

13 NEENAH HIGH SCHOOL

Neenah High School provides a comprehensive program for 9th through 12th grade students.

BUILDING AREA: 458,052 sq. ft.
STUDENT POPULATION: 1,991 STUDENTS
SITE SIZE: 54.98 ACRES; 41% IMPERVIOUS SURFACE
GRADES SERVED: GRADES 9TH-12TH
PARKING: 723 STALLS (19 HANDICAP, 704 REGULAR)

BUS QUANTITY: 7 BUSES / 11 BUS ROUTES
(COMBINED MS/HS STUDENTS - 12 BUSES & 12 ROUTES)

NEENAH HIGH SCHOOL: BUILDING EVOLUTION

Neenah High School was originally constructed in 1966, and consisted of what is now known as the Conant building. The Armstrong building was constructed separately in 1972. Over the next couple of decades, the buildings underwent an addition in 1991, in 1996 an addition was constructed that linked the two buildings, in 1997 classrooms were added, and in 2009 an entrance addition was added.

The following building evolution diagram outlines the additions made to the original building over time due primarily to student enrollment growth.



Neenah High School Main Entrance



Neenah High School Classroom



Neenah High School Corridor

NEENAH HIGH SCHOOL: BUILDING EVOLUTION

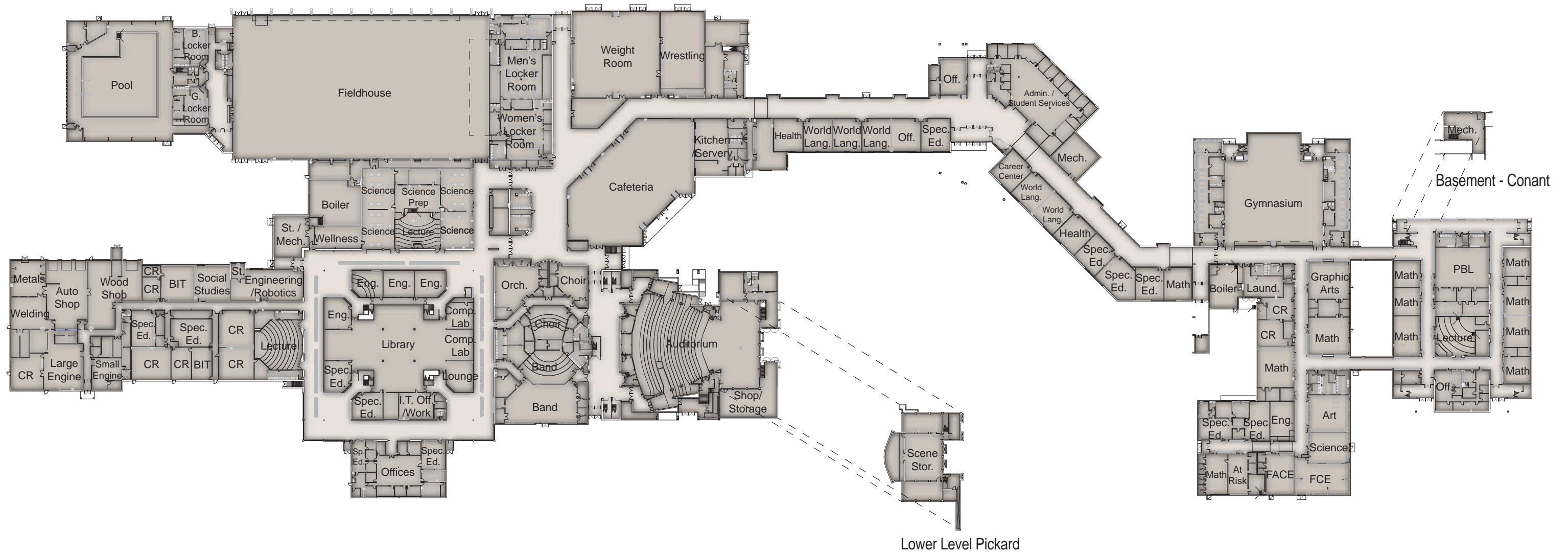


NEENAH HIGH SCHOOL: EXISTING SITE PLAN



SITE PLAN
not to scale

NEENAH HIGH SCHOOL: EXISTING FLOOR PLAN



FIRST FLOOR PLAN
not to scale





SECOND FLOOR PLAN
not to scale

NEENAH HIGH SCHOOL: PARENT SURVEY FEEDBACK

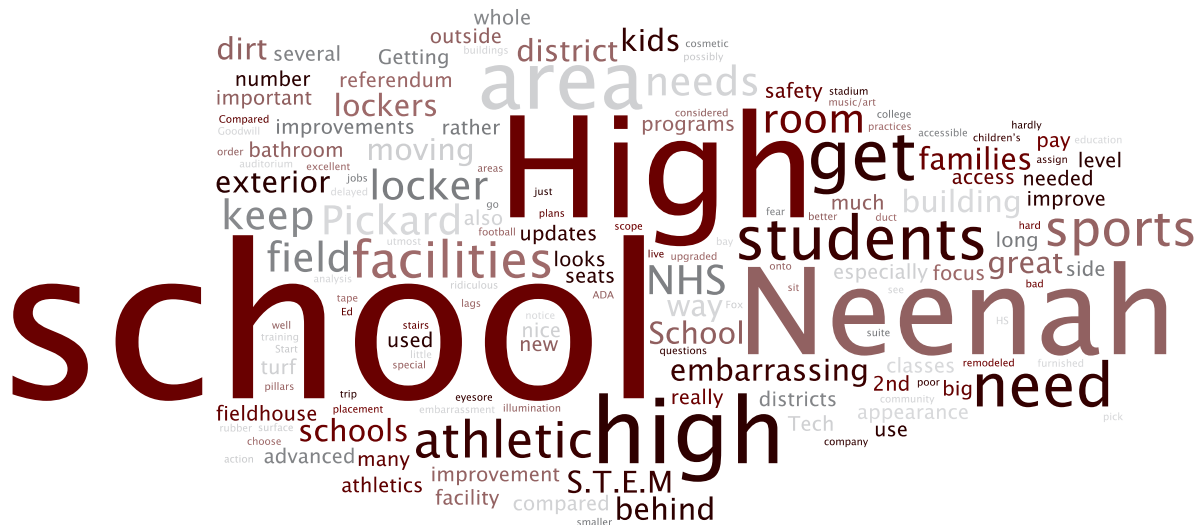
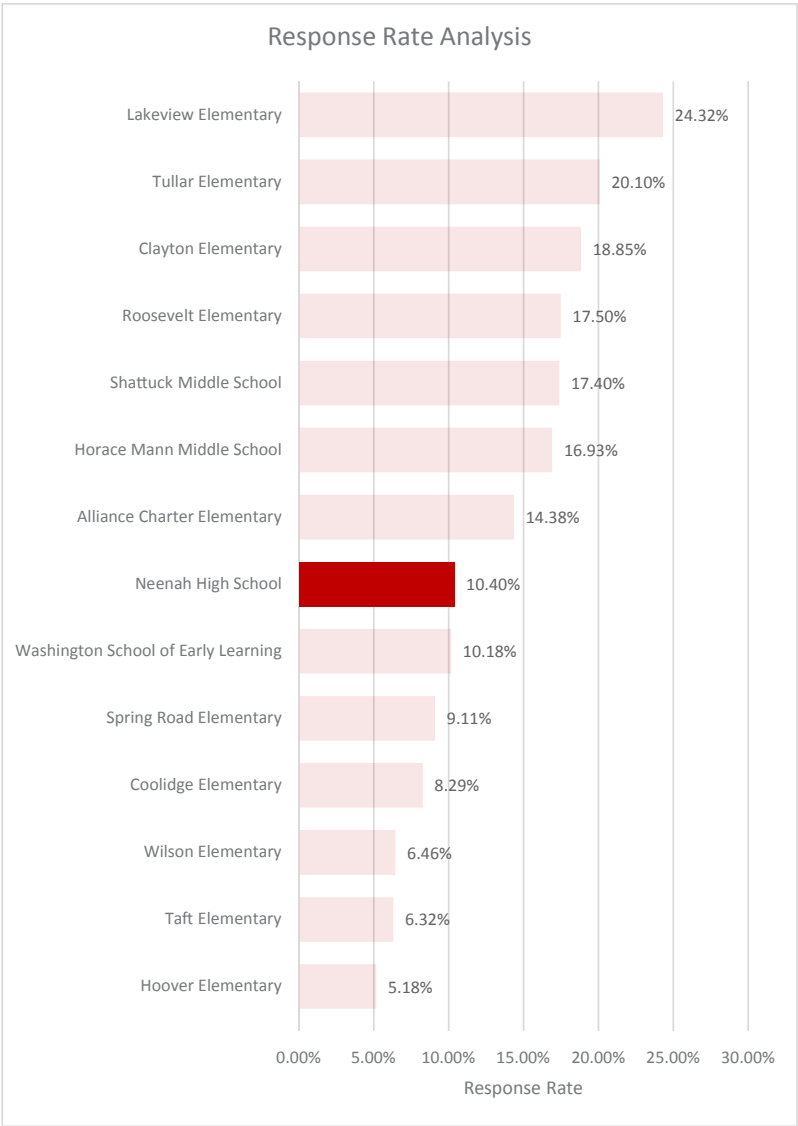
In February 2017, the District sent out a survey via email to all parents of students within the District with the focus on identifying and prioritizing needs at each school. Parents were asked to respond to a series of questions, as well as provide open-ended comments if desired.

The following information reflects feedback and response rate for Neenah High School.

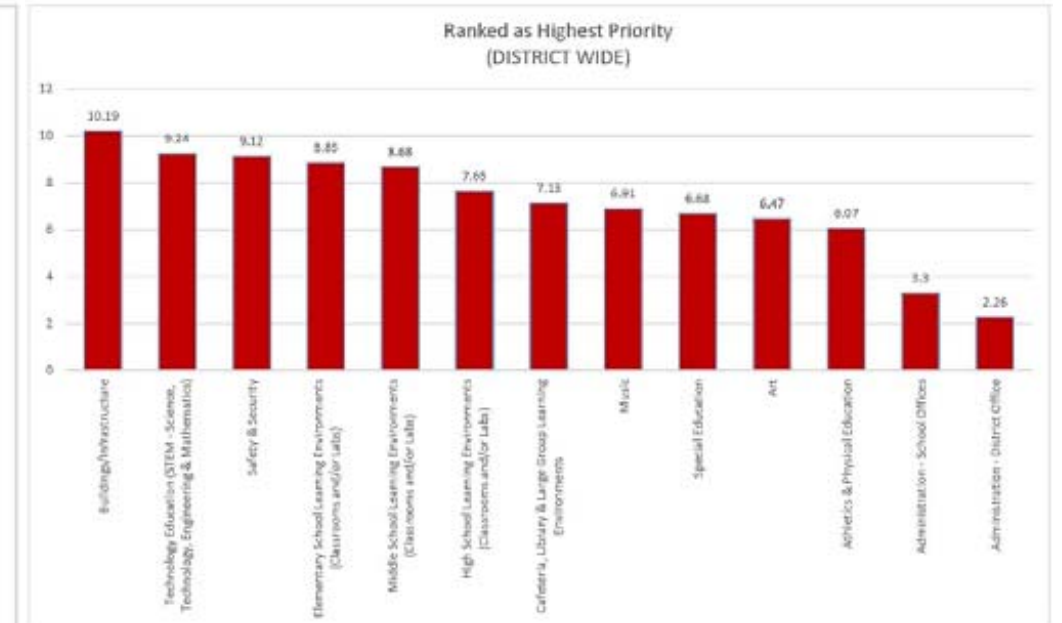
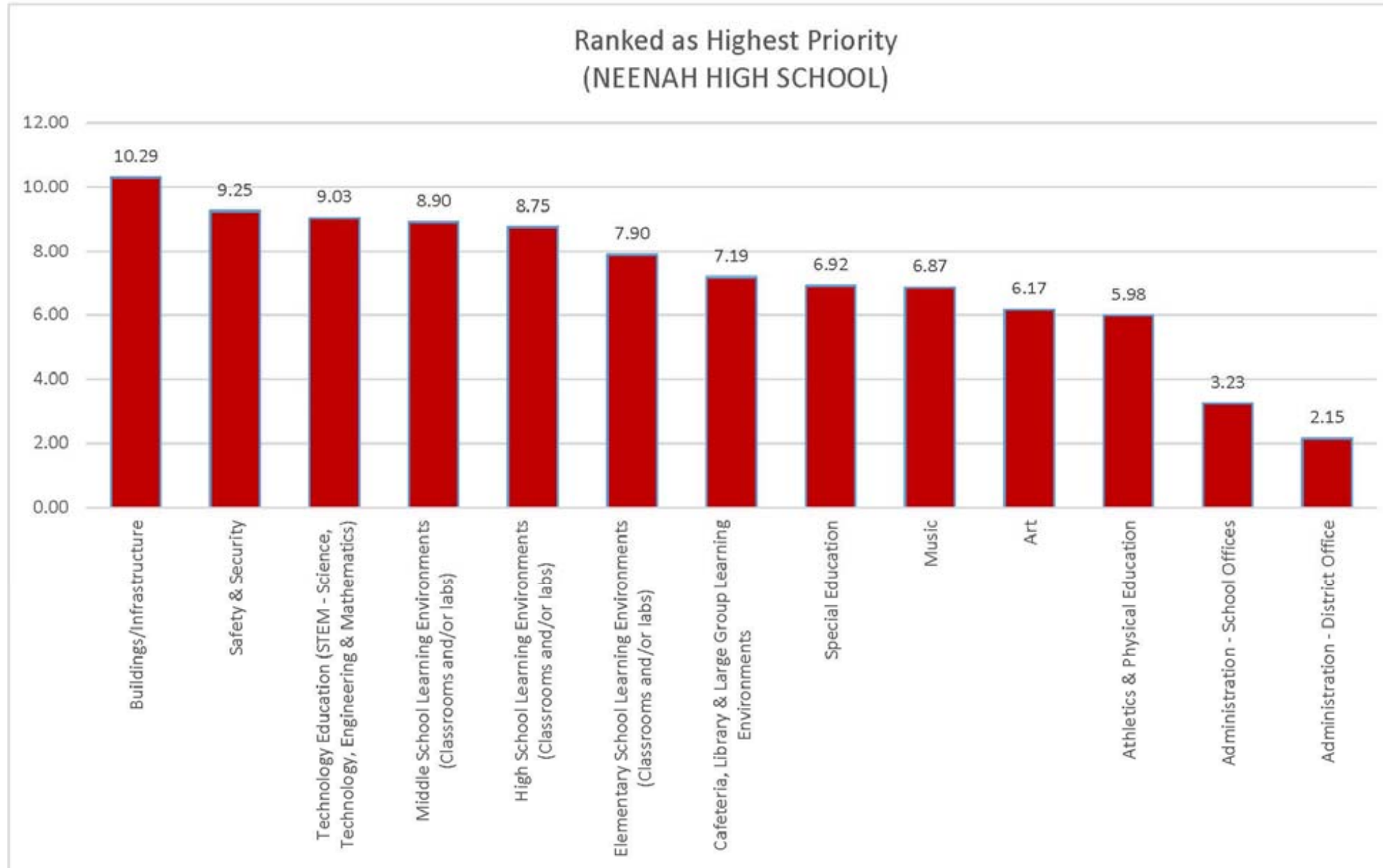
TOTAL PARENTS TO RECEIVE SURVEY: 2000
TOTAL NUMBER OF RESPONSES: 208
RESPONSE RATE: 10.40%

ADDITIONAL NOTES

- Neenah High School accounts for 36.30% of all parent survey feedback



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NEENAH HIGH SCHOOL: SUMMARY OF STAFF SURVEY FEEDBACK

The following is a summary of potential improvements at Neenah High School. This is not intended to be a comprehensive list, but a summary of possible upgrades as identified by staff. The following information was obtained from staff survey responses and numerous meetings and listening sessions held by district leadership and Bray Architects with the objective of casting a broad net to try and gather as much feedback regarding needs as possible.

1. Academic & Educational Improvements:

CLASSROOMS

- Undersized; additional, larger classrooms desired to support all subjects/departments and (30+) students, especially in Armstrong; dedicated classrooms for all teachers desired
- Variety of flexible/movable/modular furniture desired
- New/updated and additional whiteboards/smartboards/writing surfaces desired
- Additional outlets and charging stations desired; power at workstations desired
- Sound-proof walls between classrooms desired, especially in Armstrong and rooms 145/146
- Additional lighting desired
- Access to natural daylight for all classrooms desired; Tech. wing of Armstrong and room 134 are particularly limited
- Arete academy – undersized; additional, larger spaces desired
- Separation/wall desired to make classroom 145/146 into (2) separate spaces
- Additional, updated storage/cabinets/workstations desired
- Improved sound systems within the classroom desired
- Sinks/access to water desired

SCIENCE/STEM AND TECHNOLOGY EDUCATION

- Centralized science department with updated/adequate space, casework/lab stations, sinks, gas jets, and furnishings to support curriculum and project-based work desired
- Science classrooms are dated and in need of updating, especially rooms 145-146, 147, 150, 419, 501, 503, and Armstrong labs
 - Much of the casework is dated and worn
 - Updated water, gas and electrical desired; fume hoods in all rooms desired
 - Movable/flexible lab tables desired
 - Additional whiteboard surfaces desired
 - Classroom for each science teacher desired
 - Full separation of classrooms desired
 - Flexible/modular/movable workstations desired
- Accessible teaching space with tall ceilings desired
- Tech. Ed. classrooms and teaching space are limited
 - Difficult to offer additional CAD/CAM and VEX Robotics classes
 - Additional electrical drops desired in classrooms 124 & 127
- Dedicated FAB Lab/maker space desired for exploration, design and construction curriculum
 - Accessible by all science classes for projects and competitions
 - Staffed by trained/knowledgeable professional/teacher
 - Community/after school access desired
 - Laser engraver, 3D printers, CNC machine and robot to be relocated here
- Renovation of Welding, Auto, Metals and Wood Shop desired

- Sound-proof walls between classrooms desired, especially in the Tech. wing, where walls/rooms are not fully enclosed and allow for sound transmission
- Health/medical lab/workspace desired for career (CNA) training

CONFERENCE ROOMS & LARGE/SMALL GROUP INSTRUCTION

- Small group instruction spaces desired
 - Dedicated resource rooms desired for math, etc.
 - Additional small group instruction spaces near classrooms desired for small group break-outs and testing
- Large group instruction/multi-purpose/commons space(s) desired
 - Renovations of Armstrong commons spaces desired
 - Updated, flexible/movable/modular furniture desired in all commons/group areas; allow for sitting/gathering areas, especially in Conant and Armstrong areas
 - Additional outlets and charging stations desired in all commons/group areas
 - Multi-purpose/commons/large group instruction space for (50+) students desired that would allow for team/co-teaching
 - Outdoor learning classroom/atrium/space desired
 - Large PLD space to accommodate all staff and allow for collaboration
 - Coffee house/shop desired
 - Adequate sound systems in all lecture pits desired

CAFETERIA/KITCHEN

- Undersized
- Sound/noise control is a concern; can be overwhelming for students
- More welcoming/less institutional atmosphere desired
- Additional areas desired for eating lunch
- Updated Kitchen desired

GYMNASIUM & ATHLETICS

- Overall design of athletic spaces is spread out; a more cohesive/connected design between athletic spaces would allow for more efficient support spaces and passing times between facilities
- Natatorium
 - Locker Rooms
 1. Boys' bathroom stalls are rusting and damaged/bent; plastic stalls desired
 2. Boys' locker room mirror is broken
 3. Girls' bathroom stalls have the newer plastic stalls
 4. Tiles in the showers are chipping/breaking and coming off, which is a safety concern; cleaning/painting desired
 5. Boys' showers are limited (10) and not all work properly; additional showers desired
 6. Ceiling tiles are stained and falling down
 7. Mold in the showers is a concern

NEENAH HIGH SCHOOL: SUMMARY OF STAFF SURVEY FEEDBACK

- Additional bleachers desired
- New/improved lighting in the pool area desired, especially at the diving board, where lighting is limited
- Updated pool grates desired
- Fieldhouse
 - Class size of (30) students, (600) students or (20) classes use the fieldhouse daily
 - Utilized by after-school events/practices from 3:30pm – 9:00pm
 - Armstrong Boys' Locker rooms
 1. Tiles in the showers are chipping/breaking and coming off, which is a safety concern
 2. Boys' bathroom stalls are rusting and damaged/bent; plastic stalls desired
- Conant Gymnasium
 - Class size of (30) students, (180) students or (6) classes use the gymnasium daily
 - Utilized by after-school events/practices from 3:30pm – 9:00pm
 - Locker rooms
 1. Lockers are damaged, worn, and in need of replacement
 2. Bathroom stalls are undersized; can't accommodate students in wheelchairs
 - Staff indicated issues with partition not operating properly
 - Additional storage and cabinets desired
 - Additional space for batting cages desired
- Varsity Locker Rooms
 - Undersized and outdated
 - Lockers are damaged, worn and in need of replacement
 - Open room/layout desired for team meetings
- Fitness Center/Weight Room/Strength & Conditioning Center
 - Expanded facility and equipment desired
 - Projector desired
 - Tablets desired at racks for training workouts
 - Community/public accessibility desired
- Training Room
 - Undersized; adequate space required for working with more than (1) athlete at a time
 - Athletic training course/program desired; would require dedicated classroom/larger training room to support curriculum
- Team Room
 - Undersized and outdated
- Additional Physical Education/Athletic facilities desired
 - Indoor and/or outdoor turf field/facility
 - Yoga/body pump/Zumba studio
 - Larger weight room
 - Expanded winter intramural athletics programs
 - Dedicated staff showers
 - Wellness room
 - Additional practice facilities/spaces across the District desired (new facility to accommodate/move other schools off-site)
- Appropriate signage for Athletic departments/rooms desired

MUSIC

- Additional, larger music rooms and support spaces desired to accommodate growing interest in music programs and expanding program options
 - Larger rehearsal space desired
 - Drama classroom/rehearsal space for show choir desired with mirrors, large enough to accommodate band and risers (32'w x 16'd, with additional 10'-15' in front and behind them)
 - Additional programs to include: show choir, marching band, full orchestra, jazz ensembles, piano, etc.
 - Additional practice rooms desired, accessible from the corridor, with larger practice/ensemble rooms for larger groups
 - Sound system/technology improvements desired to allow for easy connectivity to computers, devices, professional speakers, etc. in all learning environments
 - Additional storage desired
 - Music computer lab/midi lab/classroom desired with recording capabilities
- Orchestra
 - Climate controlled instrument storage and rehearsal space desired
 - Adequate storage for (200+) string instruments desired (currently support 70)
- Auditorium
 - Updated auditorium and restrooms desired
 - Additional routes/access to back stage desired without going through the audience
 - Better connection/access to back stage desired for classrooms; currently have to go outside
- Black Box Theater desired
 - Accommodate smaller performances/groups
 - "In the round" layout desired with support spaces (thrust, alley, small proscenium, lobby, etc.)
- Medium-sized performance space desired (500-750 seated)
- Additional storage desired

LIBRARY/MEDIA LEARNING CENTER

- New/updated space desired
 - Access to natural daylight desired
 - Technology/research/presentation spaces desired that can accommodate a full class size
 - Accessible/centrally located within the building desired

BUSINESS EDUCATION

- Updated School Store desired

NEENAH HIGH SCHOOL: SUMMARY OF STAFF SURVEY FEEDBACK

CULINARY ARTS/FAMILY AND CONSUMER STUDIES (FCS)

- Professional kitchen/restaurant desired (v. home kitchen) for curriculum purposes; professional equipment desired (professional dishwasher, convection ovens, charbroilers, separate handwashing sinks, etc.) with restaurant seating area
- Additional/larger lecture space desired with equipment needed for cooking demonstrations (stove, oven, exhaust, refrigerator) and televisions for closed circuit presentations
- Adequate, lockable storage for culinary equipment and food
- Receiving door/area for food deliveries desired
- Child care center/child care classroom desired
- Additional classroom space for sewing/textiles desired, with adequate storage space for sewing machines and supplies
- Updated/new sewing machines desired
- CTE Career and Technical Education Department desired; should be centralized in one location to allow for collaboration
- Facilities for sewing club and home-ec textile labs desired

ART

- Undersized; adequate work space for classes of (30+) students desired
 - Dedicated area for pottery wheels desired
 - Small group meeting area desired that is near art resources
- Additional storage desired, especially for supplies and equipment; projects are currently limited due to classroom size and storage space
- Casework is dated, worn and falling apart
- Sinks clog easily and are undersized; updated sinks and adequate sink space for clean-up desired
- Relocation to the Tech. wing desired to allow for cross-curricular instruction and collaboration
- Photography classes/capabilities desired
- Gallery desired for student work/projects
- Updated tables and seating desired that are comfortable and appropriate for studio work
- Access to direct/natural daylight desired
- Art office space that allows for staff collaboration

SPECIAL ED.

- Enclosed, full-size classrooms desired (Room 211 not to include access to the elevator)
- Dimmable lighting desired
- Additional outlets and charging stations desired
- Life Skills/Tec Room desired for cross-categorical teaching (cleaning, cooking, laundry, etc.)
- Additional access to special facilities desired (science labs, cooking labs, wellness equipment/rooms)
- Additional conference rooms/small group instruction rooms desired

GUIDANCE/COUNSELING

- Ideal space program desired for the department:
 - Small room/space for decompression/calming
 - Larger room to accommodate counseling groups
 - (7) dedicated counselors' offices
 - (1) community counselor's office
 - (1) small office for visiting social workers/community advocates
 - (2) conference rooms for IEP's and larger group meetings
 - (1) office for School Psych./Autism Specialist
- Privacy at offices is a concern
- Video/projection capabilities desired in conference rooms
- Wellness/decompression room desired near Guidance Office

MAIN OFFICE

- Multiple/department Mail Rooms throughout the building desired (rather than existing centrally-located Mail Room)
- Additional meeting/conference rooms desired
- Additional offices desired
- Dedicated, accessible staff bathroom within the Main Office desired

SUPPORT

- Writing Lab/Center desired
- Language Lab desired for World Language students
- Department Resource Centers desired to allow for staff and student collaboration
- Dedicated student center desired; in addition to cafeteria
 - Space for clubs to meet
 - Entertainment system, vending machines, etc.
 - Flexible/movable/comfortable seating desired
- Separate teacher offices and shared classrooms are not ideal; difficult for students to find teachers outside of scheduled classes
- Staff/department collaboration (PLD) spaces desired
- Vending machines desired
- Dedicated textbook storage space and carts desired

STORAGE

- Adequate book storage desired
- Additional display areas throughout the building desired that contain lighting and are secure
- Lockers
 - Assignments/organization is not ideal; currently students carry backpacks due to having lockers located far from classrooms
 - Lockers are undersized; students carry everything in their backpacks due to lockers not being large enough to accommodate backpacks; if not utilized, removing lockers and replacing with collaboration space(s) is desired
 - Armstrong and Conant lockers desired for replacement
 - Removal of lockers in Armstrong hallway near Science labs desired

2. Facility & Site Improvements:

TECHNOLOGY

- Improved WiFi capabilities and computer software
- Smartboards/projectors in all classrooms/teaching spaces desired, especially in Armstrong
- Additional chrome books and charging locations desired throughout the building
- Ability to project/present from lap-tops within classroom desired
- Digital voice recorders desired
- Improved PA/sound system desired

INFRASTRUCTURE

- Windows
 - New/updated windows desired
- Finishes - Flooring, Ceiling, etc.
 - Updated finishes and/or repair of existing finishes desired; updated carpeting desired in the classrooms and Armstrong; updated tile desired in Conant
 - Newly/brightly painted walls desired, especially in classrooms, Science rooms, and corridors
 - Updated exterior finishes and/or repair of existing finishes desired, especially for the concrete pillars near Athletics
- Roof
 - Roof at counselors' offices is a concern with wind and birds

BUILDING SYSTEMS

- HVAC
 - Temperature/climate control within the classroom desired, especially room 404
 - Consistent temperatures/heating/cooling throughout the building desired
 - Air quality/filtration and access to fresh air desired, especially in the Conant building and at bathrooms
 - Mold is a concern
 - Technology wing reported to have problems with air quality/circulation, loud fans, etc.
 - Conant building reported to have problems of smoke filtering to the 1st floor in when 2nd floor chemistry labs are running (2nd floor air seems to circulate downstairs)
 - Much of the mechanical equipment is inefficient or often has problems functioning properly
 - Replacement of pneumatic
- Lighting
 - Upgrading to LED lighting desired
 - Improved, less harsh, full spectrum lighting throughout the building desired
 - Dimmable lighting desired
- Plumbing
 - Water bottle filling stations desired
 - Updated plumbing fixtures desired

MISCELLANEOUS

- Overall layout/building design
 - Current building layout is extremely long/spread out, requiring students to travel long distances to get from one part of the building to another; more collaborative layout to allow for interdisciplinary instruction desired
 - Corridors are crowded
 - **Separate access to elevator at 2nd floor of Armstrong building desired; currently the door is sometimes locked and prohibits student access from the classrooms**
 - Conant and Armstrong areas are too separated
- Noise control/reduction
 - Within corridors and between classrooms, especially at middle classrooms on 2nd floor of Armstrong building, and between rooms 433/435
- Improved community/public accessibility desired
 - Curriculum/spaces that allow for collaboration with professional businesses and services desired (ex: bank, wellness clinic, radio station, etc.)
- Bathrooms
 - Additional/larger bathrooms desired, dispersed throughout the building and especially in the linking section of the building and near the Auto Shop and Tech. Ed.
 - Updated bathrooms desired, especially those located within the Conant building
 - Additional dedicated staff bathrooms desired; especially (1) in the main office/link
 - Additional transgender bathrooms/changing rooms desired
 - Updated bathroom stall partitions desired; some stalls don't lock
 - Updated hand dryers desired
- Mold exposure throughout the building is a concern, especially in the Armstrong wing; further investigation required to confirm and determine potential remediation
- Safety & Security
 - Secure/enclosed main entry sequence desired
 - Mirrors in the corridors desired for visibility near blind spots
 - Additional cameras throughout the building desired
- Site
 - Additional/dedicated visitor, staff, and student parking desired
- IDS Suite
 - Updated kitchen desired
 - Additional bathroom desired
- New/updated exterior signage with scrolling text desired

NEENAH HIGH SCHOOL: SUMMARY OF STAFF INTERVIEW FEEDBACK

The following is a summary of potential improvements at Neenah High School. This is not intended to be a comprehensive list, but a summary of possible upgrades as identified by staff. The following information was obtained from staff interviews and numerous meetings and listening sessions held by district leadership and Bray Architects with the objective of casting a broad net to try and gather as much feedback regarding needs as possible.

1. Academic & Educational Improvements:

CLASSROOMS

- Undersized; additional, larger classrooms desired to support all subjects/departments and (30+) students, especially in Armstrong; dedicated classrooms for all teachers desired
- Variety of flexible/movable/modular furniture desired
- Additional outlets and charging stations desired; power at workstations desired
- Access to natural daylight for all classrooms desired

SCIENCE/STEM AND TECHNOLOGY EDUCATION

- Centralized science department with updated/adequate space
- Science classrooms are dated and in need of updating
 - Much of the casework is dated and worn
 - Full separation of classrooms desired
 - Flexible/modular/movable workstations desired
- Tech. Ed. classrooms and teaching space are limited
- Renovation of Welding, Auto, Metals and Wood Shop desired

SPECIAL ED.

- Dedicated OT/PT space desired
- ELL classroom and office space desired
- Multiple offices desired (one in Conant/Armstrong/Link)
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CONFERENCE ROOMS & LARGE/SMALL GROUP INSTRUCTION

- Small group instruction spaces desired
 - Dedicated resource rooms desired for math, etc.
 - Additional small group instruction spaces near classrooms desired for small group break-outs and testing
- Large group instruction/multi-purpose/commons space(s) desired
 - Renovations of Armstrong commons spaces desired
- Existing lecture rooms are outdated; update or find new purpose for space

CAFETERIA/KITCHEN

- Undersized
- Round tables desired

GYMNASIUM & ATHLETICS

- Overall design of athletic spaces is spread out; a more cohesive/connected design between athletic spaces would allow for more efficient support spaces and passing times between facilities
- Existing locker rooms are outdated and in a rough shape; update locker rooms
- Additional weight room space desired
- Smaller gym space for wellness desired; yoga, meditation, etc. for staff and students

LIBRARY

- Additional natural light desired; too enclosed
- New location for library desired; used mainly as a pass-through space

2. Facility & Site Improvements:

TECHNOLOGY

- Additional chrome books and charging locations desired throughout the building

SITE

- Additional parking desired
- Improved parent/bus pick-up/drop-off sequence desired

MISCELLANEOUS

- Overall layout/building design
 - Current building layout is extremely long/spread out, requiring students to travel long distances to get from one part of the building to another; more collaborative layout to allow for interdisciplinary instruction desired
 - Corridors are crowded
 - Separate access to elevator at 2nd floor of Armstrong building desired; currently the door is sometimes locked and prohibits student access from the classrooms
 - Conant and Armstrong areas are too separated
- Bathrooms
 - Additional/larger bathrooms desired, dispersed throughout the building and especially in the linking section of the building and near the Auto Shop and Tech. Ed.
 - Updated bathrooms desired, especially those located within the Conant building
 - Additional dedicated staff bathrooms desired; especially (1) in the main office/link
 - Additional transgender bathrooms/changing rooms desired
- Safety & Security
 - Secure/enclosed main entry sequence desired
- Additional access to natural light desired
- Flexible/movable furniture throughout desired
- Circulation/flow throughout building is a huge concern

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NEENAH HIGH SCHOOL: NEEDS ASSESSMENT

The following is a summary of potential improvements at Neenah High School. This is not intended to be a comprehensive list. The following information was obtained through notations made by Bray Architects at extensive tours of the building and grounds, as well as needs identified by school maintenance personnel.

1. Interior Infrastructure/Maintenance:

WALLS

- a. Some walls are cracking and have paint peeling/rubbing off, especially at the vestibules near the Library
- b. Some interior walls have staining, possibly due to water damage, and especially at the Little Theater, where staff reported issues with water leaking into the building
- c. Tile base in the Conant Locker Rooms is cracking/chipped off

WINDOWS

- d. Some windows have metal screens on the interior that are bent, damaged and don't shut properly, especially in the Art Rooms

CEILING

- e. Some ceiling tiles are dated while others are newer, with some tiles stained/showing signs of water damage and many bowing, bending and separating from the ceiling grid; there are a mix of tile types throughout the building, and some areas have ceiling tiles that are missing
- f. Staff reported that the ceiling in the Little Theater has multiple instances of water damage, where ceiling panels and acoustical material have been removed as a result
- g. Soffits in the Music Rooms have multiple openings that have been partially filled in or covered over time

FLOORING

- h. Treads at the stairs near the Library are extremely worn, stained, and peeling off
- i. Much of the hard-surface flooring is stained, worn, cracking/heaving, and there are multiple types of flooring throughout the building; flooring in the Technology Department is especially worn, stained and damaged
- j. Carpeting throughout the building is worn, dated and stained, especially at the vestibules near the Library
- k. Staff indicated areas of potential asbestos tile throughout the building
- l. Auditorium stage floor has multiple markings/damage from paint, and staff reported that set construction occurs on stage

MISCELLANEOUS

- m. Some casework throughout the building is dated, worn and peeling, especially in some of the old Science classrooms/labs
- n. Locker Room lockers and benches are dated, worn, rusting and dented/damaged
- p. Pool bleachers are visibly worn, scratched, and have wood/finish peeling off

2. Building Envelope:

WALLS

- a. Exterior walls are stained and show signs of effervescence at the numerous areas throughout the building, especially at the metal paneling and brick near the Conant Gymnasium, at the base of the building near the Auditorium area, and at the base of the building at the Natatorium
- b. White paneling below and above the windows on the North end of the building are stained and have paint peeling off
- c. Exterior brick walls at the vestibule to the Library area are stained and show signs of water damage at the scupper
- d. Concrete pillars at the Fieldhouse are cracking and have paint that is peeling; owner indicated that multiple attempts to repaint these pillars have continuously resulted in eventual damage
- e. Receiving/loading areas have numerous instances of staining, rusting and wear at concrete walls and pads

WINDOWS

- f. Many windows are dated/worn, and some windows are tied shut with wire on the interior; staff reported that many of these windows are drafty and have issues with weather stripping failing

DOORS

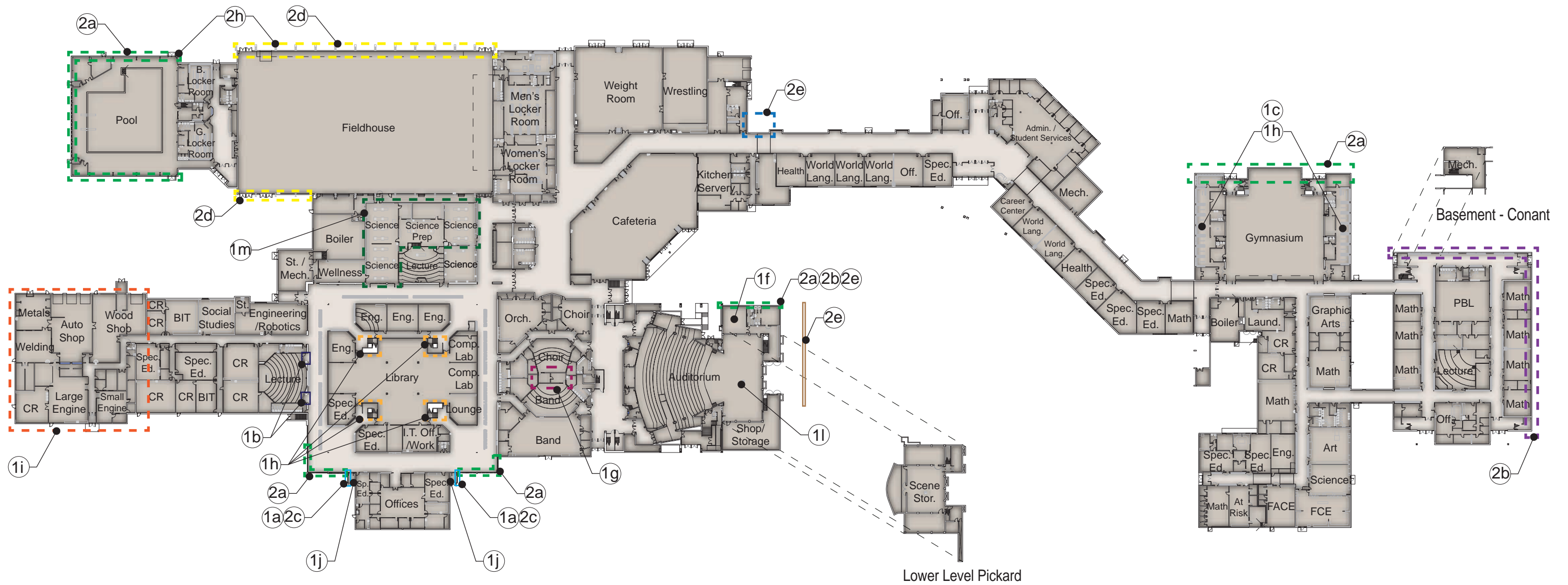
- g. Many exterior doors are dated/worn and rusting

ROOFS

- h. Staff reported concerns with icicles in the winter along the roof of the Fieldhouse and Natatorium

MISCELLANEOUS

- i. Exterior railings are dated and rusting, especially the railing outside the Auditorium loading area



FIRST FLOOR PLAN
not to scale



SECOND FLOOR PLAN
not to scale

NEENAH HIGH SCHOOL: BUILDING SYSTEMS SUMMARY

The following is summary of Plumbing, HVAC and Electrical needs. This is not intended to be a comprehensive list, but a summary of existing building system needs and possible recommendations as identified by the engineering team. Full engineers' reports are located later in this document.

Plumbing:

- Water is supplied to the building by four separate water services which connect to the Municipal water system; new additions or major renovations would require a new larger water service.
- Water distribution piping is mostly copper and appears to be in fair condition.
- The auditorium has a wet sprinkler system and an Ansul system in the kitchen hood.
- Sanitary waste flows by gravity out of the building and connects to the Municipal sanitary sewer system. Sanitary waste and vent piping is hub and spigot cast iron, and some piping has been recently replaced and is schedule 40 PVC pipe and fittings. Sanitary sewer system in the original building is nearing the end of its life expectancy, and inspection of the existing sewer located below the floor is recommended; replacement pending outcome of scope.
- The full commercial cooking kitchen has an exterior grease interceptor that is in good condition.
- Art room sinks have solids traps installed on the waste piping.
- Roof water is collected by gutter and downspout as well as internal roof drains and conductors which connect to the Municipal storm sewer system.
- Storm sewer systems in the original buildings are nearing the end of their life expectancy, and inspection of the existing sewer located below the floor is recommended; replacement pending outcome of scope.
- There are multiple domestic water heaters. A gas fired water heater serves the north portion of the building, was recently installed, and is in good condition. A central water heating system with two gas fired water heaters and storage tank serves the central portion of the building and Cafeteria, and a water heater in good condition serves the pool area.
- Domestic water is not softened.

- Plumbing fixtures are a combination of various styles and ages, with most of the fixtures original to the building age they were installed and some of the fixtures having been replaced with newer water efficient and ADA compliant fixtures. Water closets, urinals, and lavatories should be replaced with new water conserving and ADA compliant fixtures, and older electric water coolers should be replaced with new ADA compliant fixtures with a bottle filler. Sporting area drinking fountains and electric water coolers should be changed out to vandal proof units, and showers are in good condition. Faucets on classroom sinks should be replaced with new ADA compliant faucets.

HVAC:

- Four boiler plants serve the building.
- The first boiler plant is located in the southern portion of the building and has two Kewanee steam boilers that are fired with natural gas. While the installation date of the Kewanee boilers is unknown, they seem to have exceeded their estimated life expectancy of 30 years and the owner indicated that they are being replaced in the summer of 2017. Piping and pumping system consists of a 2-pipe hot water system with stand-by pump and heat exchanger on the steam side.
- The second boiler plant is located in the two story portion of the building, only serves the two air handling units that serve the two story portion of the building, and has two Patterson Kelly hot water boilers that are fired with natural gas, are in fair condition, and appear to have exceeded their estimated life expectancy of 25 years. Piping and pumping system consists of a 2-pipe hot water system with a stand-by pump. Plan for the eventual replacement of the aging boilers.
- The third boiler plant has two Hurst steam boilers that are fired with natural gas, were installed in 2012, are in good condition, and have an estimated life expectancy of 25 years. It also has a Thermal Solutions hot water boiler that is fired with natural gas, was installed in 2001, is in good condition, and has an estimated life expectancy of 25 years. Piping and pumping system has a steam circuit with heat exchanger and a hot water circuit with stand-by pump.
- The fourth boiler plant serves the pool air handling unit and pool locker room and has two Patterson Kelly hot water boilers that are fired with natural gas, are in fair condition, and appear to have exceeded their estimated life expectancy of 25 years. Piping and pumping system is comprised of a 2-pipe hot water system with a stand-by pump, and owner indicated that the pool boilers have begun to leak from the heat exchanger. Plan for the eventual replacement of the aging boilers.
- Steam piping is original and appears to be in fair condition according to owner, with no significant leaks reported. Insulation at most piping is of adequate thickness and in good condition.

HVAC (cont.):

- Continue preventative maintenance on all heating systems; any future additions or construction will require the addition of boiler capacity to serve the additional spaces.
- Pool Pak constant volume air handling unit serving the pool is corroded, and the evaporator had to be rebuilt due to corrosion. While the age of the unit is unknown, it appears to have exceeded the estimated life expectancy of 15 years; plan for its eventual replacement.
- Constant volume air handling units serving the auditorium and surrounding areas have exceeded their estimated life expectancy of 30 years, and have bearings that continue to fail, valves that won't close, branch piping that is corroding, and pipe insulation that is deteriorating due to the condensation produced from the 2-pipe system; plan for their eventual replacement.
- Unit ventilator serving the green room adjacent to the auditorium has frozen the coil in previous years, has trouble heating the room, and the owner believes that the roof has very little insulation.
- Piping loop serving the unit ventilators in the music areas do not have shutoff valves installed, which makes working on or replacing units very difficult; plan to install isolation valves.
- To improve individual office temperature control, vav boxes serving the southern offices should be removed and a vav box for each office installed; currently some spaces share vav boxes, which the owner indicated can cause problems with temperature control for occupants, and the units also have trouble heating some of the perimeter offices that have CMU block exterior walls.
- Some of the northern classrooms supplied by constant volume air handling units do not have individual zone control, which can cause problems with temperature control for occupants; plan for the eventual replacement of these units with a variable air volume system and vav boxes to allow individual temperature control for each classroom.
- Fieldhouse has relief louvers at each end of the gymnasium, but currently the dampers for each louver are inoperable and will not close, allowing one to see daylight through the louvers when standing on the gymnasium floor. Plan to replace the dampers and damper actuators serving the relief fans.
- Cooling tower for the southern end of the building has begun to rust and has exceeded its estimated life expectancy of 20 years; plan for its eventual replacement.
- Constant volume air handling units serving the Tech. Ed. areas are original and have exceeded their estimated life expectancy of 25 years; plan for their eventual replacement.
- Dust collector serving the wood shop is original and has exceeded its estimated life expectancy of 20 years; plan for its eventual replacement.
- Constant volume air handling units serving the classrooms adjacent to the fieldhouse are original and have exceeded their estimated life expectancy of 30 years; plan for their eventual replacement.
- Unit ventilators are original and have exceeded their estimated life expectancy of 25 years; plan for the eventual replacement of all aging units.
- Constant volume air handling units serving the northern classrooms and gymnasium are original and have exceeded their estimated life expectancy of 30 years; plan for their eventual replacement.
- With any renovation, plan to replace the door transfer grille relief system with a code approved system, as door transfer grilles are currently used to transfer relief air from the classrooms to the corridor, and current building code does not allow transfer air into a path of emergency egress.
- The building has a mixture of pneumatic and digital temperature controls. The pneumatic control system has limitations that result in comfort complaints and requires frequent calibration to maintain accuracy; continue to maintain and operate the system as long as the current mechanical equipment remains. When renovations to the existing equipment are made, a changeover to digital controls is strongly recommended.

Electrical:

- Facility has 3 electric services throughout the facility. The first service is located on the north end of the building, is about 30 years old, and the main switchboard is nearing the end of its useful lifespan and has capacity for 1 additional breaker. The service has surge suppression provisions, is fed by a pad mounted utility transformer with underground electrical service, and an interior emergency power generator to provide backup power for emergency lighting and other mixed loads on the north side of the facility. The generator is in good working condition and is nearing the end of its useful lifespan.

Electrical (cont.):

- The second electrical service is located on the south side of the facility, is about 30 years old, and the main switchboard is nearing the end of its useful lifespan and does not have any spare breaker spaces for future loads. The service has surge suppression provisions, is fed by a pad mounted utility transformer with an underground electrical service, and an emergency power generator to provide backup power for emergency lighting and other mixed loads on the south side and auditorium portion of the facility. All feeders served by the generator are aluminum, which can cause vibration.
- The third electrical service is located on the lower level of the auditorium, is about 30 years old, and the main switchboard is nearing the end of its useful lifespan and does not have any spare breaker spaces for future loads. The service does not have provisions for surge suppression and is fed by a pad mounted utility transformer with an underground electrical service. Emergency lighting is provided by the generator on the south side of the facility.
- Main electric services are all nearing the end of their useful lifespans and should be scheduled for replacement within the next 5-8 years. **When the electrical services are replaced, replace the emergency generators, as they are also nearing the end of their useful lifespan.**
- Panelboards vary in age, with some nearing the end of their useful lifespan, and some having been replaced or added through renovations or additions that are relatively new and are in good working condition. **There are various panelboards that have no identification, making troubleshooting harder to trace and resolve. Vintage circuit breaker panelboards should be scheduled for replacement within the next 5-8 years; provide identification tags for all panelboards throughout the facility to facilitate maintenance and troubleshooting efforts.**
- Ensure proper working clearances are maintained in front of all panelboards at all times by using safety tape to physically indicate clearances on floor/wall around panelboards. Working clearance areas may not be used for storage.
- Much of interior lighting throughout the building consists of a variety of T8 fluorescent or incandescent light fixtures that range in age and are in good condition; the band room and elevator have T12 fixtures. The gymnasium and fieldhouse use high bay metal halide fixtures, and maintenance personnel indicated that replacement ballasts for existing fixtures are no longer available, so the school has been replacing faulty fixtures with LED equivalents as they fail. The pool area has 1000w metal halide pendant mounted indirect fixtures and troffers. Replace fixtures with LED equivalents and provide dimming controls and occupancy sensors to maximize on energy savings.
- The library uses 350w metal halide recessed troffers that cause a large amount of heat, are inefficient, and should be scheduled for replacement.
- The auditorium has minimal egress level lighting, and it was indicated by the theater director that there are emergency lighting provisions in the auditorium.
- General lighting controls in rooms consist of toggle switches with no occupancy sensors, and most classrooms utilize dual level lighting controls; corridor lighting is controlled partly via the Building Automation system and partly via occupancy sensors. Remaining corridors should be reconfigured to be controlled via BAS to have standardized lighting controls for all corridors in the facility.
- Neither of the two gymnasium spaces have emergency lighting provisions, and emergency lighting in the corridors is lacking by today's standards. Emergency lighting should be reconfigured to ensure light levels meet today's standards.
- Schedule exterior light fixtures with LED equivalents and control via existing timeclock/photocell controls.
- Replace existing 15A rated receptacles with 20A rated type and provide additional receptacles throughout working spaces as necessary, as there is currently a general lack of receptacles in general common areas such as gathering spaces, the library, and other common use areas. The music teacher indicated that there is a lack of outlets in the music rooms for electronic keyboards. **Replace existing receptacles within 6'-0" of plumbing fixtures with GFI protected type.**
- Electrical in the theatrical shop room should be reconfigured to have emergency power shut-off provisions, as it currently does not have emergency power shut-off provisions for power tools.
- Science rooms have emergency gas, but no power shut-off capability.
- Shop classrooms have emergency power provisions for all tools; the shop teacher requested additional 240v cord drops for equipment and 120v power outlets with dedicated circuits for additional power tools.
- ShoreTel IP based phone system is in good working condition; no recommendations.
- Data service is provided via fiber optic utility service, is in good working condition, and fiber optic wiring interconnects all schools to the main district network. While it is unknown if the facility has ceiling plenums, riser rated data cabling should be replaced with plenum rated cabling if there are plenums in the ceiling.

Electrical (cont.):

- Data cabling consists of a variety of Cat5e and Cat6 cabling, in plenum and riser rated varieties, and there are 10 data racks throughout the facility, most of which have spare rack capacity for future needs. Data cabling at the data rack should be reinstalled in a clean workmanlike manner with proper labeling.
- Provide a UPS battery backup system to provide battery backup power to the data racks, as the main data rack is the only rack that appears to have a backup UPS power supply. If new generators are provided, provide receptacles that are connected to the emergency generator in the event of prolonged power outages.
- Provide data jacks serving the cafeteria check out station.
- Keyless entry system is in good working condition; access controlled doors are controlled via electric strikes and card readers, and none of the exterior doors have door position contacts. Provide door monitor contacts on all exterior doors to help monitor and control access to the facility.
- Rauland intercom system is in good working condition. Intercom speakers throughout are nearing the end of their useful lifespan, and speaker coverage in some areas is lacking; there are corridors that do not have intercom coverage, and larger spaces such as the fieldhouse do not have proper coverage. Bell schedule system is controlled via timeclock and has no reported issues. Schedule the existing intercom system for full replacement with a new IP-based intercom system, schedule speakers for replacement, and provide additional speakers in areas lacking coverage.
- CCTV system has 2 cameras, seems to be in good working condition, and the District plans to add about 18 more cameras to the system in the future; provide new cameras where additional coverage is necessary.
- Simplex fire alarm system is about 10 years old and in good working condition, but lacking in notification coverage; provide additional fire alarm notification devices in areas where coverage is lacking, and provide smoke detection in chemical storage rooms.
- Add a security system to control and monitor access to the facility, as none exists.
- Franklin synchronized clock system is nearing the end of its useful lifespan and has clocks that have been replaced with battery operated non-synchronous types where the existing Franklin clocks have failed. **Replace existing clocks with a synchronized clock system such as a GPS wireless clock system.**
- Building has a monitoring system to ensure boilers in the facility are operational.
- Shop teacher indicated that there are errant grounding problems in the shop classrooms that have been attempted to be mitigated with additional ground bars, but there are still underlying issues with stray voltage in these classrooms. Further investigation should be done to determine underlying cause of stray voltage issues in shop classrooms.
- Theatrical lighting system is in mostly good working condition, but it was indicated by the theatrical director that some of the pigtailed in the catwalk area are dry rotting and one of the circuits in the dimmer system is also no longer working. Theatrical lighting system should be refurbished as necessary to ensure system is in good working order and that potential fire hazards are mitigated.

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NEENAH HIGH SCHOOL: SITE SUMMARY

The following is a summary of potential improvements at Neenah High School. This is not intended to be a comprehensive list, but a summary of possible upgrades as identified by Bray Architects and the engineering team. The following information was obtained through notations made by architects and engineers at extensive tours of the building and grounds, as well as needs identified by maintenance personnel.

4. Site Improvements:

AREA 1 - HORSESHOE DRIVEWAY WITH PARKING

- Distresses Present:
 - No distresses present; re-evaluate in 2 years

AREA 2 - STUDENT/VISITOR PARKING

- Distresses Present:
 - Thermal cracking
 - Surface weathering
 - Fatigue cracking due to base failure
- Recommended Repair:
 - Crack fill
 - Seal coat
 - Full-depth patching where needed
 - Pavement Markings

AREA 3 - DRIVEWAY ENTRANCE/STAFF PARKING

- Distresses Present:
 - Thermal cracking
 - Fatigue cracking due to base failure
 - Raveling
 - Surface weathering
 - Edge Failure
 - Patch Failure, potholes
- Recommended Repair:
 - Remove existing pavement and 12 inches of base and/or subgrade
 - Place 12 inches of base aggregate dense
 - Pave 4 inches of asphaltic pavement
 - Paint all pavement markings for a parking lot

AREA 4 - VISITOR/STAFF PARKING

- Distresses Present:
 - Thermal cracking
 - Fatigue cracking due to base failure
 - Raveling
 - Surface weathering
 - Depressions due to base settling
 - Settling around inlet
- Recommended Repair:
 - Remove existing pavement and 12 inches of base and/or subgrade
 - Place 12 inches of base aggregate dense
 - Inlet adjustments
 - 4 inches of asphaltic pavement
 - Paint all pavement markings for a parking lot

AREA 5 - ASPHALT PATH BY SOCCER FIELD

- Distresses Present:
 - Currently gravel path
 - Has low spots

- Recommended Repair:
 - 6 inches base aggregate dense
 - Pave 3 inches of asphaltic pavement
 - Fix damaged gate and fence

AREA 6 - ASPHALT AREA NEAR SOFTBALL DIAMOND & ADDING CONCRETE BLEACHER PADS FOR SOFTBALL DIAMOND

- Distresses Present:
 - Thermal cracking
 - Fatigue cracking due to base failure
 - Surface weathering
- Recommended Repair:
 - Remove existing pavement and 12 inches of base and/or subgrade
 - Place 12 inches of base aggregate dense
 - 3 inches of asphaltic pavement
 - 6 inch thick concrete pad for bleachers (3 pads)

AREA 2 - STAFF PARKING AT REAR OF SCHOOL/DRIVEWAY NEXT TO GYM

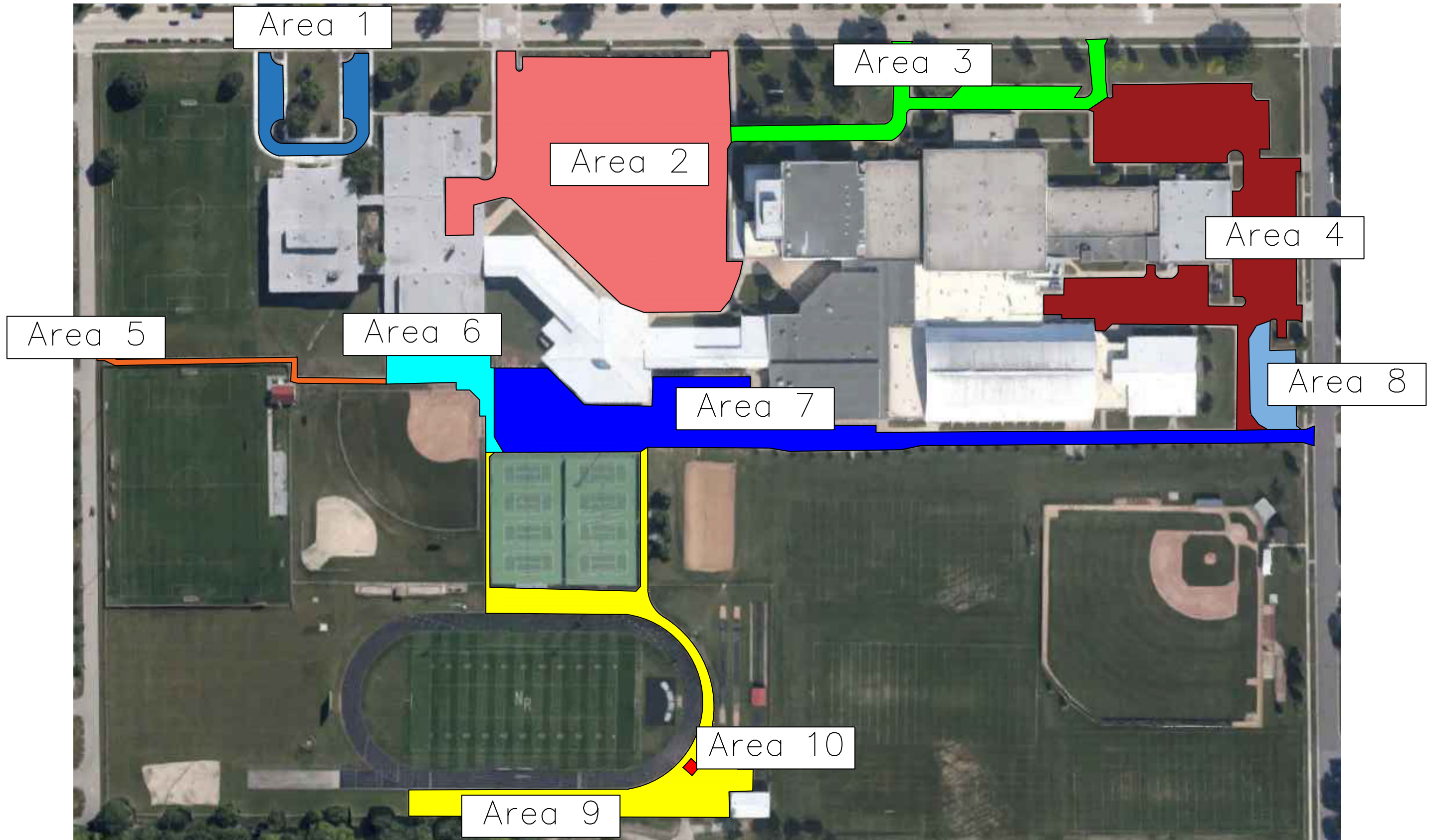
- Distresses Present:
 - Thermal cracking
 - Fatigue cracking due to base failure
 - Raveling
 - Surface weathering
 - Water infiltrating under concrete of inlets due to washout of soil
- Recommended Repair:
 - Remove existing pavement and 12 inches of base and/or subgrade
 - Place 12 inches of base aggregate dense
 - Inlet adjustments
 - 4 inches of asphaltic pavement
 - Paint all pavement markings for a parking lot
 - Add curb to west side of driveway to prevent further washing out of soil

AREA 8 - STUDENT PARKING

- Distresses Present:
 - Thermal cracking
 - Raveling
 - Surface weathering
- Recommended Repair:
 - Mill 2 inches of existing pavement
 - Pave 2 inches of asphaltic pavement
 - Paint all pavement markings for a parking lot

ADDITIONAL NOTES

- Benches attached to the building are dated, worn and rusting
- No dumpster enclosure exists



SITE PLAN
not to scale

NEENAH HIGH SCHOOL: ADA ACCESSIBILITY ASSESSMENT

The following is an analysis of Neenah High School in regards to meeting building code requirements under the Americans with Disability Act (ADA) and regulated by the American National Standard (ANSI) Accessible and Usable Buildings and Facilities. This is not intended to be a comprehensive list, but an analysis as identified by Bray Architects and engineers gathered through extensive tours and assessment of the existing building facility.

1. Building Entrance:

There is at least (1) accessible route of travel. Entry at grade level or ramps with slope no greater than 1:12, and has 5'-0" long landings every 30'-0".

1a. The building has multiple accessible entrances at this level that meet the above criteria.

2. ADA Parking:

Designated/marked ADA stalls are located near the entrance of the building and have 5'-0" access aisles between stalls (502.4.1; 502.4.2).

2a. The site contains marked ADA stalls located near the nearest accessible entrance.

3. Ramps & Lifts:

There is at least (1) accessible route to each floor level. Changes in level greater than 1/2" in height shall be ramped (303); ramps have a slope no greater than 1:12 and have 5'-0" long landings every 30'-0" (405.2).

3a. There are areas of limited accessibility where the building does not meet the criteria for accessibility standards.

4. Railings:

Handrails shall be provided on both sides of stairs and ramps, except for aisle stairs and ramps, which may be provided with a handrail either at the side or within the aisle width (505.2). Ramp runs with a rise greater than 6 inches shall have handrails (405.8).

Ramp handrails shall extend horizontally above the landing 12 inches minimum beyond the top and bottom of ramp runs. Extensions shall return to a wall, guard, or floor, or shall be continuous to the handrail of an adjacent ramp run.

Handrails shall be continuous within the full length of each stair flight or ramp run. Inside handrails on switchback or dogleg stairs or ramps shall be continuous between flights or runs, except for handrails in aisles serving seating (505.3).

At the top of a stair flight, handrails shall extend horizontally above the landing for 12 inches minimum beginning directly above the nosing. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent stair flight (505.10.2).

At the bottom of a stair flight, handrails shall extend at the slope of the stair flight for a horizontal distance equal to one tread depth beyond the bottom tread nosing. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent stair flight (505.10.3).

4a. There are handrails that do not meet the above criteria for accessibility standards.

5. Maneuvering, Thresholds, & Push/Pull:

On the pull side, a minimum clearance of 18" is required parallel to the doorway. On the push side, a minimum of 12" is required parallel to the doorway (404.2.3.1). Distance between two hinged or pivoted doors in series shall be 48" minimum plus the width of any door swinging into the space (404.2.5). Doors have a minimum 32" wide clearance. Maneuvering clearances on either side of the door are a minimum of 60" from the pull side and 48" from the push side.

Thresholds at doorways shall be maximum 1/2" high otherwise a ramp is required (303.2; 303.3).

5a. There are areas where the requirements for push/pull do not meet the above criteria for accessibility standards.

5b. There are areas where the requirements for maneuvering do not meet the above criteria for accessibility standards.

5c. There are areas where the requirements for thresholds do not meet the above criteria for accessibility standards.

6. Door Hardware & Panic Hardware:

Doors have open, lever-styled hardware (no round/knob hardware) (404.2.6). Egress doors have panic hardware.

6a. There are doors that do not meet the above criteria for accessibility standards

7. Restrooms:

Public restrooms have at least 5'-0" clearance space for a wheelchair to turn around, at least (1) ADA accessible stall (sized 60" min. depth x 56" min. width, for wall-mounted stalls, and 59" min. depth for floor-mounted stalls) with 5'-0" clearance (604.3.1), and at least (1) sink at a 34" maximum height (606.3). The compartment door clearance between the door side of the compartment and any obstruction shall be 42" minimum. Compartment doors shall not swing into the required minimum area of the compartment (604.9.3)

There is at least (1) unisex restroom per floor level, and unisex restrooms have at least 5'-0" clearance space for a wheelchair to turn around, as well as a sink/counter-top height at a maximum of 34".

Mirrors located above the sink or counter shall have the bottom edge at a maximum height of 40" above the floor. Mirrors not located above a sink or counter shall have a bottom edge at a maximum height of 35" above the floor (603.3).

Fixed stall grab bars shall be 42" minimum in length located 12" maximum from the rear wall. Vertical fixed grab bars shall be 18" minimum in length, the bottom edge of the bar shall be 39" to 41" above the floor, and 39" to 41" from the rear wall (604.5.1). Rear fixed grab bars shall be 36" minimum in length and extend 12" from the centerline of the toilet. Rear grab bars shall be 24" minimum in length centered from where wall space doesn't permit 36" grab bar (604.5.2).

Bottom edge of urinals shall be 17" maximum above the floor (604.10.4).

ADA showers shall be 36" by 36" minimum with an entry of 36" by 48" minimum. A 36" minimum depth shall be provided adjacent to the open face of the compartment (608.2.1). A roll in shower shall be 60" x 30" minimum with a 60" minimum opening adjacent to the stall (608.2.2). A seat shall be 24" minimum to 36" maximum in length shall be provided at the entry side of the compartment (608.2.3).

Horizontal shower grab bars shall be provided across the control wall and on the back wall to a point 18" from the control wall (608.3.1.1). Vertical shower grab bars shall be 18" minimum in length on the control wall and 3" minimum to 6" maximum above the horizontal grab bar and 4" maximum inward from the front edge of the shower (608.3.1.2).

7a. There are restrooms that do not meet the above criteria for accessibility standards.

8. Drinking Fountains & Protruding Objects:

At least (1) fountain has a clear foot space of at least 30" x 48" in front and has a spout height at a maximum of 36" off the ground. Children's fountain spout shall be 30" maximum above the floor. Wheelchair fountain spout shall be 36" maximum and standing 38" to 43" above the floor (602.4).

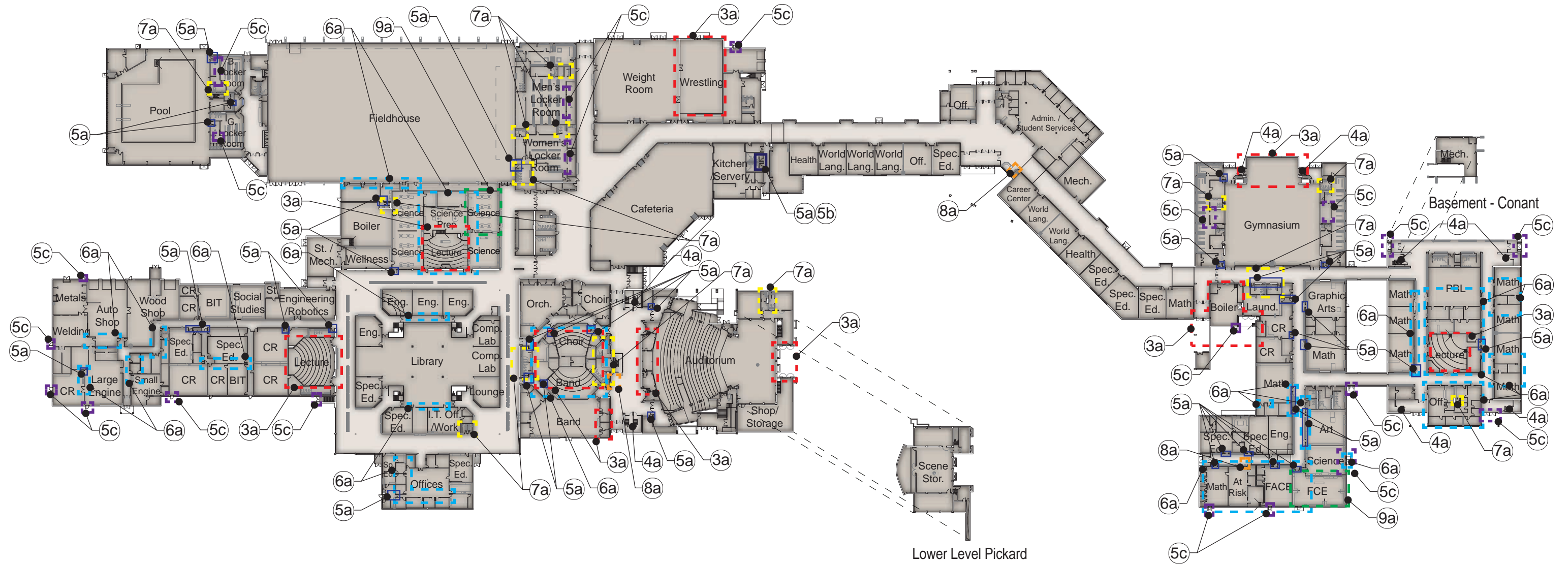
Objects more than 27" and not more than 80" above the floor shall protrude 4" maximum into the circulation path (307.2). Objects shall not reduce clear width required for accessible routes (307.5). Guardrails or other barriers shall be provided where object protrusion is beyond the limits allowed, and where the vertical clearance is less than 80 inches above the floor. The leading edge of such guardrail or barrier shall be 27 inches maximum above the floor (307.4).

8a. Drinking fountains do not meet the above criteria for meeting accessibility standards.

9. Casework, Transaction Counters, & Counters with Sinks:

Counter-tops have a maximum 34" height, and transaction counters have an accessible portion that is at a maximum 34" height for wheelchair accessibility (606.3). Counters and work surfaces for children's use shall be 26" minimum and 30" maximum above the floor (902.4.2).

9a. There are counter-tops that do not meet the above criteria for meeting accessibility standards.



FIRST FLOOR PLAN
not to scale

NEENAH HIGH SCHOOL: ADA ACCESSIBILITY ASSESSMENT

The following is an analysis of Neenah High School in regards to meeting building code requirements under the Americans with Disability Act (ADA) and regulated by the American National Standard (ANSI) Accessible and Usable Buildings and Facilities. This is not intended to be a comprehensive list, but an analysis as identified by Bray Architects and engineers gathered through extensive tours and assessment of the existing building facility.

1. Building Entrance:

There is at least (1) accessible route of travel. Entry at grade level or ramps with slope no greater than 1:12, and has 5'-0" long landings every 30'-0".

1a. This criteria does not apply to this level.

2. ADA Parking:

Designated/marked ADA stalls are located near the entrance of the building and have 5'-0" access aisles between stalls (502.4.1; 502.4.2).

2a. This criteria does not apply to this level.

3. Ramps & Lifts:

There is at least (1) accessible route to each floor level. Changes in level greater than 1/2" in height shall be ramped (303); ramps have a slope no greater than 1:12 and have 5'-0" long landings every 30'-0" (405.2).

3a. There are areas of limited accessibility where the building does not meet the criteria for accessibility standards.

4. Railings:

Handrails shall be provided on both sides of stairs and ramps, except for aisle stairs and ramps, which may be provided with a handrail either at the side or within the aisle width (505.2). Ramp runs with a rise greater than 6 inches shall have handrails (405.8).

Ramp handrails shall extend horizontally above the landing 12 inches minimum beyond the top and bottom of ramp runs. Extensions shall return to a wall, guard, or floor, or shall be continuous to the handrail of an adjacent ramp run.

Handrails shall be continuous within the full length of each stair flight or ramp run. Inside handrails on switchback or dogleg stairs or ramps shall be continuous between flights or runs, except for handrails in aisles serving seating (505.3).

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At the bottom of a stair flight, handrails shall extend at the slope of the stair flight for a horizontal distance equal to one tread depth beyond the bottom tread nosing. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent stair flight (505.10.3).

4a. There are handrails that do not meet the above criteria for accessibility standards.

5. Maneuvering, Thresholds, & Push/Pull:

On the pull side, a minimum clearance of 18" is required parallel to the doorway. On the push side, a minimum of 12" is required parallel to the doorway (404.2.3.1). Distance between two hinged or pivoted doors in series shall be 48" minimum plus the width of any door swinging into the space (404.2.5). Doors have a minimum 32" wide clearance. Maneuvering clearances on either side of the door are a minimum of 60" from the pull side and 48" from the push side.

Thresholds at doorways shall be maximum 1/2" high otherwise a ramp is required (303.2; 303.3).

5a. There are areas where the requirements for push/pull do not meet the above criteria for accessibility standards.

5b. There are areas where the requirements for maneuvering meets the above criteria for accessibility standards.

5c. There are areas where the requirements for thresholds meets the above criteria for accessibility standards.

6. Door Hardware & Panic Hardware:

Doors have open, lever-styled hardware (no round/knob hardware) (404.2.6). Egress doors have panic hardware.

6a. There are doors that do not meet the above criteria for accessibility standards

7. Restrooms:

Public restrooms have at least 5'-0" clearance space for a wheelchair to turn around, at least (1) ADA accessible stall (sized 60" min. depth x 56" min. width, for wall-mounted stalls, and 59" min. depth for floor-mounted stalls) with 5'-0" clearance (604.3.1), and at least (1) sink at a 34" maximum height (606.3). The compartment door clearance between the door side of the compartment and any obstruction shall be 42" minimum. Compartment doors shall not swing into the required minimum area of the compartment (604.9.3)

There is at least (1) unisex restroom per floor level, and unisex restrooms have at least 5'-0" clearance space for a wheelchair to turn around, as well as a sink/counter-top height at a maximum of 34".

Mirrors located above the sink or counter shall have the bottom edge at a maximum height of 40" above the floor. Mirrors not located above a sink or counter shall have a bottom edge at a maximum height of 35" above the floor (603.3).

Fixed stall grab bars shall be 42" minimum in length located 12" maximum from the rear wall. Vertical fixed grab bars shall be 18" minimum in length, the bottom edge of the bar shall be 39" to 41" above the floor, and 39" to 41" from the rear wall (604.5.1). Rear fixed grab bars shall be 36" minimum in length and extend 12" from the centerline of the toilet. Rear grab bars shall be 24" minimum in length centered from where wall space doesn't permit 36" grab bar (604.5.2).

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ADA showers shall be 36" by 36" minimum with an entry of 36" by 48" minimum. A 36" minimum depth shall be provided adjacent to the open face of the compartment (608.2.1). A roll in shower shall be 60" x 30" minimum with a 60" minimum opening adjacent to the stall (608.2.2). A seat shall be 24" minimum to 36" maximum in length shall be provided at the entry side of the compartment (608.2.3).

Horizontal shower grab bars shall be provided across the control wall and on the back wall to a point 18" from the control wall (608.3.1.1). Vertical shower grab bars shall be 18" minimum in length on the control wall and 3" minimum to 6" maximum above the horizontal grab bar and 4" maximum inward from the front edge of the shower (608.3.1.2).

7a. There are restrooms that do not meet the above criteria for accessibility standards.

8. Drinking Fountains & Protruding Objects:

At least (1) fountain has a clear foot space of at least 30" x 48" in front and has a spout height at a maximum of 36" off the ground. Children's fountain spout shall be 30" maximum above the floor. Wheelchair fountain spout shall be 36" maximum and standing 38" to 43" above the floor (602.4).

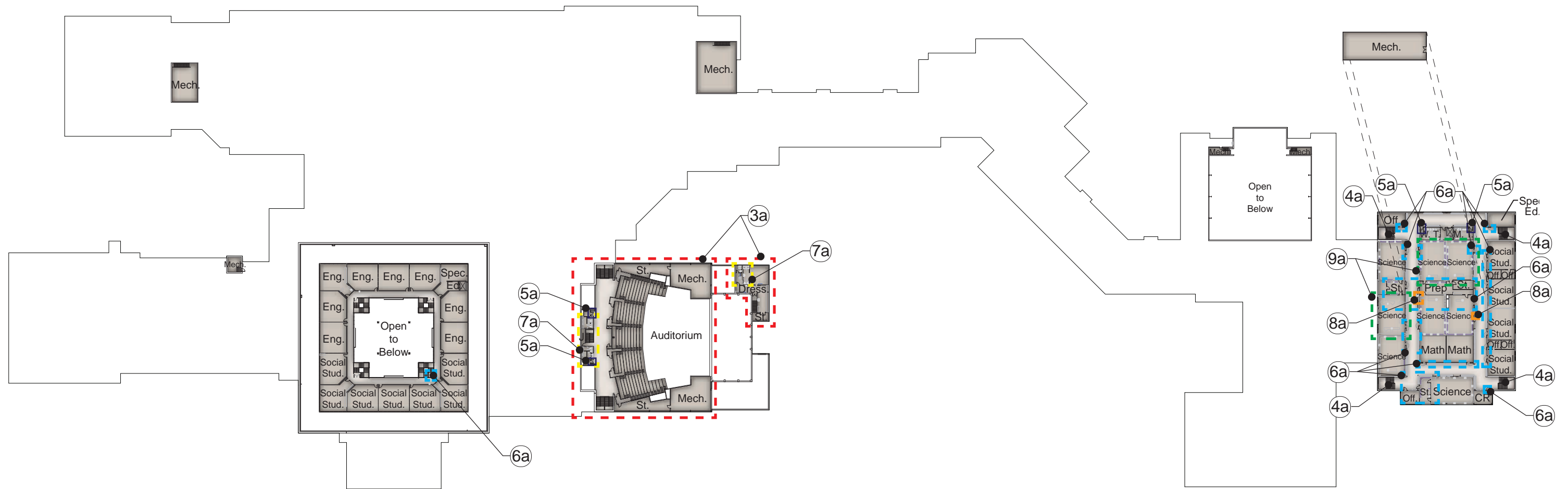
Objects more than 27" and not more than 80" above the floor shall protrude 4" maximum into the circulation path (307.2). Objects shall not reduce clear width required for accessible routes (307.5). Guardrails or other barriers shall be provided where object protrusion is beyond the limits allowed, and where the vertical clearance is less than 80 inches above the floor. The leading edge of such guardrail or barrier shall be 27 inches maximum above the floor (307.4).

8a. Drinking fountains do not meet the above criteria for meeting accessibility standards.

9. Casework, Transaction Counters, & Counters with Sinks:

Counter-tops have a maximum 34" height, and transaction counters have an accessible portion that is at a maximum 34" height for wheelchair accessibility (606.3). Counters and work surfaces for children's use shall be 26" minimum and 30" maximum above the floor (902.4.2).

9a. There are counter-tops that do not meet the above criteria for meeting accessibility standards.



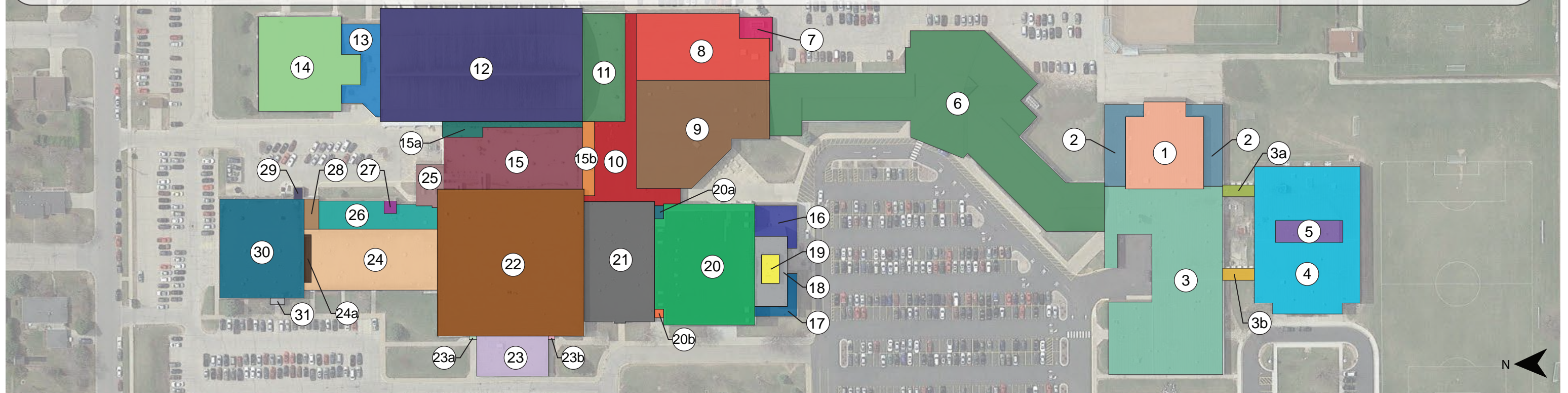
SECOND FLOOR PLAN
not to scale



NEENAH HIGH SCHOOL: ROOF PLAN

Roof Timeline

- = (1) Installer Siplast, Modified BUR, Installation 2003, 14 years old, Warranty Expires 2023
- = (2) Installer Siplast, Type Unknown, Installation 2003, 14 years old, Warranty Expires 2023
- = (3) Installer Unknown, Type Unknown, Installation Unknown, Age Unknown, Warranty Unknown
- = (3a) Installer Siplast, Modified BUR, Installation 2003, 14 years old, Warranty Expires 2023
- = (3b) Installer Siplast, Modified BUR, Installation 2003, 14 years old, Warranty Expires 2023
- = (4) Installer Siplast, Modified BUR, Installation 2003, 14 years old, Warranty Expires 2023
- = (5) Installer Siplast, Modified BUR, Installation 2003, 14 years old, Warranty Expires 2023
- = (6) Installer Unknown, Metal Roof, Installation 1996, 21 years old, Warranty Unknown
- = (7) Installer Derbigum, Modified BUR, Installation 1996, 21 years old, Warranty Expired 2016
- = (8) Installer Derbigum, Modified BUR, Installation 1996, 21 years old, Warranty Expired 2016
- = (9) Installer Derbigum, Modified BUR, Installation 1996, 21 years old, Warranty Expired 2016
- = (10) Installer Derbigum, Modified BUR, Installation 1996, 21 years old, Warranty Expired 2016
- = (11) Installer Unknown, Thermoplastic Polyolefin, Installation 2007, 10 years old, Warranty Unknown
- = (12) Installer Unknown, Metal Roof, Installation 1980, 37 years old, Warranty Unknown
- = (13) Installer Fibertite, Thermoplastic Polyolefin, Installation 2007, 10 years old, Warranty Expires 2022
- = (14) Installer Unknown, Metal Roof, Installation 1991, 26 years old, Warranty Unknown
- = (15) Installer Unknown, Thermoplastic Polyolefin, Installation 2011, 6 years old, Warranty Unknown
- = (15a) Installer Unknown, Thermoplastic Polyolefin, Installation 2011, 6 years old, Warranty Unknown
- = (15b) Installer Unknown, Thermoplastic Polyolefin, Installation 2011, 6 years old, Warranty Unknown
- = (16) Installer Fibertite, Thermoplastic Polyolefin, Installation 2007, 10 years old, Warranty Expires 2023
- = (17) Installer Fibertite, Thermoplastic Polyolefin, Installation 2007, 10 years old, Warranty Expires 2023
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- = (19) Installer Unknown, Modified BUR, Installation 2015, 2 years old, Warranty Unknown
- = (20) Installer Unknown, Modified BUR, Installation 2015, 2 years old, Warranty Unknown
- = (20a) Installer Garland, Modified BUR, Installation 2013, 4 years old, Warranty Expires 2043
- = (20b) Installer Garland, Modified BUR, Installation 2013, 4 years old, Warranty Expires 2043
- = (21) Installer Garland, Modified BUR, Installation 2013, 4 years old, Warranty Expires 2043
- = (22) Installer Garland, Modified BUR, Installation 2013, 4 years old, Warranty Expires 2043
- = (23) Installer Schuller, Modified BUR, Installation 1995, 22 years old, Warranty Expired 2015
- = (23a) Installer Unknown, Modified BUR, Installation 1995, 22 years old, Warranty Unknown
- = (23b) Installer Unknown, Modified BUR, Installation 1995, 22 years old, Warranty Unknown
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- = (30) Installer Siplast, Modified BUR, Installation 2006, 11 years old, Warranty Expires 2026
- = (31) Installer Unknown, Metal Roof, Installation Unknown, Age Unknown, Warranty Unknown



ROOF PLAN
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NEENAH HIGH SCHOOL: EXTERIOR DOOR ANALYSIS

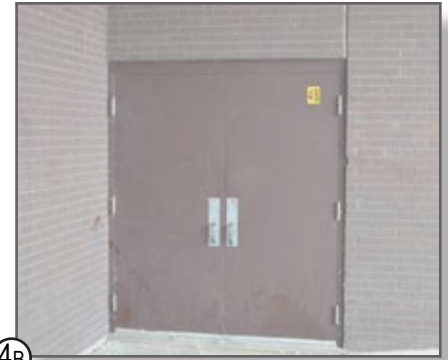
No.	Door Type	Frame Type
1	Hollow Metal	Hollow Metal
1B	Hollow Metal	Aluminum
1C	Hollow Metal	Aluminum
1D	Hollow Metal	Aluminum
1E	Hollow Metal	Hollow Metal
1F	Hollow Metal	Hollow Metal
1G	Hollow Metal	Hollow Metal
1H	Hollow Metal	Hollow Metal
1I	Hollow Metal	Hollow Metal
1J	Hollow Metal	Hollow Metal
1K	Hollow Metal	Hollow Metal
2	Aluminum	Aluminum Storefront
3	Aluminum	Aluminum Storefront
3B	Hollow Metal	Hollow Metal
3C	Aluminum	Aluminum Storefront
3D	Aluminum	Aluminum Storefront
3E	Aluminum	Aluminum Storefront
3F	Hollow Metal	Hollow Metal
4	Aluminum	Aluminum Storefront
4B	Hollow Metal	Hollow Metal
4C	Hollow Metal	Hollow Metal
4D	Hollow Metal	Hollow Metal
4E	Hollow Metal	Hollow Metal
4F	Hollow Metal	Hollow Metal
4G	Aluminum	Aluminum Storefront
10D	Hollow Metal	Hollow Metal
10E	Hollow Metal	Hollow Metal
10F	Hollow Metal	Hollow Metal
10G	Hollow Metal	Hollow Metal
10H	Hollow Metal	Hollow Metal
10I	Aluminum Garage Door	Aluminum
10J	Aluminum Garage Door	Aluminum
10K	Hollow Metal	Hollow Metal
10L	Hollow Metal	Hollow Metal
10N	Hollow Metal	Hollow Metal
11	Aluminum	Aluminum Storefront
11B	Hollow Metal	Hollow Metal
11C	Hollow Metal	Hollow Metal
11D	Hollow Metal	Hollow Metal
11E	Hollow Metal	Hollow Metal
11F	Hollow Metal	Aluminum
11G	Hollow Metal	Hollow Metal
11H	Hollow Metal	Hollow Metal
11J	Hollow Metal	Hollow Metal



1C HOLLOW METAL DOOR & ALUMINUM FRAME



3D ALUMINUM DOORS & ALUMINUM STOREFRONT



4B HOLLOW METAL DOORS & HOLLOW METAL FRAME



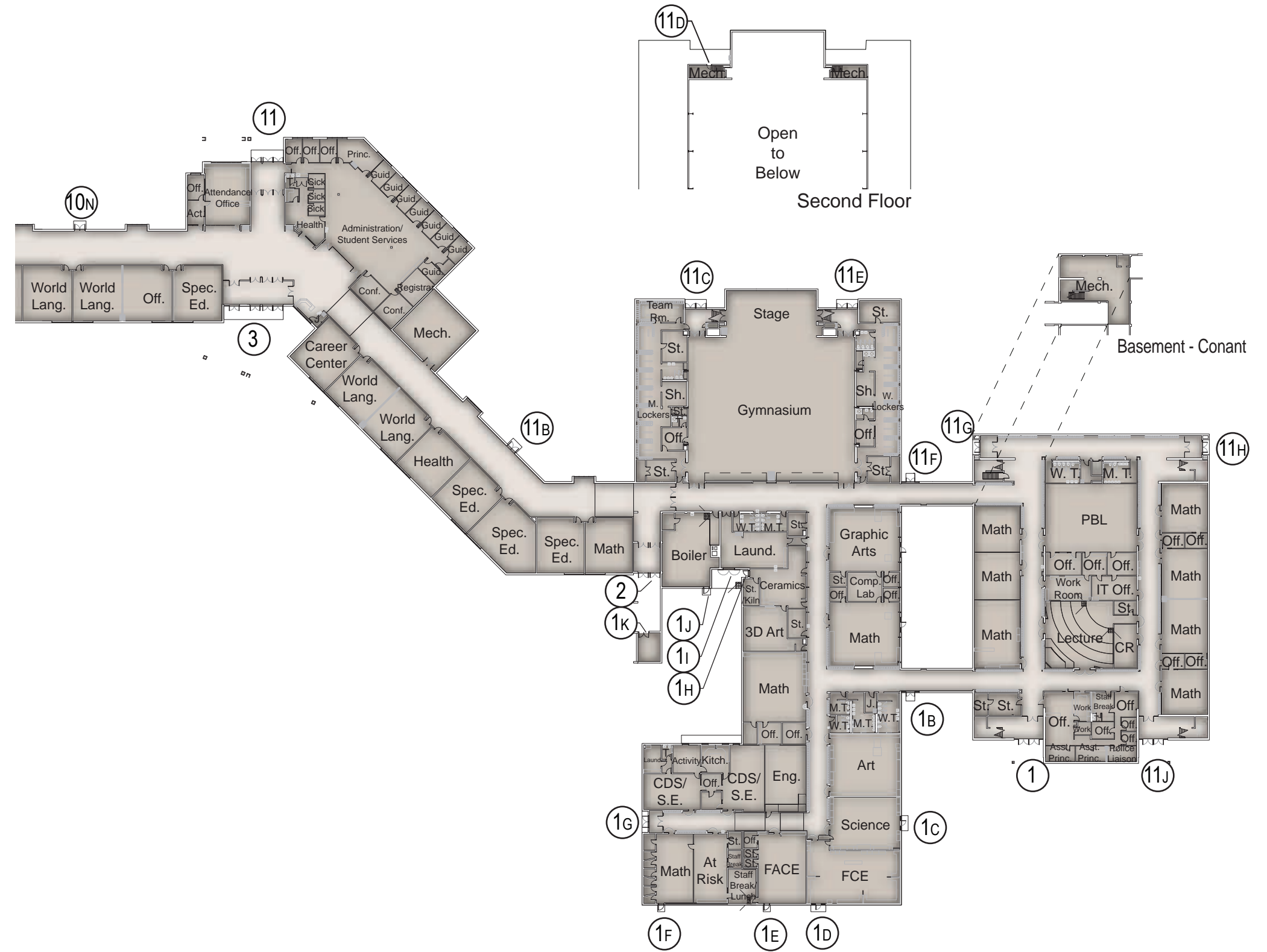
11J HOLLOW METAL DOORS & HOLLOW METAL FRAME



11F HOLLOW METAL DOORS & ALUMINUM FRAME



11C HOLLOW METAL DOORS & HOLLOW METAL FRAME



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NEENAH HIGH SCHOOL: EXTERIOR DOOR ANALYSIS

No.	Door Type	Frame Type
5	Aluminum	Aluminum
5B	Aluminum	Aluminum Storefront
5C	Fiber Reinforced Plastic	Aluminum
5D	Hollow Metal	Hollow Metal
6	Fiber Reinforced Plastic	Aluminum
6B	Hollow Metal	Hollow Metal
6C	Hollow Metal	Hollow Metal
6D	Hollow Metal	Hollow Metal
6E	Hollow Metal	Hollow Metal
7	Aluminum	Aluminum
7B	Hollow Metal	Hollow Metal
7C	Hollow Metal	Hollow Metal
7D	Hollow Metal	Hollow Metal
7DD	Hollow Metal	Hollow Metal
7E	Hollow Metal	Hollow Metal
7E	Steel Garage Door	Steel
7F	Steel Garage Door	Steel
7G	Steel Garage Door	Steel
7H	Hollow Metal	Hollow Metal
7I	Hollow Metal	Hollow Metal
7J	Aluminum Garage Door	Aluminum
7K	Fiber Reinforced Plastic	Aluminum
7L	Hollow Metal	Hollow Metal
7M	Hollow Metal	Hollow Metal
7N	Hollow Metal	Hollow Metal
7O	Hollow Metal	Hollow Metal
7P	Hollow Metal	Hollow Metal
7Q	Hollow Metal	Hollow Metal
8	Aluminum	Aluminum Storefront
8B	Aluminum	Aluminum
8C	Aluminum	Aluminum
8D	Aluminum	Aluminum
8E	Hollow Metal	Hollow Metal
8F	Aluminum	Aluminum
9	Aluminum	Aluminum
9B	Hollow Metal	Hollow Metal
9C	Hollow Metal	Hollow Metal
9D	Hollow Metal	Hollow Metal
9E	Hollow Metal	Hollow Metal
10	Aluminum	Aluminum Storefront
10B	Hollow Metal	Hollow Metal
10C	Hollow Metal	Hollow Metal



5 ALUMINUM DOORS & ALUMINUM STOREFRONT



5C FIBER REINFORCED PLASTIC DOORS & ALUMINUM FRAME



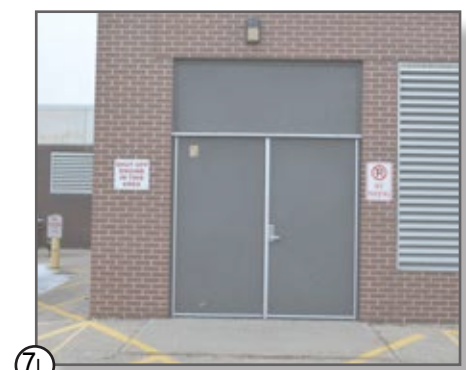
6C HOLLOW METAL DOOR & HOLLOW METAL FRAME



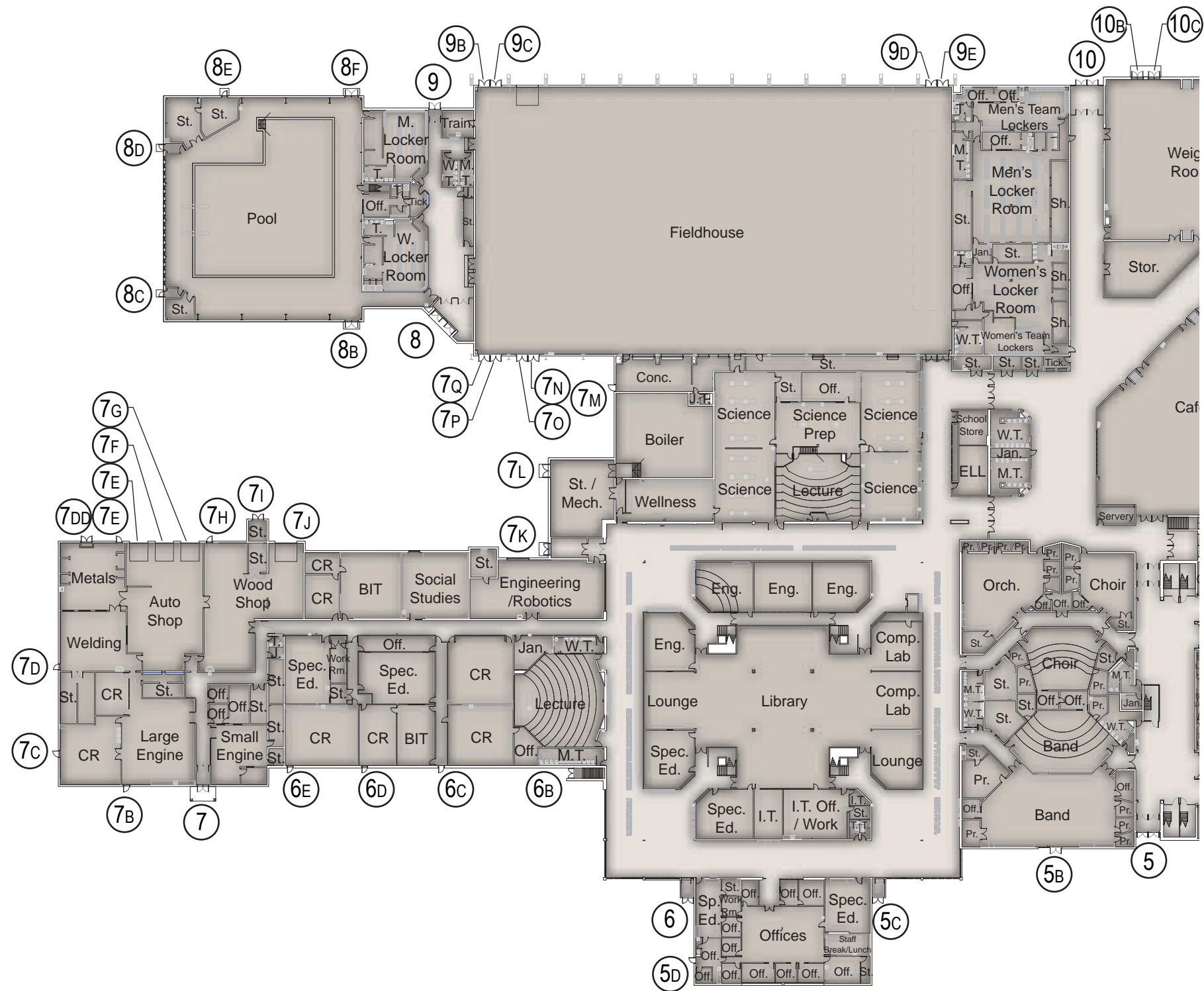
8F ALUMINUM DOORS & ALUMINUM FRAME



8 ALUMINUM DOORS & ALUMINUM STOREFRONT



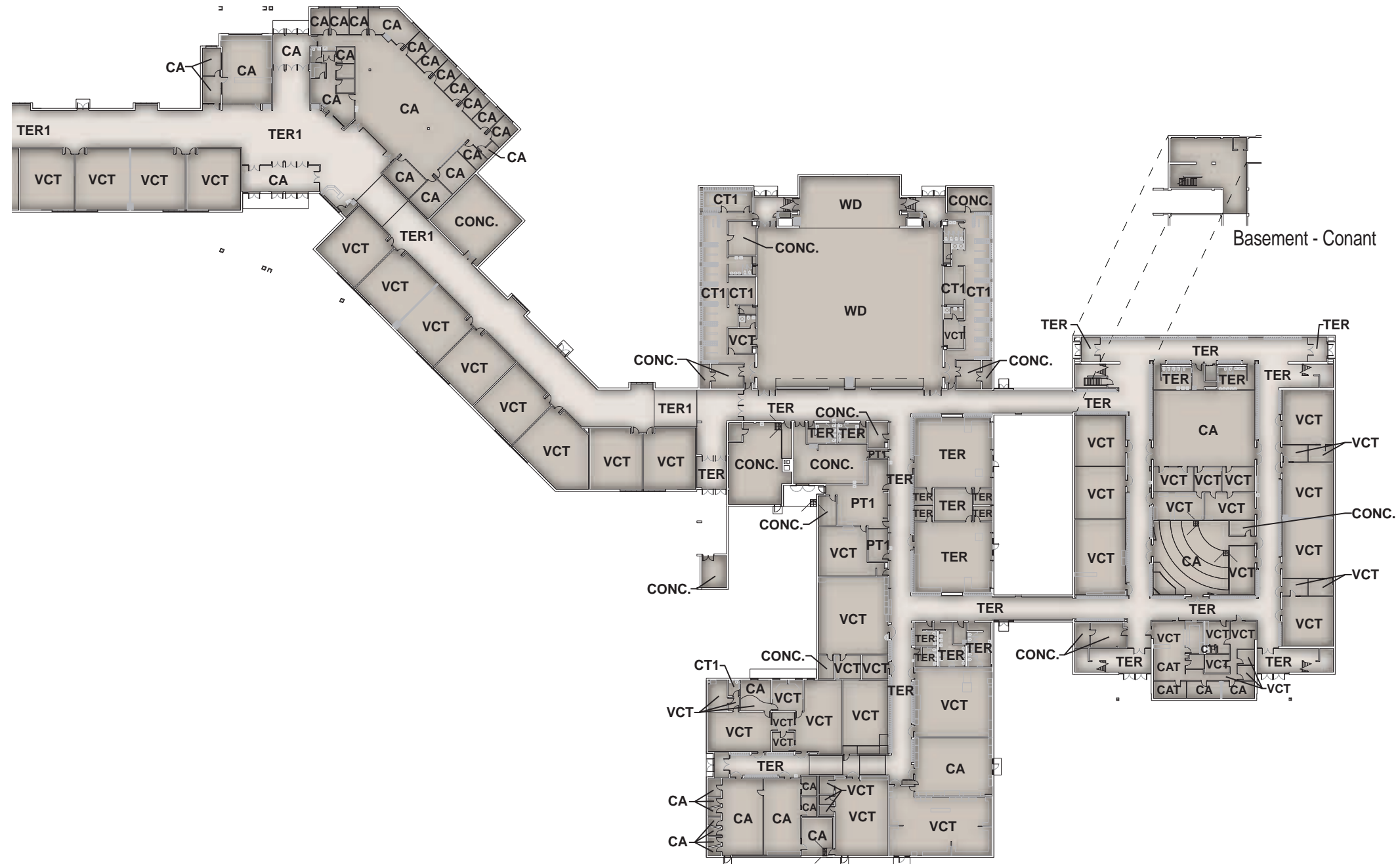
7L HOLLOW METAL DOORS & HOLLOW METAL FRAME



NEENAH HIGH SCHOOL: FLOORING ANALYSIS

- ACT - 9x9 (Asbestos)
- ACT1 - 12x12 (Asbestos)
- ACT2 - 6x6 (Asbestos)
- CA - Carpet Broadloom
- CAT - Carpet Tile
- CT1 - 1x1 Ceramic Tile
- CT2 - 2x2 Ceramic Tile
- CT12 - 1x2 Ceramic Tile
- CT24 - 24x24 Ceramic Tile
- CTH - Hex Ceramic Tile
- CONC. - Concrete
- EPX. - Epoxy
- PT - 8x8 Paver Tile
- PT1 - 6x6 Paver Tile
- PT2 - 3x3 Paver Tile
- PT3 - 3x6 Paver Tile
- RT - Rubber Tile
- RTT - Rubber Tile Tread
- SS - Seamless Synthetic
- SV - Sheet Vinyl
- TER - Terrazzo Tile
- TER1 - 12x12 Terrazzo Tile
- VCT - 12x12
- VCT2 - 24x24
- WD - Wood
- WDP - 4x4 Wood Parquet
- WM - Walk-off Mat

* Flooring Types Identified by Gries Architectural Group

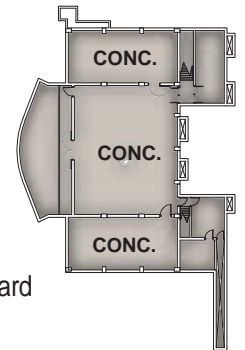
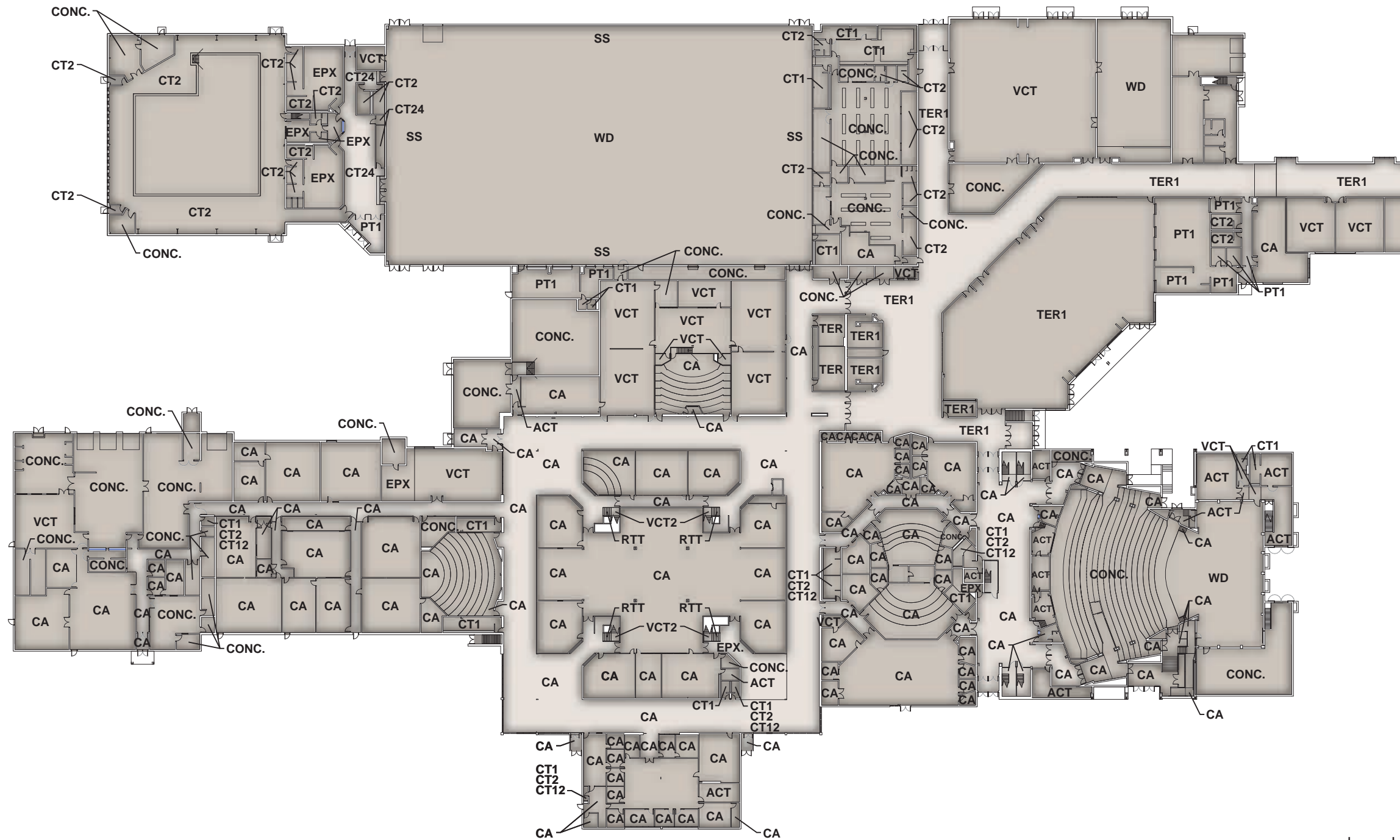


FIRST FLOOR PLAN
not to scale

NEENAH HIGH SCHOOL: FLOORING ANALYSIS

- ACT** - 9x9 (Asbestos)
- ACT1** - 12x12 (Asbestos)
- ACT2** - 6x6 (Asbestos)
- CA** - Carpet Broadloom
- CAT** - Carpet Tile
- CT1** - 1x1 Ceramic Tile
- CT2** - 2x2 Ceramic Tile
- CT12** - 1x2 Ceramic Tile
- CT24** - 24x24 Ceramic Tile
- CTH** - Hex Ceramic Tile
- CONC.** - Concrete
- EPX.** - Epoxy
- PT** - 8x8 Paver Tile
- PT1** - 6x6 Paver Tile
- PT2** - 3x3 Paver Tile
- PT3** - 3x6 Paver Tile
- RT** - Rubber Tile
- RTT** - Rubber Tile Tread
- SS** - Seamless Synthetic
- SV** - Sheet Vinyl
- TER** - Terrazzo Tile
- TER1** - 12x12 Terrazzo Tile
- VCT** - 12x12
- VCT2** - 24x24
- WD** - Wood
- WDP** - 4x4 Wood Parquet
- WM** - Walk-off Mat

* Flooring Types Identified by Gries Architectural Group



Lower Level Pickard

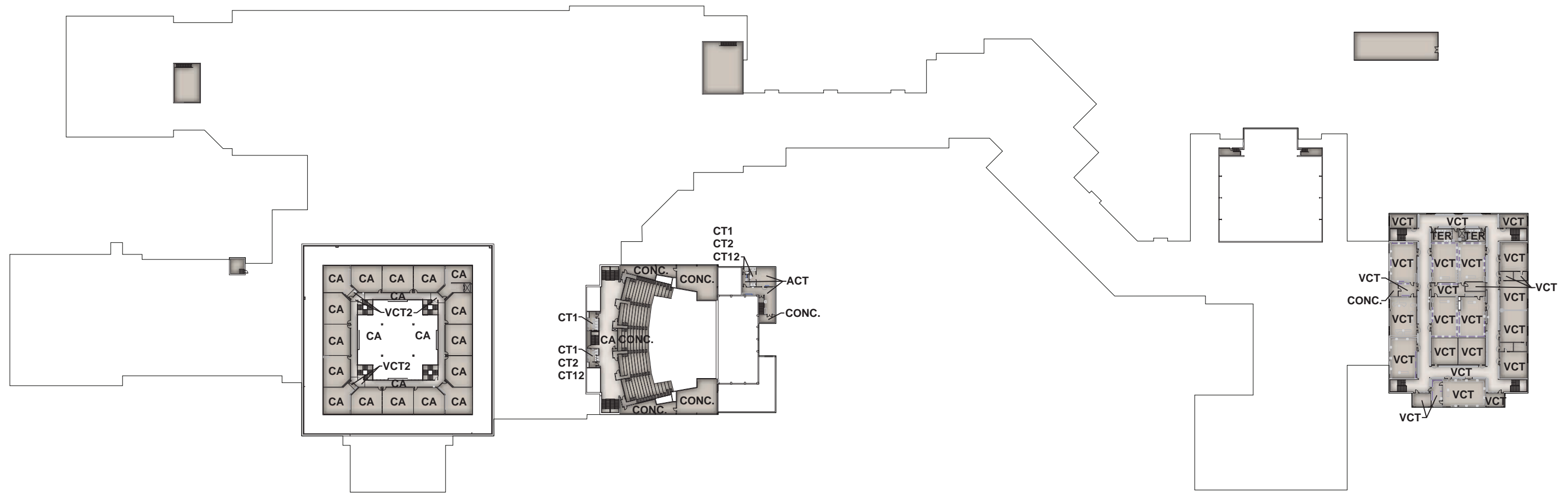


FIRST FLOOR PLAN
not to scale

NEENAH HIGH SCHOOL: FLOORING ANALYSIS

- ACT** - 9x9 (Asbestos)
- ACT1** - 12x12 (Asbestos)
- ACT2** - 6x6 (Asbestos)
- CA** - Carpet Broadloom
- CAT** - Carpet Tile
- CT1** - 1x1 Ceramic Tile
- CT2** - 2x2 Ceramic Tile
- CT12** - 1x2 Ceramic Tile
- CT24** - 24x24 Ceramic Tile
- CTH** - Hex Ceramic Tile
- CONC.** - Concrete
- EPX.** - Epoxy
- PT** - 8x8 Paver Tile
- PT1** - 6x6 Paver Tile
- PT2** - 3x3 Paver Tile
- PT3** - 3x6 Paver Tile
- RT** - Rubber Tile
- RTT** - Rubber Tile Tread
- SS** - Seamless Synthetic
- SV** - Sheet Vinyl
- TER** - Terrazzo Tile
- TER1** - 12x12 Terrazzo Tile
- VCT** - 12x12
- VCT2** - 24x24
- WD** - Wood
- WDP** - 4x4 Wood Parquet
- WM** - Walk-off Mat

* Flooring Types Identified by Gries Architectural Group



SECOND FLOOR PLAN
not to scale

Plumbing System Review:

The following report is the result of a site visit by Leslie Fry of Muermann Engineering, LLC that occurred in January 23, 2017. Site observations and interviews with staff were used in the preparation of this report.

The original buildings were built in 1966 (Conant Building) and 1972 (Armstrong Building) with additions completed in 1980, 1991, 1996, and 1997.

Domestic Water

Observations

- A. Water is supplied to the building by 4 separate water service which connects to the Municipal water system. Additional meters serve irrigation and out buildings. The water services are at limit and could not support any future additions.
- B. The majority of the water distribution piping in the building appears to be copper. The water distribution piping appears to be in fair condition.
- C. The Auditorium has a wet sprinkler system and an Ansul system in the kitchen hood.

Recommendations

- A. If there are any new additions or major remodeling planned, a new larger water service will need to be provided.

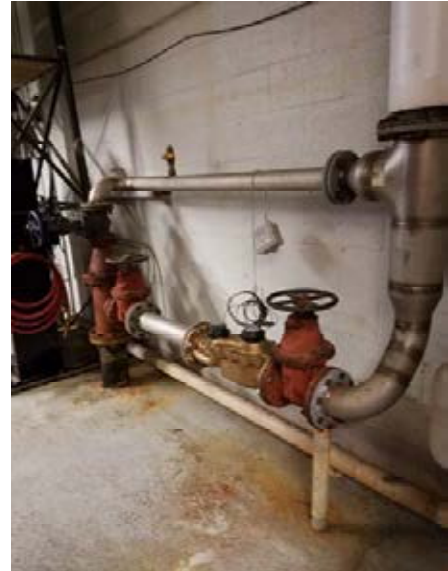
Sanitary and Storm Piping

Observations

- A. The sanitary waste from the building flows by gravity out the building and connects to the Municipal sanitary sewer system.
- B. The sanitary waste and vent piping appears to be hub and spigot cast iron. Some piping that has been replaced recently appears to be schedule 40 PVC pipe and fittings.
- C. The building has a full commercial cooking kitchen an exterior grease interceptor. The grease interceptor is in good condition.
- D. The art room sinks do have solids traps installed on the waste piping.
- E. The existing roof water is collected by gutter and downspout as well as internal roof drains and conductors which flow by gravity out the building and connect to the Municipal storm sewer system.

Recommendations

- A. The sanitary sewer system in the original buildings are nearing the end of their life expectancy. We would recommend the existing sewer located below the floor be inspected with a camera and may need to be replaced pending outcome of the scope.
- B. The storm sewer system in the original buildings are nearing the end of their life expectancy. We would recommend the existing



sewer located below the floor be inspected with a camera and may need to be replaced pending outcome of the scope.

Plumbing Equipment

Observations

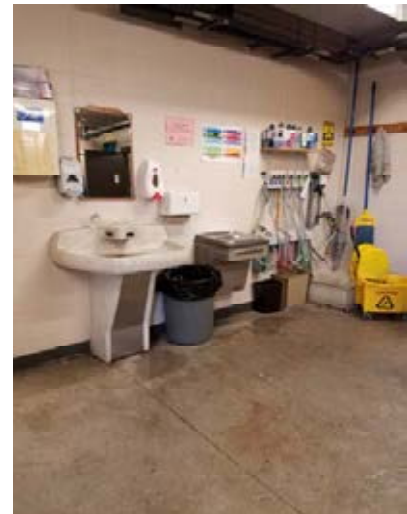
- A. The building has multiple domestic water heaters.
 - 1. A single gas fired water heater serves the north portion of the building as was recently installed. It is in good condition.
 - 2. A central water heating system with two gas fired water heaters and storage tank is in the Receiving Room Mezzanine serves the central portion of the building including the Cafeteria.
 - 3. A water heater serving the pool area. This heater is in good condition.
- B. The domestic water is not softened.



Plumbing Fixtures

Observations

- A. The existing plumbing fixtures in the building are a combination of various styles and ages. Most of the fixtures are original to the building age they were installed. Some of the fixtures have been replaced with newer water efficient and ADA compliant fixtures.
- B. The water closets are floor set with flush valves. Most appear to be water conserving. Some are ADA compliant. The fixtures are in fair condition.
- C. The urinals in the building are floor set flush valves. Some are water conserving. The fixtures are in fair condition.
- D. The lavatories in the building are wall hung with multiple styles of faucets. They do not appear to be water conserving. Some area ADA compliant. Most are in fair condition.
- E. The showers in the have mixing valves and are in good condition.
- F. The drinking fountains in the building are wall hung electric water coolers with bottle fillers. Some are ADA compliant. The fixtures are in generally in good condition however units in the Fieldhouse and locker rooms are in poor condition.



Recommendations

- A. The water closets should be replaced with new water conserving and ADA compliant fixtures.
- B. The urinals should be replaced with new water conserving and ADA compliant fixtures.
- C. The lavatories should be replaced with new water conserving and ADA compliant fixtures.



NEENAH HIGH SCHOOL: ENGINEER REPORT - PLUMBING

- D. The older electric water coolers should be replaced with new ADA compliant fixtures with a bottle filler.
- E. Sporting area drinking fountains and electric water coolers should be changed out to be vandal proof units.
- F. The faucets on the classroom sinks should be replaced with new ADA compliant faucets.
- G. Add ADA compliant restrooms and drinking fountains to Tech Ed area at the south end of the building

General Notes

- A. The Tech Ed area air compressors are HVAC grade air compressors with no filters or air dryers. These should be changed out for industrial style compressors offering filtered and dry air to tech areas, in appropriate volumes and pressures for the equipment and tools they serve.
- B. Science rooms did have master gas shut off valves.



HVAC SYSTEM

The following report is the result of a site visit by Jason Testin of Fredericksen Engineering that occurred on January 19, 2017. Site observations, construction plan review, and interviews with staff were all used in the preparation of this report.

The original building was constructed in 1966 with additions constructed in 1972, 1980, 1991, 1996 and 1997.

1.1 Heating System

A. Existing Data

1. Four boiler plants serve the building. The first boiler plant consists of two Kewanee steam boilers each fired with natural gas. The first boiler has a capacity of 11,716,000 btu. The second boiler has a capacity of 5,649,000 btu. This boiler plant is located in and serves the southern portion of the building.
2. The second boiler plant consists of two Patterson Kelly hot water boilers each fired with natural gas. Each boiler has a capacity of 1,000,000 btu. This boiler plant is located in the two story portion of the building. The boiler plant only serves the two air handling units that serve the two story portion of the building.
3. The third boiler plant consists of two Hurst steam boilers (installed 2012) and one Thermal Solutions hot water boiler (install 2001) each fired with natural gas. The two Hurst steam boilers have a capacity of 6,700,000 btu. The Thermal Solution hot water boiler has a capacity of 2,000,000 btu.
4. The forth boiler plant consists of two Patterson Kelly hot water boilers each fired with natural gas. Each boiler has a capacity of 450,000 btu. This boiler plant serves the pool air handling unit and pool locker room.
5. The piping and pumping system for the Kewanee boilers consists of a 2-pipe hot water system with a stand-by pump. If the primary pump fails, the secondary (stand-by) pump will provide hot water circulation to the system. A heat exchanger on the steam side is used to transfer heat to the hot water circuit.
6. The piping and pumping system for the Patterson Kelly boilers consist of 2-pipe hot water system with a stand-by pump. If the primary pump fails, the secondary (stand-by) pump will provide hot water circulation to the system.
7. The piping and pump system for the Hurst/Thermal Solutions boilers is comprised of two heating circuits, the first being a steam circuit, with the second being a hot water circuit. A heat exchanger on the steam side is used to transfer heat to the hot water circuit. That hot water circuit also has a stand-by pump.
8. The piping and pump system for the Patterson Kelly pool boilers is comprised of a 2-pipe hot water system with a stand-by pump. If the primary pump fails, the secondary (stand-by) pump will provide hot water circulation to the pool air handler.

B. Observations

1. According to information obtained by the Owner, the boiler plants have no reserve capacity at this point, as all boilers are brought online during periods of colder weather.
2. While the installation date of the Kewanee boilers is not known, based on the appearance, the units have exceeded the estimated life expectancy of 30 years. The Owner has indicated that the boilers are being replaced the summer of 2017.



3. The Patterson Kelly boilers are in fair condition but appear to have exceeded the estimated life expectancy of 25 years.
4. The Hurst boilers are in good condition and have an estimated life expectancy of 30 years. The Thermal Solutions boiler is in good condition and has an estimated life expectancy of 25 years.
5. Steam piping is original and appears to be in fair condition according to the Owner, with no significant leaks reported.
6. Insulation at most piping is of adequate thickness and in good condition.
7. The Owner has indicated that the pool boilers have begun to leak from the heat exchanger.

C. Recommendations

1. Continue preventative maintenance on the system.
2. Any future additions or construction will require the addition of boiler capacity to serve the additional spaces.
3. Plans should be made for the eventual replacement of the aging Patterson Kelly boilers.

1.2 Ventilation and Air Conditioning Systems

A. Existing Data

1. There are four systems that provide ventilation for the facility. The four systems are unit ventilators, variable air volume systems, constant volume multi-zone system, and constant volume air handling systems.
2. The pool is served by a constant volume air handling unit with energy recovery. Constant volume systems consist of a central supply fan, energy recovery section, hot water heating coil, DX cooling coil, condensing unit, fresh air damper and return air damper. A room thermostat is used to control the temperature of the air supplied to the space.
3. The fieldhouse is served by multiple constant volume air handling units. Constant volume systems consist of a central supply fan, combination hot water/chilled water coil, fresh air damper and return air damper. A room thermostat is used to control the temperature of the air supplied to the space.
4. The science rooms adjacent to the field house, tech. ed. rooms, auditorium, lobby and multi-purpose room are served by multiple constant volume air handling units. Constant volume systems consist of a central supply fan, combination hot water/chilled water coil, fresh air damper and return air damper. A room thermostat is used to control the temperature of the air supplied to the space.
5. The locker rooms, backstage rooms and many of the classrooms are served by unit ventilators. Unit ventilators house a fan, combination hot water/chilled water coil, fresh air damper and return air damper in a single cabinet mounted in the space. A room thermostat is used to control the temperature of the air supplied to the space.
6. The southern classrooms 112 through 128 are served by multiple constant volume air handling units and hot water booster coils. Constant volume systems consist of a central supply fan, combination hot water/chilled water coil, fresh air damper and return air damper. Hot water booster coils are installed in the ductwork to provide individual temperature control.

7. The cafeteria is served a constant volume air handling unit and hot water booster coils. Constant volume systems consist of a central supply fan, hot water heating coil, chilled water coil, fresh air damper and return air damper. Hot water booster coils are installed in the ductwork to provide individual temperature control.
8. The library and surrounding classrooms in the 2 story portion are served by variable air volume air handling units. A variable air volume air handling unit consists of a central supply fan, hot water/chilled water coil, outside air damper, and return air damper. Hot water variable air volume boxes are added to the ductwork to provide individual room temperature control.
9. The link classrooms and northern offices are served by variable air volume air handling units. A variable air volume air handling unit consists of a central supply fan, hot water heating coil, chilled water cooling coil, outside air damper and return air damper. Hot water variable air volume boxes are added to the ductwork to provide individual room temperature control.
10. The southern offices are served by a packaged variable air volume rooftop unit. A packaged variable air volume unit consists of a central supply fan, gas fired heat exchanger, DX cooling section, outside air damper and return air damper. Hot water variable air volume boxes are added to the ductwork to provide individual room temperature control.
11. The northern gym, locker rooms and center classrooms are served by multiple constant volume air handling units. Constant volume systems consist of a central supply fan, steam heating coil, fresh air damper and return air damper. A room thermostat is used to control the temperature of the air supplied to the space.
12. The classrooms in the northern 2 story are served by constant volume multi-zone units. A constant volume multi-zone unit consists of a central supply fan, a steam heating coil, chilled water cooling coil, hot deck, cold deck and zone dampers for each zone. Each zone has a room thermostat that controls the hot deck and cold deck zone dampers for that space. The dampers are modulated to control the temperature of the air supplied to each space.
13. Portions of the building (as indicated above) are air conditioned. Cooling is provided by water cooled chiller/cooling tower for the southern end, two air cooled chillers for the middle of the building and water cooled chiller/cooling tower for the northern end.

B. Observations

1. The Pool Pak air handling unit serving the pool is corroded. The evaporator had to be rebuilt due to corrosion. While it is not sure when the unit was installed, it appears to have exceeded the estimated life expectancy of 15 years.
2. The air handling units serving the auditorium and surrounding areas have bearings that continue to fail, valves that won't close, branch piping that is corroding and pipe insulation that is deteriorating due to the condensation produced from the 2-pipe system. The units have exceeded the estimated life expectancy of 30 years.
3. The unit ventilator serving the green room adjacent to the auditorium has frozen the coil in previous years and has trouble heating the room. Owner thinks that the roof has very little insulation.
4. The piping loop serving the unit ventilators in the music areas do not have shutoff valves installed. This makes working on or replacing one of the units very difficult.
5. The southern offices have some spaces that share vav boxes. The Owner indicated that this can cause problems with temperature control for the occupants.



The units also have trouble heating some of the perimeter offices with a CMU block exterior wall.

6. Some of the northern classrooms that are supplied by constant volume air handlers do not have individual zone control. Like the offices mentioned previously, this can cause problems with temperature control for the occupants.
7. The fieldhouse has relief louvers at each end of the gym. Currently the dampers for each louver are inoperable and will not close. When standing on the gym floor, you can see daylight through the louvers.
8. The cooling tower for the southern end of the building has begun to rust. The unit has exceeded the estimated life expectancy of 20 years.
9. The air handling units serving the Tech. Ed. areas are original and have exceeded the estimated life expectancy of 25 years.
10. The dust collector serving the wood shop is original and has exceeded the estimated life expectancy of 20 years.
11. The air handling units serving the classrooms adjacent to the fieldhouse are original. The units have exceeded the estimated life expectancy of 30 years.
12. The unit ventilators are original. The units have exceeded the estimated life expectancy of 25 years.
13. The air handling units serving the northern classrooms and gym are original. The units have exceeded the estimated life expectancy of 30 years.
14. Door transfer grilles are currently utilized to transfer relief air from the classrooms to the corridor.

C. Recommendations

1. Plans should be made for the eventual replacement of the aging Pool Pak constant volume air handling unit serving the pool.
2. Plans should be made for the eventual replacement of the aging constant volume air handling units serving the auditorium and lobby.
3. Plans should be made for the eventual replacement of the aging unit ventilators.
4. Plans should be made to install isolation valves in the piping in the music area.
5. To improve individual office temperature control, it is recommended that the vav boxes serving the southern offices be removed and a vav box for each office is installed.
6. Plans should be made for the eventual replacement of the aging constant volume air handling units serving the northern classrooms. The system should be replaced with a variable air volume system and vav boxes to allow individual temperature control for each classroom.
7. Plans should be made to replace the dampers and damper actuators serving the relief fans in the fieldhouse.
8. Plans should be made for the eventual replacement of the aging cooling tower.
9. Plans should be made for the eventual replacement of the aging constant volume air handling units serving the tech. ed. areas.
10. Plans should be made for the eventual replacement of the aging dust collector.

11. Plans should be made for the eventual replacement of the aging constant volume air handling units serving the classrooms adjacent to the fieldhouse.
12. Plans should be made for the eventual replacement of the aging constant volume air handling units serving the northern classrooms and gym.
13. With any remodel or renovation, plans should be made to replace the door transfer grille relief system with a code approved system. The current building code does not allow transfer air into a path of emergency egress.

1.3 Control Systems

A. Existing Data

1. There is a mixture of a pneumatic temperature control system and a digital temperature control system.

B. Observations

1. The limitations of the pneumatic system do result in comfort complaints. Pneumatic systems require frequent calibration to maintain accuracy. The newer digital controls are more accurate and more flexible. In addition, the industry has made such a complete changeover to digital controls that it is becoming difficult to find good pneumatic service technicians.

C. Recommendations

1. Continue to maintain and operate the pneumatic control system as long as the current mechanical equipment remains. When any renovations to the existing equipment are made, a changeover to digital controls is strongly recommended.

NEENAH HIGH SCHOOL: ENGINEER REPORT - ELECTRICAL

Electrical System Review:

The following report is the result of a site visit by Daniel Cedeno of Muermann Engineering, LLC that occurred on January 23, 2017. Site observations, existing plan review and interviews with staff were all used in the preparation of this report. The facility was built in 1966, with additions occurring in 1972, 1980, 1991, 1996, and 1997.

Electric Service

Observations

- A. The facility has 3 electric services throughout the facility. The first service on the north end of the building is a 1200-amp, 277/480V 3-phase 4 wire main electric service that is about 30 years old. The switchboard is nearing the end of its useful lifespan. The main switchboard has capacity for 1 additional breaker for potential future loads. This service has surge suppression provisions. This service also has a 45kw, 277/480V 3-phase interior emergency power generator to provide backup power for emergency lighting and other mixed loads on the north side of the facility. The generator is in good working condition but is also nearing the end of its useful lifespan. This service is fed by a pad mounted utility transformer with an underground electrical service terminating at the switchboard's C/T cabinet section.
- B. The second electric service is located on the south side of the facility. This service is 3000-amp, 277/480V 3-phase 4 wire that is also about 30 years old. This switchboard is nearing the end of its useful lifespan. The main switchboard does not have any spare breaker spaces for any future loads. This service has surge suppression provisions. This service also has a 55kw, 277/480V 3-phase emergency power generator to provide backup power for emergency lighting and other mixed loads on the south side and auditorium portion of the facility. It was noted that all of the feeders served by the generator were aluminum which can cause issues with vibration. This service is fed by a pad mounted utility transformer with an underground electrical service terminating at the switchboard's C/T cabinet section.
- C. The third electric service is located on the lower level of the auditorium. This service is 1600-amp, 277/480V 3-phase 4 wire that is also about 30 years old. This switchboard is nearing the end of its useful lifespan. The main switchboard does not have any spare breaker spaces for any future loads. This service does not have provisions for surge suppression. Emergency lighting is provided by the generator on the south side of the facility. This service is fed by a pad mounted utility transformer with an underground electrical service terminating at the switchboard's C/T cabinet section.
- D. The electric panelboards throughout the facility vary in age between old circuit breaker panelboards that are nearing the end of their useful lifespan, and some panelboards that were replaced or added through renovations or additions that are relatively new and in good working condition. It was noted that



North Electric Service



South Electric Service



Auditorium Electric Service



Old Panelboard



there are various panelboards that have no identification whatsoever, making troubleshooting harder to trace and resolve.

Recommendations

- A. The main electric services are all nearing the end of their useful lifespans and should be scheduled for replacement within the next 5-8 years.
- B. Provide surge suppression to the third electric service to prevent equipment damage in the building during power surges.
- C. Vintage circuit breaker panelboards should be scheduled for replacement within the next 5-8 years.
- D. It is recommended that the emergency generators be replaced when the electrical services are replaced as they are also nearing the end of their useful lifespan.
- E. It is recommended to provide identification tags for all panelboards throughout the facility to facilitate maintenance and troubleshooting efforts.
- F. Ensure proper working clearances are maintained in front of all panelboards at all times. Working clearance area may not be used for storage. Recommendations include using industrial vinyl safety tape to physically indicate clearance on floor/wall around panelboards.



New Panelboard

Light Fixtures & Controls

Observations

- A. Much of the interior lighting throughout the facility consists of a variety of T8 fluorescent or incandescent light fixtures, including recessed, surface, and pendant mounted varieties. The fixtures range in age but all are in good working condition. The band room and elevator still have T12 fixtures.
- B. The gymnasium and field house use high bay metal halide fixtures to provide general lighting in the space. It was noted that facilities maintenance personell indicated that replacement ballasts for the existing fixtures are no longer available, so school has been replacing faulty fixtures with LED equivalents as they fail. Neither of the two spaces have emergency lighting provisions.
- C. The pool area uses 1000w metal halide pendant mounted indirect fixtures and troffers.
- D. The library uses 350w metal halide recessed troffers. These fixtures cause a large amount of heat and are inefficient and should be scheduled for replacement.
- E. The auditorium had minimal egress level lighting. It was indicated by the theater director that there are emergency lighting provisions in the auditorium. It was not clear whether



Typical Classroom Lighting



Gymnasium Lighting

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- F. General lighting controls in rooms consist of toggle switches with no occupancy sensors. Most classrooms utilize dual level lighting controls.
- G. Corridor lighting is partly controlled via the Building Automation system, partly controlled via occupancy sensors. Emergency lighting in corridors was lacking by today's standards.
- H. Exterior lighting consists of a mixture of different styles of high pressure sodium wall packs.
- I. Exterior lighting is controlled via a combination of photocell and time clock controls.



Cafeteria Lighting



Field House Lighting

Recommendations

- A. Recommendations to interior lighting include replacing fixtures with LED equivalents, providing dimming controls and occupancy sensors to maximize on energy savings.
- B. Schedule existing exterior light fixtures with LED equivalents and control via existing timeclock/photocell controls.
- C. Remaining corridors should be reconfigured to be controlled via BAS to have standardized lighting controls for all corridors in the facility.
- D. Emergency lighting should be reconfigured to ensure light levels meet today's standards.

Wiring Devices

Observations

- A. Most receptacles throughout the facility are 15A rated.
- B. There was a general lack of receptacles in general common areas such as gathering spaces, the library, and other common use areas.
- C. Science rooms have emergency gas but no power shutoff capability.
- D. Shop classrooms have emergency power provisions for all of the tools. It was noted that shop teacher requested additional 240v cord drops for equipment, 120v power outlets with dedicated circuits for additional power tools.
- E. The music teacher indicated there is a lack of outlets in the music rooms for electronic keyboards.
- F. Theatrical shop room does not have emergency power shutoff provisions for their power tools.
- G. There are receptacles within 6 feet of plumbing fixtures that are not GFI protected.



Non-GFI Receptacles



Science Room Power & Gas Shut-off

Recommendations

- A. Recommendations include replacing existing 15A rated receptacles with 20A rated type.



- B. Provide additional receptacles throughout working spaces as necessary to meet needs of space.
- C. Electrical in theatrical shop room should be reconfigured to have emergency power shutt-off provisions.
- D. Replace existing receptacles within 6' of plumbing fixtures with GFI protected type.

Phone System

Observations

- A. The facility has a Shoretel IP based phone system that is in good working condition.

Recommendations

- A. No recommendations at this time.

Data System

Observations

- A. Data service is provided via fiber optic utility service. The system seems to be in good working condition.
- B. Fiber optic wiring interconnects all of the schools to the main district network.
- C. General data cabling consists of a variety of Cat5e and Cat6 cabling, both in plenum and riser rated varieties.
- D. The school has (10) data racks throughout the facility, most have spare rack capacity for future needs. Data cabling management at the racks is run in a disorganized fashion with no labeling. The main data rack is the only rack that appeared to have a backup UPS power supply.

Recommendations

- A. It was unknown at the time of the site visit if the facility has ceiling plenums, but if there are plenums in the ceiling spaces, the riser rated data cabling should be replaced with plenum rated cabling.
- B. Data cabling at the data racks should be reinstalled in a clean workmanlike manner. Proper labeling of data cabling should also be considered to facilitate cable management and traceability.
- C. A possible recommendation is to provide a UPS battery backup system to provide backup power to the data racks in the event of power loss. If new generators are provided, it would also be recommended to provide receptacles that are connected to the emergency generator in the event of prolonged power outages.
- D. Repair data jacks serving cafeteria check out station (see picture).



Loose Data Jacks



Main Data Rack

Keyless Entry System

Observations

- A. The building has a keyless entry system that is in good working condition.
- B. Access controlled doors are controlled via electric strikes and card readers.
- C. None of the exterior doors have door position contacts to monitor if doors are shut or left open.

Recommendations

- A. It is recommended to provide door monitor contacts on all exterior doors to help monitor and control access to the facility at all times.



Keyless Entry
Electric Strike

Intercom System

Observations

- A. The building has a Rauland intercom system. The system is in good working condition.
- B. It was noted that speaker coverage in some areas is lacking. There are corridors that do not have intercom coverage, larger spaces such as the field house do not have proper coverage.
- C. Intercom speakers throughout are nearing the end of their useful lifespan.
- D. The bell schedule system is controlled via a timeclock. Staff reported no issues with system.



Intercom System
Handset

Recommendations

- A. The existing intercom system should be scheduled for full replacement with a new IP-based intercom system. Existing speakers should be scheduled for replacement in addition to providing additional speakers in areas lacking coverage.

CCTV System

Observations

- A. The building has a CCTV system consisting of 2 cameras throughout the facility. The system seems to be in good working condition. The district plans to add about 18 more cameras to the system in the future.



CCTV Camera

Recommendations

- A. Provide new CCTV cameras where additional coverage is necessary.

Fire Alarm System

Observations

- A. The building has a Simplex fire alarm system that is about 10 years old and is in good working condition.



Fire Alarm Control
Panel

- B. The system is monitored and dials out to the fire department during a fire alarm event.
- C. Notification coverage is lacking in some areas by today's standards.

Recommendations

- A. A possible recommendation would be to provide additional fire alarm notification devices in areas where coverage is lacking.
- B. Provide smoke detection in chemical storage rooms.

Other Low Voltage Systems

Observations

- A. The building does not have a security system.
- B. The building has a monitoring system to ensure the boilers in the facility are operational. The system is programmed to dial facility management in the event of a boiler failure.
- C. The building has a Franklin synchronized clock system, it was noted that clocks have been replaced with battery operated non-synchronous types where the existing franklin clocks have failed. This system is nearing the end of its useful lifespan.
- D. Shop teacher indicated that there are errant grounding problems in the shop classrooms that have been attempted to be mitigated with additional ground bars but there are still underlying issues with stray voltage in these classrooms.
- E. The theatrical lighting system is in mostly good working condition. It was indicated by the theatrical director that some of the pigtails in the catwalk area are dry rotting. One of the circuits in the dimmer system is also no longer working.



Franklin Clock System



Theatrical Dimming Rack

Recommendations

- A. Other possible recommendations include adding a security system to control and monitor access to the facility.
- B. Replacing the existing clocks with a synchronized clock system such as a GPS wireless clock system to minimize labor efforts required when updating clocks during daylight savings time changes.
- C. Further investigation should be done to determine underlying cause of stray voltage issues in shop classrooms.
- D. Theatrical lighting system should be refurbished as necessary to ensure system is in good working order and that potential fire hazards are mitigated.