RESOLUTION NO. 20/24-25

SUMNER-BONNEY LAKE SCHOOL DISTRICT NO. 320

A RESOLUTION OF THE BOARD OF DIRECTORS, SUMNER-BONNEY LAKE SCHOOL DISTRICT NO. 320, APPROVING THE EDUCATIONAL SPECIFICATIONS RELATING TO PHASE 2 OF THE SUMNER HIGH SCHOOL MASTER PLAN PROJECT

WHEREAS, the District's Board of Directors (the "Board") authorized, under Resolution No. 23/23-24 (the "Capital Bond Resolution") the submission to the voters of the District on November 5, 2024 of a proposition authorizing the District to issue general obligation bonds in the aggregate principal amount of no more than $732,000,000 relating to authorized capital improvements and projects, including Phase 2 of the Sumner High School Master Plan (the "2024 Bond Program"); and

WHEREAS, the public voted to approve the 2024 Bond Program; and

WHEREAS, consistent with the Capital Bond Resolution, the District is seeking State funding for eligible capital improvements through the State Financing Assistance Program, under RCW ch. 28A.525, administered through the Office of the Superintendent of Public Instruction; and

WHEREAS, one of the requirements of the State Financing Assistance Program, is the preparation and submittal of Educational Specifications; and

WHEREAS, the purpose of the educational specifications, as defined under WAC 392-342-015, is to prepare an architectural program to create a framework to identify, organize, and describe critical elements of the project to guide decision-making, including instructional and non-instruction activities and their interrelationship, special provisions which could improve the learning environment, furniture and equipment needs, and consideration of efficiencies and future needs; and

WHEREAS, the District engaged Hutteball+Oremus Architecture, Inc., the Architects for Phase 2 of the Sumner High School Master Plan, to guide the programming process in coordination with the District's Capital Projects Team, including Marina Tanay, Director of Capital Projects, John Boatman, Capital Projects Facilities Manager, and Matt Guilanians, Falcon & Fern, the District's Development and Construction Manager, together with the Educational Specifications Advisory Committee convened by the District, consisting of District Staff, including directors, teachers, and students; and

WHEREAS, programming meetings commenced in February 2025 and concluded in late June 2025; and

WHEREAS, the meetings included: (i) programming workshops with the Educational Specifications Advisory Committee to ensure the community values of Sumner High School and the District were affirmed, (ii) District departmental focus group meetings to understand and incorporate departmental programmatic needs, and (iii) planning meetings held weekly with the

District's Capital Projects Team to monitor the process and progress, review input from the Advisory Committee and the departmental focus group relating to curriculum and needs of Staff and students, and to evaluate recommendations to achieve District standards, goals and values; and

WHEREAS, based upon the planning meetings and review by the District Capital Projects Team, Hutteball+Oremus Architecture has prepared the Educational Specifications for Phase 2 of the Sumner High School Master Plan, dated July 2025, attached hereto as *Exhibit A*, in accordance with the requirements of WAC ch. 392-342 and consistent with guidance under the School Facilities Manual of the State Financing Assistance Program (also known as the School Construction Assistance Program); and

WHEREAS, the District Administration recommends, in the best interests of the District and consistent with the authorization of the Capital Bond Resolution, approval of the Educational Specifications for Phase 2 of the Sumner High School Master Plan, prepared by Hutteball+Oremus Architecture, Inc. attached hereto as *Exhibit A*; and

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of Sumner-Bonney Lake School District No. 320, that:

1. The above recitals and findings are incorporated herein by reference;

2. The Board finds and determines that Educational Specifications for Phase 2 of the Sumner High School Master Plan, attached hereto as *Exhibit A*, are consistent with the goals, values, plans, and programming of the District and the Sumner High School Master Plan; and

3. The Superintendent is authorized to take such further action as appropriate necessary to submit to the Office of the Superintendent of Public Instruction the Educational Specifications for Phase 2 of the Sumner High School Master Plan in accordance with the State Financing Program requirements.

ADOPTED by the Board of Directors of Sumner-Bonney Lake School District No. 320, Pierce County, Washington, this 16th day of July, 2025, at an open public meeting.

SUMNER-BONNEY LAKE SCHOOL DISTRICT NO. 320, PIERCE COUNTY, WASHINGTON

_____
President and Director

_____
Vice President and Director

_____
Director

_____
Director

_____
Director

ATTEST:

_____
LAURIE D. DENT, Ph.D.
Secretary to the Board of Directors

EXHIBIT A

EDUCATIONAL SPECIFICATIONS

PHASE 2 OF THE SUMNER HIGH SCHOOL MASTER PLAN

SUMNER HIGH SCHOOL

Educational Specifications

JULY 2025

HUTTEBALL +OREMUS architecture

EDUCATIONAL SPECIFICATIONS

for

SUMNER HIGH SCHOOL

Sumner-Bonney Lake School District

July 2025

School Board Members
Kevin Lewis, President
Bill Gaines, Vice President
Erin Markquart, Director
J.B. Smith, Director
Tom Watson, Director

Superintendent
Laurie Dent, Ph.D.

Compiled by:

HUTTEBALL + OREMUS architecture

LAND ACKNOWLEDGMENT

We acknowledge that the Sumner-Bonney Lake School District occupies the unceded Coast Salish lands that have been here since time immemorial. We honor the ways of knowing and ways of being of Indigenous peoples and tribal nations, who are still here and thriving, in our district community. We also acknowledge that this is a working land acknowledgment that will continue to evolve as our partnership with local Indigenous peoples and tribal leaders expands.

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EXECUTIVE SUMMARY

INTRODUCTION

Hutteball + Oremus is pleased to present the Sumner-Bonney Lake School District and its Board of Directors with this Educational Specification document for the Sumner High School Addition - Phase 2 project.

School facility planning is characterized by extensive input, research-based analysis of educational trends and conditions, and documentation of building user needs. The development of these educational specifications represents five months of intensive meetings, workshops and discussions with district administrators and high school staff and students. All stakeholders contributed tremendously in the development of this document by providing both visionary and practical guidance focused on instructional program opportunities for the creation of a new 21st century facility for Sumner High School.

The core foundation of this Educational Specification document is the educational program. Successful educational programs require spaces which are configured with certain physical attributes and characteristics to maximize instructional performance. In essence, the shape and nature of place should be designed to support each educational program.

This document will be used by the district and the design team to develop, design, and construct the Phase 2 Addition at Sumner High School

PURPOSE

The purpose of these Educational Specifications is to prepare an architectural program identifying both general and individual space requirements and relationships for the project. This document provides the framework to identify, organize, and describe critical elements of the project. The information contained in this document will guide the decision-making process throughout the planning and construction process to ensure that decisions and priorities are based on shared common values and user needs.

METHODOLOGY

These educational specifications were developed through a collaborative process guided by a 30-member Ed Spec Advisory Committee (ESAC) consisting of district staff, teachers, and high school students. The team was facilitated by Hutteball + Oremus Architecture. The advisory committee, along with targeted focus groups representing each high school department, convened on a regular basis over a five-month period to participate and advance the programming process resulting in the development of this document. The success of these educational specifications is in large part due to the dedication and guidance provided by this group of individuals.

METHODOLOGY (continued)

Other driving factors in the programming process included codes and regulations, educational trends, budget, continued cost of operation, and resource impacts.

The following information represents an estimate of space requirements based upon an analysis of projected student enrollment, classroom utilization, functional activities, furniture and equipment layouts, and school district standards. The net area of each space is based upon similar projects and district program requirements. Each department section includes a narrative indicating the purpose of the program and a listing of associated design goals. Detailed program information is included for each room based on input received from high school staff during focus group meetings and follow-up discussions.

ACKNOWLEDGEMENTS

The Sumner-Bonney Lake School District and Hutteball + Oremus Architecture would like to thank all who participated in the programming process. Your invaluable gift of time and expertise was essential for the completion of this document.

BOARD MEMBERS

Kevin Lewis, President
Bill Gaines, Vice President
Erin Markquart, Director
J.B. Smith, Director
Tom Watson, Director

SUPERINTENDENT

Laurie Dent, Ph.D.

DISTRICT SUPPORT SERVICES + CAPITAL PROJECTS

Marina Tanay, Director of Capital Projects
John Boatman, Capital Projects Facilities Manager
Matt Guilanians, Falcon & Fern, Development and Construction Manager

ED SPEC ADVISORY COMMITTEE (ESAC)

Aaron Tomyn, CTE Director
Alli Bywater, Leadership Student
Ashleigh Schreiber, JROTC Student
Brett Thompson, Assistant Principal
Brian Kaelin, Athletics Director
Brian Scheerer, Safety / Security Director
Bryan Slater, Teacher
Casey Adcox, Teacher
Charlotte Marrison, Nutrition Director
Chris Paulson, Building AD / Dean
David Coutts, Maintenance Director
Diana Herrera, Teacher
Emily Browning-Cray, Fine/Performing Arts Teacher
Jamie Voiles, Admin Support
Janine Sather, CTE
Jay Henson, PAC Manager
Jazma Griswold, Admin Secretary
Jeff Baines, Principal

ED SPEC ADVISORY COMMITTEE (continued)

Jenna Chantler, Teacher
Joe Carl, Band/Choir Teacher
Joleen LaMay, PE Teacher
Julie New, CSO
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programming process

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THE PROCESS

OVERVIEW

Programming meetings started in February 2025 and ran through June 2025. Two formal programming workshops with the Ed Spec Advisory Committee were held to receive input into the programming process and to affirm the process integrates the community values of Sumner High School and the district in its development.

Eight Departmental Focus Group meetings were also facilitated to receive specific departmental programmatic needs. These meetings received a good number of attendees representing each department in the Sumner High School. Valuable information was shared and recorded related to curriculum and specific needs of the staff and students.

In addition, weekly planning meetings were scheduled with the district's Capital Projects Department for monitoring of the process, reviewing feedback, confirming direction, and providing input on district standards.

COMMITTEE & DEPARTMENT PROGRAMMING MEETINGS

FEBRUARY 20, 2025	**PROGRAMMING WORKSHOP #1:** Overview + Kickoff
MARCH 6, 2025	**DEPARTMENT INTERVIEWS:** Core-Plus Lab, CAD Lab, Robotics
MARCH 16, 2025	**DEPARTMENT INTERVIEWS:** Child Development, Photo Lab, Video Lab
MARCH 27, 2025	**DEPARTMENT INTERVIEWS:** JRTOC, Tiny Sparts
APRIL 3, 2025	**DEPARTMENT INTERVIEWS:** Ag. Science, Horticultural Science, Culinary Arts, Web Design, Computer Science, Business Lab
APRIL 24, 2025	**DEPARTMENT INTERVIEWS:** Core Curriculum
MAY 1, 2025	**DEPARTMENT INTERVIEWS:** PE, Athletics, Pool
MAY 8, 2025	**DEPARTMENT INTERVIEWS:** Performing Arts, Music
MAY 22, 2025	**DEPARTMENT INTERVIEWS:** Administration, Health, Counseling, Student Services
JUNE 5, 2025	**PROGRAMMING WORKSHOP #2:** Progress Update - Full Committee

PROGRAMMING WORKSHOP #1

The following is a recap of Workshop #1:

WHY ARE YOU HERE?

Your role as a committee member is to share your expertise in curriculum, students, and your community to provide the design team with direction for the Sumner High School project. We ask that you recognize our success depends on your participation and that all ideas and comments are valid. Your voice matters!

The work of the committee will contribute to the development of an educational specifications document which will provide framework to identify, organize, and describe critical elements of the project. Information contained in this document will include room data, program area summaries, site requirements, space relationships, and some district standards.

The ESAC will affirm and reflect community values using the best information possible to provide input.

The ESAC is one of many sources of input that will influence the content of the Educational Specifications document that will be used to guide the project design.

The School Board is the governing body that will approve final design decisions.

GROUP ACTIVITY: UNIQUE QUALITIES

The Ed Spec Advisory Committee was divided into five table groups. Each group received a question related to Sumner High School and was asked to discuss and respond in writing. The top responses as determined by each table group were shared with the entire committee.

Questions and responses were as follows:

What do the architects need to know about the history and specific elements at Sumner High School that should be honored in the new design?

- We are SPARTANS
- Valley Pride
- Daffodils, Mt. Ranier, Rhubarb
- Pride in the community and history of the community
- Servant Leadership is important (8 essentials)
- Sport traditions / pride – success; history
- IB program – history of academic excellence
- School colors are purple and gold with a touch of orange
- Keep pieces of school history – center court, spartan wall, murals around the school

What are some of the traditions and events at Sumner High School that bring the students, staff and community together?

- Pack the gym
- Homecoming parade
- Community dinner
- Daffodil parade
- Winter wishes
- Showcase events
- Cultural celebration
- STEM fair
- Performances
- Plays
- Sporting events
- Battle of the bands
- Other club and activity events
- Benefit night
- Homecoming dance
- CTE projects
- Assemblies each season
- PAC assemblies

What are some of the unique attributes that shape Sumner High School's identity and culture?

- Longevity – the historical part of this school and community

- Diversity of population
- Downtown campus – heart of Sumner
- Community support – high level of involvement and pride
- Love to celebrate and empower our students
- Students play a huge role in the culture and activities
- High level of student ownership
- We have something for every student – sports, clubs, etc.
- Strong IB program has helped raise academic standards
- Student have risen to meet these high expectations
- High level of participation and success in multiple programs

Describe the community and students which Sumner High School serves.

- Tradition / history / pride
- Multi-generational family ties
- Competitive
- Growing in diversity, changing identity
- High expectations
- Demographics change
- Warm / welcoming culture, family-like
- Servant oriented

What are you most excited about in the completed Sumner High School project?

- New/updated facilities – some built in the 1950's
- Better use of space, efficiency
- Storage – uniforms
- Modern collegiate learning environment that will serve the community for half a century
- Enough flexible space to serve large programs as well as dedicated spaces for programs to call home
- Centralized parking
- Modern facilities in feel, technology, and energy efficiency
- Dedicated spaces for large programs (i.e. band, CTE, choir, JROTC)
- Equipment that works
- A building that instills pride in our community, students, and alumni
- Having room for students to meet, learn, explore
- Excited for current and future children of staff to experience the building

GROUP ACTIVITY: HOPES & CONCERNS

The Ed Spec Advisory Committee collaborated to voice their hopes and concerns for the upcoming high school replacement project. Committee members were encouraged to record as many thoughts as possible and place each comment on one of the six boards that most closely align with the subject matter of their comment. Items in bold were selected by each table-group as the top three significant to share with the entire committee.

The following comments were received:

Function

- **The Gym – everything about it**
- **Hope that those who will use the space are directly involved in the planning**
- **ADA accessibility is important**
- **Accessibility for all**
- **Provide appropriate space for program storage**
- **Larger spaces – hallways and classrooms**

Safety/Security

- Fields that are secure yet accessible
- Lockable cabinets in the DLC area
- Concerned not having enough CSO eyes in all the hallways – hope for more CSO's
- Safe high levels of visibility (video/supervision)
- Up to date / better cameras that don't freeze
- Locked doors and limited in/out movement of students

- Hope for specialized light systems put in place for emergencies in case PA system is down or can't be heard
- I hope the history of SHS is thoroughly displayed
- Secure campus
- Safety is important
- **Campus safety hubs in each building**
- **Hope the safety of the campus stays intact during construction**
- **Safety**

Aesthetics

- Incorporate school colors and mascot
- Concerned that looks will take priority over function
- **Warm inviting spaces**

Community

- Incorporate SHS / the valley colors
- Do not lose the feel of our school community
- Pride
- Welcoming to the community
- More visible multi-purpose study spaces for students
- Fear people will forget how bad it is today and start complaining right after it opens
- **Most important is that this school be a crown jewel in the community**

Durability

- Maintainable is important
- Quality is important
- Durable is important
- Flexibility of space to withstand trends/changes in education

Other

- Hope visits are scheduled at other new facilities to get ideas and learn
- Concerned that the project will not happen
- Most important to me is that what is on the plan is actually adhered to
- Concerned that things don't meet timeline
- I hope the codes do not change again
- I hope those who sacrifice comfort during the construction process will still be happy and invested even if they have graduated

- Concerned about scope creep
- Concerned about budget
- Hope the project finishes on time and on budget
- Timing – we are ready! – explaining to community
- Concerned about the transitioning to Phase 2 and Phase 3 parking
- Concerned about patience
- **Inter-working with other programs while in transition to the new facilities**
- **Concerned that the price of construction will increase, and plans have to change**
- **Concerned about this being an 8-year project**
- **Minimal disruptions to learning during construction**

DEPARTMENTAL FOCUS GROUP MEETINGS

Input received from these meetings have been incorporated into the "Program Components & Room Data" section of this document.

CAPITAL PROJECTS WEEKLY PROGRESS MEETINGS

All input and information received during these meetings have been incorporated into this document and the Schematic Design as a continued work in process as information became available.

PROGRAMMING WORKSHOP #2

The entire Ed Spec Advisory Committee was assembled to review and confirm the programming process and materials generated to date. The meeting focused on presentation of current progress and solicitation of feedback, comments, and suggestions from the committee. All relevant comments were incorporated into this document and the group expressed appreciation and support of the current direction of this project.

project overview

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PROJECT OVERVIEW

PROJECT REQUIREMENTS

1. The school shall serve students in Grades 9 through 12.
2. Planned capacity of 1,830 students.
3. Construction shall be completed in a manner which allows continued operation of the existing school.
4. Square footage for Phase 2 is expected to be between 99,000 and 105,000 square feet to control a budgeted construction amount of $76,458,718.
5. The total square footage of the entire school replacement project when complete is expected to be between 315,000 and 345,000 square feet. (current square footage of the existing high school is 263,768).
6. Planned on-site parking to be 688 stalls at final completion (current parking at the existing high school is 453 stalls).
7. The project will align as closely as possible to the terms of the Conditional Use Permit and Development Agreement for the master plan replacement that was approved by the City of Sumner in July of 2021.

DESIGN REFINEMENT

When making design decisions, the design team shall consider the following factors:

1. Does it meet all functional requirements?
2. Does it result in an attractive appearance?
3. Can it be easily operated and maintained?
4. Does the resulting cost maximize value?

These factors in addition to the requirements established in the Educational Specifications shall be compiled within the design of the project.

FUNCTIONAL ORGANIZATION

The Educational Specifications for the project are organized in the following functional units. While these units are inter-related, each unit has its own unique set of activities and special characteristics.

The major functional units are classified as follows:

1. **General Instruction:** A group of general classrooms and support spaces that serves the instructional needs of students in core curriculum studies.
2. **Special Education:** A group of classrooms, specialized classrooms, and support spaces that accommodate diverse learning needs through a variety of accommodations and modifications.
3. **Career & Technical Education (CTE):** Technology-focused instructional spaces focused on providing students with academic skills to enter the workforce in high demand, high pay jobs.

4. **Faculty & Staff Support:** Office and workroom type spaces that are primarily used by administrative and other support staff.
5. **Building Support:**
    a. Maintenance: Spaces used for custodial equipment and supplies.
    b. Restrooms: Spaces that provide facilities for students, staff and the public.
    c. Mechanical/Electrical/Communications: Spaces that serve heating, ventilation, air conditioning, electrical, and telecommunications equipment.
    d. Circulation: Horizontal and vertical circulation spaces that include corridors, vestibules, shafts, stairs, and elevators.
    e. Outdoor Areas: Improvements to the school site that include vehicular parking and exterior circulation areas, play areas, courtyards, and service areas.

SPACE ALLOCATION

1. Space allocations and net areas are based upon desired uses, functional activities and relationships, and equipment/furniture needs. It is anticipated that actual square footages of each space may be modified during design to accommodate specific requirements but the overall gross total square footage should be maintained as close as possible to the target goal.

PROGRAM AREA SUMMARY

100 - GENERAL INSTRUCTION

110 GENERAL CLASSROOMS	Teaching Stations	SUMNER HS ED SPEC No. of Spaces	Unit SF	Area
111 General Classrooms	24	24	880	21,120
120 INSTRUCTIONAL SUPPORT				
121 Learning Commons		4	1,120	4,480
122 Student Workroom		2	400	800
123 Small Group Collaboration		4	145	580
GENERAL INSTRUCTION TOTAL	**24**			**26,980**

200 - SPECIAL EDUCATION

210 DEVELOPMENTAL LEARNING	Teaching Stations	SUMNER HS ED SPEC No. of Spaces	Unit SF	Area
211 Developmental Learning Classroom	3	3	780	2,340
212 Life Skills Center		1	465	465
213 Quiet Room		2	45	90
214 Developmental Learning Restroom		3	110	330
220 SPECIAL EDUCATION				
221 Special Education Classroom	5	5	900	4,500
222 Special Education Shared Storage		2	135	270
223 OT/PT Room		1	265	265
224 Special Education Office		1	265	265
SPECIAL EDUCATION TOTAL	**8**			**8,525**

300/400 - CAREER & TECHNICAL EDUCATION

310 CHILD DEVELOPMENT	Teaching Stations	SUMNER HS ED SPEC No. of Spaces	Unit SF	Area
311 Child Development Classroom	1	1	950	950
312 Daycare - Toddlers		1	840	840
312a Daycare Office		1	165	165
312b Daycare Restroom		1	60	60
312c Daycare Kitchenette		1	130	130
312d Daycare Storage		1	75	75
312e Daycare Lobby		1	240	240
312f Daycare Outdoor Storage		1	210	210
313 Daycare - Infants		1	780	780

SUMNER HS ED SPEC				
320 BUSINESS	Teaching Stations	No. of Spaces	Unit SF	Area
321 Business Lab	1	1	1,160	1,160
330 CULINARY				
331 Culinary Arts Lab		1	2,965	2,965
331a Culinary Arts Dry Storage		1	235	235
332 Culinary Arts Classroom	1	1	975	975
340 CORE-PLUS AEROSPACE MFG				
341 Core-Plus Lab		1	3,330	3,330
341a Core-Plus Storage		1	285	285
342 Core-Plus Classroom	1	1	850	850
350 CAD				
351 CAD Lab	1	1	1,220	1,220
351a Fabrication Lab		1	630	630
360 ROBOTICS				
361 Robotics Lab	1	1	2,400	2,400
370 GRAPHIC DESIGN				
371 Graphic Design Lab	1	1	1,160	1,160
380 DIGITAL PHOTOGRAPHY				
381 Digital Photography Lab	1	1	1,160	1,160
381a Photo Studio		1	635	635
390 VIDEO PRODUCTION				
391 Video Production Lab	1	1	1,160	1,160
410 AGRICULTURAL SCIENCE				
411 Agricultural Science Lab	1	1	1,400	1,400
412 Animal Science Building		1	1,025	1,025
420 HORTICULTURAL SCIENCE				
421 Horticultural Science Lab	1	1	1,400	1,400
422 Shared Prep Lab		1	380	380
423 Greenhouse		1	2,000	2,000
CAREER & TECHNICAL EDUCATION TOTAL	**11**			**27,820**

1500 - FACULTY + STAFF SUPPORT

SUMNER HS ED SPEC				
1510 FACULTY SUPPORT	Teaching Stations	No. of Spaces	Unit SF	Area
1511 Staff Workroom		4	350	1,400
1512 Staff Restroom		4	60	240
FACULTY + STAFF SUPPORT TOTAL	**0**			**1,640**

1600 - BUILDING SUPPORT

SUMNER HS ED SPEC 1610 RESTROOMS	Teaching Stations	No. of Spaces	Unit SF	Area
1611 Group Restroom - Women		3	300	900
1612 Group Restroom - Men		3	300	900
1613 Single Occupant Restroom		3	60	180
1620 CUSTODIAL				
1621 Custodial Closet		3	85	255
BUILDING SUPPORT TOTAL	**0**			**2,235**

SUBTOTAL ASSIGNABLE AREA	**43**	**67,200**

1700 - UNASSIGNABLE

Mechanical/Electrical/Data (10% of GSF)	16% of Assignable Area	10,752
Circulation (21% of GSF)	34% of Assignable Area	22,848
Interior/Exterior Walls & Shafts (6% of GSF)	9% of Assignable Area	6,048
UNASSIGNABLE TOTAL		**39,648**

TOTAL BUILDING AREA (GSF)	**106,848**

sumner high
school

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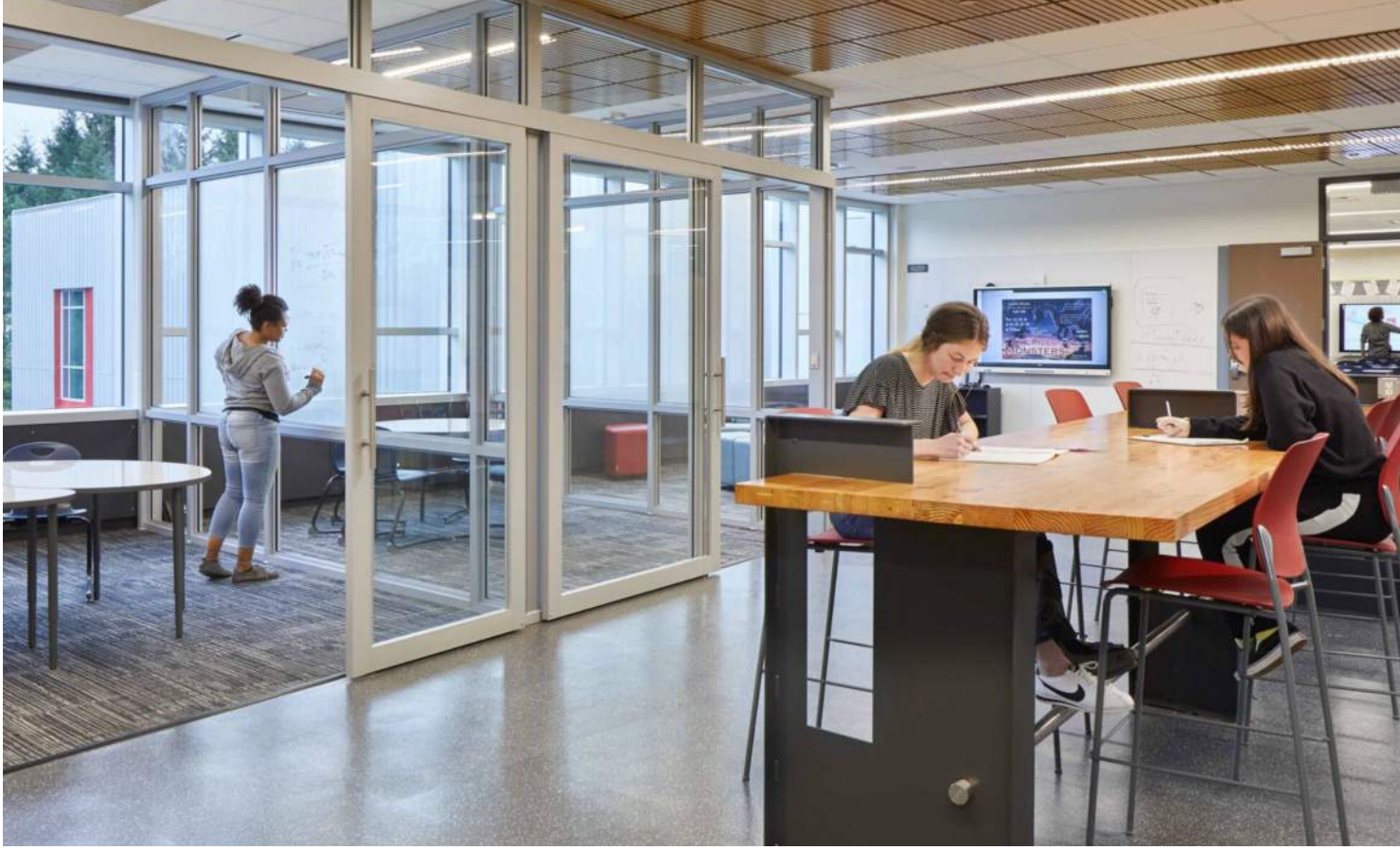
PROGRAM COMPONENTS & ROOM DATA

Programming sessions occurred over several weeks. Room data information was gathered from all Sumner High School staff. The survey's conducted included questions regarding the size, function, adjacency, environmental requirements, and special equipment needs for the spaces. The staff were encouraged to think of their needs for the next 30 years to accommodate the design goals and possible curriculum trends in the future. The information gathered is documented on the following pages and will initiate the school's basis of design.

They are organized into the following departments:

100 - GENERAL INSTRUCTION	**25**
200 - SPECIAL EDUCATION	**33**
300/400 - CAREER & TECHNICAL EDUCATION	**45**
1500 - FACULTY + STAFF SUPPORT	**81**
1600 - BUILDING SUPPORT	**87**
1700 - UNASSIGNABLE	**95**



VERBOS IRREGULARES
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100 - GENERAL INSTRUCTION

COMPONENTS:

110 GENERAL CLASSROOMS

111 General Classrooms (English, Math, Social Studies, World Languages)

120 INSTRUCTIONAL SUPPORT

121 Learning Commons
122 Student Workroom
123 Small Group Collaboration

PURPOSE:

The core curriculum classrooms include english, math, social studies, and world language where teacher planning, lectures, testing, small group collaboration, student presentations, project work, and exploration take place.

Providing instructional support, the flex space and conference room are highly flexible areas intended to accommodate a wide variety of unique teaching needs, student activities, and learning styles including individual testing, tutoring sessions, student or staff conferencing, departmental collaboration, project work, independent or group study, and socializing.

DESIGN GOALS:

- Each core curriculum area should be composed of highly flexible spaces that support a variety of instructional formats, gathering sizes, teaching methods, and learning styles.
- The core curriculum areas should easily adapt to daily teaching needs as well as to constantly evolving educational delivery methods.
- Each core curriculum classroom should enable personalization by the teacher through display of instructional materials, posters, schedules, process updates, and assignments, as well as the showcasing of student work, progress, and accomplishments.
- Core curriculum areas should be transparent, visually interconnected spaces that allow for easy supervision while simultaneously highlighting and celebrating the exciting, academic nature of the area.
- The shared learning flex space, to the maximum extent possible, should incorporate circulation space to increase its size beyond the area allocated in the identified program square footage.

110: GENERAL CLASSROOMS

111 - General Classroom

Size:	(24) @ 880 SF
Occupants:	(1) Instructor (32) Students maximum
Activities:	Group instruction/lecture/discussion Small group work Individual and group presentations Computer use by students and teachers Watching videos Writing and individual seat work Testing
Proximity:	Near: toilets & drinking fountains
Finishes:	Flooring: carpet Ceiling: suspended acoustical panels Walls: painted gypsum board, tackable wallcovering
Furniture:	(1) Teacher's desk (1) Teacher's task chair (1) Pedestal to teach from (1) Presentation table, 24"x48", mobile (16) 2-person tables, 60"Wx24"D (32) Student chairs with stacking capability, or stack on desks
Casework:	(1) Teacher wardrobe, 36"Wx24"Dx84"H, lockable (1) Tall storage, 36"Wx24"Dx84"H (4) Filing cabinets, lockable (2) Base cabinets, lockable Sliding markerboards with shelving behind (2) Base cabinets, open shelving, 30"Wx18"Dx36"H with countertop Note: Casework to be similar to general classrooms in Phase 1
Specialty:	(2) 48"x96" whiteboards, magnetized, on each side of video monitor Tackable wall covering at front and rear walls (1) Paper towel dispenser in each classroom Mini blinds at exterior windows and interior relites
Lighting:	Recesssed 2'x2'
Technology:	(1) document camera – District will provide, install and configure (1) 86" Interactive video monitor and stand at front of classroom – District will provide, install, and configure
Other:	Natural daylight

120 INSTRUCTIONAL SUPPORT

121 - Learning Commons

Size:	(4) @ 1,060 SF
Occupants:	Up to (25)
Activities:	Study/research Collaboration Project work Rehearsal area Student lounge for relaxation & socialization
Proximity:	Near: classrooms & instructional areas
Finishes:	Flooring: polished concrete Ceiling: decorative style suspended acoustical panel clouds similar to Phase 1 Wall: painted gypsum board, continuation of corridor wainscot (plastic laminate panels), tackable wallcovering
Furniture:	Tables with chairs Café style seating
Specialty:	(2) markerboard presentation walls Tackable wall covering
Lighting:	4" linear recessed
Technology:	(1) 86" Interactive video monitor and wall mounted bracket - District will provide, install, and configure
Other:	Maximize sightlines from adjacent classrooms for monitoring by staff

122 - Student Workroom

Size:	(2) @ 400 SF
Occupants:	Up to (8)
Activities:	General conference room for staff & students Small group collaboration Project work Rehearsal area
Proximity:	Near: classrooms & instructional areas
Finishes:	Flooring: carpet Ceiling: suspended acoustical panels Walls: painted gypsum board, tackable wallcovering
Furniture:	Tables with chairs
Specialty:	(1) Markerboard 4'x6' (1) Markerboard 4'x8' Provide roller shades at interior glazing for use during lockdown Provide mini-blinds at exterior windows
Lighting:	2'x2' recessed
Other:	Provide relites to maximize sightlines from corridor for monitoring by staff

120: INSTRUCTIONAL SUPPORT

123 - Small Group Collaboration

Size:	(4) @ 145 SF
Occupants:	Up to (6)
Activities:	General conference room for staff & students Small group collaboration
Proximity:	Near: classrooms & instructional areas
Finishes:	Flooring: carpet Ceiling: suspended acoustical panels Wall: Painted gypsum board, tackable wallcovering
Furniture:	Tables with chairs
Specialty:	Markerboard, 4'x6' Provide roller shades at interior glazing for use during lockdown
Lighting:	2'x2' recessed
Other:	Provide relites to maximize sightlines from corridor for monitoring by staff

Happy New Year!
Great!
Terrific Terrys
HAPPY BIRTHDAY!
RAMONA
VIKINGS

200 - SPECIAL EDUCATION

COMPONENTS:

210 DEVELOPMENTAL LEARNING

211 Developmental Learning Classroom
212 Life Skills Center
213 Quiet Room
214 Developmental Learning Restroom

220 SPECIAL EDUCATION

221 Special Education Classroom
222 Special Education Shared Storage
223 OT/PT Room
224 Special Education Office

PURPOSE:

The Developmental Learning program consists of spaces designed for students who need a high level of environmental structure and support. It is intended to serve self-contained, special education students with significant disabilities by teaching them various transition skills (personal and work related) necessary for independent living including grooming, hygiene, dressing, cooking, nutrition, safety, communication, fitness, recreation, self-advocacy, and scheduling.

The Special Education Classrooms and support areas are resources intended to serve students with diagnosed disabilities that substantially interfere with their general education. They are given direct, specialized instruction and academic remediation and assistance with homework and related assignments as individuals or in groups in one or more core academic subjects. Specifics of this assistance are spelled out in the Individualized Education Plan (IEP) specifically developed for each qualifying student per Federal and State guidelines.

DESIGN GOALS:

- The design and location of these departments should promote a sense of community and belonging within the school culture.
- The design and location of the special education spaces should promote interdisciplinary collaboration and interaction.
- The Special Education Classrooms should function and be sized similar to a General Classroom.
- Spaces should be flexible and adaptable with controllable stimuli.
- As the nature of each student's needs will vary from year to year and the equipment and furnishings needed will vary accordingly, spaces should be designed to easily accommodate the reconfiguration, replacement, and storage of equipment.

210: DEVELOPMENTAL LEARNING

211 - Developmental Learning Classroom

Size:	(3) @ 780 SF
Occupants:	(1) Instructor, (3-4) para-educators (10-12) Students
Activities:	One-on-one instruction Small group instruction Whole group instruction Self-regulated quiet time
Proximity:	Near: general classrooms, connection between DLC program rooms Direct: life skills center, restroom
Finishes:	Flooring: rubber Ceiling: suspended acoustical panels Walls: durable walls (36"-48" wainscot), painted gypsum board, tackable vinyl wallcovering
Furniture:	(1) Teacher's desk (1) Teacher's task chair (4) Adult chairs (1) Worktable for para educators (3) File cabinets, 4-drawer, lockable (4) Horseshoe tables (16) Student chairs Soft seating
Casework:	(1) Teacher wardrobe, 36"Wx24"Dx84"H, lockable (3) Tall Storage, 36"Wx24"Dx84"H, lockable Approximately 12 lineal feet of counter with drawers and cabinets below and cabinets above, lockable
Specialty:	Markerboard wall Mini blinds at exterior windows and interior relites 42"W doors for accessibility
Plumbing:	(1) sink with lever-style faucet, tempered hot water valve, and bubbler
Lighting:	2'x2' recessed
Technology:	(1) 86" interactive video monitor and mounting stand – District will provide, install, and configure
Other:	Natural daylight

210: DEVELOPMENTAL LEARNING

212 - Life Skills Center

Size:	(1) @ 465 SF
Occupants:	(1) Instructor, (2) para-educators (6) Students
Activities:	Instruction of cooking, cleaning, laundry, and other home life skills needed for independent living Food and meal preparation Food equipment cleaning Clothes washing and drying
Proximity:	Direct: developmental learning classrooms, corridor
Finishes:	Flooring: rubber flooring Ceiling: suspended acoustical panels, food grade Walls: painted gypsum board
Equipment:	Accessible range Range hood (2) Accessible microwaves (FOIC) Dishwasher Accessible (front loading) washing machine (FOIC) Accessible (front loading) dryer (FOIC) Refrigerator/freezer (FOIC)
Casework:	Approximately 25 lineal feet of counter with drawers and cabinets below and cabinets above in a Kitchenette configuration Center kitchen island to facilitate demonstrations Lockable casework
Plumbing:	(2) Two compartment sinks with lever-style faucet and tempered hot water valve No garbage disposals Connection for washing machine Connection for dishwasher Connection for refrigerator
Lighting:	Provide undercounter lighting
Other:	Room, cabinetry, and furnishings to be ADA compliant Dryer vent connection

213 - Quiet Room

Size:	(2) @ 45 SF
Occupants:	(1) Students
Activities:	De-escalation of student Protection of student/staff
Proximity:	Direct: developmental learning classroom
Finishes:	Flooring: carpet Ceiling: gypsum board Walls: cushioned/padded
Specialty:	Wall pads
Lighting:	Recessed vandal-resistant light fixture
Other:	Half-light in door No door handle inside of room Door locks when button held (magnetic push button) 42" W doors Sound isolated room as practically feasible

210: DEVELOPMENTAL LEARNING

214 - Developmental Learning Restroom

Size:	(3) @ 110 SF
Occupants:	(1-2) Adults (1) Student
Activities:	Personal hygiene Life skills development Changing diapers/clothing of students who need such assistance Hoisting student into/out of wheelchairs onto changing table Toiletry Hand-washing
Proximity:	Direct: developmental learning classroom
Finishes:	Flooring: rubber or ceramic tile Ceiling: gypsum board Walls: ceramic tile or FRP
Furniture:	Changing table
Equipment	Hoyer lift (FOIO)
Casework:	Base cabinet with countertop, 36"Wx24"D for storage of diapers, clothes, changing pads and to be used as a writing surface for bathroom logs Consider upper cabinet above base cabinet (lockable)
Plumbing:	Shower, ADA accessible Handwashing sink with lever faucets Toilet, ADA accessible Floor drain
Other:	Door to be 42"W to accommodate motorized wheelchairs. Outward swinging door preferred

220: SPECIAL EDUCATION

221 - Special Education Classroom

Size:	(5) @ 900 SF
Occupants:	(1) Instructor, (3-4) para-educators (10-12) Students
Activities:	Rotation between all classrooms Reading/writing, math, science, adaptive social behavior One-on-one instruction Small group instruction Whole group instruction Self-regulated quiet area
Proximity:	Near: general classrooms Direct: between pairs of special education classrooms
Finishes:	Flooring: Carpet Ceiling: suspended acoustical panels Walls: painted gypsum board, tackable vinyl wallcovering
Furniture:	(1) Teacher's desk (1) Teacher's task chair (4) Adult chairs (1) Worktable for para educators (3) File cabinets, 4-drawer, lockable (4) Horseshoe tables (16) Student chairs
Casework:	(1) Teacher wardrobe, 36"Wx24"Dx84"H, lockable (1) Tall Storage, 36"Wx24"Dx84"H (4) Filing cabinets, lockable (2) Base cabinets, lockable Sliding markerboards with shelving behind Note: Casework to be similar to general classrooms in Phase 1
Specialty:	(2) 48"x96" whiteboards, magnetized, on each side of video monitor Tackable wallcovering at front and rear walls (1) Paper towel dispenser in each room Mini blinds at exterior windows and interior relites
Lighting:	2'x2' recessed
Technology:	(1) Document camera – District will provide, install, and configure (1) 86" Interactive video monitor and stand – District will provide, install, and configure
Other:	Integrate with main school instructional spaces Natural daylight Easy access to buses

220: SPECIAL EDUCATION

222 - Special Education Shared Storage

Size:	(2) @ 135 SF
Occupants:	Not occupied
Activities:	Storage of materials, equipment, and supplies
Proximity:	Direct: special education classrooms where possible
Finishes:	Flooring: rubber Ceiling: suspended acoustical panels Walls: painted gypsum board
Specialty:	Shelving by Owner

223 - OT/PT Room

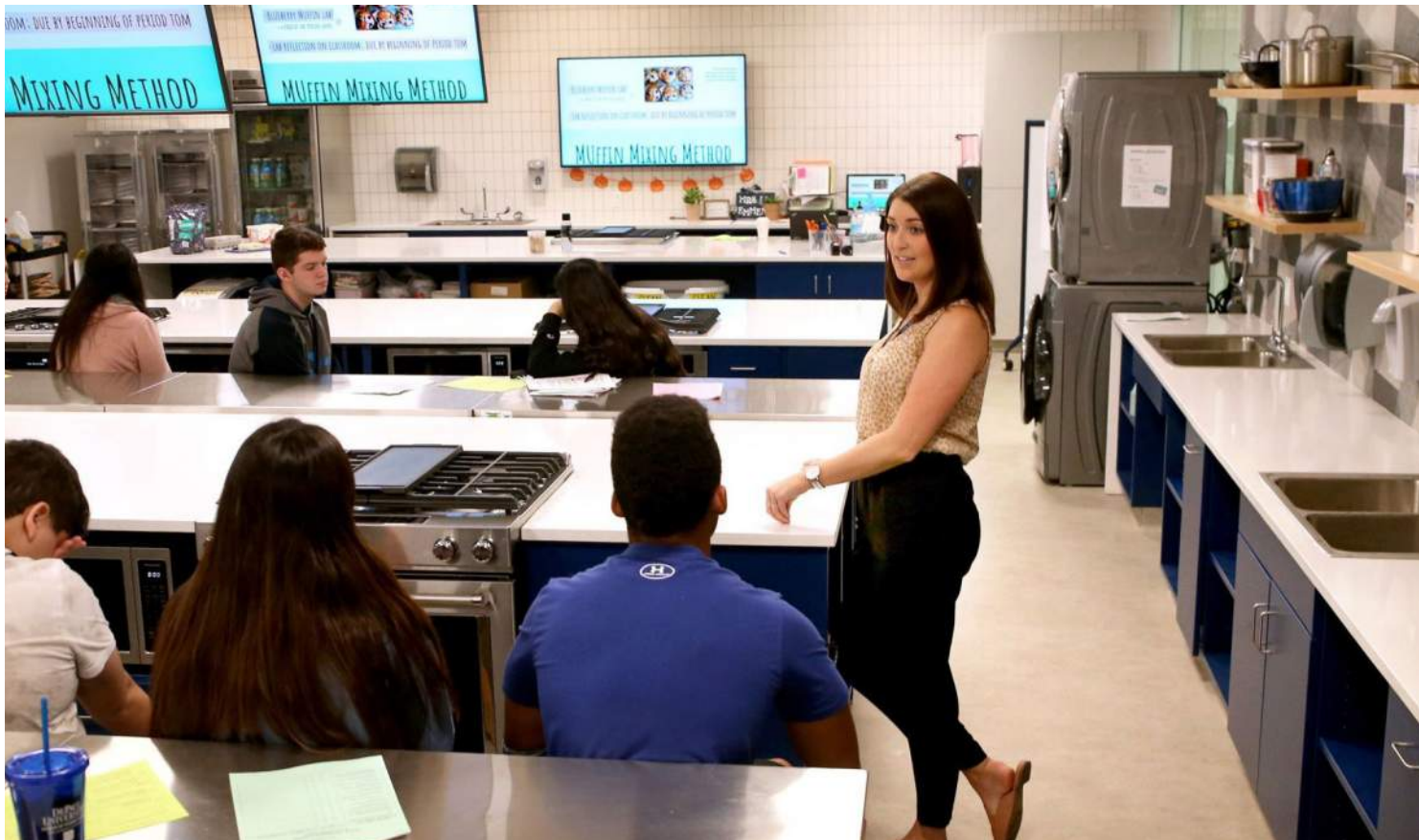
Size:	(1) @ 265 SF
Occupants:	(1) Occcupational/physical therapist (1-2) Students
Activities:	Assessing and testing students Conducting individual or group therapy Conducting communication therapy Gross motor and perceptual motor testing Fine motor testing Direct therapy treatment
Proximity:	Near: special education classrooms Direct: access from corridor
Finishes:	Flooring: carpet Ceiling: gypsum board or suspended acoustical panels Walls: painted gypsum board with durable wainscot
Furniture:	(1) Table, 36″ round (1) Desk (1) Staff chair (4) Visitor chairs (1) Filing cabinet (1) Bookcase
Specialty:	Provide one ceiling hook (400-pound capacity) and 5′-6″ clearance for swinging Coat hook strip with 5 hooks Mirror, 36″Wx60″H Markerboard, 4′x4′ Tackboard, 4′x4′ Mini blinds at exterior windows and interior relites
Other:	Provide acoustic and visual privacy Allow clearance for apparatus swing

220: SPECIAL EDUCATION

224 - Special Education Office

Size:	(1) @ 265 SF
Occupants:	(1) Staff (4) Visitors
Activities:	Meeting with teachers, counselors, students, and parents Writing memos and letters Computing, word processing Curriculum planning Private phone conversations Storing records and reference materials
Proximity:	Near: special education classrooms Direct: access from corridor
Finishes:	Flooring: carpet Ceiling: suspended acoustical panels Walls: painted gypsum board, tackable wallcovering
Furniture:	(1) Table, 36" round (1) Desk (1) Staff chair (4) Visitor chairs (1) Filing cabinet (1) Bookcase
Specialty:	Whiteboard, 4x4, magnetic Mini blinds at interior relites Coat hook on back of door
Other:	Acoustical isolation for privacy Provide sidelite or relite to corridor

CAREER & TECHNICAL EDUCATION | 300/400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300/400 - CAREER & TECHNICAL EDUCATION

COMPONENTS:

310 CHILD DEVELOPMENT
- 311 Child Development Classroom
- 312 Daycare – Toddlers
- 312a Daycare Office
- 312b Daycare Restroom
- 312c Daycare Kitchenette
- 312d Daycare Storage/Laundry
- 312e Daycare Lobby
- 312f Daycare Outdoor Storage
- 313 Daycare – Infants

320 BUSINESS
- 321 Business Lab

330 CULINARY
- 331 Culinary Arts Lab
- 331a Culinary Arts Dry Storage
- 332 Culinary Arts Classroom

340 CORE-PLUS AEROSPACE MANUFACTURING
- 341 Core-Plus Lab
- 341a Core-Plus Storage
- 342 Core-Plus Classroom

350 CAD
- 351 CAD Lab
- 351a Fabrication Lab

360 ROBOTICS
- 361 Robotics Lab

370 GRAPHIC DESIGN
- 371 Graphic Design Lab

380 DIGITAL PHOTOGRAPHY
- 381 Digital Photography Lab
- 381a Photo Studio

390 VIDEO PRODUCTION
- 391 Video Production Lab

410 AGRICULTURAL SCIENCE
411 Agricultural Science Lab
412 Animal Science Building

420 HORTICULTURAL SCIENCE
421 Horticultural Science Lab
422 Shared Prep Lab
423 Greenhouse

PURPOSE:

The district believes in the importance of hands-on learning and the value of project-based team learning that Career & Technical Education (CTE) programs provide. CTE prepares students for college and careers by providing real-world skills and knowledge. These programs help students explore different career fields and make informed decisions about their future.

DESIGN GOALS:

- Where feasible, the CTE spaces should be transparent to the general school population in order to celebrate these exciting learning environments, advertise career opportunities, and promote available services and expertise.
- Despite their highly specialized nature, the CTE spaces should be designed for maximum flexibility in order to adapt to future changes in technology as well as changes in demand for particular fields of study and careers.
- Careful design consideration for safety and health must be given to CTE programs that use potentially dangerous equipment or processes.
- The location of some CTE spaces for potential after-hours use and material deliveries should be considered.

310: CHILD DEVELOPMENT

311 - Child Development Classroom

Size:	(1) @ 950 SF
Occupants:	(1) instructor (32) students, maximum
Activities:	Group instruction/lecture/discussion Small group work Individual and group presentations Computer use by students and teachers Watching videos Writing and individual seat work Child-care activities/daycare
Proximity:	Near: daycare – toddlers and infants Direct: observation window into toddler's daycare room
Finishes:	Flooring: carpet Ceiling: suspended acoustical panels Walls: painted gypsum board, tackable vinyl wallcovering
Furniture:	(1) Teacher's desk (1) Teacher's task chair (1) Pedestal to teach from (1) Presentation table, 24"x48", mobile (16) 2-person tables, 60"Wx24"D (32) Student chairs with stacking capability, or stack on desks
Casework:	(1) Teacher wardrobe, 36"Wx24"Dx84"H, lockable (4-5) Tall storage, 36"Wx24"Dx84"H, lockable Bookshelves Base cabinets, countertop, and upper cabinets (as much as feasible)
Specialty:	(2) 48"x96" whiteboards, magnetized, on each side of video monitor Tackable wall covering at front and rear walls Mini blinds at exterior windows and interior relites
Plumbing:	(1) Sink
Lighting:	2'x2' recessed
Technology:	(1) Document camera – District will provide, install and configure (1) 86" Interactive video monitor and stand at front of classroom – District will provide, install and configure
Other:	Natural daylight Dedicated storage for baby mannequins with power for charging Sewing machines storage (confirm with owner)

310: CHILD DEVELOPMENT

312 - Daycare Toddlers

Size:	(1) @ 840 SF
Occupants:	(2) Staff minimum (14) Toddlers maximum
Activities:	Licensed daycare center for children 12 through 29 months of age Safe and nurturing environment promoting physical, social, emotional, and cognitive development Child initiated activity (free play) Staff-initiated activity (organizational play) Group activity Creative expression activities Active activity
Proximity:	Near: parent drop-off/pick-up, daycare - infants Direct: outdoor play area, daycare office, daycare restroom, daycare kitchenette, daycare storage, child development classroom
Finishes:	Flooring: rubber flooring Ceiling: suspended acoustical panels Walls: painted gypsum board, tackable wallcovering
Furniture:	Tables and chairs for young learners Toy storage shelving Provide area to facilitate sign-in/out near entrance
Casework:	Cubbies: 15"Wx15"Dx15"H with 15LF of coat storage below and uppers above (1) Teacher wardrobe, 36"Wx24"Dx84"H, lockable (3-4) Tall storage, 36"Wx24"Dx84"H, lockable Base cabinets with open shelves and countertop for toys and activities
Specialty:	Signage and color to make this a "fun" space
Plumbing:	Handwash sink outside toilet room, toddler height A second handwash sink (with drinking fountain) within the room for toddlers to wash their hands or clean up after play and activities
Lighting:	2'x2' recessed
Other:	Provide controlled access for security purposes Comply with DEL licensing and NAEYC accreditation standards Electrical outlets protected with tamper-resistant receptacles Maintain staff visibility over children Easily cleanable surfaces 980 SF outdoor play area with suitable play surface, fenced for security

312a - Daycare Office

Size:	(1) @ 165 SF
Occupants:	(1-2) Staff (1-4) Visitors
Activities:	Meetings with staff and parents Computer tasks Phone calls Confidential record keeping of children Daily attendance recording Licensing documentation
Proximity:	Near: child care entry Direct: daycare - toddlers
Finishes:	Flooring: carpet Ceiling: suspended acoustical panels Walls: painted gypsum board, tackable wallcovering
Furniture:	(1) Table, 36" round (1) Desk (1) Staff chair (4) Visitor chairs (1) Filing cabinet (1) Bookcase
Specialty:	First aid supplies Medication storage (verify with Owner) Acoustic privacy Coat hook on back of door

310: CHILD DEVELOPMENT

312b - Daycare Restroom

Size:	(1) @ 60 SF
Occupants:	(1) Staff (1) Student
Activities:	Toileting and handwashing for toddlers Diaper changing
Proximity:	Direct: daycare - toddlers
Finishes:	Flooring: rubber flooring Ceiling: painted gypsum board Walls: FRP
Furniture:	Changing table
Casework:	Shelves above the changing table
Plumbing:	Child height toilet Sink located immediately outside of restroom

312c - Daycare Kitchenette

Size:	(1) @ 130 SF
Occupants:	(1-2) Staff
Activities:	Preparation of breakfast, lunch, and snacks Storage of food items, refrigerated and non-refrigerated
Proximity:	Direct: daycare - toddlers, daycare - infants
Finishes:	Flooring: rubber flooring Ceiling: suspended acoustical panels, food grade Walls: painted gypsum board
Equipment:	(2) Microwaves Dishwasher Refrigerator/Freezer (FOIC)
Casework:	Approximately 18 lineal feet of counter with drawers and cabinets below and cabinets above in a kitchenette configuration
Plumbing:	Two-compartment sink Hot water dispenser Connection for refrigerator Connection for dishwasher
Lighting:	Provide undercounter lighting
Other:	Staff requires visual observation of children while they prepare breakfast, lunch, and snacks in the Kitchenette

312d - Daycare Storage/Laundry

Size:	(1) @ 75 SF
Occupants:	(1-2) Staff
Activities:	Support custodial needs of the Tiny Sparts program Cleaning supply storage Laundry supply storage Laundry of towels, clothes, and emergency apparel
Proximity:	Direct: daycare - toddlers, daycare - infants
Finishes:	Flooring: rubber flooring Ceiling: suspended acoustical panels Walls: painted gypsum board
Equipment:	Washing machine (FOIC) Dryer (FOIC)
Casework:	Cabinets above washer and dryer to store clean towels & linens Tall Storage cabinet for cleaning supplies, mop, broom, vacuum
Plumbing:	Utility sink if space allows Floor drain Connection for washing machine

312e - Daycare Lobby

Size:	(1) @ 240 SF
Occupants:	Up to (8)
Activities:	Drop-off and pick up of daycare children Sign-in and sign-out of daycare children Main entry to daycare facility without entering the high school building
Proximity:	Near: parking and drop-off/pick-up lane Direct: daycare - infants, daycare - toddlers
Finishes:	Flooring: walk-off mat Ceiling: suspended acoustical panels Walls: painted gypsum board
Specialty:	Bulletin board to post announcements
Other:	Provide space for daily storage of infant car seats and strollers

312f - Daycare Outdoor Storage

Size:	(1) @ 210 SF
Occupants:	Not occupied
Activities:	Secure weathertight storage of outdoor play equipment and games
Proximity:	Direct: outdoor play area
Finishes:	Flooring: concrete Ceiling: painted gypsum board or open to structure Walls: painted gypsum board with durable wainscot

313 - Daycare Infants

Size:	(1) @ 780 SF
Occupants:	(2) Staff minimum (8) Infants maximum
Activities:	Licensed day care center for infants aged birth through eleven months. Sleeping area to accommodate 8 cribs. Safe and nurturing environment promoting physical, social, emotional, and cognitive development
Proximity:	Near: parent drop-off/pick-up, daycare - toddlers, child development classroom Direct: kitchenette, laundry area
Equipment	Small refrigerator
Finishes:	Flooring: rubber flooring Ceiling: suspended acoustical ceiling Walls: painted gypsum board
Furniture:	(3) Rocking chairs Consider individual storage for (8) infants Provide area to facilitate sign-in/out near entrance
Casework:	Upper and lower cabinets for storage of materials, equipment, and supplies
Specialty:	Provide controlled access for security purposes. Easily cleanable surfaces. Provide a plexiglass shield at the changing table to accommodate visual observation while changing diapers and washing hands
Plumbing:	Handwashing sink near diaper changing station Handwashing sink for general use located near the kitchenette
Lighting:	2'x2' recessed Dimmable lighting zones

EARLY LEARNING PROGRAM - WASHINGTON STATE REGULATIONS

The following is a summary of Washington State regulations for Early Learning Program licensing requirements. Refer to WAC 110-300 for a more comprehensive list. The items included below are general in nature to assist with the basis of design.

Program Space Capacity (WAC 110-300-0354):

1. Toddler program to be designed for 14 toddlers. Program space must have a minimum of (35) thirty-five square feet per child. 14 x 35 = 490 square feet minimum.
2. Infant program to be designed for 8 infants. Program space must have a minimum of (50) fifty square feet per child (the additional 15sf per infant accounts for crib area). 8 x 50 = 400 square feet minimum.
3. Offices, bathrooms, kitchens, laundry areas, closets, and floor space occupied by shelves, built-in cabinets, file cabinets, desks, or other office equipment inaccessible to children are not to be included in the minimum square footage identified above.
4. Diaper changing areas (including twenty-four inches surrounding diaper changing areas and handwashing sink) are not to be included in the minimum square footage identified above.

Age, Group Size, Staff to Children Ratio (WAC 110-300-0356):

1. Infants: Birth through eleven months of age. For a maximum group size of eight; a ratio of one staff to four children (1:4) is required.
2. Toddlers: Twelve through twenty-nine months of age. For a maximum group size of fourteen; a ratio of one staff to seven children (1:7) is required.

Diaper Changing Areas, Privacy, and Disposal (WAC 110-300-0221):

1. Infant area: One designated diaper changing area, including stand-up diapering, is required.
2. Diaper changing areas must:
    a. Be separate from areas where food is stored, prepared, or served.
    b. Have a dedicated sink with hot and cold running water within arm's reach, or readily accessible, to the changing station.
    c. Have a moisture resistant surface that is cleanable.
    d. Provide a container designated for disposing of soiled diapers and diapering supplies only (hands-free and covered with a lid).

Outdoor Program Space (WAC 110-300-0145):

1. Must contain a minimum of (75) seventy-five square feet of useable space per enrolled children.
2. Must have shaded areas provided by trees, buildings, or shade structures.
3. Enclosed with a fence or barrier (48-inches high minimum) that is intended to prevent children from exiting and discourages climbing. All gaps to be less than 3-1/2" inches.
4. Enclosed to deter people without permission from entering the area.
5. Gates to be equipped with self-closing and self-latching hardware.
6. Outdoor play areas must have two exits.

320: BUSINESS

321 - Business Lab

Size:	(1) @ 1,160 SF
Occupants:	(1) Instructor (32) Students maximum
Activities:	Large/small/individual instruction Teacher demonstrations Instruction related to finance, business, and marketing Solve problems using computers and technology
Proximity:	Near: other CTE spaces to facilitate program collaboration Direct: corridor
Finishes:	Flooring: carpet Ceiling: suspended acoustical ceiling Walls: painted gypsum board, tackable vinyl wallcovering
Furniture:	(1) Teacher's desk (1) Teacher's task chair (1) Pedestal to teach from (1) Presentation table, 24"x48", mobile (16) 2-person tables, 60"Wx24"D (32) Student chairs with stacking capability, or stack on desks
Casework:	(1) Teacher wardrobe, 36"Wx24"Dx84"H, lockable (2) Tall storage, 30"Wx24"Dx84"H (4) Filing cabinets, lockable (3) Base cabinets, lockable Sliding markerboards with shelving behind (1) Tall cabinet, open shelving, 30"Wx18"Dx36"H
Specialty:	(2) 48"x96" whiteboards, magnetized, on each side of video monitor Tackable wall covering at front and rear walls (1) Paper towel dispenser Mini blinds at exterior windows and interior relites
Lighting:	2'x2' recessed
Technology:	(1) Document camera – District will provide, install and configure (1) 86" Interactive video monitor and stand at front of classroom – District will provide, install, and configure
Other:	Provide (12) floor boxes with power and data in center of room to accommodate flexibility of furniture arrangement and computer connectivity

330: CULINARY

331 - Culinary Arts Lab

Size:
(1) @ 2,965 SF

Occupants:
(1) Instructor
(32) Students maximum

Activities:
Teaching and demonstrating food prep/cooking
Cooking labs
Group and individual instruction
Loading/unloading of groceries

Proximity:
Near: other CTE spaces to facilitate program collaboration
Direct: culinary arts classroom, culinary arts dry storage

Finishes:
Flooring: altro safety flooring with integral base
Ceiling: washable, suspended acoustical panels, meeting USDA/FSIS guidelines for commercial kitchens
Walls: FRP panels

Equipment:
Demonstration Area:
- 1 Hand sink
- 1 Hot proofer
- 1 Table with prep sink
- 1 Teacher demonstration station with hood

Food Preparation Area:
- 8 Work space with prep sink, mobile table, and utility cart
- 1 ADA hand sink
- 1 Hand sink
- 3 Baker's Racks
- 1 20 Quart mixer
- 6 Open burner ranges
- 2 Open burner ranges with salamander for broiling
- 1 Combi-oven/steamer
- 2 Double stack convection ovens
- 1 20 Quart tilting kettle
- 1 Flat top griddle
- 1 Ice machine
- 4 Mobile pot/pan shelving (24"x48")
- 1 Walk-in cooler, lockable
- 3 Reach-in freezers, lockable
- 1 Pot/pan washing

Support Area:
- 1 Washer
- 1 Dryer
- 1 Mop Sink and cleaning cabinet

Equipment	Ware Washing Area: 1 Pot/pan washing 1 Soiled dish table with hose reel 1 Ware washer with hood 1 Clean dish table 1 Hand sink 1 Eye wash
Casework:	Built-in demonstration station
Specialty:	Exhaust hoods over cooking equipment as required by code (8) stations for cooking Mini blinds at exterior windows and interior relites Provide double-doors into lab (with a removable mullion) to accommodate movement of equipment, supplies, and appliance replacement Provide a secure area on the first floor for storage of cart used by instructor for delivery of food and supplies Maintain direct line of sight into ware washing station as much as feasibly possible
Plumbing:	Food Service consultant will provide rough-in drawings for all plumbing requirements
Technology:	Provide multiple video monitors in the lab for displaying directions and demonstration techniques Provide overhead camera above teacher's demonstration station with video display for cooking instruction

330: CULINARY

331a - Culinary Arts Dry Storage

Size:	(1) @ 235 SF
Occupants:	(1-2) Staff
Activities:	Storage of dry food goods Storage of table mixers Storage of ingredient bins
Proximity:	Near: corridor for supply delivery Direct: culinary arts lab
Finishes:	Flooring: slip-resistant sheet vinyl Ceiling: washable, suspended acoustical panels, meeting USDA/FSIS guidelines for commercial kitchens Walls: FRP panels
Specialty:	Dry storage shelving Door to be lockable to secure food supplies Table for mixers

332 - Culinary Arts Classroom

Size:	(1) @ 975 SF
Occupants:	(1) Instructor (32) Students maximum
Activities:	Group instruction/lecture/discussion Small group work Computer work by students and instructor Watching videos Food and fitness lectures
Proximity:	Near: other CTE spaces to facilitate program collaboration Direct: culinary arts lab
Finishes:	Flooring: rubber tile Ceiling: suspended acoustical panels Walls: painted gypsum board, tackable wallcovering
Furniture:	(1) Teacher's desk (1) Teacher's task chair (1) Pedestal to teach from (1) Presentation table, 24"x48", mobile (16) 2-person tables, 60"Wx24"D (32) Student chairs with stacking capability, or stack on desks
Casework:	(1) Teacher wardrobe, 36"Wx24"Dx84"H, lockable (2) Tall storage, 30"Wx24"Dx84"H (4) Filing cabinets, lockable (3) Base cabinets, lockable Sliding markerboards with shelving behind
Specialty:	(2) 48"x96" whiteboards, magnetized, on each side of video monitor Tackable wall covering at front and rear walls (1) Paper towel dispenser Mini blinds at exterior windows and interior relites
Lighting:	2'x2' recessed
Technology:	(1) Document camera – District will provide, install and configure (1) 86" Interactive video monitor and stand at front of classroom – District will provide, install, and configure

340: CORE-PLUS AEROSPACE MANUFACTURING

341 - Core-Plus Lab

Size:	(1) @ 3,330 SF
Occupants:	(1) Instructor (32) Students maximum
Activities:	Project-based learning using hand and power tools Designing, assembling, and fixing things Instruction on shop safety, print reading, and precision measurement Instruction based on the Boeing Company's manufacturing curriculum
Proximity:	Near: fabrication lab, other CTE spaces to facilitate program collaboration Direct: exterior access for receiving supplies and materials, core-plus classroom for lecture instruction, storage room for materials and supplies
Finishes:	Flooring: polished concrete Ceiling: open to structure above to maximize height Walls: MDF wainscot with painted gypsum board above
Furniture:	(8) Layout & workstation tables, 8'x3' metal tables (32) Student stools
Equipment	Fabrication workstations, 2 racks (16 stations), requires compressed air at each station and power in the area Foot shear, input and output sides to accommodate sheet metal up to 4-feet by 8-feet Brake, input and output sides to accommodate sheet metal up to 4-feet by 8-feet Manual mill & tooling cart, 2 ft. clearance, power and shutoff 2-Axis CNC, 3'x4', with dust collector (2) Snap-on tool kits Goggle and hearing protection cabinets (8) Double-door storage cabinets (2) Industrial fans (3) Virtual welders, 1 stationary, 2 portable Pneumatics trainer, 6'x2.5' Hydraulics trainer, 6'x2.5' Band saw Forklift simulator, 6'x6', requires clean space with shop visibility Laser engraver, needs ventilation and space for a computer
Casework:	(7) Tall storage cabinets 36"Wx24"Dx84"H for student projects
Specialty:	Emergency eyewash and shower (2) 48"x96" whiteboards, magnetized, on each side of video monitor 8-foot wide roll-up insulated exterior door Wall hooks for student backpack storage Pegboard wall space for tool storage
Plumbing:	Handwash fountain

Technology:	(1) 86" Interactive video monitor and mounting bracket – District will provide, install, and configure Overhead power serving work tables

340: CORE-PLUS AEROSPACE MANUFACTURING

341a - Core-Plus Storage

Size:	(1) @ 285 SF
Occupants:	(1-2) Staff or students
Activities:	Storage of materials Location for air compressor
Proximity:	Direct: core-plus lab
Finishes:	Flooring: concrete Ceiling: painted gypsum board or open to structure Walls: painted gypsum board or painted CMU
Equipment:	Air compressor
Specialty:	Storage racks for materials (confirm size and function with owner)
Other:	Design walls to mitigate noise into lab from air compressor

342 - Core-Plus Classroom

Size:	(1) @ 850 SF
Occupants:	(1) Instructor (32) Students maximum
Activities:	Group instruction/lecture/discussion Individual and group presentations
Proximity:	Direct: core-plus lab
Finishes:	Flooring: polished concrete Ceiling: suspended acoustical panels Walls: painted gypsum board, tackable wallcovering
Furniture:	(1) Teacher's desk (1) Teacher's task chair (1) Pedestal to teach from (1) Presentation table, 24"x48", mobile (16) 2-person tables, 60"Wx24"D (32) Student chairs with stacking capability, or stack on desks
Casework:	(1) Teacher wardrobe, 36"Wx24"Dx84"H, lockable (2) Tall storage, 36"Wx24"Dx84"H, lockable 9 LF of countertop with lower cabinets, lockable
Specialty:	(2) 48"x96" whiteboards, magnetized, on each side of video monitor Tackable wall covering at front and rear walls (1) Paper towel dispenser Mini blinds at exterior windows and interior relites
Lighting:	2'x2' recessed
Technology:	(1) Document camera – District will provide, install and configure (1) 86" Interactive video monitor and stand at front of classroom – District will provide, install, and configure
Other	Provide relites for direct visibility into manufacturing lab

350: CAD

351 - CAD Lab

Size:	(1) @ 1,220 SF
Occupants:	(1) Instructor (32) Students maximum
Activities:	CAD/CAM, architecture, technical illustration Teaching computer-aided drafting and illustration Architectural design and building models Lecture and discussions Demonstrations on the markerboard Project based learning Large and small group instruction
Proximity:	Near: other CTE spaces to facilitate program collaboration Direct: fabrication lab
Finishes:	Flooring: carpet Ceiling: suspended acoustical panels Walls: painted gypsum board, tackable wallcovering
Furniture:	(1) Teacher's desk (1) Teacher's task chair (1) Pedestal to teach from (1) Presentation table, 24"x48", mobile (16) 2-person modular computer desks (32) Student chairs with stacking capability, or stack on desks
Casework:	(1) Teacher wardrobe, 36"Wx24"Dx84"H, lockable (2) Tall storage, 30"Wx24"Dx84"H, lockable (4) Filing cabinets, lockable (3) Base cabinets, lockable Sliding markerboards with shelving behind
Specialty:	Maximize the opportunity for whiteboard space (2) 48"x96" whiteboards, magnetized, on each side of video monitor Tackable wall covering at front and rear walls (1) Paper towel dispenser Mini blinds at exterior windows and interior relites
Plumbing:	No sink needed
Lighting:	2'x2' recessed
Technology:	Provide master switches for computers and monitors (1) Document camera – District will provide, install and configure (1) 86" Interactive video monitor and stand at front of classroom – District will provide, install, and configure
Other:	Provide (12) floor boxes with power and data in center of room to accommodate flexibility of furniture arrangement and computer connectivity. Provide relites into fabrication lab for visibility from the CAD lab

351a - Fabrication Lab

Size:	(1) @ 630 SF
Occupants:	(1) Instructor (16) Students
Activities:	Project based 3-D and laser printing Individual student work Demonstrations Small group instruction
Proximity:	Near: other CTE spaces to facilitate program collaboration Direct: CAD lab, corridor
Finishes:	Flooring: rubber Ceiling: suspended acoustical panels or open to structure Walls: painted gypsum board, tackable wallcovering
Furniture:	(6) modular computer stations (6) Student chairs with stacking capability, or stack on desks
Equipment:	(12-15) Small 3-D printers (1) Laser engraver
Casework:	Countertop along each wall to support 3-D printers (1-2) Tall storage cabinets, 36”Wx18”Dx84”H, confirm storage needs with owner
Specialty:	Mini blinds at exterior windows and interior relites Markerboard
Plumbing:	(1) Sink for hand washing
Lighting:	2’x2’ recessed
Other:	Dedicated exhaust as required for 3-D printers and engravers

360: ROBOTICS

361 - Robotics Lab

Size:	(1) @ 2,400 SF
Occupants:	(1) Instructor (32) Students
Activities:	Hands-on learning encouraging teamwork, creative problem solving, and critical thinking Connection of technology and various sources of information with physical objects Solving open-ended problems by creating models and prototypes Individual student work Demonstrations Large and small group instruction
Proximity:	Near: fabrication lab, other CTE spaces to facilitate program collaboration Direct: corridor
Finishes:	Flooring: polished concrete Ceiling: open to structure Walls: painted gypsum board, tackable wallcovering
Furniture:	(16) Work tables, 24"x60", mobile (32) Student stools (1) Teacher's desk (1) Teacher's task chair (1) Presentation table, 24"x48", mobile (6) Mobile lockable tall storage cabinets for program materials and supplies, 48"Wx24"Dx84"H (2) Mobile lockable tall storage cabinets for club storage, 48"Wx24"Dx84"H
Casework:	(8-12) Tall storage lockable cabinets w/ 18"x18"x18" cubbies for student project storage, (64) cubbies minimum, (96) cubbies preferred (1-2) Tall storage cabinet(s), 36"Wx24"Dx84"H, lockable, for instructor's use Countertop space with cabinets below Consider storage for robotics club, confirm requirement with owner
Specialty:	Charging station capable of charging (70-96) batteries (2) 48"x96" whiteboards, magnetized, on each side of video monitor 8-foot wide roll-up insulated exterior door Provide double-doors into lab (with a removable mullion) (1) Paper towel dispenser Mini blinds at exterior windows and interior relites
Technology:	(1) 86" Interactive video monitor and stand at front of classroom – District will provide, install, and configure
Other:	Space to accommodate (2) 12'x12' arenas Provide ceiling cord reels with power and data serving work tables for flexibility of table arrangement

370: GRAPHIC DESIGN

371 - Graphic Design Lab

Size:	(1) @ 1,160 SF
Occupants:	(1) Instructor (32) students
Activities:	Foundational design principles, digital design tools, and color theory Practical applications like logo design and print layouts Branding and web-design Lecture and discussions Individual computer research and graphic work Large and small group instruction
Proximity:	Near: other CTE spaces to facilitate program collaboration Direct: corridor
Finishes:	Flooring: carpet Ceiling: suspended acoustical panels Walls: painted gypsum board, tackable wallcovering
Furniture:	(1) Teacher's desk (1) Teacher's task chair (1) Pedestal to teach from (1) Presentation table, 24"x48", mobile (16) 2-person modular computer desks (32) Student chairs with stacking capability, or stack on desks
Casework:	(1) Teacher wardrobe, 36"Wx24"Dx84"H, lockable (6) Tall storage, 36"Wx24"Dx84"H, lockable
Specialty:	(2) 48"x96" whiteboards, magnetized, on each side of video monitor Tackable wall covering at front and rear walls (1) Paper towel dispenser Mini blinds at exterior windows and interior relites
Lighting:	2'x2' recessed
Technology:	Provide master switches for computers and monitors (1) Document camera – District will provide, install and configure (1) 86" Interactive video monitor and stand at front of classroom – District will provide, install, and configure
Other:	Provide (12) floor boxes with power and data in center of room to accommodate flexibility of furniture arrangement and computer connectivity

380: DIGITAL PHOTOGRAPHY

381 - Digital Photography Lab

Size:	(1) @ 1,160
Occupants:	(1) Instructor (32) Students
Activities:	Instruction of equipment, lighting, and composition Lecture and discussions Demonstrations on the markerboard Project based learning Large and small group instruction
Proximity:	Near: other CTE spaces to facilitate program collaboration Direct: photo studio
Finishes:	Flooring: carpet Ceiling: suspended acoustical panels Walls: painted gypsum board, tackable wallcovering
Furniture:	(1) Teacher's desk (1) Teacher's task chair (1) Pedestal to teach from (1) Presentation table, 24"x48", mobile (16) 2-person modular computer desks (32) Student chairs with stacking capability, or stack on desks
Casework:	(1) Teacher wardrobe, 36"Wx24"Dx84"H, lockable (6) Tall storage, 36"Wx24"Dx84"H, lockable, to accommodate (40) cameras, lenses and photo equipment
Specialty:	(2) 48"x96" whiteboards, magnetized, on each side of video monitor Tackable wall covering at front and rear walls (1) Paper towel dispenser Mini blinds at exterior windows and interior relites
Lighting:	2'x2' recessed
Technology:	Provide master switches for computers and monitors (1) Document camera – District will provide, install and configure (1) 86" Interactive video monitor and stand at front of classroom – District will provide, install, and configure
Other:	Provide (12) floor boxes with power and data in center of room to accommodate flexibility of furniture arrangement and computer connectivity. Battery charging for up to (20) batteries at one time

381a - Photo Studio

Size:	(1) @ 635 SF
Occupants:	(1) Instructor (2-12) Students
Activities:	Portrait and small group photos Access to corridor allows use by yearbook, graphic design, and video classes
Proximity:	Near: other CTE spaces to facilitate program collaboration Direct: digital photography, corridor
Finishes:	Flooring: carpet Ceiling: suspended acoustical panels Walls: painted gypsum board, tackable wallcovering
Specialty:	Roll-down backdrop Mini blinds at exterior windows and interior relites
Lighting:	2'x2' recessed

390: VIDEO PRODUCTION

391 - Video Production Lab

Size:	(1) @ 1,160
Occupants:	(1) Instructor (32) Students
Activities:	Introduction to various media, communication and information Creating and producing media using various editing tools Lecture and discussions Demonstrations on the markerboard Project based learning Large and small group instruction
Proximity:	Near: other CTE spaces to facilitate program collaboration Direct: corridor
Finishes:	Flooring: carpet Ceiling: suspended acoustical panels Walls: painted gypsum board, tackable wallcovering
Furniture:	(1) Teacher's desk (1) Teacher's task chair (1) Pedestal to teach from (1) Presentation table, 24"x48", mobile (16) 2-person modular computer desks (32) Student chairs with stacking capability, or stack on desks
Casework:	(1) Teacher wardrobe, 36"Wx24"Dx84"H, lockable (6) Tall storage, 36"Wx24"Dx84"H, lockable
Specialty:	(2) 48"x96" whiteboards, magnetized, on each side of video monitor (1) 48"x96" whiteboard on back wall Charging station capable of charging 20 batteries Tackable wall covering at front and rear walls (1) Paper towel dispenser Mini blinds at exterior windows and interior relites
Lighting:	2'x2' recessed
Technology:	Provide master switches for computers and monitors (1) Document camera – District will provide, install and configure (1) 86" Interactive video monitor and stand at front of classroom – District will provide, install, and configure
Other:	Provide (12) floor boxes with power and data in center of room to accommodate flexibility of furniture arrangement and computer connectivity

410: AGRICULTURAL SCIENCE

411 - Agricultural Science Lab

Size:	(1) @ 1,400 SF
Occupants:	(1) Instructor (32) Students maximum
Activities:	Group instruction/lecture/discussion Teacher demonstration Small group work Lab experiments in groups of two or four Using computers to interface with experiments Individual and group presentations Student testing Storage in cabinets: student equipment, science equipment, textbooks
Proximity:	Near: animal science building Direct: preparation/storage
Finishes:	Flooring: polished concrete Ceiling: suspended acoustical panels Walls: painted gypsum board, FRP at emergency eyewash/shower
Furniture:	(1) Teacher's desk (1) Teacher's task chair (1) Teacher's stool (1) Pedestal to teach from (16) 2-person tables (student desks), 60"Wx24"D (32) Student chairs with stacking capability, or stack on desks
Equipment:	Emergency eye wash and shower
Casework:	Demonstration station, 36"Dx36"Hx120"W, (sink is not required - verify with Owner if this should be provided similar to Horticultural Science) (1) Teacher wardrobe, 36"Wx24"Dx84"H, lockable (1-2) Tall storage, 36"Wx24"Dx84"H, lockable Lower casework around room perimeter, epoxy resin countertop and backsplash Lockable casework where directed by owner – keyed to match door
Specialty:	(1) 86" Interactive video monitor and stand at front of classroom - District will provide, install, and configure (1) 86" video monitor and wall bracket at classroom side wall - District will provide, install, and configure (2) 48"x96" whiteboards, magnetized, on each side of video monitor (1) goggle sanitization cabinet (requires power) (1) filing cabinet, lockable Mini blinds at exterior windows and interior relites
Plumbing:	(3) Epoxy resin sinks 12"x18" with goose neck faucets
Lighting:	2'x2' recessed
Other:	Natural daylight

410: AGRICULTURAL SCIENCE

412 - Animal Science Building

Size:	(1) @ 1,025 SF
Occupants:	(1) Instructor (16) Students maximum
Activities:	Separate out-building, semi-conditioned Space to accomodate small animal kennels and large animal pens
Proximity:	Near: agricultural science lab
Finishes:	Flooring: concrete Ceiling: exposed to structure Walls: durable and cleanable, such as CMU or concrete with epoxy paint
Furniture:	Stainless steel rolling worktables for small animal handling
Casework:	Upper and lower storage for supplies
Specialty:	(4) 8'x8' livestock pens Overhead garage door
Plumbing:	Provide grates in flooring connected to sewer to manage animal waste Outdoor and indoor water spigots for washing animals

420: HORTICULTURAL SCIENCE

421 - Horticultural Science Lab

Size:	(1) @ 1,400 SF
Occupants:	(1) Instructor (32) Students maximum
Activities:	Group instruction/lecture/discussion Teacher demonstration Small group work Experiments in groups of two or four Using computers to interface with experiments Individual and group presentations Student testing Storage in cabinets: student equipment, equipment, textbooks
Proximity:	Near: greenhouse Direct: preparation/storage
Finishes:	Flooring: polished concrete Ceiling: suspended acoustical panels Walls: painted gypsum board, FRP at emergency eyewash/shower
Furniture:	(1) Teacher's desk (1) Teacher's task chair (1) Teacher's stool (1) Pedestal to teach from (16) 2-person tables (student desks), 60"Wx24"D (32) Student chairs with stacking capability, or stack on desks
Equipment:	Emergency eye wash and shower
Casework:	Demonstration station, 36"Dx36"Hx120"W, sink with gooseneck faucet (1) Teacher wardrobe, 36"Wx24"Dx84"H, lockable (3) Tall storage, 36"Wx24"Dx84"H, lockable Lower casework around room perimeter, epoxy resin countertop and backsplash Lockable casework where directed by owner – keyed to match door
Specialty:	(1) 86" Interactive video monitor and stand at front of classroom - District will provide, install, and configure (1) 86" video monitor and wall bracket at classroom side wall - District will provide, install, and configure (2) 48"x96" whiteboards, magnetized, on each side of video monitor (1) goggle sanitization cabinet (requires power) (1) filing cabinet, lockable Mini blinds at exterior windows and interior relites
Plumbing:	(3) Epoxy resin sinks 12"x18" with goose neck faucet
Lighting:	2'x2' recessed
Other:	Natural daylight Accomodate (4-6) hydroponic units, confirm size and quantity with owner

420: HORTICULTURAL SCIENCE

422 - Shared Prep Lab

Size:	(1) @ 380 SF
Occupants:	(1-2) Staff
Activities:	Storing equipment and supplies Preparing lab experiments
Proximity:	Direct: agricultural science and horticultural science
Finishes:	Flooring: polished concrete Ceiling: suspended acoustical panels Walls: painted gypsum board
Equipment:	6'x10' walk-in cooler
Furniture:	(2) Carts, 3'x4'
Casework:	Upper and lower casework, epoxy resin countertop and backsplash (6) Tall Storage, 36"Wx24"Dx84"H
Plumbing:	(2) Epoxy resin sinks, 22"Wx24"Lx8"D
Lighting:	Undercabinet lighting to illuminate countertop 2'x2' recessed
Other:	Provide vision panel in doors to lab Confirm with owner if acid or flammable storage is required

423 - Greenhouse

Size:	(1) @ 2,000 SF
Occupants:	(1) Instructor (32) Students maximum
Activities:	Controlled greenhouse environment to grow plants, conduct experiments, and foster an appreciation for sustainability
Proximity:	Near: horticultural science lab
Finishes:	Flooring: concrete Ceiling & walls: corrugated polycarbonate structured sheet glazing with retractable shade cloth
Specialty:	Large sliding door to accomodate pallets and forklift
Heat:	Hot water boiler heating system
Cooling:	Fan and louver system
Supplemental Lighting:	High pressure sodium (HPS) fixtures installed to provide at least 900 foot-candles at plant height
Controls:	Thermostatic control for heating and cooling
Other:	Provide greenhouse tables to maximize use of available area

FACULTY + STAFF SUPPORT | 1500

1500 - FACULTY + STAFF SUPPORT

COMPONENTS:

1510 FACULTY SUPPORT

1511 Staff Workroom
1512 Staff Restroom

PURPOSE:

Dispersed workrooms providing a designated space for staff to relax, collaborate, lesson plan and socialize.

DESIGN GOALS:

- Designated to be a relaxing and comfortable refuge for teachers and staff, protected from interruptions by students.
- A space that accomodates multiple options for eating, seating and socializing.

1510: FACULTY SUPPORT

1511 - Staff Workroom

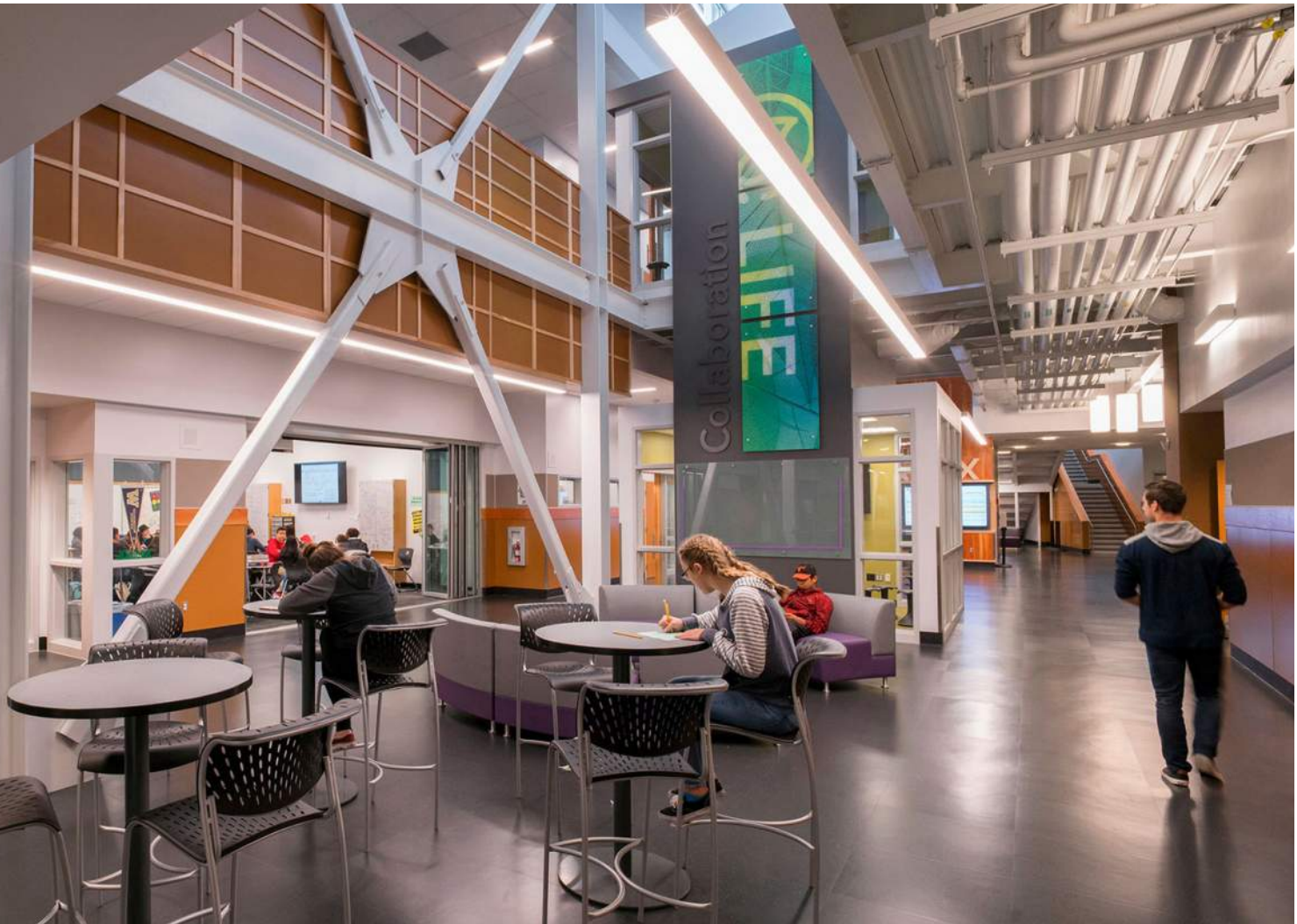
Size:	(4) @ 350 SF
Occupants:	(6-8) teachers/staff
Activities:	Lesson planning and activities Collaboration Computer work Place for "floating" teachers to work and plan
Proximity:	Near: classrooms and staff restrooms
Finishes:	Flooring: carpet Ceiling: suspended acoustical panels Walls: painted gypsum board, tackable vinyl wallcovering
Furniture:	(1) 8-person conference table (8) conference chairs
Casework:	Upper and lower casework
Plumbing:	(1) 2-compartment stainless steel sink
Lighting:	2'x2' recessed
Other:	(1) Dishwasher (1) Refrigerator (2) Microwaves

1510: FACULTY SUPPORT

1512 - Staff Restroom

Size:	(4) @ 60 SF
Occupants:	(1) Staff
Activities:	Individual accessible restroom for staff
Proximity:	Near: staff workroom
Finishes:	Flooring: resilient sheet flooring Ceiling: painted gypsum board Walls: ceramic tile or FRP
Specialty:	Mirror Paper towel dispenser Soap dispenser Toilet tissue dispenser Seat cover dispenser Sanitary napkin dispenser Sanitary napkin receptacle Waste receptacle
Plumbing	Toilet Sink Floor drain
Power:	Convenience outlet (GFCI)
Other:	Door hardware to include vacant/occupied notifier Exhaust fan

EXIT
EXIT


Collaboration
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1600 - BUILDING SUPPORT

COMPONENTS:

1610 RESTROOMS

1611 Group Restroom - Women
1612 Group Restroom - Men
1613 Single Occupant Restroom

1620 CUSTODIAL

1621 Custodial Closet

PURPOSE:

Public restrooms should accomodate a mixture of group restrooms and single occupant restrooms located for quick and easy access by students and visitors.

Custodial spaces will support the custodial staff's ongoing efforts to clean, maintain, and repair facility spaces.

DESIGN GOALS:

- Public restrooms should be designed for durability, low-maintenance, and monitoring by staff.

1610: RESTROOMS

1611 - Group Restroom Women

Size:	(3) @ 300 SF
Occupants:	(6-8)
Activities:	Typical restroom activities
Proximity:	Near: corridor
Finishes:	Flooring: ceramic tile Ceiling: painted gypsum board Walls: ceramic tile
Specialty:	Mirrors Paper towel dispensers Soap dispensers Toilet tissue dispensers Seat cover dispensers Sanitary napkin dispensers Sanitary napkin receptacles Waste receptacle
Plumbing:	Toilets Sinks Floor drain
Other:	Refer to “General Design Criteria - Restrooms” for additional requirements

1610: RESTROOMS

1612 - Group Restroom Men

Size:	(3) @ 300 SF
Occupants:	(6-8)
Activities:	Typical restroom activities
Proximity:	Near: corridor
Finishes:	Flooring: ceramic tile Ceiling: painted gypsum board Walls: ceramic tile
Specialty:	Mirrors Paper towel dispensers Soap dispensers Toilet tissue dispensers Seat cover dispensers Waste receptacle
Plumbing:	Toilets Sinks Floor drain
Other:	Refer to "General Design Criteria - Restrooms" for additional requirements

1613 - Single Occupant Restroom

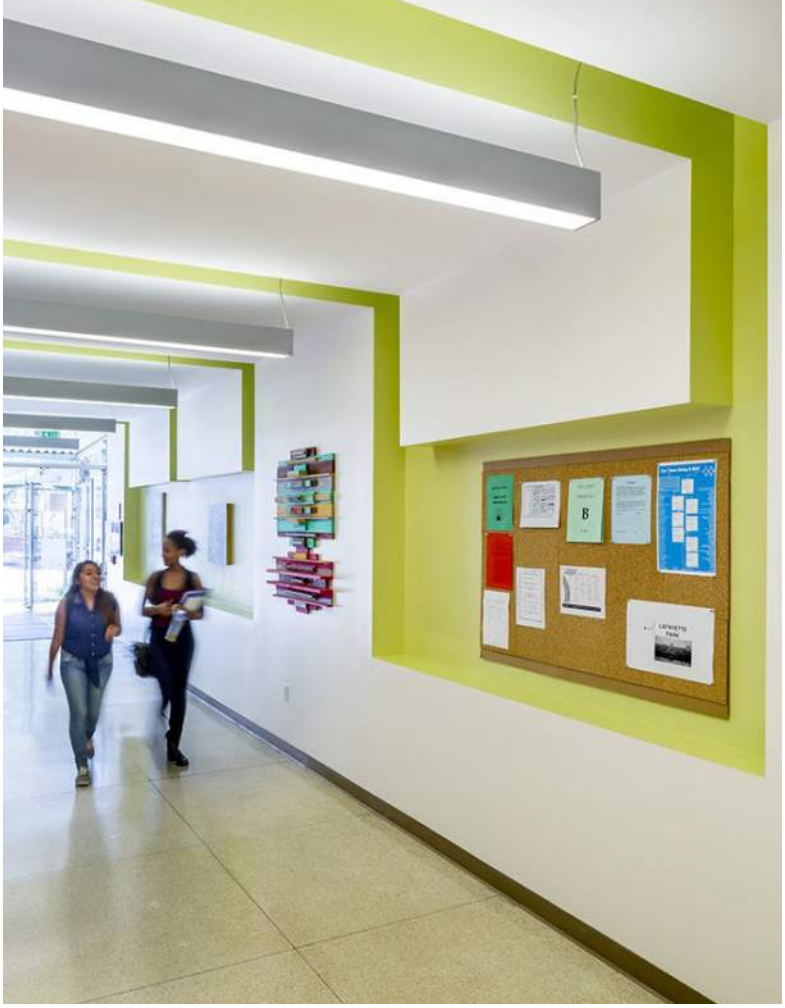
Size:	(3) @ 60 SF
Occupants:	(1)
Activities:	Individual accessible restroom for students
Proximity:	Near: corridor
Finishes:	Flooring: resilient sheet flooring or ceramic tile Ceiling: painted gypsum board Walls: ceramic tile or FRP
Specialty:	Mirror Paper towel dispenser Soap dispenser Toilet tissue dispenser Seat cover dispenser Sanitary napkin dispenser Sanitary napkin receptacle Waste receptacle
Plumbing	Toilet Sink Floor drain
Power:	Convenience outlet (GFCI)
Other:	Door hardware to include vacant/occupied notifier Exhaust fan

1620: CUSTODIAL

1621 - Custodial Closet

Size:	(3) @ 85 SF
Occupants:	Not occupied
Activities:	Storing maintenance equipment, cleaning supplies, and paper goods Filling, dumping, and rinsing mop pails
Proximity:	Near: restrooms
Finishes:	Durable and easily cleaned Flooring: sealed concrete Ceiling: open to structure Walls: durable wall covering to 7', FRP backsplash at floor sink to 4'
Specialty:	Durable, modular, free-standing shelving Custodial cart Trash cart Floor scrubber Carpet cleaning machine Vacuum cleaners (backpack and floor) Step ladder Mop & broom holder above mop sink
Plumbing:	Mop sink - cast iron with ARC coating Floor drain
Power:	As necessary for recharging equipment
Other:	Dedicated exhaust (100%) Provide adequate parking space for carts and equipment Distribute closets evenly throughout facility and locate adjacent to high-maintenance areas such as restrooms

UNASSIGNABLE | 1700



HEATING WATER SUPPLY AND RETURN
PRESSURE GAUGE
LOW TEMPERATURE CHILLED WATER
HEATING WATER PUMP
PUMP VARIABLE SPEED DRIVE
HEATING WATER

1700 - UNASSIGNABLE

COMPONENTS:

1710 CIRCULATION
- 1711 Corridors
- 1712 Stairs
- 1713 Elevator + Elevator Control Room

1720 MECHANICAL
- 1721 Mechanical Room + Penthouse
- 1722 Fire Sprinkler Riser Room (FSRR)

1730 ELECTRICAL
- 1731 Electrical Room
- 1732 IDF Room

PURPOSE:

The mechanical, electrical, and technology rooms will house the head ends and terminals for all the various systems required to run a 21st century school building.

The circulation system will accommodate the internal movement of people, materials, furnishings, and equipment between the spaces and levels of the facility.

DESIGN GOALS:

- The circulation spaces should provide opportunities to showcase student work and accomplishments throughout the facility.
- The circulation spaces should provide students with multiple options / opportunities for seating, socializing, studying, and collaborating.
- The layout of the circulation system should provide for easy staff surveillance, smooth and efficient traffic flow, and clear, simple, and intuitive navigation through all parts the building.
- The design of the circulation spaces should be warm, exciting, and filled with controlled daylight.

1710: CIRCULATION

1711 - Corridors

Occupants:	Varies
Activities:	Internal horizontal circulation for staff, students and community (includes ramps)
Finishes:	Durable and easily cleaned Flooring: polished concrete Ceiling: suspended acoustical panels Walls: tackable wall surface, protection and corner guards throughout
Equipment:	Recessed fire extinguisher cabinets
Specialty:	Intercom system throughout Fire alarm horns and strobes as required by Code IP cameras as necessary for coverage
Plumbing:	Drinking fountains (ADA accessible)
Lighting:	Natural daylight if feasible Emergency lighting as required by Code Exit lights as required by Code Accent lighting at display areas
Power:	Housekeeping outlets
Technology:	Wireless capability to support uninterrupted high-speed connectivity
Other:	Minimum 10' wide Design for easy monitoring by staff Provide display cases throughout, confirm with owner Provide tackable surface outside each classroom adjacent to door Zone corridors to accommodate controlled access of areas used in off-hours, confirm with owner

1710: CIRCULATION

1712 - Stairs

Occupants:	Varies
Activities:	Internal vertical circulation for staff, students and community
Finishes:	Pre-cast concrete stair treads with integral metal nosing Durable and easily cleaned Metal handrails and guardrails as required Flooring: polished concrete at landings
Specialty:	Share intercom system with corridors Fire alarm horns and strobes as required by Code IP cameras as necessary for coverage
Lighting:	Natural daylight if feasible Emergency lighting as required by Code Exit lights as required by Code
Power:	Housekeeping outlets
Technology:	Wireless capability to support uninterrupted high-speed connectivity

1713 - Elevator + Elevator Control Room

Size:	Elevator: 60 SF Elevator Control Room: 18 SF
Occupants:	Varies up to (8)
Activities:	Accessible route between floor levels Moving furniture and equipment between floor levels
Finishes:	Stainless steel controls, railing, and trim Flooring: rubber Walls: plastic laminate
Equipment:	Traction elevator Elevator machinery and controls
Specialty:	Emergency phone Call buttons Hall lantern IP camera in cab Elevator to return to main floor level upon activation of fire alarm
Lighting:	Cab lighting per code Elevator pit lighting per code
Power:	Disconnect switch
Technology:	Connect to elevator monitoring agency
Other:	ADA accessible 3500 lb minimum, to meet gurney requirements Card access with ability to override Approximately 4'x5' cab Signage as required by code Rated fire barrier as required by code Access ladder in pit Verify no sump pump required

1720: MECHANICAL

1721 - Mechanical Room + Penthouse

Size:	Mechanical room: (1) @ 780 SF Mechanical penthouse: (1) @ 7,700 SF
Activities:	Hosts mechanical equipment
Finishes:	Flooring: sealed concrete Ceiling: open to structure
Specialty:	HVAC as necessary to maintain temperature of space Heat exchanger
Plumbing:	Floor drains
Power:	Dedicated circuits as required for equipment
Technology:	Provide for EMS
Other:	Provide 4" concrete pads under mechanical equipment as required Provide exits and exit hardware per code Provide light switch at all entry points Water heater room to be located on main floor Ensure necessary clearances for maintenance and operation around all equipment No open web steel joists over water heater area - engineered structure only Secure space

1722 - Fire Sprinkler Riser Room (FSRR)

Size:	(1) @ 80 SF
Finishes:	Flooring: sealed concrete
Specialty:	HVAC as necessary to maintain temperature of space
Plumbing:	Fire sprinkler header Floor drains
Other:	Access from building exterior

1730: ELECTRICAL

1731 - Electrical Room

Size:	Electrical Room: (1) @ 375 SF Secondary electrical rooms: (3) @ 80 SF
Activities:	Hosts electrical equipment
Finishes:	Flooring: sealed concrete Ceiling: open to structure
Specialty:	HVAC as necessary to maintain temperature of space
Power:	Switchgear and panels for distribution Transformers Transfer switches Housekeeping outlets Subpanels for distribution Outlet for maintenance
Other:	Provide 4" concrete pads under electrical equipment as required Provide direct access to service yard on main electrical room Provide exits and exit hardware per code Secure space

1730: ELECTRICAL

1732 - IDF Room

Size:	(2) @ 140 SF
Activities:	Location of intermediate distribution frames
Finishes:	Flooring: sealed concrete Ceiling: open to structure
Equipment:	Computer network rack and hubs
Specialty:	HVAC as necessary to cool space
Power:	As necessary for equipment
Other:	Secure space

general design criteria

SUMNER
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GENERAL DESIGN CRITERIA

Beyond the design goals for each department that will make up the new Sumner High School Addition - Phase 2 project, there are goals and standards that relate to the site and building, as a whole. They are part of the school's learning environment and developed to stimulate a variety of learning activities while maintaining safety and security for students and the surrounding neighborhoods.

SITE

On-Site Roads

1. Provide convenient parking for staff, students, and visitors.
2. Consider gates at service roads to keep vehicles out of service drives areas during non-school hours.
3. Provide separate access roads for buses and for automobiles.
4. Consider speed bumps, speed limit signs, and traffic calming design opportunities.

Parking

1. Provide designated staff parking as close to instructional areas as possible. If remote lots are encountered, provide pedestrian path to building.
2. Provide separate vehicle parking areas for students, for staff, and for visitors.
3. Comply with local parking regulations.

Bus Zones

1. Separate bus zones from other vehicle areas and separate from pedestrian circulation.
2. Design bus zone area to accommodate vehicle parking for special events.
3. Locate handicap bus zone so as not to interfere with the regular buses.

Student Drop-Off and Pick-Up Zone

1. Provide a vehicle lane to drop-off/pick-up students at the front of the building. The drop-off/pick-up area should accommodate a minimum of 20 vehicles.
2. Consider queuing distance to avoid vehicles backing up into the street or blocking on-site circulation.

Exterior Courtyards

1. Locate adjacent to and visible from classrooms or other occupied space.
2. Provide landscaping and a hard surface other than asphalt.
3. Provide outdoor seating.
4. Provide exterior lighting.
5. Provide exterior speakers that are connected to the school's intercom/bell system.

Bicycle Racks

1. Provide to meet or exceed Washington Schools Protocol (WSSP) or local requirements.
2. Locate racks so they can be visually monitored from nearby offices or classrooms.
3. Where practical, locate under building overhang or canopy.

Exterior Lighting

1. Provide exterior lighting at the following areas:
    a. Staff parking
    b. Student parking
    c. Bus zones
    d. Visitor's parking
    e. Service areas
    f. On-site roads
    g. Main pedestrian walkways
    h. Courtyards
2. Provide vandal-resistant covers at exterior electrical receptacles.
3. Provide vandal-resistant lenses at exterior light fixtures.
4. Locate parking lot lights so the illumination will not be blocked by trees after they reach full growth.

Lawn and Landscape Areas

1. Provide positive drainage at all lawn areas.
2. Provide automatic irrigation system at lawn and landscape areas.
3. Provide separate irrigation zones for lawn and landscape areas.
4. Provide trees and shrubs in a manner that does not obscure visual supervision of the site.

Exterior Signage

1. Provide accessible parking signage conforming to current code.
2. Provide wayfinding signage as required for visitors to easily navigate the site while driving or on foot.
3. Provide fire lane, loading & unloading, and no parking signage as required by local jurisdictional and school operation requirements. Provide markings on asphalt and concrete curbs in lieu of signs where possible.

BUILDING

Appearance

1. Building interior and exterior shall have a timeless quality that remains attractive.
2. Building shall have an appearance that is inviting to students, staff, and public.
3. Building appearance shall blend in with and complement the site.

Building Exterior

1. Provide durable, low-maintenance and vandal-resistant exterior building materials.
2. Provide brick or other approved masonry at the lower portions of exterior walls. The use of masonry other than brick will be considered in some areas if the material complements the brick being used, is durable, and is consistent with the timeless appearance of the building.

3. Provide materials at the building exterior and outdoor areas that do not require painting to maintain, except for the hollow metal doors and frames, parking lot striping, and curb painting. Pre-finished painted surfaces may be used at the building exterior if provided with a pre-finished surface with a minimum 15-year color fast guarantee.

Roofs

1. Do not place equipment on roofs, except as approved by district personnel.
2. Minimize roof penetrations.
3. Provide downspouts at building exterior. Do not locate downspouts within the building envelope.
4. Provide downspouts that are attached tight to exterior walls so that downspouts may not be used to climb onto roof.
5. Provide interior ladders for roof access. Provide additional ladders as needed to allow access to all roof levels.

Windows and Doors

1. Provide exterior windows at all classrooms. Obtain approval by district personnel if exterior classroom windows are not feasible.
2. Provide an exterior window at all offices unless not feasible. Obtain approval from district personnel to provide an office without an exterior window.
3. Provide operable exterior windows.
4. Provide roller shades at exterior windows.
5. Provide interior windows or relites between offices and adjacent spaces where identified in the Educational Specifications. Where room size and space requirements will not accommodate relites, provide window in door.
6. Provide hollow metal frames for exterior doors, interior doors, and interior relites.
7. Provide hollow metal doors at building exterior.
8. Provide key-operated, heavy-duty, removable mullion at all exterior double doors.

Signage

1. Coordinate assignment of room numbers with Owner so that room numbers shown on the construction drawings are the same numbers permanently assigned to the rooms.
2. Provide a room nameplate at all rooms. Nameplate shall identify the room number, which shall coincide with the number shown on the construction drawings, room name and comply with ADA.

Security

1. Provide intrusion alarm system at designated areas per District standards.
2. Avoid designing areas within the school that are “blind spots” and are difficult to visually supervise.
3. Confirm with Owner the extent of surveillance camera systems within the building.
4. Design building exterior so that roof access is not possible without use of a ladder.

Casework

1. Provide casework in compliance with district direction.
2. Provide locks on casework where identified. Key locks to District’s master key system with cabinet locks matching the key used for the door to the room.

3. Provide a minimum 12-inch inside clearance depth at all overhead wall-mounted cabinets.
4. Mechanically anchor floor-mounted cabinets with a height/depth ratio greater than 3 to resist lateral movement. This includes floor-mounted cabinets attached to walls.

Accessories

1. Provide soap dispensers at all sinks. Locate the dispenser over sink or adjacent counter.
2. Provide paper towel dispensers at all restrooms.
3. Toilet paper dispensers, toilet seat cover dispensers, sanitary napkin and tampon dispensers shall be furnished and installed by the owner.

Acoustics

1. Acoustically isolate rooms where activities generate loud noises. Acoustic isolation shall include eliminating noise transfer through ductwork and wall openings.
2. At classrooms and offices where suspended acoustical ceilings are provided, provide full-height walls between rooms. Walls shall extend from floor to deck or structure above with both sides of the wall covered with gypsum wallboard and all penetrations sealed to provide acoustic separation between adjacent spaces.
3. At corridors, provide full-height walls that extend from floor to deck or structure above with both sides covered with gypsum wallboard and all penetrations sealed to provide acoustical separation from adjacent spaces.
4. Acoustically isolate mechanical and electrical equipment from occupied spaces.

Mechanical Systems

1. Provide mechanical ventilation as required by code and as necessary to provide comfortable spaces free of undesirable odors and heat buildup.
2. Provide mechanical cooling at all areas except gymnasium, commons, and kitchen.
3. Provide energy management system for monitoring and control of all mechanical systems. Connect energy management system to District's central station at its Support Services Center.
4. Provide drinking fountains and bottle fillers in compliance with code requirements and evenly distribute throughout the school.
5. Locate mechanical equipment so it is easily accessible and serviceable. Do not install equipment above ceilings except as authorized by the District.
6. Provide catwalks, attic space, or equipment platforms for the placement of mechanical equipment, piping, and cabling. Provide access directly from floor level or stairways.
7. Locate compressors for walk-in cooling systems at building exterior.

Electrical Systems

1. Provide catwalks, attic space, or equipment platforms for the placement of electrical equipment. Provide access directly from floor level or stairways.
2. Provide cable trays above suspended ceilings, catwalks, attic spaces, and equipment platforms for low voltage wiring. Provide 25 percent additional capacity in cable trays for future installation of cabling.

3. Do not place transformers in occupied spaces, storage rooms, or custodial rooms due to the heat generated by the transformers.
4. Do not locate electrical panels in custodial rooms.

CORRIDORS, VESTIBULES, AND STAIRS

1. Avoid blind corners at corridors that inhibit visual supervision.
2. Locate fire annunciator panel at main entry vestibule for visual inspection by fire personnel from outside the building.
3. Provide electrical outlets at 50-feet on center in corridors.
4. Provide durable corner guards at outside corners not otherwise protected.
5. Provide 8 lineal feet of walk-off mats at all exterior doors.
6. Provide clocks in corridors with easy visibility.
7. Provide drinking fountains and bottle fillers in corridors. Locate in a recessed manner so they do not protrude into circulation space.
8. Where feasible, locate corridor light switches in custodial rooms.
9. Establish width of corridors and stairs to adequately accommodate amount of student traffic.
10. Whenever feasible, stagger classroom doors so doors are not adjacent to and directly across from each other. This provides better acoustical seraration and more evenly disperses students when exiting classrooms.
11. Provide recessed door alcoves in corridors at classrooms where feasible.
12. Arrange classrooms and corridors to evenly distribute traffic flow.
13. Provide exterior windows in corridors, vestibules and stairs whenever feasible.

RESTROOMS

1. Design traditional, sex-segregated, multi-user restrooms.
2. Provide a common water fountain/bottle fill station in the vestibule outside the restroom or nearby.
3. Provide outswing doors (cannot be barricaded from the inside) that have magnetic hold-opens so the restroom doors remain open during the day for supervision, and can be locked after school.
4. Provide enhanced privacy stalls that come down lower to the floor and end higher up than standard. Supervisors should still be able to see how many feet are in the stall but a student should not be able to stick their head under or easily hang over the top of the stalls.
5. Provide at least one unisex restroom on each floor. Provide key-card access that the district will manage.

COMMUNICATIONS

1. Provide exterior speakers for intercom and bell systems. Provide adequate distribution and volume to be heard at the courtyard and playfields, and tennis courts. Provide protective, weather-resistant covers at exterior speakers.
2. Provide integrated clock/speaker/intercom systems with volume control at spaces designated in Educational Specifications.

LIGHTING

1. Provide emergency and pathway lighting throughout the facility.
2. Connect emergency and pathway lighting to emergency generator.
3. At each classroom, provide capability to turn lights off separately at front and back of classroom. Front of classroom is where main whiteboard is located.
4. When doors are adjacent to interior windows or relites, provide adequate space between window and door frame to accommodate electrical switches.

BUILDING TECHNOLOGY

Student Computers in Classrooms

1. Provide wireless connectivity in classrooms for computers and printers used by students.

Teachers Computers in Classrooms

1. Provide two power/data/telephone outlets each at presentation station, teacher's desk location, and at alternative teacher's desk location at back of room.
2. Data outlets at each station will serve one computer and one networked printer.
3. Teachers have the option to install a computer at one of the teacher's desk locations or a presentation station.

Interactive Monitors

1. 86" interactive video monitor and stand - District will provide, install, and configure.

Wireless Infrastructure in Building

1. Provide wireless access nodes throughout building to allow use of wireless laptop computers at all areas of the building.
2. Floor outlets in classrooms are not needed for electrical power to laptop computers.

basis of design narratives

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BASIS OF DESIGN NARRATIVES

The following project-specific Basis of Design Narratives have been prepared by the Civil, Landscape, Mechanical, and Electrical Consultants. These written summaries verbalize additional design parameters specific to the engineering and integration of project requirements based on district standards, code regulations, and preliminary information known at this time. This information will be verified as the project progresses and modified as necessary throughout the design process.

Sumner-Bonney Lake School District Sumner High School – Phase 2
Civil Engineering Narrative

June 16, 2025

Demolition, TESC and Site Preparation

The Sumner High School project will be constructed in phases, as the existing campus is fully developed and currently in use. Phase 2 includes the full demolition of existing pavement, site features, and landscaping west of the Phase 1 building. Subsurface utilities that require removal or relocation will also be excavated. Backfill will consist of either on-site soils or imported structural fill, depending on construction sequencing. Outside of the dry summer months, imported structural fill will be required for all backfill operations.

A geotechnical investigation prepared by RAM GeoServices, Inc. included new subsurface test pits and referenced previous data across the site. Most test encountered fill composes the upper 2.5- to 7.5-feet of the soil column. Otherwise, the upper 30 to 35 feet consisted of alternating layers of loose to medium-dense silty sand and soft to medium-stiff sandy silt. Groundwater was generally encountered about 3 feet below ground surface.

Site preparation will include stripping of the sod, topsoil, and root-rich soil (we anticipate 9" stripping depth) beneath the proposed building and parking areas. The selected foundation system for the Phase 2 building of augercast pipes will allow for existing fill soils under the building to remain in place (below the stripping depth described above). Under the parking lot and pavement areas a 1-foot over-excavation of material and replacement with structural fill below the aggregate base course will be needed to support the pavement above existing fill soils. Due to the anticpated organic content, the stripping material fill is not suitable for reuse under buildings or pavements.

To limit sediment transport and protect exposed soils during wet weather, gravel working pads will be placed in unpaved construction zones. Temporary erosion and sediment control (TESC) measures will include catch basin protection, interceptor ditches, rock check dams, silt fences, straw or synthetic wattles, and sediment tanks. These measures will remain in place and be maintained throughout construction until final stabilization is achieved.

Because the project will disturb more than one acre and discharge to state surface waters, it will require coverage under the Washington State Department of Ecology's NPDES Construction Stormwater General Permit. This permit will be obtained through Ecology prior to construction.

Right-of-Way/Frontage Improvements

Two primary areas of right-of-way (ROW) improvements are proposed:

1. **North Street and Wood Avenue:** The existing driveway west of the site will be widened to improve access and accommodate larger vehicles, including buses.
2. **Main Street:** A new driveway will be added at the southern edge of the site.

Currently, only one driveway serves the small western lot; adding a second entry point will improve circulation and reduce vehicle queuing within the ROW.

JACOBSON CONSULTING ENGINEERS

Stormwater

The Phase 2 project area includes two drainage basins:

- **Western Basin:** Drains toward Wood Avenue and ultimately to the Puyallup River. This area includes most of the new parking lot. A new detention system will be proposed to manage peak flows for the 2-, 10-, and 25-year storm events.
- **Eastern Basin:** Drains north toward Mason Street. This area includes the building, bus loop, courtyard, and remaining parking areas. A modular underground detention system (R-Tank) is proposed to provide flexible detention beneath constrained site areas. This system will connect to the Phase 1 detention system through flat (0.0% slope) piping and utilize the existing pump for discharge.

Since the project adds more than 5,000 square feet of new or replaced pollutant-generating impervious surfaces (PGIS), water quality treatment is required before stormwater is discharged off-site:

- **Western Basin:** One water quality vault is proposed downstream of flow control to simplify stormwater routing and reduce the number of treatment systems.
- **Eastern Basin:** Two water quality vaults are proposed upstream of detention, based on site grading and routing constraints.

Additionally, a subdrainage system is proposed beneath the building to help manage the high groundwater levels observed during the geotechnical investigation. This system will mitigate potential shallow groundwater under the building slab during wet seasons where the geotechnical engineer anticipates groundwater could rise to within 1-foot of ground surface.

Sanitary Sewer

Sanitary sewer service for the site will be coordinated with Sumner Public Works. Phase 2 includes two proposed side sewer connections for the new building:

- **South Connection:** This line will connect to an existing sanitary sewer manhole (SSMH) located within Main Street.
- **North Connection:** This line will connect to a separate SSMH within Mason Street and will include a grease interceptor to treat waste from the Culinary Arts Classroom prior to discharge.

Adequate depth is available on-site to maintain a minimum 1% slope on all side sewer lines, consistent with City of Sumner private side sewer design requirements.

Water Service

Water service for the site is also provided by Sumner Public Works. Because the site is already developed, only limited water system improvements are proposed as part of Phase 2:

- One 6” fire department connection on the east side of the building
- One 6” fire water service connection with post indicator valve (PIV)

Domestic water will be connected to the Phase 1 building so a new domestic water service and meter to this building is not anticipated to be required.

Building and Site Grading

The existing site is relatively flat, with a gentle slope from west to east. Elevations range from approximately 75 feet at the western edge of the site to about 73 feet near the west side of the Phase 1 building, resulting in a total elevation difference of roughly 2 feet.

The proposed Phase 2 building will include finished floor elevations for the main building at elevation 74.50 and the Greenhouse and Animal Science buildings (detached from the main building) at the northwest corner of the building at elevation 74.25:

The adjacent parking lot and drop-off loop will range in elevation from 73 to 74 feet, providing a gentle slope from the building toward the parking lot. This grading approach minimizes earthwork and allows for a smooth, natural transition that aligns with existing site topography.

Site Paving

The existing paved areas consist primarily of asphalt in the driveways and parking lots, with concrete walkways surrounding the school and along outdoor corridors. An 8-foot-wide concrete path currently connects the western parking lot to the school building. The remaining areas include landscaping—grass, planters, shrubbery, and trees. All pavement and sidewalk construction should follow geotechnical recommendations, particularly in areas underlain by existing fill. As a general assumption, filled areas should be over-excavated to 2 feet below the bottom of the aggregate base course and replaced with structural fill. The geotechnical engineer will observe and verify subgrade conditions through proof-rolling, compaction testing, and visual inspection.

Pavement sections will vary by use:

- **Light-duty areas** include passenger vehicle lanes and parking stalls
- **Heavy-duty areas** include bus lanes, fire access routes, and garbage truck paths

All crushed rock materials must conform to WSDOT specifications and be compacted to at least 95% of the maximum dry density. Paving in the public right-of-way will follow City of Sumner standards for arterial roadways.

Paving Thickness Summary:

- Parking Lot Stalls and Drive Ailes:
  3" HMA over 6" crushed surfacing base course (CSBC) [Standard asphalt section]
- Bus Lanes and Fire Lanes:
  4" HMA over 6" CSBC (Heavy-duty asphalt section)
- Sidewalks:
  4" Concrete over 4" CSBC (Standard sidewalk section)
- Concrete Promenade and Fire Lanes:
  8" Concrete over 6" CSBC (Heavy-duty concrete section)

LANDSCAPE

fora LANDSCAPE ARCHITECTS

CITY OF SUMNER
DEVELOPMENT SERVICES

JUNE 13, 2025

PROJECT: SUMNER HIGH SCHOOL – PHASE 2
SUBJECT: CITY OF SUMNER – SITE PLAN REVIEW NARRATIVE

LANDSCAPE

The existing, modernized Sumner High School building, including the recent Phase 1 addition wing, will remain in place. The existing front entrance of the Phase 1 building will connected to the new Phase 2 building. Two courtyard spaces will be created north and south of this building connection, which will incorporate the seating and paving improvements from Phase 1. Additional site amenities, including site paving, walls, planters and seating will be provided as part of these courtyards. Fire access will be provided into these courtyard spaces from north and south access points.

The front entry of the new Phase 2 building will include a small entry plaza and north-south curbed drop-off lane, which will also serve as a fire lane. An existing parking lot will be modified to connect to a new parking lot expansion to the north and to interface with the drop-off lane. Together, the parking lots, pedestrian walkways and drop-off sidewalks will be designed to channel students, staff and visitors to the front entry plaza and the building's primary entrance. The entry plaza will provide a small variety of spaces for seating, conversation and students waiting for pickup. A walkway leading north will connect to the fence and secured greenhouse and animal sciences outbuildings.

Integrally colored concrete exposed aggregate or unit pavers may be used to break up large expanses or define specific areas. Plazas and other outdoor pedestrian areas will be designed to be long-lasting and serve both functional and aesthetic needs. Seating will be provided by a combination of monument stairs, seat walls, or pre-manufactured benches and tables and will provide opportunities for students, faculty, and visitors to gather in small and large groups, in both active and passive ways. Litter receptacles will be provided at prominent entrances and site locations with tamper resistant anchor bolts or cast in place footings.

PLANTING

An emphasis will be placed on using native plants and/or drought resistant ornamentals that have proven to be adapted and successful in the Puget Sound climate to minimize water use and maintenance requirements. The site design will be carefully developed to preserve as many existing trees along the perimeter of the site as feasible. Additional trees and planting will visually enhance the site, mitigate the heat island effect, and increase habitat value.

Landscape elements will be arranged to emphasize building entrances and focal points, and new lawns will be aggregated into large areas with paving or mow strips clearly defining the outer edges to ease maintenance. Wherever possible, the slopes on lawn new areas will not exceed 3:1. An 8" depth of sandy loam import topsoil will be tilled into the subgrade to promote healthy plant growth and reduce watering and maintenance demands. A 3" depth of Arborist wood chip mulch will be provided in planting areas to suppress weed growth and retain soil moisture. All trees, shrubs, and groundcovers will be specified at sizes optimal for plant establishment. Perimeter buffer improvements at the northwest property line and parking lot landscaping will be provided to meet the minimum requirements of the code and as agreed upon with the City of Sumner.

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SEATTLE, WA 98115

fora LANDSCAPE ARCHITECTS

IRRIGATION

New landscape areas adjacent to the building will be watered with an automatic, water efficient irrigation system. The lawn areas directly adjacent the building will be fully irrigated by this system, but perimeter lawn / meadow areas may utilize a temporary system to reduce installation costs and long-term operating expenses. The shape and size of the planting and lawn areas will be designed to maximize irrigation efficiency and reduce water use and run-off. All irrigation will be controlled by an automatic time clock located inside the new building. The time clock will be connected to an exterior moisture sensing device to monitor rainfall and reduce water usage and will feature network capabilities that allow the district to remotely operate the controls from either a computer or a smart phone.

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STRUCTURAL

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Sumner High School – Phase 2

Sumner-Bonney Lake School District

Structural Narrative

Design Criteria

- Code: 2021 International Building Code
- Roof Loads:
  - Dead Load – 20 psf
  - Live Load (Snow) – 25 psf
- Floor Framing Loads:
  - Dead Load – 75 psf
  - Live Load – 100psf at 1st floor corridors, 80 psf at upper level corridors, 50 psf all other areas
- Mechanical Mezzanine Loads:
  - Dead Load – 75 psf
  - Live Load – 40 psf + Mechanical Equipment Weight
- Seismic Design:
  - S_S=1.249, S_1=0.429, S_{DS}= Site-specific study by Geotechnical Engineer
  - Risk Category = III
  - Importance Factor, I=1.25
  - Response Modification Coefficient: R=8 (Buckling Restrained Braced Frames)
- Wind Design:
  - Basic Wind Speed: 104 mph
  - Exposure Category: "B"
  - Wind Speed-up Effect Factor (K_{zt}): 1.0

Foundation System

All building foundations will be supported by 24" auger cast piles as determined by the Geotechnical Engineer. Grade beams will act as pile caps and will span between piles to support the steel columns and the 1st floor 10" structural slab (possibly with a topping slab). Grade beams will typically be 3'-0" wide and 3'-0" to 4'-0" deep.

Floor Framing System

The elevated floors and mechanical mezzanines will be framed with concrete filled "W2" type metal decking (5-1/2" total thickness) which will span between steel wide flange beams and girders. The steel framing members will be provided with welded headed studs to create composite action between the concrete filled deck and wide flange members. All elevated concrete decks will be reinforced with 6X6 W2.9xW2.9 Welded Wire Reinforcing. Elevated concrete decks to be reinforced with #4 @ 18" o.c. at slabs exposed to view.

- Assume 10-14 psf for gravity girders, beams and columns.
- Assume 2 psf for braced frame beams and columns.
- Tonnage above is for floor plate area and includes the columns below. Tonnage is for primary structural framing only and does not include an allowance for waste, connections, bracing, continuous bent plates, misc steel, exterior support steel, etc.

Roof Framing System

The roof framing will consist of 2" W2 or 1 ½" type "B" metal decking spanning between steel beams/girders.

- Assume 8-12psf for gravity girders, beams and columns.
- Assume 2psf for braced frame beams and columns.
- Tonnage above is for roof plate area and includes the columns below. Tonnage is for primary structural framing only and does not include an allowance for waste, connections, bracing, continuous bent plates, misc steel, exterior support steel, etc.

Exterior Walls

Exterior walls will be constructed of light-gauge steel stud framing spaced at 16" o.c. with built-up light-gauge headers and jambs at openings. Sheathing shall be as noted in the architectural drawings and specifications. Top of walls to have a deflection/drift track to limit load applied to the wall by the floor/roof above (except at the penthouse roof).

The parapets above the roof will be braced by HSS stub columns @ 4' o.c. over the steel beams.

Lateral Load Resisting System

Wind and seismic loads will be resisted by Buckling Restrained Brace Frames. These frames will be primarily in a chevron configuration or single diagonal configuration. Diaphragms will consist of concrete filled metal deck at the floors and metal roof deck at the main roof and mezzanine roof. The mechanical penthouse roof will be braced by steel sheet sheathed light-gauge steel stud walls. The east end of the connector corridor to phase 1 will be braced by a steel moment frame consisting of steel wide flange columns and beams.

END OF STRUCTURAL NARRATIVE

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MECHANICAL

METRIX ENGINEERS

METRIXENG.COM

SUMNER HIGH SCHOOL – PHASE 2
SUMNER-BONNEY LAKE SCHOOL DISTRICT
MECHANICAL BASIS OF DESIGN – 100% SCHEMATIC DESIGN
6/13/2025

Design Intent: The mechanical systems for the Sumner High School Phase 2 project is intended to integrate and expand upon the existing mechanical systems; be a balanced concept to meet project budget, District Standards, and WSEC requirements; while also adequately addressing and incorporating other equally important design, operational features and project goals including but not limited to programming and integration of spaces, operational and maintenance access needs and reduced system complexity, life cycle cost, occupant comfort, indoor air quality, reduction to ongoing District operational funds, acoustics, aesthetics and future system planning for additional project phases.

Applicable Codes and Standards:
The mechanical design shall meet, but not be limited to, the following codes:

- Washington Sustainable Schools Protocol (WSSP)
- International Building Code (IBC)
- International Mechanical Code (IMC)
- International Fuel Gas Code (IFGC)
- International Fire Code (IFC)
- Uniform Plumbing Code (UPC)
- Washington State Energy Code (WSEC)
- National Fire Protection Association (NFPA)
- Sumner-Bonney Lake School District Design Standards

The mechanical design shall meet, but not be limited to, the following standards:

- ASHRAE Standard 52.1 – Gravimetric and Dust Spot Procedures for Testing Air-Cleaning Devices Used in General Ventilation for Removing Particulate Matter
- ASHRAE Standard 55 – Thermal Comfort
- ASHRAE Standard 62.1 – Ventilation for Acceptable Indoor Air Quality
- ASHRAE Standard 90.1 – Energy Standard for Buildings Except Low Rise Residential
- SMACNA – Sheet Metal & Air Conditioning Contractors

Design Criteria
Table 1 – Outdoor Design Temperatures

Design Season	Temperature
Outdoor Winter DB	25.0°F*
Outdoor Summer DB	84.0°F*

*Values taken from 2021 Washington State Energy Code Appendix C Exterior Design Conditions

Building Envelope
Building envelope shall be in compliance with those minimum prescriptive values as defined by the Washington State Energy Code.

227 Williams Ave S, Renton, WA 98057 Office: 425 336 2822 Fax: 425 336 2802

Fire Sprinkling System:

The building will be fully protected by an automatic fire sprinkler system designed in accordance with the requirements of NFPA 13 and all applicable local Authority Having Jurisdiction (AHJ) codes. The system will be designed to provide full wet-pipe sprinkler coverage throughout all interior occupied spaces as well as in combustible concealed or interstitial voids, such as ceiling plenums or soffits, as required by code.

The primary system type will be a wet pipe system, selected for its reliability, low maintenance needs, and suitability for occupied, conditioned areas. Where architectural coordination permits, building overhangs and other exterior projections will be protected using dry-type sidewall sprinkler heads connected to the interior wet system. This approach avoids the need for separate dry systems while still providing code-compliant protection for partially enclosed exterior elements. In locations where dry-type sidewall heads are not sufficient to provide the required coverage, a dedicated dry pipe system will be provided to ensure full code compliance and life safety protection.

The fire sprinkler design will be coordinated closely with the architectural and structural drawings to ensure comprehensive coverage, code compliance, and minimal impact to interior aesthetics or ceiling layouts.

Wet system piping shall be black steel with threaded or mechanical grooved joints. The design proposes a new fire sprinkler service entrance in a dedicated Phase 2 riser room that will serve only the Phase 2 building. This approach is pending AHJ approval. Fire system backflow prevention shall consist of a double detector check valve (DDCV) assembly located at the riser. A fire department connection and post indicator valve shall be located on site by Civil.

The Phase 1, 3-story building did not require fire sprinkler pumping. It is assumed adequate pressure is available for Phase 2 to not require a booster pump, however a flow test to confirm has not been performed to date.

Plumbing Systems:

1. Utilities: The mechanical systems shall be connected to new fire and sewer services designed by the civil engineer. Connection will be at 5’-0” outside of the building or as otherwise coordinated between disciplines.

2. Domestic Cold-Water System: The domestic water main for Phase 2 shall connect to the existing domestic water system in Phase 1, located in the first-floor ceiling adjacent to the new breezeway. The Phase 1, 3-story building did not require domestic water pumping. It is assumed adequate pressure is available for Phase 2 to not require a booster pump, however a flow test to confirm has not been performed to date. Piping services shall be adequately isolated to provide ease of maintenance. Domestic cold-water piping shall be copper with solder or press fittings.

3. Domestic Hot Water System: Natural gas fired, tank type, high efficiency condensing domestic hot water heaters, shall be located in mechanical spaces to serve fixtures. All water heaters shall be designed with hot water recirculation piping and pumps to keep hot water available at fixtures. Domestic hot-water piping shall be copper with solder or press fittings.

4. Plumbing Fixtures: All plumbing fixtures shall be selected for use in high impact applications per District Standards. Lavatories will use manual metering faucets. Water closets and urinals will use hand operated low flow flush valves (1.28gpf for water closets and 0.125gpf for urinals). All fixtures will be selected in coordination with school district personnel.

5. Sanitary Waste and Vent System: A sanitary waste and vent system will be installed to serve all fixtures within the building. Sanitary waste and vent systems shall be cast iron no hub or solid wall PVC. Solids interceptors, located outside the building, will be provided for the Greenhouse, Horticultural and Ag. Science programs.

6. Grease Waste and Vent System: A hydromechanical style grease interceptor, located outside the building, will be provided for culinary arts program, per the AHJ. Coordinate with AHJ if grease interceptor needs to be on Civil or Mechanical documents for permitting. Grease waste and vent systems shall be cast iron no hub or solid wall PVC.

7. Irrigation: The water service for landscape irrigation should not enter the building and is covered under the Landscape consultant's scope of work. The BAS shall meter irrigation water usage.

8. Rain Leader Piping: No rain leaders or roof drains assumed on project. Gutters and downspouts assumed by others scope of work with attachment to Civil storm system.

9. Acid Waste and Vent System: Acid waste and vent piping shall be provided for Horticulture and Ag. Science Room plumbing fixtures. Acid waste piping shall connect to sanitary waste piping outside of building as coordinated with AHJ; no acid neutralization tank should be assumed but confirm with sanitary sewer utility. Acid waste and vent piping shall be polypropylene and fusion joints.

10. Compressed Air System: A compressed air system shall be supplied for Aero-Space Manufacturing.

11. Non-Potable HW and CW System: A non-potable hot and cold water system shall be supplied to serve Horticulture, Ag. Science and Greenhouse spaces working with acids or any other fixtures that require protection from contamination of the domestic water system. The domestic water services will be protected from non-potable services with reduced pressure backflow preventers. A small electric water heater shall be supplied on the non-potable HW heating system to ensure hot water is available at the non-potable use fixtures.

12. Culinary Arts HW and CW System: The hot water temperature for the culinary arts shall be provided at 120°F. Reduced pressure backflow preventers shall be provided for specialty fixtures within the culinary arts program that require contamination protection of the domestic water system, per AHJ requirements.

13. Natural Gas System: The medium pressure gas main for Phase 2 shall connect to the existing medium pressure gas main in Phase 1, located in the first-floor ceiling adjacent to the new breezeway. New piping from this connection will serve the gas fired water heaters, gas fired culinary arts appliances, and science labs. It is assumed the existing medium pressure gas main is adequately sized to serve the load of Phase 2, however load calcs have not been performed to date.

Heating, Ventilating and Air Conditioning System:

1. Heating Central Plant: Phase 2 will utilize existing Phase 1 heating plant design with the following revisions:
   a. Provide two additional gas-fired condensing boilers, sized to match the existing two gas-fired condensing boilers. Each new boiler shall include dedicated circulation pump.
   b. Replace the two existing secondary heating water pumps with larger pumps. Design team to coordinate the capacity of new pumps with the school district. The replacement pumps may be sized for either the Phase 1 and 2 conditions only or for the full build out of all phases.
   c. The heating water system pumping configuration shall remain primary/secondary.
   d. VFD driven pumps shall circulate heating water to the Phase 1 and 2 building active chilled beams, dedicated outside air units and air handling units.
   e. An additional or replaced expansion tank shall be provided to allow expansion of the additional heating water.
   f. The heating water main for Phase 2 shall connect to the existing heating water main in Phase 1, located in the first-floor ceiling adjacent to the new breezeway.

2. Cooling Central Plant: Phase 2 will utilize existing Phase 1 cooling plant design with the following revisions:
   a. Provide one additional air-cooled chiller, sized to serve the cooling load of the Phase 2 building. Phase 2 shall be fully mechanically cooled. A dedicated chiller circ pump shall be provided in the boiler room on a new housekeeping pad.
   g. Replace the two existing secondary low temperature chilled water pumps with larger pumps. Design team to coordinate the capacity of new pumps with the school district. The replacement pumps may be sized for either the Phase 1 and 2 conditions only or for the full build out of all phases.
   h. Replace the two existing secondary high temperature chilled water pumps with larger pumps. Design team to coordinate the capacity of new pumps with the school district. The replacement pumps may be sized for either the Phase 1 and 2 conditions only or for the full build out of all phases.
   b. Both the low and high temperature chilled water systems pumping configuration shall remain primary/secondary.
   c. VFD driven pumps shall circulate chilled water to the building active chilled beams (high temperature loop).
   d. VFD driven pumps shall circulate chilled water to the building air handling units and dedicated outside air units (low temperature loop).

e. It is assumed the existing low and high temperature chilled water expansion tanks are adequately sized for the additional chilled water, however a calculation has not been performed to date.
f. A chilled water buffer tank will be added to the chilled water system primary loop.
g. The low and high temperature chilled water mains for Phase 2 shall connect to the existing low and high temperature chilled water mains in Phase 1, located in the first-floor ceiling adjacent to the new breezeway.

3. Hydronic System:
   a. Type L copper with lead-free soldered joints for pipes 2" and smaller.
   b. Schedule 40 black steel with groove fittings for pipes 2-1/2" and larger.
   c. Ball valves for piping 2-1/2" and smaller.
   d. Butterfly valves for piping 3" and larger.

4. Classrooms, Conference Rooms, Offices and Staff Workroom Zones:
   a. A dedicated outside air unit provides ventilation air to active chilled beams at each zone.
      - The dedicated outside air units are provided with a supply fan, an exhaust fan, a heating water coil, a chilled water coil, filters, and a heat exchanger.
      - The heat exchanger is an enthalpic wheel type.
      - The heating water and chilled water coils are provided with 2-way control valves.
   b. An active chilled beam provides zone heating, induced airflow and zone cooling at each zone.
      - The active chilled beams are provided with a primary air inlet, induction nozzles, screens, a heating water coil and a chilled water coil.
      - Each zone served by induction water coils are provided with a heating water 2-way control valve and a high temperature chilled water control valve.
      - CO2 sensors are provided at each space for demand control ventilation.
   c. Return/Exhaust air will be fully ducted from individual rooms to dedicated outside air units.

5. Aero-Space Manufacturing Room, Culinary Arts and Breezeway:
   a. An air handling unit provides heating, cooling and ventilation air via overhead distribution.
      - The air handling units are provided with a supply fan, an exhaust fan, a heating water coil, a chilled water coil, filters, and a heat exchanger.
      - The outside and exhaust air pathways are sized for full economizer.
      - The heating water and chilled water coils are provided with 2-way control valves.
   b. CO2 sensors are provided at Aero-Space Manufacturing and Culinary Arts for demand control ventilation.
   c. Return/Exhaust air will be fully ducted from individual rooms to air handling units.
   d. A make up air unit provides ventilation air directly to Culinary Arts to compensate for exhaust from the Type 1 hood.
      - The make up air unit is provided with a supply fan, gas fired furnace and filters.

6. Horticulture Science, Ag. Science, Fabrication Lab and Learning Commons:
   a. A dedicated outside air unit provides ventilation air directly to each zone.
      - The dedicated outside air units are provided with a supply fan, an exhaust fan, a heating water coil, a chilled water coil, filters, and a heat exchanger.

- The heat exchanger is an enthalpic wheel type.
- The heating water and chilled water coils are provided with 2-way control valves.

b. A fan coil unit provides heating and cooling air via overhead distribution.
   - The fan coil units are provided with a supply fan, a heating water coil, a chilled water coil, and filters.
   - The heating water and chilled water coils are provided with 2-way control valves.
c. CO2 sensors are provided at each space for demand control ventilation.
d. Return/Exhaust air will be fully ducted from individual rooms to fan coil units and dedicated outside air handling units.

7. General Exhaust:
   a. Restroom and copier exhaust shall be provided by dedicated outside air units where possible.
   b. Custodial and quiet rooms shall be provided with dedicated inline exhaust fans.
   c. Type I Culinary Arts hood and dishwasher hood exhaust are provided and served by roof mounted upblast type exhaust fans.
   d. Main mechanical and electrical room exhaust shall be provided by inline exhaust fans.
   e. Specialty Exhaust for Aero-Space Manufacturing, Fabrication Lab and Prep Room shall be provided with dedicated exhaust and containment hoods for welding, painting or other activities as required by space program needs.

8. Miscellaneous Cooling:
   a. Split system air conditioning units shall be provided at IDF and elevator machine rooms.

9. Miscellaneous Heating:
   a. Electric unit heaters shall be provided at the main mechanical room, storage with exterior doors, vestibules or any other spaces that may need freeze protection.

Building Automation System (BAS):
The mechanical systems in the building will be controlled and monitored by a direct digital energy management control system with BACnet interface and web-based capability. In addition to controlling the mechanical systems, the controls will be capable of monitoring and controlling other systems in the building such as energy metering and lighting controls, and also can interface to provide metering outputs to a building energy dashboard interactive kiosk system if desired by the District. The Phase 2 building automation system will integrate into the existing Phase 1 building automation system. Metrix will coordinate controls vendor options with the school district.

ELECTRICAL

PROJECT 25-103

SUMNER HIGH SCHOOL REPLACEMENT
Phase 2

Prepared June 13th, 2025

HARGIS

Brendon Inman, P.E. Principal-in-Charge
Jeff Hoover Project Manager/ Engineer

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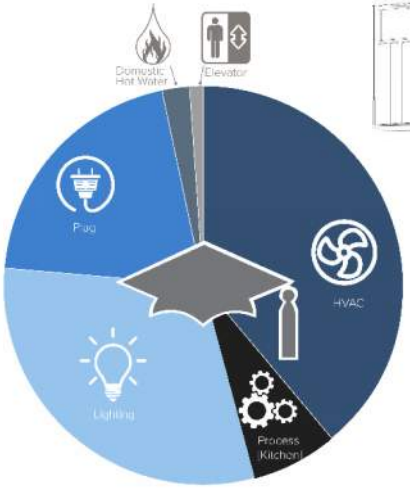
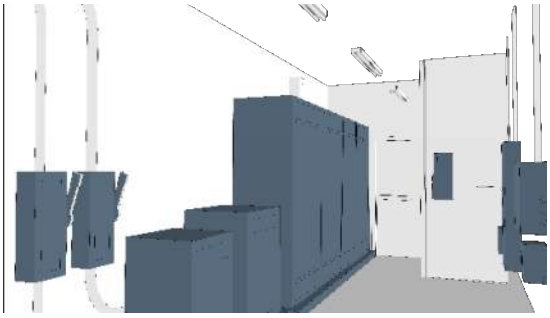




OVERVIEW OF ELECTRICAL SYSTEMS

The electrical design approach focuses on low-maintenance and long-life span. The design features flexible and robust components suitable for the instructional spaces they serve.

OBJECTIVES

Electrical systems for building addition

Extend electrical service provisions from phase 1 services to new building

Extend emergency and standby power from phase 1 systems

Extend fire alarm system from existing building

DESIGN CONSIDERATIONS

Owner standards

Local, state and national codes adopted by the local AHJ

Sustainable design intent with LEED WSSP

Existing owner medium voltage distribution to remain and be unaltered by this project

SYSTEMS

Normal Power Distribution

Emergency andOptional Standby Power Distribution

Lighting

Lighting Controls

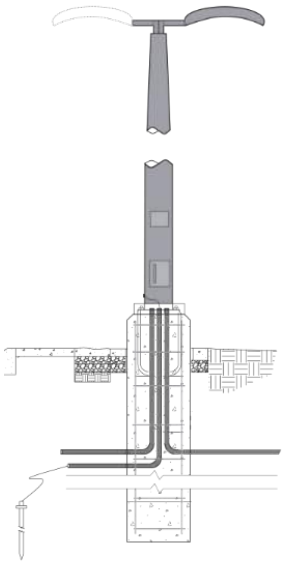
End Use Power Connections

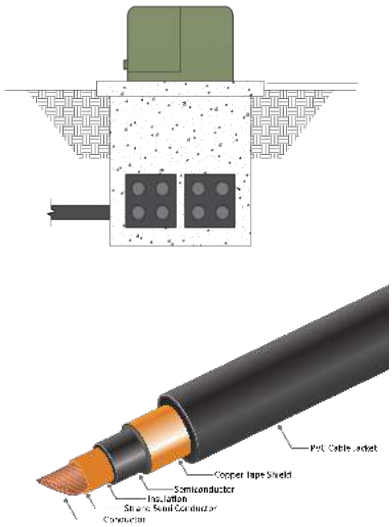
Mechanical Equipment Power Connections

Fire Alarm

Controlled Receptacles

Metering - code required





SITE UTILITIES

The building is located on a partially developed site with utilities in place. Site work needs to account for site lighting for parking, crosswalks, pathways and entries into the building. Existing pedestrian lighting, which was included in phase one, shall be relocated as part of the phase two project where in conflict with new building and site design elements.

POWER

PSE power company campus primary meter, existing to remain

Existing pad mounted transformers located north of the Phase 1 Building

Power to be extended to Phase 2 building via raceway stub provisions on the site

Power to site signage

LIGHTING

Parking lot lighting ≤ 30' above grade

Parking area pole lights mounted on concrete bases 3' above grade

Parking area pole lights mounted on concrete bases that are flush with grade

Parking and drive area pole lights have 6" square poles that are 20' tall with hand hole for wiring access.

Pathway area lighting mounted on 4" round poles that are 12' tall.

Entry lighting at all building entrances

DESIGN CONSIDERATIONS

Electric Vehicle charging stations, EV-ready, and EV capable infrastructure as required per WAC and as coordinated with owner

Empty conduit to roof for future PV beyond baseline energy code requirement to additional solar readiness areas

Power to light poles for security cameras per security section of the BOD

Fire Alarm Considerations:

- notification appliance above the Fire Department Connection or at the main point of entry as required by the AHJ
- DDCV location
- PIV location

POWER SYSTEMS

The building's power distribution approach is driven by cost and flexibility for future changes to support the program needs. The distribution approach takes advantage of provisions included in the Phase 1 building, and centralizes the 208 volt distribution with a single distribution board for all non-mechanical power. Power monitoring is incorporated to provide feedback on building system power consumption and opportunities to identify modifications to maximize building efficiency. The existing 480 volt service shall be extended, is a 4,000 ampere switchboard with a 2,000 ampere space provision, is manufactured by Siemens.

EQUIPMENT

Fixed-mounted insulated case circuit breaker with ground fault protection switchboard

Arc-Energy reduction for 1200 Amps and larger via instantaneous trip

Copper Bussing

Electronic trip units for circuit breakers 600 amps and larger

Switchboard and distribution panelboards with surge protective devices

Surge protective devices for branch circuit panelboards

Fully rated equipment

Panelboards have bolt on circuit breakers

Door-in-Door cover with continuous piano hinge

Electronic meters that monitor and record kVA, KW, amps, voltage, power factor

Power monitoring for WSEC required system

Dry Type transformers with Class H insulation

DESIGN CONSIDERATIONS

Centralized 208 volt distribution

Segregate transformers for mechanical power and plug load power, and telecommunications power.

Copper conductors with 600 volt THWN/THHN insulation

Limit voltage drop to 1.5% on feeders and 3% on branch circuits

Above grade conduits electrical metallic tubing with set screw fittings

Rigid metallic conduit required [in areas exposed to damage and for all exterior locations where exposed.

Segregate lighting, mechanical equipment and critical power, non-critical power loads

Short circuit study/arc flash study and for all new equipment

Labels for available short circuit, arc flash, and power sources

Breaker selective coordination for emergency loads

Ground conductor in all raceways

EMERGENCY AND OPTIONAL STANDBY POWER SYSTEMS

Generator power allows end user processes to continue operation and code required emergency systems to operate when utility power has failed. Code required emergency and optional standby systems will be supported from the existing power generator and associated distribution.

EQUIPMENT

Existing generator will be used for Phase 2 addition. Existing emergency distribution system will be utilizied and extended.

Existing generator is a 275kW Generac diesel generator with ASCO transfer switches.

New transfer switch to be provided for Phase 2 standby system

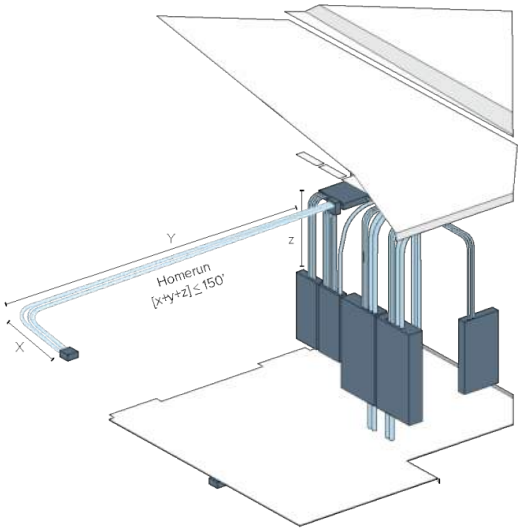
DESIGN CONSIDERATIONS

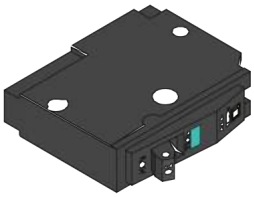
NEC 700 emergency loads

NEC 702 optional loads

Standby loads include: refrigeration systems, MDF/IDF equipment, access control, intrusion, fire alarm, video surveillance, intercom, etc.

New pathway from the generator is required to the Phase 2 addition.





CIRCUITING GUIDELINES

The circuiting is calculated based upon specific equipment and functions within each space, with capacity for minor modifications and additions. Circuiting of different power systems: mechanical power vs. plug loads vs. MDF/IDF power. Power is segregated to prevent equipment failure from affecting dissimilar systems. Therefore, branch circuit panel topology will need to support the circuiting approach to minimize downtime of different power systems.

EQUIPMENT

Dedicated branch circuits: fire alarm panels, smoke dampers,security panels, BMS control power, and lighting control panels

Housekeeping receptacles accessible so all spaces can be serviced without propping doors

Heavy duty NEMA 5-20 receptacles

Controlled receptacles with plug load controllers interfaced with lighting control system

CIRCUIT GROUPING

Segregate circuits serving computers and other sensitive loads from HVAC equipment, and appliances

Segregate critical power from normal power

Combine up to 3 circuits in a single conduit

WIRING METHODS

Conceal branch circuit wiring within walls and above ceiling

Homeruns below grade where indicated and are allowed

Mount devices flush in walls unless otherwise noted

Conductors rated less than 100 amps sized for 60°C terminations

Conductors rated more than 100 amps sized for 75°C terminations

Wiring methods rated for 90°C to accommodate conductor derating

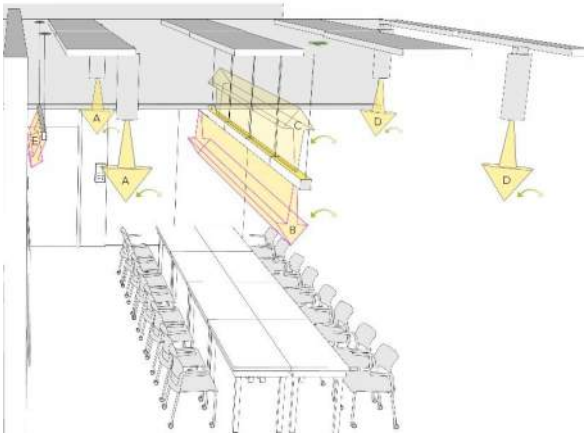
Horizontal conduits routed within ceiling area 1-1/2" below the structure

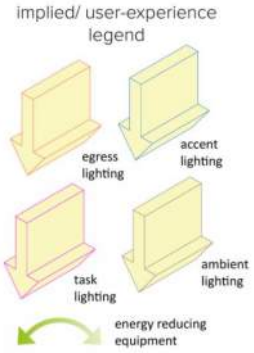
Insulated equipment grounding conductor

#12 AWG minimum branch circuit conductor size

Dedicated neutrals

MC Cable within room served with junction box and EMT homerun back to branch circuit panel





LIGHTING SYSTEMS - INTERIOR OVERVIEW

The lighting system approach blends the programmatic, owner, and energy code requirements to promote comfort, productivity, and energy efficiency. The system is tailored to the type of illumination desired within each space or areas (ambient, general, accent, display, task, emergency, and exit).

LIGHT FIXTURES

Light fixtures will be minimum LM70 and 80 CRI

Lighting Technology

LED

0-10V dimming drivers

Recessed fixtures in rooms with ceilings 9' or lower

AVERAGE LIGHTING LEVELS

Office 30fc

Conference Room 50fc

Classroom 30-35fc

Specialty Classroom 50-55fc

Corridors 15fc

Restrooms 15fc

Breakrooms 25fc

Elevator Threshold 10fc

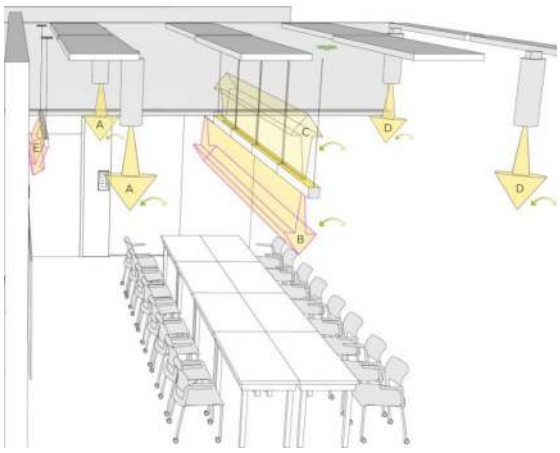
DESIGN CONSIDERATIONS

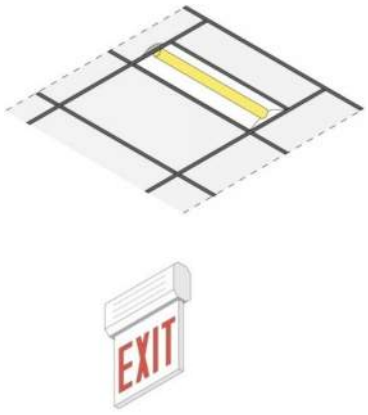
Accent lighting in entry and display areas

Time clock control zone hours of operation developed with owner input during the CD phase.

Utilize normal lighting fixtures for egress lighting in all spaces

Exit signs above exit doors and along path of egress





LIGHTING SYSTEMS - CONTROLS AND EMERGENCY LIGHTING

The lighting controls system bridges programmatic requirements, user-friendly applications, and owner energy conservation goals. The system addresses space specific illumination needs (ambient, general, accent, display, task, emergency, and exit) and supports conservation goals with occupancy control, time clock functions, and dimming set points capabilities.

LIGHTING CONTROLS

Networked lighting control system with time clock

Daylighting controls with dim to off functionality

System inputs will include

- Occupancy Sensors
- Photo Sensors
- Low Voltage Override Switches
- EMS System for time of day
- Relays for on/off functionality
- 0-10V dimming

MANUAL CONTROL SETUP

Classrooms/Labs - front/back switches and dimmed separately to support AV functions

Offices - on/off with dimming control

EMERGENCY LIGHTING

Ambient fixtures operating as emergency lighting under loss of normal power

UL924 control devices

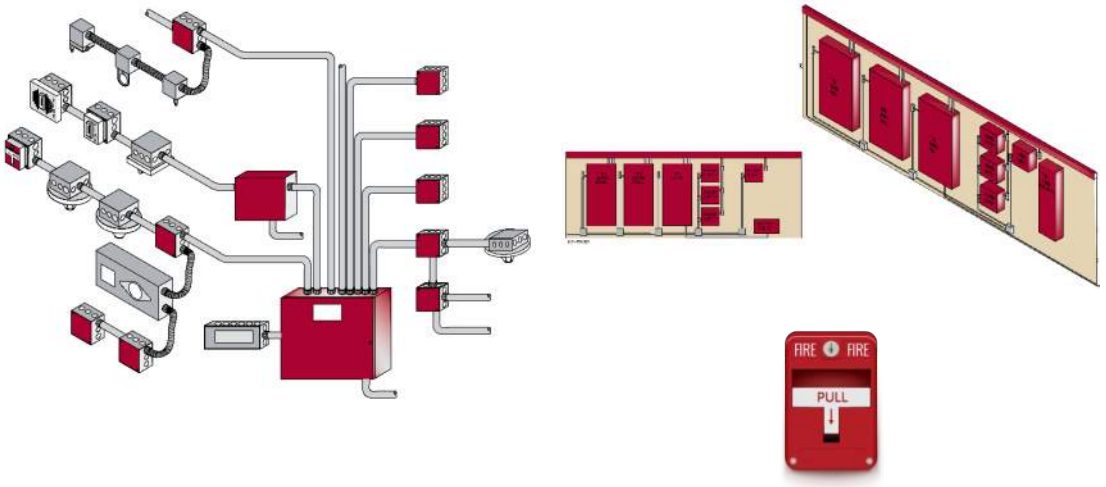
Egress lighting average 1-foot candle and a minimum of 0.1 foot candle

Max to min ratio not to exceed 40 to 1 along the path of egress

Electrical equipment rooms, restrooms over 300 sf

Egress lighting in high risk task areas average 10% of the normal lighting foot candle level no less than level with a minimum of 1.5-foot candles at any point during emergency power operation

Emergency power will be provided by generator



FIRE ALARM SYSTEM

The fire alarm system is a code required life safety system that will be a bidder designed system with minimum owner requirements shown where owner requirements are above and beyond code. Smoke detection coverage is AHJ minimum. The existing fire alarm control panel and system is going to be extended to the phase two addition, and is a Notifier NFS 3030 control panel.

Digital Addressable System with Fire Alarm Control Panel (Existing to be extended)	All wiring to be routed through conduit where above inaccessible ceiling areas, open cabling allowed where accessible ceiling is present	Wall or Ceiling mounted strobes for visual notification
Fire Alarm Annunciator panel within 15' of main entry where required by AHJ	Class B wiring	Mechanical equipment shutdown where required
Monitor Fire Sprinkler System Manual Pull Station where required by AHJ	Covers for manual pull stations Dedicated circuits for all fire alarm equipment	Labeling in electrical panelboard for fire alarm circuits
Speakers for audible notifications	Lock on device on circuit breakers	

CODE/STANDARDS/OWNER/ REQUIREMENTS

The building is located in Sumner, Washington and owner requirements will drive system selection. Local codes require compliant with code minimums and they are intended to support safety and energy efficiency.

BUILDING CODES/STANDARDS

NEC-National Electrical Code

NESC-National Electrical Safety Code

IBC-International Building Code

IFC-International Fire Code

IMC-International Mechanical Code

NEMA-National Electrical Manufacturer's Association

UL-Underwriters Laboratories, Inc.

IESNA-Illuminating Engineering Society of North America

ASHRAE 90.1, Energy Standard for Buildings

NFPA 72, National Fire Alarm Code

NFPA 101, Life Safety Code

ENERGY CODE

The 2021 Washington State Energy Code – Commercial 2021 Edition

Comply with energy code requirements for control within each space

Lighting power density shall not exceed code maximum per space/ account for C406 strategy, targeted 10% below energy code minimum.

Lighting control devices include:

Time Clocks

Occupancy Sensors

Light Reduction Controls

Photo Sensors

Dimming Controls

Emergency Egress Lighting Controllers

Plug Load Controllers

OWNER REQUIREMENTS

Alignment with existing systems in place and Phase 1 construction standards

ROOM DESIGN CRITERIA - POWER

	WIRING & CIRCUITING		RECEPTACLES			
	CIRCUITING	WIRING METHOD	NORMAL/ CONTROLLED	FLOOR BOX/POKE THRU	CONTROLLED RECEPTACLES	COMMENTS
Offices	3 circuits for up to 4 offices	Copper THWN in underground PVC or THHN in overhead EMT conduit	One duplex on each wall/One duplex each wall	No	Control receptacles via room occupancy	
Classrooms	4 circuits for the room, two circuits for A/V and teachers' desk/ podium	Copper THWN in underground PVC to homerun junction box in ceiling space	Two quads at each row of tables, power around perimeter and teachers' desk/ podium	No	Control receptacles via Networked Lighting Control System	All of the receptacles will be controlled with the exception of the AV rack Fire Alarm System will turn off the AV audio signal
Lab Spaces	4 circuits for the room, two circuits for A/V and teachers' desk/podium	Copper THWN in underground PVC	Two quads at each lab table, power around perimeter above lab tables and teach lab table	Yes, under each lab table	No	
IDF Room	Minimum two 20amp circuits and one 30amp circuit	Overhead copper THHN in EMT conduit	One double duplex receptacle on each wall and two double duplexes mounted above IT Rack	No	No	Provide hardwired connections or receptacles for all wall mounted equipment Refer to low voltage and security narratives
MDF Room	Minimum two 20amp circuits and two 30amp circuits	Overhead copper THHN in EMT conduit	2.0	N/A	N/A	

ROOM DESIGN CRITERIA - LIGHTING

	LIGHT FIXTURES		POWER AND CONTROL			
	AMBIENT LIGHTING	TASK LIGHTING	POWER DENSITY	FOOT CANDLE LEVELS	MANUAL CONTROL	COMMENTS
Offices	Grid-Mounted 1'x4' LED fixtures	None	0.89 watts/sf	30 fc minimum	On/Off control switch with dimming	Refer to energy code section for automatic control requirements
Training Room	Grid-Mounted 1'x4' LED fixtures	Whiteboard wall wash fixture	1.00 watts/sf	50 fc minimum	On/Off control switch with dimming	Refer to energy code section for automatic control requirements

Classrooms	Grid-Mounted linear LED fixtures	None	1.00 watts/sf	30-35 fc	Front/Back controlled separately. On/Off and Dimming	
Practice & Testing Lab	Grid-Mounted linear LED fixtures	As needed to support simulation spaces	1.02 watts/sf	50 fc	Front/Back controlled separately. On/Off and Dimming	Light levels and criteria to be reviewed with simulation vendor
IDF Room	Suspended Strip LED fixtures	None	0.76 watts/sf	30 fc minimum	On/Off control switch	Refer to energy code section for automatic control requirements
MDF Room	Suspended Strip LED fixtures	None	0.76 watts/sf	30 fc minimum	On/Off control switch	Refer to energy code section for automatic control requirements

ENERGY CODE DESIGN CRITERIA

Design Criteria to meet or exceed Energy Code

LIGHTING CONTROLS		
automatic control	areas	requirements
Occupancy Sensor Control	Corridors Restrooms Entry Vestibules	Automatic On
Occupancy Sensor Control	Offices Breakrooms Classrooms	Manual On
Time Clock Control		Owner to provide hours of operations, time control via EMS
Daylighting Control		Open loop photo sensors to be used to maintain minimum light levels indicated in room requirements.
Manual Control	Electrical/Mechanical Rooms	Safety concerns require rooms to be manual control only
Exterior Lighting Controls	Pathway	Owner to provide hours of operations, time control via EMS
Exterior Lighting Controls	Parking lot	Owner to provide hours of operations, time control via EMS
Exterior Lighting Controls	Building-Mounted	Owner to provide hours of operations, time control via EMS
ENERGY EFFICIENCY		
options	requirement	comments
Reduce Interior Lighting	C406.3	Lighting power density to be 10% better than code
Photovoltaic System	C406 and C411	Minimum PV system size shall be 63KVA

SECURITY

PROJECT 25-103

Sumner high school replacement
Phase 2

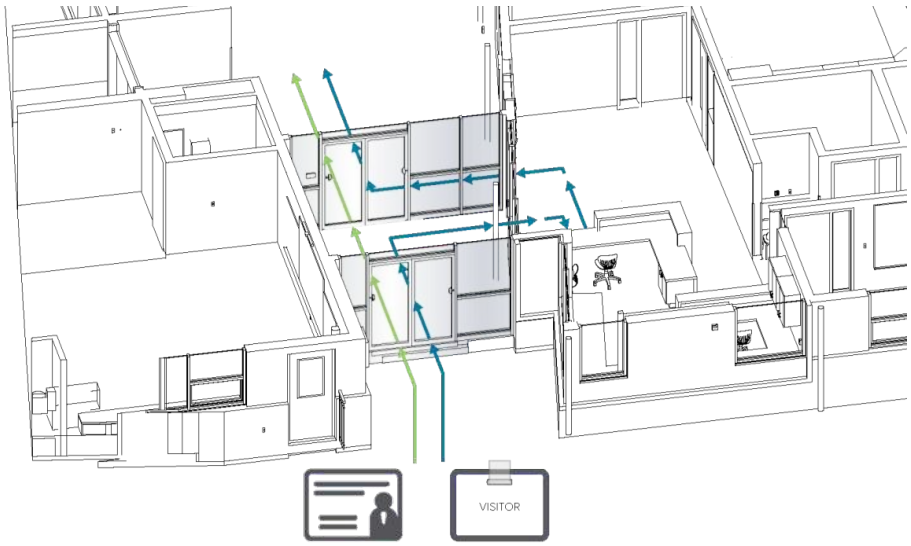
Prepared June 13, 2025

HARGIS

Brendon Inman, P.E. Principal-in-Charge

Viktor Roshchuk, Project Manager

SUMNER HIGH SCHOOL REPLACEMENT 1
OVERVIEW OF SECURITY SYSTEMS 2
ACCESS CONTROL SYSTEM 3
INTRUSION DETECTION System 4
SECURITY VIDEO SYSTEM 5
RESCUE ASSISTANCE SIGNAL SYSTEM 6
EMERGENCY RESPONDER RADIO SYSTEM 7
CODE/STANDARDS/OWNER REQUIREMENTS 8



OVERVIEW OF SECURITY SYSTEMS

The electronic security system reflects the Sumner SD posture towards creating inviting and welcoming spaces while safeguarding occupants and physical assets. It integrates into the physical structure and aligns with response protocols established by system administrators and responders. The integrated system is responsive to operational objectives bridging infrastructure, physical equipment and end devices.

DESIGN & PLANNING

Electronic access control

Intrusion detection

Video security cameras and servers

Rescue assistance communications

Emergency responders radio communications, Distributed Antenna System (DAS)

SUPPORT

Systems integration

Conduit pathways for areas without accessible ceilings or open to structure spaces

Open cable support pathways within accessible ceiling spaces

Systems panel and power supply locations

Command and control facilities located strategically

DESIGN CONSIDERATIONS

Security policy and procedures

Physical entry points

Sumner SD standards/requirements

Establish a perimeter factoring points of entry, exterior lighting, camera placement

Interior spaces (i.e. secure rooms)

Storage requirements

Door hardware types/functions

Requirement for separate security zones

Coverage

ACCESS CONTROL SYSTEM

The system manages and permits entry into the building or secures spaces for authorized personnel. System controls electronic access control doors either by time clock or using a web-based/ thick client to allow entry during scheduled and non-scheduled times. The “Lockdown” function will immediately lock electronically controlled doors or restrict access during an emergency. The door entry system includes audio and visual communications to the remote desk station with door release functions through the access control system.

DESIGN & PLANNING

Secondary entrances include parking entry, student entry, athletic field entry, playground entry, etc.

Door entry system is located at the main exterior door

Access control & power supply panels are centralized

Credential protocol are prox

Readers include standard, PIN pad and mullion

ADA operators are integrated with access control

DESIGN COORDINATION

Security policy and procedures

Exit only doors

Dual authentication

Interior electronic access control doors

Electronic door hardware (mortise, exit device, strikes, power transfer hinge, power transfer device)

PROGRAMMING

Systems integration includes intrusion detection, IP security video and intercom (Avigilon)

Forced entry detection

Access control door maps

INTRUSION DETECTION SYSTEM

Intrusion detection protects the facility and transmits an alarm to the Owner's monitoring agency to alert of unlawful entry and other programmed alarms. Separate security zones allow disarming of an area of the facility while keeping the remainder armed and supervised. (Bosch)

DESIGN & PLANNING

Keypad locations

Perimeter coverage includes magnetic door contacts

Interior coverage includes PIR/microwave motion detectors

Intrusion detection & power supply panels are centralized

DESIGN COORDINATION

Monitoring agency communications and reporting

PROGRAMMING

Systems integration includes access control and/or intercom

Arming/ disarming delays at entry/ exit points

Alarm reporting

Database management

SECURITY VIDEO SYSTEM

The system captures video for live monitoring and forensic discovery. It comprises of megapixel IP cameras, server-based Video Management Software (VMS) and video storage. Monitoring and forensic discovery are captured at a centralized location with web-based/ thick client remote accessibility. The cameras capture and transmit live video directly over an IP network, enabling authorized users to view, store, and manage video over standard IP-based network infrastructure and the internet.

DESIGN & PLANNING

Exterior coverage includes access control entries, parking lots, playgrounds, entry gates, bus pickup, parent pickup

Cameras mount on the building and light poles

Interior coverage includes entries, hallways, bathroom entry

Cameras are single sensor, 360 fisheye and multi-sensor

Video management server(s) are centralized

Video management server(s) are OFOI

Camera licenses are District provided

DESIGN COORDINATION

Video management server(s) are OFOI

Ethernet PoE switches are OFOI

Category 6 provided under section 27 11 00

PROGRAMMING

Systems integration includes access control

Record on motion with 5 second pre/ post recording

Camera maps

Compression methods via H.265

Frames per second 10 to 60 fps dependent on camera type

Video storage retainage 30 days

Tamper/ loss video alerts

Video masking

Video analytics line crossing, objects left in place, objects removed, etc.

Database management

RESCUE ASSISTANCE SIGNAL SYSTEM

The system supports two-way communication between elevator landings and the base station. Call boxes at each elevator landing (on an accessible floor that is one or more stories above or below the story of exit) include both audible and visible signals to assist those in need during an emergency.

DESIGN & PLANNING

Existing Base station located in office area

Signage includes 'Emergency Communications' and 'Instructions of Use'

Offsite monitoring via VoIP

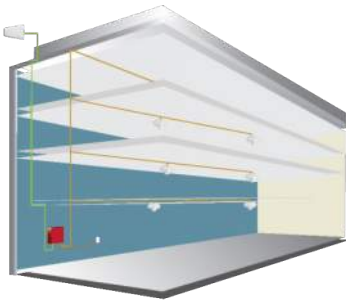
Cabling routed through conduit for protection

DESIGN REQUIREMENTS

Systems are specified to meet NFPA 72 and NFPA 101 Area of Refuge (Area of Rescue Assistance) Emergency Communications Systems and ADA Standards for Accessible Design

EMERGENCY RESPONDER RADIO SYSTEM

Append existing system to supports in-building two-way radio coverage for the Public Safety Networks (PSN) for the use by first responders.
The incoming and outgoing signal levels are to meet AHJ requirements.



DESIGN & PLANNING

Existing Bi-directional amplifiers (BDA) amplifies the signal to and from the donor antenna and coverage antennas

Existing Donor antenna (on roof) transmits and receives over air outdoor signals

Lightning surge protection for roof antenna/ coax

2-hour rated pathway for vertical backbone conduits (roof and between floors)

Coverage antennas transmit and receive in-building signals

Distributed Antenna Annunciator Panel (DAAP) located near Fire Alarm Annunciator Panel (FAACP)

DESIGN COORDINATION

Public Safety/ First responder's frequencies city of Sumner

Public Safety Communications antenna locations

Fire alarm monitoring integration

Authority Having Jurisdiction (AHJ)

DESIGN REQUIREMENTS

Systems are specified to meet IFC-510 Emergency Responders Radio Coverage and NFPA 1225 Standard for Emergency Services Communications

CODE/STANDARDS/OWNER REQUIREMENTS

The building is located in Sumner and owner requirements will drive system selection. Local codes require compliance with code minimums.

BUILDING CODES/STANDARDS

IFC-510 Emergency Responders Radio Coverage

NFPA 1225 Standard for Emergency Services Communications

NFPA 72 and 101 Area of Refuge (Area of Rescue Assistance) Emergency Communications Systems

ADA Standards for Accessible Design

NEC-National Electrical Code

NESC-National Electrical Safety Code

UL-Underwriters Laboratories, Inc.

NEMA-National Electrical Manufacturer's Association

TELECOMMUNICATION

PROJECT 25-103

SUMNER HIGH SCHOOL REPLACEMENT
Phase 2

Prepared June 13, 2025

HARGIS

Brendon Inman, P.E. Principal-in-Charge
Viktor Roshchuk, Project Manager

SUMNER HIGH SCHOOL REPLACEMENT 1
OVERVIEW OF TELECOMMUNICATION SYSTEMS 2
SITE INFRASTRUCTURE 3
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BACKBONE CABLE 6
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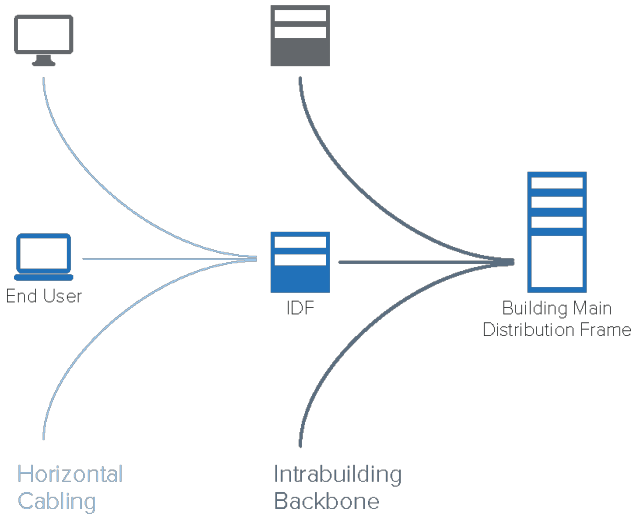


OVERVIEW OF TELECOMMUNICATION SYSTEMS

The telecommunications system is a structured cabling system to support Wide Area Network (WAN) and Local Area Network (LAN) transport of voice (analog and Voice-Over-IP), data, wireless and streaming video applications. The structured cabling system enables the transport of data, telephony, intercom, clock, audio visual, security, building automation, and other Internet Protocol (IP) applications to be converged onto a common cabling and network infrastructure. Networking equipment such as servers, Ethernet switches, routers, network software, computers, and phones will be provided by the Owner.

DESIGN

Single campus

Multi floor

Slab on grade

Supporting systems

Applicable codes, standards and references

STRUCTURED CABLING

Telecommunication spaces

Interbuilding pathways

Intrabuilding pathways

Horizontal pathways

Optical fiber cabling backbone

Copper cabling backbone

Horizontal cabling

Demarc extension

SYSTEMS

Data network

Wireless LAN

Audio Visual

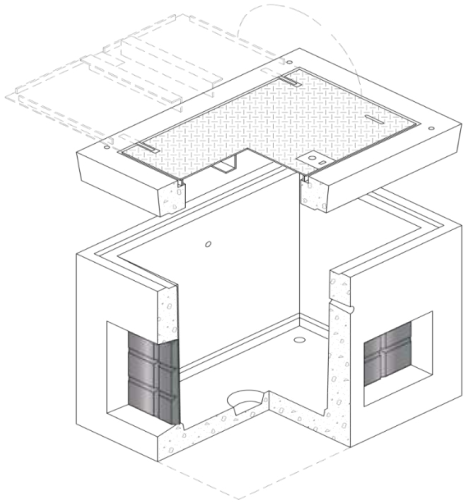
Security

Building controls

Internet of Things (IoT)

Ancillary Systems (i.e. clocks, sound, room schedulers, kiosks, etc.)

Emergency communications for area of rescue, elevators and monitoring of systems



SITE INFRASTRUCTURE

The site infrastructure is a system of pathways, spaces, infrastructure, and supporting structures to facilitate distribution of Day 1 services while providing a certain level of future provisions. It is critical that the campus infrastructure is carefully thought out from a master planning perspective to provide the highest return of investment with flexibility and mitigating impacts to existing services over the life of the site

PATHWAYS & SPACES

Minimum 36" depth of cover for pathways

Pathway type is schedule 40

Pathway size 4"

Multiple Textile innerducts in each conduit

Duct banks with metallic warning tape above ducts

Bend radius shall be no less than 36"

Pathways contain no more than 180 degrees of bend between pull points

Slope conduit away from building at 0.125" per 1'

Communications vaults with minimum 30" circular lid

INFRASTRUCTURE

Physical topology Star

Optical fiber and copper backbone cabling

SITE COORDINATION

Master planning for the life of the facility

Pathways for future service providers

Potential existing utility conflicts

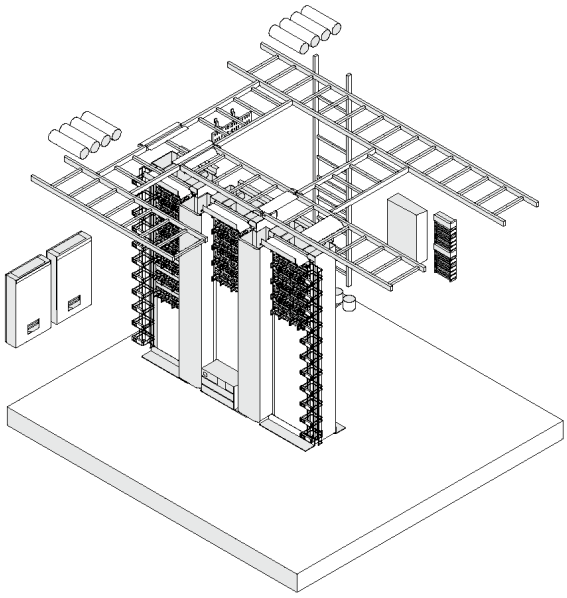
Road or walkway crossings and repairs

Communication vault placement avoiding traffic areas and large trees (roots)

Distances between maintenance hole locations

Joint utility trench

Right-of-Way requirements



TELECOMMUNICATION SPACES

The telecommunications spaces are configured as Main (MC) or Horizontal (HC) cross connect hubs. They are designed to facilitate the installation, configuration and administration of communication and mission critical systems. The allocated space is a dedicated, secure and environmentally controlled to support the termination of cabling and connection of networked equipment to the structured cabling infrastructure.

SPACE REQUIREMENTS

HC room(s) be a minimum of 10'x10'. (Size dependent upon area to be served).

Grounding and bonding. Telecommunications Main Grounding Busbar (TMGB) bonded to the building electrical service ground to provide equipotential system

MC/ HC horizontal cabling not exceeding 90 meters in length from furthest workstation

Dedicated non-switched power

UPS is rack mount

HVAC dedicated system 24/7, 365 days-per-year

DESIGN CONSIDERATIONS

HC supporting multiple floors

3/4" fire rated plywood painted with 2 coats of fire-resistant paint with fire rating stamp exposed

Minimum of two walls accessible for overhead distribution in/ out of rooms

Accessible directly from common corridor

Overhead clearance of 9'-6"

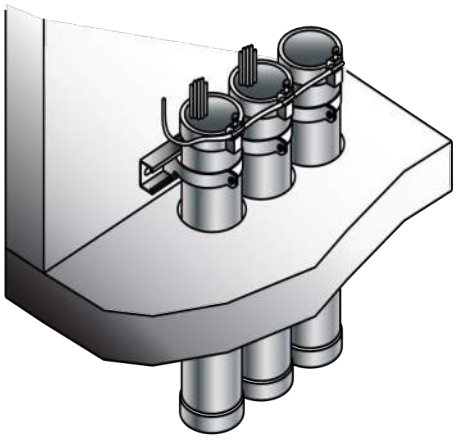
DESIGN CONSIDERATIONS (CONT)

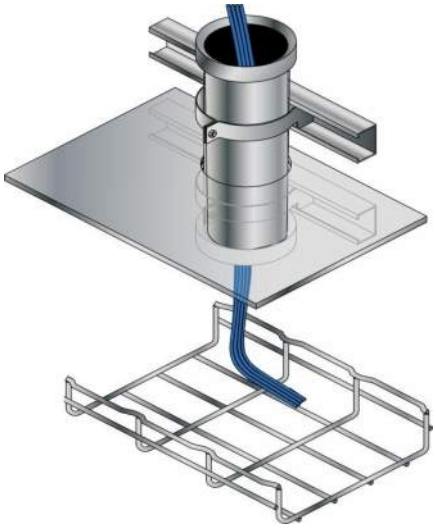
MC/ HC lighting at 50-foot candles

Overhead and/ or wall 120V/ 208V receptacles

Calculate equipment power to determine loads

HC floor loading 50lbs per sf distributed load





TELECOMMUNICATION PATHWAYS

Pathways are a means of extending services from the street into the building and vertically from there to and within end user locations. It is crucial for these pathways to be designed with future capacity and flexibility to support the life of the facility and facilitate moves, adds and changes.

PATHWAY REQUIREMENT	DESIGN CONSIDERATIONS	DESIGN COORDINATION
Interbuilding pathways between buildings/ telecommunications rooms	Vertically stacked shafts	Designed in compliance with ANSI/TIA-569-B Commercial Building Standard for Telecommunications Pathways and Spaces
Interbuilding pathways for backbone distribution	Conduit pathways for areas without accessible ceilings or open to structure spaces	Pathways are coordinated with other building systems structural, mechanical, electrical, civil, and landscaping
Horizontal distribution from MC/HC via above ceiling spaces	Open cabling support system consisting of cable saddles and j-hooks mounted on threaded rod	Building modifications including floor cores, full height wall penetrations
Open cable supports and cable trays	Horizontal distribution through corridors with cable tray versus open cable support pathways	
Flush mount recessed back box with a minimum 1-inch conduit to accessible ceiling space	Floor boxes	

BACKBONE CABLE

Interbuilding and Intrabuilding backbone cabling system are designed to support Day 1 needs while maintaining flexibility over the life cycle of the facility. The backbone system has the capacity and bandwidth to support current and future applications. The topology of the backbone cabling system is a hierarchical star with optical fiber and 100-ohm balanced twisted-pair cabling installed between the MC and the HC.

OPTICAL FIBER CABLING

24-strands OS2 backbone cabling

Single mode terminated with fusion spliced pigtail assemblies

Rack mount fiber cabinets (RMFC) with LC connector panels

Interbuilding cabling is an indoor/outdoor rated loose tube cable design with dry water blocking compound in an outside plant distribution jacket

Intrabuilding cabling is a tight buffered indoor plant distribution jacket

Cabling in conduit is protected with textile innerduct

COPPER CABLING

25-pair 100-ohm twisted-pair copper backbone cabling

Support voice and legacy applications

Interbuilding cabling has gel filled water blocking compound in an outside plant distribution jacket

Interbuilding cabling is terminated on building entrance protection blocks

Intrabuilding cabling is terminated on

DESIGN REQUIREMENTS

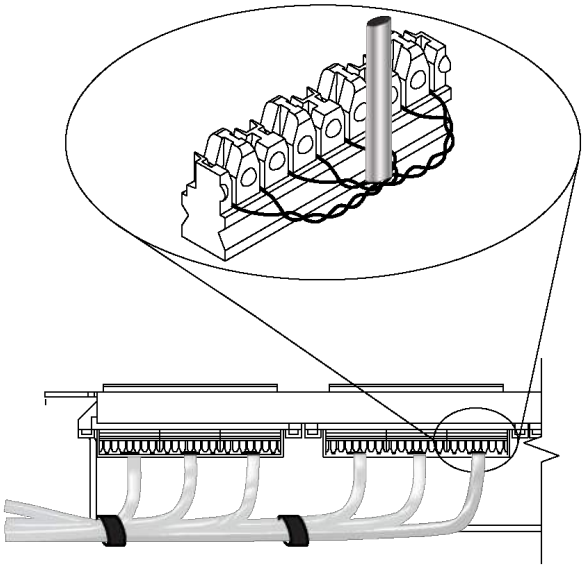
Plenum-rated cabling is specified where required by code

Outside plant cabling shall terminate within 50’ of entering a building

HORIZONTAL CABLE

The horizontal cabling is configured in a star topology with each work area outlet connected to a horizontal cross-connect in a telecommunications room.

Acknowledging that the horizontal cabling system represents a significant percentage of the overall structured cabling cost, the system is flexible, and easily expanded to facilitate changes and support all required applications. The cabling is specified to support the applications and bandwidth requirements, and environmental constraints.



COPPER CABLING

Category 6 unshielded twisted-pair horizontal cabling from telecommunications room to each work area outlet

Length of horizontal cabling limited to 90 meters or 295 feet

Horizontal cabling terminates on rack-mounted 48-port patch panels

Horizontal structured cabling is routed in a home run configuration without any splices

Higher bandwidth copper cabling requires larger conductors increasing the cable diameter

OPTICAL FIBER CABLING

Where copper distances are exceeded, optical fiber cabling is provided to support those systems (readerboards, site security cameras)

Terminated with field terminated connectors

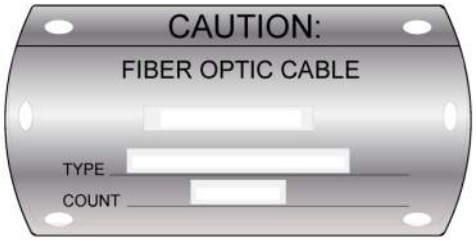
Rack mount fiber cabinets (RMFC) with LC connector panels

Optical fiber cabling is an indoor/ outdoor rated tight buffer cable design with dry water blocking compound in an indoor/outdoor distribution jacket

DESIGN REQUIREMENTS

Plenum cabling will be specified where required by code

Gel-filled outdoor rated cables required in wet environments outside the building footprint



CABLE MANAGEMENT AND ADMINISTRATION

Cable management and administration are essential components of the structured cabling system. The cable management assists administration to minimize support costs, and facilitate timely response to move, adds, and changes promoting efficient utilization of rack space, extending lifespan of infrastructure.

CABLE MANAGEMENT

3/4" fire-treated plywood backboards for wall mounted equipment

Flexible D-rings to secure and support cabling on backboards

19" wide 2-post and 4-post racks to support equipment and cabling

Ladder rack to support and distribute cabling within M/HC

2RU horizontal cable management panels

6" wide double– sided rack mounted vertical cable management panels

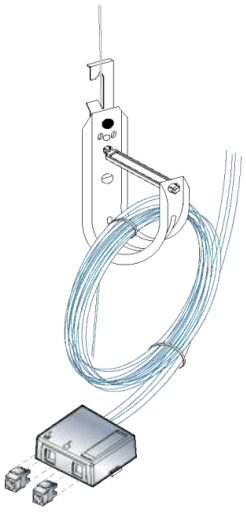
DESIGN COORDINATION

Network equipment, cable management panels and patch panels are laid out to organize patch cords and equipment connections

Patch cable colors identify and segregate different systems and connections types

ADMINISTRATION

Labeling scheme for cables, faceplates and patch panels are to match Owner standards or existing site conditions



DEVICES AND WORK AREA

The horizontal cabling terminates at edge devices to provide connectivity to a variety of systems and network-attached devices and equipment.

The interfaces and outlets are designed to provide maximum performance, durability, flexibility and aesthetics.

DEVICE TERMINATIONS

Horizontal station cabling terminates on an 8-position 8-conductor modular jack. Installed in a flush mount faceplate and/or surface mount box

Horizontal cabling terminates in a recessed floor box where equipment is not located near a wall (e.g. conference rooms, classrooms, open office spaces)

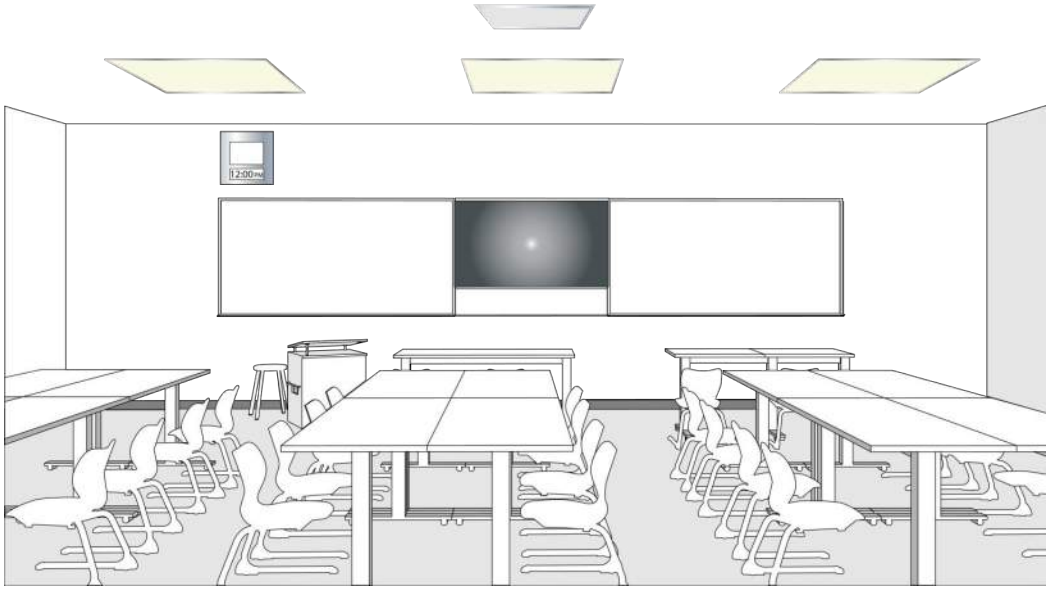
Horizontal cabling distributed within a modular furniture system terminates on faceplates compatible with the specified furniture manufacturer

DESIGN COORDINATION

Device locations and quantity of cables per location are determined by programming requirements

The design includes connectivity for telephony, intercom, clock, paging, audio visual equipment, and building automation systems such as: mechanical and electrical systems, security, and fire alarm

Horizontal cabling will terminate in a recessed floor box where equipment is not located near a wall (e.g. conference rooms, classrooms



ROOM BASED AUDIO VISUAL SYSTEM

The room-based audio-visual systems distribute audio and video content within each classroom and strategic conference rooms. The systems allow multiple audio and video sources to be connected to the system. The video is displayed on flat panel display and audio is distributed over the speaker. Audio visual equipment is contractor furnished and contractor installed exception of Flat panel displays which will be owner furnished and contractor installed.

DESIGN & PLANNING

Images displayed on an 86” interactive flat panel display

Speakers are in ceiling

Source input types include 3.5mm aux, HDMI, USB & USB-C

Audio enhancement system with wireless mics

Input/ outputs are connected through direct connections

Video distribution uses native video signals

DESIGN COORDINATION

86” Screen/ display image size

Viewing distances and angles

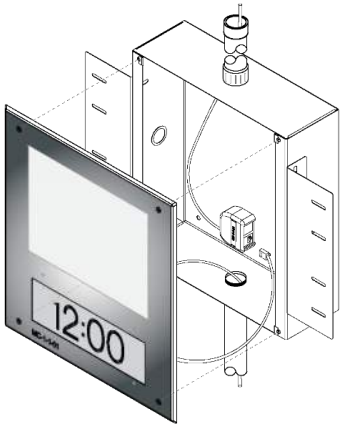
Video viewing requirements (general viewing, detailed analysis)

System control requirements (factory remote or control panel)

DESIGN REQUIREMENTS

Assistive listening audio output connection

Assistive listening kit containing ADA required devices to support a single room



INTERCOM AND CLOCK SYSTEM

The intercom clock system is a districtwide adopted enterprise application. Compatible with the internet protocol (IP) network, audio and data signals are transmitted over the structured cabling system. Bell schedules are locally maintained, while the intercom system provides overhead paging, two-way intercommunication and emergency voice notifications.

DESIGN & PLANNING

Classroom clocks are digital

Office clocks are digital

Intercom clock combo devices

Analog intercom speakers are placed throughout common spaces

Volume control in offices and conference rooms

Call switches in classrooms

DESIGN COORDINATION

Intercom zones (floors, interior, offices, exterior, athletics)

Bell schedules (normal, early release, late arrival)

Exterior intercom coverage areas

Integration with Owner's phone system

Integration with other systems

DISTRICT STANDARDS

The intercom system shall be Informacast, AND & Atlas Sound components to meet district standards

CODE/STANDARDS/OWNER REQUIREMENTS

The building is located in Sumner and owner requirements will drive system selection. Local codes require compliance with code minimums.

BUILDING CODES/STANDARDS

NEC-National Electrical Code

NESC-National Electrical Safety Code

TIA-568.0-D: Generic Telecommunications Cabling for Customer Premises

TIA-568-C.2: Balanced Twisted-Pair Telecommunications Cabling and Components

TIA-568.3-D: Optical Fiber Cabling Components

TIA-606-B: The Administration Standard for the Telecommunications Infrastructure of Commercial Building

TIA-607-B: Generic Telecommunications Bonding and Grounding (Earthing) For Customer Premises

TIA/EIA-758-B: Customer Owned Outside Plant Telecommunications Cabling

BICSI 001-2009: Information Transport Systems Design Standard for K-12 Educational Institutions

ANSI/ NECA/ BICSI 568, Standard for Installing Commercial Building Telecommunications Cabling

TIA-942: Telecommunications Infrastructure Standard for Data Centers

BICSI AV Design Reference Manual

BICSI Information Technology Systems Installation Methods Manual

BICSI Outside Plant Design Reference Manual

BICSI Telecommunications Distribution Methods Manual

ADA Standard for Accessible Design

OWNER STANDARDS

Sumner SD Design Guide and Standards

phase 3 preliminary programming

SUMNER
Commitment • Patience • Kindness • Respect • Honesty • Selflessness • Forgiveness • Humility
V

PHASE 3 PRELIMINARY PROGRAMMING

OVERVIEW

As part of the programming meetings held from February 2025 through June 2025, feedback for specific departmental programmatic needs was received and recorded for departments that will be housed in Phase 3 of the Sumner High School Addition project. A summary for preliminary programming is enumerated below.

With direction and input from the district's Capital Projects Department, a Phase 3 Ed Spec package will be compiled and delivered at a future time.

ONLINE LEARNING

Program

- (12-15) students in the program

Considerations

- Student work is completed independently on Chromebooks (no computer stations required)
- (1) adult in the room for supervision
- Consider multiple outlets for charging

JUNIOR RESERVE OFFICERS' TRAINING CORPS (JROTC)

Program

- Has been at Sumner for 1.5 years, took over old library space.
- (20-30) students per class, close to (80) students in the program next school year
- Various equipment supplied by the Army
- Physica training
- Office Hub
- Has multiple supplies, uniforms, and equipment
- Archery
- Drills

Considerations

- Equipment, supplies, and uniforms (clothes, boots) storage
- Classroom capacity for (30) students
- Can use regular science desks on wheels (easily movable to utilize room space for various activities)
- If possible, have plug-ins on the tables for Chromebook use

- 32’-40’ space with foam mats for physical training
- Office hub - can have more than (1) person per office space
- Indoor archery room/space
- Wall space to display JROTC pride

PHYSICAL EDUCATION (PE) & ATHLETICS

Program

- Spaces used
    - Mat Room
    - Weight Room
    - Main & Aux Gyms
    - Offices & Lockers
    - Storage

Mat Room Considerations

- Would be a shared space between PE and Athletics (currently using Aux Gym)
- Mainly used for wrestling practice. Used for other activities during offseason
- Capacity for around (70) students at one time
- Storage (PE and Athletics should be separate)

Weights & Fitness Room Considerations

- Ideal to have space close to locker rooms
- Host weigh training equipment and exercise equipment (treadmills, spin bikes, etc.)

Main & Aux Gym Considerations

- Aux Gym with 100 seats (instead of 300). Extra space can be used for storage
- Main Gym with 1,800 seats

Offices & Lockers Considerations

- (2) PE office spaces and (2) Athletics office spaces
- Offices in Athletics locker rooms would have day use
- PE: Around (50) students per period, (300) students for (6) periods a day
- (1) Girls PE locker room and (1) Boys PE locker room
- (1) Girls Team locker room and (1) Boys Team locker room

Storage Considerations

- PE: (4) carts used for (2) basketball teams
- PE and Athletics storage can be about the same size (400-500 SF)

- Outdoor sports use storage by stadium
  - Football
  - Soccer
  - Lacrosse

POOL

Program

- Hold competitions
- Open/available to the public

Considerations

- Roll-up door in Pool Equipment room, off to service yard
- Vending machines for concessions
- Seating area in Lobby
- Team room should be able to host (3) students
- Office for (1) person
- Announcer's stand needed during competitions
- (1) Men locker room, (1) Women locker room
- Bleachers between large pool and team room, bleachers above team room/offices/ pool storage

PERFORMING ARTS & MUSIC

Program

- Includes
  - Performing Arts Center
  - Drama and Green Room
  - Choir
  - Band

Performing Arts Center Considerations

- Clearly defined storage
- Orchestra pit
  - The deeper the better to avoid any line-of-sight conflicts
  - Consider removable cover to have more space when the pit is not in use
- Approx. 600 seats
- Needs a ticket booth (about half of the events are for profit)
- No concessions needed (will continue NO food or drink policy)
- (1) office space
- Sound booth and lighting booth can be together

- Catwalk access above
- Consider making the women's bathroom bigger (lines can get very long during intermissions)
- Stage
    - 42ft opening
    - Keep side stages
    - Lockable storage for shells and piano
    - Easy access from Green, Choir, and Band rooms for different performances
- Carpeted theater floor
- Scene shop
    - Sink and cabinets
    - Chop saw is the largest equipment currently used
    - Tools storage
    - Roll-up doors (outsideto scene shop and from scene shop to the stage)
- Toilet rooms central to space under theater risers
- Direct access or adjacency between Office/ticketing and theater lobby and scene shop

Drama and Green Room Considerations

- (1-2) connecting double doors between drama and green room
- Video feed from stage to both drama and green room
- Dressing rooms
- Green room is not a lounge area, it can have:
    - Cabinetry
    - Mirrors and lights
    - Toilet rooms
    - Dressing/changing rooms
    - Good access to stage
    - Wardrobe racks
- Up to (50) students at a time use the space for musical performances

Choir Considerations

- Floor finish: will be decided with feedback from an acoustics consultant
- Windows and access to natural light (room not adjacent to exterior walls)
- (1) office
- Practice rooms – shared with Band
- Robe storage
- Access to main stage
- Substantial music library space
- Video feed from stage

- Sound isolation between music and athletics, separation via a hallway appreciated

Band Considerations

- Clear/easy pathway from Band room to
  - Gym
  - PAC stage
  - Stadium
- Indoor tall and flat area for flag squad practice
- Storage
  - Double doors to be able to roll in racks
  - Student instruments could be stored on room perimeter OR lockers just outside the band room for ease of access after hours
- Display case: open to having a virtual display case shown on screens
- (1) big practice room, could be adjacent to Choir practice rooms
- Ensemble and percussion, directly accessible from Band room
- Band uniform storage can be across the hall from Band room
- (1) Office
- Video feed from stage
- Sound isolation between music and athletics, separation via a hallway appreciated

FINE ARTS

Program

- Includes:
  - 3D Art (Ceramics)
  - 2D Art (Drawing & Painting)
- Prefer to have both rooms right next to each other

3D Art (Ceramics) Considerations

- Kiln/Storage
  - Possibly will transmit heat to adjacent rooms
  - Direct access from classroom
- Combined storage between 3D and 2D art (a lot of storage preferred)
- Need a lot of shelving
- (2) sinks or more, and cabinetry
- Currently using (5) wheels, but (10) would be ideal
- A lot of clay delivered
- Clay traps in drains
- 1200 SF room if possible

2D Art (Drawings & Painting) Considerations

- Flat files for larger paper/board storage
- Paper cutting surface
- A lot of storage
- (2) sinks or more, and cabinetry

ADMINISTRATION

General

- Storage
- Mail room
- Toilet access with exhaust

Principal, APs, and Offices Considerations

- (3) Aps, and (1) doubles as Dean of Athletics
  Extra office space for "Dean" not required
- Principal's secretary (Office Manager) does not need office space. Can be in an open-nook area
- Athletic Director near the gyms

Conference Rooms Considerations

- Make them bigger if there is space available
- (1) of the conference rooms can move over to the Health/Counseling Center along with Health Drug Alcohol Office, Behavioral Specialist, and Psychologists

Break Room Considerations

- Can become smaller, or be joined with the Work Room
- Refrigerator, sink and countertops
- Coffee corner

In-School Suspension (ISS) Considerations

- Position closer to Principal/AP offices
- Can be smaller

ITIN Office Considerations

- Not needed, can use SF for other spaces

Waiting and Secretarial Considerations

- Both can be smaller
- (2) people, prefer to sit facing each other

- Visibility to entry

Attendance Considerations

- Can be (1) space
- Can potentially occupy what is currently labeled as 072-AP and 073-AP in Phase 1
  Would need double window to Secure Entry so students can check in

Campus Safety (Bldg. Manager/Security) Considerations

- Can stay in Phase 1 building
- Provide small space in Phase 2 building

Bookkeeping Considerations

- Can be smaller
- Have a window facing Entry Hall

STUDENT SERVICES

General

- Coffee corner
- Storage room. Explore high-density storage
- Toilet access with exhaust

Registrar Considerations

- Move closer to Guidance Center lobby (closer to entrance)
- Maintain access from the guidance center and access from interior corridor

Career Center Considerations

- 300 SF max size is appropriate

Work Allied Considerations

- Not needed. Space could potentially be used for a conference room.

Itinerant Workstations Considerations

- Only need (1) station with (2) desks
- Typically used by students that visit the Guidance Center
- Should be in a high visibility area

HEALTH

General

- Coffee corner
- Storage room

- Toilet access with exhaust

Health Center Lobby Considerations

- (1) computer station to check in
- Double door access from Entry Hall
- Make bigger (can eliminate corridor between Health Center and Mail)
- Currently have (5) chairs in the waiting area (3 inside and 2 outside)

Nurse Considerations

- (2) cots minimum needed, with separation between them (could be a curtain)
- (2) nurses

Psychologists Considerations

- (1) part-time, (1) full-time

Work Room Considerations

- Add sink, refrigerator, countertops, coffee maker and crushed ice machine to use as "break room" as well

COUNSELING

General

- (2) staff in secretarial area
- Toilet access with exhaust

Offices Considerations

- (5) counselors +3 for visiting counselors
- Prefer bigger offices, around 200 SF
  Enough space to meet with (1) student and (2) parents

Conference Rooms Considerations

- (2) minimum

Records Considerations

- Can be positioned closer to the restrooms
- Can have high-density storage like Phase 1 Media Lab

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