

South Shore Vocational Technical High School Hanover, MA



MSBA Module 3.2 –Preferred Schematic Report

FEBRUARY 29, 2024





February 29, 2024

Ms. Allison Sullivan, Sr. Project Coordinator
Ms. Veatriki Dagkalakou, Senior Project Manager
Massachusetts School Building Authority
40 Broad Street; Suite 500
Boston, MA 02109

RE: South Shore Regional Vocational Technical High School Feasibility Study
Preferred Schematic Report Submission

Dear Ms. Sullivan and Ms. Dagkalakou,

Leftfield hereby certifies that we have reviewed and coordinated the materials contained in this submission and that the submittal is complete. We also confirm that the District and the South Shore Regional Vocational Technical High School Building Committee (SBC) have reviewed the Preferred Schematic Report (PSR). The SBC unanimously voted to approve the submittal of the PSR Submission to MSBA at their February 22, 2024 SBC Meeting.

PSR Clarifications:

- 1- A certified copy of the February 22, 2024, School Building Committee Meeting Minutes will be forwarded separately as an addendum to this PSR, once approved by the Building Committee at their March meeting.
- 2- Under separate cover, an original, fully executed Local Action Letter will be mailed to the attention of Allison Sullivan at the MSBA.
- 3- A printed, bound copy of the PSR will be delivered to your attention next week.

Please feel free to contact me with any questions you may have regarding the enclosed information. On behalf of the South Shore Regional Vocational School District, South Shore Regional Vocational School Committee, the South Shore Regional Vocational Technical High School Building Committee, and the project team, we look forward to discussing any questions you may have.

Sincerely,
Leftfield, LLC



Jennifer Carlson
Project Director

Attachments: Preferred Schematic Report
Live files of required documents sent under separate cover [email]
cc: Superintendent Dr. Thomas Hickey – South Shore Regional District Superintendent
Mr. Robert Heywood, Chair – South Shore Tech School Building Committee



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3.3.1 INTRODUCTION

The purpose of this report is to document the process and conclusions of the Preliminary and Final Evaluation of Alternatives that substantiate South Shore Regional Vocational Technical High School's (South Shore Tech) selection and recommendation of a preferred solution.

This Introduction summarizes the process and conclusions of the Preferred Schematic Report, including the development of multiple alternative solutions and the evaluation process employed to determine the District's selection of **New Construction option NC 2.0 for 900** students as their preferred option.

A. PSR Process Overview Subsequent to PDP Submission October 27, 2023

Regular meetings with the Owner, the OPM and DRA were central to developing and evaluating numerous project options and, more broadly, defining the vision and goals for their new facility. Regular meetings included:

- OPM & Design Team - Weekly
- OPM, Design Team & Working Group –Weekly
- Building Committee - Monthly and Weekly as needed
- Community Meetings, in-person & online- periodically, roughly bi-weekly
- Programming interviews with all department heads and key staff personnel
- Preliminary discussions regarding wetlands with local officials

The School administration, with assistance from the Project Team, updated the District's Educational Program. The update responded to both the MSBA's PDP comments and expanded upon certain educational goals based upon further internal discussions. The Educational Program was an important criteria to evaluate each design option.

One change subsequent to the PDP was the development of an additional design option: "NC 2.1". This was a variation to option NC 2 that had similar programmatic components and site plan to NC 2, but reconfigured the layout to create a central entrance and core facilities, versus the off-center layout of NC 2. Option NC 2 was re-labeled to be "NC 2.0" to be consistent with this additional design option.

Other important evaluation criteria included:

- Project Budget & District share; initial construction and continuing operating costs
- Enrollment considerations including capacity, waiting list, and regional expansion
- Long-term value
- Impact on learning & disruption of school activities
- Flexibility, building layout and accommodation of expanded CTE programs
- Site layout and amenities
- Site access, safety, security, and traffic flow

All options presented in the PDP submission were developed including six design options, five enrollment options, and a Base Repair option. A first round of evaluations eliminated several enrollment and design options to create a short-list of six options (plus Base Repair) for further consideration. The final evaluations identified the pros-and-cons of each against a set of evaluation criteria and construction cost estimates. The result of this process was the unanimous selection of option **NC 2.0 for 900 students** as the preferred option by South Shore's School Building Committee.

Overview Of Community Outreach Subsequent to PDP

Input from regional-district community members has been a valuable resource for developing this project. To keep the community informed and to solicit community input the District:

- Frequently holds well-publicized open meetings to keep community members informed
 - 11/09/23 Community Forum #2 – Marshfield
 - 12/05/23 Public Forum #3 – Rockland
 - 12/14/23 Public Forum #4 – Whitman
 - 1/16/2024 Public Forum – Rockland Board of Selectmen
 - 1/25/2024 Public Forum – Abington
 - 1/31/2024 Advisory Committee Meeting- Hanover
- The Project Team presented the project status to several meetings of the district school committee which has representatives from all member communities
- Maintains a project website page that can be accessed from the South Shore website. This site includes project meetings and significant project documents. Access to the Project Website is at: <https://southshorettechproject.com/>
- The School Superintendent updated community leaders regularly regarding project's status and to respond to questions and concerns

A meeting was held with the Town Clerks from all 8 communities to discuss the logistics and timing of a District-wide vote. January 25, 2025 was identified as the date for a District-wide vote.



B. Summary of Updated Project Schedule

This Report is being submitted in anticipation of approval of South Shore's preferred solution by the MSBA's Board of Directors at their meeting scheduled for April 24, 2024.

We understand that this schedule includes a meeting with the Board's Facility Assessment Subcommittee (FAS) on either March 13, or March 27, 2024.

Milestone Schedule

August 28, 2024	MSBA Module 4, Schematic Design Submittal
October 30, 2024	Projected MSBA Board of Directors Meeting for the Approval of Schematic Design / Project Scope and Budget Agreement
January 25, 2025	Projected District-wide Vote among each community in the Region for the Project Scope and Budget
Winter 2025 – Winter 2026 Spring 2026	Design Development & Completion of Construction Documents Early Site Enabling Construction
Summer 2026	Anticipated Start of Construction
Summer 2028	Completion and Occupancy of the New Construction
Spring 2029	Completion of Fields & Remaining Sitework

It is anticipated that following completion of early site enabling construction, the construction zone will be safely segregated from the daily school activities. The new school building will take approximately 2 years to complete. Construction activities should have minimal impact on daily operations of the existing school. School operations would begin in the new building when it is complete and demolition of the existing school and the remainder of construction will commence.



C. Summary of the Final Evaluation of Existing Conditions

There have been only minor updates to the evaluation of existing conditions information since the submission of the Preliminary Design Program.

A preliminary meeting was held with the Hanover Conservation Commission agent to review the current wetlands delineation, the history of previous work on the school's site, the potential filling & replication work of the proposed project, the Commission's review policies, and expected project schedule.

The Design Team reviewed the Hazardous materials report and developed an abatement and remediation budget that was incorporated into the PSR construction cost estimates for the various options.

Additional on-site evaluations and investigations will be conducted during the Schematic Design phase as outlined in section 3.3.2 of this report.



South Shore Vocational Technical High School, Hanover, MA



D. Summary of the Final Evaluation of Alternatives

As reported in the PDP, the District decided to continue their consideration of five design options and five enrollments. This list was supplemented by the addition of a sixth design option-“NC 2.1”, an alternative to the NC 2 option. This resulted in the following initial matrix of 31 options:

Option	645 students	750 students	805 students	900 students	975 students
Code Upgrade “Base Repair”	existing	---	---	---	---
Addition/ Renovation AR- 1 “L-shape”	201,500 sf	217,500 sf	230,400 sf	243,200 sf	254,500 sf
Addition/ Renovation AR- 2 “Lightwell”	188,100 sf	201,700 sf	209,600 sf	228,500 sf	236,100 sf
New Construction NC-1 “Courtyard”	203,480 sf	228,540 sf	240,000 sf	260,000 sf	278,000 sf
New Construction NC-2.0 “Linear”	203,480 sf	228,540 sf	240,000 sf	260,000 sf	278,000 sf
New Construction NC-2.1 “Linear/Center core”	203,480 sf	228,540 sf	240,000 sf	260,000 sf	278,000 sf
New Construction NC-3 “Wings”	203,480 sf	228,540 sf	240,000 sf	260,000 sf	278,000 sf

Due to the large number of options and variables, the District decided to conduct the evaluation process in two steps. The first step was to reduce the list of options to a shortlist of design options and enrollment options based upon preliminary layouts and construction cost estimates. The shortlisted options were then developed further with more detailed site plans, floor plans, and cost estimates for final evaluation.

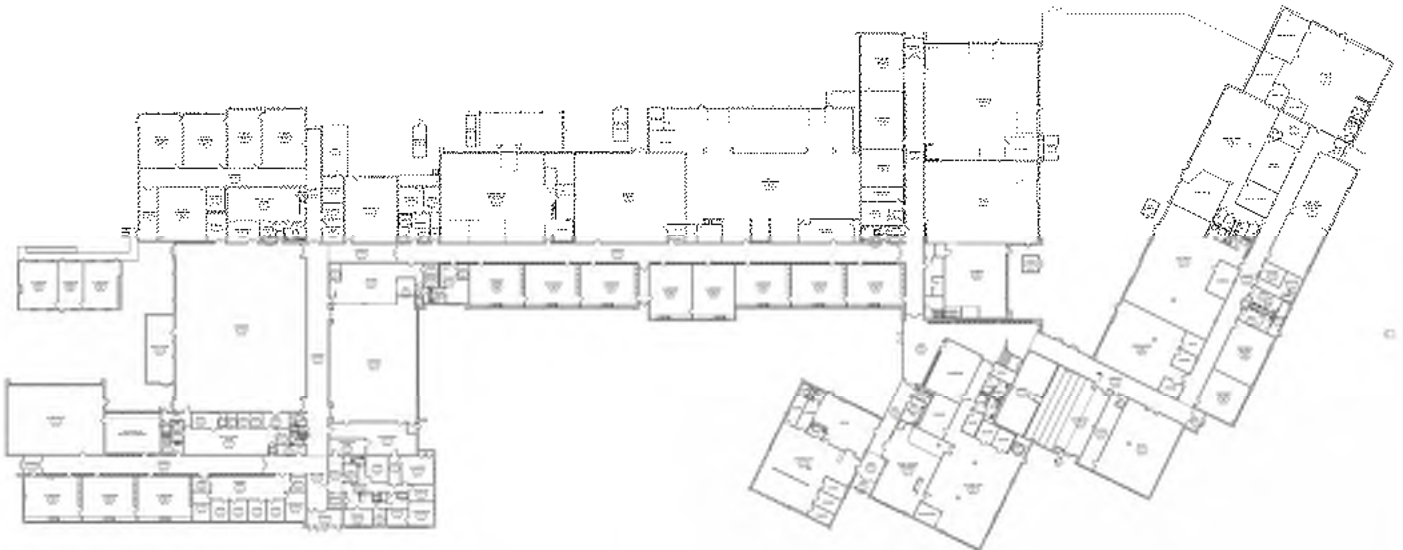
A brief description of each option follows:

Base Building Repair

The Base Building Repair Option brings the existing building up to code and includes repair of damages, deficiencies, and obsolete systems identified in the Existing Conditions Assessment. This option does not improve the educational program areas or address educational space deficiencies.

An overview of the Base Building Repair Option follows:

- Athletic field conditions are fair to poor- improve drainage, turf and track surfaces
- Improve vehicular and pedestrian pavement and curbing throughout the site
- Provide Architectural Access Board (MAAB) compliance to the fields, bleachers, and the press box
- Replace roofing at 1992 addition
- Provide a full building fire suppression system
- Renovate Toilet Rooms and classroom entrances to provide accessibility.
- Upgrade exterior envelope including insulation, water & air infiltration, metal panels
- Abate asbestos and upgrade damaged and inappropriate finishes throughout
- Replace ceilings to improve acoustics throughout, classrooms, corridors, and cafeteria
- Upgrade kitchen exhaust hoods
- Remove and replace the existing unit ventilators, cabinet heaters and finned tube radiation.
- Upgrade the HVAC control system to a new electronic system with energy management capability.
- Replace the original buildings existing electrical infrastructure, including branch circuit panelboards and feeders
- Replace the existing zoned fire alarm system to an addressable type system
- Replace existing Cast iron storm drainage, sanitary drain, waste, and vent piping
- Upgrade light fixtures and controls throughout
- Provide additional security system components, such as cameras to provide full building coverage.

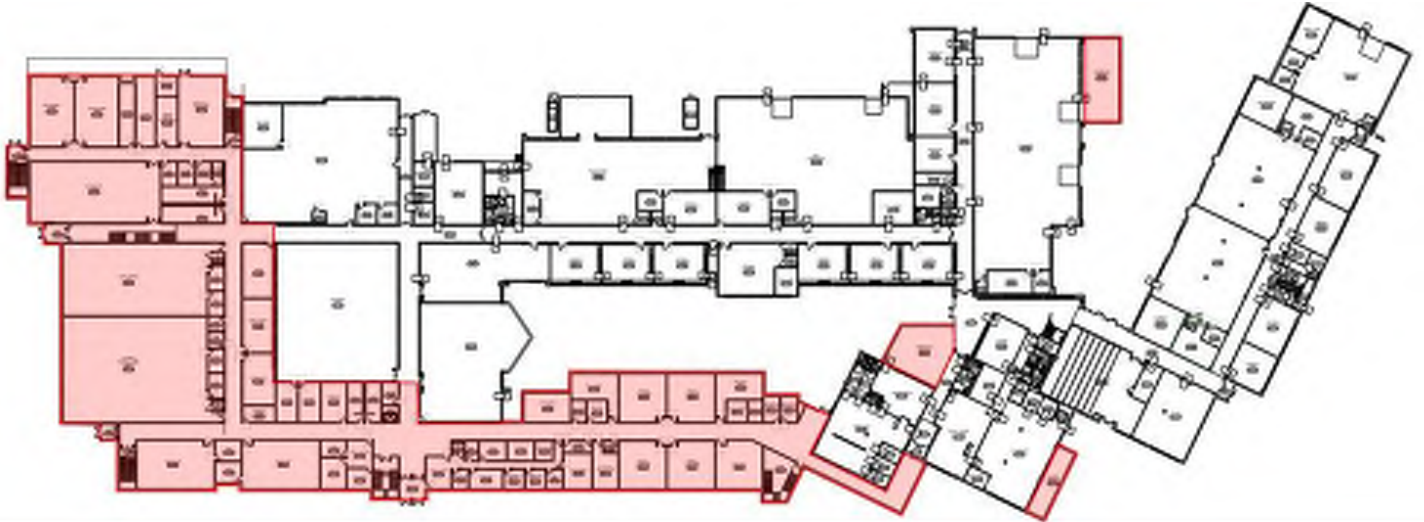


Existing Floor Plan

The projected cost, with escalation, for the Base Building Repair is approximately \$110 Million.

OPTION AR-1 “L – shaped” Addition/ Renovation

For enrollments: 645, 750, 805, 900, & 975 students



AR-1 First Floor Plan

Description:

This option proposes a two-story addition across the front of the school and wrapping around to the east of the Gym along with the full renovation of the existing school. Depending upon the selected enrollment, a small additions are required to the existing cafeteria and several CTE shops.

The first phase of the project would be to relocate the current Administration, Student Services, Allied Health spaces, classrooms, and science labs into temporary swing space, most likely modular “trailers” elsewhere on the campus.

The multi-story addition would then be constructed to house the new Gymnasium & support spaces, Administration, CTE shop space for the MET, Graphics, CIT, & Allied Health programs, and new science labs and general classrooms.

Once the new construction is completed and occupied the phased renovation of the existing building could begin. The renovation would include the conversion of the Science wing into the Electrical shop and the conversion of the former Gymnasium into a multi-purpose auditorium. This Auditorium space could also provide swing space for the renovation of existing high-bay CTE shops. The relocation of the MET, Graphics, Electrical, and CIT programs will allow a domino effect of the remaining CTE programs to expand into renovated, right-sized spaces.

The increase in student enrollment requires the construction of a wastewater treatment facility on site. Otherwise, the site configuration remains largely unchanged.

To accommodate the larger enrollments that are being considered (up to 975 students), a third floor of academic space would be included with the addition and several existing high-bay shops would need to be expanded in their current locations.

Educational Program requirements:

Option AR-1 generally satisfies most of the space needs outlined in the Educational Program and preliminary Space Summary. However, it does not alter the existing undersized classrooms of the original building, and certain CTE shops vary slightly from the DESE guidelines due to the configuration of the existing building.

This option maintains the current separate public access to the Culinary and Cosmetology shops and improves its security by potentially located some administrative presence adjacent to that entrance.

Construction Phasing:

This option will involve construction adjacent to occupancy at times during the school year. Multiple complex phasing will be required, including the consideration of double shifts, second shift work, and swing spaces for temporary relocation of programs.

Temporary parking will also need to be considered during the initial new construction phase to compensate for space lost to construction activities.

Estimated construction duration is four years.

Areas (the area of this option varies proportionally with the target enrollment variations)

Enrollment	Total	Renovation	New Construction
645 Students	201,500 sf	108,000 sf	93,500 sf
750 Students	217,500 sf	108,000 sf	109,500 sf
805 Students	230,400 sf	108,000 sf	122,400 sf
900 Students	243,200 sf	108,000 sf	135,200 sf
975 Students	254,500 sf	101,000 sf	153,500 sf

Preliminary Order-Of-Magnitude Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs	Final Project Cost (PSR)
645 Students	\$242,971,900	\$303,714,875	NA
750 Students	\$265,916,600	\$332,395,750	NA
805 Students	\$279,844,000	\$349,805,000	\$277,825,034
900 Students	\$293,406,500	\$366,758,125	\$293,492,782
975 Students	\$312,909,000	\$391,136,250	NA

Pro's:

- Fully renovates the existing building like-new to extend its longevity
- Generally Satisfies South Shore Tech's space needs and right-sizes most CTE programs
- Provides safe, secure, and direct public access to Consumer Services programs

Con's:

- Requires disruptive phased construction adjacent to occupancy
- Doesn't significantly improve the integration of CTE and Academic spaces
- Long construction period

Initial Evaluation: Continue to study in final phase of evaluation for enrollments of 805 & 900 students

Final Evaluation: Drop from consideration

OPTION **AR-2** “Lightwell” Addition/ Renovation

For enrollments: 645, 750, 805, 900, & 975 students



AR-2 View

Description:

This option proposes multiple additions to be built in phases. The existing Science wing would be demolished to provide space for the primary addition- a two-story L-shaped addition wrapping around to the south and east of the existing Gym forming a small courtyard or lightwell. Other additions would be constructed to expand certain CTE shops and the cafeteria as needed for the various enrollments. The remaining existing building would be fully renovated.

The first phase of the project would be to relocate five science classrooms into temporary swing space, most likely modular “trailers” elsewhere on the campus. The major addition would then be constructed to house the new low-bay shops for the Graphics, CIT, & Allied Health programs, girl’s locker rooms, and new science labs and general classrooms.

Once the first phase of new construction is completed and occupied, the smaller additions and phased renovation of the existing building could proceed. The smaller additions would expand most existing CTE shops as required to meet the space needs while also renovating the existing spaces. This option retains and renovates the undersized Gymnasium. The existing Lecture Hall is restored to its original size in lieu of constructing a new Auditorium. The relocation of the Graphics and CIT programs will allow the adjacent CTE programs to expand into renovated, right-sized spaces. This option also relocates the Library Media Center back into its previous location in the 1962 building.

The increase in student enrollment requires the construction of a wastewater treatment facility on site. Otherwise, the site configuration remains largely unchanged.

To accommodate the larger enrollments that are being considered (up to 975 students), a third floor of academic space would be added to the addition and several existing high-bay shops would need to be expanded further.

Educational Program requirements:

Option AR-2 generally satisfies many of space needs outlined in the Educational Program and preliminary Space Summary with two significant variations are: the existing undersized Gym (7,150 sf vs, 12,000 sf) is retained; and the existing Lecture is retained in lieu of a new, larger Auditorium (100 seats vs 450 seats). Also, this option does not alter the existing

undersized classrooms of the original building and certain CTE shops vary slightly from the DESE guidelines due to the configuration of the existing building.

The general configuration of the site circulation and parking would be maintained while the materials would be renovated. The athletic fields would be renovated to improve their drainage and condition while remaining in their current location and configuration.

Construction Phasing:

This option will involve construction adjacent to occupancy at times during the school year. Multiple complex phasing will be required, including the consideration of double shifts, second shift work, and swing spaces for temporary relocation of programs.

The first phase would be the installation of modular swing space and the relocation of science classrooms. Then abatement and demolition of the Science wing would take place to create the building zone for new construction.

Estimated construction duration is four years.

Areas (the area of this option varies proportionally with the target enrollment variations)

Enrollment	Total	Renovation	New Construction
645 Students	188,100 sf	115,000 sf	73,100 sf
750 Students	201,700 sf	115,000 sf	86,700 sf
805 Students	209,600 sf	115,000 sf	94,600 sf
900 Students	228,500 sf	115,000 sf	113,500 sf
975 Students	236,100 sf	115,000 sf	121,100 sf

Preliminary Order-Of-Magnitude Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs	Final Project Cost (PSR)
645 Students	\$ 222,327,700	\$ 277,909,625	\$224,157,893
750 Students	\$ 242,877,300	\$ 303,596,625	NA
805 Students	\$ 251,373,100	\$ 314,216,375	NA
900 Students	\$ 271,087,000	\$ 338,858,750	NA
975 Students	\$ 279,488,200	\$ 349,360,250	NA

Pro's:

- Fully renovates the existing building like-new to extend its longevity
- Satisfies many of South Shore Tech's space needs and right-sizes most CTE programs
- Minimizes construction cost with reduced overall size
- Incorporates lightwell courtyard to provide natural light to all education spaces

Con's:

- Significant disruption during all phases of construction
- Long construction period
- Requires temporary modular swing space
- Smaller Gym and Lecture Hall retained
- Sprawling, remote configuration remains
- No significant improvement to site circulation
- Higher enrollment options significantly constrain available site
- Limited opportunity for future expansion

Initial Evaluation: Drop from final consideration; develop 645 student option for comparative purposes

Final Evaluation: Drop from further consideration

OPTION NC-1 “Courtyard” New Construction

For enrollments: 645, 750, 805, 900, & 975 students



NC-1 First Floor Plan

Description:

This new construction option proposes siting the new school on the current athletic fields. The multi-story courtyard building is configured with the large assembly areas and Student Commons at the north and the academic spaces to the south organized around an exterior courtyard. The high-bay shops are at rear of the main level and accessed by a perimeter service drive. The main entrance at the Commons serves not only as the primary student entrance, but also as the visitors and events entrance for after-hours activities in the Gym and Auditorium. The Culinary and Cosmetology programs are also on the main level with a separate, secure public entrance.

The remaining low bay CTE shops are located on the second floor. Each level has academic classrooms across the corridor from CTE spaces to provide the desired adjacencies as described in the Education Program.

Educational Program requirements:

Option NC-1 satisfies the space needs outlined in the Educational Program. It provides the overall building configuration and key adjacencies identified in the Educational Program. This option provides a desired enclosed courtyard identified in visioning sessions. The building utilizes the Student Commons and Learning Commons as core elements as the heart of the school.

Site and Facility goals:

This Option has a compact footprint that can be constructed independent of the existing school. The new site layout will provide a separate service area and the potential for separate bus and car drop-off areas. Expanded athletic fields would be created, including a separate softball field, after the existing building is demolished.

Construction Phasing:

This option would be constructed in two basic phases: 1. New Construction of the proposed new school and treatment plant. 2. Demolition of the existing school and construction of athletic fields, parking, and final sitework.

It is anticipated that Phase 1 can be accomplished with minimal disruption to the ongoing operation of the existing school, although temporary parking will need to be considered to compensate for the partial loss of the existing rear parking. Athletics and physical education will need to compensate for the lack of outdoor playing fields for a period of perhaps three to four years.

Estimated construction duration is two and one half to three years.

Areas (the area of this option varies proportionally with the target enrollment variations)

Enrollment	Area
645 Students	203,480 sf
750 Students	228,540 sf
805 Students	240,000 sf
900 Students	260,000 sf
975 Students	278,000 sf

Preliminary Order-Of-Magnitude Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs	Final Project Cost (PSR)
645 Students	\$234,989,780	\$293,737,225	NA
750 Students	\$263,929,690	\$329,912,113	\$266,954,717
805 Students	\$275,352,600	\$344,190,750	NA
900 Students	\$294,330,900	\$367,913,625	NA
975 Students	\$311,489,600	\$389,362,000	NA

Pro's:

- Satisfies South Shore's space needs and right-sizes all CTE programs, including new Ch.74 programs
- Meets all of the District's Educational goals, including an enclosed exterior courtyard
- Provides convenient public access to the Consumer Services programs and assembly spaces
- Has potential for a strong new architectural image
- Compact footprint promotes good internal connectivity
- Configures CTE programs into career clusters
- Eliminates the need for temporary classrooms
- Provides long-term value with new infrastructure and robust energy efficiency

Con's:

- Slightly Higher construction cost
- Tight fit within available building zone
- Larger footprint constrains future expansion potential
- Athletic fields are displaced for several years
- Limited available parking during the first year of occupancy

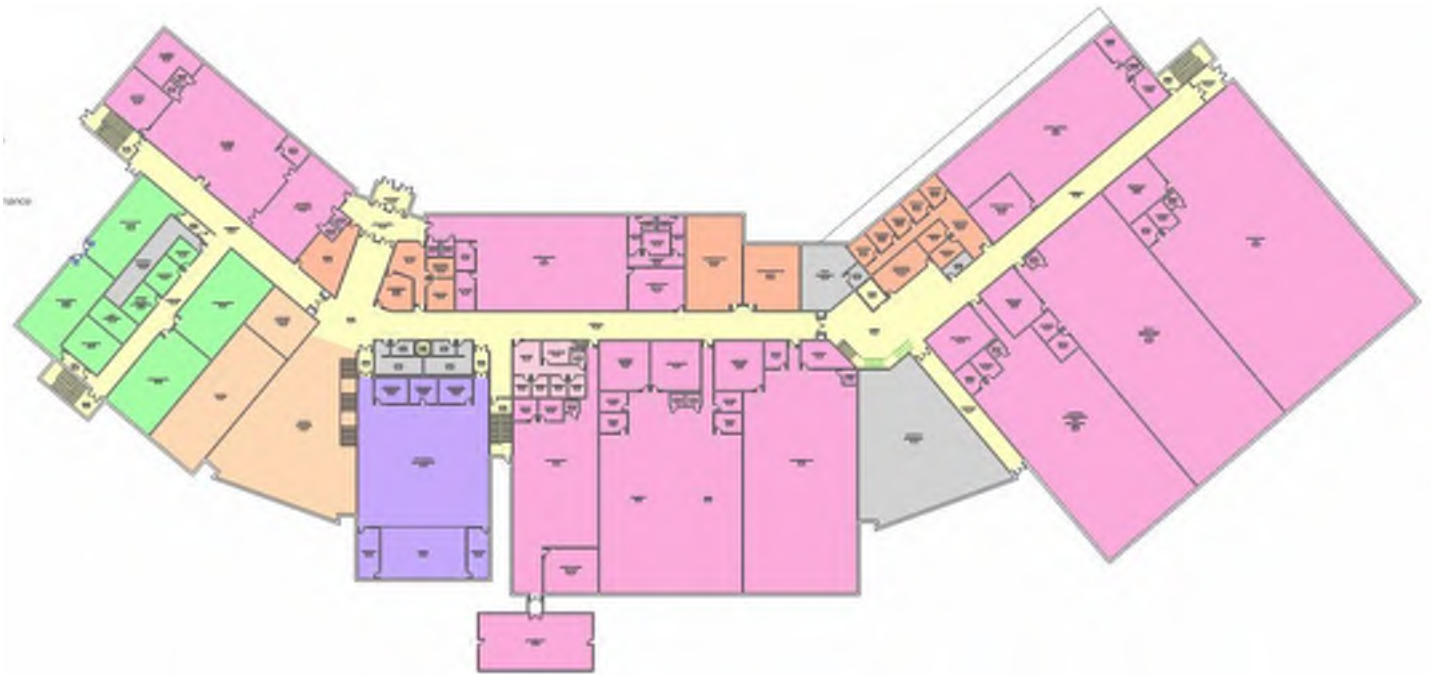
Initial Evaluation: Drop from final consideration; develop 750 student option for comparative purposes

Final Evaluation: Drop from further consideration

OPTION NC-2.0 “Linear” New Construction*

For enrollments: 645, 750, 805, **900***, & 975 students

**District’s Preferred Option: NC 2.0 for 900 Students*



NC-2.0 First Floor Plan

Description:

This new construction option proposes siting the new school on the current athletic fields. The multi-story building is configured with the large assembly areas and Student Commons to the south and the academic spaces to the north organized along a linear “main street” circulation spine. This linear spine bends to conform to the available site. The high-bay shops are located in clusters to the south of the spine and administration, Culinary, and Cosmetology flank the main entrance. The main entrance at the Commons serves not only as the primary student entrance, but also as the customer, visitors, and events entrance for after-hours activities in the Gym and Auditorium.

The remaining low bay CTE shops are located on the upper floor over the shops. All of the academic classrooms, science labs and Special Ed spaces are on the second and third floors. Each level has teacher planning, small group rooms and collaborative space as recommended in the visioning sessions.

Educational Program requirements:

Option NC-2.0 satisfies the space needs outlined in the Educational Program. It provides the overall building configuration and key adjacencies identified in the Educational Program. The building utilizes the Student Commons and Learning Commons as core elements as the heart of the school and has small gathering hubs along the main street.

Site and Facility goals:

This Option has a compact footprint that can be constructed independent of the existing school. The new site layout will provide a separate service area and the potential for separate bus and car drop-off areas. Expanded athletic fields would be created, including a separate softball field, after the existing building is demolished. The locker rooms are in close proximity to the athletic fields.

Construction Phasing:

This option would be constructed in two basic phases: 1. New Construction of the proposed new school and treatment plant. 2. Demolition of the existing school and construction of athletic fields, parking, and final sitework.

It is anticipated that Phase 1 can be accomplished with minimal disruption to the ongoing operation of the existing school, although temporary parking will need to be considered to compensate for the partial loss of the existing rear parking. Athletics and physical education will need to compensate for the lack of outdoor playing fields for a period of perhaps three to four years.

Estimated construction duration is two and one half to three years.

Areas (the area of this option varies proportionally with the target enrollment variations)

Enrollment	Area
645 Students	203,480 sf
750 Students	228,540 sf
805 Students	240,000 sf
900 Students	260,000 sf
975 Students	278,000 sf

Preliminary Order-Of-Magnitude Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs	Final Project Cost (PSR)
645 Students	\$234,989,780	\$293,737,225	NA
750 Students	\$263,929,690	\$329,912,113	NA
805 Students	\$275,352,600	\$344,190,750	\$273,966,709
900 Students	\$294,330,900	\$367,913,625	\$283,595,433
975 Students	\$311,489,600	\$389,362,000	NA

Pro's:

- Satisfies South Shore's space needs and right-sizes all CTE programs, including new Ch.74 programs
- Meets all of the District's Educational goals.
- Lower construction cost than other new construction options
- Provides convenient and secure public access to the Consumer Services programs and assembly spaces
- Has potential for a strong new architectural image
- Compact footprint promotes good internal connectivity
- Configures CTE programs into career clusters
- Efficient internal layout results in slightly smaller gross building area
- Locates locker rooms in close proximity to athletic fields
- Eliminates the need for temporary classrooms
- Provides long-term value with new infrastructure and robust energy efficiency

Con's:

- Higher construction cost than add/reno options
- Larger footprint constrains future expansion potential
- Athletic fields are displaced for several years
- Limited available parking during the first year of occupancy

Initial Evaluation: Continue to study in final phase of evaluation for enrollments of 805 & 900 students

Final Evaluation: PREFERRED OPTION for 900 Students

OPTION NC-2.1 “Linear/ Center Core” New Construction

For enrollments: 645, 750, 805, 900, & 975 students



NC-2.1 First Floor Plan

Description:

This new construction option proposes siting the new school on the current athletic fields. The multi-story building is a variation of option NC 2.0. It locates the large assembly areas and Student Commons in the center of the school with CTE and academic spaces to the north and south along the linear “main street” circulation spine. This linear spine bends to conform to the available site. The high-bay shops are located in clusters to the rear. The main entrance at the Commons serves not only as the primary student entrance, but also as the customer, visitors, and events entrance for after-hours activities in the Gym and Auditorium.

The remaining low bay CTE shops are located on the upper floor over the shops. All of the academic classrooms, science labs and Special Ed spaces are on the second and third floors. Each level has teacher planning, small group rooms and collaborative space as recommended in the visioning sessions.

Educational Program requirements:

Option NC-2.1 satisfies the space needs outlined in the Educational Program. It provides the overall building configuration and key adjacencies identified in the Educational Program. The building utilizes the Student Commons and Learning Commons as core elements as the heart of the school and has small gathering hubs along the main street.

Site and Facility goals:

This Option has a compact footprint that can be constructed independent of the existing school. The new site layout will provide a separate service area and the potential for separate bus and car drop-off areas. Expanded athletic fields would be created, including a separate softball field, after the existing building is demolished. The locker rooms are in close proximity to the athletic fields.

Construction Phasing:

This option would be constructed in two basic phases: 1. New Construction of the proposed new school and treatment plant. 2. Demolition of the existing school and construction of athletic fields, parking, and final sitework.

It is anticipated that Phase 1 can be accomplished with minimal disruption to the ongoing operation of the existing school, although temporary parking will need to be considered to compensate for the partial loss of the existing rear parking. Athletics and physical education will need to compensate for the lack of outdoor playing fields for a period of perhaps three to four years.

Estimated construction duration is two and one half to three years.

Areas (the area of this option varies proportionally with the target enrollment variations)

Enrollment	Area
645 Students	203,480 sf
750 Students	228,540 sf
805 Students	240,000 sf
900 Students	260,000 sf
975 Students	278,000 sf

Preliminary Order-Of-Magnitude Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs	Final Project Cost (PSR)
645 Students	\$234,989,780	\$293,737,225	NA
750 Students	\$263,929,690	\$329,912,113	NA
805 Students	\$275,352,600	\$344,190,750	\$281,841,924
900 Students	\$294,330,900	\$367,913,625	\$292,102,837
975 Students	\$311,489,600	\$389,362,000	NA

Pro's:

- Satisfies South Shore’s space needs and right-sizes all CTE programs, including new Ch.74 programs
- Meets all of the District’s Educational goals.
- Lower construction cost than other new construction options
- Provides convenient and secure public access to the Consumer Services programs and assembly spaces
- Has potential for a strong new architectural image
- Compact footprint promotes good internal connectivity
- Configures CTE programs into career clusters
- Efficient internal layout results in slightly smaller gross building area
- Shorter student path from core to academic areas
- Eliminates the need for temporary classrooms

- Provides long-term value with new infrastructure and robust energy efficiency

Con's:

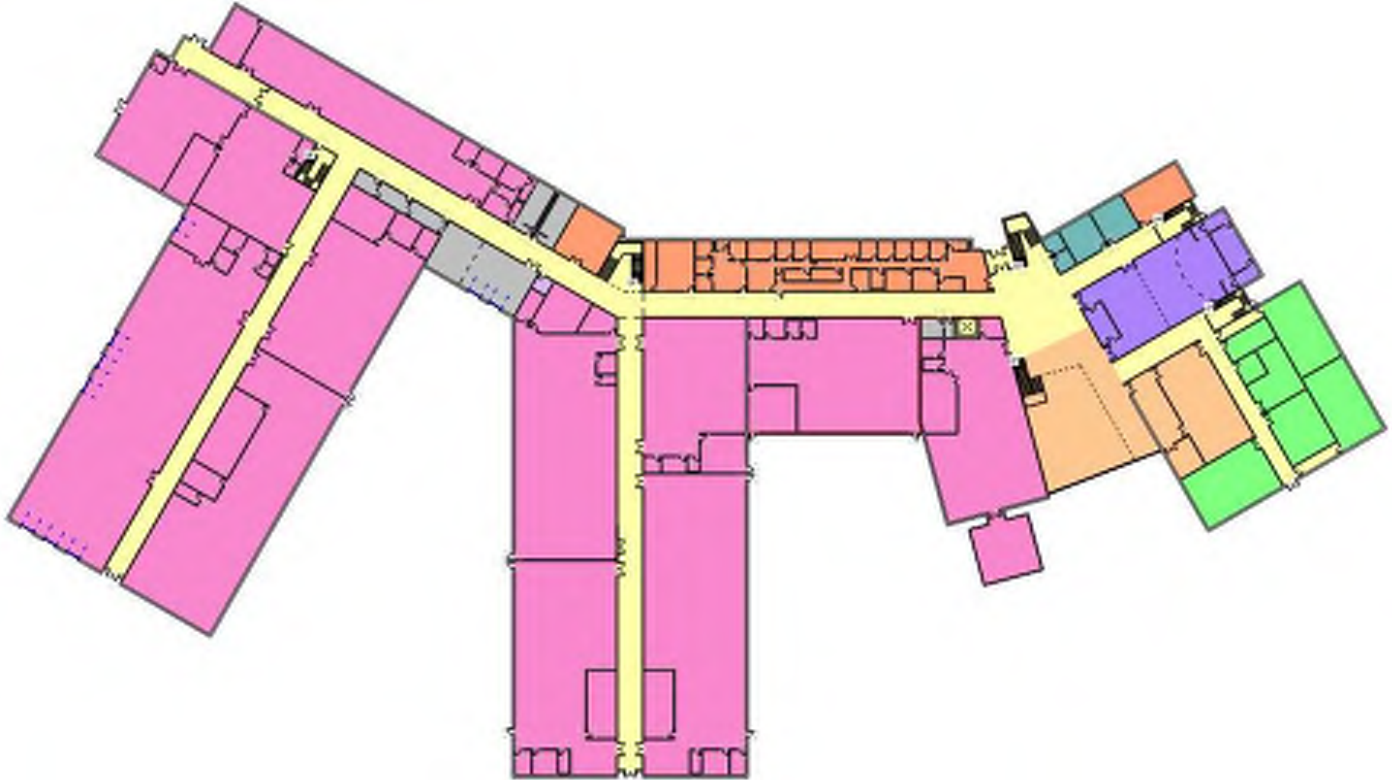
- Higher construction cost than other new construction options
- Cross traffic through the Student Commons may be a distraction
- Central locker room location is remote from athletic fields
- Larger footprint constrains future expansion potential
- Athletic fields are displaced for several years
- Limited available parking during the first year of occupancy

Initial Evaluation: Continue to study in final phase of evaluation for enrollments of 805 & 900 students

Final Evaluation: Drop from further consideration

OPTION NC-3 “Wings” New Construction

For enrollments: 645, 750, 805, 900, & 975 students



NC-3 First Floor Plan

Description:

This new construction option proposes siting the new school on the current athletic fields. The multi-story building is configured with the large assembly areas and Student Commons to the north and the academic spaces to the south. The high-bay CTE shops are configured in separate wings off of the main circulation corridor. This linear spine bends to conform to the available site. The CTE wings enclose service courtyards similar to the schools current configuration. The main entrance at the Commons serves not only as the primary student entrance, but also as the visitors and events entrance for after-hours activities in the Gym and Auditorium.

The remaining low bay CTE shops are located on the second floor over the shops. All of the academic classrooms, science labs and Special Ed spaces are on the second and third floors. Each level has teacher planning, small group rooms and collaborative space as recommended in the visioning sessions.

Educational Program requirements:

Option NC-3 satisfies the space needs outlined in the Educational Program. It provides the overall building configuration and key adjacencies identified in the Educational Program. The building utilizes the Student Commons and Learning Commons as core elements as the heart of the school and has small gathering hubs along the main corridor.

Site and Facility goals:

This Option has a relatively compact footprint that can be constructed independent of the existing school. The new site layout will provide a separate service area and the potential for separate bus and car drop-off areas. Expanded athletic fields would be created, including a separate softball field, after the existing building is demolished.

Construction Phasing:

This option would be constructed in two basic phases: 1. New Construction of the proposed new school and treatment plant. 2. Demolition of the existing school and construction of athletic fields, parking, and final sitework.

It is anticipated that Phase 1 can be accomplished with minimal disruption to the ongoing operation of the existing school, although temporary parking will need to be considered to compensate for the partial loss of the existing rear parking. Athletics and physical education will need to compensate for the lack of outdoor playing fields for a period of perhaps three to four years.

Estimated construction duration is two and one half to three years.

Areas (the area of this option varies proportionally with the target enrollment variations)

Enrollment	Area
645 Students	203,480 sf
750 Students	228,540 sf
805 Students	240,000 sf
900 Students	260,000 sf
975 Students	278,000 sf

Preliminary Order-Of-Magnitude Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs	Final Project Cost (PSR)
645 Students	\$234,989,780	\$293,737,225	NA
750 Students	\$263,929,690	\$329,912,113	NA
805 Students	\$275,352,600	\$344,190,750	NA
900 Students	\$294,330,900	\$367,913,625	NA
975 Students	\$311,489,600	\$389,362,000	\$305,608,875

Pro's:

- Satisfies South Shore’s space needs and right-sizes all CTE programs, including new Ch.74 programs
- Meets all of the District’s Educational goals.
- Provides convenient public access to the Consumer Services programs and assembly spaces
- Has potential for a strong new architectural image

- Compact footprint promotes good internal connectivity
- Configures CTE programs into career clusters
- Eliminates the need for temporary classrooms
- Provides long-term value with new infrastructure and robust energy efficiency

Con's:

- Higher construction cost
- Larger footprint constrains future expansion potential
- Athletic fields are displaced for several years
- Limited available parking during the first year of occupancy

Initial Evaluation: Drop from final consideration; develop 975 student option for comparative purposes

Final Evaluation: Drop from further consideration

A summary of the evaluation process of all 31 options is illustrated by this chart:

1. Initial Evaluation of Options						2. Final Evaluation of Options		
	645	750	805	900	975		805	900*
Base Repair	Not an educational solution		Does not accommodate expanded enrollment			Base Repair	\$109.7 Million Not an educational solution, doesn't increase capacity	
AR-1	\$250 Million (preliminary) Insufficient size for current enrollment. Poor adjacencies. Poor value.	\$262 Million (preliminary) Insufficient size to allow for growth. Poor adjacencies. Poor value.	\$277.8 Million Potential lower end adjacencies. Poor. Worthy of further evaluation.	\$293.5 Million Potential lower end adjacencies. Poor. Worthy of further evaluation.	Not Considered Unreasonably large for projected growth. Poor adjacencies. Constrained by site.	AR-1	\$277.8 Million Poor long-term value. Poor flexibility; adjacencies. Long construction duration. Highly disruptive.	\$293.5 Million Poor long-term value. Poor flexibility; adjacencies. Long construction duration. Highly disruptive.
AR-2	\$224.1 Million Insufficient size for current enrollment. Poor adjacencies. Poor value.	Not Considered Insufficient size to allow for growth. Poor adjacencies. Poor value.	Not Considered Extremely disruptive. Undesirable adjacencies. Poor value.	Not Considered Extremely disruptive. Undesirable adjacencies. Poor value. Constrained by site.	Not Considered Unreasonably large for projected growth. Undesirable adjacencies. Constrained by site.			
NC 1	Not Considered Insufficient size for current enrollment.	\$266.9 Million Insufficient size to allow for growth. Poor fit to site.	Not Considered Larger footprint. Constrained by site.	Not Considered Larger footprint. Constrained by site.	Not Considered Unreasonably large for projected growth.			
NC 2.0	\$245 Million (preliminary) Insufficient size for current enrollment.	\$267 Million (preliminary) Insufficient size to allow for growth.	\$273.9 Million Straightforward configuration. Good relationship to site. Fields. Worth further evaluation.	\$283.5 Million Straightforward configuration. Good relationship to site. Fields. Worth further evaluation.	Not Considered Unreasonably large for projected growth.	NC 2.0*	\$274 Million Affordable long-term value. Good adjacencies. Good Locker Rm location. Some room for growth.	\$283.5 Million Best long-term value. Good adjacencies. Good Locker Rm location. Best room for growth.
NC 2.1	\$249 Million (preliminary) Insufficient size for current enrollment.	\$271 Million (preliminary) Insufficient size to allow for growth.	\$281.8 Million Shorter student circulation. Good relationship to site. Worth further evaluation.	\$292.1 Million Shorter student circulation. Good relationship to site. Worth further evaluation.	Not Considered Unreasonably large for projected growth.	NC 2.1	\$281.8 Million Good circulation pattern. Exit Student area in front. Poor Locker Rm location. Slightly more expensive.	\$292.1 Million Good circulation pattern. Exit student area in front. Poor Locker Rm location. Most expensive option.
NC 3	Not Considered Insufficient size for current enrollment.	Not Considered Insufficient size to allow for growth.	Not Considered Poor configuration.	Not Considered Poor configuration.	\$305.6 Million Unreasonably large for projected growth. Poor fit to site.			

The 30 design options were narrowed down to six (plus Base Repair) for final consideration and detailed cost estimating. These included:
AR-1 805, AR-1 900, NC-2.0 805, NC-2.0 900, NC-2.1 805, and NC-2.1 900

In addition, three options were carried forward for comparative purposes:
AR-2 645, NC-1 750, and NC-3 975

This range of options insured that at least one example of each design option and one of each enrollment option was being considered.

As indicated by the color-coding (green = most advantageous; red = least advantageous), **New Construction option NC-2.0** clearly ranks highest against most all criteria. In summary it offers the following advantages:

- the best accommodation of the District’s Education Program & Vision
- the best long-term value
- slightly lower construction cost
- the least disruptive to on-going teaching & learning during construction
- compact & flexible plan configuration
- convenient , safe, and welcoming community access
- additional green space/ athletic fields

Evaluation of Enrollment Options

The District undertook a separate, parallel evaluation of the proposed enrollment options. As originally identified in the Enrollment Certificate, the range of enrollment options spanned from 645 students to 975 students, dependent upon the number of communities in the Region and the number of Chapter 74 Career Technical programs to be offered by South Shore.

Ultimately the District decided to consider five possible enrollments for this study:

645 students, 750 students, 805 students, 900 students, & 975 students

The evaluation process to reduce this number of options also took two steps similar to the design options evaluation. In the initial step the District’s Building Committee and School Committee eliminated three of these options for the following reasons:

645 students: this number is smaller than the school’s current enrollment (670) and offers no space for the Town of Marshfield, the Region’s new member without reducing the enrollment from the current member Towns. In recent years the District has consistently had a waiting list of applicants and would like to increase their capacity to reduce this list.

750 students: This size would not accommodate both the addition of Marshfield’s students and the District’s proposed new Ch. 74 programs -Plumbing and Veterinary Science.

975 students: This size was seen as excessively large and potentially unaffordable by the District’s member communities. The proposed design options for this enrollment did not reasonably fit within the buildable area of the site.

Step Two then considered the two enrollments of **805 students** and **900 students**. Multiple discussions and community meetings were held among the Building Committee, School Committee, and the public to consider these two options. The factors that were considered included construction cost, operating costs, District share on taxpayers, capacity, regional expansion, seat allocation and others.

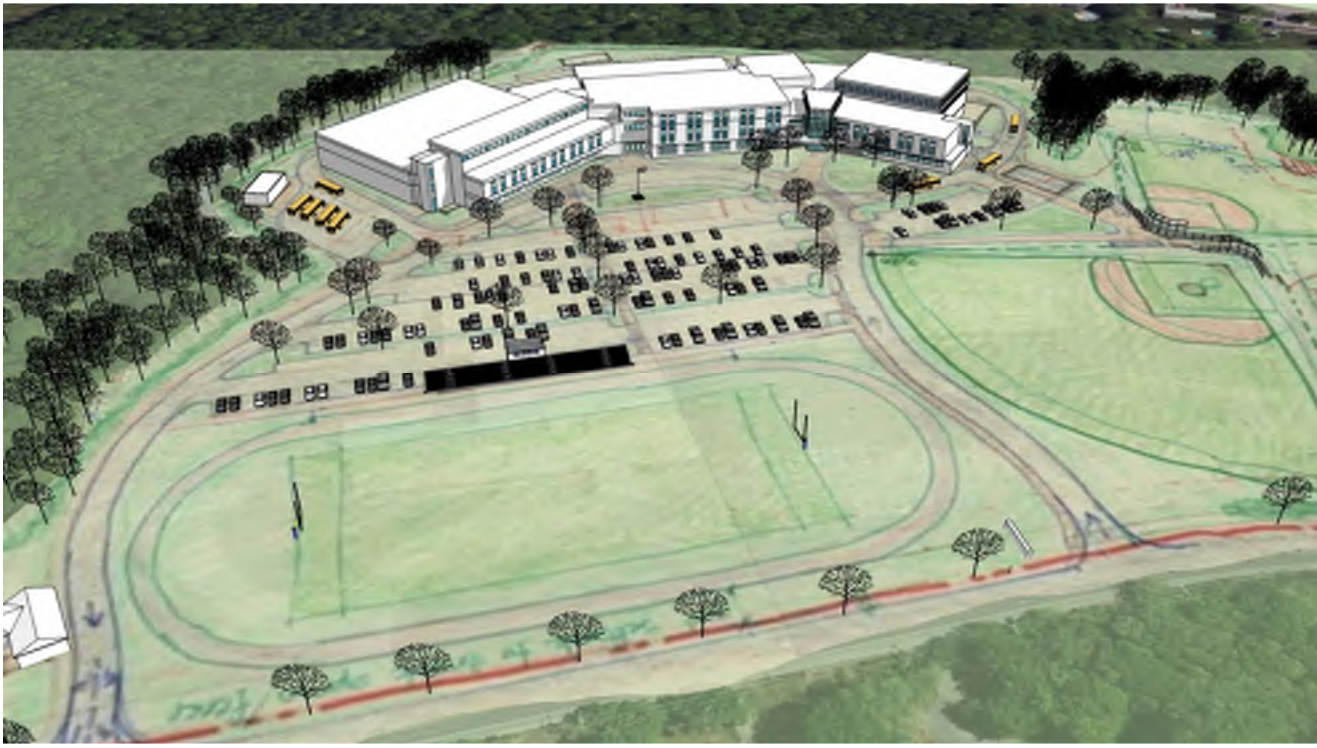
Ultimately the District agreed that the **900 student** enrollment was most advantageous. Among the positive factors:

- Offers the best long-term value
- Reduces the waiting list
- Provides flexibility for future program expansion
- Allows for potential growth of the Region



E. Summary of the District's Preferred Solution

OPTION **NC-2.0** "Linear" for 900 Students



Area: 256,350 Gross Square Feet

Description:

This new construction option proposes siting the new school on the current athletic fields. The three-story building is configured with the large assembly areas and Student Commons to the south and the academic spaces to the north organized along a linear "main street" circulation spine. This linear spine bends to conform to the available site. The high-bay shops are located in clusters to the south of the spine and administration, Culinary, and Cosmetology flank the main entrance. The main entrance at the Commons serves not only as the primary student entrance, but also as the customer, visitors, and events entrance for after-hours activities in the Gym and Auditorium

The remaining low bay CTE shops are located on the second floor over the shops. All of the academic classrooms, science labs and Special Ed spaces are on the second and third floors. Each level has some administrative space, teacher planning, small group rooms and collaborative space as recommended in the visioning sessions. To reduce the footprint the Electrical high-bay shop is located on the third floor adjacent to an elevator for service and deliveries.

Attached to the building via an enclosed link is the Horticulture program's greenhouse. Two new outbuildings are anticipated- a wastewater treatment plant and a maintenance garage. The treatment plant will be constructed as part of this project. The garage at the rear of the site will be constructed by the school's Carpentry program in the future; only the foundation and concrete slab will be included in the scope of this project at this time. There is no work anticipated for the adjacent District-owned

residential parcel at this time. The layout brings the related Chapter 74 CTE programs together in career clusters.

Floor Plans



First Floor Plan



Second Floor Plan

Third Floor Plan



View from Webster Street

Educational Program requirements:

Option NC-2 satisfies the space needs outlined in the Educational Program. It provides the overall building configuration and key adjacencies identified in the Educational Program. The building utilizes the Student Commons and Learning Commons as core elements at the heart of the school and has small gathering hubs along the main street circulation corridor. This proposed layout also provides desired Small Group rooms and Breakout spaces as described in the Ed Program.

The main entrance of this option provides a single secure access for students, visitors and customers to the school as requested in the visioning sessions. Customers have convenient and secure public access to the Consumer Services shops (Culinary, Cosmo, Horticulture Store) without traveling further into the school. Likewise the Commons provides access to the Auditorium and Gymnasium for after-hour visitors while the rest of the school can be closed off.

The Library Learning Commons stacked over the main entrance has the potential to create a desired new architectural image for the front of the school.

Space Summary variation:

It is anticipated that this option will closely match all of the Space Summary requirements identified in the Preliminary Design Program, including the District offices.



Site Plan

Site and Facility goals:

This NC-2.0 Option has a compact footprint that can be constructed independent of the existing school. The new site layout will provide multiple service areas and the potential for separate bus and car drop-off areas. Expanded athletic fields would be created, including a separate softball field and full-size running track, after the existing building is demolished.

The new building would provide all new infrastructure and potential for a robust energy efficient facility.

A new wastewater treatment plant meeting DEP requirements will be constructed to address the expanded enrollment.

Estimated Construction & Project Costs

Estimated Construction Cost:	\$239,000,211.
Estimated Project Cost:	\$283,000,000.

Advantages

Option NC-2.0 provides the best long-term value for the District. Some of the other advantages that Option NC-2.0 provides include:

- Satisfies South Shore’s space needs and right-sizes all CTE programs, including new Ch.74 programs

- Meets virtually all of the District's Educational goals.
- Provides convenient public access to the Consumer Services programs and assembly spaces
- Provides room for future growth of programs and student capacity
- Has potential for a strong new architectural image
- Compact footprint promotes good internal connectivity
- Configures CTE programs into career clusters
- Locates Locker Rooms in good proximity to the exterior athletic fields
- Eliminates the need for temporary classrooms
- Provides long-term value with new infrastructure and robust energy efficiency

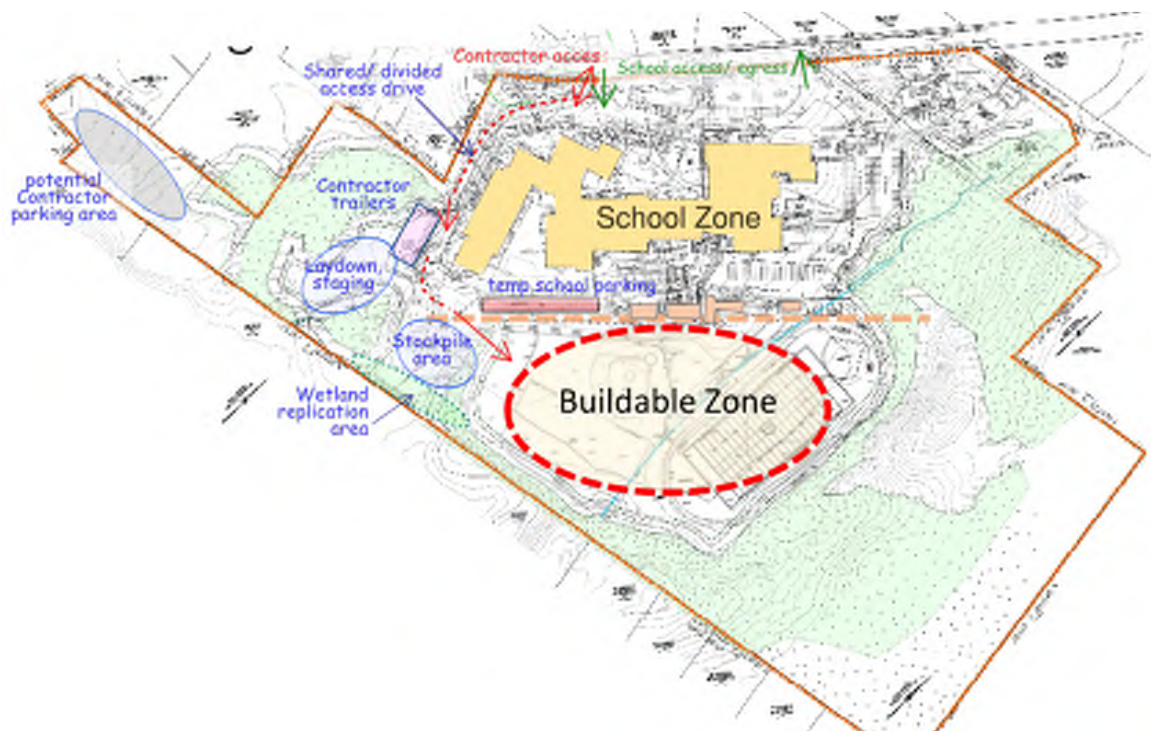
Construction Phasing:

This option would be constructed in two basic phases: 1. New Construction of the proposed new school and treatment plant. 2. Demolition of the existing school and construction of athletic fields, parking, and final sitework. To expedite the construction sequence, an Early Site Preparation phase may also be considered to provide dedicated Contractor access and parking and utility relocation.

It is anticipated that Phase 1 can be accomplished with minimal disruption to the ongoing operation of the existing school, although temporary parking may need to be considered to compensate for the loss of the existing parking. Athletics and physical education departments will need to compensate for the lack of outdoor playing fields for a period of perhaps three to four years.

Estimated construction duration is two and one half to three years.

More detailed phasing and logistic plans will be developed in subsequent phases of this project in coordination with the Districts Construction Manager at Risk.





South Shore Regional Vocational Technical High School - Hanover, MA

Project Directory

COMMITTEE / BOARD / NAME	TITLE/ROLE	EMAIL
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Updated: 2024-02-23

SOUTH SHORE TECH SCHOOL BUILDING COMMITTEE

Thomas Hickey	District Superintendent	thickey@ssvotech.org
Robert Heywood	SBC Chair, School Committee Member	rheywood@ssvotech.org
Robert Mahoney	School Committee Member	rmahoney@ssvotech.org
Dustin Reardon	School Committee Member	dreardon@ssvotech.org
Jack Manning	School Committee Member	jmanning@ssvotech.org
Daniel Salvucci	School Committee Member	dsalvucci@ssvotech.org
George Cooney	School Committee Member	gcooney@ssvotech.org
Thomas Petruzzelli	School Committee Member	tpetruzzelli@ssvotech.org
Frank Molla Jr.	School Committee Member	fmolla@ssvotech.org
James Harding	Director of Building and Grounds	jharding@ssvotech.org
Sandra Baldner	Principal	sbaldner@ssvotech.org
Keith Boyle	Assistant Principal, Vocational Director	kboyle@ssvotech.org
Robert Mello	Dean of Students, Vocational Coordinator	rmello@ssvotech.org
James Coughlin	Treasurer, School Committee Secretary	jcoughlin@ssvotech.org

SOUTH SHORE TECH SCHOOL COMMITTEE

Robert Heywood	School Committee Member - Hanover	rheywood@ssvotech.org
Robert Mahoney	Chairperson, School Committee Member - Rockland	rmahoney@ssvotech.org
Dustin Reardon	School Committee Member - Norwell	dreardon@ssvotech.org
Jack Manning	School Committee Member - Scituate	jmanning@ssvotech.org
Daniel Salvucci	School Committee Member - Whitman	dsalvucci@ssvotech.org
George Cooney	School Committee Member - Cohasset	gcooney@ssvotech.org
Thomas Petruzzelli	Vice Chairperson, School Committee Member - Abington	tpetruzzelli@ssvotech.org
Frank Molla Jr.	School Committee Member - Hanson	fmolla@ssvotech.org

South Shore Regional Vocational Technical High School - Hanover, MA

Project Directory

COMPANY / NAME	TITLE/ROLE	EMAIL	PHONE
<i>Updated: 2023-10-13</i>			
MASSACHUSETTS SCHOOL BUILDING AUTHORITY		40 Broad Street, Boston, Suite 500 MA 02109	
Veatriki Dagkalakou	Project Manager FS/SD	Veatriki.Dagkalakou@massschoolbuildings.org	617-720-4466
Allison Sullivan	Sr. Project Coordinator	Allison.Sullivan@massschoolbuildings.org	617-720-4466
OPM - LEFTFIELD, LLC		101 Federal Street, Boston, MA 02110	
Jim Rogers	Principal-In-Charge	jrogers@leftfieldpm.com	617-593-0661
Jen Carlson	Project Director	jcarlson@leftfieldpm.com	774-262-9448
Linda Liporto	Sr. Project Manager	lporto@leftfieldpm.com	617-224-8684
Adele Sands	Educational Liaison	asands@leftfieldpm.com	774-301-1352
Carlos Montanez	Mechanical Systems Specialist	cmontanez@leftfieldpm.com	339-788-7550
<u>DESIGNER - DRA Architects</u>		111 Speen Street, Framingham, MA 01701	
Carl R. Franceschi	Principal-in-Charge	CFranceschi@draws.com	617-964-1700 x 111
Judd Christopher	Project Manager	JChristopher@draws.com	617-964-1700
Sarah Carda	Project Architect	SCarda@draws.com	617-964-1700
Ann Marie Procopio	Director of Interior Design/Laboratory	AProcopio@draws.com	617-964-1700
Kenneth C. Best	Library/Media	KBest@draws.com	617-964-1700
<u>CONSULTANTS</u>			
Civil Engineering		McKenzie Engineering Groiup	
Landscape Architecture		Warner Larson	
Structural Engineering		Engineers Design Group	
Fire Protection Engineering		CA Crowley, Inc.	
Plumbing Engineering		CA Crowley, Inc.	
HVAC Engineering		Consulting Engineering Services	
Electrical/Lighting		Consulting Engineering Services	
Data/Communications		Communications Design Services	
Environmental Permitting		McKenzie Engineering Groiup	
Geotechnical Engineering		O'Reilly, Talbot & Okun	
Geonvironmental		O'Reilly, Talbot & Okun	
Hazardous Materials		CDW Consultants, Inc.	
Cost Estimating		Ellana	
Kitchen/Food Service Consultant		Crabtree McGrath	
Laboratory Consultant		DRA Architects	

South Shore Regional Vocational Technical High School - Hanover, MA

Project Directory

COMPANY / NAME	TITLE/ROLE	EMAIL	PHONE
<i>Updated: 2023-10-13</i>			
Acoustical Consultant		Acentech	
Specifications Consultant		Kalin Associates	
Library/Media		DRA Architects	
Technology / Audio Visual		Communications Design Services	
Theatrical Consultant		Studio T&L	
Sustainable/Green Design/Renewable Energy		VvS Architects & Consultants	
Code Consultant		Sullivan Code	
Accessibilty Consultant		Kessler McGuinness	
Traffic Consultant		Bryant Associates	
Furniture, Fixtures and Equipment		Point Line Space	
Site Surveying		McKenzie Engineering Group	
Security Consultant		Introba	



ATTACHMENT A
MODULE 3 – PRELIMINARY DESIGN PROGRAM REVIEW COMMENTS

District: South Shore Regional Vocational Technical School District
School: South Shore Regional Vocational Technical High School
Owner’s Project Manager: Leftfield, LLC
Designer Firm: Drummey Rosane Anderson, Inc.
Submittal Due Date: December 7, 2023
Submittal Received Date: October 27, 2023
Review Date: October 27- December 5, 2023
Reviewed by: J. Caron, V. Dagkalakou, C. Alles

MSBA REVIEW COMMENTS

The following comments¹ on the Preliminary Design Program (“PDP”) submittal are issued pursuant to a review of the project submittal document for the proposed project presented as a part of the Feasibility Study submission in accordance with the MSBA Module 3 Guidelines.

3.1 PRELIMINARY DESIGN PROGRAM

Overview of the Preliminary Design Program Submittal	Complete	Provided; <i>Refer to comments following each section</i>	Not Provided; <i>Refer to comments following each section</i>	Receipt of District’s Response; <i>To be filled out by MSBA Staff</i>
OPM Certification of Completeness and Conformity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Table of Contents	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.1 Introduction	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.2 Educational Program	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.3 Initial Space Summary	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.4 Evaluation of Existing Conditions	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.5 Site Development Requirements	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.6 Preliminary Evaluation of Alternatives	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.7 Local Actions and Approvals Certification(s)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.8 Appendices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

¹ The written comments provided by the MSBA are solely for purposes of determining whether the submittal documents, analysis process, proposed planning concept and any other design documents submitted for MSBA review appear consistent with the MSBA’s guidelines and requirements, and are not for the purpose of determining whether the proposed design and its process may meet any legal requirements imposed by federal, state or local law, including, but not limited to, zoning ordinances and by-laws, environmental regulations, building codes, sanitary codes, safety codes and public procurement laws or for the purpose of determining whether the proposed design and process meet any applicable professional standard of care or any other standard of care. Project designers are obligated to implement detailed planning and technical review procedures to effect coordination of design criteria, buildability, and technical adequacy of project concepts. Each city, town and regional school district shall be solely responsible for ensuring that its project development concepts comply with all applicable provisions of federal, state, and local law. The MSBA recommends that each city, town and regional school district have its legal counsel review its development process and subsequent bid documents to ensure that it is in compliance with all provisions of federal, state and local law, prior to bidding. The MSBA shall not be responsible for any legal fees or costs of any kind that may be incurred by a city, town or regional school district in relation to MSBA requirements or the preparation and review of the project’s planning process or plans and specifications.

3.1.1 INTRODUCTION

Provide the following Items		Complete; <i>No response required</i>	Provided; <i>District's response required</i>	Not Provided; <i>District's response required</i>	Receipt of District's Response; <i>To be filled out by MSBA Staff</i>
1	Summary of the Facility Deficiencies and Current S.O.I.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Date of invitation to conduct a Feasibility Study and MSBA Board Action Letter	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Executed Design Enrollment Certification	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Narrative of the Capital Budget Statement and Target Budget	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Project Directory with contact information	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Updated Project Schedule	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

MSBA Review Comments:

3) *The District will be required to execute a Design Enrollment Certification based on its Preferred Schematic. The MSBA will prepare a certification to be forwarded for signature upon approval by the MSBA Board of Directors for its Preferred Schematic. Please acknowledge.*

RESPONSE:
Acknowledged.

4) *The information provided in this submittal indicates that the estimated total project cost for this project could range from \$278-\$391. For reference, the OPM Request for Services indicated an estimated total project cost range of \$101-\$201 million, and the Designer Request for Services indicated an estimated construction cost range of \$225-\$250 million. In response to these review comments, describe this variation and provide information that indicates that the District has discussed and acknowledged the increase in estimated costs.*

RESPONSE:
The cost range indicated in the OPM Request for Services did not adequately reflect project soft costs nor did it reflect the current construction market. Price increases in labor, materials and operations have occurred since the original cost projections were made. The construction cost range for the Designer Request for Services was based on the design enrollments and MSBA Guidelines for square footage. Existing conditions related to the site and to the renovation/addition and increased program square footage account for the delta in the construction cost range as the project has progressed. The current cost projections submitted in the PDP were reviewed with the District and School Building Committee and the cost deltas were explained. All parties acknowledged the cost projections contained in the PDP Submission and voted to approve its submission to MSBA. Barring economic factors and market conditions outside of our control, the project team will continue to refine the project and costs and continually look for opportunities to contain and reduce total costs.

Also, please indicate how the District and design team intend to maintain the District's project budget through schematic design.

RESPONSE:
The District has agreed to utilize the Construction Manager-at-Risk building delivery method for this Project and intends to employ the CM for pre-construction services (including cost estimating) during the Schematic Design phase. The Project Team will be performing three independent Construction Cost Estimates during the Schematic Phase of the Project to manage the construction budget. The Design Team recognizes the need to be financially responsible in making design decisions. The Project Team will

incorporate alternates and value-management items throughout the design process in order to maintain the project budget.

Additionally, in response to these review comments, please provide the District’s target total project budget for the proposed project.

RESPONSE:

As indicated in the PDP submission, the preliminary total project budget for the 25 options ranges from \$278 million to \$391 million, depending on the final preferred alternative chosen. This number will be updated in the PSR once PSR-level estimates are complete, and a Preferred Schematic is chosen.

Furthermore, the information provided states: “The project is expected to either go to each sending community’s Town Meeting for approval or go to a District-wide ballot vote during the Winter of 2024/2025. The local share of debt service is planned to be allocated through regional assessment and funded via debt exclusions supported by the tax levy of member towns as indicated in the attached Establishment of a Regional School District Agreement (“the Agreement”), dated July 6, 2023, which replaced the previous agreement approved in 2018 and all other agreements or amendments”. In response to these review comments please describe the District’s plan for community outreach to all the 9 community member towns as the project progresses and the process the District will follow to inform the community Town members of the two voting options as mentioned above.

RESPONSE:

Since the PDP was submitted, after a presentation from the District’s Bond Counsel on the topic, the School Committee voted to move forward with the District-wide ballot vote approach. This has been communicated out to the sending communities and a meeting was held with the Town Clerks to begin planning for a January 2025 vote.

Throughout the Feasibility Study and Schematic Design phases, the project team will continue to hold community forums in each of the sending communities. These forums reflect the progress made to date as well as the timeline for project approval.

No further review comments for this section.

3.1.2 EDUCATIONAL PROGRAM

Provide a summary and description of the existing educational program, and the new or expanded educational vision, specifications, process, teaching philosophy statement, as well as the District’s curriculum goals and objectives of the program. Include description of the following items:

Provide the following Items		Complete; <i>No response required</i>	Provided; <i>District’s response required</i>	Not Provided; <i>District’s response required</i>	Receipt of District’s Response; <i>To be filled out by MSBA Staff</i>
1	Grade and School Configuration Policies	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Class Size Policies	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	School Scheduling Method	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Teaching Methodology and Structure				
	a) Administrative and Academic Organization/Structure	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	b) Curriculum Delivery Methods and Practices	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c) English Language Arts/Literacy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	d) Mathematics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	e) Science	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	f) Social Studies	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	g) World Languages	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	h) Academic Support Programming Spaces	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	i) Student Guidance and Support Services	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Teacher Planning and Professional Development	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Pre-kindergarten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Kindergarten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Lunch Programs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Technology Instruction Policies and Program Requirements	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Media Center/Library	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Visual Arts Programs	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Performing Arts Programs	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Physical Education Programs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	Special Education Programs	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Vocation and Technology Programs				
	a) Non-Chapter 74 Programming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b) Chapter 74 Programming	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	Transportation Policies	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	Functional and Spatial Relationships	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	Security and Visual Access Requirements	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

MSBA Review Comments:

In response to these review comments address the comments below. Additionally, as part of the District’s Preferred Schematic Report (“PSR”) submittal include (2) copies of the updated educational program, (1) redlined copy and (1) clean copy. The updated educational program must address the comments below, include District updates, provide a Designer response for each component of the educational program, and align with the District’s Preferred Schematic. Please acknowledge.

RESPONSE:
Acknowledged.

The educational program submitted for this project identified strong goals for a program to be housed in a new facility including the desire to accommodate more students, more students of varying abilities/disabilities, more integration of the academic instruction with Chapter 74 instruction, more project-based learning, the desire for more/new Chapter 74 programs, and the desire to accommodate adult/evening education programs. However, it is not clear how these goals will be achieved.

RESPONSE:

We will achieve these strong goals by developing and staffing a school that offers more instructional space in existing Chapter 74 programs and space for 2 new programs (Plumbing and Veterinary Science). It is anticipated that a larger student population and expanded district will lead to a more diverse student population at the school, including more English Learners and a more balanced male/female student population. Additional Chapter 74 space affords teachers with the ability to have more project-based learning within the shop footprint, coupled with opportunities for cooperative education in grades 11-12. These same footprints will remain open and active throughout the calendar year after the school day, for the further development and expansion of adult education programs, including the state funded Career Technical Initiative (CTI).

For example, in the model schedules included in the Educational Program, there is indication that academic instructors will have Professional Learning Communities (“PLC”) common-planning time while students are in Guidance or Physical Education periods. However, there is no indication as to who, when or how will they engage in common planning. In response to these review comments, please provide additional information and describe how the goals identified above will be achieved.

RESPONSE:

Teachers in the same Chapter 74 program are afforded 84 minutes each week to collaborate during PLC time due to the district's concurrent scheduling of all shop week students into a 42-minute physical education/health course, and a subsequent 42-minute guidance counselor led seminar.

Academic teachers in the same department have biweekly PLC meetings during the 9th period of the academic day when students have directed study periods. The district is able to schedule flexible coverage models to that, for instance, all ELA teachers can attend a PLC on Tuesdays.

Additionally, the information provided as part of the Introduction under Buildings & Grounds section of the Educational Program states: “Outbuildings include a greenhouse for Horticulture Landscape Construction, a three-bay maintenance building (that houses the Facilities Director and Transportation Coordinator), a barn (used by Horticulture Landscape Construction) and an adjacent locker room (used by Athletics Department), a concession stand and a ticket booth. There is also a district office building which houses the Superintendent-Director, Business Office, Informational Technology, and Human Resources”. Please note that as part of the Preferred Schematic Report (“PSR”) submittal, the options to be evaluated must clearly identify and describe any existing outbuildings anticipated to remain and/or any proposed newly constructed outbuildings. Please note all costs associated with new or existing outbuildings will be considered ineligible for reimbursement and must be itemized in the District’s scope of work, cost estimates, and total project budget. Please acknowledge.

RESPONSE:

Acknowledged.

2) The information provided indicates that the District has made an effort to keep Academic Classes under 28 students. Additionally, the District has consistently maintained an average class size of 20 students for the previous five years, which is below what is included in the MSBA guidelines (23 students per classroom). Please verify the current class size policy and confirm the proposed class sizes that will be used to inform the design of the proposed project.

RESPONSE:

The proposed Space Summaries have been based on maintaining the average class size of 20 students in the calculation of required General Classrooms and Science Labs. Please see attached class breakdown spreadsheet.

3) The proposed model schedule suggests 84 minutes of Professional Learning Communities (' PLC') once per week. Please consider additional time to maintain or develop the type of forward-looking Educational Program described. Please acknowledge.

RESPONSE:

Acknowledged.

4b) In response to these review comments, please provide additional information that describes how the proposed curriculum, and all associated existing and new programming offerings will be scheduled and how this academic organization/structure supports the delivery of the proposed curriculum.

RESPONSE:

All Chapter 74 programs, current and proposed, will be scheduled in an alternating week schedule. Students will have 90 cumulative days of shop instruction with full day shop experiences. On the academic week, students will attend four 84-minute blocks of instruction (which will include in grades 11-12 a daily 84-minute block of Related instruction, which is generally defined as Chapter 74 classwork related to the same curriculum framework).

As new students populate the proposed Chapter 74 programs staff will be hired accordingly, with at least one teacher being hired for each new program the year prior to the school opening, and then a second teacher being hired in either the first or second year after the school construction is completed.

All academic classes will be scheduled on the alternating week cycle with no major changes in curriculum. While not a fact at this point, the district, through the collective bargaining process, will seek some flexibility in order to allow for more scheduled academic time for wellness classes, and expanded Chapter 74 Related instruction.

4i) Provide a narrative that describes the current guidance practices/offering for students at the South Shore Regional Vocational Technical High School and clarify if there are any proposed changes associated with student guidance or provide a statement that no changes are being proposed.

RESPONSE:

Currently, SST has 2 Guidance Counselors, 2 Adjustment Counselors and 1 Director of Guidance and Admissions. Once accepted to South Shore, students have 45 minutes of scheduled "Guidance classes" every other week with their Guidance Counselor. The topics range from scheduling, peer conflict, interview skills, social media, drug & alcohol awareness, mental health awareness, job seeking skills and post-secondary planning. This class is a credited class that each student takes, each year. In addition, a Guidance Counselor is the student's go-to person for any issues that may come up in school. The Guidance Counselor is also the point of contact for parent concerns/questions.

There are no proposed changes to this scheduling model.

5) The information provided states that the District's goal is to provide collaboration and professional development. However, in order for such collaboration and professional development to succeed, support must be reflected in the way staff and students are scheduled as well as the description of specific collaborative and/or interdisciplinary goals. In response to these review comments, please provide a more detailed description of the District's plan and schedule for professional development of programs and staff.

In addition, please describe whether the District has considered providing additional professional and curricular development opportunities outside the regular school year that would enable teachers

extended times to prepare for changes in the curriculum and structure as a result of the proposed project.

RESPONSE:

Yes, the district has considered providing additional professional and curricular development opportunities outside the regular school year. Such efforts are achieved through several methods, including (a) two hours delays for morning professional development; (b) 6 department meetings per year after school; (c) aforementioned weekly or biweekly PLC meetings during the school day; (d) 9th period teacher release time (directed study schedule that allows for more during the day flexibility); (e) targeted professional development committee work where teachers are paid a stipend to undertake new curriculum work.

The main goals for our professional development are:

- to be versed in managing students with a variety of learning styles and needs,*
- to have time to develop alternate forms of instruction and assessment to reteach standards in which students are struggling.*
- to continue to learn about equitable and culturally proficient practices in schools.*
- to develop health and wellness strategies appropriate to their setting for their students and themselves.*

Please include additional details regarding the intent of teachers moving from different classrooms and describe the advantages and/or disadvantages of the proposed model.

RESPONSE:

It is generally understood that teachers being able to stay in one or two locations allows them to transition from one instructional block to another much more easily than if they have to travel with students during the passing window. Often times it requires redundancies and in instructor furniture and storage to give them the opportunity to have access to manipulatives in the classrooms in which they teach. The District considers it a priority to have teachers available to greet students as they arrive in classes. This is something that all chapter 74 programs enjoy and is found to be an essential part of the instructional model. In a newly constructed building, with strategically placed departments in classes, teachers would be allowed the ability to stay in one location. The district also acknowledges that they will be instructional initiatives that might force a balancing act, for instance, a desire to have all ninth graders taught in the same area of the high school. Well, that is not a priority right now, this new structural will allow for flexible learning adjustments to be made. in the short term, based on our statement of interest, the need for teachers to have classrooms that do not require much travel would be a big improvement.

9) The MSBA suggests the District consider providing assisted listening technology in each classroom, as well as general use throughout educational spaces within the proposed project for hearing impaired accessibility. Please acknowledge. Additionally, please provide the following information:

- Describe the District's plan for students to use their technology devices at home, if any.*
- If yes, describe whether the District has a regular program to ensure that all students have access to internet at home.*
- Additionally, please describe any arrangements that are in place to ensure all the devices are properly licensed to use the software required by the curriculum.*

RESPONSE:

South Shore Technical currently utilizes FM-based assisted listening devices to accommodate individuals with hearing impairments. The District plans to continue this process with a new or upgraded building.

Students are assigned a Chromebook Freshman year which they keep for their use both at home and school throughout their high school career. Content filtering mechanisms are utilized that ensure appropriate educational use whether they are being used inside or outside of the building. Families are

periodically surveyed, and other data is utilized to identify students who may not have access to the Internet at home. When identified, guidance staff works with the families to help them either sign up for reduced-cost internet or supply them with a district-owned hot spot.

Student Chromebooks are licensed and managed by the District with all necessary software pushed to the device via the Google Admin Console. Students are programmatically prohibited from installing software to ensure that unlicensed software does not get installed. If a student or faculty member requires software not pre-installed, there is a mechanism in place for them to request the software through the IT department. When requested, the IT department verifies academic need, compliance with privacy rules, and licensing requirements. If approved, the software gets pushed to the devices by the IT department.

10) *The information provided as part of the Impact on Design for staff states: “None”. In response to these review comments, please clarify if the District intends to eliminate the Library Media Specialist or to keep the one already in existence.*

RESPONSE:

“None” was intended to mean no additional staff will be required by the proposed project. The school intends to retain the position of Library Media Specialist.

Additionally, provide information regarding the certification and credentials of the existing Library Media Specialist.

RESPONSE:

Our library media specialist, Patricia Henderson, license number 392862, has a professional level librarian license.

Furthermore, please note that based on the educational goals provided, a fully licensed and experienced school librarian will be critical to support staff in both professional and programmatic development. Please acknowledge.

RESPONSE:

Acknowledged.

11) *The information provided indicates that the current curriculum does not have a Visual Arts program and proposes no changes to the existing curriculum. However, the information provided indicates that there is an extracurricular Art Club that currently uses a shop footprint for meetings and presentation displays in the gymnasium in the Spring. In response to these review comments, provide additional information that describes the scheduling, staffing, and overall utilization of the Art Club space.*

RESPONSE:

The extracurricular Art club will continue to utilize an available Classroom and/or the Design & Visual Communications Shop for its activities under the supervision of a faculty advisor. In addition, the proposed multi-purpose Auditorium and Student Commons can be used for the Art Club’s exhibitions.

As part of the District’s PSR submittal, the District must fully describe the function, intended users, and scheduling of this space. Also, describe potential adjacencies and common planning time relating to this program and consider including suitable display provisions throughout the building.

RESPONSE:

There is no dedicated space proposed for the Art Club. It will utilize an available Classroom and/or the Design & Visual Communications Shop for its activities as it currently does. The proposed multi-purpose Auditorium and Student Commons will be used for the Art Club’s exhibitions. The Design Team has been

instructed to include multiple display cases throughout the school for the display of student work, including Art.

Please note that art storage should include secure and appropriately ventilated space for toxic and hazardous materials as well as an accessible file of Safety Data Sheets (“SDS”). Please acknowledge.

RESPONSE:

Acknowledged.

12)The information provided indicates that South Shore RVTHS has a popular extracurricular Drama Club that performs on campus and requires rehearsal space. As part of the District’s PSR submittal, the District must fully describe the function, intended users, and scheduling of this space. Also, describe potential adjacencies and common planning time relating to this program.

RESPONSE:

The multi-purpose Auditorium and related spaces will support the activities of the extracurricular Drama Club including rehearsal, set design and performance. The Auditorium should be located adjacent to the main Lobby and Student Commons.

14) In response to these review comments, please provide additional information that describes how the English Language Learners will be fully supported at the renovated or new South Shore RVTHS.

RESPONSE:

ELL's will be fully supported at the renovated or new South Shore RVTHS with additional classroom space to allow for an increase in ELL language production and peer interaction. A dedicated space will allow students to have exactly what they need to improve: time and practice. English acquisition cannot develop if students do not have a private and comfortable space to use language both conversely and academically. Teachers will have the space to teach students as a whole group, differentiate appropriately, and promote self-learning using a variety of visual aids and technology. A larger space will allow for explicit instruction in the areas of listening, reading, writing, and speaking.

15b). The physical space and equipment needed for the Chapter 74 Programs identified by the District in its letter dated September 21, 2022, must be considered and configured early in the planning and preliminary design phases and not later in the design development process. Please acknowledge.

RESPONSE:

Acknowledged.

The information provided states: “The District has robust co-curricular SkillsUSA and Future Farmers of Americas (FFA) activities throughout the school year and this after school space would be essential for students to have meetings and practice for competitions”. Also, the information provided suggests that an ideal space for such use would be a multipurpose auditorium. In response to these review comments, please provide additional information that describes the activities of these programs and why the auditorium would be suited to support activities of the Future Farmers of Americas, in particular. Does the District intend to provide access to outdoor spaces with outdoor facilities for the delivery of those programs.

RESPONSE:

The district would use the multipurpose auditorium throughout the year for training and practices for upcoming State and National Conventions along with Regional/District competitions. The multipurpose room would allow the organization the opportunity to set up the room for specific competitions whether it

be for a student running for a National Officer position or a student practicing a demonstration or work skill in front of a large audience. The setting would provide the opportunity for students to practice in the same type of environment they will be exposed to during the competition. The space also allows for flexibility depending on the time of year and competition coming up. FFA competitions occur throughout the school year, and they will expand with Veterinary Science coming on board as well. Some of these competitions also require outdoor training/practice space which would be available for students to use for competition preparation.

Additionally, in response to these review comments, provide information that further describes each of the existing and proposed programs, the basis of the curriculum that is offered, and any potential changes to educational programming and activities planned once the proposed project is complete.

RESPONSE:

The district would use the multipurpose auditorium throughout the year for training and practices for upcoming State and National Conventions along with Regional/District competitions. The multipurpose room would allow the organization the opportunity to set up the room for specific competitions whether it be for a student running for a National Officer position or a student practicing a demonstration or work skill in front of a large audience. The setting would provide the opportunity for students to practice in the same type of environment they will be exposed to during the competition. The space will also allow for large audience assemblies as well.

Allied Health has a rigorous curriculum that includes both lab and clinical experience. Students ultimately work to obtain their Certified Nursing Assistant License and are exposed to other industry certifications including EKG, OSHA, CPR and Home Health Aide. With a new or expanded facility a Medical Assisting program would be incorporated to operate under the same umbrella which would provide additional opportunities to our students seeking the medical field. Upperclassmen often participate in South Shore Tech's cooperative education program.

Automotive has a rigorous curriculum that includes station and lift areas. Students work to learn all aspects of the automotive industry including the collision repair component. The program is accredited through NATEF and students obtain up to 8 student ASE's in addition to industry credentials in SP2 and OSHA. Upperclassmen often participate in South Shore Tech's cooperative education program.

Carpentry is starting to utilize the new NCCER curriculum as outlined in the updated MA draft frameworks. The new curriculum outlines specific learning levels and tiers divided by grade level. Students in our carpentry program obtain credentials in OSHA, Hot works, and Power actuated fasteners. Underclassmen students work in stations throughout the shop on various tiered projects and upperclassmen typically work on live off campus work. Upperclassmen often participate in South Shore Tech's cooperative education program.

Computer Information Technology students work at desk stations in the shop footprint. Students obtain various credentials in Python, Lennox, Cyber and Microsoft certifications. Students also have the opportunity to take AP credits in an embedded Computer Science course. Upperclassmen often participate in South Shore Tech's cooperative education program.

Cosmetology focuses on providing students with the skills and knowledge needed to take and pass the Cosmetology State Board License. The tiered instruction includes units on wavy and curly Hair, various haircuts and styling, manicures & pedicures and facials. In a new or expanded facility a Barbering aspect of the program would be considered in order to provide students additional pathways in the industry. In addition to the State Board Exam, students also obtain their OSHA certification as well. Upperclassmen often participate in South Shore Tech's cooperative education program.

Culinary Arts operates its curriculum in three different areas of the industry. Students are rotated on a trimester model via hospitality or front of the house, baking & pastry, and line/fry cook & salad station.

Students are also exposed to running a full-service restaurant and utilize our culinary arts Viking Food Trailer both on and off campus. Students obtain various ServeSafe certifications in addition to OSHA. Upperclassmen often participate in South Shore Tech's cooperative education program.

Design & Visual Communications operates as two programs in one and it also consists of a graphic communications curriculum. Students are exposed to all aspects of both industries and complete live work on a daily basis. The program is also expanding into photography and videography as well. Students obtain numerous credentials through the Adobe suite along with OSHA. Upperclassmen often participate in South Shore Tech's cooperative education program.

Electrical- Our rigorous electrical program curriculum has underclassmen working on booth based/station-based work in the shop footprint along with learning the code requirements in the related course of the program. Upperclassmen work on live jobs performing residential, commercial & industrial work both on and off campus. In a new or expanded facility the school would look to partner up with a local habitat for humanity additional off campus work and education. Upperclassmen often participate in South Shore Tech's cooperative education program.

Horticulture Landscape Construction has a tiered curriculum that exposes students to all aspects of the green industry. This consists of landscape maintenance, turf, irrigation, arboriculture, greenhouse management, equipment operation and more. Upper and underclass students work on live work both on and off campus. Students are also exposed to DynaScape, a CAD based program for landscape design in addition to pesticide and hoisting license training. Students also obtain their OSHA certification. Upperclassmen often participate in South Shore Tech's cooperative education program.

HVAC/R has a rigorous curriculum. Underclassmen work in stations/booths exposing and learning various parts of the industry. Our upperclassmen work on live work both on and off campus. Students obtain several credentials including OSHA, Hot Works, EPA, Universal 608a and more. In a new or expanded facility plumbing would be separated out from our existing HVAC program and make it a standalone Chapter 74 program. Upperclassmen often participate in South Shore Tech's cooperative education program.

Manufacturing Engineering Technology consists of three programs in one. Students are exposed to different levels of tiered instruction in advanced manufacturing, electronics, CAD and engineering. Students obtain several industry recognized credentials including OSHA, Hot Works and MACWIC. Upperclassmen often participate in South Shore Tech's cooperative education program.

Metal Fabrication & Welding has a robust curriculum. Underclassmen work in booths and stations on various projects used to develop and grow specific skills. Upperclassmen work on project based and live work both on and off campus. Students obtain several industry recognized credentials including OSHA, Hot Works American Welding certifications and Upperclassmen often participate in South Shore Tech's cooperative education program.

Plumbing would be a new program in a new or expanded facility. Underclassmen would work in booths and stations on various projects such as vanities, tubs, toilets and water heaters. Upperclassmen would work on and off campus, likely teaming up with habitat for humanity on various new construction projects installations. Students would obtain their OSHA certification and various other plumbing certifications. Upperclassmen will likely often participate in South Shore Tech's cooperative education program.

Veterinary Science would be a new program in a new or expanded facility. Underclassmen would be exposed to lab based on shop projects and various off campus clinical work. Students would obtain their OSHA certifications along with other potential certifications as recommended by their advisory committee. As upperclassmen students would work on live customer work and live off campus work in a clinical setting as well. Upperclassmen would likely often participate in South Shore Tech's cooperative education program.

Furthermore, please indicate if the HVAC program includes instruction regarding net-zero building HVAC systems, heat pump, ductless and solar energy technology.

RESPONSE:

Currently curriculum includes working with heat pumps and ductless systems but have not ventured into solar or net zero HVAC systems. However, these are legitimate curriculum goals that could be pursued with a new, larger shop that has the capacity to house more equipment.

Please indicate if the District and its consultant team have considered any partnership between the educators and the consultants for the project to involve students in the design and construction work.

RESPONSE:

The Project Team and the District have considered various partnership activities between the Project Team and students and educators. These activities may include design and planning involvement with the Horticulture and Construction career programs, equipment inventory assistance by CTE programs, programming meetings with student clubs, and Design Team presentations to student groups on relevant topics such as design, sustainability, materials, and energy efficiency. Additionally, the District anticipates similar activities during the construction phase focused on topics such as safety, logistics, and construction means & methods. Also, the Design Team is working with the District to identify appropriate portions of the Project that could be constructed by students as part of their future curriculum. Such portions may include the outbuildings such as the concession stand and maintenance garage.

Also, please confirm if the vocational-tech shop spaces are required to meet OSHA or any other vocational space planning standards. If so, describe how the current sizes and spaces compare to those standards.

RESPONSE:

All Chapter 74 programs were evaluated for their compliance with DESE Ch.74 Space Guidelines and deficiencies were documented in the Existing Conditions report. The proposed Space Summary addresses these deficiencies. The Cosmetology program is required to meet the State Board of Cosmetologist's facilities requirements. The school administration and instructor report that the Cosmetology program does meet those facility requirements. The school administration and Vocational Coordinator report that all existing shops comply with applicable OSHA requirements. To the best of our knowledge, no other space standards apply to the existing shops.

The District must notify the MSBA of any changes to the proposed Career/Vocational Technical Education ("CTE") Programming included in the Department of Elementary and Secondary Education ("DESE") viability letter to ensure the proposed programs and number of students per program are still considered viable by DESE. Please acknowledge.

RESPONSE:

Acknowledged.

17) Provide additional information that further describes the 'Functional and Spatial Relationships and Adjacencies' for the existing school, and the proposed changes anticipated to be incorporated into the layout of the proposed project.

RESPONSE:

The existing school layout has evolved over time in response to space needs and program changes. These changes have not always been consistent with the school's desired functional and spatial relationships. For instance, shops in similar carer clusters, like the Construction trades, are not located adjacent to one another. Likewise, the Allied Health program occupies the space of the former Library at the end of a classroom wing. The visioning session identified the desire to cluster these programs by career area where possible.

The administrative spaces in the existing building have also grown over time and have been located in random available spaces often without regard to desired functional relationships. The single teacher planning space in the existing school is under-utilized due to its remote location from many of the classrooms. The visioning sessions propose to have more, smaller planning rooms in close proximity to classrooms.

Supervision of public access in the existing building is less than desired; the proposed vision calls for a common, single-entry point for both visitors and customers to the Culinary, Cosmetology, and Horticultural store programs. |

As part of the Design Response included in the District’s Preferred Schematic Report, describe design features and strategies that will allow for the District to adjust its program offerings in the future.

RESPONSE:

The District and Design Team understand the need to provide flexibility to allow for future program changes. The strategies to be considered include: standardizing the sizes of the CTE shops where practical; upsizing utility infrastructure to allow for a variety of future needs, providing long-span structural bays to minimize structural interference with potential future reconfigurations, maximizing the use of metal stud partitions in lieu of CMU partitions to facilitate reconfiguration, providing numerous overhead doors, multiple delivery locations, and multiple elevators for future flexibility.

18) Please confirm that the first responding emergency representatives will be consulted in the planning process and associated requirements will be incorporated into the Preferred Schematic.

RESPONSE:

Acknowledged, first responders and emergency representatives will be included in the planning process during the Schematic Design and subsequent planning phases of the project.

No further review comments for this section.

3.1.3 INITIAL SPACE SUMMARY

Provide the following Items		Complete; No response required	Provided; District’s response required	Not Provided; District’s response required	Receipt of District’s Response; To be filled out by MSBA Staff
1	Space summary; one per approved design enrollment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Floor plans of the existing facility	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Narrative description of reasons for all variances (if any) between proposed net and gross areas as compared to MSBA guidelines	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

MSBA Review Comments:

1) The MSBA has performed a preliminary review of the space summaries for new construction for the (5) study enrollment options and offers the following:

- **Study Enrollment Options:**
 - **Enrollment 1:** 645 students in grades 9-12
 - **Enrollment 2:** in between 645-805 students, which the District identified as 750 students in grades 9-12.

- **Enrollment 3:** 805 students in grades 9-12 with proposed expansion of Chapter 74 Programming.
- **Enrollment 4:** in between 805 and 975 students, which the District identified as 900 students included Marshfield in grades 9-12.
- **Enrollment 5:** 975 students in grade 9-12 with proposed expansion of Chapter 74 Programming included Marshfield.

The information provided indicates that currently the District pairs 9th and 11th grade students and 10th and 12th grade students when scheduling vocational programming. To determine a full-time equivalent (“FTE”) enrollment that reflects the week-on/ week-off schedule the MSBA considered enrollments over the last five years and flexibility for future leadership should a schedule be implemented that pairs the 9th and 10th grade students. Review of the last three years of enrollment as reported to the DESE revealed that 9th and 10th grade students have represented 51% of the total population on average, which are Enrollment 1: 329 students, Enrollment 2: 383 students, Enrollment 3: 411, Enrollment 4: 459 and Enrollment 5: 497. The MSBA will base its evaluation of proposed spaces by category as presented below.

RESPONSE:
Acknowledged.

Additionally, should the District select an addition/renovation project as its Preferred Schematic, the associated space summary is subject to further review. The MSBA recognizes the benefits and the challenges associated with saving or renovating existing spaces and may consider variations in the guidelines for renovation projects beyond those included below. Please note that any spaces in new construction or substantially renovated spaces must be compliant with MSBA space standards for both allotted area and room quantity unless otherwise approved in writing by the MSBA. The MSBA will review and provide detailed comments for that specific space summary, noting any acceptance or ineligibility from the MSBA guidelines as part of its review of the District’s PSR submittal. Please acknowledge.

RESPONSE:
Acknowledged.

- **Core Academic** – The MSBA will base its evaluation of proposed spaces for this category based on the FTE enrollment (Enrollment 1: 329 students; Enrollment 2: 383 students; Enrollment 3: 411; Enrollment 4: 459; Enrollment 5: 497). The overall proposed square footage for this category exceeds the MSBA guidelines by 2,990 net square feet (“nsf”) for Enrollment 1, 4,530 nsf for Enrollment 2, 4,480 nsf for Enrollment 3, 4,380 nsf for Enrollment 4, and 5,280 nsf for Enrollment 5. Based on the information provided, the following spaces have been proposed in order for the District to deliver its educational program:

Core Academic Spaces	Enrollment 1			Enrollment 2			Enrollment 3		
	Proposed No. Rooms	MSBA Guidelines No. Rooms	Variance	Proposed No. Rooms	MSBA Guidelines No. Rooms	Variance	Proposed No. Rooms	MSBA Guidelines No. Rooms	Variance
General Classrooms	13	11	+2	15	13	+2	16	14	+2
Teacher Planning	13	11	+2	15	13	+2	16	14	+2
Small Group Seminar (20-30 Seats)	1	1	0	1	1	0	1	1	0
Science Classroom/ Lab	4	3	+1	6	4	+2	6	4	+2

Prep Room	4	3	+1	6	4	+2	6	4	+2
Central Chemical Storage Room	1	1	0	1	1	0	1	1	0

Core Academic Spaces	Enrollment 4			Enrollment 5		
	Proposed No. Rooms	MSBA Guidelines No. Rooms	Variance	Proposed No. Rooms	MSBA Guidelines No. Rooms	Variance
General Classrooms	18	16	+2	20	17	+2
Teacher Planning	18	16	+2	20	17	+2
Small Group Seminar (20-30 Seats)	1	1	0	1	1	0
Science Classroom/ Lab	6	4	+2	7	5	+2
Prep Room	6	4	+2	7	5	+2
Central Chemical Storage Room	1	1	0	1	1	0

The following spaces are variations to the MSBA guidelines:

- **General Classroom** – The District is proposing (13) 850 nsf General Classrooms totaling 11,050 nsf for Enrollment 1, which exceeds the MSBA guidelines by (2) classrooms and 1,150 nsf; (15) 850 nsf General Classrooms totaling 12,750 nsf for Enrollment 2, which exceeds the MSBA guidelines by (2) classrooms and 1,050 nsf; (16) 850 nsf General Classrooms totaling 13,600 nsf for Enrollment 3, exceeds the MSBA guidelines by (2) classrooms and 1,000 nsf; (18) 850 nsf General Classrooms totaling 15,300 nsf for Enrollment 4, exceeds the MSBA guidelines by (2) classrooms and 900 nsf; and (20) 850 nsf General Classrooms totaling 17,000 nsf for Enrollment 5, exceeds the MSBA guidelines by (2) classrooms and 1700 nsf above the MSBA guidelines. As the project further develops, please note and acknowledge 825 nsf is the minimum size for a newly constructed General Classroom for grades 9-12, and 950 nsf is the maximum size for a newly constructed General Classroom for grades 9-12.

RESPONSE:

Acknowledged, however the District believes the amount of space exceeding the guideline should be revised. The District believes that the formula in the MSBA Guideline for this category should be modified. The Space Summary template assumes that the curriculum includes Art and Technology as scheduled classes and therefore reduces the number of required General Classrooms by the number of Art and Technology classrooms. However, most Career Technical schools, like South Shore Tech, do not have an Art curriculum (the students don't have room in their schedule). Therefore, the formula in the template for calculating the number of General Classrooms should be modified accordingly. The District believes the amount of space exceeding the guideline should be revised accordingly.

- **Teacher Planning** – The District is proposing (13) 100 nsf General Classrooms totaling 1,300 nsf for Enrollment (15) 100 nsf General Classrooms totaling 1,500 nsf for Enrollment 2, (16) 100 nsf General Classrooms totaling 1,600 nsf for Enrollment 3, (18) 100 nsf General Classrooms totaling 1,800 nsf for Enrollment 4, and (20) 100 nsf General Classrooms totaling 2,000 nsf for Enrollment 5, which , which exceeds the MSBA guidelines by (2) Teacher Planning and 200 nsf for all Enrollments. In response to these review comments, provide information that describes the desired location and adjacencies of the Teacher Planning areas.

RESPONSE:

The Design Team anticipates allocating the total net area for Teacher Planning into 3 to 5 separate rooms to be located in close proximity to the academic classrooms. Depending upon the preferred solution this may result in one teacher planning room in each classroom wing and on each floor of the proposed building.

- **Small Group Seminar (20-30 seats)** – The District is proposing (1) 500 nsf Small Group Seminar for each study enrollment option, which meets the MSBA guidelines. No further preliminary comments.
- **Science Classroom / Lab** – The District is proposing (4) 1,440 nsf Science Classroom/Lab totaling 5,760 nsf for Enrollment 1, which exceeds the MSBA guidelines by (1) Science Classroom/ Lab and 1,440 nsf; (6) 1,440 nsf Science Classroom/Lab totaling 8,640 nsf for Enrollment 2, Enrollment 3 and Enrollment 4, and (7) 1,440 nsf Science Classroom/Lab totaling 10,080 nsf for Enrollment 5 which exceeds the MSBA guidelines by (2) Science Classroom/ Lab and 2,880 nsf. In response to these review comments, please provide scheduling, overall utilization, and any other supporting information that further documents the District’s need for the proposed number of Science Classrooms/Labs.

RESPONSE:

The number of Science Labs is based upon the proposed curriculum, schedule, and class sizes. South Shore offers 30 sections of Science courses (15 each alternating week) as shown on the attached excerpt from the schools course listing. The average class size for the 2023-24 school year is 19.1. Each of these Science courses is offered five days per week. Using the same formula as the MSBA template results in the proposed number of science labs for each enrollment option.

- **Prep Room** – The District is proposing (4) 200 nsf Prep Room totaling 800 nsf for Enrollment 1, which exceeds the MSBA guidelines by (1) Prep Room and 200 nsf; (6) 200 nsf Prep Room totaling 1,200 nsf for Enrollment 2, Enrollment 3 and Enrollment 4, and (7) 200 nsf Prep Room totaling 1,400 nsf for Enrollment 5 which exceeds the MSBA guidelines by (2) Prep Room and 400 nsf above the MSBA guidelines. In response to these review comments, please provide scheduling, overall utilization, and any other supporting information that further documents the District’s need for the proposed number of Prep Rooms associated with the proposed Science Classrooms/Labs.

RESPONSE:

The calculations for the number of Prep Rooms is similar to those described above for the number of Science Labs. The District proposes a similar one:one ratio of Prep Rooms to Science Labs as identified in the MSBA guidelines.

- **Central Chemical Storage Room** – The District is proposing (1) 200 nsf Central Chemical Storage Room for each study enrollment option, which meets the MSBA guidelines. No further preliminary comments.
- **Special Education** – The MSBA will base its evaluation of proposed spaces for this category based on the FTE enrollment (Enrollment 1: 329 students; Enrollment 2: 383 students; Enrollment 3: 411; Enrollment 4: 459; Enrollment 5: 497). The overall proposed square footage for this category is below the MSBA guidelines by 300 nsf for Enrollment 1, 180 nsf for Enrollment 2, 1190 nsf for Enrollment 3, 870 nsf for Enrollment 4 and 860 nsf for Enrollment 5. Please note that the Special Education program is subject to approval by the

Department of Elementary and Secondary Education (“DESE”). The District should provide the required information required with the Schematic Design submittal. Formal approval of the District’s proposed Special Education program by the DESE is a prerequisite for executing a Project Funding Agreement with the MSBA.

RESPONSE:

Acknowledged.

- **Art & Music** – The MSBA will base its evaluation of proposed spaces for this category based on the FTE enrollment (678 students for Enrollment 1; and 742 students for Enrollment 2). The District is not proposing any square footage for the Art & Music category, and it is below the MSBA guidelines by 5,050 nsf. Additionally, the information provided indicates that the current curriculum does not have a Visual Arts program and proposed no changes to the existing curriculum. However, there is an extracurricular Art Club that uses a shop footprint for meetings and presentation displays in the gymnasium in the Spring. In response to these review comments, provide additional information that describes the scheduling, staffing, and overall utilization of the Art Club space. Please also, see section 3.1.2 item 11 above. Additionally, in response to these review comments, please verify that the proposed square footage is sufficient to meet the needs of the District’s educational program.

RESPONSE:

No changes are being proposed to the District’s curriculum offerings in this category. There are no plans to include a formal Art program that would require a dedicated Art Classroom. The extracurricular Art club will continue to be able to utilize an available Classroom and/or the Design & Visual Communications Shop for its activities under the supervision of a faculty advisor. In addition, the proposed multi-purpose Auditorium and Student Commons can be used for the Art Club’s exhibitions.

- **Vocations & Technology** – The MSBA will base its evaluation of proposed spaces for this category based on the FTE enrollment (Enrollment 1: 329 students; Enrollment 2: 383 students; Enrollment 3: 411; Enrollment 4: 459; Enrollment 5: 497). The overall proposed square footage in this category exceeds the MSBA guidelines by 61,670 nsf for Enrollment 1, 71,345 for Enrollment 2, 76,145 for Enrollment 3, 83,680 for Enrollment 4, and 90,505 for Enrollment 5.
 - **Non-Chapter 74 Programs**– The District is proposing (1) 1,500 nsf Technology/Engineering Room for each study enrollment option, which is (1) Technology/Engineer Room and 1,380 nsf below the MSBA guidelines for Enrollment 1, Enrollment 2 and Enrollment 3; and (2) Technology/Engineer Rooms and 2,820 nsf below the MSBA guidelines for Enrollment 4 and Enrollment 5. Based on the information provided, the MSBA does not object to the District including the additional 60 net square footage for each Technology/Engineering Room; however, the MSBA will limit its participation to 1,440 nsf for the Technology Engineering Room. Please refer to MSBA’s STE Rooms Guidelines for additional information.

RESPONSE:

Acknowledged.

- **Chapter 74 Programs** - The District is proposing the following existing (12) Chapter 74 programs and two new Chapter 74 Programs, (1) Veterinary Science and (1) Plumbing Chapter 74 programs:

Proposed Chapter 74 Programs	Total Proposed NSF Enrollment 1	Total Proposed NSF Enrollment 2	Total Proposed NSF Enrollment 3	Total Proposed NSF Enrollment 4	Total Proposed NSF Enrollment 5
(Allied Health) Health Assisting	2,375	2,750	3,000	3,375	3,625
Automotive Tech.	7,975	9,350	10,175	11,550	12,650
Carpentry	5,400	6,300	6,750	7,650	8,550
(Computer Information Tech) Information Support Services and Networking	2,200	2,200	2,200	2,200	2,200
Cosmetology	3,150	3,750	4,050	4,650	4,950
Culinary Arts +Restaurant	3,950	4,575	4,825	5,325	5,700
Electricity	7,650	9,225	9,900	11,250	12,375
Design and Visual communications (includes Graphic Comm.)	3,450	4,200	4,500	5,100	5,500
Heating, ventilation, Air Conditioning, Refrigeration	4,800	5,800	6,200	7,000	7,600
Horticulture	4,550	5,425	5,775	6,650	7,175
(Manufacturing Engineering Tech) Advanced Manufacturing Technology	3,200	3,800	4,200	4,800	5,200
Metal Fabrication and Welding Joining Technologies	6,000	7,000	7,600	8,600	9,400
Veterinary	4,000	4,000	4,000	4,000	4,000
Plumbing	4,350	4,350	4,350	4,350	4,350
Total Proposed NSF	63,050	72,725	77,525	86,500	93,325

The information provided in the viability letter from DESE indicates an Exploratory Program, that is an existing program to be expanded based on wait list. However, the Space Summaries provided for each study enrollment haven't included this program in the Vocational Technical programs category. In response to these review comments please clarify if this program will continue to be offered and provide updated Space Summaries.

RESPONSE:

The Exploratory program for Freshmen at South Shore Tech does not require dedicated space; it utilizes the entire inventory of CTE shops. During the first portion of the 9th grade school year, the students are divided into 12 groups and rotate through each of the school's current 12 CTE programs for 3 days each. At the end of this period, the students submit their 1st, 2nd, and 3rd choices for their preferred CTE programs. The administration then assigns the students to each CTE in response to their requested programs as space allows. The students then spend the balance of the school year with that assigned shop on an alternating week basis along with the upperclass students. These shops are sized and designed to simultaneously accommodate a cohort of 9th and 11th grade students (and 10th & 12th graders on the alternate weeks).

Please note that the DESE has reviewed the District's pre-submission application and associated supplemental information and are in general agreement with the proposed Chapter 74 programs listed above going into the next phase of the proposed project, per the DESE letter provided on September 21, 2022.

RESPONSE:
Acknowledged.

Please note that DESE and the MSBA will continue to work with the District to confirm agreement with the proposed Chapter 74 programs and monitor the proposed programs in subsequent submittals to confirm consistency with the District's pre-submission documentation and alignment with program and safety recommendations.

RESPONSE:
Acknowledged.

- **Health & Physical Education** – *The MSBA will base its evaluation of proposed spaces for this category based on the FTE enrollment (Enrollment 1: 329 students; Enrollment 2: 383 students; Enrollment 3: 411; Enrollment 4: 459; Enrollment 5: 497). The overall proposed square footage of each study enrollment option for this category meets the MSBA guidelines. No further preliminary comments.*
- **Media Center** – *The MSBA will base its evaluation of proposed spaces for this category based on the FTE enrollment (Enrollment 1: 329 students; Enrollment 2: 383 students; Enrollment 3: 411; Enrollment 4: 459; Enrollment 5: 497). The overall proposed square footage of each study enrollment option for this category meets the MSBA guidelines. No further preliminary comments.*
- **Auditorium/Drama** – *The MSBA will base its evaluation of proposed spaces for this category based on the FTE enrollment (Enrollment 1: 329 students; Enrollment 2: 383 students; Enrollment 3: 411; Enrollment 4: 459; Enrollment 5: 497). The overall proposed square footage for this category is below the MSBA guidelines by 1,475 nsf for Enrollment 1, 1,650 nsf for Enrollment 2, 1,742 nsf for Enrollment 3, 1,900 nsf for Enrollment 4 and 2,025 Enrollment 5. In response to these review comments, verify the proposed square footage for the Auditorium area is sufficient to meet the District's needs.*

RESPONSE:

The District confirms that the proposed Auditorium area is sufficient to meet their needs.

- **Dining & Food Service** – *The MSBA will base its evaluation of proposed spaces for this category based on the FTE enrollment (Enrollment 1: 329 students; Enrollment 2: 383 students; Enrollment 3: 411; Enrollment 4: 459; Enrollment 5: 497). The overall proposed square footage of each study enrollment option for this category meets the MSBA guidelines. No further preliminary comments.*
- **Medical** – *The MSBA will base its evaluation of proposed spaces for this category based on the FTE enrollment (Enrollment 1: 329 students; Enrollment 2: 383 students; Enrollment 3: 411; Enrollment 4: 459; Enrollment 5: 497). The overall proposed square footage of each study enrollment option for this category exceeds the MSBA guidelines by 100 nsf. As part of the PSR submittal, please relocate the (1) 100 nsf Mothers Room to the Non-Programmed Spaces category as long as the grossing factor doesn't exceed 1.50.*

RESPONSE:
Acknowledged.

- **Administration & Guidance** – The MSBA will base its evaluation of proposed spaces for this category based on the FTE enrollment (Enrollment 1: 329 students; Enrollment 2: 383 students; Enrollment 3: 411; Enrollment 4: 459; Enrollment 5: 497). The overall proposed square footage for this category exceeds the MSBA guidelines by 1,930 nsf for Enrollment 1, 1,903 nsf for Enrollment 2, 1,890 nsf for Enrollment 3, 1,866 nsf for Enrollment 4 and 1,847 for Enrollment 5. Please note the MSBA encourages the District to seek efficiencies in the proposed layout to reduce the overall net square footage. Also, the MSBA will consider square footage in excess of the guidelines to be ineligible for reimbursement. Please acknowledge.

RESPONSE:

Acknowledged.

- **Custodial & Maintenance** – The MSBA will base its evaluation of proposed spaces for this category based on the FTE enrollment (Enrollment 1: 329 students; Enrollment 2: 383 students; Enrollment 3: 411; Enrollment 4: 459; Enrollment 5: 497). The overall proposed square footage for this category of each study enrollment option meets the MSBA guidelines. No further preliminary comments.
- **Other** – The MSBA will base its evaluation of proposed spaces for this category based on the FTE enrollment (Enrollment 1: 329 students; Enrollment 2: 383 students; Enrollment 3: 411; Enrollment 4: 459; Enrollment 5: 497). The District is proposing 1,495 nsf which exceeds the MSBA guidelines. The District is proposing the following spaces: (Square footage in this category will be considered ineligible for reimbursement). Please acknowledge.
 - (1) 695 nsf Superintendent’s Suite including Conference Room
 - (1) 800 nsf Business Office
 - (1) 1,800 nsf Maintenance / Storage Building. In response to these review comments please clarify if this space will be part of the net square footage since this space wasn’t accounted for in the total nsf of the “Other” category.

RESPONSE:

The Maintenance Storage Building will not be part of the main school building project; it will be a free-standing outbuilding and therefore no net area will be listed in the “Other” category on the Space Summary form.

Additionally, please provide a revised space summary that removes total net square footage and gross square footage associated with the separate Maintenance / Storage Building from the space summary. Furthermore, please note costs associated with this work must be itemized in subsequent submittals and that all costs associated with this space will be considered ineligible for reimbursement. Please acknowledge.

RESPONSE:

Acknowledged, see attached revised Space Summary for each enrollment.

- (1) 1,152 nsf Maintenance Garage. In response to these review comments please clarify if this space will be part of the net square footage since this space wasn’t accounted for in the total nsf of the “Other” category.

RESPONSE:

The Maintenance Garage Building will not be part of the main school building project; it will be a free-standing outbuilding and therefore no net area will be listed in the “Other” category on the Space Summary form.

Additionally, please provide a revised space summary that removes total net square footage and gross square footage associated with the separate Maintenance Garage from the space summary. Furthermore, please note costs associated with this work must be itemized in subsequent submittals and that all costs associated with this space will be considered ineligible for reimbursement. Please acknowledge.

RESPONSE:

Acknowledged, see attached revised Space Summary for each enrollment.

Please note that upon selection of a preferred solution, the District may be required to adjust spaces/square footage that exceeds the MSBA guidelines and is not supported by the Educational Program provided.

RESPONSE:

Acknowledged.

No further review comments for this section.

3.1.4 EVALUATION OF EXISTING CONDITIONS

Provide the following Items		Complete; <i>No response required</i>	Provided; <i>District's response required</i>	Not Provided; <i>District's response required</i>	Receipt of District's Response; <i>To be filled out by MSBA Staff</i>
1	Confirmation of legal title to the property.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Determination that the property is available for development.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Existing historically significant features and any related effect on the project design and/or schedule.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Determination of any development restrictions that may apply.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Initial Evaluation of building code compliance for the existing facility.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Initial Evaluation of Architectural Access Board rules and regulations and their application to a potential project.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Preliminary evaluation of significant structural, environmental, geotechnical, or other physical conditions that may impact the cost and evaluations of alternatives.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Determination for need and schedule for soils exploration and geotechnical evaluation.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Environmental site assessments minimally consisting of a Phase I: Initial Site Investigation performed by a licensed site professional.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Assessment of the school for the presence of hazardous materials.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Provide the following Items		Complete; <i>No response required</i>	Provided; <i>District's response required</i>	Not Provided; <i>District's response required</i>	Receipt of District's Response; <i>To be filled out by MSBA Staff</i>
11	Previous existing building and/or site reports, studies, drawings, etc. provided by the district, if any.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

MSBA Review Comments:

3) *The information provided states:*

“Massachusetts Historical Commission (MHC) review is not required. To the best of our knowledge, the existing South Shore Vocational Technical High School building is neither inventoried by the MHC nor is it an historic landmark. A Project Notification Form (PNF) will be submitted to the MHC as part of the PSR phase of the project.”

Please note that the Massachusetts Historic Commission (“MHC”) will determine the status/outcome based on review of the Project Notification Form (“PNF”) that must be submitted to the MHC. Also note that MHC approval is required prior to construction bids. The District should keep the MSBA informed of any decisions and/or proposed actions and should confirm that the proposed project is in conformance with Massachusetts General Law 950, CMR 71.00. In response to these review comments, please provide the timeline associated with filing a PNF with the MHC for review and approval.

RESPONSE:

Acknowledged. The Design Team will file a Project Notification Form with the Massachusetts Historical Commission prior to submitting the PSR to the MSBA.

5) *The information provided indicates a hydrant flow test is required to determine municipal water supply characteristics. In response to these review comments, please provide the timeline associated with conducting the hydrant flow test.*

RESPONSE:

The Design Team will coordinate with the Town of Hanover to perform a hydrant flow test during the Schematic Design phase in the Spring of 2024.

5, 6) *Please note that although the 2015 International Building Code (“IBC”) and 2018 International Energy Conservation Code (“IECC”) are in effect as the basis for the current 9th edition of the Massachusetts Building Code, a 10th edition of the Massachusetts Building Code based on the 2021 IBC and 2021 IECC (including any MA amendments) is pending. In response to these review comments, the design team should review the project’s anticipated permit date based on the project schedule and verify coordination with the code analysis and all systems basis of design in subsequent phases.*

RESPONSE:

Acknowledged. The Design Team anticipates filing Construction Documents in late 2024 at the earliest and will align the code analysis and all systems’ basis of design with the appropriate edition of the Building Codes at that time.

7, 8) *The information provided for the existing South Shore Regional Vocational Technical High School site indicates the following:*

- *The environmental site assessment identified no Recognized Environmental Conditions at the South Shore High School. Therefore, no additional evaluation of potential spills or releases of oils or hazardous materials are proposed at this time. If significant quantities of soil are to be removed and disposed of off-site as part of the final design, we recommend that environmental testing of the soils be conducted to aid in evaluating off-site disposal options and potential costs. Pursuant to OTO’s Geotech study, we recommend design phase explorations be performed prior to final design. The number and scope of additional explorations will depend upon design phasing and the final location and slab elevation of any new building, as well as the location of proposed parking areas and utilities.*
- *Borings/test pits should also be performed along utility lines and in deep cuts to evaluate the depth to the bedrock surface. If bedrock or large boulders are encountered in the design phase borings, coring may be required. The design phase geotechnical study should also include grain size distribution analyses to evaluate the suitability of site soils for re-use as engineered fill and testing to evaluate the hydraulic conductivity of site soils at proposed stormwater disposal locations.*

Please confirm that the recommended and suggested testing will be performed timely in order to inform the proposed scope and budget of the schematic design. Additionally, in response to these review comments, provide the timeline associated with any additional testing or review and analysis and note that all cost increases subsequent to a Project Scope and Budget Approval from the MSBA’s Board of Directors will be the sole responsibility of the District. Please acknowledge.

RESPONSE:

Acknowledged. The recommended additional HazMat and geotechnical testing will be performed during the Schematic Design phase in the Spring of 2024 so that the information can be incorporated into the Schematic Design cost estimates for the preferred option.

9) *Please note that costs associated with the removal of fuel storage tanks and associated contaminated soil will be considered ineligible for reimbursement. Please acknowledge.*

RESPONSE:

Acknowledged.

10) *The information provided states the following:*

- *“South Shore Technical has performed asbestos testing and has an asbestos insulation management program in place. If it has not already been performed, radon testing within the existing building should be considered.”*
- *“The number and scope of additional explorations will depend upon design phasing and the final location and slab elevation of any new building, as well as the location of proposed parking areas and utilities.”*

In response to these review comments, provide the timeline associated with any additional testing or review and analysis.

RESPONSE:

The recommended additional HazMat and geotechnical testing will be performed during the Schematic Design phase in the Spring of 2024 so that the information can be incorporated into the Schematic Design cost estimates for the preferred option.

The project team should be aware of the current policies associated with MSBA’s participation in the abatement and removal of hazardous materials. However, please note and acknowledge that all costs associated with the removal of flooring materials and ceiling tiles containing asbestos are considered ineligible for reimbursement.

RESPONSE:
Acknowledged.

No further review comments for this section.

3.1.5 SITE DEVELOPMENT REQUIREMENTS

Provide the following Items		Complete; No response required	Provided; District's response required	Not Provided; District's response required	Receipt of District's Response; To be filled out by MSBA Staff
1	A narrative describing project requirements related to site development to be considered during the preliminary and final evaluation of alternatives.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Existing site plan(s)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

MSBA Review Comments:

1) The information provided by the McKenzie Engineering Group states the following:

- “For any renovations and/or expansions, it is anticipated that the existing water services (domestic and fire protection to be determined as viable for reuse by the MEP Engineer), gas, and electric infrastructure will need to be further evaluated to determine viability/capacity. It is anticipated that an expanded stormwater management system would be required per Massachusetts DEP Stormwater Management Regulations (2008) to accommodate any campus expansion/renovation project”.
- “An expanded existing conditions survey on Webster Street is needed to review sight distances, slope, surface drainage, and the feasibility of possible driveway relocations to determine if the existing site access at Webster Street is sufficient for both properties. In addition, the driveway entrance and driveway for 436 Webster Street should be widened to a minimum of 20 feet for one-way traffic for future use”.
- “Wetlands resource areas are protected by the Massachusetts Wetlands Protection Act (MGL Ch. 131 S. 40), Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00), and the Hanover Wetlands Protection Bylaw and Wetlands Protection Regulations. The Bylaw Regulations are more restrictive than the Wetlands Protection Act Regulations as they impose a 35-ft. no-disturb buffer. It is presumed any new construction will encroach on resource areas or their associated buffer zones due to their close proximity to existing developed areas and that an Order of Conditions permit approving the project will be required from the Commission”.
- “It is presumed any new construction will encroach on resource areas or their associated buffer zones due to their proximity to existing developed areas and that an Order of Conditions approving the project will have to be obtained from the Commission. The

wetland resource areas are in the process of being re-delineated by a wetland botanist. The first step in the approval process is filing an Abbreviated Notice of Resource Area Delineation (ANRAD) Application will be filed with the Commission for approval of the boundaries of these resources. The Commission will review the flagged boundaries and eventually issue an Order of Resource Area Delineation (ORAD), which approves the wetland boundaries for three (3) years. Once final construction plans have been developed, a Notice of Intent Application and related documents will be filed with the Commission for approval of the construction project”.

- “An NPDES Construction General Permit (CGP) and a Stormwater Pollution Prevention Plan (SWPPP) will need to be obtained by the contractor from the EPA before construction should disturbance associated with the property exceed 1 acre”.

In response to these review comments, please review and respond to the following items:

- Identify any potential issues and steps that may be required for these resolutions if any. Additionally, please ensure that future versions of the project schedule will include dates of anticipated approvals and key steps.

RESPONSE:

A full stormwater management plan in compliance with Massachusetts DEP Stormwater Management Regulations will be developed for the entire site for the preferred option.

Depending upon the proposed location of driveways in the preferred option, an expanded existing conditions survey on Webster Street will be performed in the next phase of the project to review sight distances, slope, surface drainage of possible driveway relocations at Webster Street. The Design Team’s traffic consultant will review the new driveway design for both the current school property and the school’s residential property (436 Webster Street) during the Schematic Design phase.

The Design Team has already begun consultation with the Hanover Conservation agent in anticipation of a future filing of a Notice of Intent with the Conservation Commission. The wetland buffers and restrictions have been incorporated into the development of site options. The Conservation agent also advised that given the date of the current wetlands flagging and previous review, an ANRAD filing may not be required at this time. The Design Team will confirm this during the Schematic Design phase.

It is anticipated that a NPDES Construction General Permit (CGP) and a Stormwater Pollution Prevention Plan (SWPPP) will be required for this project. The Design Team will ensure that the Construction Manager incorporates this into their schedule during the pre-construction period.

Future versions of the project schedule will include dates of the anticipated approvals and key steps noted above.

- Describe how the site constraints are impacting the design options explored in the Preliminary Evaluation of Alternatives section.

RESPONSE:

The extent and configuration of wetlands significantly limits the buildable area on the school’s property. The Town’s Wetland By-Law imposes a 35-foot no-disturb zone in the buffer areas which further limits buildable area. The goal of minimizing disruption to the on-going school’s operation further limits the buildable area for new construction.

- As part of the District’s PSR submittal, describe how the onsite number of parking spaces for staff and visitors will be determined. Describe whether the required parking will be determined by school needs, after-hours athletic/performance needs, and/or local zoning

requirements. In addition, provide a timeline associated with the needed permits, filings, and reviews discussed in this section. Please acknowledge.

RESPONSE:
Acknowledged.

- As part of the District’s PSR submittal, provide site section(s) that illustrates how the Preferred Schematic sits on the site and how the proposed location impacts access and circulation. Please acknowledge.

RESPONSE:
Acknowledged.

2) In response to these review comments, provide the following for the existing school site:

- Circulation diagrams that identify the existing:
 - Bus and parent drop-off/pick-up locations;
 - Vehicular and pedestrian circulation; and
 - Emergency vehicle access.

RESPONSE:
See attached Site Plan diagrams.

- Provide diagram(s) and a narrative that describes how a physically challenged individual currently accesses the existing building.

RESPONSE:
See attached Site Plan diagrams.

- As part of the District’s PSR submittal, please provide circulation diagrams for all options explored as part of the Final Evaluation of Alternatives. Please acknowledge.

RESPONSE:
Acknowledged.

No further review comments for this section.

3.1.6 PRELIMINARY EVALUATION OF ALTERNATIVES

Provide the following Items		Complete; <i>No response required</i>	Provided; <i>District's response required</i>	Not Provided; <i>District's response required</i>	Receipt of District's Response; <i>To be filled out by MSBA Staff</i>
1	Analysis of school district student school assignment practices and available space in other schools in the district	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Tuition agreement with adjacent school districts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Rental or acquisition of existing buildings that could be made available for school use	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Code Upgrade option that includes repair of systems and/or scope required for purposes of code	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	compliance; with no modification of existing spaces or their function				
5	Renovation(s) and/or addition(s) of varying degrees to the existing building(s)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Construction of new building and the evaluation of potential locations	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	List of 3 distinct alternatives (including at least 1 renovation and/or addition option) are recommended for further development and evaluation.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

MSBA Review Comments:

4) *The information provided indicates that the District provided only a code analysis narrative and did not include any Code Upgrade option for the existing South Shore Regional Vocational Technical High School. Please note the District will be required to include a Code Upgrade option for the existing school as part of the PSR submittal for cost comparison purposes. This option should include additional information that identifies the capacity of the existing school associated with a repair option that does not propose any new construction square footage. Please acknowledge.*

RESPONSE:

The "Code Upgrade" option is included in section 3.1.6.4 of the original PDP submission and is called "Base Building Repair."

5, 6, 7) *As part of the Preliminary Evaluation of Alternatives, the District explored the following (25) options at the existing South Shore Regional Vocational Technical High School site. Please note this submittal concluded that the District intends to further evaluate all 25 options as part of its PSR submittal:*

- **Option AR-1 (645):** *Addition/Renovation (L-shape) for grades 9-12 with an enrollment of 645 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$303.7 million.*
- **Option AR-1 (750):** *Addition/Renovation (L-shape) for grades 9-12 with an enrollment of 750 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$332.4 million.*
- **Option AR-1 (805):** *Addition/Renovation (L-shape) for grades 9-12 with an enrollment of 805 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$349.8 million.*
- **Option AR-1 (900):** *Addition/Renovation (L-shape) for grades 9-12 with an enrollment of 805 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$366.7 million.*
- **Option AR-1 (975):** *Addition/Renovation (L-shape) for grades 9-12 with an enrollment of 975 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$391.1 million.*

- **Option AR-2 (645):** Addition/Renovation (Lightwell) for grades 9-12 with an enrollment of 645 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$277.9 million.
- **Option AR-2 (750):** Addition/Renovation (Lightwell) for grades 9-12 with an enrollment of 750 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$303.6 million.
- **Option AR-2 (805):** Addition/Renovation (Lightwell) for grades 9-12 with an enrollment of 805 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$314.2 million.
- **Option AR-2 (900):** Addition/Renovation (Lightwell) for grades 9-12 with an enrollment of 900 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$338.8 million.
- **Option AR-2 (975):** Addition/Renovation (Lightwell) for grades 9-12 with an enrollment of 975 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$349.3 million.
- **Option NC-1 (645):** New Construction (Courtyard) for grades 9-12 with an enrollment of 645 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$293.7 million.
- **Option NC-1 (750):** New Construction (Courtyard) for grades 9-12 with an enrollment of 750 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$329.9 million.
- **Option NC-1 (805):** New Construction (Courtyard) for grades 9-12 with an enrollment of 805 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$344.1 million.
- **Option NC-1 (900):** New Construction (Courtyard) for grades 9-12 with an enrollment of 900 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$367.9 million.
- **Option NC-1 (975):** New Construction (Courtyard) for grades 9-12 with an enrollment of 975 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$389.3 million.
- **Option NC-2 (645):** New Construction (Linear) for grades 9-12 with an enrollment of 645 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$293.7 million.
- **Option NC-2 (750):** New Construction (Linear) for grades 9-12 with an enrollment of 750 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$329.9 million.
- **Option NC-2 (805):** New Construction (Linear) for grades 9-12 with an enrollment of 805 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$344.1 million.

- **Option NC-2 (900):** *New Construction (Linear) for grades 9-12 with an enrollment of 900 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$367.9 million.*
- **Option NC-2 (975):** *New Construction (Linear) for grades 9-12 with an enrollment of 975 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$389.3 million.*
- **Option NC-3 (645):** *New Construction (Wings) for grades 9-12 with an enrollment of 645 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$293.7 million.*
- **Option NC-3 (750):** *New Construction (Wings) for grades 9-12 with an enrollment of 750 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$329.9 million.*
- **Option NC-3 (805):** *New Construction (Wings) for grades 9-12 with an enrollment of 805 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$344.1 million.*
- **Option NC-3 (900):** *New Construction (Wings) for grades 9-12 with an enrollment of 900 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$367.9 million.*
- **Option NC-3 (975):** *New Construction (Wings) for grades 9-12 with an enrollment of 975 students at the existing South Shore Regional Vocational Technical High School; with an estimated total project cost of \$389.3 million.*

As part of the District's PSR, the District must provide detailed narratives that clearly describe the rationale for why options were eliminated from further consideration. To ensure that the District's feasibility study is sufficiently comprehensive in scope the District must include a Code Upgrade Option as part of this feasibility study that describes repairs and upgrades required to conform with code. The final evaluation of alternatives shall include at least one viable option for each of the five enrollment options identified in the study enrollment certification, and for the District's preferred enrollment option at least one renovation and/or addition option that maximizes the use of the existing facility. Please acknowledge.

RESPONSE:
Acknowledged.

Additionally, as part of the District's PSR submittal please provide the following information:

- *Floor plan diagrams for each of the 26 options studied include a key/legend for clarity that showcase all the spaces with adjacencies to further understand the connections of the proposed spaces.*
- *Ensure that further detail is provided in the subsequent phases of the project that clearly describes and illustrates the separation, safety provisions, and possible construction laydown areas that will be applied during construction on the occupied site. Please acknowledge.*

RESPONSE:
Acknowledged.

- Please continue to use the same naming convention of options. Please acknowledge.

RESPONSE:
Acknowledged.

No further review comments for this section.

3.1.7 LOCAL ACTIONS AND APPROVAL

Provide the following Items		Complete; <i>No response required</i>	Provided; <i>District's response required</i>	Not Provided; <i>District's response required</i>	Receipt of District's Response; <i>To be filled out by MSBA Staff</i>
1	Signed Local Actions and Approvals Certification: (original)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Certified copies of the School Building Committee meeting notes showing specific submittal approval vote language and voting results, and a list of associated School Building Committee meeting dates, agenda, attendees and description of the presentation materials	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

MSBA Review Comments:

2) Please provide a certified copy of the meeting minutes when available. Please acknowledge.

RESPONSE:
Certified copy of the meeting minutes from the October 24, 2023 School Building Committee meeting are attached.

No further review comments for this section.

3.1.8 APPENDICES

Provide the following Items		Complete; <i>No response required</i>	Provided; <i>District's response required</i>	Not Provided; <i>District's response required</i>	Receipt of District's Response; <i>To be filled out by MSBA Staff</i>
1	Current Statement of Interest	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	MSBA Board Action Letter including the invitation to conduct a Feasibility Study	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Design Enrollment Certification	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

MSBA Review Comments:

3) Please refer to the comment above in Section 3.1.1, Item 3.

No further review comments for this section.

Additional Comments:

- *Please note that as part of the upcoming Preferred Schematic submittal process, districts and their consultants are required to provide a summary overview of the proposed project to the MSBA Facilities Assessment Subcommittee (the “FAS”). In preparation, the MSBA requests that the District submit a complete PowerPoint of the FAS presentation with the PSR submittal. For your reference, the guidance memorandum for preparing an FAS presentation is attached.*
- *The MSBA issues project advisories from time to time, as informational updates for Districts, Owner's Project Managers (“OPM”), and Designers in an effort to facilitate the efficient and effective administration of proposed projects currently pending review by the MSBA. The advisories can be found on the MSBA’s website. In response to these review comments, please confirm that the District’s consultants have reviewed all project advisories and they have been incorporated into the proposed project as applicable.*

RESPONSE:

Confirmed – the District’s consultants have reviewed all project advisories and have incorporated them into the proposed project as applicable.

Regarding Past Projects:

Both the MSBA’s enabling legislation, M.G.L. c. 70B, and the MSBA’s regulations, 963 CMR 2.00 et seq. specifically address the issue of past projects. MSBA records show two previous grants associated with the South Shore Regional Vocational Technical High School as follows:

- *Green Repair/ Roof, Windows and Doors Project #200808730605G completed on November 4, 2011, with a total MSBA payment of \$1,312,268.*
- *Accelerated Repair/Boiler Project #201408730605 completed on January 18, 2016, with a total MSBA payment of \$231,349.*

Pursuant to these requirements and depending on the School District’s ultimate plan for the School, the MSBA may recover a pro-rated portion of the financial assistance that the School District has received for previous renovation grants. The exact amount recovered will be established at the conclusion of the Schematic Design / Total Project Budget phase. Please see the MSBA website to view the MSBA’s regulations, statute and closed school bulletin for additional information.

End



Class Breakdown

Teacher Dept	Course Name	Number.Section	Expression	Term	Room	Students	Max Seats
ENG-ACAD	Biology CT	03051_4.1	7-8(A1-A5) 9(A5)	23-24	202	18	24
ENG-ACAD	English 10	01002_3.6	3-4(B1-B5) 9(B2)	23-24	119	18	24
ENG-ACAD	English 10	01002_3.3	3-4(B1-B5) 9(B2)	23-24	113	20	24
ENG-ACAD	English 10	01002_3.14	7-8(B1-B5) 9(B5)	23-24	113	24	24
ENG-ACAD	English 10	01002_3.14	7-8(B1-B5) 9(B5)	23-24	113	24	24
ENG-ACAD	English 10 CP	01002_2.21	3-4(B1-B5) 9(B2)	23-24	115B	15	24
ENG-ACAD	English 10 CP	01002_2.2	5-6(B1-B5) 9(B3)	23-24	115B	18	24
ENG-ACAD	English 10 CP	01002_2.7	1-2(B1-B5) 9(B1,B5) HR(B1-B5)	23-24	119	20	20
ENG-ACAD	English 10 CP	01002_2.23	3-4(B1-B5)	23-24	111	17	20
ENG-ACAD	English 10 CT	01002_4.1	1-2(B1-B5) 9(B1,B5) HR(B1-B5)	23-24	113	15	20
ENG-ACAD	English 10 CT	01002_4.1	1-2(B1-B5) 9(B1,B5) HR(B1-B5)	23-24	113	15	20
ENG-ACAD	English 10 HN	01002_1.1	7-8(B1-B5) 9(B4)	23-24	115B	24	25
ENG-ACAD	English 11	01003_3.5	3-4(A1-A5) 9(A2)	23-24	119	17	20
ENG-ACAD	English 11	01003_3.7	5-6(A1-A5)	23-24	115A	16	25
ENG-ACAD	English 11 CP	01003_2.21	1-2(A1-A5) 9(A1,A5) HR(A1-A5)	23-24	117	24	20
ENG-ACAD	English 11 CP	01003_2.4	5-6(A1-A5)	23-24	117	19	20
ENG-ACAD	English 11 CP	01003_2.6	5-6(A1-A5)	23-24	119	15	20
ENG-ACAD	English 11 CP	01003_2.19	1-2(A1-A5) 9(A1,A5) HR(A1-A5)	23-24	115A	22	25
ENG-ACAD	English 11 CP	01003_2.20	3-4(A1-A5) 9(A2)	23-24	115A	18	25
ENG-ACAD	English 11 CT	01003_4.3	3-4(A1-A5) 9(A2)	23-24	117	8	16
ENG-ACAD	English 11 HN	01003_1.25	1-2(A1-A5) HR(A1-A5)	23-24	119	25	25
ENG-ACAD	English 12	01004_3.8	5-6(B1-B5)	23-24	119	17	20
ENG-ACAD	English 12	01004_3.11	3-4(B1-B5) 9(B2)	23-24	115A	12	24
ENG-ACAD	English 12	01004_3.6	5-6(B1-B5) 9(B3)	23-24	115A	13	20
ENG-ACAD	English 12 CP	01004_2.15	1-2(B1-B5) 9(B1,B5) HR(B1-B5)	23-24	117	22	25
ENG-ACAD	English 12 CP	01004_2.4	3-4(B1-B5) 9(B2)	23-24	117	23	24
ENG-ACAD	English 12 CP	01004_2.16	5-6(B1-B5) 9(B3)	23-24	117	20	25
ENG-ACAD	English 12 CP	01004_2.1	1-2(B1-B5) 9(B1,B5) HR(B1-B5)	23-24	115A	22	24
ENG-ACAD	English 12 CT	01004_4.1	3-4(B1-B5) 9(B2)	23-24	101	10	20
ENG-ACAD	English 12 HN	01004_1.9	1-2(B1-B5) HR(B1-B5)	23-24	105	21	24
ENG-ACAD	English 9	01001_3.8	3-4(A1-A5) 9(A2)	23-24	113	21	20
ENG-ACAD	English 9	01001_3.24	5-6(A1-A5) 9(A3)	23-24	115B	21	25
ENG-ACAD	English 9	01001_3.5	1-2(A1-A5) 9(A1,A5) HR(A1-A5)	23-24	113	18	20
ENG-ACAD	English 9 CP	01001_2.23	1-2(A1-A5) 9(A1,A5) HR(A1-A5)	23-24	115B	18	20
ENG-ACAD	English 9 CP	01001_2.3	3-4(A1-A5) 9(A2)	23-24	115B	13	20
ENG-ACAD	English 9 CP	01001_2.6	7-8(A1-A5) 9(A4)	23-24	115B	23	24
ENG-ACAD	English 9 CP	01001_2.24	5-6(A1-A5) 9(A3)	23-24	113	22	25
ENG-ACAD	English 9 CT	01001_4.2	1-2(A1-A5) 9(A1,A5) HR(A1-A5)	23-24	105	22	20
ENG-ACAD	English 9 HN	01001_1.4	7-8(A1-A5) 9(A4)	23-24	117	18	20
GUID-ACAD	G 10 Employability and Career Choices	22151_10.10AH	2(A1)	23-24	GUID	10	0
GUID-ACAD	G 11 Career Planning and Opportunities	22151_11.11AH	1(B1) HR(B1)	23-24	GUID	13	0
GUID-ACAD	G 12 Senior Decisions	22151_12.12AH	1(A1) HR(A1)	23-24	GUID	12	0
MA-ACAD	Algebra I	02052_3.15	7-8(A1-A5) 9(A4)	23-24	307	18	25
MA-ACAD	Algebra I	02052_3.4	7-8(A1-A5) 9(A4)	23-24	124	18	24
MA-ACAD	Algebra I CP	02052_2.20	1-2(A1-A5) 9(A1,A5) HR(A1-A5)	23-24	124	14	24
MA-ACAD	Algebra I CP	02052_2.15	3-4(A1-A5) 9(A2)	23-24	124	9	23
MA-ACAD	Algebra I CP	02052_2.13	7-8(A1-A5) 9(A5)	23-24	116	18	25
MA-ACAD	Algebra I CP	02052_2.25	1-2(A1-A5) 9(A1,A5) HR(A1-A5)	23-24	116	14	25
MA-ACAD	Algebra I CP	02052_2.11	7-8(A1-A5) 9(A5)	23-24	119	14	25
MA-ACAD	Algebra I CT	02052_4.4	5-6(A1-A5)	23-24	304	21	20
MA-ACAD	Algebra I HN	02052_1.3	5-6(A1-A5) 9(A3)	23-24	307	19	24
MA-ACAD	Algebra II	02056_3.15	3-4(A1-A5) 9(A3)	23-24	307	22	25
MA-ACAD	Algebra II	02056_3.14	1-2(A1-A5) 9(A1,A5) HR(A1-A5)	23-24	207	19	20
MA-ACAD	Algebra II	02056_3.13	5-6(A1-A5) 9(A3)	23-24	124	14	25
MA-ACAD	Algebra II CP	02056_2.5	1-2(A1-A5) 9(A1,A5) HR(A1-A5)	23-24	307	22	23
MA-ACAD	Algebra II CP	02056_2.4	5-6(A1-A5) 9(A3)	23-24	207	15	20
MA-ACAD	Algebra II CP	02056_2.1	1-2(A1-A5) 9(A1,A5) HR(A1-A5)	23-24	126	17	20
MA-ACAD	Algebra II CP	02056_2.3	3-4(A1-A5) 9(A2)	23-24	126	20	20
MA-ACAD	Algebra II HN	02056_1.1	3-4(A1-A5)	23-24	207	22	20
MA-ACAD	Algebra II HN	02056_1.6	5-6(A1-A5) 9(A3)	23-24	126	18	0
MA-ACAD	Calculus HN	02121_1.4	3-4(B1-B5)	23-24	126	9	24
MA-ACAD	Financial Literacy	02157_3.10	5-6(B1-B5) 9(B3)	S1	124	17	20
MA-ACAD	Financial Literacy	02157_3.9	1-2(B1-B5) 9(B1,B5) HR(B1-B5)	S1	124	22	25

MA-ACAD	Financial Literacy	02157_3.12	1-2(B1-B5) 9(B1,B5) HR(B1-B5)	S2	124	23	25
MA-ACAD	Financial Literacy CP	02157_2.15	3-4(B1-B5) 9(B2)	S1	103	18	24
MA-ACAD	Financial Literacy CP	02157_2.16	3-4(B1-B5) 9(B2)	S2	103	20	25
MA-ACAD	Financial Literacy CT	02157_4.1	1-2(B1-B5) 9(B1,B5) HR(B1-B5)	23-24	307	9	25
MA-ACAD	Geometry	B02072_3.12	3-4(B1-B5) 9(B2)	23-24	307	14	24
MA-ACAD	Geometry	B02072_2.1	3-4(B1-B5) 9(B2)	23-24	124	11	20
MA-ACAD	Geometry	B02072_3.11	7-8(B1-B5) 9(B4)	23-24	126	12	24
MA-ACAD	Geometry	B02072_4.1	3-4(B1-B5) 9(B2)	23-24	304	13	24
MA-ACAD	Geometry	B02072_3.23	7-8(B1-B5) 9(B4)	23-24	115a	13	24
MA-ACAD	Geometry	B02072_2.3	5-6(B1-B5) 9(B3)	23-24	126	22	25
MA-ACAD	Geometry	B02072_3.8	1-2(B1-B5) 9(B1,B5) HR(B1-B5)	23-24	116	25	25
MA-ACAD	Geometry	B02072_2.32	7-8(B1-B5) 9(B3)	23-24	116	20	25
MA-ACAD	Geometry Honors	B02072_1.1	1-2(B1-B5) 9(B1) HR(B1-B5)	23-24	126	24	24
MA-ACAD	Physics	B03151_3.2	5-6(B1-B5) 9(B3)	23-24	116	22	24
MA-ACAD	Pre-Calculus CP	B02110_2.4	5-6(B1-B5) 9(B3)	23-24	207	20	25
MA-ACAD	Pre-Calculus CP	B02110_2.5	3-4(B1-B5) 9(B2)	23-24	116	21	20
MA-ACAD	Pre-Calculus CP	B02110_2.4	5-6(B1-B5) 9(B3)	23-24	207	20	25
MA-ACAD	Pre-Calculus HN	02110_1.15	5-6(A1-A5)	23-24	116	14	25
MA-ACAD	Statistics	B02201_2.12	5-6(B1-B5) 9(B3)	S2	307	17	25
MA-ACAD	Statistics	B02201_3.1	1-2(B1-B5) 9(B1,B5) HR(B1-B5)	S1	207	23	24
MA-ACAD	Statistics	B02201_2.9	3-4(B1-B5) 9(B2)	S1	207	20	24
MA-ACAD	Statistics	B02201_3.10	1-2(B1-B5) 9(B1,B5) HR(B1-B5)	S2	207	22	24
MA-ACAD	Statistics	B02201_2.11	3-4(B1-B5) 9(B2)	S2	207	18	24
SC-ACAD	Anatomy and Physiology CP	03053_2.1	5-6(A1-A5)	23-24	205	12	24
SC-ACAD	Bio Tech	14252.1	7-8(B1-B5) 9(B4)	23-24	104	15	25
SC-ACAD	Biology	03051_3.8	1-2(A1-A5) 9(A1,A5) HR(A1-A5)	23-24	204	19	24
SC-ACAD	Biology	B03051_3.6	7-8(B1-B5) 9(B4)	23-24	204	22	25
SC-ACAD	Biology	03051_3.10	7-8(A1-A5) 9(A4)	23-24	201	20	24
SC-ACAD	Biology	03051_3.9	3-4(A1-A5) 9(A2)	23-24	202	20	24
SC-ACAD	Biology CP	03051_2.1	1-2(A1-A5) 9(A1,A5) HR(A1-A5)	23-24	205	23	24
SC-ACAD	Biology CP	03051_2.2	3-4(A1-A5) 9(A2)	23-24	205	22	24
SC-ACAD	Biology CP	B03051_2.3	3-4(B1-B5) 9(B2)	23-24	205	20	24
SC-ACAD	Biology CP	B03051_2.4	5-6(B1-B5) 9(B3)	23-24	205	18	24
SC-ACAD	Biology CT	03051_4.1	7-8(A1-A5) 9(A5)	23-24	202	18	24
SC-ACAD	Chemistry	03101_3.1	3-4(A1-A5) 9(A2)	23-24	201	14	24
SC-ACAD	Chemistry CP	B03101_2.7	3-4(B1-B5) 9(B2)	23-24	201	23	25
SC-ACAD	Chemistry CP	03101_2.1	5-6(A1-A5) 9(A3)	23-24	201	16	24
SC-ACAD	Chemistry CP	B03101_2.1	5-6(B1-B5) 9(B3)	23-24	201	23	24
SC-ACAD	Engineering	21006_3.3	5-6(A1-A5) 8(A3)	23-24	111	22	24
SC-ACAD	Engineering CP	21006_2.5	3-4(A1-A5)	23-24	111	23	24
SC-ACAD	Engineering CP	B21006_2.14	5-6(B1-B5) 9(B3)	23-24	204	19	24
SC-ACAD	Engineering CP	21006_2.5	3-4(A1-A5)	23-24	111	23	24
SC-ACAD	Environmental Science	03003_3.5	3-4(A1-A5) 9(A2)	23-24	204	19	24
SC-ACAD	Environmental Science	03003_3.2	5-6(A1-A5) 9(A3)	23-24	204	19	24
SC-ACAD	Environmental Science	03003_3.3	1-2(A1-A5) 9(A1,A5) HR(A1-A5)	23-24	202	20	24
SC-ACAD	Environmental Science (B Cycle)	B03003_3.11	3-4(B1-B5)	23-24	204	24	24
SC-ACAD	Environmental Science CP (B Cycle)	B03003_2.1	1-2(B1-B5) 9(B1,B5) HR(B1-B5)	23-24	205	22	24
SC-ACAD	Intro Engineering Design Comm 9	71006_9.1	7-8(B1-B5)	S2	111	0	25
SC-ACAD	Physics	B03151_3.3	1-2(B1-B5) 9(B1,B5) HR(B1-B5)	23-24	201	18	24
SC-ACAD	Physics	B03151_3.2	5-6(B1-B5) 9(B3)	23-24	116	22	24
SC-ACAD	Physics	B03151_3.3	1-2(B1-B5) 9(B1,B5) HR(B1-B5)	23-24	201	18	24
SC-ACAD	Physics CP	03151_2.1	1-2(A1-A5) 9(A1,A5) HR(A1-A5)	23-24	203	21	24
SC-ACAD	Physics CP	03151_2.17	5-6(A1-A5)	23-24	203	21	24
SC-ACAD	Physics CP	B03151_2.1	7-8(B1-B5) 9(B4)	23-24	203	24	24
SC-ACAD	Physics CP	03151_2.1	1-2(A1-A5) 9(A1,A5) HR(A1-A5)	23-24	203	21	24
SC-ACAD	Physics CP	B03151_2.15	1-2(B1-B5) 9(B1,B5) HR(B1-B5)	23-24	203	10	24
SC-ACAD	Physics CP	03151_2.7	5-6(A1-A5) 9(A3)	23-24	202	14	24
SC-ACAD	Physics CP	03151_2.4	5-6(B1-B5) 9(B3)	23-24	203	21	24
SC-ACAD	Physics CP	B03151_2.1	7-8(B1-B5) 9(B4)	23-24	203	24	24
SC-ACAD	Physics CT	B03151_4.2	5-6(B1-B5) 9(B3)	23-24	202	17	17
SC-ACAD	Technical Engineering	B21005.3	5-6(B1-B5) 9(B3)	23-24	111	16	24
SC-ACAD	Vocational Engineering 10	150000_10VE.1	1-2(A1-A5) 9(A1,A5) HR(A1-A5)	23-24	111	7	25
SC-ACAD	Vocational Engineering 11	150000_11VE.1	1-2(B1-B5) HR(B1-B5)	23-24	111	13	25
SS-ACAD	Civics in Action	4161.15	7-8(A1-A5) 9(A4)	S1	101	17	25
SS-ACAD	Civics in Action	4161.16	7-8(A1-A5) 9(A4)	S2	101	16	25
SS-ACAD	Civics in Action	4161.6	7-8(A1-A5) 9(A4)	S1	105	19	24

SS-ACAD	Civics in Action	4161.13	7-8(A1-A5) 9(A4)	S2	105	17	25
SS-ACAD	Civics in Action	4161.3	7-8(A1-A5) 9(A4)	S1	103	19	25
SS-ACAD	Civics in Action	B04161.17	7-8(B1-B5) 9(B4)	S1	103	17	24
SS-ACAD	Civics in Action	4161.14	7-8(A1-A5) 9(A4)	S2	103	16	25
SS-ACAD	Civics in Action	B04161.16	7-8(B1-B5) 9(B4)	S2	103	16	24
SS-ACAD	Civics in Action	B04161.13	7-8(B1-B5) 9(B4)	S1	206	17	24
SS-ACAD	Civics in Action	B04161.15	7-8(B1-B5) 9(B4)	S2	206	21	24
SS-ACAD	Modern World History	B04053_3.8	1-2(B1-B5) 9(B1,B5) HR(B1-B5)	23-24	101	17	24
SS-ACAD	Modern World History	B04053_3.7	5-6(B1-B5) 9(B3)	23-24	103	18	24
SS-ACAD	Modern World History	B04053_3.5	1-2(B1-B5) 9(B1,B5) HR(B1-B5)	23-24	115B	23	25
SS-ACAD	Modern World History	B04053_3.10	3-4(B1-B5) 9(B2)	23-24	206	18	24
SS-ACAD	Modern World History CP	B04053_2.5	5-6(B1-B5) 9(B3)	23-24	101	16	25
SS-ACAD	Modern World History CP	B04053_2.14	7-8(B1-B5) 9(B4)	23-24	105	20	24
SS-ACAD	Modern World History CP	B04053_2.23	1-2(B1-B5) 9(B1,B5) HR(B1-B5)	23-24	103	19	25
SS-ACAD	Modern World History CT	B04053_4.3	7-8(B1-B5) 9(B4)	23-24	101	11	25
SS-ACAD	Modern World History HN	B04053_1.5	3-4(B1-B5) 9(B2)	23-24	105	23	24
SS-ACAD	US History I	04102_3.24	1-2(A1-A5) 9(A1,A5) HR(A1-A5)	23-24	101	14	16
SS-ACAD	US History I	04102_3.24	1-2(A1-A5) 9(A1,A5) HR(A1-A5)	23-24	101	14	16
SS-ACAD	US History I	04102_3.2	5-6(A1-A5) 9(A3)	23-24	206	22	24
SS-ACAD	US History I CP	04102_2.4	3-4(A1-A5) 9(A2)	23-24	105	24	24
SS-ACAD	US History I CP	04102_2.2	5-6(A1-A5) 9(A3)	23-24	105	20	25
SS-ACAD	US History I CP	04102_2.7	3-4(A1-A5)	23-24	206	24	24
SS-ACAD	US History I CP	04102_2.9	7-8(A1-A5) 9(A4)	23-24	206	16	25
SS-ACAD	US History I CT	04102_4.1	3-4(A1-A5) 9(A2)	23-24	101	22	25
SS-ACAD	US History I HN	04102_1.1	3-4(A1-A5) 9(A2)	23-24	103	24	24

Average Class Size: 18.2



Proposed Space Summary - Regional Vocational Technical High School

DRAFT

900 Enrollment

Date: 9.14.2023 Preliminary Design Program

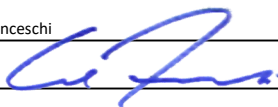
South Shore Regional Vocational Technical School District SOUTH SHORE TECH			
EXISTING CONDITIONS			
ROOM TYPE	ROOM NFA ¹	# OF ROOMS	AREA TOTALS
Toilet Rooms			
Circulation (corridors, stairs, ramps and elevators)			
Remaining ³			
Total Building Gross Floor Area (GFA) ²			125,200
Grossing Factor (GFA / NFA)			1.34

PROPOSED PROGRAM								
EXISTING TO REMAIN / RENOVATED			NEW CONSTRUCTION			TOTAL		
ROOM NFA ¹	# OF ROOMS	AREA TOTALS	ROOM NFA ¹	# OF ROOMS	AREA TOTALS	ROOM NFA ¹	# OF ROOMS	AREA TOTALS
-	#DIV/0!		-	0.0%		-	0.0%	0
-	#DIV/0!		-	0.0%		-	0.0%	0
-	#DIV/0!	0	-	33.3%	86,062	-	33.3%	86,062
		0			258,190			258,190
	#DIV/0!				1.50			1.50

VARIATION TO MSBA GUIDELINES		
ROOM NFA ¹	# OF ROOMS	AREA TOTALS
		#N/A
		#N/A

MSBA GUIDELINES (DO NOT MODIFY) (Refer to Educational Facility Planning for additional information)			
ROOM NFA ¹	# OF ROOMS	AREA TOTALS	COMMENTS
		#N/A	Total Building Gross Floor Area (GFA) ²
		#N/A	Grossing Factor (GFA / NFA)

- ¹ **Individual Room Net Floor Area (NFA)** Includes the net square footage measured from the inside face of the perimeter walls and includes all specific spaces assigned to a particular program area including such spaces as non-communal toilets and storage rooms.
- ² **Total Building Gross Floor Area (GFA)** Includes the entire building gross square footage measured from the outside face of exterior walls.
- ³ **Remaining** Includes exterior walls, interior partitions, chases, and other areas not listed above. Do not calculate this area, it is assumed to equal the difference between the Total Building Gross Floor Area and area not accounted for above.

Architect Certification	<p>I hereby certify that all of the information provided in this "Proposed Space Summary" is true, complete and accurate and, except as agreed to in writing by the Massachusetts School Building Authority, in accordance with the guidelines, rules, regulations and policies of the Massachusetts School Building Authority to the best of my knowledge and belief. A true statement, made under the penalties of perjury.</p> <p style="text-align: center;">Name of Architecture Firm: <u>Drumme Rosane Anderson, Inc.</u></p> <p style="text-align: center;">Name of Principal Architect: <u>Carl Franceschi</u></p> <p style="text-align: center;">Signature of Principal Architect: </p> <p style="text-align: center;">Date: <u>12/29/2023</u></p>
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Proposed Space Summary - Regional Vocational Technical High School

DRAFT

975 Enrollment

Date: 9/14/2023 Preliminary Design Program

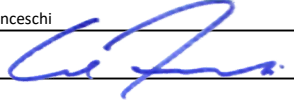
South Shore Regional Vocational Technical School District SOUTH SHORE TECH			
EXISTING CONDITIONS			
ROOM TYPE	ROOM NFA ¹	# OF ROOMS	AREA TOTALS
Toilet Rooms			
Circulation (corridors, stairs, ramps and elevators)			
Remaining ³			
Total Building Gross Floor Area (GFA) ²			125,200
Grossing Factor (GFA / NFA)			1.34

PROPOSED PROGRAM								
EXISTING TO REMAIN / RENOVATED			NEW CONSTRUCTION			TOTAL		
ROOM NFA ¹	# OF ROOMS	AREA TOTALS	ROOM NFA ¹	# OF ROOMS	AREA TOTALS	ROOM NFA ¹	# OF ROOMS	AREA TOTALS
-	#DIV/0!		-	0.0%		-	0.0%	0
-	#DIV/0!		-	0.0%		-	0.0%	0
-	#DIV/0!	0	-	33.3%	92,371	-	33.3%	92,371
		0			277,120			277,120
		#DIV/0!			1.50			1.50

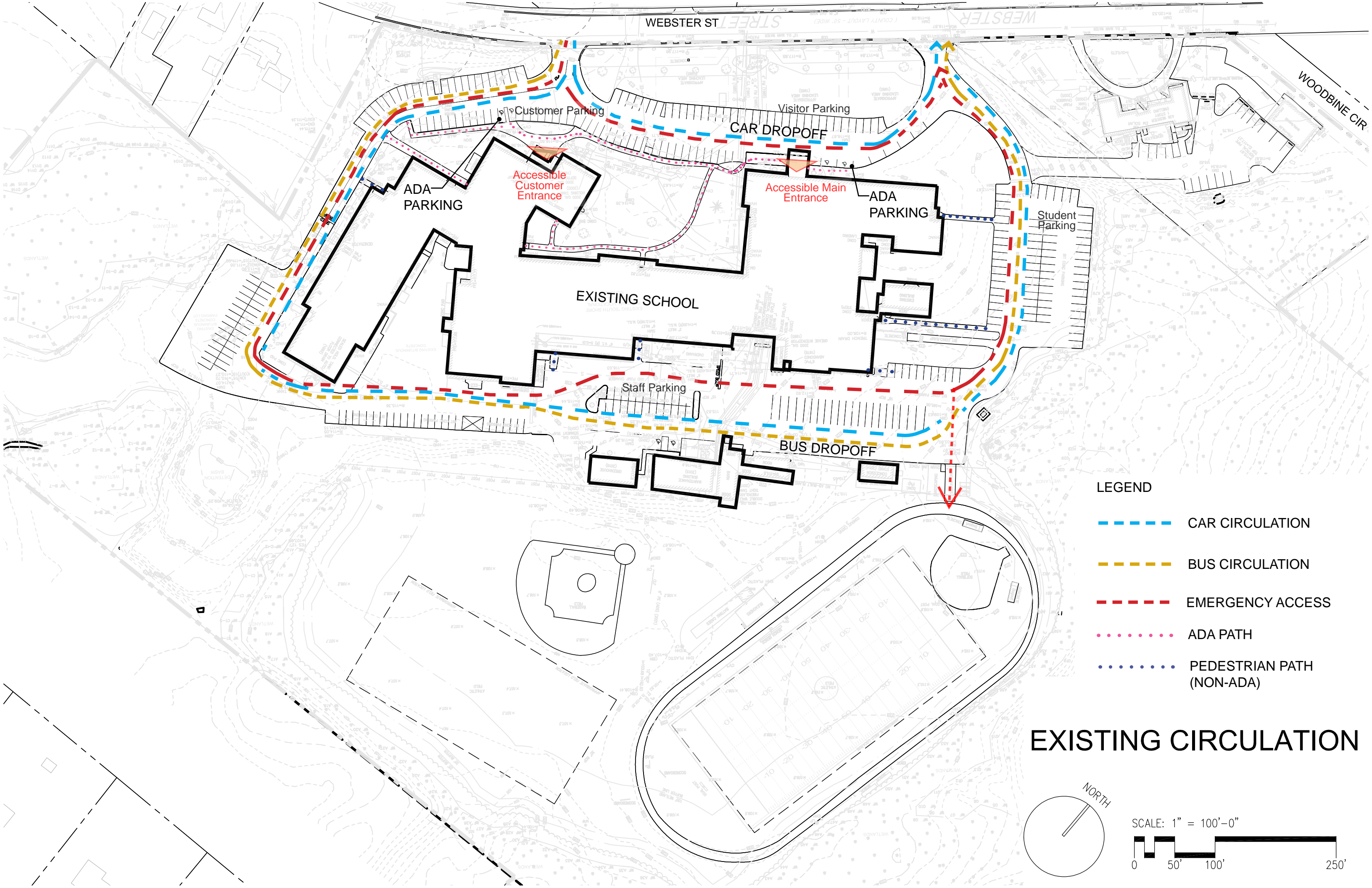
VARIATION TO MSBA GUIDELINES		
ROOM NFA ¹	# OF ROOMS	AREA TOTALS
		#N/A
		#N/A

MSBA GUIDELINES (DO NOT MODIFY) (Refer to Educational Facility Planning for additional information)			
ROOM NFA ¹	# OF ROOMS	AREA TOTALS	COMMENTS
		#N/A	Total Building Gross Floor Area (GFA) ²
		#N/A	Grossing Factor (GFA / NFA)

- ¹ **Individual Room Net Floor Area (NFA)** Includes the net square footage measured from the inside face of the perimeter walls and includes all specific spaces assigned to a particular program area including such spaces as non-communal toilets and storage rooms.
- ² **Total Building Gross Floor Area (GFA)** Includes the entire building gross square footage measured from the outside face of exterior walls.
- ³ **Remaining** Includes exterior walls, interior partitions, chases, and other areas not listed above. Do not calculate this area, it is assumed to equal the difference between the Total Building Gross Floor Area and area not accounted for above.

Architect Certification	<p>I hereby certify that all of the information provided in this "Proposed Space Summary" is true, complete and accurate and, except as agreed to in writing by the Massachusetts School Building Authority, in accordance with the guidelines, rules, regulations and policies of the Massachusetts School Building Authority to the best of my knowledge and belief. A true statement, made under the penalties of perjury.</p> <p style="text-align: center;">Name of Architecture Firm: <u>Drummey Rosane Anderson, Inc.</u></p> <p style="text-align: center;">Name of Principal Architect: <u>Carl Franceschi</u></p> <p style="text-align: center;">Signature of Principal Architect: </p> <p style="text-align: center;">Date: <u>12/29/2023</u></p>
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WEBSTER ST

WOODBINE CIR

Customer Parking

Visitor Parking

CAR DROPOFF

ADA PARKING

Accessible Customer Entrance

Accessible Main Entrance

ADA PARKING

Student Parking

EXISTING SCHOOL

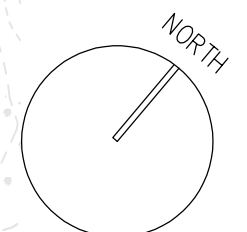
Staff Parking

BUS DROPOFF

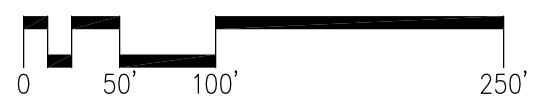
LEGEND

- CAR CIRCULATION
- BUS CIRCULATION
- EMERGENCY ACCESS
- ... ADA PATH
- ... PEDESTRIAN PATH (NON-ADA)

EXISTING CIRCULATION



SCALE: 1" = 100'-0"





JOINT MEETING of the SOUTH SHORE REGIONAL SCHOOL DISTRICT COMMITTEE and the SOUTH SHORE REGIONAL VOCATIONAL SCHOOL BUILDING COMMITTEE 10/24/2023

A joint meeting of the South Shore Regional School District Committee and the South Shore Regional Vocational School Building Committee was held on October 24, 2023 at the South Shore Vocational Technical High School Building, 476 Webster St, Hanover, Massachusetts.

The District School Committee members present were Chairman Mahoney, Vice Chairman Petruzzelli, Messrs. Salvucci, Cooney, Manning, F Molla and Heywood.

Also in attendance were Mr. Thomas J. Hickey, Superintendent of Schools; Mr. James Coughlin, District Treasurer; Jen Carlson: Left Field (zoom), Judd Christopher: DRA, Assistant Principal Keith Boyle, Bob Mello and Carl Franceschi (DRA).

The meeting of the School Committee was called to order by Chairman Mahoney at 7:00pm.

	Motion	Second	Vote
All votes will be roll call votes based on some members joining via Zoom			

A motion to amend the School Calendar to close the school on Friday November 10th in observance of Veteran's Day.	<i>Mr. Salvucci</i>	<i>Mr. Cooney</i>	<i>Unanimous for those in attendance</i>
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Attorney Richard Manley for Locke & Lord educated the committee on the options for our member towns to vote on the School Building Project in the future. There are two options: 1) A town by town vote 2) A district wide vote.

Attorney Richard Manley provided some suggestions on the nuances of these types of votes and suggests maintaining an open line of communication with the nine Town Clerks.

A motion to utilize Chapter 71(16)(n) for a District Wide Vote for approval of the School Building Project.	<i>Mr. Heywood</i>	<i>Mr. Salvucci</i>	<i>Unanimous 7-0</i>
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A motion to amend the Education Plan, changing the name of the Chapter 74 program from Animal Science to Veterinary Science, due to changes with the DESE curriculum.	<i>Mr. Manning</i>	<i>Mr. Salvucci</i>	<i>Unanimous 7-0</i>
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School Building Meeting begins

A motion to approve the minutes of the School Building Committee meeting on September 7, 2023.	<i>Mr. Mahoney</i>	<i>Mr. Cooney</i>	<i>Unanimous 12-0</i>
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A motion to approve the minutes of the School Building Committee meeting on September 20, 2023.	<i>Mr. Mahoney</i>	<i>Mr. Cooney</i>	<i>Unanimous 12-0</i>
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Jen Carlson from Leftfield described the Preliminary Design Program.

Carl Franceschi from DRA showed the committee a PowerPoint presentation presenting 25 options: Five Building Options (three new building options and two renovation options) based on Five Enrollment figures (645/750/805/900/975).

Jen Carlson from Leftfield reviewed rough cost estimates

Motion	Second	Vote
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A motion to approve the submission of the Preliminary Design Program to the MSBA.

<i>Mr. Mahoney</i>	<i>Mr. Petruzzelli</i>	<i>Unanimous 12-0</i>
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Tom Hickey mentioned the next School Building Committee meeting will be held on November 2nd.

A motion to adjourn at 8:58pm.

<i>Mr. Salvucci</i>	<i>Mr. Manning</i>	<i>Unanimous 12-0</i>
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Respectfully submitted:

James M. Coughlin, District Secretary/Treasurer



The final Evaluation of Existing Conditions review was included in the Preliminary Design Program submittal. There have been no material changes, to the best of our knowledge.

A copy of the preliminary Geo-Technical Report has also been included within this PSR submission in Appendix C.

A Project Notification Form has been filed with the Massachusetts Historical Commission. A copy of that submission is included in Appendix D.



There were no revisions required to Evaluation of Existing Conditions.



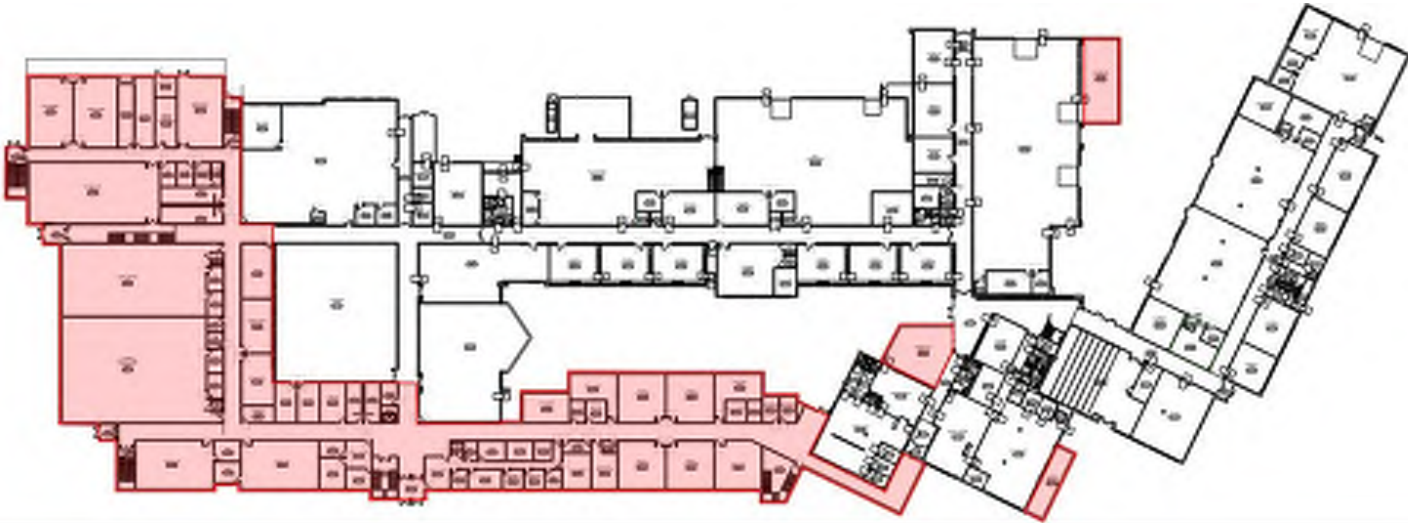






OPTION AR-1 “L – shaped” Addition/ Renovation

For enrollment of 805 students



AR-1 First Floor Plan

Description:

This option proposes a two-story addition across the front of the school and wrapping around to the east of the Gym along with the full renovation of the existing school. Depending upon the selected enrollment, a small additions are required to the existing cafeteria and several CTE shops.

The first phase of the project would be to relocate the current Administration, Student Services, Allied Health spaces, classrooms, and science labs into temporary swing space, most likely modular “trailers” elsewhere on the campus.

The multi-story addition would then be constructed to house the new Gymnasium & support spaces, Administration, CTE shop space for the MET, Graphics, CIT, & Allied Health programs, and new science labs and general classrooms.

Once the new construction is completed and occupied the phased renovation of the existing building could begin. The renovation would include the conversion of the Science wing into the Electrical shop and the conversion of the former Gymnasium into a multi-purpose auditorium. This Auditorium space could also provide swing space for the renovation of existing high-bay CTE shops. The relocation of the MET, Graphics, Electrical, and CIT programs will allow a domino effect of the remaining CTE programs to expand into renovated, right-sized spaces.

The increase in student enrollment requires the construction of a wastewater treatment facility on site. Otherwise, the site configuration remains largely unchanged.

To accommodate the larger enrollments that are being considered (up to 975 students), a third floor of academic space would be included with the addition and several existing high-bay shops would need to be expanded in their current locations.

Educational Program requirements:

Option AR-1 generally satisfies most of the space needs outlined in the Educational Program and preliminary Space Summary. However, it does not alter the existing undersized classrooms of the original building, and certain CTE shops vary slightly from the DESE guidelines due to the configuration of the existing building.

This option maintains the current separate public access to the Culinary and Cosmetology shops and improves its security by potentially located some administrative presence adjacent to that entrance.

Construction Phasing:

This option will involve construction adjacent to occupancy at times during the school year. Multiple complex phasing will be required, including the consideration of double shifts, second shift work, and swing spaces for temporary relocation of programs.

Temporary parking will also need to be considered during the initial new construction phase to compensate for space lost to construction activities.

Estimated construction duration is four years.

Areas (the area of this option varies proportionally with the target enrollment variations)

Enrollment	Total	Renovation	New Construction
805 Students	230,400 sf	108,000 sf	122,400 sf

Preliminary Order-Of-Magnitude Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs
805 Students	\$279,844,000	\$349,805,000

Final PSR Estimated Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs
805 Students	\$205,236,019	\$277,825,034

Pro's:

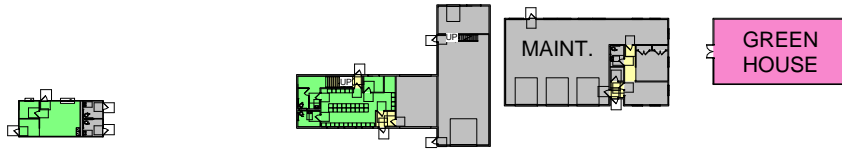
- Fully renovates the existing building like-new to extend its longevity
- Generally Satisfies South Shore Tech's space needs and right-sizes most CTE programs
- Provides safe, secure, and direct public access to Consumer Services programs

Con's:

- Requires disruptive phased construction adjacent to occupancy
- Doesn't significantly improve the integration of CTE and Academic spaces
- Long construction period

Initial Evaluation: Continue to study in final phase of evaluation for enrollments of 805 & 900 students

Final Evaluation: Drop from consideration

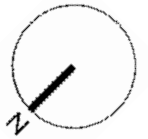
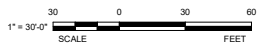


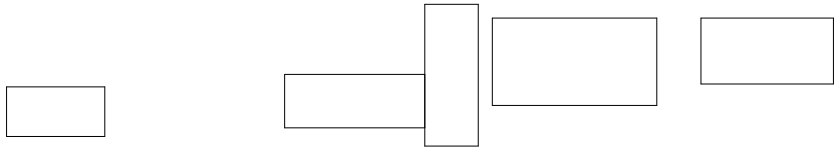
Departments

- | | | |
|---|---|---|
| ■ Admin-Teacher Support | ■ Classroom | ■ Nurse |
| ■ Auditorium | ■ Custodial-Maintenance | ■ Science Labs |
| ■ Cafeteria-Kitchen | ■ Gym-PE | ■ Special Education |
| ■ Circulation | ■ Library-Media | ■ Vocational |



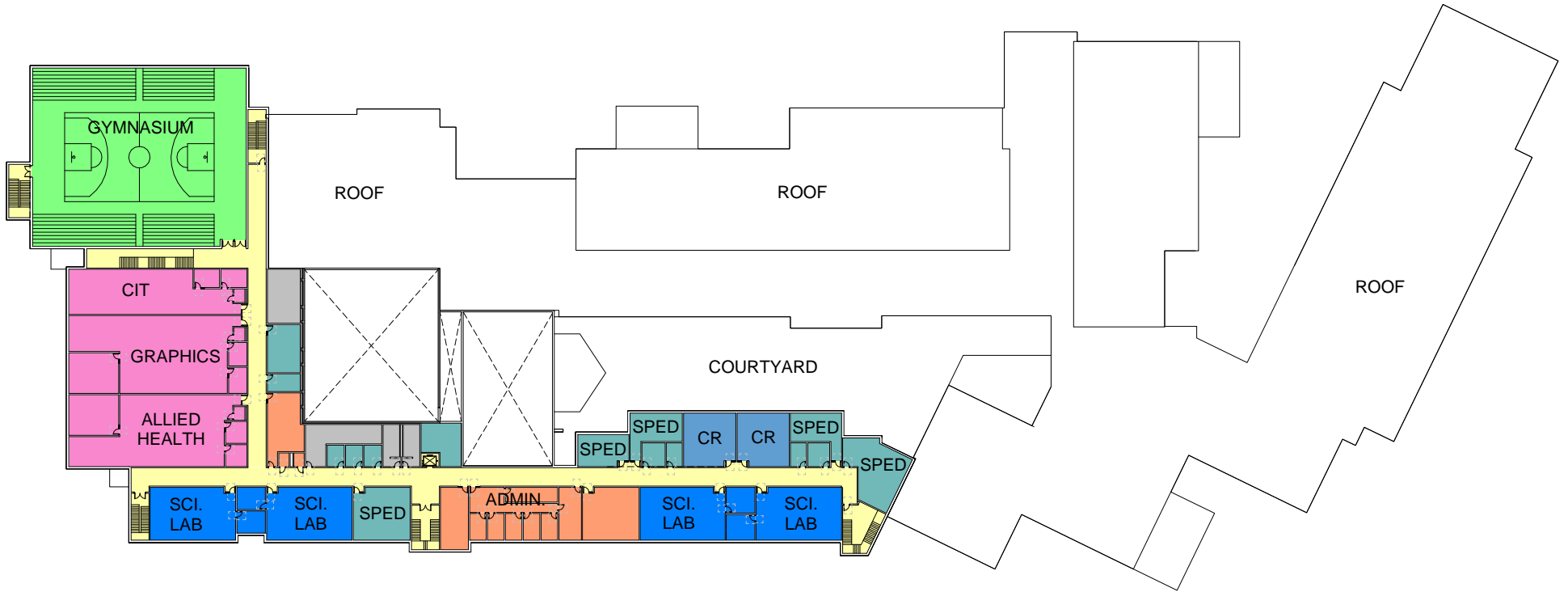
OPTION AR-1 FIRST FLOOR PLAN - 805 ENROLLMENT



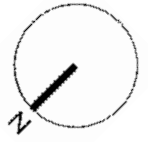
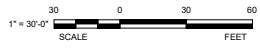


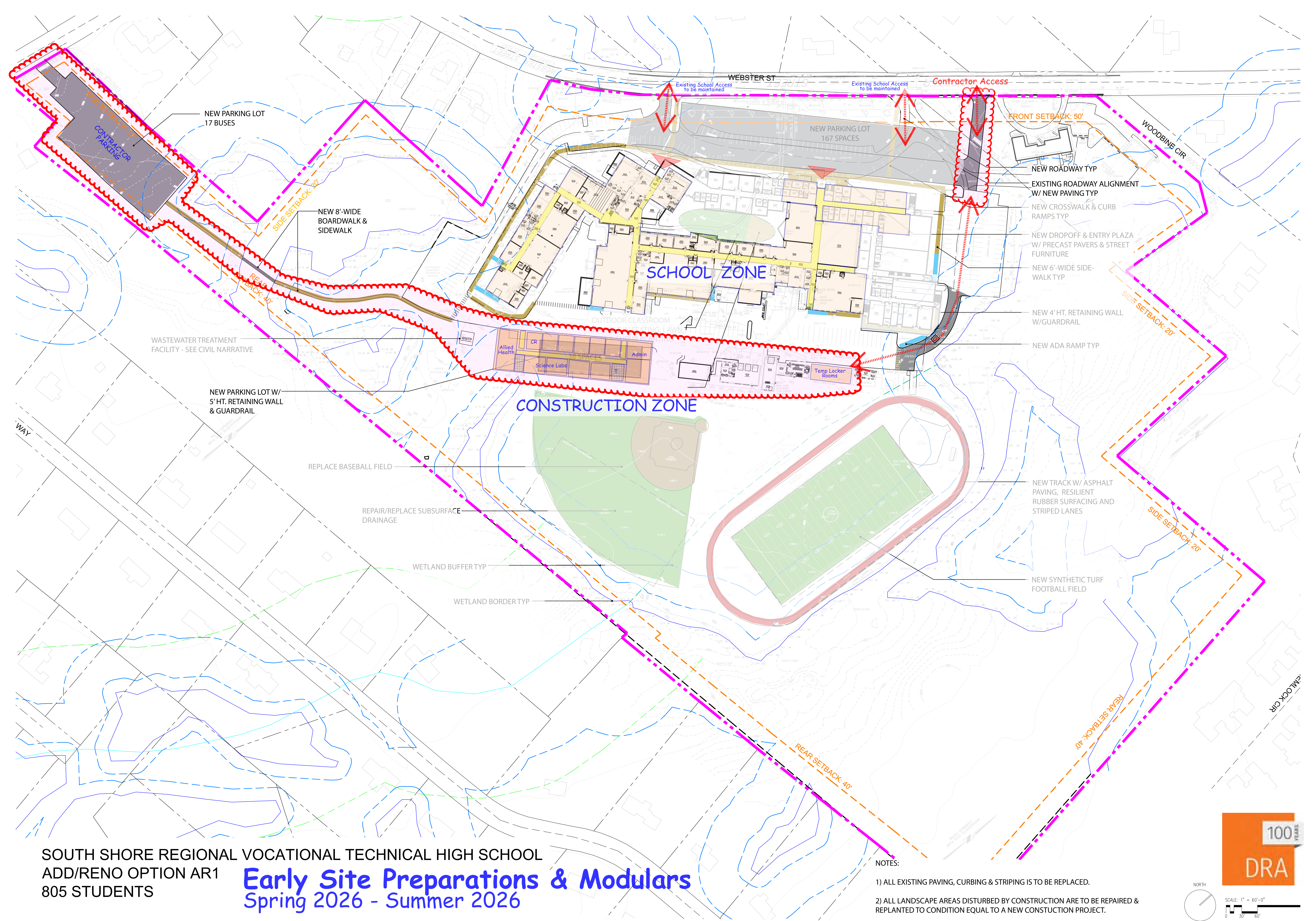
Departments

- Admin-Teacher Support
- Circulation
- Classroom
- Custodial-Maintenance
- Gym-PE
- Science Labs
- Special Education
- Vocational



OPTION AR-1 SECOND FLOOR PLAN - 805 ENROLLMENT





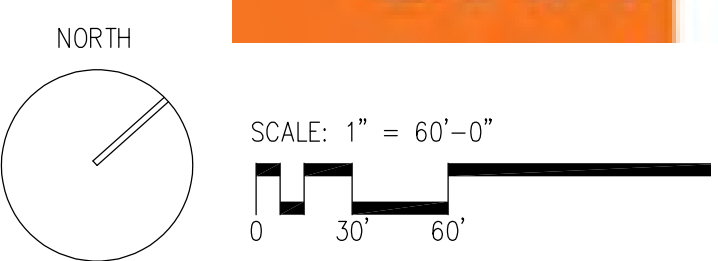
SOUTH SHORE REGIONAL VOCATIONAL TECHNICAL HIGH SCHOOL
 ADD/RENO OPTION AR1
 805 STUDENTS

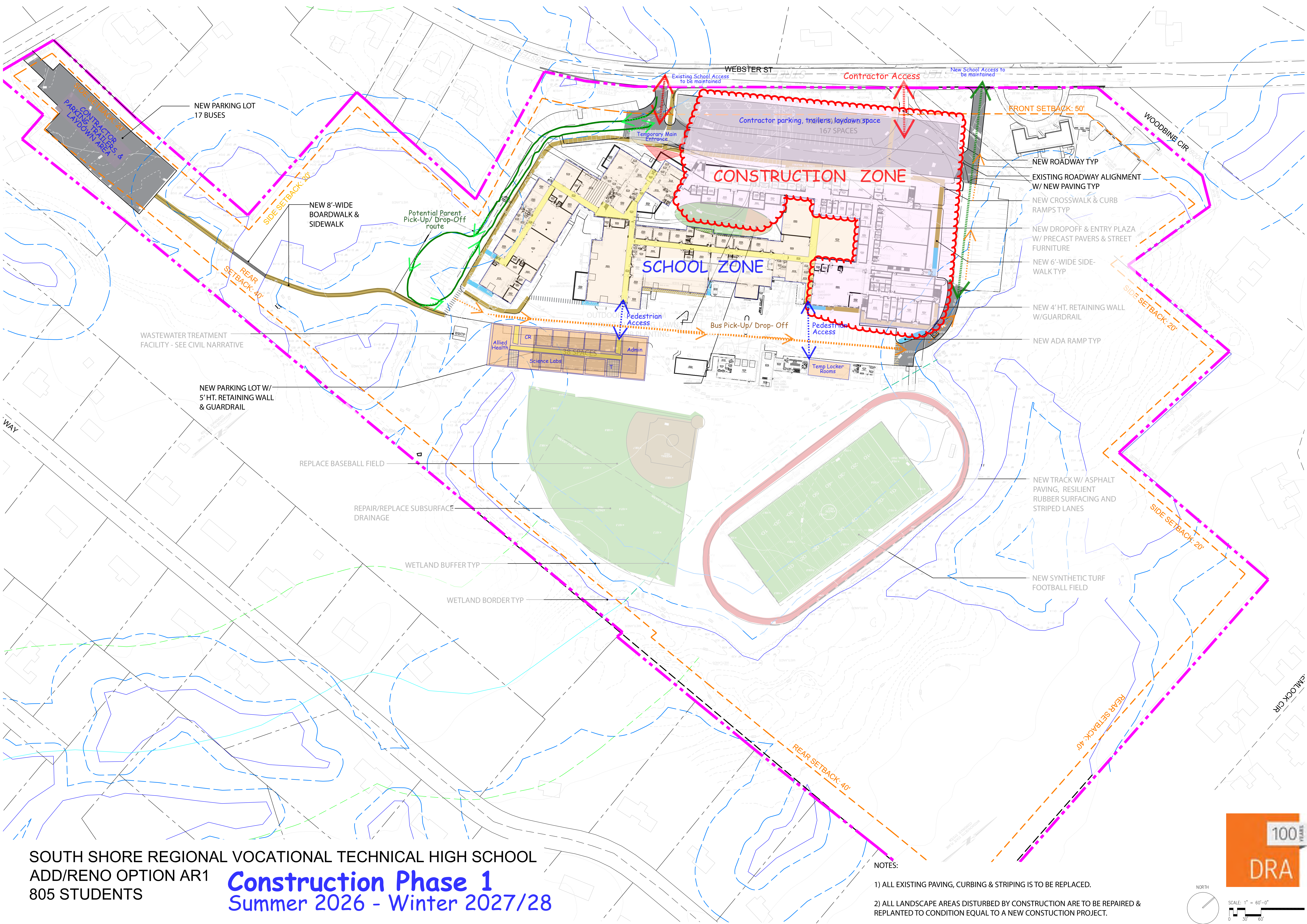
Early Site Preparations & Modulars

Spring 2026 - Summer 2026

NOTES:

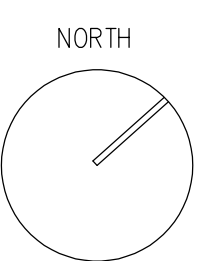
- 1) ALL EXISTING PAVING, CURBING & STRIPING IS TO BE REPLACED.
- 2) ALL LANDSCAPE AREAS DISTURBED BY CONSTRUCTION ARE TO BE REPAIRED & REPLANTED TO CONDITION EQUAL TO A NEW CONSTRUCTION PROJECT.



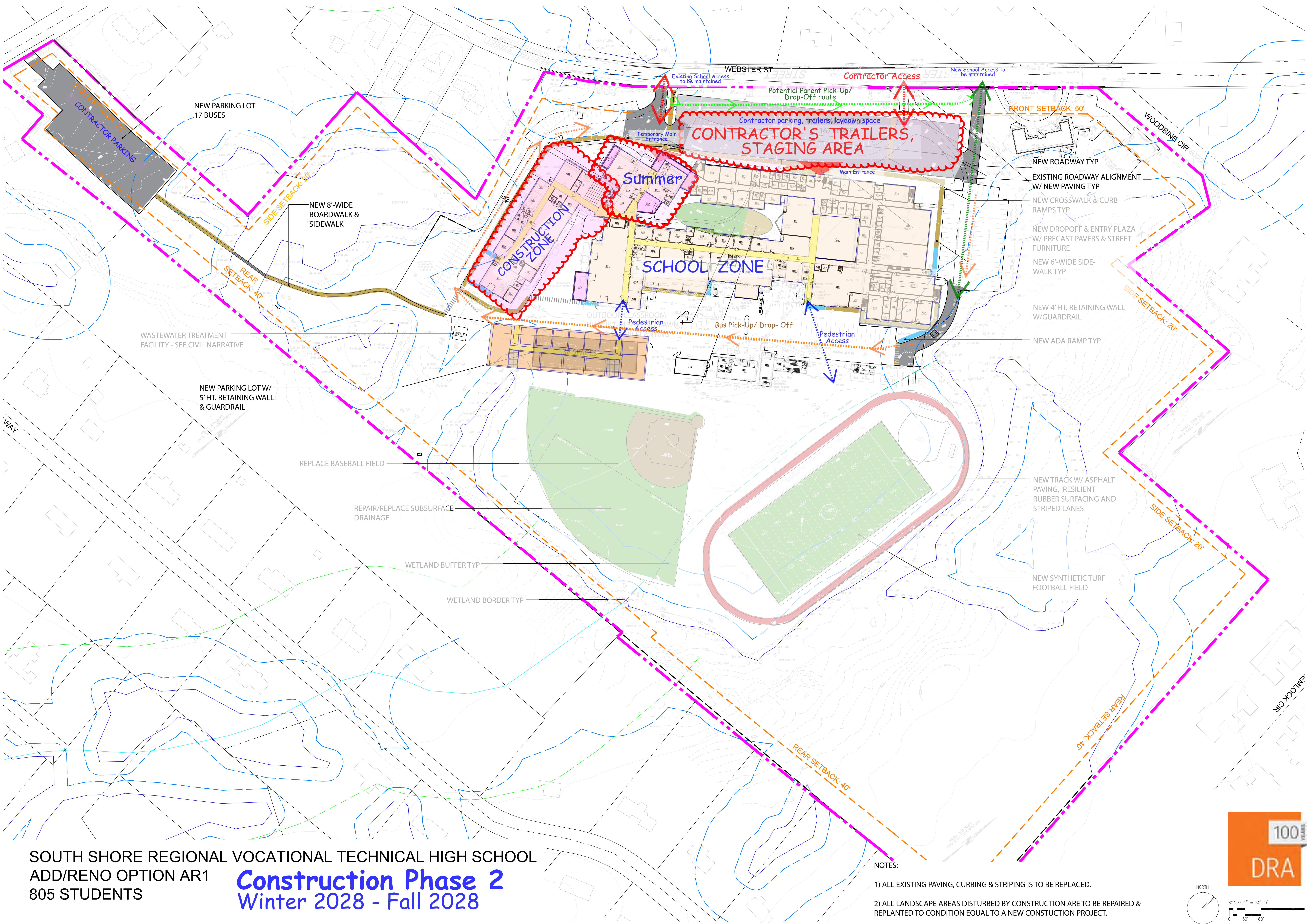


SOUTH SHORE REGIONAL VOCATIONAL TECHNICAL HIGH SCHOOL
 ADD/RENO OPTION AR1
 805 STUDENTS
Construction Phase 1
 Summer 2026 - Winter 2027/28

- NOTES:
- 1) ALL EXISTING PAVING, CURBING & STRIPING IS TO BE REPLACED.
 - 2) ALL LANDSCAPE AREAS DISTURBED BY CONSTRUCTION ARE TO BE REPAIRED & REPLANTED TO CONDITION EQUAL TO A NEW CONSTRUCTION PROJECT.



SCALE: 1" = 60'-0"
 0 30 60



SOUTH SHORE REGIONAL VOCATIONAL TECHNICAL HIGH SCHOOL
 ADD/RENO OPTION AR1
 805 STUDENTS

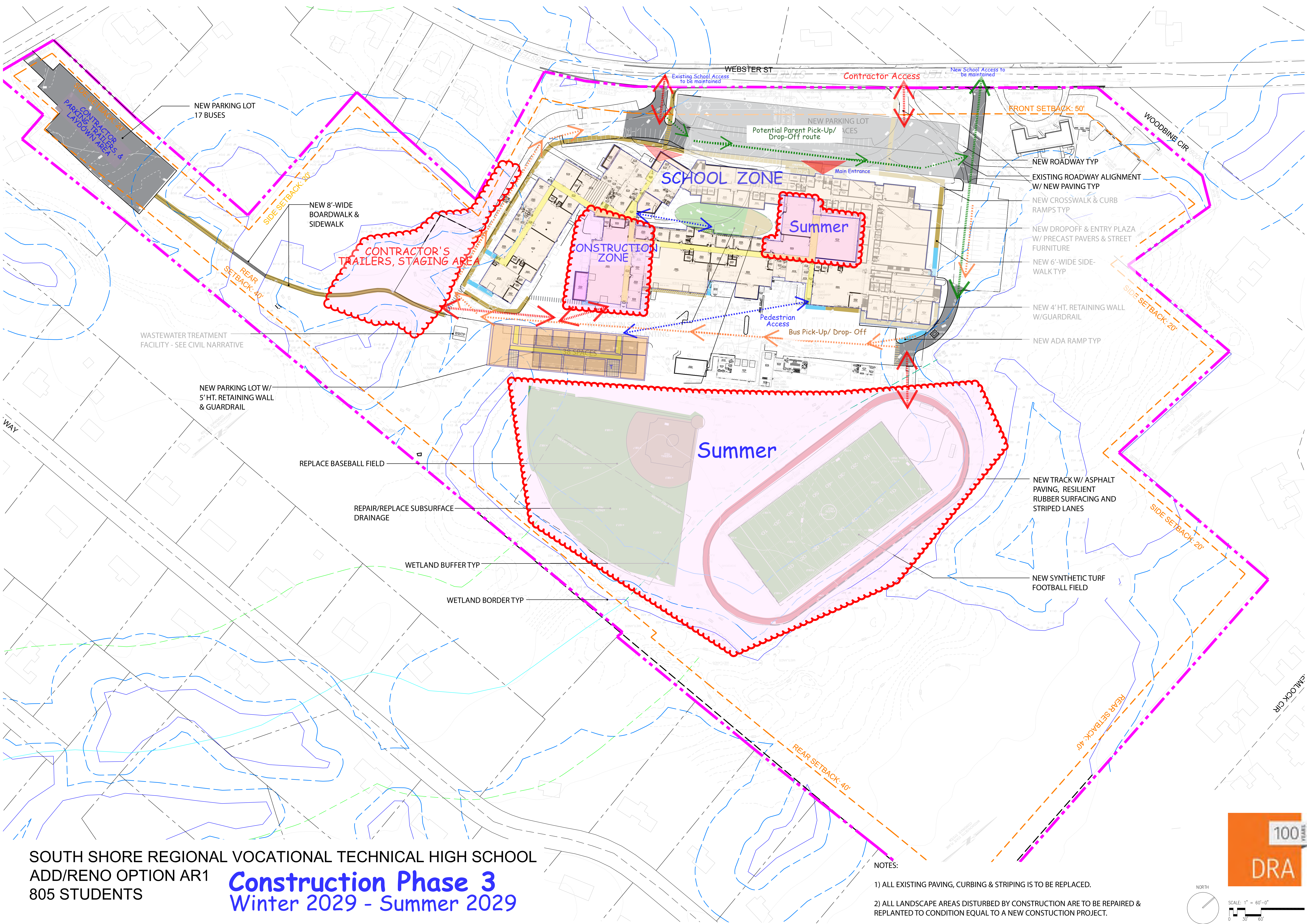
Construction Phase 2

Winter 2028 - Fall 2028

- NOTES:
- 1) ALL EXISTING PAVING, CURBING & STRIPING IS TO BE REPLACED.
 - 2) ALL LANDSCAPE AREAS DISTURBED BY CONSTRUCTION ARE TO BE REPAIRED & REPLANTED TO CONDITION EQUAL TO A NEW CONSTRUCTION PROJECT.

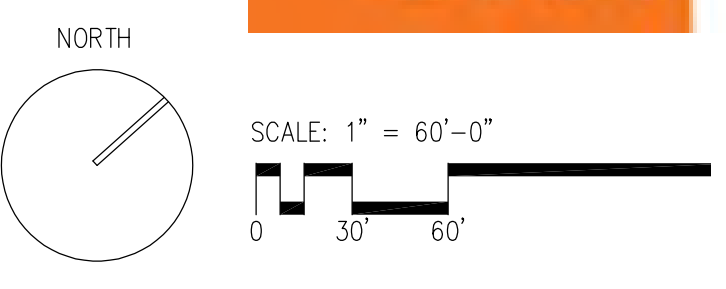


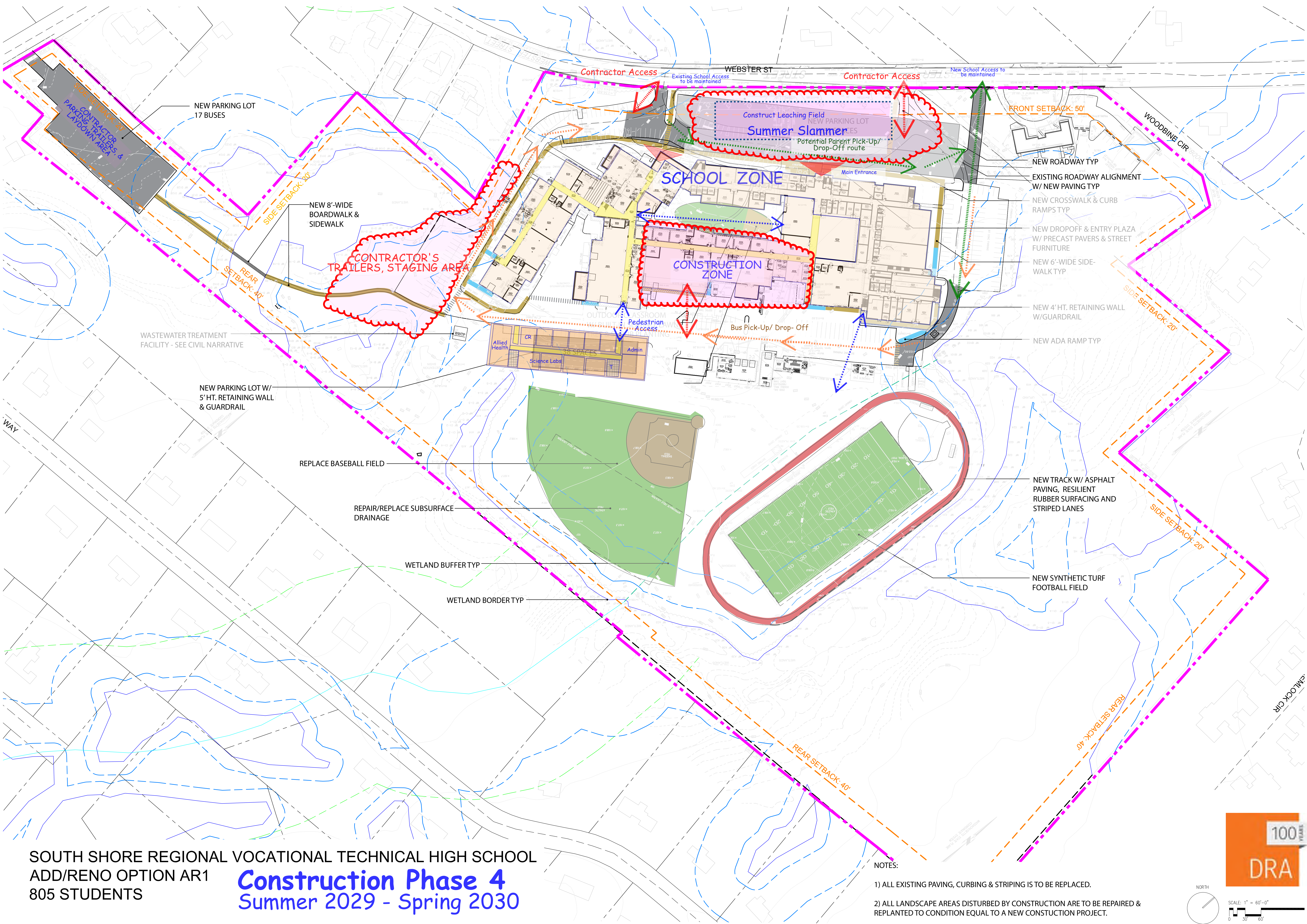
SCALE: 1" = 60'-0"



SOUTH SHORE REGIONAL VOCATIONAL TECHNICAL HIGH SCHOOL
 ADD/RENO OPTION AR1
 805 STUDENTS
Construction Phase 3
 Winter 2029 - Summer 2029

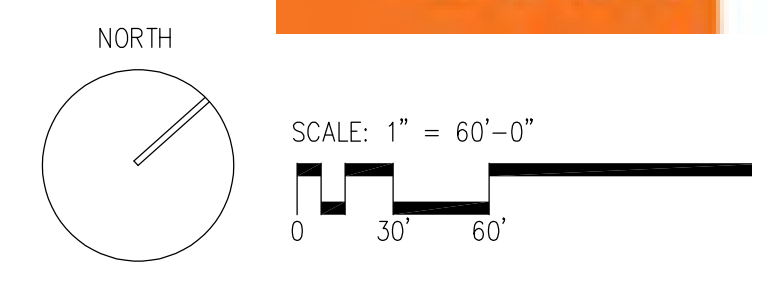
- NOTES:
- 1) ALL EXISTING PAVING, CURBING & STRIPING IS TO BE REPLACED.
 - 2) ALL LANDSCAPE AREAS DISTURBED BY CONSTRUCTION ARE TO BE REPAIRED & REPLANTED TO CONDITION EQUAL TO A NEW CONSTRUCTION PROJECT.

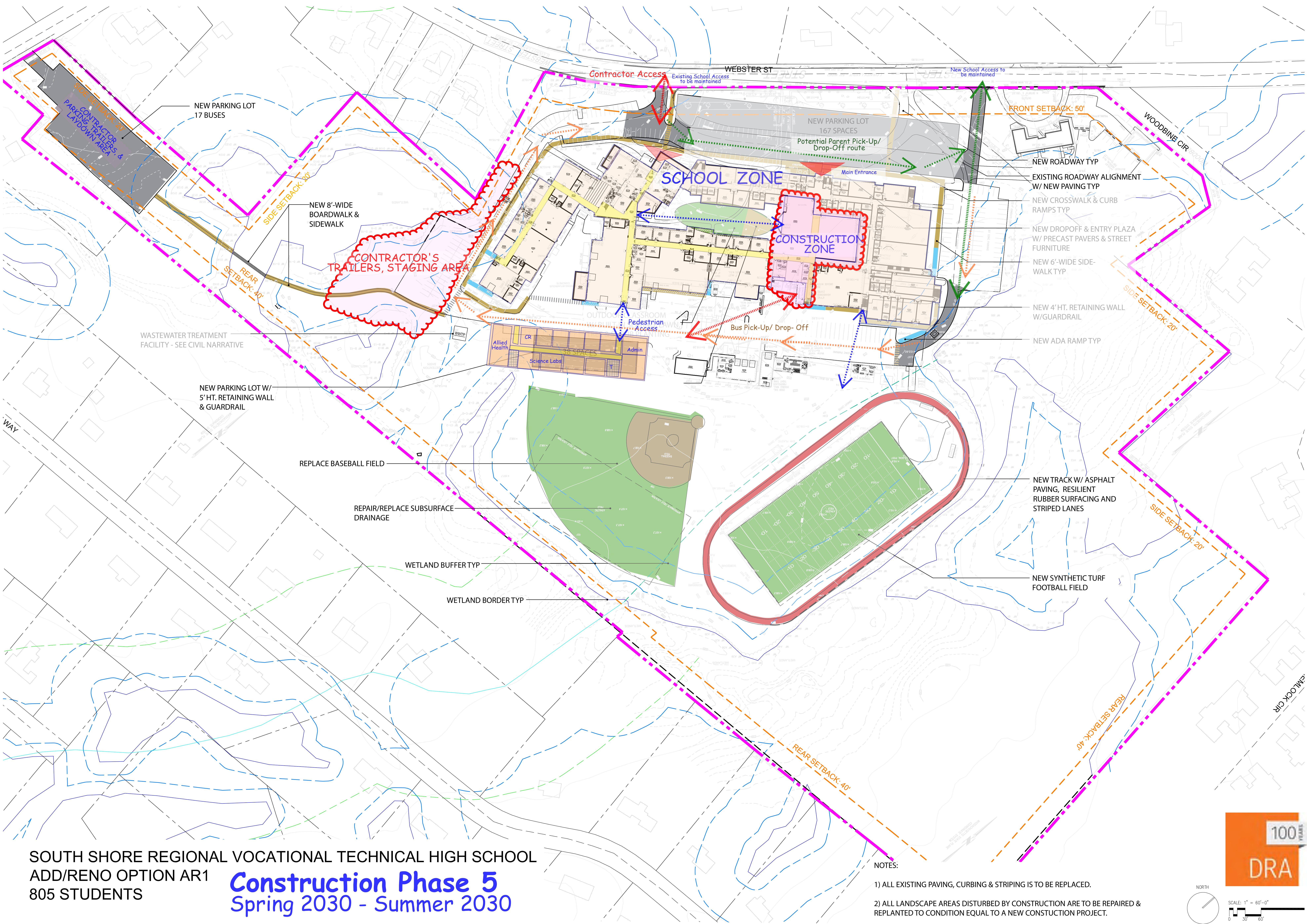




SOUTH SHORE REGIONAL VOCATIONAL TECHNICAL HIGH SCHOOL
 ADD/RENO OPTION AR1
 805 STUDENTS
Construction Phase 4
 Summer 2029 - Spring 2030

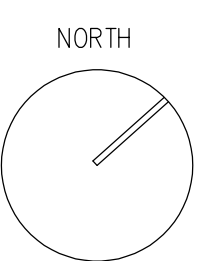
- NOTES:
- 1) ALL EXISTING PAVING, CURBING & STRIPING IS TO BE REPLACED.
 - 2) ALL LANDSCAPE AREAS DISTURBED BY CONSTRUCTION ARE TO BE REPAIRED & REPLANTED TO CONDITION EQUAL TO A NEW CONSTRUCTION PROJECT.





SOUTH SHORE REGIONAL VOCATIONAL TECHNICAL HIGH SCHOOL
 ADD/RENO OPTION AR1
 805 STUDENTS
Construction Phase 5
 Spring 2030 - Summer 2030

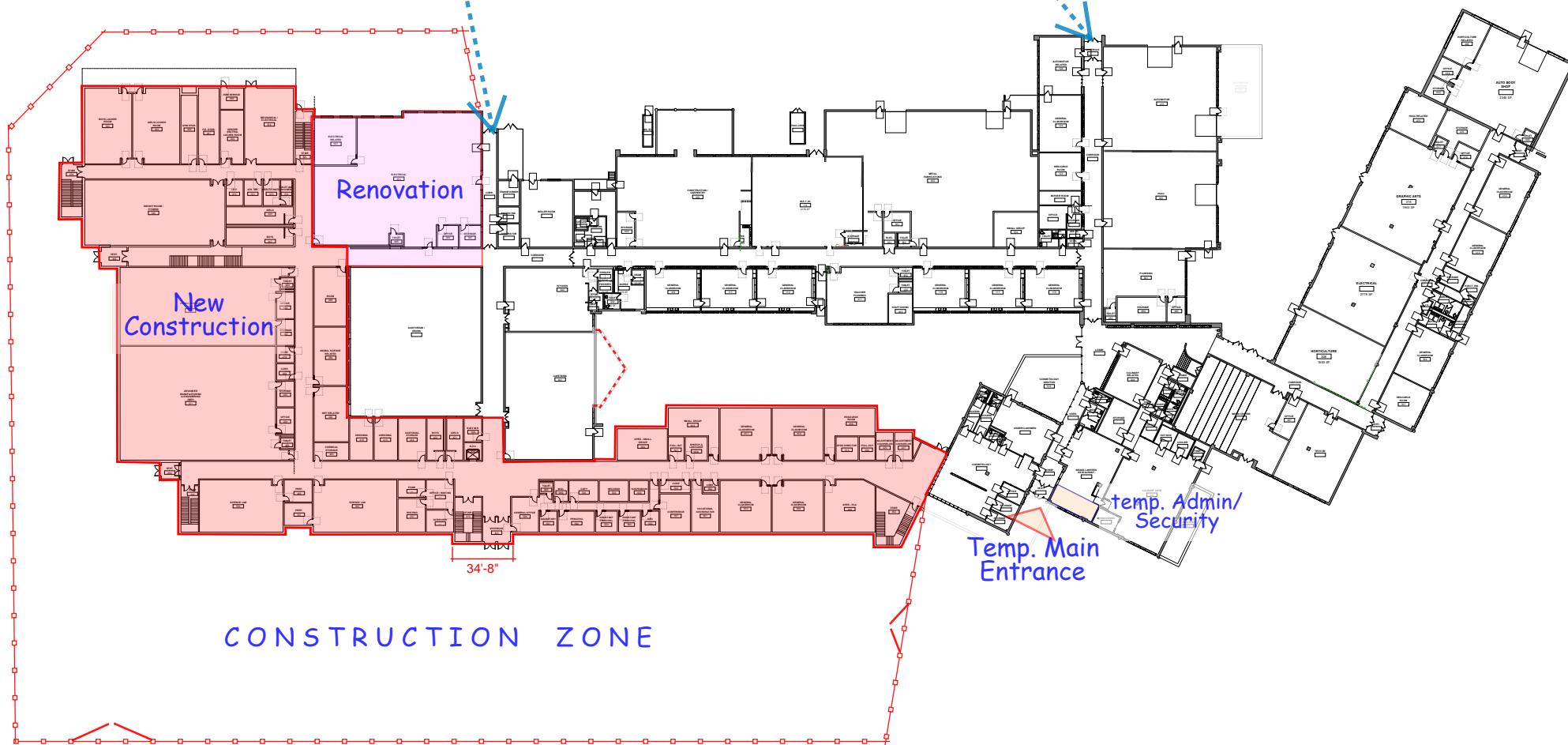
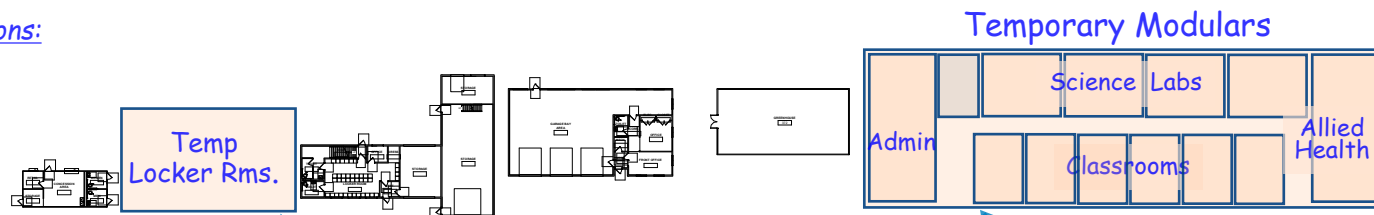
- NOTES:
- 1) ALL EXISTING PAVING, CURBING & STRIPING IS TO BE REPLACED.
 - 2) ALL LANDSCAPE AREAS DISTURBED BY CONSTRUCTION ARE TO BE REPAIRED & REPLANTED TO CONDITION EQUAL TO A NEW CONSTRUCTION PROJECT.



SCALE: 1" = 60'-0"
 0 30 60

New (Permanent) Locations:
none

Temporary Relocations:
Allied Health
Science Labs
Locker Rooms
Administration



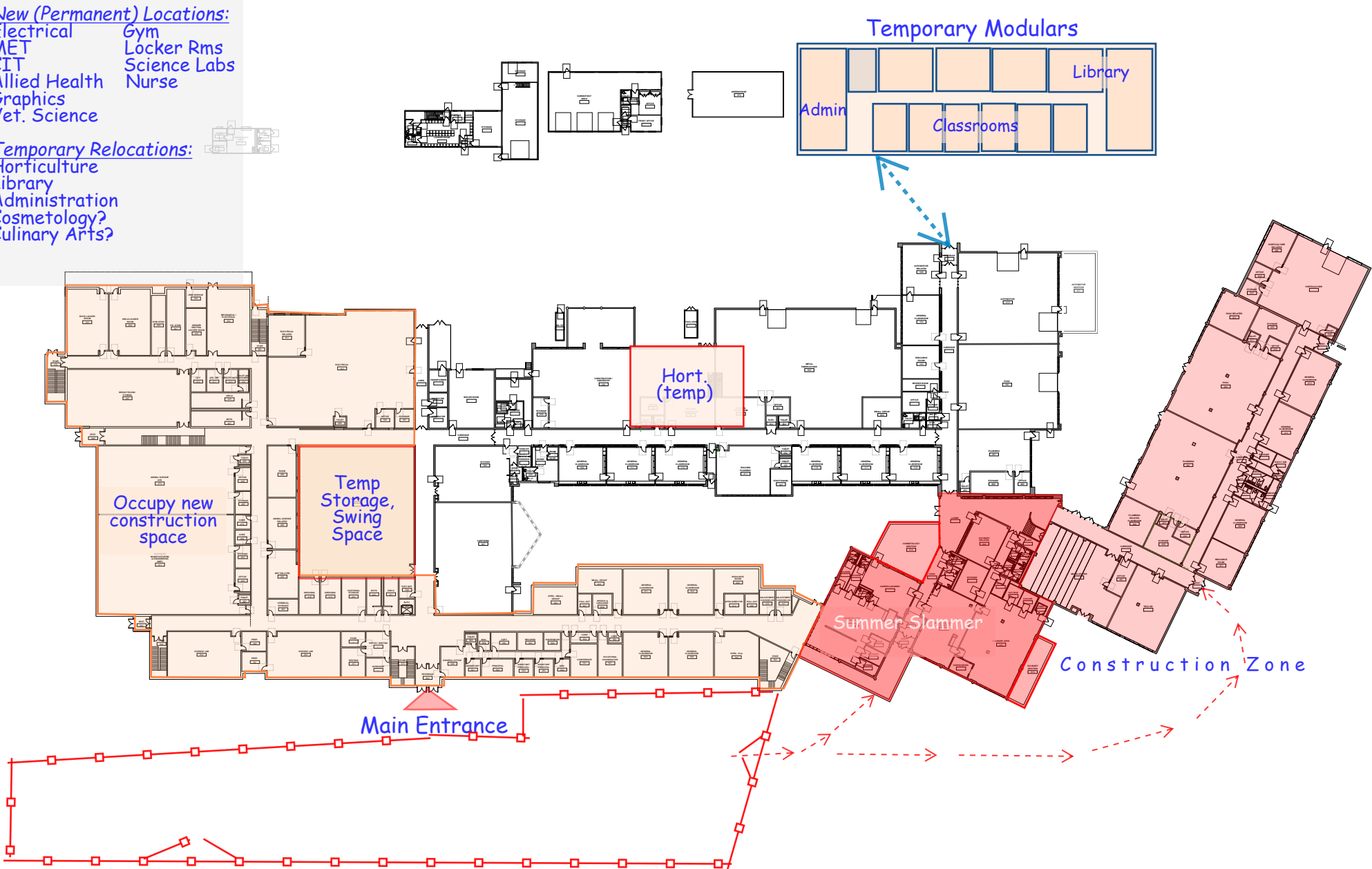
Construction Phase 1
Summer 2026 - Winter 2027/28

New (Permanent) Locations:

- Electrical
- GYM
- MET
- CIT
- Allied Health
- Graphics
- Vet. Science
- Gym
- Locker Rms
- Science Labs
- Nurse

Temporary Relocations:

- Horticulture
- Library
- Administration
- Cosmetology?
- Culinary Arts?



Construction Phase 2
Winter 2028 - Fall 2028

New (Permanent) Locations:

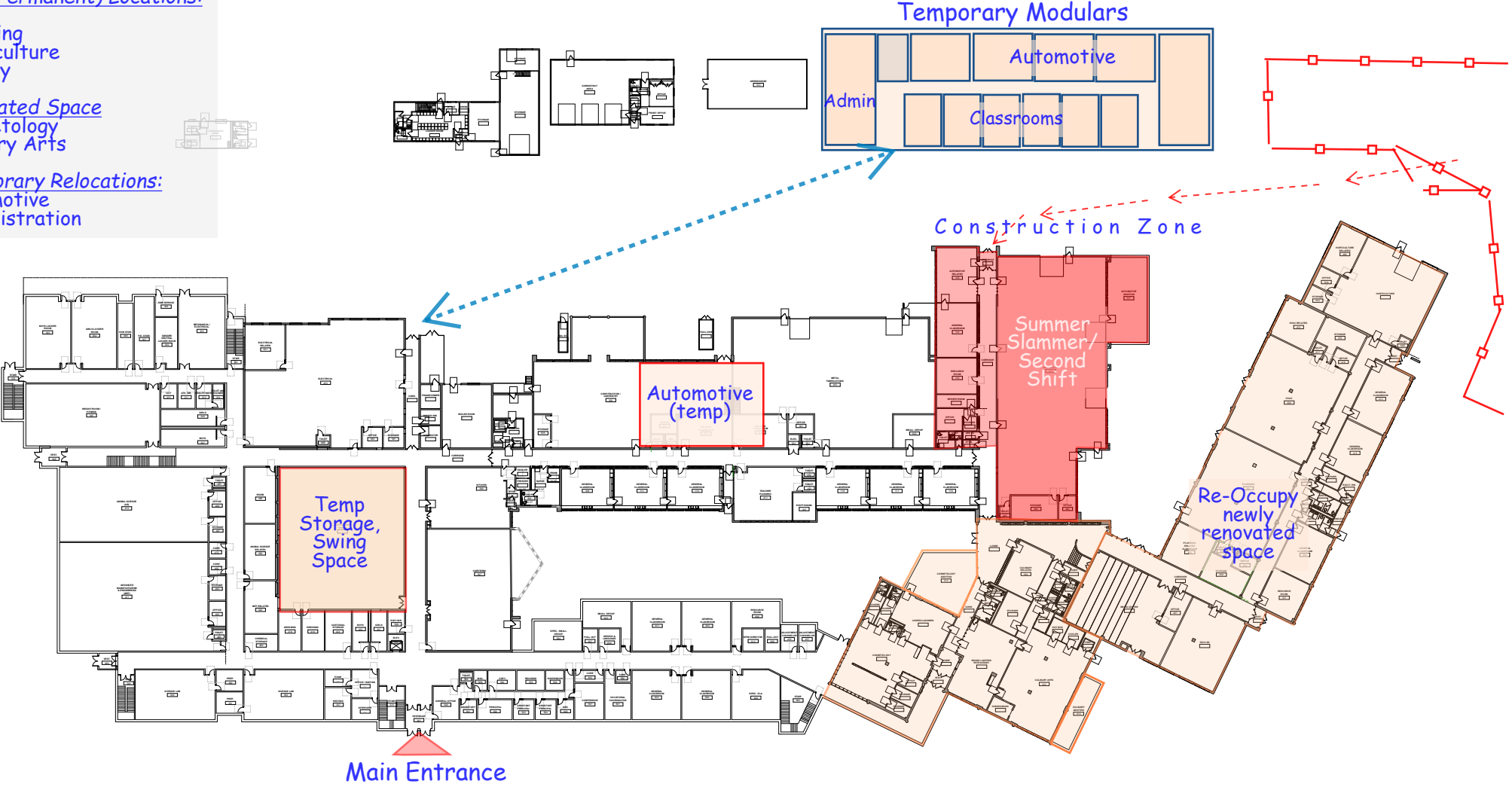
- HVAC
- Plumbing
- Horticulture
- Library

Renovated Space

- Cosmetology
- Culinary Arts

Temporary Relocations:

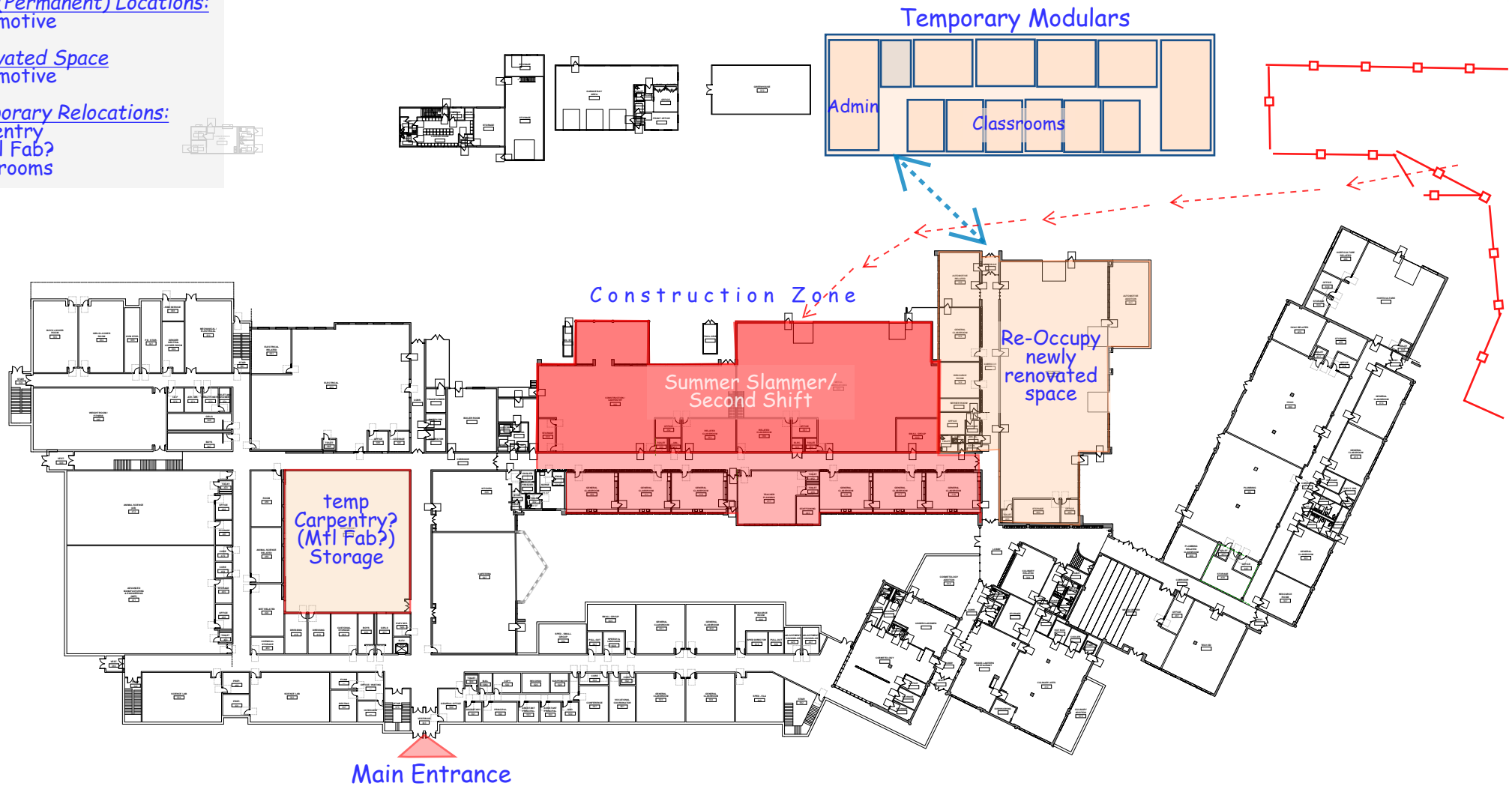
- Automotive
- Administration



New (Permanent) Locations:
Automotive

Renovated Space
Automotive

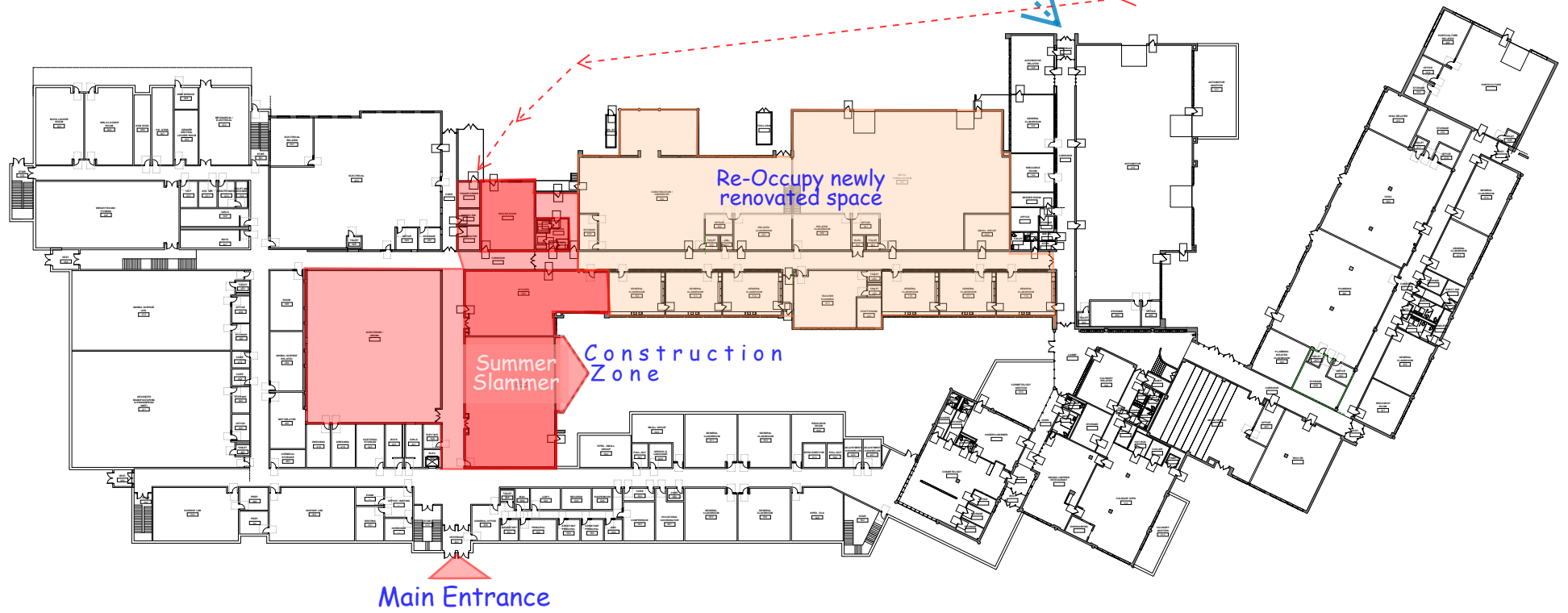
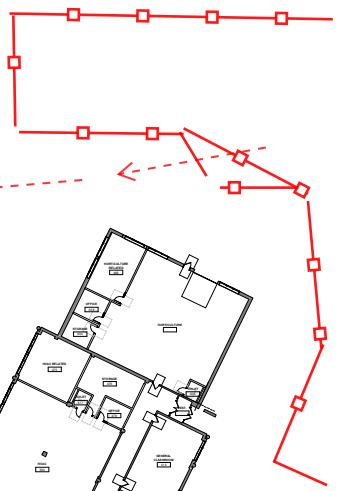
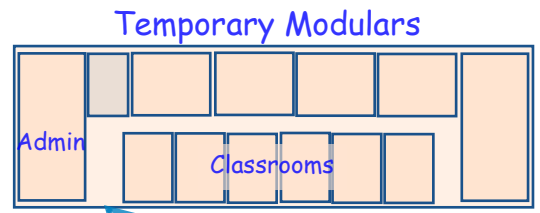
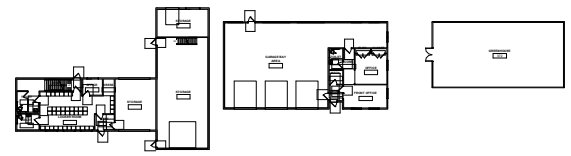
Temporary Relocations:
Carpentry
Metal Fab?
Classrooms

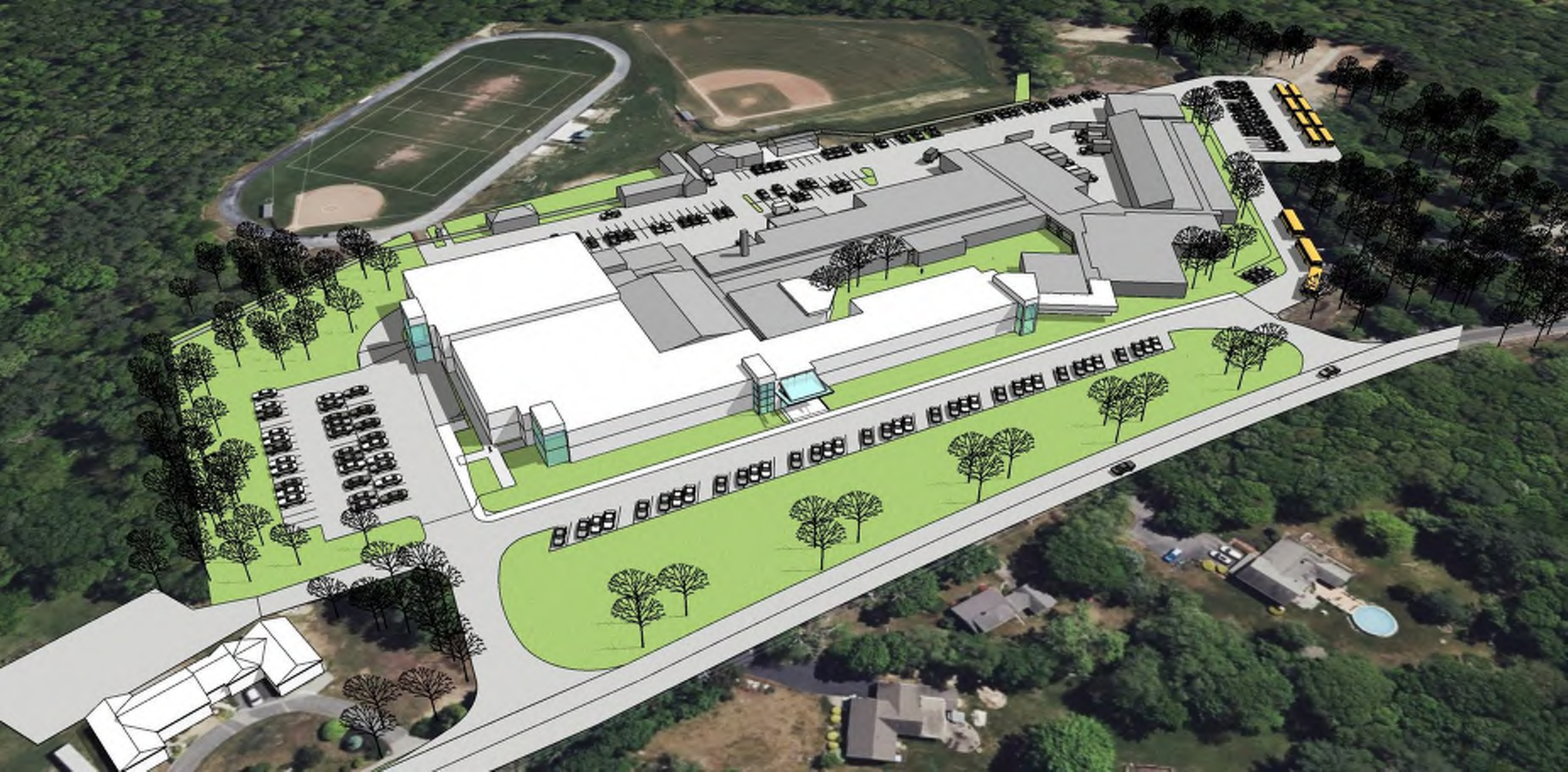


New (Permanent) Locations:
Teachers Planning

Renovated Space
Carpentry
Metal Fab
Kitchen

Temporary Relocations:
Kitchen Storage
Custodian

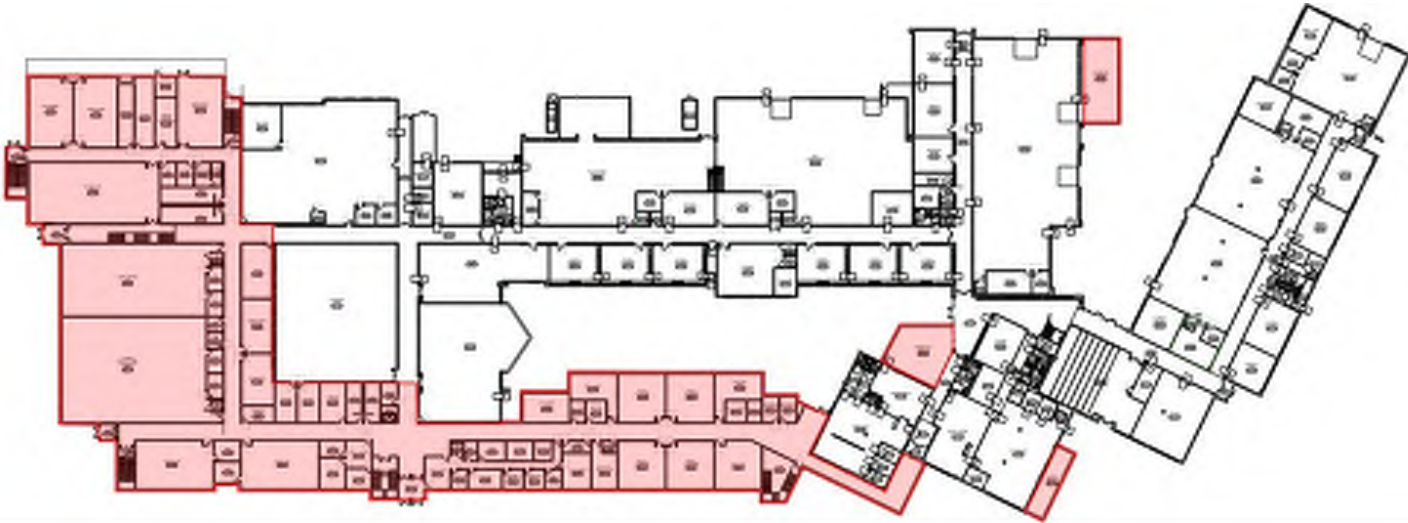






OPTION AR-1 “L – shaped” Addition/ Renovation

For enrollment of 900 students



AR-1 First Floor Plan

Description:

This option proposes a two-story addition across the front of the school and wrapping around to the east of the Gym along with the full renovation of the existing school. Depending upon the selected enrollment, a small additions are required to the existing cafeteria and several CTE shops.

The first phase of the project would be to relocate the current Administration, Student Services, Allied Health spaces, classrooms, and science labs into temporary swing space, most likely modular “trailers” elsewhere on the campus.

The multi-story addition would then be constructed to house the new Gymnasium & support spaces, Administration, CTE shop space for the MET, Graphics, CIT, & Allied Health programs, and new science labs and general classrooms.

Once the new construction is completed and occupied the phased renovation of the existing building could begin. The renovation would include the conversion of the Science wing into the Electrical shop and the conversion of the former Gymnasium into a multi-purpose auditorium. This Auditorium space could also provide swing space for the renovation of existing high-bay CTE shops. The relocation of the MET, Graphics, Electrical, and CIT programs will allow a domino effect of the remaining CTE programs to expand into renovated, right-sized spaces.

The increase in student enrollment requires the construction of a wastewater treatment facility on site. Otherwise, the site configuration remains largely unchanged.

To accommodate the larger enrollments that are being considered (up to 975 students), a third floor of academic space would be included with the addition and several existing high-bay shops would need to be expanded in their current locations.

Educational Program requirements:

Option AR-1 generally satisfies most of the space needs outlined in the Educational Program and preliminary Space Summary. However, it does not alter the existing undersized classrooms of the original building, and certain CTE shops vary slightly from the DESE guidelines due to the configuration of the existing building.

This option maintains the current separate public access to the Culinary and Cosmetology shops and improves its security by potentially located some administrative presence adjacent to that entrance.

Construction Phasing:

This option will involve construction adjacent to occupancy at times during the school year. Multiple complex phasing will be required, including the consideration of double shifts, second shift work, and swing spaces for temporary relocation of programs.

Temporary parking will also need to be considered during the initial new construction phase to compensate for space lost to construction activities.

Estimated construction duration is four years.

Areas (the area of this option varies proportionally with the target enrollment variations)

Enrollment	Total	Renovation	New Construction
900 Students	243,200 sf	108,000 sf	135,200 sf

Preliminary Order-Of-Magnitude Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs
900 Students	\$293,406,500	\$366,758,125

Final PSR Estimated Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs
900 Students	\$216,712,216	\$293,492,782

Pro's:

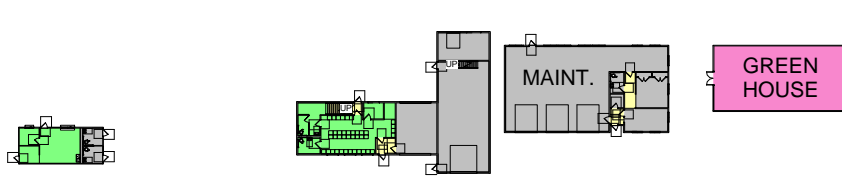
- Fully renovates the existing building like-new to extend its longevity
- Generally Satisfies South Shore Tech's space needs and right-sizes most CTE programs
- Provides safe, secure, and direct public access to Consumer Services programs

Con's:

- Requires disruptive phased construction adjacent to occupancy
- Doesn't significantly improve the integration of CTE and Academic spaces
- Long construction period

Initial Evaluation: Continue to study in final phase of evaluation for enrollments of 805 & 900 students

Final Evaluation: Drop from consideration

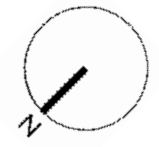


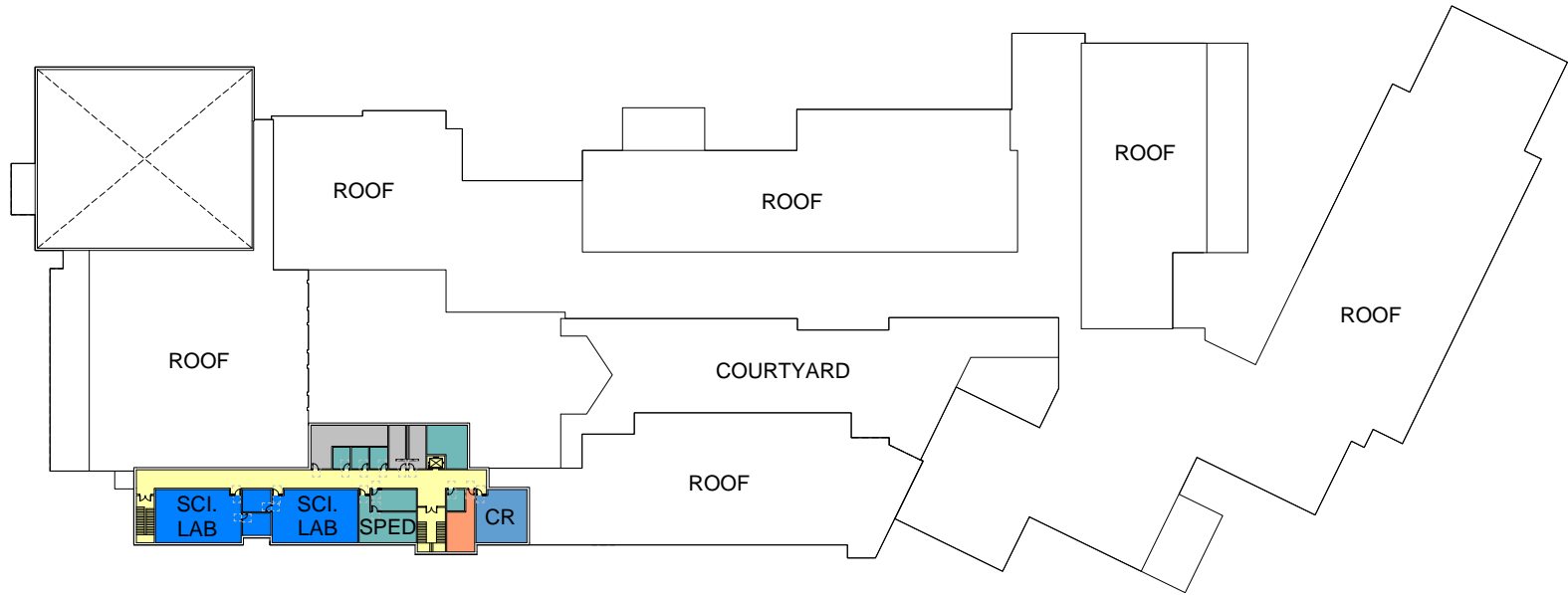
Departments

- | | | |
|---|---|---|
| Admin-Teacher Support | Classroom | Nurse |
| Auditorium | Custodial-Maintenance | Science Labs |
| Cafeteria-Kitchen | Gym-PE | Special Education |
| Circulation | Library-Media | Vocational |



OPTION AR-1 FIRST FLOOR PLAN - 900 ENROLLMENT

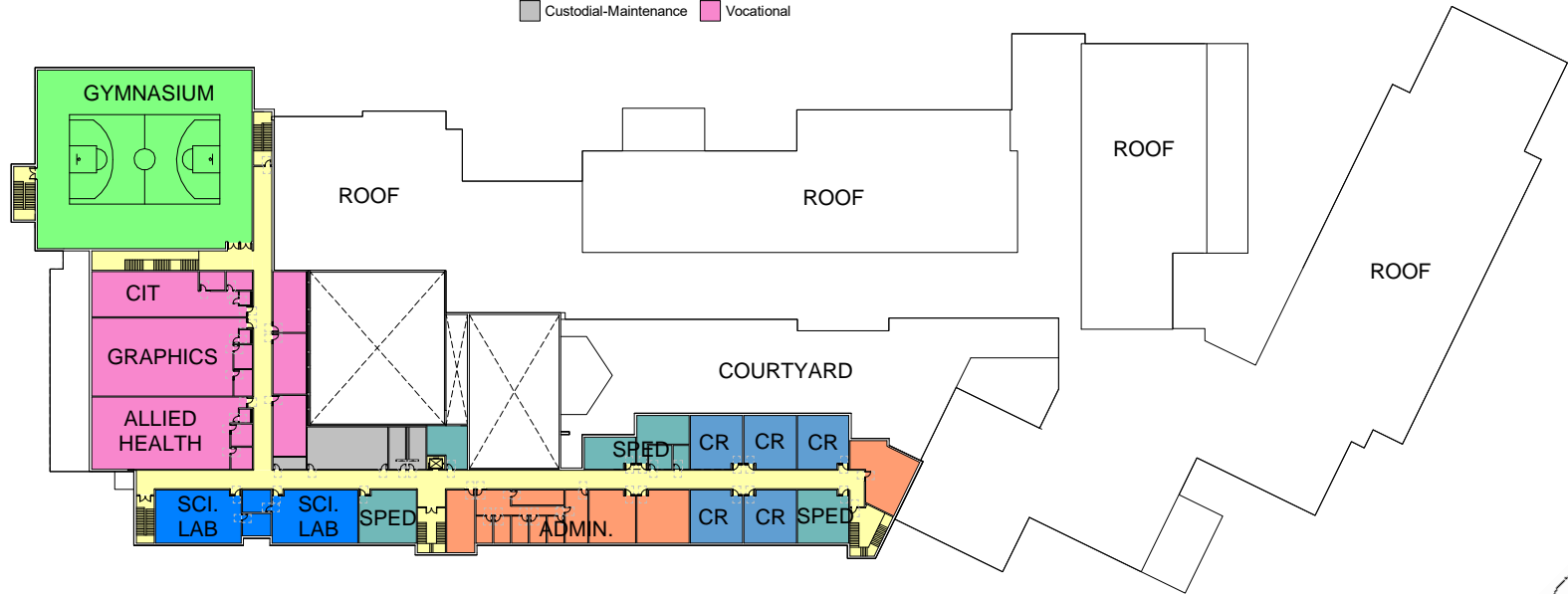




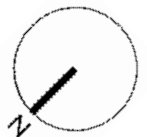
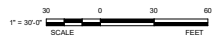
OPTION AR-1 THIRD FLOOR PLAN - 900 ENROLLMENT

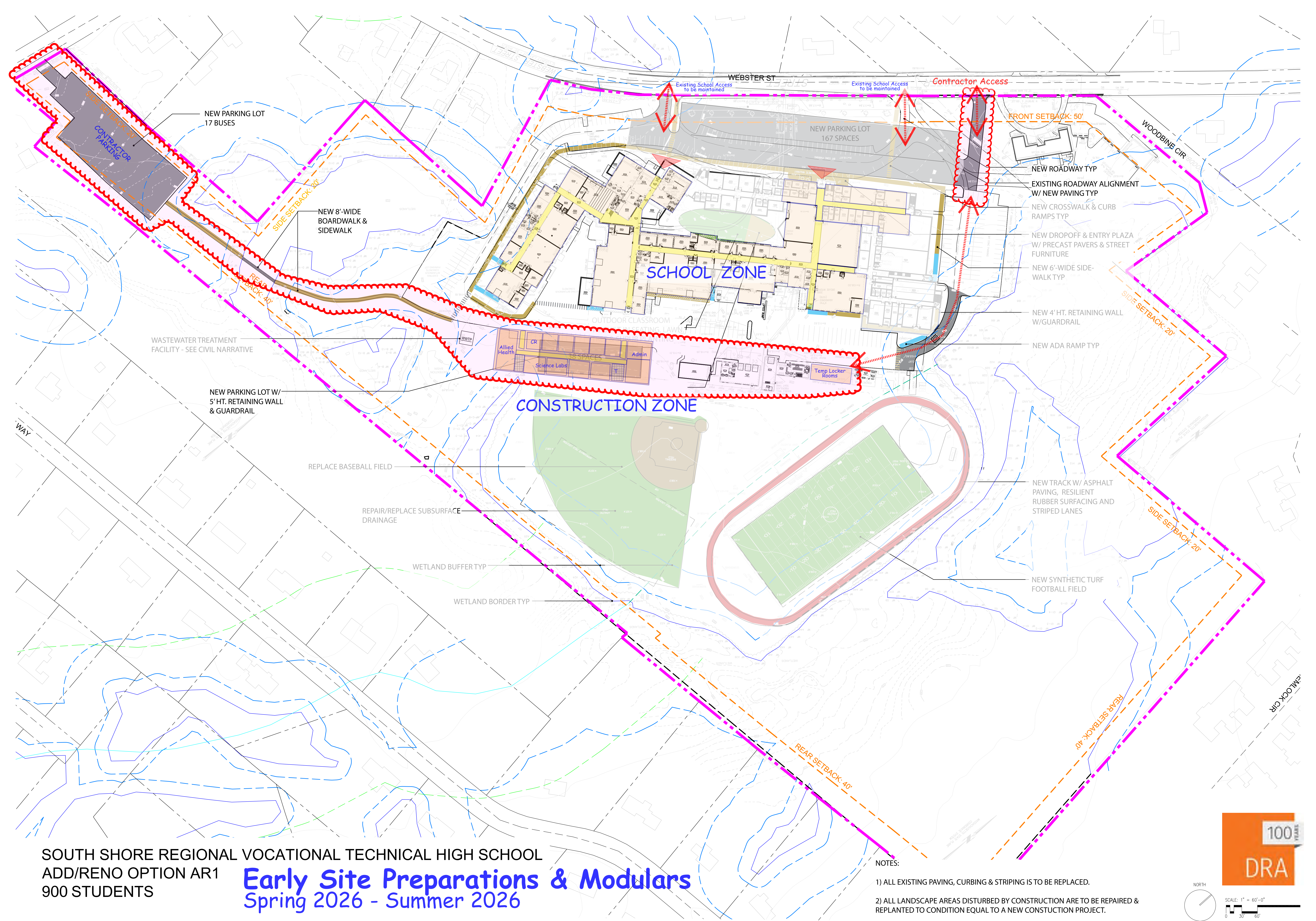
Departments

- Admin-Teacher Support
- Gym-PE
- Circulation
- Science Labs
- Classroom
- Special Education
- Custodial-Maintenance
- Vocational



OPTION AR-1 SECOND FLOOR PLAN - 900 ENROLLMENT



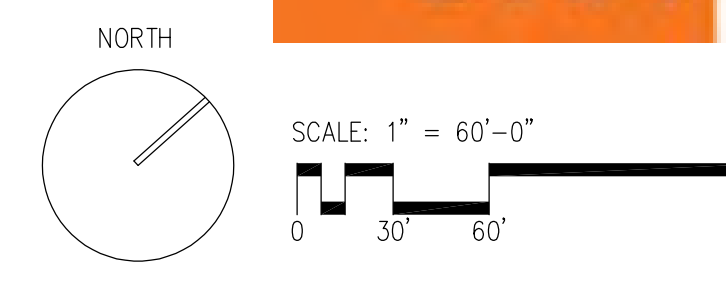


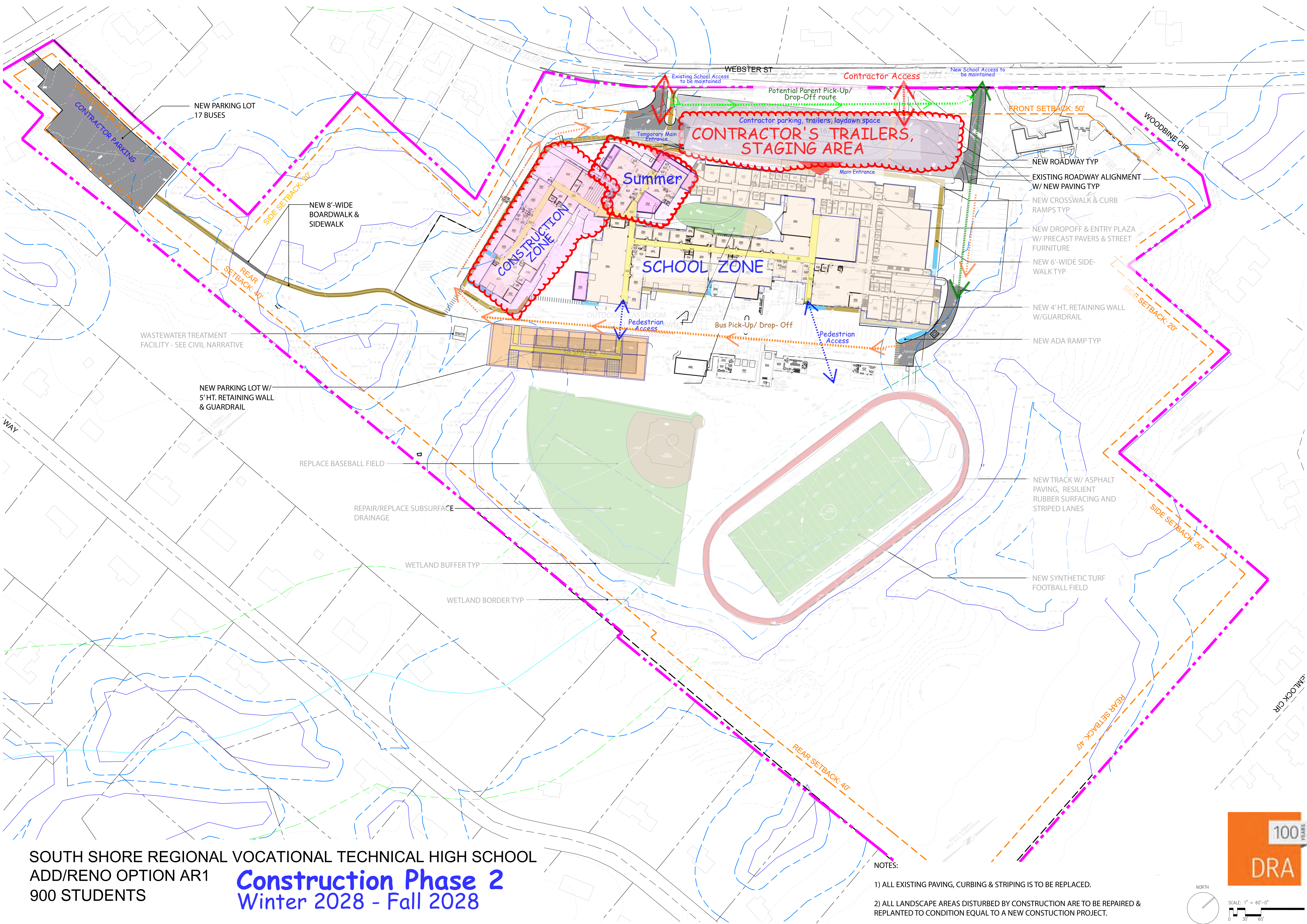
SOUTH SHORE REGIONAL VOCATIONAL TECHNICAL HIGH SCHOOL
 ADD/RENO OPTION AR1
 900 STUDENTS

Early Site Preparations & Modulars

Spring 2026 - Summer 2026

- NOTES:
- 1) ALL EXISTING PAVING, CURBING & STRIPING IS TO BE REPLACED.
 - 2) ALL LANDSCAPE AREAS DISTURBED BY CONSTRUCTION ARE TO BE REPAIRED & REPLANTED TO CONDITION EQUAL TO A NEW CONSTRUCTION PROJECT.





SOUTH SHORE REGIONAL VOCATIONAL TECHNICAL HIGH SCHOOL
 ADD/RENO OPTION AR1
 900 STUDENTS

Construction Phase 2

Winter 2028 - Fall 2028

- NOTES:
- 1) ALL EXISTING PAVING, CURBING & STRIPING IS TO BE REPLACED.
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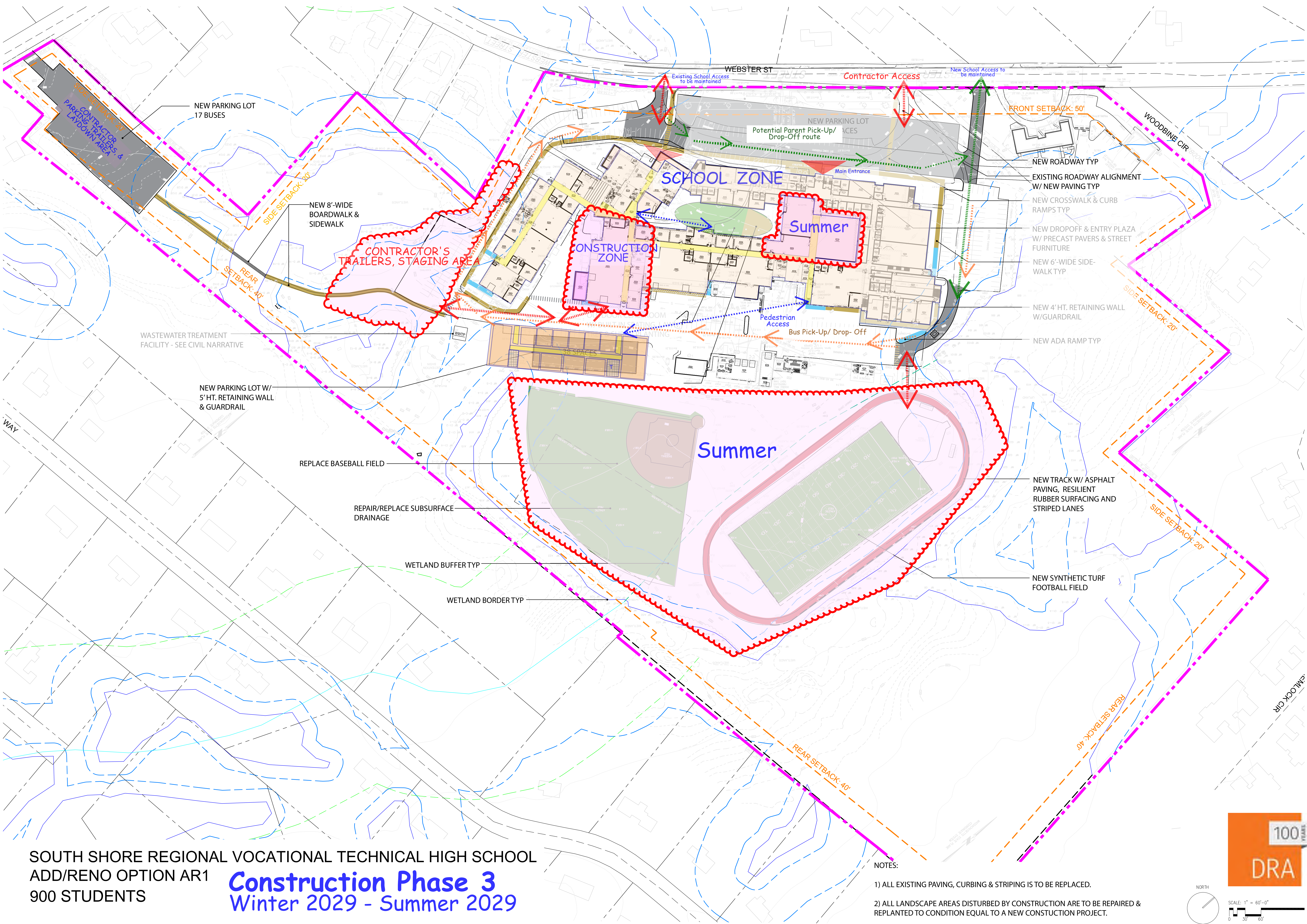
100' SCALE

DRA

NORTH

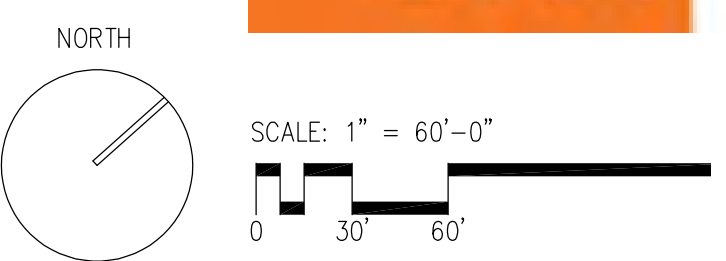
SCALE: 1" = 60'-0"

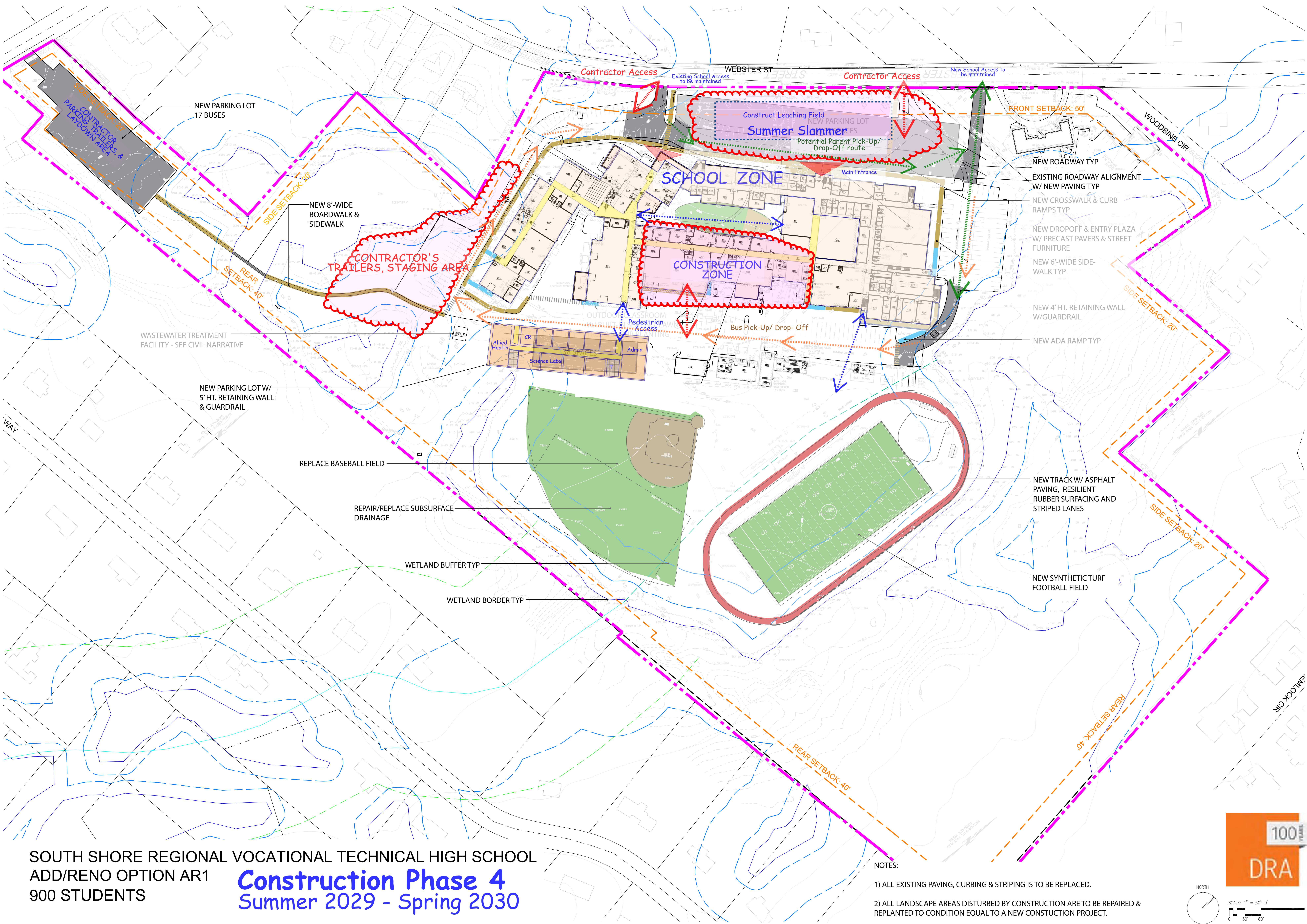
0 30 60'



SOUTH SHORE REGIONAL VOCATIONAL TECHNICAL HIGH SCHOOL
 ADD/RENO OPTION AR1
 900 STUDENTS
Construction Phase 3
 Winter 2029 - Summer 2029

- NOTES:
- 1) ALL EXISTING PAVING, CURBING & STRIPING IS TO BE REPLACED.
 - 2) ALL LANDSCAPE AREAS DISTURBED BY CONSTRUCTION ARE TO BE REPAIRED & REPLANTED TO CONDITION EQUAL TO A NEW CONSTRUCTION PROJECT.

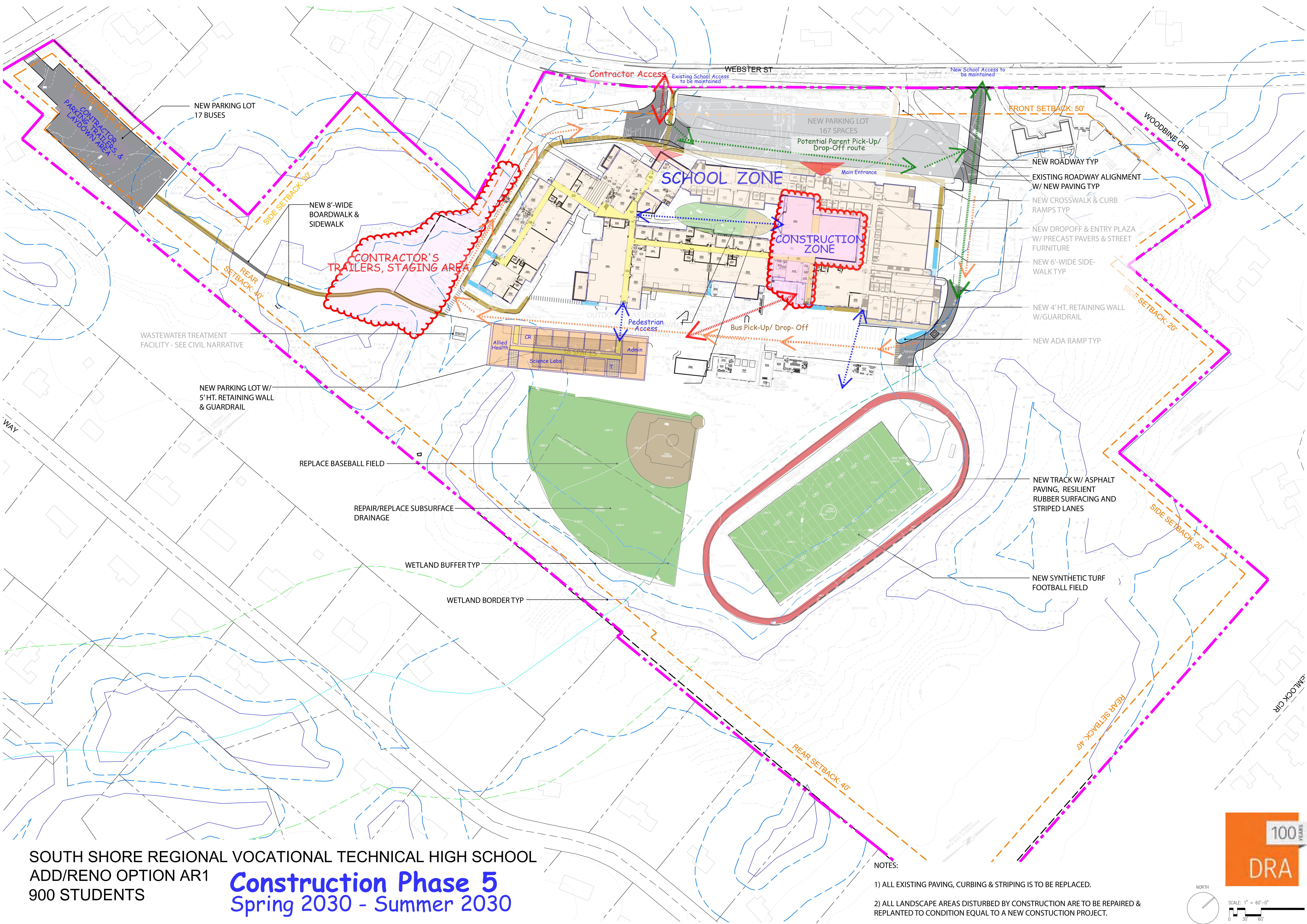




SOUTH SHORE REGIONAL VOCATIONAL TECHNICAL HIGH SCHOOL
 ADD/RENO OPTION AR1
 900 STUDENTS
Construction Phase 4
 Summer 2029 - Spring 2030

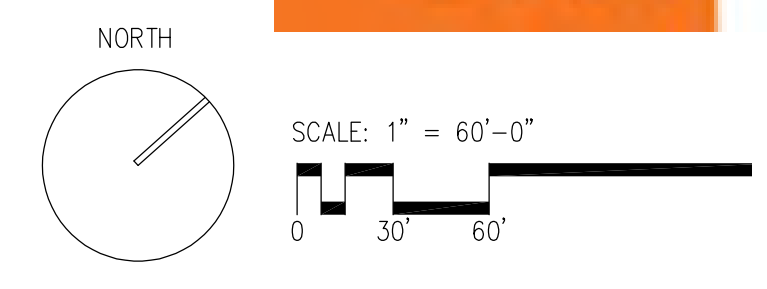
- NOTES:
- 1) ALL EXISTING PAVING, CURBING & STRIPING IS TO BE REPLACED.
 - 2) ALL LANDSCAPE AREAS DISTURBED BY CONSTRUCTION ARE TO BE REPAIRED & REPLANTED TO CONDITION EQUAL TO A NEW CONSTRUCTION PROJECT.

100%
 DRA
 NORTH
 SCALE: 1" = 60'-0"
 0 30 60



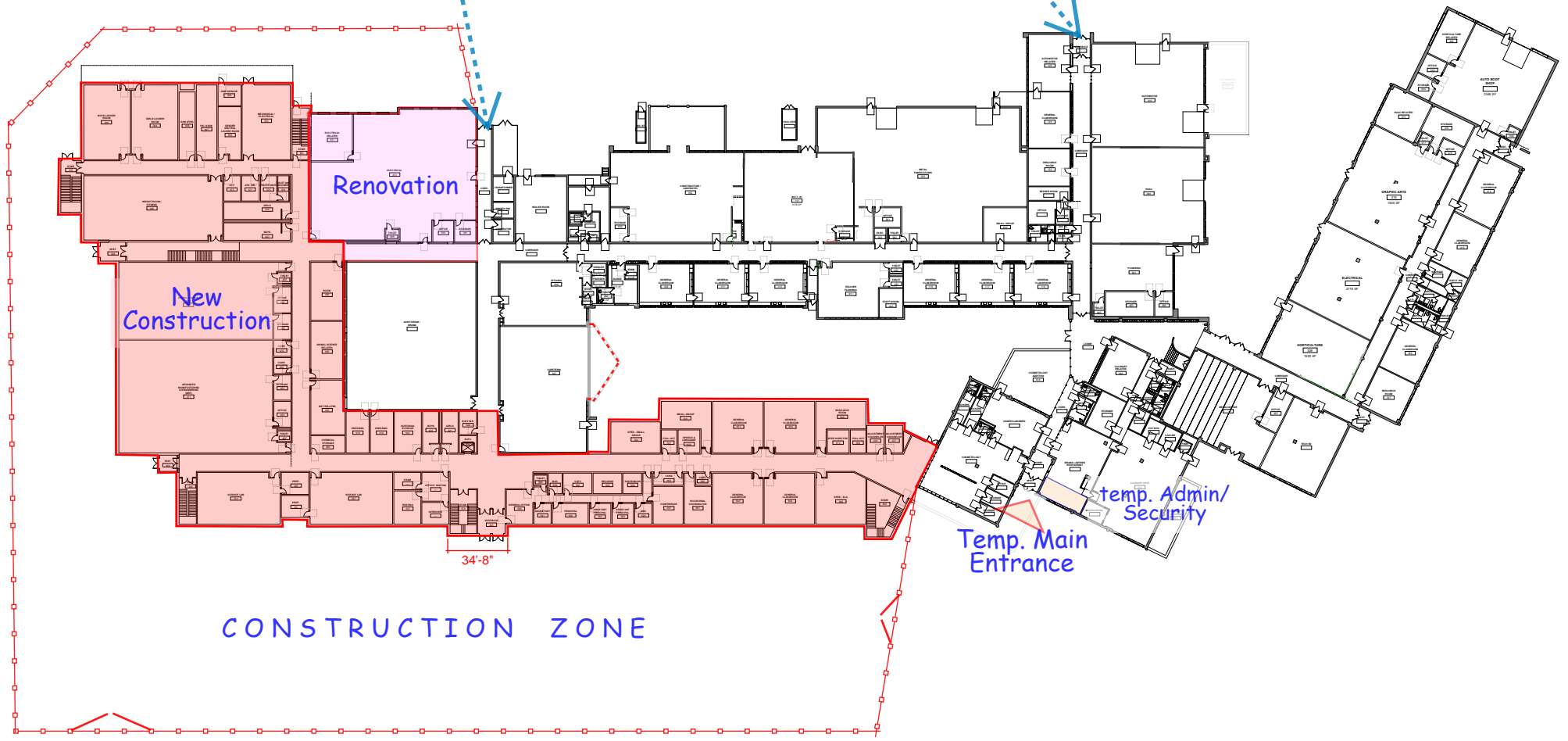
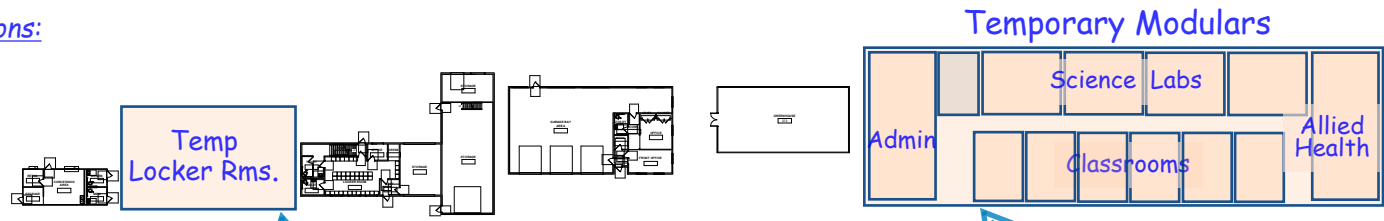
SOUTH SHORE REGIONAL VOCATIONAL TECHNICAL HIGH SCHOOL
 ADD/RENO OPTION AR1
 900 STUDENTS
Construction Phase 5
 Spring 2030 - Summer 2030

- NOTES:
- 1) ALL EXISTING PAVING, CURBING & STRIPING IS TO BE REPLACED.
 - 2) ALL LANDSCAPE AREAS DISTURBED BY CONSTRUCTION ARE TO BE REPAIRED & REPLANTED TO CONDITION EQUAL TO A NEW CONSTRUCTION PROJECT.



New (Permanent) Locations:
none

Temporary Relocations:
Allied Health
Science Labs
Locker Rooms
Administration



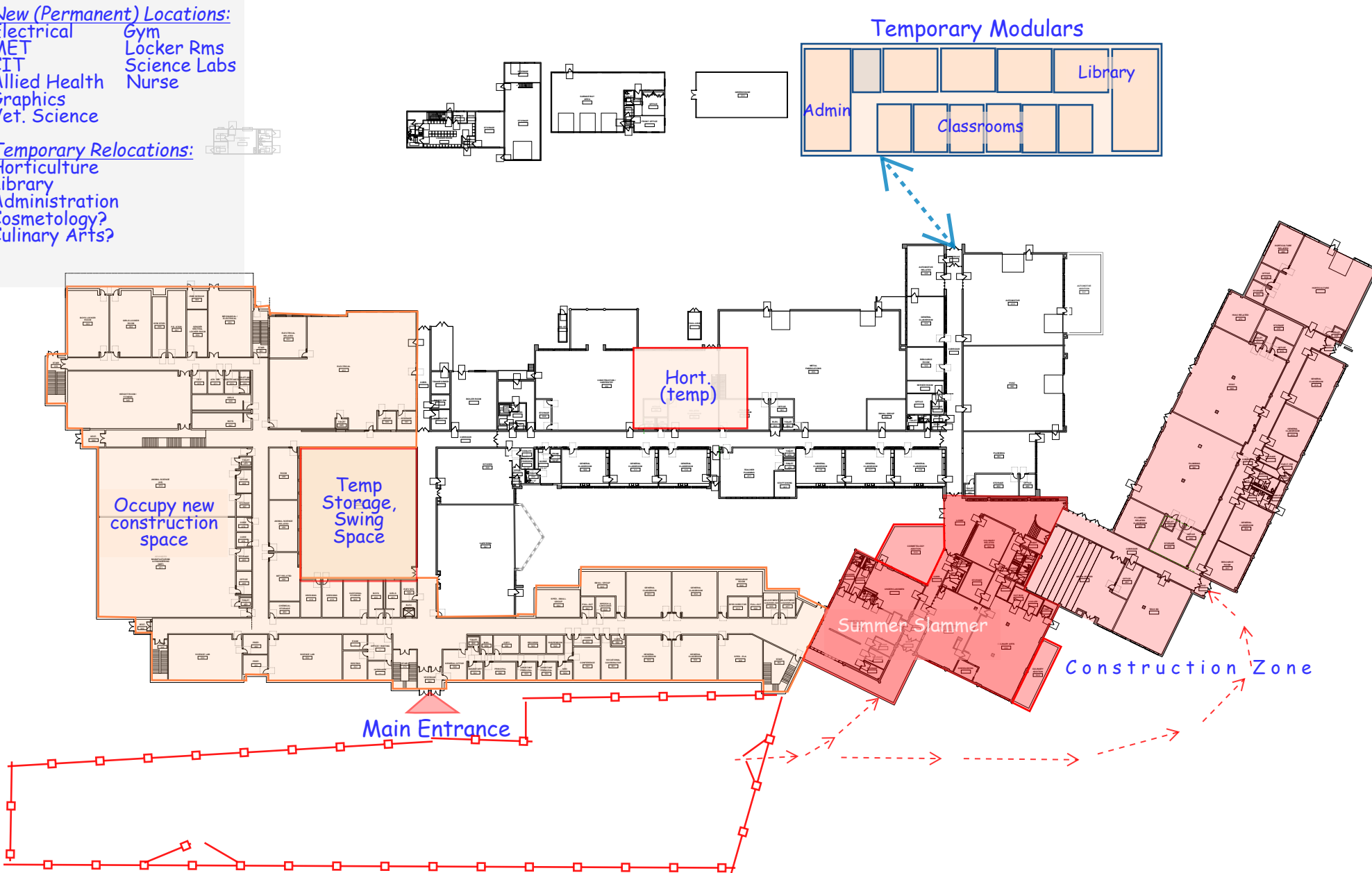
Construction Phase 1
Summer 2026 - Winter 2027/28

New (Permanent) Locations:

Electrical Gym
MET Locker Rms
CIT Science Labs
Allied Health Nurse
Graphics
Vet. Science

Temporary Relocations:

Horticulture
Library
Administration
Cosmetology?
Culinary Arts?



Construction Phase 2
Winter 2028 - Fall 2028

New (Permanent) Locations:

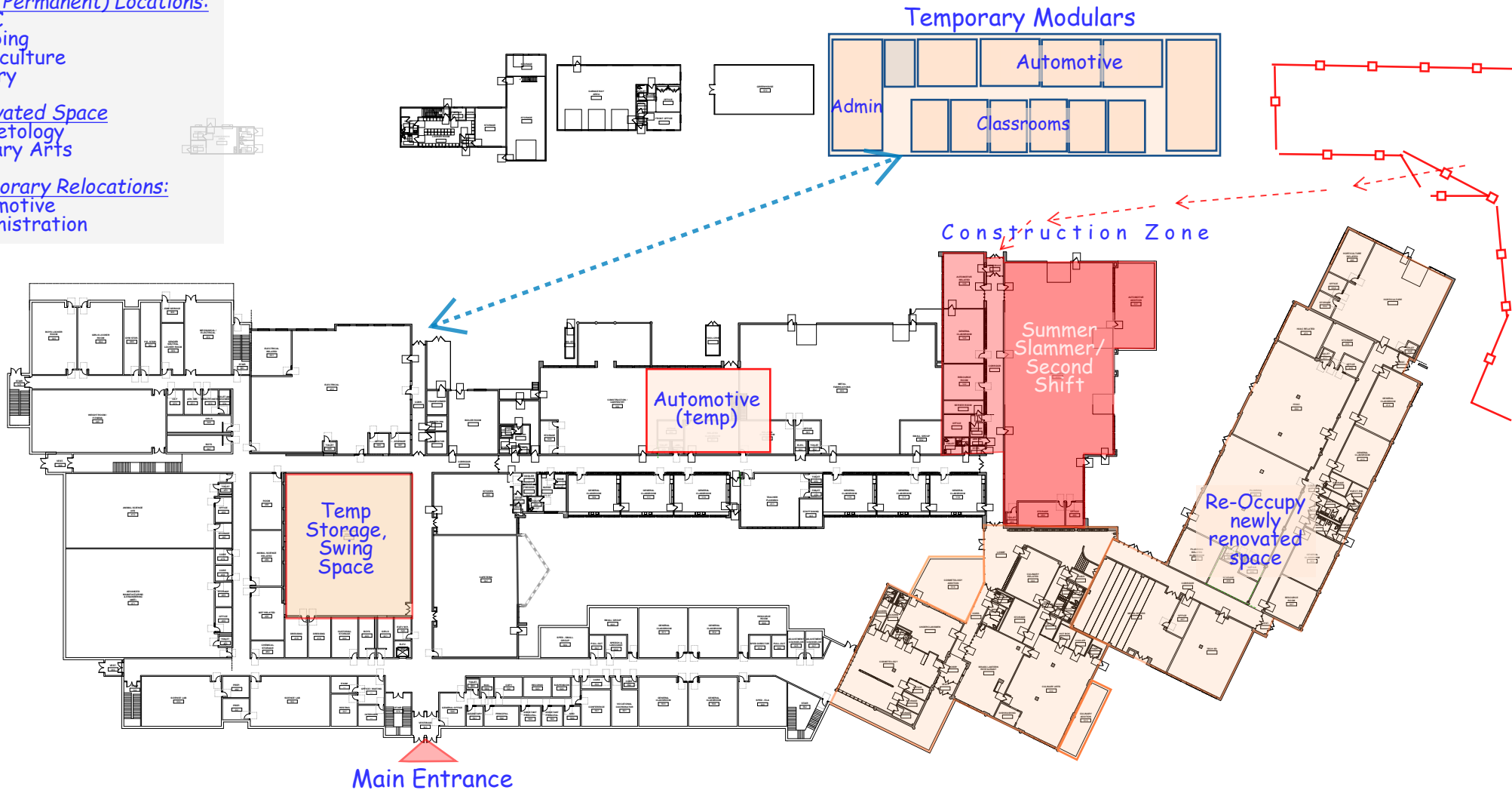
HVAC
Plumbing
Horticulture
Library

Renovated Space

Cosmetology
Culinary Arts

Temporary Relocations:

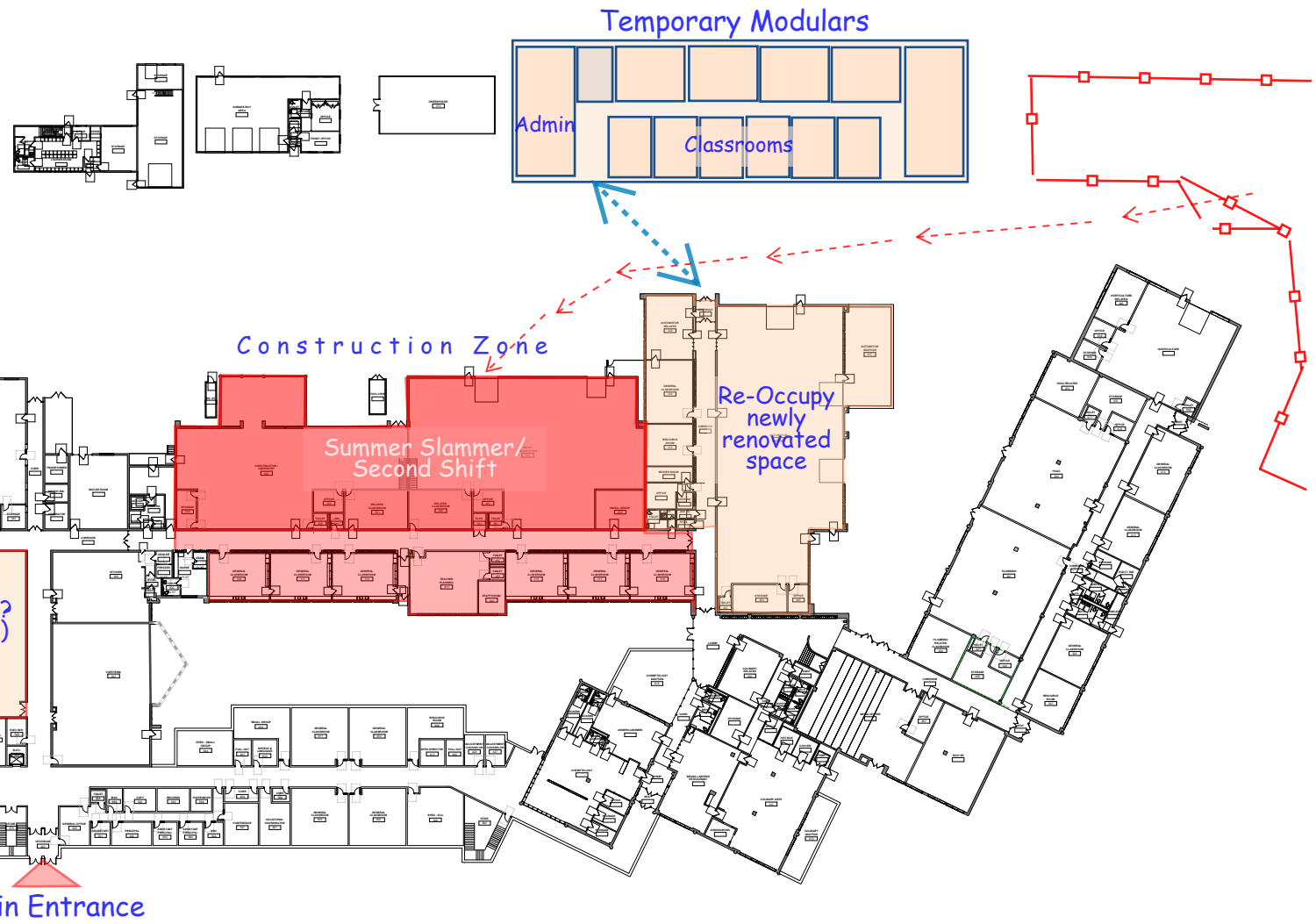
Automotive
Administration



New (Permanent) Locations:
Automotive

Renovated Space
Automotive

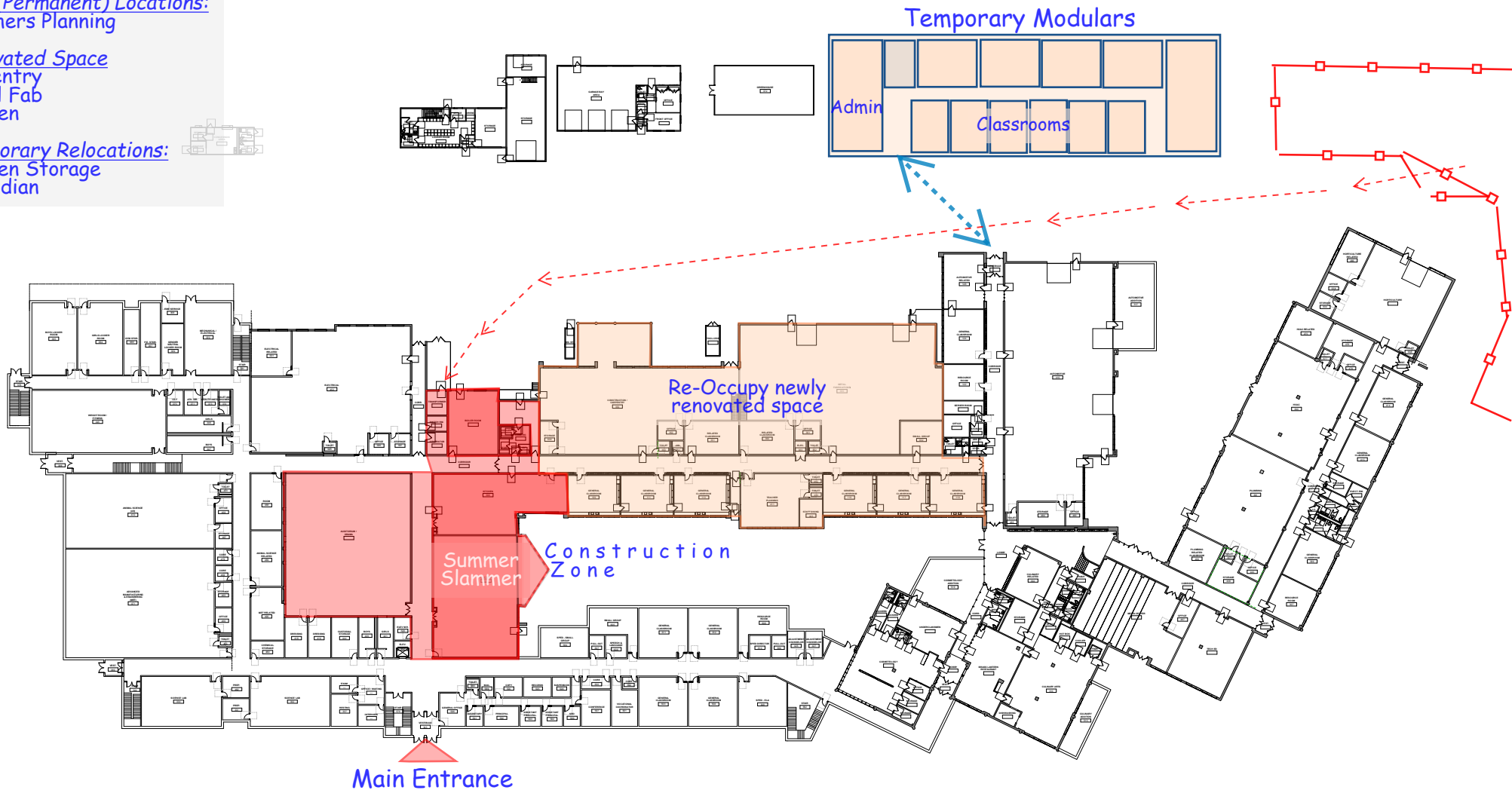
Temporary Relocations:
Carpentry
Metal Fab?
Classrooms

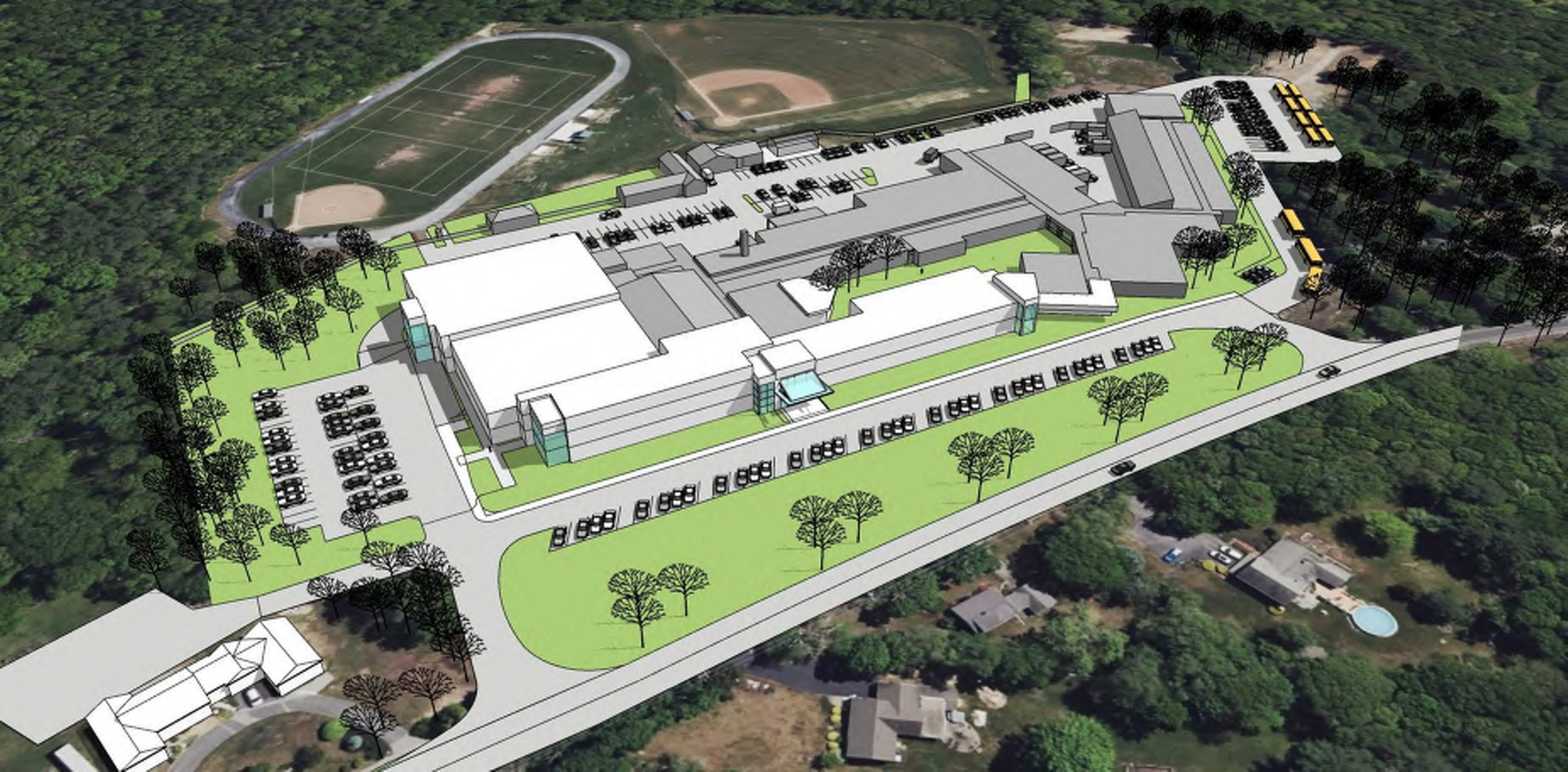


New (Permanent) Locations:
Teachers Planning

Renovated Space
Carpentry
Metal Fab
Kitchen

Temporary Relocations:
Kitchen Storage
Custodian

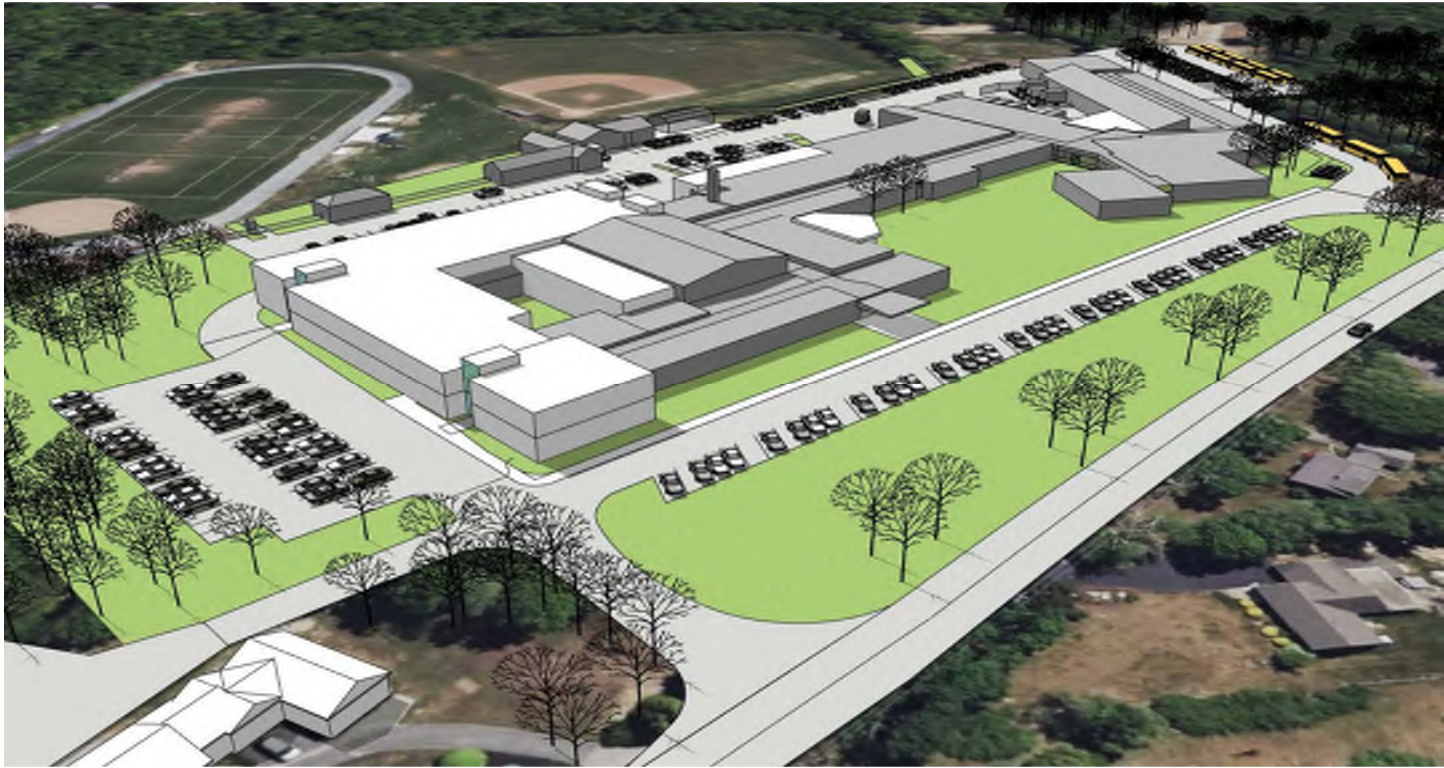






OPTION AR-2 “Lightwell” Addition/ Renovation

For enrollment of 645 students



AR-2 View

Description:

This option proposes multiple additions to be built in phases. The existing Science wing would be demolished to provide space for the primary addition- a two-story L-shaped addition wrapping around to the south and east of the existing Gym forming a small courtyard or lightwell. Other additions would be constructed to expand certain CTE shops and the cafeteria as needed for the various enrollments. The remaining existing building would be fully renovated.

The first phase of the project would be to relocate five science classrooms into temporary swing space, most likely modular “trailers” elsewhere on the campus. The major addition would then be constructed to house the new low-bay shops for the Graphics, CIT, & Allied Health programs, girl’s locker rooms, and new science labs and general classrooms.

Once the first phase of new construction is completed and occupied, the smaller additions and phased renovation of the existing building could proceed. The smaller additions would expand most existing CTE shops as required to meet the space needs while also renovating the existing spaces. This option retains and renovates the undersized Gymnasium. The existing Lecture Hall is restored to its original size in lieu of constructing a new Auditorium. The relocation of the Graphics and CIT programs will allow the adjacent CTE programs to expand into renovated, right-sized spaces. This option also relocates the Library Media Center back into its previous location in the 1962 building.

The increase in student enrollment requires the construction of a wastewater treatment facility on site. Otherwise, the site configuration remains largely unchanged.

To accommodate the larger enrollments that are being considered (up to 975 students), a third floor of academic space would be added to the addition and several existing high-bay shops would need to be expanded further.

Educational Program requirements:

Option AR-2 generally satisfies many of space needs outlined in the Educational Program and preliminary Space Summary with two significant variations are: the existing undersized Gym (7,150 sf vs, 12,000 sf) is retained; and the existing Lecture is retained in lieu of a new, larger Auditorium (100 seats vs 450 seats). Also, this option does not alter the existing undersized classrooms of the original building and certain CTE shops vary slightly from the DESE guidelines due to the configuration of the existing building.

The general configuration of the site circulation and parking would be maintained while the materials would be renovated. The athletic fields would be renovated to improve their drainage and condition while remaining in their current location and configuration.

Construction Phasing:

This option will involve construction adjacent to occupancy at times during the school year. Multiple complex phasing will be required, including the consideration of double shifts, second shift work, and swing spaces for temporary relocation of programs.

The first phase would be the installation of modular swing space and the relocation of science classrooms. Then abatement and demolition of the Science wing would take place to create the building zone for new construction.

Estimated construction duration is four years.

Areas (the area of this option varies proportionally with the target enrollment variations)

Enrollment	Total	Renovation	New Construction
645 Students	188,100 sf	115,000 sf	73,100 sf

Preliminary Order-Of-Magnitude Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs
645 Students	\$ 222,327,700	\$ 277,909,625

Final PSR Estimated Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs
645 Students	\$172,026,314	\$224,157,893

Pro's:

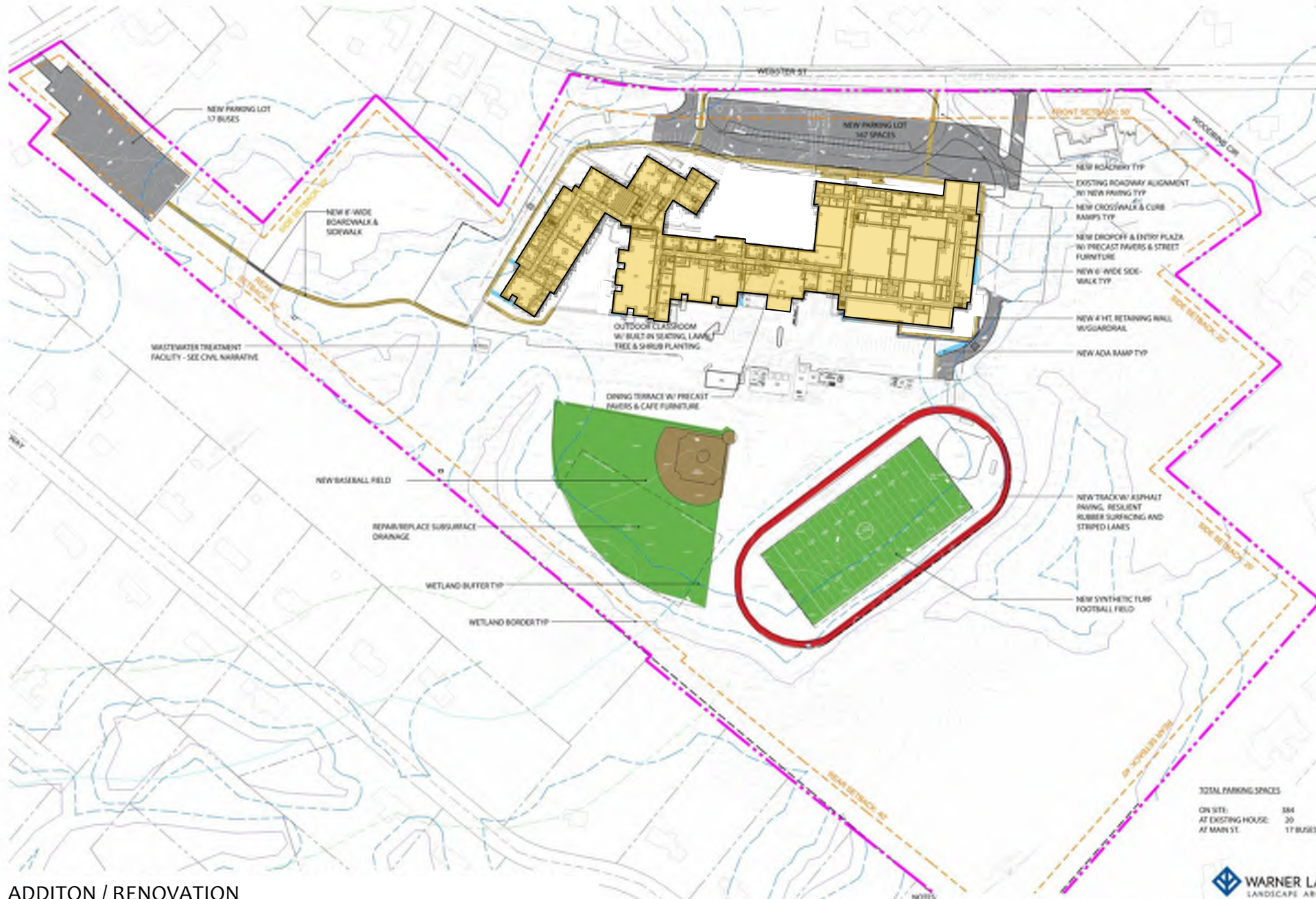
- Fully renovates the existing building like-new to extend its longevity
- Satisfies many of South Shore Tech's space needs and right-sizes most CTE programs
- Minimizes construction cost with reduced overall size
- Incorporates lightwell courtyard to provide natural light to all education spaces

Con's:

- Significant disruption during all phases of construction
- Long construction period
- Requires temporary modular swing space
- Smaller Gym and Lecture Hall retained
- Sprawling, remote configuration remains
- No significant improvement to site circulation
- Higher enrollment options significantly constrain available site
- Limited opportunity for future expansion

Initial Evaluation: Drop from final consideration; develop 645 student option for comparative purposes

Final Evaluation: Drop from further consideration



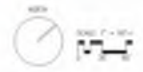
TOTAL PARKING SPACES

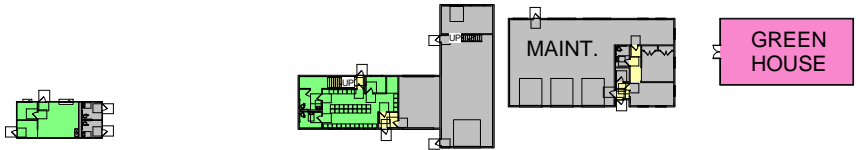
ON SITE:	384
AT EXISTING HOUSE:	30
AT MAIN ST:	17 BUSES



ADDITON / RENOVATION
OPTION AR-2
 645 ENROLLMENT

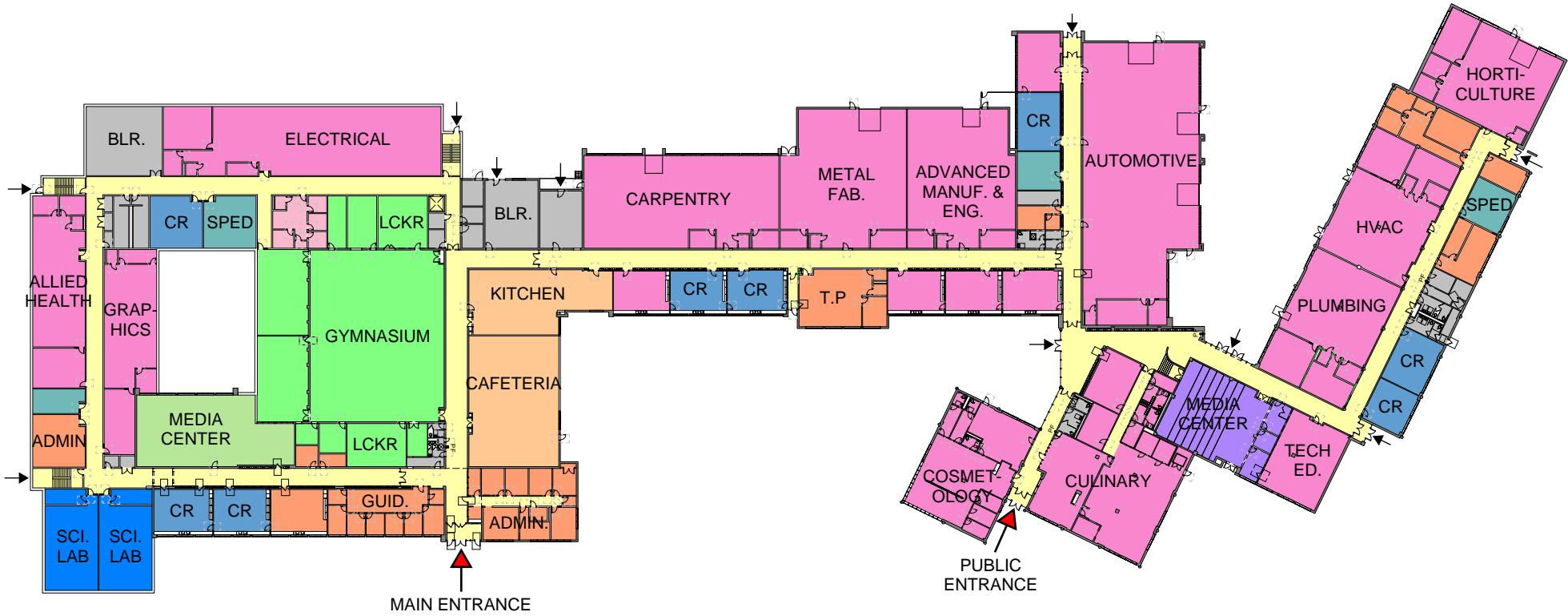
- NOTES:
- 1) ALL EXISTING PAVING, CURBING & STRIPING IS TO BE REPLACED.
 - 2) ALL LANDSCAPE AREAS DISTURBED BY CONSTRUCTION ARE TO BE REPAIRED & REPLANTED TO-CONDITION EQUAL TO A NEW CONSTRUCTION PROJECT.



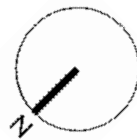


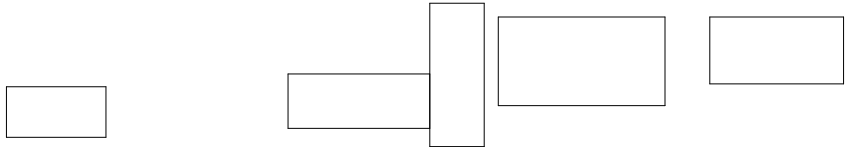
Departments

- Admin-Teacher Support
- Auditorium
- Cafeteria-Kitchen
- Circulation
- Classroom
- Custodial-Maintenance
- Gym-PE
- Library-Media
- Nurse
- Science Labs
- Special Education
- Vocational



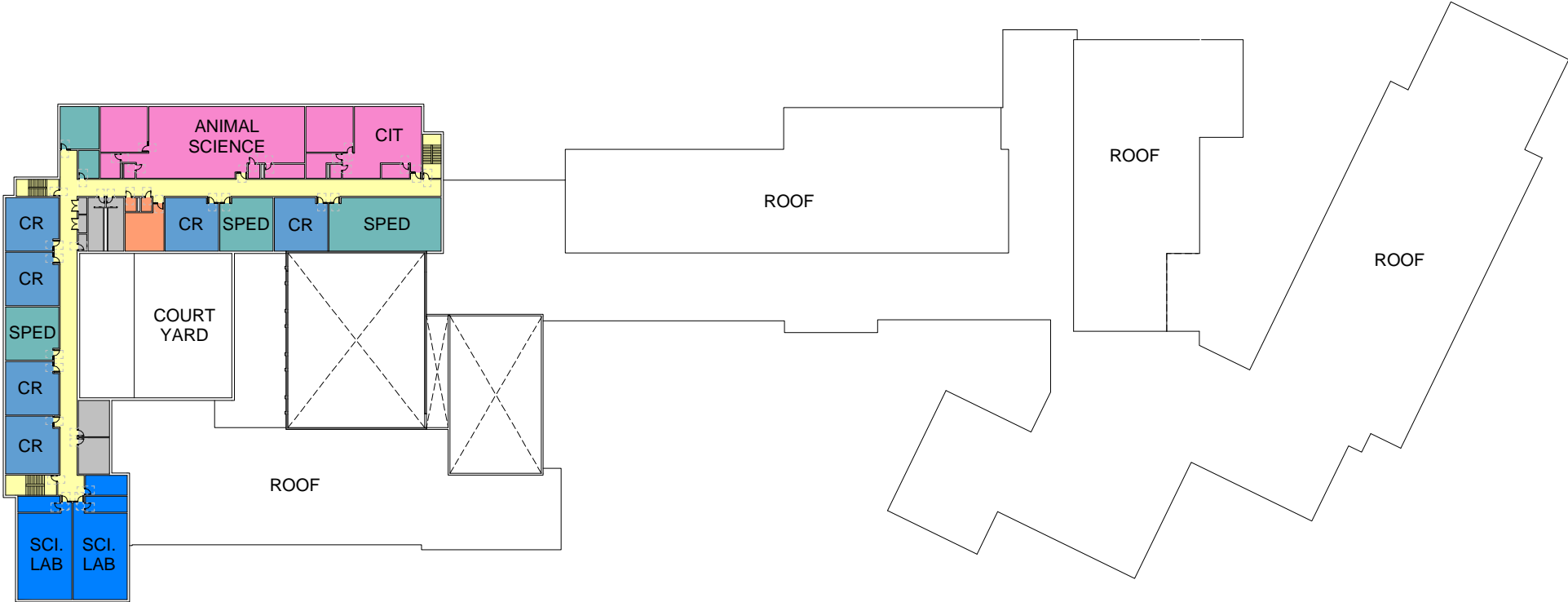
OPTION AR-2 FIRST FLOOR PLAN - 645 ENROLLMENT





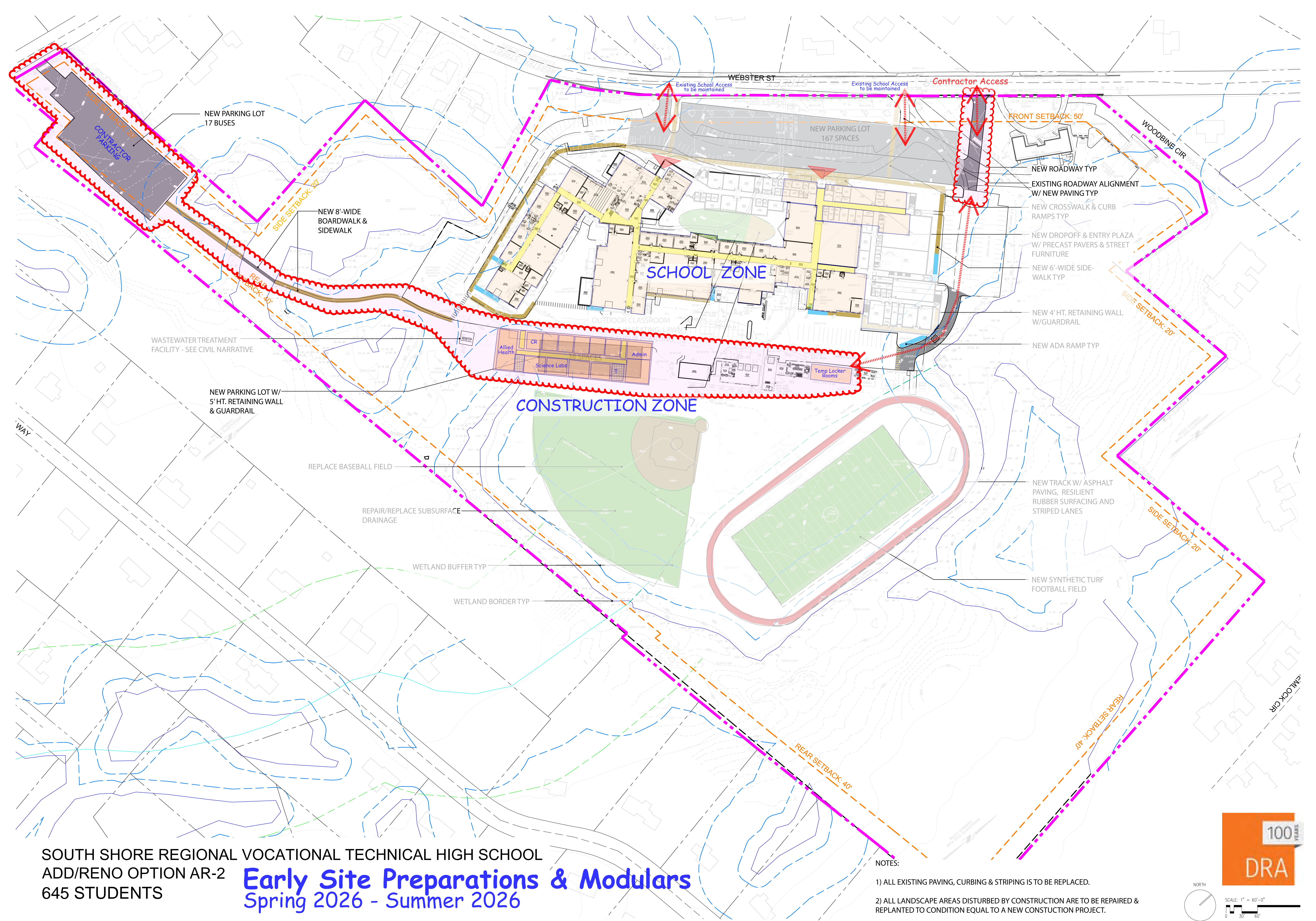
Departments

- Admin-Teacher Support
- Circulation
- Classroom
- Custodial-Maintenance
- Science Labs
- Special Education
- Vocational



OPTION AR-2 SECOND FLOOR PLAN - 645 ENROLLMENT





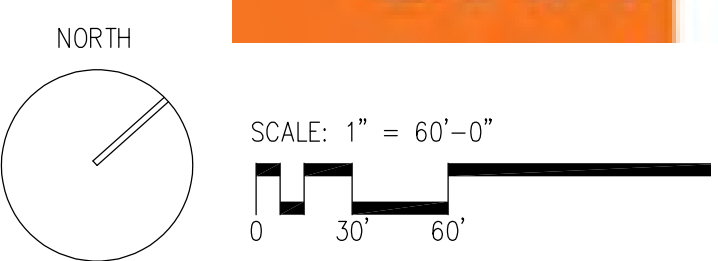
SOUTH SHORE REGIONAL VOCATIONAL TECHNICAL HIGH SCHOOL
 ADD/RENO OPTION AR-2
 645 STUDENTS

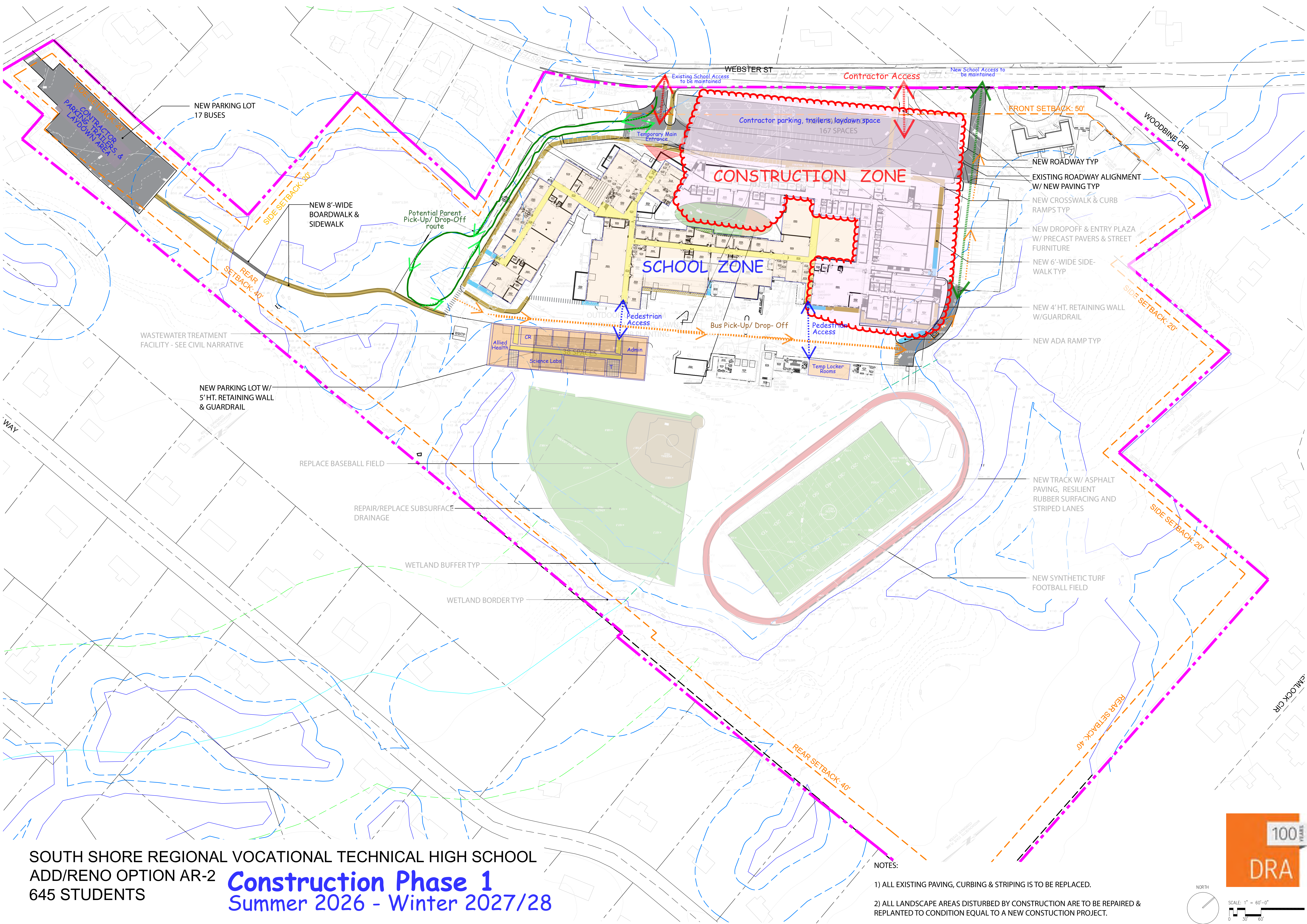
Early Site Preparations & Modulars

Spring 2026 - Summer 2026

NOTES:

- 1) ALL EXISTING PAVING, CURBING & STRIPING IS TO BE REPLACED.
- 2) ALL LANDSCAPE AREAS DISTURBED BY CONSTRUCTION ARE TO BE REPAIRED & REPLANTED TO CONDITION EQUAL TO A NEW CONSTRUCTION PROJECT.



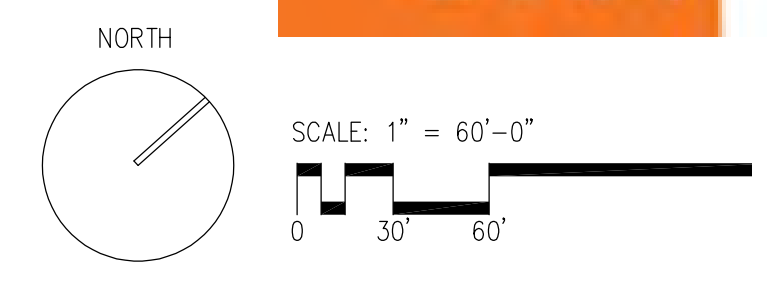


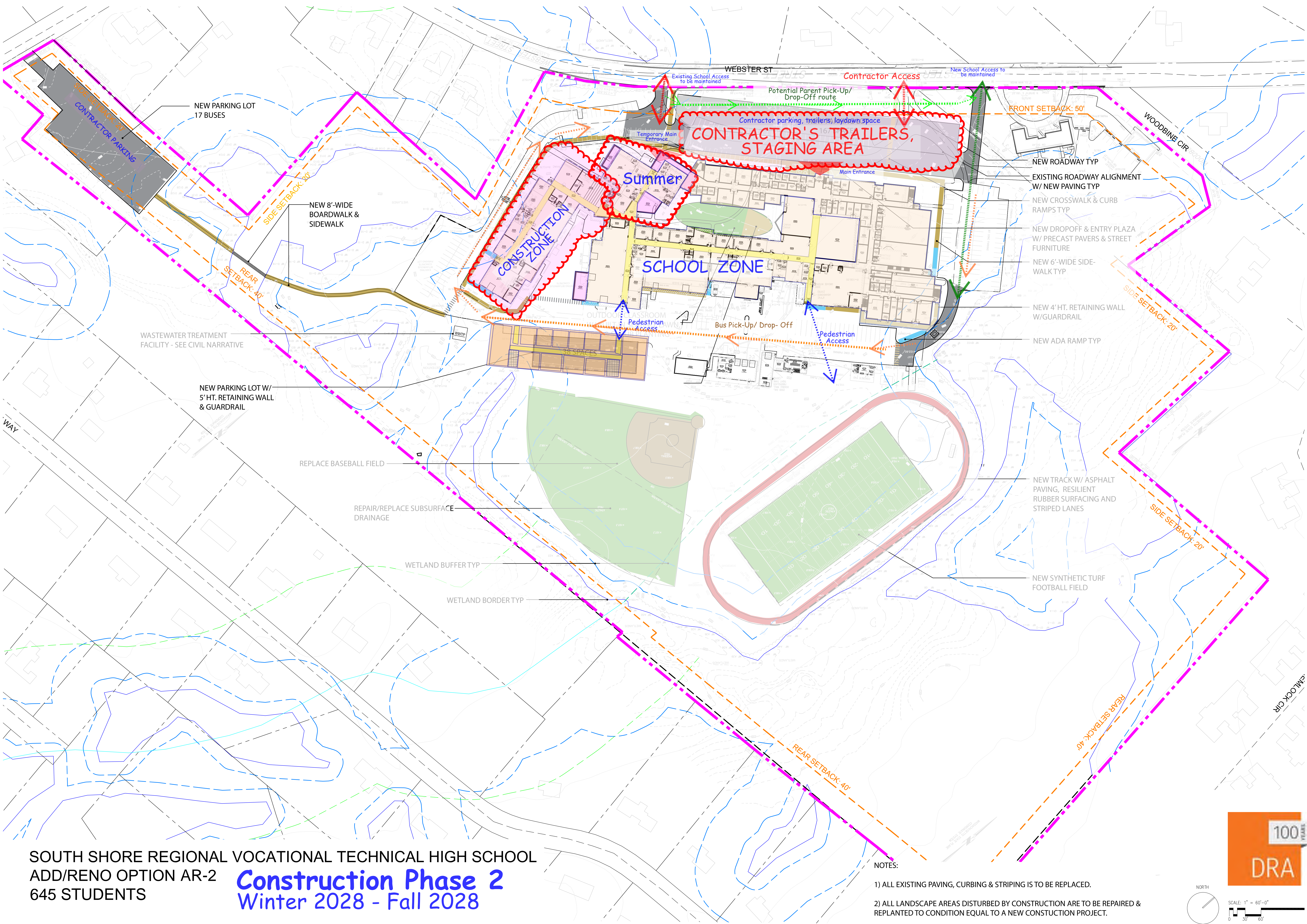
SOUTH SHORE REGIONAL VOCATIONAL TECHNICAL HIGH SCHOOL
 ADD/RENO OPTION AR-2
 645 STUDENTS

Construction Phase 1

Summer 2026 - Winter 2027/28

- NOTES:
- 1) ALL EXISTING PAVING, CURBING & STRIPING IS TO BE REPLACED.
 - 2) ALL LANDSCAPE AREAS DISTURBED BY CONSTRUCTION ARE TO BE REPAIRED & REPLANTED TO CONDITION EQUAL TO A NEW CONSTRUCTION PROJECT.

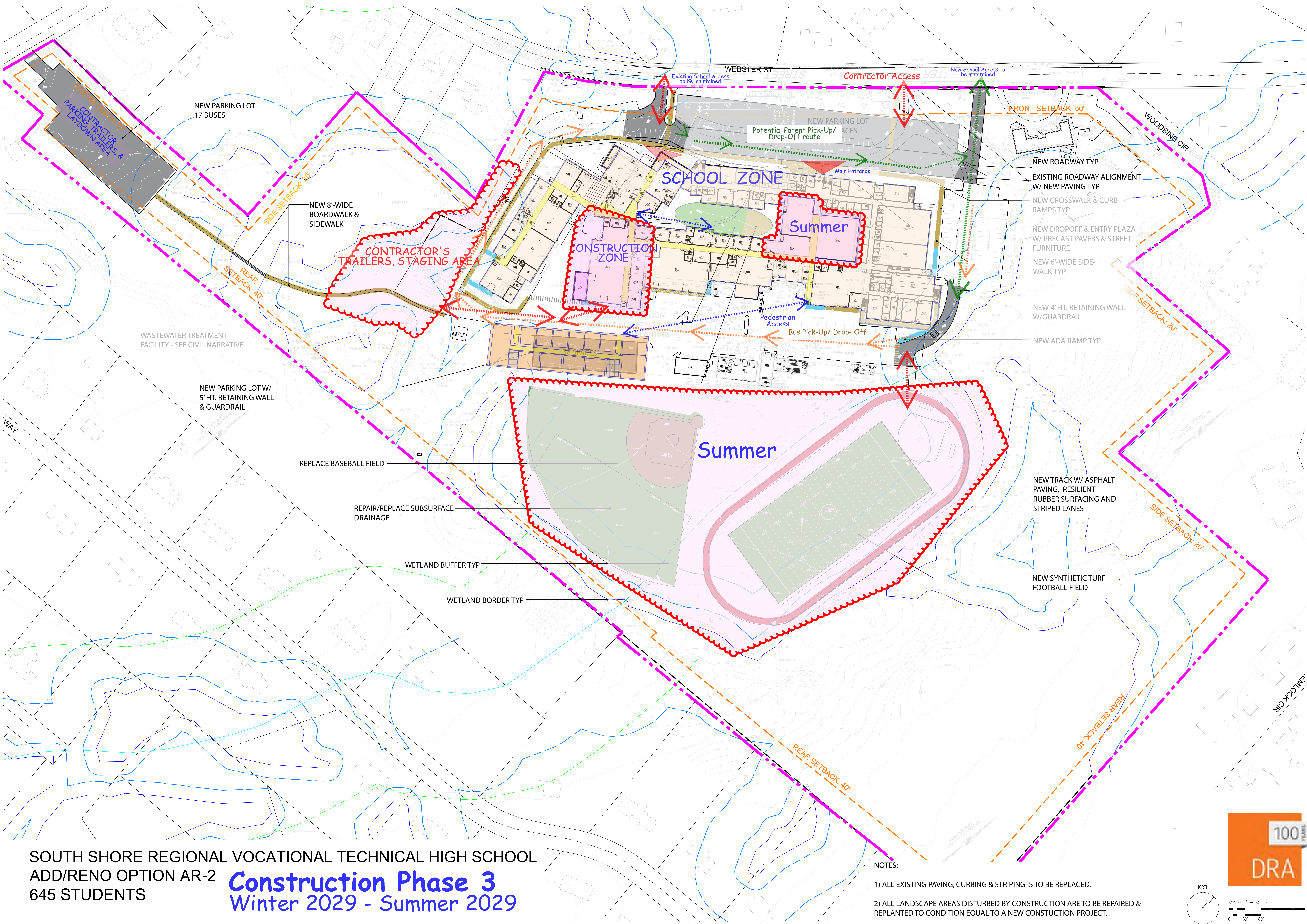




SOUTH SHORE REGIONAL VOCATIONAL TECHNICAL HIGH SCHOOL
 ADD/RENO OPTION AR-2
 645 STUDENTS
Construction Phase 2
 Winter 2028 - Fall 2028

- NOTES:
- 1) ALL EXISTING PAVING, CURBING & STRIPING IS TO BE REPLACED.
 - 2) ALL LANDSCAPE AREAS DISTURBED BY CONSTRUCTION ARE TO BE REPAIRED & REPLANTED TO CONDITION EQUAL TO A NEW CONSTRUCTION PROJECT.

100%
 DRA
 NORTH
 SCALE: 1" = 60'-0"
 0 30 60



SOUTH SHORE REGIONAL VOCATIONAL TECHNICAL HIGH SCHOOL
 ADD/RENO OPTION AR-2
 645 STUDENTS

Construction Phase 3

Winter 2029 - Summer 2029

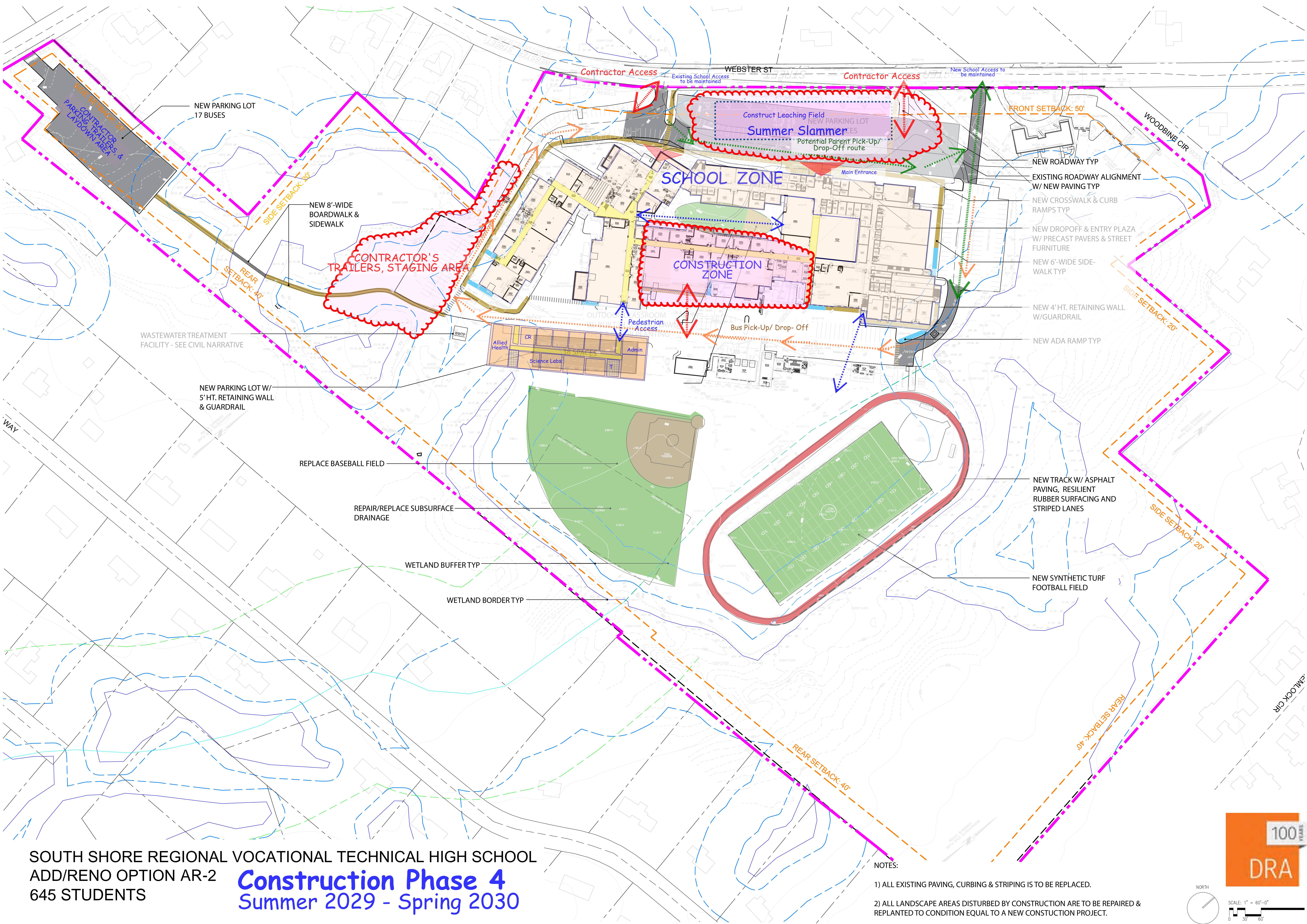
- NOTES:
- 1) ALL EXISTING PAVING, CURBING & STRIPING IS TO BE REPLACED.
 - 2) ALL LANDSCAPE AREAS DISTURBED BY CONSTRUCTION ARE TO BE REPAIRED & REPLANTED TO CONDITION EQUAL TO A NEW CONSTRUCTION PROJECT.

100 YEARS
 DRA

NORTH

SCALE: 1" = 60'-0"

0 30 60



SOUTH SHORE REGIONAL VOCATIONAL TECHNICAL HIGH SCHOOL
 ADD/RENO OPTION AR-2
 645 STUDENTS

Construction Phase 4

Summer 2029 - Spring 2030

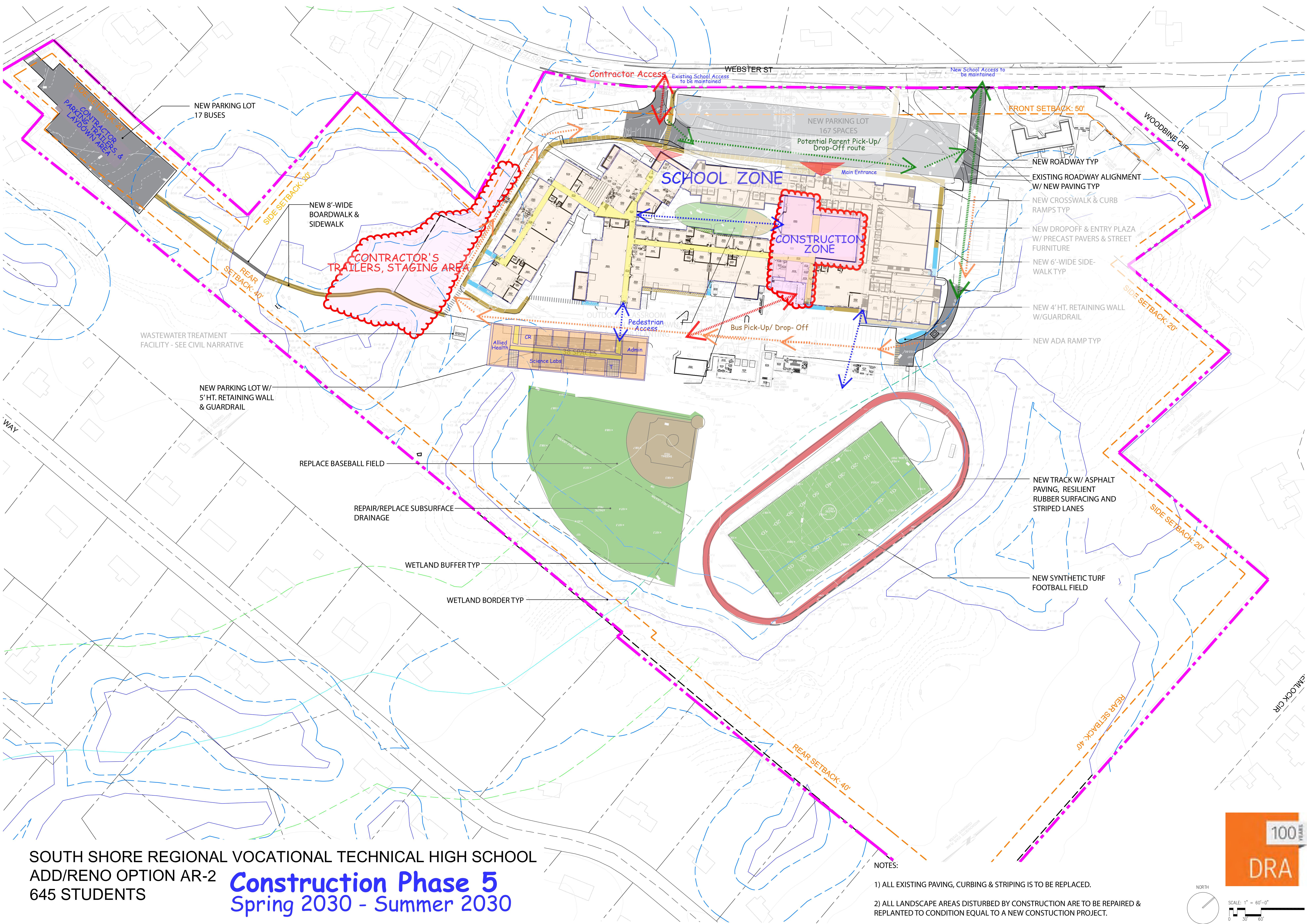
- NOTES:
- 1) ALL EXISTING PAVING, CURBING & STRIPING IS TO BE REPLACED.
 - 2) ALL LANDSCAPE AREAS DISTURBED BY CONSTRUCTION ARE TO BE REPAIRED & REPLANTED TO CONDITION EQUAL TO A NEW CONSTRUCTION PROJECT.

100%
 DRA

NORTH

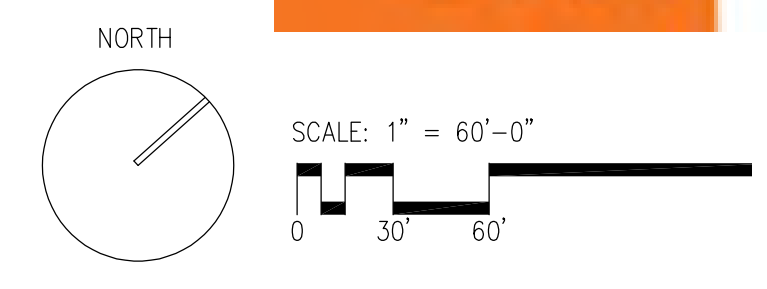
SCALE: 1" = 60'-0"

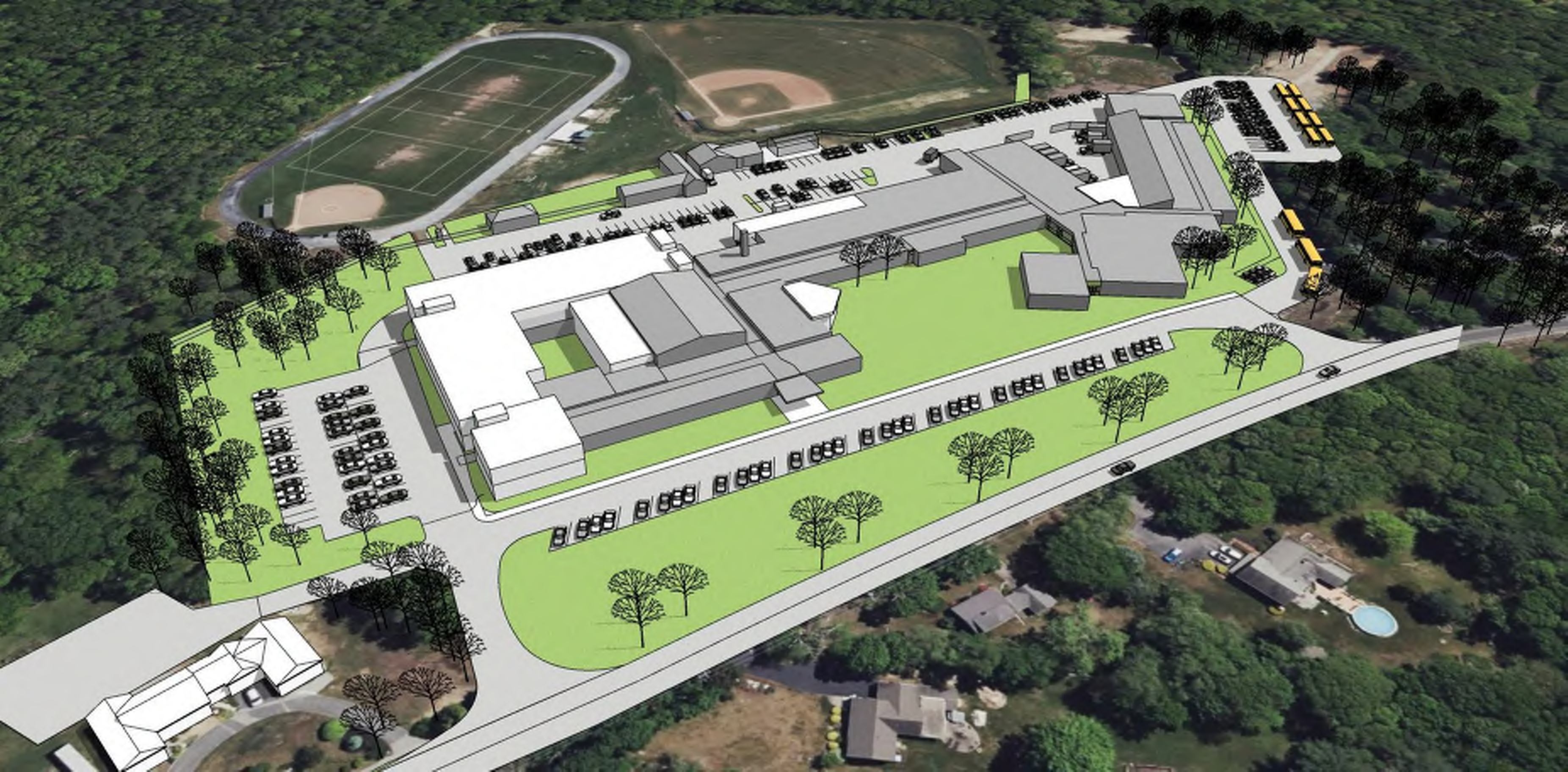
0 30 60



SOUTH SHORE REGIONAL VOCATIONAL TECHNICAL HIGH SCHOOL
 ADD/RENO OPTION AR-2
 645 STUDENTS
Construction Phase 5
 Spring 2030 - Summer 2030

- NOTES:
- 1) ALL EXISTING PAVING, CURBING & STRIPING IS TO BE REPLACED.
 - 2) ALL LANDSCAPE AREAS DISTURBED BY CONSTRUCTION ARE TO BE REPAIRED & REPLANTED TO CONDITION EQUAL TO A NEW CONSTRUCTION PROJECT.







OPTION NC-1 “Courtyard” New Construction

For enrollment of 750 students



NC-1 First Floor Plan

Description:

This new construction option proposes siting the new school on the current athletic fields. The multi-story courtyard building is configured with the large assembly areas and Student Commons at the north and the academic spaces to the south organized around an exterior courtyard. The high-bay shops are at rear of the main level and accessed by a perimeter service drive. The main entrance at the Commons serves not only as the primary student entrance, but also as the visitors and events entrance for after-hours activities in the Gym and Auditorium. The Culinary and Cosmetology programs are also on the main level with a separate, secure public entrance.

The remaining low bay CTE shops are located on the second floor. Each level has academic classrooms across the corridor from CTE spaces to provide the desired adjacencies as described in the Education Program.

Educational Program requirements:

Option NC-1 satisfies the space needs outlined in the Educational Program. It provides the overall building configuration and key adjacencies identified in the Educational Program. This option provides a desired enclosed courtyard identified in visioning sessions. The building utilizes the Student Commons and Learning Commons as core elements as the heart of the school.

Site and Facility goals:

This Option has a compact footprint that can be constructed independent of the existing school. The new site layout will provide a separate service area and the potential for separate bus and car drop-off areas. Expanded athletic fields would be created, including a separate softball field, after the existing building is demolished.

Construction Phasing:

This option would be constructed in two basic phases: 1. New Construction of the proposed new school and treatment plant. 2. Demolition of the existing school and construction of athletic fields, parking, and final sitework.

It is anticipated that Phase 1 can be accomplished with minimal disruption to the ongoing operation of the existing school, although temporary parking will need to be considered to compensate for the partial loss of the existing rear parking. Athletics and physical education will need to compensate for the lack of outdoor playing fields for a period of perhaps three to four years.

Estimated construction duration is two and one half to three years.

Areas (the area of this option varies proportionally with the target enrollment variations)

Enrollment	Area
750 Students	228,540 sf

Preliminary Order-Of-Magnitude Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs
750 Students	\$263,929,690	\$329,912,113

Final PSR Estimated Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs
750 Students	\$213,563,774	\$266,954,717

Pro's:

- Satisfies South Shore's space needs and right-sizes all CTE programs, including new Ch.74 programs
- Meets all of the District's Educational goals, including an enclosed exterior courtyard
- Provides convenient public access to the Consumer Services programs and assembly spaces
- Has potential for a strong new architectural image
- Compact footprint promotes good internal connectivity
- Configures CTE programs into career clusters
- Eliminates the need for temporary classrooms
- Provides long-term value with new infrastructure and robust energy efficiency

Con's:

- Slightly Higher construction cost
- Tight fit within available building zone
- Larger footprint constrains future expansion potential
- Athletic fields are displaced for several years
- Limited available parking during the first year of occupancy

Initial Evaluation: Drop from final consideration; develop 750 student option for comparative purposes

Final Evaluation: Drop from further consideration

NEW CONSTRUCTION
OPTION NC-1
 750 ENROLLMENT

LEGEND

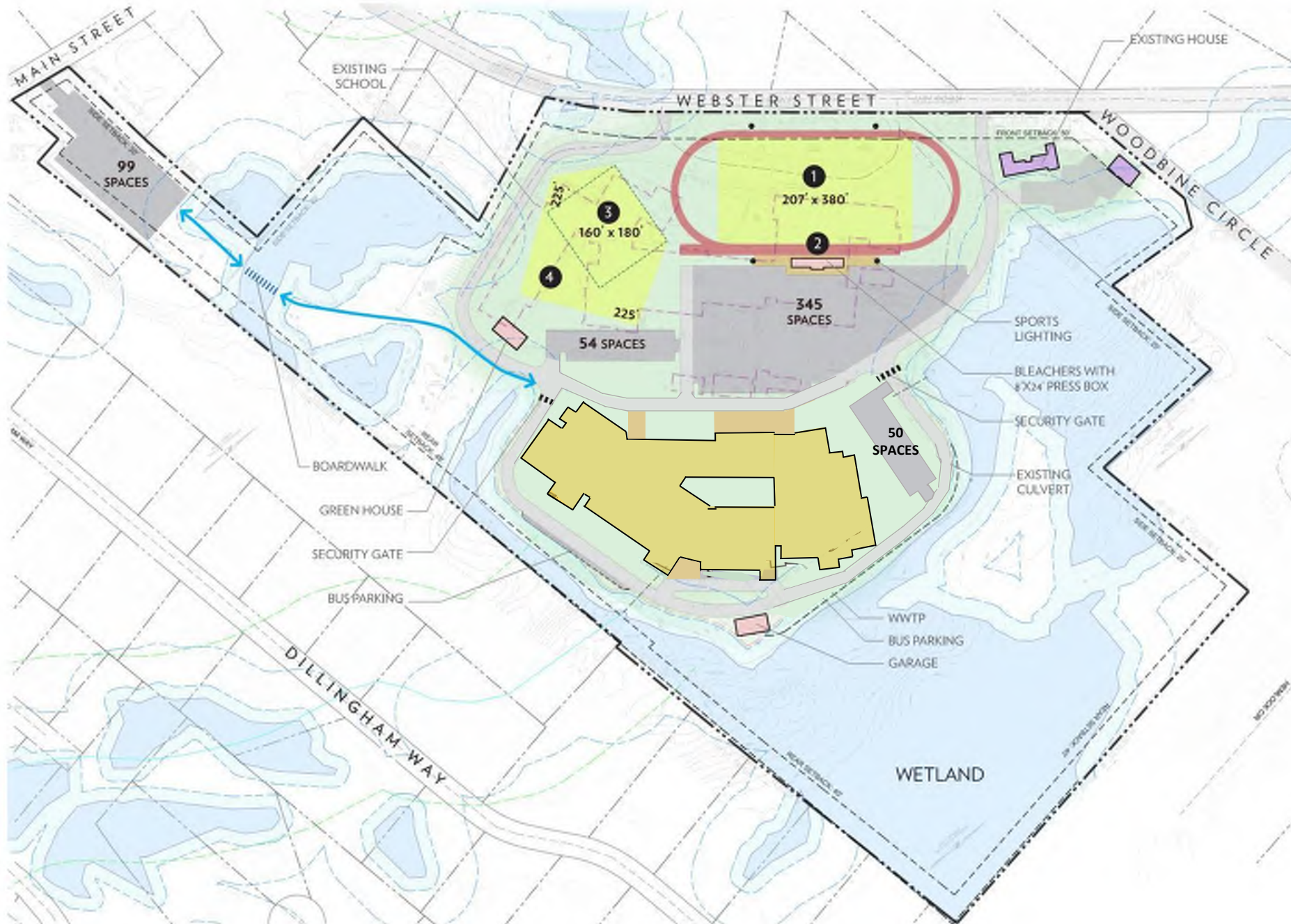
- EXISTING STRUCTURES
- PROPOSED STRUCTURES
- NEW SCHOOL
- ATHLETICS
- ENTRY PLAZA
- WETLAND
- 35' WETLAND BUFFER
- SECURITY GATE
- 1 SYNTHETIC TURF MULTI-PURPOSE FIELD
- 2 RUNNING TRACK
- 3 PRACTICE FIELD
- 4 SOFTBALL

TOTAL PARKING:














EXISTING: 304 SPACES
 & 15 BUS SPACES

PROPOSED: 426 SPACES (9'x18')
 TARGET: 426 SPACES

ADDITIONAL:
 99 SPACES (MAIN ST.)
 20 SPACES (EX. HOUSE)

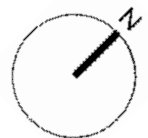


Departments

- | | | |
|---|---|---|
|  Admin-Teacher Support |  Custodial-Maintenance |  Special Education |
|  Auditorium |  Gym-PE |  Specials |
|  Cafeteria-Kitchen |  Library-Media |  Vocational |
|  Circulation |  Nurse | |
|  Classroom |  Science Labs | |



OPTION NC-1 FIRST FLOOR PLAN - 750 ENROLLMENT

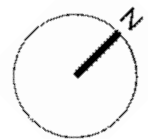
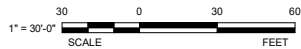


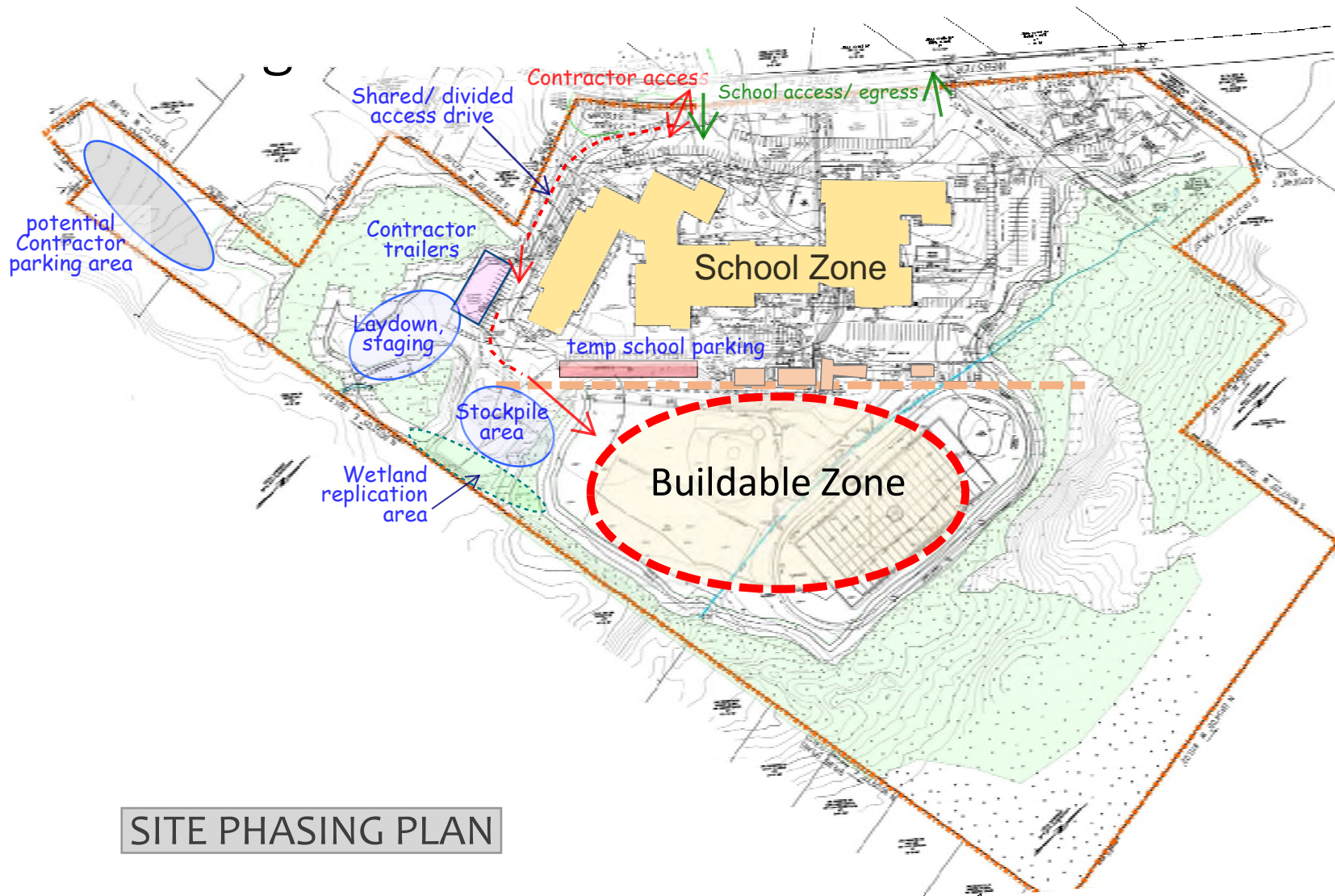
Departments

 Admin-Teacher Support	 Custodial-Maintenance	 Special Education
 Auditorium	 Gym-PE	 Specials
 Cafeteria-Kitchen	 Library-Media	 Vocational
 Circulation	 Nurse	
 Classroom	 Science Labs	

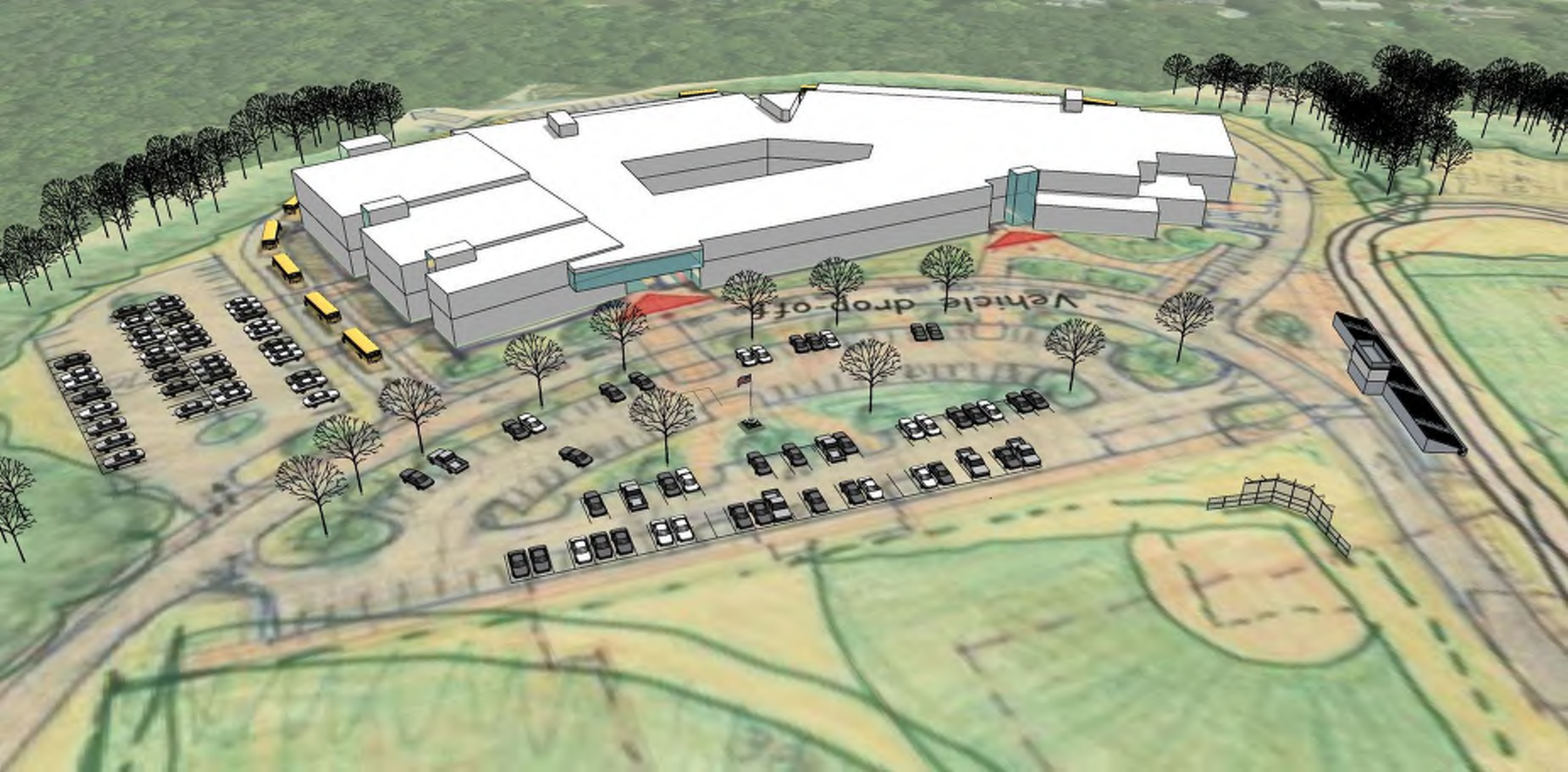


OPTION NC-1 SECOND FLOOR PLAN - 750 ENROLLMENT





SITE PHASING PLAN





OPTION NC-2.0 “Linear” New Construction

For enrollment of 805 students



NC-2.0 First Floor Plan

Description:

This new construction option proposes siting the new school on the current athletic fields. The multi-story building is configured with the large assembly areas and Student Commons to the south and the academic spaces to the north organized along a linear “main street” circulation spine. This linear spine bends to conform to the available site. The high-bay shops are located in clusters to the south of the spine and administration, Culinary, and Cosmetology flank the main entrance. The main entrance at the Commons serves not only as the primary student entrance, but also as the customer, visitors, and events entrance for after-hours activities in the Gym and Auditorium.

The remaining low bay CTE shops are located on the upper floor over the shops. All of the academic classrooms, science labs and Special Ed spaces are on the second and third floors. Each level has teacher planning, small group rooms and collaborative space as recommended in the visioning sessions.

Educational Program requirements:

Option NC-2.0 satisfies the space needs outlined in the Educational Program. It provides the overall building configuration and key adjacencies identified in the Educational Program. The building utilizes the Student Commons and Learning Commons as core elements as the heart of the school and has small gathering hubs along the main street.

Site and Facility goals:

This Option has a compact footprint that can be constructed independent of the existing school. The new site layout will provide a separate service area and the potential for separate bus and car drop-off areas.

Expanded athletic fields would be created, including a separate softball field, after the existing building is demolished. The locker rooms are in close proximity to the athletic fields.

Construction Phasing:

This option would be constructed in two basic phases: 1. New Construction of the proposed new school and treatment plant. 2. Demolition of the existing school and construction of athletic fields, parking, and final sitework.

It is anticipated that Phase 1 can be accomplished with minimal disruption to the ongoing operation of the existing school, although temporary parking will need to be considered to compensate for the partial loss of the existing rear parking. Athletics and physical education will need to compensate for the lack of outdoor playing fields for a period of perhaps three to four years.

Estimated construction duration is two and one half to three years.

Areas (the area of this option varies proportionally with the target enrollment variations)

Enrollment	Area
805 Students	240,000 sf

Preliminary Order-Of-Magnitude Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs
805 Students	\$275,352,600	\$344,190,750

Final PSR Estimated Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs
805 Students	\$218,356,593	\$273,956,709

Pro's:

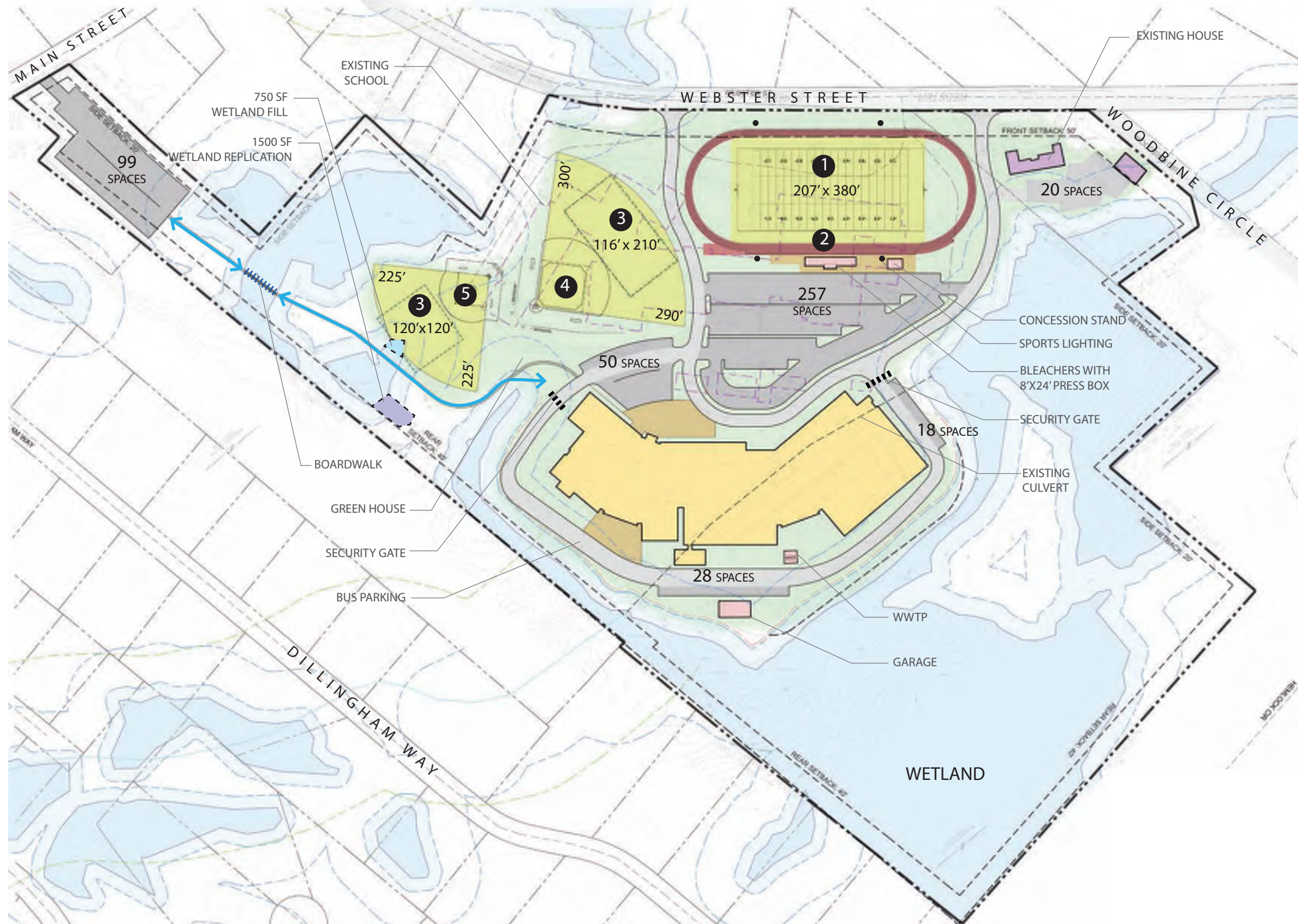
- Satisfies South Shore’s space needs and right-sizes all CTE programs, including new Ch.74 programs
- Meets all of the District’s Educational goals.
- Lower construction cost than other new construction options
- Provides convenient and secure public access to the Consumer Services programs and assembly spaces
- Has potential for a strong new architectural image
- Compact footprint promotes good internal connectivity
- Configures CTE programs into career clusters
- Efficient internal layout results in slightly smaller gross building area
- Locates locker rooms in close proximity to athletic fields
- Eliminates the need for temporary classrooms
- Provides long-term value with new infrastructure and robust energy efficiency

Con's:

- Higher construction cost than add/reno options
- Larger footprint constrains future expansion potential
- Athletic fields are displaced for several years
- Limited available parking during the first year of occupancy

Initial Evaluation: Continue to study in final phase of evaluation for enrollments of 805 & 900 students

Final Evaluation: the 805 enrollment option was dropped in favor for the **PREFERRED OPTION** for 900 Students



NEW CONSTRUCTION

OPTION NC-2.0

900 ENROLLMENT

LEGEND

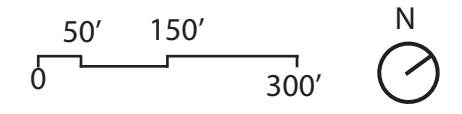
- EXISTING STRUCTURES
- PROPOSED STRUCTURES
- NEW SCHOOL
- ATHLETICS
- ENTRY PLAZA
- WETLAND
- 35' WETLAND BUFFER
- SECURITY GATE
- 1 SYNTHETIC TURF MULTI-PURPOSE FIELD
- 2 RUNNING TRACK
- 3 PRACTICE FIELD
- 4 BASEBALL
- 5 SOFTBALL

TOTAL PARKING:

EXISTING: 304 SPACES
& 15 BUS SPACES

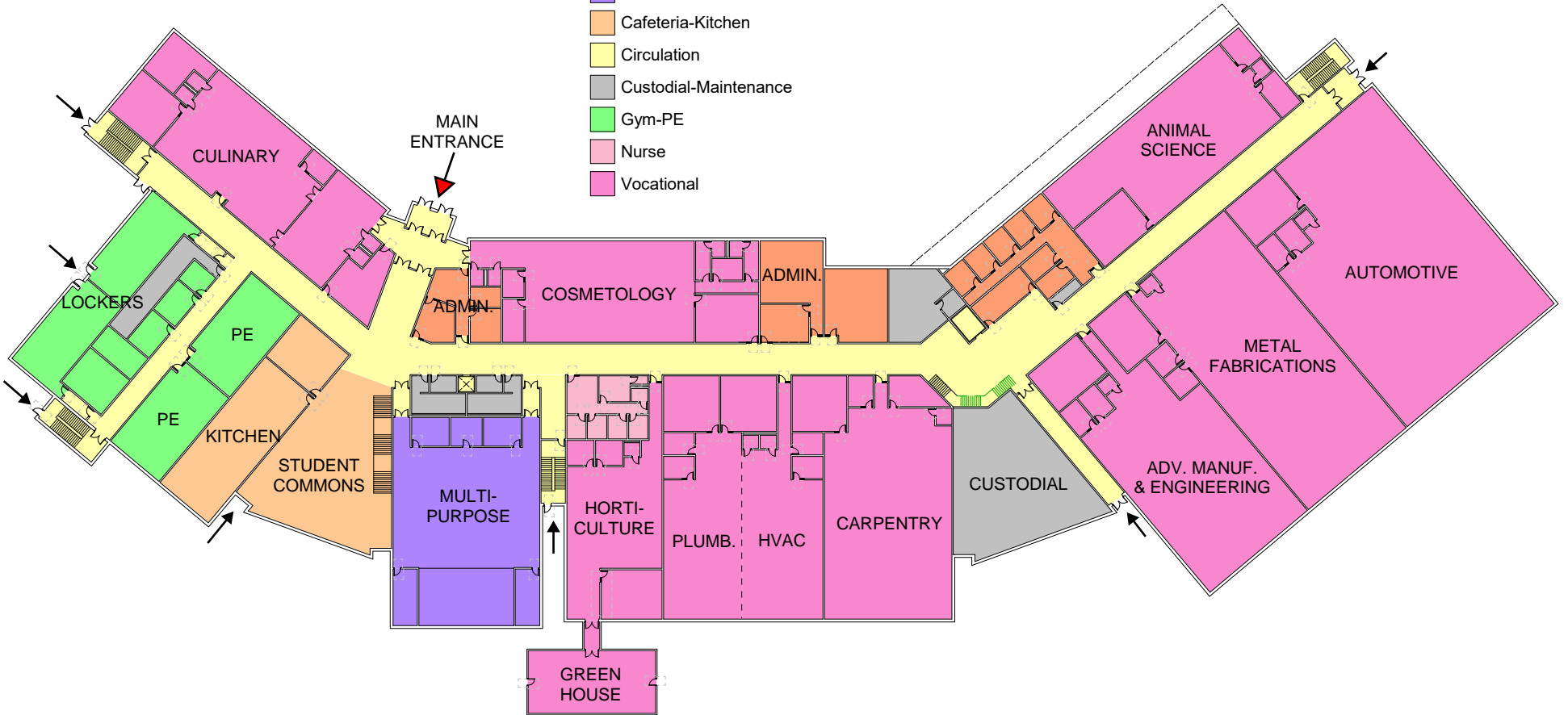
PROPOSED: 353 SPACES (9'x18')
TARGET: 426 SPACES

ADDITIONAL:
99 SPACES (MAIN ST.)
20 SPACES (EX. HOUSE)

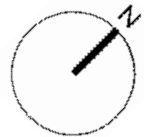
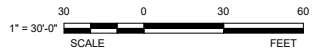


Departments

- Admin-Teacher Support
- Auditorium
- Cafeteria-Kitchen
- Circulation
- Custodial-Maintenance
- Gym-PE
- Nurse
- Vocational



NC2.0 - FIRST FLOOR PLAN - 805 ENROLLMENT

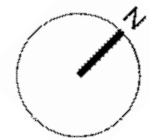
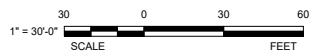


Departments

- Admin-Teacher Support
- Auditorium
- Circulation
- Classroom
- Custodial-Maintenance
- Gym-PE
- Library-Media
- Science Labs
- Special Education
- Vocational

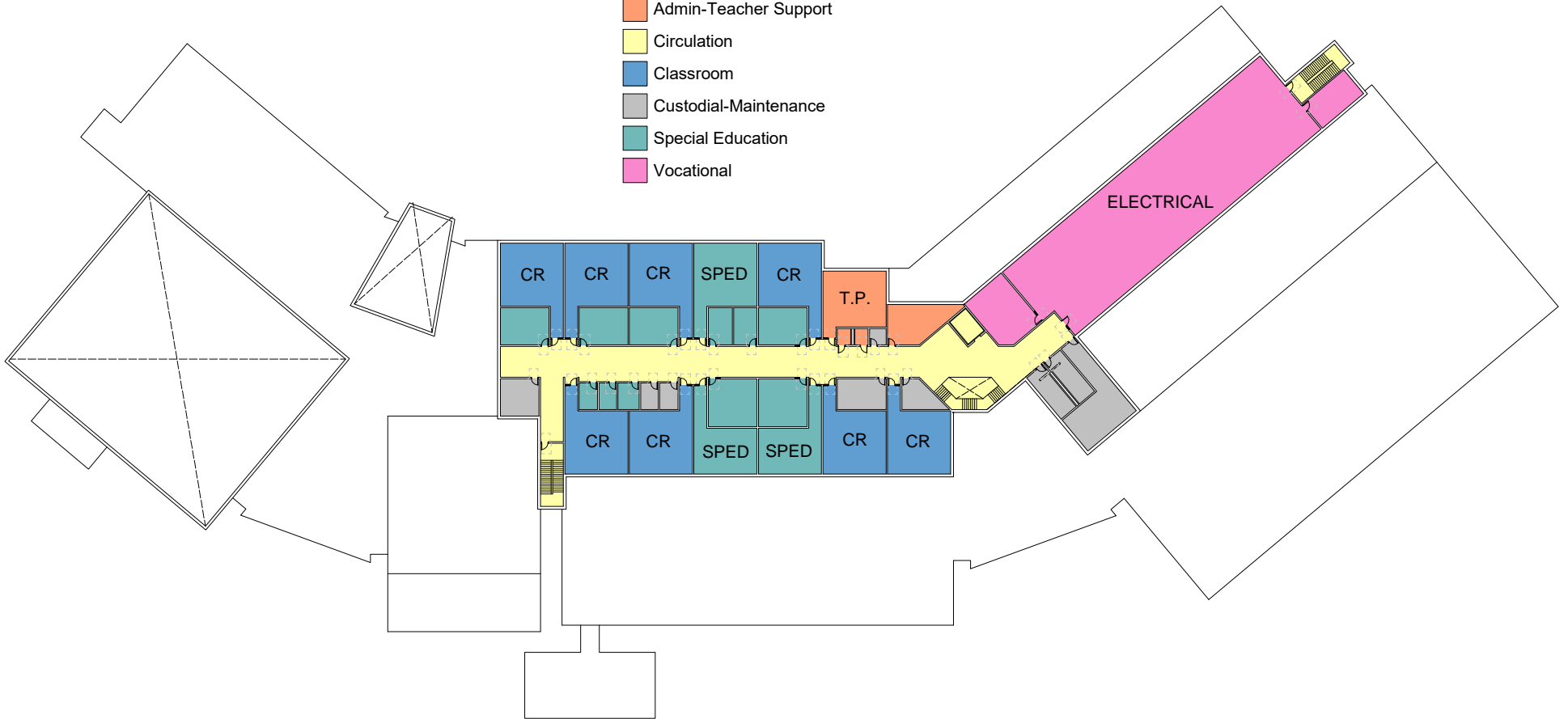


NC2.0 - SECOND FLOOR PLAN - 805 ENROLLMENT

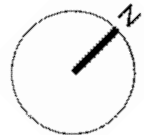


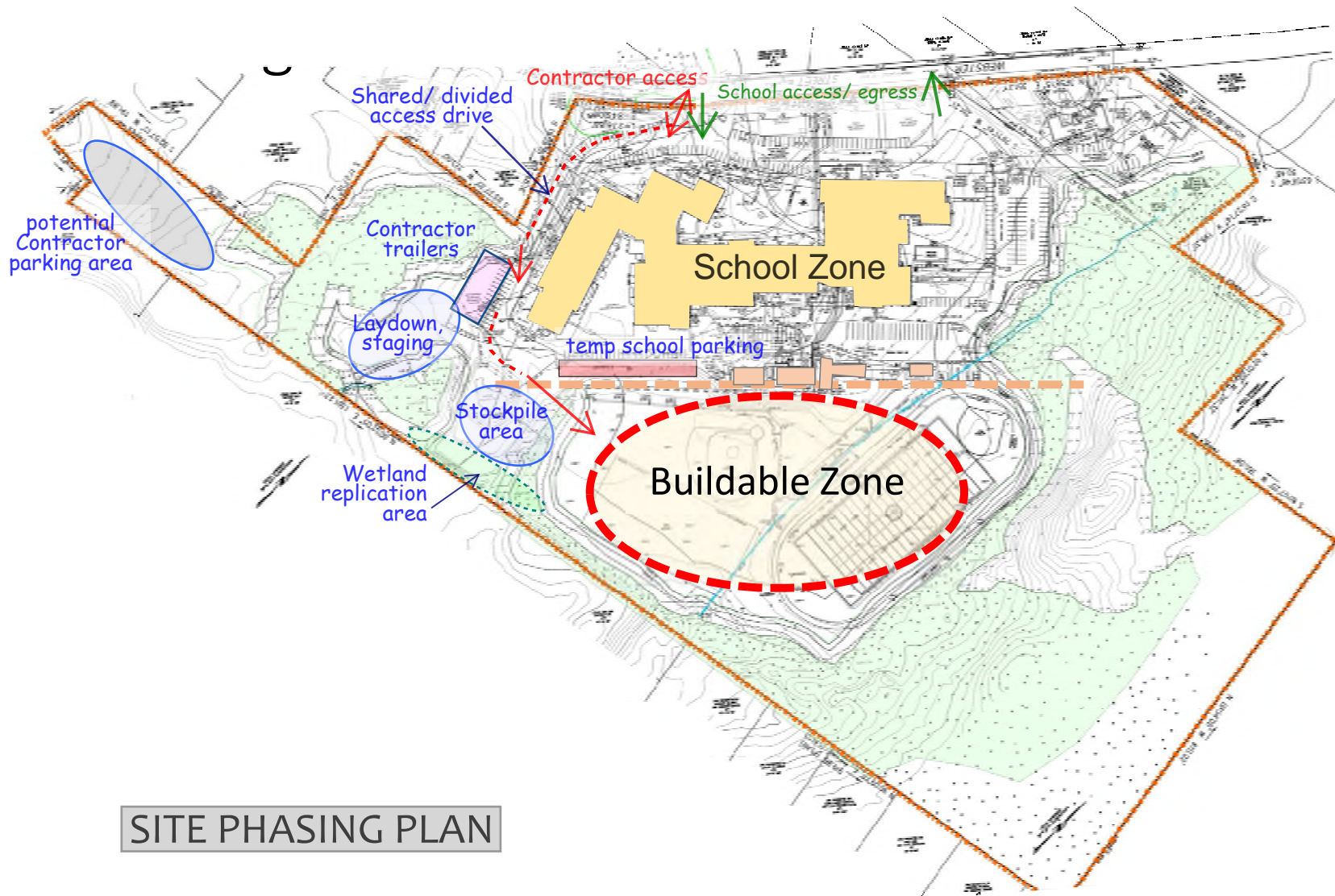
Departments

- Admin-Teacher Support
- Circulation
- Classroom
- Custodial-Maintenance
- Special Education
- Vocational

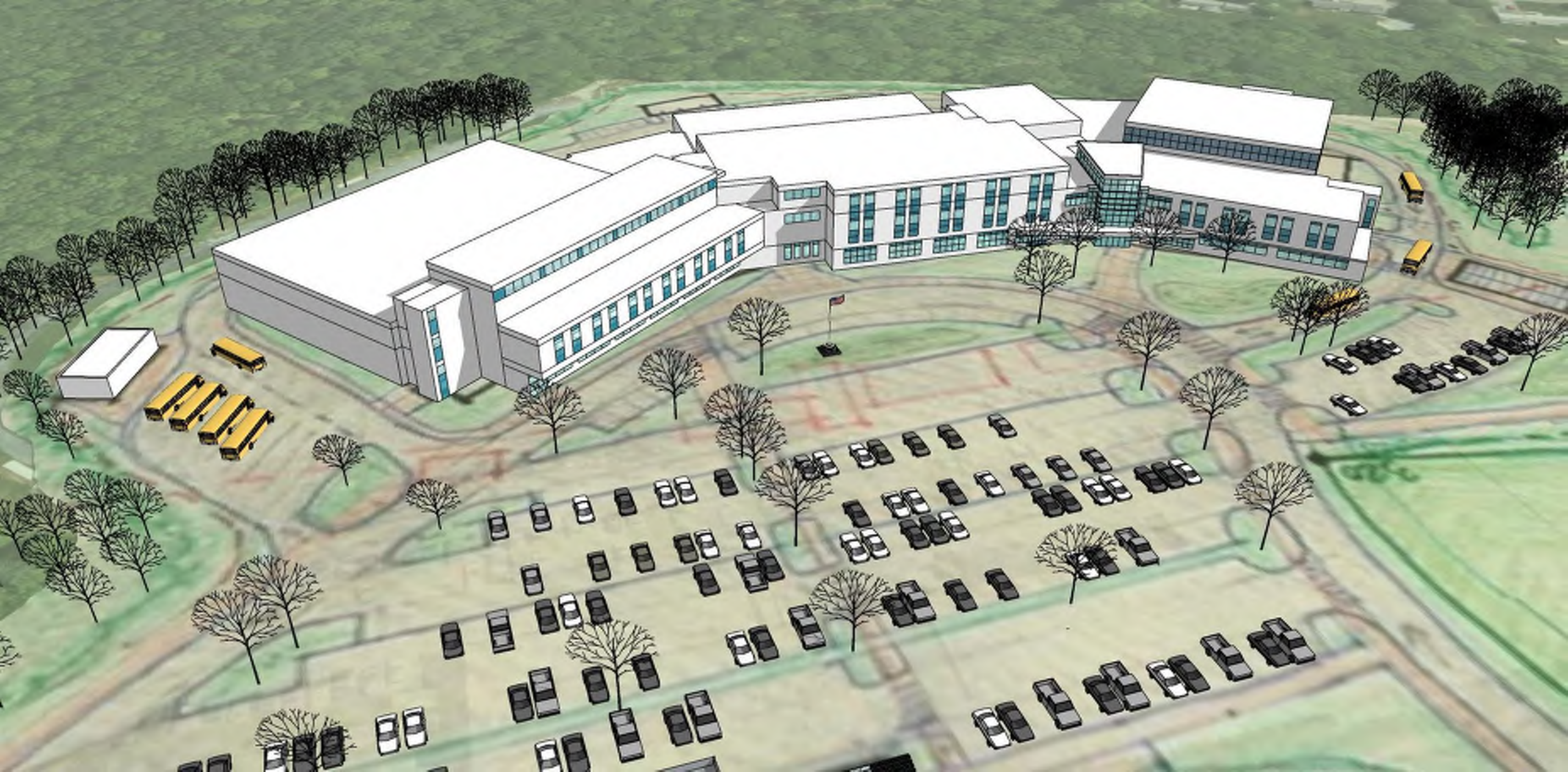


NC2.0 - THIRD FLOOR PLAN - 805 ENROLLMENT





SITE PHASING PLAN





OPTION NC-2.0 “Linear” New Construction*

For enrollments of 900* students

**District’s Preferred Option: NC 2.0 for 900 Students*



NC-2.0 First Floor Plan

Description:

This new construction option proposes siting the new school on the current athletic fields. The multi-story building is configured with the large assembly areas and Student Commons to the south and the academic spaces to the north organized along a linear “main street” circulation spine. This linear spine bends to conform to the available site. The high-bay shops are located in clusters to the south of the spine and administration, Culinary, and Cosmetology flank the main entrance. The main entrance at the Commons serves not only as the primary student entrance, but also as the customer, visitors, and events entrance for after-hours activities in the Gym and Auditorium.

The remaining low bay CTE shops are located on the upper floor over the shops. All of the academic classrooms, science labs and Special Ed spaces are on the second and third floors. Each level has teacher planning, small group rooms and collaborative space as recommended in the visioning sessions.

Educational Program requirements:

Option NC-2.0 satisfies the space needs outlined in the Educational Program. It provides the overall building configuration and key adjacencies identified in the Educational Program. The building utilizes the Student Commons and Learning Commons as core elements as the heart of the school and has small gathering hubs along the main street.

Site and Facility goals:

This Option has a compact footprint that can be constructed independent of the existing school. The new site layout will provide a separate service area and the potential for separate bus and car drop-off areas.

Expanded athletic fields would be created, including a separate softball field, after the existing building is demolished. The locker rooms are in close proximity to the athletic fields.

Construction Phasing:

This option would be constructed in two basic phases: 1. New Construction of the proposed new school and treatment plant. 2. Demolition of the existing school and construction of athletic fields, parking, and final sitework.

It is anticipated that Phase 1 can be accomplished with minimal disruption to the ongoing operation of the existing school, although temporary parking will need to be considered to compensate for the partial loss of the existing rear parking. Athletics and physical education will need to compensate for the lack of outdoor playing fields for a period of perhaps three to four years.

Estimated construction duration is two and one half to three years.

Areas (the area of this option varies proportionally with the target enrollment variations)

Enrollment	Area
900 Students	260,000 sf

Preliminary Order-Of-Magnitude Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs
900 Students	\$294,330,900	\$367,913,625

Final PSR Estimated Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs
900 Students	\$225,773,834	\$283,595,433

Pro's:

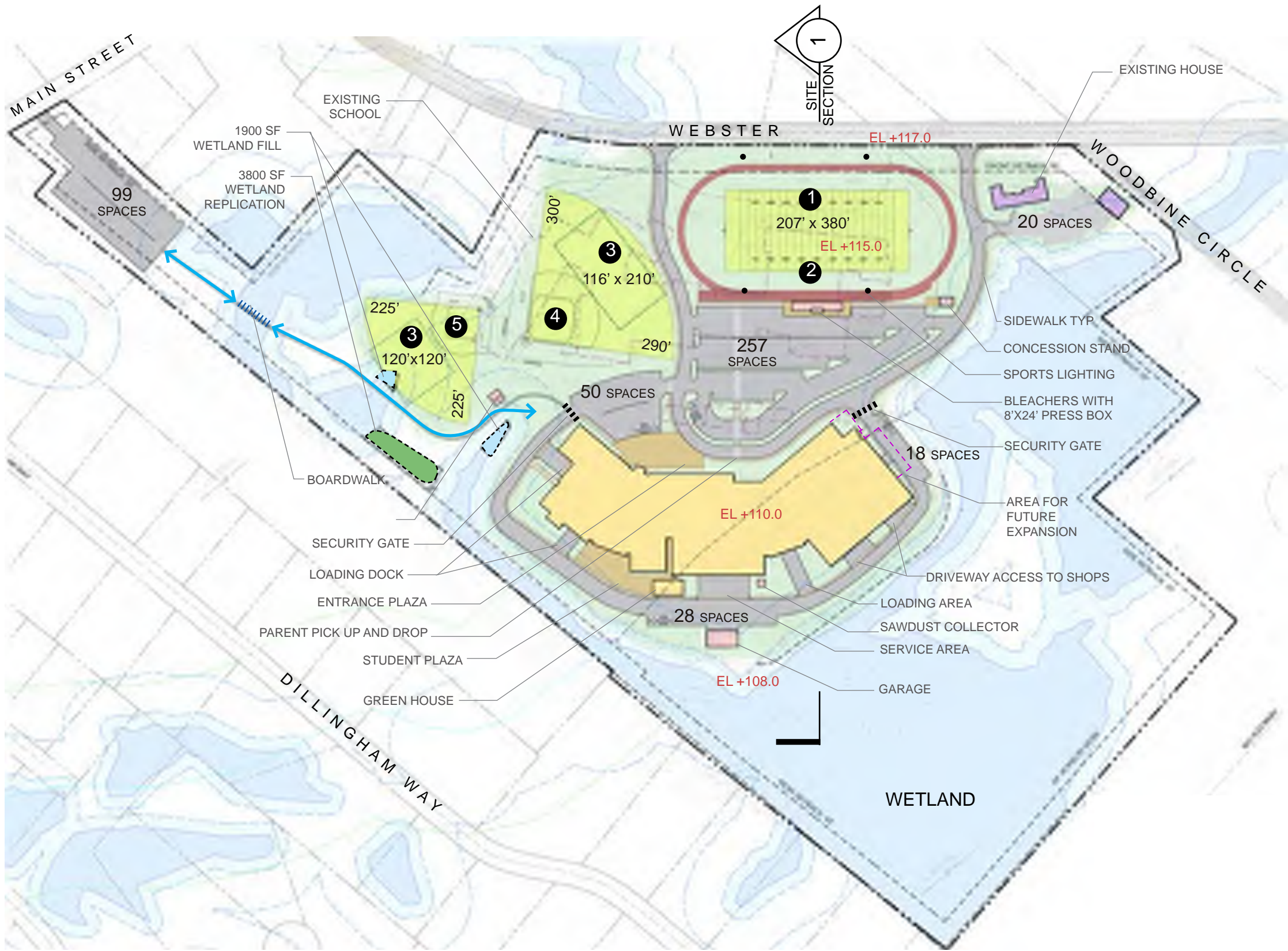
- Satisfies South Shore's space needs and right-sizes all CTE programs, including new Ch.74 programs
- Meets all of the District's Educational goals.
- Lower construction cost than other new construction options
- Provides convenient and secure public access to the Consumer Services programs and assembly spaces
- Has potential for a strong new architectural image
- Compact footprint promotes good internal connectivity
- Configures CTE programs into career clusters
- Efficient internal layout results in slightly smaller gross building area
- Locates locker rooms in close proximity to athletic fields
- Eliminates the need for temporary classrooms
- Provides long-term value with new infrastructure and robust energy efficiency

Con's:

- Higher construction cost than add/reno options
- Larger footprint constrains future expansion potential
- Athletic fields are displaced for several years
- Limited available parking during the first year of occupancy

Initial Evaluation: Continue to study in final phase of evaluation for enrollments of 805 & 900 students

Final Evaluation: PREFERRED OPTION for 900 Students

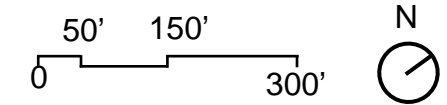


NEW CONSTRUCTION
OPTION NC-2.0
 900 ENROLLMENT

LEGEND

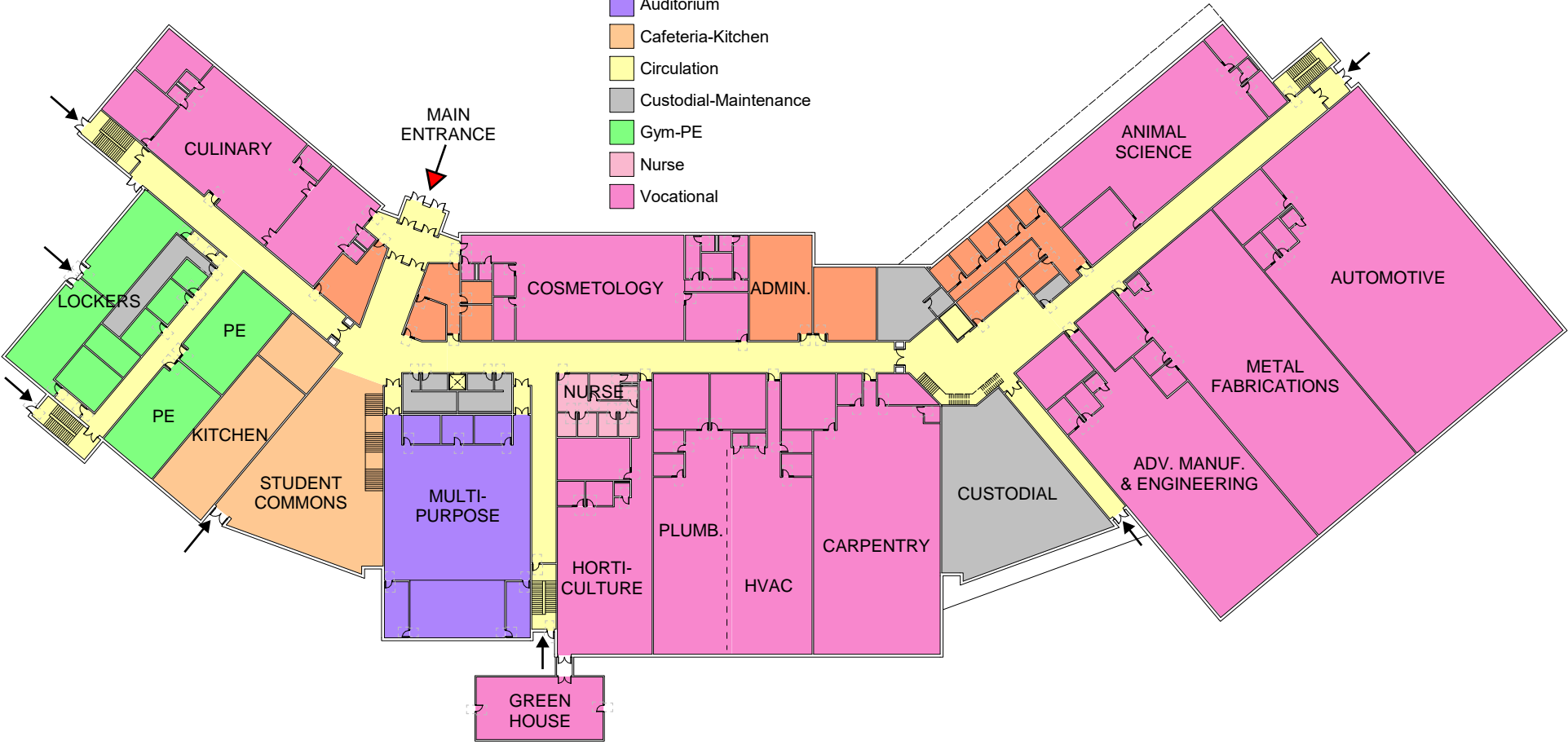
- EXISTING STRUCTURES
- PROPOSED STRUCTURES
- NEW SCHOOL
- ATHLETICS
- ENTRY PLAZA
- WETLAND
- 35' WETLAND BUFFER
- SECURITY GATE
- 1 SYNTHETIC TURF MULTI-PURPOSE FIELD
- 2 RUNNING TRACK
- 3 PRACTICE FIELD
- 4 BASEBALL
- 5 SOFTBALL

TOTAL PARKING:
 EXISTING: 304 SPACES & 15 BUS SPACES
 PROPOSED: 353 SPACES (9'x18')
 TARGET: 426 SPACES
 ADDITIONAL:
 99 SPACES (MAIN ST.)

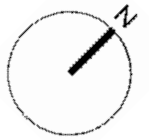
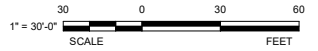


Departments

- Admin-Teacher Support
- Auditorium
- Cafeteria-Kitchen
- Circulation
- Custodial-Maintenance
- Gym-PE
- Nurse
- Vocational



OPTION NC-2.0 FIRST FLOOR PLAN - 900 ENROLLMENT

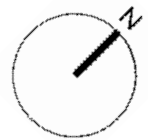
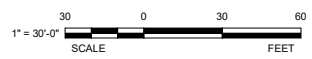


Departments

- Admin-Teacher Support
- Auditorium
- Circulation
- Classroom
- Custodial-Maintenance
- Gym-PE
- Library-Media
- Science Labs
- Special Education
- Vocational

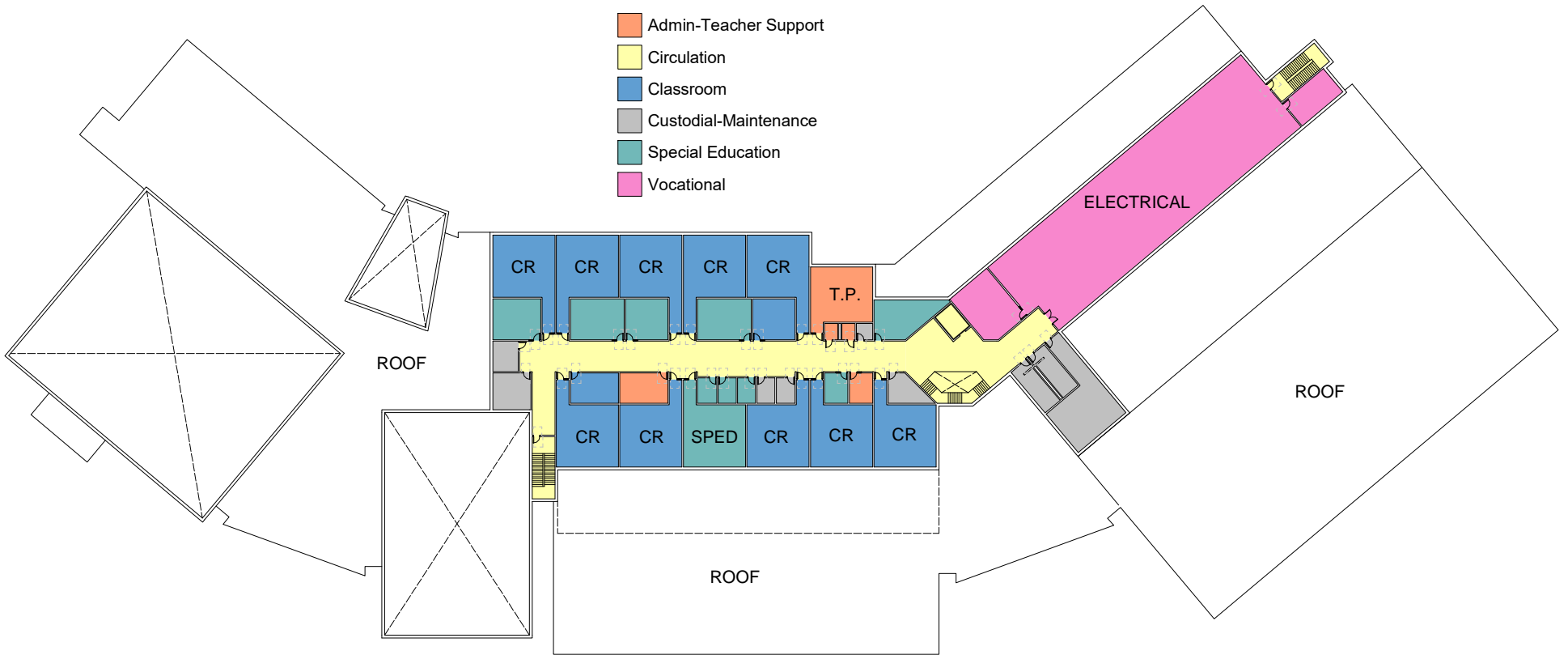


OPTION NC-2.0 SECOND FLOOR PLAN - 900 ENROLLMENT

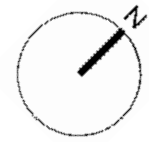
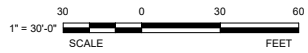


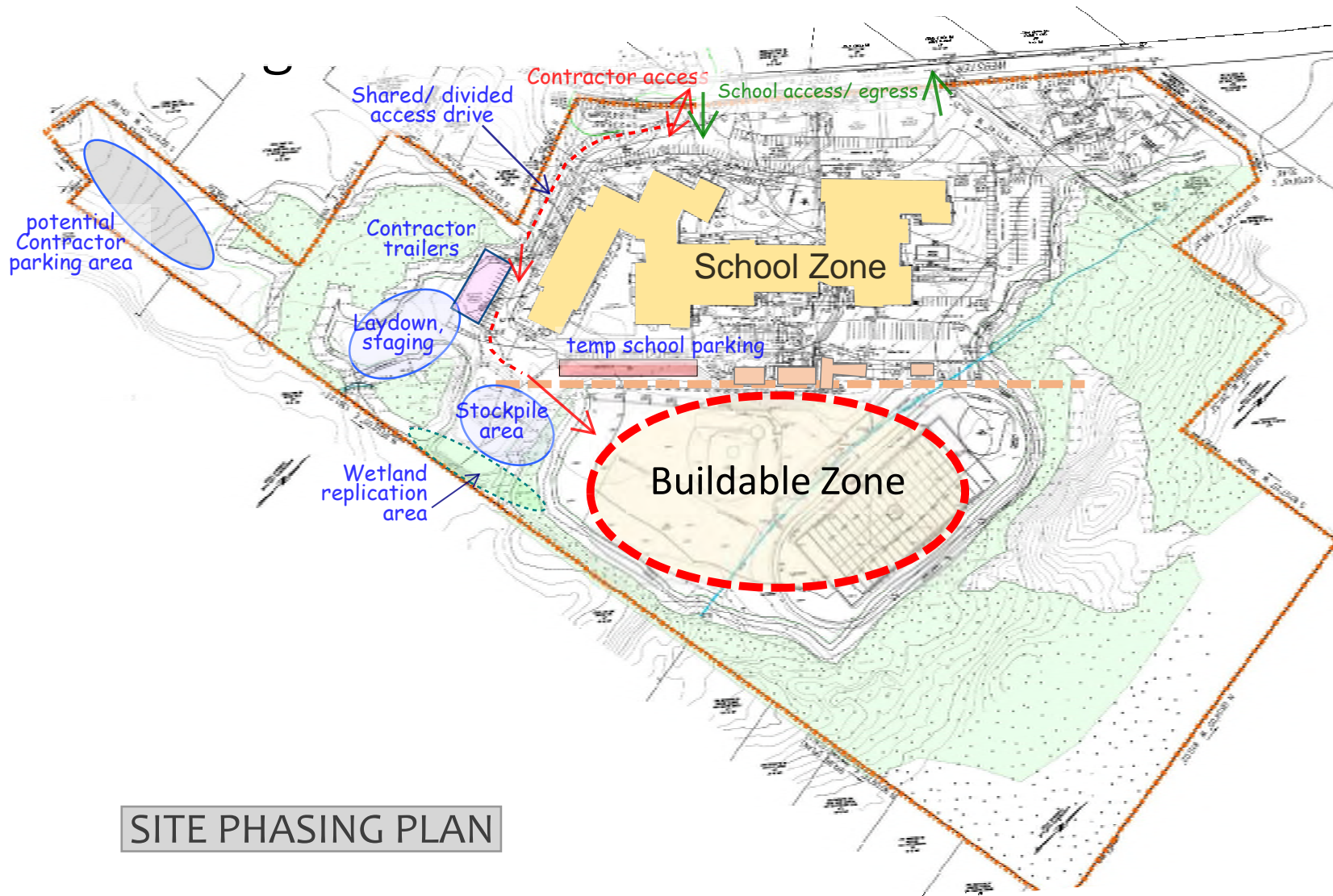
Departments

- Admin-Teacher Support
- Circulation
- Classroom
- Custodial-Maintenance
- Special Education
- Vocational

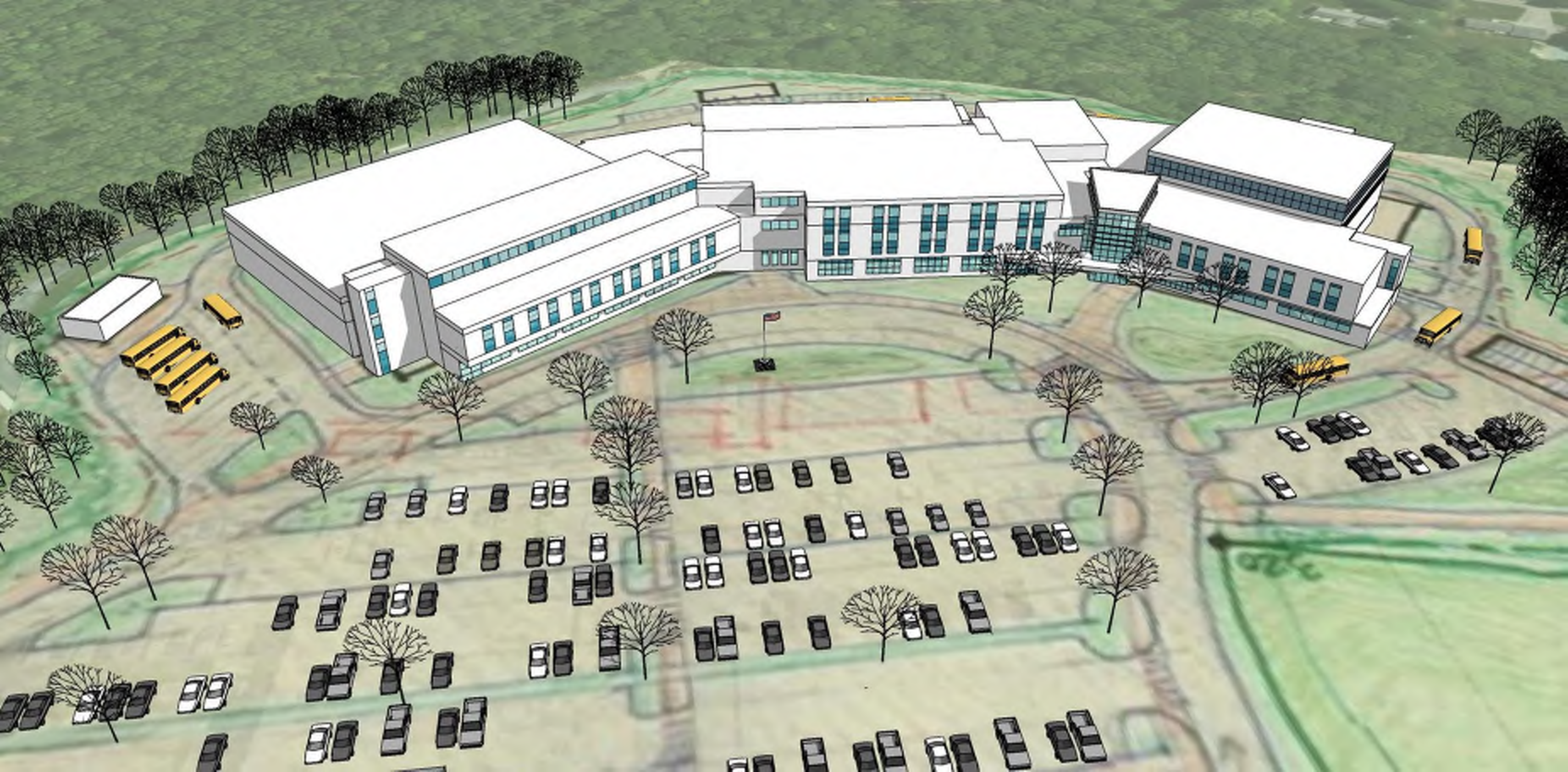


OPTION NC-2.0 THIRD FLOOR PLAN - 900 ENROLLMENT





SITE PHASING PLAN





OPTION NC-2.1 “Linear/ Center Core” New Construction

For enrollments of 805 students



NC-2.1 First Floor Plan

Description:

This new construction option proposes siting the new school on the current athletic fields. The multi-story building is a variation of option NC 2.0. It locates the large assembly areas and Student Commons in the center of the school with CTE and academic spaces to the north and south along the linear “main street” circulation spine. This linear spine bends to conform to the available site. The high-bay shops are located in clusters to the rear. The main entrance at the Commons serves not only as the primary student entrance, but also as the customer, visitors, and events entrance for after-hours activities in the Gym and Auditorium.

The remaining low bay CTE shops are located on the upper floor over the shops. All of the academic classrooms, science labs and Special Ed spaces are on the second and third floors. Each level has teacher planning, small group rooms and collaborative space as recommended in the visioning sessions.

Educational Program requirements:

Option NC-2.1 satisfies the space needs outlined in the Educational Program. It provides the overall building configuration and key adjacencies identified in the Educational Program. The building utilizes the Student Commons and Learning Commons as core elements as the heart of the school and has small gathering hubs along the main street.

Site and Facility goals:

This Option has a compact footprint that can be constructed independent of the existing school. The new site layout will provide a separate service area and the potential for separate bus and car drop-off areas. Expanded athletic fields would be created, including a separate softball field, after the existing building is demolished. The locker rooms are in close proximity to the athletic fields.

Construction Phasing:

This option would be constructed in two basic phases: 1. New Construction of the proposed new school and treatment plant. 2. Demolition of the existing school and construction of athletic fields, parking, and final sitework.

It is anticipated that Phase 1 can be accomplished with minimal disruption to the ongoing operation of the existing school, although temporary parking will need to be considered to compensate for the partial loss of the existing rear parking. Athletics and physical education will need to compensate for the lack of outdoor playing fields for a period of perhaps three to four years.

Estimated construction duration is two and one half to three years.

Areas (the area of this option varies proportionally with the target enrollment variations)

Enrollment	Area
805 Students	240,000 sf

Preliminary Order-Of-Magnitude Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs
805 Students	\$275,352,600	\$344,190,750

Final PSR Estimated Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs
805 Students	\$224,946,731	\$281,841,924

Pro's:

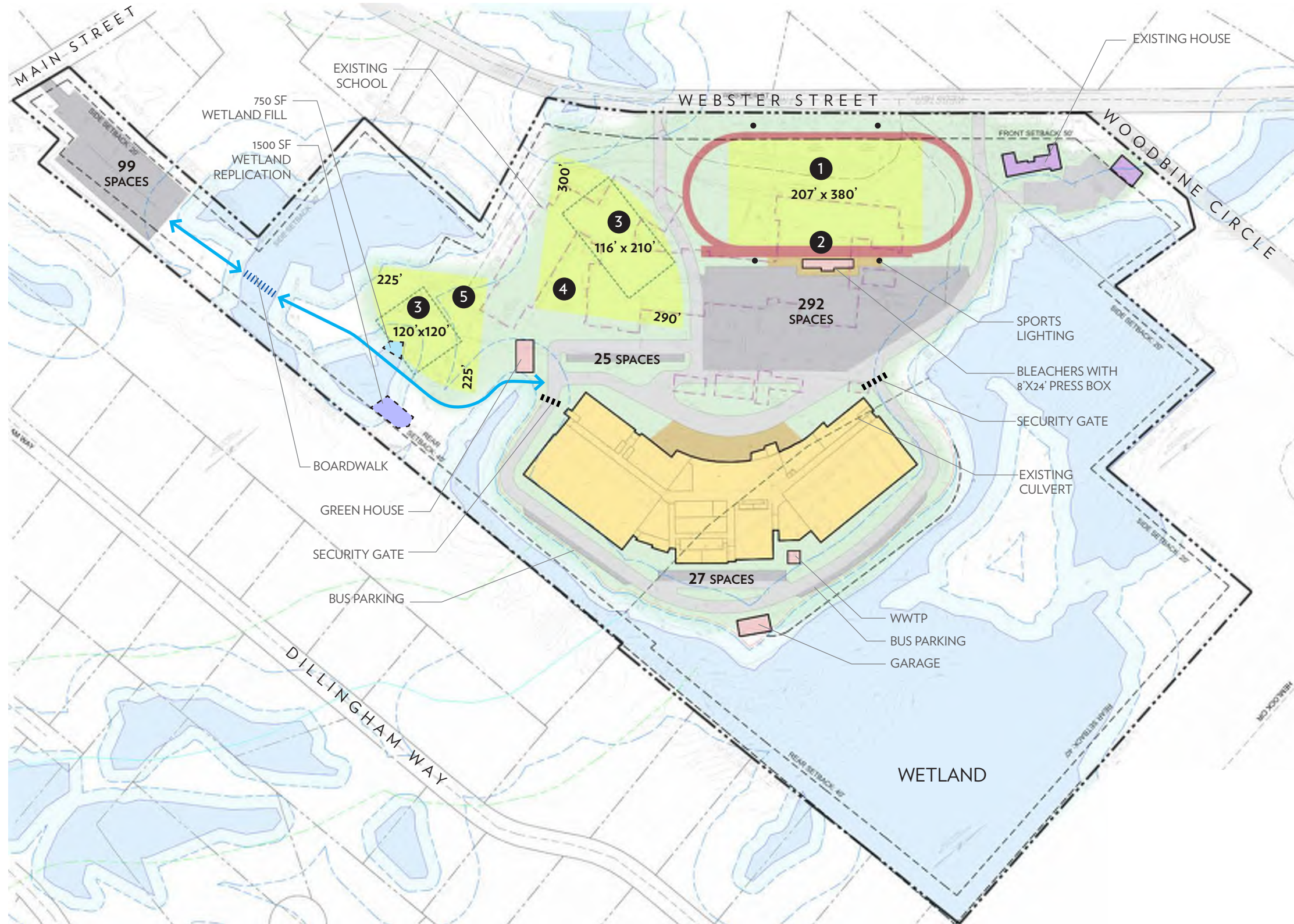
- Satisfies South Shore's space needs and right-sizes all CTE programs, including new Ch.74 programs
- Meets all of the District's Educational goals.
- Lower construction cost than other new construction options
- Provides convenient and secure public access to the Consumer Services programs and assembly spaces
- Has potential for a strong new architectural image
- Compact footprint promotes good internal connectivity
- Configures CTE programs into career clusters
- Efficient internal layout results in slightly smaller gross building area
- Shorter student path from core to academic areas
- Eliminates the need for temporary classrooms
- Provides long-term value with new infrastructure and robust energy efficiency

Con's:

- Higher construction cost than other new construction options
- Cross traffic through the Student Commons may be a distraction
- Central locker room location is remote from athletic fields
- Larger footprint constrains future expansion potential
- Athletic fields are displaced for several years
- Limited available parking during the first year of occupancy

Initial Evaluation: Continue to study in final phase of evaluation for enrollments of 805 & 900 students

Final Evaluation: Drop from further consideration



NEW CONSTRUCTION

OPTION NC-2.1

805 ENROLLMENT

LEGEND

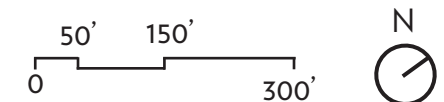
- EXISTING STRUCTURES
- PROPOSED STRUCTURES
- NEW SCHOOL
- ATHLETICS
- ENTRY PLAZA
- WETLAND
- 35' WETLAND BUFFER
- SECURITY GATE
- 1 SYNTHETIC TURF MULTI-PURPOSE FIELD
- 2 RUNNING TRACK
- 3 PRACTICE FIELD
- 4 BASEBALL
- 5 SOFTBALL

TOTAL PARKING:

EXISTING: 304 SPACES
& 15 BUS SPACES

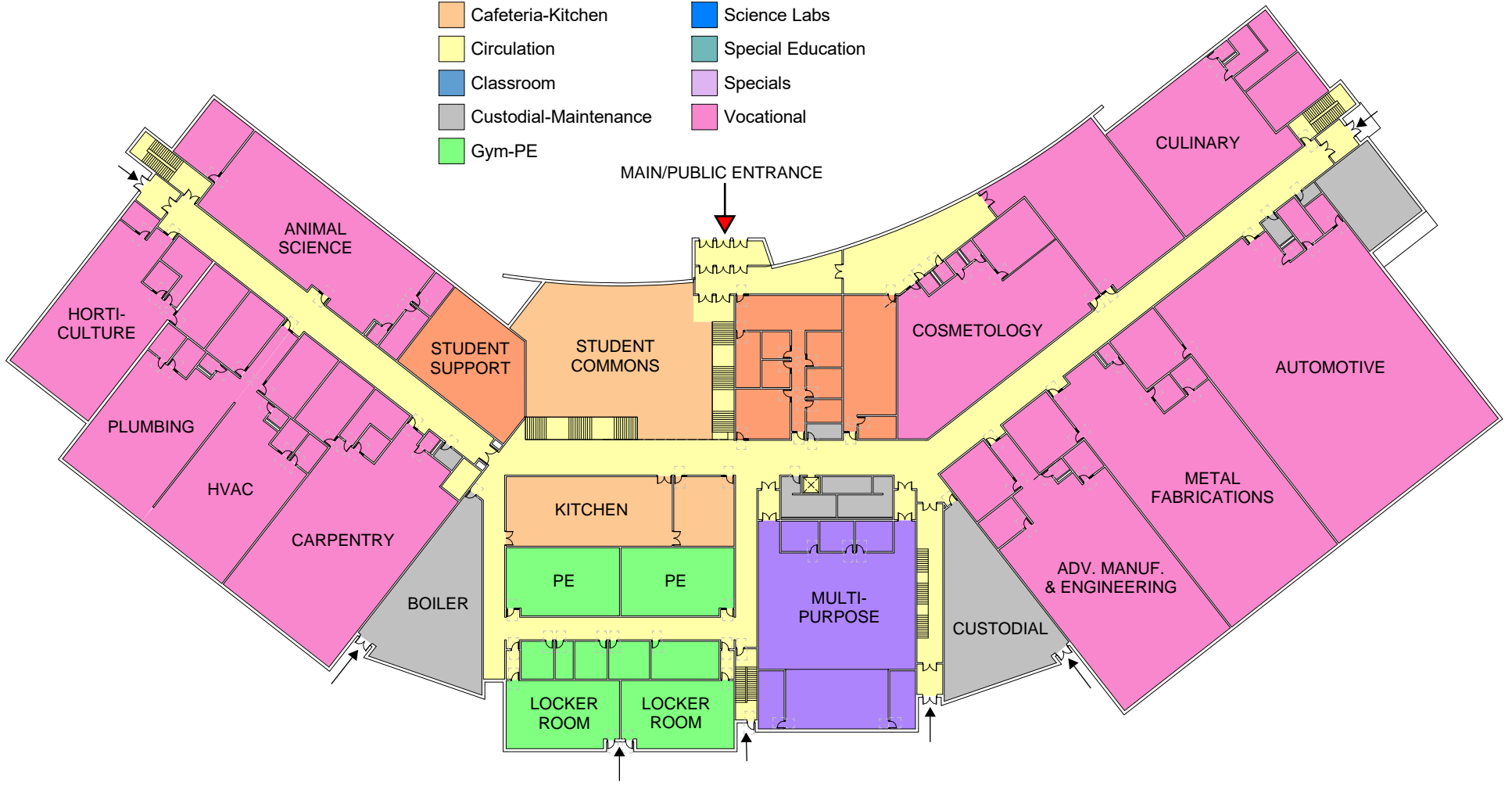
PROPOSED: 344 SPACES (9'x18')
TARGET: 426 SPACES

ADDITIONAL:
99 SPACES (MAIN ST.)
20 SPACES (EX. HOUSE)

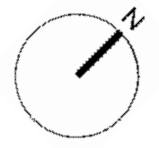
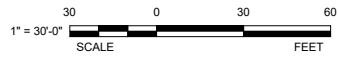


Departments

- | | |
|--|---|
| Admin-Teacher Support | Library-Media |
| Auditorium | Nurse |
| Cafeteria-Kitchen | Science Labs |
| Circulation | Special Education |
| Classroom | Specials |
| Custodial-Maintenance | Vocational |
| Gym-PE | |

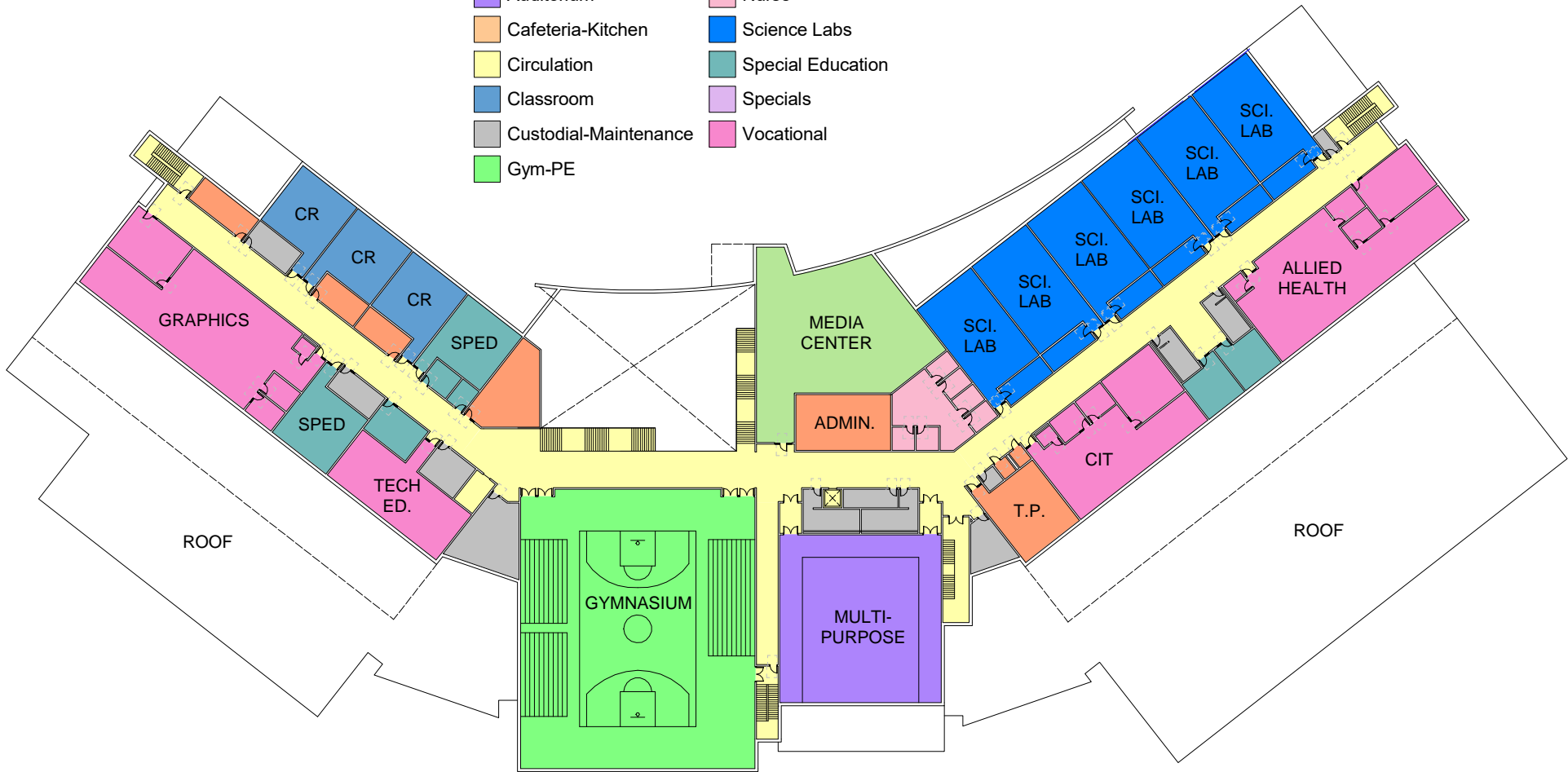


OPTION NC2.1 FIRST FLOOR PLAN - 805 ENROLLMENT

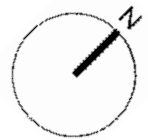
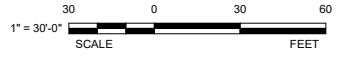


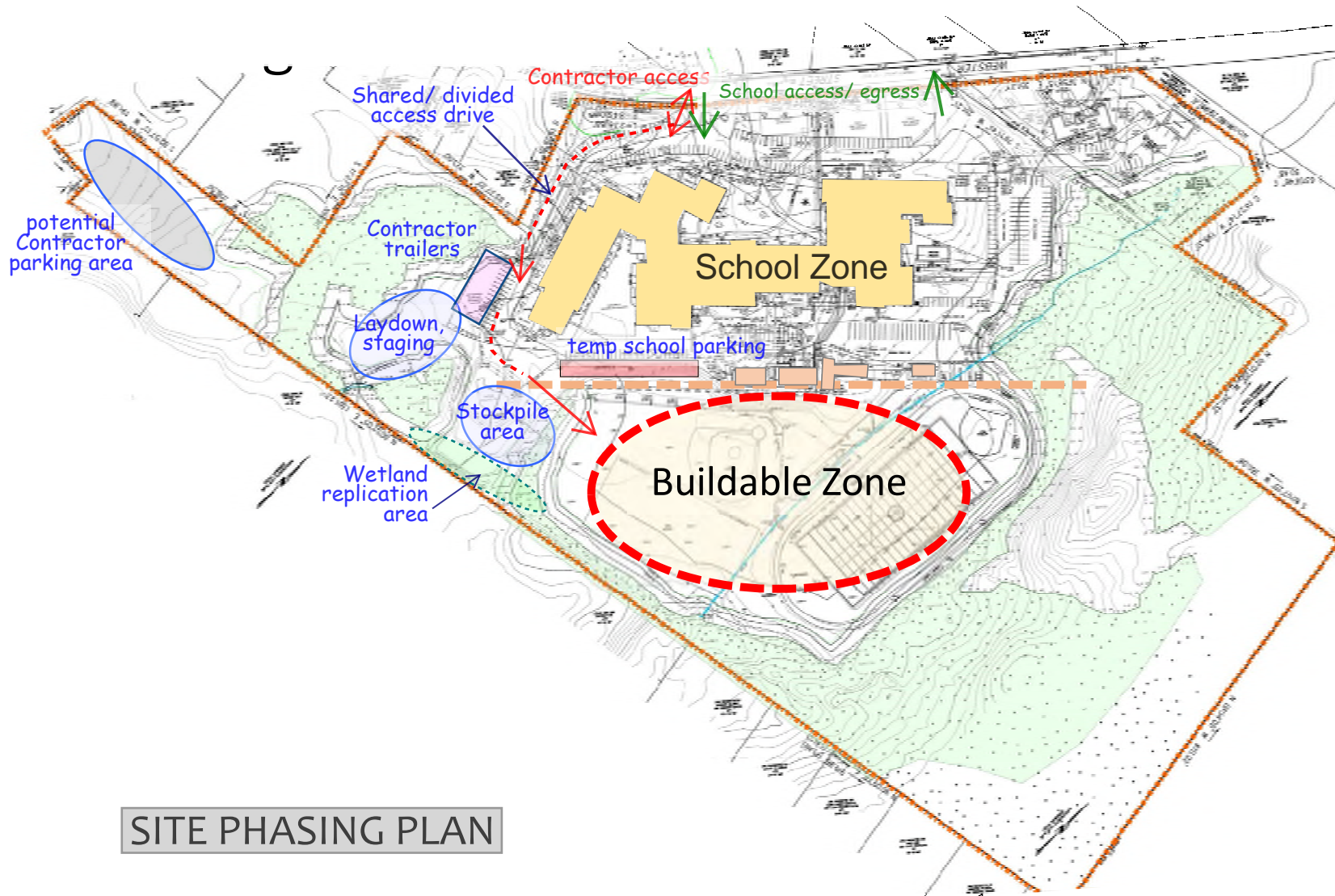
Departments

- Admin-Teacher Support
- Library-Media
- Auditorium
- Nurse
- Cafeteria-Kitchen
- Science Labs
- Circulation
- Special Education
- Classroom
- Specials
- Custodial-Maintenance
- Vocational
- Gym-PE

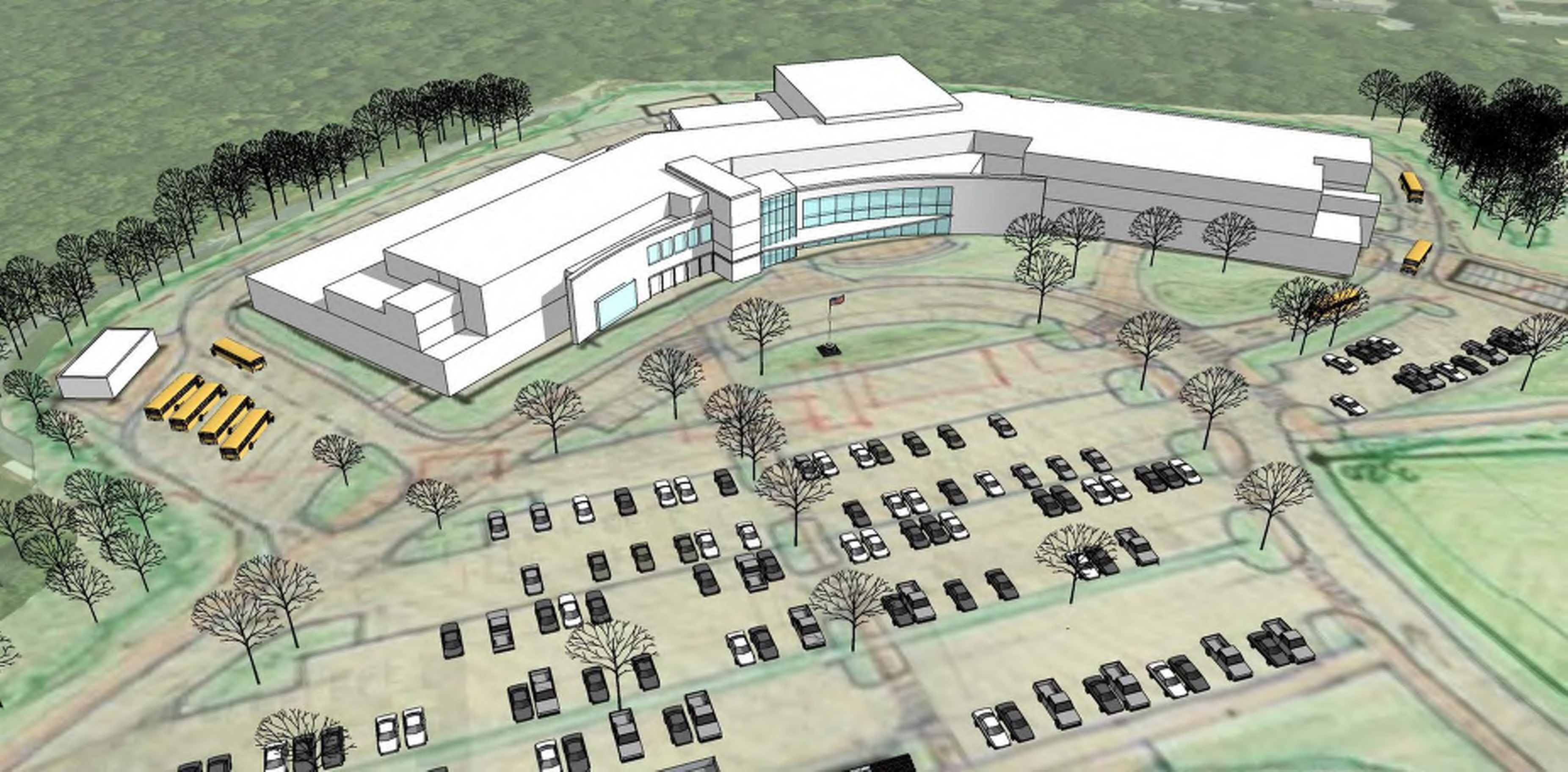


OPTION NC2.1 SECOND FLOOR PLAN - 805 ENROLLMENT





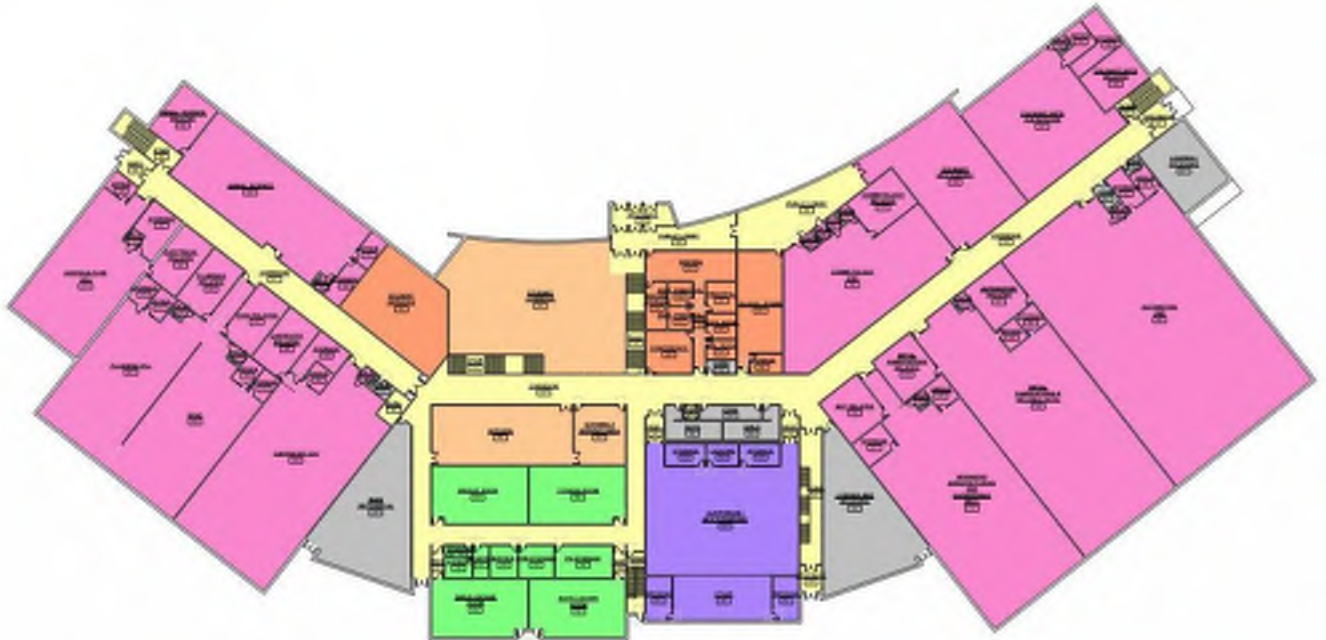
SITE PHASING PLAN





OPTION NC-2.1 “Linear/ Center Core” New Construction

For enrollment of 900 students



NC-2.1 First Floor Plan

Description:

This new construction option proposes siting the new school on the current athletic fields. The multi-story building is a variation of option NC 2.0. It locates the large assembly areas and Student Commons in the center of the school with CTE and academic spaces to the north and south along the linear “main street” circulation spine. This linear spine bends to conform to the available site. The high-bay shops are located in clusters to the rear. The main entrance at the Commons serves not only as the primary student entrance, but also as the customer, visitors, and events entrance for after-hours activities in the Gym and Auditorium.

The remaining low bay CTE shops are located on the upper floor over the shops. All of the academic classrooms, science labs and Special Ed spaces are on the second and third floors. Each level has teacher planning, small group rooms and collaborative space as recommended in the visioning sessions.

Educational Program requirements:

Option NC-2.1 satisfies the space needs outlined in the Educational Program. It provides the overall building configuration and key adjacencies identified in the Educational Program. The building utilizes the Student Commons and Learning Commons as core elements as the heart of the school and has small gathering hubs along the main street.

Site and Facility goals:

This Option has a compact footprint that can be constructed independent of the existing school. The new site layout will provide a separate service area and the potential for separate bus and car drop-off areas. Expanded athletic fields would be created, including a separate softball field, after the existing building is demolished. The locker rooms are in close proximity to the athletic fields.

Construction Phasing:

This option would be constructed in two basic phases: 1. New Construction of the proposed new school and treatment plant. 2. Demolition of the existing school and construction of athletic fields, parking, and final sitework.

It is anticipated that Phase 1 can be accomplished with minimal disruption to the ongoing operation of the existing school, although temporary parking will need to be considered to compensate for the partial loss of the existing rear parking. Athletics and physical education will need to compensate for the lack of outdoor playing fields for a period of perhaps three to four years.

Estimated construction duration is two and one half to three years.

Areas (the area of this option varies proportionally with the target enrollment variations)

Enrollment	Area
900 Students	260,000 sf

Preliminary Order-Of-Magnitude Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs
900 Students	\$294,330,900	\$367,913,625

Final PSR Estimated Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs
900 Students	\$232,893,002	\$292,102,837

Pro's:

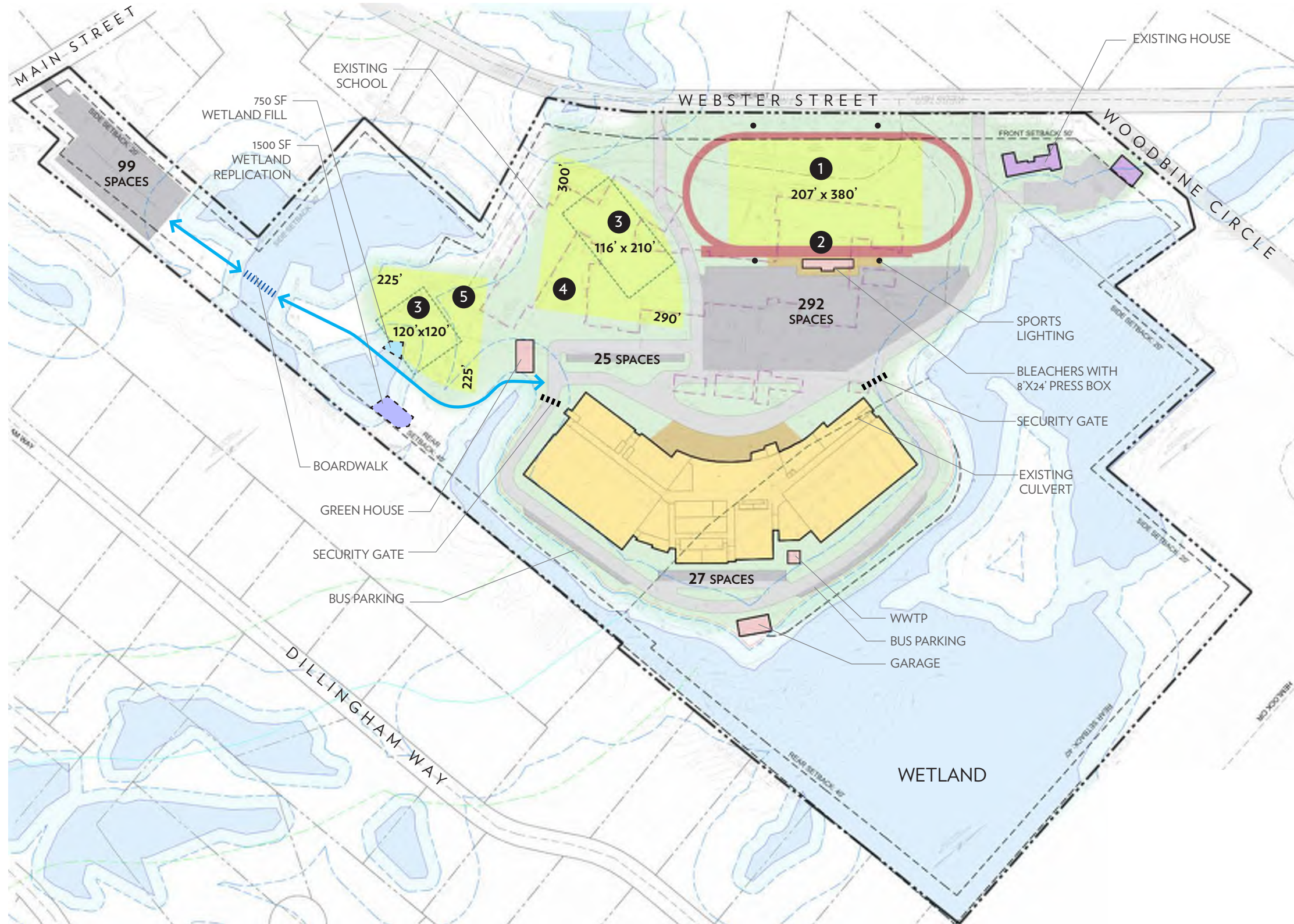
- Satisfies South Shore's space needs and right-sizes all CTE programs, including new Ch.74 programs
- Meets all of the District's Educational goals.
- Lower construction cost than other new construction options
- Provides convenient and secure public access to the Consumer Services programs and assembly spaces
- Has potential for a strong new architectural image
- Compact footprint promotes good internal connectivity
- Configures CTE programs into career clusters
- Efficient internal layout results in slightly smaller gross building area
- Shorter student path from core to academic areas
- Eliminates the need for temporary classrooms
- Provides long-term value with new infrastructure and robust energy efficiency

Con's:

- Higher construction cost than other new construction options
- Cross traffic through the Student Commons may be a distraction
- Central locker room location is remote from athletic fields
- Larger footprint constrains future expansion potential
- Athletic fields are displaced for several years
- Limited available parking during the first year of occupancy

Initial Evaluation: Continue to study in final phase of evaluation for enrollments of 805 & 900 students

Final Evaluation: Drop from further consideration



NEW CONSTRUCTION

OPTION NC-2.1

900 ENROLLMENT

LEGEND

- EXISTING STRUCTURES
- PROPOSED STRUCTURES
- NEW SCHOOL
- ATHLETICS
- ENTRY PLAZA
- WETLAND
- 35' WETLAND BUFFER

..... SECURITY GATE

- 1** SYNTHETIC TURF MULTI-PURPOSE FIELD
- 2** RUNNING TRACK
- 3** PRACTICE FIELD
- 4** BASEBALL
- 5** SOFTBALL

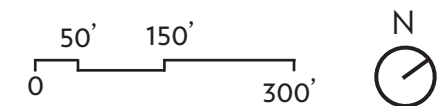
TOTAL PARKING:

EXISTING: 304 SPACES
& 15 BUS SPACES














PROPOSED: 344 SPACES (9'x18')
TARGET: 426 SPACES

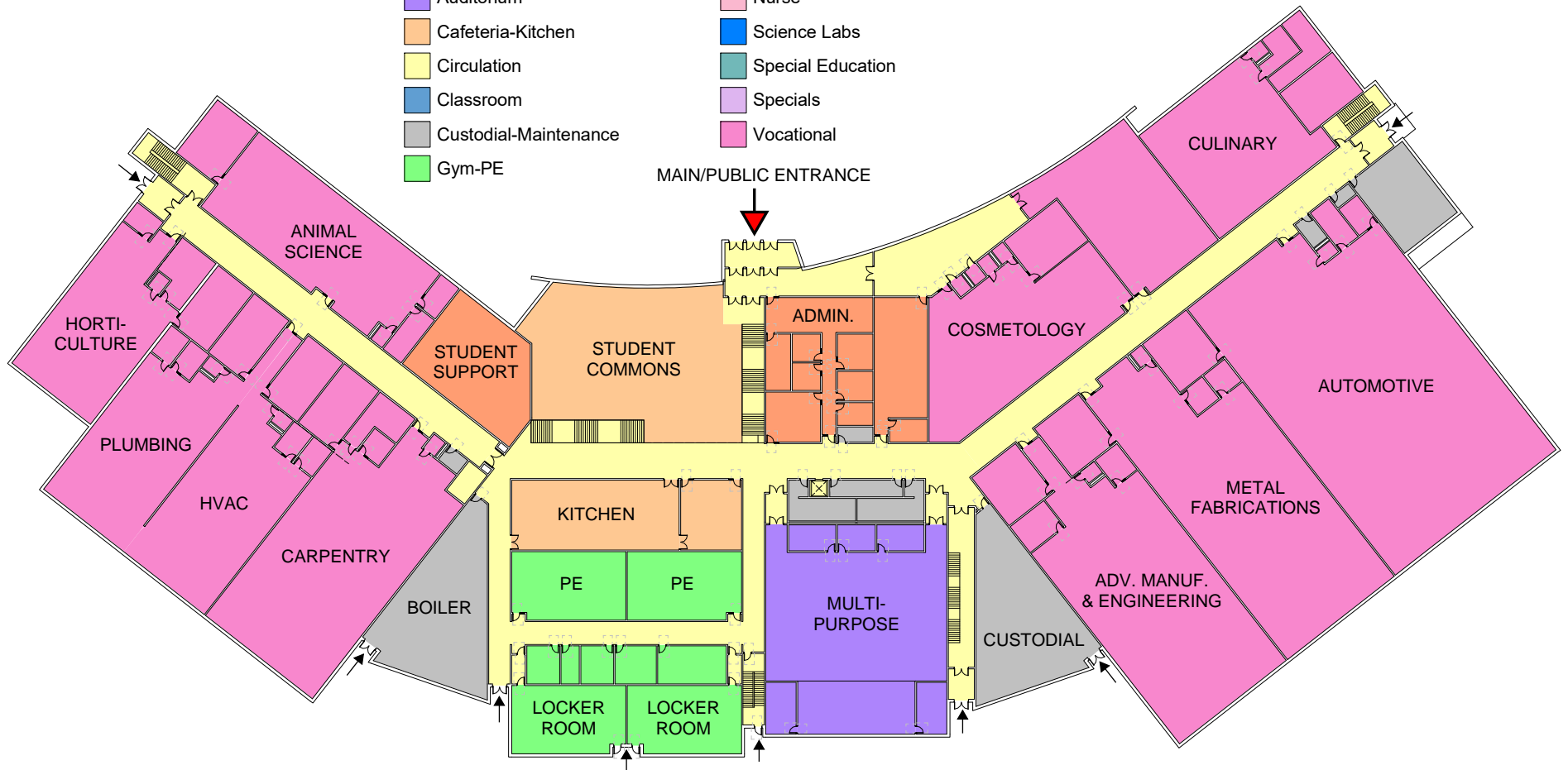
ADDITIONAL:

99 SPACES (MAIN ST.)
20 SPACES (EX. HOUSE)

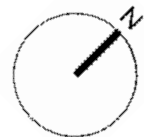
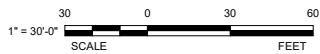


Departments














- | | |
|---|--|
|  Admin-Teacher Support |  Library-Media |
|  Auditorium |  Nurse |
|  Cafeteria-Kitchen |  Science Labs |
|  Circulation |  Special Education |
|  Classroom |  Specials |
|  Custodial-Maintenance |  Vocational |
|  Gym-PE | |

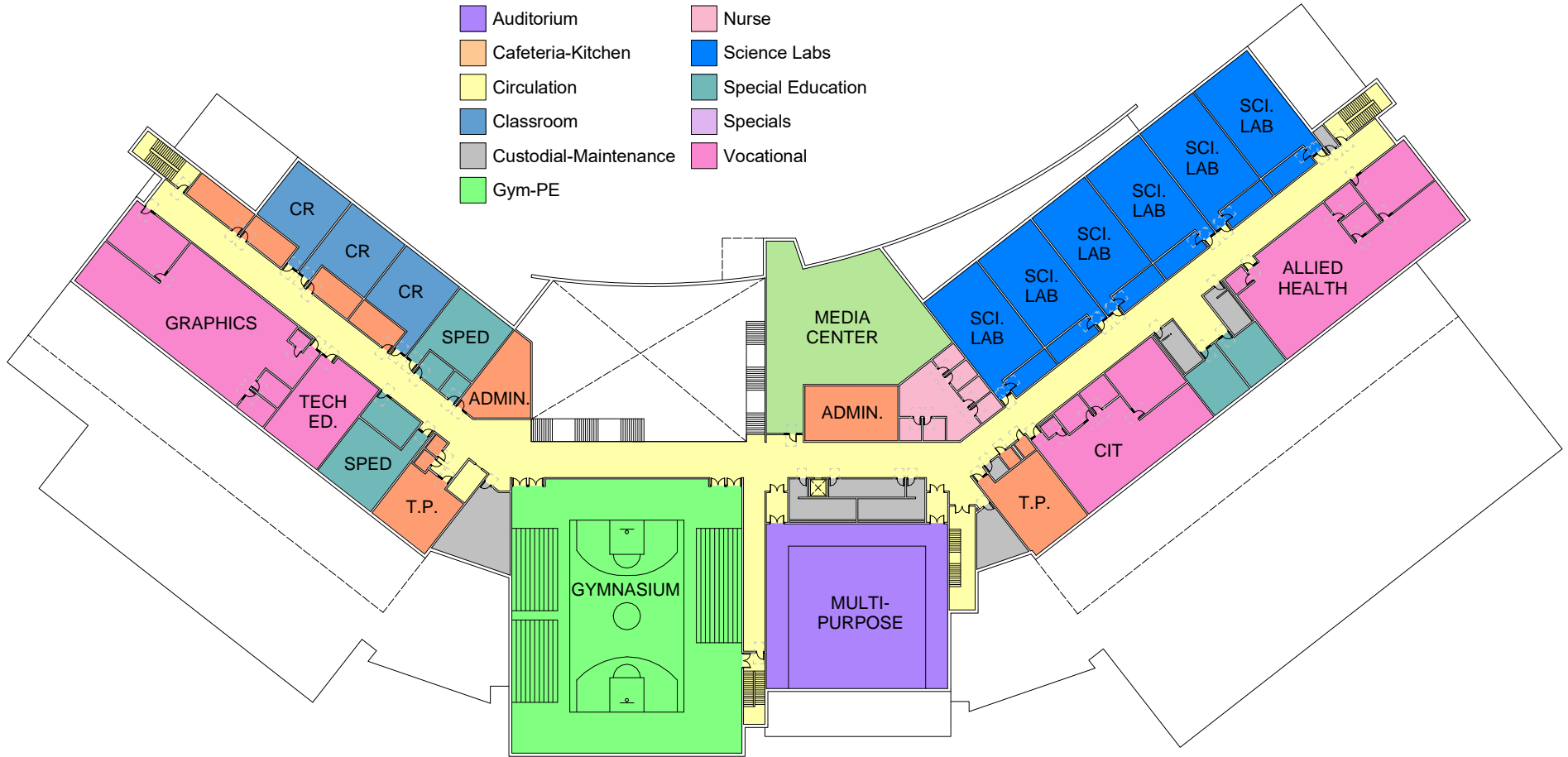


OPTION NC-2.1 FIRST FLOOR PLAN - 900 ENROLLMENT

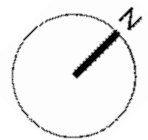
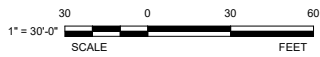


Departments














- | | |
|---|---|
|  Admin-Teacher Support |  Library-Media |
|  Auditorium |  Nurse |
|  Cafeteria-Kitchen |  Science Labs |
|  Circulation |  Special Education |
|  Classroom |  Specials |
|  Custodial-Maintenance |  Vocational |
|  Gym-PE | |



OPTION NC-2.1 SECOND FLOOR PLAN - 900 ENROLLMENT

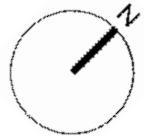
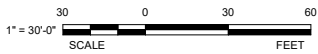


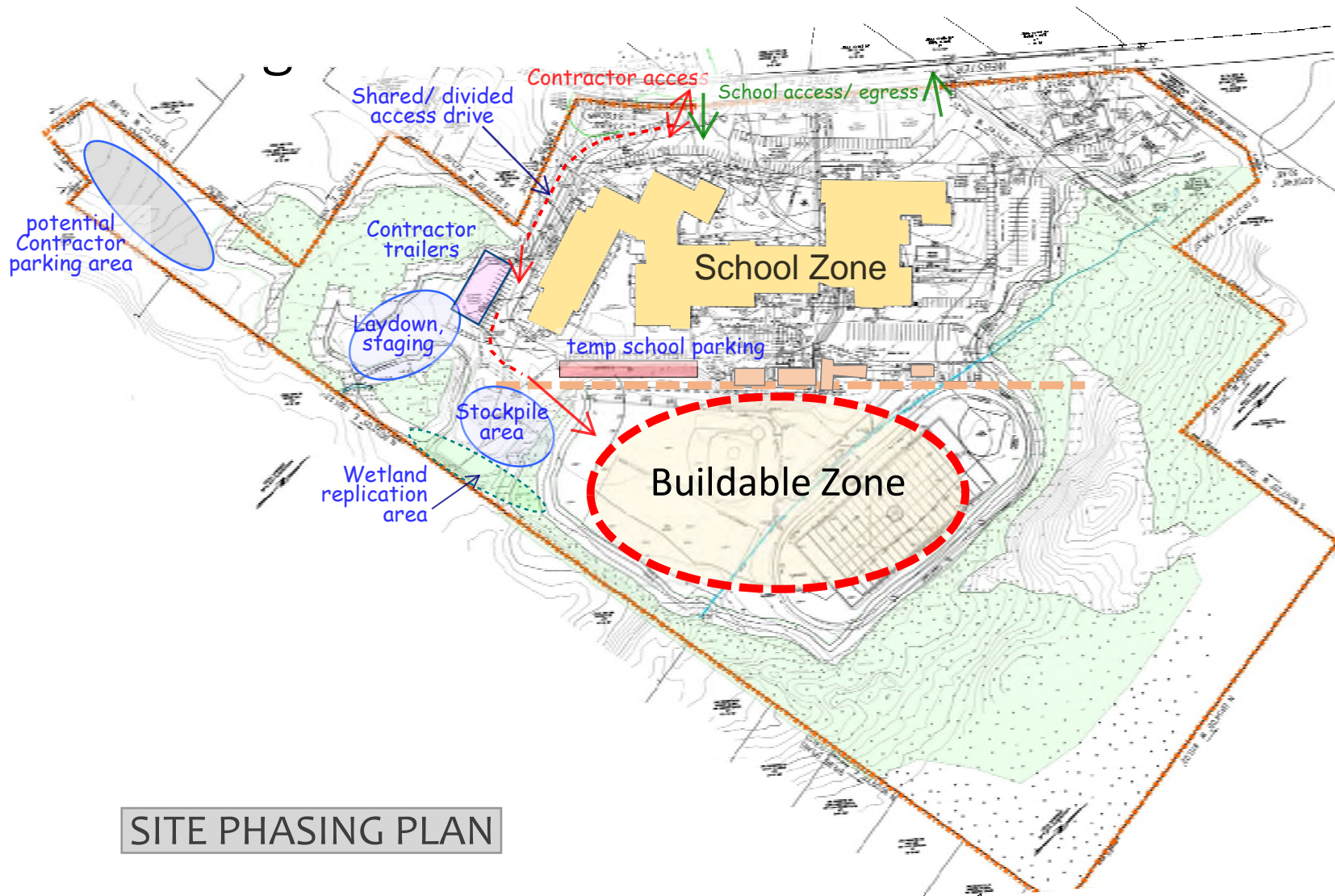
Departments

- | | |
|---|--|
|  Admin-Teacher Support |  Library-Media |
|  Auditorium |  Nurse |
|  Cafeteria-Kitchen |  Science Labs |
|  Circulation |  Special Education |
|  Classroom |  Specials |
|  Custodial-Maintenance |  Vocational |
|  Gym-PE | |

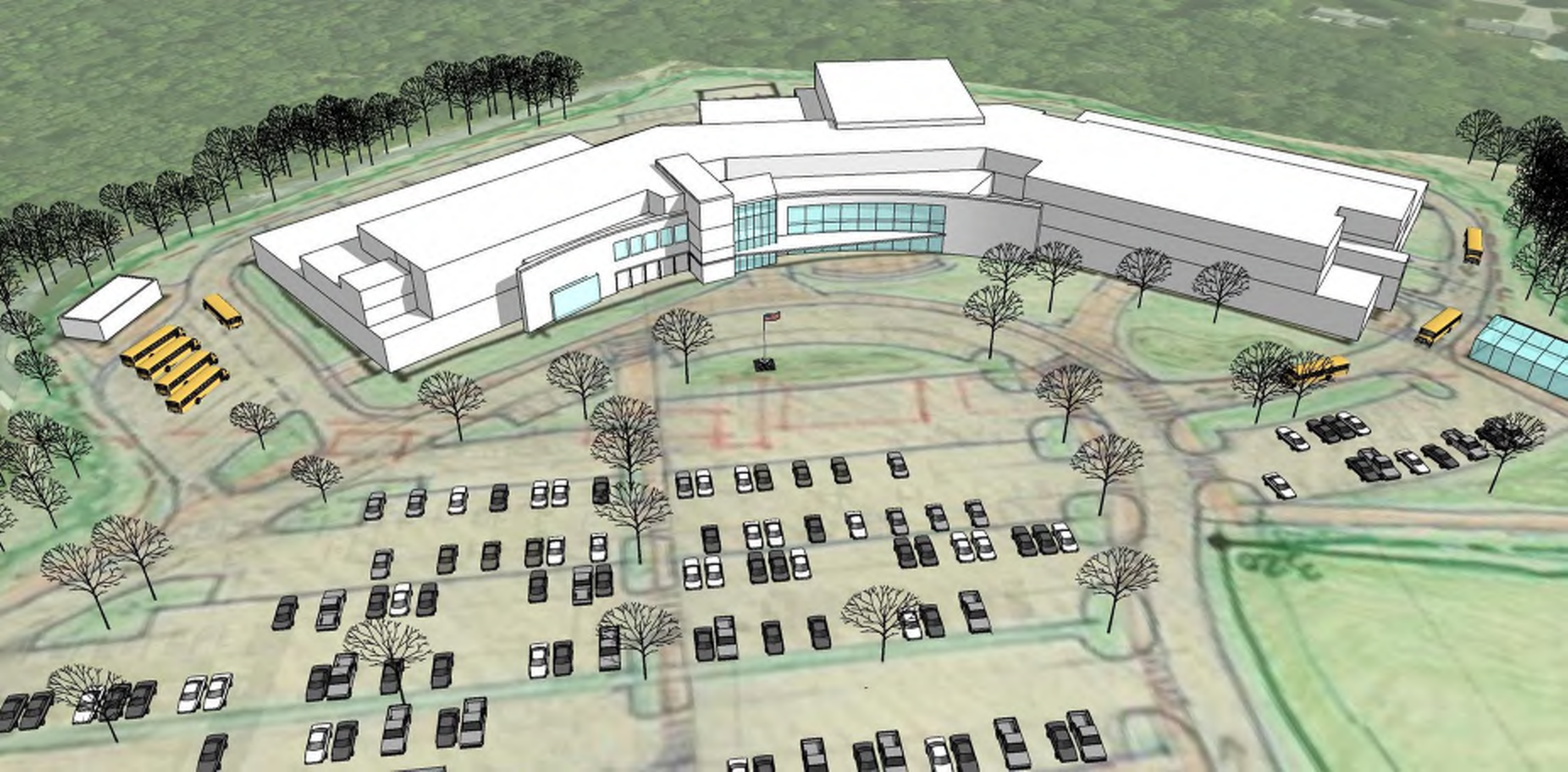


OPTION NC-2.1 THIRD FLOOR PLAN - 900 ENROLLMENT





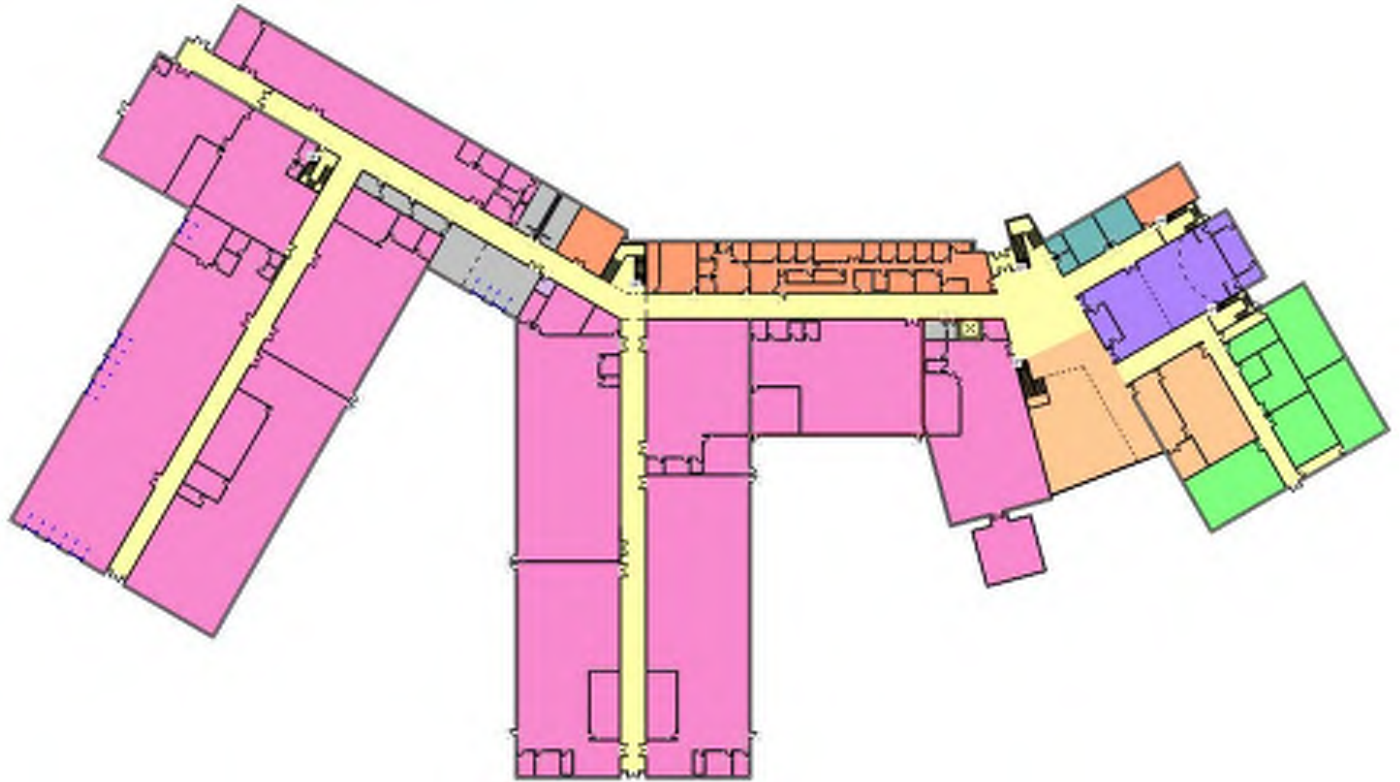
SITE PHASING PLAN





OPTION NC-3 “Wings” New Construction

For enrollment of 975 students



NC-3 First Floor Plan

Description:

This new construction option proposes siting the new school on the current athletic fields. The multi-story building is configured with the large assembly areas and Student Commons to the north and the academic spaces to the south. The high-bay CTE shops are configured in separate wings off of the main circulation corridor. This linear spine bends to conform to the available site. The CTE wings enclose service courtyards similar to the schools current configuration. The main entrance at the Commons serves not only as the primary student entrance, but also as the visitors and events entrance for after-hours activities in the Gym and Auditorium.

The remaining low bay CTE shops are located on the second floor over the shops. All of the academic classrooms, science labs and Special Ed spaces are on the second and third floors. Each level has teacher planning, small group rooms and collaborative space as recommended in the visioning sessions.

Educational Program requirements:

Option NC-3 satisfies the space needs outlined in the Educational Program. It provides the overall building configuration and key adjacencies identified in the Educational Program. The building utilizes the Student Commons and Learning Commons as core elements as the heart of the school and has small gathering hubs along the main corridor.

Site and Facility goals:

This Option has a relatively compact footprint that can be constructed independent of the existing school. The new site layout will provide a separate service area and the potential for separate bus and car drop-off areas. Expanded athletic fields would be created, including a separate softball field, after the existing building is demolished.

Construction Phasing:

This option would be constructed in two basic phases: 1. New Construction of the proposed new school and treatment plant. 2. Demolition of the existing school and construction of athletic fields, parking, and final sitework.

It is anticipated that Phase 1 can be accomplished with minimal disruption to the ongoing operation of the existing school, although temporary parking will need to be considered to compensate for the partial loss of the existing rear parking. Athletics and physical education will need to compensate for the lack of outdoor playing fields for a period of perhaps three to four years.

Estimated construction duration is two and one half to three years.

Areas (the area of this option varies proportionally with the target enrollment variations)

Enrollment	Area
975 Students	278,000 sf

Preliminary Order-Of-Magnitude Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs
975 Students	\$311,489,600	\$389,362,000

Final PSR Estimated Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs
975 Students	\$244,487,100	\$305,608,875

Pro's:

- Satisfies South Shore’s space needs and right-sizes all CTE programs, including new Ch.74 programs
- Meets all of the District’s Educational goals.
- Provides convenient public access to the Consumer Services programs and assembly spaces
- Has potential for a strong new architectural image
- Compact footprint promotes good internal connectivity
- Configures CTE programs into career clusters
- Eliminates the need for temporary classrooms
- Provides long-term value with new infrastructure and robust energy efficiency

Con's:

- Higher construction cost
- Larger footprint constrains future expansion potential
- Athletic fields are displaced for several years
- Limited available parking during the first year of occupancy

Initial Evaluation: Drop from final consideration; develop 975 student option for comparative purposes

Final Evaluation: Drop from further consideration

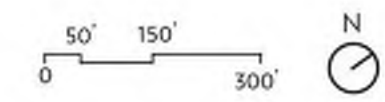


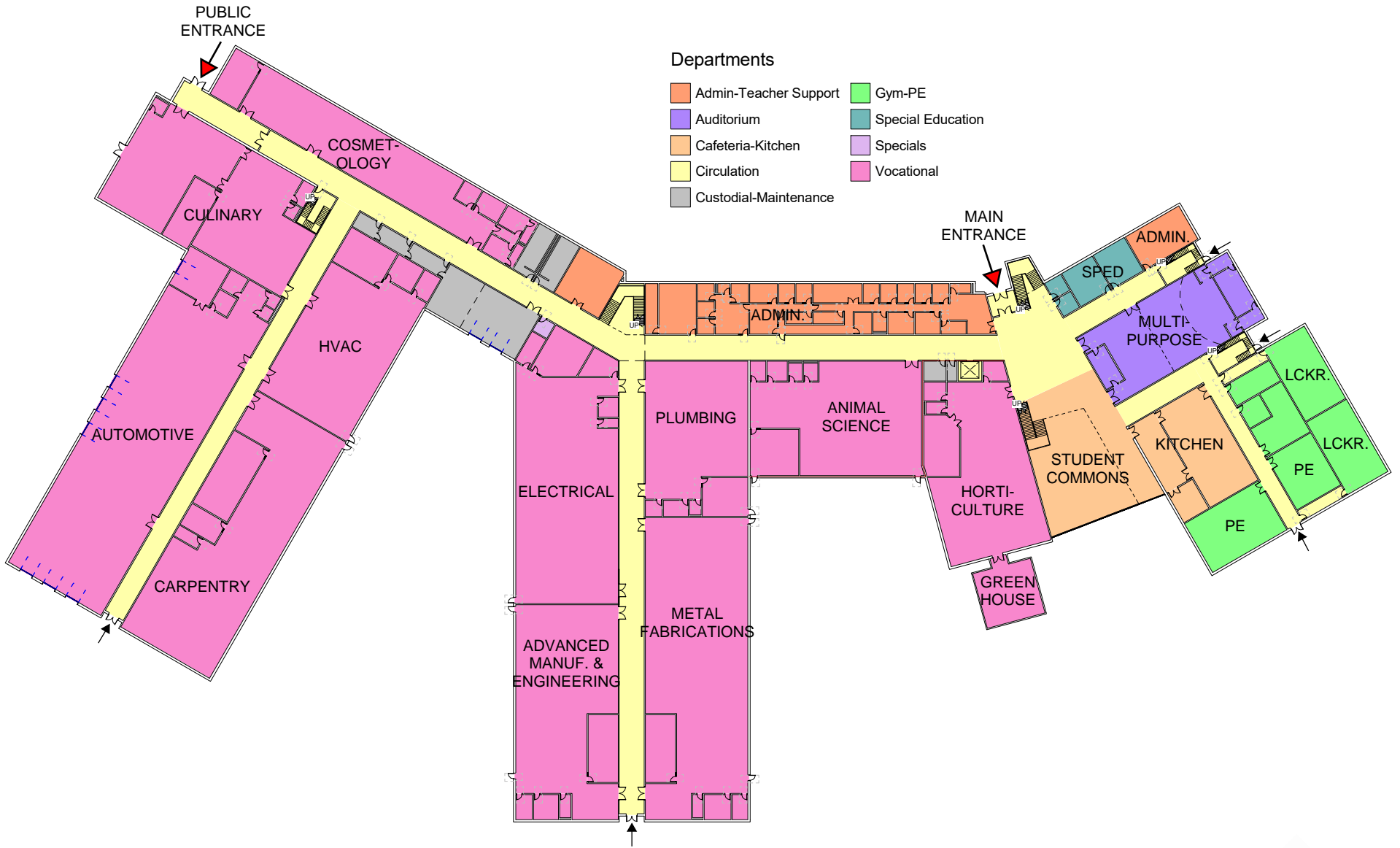
NEW CONSTRUCTION
OPTION NC-3
 975 ENROLLMENT

LEGEND

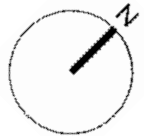
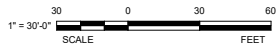
- EXISTING STRUCTURES
- PROPOSED STRUCTURES
- NEW SCHOOL
- ATHLETICS
- ENTRY PLAZA
- WETLAND
- 35' WETLAND BUFFER
- SECURITY GATE
- 1 BASEBALL
- 2 PRACTICE FIELD
- 3 SOFTBALL
- 4 SYNTHETIC TURF MULTI-PURPOSE FIELD

TOTAL PARKING:
 EXISTING: 304 SPACES
 & 15 BUS SPACES
 PROPOSED: 426 SPACES (9'x18')
 TARGET: 426 SPACES
 ADDITIONAL:
 17 SPACES (MAIN ST.)
 20 SPACES (EX. HOUSE)















OPTION NC-3 FIRST FLOOR PLAN - 975 ENROLLMENT

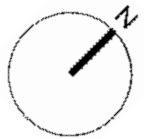


Departments

- | | |
|---|---|
|  Admin-Teacher Support |  Gym-PE |
|  Auditorium |  Library-Media |
|  Circulation |  Science Labs |
|  Classroom |  Special Education |
|  Custodial-Maintenance |  Vocational |



OPTION NC-3 SECOND FLOOR PLAN - 975 ENROLLMENT

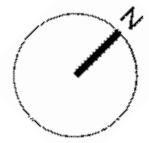


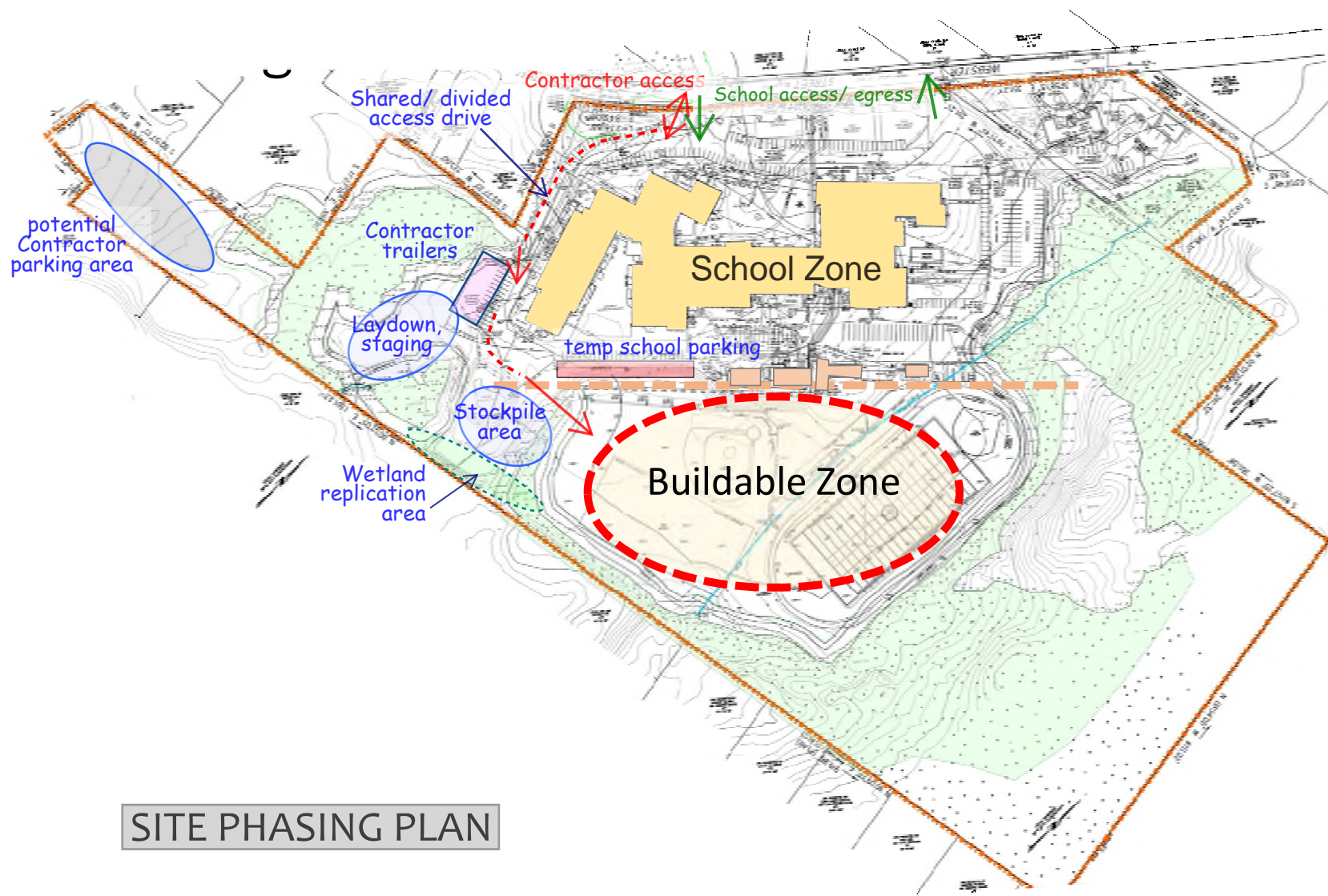
Departments

- Admin-Teacher Support
- Circulation
- Classroom
- Custodial-Maintenance
- Science Labs
- Special Education
- Vocational



OPTION NC-3 THIRD FLOOR PLAN - 975 ENROLLMENT





SITE PHASING PLAN







South Shore Vocational Technical High School Project - PSR Architectural Narrative

The purpose of the narrative is to establish the anticipated quality level of construction.

General Notes:

Building Code:

Occupancy Classification – Non-Separated Uses

- Use Group E (Classrooms, Labs, Vocational Areas, Student Commons/Cafeteria, Learning Commons/Library)
- Use Group B (Administration and Guidance)
- Use Group A-1 (Auditorium / Multipurpose)
- Use Group A-3 (Gymnasium) – for “non-school events”

Construction Type:

- Assume – Type IB Construction (non-combustible, 2hr rating) - Fire Walls shall not be required.
- Also refer to the Code Analysis Report

Roofing:

- Assume PVC membrane roof (color light grey) with combination of the tapered insulation and sloped steel as required achieving proper drainage. The roofing system shall be mechanically fastened and include a ½” recovery board over rigid insulation. The minimum depth of the rigid insulation shall be 6-1/2”. The minimum slope for the roofing surface is 1/4" in twelve inches. Minimum slope for the insulation crickets shall be ½” in twelve inches. The roofing system shall meet the requirements for the 25-year warranty.
- There will be vegetated roofs located at portions of the lower roofs located over the shops and exposed to view from the Second Floor. A leak detection system shall be provided at the vegetated roof areas.
- At sloped roof areas assume PVC membrane roof system.
- Assume aluminum roof edge (8” tall minimum) perimeter of the roof at storefronts, curtain walls and metal panels.
- Provide walkway pads as necessary for rooftop equipment maintenance.
- Provide roof expansion joints.
- Provide hatches at roof access interior ladders with safety railing.
- Provide rooftop mounted guardrails at the perimeter of the courtyard. The guardrails shall be manufactured items and shall not require roof penetration for support. Weights shall be utilized to support the railing system.
- Elevator vents, see Mechanical.
- Lightning protection system see electrical.

Exterior Wall Construction: (see elevations and sections for additional information)

- Exterior wall construction shall comply with NFPA 285

- Front elevation shall be Utility size brick on LGMF. Precast sills at window locations.
- Architectural non-load bearing High Performance Insulated Precast Concrete Panels with 4" rigid insulation, (Polyisocyanurate board insulation ASTM C1289, Type II, felt or glass-fiber mat facer on both major surfaces, R-Value 24.5 minimum) interior exposed to view surface of the precast panel shall be painted. Assume that the form liners shall be required to achieve desired appearance of all exposed to view surfaces.
- At various locations where second floor overlooks roof: LGMF back-up, 3" insulated metal panels. Paint GWB at the interior face of the exterior wall.
- Aluminum Composite Metal Panels (ACM) over LGMF framing with exterior sheathing, Air Vapor Barrier (AVB) at curved front façade of scheme nc2.1.
- Large format exterior CMU veneer over insulation, air and vapor barrier over CMU back-up walls.
- Waterproofing is required at the elevator pits.

Fenestration:

- Thermally broken aluminum frames with insulated glazing panels shall be assumed for the exterior Curtain Walls, Storefront and Windows. U-Value to meet or exceed 0.20
- Insulated Thermally-Broken (with Lumira Aerogel insulation) Translucent Wall Panels (2-3/4" thick) with operable insulated clear glass vision panels is planned for the openings located at the Vocational Shops as indicated on the Exterior Elevations. Exterior Louvers to be integrated into Insulated Translucent Wall Panel System. The basis of design Kalwall Corporation, Verti-Kal, with Shoji grid pattern. Light transmission – 12%. Solar heat gain coefficient – 0.17. Panel U-factor by NRC certified laboratory – 0.05. The panels must meet "Class CC1" classification.
- Exterior motorized panel overhead doors at the Vocational Shop areas shall be glazed (insulated), provide telescoping security gates at all exterior overhead doors located in the vocational shop areas.
- High Security Glazing required at the main entrance and customer entrance curtain wall and storefronts.
- All fenestration specified for the project shall comply with the safety requirements of the Building Code

Interior partitions: (see floor plans and partition-types sheet)

- Corridor walls – assume metal stud (unless indicated as CMU on the drawings) with total of 3 layers of 5/8" GWB (to comply with acoustical performance requirements). Assume porcelain tile wainscoting at the corridor side up to 4'-6" AFF, ceramic tile is not required behind lockers.
- Classroom demising walls - assume metal stud (unless indicated as CMU on the drawings) with total of 4 layers of 5/8" GWB (to comply with acoustical performance requirements). Acoustical batt insulation and acoustical sealant is required. Assume 8' high abuse resistant board at all exposed to view surfaces (at metal stud walls) within educational spaces.
- Administration Areas – assume metal stud with 5/8" GWB and acoustical batt insulation and acoustical sealant.
- Toilet cores - assume metal studs with concrete backer board and ceramic tile full height.
- Vocational Shops, Toilets and Locker Rooms –

- First Floor Level: assume Concrete Masonry Units (CMU) Walls, painted (epoxy paint).
- Second Floor Level: assume Metal Stud Walls with painted GWB (unless noted as CMU on the drawings). At toilets assume Ceramic Tile over concrete backer board full height.
- Post Grad Spaces - assume metal studs with 5/8" GWB, painted.
- Gymnasium – assume CMU, painted (epoxy paint)
- Locker Rooms - assume CMU walls, painted (epoxy paint)
- Auditorium / Multi-Purpose Space - assume 4 layers 5/8" GWB over metal studs, with acoustical wall panels and decorative wood panels.
- Cafeteria (Student Commons) - assume metal studs with backer board, acoustical wall panels, porcelain Tile and Wood Panels in high visibility areas. Also, glazed aluminum storefront with safety glazing.
- Kitchen Areas – assume CMU and 10'- FRP. Painted CMU walls (epoxy paint).
- Library (Media Center/Learning Commons) - assume 5/8" GWB over metal studs, Wood Panels in highly visible areas. Also, glazed aluminum storefront with safety glazing, movable glass partitions as indicated on the drawings.
- Vegetated wall assemblies with integral irrigation systems in Cafeteria / Student Commons and Library / Learning Commons.
- Custom Display Cases integrated into the walls in Cafeteria / Student Commons area.
- Custom Millwork Benches integrated into the walls in Cafeteria / Student Commons area.
- Stairs – assume metal studs and GWB UL design compliant rated enclosures with ceramic tile wainscoting – 5' high.

Ceilings: (see Reflected Ceiling Plan diagrams)

- Corridors - assume ACT 2x2 with GWB soffits at classroom entrances and key intersections.
- Stair landings – assume ACT 2x2 with GWB soffits
- Classrooms/Music Room, Science Labs - assume ACT 2x2 High NRC to comply with acoustical performance requirements.
- Administration areas - assume ACT 2x2 High NRC.
- Teacher Planning Spaces – assume ACT 2x2.
- Toilet cores - assume Moisture resistant GWB.
- Vocational Shops (located on the First Floor Level) - assume exposed structure painted; NOTE: Special acoustical separation ceiling shall be required to acoustically separate the Shop areas from the learning spaces above - assume system consisting of two layers of GWB on hat channels, on metal studs suspended from the floor structure above on the Spring Isolation hangers, Acoustical insulation (6") above GWB. The MEP and FP systems shall not be supported or penetrate this system. All MEP and FP systems in the areas of the acoustical separation ceilings shall be supported by the supplemental steel, unistrut etc. suspended from the steel beams floor farming.
- Vocational Shops Spaces located below the mezzanines – assume ACT 2 x 2 High NRC in Theory Rooms; assume exposed structure painted in the storage and tool crib spaces.

- Vocational Shops (located on the Second Floor Level) - assume ACT 2x2 High NRC.
- Gymnasium - assume painted exposed structure with structural metal cellular acoustical deck.
- Locker Rooms - assume moisture resistant GWB, painted.
- Auditorium / Multipurpose Performance Space - assume combination of exposed structure painted and suspended acoustical ceiling soffits (with vertical blade ceilings) to achieve acoustical performance goals. Provide Pipe Grid suspended from the structure above to enhance flexibility of the space utilization. Assume – K13 acoustical spray treatment See Theatrical systems narratives.
- Cafeteria / Student Commons - assume combination of premium ACT (Including Acoustical Vertical Blade - AVB) and specialty metal ceiling system to achieve acoustical performance as well as be visually appropriate for this highly visibility space.
- Kitchen and Culinary Arts Kitchen - assume ACT 2x2 washable as appropriate for the Foodservice Areas
- Culinary Arts Restaurant – assume Specialty metal ceiling.
- Cosmetology - assume Specialty metal ceiling.
- Learning Commons / Library/Media Center - assume combination of Specialty metal Ceiling, premium ACT and GWB soffits.

Floors: (see Finish Floor Diagram drawings)

Assume that high [performance adhesives shall be required at all areas to receive resilient finish flooring products.

- Corridors - assume Rubber Tile 4mm with resilient base.
- Lobby at Main entrance and Cafeteria/ Student Commons - assume poured epoxy terrazzo floor over moisture mitigation system and terrazzo base.
- Auditorium / Multipurpose Space – assume high compression strength sheet vinyl (to withhold the dynamic load from the movable seating equipment) with resilient base.
- Classrooms - assume linoleum tile with resilient base.
- Science Labs - assume sheet vinyl with integral base.
- Administration Areas - assume carpet with resilient base.
- Toilet cores - assume CMT and CMT base (ceramic mosaic tile)
- Locker and Toilet Areas located within the Shops - assume poured epoxy floor and base.
- Industrial Shops located on the First Floor Level - assume sealed concrete flooring (including electrical shop on the third floor).
- Shops located on the Upper Level – assume linoleum tile and resilient base.
- Gymnasium - assume Athletic Performance Wood Floor and vented rubber base.
- Locker Rooms - assume combination of poured epoxy floor and base and Ceramic Mosaic Tile (CMT)
- Fitness Room - assume sheet vinyl with integral base.
- Weight Room - assume cushioned rubber tile floor and resilient base.
- Kitchen - assume poured epoxy floor and base.
- Culinary Arts kitchen – assume poured epoxy floor and base.

- Culinary Arts restaurant – assume poured epoxy terrazzo floor over moisture mitigation system and terrazzo base. Assume that color patterns with divider strips shall be required.
- Library/Media Center - assume carpet and resilient base.
- Main Stair located adjacent to main entrance Student Commons area – assume precast terrazzo treads and risers.
- All other Stairs - assume Rubber Treads and Risers and rubber tile at the landings.

Special treatment for high visibility spaces:

- Lobby / Cafeteria Student Commons - assume wood paneling/large format porcelain tile at lower portion of walls. Pre-manufactured glass guardrails at the second-floor openings. This would also occur at the second floor lobby.
- Gymnasium - assume 6' tall gym pads at the exposed wall areas and 4' tall acoustical fiber panels, full perimeter of the gym.
- Auditorium/Multipurpose Room – assume fabric wrapped panels, glass railing and wood trim at the balcony walls.
- Library/Media Center - assume fabric wrapped acoustical panels.

Specialty Wall Treatment:

- Kitchens - assume FRP (height as noted above)
- Custodial Closets - assume FRP
- Shower stalls - assume Ceramic Tile

Stair Construction:

- The typical metal stairs shall be constructed out of steel as part of the Metal Fabrications trade-contractor scope. delegated design engineering shall be included by metal fabrications trade-contractor.
- Stair guardrails shall be manufactured from the steel components except where noted otherwise.
- Stair handrails shall be manufactured from stainless steel components.
- Guardrails at the floor opening over the Student Commons, Social Stair and Main Stair (connecting three floor levels) shall be pre-manufactured glass railing system.
- Pre-manufactured aluminum ship's ladders shall be provided to access Electrical Rooms located at mezzanine level.
- Pre-manufactured aluminum wall ladders shall be provided to access mechanical mezzanine level at each industrial shop.
- Pre-manufactured aluminum wall ladders shall be provided to exterior wall to provide access between roof levels (unless access is indicated from inside the building)
- Steel Guards meeting the code requirements for design of the industrial platform guardrail shall be provided at the edges of all mechanical/electrical mezzanines (including the ones located within the Industrial High Bay shop areas.
- Steel Guardrails meeting the building code for the publicly accessible spaces shall be provided at the student occupied mezzanine areas, accessed by the conventional stairs.

Lockers:

- Corridor lockers - assume two tier 15 x 15 with sloped tops (on wood base). Assume 125 units (to accommodate 250 students – freshman class only)
- Athletic Locker Room lockers - assume combination of multi-tier and single tier lockers on concrete base for PE; welded locker construction with antimicrobial treatment and integrated combination locks – see plans
- Team lockers - assume single tier appropriate size; welded locker construction with sloped tops and antimicrobial treatment (on concrete base) - see plans
- Vocational shop lockers - assume two or three tier 15 x 15 with sloped tops (on concrete base within First Floor Industrial shops and wood base within the Second Floor shops) – see plans

Doors and frames:

- Exterior doors – assume thermally broken aluminum glazed storefront in aluminum frame at highly visible entrances and hollow metal doors and frames elsewhere. Note that all exterior hollow metal frames shall be galvanized.
- Industrial High Bay Vocational areas (Located on First Floor), Athletic areas and Mechanical/Electrical (back of the house areas) - assume hollow metal doors and frames.
- Kitchen Areas – assume hollow metal doors and frames; doors between the kitchen and the servery assume stainless steel doors in s.s. frames.
- Everywhere else - assume wood veneer doors (5 ply) in hollow metal frames
- There also are a number of spaces that would require borrowed lights with safety glass.
- Auditorium / Multipurpose Doors separating the space from adjacent activities shall have manufacturer’s certified acoustical rating.
- Overhead exterior insulated doors at the shops shall be fully glazed with insulated safety glass, electrically operated.
- Overhead exterior door at the North wall of the platform area shall be fully glazed with insulated glass, scissor top folding, electrically operated.
- Assume expandable steel security gates at all shops overhead doors.
- Assume rolling grills at the foodservice servery areas (First and Second Floors).
- Assume Stainless Steel rolling door at the dish return.
- Assume rolling grills (manually operated) at the Team Rooms.

Manufactured Casework: (see Equipment Drawings)

- High Quality plastic laminate casework shall be assumed for the project.
- All Science Labs and Prep Rooms shall have standardized approach to the design, to make these spaces interchangeable. Assume chemical resistance countertops for the science spaces.
- The fume hoods shall be movable, recirculating air without any connection to the exterior exhaust systems.
- Each Classroom space shall have a teacher’s wardrobe and storage casework.

- Office Work Rooms and Conference rooms shall have storage casework with base and wall cabinets and plastic laminate countertop assemblies.
- Cosmetology shop space shall be provided with cosmetology specific premanufactured casework assemblies.
- Refer to the foodservice drawings and narratives for the culinary shop.

Gymnasium Equipment: (see Drawings)

- Provide foldable basketball backstops (glass) for the main court and the practice courts.
- Provide motorized ceiling mounted Gymnasium Divider curtain.
- Provide motorized ceiling mounted Wrestling Mat lifter.
- Provide two scoreboards and shot clocks for the main court.
- Provide volleyball standards inserts (3 courts)
- Provide ceiling mounted motorized batting cage.
- Provide electrically operated Gym Bleachers on both sides of the Gym (1,000 seat total capacity)

Multipurpose Room:

- Provide electrically operated Specialty Foldable Seating as indicated on the drawings (500 seat capacity) by Hussey – MAXAM, or equal, + Telescoping platform with metro chairs, basis of design

Window Treatments:

- Classrooms, Science Labs, Music and other similar room - assume manual operated roller shades.
- Second Floor Shops - assume manual operated roller shades.
- Post-Grad Program Spaces - assume manual operated roller shades.
- Administration Areas - assume manual operated vertical blinds.
- Library/Media Center - assume electrically operated roller shades.
- Interior Storefronts at Administration Areas - assume manual operated vertical blinds.
- Interior Sidelights at hollow metal frames at Classrooms - assume manual operated roller shades. (for security)

Displays:

- Each educational space shall contain at least 20' of Marker Board surface (4' tall) and 8' of Tack Board surface. (Refer to drawings)
- Each Educational space shall contain an interactive wall mounted display (not part of the CM-R scope, part of the FF&E Technology budget)
- Auditorium Multipurpose Room - assume 16' x 12' motorized Projection Screen
- Library/Media Center - assume 10' x 8' motorized Projection Screen
- Cafeteria Commons - assume 10' x 8' motorized Projection Screen.

Elevators:

- Elevator - assume traction elevators (2 required). One of the elevators (located adjacent to the Student Commons) shall be oversized and have high load capacity for large equipment delivery to the Second-Floor shops. One of the elevators (located adjacent to the customer entrance) shall have 4 stops, with front and back access.

- Assume LULA elevator for the exterior grandstands, access to the press box. Shall be part of the grandstand / press box assembly package.

Fireproofing:

- All structural steel columns to receive spray fireproofing 2 hour rated.
- At highly visible locations where structural steel columns are exposed to view (i.e. in front of exterior or interior glass etc.) assume intumescent coating system UL Rated. Visual quality of the steel surface preparation and detailing shall be increased for all areas to receive intumescent coating system.
- Beams and kickers supporting second floor to receive spray fireproofing 2 hour rated
- Beams, kickers and metal deck supporting roof to receive spray fireproofing 1 hour rated
- Spray fireproofing is not required at the horizontal or sloping structural steel components located more than 20' above the floor surface below, measured to the bottom of the structural component.

Food Service Equipment:

- Refer to Food Consultant Narrative.

Furniture and Equipment:

- Furniture shall include student desks, chairs, teacher desks, media center furniture, cafeteria furniture, café tables, stack seating, lounge seating. These items shall be procured by the district and are not part of the CM-R's scope of work.
- Furniture shall conform to ADA code.
- Vocational Equipment for shops to be part of the FF&E budget. Specific Vocational equipment that may be included in the CM-R's scope of work to simplify coordination of the installation. See schedules.
- CM-R shall coordinate ALL Owner provided equipment and provide all MEP & FP services and connections as part of the Construction Contract scope of work.



MEMORANDUM

Date: February 27, 2024
To: Drummey Rosane Anderson, Inc. (DRA)
From: Bradley C. McKenzie, P.E./Susan B. Spratt, P.E.
Regarding: South Shore Vocational Technical High School MEG Project No.: 223-190
New Construction (NC)

Overview

The following describes the existing utility infrastructure on site and proposed utility impacts for the above-referenced schematic design alternative at the main campus of the South Shore Regional Vocational High School located at 476 Webster Street in Hanover, Massachusetts. This design alternative will require new utility connections/piping, structures with water, natural gas, and telecom connections to the municipal and private utility systems located within Webster Street, and construction of a wastewater treatment plant (WWTP) located within the school campus site.

Utilities:

Water Service

476 Webster Street – Main Campus

According to record documents (1986 and 1992 construction drawings and Town of Hanover Water Dept.) and previous field surveys conducted by MEG, the main campus building built in 1962 is serviced by a 6-inch domestic water service that enters the front of the building. This service is connected to a 12-inch water main located within the Webster Street layout. The main portion of the building constructed in 1962 is not sprinkled, so there is no separate fire protection line. A separate 8-inch ductile iron water service installed for the addition constructed in 1992 connects to the same water main and extends to the south and east sides of the building, where it terminates at a hydrant. A 6-inch ductile iron fire service and 4-inch ductile iron domestic service branch off this service and enter the south side of the building. A water sampling station was also installed off the 8-inch service near Webster Street as part of the 1992 improvements. The maintenance, greenhouse, barn/locker room, and concession buildings located to the main school building's rear (east side) are serviced by individual 1 and 1 ½ inch PE water services extending from the rear of the main school building. Record drawings and conversations with the maintenance staff indicate that these services were installed in 2015 and 2018 when the buildings were constructed.

Five (5) existing fire hydrants are also located throughout the site.

The NC scheme will require the installation of a new fire protection service and domestic water service line for the new school that will be fed from a new water main loop installed throughout the property that will meet the requirements of the Hanover Water and Fire Departments. The new water main connection for the school will connect to the existing 12-inch water main located within the Webster Street layout, and the existing water line throughout the property will be abandoned.

Recommended scope of work:

- Abandon all existing water pipes and appurtenances.
- Install a new water main loop throughout the property from the existing 12-inch main located within the Webster Street layout.
- The domestic water service and fire protection service will connect to the new water main loop. The project MEP will determine the need for fire and/or domestic fire pumps.
- Install new hydrants and assemblies as required.

Sanitary Sewage

476 Webster Street – Main Campus

According to record documents (1986 and 1992 construction drawings and Town of Hanover Board of Health) and previous field surveys conducted by MEG, the existing main campus building is serviced by a Title 5 (Mass. State Environmental Code 310 CMR 15.00) subsurface sanitary sewage disposal system (septic system) located in the front (westerly side) of the school building. The system is comprised of sanitary sewer services, septic tanks, grease traps, pump chambers, and three (3) soil absorption fields (SAS).

Per record documents, two (2) 6-inch gravity sewer services exit the rear (east side) of the main school building built in 1962 and convey flows to a pump chamber located within the parking area east of the building. In 2023, one of the six-inch gravity sewer services collapsed, and a new service was installed outside the building and within the parking lot, conveying flows to the pump chamber. This chamber pump flows through a 4-inch ductile iron force main around the east and south sides of the building and discharges into a pump chamber located at the building's front (west side). Wastewater is then pumped through three (3) 4-inch force mains to the three (3) soil absorption systems (SAS) located at the western portion of the site near Webster Street. The pumping chamber, grease traps, septic tanks, and force mains were installed in 1992. Records indicate that the soil absorption systems at 476 Webster Street were constructed in 1986. Wastewater from the maintenance building, barn/locker room, and concession building located to the rear (east side) of the main school building flows through various pipes to the pump chamber within the parking area east of the building, where it is pumped through the same 4-inch force main to the pump chamber on the east side of the building and eventually to the SAS. The services associated with these buildings were constructed between 2015 and the present.

The 1992 plans indicate a gravity sewer (size unknown) conveys flows from the auto body shop section of the building to a sealed 500-gallon tank.

Record documents indicate that an external 1,500-gallon grease trap is located outside the west side of the school building that accepts food preparation flow from a 6-inch sewer that flows from the kitchen in the restaurant. The sewer then conveys flow from the grease trap to a 3,000 septic tank and then flows by gravity through an 8-inch PVC pipe to the pump chamber. These structures and piping were also constructed in 1992.

Record documents indicate that a holding tank, also installed in 1992, is present in the front of the building to accept industrial waste from the cosmetology lab of the building.

A 2,500-gallon fiberglass tight tank accepts flows from the portion of the maintenance building that was constructed in 2015.

The NC scheme will require a wastewater treatment plant (WWTP) designed and permitted under the Massachusetts DEP Groundwater Discharge Permit Program (314 CMR 5.00) as the design flow will exceed the 10,000 gallons per day threshold for a Title 5 septic system (310 CMR 15.00).

The soil absorption system (SAS) size depends on total school enrollment and soil percolation rates. The approximate cost of a WWTP could be between 1.5 and 3 million dollars.

Recommended scope of work:

- Evaluate the capacity and condition of all existing sanitary sewer services and appurtenances, including holding tanks, manholes, pump chambers, and grease traps, in conjunction with the project MEP to determine the viability for reuse.
- Videotape the existing sanitary sewer piping to determine the structural integrity of the pipes.
- If applicable, reconfigure the sewer collection system or construct a new sewer collection system and appurtenances, including holding tanks, manholes, pump chambers, and grease traps.
- Abandon the existing Title V septic system, including soil absorption systems, piping, and appurtenances that cannot be retained, and construct a WWTP.

Stormwater Management

476 Webster Street – Main Campus

The stormwater management system information was compiled from record documents (2015 and 1992 construction drawings) and previous field surveys and as-built plans prepared by MEG. An existing on-site stormwater infrastructure captures overland stormwater runoff from impervious and grassed areas on the school property. Per record documents and previous surveys conducted by MEG, storm drainage from impervious and grassed surfaces (bituminous concrete access roadways, parking areas, and landscaped areas) sheet flows to a series of catch basins located throughout the property. A closed drainage system located within parking areas at the front (west) and side (north) collects runoff conveyed through pipes and eventually discharges to the bordering vegetated wetland to the school's north at a concrete headwall. A 30-inch culvert flows from the concrete headwall southerly across the site under the athletic fields and discharges into the bordering vegetated wetlands (BVW) located south of the athletic fields. A closed drainage system to the rear (east) and side (south) of the building accepts runoff and conveys it to a stormwater detention basin located southeast of the building. This portion of the system and the basin were constructed as part of the 1992 addition project. There appear to be numerous roof drains that connect to drainage structures throughout the closed drainage system on site.

A drainage system consisting of catch basins, closed drainage piping, and a subsurface infiltration system was installed as part of the construction of the maintenance building in 2015. This system connects to a closed drainage system that extends northerly to the headwall at the 30-inch culvert.

A separate closed drainage system with inlet structures was constructed in connection with the 2020 baseball field renovation project. These structures were installed in the eastern portion of the field to alleviate seasonal flooding caused by runoff and high groundwater conditions. A 6-inch PVC drainpipe connects these structures by gravity to the catch basin located northwest of the field, which drains to the 30-inch culvert that conveys flows under the fields.

For the NC scheme, a new stormwater system will have to be designed and constructed to comply with the Standards of the Massachusetts DEP Stormwater Management Regulations (2008). The system would be comprised of a treatment stream of catch basins with hoods that will accept runoff that will be conveyed through a piping system to proprietary treatment units, drain manholes, and detention/infiltration systems to mitigate the increase in impervious surfaces and required attenuation and renovation of peak flows before discharging into the downgradient BVW.

Recommended scope of work:

- Evaluate the capacity and condition of all existing drainage systems in conjunction with the project MEP to determine the viability for reuse.
- Videotape the existing system of drain piping to determine the structural integrity of the pipes.
- Construct new subsurface stormwater infiltration systems, detention/infiltration basins, piping systems, or low-impact development best management practices.
- Install new catch basins at low points within the new parking areas.

Natural Gas Service

476 Webster Street – Main Campus

According to record documents (Eversource and 1985 and 1992 construction drawings) and previous surveys conducted by MEG, the original school building built in 1962 is serviced by two (2) 2-inch gas services in the front (west side) of the building that connects to an existing 6-inch main located within the Webster Street layout. The maintenance and greenhouse buildings are fed by gas lines from the rear (east side) of the main school building.

Although the maintenance staff for the school indicates that there are presently no issues with the gas service, new services will be constructed for the NC scheme. The project MEP will determine the design of these new connections.

Electric/Telecom Service

476 Webster Street – Main Campus

According to record documents (National Grid and 1986 and 1992 construction drawings) and previous surveys conducted by MEG, the electrical service for the 1992 school building addition emanates from a utility pole within the Webster Street layout and extends underground in conduits to the school building and connects to a transformer located on the south side of the building. A generator is also located at this location. A separate, underground direct burial service extends from a utility pole within Webster Street and enters the front of the original 1962 building. The electrical service for the maintenance, greenhouse, barn/locker room, and concession buildings to the rear (east) of the school building runs underground from the rear of the school building.

A 2019 construction project involved the installation of several light poles at the football field /track. The electrical service to these poles runs through a conduit from utility poles within the Webster Street layout along the northern side of the parcel to a transformer located at the northeast corner of the parking lot near the athletic field. The lighting system for the field is fed through underground conduits from this transformer.

Telecom service also appears to run underground from a utility pole within the Webster Street layout to the front of the school building.

It is presumed that electric and telecom services would continue to be fed off the existing infrastructure. Although the maintenance staff for the school indicates that there are presently no issues with the telecom service, new services will be constructed for the NC scheme. The project MEP will determine the design of these new connections.

MEMORANDUM

Date: February 27, 2024
To: Drummey Rosane Anderson, Inc. (DRA)
From: Bradley C. McKenzie, P.E./Susan B. Spratt, P.E.
Regarding: South Shore Vocational Technical High School MEG Project No.: 223-190
Add/Reno (AR) Scheme

Overview

The following describes the existing utility infrastructure on site and proposed utility impacts for the above-referenced schematic design alternative at the main campus of the South Shore Regional Vocational High School located at 476 Webster Street in Hanover, Massachusetts. These design alternatives will require new utility connections/piping, structures with water, natural gas, and telecom connections to the municipal and private utility systems located within Webster Street, and a wastewater treatment plant (WWTP) located within the school campus site.

Utilities:

Water Service

476 Webster Street – Main Campus

According to record documents (1986 and 1992 construction drawings and Town of Hanover Water Dept.) and previous field surveys conducted by MEG, the main campus building built in 1962 is serviced by a 6-inch domestic water service that enters the front of the building. This service is connected to a 12-inch water main located within the Webster Street layout. The main portion of the building constructed in 1962 is not sprinkled, so there is no separate fire protection line. A separate 8-inch ductile iron water service installed for the addition constructed in 1992 connects to the same water main and extends to the south and east sides of the building, where it terminates at a hydrant. A 6-inch ductile iron fire service and 4-inch ductile iron domestic service branch off this service and enter the south side of the building. A water sampling station was also installed off the 8-inch service near Webster Street as part of the 1992 improvements. The maintenance, greenhouse, barn/locker room, and concession buildings located to the main school building's rear (east side) are serviced by individual 1 and 1 ½ inch PE water services extending from the rear of the main school building. Record drawings and conversations with the maintenance staff indicate that these services were installed in 2015 and 2018 when the buildings were constructed.

Five (5) existing fire hydrants are also located throughout the site.

The AR scheme will require the installation of a new fire protection service line to the main building for a sprinkler system, with the potential for a larger water main extension throughout the property. The capacity and condition of all existing domestic and fire services will need to be evaluated by the project MEP to determine the viability for reuse.

Recommended scope of work:

- Evaluate the capacity and condition of domestic water and fire protection services by project MEP.
- Remove and relocate one hydrant located in the front parking lot.
- Replace all other existing hydrants (four (4) total).
- At a minimum, replace the existing 6-inch domestic water service that services the 1962 main campus building.

Sanitary Sewage

476 Webster Street – Main Campus

According to record documents (1986 and 1992 construction drawings and Town of Hanover Board of Health) and previous field surveys conducted by MEG, the existing main campus building is serviced by a Title 5 (Mass. State Environmental Code 310 CMR 15.00) subsurface sanitary sewage disposal system (septic system) located in the front (westerly side) of the school building. The system is comprised of sanitary sewer services, septic tanks, grease traps, pump chambers, and three (3) soil absorption fields (SAS).

Per record documents, two (2) 6-inch gravity sewer services exit the rear (east side) of the main school building built in 1962 and convey flows to a pump chamber located within the parking area east of the building. In 2023, one of the six-inch gravity sewer services collapsed, and a new service was installed outside the building and within the parking lot, conveying flows to the pump chamber. This chamber pump flows through a 4-inch ductile iron force main around the east and south sides of the building and discharges into a pump chamber located at the building's front (west side). Wastewater is then pumped through three (3) 4-inch force mains to the three (3) soil absorption systems (SAS) located at the western portion of the site near Webster Street. The pumping chamber, grease traps, septic tanks, and force mains were installed in 1992. Records indicate that the soil absorption systems at 476 Webster Street were constructed in 1986. Wastewater from the maintenance building, barn/locker room, and concession building located to the rear (east side) of the main school building flows through various pipes to the pump chamber within the parking area east of the building, where it is pumped through the same 4-inch force main to the pump chamber on the east side of the building and eventually to the SAS. The services associated with these buildings were constructed between 2015 and the present.

The 1992 plans indicate a gravity sewer (size unknown) conveys flows from the auto body shop section of the building to a sealed 500-gallon tank.

Record documents indicate that an external 1,500-gallon grease trap is located outside the west side of the school building that accepts food preparation flow from a 6-inch sewer that flows from the kitchen in the restaurant. The sewer then conveys flow from the grease trap to a 3,000 septic tank and then flows by gravity through an 8-inch PVC pipe to the pump chamber. These structures and piping were also constructed in 1992.

Record documents indicate that a holding tank, also installed in 1992, is present in the front of the building to accept industrial waste from the cosmetology lab of the building.

A 2,500-gallon fiberglass tight tank accepts flows from the portion of the maintenance building that was constructed in 2015.

The AR scheme will require a wastewater treatment plant (WWTP) designed and permitted under the Massachusetts DEP Groundwater Discharge Permit Program (314 CMR 5.00) as the design flow will exceed the 10,000 gallons per day threshold for a Title 5 septic system (310 CMR 15.00). The soil absorption system (SAS) size depends on total school enrollment and soil percolation

rates. The approximate cost of a WWTP could be between 1.5 and 3 million dollars.

Recommended scope of work:

- Evaluate the capacity and condition of all existing sanitary sewer services and appurtenances, including holding tanks, manholes, pump chambers, and grease traps, in conjunction with the project MEP to determine the viability for reuse.
- Videotape the existing sanitary sewer piping to determine the structural integrity of the pipes.
- Reconfigure the sewer collection system due to conflicts with building additions, if applicable.
- Abandon the existing Title V septic system, including soil absorption systems, piping, and appurtenances that cannot be retained, and construct a WWTP.

Stormwater Management

476 Webster Street – Main Campus

The stormwater management system information was compiled from record documents (2015 and 1992 construction drawings) and previous field surveys and as-built plans prepared by MEG. An existing on-site stormwater infrastructure captures overland stormwater runoff from impervious and grassed areas on the school property. Per record documents and previous surveys conducted by MEG, storm drainage from impervious and grassed surfaces (bituminous concrete access roadways, parking areas, and landscaped areas) sheet flows to a series of catch basins located throughout the property. A closed drainage system located within parking areas at the front (west) and side (north) collects runoff conveyed through pipes and eventually discharges to the bordering vegetated wetland to the school's north at a concrete headwall. A 30-inch culvert flows from the concrete headwall southerly across the site under the athletic fields and discharges into the bordering vegetated wetlands (BVW) located south of the athletic fields. A closed drainage system to the rear (east) and side (south) of the building accepts runoff and conveys it to a stormwater detention basin located southeast of the building. This portion of the system and the basin were constructed as part of the 1992 addition project. There appear to be numerous roof drains that connect to drainage structures throughout the closed drainage system on site.

A drainage system consisting of catch basins, closed drainage piping, and a subsurface infiltration system was installed as part of the construction of the maintenance building in 2015. This system connects to a closed drainage system that extends northerly to the headwall at the 30-inch culvert.

A separate closed drainage system with inlet structures was constructed in connection with the 2020 baseball field renovation project. These structures were installed in the eastern portion of the field to alleviate seasonal flooding caused by runoff and high groundwater conditions. A 6-inch PVC drainpipe connects these structures by gravity to the catch basin located northwest of the field, which drains to the 30-inch culvert that conveys flows under the fields.

For the *AR* scheme, the existing stormwater system will have to be upgraded to the maximum extent practicable to comply with the Standards of the Massachusetts DEP Stormwater Management Regulations (2008), which may require the existing network of drainage pipes and structures at the front of the building to be reconfigured or replaced.

Recommended scope of work:

- Evaluate the capacity and condition of all existing drainage systems in conjunction with the project MEP to determine the viability for reuse.
- Videotape the existing system of drain piping to determine the structural integrity of the pipes.
- Provide roof drainage for the proposed additions.

- Reconfigure the stormwater conveyance system around building additions if applicable due to conflicts.
- Install additional catch basins at low points within the new or reconfigured parking areas.
- Evaluate existing athletic fields if they are to be retained and design and construct a system to alleviate existing localized flooding conditions.
- Construct new subsurface stormwater infiltration systems, detention/infiltration basins, piping systems, or low-impact development best management practices to mitigate additional impervious surfaces.

Natural Gas Service

476 Webster Street – Main Campus

According to record documents (Eversource and 1985 and 1992 construction drawings) and previous surveys conducted by MEG, the original school building built in 1962 is serviced by two (2) 2-inch gas services in the front (west side) of the building that connects to an existing 6-inch main located within the Webster Street layout. The maintenance and greenhouse buildings are fed by gas lines from the rear (east side) of the main school building.

The maintenance staff for the school indicates that there are presently no issues with the gas service. The capacity and condition of all existing natural gas services will need to be evaluated by the project MEP to determine the viability for reuse.

Electric/Telecom Service

476 Webster Street – Main Campus

According to record documents (National Grid and 1986 and 1992 construction drawings) and previous surveys conducted by MEG, the electrical service for the 1992 school building addition emanates from a utility pole within the Webster Street layout and extends underground in conduits to the school building and connects to a transformer located on the south side of the building. A generator is also located at this location. A separate, underground direct burial service extends from a utility pole within Webster Street and enters the front of the original 1962 building. The electrical service for the maintenance, greenhouse, barn/locker room, and concession buildings to the rear (east) of the school building runs underground from the rear of the school building.

A 2019 construction project involved the installation of several light poles at the football field /track. The electrical service to these poles runs through a conduit from utility poles within the Webster Street layout along the northern side of the parcel to a transformer located at the northeast corner of the parking lot near the athletic field. The lighting system for the field is fed through underground conduits from this transformer.

Telecom service also appears to run underground from a utility pole within the Webster Street layout to the front of the school building.

It is presumed that electric and telecom services would continue to be fed off the existing infrastructure. The maintenance staff for the school indicates that there are presently no issues with the electricity and telecom services. The capacity and condition of all existing electric and telecom systems will need to be evaluated by the project MEP to determine the viability for reuse.





WARNER LARSON
LANDSCAPE ARCHITECTS

February 29, 2024

**South Shore Regional Vocational Technical High School
Hanover, MA
PSR Evaluation of Alternative Designs**

A. Overview of existing site

The existing South Shore Regional Vocational Technical High School site is bordered by wooded areas to the south and east. An area of wetlands lies between the school's facilities and these woodlands. The school is adjacent to residential properties to the west and to the north, across Webster Street. This street, also known as Highway 123, serves as the vehicular access to the site. A portion of the property extends southwest to Main Street. The mostly one-story existing school building is located on the northern half of the site. The southern half of the site contains the school's sports fields.

Physical Conditions Summary

The existing school building is oriented toward Webster Street where two driveways access the site serving a main drop-off in front of the school, creating a one-way loop from the southern entrance to the northern exit. There are several parking spaces at this front face of the school, while the majority is in the rear and north side of the building.

The property's highest point is the northern corner of the site and generally slopes to the south, dropping in elevation approximately 12 feet. A wetland area extends around the athletic fields and the southern edge of the property. The school's leaching field is in the landscape area in front of the building. Refer to separate WWTP narrative by McKenzie Engineering.

B. Analysis of Alternative Building & Site Designs

This report analyzes the differing impacts on costs that are presented by the design alternatives. These include the Add/Reno, and new construction options.

C. Cost Impacts for the Add/Reno Options

Parking, Paving, and Circulation

These options will include replacing the landscaped area in front of the school with a parking lot.

New crosswalks, sidewalks, and ADA curb ramps at the school's entrance and parking areas as shown on the Add-Reno plans and the Landscape Base/Repair plan will be required.

The existing bituminous paving will be resurfaced.

Code and Accessibility Requirements

All the building entrances that are not ADA accessible will need to have accessible ramps added. These are shown in the Landscape Base/Repair plan and are included as part of the Add-Reno options.

Accessible parking stall quantities, layout, and configuration are to be compliant with ADA standards. Accessible routes to the building will be provided at each parking area and throughout the site, as necessary.

Recreational Fields and Outdoor Spaces

The existing track will be replaced with new pavement and resilient rubber track surfacing with defined lanes. The drainage systems at the sports fields will be repaired and upgraded to prevent standing water from accumulating. New Sportslighting will be provided at the softball field. The football field natural turfgrass turf will be renovated with soil amendments and sod, and the bleachers at the football field will be replaced with a new bleacher system that is code and ADA compliant system.

Site Planting

All disturbed areas will be repaired, replanted and re-seeded. Lawns will be seeded grass. Shrub and tree plantings will be of native species or non-native species that are adapted to the local climate. Sloped areas will be stabilized and planted with appropriate plant species to minimize erosion.

D. Cost Impacts for New Construction Alternatives

The following features will remain consistent in all the new construction alternatives:

- 1) Main Vehicular Circulation Driveway from Webster Street with 6-foot-wide pedestrian concrete sidewalk and VGC on both sides.
- 2) Entrance and dining terrace plazas with precast permeable pavers, street furniture, and shrub and perennial plantings.

- 3) Vehicular and pedestrian lighting along the roadways and entrance plazas
- 4) 1 Baseball and 1 Softball Field (Irrigated Sod Lawn), 1 Football Field (Synthetic Turf) with bleachers for 300 people and an 8'x24' Press Box, and 1 Multi-Purpose Field (Synthetic Turf).
- 5) A new track with pavement and resilient rubber track surfacing and defined lanes. The track will have 4 lanes except for the straightaway on the south side, which will have 6 lanes.
- 6) Synthetic turf field will have acrylic-coated sand infill with underlying shock pad.
- 7) Both multi-purpose field and baseball field will have electronic scoreboards and accessible bleachers and dugouts for the baseball field
- 8) The baseball, softball and football fields will have sports lighting.
- 9) A retaining wall between the existing house at 436 Webster St. and the new athletic fields, that will be approximately 200' long and 4' high above grade.
- 10) Automated gates at either end of the road behind school.
- 11) A walkway and an approximately 75'-long x 10' wide boardwalk across the wetlands to a new parking area on Main St.
- 12) There will be 2-3 outdoor learning spaces.
- 13) A separate maintenance garage and greenhouse.
- 14) A wastewater treatment facility – see civil engineer's narrative for more information.
- 15) Loading and services accessed at the back of the building.
- 16) All landscape areas will be planted with lawn or shrub and perennials, and trees. Lawns will be seeded grass. Shrub and tree plantings will be of native species or non-native species that are adapted to the local climate. Sloped areas will be stabilized and planted with appropriate plant species to minimize erosion.

Site circulation includes a separate bus drop off behind the new school and car drop-off loop in front. The entrance is at the existing curb cut on Webster St. and the exit is adjacent to the existing house at 436 Webster St.

The new softball field will require approximately 1900 SF of fill in the existing wetland adjacent to the softball field and 3800 SF of wetland replication.

E) Parking

The parking requirements outlined below have been determined by the school administration for the needs for each enrollment level.

Enrollments:	645	750	805	900	975
Staff: (Admin & Teachers):	130	150	160	175	185
Approx. 2/3 of seniors:	108	125	134	150	163
Approx. 1/3 of juniors:	53	61	66	74	80
Visitors:	20	23	24	27	29
<hr/> TOTAL	<hr/> 311	<hr/> 359	<hr/> 384	<hr/> 426	<hr/> 457

END REPORT



PROPOSED OPTION – New Construction

SUBSTRUCTURE

Foundations

Based on the recommendations of the geotechnical engineer, the columns of the proposed structure would bear on reinforced concrete spread footings and the perimeter foundation walls would bear on continuous reinforced concrete strip footings extending at least 4'-0" below grade. With the recommended bearing capacity of the soil of 2 tons/sf, a typical interior footing would be 9 ft. – 0 in. x 9 ft. - 0 in. x 24 in. deep and the typical exterior footings would be 8 ft. x 8 ft. x 24 in. deep in the two story areas. Typical interior footings below the Gymnasium level would be 7 ft. x 7 ft. x 24 in. deep. Typical exterior footings at the Gymnasium would be 8 ft. x 8 ft. x 24 in. deep. The typical exterior foundation walls would be 14 in. to 16 in. thick, reinforced cast-in-place concrete walls on 24 to 36 in. wide continuous reinforced concrete strip footings around the perimeter of the building extending a minimum of 4 ft. – 0 in. below finished grade.

Slabs-on-Grade

Based on the recommendations of the geotechnical engineer, the lowest level of the proposed structure would be a 5 in. thick concrete slab-on-grade reinforced with welded wire fabric over a vapor barrier on 2 in. thick rigid insulation on 8 in. of compacted granular structural fill and a base course of 8 in. of compacted grave at typical areas and 6" thick slab on grade in the Vocation Shop Areas.

SUPERSTRUCTURE

Floor Construction

Typical Floor Construction

A 5 ¼ in. light weight concrete composite metal deck slab reinforced with welded wire fabric on wide flange steel beams spanning between steel girders and columns. The weight of the structural steel is estimated to be 15 psf for the typical framing. The weight of structural steel at the second floor above the Vocational Shops is estimated to be 20 psf.

Roof Construction

Typical Roof Construction

The roof construction would be galvanized, corrugated 3 in. deep, Type 'N' metal roof deck spanning between wide flange steel beams and girders. At locations of roof supported mechanical equipment, a concrete slab will be provided similar to the typical supported slab. The weight of the structural steel is estimated to be 14 psf.

Low Roof Structure

The typical roof would be a continuation of the adjacent floor and would be similar to the typical floor construction of 5 ¼ in. light weight concrete composite metal deck slab reinforced with welded wire fabric on wide flange steel beams spanning between steel girders and columns. This roof will be supporting the mechanical units or green plantation. The units would be screened by a screen

comprised of structural steel posts and beams. The weight of the structural steel for the patio, the vegetated green roof and portions of roof supporting mechanical equipment is estimated to be 18 psf. The weight of the structural steel of the portion of the roof that is typical roof construction is estimated to be 14 psf.

Shops, Gymnasium and Auditorium Roof Framing

The roof construction would be acoustic, galvanized, corrugated 3 in. deep, Type 'NA', metal roof deck at the Gymnasium and portions of the shop area, spanning between long span steel joists. The weight of the steel joists and structural steel framing is estimated to be 14 psf.

VERTICAL FRAMING ELEMENTS

Columns

Columns will be hollow structural steel columns. Typical columns would be HSS 12 x 12 columns due to the height of the lowest level.

Lateral Load-Resisting System

The proposed school structure will be divided into two parts separated by way of an expansion joint.

The lateral load resisting system for the portion housing the Gymnasium and other spaces north of the commons would be ordinary concentric braced frames comprised of HSS structural steel members.

The typical lateral load resisting system for the remainder of the structure would be ordinary concentric braced frames comprised of HSS structural steel members.

PROPOSED OPTION—Additions/Renovations

The proposed scheme requires renovation of the entire school and reconfiguration of the majority of the demising walls. The scheme requires partial demolition of portions of the existing school and the construction of a two story addition at the front of the school. The addition will create a new main entrance for visitors and house the administration and guidance spaces on the first floor, Science Classrooms, Locker Rooms, ancillary spaces and Graphics Studio. The upper floor will house new classrooms and science laboratories, Allied Health and a Gymnasium. As part of the architectural renovation scope, all windows will be replaced, the existing roofing will be replaced and repairs and/or replacement of the exterior façade will be required.

This scheme also requires replacement of the entire mechanical, electrical and plumbing systems and major upgrades to the fire protection system. The scheme requires renovations related to ADA requirements and would include addition of new elevators. The scheme would require openings through floors and walls related to the MEP renovation. No major structural alterations are anticipated in this scheme.

PRIMARY STRUCTURAL CODE ISSUES RELATED TO THE EXISTING STRUCTURE

Due to the extent of the proposed demolition, and the renovations and additions to the existing structure, the existing structure will have to be upgraded by the addition of some braced frames. All of the existing masonry walls may be required to be clipped to the floor or roof structure.

PROPOSED STRUCTURAL SCHEME

The proposed additions will be structurally separated from the existing structure.

Due to the extent of the proposed renovations and reconfiguration of the interior spaces, additional braced frames may be required. The proposed braced frames would be located at the existing column lines. An allowance for 8 bays of full height braced frames should be made in the project budget. These new braced frames may require replacement of existing column footings at the frame locations.

Due to the replacement of the entire mechanical and HVAC system, an allowance should be made for reinforcement of the existing roof framing to support the new units. This cost should be carried as a percentage cost of the mechanical units in the budget.

All of the existing masonry walls may be required to be clipped to the existing structure with steel angle clips at 4 ft. – 0 in. on center.

PROPOSED ADDITION

SUBSTRUCTURE

Foundations

Based on the foundations of the existing structure, and recommendations of the Geotechnical Engineer, the columns of the proposed addition would bear on reinforced concrete footings and the perimeter foundation walls would bear on continuous reinforced concrete strip footings extending at least 4 ft. – 0 in. below grade. With the recommended bearing capacity of the soil of 2 tons/sf, a typical interior footing would be 9 ft. - 0 in. x 9 ft. - 0 in. x 24 in. deep and a typical exterior footing would be 8 ft. x 8 ft. x 24 in. in the two story addition. The typical interior footing in the portion below the Gymnasium would be 8 ft. x 8 ft. x 24 in. and the typical exterior footing would be 7 ft. x 7 ft. x 26 in. deep. The exterior foundation walls would be 14 to 16 in. thick reinforced cast-in-place concrete walls in 24 to 36 in. wide x 12 in. deep continuous reinforced concrete strip footings around the perimeter of the addition extending a minimum of 4 ft. - 0 in. below finished grade.

Slabs-on-Grade

Based on the existing school construction, the lowest level of the proposed additions would be a 5 in. thick concrete slab-on-grade reinforced with welded wire fabric over a vapor barrier on 2 in. thick rigid insulation on 8 in. of compacted granular structural fill and a base course of 8 in. of compacted gravel at typical areas and 6" thick slab on grade in the Vocation Shop Areas.

SUPERSTRUCTURE

Floor Construction

Typical Floor Construction

A 5 ¼ in. light weight concrete composite metal deck slab reinforced with welded wire fabric on wide flange steel beams spanning between steel girders and columns. The weight of the structural steel is estimated to be 15 psf for the typical framing.

Roof Construction

Typical Roof Construction

The roof construction would be galvanized, corrugated 3 in. deep, Type 'N' metal roof deck spanning between wide flange steel beams and girders. At locations of roof supported mechanical equipment, a concrete slab will be provided similar to the typical supported slab. The weight of the structural steel is estimated to be 14 psf.

Low Roof Construction

The low roof will be a continuation of the typical floor slab. The weight of the structural steel is estimated to be 15 psf.

Gymnasium Roof Framing

The roof construction would be acoustic, galvanized, corrugated 3 in. deep, Type 'NA', metal roof deck at the Gymnasium spanning between long span steel joists. The weight of the steel joists and structural steel framing is estimated to be 14 psf.

Vertical Framing Elements

Columns

Columns will be hollow structural steel columns. Typical columns would be HSS 8 x 8 columns.

Lateral Load-Resisting System

The typical lateral load resisting system would be concentric braced frames comprised of HSS structural steel members.



South Shore Regional Vocational Technical High School

PSR Narrative – Fire Protection

New Construction

Introduction

The following is the Fire Protection System Narrative which defines the scope of work related to the Fire Protection System as well as the Basis of Design.

1. CODES

A. All Fire Protection work installed under Section 210000 shall comply with:

780CMR MA State Building Code

NFPA 13 Standard for the Installation of Sprinkler Systems (2013 Edition)

NFPA 14 Standard for the Installation of Standpipe and Hose Systems (2013 Edition)

NFPA 24 Standard for the Installation of Private Fire Service Mains (2013 edition)

NFPA 2001 Standard on Clean Agent Fire Extinguishing Systems (2012 Edition)

2. DESIGN PARAMETERS

A. The required fire protection systems include private fire service mains, manual standpipes, and automatic sprinklers.

B. The new building will be serviced by the municipal water system.

3. DESIGN INTENT

A. A new fire protection system will be provided, and sized to accommodate the new building.

B. A new underground private fire service main will be provided and sized to accommodate the new sprinkler system.

C. A hydrant flow test will be conducted to evaluate the existing municipal water supply and its adequacy to support the proposed fire protection system without the use of a fire pump.

D. A manual standpipe system will be provided.

E. An automatic sprinkler system will be installed and will provide complete building coverage.

F. Auto body paint and spray booths will be equipped with clean agent suppression systems.

G. Kitchen hoods will be furnished with integral Ansul dry chemical suppression systems. Hoods are to be provided by the kitchen equipment contractor.

4. FIRE PROTECTION SYSTEMS

A. UNDERGROUND PRIVATE FIRE SERVICE MAIN

1. A new underground private fire service main will be installed to serve the new building, and will be sized to accommodate the standpipe and sprinkler system.
2. The private fire service main shall extend from the valve at the street main, into the building, and above the floor slab. The private fire service main shall be installed by the Fire Protection contractor.
3. The private fire service will be equipped with a double check valve assembly.

B. MANUAL STANDPIPE SYSTEM

1. The new building will be provided with a manual standpipe system. Standpipes will be installed in each required exit stairwell. Each standpipe will be equipped with a supervised isolation valve. Hose valves will be located on each floor level.
2. Operating pressure for the manual standpipe system will be provided by the local Fire Department pumping apparatus.
3. The manual standpipe system will be equipped with a fire department connection located within 100' of a fire hydrant.

B. AUTOMATIC SPRINKLER SYSTEM

1. The new building will be provided with an automatic wet-pipe sprinkler system providing complete building coverage, including electric rooms and combustible concealed spaces. Sprinklers will not be installed in elevator shafts or machine rooms.
2. The sprinkler system shall be zoned, each with its own dedicated riser and distribution piping. Zones shall not exceed 52,000sf of horizontal floor area.
3. The system riser shall consist of a backflow preventer, supervised isolation valves, alarm check valves with trim, tamper switches, flow switches, pressure switches, and test and drain connections.
4. In addition to zones, each floor shall be equipped with individual floor control valve assemblies which shall include supervised control valves, check valves, flow switches, and test and drain assemblies.
5. The sprinkler system shall be equipped with a fire department connection.

5. DESIGN CRITERIA

A. OCCUPANCY HAZARD

1. Classrooms, corridors, restrooms, offices, cafeteria, gymnasium, locker rooms, and similar areas are considered to be of light hazard.
2. Loading docks, mechanical rooms, storage rooms, shops, and the kitchen and culinary arts service area are considered to be of Ordinary Hazard Group 1.
3. Legitimate stages, library stack rooms, and large storage areas are considered to be of Ordinary Hazard Group 2. Legitimate stages will require hose valves on either side of the proscenium opening.
4. No high piled storage or hazardous materials storage requiring special sprinkler coverage are anticipated.

B. DESIGN DENSITY

- | | |
|----------------------------|---|
| 1. Light Hazard | 0.10 GPM over a design area of 1,500 s.f. |
| 2. Ordinary Hazard Group 1 | 0.15 GPM over a design area of 1,500 s.f. |
| 3. Ordinary Hazard Group 2 | 0.20 GPM over a design area of 1,500 s.f. |

C. SPRINKLER COVERAGE AREA AND SPACING

- | | |
|----------------------------|---|
| 1. Light Hazard | 225 s.f., maximum of 15' between sprinklers |
| 2. Ordinary Hazard Group 1 | 130 s.f., maximum of 15' between sprinklers |
| 3. Ordinary Hazard Group 2 | 130 s.f., maximum of 15' between sprinklers |

6. SPRINKLERS

- A. Quick response, standard spray upright, pendent and sidewall sprinklers will be provided throughout the existing building and addition.
- B. Concealed pendent sprinkler with flat cover plates will be installed in all areas with suspended ceilings.
- C. Sidewall sprinklers will be installed under overhead doors.
- D. Dry sprinklers will be installed in freezers, coolers, and the carpentry shop dust collection system.
- E. Special application combustible concealed space sprinklers will be installed within interstitial spaces of exposed combustible construction.

7. PIPE AND FITTINGS

- A. All underground private fire service main piping shall be Class 52 cement lined ductile iron with bituminous outside coating and push-on joint. Fittings shall be ductile iron MegaLug type restrained mechanical joints. Joints between consecutive push-on pipe sections shall be restrained utilizing a boltless restraint joint system. Thrust blocks shall be provided and installed where required.

- B All piping inside the building for the Sprinkler System, two inches (2") and smaller in size, shall be Schedule 40 threaded black steel, conforming to ASTM Standards A53, A135, and/or A795 as applicable, and listed and approved for use in Fire Suppression Systems.
- C All Sprinkler System piping inside the building two and one-half inches (2½") and larger in size, unless otherwise noted, shall be Schedule 10 black steel pipe with rolled groove ends, conforming to ASTM Standards A53, A135 and/or A795 as applicable, and listed and approved for use in Fire Suppression Systems.
- D U.L. listed and F.M. approved groove fittings will be allowed. All fittings shall be approved by Underwriters' Laboratories for use in Sprinkler System and shall be designed and guaranteed for a working pressure of not less than 175-psi cold-water pressure.

8. HOSE VALVES

- A Standpipe hose valves shall be 2½" polished chrome plated brass angle valve with removable 2½" chrome plated brass cap with chain. Valves shall be rated for 300psi. Valve and coupling shall have external threads having the NH standard thread, as specified in NFPA 1963.

9. FIRE DEPARTMENT CONNECTION

- A The fire department sprinkler connection shall be a cast brass two-way inlet body with drop clappers, furnished with protective brass caps with chains, and decorative brass back plate.
- B The fire department standpipe connection shall be a cast brass four-way inlet body with drop clappers, furnished with protective brass caps with chains, and decorative brass back plate.
- C Connections shall be national hose threads of a size to match the local Fire Department Requirements, with brass adapters as necessary.
- D Piping between the fire department connections and system riser shall be equipped with a check valve. Check valves shall be provided with an automatic ball drip.

South Shore Regional Vocational Technical High School

PSR Narrative – Plumbing

New Construction

Introduction

The following is the Plumbing System Narrative which defines the scope of work related to the Plumbing System as well as the Basis of Design. The Plumbing Systems included in this narrative shall be designed and constructed for LEED certification.

1. CODES

A. All Plumbing work installed under Section 220000 shall comply with:

248CMR MA State Plumbing Code

2. DESIGN PARAMETERS

A. The required plumbing systems include cold water, hot water, hot water recirculation, sanitary, waste and vent system, kitchen grease waste system, storm drain system, laboratory waste and vent piping system, non-potable hot and cold water systems, natural gas, and compressed air system.

B. The new building will be serviced by the municipal water and sewer systems.

3. DESIGN INTENT

A. New domestic water piping systems will be provided, and sized to accommodate the new building.

B. Hot water will be provided by two high-efficiency gas-fired water heaters. The hot water will be a dual temperature system, each equipped with thermostatic mixing valve, circulator, hot water circulation piping, and balancing stations.

C. New sanitary waste and vent piping systems will be provided, and sized to accommodate the new building. The kitchen and culinary arts kitchen will be equipped with recessed grease interceptors serving the scullery sinks and dishwashers. A dedicated grease waste will exit the building and discharge into a 1,000-gallon grease interceptor with a 4" dedicated chamber vent which will be run back into the building and up through the roof.

D. Roof drains and storm drainage piping will be provided, and sized to accommodate the new building.

F. Laboratory waste and vent piping will be provided, and sized to accommodate the laboratory type science classrooms. The system will be provided with a neutralization tank with pH adjustment system (chemical injection). Non-potable hot and cold water piping systems will be provided and equipped with reduced pressure backflow preventers. Each laboratory type science classroom will be provided with an emergency safety station (eye wash and shower) with a dedicated thermostatic mixing valve.

- G. Shop compressed air systems and piping will be provided. Air compressors shall be tank mounted reciprocating piston type and shall be equipped with refrigerated dryers.
- H. Natural gas will be provided for the domestic water heaters, kitchen and culinary arts kitchen, HVAC equipment, as well as the plumbing and HVAC shops. The kitchen and culinary arts gas systems will be interlocked with the kitchen hoods, and emergency gas shut-off systems provided. Where kitchens include equipment with standing pilots, carbon monoxide detector(s) and control panels will be provided.
- I. Elevator sump pump, control panel, alarm, and oil separator will be provided, and will discharge to the sanitary drainage system.
- J. Plumbing work will include furnishing all equipment, fixtures, piping, accessories, and labor required for the complete and operational installation of the plumbing systems. All systems shall be tested and inspected.

4. PLUMBING SYSTEMS

A. DRAINAGE SYSTEMS

- 1. Sanitary, waste, and vent piping systems will be provided and will connect to all fixtures and equipment requiring such connections throughout the new building. The building's drain(s) will extend to a point 10'-0" of developed length beyond the building foundation. All plumbing system vents will extend through the roof.
- 2. A separate, dedicated kitchen grease waste system will be provided and extend to an exterior grease interceptor. A chamber vent for the grease interceptor will be provided and will run independently back in to the building and through the roof. The grease waste will extend to a point 10'-0" of developed length beyond the exterior grease interceptor. Grease waste piping will serve kitchen equipment and floor drains. Interior grease traps will be provided at specific kitchen equipment such as, but not limited to, dishwashers and scullery sinks.
- 3. A storm drainage system will be provided to drain all flat roofs using roof drains and interior storm drainage piping routed through the new building. Areas with pitched roofs will be provided with downspout boots (gutters and downspouts will be provided by the GC). Overflow drains will be provided where required and will discharge to grade via downspout nozzles. The storm drainage system will extend to a point 10'-0" of developed length beyond the building foundation.
- 4. A separate, dedicated laboratory waste and vent piping will be provided and will include a containment and chemical injection type pH adjustment system. The pH adjustment system shall monitor and record the outgoing effluent. The piping system will connect to each fixture discharging wastes which require treatment.

B. WATER SYSTEM

1. Domestic water service for the new building will be provided from the municipal water system. The water service will include valves, strainers, a water meter, pressure gauge and drain. The water meter will be interfaced with the building management system. Backflow preventers will be installed where required including, but not limited to, HVAC system make-up water connections, kitchen equipment, custodial detergent injection systems, and laboratory type science classrooms.
2. Hot and cold water distribution piping will be provided throughout the new building and connect to each plumbing fixture. Hot water recirculation systems will be provided.
3. Water heating will be provided by two high efficiency gas-fired water heaters with storage tanks. Thermostatic mixing valves will be installed to provide 140°F hot water to the kitchen fixtures and janitor sinks, and 120°F hot water to serve general use fixtures. Hot water at showers and public use lavatories will be further tempered to code allowed maximum temperatures by point-of-use pressure balancing and thermostatic mixing valves. Hot water recirculation pumps and piping will be provided for each system. Sub-meters will be installed and interfaced with the building management system. Proposed systems to be sub-metered include hot water and kitchen dishwashers.

5. FIXTURES

A. The new building will be furnished with all new fixtures, including floor mounted carriers, supports, connections, fittings, and any incidental items required for a complete installation. Toilets shall be wall-hung, white vitreous china with flush valves. Urinals shall be wall-hung, white vitreous china with flush valves. Lavatories shall be wall-hung or drop-in white vitreous china with manual faucets. General use sinks shall be stainless steel with manual faucets. Showers, if provided, will be furnished with thermostatic and pressure balancing mixing valves. Water coolers shall be stainless steel with bottle fillers.

B. The initial proposed flow rates for the new plumbing fixtures are as follows:

- | | |
|------------------|-----------|
| 1. Toilets | 1.28 gpf |
| 2. Urinals | 0.125 gpf |
| 3. Lavatories | 0.35 gpm |
| 4. Sinks | 1.5 gpm |
| 5. Showers | 1.5 gpm |
| 6. Water Coolers | 0.5 gpm |

6. DRAINS

- A. Floor drains will be provided where required throughout the new building. Floor drains shall be installed in restrooms with more than one flush valve type fixture, wet mechanical spaces, kitchens, at each emergency safety station, and where necessary for shop or process uses.
 - B. Floor drains will be connected to the appropriate drainage and venting system.
 - C. Floor drains in restrooms will be equipped with pressure drop type trap primers.
 - D. Floor drains in all other spaces will be equipped with electronic automatic trap priming devices.
7. WALL HYDRANTS AND HOSE BIBBS
- A. Wall hydrants shall be installed along the perimeter of the building. Wall hydrants shall be of the key-operated freeze-proof self-draining type with integral vacuum breaker and bronze box and door.
 - B. Hose bibbs shall be installed in restrooms with more than one flush valve type fixture, wet mechanical spaces, and where necessary for shop or process uses. Hose bibbs in restrooms shall be chrome plated key-operated type. Hose bibbs in shops and mechanical spaces will be rough bronze with metal wheel handles. All hose bibbs shall be equipped with vacuum breakers.
8. INSULATION
- A. All water piping and storm drainage piping will be insulated.

South Shore Regional Vocational Technical High School

PSR Narrative – Fire Protection

Renovation / Addition

Introduction

The original 76,150 square foot (sf) school building was constructed 62 years ago, and was not sprinklered at the time of construction. A 6,250 sf addition was added in 1978, but the general laws and building code at that time evidently did not require the installation or retrofitting of an automatic fire suppression system. It appears that there have been no modifications or renovations since that time which would have required retrofitting the building with an automatic fire suppression system.

A 38,600 sf addition was constructed in 1992. The addition was equipped with an automatic wet pipe fire sprinkler system, but the original building and 1978 addition were not. Two zones were provided.

The proposed work includes demolition of a portion of the existing building, renovation of the remainder of the existing building, and construction of a new addition.

The following is the Fire Protection System Narrative which defines the scope of work related to the Fire Protection System as well as the Basis of Design.

1. CODES

A. All Fire Protection work installed under Section 210000 shall comply with:

780CMR MA State Building Code

NFPA 13 Standard for the Installation of Sprinkler Systems (2013 Edition)

NFPA 24 Standard for the Installation of Private Fire Service Mains (2013 edition)

NFPA 2001 Standard on Clean Agent Fire Extinguishing Systems (2012 Edition)

2. DESIGN PARAMETERS

A. The required fire protection system includes private fire service mains and automatic sprinklers.

B. The existing building and addition will be serviced by the municipal water system.

3. DESIGN INTENT

A. A new fire protection system will be provided, and sized to accommodate the unsprinklered portion of the existing building and the new addition.

B. A new underground private fire service main will be provided and sized to accommodate the new sprinkler system.

- C. A hydrant flow test will be conducted to evaluate the existing municipal water supply and its adequacy to support the proposed fire protection system without the use of a fire pump.
- D. An automatic sprinkler system will be installed and will provide complete building coverage.
- F. Existing auto body paint and spray booth suppression systems will remain.
- G. Existing kitchen hood suppression systems will remain.

4. FIRE PROTECTION SYSTEMS

A. UNDERGROUND PRIVATE FIRE SERVICE MAIN

1. A new underground private fire service main will be installed to serve the existing unsprinklered building and new addition, and will be sized to accommodate the sprinkler system.
2. The private fire service main shall extend from the valve at the street main, into the building, and above the floor slab. The private fire service main shall be installed by the Fire Protection contractor.
3. The private fire service will be equipped with a double check valve assembly.

B. AUTOMATIC SPRINKLER SYSTEM

1. The existing unsprinklered building and new addition will be provided with an automatic wet-pipe sprinkler system providing complete building coverage, including electric rooms and combustible concealed spaces. Sprinklers will not be installed in elevator shafts or machine rooms.
2. The sprinkler system shall be zoned, each with its own dedicated riser and distribution piping. Zones shall not exceed 52,000sf of horizontal floor area.
3. The system riser shall consist of a backflow preventer, supervised isolation valves, alarm check valves with trim, tamper switches, flow switches, pressure switches, and test and drain connections.
4. The sprinkler system shall be equipped with a fire department connection.

5. DESIGN CRITERIA

A. OCCUPANCY HAZARD

1. Classrooms, corridors, restrooms, offices, cafeteria, gymnasium, locker rooms, and similar areas are considered to be of light hazard.
2. Loading docks, mechanical rooms, storage rooms, shops, and the kitchen and culinary arts service area are considered to be of Ordinary Hazard Group 1.

3. Legitimate stages, library stack rooms, and large storage areas are considered to be of Ordinary Hazard Group 2. Legitimate stages will require hose valves on either side of the proscenium opening.
4. No high piled storage or hazardous materials storage requiring special sprinkler coverage are anticipated.

B. DESIGN DENSITY

- | | |
|----------------------------|---|
| 1. Light Hazard | 0.10 GPM over a design area of 1,500 s.f. |
| 2. Ordinary Hazard Group 1 | 0.15 GPM over a design area of 1,500 s.f. |
| 3. Ordinary Hazard Group 2 | 0.20 GPM over a design area of 1,500 s.f. |

C. SPRINKLER COVERAGE AREA AND SPACING

- | | |
|----------------------------|---|
| 1. Light Hazard | 225 s.f., maximum of 15' between sprinklers |
| 2. Ordinary Hazard Group 1 | 130 s.f., maximum of 15' between sprinklers |
| 3. Ordinary Hazard Group 2 | 130 s.f., maximum of 15' between sprinklers |

6. SPRINKLERS

- A. Quick response, standard spray upright, pendent and sidewall sprinklers will be provided throughout the existing building and addition.
- B. Concealed pendent sprinkler with flat cover plates will be installed in all areas with suspended ceilings.
- C. Sidewall sprinklers will be installed under overhead doors.
- D. Dry sprinklers will be installed in freezers, coolers, and the carpentry shop dust collection system.
- E. Special application combustible concealed space sprinklers will be installed within interstitial spaces of exposed combustible construction.

7. PIPE AND FITTINGS

- A. All underground private fire service main piping shall be Class 52 cement lined ductile iron with bituminous outside coating and push-on joint. Fittings shall be ductile iron MegaLug type restrained mechanical joints. Joints between consecutive push-on pipe sections shall be restrained utilizing a boltless restraint joint system. Thrust blocks shall be provided and installed where required.
- B. All piping inside the building for the Sprinkler System, two inches (2") and smaller in size, shall be Schedule 40 threaded black steel, conforming to ASTM Standards A53, A135, and/or A795 as applicable, and listed and approved for use in Fire Suppression Systems.

- C. All Sprinkler System piping inside the building two and one-half inches (2½") and larger in size, unless otherwise noted, shall be Schedule 10 black steel pipe with rolled groove ends, conforming to ASTM Standards A53, A135 and/or A795 as applicable, and listed and approved for use in Fire Suppression Systems.
- D. U.L. listed and F.M. approved groove fittings will be allowed. All fittings shall be approved by Underwriters' Laboratories for use in Sprinkler System and shall be designed and guaranteed for a working pressure of not less than 175-psi cold-water pressure.

8. FIRE DEPARTMENT CONNECTION

- A. The fire department sprinkler connection shall be a cast brass two-way inlet body with drop clappers, furnished with protective brass caps with chains, and decorative brass back plate.
- B. The fire department standpipe connection shall be a cast brass four-way inlet body with drop clappers, furnished with protective brass caps with chains, and decorative brass back plate.
- C. Connections shall be national hose threads of a size to match the local Fire Department Requirements, with brass adapters as necessary.
- D. Piping between the fire department connections and system riser shall be equipped with a check valve. Check valves shall be provided with an automatic ball drip.

South Shore Regional Vocational Technical High School

PSR Narrative – Plumbing

Renovation / Addition

The original 76,150 square foot (sf) school building was constructed 62 years ago. A 6,250 sf addition was added in 1978, and 38,600 sf addition was constructed in 1992.

The proposed work includes demolition of a portion of the existing building, renovation of the remainder of the existing building, and construction of a new addition.

Introduction

The following is the Plumbing System Narrative which defines the scope of work related to the Plumbing System as well as the Basis of Design. The Plumbing Systems included in this narrative shall be designed and constructed for LEED certification.

1. CODES

A. All Plumbing work installed under Section 220000 shall comply with:

248CMR MA State Plumbing Code

2. DESIGN PARAMETERS

A. The required plumbing systems include cold water, hot water, hot water recirculation, sanitary, waste and vent system, kitchen grease waste system, storm drain system, laboratory waste and vent piping system, non-potable hot and cold water systems, natural gas, and compressed air system.

B. The renovated building and addition will be serviced by the municipal water and sewer systems.

3. DESIGN INTENT

A. Existing domestic water piping systems will be demolished and replaced with new, sized to accommodate the existing building renovations and the new addition.

B. The existing gas-fired water heaters, storage tank, circulators, and mixing valves are to remain. An additional hot water storage tank is to be installed, and the piping around the mixing valves and circulators to be rearranged and equipped with pressure gauges, check valves, balancing valves, and thermometers.

C. Existing sanitary waste and vent piping systems will be demolished and replaced with new, sized to accommodate the existing building renovations and the new addition. The kitchen and culinary arts kitchen will be equipped with recessed grease interceptors serving the scullery sinks and dishwashers. A dedicated grease waste will exit the building and discharge into a 1,000-gallon grease interceptor with a 4" dedicated chamber vent which will be run back into the building and up through the roof.

- D. Existing roof drains and storm drainage piping will be replaced as needed and modified where required. A new storm drainage piping system will be provided for the new addition.
- E. Existing laboratory waste and vent piping will be demolished and replaced with new laboratory waste and vent piping, neutralization tank with pH adjustment system (chemical injection), and non-potable hot and cold water piping systems equipped with reduced pressure backflow preventers. Each laboratory type science classroom will be provided with an emergency safety station (eye wash and shower) with a dedicated thermostatic mixing valve.
- F. Shop compressed air systems and piping will remain and be modified as required.
- G. The natural gas piping will remain and be identified as low or elevated pressure. New gas piping will be provided for new equipment.
- H. The kitchen and culinary arts gas systems will be interlocked with the kitchen hoods, and new emergency gas shut-off systems provided. Where kitchens include equipment with standing pilots, carbon monoxide detector(s) and control panels will be provided.
- I. An elevator sump pump, control panel, alarm, and oil separator will be provided, and will discharge to the sanitary drainage system.
- J. Plumbing work will include furnishing all equipment, fixtures, piping, accessories, and labor required for the complete and operational installation of the plumbing systems. All systems shall be tested and inspected.

4. PLUMBING SYSTEMS

A. DRAINAGE SYSTEMS

- 1. Sanitary, waste, and vent piping systems will be provided and will connect to all fixtures and equipment requiring such connections throughout the renovated building and addition. The building's drain(s) will extend to a point 10'-0" of developed length beyond the building foundation. All plumbing system vents will extend through the roof.
- 2. A separate, dedicated kitchen grease waste system will be provided and extend to an exterior grease interceptor. A chamber vent for the grease interceptor will be provided and will run independently back in to the building and through the roof. The grease waste will extend to a point 10'-0" of developed length beyond the exterior grease interceptor. Grease waste piping will serve kitchen equipment and floor drains. Interior grease traps will be provided at specific kitchen equipment such as, but not limited to, dishwashers and scullery sinks.
- 3. A storm drainage system will be provided to drain all flat roofs using roof drains and interior storm drainage piping routed through the renovated building and addition. Areas with pitched roofs will be provided with downspout boots (gutters and downspouts will be provided by the GC). Overflow drains will be provided where required and will discharge to grade via downspout

nozzles. The storm drainage system will extend to a point 10'-0" of developed length beyond the building foundation.

4. A separate, dedicated laboratory waste and vent piping will be provided and will include a containment and chemical injection type pH adjustment system. The pH adjustment system shall monitor and record the outgoing effluent. The piping system will connect to each fixture discharging wastes which require treatment.

B. WATER SYSTEM

1. Domestic water service for the renovated building and addition will be provided from the municipal water system. The water service will include valves, strainers, a water meter, pressure gauge and drain. The water meter will be interfaced with the building management system. Backflow preventers will be installed where required including, but not limited to, HVAC system make-up water connections, kitchen equipment, custodial detergent injection systems, and laboratory type science classrooms.
2. Hot and cold water distribution piping will be provided throughout the renovated building and addition and connect to each plumbing fixture. Hot water recirculation systems will be provided.
3. Water heating will be provided by existing gas-fired water heaters and storage tank. A second storage tank is to be installed. Thermostatic mixing valves will remain and be adjusted to provide 140°F hot water to the kitchen fixtures and janitor sinks, and 120°F hot water to serve general use fixtures. Hot water at showers and public use lavatories will be further tempered to code allowed maximum temperatures by point-of-use pressure balancing and thermostatic mixing valves. Hot water recirculation pumps will remain. Sub-meters will be installed and interfaced with the building management system. Proposed systems to be sub-metered include hot water and kitchen dishwashers.

5. FIXTURES

- A. The renovated building and addition will be furnished with all new fixtures, including floor mounted carriers, supports, connections, fittings, and any incidental items required for a complete installation. Toilets shall be wall-hung, white vitreous china with flush valves. Urinals shall be wall-hung, white vitreous china with flush valves. Lavatories shall be wall-hung or drop-in white vitreous china with manual faucets. General use sinks shall be stainless steel with manual faucets. Showers, if provided, will be furnished with thermostatic and pressure balancing mixing valves. Water coolers shall be stainless steel with bottle fillers.
- B. The initial proposed flow rates for the new plumbing fixtures are as follows:
 1. Toilets 1.28 gpf
 2. Urinals 0.125 gpf
 3. Lavatories 0.35 gpm

- 4. Sinks 1.5 gpm
- 5. Showers 1.5 gpm
- 6. Water Coolers 0.13 gpm

6. DRAINS

- A. Floor drains will be provided where required throughout the renovated building and addition. Floor drains shall be installed in restrooms with more than one flush valve type fixture, wet mechanical spaces, kitchens, at each emergency safety station, and where necessary for shop or process uses.
- B. Floor drains will be connected to the appropriate drainage and venting system.
- C. Floor drains in restrooms will be equipped with pressure drop type trap primers.
- D. Floor drains in all other spaces will be equipped with electronic automatic trap priming devices.

7. WALL HYDRANTS AND HOSE BIBBS

- A. Wall hydrants shall be installed along the perimeter of the building. Wall hydrants shall be of the key-operated freeze-proof self-draining type with integral vacuum breaker and bronze box and door.
- B. Hose bibbs shall be installed in restrooms with more than one flush valve type fixture, wet mechanical spaces, and where necessary for shop or process uses. Hose bibbs in restrooms shall be chrome plated key-operated type. Hose bibbs in shops and mechanical spaces will be rough bronze with metal wheel handles. All hose bibbs shall be equipped with vacuum breakers.

8. INSULATION

- A. All water piping and storm drainage piping will be insulated.



MECHANICAL SYSTEMS

General

1. Please note that this mechanical system narrative is written to yield two separate system designs/prices. The two systems share several similar pieces and parts,
 - a. **AHU with Displacement (Option 1):** Price should include all descriptions tagged Option 1 and shall not include anything tagged option 2. Option 1 consists of an air source heat pump chiller that feeds AHUs and VAVs for displacement ventilation throughout the building.
 - b. **DOAS with VRF (Option 2):** Price should include all descriptions tagged Option 2 and shall not include anything tagged option 1. Option 2 consists of an air source heat pump chiller that feeds DOAS units with VRF units throughout the building.

General Conditions

1. The mechanical systems are based on heating and cooling the building while meeting the objective for energy efficiency. Heating design shall be 70°F and cooling design shall be 75°F.
 - c. ASHRAE Fundamentals summer outdoor air design conditions (87.6DB, 71.6WB).
 - d. ASHRAE Fundamentals winter outdoor air design conditions (8.5DB).

Materials and Methods

1. Include the following basic materials and methods of construction:
 - a. All ductwork and accessories shall meet SMACNA standards. After installation of duct is complete third party shall clean all ductwork.
 - b. Provide all HVAC equipment with extra set of filters.
 - c. Seismic restraints shall be designed and installed as required per State of Massachusetts Building Code and Fire Safety Code which requires the seal of a licensed professional engineer. Abovementioned professional engineer will be required to verify installation is correct and complete per seismic code. This includes piping, ductwork, equipment, and equipment bases.
 - d. Design isolators for equipment installed outdoors to provide adequate restraint to withstand the force of a 100 mph wind applied to any exposed surface of the isolated equipment. Isolators for outdoor equipment shall have bolt holes for attachment to equipment and to supports. The vibration isolation Vendor shall submit verifying shear and over turning calculations, for their product and equipment installation arrangement, stamped by a licensed Professional Engineer. Provide glass fiber insulation for all hydronic piping and ductwork. Insulation shall be installed to meet the Energy Conservation Code.
 - e. Provide glass fiber insulation for all hydronic piping and ductwork. Insulation shall be installed to meet the Energy Code. Jacketing shall be provided for piping exterior to the building.
 - f. Provide elastomeric pipe insulation for all refrigerant piping. Insulation shall be installed to meet the Energy Code. Jacketing shall be provided for piping exterior to the building.

- g. Provide firestopping around mechanical penetrations in accordance with fire stopping requirements. System shall be capable of maintaining against flame and gases. System shall be UL listed and comply with ASTM E814.
- h. Provide mechanical identification for mechanical systems. Identification shall comply with ANSI A13.1.
- i. All pipe connections shall be installed to allow for freedom of movement of the piping during expansion and contraction without springing. Swing joints, expansion loops and expansion joints with proper anchors and guides shall be provided where shown.
- j. Provide vibration isolation for hydronic piping, ductwork, and equipment.
- k. Hydronic piping 2-1/2"Ø and under shall be Type L copper. Piping 3" and over shall be ASTM A 53; Schedule 10 black steel pipe with welded, flanged or grooved joints.
- l. Hydronic piping below grade shall be Schedule 40 steel with welded fittings and polyethylene jacketing.
- m. All equipment served by hydronic piping shall have isolation valves on the supply and return lines. Isolation valves shall also be provided at branch take-offs.
- n. Provide 30% propylene glycol solution in the chiller and hot water heating systems.
- o. All motors (fan and pump) 3 HP and larger shall be high efficiency and provided with VFD. VFDs shall be by ABB or approved equal.
- p. Provide roof curb type 2 (RC-2) for all roof mounted air handling equipment.
 - i. Type RC-2 isolation bases shall be a prefabricated assembly consisting of a structural steel frame and steel spring isolation system that also forms the roof curb under the isolated equipment. Spring isolators shall be selected and positioned along the curb to achieve the minimum static deflection called for in the schedule. The static deflection shall be constant around the entire periphery of the base. Springs shall be free standing, laterally stable with a diameter of not less than 0.8 times the compressed height, and have additional travel-to-solid that is at least 50% of the rated deflection. Springs and limits stops shall be provided at the corners of the base to limit equipment movement to 1/4" under wind load.
 - ii. The isolation curb base shall be made weather tight by sealing all around the periphery with closed cell neoprene, flexible membrane or light gauge spring metal loop, which shall in no way inhibit the vibration isolation of the spring elements. A closed cell sponge gasket or field caulking shall be used between the equipment unit and the isolation curb base and between the isolation curb and roof curb to form a weather-tight seal.

Code Compliance

- b. All systems will be designed to code compliance for percentage of outside (fresh) air and will meet the requirements in ASHRAE 90.1, International Mechanical Code, International Energy Code as well as ASHRAE 62.1.
- c. All systems will be designed to code compliance and will meet or exceed requirements stated in:
 - i. ASHRAE 90.1,
 - ii. International Mechanical Code,
 - iii. International Energy Code
 - iv. ASHRAE 62.

HVAC Controls

- 1. A Building Management System (BMS) shall be installed to control the mechanical and selected electrical systems. BMS shall be by the Temperature Control vendor approved by the owner.
 - a. The system shall include a personal computer with graphics based display and capabilities for alarming off-site.
 - b. The BMS shall provide temperature control for all HVAC systems and control select lighting in the building.
 - c. The system shall be programmed for occupied/unoccupied cycles for the air handling equipment, with an override feature for spaces that would be utilized after-hours.
 - d. The system shall monitor occupancy sensing devices to control the amount of outside air being brought in to each classroom to assist in energy conservation.
 - e. The BMS shall be accessible from any Web browser and mobile device with proper authorization.

Heating and Cooling Plant

- 1. The cooling and heating plant will be sized for 100% cooling and heating load and consist of an air to water source Heat Pump modular chiller that provides simultaneous heating and cooling similar to Trane Ascend or approved equal. Refer to Table One below for size. The chiller shall have a sound enclosure surrounding on all sides; consult the chiller manufacturer on the exact size and thickness of the enclosure to provide acceptable sound levels in the residential neighborhoods.
- 2. The primary chilled water pumping plant will consist of two (2) pumps and a buffer tank. Each pump will be sized for the full system load (N+1) to provide for complete redundancy. The pumps will be vertical inline type controlled by VFD's and shall be mounted on 6" thick concrete housekeeping pads located in the mechanical room. The primary chilled water pumps will circulate chilled water through the heat recovery chiller to the low loss header separating the primary & secondary sides.

3. The secondary chilled water pumping plants will consist of two (2) pumps. Each pump will be sized for the full system load (N+1) to provide for complete redundancy. The pumps will be vertical inline type controlled by VFD's and shall be mounted on 6" thick concrete housekeeping pads located in the mechanical room. The secondary chilled water pumps will supply chilled water to air handling units located throughout the building.
4. The primary heating hot water pumping plant will consist of two (2) pumps and a buffer tank for the heat recovery chiller and one pump for each boiler. Where two (2) pumps are provided, each pump will be sized for the full system load (N+1) to provide for complete redundancy. The pumps will be vertical inline type controlled by VFD's and shall be mounted on 6" thick concrete housekeeping pads located in the mechanical room. The primary heating water pumps will circulate heating hot water through the heat recovery chiller or boiler to the low loss header separating the primary & secondary sides.
5. The primary heating hot water pumping plant will also consist of two boiler pumps, one for each gas backup boiler. The pumps will be vertical inline type controlled by ECM and shall be mounted inline with the hot water piping located in the mechanical room.
6. The secondary heating hot water pumping plants will consist of two (2) pumps. Each pump will be sized for the full system load (N+1) to provide for complete redundancy. The pumps will be vertical inline type controlled by VFD's and shall be mounted on 4" thick concrete housekeeping pads located in the mechanical room. The secondary heating hot water pumps will supply heating hot water to air handling units as well as hot water terminal units (fin-tube baseboard, radiant panels, VAV reheat coils, etc.) located throughout the building.
7. The heating plant will consist of two (2) commercial gas fired condensing boilers that provide back up heat for the heat recovery chiller. The boiler shall be Lochinvar Crest or similar. Refer to Table One for size.
8. The mechanical room will consist of the pumps, buffer tanks, boiler, expansions tanks, glycol make up units, and other appurtenances.

Table One:

Architectural Option	Heat Recovery Chiller Size	Boiler Size
805 Enrollment – 240,000 sf	(4) 160 Ton Units	(3) 3,000,000 btuh
900 Enrollment – 260,000 sf	(4) 180 Ton Units	(3) 3,250,000 btuh

Heating, Ventilation and Air Conditioning

1. Classroom and Offices (RTU-1,RTU-2, RTU-3, RTU-4) **(Option 1 – Displacement)**

- a. Four (4) 8,000 CFM roof top mounted air handling units (AHUs) will be provided for the four (4) classroom blocks on the second floor. AHUs shall be Performance Climate Changers by Trane or approved equal. The AHU will be provided with a hot water preheat coil, chilled water coil, hot water reheat coil, energy recovery wheel, 100% outside air economizer, MERV-8 prefilter and MERV-13 final filter. The outside air ventilation provided by the unit will be demand controlled (shall modulate to maintain the space CO2 setpoint), thereby reducing energy consumption. This air will be provided via air only (non fan powered) variable air volume (VAV) terminal units with hot water reheat coils. These VAV units will generally act as the secondary sources of heating and sensible cooling for the classrooms.
- b. Each classroom will be served by three (3) 400 CFM displacement ventilation diffusers Price model DFE- 36x48x16. Each diffuser will have a 10" round duct connected to its inlet which will convey the air from the AHU. The displacement diffusers will provide the space with both heating and cooling and will be located in the corners of the room at floor level to provide maximum occupant comfort.
- c. Each office space will be served by one (1) 300 CFM ceiling diffuser Price SMD. The diffuser will provide the space with both heating and cooling and will be located near the exterior wall of the room to provide maximum occupant comfort.
- d. Each Science Classroom will be equipped with a 1,600 CFM dedicated roof mounted lab exhaust, high plume discharge fans, Loren Cook Model TCNH-LE or approved equal.
- e. Each Science Prep Room will be equipped with a 800 CFM dedicated roof mounted lab exhaust, high plume discharge fans, Loren Cook Model TCNH-LE or approved equal.
- f. Each Kiln room will be equipped with a 400 CFM inline exhaust fan, Loren Cook Model SQN Series or approved equal.
- g. The mechanical room will be equipped with a 1,200 CFM inline exhaust fan, Loren Cook Model SQN Series or approved equal.
- h. The bathrooms and other spaces requiring general exhaust will be served by four (4) rooftop mounted, upblast fan, Loren Cook Model ACRU or approved equal.

2. Classroom and Offices (DOAS-1, DOAS-2,) **(Option 2 – DOAS with VRF)**

- a. One (1) 10,000 CFM and one (8,000 CFM) roof top mounted dedicated outdoor air systems (DOAS) will be provided for the east and west classroom wings on the second floor. DOAS shall be Performance Climate Changers by Trane or approved equal. Preconditioned outside ventilation air will be distributed through ductwork to each space. These DOAS unit will be provided with hot water preheat coil, chilled water coil, and hot water reheat coil, energy recover wheel, 100% outside air economizer, MERV-8 prefilter and MERV-13 final filter.
- b. Each of the Classrooms, Offices and Teacher planning shall be heated and cooled by use of a Variable Refrigerant Flow (VRF) system comprised of concealed fan coil units suspended above the ceilings. This system will be capable of simultaneous heating and cooling. Each Fan Coil Unit will be controlled independently.

- c. In general, each 2nd floor classroom shall receive (1) ducted style VRF unit located above the ceiling grid. Units shall typically be 2-ton Daikin Model 'FXSQ' or approved equal. Total of approximately (30) units.
 - d. In general, each offices shall receive (1) cassette style VRF unit located within the ceiling grid. Units shall typically be 0.5 ton Daikin Model 'FXFQ' or approved equal. Total of approximately (20) units.
 - e. Conference rooms, open plan offices and large corridors shall receive (1) ducted style VRF unit located above the ceiling grid. Units shall typically be 1-ton Daikin Model 'FXSQ' or approved equal. Total of approximately (4) units.
 - f. There will be a total of four (4) air source heat recovery type condensing units roughly zoned in the same manner as the DOAS units serving the indoor FCU's. The condensing units shall be roof mounted on equipment rails to ensure the units are mounted above the snow line and shall be provided with snow/hail guards. Condensing units shall be Daikin VRV-IV/X Series or approved equal. The breakdown of the unit is as follows:
 - i. VRF-CU-1: 18 ton
 - ii. VRF-CU-2: 20 ton
 - iii. VRF-CU-3: 20 ton
 - iv. VRF-CU-4: 18 ton
 - g. Each Science Classroom will be equipped with a 1,600 CFM dedicated roof mounted lab exhaust, high plume discharge fans, Loren Cook Model TCNH-LE or approved equal.
 - h. Each Science Prep Room will be equipped with a 800 CFM dedicated roof mounted lab exhaust, high plume discharge fans, Loren Cook Model TCNH-LE or approved equal.
 - i. Each Kiln room will be equipped with a 400 CFM inline exhaust fan, Loren Cook Model SQN Series or approved equal.
 - j. The mechanical room will be equipped with a 1,200 CFM inline exhaust fan, Loren Cook Model SQN Series or approved equal.
3. Gym (RTU-5, RTU-6)
- a. One (1) 10,000 CFM and one (1) 6,000 CFM roof top mounted air handling units (AHUs) will be provided for the gym. AHUs shall be Performance Climate Changers by Trane or approved equal. It will be provided with hot water preheat coil, chilled water coil, and hot water reheat coil, energy recover wheel, 100% outside air economizer, MERV-8 prefilterer and MERV-13 final filter. The unit will also incorporate demand control ventilation which will modulate the amount of outside air to the space based on occupancy and CO2.
4. Auditorium (RTU-7)
- a. One (1) 10,000 CFM roof top mounted air handling unit (AHU) will be provided for the Auditorium. AHU shall be Performance Climate Changers by Trane or approved equal. It will be provided with hot water preheat coil, chilled water coil, and hot water reheat coil, energy recover

- wheel, 100% outside air economizer, MERV-8 prefilterer and MERV-13 final filter. The unit will also incorporate demand control ventilation which will modulate the amount of outside air to the space based on occupancy and CO₂.
5. Library, Media, Admin Suite (RTU-8) **(Option 1 – Displacement)**
- a. One (1) 7,000 CFM roof top mounted air handling unit (AHU) will be provided for the Library, Media and Admin Suite. AHU shall be Performance Climate Changers by Trane or approved equal. It will be provided with hot water preheat coil, chilled water coil, and hot water reheat coil, energy recover wheel, 100% outside air economizer, MERV-8 prefilterer and MERV-13 final filter. The unit will also incorporate demand control ventilation which will modulate the amount of outside air to the space based on occupancy and CO₂. This air will be provided via air only (non-fan powered) variable air volume (VAV) terminal units with hot water reheat coils.
6. Library, Media, Admin (DOAS-5) **(Option 2 – DOAS with VRF)**
- a. One (1) 4,000 CFM roof top mounted dedicated outdoor air systems (DOAS) will be provided for the Library, Media and Admin Suite. DOAS shall be Performance Climate Changers by Trane or approved equal. Preconditioned outside ventilation air will be distributed through ductwork to each space. These DOAS unit will be provided with hot water preheat coil, chilled water coil, and hot water reheat coil, energy recover wheel, 100% outside air economizer, MERV-8 prefilterer and MERV-13 final filter.
 - b. Each of the Offices, Teacher Planning, Media Rooms, and Library Stack shall be heated and cooled by use of a Variable Refrigerant Flow (VRV) system comprised of concealed fan coil units suspended above the ceilings. This system will be capable of simultaneous heating and cooling. Each Fan Coil Unit will be controlled independently.
 - c. In general, the media center and library shall receive (4) ducted style VRF unit located above the ceiling grid. Units shall typically be 3-ton Daikin Model 'FXSQ' or approved equal.
 - d. In general, in the Admin/Office/ Nurse suite each office shall receive (1) cassette style VRF unit located within the ceiling grid. Units shall typically be 0.5 ton Daikin Model 'FXFQ' or approved equal. Total of approximately (12) units.
 - e. Conference rooms, open plan offices and large exterior corridors shall receive (1) ducted style VRF unit located above the ceiling grid. Units shall typically be 1-ton Daikin Model 'FXSQ' or approved equal. Total of approximately (6) units.
 - f. There will be a total of two (2) air source heat recovery type condensing units roughly zoned in the same manner as the DOAS units serving the indoor FCU's. The condensing units shall be roof mounted on equipment rails to ensure the units are mounted above the snow line and shall be provided with snow/hail guards. Condensing units shall be Daikin VRV-IV/X Series or approved equal. The breakdown of the unit is as follows:
 - i. VRF-CU-1: 12 ton
 - ii. VRF-CU-2: 12 ton
7. Commons (RTU-9)

- a. One (1) 10,000 CFM roof top mounted air handling unit (AHU) will be provided for the Commons. AHU shall be Performance Climate Changers by Trane or approved equal. It will be provided with hot water preheat coil, chilled water coil, and hot water reheat coil, energy recover wheel, 100% outside air economizer, MERV-8 prefilterer and MERV-13 final filter. The unit will also incorporate demand control ventilation which will modulate the amount of outside air to the space based on occupancy and CO2.
8. Kitchen & Servery
- a. Kitchen exhaust hoods (Dishwasher & Grease) shall be designed and specified by the Kitchen Equipment Consultant. Grease exhaust hoods as required shall be installed per NFPA 96 with carbon steel ductwork and up-blast exhaust fans with ventilated curbs. Fan serving grease hood shall variable speed 3,400 CFM by Loren Cook or approved equal. Dishwasher exhaust fan shall be 600 CFM by Loren Cook or approved equal. Make-up air will be provided by adjacent cafeteria unit deleting the need to provide a dedicated make-up air unit for the kitchen.
 - b. Kitchen hoods and kitchen exhaust ductwork shall be protected by dry chemical type systems and shall be connected to the fire alarm system.
9. Locker Rooms & Fitness (RTU-10)
- a. One (1) 6,000 CFM roof top mounted air handling unit (AHU) will be provided for the Locker Rooms and Fitness. AHU shall be Performance Climate Changers by Trane or approved equal. It will be provided with hot water preheat coil, chilled water coil, and hot water reheat coil, energy recover wheel, 100% outside air economizer, MERV-8 prefilterer and MERV-13 final filter. The unit will also incorporate demand control ventilation which will modulate the amount of outside air to the space based on occupancy and CO2. This air will be provided via air only (non-fan powered) variable air volume (VAV) terminal units with hot water reheat coils.
10. Vocational (Shop) Spaces (ERV-1, ERV-2, ERV-3, ERV-4, ERV-5, ERV-6, ERV-7, ERV-8, ERV-9, ERV-10)
- a. One (1) Energy Recovery Ventilators (ERVs) will be provided for each Vocational Space located indoors on the mezzanine above the vocational classroom for each Vocational space. ERVs shall be Performance Climate Changers by Trane or approved equal. The ERVs will be provided with hot water coil, plate type heat exchanger, 100% outside air economizer, MERV-8 prefilterer and MERV-13 final filter. Ductwork at the inlet to the each unit shall incorporate return air and outside air motorized dampers to allow 100% outside air or partial return air / outside air operation. ERVs 1-6 will have heating and ventilation only.
 - b. Electrical shop (ERV-7), Culinary Arts (ERV-8), Cosmetology (ERV-9), Vet School (ERV-10) ERV will have hot water preheat coil, chilled water coil and hot water reheat coil to provide a fully conditioned space.
 - c. Refer to table for ERV sizing:

ERV-1	Serves Auto	15,000 CFM
ERV-2	Serves M.E.T.	10,000 CFM
ERV-2	Serves MH Fab	10,000 CFM

ERV-3	Serves Hort.	10,000 CFM
ERV-4	Serves Carpentry	15,000 CFM
ERV-5	Serves HVAC	8,000 CFM
ERV-6	Serves Plumbing	8,000 CFM
ERV-7	Serves Electrical	8,000 CFM
ERV-8	Serves Culinary Arts	10,000 CFM
ERV-9	Serves Cosmetology	6,000 CFM
ERV-10	Serves Vet School	8,000 CFM

- d. Auto Mechanic Shop shall have the following additional mechanical equipment.
 - i. Provide central vehicle exhaust system. Provide Loren Cook or approved equal central exhaust fan on the roof rated for 3,000 cfm. Provide high pressure (negative pressure) ductwork system to a hose reel at each workstation. Each hose reel shall be Monoxivent spring operated hose reel or approved equal. Provide (12) hose reels.
 - ii. Provided welding hood with dedicated exhaust fan on the roof.
- e. M.E.T and Metal Fab Shop
 - i. Provide a duct collector for metal work in each shop. Dust collector shall be located outside and shall rate for rated for 1,500 cfm. Provide with cyclone separator with 55 gallon drum and post filter.
- f. Carpentry Shop shall have the following additional mechanical equipment.
 - i. Provide two dust collectors; each rated for 7,500 cfm. Each dust collector shall be installed outside the building and shall consist of a cyclone separator, fan with VFD and bag filters with electric shaker motors. Provide 20" diameter high velocity, negative pressure (-10" w.c.) ductwork header to serve each dust collector. Each branch to each piece of equipment shall be provided with blast gate for balancing. Discharge air from of each dust collector shall re-circulate back to the Carpentry Shop. Sound attenuators shall be provided at the discharge of the fan and the discharge of the filters.
- g. HVAC and Plumbing Shops shall have the following additional mechanical equipment.
 - i. Provide flues up through second floor and terminate at nominal 8'0" above the roof. Provide total of 12 flues up thru roof. Terminate at 12'0" above finished floor for instructional use. (6) Flues shall be 4" PVC and (6) flues shall be 4" double wall metal flues. Some flues shall be for gas fired equipment, others shall be for fuel oil fired equipment.
 - ii. Provide combustion air through direct vent connections at louvers along the exterior wall.

- iii. Provide 300 gallon above ground, double wall fuel oil storage tank with digital level gauges and leak detection. Provide dual oil transfer pumps inside the building with 2” fuel oil supply and return, double wall piping with leak detection outside the building. Piping inside shall be carbon steel and shall be manifolded along the wall with ball valves for instructional use.
 - h. Culinary Arts shall have the following additional mechanical equipment.
 - i. Four (4) Kitchen exhaust hoods (Dishwasher & Grease) shall be designed and specified by the Kitchen Equipment Consultant. Grease exhaust hoods as required shall be installed per NFPA 96 with carbon steel ductwork and up-blast exhaust fans with ventilated curbs. Fan serving grease hood shall variable speed 1,200 CFM by Loren Cook or approved equal. Dishwasher exhaust fan shall be 600 CFM by Loren Cook or approved equal. Make-up air will be provided by ERV-8 with a motorized dampers.
 - ii. Kitchen hoods and kitchen exhaust ductwork shall be protected by dry chemical type systems and shall be connected to the fire alarm system.
11. Tel/Data and security equipment rooms
- a. Data closets will be served by ductless split A/C units. Unit consists of indoor wall mount air handler and roof mount condensing unit.
 - b. Data closets will be served by ductless split units, by Mitsubishi or approved equal. Total units will be one (1) 2 ton unit (MDF) and five (5) 1 ton units (IDF). Unit consists of indoor wall mount ductless air handler and roof mount condensing unit with low ambient kit.
12. Corridors/Miscellaneous areas
- a. All restrooms, mechanical/electrical rooms and storage areas shall be provided with exhaust systems
 - b. The stairwells, entrances and vestibules shall be served by hot water cabinet unit heaters with return air temperature sensors and control valves.
 - c. All storage areas, mechanical rooms and electrical rooms shall be provided with hot water unit heaters.
 - d. All restrooms, mechanical/electrical rooms and storage areas shall be provided with exhaust that will be connected the DOAS units throughout the building. The exhaust rate to these rooms will be provided based on ASHRAE 62.1 Requirements.
 - e. The stairwells, entrances and vestibules shall be served by electric cabinet unit heaters with return air temperature sensors.
 - f. All storage areas, mechanical rooms and electrical rooms shall be provided with electric unit heaters.
13. All Spaces:
- a. All spaces along the perimeter of the building will have hot water radiant ceiling panels located in the ceiling grid at the glass outside wall; the panels will run wall to wall and be 2 feet wide by Rittling or approved equal. Each space will be provided with a dedicated temperature sensor for individual room temperature control.

Note: All motors (fan and pump) 3 HP and larger shall be high efficiency and provided with VFD.

ELECTRICAL SYSTEMS

Electrical Service

1. The building shall have **TWO(2) 2,500A, 480/277V, 3-phase, 4-wire** electrical services. Provide two main switchboards located in the first floor electrical room:
 - a. Main Switchboard MSB-1: Power to all building loads other than HVAC/PFP. Power to site lighting, electric vehicle charging and other sitework.
 - b. Main Switchboard MSB-2: Power to HVAC/PFP loads in building.
 - c. Each switchboard shall consist of three(3) sections: Pull box, main breaker and distribution.
2. The building shall be primary metered at the utility transformer per National Grid requirements. Utility meter will be furnished and installed by National Grid at two transformers, for the two services.
3. Each main switchboard shall be provided with electronic trip LSIG circuit breakers, arc flash reduction maintenance switch, Type 1 surge protective device, ground fault protection for equipment relay and phase failure relay.
4. Provide a grounding electrode system for the building consisting of (2) ¾"x 10' copper ground rods and #4 AWG copper wiring bonded to the switchboards, concrete rebar, building steel, water/sprinkler main and gas main.
5. Provide schedule 40 PVC conduit routed from the each switchboard underground to a dedicated utility company pad-mounted transformer. Provide schedule 40 PVC conduit in concrete encased ductbank from the transformer to a pole on the street for utility company provided primary conductors. Two utility transformers shall be provided by National Grid.

On-Site Power Generation

1. The building shall have a single **750kW, 480/277V, 3-phase**, 0.8 power factor, diesel fueled generator for both emergency and optional standby power. The generator shall be provided with a brushless alternator, 72-hour sub-base fuel tank, weatherproof sound attenuated enclosure, internal digital controller, (4) 100% rated line circuit breakers, battery charger, block heater, remote annunciator and remote stop switch. The generator shall be grounded as a separately derived system with (2) ¾"x 10' copper ground rods bonded to the enclosure and concrete pad rebar.
2. The following automatic transfer switches shall be provided, wired to the generator:
 - a. ATS-1E: MSB-1 Emergency Loads: 100A, 480/277V, 4-pole, switched neutral.
 - b. ATS-1S: MSB-1 Standby Loads: 400A, 480/277V, 4-pole, switched neutral.
 - c. ATS-2S: MSB-2 Standby Loads: 800A, 480/277V, 4-pole, switched neutral.
3. The generator will provide backup power to the following systems:
 - a. Building heating systems for freeze protection only (not thermal comfort)
 - b. Building management system
 - c. All rack mounted and wall mounted equipment in each I.T. room, including but not limited to servers, networking equipment, wireless network, public address systems, security systems, telephone systems and video surveillance.

- d. Cooling for each I.T. room
 - e. Elevator
 - f. Emergency lighting, wired to dedicated panelboards and a dedicated automatic transfer switch per NEC requirements. Batteries/ inverters will not be provided for emergency lighting in the building.
 - g. Receptacles and lighting in the gymnasium, cafeteria and associated multi-occupant bathrooms.
 - h. Receptacles and lighting in the administrative area and nurse's office.
 - i. Flush valves and faucet sensors in multi-occupant bathrooms, if these are selected to be hardwired type.
 - j. Fire alarm system
 - k. Fire protection/ sprinkler system
 - l. Full backup to the main kitchen, including refrigeration and cooking loads.
 - m. Refrigeration loads in culinary arts kitchen. Note that cooking and food preparation equipment will not be on generator power.
4. The building will not be provided with a solar photovoltaic system as part of this project. However, infrastructure will be provided for a future system. Include (2)-3" C. routed from the main electrical room to the main roof on the east side and (2)-3" C. routed to the west side.

Distribution

1. In the main electrical room on the first floor, provide the following:
 - a. MSB-1 and MSB-2 switchboards as referenced above.
 - b. ATS-1E, ATS-1S and ATS-2S Automatic transfer switches as referenced above. ATS-1E shall be located in a dedicated closet per NFPA 110 requirements.
 - c. Distribution equipment powered from MSB-1:
 - i. Vocational area distribution switchboard: 1,600A, 208/120V, 3-ph, 4-W., with main circuit breaker (two section switchboard) – provide with 500kva, 480-208V, 3-ph dry-type transformer.
 - ii. Lighting distribution panel: 400A, 480/277V, 3-ph, 4-W., main lugs only
 - iii. General power distribution panel: 800A, 480/277V, 3-ph, 4-W., main lugs only
 - iv. Optional standby 480V distribution panel: 400A, 480/277V, 3-ph, 4W. with main circuit breaker
 - v. Optional standby 208V distribution panel: 400A, 208/120V, 3-ph, 4-W., with main circuit breaker – fed from 112.5kVA, 480-208V, 3-ph dry-type transformer.
 - vi. Emergency distribution panel: 100A, 480/277V, 3-ph, 4W, fused switch type.
 - vii. Branch panelboards as follows: Lighting panel (100A, 480/277V, 3ph), General power panel (225A, 208/120V, 3ph, 2-section) fed from 75KVA transformer, Optional Standby panel (100A, 208/120V, 3ph)

- viii. 225KVA transformer and 800A fused disconnect switch to feed electric vehicle charging panel “EV1” as described in section below.
 - ix. Athletic lighting, outbuildings and other sitework shall be fed from MSB-1.
 - d. Distribution equipment powered from MSB-2:
 - i. Mechanical normal 208V distribution panel: 600A, 208/120V, 3-ph, 4-W., with main circuit breaker – provide with 150kva, 480-208V, 3-ph dry-type transformer.
 - ii. Mechanical standby 480V distribution panel: 800A, 480/277V, 3-ph, 4W. with main circuit breaker
 - iii. Mechanical standby 208V distribution panel: 400A, 208/120V, 3-ph, 4-W., with main circuit breaker – fed from 112.5kVA, 480-208V, 3-ph dry-type transformer.
 - iv. Branch panelboards as follows: Mechanical normal panel (100A, 208/120V, 3ph), Mechanical normal panel (225A, 480/277V, 3ph), Mechanical Standby panel (100A, 208/120V, 3ph), Mechanical Standby panel (100A, 480/277V, 3ph).
 2. In the main electrical room, an energy monitoring/ electric submeter system shall be provided per IECC 2021 requirements. This system shall consist of a central control panel with (1) submeter and (1) current transformer for each of the distribution panels referenced above. This system shall be provided with BACNET communications to the building management system. Provide a system equal to SATEC BFM-136.
 3. The building shall have **FOUR (4)** remote electrical rooms – (2) on the first floor, (2) on the second floor. Each electrical room shall be provided with the following:
 - a. Lighting panel (100A, 480/277V, 3ph)
 - b. General power panel (225A, 208/120V, 3ph, 2-section) fed from 75KVA transformer
 - c. Optional Standby panel (100A, 208/120V, 3ph)
 - d. Emergency lighting panel (60A, 480/277V, 3ph, fused switch type)
 - e. Mechanical Standby panel (225A, 480/277V, 3ph)
 - f. Mechanical Normal panel (400A, 480/277V, 3ph)
 - g. Mechanical Normal panel (100A, 208/120V, 3ph)
 4. Provide branch panelboards for the vocational shops as follows. Each of these panelboards shall be fed from the vocational shop distribution switchboard in the main electrical room:
 - a. Automotive – 225A, 208/120V, 3ph, 4-W., 2-section.
 - b. Culinary Arts – 400A, 208/120V, 3ph, 4-W., 2-section.
 - i. Also include 100A, 208/120V, 3ph. Panelboard fed from the optional standby system for refrigeration loads.
 - c. Cosmetology – 225A, 208/120V, 3ph, 4-W., 2-section.
 - d. MET – 225A, 208/120V, 3ph, 4-W., 2-section.
 - e. Metal Fabrication – 800A, 208/120V, 3ph, 4-W., 2-section.
 - f. Horticulture – 225A, 208/120V, 3ph, 4-W., 2-section.

- g. Carpentry – 400A, 208/120V, 3ph, 4-W., 2-section.
 - h. HVAC – 225A, 208/120V, 3ph, 4-W., 2-section.
 - i. Plumbing – 225A, 208/120V, 3ph, 4-W., 2-section.
 - j. Electrical – 400A, 208/120V, 3ph, 4-W., 2-section.
 - k. Veterinary – 100A, 208/120V, 3ph, 4-W.
 - l. Main Kitchen – 400A, 208/120V, 3ph, 4-W., 2-section.
 - i. Also include 100A, 208/120V, 3ph. Panelboard fed from the optional standby system for refrigeration loads.
 - m. Graphics – 400A, 208/120V, 3ph, 4-W., 2-section.
 - n. CIT – 100A, 208/120V, 3ph, 4-W.
 - o. Allied Health – 100A, 208/120V, 3ph, 4-W.
5. Provide a remote facility shutoff switch equal to ASCO 911 series for Automotive, MET, Metal Fabrication, Horticulture, Carpentry, HVAC, Plumbing and Electrical shops. This switch shall have an amperage rating equal to the panelboard in the associated room. Provide an instructor's station with keyed reset and (4) remote EPO pushbuttons in each shop. Panelboards in all other vocational shops not listed above shall be provided with shunt trip main circuit breakers, wired to (2) EPO pushbuttons in associated shop area.
6. Branch circuits shall be installed in EMT conduit. Type MC cable shall be limited to concealed spaces above finished ceilings in classrooms or drywall type partitions after first device. EMT conduit shall be used to the first device in a branch circuit and shall be used in all masonry or CMU partitions. Provide the following branch circuitry:
- a. (10) duplex receptacles and (2) quad receptacles, (4) circuits per classroom.
 - b. (3) duplex receptacles and (1) quad receptacle, (1) circuit per office.
 - c. (6) duplex receptacles and (1) floor box, (2) circuits per conference room.
 - d. In classrooms, offices and conference rooms, Each receptacle shall be half-switched type and a room controller shall be provided and connected to the lighting occupancy sensor in the room for automatic receptacle shutoff in accordance with IECC 2021 requirements.
 - e. (1) duplex GFCI-type receptacle at each bathroom above the sink
 - f. (30) duplex receptacles on dedicated circuits for each vocational shop
 - g. (24) duplex receptacles, (6) circuits in the gymnasium
 - h. (24) duplex receptacles, (6) circuits in the cafeteria
 - i. (16) duplex receptacles, (4) circuits in the media center
 - j. (4) duplex receptacles and (4) twistlock rack-mounted receptacles, (6) circuits per IDF.
 - k. (8) duplex receptacles and (8) twistlock rack-mounted receptacles, (12) circuits in the MDF.
 - l. Circuits for all HVAC equipment as required. 120V Wiring to control panels, control transformers, etc shall be provided by the electrician while low voltage control wire shall be included in Division 23.

- m. Circuits for all plumbing equipment.
 - n. Circuits for the Fire Alarm Equipment and Sound Equipment as required.
 - o. Circuits for office equipment as required.
 - p. Circuits for security system and devices as required.
7. The following shall be provided to support electric vehicle charging equipment:
- a. Provide “EV1” 800A, 208/120V, 3-phase, 4-W, panelboard mounted in free standing enclosure in parking lot. Power from MSB-1 via transformer in main electrical room.
 - b. Provide “EV2” 400A, 208/120V, 3-phase, 4-W, sub-panel in a second free standing enclosure on the opposite side of the parking lot. Feed from EV1.
 - c. Provide (50) “EV-Ready” parking spaces as defined by the Massachusetts Stretch Code, Each space shall be provided with a NEMA 14-50R receptacle mounted in a weatherproof enclosure, with a 40A, 208V-1ph (3W+G) circuit powered from one of the EV panelboards in the parking area.

Lighting Systems

1. All lighting throughout the building will be LED based:
- a. Provide three(3) rows of pendant mounted direct/indirect linear light fixtures in each classroom.
 - b. Provide recessed 2x2 and 2x4 troffers suitable for ACT ceilings in all offices, corridors, conference rooms, bathrooms and similar areas.
 - c. Provide 4-foot utility strip fixtures in utility spaces.
 - d. Provide recessed lensed/gasketed 2x2 fixtures in the kitchen.
 - e. Provide wall mounted linear fixtures in the stairwells.
 - f. Architectural pendant fixtures shall be provided in the media center, multipurpose room and cafeteria. Exact type will be coordinated as design progresses. Include (30) fixtures per room.
 - g. Provide (16) pendant mounted high-bay fixtures in the gymnasium.
 - h. Provide (16) pendant mounted high-bay fixtures in each vocational shop area.
2. Provide a basic theatrical lighting system at the auditorium area, consisting of the following:
- a. Two(2) 32-foot long dead-hung schedule 40 1.5” ID steel pipes above stage. Each shall be provided with connector strips spanning the length of pipe, equal to ETC Colorsourc Series. At each stage pipe, provide (6) LED RGBL par lights and (4) LED RGBL spot lights.
 - b. One(1) 28-foot long hoist system in seating area equal to ETC Flypipe series. Provide with connector strip spanning length of hoist, equal to ETC Colorsourc Series. Provide with (10) LED RGBL spot lights.
 - c. Relay panel with (12) combination relay/breaker equal to ETC Sensor iQ series.
 - d. 8-way DMX splitter in Din Rail enclosure for control wiring management.
 - e. DMX control console equal to ETC Colorsourc 40.
 - f. Echo-touch 7” touchscreen controller on stage equal to ETC 7TSN.

3. Exterior lighting will be provided at each egress door for code required egress and safety lighting. Typical fixture shall be LED and wired to the emergency generator to meet the code required egress lighting.
4. Provide pole mounted light fixtures in each parking lot, spaced 50 feet on center. The fixture, pole, concrete base and anchor bolts shall be provided by the electrical contractor. Excavation and backfill shall be provided by the site/civil contractor.
5. Emergency lighting shall be accomplished using the emergency distribution system powered by the generator and shall be provided in all egress pathways and those areas described as having generator back-up power. UL 924 compliant relays will be included in areas with both normal and emergency lighting.
6. Exit signs shall be self-contained, universal mounted, LED edge-lit illuminated, low energy usage fixtures. Exit signs shall be located at all egress doors, within corridors within 100ft line of sight, areas of assembly, and all other locations as required by code. Exit signs with the Connecticut Active Symbol of Access shall be located at all egress doors that lead to accessible exits.
7. Typical lighting illumination levels shall be:
 - a. 45FC – Classrooms, Offices, Cafeteria, Media Center, Multipurpose rooms.
 - b. 50FC – Gymnasium, Vocational Shops.
 - c. 15FC – Corridors, Stairwells, Bathrooms, Storage Rooms, Utility Spaces.
8. Daylight sensors and dimming control via room controllers shall be provided in the meeting rooms and other select rooms containing exterior window walls to meet IECC 2021 requirements.
9. Vacancy sensors shall be provided in all lit areas except in utility rooms and other rooms exempted by code.
10. Vacancy sensor switches with wall override shall be provided in all small offices, single occupancy toilet rooms, storage rooms and janitors closets.
11. Provide a central lighting area controller for control of corridor, stairwell and site lighting. Provide a relay panel in each electrical room, networked to this area controller. Provide low voltage key switches in each corridor for shutoff.
12. A new athletic field lighting system shall be provided and shall consist of the following:
 - a. Free standing electrical enclosure equal to Hammond Manufacturing #HN4FS723724 adjacent to utility transformer.
 - b. 400A, 480/277V, 3-ph, 4-W. panelboard with NEMA 3R housing mounted in above enclosure. This panelboard will service all fields.
 - c. 225A, 208/120V, 3-ph, 4-W. panelboard with NEMA 3R housing mounted in above enclosure. This panelboard will service outbuildings and other 120V circuits required in field areas. Provide with 75KVA 480-208V, 3ph dry-type transformer with NEMA 3R housing.
 - d. At the soccer field, provide contactor panel equal to Musco Control-Link series. Provide (4) 80 ft poles, each with (12) LED fixtures. Provide with (1) 30A-3P, 480V circuit to each pole powered via contactor panel.
 - e. At the baseball field, provide contactor panel equal to Musco Control-Link series. Provide (4) 70 ft poles, each with (10) LED fixtures. Provide with (1) 30A-3P, 480V circuit to each pole powered via contactor panel.

- f. At the softball field, provide contactor panel equal to Musco Control-Link series. Provide (4) 70 ft poles, each with (10) LED fixtures. Provide with (1) 30A-3P, 480V circuit to each pole powered via contactor panel.
- g. Include (4) 120V circuits and (4) 208V circuits at each of the above fields for miscellaneous connections. Include 200 feet for each circuit.

Fire Alarm System

1. The building shall be provided with an addressable fire alarm system in compliance with NFPA 72, IBC 2021 and ADA regulations. Speaker/strobes with voice evacuation shall be provided throughout the building. The system shall be provided with a fire alarm control panel with a wireless master box to contact the local fire department. Manual pull stations shall be installed in locations designated by the fire marshal's office. Audible and visual signaling devices shall be installed in common areas, classrooms, corridors, etc. Visual-only signaling devices shall be installed in all work rooms, small staff toilets, etc.
2. Monitoring modules for sprinkler tamper and flow switches shall be provided.
3. Duct smoke detectors for each air-handling unit, (1) in the supply, and (1) in the return duct shall be provided. Test switches shall be located in accessible locations shall be provided.
4. Monitor module for Kitchen hood fire extinguishing system (Ansul System) shall be provided.
5. Remote annunciators, Knox Boxes and dedicated beacons shall be provided for fire department use at each entrance.
6. Connections from the fire alarm system to each magnetic door hold open device shall be provided in accordance with architectural code plans.
7. Carbon monoxide sensors shall be provided in the Kitchen and Mechanical rooms where fossil fuel burning equipment is located.

Miscellaneous Systems

1. The building shall be provided with a distributed antenna system for first responder radio coverage. The system shall consist of antennas, cabling, combiners, couplers, amplifiers and repeaters to provide 95% building addition coverage. The system shall communicate across the Town's fire, police and central dispatch licensed frequencies.
2. A UL Master Label compliant lightning protection system in compliance with NFPA 780, LPI standard #175, and UL #96A shall be provided for the building. System shall include strike termination devices, interconnecting conductors, ground rods around perimeter of the building and interconnection to the building grounding system. Downloads shall be routed in PVC conduit within the building envelope and concealed in wall cavities.
3. An emergency 2-way communication system shall be provided at each elevator lobby in accordance with IBC Section 1009. Provide one call station per floor, wired to a master unit at the main administrative area.
4. Provide an emergency electric and gas shutoff system with natural gas detection in each science lab equal to AGS Merlin Series. Electrical contractor shall provide utility controller, natural gas detectors and electrical contactor for (6) circuits in room. Plumbing contractor shall provide 120V normally closed solenoid valve and associated enclosure.

Electrical Means and Methods

1. All circuits shall be run overhead (except where feeding recessed floor mounted devices).
2. Wiring shall be THHN/THWN copper, installed in EMT conduit for general circuits.
3. Devices shall be specification grade, NEMA 5-20R etc.
4. In addition to other functions listed, all receptacles shall tamper-resistant type.
5. Disconnect switches shall be 600 VAC heavy-duty type. NEMA 1, 3R or 4X as required for locations installed. Provide fusible switches where indicated.
6. Circuit breakers shall be fixed element, thermal magnetic type.
7. Panelboards shall have copper bussing, with hinged, lockable, door-in-door trim.
8. Branch circuit breakers shall be bolt-on type.
9. All conduits, circuits and devices shall be labeled.
10. Conduits below slabs shall be Schedule 40 PVC, with rigid steel conduit sweeps.
11. New feeders shall be in conduit.
12. Branch circuits shall be in EMT to the first device in any circuit, and shall transition to MC cable from first device, downstream.
13. Exposed exterior conduits shall be RGS.
14. Underground conduits shall be Schedule 40 PVC and concrete encased conduit when crossing under roadways and sidewalks.

TECHNOLOGY SYSTEMS

Structured Cabling

1. Provide a new structured cabling system in the building consisting of the following:
 - a. (4)-4”C. routed underground from a pole on the street to the building MDF for utility service entrance cabling.
 - b. Four(4) free-standing equipment cabinets in the MDF for servers and head-end equipment.
 - c. Four(4) remote IDF closets, each with Two(2) open frame racks, patch panels, power distribution, cable management and overhead ladder-rack.
 - d. Provide 12-strand OS2 single mode and 12-strand OM4 multimode fiber optic cabling routed in 1-1/2” flexible innerduct routed from the IDF to the MDF.
 - e. Category 6 horizontal cabling throughout the building.
 - f. (2) Data and (1) VOIP drop in each office.
 - g. (4) Data drops in each conference room.
 - h. (8) Data drops in each of the meeting hall spaces.
 - i. Data cabling to support wireless access devices, ceiling mounted, throughout the entire building. Locate one device per every two offices/conference rooms. Provide (4) outlets for wireless access devices in each of the meeting hall spaces.
 - j. Data cabling to support security systems.

- k. Horizontal cabling shall be routed to work area outlets using J-hooks spaced 5-foot on center in corridors.
2. Provide a telecommunications ground bar in each IT room with grounding backbone installed per TIA/EIA-607 standards.

Distributed Communications

1. The building shall be provided with a Public Address system throughout the corridors, classrooms, offices, assembly areas, offices, and the exterior/ building perimeter. Interconnection between the public address and VOIP systems shall be provided to allow paging via desk phones. Paging zones shall be coordinated with the owner's representative.
2. The building shall be provided with a central wireless clock system. Clocks shall be located in each classroom and each office. Clocks shall be analog type, powered via 120V circuit in area.

Audio-Video Systems

1. Provide the following in each classroom:
 - a. Interactive flatscreen display, 86" diagonal. (provided under FF&E phase)
 - b. HDBASET wallplate transmitter at teacher's desk and receiver at flatscreen.
 - c. Sound reinforcement system consisting of a portable media connector, wirelessly communicating with a central overhead combination speaker/receiver. The media connector shall have an audio-input from the flatscreen display, accomplished via a stereo audio cable routed to the teacher's desk. The speaker/receiver shall have inputs from the building public address and fire alarm systems for muting. The system shall be equal to Lightspeed Topcat.
2. The gymnasium, commons and multipurpose/auditorium shall each be provided with a large format audio-video system. This system shall consist of the following items in each space:
 - a. DSP equal to Bose ControlSpace.
 - b. Amplifier equal to Bose PowerSpace.
 - c. (16) loudspeakers
 - d. AV control processor, equal to Extron IPCP.
 - e. 16-port managed POE network switch
 - f. Touchscreen controller, equal to Extron TLP PRO.
 - g. Two faceplate style HDBASET transmitters and associated receivers in rack.
 - h. Projector (furnished under FF&E phase) – provide with HDBASET style receiver.
 - i. Four wireless microphone receivers and transmitters, equal to Shure BLX series.
 - j. Assistive listening system
 - k. Equipment rack and power distribution unit

Security Systems

1. Intrusion Detection system control panel and peripheral components shall be provided that will provide security contacts on all exterior doors and any operable windows that are accessible from grade. Motion detectors shall be specified for internal building monitoring when the building is closed. Keypad activation shall be provided at each egress door.
2. Security Cameras (IP-based) shall be specified to cover each egress door and the general building perimeter. Camera storage shall be provided by an NVR system installed at the MDF equipment cabinet location. Security cameras shall also be provided for complete coverage of all building corridors and common assembly areas. Include interior cameras mounted 100 feet on center.
3. Access control doors shall be provided at each exterior door, and at each I.T. room. Provide an IP-based access control system for the building.
4. Provide a video entry/ intercom system for (4) entrances to the building equal to AIPHONE IX Series.

MECHANICAL SYSTEMS

General

1. Please note that this mechanical system narrative is written to yield two separate system designs/prices. The two systems share several similar pieces and parts,
 - a. **AHU with Displacement (Option 1):** Price should include all descriptions tagged Option 1 and shall not include anything tagged option 2. Option 1 consists of an air source heat pump chiller that feeds AHUs and VAVs for displacement ventilation throughout the building.
 - b. **DOAS with VRF (Option 2):** Price should include all descriptions tagged Option 2 and shall not include anything tagged option 1. Option 2 consists of an air source heat pump chiller that feeds DOAS units with VRF units throughout the building.

General Conditions

1. The mechanical systems are based on heating and cooling the building while meeting the objective for energy efficiency. Heating design shall be 70°F and cooling design shall be 75°F.
 - c. ASHRAE Fundamentals summer outdoor air design conditions (87.6DB, 71.6WB).
 - d. ASHRAE Fundamentals winter outdoor air design conditions (8.5DB).

Materials and Methods

1. Include the following basic materials and methods of construction:
 - a. All ductwork and accessories shall meet SMACNA standards. After installation of duct is complete third party shall clean all ductwork.
 - b. Provide all HVAC equipment with extra set of filters.
 - c. Seismic restraints shall be designed and installed as required per State of Massachusetts Building Code and Fire Safety Code which requires the seal of a licensed professional engineer. Abovementioned professional engineer will be required to verify installation is correct and complete per seismic code. This includes piping, ductwork, equipment, and equipment bases.
 - d. Design isolators for equipment installed outdoors to provide adequate restraint to withstand the force of a 100 mph wind applied to any exposed surface of the isolated equipment. Isolators for outdoor equipment shall have bolt holes for attachment to equipment and to supports. The vibration isolation Vendor shall submit verifying shear and over turning calculations, for their product and equipment installation arrangement, stamped by a licensed Professional Engineer. Provide glass fiber insulation for all hydronic piping and ductwork. Insulation shall be installed to meet the Energy Conservation Code.
 - e. Provide glass fiber insulation for all hydronic piping and ductwork. Insulation shall be installed to meet the Energy Code. Jacketing shall be provided for piping exterior to the building.
 - f. Provide elastomeric pipe insulation for all refrigerant piping. Insulation shall be installed to meet the Energy Code. Jacketing shall be provided for piping exterior to the building.

- g. Provide firestopping around mechanical penetrations in accordance with fire stopping requirements. System shall be capable of maintaining against flame and gases. System shall be UL listed and comply with ASTM E814.
- h. Provide mechanical identification for mechanical systems. Identification shall comply with ANSI A13.1.
- i. All pipe connections shall be installed to allow for freedom of movement of the piping during expansion and contraction without springing. Swing joints, expansion loops and expansion joints with proper anchors and guides shall be provided where shown.
- j. Provide vibration isolation for hydronic piping, ductwork, and equipment.
- k. Hydronic piping 2-1/2"Ø and under shall be Type L copper. Piping 3" and over shall be ASTM A 53; Schedule 10 black steel pipe with welded, flanged or grooved joints.
- l. Hydronic piping below grade shall be Schedule 40 steel with welded fittings and polyethylene jacketing.
- m. All equipment served by hydronic piping shall have isolation valves on the supply and return lines. Isolation valves shall also be provided at branch take-offs.
- n. Provide 30% propylene glycol solution in the chiller and hot water heating systems.
- o. All motors (fan and pump) 3 HP and larger shall be high efficiency and provided with VFD. VFDs shall be by ABB or approved equal.
- p. Provide roof curb type 2 (RC-2) for all roof mounted air handling equipment.
 - i. Type RC-2 isolation bases shall be a prefabricated assembly consisting of a structural steel frame and steel spring isolation system that also forms the roof curb under the isolated equipment. Spring isolators shall be selected and positioned along the curb to achieve the minimum static deflection called for in the schedule. The static deflection shall be constant around the entire periphery of the base. Springs shall be free standing, laterally stable with a diameter of not less than 0.8 times the compressed height, and have additional travel-to-solid that is at least 50% of the rated deflection. Springs and limits stops shall be provided at the corners of the base to limit equipment movement to 1/4" under wind load.
 - ii. The isolation curb base shall be made weather tight by sealing all around the periphery with closed cell neoprene, flexible membrane or light gauge spring metal loop, which shall in no way inhibit the vibration isolation of the spring elements. A closed cell sponge gasket or field caulking shall be used between the equipment unit and the isolation curb base and between the isolation curb and roof curb to form a weather-tight seal.

Code Compliance

- b. All systems will be designed to code compliance for percentage of outside (fresh) air and will meet the requirements in ASHRAE 90.1, International Mechanical Code, International Energy Code as well as ASHRAE 62.1.
- c. All systems will be designed to code compliance and will meet or exceed requirements stated in:
 - i. ASHRAE 90.1,
 - ii. International Mechanical Code,
 - iii. International Energy Code
 - iv. ASHRAE 62.

HVAC Controls

A Building Management System (BMS) shall be installed to control the mechanical and selected electrical systems. BMS shall be by the Temperature Control vendor approved by the owner.

- a. The system shall include a personal computer with graphics based display and capabilities for alarming off-site.
- b. The BMS shall provide temperature control for all HVAC systems and control select lighting in the building.
- c. The system shall be programmed for occupied/unoccupied cycles for the air handling equipment, with an override feature for spaces that would be utilized after-hours.
- d. The system shall monitor occupancy sensing devices to control the amount of outside air being brought in to each classroom to assist in energy conservation.
- e. The BMS shall be accessible from any Web browser and mobile device with proper authorization.

Heating and Cooling Plant

- 1. The cooling and heating plant will be sized for 100% cooling and heating load and consist of an air to water source Heat Pump modular chiller that provides simultaneous heating and cooling similar to Trane Ascend or approved equal. Refer to Table One below for size. The chiller shall have a sound enclosure surrounding on all sides; consult the chiller manufacturer on the exact size and thickness of the enclosure to provide acceptable sound levels in the residential neighborhoods.
- 2. The primary chilled water pumping plant will consist of two (2) pumps and a buffer tank. Each pump will be sized for the full system load (N+1) to provide for complete redundancy. The pumps will be vertical inline type controlled by VFD's and shall be mounted on 6" thick concrete housekeeping pads located in the mechanical room. The primary chilled water pumps will circulate chilled water through the heat recovery chiller to the low loss header separating the primary & secondary sides.

3. The secondary chilled water pumping plants will consist of two (2) pumps. Each pump will be sized for the full system load (N+1) to provide for complete redundancy. The pumps will be vertical inline type controlled by VFD's and shall be mounted on 6" thick concrete housekeeping pads located in the mechanical room. The secondary chilled water pumps will supply chilled water to air handling units located throughout the building.
4. The primary heating hot water pumping plant will consist of two (2) pumps and a buffer tank for the heat recovery chiller and one pump for each boiler. Where two (2) pumps are provided, each pump will be sized for the full system load (N+1) to provide for complete redundancy. The pumps will be vertical inline type controlled by VFD's and shall be mounted on 6" thick concrete housekeeping pads located in the mechanical room. The primary heating water pumps will circulate heating hot water through the heat recovery chiller or boiler to the low loss header separating the primary & secondary sides.
5. The primary heating hot water pumping plant will also consist of two boiler pumps, one for each gas backup boiler. The pumps will be vertical inline type controlled by ECM and shall be mounted inline with the hot water piping located in the mechanical room.
6. The secondary heating hot water pumping plants will consist of two (2) pumps. Each pump will be sized for the full system load (N+1) to provide for complete redundancy. The pumps will be vertical inline type controlled by VFD's and shall be mounted on 4" thick concrete housekeeping pads located in the mechanical room. The secondary heating hot water pumps will supply heating hot water to air handling units as well as hot water terminal units (fin-tube baseboard, radiant panels, VAV reheat coils, etc.) located throughout the building.
7. The heating plant will consist of two (2) commercial gas fired condensing boilers that provide back up heat for the heat recovery chiller. The boiler shall be Lochinvar Crest or similar. Refer to Table One for size.
8. The mechanical room will consist of the pumps, buffer tanks, boiler, expansions tanks, glycol make up units, and other appurtenances.

Table One:

Architectural Option	Heat Recovery Chiller Size	Boiler Size
805 Enrollment – 240,000 sf	(4) 160 Ton Units	(3) 3,000,000 btuh
900 Enrollment – 260,000 sf	(4) 180 Ton Units	(3) 3,250,000 btuh

Heating, Ventilation and Air Conditioning

1. Classroom and Offices (RTU-1,RTU-2, RTU-3, RTU-4) **(Option 1 – Displacement)**

- a. Four (4) 8,000 CFM roof top mounted air handling units (AHUs) will be provided for the four (4) classroom blocks on the second floor. AHUs shall be Performance Climate Changers by Trane or approved equal. The AHU will be provided with a hot water preheat coil, chilled water coil, hot water reheat coil, energy recovery wheel, 100% outside air economizer, MERV-8 prefilter and MERV-13 final filter. The outside air ventilation provided by the unit will be demand controlled (shall modulate to maintain the space CO2 setpoint), thereby reducing energy consumption. This air will be provided via air only (non fan powered) variable air volume (VAV) terminal units with hot water reheat coils. These VAV units will generally act as the secondary sources of heating and sensible cooling for the classrooms.
- b. Each classroom will be served by three (3) 400 CFM displacement ventilation diffusers Price model DFE- 36x48x16. Each diffuser will have a 10" round duct connected to its inlet which will convey the air from the AHU. The displacement diffusers will provide the space with both heating and cooling and will be located in the corners of the room at floor level to provide maximum occupant comfort.
- c. Each office space will be served by one (1) 300 CFM ceiling diffuser Price SMD. The diffuser will provide the space with both heating and cooling and will be located near the exterior wall of the room to provide maximum occupant comfort.
- d. Each Science Classroom will be equipped with a 1,600 CFM dedicated roof mounted lab exhaust, high plume discharge fans, Loren Cook Model TCNH-LE or approved equal.
- e. Each Science Prep Room will be equipped with a 800 CFM dedicated roof mounted lab exhaust, high plume discharge fans, Loren Cook Model TCNH-LE or approved equal.
- f. Each Kiln room will be equipped with a 400 CFM inline exhaust fan, Loren Cook Model SQN Series or approved equal.
- g. The mechanical room will be equipped with a 1,200 CFM inline exhaust fan, Loren Cook Model SQN Series or approved equal.
- h. The bathrooms and other spaces requiring general exhaust will be served by four (4) rooftop mounted, upblast fan, Loren Cook Model ACRU or approved equal.

2. Classroom and Offices (DOAS-1, DOAS-2,) **(Option 2 – DOAS with VRF)**

- a. One (1) 10,000 CFM and one (8,000 CFM) roof top mounted dedicated outdoor air systems (DOAS) will be provided for the east and west classroom wings on the second floor. DOAS shall be Performance Climate Changers by Trane or approved equal. Preconditioned outside ventilation air will be distributed through ductwork to each space. These DOAS unit will be provided with hot water preheat coil, chilled water coil, and hot water reheat coil, energy recover wheel, 100% outside air economizer, MERV-8 prefilter and MERV-13 final filter.
- b. Each of the Classrooms, Offices and Teacher planning shall be heated and cooled by use of a Variable Refrigerant Flow (VRF) system comprised of concealed fan coil units suspended above the ceilings. This system will be capable of simultaneous heating and cooling. Each Fan Coil Unit will be controlled independently.

- c. In general, each 2nd floor classroom shall receive (1) ducted style VRF unit located above the ceiling grid. Units shall typically be 2-ton Daikin Model 'FXSQ' or approved equal. Total of approximately (30) units.
 - d. In general, each offices shall receive (1) cassette style VRF unit located within the ceiling grid. Units shall typically be 0.5 ton Daikin Model 'FXFQ' or approved equal. Total of approximately (20) units.
 - e. Conference rooms, open plan offices and large corridors shall receive (1) ducted style VRF unit located above the ceiling grid. Units shall typically be 1-ton Daikin Model 'FXSQ' or approved equal. Total of approximately (4) units.
 - f. There will be a total of four (4) air source heat recovery type condensing units roughly zoned in the same manner as the DOAS units serving the indoor FCU's. The condensing units shall be roof mounted on equipment rails to ensure the units are mounted above the snow line and shall be provided with snow/hail guards. Condensing units shall be Daikin VRV-IV/X Series or approved equal. The breakdown of the unit is as follows:
 - i. VRF-CU-1: 18 ton
 - ii. VRF-CU-2: 20 ton
 - iii. VRF-CU-3: 20 ton
 - iv. VRF-CU-4: 18 ton
 - g. Each Science Classroom will be equipped with a 1,600 CFM dedicated roof mounted lab exhaust, high plume discharge fans, Loren Cook Model TCNH-LE or approved equal.
 - h. Each Science Prep Room will be equipped with a 800 CFM dedicated roof mounted lab exhaust, high plume discharge fans, Loren Cook Model TCNH-LE or approved equal.
 - i. Each Kiln room will be equipped with a 400 CFM inline exhaust fan, Loren Cook Model SQN Series or approved equal.
 - j. The mechanical room will be equipped with a 1,200 CFM inline exhaust fan, Loren Cook Model SQN Series or approved equal.
3. Gym (RTU-5, RTU-6)
- a. One (1) 10,000 CFM and one (1) 6,000 CFM roof top mounted air handling units (AHUs) will be provided for the gym. AHUs shall be Performance Climate Changers by Trane or approved equal. It will be provided with hot water preheat coil, chilled water coil, and hot water reheat coil, energy recover wheel, 100% outside air economizer, MERV-8 prefilter and MERV-13 final filter. The unit will also incorporate demand control ventilation which will modulate the amount of outside air to the space based on occupancy and CO2.
4. Auditorium (RTU-7)
- a. One (1) 10,000 CFM roof top mounted air handling unit (AHU) will be provided for the Auditorium. AHU shall be Performance Climate Changers by Trane or approved equal. It will be provided with hot water preheat coil, chilled water coil, and hot water reheat coil, energy recover

- wheel, 100% outside air economizer, MERV-8 prefilter and MERV-13 final filter. The unit will also incorporate demand control ventilation which will modulate the amount of outside air to the space based on occupancy and CO₂.
5. Library, Media, Admin Suite (RTU-8) **(Option 1 – Displacement)**
- a. One (1) 7,000 CFM roof top mounted air handling unit (AHU) will be provided for the Library, Media and Admin Suite. AHU shall be Performance Climate Changers by Trane or approved equal. It will be provided with hot water preheat coil, chilled water coil, and hot water reheat coil, energy recover wheel, 100% outside air economizer, MERV-8 prefilter and MERV-13 final filter. The unit will also incorporate demand control ventilation which will modulate the amount of outside air to the space based on occupancy and CO₂. This air will be provided via air only (non-fan powered) variable air volume (VAV) terminal units with hot water reheat coils.
6. Library, Media, Admin (DOAS-5) **(Option 2 – DOAS with VRF)**
- a. One (1) 4,000 CFM roof top mounted dedicated outdoor air systems (DOAS) will be provided for the Library, Media and Admin Suite. DOAS shall be Performance Climate Changers by Trane or approved equal. Preconditioned outside ventilation air will be distributed through ductwork to each space. These DOAS unit will be provided with hot water preheat coil, chilled water coil, and hot water reheat coil, energy recover wheel, 100% outside air economizer, MERV-8 prefilter and MERV-13 final filter.
 - b. Each of the Offices, Teacher Planning, Media Rooms, and Library Stack shall be heated and cooled by use of a Variable Refrigerant Flow (VRV) system comprised of concealed fan coil units suspended above the ceilings. This system will be capable of simultaneous heating and cooling. Each Fan Coil Unit will be controlled independently.
 - c. In general, the media center and library shall receive (4) ducted style VRF unit located above the ceiling grid. Units shall typically be 3-ton Daikin Model 'FXSQ' or approved equal.
 - d. In general, in the Admin/Office/ Nurse suite each office shall receive (1) cassette style VRF unit located within the ceiling grid. Units shall typically be 0.5 ton Daikin Model 'FXFQ' or approved equal. Total of approximately (12) units.
 - e. Conference rooms, open plan offices and large exterior corridors shall receive (1) ducted style VRF unit located above the ceiling grid. Units shall typically be 1-ton Daikin Model 'FXSQ' or approved equal. Total of approximately (6) units.
 - f. There will be a total of two (2) air source heat recovery type condensing units roughly zoned in the same manner as the DOAS units serving the indoor FCU's. The condensing units shall be roof mounted on equipment rails to ensure the units are mounted above the snow line and shall be provided with snow/hail guards. Condensing units shall be Daikin VRV-IV/X Series or approved equal. The breakdown of the unit is as follows:
 - i. VRF-CU-1: 12 ton
 - ii. VRF-CU-2: 12 ton
7. Commons (RTU-9)

- a. One (1) 10,000 CFM roof top mounted air handling unit (AHU) will be provided for the Commons. AHU shall be Performance Climate Changers by Trane or approved equal. It will be provided with hot water preheat coil, chilled water coil, and hot water reheat coil, energy recover wheel, 100% outside air economizer, MERV-8 prefilterer and MERV-13 final filter. The unit will also incorporate demand control ventilation which will modulate the amount of outside air to the space based on occupancy and CO2.

8. Kitchen & Servery

- a. Kitchen exhaust hoods (Dishwasher & Grease) shall be designed and specified by the Kitchen Equipment Consultant. Grease exhaust hoods as required shall be installed per NFPA 96 with carbon steel ductwork and up-blast exhaust fans with ventilated curbs. Fan serving grease hood shall variable speed 3,400 CFM by Loren Cook or approved equal. Dishwasher exhaust fan shall be 600 CFM by Loren Cook or approved equal. Make-up air will be provided by adjacent cafeteria unit deleting the need to provide a dedicated make-up air unit for the kitchen.
- b. Kitchen hoods and kitchen exhaust ductwork shall be protected by dry chemical type systems and shall be connected to the fire alarm system.

9. Locker Rooms & Fitness (RTU-10)

- a. One (1) 6,000 CFM roof top mounted air handling unit (AHU) will be provided for the Locker Rooms and Fitness. AHU shall be Performance Climate Changers by Trane or approved equal. It will be provided with hot water preheat coil, chilled water coil, and hot water reheat coil, energy recover wheel, 100% outside air economizer, MERV-8 prefilterer and MERV-13 final filter. The unit will also incorporate demand control ventilation which will modulate the amount of outside air to the space based on occupancy and CO2. This air will be provided via air only (non-fan powered) variable air volume (VAV) terminal units with hot water reheat coils.

10. Vocational (Shop) Spaces (ERV-1, ERV-2, ERV-3, ERV-4, ERV-5, ERV-6, ERV-7, ERV-8, ERV-9, ERV-10, ERV-11)

- a. One (1) Energy Recovery Ventilators (ERVs) will be provided for each Vocational Space located indoors on the mezzanine above the vocational classroom for each Vocational space. ERVs shall be Performance Climate Changers by Trane or approved equal. The ERVs will be provided with hot water coil, plate type heat exchanger, 100% outside air economizer, MERV-8 prefilterer and MERV-13 final filter. Ductwork at the inlet to the each unit shall incorporate return air and outside air motorized dampers to allow 100% outside air or partial return air / outside air operation. ERVs 1-7 will have heating and ventilation only.
- b. Electrical shop (ERV-7), Culinary Arts (ERV-8), Cosmetology (ERV-9), Vet School (ERV-11) ERV will have hot water preheat coil, chilled water coil and hot water reheat coil to provide a fully conditioned space.
- c. Refer to table for ERV sizing:

ERV-1	Serves Auto	15,000 CFM
ERV-2	Serves M.E.T.	10,000 CFM
ERV-3	Serves Metal Fab	10,000 CFM

ERV-4	Serves Hort.	10,000 CFM
ERV-5	Serves Carpentry	15,000 CFM
ERV-6	Serves HVAC	8,000 CFM
ERV-7	Serves Plumbing	8,000 CFM
ERV-8	Serves Electrical	8,000 CFM
ERV-9	Serves Culinary Arts	10,000 CFM
ERV-10	Serves Cosmetology	6,000 CFM
ERV-11	Serves Vet School	8,000 CFM

- d. Auto Mechanic Shop shall have the following additional mechanical equipment.
 - i. Provide central vehicle exhaust system. Provide Loren Cook or approved equal central exhaust fan on the roof rated for 3,000 cfm. Provide high pressure (negative pressure) ductwork system to a hose reel at each workstation. Each hose reel shall be Monoxivent spring operated hose reel or approved equal. Provide (12) hose reels.
 - ii. Provided welding hood with dedicated exhaust fan on the roof.
- e. M.E.T and Metal Fab Shop
 - i. Provide a duct collector for metal work in each shop. Dust collector shall be located outside and shall rate for rated for 1,500 cfm. Provide with cyclone separator with 55 gallon drum and post filter.
- f. Carpentry Shop shall have the following additional mechanical equipment.
 - i. Provide two dust collectors; each rated for 7,500 cfm. Each dust collector shall be installed outside the building and shall consist of a cyclone separator, fan with VFD and bag filters with electric shaker motors. Provide 20" diameter high velocity, negative pressure (-10" w.c.) ductwork header to serve each dust collector. Each branch to each piece of equipment shall be provided with blast gate for balancing. Discharge air from of each dust collector shall re-circulate back to the Carpentry Shop. Sound attenuators shall be provided at the discharge of the fan and the discharge of the filters.
- g. HVAC and Plumbing Shops shall have the following additional mechanical equipment.
 - i. Provide flues up through second floor and terminate at nominal 8'0" above the roof. Provide total of 12 flues up thru roof. Terminate at 12'0" above finished floor for instructional use. (6) Flues shall be 4" PVC and (6) flues shall be 4" double wall metal flues. Some flues shall be for gas fired equipment, others shall be for fuel oil fired equipment.
 - ii. Provide combustion air through direct vent connections at louvers along the exterior wall.

- iii. Provide 300 gallon above ground, double wall fuel oil storage tank with digital level gauges and leak detection. Provide dual oil transfer pumps inside the building with 2” fuel oil supply and return, double wall piping with leak detection outside the building. Piping inside shall be carbon steel and shall be manifolded along the wall with ball valves for instructional use.
 - h. Culinary Arts shall have the following additional mechanical equipment.
 - i. Four (4) Kitchen exhaust hoods (Dishwasher & Grease) shall be designed and specified by the Kitchen Equipment Consultant. Grease exhaust hoods as required shall be installed per NFPA 96 with carbon steel ductwork and up-blast exhaust fans with ventilated curbs. Fan serving grease hood shall variable speed 1,200 CFM by Loren Cook or approved equal. Dishwasher exhaust fan shall be 600 CFM by Loren Cook or approved equal. Make-up air will be provided by ERV-8 with a motorized dampers.
 - ii. Kitchen hoods and kitchen exhaust ductwork shall be protected by dry chemical type systems and shall be connected to the fire alarm system.
11. Tel/Data and security equipment rooms
- a. Data closets will be served by ductless split units, by Mitsubishi or approved equal. Total units will be one (1) 2 ton unit (MDF) and five (5) 1 ton units (IDF). Unit consists of indoor wall mount ductless air handler and roof mount condensing unit with low ambient kit.
12. Corridors/Miscellaneous areas
- a. All restrooms, mechanical/electrical rooms and storage areas shall be provided with exhaust systems
 - b. The stairwells, entrances and vestibules shall be served by hot water cabinet unit heaters with return air temperature sensors and control valves.
 - c. All storage areas, mechanical rooms and electrical rooms shall be provided with hot water unit heaters.
 - d. All restrooms, mechanical/electrical rooms and storage areas shall be provided with exhaust that will be connected the DOAS units throughout the building. The exhaust rate to these rooms will be provided based on ASHRAE 62.1 Requirements.
 - e. The stairwells, entrances and vestibules shall be served by electric cabinet unit heaters with return air temperature sensors.
 - f. All storage areas, mechanical rooms and electrical rooms shall be provided with electric unit heaters.
13. All Spaces:
- a. All spaces along the perimeter of the building will have hot water radiant ceiling panels located in the ceiling grid at the glass outside wall; the panels will run wall to wall and be 2 feet wide by Rittling or approved equal. Each space will be provided with a dedicated temperature sensor for individual room temperature control.

Note: All motors (fan and pump) 3 HP and larger shall be high efficiency and provided with VFD.

ELECTRICAL SYSTEMS

Electrical Service

1. The building shall have **TWO(2) 2,500A, 480/277V, 3-phase, 4-wire** electrical services. Provide two main switchboards located in the first floor electrical room:
 - a. Main Switchboard MSB-1: Power to all building loads other than HVAC/PFP. Power to site lighting, electric vehicle charging and other sitework.
 - b. Main Switchboard MSB-2: Power to HVAC/PFP loads in building.
 - c. Each switchboard shall consist of three(3) sections: Pull box, main breaker and distribution.
2. The building shall be primary metered at the utility transformer per National Grid requirements. Utility meter will be furnished and installed by National Grid at two transformers, for the two services.
3. Each main switchboard shall be provided with electronic trip LSIG circuit breakers, arc flash reduction maintenance switch, Type 1 surge protective device, ground fault protection for equipment relay and phase failure relay.
4. Provide a grounding electrode system for the building consisting of (2) ¾"x 10' copper ground rods and #4 AWG copper wiring bonded to the switchboards, concrete rebar, building steel, water/sprinkler main and gas main.
5. Provide schedule 40 PVC conduit routed from the each switchboard underground to a dedicated utility company pad-mounted transformer. Provide schedule 40 PVC conduit in concrete encased ductbank from the transformer to a pole on the street for utility company provided primary conductors. Two utility transformers shall be provided by National Grid.

On-Site Power Generation

1. The building shall have a single **750kW, 480/277V, 3-phase**, 0.8 power factor, diesel fueled generator for both emergency and optional standby power. The generator shall be provided with a brushless alternator, 72-hour sub-base fuel tank, weatherproof sound attenuated enclosure, internal digital controller, (4) 100% rated line circuit breakers, battery charger, block heater, remote annunciator and remote stop switch. The generator shall be grounded as a separately derived system with (2) ¾"x 10' copper ground rods bonded to the enclosure and concrete pad rebar.
2. The following automatic transfer switches shall be provided, wired to the generator:
 - a. ATS-1E: MSB-1 Emergency Loads: 100A, 480/277V, 4-pole, switched neutral.
 - b. ATS-1S: MSB-1 Standby Loads: 400A, 480/277V, 4-pole, switched neutral.
 - c. ATS-2S: MSB-2 Standby Loads: 800A, 480/277V, 4-pole, switched neutral.
3. The generator will provide backup power to the following systems:
 - a. Building heating systems for freeze protection only (not thermal comfort)
 - b. Building management system
 - c. All rack mounted and wall mounted equipment in each I.T. room, including but not limited to servers, networking equipment, wireless network, public address systems, security systems, telephone systems and video surveillance.
 - d. Cooling for each I.T. room

- e. Elevator
 - f. Emergency lighting, wired to dedicated panelboards and a dedicated automatic transfer switch per NEC requirements. Batteries/ inverters will not be provided for emergency lighting in the building.
 - g. Receptacles and lighting in the gymnasium, cafeteria and associated multi-occupant bathrooms.
 - h. Receptacles and lighting in the administrative area and nurse's office.
 - i. Flush valves and faucet sensors in multi-occupant bathrooms, if these are selected to be hardwired type.
 - j. Fire alarm system
 - k. Fire protection/ sprinkler system
 - l. Full backup to the main kitchen, including refrigeration and cooking loads.
 - m. Refrigeration loads in culinary arts kitchen. Note that cooking and food preparation equipment will not be on generator power.
4. The building will not be provided with a solar photovoltaic system as part of this project. However, infrastructure will be provided for a future system. Include (2)-3”C. routed from the main electrical room to the main roof on the east side and (2)-3”C. routed to the west side.

Distribution

1. In the main electrical room on the first floor, provide the following:
- a. MSB-1 and MSB-2 switchboards as referenced above.
 - b. ATS-1E, ATS-1S and ATS-2S Automatic transfer switches as referenced above. ATS-1E shall be located in a dedicated closet per NFPA 110 requirements.
 - c. Distribution equipment powered from MSB-1:
 - i. Vocational area distribution switchboard: 1,600A, 208/120V, 3-ph, 4-W., with main circuit breaker (two section switchboard) – provide with 500kva, 480-208V, 3-ph dry-type transformer.
 - ii. Lighting distribution panel: 400A, 480/277V, 3-ph, 4-W., main lugs only
 - iii. General power distribution panel: 800A, 480/277V, 3-ph, 4-W., main lugs only
 - iv. Optional standby 480V distribution panel: 400A, 480/277V, 3-ph, 4W. with main circuit breaker
 - v. Optional standby 208V distribution panel: 400A, 208/120V, 3-ph, 4-W., with main circuit breaker – fed from 112.5kVA, 480-208V, 3-ph dry-type transformer.
 - vi. Emergency distribution panel: 100A, 480/277V, 3-ph, 4W, fused switch type.
 - vii. Branch panelboards as follows: Lighting panel (100A, 480/277V, 3ph), General power panel (225A, 208/120V, 3ph, 2-section) fed from 75KVA transformer, Optional Standby panel (100A, 208/120V, 3ph)
 - viii. 225KVA transformer and 800A fused disconnect switch to feed electric vehicle charging panel “EV1” as described in section below.

- ix. Athletic lighting, outbuildings and other sitework shall be fed from MSB-1.
- d. Distribution equipment powered from MSB-2:
 - i. Mechanical normal 208V distribution panel: 600A, 208/120V, 3-ph, 4-W., with main circuit breaker – provide with 150kva, 480-208V, 3-ph dry-type transformer.
 - ii. Mechanical standby 480V distribution panel: 800A, 480/277V, 3-ph, 4W. with main circuit breaker
 - iii. Mechanical standby 208V distribution panel: 400A, 208/120V, 3-ph, 4-W., with main circuit breaker – fed from 112.5kVA, 480-208V, 3-ph dry-type transformer.
 - iv. Branch panelboards as follows: Mechanical normal panel (100A, 208/120V, 3ph), Mechanical normal panel (225A, 480/277V, 3ph), Mechanical Standby panel (100A, 208/120V, 3ph), Mechanical Standby panel (100A, 480/277V, 3ph).
2. In the main electrical room, an energy monitoring/ electric submeter system shall be provided per IECC 2021 requirements. This system shall consist of a central control panel with (1) submeter and (1) current transformer for each of the distribution panels referenced above. This system shall be provided with BACNET communications to the building management system. Provide a system equal to SATEC BFM-136.
3. The building shall have **FOUR (4)** remote electrical rooms – (2) on the first floor, (2) on the second floor. Each electrical room shall be provided with the following:
 - a. Lighting panel (100A, 480/277V, 3ph)
 - b. General power panel (225A, 208/120V, 3ph, 2-section) fed from 75KVA transformer
 - c. Optional Standby panel (100A, 208/120V, 3ph)
 - d. Emergency lighting panel (60A, 480/277V, 3ph, fused switch type)
 - e. Mechanical Standby panel (225A, 480/277V, 3ph)
 - f. Mechanical Normal panel (400A, 480/277V, 3ph)
 - g. Mechanical Normal panel (100A, 208/120V, 3ph)
4. Provide branch panelboards for the vocational shops as follows. Each of these panelboards shall be fed from the vocational shop distribution switchboard in the main electrical room:
 - a. Automotive – 225A, 208/120V, 3ph, 4-W., 2-section.
 - b. Culinary Arts – 400A, 208/120V, 3ph, 4-W., 2-section.
 - i. Also include 100A, 208/120V, 3ph. Panelboard fed from the optional standby system for refrigeration loads.
 - c. Cosmetology – 225A, 208/120V, 3ph, 4-W., 2-section.
 - d. MET – 225A, 208/120V, 3ph, 4-W., 2-section.
 - e. Metal Fabrication – 800A, 208/120V, 3ph, 4-W., 2-section.
 - f. Horticulture – 225A, 208/120V, 3ph, 4-W., 2-section.
 - g. Carpentry – 400A, 208/120V, 3ph, 4-W., 2-section.
 - h. HVAC – 225A, 208/120V, 3ph, 4-W., 2-section.

- i. Plumbing – 225A, 208/120V, 3ph, 4-W., 2-section.
 - j. Electrical – 400A, 208/120V, 3ph, 4-W., 2-section.
 - k. Veterinary – 100A, 208/120V, 3ph, 4-W.
 - l. Main Kitchen – 400A, 208/120V, 3ph, 4-W., 2-section.
 - i. Also include 100A, 208/120V, 3ph. Panelboard fed from the optional standby system for refrigeration loads.
 - m. Graphics – 400A, 208/120V, 3ph, 4-W., 2-section.
 - n. CIT – 100A, 208/120V, 3ph, 4-W.
 - o. Allied Health – 100A, 208/120V, 3ph, 4-W.
5. Provide a remote facility shutoff switch equal to ASCO 911 series for Automotive, MET, Metal Fabrication, Horticulture, Carpentry, HVAC, Plumbing and Electrical shops. This switch shall have an amperage rating equal to the panelboard in the associated room. Provide an instructor's station with keyed reset and (4) remote EPO pushbuttons in each shop. Panelboards in all other vocational shops not listed above shall be provided with shunt trip main circuit breakers, wired to (2) EPO pushbuttons in associated shop area.
6. Branch circuits shall be installed in EMT conduit. Type MC cable shall be limited to concealed spaces above finished ceilings in classrooms or drywall type partitions after first device. EMT conduit shall be used to the first device in a branch circuit and shall be used in all masonry or CMU partitions. Provide the following branch circuitry:
- a. (10) duplex receptacles and (2) quad receptacles, (4) circuits per classroom.
 - b. (3) duplex receptacles and (1) quad receptacle, (1) circuit per office.
 - c. (6) duplex receptacles and (1) floor box, (2) circuits per conference room.
 - d. In classrooms, offices and conference rooms, Each receptacle shall be half-switched type and a room controller shall be provided and connected to the lighting occupancy sensor in the room for automatic receptacle shutoff in accordance with IECC 2021 requirements.
 - e. (1) duplex GFCI-type receptacle at each bathroom above the sink
 - f. (30) duplex receptacles on dedicated circuits for each vocational shop
 - g. (24) duplex receptacles, (6) circuits in the gymnasium
 - h. (24) duplex receptacles, (6) circuits in the cafeteria
 - i. (16) duplex receptacles, (4) circuits in the media center
 - j. (4) duplex receptacles and (4) twistlock rack-mounted receptacles, (6) circuits per IDF.
 - k. (8) duplex receptacles and (8) twistlock rack-mounted receptacles, (12) circuits in the MDF.
 - l. Circuits for all HVAC equipment as required. 120V Wiring to control panels, control transformers, etc shall be provided by the electrician while low voltage control wire shall be included in Division 23.
 - m. Circuits for all plumbing equipment.
 - n. Circuits for the Fire Alarm Equipment and Sound Equipment as required.

- o. Circuits for office equipment as required.
 - p. Circuits for security system and devices as required.
7. The following shall be provided to support electric vehicle charging equipment:
- a. Provide “EV1” 800A, 208/120V, 3-phase, 4-W, panelboard mounted in free standing enclosure in parking lot. Power from MSB-1 via transformer in main electrical room.
 - b. Provide “EV2” 400A, 208/120V, 3-phase, 4-W, sub-panel in a second free standing enclosure on the opposite side of the parking lot. Feed from EV1.
 - c. Provide (50) “EV-Ready” parking spaces as defined by the Massachusetts Stretch Code, Each space shall be provided with a NEMA 14-50R receptacle mounted in a weatherproof enclosure, with a 40A, 208V-1ph (3W+G) circuit powered from one of the EV panelboards in the parking area.

Lighting Systems

1. All lighting throughout the building will be LED based:
- a. Provide three(3) rows of pendant mounted direct/indirect linear light fixtures in each classroom.
 - b. Provide recessed 2x2 and 2x4 troffers suitable for ACT ceilings in all offices, corridors, conference rooms, bathrooms and similar areas.
 - c. Provide 4-foot utility strip fixtures in utility spaces.
 - d. Provide recessed lensed/gasketed 2x2 fixtures in the kitchen.
 - e. Provide wall mounted linear fixtures in the stairwells.
 - f. Architectural pendant fixtures shall be provided in the media center, multipurpose room and cafeteria. Exact type will be coordinated as design progresses. Include (30) fixtures per room.
 - g. Provide (16) pendant mounted high-bay fixtures in the gymnasium.
 - h. Provide (16) pendant mounted high-bay fixtures in each vocational shop area.
2. Provide a basic theatrical lighting system at the auditorium area, consisting of the following:
- a. Two(2) 32-foot long dead-hung schedule 40 1.5” ID steel pipes above stage. Each shall be provided with connector strips spanning the length of pipe, equal to ETC Colorsource Series. At each stage pipe, provide (6) LED RGBL par lights and (4) LED RGBL spot lights.
 - b. One(1) 28-foot long hoist system in seating area equal to ETC Flypipe series. Provide with connector strip spanning length of hoist, equal to ETC Colorsource Series. Provide with (10) LED RGBL spot lights.
 - c. Relay panel with (12) combination relay/breaker equal to ETC Sensor iQ series.
 - d. 8-way DMX splitter in Din Rail enclosure for control wiring management.
 - e. DMX control console equal to ETC Colorsource 40.
 - f. Echo-touch 7” touchscreen controller on stage equal to ETC 7TSN.
3. Exterior lighting will be provided at each egress door for code required egress and safety lighting. Typical fixture shall be LED and wired to the emergency generator to meet the code required egress lighting.

4. Provide pole mounted light fixtures in each parking lot, spaced 50 feet on center. The fixture, pole, concrete base and anchor bolts shall be provided by the electrical contractor. Excavation and backfill shall be provided by the site/civil contractor.
5. Emergency lighting shall be accomplished using the emergency distribution system powered by the generator and shall be provided in all egress pathways and those areas described as having generator back-up power. UL 924 compliant relays will be included in areas with both normal and emergency lighting.
6. Exit signs shall be self-contained, universal mounted, LED edge-lit illuminated, low energy usage fixtures. Exit signs shall be located at all egress doors, within corridors within 100ft line of sight, areas of assembly, and all other locations as required by code. Exit signs with the Connecticut Active Symbol of Access shall be located at all egress doors that lead to accessible exits.
7. Typical lighting illumination levels shall be:
 - a. 45FC – Classrooms, Offices, Cafeteria, Media Center, Multipurpose rooms.
 - b. 50FC – Gymnasium, Vocational Shops.
 - c. 15FC – Corridors, Stairwells, Bathrooms, Storage Rooms, Utility Spaces.
8. Daylight sensors and dimming control via room controllers shall be provided in the meeting rooms and other select rooms containing exterior window walls to meet IECC 2021 requirements.
9. Vacancy sensors shall be provided in all lit areas except in utility rooms and other rooms exempted by code.
10. Vacancy sensor switches with wall override shall be provided in all small offices, single occupancy toilet rooms, storage rooms and janitors closets.
11. Provide a central lighting area controller for control of corridor, stairwell and site lighting. Provide a relay panel in each electrical room, networked to this area controller. Provide low voltage key switches in each corridor for shutoff.
12. A new athletic field lighting system shall be provided and shall consist of the following:
 - a. Free standing electrical enclosure equal to Hammond Manufacturing #HN4FS723724 adjacent to utility transformer.
 - b. 400A, 480/277V, 3-ph, 4-W. panelboard with NEMA 3R housing mounted in above enclosure. This panelboard will service all fields.
 - c. 225A, 208/120V, 3-ph, 4-W. panelboard with NEMA 3R housing mounted in above enclosure. This panelboard will service outbuildings and other 120V circuits required in field areas. Provide with 75KVA 480-208V, 3ph dry-type transformer with NEMA 3R housing.
 - d. At the combination soccer/softball field, provide contactor panel equal to Musco Control-Link series. Provide (4) 80 ft poles, each with (12) LED fixtures. Provide with (1) 30A-3P, 480V circuit to each pole powered via contactor panel.
 - e. At the baseball field, provide contactor panel equal to Musco Control-Link series. Provide (4) 70 ft poles, each with (10) LED fixtures. Provide with (1) 30A-3P, 480V circuit to each pole powered via contactor panel.
 - f. Include (4) 120V circuits and (4) 208V circuits at each of the above fields for miscellaneous connections. Include 200 feet for each circuit.

Fire Alarm System

1. The building shall be provided with an addressable fire alarm system in compliance with NFPA 72, IBC 2021 and ADA regulations. Speaker/strobes with voice evacuation shall be provided throughout the building. The system shall be provided with a fire alarm control panel with a wireless master box to contact the local fire department. Manual pull stations shall be installed in locations designated by the fire marshal's office. Audible and visual signaling devices shall be installed in common areas, classrooms, corridors, etc. Visual-only signaling devices shall be installed in all work rooms, small staff toilets, etc.
2. Monitoring modules for sprinkler tamper and flow switches shall be provided.
3. Duct smoke detectors for each air-handling unit, (1) in the supply, and (1) in the return duct shall be provided. Test switches shall be located in accessible locations shall be provided.
4. Monitor module for Kitchen hood fire extinguishing system (Ansul System) shall be provided.
5. Remote annunciators, Knox Boxes and dedicated beacons shall be provided for fire department use at each entrance.
6. Connections from the fire alarm system to each magnetic door hold open device shall be provided in accordance with architectural code plans.
7. Carbon monoxide sensors shall be provided in the Kitchen and Mechanical rooms where fossil fuel burning equipment is located.

Miscellaneous Systems

1. The building shall be provided with a distributed antenna system for first responder radio coverage. The system shall consist of antennas, cabling, combiners, couplers, amplifiers and repeaters to provide 95% building addition coverage. The system shall communicate across the Town's fire, police and central dispatch licensed frequencies.
2. A UL Master Label compliant lightning protection system in compliance with NFPA 780, LPI standard #175, and UL #96A shall be provided for the building. System shall include strike termination devices, interconnecting conductors, ground rods around perimeter of the building and interconnection to the building grounding system. Downleads shall be routed in PVC conduit within the building envelope and concealed in wall cavities.
3. An emergency 2-way communication system shall be provided at each elevator lobby in accordance with IBC Section 1009. Provide one call station per floor, wired to a master unit at the main administrative area.
4. Provide an emergency electric and gas shutoff system with natural gas detection in each science lab equal to AGS Merlin Series. Electrical contractor shall provide utility controller, natural gas detectors and electrical contractor for (6) circuits in room. Plumbing contractor shall provide 120V normally closed solenoid valve and associated enclosure.

Electrical Means and Methods

1. All circuits shall be run overhead (except where feeding recessed floor mounted devices).
2. Wiring shall be THHN/THWN copper, installed in EMT conduit for general circuits.
3. Devices shall be specification grade, NEMA 5-20R etc.
4. In addition to other functions listed, all receptacles shall tamper-resistant type.

5. Disconnect switches shall be 600 VAC heavy-duty type. NEMA 1, 3R or 4X as required for locations installed. Provide fusible switches where indicated.
6. Circuit breakers shall be fixed element, thermal magnetic type.
7. Panelboards shall have copper bussing, with hinged, lockable, door-in-door trim.
8. Branch circuit breakers shall be bolt-on type.
9. All conduits, circuits and devices shall be labeled.
10. Conduits below slabs shall be Schedule 40 PVC, with rigid steel conduit sweeps.
11. New feeders shall be in conduit.
12. Branch circuits shall be in EMT to the first device in any circuit, and shall transition to MC cable from first device, downstream.
13. Exposed exterior conduits shall be RGS.
14. Underground conduits shall be Schedule 40 PVC and concrete encased conduit when crossing under roadways and sidewalks.

TECHNOLOGY SYSTEMS

Structured Cabling

1. Provide a new structured cabling system in the building consisting of the following:
 - a. (4)-4”C. routed underground from a pole on the street to the building MDF for utility service entrance cabling.
 - b. Four(4) free-standing equipment cabinets in the MDF for servers and head-end equipment.
 - c. Four(4) remote IDF closets, each with Two(2) open frame racks, patch panels, power distribution, cable management and overhead ladder-rack.
 - d. Provide 12-strand OS2 single mode and 12-strand OM4 multimode fiber optic cabling routed in 1-1/2” flexible innerduct routed from the IDF to the MDF.
 - e. Category 6 horizontal cabling throughout the building.
 - f. (2) Data and (1) VOIP drop in each office.
 - g. (4) Data drops in each conference room.
 - h. (8) Data drops in each of the meeting hall spaces.
 - i. Data cabling to support wireless access devices, ceiling mounted, throughout the entire building. Locate one device per every two offices/conference rooms. Provide (4) outlets for wireless access devices in each of the meeting hall spaces.
 - j. Data cabling to support security systems.
 - k. Horizontal cabling shall be routed to work area outlets using J-hooks spaced 5-foot on center in corridors.
2. Provide a telecommunications ground bar in each IT room with grounding backbone installed per TIA/EIA-607 standards.

Distributed Communications

1. The building shall be provided with a Public Address system throughout the corridors, classrooms, offices, assembly areas, offices, and the exterior/ building perimeter. Interconnection between the public address and VOIP systems shall be provided to allow paging via desk phones. Paging zones shall be coordinated with the owner's representative.
2. The building shall be provided with a central wireless clock system. Clocks shall be located in each classroom and each office. Clocks shall be analog type, powered via 120V circuit in area.

Audio-Video Systems

1. Provide the following in each classroom:
 - a. Interactive flatscreen display, 86" diagonal. (provided under FF&E phase)
 - b. HDBASET wallplate transmitter at teacher's desk and receiver at flatscreen.
 - c. Sound reinforcement system consisting of a portable media connector, wirelessly communicating with a central overhead combination speaker/receiver. The media connector shall have an audio-input from the flatscreen display, accomplished via a stereo audio cable routed to the teacher's desk. The speaker/receiver shall have inputs from the building public address and fire alarm systems for muting. The system shall be equal to Lightspeed Topcat.
2. The gymnasium, commons and multipurpose/auditorium shall each be provided with a large format audio-video system. This system shall consist of the following items in each space:
 - a. DSP equal to Bose ControlSpace.
 - b. Amplifier equal to Bose PowerSpace.
 - c. (16) loudspeakers
 - d. AV control processor, equal to Extron IPCP.
 - e. 16-port managed POE network switch
 - f. Touchscreen controller, equal to Extron TLP PRO.
 - g. Two faceplate style HDBASET transmitters and associated receivers in rack.
 - h. Projector (furnished under FF&E phase) – provide with HDBASET style receiver.
 - i. Four wireless microphone receivers and transmitters, equal to Shure BLX series.
 - j. Assistive listening system
 - k. Equipment rack and power distribution unit

Security Systems

1. Intrusion Detection system control panel and peripheral components shall be provided that will provide security contacts on all exterior doors and any operable windows that are accessible from grade. Motion detectors shall be specified for internal building monitoring when the building is closed. Keypad activation shall be provided at each egress door.

2. Security Cameras (IP-based) shall be specified to cover each egress door and the general building perimeter. Camera storage shall be provided by an NVR system installed at the MDF equipment cabinet location. Security cameras shall also be provided for complete coverage of all building corridors and common assembly areas. Include interior cameras mounted 100 feet on center.
3. Access control doors shall be provided at each exterior door, and at each I.T. room. Provide an IP-based access control system for the building.
4. Provide a video entry/ intercom system for (4) entrances to the building equal to AIPHONE IX Series.



South Shore Regional School District



South Shore Regional Vocational Technical High School

*476 Webster Street
Hanover, MA 02339*

***Telecommunications, Security, and Audiovisual
Schematic Design Narrative***

New Construction

February 29, 2024

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PART 1 - ABOUT

- 1.1 The following describes the proposed new telecommunications, security, and audiovisual and paging/mass communications systems for the new South Shore Regional Vocational Technical High School (SSVT) located at 476 Webster Street in Hanover, Massachusetts.

PART 2 - TELECOMMUNICATIONS

2.1 Internet Service

- A. The existing underground Comcast Business fiber service shall be removed, and a new service shall be provided to the new school via underground (2) 4inch conduits (min) to a new telecom room for service demarc. The new telecom rooms shall not be shared with other utilities (electrical, mechanical, plumbing) and shall have a dedicated HVAC system to maintain.

2.2 Telecom Rooms

- A. All telecommunications cabling will be terminated at new four-post racks in climate-controlled telecom rooms serving one (1) wing per floor. Telecom rooms will consist of at least two (2) four-post racks with 6 and 10-inch vertical cable management and uninterrupted power by two (2) 2-3KVA 2RU UPS per rack to support network, security, and mass communications systems. 12 and 18-inch overhead cable runway for cable organization and support.

2.3 Network Cabling Infrastructure

- A. **Backbone Cabling:** New telecom rooms will be connected back to the main telecom demarc room via 6-strand singlemode OS2, 12-strand multimode OM4 armored fibers, and six (6) category 6A copper cables in a j-hook pathway. AR1 only - Existing buildings connected via outside plant cabling shall be repathed and cabled with OSP 6-strand singlemode OS2, 12-strand multimode OM4 armored fibers via 4inch conduit to the nearest new telecom room.
- B. **Horizontal Cabling:** All work area outlets, WAPs (wireless access points), and other horizontal cabling-connected devices will be augmented Category 6 (CAT6A), at a minimum, as recommended by BICSI. All cabling will be terminated on CAT6A color-coded 8P8C RJ45 connectors. White thermoplastic faceplates will be utilized throughout the project. For above-ceiling terminations, surface-mounted two (2) port plenum-rated boxes shall be provided.
1. Typical Trade rooms, classrooms, and commons:
 - a. Four (4) port faceplate at the teacher desk location. Three (3) connectors will be terminated per faceplate, one (1) for phone and two (2) for data.
 - b. Wall-mounted phone for paging/intercom.
 - c. One (1) WAP per room. Two (2) CAT6A per device.



2. Teacher Work Room, Office, Conference Room, Kitchen:
 - a. Four (4) port faceplate at each work area. Three (3) connectors will be terminated per faceplate, one (1) for phone and two (2) for data.
 - b. Wall-mounted phone for paging/intercom.
 - c. One (1) WAP per room. Two (2) CAT6A per device.
 3. Cafeteria
 - a. Two (2) Wall-mounted phones for paging/intercom.
 - b. Two (2) WAP per room. Two (2) CAT6A per device.
 - c. Four (4) port faceplate for stage.
 4. Gymnasium
 - a. Two (2) Wall-mounted phones for paging/intercom.
 - b. Four (4) WAP per room. Two (2) CAT6A per device. (in exterior IK-rated enclosures)
 - c. Four (4) port faceplate for scoreboard/AV.
- C. **Cabling Pathways:** Device back boxes shall be equal to Randl Industries 5” square by 2-7/8” deep boxes with a 1-inch conduit above the accessible ceiling. Open cable pathways (J hooks) will be provided in accessible ceiling areas by the division 27 contractor. In areas where the room/area is open to structure, cabling shall be routed through a dedicated cable tray.

2.4 Network Equipment

- A. SSVT utilizes SonicWall for its firewall. The existing firewall was recently replaced in 2022 through the E-rate program. This SonicWall can be turned over to SSVT before renovation or demo to be reused in the new telecom rooms.
- B. SSVT's existing network switches were recently replaced in 2022 with HP ProCurve 2920-48G POE+ units purchased through the e-rate program. These switches can be turned over to SSVT before renovation or demo to be reused in the new telecom rooms.
- C. New switches to support additional horizontal cabling shall match the HP ProCurve 2920-48G POE+ switches (the latest model at construction time). Switches will be connected back to the core switch in the demarc room via SFP fiber ports and the fiber backbone infrastructure.
- D. All new WAP (wireless access points) will provided per the above

2.5 Outline of Codes/Guidelines Used

- A. Building Industry Consulting Service International (BICSI) – Telecommunications Distribution Methods Manual (TDMM), 14th Edition.
- B. Telecommunications Industry Association (TIA)
- C. International Code Council (ICC)



- D. National Fire Protection Association (NFPA) 70 - National Electric Code (NEC), 2023 edition as adopted by the State of Massachusetts (effective February 17, 2023).
- E. National Electrical Manufacturers Association (NEMA)



PART 3 - SECURITY

3.1 Security Systems

- A. **Video Management Software:** A new network based recording server operating on video management software (VMS) to support the below cameras shall be provided. VMS shall be selected during design but an on-premise video recording server shall be provided and installed in the main telecom room.
- B. **Cameras:** All cameras shall be high resolution, IP POE connected/powered, and have object detection/classifications for humans, vehicles, objects. Manufacturers such as Hanwha, Avigilon, Axis, and iPro are acceptable. Cameras will be installed in the following locations:
 1. Exterior:
 - a. 12-20MP Multi-sensor cameras, vandal-resistant, integral IR wall or corner mounted. General coverage of the perimeter of the building, parking, annex buildings, and fields.
 - b. 5MP vandal-resistant, integral IR, fixed domes for main entry, egress doors, as well as outdoor trade areas, courtyards, and coverage.
 - c. Pole Mounted cameras for site Coverage:
 - Parking Lot
 - Site Entrys
 - Bus Area
 2. Interior: 5MP vandal-resistant, integral IR, fixed domes.
 - a. Entry Vestibule
 - b. Stairwells and Elevator
 - c. Corridor Areas (non-learning)
 - d. Cafeteria (If requested by SSTV)
 - e. Gymnasium (If requested by SSTV)
- C. **Cabling:** All cabling and connectivity shall be equal to the telecommunication horizontal cabling (CAT6A). Surge protection shall be provided on all exterior devices. All cabling will be terminated at the telecom rooms designated for that floor/area on dedicated patch panels.
- D. **Cabling Pathways:** Security cabling will utilize open cable pathways (J hooks) in accessible ceiling areas. In areas where the room/area is open to structure, cabling shall be routed through a dedicated conduit to each device.
- E. **Viewing Station:** 55inch wall-mounted viewing monitors will be provided at the main office and principal's office. Displays will be connected to a micro-computer to connect to the access control and video management software for viewing and monitoring.



- F. **Access Control:** The new access control system will be an software and/or web based access control system with controllers, power supplies, and batteries to provide electronic control on the following doors:
 - 1. Exterior doors
 - 2. Main Office
 - 3. Stairwell doors
 - 4. Elevator
 - 5. Receiving
 - 6. Telecom Rooms
 - 7. Teacher Workroom
 - 8. Trade and Classrooms
- G. **Video Intercom:** Provide a new IP-based video intercom at the main entry and receiving entry that includes a NEMA 4X-rated call station and a desktop-mounted video master station with door release capabilities—devices to be tied into the access control and VMS system for recording and door integration.
- H. **Intrusion Alarm:** The intrusion alarm system shall be equal to Honeywell. The system shall be integrated into the access control system for door monitoring of non-access control doors. Connected to a UL listed central station dispatch center.
 - 1. Door Contacts shall be provided on all exterior doors for monitoring and alarm.
 - 2. Motion sensors shall be provided at all lower-level rooms/areas with doors and/or windows to at grade.
 - 3. Keypads shall be provided at the main entry, gym entry, and back receiving door. Receiving door keypad shall only allow disarming of the kitchen and café area. The culinary public restaurant shall be zoned separately. Coordinate requirements with SSTV.

3.2 Maintenance Consideration

- A. It is highly likely that one or more outside service vendors will need to be retained to maintain these systems and provide regular training to school department staff.
- B. A 3-year service maintenance agreement shall be included as part of the construction contract. The service agreement shall include the following:
 - 1. 24/7/365 Phone support.
 - 2. 4-hour technician dispatch for emergency calls.
 - 3. Quarterly on-site inspections include camera refocusing and cleaning.
 - 4. Monthly remote inspection to confirm all systems and devices are operational.
 - 5. 3-year warranty on all devices and equipment.
- C. 3 years of software updates/patches. Updates shall be bi-annual.



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PART 4 - AUDIOVISUAL AND PAGING/MASS COMMUNICATIONS

4.1 Audiovisual Systems

- A. Typical trade rooms, Classroom, small group room, Teacher room:
 - 1. Wall-mounted (or mobile) interactive Cleartouch display with wireless screen share integrated.
 - 2. Voice Equalization System equal to LightSpeed-Tek Topcat (Ceiling) or Redcat (wall) system with FlexMike for teachers and T3 for students. Provide with Access Link connected to the integrative display.
 - 3. HDMI and USB Type-C connection outlet at the teacher workarea.
- B. Conference Room:
 - 1. Wall-mounted interactive Cleartouch display with wireless screen share integrated.
 - 2. Voice Equalization System equal to LightSpeed-Tek Topcat (Ceiling) or Redcat (wall) system with FlexMike and T3. Provide with Access Link connected to the integrative display.
 - 3. HDMI and USB Type-C connection outlet at the floor box.
- C. Cafeteria
 - 1. Wall mounted enclosure in Stage room for AV equipment.
 - 2. Ceiling mounted laser projector and motorized projector screen.
 - 3. Ceiling Mount speakers in the cafeteria connected to rack-mounted multi-channel network amplifier. Amp set for paging input priority over local input.
 - 4. Network based control system tied into local lighting control system and motorized shades.
 - 5. Mobile microphones, handheld and lapel.
 - 6. IR based assistive listening system.
- D. Gymnasium
 - 1. Wall mounted enclosure in storage room for AV equipment.
 - 2. Ceiling mounted laser projector and motorized projector screen.
 - 3. Ceiling Mount speakers in the cafeteria connected to rack-mounted multi-channel network amplifier. Amp set for paging input priority over local input.
 - 4. Network based control system tied into local lighting control system and motorized shades.
 - 5. Mobile microphones, handheld and lapel.
 - 6. IR based assistive listening system.
- E. **Digital Signage:** Wall-mounted displays will be installed in common public spaces, like the main entry, office area, Gym lobby, and connected to digital signage player and software platform similar to Safari Montage <https://safarimontage.com/os/> or BrightSign <https://www.brightsign.biz/brightsign-players/series-4/>



4.2 Mass Communications System

- A. SIP-based phone, paging, clock, bell, and mass notification alerting system. SSTV currently utilizes Raptor Technologies for its visitor management system.
1. The new system shall be comprised of the following devices:
 - a. Combination speaker, LCD display, LED flasher, and integrated talk back microphone; POE powered. One per typical classroom and/or office space.
 - Extension speakers will be utilized in larger spaces that need additional coverage. I.e. library, cafeteria.
 - b. SIP-enabled voIP phone with dial out capabilities. One per typical classroom and/or office space.
 - c. Main office console unit with gooseneck mic and handset.
 - d. Interior 70V ceiling speaker for corridor or circulation areas.
 - e. Exterior 70V horn speakers. One at each exterior exit door.
 - f. Multichannel 70V hybrid IP amplifier for 70V speakers.
 - g. Server gateway hardware appliance.
 - h. 24 and 48 port patch panels to support each device.
 - i. 24 and 48 port layer3 Poe+ network switches to support each device.
 2. The proposed new system will utilize a mass notification software package that requires end point device and user licenses. The software provides the following features:
 - a. Ability to add pre-recorded messages for pre-defined events.
 - b. Text, audio, and visual-based alerts. Alerts can be distributed to multiple types of devices including:
 - IP devices - phones, speakers, paging devices.
 - Mobile phones and tablets.
 - Digital signage.
 - Computer workstations.
 - c. 911 dial out.
 - Emergency pre-configured notifications can be sent the moment 911 is dialed.
 - Automated alerts when 911 is dialed from a land line phone within the facility.
 - Call listening and recording for incident reporting.
 - d. Multiple ways to indicate an alert including via:
 - Manual:
 - a) Desktop, mobile, or tablet app.
 - b) Web browser.
 - c) Fixed and wearable panic buttons.



- d) Programmed extension number(s).
- Automated:
 - a) Emergency 911 call from within the school.
 - b) Physical security systems (access, video, intrusion).
 - c) Sever weather.
 - d) Fire alarm systems.
- 3. As with any software system, proper configuration/programming and training is required. The proposed system shall come with on-site factory start up, onboarding, and end user training. System configuration shall be coordinated with SSTV administrators. Pre-construction programming meetings will be required to ensure the proposed system functionality is implemented per SSTV requirements.
- B. **Cabling:** All new network and POE-powered AV equipment will be augmented Category 6 (CAT6A), at a minimum, cabling terminated on CAT6A color-coded 8P8C RJ45 connectors.
- C. **Cabling Pathways:** AV cabling will utilize open cable pathways (J hooks) in accessible ceiling areas. In areas where the room/area is open to structure, cabling shall be routed through a dedicated conduit to each device.

4.3 Maintenance Consideration

- A. It is highly likely that one or more outside service vendors will need to be retained to maintain these systems and provide regular training to school department staff.
- B. A 3-year service maintenance agreement shall be included as part of the construction contract. The service agreement shall include the following:
 - 1. 24/7/365 Phone support.
 - 2. 4-hour technician dispatch for emergency calls.
 - 3. Quarterly on-site inspections include camera refocusing and cleaning.
 - 4. Monthly remote inspection to confirm all systems and devices are operational.
 - 5. 3-year warranty on all devices and equipment.
- C. 3 years of software updates/patches. Updates shall be bi-annual.

4.4 Outline of Codes/Guidelines Used

- A. Building Industry Consulting Service International (BICSI) – Telecommunications Distribution Methods Manual (TDMM), 14th Edition.
- B. ANSI/BICSI 007 Standard for Intelligent Buildings.
- C. Telecommunications Industry Association (TIA)
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End of Narrative

South Shore Regional School District



South Shore Regional Vocational Technical High School

*476 Webster Street
Hanover, MA 02339*

***Telecommunications, Security, and Audiovisual
Schematic Design Narrative***

Addition/Renovation

February 29, 2024

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PART 1 - ABOUT

- 1.1 The following describes the proposed new telecommunications, security, and audiovisual and paging/mass communications systems for the addition and renovation to the main campus of the South Shore Regional Vocational Technical High School (SSVT) located at 476 Webster Street in Hanover, Massachusetts.

PART 2 - TELECOMMUNICATIONS

2.1 Internet Service

- A. The existing South Shore Vocational Technical High School (SSVT) underground Comcast Business fiber service demarc/terminated in the original A.V. Storage 127 will need to be demoed and a new underground service brought in via (2) 4inch conduits (min) to a new telecom room for service demarc. The new telecom rooms shall not be shared with other utilities (electrical, mechanical, plumbing) and shall have a dedicated HVAC system to maintain.

2.2 Telecom Rooms

- A. Existing telecom Closets, Rooms/spaces are insufficient, not secured, or not climate controlled. Spaces are shared with other building systems or storage, causing network and security vulnerabilities. All telecommunications cabling will be terminated at new four-post racks in climate-controlled telecom rooms designated for that floor/area. New telecom rooms will consist of a minimum of two (2) four-post racks with 6 and 10-inch vertical cable management and uninterrupted power by two (2) 2-3KVA 2RU UPS per rack to support network, security, and mass communications systems. 12 and 18-inch overhead cable runway for cable organization and support.

2.3 Network Cabling Infrastructure

- A. **Backbone Cabling:** New telecom rooms will be connected back to the main telecom demarc room via 6-strand singlemode OS2, 12-strand multimode OM4 armored fibers, and six (6) category 6A copper cables in a j-hook pathway. AR1 only - Existing buildings connected via outside plant cabling shall be repathed and cabled with OSP 6-strand singlemode OS2, 12-strand multimode OM4 armored fibers via 4inch conduit to the nearest new telecom room.
- B. **Horizontal Cabling:** All work area outlets, WAPs (wireless access points), and other horizontal cabling-connected devices will be augmented Category 6 (CAT6A), at a minimum, as recommended by BICSI. All cabling will be terminated on CAT6A color-coded 8P8C RJ45 connectors. White thermoplastic faceplates will be utilized throughout the project. For above-ceiling terminations, surface-mounted two (2) port plenum-rated boxes shall be provided.
 1. Typical Trade rooms, classrooms, and commons:



- a. Four (4) port faceplate at the teacher desk location. Three (3) connectors will be terminated per faceplate, one (1) for phone and two (2) for data.
 - b. Wall-mounted phone for paging/intercom.
 - c. One (1) WAP per room. Two (2) CAT6A per device.
2. Teacher Work Room, Office, Conference Room, Kitchen:
- a. Four (4) port faceplate at each work area. Three (3) connectors will be terminated per faceplate, one (1) for phone and two (2) for data.
 - b. Wall-mounted phone for paging/intercom.
 - c. One (1) WAP per room. Two (2) CAT6A per device.
3. Cafeteria
- a. Two (2) Wall-mounted phones for paging/intercom.
 - b. Two (2) WAP per room. Two (2) CAT6A per device.
 - c. Four (4) port faceplate for stage.
4. Gymnasium
- a. Two (2) Wall-mounted phones for paging/intercom.
 - b. Four (4) WAP per room. Two (2) CAT6A per device. (in exterior IK-rated enclosures)
 - c. Four (4) port faceplate for scoreboard/AV.
- C. **Cabling Pathways:** Device back boxes shall be equal to Randl Industries 5" square by 2-7/8" deep boxes with a 1-inch conduit above the accessible ceiling. Open cable pathways (J hooks) will be provided in accessible ceiling areas by the division 27 contractor. In areas where the room/area is open to structure, cabling shall be routed through a dedicated cable tray.

2.4 Network Equipment

- A. SSVT utilizes SonicWall for its firewall. The existing firewall was recently replaced in 2022 through the E-rate program. This SonicWall can be turned over to SSVT before renovation or demo to be reused in the new telecom rooms.
- B. SSVT's existing network switches were recently replaced in 2022 with HP ProCurve 2920-48G POE+ units purchased through the e-rate program. These switches can be turned over to SSVT before renovation or demo to be reused in the new telecom rooms.
- C. New switches to support additional horizontal cabling shall match the HP ProCurve 2920-48G POE+ switches (the latest model at construction time). Switches will be connected back to the core switch in the demarc room via SFP fiber ports and the fiber backbone infrastructure.
- D. All new WAP (wireless access points) will provided per the above



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PART 3 - SECURITY

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PART 4 - AUDIOVISUAL AND PAGING/MASS COMMUNICATIONS

4.1 Audiovisual Systems

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 - 3. HDMI and USB Type-C connection outlet at the teacher workarea.
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4.2 Mass Communications System

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1. The new system shall be comprised of the following devices:
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 - h. 24 and 48 port patch panels to support each device.
 - i. 24 and 48 port layer3 Poe+ network switches to support each device.
 2. The proposed new system will utilize a mass notification software package that requires end point device and user licenses. The software provides the following features:
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 - b. Text, audio, and visual-based alerts. Alerts can be distributed to multiple types of devices including:
 - IP devices - phones, speakers, paging devices.
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- d) Programmed extension number(s).
- Automated:
 - a) Emergency 911 call from within the school.
 - b) Physical security systems (access, video, intrusion).
 - c) Sever weather.
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- 3. As with any software system, proper configuration/programming and training is required. The proposed system shall come with on-site factory start up, onboarding, and end user training. System configuration shall be coordinated with SSTV administrators. Pre-construction programming meetings will be required to ensure the proposed system functionality is implemented per SSTV requirements.
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End of Narrative





Final Evaluation of Alternatives

As reported in the PDP, the District decided to continue their consideration of five design options and five enrollments. This list was supplemented by the addition of a sixth design option-“NC 2.1”, an alternative to the NC 2 option. This resulted in the following initial matrix of 31 options:

Option	645 students	750 students	805 students	900 students	975 students
Code Upgrade “Base Repair”	existing	---	---	---	---
Addition/ Renovation AR- 1 “L-shape”	201,500 sf	217,500 sf	230,400 sf	243,200 sf	254,500 sf
Addition/ Renovation AR- 2 “Lightwell”	188,100 sf	201,700 sf	209,600 sf	228,500 sf	236,100 sf
New Construction NC-1 “Courtyard”	203,480 sf	228,540 sf	240,000 sf	260,000 sf	278,000 sf
New Construction NC-2.0 “Linear”	203,480 sf	228,540 sf	240,000 sf	260,000 sf	278,000 sf
New Construction NC-2.1 “Linear/Center core”	203,480 sf	228,540 sf	240,000 sf	260,000 sf	278,000 sf
New Construction NC-3 “Wings”	203,480 sf	228,540 sf	240,000 sf	260,000 sf	278,000 sf

Due to the large number of options and variables, the District decided to conduct the evaluation process in two steps. The first step was to reduce the list of options to a shortlist of design options and enrollment options based upon preliminary layouts and construction cost estimates. The shortlisted options were then developed further with more detailed site plans, floor plans, and cost estimates for final evaluation.

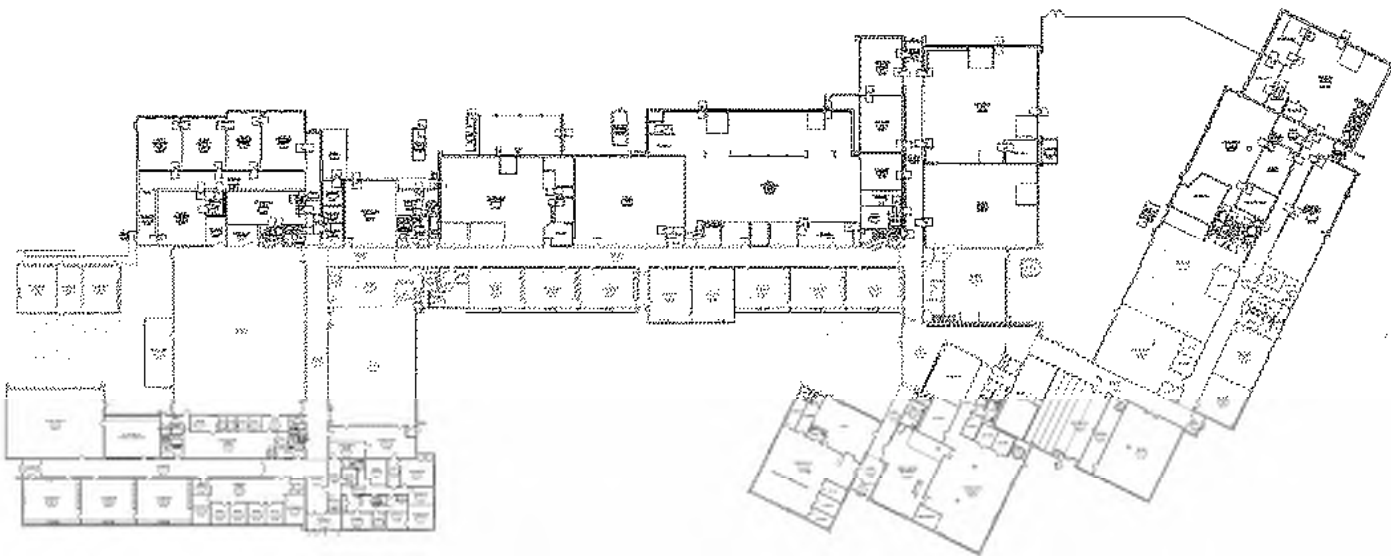
A brief description of each option follows:

Base Building Repair

The Base Building Repair Option brings the existing building up to code and includes repair of damages, deficiencies, and obsolete systems identified in the Existing Conditions Assessment. This option does not improve the educational program areas or address educational space deficiencies.

An overview of the Base Building Repair Option follows:

- Athletic field conditions are fair to poor- improve drainage, turf and track surfaces
- Improve vehicular and pedestrian pavement and curbing throughout the site
- Provide Architectural Access Board (MAAB) compliance to the fields, bleachers, and the press box
- Replace roofing at 1992 addition
- Provide a full building fire suppression system
- Renovate Toilet Rooms and classroom entrances to provide accessibility.
- Upgrade exterior envelope including insulation, water & air infiltration, metal panels
- Abate asbestos and upgrade damaged and inappropriate finishes throughout
- Replace ceilings to improve acoustics throughout, classrooms, corridors, and cafeteria
- Upgrade kitchen exhaust hoods
- Remove and replace the existing unit ventilators, cabinet heaters and finned tube radiation.
- Upgrade the HVAC control system to a new electronic system with energy management capability.
- Replace the original buildings existing electrical infrastructure, including branch circuit panelboards and feeders
- Replace the existing zoned fire alarm system to an addressable type system
- Replace existing Cast iron storm drainage, sanitary drain, waste, and vent piping
- Upgrade light fixtures and controls throughout
- Provide additional security system components, such as cameras to provide full building coverage.

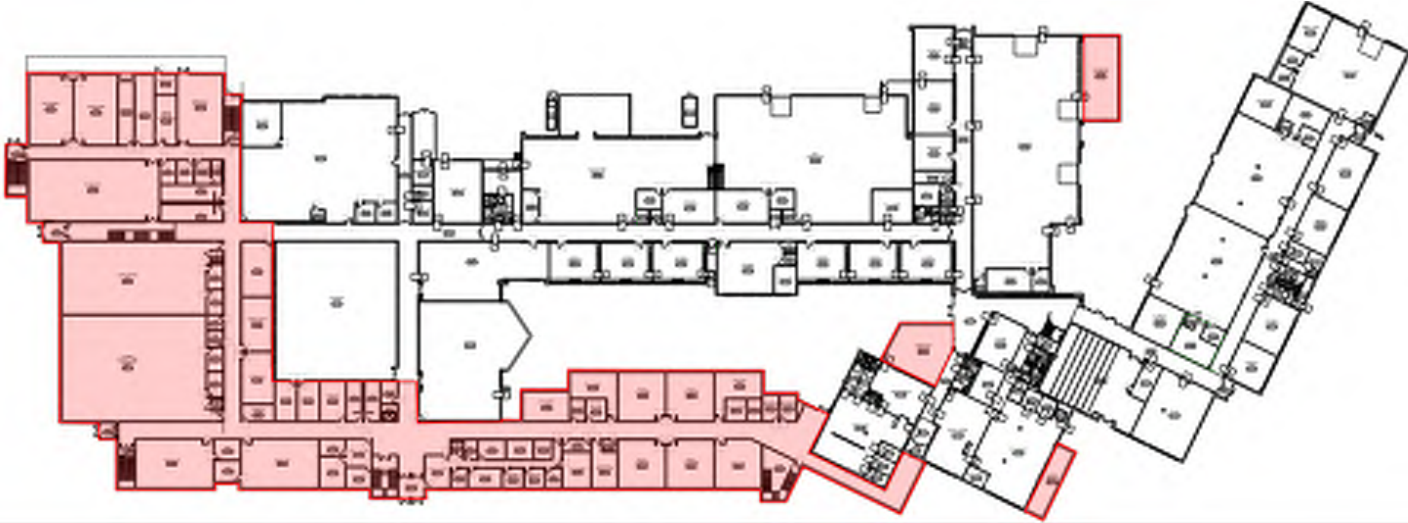


Existing Floor Plan

The projected cost, with escalation, for the Base Building Repair is approximately \$122 Million.

OPTION AR-1 “L – shaped” Addition/ Renovation

For enrollments: 645, 750, 805, 900, & 975 students



AR-1 First Floor Plan

Description:

This option proposes a two-story addition across the front of the school and wrapping around to the east of the Gym along with the full renovation of the existing school. Depending upon the selected enrollment, a small additions are required to the existing cafeteria and several CTE shops.

The first phase of the project would be to relocate the current Administration, Student Services, Allied Health spaces, classrooms, and science labs into temporary swing space, most likely modular “trailers” elsewhere on the campus.

The multi-story addition would then be constructed to house the new Gymnasium & support spaces, Administration, CTE shop space for the MET, Graphics, CIT, & Allied Health programs, and new science labs and general classrooms.

Once the new construction is completed and occupied the phased renovation of the existing building could begin. The renovation would include the conversion of the Science wing into the Electrical shop and the conversion of the former Gymnasium into a multi-purpose auditorium. This Auditorium space could also provide swing space for the renovation of existing high-bay CTE shops. The relocation of the MET, Graphics, Electrical, and CIT programs will allow a domino effect of the remaining CTE programs to expand into renovated, right-sized spaces.

The increase in student enrollment requires the construction of a wastewater treatment facility on site. Otherwise, the site configuration remains largely unchanged.

To accommodate the larger enrollments that are being considered (up to 975 students), a third floor of academic space would be included with the addition and several existing high-bay shops would need to be expanded in their current locations.

Educational Program requirements:

Option AR-1 generally satisfies most of the space needs outlined in the Educational Program and preliminary Space Summary. However, it does not alter the existing undersized classrooms of the original building, and certain CTE shops vary slightly from the DESE guidelines due to the configuration of the existing building.

This option maintains the current separate public access to the Culinary and Cosmetology shops and improves its security by potentially located some administrative presence adjacent to that entrance.

Construction Phasing:

This option will involve construction adjacent to occupancy at times during the school year. Multiple complex phasing will be required, including the consideration of double shifts, second shift work, and swing spaces for temporary relocation of programs.

Temporary parking will also need to be considered during the initial new construction phase to compensate for space lost to construction activities.

Estimated construction duration is four years.

Areas (the area of this option varies proportionally with the target enrollment variations)

Enrollment	Total	Renovation	New Construction
645 Students	201,500 sf	108,000 sf	93,500 sf
750 Students	217,500 sf	108,000 sf	109,500 sf
805 Students	230,400 sf	108,000 sf	122,400 sf
900 Students	243,200 sf	108,000 sf	135,200 sf
975 Students	254,500 sf	101,000 sf	153,500 sf

Preliminary Order-Of-Magnitude Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs
645 Students	\$242,971,900	\$303,714,875
750 Students	\$265,916,600	\$332,395,750
805 Students	\$279,844,000	\$349,805,000
900 Students	\$293,406,500	\$366,758,125
975 Students	\$312,909,000	\$391,136,250

Pro's:

- Fully renovates the existing building like-new to extend its longevity
- Generally Satisfies South Shore Tech's space needs and right-sizes most CTE programs
- Provides safe, secure, and direct public access to Consumer Services programs

Con's:

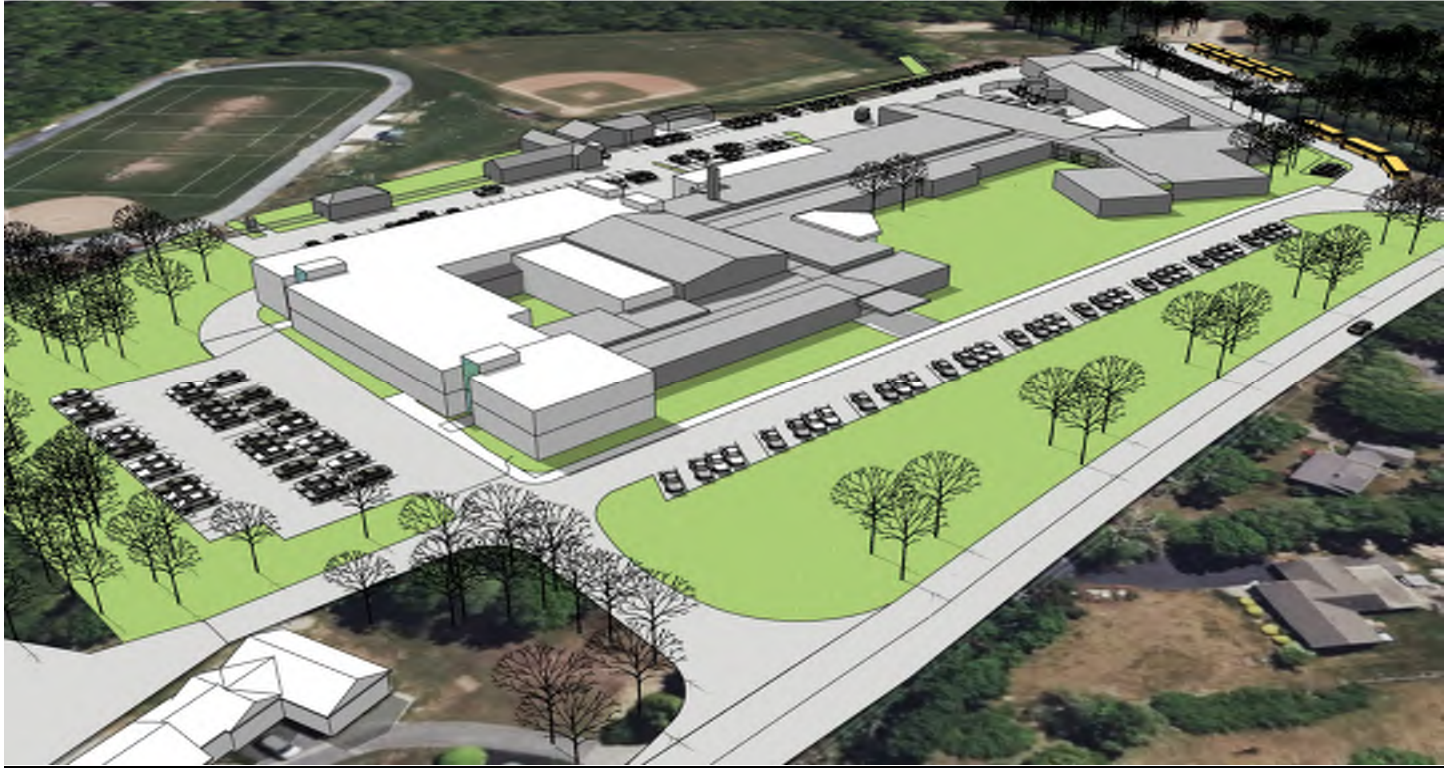
- Requires disruptive phased construction adjacent to occupancy
- Doesn't significantly improve the integration of CTE and Academic spaces
- Long construction period

Initial Evaluation: Continue to study in final phase of evaluation for enrollments of 805 & 900 students

Final Evaluation: Drop from consideration

OPTION AR-2 “Lightwell” Addition/ Renovation

For enrollments: 645, 750, 805, 900, & 975 students



AR-2 View

Description:

This option proposes multiple additions to be built in phases. The existing Science wing would be demolished to provide space for the primary addition- a two-story L-shaped addition wrapping around to the south and east of the existing Gym forming a small courtyard or lightwell. Other additions would be constructed to expand certain CTE shops and the cafeteria as needed for the various enrollments. The remaining existing building would be fully renovated.

The first phase of the project would be to relocate five science classrooms into temporary swing space, most likely modular “trailers” elsewhere on the campus. The major addition would then be constructed to house the new low-bay shops for the Graphics, CIT, & Allied Health programs, girl’s locker rooms, and new science labs and general classrooms.

Once the first phase of new construction is completed and occupied, the smaller additions and phased renovation of the existing building could proceed. The smaller additions would expand most existing CTE shops as required to meet the space needs while also renovating the existing spaces. This option retains and renovates the undersized Gymnasium. The existing Lecture Hall is restored to its original size in lieu of constructing a new Auditorium. The relocation of the Graphics and CIT programs will allow the adjacent CTE programs to expand into renovated, right-sized spaces. This option also relocates the Library Media Center back into its previous location in the 1962 building.

The increase in student enrollment requires the construction of a wastewater treatment facility on site. Otherwise, the site configuration remains largely unchanged.

To accommodate the larger enrollments that are being considered (up to 975 students), a third floor of academic space would be added to the addition and several existing high-bay shops would need to be expanded further.

Educational Program requirements:

Option AR-2 generally satisfies many of space needs outlined in the Educational Program and preliminary Space Summary with two significant variations are: the existing undersized Gym (7,150 sf vs, 12,000 sf) is retained; and the existing Lecture is retained in lieu of a new, larger Auditorium (100 seats vs 450 seats). Also, this option does not alter the existing undersized classrooms of the original building and certain CTE shops vary slightly from the DESE guidelines due to the configuration of the existing building.

The general configuration of the site circulation and parking would be maintained while the materials would be renovated. The athletic fields would be renovated to improve their drainage and condition while remaining in their current location and configuration.

Construction Phasing:

This option will involve construction adjacent to occupancy at times during the school year. Multiple complex phasing will be required, including the consideration of double shifts, second shift work, and swing spaces for temporary relocation of programs.

The first phase would be the installation of modular swing space and the relocation of science classrooms. Then abatement and demolition of the Science wing would take place to create the building zone for new construction.

Estimated construction duration is four years.

Areas (the area of this option varies proportionally with the target enrollment variations)

Enrollment	Total	Renovation	New Construction
645 Students	188,100 sf	115,000 sf	73,100 sf
750 Students	201,700 sf	115,000 sf	86,700 sf
805 Students	209,600 sf	115,000 sf	94,600 sf
900 Students	228,500 sf	115,000 sf	113,500 sf
975 Students	236,100 sf	115,000 sf	121,100 sf

Preliminary Order-Of-Magnitude Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs
645 Students	\$ 222,327,700	\$ 277,909,625
750 Students	\$ 242,877,300	\$ 303,596,625
805 Students	\$ 251,373,100	\$ 314,216,375
900 Students	\$ 271,087,000	\$ 338,858,750
975 Students	\$ 279,488,200	\$ 349,360,250

Pro's:

- Fully renovates the existing building like-new to extend its longevity
- Satisfies many of South Shore Tech’s space needs and right-sizes most CTE programs
- Minimizes construction cost with reduced overall size

- Incorporates lightwell courtyard to provide natural light to all education spaces

Con's:

- Significant disruption during all phases of construction
- Long construction period
- Requires temporary modular swing space
- Smaller Gym and Lecture Hall retained
- Sprawling, remote configuration remains
- No significant improvement to site circulation
- Higher enrollment options significantly constrain available site
- Limited opportunity for future expansion

Initial Evaluation: Drop from final consideration; develop 645 student option for comparative purposes

Final Evaluation: Drop from further consideration

OPTION NC-1 “Courtyard” New Construction

For enrollments: 645, 750, 805, 900, & 975 students



NC-1 First Floor Plan

Description:

This new construction option proposes siting the new school on the current athletic fields. The multi-story courtyard building is configured with the large assembly areas and Student Commons at the north and the academic spaces to the south organized around an exterior courtyard. The high-bay shops are at rear of the main level and accessed by a perimeter service drive. The main entrance at the Commons serves not only as the primary student entrance, but also as the visitors and events entrance for after-hours activities in the Gym and Auditorium. The Culinary and Cosmetology programs are also on the main level with a separate, secure public entrance.

The remaining low bay CTE shops are located on the second floor. Each level has academic classrooms across the corridor from CTE spaces to provide the desired adjacencies as described in the Education Program.

Educational Program requirements:

Option NC-1 satisfies the space needs outlined in the Educational Program. It provides the overall building configuration and key adjacencies identified in the Educational Program. This option provides a desired enclosed courtyard identified in visioning sessions. The building utilizes the Student Commons and Learning Commons as core elements as the heart of the school.

Site and Facility goals:

This Option has a compact footprint that can be constructed independent of the existing school. The new site layout will provide a separate service area and the potential for separate bus and car drop-off areas.

Expanded athletic fields would be created, including a separate softball field, after the existing building is demolished.

Construction Phasing:

This option would be constructed in two basic phases: 1. New Construction of the proposed new school and treatment plant. 2. Demolition of the existing school and construction of athletic fields, parking, and final sitework.

It is anticipated that Phase 1 can be accomplished with minimal disruption to the ongoing operation of the existing school, although temporary parking will need to be considered to compensate for the partial loss of the existing rear parking. Athletics and physical education will need to compensate for the lack of outdoor playing fields for a period of perhaps three to four years.

Estimated construction duration is two and one half to three years.

Areas (the area of this option varies proportionally with the target enrollment variations)

Enrollment	Area
645 Students	203,480 sf
750 Students	228,540 sf
805 Students	240,000 sf
900 Students	260,000 sf
975 Students	278,000 sf

Preliminary Order-Of-Magnitude Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs
645 Students	\$234,989,780	\$293,737,225
750 Students	\$263,929,690	\$329,912,113
805 Students	\$275,352,600	\$344,190,750
900 Students	\$294,330,900	\$367,913,625
975 Students	\$311,489,600	\$389,362,000

Pro's:

- Satisfies South Shore’s space needs and right-sizes all CTE programs, including new Ch.74 programs
- Meets all of the District’s Educational goals, including an enclosed exterior courtyard
- Provides convenient public access to the Consumer Services programs and assembly spaces
- Has potential for a strong new architectural image
- Compact footprint promotes good internal connectivity
- Configures CTE programs into career clusters
- Eliminates the need for temporary classrooms
- Provides long-term value with new infrastructure and robust energy efficiency

Con's:

- Slightly Higher construction cost
- Tight fit within available building zone
- Larger footprint constrains future expansion potential
- Athletic fields are displaced for several years
- Limited available parking during the first year of occupancy

Initial Evaluation: Drop from final consideration; develop 750 student option for comparative purposes

Final Evaluation: Drop from further consideration

OPTION **NC-2.0** “Linear” New Construction*
 For enrollments: 645, 750, 805, **900***, & 975 students

**District’s Preferred Option: NC 2.0 for 900 Students*



NC-2.0 First Floor Plan

Description:

This new construction option proposes siting the new school on the current athletic fields. The multi-story building is configured with the large assembly areas and Student Commons to the south and the academic spaces to the north organized along a linear “main street” circulation spine. This linear spine bends to conform to the available site. The high-bay shops are located in clusters to the south of the spine and administration, Culinary, and Cosmetology flank the main entrance. The main entrance at the Commons serves not only as the primary student entrance, but also as the customer, visitors, and events entrance for after-hours activities in the Gym and Auditorium.

The remaining low bay CTE shops are located on the upper floor over the shops. All of the academic classrooms, science labs and Special Ed spaces are on the second and third floors. Each level has teacher planning, small group rooms and collaborative space as recommended in the visioning sessions.

Educational Program requirements:

Option NC-2.0 satisfies the space needs outlined in the Educational Program. It provides the overall building configuration and key adjacencies identified in the Educational Program. The building utilizes the Student Commons and Learning Commons as core elements as the heart of the school and has small gathering hubs along the main street.

Site and Facility goals:

This Option has a compact footprint that can be constructed independent of the existing school. The new site layout will provide a separate service area and the potential for separate bus and car drop-off areas. Expanded athletic fields would be created, including a separate softball field, after the existing building is demolished. The locker rooms are in close proximity to the athletic fields.

Construction Phasing:

This option would be constructed in two basic phases: 1. New Construction of the proposed new school and treatment plant. 2. Demolition of the existing school and construction of athletic fields, parking, and final sitework.

It is anticipated that Phase 1 can be accomplished with minimal disruption to the ongoing operation of the existing school, although temporary parking will need to be considered to compensate for the partial loss of the existing rear parking. Athletics and physical education will need to compensate for the lack of outdoor playing fields for a period of perhaps three to four years.

Estimated construction duration is two and one half to three years.

Areas (the area of this option varies proportionally with the target enrollment variations)

Enrollment	Area
645 Students	203,480 sf
750 Students	228,540 sf
805 Students	240,000 sf
900 Students	260,000 sf
975 Students	278,000 sf

Preliminary Order-Of-Magnitude Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs
645 Students	\$234,989,780	\$293,737,225
750 Students	\$263,929,690	\$329,912,113
805 Students	\$275,352,600	\$344,190,750
900 Students	\$294,330,900	\$367,913,625
975 Students	\$311,489,600	\$389,362,000

Pro's:

- Satisfies South Shore’s space needs and right-sizes all CTE programs, including new Ch.74 programs
- Meets all of the District’s Educational goals.
- Lower construction cost than other new construction options
- Provides convenient and secure public access to the Consumer Services programs and assembly spaces
- Has potential for a strong new architectural image
- Compact footprint promotes good internal connectivity
- Configures CTE programs into career clusters

- Efficient internal layout results in slightly smaller gross building area
- Locates locker rooms in close proximity to athletic fields
- Eliminates the need for temporary classrooms
- Provides long-term value with new infrastructure and robust energy efficiency

Con's:

- Higher construction cost than add/reno options
- Larger footprint constrains future expansion potential
- Athletic fields are displaced for several years
- Limited available parking during the first year of occupancy

Initial Evaluation: Continue to study in final phase of evaluation for enrollments of 805 & 900 students

Final Evaluation: PREFERRED OPTION for 900 Students

OPTION NC-2.1 “Linear/ Center Core” New Construction

For enrollments: 645, 750, 805, 900, & 975 students



NC-2.1 First Floor Plan

Description:

This new construction option proposes siting the new school on the current athletic fields. The multi-story building is a variation of option NC 2.0. It locates the large assembly areas and Student Commons in the center of the school with CTE and academic spaces to the north and south along the linear “main street” circulation spine. This linear spine bends to conform to the available site. The high-bay shops are located in clusters to the rear. The main entrance at the Commons serves not only as the primary student entrance, but also as the customer, visitors, and events entrance for after-hours activities in the Gym and Auditorium.

The remaining low bay CTE shops are located on the upper floor over the shops. All of the academic classrooms, science labs and Special Ed spaces are on the second and third floors. Each level has teacher planning, small group rooms and collaborative space as recommended in the visioning sessions.

Educational Program requirements:

Option NC-2.1 satisfies the space needs outlined in the Educational Program. It provides the overall building configuration and key adjacencies identified in the Educational Program. The building utilizes the Student Commons and Learning Commons as core elements as the heart of the school and has small gathering hubs along the main street.

Site and Facility goals:

This Option has a compact footprint that can be constructed independent of the existing school. The new site layout will provide a separate service area and the potential for separate bus and car drop-off areas. Expanded athletic fields would be created, including a separate softball field, after the existing building is demolished. The locker rooms are in close proximity to the athletic fields.

Construction Phasing:

This option would be constructed in two basic phases: 1. New Construction of the proposed new school and treatment plant. 2. Demolition of the existing school and construction of athletic fields, parking, and final sitework.

It is anticipated that Phase 1 can be accomplished with minimal disruption to the ongoing operation of the existing school, although temporary parking will need to be considered to compensate for the partial loss of the existing rear parking. Athletics and physical education will need to compensate for the lack of outdoor playing fields for a period of perhaps three to four years.

Estimated construction duration is two and one half to three years.

Areas (the area of this option varies proportionally with the target enrollment variations)

Enrollment	Area
645 Students	203,480 sf
750 Students	228,540 sf
805 Students	240,000 sf
900 Students	260,000 sf
975 Students	278,000 sf

Preliminary Order-Of-Magnitude Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs
645 Students	\$234,989,780	\$293,737,225
750 Students	\$263,929,690	\$329,912,113
805 Students	\$275,352,600	\$344,190,750
900 Students	\$294,330,900	\$367,913,625
975 Students	\$311,489,600	\$389,362,000

Pro's:

- Satisfies South Shore’s space needs and right-sizes all CTE programs, including new Ch.74 programs
- Meets all of the District’s Educational goals.
- Lower construction cost than other new construction options
- Provides convenient and secure public access to the Consumer Services programs and assembly spaces
- Has potential for a strong new architectural image
- Compact footprint promotes good internal connectivity
- Configures CTE programs into career clusters
- Efficient internal layout results in slightly smaller gross building area
- Shorter student path from core to academic areas
- Eliminates the need for temporary classrooms
- Provides long-term value with new infrastructure and robust energy efficiency

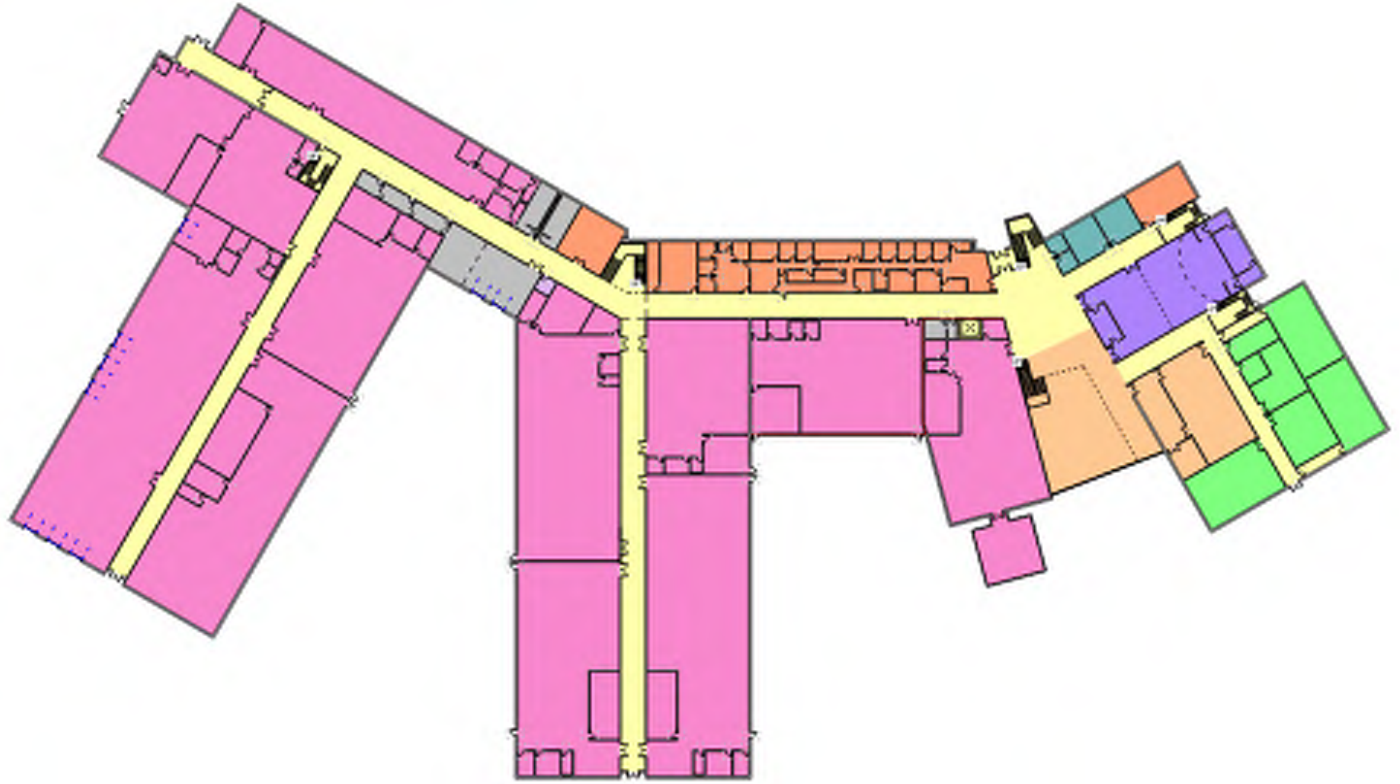
Con's:

- Higher construction cost than other new construction options
- Cross traffic through the Student Commons may be a distraction
- Central locker room location is remote from athletic fields
- Larger footprint constrains future expansion potential
- Athletic fields are displaced for several years
- Limited available parking during the first year of occupancy

Initial Evaluation: Continue to study in final phase of evaluation for enrollments of 805 & 900 students

Final Evaluation: Drop from further consideration

OPTION NC-3 “Wings” New Construction
 For enrollments: 645, 750, 805, 900, & 975 students



NC-3 First Floor Plan

Description:

This new construction option proposes siting the new school on the current athletic fields. The multi-story building is configured with the large assembly areas and Student Commons to the north and the academic spaces to the south. The high-bay CTE shops are configured in separate wings off of the main circulation corridor. This linear spine bends to conform to the available site. The CTE wings enclose service courtyards similar to the schools current configuration. The main entrance at the Commons serves not only as the primary student entrance, but also as the visitors and events entrance for after-hours activities in the Gym and Auditorium.

The remaining low bay CTE shops are located on the second floor over the shops. All of the academic classrooms, science labs and Special Ed spaces are on the second and third floors. Each level has teacher planning, small group rooms and collaborative space as recommended in the visioning sessions.

Educational Program requirements:

Option NC-3 satisfies the space needs outlined in the Educational Program. It provides the overall building configuration and key adjacencies identified in the Educational Program. The building utilizes the Student Commons and Learning Commons as core elements as the heart of the school and has small gathering hubs along the main corridor.

Site and Facility goals:

This Option has a relatively compact footprint that can be constructed independent of the existing school. The new site layout will provide a separate service area and the potential for separate bus and car drop-off areas. Expanded athletic fields would be created, including a separate softball field, after the existing building is demolished.

Construction Phasing:

This option would be constructed in two basic phases: 1. New Construction of the proposed new school and treatment plant. 2. Demolition of the existing school and construction of athletic fields, parking, and final sitework.

It is anticipated that Phase 1 can be accomplished with minimal disruption to the ongoing operation of the existing school, although temporary parking will need to be considered to compensate for the partial loss of the existing rear parking. Athletics and physical education will need to compensate for the lack of outdoor playing fields for a period of perhaps three to four years.

Estimated construction duration is two and one half to three years.

Areas (the area of this option varies proportionally with the target enrollment variations)

Enrollment	Area
645 Students	203,480 sf
750 Students	228,540 sf
805 Students	240,000 sf
900 Students	260,000 sf
975 Students	278,000 sf

Preliminary Order-Of-Magnitude Construction & Project Costs

Enrollment	Total Construction Costs	Total Project Costs
645 Students	\$234,989,780	\$293,737,225
750 Students	\$263,929,690	\$329,912,113
805 Students	\$275,352,600	\$344,190,750
900 Students	\$294,330,900	\$367,913,625
975 Students	\$311,489,600	\$389,362,000

Pro's:

- Satisfies South Shore's space needs and right-sizes all CTE programs, including new Ch.74 programs
- Meets all of the District's Educational goals.
- Provides convenient public access to the Consumer Services programs and assembly spaces
- Has potential for a strong new architectural image
- Compact footprint promotes good internal connectivity
- Configures CTE programs into career clusters

- Eliminates the need for temporary classrooms
- Provides long-term value with new infrastructure and robust energy efficiency

Con's:

- Higher construction cost
- Larger footprint constrains future expansion potential
- Athletic fields are displaced for several years
- Limited available parking during the first year of occupancy

Initial Evaluation: Drop from final consideration; develop 975 student option for comparative purposes

Final Evaluation: Drop from further consideration



Summary of the Final Evaluation of Alternatives

As reported in the PDP, the District decided to continue their consideration of five design options and five enrollments. This list was supplemented by the addition of a sixth design option-“NC 2.1”, an alternative to the NC 2 option. This resulted in the following initial matrix of 31 options:

Option	645 students	750 students	805 students	900 students	975 students
Code Upgrade “Base Repair”	existing	---	---	---	---
Addition/ Renovation AR- 1 “L-shape”	201,500 sf	217,500 sf	230,400 sf	243,200 sf	254,500 sf
Addition/ Renovation AR- 2 “Lightwell”	188,100 sf	201,700 sf	209,600 sf	228,500 sf	236,100 sf
New Construction NC-1 “Courtyard”	203,480 sf	228,540 sf	240,000 sf	260,000 sf	278,000 sf
New Construction NC-2.0 “Linear”	203,480 sf	228,540 sf	240,000 sf	260,000 sf	278,000 sf
New Construction NC-2.1 “Linear/Center core”	203,480 sf	228,540 sf	240,000 sf	260,000 sf	278,000 sf
New Construction NC-3 “Wings”	203,480 sf	228,540 sf	240,000 sf	260,000 sf	278,000 sf

Due to the large number of options and variables, the District decided to conduct the evaluation process in two steps. The first step was to reduce the list of options to a shortlist of design options and enrollment options based upon preliminary layouts and construction cost estimates. The shortlisted options were then developed further with more detailed site plans, floor plans, and cost estimates for final evaluation.

A brief description of each option follows:

A summary of the evaluation process of all 31 options is illustrated by this chart:



1. Initial Evaluation of Options						2. Final Evaluation of Options			
	645	750	805	900	975		805	900*	
Base Repair	Not an educational solution	Does not accommodate expanded enrollment					Base Repair	\$122 Million Not an educational solution, doesn't increase capacity	
AR-1	\$250 Million Insufficient size for current enrollment Poor adjacencies Poor value	\$262 Million Insufficient size to allow for growth Poor adjacencies Poor value	\$277 Million Potential lower cost adjacencies Worthy of further evaluation	\$293 Million Potential lower cost adjacencies Worthy of further evaluation	\$xxx,xxx Million Unreasonably large for projected growth Poor adjacencies Constrained by site	»»»	AR-1	\$277 Million Poor long-term value flexibility; adjacencies Long construction duration Highly disruptive	\$293 Million Poor long-term value flexibility; adjacencies Long construction duration Highly disruptive
AR-2	\$252 Million Insufficient size for current enrollment Poor adjacencies Poor value	\$xxx,xxx Million Insufficient size to allow for growth Poor adjacencies Poor value	\$xxx,xxx Million Extremely disruptive Undesirable adjacencies Poor value	\$xxx,xxx Million Extremely disruptive Undesirable adjacencies Poor value Constrained by site	\$xxx,xxx Million Unreasonably large for projected growth Undesirable adjacencies Constrained by site				
NC 1	\$xxx,xxx Million Insufficient size for current enrollment	\$271 Million Insufficient size to allow for growth Poor fit to site	\$xxx,xxx Million Larger footprint Constrained by site	\$xxx,xxx Million Larger footprint Constrained by site	\$xxx,xxx Million Unreasonably large for projected growth				
NC 2.0	\$245 Million Insufficient size for current enrollment	\$267 Million Insufficient size to allow for growth	\$274 Million Straightforward configuration Good relationship to site, fields Worth further evaluation	\$283 Million Straightforward configuration Good relationship to site, fields Worth further evaluation	\$xxx,xxx Million Unreasonably large for projected growth	»»»	NC 2.0*	\$274 Million Affordable long-term value Good adjacencies Locker Rm location Some room for growth	\$283 Million Preferred Alternative* Best long-term value Good adjacencies Good Locker Rm location Best room for growth
NC 2.1	\$249 Million Insufficient size for current enrollment	\$271 Million Insufficient size to allow for growth	\$282 Million Shorter student circulation Good relationship to site Worth further evaluation	\$292 Million Shorter student circulation Good relationship to site Worth further evaluation	\$xxx,xxx Million Unreasonably large for projected growth	»»»	NC 2.1	\$282 Million Good circulation pattern Ext Student area in front Poor Locker Rm location Slightly more expensive	\$292 Million Good circulation pattern Ext. student area in front Poor Locker Rm location Most expensive option
NC 3	\$xxx,xxx Million Insufficient size for current enrollment	\$xxx,xxx Million Insufficient size to allow for growth	\$xxx,xxx Million Poor configuration	\$xxx,xxx Million Poor configuration	\$306 Million Unreasonably large for projected growth Poor fit to site				

The 30 design options were narrowed down to six (plus Base Repair) for final consideration and detailed cost estimating. These included:

AR-1 805, AR-1 900, NC-2.0 805, NC-2.0 900, NC-2.1 805, and NC-2.1 900

In addition, three options were carried forward for comparative purposes:

AR-2 645, NC-1 750, and NC-3 975


This range of options insured that at least one example of each design option and one of each enrollment option was being considered.


Evaluation of Design Options


To evaluate the final three design options (AR 1, NC 2.0, NC 2.1) a comparative matrix was developed by the Design Team in conjunction with the District School Building Committee. Each option was rated against a series of customized criteria. The pro's and con's of each were summarized as follows:

Evaluation Matrix - South Shore Tech - PSR Design Options - **FINAL DRAFT**

Updated: 1/16/2024		MSBA Required	Add/ Reno Options	Concept Options	New Construction Options
Evaluation Criteria		Base Repair	AR.1	NC.2.0* Preferred Option	NC.2.1
Construction Duration:		Code Renovation	L - Shaped	Linear	Center Core
		multiple years	3+ years	2+ years	2+ years
1	Ed Plan Accommodation Compliance w/ Vision	doesn't address any educational deficiencies	Addresses most Space Needs Lacks meaningful integration of academic & CTE spaces Poor career cluster adjacencies	Good Ed Plan Conformance Multi-purpose Student Commons	Good Ed Plan Conformance Clear "Heart of the School" space
2	Project Cost Reimbursable Cost Temporary Costs Long-term Value		Slightly Lower Initial cost Higher reimbursement rate for renovation High (non-reimbursable) temporary costs.	Slightly Higher Initial Construction Cost Best Long-Term Value Few non-reimbursable temporary costs	Highest Initial Construction Cost Best Long-Term Value Few non-reimbursable temporary costs
3	Disruption Impact on Students Construction Duration Phasing		Phased construction adjacent to occupancy Long construction schedule Multi-phase renovation	Minimal impact on adjacent occupancy. Loss of Athletic Fields during construction. Short duration 2 phases: 1. New construction, 2 Demolition & Sitework	Minimal impact on adjacent occupancy. Loss of Athletic Fields during construction. Short duration 2 phases: 1. New construction, 2 Demolition & Sitework
4	Flexibility Community Use Expansion Potential		Some flexibility Good community use Limited expansion potential	Good flexibility. Better Community access & Separation Limited expansion potential	Good flexibility. Good Community access Limited expansion potential
5	Operating Costs Maintenance		Generally all new finish materials & systems Some existing infrastructure remains Limited building envelope upgrade	All new construction, infrastructure, & MEP systems Best thermal envelope	All new construction, infrastructure, & MEP systems Best thermal envelope
6	Site Access Safety & Security Circulation/ flow		Site circulation similar to existing Potential admin presence at existing public entrance Remains somewhat sprawling	Site approach offset from entrance Central, secure access to public shops Good separation of assembly & academic areas, but with long linear corridor Contained Outdoor Student gathering area	Site Approach focused on School, entry Central, secure access to public shops Shorter internal travel distance to core, but potentially disrupts cafeteria Outdoor Student gathering area in front
7	Final Site layout Site amenities Impact to Abutters		Similar to existing No additional site amenities Minimal new impact to abutters	Building layout follows buildable area Good relationship of lockers to athletic fields Separate Buses and Car drop-offs in front Patio off of the Commons Playing fields may impact abutters	Wings create shared outdoor collaboration area Long distance around back of building from lockers to athletic fields Bus access at rear Patio off of the Commons Playing fields may impact abutters
8	Civic Image / Aesthetics		New "front door" and civic image	School setback from street Athletic fields & parking in front yard All new construction = all new image	School setback from street Athletic fields & parking in front yard All new construction = all new image
Totals					

5	positive / most advantageous	
4		
3	neutral	
2		
1	negative / least advantageous	

5	positive / most advantageous	
4		
3	neutral	
2		
1	negative / least advantageous	

5	positive / most advantageous	
4		
3	neutral	
2		
1	negative / least advantageous	

As indicated by the color-coding (green = most advantageous; red = least advantageous), **New Construction option NC-2.0** clearly ranks highest against most all criteria. In summary it offers the following advantages:

- the best accommodation of the District's Education Program & Vision

- the best long-term value
- slightly lower construction cost
- the least disruptive to on-going teaching & learning during construction
- compact & flexible plan configuration
- convenient , safe, and welcoming community access
- additional green space/ athletic fields

Evaluation of Enrollment Options

The District undertook a separate, parallel evaluation of the proposed enrollment options. As originally identified in the Enrollment Certificate, the range of enrollment options spanned from 645 students to 975 students, dependent upon the number of communities in the Region and the number of Chapter 74 Career Technical programs to be offered by South Shore.

Ultimately the District decided to consider five possible enrollments for this study:

645 students, 750 students, 805 students, 900 students, & 975 students

The evaluation process to reduce this number of options also took two steps similar to the design options evaluation. In the initial step the District's Building Committee and School Committee eliminated three of these options for the following reasons:

645 students: this number is smaller than the school's current enrollment (670) and offers no space for the Town of Marshfield, the Region's new member without reducing the enrollment from the current member Towns. In recent years the District has consistently had a waiting list of applicants and would like to increase their capacity to reduce this list.

750 students: This size would not accommodate both the addition of Marshfield's students and the District's proposed new Ch. 74 programs -Plumbing and Veterinary Science.

975 students: This size was seen as excessively large and potentially unaffordable by the District's member communities. The proposed design options for this enrollment did not reasonably fit within the buildable area of the site.

Step Two then considered the two enrollments of **805 students** and **900 students**. Multiple discussions and community meetings were held among the Building Committee, School Committee, and the public to consider these two options. The factors that were considered included construction cost, operating costs, District share on taxpayers, capacity, regional expansion, seat allocation and others.

Ultimately the District agreed that the **900 student** enrollment was most advantageous. Among the positive factors:

- Offers the best long-term value
- Reduces the waiting list
- Provides flexibility for future program expansion
- Allows for potential growth of the Region



Preliminary Design Pricing Table

= Formula do not edit

Option (Description)	Total Gross Square Feet	Square Feet of Renovated Space (\$*/SF)	Square Feet of New Construction (\$*/SF)	Site, Building Takedown, Haz Mat Etc. (\$*)	Estimated Total Construction** (\$*)	Estimated Total Project Costs (\$)
Base Building Repair Option <i>(Code Upgrade Only)</i>	121,805 sf	121,805 sf \$ 556.06 \$/sf	- sf \$ - \$/sf	\$ 13,502,914	\$ 81,233,802 \$ 666.92 \$/sf	\$ 109,665,633
AR-1 805 <i>(Add/Reno, L-Shape, 805 Enrollment)</i>	235,310 sf	112,100 sf \$ 699.49 \$/sf	123,210 sf \$ 668.27 \$/sf	\$ 44,485,643	\$ 205,236,019 \$ 872.19 \$/sf	\$ 277,825,034
AR-1 900 <i>(Add/Reno, L-Shape, 900 Enrollment)</i>	253,990 sf	112,100 sf \$ 701.33 \$/sf	141,890 sf \$ 670.11 \$/sf	\$ 43,011,215	\$ 216,712,216 \$ 853.23 \$/sf	\$ 293,492,782
AR-2 645 <i>(Add/Reno, Lightwell, 645 Enrollment)</i>	188,100 sf	115,000 sf \$ 745.64 \$/sf	73,100 sf \$ 715.21 \$/sf	\$ 33,995,863	\$ 172,026,314 \$ 914.55 \$/sf	\$ 224,157,893
NC-1 750 <i>(New Construction, Courtyard, 750 Enrollment)</i>	228,540 sf	- sf \$ - \$/sf	228,540 sf \$ 755.00 \$/sf	\$ 41,016,074	\$ 213,563,774 \$ 934.47 \$/sf	\$ 266,954,717
NC-2.0 805 <i>(New Construction, Linear Left, 805 Enrollment)</i>	237,175 sf	- sf \$ - \$/sf	237,175 sf \$ 743.84 \$/sf	\$ 41,936,341	\$ 218,356,593 \$ 920.66 \$/sf	\$ 273,966,709
NC-2.0 900 *** <i>(New Construction, Linear Left, 900 Enrollment)</i>	256,350 sf	- sf \$ - \$/sf	256,350 sf \$ 717.83 \$/sf	\$ 41,758,114	\$ 225,773,834 \$ 880.72 \$/sf	\$ 283,595,433
NC-2.1 805 <i>(New Construction, Linear Center, 805 Enrollment)</i>	240,360 sf	- sf \$ - \$/sf	240,360 sf \$ 762.14 \$/sf	\$ 41,758,761	\$ 224,946,731 \$ 935.87 \$/sf	\$ 281,841,924
NC-2.1 900 <i>(New Construction, Linear Center, 900 Enrollment)</i>	259,520 sf	- sf \$ - \$/sf	259,520 sf \$ 736.49 \$/sf	\$ 41,759,117	\$ 232,893,002 \$ 897.40 \$/sf	\$ 292,102,837
NC-3 975 <i>(New Construction, Wings, 975 Enrollment)</i>	278,000 sf	- sf \$ - \$/sf	278,000 sf \$ 721.76 \$/sf	\$ 43,837,820	\$ 244,487,100 \$ 879.45 \$/sf	\$ 305,608,875

AR-1 645 <i>(Add/Reno, L-Shape, 645 Enrollment)</i>	201,500 sf	108,000 sf	93,500 sf	\$ 39,755,402	\$ 184,031,642	\$ 250,081,451
		\$ 731.05 \$/sf	\$ 698.64 \$/sf		\$ 913.31 \$/sf	
AR-1 750 <i>(Add/Reno, L-Shape, 750 Enrollment)</i>	217,500 sf	108,000 sf	109,500 sf	\$ 33,723,462	\$ 192,492,642	\$ 262,165,361
		\$ 746.29 \$/sf	\$ 713.88 \$/sf		\$ 885.02 \$/sf	
AR-1 975 <i>(Add/Reno, L-Shape, 975 Enrollment)</i>	254,500 sf	101,000 sf	153,500 sf	\$ 37,540,902	\$ 212,639,987	\$ 295,558,383
		\$ 707.56 \$/sf	\$ 675.15 \$/sf		\$ 835.52 \$/sf	
AR-2 750 <i>(Add/Reno, Lightwell, 750 Enrollment)</i>	201,700 sf	115,000 sf	86,700 sf	\$ 27,731,999	\$ 175,448,745	\$ 239,837,856
		\$ 746.29 \$/sf	\$ 713.88 \$/sf		\$ 869.85 \$/sf	
AR-2 805 <i>(Add/Reno, Lightwell, 805 Enrollment)</i>	209,600 sf	115,000 sf	94,600 sf	\$ 36,034,580	\$ 179,694,272	\$ 245,399,496
		\$ 699.49 \$/sf	\$ 668.27 \$/sf		\$ 857.32 \$/sf	
AR-2 900 <i>(Add/Reno, Lightwell, 900 Enrollment)</i>	228,500 sf	115,000 sf	113,500 sf	\$ 35,103,890	\$ 191,814,325	\$ 261,276,766
		\$ 701.33 \$/sf	\$ 670.11 \$/sf		\$ 839.45 \$/sf	
AR-2 975 <i>(Add/Reno, Lightwell, 975 Enrollment)</i>	236,100 sf	115,000 sf	121,100 sf	\$ 31,099,961	\$ 194,230,026	\$ 264,441,334
		\$ 707.56 \$/sf	\$ 675.15 \$/sf		\$ 822.66 \$/sf	
NC-1 645 <i>(New Construction, Courtyard, 645 Enrollment)</i>	203,480 sf	- sf	203,480 sf	\$ 39,816,559	\$ 199,082,390	\$ 248,853,497
		\$ - \$/sf	\$ 782.71 \$/sf		\$ 978.39 \$/sf	
NC-1 805 <i>(New Construction, Courtyard, 805 Enrollment)</i>	240,000 sf	- sf	240,000 sf	\$ 45,921,760	\$ 225,609,760	\$ 282,012,200
		\$ - \$/sf	\$ 748.70 \$/sf		\$ 940.04 \$/sf	
NC-1 900 <i>(New Construction, Courtyard, 900 Enrollment)</i>	260,000 sf	- sf	260,000 sf	\$ 46,664,800	\$ 233,324,000	\$ 291,655,000
		\$ - \$/sf	\$ 717.92 \$/sf		\$ 897.40 \$/sf	
NC-1 975 <i>(New Construction, Courtyard, 975 Enrollment)</i>	278,000 sf	- sf	278,000 sf	\$ 48,897,420	\$ 244,487,100	\$ 305,608,875
		\$ - \$/sf	\$ 703.56 \$/sf		\$ 879.45 \$/sf	
NC-2.0 645 <i>(New Construction, Linear Left, 645 Enrollment)</i>	203,480 sf	- sf	203,480 sf	\$ 39,169,900	\$ 195,849,500	\$ 244,811,875
		\$ - \$/sf	\$ 770.00 \$/sf		\$ 962.50 \$/sf	
NC-2.0 750 <i>(New Construction, Linear Left, 750 Enrollment)</i>	240,000 sf	- sf	240,000 sf	\$ 44,854,560	\$ 224,273,760	\$ 280,341,000
		\$ - \$/sf	\$ 747.58 \$/sf		\$ 934.47 \$/sf	
NC-2.0 975 <i>(New Construction, Linear Left, 975 Enrollment)</i>	278,000 sf	- sf	278,000 sf	\$ 47,988,360	\$ 239,941,800	\$ 299,927,250
		\$ - \$/sf	\$ 690.48 \$/sf		\$ 863.10 \$/sf	

NC-2.1 645 (New Construction, Linear Center, 645 Enrollment)	203,480 sf	- sf	203,480 sf	\$ 39,816,559	\$ 199,082,390	\$ 248,853,497
		\$ - \$/sf	\$ 782.71 \$/sf		\$ 978.39 \$/sf	
NC-2.1 750 (New Construction, Linear Center, 750 Enrollment)	240,000 sf	- sf	240,000 sf	\$ 45,595,200	\$ 227,976,000	\$ 284,970,000
		\$ - \$/sf	\$ 759.92 \$/sf		\$ 949.90 \$/sf	
NC-2.1 975 (New Construction, Linear Center, 975 Enrollment)	278,000 sf	- sf	278,000 sf	\$ 48,897,420	\$ 244,487,100	\$ 305,608,875
		\$ - \$/sf	\$ 703.56 \$/sf		\$ 879.45 \$/sf	
NC-3 645 (New Construction, Wings, 645 Enrollment)	203,480 sf	- sf	203,480 sf	\$ 39,816,559	\$ 199,082,390	\$ 248,853,497
		\$ - \$/sf	\$ 782.71 \$/sf		\$ 978.39 \$/sf	
NC-3 750 (New Construction, Wings, 750 Enrollment)	240,000 sf	- sf	240,000 sf	\$ 41,595,200	\$ 223,976,000	\$ 279,970,000
		\$ - \$/sf	\$ 759.92 \$/sf		\$ 933.23 \$/sf	
NC-3 805 (New Construction, Wings, 805 Enrollment)	240,000 sf	- sf	240,000 sf	\$ 45,921,760	\$ 225,609,760	\$ 282,012,200
		\$ - \$/sf	\$ 748.70 \$/sf		\$ 940.04 \$/sf	
NC-3 900 (New Construction, Wings, 900 Enrollment)	260,000 sf	- sf	260,000 sf	\$ 46,664,800	\$ 233,324,000	\$ 291,655,000
		\$ - \$/sf	\$ 717.92 \$/sf		\$ 897.40 \$/sf	

* Marked Up Construction Costs

** Does not include Construction Contingency

*** District's Preferred Schematic



MEMORANDUM

Date: February 27, 2024

To: Drummey Rosane Anderson, Inc.

From: Bradley C. McKenzie/Susan B. Spratt, P.E.

Regarding: South Shore Vocational Technical High School MEG Project No.: 223-190
Entitlements/Permitting

Planning Board Site Plan Approval Process

Any new construction or proposed redevelopment requires submittal to the Hanover Planning Board for Site Plan Review (Zoning Bylaws Section 10.00). Section 10.00 outlines the specific requirements to obtain Site Plan Approval. In addition to submitting the application and project plans, an Environmental Impact Report, a Stormwater Management Report, and a Stormwater Management Construction Phase and Post-Development Phase Operation and Maintenance Plan detailing the entire project scope may need to be submitted to the Planning Board for project approval.

Conservation Commission Approval Process

Wetlands resource areas are protected by the Massachusetts Wetlands Protection Act (MGL Ch. 131 S. 40), Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00), and the Hanover Wetlands Protection Bylaw and Wetlands Protection Regulations. It is presumed any new construction will encroach on resource areas or their associated buffer zones due to their proximity to existing developed areas and that an Order of Conditions approving the project will have to be obtained from the Commission. The wetland resource areas are in the process of being re-delineated by a wetland botanist. The first step in the approval process is filing an Abbreviated Notice of Resource Area Delineation (ANRAD) Application will be filed with the Commission for approval of the boundaries of these resources. The Commission will review the flagged boundaries and issue an Order of Resource Area Delineation (ORAD), which approves the wetland boundaries for three (3) years. Once final construction plans have been developed, a Notice of Intent Application and related documents will be filed with the Commission for approval of the construction project.

Wastewater Treatment Plant Approval Process

For all design alternatives, the project will most likely incorporate a wastewater treatment plant designed and permitted in accordance with the Massachusetts Groundwater Discharge Permit Program (314 CMR 5.00) as the design flow exceeds the 10,000 gallons per day threshold for a Title 5 septic system (310 CMR 15.00). The permitting authority is the Southeast Regional Office of the Massachusetts Department of Environmental Protection.

EPA NPDES Construction General Permit (CGP) and Stormwater Pollution Prevention Plan (SWPPP)

An NPDES Construction General Permit (CGP) will need to be obtained by the contractor from the EPA, and a Stormwater Pollution Prevention Plan (SWPPP) will be prepared before construction commences as land disturbance associated with the project will exceed 1 acre.

Utilities

The Town of Hanover will require permits to connect the proposed water service to the municipal system on Webster Street. Permits will also be required from private utility companies for gas, electric, and telephone connections.

Massachusetts Environmental Policy Act (MEPA)

Some of the project alternatives being considered may trigger thresholds under the MEPA Regulations (301 CMR 11.00). The thresholds that could require the preparation of an Environmental Notification Form (ENF) are as follows:

- Direct alteration of 25 or more acres of land
- Creation of five or more acres of impervious area
- Generation of 1,000 or more new ADTs and construction of 150 or more new parking spaces



Schematic Design Workplan - DRAFT 02/29/2024

No.	TASK	START	FINISH	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	
1.0	Project Team Meetings (Weekly - Wednesday)	03/05/23	08/20/23	+						
2.0	Working Group Meetings	03/06/24	08/21/24	+						
2.1	WGM #1: Review the Workplan and Project Goals	03/06/24	03/06/24	+						
2.2	WGM #2: Design Vision	03/20/24	03/20/24		+					
2.3	WGM #3: Site Design	04/03/23	04/03/23			+				
2.4	WGM #4: LEED Integrated Design Meeting	04/17/23	04/17/23				+			
2.5	WGM #5: Preliminary Design Layouts - Shops	05/01/23	05/01/23					+		
2.6	WGM #6: Preliminary Design Layouts - Classrooms & Science Labs	05/08/23	05/08/23						+	
2.7	WGM #7: Mechanical, Electrical, Plumbing & Fire Protection Design	05/15/23	05/15/23							
2.8	WGM #8: Introduce CMR - Construction Management Process	05/22/23	05/22/23							
2.9	WGM #9: Security and Technology Design	05/29/23	05/29/23							
2.10	WGM #10: Exterior Elevations and Material Review	06/05/23	06/05/23							
2.11	WGM #11: Gym, Multi-Purpose, Café, Media Center layout review	06/12/23	06/12/23							
2.12	WGM #12: Review of Proposed Interior Finishes	06/26/23	06/26/23							
2.13	WGM #13: Finalize Design Layouts - Shops	07/10/23	07/10/23							
2.14	WGM #14: Finalize Design Layouts - Classrooms & Science Labs	07/24/23	07/24/23							
2.15	WGM #15: Logistics and Construction Phasing	08/07/23	08/07/23							
3.0	Building Committee Meetings	03/21/23	08/15/23	+						
3.1	Building Committee Meeting	03/21/23	03/21/23	+						
3.2	Building Committee Meeting	04/25/23	04/25/23		+					
3.3	Building Committee Meeting	05/23/23	05/23/23			+				
3.4	Building Committee Meeting	06/27/23	06/27/23				+			
3.5	Building Committee Meeting	07/25/23	07/25/23					+		
3.6	Building Committee Meeting	08/15/23	08/15/23						+	
4.0	Design Team Milestones, Meetings & Activities	03/15/24	08/29/24	+						

**SOUTH SHORE REGIONAL VOCATIONAL TECHNICAL HIGH SCHOOL
Preliminary Project Schedule**

2/29/2024

Task Name	Duration (days)	Start	Finish
Procure OPM [MOD 2]	34	Thursday, January 5, 2023	Tuesday, February 7, 2023
OPM interviews	1	Thursday, January 5, 2023	Thursday, January 5, 2023
OPM fee review & approval	33	Friday, January 6, 2023	Tuesday, February 7, 2023
MSBA OPM meeting approval	1	Monday, February 6, 2023	Monday, February 6, 2023
MSBA OPM letter issued	1	Tuesday, February 7, 2023	Tuesday, February 7, 2023
OPM contract executed	1	Tuesday, February 7, 2023	Tuesday, February 7, 2023
Procure Architect [MOD 2]	115	Tuesday, February 7, 2023	Thursday, June 1, 2023
Committee reviews & approves issuance RFS to the MSBA	1	Tuesday, February 7, 2023	Tuesday, February 7, 2023
LF issues RFS to the MSBA	1	Wednesday, February 8, 2023	Wednesday, February 8, 2023
MSBA-RFS review period	14	Wednesday, February 8, 2023	Tuesday, February 21, 2023
Finalize RFS with MSBA/BC	1	Tuesday, February 28, 2023	Tuesday, February 28, 2023
Ad submitted in Central Register & local newspaper	1	Thursday, February 23, 2023	Thursday, February 23, 2023
Select 3 members for DSP team / Assign DSP subcommittee	1	Tuesday, February 7, 2023	Tuesday, February 7, 2023
Ad appears in Central Register	1	Wednesday, March 1, 2023	Wednesday, March 1, 2023
On-Site RFS briefing	1	Tuesday, March 7, 2023	Tuesday, March 7, 2023
Receive RFS designer submissions	1	Thursday, March 30, 2023	Thursday, March 30, 2023
Review RFS & check references	13	Thursday, March 30, 2023	Tuesday, April 11, 2023
Submit initial RFS packets to the MSBA DSP	1	Tuesday, April 11, 2023	Tuesday, April 11, 2023
Submit reference check data to the MSBA DSP [MSBA deadline]	1	Tuesday, April 18, 2023	Tuesday, April 18, 2023
Designer Selection Panel Dry Run	1	Monday, April 24, 2023	Monday, April 24, 2023
Attend MSBA 1st DSP Meeting [assume rank and interview option is selected]	1	Tuesday, April 25, 2023	Tuesday, April 25, 2023
Attend MSBA 2nd DSP Meeting for Interviews	1	Tuesday, May 9, 2023	Tuesday, May 9, 2023
MSBA DSP issues official ranking and letter Re: Top Ranked Design Firm	1	Wednesday, May 10, 2023	Wednesday, May 10, 2023
Negotiate Designer Fee	17	Wednesday, May 10, 2023	Friday, May 26, 2023
Present designer contact to Building Committee	1	Friday, May 26, 2023	Friday, May 26, 2023
Designer contract - review by BC	7	Friday, May 26, 2023	Thursday, June 1, 2023
Designer contract - approval by BC	1	Thursday, June 1, 2023	Thursday, June 1, 2023
Execute Designer contact	1	Thursday, June 1, 2023	Thursday, June 1, 2023
Develop schedule/work plan	41	Thursday, June 1, 2023	Tuesday, July 11, 2023
BC approves work plan	1	Thursday, August 3, 2023	Thursday, August 3, 2023
MSBA/District kick off meeting	1	Tuesday, July 18, 2023	Tuesday, July 18, 2023
FEASIBILITY STUDY [MOD 3]	329	Wednesday, May 31, 2023	Wednesday, April 24, 2024
Preliminary Design Program (PDP)	219	Wednesday, May 31, 2023	Friday, January 5, 2024
Educational Programming	91	Wednesday, May 31, 2023	Tuesday, August 29, 2023
Ed. Visioning kick off meeting	1	Wednesday, May 31, 2023	Wednesday, May 31, 2023
Educational Visioning Group Workshop #1	1	Tuesday, June 20, 2023	Tuesday, June 20, 2023
Educational Visioning Group Workshop #2	1	Tuesday, July 11, 2023	Tuesday, July 11, 2023
Educational Visioning Public Forum	1	Thursday, July 13, 2023	Thursday, July 13, 2023
Educational Visioning Group Workshop #3	1	Tuesday, July 18, 2023	Tuesday, July 18, 2023
Teachers Workshop	1	Tuesday, August 29, 2023	Tuesday, August 29, 2023
EDUCATIONAL PLAN; Ed plan statement of teaching philosophy, methods and goals.	114	Wednesday, May 31, 2023	Thursday, September 21, 2023
Initial space summary ("ISS")	18	Tuesday, August 29, 2023	Friday, September 15, 2023
Evaluation of existing conditions	40	Monday, June 19, 2023	Friday, July 28, 2023
Meetings	304	Tuesday, February 7, 2023	Thursday, December 7, 2023

** Submit PDP to the MSBA **	1	Friday, October 27, 2023	Friday, October 27, 2023
MSBA PDP Review	412	Friday, October 27, 2023	Wednesday, December 11, 2024
Receive MSBA PDP comments	1	Monday, December 11, 2023	Monday, December 11, 2023
District returns responses to MSBD PDP comments	1	Friday, January 5, 2024	Friday, January 5, 2024
Preferred Schematic Report (PSR)	178	Monday, October 30, 2023	Wednesday, April 24, 2024
Prepare and Submit Project Notification to Mass Historical Commission and Receive MHC Response	32	Friday, February 16, 2024	Monday, March 18, 2024
SBC Vote to Submit PSR	1	Thursday, February 22, 2024	Thursday, February 22, 2024
*** Submit PSR to the MSBA ***	1	Thursday, February 29, 2024	Thursday, February 29, 2024
MSBA Review Period	22	Friday, March 1, 2024	Friday, March 22, 2024
Respond to MSBA PSR review comments	15	Monday, March 25, 2024	Monday, April 8, 2024
MSBA Facilities Assessment Committee (FAS) review (3/13 or 3/27)	15	Wednesday, March 13, 2024	Wednesday, March 27, 2024
Respond to MSBA FAS Comments	8	Wednesday, March 27, 2024	Wednesday, April 3, 2024
★★MSBA BOD Mtg - PSR - Proceed to Schematic★★	1	Wednesday, April 24, 2024	Wednesday, April 24, 2024
Schematic Design [MOD 4]	306	Thursday, April 25, 2024	Monday, February 24, 2025
DESE submittal (confirm submittal date with MSBA)	1	Thursday, August 29, 2024	Thursday, August 29, 2024
MSBA Review of DESE Submittal	22	Friday, August 30, 2024	Friday, September 20, 2024
DESE Review and Approval	22	Saturday, September 21, 2024	Saturday, October 12, 2024
Schematic Design Submittal	128	Wednesday, April 24, 2024	Thursday, August 29, 2024
SD Cost Estimates and Reconciliation	29	Monday, July 1, 2024	Monday, July 29, 2024
MSBA and Bond Counsel to Review Vote Language	15	Monday, August 12, 2024	Monday, August 26, 2024
Submit SD Budget to MSBA	1	Thursday, August 15, 2024	Thursday, August 15, 2024
SBC Vote to Approve SD Submission to MSBA	1	Thursday, August 15, 2024	Thursday, August 15, 2024
MSBA Schematic Design Notification	1	Thursday, August 15, 2024	Thursday, August 15, 2024
** Schematic Design Submitted to the MSBA **	1	Thursday, August 29, 2024	Thursday, August 29, 2024
MSBA Project Scope and Budget meeting	1	Wednesday, October 30, 2024	Wednesday, October 30, 2024
MSBA Review Comments Issued	22	Thursday, August 29, 2024	Thursday, September 19, 2024
Respond to MSBA Comments	15	Friday, September 20, 2024	Friday, October 4, 2024
★★MSBA BOD Meeting - SD Approval★★	1	Wednesday, October 30, 2024	Wednesday, October 30, 2024
120-day duration to secure funding authorization	121	Wednesday, October 30, 2024	Thursday, February 27, 2025
District executes PSBA	8	Wednesday, October 30, 2024	Wednesday, November 6, 2024
★★District Wide Ballot★★	1	Saturday, January 25, 2025	Saturday, January 25, 2025
★★Execute PFA★★	1	Monday, February 24, 2025	Monday, February 24, 2025
CM PROCUREMENT [applicable if committee decides to utilize CM-R methodology]	-218	Saturday, December 14, 2024	Friday, May 10, 2024
SBC Approves Use of CM at Risk Delivery & Selection Committee	1	Saturday, December 14, 2024	Saturday, December 14, 2024
Prequalification Committee is formed (PQC)	1	Thursday, February 22, 2024	Thursday, February 22, 2024
Selection Committee is formed (SC)	1	Thursday, February 22, 2024	Thursday, February 22, 2024
CM at Risk Application & Submit to OIG (If Applicable)	1	Friday, January 19, 2024	Friday, January 19, 2024
Office of Inspector General Review & Approval	1	Friday, February 16, 2024	Friday, February 16, 2024
CM at Risk RFQ Issued	1	Wednesday, March 6, 2024	Wednesday, March 6, 2024
CM at Risk SOQs Due	1	Wednesday, March 20, 2024	Wednesday, March 20, 2024
CM at Risk RFP Issued	1	Wednesday, April 3, 2024	Wednesday, April 3, 2024
CM at Risk Proposals Due	1	Wednesday, April 24, 2024	Wednesday, April 24, 2024

CM at Risk Interviews (notify CMs that all will be interviewed on this date in RFP)	1	Monday, May 6, 2024	Friday, May 10, 2024
CM at Risk Award / Notice to Proceed	1	Friday, May 10, 2024	Friday, May 10, 2024
Preconstruction	759	Friday, May 10, 2024	Monday, June 8, 2026
Design Development	177	Thursday, January 2, 2025	Friday, June 27, 2025
Design Development Documents	106	Thursday, January 2, 2025	Friday, April 18, 2025
DD Cost Estimate	21	Friday, April 18, 2025	Friday, May 9, 2025
DD Value Engineering and Reconciliation	14	Saturday, May 10, 2025	Friday, May 23, 2025
** Submit DD package to MSBA **	1	Friday, May 23, 2025	Friday, May 23, 2025
MSBA Issues Comments	22	Friday, May 23, 2025	Friday, June 13, 2025
Response to MSBA Comments	14	Friday, June 13, 2025	Friday, June 27, 2025
CD 60% Phase_MSBA Submission	160	Friday, June 27, 2025	Thursday, December 4, 2025
Develop CD 60% Documents	91	Friday, June 27, 2025	Thursday, September 25, 2025
CD 60% Cost Estimate	21	Thursday, September 25, 2025	Thursday, October 16, 2025
CD 60% VE and Reconciliation	14	Thursday, October 16, 2025	Thursday, October 30, 2025
** Submit 60% CD MSBA submission **	1	Thursday, October 30, 2025	Thursday, October 30, 2025
MSBA Issues Comments	21	Thursday, October 30, 2025	Thursday, November 20, 2025
Response to MSBA Comments	14	Thursday, November 20, 2025	Thursday, December 4, 2025
CD 90% Phase_MSBA Submission	133	Thursday, December 4, 2025	Thursday, April 16, 2026
Develop CD 90% Documents	63	Thursday, December 4, 2025	Thursday, February 5, 2026
CD 90% Cost Estimate	21	Thursday, February 5, 2026	Thursday, February 26, 2026
CD 90% VE and Reconciliation	14	Thursday, February 26, 2026	Thursday, March 12, 2026
** Submit 90% CD MSBA submission **	1	Thursday, March 12, 2026	Thursday, March 12, 2026
MSBA Issues Comments	21	Thursday, March 12, 2026	Thursday, April 2, 2026
Response to MSBA Comments	14	Thursday, April 2, 2026	Thursday, April 16, 2026
Final 100% CD MSBA submission - for record only	41 days		
100% CD drawings developed	45	Thursday, April 16, 2026	Sunday, May 31, 2026
Prepare 100% CDs for Final Bidding	8	Sunday, May 31, 2026	Monday, June 8, 2026
** Submit 100% CD (Bid) drawings/specs/GMP to MSBA ** FOR RECORD	1	Monday, June 8, 2026	Monday, June 8, 2026
PERMITTING - STATE and LOCAL JURISDICTIONAL APPROVALS	459	Thursday, October 30, 2025	Monday, February 1, 2027
Zoning Board of Appeals	98	Thursday, December 4, 2025	Thursday, March 12, 2026
Notice of Intent to Conservation Commission (Review based on Preliminary Site Design w/ Final Site Design due at 60% CDs)	1	Thursday, October 30, 2025	Thursday, October 30, 2025
NPDS Construction General Permit	45	Thursday, April 16, 2026	Sunday, May 31, 2026
EPA-NPDES / SWPPP	25	Sunday, May 31, 2026	Thursday, June 25, 2026
Permits from Town Engineering Dept.	45	Thursday, April 16, 2026	Sunday, May 31, 2026
Special Permit to Planning Dept.	35	Thursday, September 25, 2025	Thursday, October 30, 2025
Building Permit	246	Sunday, May 31, 2026	Monday, February 1, 2027
Bidding			
Early Site Work Bid Period (after 60% CDs, if possible)	28	Thursday, November 20, 2025	Thursday, December 18, 2025
Award Early Package Contract	1	Thursday, December 18, 2025	Thursday, December 25, 2025
Main Bid Period	30	Monday, June 8, 2026	Wednesday, July 8, 2026
Final GMP	28	Wednesday, July 8, 2026	Wednesday, August 5, 2026
Construction	1469	Thursday, December 25, 2025	Wednesday, January 2, 2030
Early Mobilization	28	Thursday, December 25, 2025	Thursday, January 22, 2026
Early Site Work Construction (if possible)	167	Thursday, January 22, 2026	Wednesday, July 8, 2026
Main Construction	842	Wednesday, July 8, 2026	Friday, October 27, 2028
Building Substantial Completion	1	Friday, October 27, 2028	Friday, October 27, 2028
FFE Installation	49	Friday, October 27, 2028	Friday, December 15, 2028
Punchlist	49	Friday, October 27, 2028	Friday, December 15, 2028

Final Completion of New School	1	Monday, December 18, 2028	Monday, December 18, 2028
Teacher Move-In	14	Monday, December 18, 2028	Monday, January 1, 2029
School Opening	1	Tuesday, January 2, 2029	Tuesday, January 2, 2029
Building Demo and Field Construction (if applicable)	365	Tuesday, January 2, 2029	Wednesday, January 2, 2030
Project Closeout Phase	118	Wednesday, January 2, 2030	Tuesday, April 30, 2030
Prepare and Submit Closeout Documents	90	Wednesday, January 2, 2030	Tuesday, April 2, 2030
Final Application for Payment	1	Tuesday, April 2, 2030	Tuesday, April 2, 2030
Submit 100% DCAMM Contractor Evaluations	7	Tuesday, April 2, 2030	Tuesday, April 9, 2030
Final Reimbursement Request	1	Tuesday, April 9, 2030	Tuesday, April 9, 2030
MSBA Closeout Documents Submitted	21	Tuesday, April 9, 2030	Tuesday, April 30, 2030
LEED	1716	Thursday, January 2, 2025	Friday, September 14, 2029
LEED Registration	21	Thursday, January 2, 2025	Thursday, January 23, 2025
LEED Kick-Off Meeting	1	Thursday, January 30, 2025	Thursday, January 30, 2025
Submit Design Submittal to USGBC	1	Monday, June 8, 2026	Monday, June 8, 2026
Final LEED 10-Month Cx Report	300	Friday, October 27, 2028	Thursday, August 23, 2029
Final Cx Report, Cx Completion Certificate	7	Friday, August 24, 2029	Friday, August 31, 2029
Construction Submittal to USGBC	14	Friday, August 31, 2029	Friday, September 14, 2029
Targeted Date of LEED Certification Letter	1	Friday, September 14, 2029	Friday, September 14, 2029
DCAMM Documentation	960	Monday, June 8, 2026	Tuesday, January 23, 2029
Designer evaluation for Design Phase	21	Monday, June 8, 2026	Monday, June 29, 2026
Designer evaluation for CA Phase	21	Friday, October 27, 2028	Friday, November 17, 2028
Contractor 50% evaluation	21	Thursday, September 2, 2027	Thursday, September 23, 2027
Contractor 100% evaluation	21	Tuesday, January 2, 2029	Tuesday, January 23, 2029





OPTION NC-2.0 “Linear” New Construction*

For enrollments of 900* students

**District’s Preferred Option: NC 2.0 for 900 Students*



NC-2.0 First Floor Plan

Project Description:

This new construction option sites the new school on the current athletic fields. The three-story building is configured with the large assembly areas and Student Commons to the south and the academic spaces to the north organized along a linear “main street” circulation spine. This linear spine bends to conform to the available site limitations. The high-bay shops are located in clusters to the south of the spine and administration, Culinary, and Cosmetology flank the main entrance. The main entrance at the Commons serves not only as the primary student entrance, but also as the customer, visitors, and events entrance for after-hours activities in the Gym and Auditorium.

The remaining low bay CTE shops are located on the upper floor over the shops. All of the academic classrooms, science labs and Special Ed spaces are on the second and third floors. Each level has teacher planning, small group rooms and collaborative space as recommended in the visioning sessions.

Educational Program requirements:

Option NC-2.0 satisfies the space needs outlined in the Educational Program. It provides the overall building configuration and key adjacencies identified in the Educational Program. The building utilizes the Student Commons and Learning Commons as core elements as the heart of the school and has small gathering hubs along the main street.

This option includes a flexible Multi-purpose Auditorium in lieu of the school’s current stepped-floor Lecture Hall to provide the desired space for a variety of performances, presentations, large-group activities, auxiliary athletics, and community events.

All Career Technical shops have been “right-sized”, incorporating both the DESE Ch. 74 guidelines and South Shore’s current experience with their existing school’s conditions.

Key Adjacencies

Option NC-2.0 satisfies most all of the District' desired program adjacencies, including:

- A single main entrance for visitors, customers and students adjacent to the main Administration office area
- A dedicated Visitor entrance with controlled access to the Culinary Arts restaurant, the Cosmetology salon, and the school Store
- Central Student Commons adjacent to the Kitchen Servery, the Gymnasium, and the Multi-Purpose Auditorium
- Related Career Technical shops configured in career clusters- Construction cluster: HVAC, Plumbing, and Carpentry ; Consumer Services: Culinary, Cosmetology, Horticulture, Veterinary Science; Manufacturing/Transportation: MET, Metal Fab, Automotive.
- Centrally-located Library/ Learning Commons
- Special Education Pullout spaces and Small Group rooms conveniently located adjacent to general education classrooms and each floor level
- Related Classrooms provided for every CTE shop; generally located to allow both direct access from the shop and from the corridor
- Potential for a robust Student Support Center, co-locating several counseling, conference, and office spaces together in a convenient location for student access.
- The "Main Street" configuration provides a common shared circulation path for all students to reinforce the "whole-school" community with opportunities for display and informal student gathering.

Site and Facility goals:

This Option has a compact footprint that can be constructed independent of the existing school. The new site layout will provide a separate service area and the potential for separate bus and car drop-off areas. Expanded athletic fields would be created, including a separate softball field, after the existing building is demolished. The locker rooms are in close proximity to provide convenient access to the athletic fields.

Construction Phasing:

This option would be constructed in two basic phases: 1. New Construction of the proposed new school and treatment plant. 2. Demolition of the existing school and construction of athletic fields, parking, and final sitework.

It is anticipated that Phase 1 can be accomplished with minimal disruption to the ongoing operation of the existing school, although temporary parking will need to be considered to compensate for the partial loss of the existing rear parking. Athletics and physical education will need to compensate for the lack of outdoor playing fields for a period of perhaps three to four years.

Estimated construction duration is two and one half to three years.

Area

The total gross area of the 900 student option of NC-2.0 is **256,350 square feet**

Estimated Construction & Project Costs

Estimated Construction Cost is \$ 239,000,211.

Estimated Total Project Cost is \$283,000,000.

Pro's:

- Satisfies South Shore's space needs and right-sizes all CTE programs, including new Ch.74 programs
- Meets all of the District's Educational goals.
- Lower construction cost than other new construction options
- Provides convenient and secure public access to the Consumer Services programs and community assembly spaces
- Has potential for a strong new architectural image
- Compact footprint promotes good internal connectivity
- Configures CTE programs into career clusters
- Efficient internal layout results in slightly smaller gross building area
- Locates locker rooms in close proximity to athletic fields
- Eliminates the need for temporary classrooms
- Provides long-term value with new infrastructure and robust energy efficiency







South Shore Regional Vocational Technical High School

Educational Program

Submitted by:

Thomas J. Hickey, Superintendent-Director

Sandra Baldner, Principal

Keith Boyle, Assistant Principal/Director of Vocational Education

Crystal Paluzzi, Director of Technology

Katherine Berry, Director of Special Education

Robert Mello, Director of Off Campus Education and Special Projects

John Scopelleti, Director of Curriculum, Instruction, Assessment and PD

Amy Dow, Director of Guidance and Admissions

Deborah Beary, Director of Food Service

SST's mission is to develop confident, civic-minded students through rigorous and relevant hands-on instructional experiences so they can achieve ambitious career goals leading to their personal fulfillment, economic independence, and positive impact on their community.

October 23, 2023, revised January 11, 2024

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I. Introduction

The South Shore Regional Vocational School District (“District”) opened the doors of South Shore Regional Vocational Technical High School (“SST”) in 1962 and graduated its first class in 1964. The school is located at 476 Webster Street, Hanover and sits on 35 acres. The original building along with additions in 1978 and 1992 encompass 130,000 square feet.

As of July 1, 2024 SST will serve students from nine communities: Abington, Cohasset, Hanover, Hanson, Marshfield, Norwell, Rockland, Scituate, Whitman. Marshfield will become the ninth member town on July 1, 2024.

Recent enrollment trends show that over 70% of the in district enrollment has come from Abington, Rockland, Whitman and Hanson. For the 22-23 school year, the town specific enrollment was:

Abington	103	Duxbury	7
Cohasset	11	Halifax	1
Hanover	67	Hingham	4
Hanson	86	Hull	2
Norwell	26	Marshfield	8
Rockland	136	Pembroke	10
Scituate	40	Quincy	1
Whitman	151	OOD Total	33
In District Total	620	Total Enrollment	653

SST has 12 vocational technical programs (housed in 14 shop footprints; Automotive and MET have two footprints each) and five academic departments. There are 20 classrooms used for academic and Chapter 74 Related (theory) classes, four fully furnished science labs, and two former classroom spaces that are being used for the teachers’ room and space for the athletic trainer. Other spaces include a single gymnasium, a cafeteria, a 65 seat lecture hall which shares space with the library media center.

A. Typical student day

Students follow an alternating week academic/vocational schedule, with 9th and 11th graders scheduled in academics on “A” cycle and shop on “B” cycle, and 10th and 12th graders scheduled in shop on “A” cycle and academics on “B” cycle.

During the academic week, a student will attend 4 classes following a schedule similar to that below:

7:20 AM - 7:35 AM	Breakfast available
7:40 AM - 9:00 AM	Block 1 class
9:04 AM - 10:24 AM	Block 2 class
10:28 AM - 12:17 PM	Block 3 class and lunch
12:21 PM - 1:41 PM	Block 4 class
1:45 PM - 2:25 PM	Period 9 directed study hall

During the shop week, a student will follow a schedule similar to that below:

7:20 AM - 7:35 AM	Breakfast available
7:40 AM - 9:00 AM	Related (grade 9-10); Shop time (grade 11-12)
9:04 AM - 10:24 AM	Shop time
10:28 AM - 12:17 PM	Shop time and lunch
12:21 PM - 1:41 PM	Shop time
1:45 PM - 2:25 PM	Shop time

Related courses are block-long classes. Every two weeks students will leave shop to attend Guidance/PE classes, while teachers use that time for Professional Learning Communities (PLCs). In Grade 9, students also take Digital Literacy instead of a Guidance class. Grade 9 students explore all 12 programs during the first half of their first year.

B. After School Activities and Events

SST offers several after school activities and clubs outside our athletics program. Clubs include: Dungeons & Dragons, Chess Club, Drama Club, GSA, Art Club, Music Club. Other regular activities include an afterschool homework center for students needing extra support or some structure for getting tasks completed.

The extracurricular Art Club will continue to utilize an available Classroom and/or the Design & Visual Communications Shop for its activities under the supervision of a faculty advisor. In addition, the proposed multi-purpose Auditorium and Student Commons can be used for the Art Club's exhibitions. There is no dedicated space proposed for the Art Club. It will utilize an available Classroom and/or the Design & Visual Communications Shop for its activities as it currently does. The proposed multi-purpose Auditorium and

Student Commons will be used for the Art Club's exhibitions. The Design Team has been instructed to include multiple display cases throughout the school for the display of student work, including Art.

SST has meetings for the Parents Association, Athletic Association, School Council and School Committee in the high school typically once per month.

Also, SST has recently been running several Career Technical Institute classes for underemployed and unemployed adults in the late afternoons and evenings. The space impact is noteworthy in the shop areas involved (Carpentry, Culinary Arts, Metal Fabrication/Welding, Automotive, HVAC-R, Horticulture, Manufacturing). Future school designs should consider the organization of the shops and common area space which would have its primary design focused on serving the high school population but could double as functional space for various 'night school' programs.

SST offers late buses at 4PM daily to allow students to participate in afterschool activities and still have transportation home. 6PM late buses support students who participate in our athletics program and are after school for staggered practice times and/or contests.

C. Buildings & Grounds

On the grounds, there is a baseball field, main playing field for football, soccer and lacrosse, a softball field adjacent to the main playing field, and a gravel track that surrounds the main playing field.

Outbuildings include a greenhouse for Horticulture Landscape Construction, a three bay maintenance building (that houses the Facilities Director and Transportation Coordinator), a barn (used by Horticulture Landscape Construction) and an adjacent locker room (used by Athletics Department), a concession stand and a ticket booth. There is also a district office building which houses the Superintendent-Director, Business Office, Informational Technology, and Human Resources.

D. Offices

High school administrative and student services offices are near the main entrance, with the school nurse located more centrally in the building to be closer to the shop programs. Some administrative and specialist offices are placed elsewhere in the building due to space constraints and a desire to have some administrative presence distributed throughout the building.

Office space is designated for the Principal, Assistant Principal, School Resource Officer, Student Services department staff (Speech Pathologist, Psychologist, 2 Adjustment Counselors, 2 Guidance Counselors, Special Education Director, Director of Guidance and Admissions and administrative assistant) Athletic Director, Director of Career and Community Development, Director of Curriculum, Instruction, Assessment and Professional Development, and Athletic Trainer.

II. South Shore Regional Vocational Technical High School Information

A. Background and Vision

To start the process of envisioning a new school, SST's leadership team met with New Vista Design in May 2023 to prepare for upcoming visioning sessions. Then on June 20, July 11, and July 18, 2023, SST's larger visioning group, consisting of 7 students, 9 teachers, 1 paraprofessional, 6 administrators, 7 parents/caregivers, participated in three virtual workshops run by New Vista Design. There was also a

community forum held on July 13 for the SST community at large to hear about the visioning process and ask questions.

Each workshop was a collaborative session, allowing community members to participate in a step-by-step visioning process intended to identify SST's current and future priorities and goals and how a new facility design can reflect, project, and enhance those priorities and goals.

Please also refer to the entire Educational Visioning Workshop Report attached to this Educational Program.

1. Priorities and Considerations

Below are the top educational, architectural, and community priorities for the renovated and/or new SST facility that were discussed by the Educational Visioning Group:

Educational Priorities

Student-Centered Learning	<ul style="list-style-type: none"> • Making lifelong learners <p>Creativity, critical thinking, and problem-solving are valued more than compliance and regurgitation of something someone else learned</p>
Vocational Academic Integration	<ul style="list-style-type: none"> • Integration of academic and career tech programs • Project-based and student-centered learning that integrates academics and Ch74
Expanded Chapter 74 Options	<ul style="list-style-type: none"> • Stay current in the industry and adapt to the current climate. • The construction trade is ever changing and it's important to make sure students are equipped. • Additional shops with separate related classrooms.
Real World Connections	<ul style="list-style-type: none"> • Connect vocational education with employers • Providing real world experiences, including co-ops
Inclusive and Differentiated Learning	<ul style="list-style-type: none"> • Flexible to changing needs of all types of education • All students can achieve at a high level and get the supports they need • Being able to meet and support students "where they are". <p>Having sufficient instructional resources for all students Space for students who may struggle and need extra support</p>

Architectural Priorities

Welcoming Spaces	<ul style="list-style-type: none"> ● Warm and welcoming with modern colors ● Large modern, innovative, open, and bright spaces ● Colorful spaces, no more beige ● Natural light and open spaces ● More windows for natural light
Good Wayfinding	<ul style="list-style-type: none"> ● Better flow of classrooms and shops ensuring you know you're at SST (more branding) ● Welcoming flow for new students & families ● Compact efficient layout to help flow within a larger building
Flexible Spaces	<ul style="list-style-type: none"> ● Flexible and multi-purpose spaces ● Flexible spaces for growth in the field ● Adequate space for all learning
Collaborative Spaces	<ul style="list-style-type: none"> ● Places for teachers to convene in large and small spaces ● Need for a large gathering multi-purpose space ● A fantastic auditorium, used for staff and students ● Breakout space ● A dedicated space only for meetings
Community Space	<ul style="list-style-type: none"> ● Community space ● Community gathering space

Community Priorities

Inclusive and Welcoming School Culture	<ul style="list-style-type: none"> ● Ensure students feel like a supported/connected community within ● Inclusive - all are welcome (seen, supported, and safe) ● A school that informs and allows community to see what the students are capable of
Collaboration and Connectivity	<ul style="list-style-type: none"> ● More communication between crossover shops to allow students to work between trades ● Interaction with staff, students and public ● Connected shops that may work together on projects
Community Access and Integration	<ul style="list-style-type: none"> ● Welcoming access to public shops ● Visible community facing programs with clear branding ● More community ties between shops ● Shared spaces! Building relationships with our sending districts. ● Connected to all sending towns; include design elements that feel native to sending towns ● Community space such as auditorium or meeting spaces that can be utilized for community and learning based events ● An auditorium/ presentation space that can be rented
Night School Programing	<ul style="list-style-type: none"> ● Expanded night school programs ● Community classes at night ● Separate storage for night school elements
Access to Outdoor Athletic Spaces	<ul style="list-style-type: none"> ● Synthetic multi-use sport fields with lighting ● Track for walking
Flexible Spaces	<ul style="list-style-type: none"> ● Space near main entrances for admissions/prospective parents to meet and greet

We will achieve these strong goals by developing and staffing a school that offers more instructional space in existing Chapter 74 programs and space for 2 new programs (Plumbing and Veterinary Science). It is anticipated that a larger student population and expanded district will lead to a more diverse student population at the school, including more English Learners and a more balanced male/female student population. Additional Chapter 74 space affords teachers with the ability to have more project-based learning within the shop footprint, coupled with opportunities for cooperative education in grades 11-12. These same footprints will remain open and active throughout the calendar year after the school day, for the further development and expansion of adult education programs, including the state funded Career Technical Initiative (CTI).

2. Priority Educational Focus Areas

Workshop participants were asked to share what the highlighted teaching and learning practices look like at SST now, and then were asked to consider what they could be in an aspirational future. The following comments, which have been grouped thematically, list what the top practices could look like in an aspirational future:

Growth Mindset	<ul style="list-style-type: none"> • The attitude “we can get better” is encouraged and modeled.
Equity & Inclusion	<ul style="list-style-type: none"> • Remove obstacles to student success and sense of belonging
Student Centered Learning	<ul style="list-style-type: none"> • Space to explore ideas through experiences • Tangible outcomes in all content areas
Vocational Academic Integration	<ul style="list-style-type: none"> • Working together • See a return to collaboration and spaces support connectivity • Increased collaboration between academics and vocational shops • More support for shop-to-shop collaboration
Competency Based Learning	<ul style="list-style-type: none"> • Systems in place for students to develop and demonstrate mastery

SST Future Ready Learning Goals

The following set of “Future Ready CTE Learning Goals 1.0” for South Shore Tech students was developed by the Educational Visioning Group (EVG) during the Visioning Workshop One that took place on June 20, 2023. The EVG is a group of approximately 30 participants that includes SST leadership, administrators, teachers, parents, and students. Five teams of 4- 5 participants worked in small groups to create their own set of SST Future Ready CTE Learning Goals for a theoretical poster that would appear in each STS classroom. Each team’s list was then grouped by like goals, with each Learning Goal receiving 5 votes for appearing on an original list.

Workplace Readiness Skills <ul style="list-style-type: none"> • Work Ethic • Modern Tools of the Trade • Essential Workplace Habits • Learning How to be a Good Employee • Customer Service Skills 	Personal, Social, and Civic Responsibility <ul style="list-style-type: none"> • Empathy and Cultural Proficiency • Integrity and Responsibility Vocational Partnerships • Volunteerism and Community Engagement • Extracurricular and Athletic Engagement
Effective Communication <ul style="list-style-type: none"> • Written and Oral Communication • Acting as a Team Member • Building Relationships • Digital Literacy 	Growth Mindset <ul style="list-style-type: none"> • Adaptability • Explorative and Open Mindset • Risk-taking Within a Safe Environment • Faculty Behavior Modeling
Critical Thinking and Problem Solving	Lifelong Learning

<ul style="list-style-type: none"> ● Flexible Mindset ● Inventive Thinking ● Real World Problem Solving 	<ul style="list-style-type: none"> ● High Productivity ● Planning and Organization ● Self-Advocacy
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This version of SST Future Ready CTE Learning Goals Poster 1.0 will likely continue to evolve and will serve to inform the EVG’s conversations about the teaching and learning practices and priorities that should be supported by the renovated and/or new SST school facility.

3. Desired 21st-century Design Patterns

The following set of priority “21st Century Design Patterns” for the design of the renovated and/or new South Shore Tech was developed by the Educational Visioning Group (EVG) during Workshop Two. Workshop participants were introduced to 36 “Design Patterns” that represent varied architectural design features of, and approaches to 21st century school facility design. Individual participants first rated each Design Pattern with a heart, thumbs up, or thumbs down, and were then given the opportunity to rate Design Patterns collectively in order of importance. The resulting list of Design Patterns has been placed in priority order based on the cumulative total of hearts, thumbs up, and priority ratings that each received.

Top 12 Design Patterns:

1. Professional Work Areas (30 votes)
2. Dining as Social Commons (28 votes)
3. Display and Exhibition (27 votes)
4. Branding and Identity (27 votes)
5. Indoor/Outdoor Connections (27 votes)
6. Heart of the School (26 votes)
7. School Run Businesses (26 votes)
8. Natural Light and Biophilia (26 votes)
9. Effective Storage (26 votes)
10. Security and Welcome (25 votes)
11. Community Use and Access (25 votes)
12. Media Center as Learning Commons (25 votes)

4. Guiding Principles

The EVG was introduced to four Case Studies of recent CTE school projects in which the Guiding Principles for each school were reviewed as connected to design decisions that were made for the project. Three teams of 4-5 participants each worked to create their own set of 4-6 Guiding Principles for the SST project, which were later grouped by like themes and are listed below in order of the number of “votes” they received, with each pattern given 5 votes for every time that it appeared on a team’s list.

The following principles offer guidance on setting design goals and focus the work of the visioning team. These principles may evolve as the design process continues.

Guiding Principle	Illustration
Sense of Place	<ul style="list-style-type: none"> ● Learning communities ● Public area and academic area ● Displays of student work ● A school that looks like a place of learning ● A facade that is reflective of the community
Safety and Welcome	<ul style="list-style-type: none"> ● Welcoming wayfinding ● A Courtyard that would provide for safe student gathering outside
Heart of the School	<ul style="list-style-type: none"> ● Multi-purpose Commons ● Open, with a variety of spaces
Natural Light	<ul style="list-style-type: none"> ● Well lit classrooms and common areas
Visual and functional connections to the outdoors	<ul style="list-style-type: none"> ● Access to the campus for curriculum initiatives, PE program, passive recreation (walking trails), as well as shop activities ● Access to school vehicles for shops that go off campus
Adaptability and Flexibility	<ul style="list-style-type: none"> ● The ability to evolve, grow, and adapt to changing 21st century skills ● The ability to flex when future technology and vocational equipment are introduced
School as Community Resource	<ul style="list-style-type: none"> ● Welcoming yet secure ● Public spaces and public-facing CTE programs secured from other areas of the school ● An active community and an active night school program
Building as a Learning Tool	<ul style="list-style-type: none"> ● Students understand and participate in maintaining the building systems ● Horticulture students participate in maintaining the grounds ● Having an energy-efficient building

Enrollment

SST is in the MSBA’s program to consider the Feasibility and Schematic Design of a possible Addition/ Renovation or New School. As part of that program, SST has agreed to study a range of enrollment possibilities from 805 students to 975 students and something in-between. This range recognizes the growth of the District with the addition of the Town of Marshfield and the potential to add new Chapter 74 CTE programs.

B. Grade and School Configuration Policies

1. Current School

The District consists of one high school serving Grades 9-12. Enrollment as of October 1, 2022 was 653 students and as of this report in September 2023, there are 671 students. The high school is currently organized by five academic departments and twelve vocational technical programs.

SST receives over 300 applications for Grade 9 admissions and accepts up to 180 students each year. The school's wait list for the past five years has averaged 100 students. This evidence strongly suggests that SST could support higher enrollments. During the 2022-2023 school year, 302 students completed applications while only 165 were enrolled as incoming Grade 9 students. This acceptance rate of 54.6% is part of a trend: 68.1% of students who completed applications were accepted in 2021-2022, and 78.4% were accepted in 2020-2021. This downward trend shows that applications have gone up while the number of available spots has not been able to keep pace with student interest.

SST's curriculum is aligned with all applicable DESE/CTE frameworks, fulfills the Mass Core curriculum, and meets the Massachusetts Board of Higher Education Admissions Requirements. SST students graduate with four years of English, Mathematics, Physical Ed/Health and Science, as well as three years of Social Studies, including a grade 11 semester long Civics course. PE/Health instruction is extremely limited and needs to be addressed through design and staffing. SST does not yet offer World Language courses due to scheduling limitations; However the Massachusetts Board of Higher Education Admissions requirements allow Technical Related courses to be substituted in lieu of World Language courses.

SST is committed to educating all students and has successfully developed a special education program to address the needs of students with disabilities in an inclusion model where all students with individual education plans are successfully integrated into co-taught and paraprofessional supported classes.

The existing facility significantly limits the number of students who can enroll. As the district Statement of Interest indicates, as the second oldest regional vocational school in Massachusetts, many of the infrastructure systems have outlived their useful life. In addition, we lack adequate space for instructional and instructional support settings.

2. Proposed School

The proposed school would be designed in a way that would provide access for more students to enroll in programs that are aligned with local and regional labor market needs. In addition, the proposed school must be a learning tool in itself; it must efficiently utilize every square inch because there is a limited site on which to renovate or build.

SST **learning goals** emphasize workplace readiness, growth mindset, problem solving, and responsibility. These goals are embedded in the school mission and goals. Students have flourished within our current building and grounds layout, yet their future experience will be improved exponentially with a new design. Efforts should be made to cluster shops within similar industries (when there is an authentic curriculum reason to do so) and to cluster shops that have a prominent public facing component to the program.

Design decisions must consider the visioning session **guiding principles and design patterns** that emphasize safety, sense of place, natural light, adaptability and flexibility, among others. Students and teachers need the space to gather as a community in large and small spaces, to practice skills in and out of the shop and classroom, and to be supported socially and emotionally through the school year.

Skills building is at the heart of SST’s program of studies. Academic skills are best cultivated through project based learning, ability to collaborate within and among departments. Teachers need a design that gives them an array of learning environment options in and out of the classroom, whether that is in a creatively designed hallway, multipurpose room, or small group work areas. Workplace skills are developed and refined in spacious shop settings and with opportunities to interact with the public, either on or off campus. The proposed school must be designed with adequate spacing in mind for all aspects of the educational program:

Space Needs	Impact for Design
<p>Chapter 74 spaces</p>	<ul style="list-style-type: none"> ● More floor space for heavy equipment. ● Shop adjacencies that allow teachers the ability to transition from individualized shop work on the floor to small/large class meetings in a classroom. ● Expanded and accessible storage that does not require interruptions to the flow of the school day by having to send students to distant locations to retrieve supplies. ● Shop proximity to school vehicle (e.g. 14 person van) parking when shops need to bring students to job. ● Open space to display student work products. ● Demonstration space and student skill practice space. ● Student rest rooms within the shop footprint.
<p>Academic spaces</p>	<ul style="list-style-type: none"> ● In an effort to offer more access to SEL supports, PE programming, Digital Literacy, World Language and expanded Related Theory instruction on the academic week, a future scheduling model could include 5 blocks of instruction which will require more classroom space. ● MSBA-standard science labs with storage nearby, and also space to pivot between lab and desk work within the same footprint. ● Classrooms with universal technology access, maximized natural lighting and flexible furniture to allow for the school to more easily adjust for curriculum and staffing needs in the future. ● Student restrooms in sufficient number to minimize time that students are not in the classroom setting. ● Breakout room or gathering/common spaces in sufficient number to make the best use of the existing internal space and encourage collaboration between: <ul style="list-style-type: none"> ○ Teachers who work on the same subject/grade level. ○ Teachers who collaborate across academic disciplines (e.g. English and Social Studies). ○ Academic and Chapter 74 integration in the curriculum via locally designed project based learning.
	<ul style="list-style-type: none"> ● Being able to assemble groups of students for instructional and extracurricular activities and not over rely on remote technology (e.g. Zoom) to create a school community.

Common/Flexible spaces	<ul style="list-style-type: none"> • Having the option to leave materials for events and projects that might take multiple days. • Having space that is available throughout the school day. • Having flexible furniture to convert the functionality of the space to meet the educational program, community needs, or extracurricular activities.
Administrative and Student Support spaces	<ul style="list-style-type: none"> • Having space strategically located within clusters of classrooms or shops for staff and student gatherings. • Having sufficient space options to have 'just in time' meetings with students, parents and staff.

C. Class Size Policies

Every effort is made to keep academic class sizes for regular education classes under 25. The District has consistently maintained an average class size of approximately 20 students for the previous five years. This includes high needs students such as those who come from low income families, those with disabilities, and—to a smaller extent—English learners. The proposed Space Summaries have been based on maintaining the average class size of 20 students in the calculation of required General Classrooms and Science Labs. Please see attached class breakdown spreadsheet.

SST complies with Massachusetts regulations with regard to instructional groupings for students on individualized education plans. When eligible students are assigned to instructional groupings outside of the general education classroom for 60% or less of the students' school schedules, group size shall not exceed

- 8 students with a certified special educator,
- 12 students if the certified special educator is assisted by one aide, and
- 16 students if the certified special educator is assisted by two aides.

For the 2022-2023 school year, students with disabilities comprised 27.3% of the student population, compared to 19.4% for the state. Low-income students comprised 29.2% of SST's population, compared to 42.3% for the state. Maintaining class sizes for these students in particular is an important goal for any building expansion.

Chapter 74 "shop" classes have varying teacher student ratios, but they do not exceed 20:1 when students are in a shop setting. These ratios are mindful of state board regulations (e.g. Department of Public Health, Board of Cosmetology), existing instructional space, student demand, and current staffing.

Impact for Design: Class Size Policies

Regardless of design, state regulatory boards (e.g. Cosmetology, Board of Health), and special education regulations all contribute to the district determining class size parameters.

SST is currently enrolling 671 students as of September 2023. Should the enrollment expand to a range of up to 975, there will be additional staffing needs phased in over a 4-year period.

English: 1 for every 120 new students

Math:	1 for every 120 new students
Science:	1 for every 120 new students
Social Studies:	1 for every 120 new students
Special Education:	1 for every 90 new students
World Language:	1
PE/Health:	1 for every 120 new students
Counseling:	1 for every 120 students
IT Support:	2 support staff
Food Service:	4 staff for increase serving lines
Ch 74 Teachers:	10 (5 for enrollment increase, 5 for new programming)
Ch 74 Paras:	3 school day staff
Paraprofessionals:	1 for every 60 students
Administration:	2
Admin Assistants:	2
Custodians:	4
Bus Drivers:	1 for every 60 new students

D. School Scheduling Method

The school day begins at 7:40 AM and ends at 2:25 PM. Students are all on an alternating week schedule, with 9th and 11th graders on the same rotation, and 10th and 12th graders on the same rotation. The groups alternate cycles throughout the school year culminating in 90 days of academic instruction and 90 days of Chapter 74 full day shop instruction.

The school day is structured around a 9 period day; SST commonly refers to 84 minute 'double periods' as single 'blocks'.

Blocks	Event	Time	Minutes
	Warning Bell	7:35	
1	Period 1	7:40-8:20	80
	Period 2	8:20-9:00	
2	Period 3	9:04-9:44	80
	Period 4	9:44-10:24	
3	Period 5	10:28-11:08	80
	Lunch A	10:28-10:53	
	Lunch B	10:57-11:22	
	Lunch C	11:25-11:50	
	Lunch D	11:52-12:17	
	Period 6	11:37-12:17	

4	Period 7	12:21-1:01	80
	Lunch E	12:21-12:46	
	Period 8	1:01- 1:41	
	Period 9	1:45- 2:25	40
	Dismissal	2:25	

On a typical shop week, students spend the entire day in a shop setting except for a lunch period in the cafeteria. There are some exceptions:

- a. One day per week the students leave shop to attend a guidance class and gym class lasting 84 minutes in total. While the students are out of the shop, the teachers have a professional learning community block of time in common.
- b. Students in grade 9, after Exploratory, and students in grade 10, for the most part will start their shop day with 84 minutes of a Related course and then return to the shop setting for the duration of the school day.

Core academic courses are scheduled in 'blocks' or 84 minute 'double periods'. The academic day ends with a 9th period directed study period for students to complete work, get scheduled services, meet in extracurricular settings, and/or receive small group support from content area teachers or paraprofessionals.

All Chapter 74 programs, current and proposed, will be scheduled in an alternating week schedule. Students will have 90 cumulative days of shop instruction with full day shop experiences. On the academic week, students will attend four 84-minute blocks of instruction (which will include in grades 11-12 a daily 84-minute block of Related instruction, which is generally defined as Chapter 74 classwork related to the same curriculum framework).

As new students populate the proposed Chapter 74 programs staff will be hired accordingly, with at least one teacher being hired for each new program the year prior to the school opening, and then a second teacher being hired in either the first or second year after the school construction is completed.

All academic classes will be scheduled on the alternating week cycle with no major changes in curriculum. While not a fact at this point, the district, through the collective bargaining process, will seek some flexibility in order to allow for more scheduled academic time for wellness classes, and expanded Chapter 74 Related instruction.

Teachers in the same Chapter 74 program are afforded 84 minutes each week to collaborate during PLC time due to the district's concurrent scheduling of all shop week students into a 42-minute physical education/health course, and a subsequent 42-minute guidance counselor led seminar. Academic teachers in the same department have biweekly PLC meetings during the 9th period of the academic day when students have directed study periods. The district is able to schedule flexible coverage models to that, for instance, all ELA teachers can attend a PLC on Tuesdays. One current instructional priority that requires PLC time has to do with grading. SST is in the second year of a two-year initiative to overhaul its assessment system so that the grading system is more equitable and reflects student progress toward standards which is a philosophy that is more in line with project based applied learning.

Yes, the district has considered providing additional professional and curricular development opportunities outside the regular school year. Such efforts are achieved through several methods, including (a) two

hours delays for morning professional development; (b) 6 department meetings per year after school; (c) aforementioned weekly or biweekly PLC meetings during the school day; (d) 9th period teacher release time (directed study schedule that allows for more during the day flexibility); (e) targeted professional development committee work where teachers are paid a stipend to undertake new curriculum work.

The main goals for our professional development are:

- to be versed in managing students with a variety of learning styles and needs,
- to have time to develop alternate forms of instruction and assessment to reteach standards in which students are struggling.
- to continue to learn about equitable and culturally proficient practices in schools.
- to develop health and wellness strategies appropriate to their setting for their students and themselves.

There are honors level courses offered in the following subjects and grade levels:

	Math	Science	English	Social Studies	Computer Science
Grade 9	Algebra I and Algebra II	n/a	English 9	US I	n/a
Grade 10	Geometry	n/a	English 10	Modern World	n/a
Grade 11	Algebra II and PreCal	n/a	English 11: American Literature	n/a	n/a
Grade 12	PreCalc and Calculus	Biotech (Dual Enrollment)	English 12: World Literature (Dual Enrollment)	n/a	Computer Science (AP)

Impact for Design: School Scheduling Method

- Space for PLC meetings is essential.
- A cafeteria setting needs to set aside space for students who seek a quieter lunch experience.
- **Staffing:** Potential expansion of instructional blocks within the existing school day (4 blocks vs 5 blocks) needs further analysis for impact on school design. Having 5 instructional blocks would allow for more PE/Health, Digital Literacy, SEL supports, World Language and Related Theory.
- It is generally understood that teachers being able to stay in one or two locations allows them to transition from one instructional block to another much more easily than if they have to travel with students during the passing window. Often times it requires redundancies and in instructor furniture and storage to give them the opportunity to have access to manipulatives in the classrooms in which they teach. The District considers it a priority to have teachers available to greet students as they arrive in classes. This is something that all chapter 74 programs enjoy and is found to be an essential part of the instructional model. In a newly constructed building, with strategically placed departments in classes, teachers would be allowed the ability to stay in one location. The district also acknowledges that they will be instructional initiatives that might force a balancing act (for instance, a desire to have all ninth graders taught in the same area of the high school). While that is not a priority right now, this new structure will allow for flexible learning adjustments to be made. In the short term, based on our statement of interest, the need for teachers to have classrooms that do not require much travel would be a big improvement.

E. Teaching Methodology and Structure

1. Programs

SST offers 12 CTE programs that are designed for students to develop the skills and knowledge they need to succeed in their respective trades. Through our Chapter 74 Program Advisory Committees, we ensure that our students are learning what they need to know and are being held to industry standards. To enable all students to achieve their post-secondary goals, SST offers college preparatory and Honors level courses aligned with all applicable Massachusetts Curriculum Frameworks. This program of studies allows students to access and develop deeper learning skills like critical thinking and problem solving in a developmentally appropriate manner so they can be successful outside of school.

2. Administration and Department Leadership

SST's administration includes the Superintendent/Director, Principal, Assistant Principal/Director of Vocational Education, Director of Curriculum, Instruction, Assessment and Professional Development, Director of Special Education, Director of Off Campus Learning & Special Projects, Director of Technology, Director of Facilities, Food Service Director and Transportation Coordinator. The district also has a Human Resources Coordinator and a business office which includes Accounts Payable and Payroll staff and the District Treasurer.

Each instructional program department has a chair, who meets with administration monthly. An expanded or new building and/or increased enrollment may require a small increase and rearrangement of this organizational structure.

3. Curriculum & Instruction

All courses have curriculum maps that guide the pacing of instruction. More importantly, the maps emphasize the most essential standards that will be taught and assessed in the course. Multiple sections of the same course use the same curriculum map to ensure equity and continuity of instruction. Maps are guided further by course essential questions and units of study which include lesson plans that connect the day to day activities in alignment with the standards and outcomes. In academic classes, teachers often design activities that make real world connections, foster teamwork and collaboration, and get students out of their "desk and row" traditional learning environment. Chapter 74 shop courses and related courses embrace and model this philosophy every day.

Deeper integration projects within a department, and between academic and shop departments are hampered by a lack of common area space. Unless students were to gather outdoors, there is very limited space to have groups of students collaborate on projects and view demonstrations and presentations. Making strategic design decisions with common gathering spaces as a priority will create an ideal environment for these initiatives to take root in the future.

Faculty members employ various instructional approaches including project-based learning, collaborative and small group work, and laboratory activities. Direct instruction, guided reading, skills based practice is also part of the learning experience for students. With a standards-based assessment system, teachers want students to take charge of their learning through multiple opportunities to show what they know and are able to do. SST's co-teaching model has supported students in all academic areas. Special education teachers also serve as student liaisons in order to ensure that IEPs are being implemented and parents are an active part of the student learning process.

Impact for Design: Curriculum & Instruction

- To meet the current and future needs of diverse learners, instructional spaces must have universal technology, mobile furniture and proper adjacencies and supervision.
- Another design priority is designing flexible spaces that can shift to meet ever changing needs of teaching and learning in the short term and long term.
- Potential non-instructional spaces must be distributed throughout the building to allow for better student supervision and reasonable access to meeting room space for adult and student needs (e.g. department meeting space, break out rooms for small group learning).
- To allow for the sharing of general classrooms and to maintain the high utilization of all educational spaces, teachers must have professional planning spaces. We envision these spaces to be appropriately furnished and equipped for both quiet work spaces and comfortable lounge-type spaces. There should be multiple locations throughout the school to be convenient to all academic classrooms,

4. Promotion/Graduation Requirements

In order to ensure promotion, it is the expectation that credits for all classes that earn a mark of *Unsatisfactory* or *No Credit* will be recovered prior to the start of the next school year. A student who earns *Unsatisfactory* or *No Credit* in three (3) or more academic courses in a given year will not be promoted academically. A student who earns *Unsatisfactory* or *No Credit* in shop for the year will meet with the principal or her/his/their designee to plan for credit recovery. Students may be required to repeat the vocational year. All students must earn their OSHA 10 card prior to co-op placement and/or graduation. Exceptions to these requirements may be made for students entering South Shore after their 9th grade.

5. English Language Arts/Literacy

Guided by the Massachusetts Common Core Curriculum, students will be instructed in Reading & Literature, Language, Writing, and Speaking & Listening. The emphasis in English 9 and 10 is developing essential skills for success in high school and on state assessments, focusing on prose, short stories, and novels. The curriculum has been designed to prepare students to be college and career-ready. English 9 is the first of a two-year loop, culminating at the end of English 10. There will be department-selected formative and/or summative assessments in English 9 and 10.

In Grades 11 and 12, students will be instructed in Reading & Literature, Language, Writing, and Speaking & Listening. English 11 has a focus on American Literature, and English 12 has a focus on World Literature. A central focus in all English 11 and 12 courses are assignments that prepare all students for college and careers. English 11 is the first of a two-year loop, culminating at the end of English 12. Students will develop a required career-ready digital portfolio in English 11, which will carry over to English 12.

The District offers two levels of instruction in all grade levels. The Honors course in Grade 9 has a prerequisite that is a combination of Grade 8 grades and SST placement test scores. In Grades 10, 11, and 12 students must earn *Advanced* in English Honors or *Exemplary* in English CP.

Title 1 supports in the areas of reading are provided through direct instruction in academic classes and targeted reading interventions in small groups or in individual settings. Identified Title 1 students receive

additional support in Grades 9 receive reading interventions and in grades 9 & 10 to prepare for MCAS. Upperclassmen in grades 11 and 12 receive interventions to prepare for PSAT/SAT assessments.

Our English Language Learner program continues to grow. Identified ELL students receive support from our ESL instructor. The ESL teacher works directly with students in their academic and vocational programs, and provides direct services based on need in small groups or individually. The ESL teacher collaborates with teachers during PLCs to offer professional development in supporting EL's with SEI and WIDE Can Do best practices.

ELA Staffing, Scheduling and Space Limitations

The English Department has 6 full time teachers. All are certified to teach English. Two have a Masters in English to support dual enrollment instructor requirements. One is dual certified in English and Special Education.

Most of the teachers in the English Department travel for up to half of their scheduled course load. SST attempts to limit the number of periods a teacher will travel, but due to space constraints there are times when an instructor may be in a different classroom for each class on a given instructional cycle. SST's classrooms vary in size. Most classrooms can accommodate 24 student work stations; some cannot. Those that can accommodate 24 students meet safety requirements, but leave little room for teacher mobility. Teachers meet weekly in a Professional Learning Community. There are no classrooms available for these meetings. Teachers meet in conference rooms which are not always large enough to effectively accommodate the department's needs.

SST provides individualized instruction and assessment to students who need it. When appropriate, classes include a special education teacher and/or a trained instructional aide. Students who need support in a small group setting are provided with the opportunity to work with a teacher or paraprofessional outside the regular classroom in other available spaces. Students who need extra support are also provided with special educators or instructional aides who staff small group study halls during our academic week 9th period. Students are also supported after school by their teacher or in a designated extra help location staffed by trained instructional aides.

The following table provides offerings for English Language Arts courses in Grades 9 -12 at SST:

Grade	Dual Enrollment	Honors	College Prep
9	n/a	English 9 Honors	English 9 CP
10	n/a	English 10 Honors	English 10 CP
11	n/a	English 11 Honors	English 11 CP
12	World Literature	English 12 Honors	English 12 CP

Impact for Design: English Language Arts/Literacy

- No specific design changes envisioned for the English Language Arts/ Literacy curriculum.
- **Staffing:** 1 teacher for every 120 new students.

6. Mathematics

Math is a critical ingredient in nearly every program at SST. A wide range of math subjects are available to stimulate and challenge all of our students. Such courses are designed to support students' career objectives, as well as college ambitions. All courses are guided by the Massachusetts Common Core Curriculum. Courses offered include Geometry, Algebra I, Algebra II, Pre-calculus, Calculus, Financial Literacy and Statistics. SST offers college placement and honors level courses in all grade levels, as well as dual enrollment Pre-calculus.

Title 1 supports in the areas of math are provided through direct instruction in academic classes and through targeted reading math interventions in small groups or in individual settings. Identified students receive additional support in Grades 9 and 10 to prepare for MCAS and Grades 11 and 12 to prepare for PSAT/SAT assessments.

Our English Language Learner program continues to grow. Identified ELL students receive support from our ESL instructor. The ESL teacher works directly with students in their academic and vocational programs, and provides direct services based on need in small groups or individually. The ESL teacher collaborates with teachers during PLCs to offer professional development in supporting EL's with SEI and WIDE Can Do best practices.

Mathematics Staffing, Scheduling and Space Limitations

The Math Department has 6 full time teachers certified to teach Mathematics. One teacher has a Masters in Mathematics which supports dual enrollment instructor requirements. In addition, SST has 2 full time teachers dual-certified in Math and special education.

Most of the teachers in the Math Department travel for up to half of their scheduled course load. SST attempts to limit the number of periods a teacher will travel, but due to space constraints there are times when an instructor may be in a different classroom for each class on a given instructional cycle. SST's classrooms vary in size. Most classrooms can accommodate 24 student work stations; some cannot. Those that can accommodate 24 students meet safety requirements, but leave little room for teacher mobility. Teachers meet weekly in a Professional Learning Community. There are no classrooms available for these meetings. Teachers meet in conference rooms which are not always large enough to effectively accommodate the department's needs.

SST provides individualized instruction and assessment to students who need it. When appropriate classes include a special education teacher and/or a trained instructional aide. Students who need support in a small group setting are provided with the opportunity to work with a teacher or paraprofessional outside the regular classroom in other available spaces. Students who need extra support are also provided with special educators or instructional aides who staff small group study halls during our academic week 9th period. Students are also supported after school by their teacher or in a designated extra help location staffed by trained instructional aides.

The following table provides offerings for Math courses in Grades 9 -12 at SST:

Grade	Dual Enrollment	Honors A**	Honors B	CP
9	n/a	Algebra 2	Algebra 1	Algebra 1

10	n/a	Geometry		Geometry
11	Pre-calculus	Pre-calculus	Algebra 2	Algebra 2
12	Pre-calculus	Calculus	Pre-calculus, Calculus	Pre-calculus, Financial Literacy, Statistics

** For incoming 9th grade students who have successfully completed Algebra 1 by the end of 8th grade at an Honors Level

Impact for Design: Mathematics

- No specific design changes envisioned for the Math curriculum.
- **Staffing:** 1 teacher for every 120 new students.

7. Science

SST currently uses 4 lab classrooms (sizes range between 774-992 sq ft) and one chemical storage area (187.5 sq ft) to teach 450 students in 4 instructional blocks per day.

All Science classes are aligned with the Massachusetts Curriculum Frameworks which incorporate the Common Core Literacy standards as well. All Grade 9 and 10 students enroll in one science course per year (Biology or Physics) and take Science MCAS in grade 9. Grade 11 students can choose Environmental Science, Chemistry or Engineering. Students in the Allied Health program also take Anatomy and Physiology. Grade 12 students can choose from Environmental Science, Chemistry, Engineering, or Tech Engineering. Often the science course a student chooses depends upon their technical area and their college plans.

Title 1 supports in the areas of reading and math are provided through direct instruction in academic classes and through targeted reading math interventions in small group or 1:1 settings. Identified students receive additional support in Grades 9 and 10 to prepare for MCAS and Grades 11 and 12 to prepare for PSAT/SAT assessments.

Our English Language Learner program continues to grow. Identified ELL students receive support from our ESL instructor. The ESL teacher works directly with students in their academic and vocational programs, and provides direct services based on need in small groups or individually. The ESL teacher collaborates with teachers during PLCs to offer professional development in supporting EL's with SEI and WIDE Can Do best practices.

Science Staffing, Scheduling and Space Limitations

The Science Department consists of 6 teachers who are licensed in Biology, Physics, Tech Engineering or Chemistry. The Science Department has 6 full-time teachers, many with multiple areas of licensure.

- 4 are certified to teach Biology.
- 2 are certified to teach Physics.
- 2 are certified to teach Chemistry.
- 1 is certified to teach Tech Engineering.

- 1 has a Master’s degree in Biology to support dual enrollment instructor requirements.
- 1 is dual-certified in Biology and Special Education.

Some members of the Science Department travel for up to half of their scheduled course load, even for lab bases courses. SST attempts to limit the number of periods a teacher will travel, but due to space constraints there are times when an instructor may be in a different classroom for each class on a given instructional cycle. SST has four Science labs outfitted with sinks, water, lab tables, necessary safety features and storage. Most classrooms can accommodate 24 student work stations; some cannot. Those that can accommodate 24 students meet safety requirements, but leave little room for teacher mobility. Teachers meet weekly in the Professional Learning Community. There are no classrooms available for these meetings. Teachers meet in conference rooms which are not always large enough to effectively accommodate the department's needs.

The following table provides a grade-level listing of Science courses. All students enroll in Biology and Physics in Grades 9 and 10. All students enroll in 2 more science classes in Grades 11-12. Some of these courses are aligned with Chapter 74 majors (e.g. Allied Health students enroll in Anatomy & Physiology; Manufacturing Engineering students enroll in Engineering; Cosmetology students enroll in Chemistry)

Grade	Dual Enrollment	College Prep
9	n/a	Biology, Physics
10	n/a	Biology, Physics
11	n/a	Engineering, Environmental Science, Anatomy and Physiology, Chemistry
12	Biotechnology	Engineering, Tech Engineering, Environmental Science, Anatomy and Physiology, Chemistry

Impact for Design: Science

For the current enrollment, the District needs six Science classrooms at a minimum. Each of the proposed science classrooms should have the following equipment:

- Instructor’s station
- Movable demo table
- 2 Wheelchair accessible tables
- 1 Wheelchair accessible counter
- 10 Movable tables
- An adjoining prep room with refrigerator and dishwasher
- 7 sinks including hot & cold water, gas
- A primary teaching wall and a secondary teaching wall
- Full blackout window treatment in labs

Each of the proposed science classrooms should have the following safety measures:

- Fire Extinguisher Master Gas Shut Off
- Safety Goggle Sterilizer Unit
- Fume Hood/ Biosafety Cabinet
- Safety Shower & Eyewash w/ Fd
- Fire Blankets
- Chemical storage

The Science classrooms should be designed to accommodate all Science offerings and they should be capable of providing both lecture and lab, in accordance with current MSBA standards.

Design consideration should be given to having at least one Science lab in proximity to the MET shop for engineering integration and 1 science lab near the Allied Health shop for similar curriculum integration in life sciences.

Staffing: 1 teacher for every 120 new students

8. Social Studies

The goal of the Social Studies Department at SST is to engage students in understanding the history of the world in which we live. In addition, our department teaches history through skill-based learning that emphasizes reading, writing, and critical thinking. The department also incorporates 21st-century skills including global awareness and economic, civic, and environmental literacy.

Our approach is to teach for greater historical understanding, using a variety of methods to elicit each student's interpretation and insight in looking at past events. SST believes this will help to make graduates more well-rounded, productive, and better grounded in the world we live in today. To create active and more engaged citizens, the department focuses on U.S. History, Modern World History, and Civics. All Social Studies Department classes are aligned to the current MA DESE Frameworks and Standards. All course offerings are required at South Shore Technical High School.

Title 1 supports in the areas of reading and math are provided through direct instruction in academic classes and through targeted reading math interventions in small group or 1:1 settings. Identified students receive additional support in Grades 9 and 10 to prepare for MCAS and Grades 11 and 12 to prepare for PSAT/SAT assessments.

The English Language Learner program continues to grow each year. Identified ELL students receive support from our ESL instructor. The ESL teacher works directly with students in their academic and vocational programs, and provides direct instruction and intervention in small groups and/ or 1:1. She collaborates with teachers during PLC's to offer professional development in the areas of need.

Social Studies Staffing, Scheduling and Space Limitations

The Social Studies Department has 3 full time teachers and one special education teacher who works close to full-time in the Social Studies Department.

- 3 are certified to teach high school Social Studies.
- 1 is dual-certified in English and Special Education.

Most of the teachers in the Social Studies Department travel for up to half of their scheduled course load. SST attempts to limit the number of periods a teacher will travel, but due to space constraints there are times when an instructor may be in a different classroom for each class on a given instructional cycle. SST classrooms vary in size. Most classrooms can accommodate 24 student work stations; some cannot. Those that can accommodate 24 students meet safety requirements, but leave little room for teacher mobility. Teachers meet weekly in a Professional Learning Community. There are no classrooms available for these meetings. Teachers meet in conference rooms which are not always large enough to effectively accommodate the department's needs.

The following table provides a typical pathway for Social Studies courses in Grades 9 -12 at SST:

Grade	Honors	CP
9	US History	US History
10	Modern World History	Modern World History
11 or 12	n/a	Civics (one semester)

Impact for Design: Social Studies
 No specific design changes are envisioned for the Social Studies curriculum.
Staffing: 1 teacher for every 120 new students

9. World Language

There are currently no courses offered. The Massachusetts Board of Higher Education allows vocational technical schools to substitute Related Theory courses for the World Language requirement for college admissions.

Impact for Design: World Language

- It is likely that some world language instruction would be offered in the future, requiring at least one additional classroom for one licensed teacher to offer instruction for 60-75 students per cycle.
- **Staffing:** 1 teacher

10. Physical Education/Health and Wellness

There is only 1 Physical Education/Health and Wellness teacher at SST currently. The program space is limited to a 8,000 sq ft gymnasium and approx 600 sq ft weight room. Thy gym area is used 75% of school day and regularly after school for contests and practices. When one factors in the use of the gym for class assemblies, guest speakers, or any reason to congregate, the usage rate is higher.

SST lacks the instructional and storage space for a comprehensive PE/Health & Wellness program. All health classes are run in the gymnasium which presents scheduling challenges. Our current exercise and fitness room at SST is inadequate due to the small size and lack of equipment. At 600 square feet,

approximately six to eight students can safely exercise, but the equipment is very limited because several pieces were removed to make room for the athletic trainer to administer to athletes. As it stands right now, the room cannot accommodate a wellness class, rendering it underutilized during the day. Students are limited to engaging in strength training exercises using body weight, resistance bands and small hand-held dumbbells in the gymnasium.

Impact for Design: Physical Education/Health and Wellness

- With a larger PE/Wellness area and adequate staffing we can increase PE/Health & Wellness instruction on both the academic and shop cycles.
- Additional programming should include:
 - Space needed to accommodate 25 students for concurrent use of weight training and cardio equipment. Students currently participate in cardio exercise by walking, running or jumping rope in the gym. With an expanded weight room/training facility, they could use a variety of modalities that can be adjusted to meet individual fitness needs.
 - Space for a workout area would be designated for fitness exercises or group instruction involving stability balls, medicine balls, kettlebells, free weights, abdominal work, yoga and stretching. This area needs a large storage area where all of this equipment could be secured.
 - A dedicated classroom near the gymnasium for health/wellness instruction
- Space for an instructor office that is not located within the student locker room
- In a new/renovated building, there would be adequate, centralized space for storage, trainer, coach and game officials' rooms, and increased capacity for weight training for classes and teams.
- **Staffing:** 1 teacher for every 120 new students; 1 paraprofessional is needed to support weight room and locker room supervision.

11. Athletics

The Athletics program supports nearly one third of the student body over the course of the school year. Our athletics programs are growing in popularity despite inadequate locker room space for storage, lockers and changing areas, inadequate gym space, and a small weight room that cannot be used effectively as part of a physical education program (or as a part of an athletics training program). We have built a 3rd locker room outside the building to address these needs. We have moved our athletic trainer into a closet area adjacent to the gym to assist some fall and winter athletes.

Impact for Design: Athletics

- Space for a workout area would be designated for fitness exercises or group instruction involving stability balls, medicine balls, kettlebells, free weights, abdominal work, yoga and stretching. This area needs a large storage area where all of this equipment could be secured.
- A dedicated classroom (perhaps shared with the Health Classroom) near the gymnasium for a team gathering place which are often a challenge after school near the gym and locker area
- In a new/renovated building there would be adequate, centralized space for storage, trainer, coach and game officials' rooms, and increased capacity for weight training for classes and teams.

- **Staffing:** An administrative assistant to support the athletics program and other operational departments (such as food service, transportation and maintenance) will also be needed as the number of student athletes will surely increase.

12. Student Guidance, Admissions and Support Services

“Student Services” is a combination of Special Education and Counseling Staff consisting of:

- Director of Special Education
- Team Chairperson
- Director of Guidance and Admissions
- 2 Guidance Counselors
- 2 Adjustment Counselors
- Speech Language Pathologist (not housed in the SS area at this time)

(For more in-depth information on Special Education, see Section O.)

Currently the space in student services is set up to be an open and supportive environment for the district. Within the suite, there are six offices and two conference rooms. The conference rooms are used for special education team meetings, parent meetings, student meetings, administrative meetings, and professional learning communities for teachers. The two conference rooms are managed by the administrative assistant in the student services suite. The suite does not always offer a private place for students who need privacy if the conference rooms are being used. When a student needs privacy, a staff member within the suite will give up their own space so the student has the privacy they need. This can be very challenging when days are busier than others. In addition, the walls are thin in the offices and soundproofing is poor.

Counselors need offices where they can meet privately with students. Students need to feel comfortable expressing themselves in a safe space that is soundproofed. Counselors need an office setting that is accessible to students and staff yet private.

Students who are transitioning back to school from extended absences need a space to receive both counseling and academic support. This space would be the district's BRIDGE program. The space should include a private area for counseling, a space for meetings, and a space for small group learning.

College and career representatives meet with students regarding their area of expertise. Students utilize the space for social, emotional, academic, and personal needs. Students meet with counselors for college and career planning. Within each grade, by technical area, the counselors assist students in developing skills such as time management, goal setting, social emotional health, and college and career readiness.

The guidance curriculum was created in collaboration with the school's health and wellness instructor and school nurse. There are social emotional lesson plans incorporated into classroom activities. The guidance classes tend to be held in the lecture hall or cafeteria which can pose a problem for learning as these spaces are used frequently so guidance classes tend to have to shift. Also, these spaces do not provide an intimate space that counselors need to deliver instruction. Counselors deliver a comprehensive guidance curriculum in a variety of ways. Curriculum is delivered one-to-one, in small groups and in large

groups. College and career representatives meet with students regarding their area of expertise. Students have 45 minutes of scheduled "Guidance classes" every other week with their Guidance Counselor. The topics range from scheduling, peer conflict, interview skills, social media, drug & alcohol awareness, mental health awareness, job seeking skills and post-secondary planning. This class is a credited class that each student takes, each year. In addition, a Guidance Counselor is the student's go-to person for any issues that may come up in school. The Guidance Counselor is also the point of contact for parent concerns/questions.

There are no proposed changes to this scheduling model.

Impact for Design: Student Guidance, Admissions and Support Services

- The Student Services area should include several conference rooms so that the school can hold special education team meetings and guidance meetings at the same time.
- It should include a student transition room that is calming and inviting as well as private areas for small groups of students to gather to work independently.
- Emphasis on confidentiality and a welcoming environment at the same time.
- Secure student records area.
- Offices should be spacious and designed to hold two to three people to converse with ample personal space.
- Conference room space and/or Career Center for employer, military and college representative visits, guest speakers, 504 meetings, counseling group sessions, quiet study space for students who need it within their service delivery plan, etc.
- A dedicated instructional space for the guidance/career portion of the curriculum so that counselors are not constantly roaming; this dedicated space fosters legitimacy for the curriculum and allows counselors to have a reliable, welcoming environment as any other teacher would want. This instructional space should include whiteboards, smart board (or similar technology) and flexible movable furniture that can be organized in several different configurations.
- The administrative assistant to this space should be the center of the suite. They should be the greeter and monitor of all guests (students, parents, outside visitors, staff, etc.) traffic patterns and direct the flow of students and staff to assigned offices and conference spaces. They should be placed in a position where they are able to greet and triage in a private and positive manner.
- The school psychologist and the school's speech and language pathologist need space that allows for testing to occur in 1:1 settings. The testing space needs to be private, quiet, and should not allow for interruptions. The space should include an area for direct instruction and small groups, and the school psychologist and speech and language pathologist need a private office setting for phone calls, Medicaid billing, IEP writing, virtual team meetings, and interpreting data into testing reports.
- Design options could include a separate Guidance and Admissions area separate from Special Education, but it would require an additional administrative assistant if there are separate waiting areas.
- **Staffing:** 1 counselor for every 120 new students; 1 administrative assistant

F. Teacher Planning and Room Assignment Policies

Teacher planning space is nearly non-existent. Most academic classrooms have 2 teachers with 2 teacher desks. Oftentimes the teachers undertake their planning in the classroom while the other teacher is

actively teaching. There is a faculty lunchroom which doubles as a work room. Classrooms in the 1962 building are typically connected through adjacent doors at the rear of the classroom.

Academic teachers are teaching 6 periods, supervising students one 1 period, and have 2 planning periods per day. Vocational teachers are teaching 8 periods and have 1 planning period per day. There are monthly department meetings, and monthly faculty meetings where some collaborative planning can take place. However, it is through weekly PLC meetings (at the department level during the day) that most effective planning and collaboration takes place. There is no time or common space for multiple departments to collaborate concurrently unless it is done after school.

Impact for Design: Teacher Planning and Room Assignment Policies

- Teachers need to have space to plan and prepare for upcoming class activities outside of their current classrooms.
- Teacher work rooms should be separate from lunch room areas.
- Multiple teacher work areas will allow for collaboration during the school day.
- These common rooms will also be important in the event that the design requires that classrooms are used for instruction up to 100% of the day.
- Secure locker areas and a “home base” for paraprofessionals are necessary as they do not have classroom closets or desks to lock up personal items. Locating these in a staff lunch or planning area would be an improvement.

G. Pre-Kindergarten Program

N/A

H. Kindergarten Program

N/A

I. Breakfast/Lunch Programs

The breakfast program runs out of the cafeteria each morning from 7:20-7:35. School buses arrive with enough time for students to participate in the breakfast program. There are five lunches throughout the school day. The schedule for lunches includes shops and academic classes noted by teacher last name below:

LUNCHES 23-24		
A CYCLE	TIME	B CYCLE
151	10:28-10:53	163
148	10:57-11:22	130
140	11:25-11:50	143

141	11:52-12:17	153
97	12:21-12:46	140

Students have the option to use a recently opened adjacent space for a quieter lunch, which can house up to 20 students. Outside lunch is a COVID-influenced option that remains available.

SST participates in the National School Lunch program and is in compliance with state and federal guidelines. SST also offers a daily breakfast program. At present SST serves over 200 students for breakfast via one serving line; the program runs prior to the start of the school day. The amount of students that partake in breakfast has increased due to the present day of free meals. The district sees the need to expand its serving lines to allow for quicker processing.

Storage continues to be an issue. SST has exhausted all possible reasonable storage ideas. With continued increase in participation and future enrollment growth we will definitely need more space. As a single district we lack the option of housing one week’s worth of inventory. Other districts with multiple locations (schools) have opportunities to borrow space for food, paper and equipment. We would definitely need more than ample space moving forward, but the storage must be accessible and in proximity to the cafeteria serving area.

Our cafeteria has evolved into a multipurpose space out of necessity. While the main focus of the space is to serve our student body over five 25-minute lunch services each day, the space is also used for after school activities such as wrestling practice, and during the day break out space for students and teachers/paras. It is the only space in the school to convene our entire faculty or our Chapter 74 Program Advisory Committees (around lunch tables) to facilitate collaborative activities. Having multipurpose space in a renovated or new building is cost-effective and necessary.

Impact for Design: Breakfast/Lunch Programs

- With an eventual increase in student population, we need a cafeteria with more than two serving lines so that we are not forced to lengthen the lunches, which already encompass nearly two hours of the school day.
- Future cafeteria space must have more space so the number of lunches can be reduced and open up the space for other activities during the school day. The cafeteria should be in close proximity to restrooms, the gymnasium and to some courtyard/outdoor space that is secure.
- SST would like to investigate the concept of an open, multi-purpose student commons in lieu of a traditional high school cafeteria.
- Office space near the cafeteria will assist with staff who often use the lunch window of time to communicate with students (e.g. main office staff, counselors, athletics)
- Oftentimes students do not need the full lunch period for dining and would prefer to exercise or get fresh air. The cafeteria should also have adjacent space with natural light for students who seek a less noisy lunch experience.
- Adjacent storage for tables, chairs and other equipment will allow the cafeteria space to be used more easily for multiple purposes.
- **Staffing:** 4 cafeteria aides

J. Technology Instruction Policies and Program Requirements

South Shore Technical began our first pilot of a 1:1 initiative in September of 2011 when we started a 2 year long Ipad pilot program. Although this pilot was successful in terms of seeing the advantage of each student having a device, we soon realized that an iPad was not the appropriate device for the needs of our departments. We then decided to continue the pilot but to transition to Chromebooks. We decided to purchase Chromebook carts to be placed in each classroom. In some areas, where appropriate based on the software needs of the program, we purchased Windows laptops or Apple iMacs. This model continued successfully until 2020, when COVID forced us to dismantle the carts in order to distribute the devices to each individual student to allow them to have devices at home to accommodate remote learning. We have continued this model post-COVID, and now purchase a new Chromebook for each incoming student which is assigned to them for their 4 years of high school. Content filtering mechanisms are utilized that ensure appropriate educational use whether they are being used inside or outside of the building. Families are periodically surveyed, and other data is utilized to identify students who may not have access to the Internet at home. When identified, guidance staff works with the families to help them either sign up for reduced-cost internet or supply them with a district-owned hot spot.

Student Chromebooks are licensed and managed by the District with all necessary software pushed to the device via the Google Admin Console. Students are programmatically prohibited from installing software to ensure that unlicensed software does not get installed. If a student or faculty member requires software not pre-installed, there is a mechanism in place for them to request the software through the IT department. When requested, the IT department verifies academic need, compliance with privacy rules, and licensing requirements. If approved, the software gets pushed to the devices by the IT department.

Teachers are issued a device appropriate for their needs. Most elect for a Windows laptop but we do still have a few who prefer a desktop computer or an Apple Mac Book where needed to support program-specific software. 90% of classrooms are set up with 65-75" LCD touchscreen devices with integrated PC's. The remaining 10% elected to have LED TV's mounted on the wall with micro PC's mounted behind the screen. Staff either utilize the integrated PC's using a wireless keyboard/mouse to control these devices or can utilize software integrated within the device to allow for wireless presentation to the devices.

Our network infrastructure consists of 3 IDF's feeding 1 MDF, connected via redundant and physically separated 10gb fiber so that an outage in one area will not affect the entire building. Lab spaces or departments requiring higher bandwidth have dedicated switches. Only the MDF is air conditioned and backup power is provided only by a UPS in the MDF; there is no backup generator power available to the core network devices. Wired connections are available in all areas of the building along with wireless access points throughout the facility to provide sufficient wireless coverage to support our needs. We do not currently have any wireless coverage to the outside of the campus. Additionally, the building materials of the school severely impacts the coverage area of our wireless access points.

The Technology department at SST consists of the Director of Technology, one Technical Support specialist, and one Administrative Assistant. Additionally, during the school year students in our Computer Information Technology Department provide front-line technical support as appropriate. The IT office has moved 5 times in the past 15 years to help alleviate space issues in the building. We are currently located in an off-campus building located next to the school. The three members of the IT department are in one small room with enough space for just our 3 desks and our computers. Inside the School we have a dedicated space located adjacent to our MDF which allows for storage of our parts and a work surface to perform hardware repairs. We also have shelving space available in some of the IDF's to allow for some

additional storage. The lack of space and storage is a critical problem. The department needs a central location with sufficient office space, meeting/training space, space for benchwork, and space for storage of not only small parts (computer components, wires, cables, etc.) but also for large AV equipment. When large purchases are made, which happens every summer and several times throughout the school year, we have to find a classroom or conference room to take over for storage and configuration prior to distribution to students/departments.

Physical security of network components and equipment is also a critical issue. Since the IDF's are not air conditioned and, in many instances, are in a location that is shared storage for other things, often the doors are left open (for ventilation) and many people have access to these areas. In a new or redesigned building it is imperative that our network closets are dedicated spaces with adequate conditioning/ventilation, that our storage areas are secure, and that our office and work spaces provide the ability to train and support our staff while also keeping the expensive equipment and sensitive data secure.

Our phone system is an antiquated local PBX that is under the control of our Building Grounds and Maintenance Department. We recently installed a SIP gateway to allow for some very limited VOIP capabilities. Our Internet and phone lines are serviced by a dedicated 1gb symmetric fiber connection, with a backup 100mb broadband connection. We also maintain a 300mb fiber EPL between the main campus and the adjacent building housing the District Office. The District Office is utilizing Zoom Phone which we hope to be able to expand to the entire school as part of a renovation. This was not feasible currently due to the CAT3 wiring that is currently in place to each phone in all the classrooms and offices.

South Shore Technical currently utilizes FM-based assisted listening devices to accommodate individuals with hearing impairments. The District plans to continue this process with a new or upgraded building.

The IT department at SST is dedicated to providing the resources, support, and infrastructure required to meet the technical demands of our students and staff. We aim to follow industry best practices for managing and maintaining a robust, secure and reliable infrastructure.

Impact for Design: Technology Instruction Policies and Program Requirements

- Design should assume that there is easily accessible technology throughout the building and grounds.
- 1:1 technology for students
- Plentiful access to charging stations for portable devices
- All industry standards for reliable connectivity should be implemented.
- **Staffing:** 2 additional technical support staff; 1 additional instructional support staff.

K. Art Program

SST does not have a visual arts program, but there is an extracurricular Art Club. SST's art club uses a shop footprint for meetings and then has spring presentation displays in the gymnasium.

Impact for Design: Art Program

SST does not envision adding a formal Art program to the curriculum.

L. Music/Performing Arts Program

SST has a popular extracurricular Drama Club that competes regionally. They have performances on campus and require rehearsal space. The Drama Club currently uses classrooms for rehearsal and also occupies our only undersized 65 seat lecture hall for set design and construction each spring.

Impact for Design: Music/Performing Arts Program

SST does not envision adding a formal Music program to the curriculum.

- Multipurpose space with a stage and raised seating for presentations, larger group workshops and instruction and performances is necessary. Such an area will support the whole school and also foster opportunities for arts programming at SST that does not exist currently.
- A flat-floor space with retractable seating may be particularly appropriate for SST's variety of presentation and performance needs.
- Adequate adjacent storage and backstage support spaces should also be provided.

M. Library/Media Center

The school has scaled back its library media center out of necessity to make more room for its Chapter 74 programs. The LMC occupies a portion of our lecture hall. It is staffed by a 1.0 Library Media Specialist. The space is too small to accommodate classes but it is adjacent to the sole 65 seat lecture hall which can be used under some circumstances as alternative instructional space. The tiered seating does not lend itself to much collaborative activity. The space is open by appointment for teachers/classes and is also open during the 9th period window each day.

Impact for Design: Library/Media Center

- The future of the LMC is in its programming and support for digital literacy and research skills initiatives.
- The space must be flexible enough to accommodate whole classes, as well as individual students (before, during and after school), and equipped with flexible furniture, mobile technology and supporting equipment for demonstrations and presentations.
- Interior rooms for quiet study, small group discussions and work space for the library media specialist are also essential ingredients. After hours, the LMC is an ideal place for meetings, PLC meetings and after school club activities.
- Note: In the event of space limitations, the LMC does not need to be a single location, but rather could be decentralized in smaller gathering hubs throughout the building. The Library Media Specialist would push-in most services into instructional areas, gathering with students in more than one location as needed.
- **Staffing:** No expansion; current staffing is one licensed library media specialist

O. Special Education

The Special Education Department continues to expand as our student population and needs increase. Special educators are dual-certified and can be assigned a classroom where they are the lead teacher with a paraprofessional or are in a co-teacher model.

The number of students with disabilities tends to average around one third of our total student population. Our students tend to be classified in the low to moderate disability category with a very small number of severe needs. In the academic settings, teachers are working on goals in the areas of reading, writing, math, and comprehension. Our speech and language pathologist works on goals in the areas of executive functioning, social, and communication/language skills. Our adjustment counselors work closely with students with goals in the area of social / emotional and self-advocacy. In the vocational setting, students' goals are in the area of employability and self-management/task initiative.

The district's special education approach is one of inclusion, to the greatest extent possible. There are no substantially separate programs that would require dedicated, self-contained classrooms. Our co-teaching and paraprofessional supported model creates opportunities for students with disabilities to learn among their non-disabled peers in both the academic and vocational settings. Although this model is a success for student learning and growth, there is a shortfall in the pockets of space available for special educators and paraprofessionals to work in small group settings to reteach, review, and accommodate appropriately for testing purposes. Staff tend to shuffle quickly to find a space available around the building which can take up time. Classrooms should have small areas within the space that allows for small groups of students to get what they need through direct instruction and/or to support collaboration and teamwork. An area where students do not feel they are being pulled out or taken away from the rest of the class. The movement to this space should flow so it does not disrupt or distract.

In addition to the classroom space, there should be a more centralized area for students to receive tutoring and/or support in a learning center space that is open before, during, and after school. This space could be used for our MA Rehab Liaisons who work closely with a sub group of students on PRE-ETS skills.

Impact for Design: Special Education

- The Special Education Department consists of the Director of Special Education, Team Chair, School Psychologist, Speech and Language Pathologist, 2 Adjustment Counselors, 7 Special Educators, 7 Special Education Paraprofessionals and 1 BCBA (contracted position).
- The administration offices should include an area for the special ed director and the administrative assistant to store files and conduct all special education operations.
- There should be a private office for the team chair, school psychologist, speech and language pathologist, and BCBA (as needed).
- In addition, the office space should include a dedicated conference room to accommodate the numerous in person and virtual meetings with parents, staff, students, and specialists.
- In the academic classroom zone of a new or renovated building there should be Special Ed spaces in a variety of sizes convenient to the general classrooms. These spaces could range from one-to-one tutoring to 8 to 12 student small groups.
- SST has staffing and space limitations during MCAS testing. Older students in grades 11 and 12 are placed on a delayed start because of the number of teachers and paraprofessionals needed for small groups and 1:1 accommodations. These required accommodations create spacing issues where students are using larger classroom spaces. More ideal arrangements in a new building would include small break out areas for testing purposes, not just for MCAS but also for IEP evaluation testing.
- **Staffing:** 1 teacher for every 90 students; 1 paraprofessional for every 90 students

P. Target Service Programs

1. MCAS Support

Academic staff and paraprofessionals support students to prepare for MCAS. Our content teachers are on the frontlines of delivering instruction in their settings. Remediation occurs for students in a variety of ways to ensure that each student has the opportunity to prepare for an MCAS assessment. Staff works together to identify the areas of strengths and weakness that each student possesses. Any student including additional support will be invited to a series of MCAS Boot Camp sessions which run after school in the areas of ELA, math, and science. In addition, we offer MCAS support during p. 9 or during shop week. All support offerings vary depending on the students' current identified needs.

2. After School Homework Club

The after school homework club is a space where students have the opportunity to work with paraprofessionals in core subject areas. During this time, students have the opportunity to work on assignments and review for assessments. They receive the support that is just right for them. Some prefer to work with staff one-to-one, in a small group, or choose to work independently. Teachers, paraprofessionals, and counselors utilize this time to build relationships with students, help fill gaps, and accelerate learning. The homework club is available for students Monday - Thursday after school. Students have the option to stay until 4 pm or they can be picked up when they are done. The At-Risk Coordinator manages the space to keep track of student attendance and assignments, and communicates with teachers and the administrative team as needed.

3. English Language Learner Support

Our ELL student population is fairly small, about 1-2%. Our ESL instructor works with our ELL students directly in the classroom and during period 9 or during shop week. ELL students are scheduled into academic classes and our ESL is placed in their English and science classes. The instructor is dual certified in Special Education and ESL. Our ESL teacher supports her caseload of students in their vocational programs working closely with vocational instructors. In addition, the ESL instructor shares the responsibilities of WIDA and ACCESS requirements with the Director of Special Education.

ELL's will be fully supported at the renovated or new South Shore RVTHS with additional classroom space to allow for an increase in ELL language production and peer interaction. A dedicated space will allow students to have exactly what they need to improve: time and practice. English acquisition cannot develop if students do not have a private and comfortable space to use language both conversely and academically. Teachers will have the space to teach students as a whole group, differentiate appropriately, and promote self-learning using a variety of visual aids and technology. A larger space will allow for explicit instruction in the areas of listening, reading, writing, and speaking.

Impact for Design

- Dedicated space for targeted services to be housed near common areas or main entrances to minimize student traffic throughout the building after school hours.

Q. Health Services/School Nurse

SST currently has 1 school nurse and is in the process of hiring a part time school nurse with a goal of furnishing an office as a satellite nurse station closer to some of the Chapter 74 programs. The current nurse's office space is too small, with inadequate space to attend properly to the varying needs of

students. Space for private communications is also a challenge in this space. We did construct a small office and install privacy curtains to address these limitations, but it is not enough.

Impact for Design

- There is a need for 2 health services areas, with at least one in close proximity to shop areas where most accidents occur and one closer to the main entrance and Student Services area.
- Each area needs a single use bathroom, office and consultation space and privacy curtains, and adequate storage for medical supplies.
- **Staffing:** None. The goal will be to have 2 school nurses on staff for the current building footprint. No new staff will be added.

R. Vocational Education Programs and Cooperative Education

1. Current Conditions and Impact for Design

a. Allied Health

- **Staffing:** 2 teachers, 0.5 aide
- **Space:** 1 shop space and one adjacent lab/classroom
- **Space Utilization:** 100% of school day
- **Description:** The current Allied Health shop space is 1680 sq ft which is used for up to 24 students and two teachers. In 2008 NEASC recommendations included reorganizing the shop area, which was done promptly. Despite these adjustments, there is a lack of space preventing an increase of students while still maintaining the course curriculum as currently designed. The current footprint contains 4 bed bays which are used for most clinical skills, 1 doctor office setup and an anatomage table. The shop space also has 15 tables that seat a total of 30 students and 9 tables in the related classroom that seat an additional 18 students.
- Allied Health has a rigorous curriculum that includes both lab and clinical experience. Students ultimately work to obtain their Certified Nursing Assistant License and are exposed to other industry certifications including EKG, OSHA, CPR and Home Health Aide. With a new or expanded facility we would incorporate a Medical Assisting program to operate under the same umbrella which would provide additional opportunities to our students seeking the medical field. Upperclassmen often participate in our school's cooperative education program.

Impact for Design: Allied Health

- A properly sized lab for science-related courses
- Shop space for skills practice and application
- A classroom setting for theory and medical terminology coursework which is a significant part of the program
- Space for simulated hospital beds to practice patient care
- Space for simulated office setting
- **Staffing:** 1 additional teacher

b. Automotive

- **Staffing:** 4 teachers
- **Space:** 2 non-adjacent shop footprints; one windowless classroom

- **Space Utilization:** 100% of school day
- **Description:** Structurally, the Automotive shop has remained the same since it was built in 1962. The shop has 3,458 sq. ft. of instructional space for up to 30 students on any given instructional day. There are not enough stations for students to train effectively. High student to station ratios (e.g. working on cars) means that students are not able to practice sufficiently the skills being taught. The current automotive program consists of two separate footprints. The footprints have a total of 20 workstations consisting of lifts, lecture area, tire mounting and balancing area, tool crib, spray booth, paint prep and tire repair stations.
- Automotive has a rigorous curriculum that includes station and lift areas. Students work to learn all aspects of the automotive industry including the collision repair component. The program is accredited through NATEF and students obtain up to 8 student ASE's in addition to industry credentials in SP2 and OSHA. Upperclassmen often participate in our school's cooperative education program.

Impact for Design: Automotive

- Sufficient stations so that two students can work on one car to practice skills taught in the shop.
- A dedicated diagnostics bay and tire mounting/balancing and brake machining repair area.
- A dedicated engine and transmission repair area to be used for senior projects and tear downs.
- Sufficient storage that does not compromise instructional space
- An interior classroom for ease of theory instruction for whole group and small group supports.
- **Staffing:** No changes

c. Carpentry

- **Staffing:** 3 teachers, 0.8 aide
- **Space:** 1 shop space; 1 non adjacent shared classroom
- **Space Utilization:** 100% of school day
- **Description:** The Carpentry shop is undersized and the instructional model depends entirely on (a) students being placed on co-op and (b) 11th and 12th grade students who are not on co-op having an off campus or outside-the-shop project. Horizontal work stations are only recently enhanced through a state grant for more equipment. Ratios of fixed equipment to students are high, increasing waiting times on projects. The current carpentry program consists of 8 benches which are able to have 2 students per bench yielding 16 available spaces for students. In addition to the workbenches there are an additional 10+ workstations that are made up of equipment such as the drill press, planer, router tables, joiners and more. The program has the ability to add more benches after the outside renovation is completed. In addition, the upperclassmen work on outside jobs/projects which helps alleviate the pressure in the footprint
- Carpentry is starting to utilize the new NCCER curriculum as outlined in the updated MA draft frameworks. The new curriculum outlines specific learning levels and tiers divided by grade level. Students in our carpentry program obtain credentials in OSHA, Hot works, and Power actuated fasteners. Underclassmen students work in stations throughout the shop on various tiered projects and upperclassmen typically work on live off campus work. Upperclassmen often participate in our school's cooperative education program.

Impact for Design: Carpentry

- A renovated shop space will have more equipment, adequately spaced.
- It will be large enough to properly accommodate the students in the program in the event that co-op numbers and/or availability of off campus projects was limited
- There will be more horizontal table space for underclassmen to learn the basics of the curriculum.
- **Staffing:** 1 additional teacher

d. **Computer Information Technology**

- **Staffing:** 2 teachers
- **Space:** 1 shop space (no related space)
- **Space Utilization:** 100% of school day
- **Description:** The CIT program is housed in essentially two adjacent classrooms, with students segregated by grade level at opposite ends of the program. Conflicting noise levels and activities between the groups is oftentimes distracting. Power supply needs are often a challenge. The current footprint has 14 tables on one side of the room and 11 tables on the other side of the room. They have an additional 3 other tables in the middle of the room. They are able to accommodate up to 30 students with the current amount of seating.
- Computer Information Technology students work at desk stations in the shop footprint. Students obtain various credentials in Python, Lennox, Cyber and Microsoft certifications. Students also have the opportunity to take AP credits in an embedded Computer Science course. Upperclassmen often participate in our school's cooperative education program.

Impact for Design: Computer Information Technology

- A renovated shop space would have provisions for noise reduction between grade levels, adequate power supply for changing technology/device needs, and
- a common area for the program that will allow for demonstrations and the location of equipment that it used at multiple grade levels.
- **Staffing:** No changes

e. **Cosmetology**

- **Staffing:** 3 teachers
- **Space:** One shop area for salon/live work and a renovated classroom adjacent for underclassmen training
- **Space Utilization:** 100% of school day
- **Description:** The program has an undersized space for grade 9 and 10 students. Students are in close proximity and there are line of sight challenges for the instructors and students to see demonstrations. There is a salon area open to the public that needs additional space to accommodate additional grade 11-12 students to take on clients. The current footprint includes 14 wet styling stations (with sinks), 14 dry styling stations, all have rolling station with drawers, 2 shampoo bowls, 2 facial beds and vanity with sink, 2 wax stations, 1 pedicure chair, 6 manicure stations in the salon, 8 portable manicure tables, Reception area and a Supply/dispensary area. The department also has a learning lounge with seating for 14+ (can accommodate 28 to fit both classes).
- Cosmetology focuses on providing students the skills and knowledge needed to take and pass the Cosmetology State Board License. The tiered instruction includes units on wavy and curly Hair,

various haircuts and styling, manicures & pedicures and facials. In a new or expanded facility we would look to include a Barbering aspect of the program to provide students additional pathways in the industry. In addition to the State Board Exam, students also obtain their OSHA certification as well. Upperclassmen often participate in our school's cooperative education program.

-
- Program hours used toward licensure requirements
 - 1,000 hours obtained to sit for the Cosmetology State Board exam
 - 500 of those hours can be put towards 1,000 hour requirement for barbering
 - The Cosmetology program is required to meet the State Board of Cosmetologist's facilities requirements.

Impact for Design: Cosmetology

- Properly sized space for grade 9-10 student instruction that includes separate space for chemicals and storage
- Properly sized salon in proximity to the waiting area with adequate space for storage, chemical storage and an aesthetician space.
- Future program expansion considerations to include barbering.
- A reception area for clients separated from the instructional space while waiting for services
- Design location in an area that is secure and easily accessible for the public.
- Dedicated related theory space for classroom instruction, industry demonstrations and career seminars.
- **Staffing:** 1 licensed paraprofessional (0.8)

f. Culinary Arts

- **Staffing:** 3 teachers, 0.5 paraprofessional
- **Space:** One shop space including a front and back of the house restaurant, dry storage space, locker rooms and student restrooms, and an adjacent classroom that is often used by academic classes
- **Space Utilization:** 100% of school day
- **Description:** The program has inadequate space for serving customers in our restaurant, including space for takeout food, bakery displays and service area storage. A proper demonstration area outside of the restaurant for service training and cooking skills is necessary. It was converted due to a lack of academic classroom space. The current footprint includes 40+ workstations including the line, prep area, grills, steam kettle, ovens, bakery stations, mixers, dishwashers and front of the house.
- Culinary Arts operates its curriculum in three different areas of the industry. Students are rotated on a trimester model via hospitality or front of the house, baking & pastry, and line/fry cook & salad station. Students are also exposed to running a full service restaurant and utilize our culinary arts Viking Food Trailer both on and off campus. Students obtain various ServeSafe certifications in addition to OSHA. Upperclassmen often participate in our school's cooperative education program.

Impact for Design: Culinary Arts

- Restaurant service space to house at least people with the potential to section off an area for business meetings for community groups while allowing for patrons to enjoy lunch at the restaurant.
- Adequate space for takeout so that it does not crowd patrons sitting for lunch.

- Improved line of sight supervision from the restaurant into the back of the program.
- Dedicated related theory/demonstration space.
- **Staffing:** 1 additional teacher.

g. Electrical

- **Staffing:** 4 teachers
- **Space:** One shop space with student restrooms; adjacent classroom
- **Space Utilization:** 100% of school day
- **Description:** Students are being instructed in booths that are stacked (a second floor). The program popularity (highest enrollment) would be adversely impacted were it not for high co-op placement and available projects to be undertaken around the building. The electrical footprint currently consists of 32 workstations (booths) throughout the shop.
- Electrical's rigorous program curriculum has underclassmen working on booth based/station based work in the shop footprint along with learning the code requirements in the related course of the program. Upperclassmen work on live jobs performing residential, commercial & industrial work both on and off campus. In a new or expanded facility we would look to partner up with a local habitat for humanity additional off campus work and education. Upperclassmen often participate in our school's cooperative education program.
- Program hours used toward licensure requirements"
 - 2,000 hours of electrical shop/working
 - 300 hours of Massachusetts electrical code training

Impact for Design: Electrical

- Adequate space to accommodate students with ground floor instructional space.
- **Staffing:** 1 additional paraprofessional (0.8).

h. Manufacturing Engineering Technology

- **Staffing:** 2.5 teachers, 1 aide
- **Space:** 2 non-adjacent shop footprints; 1 adjacent classroom
- **Space Utilization:** 100% of school day
- **Description:** The program has excellent equipment at reasonable student to equipment ratios, but it has been placed in a space that is too small. There is a clean room that was retrofitted under a mezzanine as part of the adjacent program and there is no dedicated classroom space within the shop. There is no demonstration space for students. The current footprint consists of two separate shop spaces. There are 25 machine stations not including secondary machines like saws and drill presses. The 306 footprint has an additional 16 machine stations.
- Manufacturing Engineering Technology consists of three programs in one. Students are exposed to different levels of tiered instruction in advanced manufacturing, electronics, CAD and engineering. Students obtain several industry-recognized credentials including OSHA, Hot Works and MACWIC. Upperclassmen often participate in our school's cooperative education program.

Impact for Design: Manufacturing Engineering Technology

- Program space must take into consideration the placement of existing equipment and the potential for new industry equipment.

- Space for students and teachers to gather on the shop floor
- Adequate ground level storage
- Larger clean room/inspection room
- Dedicated related theory classroom
- **Staffing:** No changes

i. Design Visual Communication

- **Staffing:** 3 teachers
- **Space:** 1 shop space with interior classroom, interior copy center, interior paper storage and student restrooms
- **Space Utilization:** 100% of school day
- **Description:** The program has important instructional areas that require both traditional classroom space with 1:1 devices, as well as the need for larger ventilated space for silk screening, paper cutting and copy/print areas. The program is housed in a high bay area currently but that is no longer necessary due to changes in industry over the last 30 years. The current footprint is made up of 45 workstations including computers, printers, screen printing, cutters and other various equipment.
- Design & Visual Communications operates as two programs in one and it also consists of a graphic communications curriculum. Students are exposed to all aspects of both industries and complete live work on a daily basis. The program is also expanding into photography and videography as well. Students obtain numerous credentials through the Adobe suite along with OSHA. Upperclassmen often participate in our school's cooperative education program.

Impact for Design: Design Visual Communication

- Dedicated computer lab/design space.
- Specialized space for digital content creation (e.g. studio) and photography.
- Adequate paper and supplies storage.
- Consideration for layout of the silkscreen area and the other larger equipment in the program.
- Development of this program as a front facing program with a public presence for services and products.
- Display/storefront area for work products.
- **Staffing:** No changes.

j. Horticulture Landscape Construction

- **Staffing:** 3 teachers
- **Space:** 1 shop space inside the building; 1 barn area for outside work, 1 greenhouse non adjacent to the barn area
- **Space Utilization:** 100% of school day
- **Description:** The Horticulture program is housed in disparate locations making the program coordination a challenge. There is space inside the school for a shop setting used for related instructional and floral arrangements; however, the space cannot contain 2 grades of students, which means that one grade is usually in an outside location. The horticulture program currently has 8 work stations in the barn for irrigation clock wiring, landscape lighting, and raised hardscape projects. The classroom/shop has table seating for 40 students. The department has more than 20

individual pieces of equipment for use throughout the day. In addition, the department has a greenhouse which also has 10+ student stations/workbenches.

- Horticulture Landscape Construction has a tiered curriculum that exposes students to all aspects of the green industry. This consists of landscape maintenance, turf, irrigation, arboriculture, greenhouse management, equipment operation and more. Upper and underclass students work on live work both on and off campus. Students are also exposed to DynaScape, a CAD based program for landscape design in addition to pesticide and hoisting license training. Students also obtain their OSHA certification. Upperclassmen often participate in our school's cooperative education program.

Impact for Design: Horticulture Landscape Construction

- First floor program placement with easy outdoor access to greenhouse and grounds equipment and vehicles.
- Single indoor space large enough to accommodate the wide ranging parts of the curriculum.
- Dedicated classroom space within the shop footprint.
- Flexible furniture that can be used for lab space, flower arranging, small equipment repair and traditional classroom work.
- **Staffing:** 1 additional paraprofessional (0.8).

k. HVAC-R

- **Staffing:** 3 teachers
- **Space:** 2 adjacent shop spaces connected by an open wall; no adjacent classroom; student restroom
- **Space Utilization:** 100% of school day
- **Description:** We added a third teacher to this program to expand the program's outreach into plumbing. We are relegated to storing materials in outside storage containers and rack storage adjacent to the shop. Students often work outside the shop in an adjacent courtyard when weather permits. The current footprint consists of 60+ workstations including boilers, work tables, sheet metal fabrication, refrigeration stations, sink workstations, water heater stations, and plumbing booths. Currently curriculum includes working with heat pumps and ductless systems but have not ventured into solar or net zero HVAC systems. However, these are legitimate curriculum goals that could be pursued with a new, larger shop that has the capacity to house more equipment.
- HVAC/R has a rigorous curriculum. Underclassmen work in stations/booths exposing and learning various parts of the industry. Our upperclassmen work on live work both on and off campus. Students obtain several credentials including OSHA, Hot Works, EPA, Universal 608a and more. In a new or expanded facility we would separate out plumbing from our existing HVAC-R program and make it a standalone Chapter 74 program. Upperclassmen often participate in our school's cooperative education program.
- Program hours toward code/licensure requirements
 - 750 hours of refrigeration shop instruction
 - 150 hours of refrigeration theoretical instruction
 - 100 hours of Massachusetts electrical code training
 - 150 hours of shop for sheet metal
 - 150 hours credit toward the work hours requirement for a Pipefitters license

Impact for Design: HVAC-R

- Dedicated theory classroom
- First floor priority for material delivery

- Equipment layout that does not impact supervisory line of sight
- Ventilation system with sufficient capacity to handle increased enrollment
- **Staffing:** a third HVAC teacher if there is a separate Plumbing program established

I. Metal Fabrication Welding

- **Staffing:** 3 teachers
- **Space:** 1 shop space with interior classroom
- **Space Utilization:** 100% of school day
- **Description:** The metal fabrication & welding program is properly spaced for current enrollment only. The lighting and ventilation system are not ideal but we have made recent improvements. The shop has an undersized, windowless related room adjacent to the shop. Supervisory lines of sight are challenging. The current shop footprint is made up of 14 stick booth work stations, 8 mig booths, 8 oxy fuel stations and 8 work benches which accommodate 2 students each for a total of 16.
- Metal Fabrication & Welding has a robust curriculum. Underclassmen work in booths and stations on various projects used to develop and grow specific skills. Upperclassmen work on project based and live work both on and off campus. Students obtain several industry-recognized credentials including OSHA, Hot Works American Welding certifications and Upperclassmen often participate in our school's cooperative education program.

Impact for Design: Metal Fabrication Welding

- Dedicated theory classroom
- First floor priority for material delivery
- Equipment layout that does not impact supervisory line of sight
- Ventilation system with sufficient capacity to handle increased enrollment
- **Staffing:** 1 additional teacher

2. Additional Considerations for Chapter 74 Space

a. Potential Expansion of Chapter 74 Programs

SST identified several potential Chapter 74 programs that are economically viable in the Southeast Region and the Department of Elementary and Secondary Education concurred that these programs, while subject to the Chapter 74 approval process, are seen as viable. Two 'stand alone' programs, Animal Science and Plumbing and one integrated program, Medical Assisting are being considered as part of early design models.

Potential Program	Stand Alone or Integrated	Status
Veterinary Science	Stand Alone	Recommended for design consideration
<i>Biotechnology</i>	<i>Integrated with Manufacturing Engineering Technology</i>	<i>Not recommended at this time</i>
<i>Dental Assisting</i>	<i>Stand Alone</i>	<i>Not recommended at this time</i>

<i>Early Childhood Education</i>	<i>Stand Alone</i>	<i>Not recommended at this time</i>
Medical Assisting	Integrated with Allied Health	Recommended for design consideration, but not as a stand alone program.
Plumbing	Integrated with HVAC-R initially but eventual Stand Alone	Recommended for design consideration

Impact for Design:

Plumbing:

- High bay shop space, ideally near HVAC program.
- Dedicated related classroom and bathroom within the shop footprint.
- Similar needs as other construction programs for power, lighting, ventilation, wall and table/work space.
- Plumbing would be a new program in a new or expanded facility. Underclassmen would work in booths and stations on various projects such as vanities, tubs, toilets and water heaters. Upperclassmen would work on and off campus, likely teaming up with habitat for humanity on various new construction projects installations. Students would obtain their OSHA certification and various other plumbing certifications. Upperclassmen will likely often participate in our school's cooperative education program.
- **Staffing:** 1 teacher to join the current Plumbing teacher who is part of HVAC program.

Veterinary Science

- Program would focus on veterinary assisting training.
- DESE has frameworks for veterinary science in draft version out for public comment at this time.
- Veterinary Science would be a new program in a new or expanded facility. Underclassmen would be exposed to lab based on shop projects and various off campus clinical work. Students would obtain their OSHA certifications and along with other potential certifications as recommended by their advisory committee. As upperclassmen students would work on live customer work and live off campus work in a clinical setting as well. Upperclassmen would likely often participate in our school's cooperative education program.
- **Staffing:** 2 teachers and one technical aide.

Medical Assisting

- Additional minimal space within the shop footprint to accommodate curriculum equipment and supplies.
- **Staffing:** 1 teacher to be integrated with the Allied Health program.

After construction has finished, the Plumbing program could be implemented immediately after obtaining DESE approval. Animal Science and Medical Assisting would take one year to implement, subject to appropriation.

b. Skills USA/FFA

We also have robust co-curricular SkillsUSA and Future Farmers of America (FFA) activities throughout the school year, mostly in the form of competitions at the local and state level.

Impact for Design:

- After school space is essential for students to have meetings and practice for competitions. A multipurpose auditorium space is ideal for such use.
- The district would use the multipurpose auditorium throughout the year for training and practices for upcoming State and National Conventions along with Regional/District competitions. The multipurpose room would allow the organization the opportunity to set up the room for specific competitions whether it be for a student running for a National Officer position or a student practicing a demonstration or work skill in front of a large audience. The setting would provide the opportunity for students to practice in the same type of environment they will be exposed to during the competition. The space also allows for flexibility depending on the time of year and competition coming up. FFA competitions occur throughout the school year, and they will expand with Veterinary Science coming on board as well. Some of these competitions also require outdoor training/practice space which would be available for students to use for competition preparation.

c. Cooperative Education/Internship Program

SST is proud to offer the benefit of cooperative education and internships to our students and businesses within our communities. We rely on businesses to support our mission of providing rigorous and relevant hands-on instructional experiences in order to develop confident, civic-minded students who achieve ambitious career goals leading to their personal fulfillment, economic independence, and a positive impact on their community. In return, employers are able to recruit and hire eager workers who are well versed in the language, procedures, and technology of the industry.

We believe in the value of experience-based learning. Our goal is to engage students in a process of learning that links work and experience with classroom knowledge. The educational opportunities that employers afford our students speak volumes to their commitment to youth, education, and community. We provide qualified students who have obtained 1.5 years of specific shop experience, are licensed (if applicable) and who best fits your needs. Employers will interview our students and if it's a good match, the student is hired as an employee of the company.

Following Chapter 74 Cooperative Education guidelines, students who are 16 years of age and older, with appropriate skills, grades and interest may participate in the Cooperative Education/Internship program. Seniors are eligible for co-op at the start of each school year and Juniors become eligible after the first half of each school year. Students participating in co-op are required to pass in a weekly timecard and journal indicating their hours worked (minimum of 30) and a paragraph explaining the work experience for that week. In addition to the student timecard, the employer also fills out a timecard which lists the hours worked by the student and comments & or concerns the employer might have. Our cooperative education agreement is signed electronically in DocuSign by the employer, student, parent, vocational teacher and the Director of Vocational Education.

Impact for Design: Cooperative Education/Internships

- Dedicated office space for the cooperative education program is essential. It must be in proximity to Chapter 74 instructional areas and easily accessible for employers when visiting the school

- Space should include a conference room, office for an administrator and space for an administrative assistant, plus waiting room space for students.

S. Transportation Policies

SST owns its bus fleet and employs its own drivers. We currently own 15 buses and six 14 person vehicles used for field trips, athletics and Chapter 74 program transportation to job sites. We employ 11 bus drivers and our 6 custodians are required to maintain bus driving licenses as well to service as back up bus drivers. SST has a Transportation Coordinator who manages maintenance, scheduling and routes.

In the 2023-2024 school year, SST operates 13 bus routes for district communities, running morning pick up and afternoon dismissal runs, along with daily late bus (4PM and 6PM) routes for students staying after school for extra help and athletics respectively. Athletic runs are also handled by our staff.

One of our significant space challenges is that we house our own fleet on campus which takes up the equivalent of 55 student parking spaces, and this space is difficult for bus drivers to park and turn around buses. With a new building and a well-designed layout, we can have adequate space for buses to be stored when not in use, and to mobilize for the crowded dismissal window in an area that does not interfere with parent pickup.

With additional student enrollment the district will need to anticipate more space on campus for bus storage, and will likely need to consider leasing or purchasing space off campus to house our bus fleet and/ or consider getting transportation services through a third party provider.

Impact on design: Transportation Policies

- Space for school bus storage on campus during the day that is easy to assemble for afternoon dismissal.
- Transportation coordinator office location in close proximity to the bus location that includes sufficient space for bus drivers to attend professional development meetings.
- Charging stations for eventual conversion to electric fleet as industry trends and cost allow.
- Supplies storage needed.
- Maintenance space for small repairs.
- Space for snow removal devices to be installed.
- **Staffing:** 1 Administrative Assistant for Transportation Department (shared with other operational departments such as food service and maintenance); 1 bus driver for every 60 new students.

T. Functional and Spatial Relationships

SST's leadership team met with New Vista Design in May 2023 to prepare for upcoming visioning sessions. Then on June 20, July 11, and July 18, 2023, SST's larger visioning group, consisting of 7 students, 9 teachers, 1 paraprofessional, 6 administrators, 7 parents/caregivers, participated in three virtual workshops run by New Vista Design. There was also a community forum held on July 13 for the SST community at large to hear about the visioning process and ask questions.

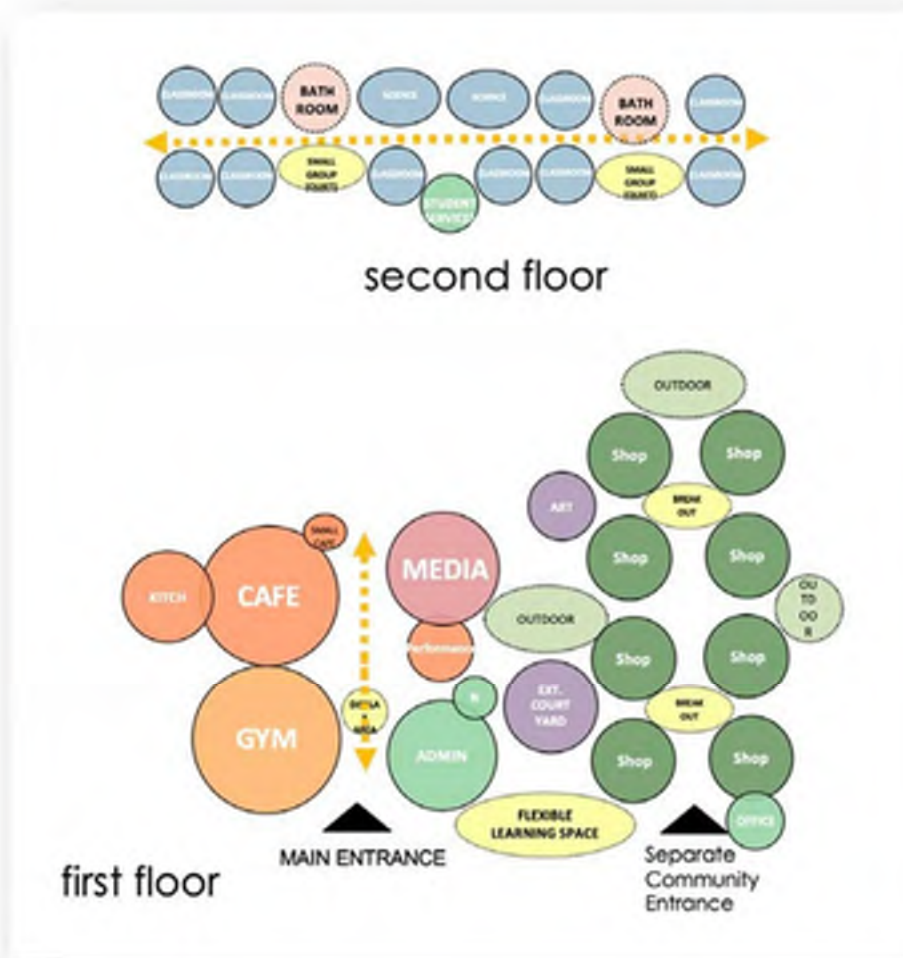


Diagram Attributes:

- The group is not sure about academic and career tech integration and what the real benefits and value are. In this diagram academics and vocational are not shown close together.
- There could be a potential 3-D connection between CTE on the first floor and academics on the second floor.
- A “heart of school” near the main entry, maybe the Student Commons.
- Separate customer entry that is limited in how far you can get into the school.
- A school store for not just Culinary and Cosmetology, but shops like Graphics, that makes and prints things, and Horticulture with plants to sell.
- Grouping shops in career clusters, such as MET and Metal Fab being next to each other because they share a lot of equipment and resources, and the construction shops.
- Separation between academic and public areas.

Impact on design: Functional and Spatial Relationships

- The Design Team will continue to explore options that capture the design attributes described in the above diagrams.
- The existing school layout has evolved over time in response to space needs and program changes. These changes have not always been consistent with the school's desired functional and spatial relationships. For instance, shops in similar career clusters, like the Construction trades, are not located adjacent to one another. Likewise, the Allied Health program occupies the space of the former Library at the end of a classroom wing. The visioning session identified the desire to cluster these programs by career area where possible.
- The administrative spaces in the existing building have also grown over time and have been located in random available spaces often without regard to desired functional relationships. The single teacher planning space in the existing school is under-utilized due to its remote location from many of the classrooms. The visioning sessions propose to have more, smaller planning rooms in close proximity to classrooms.
- Supervision of public access in the existing building is less than desired; the proposed vision calls for a common, single-entry point for both visitors and customers to the Culinary, Cosmetology, and Horticultural store programs.
- The District and Design Team understand the need to provide flexibility to allow for future program changes. The strategies to be considered include: standardizing the sizes of the CTE shops where practical; upsizing utility infrastructure to allow for a variety of future needs, providing long-span structural bays to minimize structural interference with potential future reconfigurations, maximizing the use of metal stud partitions in lieu of CMU partitions to facilitate reconfiguration, providing numerous overhead doors, multiple delivery locations, and multiple elevators for future flexibility.

U. Key Programmatic Adjacencies

The above diagrams capture the important adjacencies in SST's vision:

- Programmatic spaces that need to be near an entrance: Admin, SpEd Office, Nurse, Gym, Auditorium, public accessible CTE programs.
- A dedicated customer entrance for secure, but limited public access to Culinary, Cosmetology, and Horticulture's floral shop. If space permits, Design Visual Communications often has public traffic (client consultations, work product pick up) and could benefit from proximity that is close to the customer entrance.
- Academic classrooms in proximity to the Library Media Center.
- Small group rooms and pullout spaces in close proximity to General Ed classrooms.
- Similar CTE shops grouped similar (but not limited to) Career cluster groupings.
- Science Labs paired with shared prep rooms, perhaps stacked; not necessarily in a department configuration.
- Administration personnel distributed through the building for supervision and accessibility to students.
- Teacher Planning rooms distributed through the academic areas in close proximity to classrooms.

Impact on design: Key Programmatic Adjacencies

- The key programmatic adjacencies are captured in the attached diagrams and listed above.

V. Security and Visual Access Requirements

1. Relationship with Host Community

SST has an excellent working relationship with our local police and fire departments. There is an SRO on campus 3 days a week/ Every year our SRO and Administrators work together to provide ALICE training to all staff and students. Our SRO also does a yearly security check and brings back a report for the school to review and make corrections. The District serves as one of the region's MedFlight Land Zones. It would be the intention of the District to remain one of the region's Med Flight Land Zones in a new or renovated facility.

2. Committees, Plans and Inspections

SST participates in annual fire department inspections of the building and maintains a current Emergency Action Plan and Medical Emergency Response Plan. SST has a school safety committee that meets throughout the year to discuss concerns and what we can do to resolve these concerns. This committee is organized by the Vocational Office.

3. Doors, Entrances, Visitors and Perimeter Security

The current facility has one main entrance but there is also a public entrance near our school restaurant and salon. Most exterior doors are equipped with electronic access control with cameras at their location. The entrance at the front of the building is locked after 8:00 AM. Upon entering, a visitor will encounter the reception desk only at the main entrance where they will have an ID scanned through our Raptor system and then issued an ID badge. This desk is equipped with a two-way radio, phone, and computer. Our Raptor program scans licenses then runs a rudimentary background check and generates a credential for the visitor to wear throughout their stay in the building.

One challenge to note as a regional technical high school is the community's use of the facility and the extensive number of vendors that deliver products to the school. Our Culinary Arts, Cosmetology, Auto Tech, Metal Fab, Maintenance, Electrical, MET, and DVC all have frequent deliveries to the back of the building.

The existing facility has over 40 interior and exterior video cameras, with remote access. Currently the Hanover Police Department has access to our cameras, but the Hanover Fire Department does not. All camera views are digitally recorded and stored for approximately thirty (30) days.

4. Parking and Car Access

There is only one access road coming into SST. Currently, the facility has an easily discernible main entrance but then offers you two routes around the back of the building. The school is lined with parking spaces all around the footprint which is for visitors, students, staff and administration. Anyone coming to SST can drive onto campus without any check points off Webster Street. Our current entrance is set up to be one way as it is on a curve. All traffic comes in and either goes to the right or left. In the morning there can be a backup on the street as we have buses, student drivers, faculty and parents dropping the student off all happening in a short time frame.

The parking lot in front of the building is generally full. However, part of the lot is shared with those going into the salon and restaurant. This is a source of great concern and requires daily monitoring since visitors to the salon and restaurant regularly park in areas of the lot designated for SST.

Our exit at dismissal time has three lanes of traffic that merge into two lanes and also has crossover that results in congestion. In addition, parents who pick their students up tend to line up across the front of the building and also out on the street. Over the years we have had a few accidents due to the congestion while exiting the school. Our current parking lots do not allow for enough parking to meet our current demands.

Impact on design: Security and Visual Access Requirements

- With a new building we will have adequate parking for all staff, students and visitors.
- The new building will offer a better traffic flow when entering and exiting the campus. This improved traffic flow will help to limit accidents and also limit the public's access to the back half of our building.
- A new facility will allow for all entry doors to be better monitored and secured during the day and allow us to have every corner of the building monitored by surveillance cameras. A new system would be web based so it can be viewed by Administration even when they are not in the building.
- **Staffing:** 1 paraprofessional for building security.

[End of Educational Program]





South Shore Regional Vocational Technical High School



Educational Program

Submitted by:

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SST's mission is to develop confident, civic-minded students through rigorous and relevant hands-on instructional experiences so they can achieve ambitious career goals leading to their personal fulfillment, economic independence, and positive impact on their community.

October 23, 2023, revised January 11, 2024

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I. Introduction

The South Shore Regional Vocational School District (“District”) opened the doors of South Shore Regional Vocational Technical High School (“SST”) in 1962 and graduated its first class in 1964. The school is located at 476 Webster Street, Hanover and sits on 35 acres. The original building along with additions in 1978 and 1992 encompass 130,000 square feet.

As of July 1, 2024 SST will serve students from nine communities: Abington, Cohasset, Hanover, Hanson, Marshfield, Norwell, Rockland, Scituate, Whitman. Marshfield will become the ninth member town on July 1, 2024.

Recent enrollment trends show that over 70% of the in district enrollment has come from Abington, Rockland, Whitman and Hanson. For the 22-23 school year, the town specific enrollment was:

Abington	103	Duxbury	7
Cohasset	11	Halifax	1
Hanover	67	Hingham	4
Hanson	86	Hull	2
Norwell	26	Marshfield	8
Rockland	136	Pembroke	10
Scituate	40	Quincy	1
Whitman	151	OOD Total	33
In District Total	620	Total Enrollment	653

SST has 12 vocational technical programs (housed in 14 shop footprints; Automotive and MET have two footprints each) and five academic departments. There are 20 classrooms used for academic and Chapter 74 Related (theory) classes, four fully furnished science labs, and two former classroom spaces that are being used for the teachers’ room and space for the athletic trainer. Other spaces include a single gymnasium, a cafeteria, a 65 seat lecture hall which shares space with the library media center.

A. Typical student day

Students follow an alternating week academic/vocational schedule, with 9th and 11th graders scheduled in academics on “A” cycle and shop on “B” cycle, and 10th and 12th graders scheduled in shop on “A” cycle and academics on “B” cycle.

During the academic week, a student will attend 4 classes following a schedule similar to that below:

7:20 AM - 7:35 AM	Breakfast available
7:40 AM - 9:00 AM	Block 1 class
9:04 AM - 10:24 AM	Block 2 class
10:28 AM - 12:17 PM	Block 3 class and lunch
12:21 PM - 1:41 PM	Block 4 class
1:45 PM - 2:25 PM	Period 9 directed study hall

During the shop week, a student will follow a schedule similar to that below:

7:20 AM - 7:35 AM	Breakfast available
7:40 AM - 9:00 AM	Related (grade 9-10); Shop time (grade 11-12)
9:04 AM - 10:24 AM	Shop time
10:28 AM - 12:17 PM	Shop time and lunch
12:21 PM - 1:41 PM	Shop time
1:45 PM - 2:25 PM	Shop time

Related courses are block-long classes. Every two weeks students will leave shop to attend Guidance/PE classes, while teachers use that time for Professional Learning Communities (PLCs). In Grade 9, students also take Digital Literacy instead of a Guidance class. Grade 9 students explore all 12 programs during the first half of their first year.

B. After School Activities and Events

SST offers several after school activities and clubs outside our athletics program. Clubs include: Dungeons & Dragons, Chess Club, Drama Club, GSA, Art Club, Music Club. Other regular activities include an afterschool homework center for students needing extra support or some structure for getting tasks completed.

The extracurricular Art Club will continue to utilize an available Classroom and/or the Design & Visual Communications Shop for its activities under the supervision of a faculty advisor. In addition, the proposed multi-purpose Auditorium and Student Commons can be used for the Art Club's exhibitions. There is no dedicated space proposed for the Art Club. It will utilize an available Classroom and/or the Design & Visual Communications Shop for its activities as it currently does. The proposed multi-purpose Auditorium and

Student Commons will be used for the Art Club's exhibitions. The Design Team has been instructed to include multiple display cases throughout the school for the display of student work, including Art.

SST has meetings for the Parents Association, Athletic Association, School Council and School Committee in the high school typically once per month.

Also, SST has recently been running several Career Technical Institute classes for underemployed and unemployed adults in the late afternoons and evenings. The space impact is noteworthy in the shop areas involved (Carpentry, Culinary Arts, Metal Fabrication/Welding, Automotive, HVAC-R, Horticulture, Manufacturing). Future school designs should consider the organization of the shops and common area space which would have its primary design focused on serving the high school population but could double as functional space for various 'night school' programs.

SST offers late buses at 4PM daily to allow students to participate in afterschool activities and still have transportation home. 6PM late buses support students who participate in our athletics program and are after school for staggered practice times and/or contests.

C. Buildings & Grounds

On the grounds, there is a baseball field, main playing field for football, soccer and lacrosse, a softball field adjacent to the main playing field, and a gravel track that surrounds the main playing field.

Outbuildings include a greenhouse for Horticulture Landscape Construction, a three bay maintenance building (that houses the Facilities Director and Transportation Coordinator), a barn (used by Horticulture Landscape Construction) and an adjacent locker room (used by Athletics Department), a concession stand and a ticket booth. There is also a district office building which houses the Superintendent-Director, Business Office, Informational Technology, and Human Resources.

D. Offices

High school administrative and student services offices are near the main entrance, with the school nurse located more centrally in the building to be closer to the shop programs. Some administrative and specialist offices are placed elsewhere in the building due to space constraints and a desire to have some administrative presence distributed throughout the building.

Office space is designated for the Principal, Assistant Principal, School Resource Officer, Student Services department staff (Speech Pathologist, Psychologist, 2 Adjustment Counselors, 2 Guidance Counselors, Special Education Director, Director of Guidance and Admissions and administrative assistant) Athletic Director, Director of Career and Community Development, Director of Curriculum, Instruction, Assessment and Professional Development, and Athletic Trainer.

II. South Shore Regional Vocational Technical High School Information

A. Background and Vision

To start the process of envisioning a new school, SST's leadership team met with New Vista Design in May 2023 to prepare for upcoming visioning sessions. Then on June 20, July 11, and July 18, 2023, SST's larger visioning group, consisting of 7 students, 9 teachers, 1 paraprofessional, 6 administrators, 7 parents/caregivers, participated in three virtual workshops run by New Vista Design. There was also a

community forum held on July 13 for the SST community at large to hear about the visioning process and ask questions.

Each workshop was a collaborative session, allowing community members to participate in a step-by-step visioning process intended to identify SST's current and future priorities and goals and how a new facility design can reflect, project, and enhance those priorities and goals.

Please also refer to the entire Educational Visioning Workshop Report attached to this Educational Program.

1. Priorities and Considerations

Below are the top educational, architectural, and community priorities for the renovated and/or new SST facility that were discussed by the Educational Visioning Group:

Educational Priorities

Student-Centered Learning	<ul style="list-style-type: none"> ● Making lifelong learners ● Creativity, critical thinking, and problem-solving are valued more than compliance and regurgitation of something someone else learned
Vocational Academic Integration	<ul style="list-style-type: none"> ● Integration of academic and career tech programs ● Project-based and student-centered learning that integrates academics and Ch74
Expanded Chapter 74 Options	<ul style="list-style-type: none"> ● Stay current in the industry and adapt to the current climate. ● The construction trade is ever changing and it's important to make sure students are equipped. ● Additional shops with separate related classrooms.
Real World Connections	<ul style="list-style-type: none"> ● Connect vocational education with employers ● Providing real world experiences, including co-ops
Inclusive and Differentiated Learning	<ul style="list-style-type: none"> ● Flexible to changing needs of all types of education ● All students can achieve at a high level and get the supports they need ● Being able to meet and support students "where they are". ● Having sufficient instructional resources for all students ● Space for students who may struggle and need extra support

Architectural Priorities

Welcoming Spaces	<ul style="list-style-type: none"> ● Warm and welcoming with modern colors ● Large modern, innovative, open, and bright spaces ● Colorful spaces, no more beige ● Natural light and open spaces ● More windows for natural light
Good Wayfinding	<ul style="list-style-type: none"> ● Better flow of classrooms and shops ensuring you know you're at SST (more branding) ● Welcoming flow for new students & families ● Compact efficient layout to help flow within a larger building
Flexible Spaces	<ul style="list-style-type: none"> ● Flexible and multi-purpose spaces ● Flexible spaces for growth in the field ● Adequate space for all learning
Collaborative Spaces	<ul style="list-style-type: none"> ● Places for teachers to convene in large and small spaces ● Need for a large gathering multi-purpose space ● A fantastic auditorium, used for staff and students ● Breakout space ● A dedicated space only for meetings
Community Space	<ul style="list-style-type: none"> ● Community space ● Community gathering space

Community Priorities

Inclusive and Welcoming School Culture	<ul style="list-style-type: none"> • Ensure students feel like a supported/connected community within • Inclusive - all are welcome (seen, supported, and safe) • A school that informs and allows community to see what the students are capable of
Collaboration and Connectivity	<ul style="list-style-type: none"> • More communication between crossover shops to allow students to work between trades • Interaction with staff, students and public • Connected shops that may work together on projects
Community Access and Integration	<ul style="list-style-type: none"> • Welcoming access to public shops • Visible community facing programs with clear branding • More community ties between shops • Shared spaces! Building relationships with our sending districts. • Connected to all sending towns; include design elements that feel native to sending towns • Community space such as auditorium or meeting spaces that can be utilized for community and learning based events • An auditorium/ presentation space that can be rented
Night School Programing	<ul style="list-style-type: none"> • Expanded night school programs • Community classes at night • Separate storage for night school elements
Access to Outdoor Athletic Spaces	<ul style="list-style-type: none"> • Synthetic multi-use sport fields with lighting • Track for walking
Flexible Spaces	<ul style="list-style-type: none"> • Space near main entrances for admissions/prospective parents to meet and greet

We will achieve these strong goals by developing and staffing a school that offers more instructional space in existing Chapter 74 programs and space for 2 new programs (Plumbing and Veterinary Science). It is anticipated that a larger student population and expanded district will lead to a more diverse student population at the school, including more English Learners and a more balanced male/female student population. Additional Chapter 74 space affords teachers with the ability to have more project-based learning within the shop footprint, coupled with opportunities for cooperative education in grades 11-12. These same footprints will remain open and active throughout the calendar year after the school day, for the further development and expansion of adult education programs, including the state funded Career Technical Initiative (CTI).

2. Priority Educational Focus Areas

Workshop participants were asked to share what the highlighted teaching and learning practices look like at SST now, and then were asked to consider what they could be in an aspirational future. The following comments, which have been grouped thematically, list what the top practices could look like in an aspirational future:

Growth Mindset	<ul style="list-style-type: none"> • The attitude “we can get better” is encouraged and modeled.
Equity & Inclusion	<ul style="list-style-type: none"> • Remove obstacles to student success and sense of belonging
Student Centered Learning	<ul style="list-style-type: none"> • Space to explore ideas through experiences • Tangible outcomes in all content areas
Vocational Academic Integration	<ul style="list-style-type: none"> • Working together • See a return to collaboration and spaces support connectivity • Increased collaboration between academics and vocational shops • More support for shop-to-shop collaboration
Competency Based Learning	<ul style="list-style-type: none"> • Systems in place for students to develop and demonstrate mastery

SST Future Ready Learning Goals

The following set of “Future Ready CTE Learning Goals 1.0” for South Shore Tech students was developed by the Educational Visioning Group (EVG) during the Visioning Workshop One that took place on June 20, 2023. The EVG is a group of approximately 30 participants that includes SST leadership, administrators, teachers, parents, and students. Five teams of 4- 5 participants worked in small groups to create their own set of SST Future Ready CTE Learning Goals for a theoretical poster that would appear in each STS classroom. Each team’s list was then grouped by like goals, with each Learning Goal receiving 5 votes for appearing on an original list.

Workplace Readiness Skills <ul style="list-style-type: none"> • Work Ethic • Modern Tools of the Trade • Essential Workplace Habits • Learning How to be a Good Employee • Customer Service Skills 	Personal, Social, and Civic Responsibility <ul style="list-style-type: none"> • Empathy and Cultural Proficiency • Integrity and Responsibility Vocational Partnerships • Volunteerism and Community Engagement • Extracurricular and Athletic Engagement
Effective Communication <ul style="list-style-type: none"> • Written and Oral Communication • Acting as a Team Member • Building Relationships • Digital Literacy 	Growth Mindset <ul style="list-style-type: none"> • Adaptability • Explorative and Open Mindset • Risk-taking Within a Safe Environment • Faculty Behavior Modeling
Critical Thinking and Problem Solving	Lifelong Learning

<ul style="list-style-type: none"> ● Flexible Mindset ● Inventive Thinking ● Real World Problem Solving 	<ul style="list-style-type: none"> ● High Productivity ● Planning and Organization ● Self-Advocacy
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This version of SST Future Ready CTE Learning Goals Poster 1.0 will likely continue to evolve and will serve to inform the EVG’s conversations about the teaching and learning practices and priorities that should be supported by the renovated and/or new SST school facility.

3. Desired 21st-century Design Patterns

The following set of priority “21st Century Design Patterns” for the design of the renovated and/or new South Shore Tech was developed by the Educational Visioning Group (EVG) during Workshop Two. Workshop participants were introduced to 36 “Design Patterns” that represent varied architectural design features of, and approaches to 21st century school facility design. Individual participants first rated each Design Pattern with a heart, thumbs up, or thumbs down, and were then given the opportunity to rate Design Patterns collectively in order of importance. The resulting list of Design Patterns has been placed in priority order based on the cumulative total of hearts, thumbs up, and priority ratings that each received.

Top 12 Design Patterns:

1. Professional Work Areas (30 votes)
2. Dining as Social Commons (28 votes)
3. Display and Exhibition (27 votes)
4. Branding and Identity (27 votes)
5. Indoor/Outdoor Connections (27 votes)
6. Heart of the School (26 votes)
7. School Run Businesses (26 votes)
8. Natural Light and Biophilia (26 votes)
9. Effective Storage (26 votes)
10. Security and Welcome (25 votes)
11. Community Use and Access (25 votes)
12. Media Center as Learning Commons (25 votes)

4. Guiding Principles

The EVG was introduced to four Case Studies of recent CTE school projects in which the Guiding Principles for each school were reviewed as connected to design decisions that were made for the project. Three teams of 4-5 participants each worked to create their own set of 4-6 Guiding Principles for the SST project, which were later grouped by like themes and are listed below in order of the number of “votes” they received, with each pattern given 5 votes for every time that it appeared on a team’s list.

The following principles offer guidance on setting design goals and focus the work of the visioning team. These principles may evolve as the design process continues.

Guiding Principle	Illustration
Sense of Place	<ul style="list-style-type: none"> ● Learning communities ● Public area and academic area ● Displays of student work ● A school that looks like a place of learning ● A facade that is reflective of the community
Safety and Welcome	<ul style="list-style-type: none"> ● Welcoming wayfinding ● A Courtyard that would provide for safe student gathering outside
Heart of the School	<ul style="list-style-type: none"> ● Multi-purpose Commons ● Open, with a variety of spaces
Natural Light	<ul style="list-style-type: none"> ● Well lit classrooms and common areas
Visual and functional connections to the outdoors	<ul style="list-style-type: none"> ● Access to the campus for curriculum initiatives, PE program, passive recreation (walking trails), as well as shop activities ● Access to school vehicles for shops that go off campus
Adaptability and Flexibility	<ul style="list-style-type: none"> ● The ability to evolve, grow, and adapt to changing 21st century skills ● The ability to flex when future technology and vocational equipment are introduced
School as Community Resource	<ul style="list-style-type: none"> ● Welcoming yet secure ● Public spaces and public-facing CTE programs secured from other areas of the school ● An active community and an active night school program
Building as a Learning Tool	<ul style="list-style-type: none"> ● Students understand and participate in maintaining the building systems ● Horticulture students participate in maintaining the grounds ● Having an energy-efficient building

Enrollment

SST is in the MSBA’s program to consider the Feasibility and Schematic Design of a possible Addition/ Renovation or New School. As part of that program, SST has agreed to study a range of enrollment possibilities from 805 students to 975 students and something in-between. This range recognizes the growth of the District with the addition of the Town of Marshfield and the potential to add new Chapter 74 CTE programs.

B. Grade and School Configuration Policies

1. Current School

The District consists of one high school serving Grades 9-12. Enrollment as of October 1, 2022 was 653 students and as of this report in September 2023, there are 671 students. The high school is currently organized by five academic departments and twelve vocational technical programs.

SST receives over 300 applications for Grade 9 admissions and accepts up to 180 students each year. The school's wait list for the past five years has averaged 100 students. This evidence strongly suggests that SST could support higher enrollments. During the 2022-2023 school year, 302 students completed applications while only 165 were enrolled as incoming Grade 9 students. This acceptance rate of 54.6% is part of a trend: 68.1% of students who completed applications were accepted in 2021-2022, and 78.4% were accepted in 2020-2021. This downward trend shows that applications have gone up while the number of available spots has not been able to keep pace with student interest.

SST's curriculum is aligned with all applicable DESE/CTE frameworks, fulfills the Mass Core curriculum, and meets the Massachusetts Board of Higher Education Admissions Requirements. SST students graduate with four years of English, Mathematics, Physical Ed/Health and Science, as well as three years of Social Studies, including a grade 11 semester long Civics course. PE/Health instruction is extremely limited and needs to be addressed through design and staffing. SST does not yet offer World Language courses due to scheduling limitations; However the Massachusetts Board of Higher Education Admissions requirements allow Technical Related courses to be substituted in lieu of World Language courses.

SST is committed to educating all students and has successfully developed a special education program to address the needs of students with disabilities in an inclusion model where all students with individual education plans are successfully integrated into co-taught and paraprofessional supported classes.

The existing facility significantly limits the number of students who can enroll. As the district Statement of Interest indicates, as the second oldest regional vocational school in Massachusetts, many of the infrastructure systems have outlived their useful life. In addition, we lack adequate space for instructional and instructional support settings.

2. Proposed School

The proposed school would be designed in a way that would provide access for more students to enroll in programs that are aligned with local and regional labor market needs. In addition, the proposed school must be a learning tool in itself; it must efficiently utilize every square inch because there is a limited site on which to renovate or build.

SST **learning goals** emphasize workplace readiness, growth mindset, problem solving, and responsibility. These goals are embedded in the school mission and goals. Students have flourished within our current building and grounds layout, yet their future experience will be improved exponentially with a new design. Efforts should be made to cluster shops within similar industries (when there is an authentic curriculum reason to do so) and to cluster shops that have a prominent public facing component to the program.

Design decisions must consider the visioning session **guiding principles and design patterns** that emphasize safety, sense of place, natural light, adaptability and flexibility, among others. Students and teachers need the space to gather as a community in large and small spaces, to practice skills in and out of the shop and classroom, and to be supported socially and emotionally through the school year.

Skills building is at the heart of SST’s program of studies. Academic skills are best cultivated through project based learning, ability to collaborate within and among departments. Teachers need a design that gives them an array of learning environment options in and out of the classroom, whether that is in a creatively designed hallway, multipurpose room, or small group work areas. Workplace skills are developed and refined in spacious shop settings and with opportunities to interact with the public, either on or off campus. The proposed school must be designed with adequate spacing in mind for all aspects of the educational program:

Space Needs	Impact for Design
<p>Chapter 74 spaces</p>	<ul style="list-style-type: none"> ● More floor space for heavy equipment. ● Shop adjacencies that allow teachers the ability to transition from individualized shop work on the floor to small/large class meetings in a classroom. ● Expanded and accessible storage that does not require interruptions to the flow of the school day by having to send students to distant locations to retrieve supplies. ● Shop proximity to school vehicle (e.g. 14 person van) parking when shops need to bring students to job. ● Open space to display student work products. ● Demonstration space and student skill practice space. ● Student rest rooms within the shop footprint.
<p>Academic spaces</p>	<ul style="list-style-type: none"> ● In an effort to offer more access to SEL supports, PE programming, Digital Literacy, World Language and expanded Related Theory instruction on the academic week, a future scheduling model could include 5 blocks of instruction which will require more classroom space. ● MSBA-standard science labs with storage nearby, and also space to pivot between lab and desk work within the same footprint. ● Classrooms with universal technology access, maximized natural lighting and flexible furniture to allow for the school to more easily adjust for curriculum and staffing needs in the future. ● Student restrooms in sufficient number to minimize time that students are not in the classroom setting. ● Breakout room or gathering/common spaces in sufficient number to make the best use of the existing internal space and encourage collaboration between: <ul style="list-style-type: none"> ○ Teachers who work on the same subject/grade level. ○ Teachers who collaborate across academic disciplines (e.g. English and Social Studies). ○ Academic and Chapter 74 integration in the curriculum via locally designed project based learning.
	<ul style="list-style-type: none"> ● Being able to assemble groups of students for instructional and extracurricular activities and not over rely on remote technology (e.g. Zoom) to create a school community.

Common/Flexible spaces	<ul style="list-style-type: none"> • Having the option to leave materials for events and projects that might take multiple days. • Having space that is available throughout the school day. • Having flexible furniture to convert the functionality of the space to meet the educational program, community needs, or extracurricular activities.
Administrative and Student Support spaces	<ul style="list-style-type: none"> • Having space strategically located within clusters of classrooms or shops for staff and student gatherings. • Having sufficient space options to have 'just in time' meetings with students, parents and staff.

C. Class Size Policies

Every effort is made to keep academic class sizes for regular education classes under 25. The District has consistently maintained an average class size of approximately 20 students for the previous five years. This includes high needs students such as those who come from low income families, those with disabilities, and—to a smaller extent—English learners. [The proposed Space Summaries have been based on maintaining the average class size of 20 students in the calculation of required General Classrooms and Science Labs. Please see attached class breakdown spreadsheet.](#)

SST complies with Massachusetts regulations with regard to instructional groupings for students on individualized education plans. When eligible students are assigned to instructional groupings outside of the general education classroom for 60% or less of the students' school schedules, group size shall not exceed

- 8 students with a certified special educator,
- 12 students if the certified special educator is assisted by one aide, and
- 16 students if the certified special educator is assisted by two aides.

For the 2022-2023 school year, students with disabilities comprised 27.3% of the student population, compared to 19.4% for the state. Low-income students comprised 29.2% of SST's population, compared to 42.3% for the state. Maintaining class sizes for these students in particular is an important goal for any building expansion.

Chapter 74 "shop" classes have varying teacher student ratios, but they do not exceed 20:1 when students are in a shop setting. These ratios are mindful of state board regulations (e.g. Department of Public Health, Board of Cosmetology), existing instructional space, student demand, and current staffing.

Impact for Design: Class Size Policies

Regardless of design, state regulatory boards (e.g. Cosmetology, Board of Health), and special education regulations all contribute to the district determining class size parameters.

SST is currently enrolling 671 students as of September 2023. Should the enrollment expand to a range of up to 975, there will be additional staffing needs phased in over a 4-year period.

English: 1 for every 120 new students

Math:	1 for every 120 new students
Science:	1 for every 120 new students
Social Studies:	1 for every 120 new students
Special Education:	1 for every 90 -new students
World Language:	1
PE/Health:	1 for every 120 new students
Counseling:	1 for every 120 students
IT Support:	2 support staff
Food Service:	4 staff for increase serving lines
Ch 74 Teachers:	—————10 (5 for enrollment increase, 5 for new programming)
Ch 74 Paras:	3 school day staff
Paraprofessionals:	1 for every 60 students
Administration:	2
Admin Assistants:	2
Custodians:	4
Bus Drivers:	1 for every 60 new students

D. School Scheduling Method

The school day begins at 7:40 AM and ends at 2:25 PM. Students are all on an alternating week schedule, with 9th and 11th graders on the same rotation, and 10th and 12th graders on the same rotation. The groups alternate cycles throughout the school year culminating in 90 days of academic instruction and 90 days of Chapter 74 full day shop instruction.

The school day is structured around a 9 period day; SST commonly refers to 84 minute 'double periods' as single 'blocks'.

Blocks	Event	Time	Minutes
	Warning Bell	7:35	
1	Period 1	7:40-8:20	80
	Period 2	8:20-9:00	
2	Period 3	9:04-9:44	80
	Period 4	9:44-10:24	
3	Period 5	10:28-11:08	80
	Lunch A	10:28-10:53	
	Lunch B	10:57-11:22	
	Lunch C	11:25-11:50	
	Lunch D	11:52-12:17	

	Period 6	11:37-12:17	
4	Period 7	12:21-1:01	80
	Lunch E	12:21-12:46	
	Period 8	1:01-1:41	
	Period 9	1:45-2:25	40
	Dismissal	2:25	

On a typical shop week, students spend the entire day in a shop setting except for a lunch period in the cafeteria. There are some exceptions:

- a. One day per week the students leave shop to attend a guidance class and gym class lasting 84 minutes in total. While the students are out of the shop, the teachers have a professional learning community block of time in common.
- b. Students in grade 9, after Exploratory, and students in grade 10, for the most part will start their shop day with 84 minutes of a Related course and then return to the shop setting for the duration of the school day.

Core academic courses are scheduled in 'blocks' or 84 minute 'double periods'. The academic day ends with a 9th period directed study period for students to complete work, get scheduled services, meet in extracurricular settings, and/or receive small group support from content area teachers or paraprofessionals.

All Chapter 74 programs, current and proposed, will be scheduled in an alternating week schedule. Students will have 90 cumulative days of shop instruction with full day shop experiences. On the academic week, students will attend four 84-minute blocks of instruction (which will include in grades 11-12 a daily 84-minute block of Related instruction, which is generally defined as Chapter 74 classwork related to the same curriculum framework).

As new students populate the proposed Chapter 74 programs staff will be hired accordingly, with at least one teacher being hired for each new program the year prior to the school opening, and then a second teacher being hired in either the first or second year after the school construction is completed.

All academic classes will be scheduled on the alternating week cycle with no major changes in curriculum. While not a fact at this point, the district, through the collective bargaining process, will seek some flexibility in order to allow for more scheduled academic time for wellness classes, and expanded Chapter 74 Related instruction.

Teachers in the same Chapter 74 program are afforded 84 minutes each week to collaborate during PLC time due to the district's concurrent scheduling of all shop week students into a 42-minute physical education/health course, and a subsequent 42-minute guidance counselor led seminar. Academic teachers in the same department have biweekly PLC meetings during the 9th period of the academic day when students have directed study periods. The district is able to schedule flexible coverage models to that, for instance, all ELA teachers can attend a PLC on Tuesdays. Teachers are all scheduled for weekly 40-80 minute Professional Learning Community (PLC) time with colleagues, which is an essential part of the professional development model because it reinforces consistent professional practice and dialogue over an entire school year. One current instructional priority that requires PLC time has to do with grading. SST is in the second year of a two-year initiative to overhaul its assessment system so that the grading

system is more equitable and reflects student progress toward standards which is a philosophy that is more in line with project based applied learning.

Yes, the district has considered providing additional professional and curricular development opportunities outside the regular school year. Such efforts are achieved through several methods, including (a) two hours delays for morning professional development; (b) 6 department meetings per year after school; (c) aforementioned weekly or biweekly PLC meetings during the school day; (d) 9th period teacher release time (directed study schedule that allows for more during the day flexibility); (e) targeted professional development committee work where teachers are paid a stipend to undertake new curriculum work. The main goals for our professional development are:

- to be versed in managing students with a variety of learning styles and needs.
- to have time to develop alternate forms of instruction and assessment to reteach standards in which students are struggling.
- to continue to learn about equitable and culturally proficient practices in schools.
- to develop health and wellness strategies appropriate to their setting for their students and themselves.

There are honors level courses offered in the following subjects and grade levels:

	Math	Science	English	Social Studies	Computer Science
Grade 9	Algebra I and Algebra II	n/a	English 9	US I	n/a
Grade 10	Geometry	n/a	English 10	Modern World	n/a
Grade 11	Algebra II and PreCal	n/a	English 11: American Literature	n/a	n/a
Grade 12	PreCalc and Calculus	Biotech (Dual Enrollment)	English 12: World Literature (Dual Enrollment)	n/a	Computer Science (AP)

Impact for Design: School Scheduling Method

- Space for PLC meetings is essential.
- A cafeteria setting needs to set aside space for students who seek a quieter lunch experience.
- **Staffing:** Potential expansion of instructional blocks within the existing school day (4 blocks vs 5 blocks) needs further analysis for impact on school design. Having 5 instructional blocks would allow for more PE/Health, Digital Literacy, SEL supports, World Language and Related Theory.
- It is generally understood that teachers being able to stay in one or two locations allows them to transition from one instructional block to another much more easily than if they have to travel with students during the passing window. Often times it requires redundancies and in instructor furniture and storage to give them the opportunity to have access to manipulatives in the classrooms in which they teach. The District considers it a priority to have teachers available to greet students as they arrive in classes. This is something that all chapter 74 programs enjoy and is found to be an essential part of the instructional model. In a newly constructed building, with strategically placed departments in classes, teachers would be allowed the ability to stay in one location. The district also acknowledges that they will be instructional initiatives that might force a balancing act (for instance, a desire to have all ninth graders taught in the same area of

the high school). While that is not a priority right now, this new structure will allow for flexible learning adjustments to be made. in the short term, based on our statement of interest, the need for teachers to have classrooms that do not require much travel would be a big improvement.

E. Teaching Methodology and Structure

1. Programs

SST offers 12 CTE programs that are designed for students to develop the skills and knowledge they need to succeed in their respective trades. Through our Chapter 74 Program Advisory Committees, we ensure that our students are learning what they need to know and are being held to industry standards. To enable all students to achieve their post-secondary goals, SST offers college preparatory and Honors level courses aligned with all applicable Massachusetts Curriculum Frameworks. This program of studies allows students to access and develop deeper learning skills like critical thinking and problem solving -in a developmentally appropriate manner so they can be successful outside of school.

2. Administration and Department Leadership

SST's administration includes the Superintendent/Director, Principal, Assistant Principal/Director of Vocational Education, Director of Curriculum, Instruction, Assessment and Professional Development, Director of Special Education, Director of Off Campus Learning & Special Projects, Director of Technology, Director of Facilities, Food Service Director and Transportation Coordinator. The district also has a Human Resources Coordinator and a business office which includes Accounts Payable and Payroll staff and the District Treasurer.

Each instructional -program department has a chair, who meets with administration monthly. An expanded or new building and/or increased enrollment may require a small increase and rearrangement of this organizational structure.

3. Curriculum & Instruction

All courses have curriculum maps that guide the pacing of instruction. More importantly, the maps emphasize the most essential standards that will be taught and assessed in the course. Multiple sections of the same course use the same curriculum map to ensure equity and continuity of instruction. Maps are guided further by course essential questions and units of study which include lesson plans that connect the day to day activities in alignment with the standards and outcomes. In academic classes, teachers often design activities that make real world connections, foster teamwork and collaboration, and get students out of their "desk and row" traditional learning environment. Chapter 74 shop courses and related courses embrace and model this philosophy every day.

Deeper integration projects within a department, and between academic and shop departments are hampered by a lack of common area space. Unless students were to gather outdoors, there is very limited space to have groups of students collaborate on projects and view demonstrations and presentations. Making strategic design decisions with common gathering spaces as a priority will create an ideal environment for these initiatives to take root in the future.

Faculty members employ various instructional approaches including project-based learning, collaborative and small group work, and laboratory activities. Direct instruction, guided reading, skills based practice is

also part of the learning experience for students. With a standards-based assessment system, teachers want students to take charge of their learning through multiple opportunities to show what they know and are able to do. SST's co-teaching model has supported students in all academic areas. Special education teachers also serve as student liaisons in order to ensure that IEPs are being implemented and parents are an active part of the student learning process.

Impact for Design: Curriculum & Instruction

- To meet the current and future needs of diverse learners, instructional spaces must have universal technology, mobile furniture and proper adjacencies and supervision.
- Another design priority is designing flexible spaces that can shift to meet ever changing needs of teaching and learning in the short term and long term.
- Potential non-instructional spaces must be distributed throughout the building to allow for better student supervision and reasonable access to meeting room space for adult and student needs (e.g. department meeting space, break out rooms for small group learning).
- To allow for the sharing of general classrooms and to maintain the high utilization of all educational spaces, teachers must have professional planning spaces. We envision these spaces to be appropriately furnished and equipped for both quiet work spaces and comfortable lounge-type spaces. There should be multiple locations throughout the school to be convenient to all academic classrooms,

4. Promotion/Graduation Requirements

In order to ensure promotion, it is the expectation that credits for all classes that earn a mark of *Unsatisfactory* or *No Credit* will be recovered prior to the start of the next school year. A student who earns *Unsatisfactory* or *No Credit* in three (3) or more academic courses in a given year will not be promoted academically. A student who earns *Unsatisfactory* or *No Credit* in shop for the year will meet with the principal or her/his/their designee to plan for credit recovery. Students may be required to repeat the vocational year. All students must earn their OSHA 10 card prior to co-op placement and/or graduation. Exceptions to these requirements may be made for students entering South Shore after their 9th grade.

5. English Language Arts/Literacy

Guided by the Massachusetts Common Core Curriculum, students will be instructed in Reading & Literature, Language, Writing, and Speaking & Listening. The emphasis in English 9 and 10 is developing essential skills for success in high school and on state assessments, focusing on prose, short stories, and novels. The curriculum has been designed to prepare students to be college and career-ready. English 9 is the first of a two-year loop, culminating at the end of English 10. There will be department-selected formative and/or summative assessments in English 9 and 10.

In Grades 11 and 12, students will be instructed in Reading & Literature, Language, Writing, and Speaking & Listening. English 11 has a focus on American Literature, and English 12 has a focus on World Literature. A central focus in all English 11 and 12 courses are assignments that prepare all students for college and careers. English 11 is the first of a two-year loop, culminating at the end of English 12. Students will develop a required career-ready digital portfolio in English 11, which will carry over to English 12.

The District offers two levels of instruction in all grade levels. The Honors course in Grade 9 has a prerequisite that is a combination of Grade 8 grades and SST placement test scores. In Grades 10, 11, and 12 students must earn *Advanced* in English Honors or *Exemplary* in English CP.

Title 1 supports in the areas of reading are provided through direct instruction in academic classes and targeted reading interventions in small groups or in individual settings. Identified Title 1 students receive additional support in Grades 9 receive reading interventions and in grades 9 & 10 to prepare for MCAS. Upperclassmen in grades 11 and 12 receive interventions to prepare for PSAT/SAT assessments.

Our English Language Learner program continues to grow. Identified ELL students receive support from our ESL instructor. The ESL teacher works directly with students in their academic and vocational programs, and provides direct services based on need in small groups or individually. The ESL teacher collaborates with teachers during PLCs to offer professional development in supporting EL's with SEI and WIDE Can Do best practices.

ELA Staffing, Scheduling and Space Limitations

The English Department has 6 full time teachers. All are certified to teach English. Two have a Masters in English to support dual enrollment instructor requirements. One is dual certified in English and Special Education.

Most of the teachers in the English Department travel for up to half of their scheduled course load. SST attempts to limit the number of periods a teacher will travel, but due to space constraints there are times when an instructor may be in a different classroom for each class on a given instructional cycle. SST's classrooms vary in size. Most classrooms can accommodate 24 student work stations; some cannot. Those that can accommodate 24 students meet safety requirements, but leave little room for teacher mobility. Teachers meet weekly in a Professional Learning Community. There are no classrooms available for these meetings. Teachers meet in conference rooms which are not always large enough to effectively accommodate the department's needs.

SST provides individualized instruction and assessment to students who need it. When appropriate, classes include a special education teacher and/or a trained instructional aide. Students who need support in a small group setting are provided with the opportunity to work with a teacher or paraprofessional outside the regular classroom in other available spaces. Students who need extra support are also provided with special educators or instructional aides who staff small group study halls during our academic week 9th period. Students are also supported after school by their teacher or in a designated extra help location staffed by trained instructional aides.

The following table provides offerings for English Language Arts courses in Grades 9 -12 at SST:

Grade	Dual Enrollment	Honors	College Prep
9	n/a	English 9 Honors	English 9 CP
10	n/a	English 10 Honors	English 10 CP
11	n/a	English 11 Honors	English 11 CP
12	World Literature	English 12 Honors	English 12 CP

Impact for Design: English Language Arts/Literacy

- No specific design changes envisioned for the English Language Arts/ Literacy curriculum.
- **Staffing:** 1 teacher for every 120 new students.

6. Mathematics

Math is a critical ingredient in nearly every program at SST. A wide range of math subjects are available to stimulate and challenge all of our students. Such courses are designed to support students' career objectives, as well as college ambitions. All courses are guided by the Massachusetts Common Core Curriculum. Courses offered include Geometry, Algebra I, Algebra II, Pre-calculus, Calculus, Financial Literacy and Statistics. SST offers college placement and honors level courses in all grade levels, as well as dual enrollment Pre-calculus.

Title 1 supports in the areas of math are provided through direct instruction in academic classes and through targeted reading math interventions in small groups or in individual settings. Identified students receive additional support in Grades 9 and 10 to prepare for MCAS and Grades 11 and 12 to prepare for PSAT/SAT assessments.

Our English Language Learner program continues to grow. Identified ELL students receive support from our ESL instructor. The ESL teacher works directly with students in their academic and vocational programs, and provides direct services based on need in small groups or individually. The ESL teacher collaborates with teachers during PLCs to offer professional development in supporting EL's with SEI and WIDE Can Do best practices.

Mathematics Staffing, Scheduling and Space Limitations

The Math Department has 6 full time teachers certified to teach Mathematics. One teacher has a Masters in Mathematics which supports dual enrollment instructor requirements. In addition, SST has 2 full time teachers dual-certified in Math and special education.

Most of the teachers in the Math Department travel for up to half of their scheduled course load. SST attempts to limit the number of periods a teacher will travel, but due to space constraints there are times when an instructor may be in a different classroom for each class on a given instructional cycle. SST's classrooms vary in size. Most classrooms can accommodate 24 student work stations; some can-not. Those that can accommodate 24 students meet safety requirements, but leave little room for teacher mobility. Teachers meet weekly in a Professional Learning Community. There are no classrooms available for these meetings. Teachers meet in conference rooms which are not always large enough to effectively accommodate the department's needs.

SST provides individualized instruction and assessment to students who need it. When appropriate classes include a special education teacher and/or a trained instructional aide. Students who need support in a small group setting are provided with the opportunity to work with a teacher or paraprofessional outside the regular classroom in other available spaces. Students who need extra support are also provided with special educators or instructional aides who staff -small group study halls during our academic week 9th period. Students are also supported after school by their teacher or -in a designated extra help location staffed by trained instructional aides.

The following table provides offerings for Math courses in Grades 9 -12 at SST:

Grade	Dual Enrollment	Honors A**	Honors B	CP
9	n/a	Algebra 2	Algebra 1	Algebra 1
10	n/a	Geometry		Geometry
11	Pre-calculus	Pre-calculus	Algebra 2	Algebra 2
12	Pre-calculus	Calculus	Pre-calculus, Calculus	Pre-calculus, Financial Literacy, Statistics

** For incoming 9th grade students who have successfully completed Algebra 1 by the end of 8th grade at an Honors Level

Impact for Design: Mathematics

- No specific design changes envisioned for the Math curriculum.
- **Staffing:** 1 teacher for every 120 new students.

7. Science

SST currently uses 4 lab classrooms (sizes range between 774-992 sq ft) and one chemical storage area (187.5 sq ft) to teach 450 students in 4 instructional blocks per day.

All Science classes are aligned with the Massachusetts Curriculum Frameworks which incorporate the Common Core Literacy standards as well. All Grade 9 and 10 students enroll in one science course per year (Biology or Physics) and take Science MCAS in grade 9. Grade 11 students can choose Environmental Science, Chemistry or Engineering. Students in the Allied Health program also take Anatomy and Physiology. Grade 12 students can choose from Environmental Science, Chemistry, Engineering, or Tech Engineering. Often the science course a student chooses depends upon their technical area and their college plans.

Title 1 supports in the areas of reading and math are provided through direct instruction in academic classes and through targeted reading math interventions in small group or 1:1 settings. Identified students receive additional support in Grades 9 and 10 to prepare for MCAS and Grades 11 and 12 to prepare for PSAT/SAT assessments.

Our English Language Learner program continues to grow. Identified ELL students receive support from our ESL instructor. The ESL teacher works directly with students in their academic and vocational programs, and provides direct services based on need in small groups or individually. The ESL teacher collaborates with teachers during PLCs to offer professional development in supporting EL's with SEI and WIDE Can Do best practices.

Science Staffing, Scheduling and Space Limitations

The Science Department consists of 6 teachers who are licensed in Biology, Physics, Tech Engineering or Chemistry. The Science Department has 6 full-time teachers, many with multiple areas of licensure.

- 4 are certified to teach Biology.
- 2 are certified to teach Physics.
- 2 are certified to teach Chemistry.
- 1 is certified to teach Tech Engineering.
- 1 has a Master's degree in Biology to support dual enrollment instructor requirements.
- 1 is dual-certified in Biology and Special Education.

Some members of the Science Department travel for up to half of their scheduled course load, even for lab bases courses. SST attempts to limit the number of periods a teacher will travel, but due to space constraints there are times when an instructor may be in a different classroom for each class on a given instructional cycle. SST has four Science labs outfitted with sinks, water, lab tables, necessary safety features and storage. Most classrooms can accommodate 24 student work stations; some can-not. Those that can accommodate 24 students meet safety requirements, but leave little room for teacher mobility. Teachers meet weekly in the Professional Learning Community. There are no classrooms available for these meetings. Teachers meet in conference rooms which are not always large enough to effectively accommodate the department's needs.

The following table provides a grade-level listing of Science courses. All students enroll in Biology and Physics in Grades 9 and 10. All students enroll in 2 more science classes in Grades 11-12. Some of these courses are aligned with Chapter 74 majors (e.g. Allied Health students enroll in Anatomy & Physiology; Manufacturing Engineering students enroll in Engineering; Cosmetology students enroll in Chemistry)

Grade	Dual Enrollment	College Prep
9	n/a	Biology, Physics
10	n/a	Biology, Physics
11	n/a	Engineering, Environmental Science, Anatomy and Physiology, Chemistry
12	Biotechnology	Engineering, Tech Engineering, Environmental Science, Anatomy and Physiology, Chemistry

Impact for Design: Science

For the current enrollment, the District needs six Science classrooms at a minimum. Each of the proposed science classrooms should have the following equipment:

- Instructor's station
- Movable demo table
- 2 Wheelchair accessible tables
- 1 Wheelchair accessible counter

- 10 Movable tables
- An adjoining prep room with refrigerator and dishwasher
- 7 sinks including hot & cold water, gas
- A primary teaching wall and a secondary teaching wall
- Full blackout window treatment in labs

Each of the proposed science classrooms should have the following safety measures:

- Fire Extinguisher Master Gas Shut Off
- Safety Goggle Sterilizer Unit
- Fume Hood/ Biosafety Cabinet
- Safety Shower & Eyewash w/ Fd
- Fire Blankets
- Chemical storage

The Science classrooms should be designed to accommodate all Science offerings and they should be capable of providing both lecture and lab, in accordance with current MSBA standards.

Design consideration should be given to having at least one Science lab in proximity to the MET shop for engineering integration and 1 science lab near the Allied Health shop for similar curriculum integration in life sciences.

Staffing: 1 teacher for every 120 new students

8. Social Studies

The goal of the Social Studies Department at SST is to engage students in understanding the history of the world in which we live. In addition, our department teaches history through skill-based learning that emphasizes reading, writing, and critical thinking. The department also incorporates 21st-century skills including global awareness and economic, civic, and environmental literacy.

Our approach is to teach for greater historical understanding, using a variety of methods to elicit each student's interpretation and insight in looking at past events. SST believes this will help to make graduates more well-rounded, productive, and better grounded in the world we live in today. To create active and more engaged citizens, the department focuses on U.S. History, Modern World History, and Civics. All Social Studies Department classes are aligned to the current MA DESE Frameworks and Standards. All course offerings are required at South Shore Technical High School.

Title 1 supports in the areas of reading and math are provided through direct instruction in academic classes and through targeted reading math interventions in small group or 1:1 settings. Identified students receive additional support in Grades 9 and 10 to prepare for MCAS and Grades 11 and 12 to prepare for PSAT/SAT assessments.

The English Language Learner program continues to grow each year. Identified ELL students receive support from our ESL instructor. The ESL teacher works directly with students in their academic and

vocational programs, and provides direct instruction and intervention in small groups and/ or 1:1. She collaborates with teachers during PLC's to offer professional development in the areas of need.

Social Studies Staffing, Scheduling and Space Limitations

The Social Studies Department has 3 full time teachers and one special education teacher who works close to full-time in the Social Studies Department.

- 3 are certified to teach high school Social Studies.
- 1 is dual-certified in English and Special Education.

Most of the teachers in the Social Studies Department travel for up to half of their scheduled course load. SST attempts to limit the number of periods a teacher will travel, but due to space constraints there are times when an instructor may be in a different classroom for each class on a given instructional cycle. SST classrooms vary in size. Most classrooms can accommodate 24 student work stations; some can-not. Those that can accommodate 24 students meet safety requirements, but leave little room for teacher mobility. Teachers meet weekly in a Professional Learning Community. There are no classrooms available for these meetings. Teachers meet in conference rooms which are not always large enough to effectively accommodate the department's needs.

The following table provides a typical pathway for Social Studies courses in Grades 9 -12 at SST:

Grade	Honors	CP
9	US History	US History
10	Modern World History	Modern World History
11 or 12	n/a	Civics (one semester)

Impact for Design: Social Studies

No specific design changes are envisioned for the Social Studies curriculum.

Staffing: 1 teacher for every 120 new students

9. World Language

There are currently no courses offered. The Massachusetts Board of Higher Education allows vocational technical schools to substitute Related Theory courses for the World Language requirement for college admissions.

Impact for Design: World Language

- It is likely that some world language instruction would be offered in the future, requiring at least one additional classroom for one licensed teacher to offer instruction for 60-75 students per cycle.
- **Staffing:** 1 teacher

10. Physical Education/Health and Wellness

There is only 1 Physical Education/Health and Wellness teacher at SST currently. The program space is limited to a 8,000 sq ft gymnasium and approx 600 sq ft weight room. Thy gym area is used 75% of school day and regularly after school for contests and practices. When one factors in the use of the gym for class assemblies, guest speakers, or any reason to congregate, the usage rate is higher.

SST lacks the instructional and storage space for a comprehensive PE/Health & Wellness program. All health classes are run in the gymnasium which presents scheduling challenges. Our current exercise and fitness room at SST is inadequate due to the small size and lack of equipment. At 600 square feet, approximately six to eight students can safely exercise, but the equipment is very limited because several pieces were removed to make room for the athletic trainer to administer to athletes. As it stands right now, the room cannot accommodate a wellness class, rendering it underutilized during the day. Students are limited to engaging in strength training exercises using body weight, resistance bands and small hand-held dumbbells in the gymnasium.

Impact for Design: Physical Education/Health and Wellness

- With a larger PE/Wellness area and adequate staffing we can increase PE/Health & Wellness instruction on both the academic and shop cycles.
- Additional programming should include:
 - Space needed to accommodate 25 students for concurrent use of weight training and cardio equipment. Students currently participate in cardio exercise by walking, running or jumping rope in the gym. With an expanded weight room/training facility, they could use a variety of modalities that can be adjusted to meet individual fitness needs.
 - Space for a workout area would be designated for fitness exercises or group instruction involving stability balls, medicine balls, kettlebells, free weights, abdominal work, yoga and stretching. This area needs a large storage area where all of this equipment could be secured.
 - A dedicated classroom near the gymnasium for health/wellness instruction
- Space for an instructor office that is not located within the student locker room
- In a new/renovated building, there would be adequate, centralized space for storage, trainer, coach and game officials' rooms, and increased capacity for weight training for classes and teams.
- **Staffing:** 1 teacher for every 120 new students; 1 paraprofessional is needed to support weight room and locker room supervision.

11. Athletics

The Athletics program supports nearly one third of the student body over the course of the school year. Our athletics programs are growing in popularity despite inadequate locker room space for storage, lockers and changing areas, inadequate gym space, and a small weight room that cannot be used effectively as part of a physical education program (or as a part of an athletics training program). We have built a 3rd locker room outside the building to address these needs. We have moved our athletic trainer into a closet area adjacent to the gym to assist some fall and winter athletes.

Impact for Design: Athletics

- Space for a workout area would be designated for fitness exercises or group instruction involving stability balls, medicine balls, kettlebells, free weights, abdominal work, yoga and stretching. This area needs a large storage area where all of this equipment could be secured.
- A dedicated classroom (perhaps shared with the Health Classroom) near the gymnasium for a team gathering place which are often a challenge after school near the gym and locker area
- In a new/renovated building there would be adequate, centralized space for storage, trainer, coach and game officials' rooms, and increased capacity for weight training for classes and teams.
- **Staffing:** An administrative assistant to support the athletics program and other operational departments (such as food service, transportation and maintenance) will also be needed as the number of student athletes will surely increase.

12. Student Guidance, Admissions and Support Services

“Student Services” is a combination of Special Education and Counseling Staff consisting of:

- Director of Special Education
- Team Chairperson
- Director of Guidance and Admissions
- 2 Guidance Counselors
- 2 Adjustment Counselors
- Speech Language Pathologist (not housed in the SS area at this time)

(For more in-depth information on Special Education, see Section O.)

Currently the space in student services is set up to be an open and supportive environment for the district. Within the suite, there are six offices and two conference rooms. The conference rooms are used for special education team meetings, parent meetings, student meetings, administrative meetings, and professional learning communities for teachers. The two conference rooms are managed by the administrative assistant in the student services suite. The suite does not always offer a private place for students who need privacy if the conference rooms are being used. When a student needs privacy, a staff member within the suite will give up their own space so the student has the privacy they need. This can be very challenging when days are busier than others. In addition, the walls are thin in the offices and soundproofing is poor.→

Counselors need offices where they can meet privately with students. Students need to feel comfortable expressing themselves in a safe space that is soundproofed. Counselors need an office setting that is accessible to students and staff yet private.

Students who are transitioning back to school from extended absences need a space to receive both counseling and academic support. This space would be the district's BRIDGE program. The space should include a private area for counseling, a space for meetings, and a space for small group learning.

College and career representatives meet with students regarding their area of expertise. Students utilize the space for social, emotional, academic, and personal needs. Students meet with counselors for college

and career planning. Within each grade, by technical area, the counselors assist students in developing skills such as time management, goal setting, social emotional health, and college and career readiness.

The guidance curriculum was created in collaboration with the school's health and wellness instructor and school nurse. There are social emotional lesson plans incorporated into classroom activities. The guidance classes tend to be held in the lecture hall or cafeteria which can pose a problem for learning as these spaces are used frequently so guidance classes tend to have to shift. Also, these spaces do not provide an intimate space that counselors need to deliver instruction. Counselors deliver a comprehensive guidance curriculum in a variety of ways. Curriculum is delivered one-to-one, in small groups and in large groups. College and career representatives meet with students regarding their area of expertise. Students have 45 minutes of scheduled "Guidance classes" every other week with their Guidance Counselor. The topics range from scheduling, peer conflict, interview skills, social media, drug & alcohol awareness, mental health awareness, job seeking skills and post-secondary planning. This class is a credited class that each student takes, each year. In addition, a Guidance Counselor is the student's go-to person for any issues that may come up in school. The Guidance Counselor is also the point of contact for parent concerns/questions.

There are no proposed changes to this scheduling model.

Impact for Design: Student Guidance, Admissions and Support Services

- The Student Services area should include several conference rooms so that the school can hold special education team meetings and guidance meetings at the same time.
- It should include a student transition room that is calming and inviting as well as private areas for small groups of students to gather to work independently.
- Emphasis on confidentiality and a welcoming environment at the same time.
- Secure student records area.
- Offices should be spacious and designed to hold two to three people—to converse with ample personal space.
- Conference room space and/or Career Center for employer, military and college representative visits, guest speakers, 504 meetings, counseling group sessions, quiet study space for students who need it within their service delivery plan, etc.
- A dedicated instructional space for the guidance/career portion of the curriculum so that counselors are not constantly roaming; this dedicated space fosters legitimacy for the curriculum and allows counselors to have a reliable, welcoming environment as any other teacher would want. This instructional space should include whiteboards, smart board (or similar technology) and flexible movable furniture that can be organized in several different configurations.
- The administrative assistant to this space should be the center of the suite. They should be the greeter and monitor of all guests (students, parents, outside visitors, staff, etc.) traffic patterns and direct the flow of students and staff to assigned offices and conference spaces. They should be placed in a position where they are able to greet and triage in a private and positive manner.
- The school psychologist and the school's speech and language pathologist need space that allows for testing to occur in 1:1 settings. The testing space needs to be private, quiet, and should not allow for interruptions. The space should include an area for direct instruction and small groups, and the school psychologist and speech and language pathologist need a private office setting for phone calls, Medicaid billing, IEP writing, virtual team meetings, and interpreting data into testing reports.

- Design options could include a separate Guidance and Admissions area separate from Special Education, but it would require an additional administrative assistant if there are separate waiting areas.
- **Staffing:** 1 counselor for every 120 new students; 1 administrative assistant

F. Teacher Planning and Room Assignment Policies

Teacher planning space is nearly non-existent. Most academic classrooms have 2 teachers with 2 teacher desks. Oftentimes the teachers undertake their planning in the classroom while the other teacher is actively teaching. There is a faculty lunchroom which doubles as a work room. Classrooms in the 1962 building are typically connected through adjacent doors at the rear of the classroom.

Academic teachers are teaching 6 periods, supervising students one 1 period, and have 2 planning periods per day. Vocational teachers are teaching 8 periods and have 1 planning period per day. There are monthly department meetings, and monthly faculty meetings where some collaborative planning can take place. However, it is through weekly PLC meetings (at the department level during the day) that most effective planning and collaboration takes place. There is no time or common space for multiple departments to collaborate concurrently unless it is done after school.

Impact for Design: Teacher Planning and Room Assignment Policies

- Teachers need to have space to plan and prepare for upcoming class activities outside of their current classrooms.
- Teacher work rooms should be separate from lunch room areas.
- Multiple teacher work areas will allow for collaboration during the school day.
- These common rooms will also be important in the event that the design requires that classrooms are used for instruction up to 100% of the day.
- Secure locker areas and a “home base” for paraprofessionals are necessary as they do not have classroom closets or desks to lock up personal items. Locating these in a staff lunch or planning area would be an improvement.

G. Pre-Kindergarten Program

N/A

H. Kindergarten Program

N/A

I. Breakfast/Lunch Programs

The breakfast program runs out of the cafeteria each morning from 7:20-7:35. School buses arrive with enough time for students to participate in the breakfast program. There are five lunches throughout the school day. The schedule for lunches includes shops and academic classes noted by teacher last name below:

LUNCHES 23-24		
A CYCLE	TIME	B CYCLE
151	10:28-10:53	163
148	10:57-11:22	130
140	11:25-11:50	143
141	11:52-12:17	153
97	12:21-12:46	140

Students have the option to use a recently opened adjacent space for a quieter lunch, which can house up to 20 students. Outside lunch is a COVID-influenced option that remains available.

SST participates in the National School Lunch program and is in compliance with state and federal guidelines. SST also offers a daily breakfast program. At present SST serves over 200 students for breakfast via one serving line; the program runs prior to the start of the school day. The amount of students that partake in breakfast has increased due to the present day of free meals. The district sees the need to expand its serving lines to allow for quicker processing.

Storage continues to be an issue. SST has exhausted all possible reasonable storage ideas. With continued increase in participation and future enrollment growth we will definitely need more space. As a single district we lack the option of housing one week's worth of inventory. Other districts with multiple locations (schools) have opportunities to borrow space for food, paper and equipment. We would definitely need more than ample space moving forward, but the storage must be accessible and in proximity to the cafeteria serving area.

Our cafeteria has evolved into a multipurpose space out of necessity. While the main focus of the space is to serve our student body over five 25-minute lunch services each day, the space is also used for after school activities such as wrestling practice, and during the day break out space for students and teachers/paras. It is the only space in the school to convene our entire faculty or our Chapter 74 Program Advisory Committees (around lunch tables) to facilitate collaborative activities. Having multipurpose space in a renovated or new building is cost-effective and necessary.

Impact for Design: Breakfast/Lunch Programs

- With an eventual increase in student population, we need a cafeteria with more than two serving lines so that we are not forced to lengthen the lunches, which already encompass nearly two hours of the school day.

- Future cafeteria space must have more space so the number of lunches can be reduced and open up the space for other activities during the school day. The cafeteria should be in close proximity to restrooms, the gymnasium and to some courtyard/outdoor space that is secure.
- SST would like to investigate the concept of an open, multi-purpose student commons in lieu of a traditional high school cafeteria.
- Office space near the cafeteria will assist with staff who often use the lunch window of time -to communicate with students (e.g. main office staff, counselors, athletics)
- Oftentimes students do not need the full lunch period for dining and would prefer to exercise or get fresh air. The cafeteria should also have adjacent space with natural light for students who seek a less noisy lunch experience.
- Adjacent storage for tables, chairs and other equipment will allow the cafeteria space to be used more easily for multiple purposes.
- **Staffing:** 4 cafeteria aides

J. Technology Instruction Policies and Program Requirements

South Shore Technical began our first pilot of a 1:1 initiative in September of 2011 when we started a 2 year long iPad pilot program. Although this pilot was successful in terms of seeing the advantage of each student having a device, we soon realized that an iPad was not the appropriate device for the needs of our departments. We then decided to continue the pilot but to transition to Chromebooks. We decided to purchase Chromebook carts to be placed in each classroom. In some areas, where appropriate based on the software needs of the program, we purchased Windows laptops or Apple iMacs. This model continued successfully until 2020, when COVID forced us to dismantle the carts in order to distribute the devices to each individual student to allow them to have devices at home to accommodate remote learning. We have continued this model post-COVID, and now purchase a new Chromebook for each incoming student which is assigned to them for their 4 years of high school. Content filtering mechanisms are utilized that ensure appropriate educational use whether they are being used inside or outside of the building. Families are periodically surveyed, and other data is utilized to identify students who may not have access to the Internet at home. When identified, guidance staff works with the families to help them either sign up for reduced-cost internet or supply them with a district-owned hot spot.

Student Chromebooks are licensed and managed by the District with all necessary software pushed to the device via the Google Admin Console. Students are programmatically prohibited from installing software to ensure that unlicensed software does not get installed. If a student or faculty member requires software not pre-installed, there is a mechanism in place for them to request the software through the IT department. When requested, the IT department verifies academic need, compliance with privacy rules, and licensing requirements. If approved, the software gets pushed to the devices by the IT department.

Teachers are issued a device appropriate for their needs. Most elect for a Windows laptop but we do still have a few who prefer a desktop computer or an Apple MacBook where needed to support program-specific software. 90% of classrooms are set up with 65-75" LCD touchscreen devices with integrated PC's. The remaining 10% elected to have LED TV's mounted on the wall with micro PC's mounted behind the screen. Staff either utilize the integrated PC's using a wireless keyboard/mouse to control these devices or can utilize software integrated within the device to allow for wireless presentation to the devices.

Our network infrastructure consists of 3 IDF's feeding 1 MDF, connected via redundant and physically separated 10gb fiber so that an outage in one area will not affect the entire building. Lab spaces or departments requiring higher bandwidth have dedicated switches. Only the MDF is air conditioned and backup power is provided only by a UPS in the MDF; there is no backup generator power available to the core network devices. Wired connections are available in all areas of the building along with wireless access points throughout the facility to provide sufficient wireless coverage to support our needs. We do not currently have any wireless coverage to the outside of the campus. Additionally, the building materials of the school severely impacts the coverage area of our wireless access points.

The Technology department at SST consists of the Director of Technology, one Technical Support specialist, and one Administrative Assistant. Additionally, during the school year students in our Computer Information Technology Department provide front-line technical support as appropriate. The IT office has moved 5 times in the past 15 years to help alleviate space issues in the building. We are currently located in an off-campus building located next to the school. The three members of the IT department are in one small room with enough space for just our 3 desks and our computers. Inside the School we have a dedicated space located adjacent to our MDF which allows for storage of our parts and a work surface to perform hardware repairs. We also have shelving space available in some of the IDF's to allow for some additional storage. The lack of space and storage is a critical problem. The department needs a central location with sufficient office space, meeting/training space, space for benchwork, and space for storage of not only small parts (computer components, wires, cables, etc.) but also for large AV equipment. When large purchases are made, which happens every summer and several times throughout the school year, we have to find a classroom or conference room to take over for storage and configuration prior to distribution to students/departments.

Physical security of network components and equipment is also a critical issue. Since the IDF's are not air conditioned and, in many instances, are in a location that is shared storage for other things, often the doors are left open (for ventilation) and many people have access to these areas. In a new or redesigned building it is imperative that our network closets are dedicated spaces with adequate conditioning/ventilation, that our storage areas are secure, and that our office and work spaces provide the ability to train and support our staff while also keeping the expensive equipment and sensitive data secure.

Our phone system is an antiquated local PBX -that is under the control of our Building Grounds and Maintenance Department. We recently installed a SIP gateway to allow for some very limited VOIP capabilities. Our Internet and phone lines are serviced by a dedicated 1gb symmetric fiber connection, with a backup 100mb broadband connection. We also maintain a 300mb fiber EPL between the main campus and the adjacent building housing the District Office. The District Office is utilizing Zoom Phone which we hope to be able to expand to the entire school as part of a renovation. This was not feasible currently due to the CAT3 wiring that is currently in place to each phone in all the classrooms and offices.

[South Shore Technical currently utilizes FM-based assisted listening devices to accommodate individuals with hearing impairments. The District plans to continue this process with a new or upgraded building.](#)

The IT department at SST is dedicated to providing the resources, support, and infrastructure required to meet the technical demands of our students and staff. We aim to follow industry best practices for managing and maintaining a robust, secure and reliable infrastructure.

Impact for Design: Technology Instruction Policies and Program Requirements

- Design should assume that there is easily accessible technology throughout the building and grounds.
- 1:1 technology for students
- Plentiful access to charging stations for portable devices
- All industry standards for reliable connectivity should be implemented.
- **Staffing:** 2 additional technical support staff; 1 additional instructional support staff.

K. Art Program

SST does not have a visual arts program, but there is an extracurricular Art Club. SST's art club uses a shop footprint for meetings and then has spring presentation displays in the gymnasium.

Impact for Design: Art Program

SST does not envision adding a formal Art program to the curriculum.

L. Music/Performing Arts Program

SST has a popular extracurricular Drama Club that competes regionally. They have performances on campus and require rehearsal space. The Drama Club currently uses classrooms for rehearsal and also occupies our only undersized 65 seat lecture hall for set design and construction each spring.

Impact for Design: Music/Performing Arts Program

SST does not envision adding a formal Music program to the curriculum.

- Multipurpose space with a stage and raised seating for presentations, larger group workshops and instruction and performances is necessary. Such an area will support the whole school and also foster opportunities for arts programming at SST that does not exist currently.
- A flat-floor space with retractable seating may be particularly appropriate for SST's variety of presentation and performance needs.
- Adequate adjacent storage and backstage support spaces should also be provided.

M. Library/Media Center

The school has scaled back its library media center out of necessity to make more room for its Chapter 74 programs. The LMC occupies a portion of our lecture hall. It is staffed by a 1.0 Library Media Specialist. The space is too small to accommodate classes but it is adjacent to the sole 65 seat lecture hall which can be used under some circumstances as alternative instructional space. The tiered seating does not lend itself to much collaborative activity. The space is open by appointment for teachers/classes and is also open during the 9th period window each day.

Impact for Design: Library/Media Center

- The future of the LMC is in its programming and support for digital literacy and research skills initiatives.

- The space must be flexible enough to accommodate whole classes, as well as individual students (before, during and after school), and equipped with flexible furniture, mobile technology and supporting equipment for demonstrations and presentations.
- Interior rooms for quiet study, small group discussions and work space for the library media specialist are also essential ingredients. After hours, the LMC is an ideal place for meetings, PLC meetings and after school club activities.
- Note: In the event of space limitations, the LMC does not need to be a single location, but rather could be decentralized in smaller gathering hubs throughout the building. The Library Media Specialist would push-in most services into instructional areas, gathering with students in more than one location as needed.
- **Staffing:** ~~None~~ No expansion; current staffing is one licensed library media specialist

O. Special Education

The Special Education Department continues to expand as our student population and needs increase. Special educators are dual-certified and can be assigned a classroom where they are the lead teacher with a paraprofessional or are in a co-teacher model.

The number of students with disabilities tends to average around one third of our total student population. Our students tend to be classified in the low to moderate disability category with a very small number of severe needs. In the academic settings, teachers are working on goals in the areas of reading, writing, math, and comprehension. Our speech and language pathologist works on goals in the areas of executive functioning, social, and communication/language skills. Our adjustment counselors work closely with students with goals in the area of social / emotional and self-advocacy. In the vocational setting, students' goals are in the area of employability and self-management/task initiative.

The district's special education approach is one of inclusion, to the greatest extent possible. There are no substantially separate programs that would require dedicated, self-contained classrooms. Our co-teaching and paraprofessional supported model creates opportunities for students with disabilities to learn among their non-disabled peers in both the academic and vocational settings. Although this model is a success for student learning and growth, there is a shortfall in the pockets of space available for special educators and paraprofessionals to work in small group settings to reteach, review, and accommodate appropriately for testing purposes. Staff tend to shuffle quickly to find a space available around the building which can take up time. Classrooms should have small areas within the space that allows for small groups of students to get what they need through direct instruction and/or to support collaboration and teamwork. An area where students do not feel they are being pulled out or taken away from the rest of the class. The movement to this space should flow so it does not disrupt or distract.

In addition to the classroom space, there should be a more centralized area for students to receive tutoring and/or support in a learning center space that is open before, during, and after school. This space could be used for our MA Rehab Liaisons who work closely with a sub group of students on PRE-ETS skills.

Impact for Design: Special Education

- The Special Education Department consists of the Director of Special Education, Team Chair, School Psychologist, Speech and Language Pathologist, 2 Adjustment Counselors, 7 Special Educators, 7 Special Education Paraprofessionals and 1 BCBA (contracted position).

- The administration offices should include an area for the special ed director and the administrative assistant to store files and conduct all special education operations.
- There should be a private office for the team chair, school psychologist, speech and language pathologist, and BCBA (as needed).
- In addition, the office space should include a dedicated conference room to accommodate the numerous in person and virtual meetings with parents, staff, students, and specialists.
- In the academic classroom zone of a new or renovated building there should be Special Ed spaces in a variety of sizes convenient to the general classrooms. These spaces could range from one-to-one tutoring to 8 to 12 student small groups.
- SST has staffing and space limitations during MCAS testing. Older students in grades 11 and 12 are placed on a delayed start because of the number of teachers and paraprofessionals needed for small groups and 1:1 accommodations. These required accommodations create spacing issues where students are using larger classroom spaces. More ideal arrangements in a new building would include small break out areas for testing purposes, not just for MCAS but also for IEP evaluation testing.
- **Staffing:** 1 teacher for every 90 students; 1 paraprofessional for every 90 students

P. Target Service Programs

1. MCAS Support

Academic staff and paraprofessionals support students to prepare for MCAS. Our content teachers are on the frontlines of delivering instruction in their settings. Remediation occurs for students in a variety of ways to ensure that each student has the opportunity to prepare for an MCAS assessment. Staff works together to identify the areas of strengths and weakness that each student possesses. Any student including additional support will be invited to a series of MCAS **Bboot Ce**camp sessions which run after school in the areas of ELA, math, and science. In addition, we offer MCAS support during p. 9 or during shop week. All support offerings vary depending on the students' current identified needs.

2. After School Homework Club

The after school homework club is a space where students have the opportunity to work with paraprofessionals in core subject areas. During this time, students have the opportunity to work on assignments and review for assessments. They receive the support that is just right for them. Some prefer to work with staff one-to-one, in a small group, or choose to work independently. Teachers, paraprofessionals, and counselors utilize this time to build relationships with students, help fill gaps, and accelerate learning. The homework club is available for students Monday - Thursday after school. Students have the option to stay until 4 pm or they can be picked up when they are done. The At-Risk Coordinator manages the space to keep track of student attendance and assignments, and communicates with teachers and the administrative team as needed.

3. English Language Learner Support

Our ELL student population is fairly small, about 1-2%. Our ESL instructor works with our ELL students directly in the classroom and during period 9 or during shop week. ELL students are scheduled into academic classes and our ESL is placed in their English and science classes. The instructor is dual certified in Special Education and ESL. Our ESL teacher supports her caseload of students in their

vocational programs working closely with vocational instructors. In addition, the ESL instructor shares the responsibilities of WIDA and ACCESS requirements with the Director of Special Education.

ELL's will be fully supported at the renovated or new South Shore RVTHS with additional classroom space to allow for an increase in ELL language production and peer interaction. A dedicated space will allow students to have exactly what they need to improve: time and practice. English acquisition cannot develop if students do not have a private and comfortable space to use language both conversely and academically. Teachers will have the space to teach students as a whole group, differentiate appropriately, and promote self-learning using a variety of visual aids and technology. A larger space will allow for explicit instruction in the areas of listening, reading, writing, and speaking.

Impact for Design

- Dedicated space for targeted services to be housed near common areas or main entrances to minimize student traffic throughout the building after school hours.

Q. Health Services/School Nurse

SST currently has 1 school nurse and is in the process of hiring a part time school nurse with a goal of furnishing an office as a satellite nurse station closer to some of the Chapter 74 programs. The current nurse's office space is too small, with inadequate space to attend properly to the varying needs of students. Space for private communications is also a challenge in this space. We did construct a small office and install privacy curtains to address these limitations, but it is not enough.

Impact for Design

- There is a need for 2 health services areas, with at least one in close proximity to shop areas where most accidents occur and one closer to the main entrance and Student Services area.
- Each area needs a single use bathroom, office and consultation space and privacy curtains, and adequate storage for medical supplies.
- **Staffing:** None. The goal will be to have 2 school nurses on staff for the current building footprint. No new staff will be added.

R. Vocational Education Programs and Cooperative Education

1. Current Conditions and Impact for Design

a. Allied Health

- **Staffing:** 2 teachers, 0.5 aide
- **Space:** 1 shop space and one adjacent lab/classroom
- **Space Utilization:** 100% of school day
- **Description:** The current Allied Health shop space is 1680 sq ft which is used for up to 24 students and two teachers. In 2008 NEASC recommendations included reorganizing the shop area, which was done promptly. Despite these adjustments, there is a lack of space preventing an increase of students while still maintaining the course curriculum as currently designed. The current footprint contains 4 bed bays which are used for most clinical skills, 1 doctor office setup and an anatomage table. The shop space also has 15 tables that seat a total of 30 students and 9 tables in the related classroom that seat an additional 18 students.

- Allied Health has a rigorous curriculum that includes both lab and clinical experience. Students ultimately work to obtain their Certified Nursing Assistant License and are exposed to other industry certifications including EKG, OSHA, CPR and Home Health Aide. With a new or expanded facility we would incorporate a Medical Assisting program to operate under the same umbrella which would provide additional opportunities to our students seeking the medical field. Upperclassmen often participate in our school's cooperative education program.

Impact for Design: Allied Health

- A properly sized lab for science-related courses
- Shop space for skills practice and application
- A classroom setting for theory and medical terminology coursework which is a significant part of the program
- Space for simulated hospital beds to practice patient care
- Space for simulated office setting
- **Staffing:** 1 additional teacher

b. Automotive

- **Staffing:** 4 teachers
- **Space:** 2 non-adjacent shop footprints; one windowless classroom
- **Space Utilization:** 100% of school day
- **Description:** Structurally, the Automotive shop has remained the same since it was built in 1962. The shop has 3,458 sq. ft. of instructional space for up to 30 students on any given instructional day. There are not enough stations for students to train effectively. High student to station ratios (e.g. working on cars) means that students are not able to practice sufficiently the skills being taught. The current automotive program consists of two separate footprints. The footprints have a total of -20 workstations consisting of lifts, lecture area, tire mounting and balancing area, tool crib, spray booth, paint prep and tire repair stations.
- Automotive has a rigorous curriculum that includes station and lift areas. Students work to learn all aspects of the automotive industry including the collision repair component. The program is accredited through NATEF and students obtain up to 8 student ASE's in addition to industry credentials in SP2 and OSHA. Upperclassmen often participate in our school's cooperative education program.

Impact for Design: Automotive

- Sufficient stations so that two students can work on one car to practice skills taught in the shop.
- A dedicated diagnostics bay and tire mounting/balancing and brake machining repair area.
- A dedicated -engine and transmission repair area to be used for senior projects and tear downs.
- Sufficient storage that does not compromise instructional space
- An interior classroom for ease of theory instruction for whole group and small group supports.
- **Staffing:** No changes

c. Carpentry

- **Staffing:** 3 teachers, 0.8 aide
- **Space:** 1 shop space; 1 non adjacent shared classroom
- **Space Utilization:** 100% of school day
- **Description:** The Carpentry shop is undersized and the instructional model depends entirely on (a) students being placed on co-op and (b) 11th and 12th grade students who are not on co-op having an off campus or outside-the-shop project. Horizontal work stations are only recently enhanced through a state grant for more equipment. Ratios of fixed equipment to students are high, increasing waiting times on projects. The current carpentry program consists of 8 benches which are able to have 2 students per bench yielding 16 available spaces for students. In addition to the workbenches there are an additional 10+ workstations that are made up of equipment such as the drill press, planer, router tables, joiners and more. The program has the ability to add more benches after the outside renovation is completed. In addition, the upperclassmen work on outside jobs/projects which helps alleviate the pressure in the footprint
- Carpentry is starting to utilize the new NCCER curriculum as outlined in the updated MA draft frameworks. The new curriculum outlines specific learning levels and tiers divided by grade level. Students in our carpentry program obtain credentials in OSHA, Hot works, and Power actuated fasteners. Underclassmen students work in stations throughout the shop on various tiered projects and upperclassmen typically work on live off campus work. Upperclassmen often participate in our school's cooperative education program.

Impact for Design: Carpentry

- A renovated shop space will have more equipment, adequately spaced.
- It will be large enough to properly accommodate the students in the program in the event that co-op numbers and/or availability of off campus projects was limited
- There will be more horizontal table space for underclassmen to learn the basics of the curriculum.
- **Staffing:** 1 additional teacher

d. Computer Information Technology

- **Staffing:** 2 teachers
- **Space:** 1 shop space (no related space)
- **Space Utilization:** 100% of school day
- **Description:** The CIT program is housed in essentially two adjacent classrooms, with students segregated by grade level at opposite ends of the program. Conflicting noise levels and activities between the groups is oftentimes distracting. Power supply needs are often a challenge. The current footprint has 14 tables on one side of the room and 11 tables on the other side of the room. They have an additional 3 other tables in the middle of the room. They are able to accommodate up to 30 students with the current amount of seating.
- Computer Information Technology students work at desk stations in the shop footprint. Students obtain various credentials in Python, Lennox, Cyber and Microsoft certifications. Students also have the opportunity to take AP credits in an embedded Computer Science course. Upperclassmen often participate in our school's cooperative education program.

Impact for Design: Computer Information Technology

- A renovated shop space would have provisions for noise reduction between grade levels, adequate power supply for changing technology/device needs, and
- a common area for the program that will allow for demonstrations and the location of equipment

that it used at multiple grade levels.

- **Staffing:** No changes

e. **Cosmetology**

- **Staffing:** 3 teachers
- **Space:** One shop area for salon/live work and a renovated classroom adjacent for underclassmen training
- **Space Utilization:** 100% of school day
- **Description:** The program has an undersized space for grade 9 and 10 students. Students are in close proximity and there are line of sight challenges for the instructors and students to see demonstrations. There is a salon area open to the public that needs additional space to accommodate additional grade 11-12 students to take on clients. The current footprint includes 14 wet styling stations (with sinks), 14 dry styling stations, all have rolling station with drawers, 2 shampoo bowls, 2 facial beds and vanity with sink, 2 wax stations, 1 pedicure chair, 6 manicure stations in the salon, 8 portable manicure tables, Reception area and a Supply/dispensary area. The department also has a learning lounge with seating for 14+ (can accommodate 28 to fit both classes).
- Cosmetology focuses on providing students the skills and knowledge needed to take and pass the Cosmetology State Board License. The tiered instruction includes units on wavy and curly Hair, various haircuts and styling, manicures & pedicures and facials. In a new or expanded facility we would look to include a Barbering aspect of the program to provide students additional pathways in the industry. In addition to the State Board Exam, students also obtain their OSHA certification as well. Upperclassmen often participate in our school's cooperative education program.
-
- Program hours used toward licensure requirements
 - 1,000 hours obtained to sit for the Cosmetology State Board exam
 - 500 of those hours can be put towards 1,000 hour requirement for barbering
 - The Cosmetology program is required to meet the State Board of Cosmetologist's facilities requirements.

Impact for Design: Cosmetology

- Properly sized space for grade 9-10 student instruction that includes separate space for chemicals and storage
- Properly sized salon in proximity to the waiting area with adequate space for storage, chemical storage and an aesthetician space.
- Future program expansion considerations to include barbering.
- A reception area for clients separated from the instructional space while waiting for services
- Design location in an area that is secure and easily accessible for the public.
- Dedicated related theory space for classroom instruction, industry demonstrations and career seminars.
- **Staffing:** 1 licensed paraprofessional (0.8)

f. **Culinary Arts**

- **Staffing:** 3 teachers, 0.5 paraprofessional

- **Space:** One shop space including a front and back of the house restaurant, dry storage space, locker rooms and student restrooms, and an adjacent classroom that is often used by academic classes
- **Space Utilization:** 100% of school day
- **Description:** The program has inadequate space for serving customers in our restaurant, including space for take-out food, bakery displays and service area storage. A proper demonstration area outside of the restaurant for service training and cooking skills is necessary. It was converted due to a lack of academic classroom space. The current footprint includes 40+ workstations including the line, prep area, grills, steam kettle, ovens, bakery stations, mixers, dishwashers and front of the house.
- Culinary Arts operates its curriculum in three different areas of the industry. Students are rotated on a trimester model via hospitality or front of the house, baking & pastry, and line/fry cook & salad station. Students are also exposed to running a full service restaurant and utilize our culinary arts Viking Food Trailer both on and off campus. Students obtain various ServeSafe certifications in addition to OSHA. Upperclassmen often participate in our school's cooperative education program.

Impact for Design: Culinary Arts

- Restaurant service space to house at least people with the potential to section off an area for business meetings for community groups while allowing for patrons to enjoy lunch at the restaurant.
- Adequate space for take-out so that it does not crowd patrons sitting for lunch.
- Improved line of sight supervision from the restaurant into the back of the program.
- Dedicated related theory/demonstration space.
- **Staffing:** 1 additional teacher.

g. Electrical

- **Staffing:** 4 teachers
- **Space:** One shop space with student restrooms; adjacent classroom
- **Space Utilization:** 100% of school day
- **Description:** Students are being instructed in booths that are stacked (a second floor). The program popularity (highest enrollment) would be adversely impacted were it not for high co-op placement and available projects to be undertaken around the building. The electrical footprint currently consists of 32 workstations (booths) throughout the shop.
- Electrical's rigorous program curriculum has underclassmen working on booth based/station based work in the shop footprint along with learning the code requirements in the related course of the program. Upperclassmen work on live jobs performing residential, commercial & industrial work both on and off campus. In a new or expanded facility we would look to partner up with a local habitat for humanity additional off campus work and education. Upperclassmen often participate in our school's cooperative education program.
- Program hours used toward licensure requirements"
 - 2,000 hours of electrical shop/working
 - 300 hours of Massachusetts electrical code training

Impact for Design: Electrical

- Adequate space to accommodate students with ground floor instructional space.
- **Staffing:** 1 additional paraprofessional (0.8).

h. Manufacturing Engineering Technology

- **Staffing:** 2.5 teachers, 1 aide
- **Space:** 2 non-adjacent shop footprints; 1 adjacent classroom
- **Space Utilization:** 100% of school day
- **Description:** The program has excellent equipment at reasonable student to equipment ratios, but it has been placed in a space that is too small. There is a clean room that was retrofitted under a mezzanine as part of the adjacent program and there is no dedicated classroom space within the shop. There is no demonstration space for students. The current footprint consists of two separate shop spaces. There are 25 machine stations not including secondary machines like saws and drill presses. The 306 footprint has an additional 16 machine stations.
- Manufacturing Engineering Technology consists of three programs in one. Students are exposed to different levels of tiered instruction in advanced manufacturing, electronics, CAD and engineering. Students obtain several industry-recognized credentials including OSHA, Hot Works and MACWIC. Upperclassmen often participate in our school's cooperative education program.

Impact for Design: Manufacturing Engineering Technology

- Program space must take into consideration the placement of existing equipment and the potential for new industry equipment.
- Space for students and teachers to gather on the shop floor
- Adequate ground level storage
- Larger clean room/inspection room
- Dedicated related theory classroom
- **Staffing:** No changes

i. Design Visual Communication

- **Staffing:** 3 teachers
- **Space:** 1 shop space with interior classroom, interior copy center, interior paper storage and student restrooms
- **Space Utilization:** 100% of school day
- **Description:** The program has important instructional areas that require both traditional classroom space with 1:1 devices, as well as the need for larger ventilated space for silk screening, paper cutting and copy/print areas. The program is housed in a high bay area currently but that is no longer necessary due to changes in industry over the last 30 years. The current footprint is made up of 45 workstations including computers, printers, screen printing, cutters and other various equipment.
- Design & Visual Communications operates as two programs in one and it also consists of a graphic communications curriculum. Students are exposed to all aspects of both industries and complete live work on a daily basis. The program is also expanding into photography and videography as well. Students obtain numerous credentials through the Adobe suite along with OSHA. Upperclassmen often participate in our school's cooperative education program.

Impact for Design: Design Visual Communication

- Dedicated computer lab/design space.
- Specialized space for digital content creation (e.g. studio) and photography.

- Adequate paper and supplies storage.
- Consideration for layout of the silkscreen area and the other larger equipment in the program.
- Development of this program as a front facing program with a public presence for services and products.
- Display/storefront area for work products.
- **Staffing:** No changes.

j. Horticulture Landscape Construction

- **Staffing:** 3 teachers
- **Space:** 1 shop space inside the building; 1 barn area for outside work, 1 greenhouse non adjacent to the barn area
- **Space Utilization:** 100% of school day
- **Description:** The Horticulture program is housed in disparate locations making the program coordination a challenge. There is space inside the school for a shop setting used for related instructional and floral arrangements; however, the space cannot contain 2 grades of students, which means that one grade is usually in an outside location. The horticulture program currently has 8 work stations in the barn for irrigation clock wiring, landscape lighting, and raised hardscape projects. The classroom/shop has table seating for 40 students. The department has more than 20 individual pieces of equipment for use throughout the day. In addition, the department has a greenhouse which also has 10+ student stations/workbenches.
- Horticulture Landscape Construction has a tiered curriculum that exposes students to all aspects of the green industry. This consists of landscape maintenance, turf, irrigation, arboriculture, greenhouse management, equipment operation and more. Upper and underclass students work on live work both on and off campus. Students are also exposed to DynaScape, a CAD based program for landscape design in addition to pesticide and hoisting license training. Students also obtain their OSHA certification. Upperclassmen often participate in our school's cooperative education program.

Impact for Design: Horticulture Landscape Construction

- First floor program placement with easy outdoor access to greenhouse and grounds equipment and vehicles.
- Single indoor space large enough to accommodate the wide ranging parts of the curriculum.
- Dedicated classroom space within the shop footprint.
- Flexible furniture that can be used for lab space, flower arranging, small equipment repair and traditional classroom work.
- **Staffing:** 1 additional paraprofessional (0.8).

k. HVAC-R

- **Staffing:** 3 teachers
- **Space:** 2 adjacent shop spaces connected by an open wall; no adjacent classroom; student restroom
- **Space Utilization:** 100% of school day
- **Description:** We added a third teacher to this program to expand the program's outreach into plumbing. We are relegated to storing materials in outside storage containers and rack storage adjacent to the shop. Students often work outside the shop in an adjacent courtyard when weather

permits. The current footprint consists of 60+ workstations including boilers, work tables, sheet metal fabrication, refrigeration stations, sink workstations, water heater stations, and plumbing booths. Currently curriculum includes working with heat pumps and ductless systems but have not ventured into solar or net zero HVAC systems. However, these are legitimate curriculum goals that could be pursued with a new, larger shop that has the capacity to house more equipment.

- HVAC/R has a rigorous curriculum. Underclassmen work in stations/booths exposing and learning various parts of the industry. Our upperclassmen work on live work both on and off campus. Students obtain several credentials including OSHA, Hot Works, EPA, Universal 608a and more. In a new or expanded facility we would separate out plumbing from our existing HVAC-R program and make it a standalone Chapter 74 program. Upperclassmen often participate in our school's cooperative education program.
- Program hours toward code/licensure requirements
 - 750 hours of refrigeration shop instruction
 - 150 hours of refrigeration theoretical instruction
 - 100 hours of Massachusetts electrical code training
 - 150 hours of shop for sheet metal
 - 150 hours credit toward the work hours requirement for a Pipefitters license

Impact for Design: HVAC-R

- Dedicated theory classroom
- First floor priority for material delivery
- Equipment layout that does not impact supervisory line of sight
- Ventilation system with sufficient capacity to handle increased enrollment
- **Staffing:** a third HVAC teacher if there is a separate Plumbing program established

I. Metal Fabrication Welding

- **Staffing:** 3 teachers
- **Space:** 1 shop space with interior classroom
- **Space Utilization:** 100% of school day
- **Description:** The metal fabrication & welding program is properly spaced for current enrollment only. The lighting and ventilation system are not ideal but we have made recent improvements. The shop has an undersized, windowless related room adjacent to the shop. Supervisory lines of sight are challenging. The current shop footprint is made up of 14 stick booth work stations, 8 mig booths, 8 oxy fuel stations and 8 work benches which accommodate 2 students each for a total of 16.
- Metal Fabrication & Welding has a robust curriculum. Underclassmen work in booths and stations on various projects used to develop and grow specific skills. Upperclassmen work on project based and live work both on and off campus. Students obtain several industry-recognized credentials including OSHA, Hot Works American Welding certifications and Upperclassmen often participate in our schools cooperative education program.

Impact for Design: Metal Fabrication Welding

- Dedicated theory classroom
- First floor priority for material delivery
- Equipment layout that does not impact supervisory line of sight
- Ventilation system with sufficient capacity to handle increased enrollment
- **Staffing:** 1 additional teacher

2. Additional Considerations for Chapter 74 Space

a. Potential Expansion of Chapter 74 Programs

SST identified several potential Chapter 74 programs that are economically viable in the Southeast Region and the Department of Elementary and Secondary Education concurred that these programs, while subject to the Chapter 74 approval process, are seen as viable. Two 'stand alone' programs, Animal Science and Plumbing and one integrated program, Medical Assisting are being considered as part of early design models.

Potential Program	Stand Alone or Integrated	Status
Veterinary Science	Stand Alone	Recommended for design consideration
<i>Biotechnology</i>	<i>Integrated with Manufacturing Engineering Technology</i>	<i>Not recommended at this time</i>
<i>Dental Assisting</i>	<i>Stand Alone</i>	<i>Not recommended at this time</i>
<i>Early Childhood Education</i>	<i>Stand Alone</i>	<i>Not recommended at this time</i>
Medical Assisting	Integrated with Allied Health	Recommended for design consideration, but not as a stand alone program.
Plumbing	Integrated with HVAC-R initially but eventual Stand Alone	Recommended for design consideration

Impact for Design:

Plumbing:

- High bay shop space, ideally near HVAC program.
- Dedicated related classroom and bathroom within the shop footprint.
- Similar needs as other construction programs for power, lighting, ventilation, wall and table/work space.
- Plumbing would be a new program in a new or expanded facility. Underclassmen would work in booths and stations on various projects such as vanities, tubs, toilets and water heaters. Upperclassmen would work on and off campus, likely teaming up with habitat for humanity on various new construction projects installations. Students would obtain their OSHA certification and various other plumbing certifications. Upperclassmen will likely often participate in our school's cooperative education program.
- **Staffing:** 1 teacher to join the current Plumbing teacher who is part of HVAC program.

Veterinary Science

- Program would focus on veterinary assisting training.
- DESE has frameworks for veterinary science in draft version out for public comment at this time.
- Veterinary Science would be a new program in a new or expanded facility. Underclassmen would be exposed to lab based on shop projects and various off campus clinical work. Students would obtain their OSHA certifications and along with other potential certifications as

recommended by their advisory committee. As upperclassmen students would work on live customer work and live off campus work in a clinical setting as well. Upperclassmen would likely often participate in our school's cooperative education program.

- **Staffing:** 2 teachers and one technical aide.

Medical Assisting

- Additional minimal space within the shop footprint to accommodate curriculum equipment and supplies.
- **Staffing:** 1 teacher to be integrated with the Allied Health program.

After construction has finished, the Plumbing program could be implemented immediately after obtaining DESE approval. Animal Science and Medical Assisting would take one year to implement, subject to appropriation.

b. Skills USA/FFA

We also have robust co-curricular SkillsUSA and Future Farmers of America (FFA) activities throughout the school year, mostly in the form of competitions at the local and state level.

Impact for Design:

- After school space is essential for students to have meetings and practice for competitions. A multipurpose auditorium space is ideal for such use.
- The district would use the multipurpose auditorium throughout the year for training and practices for upcoming State and National Conventions along with Regional/District competitions. The multipurpose room would allow the organization the opportunity to set up the room for specific competitions whether it be for a student running for a National Officer position or a student practicing a demonstration or work skill in front of a large audience. The setting would provide the opportunity for students to practice in the same type of environment they will be exposed to during the competition. The space also allows for flexibility depending on the time of year and competition coming up. FFA competitions occur throughout the school year, and they will expand with Veterinary Science coming on board as well. Some of these competitions also require outdoor training/practice space which would be available for students to use for competition preparation.

c. Cooperative Education/Internship Program

SST is proud to offer the benefit of cooperative education and internships to our students and businesses within our communities. We rely on businesses to support our mission of providing rigorous and relevant hands-on instructional experiences in order to develop confident, civic-minded students who achieve ambitious career goals leading to their personal fulfillment, economic independence, and a positive impact on their community. In return, employers are able to recruit and hire eager workers who are well versed in the language, procedures, and technology of the industry.

We believe in the value of experience-based learning. Our goal is to engage students in a process of learning that links work and experience with classroom knowledge. The educational opportunities that employers afford our students speak volumes to their commitment to youth, education, and community.

We provide qualified students who have obtained 1.5 years of specific shop experience, are licensed (if applicable) and who best fits your needs. Employers will interview our students and if it's a good match, the student is hired as an employee of the company.

Following Chapter 74 Cooperative Education guidelines, students who are 16 years of age and older, with appropriate skills, grades and interest may participate in the Cooperative Education/Internship program. Seniors are eligible for co-op at the start of each school year and Juniors become eligible after the first half of each school year. Students participating in co-op are required to pass in a weekly timecard and journal indicating their hours worked (minimum of 30) and a paragraph explaining the work experience for that week. In addition to the student timecard, the employer also fills out a timecard which lists the hours worked by the student and comments & or concerns the employer might have. Our cooperative education agreement is signed electronically in DocuSign by the employer, student, parent, vocational teacher and the Director of Vocational Education.

Impact for Design: Cooperative Education/Internships

- Dedicated office space for the cooperative education program is essential. It must in proximity to Chapter 74 instructional areas and easily accessible for employers when visiting the school
- Space should include a conference room, office for an administrator and space for an administrative assistant, plus waiting room space for students.

S. Transportation Policies

SST owns its bus fleet and employs its own drivers. We currently own 15 buses and six 14 person vehicles used for field trips, athletics and Chapter 74 program transportation to job sites. We employ 11 bus drivers and our 6 custodians are required to maintain bus driving licenses as well to service as bac up bus drivers. SST has a Transportation Coordinator who manages maintenance, scheduling and routes.

In the 2023-2024 school year, SST operates 13 bus routes for district communities, running morning pick up and afternoon dismissal runs, along with daily late bus (4PM and 6PM) -routes for students staying after school for extra help and athletics respectively. Athletic runs are also handled by our staff.

One of our significant space challenges is that we house our own fleet on campus which takes up the equivalent of 55 student parking spaces, and this space is difficult for bus drivers to park and turn around buses. With a new building and a well-designed layout, we can have adequate space for buses to be stored when not in use, and to mobilize for the crowded dismissal window in an area that does not interfere with parent pickup.

With additional student enrollment the district will need to anticipate more space on campus for bus storage, and will likely need to consider leasing or purchasing space off campus to house our bus fleet and/ or consider getting transportation services through a third party provider.

Impact on design: Transportation Policies

- Space for school bus storage on campus during the day that is easy to assemble for afternoon dismissal.

- Transportation coordinator office location in close proximity to the bus location that includes sufficient space for bus drivers to attend professional development meetings.
- Charging stations for eventual conversion to electric fleet as industry trends and cost allow.
- Supplies storage needed.
- Maintenance space for small repairs.
- Space for snow removal devices to be installed.
- **Staffing:** 1 Administrative Assistant for Transportation Department (shared with other operational departments such as food service and maintenance); 1 bus driver for every 60 new students.

T. Functional and Spatial Relationships

SST's leadership team met with New Vista Design in May 2023 to prepare for upcoming visioning sessions. Then on June 20, July 11, and July 18, 2023, SST's larger visioning group, consisting of 7 students, 9 teachers, 1 paraprofessional, 6 administrators, 7 parents/caregivers, participated in three virtual workshops run by New Vista Design. There was also a community forum held on July 13 for the SST community at large to hear about the visioning process and ask questions.

Workshop Three focused on reviewing the preferred Design Patterns, confirming the Guiding Principles and developing Whole-School diagrams. The EVG team worked in small groups with the aid of the Design Team to develop the following two Whole-School diagrams:

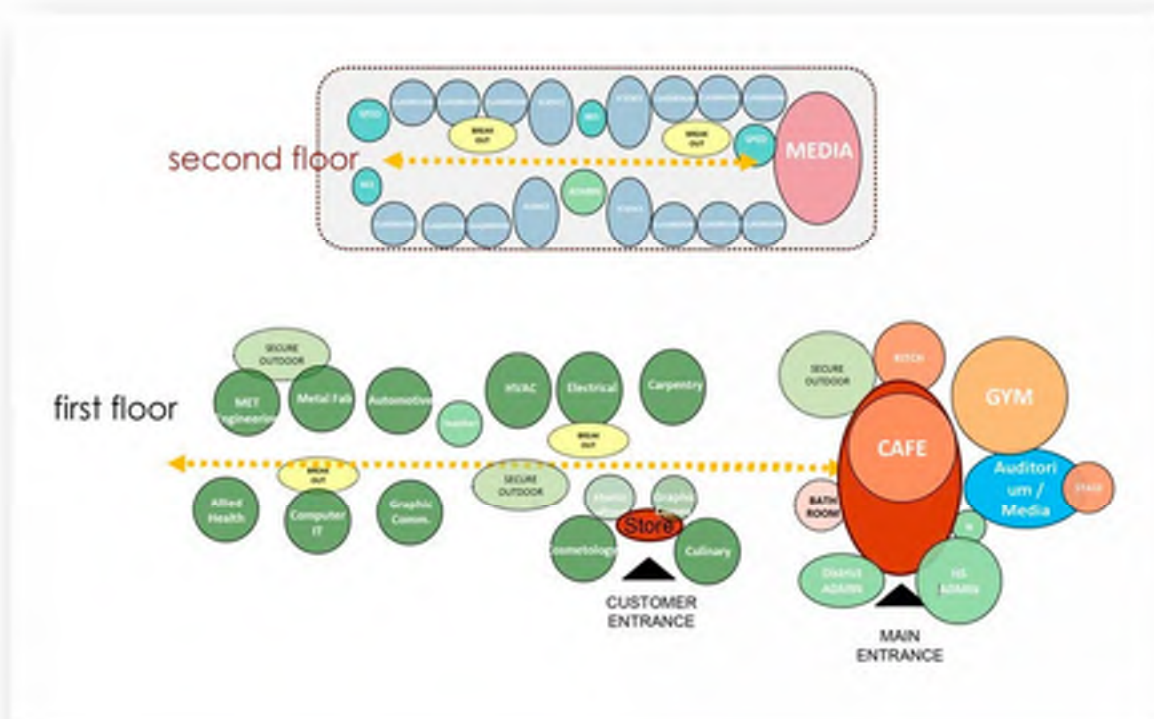


Diagram Attributes:

- Main entrance area with access to Administration, Nurse's Office, and an area for display in the main lobby area.
- Public spaces off the main entry that include the gym, cafeteria, and kitchen.
- A small café area for students who don't want to be in the large and loud cafeteria.
- A Media Center that serves as a flexible learning space right up front as a face for the building with an adjacent performance area.
- The ability to see a lot of activity going on in the entry area, including an enclosed courtyard behind, like the West Bridgewater Middle High School. Something that is open and gets kids outside.
- A separate community entry with access to some of the public shop spaces.
- Outdoor areas associated with some of the shops.
- A multi-purpose art room that is connected to Graphics and other shops that want to utilize art.
- Academic areas that are small clusters of classrooms and including Science Rooms and small group areas where quiet work can be done.
- A Student Services area that is adjacent to the academic areas and acts as a second administrative suite.

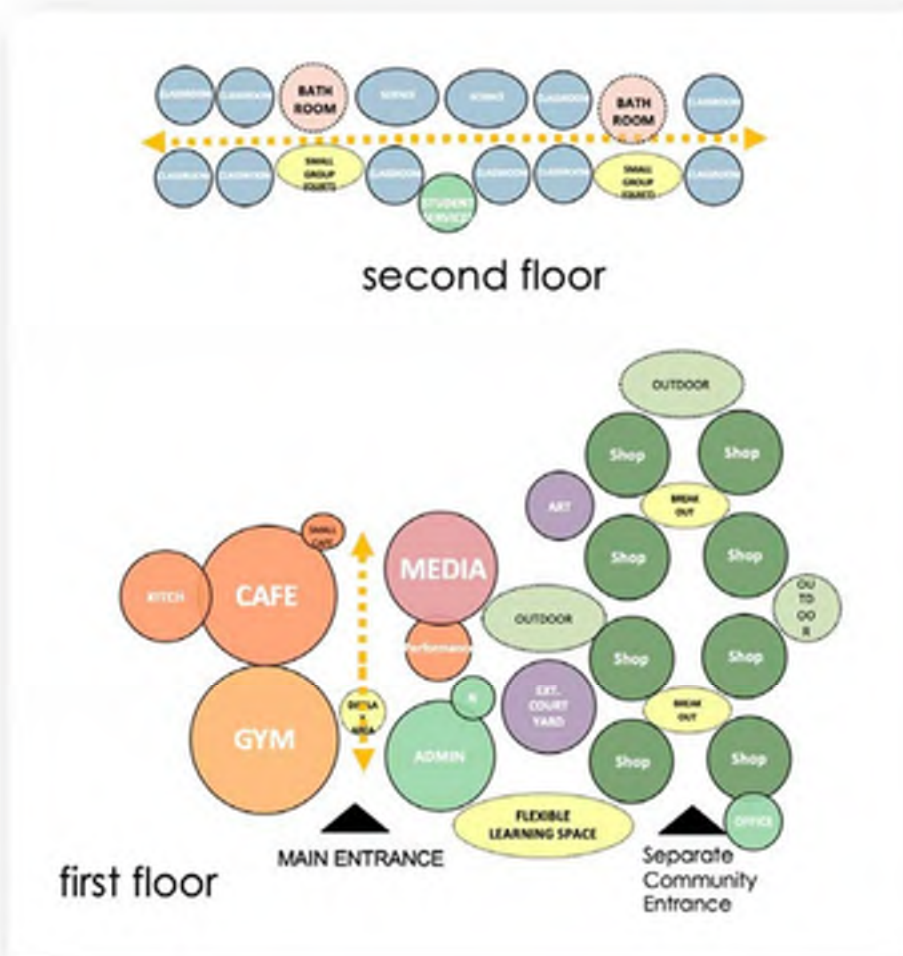


Diagram Attributes:

- The group is not sure about academic and career tech integration and what the real benefits and value are. In this diagram academics and vocational are not shown close together.
- There could be a potential 3-D connection between CTE on the first floor and academics on the second floor.
- A “heart of school” near the main entry, maybe the Student Commons.
- Separate customer entry that is limited in how far you can get into the school.
- A school store for not just Culinary and Cosmetology, but shops like Graphics, that makes and prints things, and Horticulture with plants to sell.
- Grouping shops in career clusters, such as MET and Metal Fab being next to each other because they share a lot of equipment and resources, and the construction shops.
- Separation between academic and public areas.

Impact on design: Functional and Spatial Relationships

- The Design Team will continue to explore options that capture the design attributes described in the above diagrams.
- The existing school layout has evolved over time in response to space needs and program changes. These changes have not always been consistent with the school's desired functional and spatial relationships. For instance, shops in similar career clusters, like the Construction trades, are not located adjacent to one another. Likewise, the Allied Health program occupies the space of the former Library at the end of a classroom wing. The visioning session identified the desire to cluster these programs by career area where possible.
- The administrative spaces in the existing building have also grown over time and have been located in random available spaces often without regard to desired functional relationships. The single teacher planning space in the existing school is under-utilized due to its remote location from many of the classrooms. The visioning sessions propose to have more, smaller planning rooms in close proximity to classrooms.
- Supervision of public access in the existing building is less than desired; the proposed vision calls for a common, single-entry point for both visitors and customers to the Culinary, Cosmetology, and Horticultural store programs.
- The District and Design Team understand the need to provide flexibility to allow for future program changes. The strategies to be considered include: standardizing the sizes of the CTE shops where practical; upsizing utility infrastructure to allow for a variety of future needs, providing long-span structural bays to minimize structural interference with potential future reconfigurations, maximizing the use of metal stud partitions in lieu of CMU partitions to facilitate reconfiguration, providing numerous overhead doors, multiple delivery locations, and multiple elevators for future flexibility.

U. Key Programmatic Adjacencies

The above diagrams capture the important adjacencies in SST's vision:

- Programmatic spaces that need to be near an entrance: Admin, SpEd Office, Nurse, Gym, Auditorium, public accessible CTE programs.
- A dedicated customer entrance for secure, but limited public access to Culinary, Cosmetology, and Horticulture's floral shop. If space permits, Design Visual Communications often has public traffic

(client consultations, work product pick up) and could benefit from proximity that is close to the customer entrance.

- Academic classrooms in proximity to the Library Media Center.
- Small group rooms and pullout spaces in close proximity to General Ed classrooms.
- Similar CTE shops grouped similar (but not limited to) Career cluster groupings.
- Science Labs paired with shared prep rooms, perhaps stacked; not necessarily in a department configuration.
- Administration personnel distributed through the building for supervision and accessibility to students.
- Teacher Planning rooms distributed through the academic areas in close proximity to classrooms.

Impact on design: Key Programmatic Adjacencies

- The key programmatic adjacencies are captured in the attached diagrams and listed above.

V. Security and Visual Access Requirements

1. Relationship with Host Community

SST has an excellent working relationship with our local police and fire departments. There is an SRO on campus 3 days a week/ Every year our SRO and Administrators work together to provide ALICE training to all staff and students. Our SRO also does a yearly security check and brings back a report for the school to review and make corrections. The District serves as one of the region's MedFlight Land Zones. It would be the intention of the District to remain one of the region's Med Flight Land Zones in a new or renovated facility.

2. Committees, Plans and Inspections

SST participates in annual fire department inspections of the building and maintains a current Emergency Action Plan and Medical Emergency Response Plan. SST has a school safety committee that meets throughout the year to discuss concerns and what we can do to resolve these concerns. This committee is organized by the Vocational Office.

3. Doors, Entrances, Visitors and Perimeter Security

The current facility has one main entrance but there is also a public entrance near our school restaurant and salon. Most exterior doors are equipped with electronic access control with cameras at their location. The entrance at the front of the building is locked after 8:00 AM. Upon entering, a visitor will encounter the reception desk only at the main entrance where they will have an ID scanned through our Raptor system and then issued an ID badge. This desk is equipped with a two-way radio, phone, and computer. Our Raptor program scans licenses then runs a rudimentary background check and generates a credential for the visitor to wear throughout their stay in the building.

One challenge to note as a regional technical high school is the community's use of the facility and the extensive number of vendors that deliver products to the school. Our Culinary Arts, Cosmetology, Auto

Tech, Metal Fab, Maintenance, Electrical, MET, and DVC all have frequent deliveries to the back of the building.

The existing facility has over 40 interior and exterior video cameras, with remote access. Currently the Hanover Police Department has access to our cameras, but the Hanover Fire Department does not. All camera views are digitally recorded and stored for approximately thirty (30) days.

4. Parking and Car Access

There is only one access road coming into SST. Currently, the facility has an easily discernible main entrance but then offers you two routes around the back of the building. The school is lined with parking spaces all around the footprint which is for visitors, students, staff and administration. Anyone coming to SST can drive onto campus without any check points off Webster Street. Our current entrance is set up to be one way as it is on a curve. All traffic comes in and either goes to the right or left. In the morning there can be a backup on the street as we have buses, student drivers, faculty and parents dropping the student off all happening in a short time frame.

The parking lot in front of the building is generally full. However, part of the lot is shared with those going into the salon and restaurant. This is a source of great concern and requires daily monitoring since visitors to the salon and restaurant regularly park in areas of the lot designated for SST.

Our exit at dismissal time has three lanes of traffic that merge into two lanes and also has crossover that results in congestion. In addition, parents who pick their students up tend to line up across the front of the building and also out on the street. Over the years we have had a few accidents due to the congestion while exiting the school. Our current parking lots do not allow for enough parking to meet our current demands.

Impact on design: Security and Visual Access Requirements

- With a new building we will have adequate parking for all staff, students and visitors.
- The new building will offer a better traffic flow when entering and exiting the campus. This improved traffic flow will help to limit accidents and also limit the public's access to the back half of our building.
- A new facility will allow for all entry doors to be better monitored and secured during the day and allow us to have every corner of the building monitored by surveillance cameras. A new system would be web based so it can be viewed by Administration even when they are not in the building.
- **Staffing:** 1 paraprofessional for building security.

[End of Educational Program]

|





3.3.4 C

Variations Between the Preferred Solution Report (PSR) and the Preliminary Design Program (PDP) Space Summaries

This narrative explains the reasons for variations between the Initial Space Summary contained in the Preliminary Design Program (PDP) along with the MSBA PDP review comments and the current Preferred Schematic Report (PSR) Space Summary.

Core Academic Spaces

The total net area for this category remains 27,640 square feet, unchanged from the PDP.

The District previously acknowledged the MSBA's review comment that this total exceeds the guideline by 4,380 sf. However, as the District responded previously the District believes that this space should be eligible for reimbursement as the proposed 18 General Classrooms and 6 Science Labs are required to meet their educational program. The District believes that the formula in the MSBA Guideline for this category should be modified. The Space Summary template assumes that the school's curriculum includes Art and Technology as scheduled classes and therefore reduces the number of required General Classrooms by the number of Art and Technology classrooms. However, most Career Technical schools, like South Shore Tech, do not have an Art curriculum (the students don't have room in their schedule). Therefore, the formula in the template for calculating the number of General Classrooms should be modified accordingly. The District believes the amount of space exceeding the guideline should be revised accordingly.

Special Education

The total net area for this category remains 8,190 square feet, unchanged from the PDP.

Art & Music

The total net area for this category remains 0 square feet, unchanged from the PDP.

As noted above, the District does not Art or Music in its curriculum. As noted in the District's PDP responses, the school's Art Club will utilize an available Classroom and/or the Design & Visual Communications Shop for its after-school activities.

Vocations & Technology

The total net area for this category of 89,260 sf has increased slightly by 1,260 square feet from the PDP.

This slight increase is a result of a review of several shop sizes relative to the recommended areas per student and a comparison with existing shop sizes. The CTE program of spaces remains consistent with the District's DESE Ch.74 Viability letter. Please note that the District's Exploratory program does not need dedicated space as explained in the District's PDP responses.

Health & Physical Education

The total net area for this category remains 18,770 square feet, unchanged from the PDP and equal to the MSBA guideline.

Media Center

The net area for this category remains 3,650 square feet, unchanged from the PDP and equal to the MSBA guideline.

Auditorium/ Drama

The total net area for this category is 6,700 square feet, 275 sf less than the PDP and 2,175 sf below the MSBA guideline. *The slight decrease in area was due to the reduction in the stage/platform and support areas to better reflect the intended nature of this multi-purpose space,*

Dining & Food Service

The total net area for this category remains 8,150 square feet, unchanged from the PDP and equal to the MSBA guideline.

Medical

The total net area for this category is 910 square feet, 100 sf less than the PDP and equal to the MSBA guideline. *This decrease was as a result of removing a separate "Mothers Room" from the program. This activity can be accommodated with the private rooms within the Nurse's suite.*

Administration & Guidance

The total net area for this category remains 5,948 square feet, unchanged from the PDP and 1,865 sf above the MSBA guideline.

Custodial & Maintenance

The total net area for this category remains 2,300 square feet, unchanged from the PDP and equal to the MSBA guideline.

Other

The total net area for this category remains 1,495 square feet, unchanged from the PDP and 1,495 sf above the MSBA guideline.

As noted in the District's PDP responses, the free-standing "outbuildings" have been listed in this category but with 0 square feet assigned to them, reflecting that they are part of the overall scope but not part of the main High School building and not eligible for reimbursement.

Total Net Area

The total net area (NFA) for the Preferred Option is 173,013 square feet is increased by 885 sf above the PDP total of 172,128 sf. The PSR total net area is 3,250 sf below the MSBA guideline.

Total Gross Floor Area

The total net area (NFA) for the Preferred Option is 256,350 square feet which is 1,840 sf below the PDP total of 258,190 square feet.

The grossing factor has been reduced to 1.48 in lieu of 1.50 due to the efficiency of layout of Option NC 2.0.







SUMMARY LEED SCORECARD - New Construction

Yes	?+	?-	No	Credit	Description	
			1	Credit	Integrative Process	1
1	1	2	11	Location and Transportation		15
				Credit	LEED for Neighborhood Development Location	15
		1		Credit	Sensitive Land Protection	1
		2		Credit	High Priority Site	2
		5		Credit	Surrounding Density and Diverse Uses	5
		4		Credit	Access to Quality Transit	4
1				Credit	Bicycle Facilities	1
		1		Credit	Reduced Parking Footprint	1
	1			Credit	Green Vehicles	1
8	0	3	1	Sustainable Sites		12
Y				Prereq	Construction Activity Pollution Prevention	Required
Y				Prereq	Environmental Site Assessment	Required
1				Credit	Site Assessment	1
1		1		Credit	Site Development - Protect or Restore Habitat	2
1				Credit	Open Space	1
3				Credit	Rainwater Management	3
		2		Credit	Heat Island Reduction	2
1				Credit	Light Pollution Reduction	1
			1	Credit	Site Master Plan	1
1				Credit	Joint Use of Facilities	1
7	1	1	3	Water Efficiency		12
Y				Prereq	Outdoor Water Use Reduction	Required
Y				Prereq	Indoor Water Use Reduction	Required
Y				Prereq	Building-Level Water Metering	Required
2				Credit	Outdoor Water Use Reduction	2
4	1	1	1	Credit	Indoor Water Use Reduction	7
			2	Credit	Cooling Tower Water Use	2
1				Credit	Water Metering	1
20	1	0	10	Energy and Atmosphere		31
Y				Prereq	Fundamental Commissioning and Verification	Required
Y				Prereq	Minimum Energy Performance	Required
Y				Prereq	Building-Level Energy Metering	Required
Y				Prereq	Fundamental Refrigerant Management	Required
6				Credit	Enhanced Commissioning	6
14			2	Credit	Optimize Energy Performance	16
	1			Credit	Advanced Energy Metering	1
			2	Credit	Demand Response	2
			3	Credit	Renewable Energy Production	3
			1	Credit	Enhanced Refrigerant Management	1

			2	Credit	Green Power and Carbon Offsets	2
4	1	1	7	Materials and Resources		13
Y				Prereq	Storage and Collection of Recyclables	Required
Y				Prereq	Construction and Demolition Waste Management Planning	Required
			5	Credit	Building Life-Cycle Impact Reduction	5
1		1		Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
			2	Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
1	1			Credit	Building Product Disclosure and Optimization - Material Ingredients	2
2				Credit	Construction and Demolition Waste Management	2
7	2	0	7	Indoor Environmental Quality		16
Y				Prereq	Minimum Indoor Air Quality Performance	Required
Y				Prereq	Environmental Tobacco Smoke Control	Required
Y				Prereq	Minimum Acoustic Performance	Required
2				Credit	Enhanced Indoor Air Quality Strategies	2
2	1			Credit	Low-Emitting Materials	3
1				Credit	Construction Indoor Air Quality Management Plan	1
1			1	Credit	Indoor Air Quality Assessment	2
			1	Credit	Thermal Comfort	1
1			1	Credit	Interior Lighting	2
			3	Credit	Daylight	3
	1			Credit	Quality Views	1
			1	Credit	Acoustic Performance	1
6	0	0	0	Innovation		6
1				Credit	Innovation : Pilot Embodied carbon	1
1				Credit	Innovation - Exemplary EPD	1
1				Credit	Innovation - Exemplary MI	1
1				Credit	Innovation - Occupant Education / Teaching tool	1
1				Credit	Innovation - O+M Starter Kit (pest, landscape)	1
1				Credit	LEED Accredited Professional	1
4	0	0	2	Regional Priority		4
1				Credit	Regional Priority: Open Space, min. 1 point	1
1				Credit	Regional Priority: Indoor Water Use Reduction, min. 4 points	1
				Credit	Regional Priority: Renewable Energy Production, min. 2 points	
1				Credit	Regional Priority: Outdoor Water Use Reduction, min. 2 points	
1				Credit	Regional Priority: Optimize Energy Performance, 8 points min.	1
				Credit	Regional Priority: Building Life-Cycle Impact Reduction, min. 2 points	1
57	6	7	42	TOTALS		Possible Points: 110

Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110

Memorandum

Date: 2023-12-15

Re: Preferred Schematic Sustainability Narrative – New Construction

The South Shore Regional Vocational Technical High School project intends to achieve LEED-S certification at the Silver level, as required by the MSBA 2023 Policy, outlined in the Project Advisory 81. The project intends to meet a minimum of 3 points in the following credits:

- MR Building Product Disclosure and Optimization – Materials Ingredients
- IEQ Low Emitting Materials
- IEQ Indoor Air Quality Assessment

and achieve compliance with the new MA DOER Stretch Code.

The project should establish whether the target includes any additional reimbursement, as this would affect targeted LEED credits and base energy code.

Currently the project is being analyzed in 2 main configurations: new construction – a complete replacement of the existing building and addition/renovation preserving many of the existing spaces. Each option has its own sustainability benefits and implications. The narrative below, along with the scorecards, presents sustainability impact of each configuration. The various options and enrollments have lower impact on LEED, although there still may be difference in points, related to bicycle and car parking counts as well as open space / vegetated area on site.

New construction

The South Shore Regional Vocational Technical High School project in Hanover, MA will pursue LEED for Schools v 4 certification. The project team would like to attempt the certification at Silver level to ensure compliance with the MSBA requirements. The strategies and assumptions presented in the attached project scorecard will allow the project to attempt 50+ points, as required for the LEED for Schools v4 Silver level.

During the preliminary sustainability review the project team analyzed both available sustainability certification options: NE-CHPS as well as LEED-S, and it has been concluded that the LEED for Schools v4 would be more beneficial for the project.

LEED for Schools v4 certification is divided into 7 major categories: Integrative Process, Location and Transportation, Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources and Indoor Environmental Quality. There are 2 supplementary categories: Innovation in Design as well as Regional Priority.

Integrative Process

The project implemented the integrative design process from the very beginning. The design team together with the sustainability consultant discussed the project sustainability goals which were then translated into a preliminary LEED scorecard. The project team intends to organize a green building charrette with all other stakeholders in the upcoming months to further outline the project sustainability goals, as well as to identify the opportunities to achieve synergies across the disciplines and building systems. The next steps may include preparation of a simple energy modeling analysis as well as water budget analysis during the schematic design phase.

Location and Transportation

The team analyzed the project site and multiple development options and it was concluded that all of them meet the basic LEED requirements. It seems that the site could potentially allow the project to earn between 2-4 points in the LT category. The suburban location limits the amount of public transportation available for the project as well as the availability of basic services. The project is located in a close proximity to single family residential neighborhoods. The project provides school bus transportation to the majority of the student population. The public transport to the site should be improved – currently the site is not within a quarter mile walking distance from a public bus stop.

The project is interested to pursue the bicycling and green vehicles credits. The project will maximize alternative transport opportunities within the site, by providing preferred parking spaces for low emitting vehicles and drop off area for carpools, install an electric vehicle charging station as well as consider transitioning to green buses and other school-owned vehicles. Bicycle racks will be provided for students and staff and changing facilities will include showers. The project will promote walking and biking to school among local students. The school intends to share facilities with the public for complimentary uses to increase the sustainability of the new project.

Sustainable Sites

The project plans to undertake a number of sustainability strategies in compliance with the LEED for Schools rating system. Many of them will not only enhance the sustainability of the project but also provide quality outdoor spaces/features for the students as well as reduce the impact on the local infrastructure.

The site design will maximize the open space and vegetated areas in order to improve the students' experience as well as protect the natural habitat. Site employed strategies will include stormwater runoff reduction, joint use of facilities as well as avoidance of light pollution by proposed lighting design. The site lighting will be reduced, and will include full cut-off pole lighting, reduced lighting at site perimeter, interior lighting will be automatically shut down after hours. In order to reduce the heat island effect, the project plans to install a white roof. The team is also considering a light-colored pavement, rain and pollinator gardens, as well as herb and vegetable garden for students.

Water Efficiency

The designed vegetation will complement the existing one on site, the selected species will be native or adapted, low maintenance and drought tolerant. This will minimize the need to use harmful chemicals, expenses associated with maintenance as well as unnecessary potable water use for irrigation purposes. The project does not intend to install permanent irrigation system.

Indoor plumbing fixtures will be low flow, including ultra-low flow faucets, low flow showers, low flow kitchen sinks, pint urinals and low flow single flush toilets resulting in expecting potable water savings of 35-40%. Students will be educated about the reduced water use practices through signage or educational display. Appliances will be Energy Star rated and process equipment will meet LEED credit requirements.

Energy and Atmosphere

The building intends to reduce energy usage and associated carbon emissions through architectural and systems design.

All presented new construction options are compact structures what is most favorable with regards to heating and cooling load due to the smallest surface area exposed to the outdoor conditions. They also favorably place all classrooms along the perimeter maximizing daylight and hence further conserving energy. Placing gym in the center will limit cooling energy loss. The proposed commons, gym and corridors could include skylights to provide daylight to the gym and along the main corridor. The multistory construction will aid in energy conservation. Potential solar heat gain at any larger glazed areas could be controlled by overhangs, exterior blinds and/or specialty glazing.

All new construction options will include advanced building envelope, highly efficient mechanical systems, daylight harvesting opportunities, significantly reduced lighting power density and lighting controls.

Energy Efficient Measures are currently being discussed and considered and will include improved lighting, superior building envelope with detailing reducing infiltration, electrified mechanical systems (where feasible, taking into account the technical spaces and process loads required for carrying on the educational purpose). The project is targeting 14 LEED points and the expected savings will range around 35% better than ASHRAE 90.1-2010.

The project team will prepare tools that can be used by school during operations phase for analyzing and optimizing energy usage, including the Building Management System for energy efficiency optimization. The integrative design process implemented by the project team will maximize opportunities and synergies between building elements as well as allow for optimizing design and provide operational savings.

The building will be fully commissioned and it's recommended to purchase renewable energy credits to offset its energy usage by renewable sources. It is recommended to prepare a feasibility analysis for the installation of renewable energy on the project site.

Materials and Resources

The project will be designed and constructed to minimize its impact on the environment. The construction and demolition waste will be diverted from landfill. The large demolished area will aid the project in obtaining both LEED points if the demolition waste is separated on site and fully recycled.

The selected building materials will come from renewable sources, will be regionally sourced to promote local economy and limit CO2 emissions associated with transport, will contain recycled components. Additionally, a strong focus will be placed on the content of building materials – ingredients will be analyzed and optimized. The project team will prepare recommendations for recycling opportunities during operational phase.

Indoor Environmental Quality

The main goal of the project team is to design and construct a healthy and comfortable building which will maximize learning opportunities for the students. Required analysis will be performed to ensure selection of best available solutions for the intent of the building.

The building materials and specified products will be low emitting and tested in accordance with the LEED recommended standards. Lighting and HVAC will be optimized to enhance the occupant comfort. Spaces will be well ventilated to increase cognitive performance. Ample daylighting and high-quality views to nature will ensure the student wellbeing. Implemented construction practices will improve indoor air quality.

Innovation in Design

The project will utilize numerous innovative solutions including low mercury lighting, educational displays and signage, design for health, improved physical activity and learning opportunities for the students. The team will also propose strategies to be implemented in the operations phase that will increase sustainability of the project, like green cleaning, green building tours, organic landscaping or growing food on-site.

Addition / renovation

The South Shore Regional Vocational Technical High School project in Hanover, MA will pursue LEED for Schools v 4 certification. The project team would like to attempt the certification at Silver level to ensure compliance with the MSBA requirements. The strategies and assumptions presented in the attached project scorecard will allow the project to attempt 50+ points, as required for the LEED for Schools v4 Silver level.

During the preliminary sustainability review the project team analyzed both available sustainability certification options: NE-CHPS as well as LEED-S, and it has been concluded that the LEED for Schools v4 would be more beneficial for the project.

LEED for Schools v4 certification is divided into 7 major categories: Integrative Process, Location and Transportation, Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources and Indoor Environmental Quality. There are 2 supplementary categories: Innovation in Design as well as Regional Priority.

Integrative Process

The project implemented the integrative design process from the very beginning. The design team together with the sustainability consultant discussed the project sustainability goals which were then translated into a preliminary LEED scorecard. The project team intends to organize a green building charrette with all other stakeholders in the upcoming months to further outline the project sustainability goals, as well as to identify the opportunities to achieve synergies across the disciplines and building systems. The next steps may include preparation of a simple energy modeling analysis as well as water budget analysis during the schematic design phase.

Location and Transportation

The team analyzed the project site and multiple development options and it was concluded that all of them meet the basic LEED requirements. It seems that the site could potentially allow the project to earn between 2-4 points in the LT category. The suburban location limits the amount of public transportation available for the project as well as the availability of basic services. The project is located in a close proximity to single family residential neighborhoods. The project provides school bus transportation to the majority of the student population. The public transport to the site should be improved – currently the site is not within a quarter mile walking distance from a public bus stop.

The project is interested to pursue the bicycling and green vehicles credits. The project will maximize alternative transport opportunities within the site, by providing preferred parking spaces for low emitting vehicles and drop off area for carpools, install an electric vehicle charging station as well as consider transitioning to green buses and other school-owned vehicles. Bicycle racks will be provided for students and staff and changing facilities will include showers. The project will promote walking and biking to school among local students. The school intends to share facilities with the public for complimentary uses to increase the sustainability of the new project.

Sustainable Sites

The project plans to undertake a number of sustainability strategies in compliance with the LEED for Schools rating system. Many of them will not only enhance the sustainability of the project but also provide quality outdoor spaces/features for the students as well as reduce the impact on the local infrastructure.

The site design will maximize the open space and vegetated areas in order to improve the students' experience as well as protect the natural habitat. The areas will most likely be smaller than in the New Construction option hence potentially limiting the achievement of these LEED points. Site employed strategies will include stormwater runoff reduction, joint use of facilities as well as avoidance of light pollution by proposed lighting design. The new site lighting will be reduced, and will include full cut-off pole lighting, reduced lighting at site perimeter, interior lighting will be automatically shut down after hours. The existing site lighting if retained, may not allow for the achievement of this credit. In order to reduce the heat island effect, the project plans to install a white roof. The team is also considering a light-colored pavement

for new hardscape, rain / pollinator gardens, as well as herb and vegetable garden for students if space permits.

Water Efficiency

The designed vegetation will complement the existing one on site, the selected species will be native or adapted, low maintenance and drought tolerant. This will minimize the need to use harmful chemicals, expenses associated with maintenance as well as unnecessary potable water use for irrigation purposes. The project does not intend to install new permanent irrigation system.

Indoor plumbing fixtures will be low flow, including ultra-low flow faucets, low flow showers, low flow kitchen sinks, pint urinals and low flow single flush toilets resulting in expecting potable water savings of 35-40%. Students will be educated about the reduced water use practices through signage or educational display. Appliances will be Energy Star rated and process equipment will meet LEED credit requirements.

Energy and Atmosphere

The building intends to reduce energy usage and associated carbon emissions through architectural and systems design. The presented design is relatively compact to the extent allowed by the existing structures' configuration. The multistory construction will aid in energy conservation. Potential solar heat gain at any larger glazed areas could be controlled by overhangs, exterior blinds and/or specialty glazing.

All added construction will include advanced building envelope, highly efficient mechanical systems, daylight harvesting opportunities, significantly reduced lighting power density and lighting controls.

Energy Efficient Measures are currently being discussed and considered and will include improved lighting, superior building envelope for new construction, with detailing reducing infiltration, electrified mechanical systems (where feasible, taking into account the technical spaces and process loads required for carrying on the educational purpose). The project is targeting 14 LEED points to comply with the MSBA requirement.

The project team will prepare tools that can be used by school during operations phase for analyzing and optimizing energy usage, including the Building Management System for energy efficiency optimization. The integrative design process implemented by the project team will maximize opportunities and synergies between building elements as well as allow for optimizing design and provide operational savings.

The building will be fully commissioned and it's recommended to purchase renewable energy credits to offset its energy usage by renewable sources. It is recommended to prepare a feasibility analysis for the installation of renewable energy on the project site.

Materials and Resources

The project will be designed and constructed to minimize its impact on the environment. This option retains a large portion of the existing building hence contributing to substantial reduction of embodied carbon of the

completed school. The demolition and construction waste will be diverted from landfill. The selected building materials will come from renewable sources, will be regionally sourced to promote local economy and limit CO2 emissions associated with transport, will contain recycled components. Additionally, a strong focus will be placed on the content of building materials – ingredients will be analyzed and optimized. The project team will prepare recommendations for recycling opportunities during operational phase.

Indoor Environmental Quality

The main goal of the project team is to design and construct a healthy and comfortable building which will maximize learning opportunities for the students. Required analysis will be performed to ensure selection of best available solutions for the intent of the building.

New building materials and specified products will be low emitting and tested in accordance with the LEED recommended standards. Lighting and HVAC will be optimized to enhance the occupant comfort. Spaces will be well ventilated to increase cognitive performance. Ample daylighting and high-quality views to nature will ensure the student wellbeing. Implemented construction practices will improve indoor air quality.

Innovation in Design

The project will utilize numerous innovative solutions including low mercury lighting, educational displays and signage, design for health, improved physical activity and learning opportunities for the students. The team will also propose strategies to be implemented in the operations phase that will increase sustainability of the project, like green cleaning, green building tours, organic landscaping or growing food on-site.



February 29, 2024

Massachusetts School Building
Authority 40 Broad Street
Boston, MA 02109
ATTN: Veatriki Dagkalakou, Project Manager

RE: South Shore Vocational Technical High School, Hanover MA

Dear Veatriki:

This is an acknowledgement that the South Shore Vocational Technical High School District has identified a goal of 4% additional reimbursement from the MSBA High Efficiency Green School Program. As their Designer, I have submitted a completed US Green Building Council's LEED for Schools scorecard showing all prerequisites and 57 attempted points with 13 additional possible points, which will meet that goal.

The scope of work for this project will include the construction elements and performance tasks to achieve that goal, and all subsequent documents, including but not limited to, specifications, drawings, and cost estimates will match the scope of work indicated in the submitted scorecard.

Very Truly Yours,
DRUMMEY ROSANE ANDERSON, INC.



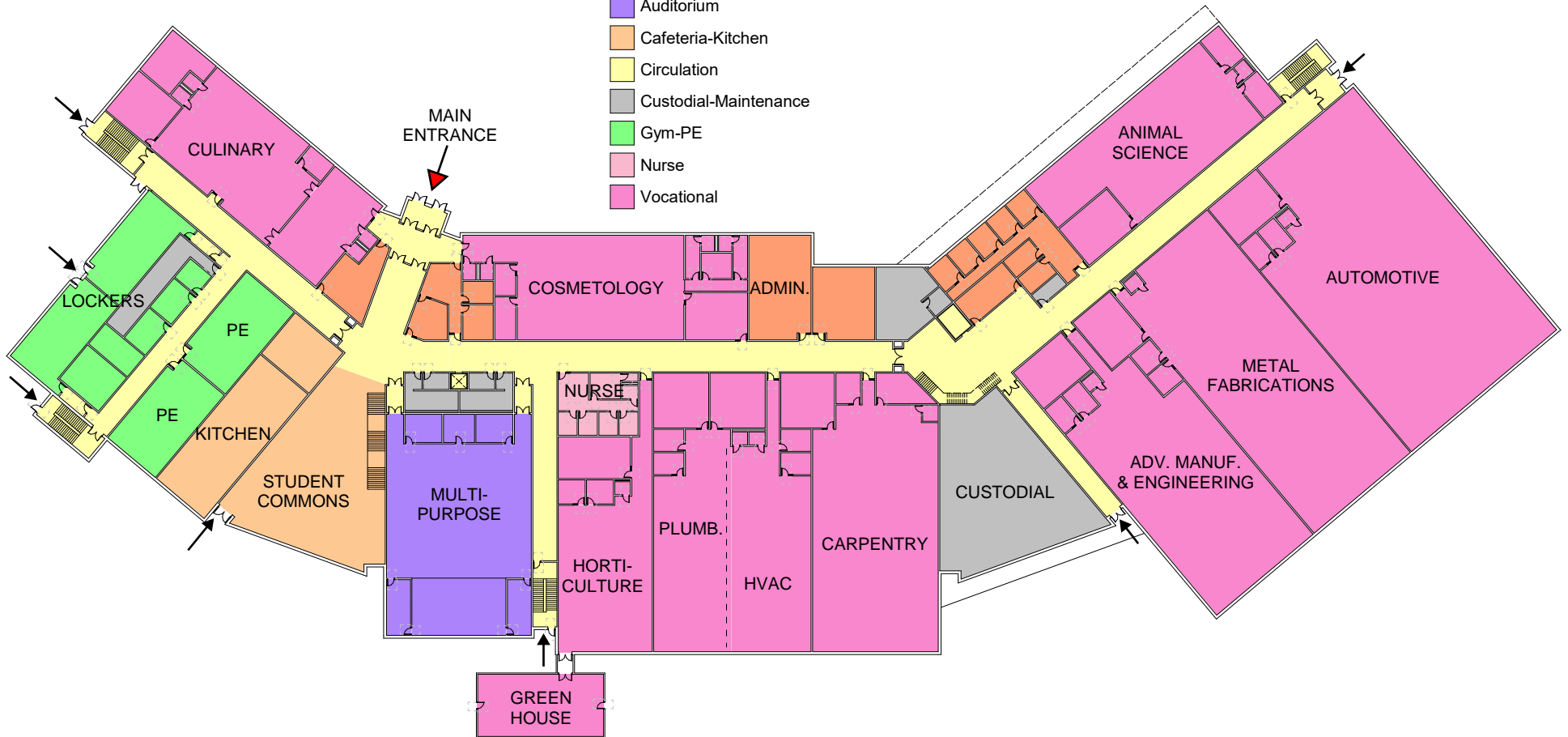
Carl Franceschi, AIA Principal

Distribution:
South Shore Vocational Technical High School
Jen Carlson, Leftfield
Judd Christopher, DRA
Architects DRA Files

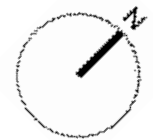
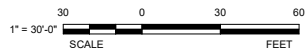


Departments

- Admin-Teacher Support
- Auditorium
- Cafeteria-Kitchen
- Circulation
- Custodial-Maintenance
- Gym-PE
- Nurse
- Vocational



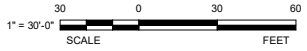
OPTION NC-2.0 FIRST FLOOR PLAN - 900 ENROLLMENT



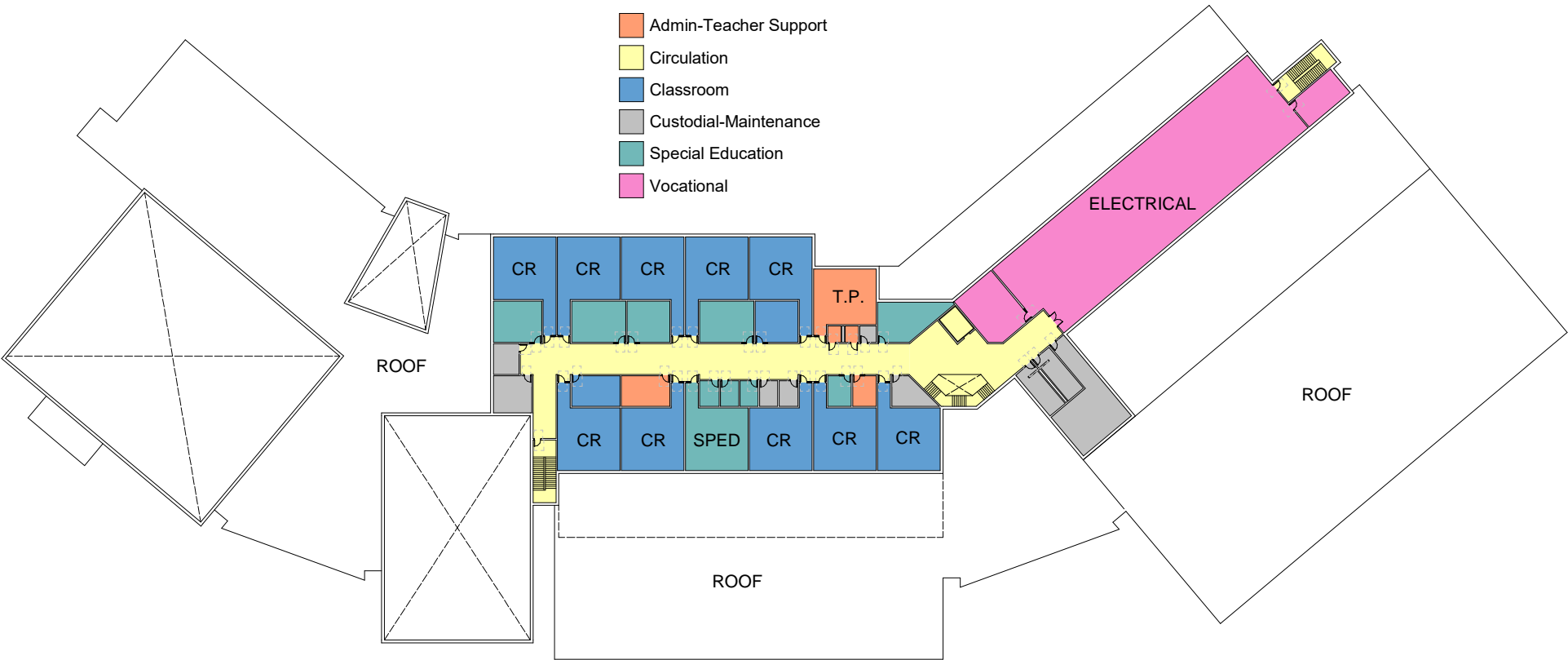
- Departments**
- Admin-Teacher Support
 - Auditorium
 - Circulation
 - Classroom
 - Custodial-Maintenance
 - Gym-PE
 - Library-Media
 - Science Labs
 - Special Education
 - Vocational



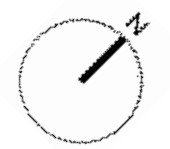
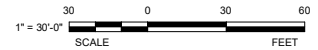
OPTION NC-2.0 SECOND FLOOR PLAN - 900 ENROLLMENT



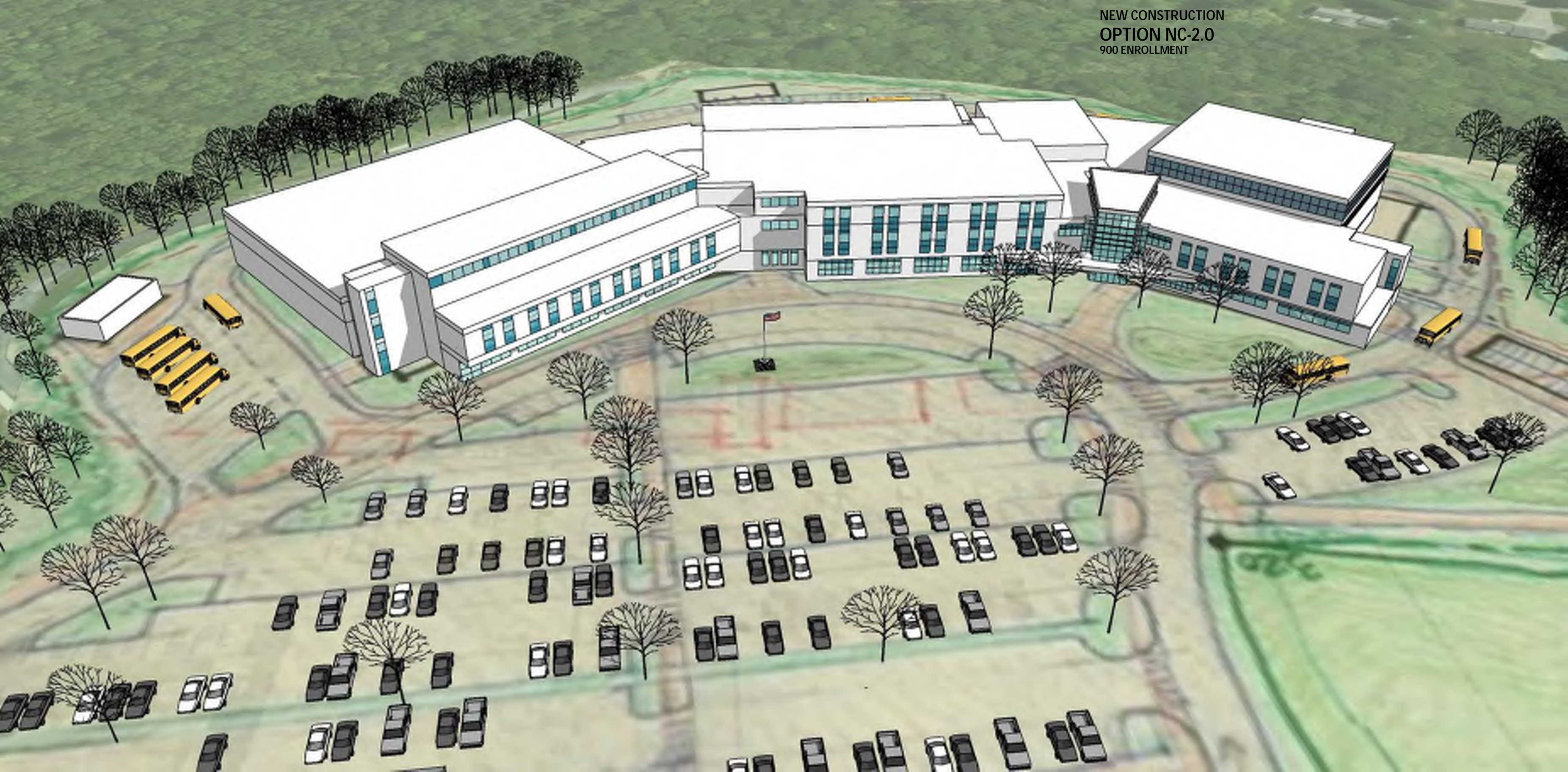
- Departments
- Admin-Teacher Support
 - Circulation
 - Classroom
 - Custodial-Maintenance
 - Special Education
 - Vocational



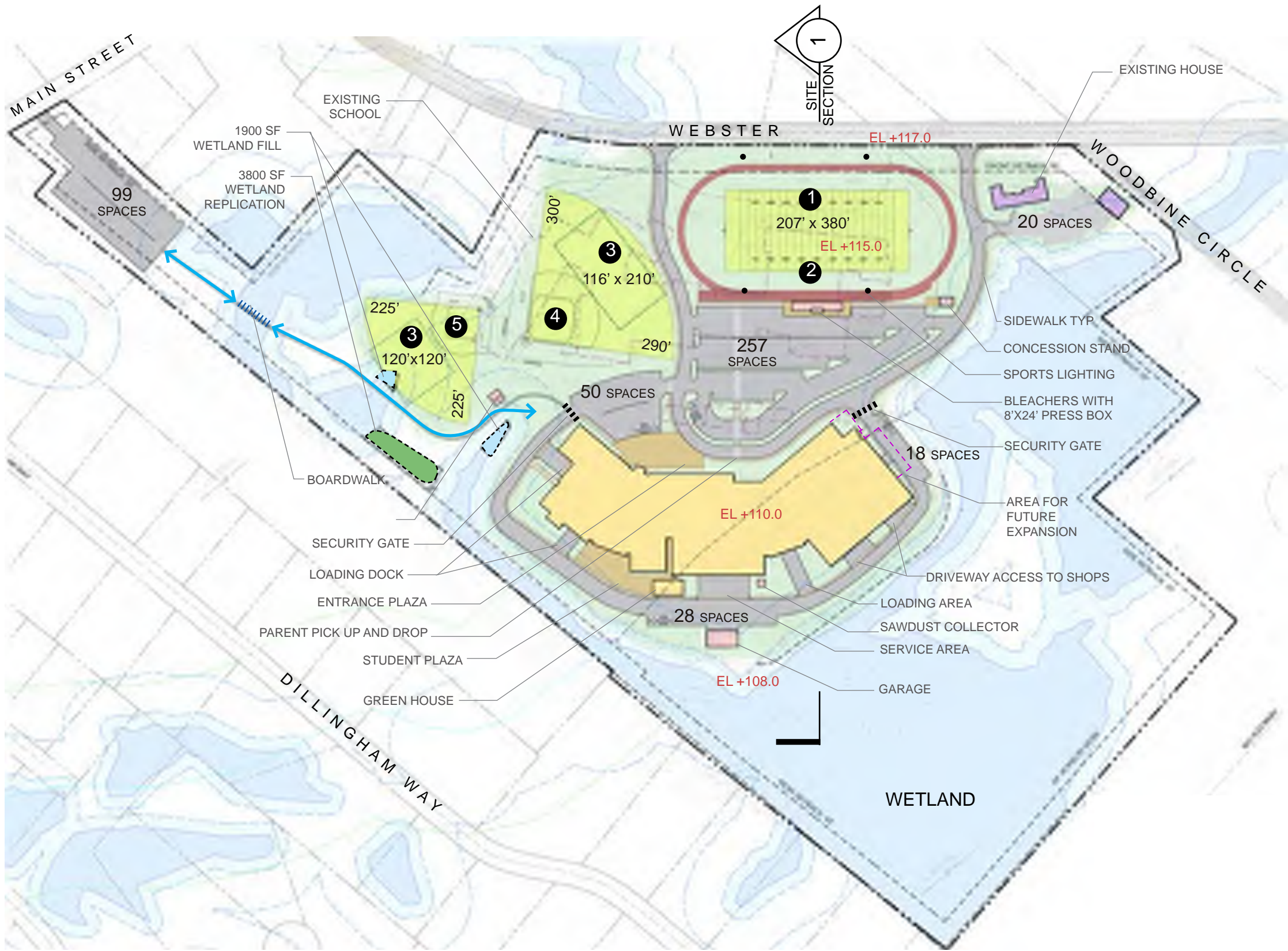
OPTION NC-2.0 THIRD FLOOR PLAN - 900 ENROLLMENT



NEW CONSTRUCTION
OPTION NC-2.0
900 ENROLLMENT





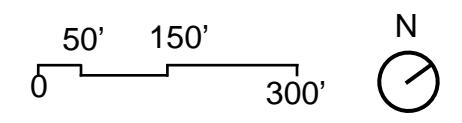


NEW CONSTRUCTION
OPTION NC-2.0
 900 ENROLLMENT

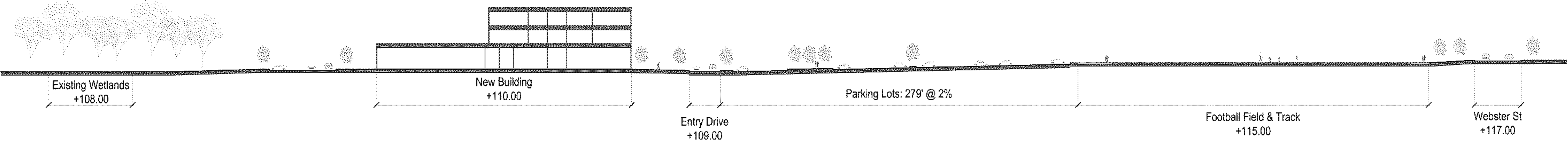
LEGEND

- EXISTING STRUCTURES
- PROPOSED STRUCTURES
- NEW SCHOOL
- ATHLETICS
- ENTRY PLAZA
- WETLAND
- 35' WETLAND BUFFER
- SECURITY GATE
- 1 SYNTHETIC TURF MULTI-PURPOSE FIELD
- 2 RUNNING TRACK
- 3 PRACTICE FIELD
- 4 BASEBALL
- 5 SOFTBALL

TOTAL PARKING:
 EXISTING: 304 SPACES & 15 BUS SPACES
 PROPOSED: 353 SPACES (9'x18')
 TARGET: 426 SPACES
 ADDITIONAL:
 99 SPACES (MAIN ST.)

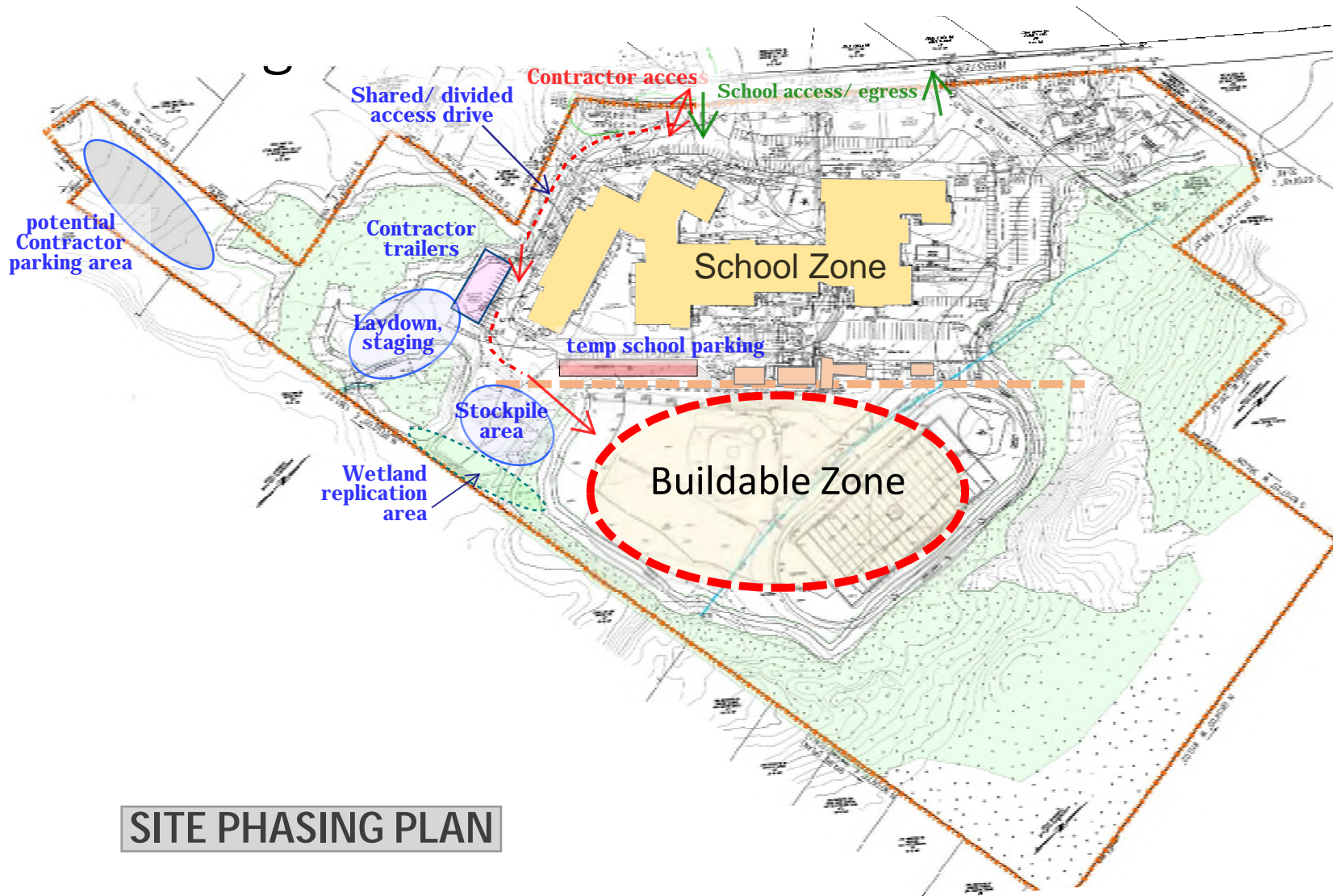


NEW CONSTRUCTION
OPTION NC-2.0
900 ENROLLMENT



1 Site Section
1" = 30'-0"

NEW CONSTRUCTION
OPTION NC-2.0
900 ENROLLMENT



SITE PHASING PLAN

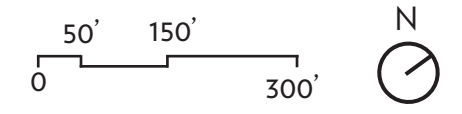
EXISTING SITE



LEGEND

-  EXISTING STRUCTURES
-  ATHLETICS
-  WETLAND
-  35' WETLAND BUFFER
-  SECURITY GATE
-  1 MULTI-PURPOSE FIELD
-  2 RUNNING TRACK
-  3 SOFTBALL
-  4 BASEBALL
-  5 PRACTICE FIELD

TOTAL EXISTING PARKING:
304 SPACES & 15 BUS SPACES (SCHOOL)
20 SPACES (HOUSE)





N 08°34'05" W 870.02'

S 80°07'25" W 360.08'

N 02°01'55" W 281.32'

S 79°49'25" W 251.43'

S 05°27'14" W 198.32'

S 63°08'46" E 60.48'

N 39°58'15" E 351.23'

WEBSTER STREET
(COUNTY LAYOUT - 50' WIDE)

WEBSTER STREET
(COUNTY LAYOUT - 50' WIDE)

WEBSTER STREET
(COUNTY LAYOUT - 50' WIDE)

N 80°02'05" E 1361.23'

S 83°37'35" W 223.00'

S 112°15' E 309.00'

S 83°15' W 308.50'

S 85°57'15" W 194.89'

N 80°09'14" E 919.89' (PLAN)
N 80°09'14" E 919.89' (CALC)

24.69'

L=236.88'
R=849.00'

MONUMENTS TO BE PLACED
CONFORMING TO PLAN

MONUMENTS TO BE PLACED
CONFORMING TO PLAN

APR 10-72
BLAIR J. BROWN
444 WEBSTER STREET

APR 10-72
CHRISTINE BARRIS
444 WEBSTER STREET

APR 10-70
ERIC S. LAR
418 WEBSTER STREET

APR 10-8
LOUIS W. BROWN
AND SARA L. BROWN
444 WEBSTER STREET

APR 10-10
DAVID C. COBB AND
STANLEY COBB
517 WEBSTER STREET

APR 10-37
CHRISTINE BARRIS ET
AL
1041 WEB STREET

APR 10-13
1027 WEB STREET REALTY TRUST
1027 WEB STREET

APR 10-21
418 WEBSTER STREET
ROBERT A. BIRD AND
ROBERTA H. BIRD
1037 PG 108

APR 10-26
SOUTH SHORE REGIONAL
TECHNICAL SCHOOL
215 ADAMS

APR 10-19
474 WEBSTER STREET
LEIF OTHNE REGIONAL
TECHNICAL SCHOOL
200 PG 9

APR 10-19
474 WEBSTER STREET
LEIF OTHNE REGIONAL
TECHNICAL SCHOOL
200 PG 9

APR 10-19
474 WEBSTER STREET
LEIF OTHNE REGIONAL
TECHNICAL SCHOOL
200 PG 9

APR 10-18
MOULDER RICE AND
DAVE WEBSTER ET
AL

APR 10-17
KATHLEEN BOURKE
517 WEBSTER ST

APR 10-16
DAVID C. COBB AND
STANLEY COBB
517 WEBSTER STREET

APR 10-24
JOE BARNETT
1041 WEB STREET

APR 10-24
JOE BARNETT
1041 WEB STREET

APR 10-15
JOE BARNETT
1041 WEB STREET

APR 10-15
JOE BARNETT
1041 WEB STREET

APR 10-15
JOE BARNETT
1041 WEB STREET



Total Project Budget and Local Funding

Total project budget overview

The Probable Total Project Budget for the Preferred Solution is as follows:

- a. The estimated total construction cost for the preferred option, New Construction option NC 2.0 on the existing school's site for a 900-student design enrollment, is \$226 million.
- b. The estimated total project cost for the preferred option, option A3.3, the 2-story, dual courtyard new construction, is \$283 million.
- c. Based on a reimbursement analysis for the preferred option and assuming an anticipated MSBA grant of approximately \$107 million, the estimated funding capacity for the District is \$176 million of District funding, which will be distributed among the 9-member communities pursuant to the South Shore Regional Vocational School District Regional Agreement. Please note that the District understands that all approval ballot language will be based on authorization for the FULL Project amount.
- d. A summary list of other Municipal Projects currently planned or in progress includes but is not limited to the following:

Community	Project
Abington	Central Street Fire Station / DPW Building Project
Cohasset	Salt Shed
	GAC Filtration System at Lily Pond Water Treatment Plant
	Alumni Field Track and Turf Replacement
Hanover	N/A
Hanson	Council on Aging Remodel
	Library Upgrades
Norwell	N/A
Rockland	N/A
Scituate	Cushing-Hatherly Elementary School Project
	Phase 4 - Oceanside Seawall
	North Scituate Sewer Expansion
	Water Main Replacement
Whitman	Whitman Middle School

- e. As summarized above, the District's Not-To-Exceed total project budget is \$283 million.
- f. Local Funding Process

Regarding local funding authorization, once the South Shore Regional School Committee votes to approve the authorization of debt, the School Committee has voted and determined that the District will seek approval of debt by all voters in the district [G.L. c 71, §§ 14D, 16(n)]. A district-wide election would be held pursuant to Chapter 71, section 16[n]. Said election date would be called by warrant article in each member town

comprising the regional district. The Project would receive successful passage based on a majority vote of registered voters in the member communities. The expenses of the election shall be paid by the regional school district as an operating expense of the district.

Estimated impact to local property tax

The estimated local property tax for each of the member communities is attached to this document

Budget statement

A copy of the completed MSBA Budget Statement is provided in Section 3.3.4H.



South Shore Tech Estimated Taxpayer Impact for Option NC 2.0 - 30yr @ 3.75%

	Level Debt Service		Level Principal Service	
	Option NC 2.0 900 Students		Option NC 2.0 900 Students	
Estimated Total Project Budget	\$	283,000,000	\$	283,000,000
Estimated District Share	\$	176,000,000	\$	176,000,000
Estimated SST Bond Amount	\$	296,142,656	\$	278,300,000
Estimated SST Yearly Payment	\$	9,871,422	\$	12,466,667

	Enrollment %	Annual Town Share		Annual Town Share	
Abington	16.70%	\$	1,648,527	\$	2,081,933
Cohasset	1.49%	\$	147,084	\$	185,753
Hanover	11.06%	\$	1,091,779	\$	1,378,813
Hanson	13.03%	\$	1,286,246	\$	1,624,407
Norwell	4.10%	\$	404,728	\$	511,133
Rockland	22.77%	\$	2,247,723	\$	2,838,660
Scituate	6.60%	\$	651,514	\$	822,800
Whitman	24.25%	\$	2,393,820	\$	3,023,167

	FY24 Tax Rate	Annual AVG Taxpayer Share		Annual AVG Taxpayer Share - Year 1	
Abington	\$ 13.38	\$	292.02	\$	363.65
Cohasset	\$ 12.17	\$	51.53	\$	64.41
Hanover	\$ 12.84	\$	190.68	\$	242.01
Hanson	\$ 13.38	\$	319.92	\$	404.90
Norwell	\$ 13.46	\$	95.17	\$	123.72
Rockland	\$ 14.06	\$	337.11	\$	425.05
Scituate	\$ 10.36	\$	73.70	\$	101.33
Whitman	\$ 12.74	\$	446.68	\$	564.23

	FY24 Tax Rate	Monthly AVG Taxpayer Share		Monthly AVG Taxpayer Share - Year 1	
Abington	\$ 13.38	\$	24.34	\$	30.30
Cohasset	\$ 12.17	\$	4.29	\$	5.37
Hanover	\$ 12.84	\$	15.89	\$	20.17
Hanson	\$ 13.38	\$	26.66	\$	33.74
Norwell	\$ 13.46	\$	7.93	\$	10.31
Rockland	\$ 14.06	\$	28.09	\$	35.42
Scituate	\$ 10.36	\$	6.14	\$	8.44
Whitman	\$ 12.74	\$	37.22	\$	47.02



As reported on the school district's most recent three end of year information, please updated to the 3 latest fiscal year periods and complete the fields below.

Category	2020-2021		2021-2022		2022-2023		Change from Previous Year		Post-Construction Budget		New Facility vs. Current	
	Staff (FTE)	Budget	Staff (FTE)	Budget	Staff	Budget	Staff (FTE)	Budget	Staff	Budget	Staff (FTE)	Budget
Salaries												
Administration												
Admin. Secretary	3.00	152,268	3.00	154,717	3.00	155,721	0.00	1,004	5.00	306,251	2.00	150,530
Assistant Principal	1.00	115,800	1.00	119,068	1.00	134,016	0.00	14,948	2.00	316,278	1.00	182,262
Business Office	2.00	117,368	2.00	118,511	2.00	119,995	0.00	1,484	3.00	212,391	1.00	92,396
Curriculum Director/Coord.	2.00	211,576	2.00	213,425	2.00	235,668	0.00	22,243	2.00	278,088	0.00	42,420
Custodians/Maintenance Staff	8.00	400,948	8.00	418,680	8.50	467,855	0.50	49,175	12.50	811,866	4.00	344,011
Executive Secretary	1.00	91,344	1.00	93,588	1.00	96,311	0.00	2,723	1.00	113,647	0.00	17,336
Facilities Manager	1.00	112,775	1.00	122,900	1.00	102,500	0.00	(20,400)	1.00	120,950	0.00	18,450
Guidance	1.00	55,620	1.00	57,011	2.00	130,715	1.00	73,704	1.00	77,122	-1.00	(53,593)
Adjustment Counselor	1.00	73,737	1.00	75,212	1.00	82,695	0.00	7,483	3.00	292,740	2.00	210,045
Guidance Counselors	2.50	283,341	2.50	277,127	2.25	224,547	-0.25	(52,580)	3.00	353,287	0.75	128,740
Guidance Director	1.00	106,025	1.00	108,360	1.00	111,285	0.00	2,925	1.00	131,316	0.00	20,031
Athletic Director	0.00	-	0.00	-	0.00	-	0.00	-	1.00	90,000	1.00	90,000
Nurse	1.15	100,692	1.15	124,159	1.00	108,190	-0.15	(15,969)	2.00	255,328	1.00	147,138
HR Director / IT	1.00	71,375	1.00	73,150	1.00	75,354	0.00	2,204	1.00	88,918	0.00	13,564
Principal	1.00	127,558	1.00	130,878	1.00	133,816	0.00	2,938	1.00	157,903	0.00	24,087
Special Education Admin	1.00	106,888	1.00	113,493	1.00	117,211	0.00	3,718	1.00	138,309	0.00	21,098
Superintendent/Asst. Superintendent	1.00	165,114	1.00	165,114	1.00	196,001	0.00	30,887	1.00	231,281	0.00	35,280
Transportation	18.00	350,710	18.00	460,621	18.00	445,140	0.00	(15,481)	24.00	700,354	6.00	255,214
Treasurer	0.25	42,158	0.25	42,585	0.25	43,648	0.00	1,063	0.25	51,505	0.00	7,857
Total Administration	46.90	2,685,297	46.90	2,868,599	48.00	2,980,668	1.10	112,069	65.75	4,727,535	17.75	1,746,867
Instruction - Teaching Services												
Arts	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Business	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Communications	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Coping Instructor	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Culinary Arts	3.00	295,089	3.00	302,626	3.00	313,402	0.00	10,776	3.00	369,814	0.00	56,412
ELL	0.00	-	0.00	-	0.00	-	0.00	-	1.00	-	1.00	-
English Language	7.00	592,736	6.00	553,905	6.25	587,772	0.25	33,867	9.25	1,026,485	3.00	438,713
Family Consumer Services	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Foreign Language	0.00	-	0.00	-	0.00	-	0.00	-	1.00	101,296	1.00	101,296
Health Services	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
History & Social Science	4.00	328,607	4.00	336,784	4.00	364,967	0.00	28,183	6.00	645,992	2.00	281,025
Instructional Assistant/Paraprofessionals	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Library/Media	1.00	76,355	1.00	78,272	1.00	82,626	0.00	4,354	1.00	97,499	0.00	14,873
Mathematics	6.00	544,039	6.00	575,864	6.00	541,584	0.00	(34,280)	9.00	958,604	3.00	417,020
MCAS	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Music	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Athletic Coaches	22.00	212,906	24.00	199,538	39.00	214,690	15.00	15,152	43.00	285,334	4.00	70,644
Physical Education	1.00	67,112	1.00	68,797	1.00	74,794	0.00	5,997	2.50	88,257	1.50	13,463
Reading	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
School Adjustment Counselor	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Science												
Biology	2.00	187,853	3.00	256,272	3.00	257,985	0.00	1,713	4.00	304,422	1.00	46,437
Botany	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Chemistry	1.00	90,088	1.00	90,877	1.00	99,172	0.00	8,295	3.00	117,023	2.00	17,851
Geology	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Physics	2.00	180,000	2.00	180,000	2.00	200,000	0.00	20,000	2.00	236,000	0.00	36,000
Special Education	14.00	825,917	13.75	801,370	15.27	939,164	1.52	137,794	18.27	1,108,214	3.00	169,050
Substitute Teachers	3.16	79,000	2.94	73,375	3.93	98,373	1.00	24,998	6.00	116,080	2.07	17,707
Technology	3.00	225,901	3.00	237,695	3.00	244,884	0.00	7,189	4.00	288,963	1.00	44,079
Vocational Tech.	32.50	2,762,292	32.50	2,771,909	32.50	2,969,231	0.00	197,322	39.50	4,258,334	7.00	1,289,103
Total Instruction - Teaching Services	101.66	6,467,895	103.19	6,527,284	120.96	6,988,644	17.77	461,360	152.52	10,002,316	31.56	3,013,672
Total Salaries Administration & Instruction	148.56	9,153,192	150.09	9,395,883	168.96	9,969,312	18.87	573,429	218.27	14,729,851	49.31	4,760,539
Employee Benefits												
All employee-related fringe (health insurance, retirement etc)		2,179,993		2,011,978		2,059,040		47,062		3,047,379		988,339
Materials & Services												

Materials												
Audio-Visual Materials	-	-	-	-	-	-	-	-	-	-	-	
Culinary Arts Materials	26,775	28,025	32,105	4,080	50,889	18,784						
General Office Supplies	89,513	122,020	119,523	(2,497)	141,037	21,514						
Information Technology	-	-	-	-	-	-						
Hardware	61,461	72,884	135,380	62,496	214,587	79,207						
Software	103,701	109,594	87,780	(21,814)	103,580	15,800						
Library Materials	4,775	5,224	6,551	1,327	7,730	1,179						
Non Info-tech equipment	-	-	-	-	-	-						
Testing Materials & Supplies	54,020	55,920	63,420	7,500	74,836	11,416						
Textbooks	123,282	110,590	93,711	(16,879)	148,539	54,828						
Vocational Program Materials	298,300	179,360	225,517	46,157	357,461	131,944						
Total Materials	761,827	683,617	763,987	80,370	1,098,660	334,673						
Services												
Athletics	90,405	103,769	114,826	11,057	182,008	67,182						
School Insurances	266,859	310,424	321,820	11,396	510,109	188,289						
Food Service	-	-	-	-	-	-						
Health Services	37,000	6,500	7,100	600	11,254	4,154						
Other Student Activities	40,445	29,655	25,130	(4,525)	39,833	14,703						
Psychological Services	-	-	-	-	-	-						
School Security	60,950	50,500	45,750	(4,750)	53,985	8,235						
Student Transportation	337,253	344,183	176,416	(167,767)	208,171	31,755						
Total Services	832,912	845,031	691,042	2,721	1,005,359	314,317						
Total Material & Services	1,594,739	1,528,648	1,455,029	83,091	2,104,019	648,990						
Facility Costs & Capital Improvements												
Facility Costs												
Custodial Supplies	35,000	27,000	30,000	3,000	70,800	40,800						
Electricity	116,618	140,000	160,000	20,000	377,600	217,600						
Heating Oil	9,500	8,000	-	(8,000)	-	-						
Maintenance												
Building Security Maintenance	-	-	-	-	-	-						
Elevator	-	-	-	-	-	-						
Equipment Maintenance	40,151	40,151	35,715	(4,436)	84,287	48,572						
Exterminating	2,500	3,000	2,500	(500)	5,900	3,400						
Facility Maintenance	317,909	448,820	479,485	30,665	565,792	86,307						
Fire Alarm	-	-	-	-	-	-						
Fire Extinguisher Inspection	-	-	-	-	-	-						
Generator	-	-	-	-	-	-						
HVAC Maintenance	-	-	-	-	-	-						
Other Expenses	24,044	11,102	338,141	327,039	399,006	60,865						
Site Maintenance (Grounds)	-	-	-	-	-	-						
Technology	-	-	-	-	-	-						
Trash Removal	41,175	43,336	54,000	10,664	63,720	9,720						
Natural Gas	76,000	85,000	100,000	15,000	118,000	18,000						
Snow Removal	4,500	4,500	7,000	2,500	8,260	1,260						
Telephone	16,500	16,000	14,000	(2,000)	16,520	2,520						
Water/Sewer	15,000	20,000	20,500	500	24,190	3,690						
Total Facility Costs	698,897	846,909	1,241,341	394,432	1,734,076	492,735						
Capital Improvements												
Capital Improvements	774,914	895,000	220,000	(675,000)	400,000	180,000						
Total Facility Costs & Capital Improvements	1,473,811	1,741,909	1,461,341	(280,568)	2,134,076	672,735						
Debt Service												
Short-term	-	-	-	-	-	-						
Long-term	4,456	-	-	-	-	-						
Total Debt Service	4,456	-	-	-	-	-						
Total Budget & Staff	148.56	14,406,191	150.09	14,678,418	168.96	14,944,722	19	423,014	218	22,015,325	49	7,070,603
		14,406,191		14,678,418		\$14,944,722						
		0		0		0						

As reported on the school district's most recent three End of Year Pupil and Financial Reports schedule 1, please update to the 3 latest fiscal year periods and report sources of revenue in the fields below.

	FY21 End of Year Financial Report							FY22 End of Year Financial Report							FY23 End of Year Financial Report							
	Regular Day	Special Education	C74 Occupational Day	Adult Education	Other Programs	Un-distributed	Total	Regular Day	Special Education	C74 Occupational Day	Adult Education	Other Programs	Un-distributed	Total	Regular Day	Special Education	C74 Occupational Day	Adult Education	Other Programs	Un-distributed	Total	
A. Revenue from Local Sources																						
Assessments received by Regional Schools	-	-	-	-	-	7,718,748	7,718,748	-	-	-	-	-	7,943,667	-	-	-	-	-	-	-	8,197,320	8,197,320
E&D Fund Appropriations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Tuition from Individuals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Tuition from Other Districts in Comm.	-	-	-	-	-	1,681,629	1,681,629	-	-	-	-	-	1,487,382	1,487,382	-	-	-	-	-	-	1,016,748	1,016,748
Tuition from Districts in Other States	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Previous Year Unexpended Encumbrances (Carry Forward)	-	-	-	-	-	34,053	34,053	-	-	-	-	-	740,000	740,000	-	-	-	-	-	-	-	-
Transportation Fees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Earnings on Investments	-	-	-	-	-	12,796	12,796	-	-	-	-	-	12,004	12,004	-	-	-	-	-	-	61,612	61,612
Rental of School Facilities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other Revenue	-	-	-	-	-	-	-	-	-	-	-	-	282,011	282,011	-	-	-	-	-	-	169,020	169,020
Medical Care and Assistance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Non Revenue Receipts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Revenue From Local Sources	-	-	-	-	-	9,447,226	9,447,226	-	-	-	-	-	10,465,064	2,521,397	-	-	-	-	-	-	9,444,700	9,444,700
B. Revenue from State Aid																						
School Aid (Chapter 70)	-	-	-	-	-	4,442,848	4,442,848	-	-	-	-	-	4,459,678	4,459,678	-	-	-	-	-	-	5,000,397	5,000,397
Mass School Building Authority - Construction Aid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Pupil Transportation (Ch. 71, 71A, 71B, 74)	-	-	-	-	-	658,861	658,861	-	-	-	-	-	748,547	748,547	-	-	-	-	-	-	725,146	725,146
Charter Tuition Reimbursements & Charter Facilities Aid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Circuit Breaker	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Foundation Reserve	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Revenue From State Aid	-	-	-	-	-	5,101,709	5,101,709	-	-	-	-	-	5,208,225	5,208,225	-	-	-	-	-	-	5,725,543	5,725,543
C. Revenue from Federal Grants																						
ESE Administered Grants	52,614	275,240	118,987	-	-	91,681	538,522	55,547	246,302	165,027	-	-	361,430	828,306	72,917	317,929	281,884	-	247,721	-	920,451	
Direct Federal Grants	-	-	-	-	-	-	-	-	39,951	51,517	-	-	477,346	568,814	-	-	-	-	-	-	-	-
Total Revenue Federal Grants	52,614	275,240	118,987	-	-	91,681	538,522	55,547	286,253	216,544	-	-	838,776	1,397,120	72,917	317,929	281,884	-	247,721	-	920,451	
D. Revenue from State Grants																						
ESE Administered Grants	-	-	-	-	-	27,025	27,025	-	-	-	-	-	3,800	3,800	-	-	-	-	-	-	-	-
Other State Grants	-	-	-	-	-	35,626	35,626	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Revenue From State Grants	-	-	-	-	-	62,651	62,651	-	-	-	-	-	3,800	3,800	-	-	-	-	-	-	1,598,921	1,598,921
E. Revenue - Revolving & Special Funds																						
School Lunch Receipts	-	-	-	-	-	286,117	286,117	-	-	-	-	-	605,025	605,025	-	-	-	-	-	-	557,689	557,689
Athletic Receipts	-	-	-	-	-	16,446	16,446	-	-	-	-	-	17,786	17,786	-	-	-	-	-	-	21,413	21,413
Tuition Receipts - School Choice	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Tuition Receipts - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other Local Receipts	-	-	-	-	-	505,324	505,324	-	-	-	-	-	529,807	529,807	-	-	-	-	-	-	-	-
Private Grants	-	-	-	-	-	13,500	13,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Revenue Revolving & Special Funds	-	-	-	-	-	821,387	821,387	-	-	-	-	-	1,152,618	1,152,618	-	-	-	-	-	-	579,102	579,102
Total Revenue All Sources	52,614	275,240	118,987	-	-	15,524,654	15,971,495	55,547	286,253	216,544	-	-	17,668,483	10,283,160	72,917	317,929	281,884	-	247,721	17,348,266	18,268,717	



**SOUTH SHORE REGIONAL VOCATIONAL TECHNICAL HIGH SCHOOL
Preliminary Project Schedule**

2/29/2024

Task Name	Duration (days)	Start	Finish
Procure OPM [MOD 2]	34	Thursday, January 5, 2023	Tuesday, February 7, 2023
OPM interviews	1	Thursday, January 5, 2023	Thursday, January 5, 2023
OPM fee review & approval	33	Friday, January 6, 2023	Tuesday, February 7, 2023
MSBA OPM meeting approval	1	Monday, February 6, 2023	Monday, February 6, 2023
MSBA OPM letter issued	1	Tuesday, February 7, 2023	Tuesday, February 7, 2023
OPM contract executed	1	Tuesday, February 7, 2023	Tuesday, February 7, 2023
Procure Architect [MOD 2]	115	Tuesday, February 7, 2023	Thursday, June 1, 2023
Committee reviews & approves issuance RFS to the MSBA	1	Tuesday, February 7, 2023	Tuesday, February 7, 2023
LF issues RFS to the MSBA	1	Wednesday, February 8, 2023	Wednesday, February 8, 2023
MSBA-RFS review period	14	Wednesday, February 8, 2023	Tuesday, February 21, 2023
Finalize RFS with MSBA/BC	1	Tuesday, February 28, 2023	Tuesday, February 28, 2023
Ad submitted in Central Register & local newspaper	1	Thursday, February 23, 2023	Thursday, February 23, 2023
Select 3 members for DSP team / Assign DSP subcommittee	1	Tuesday, February 7, 2023	Tuesday, February 7, 2023
Ad appears in Central Register	1	Wednesday, March 1, 2023	Wednesday, March 1, 2023
On-Site RFS briefing	1	Tuesday, March 7, 2023	Tuesday, March 7, 2023
Receive RFS designer submissions	1	Thursday, March 30, 2023	Thursday, March 30, 2023
Review RFS & check references	13	Thursday, March 30, 2023	Tuesday, April 11, 2023
Submit initial RFS packets to the MSBA DSP	1	Tuesday, April 11, 2023	Tuesday, April 11, 2023
Submit reference check data to the MSBA DSP [MSBA deadline]	1	Tuesday, April 18, 2023	Tuesday, April 18, 2023
Designer Selection Panel Dry Run	1	Monday, April 24, 2023	Monday, April 24, 2023
Attend MSBA 1st DSP Meeting [assume rank and interview option is selected]	1	Tuesday, April 25, 2023	Tuesday, April 25, 2023
Attend MSBA 2nd DSP Meeting for Interviews	1	Tuesday, May 9, 2023	Tuesday, May 9, 2023
MSBA DSP issues official ranking and letter Re: Top Ranked Design Firm	1	Wednesday, May 10, 2023	Wednesday, May 10, 2023
Negotiate Designer Fee	17	Wednesday, May 10, 2023	Friday, May 26, 2023
Present designer contact to Building Committee	1	Friday, May 26, 2023	Friday, May 26, 2023
Designer contract - review by BC	7	Friday, May 26, 2023	Thursday, June 1, 2023
Designer contract - approval by BC	1	Thursday, June 1, 2023	Thursday, June 1, 2023
Execute Designer contact	1	Thursday, June 1, 2023	Thursday, June 1, 2023
Develop schedule/work plan	41	Thursday, June 1, 2023	Tuesday, July 11, 2023
BC approves work plan	1	Thursday, August 3, 2023	Thursday, August 3, 2023
MSBA/District kick off meeting	1	Tuesday, July 18, 2023	Tuesday, July 18, 2023
FEASIBILITY STUDY [MOD 3]	329	Wednesday, May 31, 2023	Wednesday, April 24, 2024
Preliminary Design Program (PDP)	219	Wednesday, May 31, 2023	Friday, January 5, 2024
Educational Programming	91	Wednesday, May 31, 2023	Tuesday, August 29, 2023
Ed. Visioning kick off meeting	1	Wednesday, May 31, 2023	Wednesday, May 31, 2023
Educational Visioning Group Workshop #1	1	Tuesday, June 20, 2023	Tuesday, June 20, 2023
Educational Visioning Group Workshop #2	1	Tuesday, July 11, 2023	Tuesday, July 11, 2023
Educational Visioning Public Forum	1	Thursday, July 13, 2023	Thursday, July 13, 2023
Educational Visioning Group Workshop #3	1	Tuesday, July 18, 2023	Tuesday, July 18, 2023
Teachers Workshop	1	Tuesday, August 29, 2023	Tuesday, August 29, 2023
EDUCATIONAL PLAN; Ed plan statement of teaching philosophy, methods and goals.	114	Wednesday, May 31, 2023	Thursday, September 21, 2023
Initial space summary ("ISS")	18	Tuesday, August 29, 2023	Friday, September 15, 2023
Evaluation of existing conditions	40	Monday, June 19, 2023	Friday, July 28, 2023
Meetings	304	Tuesday, February 7, 2023	Thursday, December 7, 2023

** Submit PDP to the MSBA **	1	Friday, October 27, 2023	Friday, October 27, 2023
MSBA PDP Review	412	Friday, October 27, 2023	Wednesday, December 11, 2024
Receive MSBA PDP comments	1	Monday, December 11, 2023	Monday, December 11, 2023
District returns responses to MSBD PDP comments	1	Friday, January 5, 2024	Friday, January 5, 2024
Preferred Schematic Report (PSR)	178	Monday, October 30, 2023	Wednesday, April 24, 2024
Prepare and Submit Project Notification to Mass Historical Commission and Receive MHC Response	32	Friday, February 16, 2024	Monday, March 18, 2024
SBC Vote to Submit PSR	1	Thursday, February 22, 2024	Thursday, February 22, 2024
*** Submit PSR to the MSBA ***	1	Thursday, February 29, 2024	Thursday, February 29, 2024
MSBA Review Period	22	Friday, March 1, 2024	Friday, March 22, 2024
Respond to MSBA PSR review comments	15	Monday, March 25, 2024	Monday, April 8, 2024
MSBA Facilities Assessment Committee (FAS) review (3/13 or 3/27)	15	Wednesday, March 13, 2024	Wednesday, March 27, 2024
Respond to MSBA FAS Comments	8	Wednesday, March 27, 2024	Wednesday, April 3, 2024
★★MSBA BOD Mtg - PSR - Proceed to Schematic★★	1	Wednesday, April 24, 2024	Wednesday, April 24, 2024
Schematic Design [MOD 4]	306	Thursday, April 25, 2024	Monday, February 24, 2025
DESE submittal (confirm submittal date with MSBA)	1	Thursday, August 29, 2024	Thursday, August 29, 2024
MSBA Review of DESE Submittal	22	Friday, August 30, 2024	Friday, September 20, 2024
DESE Review and Approval	22	Saturday, September 21, 2024	Saturday, October 12, 2024
Schematic Design Submittal	128	Wednesday, April 24, 2024	Thursday, August 29, 2024
SD Cost Estimates and Reconciliation	29	Monday, July 1, 2024	Monday, July 29, 2024
MSBA and Bond Counsel to Review Vote Language	15	Monday, August 12, 2024	Monday, August 26, 2024
Submit SD Budget to MSBA	1	Thursday, August 15, 2024	Thursday, August 15, 2024
SBC Vote to Approve SD Submission to MSBA	1	Thursday, August 15, 2024	Thursday, August 15, 2024
MSBA Schematic Design Notification	1	Thursday, August 15, 2024	Thursday, August 15, 2024
** Schematic Design Submitted to the MSBA **	1	Thursday, August 29, 2024	Thursday, August 29, 2024
MSBA Project Scope and Budget meeting	1	Wednesday, October 30, 2024	Wednesday, October 30, 2024
MSBA Review Comments Issued	22	Thursday, August 29, 2024	Thursday, September 19, 2024
Respond to MSBA Comments	15	Friday, September 20, 2024	Friday, October 4, 2024
★★MSBA BOD Meeting - SD Approval★★	1	Wednesday, October 30, 2024	Wednesday, October 30, 2024
120-day duration to secure funding authorization	121	Wednesday, October 30, 2024	Thursday, February 27, 2025
District executes PSBA	8	Wednesday, October 30, 2024	Wednesday, November 6, 2024
★★District Wide Ballot★★	1	Saturday, January 25, 2025	Saturday, January 25, 2025
★★Execute PFA★★	1	Monday, February 24, 2025	Monday, February 24, 2025
CM PROCUREMENT [applicable if committee decides to utilize CM-R methodology]	-218	Saturday, December 14, 2024	Friday, May 10, 2024
SBC Approves Use of CM at Risk Delivery & Selection Committee	1	Saturday, December 14, 2024	Saturday, December 14, 2024
Prequalification Committee is formed (PQC)	1	Thursday, February 22, 2024	Thursday, February 22, 2024
Selection Committee is formed (SC)	1	Thursday, February 22, 2024	Thursday, February 22, 2024
CM at Risk Application & Submit to OIG (If Applicable)	1	Friday, January 19, 2024	Friday, January 19, 2024
Office of Inspector General Review & Approval	1	Friday, February 16, 2024	Friday, February 16, 2024
CM at Risk RFQ Issued	1	Wednesday, March 6, 2024	Wednesday, March 6, 2024
CM at Risk SOQs Due	1	Wednesday, March 20, 2024	Wednesday, March 20, 2024
CM at Risk RFP Issued	1	Wednesday, April 3, 2024	Wednesday, April 3, 2024
CM at Risk Proposals Due	1	Wednesday, April 24, 2024	Wednesday, April 24, 2024

CM at Risk Interviews (notify CMs that all will be interviewed on this date in RFP)	1	Monday, May 6, 2024	Friday, May 10, 2024
CM at Risk Award / Notice to Proceed	1	Friday, May 10, 2024	Friday, May 10, 2024
Preconstruction	759	Friday, May 10, 2024	Monday, June 8, 2026
Design Development	177	Thursday, January 2, 2025	Friday, June 27, 2025
Design Development Documents	106	Thursday, January 2, 2025	Friday, April 18, 2025
DD Cost Estimate	21	Friday, April 18, 2025	Friday, May 9, 2025
DD Value Engineering and Reconciliation	14	Saturday, May 10, 2025	Friday, May 23, 2025
** Submit DD package to MSBA **	1	Friday, May 23, 2025	Friday, May 23, 2025
MSBA Issues Comments	22	Friday, May 23, 2025	Friday, June 13, 2025
Response to MSBA Comments	14	Friday, June 13, 2025	Friday, June 27, 2025
CD 60% Phase_MSBA Submission	160	Friday, June 27, 2025	Thursday, December 4, 2025
Develop CD 60% Documents	91	Friday, June 27, 2025	Thursday, September 25, 2025
CD 60% Cost Estimate	21	Thursday, September 25, 2025	Thursday, October 16, 2025
CD 60% VE and Reconciliation	14	Thursday, October 16, 2025	Thursday, October 30, 2025
** Submit 60% CD MSBA submission **	1	Thursday, October 30, 2025	Thursday, October 30, 2025
MSBA Issues Comments	21	Thursday, October 30, 2025	Thursday, November 20, 2025
Response to MSBA Comments	14	Thursday, November 20, 2025	Thursday, December 4, 2025
CD 90% Phase_MSBA Submission	133	Thursday, December 4, 2025	Thursday, April 16, 2026
Develop CD 90% Documents	63	Thursday, December 4, 2025	Thursday, February 5, 2026
CD 90% Cost Estimate	21	Thursday, February 5, 2026	Thursday, February 26, 2026
CD 90% VE and Reconciliation	14	Thursday, February 26, 2026	Thursday, March 12, 2026
** Submit 90% CD MSBA submission **	1	Thursday, March 12, 2026	Thursday, March 12, 2026
MSBA Issues Comments	21	Thursday, March 12, 2026	Thursday, April 2, 2026
Response to MSBA Comments	14	Thursday, April 2, 2026	Thursday, April 16, 2026
Final 100% CD MSBA submission - for record only	41 days		
100% CD drawings developed	45	Thursday, April 16, 2026	Sunday, May 31, 2026
Prepare 100% CDs for Final Bidding	8	Sunday, May 31, 2026	Monday, June 8, 2026
** Submit 100% CD (Bid) drawings/specs/GMP to MSBA ** FOR RECORD	1	Monday, June 8, 2026	Monday, June 8, 2026
PERMITTING - STATE and LOCAL JURISDICTIONAL APPROVALS	459	Thursday, October 30, 2025	Monday, February 1, 2027
Zoning Board of Appeals	98	Thursday, December 4, 2025	Thursday, March 12, 2026
Notice of Intent to Conservation Commission (Review based on Preliminary Site Design w/ Final Site Design due at 60% CDs)	1	Thursday, October 30, 2025	Thursday, October 30, 2025
NPDS Construction General Permit	45	Thursday, April 16, 2026	Sunday, May 31, 2026
EPA-NPDES / SWPPP	25	Sunday, May 31, 2026	Thursday, June 25, 2026
Permits from Town Engineering Dept.	45	Thursday, April 16, 2026	Sunday, May 31, 2026
Special Permit to Planning Dept.	35	Thursday, September 25, 2025	Thursday, October 30, 2025
Building Permit	246	Sunday, May 31, 2026	Monday, February 1, 2027
Bidding			
Early Site Work Bid Period (after 60% CDs, if possible)	28	Thursday, November 20, 2025	Thursday, December 18, 2025
Award Early Package Contract	1	Thursday, December 18, 2025	Thursday, December 25, 2025
Main Bid Period	30	Monday, June 8, 2026	Wednesday, July 8, 2026
Final GMP	28	Wednesday, July 8, 2026	Wednesday, August 5, 2026
Construction	1469	Thursday, December 25, 2025	Wednesday, January 2, 2030
Early Mobilization	28	Thursday, December 25, 2025	Thursday, January 22, 2026
Early Site Work Construction (if possible)	167	Thursday, January 22, 2026	Wednesday, July 8, 2026
Main Construction	842	Wednesday, July 8, 2026	Friday, October 27, 2028
Building Substantial Completion	1	Friday, October 27, 2028	Friday, October 27, 2028
FFE Installation	49	Friday, October 27, 2028	Friday, December 15, 2028
Punchlist	49	Friday, October 27, 2028	Friday, December 15, 2028

Final Completion of New School	1	Monday, December 18, 2028	Monday, December 18, 2028
Teacher Move-In	14	Monday, December 18, 2028	Monday, January 1, 2029
School Opening	1	Tuesday, January 2, 2029	Tuesday, January 2, 2029
Building Demo and Field Construction (if applicable)	365	Tuesday, January 2, 2029	Wednesday, January 2, 2030
Project Closeout Phase	118	Wednesday, January 2, 2030	Tuesday, April 30, 2030
Prepare and Submit Closeout Documents	90	Wednesday, January 2, 2030	Tuesday, April 2, 2030
Final Application for Payment	1	Tuesday, April 2, 2030	Tuesday, April 2, 2030
Submit 100% DCAMM Contractor Evaluations	7	Tuesday, April 2, 2030	Tuesday, April 9, 2030
Final Reimbursement Request	1	Tuesday, April 9, 2030	Tuesday, April 9, 2030
MSBA Closeout Documents Submitted	21	Tuesday, April 9, 2030	Tuesday, April 30, 2030
LEED	1716	Thursday, January 2, 2025	Friday, September 14, 2029
LEED Registration	21	Thursday, January 2, 2025	Thursday, January 23, 2025
LEED Kick-Off Meeting	1	Thursday, January 30, 2025	Thursday, January 30, 2025
Submit Design Submittal to USGBC	1	Monday, June 8, 2026	Monday, June 8, 2026
Final LEED 10-Month Cx Report	300	Friday, October 27, 2028	Thursday, August 23, 2029
Final Cx Report, Cx Completion Certificate	7	Friday, August 24, 2029	Friday, August 31, 2029
Construction Submittal to USGBC	14	Friday, August 31, 2029	Friday, September 14, 2029
Targeted Date of LEED Certification Letter	1	Friday, September 14, 2029	Friday, September 14, 2029
DCAMM Documentation	960	Monday, June 8, 2026	Tuesday, January 23, 2029
Designer evaluation for Design Phase	21	Monday, June 8, 2026	Monday, June 29, 2026
Designer evaluation for CA Phase	21	Friday, October 27, 2028	Friday, November 17, 2028
Contractor 50% evaluation	21	Thursday, September 2, 2027	Thursday, September 23, 2027
Contractor 100% evaluation	21	Tuesday, January 2, 2029	Tuesday, January 23, 2029