



HOPE-PAGE PUBLIC SCHOOLS FACILITIES ASSESSMENT REPORT

HIGH SCHOOL

740 7th Street SE
Hope, ND 58046

ELEMENTARY SCHOOL

630 May Avenue
Page, ND 58064

February 2019

PREPARED BY:

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FACILITY ASSESSMENT – PAGE ELEMENTARY SCHOOL

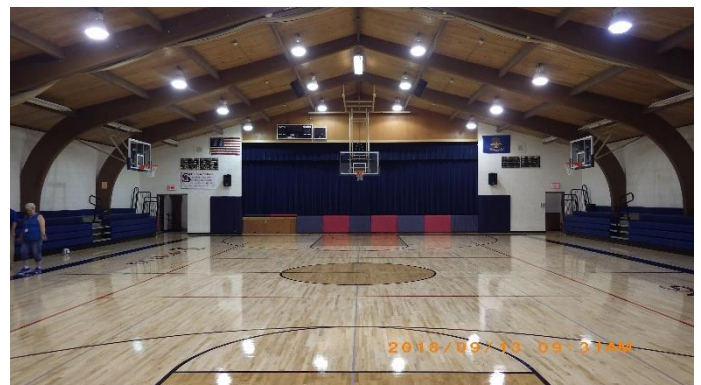
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STATEMENT OF PURPOSE

EngTech has performed facility assessments of the Hope-Page Public School buildings which is comprised of the Elementary school building in Page, ND and the High School building in Hope, ND. Additional out buildings, bus barns, and athletic facilities are not included. The facility assessment included a visual inspection of the current facility conditions with respect to these key components: exterior building envelope, interior finishes, building/life safety, accessibility, structural conditions, mechanical, plumbing, and electrical system conditions. The focus of the effort is as follows:

1. Observe and comment on the condition of the building's interior and exterior condition, maintenance issues, aesthetics, and functional quality.
2. Review and comment on potential building safety and security improvements.
3. Review and comment on potential building code and life safety compliance deficiencies or potential concerns.
4. Review and comment on potential accessibility deficiencies.
5. Observe and comment on the structural integrity of the building.
6. Review the mechanical systems of the buildings to determine their conditions and potential for continued use. This includes the heating and cooling plants, air handlers, terminal units and ancillary equipment.
7. Review the plumbing systems of the buildings to determine their conditions and potential for continued use. This includes the domestic water supply, plumbing fixtures, and sanitary waste and vent piping.
8. Review the electrical systems of the buildings to determine their conditions and potential for continued use. This includes the electrical service, outlets, circuits, fire alarm, and wiring.
9. Review the lighting systems to determine their conditions and potential for continued use.
10. Review the technology systems of the buildings to determine their conditions and potential for continued use. This includes data jacks, server location, phone/PA system, clocks, and security system.

This Facilities Assessment will document, categorize, and prioritize the deficiencies. The priorities are based on our initial observations and will be discussed in more detail with the District. Once the recommendations are reviewed with the District, EngTech will work to develop the scope of work and a budget for the individual items. Our recommendations are provided in a manner to extend the expected useful life of the building for around another 20-25 years.

The Facilities Assessment and subsequent recommendations should be considered during any future building projects. Some of the projects may be completed by the district out the annual operating budget, or several of the projects may be bundled and funded as part of a larger project.



EXECUTIVE SUMMARY

The elementary and high school buildings were observed with several critical items requiring immediate attention along with many other items that are less critical such as materials and systems in use beyond their rated life expectancy. The following is a brief outline of the critical items discovered during the team's assessment of the facilities.

CRITICAL ITEMS – HOPE FACILITY

Building Exterior/Interior

- Exterior joint sealant
- Tuckpoint masonry
- Roof Assessment (Repair roof to eliminate leaks)

Safety/Security

- Provide secure building entrance

Accessibility

- The school facilities were observed with several items that are not compliant with the ADA Standards (American with Disabilities Act). The primary deficiencies observed requiring attention include:
 - Accessible parking
 - Restrooms / Locker Rooms
 - Room Signage

HVAC/Mechanical

- Fuel-oil boiler shell, boiler piping, heat exchanger and appurtenances.
- Electric boiler and associated piping.
- Heating water distribution piping, piping insulation, and valving.
- Pneumatic (compressed air) HVAC controls.
- Outside air openings/louvers should not be blocked off. Classrooms require fresh air exchange per code.

Electrical

- Replace power service entrance, and part of the distribution system.
- Replace receptacles with tamper resistant devices.

BEYOND RATED LIFE

Building Exterior/Interior

- Interior wood doors
- Interior classroom casework
- Interior finishes (flooring, ceilings, paint)
 - Consider asbestos abatement
- Marker Boards

Mechanical/Plumbing

- Cabinet Unit Ventilators.
- Gym air handling units.
- Plumbing piping, piping insulation and valving.

Electrical

- Existing speaker system.
- Main distribution panel

CRITICAL ITEMS – PAGE FACILITY

Building Exterior/Interior

- Exterior joint sealant
- Tuckpoint masonry
- Replace exterior windows
- Kitchen – Enclose walk-in cooler/freezer
- Roof Assessment (Repair roof to eliminate leaks)

Safety/Security

- Provide secure building entrance

Accessibility

- Accessible parking
- Restrooms/Locker Rooms
- Room Signage

HVAC/Mechanical

- Steam boiler shell, boiler piping, heat exchanger and appurtenances.
- Electric boiler and associated piping.
- Heating water distribution piping, piping insulation, and valving.
- Pneumatic (compressed air) HVAC controls.
- Outside air openings/louvers should not be blocked off. Classrooms require fresh air exchange per code.

Electrical

- Power distribution system should be replaced.
- Replace receptacles with tamper resistant devices.
- Provide a secured space with the Telecom head end equipment.
- Replace cloth insulated wire.
- Provide additional emergency lights.

BEYOND RATED LIFE

Building Exterior/Interior

- Interior wood doors
- Interior casework
- Interior finishes (flooring, ceilings, paint).
 - Consider asbestos abatement.
- Marker Boards

Mechanical / Plumbing

- Cabinet Unit Ventilators.
- Gym air handling units.
- Plumbing piping, piping insulation and valving.

Electrical

- Existing speaker system
- Existing branch panels

FACILITY BACKGROUND

HOPE FACILITY

The building in Hope was originally built in 1961 as a K-12 school and was comprised of a single-story building totaling approximately 34,991sf.

A 5,936sf addition was built in 1980 and was comprised of an ag-ed shop, music classroom, practice rooms, and a kindergarten classroom.

A 291sf greenhouse was built on the west side of the building with its access being from the science classrooms.

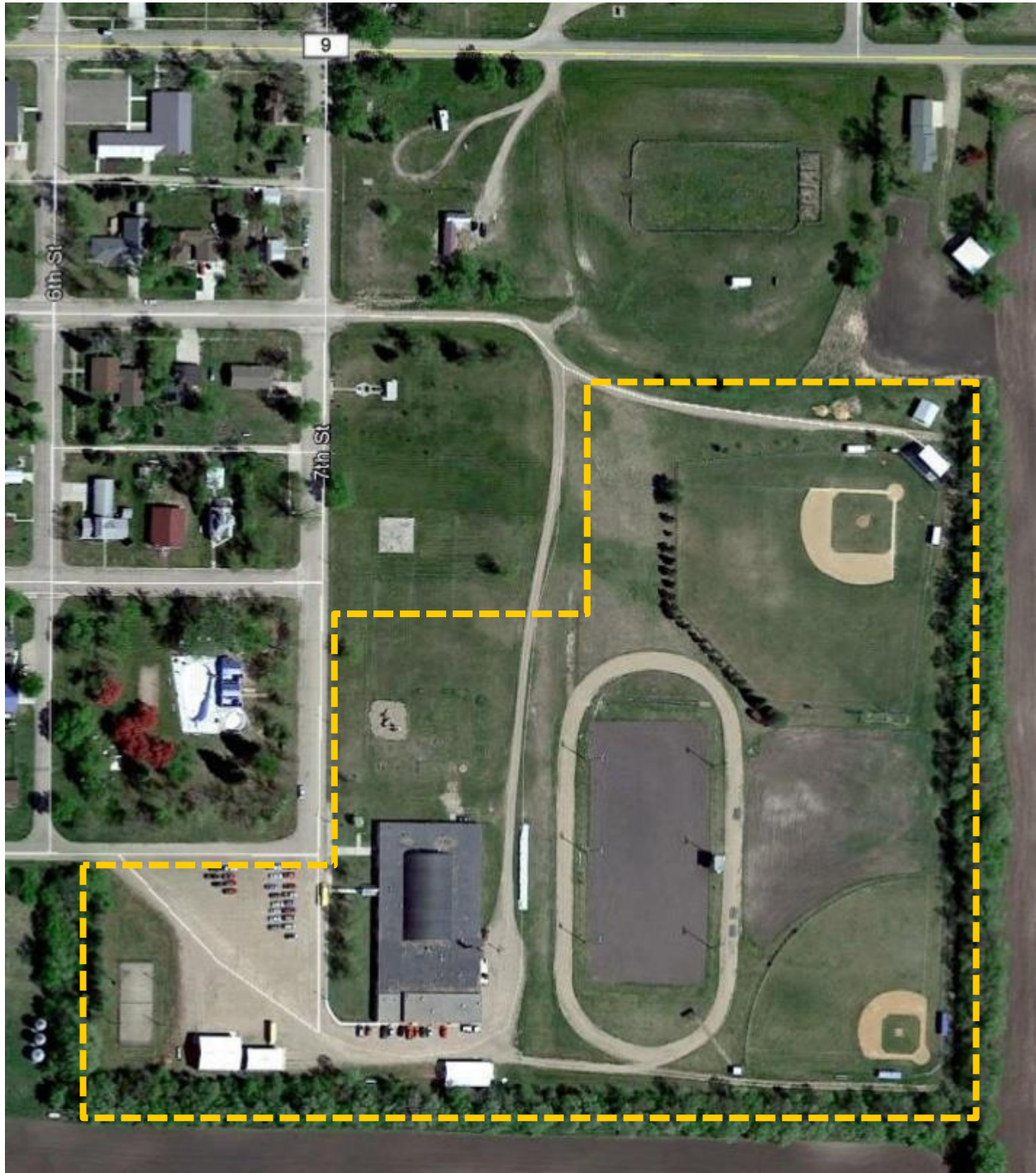
Recent interior improvements have occurred at the science classrooms and to the family and consumer science (FACS) classroom.

The building currently functions as the high school with a total of 41,218sf. There are 15 classrooms (including music and ag-ed classroom/shop), library, gymnasium, stage, locker rooms, and administrative areas.

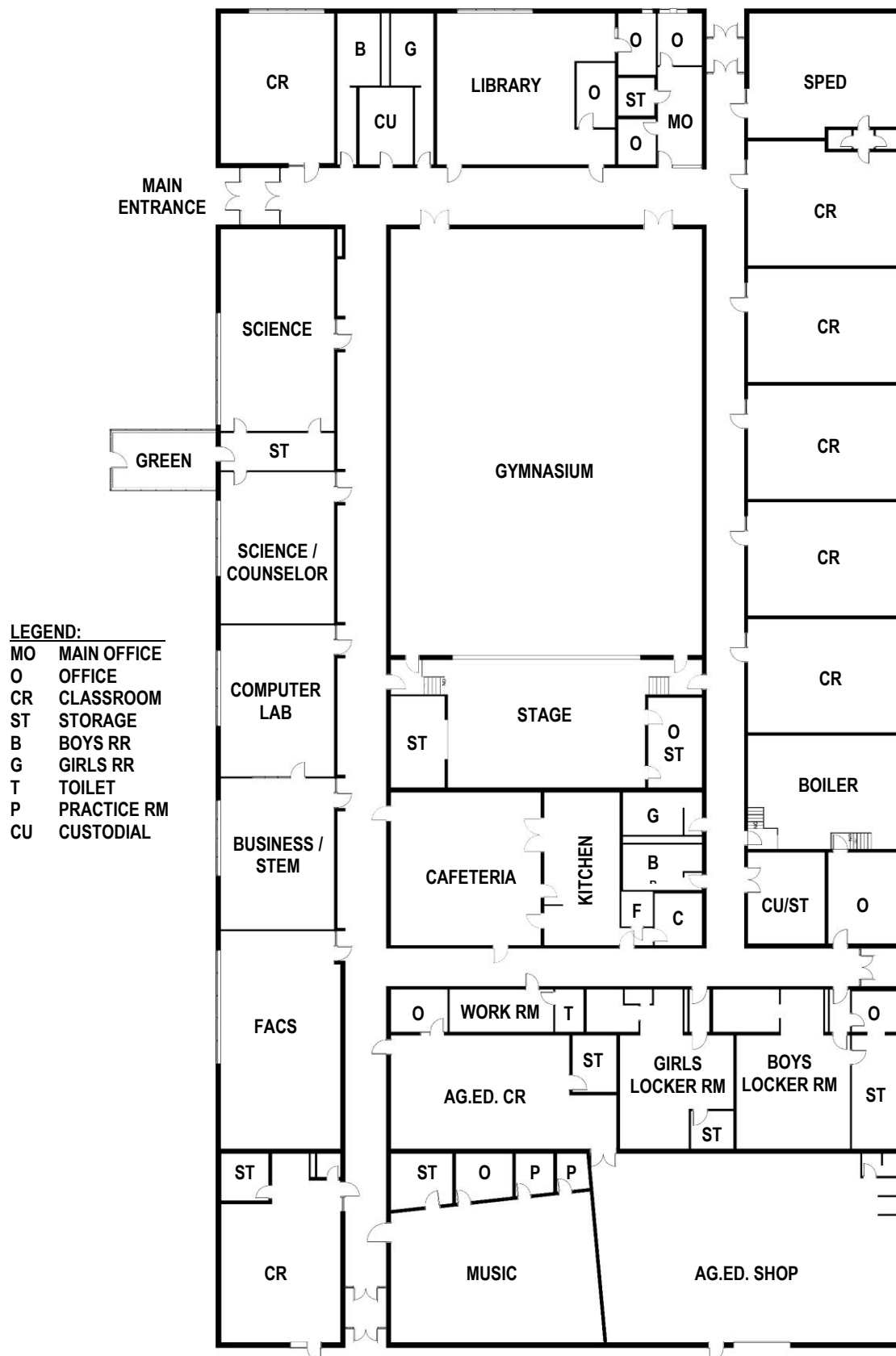


SCHOOL DISTRICT PROPERTY - HOPE

Dashed line represents approximate outline of property owned by the school district.
Source: Steele County GIS Link (<https://portico.mygisonline.com/html5/?viewer=>)



CURRENT FLOOR PLAN – HOPE FACILITY



PAGE FACILITY

The building in Page was originally built in 1954 as a grade school and was comprised of a single-story building totaling approximately 8,406sf. The boiler room on the north end supplied heat to the existing school facility across the street to the south (now demolished) via an underground tunnel.

A 33,574sf addition was built in 1960 – making the school a K-12 facility. The addition included general-purpose classrooms, science classrooms, FACS, music, ag-ed classroom/shop, gymnasium, stage, locker rooms, kitchen, cafeteria, and administrative areas.

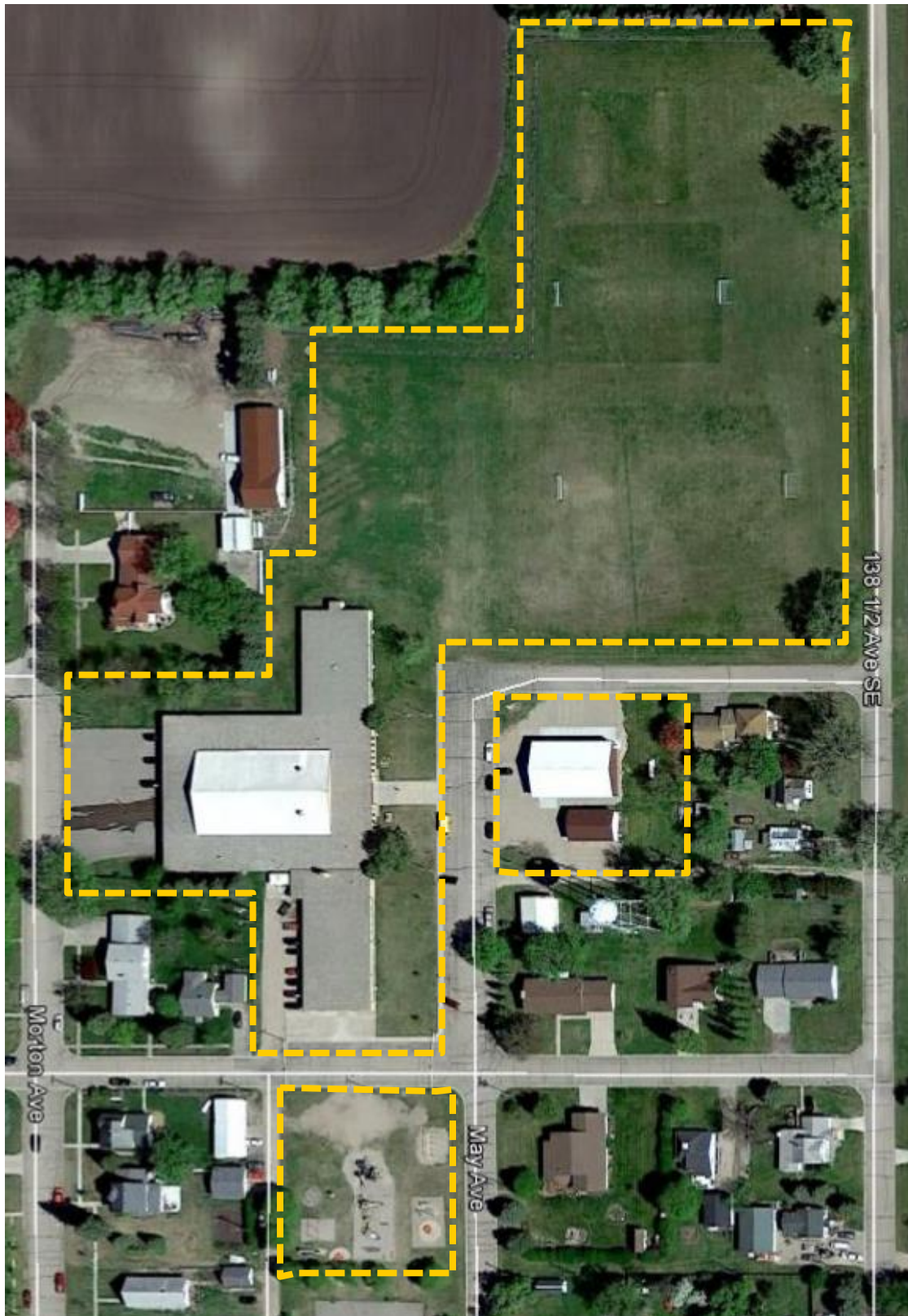
No significant building renovations have occurred. Some improvements projects have taken place such as: Updates to the fire alarm system, access control, window replacement, and converting the shop to a weight room.

The building currently functions as the elementary school with a total of 41,980sf. There are 16 classrooms (including music), a library, gymnasium, stage, locker rooms, administrative areas, and a weight room.



SCHOOL DISTRICT PROPERTY - PAGE

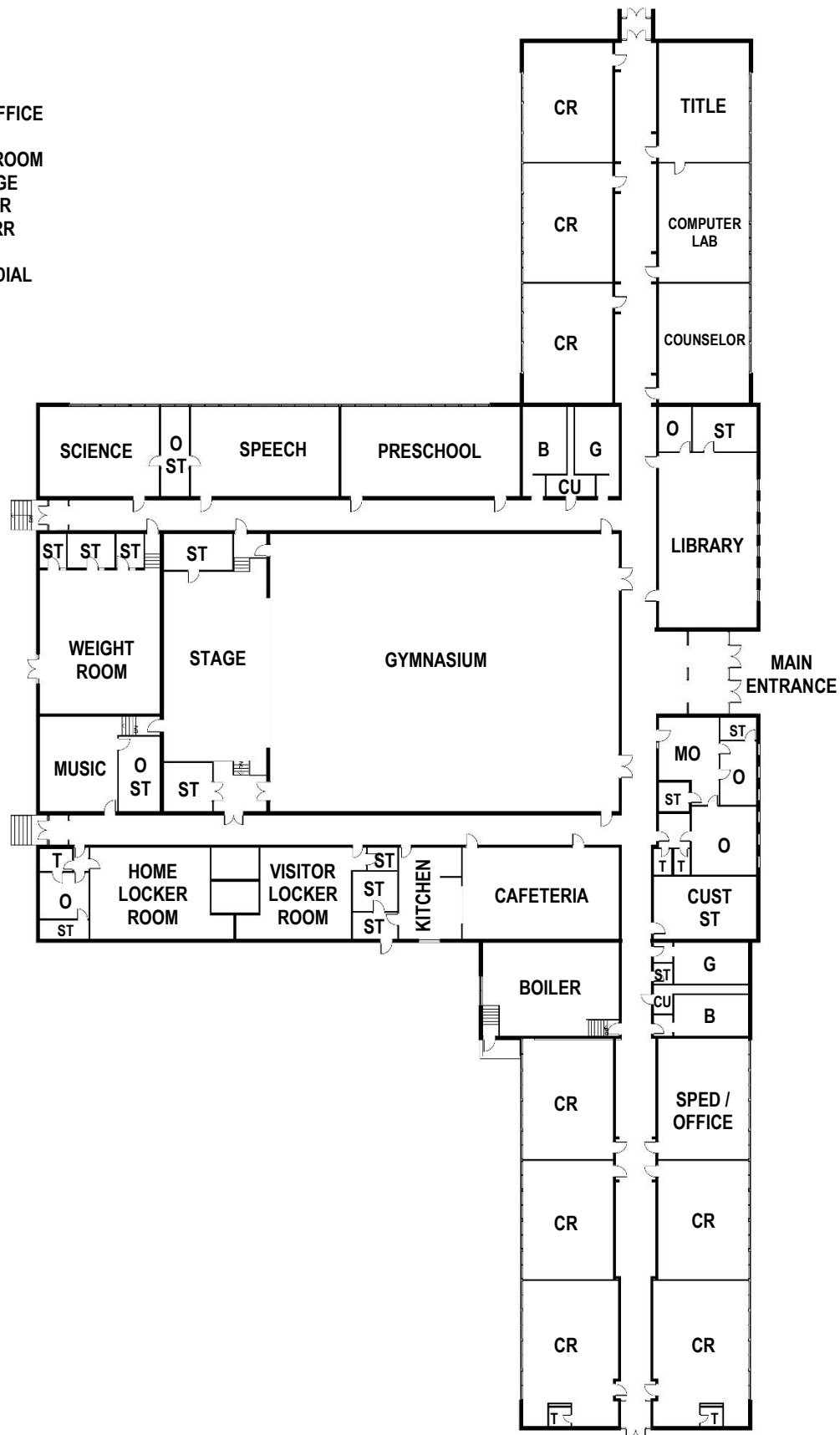
Dashed line represents approximate outline of property owned by the school district.
Source: Cass County GIS Link (<http://gisweb.casscountynynd.gov/jsfe/index.aspx>)



CURRENT FLOOR PLAN – PAGE FACILITY

LEGEND:

MO	MAIN OFFICE
O	OFFICE
CR	CLASSROOM
ST	STORAGE
B	BOYS RR
G	GIRLS RR
T	TOILET
CU	CUSTODIAL



MAINTENANCE & STAFF FEEDBACK

HOPE FACILITY

Throughout our assessment process, several informal conversations with maintenance staff, teachers, and administration help our team get a better understanding of how the school operates including any pain points and things that work well. The following is a summary of the feedback received.

MAINTENANCE

- More reactive than proactive.

SITE

- Parking lot has poor drainage from gravel surface / grading.
- ADA access to building is not code compliant

ARCHITECTURAL

- Lack of secure entrance.
- Building/Classroom storage is minimal.
- No access to roof from inside building.
- Perform comprehensive roof assessment (weather dependent).

HVAC

- Fuel oil boiler burners are approximately 3 years-old.
 - New fuel oil burners are served by digital controls.
- Electric boiler provides backup to fuel oil boilers.
 - Parts are obsolete and service for electric boiler.
- Nearly all mechanical controls are pneumatic type (compressed air).
- Piping insulation in the tunnels is believed to contain asbestos which has been “capped” or covered.
- Air filtration unit in Wood Shop does not work.
- Recently all heat was lost on the west side of the building due to a failed valve.
- Welding booths do not have welding fumes exhausted.

PLUMBING

- Valves have lime build-up causing them to not function properly.
- Piping insulation in the tunnels contains asbestos which has been “capped” or covered.
- Underfloor plumbing at the Ag-Ed Shop is plugged and cannot be jet-cleaned. The sink is being piped to a nearby drain.
- There are “seasonal” issues with the sanitary sewer system.

ELECTRICAL

- Existing telecommunications network is adequate.
- Many clocks have been altered to be battery powered, but no longer synchronized
- Exterior electrical service entrance rusting and unattractive

ARCHITECTURAL ASSESSMENT

HOPE FACILITY

Interior and exterior areas of the building were toured in order to document the current conditions. Several deficiencies were identified during our initial walk-through and subsequent review of plans, photos, and staff discussions. This section documents items that should be considered during any future building improvement projects, some of which may be required to be addressed during any large-scale remodeling projects.

The elements reviewed in this section include:

- Site
- Roof
- Exterior Masonry
- Exterior Doors
- Exterior Windows
- Exterior Joint Sealant
- Structural Integrity
- Interior Walls
- Interior Ceilings
- Interior Floors
- Interior Doors
- Casework, Visual Display Boards
- Classroom Furniture
- Restrooms/Locker Rooms
- Building Code Review
- Accessibility Review
- Hazardous Materials
- Safety / Security

SITE CONDITIONS



Site parking, drive, sidewalks



Deteriorated sidewalk



Parking is not ADA compliant

- The gravel parking lot to the west of the building appears adequate for normal daily use. It also appears adequate for additional parking required for large school activities.
 - Concerns about poor drainage in the parking area were noted. Consideration to paving part of the parking lot may solve several issues (drainage, traffic flow, ADA).
- Gravel access roads on the south and east sides of the building provide general convenience parking and access to the building.
- In general, the sidewalks are in average overall condition.
 - Deteriorated surfaces and cracked panels were observed.
 - Building stoops are generally flush with adjacent sidewalks.
 - The north entrance has a step.
- The signed accessible parking outside the main entrance on the west side does not meet ADA guidelines.
 - Deficiencies include improper striping and signage.
 - Deteriorated/inadequate pavement surfaces (gravel, cracking, gaps, elevation changes, lack of detectable warnings at ramp).
 - Inadequate quantity of accessible spaces.
- Some ground settlement was observed around downspouts. Some minor deficiencies related to downspouts and/or splash blocks has caused the settlement as well as surface staining on the masonry.
- The playground equipment north of the school should be evaluated for accessibility.

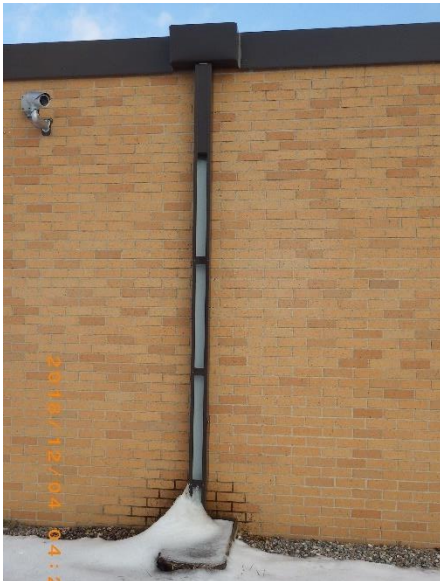
ROOF



EPDM Roof membrane over the Gymnasium



Steel roof deck / abandoned skylight



Roof drainage; Moisture causing stains at brick



Example of mortar joint with hairline crack

- The roof over the original 1961 building consists of a fully adhered EPDM membrane over roof insulation (typically mechanically fastened to the steel roof deck below).
 - The metal roof deck over the single-story building is dead flat with no structural slope.
 - The gymnasium has an arched 4" wood deck.
 - Roof drainage is along the perimeter of the building via tapered roof insulation and metal down spouts. The perimeter flashing and downspouts appear in good condition.
 - There are active roof leaks throughout.
- There is no roof access from inside the building.
- Several skylights were originally located on the roof above the hallways but have since been removed and infilled.
- The roof over the 1980 addition consists of a rock ballasted EPDM system over roof insulation.
 - The metal roof deck is dead flat with no structural slope.
 - Drainage occurs with the use of tapered insulation directed to interior roof drains.
- EPDM roof systems generally have a life expectancy of 20-25 years depending on the membrane thickness, roof warranty, and by performing annual inspections and maintenance.
 - No roof cores were taken during the initial assessment to identify thickness of insulation or the potential presence of older roof systems that may have been covered.
 - No known information was found indicating when the roof membrane and insulation was replaced last.

EXTERIOR ENVELOPE / MASONRY

- The exterior wall construction is comprised of brick veneer on the exterior and painted concrete masonry units (CMU) on the interior. Original drawings indicate no cavity insulation exists at the 1961 building while the 1980 addition has 2" rigid cavity insulation.
- Stucco soffits above the entrances are in average condition. Some hairline cracking was observed.
- The original louvers providing fresh air to the building are blanked off with metal covers.
- Staining/discoloration of mortar was observed on the north exposure. It was also observed around the downspouts on all sides.
- The CMU foundation at the greenhouse is not painted. Surface staining was observed, as well as some deterioration of the joints.
- Selective tuck-pointing at the exterior walls is needed. Some mortar joints need repaired as a result of expansion/contraction, lack of control joints, and deterioration from moisture/normal wearing.
 - In general, the life-span of mortar varies due to exposure conditions, and mortar materials, but can typically be expected to last over 25 years to upwards of 50 years or more.



Aluminum entrance door with plaster soffit



Hollow metal frame/door with rust and faded paint



Aluminum window with insulated glazing



Deteriorated sealant at masonry control joint

EXTERIOR DOORS

- Exterior doors and frames at the four primary entrances consist of an aluminum framed storefront system with a clear anodized finish and insulated glazing.
 - Aluminum entrances systems all appeared in good condition.
 - Code compliant panic bars were observed.
 - Access control card readers were observed.
 - A video intercom system for building access was observed.
 - An ADA door operator was located at the main entrance.
 - The doors are all easily identified with vinyl lettering.
 - Interior vestibule doors were not installed. These are required by the International Energy Conservation Code (IECC) to help minimize air-infiltration into the building.
- The overhead garage door at the shop appeared to be the original door and was in average condition. Weather-stripping should be replaced.
- Hollow metal doors/frames with un-insulated glazing were observed at 2 locations on the south side of the building (classroom & shop).
 - The paint finish on these doors/frames was observed to be faded and chalking with some rust. They should be routinely repainted, along with all exposed exterior metals.
- Weather-stripping should be evaluated and repaired at all doors on an annual basis.

EXTERIOR WINDOWS

- Exterior windows consist of an aluminum framed storefront system with a clear anodized finish and insulated glazing/insulated panels. Classrooms have an 1-2 operable windows with screens.
 - Windows are good overall condition. Comments were made about some of the windows leaking. See “exterior sealant” for related comments.
- The boiler room has a louver with deteriorated paint finish.
- The exterior wall/windows have marble sills and are in good condition.
- The vertical window blinds are in good condition but have a dated appearance.

EXTERIOR SEALANT

- Joint sealants around the building are showing signs of deterioration.
 - The joint sealant at select masonry controls joints, where masonry abuts stucco, and around exterior louvers/building penetrations is starting to deteriorate and crack.
 - Joint sealant at the control joints below the windows is missing entirely, exposing the wall cavity to moisture, air infiltration, insects and could cause damage if they are not sealed.



Aluminum window with missing sealant under vertical framing; control joint below window with no mortar or sealant



Example of painted CMU walls



Discolored 2x4 ATC ceiling tile and grid



2x4 ATC ceiling tile and grid at classroom.



Various styles of ceiling tiles in the same room

- Joint sealant at the aluminum storefront windows and doors is in good condition. Some select locations were missing sealant along the bottom of the vertical framing members.
- The expected useful life of joint sealants is 10-20 years depending on the type used and the environmental conditions in which it is exposed. Many of the joint sealants have exceeded their expected useful life and should be replaced entirely to prevent future moisture and air infiltration.

STRUCTURAL INTEGRITY

- A general review of the building structure was performed, and no significant deficiencies or concerns were observed.
- The building has concrete foundations and masonry walls.
- The floor system is slab-on-grade with a perimeter tunnel system.
- The 1961 and 1980 buildings have steel joist and steel roof decks.
- The gymnasium has glue-laminated wood trusses with a 4" thick structural wood deck.

INTERIOR WALLS

- Interior walls consist mostly of painted CMU with 4" tall glazed CMU wall base. The walls typically have a painted finish.
 - Paint in select areas is original or in poor condition
- A few walls between classrooms have a plaster finish over the CMU (Science and Business). The plaster should be tested for asbestos as some older plaster systems are known to have asbestos.
- A few interior walls have been added and consist of stud framing with painted drywall.
- The recently renovated FACS room has furred out walls consisting a metal studs and painted drywall.

INTERIOR CEILINGS

- The ceilings throughout corridors and classrooms are typically a 2'x4' suspended acoustical tile ceiling (ATC) with metal grid. Select locations have a 2'x2' grid and tile.
 - The ceilings tiles are in average to poor condition. The ceiling tiles are starting to sag and have stains/scuffs/damage.
 - Ceiling tiles typically have an expected useful life of around 20-30 years. The grid can last much longer but is subject to discoloring and minor damage.
 - Replacement of sagging, stained, or damaged tiles may be considered for future routine maintenance.
 - When the tiles are replaced, consideration should be given to convert the ceilings with a 2'x4' metal grid to a 2'x2' metal grid. 2'x2' ceiling tiles tend to perform better over time and exhibit less sagging.



Perforated acoustical metal tile at kitchen



Deteriorated VCT flooring at main corridor



9x9 vinyl asbestos tile (VAT) at stage



Broadloom (roll) carpet



Square tile carpet



Lever style door hardware on original wood door

- The ceiling at the kitchen is a perforated acoustical metal tile. A solid ceiling with a smooth, cleanable surface is recommended such as drywall or suspended ceiling grid and smooth 2x2 tiles.
- Ceilings in various smaller rooms have a smooth plaster ceiling with painted finish. We recommend testing to verify if they contain asbestos.
- Ceilings in select larger areas are exposed finish:
 - Wood decking at gym/stage
 - Exposed steel joist/deck at locker rooms, shop, storage rooms.

INTERIOR FLOORS

- The flooring types vary throughout the building and are usually dictated by the designated use of the space. The types of flooring documented are concrete, carpet (broadloom and square tiles), porcelain tile, vinyl tile, wood, epoxy, etc. The wall base is typically 4" tall glazed CMU wall base while some rooms have 4" tall rubber base, or no base at all.
 - Vinyl floor tile in the corridors was cracking and shifting. The worst areas where cracking occurred aligned with control joints in the concrete floor.
 - Hard flooring surfaces throughout the 1961 building was originally noted as vinyl asbestos tile (VAT), which is usually 9"x9" in size. Much of this VAT remains in place.
 - Some rooms were observed with vinyl composition tile (VCT) which typically does not contain asbestos is 12"x12" in size.
 - It is not known if the original VAT is still present under the newer floor coverings.
 - Abatement of the VAT floor tiles is not required due to its overall condition, however - it should be considered as part of a plan to eliminate asbestos from the building. As the flooring begins to deteriorate, or a new floor covering is considered, abatement should be performed.
- Several offices and classrooms in the building have been covered with broadloom carpet (rolls) and square tiles, which may have been installed over the original VAT. Carpet color and styles vary from space to space and condition also ranges for poor to average.
 - The life expectancy of carpet is 7 to 15 years if it is well maintained and of good quality. Flooring should be reviewed and replaced during routine building maintenance.
- Flooring at the large restrooms are 12"x12" porcelain tile.
- Flooring at the gymnasium is wood and it is in good condition.
- The locker rooms have a painted concrete floor.

INTERIOR DOORS

- Most interior doors consist of the original hollow metal frames with solid-core wood doors. Several classrooms doors have been changed to an aluminum frame with the original wood doors reinstalled.
 - The hollow metal frames and doors are in average condition. Routine painting should be performed.
 - The aluminum frames are in good condition.



Original wood door with louver

- The solid-core wood doors appear to be original and are in average condition. Various types of wear/tear and damage was observed.
- Many of the doors also contain louvers, which are not allowed under current building codes. Replacement of the doors should be considered with an upgrade project.
- Most of the door hardware throughout the building has lever style door handles, which is ADA compliant.
- Several doors throughout the building are less than 3'-0" wide, which may be an issue with ADA guidelines.
- Potential code deficiencies include corridor doors with louvers, non-rated corridor doors, corridor doors without closers, and doors that open entirely into the corridor. These items are typically not allowed by code and may require improvements with future building improvements.



Original casework with pegboard doors and items stored above tall cabinets

CASEWORK, VISUAL DISPLAY BOARDS, AND FURNITURE

- Many classrooms were observed with the original casework still in-use. The condition of the casework was poor, and they do not provide enough storage.
 - The science rooms and FACS have been recently renovated and the casework appears adequate and in excellent condition.
- Visual display boards (marker boards and tack boards) vary in style and condition throughout the building.
 - Corridors have very little tackable display rails and/boards. Materials were observed taped to the walls.
 - Classrooms have markerboard writing surfaces. In most instances, the marker board has been overlaid on the original chalk board. The surfaces are very poor and discolored.
 - We recommend testing to verify if the chalkboards and/or glue contain asbestos.
 - Smartboards cover portions of the marker boards.
 - There appears to be adequate tack boards in the classrooms.
- Classroom furniture varies throughout the building, but most of the rooms have desk/chair combinations. Styles and colors of the furniture varies.
 - Consider new classroom furniture to improve flexibility, small grouping, and enhanced teaching/learning opportunities.
- Corridor lockers are typically 12" wide, 15" deep and 6' tall.
 - Two different styles of locker were observed. They appear to be in good condition.
- Kitchen Equipment
 - Staff reported that everything is adequate.
 - Observations were that some of the storage/appliances were residential grade.
 - The walk-in cooler & freezer are old and should be evaluated.



Markerboard installed over original chalkboards. Ghosting on surface observed.



New casework at science.



Typical restroom



Locker room



Staff restroom is not ADA compliant



Corridor with folding gate



Corridor width restricted to 46"



No panic hardware at cafeteria

RESTROOMS / LOCKER ROOM

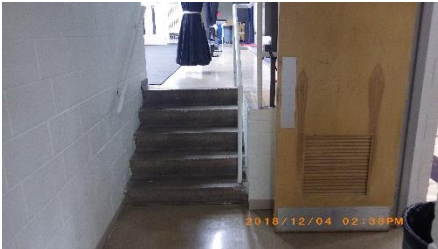
- The plumbing fixtures in the restrooms appear to be in working condition.
 - Style of fixtures and faucets vary throughout.
 - Some sinks are missing the plastic guard on the waste piping.
 - Toilet and urinals are both manually and automatically operated. Sinks and bathrooms accessories (soap and towel dispensers) are manually operated.
 - Toilet rooms in select classrooms are not in working order.
 - The quantity of fixtures appears adequate given the number of building occupants (students and staff).
- The toilet partitions are HDPE solid plastic in good overall condition.
- The locker rooms are in average to below-average condition.
 - The girl's locker room has the original ventilated steel lockers.
 - The boy's locker room has open faced wood lockers.
 - The painted floor finish is deteriorating.
 - The size and layout appear to be adequate.
 - Equipment storage appears to be somewhat limited, evidenced by the storage room built inside the girl's locker room.
 - Plumbing fixtures do not meet ADA requirements.
- The restrooms and locker rooms generally do not meet ADA accessibility standards – which is common for buildings constructed prior before 1992. Common deficiencies include the entrance door width, stall width, fixture height, lack of grab bars, shower stalls, and the required clear floor space around doors and fixtures.

BUILDING CODE REVIEW

- The building code review addresses readily visible items that may be non-compliant within the building. This review does not include specifics due to the extensive amount of time that is required to review the code, measure the building elements to demonstrate compliance or non-compliance, and assess areas that pose life safety concerns. The 2015 IBC (International Building Code) is currently adopted by the State of North Dakota. When undertaking a major building renovation, or addition – full compliance with the most current adopted code is typically required within the modified areas. Improvements to correct deficiencies are sometimes required in other unrelated building areas that have been allowed during previous fire marshal inspections.
- Readily observed non-compliant or potentially non-compliant issues were minimal and include:
 - No fire sprinkler system observed.
 - Existing doors swing into the corridor.
 - Lack of door closers at all corridor/classroom doors.
 - Door stops, propped open doors are not allowed.
 - Extension cords / power strips observed.
 - Wood framed walls observed.
 - Lack of panic hardware in assembly areas and classrooms exceeding 1,000sf (Cafeteria, Ag-Ed, Music, Library).
 - Accordion folding gates at corridor.

ACCESSIBILITY REVIEW

- A visual review of the facilities was performed to identify non-compliant items related to accessibility standards in accordance with the Americans with Disabilities Act (ADA). This review does not necessarily include all non-compliant items, but common items that were readily visible during the building assessment.
- Non-compliant issues observed include:
 - Element 1 - Parking Spaces
 - Inadequate hard surface parking area*
 - Inadequate number of spaces / van spaces
 - Inadequate access aisle
 - Inadequate striping*
 - Inadequate signage*
 - * Some items exist, but they are not in strict accordance with standard.
 - Element 2 - Accessible Route
 - Wall mounted protruding objects.
 - Changes in level
 - Exterior paving
 - Rough surface
 - Gaps at paving/stoops
 - Step at north stoop/entrance
 - Element 3 – Ramps, Curb Ramps, and Handrails
 - Floor changes greater than 1/2"
 - Element 4 – Entrances and Interior Doors
 - Narrow door opening widths at select locations
 - Push/pull clearance at doors (locker rooms)
 - Element 5 - Restrooms
 - Sign designations
 - Lack of wheelchair accessible compartments
 - Floor clearance around fixtures
 - Lack of grab bars
 - Dispenser locations
 - Exposed pipes
 - Sink faucet handle types
 - Plumbing fixture heights
 - Step at shower areas
 - Element 7 – Stairs and Lifts
 - Lift / Ramp access to the stage
 - Element 8 – Communication Elements
 - Room signage
 - Element 9 – Drinking Fountains
 - Bi-Level drinking fountains



Stairs up to stage



Toilet and stall is not ADA compliant



Door widths less than 36" wide



Clear area / pull space at door less than 12"



Room signage is not ADA compliant



Vinyl Asbestos Tile



Asbestos Pipe Elbows



Glue pucks on wall may have asbestos



Signage & video-intercom at main entry



Main office is not near main entrance



Video surveillance

HAZARDOUS MATERIALS

The Asbestos Hazard Emergency Response Act (AHERA) and its regulations require public school districts to:

- Inspect facilities for asbestos-containing building material
- Prepare management plans and to take action to prevent or reduce asbestos hazards

These legal requirements are founded on the principle of “in-place” management of asbestos-containing material. Removal of these materials is not usually necessary unless the material is severely damaged or will be disturbed by a building demolition or renovation project.

Many building materials installed prior to the early 1980s contained asbestos (see list), some of which were observed “in-place” during our inspection:

Cement Wallboard	Pipe Insulation
Cement Siding	Heating and Electrical Ducts
Asphalt Floor Tile	Electrical Panel Partitions
Vinyl Floor Tile	Electrical Cloth
Vinyl Sheet Flooring	Electric Wiring Insulation
Construction Mastics	Chalkboards
Ceiling Tiles and Lay-in Panels	Roofing Felt
Blown-in Insulation	Roll Roofing
Fireproofing Materials	Roof Patching Cement
Taping Compounds (thermal)	Fire Doors
Laboratory Hoods/Table Tops	Caulking/Putties
HVAC Duct Insulation	Adhesives
Boiler Insulation	Joint Compounds

A full building survey should be performed prior to moving forward with any major renovation or demolition project.

SAFETY / SECURITY

- Door hardware at classrooms is lockable from the inside of the room, which is a good security measure.
- Building Identification using vinyl graphics to identify building entrances and rooms with windows are a good safety and wayfinding practice. Building entrances were observed with vinyl numbers.
- A digital surveillance system with recording capabilities was observed. Adding a large TV screen near the main office that actively displays the various cameras is another way to reinforce security in action.
- The video-intercom device at the main entrance is a common way of allowing visitor's access to the building. However, this is more of low-cost and/or quick-fix solution that provides very low-level security.
 - A preferred way to create a secure entrance is to have the office near the main entrance. Depending on the configuration of the office, staff may have line of sight to the parking areas and sidewalks. Additionally, visitors should be required to enter the building through a secure, access-controlled vestibule. Once in the vestibule, visitors should be “buzzed” directly into the main office and check-in.

MECHANICAL / PLUMBING ASSESSMENT

HOPE FACILITY

The mechanical assessment includes a review of the existing building HVAC system and plumbing system.

The following components are discussed in this section:

- Controls
- Boilers
- HVAC System
- HVAC Piping
- Heating and Ventilation Systems
- Plumbing Fixtures
- Sanitary
- Domestic Water
- Fire Protection

CONTROLS

- Combination of pneumatics (i.e. compressed air) and standalone digital thermostats serving Classrooms air conditioning units
 - No Direct Digital Controls (DDC) installed except on newer boiler burners.
 - Pneumatic controls are original to the building.
 - Controls are not accessible from computer for monitoring or adjusting.

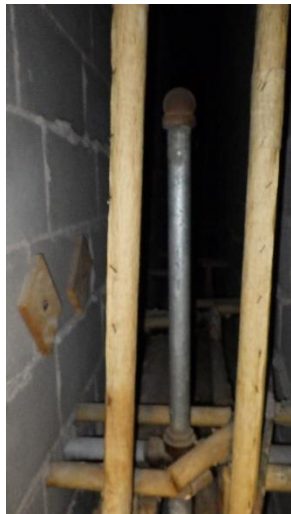
BOILERS

- Heating Water boilers (Quantity 2).
 - Fuel-oil fired.
 - 3,350 MBH heating capacity per boiler.
 - New boiler burners installed approximately 3-years ago.
 - Original boiler casings from 1961.
 - Seepage was observed in the heating water piping.
- Electric Boiler
 - Provides the school with the option to operate the boiler when electrical rates are favorable or as a backup boiler to the primary heating water boilers should one boiler fail.
- Heat Exchanger
 - Original to the building.
 - Corrosion, leaks.

HVAC PIPING

- Hydronic heating piping is placed in a tunnel system which is accessible from boiler room or at access panels in vestibules.
 - The hydronic heating piping is original to building.
 - Hydronic heating piping insulation is known to have asbestos insulation. A project was performed in the past to cover (i.e. encapsulate) the asbestos piping insulation.





HEATING & VENTILATING SYSTEMS

- The classrooms are served by cabinet unit ventilators with heating water coils.
 - Cabinet unit ventilators have been replaced in nearly every classroom with west facing exterior exposure. Classrooms on east exposure of the building have had the ventilation air openings blocked off resulting in no ventilation air to the space. All other cabinet unit heaters are original to the building.
 - Cabinet unit ventilators are built into casework.
 - Direct Expansion (DX) cooling was added approximately 5-years ago to nearly all the classrooms with exterior exposure.
 - Cooling is provided by split-systems air conditioning units with wall-mounted evaporators inside the classroom and the condensers located outside adjacent to the classrooms and controlled with standalone digital thermostats.
 - Remaining HVAC equipment use pneumatics controls.
- Business Manager Office
 - No ventilation air provided.
- Gym
 - Air handling units original to the building.
 - Heating only (via heating water), no cooling.
- Ag-Ed Shop
 - No ventilation, only unit heaters.
 - Air filtration unit is suspended from ceiling (not working).
 - No fume hood/exhaust for welding units.
- Network/ Data Room
 - No cooling.

PLUMBING FIXTURES

- Fixtures are in overall fair condition.
- Newer stainless-steel drinking fountains with water bottle fillers have been installed.
- Newer flush valves on urinals have been installed.

SANITARY

- Galvanized waste and vent piping were observed serving bathrooms.
- The Ag-Ed Shop had exposed waste piping draining into a plastic bucket. The main plumbing sewer out of this room is blocked.

DOMESTIC WATER

- Domestic water is heated by two different methods depending on the time of year.
 - During heating season, the heating boilers provide hot water to a heat exchanger located in a storage tank which provides domestic hot water for building use.
 - During cooling season when the heating boilers are not operating, a fuel-oil fired domestic water heater heats the water and circulates it through the storage tank.
- Domestic water piping consists primarily of copper piping and is original to the building and is in average to fair condition.



FIRE PROTECTION

- There is a fire suppression system, but it only serves the boiler room and custodial closets. It is not known if the system is working, or when it was last tested.

ADDITIONAL CODE AND GUIDELINE ITEMS

- There is currently no ventilation air being brought into the classrooms on the east exposure as fresh air openings are closed off. The Mechanical Code requires active mechanical ventilation to promote good indoor air quality or natural ventilation with window openings equal to 4% of the room area served.
- If uncovered and implemented into the HVAC system, it is anticipated the current ventilation openings would provide adequate fresh air in to the space.



ELECTRICAL ASSESSMENT

HOPE FACILITY

The electrical assessment includes a review of the existing building electric service, power system, and lighting system.

The following components are discussed in this section:

- Electrical Service
- Power Distribution
- Lighting
- Fire Alarm

ELECTRICAL SERVICE AND POWER DISTRIBUTION

- The electrical service is fed from local utility pole mount transformers. The utility transformers feed a 1200A main distribution switch located in the boiler room at 480/277 volts, 3-phase, 4-wire, and a 1200A switch board in the janitor's room at 208/120 volts, 3-phase, 4-wire.
- The power distribution systems date from the 1960s and 1980s. The switchboards are made by various manufacturers, some of which are no longer in business.
- The condition of the distribution system varies from poor to fair. The equipment is antiquated, but functional. Appears that labels are old/outdated. Several breakers labeled in pencil.
- The branch circuit panels are three-phase, 208/120 volts. The panels are mostly old and in mixed conditions.

LIGHTING

- Lighting consists of linear T8 fluorescent lamps in recessed 4-lamp troffers in the corridors and in the classrooms. LED lighting located in newly renovated FCS classroom.
- The gym is lit by 6 lamp linear fluorescent fixtures.
- The emergency lighting is provided by wall mounted battery pack fixtures.
- The school does not have an emergency generator.

FIRE ALARM

- The fire alarm system is a Simplex system equipped with horns and strobes for notification.
 - Current code requires an emergency voice message system.
- The smoke detector coverage in the corridors is good.
- Fire alarm panel (Simplex 4007) was installed in the past couple years, however the manufacturer has upgraded technology and this panel is now obsolete. While it will perform as intended, the system cannot be expanded without upgrading the panel.





ACCESS CONTROL

- Existing card readers are located at four primary entrances.
- Aiphone video phone is located at the main entrance.
- There are surveillance cameras installed in corridors and near building entrances. Coverage is adequate for size of building.
- Mismatch of camera systems and manufacturers.

MASTER CLOCK

- Existing clock system is being replaced with new wireless GPS system. Existing master clock system is not working properly according to staff.



INTERCOM / PUBLIC ADDRESS

- A speaker system is deployed in the classrooms. The speakers are all existing original devices. There is new head end equipment that is tied into the older speakers.
- Gymnasium doesn't contain any speakers that are connected to the existing school wide PA system.
- Some classrooms are also equipped with a telephone which can be called using an extension number. Existing head end equipment has limited space for the addition of more phones.
 - Ideally, phones should be placed in all occupied rooms.



DATA NETWORK

- The staff reported that the data network was adequate for their needs.
- Existing branch data switches are exposed in existing classroom spaces with no locked door or case. This leaves the potential for tamper with equipment and wiring.
- No dedicated temperature controls for room housing head end equipment.
- There is no cable tray installed in the building.

RECOMMENDATIONS

HOPE FACILITY

The following list of recommendation is based upon the conditions observed and documented. In many cases, the items identified may be corrected through routine maintenance. In other instances, the items may be more significant in cost, complexity, or require coordination with other building systems.

The next step will be to identify and prioritize the recommendations. The list should be evaluated for items the School may wish to perform on their own, through the annual operating budget, or by bundling several projects to become part of a larger renovation project.

SITE / BUILDING ENVELOPE ARCHITECTURAL / RECOMMENDATIONS

- Provide accessible parking that complies with ADA requirements.
- Repair/replace deteriorated concrete walks from street to main entrance.
- Address grading issues at parking lot.
 - Consider paving part of parking lot to address multiple issues (circulation, drainage, ADA).
- Perform minor grading around downspouts to provide drainage away from building.
- Provide code compliant roof access hatch and ladder.
- Tuckpoint deteriorated mortar joints and cracks in brick masonry.
- Roof maintenance / replacement.
 - Perform comprehensive assessment first.
- Remove/replace joint sealants at masonry control joints, penetrations, stucco
- Repair cracking at exterior plaster soffit. Paint.
- Paint / provide protective covering at CMU foundation for the greenhouse.
- Paint exterior hollow metal doors and frames.
- Replace majority of flooring throughout building.
 - Coordinate with HVAC and Electrical improvements.
- Replace suspended ATC grid and ceilings tiles throughout building.
 - Coordinate with HVAC and Electrical improvements.
- Paint walls.
- Replace casework in classrooms.
- Replace visual display boards in classrooms.
- Replace original wood doors (possibly reuse door cylinders/levers).
- Repaint HM doors/frames.
- Remodel restrooms and locker rooms
 - For compliance with ADA requirements and to replace plumbing.
- Review extent of kitchen equipment.
 - Replacement of storage, equipment, and/or walk-ins expected.
- Provide new room signage / wayfinding signage.
- Add interior vestibule doors.
- Asbestos abatement throughout the building.
 - Complete building survey to determine extent of asbestos containing materials (ACMs).
- Address building code deficiencies.
- New classroom furniture.
- Safe, Secure Entrance through office.
 - Optimal solution will require some re-programming of space.

MECHANICAL RECOMMENDATIONS

- Install HVAC system incorporating water source heat pumps with geothermal heating and cooling.
 - Remove fuel oil fired boilers and all associated piping.
 - Remove electric boiler and all associated piping.
 - Remove heat exchanger and all associated piping.
 - Replace Cabinet Unit Ventilators (CUV) with water source heat pumps.
 - Replacing HVAC piping in tunnels.
- Install Direct Digital Controls on any existing and new HVAC equipment.
- Remove all pneumatic controls.
- Provide proper ventilation air as required to areas which currently do not have ventilation.
- Install a chemical water treatment for HVAC heating water system.
- Replace all corroded plumbing piping, valving, deteriorated insulation and valving.
- Restroom Renovation
 - Replace sinks, toilets, urinals.
 - Install low-flow flush valves on toilets and urinals.
 - Replace plumbing piping and insulation.
- Gym
 - Replace HVAC units
- Replace unit heaters in corridors and vestibules.

ELECTRICAL RECOMMENDATIONS

- Replace the electrical service entrance equipment with new 2000A main switch board to feed existing equipment downstream.
- Replace exterior service equipment and weather head into building.
- Replace electrical panels original to 1961 building.
- Replace “rocker” style switches with standard wall switches.
- Provide additional outlets to reduce reliance on extension cords and power strips.
 - To meet current National Electrical Code requirements, replace existing standard 120-volt receptacles with listed tamper-resistant receptacles.
- Install occupancy sensor and time clock controls to increase energy efficiency.
- Provide dedicated room for data equipment or provide equipment with secured boxes for protection.
- Upgrade all fluorescent lighting to LED fixtures.
 - Include lighting controls, dimmers, and zone controls.
- Add additional telephones to all classrooms and additional occupied spaces.
- Install cable tray for routing of all data cabling throughout school.
- Consider installing access control card readers to additional doors within the building.
- Consider adding audio enhancement equipment to all classrooms.
 - Some systems include a panic button that dials office directly in the event of an emergency. Video recording features are also available to record events in the classroom once the panic button is activated.

MAINTENANCE & STAFF FEEDBACK

PAGE FACILITY

Throughout our assessment process, several informal conversations with maintenance staff, teachers, and administration help our team get a better understanding of how the school operates including any pain points and things that work well. The following is a summary of the feedback received.

MAINTENANCE

- More reactive than proactive

SITE

- Parking
- Playground equipment (ADA and safety)
- Playground location (across street from school)
- Site Circulation
 - Pick-up/drop-off, bus lane, and parking all use same area.

ARCHITECTURAL

- Windows leak
- Building/Classroom storage is minimal.
- No roof access from inside building.
- Frost build-up on exterior aluminum doors
- Lack of secure entrance
- Perform comprehensive roof assessment (weather dependent).

HVAC

- Fuel-oil boiler had burner replaced approximately 3-years ago.
- Ventilation – closed off openings over years, no ventilation.
- Electric boiler electrical panel recently failed. Parts are obsolete.
- Boiler controls recently failed and had to be patched back together to get boiler up and operational.

PLUMBING

- Sewer backups occur near the south end of building.
- Plumbing P-traps dry out.

ELECTRICAL

- Existing data network coverage is adequate
- Have added receptacles, but need more
- Trip circuit breakers from time to time
- Poor data network protection
- Issues with clock system
- Unused old equipment still on walls
- Lack of phones in all occupied rooms
- Gym speakers are not connected to the PA System

ARCHITECTURAL ASSESSMENT

PAGE FACILITY



Main entrance, no accessible parking



Overlap of parking, drop-off areas



Uneven pavement at main entrance



Playground across the street from school



Walk-in freezer outside kitchen

Interior and exterior areas of the building were toured in order to document the current conditions. Several deficiencies were identified during our initial walk-through and subsequent review of plans, photos, and staff discussions. This section documents items that should be considered during any future building improvement projects, some of which may be required to be addressed during any large-scale remodeling projects.

The elements reviewed in this section include:

- Site
- Roof
- Exterior Masonry
- Exterior Doors
- Exterior Windows
- Exterior Joint Sealant
- Structural Integrity
- Interior Walls
- Interior Ceilings
- Interior Floors
- Interior Doors
- Casework, Visual Display Boards
- Classroom Furniture
- Restrooms/Locker Rooms
- Building Code Review
- Accessibility Review
- Hazardous Materials
- Safety / Security

SITE CONDITIONS

- Asphalt parking areas are located on the west side of the building and along May Avenue on the east.
- Gravel parking areas are located southwest of the building and around the bus barn to the east.
- Parking lots and on-street parking appear adequate for normal daily use. Parking required for large school activities is primarily limited to available on-street parking.
- Bus drop-off and visitor parking on May Avenue overlap the same area.
 - Segregating these activities are ideal.
- In general, the sidewalks are in average-poor overall condition.
 - Deteriorated surfaces and cracked panels were observed.
 - Vertical and horizontal shifting of the concrete sidewalks was observed.
- There are no accessible parking spaces.
- 6th Street to the south is closed (via gates) during the school day to allow safe access to the playground across the street.
 - There is no accessible path to the playground.
 - Playground equipment should be evaluated for accessibility.
- Some ground settlement was observed around the building perimeter and near downspouts.
 - Minor deficiencies related to downspouts and/or splash blocks has caused the settlement as well as surface staining on the masonry.



Ballasted EPDM roof



Plastic singly-ply roof membrane over gym



Peeling paint at wood beams and deck



Rust at louver, deteriorating sealant at roof



Downspout at roof edge with staining on brick



Fiber board above windows

ROOF

- The roof portions of the 1954 and 1960 buildings consists of a rock ballasted 60-mil EPDM system over roof insulation.
 - The roof deck is 2" tongue and groove wood and is dead flat with no structural slope.
 - Roof drainage is along the perimeter of the building via tapered roof insulation and metal down spouts. The perimeter flashing and downspouts appear in good condition.
 - There are active roof leaks throughout, evidence by staining on the exposed wood deck.
- The roof over the gymnasium (1960 building) consists of mechanically fastened single ply system (most likely PVC) over roof insulation.
 - The roof deck is 2" tongue and groove wood and is sloped.
 - Roof drainage flows over the perimeter flashing of north and south eaves. The perimeter flashing and downspouts appear in good condition.
- Several skylights were originally located on the roof above the hallways but have since been removed and infilled. The plastic lens on the inside of the building was abandoned in place in the wood ceilings.
- The exposed, painted wood beams and trim under the gymnasium overhang is peeling and deteriorated. There are a few pieces of wood trim that are loose and or missing.
 - Wood trim should be repaired/replaced.
 - Exposed wood materials should be prepped and painted.
- The painted finish on louvers at the upper gymnasium is deteriorated.
- EPDM roof systems generally have a life expectancy of 20-25 years depending on the membrane thickness, roof warranty, and by performing annual inspections and maintenance.
 - No roof cores were taken during the initial assessment to identify thickness of insulation or the potential presence of older roof systems that may have been covered.
 - No known information was found indicating when the roof membrane and insulation was replaced last.

EXTERIOR ENVELOPE / MASONRY

- The exterior wall construction is comprised of brick veneer on the exterior and painted concrete masonry units (CMU) on the interior. Original drawings indicate no cavity insulation exists at the 1954 building or the 1960 addition.
- Metal soffit panels at the south entrances appear in good condition.
- Textured fiber boards are located above the classroom windows (over the original glass block). They are starting to crack and deteriorate.
- On the 1960 addition, the louvers providing fresh air to the building were blanked off with painted wood. We recommend infilling with masonry or covering with a sheet metal product if they are to remain abandoned.



Typical condition of brick and mortar

- Staining/discoloration of mortar was observed on the north exposure. It was also observed around the downspouts on all sides.
- Selective tuck-pointing at the exterior walls is needed. Some mortar joints need repaired as a result of expansion/contraction, lack of control joints, and deterioration from moisture/normal wearing.
 - In general, the life-span of mortar varies due to exposure conditions, and mortar materials, but can typically be expected to last over 25 years to upwards of 50 years or more.

EXTERIOR DOORS



Rusted hinge at aluminum entrance door



Condensation on interior side of aluminum

- Exterior doors and frames at six entrances consist of aluminum framed storefront systems with a bronze anodized finish and insulated glazing.
 - The aluminum entrances all appear in good condition, however there are concerns and issues:
 - The door hinges at all locations are rusted.
 - Condensation was observed on the west doors. Additional discussions indicate the door frost over completely during extreme cold weather, causing the doors to not function and/or latch properly.
 - Code compliant panic bars were observed.
 - Access control card readers were observed.
 - A video intercom system for building access was observed.
 - An ADA door operator was located at the main entrance.
 - The doors are all easily identified with vinyl lettering.
 - Interior vestibule doors are missing from several locations. These are required by the International Energy Conservation Code (IECC) to help minimize air-infiltration into the building.
 - At locations where vestibule doors are installed, they are too close to the exterior door and do not meet building code or ADA.
- Hollow metal doors/frames were observed at 2 locations on the southeast side of the building (kitchen and boiler room).
 - The paint finish on these doors/frames was in good condition. The paint finish on the steel lintel above the door frames is peeling.
 - Doors, frames, and lintels should be routinely repainted, along with all exposed exterior metals.
- Weather-stripping should be evaluated and repaired at all doors on an annual basis.



Hollow metal frame & door; peeling paint on lintel

EXTERIOR WINDOWS



Rotted sash at exterior window

- Exterior windows consist of operable, aluminum clad wood windows with insulated glazing. The original drawings indicate that glass block was once located above these windows, which appears to have been abandoned in place and covered with paneling.
 - Sashes and framing at the wood windows are rotted, falling apart. Windows around the entire building should be replaced.



Original steel frame window with broken glazing

- The windows are known to leak.
- The boiler room has the original steel framed window with non-insulated wire glass and louver. The glass is cracked.
 - The window system should be replaced or infilled.
- Interior sides of windows have wood trim/sills and should be replaced with the windows.
- The window blinds are integral with the windows.
 - New blinds will be required.

EXTERIOR SEALANT



Deteriorated joint sealant

- Joint sealants around the building are showing signs of deterioration.
 - The joint sealant at select masonry controls joints, where masonry abuts the wood fascia, and around exterior louvers/building penetrations is starting to deteriorate and crack.
 - Most joint sealant on the exterior of the building should be completely removed and replaced.
- The expected useful life of joint sealants is 10-20 years depending on the type used and the environmental conditions in which it is exposed. Many of the joint sealants have exceeded their expected useful life and should be replaced entirely to prevent future moisture and air infiltration.

STRUCTURAL INTEGRITY



CMU walls and 2x4 ATC ceiling at 1954 corridor

- A general review of the building structure was performed, and no significant deficiencies or concerns were observed.
- The building consists of a concrete foundations and masonry walls.
- The floor system is slab-on-grade with a perimeter tunnel system.
- The 1954 and 1960 buildings have wood glue-laminated trusses a 2" thick tongue and groove (T&G) structural wood deck.

INTERIOR WALLS



Tongue and groove (T&G) ceiling with



Painted T&G ceiling at locker room is stained and discolored from moisture

- Interior walls consist mostly of painted CMU with rubber wall base. The walls are in good overall condition.
 - Paint in select areas is original or in poor condition
- A few interior walls have been added and consist of stud framing with painted drywall.

INTERIOR CEILINGS

- The ceilings throughout corridors, classrooms, and the gymnasium are mostly exposed, 2" T&G wood decking. The structural beams are also exposed.
 - The wood ceilings are in good condition and appearance. Some water staining was observed.
 - The ceilings in the locker room are painted.



12x12 acoustical tile (may have asbestos glue)



12x12 metal acoustical tile



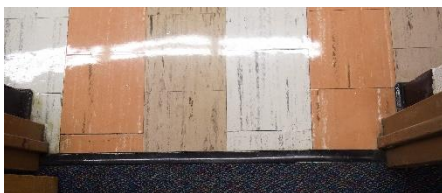
Square tile in classroom abutting broadloom carpet (roll) carpet at the corridor



Broadloom carpet at classroom and corridor



Broadloom carpet at classroom and corridor



Vinyl asbestos tile (VAT) at science room



Painted floor at shower is deteriorated, peeling.

- Restroom ceilings in the 1954 building have painted 12"x12 fiber acoustical tile and suspended (concealed) steel framing. We recommend testing to verify if the tiles or the glue contain asbestos.
- The corridor ceilings in the 1954 building have a 2'x4' suspended acoustical tile ceiling (ATC) with metal grid. A few select locations have a 2'x2' grid and tile.
- The ceiling in the weight room and adjacent storage rooms, kitchen and office bathrooms in the 1960 addition have 12"x12 metal acoustical tile on suspended (concealed) steel framing.
 - The ceilings are generally in good condition but is discolored.
- The showers have plaster ceilings on metal lath and suspended steel framing. We recommend testing to verify if they contain asbestos.
- The kitchen ceiling has a 12" x 12" metal acoustical tile. A solid ceiling with a smooth, cleanable surface is recommended such as drywall or suspended ceiling grid and smooth 2x2 tiles.

INTERIOR FLOORS

- The flooring types vary throughout the building and are usually dictated by the designated use of the space. The types of flooring documented are concrete, carpet (sheets and square tiles), porcelain tile, vinyl tile, wood, epoxy, etc. The wall base is typically 4" tall vinyl base, or no base at all.
 - Hard flooring surfaces throughout the 1954 building and 1961 addition was originally noted as vinyl asbestos tile (VAT), which is usually 9"x9" in size; much of it remains in place.
 - Some rooms were observed with vinyl composition tile (VCT) which typically does not contain asbestos is 12"x12" in size.
 - It is not known if the original VAT was abated, or of it is still present under the newer floor coverings.
 - Abatement of the VAT floor tiles is not required due to its overall condition, however - it should be considered as part of a plan to eliminate asbestos from the building. As the flooring begins to deteriorate, or a new floor covering is considered, abatement should be performed.
- Several offices and classrooms in the building have been covered with carpet, which may have been installed over the original VAT. Carpet color and styles vary from space to space and condition also ranges for poor to average.
 - The life expectancy of carpet is 7 to 15 years if it is well maintained and of good quality. Flooring should be reviewed and replaced during routine building maintenance.
- Flooring at the gymnasium is wood and is in good condition.
- Flooring at the large restrooms are 12"x12" porcelain tile.
- Flooring at the vestibules have a walk-off carpet tile.
- Flooring at the corridors have broadloom (roll) carpeting.
- The locker rooms have a painted concrete floor. The finish at the shower areas is deteriorated (peeling and bubbling).



Typical wood door with lever hardware.



Original casework at classroom



Original casework at exterior wall that is part of the cabinet unit ventilator (CUV)



Markerboard laminated over chalkboard



New student chairs with older desk.

INTERIOR DOORS

- Most interior doors consist of the original hollow metal frames with solid-core wood doors.
 - The hollow metal frames and doors are in average condition. Routine painting should be performed.
 - The solid-core wood doors are original and in average to poor condition. Various forms of minor damage were observed.
 - Many of the doors also contain louvers, which are not allowed under current building codes. Replacement of the doors should be considered with an upgrade project.
 - Most of the door hardware throughout the building has lever style door handles, which is ADA compliant.
 - Several doors throughout the building are less than 3'-0" wide, which may be an issue with ADA guidelines.
- There are two doors at the east end of the gymnasium that are located behind the bleachers and are barricaded shut. The doors should be removed, and the openings infilled.
- Potential code deficiencies include corridor doors with louvers, non-rated corridor doors, corridor doors without closers, and doors that open entirely into the corridor.

CASEWORK, VISUAL DISPLAY BOARDS, AND FURNITURE

- Many classrooms were observed with the original casework still in-use. The casework is in poor condition and do not provide much storage.
 - The mechanical units on the exterior wall have matching built-in shelving. Replacement shelving should be considered with replacement of the HVAC units.
 - Library shelving is too tall for elementary students.
- Visual display boards (marker boards and tack boards) vary in style and condition throughout the building.
 - Classrooms have markerboard writing surfaces. In most instances, the marker board has been overlaid on the original chalk board. The surfaces are very poor and discolored.
 - Smartboards cover portions of the marker boards.
 - There appears to be adequate tack boards in the classrooms.
- Classroom furniture varies throughout the building. Styles and colors of the furniture varies.
 - Some chairs and desk are newer, allowing flexible layouts.
- Corridor lockers only occur in the north corridor at the 1960 addition and are typically 12" wide and 6' tall.
 - The 1954 corridor has locker bases but only coat hooks on the walls. Combustible materials in corridors is a fire hazard.
- Kitchen Equipment
 - Staff reported that everything is adequate.
 - Observations were that some of the storage/appliances were residential grade.
 - The walk-in cooler & freezer are located outside, which is inconvenient.



Stall is not ADA compliant



Typical restroom



Typical locker room



Wood framed wall at storage room



Accordion gate at corridor

RESTROOMS / LOCKER ROOM

- The plumbing fixtures in the restrooms appear to be in working condition.
 - Style of fixtures and faucets vary throughout.
 - Some sinks are missing the plastic guard on the waste piping.
 - Toilet, urinals, sinks and bathrooms accessories (except towel dispensers) are manually operated.
 - The quantity of fixtures appears adequate given the number of building occupants (students and staff).
- The toilet partitions are HDPE solid plastic in good overall condition.
- The locker rooms are in average to average-fair condition.
 - The girl's locker room has the original steel lockers.
 - The boy's locker room has open faced wood lockers.
 - The painted floor finish is in good condition. It is poor condition in the shower areas.
 - The locker room size and layout appear to be adequate.
 - Plumbing fixture do not meet ADA.
 - The individual shower in the girl's locker room does not work.
- The restrooms and locker rooms generally do not meet ADA accessibility standards – which is common for buildings constructed prior before 1992. Common deficiencies include the entrance door width, stall width, fixture height, lack of grab bars, and the required clear floor space around doors and fixtures.

BUILDING CODE REVIEW

- The building code review addresses readily visible items that may be non-compliant within the building. This review does not include specifics due to the extensive amount of time that is required to review the code, measure the building elements to demonstrate compliance or non-compliance, and assess areas that pose life safety concerns. The 2015 IBC (International Building Code) is currently adopted by the State of North Dakota. When undertaking a major building renovation, or addition – full compliance with the most current adopted code is typically required within the modified areas, sometimes including deficiencies in other areas that have been allowed during previous fire marshal inspections.
- Readily observed non-compliant or potentially non-compliant issues were minimal and include:
 - No fire sprinkler system observed.
 - Existing doors swing into the corridor.
 - Lack of door closers at all corridor/classroom doors.
 - Door stops, propped open doors are not allowed.
 - Extension cords / power strips observed.
 - Wood framed walls observed.
 - Lack of panic hardware in assembly areas and classrooms exceeding 1,000sf (Cafeteria, Ag-Ed, Music, Library).
 - Accordion folding gates at corridor.

ACCESSIBILITY REVIEW

- A visual review of the facilities was performed to identify non-compliant items related to accessibility standards in accordance with the Americans with Disabilities Act (ADA). This review does not necessarily include all non-compliant items, but common items that were readily visible during the building assessment.
- Non-compliant issues observed include:
 - Element 1 - Parking Spaces
 - Inadequate number of spaces / van spaces
 - Inadequate cross slopes at existing parking area
 - Inadequate access aisle
 - Inadequate striping
 - Inadequate signage
 - Element 2 - Accessible Route
 - Wall mounted protruding objects
 - Changes in level
 - Exterior paving
 - Gaps at paving/stoops
 - Element 3 – Ramps, Curb Ramps, and Handrails
 - Floor changes greater than 1/2"
 - Element 4 – Entrances and Interior Doors
 - Select door opening widths are too narrow
 - Push/pull clearance at doors
 - Element 5 - Restrooms
 - Sign designations
 - Lack of wheelchair accessible compartments
 - Floor clearance around fixtures
 - Lack of grab bars
 - Dispenser locations
 - Exposed pipes
 - Faucet handle types
 - Plumbing fixture heights (lavs, mirrors)
 - Step at shower areas
 - Element 7 – Stairs and Lifts
 - Lift / Ramp access to the stage and weight room
 - Element 8 – Communication Elements
 - Room signage
 - Element 9 – Drinking Fountains
 - Bi-Level drinking fountains



ADA compliant lever style door hardware



Door opening to restroom is not ADA compliant



Door opening is not ADA compliant



Stairs to stage level



Vestibule doors do have proper floor clearance and not ADA compliant



Pipe elbows, boiler insulation with asbestos



Adhesives holding various finishes in place



Vinyl asbestos tile (VAT)



Coating on underside of sink



Signage & video-intercom at main entry



Opportunity exists for secure entrance with main office near the main entrance

HAZARDOUS MATERIALS

The Asbestos Hazard Emergency Response Act (AHERA) and its regulations require public school districts to:

- Inspect facilities for asbestos-containing building material
- Prepare management plans and to take action to prevent or reduce asbestos hazards

These legal requirements are founded on the principle of “in-place” management of asbestos-containing material. Removal of these materials is not usually necessary unless the material is severely damaged or will be disturbed by a building demolition or renovation project.

Many building materials installed prior to the early 1980s contained asbestos (see list), some of which were observed “in-place” during our inspection:

Cement Wallboard	Pipe Insulation
Cement Siding	Heating and Electrical Ducts
Asphalt Floor Tile	Electrical Panel Partitions
Vinyl Floor Tile	Electrical Cloth
Vinyl Sheet Flooring	Electric Wiring Insulation
Construction Mastics	Chalkboards
Ceiling Tiles and Lay-in Panels	Roofing Felt
Blown-in Insulation	Roll Roofing
Fireproofing Materials	Roof Patching Cement
Taping Compounds (thermal)	Fire Doors
Laboratory Hoods/Table Tops	Caulking/Putties
HVAC Duct Insulation	Adhesives
Boiler Insulation	Joint Compounds

A full building survey should be performed prior to moving forward with any major renovation or demolition project.

SAFETY / SECURITY

- Door hardware at classrooms is lockable from the inside of the room, which is a good security measure.
- Building Identification using vinyl graphics to identify building entrances and rooms with windows are a good safety and wayfinding practice. Building entrances were observed with vinyl numbers.
- A digital surveillance system with recording capabilities was observed. Adding a large TV screen near the main office that actively displays the various cameras is another way to reinforce security in action.
- The video-intercom device at the main entrance is a common way of allowing visitor's access to the building. However, this is more of low-cost and/or quick-fix solution that provides very low-level security.
 - A preferred way to create a secure entrance is to have the office near the main entrance. Depending on the configuration of the office, staff may have line of sight to the parking areas and sidewalks. Additionally, visitors should be required to enter the building through a secure, access-controlled vestibule. Once in the vestibule, visitors should be “buzzed” directly into the main office and check-in.

MECHANICAL / PLUMBING ASSESSMENT

PAGE FACILITY

The mechanical assessment includes a review of the existing building HVAC system and plumbing system.

The following components are discussed in this section:

- Controls
- Boilers
- HVAC System
- HVAC Piping
- Heating and Ventilation Systems
- Plumbing Fixtures
- Sanitary
- Domestic Water
- Fire Protection

CONTROLS

- Pneumatics (i.e. compressed air) controls
 - Pneumatic controls are original to the building.
 - Controls are not accessible from computer for monitoring or adjusting.

BOILERS

- Fuel-oil fired steam boiler
 - 3,280 MBH heating capacity, 15 psi steam.
 - Boiler shell deteriorated with rust.
 - Expansion tanks disconnect from system and not in service.
- Electric steam boiler
 - Provides the school with the option to operate the boiler when electrical rates are favorable or as a backup boiler to the primary heating water boiler should it fail.
- Steam piping in average to poor condition
 - Corrosion, leaks
 - Pipe insulation in very poor condition and “duct-taped” in areas.
- Heat Exchanger
 - Original to the building.
 - Corrosion, leaks

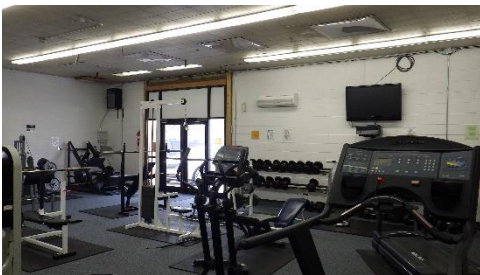
HVAC PIPING

- Steam heating piping is placed in a tunnel system which is accessible from boiler room or at access panels in vestibules.
 - The steam heating piping is original to building.
 - Steam heating piping insulation is thought to have asbestos insulation.



HEATING & VENTILATING SYSTEMS

- Classrooms are served by cabinet unit ventilators with steam coils.
 - Cabinet unit ventilators are built into casework and are original to the building. Classrooms on east exposure of the building have had the ventilation air openings blocked off resulting in no ventilation air to the space.
 - Cooling is provided by split-systems air conditioning units with wall-mounted evaporators inside the classroom and the condensers located outside adjacent to the classrooms and controlled with wireless handheld thermostats.
 - Remaining HVAC equipment use pneumatics controls.
- Gym
 - Air handling units original to the building.
 - Heating only (via steam), no cooling.
- Weight Room
 - No ventilation air provided.
- Network/ Data Room
 - No cooling.



PLUMBING FIXTURES

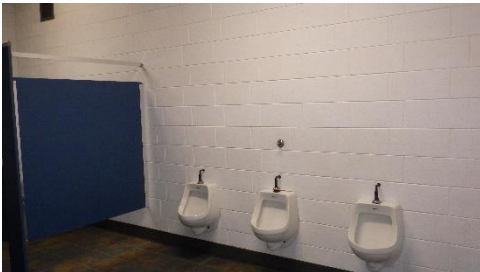
- Fixtures are in overall fair condition.
- A single flush valve operates three fixtures in the boy's restrooms. It has been reported to have issues and does not work very well.
- Newer stainless-steel drinking fountains with water bottle fillers have been installed.

SANITARY

- Galvanized waste and vent piping were observed serving bathrooms.

DOMESTIC WATER

- Domestic water is heated by two different methods depending on the time of year.
 - During heating season, the steam boiler provides steam to a heat exchanger located in a storage tank to produce domestic hot water for building use.
 - During cooling season, when the steam boiler is not operating an electric domestic water heater heats the water and circulates it through the storage tank for building use.
- Domestic water piping consists primarily of copper piping and is original to the building and is in average to fair condition.



FIRE PROTECTION

- There is no fire suppression system.

ADDITIONAL CODE AND GUIDELINE ITEMS

- There is currently no ventilation air being brought into the classrooms on the east exposure as fresh air openings are closed off. The Mechanical Code requires active mechanical ventilation to promote good indoor air quality or natural ventilation with window openings equal to 4% of the room area served.
- If uncovered and implemented into the HVAC system, it is anticipated the current ventilation openings would provide adequate fresh air in to the space.

ELECTRICAL ASSESSMENT

PAGE FACILITY

The electrical assessment includes a review of the existing building electric service, power system, and lighting system.

The following components are discussed in this section:

- Electrical Service
- Power Distribution
- Lighting
- Fire Alarm
- Electronic Systems



ELECTRICAL SERVICE AND POWER DISTRIBUTION

- There are two electrical services to the boiler room. Both are fed from local utility pole mount transformers. Transformers serve a 600A main service disconnect for the 120/240V service. The 277/480V serves only the Boiler through an existing 1200A distribution board.
- Main service disconnect is manufactured by Square D and is rated 600 amps, 240/120 volts, 3-phase, 4-wire. This serves This panel is over 60 years old and is in poor condition.
- The main service disconnect feeds a distribution panel that serves several branch circuit panels, which are configured as 240/120 volt single-phase and three-phase.
- The branch circuit panels are a mismatch of equipment from 3 different manufacturers and vary in their condition. Many devices are obsolete or in poor condition. Many branch circuits appear to require updated labeling and schedules.
- No tamper resistant receptacles installed.
- Limited GFI outlets installed. Some locations are daisy-chained.



LIGHTING

- Lighting consists of linear T8 fluorescent lamps in surface mounted acrylic wraparounds suspended from the structure.
- Corridor lighting is T8 surface mounted acrylic wraparounds.
- The gym is lit by a mix of surface mounted HID, and LED bulbs.
- The stage lighting utilizes cloth insulated wire, and according to staff, not all the lights work anymore.
- Emergency lighting is provided by four battery powered wall mount fixtures in the gym and the corridors. It is likely that the illumination for emergency egress does not meet the code standard.
- The school does not have an emergency generator.



FIRE ALARM

- Existing fire alarm system appears to be good coverage wise for detection and notification.
- Existing fire alarm panel was recently made obsolete by manufacturer.
- Current code requires a fire alarm system equipped with an emergency voice message system and with visual devices (strobes).



ACCESS CONTROL

- Existing card readers at main entrances.
- Aiphone video phone is located at the main entrance.
- There are surveillance cameras installed in the corridors. These cameras are connected to the head end equipment in the telecom closet.
- Mismatch of camera systems and manufacturers.

MASTER CLOCK

- Existing clock system is in the stages of being replaced with new wireless GPS system. Existing master clock system is not working properly according to staff.



INTERCOM / PUBLIC ADDRESS

- A speaker system is deployed in the classrooms. The speakers are all existing original devices. There is new head end equipment that is tied into the older speakers.
- Gymnasium doesn't contain any speakers that are connected to the existing school wide PA system.
- Some classrooms are also equipped with a telephone which can be called using an extension number. Existing head end equipment has limited space for the addition of more phones.



DATA NETWORK

- The data network equipment is housed in a storage room. The space is not secured by a locked door and is exposed to the public. This leaves the potential for tampering with equipment and wiring.
- There is no cable tray installed in the building. All data wire is zip tied to joist or exposed below the ceiling.
- The wireless internet coverage is adequate, but the limited number of access points limits the speed when many devices are connected to the network.
- No dedicated temperature controls for room housing head end equipment.

RECOMMENDATIONS

PAGE FACILITY

The following list of recommendation is based upon the conditions observed and documented. In many cases, the items identified may be corrected through routine maintenance. In other instances, the items may be more significant in cost, complexity, or require coordination with other building systems.

The next step will be to identify and prioritize the recommendations. The list should be evaluated for items the School may wish to perform on their own, through the annual operating budget, or by bundling several projects to become part of a larger renovation project.

SITE / ARCHITECTURAL / BUILDING ENVELOPE RECOMMENDATIONS

- Provide accessible parking that complies with ADA requirements.
- Consider relocating playground to north side of building to avoid street.
 - This could allow for staff parking on the south side of the building and a bus lane.
- Repair/replace deteriorated concrete walks.
- Perform minor grading around downspouts to provide drainage away from building.
- Provide code compliant roof access hatch and ladder.
- Tuckpoint deteriorated mortar joints and cracks in brick masonry.
- Roof maintenance / replacement.
 - Perform comprehensive assessment first.
- Remove/replace joint sealants at masonry control joints and penetrations
- Paint exterior steel lintels.
- Replace majority of flooring throughout building.
 - Coordinate with HVAC and Electrical improvements.
- Replace suspended metal ATC grid and ceilings tiles at restrooms and kitchen.
 - Coordinate with HVAC and Electrical improvements.
- Paint walls.
- Replace casework in classrooms.
- Replace visual display boards in classrooms.
- Replace original wood doors (possibly reuse door levers). Repaint HM frames to remain.
- Repaint HM doors/frames.
- Remodel restrooms and locker rooms
 - For compliance with ADA requirements and to replace plumbing.
- Review extent of kitchen equipment.
 - Replacement of storage, equipment. Consider enclosing walk-in cooler/freezer.
- Provide new room signage / wayfinding signage.
- Asbestos abatement throughout the building.
 - Complete building survey to determine extent of asbestos containing materials (ACMs).
- Address building code deficiencies.
- Safe, Secure Entrance through office.
 - Optimal solution requires minor reworking of the entrance vestibule.

MECHANICAL RECOMMENDATIONS

- Install HVAC system incorporating water source heat pumps with geothermal heating and cooling.
 - Remove fuel oil fired boilers and all associated piping.
 - Remove electric boiler and all associated piping.
 - Remove heat exchanger and all associated piping.

- Replace Cabinet Unit Ventilators with water source heat pumps.
 - Include a four-pipe HVAC piping system to accommodate both heating and cooling.
 - Replacing HVAC piping in trenches.
- Replace unit heaters in corridors and vestibules.
- Install Direct Digital Controls on any existing and new HVAC equipment
 - remove all pneumatic controls
- Provide proper ventilation air as required to areas which currently do not have ventilation.
- Install a chemical water treatment for HVAC heating water system.
- Replace all corroded plumbing piping, valving, deteriorated insulation and valving.
- Restroom Renovation
 - Replace sinks, toilets, urinals.
 - Install low-flow flush valves on toilets and urinals.
 - Replace plumbing piping and insulation.
- Workout Room
 - Provide code required ventilation.
- Gym
 - Replace HVAC units
- Replace unit heaters in corridors and vestibules.

ELECTRICAL RECOMMENDATIONS

- Replace the electrical service entrance equipment with new 1000A main switch board to feed existing equipment downstream.
- Replace circuit breaker panels which are more than 30 years old.
- Replace “rocker” style switches with standard wall switches.
- Provide additional outlets to reduce reliance on extension cords and power strips.
 - To meet current National Electrical Code requirements, replace existing standard 120-volt receptacles with listed tamper-resistant receptacles.
- Upgrade all fluorescent lighting to LED fixtures.
 - Include lighting controls, dimmers, and zone controls.
- Install occupancy sensor and time clock controls to increase energy efficiency.
- Install additional emergency lighting fixtures to comply with building code.
- Reinstall Telecom headend equipment in secured space with temperature controls.
- Install new functional stage lighting to eliminate use of cloth insulated wire.
- Add additional telephones to all classrooms and additional occupied spaces.
- Consider adding cable tray for routing of all data cabling throughout school.
- Consider installing access control card readers to additional doors within the building.
- Consider adding audio enhancement equipment to all classrooms.
 - Some systems include a panic button that dials office directly in the event of an emergency. Video recording features are also available to record events in the classroom once the panic button is activated.