Concord Middle School Project

Project Manager Report

July 2022

HILL International

CONCORD MIDDLE SCHOOL PROJECT

PROJECT MANAGER'S REPORT
JULY 2022

TABLE OF CONTENTS

Executive Summary

Town of Concord
Concord Middle School Project

Executive Summary

This Project Manager's Report for the Concord Middle School Project is submitted by **Hill International** (Hill) and covers activities through the month of **July 2022.**

Project Progress

Project related meetings are being held in a hybrid format both via Zoom Video Conferencing and in person at various locations in Concord, MA.

The Project Team began advancing the design through the CD phase while the CMSBC began reviewing potential Value Management opportunities. Hill and SMMA attended a Concord Middle School Building Committee (SBC) meeting on July 28th; a Solar Project Design Coordination meeting on July 11th; and a SEPAC meeting on July 21st. Hill set-up and facilitated weekly Leadership Team meetings on July 6th, 13th, 20th, and 27th. Hill and SMMA also met weekly to coordinate work tasks and deliverables to the SBC.

Milestones

The following milestones were achieved during the month of July 2022:

- A final Design Development report, consistent with typical MSBA submissions, was completed by Hill and SMMA on July 15th and was issued to the CMSBC thereafter. Sections 6A.1 through 6A3.3 are attached for reference with some sections omitted or condensed due to size.
- At the July 11th Solar Project Design Coordination meeting, Concord Municipal Light Plant/Board members and solar designer, SDA, reviewed and discussed solar plan development with the CMS project team. Roles and responsibilities were discussed. Infrastructure planning and coordination will continue between SDA and SMMA, but the solar project will maintain its own scope, schedule, and budget apart from the CMS project.
- At the July 28th SBC meeting, the CMSBC reviewed general correspondence from the public, and evaluated methods to encourage further public engagement pertaining to the project. Hill International presented and gave an overview of the current budget challenges and value management log potential. The VM log included $2,070,944 worth of items recommended to be accepted by Hill and SMMA as well as $10,211,319 in savings potential, all to be further reviewed and voted on by the SBC in future meetings. The current construction estimate, informed by the reconciled Design Development estimate, is $86,105,312. The DD estimate projection including the bid contingency and updated construction contingency is $108,415,174, which is $5,559,174 over the approved budget of $102,816,000 (excluding the Feasibility and SD Phase). Hill presented a pathway to budget alignment:
    - Step 1: Proceed with Contract Document design per 6/30 CMSBC Vote
    - Step 2: Review and discuss VM items as recommended by SMMA
    - Step 3: Review and discuss plan to submit a Warrant Article for a Special Town Meeting
    - Step 4: Finalize 60% CD package by 9/29/22. Reconcile 60% CD estimate by 10/21/22
    - Step 5: CMSBC reviews 60% estimate and re-assesses at 10/27/22 CMSBC meeting

  The CMSBC agreed to begin the process of evaluating Value Management opportunities while preparing for a potential Special Town Meeting in mid-December 2022 and a vote in early January 2023.

Milestones projected for the coming months are:

- Execute contract for Commissioning Agent
- Review and make decisions on Value Management opportunities
- Establish a Special Town Meeting date
- 60% CD package

Issues

- Current construction market cost conditions
- Construction budget alignment at 60% CD estimate
- Establishing a Special Town Meeting date

Schedule

Major milestones are as follows:

OPM Selection	Completed Aug. 28th, 2019
Designer Selection	Completed Nov. 18th, 2019
Feasibility Study	Completed April 29th, 2021
Schematic Design	Completed December 9th, 2021
Town Hearing	Completed December 16th, 2021
Special Town Meeting	Completed January 20th, 2022
Town Vote	Completed February 3rd, 2022
Design Development	Completed June 30th, 2022
60% Contract Documents	July 1st, 2022 (start date)
90% Contract Documents	See attached schedule
100% Contract Documents	See attached schedule
Bidding	See attached schedule
Construction	See attached schedule
Substantial Completion (New Building)	See attached schedule
Demolition of Existing Building and Add New Fields	See attached schedule
Closeout	

Budget

In January 2022, the Town of Concord held a Special Town Meeting to present the Middle School Building Project and hold an in-person vote on a not-to-exceed project budget $104,316,000 to be reflected on the ballot at the February 3rd Town Vote.

In February 2022, the Town of Concord voted by ballot to approve debt authorization amounting to $102,816,000 for the new Concord Middle School project bringing the total project budget including Feasibility and Schematic Design Phase to $104,316,000.

In June 2022, the Design Development estimate was presented at $5,332,865 over the construction budget of $80,772,447. However, the Concord Middle School Building Committee voted to proceed with Contract Document design preparation at the June 30, 2022 CMSBC Meeting with the idea that value management and budget alignment must happen no later than October 2022 at the 60% CD estimate phase.

Cash Flow

Total project budget is $104,316,000.
Total encumbered to date is $12,704,575.00.
Total spent on construction to date is $0.00.
Total spent to date is $3,249,117.10. 25.5% of total encumbered.

Project Team Summary

Awarding Authority	Town of Concord (ToC)
Client	Town of Concord / Concord Public Schools
Owner's Project Manager	Hill International, Inc. (Hill)
Commissioning Agent	AKF Group / Simpson Gumpertz and Heger (AKF/SGH)
Designer	SMMA
General Contractor	TBD

HILL International

Project Dashboard

Town of Concord

Concord Middle School

Project Dashboard **July 31, 2022** **EXECUTIVE SUMMARY**

HILL International

Project Accomplishments this Month

A final Design Development report was completed by Hill and SMMA on July 15 and was issued to the CMSBC thereafter.
At the July 21 SEPAC meeting Hill and SMMA answered questions from SEPAC committee relating to the design of the building.
At the July 28 Concord Middle School Building Committee meeting, the professional team worked with CMSBC members to establish a pathway to achieve budget alignment through both value management and appropriation of additional funds through another Special Town Meeting. The variance currently stands at $5,559,174 between the approved budget of $102,816,000 (excluding the Feasibility and SD Phase) and the DD estimate projection of $108,415,174.

Projected Major Tasks next Month

Execute contract for Commissioning Agent
Review and make decisions on Value Management opportunities
Establish a Special Town Meeting date
60% CD package

Current Issues & Areas of Focus

Current construction market conditions
Construction budget alignment at 60% CD estimate
Establishing a Special Town Meeting date

Current Progress Photos

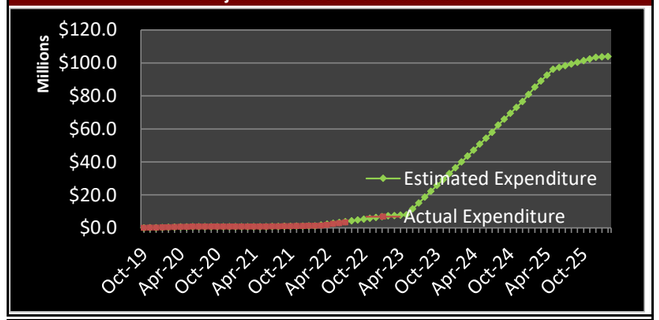
Schedule Summary - Upcoming Milestones

	Scheduled Start	Scheduled Finish	Actual Start	Actual Finish
Designer Procurement	9/25/2019	11/18/2019	9/25/2019	12/9/2019
Feasibility/Schematic Design	11/19/19	7/1/2020	11/19/19	12/9/2021
Special Town Meeting	12/17/21	12/17/21	1/20/22	1/20/2022
Town Vote	2/3/22	2/3/22	2/3/22	2/3/22
Design Development / Contract Documents	2/7/22	2/22/23	2/7/22	
Bidding	10/24/22	4/23/23		
Construction	5/9/23	12/10/24		
Punch List & Move-in	12/11/24	4/11/25		
Demolition Existing Building	4/15/25	9/12/25		
Closeout	9/12/25	1/15/26		

Diversity Compliance

Metric	Target	Actual
Designer's WBE/MBE	TBD	TBD
Contractor's WBE/MBE	TBD	TBD

Project Cash Flow - Plan vs Actual



PROJECT FINANCIAL OVERVIEW

Description	BUDGET Baseline Budget	Authorized Changes	Approved Budget	COST Committed Costs	Uncommitted Costs	Forecast Costs	Total Project Costs	CASH FLOW Expenditures to Date	Balance To Spend
Site Acquisistion	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Construction	$ 80,000,000	$ 772,477	$ 80,772,477	$ -	$ 80,772,477	$ -	$ 80,772,477	$ -	$ 80,772,477
Design Services	$ 8,281,000	$ 936,347	$ 9,217,347	$ 8,937,347	$ 280,000	$ -	$ 9,217,347	$ 2,680,791	$ 6,536,555
Administrative	$ 4,279,595	$ 607,638	$ 4,887,233	$ 3,767,228	$ 1,120,005	$ -	$ 4,887,233	$ 568,326	$ 4,318,908
FF&E	$ 2,677,500	$ (52,500)	$ 2,625,000	$ -	$ 2,625,000	$ -	$ 2,625,000	$ -	$ 2,625,000
SUBTOTAL	**$ 95,238,095**	**$ 2,263,962**	**$ 97,502,057**	**$ 12,704,575**	**$ 84,797,482**	**$ -**	**$ 97,502,057**	**$ 3,249,117**	**$ 94,252,940**
Construction Contingency (Hard Cost)	$ 4,000,000	$ 38,927	$ 4,038,927	$ -	$ 4,038,927	$ -	$ 4,038,927	$ -	$ 4,038,927
Owner's FFE Contingency	$ -	$ 2,019,312	$ 2,019,312	$ -	$ 2,019,312	$ -	$ 2,019,312	$ -	$ 2,019,312
Owner's Contingency (Soft Cost)	$ 761,905	$ (6,201)	$ 755,704	$ -	$ 755,704	$ -	$ 755,704	$ -	$ 755,704
SUBTOTAL	**$ 4,761,905**	**$ 2,052,038**	**$ 6,813,943**	**$ -**	**$ 6,813,943**	**$ -**	**$ 6,813,943**	**$ -**	**$ 6,813,943**
PROJECT TOTAL	**$ 100,000,000**	**$ 4,316,000**	**$ 104,316,000**	**$ 12,704,575**	**$ 91,611,425**	**$ -**	**$ 104,316,000**	**$ 3,249,117**	**$ 101,066,883**

Scope changes from the Original Scope

N/A

Project Budget Transfers

N/A

Budget Update

Town of Concord

Concord Middle School

Project Budget and Cost Summary

July 31, 2022

HILL International

A	C	D (Bud. Adj. Tab)	E (C+D)	F (Com. Cost tab)	G (E-F)	H (Forecast. tab, >G)	I (F+G+H)	J (Invoice Tab)	K (I-J)
	BUDGET			COST				CASH FLOW	
Description	Intial Budget	Authorized Changes	Approved Budget	Committed Costs	Uncommitted Costs	Forecast Costs	Total Project Costs	Expenditures to Date	Balance To Spend
20 Construction									
Construction	$80,000,000	$772,477	$80,772,477	$0	$80,772,477	$0	$80,772,477	$0	$80,772,477
Subtotal	$80,000,000	$772,477	$80,772,477	$0	$80,772,477	$0	$80,772,477	$0	$80,772,477
30 Architectural & Engineering									
Designer - Basic Services	$6,590,600	$589,400	$7,180,000	$7,180,000	$0	$0	$7,180,000	$1,500,000	$5,680,000
Schematic Design	$889,400	$232,447	$1,121,847	$1,121,847	$0	$0	$1,121,847	$1,121,847	$0
Geotechnical Engineering CA	$250,000	-$45,000	$205,000	$205,000	$0	$0	$205,000	$34,650	$170,350
Geoenvironmental Engineering-allowance	$51,000	$134,000	$185,000	$185,000	$0	$0	$185,000	$0	$185,000
Site Survey	$50,000	-$30,000	$20,000	$10,000	$10,000	$0	$20,000	$0	$20,000
Survey of Existing Conditions / Wetlands	$50,000	-$50,000	$0	$0	$0	$0	$0	$0	$0
Hazardous Materials	$100,000	$45,000	$145,000	$145,000	$0	$0	$145,000	$0	$145,000
A&E Sub Consultants	$0	$70,500	$70,500	$70,500	$0	$0	$70,500	$24,200	$46,300
Other Reimbursable Costs	$100,000	-$80,000	$20,000	$20,000	$0	$0	$20,000	$95	$19,905
Printing (Over the Minimum)	$50,000	-$30,000	$20,000	$0	$20,000	$0	$20,000	$0	$20,000
Testing & Inspections	$150,000	$100,000	$250,000	$0	$250,000	$0	$250,000	$0	$250,000
Subtotal	$8,281,000	$936,347	$9,217,347	$8,937,347	$280,000	$0	$9,217,347	$2,680,791	$6,536,555
40 Administrative Costs									
Owner's Project Manager Basic Services	$3,200,000	$443,580	$3,643,580	$3,383,575	$260,005	$0	$3,643,580	$184,673	$3,458,908
OPM Feasibility Study	$299,800	$78,353	$378,153	$378,153	$0	$0	$378,153	$378,153	$0
OPM Cost Estimates	$0	$5,500	$5,500	$5,500	$0	$0	$5,500	$5,500	$0
Commissioning Agent	$200,000	$80,000	$280,000	$0	$280,000	$0	$280,000	$0	$280,000
Advertising	$29,795	$205	$30,000	$0	$30,000	$0	$30,000	$0	$30,000
Other Administrative Costs	$50,000	$0	$50,000	$0	$50,000	$0	$50,000	$0	$50,000
Other Project Costs (Moving)	$150,000	$50,000	$200,000	$0	$200,000	$0	$200,000	$0	$200,000
Utility Fees	$300,000	$0	$300,000	$0	$300,000	$0	$300,000	$0	$300,000
Legal	$50,000	-$50,000	$0	$0	$0	$0	$0	$0	$0
Subtotal	$4,279,595	$607,638	$4,887,233	$3,767,228	$1,120,005	$0	$4,887,233	$568,326	$4,318,908

Town of Concord

Concord Middle School

Project Budget and Cost Summary

July 31, 2022

A	C	D (Bud. Adj. Tab)	E (C+D)	F (Com. Cost tab)	G (E-F)	H (Forecast. tab, >G)	I (F+G+H)	J (Invoice Tab)	K (I-J)
	BUDGET			COST				CASH FLOW	
Description	Intial Budget	Authorized Changes	Approved Budget	Committed Costs	Uncommitted Costs	Forecast Costs	Total Project Costs	Expenditures to Date	Balance To Spend
50 Furniture, Fixtures and Equipment									
Furniture, Fixtures and Equipment	$1,225,000	$140,000	$1,365,000	$0	$1,365,000	$0	$1,365,000	$0	$1,365,000
Security	$227,500	-$227,500	$0	$0	$0	$0	$0	$0	$0
Technology	$1,225,000	$35,000	$1,260,000	$0	$1,260,000	$0	$1,260,000	$0	$1,260,000
Subtotal	$2,677,500	-$52,500	$2,625,000	$0	$2,625,000	$0	$2,625,000	$0	$2,625,000
Project Sub-Total	$95,238,095	$2,263,962	$97,502,057	$12,704,575	$84,797,482	$0	$97,502,057	$3,249,117	$94,252,940
70 Project Contingency					Current Contingency	Potential Risk	Potential Contingency		
Construction Contingency	$4,000,000	$38,927	$4,038,927		$4,038,927	$0	$4,038,927		$4,038,927
Owner's Bid Contingency	$0	$2,019,312	$2,019,312		$2,019,312	$0	$2,019,312		$2,019,312
Owner's Contingency	$761,905	-$6,201	$755,704		$755,704	$0	$755,704		$755,704
Subtotal	$4,761,905	$2,052,038	$6,813,943		$6,813,943	$0	**$6,813,943**		**$6,813,943**
Project Total	**$100,000,000**	**$4,316,000**	**$104,316,000**	**$12,704,575**	**$91,611,425**	**$0**	**$104,316,000**	**$3,249,117**	**$101,066,883**

*Includes $1.5M from Feasibility and Schematic Design Phase

Construction Cost Estimates	Date	Amount	Gross Square Feet	Cost Per SF
Schematic Design Estimate	11/03/21	$82,512,622	143,510	$574.96
Design Development	06/29/22	$86,105,512	142,704	
Construction Documents (60%)				
Construction Documents (90%)				
Finalized GC Contract				

-$11,204,575

Budget Revisions Summary	Date	Amount

July 31, 2022

Concord Middle School
Estimated Project Cash Flow

HILL International

		Month	OPM + Commissioning	Designer & Consultants	FF&E & Misc. Admin.	Construction	Contingency	Estimated Expenditures	Actual Expenditures	Estimated Cumulative Expenditures	Actual Cumulative Expenditures
Feasibility Study	1	Oct-19	$25,110					$25,110	$25,110	$25,110	$25,110
	2	Nov-19	$34,595					$34,595	$34,595	$59,705	$59,705
	3	Dec-19	$20,660					$20,660	$20,660	$80,365	$80,365
	4	Jan-20	$12,565	$75,645				$88,210	$88,210	$168,575	$168,575
	5	Feb-20	$16,445	$151,290				$167,735	$167,735	$336,310	$336,310
	6	Mar-20	$25,890	$75,645				$101,535	$101,535	$437,845	$437,845
	7	Apr-20	$34,480	$75,645				$110,125	$110,125	$547,970	$547,970
	8	May-20	$50,035	$50,430				$100,465	$100,465	$648,435	$648,435
Pause	9	Jun-20	$33,130	$40,344				$73,474	$73,474	$721,909	$721,909
	10	Jul-20	$15,520					$15,520	$15,520	$737,429	$737,429
	11	Aug-20	$3,785					$3,785	$3,785	$741,214	$741,214
	12	Sep-20	$720					$720	$720	$741,934	$741,934
	13	Oct-20	$2,590					$2,590	$2,590	$744,524	$744,524
	14	Nov-20						$0	$0	$744,524	$744,524
Restart Feasibility Study	15	Dec-20	$16,798					$16,798	$16,798	$761,322	$761,322
	16	Jan-21						$0	$0	$761,322	$761,322
	17	Feb-21						$0	$0	$761,322	$761,322
	18	Mar-21						$0	$0	$761,322	$761,322
	19	Apr-21						$0	$0	$761,322	$761,322
Schematic Design	20	May-21						$0	$0	$761,322	$761,322
	21	Jun-21		$2,400				$2,400	$2,400	$763,722	$763,722
	22	Jul-21		$69,318				$69,318	$69,318	$833,040	$833,040
	23	Aug-21		$69,318				$69,318	$69,318	$902,358	$902,358
	24	Sep-21		$69,318				$69,318	$69,318	$971,676	$971,676
	25	Oct-21		$73,918				$73,918	$73,938	$1,045,594	$1,045,614
	26	Nov-21		$57,765				$57,765	$57,765	$1,103,359	$1,103,379
Town Proces	27	Dec-21	$18,016	$42,361				$60,377	$60,377	$1,163,736	$1,163,756
	28	Jan-22	$78,353	$7,202				$85,555	$78,357	$1,249,291	$1,242,113
Design Development & Construction Documents	29	Feb-22	$53,017					$53,017	$7,950	$1,302,308	$1,250,063
	30	Mar-22	$53,017	$436,495				$489,512	$62,018	$1,791,820	$1,312,081
	31	Apr-22	$53,017	$436,495				$489,512	$382,447	$2,281,332	$1,694,528
	32	May-22	$53,017	$436,495				$489,512	$733,550	$2,770,844	$2,428,078
	33	Jun-22	$47,017	$436,495				$483,512	$347,075	$3,254,356	$2,775,153
	34	Jul-22	$107,867	$424,658	$16,667			$549,191	$473,965	$3,803,547	$3,249,117.10
	35	Aug-22	$56,117	$424,658	$16,667			$497,441	$0	$4,300,989	
	36	Sep-22	$55,207	$424,658	$16,667			$496,531	$0	$4,797,520	
	37	Oct-22	$55,207	$424,658	$29,795			$509,660	$0	$5,307,179	
	38	Nov-22	$55,207	$424,658	$7,143			$487,007	$0	$5,794,187	
	39	Dec-22	$99,207	$424,658	$7,143			$531,007	$0	$6,325,194	
	40	Jan-23	$62,857	$424,658	$7,143			$494,657	$0	$6,819,851	
	41	Feb-23	$57,820	$424,665	$7,143			$489,627	$0	$7,309,479	
Bid	42	Mar-23	$68,030	$127,350	$7,143			$202,523	$0	$7,512,002	
	43	Apr-23	$106,980	$127,350	$7,143			$241,473	$0	$7,753,474	
	44	May-23	$80,630	$96,200	$7,143			$183,973	$0	$7,937,447	
	45	Jun-23	$99,130	$96,200	$8,333	$3,094,687	$272,669	$3,571,019	$0	$11,508,467	
	46	Jul-23	$100,630	$96,200	$8,333	$3,094,687	$272,669	$3,572,519	$0	$15,080,986	
	47	Aug-23	$94,880	$96,200	$8,333	$3,094,687	$272,669	$3,566,769	$0	$18,647,756	
	48	Sep-23	$94,880	$96,200	$8,333	$3,094,687	$272,669	$3,566,769	$0	$22,214,525	
	49	Oct-23	$94,880	$96,200	$8,333	$3,094,687	$272,669	$3,566,769	$0	$25,781,294	

July 31, 2022

Concord Middle School
Estimated Project Cash Flow

HILL International

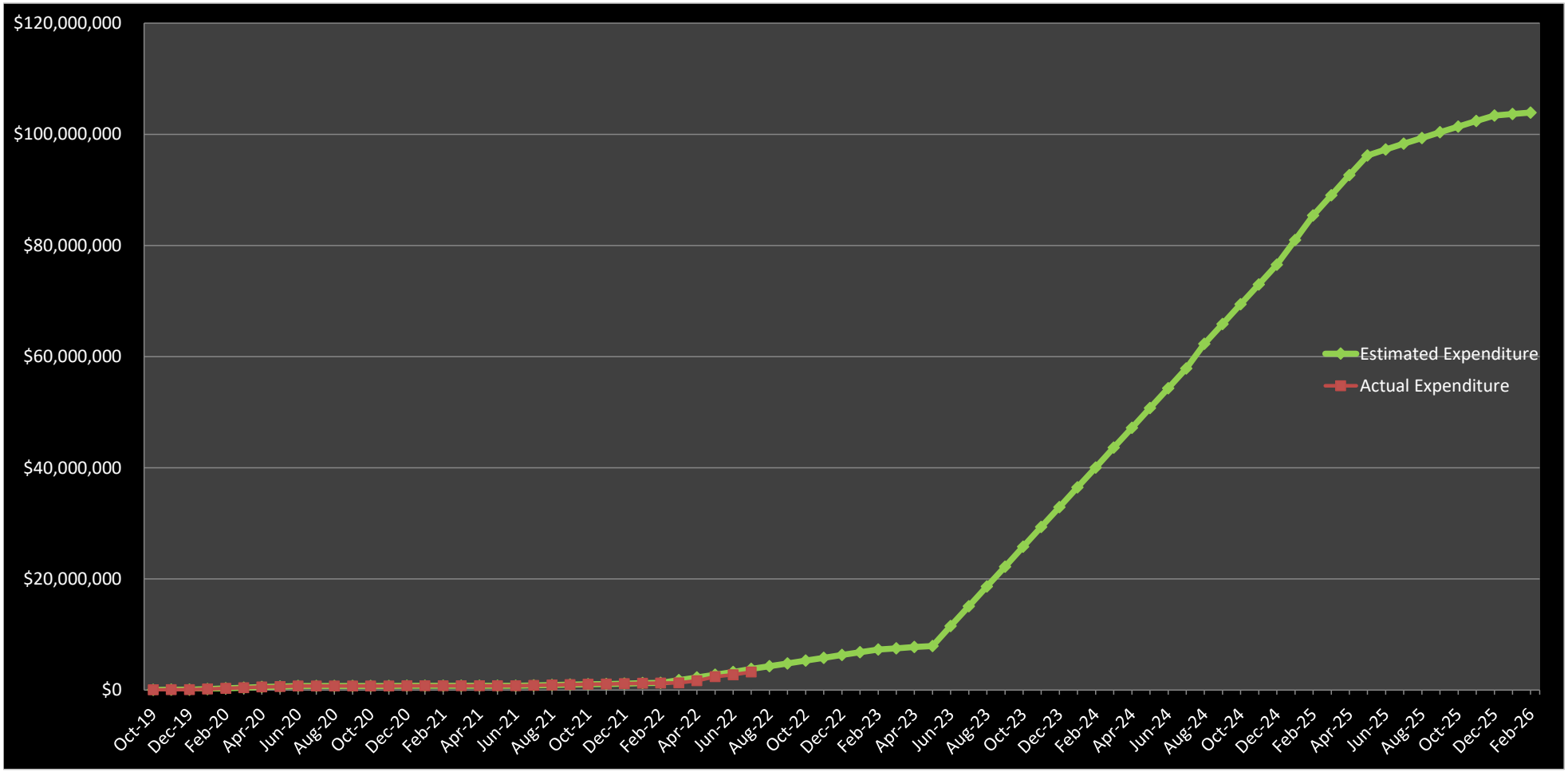
		Month	OPM + Commissioning	Designer & Consultants	FF&E & Misc. Admin.	Construction	Contingency	Estimated Expenditures	Actual Expenditures	Estimated Cumulative Expenditures	Actual Cumulative Expenditures
Construction Phase 1 (New School)	50	Nov-23	$94,880	$96,200	$8,333	$3,094,687	$272,669	$3,566,769	$0	$29,348,064	
	51	Dec-23	$94,880	$96,200	$8,333	$3,094,687	$272,669	$3,566,769	$0	$32,914,833	
	52	Jan-24	$94,880	$96,200	$8,333	$3,094,687	$272,669	$3,566,769	$0	$36,481,603	
	53	Feb-24	$94,880	$96,200	$8,333	$3,094,687	$272,669	$3,566,769	$0	$40,048,372	
	54	Mar-24	$94,880	$96,200	$8,333	$3,094,687	$272,669	$3,566,769	$0	$43,615,141	
	55	Apr-24	$94,880	$96,200	$8,333	$3,094,687	$272,669	$3,566,769	$0	$47,181,911	
	56	May-24	$94,880	$96,200	$8,333	$3,094,687	$272,669	$3,566,769	$0	$50,748,680	
	57	Jun-24	$94,880	$96,200	$8,333	$3,094,687	$272,669	$3,566,769	$0	$54,315,450	
	58	Jul-24	$94,880	$96,200	$8,333	$3,094,687	$272,669	$3,566,769	$0	$57,882,219	
	59	Aug-24	$81,380	$96,200	$887,500	$3,094,687	$272,669	$4,432,436	$0	$62,314,655	
	60	Sep-24	$81,380	$96,200	$12,500	$3,094,687	$272,669	$3,557,436	$0	$65,872,091	
	61	Oct-24	$81,380	$96,200	$12,500	$3,094,687	$272,669	$3,557,436	$0	$69,429,527	
	62	Nov-24	$81,380	$96,200	$12,500	$3,094,687	$272,669	$3,557,436	$0	$72,986,963	
	63	Dec-24	$81,380	$96,200	$12,500	$3,094,687	$272,669	$3,557,436	$0	$76,544,400	
	64	Jan-25	$81,380	$96,200	$887,500	$3,094,687	$272,669	$4,432,436	$0	$80,976,836	
	65	Feb-25	$81,380	$96,200	$887,500	$3,094,687	$272,669	$4,432,436	$0	$85,409,272	
	66	Mar-25	$81,380	$96,200	$87,500	$3,094,687	$272,669	$3,632,436	$0	$89,041,708	
	67	Apr-25	$81,380	$96,200	$87,500	$3,094,687	$272,669	$3,632,436	$0	$92,674,144	
Phase 2 (Demo & Fields)	68	May-25	$81,380	$57,143	$12,500	$3,094,687	$272,669	$3,518,379	$0	$96,192,523	
	69	Jun-25	$81,380	$57,143	$58,538	$857,143	$34,388	$1,088,592	$0	$97,281,114	
	70	Jul-25	$77,780	$57,143		$857,143	$34,388	$1,026,454	$0	$98,307,568	
	71	Aug-25	$77,780	$57,143		$857,143	$34,388	$1,026,454	$0	$99,334,022	
	72	Sep-25	$77,780	$57,143		$857,143	$34,388	$1,026,454	$0	$100,360,475	
	73	Oct-25	$68,800	$57,143		$857,143	$34,388	$1,017,474	$0	$101,377,949	
	74	Nov-25	$60,255	$57,143		$857,143	$34,388	$1,008,929	$0	$102,386,877	
Closeout	75	Dec-25	$56,055	$41,667		$857,143	$34,388	$989,252	$0	$103,376,130	
	76	Jan-26	$47,705	$41,667		$166,667	$29,180	$285,218	$0	$103,661,348	
	77	Feb-26	$41,855	$41,667		$166,667		$250,188	$0	$103,911,536	
	78	Mar-26	$38,355	$41,667		$166,647		$246,668	$0	$104,158,205	
	79	Apr-26	$28,407	$41,667				$70,074	$0	$104,228,278	
	80	May-26	$25,060	$41,667				$66,727	$0	$104,295,005	
	81	Jun-26	$20,995					$20,995	$0	$104,316,000	
	82	Jul-26						$0	$0	$104,316,000	
	83	Aug-26						$0	$0	$104,316,000	
	84	Sep-26						$0	$0	$104,316,000	
		Subtotal for FY '19	**$252,910**	**$468,999**	**$0**	**$0**	**$0**	**$721,909**			
		Subtotal for FY '20	**$39,413**	**$2,400**	**$0**	**$0**	**$0**	**$41,813**			
		Subtotal for FY '21	**$355,454**	**$2,135,180**	**$0**	**$0**	**$0**	**$2,490,634**			
		Subtotal for FY '22	**$904,259**	**$3,844,367**	**$138,128**	**$3,094,687**	**$272,669**	**$8,254,110**			
		Subtotal for FY '23	**$1,144,310**	**$1,154,401**	**$100,000**	**$37,136,249**	**$3,272,024**	**$42,806,983**			
		Subtotal for FY '24	**$990,060**	**$1,076,286**	**$2,966,871**	**$34,898,704**	**$3,033,743**	**$42,965,665**			
		Subtotal for FY '25	**$620,827**	**$535,714**	**$0**	**$5,642,837**	**$235,507**	**$7,034,886**			
		TOTAL	**$4,307,233**	**$9,217,347**	**$3,205,000**	**$80,772,477**	**$6,813,943**	**$104,316,000**			

Town of Concord

Concord Middle School

Estimated Project Cash Flow Graph

July 31, 2022

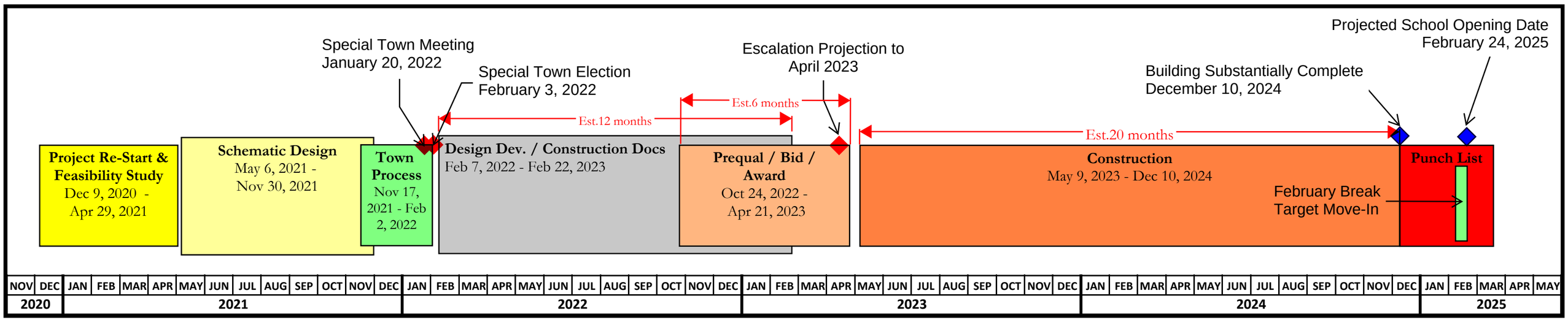


HILL International

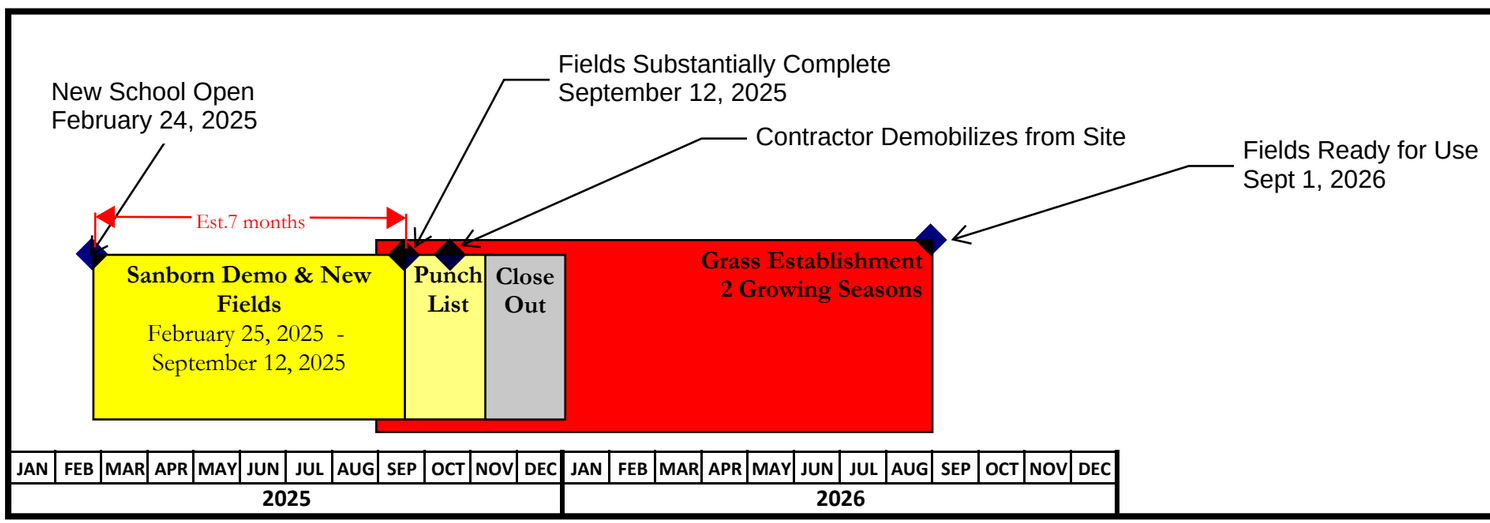
Schedule Update

Concord Middle School
Executive Summary Schedule
June 2, 2022 UPDATE

PHASE 1 - NEW SCHOOL DESIGN & CONSTRUCTION



PHASE 2 - SANBORN DEMO & NEW FIELDS



HILL International

Final Design Development Report

SMMA

Design Development Report

Concord Middle School

835/1231 Old Marlboro Rd
Concord, MA 01742

July 15, 2022

SMMA

Acknowledgements

Concord Middle School Building Committee

Dawn Guarriello, Co-Chair – Community Volunteer

Pat Nelson, Co-Chair – Community Volunteer

Alexa Anderson - School Committee Representative

Court Booth – School Committee Representative

Heather Bout – School Committee Representative

Justin Cameron – Concord Middle School Principal

Frank Cannon – Community Volunteer

Peter Fischelis – Community Volunteer

Jon Harris - Concord Budget Director

Russ Hughes - Facilities Director, CPS/CCRSD

Laurie Hunter - Superintendent of Schools, CPS/CCRSD

Matt Johnson – Concord Select Board Representative

Amanda Kohn – Director of Sustainability

Kerry Lfleur – Concord Interim Town Manager

Charlie Parker - Community Volunteer

Chris Popov - Community Volunteer

Matt Root - Community Volunteer

Robert Conry – Assistant Superintendent of Finance and Operations, CPS/CCRSD

Stephen Stasheski – Community Volunteer

Owners Project Manager

Hill International

Commissioning Agent

AKF with SGH

SMMA

Design Team

Principal-in-Charge	*Project Manager*	*Project Architect*	*Design Architect*
SMMA Lorraine Finnegan	SMMA Lorraine Finnegan	SMMA Jennifer Soucy	EwingCole Saul Jabbawy
Civil Engineering / Environmental Permitting	*Landscape Architecture*	*Structural Engineering*	*Educational Programming*
Nitsch Steven Ventresca	SMMA Michael Dowhan	SMMA Paul Livernois	SMMA Philip J. Poinelli
Fire Protection / Plumbing Engineering	*HVAC Engineering*	*Electrical / Lighting*	*Data / Communications*
SMMA Luis Moreno	SMMA Charles Gibson	SMMA Anthony Jimenez	3si Aaron DiBari
Geotechnical Consultant	*Geoenvironmental Engineering*	*Hazardous Materials*	*Traffic Consultant*
McArdle Gannon Assoc. Wayne McArdle	Nobis Engineering (MBE) Tim Andrews	Nobis Engineering (MBE) Jeffery Brunelle	Bryant Associates Todd Brayton
Kitchen / Food Service Consultant	*Acoustical Consultant*	*Specifications Consultant*	*Library / Media*
Schiavone Designs, LLC (WBE) Joanne Schiavone	Acentech. Rose Mary Su	SMMA Kristin Norwood	SMMA Sarah Long
Technology / Audio Visual Consultant	*Furniture, Fixtures and Equipment Consultant*	*Sustainable / Green Design / Renewable Energy Consultant*	*Passive House Consultant*
Acentech. Liz Lamour Croteau	Stefura Associates Inc Marcy Stefura	SMMA Martine Dion	Steven Winter Associates, Inc. Lois Arena
Code Consultant	*Site Survey*	*Cost Estimating*	*Auditorium Consultant*
Building, Fire & Access Robert Carasitti	Nitsch Engineering (WBE) Denis Seguin	A.M. Fogarty Peter Timothy	Theater Design Michael Mell

Design Development Report

Concord Middle School
835/1231 Old Marlboro Rd
Concord, MA 01742

Prepared by:

SMMA
1000 Massachusetts Avenue
Cambridge, MA 02138
www.smma.com

Table of Contents

6A.3 Designer Deliverables

6A.3.1 General Requirements

1. Updated Work Plan
2. Basis of Design Narratives
   - Architectural
   - Structural
   - Civil
   - MEP/FP
   - DATA/Comms/Security
3. Building Code Analysis
4. List of Proprietary Items Under Consideration
5. Interior Color Theory Statement
6. Project Registration with USGBC
7. Structural Calculations and Required Floor Loads
8. Energy Model Calculations
9. Life Cycle Cost Analysis for Energy & Water Devices
10. Heat Gain and Loss Calculations for HVAC
11. Electrical Load Calculations
12. Security and Visual Access Requirements
13. Facility and Maintenance Requirements
14. Quality Control Narratives

6A.3.2 Space Summary

1. Updated Space Summary and Signed Certification
2. Comparison of Current Design with Final Educational Program
3. DESE Approved SPED Space Confirmation
4. DESE Approved Public Day Education Spaces Confirmation

6A.3.3 Project Approvals

1. Status of Approvals
2. Confirmation of Receipt of All Necessary Approvals
3. State review or permit status
4. Schedule for Local Zoning Approvals
5. Certification of Utility Official Notification

6A.3.4 Cost Estimates

1. Designer Cost Estimate (Uniformat II)
2. Designer Cost Estimate (CSI)

6A.3.5 Drawings

6A.3.6 Project Manual

6A.4 Appendix

A. Geotechnical Engineering Report
B. GeoEnvironmental Investigation Report
C. Traffic Impact Study
D. Hazardous Materials Investigation Report
E. IHCD Review w Attachments

6A Design Development

6A.1 Summary

1. Basic Project Information

The all-new Concord Middle School is a public middle school that will be located at 835 Old Marlboro Road (indicated as Parcel 3010-2-1, Map 12D, Block 3010 by the Concord Tax Assessors Office) in Concord Massachusetts, on the site of the existing Sanborn Middle School. The parcel is located within the Residence AA zoning district on the Concord Zoning Map. It will support grades 6-8 with an enrollment of 700 students.

The building is organized as in two parts. The western wing houses the Administration, Media Center, Cafeteria, Auditorium, Music Rooms and OTPT on the first floor, with Art and Word Language on a partial second floor. The eastern wing of the building is a three-story academic wing housing many of the core classrooms, Team Commons, and special education spaces. The building totals 143,510 gross square feet.

The site measures 31.29 acres, made up of one contiguous lot, a large portion of which is heavily wooded with adjacent wetlands (the buffer zone is outside of the project limit of work). The site is bordered to the east and south by a wetland complex associated with Dugan Brook and a Town of Concord public drinking water supply well, to the west by single-family residences on Captain Miles Lane, and to the north by single-family residences on the opposite side of Old Marlboro Road. Topographically, the developed northwest portion of the site (building. septic field, circulation and parking, athletic fields) along Old Marlboro Road is relatively flat, with approximately ten (10) feet of topographic change from Old Marlboro Road towards the interior of the site through the developed area. The south and southeastern portion of the site is steeply sloped and wooded with mature native pine/oak/maple forest cover. There is approximately forty (40) feet of topographic change from the edge of the developed area to the base of slope to the south and southeast. Beyond the base of the slope at the southeasternmost area of the site is another flat area of the site that contains additional athletic fields. A small portion of the site is within a buffer zone for a resource area associated with Dugan Brook.

The site development includes approximately 150 dedicated parking spaces, paved outdoor areas, MIAA regulation-sized boys' baseball and girls' softball fields, and a MIAA regulation-sized overlay soccer pitch. Dedicated bus lanes and parent drop off/pick up are designed to alleviate the current traffic congestion and safety concerns. The building is being designed as an all-electric building, to achieve Net Zero Ready when open. Solar PV is being designed by Solar Design Associates (SDA) and procured through a separate contract by the Town/Concord Municipal Light.

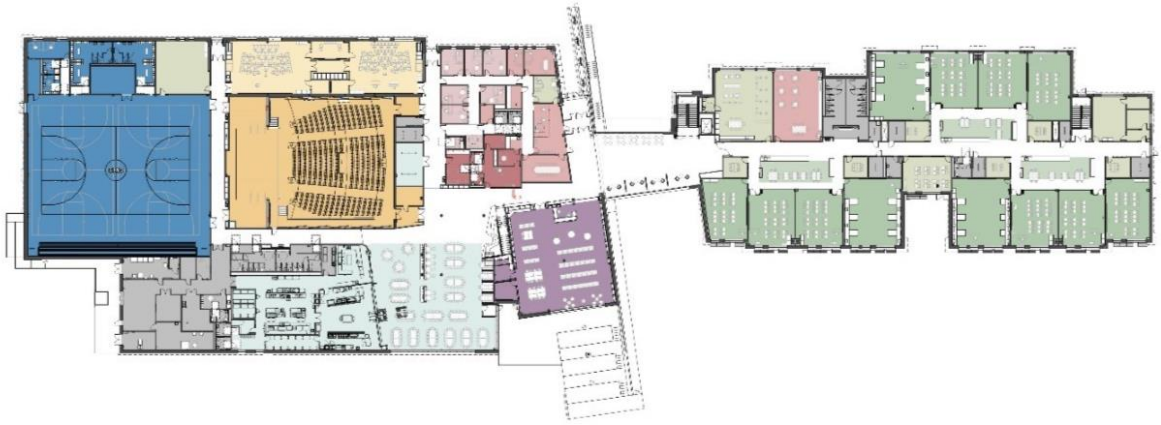
The total project budget is $104,316,000, which combines the $1,500,000 appropriation for the Feasibility and Schematic Design phases with the approved additional funding of $102,816,000 at the Town Meeting on January 20, 2022.

This total project budget includes a bidding contingency of $2,019,312 for a potential bid overrun due to the uncertainty and volatility of the current construction market.

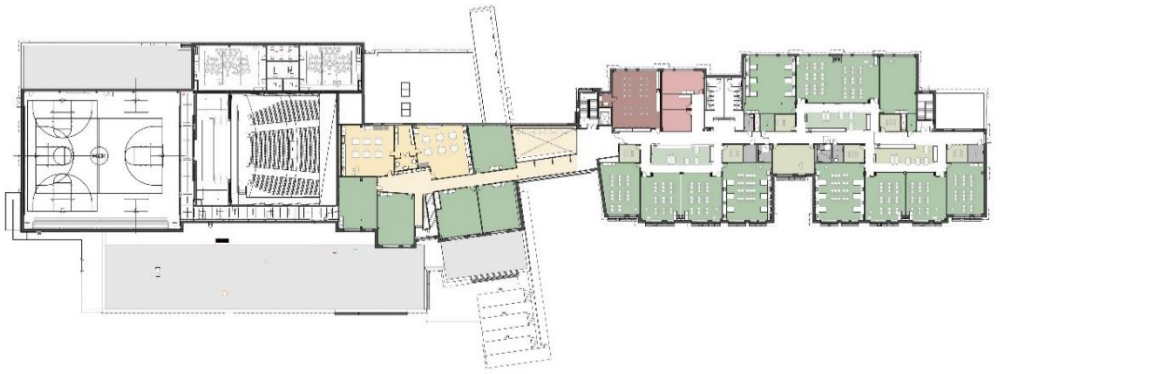
The project will be delivered through Design Bid Build, which was approved by the School Building Committee at their April 15, 2021, meeting.

Site Plan

Lower-Level Program Plan



Ground Level Program Plan



Upper-Level Program Plan

Aerial View from Northeast

View of Entry from Bus Zone

View of Entry from Bus Zone

View of Lobby Looking toward Athletic Fields

View of Cafeteria looking South

View of Cafeteria looking North

View of Team Learning Commons

View between Academic Wing (left) and Entry (right)

2. Project Budget Compliance

The Total Project Budget Form (3011) produced by the OPM defines a total project budget of $104,316,000. A copy of which is included with the final report.

The approved total project budget will be funded through the issuance of a general obligation bond. The District will authorize the full amount of the total project budget as a borrowing authorization. Town Meeting was held on January 20, 2022, and subsequent vote on February 3, 2022, approved the override to permit the borrowing.

SMMA

6A Design Development

6A.2 OPM Deliverables

6A.2.1 OPM Submittal Review & Coordination

1. OPM Certification, Review, and Recommendation

Hill International has participated in and has managed, on behalf of the Town of Concord, the Design Development Phase of the Concord Middle School Project. We have reviewed the Design Development submission prepared by SMMA Architects and their Consultants and have found that all comments and feedback given through various meetings such a User Group, Educational Programming, Design Subcommittee, Sustainability Subcommittee, School Building Committee, and Local and State Regulatory groups have been addressed and have been incorporated into the design. The current design also incorporated value management items as accepted by the School Building Committee during the Schematic Design Phase. Areas of focus during the Design Development Phase included but were not limited to educational programming, water efficiency, septic design, fire protection, life safety, security, mental health, auditorium/specialty spaces audio visual and technology, educational technology, interior and exterior building progress, MEP systems advancement, site design, and soil management.

Our comprehensive review included the Design Development Drawings and Specifications. We found them to be technically accurate and coordinated at a level consistent with, and in some cases beyond, what is expected at this phase of design. Hill's design review comments are attached for reference.

In addition, the Design Development package was reviewed, and cost estimates were prepared by two estimators: AM Fogarty, retained by SMMA Architects, and PM&C, hired by Hill International. These estimates were reconciled at an all-day meeting on June 21, 2022. The estimate summary and detail are attached for reference. In summary, the reconciled estimated construction cost is $86,105,512 for the current design. The construction budget as established by the Town Meeting and vote approval in January/February 2022 is $80,772,447. Therefore, the estimated cost for construction is $5,304,911 over the construction budget at this time. This overrun is attributed to drastic increases in construction market labor and materials in 2022 as well as projected escalation into 2023. Please also note that the approved Total Project Budget includes a bidding contingency of $2,019,312 that could be utilized for a cost overrun at the time of bidding in March/April 2023, which would help, but not completely resolve this current construction budget issue.

Hill International presented five potential options and associated risks for each option to the School Building Committee on June 30, 2022. The options are attached for reference. The School Building Committee reviewed and deliberated on these options and ultimately voted for Option 1 – Do Nothing, Re-Assess @ 60% CD Estimate in September/October 2022. The School Building Committee also voted specifically to allow SMMA Architects to proceed with Contract Documents while maintaining the current design intent and programming.

In summary, SMMA Architects will be proceeding with Contract Document design work to achieve a 60% CD package deliverable date of September 29, 2022. A 60% CD estimate will be prepared thereafter. This approach will allow for more time to pass as related to the scheduled construction bid in March/April 2022.

Construction market changes will be realized in this 3.5-month period and actual construction bid data for similar schools will be captured for analysis. This information will be summarized and presented to the School Building Committee in late October 2022 as well as similar options to either reduce/defer project scope to maintain the current construction budget, increase the construction budget, delay the design/bid, etc. The School Building Committee will need to take action in October 2022 to resolve these budget issues before further design efforts can be authorized.

Potential Options & Risks

OPTION 1 - Do Nothing, Re-Assess @ 60% CD Estimate in Sept 2022

$80,772,447	Construction Budget
$2,019,312	Bidding Contingency
$82,791,759	Construction Budget w/ Bid Contingency
$82,520,420	Reconciled DD Estimate w/o Escalation
($271,339)	Variance (UNDER BUDGET)

Scenario: current market maintains through bid

Risk: escalation continues

Response: VM @ 60% CD

OPTION 2 - Ask for More Money **Risk**: failed approval or addtl. funding not really required

OPTION 3 - VM to $80,772,447 Construction Budget **Risk**: unnecessary scope cuts

OPTION 4 - VM to $82,791,759 Construction Budget + $2M Bidding Contingency **Risk:** unnecessary scope cuts

OPTION 5 - Pause the Design **Risk**: increases the “unknowns” by pushing out bid

Hill International

2. OPM Designer Submission Review

Please see attached design review comments prepared by Hill International.

Concord MS DD Comments
Project Document Review - Comments
June 20, 2022

Hill International

Design Developmment Plan Review - Parks, McCann, Cutler, Miller, Donovan

Item	Drawing	Reference	Comments	Response Date	Response
Code Summary					
1	G-010	Elevator Control Room	Should this have a one-hour rating - all walls?		**The elevator machine room will have a 1 hour rating. This revision has been made in the final DD submission.**
2	G-011	Elevator - General	Sections detailing elevator are not present in this version.		**Details will be provided in the 60% CD submission**
Site / Civil					
3	Cover		Add Hill International as OPM in the Project Team section		**This has been added to the final DD drawings**
4	Cover		Add AKF as the Commissioning Agent in the Project Team section		**This has been added to the final DD drawings**
5	Cover		Is the Structural Engineer for the project a subconsultant or in-house staff from SMMA?		**This has been added to the final DD drawings**
6	Cover		Is there a landscape architect that needs to be added to the cover page ?		**This has been added to the final DD drawings**
7	Cover		Is SMMA providing mechanical and fire protection design services ? Are MEP services provided in-house or through consultant services ?		**This has been added to the final DD drawings**
8	Cover		Add Nobis Engineering as the Hazmat and Geoenvironmental Engineer		**This has been added to the final DD drawings**
9	Cover		Add McArdle Gannon as the Geotechnical Engineer		**This has been added to the final DD drawings**
10	Cover		Add Nitsch Engineering as the Septic Design Engineer		**This has been added to the final DD drawings**
11	Cover		Add IHCD as the Unversal Design Consultant		**This has been added to the final DD drawings**
12	C-1		Label buidlings, athletic fields and site features		
13	C-101		Are there any existing structures or homes adjacent to the school site ?		
14	C-102		Match line needs to be adjusted.		
15	C-102		Identify existing school and note "To Be Demolished"		
16	C-111		Identify wetland areas and 100 foot buffer zones on the plan.		
17	C-111		The tree removal lines should be squared off.		
18	C-112		Add a note "Demolish Building".		
19	C122		Adjust match line.		
20	C-131		Add a legend for proposed utilities.		
21	C-131		There is a 40% slope at the southerly side of the school. Consider flattening.		
22	C-131		Consider alternatives to proposed septic system. As designed, it will require a lot of maintenance.		
23	C-143		Identify the 3 arcs behind the school.		
24	C-152		Adjust the match line		
25	C-504		What is the purpose of the post indicator valve?		
26	C-505		Bituminous concrete pavement - it is difficult to properly place a 1 inch wearing course.Consider 1 1/2 inch instead,		
27	C-511		The sump pump should be raised up to a higher elevation.		
Architectural					
28	AD-101		Does the exisitng Sanborn school have a basement?		**No Basement, but there are pipe trenches.**
29	A-102		Are 2 kilns required?		**Yes. This was specifically requested by the Art teachers during DD programming meetings**
30	A-103a		PVC roof will need maintenance walkways as it becomes slippery during rain/snow/ice events.		**Walkway pads will be provided and will be shown in the 60% CDs**
31	A-650		Plaque should note General Contractor, not Construction Manager.		**This revision has been made and is included in the final DD Set**
Structural					
32	S-301		Footing dimensions need to be added.		**Footing Dimensions will be added for the 60% submission**
Plumbing					
33	General	Water Direction	Add direction of waterflow symbols on lines.		**Flow symbols will be provided in the 60% submission**
34	P 501	Details	Grease trap is referenced, but no detail is provided.		**Details will be provided in the 60% CD submission**
35	General	Riser plans	No riser plans are present in this version of plans. One will be required.		**Riser diagrams will be provided in the 60% submission**
36	P103 (a,b,c,)	Roof Construction	Plans show roof drains but no vent penetrations.		**Vents will be located and provided in te 60% submission**
37	P 103	Roof Construction	Roof does not have a water hose bib for a maintenance hose/water on the roof. Should one be provided for maintainence, etc.?		**Wall hydrant will be provided and coordinated with ARCH. in the roof for 60% submission**
38	P-601	Schedule Part 1	Fixture schedule seems to be in progress. Does not show nurses' station, janitor's closet, eye wash stations, washing machine,etc. Other schedules seem to be in progress as well.		**Schedule will be fully updated for 60% submission**
39	P-601	Drain Schedule	Schedule could show more columns. Function (roof, floor, etc.); outlet (in inches); strainer(inches and shape).		**Drain schedule will be updated as requested for 60% CD submission**
40	P-501	Details	Are more details needed such as under slab drainage (perf pipe); hot water heater; indirect condensate reciever; janitors closet or mop service?		**Details will be provided in the 60% CD submission**
Fire protection					
41	General	Shading	Piping and componants are typically shaded darker than floor plan lines for clarity		**Plans are updated and piping is darker than background**
42	General	Flow Direction	Flow direction is typically labeled on lines.		**Flow symbols will be provided in the 60% submission**
43	General	Section Designation	No section designation utilized in this section of plans.		**Please elaborate on this comment**
44	General	Riser Diagram	Is a riser diagram required for this section of plans?		**Riser will be provided in the 60% CD submission**
45	F501	Typo	Detail A1 appears to be an assembly and not a schematic.		**Name of detail will be updated to a DIAGRAM instead of schematic for this submittal**
food service					
46	FS 102	Schedule part 1	Food service schedule does not reference condensing units but plans do. Should it be listed here?		**This will be reviewed and corrected for next submission**
47	FS 101	Typos	Wording overlap, no periods on some abbreviations, and some symbols are sideways and need to be rotated.		**This will be corrected for next submission**
48	FS 101	Designer	Consultant not listed - Schiavone.		**This will be corrected for next submission**

Hill International

Design Developmment Plan Review - Parks, McCann, Cutler, Miller, Donovan

Item	Drawing	Reference	Comments	Response Date	Response
Mechanical					
49	General	Lines	Lines for ductwork are typically shaded heavier than floorplan lines for clarity.		**Will review line weights of mechanical elements and architectural elements.**
50	General	Pod Layout	Pod layout should be shown in each room for clarity (shown only on M-102C, typical on rest.)		**Will show layout in other rooms for DD set to MSBA and future submissions.**
51	M-501	Details	Unable to locate kitchen hood details. Kitchen in general seems to be in progress.		**Kitchen Hood is purchased/detailed by the kitchen consultant. Mechancial connects to the hood and owns grease duct/fan.**
Electrical / Technology/ Fire Alarm					
52	General	Lines	Lines for fixtures are typically shaded heavier than floorplan lines for clarity.		**Will review.**
53	E 401	Kitchen	Kitchen plan seems to be in progress. Several items are not present.		**Confirmed. Kitchen Design is in progress. Will be further coordinated for next submission.**

Concord MS DD Comments
Project Document Review - Comments
June 20, 2022

Hill International

Design Developmment Spec Review - Parks, McCann, Cutler, Miller, Donovan

Item	Spec	Reference	Comments	Response Date	Response
Specifications					
1	33000	1.04.D	Add "… mix designs have been reviewed **and approved** by the Architect"		**I will defer to the Structural Team. (CH 06/29/2022)**
2	33000	2.04.C.1	Specify Portland Cement Type II only.		**I will defer to the Structural team on whether or not to update. (CH 06/29/2022)**
3	33000	Part 3	Add a Part 3 Execution section describing concrete delivery, reinforcement, placing concrete, consolidating concrete, curing, removal of forms and crack repair.		**Part 3 of the specifications will be added for our next submission, after DD. (CH 06/29/2022)**
4	42000	1.06.	Suggest one Submittal section, not 3. Not sure informational submittals are required.		**I disagree; we should keep all submittal requirements. (CH 06/29/2022)**
7	42000	2.15.C	Type II cement only.		**Our spec says not to use cement mortar, per 2.15A.2. (CH 06/29/2022)**
8	42000	Part 3	Add a Part 3 Execution including masonry installation, mortar bedding, masonry joint reinforcement, expansion joints, and pointing, repairing and cleaning.		**Part 3 of the specifications will be added for our next submission, after DD. (CH 06/29/2022)**
9	51200	Part 3	Add a Part 3 Execution section including erection, field connections and repairs.		**Part 3 of the specifications will be added for our next submission, after DD. (CH 06/29/2022)**
10	321216	Part 2	Add requirements for fine and coarse aggregate.		**I will defer to the Site Team. (CH 06/29/2022)**

Hill International

Design Developmment Spec Review - Parks, McCann, Cutler, Miller, Donovan

Item	Spec	Reference	Comments	Response Date	Response
11	321216	Part 3	Add requirements for the batch plant, transportation and delivery of mixtures, tack coat, spreading and finishing, compaction and joints.		**I will defer to the Site Team. (CH 06/29/2022)**
12	71416	Part 3	Add a Part 3 Execution section including surface preparation, joint and crack treatment, waterproofing application, and curing, protecting and cleaning.		**Part 3 of the specifications will be added for our next submission, after DD. (CH 06/29/2022)**
13	71616	Part 3	Add a Part 3 Execution section including surface preparation, application and curing.		**Part 3 of the specifications will be added for our next submission, after DD. (CH 06/29/2022)**
14	75419	2.10.	Need to add a construction material for the roof walkway.		**Walkway pads are included in 2.08 (CH 06/29/2022)**
15	75419	Part 3	Add a Part 3 Execution section including surface preparartion, roll placement and seaming, and flashing.		**Part 3 of the specifications will be added for our next submission, after DD. (CH 06/29/2022)**
16	79200	Part 3	Add a Part 3 Execution section including surface preparation, installation, and repair and cleaning.		**Part 3 of the specifications will be added for our next submission, after DD. (CH 06/29/2022)**
17	88000	2.08.	Glazing Sealant - specify a construction material. Silicone?		**Added, see para. 2.08.B. (CH 06/29/2022)**
18	88000	Part 3	Add a Part 3 Execution including preparation, installation, and cleaning and protection.		**Part 3 of the specifications will be added for our next submission, after DD. (CH 06/29/2022)**
19	31000		An Earthwork specification needs to be added, including requirements to consolidate loose sandy soils at subgrade.		**Earth Moving Section 312000 Is to be issued by Nitsch. (CH 06/29/2022)**
20	221429	Part 2	Specify maximum discharge flow and total dynamic head requirements.		**Spec section will be updated for 60% submission**
21	99100	2.14 & 2.15	On the listings of approved paints, add **Or Equal**		**Completed. (CH 06/29/2022)**
22	96723	2.05.A	Or equal should be added.		**Completed. (CH 06/29/2022)**
23	96723	2.05.C	Is this epoxy resin based?		**Yes, this is what is specified. (CH 06/29/2022)**
24	78413	1.06.	Add - Firestop testing will be performed by a qualified testing and inspection agency approved by the Town		**In Para. 3.05 (hidden for this submission), it is indicated the "Owner will engage a qualified testing agency to perform tests and inspections. In this case the "Owner" is the Town of Concord. (CH 06/29/2022)**
25	78413	Part 3	Add a Part 3 Execution section		**Part 3 of the specifications will be added for our next submission, after DD. (CH 06/29/2022)**
26	78100	1.04.	Add - Submit qualification data for the Installer, Manufacturer and Testing Agency		**Completed, see 1.05.A. (CH 06/29/2022)**
27	55000	2.18.A	Typo "… 153M for **nsteel** and iron hardware		**Corrected. (CH 06/29/2022)**

3. Commissioning Consultant Review

Please see attached design review comments prepared by the Commissioning Consultant, AKF Group and their Building Envelope Commissioning Consultant, Simpson Gumpertz & Heger (SGH).

Concord Middle School
Drawing Set: DD Estimate 5/27/22

Commissioning Design Review Comments

AKF

No.	Date	By	Trade	Reference Document (Drawing/Specification)	Equip/Item	Design Review Comment	Response	Response by	Response Date
1	6/17/2022	LB	00-Gen	Owner's Project Requirements	General	The owner's project manager is requested to work with the owner to develop an owner's project requirement (OPR) document that meets the minimum requirements of LEED v4. Subsequent Cx reviews will consider the OPR.			
2	6/17/2022	LB	00-Gen	Combined drawing PDF	PDF	The PDF bookmarks are not complete (e.g., few sheets for architectural, only one sheet for technology) and not fully functional (e.g., no links for plumbing and electrical). Please provide future sets with organized bookmarks to all sheets for easy navigation through the ~300 drawing sheets.	This will be reviewed and coordinated for the 60% submission	J.Soucy	6/30/2022
3	6/17/2022	LB	00-Gen	Drawings	Floor plans - ground level and upper level	Please develop a consistent handling of match lines between parts of these levels. Arch plans and some others show the matchline dashed, whereas plumbing shows a light line, AV has no line, technology shows the adjacent sheet numbers, etc.	This will be reviewed and coordinated for the 60% submission	J.Soucy	6/30/2022
4	6/17/2022	LB	08-Arch	Drawings	Floor plans	Review room numbering with owner prior to finalizing construction documents to avoid renumbering during construction.	Room numbering was reviewed and agreed upon by the Principal, Superintendent, and Fire Department during the Design Developement phase	J.Soucy	6/30/2022
5	6/17/2022	LB	08-Arch	A-102a	Roof access	Is a ladder and hatch acceptable means of access to the low roof? Is an exterior ladder adequate for access to the high roof, such as for transporting filters and other service materials to ERUs? Consider extending one stair to the high roof level.	An alternating tread stair and roof hatch will provide access to the lower roof, and one of the enclosed stairs does extend to the high roof. An additional roof hatch and davit will be provided to the high roof. This was all reviewed and agreed upon by CMS Facilities group during the Design Development phase	J.Soucy	6/30/2022
6	6/17/2022	LB	11-FP	F-100c	Floor plans	We assume the rooms on F-102c are indicative of the level of detail to be shown in a subsequent drawing set throughout, including pipe diameters and head locations/types.	Yes thats correct	L.Moreno	6/30/2022
7	6/17/2022	CJ	11-FP	F-100c	FVCAs	FCVA to also include Tamper switch and Waterflow alarm as per NFPA requirements. Drain piping from test section of the FCVA to be shown.	Will show at 60% submission	L.Moreno	6/30/2022
8	6/17/2022	LB	12-Plbg	P-100c	Floor plans	We understand that piping is a work in progress and assume that pipe diameter will be specified in a future drawing set.	Yes all mains, branches and drops will be shown at 60% submittal	L.Moreno	6/30/2022
9	6/17/2022	LB	12-Plbg	P-101a	A147	Please show fire pump on the plumbing plan.	Will be shown for 60%, currently shows in FP drawings	L.Moreno	6/30/2022
10	6/17/2022	LB	12-Plbg	P-601	Plumbing fixture schedule	Review whether thermostatic mixing valves are required for lavatories.	Will review	L.Moreno	6/30/2022

Commissioning Design Review Comments

11	6/17/2022	LB	12-Plbg	P-601	Schedules	Please provide missing information in the next drawing set and remove any inapplicable schedules	Schedules will be shown with all the information at 60% submittal	L.Moreno	6/30/2022
12	6/17/2022	NC	12-Plbg	P-100c	Floor plan, west side	Where do the plumbing lines on the left side of the page (column line 8b & Ab) go to?	Some pipes like sanitary and lab waste wil cross under the bridge. Other pipes like water mains will cross at the ceiling of the bridge	L.Moreno	6/30/2022
13	6/17/2022	CJ	12-Plbg	Drawings	Riser diagrams	Please provide Plumbing piping riser diagrams for each system with pipe sizes	Riser diagrams will be provided for 90% submittals	L.Moreno	6/30/2022
14	6/17/2022	CJ	12-Plbg	Drawings	General	Please advise on storm water management, if any	No storm water management	L.Moreno	6/30/2022
15	6/17/2022	CJ	12-Plbg	P-001c	Plan west near elevator	Please show where the Sanitary and Lab Waste lines from P-001b tie into S and LW lines.	This will be reviewed and coordinated for the 60% submission	L.Moreno	6/30/2022
16	6/17/2022	CJ	12-Plbg	P-001c	Ejector pumps	Please advise on construction details for ejector pumps, if any - such as metal grating or cover over the pit, the dimensions of the pit.	This will be fully design and coordinated for 60% submittal	L.Moreno	6/30/2022
17	6/17/2022	CJ	12-Plbg	P-101a	TP-1	Please show piping to Trap Primer, show lines to the served drains, and provide pitch requirements if any. Comment applies to all TP in Part A.	All pipes will be shown for 60% submittal	L.Moreno	6/30/2022
18	6/17/2022	CJ	12-Plbg	P-101a	A146.6	Please which equipment will need a floor drain and coordinate/consolidate.	All eqiupment requiring floor drain will be coordinated for 60% submittal	L.Moreno	6/30/2022
19	6/17/2022	CJ	12-Plbg	P-101a	A146.6	Please identify the tank next to DBP-1.	Tank will be removed not needed for 60% submittal	L.Moreno	6/30/2022
20	6/17/2022	CJ	12-Plbg	P-101a	RPRB	Please indicate piping on which RPRB is installed in the Water serv/booster room, with drains piped to floor drain (condensate drain could be included in details section of device)	All pipe design will be fully detail and coordinated for 60% submittal	L.Moreno	6/30/2022
21	6/17/2022	CJ	12-Plbg	P-101a	Floor plans	Please provide DCW connection to EWC (applicable to all parts on all floors)	All pipes will be shown for 60% submittal	L.Moreno	6/30/2022
22	6/17/2022	CJ	12-Plbg	P-101c	Condensate piping	Condensate piping or other drain piping to the Janitor's closet to be indicated along pitch requirements.	All condensate pipes from HVAc will be coordinated, Drains discharging on janitors closet will be shown for next submittal	L.Moreno	6/30/2022
23	6/17/2022	CJ	12-Plbg	P-601	Schedules	LEED prerequisites to be considered for Plumbing equipment.	All LEED for water reduction are being considered	L.Moreno	6/30/2022
24	6/17/2022	BCM	14-HVAC	DD Report pg. 27	VRF Control	Ensure control system can provide occupied/unoccupied setpoints as related to desired occupancy schedule.	BMS recieves occupancy from both schedule and sensors.	CKG	6/22/2022
25	6/17/2022	BCM	14-HVAC	DD Report pg. 27	Kitchen DCV	Ensure means of control are provided so that kitchen exhaust and makeup only operate during kitchen use schedule.	Agreed. Specifying a Melink System (or similar)	CKG	6/22/2022
26	6/17/2022	BCM	14-HVAC	DD Report pg. 26	DOAS Units	Ensure DOAS unit controls modulate wheel speed as necessary so that outside air is not overheated or overcooled requiring unnecessary use of VRF coil to compensate.	Agreed. Will review Energy recovery control sequence.	CKG	6/22/2022
27	6/17/2022	BCM	14-HVAC	DD Report pg. 42	Energy Model Inputs	Provide schedule and setpoints utilized for energy model.	These will be provided for 60% review	J.Soucy	6/30/2022
28	6/17/2022	BCM	14-HVAC	Drawings/Specs	Demand Control Ventilation	Ensure DCV airflow setpoints allow for low/no airflow to unoccupied spaces as permitted by the applicable version of ASHRAE 62.1.	Will review setpoints and minimums for DCV system.	CKG	6/22/2022

29	6/17/2022	BCM	14-HVAC	Drawings/Specs	Building Pressurization	Provide air balance of building under modes of operation to ensure that building remains positively pressured at all times.	Agreed.	CKG	6/22/2022
30	6/17/2022	BCM	14-HVAC	Drawings/Specs	DCV	Ensure enough room CO2 sensors are provided to meet code requirements for DCV.	CO2 sensors will be in all large spaces and per VAV box.	CKG	6/22/2022
31	6/17/2022	BCM	14-HVAC	Drawings/Specs	Standby Temp Control	Consider integrating temperature control with lighting occupancy sensors to control to standby temperatures when spaces as sensed to be vacant during scheduled occupied periods.	Will review.	CKG	6/22/2022
32	6/17/2022	LB	14-HVAC	M-100c	Electric room transfer fans	Add wire mesh screen at fan outlet for personnel safety	Will add note for WMS.	CKG	6/22/2022
33	6/17/2022	LB	14-HVAC	M-101a	Perimeter locker rooms	Do perimeter locker rooms require heat?	Yes, will provide heat in perimeter spaces as design progresses.	CKG	6/22/2022
34	6/17/2022	LB	14-HVAC	M-101a	A146.7A	Electric room transfer fan serving emer. elec.: show tstat.	Will add Tstat.	CKG	6/22/2022
35	6/17/2022	LB	14-HVAC	M-401	Part plan	Plumbing equipment and piping is shown on mechanical drawings. Hide.	Will hide.	CKG	6/22/2022
36	6/17/2022	LB	14-HVAC	M-602	ACU schedule	Please indicate form factor (wall/cassette/ducted) in addition to model number.	Will review.	CKG	6/22/2022
37	6/17/2022	LB	14-HVAC	M-701	Controls general	AKF will review controls in the next submission	Noted.	CKG	6/22/2022
38	6/17/2022	NC	14-HVAC	M-001	Piping plans	Are piping plans going to be provided for VRF system? A layout would help with coordination before construction.	Ductwork and Piping will be shown on the same plans. RS/RL plans are shown for sample classrooms. Condensate and more Refrigerant lines will be shown as the drawings progress.	CKG	6/22/2022
39	6/17/2022	NC	14-HVAC	M-001	Piping plans	HVAC plans (piping if applicable) should show condensate piping with pitch requirements	Condensate will be show at 60%.	CKG	6/22/2022
40	6/17/2022	NC	14-HVAC	M-100c	Electric room transfer fans	Electric room transfer fans (C027 as example): Wall is 2 hour fire rated per LS plans. Review whether FD is required.	Will review wall ratings and FD requirements.	CKG	6/22/2022
41	6/17/2022	NC	14-HVAC	M-101a	VAV-1-01	VAV is in a fire rated wall, consider relocating	Will relocate.	CKG	6/22/2022
42	6/17/2022	NC	14-HVAC	M-101a	Locker rooms	Any ventilation air needed for locker rooms?	Will review ventilation requirements. Code only requires exhaust.	CKG	6/22/2022
43	6/17/2022	NC	14-HVAC	M-101b	Records B100.4	Wall is 1 hour fire rated; review whether FD is required	Will review wall ratings and FD requirements.	CKG	6/22/2022
44	6/17/2022	NC	14-HVAC	M-101b	ACU-B-27,28	Where are T-stats located? Controlled by one tstat or two?	Will update Tstats.	CKG	6/22/2022
45	6/17/2022	NC	14-HVAC	M-101c	C132 suite	Indicate HVAC equipment serving the space	A ACU will serve this space.	CKG	6/22/2022
46	6/17/2022	NC	14-HVAC	M-102b	VAV-2-05,06,07	Can VAVs be relocated to corridor? It would be easier to perform maintenance without intruding a class. Noise of the damper modulating can be distracting as well. But please ensure a straight run of 2-3 times of the VAV size at the inlet to the unit.	Generally we try to locate VAVs in corridors. We will review all locations for clearance and inlet conditions.	CKG	6/22/2022
47	6/17/2022	NC	14-HVAC	M-102c	EVAV-2-16	Can VAV be relocated to outside of toilet room? It constrains when maintenance personnel are allowed in space. But please ensure a straight run of 2-3 times of the VAV size at the inlet to the unit.	Generally we try to locate VAVs in corridors. We will review all locations for clearance and inlet conditions.	CKG	6/22/2022

Commissioning Design Review Comments

48	6/17/2022	NC	14-HVAC	M-601	Schedules	Please fill in missing schedule information, or remove if not applicable	Schedules will be updated as design progresses.	CKG	6/22/2022
49	6/17/2022	CJ	14-HVAC	M-100c	Electric room transfer fans	Provide SOO	SOO are in specification section 230993.	CKG	6/22/2022
50	6/17/2022	CJ	14-HVAC	M-101a	Electric room transfer fans	If SOO is based on temp, please indicate location of tstat (e.g. A142)	Will show Tstats	CKG	6/22/2022
51	6/17/2022	CJ	14-HVAC	M-102a	AHUs	Verify if any penetration for the AHUs, is through fire rated wall. If yes, verify installation of FSD.	Noted.	CKG	6/22/2022
52	6/17/2022	CJ	14-HVAC	M-103b	ERU-1	Provide duct dimensions.	Will update Duct dimentions.	CKG	6/22/2022
53	6/17/2022	CJ	14-HVAC	M-103c	ERU-2, ERU-3	Provide duct dimensions.	Will update Duct dimentions.	CKG	6/22/2022
54	6/17/2022	CJ	14-HVAC	M-701	Controls general	Provide SOO for system operation.	SOO are in specification section 230993.	CKG	6/22/2022
55	6/17/2022	BCM	15-Elec	DD Report pg. 31	PV Metering	Consider providing provisions for future PV system metering tied into and logged by the BMS for ongoing performance monitoring of renewable energy production system investment.	Noted. Will confirm with PV designer and provide required infrastructure.	AJ	6/22/2022
56	6/17/2022	HJ	15-Elec	E-001	One Line Diagram Symbols	Missing DM and GFI symbols as applicable for MSB switchboard.	Noted. Will update.	AJ	6/22/2022
57	6/17/2022	HJ	15-Elec	E-001	One Line Diagram Symbols	Include symbol/abbreviation for static trip units (LSIG).	Noted. Will update.	AJ	6/22/2022
58	6/17/2022	HJ	15-Elec	E-001	Project Notes	Recommended to indicate that the contractors is responsible for testing & Cx support as well as provide required testing equipment, if not clearly stated in specs.	Language is within specifications. 26 05 00 1.03H, refers to 01 91 13 "General Commissiong Requirements"	AJ	6/22/2022
59	6/17/2022	HJ	15-Elec	EP101a	MSB	Switchgear is not labeled	Noted. Will update.	AJ	6/22/2022
60	6/17/2022	HJ	15-Elec	EP601	MSB	Is the main a draw out type breaker? If so, correct the symbol to indicate. Recommended to utilize draw out type breaker for proper isolation during maintenance and repairs.	Intent will be for all breakers to be fixed, including the main breaker. We typically do not provide drawout type circuit breakers for school designs. The isolation and maintenance benefits do not justify the cost increase of the equipment. The main will remain as fixed mounted, as noted in specifications.	AJ	6/22/2022
61	6/17/2022	HJ	15-Elec	EP601	MSB	Confirm if the Main is LSIG type breaker. Recommended to have adjustable LSIG breaker.	Confirmed. Refer to specifications 26 24 16, 2.02 C.3	AJ	6/22/2022
62	6/17/2022	HJ	15-Elec	EP601	MSB	Confirm and indicate where necessary that the OCPD device(s) in the switchboard has ARMS switch for arc reduction as per spec section 262413, 2.02A.5 and 262416, 2.02E.4 2. Indicate if the branch devices on this board are adjustable static trip unit.	Confirmed. The specificaiton sections noted provide sufficent information on when ARMS will be provided for the panelboard and switchboard. Static trip units are not required on this distribution system.	AJ	6/22/2022
63	6/17/2022	HJ	15-Elec	EP601	ATSs	Calculate and indicate KAIC rating	Refer to specifications. ATS will have a withstand rating of 42,000 Amps.	AJ	6/22/2022
64	6/17/2022	HJ	15-Elec	EP601	Gen SWBD	Indicate if the breakers are to LSI capable	Confirmed, as noted in specifications.	AJ	6/22/2022

65	6/17/2022	HJ	15-Elec	EP601	Gen SWBD	Recommended to utilize kirk-key for the Load Bank breaker operation	No. The load bank can be utilized as supplemental load for maintaining a mimimum load on the power source, when required. Assuming the intent of your comment is to avoid a scenario when the load bank is used with the output breaker, however that is the intent. Refer to specifications.	AJ	6/22/2022
66	6/17/2022	HJ	15-Elec	EP601	Generator	Confirm that the fuel type is Gas and correct in the spec 263214, 1.03D accordingly	Confirmed.	AJ	6/22/2022
67	6/17/2022	HJ	15-Elec	EP603	Switchboard MSB and other DP panels	Confirm that KAIC ratings indicated for these panels are based on the actual calculated short circuit ratings	All KAIC ratings currently shown are a placeholder for pricing. Ones not shown are TBD. Calculations will be done as the design progresses.	AJ	6/22/2022
68	6/17/2022	HJ	15-Elec	EP603	Distribution Panels General	Calculate and indicate the A.I.C ratings for the all distribution equipment (panelboards, disconnect switches etc..)	All KAIC ratings currently shown are a placeholder for pricing. Ones not shown are TBD. Calculations will be done as the design progresses.	AJ	6/22/2022
69	6/17/2022	HJ	15-Elec	EP610	Mechanical Equipment Schedule	Recommended to include a column to indicate calculated KAIC ratings at the controllers where applicable, so appropriately rated KAIC controllers are bought and installed	Noted, however we will rely on specifications and mechanical/electrical coordination for this.	AJ	6/22/2022
70	6/17/2022	LB	15-Elec	EL100c	Keyed noe 2	Please provide lighting control sequence key in the next drawing set for Cx review.	Key note 2 refers to EL501 / A8 where the sequence is shown. The design will be more developed and detailed in the next submission.	AJ	6/22/2022
71	6/17/2022	LB	15-Elec	EP101a	Power plans	Review exterior receptacle requirements. None are shown.	Noted, they will be added.	AJ	6/22/2022
72	6/17/2022	LB	15-Elec	EP101a	Fire pump	Fire pump is not tagged	Noted, will update.	AJ	6/22/2022
73	6/17/2022	LB	15-Elec	EP101a	Power plans	Recommend showing all keyed notes on all applicable sheets rather than having to flip to sheet EP-100c.	Acknowledged, but no. We will keep the "refer to" notes on drawings for keyed notes.	AJ	6/22/2022
74	6/17/2022	LB	15-Elec	EP101b	Power plans	Show all mech equipment (e.g., EF-A serving Elec A142)	Noted, coordination is on going. Will be more complete for next submission.	AJ	6/22/2022
75	6/17/2022	LB	15-Elec	EP101b	Power plans	Is occupancy-sensor based control of receptacles is required for this project?	Mixture of occupancy and time clock receptacle control will be implemented for 75% of all outlets. Will be more detailed in next submission.	AJ	6/22/2022
76	6/17/2022	LB	15-Elec	EP103c	Roof plan	Provide convenience receptacle near ACCU-04	Noted, will update.	AJ	6/22/2022
77	6/17/2022	LB	15-Elec	EP103c	Roof plan	WP receptacles should be GFCI	Refer to legend. Devices shown on roof are GFCI.	AJ	6/22/2022
78	6/17/2022	LB	15-Elec	E-401	Kitchen power	Show mechanical equipment (e.g., ACU-A04) in kitchen area	Noted, coordination is on going. Will be more complete for next submission.	AJ	6/22/2022
79	6/17/2022	LB	15-Elec	EP610	Mechanical equipment schedule	Coordinate power requirements with mechanical. Some ACUs are listed as 480V.	Noted, coordination is on going. Will be more complete for next submission.	AJ	6/22/2022

80	6/17/2022	MV	15-Elec	E-001	Fire alarm symbols	Candela rating not included throughout floorplan	Noted. Will be more complete for next submission. Please note legend indicates 75cd unless otherwise noted. However, corridors and specific areas will utilze different ratings (15,30,110 etc.)	AJ	6/22/2022
81	6/17/2022	MV	15-Elec	E-001	Fire alarm symbols	No duct smoke detectors shown on any floorplans. Ensure DSDs are accessible and installed in accordance with manufacturers recommendation. Typically recommended with laminar flow	Noted, coordination is on going. Locations will be owned for next submission. Please note DSD scope is currently owned via EP611 and mechanical drawings.	AJ	6/22/2022
82	6/17/2022	MV	15-Elec	E-001	Fire alarm symbols	No magnetic door holders shown on drawing	Will review requirements with architecture	AJ	6/22/2022
83	6/17/2022	MV	15-Elec	E-001	Fire alarm symbols	No control module shown on drawings for elevator rooms, mechanical rooms, or fire pump room	Noted, will be shown for next submission. Scope is currently owned in specifications.	AJ	6/22/2022
84	6/17/2022	MV	15-Elec	E-001	Fire alarm symbols	No FSDs included on floorplan	Noted, coordination is ongoing. If not required for this job, reference will be removed from legend.	AJ	6/22/2022
85	6/17/2022	MV	15-Elec	E-001	Fire alarm symbols	No heat detectors shown on drawing; will any be required?	Noted. Will review requirements as design progresses.	AJ	6/22/2022
86	6/17/2022	MV	15-Elec	EF100c	BH-01 hallway elevator lobby These two devices are very	These two devices are very close together and may be redundant. Only one SD is labeled for elevator, both are in elevator lobby.	Concur. Smoke will be removed.	AJ	6/22/2022
87	6/17/2022	MV	15-Elec	EF100c	Offices C002,003,004,005	Offices C002,003,004,005 do not show many devices. Confirm if additional devices are required. This level of detail may be intentional for this DD set.	Speaker/strobes will not be provided for private offices. Will review further as design progresses.	AJ	6/22/2022
88	6/17/2022	MV	15-Elec	EF100c	Stair	FCVA not shown on drawing, confirm if TS/FS required	Will review requirements with Fire Protection Engineer.	AJ	6/22/2022
89	6/17/2022	MV	15-Elec	EF100c	C016, C017	No SD shown in these rooms. Typical comment throughout DD set is for rooms that may be missing devices.	Will reivew providing in C017. Typically do not provide SD in Janitor Closets.	AJ	6/22/2022
90	6/17/2022	MV	15-Elec	EF100c	FA plans	Are door releases required for any egress corridors? None shown on this drawing. Coordinate with security consultant, architect, and others	Will review.	AJ	6/22/2022
91	6/17/2022	MV	15-Elec	EF100c	Elevator	No elevator monitoring sensors devices in elevator control room. Does this project require elevator recall?	Will review.	AJ	6/22/2022
92	6/17/2022	MV	15-Elec	EF101a	Elec A142	"FAP" nomenclature not captured on fire alarm symbols legend. Is this referring to annunciator panel FAA?	FAP is intended to indicate sub panels, for termination, and additional amplifers/batteries. Will review and update legend/drawings accordingly.	AJ	6/22/2022
93	6/17/2022	MV	15-Elec	EF101a	Stage A149	Coordinate PA system FA override or stage sound control if required by AHJ	Will review.	AJ	6/22/2022
94	6/17/2022	MV	15-Elec	EF101a	Horn symbol, gym	This symbol with the WG and H notes is not shown on symbol legend	Noted, will update.	AJ	6/22/2022

95	6/17/2022	MV	15-Elec	EF101a	Fire Pump A147	No annunciators or SD shown in	Noted, will update for next submission.	AJ	6/22/2022
96	6/17/2022	MV	15-Elec	EF101a	Fire Pump A147	MM devices on fire pump assumed for "start/stop" and "status". Confirm no other signals required at FACP for AHJ.	Noted, will review.	AJ	6/22/2022
97	6/17/2022	MV	15-Elec	EF101a	Elec Rm A146.7	FACP located in electrical closet; confirm this meets code compliance for fire department access.	Confirmed - location was requested by fire dept.	AJ	6/22/2022
98	6/17/2022	MV	15-Elec	EF101a	FA plans	No smoke purge panel shown on plans. Confirm if post fire smoke purge is required by project	Not required for this project.	AJ	6/22/2022
99	6/17/2022	MV	15-Elec	EF101b	FA plans	Confirm if door releases required for code compliance on egress corridors or for any smoke control/purge requirements	Will review.	AJ	6/22/2022
100	6/17/2022	MV	15-Elec	EF101c	Second elevator lobby	These two devices are very close together and may be redundant. Only one SD is labeled for elevator, both are in elevator lobby	Noted, will review and remove redundant device.	AJ	6/22/2022
101	6/17/2022	MV	15-Elec	EF102a	FA plans	No devices shown on drawing EF102a	Will review requirements for auditorium and gym. South of Plan is lower roof - duct smokes will be shown when coordinated.	AJ	6/22/2022
102	6/17/2022	MV	15-Elec	EF102a	Exterior FA devices	Consider including requirements for spacing and locations for exterior fire alarm white beacon device. Not many of these devices are shown on plans	Only two are required for the entire job, per FD request.	AJ	6/22/2022
103	6/17/2022	MV	15-Elec	EF102c	Second floor elevator lobby	Lobby possibly needs two SD as shown on first floor	Second device in lobby is behind match line. Graphics will be cleaned for next submission.	AJ	6/22/2022
104	6/17/2022	MV	15-Elec	EF601	Fire alarm riser detail B7	Is the intention for FA riser to not show all devices? Consider including all devices for clarity on design	Tier 2 drawings will own a one-line with all devices, at the completion of the project. Project one-line will be intended to outline intent and major components/loops/etc,	AJ	6/22/2022
105	6/17/2022	MV	15-Elec	EF601	Fire alarm riser detail B7	Booster panel location & quantities not included on design. Consider including an estimate of quantity and a recommended location for reference	FAP is intended to indicate terminal cabinets/booster panels, etc. drawings will be updated for additional clarity on next submission.	AJ	6/22/2022
106	6/17/2022	MV	15-Elec	EF601	Fire alarm riser detail B7	Fire fighter radio system amplifier not shown on floorplans	Noted, will be located in 2nd floor electrical room, wing C.	AJ	6/22/2022
107	6/17/2022	MV	15-Elec	EF601	Fire alarm riser detail B7	FA shutdown relays not shown for HVAC integration	Will review and coordinate with HVAC.	AJ	6/22/2022
108	6/17/2022	MV	15-Elec	EF601	Fire alarm riser detail B7	Multiple of these exterior devices shown on floorplans. Ensure proper quantity provided	Noted, will review.	AJ	6/22/2022
109	6/17/2022	MV	15-Elec	EF601	Fire alarm riser detail B7	Overall fire alarm sequence of operations not provided on drawing	Sequence of operations will be owned in specifications and Fire Protection Narrative.	AJ	6/22/2022
110	6/17/2022	MV	15-Elec	EF601	Duct smoke detail F7	Smoke detected by DSD does not send alarm to FACP. Confirm this is acceptable by AHJ	Noted. Will review with AHJ.	AJ	6/22/2022
111	6/17/2022	MV	15-Elec	EF601	Duct smoke detail F7	Does FA interface to BMS provide shutdown command via BMS? Confirm AHJ will accept BMS shutdown and not hard wired modules at each HVAC fan	Will review.	AJ	6/22/2022

Commissioning Design Review Comments

AKF

112	6/17/2022	MV	15-Elec	EF601	Duct smoke detail F7	Consider including airflow direction for proper installation per manufactuers guidelines	Will review.	AJ	6/22/2022
113	6/17/2022	MV	15-Elec	EF601	Duct smoke detail F7	Line #7 for fan shutdown contradicts SOO notes.	Will reivew.	AJ	6/22/2022
114	6/17/2022	CJ	15-Elec	E-001	Switching Designations	Confirm legend for the Lighting Control device ie- Occupancy, Vacancy sensor.	Refer to EL501.	AJ	6/22/2022
115	6/17/2022	CJ	15-Elec	E-001	Switching Designations	Please consider using Daylight harvesting sensors in perimeter spaces to conserve energy	They are shown on plans as Sensor Type D. Will review locations as design progresses.	AJ	6/22/2022
116	6/17/2022	CJ	15-Elec	EL501	Lighting details (general)	Provide details for interconnection of light fixtures, drivers and control devices.	Noted, will be added for next submission.	AJ	6/22/2022
117	6/17/2022	LB	16-Tech	T-100	Cable routing plans	The utility of sheets T-100, T-101, and T-102 is unclear.	These are cable routing drawings. These will be advanced for the 60% submission	M.DiBari	7/5/2022
118	6/17/2022	LB	16-Tech	T-101A	Tech plans	Show master intercom station in Cust. Office (A146.2) and Assistant Principal per BOD.	A VMS (Visitor's Master Station) will not be added to the Custoian's Office	M.DiBari	7/5/2022
119	6/17/2022	LB	16-Tech	T-101B	Tech plans	Show additional VMSs in Principal (B100.3) and Assistant Principal per BOD.	A VMS will be added to the Assistant Principal's Office	M.DiBari	7/5/2022
120	6/17/2022	LB	16-Tech	T-101B	Tech plans	Show master intercom station in Principal (B100.3) and Assistant Principal per BOD.	A VMS is already shown in the Principal's Office B100.3	M.DiBari	7/5/2022
121	6/17/2022	LB	16-Tech	T-101B	B100	Will the VMS in B100 serve as the "access control system workstation, video management workstation, visitor management workstation, and master video intercom" described in the BOD?	Access control and video management workstations will be procured as part of the FF&E package.	M.DiBari	7/5/2022
122	6/17/2022	DC	19-AV	AV Drawings	AV Device Locations	Indicate mounting height and centerline alignment for all AV devices including wall-mounted speakers, AV receptacle panels, cameras, etc. Coordinate wit architect.	This will be reviewed and coordinated for the 60% submission	J.Soucy	6/30/2022
123	6/17/2022	DC	19-AV	AV Drawings	AV conduit and device box detail	Indicate all AV conduit and device box trade sizes. Example: 1-1/4" conduit; 2-gang box, etc.	This will be reviewed and coordinated for the 60% submission	J.Soucy	6/30/2022

Project Concord Middle School
Subject BECx 100% DD Drawing Review Issues Log

Sheet No. _____ | _____
Project No. 220772
Date 6/15/2022
By/Chk By _____

Item No.	Drawing Sheet or Specification Page	Detail or Paragraph	ECA Comments	Action by	Item Resolution (Y / N / For Record)	A/E Response
			Drawings			
1	Title Page	General	(required by IBC) requires that masonry with vertical span greater than 30' include intermediate supports. How will masonry be supported where the vertical span exceeds 30'?	Design Team		at masonry veneer walls that exceed 30'. These will be detailed in the 60% Review Set
2	Title Page	General	Provide typical roof details for drains, penetrations, equipment curbs, etc.	Design Team		Design Development submission includes some of these typical details. These will be further developed and expanded in subsequent submissions
3	A-003	ERA-1A Assembly	includes materials to adhere or mechanically fasten. If intent is to mechanically fasten, check if roofing manufacturer has fastener options to fasten through 9" of insulation, plus added thickness at tapered areas.	Design Team		mechanically fastened and subsequent layers including cover board will be adhered.
4	A-003	ERA-3 Assembly	Consider if insulation will be required at canopies. See comments regarding canopy roofs on 1/A-201 and D4/A-411.	Design Team		Insulation will not be required at main entrance canopy as this will be support separately from the building or the structure will be thermally isolated where it connects into the building
5	A-003	ECA-1 Assembly	This assembly occurs below occupied space, therefore insulation is required to meet energy code requirements. Direct applied finish systems typically do not allow for exterior insulation; consider EIFS cladding to allow for exterior insulation with similar aesthetics.	Design Team		Insulation will be provided at many of these ceiling locations- see note above related to main entry canopy. DAFS vs. EIFS will be explored and detailed in the 60%
6	A-003	EWA-1 Assembly	How will insulation be held on the wall? Ensure method has sufficient capacity to hold the weight of the 8" insulation thickness.	Design Team		this: B. Installing Cavity-Wall Insulation: Install continuous serpentine beads of adhesive spaced approximately 8 inches o.c., and as recommended by manufacturer, on inside face of insulation boards. Fit courses of insulation between wall ties and other confining obstructions in cavity, with edges butted tightly both ways. Cut slots to fit boards around wall ties. Press units firmly against inside substrates in a manner that eliminates gaps behind units that could allow circulation of air. 1. Install detailing foam insulation in joints and gaps between
7	A-003	EWA-1 Assembly	Masonry ties should be designed rather then using prescriptive code requirements. When the distance between the inside face of the veneer and steel framing exceeds 6 5/8", TMS 402 (required by IBC for masonry design) requires ties be designed using TMS "Alternative design of anchored masonry	Design Team		Masonry ties will be engineered to meet the spans required. Delegated Design language is included in Spec Section 04 20 00
8	A-003	EWA-1 Assembly	Show masonry anchors in exterior wall assembly details. For plan section, anchors should engage cold-formed metal framing. Masonry ties should be installed directly against the sheathing and extend out through the insulation; blindly installing ties through 8" of insulation will not reliably allow the ties to hit the studs.	Design Team		Masonry ties have been added to Exterior Assembly Types sheet A-003. Installation of masonry veneer anchors will also be included in Spec Section 04 20 00, Part 3 (included in 60% CD Cost
9	A-003	EWA-6 Assembly	Show air barrier. Same foil faced modified bituminous sheet air barrier specified for other assemblies would be appropriate.	Design Team		Air barrier has been added and keynoted on A-003 in Design Development submission
10	A-003	EWA-6 Assembly	Further develop this detail to show framing system, clips, fasteners, etc., for phenolic panels.	Design Team		EWA-6 will be further detailed in 60% CD Cost Estimate set
11	A-003	General	Consider adding underslab assembly showing required insulation and vapor retarder.	Design Team		Underslab insulation and vapor barrier will be detailed in Section Details. See A-510-A-513
12	A-103a	1	The tapered plan would be more efficient without ridge at this location.	Design Team		This will be reviewed and revisions incorporated into the 60% CD Cost Estimate set
13	A-103a	1	Clarify this note. All roofs and copings should be sloped to drain.	Design Team		All roofs and copings will be sloped to drain
14	A-103a	1	We presume these are truss members and are are not intended to be shown on the roof plans.	Design Team		This has been coordinated with structural and corrected in the final DD submission

15	A-103a	1	Show canopy roof and indicate roof assembly, slope, and drainage method.	Design Team		This will be incorporated into the 60% CD Cost Estimate set
16	A-103a	1	Based on building axonometrics and roof details provided, coping caps will be provided at most roof perimeters. The building code requires a secondary form of drainage for roofs where perimeter construction would entrap water if the primary drains become backed up. Provide secondary drainage, with end point of discharge separate from the primary drainage system, for all roof drains; typical options include overflow drains adjacent to primary drains or scuppers.	Design Team		Currently, overflow drainage will be provided. See plumbing drawings.
17	A-103a	1	Provide tapered insulation crickets upslope of all obstructions to provide positive drainage. (typ.)	Design Team		Crickets will be provided as required.
18	A-103a	1	Provide tapered insulation cricket.	Design Team		This will be incorporated into the 60% CD Cost Estimate set
19	A-103a	1	Coordinate where roof slope will be provided by roof deck vs tapered insulation, and differentiate between the two on roof plans. (typ.)	Design Team		This will be incorporated into the 60% CD Cost Estimate set
20	A-103b	1	Provide details for skylights.	Design Team		Details for skylights will be provided in the 60% CD cost estimate set
21	A-103b	1	Indicate roof assembly, slope, and drainage method.	Design Team		This will be incorporated into the 60% CD Cost Estimate set
22	A-103c	1	Indicate roof assembly, slope, and drainage method.	Design Team		This will be incorporated into the 60% CD Cost Estimate set
23	A-201	1	Provide detail for curtain wall to roof transition.	Design Team		This will be incorporated into the 60% CD Cost Estimate set
24	A-201	1	What is edge material at canopy? Provide detail.	Design Team		This will be incorporated into the 60% CD Cost Estimate set
25	A-201	1	Will this vestibule be conditioned? Consider where the thermal envelope occurs around the vestibule and provide insulation to meet project's energy requirements.	Design Team		included to indicate the vestibule in question? All vestibules will be conditioned
26	A-201	2	Provide saddle flashing at coping where copings intersect exterior walls. We recommend providing an isometric detail for this condition, as well as other details where three assemblies meet. (typ.)	Design Team		This will be incorporated into the 60% CD Cost Estimate set
27	A-202	F1	Provide detail for vertical brick expansion joints.	Design Team		This will be incorporated into the 60% CD Cost Estimate set
28	A-202	F1	We recommend spacing of vertical expansion joints in masonry meet The Brick Industry Association recommendations: 25' max for brickwork with no openings and 20' max for brickwork with multiple openings. (typ.)	Design Team		This will be incorporated into the 60% CD Cost Estimate set
29	A-310	General	Provide details at all transitions between different cladding assemblies and fenestrations as design is further developed. Also consider providing isometric details where three cladding assemblies intersect (for example, an isometric detail showing saddle flashing where a coping cap intersects an exterior wall).	Design Team		Detailing will continue through CDs, some of which will be incorporated into the 60% CD Cost Estimate set
30	A-313	A3	See comment on A-003 regarding use of insulation with direct applied finish system at soffit.	Design Team		Insulation will be provided at many of these ceiling locations- see note above related to main entry canopy. DAFS vs. EIFS will be explored and detailed in the 60%
31	A-314	A1	Consider extent of insulation required at these walls. Energy code requires perimeter insulation for slabs-on-grade to extend 24" below bottom of slab for this climate zone.	Design Team		provided to meet the energy code. Details and sections will reflect this in subsequent submissions.
32	A-314	C7	We recommend all fenestrations, with the exception of doors, be on a curb 8" min. above grade or finished roof surfaces. (typ.)	Design Team		This will be taken into consideration during the 60% CD phase
33	A-314	C7	Rather than turning the insulation under the slab, consider turning it down the foundation wall, sim. to detail A1/A-510.	Design Team		Insulation at this location will be detailed similar to A1/A-510
34	A-510	A1	Flexible metal flashing is called out here, but metal flashing will be required to span the cavity. The metal flashing should be one piece.	Design Team		We have successfully detailed and installed this as flexible metal flashing at this location on other projects. The XPS insulation will provide support to the flashing and flashing will be sealed to the metal
35	A-510	A1	We recommend extending drainage composite to drainage tile.	Design Team		This has been revised in the final DD submission.
36	A-510	A6	We recommend providing through-wall flashing sloped to exterior to drain masonry cavity and protect exposed concrete horizontal.	Design Team		sloped to drain. This detail will be developed further for the 60% CD Cost Estimate set
37	A-510	D3	Lap roof vapor retarder (red) over wall AVB (green) as shown.	Design Team		Is there a Drawing that should be included with these comments to illustrate this?
38	A-510	D3	If movement is anticipated between roof deck and wall, provide a roof expansion joint.	Design Team		This will be reviewed and included into details in subsequent submissions
39	A-510	D3	Show PVC roofing membrane.	Design Team		This has been revised in the final DD submission.
40	A-510	D3	Fill cavity with SPF insulation to reduce risk of potential condensation if humid warm air gets up in this space.	Design Team		This will be reviewed and included into details in subsequent submissions
41	A-510	D3	We recommend PVC clad sheet metal fascia cover (blue) with PVC flashing membrane (red) as shown for this termination.	Design Team		Is there a Drawing that should be included with these comments to illustrate this?
42	A-510	D3	This section of AVB is not necessary.	Design Team		Is there a Drawing that should be included with these comments to illustrate this?

43	A-510	D3	Is the purpose of this weep to vent the cavity?	Design Team		Yes
44	A-511	B7	See comments on D3/A-510 for parapet condition.	Design Team		Is there a Drawing that should be included with these comments to illustrate this?
45	A-511	B7	transitions to wall AVB, provide chemically compatible transition material between the two. Roof base flashing should extend 8" min. above finished roof surface. (typ.)	Design Team		This detail will be developed further for the 60% CD Cost Estimate set
46	A-511	B7	See comments on D3/A-510 for parapet condition.	Design Team		Is there a Drawing that should be included with these comments to illustrate this?
47	A-511	D4	Consider how canopy roof will be supported and required detailing for enclosure. Enclosure strategies at canopy include cutting off canopy from enclosure or integrating canopy with surrounding assemblies.	Design Team		This detail will be developed further for the 60% CD Cost Estimate set
48	A-520	A1	Consider providing preformed silicone extrusion in curtain wall glazing pocket at sills and jambs, similar to head condition below, for enhanced detail.	Design Team		Silicone extrusions will be added to sill and jamb conditions. This will be detailed further in the 60% CD Cost Estimate set
49	A-520	A1	Extend AVB (red) to curtain wall sealant joint.	Design Team		This has been revised in the final DD submission.
50	A-520	A1	Provide through-wall flashing or other drainage method to allow water to drain from cavity. Typical at base of all phenolic wall panel assemblies.	Design Team		This detail will be developed further for the 60% CD Cost Estimate set
51	A-520	A5	Extend trim and provide sealant joint.	Design Team		This has been revised in the final DD submission.
52	A-520	A5	continuous aluminum angle at interior and anchoring through vertical leg of angle to prevent penetrations through horizontal AVB surfaces. Also consider providing sheet metal pan flashing below windows.	Design Team		This will be reviewed further and details developed further for the 60% CD Cost Estimate set
53	A-520	B5	Maintain min. 1/4" gap below all relief angles.	Design Team		Noted. This will be reflected in details in subsequent submissions.
54	A-520	B5	Consider extending through-wall metal flashing to face of brick to allow for sealant joint that aligns with sealant joint at brick in jamb detail above. Sealant joint should be wept.	Design Team		This will be considered further for the 60% CD Cost Estimate set
55	A-520	B5	Modified-bituminous counterflashing strip is not required, as metal flashing is required to span cavity.	Design Team		This will be considered further for the 60% CD Cost Estimate set
56	A-520	B5	Lipped masonry should bear min. 2 7/16" on angle.	Design Team		This will be considered further for the 60% CD Cost Estimate set
57	A-520	B5	Strip in sheet metal flashing with AVB flashing membrane. Positively lap AVB to shed water.	Design Team		This will be corrected for the 60% CD Cost Estimate set
58	A-520	B5	Provide end dams (see blue shading) where through-wall flashing is not continuous. End dams should align with masonry head joints.	Design Team		Is there a Drawing that should be included with these comments to illustrate this? End dams will be added to the details for
59	A-520	B5	What are these solid line components? 04200J1 callout is for loose lintel. Maintain air barrier continuity between backup wall and window.	Design Team		This will be corrected for the 60% CD Cost Estimate set
60	A-520	B5	See comment on Detail A5 on this sheet regarding aluminum angle.	Design Team		This will be reviewed further and details developed further for the 60% CD Cost Estimate set
61	A-520	D5	Extend trim and provide sealant joint.	Design Team		This will be corrected for the 60% CD Cost Estimate set
62	A-520	D5	continuous aluminum angle at interior and anchoring through vertical leg of angle to prevent penetrations through horizontal AVB surfaces. Also consider providing sheet metal pan flashing below windows.	Design Team		This will be reviewed further and details developed further for the 60% CD Cost Estimate set

6A.2.2 Project Schedule

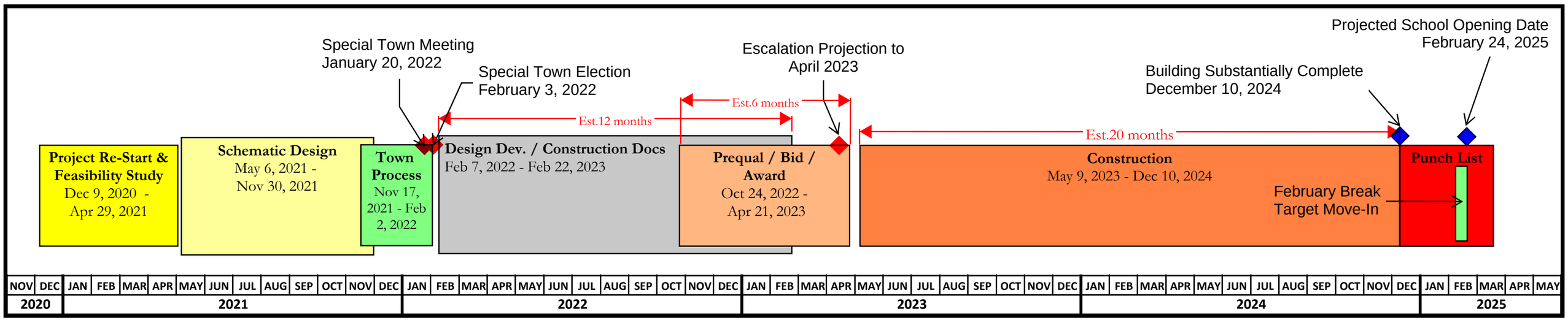
1. OPM Project Schedule

Hill International prepared an overall project schedule during the Feasibility Study Phase and has been providing periodic updates to this schedule thereafter. We focused efforts on validating the construction duration, punch list and move-in logic, and the addition of permitting activities during schedule updates in the Design Development phase. The attached current project schedule dated June 27, 2022, validates the (20) month construction duration, adds permitting activities to be tracked in 2022/2023 leading up to the planned construction start on May 9, 2023, and modifies logic as related to the punch list and move-in schedule. The move-in timeframe was shortened to a (10) day period and was moved up to coincide with the School's February break in 2025. In addition, punch list work will be allowed post occupancy of the school. This will allow for the new Concord Middle School to be opened on February 24, 2025, in lieu of April 14, 2025, as reported in the Schematic Design phase. Phase 2 construction work (abatement/demolition of the existing Sanborn School and natural grass fields) will commence earlier as a result and will be completed September 12, 2025. The fields will be ready for use after two growing seasons starting September 1, 2026.

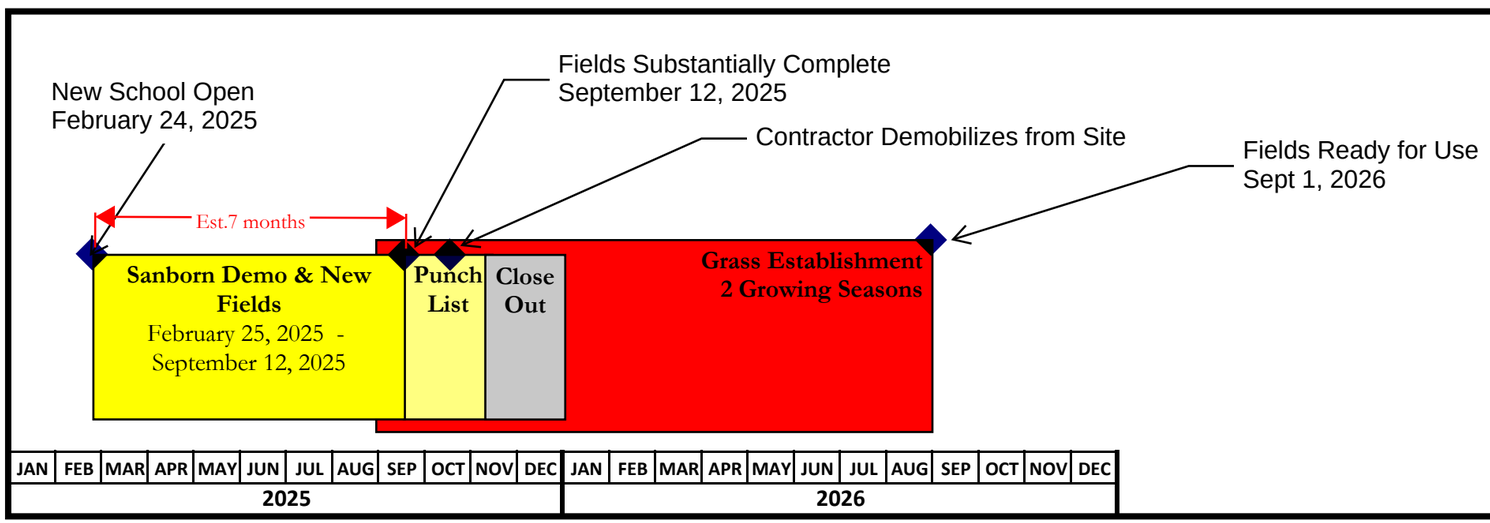
Concord Middle School
Executive Summary Schedule
May 25, 2022 UPDATE

Hill International

PHASE 1 - NEW SCHOOL DESIGN & CONSTRUCTION



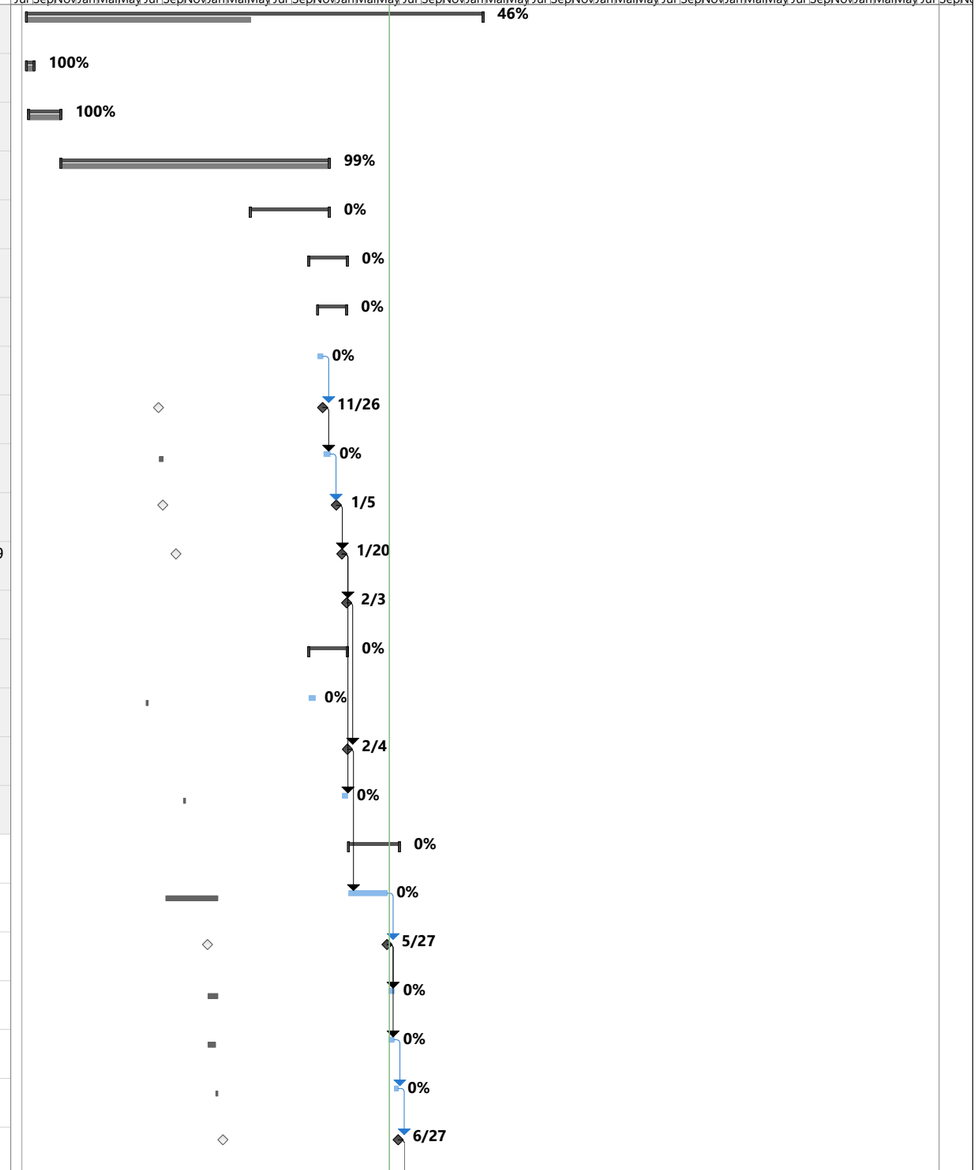
PHASE 2 - SANBORN DEMO & NEW FIELDS



Concord Middle School
Project Schedule UPDATE
May 25, 2022

Hill International

ID	Task Mode	Task Name	Duration	Start	Finish	Total Slack	Predecessors	Successors
1		**Design & Pre-Construction Phases**	**886 days**	**Wed 8/14/19**	**Wed 2/22/23**	**884 days**		
2		**OPM Selection**	**15 days**	**Wed 8/14/19**	**Wed 9/4/19**	**0 days**		
7		**Designer Selection**	**62 days**	**Tue 8/20/19**	**Mon 11/18/19**	**0 days**		
21		**Feasibility Study**	**521 days**	**Tue 11/19/19**	**Thu 12/16/21**	**1183 days**		
38		**Schematic Design**	**155 days**	**Thu 5/6/21**	**Thu 12/16/21**	**302 days**		
48		**Town Actions**	**77 days**	**Mon 10/18/21**	**Fri 2/4/22**	**188 days**		
49		**Warrant Article**	**57 days**	**Fri 11/12/21**	**Thu 2/3/22**	**158 days**		
50		Finalize Language for Warrant Article	10 days	Fri 11/12/21	Fri 11/26/21	12 days	44	51
51		Submit Article to Selectman's Office	0 days	Fri 11/26/21	Fri 11/26/21	12 days	50	52
52		Selectman finalize Warrant & Order of Articles / Assign to Public Hearing	15 days	Mon 11/29/21	Fri 12/17/21	12 days	51	53
53		Finance Committee Hearing / Recommendation	0 days	Wed 1/5/22	Wed 1/5/22	158 days	52	54FS+10 days
54		Special Town Meeting	0 days	Thu 1/20/22	Thu 1/20/22	158 days	53FS+10 days	55FS+10 days,59
55		Special Town Election	0 days	Thu 2/3/22	Thu 2/3/22	158 days	54FS+10 days	58FS+2 days
56		**Execute OPM & Designer Contracts**	**77 days**	**Mon 10/18/21**	**Fri 2/4/22**	**235 days**		
57		OPM & Designer Contract Amendment	15 days	Mon 10/18/21	Fri 11/5/21	1210 days	43SF	
58		Design Development NTP	0 days	Fri 2/4/22	Fri 2/4/22	158 days	55FS+2 days	61
59		Execute OPM and Designer Contracts (Full Contract)	12 days	Thu 1/20/22	Fri 2/4/22	1148 days	54	
60		**Design Development**	**102 days**	**Mon 2/7/22**	**Fri 7/1/22**	**158 days**		
61		Design Development Documents	78 days	Mon 2/7/22	Fri 5/27/22	158 days	58	62
62		Finalize DD Estimate Set	0 days	Fri 5/27/22	Fri 5/27/22	158 days	61	63,64
63		OPM & Cx DD Document Review	12 days	Tue 5/31/22	Wed 6/15/22	1058 days	62	
64		DD Cost Estimate	12 days	Tue 5/31/22	Wed 6/15/22	158 days	62	65
65		DD Reconciliation & VM List	8 days	Thu 6/16/22	Mon 6/27/22	158 days	64	66
66		Submit DD Package & Estimate to CMSBC	0 days	Mon 6/27/22	Mon 6/27/22	158 days	65	68

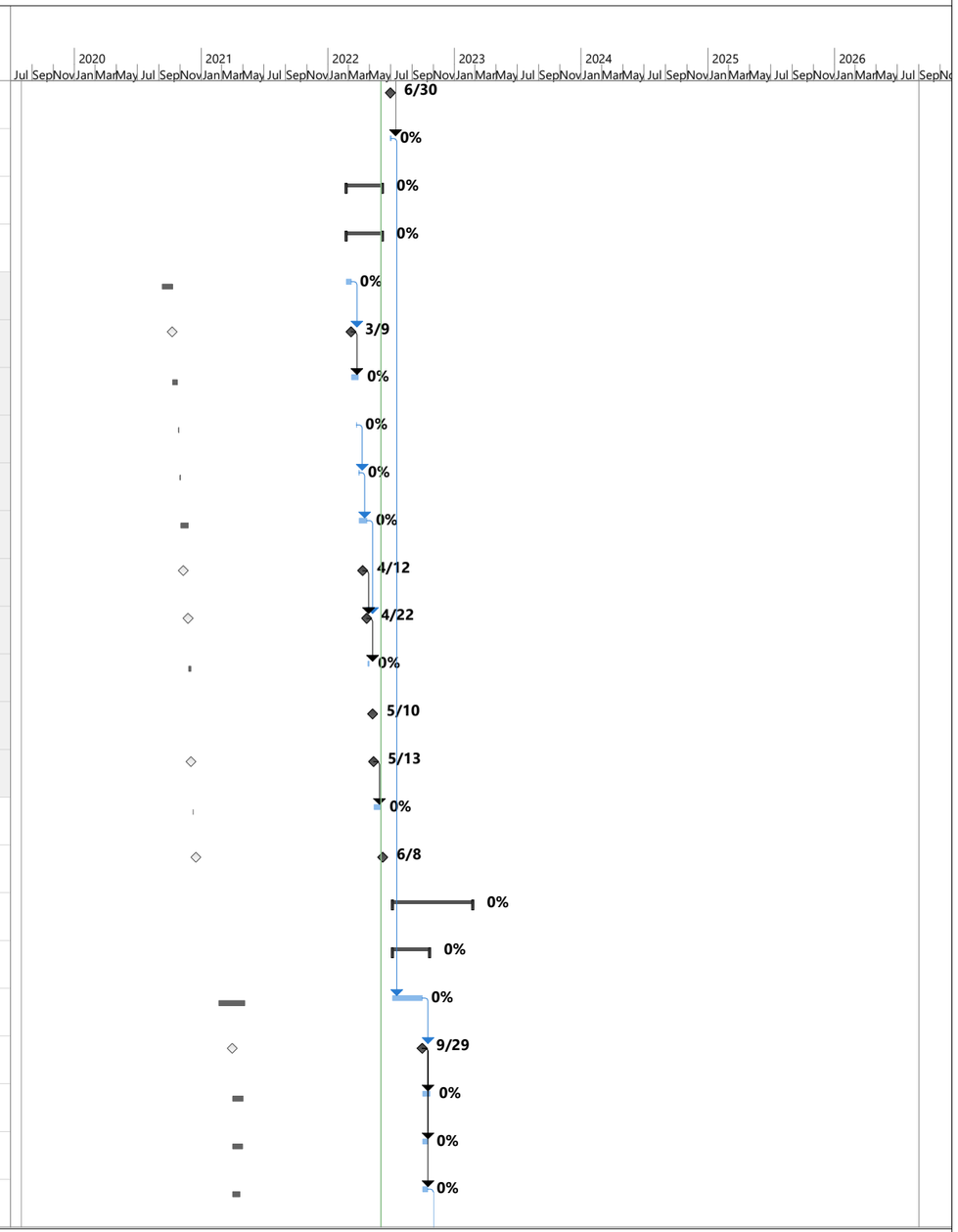


Critical
Critical Split
Critical Progress
Task
Split
Task Progress
Manual Task
Start-only
Finish-only
Duration-only
Baseline
Baseline Split
Baseline Milestone
Milestone
Summary Progress
Summary
Manual Summary
Project Summary
External Tasks
External Milestone
Inactive Task
Inactive Milestone
Inactive Summary
Deadline

Concord Middle School
Project Schedule UPDATE
May 25, 2022

Hill International

ID	Task Mode	Task Name	Duration	Start	Finish	Total Slack	Predecessors	Successors
67		DD Estimate & VM Log Review Mtg with CMSBC	0 days	Thu 6/30/22	Thu 6/30/22	1048 days		
68		CMSBC Review and Acceptance of DD Package	4 days	Tue 6/28/22	Fri 7/1/22	158 days	66	86
69		**Commissioning Agent Selection**	**74 days**	**Tue 2/22/22**	**Wed 6/8/22**	**1063 days**		
70		Commissioning Agent RFP	**74 days**	**Tue 2/22/22**	**Wed 6/8/22**	**1063 days**		
71		Draft CxA RFP	11 days	Tue 2/22/22	Tue 3/8/22	1113 days		72
72		Submit Draft RFP to CMSBC	0 days	Wed 3/9/22	Wed 3/9/22	1113 days	71	73
73		CMSBC Review of Draft RFP	14 days	Wed 3/9/22	Mon 3/28/22	1113 days	72	
74		Issue RFP Notice to Central Register	1 day	Wed 3/23/22	Wed 3/23/22	1090 days		75FS+4 days
75		RFP Available in Central Register & COMMBUYS	1 day	Wed 3/30/22	Wed 3/30/22	1090 days	74FS+4 days	76
76		RFS Response Period	16 days	Thu 3/31/22	Fri 4/22/22	1090 days	75	78
77		Bidder Conference with Commissioning Firms	0 days	Tue 4/12/22	Tue 4/12/22	1098 days		78
78		Receive RFP Responses	0 days	Fri 4/22/22	Fri 4/22/22	1090 days	76,77	79
79		Review Proposals & Reference Checks	5 days	Mon 4/25/22	Fri 4/29/22	1090 days	78	
80		Commissioning Agent Interviews	0 days	Tue 5/10/22	Tue 5/10/22	1084 days		
81		Recommend Prefered Vendor	0 days	Fri 5/13/22	Fri 5/13/22	1069 days		82
82		Contract Execution with Preferred Vendor	12 days	Fri 5/13/22	Tue 5/31/22	1069 days	81	
83		Cx Kick Off Meeting	0 days	Wed 6/8/22	Wed 6/8/22	1064 days		
84		**Construction Documents**	**161 days**	**Tue 7/5/22**	**Wed 2/22/23**	**158 days**		
85		**60% Construction Documents**	**77 days**	**Tue 7/5/22**	**Fri 10/21/22**	**158 days**		
86		60% Construction Documents - Pricing Set	62 days	Tue 7/5/22	Thu 9/29/22	158 days	68	87
87		Finalize 60% CD Estimate Set	0 days	Thu 9/29/22	Thu 9/29/22	158 days	86	90,89,88
88		Building Inspector Review of 60% Estimate Set	15 days	Fri 9/30/22	Fri 10/21/22	969 days	87	
89		OPM & CxA Review 60% CD	10 days	Fri 9/30/22	Fri 10/14/22	974 days	87	
90		60% CD Cost Estimate	10 days	Fri 9/30/22	Fri 10/14/22	158 days	87	91

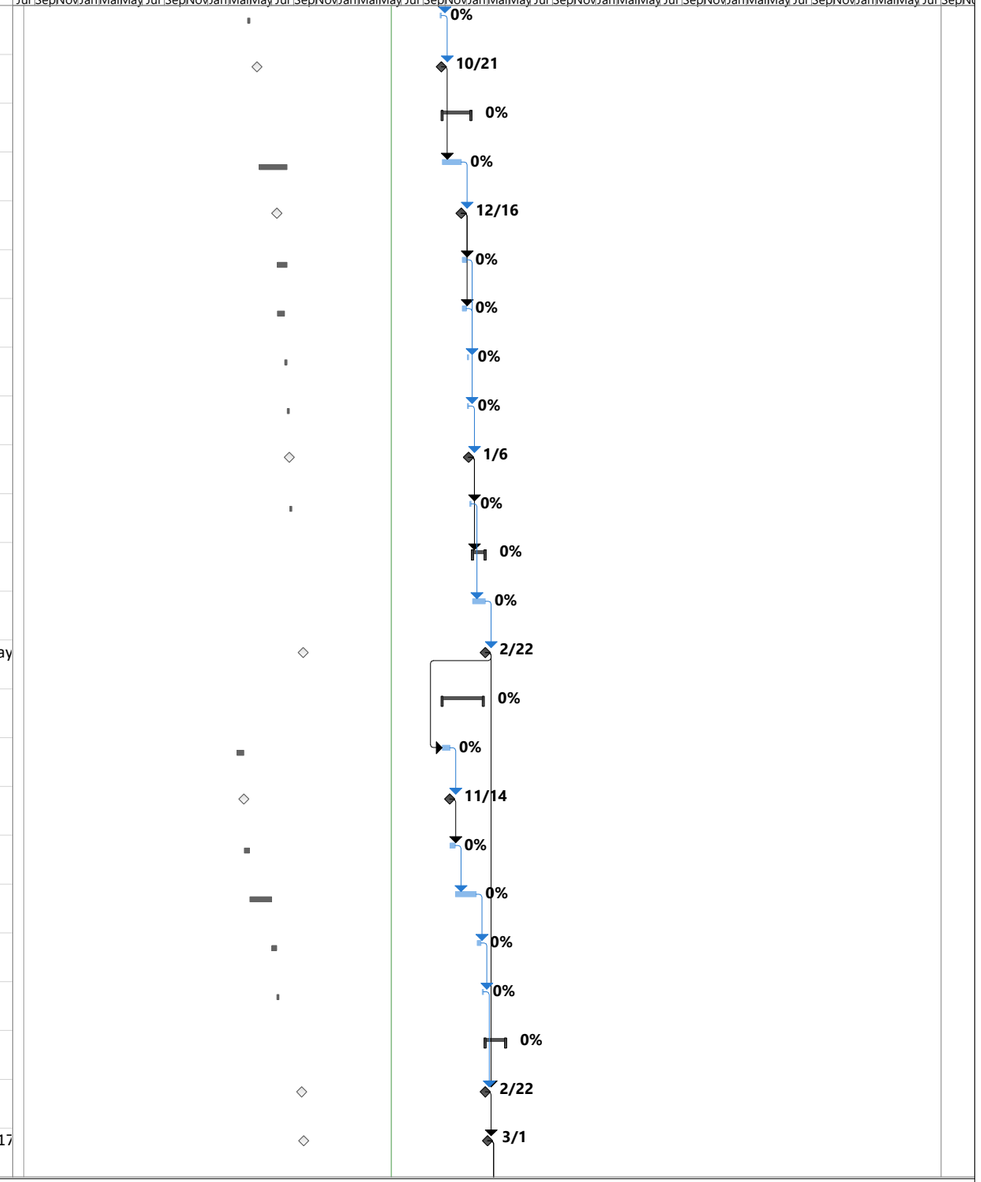


Critical | Task | Manual Task | Duration-only | Baseline Milestone | Summary | External Tasks | Inactive Milestone
Critical Split | Split | Start-only | Baseline | Milestone | Manual Summary | External Milestone | Inactive Summary
Critical Progress | Task Progress | Finish-only | Baseline Split | Summary Progress | Project Summary | Inactive Task | Deadline

Concord Middle School
Project Schedule UPDATE
May 25, 2022

Hill International

ID	Task Mode	Task Name	Duration	Start	Finish	Total Slack	Predecessors	Successors
91		60% CD Reconcilliation & VM List	5 days	Mon 10/17/22	Fri 10/21/22	158 days	90	92
92		60% CD submission to CMSBC	0 days	Fri 10/21/22	Fri 10/21/22	158 days	91	94
93		**90% Construction Documents**	**58 days**	**Mon 10/24/22**	**Fri 1/13/23**	**158 days**		
94		90% Construction Documents- Pricing Set	38 days	Mon 10/24/22	Fri 12/16/22	158 days	92	95
95		Finalize 90% CD Estimate Set	0 days	Fri 12/16/22	Fri 12/16/22	158 days	94	96,97
96		OPM & CxA review 90% CD	10 days	Mon 12/19/22	Fri 12/30/22	158 days	95	99
97		90% CD Cost Estimate	10 days	Mon 12/19/22	Fri 12/30/22	916 days	95	98
98		90% CD Cost Reconciliation & VM List	5 days	Mon 1/2/23	Fri 1/6/23	916 days	97	
99		Complete 90% CD Documents for submission	5 days	Mon 1/2/23	Fri 1/6/23	158 days	96	100
100		90% CD submission to CMSBC	0 days	Fri 1/6/23	Fri 1/6/23	158 days	99	101,102
101		CMSBC Review and Approval of 90% CD Package	5 days	Mon 1/9/23	Fri 1/13/23	158 days	100	103
102		**100% Construction Documents**	**26 days**	**Tue 1/17/23**	**Wed 2/22/23**	**158 days**	**100**	
103		100% Construction Documents	26 days	Tue 1/17/23	Wed 2/22/23	158 days	101	104
104		100% CD Package to CMSBC / Bid Package Complete	0 days	Wed 2/22/23	Wed 2/22/23	158 days	103	113,106FS-84 day
105		**GC and Subs Contractor Prequalifications**	**82 days**	**Mon 10/24/22**	**Fri 2/17/23**	**160 days**		
106		Draft RFQ and Advertising	15 days	Mon 10/24/22	Mon 11/14/22	2 days	104FS-84 days	107
107		Posted Advertisement	0 days	Mon 11/14/22	Mon 11/14/22	2 days	106	108
108		Receive RFQ	10 days	Tue 11/15/22	Tue 11/29/22	2 days	107	109
109		Review Submissions and Prequals Committee Meetings	42 days	Wed 11/30/22	Fri 1/27/23	2 days	108	110
110		Final Report	10 days	Mon 1/30/23	Fri 2/10/23	2 days	109	111
111		Issue Final Contractor List	5 days	Mon 2/13/23	Fri 2/17/23	2 days	110	113
112		**Bidding**	**41 days**	**Wed 2/22/23**	**Fri 4/21/23**	**158 days**		
113		Advertise on Central Register	0 days	Wed 2/22/23	Wed 2/22/23	158 days	104,111	114FS+5 days
114		Posted on Central Register / Documents Available	0 days	Wed 3/1/23	Wed 3/1/23	158 days	113FS+5 days	115FS+5 days,117

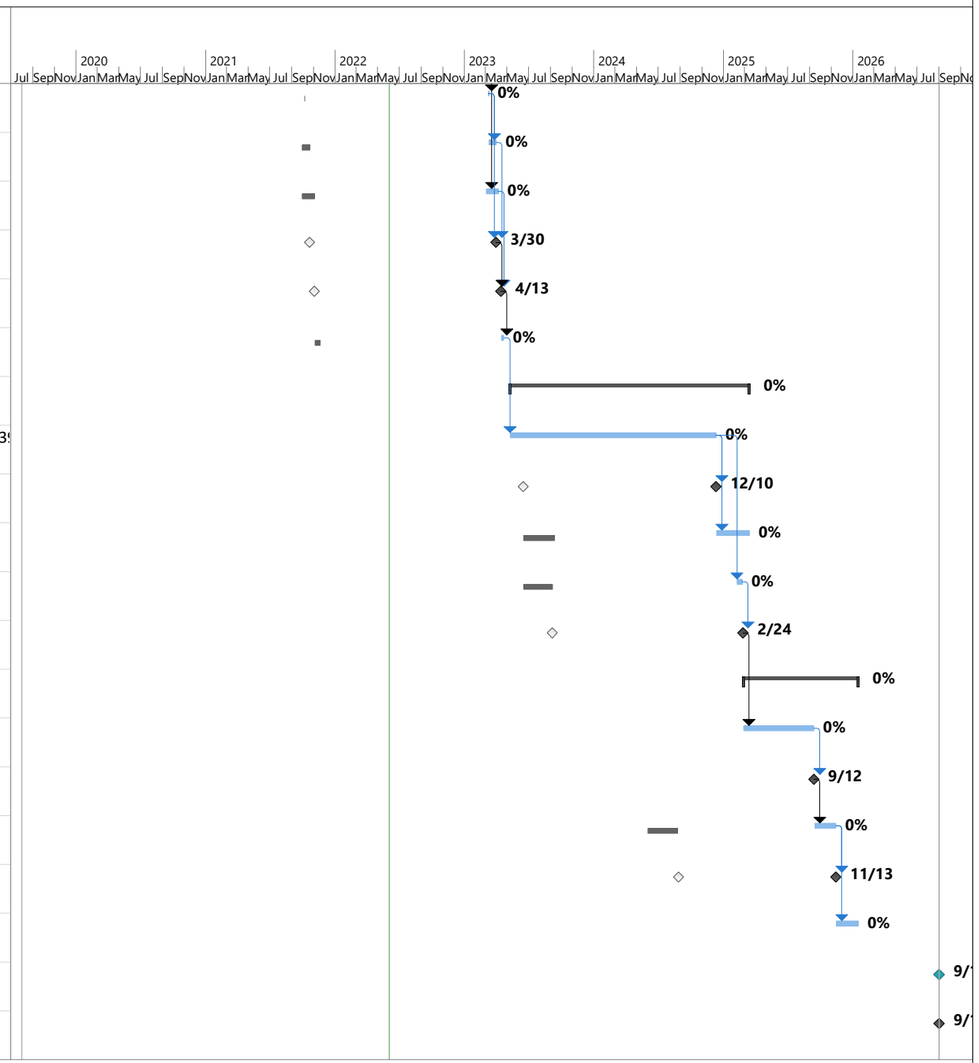


Critical, Critical Split, Critical Progress, Task, Split, Task Progress, Manual Task, Start-only, Finish-only, Duration-only, Baseline, Baseline Split, Baseline Milestone, Milestone, Summary Progress, Summary, Manual Summary, Project Summary, External Tasks, External Milestone, Inactive Task, Inactive Milestone, Inactive Summary, Deadline

Concord Middle School
Project Schedule UPDATE
May 25, 2022

Hill International

ID	Task Mode	Task Name	Duration	Start	Finish	Total Slack	Predecessors	Successors
115		Pre-Bid Conference	1 day	Thu 3/9/23	Thu 3/9/23	158 days	114FS+5 days	118,116
116		FSB Duration	15 days	Fri 3/10/23	Thu 3/30/23	158 days	115	118
117		GC Duration	25 days	Thu 3/2/23	Wed 4/5/23	6 days	114	119
118		Filed Sub-bid Due	0 days	Thu 3/30/23	Thu 3/30/23	158 days	115,116	119FS+10 days
119		General Bid (DBB)	0 days	Thu 4/13/23	Thu 4/13/23	158 days	118FS+10 days,11	120
120		Contract Award / NTP	5 days	Fri 4/14/23	Fri 4/21/23	158 days	119	122FS+11 days
121		**Construction Phase 1 - New School Building & Site**	**463 days**	**Tue 5/9/23**	**Thu 3/13/25**	**158 days**		
122		Phase 1 Construction	20 mons	Tue 5/9/23	Tue 12/10/24	7.9 mons	120FS+11 days	123,124,125FS+3
123		New Building Substantially Complete	0 days	Tue 12/10/24	Tue 12/10/24	433 days	122	
124		Construction Phase 1 - Punchlist	63 days	Wed 12/11/24	Thu 3/13/25	369 days	122	
125		Move into new Building	10 days	Fri 2/7/25	Fri 2/21/25	158 days	122FS+39 days	126FS+1 day
126		New School Open for Classes	0 days	Mon 2/24/25	Mon 2/24/25	158 days	125FS+1 day	128
127		**Construction Phase 2 - Demo Existing School / Construct Fields**	**224 days**	**Tue 2/25/25**	**Thu 1/15/26**	**158 days**		
128		Phase 2 Demo / Construction	7 mons	Tue 2/25/25	Fri 9/12/25	7.9 mons	126	129
129		Fields Substantially Complete	0 days	Fri 9/12/25	Fri 9/12/25	158 days	128	130
130		Construction Phase 2 Punchlist	42 days	Mon 9/15/25	Thu 11/13/25	158 days	129	132,131
131		Project Final Completion	0 days	Thu 11/13/25	Thu 11/13/25	201 days	130	
132		Project Close-Out	42 days	Fri 11/14/25	Thu 1/15/26	158 days	130	
133		**Grass Established for Field Usage**	**0 days**	**Tue 9/1/26**	**Tue 9/1/26**	**0 days**		
134		Fields Ready for Use	0 days	Tue 9/1/26	Tue 9/1/26	0 days		



Critical, Critical Split, Critical Progress, Task, Split, Task Progress, Manual Task, Start-only, Finish-only, Duration-only, Baseline, Baseline Split, Baseline Milestone, Milestone, Summary Progress, Summary, Manual Summary, Project Summary, External Tasks, External Milestone, Inactive Task, Inactive Milestone, Inactive Summary, Deadline

6A.2.3 Project Scope and Budget

1. Project Scope and Budget, Cost Estimates, and Reconciliation

As noted in section 6A.2.1, the Design Development package was reviewed and independent cost estimates were prepared by two estimators: AM Fogarty, retained by SMMA Architects, and PM&C, hired by Hill International. These cost estimates utilized Uniformat II and CSI.

The estimate detail was reconciled and finalized on June 21, 2022. The estimate summary and detail are attached for reference.

In summary, the reconciled estimated construction cost is $86,105,512. The construction budget is $80,772,447. The Design Development estimate is currently $5,304,911 over the construction budget.

There were no substantiative changes in quality or scope from Schematic Design to Design Development.

Concord Middle School

DESIGN DEVELOPMENT COST ESTIMATE - RECONCILED

6/21/2022

SMMA HILL International

	Program Area		142,704. sf RECONCILED VALUE (Average)	Cost/SF		142,704. sf PM & C, dated 6/21/2022	Cost/SF		142,704. sf AM Fogarty, dated 6/21/2022	Cost/SF	DELTA PM&C - AMF
NEW BUILDING			**142,704**	**SF**		**142,704**	**SF**		**142,704**	**SF**	
A	**Substructure**										**($399,119)**
A10	**Foundations**										
	A1010 Standard Foundations		$2,855,444	$20.01 /sf		$2,642,760	$18.52 /sf		$3,068,127	$21.50 /sf	($425,367)
	A1020 Special Foundations		$0	$0.00 /sf		$0	$0.00 /sf		$0	$0.00 /sf	$0
	A1030 Lowest Floor Construction		$1,526,469	$10.70 /sf		$1,539,593	$10.79 /sf		$1,513,345	$10.60 /sf	$26,248
A20	**Basement Construction**										
	A2010 Basement Excavation		$0	$0.00 /sf		$0	$0.00 /sf		$0	$0.00 /sf	$0
	A2020 Basement Walls		$0	$0.00 /sf		$0	$0.00 /sf		$0	$0.00 /sf	$0
B	**Shell**										**($198,160)**
B10	**Superstructure**										
	B1010 Floor Construction		$4,111,061	$28.81 /sf		$4,339,947	$30.41 /sf		$3,882,175	$27.20 /sf	$457,772
	B1020 Roof Construction		$2,906,841	$20.37 /sf		$2,690,025	$18.85 /sf		$3,123,657	$21.89 /sf	($433,632)
B20	**Exterior Enclosure**										
	B2010 Exterior Walls		$5,302,253	$37.16 /sf		$5,195,168	$36.41 /sf		$5,409,337	$37.91 /sf	($214,169)
	B2020 Windows		$2,706,835	$18.97 /sf		$2,697,148	$18.90 /sf		$2,716,521	$19.04 /sf	($19,373)
	B2030 Exterior Doors		$131,421	$0.92 /sf		$116,880	$0.82 /sf		$145,961	$1.02 /sf	($29,081)
B30	**Roofing**										
	B3010 Roof Coverings		$3,114,494	$21.82 /sf		$3,141,315	$22.01 /sf		$3,087,672	$21.64 /sf	$53,643
	B3020 Roof Openings		$69,940	$0.49 /sf		$63,280	$0.44 /sf		$76,600	$0.54 /sf	($13,320)
C	**Interiors**										**($48,629)**
C10	**Interior Construction**										
	C1010 Partitions		$4,041,269	$28.32 /sf		$4,131,695	$28.95 /sf		$3,950,843	$27.69 /sf	$180,852
	C1020 Interior Doors		$1,057,482	$7.41 /sf		$1,010,560	$7.08 /sf		$1,104,404	$7.74 /sf	($93,844)
	C1030 Specialties/Millwork		$1,405,917	$9.85 /sf		$1,501,206	$10.52 /sf		$1,310,627	$9.18 /sf	$190,579
C20	**Stairs**										
	C2010 Stair Construction		$347,000	$2.43 /sf		$318,000	$2.23 /sf		$376,000	$2.63 /sf	($58,000)
	C2020 Stair Finishes		$40,939	$0.29 /sf		$37,832	$0.27 /sf		$44,046	$0.31 /sf	($6,214)
C30	**Interior Finishes**										
	C3010 Wall Finishes		$1,735,760	$12.16 /sf		$1,662,096	$11.65 /sf		$1,809,423	$12.68 /sf	($147,327)
	C3020 Floor Finishes		$1,283,572	$8.99 /sf		$1,262,738	$8.85 /sf		$1,304,406	$9.14 /sf	($41,668)
	C3030 Ceiling Finishes		$1,685,821	$11.81 /sf		$1,649,317	$11.56 /sf		$1,722,324	$12.07 /sf	($73,007)
D	**Services**										**$43,592**
D10	**Conveying**										
	D1010 Elevators		$225,350	$1.58 /sf		$227,400	$1.59 /sf		$223,300	$1.56 /sf	$4,100
D20	**Plumbing**										
	D20 Plumbing		$3,030,897	$21.24 /sf		$3,078,865	$21.58 /sf		$2,982,929	$20.90 /sf	$95,936
D30	**HVAC**										
	D30 HVAC		$8,467,944	$59.34 /sf		$8,645,002	$60.58 /sf		$8,290,886	$58.10 /sf	$354,116
D40	**Fire Protection**										
	D40 Fire Protection		$1,016,303	$7.12 /sf		$1,036,200	$7.26 /sf		$996,405	$6.98 /sf	$39,795
D50	**Electrical**										
	D50 Electrical		$7,478,466	$52.41 /sf		$7,253,288	$50.83 /sf		$7,703,643	$53.98 /sf	($450,355)
E	**Equipment & Furnishings**										**($72,592)**
E10	**Equipment**										
	E10 General		$1,812,808	$12.70 /sf		$1,785,845	$12.51 /sf		$1,839,770	$12.89 /sf	($53,925)
E20	**Furnishings**										
	E2010 Fixed Furnishings		$1,270,172	$8.90 /sf		$1,260,838	$8.84 /sf		$1,279,505	$8.97 /sf	($18,667)
F	**Special Construction & Hazmat Removals**										**($107,283)**
F10	**Special Construction**										$0
	F1010 Special Construction		$0	$0.00 /sf		$0	$0.00 /sf		$0	$0.00 /sf	$0
F20	**Building Demolition**										$0
	F2010 Building Elements Demolition		$698,539	$4.90 /sf		$644,897	$6.78 /sf		$752,180	$5.27 /sf	($107,283)
	F2020 Hazardous Components Abatement		$1,010,444	$7.08 /sf		$1,010,444	$7.08 /sf		$1,010,444	$7.08 /sf	$0
	Sub-total for above trade work		**$59,333,435**	**$415.78 /sf**		**$58,942,339**	**$413.04 /sf**		**$59,724,530**	**$418.52 /sf**	**($782,191)**
G	**Sitework**										**$387,453**
G 10	**Site Preparation**		$2,121,694	$14.87 /sf		$2,067,443	$14.49 /sf		$2,175,945	$15.25 /sf	($108,502)
G 20	**Site improvements**		$6,403,917	$44.88 /sf		$6,517,159	$45.67 /sf		$6,290,674	$44.08 /sf	$226,485
G 30	**Utilities**		$2,023,604	$14.18 /sf		$2,181,401	$15.29 /sf		$1,865,807	$13.07 /sf	$315,594
G 40	**Site Electric**		$703,682	$4.93 /sf		$680,620	$4.77 /sf		$726,744	$5.09 /sf	($46,124)
	Sub-total incl. Sitework & Demo		**$70,586,331**	**$494.63 /sf**		**$70,388,962**	**$493.25 /sf**		**$70,783,699**	**$496.02 /sf**	**($394,737)**
	Markups										
	Escalation	0.00%	$3,583,833	$25.11 /sf	4.67%	$3,451,523	$24.19 /sf	5.00%	$3,716,144	$26.04 /sf	($264,621)
	Design and Estimating Contingency	0.00%	$3,529,317	$24.73 /sf	5.00%	$3,519,448	$24.66 /sf	5.00%	$3,539,185	$24.80 /sf	($19,737)
	Sub-total incl. Escalation & Design Cont		**$77,699,481**	**$544.48 /sf**		**$77,359,933**	**$542.10 /sf**		**$78,039,028**	**$546.86 /sf**	**($679,095)**
	General Conditions - Main Building	20mo	$2,700,000	$18.92 /sf	20mo	$2,700,000	$18.92 /sf	20mo	$2,700,000	$18.92 /sf	$455,000
	General Conditions - Demo + Sitework	7mo	$455,000	$3.19 /sf	7mo	$455,000	$3.19 /sf	7mo	$455,000	$0.00 /sf	Incl. Above
	General Requirements	2.00%	$1,553,990	$10.89 /sf	2.00%	$1,547,199	$10.84 /sf	2.00%	$1,560,781	$10.94 /sf	($13,582)
	Bonds	1.00%	$737,975	$5.17 /sf	1.00%	$773,599	$5.42 /sf	0.90%	$702,351	$4.92 /sf	$71,248
	Insurance	1.00%	$831,464	$5.83 /sf	1.00%	$828,357	$5.80 /sf	1.00%	$834,572	$5.85 /sf	($6,214)
	Permit	N/A	$0	$0.00 /sf	N/A	$0	$0.00 /sf	N/A	$0	$0.00 /sf	$0
	Overhead & Profit	2.50%	$2,099,448	$14.71 /sf	2.50%	$2,091,602	$14.66 /sf	2.50%	$2,107,293	$14.77 /sf	($15,691)
	Total Estimated Construction Cost		**$86,077,358**	**$603.19 /sf**		**$85,755,690**	**$600.93 /sf**		**$86,399,025**	**$605.44 /sf**	**($643,335)**

Notes:

1.) Variance of $643,335 between the two estimates is under 2%, which is an acceptable standard.
2.) Other FF&E has been included in the total project budget under soft costs for non-fixed equipment and furniture.
3.) Construction hard costs include security scope. Technology scope has been included in the total project budget under soft costs.
4.) Existing building demolition assumes 89,271 SF for main structure and 5,848 SF for the modular units.
5.) Hazardous materials abatement is per the Nobis environmental survey and report.
6.) AM Fogarty carried 4.67% escalation and PM&C carried 5% escalation which accounts for $264,621 of the variance between estimates.
7.) Duration of Phase 1 work assumes (20) months for General Conditions.
8.) Assumes permit fees waived.

Concord Middle School

DESIGN DEVELOPMENT AND SCHEMATIC DESIGN COST ESTIMATE COMPARISON

SMMA HILL International

6/21/2022

		142,704. sf	DESIGN DEVELOPMENT RECONCILED VALUE		143,510. sf	SCHEMATIC DESIGN RECONCILED VALUE		DELTA
	Program Area		Cost/SF			Cost/SF		DD - SD
NEW BUILDING			142,704	SF		143,510	SF	
A	**Substructure**							**($247,522)**
A10	**Foundations**							
	A1010 Standard Foundations		$2,855,444	$20.01 /sf		$3,236,420	$22.55 /sf	($380,977)
	A1020 Special Foundations		$0	$0.00 /sf		$0	$0.00 /sf	$0
	A1030 Lowest Floor Construction		$1,526,469	$10.70 /sf		$1,393,015	$9.71 /sf	$133,455
A20	**Basement Construction**							
	A2010 Basement Excavation		$0	$0.00 /sf		$0	$0.00 /sf	$0
	A2020 Basement Walls		$0	$0.00 /sf		$0	$0.00 /sf	$0
B	**Shell**							**$2,228,634**
B10	**Superstructure**							
	B1010 Floor Construction		$4,111,061	$28.81 /sf		$2,941,468	$20.50 /sf	$1,169,593
	B1020 Roof Construction		$2,906,841	$20.37 /sf		$2,902,930	$20.23 /sf	$3,912
B20	**Exterior Enclosure**							$0
	B2010 Exterior Walls		$5,302,253	$37.16 /sf		$5,225,479	$36.41 /sf	$76,774
	B2020 Windows		$2,706,835	$18.97 /sf		$2,819,742	$19.65 /sf	($112,908)
	B2030 Exterior Doors		$131,421	$0.92 /sf		$122,385	$0.85 /sf	$9,036
B30	**Roofing**							$0
	B3010 Roof Coverings		$3,114,494	$21.82 /sf		$2,085,706	$14.53 /sf	$1,028,788
	B3020 Roof Openings		$69,940	$0.49 /sf		$16,500	$0.11 /sf	$53,440
C	**Interiors**							**$1,465,835**
C10	**Interior Construction**							
	C1010 Partitions		$4,041,269	$28.32 /sf		$3,756,937	$26.18 /sf	$284,332
	C1020 Interior Doors		$1,057,482	$7.41 /sf		$870,402	$6.07 /sf	$187,080
	C1030 Specialties/Millwork		$1,405,917	$9.85 /sf		$1,271,846	$8.86 /sf	$134,071
C20	**Stairs**							$0
	C2010 Stair Construction		$347,000	$2.43 /sf		$320,050	$2.23 /sf	$26,950
	C2020 Stair Finishes		$40,939	$0.29 /sf		$40,447	$0.28 /sf	$492
C30	**Interior Finishes**							$0
	C3010 Wall Finishes		$1,735,760	$12.16 /sf		$1,192,232	$8.31 /sf	$543,528
	C3020 Floor Finishes		$1,283,572	$8.99 /sf		$1,146,944	$7.99 /sf	$136,628
	C3030 Ceiling Finishes		$1,685,821	$11.81 /sf		$1,533,067	$10.68 /sf	$152,754
D	**Services**							**$2,209,749**
D10	**Conveying**							
	D1010 Elevators		$225,350	$1.58 /sf		$206,588	$1.44 /sf	$18,763
D20	**Plumbing**							
	D20 Plumbing		$3,030,897	$21.24 /sf		$2,405,794	$16.76 /sf	$625,103
D30	**HVAC**							
	D30 HVAC		$8,467,944	$59.34 /sf		$7,763,699	$54.10 /sf	$704,246
D40	**Fire Protection**							
	D40 Fire Protection		$1,016,303	$7.12 /sf		$964,606	$6.72 /sf	$51,697
D50	**Electrical**							
	D50 Electrical		$7,478,466	$52.41 /sf		$6,668,525	$46.47 /sf	$809,941
E	**Equipment & Furnishings**							**$475,643**
E10	**Equipment**							
	E10 General		$1,812,808	$12.70 /sf		$1,548,865	$10.79 /sf	$263,943
E20	**Furnishings**							
	E2010 Fixed Furnishings		$1,270,172	$8.90 /sf		$1,058,472	$7.38 /sf	$211,700
F	**Special Construction & Hazmat Removals**							**$68,450**
F10	**Special Construction**							
	F1010 Special Construction		$0	$0.00 /sf		$0	$0.00 /sf	$0
F20	**Building Demolition**							
	F2010 Building Elements Demolition		$698,539	$4.90 /sf		$721,948	$5.03 /sf	($23,410)
	F2020 Hazardous Components Abatement		$1,010,444	$7.08 /sf		$918,585	$6.40 /sf	$91,859
	Sub-total for above trade work		**$59,333,435**	**$415.78 /sf**		**$53,132,648**	**$370.24 /sf**	**$6,200,787**
G	**Sitework**							**$614,926**
G 10	**Site Preparation**		$2,121,694	$14.87 /sf		$2,984,860	$20.80 /sf	($863,166)
G 20	**Site improvements**		$6,403,917	$44.88 /sf		$5,354,558	$37.31 /sf	$1,049,359
G 30	**Utilities**		$2,023,604	$14.18 /sf		$1,628,530	$11.35 /sf	$395,074
G 40	**Site Electric**		$703,682	$4.93 /sf		$670,023	$4.67 /sf	$33,659
	Sub-total incl. Sitework & Demo		**$70,586,331**	**$494.63 /sf**		**$63,770,619**	**$444.36 /sf**	**$6,815,713**
	Markups							
	Escalation	4.67% to 5%	$3,583,833	$25.11 /sf	5.25%	$3,682,753	$25.66 /sf	($98,920)
	Design and Estimating Contingency	5% @ DD	$3,529,317	$24.73 /sf	10% @ SD	$6,377,062	$44.44 /sf	($2,847,745)
	Sub-total incl. Escalation & Design Cont		**$77,699,481**	**$544.48 /sf**		**$73,830,433**	**$514.46 /sf**	**$3,869,048**
	General Conditions - Main Building	20mo	$2,700,000	$18.92 /sf	24mo	$3,240,000	$22.58 /sf	($540,000)
	General Conditions - Demo + Sitework	7mo	$455,000	$3.19 /sf	7mo	$455,000	$3.17 /sf	Incl. Above
	General Requirements	2.00%	$1,553,990	$10.89 /sf	2.00%	$1,476,609	$10.29 /sf	$77,381
	Bonds	1.00%	$737,975	$5.17 /sf	1.00%	$701,046	$4.88 /sf	$36,929
	Insurance	1.00%	$831,464	$5.83 /sf	1.00%	$797,031	$5.55 /sf	$34,434
	Permit	N/A	$0	$0.00 /sf	N/A	$0	$0.00 /sf	$0
	Overhead & Profit	2.50%	$2,099,448	$14.71 /sf	2.50%	$2,012,503	$14.02 /sf	$86,945
	Total Estimated Construction Cost		**$86,077,358**	**$603.19 /sf**		**$82,512,622**	**$574.96 /sf**	**$3,564,736**

2. Total Project Budget

The total project budget is $104,316,000 as approved by the Town in February 2022.

Town of Concord

Concord Middle School

Project Budget and Cost Summary

May 31, 2022

HILL International

A	C	D (Bud. Adj. Tab)	E (C+D)	F (Com. Cost tab)	G (E-F)	H (Forecast. tab, >G)	I (F+G+H)	J (Invoice Tab)	K (I-J)
	BUDGET			COST				CASH FLOW	
Description	Intial Budget	Authorized Changes	Approved Budget	Committed Costs	Uncommitted Costs	Forecast Costs	Total Project Costs	Expenditures to Date	Balance To Spend
20 Construction									
Construction	$80,000,000	$772,477	$80,772,477	$0	$80,772,477	$0	$80,772,477	$0	$80,772,477
Subtotal	$80,000,000	$772,477	$80,772,477	$0	$80,772,477	$0	$80,772,477	$0	$80,772,477
30 Architectural & Engineering									
Designer - Basic Services	$6,590,600	$589,400	$7,180,000	$7,180,000	$0	$0	$7,180,000	$825,000	$6,355,000
Schematic Design	$889,400	$232,447	$1,121,847	$1,121,847	$0	$0	$1,121,847	$1,098,857	$22,990
Geotechnical Engineering CA	$250,000	-$45,000	$205,000	$205,000	$0	$0	$205,000	$24,255	$180,745
Geoenvironmental Engineering-allowance	$51,000	$134,000	$185,000	$185,000	$0	$0	$185,000	$0	$185,000
Site Survey	$50,000	-$30,000	$20,000	$10,000	$10,000	$0	$20,000	$0	$20,000
Survey of Existing Conditions / Wetlands	$50,000	-$50,000	$0	$0	$0	$0	$0	$0	$0
Hazardous Materials	$100,000	$45,000	$145,000	$145,000	$0	$0	$145,000	$0	$145,000
A&E Sub Consultants	$0	$70,500	$70,500	$70,500	$0	$0	$70,500	$9,075	$61,425
Other Reimbursable Costs	$100,000	-$80,000	$20,000	$20,000	$0	$0	$20,000	$0	$20,000
Printing (Over the Minimum)	$50,000	-$30,000	$20,000	$0	$20,000	$0	$20,000	$0	$20,000
Testing & Inspections	$150,000	$100,000	$250,000	$0	$250,000	$0	$250,000	$0	$250,000
Subtotal	$8,281,000	$936,347	$9,217,347	$8,937,347	$280,000	$0	$9,217,347	$1,957,187	$7,260,160
40 Administrative Costs									
Owner's Project Manager Basic Services	$3,200,000	$443,580	$3,643,580	$3,383,575	$260,005	$0	$3,643,580	$87,238	$3,556,343
OPM Feasibility Study	$299,800	$78,353	$378,153	$378,153	$0	$0	$378,153	$378,153	$0
OPM Cost Estimates	$0	$5,500	$5,500	$5,500	$0	$0	$5,500	$5,500	$0
Commissioning Agent	$200,000	$80,000	$280,000	$0	$280,000	$0	$280,000	$0	$280,000
Advertising	$29,795	$205	$30,000	$0	$30,000	$0	$30,000	$0	$30,000
Other Administrative Costs	$50,000	$0	$50,000	$0	$50,000	$0	$50,000	$0	$50,000
Other Project Costs (Moving)	$150,000	$50,000	$200,000	$0	$200,000	$0	$200,000	$0	$200,000
Utility Fees	$300,000	$0	$300,000	$0	$300,000	$0	$300,000	$0	$300,000
Legal	$50,000	-$50,000	$0	$0	$0	$0	$0	$0	$0
Subtotal	$4,279,595	$607,638	$4,887,233	$3,767,228	$1,120,005	$0	$4,887,233	$470,891	$4,416,343

Town of Concord

Concord Middle School

Project Budget and Cost Summary

May 31, 2022

HILL International

A	C	D (Bud. Adj. Tab)	E (C+D)	F (Com. Cost tab)	G (E-F)	H (Forecast. tab, >G)	I (F+G+H)	J (Invoice Tab)	K (I-J)
	BUDGET			COST				CASH FLOW	
Description	**Intial Budget**	**Authorized Changes**	**Approved Budget**	**Committed Costs**	**Uncommitted Costs**	**Forecast Costs**	**Total Project Costs**	**Expenditures to Date**	**Balance To Spend**
50 Furniture, Fixtures and Equipment									
Furniture, Fixtures and Equipment	$1,225,000	$140,000	$1,365,000	$0	$1,365,000	$0	$1,365,000	$0	$1,365,000
Security	$227,500	-$227,500	$0	$0	$0	$0	$0	$0	$0
Technology	$1,225,000	$35,000	$1,260,000	$0	$1,260,000	$0	$1,260,000	$0	$1,260,000
Subtotal	$2,677,500	-$52,500	$2,625,000	$0	$2,625,000	$0	$2,625,000	$0	$2,625,000
Project Sub-Total	$95,238,095	$2,263,962	$97,502,057	$12,704,575	$84,797,482	$0	$97,502,057	$2,428,078	$95,073,980

70 Project Contingency				Current Contingency	Potential Risk	Potential Contingency		
Construction Contingency	$4,000,000	$38,927	$4,038,927	$4,038,927	$0	$4,038,927		$4,038,927
Owner's Bid Contingency	$0	$2,019,312	$2,019,312	$2,019,312	$0	$2,019,312		$2,019,312
Owner's Contingency	$761,905	-$6,201	$755,704	$755,704	$0	$755,704		$755,704
Subtotal	$4,761,905	$2,052,038	$6,813,943	$6,813,943	$0	**$6,813,943**		**$6,813,943**
Project Total	**$100,000,000**	**$4,316,000**	**$104,316,000**	**$12,704,575**	**$91,611,425**	**$0**	**$104,316,000**	**$2,428,078**	**$101,887,923**

***Includes $1.5M from Feasibility and Schematic Design Phase**

Construction Cost Estimates	Date	Amount	Gross Square Feet	Cost Per SF
Schematic Design Estimate	11/03/21	$82,512,622	143,510	$574.96
Design Development				
Construction Documents (60%)				
Construction Documents (90%)				
Finalized GMP Contract				

Budget Revisions Summary	Date	Amount

3. Early Bid Packages

There are no early packages for this project.

4. Value Management

SMMA Architects in conjunction with Hill International has developed a list of potential Value Management (VM) considerations for the Town. This list will be presented to the School Building Committee in July 2022 for further consideration leading up to and during the time of the 60% CD estimate presentation in October 2022.

At the end of Schematic Design, (4) Value Management items remained outstanding as shown on the attached VM log. These items have been resolved as noted below.

Soil Management, Items 1A and 1B

Examine any potential additional savings that may be achieved by eliminating export of topsoil and suitable fill from the site.

Resolution: Geotechnical explorations were completed in March 2022 and a final report from the Geotechnical Engineer, McArdle Gannon Associates, was issued thereafter in April 2022. SMMA Architects and their Consultants reviewed this report in relation to site design advancements and determined that all topsoil and suitable fill material could be re-used on site. Meetings were held with the School Department to determine where soil stockpiles could be located during construction while maintaining school operations. The only material to be exported during construction is deleterious material such as forest mat and other unsuitable fill material, which will nearly eliminate the need to export soil from the site. The Design Development estimate was updated according to this new soil management plan.

Ventilation, Item 6B

Advance the HVAC design with a goal to continue to reduce CO2 from the current 970ppm to an enhanced ventilation option as low as 800ppm. Increase the CFM per person from 19 upwards to 25 without increasing the overall sizing of the DOAS units.

Resolution: SMMA Architects and Consultants continued to advance the HVAC design with this charge taken into consideration. Design Development progress in this area was shared with both the Sustainability Subcommittee as well as the School Building Committee.

Fire Pump, Item 12

Remove the fire pump if not required.

Resolution: A hydrant flow test was performed on March 14, 2022, and the results of that test require a fire pump in the building. Therefore, this VM item was rejected, and the cost was included in the Design Development estimate.

Roof Screen, Item 25

Further reduce the quantity of acoustical metal screen on the rooftop.

Response: SMMA Architects acoustical consultant, Acentech, performed an existing sound study in August 2021 and further examined the proposed rooftop equipment. They advised that sufficient sound attenuation could be achieved through equipment modifications in lieu of acoustical metal screening. As a result, the rooftop screening was removed from the Design Development estimate and attenuation costs were added.

Value Management Log

Schematic Design Documents

SMMA | Hill International

A	B	C	D	G	H	I	L	M	O	P
Item #	**Ext.**	**VE/VM Item**	**Discipline/Trade**	**Risks/Impacts**	**Comments/Details**	**Ball In Court**	**Reconciled Value** (Avg of Estimates)	**Status**	**Accepted Value**	**Rejected Value**
1	A	Topsoil - export 50% existing topsoil to off-site location in Town; stockpile, stabilize, and re-use on site. Dispose of excess material in Town.	Site	Finding locations in town to take excess materials.	Stockpile 7,500 CY Excess 7,500 CY	SMMA	($338,836)	Reject		($338,836)
2	A	Suitable Fill - export 50% existing suitable fill to off-site location in Town; stockpile, stabilize, and re-use on site. Dispose of excess material in Town.	Site	Finding locations in town to take excess materials.	Stockpile 15,000 CY Excess 15,000 CY Difference in base bid unit price assumptions.	SMMA	($473,862)	Reject		($473,862)
6	B	ALT 1 @ 25 CFM per person, no Aircuity	Mechanical		Cannot be chosen with 6A	SMMA	$730,050	Reject	$0	$730,050
12		Remove Fire Pump	Fire Protection	Option Only for Design Development	A fire pump is likely not required. It is in the design pending confirmation that it can be removed after receipt of flow test results.	SMMA	($137,250)	Reject		($137,250)
25		Reduce length of acoustic mechanical screen by 164 LF	Exteriors	Zoning dependent.		SMMA	($221,274)	Accept	($221,274)	$0
		TOTALS					**DO NOT TOTAL**		**($221,274)**	**($219,898)**

6A Design Development

6A.3 Designer Deliverables

6A.3.1 General Requirements

1. Updated Work Plan

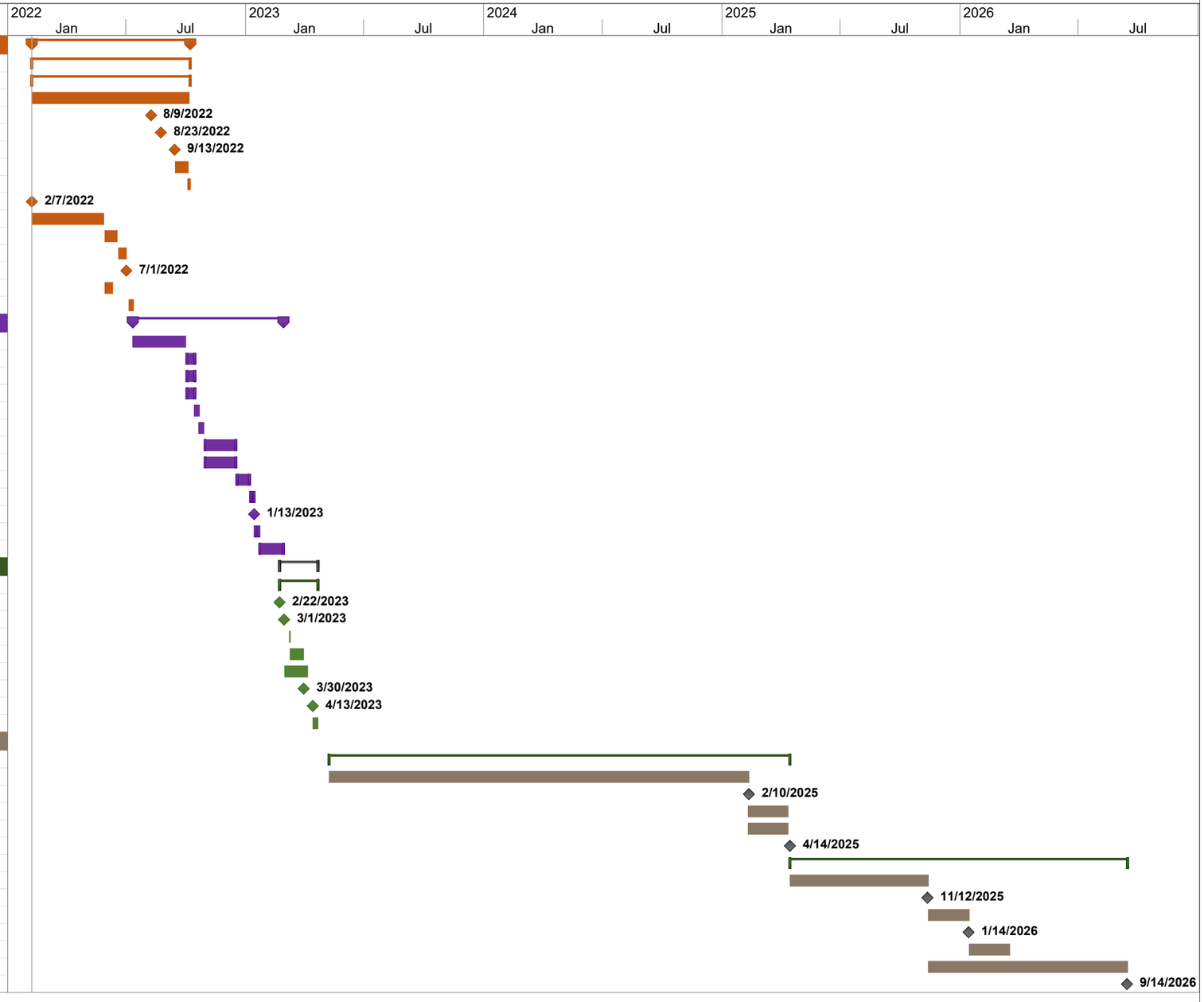
The Updated Project workplan is attached to this section.

February 4, 2022

CONCORD MIDDLE SCHOOL
WORKPLAN

SMMA

ID	Task Name	Duration	Start	Finish	Predecessors
1	**DESIGN DEVELOPMENT**	**175 days**	**Mon 2/7/22**	**Fri 10/7/22**	
2	**Site Permitting Project**	**175 days**	**Mon 2/7/22**	**Fri 10/7/22**	
3	**Concord Planning Board - Site Plan Approval**	**175 days**	**Mon 2/7/22**	**Fri 10/7/22**	
4	Prepare Application Documents	173 days	Mon 2/7/22	Wed 10/5/22	
5	File Application	0 days	Tue 8/9/22	Tue 8/9/22	4FS-42 days
6	Hearing No. 1	0 days	Tue 8/23/22	Tue 8/23/22	5FS+11 days
7	Planning Board Issues Site Plan Approval	0 days	Tue 9/13/22	Tue 9/13/22	6FS+15 days
8	Appeal Period	14 days	Thu 9/15/22	Tue 10/4/22	7FS+1 day
9	File at Registry	4 days	Tue 10/4/22	Fri 10/7/22	8FS-1 day
10	**DD Notice to Proceed**	0 wks	Mon 2/7/22	Mon 2/7/22	
11	**DD Package to Estimators**	16 wks	Mon 2/7/22	Fri 5/27/22	
12	**DD Estimating**	3 wks	Mon 5/30/22	Fri 6/17/22	11,10
13	**DD Review Estimate and VM with CSMBC**	2 wks	Mon 6/20/22	Fri 7/1/22	12
14	**DD Final Package to CSMBC**	0 days	Fri 7/1/22	Fri 7/1/22	13
15	**OPM & Cx DD Document Review**	2 wks	Mon 5/30/22	Fri 6/10/22	12SS
16	**CSMBC Review of DD Package**	1 wk	Wed 7/6/22	Tue 7/12/22	14FS+2 days
17	**CONSTRUCTION DOCUMENTS**	**165 days**	**Tue 7/12/22**	**Mon 2/27/23**	
18	Develop 60% Contract Documents for Estimator	59 days	Tue 7/12/22	Fri 9/30/22	16FS-1 day
19	60% Contract Documents to OPM and Cx for Review	10 days	Mon 10/3/22	Fri 10/14/22	18
20	OPM and Cx Review	10 days	Mon 10/3/22	Fri 10/14/22	18
21	60% Construction Documents Cost Estimate	10 days	Mon 10/3/22	Fri 10/14/22	18
22	Review Estimate and VM with CSMBC	6 days	Fri 10/14/22	Fri 10/21/22	21FS-1 day
23	60% Construction Documents Submission to CSMBC	6 days	Fri 10/21/22	Fri 10/28/22	22FS-1 day
24	Develop 90% Contract Documents to Estimator	35 days	Mon 10/31/22	Fri 12/16/22	23
25	90% Contract Documents to OPM and Cx for Review	35 days	Mon 10/31/22	Fri 12/16/22	24SS
26	90% Construction Documents Cost Estimate	15 days	Mon 12/19/22	Fri 1/6/23	25
27	OPM and Cx Review	5 days	Mon 1/9/23	Fri 1/13/23	26
28	Review Estimate and VM with CSMBC	0 days	Fri 1/13/23	Fri 1/13/23	27
29	90% Construction Documents Submission to CSMBC	5 days	Mon 1/16/23	Fri 1/20/23	27
30	100% Construction Documents Package for Bidding	26 days	Mon 1/23/23	Mon 2/27/23	29
31	**PROCUREMENT**	**43 days**	**Wed 2/22/23**	**Fri 4/21/23**	
32	**Bidding**	**43 days**	**Wed 2/22/23**	**Fri 4/21/23**	
33	Advertise on Central Register/Newspaper	0 days	Wed 2/22/23	Wed 2/22/23	
34	Posted on Central Register/Documents Available	0 days	Wed 3/1/23	Wed 3/1/23	33FS+5 days
35	Prebid Conference	1 day	Thu 3/9/23	Thu 3/9/23	34FS+6 days
36	FSB Duration	15 days	Fri 3/10/23	Thu 3/30/23	35
37	GC Duration	25 days	Thu 3/2/23	Wed 4/5/23	34FS+1 day
38	Filed Sub-bid Due	0 days	Thu 3/30/23	Thu 3/30/23	35,36
39	General Bid (DBB)	0 days	Thu 4/13/23	Thu 4/13/23	38FS+10 days
40	Contract Award	6 days	Fri 4/14/23	Fri 4/21/23	39
41	**CONSTRUCTION**	**875 days**	**Tue 5/9/23**	**Mon 9/14/26**	
42	**Phase 1 - New School Building & Site**	**505 days**	**Tue 5/9/23**	**Mon 4/14/25**	
43	Phase 1 Construction	23 mons	Tue 5/9/23	Mon 2/10/25	40FS+11 days
44	New Building Substantially Complete	0 days	Mon 2/10/25	Mon 2/10/25	43
45	Construction Phase 1 - Punchlist	45 days	Mon 2/10/25	Fri 4/11/25	43FS-1 day
46	Move into New Building	45 days	Mon 2/10/25	Fri 4/11/25	43FS-1 day
47	New School Open for Classes	0 days	Mon 4/14/25	Mon 4/14/25	46FS+1 day
48	**Phase 2 - Demo Existing School & Construct Fields**	**370 days**	**Tue 4/15/25**	**Mon 9/14/26**	
49	Phase 2 Demo/Construction	152 days	Tue 4/15/25	Wed 11/12/25	47
50	Fields Substantially Complete	0 days	Wed 11/12/25	Wed 11/12/25	49FS-1 day
51	Construction Phase 2 - Punchlist	45 days	Thu 11/13/25	Wed 1/14/26	50FS+1 day
52	Project Final Completion	0 days	Wed 1/14/26	Wed 1/14/26	51FS-1 day
53	Project Close-Out	44 days	Thu 1/15/26	Tue 3/17/26	51
54	Grass Established for Field Usage	218 days	Thu 11/13/25	Mon 9/14/26	50FS+1 day
55	Fields Ready for Use	0 days	Mon 9/14/26	Mon 9/14/26	54FS-1 day



2. Basis of Design Narratives

Architectural

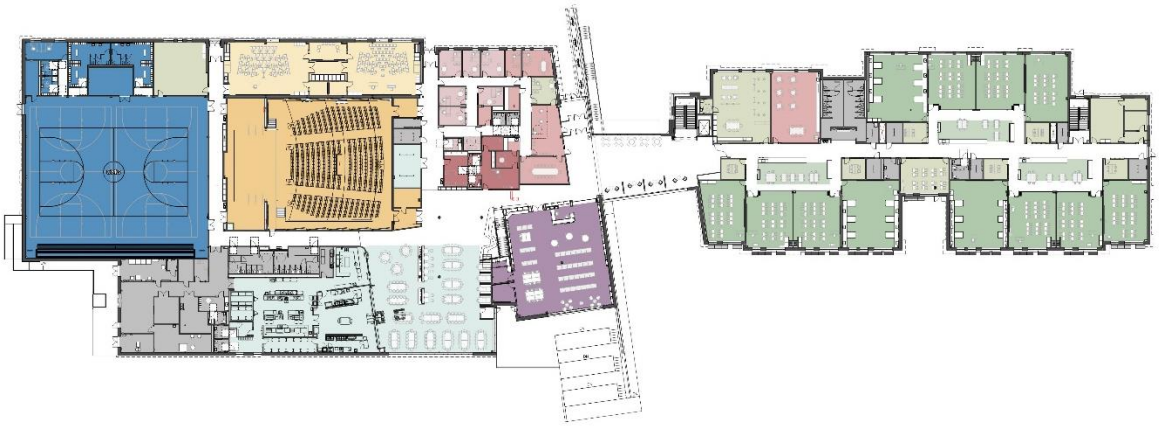
The new Concord Middle School Design realizes the goal of Concord Public Schools to replace two existing facilities with one combined middle school housing grades six through eight. The facility is designed to serve students and the community for generations. The school will accommodate a 700-student population projected enrollment. The project incorporates a team-teaching model and appropriate space to support positive learning environments to meet the educational needs of Middle School students. The project will be designed to achieve net-zero energy operations.

Site Plan

The new middle school facility will be of all-new construction and will be located on the property currently occupied by the existing Sanborn Middle School. The new building will occupy a portion of the property southwest of the existing structure, in the location of the current athletic fields and a sloping, tree-covered area immediately south of the athletic fields. Located to provide a strong connection to the existing topography and landscape while accommodating required on-site vehicular circulation, the building footprint is also optimized for solar orientation.

The main entrance drive, the bus drop, the parent drop-off, parking, and athletic fields will be positioned to the northern and western sides of the property, occupying much of the existing plateau and the footprint of the existing Sanborn building, which is to be demolished. Service is provided via a separate drive to the southwest. An entry plaza is located on the northern side of the building, lending prominence to the main entry and allowing easy pedestrian access for walkers and bikers from the neighborhood. The design approach engages the sloping topography and the existing tree cover in a manner that prevents the school from overwhelming the residential street.

The plan configuration for the new facility is made up of two wings organized around a central lobby, which connects over an existing site ravine. The western wing contains shared program spaces serving the whole school while learning communities are located within a 3-story portion of the building to the east, accessible from a central entry lobby/connector element.



Ground Level Program Plan

The new school's location on the existing Sanborn site naturally makes the building an integral and important community center and a resource for all citizens. By co-locating the Gymnasium, Auditorium, and Cafeteria at the very front of the school after-hours use is easily accommodated and prominently on display for the Town. The natural separation formed by the lobby space has been designed to allow for easy securing of the classroom spaces during after-hour activities.

The Media Center is centrally located on the ground floor opposite the administration suite and main entrance, central to the school and is large enough and flexible enough to allow for multiple zones of activities with access to the exterior dining and a tiered assembly landscaped space.

The 420-seat Auditorium is located north of the cafeteria offering immediate access from the main entry. Music classrooms are located directly north of the Auditorium to allow them to function in a green room capacity.

The Gymnasium and associated spaces are located northwest of the cafeteria with immediate access to the athletic fields to the north. The Media Center is positioned on the ground floor, just across from the

main entrance and administration area to anchor the school and establish presence the “heart of the school.”

Guidance, Nurse, and Administration share a suite of resources, but each has a dedicated entry to reduce any stigma associated with a student seeking their services. Guidance and administrative offices will also be scattered throughout the classroom wing. World language and art spaces are located on the upper floor as part of one shared western wing. An open stair to the cafeteria connects these classrooms with the whole school and a display area in the corridor allows the arts to be on display or provides space for critique.

The main entry/lobby flows to the west to an open Cafeteria, and is flanked by the main administration area, Media Center and Auditorium. This offers passive surveillance of students and visitors as they pass through the security vestibule upon entry.

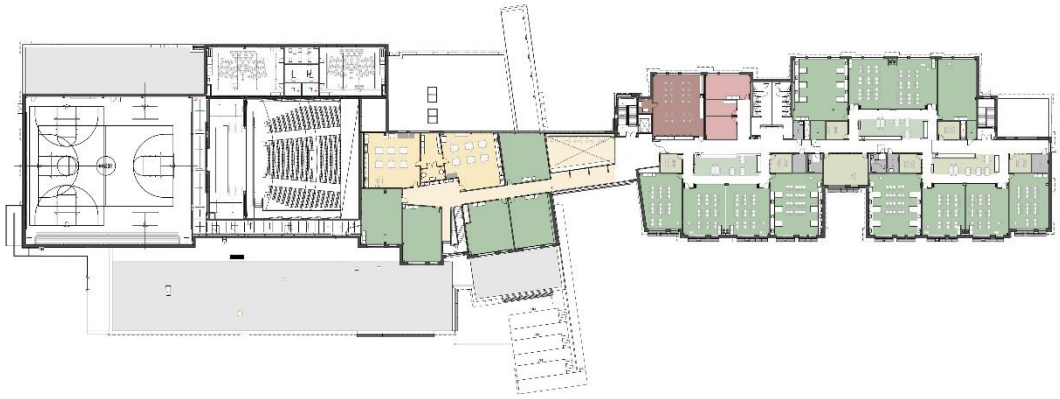
Entry Lobby

Due to the existing topography, vertical travel is limited to one floor above or below the entrance level, with each grade co-located on a separate floor and accessed by a communicating stair. Each floor houses (3) teams with integrated special education spaces and an allocation of off-team classrooms. Team Commons have access to daylighting from the full glass folding walls of the adjacent classrooms and are located proximate to one another to encourage and facilitate grade level interaction.

Lower-Level Program Plan

Each middle school grade is arranged to maintain fidelity of both classroom teams and grade levels while offering proximity of off-team classrooms. This arrangement allows for full integration of Special Education and Team learning environments, with teacher and student support spaces organized around centrally located Team commons. The organization of Team classrooms around the neighborhood commons serves to reinforce the social cohort of the Team by creating a localized sense of place and belonging. Each grouping of the classrooms also has two small SPED resource spaces or breakout rooms for small groups or one-on-one interaction – a critical part of today's educational experience. To build upon the Middle School's Home Base concept "cloak" areas have been established within classrooms except for the 6th grade wing which will incorporate lockers into the Commons spaces. Each grade shares a Workroom classroom located in the middle of the floor plan to be shared by all Teams.

Specialized learning spaces have been provided to serve all grades in an off-team model. Grouped Art rooms located on the upper floor with northern exposure allow them to share resources. Two Music rooms located north of the Auditorium also include individual practice rooms and a shared ensemble practice room and instrument storage area. World language is co-located along a shared corridor to limit teacher travel and facilitate resource sharing. Engineering and Family and Consumer Science have dedicated rooms which are easily accessed by all students. All students have easy access to outdoor learning spaces from the Lower-Level floor.



Upper-Level Program Plan

The building will be clad in combination of a brick veneer and concrete masonry units in a warm palette. The brick veneer will extend to the roof line at each wing. Secondary rain screen cladding materials such as Phenolic or Composite Metal will be used as an accent within the lobby/entry connection volume to add natural “wood-look” tones to the palette. A canopy will highlight the entry area. The large volumes of the gym and auditorium have been located towards the center of the school for better flow into student life and to reduce large height walls against the parameter/entry.

Aerial View from Northeast

Description of Desired Features of the School

The new Concord Middle School is guided by a set of underlying principles, developed in response to the educational program, the site, and the broader architectural context of Concord. Of these principles, the desire to connect with nature and the surrounding site is a core value that informs many of the aesthetic features of the building, from its massing to the distribution of program, to the placement of windows and glazing, and the selection of materials. The building is positioned to provide a welcoming presence from Old Marlborough Road and provides opportunities for the students to connect back to the tree covered site from within whether through use of a terraced performance/ravine area, outdoor instructional spaces, or playing fields.

View from the Front Entrance Looking West.

The main entrance for the school is defined by an axis created by a natural site ravine, The main lobby connects across this ravine and is located between a stepped two-story wing and a three-story classroom wing. The main entry is located immediately adjacent to the Administration which provides for passive surveillance. The Music Classrooms and ancillary support of the Gymnasium flow to the west and, along with the Administration, forms a welcoming one-story volume as you enter the school. Behind that the larger volume of the Gymnasium and Auditorium are clad in a lighter color to break down the scale of the building.

View from the Front Entrance Looking East.

The selection of materials for the new Concord Middle School will build upon the traditional type found in the local Concord buildings yet will strive for subtly unique expression in its visual and tactile characteristics - i.e., those of color, texture and layering in masonry, reflectance, and vibrancy. The brick veneer will extend to the roof line across the project, A warm “striated” blend of brick will offer texture and relate to banding commonly found in Concord. This blend consists of 3 uniquely colored bricks stacked in rows of individual colors. This is accented with both darker and lighter concrete masonry units to offer relief along the longer expanses of the building. The concrete masonry will have a polished finish and coursed with a uniquely shaped unit to give texture and shadow to the field. Secondary rain screen cladding materials such as Phenolic or Composite Metal will be used above the second-floor line along the lobby/connector to generate a sense of lightness to the building forms and introduce warmth in a wood look material. The classroom fenestration will consist of large window units which have been optimized for natural daylight. The entry lobby Media Center, and Cafeteria are accented with glass curtainwall at key locations to introduce natural light provide views to the surrounding landscape.

View of Sloped Performance Area

The curtain wall within the lobby on the front and rear of the building allows a glimpse of the colorful ceiling elements which create a whimsical playfulness through the front façade to the tree line behind the building. The diagonal columns of the entry canopy roof structure reaching past the face of the building further distinguish the entry. The sloped ravine area between the classroom stairs extending across to the Media Center and Entry provides an outdoor space for informal performance and education. This can be used for both school and community functions. The playful undulation of the façade encourages the imagination of the students within, reminding them of the movement of the trees in the surrounding wetlands and site.

View of Gym corner on entry drive

View outdoor learning spaces facing west

As the building meets the forest on the south edge, retaining walls have been introduced to address grade change and preserve the natural landscape. The height of these elements has been visually

reduced by introducing a sloping walkway and tiered green space to the outdoor dining area. This element frames and reinforces the existing natural ravine and site circulation. Towards the east, outdoor learning spaces are built into the landscape to allow students to appreciate their place in relationship to the historic environment of concord and the adjacent wetlands.

View of Lobby Looking West

View of Lobby Looking East

Designed to accommodate the flow of students entering the school and changing classes, the space is designed as a mostly open circulation space. Flexible seating is provided for moments of social interaction and gathering. When not used for circulation, the space may also host informal presentations and group activity. The ceiling and wayfinding graphics are designed to encourage movement and provide moments of reflection. Fixed display elements offer a home for temporary exhibits or class use.

View of Media Center from corridor

View of Cafeteria stair and built-in seating looking south

Between the Media Center and the corridor, millwork shelving and an operable wall creates an open and inviting connection to the school. This allows the Media Center to become the heart of the school as everyone passes and engages in content on display. The media center millwork is framed by a ceiling soffit and wraps around a staircase sitting between the cafeteria and Media Center. The millwork element becomes informal seating in the corridor offering a place for social interaction and small group presentation. This space also serves as a pre-function room for the auditorium.

View of Cafeteria Dining

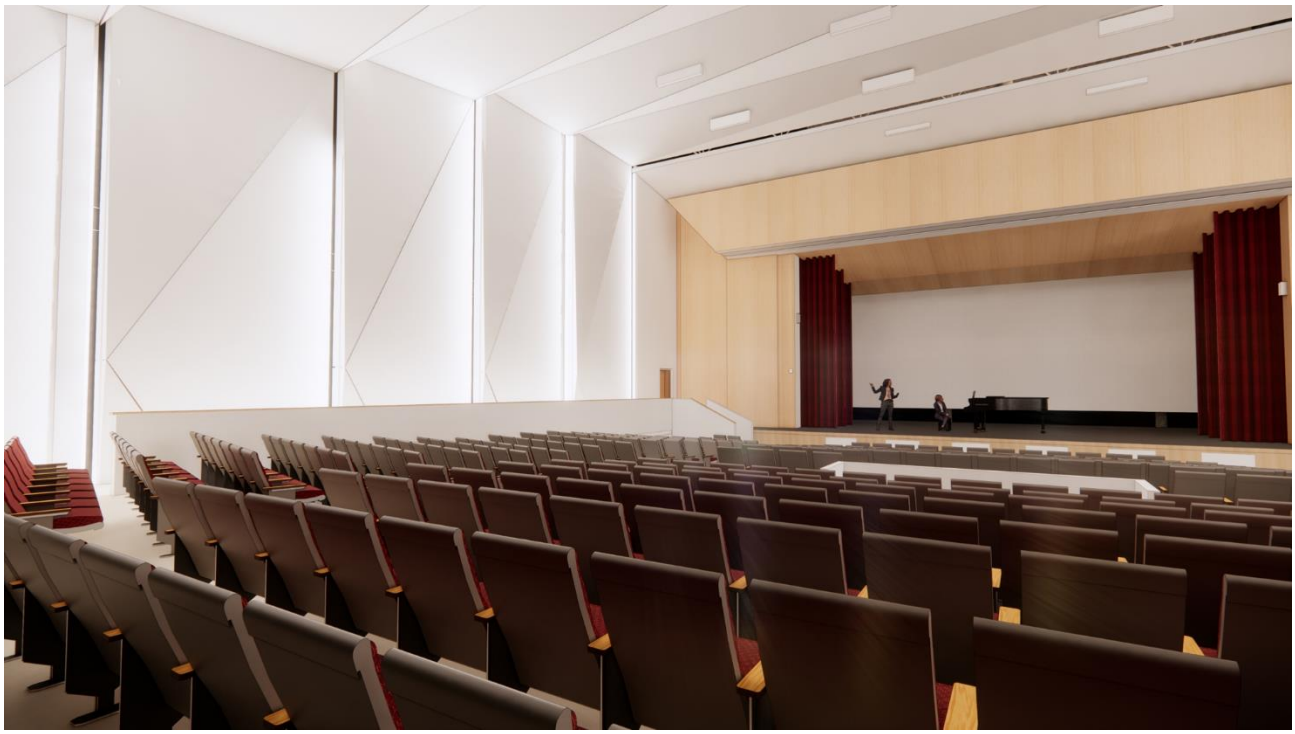
In addition to seating for dining, the cafeteria is imagined as a space for informal learning throughout the school day and pre-function for the Auditorium and Gymnasium. The design features mostly movable furniture which can be stored away giving the room more flexibility. Built-in seating is provided along with areas of lower ceiling acoustical baffles break down the scale of the large space to provide choice

in seating areas accommodating social interaction for all. Glazing at the rear of the room gives students clear view of the tree line behind the building offering a connection back to nature.

View of Team Commons and Classrooms

View of typical classroom

Classrooms are arranged around a Team Commons. This space is conceived as an eddy off of the main corridor circulation. With a combination of solid and glazed operable partitions, the classrooms and team commons can be opened and configured to meet the needs of instruction. Two Small Group Rooms are located at either end of the commons with interior glazing between. These offer flexibility of group learning or individualized one-on-one instruction. A long counter anchors the space with a divider screen which provides additional workspace. Storage and display millwork is built into the counter display making this an innovative hub for 21st century learning. At one end of the team commons a partial height partition provides a fixed element for instruction and collaboration and offers storage on the back side.



View of auditorium

Tuned for acoustic performance a combination of folded planar wall and ceiling elements visual interest and accent lighting. Fabric wrapped panels and seating introduce texture and color into the room. The proscenium is highlighted by a wood paneling surround offering a place for the eye to rest and enjoy the performance. A soft sloped floor allows easy access to seating and appropriate sightlines to the stage.

View of Gymnasium

The Gymnasium is designed to be flexible for a variety of sporting events in addition to all school assemblies. Tiered seating and adjustable audio/visual equipment give the space full flexibility. Color is introduced into acoustic paneling and accent paint. Northern clerestory windows allow dappled natural light to filter into the room.

Structural

Structural Systems at New Construction

Foundations

The exterior foundation walls for the school will be 18” thick, 4000 psi, reinforced cast-in-place concrete walls with an 8” brick shelf, resting on a 30” to 36” wide continuous reinforced concrete strip footings, around the perimeter of the building. The foundations will extend at least 4'-0" below finished grade for footings resting on compacted structural fill or undisturbed soils, and 2'-0" for footings resting on ledge. Wall reinforcing will consist of approximately 3 to 4psf of reinforcing steel.

Individual spread footings at columns with allowable bearing pressures as recommended in the Site Geotechnical Evaluation Report. Based on preliminary visual observations at the site, the footings will most likely rest on natural undisturbed soils, compacted structural fill, having an allowable design bearing pressure of approximately 3000 pounds per square foot. The average interior footing size will be approximately 7 to 8 feet square x 20 inches deep with 6 to 7 psf of reinforcing steel

At locations of interior braced frames (for the lateral force resisting system), 24”x24” grade beams will be installed 1’-0” to 2’-0” below the ground floor slab-on-grade, connecting the cast in place concrete piers and footings below each of the two columns that are part of the braced frame.

Standard Slabs-on-Grade

All slab-on-grade floors shall be 4000psi concrete, 4" thick at the typical classroom wings, 5" thick at the cafeteria, multi-purpose, gymnasium, and other spaces subjected to heavy-duty use; and 6" thick at mechanical and electrical rooms. Slabs on grade will be reinforced with welded wire mesh, placed over a gas vapor mitigation barrier if required, on a layer of insulation over a base course of approximately 8" to 12” of compacted gravel. The exact details of the slab-on-grade subgrade preparation will be determined from the recommendations set forth in the Geotechnical Evaluation Report.

Pits and Bases

Elevator pits will be constructed with 10" reinforced concrete walls with 4 psf of reinforcing steel and a 12" thick reinforced concrete foundation mat with 8 psf of reinforcing steel. A sump pit will be provided as required. An appropriate water stop will be part of the design.

Structural Frame

The building will be framed with structural steel, consisting of wide flange or tube-shaped columns. The columns will be connected with wide flange structural steel girders, and in turn, will support wide flange structural steel beams, space 7' to 8' maximum, and compositely connected to the slab with field welded shear connectors. Steel framing which is not concealed by walls or ceilings will be considered Architecturally Exposed Structural Steel. All steel beams and girders will be spray fireproofed except in selected areas where they are called out as AESS which will be protected with an intumescent paint. The total structural steel for the structural floor frame, columns, and lateral bracing will be approximately 10 to 12psf.

The link/bridge between the academic wing and the public wings will be framed with 2-clear span custom designed and fabricated steel trusses supporting both the roof and floor of the bridge as one single frame. The floor deck of the bridge will 5 ¼" thick composite slab matching that of the building, which are supported on wide flange composite beams spanning between the trusses. The roof of the bridge will be framed with wide flange steel beams framed between the trusses, with a 1 ½" x 18gage, type B galvanized steel deck. The trusses will weigh approximately 200 - 250#/ft. The floor and roof framing will account for approximately 9 to 10psf of steel framing.

Lateral Load-Resisting System

Lateral loads due to wind and seismic forces will be resisted by diagonal braced frames and/or moment frames at selected locations, at each level and will be incorporated within the interior and/or exterior wall systems. The steel framing associated with braced frames is typically 1 to 1.5 PSF of building for new construction. The overall building will be subdivided into individual building sections with seismic and expansion joints between each section. Each section will have its own lateral force resisting system.

Structural Steel Recycled Content: All steel is to consist of a minimum of 95% recycled steel with over 80% post-consumer and 15% pre-consumer recycled material in compliance with LEED for Schools requirements.

Misc. Metals Recycled Content: Recycled Content of Metal Products; Provide products with average recycled content of steel products so postconsumer recycled content plus one-half of pre-consumer recycled content is not less than 60 percent.

New Floor/Frame Construction: Typical elevated floor construction will consist of a 3 1/4" lightweight concrete slab on 2", 20 gage composite metal deck, (5 ¼" total depth), reinforced with welded wire fabric. (This floor system provides a 1-hour fire rated floor slab without the need to spray fire-proof the deck). The slab will be supported on a system of composite, wide flange structural steel beams compositely connected to the slab with field welded shear connectors. Steel composite beams will be supported on composite steel wide flange girders. The steel girders will in turn be supported on steel wide-flange columns, round, or square tubular columns. Steel weights for these areas to be 10-12 PSF.

A vibration analysis is typically performed on all framing members, in order to create a structure that is comfortable, and free from excessive vibrations that would create discomfort for the building's occupants.

Roof Structural Frame

The structural steel building frame will extend up to the roof which will be primarily framed with structural steel beams and/or open web joists. The specific roof framing type for each area is described by room type below All roofs will be sloped to roof drains at 1/4 inch per foot.

All roof areas that are not designated for rooftop equipment or other purposes, will be designed with a 20 PSF allowance for future roof mounted photovoltaics. Areas to receive photovoltaic panels will require an 18-gage deck.

Roof construction at the classroom area, will consist of a 1-1/2" deep, 20 gage, Type B, galvanized metal roof deck. Roof decks will be supported on a system of wide flange structural steel beams, spaced 5’ to 6’ apart, maximum, and in turn will be supported on steel wide flange girders. The steel girders will in turn be supported on steel wide-flange columns and square tubular columns. Steel weights for these areas to be 9-10 psf.

Some portions of the roof will be designated at “Green Roofs”. At these locations, these roofs will be framed similar to the floor framing at this level. Additional dead and live loads for these areas will be considered in the design.

The roof areas directly beneath the rooftop mechanical equipment, as well as a 5' perimeter around the unit, will be constructed with a 4" normal weight concrete topping slab supported on a 2” deep, 20 gage, galvanized composite metal deck, (6” total depth), supported on wide flange beams and girders.

The Gymnasium roof framing will be 1-1/2” deep, 18gage, Type BCA, galvanized, cellular acoustic deck which will be supported by "LH" or “DLH” series long-span steel joists spaced a maximum of 6'-6" apart. The Gymnasium structural framing shall include design factors for support of gym divider partition and other hung equipment.

The Cafeteria roof framing will be 1-1/2” deep, 18gage, Type BCA, galvanized, cellular metal deck supported on "LH" series long span steel joists spaced a maximum of 6'-6" apart. The joists will frame into perimeter steel girders, supported on wide flange or tubular shaped steel columns carried to the foundation. Typical steel weights for these areas to be 12 PSF.

Canopy Construction will consist of a steel framed roof with 1-½" galvanized metal deck supported on steel beams and columns. Lateral load resistance will be provided by moment frames around the perimeter of the canopy.

Civil

Because the existing Sanborn Middle School will remain in use during construction of the new building, the project will require a phased approach to the site work. The initial phase will generally include site preparation for construction of the new building, earth work operations, utility installations, pedestrian and vehicular circulation infrastructure, parking, and other site improvements necessary to allow the new building to function. The following phase will generally include the demolition and removal of existing building and site elements for the remainder of the site outside of the initial phase limit of work, including the existing building, parking and circulation systems, utilities, and surface and landscape elements. Upon demolition and removal of these elements, the new play fields will be completed.

The site development program includes the new building; new vehicular circulation drives and pedestrian routes allowing access to the site from Old Marlborough Road; parking lots totaling approximately 150 spaces; bus parking areas for 18 buses; a loading area with a dedicated access drive; outdoor learning areas adjacent to the classroom wing, sloped lawn amphitheaters adjacent to the main building entrance and the cafeteria; a pedestrian promenade bisecting the site that leads from the main bus drop off area to the main entrance; and a new boys baseball field, girls softball field, and co-ed soccer pitch, all constructed of natural turf. The parent drop-off / pick-up queue is located at the front of the building, and the bus drop-off / pick-up area is split between the main entrance promenade and the service drive located west of the building.

The circulation design and drop off locations are intended to minimize vehicle back up onto Old Marlborough Road, maximize on-site vehicle queuing, maintain safe separation between buses and passenger cars, and create safe routes for students to access the building entrance and recreation areas without the need to cross active vehicle paths of travel. Accessible routes to the building and to the site amenities from the car and bus drop-off areas and Old Marlborough Road will be included. The entrance sign will be located at the main bus/passenger vehicle entrance. There will be appropriate traffic and parking signage throughout the site. Roadway and pedestrian scale lighting will be included.

New canopy, understory, and ground plane vegetation will be introduced around the perimeter of the building and throughout the developed site to complement the architecture of the building, develop and frame outdoor rooms, and add shade, scale, color, texture and four-season interest/educational opportunities to the site. Bioretention basins designed to treat stormwater runoff from the parking and vehicular access drives will be planted to create vertical separation to break down the scale of the pavement areas. Site lighting will consist of 3’ pathway, 12’ pedestrian scale and 20’ vehicular scale full cutoff LED fixtures.

Outdoor student recreation will include structured and open lawn play areas. The structured play area is intended to be the existing play structure in its existing location. The open lawn play areas will be constructed of a special athletic field turf seed mix and extended topsoil depth that will allow this area to withstand extensive use. The athletic field program will include MIAA regulation-sized boys' baseball and girls' softball fields, as well as an MIAA regulation-sized soccer pitch that will partially overlay the boys' baseball outfield. The soccer pitch will also be sufficiently sized to support youth soccer field overlays.

Outdoor classrooms will be located around the perimeter of the classroom wing, the design of which will support the educational curriculum while also allowing for environmental discovery and alternative learning environments.

Mechanical/Electrical/Plumbing & Fire Protection

Plumbing

The new plumbing system will be designed in accordance with the 10th Edition of the Commonwealth of Massachusetts Building Code and 248 CMR 10.00: Uniform State Plumbing Code.

The building will be serviced by a new 6" domestic water supply that will enter into the facility through the water service room. A Mass. Approved, 6" master double reduced pressure backflow preventer will be provided to the main domestic water supply to protect the service (per the DEP regulation 310 CMR 22). The service entrance will be equipped with a strainer, water meter that meets the requirements of the local water department, and a duplex pre-packaged skid domestic water booster pump system with variable frequency drives. Potable water will meet both the NSF 61 and NSF 372 standards for lead free safe drinking water act. Any other mechanical connections will include a reduced pressure-principle backflow preventer. Domestic cold water inside the building will be "L" type copper tube with wrought or cast copper fittings. All cold-water piping will be insulated to prevent condensation.

The new school will include a central hot water supply and recirculation system. Three electric water heaters will be installed in parallel and located in the water heater room. Domestic hot water heaters will consist of two commercial electric water heaters, each sized for 66% of the hot water demand. Storage tanks will be ASME rated. Storage tanks will meet the thermal efficiency and standby loss requirements of the U.S Dept. of energy and current edition of ASHRAE / IESNA 90.1.3. The acceptable manufacturers of hot water heaters are PVI, Lochinvar-AWN, A. O. Smith, or equal.

The domestic hot water distribution will have dual temperature hot water supply and recirculation systems in the building. One system will operate at 140°F and will serve the kitchen appliances requiring high temperature water. The other system will operate at 120°F and will serve the other kitchen appliances, custodian room sinks, locker room, lavatories, and classroom sinks. All lavatory faucets will have thermostatic mixing valves to temper water supply. Domestic hot water will be distributed in "L" type copper tube with wrought or cast copper fittings. The hot water (HW) and re-circulating (HWC) piping will be provided with 1" insulation.

Science classroom sinks will be supplied with isolated protected water systems to prevent contamination of the potable water systems. Protected cold, hot, and hot water recirculation systems will be provided and isolated from the domestic water systems by means of backflow preventers. An electric water heater will be provided at a janitor's closet to recirculate the non-potable hot water system

Insulation will be applied to protected cold water, protected hot water, protected hot water return piping. Insulation will be continuous through supports and include a vapor retarding jacket. Insulation for protected cold water will be 1/2" thick. For all protected hot water and protected hot water return piping, insulation will be 1" thick.

Storm drainage systems will include dual level promenade drains with the lower drain bodies flashed into the waterproofing membrane. Where required, overflow drainage systems will be provided. Overflow drains will be extended to exterior wall and spill to grade. Storm drainage systems will be sized to handle a rainfall rate of 4 inches per hour, with a total runoff from the main roof and the roof deck of just under 1 cubic foot per second. The storm drainage system will be comprised of cast iron piping with all horizontal piping insulated to prevent condensation. The storm system will exit at various locations of the

building and connect to the site storm water collection system. All the lower-level roofs connected to a riser higher roof level will be provided with a Back Water Valve

A new sanitary waste system will drain by gravity and connect to the site sewer system. A dedicated kitchen waste line will be installed to collect grease-laden wastewater from the kitchen appliances and fixtures. The kitchen waste line will exit the building and will be connected to a new, exterior grease interceptor exterior to the building. Chamber vents from the interceptor will be routed to the roof independent from the sanitary waste and vent system. Localized, interior grease traps will be provided at the source for individual grease-laden drainage fixtures and drains in the kitchen. Art room sinks will be provided with solids interceptors. All above ground sanitary drainage and vent will be piped in cast iron with “no-hub” joints. Piping smaller than 3-inch may be piped in DWV copper. Piping below slab (buried) will be cast iron hub and spigot type. All floor drains will have wet trap primer connection with electronic trap primer.

A sewage ejector with slicer will be required waste from all fixtures at the lower level of building C. Sanitary waste discharge from all water closets, floor drains, sinks, lavatories and drinking fountain at the lower level will be collected and will be pump out of the building independently to 10'-0" outside the building and connected to the site sanitary drainage system.

Gas/Oil separator will be provided to receive pumped waste discharge from elevator sump pump. The vent piping from the separator will be routed back into the building, independent from the rest of the sanitary vent system. The vent shall be extended independently 18” above the roof, or as approved by the local Authorities and the Authorities of the M.W.R.A. Waste from the elevator sump must be separated from sewer effluent and directed to a tight tank and not the septic system.

Basis of Design: A lab waste and vent system will be required to collect waste from all science classrooms and laboratories. The system will include a rectangular neutralization/dilution (Limestone) tank with standard bolted and gasketed reinforced cover. The system also includes a sampling sump, pH probe assembly with support and stand, pH monitoring and alarm system, pH control panel, pH wiring cable for hook-up, adapters, and limestone chips.

After treatment, lab waste piping downstream of the neutralization/dilution (Limestone) tank will convey lab waste out of the building independently by gravity to 10'-0" outside the building and connected to the site sanitary drainage system.

A lab waste sewage ejector will be required to collect waste from all science classrooms and laboratories at the lower level. Lab waste discharge from all science classrooms and laboratories at the lower level will be collected and will be pump out of the building independently to 10'-0" outside the building and connected to the site sanitary drainage system.

There will be no pH adjustment system for the art rooms based on the assumption that oil-based paints will not be used in the art rooms.

The emergency generator was changed to natural gas from diesel as the site is within a Water Protection Overlay District where diesel generators are not allowed under the Concord Zoning By-laws.

Plumbing fixtures will be provided in the facility to accommodate the projected population of male students and female students and shall be in accordance with 248 CMR Paragraph 10.10

Table 1. Plumbing fixtures will be equipped with the following water conserving features (for 30% indoor water use reduction-LEED-V4, Credit 2).

Water Closet	Urinals	Lavatory
Electronic sensor operated, battery powered, 1.28 gpf flush valve (American Standard or equal)	Electronic sensor operated, battery powered, ultra-low flow flush valve type-0.125gpf (American Standard or equal)	Bradley Verge Wash Basin or equal, sensor activated, battery powered hand washing faucet, 0.5 gpm flow restricting aerator and field adjustable run time limit setting.

Water closets and urinals will be commercial vitreous china, wall hung (ADA compliant). Lavatories will be Bradley multi-station units or wall mounted china. Each floor will include a janitor's closet with a corner mop service basin. Toilet cores on each floor will include an alcove-recessed electric water cooler with bottle filling station and, in a high-low handicapped accessible configuration to meet MAAB requirement. All toilet and mechanical rooms will have floor drains complete with trap primers. All art rooms will include self-rimming stainless-steel sinks with gooseneck type faucets and eye/face wash units. Plumbing roughing connections and faucets will be provided to each kitchen appliances requiring plumbing work. Non-freeze wall hydrants will be provided at various points and at least every 100 feet along the building's perimeter walls.

Mechanical

A new Heating, Ventilating and Air Conditioning system will be provided to serve the various program spaces of the middle school building to meet/exceed current codes will being all-electric, and strive for net zero-ready energy goals for the project.

Ventilation

Ventilation will be provided to the majority of spaces by Dedicated Outdoor Air System (DOAS) units with high efficiency energy recovery wheels or superblock technology. The DOAS units will be configured as DX heat pumps with enthalpy wheels and hot gas reheat coils with remote condensers. The units will provide variable volume air distribution for conditioned outdoor air supply and return (exhaust). The DOAS units will be provided with roof screens for visual and, if needed, acoustic attenuation. The DOAS units will provide general exhaust functions for the school, including utility spaces and restrooms. Separate exhaust systems will be provided for the kitchen and for the kiln exhaust.

Each program space (e.g., classroom) will be served by a VAV (Variable Air Volume) box to modulate ventilation supply air based on measured space CO2 levels. The ventilation return will be similarly controlled through a central exhaust VAV box, whereby each floor of a wing is provided with a zone exhaust VAV as plenum return and dedicated exhaust VAV boxes will be provided for restrooms, where located in a certain zone.

The Gym, Cafeteria and Auditorium will be provided with ventilation through the proposed rooftop air handling units. The Cafeteria and Auditorium will use VAV terminal boxes for space temperature control.

Duct distribution will be provided using galvanized (G90) ductwork, providing 4” pressure class on ductwork up to the proposed supply and return/exhaust VAV boxes and 2” pressure class between the VAV boxes and the space grilles/diffusers. Supply ductwork within the building will be insulated with R-6 blanket type insulation. Exterior ductwork (supply or return/exhaust) will be insulated with 2” rigid insulation with tapered insulation for a sloped top and with weatherproof, UV-proof wrap.

Kitchen exhaust will include a grease exhaust fan with VFD (Variable Frequency Drive) distributed with NFPA 96-compliant exhaust ductwork with a 2-hour enclosure (as fire wrap) with cleanouts or similarly rated system. A dedicated dishwasher exhaust fan will be connected to the proposed commercial dishwasher with aluminum ductwork. Makeup air for the kitchen will be provided with a dedicated rooftop heat pump unit with backup electric coil and a VFD. A Demand Controlled Ventilation system will modulate the airflow of the kitchen exhaust and makeup air unit based on cooking demand.

Dedicated exhaust will be provided for kilns with a canopy hood to provide temperature-controlled exhaust of the kiln when in use.

Heating and Air Conditioning

A Variable Refrigerant Flow (VRF) heat pump system will provide heating and air conditioning to the classrooms and other program spaces. Rooftop air cooled condensing units (ACCUs) will be located to minimize piping distances. Typical systems will be heat recovery heat pump configurations, capable of providing either heating or cooling to all the zones served by each subsystem.

Refrigerant piping will be provided as a hard-piped system using copper ACR piping with brazed joints. Condensate drain piping will use copper Type L piping with brazed or pro-press fittings, sloped to drain and sized to match the equipment drain connection. Interior piping insulation shall be NFPA 90A and 90B compliant. Exterior piping insulation shall include weatherproof aluminum cladding.

Larger spaces, including the Gymnasium, Cafeteria and Auditorium will be served by dedicated air handling units with packaged DX heating/cooling. The AHUs will be planned as rooftop units.

Vestibules, stairways, storage, loading dock, and other back-of-house spaces will be heated with either electric unit heaters or baseboard. Corridors will be on the VRF system for both heating and cooling.

Independent, split-type air conditioning systems will be provided for Data Closets and fans or split-type air conditioning for Electrical rooms, depending on the degree of transformer load (75KVA and above would be actively cooled).

Building Automation Systems

The facility will be provided with a Johnson Controls Metasys, web-accessible, microprocessor-based, direct digital control (DDC) building management system (BMS) for control of HVAC systems and equipment and for monitoring of selected other systems.

The VRF system will include a proprietary DDC system for direct operation and control. This system will have a BACnet interface to the BMS to enable monitoring, alarm and setpoint adjustment of the VRF system through the BMS.

A demand-controlled ventilation system will be provided for modulation of the kitchen exhaust and makeup airflows based on cooking demand through a third-party system (e.g., Melink or specified equal).

CO2 sensors will be provided for demand-controlled ventilation for typical occupied spaces. The CO2 sensors will be individual sensors provided through the BMS manufacturer.

General Requirements

Acoustic attenuation and vibration control will be provided to minimize noise and vibration transmission to occupied spaces in the form of in-duct attenuators, duct lagging, vibration isolators and/or roof-level slabs beneath HVAC equipment.

Rooftop DOAS units will be supported by insulated 24” roof curbs with vibration isolation. Concrete slabs may be recommended by the acoustic consultant, Acentech.

Rooftop duct or piping supports will use manufactured support bases to rest on the roof membrane with Unistrut support framing. ACCUs for VRF or smaller split systems will be supported on 24”-high stands per manufacturers requirements.

The utility shed will have heating and ventilation as required for the plumbing equipment.

Freeze Protection

The heating system will be powered from the emergency generator for freeze protection during a loss of normal power. A strategy for staggering the operation of ACCU subsystems will be evaluated for the opportunity to limit the size of the generator.

Fire Protection

The entire building will be protected throughout with a wet automatic fire suppression system. A fire department pumper connection will be provided at the exterior wall near the site hydrant. The fire department connection will either be wall-mount or free-standing, depending on the final architectural details and the preference of the Fire Department AHJ. Roof manifolds will be provided at each two story or greater roof area. Total number of fire department connections and roof manifolds shall be in accordance with local fire department requirements. Exterior fire service to be equipped with a post indicator valve, located approximately 40 feet from the building wall, equipped with a supervisory switch, and wired to the building fire alarm system. The system will be designed in accordance with NFPA Standard 13 (2013), IBC 2021 with Massachusetts State Building Code (9th edition) amendments, Massachusetts Fire Prevention Code 527 CMR, and local jurisdiction.

A new 8” fire service will be installed to a dedicated water service room/fire service room. The room will have a supervised double check valve assembly backflow preventer. The facility will also include an electric fire pump on emergency power with secondary electrical power and will be installed in a dedicated Fire Pump Room. The Fire Pump controller will include a factory assembled Wye Delta Controller with Automatic Transfer Switch. The system will also include wet alarm valve assemblies. Sprinkler mains will be equipped with control valves, inspector test stations, and flow switches.

The water service/fire service room will be located on the Ground level of building A and access to the room shall be directly from an exterior door at grade or through fire resistance rated enclosures.

From the fire service room, fire protection piping will run to each stairway, and up through the stairways as Class III standpipes. Floor control valve stations (consisting of a monitored shut-off valve, flow switch and an inspector’s test valve with sight glass) will be provided at the stairs at each floor, fed from the standpipe system.

Sprinklers will be supplied from the standpipes in the stairs. The building shall be protected as light hazard, ordinary hazard group 1, and ordinary hazard group 2.

Light hazard design shall have sprinkler spacing no more than 225 square feet (15’ x 15’ pattern) per sprinkler. The system will be hydraulically calculated to provide 0.10 GPM per square foot over the most hydraulically remote 1500 square feet. Areas to be protected as light hazard: general classrooms, fitness rooms, common areas, gymnasiums, offices.

Ordinary hazard (group 1) design shall have sprinkler spacing no more than 130 square feet (10’ x 13’ pattern) per sprinkler. The system will be hydraulically calculated to provide 0.15 GPM per square foot over the most hydraulically remote 1500 square feet. Areas to be protected as ordinary hazard (group 1): kitchens, storage rooms, electrical closets.

Ordinary hazard (group 2) design shall have sprinkler spacing no more than 130 square feet (10' x 13' pattern) per sprinkler. The system will be hydraulically calculated to provide 0.20 GPM per square foot over the most hydraulically remote 1500 square feet. Areas to be protected as ordinary hazard (group 2): stages.

Areas not to be provided with wet-pipe sprinkler protection: areas below raised floors, non-combustible concealed spaces above suspended ceilings, elevator shaft and pit, elevator machine room, and electrical transformer vaults (if meeting the conditions outlined in 780 CMR).

Standpipes will be supplied in all required egress stairs. Standpipes will be designed in accordance with NFPA Standard 14, 2013, and local Fire Department requirements. Standpipes will be located in each required egress stairway and adjacent to the Stage. Additionally, standpipes will be located so that no part of the building is more than 200 feet from a standpipe valve. Each standpipe will be equipped with a 2-1/2" fire department hose valve with 1-1/2" reducer at the stair floor landing. Because the building is not a high rise, there is no minimum pressure requirement for the standpipes since the facility will be protected with automatic sprinklers throughout.

The sprinkler system shall be zoned for water flow as follows: separate into zones per floor with a maximum of 52,000 square feet per zone for the purposes of monitoring water flow. The test valves for each zone shall be located to be accessible, and their discharge lines are to be directed outside the building to a safe location.

Sprinkler heads in areas with finished ceilings will be concealed pendant type. In areas with no suspended ceilings, there will be upright sprinkler heads. All sprinklers will be quick response heads. Sprinkler heads in mechanical rooms will be provided with wire guards.

The fire protection piping will be schedule 40 piping with threaded fittings for any piping sized 1-½" and less. For sizes over 2", schedule 10 piping with roll grooved fittings and couplings will be used. All valves controlling the flow of water will be equipped with supervisory devices that report to the Fire Alarm system.

Electrical

Based on preliminary loads, a single 2000 Ampere, 277/480 Volt, 3 phase, 4 wire service will be provided to the new Middle School with a new utility pad mounted transformer and underground primary wiring and secondary wiring. The utility electrical transformer will be furnished, installed, owned, and maintained by the electric company, Concord Municipal Light Plant.

A primary voltage of 13.8 kV will be extended overhead to the new utility pole on Old Marlboro Road and transition underground to the stepped down to the secondary voltage of 480Y/277 Volts. The transformer secondary feeders will run underground and be terminated in the main switchboard located in the buildings main electrical room. All underground conduit raceways will be concrete encased per utility standards.

The new service will be metered at the transformer secondary voltage. The utility metering CTs will be installed 'cold-sequence', downstream of the main service disconnect, in the metering compartment of the main switchboard. Final meter requirements to be confirmed with utility.

The switchboard will be rated for 2500 Amps and be provided with tin-plated aluminum phase and neutral bus bars, and copper equipment ground bus. The main protective device will be an insulated-case circuit breaker (ICCB), individually fixed mounted, 2000 Amp, 100% rated, with a solid-state trip unit capable of adjusting long time, short time, and ground fault protection characteristics. Switchboard will include an arc energy reduction maintenance switch (ARMS) with a local indicator for a main circuit breaker.

Downstream from the 2,000 Ampere main protection device, a system of new distribution panelboards will be installed in all electrical rooms to energize branch circuit panelboards. The distribution system will separate loads by use – lighting, mechanical and receptacle power. All panelboards will be installed in dedicated electrical rooms. A multi-point metering system shall be installed to separately monitor each use type, in accordance with ASHRAE 90.1 electrical monitoring device guidelines.

A fully addressable and networked whole building lighting control system will be installed to conform with the latest Energy Code. Daylight sensors and occupancy sensors will be installed throughout. Fixtures located adjacent to windows will be tied to daylight sensors that will automatically dim the fixture lumen output up or down depending on the amount of natural light entering the room or space. In addition, plug load controls will be provided and tied to the lighting control system. 75% of receptacles will be controlled by either occupancy sensors or timeclock to automatically turn off when an occupant leaves a space or by scheduled time basis. The lighting control system will also support load shedding programmability and utility demand response events.

All fixtures will utilize high efficiently integral LED lamps with integral dimmable addressable drivers, which will provide more acceptable light output with increased energy efficiency.

Light fixtures will be provided at all exterior egress doors per code, wall packs will be installed along the building perimeter for security purposes and pedestrian lights and/or bollards to illuminate walkways. Light poles with LED heads will be provided in the parking lots. All exterior fixtures will be controlled by astronomical time clock with photocell override via the lighting control panel.

A stand alone, dimming rack with a DMX controller will be used for theatrical lighting control.

A new 500KW/625kVA 277/480V, 3-phase, 4 wire pad-mounted, packaged natural-gas engine emergency generator will be provided to supply power to the building life safety and optional standby loads.

The generator will be pad mounted on the site with a sound attenuated weatherproof enclosure. Separate 2-hour rated emergency closets will be built to house life safety distribution equipment.

The building will be designed to be “Net Zero Ready” by installing conduit pathways, dedicated equipment space on-site/indoors/on the roof, electrical equipment sized per code requirements, and interconnection points for a preliminarily sized 1216 kWac system. The future system will include a combination of interconnection points at the main switchboard and directly to the utility transformer, as well as energy storage units. Final metering requirements to be coordinated with utility.

Electric vehicle charging stations will be provided at two (2) locations within the parking lot. Each car charger will support level 2 charging, be bollard type, 6.6 kW rated output, and capable of charging two

(2) vehicles simultaneously via a power shared controller. Two charging stations (capable of charging 4 vehicles) will be located in the north parking lot. In addition, underground conduit pathways will be provided to support ten (10) future EV charging stations, 10% of parking. The future EV charging stations will be owned and maintained by CMLP, as a separate electrical service. Provisions to interconnect the separate electrical service to the utility transformer, as well as dedicated space for the supporting electrical equipment will be provided and installed by the Contractor.

The fire alarm system will be a new addressable voice evacuation system. Detection devices will be installed in egress paths for early warning and new speaker/strobe notification appliances installed throughout per NFPA 72. A Bi-Directional Antenna system throughout the building will be installed if required by local Fire Department.

DATA/Comms/Security

Information Technology

Electronic Safety and Security System

Introduction

- An integrated electronic security system consisting of 5 sub-systems, including video surveillance, electronic access control, electronic intrusion detection, duress alert/active shooter system, and security communication and visitor management will be installed. All systems will be integrated.

Site

- Perimeter video surveillance shall include high resolution, lowlight, and infrared fixed and multi-lens cameras in concert with video analytics, including motion detection, camera tampering, etc., to establish a virtual perimeter and monitor activity within the site. Video surveillance will be used to cover the driveways, parking areas, and outdoor classrooms. Cameras will be aesthetically mounted to poles and to the school, where permitted, to provide maximum coverage of the perimeter. All exterior building cameras will be power over Ethernet (PoE), specified for the environment in which they are located, and will include lightning and surge protection. All PoE power supplies will be on UPS and emergency power. Pole-mounted cameras will connect to the security network via fiber cabling and will be powered from independent 120VAC power with step-down transformers mounted in a NEMA enclosure at the base of the pole.

Building Perimeter

- Doors scheduled as entry doors should be controlled by a proximity card reader, electric lock, request to exit switch, door position switch and be monitored by video on both the interior and exterior of the school. This includes classroom wing stair doors that lead directly to the exterior that will be used for recess or outside learning, doors to the west courtyard adjacent to the gym, doors to the gym toilets and the door to the cafeteria. Vestibule doors at the main entrance shall include a video intercom system whereby a visitor would request access into the school.
- Only during parent and bus drop off shall certain exterior doors remain unsecure. At these times staff should be positioned at the doors providing supervision of the entry process. Outside of these times under no other circumstances shall doors be unsecure or propped open. Either of these events shall trigger an alarm on the access control system for staff review.
- All exterior doors not used for normal entry, but for emergency egress only, shall be equipped with hardware on the interior side of the door only unless specifically requested by the police or fire department, door position switches and alarms. Alarms will be generated for unauthorized access and can be silent alarms, generated only on the access control workstation, and/or audible alarms for local annunciation. All doors either access controlled or monitored shall include door closers.
- An intercom speaker phone shall be located outside of the loading dock delivery doors to allow the driver of the delivery vehicle to communicate with the custodian office or the main office to request access into the school.

- All doors with access into the school should be marked in numerical order based on the clock position method, starting with the main entry as number one. All doors should be clearly labeled with large, reflective numbers. These markings will serve as a reference point for first responders.
- Flashing Prizm lights will be installed on the exterior of the school, visible from all exterior areas, to indicate a lockdown in progress. This will warn staff members outside of the school to evacuate students to a predetermined location and alert first responders traveling on the adjacent streets of the emergency.

Building Interior

- All controlled and monitored doors shall communicate with access control panels and an intrusion detection system mounted in a climate-controlled secure closet inside the school. This location will also house the power over ethernet (PoE) switches that power the cameras. These panels will transmit the access control data to the access control workstations. The system will have the capability to receive and acknowledge various types of facility alarm conditions to include door-propped-open and door-forced-open. The system will be addressable, and all alarms will be displayed on a facility map indicating specific location and type of alarm.
- Through the access control system and associated equipment, the school will have the capability to lockdown, rendering all card access doors only to be operated by pre-authorized credentials, i.e., the administrative team, and kept in the separate Knox Boxes for police and fire on the exterior of the school. Lockdown buttons should be fully functional and monitored on a 24x7 basis by the school, local police department and a dedicated monitoring service or central station.
- These panels will also include a fire alarm module to support a connection with the fire alarm system. In addition, intrusion detection keypads should be located at common entry points for after-hours door and motion sensor status monitoring. These keypads will be disarmed by the first person entering and armed by the last person leaving the school.
- Similar to the ability to lockdown the school during an emergency, the school will have the ability to secure portions of the school for after school and weekend events in the gymnasium or cafeteria. The doors surrounding the perimeter of these spaces can be programmed to secure or include a manual system override. Users will have the ability to use the spaces allowed by the school without access to classroom or administrative areas of the school. In all cases, proper egress from the spaces will remain free and accessible. Authorized credentials for staff with permission will be able to enter through secure doors regardless of the door status.
- Wireless duress buttons shall be installed to ensure that assistance can be summoned covertly without escalating a bad situation and to notify school personnel of an emergency. Duress buttons should be located in high-risk areas as designated by School Administrators. Positioning of the buttons should be such that the staff member can activate the button without obvious movements that could escalate a confrontation. Duress buttons shall be fully functional and monitored by the school. A network-based application shall also be installed on designated staff computers to allow for the reporting and notification of active events in the building and to establish two-way communications with first responders.
- The access control system database will be linked to the district user database, which will allow new employee data to be passed to the system for pre-population of card holder data, which

will allow personnel to quickly create new access control credentials. Access control credentials will be produced offsite with badging software within, or integrated with, the access control system and allow for multi-colored badges with a photograph and permit full user design of style, logo, fonts, and data placement. The system will be part of, or integrated with, the access control system in order to permit tracking of individual badge usage, activation/deactivation of badges at any time or based on user-defined rule sets and provide both standard and custom reporting capability.

- Card access should be employed at the inner and outer doors of the entry vestibule, entry door into the administrative office, tel/data closets, and rooms containing security equipment. Basic classrooms and other spaces will be provided with a storeroom type lockset, or similar functionality, where the corridor handle is always secure, only unlocked by a key, and the interior handle remains free. All door hardware should be in compliance with local life safety code and not restrict the ability of parties to exit the room in the event of a fire emergency.
- PoE video cameras will be employed within vestibules, hallways, the gymnasium, the cafeteria, stairwells, and other group gathering areas. The video management system server and the network video recorder (NVR), will be capable of recording and storing all video, including the exterior cameras, for a minimum of 30 days. The video management system will transmit video to workstations located throughout the school, and/or at alternate locations, including the local Police Station, where live viewing will be permitted of any camera image. All cameras will be capable of transmitting in color and exterior cameras will have low light capability where needed (based on lighting design and configuration). Software for motion-based as well as object-based and/or forensic video detection will be used in order to provide discrimination of unwanted versus normal events. All cameras should have wiring installed inside walls and above ceilings. Any cable that requires surface mounting shall be run in electrical metallic tubing (EMT) with appropriate fasteners.
- A desk in the school office will house an access control system workstation, a video management workstation, a visitor management workstation, the master video intercom, a lockdown and duress button. It is from this desk that visitors requesting access into the building will communicate through the video intercom system. Once allowed into the school main office through the remote unlocking capability from the master intercom, visitors will utilize a visitor management kiosk where upon scanning their photo identification will check their background against custom databases set by the school, including custody alerts, banned visitors or sex offender registries. Once cleared by the software, the visitor will be provided a credential by office staff to wear while inside the school.
- The Principal's and Assistant Principal Office will be equipped the following equipment: video management workstation, master intercom station, duress button. The Custodian Office will be equipped with the following equipment: master intercom station. The SRO Office will be equipped with the following equipment: a video management workstation and a duress button. The Guidance Office, SPED (Special Education) Office, Therapist, Athletic Office, and Nurses Office will be equipped with a duress button.
- Ground floor windows with direct view from the exterior and all classrooms and offices with visibility from interior corridors will be fitted with easily controlled shades to allow teachers, staff, and students to properly shelter in place while decreasing visibility. During a lockdown students and staff should be trained to shut off lights and get into a location that is out of site of the window.

- All systems operating the security system should be tied into the uninterruptable power supply (UPS) system and generator. Incorporating this system will eliminate the downtime while maintaining visibility that they are exposed to without a backup system.

Infrastructure

- Below are the various power, network and conduit requirements for the access control and video assessment systems:

Network

- A network connection would be required for each access control panel location. This is typically in the form of a network jack located within the security equipment enclosure.
- Category 6e cabling will be required for each camera, routed back to a network switch inside a secure closet.
- Two network connections would be required for each video server recorder; the final configuration for recorders will vary depending on the number of cameras throughout the school. A complete network switch infrastructure is installed with the purpose to connect all security and building systems devices together with a 10GbE backbone. Switches are typically located in all IDF (Tel/Data) rooms.
- Coordination of IT elements such as data drops, IP addresses and VLAN configuration, if desired, will be conducted well in advance of system deployment and will be closely monitored throughout the system installation.
- A network connection would be required for each access control, video management, and visitor management workstation.
- Rack-mounted equipment will be installed in a 7-foot server cabinet with locking system.

Power and Fire Alarm

- Power for security devices, as outlined below, should not be shared with any circuit supplying non-security related equipment.
- Provide one 120VAC 20 Amp UPS circuit and Fire Alarm connection for each access control panel location.
- Provide one 120VAC 20 Amp UPS circuit for each door to receive an electrified panic hardware device. This circuit may be shared with other security devices.
- Provide one 120VAC 20 Amp UPS circuit and Fire Alarm connection for each door to receive any type of delayed egress device. This circuit may be shared with other security devices.
- Provide one 120VAC 20 Amp UPS circuit and Fire Alarm connection for each set of interlocked controlled doors. This circuit may be shared with other security devices.
- Provide 120VAC UPS power for each pole mounted exterior camera. This circuit may be shared with other security devices.
- Five 120VAC 20 Amp UPS circuits would be required for the security desk.
- Six 120VAC 20 Amp UPS circuits would be required to support the security desk monitors.

- A rack-mounted managed Uninterruptible Power Supply (UPS) will have adequate power to support at least 30 minutes of outage in the event of a power loss for all rack-mounted equipment.

Conduit

- One 1" conduit would be required for each card reader location. Conduit shall be run from the card reader location to the nearest IT closet or cable tray.
- One 1" conduit would be required for the following devices and would be run to the nearest IT closet or cable tray:

Video Assessment Camera

- Monitored doors without a card reader
- Intercom or Call for Assistance stations
- Wide Area Network (WAN) services will be provided over the district-wide, high-speed fiber optic network.
- A Main Distribution Frame (MDF) Head-End room will be constructed to serve as the primary hub of communications. A laser optimized, OM4, fiber optic backbone cable network will be provided to connect the MDF with Intermediate Distribution Frame rooms (IDF) throughout the building.
- The horizontal cable infrastructure will be comprised of Category 6E to provide high-speed voice and data communications throughout the building. The building will be cabled to provide robust WiFi coverage throughout the interior and exterior learning environments.
- A master clock system with secondary clocks will be installed in classrooms, offices, and other learning spaces. An analog Public-Address system will be installed with speakers located throughout the building designed with the ability to page an individual room, initiate two-way communications with classrooms or offices or make a facility-wide announcement and broadcast emergency notifications.
- Audio Visual systems will be provided to support large group activities in the Gymnasium and Cafetorium. These spaces will be equipped with local sound systems, projection screens, a high lumen projection system and touch panels to provide remote control AV the equipment.
- Sound Field systems will be installed in all classrooms and/or academic spaces. The Sound Field Systems will be made ready to interface with interactive flat panel monitors to provide even, full sound distribution within the classroom.
- The telephone system will be a VoIP solution that will be purchased separately from the base building construction budget as part of the Technology Equipment budget. Modern school designs include sustainable insulation and window systems that limit the transmission of cellular voice signals. The school will also be equipped with an internal antenna and repeater system to support the use of cellular phones.
- A Bi-Directional Amplification system will be installed to support first responder radio communications within the building and outside the building, if required by the Fire Department. System design will be developed in collaboration with Concord Emergency Service Personnel.

- Schools within the district currently use two-way radio systems to provide wireless voice communications among Administrators and selected staff. The new school will be equipped with an infrastructure of antennas and signal boosters that will be specified to integrate with the existing district-wide two-way radio system.
- Network electronic equipment (switches, firewalls, wireless access points), student, Teacher and Staff computers, classroom interactive projectors, document cameras and related electronic educational peripheral equipment will be purchased separately from the base building construction budget as part of the Technology Equipment budget.

3. Building Code Analysis

A code compliance report was completed on the Design Development Cost Estimate documents by Building Fire & Access, inc. A report was issued on June 3, 2022. Recommendations contained within will be incorporated into the project and all costs associated with them will be included in the Design Development estimate.

6A.3.2 Space Summary

1. Updated Space Summary and Signed Certification

The Space Summary for the Design Development submission is an updated version of the new construction grade 6-8 summary previously submitted in the Feasibility Study. This revised Space Summary was developed because of ongoing discussions between the CMSBC and School Department. The goal was to capture all the program space required to meet the educational vision and planning conducted over the course of the feasibility phase, adding the gym and auditorium scope raised by the community and confirmed by the CMSBC, incorporating other space reductions in working toward meeting the project budget goals.

The district is committed to delivering high quality educational spaces for all the programs listed in the Space Summary while also working within the 1.5 net to gross multiplier.

A current Space Summary has been included in the section attachments.

Proposed Space Summary - Middle Schools

CMS - DD Progress

Date: 6/29/2022

ROOM TYPE	SCHEMATIC DESIGN New ROOM NFA[1]	# OF RMS	area totals	DESIGN DEVELOPMENT New ROOM NFA[1]	# OF RMS	area totals	Difference to SD SD TOTAL	SF DELTA (NFA)	SF DELTA (%)	MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines) ROOM NFA[1]	# OF RMS	area totals	Comments
CORE ACADEMIC SPACES			**41,700**			**41,723**	**41,700**	23	**0.06%**		38	**33,360**	
(List classrooms of different sizes separately)													
Classroom - General	825	27	22,275	827	27	22,329	22,275	54	**0.24%**	950	27	25,650	850 SF min - 950 SF max
World Language Classrooms	825	5	4,125	826	5	4,130	4,125	5	**0.12%**				
Small Group Seminar (20-30 seats) / Resource			0			0				500	2	1,000	
STE Room- Grades 5-6			0			0				1,080	Refer to STE Guidelines for Additional information		
STE Storage			0			0				120	Refer to STE Guidelines for Additional information		
Science Classroom / Lab- Grade 6	1,080	3	3,240	1,105	3	3,315	3,240	75	**2.31%**				
Science Classroom / Lab- Grades 7-8	1,200	6	7,200	1,204	6	7,224	7,200	24	**0.33%**	1,440	4	5,760	1 period / day / student
Prep Room (shared)	200	0	0		0	0				200	4	800	
Prep Room	120	3	360	105	3	315	360	-45	**-12.50%**				
Central Chemical Storage Rm	150	0	0		0	0	0	0		150	1	150	
Team Commons	500	9	4,500	490	9	4,410	4,500	-90	**-2.00%**				
SPECIAL EDUCATION			**8,535**			**8,430**	**8,535**	-105	**-1.23%**			**8,050**	
(List classrooms of different sizes separately)													
Self-Contained SPED			0			0				950	5	4,750	850-950 SF equal to surrounding classrooms
Self-Contained SPED Toilet	60	1	60	59	1	59	60	-1	**-1.67%**	60	5	300	
Resource Room (workshop classrooms) 1/grade	500	3	1,500	523	3	1,569	1,500	69	**4.60%**	500	4	2,000	1/2 size Genl. Clrm.
Small Group Room / Reading	150	18	2,700	154	18	2,772	2,700	72	**2.67%**	500	2	1,000	1/2 size Genl. Clrm.
SPED Office/Conference	200	1	200	228	1	228	200	28	**14.00%**				
BCBA Office/Conference	200	1	200	204	1	204	200	4	**2.00%**				
Speech Office/Conference	200	1	200	175	1	175	200	-25	**-12.50%**				
ACCESS sub-separate	825	1	825	480	1	480	825	-345	**-41.82%**				
ACCESS De-escalation		0		85	1								
ACCESS Vestibule/Entry/Waiting		0		81	1								
ACCESS Counceling		0		139	1								
Language Based sub-separate	825	1	825	821	1	821	825	-4	**-0.48%**				
ASD High Needs sub-separate w/ toilet	1,200	1	1,200	1,269	1	1,269	1,200	69	**5.75%**				
Occupational Therapy (OT)													
Occupational/Physical Therapy (OTPT)	825	1	825	853	1	853	825	28	**3.39%**				
ART & MUSIC			**6,200**			**6,179**	**6,200**	-21	**-0.34%**			**4,600**	
Art Classroom	1,200	2	2,400	1,254	2	2,508	2,400	108	**4.50%**	1,200	2	2,400	assumed use - 50% population 2 times / week
Art Workroom w/ Storage & kiln 1/250; 1/150		1	400	404	1	404	400	4	**1.00%**	150	2	300	
Band Room (shared by General Music)	1,500	1	1,500	1,427	1	1,427	1,500	-73	**-4.87%**	1,500	1	1,500	
Orchestra Room (shared by General Music)	1,500	1	1,500	1,232	1	1,232	1,500	-268	**-17.87%**				
Chorus (on stage)													
Music Practice / Ensemble	100	2	200	82	2	164	200	-36	**-18.00%**	200	2	400	
				213	1	213		213					
Instrument Storage	200	1	200	231	1	231	200	31	**15.50%**				
VOCATIONS & TECHNOLOGY			**2,400**			**2,456**	**2,400**	56	**2.33%**			**4,320**	
Technology/Engineering Rooms			0			0	0			1,440	3	4,320	Assumed use - 50% Population - 5 times/week; 850 SF - 2,000 SF
Family & Consumer Science Lab	1,200	1	1,200	1,211	1	1,211	1,200	11	**0.92%**				
Engineering	1,200	1	1,200	1,245	1	1,245	1,200	45	**3.75%**				
Digital Literacy (in team classrooms)							0						
HEALTH & PHYSICAL EDUCATION			**11,468**			**11,321**	**11,321**	0	**0.00%**			**8,400**	Excess PE Spaces Policy
Gymnasium	9,568	1	9,568	9,502	1	9,502	9,568	-66	**-0.69%**	6,000	1	6,000	104 x 92 overall gym dimension
Gym Storeroom	250	1	250	145	1	145	250	-105	**-42.00%**	150	1	150	
Athletic Storeroom	250	1	250	396	1	396	250	146	**58.40%**				
Health Instructor's Office w/ Toilet	200	2	400	318	1	318	400	-82	**-20.50%**	250	1	250	
Locker Rooms - Boys / Girls w/ Toilets	500	2	1,000	430	2	860	1,000	-140	**-14.00%**	1,000	2	2,000	
All Gender (Single User) Locker Room/Shower				100	1	100							
Health (conducted in FCS, alt PE & core classrooms)			0			0	0						
Alternate PE	0	1	0	0	1	0	0						removed per May 6 vote
MEDIA CENTER			**3,400**			**3,492**	**3,400**	92	**2.71%**			**4,405**	
Media Center / Reading Room	3,400	1	3,400	3,355	1	3,355	3,400	-45	**-1.32%**	4,405	1	4,405	
Library Office (included in Media sf)			0	137	1	137	0						
Maker Space	0	1	0	0	1	0	0						removed per May 6 vote
DINING & FOOD SERVICE			**7,850**			**7,354**	**7,850**	-496	**-6.32%**			**9,558**	
Cafetorium / Dining			0			0	0			5,250	1	5,250	2 seatings - 15SF per seat
Stage - removed			0			0	0			1,600	1	1,600	
Chair / Table / Equipment Storage	300	1	300	326	1	326	300	26	**8.67%**	433	1	433	
Kitchen (includes dishwashing)	2,300	1	2,300	2,164	1	2,164	2,300	-136	**-5.91%**	2,000	1	2,000	1600 SF for first 300 + 1 SF/student Add'l
Scramble Servery	1,500	1	1,500	1,214	1	1,214	1,500	-286	**-19.07%**				
Staff Lunch Room (none)			0			0	0			275	1	275	20 SF/Occupant
Cafeteria Dining (3x lunch, 250 students each)	3,750	1	3,750	3,650	1	3,650	3,750	-100	**-2.67%**				250 students x 15 sf
AUDITORIUM / DRAMA			**7,040**			**7,195**	**7,040**	155	**2.20%**				
Auditorium - 420 seats	5,040	1	5,040	5,100	1	5,100	5,040	60	**1.19%**				12 sf / seat
Stage	1,600	1	1,600	1,900	1	1,900	1,600	300	**18.75%**				
Stage Storage	200	1	200	0	1	0	200	-200	**-100.00%**				
Chorus Storage	200	1	200	195	1	195	200	-5	**-2.50%**				
MEDICAL			**730**			**900**	**730**	170	**23.29%**			**610**	
Medical Suite Toilet	60	2	120	49	2	98	120	-22	**-18.33%**	60	1	60	
Nurses' Office / Waiting Room	250	1	250	358	1	358	250	108	**43.20%**	250	1	250	
Nurses' Office / Conference				120	1	120							
Examination Room	100	1	100	94	1	94	100	-6	**-6.00%**	100	3	300	
Resting	200	1	200	230	1	230	200	30	**15.00%**				
Storage	60	1	60	0	1	0	60	-60	**-100.00%**				
ADMINISTRATION & GUIDANCE			**4,175**			**4,305**	**4,175**	130	**3.11%**			**3,350**	
General Office / Waiting Room / Toilet	450	1	450	412	1	412	450	-38	**-8.44%**	450	1	450	
Teachers' Mail and Time Room	0	1	0	0	1	0	0			100	1	100	
Duplicating Room	0	1	0	0	1	0	0			200	1	200	
Records Room	200	1	200	119	1	119	200	-81	**-40.50%**	200	1	200	
Admin Kitchenette				65	1	65							
Admin Supply				78	1	78							
Principal's Office w/ Conference Area	250	1	250	247	1	247	250	-3	**-1.20%**	375	1	375	
Principal's Secretary / Waiting	125	1	125	133	1	133	125	8	**6.40%**	125	1	125	
Assistant Principal's Office (Sanborn)	150	1	150	149	1	149	150	-1	**-0.67%**	150	1	150	
Assistant Principal's Office (Peabody)	150	1	150	149	1	149	150	-1	**-0.67%**	150	1	150	
Supervisory / Spare Office											1	-	
Psychologist	200	1	200	195	1	195	200	-5	**-2.50%**	350	1	350	
Conference Room	300	1	300	312	1	312	300	12	**4.00%**	150	4	600	
Guidance Office	150	4	600	152	4	608	600	8	**1.33%**	100	1	100	
Guidance Waiting Room	100	1	100	74	1	74	100	-26	**-26.00%**	50	1	50	
Guidance Storeroom	50	1	50	0	1	0	50	-50	**-100.00%**				
Teachers' Work Room	1,000	1	1,000	1,110	1	1,110	1,000	110	**11.00%**				small room, teacher planning in team classrooms
ELL Office	200	1	200	195	1	195	200	-5	**-2.50%**				
METCO Office / Service room	400	1	400	390	1	390	400	-10	**-2.50%**	500	1	500	
Mother's Room				69	1	69							
CUSTODIAL & MAINTENANCE			**2,175**			**2,318**	**2,175**	143	**6.57%**			**2,175**	
Custodian's Office	150	1	150	100	1	100	150	-50	**-33.33%**	150	1	150	
Custodian's Breakroom and Toilet				198	1	198							
Custodian's Workshop	250	1	250	209	1	209	250	-41	**-16.40%**	250	1	250	
Custodian's Storage	375	1	375	285	1	285	375	-90	**-24.00%**	375	1	375	
Recycling Room / Trash	400	1	400	0	1	0	400	-400	**-100.00%**	400	1	400	
Receiving and General Supply	333	1	333	1,100	1	1,100	333	767	**230.33%**	333	1	333	
Storeroom	467	1	467	0	1	0	467	-467	**-100.00%**	467	1	467	
Network / Telecom Room	200	1	200	426	1	426	200	226	**113.00%**	200	1	200	
OTHER			**0**			**0**	**0**					**0**	
Other *(specify)*			0			0	0						
Total Building Net Floor Area (NFA)			**95,673**			**95,673**						**78,828**	
Proposed Student Capacity / Enrollment												**700**	Enter grade enrollments below
												234	Lower Middle; Grades 5-6
												466	Upper Middle; Grades 7-8
NON-PROGRAMMED SPACES		% of GFA	**47,837**		% of GFA	**47,837**							
Other Occupied Rooms (list separately)		0%			0%								Non-Programmed space areas are
		0%			0%								required to be included in the
		0%			0%								following submittals:
		0%			0%								Schematic Design Submittal
Unoccupied MEP/FP Spaces		0%			0%								Design Development Submittal
Unoccupied Closets, Supply Rooms & Storage Rooms		0%			0%								60% Construction Documents
Toilet Rooms		0%			0%								90% Construction Documents
Circulation (corridors, stairs, ramps & elevators)		0%			0%								Final Construction Documents
Remaining[3]		33%	**47,837**		33%	**47,837**							
Total Building Gross Floor Area (GFA)[2]			**143,510**			**143,510**						**115,000**	118,242
Grossing factor (GFA/NFA)			**1.50**			**1.50**						**1.46**	above in red = NSF with 1.5 multiplier

[1] **Individual Room Net Floor Area (NFA)**

LEGEND

SD Phase updates

FS Phase updates

LEGEND

SD Phase updates

FS Phase updates

[2] **Total Building Gross Floor Area (GFA)**

[3] **Remaining**

Proposed Space Summary - Middle Schools

CMS - DD Progress

Date: 6/3/2022

ROOM TYPE	SCHEMATIC DESIGN New ROOM NFA[1]	# OF RMS	area totals	DESIGN DEVELOPMENT New ROOM NFA[1]	# OF RMS	area totals	Difference to SD SD TOTAL	SF DELTA (NFA)	SF DELTA (%)	MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines) ROOM NFA[1]	# OF RMS	area totals	Comments
CORE ACADEMIC SPACES			**41,700**			**42,330**	**41,700**	630	**1.51%**		38	**33,360**	
(List classrooms of different sizes separately)													
Classroom - General	825	27	22,275	826	27	22,302	22,275	27	**0.12%**	950	27	25,650	850 SF min - 950 SF max
World Language Classrooms	825	5	4,125	847	5	4,235	4,125	110	**2.67%**				
Small Group Seminar (20-30 seats) / Resource			0			0				500	2	1,000	
STE Room- Grades 5-6			0			0				1,080	Refer to STE Guidelines for Additional information		
STE Storage			0			0				120	Refer to STE Guidelines for Additional information		
Science Classroom / Lab- Grade 6	1,080	3	3,240	1,242	3	3,726	3,240	486	**15.00%**				
Science Classroom / Lab- Grades 7-8	1,200	6	7,200	1,242	6	7,452	7,200	252	**3.50%**	1,440	4	5,760	1 period / day / student
Prep Room (shared)	200	0	0		0	0				200	4	800	
Prep Room	120	3	360		0	0	360	-360	**-100.00%**				
Central Chemical Storage Rm	150	0	0	115	1	115	0	115		150	1	150	
Team Commons	500	9	4,500	500	9	4,500	4,500	0	**0.00%**				
SPECIAL EDUCATION			**8,535**			**8,576**	**8,535**	41	**0.48%**			**8,050**	
(List classrooms of different sizes separately)													
Self-Contained SPED			0			0				950	5	4,750	850-950 SF equal to surrounding classrooms
Self-Contained SPED Toilet	60	1	60	59	1	59	60	-1	**-1.67%**	60	5	300	
Resource Room (workshop classrooms) 1/grade	500	3	1,500	538	3	1,614	1,500	114	**7.60%**	500	4	2,000	1/2 size Genl. Clrm.
Small Group Room / Reading	150	18	2,700	154	18	2,772	2,700	72	**2.67%**	500	2	1,000	1/2 size Genl. Clrm.
SPED Office/Conference	200	1	200	254	1	254	200	54	**27.00%**				
BCBA Office/Conference	200	1	200	204	1	204	200	4	**2.00%**				
Speech Office/Conference	200	1	200	175	1	175	200	-25	**-12.50%**				
ACCESS sub-separate	825	1	825	480	1	480	825	-345	**-41.82%**				
ACCESS De-escalation		0		85	1								
ACCESS Vestibule/Entry/Waiting		0		81	1								
ACCESS Counceling		0		139	1								
Language Based sub-separate	825	1	825	821	1	821	825	-4	**-0.48%**				
ASD High Needs sub-separate w/ toilet	1,200	1	1,200	1,289	1	1,289	1,200	89	**7.42%**				
Occupational Therapy (OT)													
Occupational/Physical Therapy (OTPT)	825	1	825	908	1	908	825	83	**10.06%**				
ART & MUSIC			**6,200**			**6,179**	**6,200**	-21	**-0.34%**			**4,600**	
Art Classroom	1,200	2	2,400	1,254	2	2,508	2,400	108	**4.50%**	1,200	2	2,400	assumed use - 50% population 2 times / week
Art Workroom w/ Storage & kiln 1/250; 1/150		1	400	404	1	404	400	4	**1.00%**	150	2	300	
Band Room (shared by General Music)	1,500	1	1,500	1,427	1	1,427	1,500	-73	**-4.87%**	1,500	1	1,500	
Orchestra Room (shared by General Music)	1,500	1	1,500	1,232	1	1,232	1,500	-268	**-17.87%**				
Chorus (on stage)													
Music Practice / Ensemble	100	2	200	82	2	164	200	-36	**-18.00%**	200	2	400	
				213	1	213		213					
Instrument Storage	200	1	200	231	1	231	200	31	**15.50%**				
VOCATIONS & TECHNOLOGY			**2,400**			**2,544**	**2,400**	144	**6.00%**			**4,320**	
Technology/Engineering Rooms			0			0	0			1,440	3	4,320	Assumed use - 50% Population - 5 times/week; 850 SF - 2,000 SF
Family & Consumer Science Lab	1,200	1	1,200	1,211	1	1,211	1,200	11	**0.92%**				
Engineering	1,200	1	1,200	1,333	1	1,333	1,200	133	**11.08%**				
Digital Literacy (in team classrooms)							0						
HEALTH & PHYSICAL EDUCATION			**11,468**			**11,643**	**11,643**	0	**0.00%**			**8,400**	Excess PE Spaces Policy
Gymnasium	9,568	1	9,568	9,502	1	9,502	9,568	-66	**-0.69%**	6,000	1	6,000	104 x 92 overall gym dimension
Gym Storeroom	250	1	250	145	1	145	250	-105	**-42.00%**	150	1	150	
Athletic Storeroom	250	1	250	396	1	396	250	146	**58.40%**				
Health Instructor's Office w/ Toilet	200	2	400	318	2	636	400	236	**59.00%**	250	1	250	
Locker Rooms - Boys / Girls w/ Toilets	500	2	1,000	430	2	860	1,000	-140	**-14.00%**	1,000	2	2,000	
All Gender (Single User) Locker Room/Shower				104	1	104							
Health (conducted in FCS, alt PE & core classrooms)			0			0	0						
Alternate PE	0	1	0	0	1	0	0						removed per May 6 vote
MEDIA CENTER			**3,400**			**3,492**	**3,400**	92	**2.71%**			**4,405**	
Media Center / Reading Room	3,400	1	3,400	3,355	1	3,355	3,400	-45	**-1.32%**	4,405	1	4,405	
Library Office (included in Media sf)			0	137	1	137	0						
Maker Space	0	1	0	0	1	0	0						removed per May 6 vote
DINING & FOOD SERVICE			**7,850**			**7,720**	**7,850**	-130	**-1.66%**			**9,558**	
Cafetorium / Dining			0			0	0			5,250	1	5,250	2 seatings - 15SF per seat
Stage - removed			0			0	0			1,600	1	1,600	
Chair / Table / Equipment Storage	300	1	300	376	1	376	300	76	**25.33%**	433	1	433	
Kitchen (includes dishwashing)	2,300	1	2,300	2,164	1	2,164	2,300	-136	**-5.91%**	2,000	1	2,000	1600 SF for first 300 + 1 SF/student Add'l
Scramble Servery	1,500	1	1,500	1,214	1	1,214	1,500	-286	**-19.07%**				
Staff Lunch Room (none)			0			0	0			275	1	275	20 SF/Occupant
Cafeteria Dining (3x lunch, 250 students each)	3,750	1	3,750	3,966	1	3,966	3,750	216	**5.76%**				250 students x 15 sf
AUDITORIUM / DRAMA			**7,040**			**7,307**	**7,040**	267	**3.79%**				
Auditorium - 420 seats	5,040	1	5,040	5,211	1	5,211	5,040	171	**3.39%**				12 sf / seat
Stage	1,600	1	1,600	1,934	1	1,934	1,600	334	**20.88%**				
Stage Storage	200	1	200	0	1	0	200	-200	**-100.00%**				
Chorus Storage	200	1	200	162	1	162	200	-38	**-19.00%**				
MEDICAL			**730**			**924**	**730**	194	**26.58%**			**610**	
Medical Suite Toilet	60	2	120	49	2	98	120	-22	**-18.33%**	60	1	60	
Nurses' Office / Waiting Room	250	1	250	358	1	358	250	108	**43.20%**	250	1	250	
Nurses' Office / Conference				120	1	120							
Examination Room	100	1	100	94	1	94	100	-6	**-6.00%**	100	3	300	
Resting	200	1	200	254	1	254	200	54	**27.00%**				
Storage	60	1	60	0	1	0	60	-60	**-100.00%**				
ADMINISTRATION & GUIDANCE			**4,175**			**4,411**	**4,175**	236	**5.65%**			**3,350**	
General Office / Waiting Room / Toilet	450	1	450	412	1	412	450	-38	**-8.44%**	450	1	450	
Teachers' Mail and Time Room	0	1	0	0	1	0	0			100	1	100	
Duplicating Room	0	1	0	0	1	0	0			200	1	200	
Records Room	200	1	200	119	1	119	200	-81	**-40.50%**	200	1	200	
Admin Kitchenette				65	1	65							
Admin Supply				78	1	78							
Principal's Office w/ Conference Area	250	1	250	247	1	247	250	-3	**-1.20%**	375	1	375	
Principal's Secretary / Waiting	125	1	125	133	1	133	125	8	**6.40%**	125	1	125	
Assistant Principal's Office (Sanborn)	150	1	150	149	1	149	150	-1	**-0.67%**	150	1	150	
Assistant Principal's Office (Peabody)	150	1	150	149	1	149	150	-1	**-0.67%**	150	1	150	
Supervisory / Spare Office											1	-	
Psychologist	200	1	200	195	1	195	200	-5	**-2.50%**	350	1	350	
Conference Room	300	1	300	408	1	408	300	108	**36.00%**	150	4	600	
Guidance Office	150	4	600	152	4	608	600	8	**1.33%**	100	1	100	
Guidance Waiting Room	100	1	100	74	1	74	100	-26	**-26.00%**	50	1	50	
Guidance Storeroom	50	1	50	0	1	0	50	-50	**-100.00%**				
Teachers' Work Room	1,000	1	1,000	1,110	1	1,110	1,000	110	**11.00%**				small room, teacher planning in team classrooms
ELL Office	200	1	200	195	1	195	200	-5	**-2.50%**				
METCO Office / Service room	400	1	400	400	1	400	400	0	**0.00%**	500	1	500	
Mother's Room				69	1	69							
CUSTODIAL & MAINTENANCE			**2,175**			**2,725**	**2,175**	550	**25.29%**			**2,175**	
Custodian's Office	150	1	150	101	1	101	150	-49	**-32.67%**	150	1	150	
Custodian's Breakroom and Toilet				204	1	204							
Custodian's Workshop	250	1	250	209	1	209	250	-41	**-16.40%**	250	1	250	
Custodian's Storage	375	1	375	285	1	285	375	-90	**-24.00%**	375	1	375	
Recycling Room / Trash	400	1	400	400	1	400	400	0	**0.00%**	400	1	400	
Receiving and General Supply	333	1	333	1,100	1	1,100	333	767	**230.33%**	333	1	333	
Storeroom	467	1	467	0	1	0	467	-467	**-100.00%**	467	1	467	
Network / Telecom Room	200	1	200	426	1	426	200	226	**113.00%**	200	1	200	
OTHER			**0**			**0**	**0**					**0**	
Other *(specify)*			0			0	0						
Total Building Net Floor Area (NFA)			**95,673**			**97,851**						**78,828**	
Proposed Student Capacity / Enrollment												**700**	Enter grade enrollments below
												234	Lower Middle; Grades 5-6
												466	Upper Middle; Grades 7-8
NON-PROGRAMMED SPACES		% of GFA	**47,837**		% of GFA	**48,926**							
Other Occupied Rooms (list separately)		0%			0%								Non-Programmed space areas are
		0%			0%								required to be included in the
		0%			0%								following submittals:
		0%			0%								Schematic Design Submittal
Unoccupied MEP/FP Spaces		0%			0%								Design Development Submittal
Unoccupied Closets, Supply Rooms & Storage Rooms		0%			0%								60% Construction Documents
Toilet Rooms		0%			0%								90% Construction Documents
Circulation (corridors, stairs, ramps & elevators)		0%			0%								Final Construction Documents
Remaining[3]		33%	**47,837**		33%	**48,926**							
Total Building Gross Floor Area (GFA)[2]			**143,510**			**146,777**						**115,000**	118,242
Grossing factor (GFA/NFA)			**1.50**			**1.50**						**1.46**	above in red = NSF with 1.5 multiplier

[1] **Individual Room Net Floor Area (NFA)**

LEGEND

SD Phase updates

FS Phase updates

LEGEND

SD Phase updates

FS Phase updates

[2] **Total Building Gross Floor Area (GFA)**

[3] **Remaining**

2. Comparison of Current Design with Final Educational Program

Concord Middle School currently serves students in grades 6, 7, and 8 located in two schools with grade six located in one building and grades seven and eight another. Despite the vintage of the schools and their original purposes as an elementary school and junior high school, Concord Middle School provides deep, rich, and robust curriculum offerings focused on meeting the individual needs of students and integrating a range of opportunities both during and outside of the school day.

A new Concord Middle School where all three grades coexist in one building will allow for the vision of teams of core content teachers to share the instruction for a group of students, enhancing social relationships as well as interdisciplinary and cooperative learning. The modified teams that are assigned to mixed grades and spread throughout expansive buildings will, in a new school, have pods within the school where core classrooms and a shared common space invite team and grade-level experiences and connections.

A commitment to intervention and enrichment is also integral to the philosophy of Concord Middle School resulting in students receiving targeted both instruction and a range of choices for enrichment. This Response to Intervention and Response to Enrichment model provides benefits to academics, emotional well-being, and engagement. Similarly, all students participate in the fine and performing arts programs, world languages, physical education, health, and technology courses. The extensive athletic program promotes both skill and enjoyment for all students as do the expansive after school clubs. There is literally an option for everyone.

As the community embarks on the design of a new Concord Middle School it should meet these needs as well as be flexible to meet educational changes of the next 50 years.

Introduction, Strategic Plan, and Core Values

The Concord Middle School Educational Plan was initiated in the winter of 2019 as part of a timeline to work through the 2019-2020 school year toward completion of Feasibility and Schematic Design of a new Concord Middle School. The process was moving forward in March of 2020 when, as with everything, the design process halted due to the Coronavirus pandemic. During the summer of 2020, some work was furthered on the Education Plan with completion of its first draft in December of 2020. The draft was made available to the project team, School Committee, and Concord School Building Committee for review and input in the first weeks of January 2021. As a result of the pandemic, Concord Middle School operated very differently during the 2020-2021 school year. References to schedules and programs are either anchored in the 2019-2020 school year or projected for future years beginning with the Fall of 2021 and beyond.

Concord Public Schools Core Values

In 2018, the Concord Public Schools and Concord-Carlisle Regional School District embarked on a strategic planning process. The process resulted in an identified mission, vision and core values as well as four district-wide strategic objectives:

Multiple Paths to Success

Employ teaching practices that are highly engaging, emphasize innovation, and offer multiple paths to student success.

Well-Being

Establish and commit to ensuring student achievement through student well-being.

Inclusive Culture

Create a collaborative and inclusive culture in the schools and community that values diversity and recognizes the contributions and uniqueness of each learner.

Innovative Environment

Create a physical environment that catalyzes student learning through safe, healthy, and innovative indoor and outdoor spaces.

The objectives are each supported by strategic initiatives which are clearly outlined in the complete document, Strategic Plan 2018-2023. Concord Middle School aligns its plan with this mission, vision and core values to develop a plan appropriate for the vision in grades six through eight.

Concord Middle School Core Values

All Concord Middle School staff are committed to cultivating a climate that nurtures the following values in our students:

Community

Compassion and loyalty towards the world outside of the self.

High Achievement

Confidence and willpower to learn from mistakes, appreciate success, and grow towards one's potential.

Lifelong Learning

Passion to discover new interests and to uncover the fascinating in the mundane.

2019-2020 School Improvement Plan

CMS 2019-2020 School Improvement Plan

Concord Middle School Core Values and Learning Beliefs

Concord Middle School staff are committed to cultivating a climate that nurtures the following values in our students:

- Community: Compassion and loyalty towards the world outside of the self.
- High Achievement: Confidence and willpower to learn from mistakes, appreciate success, and grow towards one's potential.
- Lifelong Learning: Passion to discover new interests and to uncover the fascinating in the mundane.

Concord and Concord-Carlisle Regional School District Vision

Students of Concord and Concord-Carlisle Regional Schools actively seek varied pathways through which they achieve their potential and find joy. They will possess a strong sense of self and embrace their responsibilities as members of both local and global communities.

Concord and Concord-Carlisle Regional School District Vision of Student Learning

I am a student in Concord Public Schools and Concord Carlisle High School.

- My safe learning environment is created by respectful relationships with my teachers and my peers.
- My teachers are knowledgeable, highly skilled and passionate.
- My teachers care about me by affirming me, giving me useful feedback, and working with me individually when I need it.
- I am learning important content based on agreed upon standards, clear goals, and real world applications.
- My learning experiences are engaging, enjoyable, and challenging.
- My learning experiences vary from one another (individual vs. group work; creative vs. repetitive practice; novel vs. known; digital vs. traditional; personal choice vs. consistent topic).
- I am learning how to learn by staying organized, breaking down assignments, managing my time, using all available resources, and always giving my best effort.
- I take risks, learn from my mistakes, and know every day that I am growing.
- When I struggle, I continue to grow and learn.
- With hard work, I will be prepared for higher learning, the work world, and knowledgeable citizenship in my community and the wider world.

Concord and Concord-Carlisle Regional School District Core Values

The Concord and Concord-Carlisle Regional School District values:

Excellence Engagement Perseverance
Inclusion Innovation

Concord and Concord-Carlisle Regional School District Theory of Action

If we… - Provide engaging, innovative learning experiences that support multiple paths to success,
- Ensure our students' well-being,

	- Create a collaborative and inclusive culture that values diversity and the uniqueness of each learner		
And	- Create a physical environment that catalyzes student learning,		
Then…	- Our students will achieve their potential and find joy.		
CMS SIP Goals			
Multiple Paths to Success Year Two **1.** Employ teaching practices that are highly engaging, emphasize innovation, and offer multiple paths to student success.	**Well-Being** **Year Two** **2. Establish and commit to ensuring student achievement through student well-being.**	**Inclusive Culture** **Year Two** **3. Create a collaborative and inclusive culture in the schools and community that values diversity and recognizes the contributions and uniqueness of each learner.**	Innovative Environment Year Two **4.** Create a physical environment that catalyzes student learning through safe, healthy, and innovative indoor and outdoor spaces.
CMS SIP Initiatives			
1.1 Support in year two, a middle school RtI/tiered levels of support and data team that would oversee all RtI/tiered levels of support at the middle school.	**2.1** **Support in year two, a middle school Challenge Success and Mindfulness Steering Committees to create opportunities for students and families at the middle school to learn a variety of coping strategies to develop mindfulness and help redefine success from a whole child perspective.**	**3.1** **Support the work of the CMS Allies group with a focus on cultural proficiency and inclusive practices to meet the individual learning needs of each student.**	**4.1** **Reestablish a middle school Building Reconfigure Steering Committee to reflect on the transition of two 6th / 7th / 8th grade buildings to Sanborn being an all 7th and 8th grade building and Peabody being an all 6th grade building.**
1.2 Support in year two, middle school ACCESS (social and emotional program) at both Sanborn (7th /8th Grade) and Peabody (6th Grade) along with in year one, a 6th grade language based program.	2.2 Support in year two, the Rethinking the Middle School 1:1 Committee to examine the role of digital learning for students at a middle school age.	**3.2** **Support in year two, the Celtics Playbook Initiative, an anti-discrimination and bias-prevention student program.**	**4.2** **Pursue a new middle school building.**
1.3 Support in year two, a Student Council with a focus on increasing student voice in the culture and climate of CMS.	**2.3** **Improve practices to ease the 5th to 6th grade and 8th to 9th grade transitions. Working with CCHS and Carlisle Middle School in the support of the 8th to 9th grade transition.**	**3.3** **Continue to partner with students and families from Boston to increase opportunities for them, as members of the community, to participate in the middle school.**	**4.3** **Increase and leverage the use of the physical environment and outdoor space in instructional experiences at the middle school. This includes support of the new outdoor classroom at Sanborn.**

3. DESE Approved SPED Space Confirmation

The preferred solution solves many of the District's needs by constructing a new 6-8 700 student school which fulfills the educational vision of the District and consolidating the Peabody School (current 6th grade) and the Sanborn School (current grades 7 & 8).

All new construction adjacent to the location of the existing Sanborn Middle school. The configuration of the new construction will feature a single-story wing housing large spaces such as the gymnasium, 240-seat cafeteria, 420-seat auditorium, and media center and a three-story academic wing housing most of the general classrooms. The existing school can remain in full operation during the construction and no swing space will be required, although some temporary facilities for utility relocation will be constructed. Approximately 134 parking spaces will be provided, five outdoor learning areas of different typologies, and natural turf field areas for physical education and recess.

Several reasons lead to the preferred alternative. Most importantly, it provides the quality of academic space needed for the combined student population based on enrollment information gathered from the New England School Development Council (NSEDEC) and the spaces necessary to implement grade wide team-based learning initiatives available in a new building. In this option, building functions are located for educational efficiency, enhanced teacher collaboration, and student engagement in teaching and learning.

Additional considerations that led the Building Committee to selection of this preferred alternative is its compactness, optimal solar orientation, ability to be constructed while keeping the existing school fully operational, connection to nature and integration with its surrounding site.

The layout considers creating team commons within each grade to enhance the student cohort, maintaining that sense of a small school within a larger building. These team common areas are organized to provide full integration of Special Education and learning environments. Windows and internal borrowed lights will be placed to allow maximum penetration of natural light and visual connection between adjacent spaces and outdoors.

And the three-story wing of the building is steps down the slope of the site, which will give it the appearance of a two-story building from Old Marlboro Road and the school's neighbors.

4. DESE Approved Public Day Education Spaces Confirmation

Our middle school STE program builds upon students' natural curiosity and love of exploration as they learn to think critically about the world around them. Working as individuals and in cooperative learning groups, students develop analytical, reasoning, and problem-solving skills. They learn to make hypotheses, conduct experiments, record observations, interpret data, and draw conclusions based on evidence. Our goal is to cultivate an active interest in science and technology and to develop students' ability and desire to pursue a future in the STE world.

Example of New Learning Spaces

Starting with the Class of 2024, the CMS science program has been using the DESE recommended model of integrated science instruction.

Using this model, students are exposed each year to a variety of concepts from the earth, space, life, and physical sciences, all taught within different thematic units. Much of the students' scientific knowledge is derived from or reinforced by experimental evidence and hands-on activities.

Fully aligned with the Massachusetts Science, Technology, and Engineering Frameworks (MA STE-16) and utilizing the FOSS Next Generation middle school science curriculum as a foundation, engineering and design challenges are woven in as problem-solving experiences at each grade level. Laboratory work and scientific practices are integral parts of each course.

In a new school, daily implementation of a hands-on, inquiry-based science and engineering curriculum requires flexible space which is currently limited. The spaces – indoor and outdoor – need to allow for and promote creativity and innovation. Classroom labs need to be well equipped and have ample space for students to work safely, for the safe storage of science materials and supplies, and for storage of on-going student projects.

In addition to the general design needs of modern classrooms – wall space for visuals, projection area(s), technological versatility, natural light, flexible furniture, etc. - science labs also require specialized chemical and flame-resistant benches with numerous accessible electrical outlets, multiple sinks with hot and cold running water, safety showers and eyewash stations, and enhanced ventilation systems.

6A.3.3 Project Approvals

1. Status of Approvals

The project will begin the approval process with the Town of Concord now that 100% Design Development Documents are complete. The project anticipates submitting a Special Permit to the Zoning Board of Appeals on or about August 1, 2022. Approval for the special permit is anticipated in October of 2022. Plans for the septic system and flow variance will be submitted to the State DEP Northeast Office for review at the end of June 2022. Local review and approval of the septic system will be submitted to the Concord Board of Health in early July 2022.

2. Confirmation of Receipt of All Necessary Approvals

The project will start the local permitting process in August of 2022 with anticipated approvals in October of 2022. The project anticipates a waiver of all local permitting fees but notes it is up to the interim Town Manager and other Department Director's especially for water and sewer to waive fees.

Design Review Board – Architectural Review

Design Review Approval - Review is part of the Special Permit Process

Building Department – Review is part of the Special Permit Process but also requires various designer input after Special Permit Approval.

Building Permit - Review is part of the Special Permit Process

Board of Public Works - Review is part of the Special Permit Process

Street Occupancy and Trench Permit – Permit by the Contractor

Water Department – Review is part of the Special Permit Process

Application for Water Connection – Application by the Contractor

3. State Review or Permit Status

State of Massachusetts

Massachusetts Environmental Policy Act – The Title 5 Flow Variance for the septic flow reduction is a MEPA threshold that requires an Environmental Notification Form (ENF). What is not clear is whether the threshold is the only trigger as MEPA appears to also require State funding which this project is not pursuing. Nitsch is setting up a pre-filing hearing with MEPA to determine the scope of the review. Nitsch anticipates a limited review of just the septic flow. Nitsch also reviewed the MEPA Environmental Justice Map and determined that the Site is not within the 1-mile radius for the Environmental Justice component of the ENF. The project site is not proposing any projects associated with air pollution which triggers a 5-mile radius for the Environmental Justice component of the ENF. Based on the MEPA map

the project does not appear to trigger the 1- and 5-mile triggers for environmental justice review. It appears that this project is just an ENF

Massachusetts Historical Commission – The project will submit to MHC for review and comment.

Massachusetts Department of Transportation – The project site does not access a MassDOT roadway and is not subject to a MassDOT permit (confirm with Traffic Engineer)

Access Permit – Confirm with Traffic Engineer. Local permit through DPW required which will be issued as part of the Special Permit process.

4. Schedule for Local Zoning Approvals

This Concord MS project will be issued one permit by the Concord Zoning Board of Appeals (ZBA). This assumes that the project will need to go through the Site Plan Review process with the Planning Board. The Board will provide recommendations to the Zoning Board of Appeals for final approval and conditions.

An all Town Staff meeting occurred on June 7, 2022 to review the proposed permitting process as outlined below.

Task Name	Duration	Start	Finish
Permitting	**215 days**	**Wed 6/15/22**	**Fri 4/21/23**
ZBA Plan Review & Approval	**76 days**	**Mon 8/1/22**	**Thu 11/17/22**
Submit plans for review (i) Site Plan Review (ii) Special Permit for Ground Water Conservancy (iii) Building Height Waiver	0 days	Mon 8/1/22	Mon 8/1/22
Plan Review by DPW / Engineering / Water / CMLP / ZBA / Planning Board	31 days	Mon 8/1/22	Tue 9/13/22
Planning Board Meeting Date	0 days	Tue 9/13/22	Tue 9/13/22
ZBA Meeting Date	0 days	Thu 10/13/22	Thu 10/13/22
Special Permit Recommendations to ZBA from Planning Board	0 days	Thu 10/13/22	Thu 10/13/22
ZBA - 20 Day Appeal (Filed by Town Clerk)	20 days	Thu 10/20/22	Thu 11/17/22
ZBA Issues Approval & Order of Conditions	0 days	Thu 11/17/22	Thu 11/17/22
Tree Protection and Removal Permit by Planning Board	60 days	Fri 11/18/22	Mon 2/13/23
Septic System Approval by Health Division	days	Wed 6/15/22	Thu 10/13/22
Building Permit	**37 days**	**Wed 3/1/23**	**Fri 4/21/23**
Submit Application & Permit Set to Town Building Department	0 days	Wed 3/1/23	Wed 3/1/23
Application/Plan Review by Town	30 days	Wed 3/1/23	Tue 4/11/23
GC pulls Building Permit (Upon Contract Award / Issuance of NTP)	0 days	Fri 4/21/23	Fri 4/21/23

5. Certification of Utility Official Notification

Utility Infrastructure

Water

There is an existing 6-inch Ductile Iron Cement Lined (DICL) water service that enters the site off Old Marlborough Road and connects to the existing school building and at least three fire hydrants around the existing building.

The new school project proposes to remove the existing water service and install a new 8-inch DICL off Old Marlborough Road to the new building. There will be a new 6-inch DICL water service to four (4) new fire hydrants. The water line will not loop around the proposed school but extend on three sides of the building. A 6-inch potable water and 8-inch fire protection line will extend off the new water line to service the new school building. Three (3) new fire hydrants will be placed near the new school building as requested by the Concord Fire Department. Additional coordination with the Concord Water Department is required as the project design progresses. The project should request a fee waiver from the Concord DPW/Water Department for any new water connections associated with the new Concord Middle School project.

The Jenny Duggan Town well is located just to the south of the project site. This well is monitored by the Town for nitrate levels throughout the year. Considering the new project's location to the well, and that the entire site is within a Groundwater Conservancy District, the design team worked to provide stormwater water quality treatment for the new building and parking lot run off. Currently, the site stormwater management does not meet current standards. The project will employ structures and Low Impact Development (LID) approaches to stormwater to improve water quality and infiltrate more stormwater than the existing site infiltrates.

A fire flow test will be performed by the Mechanical Engineer to determine whether there is adequate pressure in the existing water system for the new building's fire suppression system.

Sanitary Sewer

A municipal sewer service is not available for this project. The existing school is served by a septic system and components, which will be removed from the site as part of the new project. A new septic system with new tanks, pump chamber and septic field will be installed near the existing school's septic field. In addition, the project will install a Bioclere denitrification system to provide total nitrogen treatment at or below 25 mg/l. The new septic field will be on the opposite end of the site from the Jenny Dugan well. The new septic field is designed to handle the new school's septic flow based on a variance for schools under Title 5 which equates to a daily design flow of 6,000 gallons per day. The Jenny Dugan well will be better protected with the new septic field on the opposite side of the site from the well and the addition of the denitrification system which will improve the effluent quality. In addition, a groundwater study from 2001 indicated the groundwater in the location of the new septic field would flow away from the Jenny Dugan well pumping influence. The project will request a fee waiver from the Concord BOH which must be granted by the Town Manager.

Storm Drain

The existing storm drain system involves sheet flows to leaching catch basins for the entire site. As currently configured the existing drainage system is not in compliance with current stormwater regulations.

The project proposes to use best practices management for stormwater by sheeting stormwater runoff by sheet flow toward structural pre-treatment systems and then into bio-retention systems with overflows to underground infiltration systems with isolator rows. This will provide a robust level of pre-treatment prior to infiltrating stormwater. The project will capture and infiltrate the entire new school roof run off, while swales convey and provide pre-treatment of runoff from new pedestrian impervious surfaces behind the school. The project anticipates capturing and infiltrating large storm events while providing rate and volume reductions when compared to the existing conditions. The project team will use the NOAA Atlas 14 storm events in recognition of storms that are more frequent with greater intensity. All stormwater will be managed on site. The Town of Concord does not allow new developments to discharge stormwater into the Town drainage system.

Storm runoff will be treated to meet the requirements of the Massachusetts Department of Environmental Protection (DEP) Stormwater Handbook, latest edition, and the Town of Concord requirements for stormwater.

Gas

A new 2-inch gas service, for the new generator only, is proposed for this project. The existing 2-inch gas service to the site will be removed and disposed.

Electric / Telecom

Electric service will be provided from the existing electric utility pole on Old Marlborough Road. The project electrical engineer will coordinate connections and site routing with the Concord Municipal Light Plant. It is anticipated that new conduits to the new building will be installed underground in conduits encased in concrete.

Budget Alignment

Concord Middle School

Path to Budget Alignment

July – October 2022

Hill International

Design Dev. Estimate & Budget Comparison

$80,772,447	Construction Budget
$2,019,312	Bidding Contingency
$82,791,759	Construction Budget w/ Bid Contingency
$86,105,312	Reconciled DD Estimate
$5,332,865	Variance from Budget (OVERRUN)
$3,313,553	Variance from Budget + Bidding Cont. (OVERRUN)

Hill International

Potential Options & Risks

OPTION 1 - Do Nothing, Re-Assess @ 60% CD Estimate in Sept 2022

Scenario: current market maintains through bid

$80,772,447	Construction Budget
$2,019,312	Bidding Contingency
$82,791,759	Construction Budget w/ Bid Contingency
$82,520,420	Reconciled DD Estimate w/o Escalation
($271,339)	Variance (UNDER BUDGET)

Risk: escalation continues

Response: VM @ 60% DD

OPTION 2 - Ask for More Money **Risk**: failed approval or addtl. funding not really required

OPTION 3 - VM to $80,772,447 Construction Budget **Risk**: unnecessary scope cuts

OPTION 4 - VM to $82,791,759 Construction Budget + $2M Bidding Contingency **Risk:** unnecessary scope cuts

OPTION 5 - Pause the Design **Risk**: increases the “unknowns” by pushing out bid

Hill International

CMSBC Vote - June 30, 2022

Motion:

Court Booth motioned that the CMSBC authorize the Design Team to continue with Construction Documents, accept current findings, and revisit the estimates at the 60% phase; recognizing that the CMSBC will have to make decisions at that point and will be the final opportunity to make decisions. Heather Bout seconded the motion.

Vote:

The motion carried 12 votes to 1.

Hill International

Path to Budget Alignment

Step 1: Proceed with Contract Document design per 6/30 CMSBC Vote.

Step 2: Review and discuss VM items as recommended by SMMA.

Step 3: Review and discuss a plan to submit a Warrant Article for a Special Town Meeting

Step 4: Finalize 60% CD package by 9/29/22. Reconcile 60% estimate by 10/21/22.

Step 5: CMSBC reviews 60% estimate and re-assesses at 10/27/22 meeting.

Hill International

CMSBC Committee Questions & Responses
July 27, 2022

The questions below were sent by various CMSBC members via email as a follow-up to the meeting held on June 30, 2022, and were distributed to Hill and SMMA for a coordinated review and response.

These responses will be presented and discussed at the July 28, 2022 CMSBC meeting.

Question 1:
Issued by Peter Fischelis on July 6, 2022
What would be the implications of delaying the project?

Response 1:
Response by Hill International on July 25, 2022
Simply put, the likely implication of delaying the project is an increase in the cost of construction. Even if the current construction market costs "self-correct" in the next 6-8 months, escalation will likely continue at an average of 4-5% per year as it has in the past. As such, we do not see any cost benefit in delaying the project at this time. As we continue to evaluate the construction market, we still feel that spring 2023 remains to be a good bidding market. Another factor in delaying the project is continued maintenance costs for the two existing middle schools, which will be alleviated by the new school. The last consideration should be timing of move-in/occupancy of the new school, which we feel is timed appropriately with a February 2025 break. Schedule delays would have to factor in a new move-in/occupancy window that aligns with a future summer break, winter break, or spring break, etc.

Question 2:
Issued by Chris Popov on July 7, 2022
Can design changes (eg. the gym) be made so it would be easier to expand the gym if the town decided it could spend the money?

Response 2:
Response by SMMA on July 25, 2022
The Gym could be designed to allow for future expansion. The decision to make this change would need to be decided no later than the submission deadline for the 60% Construction Documents.

Question 3:
Issued by Charlie Parker on July 7, 2022
What would be the impact of changes to servery?

Response 3:
Response by SMMA on July 25, 2022
The design of the servery is currently tailored for middle school students that are transitioning from the traditional elementary line service to a high school scramble servery. This design gives middle school

students more control over their food choices. A scramble servery and a line servery require the same square footage.

Question 4:
Issued by Matt Johnson on July 7, 2022
What is the new total project cost estimate, based upon our updated construction estimate?

Response 4:
Response by Hill International on July 25, 2022
Please see attached Design Development estimate projection dated July 21, 2022.

Question 5:
Issued by Matt Johnson on July 18, 2022
Does the assumption that we can still make changes up until 60% design stage without incurring significant additional costs if we eventually decide we need to reduce or consolidate space in the academic wing?

Response 5:
Response by SMMA on July 25, 2022
It depends on the nature of the design changes. As SMMA noted, it will require large scale changes to reduce the budget by $5.3M. For example, changing triple glazed windows to double glazed is a written specification change that impacts one subcontractor versus removing space within the building which would impact architectural, structural, plumbing, fire protection, electrical, mechanical, and site.

Question 6:
Issued by Charlie Parker on July 20, 2022
<u>Questions for SMMA and Hill</u>

A. What was the criteria process used to select the *non-space* items for the list?

   Response by Hill International on July 25, 2022
   The current VM list is compiled of items that were previously rejected by the committee in November/December 2021 for further consideration, as well as additional items to potentially alleviate the $5.3M gap between the DD construction estimate and the construction budget. SMMA and consultants brainstormed and compiled these additional VM items, trying to limit impact on the Education Plan, similar to VM exercises on other public school projects at the Design Development phase. Hill International reviewed this list and added to it with additional items/suggestions and edits.

B. Can we hold some items for further discussion if we need more data and a broader plan context?

Response by Hill International on July 25, 2022
Yes. The intent is to review and discuss the VM log with the committee as we continue to proceed towards 60% construction drawings.

C. Can we consider reducing the length of the bridge? What would be the impact?

Response by SMMA on July 25, 2022
Upon arrival at drop-off, this area will receive anywhere from 500-700 students at one time. At departure, all students will egress through the main lobby and these doors per standard security protocols. Therefore, this space is appropriately sized to provide safe gathering and egress. It is included in the grossing factor for the overall square footage of the school and is necessary for circulation through the building.

The bridge connector which spans the sloped ravine area between the academic wing and the public spaces such as the Media Center and Entry provides an outdoor space for informal performance and education. This can be used for both school and community functions. Reducing this could result in a space that is unusable and may not allow for the intended connection through the site.

D. What would be the impact of a midrange alternative for the Auditorium? VE proposed is 270, could we add, say, a 350 seat alternative?

Response by SMMA on July 25, 2022
Maintaining a 350 seat Auditorium would only be reducing the size by 900 SF. Based on the PSF costs on Item #82, the price deduction would be approximately $540,000

E. For the gym, could we consider an alternative that's somewhere between the revised VE number and the number in the space plan?

Response by SMMA on July 25, 2022
Yes. A minimum 6,000 SF Gymnasium would be required for Physical Education.

F. What would be the impact of mid-range alternative for the Auditorium? VE proposed is 270, could we add, say, a 350 seat alternative?

Response by SMMA on July 25, 2022
Repeat of Question D above.

<u>Questions for Educators</u>

G. Could we consider reducing the number of science classrooms from 9 to 6 ? (Impact)

Eliminating three science classrooms violates the Educational Plan approved by the Concord School Committee and shared in every session since then. Reducing the number of science classrooms does not allow for every science classroom to access the appropriate lab space. Two teams would remain intact with a classroom designated to the team, preserving the goal of proximity and common spaces to share, build community, and create interdisciplinary instruction. The third team would be split as much as possible among available spaces but the schedule does not allow for all science classrooms to access a lab which Justin Cameron will describe in more detail at the July 28 meeting. Ultimately, the inequity this causes will have an impact on content, experiences, and opportunities for one of the three teams at each grade. The foundation of the vision for the new Concord Middle School is directly and seriously altered thus making this not a viable option.

H. Can we consider a reduction in the size of the Media Center by 1000 sq. ft.?

Similar to the science classroom question, the Media Center is at the heart of the educational vision of the new Concord Middle School. The Media Center is the hub of the learning experience providing resources and collaborative opportunities for students. There must be room for an entire class to visit the library in an instructional setting. There must also be room for the book collections and space for students to work in small groups and prepare for presentations and projects. When the proposed Makerspace was eliminated, the compromise was for the common team space and library to accommodate that loss. In fact, the new Concord Free Public Library now houses two Makerspaces, one for traditional materials and one for technical tools. Reducing the size of the Media Center space will dramatically limit the vision and implementation of what the Media Center should be providing to students in the coming fifty years. As a result, the Media Center should remain as is currently planned.

July 21, 2022

Concord Middle School
Design Development Estimate Projection

Description	DD Estimate Projection
20 Construction	
Design Development Reconciled Estimate	$86,105,312
VM Accepted in DD	$0
Final DD Construction Estimate with VM Accepted	**$86,105,312**
30 Architectural & Engineering	
Designer - Basic Services	$7,180,000
Geotechnical Engineering CA	$205,000
Geoenvironmental Engineering-allowance	$185,000
Site Survey	$20,000
Survey of Existing Conditions / Wetlands	$0
Hazardous Materials	$145,000
A&E Sub Consultants	$70,500
Other Reimbursable Costs	$20,000
Printing (Over the Minimum)	$20,000
Testing & Inspections	$250,000
Subtotal	**$8,095,500**
40 Administrative Costs	
Owner's Project Manager Basic Services	$3,643,580
Commissioning Agent	$280,000
Advertising	$30,000
Other Administrative Costs	$50,000
Other Project Costs (Moving)	$200,000
Utility Fees	$300,000
Legal	$0
Subtotal	**$4,503,580**
50 Furniture, Fixtures and Equipment	
Furniture, Fixtures and Equipment	$1,365,000
Security	$0
Technology	$1,260,000
Subtotal	**$2,625,000**
70 Contingency	
Construction Contingency (5% Hard Costs)	$4,305,266
Owner's Contingency (5% Soft Costs)	$761,204
Subtotal	**$5,066,470**
Sub-Total	**$106,395,862**
Owner's Bid Contingency	$2,019,312
Total	**$108,415,174**

Note: Excludes $1.5M initial funding for Feasibility and Schematic Design Phase

Value Management Log

Updated 7/26/22

Design Development Set

SMMA HILL International

A	B	C	D	F	G	H	I	J	L	M	N	O	P	
Item #	**Ext.**	**VE/VM Item**	**Discipline/Trade**	**Comments/Details**	**Ball In Court**	**SD Reconciled Value** (Avg of Estimates)	**DD Estimated Value** (PM+C)	**DD Estimated Value** (AM Fogarty)	**DD Reconciled Value (Avg of Estimates)**	**Status**	**SMMA Recommendation**	**Accepted Value**	**Rejected Value**	**SMMA Initials & Comments**
3		Reduce number of outdoor classrooms on south of academic wing from 4 to 3.	Site	We have had limited discussion on utilization of / plan for outdoor classrooms at this time to inform how many should be provided.	Concord	($33,550)	($58,000)	($49,618)	($53,809)	Under Review	Accept	($53,809)		MJD- 4th outdoor classroom had already been eliminated prior to DD Estimate submission
7		Remove electrical from outdoor classrooms	Electrical		Concord	($9,760)	$0	$0	$0	Under Review	Reject		($9,760)	
8		Remove bollard lighting from outdoor classrooms	Electrical		Concord	($21,838)	$0	$0	$0	Under Review	Reject		($21,838)	
9		Reduce advanced lighting controls from 100% addressable lights to 60%	Electrical		Concord	($74,410)	($41,384)	($41,761)	($41,573)	Under Review	Reject		($41,573)	AJ- Code required for this project.
11		Remove sink in all (9) Team Commons	Plumbing	Reduces the flexibility of the team commons by eliminating the potential for any projects that need to incorporate water usage.	Concord	($52,247)	($40,600)	($49,499)	($45,050)	Under Review	Reject		($45,050)	JLS- Will impact educational program
13		Remove millwork "work station" from Grade Level 6 Team Commons; retain sink on perimeter of room	Interiors	Use of moveable furniture in lieu of work station. Will allow for different identity, more movement; retains "Maker Space" sink	Concord	($37,023)	($52,461)	($46,575)	($49,518)	Under Review	Reject		($49,518)	JLS- Will impact educational program
15		Reduce quantity of wall tile in the cafeteria to 50%	Interiors		Concord	($12,231)	($10,962)	($11,081)	($11,022)	Under Review	Reject		($11,022)	JLS- Maintenance Issue
17	A	Reduce interior lightshelf to 10"	Interiors	Cannot be chosen with 17B	Concord	($17,568)	($45,675)	($45,833)	($45,754)	Under Review	Reject		($45,754)	
17	B	Remove interior light shelf	Interiors	Cannot be chosen with 17A	Concord	($52,704)	($121,800)	($122,220)	($122,010)	Under Review	Accept	($122,010)		JLS - Minimal impacts on daylighting. - WJS
21		Remove sunshades from south facing windows at classrooms	Exteriors		Concord	($143,402)	($91,872)	($122,528)	($107,200)	Under Review	Reject		($107,200)	MD: reject - removing the sunshades will greatly impact daylighting goals (LEED and SSC)
22		Reduce sunshades at south facing classrooms to 1'-0" deep	Exteriors		Concord	($70,833)	($30,624)	($49,674)	($40,149)	Under Review	Reject		($40,149)	MD: reject - removing the sunshades will greatly impact daylighting goals (LEED and SSC)
23		Replace sunshades on south facing curtainwall with deep mullion caps (assume custom/semi-custom die to make 2.5"x8" cap)	Exteriors	Difference in unit price cost assumptions. PMC ; 204LF SUNSHADE VS 300LF CW MULLION	Concord	($47,824)	($24,847)	($33,244)	($29,046)	Under Review	Reject		($29,046)	MD: reject - removing the sunshades will greatly impact daylighting goals (LEED and SSC)
24		Remove sunshades from south facing curtainwall	Exteriors	Difference in unit price cost assumptions.	Concord	($64,050)	($35,496)	($43,929)	($39,713)	Under Review	Reject		($39,713)	MD: reject - removing the sunshades will greatly impact daylighting goals (LEED and SSC)
27		Reduce entrance canopy by 15 LF of the canopy length. Canopy is 16.5' wide.	Architecture	Canopy can be reduced 15 LF from what is shown on A-103 to keep the projection beyond the admin volume.	Concord	($45,498)	see #78	see #78	see #78	Under Review	Reject		$0	WJS
28		Replace curtain wall on north wall of art rooms with punched windows. Change 898 SF of CW to 414 SF of punched window and 484 SF of opaque wall assembly with phenolic cladding	Architecture	This may benefit comfort, glare reduction and slight impact in improving enclosure performance	Concord	($48,038)	($36,459)	($39,490)	($37,974)	Under Review	Reject		($37,974)	WJS - Reduction in glazing was already made in SD. Concerned natural daylighting will be compromised in art rooms.
29		Change curtainwall and window glazing from triple to double	Architecture	Difference in unit price cost assumptions. PMC SAVINGS $30/SF	Concord	($544,028)	($491,828)	($384,469)	($438,149)	Under Review	Reject		($438,149)	MD: In order to achieve EUI 25, we must keep triple glazing
30		Site: At south side of building at Dining Commons terrace: Remove 100 linear feet of retaining wall and guardrail, remove lawn terraces, remove CIP Stairs and concrete walkway. Add 800 SF of concrete pavement to patio and regrade. (BOD C-121)	Site		Concord	N/A	$(319,824)	$(385,109)	$(352,467)	Under Review	Accept	($352,467)		MJD - Would recommend remaining to accommodate continuous exterior space connection for students
31	A	Form-Facing Panels for Smooth Finish: Exterior-grade plywood panels, nonabsorptive, that will provide continuous, true, and smooth architectural finished concrete surfaces, medium-density overlay, Class1, or better, mill-applied release agent and edge sealed, complying with DOCPS1. (BOD Sec. 03 30 00)	Site	Cannot be selected with 31B or C	Concord	N/A	$(46,400)	$(34,454)	$(40,427)	Under Review	Accept	($40,427)		WJS/KF, Would like to maintain item 77 if this is accepted.
31	B	Board Forms: Lumber boards of face design, texture, arrangement.	Site	Cannot be selected with 31A or C	Concord	N/A	$(69,600)	$(10,592)	$(40,096)	Under Review	Reject		($40,096)	
31	C	Masonry Veneer: Concrete retaining wall per structural, damp proofing with a 1" air cavity, CMU Masonry veneer similar to EWA-1.	Site	Cannot be selected with 31A or B	Concord	N/A	$144,072	$184,814	$164,443	Under Review	Reject		$164,443	MJD - Added cost does not justify aesthetics
32		Site: Athletic Fields: Remove Boys Baseball Field, Girls Softball Field, and overlay Soccer Field, including all fences, equipment, and revise athletic field cross sections to match typical lawn section. Leave retaining wall and limit of clearing in place.	Site		Concord	N/A	$(1,228,773)	$(1,775,769)	$(1,502,271)	Under Review	Reject		($1,502,271)	MJD - Tied to Item 62. Athletic facilities are critical to education program. This type of scope change also warrants significant additional conversation with the client.
33		Site: Wood Bridge: Remove 6' wide wood bridge with wood guardrails (43 LF)	Site		Concord	N/A	$(87,000)	$(74,205)	$(80,603)	Under Review	Accept	($80,603)		MJD - Not necessary for educational program or exterior space connections
34	A	Air Vapor Barrier Alt 1: Fluid-Applied, Vapor-Retarding Membrane Air Barrier: Elastomeric, modified bituminous or synthetic polymer membrane	Architecture	Cannot be selected with 34B	Concord	N/A	$(69,601)	$(12,102)	$(40,852)	Under Review	Reject		($40,852)	JLS
34	B	Air Vapor Barrier Alt 2: Modified Bituminous Sheet: 40-mil- thick, self-adheringsheet consisting of 36 mils of rubberized asphalt laminated to a 4-mil- thick, cross-laminated polyethylene film with release liner on adhesive side and formulated for application with primer that complies with VOC limits of authorities having jurisdiction	Architecture	Cannot be selected with 34A PMC - looks like similar product to what is carried in base estimate?	Concord	N/A	$-	$-	$-	Under Review	Reject		$0	
35		Sound Absorptive Treatment @ C-Wing Corridors - Tectum Panels ilo K-13 spray insulation to 75% Area	Architecture		Concord	N/A	$(88,949)	$(49,781)	$(69,365)	Under Review	Reject		($69,365)	JLS- See Item #54
36		Plumbing - Overflow drainage; install scuppers at roof edge ilo internally piped overflow drainage	Plumbing		Concord	N/A	$(84,680)	$(34,920)	$(59,800)	Under Review	Accept	($59,800)		JLS
37		Electrical: Change distribution feeders to aluminum for 150Amp feeders, and higher.	Electrical		Concord	N/A	$(25,520)	$(23,280)	$(24,400)	Under Review	Accept	($24,400)		AJ
38		Electrical: Change PVC 40 to EB conduit for Utility primary duct bank. Note Utility primary will need confirmation from CMLP.	Electrical		Concord	N/A	$(4,640)	$(4,640)	$(4,640)	Under Review	Accept	($4,640)		AJ
39		Electrical: Change PVC 40 to EB conduit for Communications exterior duct bank	Electrical		Concord	N/A	$(17,400)	$(17,400)	$(17,400)	Under Review	Accept	($17,400)		AJ
40		Electrical: Change PVC 40 to EB conduit for Building secondary and underground feeders	Electrical		Concord	N/A	$(13,920)	$(13,920)	$(13,920)	Under Review	Accept	($13,920)		AJ
41		Electrical: Change PVC 40 to EB conduit for branch circuit wiring (lighting and power)	Electrical		Concord	N/A	$(11,600)	$(11,600)	$(11,600)	Under Review	Accept	($11,600)		AJ
42		Electrical: Install low energy Fire Alarm cable in lieu of MC.	Electrical		Concord	N/A	$(40,600)	$(6,518)	$(23,559)	Under Review	Reject		($23,559)	AJ
43		Electrical: If PV canopies are installed in the North Parking lot, South parking Lot, and Walkway: Remove 4 Type BB light poles, 3 type AA1 Light poles, 5 Type CC Light poles.	Electrical		Concord	N/A	$(35,786)	$(28,320)	$(32,053)	Under Review	Pending			AJ- Dependant on PV Scope
44		Electrical: If PV canopies are installed in the North Parking lot, South parking Lot, and Walkway: Install 40 surface mounted canopy light fixtures. Basis of design Hubbell Lighting STR1 Edge-Lit Size 1 (4500 lumen output, 3000k color temp.) or equal.	Electrical		Concord	N/A	$25,520	$38,907	$32,214	Under Review	Pending			AJ- Dependant on PV Scope
45		Exterior Wall Assemblies: Install Metal Composite material wall panels in lieu of phenolic: available products that may be incorporated into the Work include, but are not limited to, the following: 3A Composites USA, Inc.; Alucobond Plus; Alcoa Inc.; Reynobond FR.; ALOCTEX Inc Alcotex, FR.; Or equal.	Architecture		Concord	N/A	$(63,585)	$(5,820)	$(34,703)	Under Review	Reject		($34,703)	WJS
46		FOR DISCUSSION: Reduce Construction Schedule by (2) months	General	Would allow for an earlier occupancy and (2) months less in GC's.	Concord	N/A	$(270,000)	$(270,000)	$(270,000)	Under Review	Accept	($270,000)		LBF
47		Reduce underslab insulation from 4" to 2", Maintain 4" at 6' around the perimeter	Architecture		Concord	N/A	$(102,725)	$(88,988)	$(95,856)	Under Review	Accept	($95,856)		The VE energy model shows minimal impact to the pEUI; maintains an EUI under 30 (~26) - EMS
48		Reduce exterior wall mineral wool insulation from 8" to 6"	Architecture		Concord	N/A	$(139,200)	$(139,680)	$(139,440)	Under Review	Accept	($139,440)		The VE energy model shows minimal impact to the pEUI; maintains an EUI under 30 (~26) - EMS
49		Reduce roof polyiso isulation from 10" to 8"	Architecture		Concord	N/A	$(189,776)	$(288,415)	$(239,096)	Under Review	Accept	($239,096)		The VE energy model shows minimal impact to the pEUI; maintains an EUI under 30 (~26) - EMS
50		Replace folding glass walls at Classrooms into Commons with hollow metal frames and glazing (Maintain folding glass wall at Media Center)	Architecture	PMC; REPLACE WITH SINGLE LEAF DOOR AND 15'X8' HM GLAZING?	Concord	N/A	$(125,280)	$(101,582)	$(113,431)	Under Review	Reject		($113,431)	LBF - Detrimental to the educational functionality of the Team Commons and cross curricular goals of the Ed Plan
51		Replace operable panel walls in between classrooms with GWB wall (G3C.U)	Architecture	PMC; INCLUDES SOFFIT AND GWB ABOVE - REPLACE WITH ACT	Concord	N/A	$(261,151)	$(313,698)	$(287,424)	Under Review	Reject		($287,424)	LBF - Detrimental to the educational functionality of the Team Commons and cross curricular goals of the Ed Plan
52		Eliminate stair access to roof- reduce height of stair tower, add alternating tread stair and hatch for roof access	Architecture	PMC; LEFT IN CLOSURE FOR ELEVATOR OVER RUN	Concord	N/A	$(122,682)	$(164,124)	$(143,403)	Under Review	Reject		($143,403)	JLS - maintenance issue for accessing RTU's
53		Combine Gym and Auditorium AHUs	Mechanical	PMC; SAVINGS IN CURB, CONTROLS & COST OF AHU, ADD FOR DUCTWORK	Concord	N/A	$(87,000)	$(58,200)	$(72,600)	Under Review	Accept	($72,600)		CKG
54		Replace exposed corridor ceilings (K-13) with ACP-1 ceilings	Architecture		Concord	N/A	$(22,237)	$(43,299)	$(32,768)	Under Review	Accept	($32,768)		KF - this represents a nominal savings. Aesthetically, it provides a significant counterpoint to unitinterrupted areas of ACT.
55		Change quarry tile floor and base with epoxy at Kitchen	Interiors	PMC; INCLUDES BASE	Concord	N/A	$(69,124)	$(24,686)	$(46,905)	Under Review	Accept	($46,905)		JLS
56		Remove 8' tall mesh front storage cabinets at Team Commons	Interiors	PM+C; 9 LOCATIONS @ $5000 PER LOC	Concord	N/A	$(52,200)	$(87,300)	$(69,750)	Under Review	Reject		($69,750)	JLS- Not recommended by CMS- this could impact educational program
57		Reduce ceramic wall tile in toilet rooms to 8' on wet walls only. Epoxy paint on all other walls	Interiors		Concord	N/A	$(254,643)	$(294,444)	$(274,543)	Under Review	Reject		($274,543)	JLS - not recommended at MS and HS levels
58		Eliminate porcelain wall tile at corridors- maintain 6" porcelain tile base and include impact resistant GWB and SS corner guards	Interiors		Concord	N/A	$(249,641)	$(237,642)	$(243,641)	Under Review	Reject		($243,641)	JLS
59		Eliminate unit skylights in Admin area	Architecture	2 LOC	Concord	N/A	$(20,045)	$(27,936)	$(23,990)	Under Review	Reject		($23,990)	JLS
60		Eliminate lightning preventor system	Electrical		Concord	N/A	$(69,600)	$(69,840)	$(69,720)	Under Review	Reject		($69,720)	AJ- System is recommended, per NFPA 780 lightning risk assessment calculations.
61		Reduce concrete slab thickness to 4" at classroom wing. Maintain 5" at Auditorium and Gym	Structure			N/A	$(47,733)	$(70,102)	$(58,918)	Under Review	Accept	($58,918)		PL - no impact on educational program
62		Eliminate Phase 2 existing building demo and abatement scope	Site		Concord	N/A	$(1,920,196)	$(2,051,694)	$(1,985,945)	Under Review	Reject		($1,985,945)	MJD - Tied to Item 32 - Athletic Facilities are critical to education program. This type of scope change also warrants significant additional conversation with the client.
63		Reduce height of Gymnasium to minimum clearance allowed by MIAA for basketball - Approx 5'-0" ft	Architecture		Concord	N/A	$(97,411)	$(111,252)	$(104,332)	Under Review	Reject		($104,332)	Reduce height of gymansium and auditorium by xx'-0" Maintain glazing on north of gym - WJS
64		Eliminate Vape Detection System	Electrical		Concord	N/A	$(48,720)	$(48,888)	$(48,804)	Under Review	Accept	($48,804)		JLS
65		Replace linoleum with VCT	Interiors	PMC; ASSUME MCT	Concord	N/A	$(169,180)	$(170,257)	$(169,719)	Under Review	Reject		($169,719)	JLS

Value Management Log

Updated 7/26/22

Design Development Set

SMMA HILL International

A	B	C	D	F	G	H	I	J	L	M	N	O	P	
Item #	Ext.	VE/VM Item	Discipline/Trade	Comments/Details	Ball In Court	SD Reconciled Value (Avg of Estimates)	DD Estimated Value (PM+C)	DD Estimated Value (AM Fogarty)	DD Reconciled Value (Avg of Estimates)	Status	SMMA Recommendation	Accepted Value	Rejected Value	SMMA Initials & Comments
66		Reduce Auditorium and Specialty space AV systems by 25%	Electrical		Concord	N/A	$(269,572)	$(260,969)	$(265,271)	Under Review	Reject		($265,271)	JLS- Acentech to clarify what this would mean- could impact educational programming
67		Replace granite curbing at straight sections with precast concrete curbing	Site	PMC; 4700 LF	Concord	N/A	$(49,068)	$(85,808)	$(67,438)	Under Review	Accept	($67,438)		MJD - further review for specific locations
68		Remove (2) maintenance sheds at loading dock- provide conduit and electrical stub up and concrete pads only	Site		Concord	N/A	$(11,600)	$(23,303)	$(17,452)	Under Review	Reject		($17,452)	MJD - Sheds will need to be purchased and installed by Town after project completion
69		Eliminate full height built-in shelving at Media Center (all shelving to be FF&E)	Interiors		Concord	N/A	$(77,952)	$(72,314)	$(75,133)	Under Review	Reject		($75,133)	KF - if there is room within FFE budget, this could offset retention of some architectural features
70		Eliminate environmental graphics ($50K allowance)	Interiors		Concord	N/A	$(58,000)	$(58,200)	$(58,100)	Under Review	Reject		($58,100)	KF - EC has been thinking that using this allowance to introduce inspiring quates from Concord authors would reinforce the sense of history and place.
71		Eliminate bleachers in the Gymnasium (possibly provided by donation?)	Interiors		Concord	N/A	$(87,000)	$(81,480)	$(84,240)	Under Review	Reject		($84,240)	JLS
72	A	Eliminate all millwork display cases	Interiors	Cannot be Accepted with 74B	Concord	N/A	$(144,332)	$(165,172)	$(154,752)	Under Review	Reject		($154,752)	JLS
72	B	Reduce millwork display cases by 50%	Interiors	Cannot be Accepted with 74A	Concord	N/A	$(72,166)	$(82,586)	$(77,376)	Under Review	Reject		($79,981)	WJS
73		Revise Ever Alert Master Clock system (proposed proprietary) to traditional wireless master clock system	Electrical		Concord	N/A	$(78,848)	$(104,760)	$(91,804)	Under Review	Accept	($91,804)		JLS- CMS to confirm as this is also used for notifications
74		Rough in Only for Sound Field Systems in Classrooms- Systems and Speakers by FF&E	Electrical	61 locations; PMC base estimate Accentech allowance @ $130k	Concord	N/A	$(115,420)	$(136,328)	$(125,874)	Under Review	Reject		($125,874)	JLS - support accessibility
75		Eliminate roof davit and associated structure	Architecture		Concord	N/A	$(23,200)	$(34,920)	$(29,060)	Under Review	Reject		($29,060)	JLS- Maintenance Issue
76		Eliminate green screen/cable trellis	Site		Concord	N/A	$(58,000)	$(58,200)	$(58,100)	Under Review	Reject		($58,100)	Would like to keep if site wall form liner is removed
77		Simplify main entry canopy design by 50%	Architecture	PMC; Target savings; dteel framing, decking, membrane roofing, DEFS soffit & framing	Concord	N/A	$(60,320)	$(58,087)	$(59,203)	Under Review	Reject		($59,203)	JLS
78		Eliminate entry concrete planter, add metal picket fence rail for fall protection, concrete retaining wall to remain	Architecture		Concord	N/A	$(19,058)	$(6,606)	$(12,832)	Under Review	Reject		($12,832)	WJS - reccomend maintain design to date.
79		Replace granite bollards with concrete filled galvanized steel bollards	Site	PMC ASSUME 69 LOC	Concord	N/A	$(120,060)	$(132,521)	$(126,291)	Under Review	Accept	($126,291)		MJD - Review incorporation of stainless steel bollard sleeves over steel bollards in lieu of painted steel only
80		Remove bevel at CMU exterior walls	Architecture		Concord	N/A	$(108,089)	$(14,412)	$(61,251)	Under Review	Reject		($37,832)	WJS
81		Reduce size of Gymasium by 3,500 Square Feet to MSBA Standard	Architecture		Concord	N/A	$(2,103,255)	$(2,120,440)	$(2,111,848)	Under Review	Reject		($2,116,144)	
82		Reduce size of Auditorium to accomodate 270 person occupancy; reduce by 1/3 from 5040 SF to 3240 SF	Architecture		Concord	N/A	$(1,081,674)	$(1,090,512)	$(1,086,093)	Under Review	Reject		($1,088,303)	
		TOTALS				DO NOT TOTAL	DO NOT TOTAL	DO NOT TOTAL	DO NOT TOTAL		$0	($2,070,994)	($10,211,319)	

HILL International

Meeting Minutes

Concord Middle School Building Committee
Meeting Minutes
July 28th, 2022

Name	Present	Name	Present	Name	Present
CONCORD MIDDLE SCHOOL BUILDING COMMITTEE:					
Court Booth*	P	Russ Hughes	P	Matt Root*	P
Heather Bout*	P	Laurie Hunter*	P	Steven Stasheski*	P
Frank Cannon*	P	Matt Johnson*	P	Gail Dowd	P
Justin Cameron	P	Kerry Lafleur	P	Suresh Bhatia	NP
Peter Fischelis*	P	Pat Nelson*	P	Robert Conry	NP
Dawn Guarriello*	P	Chris Popov*	P	Alexa Anderson*	P
Jon Harris	P	Charlie Parker*	P		
Hill International					
Peter Martini	P	Ian Parks	P	Susan McCann	P
John Cutler	P				
SMMA / Ewing Cole					
Lorraine Finnegan	P	Nicole Bronola	P	Keith Fallon	P
Will Smarzewski	P	Phil Poinelli	NP	Saul Jabbawy	NP
Chase Gibson	NP	Michael Dowhan	NP	Jen Soucy	NP

P=Present, NP= Not Present *=Voting Member

Call to Order

Co-Chair P. Nelson called the meeting to order at 7:30 A.M. This meeting was conducted in a hybrid format, with a forum being held in person connected to additional members via Zoom Virtual Conference call. Here is a link to the recording: Concord Middle School Building Committee Meeting - Zoom. This recording will be made available at the Concord Public School's project page and Town of Concord's website.

Approval of Minutes

Co-Chair P. Nelson invited the Sustainability Subcommittee to vote on the approval of the May 9th and June 16th Sustainability Subcommittee meeting minutes. S. Stasheski motioned to approve the minutes. M. Root seconded the motion. The motion to approve the May 9th and June 16th meeting minutes unedited carried unanimously. Co-Chair P. Nelson moved the approval of the June 2nd and June 30th CMSBC meeting minutes to the end of the meeting.

Correspondence & Communication

H. Bout reported that the CMSBC had received 18 emails since their last meeting largely relating to the Design Development estimate. She reported that the tone of the emails ranged from urging the committee to stay within budget to avoiding cutting scope, with the majority of the community input advocating to not make any scope cuts to the design.

H. Bout & A. Anderson reported on community outreach that had been conducted during Design Development including building committee reports after each meeting to a distribution list. The distribution list includes the chairs of all committees in town, the Finance and Select Boards, the School Committee, and the School Community at large through ConnectEd.

Various committee members discussed the benefit of potentially using a survey to gather information from the public.

Concord Middle School Building Committee
Meeting Minutes
July 28th, 2022

Public Comment

Town resident Dorrie Kehoe advocated for evaluating cuts that can be made to the project in order to maintain the budget that was voted on by the Town.

Town resident Wilson Kerr pointed out the Town had already made cuts and compromised, and further noted that the economy was experiencing unprecedented inflation. He further noted that the community voted for the school as it was designed, not necessarily the budget, and that the CMSBC should avoid cutting to save some money.

Town resident Ned Perry noted that the Town does vote on a budget, not on a design. He cautioned the committee to stay within the voted budget.

Town resident Joel Gagne noted that the project was approved by Town vote with overwhelming support and the committee should avoid making any cuts to the scope of the project without going back to a Town meeting and letting the voters decide if they would like to allocate more funds or make cuts.

OPM Updates

Cash Flow Update

I. Parks presented the current project cash flow through July 31st, 2022, as well as projections through the end of the project. Project expenditures to date are $3,249,117 including monthly progress payments made to Hill and SMMA.

Path to Budget Alignment

I. Parks presented a potential five (5) step plan which encompassed multiple avenues by which the CMSBC may achieve budget alignment.

Step 1: Proceed with Construction Document design per 6/30 CMSBC Vote
Step 2: Review and discuss VM items as recommended by SMMA
Step 3: Review and discuss plan to submit a Warrant Article for a Special Town Meeting
Step 4: Finalize 60% CD package by 9/29/22. Reconcile 60% CD estimate by 10/21/22
Step 5: CMSBC reviews 60% estimate and re-assesses at 10/27/22 CMSBC meeting

I. Parks noted that going to a Town Meeting would serve to potentially allocate more funds as one of the ways to achieve budget alignment. He further noted that the Special Town Meeting could serve as component of a two-pronged approach which could include cutting scope and allocating additional funds. Ultimately the budget must align with the final estimate to take the project out to bid.

I. Parks opened discussion surrounding questions from CMSBC members which had been posed to and answered by the professional team.

Question 1 pertained to delaying the project and the cost impact associated with delaying the project.

S. Stasheski cautioned the committee against taking time away from the SMMA team by evaluating large scale design changes in VM as that would take away from their ability to meet the current schedule and result

in a cost impact. He noted the DD phase was complete and SMMA had been directed to move into CD phase, in which the intent of design was already achieved, and design enhancement would be focused on more detailed design characteristics than large scale changes like changing classroom quantities or sizes or reducing the height of ceilings.

Co-chair P. Nelson encouraged the committee to move on from the questions and move into discussion surrounding VM.

M. Johnson asked for clarification surrounding why some spaces like the gym and auditorium were listed on the VM log while classroom/educational space reduction was not listed as a VM option. He further asked if design in some spaces was more progressed than others.

L. Finnegan responded that design was progressed equally throughout the building, however the impact of reducing some spaces have larger scale impacts across the building. She further responded that the coordination in the gym for example was largely dedicated to the gym, so carrying various size options as add alternates as previously proposed earlier in the project was less impactful to the design schedule than changing the square footage in a classroom, which could impact coordination in various spaces.

Current Budget Review

I. Parks presented the current project cost reflecting the Design Development estimate. The Construction cost line was updated to $86,105,312 reflecting the DD cost estimate. The Construction Contingency also saw a slight adjustment to reflect 5% of the new Construction cost estimate. With the updated DD estimate the estimated project subtotal stands at $106,395,862. Including the Owner's Bid Contingency, the estimated project total stands at $108,415,174.

Value Management Log Discussion

I. Parks presented the updated VM log, containing new VM opportunities identified by Hill and SMMA, as well as VM opportunities which were rejected in the SD phase by the CMSBC. The rejected VM opportunities reflected a side-by-side comparison of the potential savings for those items in SD and the estimated potential savings in DD.

L. Finnegan noted that the items on the VM log reflected an effort by the professional team to maintain a design focused on achieving the desired educational program and achieve a Net-Zero sustainable building.

I. Parks proceeded to read through the VM log item by item and providing context to the items. He noted two large items in particular are reducing the square footage of the gymnasium, which carries an estimated potential savings of $2,116,144, and reducing the square footage of the auditorium, which carries an estimated potential savings of $1,088,303.

Education Plan Discussion

J. Cameron presented slides reflecting the educational programming impact of removing three (3) science classrooms.

J. Cameron noted reducing classrooms impacts the Team Teaching model, as well as negatively impacting the ability to have flexible teaching classrooms. He further presented the scheduling impact associated with removing the classrooms.

L. Finnegan added that removing three (3) classrooms would have a stacking impact on the overall design, particularly as it relates to the MEP coordination in those classrooms and surrounding classrooms.

CMSBC Discussion:

C. Popov noted that the current design configuration meets the intended design plan but asked if there were potential reductions to these spaces that could be made without eliminating them.

S. Stasheski advocated for reviewing the VM items proposed by Hill and SMMA as the primary source of budget alignment. He further noted that the CMSBC would have to ask the community for additional funding and make practical cuts simultaneously.

M. Johnson noted he was hoping for more creative thinking with regards to space configuration. He noted that the Team-Teaching model creates potentially unused space by nature. He further noted that there are no items on the list relating to reducing square footage in some areas of the school while the option exists in other areas of the school and believes everything should be an option for discussion to achieve budget alignment.

P. Nelson clarified with M. Johnson that his point was not to eliminate items that would impact the educational programming, but rather see the potential savings in reducing space in those areas.

C. Parker advocated for thoroughly reviewing the VM log, in particular the 17 items valued over $50,000 and the previously rejected items. P. Nelson and D. Guarriello agreed with C. Parker and noted that the next step would be to take a deep dive into the VM log.

A. Anderson advocated her support of the two-pronged approach presented by I. Parks earlier in the meeting which would give the CMSBC the flexibility to plan for all potential scenarios to ensure the goal of CMSBC is achieved.

H. Bout noted that she agrees with many committee members that the educational programming should be considered sacred and avoided when making cuts, and that she agrees with C. Parker that a deep dive into the VM log was a necessary next step. She further reiterated an earlier point that feedback from the community at this stage was critical both in the form of correspondence and potentially a Special Town Meeting.

P. Fischelis commented that his position was similar to that of H. Bout and reiterated that the education programming should not be touched and the VM log needed to be reviewed to analyze potential savings.

F. Cannon commented that he believes the CMSBC is doing the right work, but he expressed concern over the state of the economy and where prices would be at bid time.

C. Booth added that it could be a useful exercise to see how impactful the projects constraints would be had the project been approved by the state and supported by the MSBA. In particular what would happen with the programming given the budgetary constraints with the educational plan.

L. Hunter reiterated her position that the educational programming has been thoroughly reviewed with SMMA and Hill. She encouraged the committee not to spend too much time resurfacing items which would impact this programming that has already been vetted thoroughly.

P. Nelson added that the Town voted for a school that emphasizes this educational programming and it needs to be preserved. She further added that the Town would need to be presented with the facts of the situation.

New Business:

Members of the CMSBC discussed a potential follow up meeting, deciding between August 4th and August 11th. Ultimately the CMSBC agree to do a virtual meeting on August 4th at 7:30am. D. Guarriello reminded committee members to send their comments and questions relating to the VM log to herself and P. Nelson prior to the end of the weekend to allow Hill and SMMA time to respond and present responses at the August 4th meeting.

M. Johnson reported he had been in contact with the Town Moderator and Town Manager regarding potential dates for a Special Town Meeting. He noted the Town Clerk had not signed off on anything yet but proceed to present a slide reflecting the possible date and how they fit into the project schedule and the Town process at large.

Potential Schedule Proposed by M Johnson:

60% Estimate Received: 10/13/22
Open Warrant: 10/17/22
Propose Article: 10/20/22
Vote on Amount: 10/24/22
Close Warrant: 10/27/22
Post Warrant: 11/7/22
Public Hearing: 11/17/22
Finance Committee Report: 12/8/22
Special Town Meeting: 12/15/22
Town-wide Vote: 1/10/22

Public Comment

Town resident Wilson Kerr asked if some of the savings presented on the VM log would create further costs down the road to by switching to cheaper materials for example. He further added that if they need to make a buffer against market conditions they need to consider potential impacts down the road.

Town resident Joel Gagne noted that the CMSBC had done the work of making budget friendly cuts already and that further cuts could potentially result in issues that existing schools in Concord currently have to save

some money. He further added that he advocated that the CMSBC go back to the taxpayers and ask them to decide if they want to add additional funding or make further cuts.

Next Steps

Co-Chair P. Nelson reminded CMSBC members to continue reviewing emails from the public and continue reviewing the VM log to ensure a robust discussion on August 4th.

Adjournment

Co-Chair P. Nelson entertained motions to adjourn at 10:02am. D. Guarriello motioned to adjourn. A. Anderson seconded the motion. The motion to adjourn carried unanimously.