OKOBOJI COMMUNITY SCHOOLS

PIONEERING PATHWAYS FOR EVERY STUDENT

ASSESSMENT REPORT

OKOBOJI CSD

OKOBOJI, IOWA

FEHDESIGN.COM

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INTRODUCTION 01

01 / INTRODUCTION

STATEMENT OF PURPOSE

FEH DESIGN in conjunction with West Plains Engineering has been retained by the Okoboji Community School District to complete the following Project Objectives:

- Conduct a Facility Assessment Study including windows, doors, roofs, mechanical, electrical and plumbing.
- Conduct a Space Planning Study including current conditions, wants, needs and look for opportunities for development of Maker Spaces.
- Review Transportation around each of the facilities, drop off & pickups, and parking.
- Review potential other uses for the Alternative HS building.
- Review the Athletic fields and playgrounds.
- Review security at each of the buildings.
- The District needs a transportation facility, so review potential locations/cost for the building.
- Review impact if the two homes at the High School are removed.
- Engage in discussions with the community during the assessment at various Design Workshops.
- Create a final assessment report for delivery to the School District.

The Facility Assessment Study was conducted for each of the District's five buildings listed below. Additionally, the High School Athletic Stadium was reviewed due to the age of the infrastructure.

- Okoboji High School
- Okoboji Middle School
- Okoboji Elementary School
- District Administration Office
- Alternative High School

The Assessment Team included the following individuals:

FEH DESIGN
Tyler Riley, AIA – Architect
Toi Sullivan, AIA – Architect
Denny Sharp, AIA – Architect

West Plains Engineering
Mike Fisher, P.E. – Engineer
Stuart Oster, P.E. – Engineer

The Architectural/Engineering Team was on-site at each facility various times from April through June, 2017.

Other information for consideration is the Demographics Study conducted by RSP Associates concurrently during the building assessments. This report is available through the District Administration Office.

The District has a Roofing Report of all the facilities that was conducted in 2015 by Mike Petula with RL Craft Commercial Roofing. This report has been included in this document for reference as it pertains to future cost for roof replacements in the future.

Other information provided by the District included the Energy Usage by year from 2008 through 2016, desired classroom size ranges, financial reports by Piper Jaffray, and current bus routes. This information has been included in this report.

EXECUTIVE SUMMARY

The five buildings assessed by the Architectural/Engineering Team covers a period of construction from circa 1929 to 2015. Construction types have changed significantly over that period of time as have teaching methods, curricula, technology, space needs, building codes and expectations. All these factors are contributing to concerns regarding the efficiency, adequacy and suitability of the District facilities to best serve students' needs and provide the best possible educational opportunities for the students.

In our opinion, all the School Districts we serve make decisions to either retain or abandon existing facilities based on carefully studied information that we frequently assist in providing. Many factors are considered.
Most of the educational facilities built in this part of the country are in the era prior to WWII were solid masonry wall construction. Some had concrete (usually pan-joist) floor systems; some had wood floor systems; many had wood framed roof systems.

Many of these that used concrete floor systems are still structurally sound but heating/plumbing systems have been patched and are simply worn out. Electrical systems are sub-standard/functionally obsolete, operating beyond rated capacity and are frequently dangerous. Cooling/ventilation depended on operable windows and/or stack effect of vertical shafts and gravity vents. The windows are generally no longer functional or were replaced during the energy crisis in the 80's with insulating panels and small windows that eliminated both daylight and ventilation.

As a "rule of thumb," if other systems are worn out/obsolete, the "structure" is probably worth about +/-10%. In other words, you would spend 90% of replacement costs to put the building in useable condition. This is before considering any modernizations required to make the building function properly for current program needs or to bring it into compliance with existing building codes and the Americans with Disabilities Act (ADA). By the time those changes are made, the cost is often more than the replacement cost (sometimes considerably more) and a major part of the building with many years of wear on it remains.

Additionally, these buildings usually had no insulation in the exterior wall, relying on the mass of the building to release heat in the winter and absorb heat during the hot months. This generation of buildings also have no vapor barrier in the walls or under the floor slabs, and moisture traveled freely through them. There is generally a desire to improve thermal efficiency, ventilate to meet current codes and air condition these buildings when they are remodeled. Adding insulation to the inside of the exterior walls will change the characteristics of the wall relative to the travel/retention of moisture (not necessarily for the better) and the potential for increased rate of deterioration will likely occur. This potential may suggest foregoing the thermal efficiency and absorbing the resulting higher energy costs.

A typical model for many of these pre-WWII era buildings was 2-1/2 stories above ground, 1/2 story in the ground with a single center stair. It was not uncommon to have floor level changes within each floor. There were/are multiple variations of this model, but none are in compliance with current building codes or ADA and could not be duplicated and occupied as a school today. That does not necessarily mean that the buildings should be abandoned or are unsafe to occupy, but they should be brought up to standard to the extent possible if retained. Okoboji Elementary is an example of this typical model but has multiple stairwells which greatly improves exiting/life safety.

Many older school buildings represent shared history, provide a local identity and provide sentimental attachment to a segment of the community. They may not, however, be of great historical significance or of equal importance to the community as a whole. They may also be functionally obsolete for the purpose originally intended. Others may be functionally obsolete and yet have aesthetic and/or historical significance that suggest preserving them for other uses.

One advantage these buildings typically have for renovation is that the floor-to-floor height is usually quite generous, allowing for the addition of air conditioning ductwork, data systems, etc. Unfortunately, this advantage is often outweighed by the expense associated with building codes, ADA, room sizes, etc. issues.

Schools constructed in the period following WWII were often cavity wall construction, but uninsulated (energy was cheap) and not air conditioned. Since they were not air conditioned and heat was typically provided by steam or hot water boilers piped through perimeter tunnels to radiators, floor-to-floor height was generally very low as an economy measure since ductwork in the ceiling space was not required. This creates a significant challenge for bringing a building up to current standards/expectations. Building codes and ADA issues are typically serious issues in these buildings as well. Several of your buildings generally fit this model.

Educational standards and teaching methods have changed over time and will continue to evolve. Federal mandates and more opportunity/desire for flexible space with larger areas to accommodate the same number of students is required for individualized learning.

Additionally, many studies have shown that the educational environment can have dramatic effects on learning. While many older educational institutions provided adequate environments, they often lacked excitement, natural light, color, comfort and other things students have come to expect today.

While we are proponents of and are actively involved in historic preservation projects, it is our judgment that the decision to retain or replace an educational facility should be based primarily on its perceived ability to efficiently meet current and anticipated educational requirements with consideration given to economics and other factors previously mentioned.

Codes are fluid and in constant flux. Changes occur for various reasons, but in theory are based on new experience, circumstance or knowledge. Changes are generally made in good faith for improved life safety.

The State Fire Marshal's office is the prevailing code authority with jurisdiction over code enforcement for schools and recognizes that most older buildings are not in total compliance. Furthermore, they understand that most probably cannot be brought into compliance (at least at reasonable cost) and picks away at the most offensive items posing threats to life and property hoping to make continual progress.

Subject to some interpretation, the current codes generally require that existing buildings be brought up to current standards if renovations will equal or exceed 50% of the value of the building. In any case, any work done to buildings must meet current codes and ADA standards to the MAXIMUM EXTENT FEASIBLE.

All new buildings must be built to current code requirements and ADA regulations (not in existence when some of yours were built). There is a great deal of difference in both cost and practicality between bringing a building into FULL COMPLIANCE vs. the MAXIMUM EXTENT FEASIBLE in the areas being renovated. The difficulty comes in who determines the 50% value and how it is determined if you are doing major renovation. Additionally, you cannot do a project incrementally in small alterations within three years of each other to avoid the issue.

Toilet fixture count can be a major issue in older buildings as well. Current codes require that the number of toilet fixtures for schools be based on a fully occupied building as calculated for exit requirements. This has little to do with actual occupancy but is based on one occupant/20 square feet of classroom, one/15 square feet of gym floor (plus bleacher seating), etc. assuming every space in the building is occupied. A toilet or urinal and a lavatory (sink) is to be provided for every 50 occupants. There is an added caveat that you cannot have fewer water closets for females than the combined water closet/urinal total for males. Some of your facilities are likely under-fixtured by any standard and converting existing toilet rooms for accessibility will reduce fixture count, so FULL COMPLIANCE in this instance would not be feasible.

We assume that the District is not interested in bringing the existing buildings to full compliance with any proposed alterations, but rather to design the alterations to that standard and provide access to them to the maximum extent feasible. We believe it is reasonable and proper to provide access for persons with disabilities via an accessible path to the facility, so they are able to enter the facility and access primary functions, toilets, etc. if it can be done within reasonable parameters.

Listing every ADA deficiency in each of your buildings is not our intent here. While we will mention a number of general deficiencies in the Code and ADA Issues section of each building, it is our intention to point out significant life-safety issues or perhaps just good practice for the District to consider. It is better to leave the specifics to a later stage of development when there is some direction proposed.

There are potentially inherent problems associated with a complex built in multiple phases over a long time period:

- Some parts of the building wear out while others are quite serviceable
- Efficiency becomes compromised
- Potential for leaks at building junctures is common
- Code/accessibility issues are more difficult to resolve
- Aesthetics can be an issue
- Maintenance is frequently more difficult and expensive
- Mechanical, electrical and emergency systems can be problematical

Security issues are a growing concern in all avenues of life, but particularly with our schools. We do not want to turn them into prisons aesthetically, but we do want to control access and make them as safe as is reasonably possible. Security was not a primary concern when many of our schools were built, they were not designed with security in mind and some are difficult to retrofit. Camera systems, card readers, etc. have greatly improved the potential in these buildings. Security systems will be discussed in the appropriate section, but additional comments may be made in the Architectural Review section on some of the facilities.

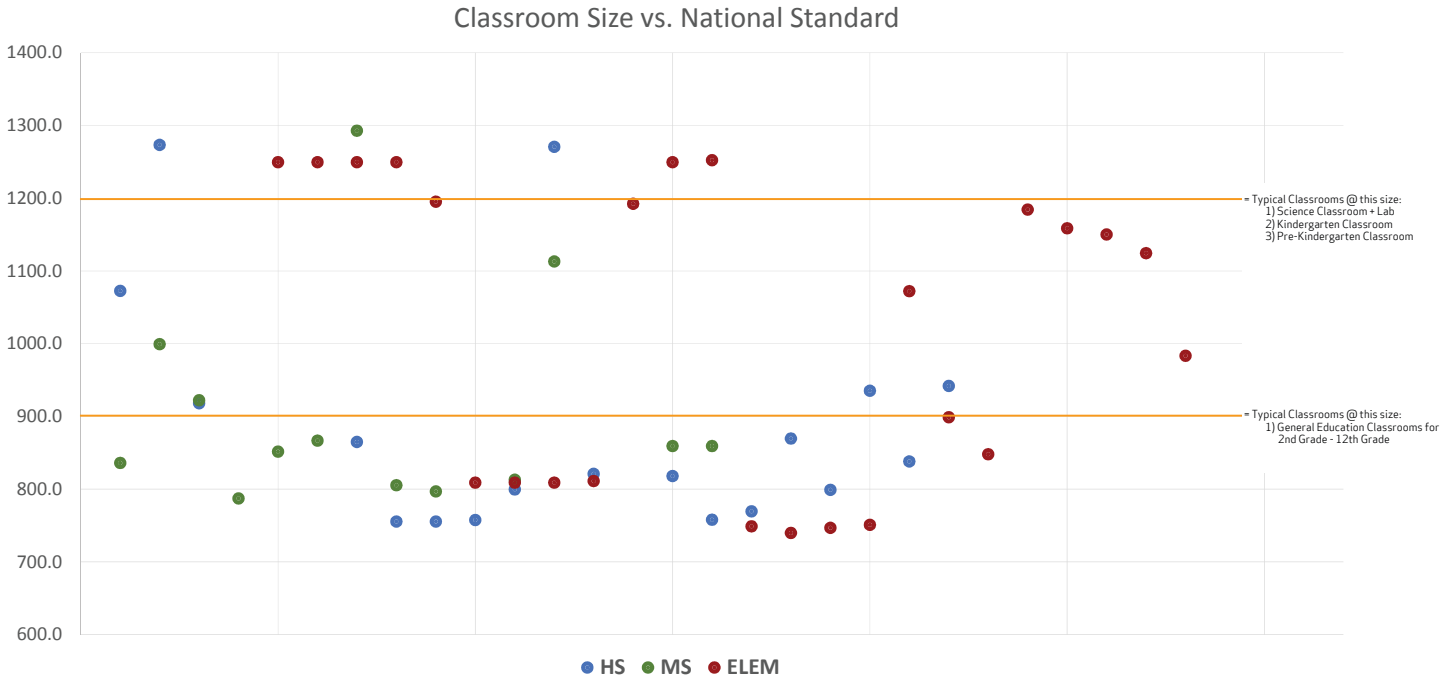
Observations of existing building conditions are somewhat limited without destructive demolition. Accessibility to structural systems is perhaps one of the most limiting. Furring, flooring and room finishes cover most of the structural systems making observations of the overall condition of the systems difficult. Deterioration of structural systems frequently follow deterioration of other systems. For example, where the waterproofing system of the exterior envelope fails, water may enter the building and damage the structural systems and/or finishes. Similarly, joint failure can result in deterioration of structural components. Most of your facilities were observed to have some failed masonry or caulked joints. Instituting a regular joint maintenance program is a relatively inexpensive procedure and can serve to avoid some very expensive repairs down the road.

ARCHITECTURAL REVIEW 02

02 / ARCHITECTURAL REVIEW

CLASSROOM SIZES

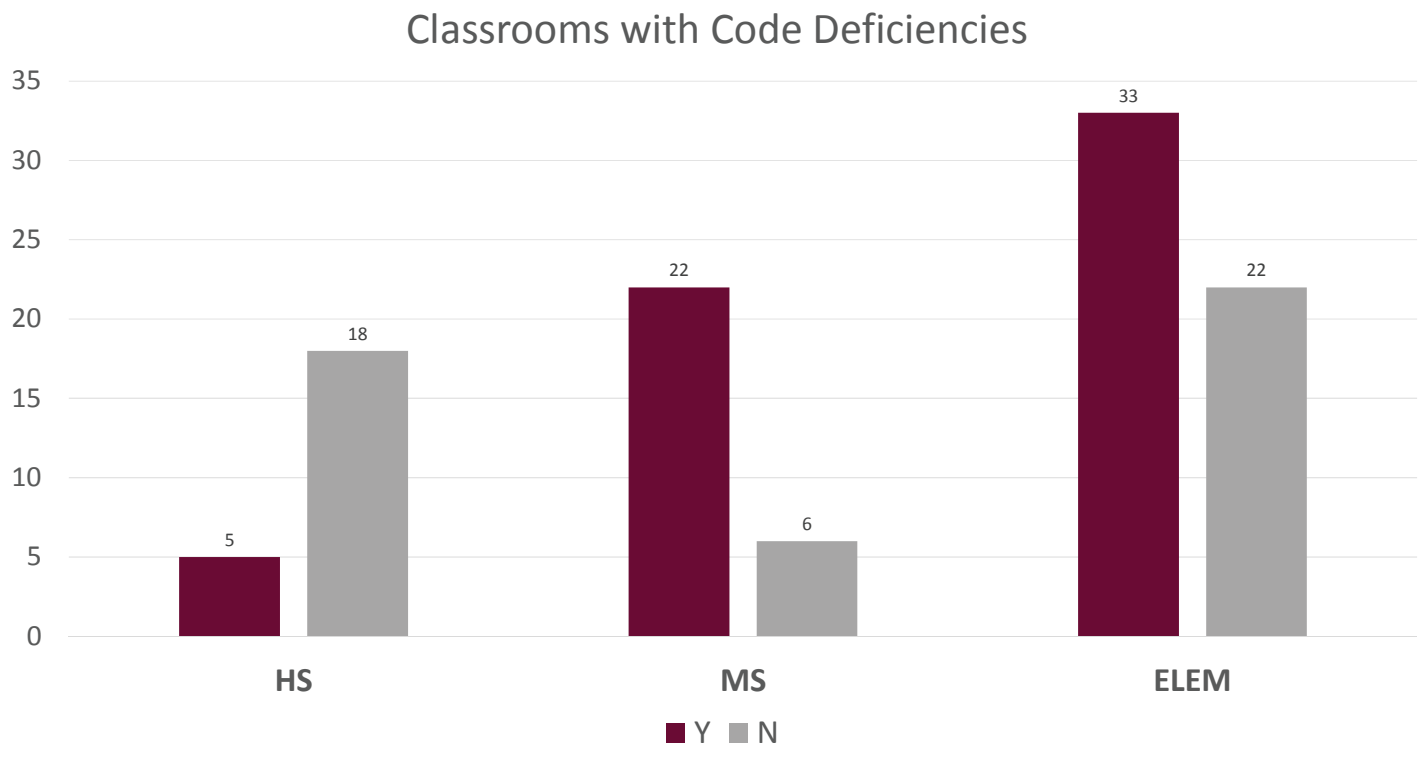
The chart provided below was generated by identifying the size of every classroom within the District and comparing the existing size to national standards for classroom design. The national standard for Pre-K through Kindergarten is a minimum of 1,200 square feet. Second grade through twelfth grade is a minimum of 900 square feet for an average class size of 25 students. Younger grade levels strive to have student levels in the low 20's while older student levels in the classroom may be in the upper 20's. There are certain classrooms that do require more space such as Music, Choir, Band, Art, Home Education, Science Labs, and Industrial Technology for instance. Other rooms may require less space such as reading rooms, Special Education rooms, and auxiliary rooms for AEA and ESL for instance. The chart below only reflects standard classrooms, art classrooms and science labs. It does not include any type of music/choir/band rooms as these rooms do not have a minimum size of room.



CODE DEFICIENCIES

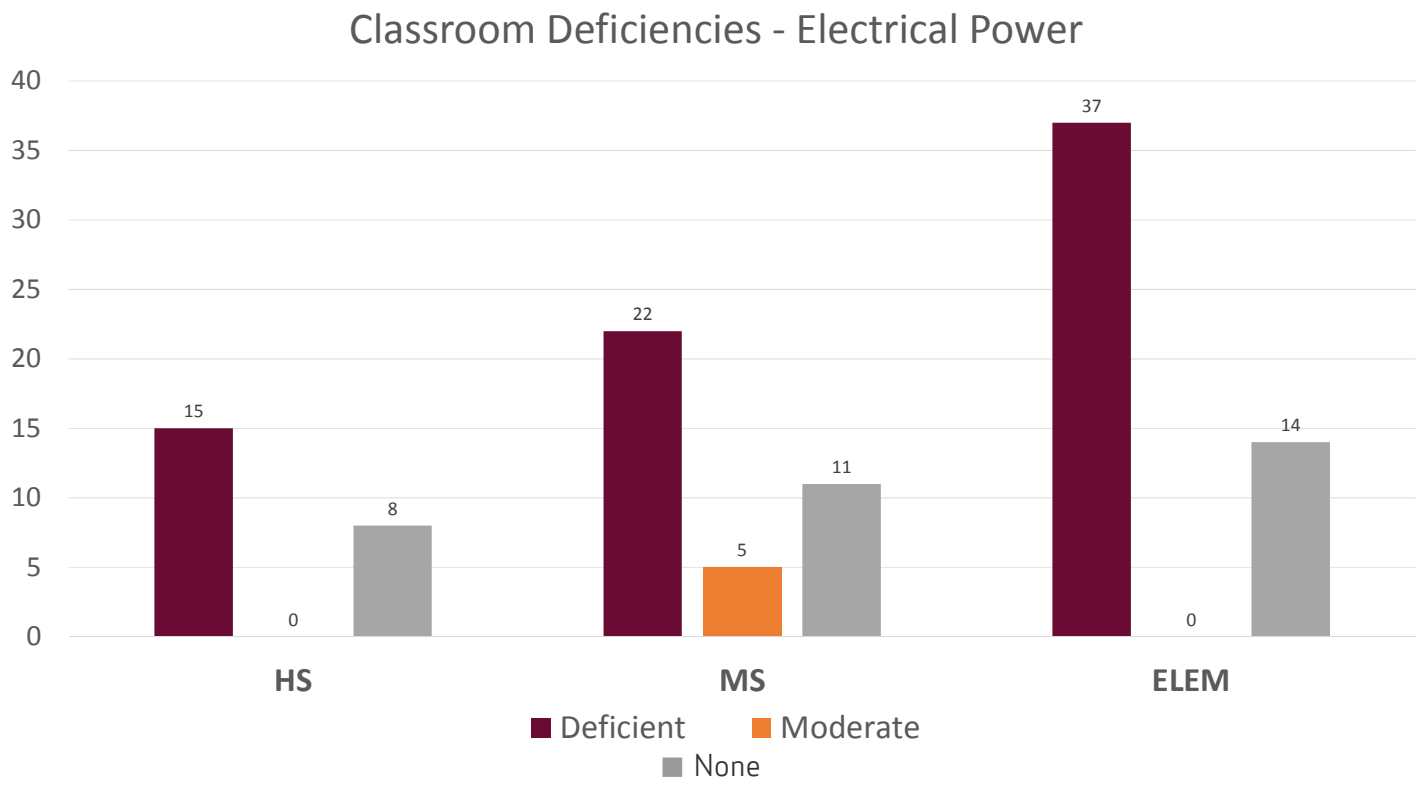
At each building, except the Alternative High School and the new renovations of the High School and Elementary, there are a number of code deficiencies throughout. Primary code deficiencies are a result of the flux in the codes over the years, as noted in the Executive Summary. These issues involve door widths, lack of handrails at stairs and ramps, electrical circuit breaker boxes without proper clear floor space, ADA non-compliance, fire doors held open or lacking proper closers and other issues observed. Some of these items are easily and economically addressable. Others are significantly more difficult.

The chart below represents the three main schools, identifying the quantity of code deficient classrooms compared to classrooms with no code issues. Many of these items can be addressed as the majority involve the incorrect door hardware installed. Other items are more difficult due such as ADA clearances. This report is not to identify every single deficiency and identify cost of each deficiency resolution. The intent of the report was to observe where there are deficiencies to bring general awareness of these issues to the District.



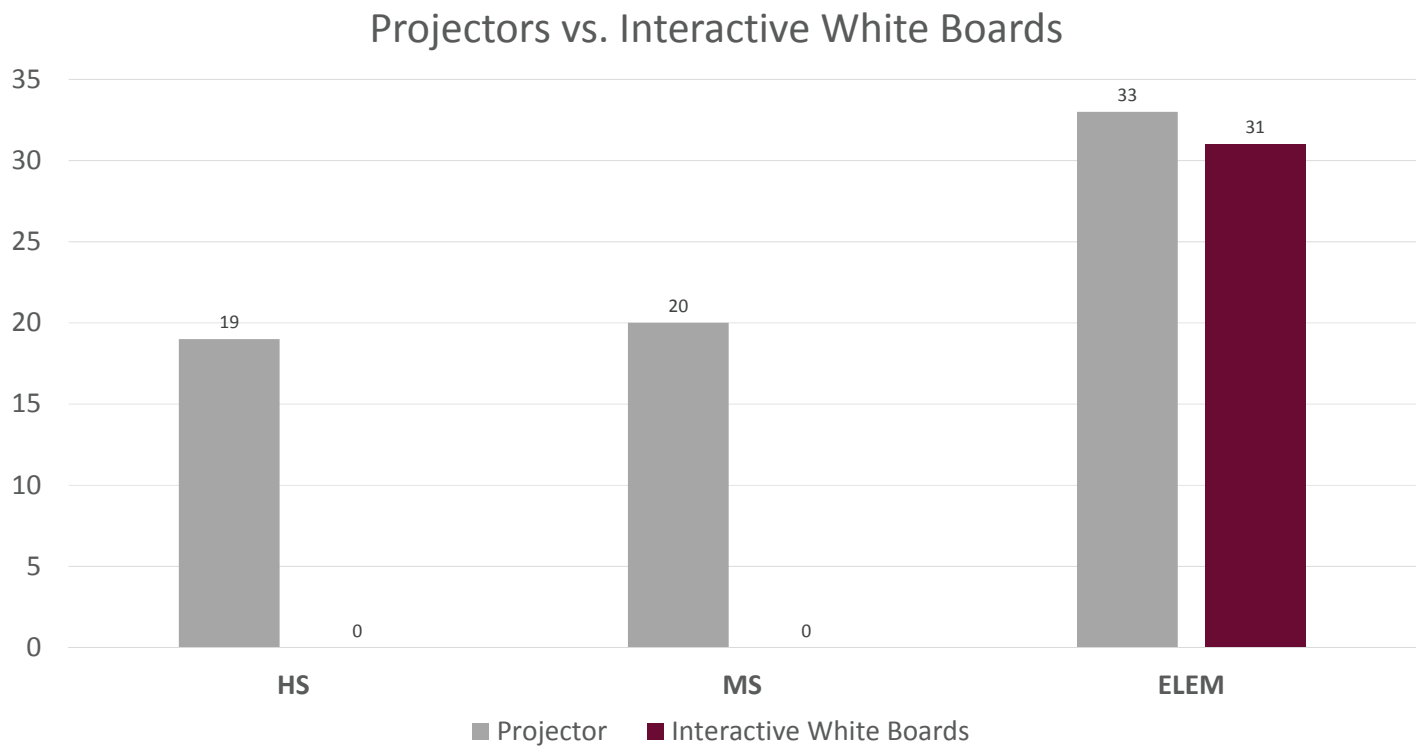
ELECTRICAL DEFICIENCIES

With the ever-increasing demand for technology integration throughout the schools, an issue experienced by all school districts throughout the nation, electrical demand is also then ever increasing. Please review the Electrical Conditions School Assessment later in this report for more information directly related to the electrical systems at each facility. The chart below is to identify, in the Architectural Team's opinion, where classrooms were deficient in available outlets for teacher and staff use. Computer laptops and tablet usage has increased significantly over the past few years, and this applies to all grade levels. Those devices require accessible outlets to allow for the proper recharging of the internal batteries. Additionally, the teachers are utilizing their computers, projectors, interactive white boards, sound systems and overhead image devices. Based on the chart below, it can be observed that all three schools have approximately 50% of the classrooms that are deficient in available electrical outlets for the number of students per room. The elementary is the worst, which is understandable considering it has the oldest section of building within the District. Many of the elementary classrooms in the old section have less than 6 outlets per classroom. Many of the teachers have resorted to power strips which expands the availability but is not a recommended solution. This can be rectified by providing more power to each of the buildings and running new electrical service to each of the classrooms. Based on the construction materials of the classroom floors and walls, these outlets would need to be surface mounted within the classroom. While this improvement is possible with minimal intrusion to the rooms, it can be quite expensive due to the equipment needed for the additional power to the building, along with then needing to bring the electrical systems up to code.



TECHNOLOGY

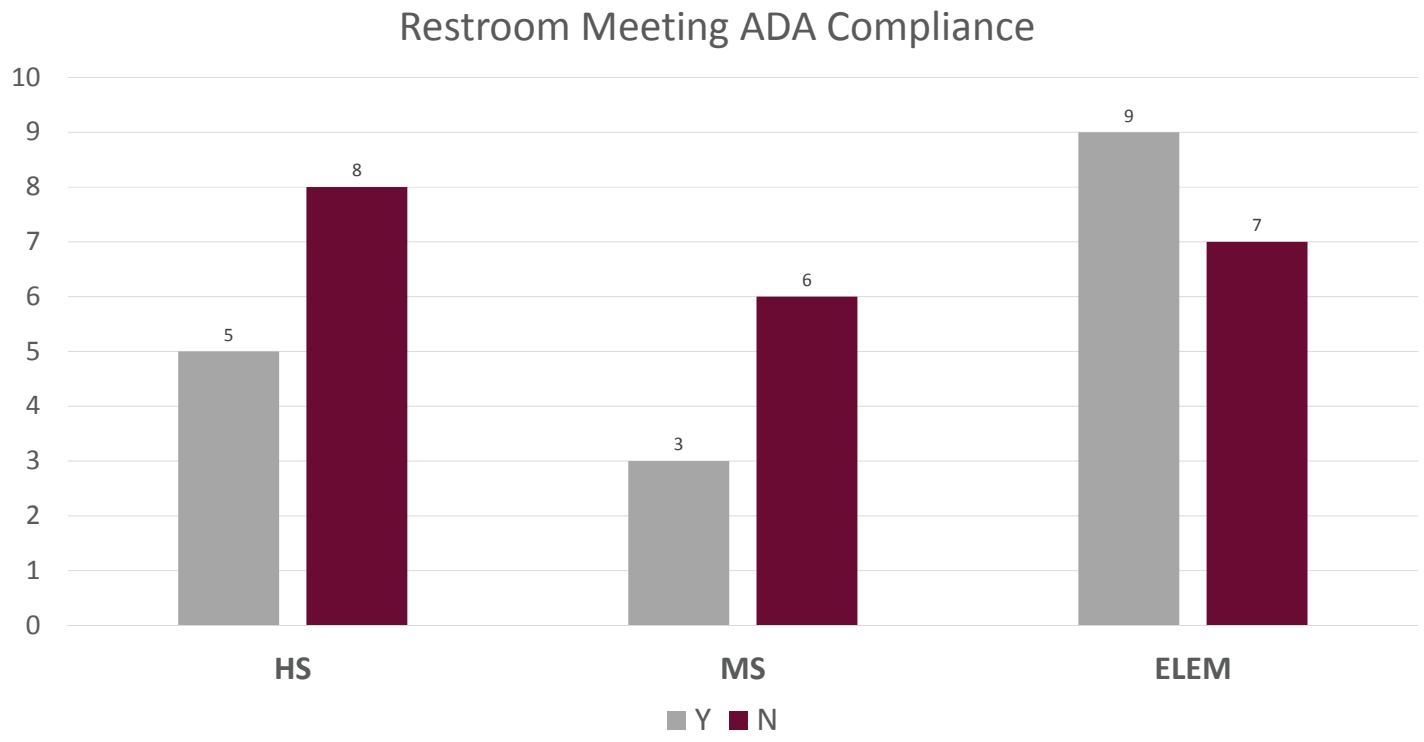
The 21st Century has had an explosion of technology that is available to persons of all ages. That technology is becoming ever more commonly used not just daily but hourly, and in the case of cell phones is down to being checked on average every half hour by Americans. Schools across the country have eliminated computer labs in favor of using technology carts loaded with tablets or laptops, and have issued laptops to every student (termed One-To-One). While Okoboji is not yet fully one-to-one, usage is rising quickly. The Assessment Team did not review computer usage in the District, nor wi-fi accessibility as both of these items are well covered by the IT Department of the District. However, one of the major elements of 21st Century Learning Environments is the ability for students to have greater interaction with the teacher and with their fellow students. The use of interactive white boards is a very common piece of technology that we see in the Districts that we work with. The graph below represents the current installation ratios in each of the three schools. The elementary has approximately 50% of the student used rooms with interactive white boards. While the High School and Middle School have none.



One item to note in this report is that the graphs throughout do not represent the same number of rooms, when comparing each school to each other. This is due to how the room is classified and used. For instance, there are more rooms at the elementary with projectors and white boards than classrooms with electrical deficiencies. This is due to the fact that projectors and white boards are located in small meeting rooms, the media center, music rooms, etc. These types of rooms were not evaluated as a classroom when determining electrical deficiencies as the need for electrical power is minimal.

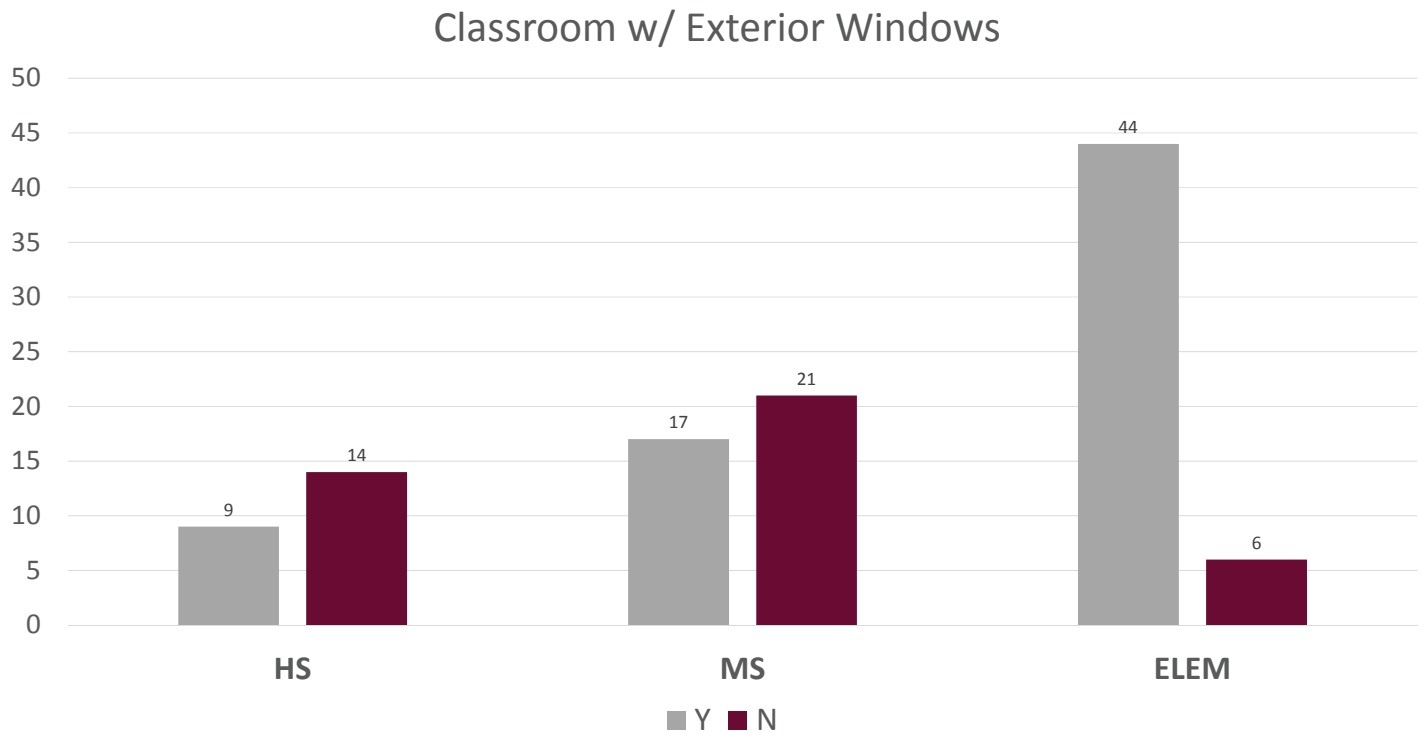
RESTROOM ADA COMPLIANCE

The Architectural Team reviewed all of the restrooms at the three schools and noted where there were facilities that are not in compliance with the American with Disabilities Act. As shown in the chart below, each school has facilities that are not in compliance but the District has done a decent job of retrofitting existing facilities to meet ADA. Other restrooms that are newer are in compliance. This review was not an exhaustive evaluation to develop a report specific to the non-compliance areas. The review intention was only to develop a general awareness for the District.



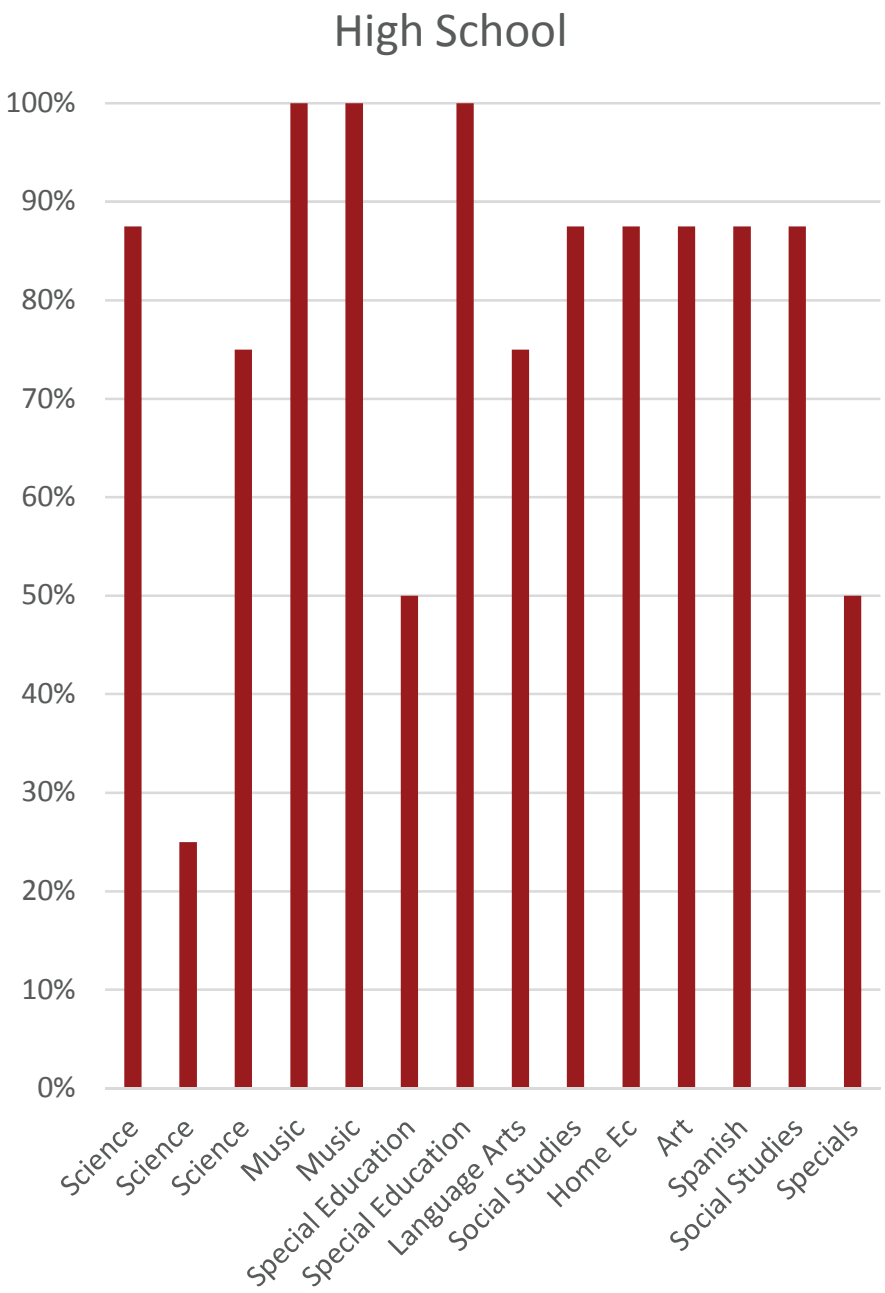
EXTERIOR WINDOW ACCESS

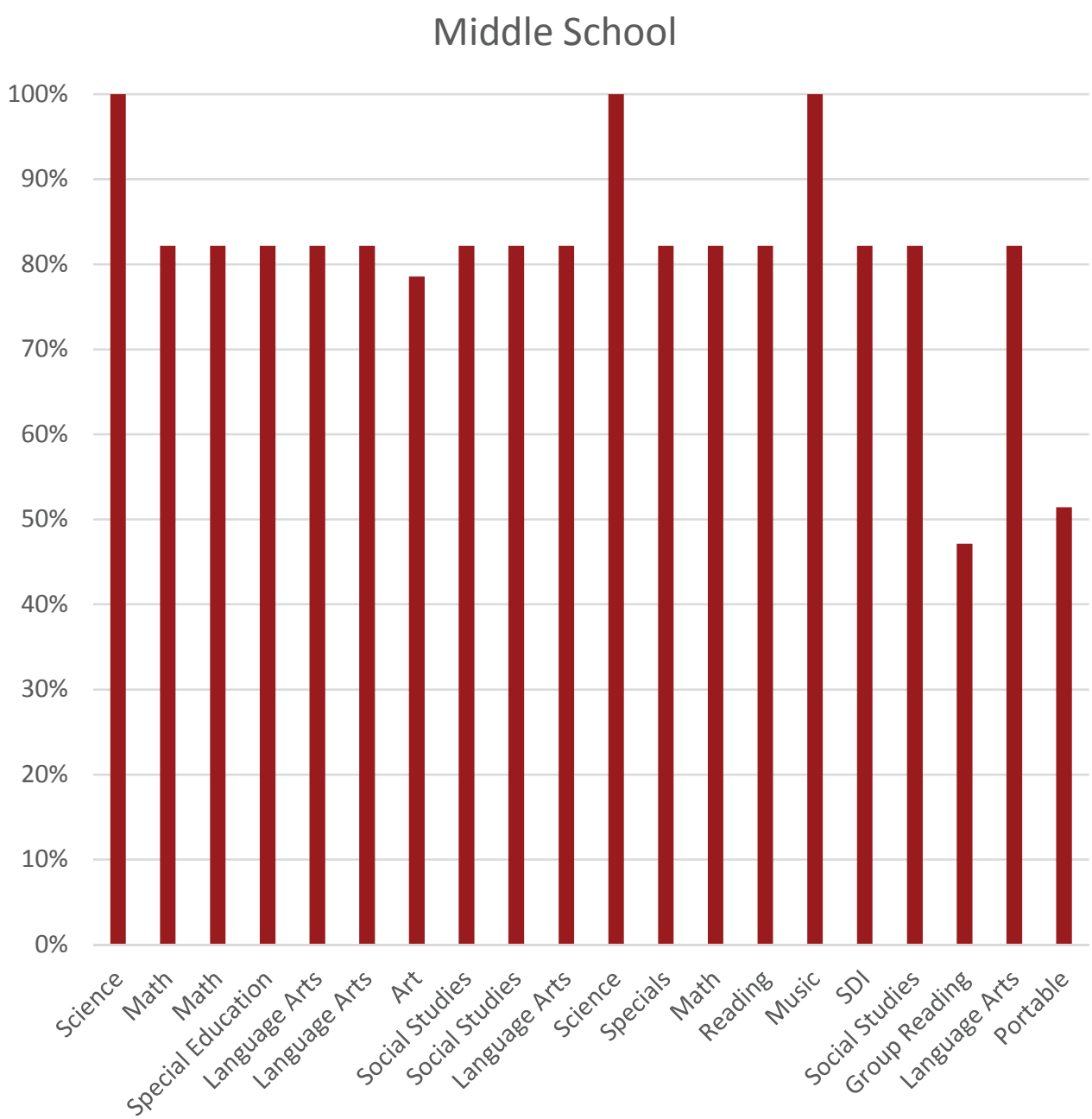
A study conducted with 21,000 students in three school districts showed that having natural daylight in the classroom improved test scores by 26%, had less student absenteeism and improved student attention. As the chart below shows, the Elementary has a very high number of classrooms that have access to exterior windows. For the oldest section of this school, this is a result of designing for natural ventilation, prior to air conditioning, which utilized high windows to create natural convection and cross-airflow through the classroom. The newer sections of the school were built with moderately sized windows. Unfortunately, natural daylighting was not a consideration during the 1970's after the energy crisis and most school designs eliminated or minimized the size of windows to small viewing sizes and examples of that are visible on several of the buildings. The Middle School and High School both suffer from reduced window sizes and lack of windows in the majority of the classrooms. Primarily this is a result of the designs preventing many of the rooms from having exterior walls, which was a common design tactic prior to the understanding of natural daylight importance.

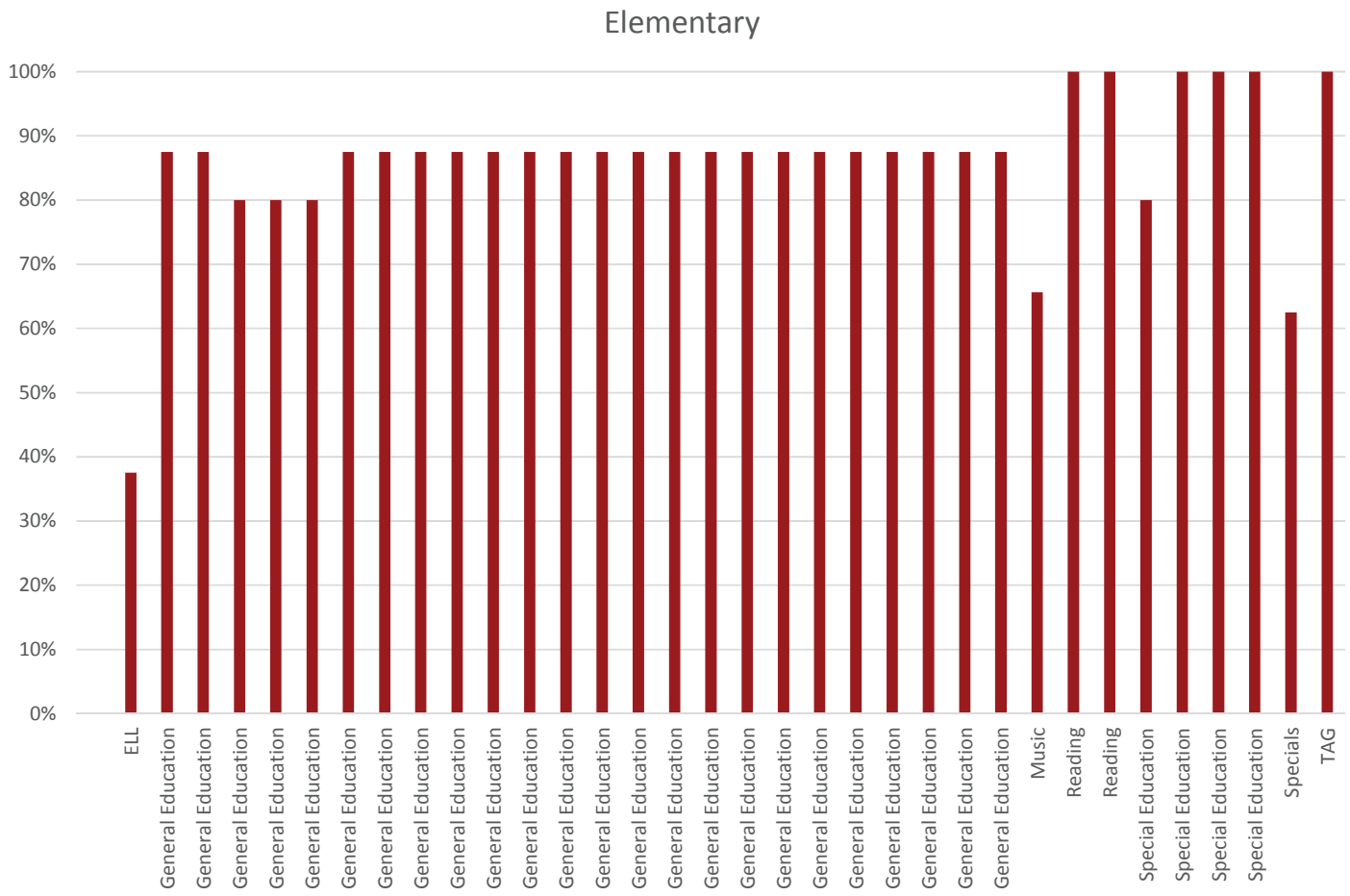


CLASSROOM USAGE

As part of this Assessment, the Team was asked to evaluate the classroom usage and determine if there are opportunities for flexible spaces. Based on the three charts, the District is clearly at a high usage rate for all classrooms. These charts represent the amount of time that students occupy the rooms. While some rooms like Music, Specials, Special Education and Science shows lower than 50% utilization, these rooms are too specialized to allow for any type of flexible classroom sharing capacity. Teacher preparations, while students are not within the room, typically utilize the room the remainder of the time of the school day. During the time at each building, the Team observed only a handful of rooms that were not currently occupied by a teacher or students. This was a result of lunch time, recess time, or periods between classes for the Middle School and High School.




Middle School
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Science
Math
Math
Special Education
Language Arts
Language Arts
Art
Social Studies
Social Studies
Language Arts
Science
Specials
Math
Reading
Music
SDI
Social Studies
Group Reading
Language Arts
Portable


Elementary
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
ELL
General Education
General Education
General Education
General Education
General Education
General Education
General Education
General Education
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General Education
General Education
General Education
General Education
General Education
General Education
General Education
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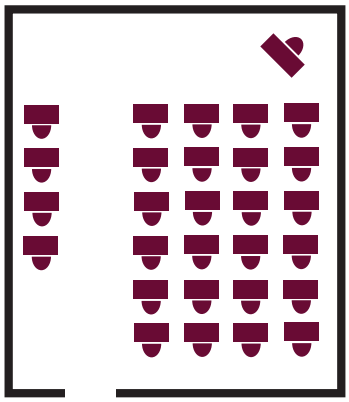
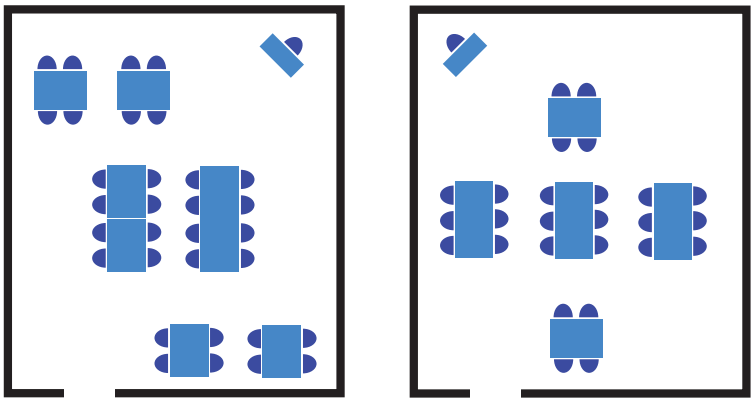
General Education
General Education
General Education
General Education
General Education
General Education
General Education
Music
Reading
Reading
Special Education
Special Education
Special Education
Special Education
Specials
TAG

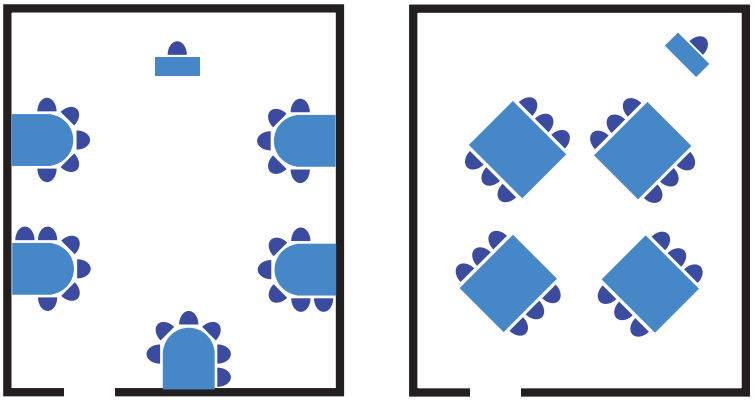
21ST CENTURY LEARNING ENVIRONMENTS

The teaching methods, learning opportunities and student interactions have changed significantly over the course of the last decade. One of the primary driving factors of this is the integration of technology. One of the other primary driving factors is the shift from having a front of classroom with chairs/desks in rows, to a group setting for student group learning pods…students teaching each other. There is a lot of information regarding 21st Century Learning Environments, too much for the purpose of this report. However, one aspect that can be implemented with relatively minimal cost is the furnishings within the classroom. Most of the classrooms observed by the Assessment Team had furnishings that will accomplish this change. The graph below is from a study conducted by a national furnishing company, to determine the effects of alternative classroom layouts. The graph shows the traditional rows of chairs/desks as the base layout. The four other layouts were utilized during the study and afterwards the students and teachers were surveyed based on the criteria of the bar graph below. This survey was for high school and college students, who are better equipped to analyze and respond to the survey questions than an elementary or middle student would be. But the findings are applicable to all grade levels and many of the school districts that we work with have been switching to group-based layouts. As shown on the bar graph, there was significant changes to the responses, simply by altering the layout of the furnishings. This study is being shared in this report to bring awareness to the potential improvements to Okoboji with potentially minimal cost to zero cost.



Standard Classroom Design





Advanced Learning Environment Design Solutions

02 / HIGH SCHOOL REVIEW

HIGH SCHOOL ARCHITECTURAL REVIEW

The High School has received the most recent architectural changes with the addition of the front entry, modified cafeteria, and newer gymnasium addition. The building has had at least five additions, per the drawings provided by the District. Additionally, the building is situated on the site that will allow for future additions to be constructed on the site with minimal changes to the existing infrastructure.

The building does have a security system requiring visitors to be 'buzzed in" to the main entrance. However, the front receptionist does not have good visibility to the visitor and therefore has to rely on a camera system at the buzzer. All other entrances are either locked with no electronic access, or have card readers for authorized personnel use. Most school intruder events, as termed by districts and security experts, involving lethal violence are typically students and not visitors. Therefore, the level of safety design within the building is of concern to both students and staff. The High School is not to current design practices. This is certainly understood based on the age of the building. And there are changes that can be implemented to increase the level of safety within the building with some minor changes to doors and electronic control of the doors. There are cameras within the corridors which does help with identifying persons involved in incidents, including vandalism and fights.

Bus and parent drop-off/pickup are reasonably separated at the High School. The need for this separation is diminished compared to the Middle School and Elementary School, as typical at all High Schools. This diminished need is due to the number of students who drive to school vs. a parent or bus mode of travel. Therefore, the bus lane at the High School appears to be servicing the school quite well by separating the bus vehicles from the road and improving student safety significantly.

The High School building is in good condition. The Team observed a few areas of cracks in brick, but all were relatively minor and did not appear to be changing. This would be expected in any brick building and was not a concern. There are areas around the building that do require continual maintenance such as replacement of caulking, roof drainage swells, and general sod replacements. Two windows to the cafeteria have had the seals fail and therefore condensation has developed within the window. Several of the existing steel windows should be repainted. Replacement of the steel windows would be preferable from an energy savings perspective, but most of these windows are relatively small and therefore the payback period from the energy savings compared to the cost of the new windows, would be quite lengthy.

Parking around the building is good. There are several parking stalls at the front of the building for visitors, parking behind the building and to the south of the building for students and staff. Additionally, the football stadium parking is directly south of the building and can accommodate overflow as needed. The vehicular circulation through the parking lots is problematic as it allows multiple entry and exit points which does allow students to expedite their departure from the property at a faster than desired speed.

The interior of the building is equally in good condition. There are a number of cosmetic items that should be

addressed, such as old acoustic sprayed ceilings should be removed, interior caulking replacement, and damage to the old gymnasium ceiling. (The old gymnasium was repainted during the summer of 2017, after the Assessment Team performed their review.) There are signs of roof leaks, visible from stained ceiling tiles, but this was visible in only a few areas throughout the building.

The majority of the classrooms are smaller than the national standard. While smaller classrooms are not a direct issue, it does limit the students per teacher ratio which is typically in the high 20's for high school classrooms. The High School classrooms should be kept to a student occupant level in the low to mid 20's.

The High School has two gymnasium facilities which is a huge advantage to the District. This allows for all students to have physical activity regularly with the use of the dual gymnasiums.

There were a variety of code violations within the school. The most concerning violation was the disconnection of the door closers on fire rated doors, and the use of wood wedges to hold these same doors open. These doors are at the end of the corridor and should be corrected to properly separate the building in case of a fire.

The High School has terrific access to the athletic facilities for track, football, softball, baseball and soccer. This is a great asset for the District and should be maintained if possible. There is some maintenance at the facilities that is needed, and is noted later in this report.

In general, the High School facility is in good condition and should service the District for many more years. While there are cosmetic improvements that could be done to the interior to enhance the student/teacher environment, particularly the older classrooms, the majority of the building is in great shape. While classrooms are smaller than desired and limits the capacity of the building, there is space to accommodate additional classrooms as an addition to the school in the future.

Item to Note: Currently several dozen middle school students start at the High School for advanced classes, then are transported to the Middle School by bus after the first period. Additionally, students are transported by bus back to the High School from the Middle School for after school athletics. This is a significant cost to the District for the daily bus transportation between the two schools.

02 / MIDDLE SCHOOL REVIEW

MIDDLE SCHOOL ARCHITECTURAL REVIEW

The Middle School in Arnold's Park currently has 5th – 8th Grade students. The building has had several additions and the original building has been removed. The most recent change, according to the drawings provided by the District, was completed in 2005. The building is currently land-locked and cannot be expanded easily.

Like the High School, the Middle School does have a security system in place and like the High School, must utilize a camera at the buzzer for the receptionist as the receptionist does not have a good line of direct sight to the exterior doors. Likewise, the interior layout is not to current design practices and could be modified for improvements. However, based on the levels of the building that require the use of stairs, it is more difficult to compartmentalize the building to improve occupant safety. All other entrances are either locked with no electronic access, or have card readers for authorized personnel use.

The bus and parent drop-off/pickup at this location is not separated. This is one of the highest safety concerns that must be addressed. Currently buses and some parents are coming from the east to drop the students off. This is an issue by having both buses and parent vehicles sharing the same road space as buses are significantly more unwieldy and have larger blind spots. Some parents are coming from the west and dropping off their student, thus allowing the student to cross the street in the middle of the road. Given the width of this street, this is a major safety concern for this site.

The Middle School is in reasonable condition on the exterior. There are signs of moisture infiltration into the concrete block on the back side of the building. The block is disintegrating due to the high moisture within the block that is being frozen during the winter. The freeze/thaw cycle, particularly daily cycles, can expand the water when it freezes and thus disintegrate the block. The older portions of the building are in good condition for the age of the building. There are minor cracks in the block and brick, and some of these cracks have been maintained with caulk. There are other caulk joints that do need some continual maintenance.

Parking for the staff and visitors is a problem for the Middle School. Currently the parking lot is not adequate for staff and the on-street parking is consistently full. There are additional parking lots down the street that are city parking lots and may be utilized. Those parking on the opposite side of the street must cross the street to the school. The only crosswalk is at the controlled intersection at the end of the block, thus all persons observed by the Team jay-walked from their vehicle to the school. While not as busy as the adjacent highway, the main street on the south side of the school is quite wide which increases the time needed to cross the street.

The interior of the building, in general, is in good condition. The circulation through the building does have significant issues for any disabled staff member, student and /or visitor. Due to the existence of the stairs in the main corridor along the gymnasium, a disabled person may have to alter their path significantly to access the northern and western classrooms. While some of the interior spaces are certainly dated with colored glazed tile, dark woodwork, and old ceilings, the building appears to be in good condition.

The cafeteria and kitchen are severely undersized. Currently students had to wait 15-20 minutes to get through the hot lunch line if they were at the end of the line. Additionally, nearly all of the tables were completely full of students with no additional space available for more tables. Therefore, the school was utilizing four lunch periods to get all of the students accommodated. During the 2017-2018 school year, the school was going to try three lunch periods by using the adjacent Art room for the overflow of students. This is not ideal for staff and students as now the students are separated into two groups, which also requires staff to be separated to monitor both rooms. Once lunch periods are over, the staff must also clean two rooms in lieu of one. While this is a reasonable approach to help solve lunch period lengths, start times, and students' eating time, it is not a recommended long-term solution. The kitchen is extremely small for the number of students that it serves. The serving line for the students does not meet ADA requirements, thus any disabled person would not be able to receive a hot lunch without significant help from a staff member. During non-lunch periods, the room is use for music class which is not ideal for the students and teacher, due to the poor acoustics of the space and the need to share the space with the lunch periods.

The majority of the classrooms are below the national standard, but the delta difference is relatively small in most sub-sized spaces. Only four classrooms are more than 50 square feet smaller than the national standard.

The school only has one gymnasium, which is in good condition. However, the major issue is that there is no outside green space for physical education or playground space for the younger students. Therefore, the students are not getting the level of physical activity that should be provided. While the school has been allowed the use of the park area across the street to the south, this is a very small space that severely limits the use for physical education and quantity of kids during recess.

Due to the school being landlocked, any type of expansion will either need to be vertical by adding an addition floor (if possible) or through the purchase of adjacent land/buildings. However, any expansion will compound the other issues of this site, including putting more demand on available parking and putting more vehicular traffic from additional parents and possibly an additional buss. Site safety becomes even more difficult to maintain. Additionally, more students also put more demand on the gymnasium since there are no available green spaces next to the property.
In general, the Middle School building is in good condition, both inside and out. There are some masonry issues that should be resolved to help maintain the life of the building. The newer additions have utilized aluminum storefront systems with insulated glazing. In the older sections of the building, primarily the older classrooms and admin areas, there are older windows with insulated metal panels framed inside the window frames that would benefit the District to replace with thermally broken aluminum windows and insulated wall system. These same areas of the building have corrugated metal panels above the brick. Historically this type of wall construction is not well insulated. Additionally, vapor barriers were not utilized in the walls and therefore there could be significant vapor transmission through the walls, thus letting the heat quickly escape the building.

The Middle School has no access to any athletic facilities and students must be transported to the High School to participate in any school sport. While the Middle School is nearby to a baseball field, it requires all students to cross the highway at the controlled intersection. Due to the transportation time to the High School, students must leave early from school to arrive at the High School in time and thus allow the bus to engage in its normal student pick-up & drop-off.

In general, the Middle School facility is in good condition and has the potential to have many more years of available life. Like the High School, the classrooms are smaller than desired and limits the capacity of the building. Unlike the High School, this facility has no additional land/space to expand upon. Any expansion attempt will put additional stress on the surrounding infrastructure such as roads, parking, and especially student safety. Therefore, due to being land-locked, no green space for PE and no playground space for the younger students, this is not a building that the Team would recommend to continually use.

MIDDLE SCHOOL CONCEPT PLANS

Several plans were developed to evaluate potential solutions to the issues at the Middle School site. These plans are on the following pages. As identified for each of the plans, each concept does focus on one or more issues at the school, but none of the plans solve all of the issues and several of the plans require significant land acquisition(s), which could be quite expensive and problematic.

MIDDLE SCHOOL OPTION A

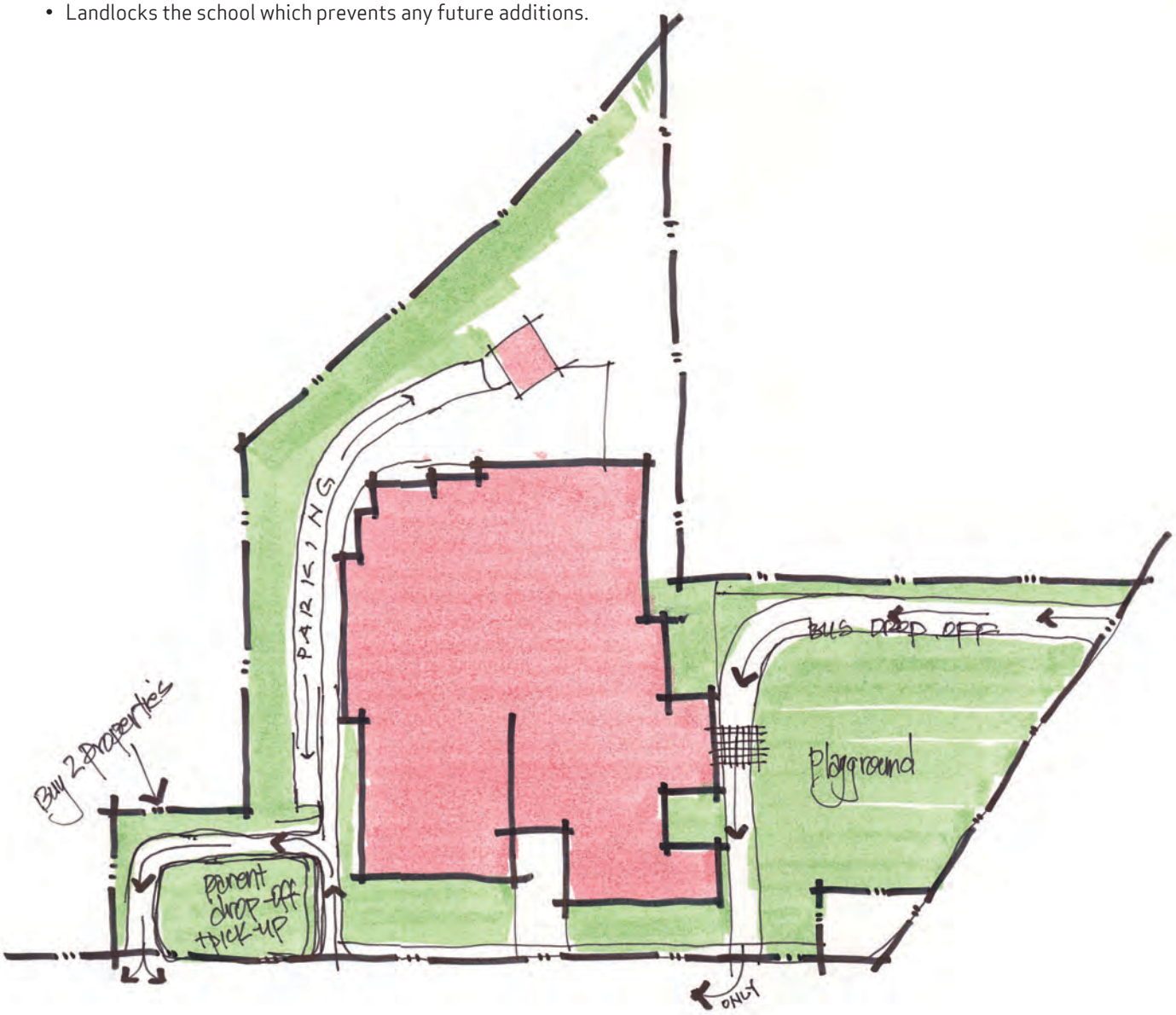
This option requires the purchase of two properties to the immediate west to allow for the creation of a parent drop-off/pickup lane. From this lane is the rear parking for staff. The existing staff parking lot is turned into green space except for the development of a dedicated bus lane.

POSITIVES:

- Creates separation of parent and bus drop-off/pickup lanes.
- Creates green space for physical education and recess/playground space.

NEGATIVES:

- Requires the purchase of two adjacent properties and the demolition of existing buildings.
- Playground/green space is directly next to Highway 71which is an issue for balls being thrown/kicked into Highway 71.
- Bus lane exit can only be right turn due to the proximity to the corner, if even allowed to be that close to the corner by the city.
- Parent drop-off/pickup lane is not in an ideal location, thus most likely not utilized by parents vs. using the street again.
- Parking availability has not increased for staff.
- Buses and parent vehicles are still intermixing along the same street.
- Landlocks the school which prevents any future additions.



MIDDLE SCHOOL OPTION A

MIDDLE SCHOOL OPTION B

This option requires the construction of a new 2-3 story addition on the back side of the school, then demolishing the existing SE side of the school. This creates a green space for physical education and recess/ playground space.

POSITIVES:

- Ability to create 21st Century classrooms in the new addition.
- Creates green space for physical education and recess/playground space.

NEGATIVES:

- Does not solve parent & bus drop-off/pickup, thus safety is still a significant issue.
- Does not solve parking availability for staff.
- Requires significant investment by the District.
- Potentially increases the capacity of the school for students, which puts additional pressure on safety issues for drop-off/pickup and staff parking.
- Landlocks the school which prevents any future additions.

MIDDLE SCHOOL PLAN OPTION B

MIDDLE SCHOOL OPTION C

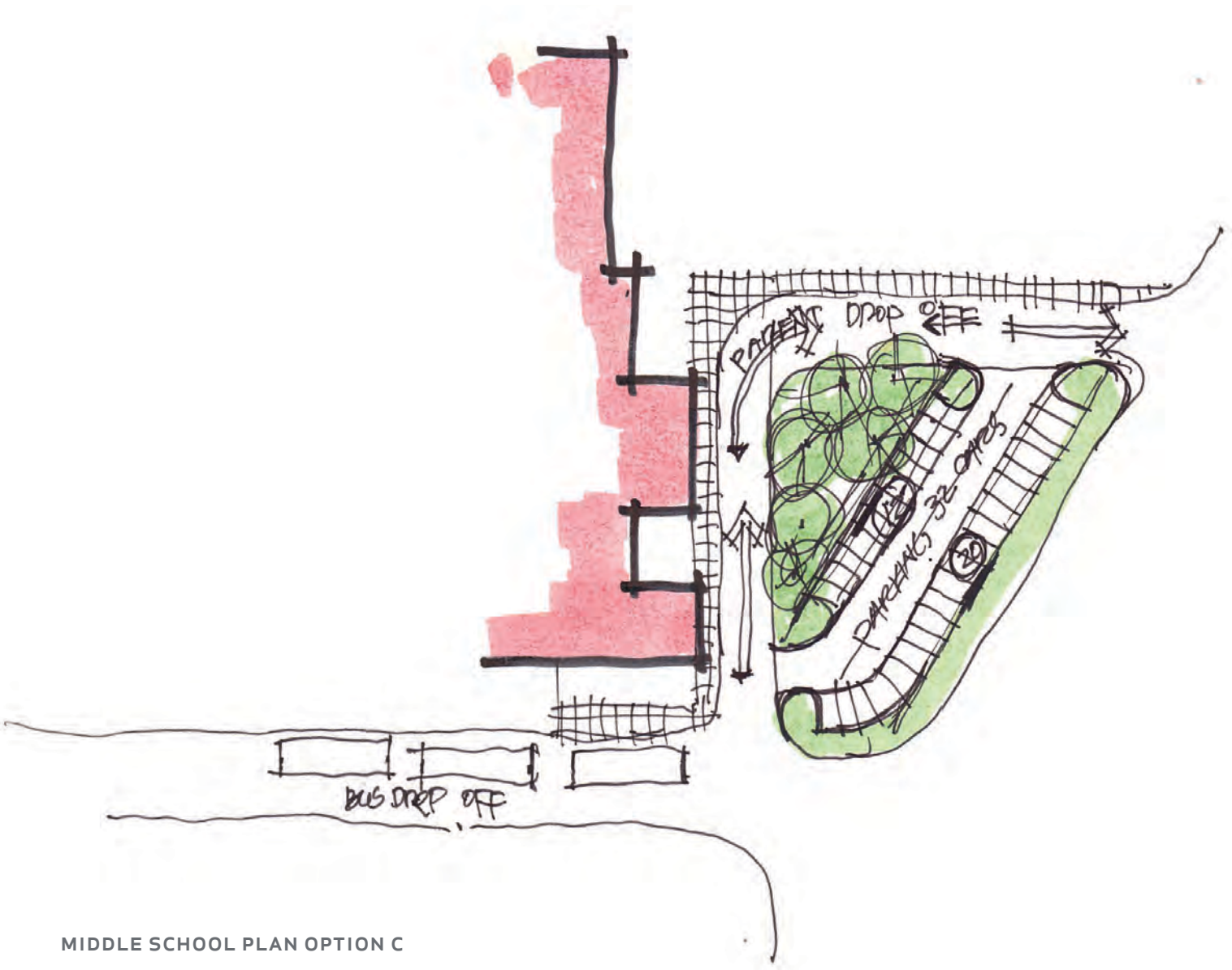
This option was a study for the potential of the creation of a dedicated parent drop-off/pickup lane.

POSITIVES:

- Creates separation of parent and bus drop-off/pickup lanes

NEGATIVES:

- One direction for vehicle traffic is not preferred due to dropping students off on the non-curb side of the parent lane, thus students must cross in front of vehicles.
- Reduces parking availability for staff.
- Turn in for parents is very close to Highway 71, may not be allowed by the City or IDOT.
- Left turn out of the parents' lane may be difficult due Highway 71 traffic, thus creating a backup in vehicles in the lane and subsequently onto the street.
- Parent drop-off/pickup lane is not in an ideal location, thus most likely not utilized by parents vs. using the street again.



MIDDLE SCHOOL PLAN OPTION C

MIDDLE SCHOOL OPTION D

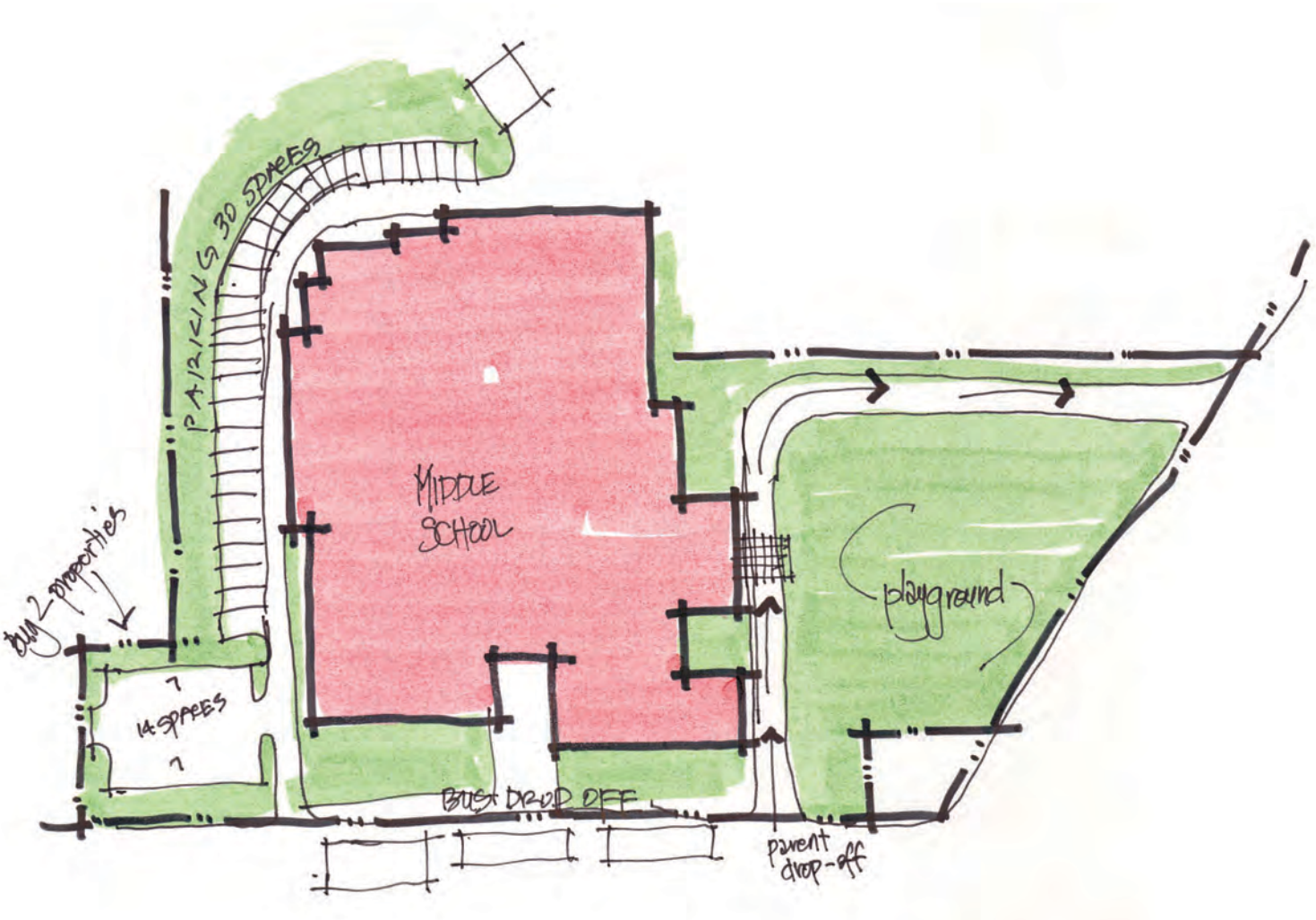
This option requires the purchase of two properties to the immediate west to allow for the creation of a parking lot. From this drive is the additional rear parking for staff. The existing staff parking lot is turned into green space except for the development of a dedicated parent drop-off/pickup lane. This is a variation of Option A to study the impacts of changing the location of the parent drop-off/pickup lane.

POSITIVES:

- Creates separation of parent and bus drop-off/pickup lanes.
- Creates green space for physical education and recess/playground space.

NEGATIVES:

- Requires the purchase of two adjacent properties and the demolition of existing buildings.
- Playground/green space is directly next to Highway 71which is an issue for balls being thrown/kicked into Highway 71.
- One direction for vehicle traffic is not preferred due to dropping students off on the non-curb side of the parent lane, thus students must cross in front of vehicles.
- Turn in for parents is very close to Highway 71, may not be allowed by the City or IDOT.
- Left turn out of the parents' lane may be difficult due to Highway 71 traffic, thus creating a backup in vehicles in the lane and subsequently onto the street.
- Parent drop-off/pickup lane is not in an ideal location, thus most likely not utilized by parents vs. using the street again.
- Landlocks the school which prevents any future additions.



MIDDLE SCHOOL OPTION D

MIDDLE SCHOOL OPTION E

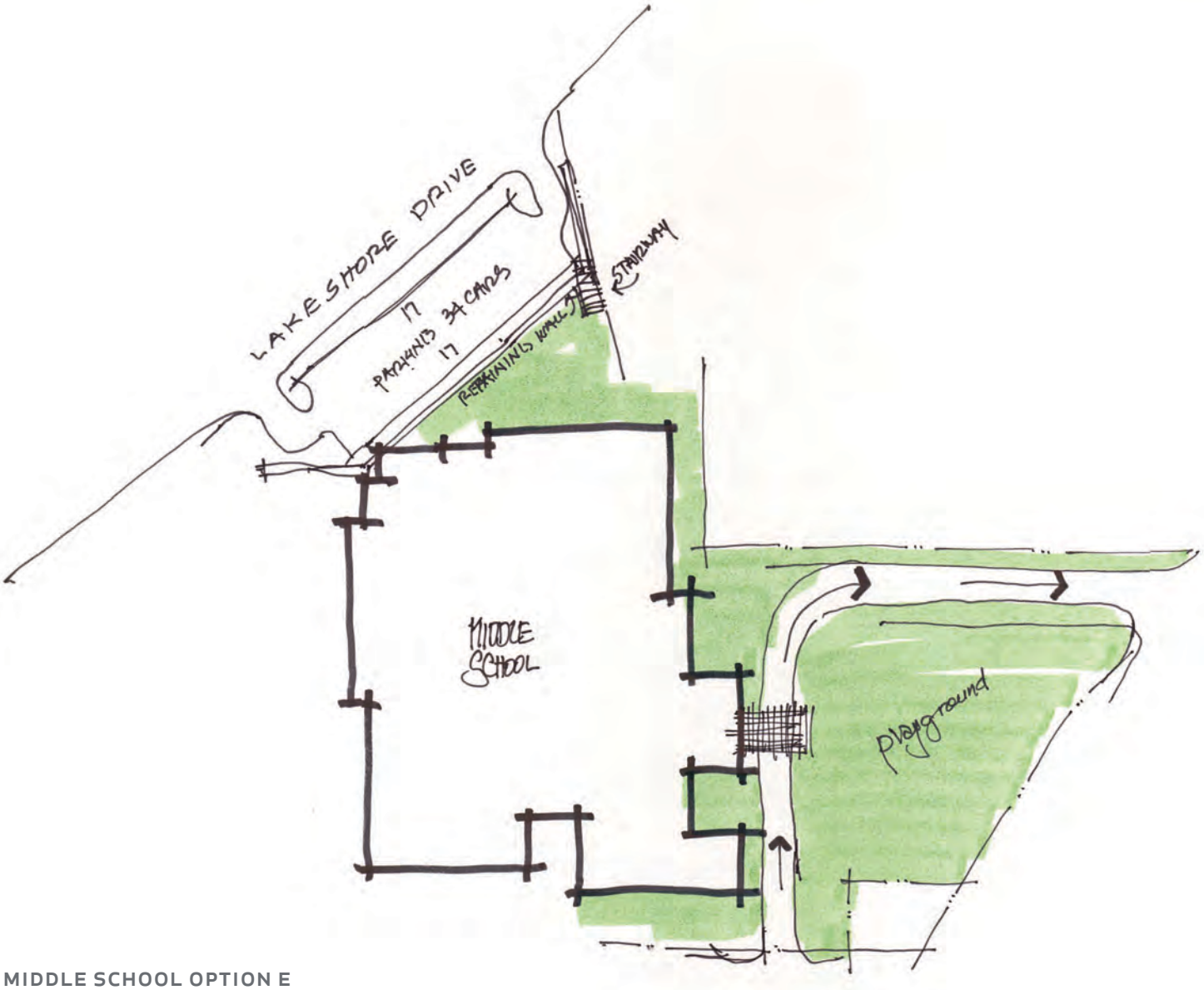
This option creates a parking lot for staff down below on the lake side of the property, off of Lakeshore Drive. The existing staff parking lot is converted into a green space and a drop-off/pickup lane. The lane is not identified as bus or parent since Options A & D show the different potential uses for the lane.

POSITIVES:

- Creates separation of parent and bus drop-off/pickup lanes.
- Creates green space for physical education and recess/playground space.

NEGATIVES:

- Playground/green space is directly next to Highway 71which is an issue for balls being thrown/kicked into Highway 71.
- Expensive parking lot for staff due to the need for retaining wall, stairs, ramp and modifying the existing grades.
- Staff parking area, ramp and stairs creates additional difficulties for maintenance staff and for snow removal processes.
- Eliminates any parking on the back side of the school, along with eliminating delivery vehicle access to the existing loading dock.
- Same negatives as Options A & E in terms of bus or parent drop-off/pickup lane issues.
- Landlocks the school which prevents any future additions.



MIDDLE SCHOOL OPTION E

MIDDLE SCHOOL OPTION F

This option is a study for the potential of closing the street in front of the school. Green space, parent drop-off/pickup is separated from the buses. This also requires the purchase of additional property.

POSITIVES:

- Creates separation of parent and bus drop-off/pickup lanes.
- Creates green space for physical education and recess/playground space.

NEGATIVES:

- Closes a street. Difficult process to close a street and directly impacts business owners to the west of the school.
- High potential of vehicular backups due to inability to exit the parent area back onto Highway 71, especially since this intersection is street light controlled.
- Requires additional land purchase.
- Playground/green space is directly next to Highway 71which is an issue for balls being thrown/kicked into Highway 71.
- Does not solve parking issues for staff. Creates additional issues due to no staff parking area.
- Bus lane drop-off/pickup is too short to stack several buses simultaneously.
- Landlocks the school which prevents any future additions.

MIDDLE SCHOOL OPTION F

MIDDLE SCHOOL OPTION G

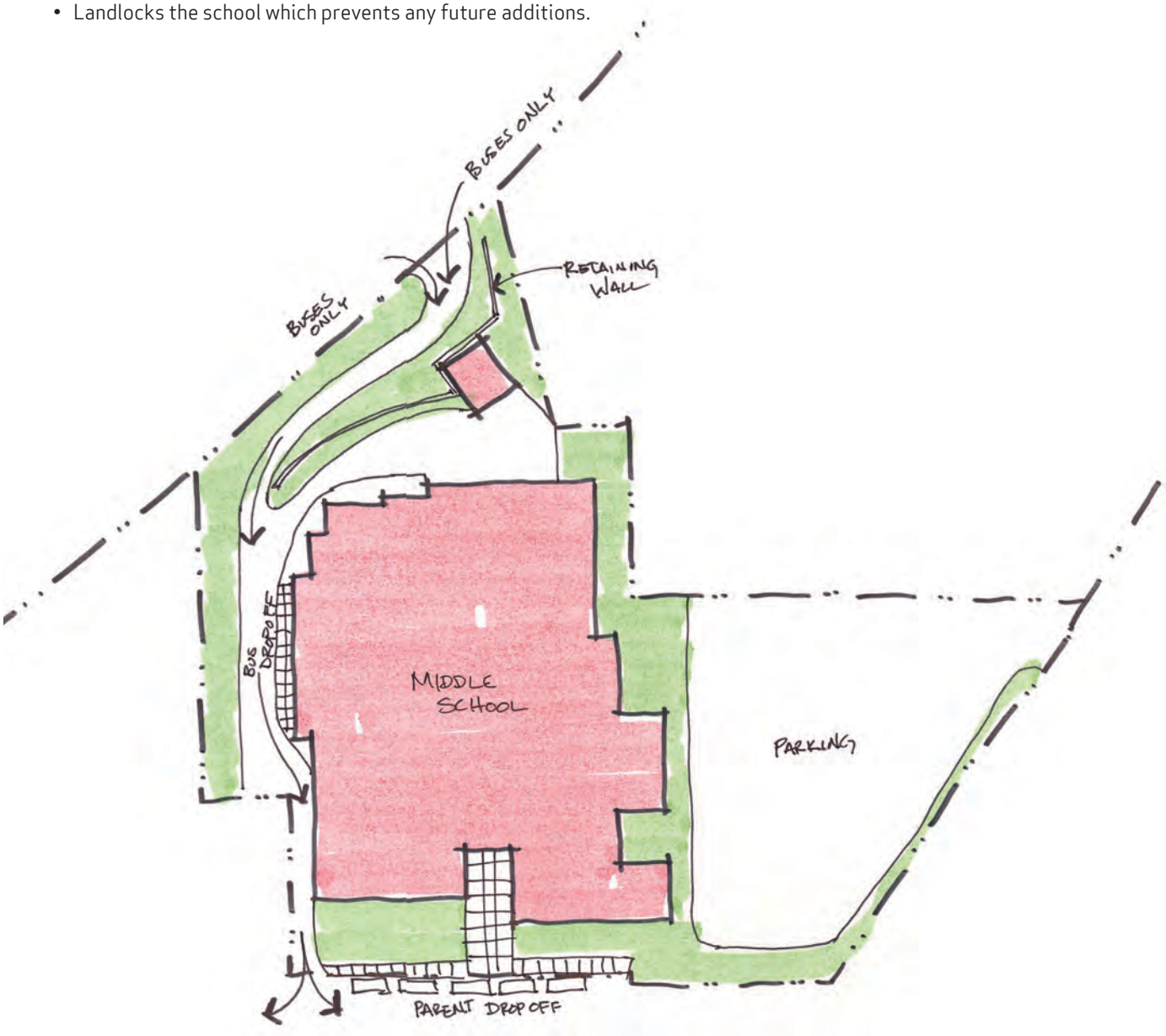
This option develops a bus lane for drop-off/pickup using Lakeshore Drive. Parent drop-off/pickup utilizes the street.

POSITIVES:

- Creates separation of parent and bus drop-off/pickup lanes.

NEGATIVES:

- No improvements to staff parking.
- Requires the construction of a retaining walls to create the bus lane from Lakeshore Drive.
- Bus lane from Lakeshore would have a steep grade which is difficult to drive and difficult to maintain for snow removal.
- Parent drop-off/pickup not improved, thus parents will continue to drop students off on the south side of the street to then need to cross the street to reach school property.
- Buses drop students off on the non-curb side of the bus lane, not preferred due to the need to cross in front of the buses.
- Does not create any green space for physical education and recess/playground space.
- Landlocks the school which prevents any future additions.



MIDDLE SCHOOL OPTION H

This option creates a drive around the back of the school for a bus drop-off/pickup lane. It requires the purchase of some land from the adjacent property owner in order to construct the bus lane.

POSITIVES:

- Creates separation of parent and bus drop-off/pickup lanes.
- Creates drop-off/pickup zone for multiple buses simultaneously.

NEGATIVES:

- Requires the purchase of adjacent property from the resort.
- Long bus lane around the school increases construction cost and maintenance cost.
- Eliminates parking and loading areas on the back side of the school.
- No improvements to staff parking. Reduces staff parking availability.
- Parent drop-off/pickup not improved, thus parents will continue to drop students off on the south side of the street to then need to cross the street to reach school property.
- Does not create any green space for physical education and recess/playground space.
- Buses and parent vehicles are still intermixing along the same street.
- Landlocks the school which prevents any future additions.

MIDDLE SCHOOL OPTION H

02 / ELEMENTARY REVIEW

ELEMENTARY SCHOOL ARCHITECTURAL REVIEW

The Elementary School in Milford currently has Pre-K – 4th Grade students. The building has had several additions to the original building. The most recent addition, according to the drawings provided by the District, was completed in 2010. The building is currently land-locked by being surrounded on all sides by roads and cannot be expanded easily. Like the other schools, the Elementary School does have a security system in place utilizes a camera at the buzzer for the receptionist. Similar to the other schools, the receptionist does not have a good line of direct sight to the exterior doors. Likewise, the interior layout is not to current design practices and could be modified for safety improvements. However, based on the levels of the building that require the use of stairs, it is more difficult to compartmentalize the building to improve occupant safety. All other entrances are either locked with no electronic access, or have card readers for authorized personnel use.

The bus and parent drop-off/pickup at this location is separated by utilizing separate sides of the building for both. The buses use a gated drive between the Elementary and the District Administration building. This allows for good student drop-off/pickup by having a dedicated sidewalk system from the buses to the school. The parent drop-off/pickup is problematic based on the available vehicular staging space along the roads, which creates upset parents and takes significantly longer to receive/send students.

The Elementary School is in reasonable condition on the exterior. Although there have been multiple additions, all the walls look to be in good condition. There are areas that need some attention, primarily areas where caulking has failed, caulk was used in lieu of mortar, and some tuck-pointing. Larger exterior issues of the building include the windows and adjacent wall construction. The majority of the windows in the classrooms are operable aluminum windows, with several that have failed glazing seals and thus have condensation between the panes of glass. This does not require the entire window system to be replaced, but does require the insulated glazing to be replaced. Between 1st floor and 2nd floor, there is an exterior panel product between some of the windows. This panel product, which cosmetically is not attractive and has rusting screws, does not appear to be failing nor allowing water to infiltrate the building. However, this construction is typically not constructed with high thermal performance and thus is allowing heat to escape. One item to note is that due to the boiler system of the school, many classrooms are overheated and the teachers are opening the windows during cold weather in an attempt to better control the temperature within the room. This balancing of the heat by allowing the heat to escape through the window is a tremendous energy loss for the school and a large expense for the District.

Parking for the staff and visitors is a problem for the Elementary School. The amount of parking around the school does not accommodate the number of staff members at the school. Many staff members must park near the District Administration building, at a nearby city parking lot, or on an adjacent street. One of the recent changes at the Elementary has been the City of Milford enforcing the zoning ordinance that prevents diagonal parking around the school. Per the zoning ordinance, only parallel parking is permitted. At the time of the review, the streets had not been re-striped by the City. This modification to the parking layout will eliminate approximately 40 parking stalls

around the building for staff and visitors. During the April Design Workshop, the Team did generate a couple of site sketches, included in this report, showing potential solutions to the ordinance enforcement. One concept sketch created a separate parking lot for staff to the south-west of the Elementary school. The same sketch shows the creation of dedicated parent drop-off/pickup lanes to help alleviate some of the difficulties of the existing system. The other site sketch concept showed the potential to acquire a property across the street should a house become available for purchase. By razing the building, a parking lot could be constructed on the site. However, this concept was not as desirable.

One of the unique aspects to the Elementary School is the road on the south side of the building which has been fenced in but still has gated access at either end of the road. This does provide students some space to play on a hard surface, however the condition of the road is not ideal for student use. This is due to the slope across the road for storm drainage makes it difficult to use as a playing surface for the students. Additionally, the presence of curbs is a hazard to the students while playing in this area for the potential tripping over the curb, accidentally stepping off the curb and the potential for sprained/broken ankles.

The interior of the building, in general, is in good condition. The walls, doors and ceilings are in good condition. While sometimes these materials and colors are dated, the material appears to be in sound condition. The circulation through the building does have issues for any disabled staff member, student and/or visitor since the building is two stories. An elevator is available for use, but due to the differing additions and the original building floor to floor heights, it requires the facility to have several interior ramps and floor changes. There is also a lift to accommodate individuals using the gymnasium.

The majority of the classrooms are at or above the national standard for classroom size. About 25% of the rooms are undersized for standard classrooms.

The school only has one gymnasium, which is in good condition, and seems to accommodate the school quite well. Storage is always an issue in a school, and particularly for a gymnasium. Unfortunately, this gym is quite dated and storage space is very minimal. Storage has been created where possible, including niches in the required exit paths which is against the building code.

The Elementary School does have a large playground for Kindergarten – 4th grade use, and a dedicated Pre-Kindergarten playground that is fenced off. The Pre-K playground equipment is relatively new and in good condition. There is some wood constructed elements in the playground, such as a bridge, house and set of swings. These will deteriorate faster than the other playground equipment, but currently is in good condition and should last several more years. The playground for the older students is in very poor condition. The equipment was installed over 20 years ago and certainly has outlasted the standard expectation. Parts are no longer easily obtained to maintain the equipment, many of the plastic cover plates for the equipment are missing, protective coatings have been chipped off, and several interactive elements no longer have all of the pieces in place. The District should consider investing in new equipment in the very near future. There is a basketball court area for the students to use, directly south of the playground space and the hoops and backstops are in good condition. There is some green space to the south of the playground that is used by the students. There is also a kickball/softball field at the very south end of the property, but this field is in need of some significant improvements to the ground as many areas have been severely rutted.

In general, the Elementary School facility is in good condition and should service the District for many more years with proper maintenance. The general proximity to the High School is advantageous by limiting the distance for busing, staff sharing and for administrative meetings.

ELEMENTARY SCHOOL CONCEPT PLANS

Based on the condition of the Elementary School, there are no major building, safety or site concerns that involve necessary improvements based on the existing conditions. However, there are site issues that need to be resolved based on the City of Milford enforcement of the zoning ordinance. Additionally, due to the age of the playground, the equipment should be replaced but the replacement does not dictate a site plan change. The following concept plans were developed to evaluate potential solutions to the need for additional parking due to the zoning enforcement.

ELEMENTARY SCHOOL OPTION A

This concept plan considered the age of the playground and the need for the replacement of the equipment as an opportunity to relocate the playground area. By shifting the playground, it created space to develop a small parking lot for 40 vehicles, which accommodates the amount of vehicles displaced by the zoning ordinance enforcement. On the east side of the school, the front area has been developed into a dedicated parent drop-off/pickup lane to separate parent vehicles from the main street. Bus drop-off/pickup continues to operate at the same location. This concept requires the abandonment of the street on the south side of the school.

POSITIVES:

- Develops a dedicated parent drop-off/pickup lane off the street.
- Develops a parking lot to accommodate the parking lost due to zoning ordinance enforcement.
- Parking is available for all staff on District property and on-street parallel parking stalls.
- Replaces the playground equipment.

NEGATIVES:

- Requires the abandonment of the street.
- Potentially dislocates the existing Pre-K playground.
- Does not solve the issue of waiting space for parents in vehicles, often backed up along the streets.

ELEMENTARY SCHOOL OPTION B

This concept plan is very similar to Option A. On the east side of the school, the front area has been developed into two dedicated parent drop-off/pickup lanes to develop additional waiting areas for parent vehicles. Bus drop-off/pickup continues to operate at the same location. This concept does not require the abandonment of the street on the south side of the school.

POSITIVES:

- Develops two dedicated parent drop-off/pickup lane off the street.
- Develops a parking lot to accommodate the parking lost due to zoning ordinance enforcement.
- Parking is available for all staff on District property and on-street parallel parking stalls.
- Replaces the playground equipment.

NEGATIVES:

- Two parent drop-off/pickup lane requires an additional staff member to monitor students crossing across the interior lane.
- May not provide enough waiting space for parents to solve the issue of vehicles waiting in the streets.

ELEMENTARY SCHOOL OPTION C

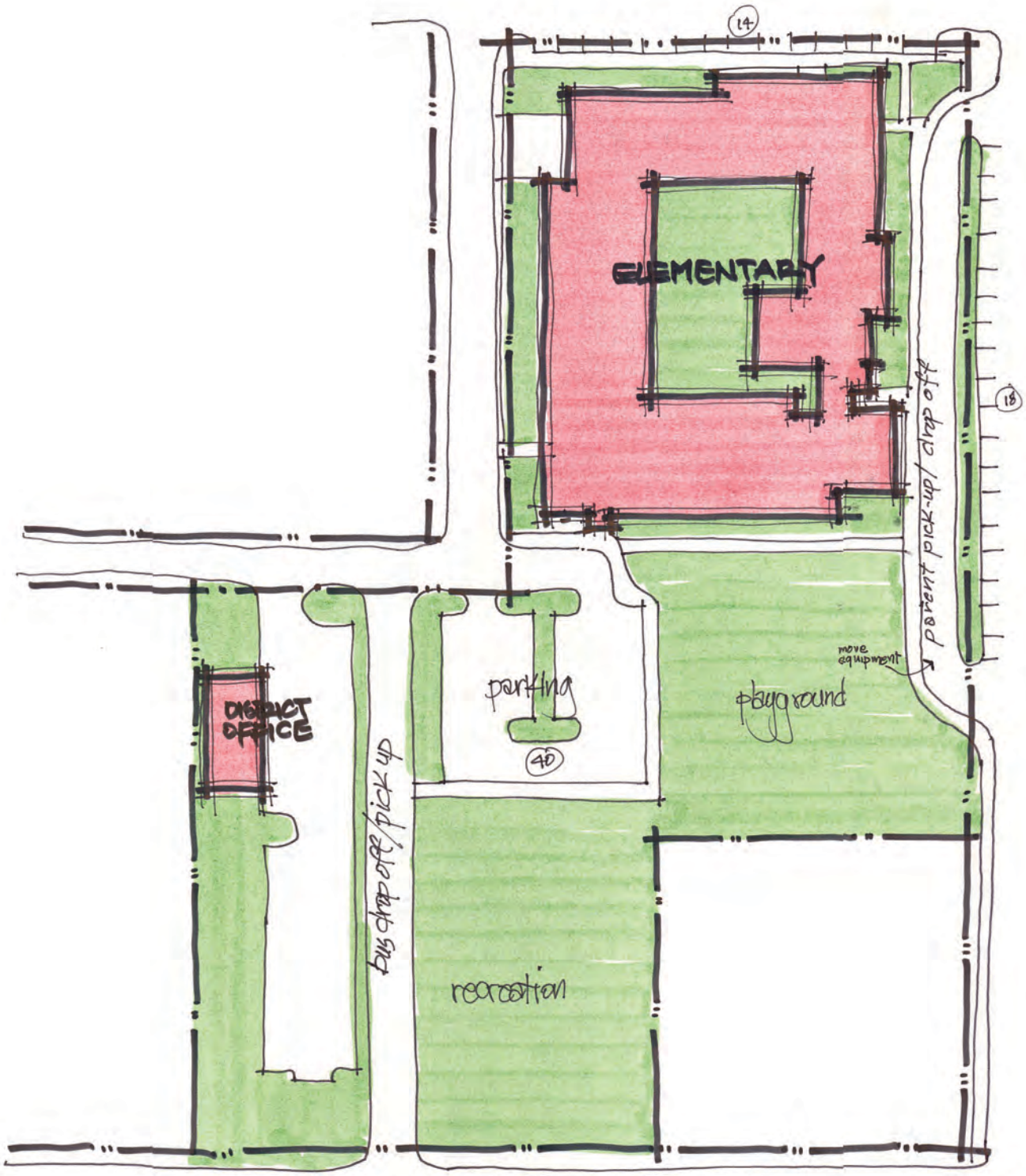
This concept considered the potential to purchase a property across the street from the school. The location of the property shown on this plan is irrelevant for the concept plan, this concept could be applied to any property surrounding the school.

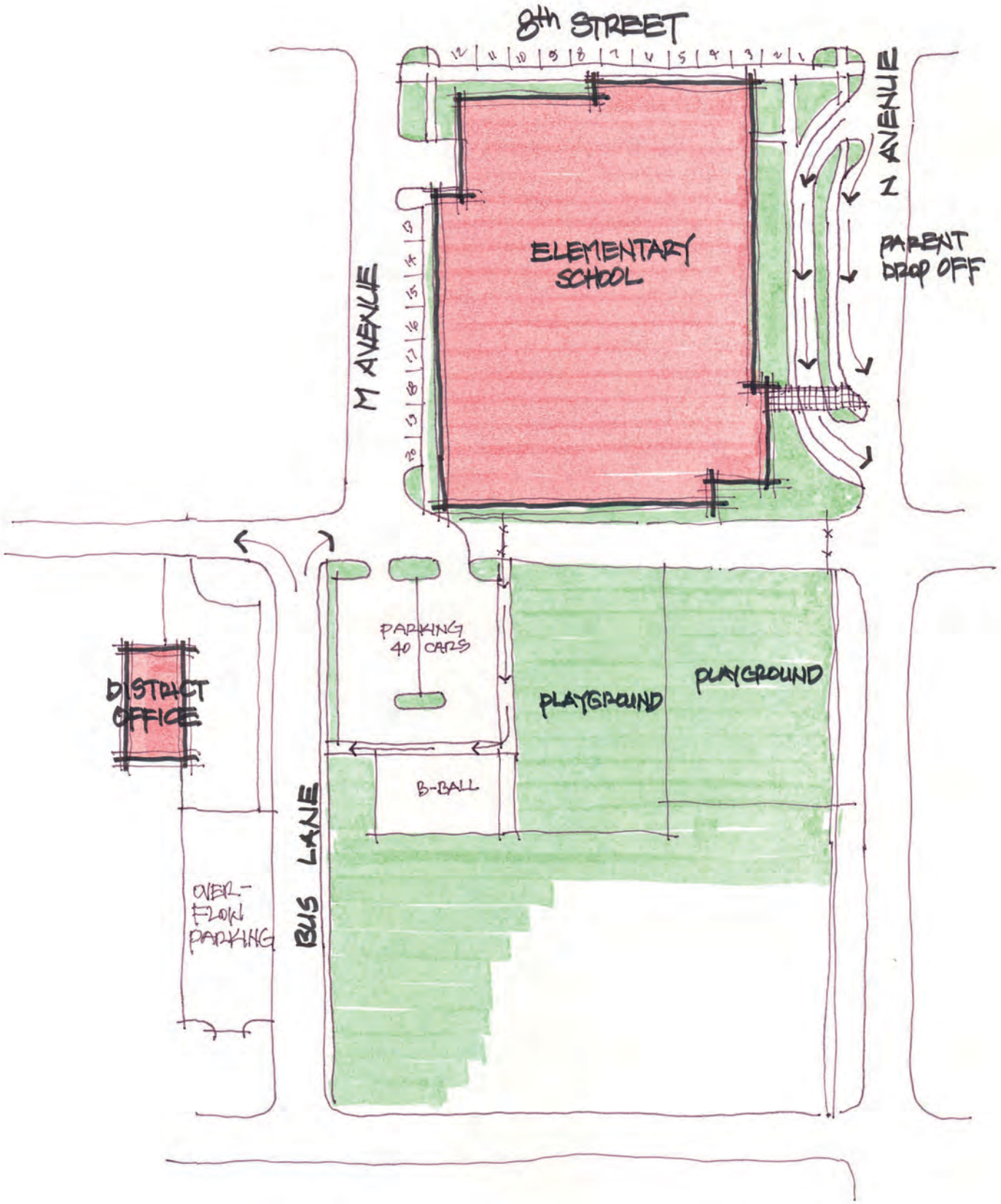
POSITIVES:

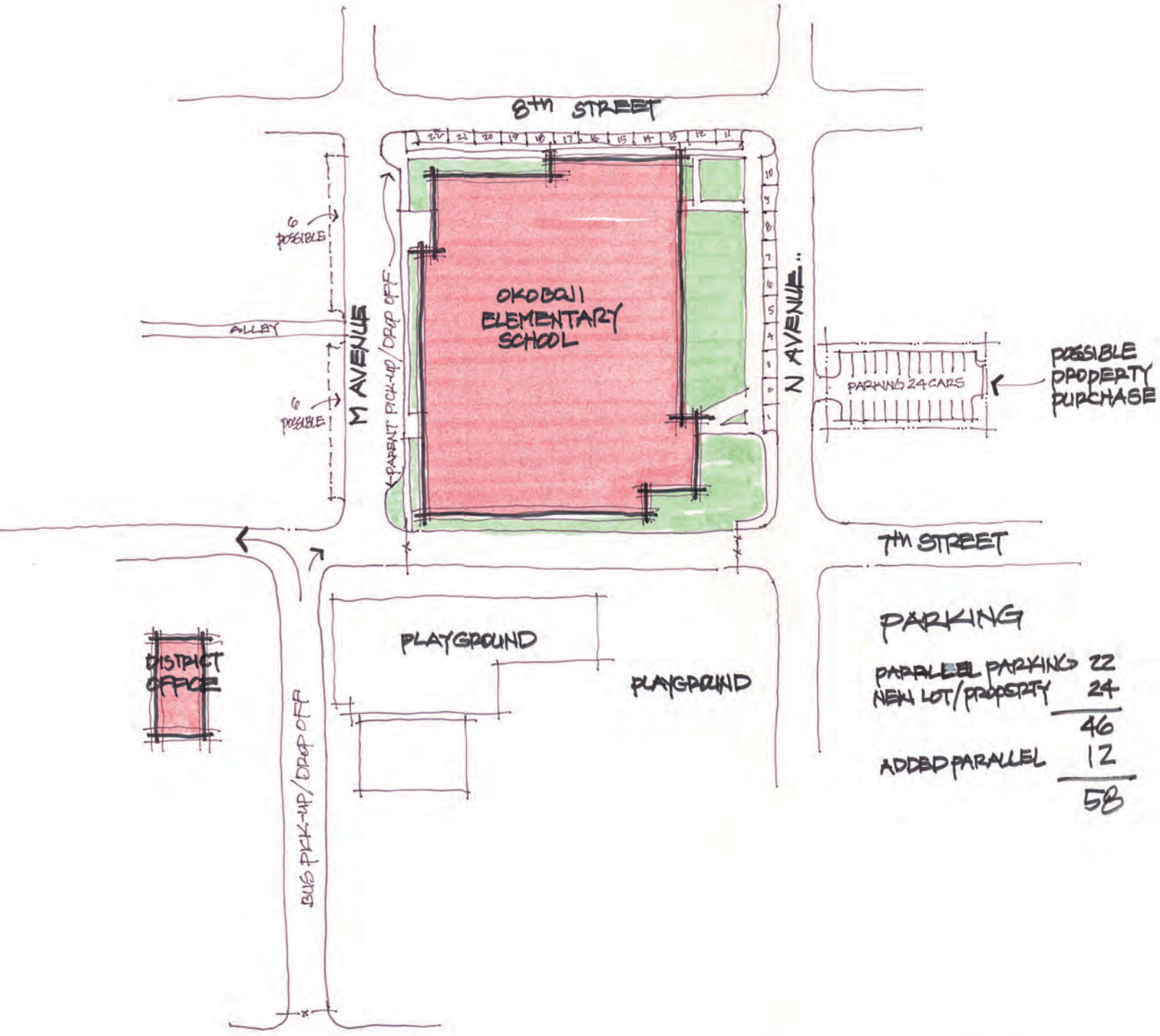
- Playground equipment can be replaced and located in the same location.
- Does not affect the Pre-K playground equipment.

NEGATIVES:

- Cannot create enough parking for all the staff, added between the on-street parallel parking and the new parking lot.
- Requires the purchase of additional property and demolition of any structures on that property.
- Not favorable to the adjacent property owners.
- Requires staff to cross the street.


14
ELEMENTARY
parent pick-up/ drop off
18
move equipment
playground
parking
45
DISTRICT OFFICE
bus drop off/ pick up
recreation


8th STREET
M AVENUE
N AVENUE
ELEMENTARY SCHOOL
PARENT DROP OFF
DISTRICT OFFICE
PARKING 40 CARS
PLAYGROUND
PLAYGROUND
B-BALL
BUS LANE
OVER-FLOW PARKING


8TH STREET
M AVENUE
N AVENUE
7TH STREET
OKOBOJI ELEMENTARY SCHOOL
6 POSSIBLE
ALLEY
6 POSSIBLE
PARENT PICKUP/DROP OFF
PARKING 24 CARS
POSSIBLE PROPERTY PURCHASE
DISTRICT OFFICE
PLAYGROUND
PLAYGROUND
BUS PICKUP/DROP OFF
PARKING
PARALLEL PARKING 22
NEW LOT/PROPERTY 24
46
ADDED PARALLEL 12
58

02 / ATHLETIC FIELD REVIEW

HIGH SCHOOL ATHLETIC FIELD REVIEW

The stadium complex containing the football field, track and field sports, and bleachers were reviewed as part of this report. The baseball and softball fields were not reviewed based on discussions with the District. However, the ground around the two ball fields needs significant repair as the grass is not growing, severely rutted and full of weeds. While this is cosmetic in nature, it does create issues for the athletes and spectators traversing the rutted grounds and uneven foliage.

The track has been resurfaced with asphalt several years ago and shows significant signs of deterioration. There are several areas where there are significant drops off the edge of the track and several areas where the asphalt is failing, particularly around the inside and outside edges of the track. This creates a hazard for the athletes for the potential of rolled or broken ankles and feet.

Additionally, there is no fence separation around the track as preferred. Separation fencing is preferred to prevent undesirable outside agents from entering the track easily, especially in the middle of an event. An outside agent is any foreign element that could interfere with the activities such as a squirrel, a toddler, a ball, etc.
The District has recently poured a few new sidewalks and at the time of the review, had not regraded the soil around the sidewalks. This area should be regraded to prevent the drop off edge that presents a hazard to persons walking along the sidewalk.

For the track and field areas for different events, the conditions are not ideal for the athletes. These areas should be expected to incur some cost soon to improve the area for each event for the safety of the athletes. Several areas do not have the proper space for the event, have unlevel surfaces and adjacent surfaces, and surfaces that are failing. The bleachers appear to be in good, sound condition and no changes should be expected. This review was not exhaustive for the bleachers and no structural evaluation was performed. The visitor's bleachers however should be improved to provide an accessible path from the bleachers to the parking lot. Currently there are only two concrete pads on either end of the bleachers which occur at the bottom of the steps. Gravel then extends from the concrete pads to the parking lot. Additionally, the concrete pads are not level with the ground and therefore create a tripping hazard for the users.

The scoreboard should be replaced as the existing one requires manual labor to change between different sports. The Assessment Team observed crews trying to change the scoreboard for track use, which required an extension ladder set on unlevel ground and two persons to make the changes. Newer scoreboards can be electronically changed by one individual along with having those changes pre-programmed, thus allowing the change to occur immediately prior to the event.

02 / ADMIN BUILDING REVIEW

ADMINISTRATION BUILDING REVIEW

The building is an older building and needs some work to be done to maintain the building in good condition. The roof needs to be replaced, as noted in the Roof Review. There are downspouts that need to be extended to avoid dumping water directly adjacent to the foundation.

The interior of the building has nice, newer finishes of carpeting, paint, doors and wood trim. The ceilings are dated but still functional and not heavily damaged. There is a large storage area on the back of the building that houses some District records and other materials. However this space is moderately tempered and does not provided good storage conditions for long term records storage.

The interior of the building is also underutilized. The superintendent's office is larger than needed, and the front office area has a significant amount of wasted space. These equates to the need to heat/cool a building at a higher rate per occupant.

The biggest issue with this building is that the building does not meet ADA requirements. The entrance door is not wide enough, nor have the proper side clearances to maneuver through the vestibule. The entrance is also raised above the sidewalk significantly; ADA requires the maximum height difference to be 1/2" or less. The main entrance is several inches above the sidewalk. Additionally, the public restroom does not meet ADA requirements for size and space clearances.

While the building location is convenient to the Elementary and High School, it does not meet current codes and is not usable for disabled individuals, both public and staff members. The Assessment Team is recommending moving the District Office to the Alternative High School Building. This move would resolve the issue of ADA clearances as well as use a building better suited for the space needs. Since the Alternative building is newer, it has better insulation and higher efficiency heating and cooling system, which can help reduce the Districts energy costs.

02 / ALT HIGH SCHOOL REVIEW

ALTERNATIVE HIGH SCHOOL REVIEW

The building was recently completed and is in excellent condition, but is currently vacated and unused. This is a drain on the District to heat/cool the building, keep electricity on, and maintain the facility. However, the Team does feel that there can be alternative uses to the building that would benefit the District and/or the community.

Per the Master Plans, the Team is recommending that the Administration Office utilize the building as the District Office. This would allow the existing Administration Building to be sold, razed, or used for other uses. Selling the existing Administration Building would be preferred as it would allow the building to be immediately removed from the Districts expenses and could allow the building to go back onto the City's tax basis. Razing the building could be an option if this area was to be designed for the transportation facility (bus barn) to house all of the District buses and vehicles. Alternatively, the building could be reused for other purposes such as a district maintenance office and directly connected to a transportation facility.

Other uses for the Alternative Building include opening the building up for community events, a storage building for athletics, or as a potential concession stand. However, the conversion to a concessions stand would be required significant remodeling and infrastructure improvements for water, electricity and exhaust. These options however, do not utilize the building significantly and could require significant remodeling cost. Converting to a District Office would be minimal as most of the infrastructure is already in place, meets ADA requirements for restrooms, and would only potentially require the construction of a few walls if additional dedicated offices are required. Based on the existing floor plan, the Team felt that the existing walls could remain, no new walls constructed, and perform well as a District Office. Board meetings could be staged in the open area of the existing building, superintendent in the existing enclosed office space, and the administration staff could utilize the existing administration desks and relocate to this building into the main open area.

ROOF REVIEW 03

03 / ROOF REVIEW

BUILDING ROOF REVIEWS

To save the District additional cost for a roof review by the Assessment Team, this report is including the recent roof review performed by a roofing contractor that was completed in 2015. The Assessment Team has created overall images and key-codes to help explain the areas of roofing that are in need of replacement, along with giving a timeline of when to expect those replacements should occur. Each building, except for the Alternative High School Building, have roof areas that are in need of attention in the near future.

The Team has given some cost based on square foot values. The Team has supplied these values based on recent work on other school roof replacements in the near area and these values are different from roof area to roof area. The explanation for the difference is due to the type of roof material that is present and the expected work to remove the roof material. To summarize, there is approximately $760,000 worth of roof replacement that should occur immediately among the buildings. If this is completed at one time, it could be expected to achieve better competitive bidding among the contractors vs. trying to have each roof area replaced independently of each other. There is another $1,500,000 worth of roof replacement to be performed within the next 4-8 years.

PROJECTED COSTS FOR ROOF REPLACEMENT

Work includes removal of existing roof material, adding sufficient insulation to bring building into energy code compliance, and resurfacing with Fully Adhered TPO membrane and new roof edge metal. (Reference Roof Analysis Sheet to identify various regions and existing roof types, conditions and timeframe for replacement) To gain benefit of economy of scale regions are combined into manageable sections.

Cost for immediate replacement is $11/SF for fully adhered EPDM roofs; $13/SF for ballasted EPDM. However, due to complex staging conditions at the Middle School there are some added costs: $13.50/SF. TPO roofs are proposed at all locations and are considered the best solution which translates to most expensive replacement costs.

Costs are modified for inflation at approximately 2.5% per year. No costs for asbestos abatement are included.

HIGH SCHOOL

IMMEDIATE REPLACEMENT AREA
(3, 4, 6, 7, 15, 16 are Gravel Built-Up) = 32,550 SF

Cost to replace now ($13/SF) = $423,150
Cost to replace in 3 years ($13.66/SF) = $444,633

REPLACEMENT WITHIN 4-8 YEARS
@ SW corner (9, 13, 14, 18 are Ballasted EPDM) = 17,450 SF

Cost to replace now ($13/SF) = $226,850
Cost to replace in 4 years ($14/SF) = $244,300
Cost to replace in 8 years ($15.32/SF) = $267,344

REPLACEMENT WITHIN 4-8 YEARS
@ NE corner (1, 2, 5, 8, 8A, 10, 11, 12 are Ballasted EPDM) = 39,950 SF

Cost to replace now ($13/SF) = $519,350
Cost to replace in 4 years ($14/SF) = $559,300
Cost to replace in 8 years ($15.32/SF) = $612,034

MIDDLE SCHOOL

IMMEDIATE REPLACEMENT AREA
(7, 10 are Ballasted EPDM) = 14,650 SF

Cost to replace now ($13.50/SF) = $197,775
Cost to replace in 3 years ($14.18/SF) = $207,737

REPLACEMENT WITHIN 4-8 YEARS
@ South (5, 6 are Ballasted EPDM) = 12,600 SF

Cost to replace now ($13.50/SF) = $170,100
Cost to replace in 4 years ($14.50/SF) = $182,700
Cost to replace in 8 years ($15.86/SF) = $199,836

REPLACEMENT WITHIN 4-8 YEARS
@ North (1, 2, 3, 4 are Ballasted EPDM) = 28,530 SF

Cost to replace now ($13.50/SF) = $385,155
Cost to replace in 4 years ($14.50/SF) = $413,685
Cost to replace in 8 years ($15.86/SF) = $452,486

ELEMENTARY SCHOOL

IMMEDIATE REPLACEMENT AREA
(4A is Fully Adhered EPDM) = 9,375 SF

Cost to replace now ($11/SF) = $103,125
Cost to replace in 3 years ($11.56/SF) = $108,375

IMMEDIATE REPLACEMENT AREA
(Admin is Built-up Asphalt) = 3,444 SF

Cost to replace now ($11/SF) = $37,884
Cost to replace in 3 years ($11.56/SF) = $39,813

REPLACEMENT WITHIN 4-8 YEARS
@ South (4 is Fully Adhered EPDM) = 8,875 SF

Cost to replace now ($11/SF) = $97,625
Cost to replace in 4 years ($11.84/SF) = $105,080
Cost to replace in 8 years ($13/SF) = $115,375

REPLACEMENT WITHIN 4-8 YEARS
@ Central (5, 5A is Fully Adhered EPDM) = 1,800 SF

Cost to replace now ($11/SF) = $19,800
Cost to replace in 4 years ($11.84/SF) = $21,312
Cost to replace in 8 years ($13/SF) = $23,400

REPLACEMENT WITHIN 4-8 YEARS
@ North (1 is Fully Adhered EPDM) = 6,825 SF

Cost to replace now ($11/SF) = $75,075
Cost to replace in 4 years ($11.84/SF) = $80,808
Cost to replace in 8 years ($13/SF) = $88,725

LEGEND

IMMEDIATE REPLACEMENT REQUIRED WITHIN THE NEXT 1-3 YEARS

FORECASTED REPLACEMENT WITHIN NEXT 4-8 YEARS

NEW ROOF NO REPLACEMENT REQUIRED

HIGH SCHOOL ROOF ANALYSIS

1 Ballasted EPDM roof system

2 Ballasted EPDM roof system

3 Gravel Built-Up roof system

4 Gravel Built-Up roof system

5 Ballasted EPDM roof system

6 Gravel Built-Up roof system

7 Gravel Built-Up roof system

8 Ballasted EPDM roof system

8A Fully Adhered EPDM roof system

9 Ballasted EPDM roof system

10 Ballasted EPDM roof system

11 Ballasted EPDM roof system

12 Ballasted EPDM roof system

13 Ballasted EPDM roof system

14 Gravel Built-Up roof system

15 Gravel Built-Up roof system

16 Gravel Built-Up roof system

17 Fully Adhered EPDM roof system

17A Fully Adhered EPDM roof system

18 Ballasted EPDM roof system

19 Fully Adhered EPDM roof system

19A Fully Adhered EPDM roof system

20 Fully Adhered EPDM roof system

21 Fully Adhered EPDM roof system

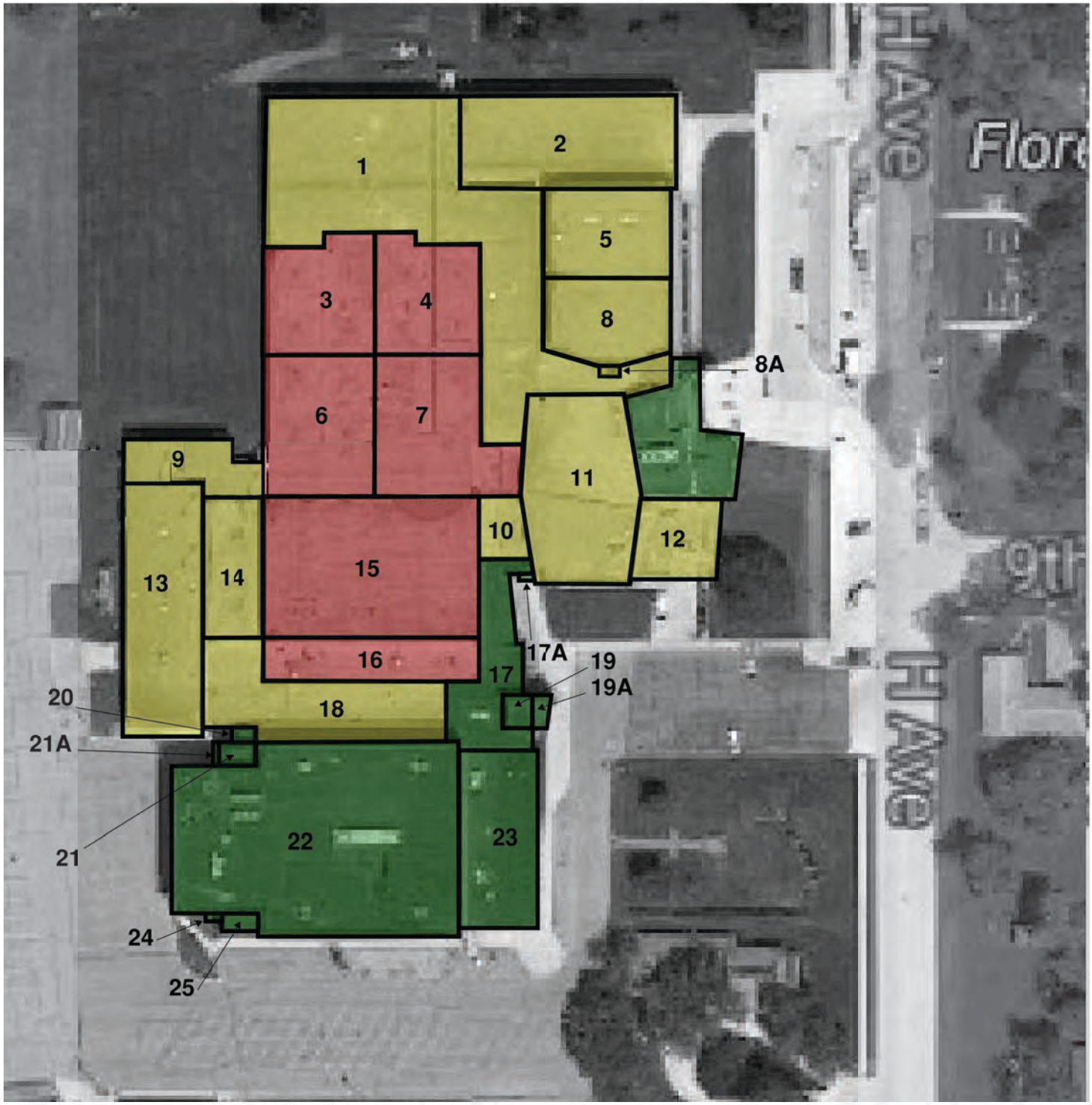
21A Fully Adhered EPDM roof system

22 Fully Adhered EPDM roof system

23 Fully Adhered EPDM roof system

24 Fully Adhered EPDM roof system

25 Fully Adhered EPDM roof system



OKOBOJI COMMUNITY SCHOOL DISTRICT ROOF ANALYSIS

BASED ON A 2015 ROOF REPORT & PROPOSAL FOR REPAIRS AND/OR REPLACEMENT CONDUCTED BY R.L. KRAFT COMMERCIAL ROOFING.

LIFE EXPECTANCY RANGES ARE NOT ADJUSTED TO 2017

LEGEND

IMMEDIATE REPLACEMENT REQUIRED WITHIN THE NEXT 1-3 YEARS

FORECASTED REPLACEMENT WITHIN NEXT 4-8 YEARS

NEW ROOF NO REPLACEMENT REQUIRED

MIDDLE SCHOOL ROOF ANALYSIS

1 Fully Adhered EPDM roof system

2 Ballasted EPDM roof system

3 Ballasted EPDM roof system

4 Ballasted EPDM roof system

5 Ballasted EPDM roof system

6 Ballasted EPDM roof system

7 Ballasted EPDM roof system

8 Fully Adhered EPDM roof system

9 Fully Adhered EPDM roof system

10 Ballasted EPDM roof system

OKOBOJI COMMUNITY SCHOOL DISTRICT ROOF ANALYSIS

BASED ON A 2015 ROOF REPORT & PROPOSAL FOR REPAIRS AND/OR REPLACEMENT CONDUCTED BY R.L. KRAFT COMMERCIAL ROOFING.

*****LIFE EXPECTANCY RANGES ARE NOT ADJUSTED TO 2017*****

LEGEND

IMMEDIATE REPLACEMENT REQUIRED WITHIN THE NEXT 1-3 YEARS

FORECASTED REPLACEMENT WITHIN NEXT 4-8 YEARS

NEW ROOF NO REPLACEMENT REQUIRED

ELEMENTARY SCHOOL ROOF ANALYSIS

1 Fully Adhered EPDM roof system

2 Fully Adhered EPDM roof system

3 Fully Adhered EPDM roof system

4 Fully Adhered EPDM roof system

4A Fully Adhered EPDM roof system

5 Fully Adhered EPDM roof system

5A Fully Adhered EPDM roof system

6 Fully Adhered EPDM roof system

7 Concrete roof

8 Fully Adhered EPDM roof system

9 Fully Adhered EPDM roof system

10 Fully Adhered EPDM roof system

11 Fully Adhered EPDM roof system

12 Fully Adhered EPDM roof system

ADMINISTRATION

A Built-Up Asphalt roof system

OKOBOJI COMMUNITY SCHOOL DISTRICT ROOF ANALYSIS

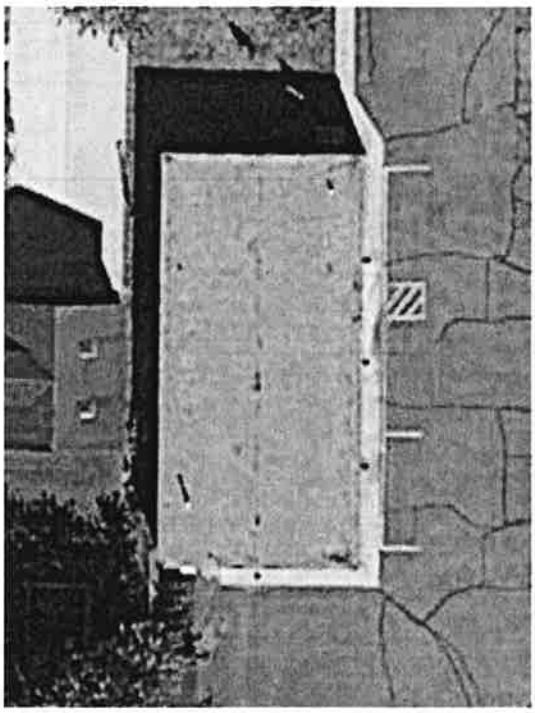
BASED ON A 2015 ROOF REPORT & PROPOSAL FOR REPAIRS AND/OR REPLACEMENT CONDUCTED BY R.L. KRAFT COMMERCIAL ROOFING.

LIFE EXPECTANCY RANGES ARE NOT ADJUSTED TO 2017

PIONEERS

Okoboji Administration
1205 7th Street
Milford, Iowa
2015 Report

Inspected by Mike Petula



RL CRAFT
COMMERCIAL ROOFING

2509 HWY 30 EAST P.O. BOX 633 DENISON, IOWA 51442-0633
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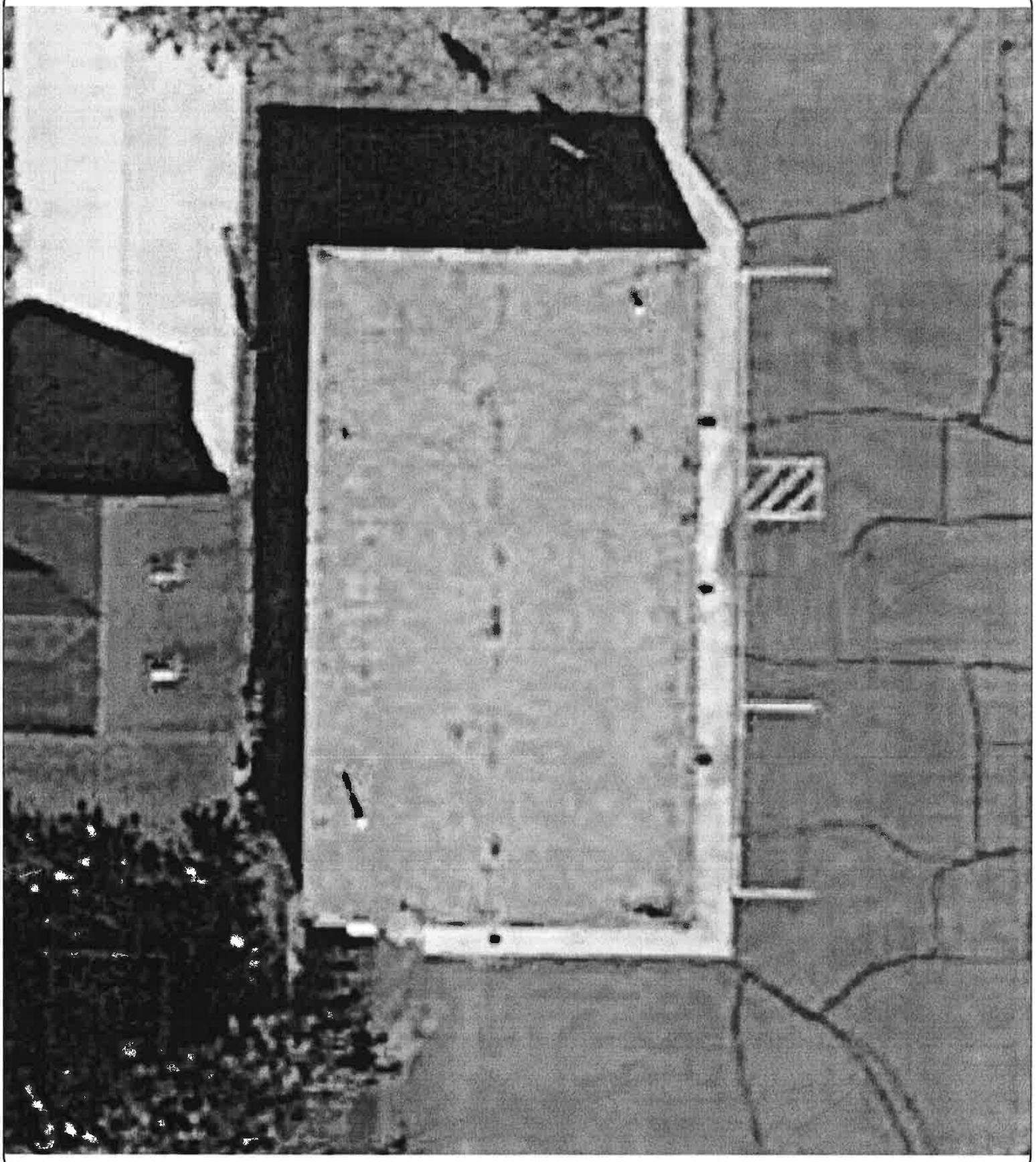


RL CRAFT
COMMERCIAL ROOFING

Building Overview

Okoboji Administration

1205 7th Street, Milford, Iowa

PIONEERS

Roof Section Photos

Roof Overview

Exposed Felts (Common)

Deteriorating Asphalt at the Field Felts

Deteriorating Asphalt at the Field Felts

Torn Pipe Boot/Not Commercial Grade

Gutter Detail (Minor Debris/Ponding)

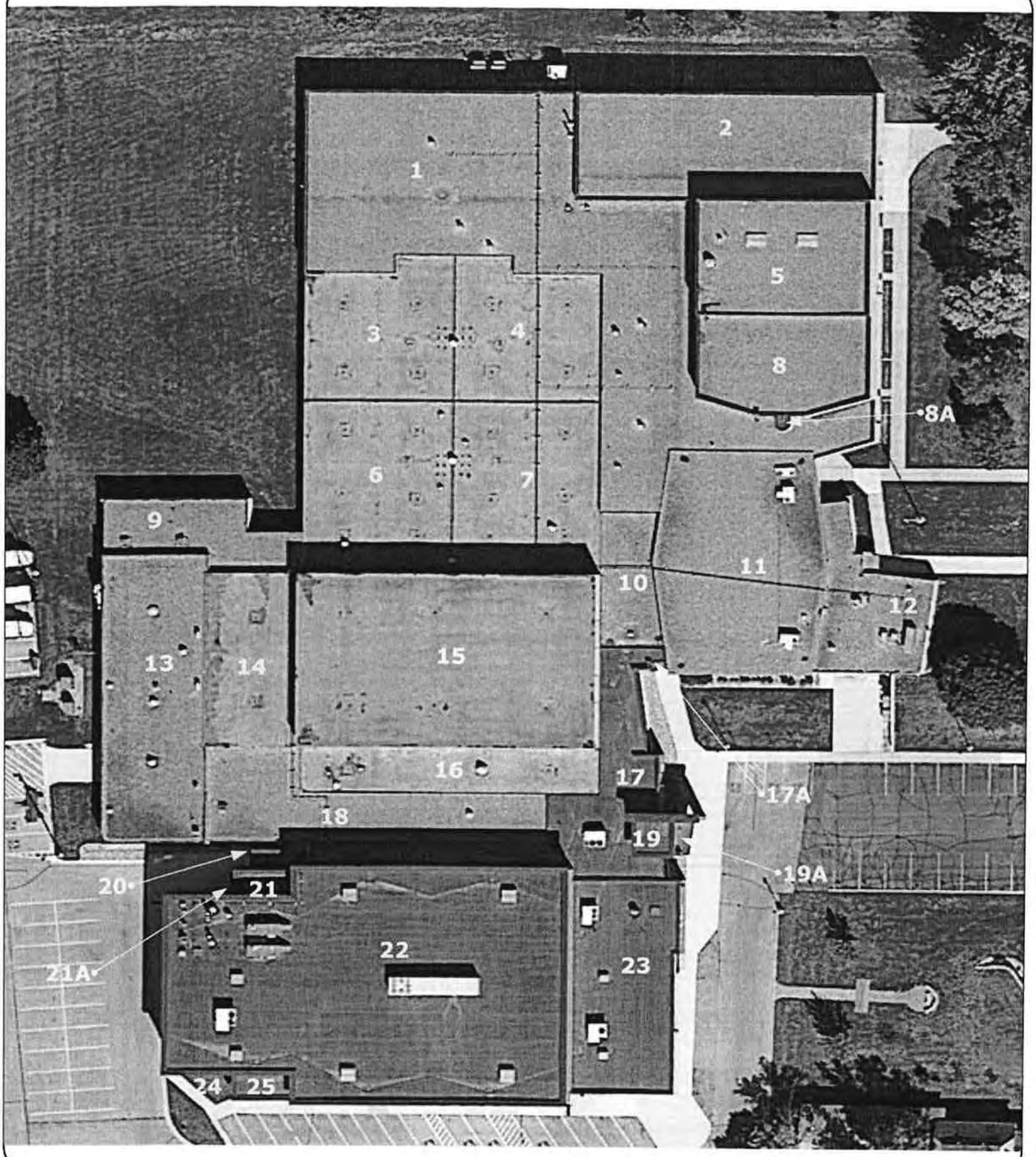
Roof Section Summary

Roof System:
The roof employs a Built-Up Asphalt roof system with gravel surfacing. The roof slopes at approximately 1/16" per foot to all edges with a gutter on the front side.

Roof Evaluation:
The roof is in poor condition. The roof appears to have been properly installed and is holding-up well for its age. There is significant deterioration noted at the field felts and the flashings along with several soft areas in the field which is generally a good indication of weakening field felts.

Recommendations:
This roof is nearing the end of its life cycle. It should be monitored until its replacement can be budgeted.

Estimated Life:
The roof should perform approximately 1-3 years, depending on the harshness of winters.



RL CRAFT
COMMERCIAL ROOFING

Building Overview

Okoboji High School

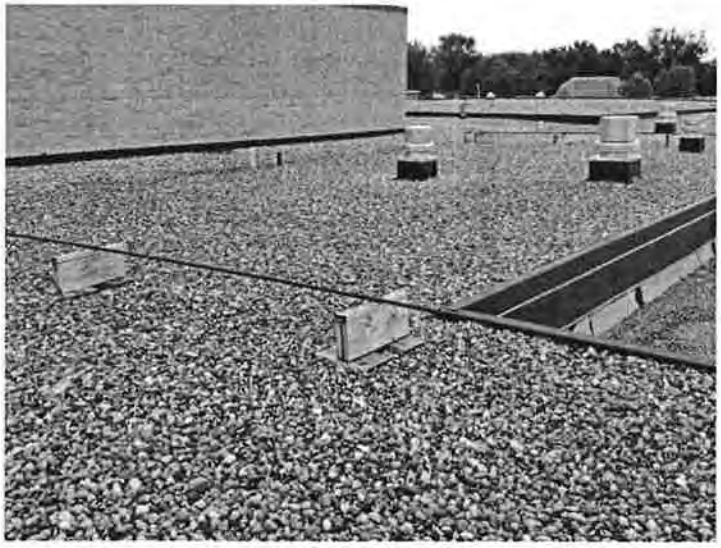
901 H Avenue, Milford, Iowa

PIONEERS

Roof Section Photos
Section 1

Roof Overview Section 1

Roof Overview Section 1



Minor Pulled Vertical Wall Flashing

Moderate Pulling Along West Wall

Edge Metal Looks Good

Curbs Look Acceptable

Roof Section Photos
Section 2

Roof Overview Section 2

Suspect Wall Flashing Detail

Repaired Scupper Details Holding Well

Minor Pulling Along South Wall

Significant Lifting at West Wall Flashing

Some Ponding at Drains

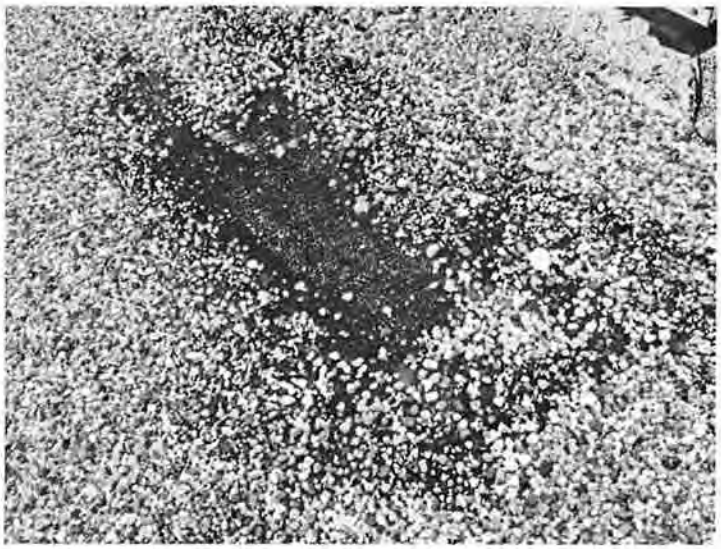
Roof Section Photos
Section 3

Roof Overview Section 3

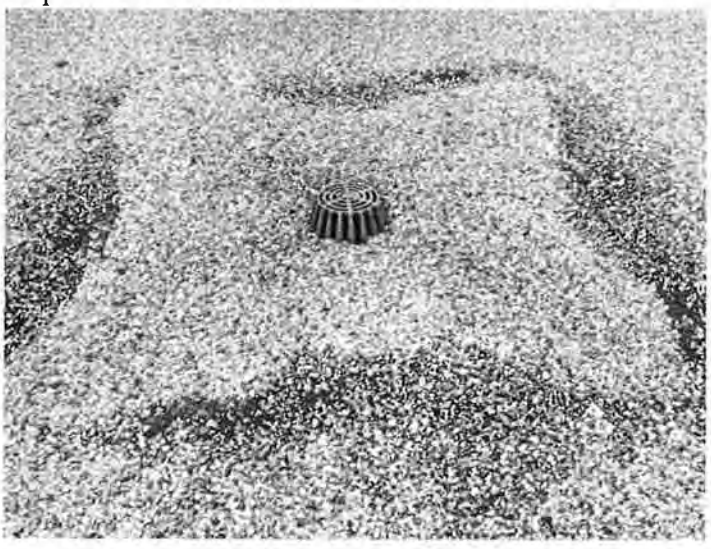
Cracked Wall Flashings

Wall Details Deteriorating But Holding

Bare Spots Appear Around Field



Exposed Felts and Deterioration at Drain Details



Roof Section Summary
Sections 1-3

Roof System:
Section 1 employs a Ballasted EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 2 employs a Ballasted EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 3 employs a Gravel Built-Up roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Roof Evaluation:
Section 1 is in fair to good condition. The field is evenly ballasted and free of debris. There are minor pulled wall flashings and an area in the field where the seam is delaminating. There are wall flashings that were previously repaired with caulk. This is considered a substandard repair because caulk is not a long-term EPDM repair material and will make future repairs more costly. Caulk should only be used as a temporary/emergency repair.

Section 2 is in fair condition. Overall the field is evenly ballasted and free of debris with the exception of an area near a vertical wall where the ballast is misplaced and the field membrane is exposed. There is an area with minor pulled wall flashings. There are minor runs of pulled wall flashings with some areas experiencing significant lifting along the top of the wall. The pulling will likely continue and could open these flashings.

Section 3 is in fair condition for its age. The field appears to be holding-up well for its age and the flashings are in serviceable condition. There is minor deterioration of the asphalt on the field flashings and pitch pans. The exposed felts in a few small areas are a concern for leaks but appear to be holding for now.

Recommendations:
Section 1: No repairs are needed at this time, however the substandard caulked wall flashings should be monitored along with the minor pulled wall flashings and minor delaminating field seam.

Section 2: The lifted wall flashing along the west should be reflashed with 5" Quikck Seam to ensure it does not open. The minor pulled wall flashing should be monitored annually.

Section 3: The roof in general should be monitored for more areas of exposed felt.

Estimated Life:
Section 1: The roof should perform approximately 3-5 years.

Section 2: The roof should perform approximately 4-6 years.

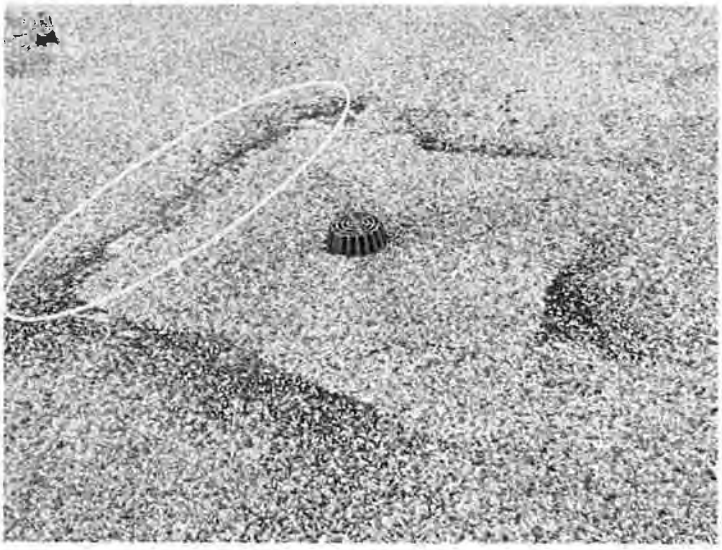
Section 3: The roof should perform approximately 1-2 years depending on the harshness of winters.

Roof Section Photos
Section 4

Roof Overview Section 4

Wall Seam Repairs Beginning to Separate

Exposed Felts in Places



Pitched Pans Appear to Be Performing Well

Roof Section Photos
Section 5

Roof Overview Section 5

Membrane Well Adhered to Wall

Moderate Pulled Wall Flashing (60')

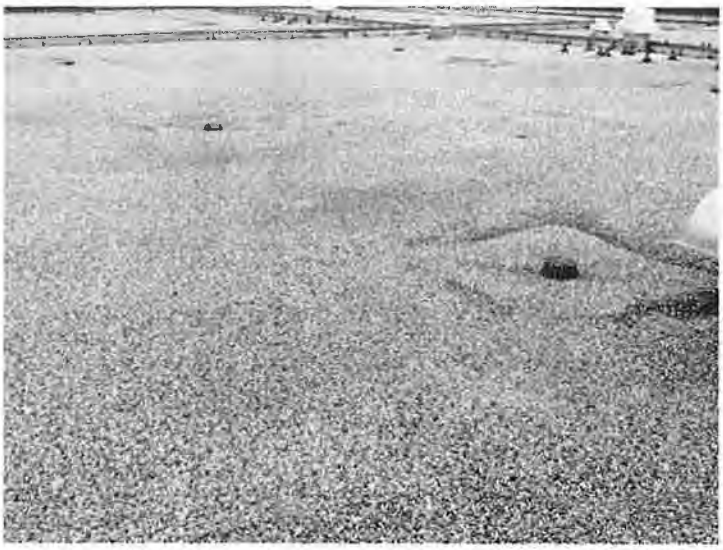
Open Curb Corner Flashing

Open Curb Corner Flashing

Lifting Field Seam

Roof Section Photos
Section 6

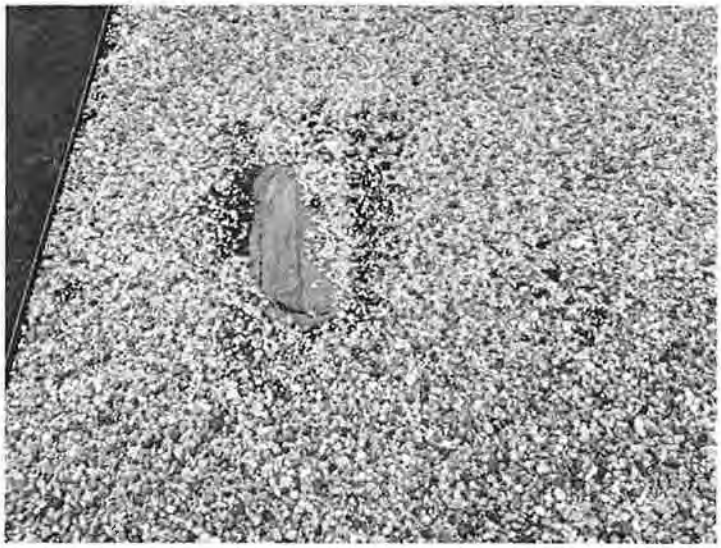
Roof Overview Section 6



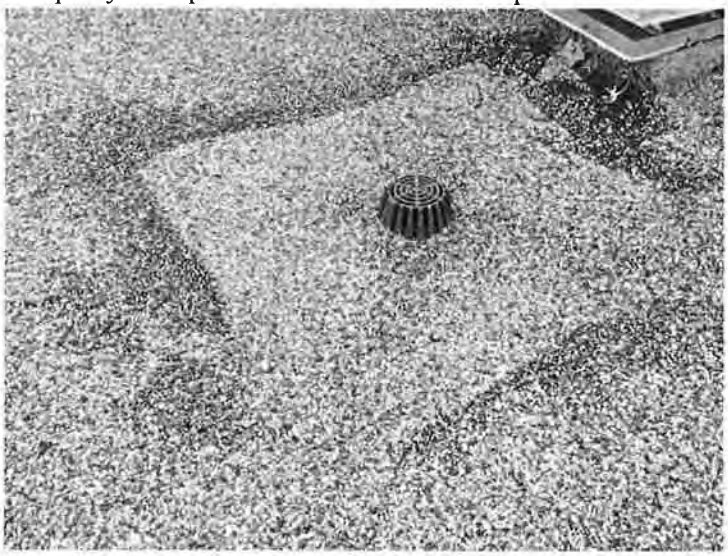
Edge Metal Holding at Perimeter Well

Wall Flashings Holding for Their Age

Previously Repaired Area Holding But Deteriorating



Properly Sumped Drain with Minor Exposed Felts



Details at Curbs & Penetrations Holding

Roof Section Summary
Sections 4-6

Roof System:
Section 4 employs a Gravel Built-Up roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 5 employs Ballasted EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 6 employs a Gravel Built-Up roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Roof Evaluation:
Section 4 is in fair condition for its age. The field appears to be holding-up well for its age and the flashings are in serviceable condition. There is minor deterioration of the asphalt, notably at the area of on old field repair. A few areas are showing exposed felts which is typical as the roof ages.

Section 5 is in fair condition. The field is evenly ballasted and free of debris. There are (2) open curb corners. There are runs of moderate pulling (60') at the north wall. Visible field seams are lifting some which is typical as the roof ages.

Section 6 is in fair condition for its age. The field appears to be holding-up well for its age. The flashings are in serviceable condition, but are also showing signs of age. There is minor deterioration of the asphalt especially at the curb details and some at the drains.

Recommendations:
Section 4: The deteriorated asphalt wall details and exposed felts should be monitored.

Section 5: The (2) open curb corner should be properly patched. The pulling at the walls, especially along the north (60') should be closely monitored as well as the lifting field seams.

Section 6: The deteriorated asphalt wall details and exposed felts should be monitored.

Estimated Life:
Section 4: The roof should perform approximately 1-3 years.

Section 5: The roof should perform approximately 5-7 years after proper repairs have been completed.

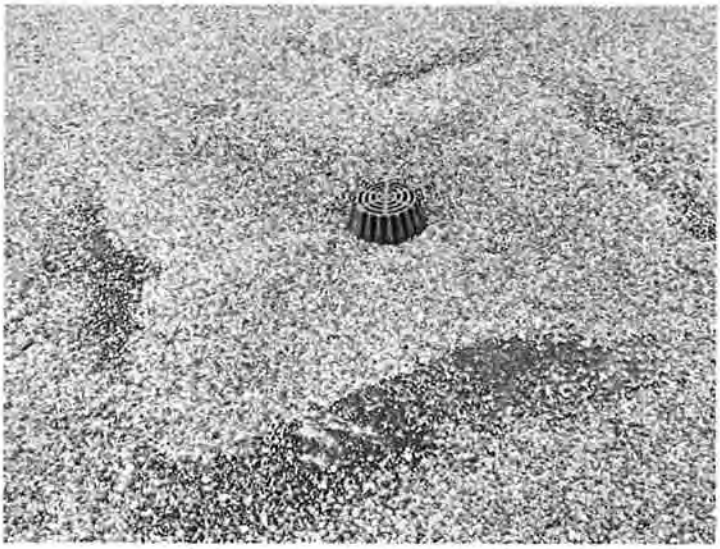
Section 6: The roof should perform approximately 1-3 years.

Roof Section Photos
Section 7

Roof Overview Section 7

Wall Flashings Holding for Their Age

Exposed Felts at Drain Details

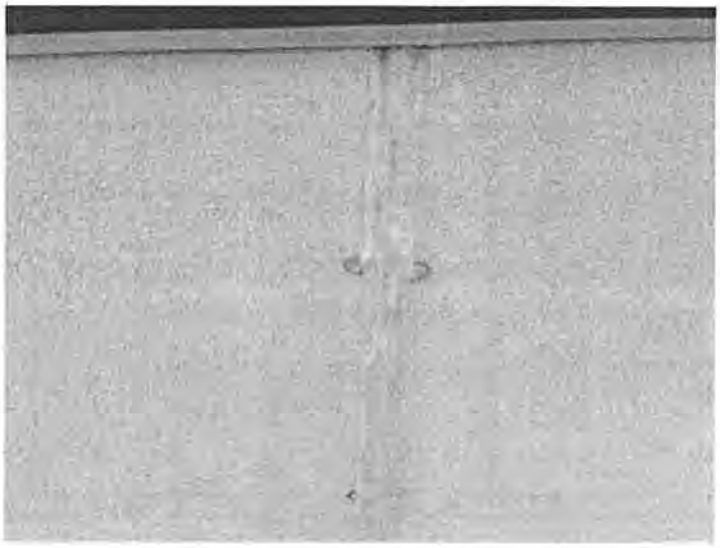


Pitch Pan Details Holding Well

Roof Section Photos
Section 8

Roof Overview Section 8

EIFS Joints Have Been Sealed



Roof Edge Looks Good

Moderate Pulled Wall Flashings

Moderate Pulled Wall Flashings

Roof Section Photos
Section 8A

Roof Overview Section 8A

Perimeter Flashing Repaired Nicely

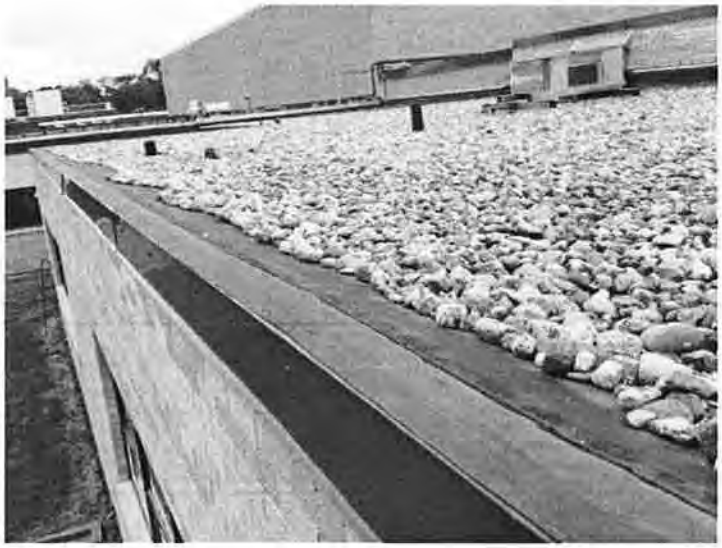
Scupper Details Holding Well

Roof Section Photos
Section 9

Roof Overview Section 9

Repaired Wall Flashing Looks Good

Edges Look Good



Significant Pulling at Vertical Wall (40')

Roof Section Summary
Sections 7-9

Roof System:
Section 7 employs a Gravel Built-Up roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 8 employs a Ballasted EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 8A employs a Fully Adhered EPDM roof system. The roof slopes at approximately 1/8" per foot to a scupper.

Section 9 employs a Ballasted EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Roof Evaluation:
Section 7 is in poor condition. The field appears to be holding-up well for its age and the flashings are in serviceable condition. There is minor deterioration of the asphalt at the curb details and in the field.

Section 8 is in fair condition. The roof is evenly ballasted and free of debris. There are two walls with moderate pulling of the wall flashings.

Section 8A is in fair condition overall. The field is well adhered. The perimeter flashing has been repaired and looks great.

Section 9 is in fair condition overall. The roof is evenly ballasted and free of debris. Previous wall re-flash repairs look good, however another run is pulling significantly at the vertical wall.

Recommendations:
Section 7: No repairs are needed at this time.

Section 8: The moderately pulled wall flashings should be monitored annually.

Section 8A: No repairs are needed at this time.

Section 9: The 40' of pulled wall flashings could be reflashed.

Estimated Life:
Section 7: The roof should perform approximately 1-3 years.

Section 8: The roof should perform approximately 5-7 years.

Section 8A: The roof should perform approximately 3-5 years.

Section 9: The roof should perform approximately 2-4 years with minor repairs likely.

Roof Section Photos
Section 10

Roof Overview Section 10

Repaired Wall Flashing Looks Good

Vertical Wall Flashing Looks Acceptable

New Penetration Detailed Properly

New Curb Detailed Properly

Roof Section Photos
Section 11

Roof Overview Section 11

Curb Details Look Good

Transition Area Looks Poorly Done

Vertical Wall Details Look Acceptable

Properly Sumped Drain

Roof Section Photos
Section 12

Roof Overview Section 12

Moderately Pulled Wall Flashing

New Vertical Wall Details Look Good

Newer Curb Corner Details Look Good

Field Seam With Minor Lifting

Frozen HVAC Line at Pitch Pan

Roof Section Summary
Sections 10-12

Roof System:
Section 10 employs a Ballasted EPDM roof system. The roof slopes at approximately 1/8" per foot to an internal drain.

Section 11 employs a Ballasted EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 12 employs a Ballasted EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Roof Evaluation:
Section 10 is in fair condition. Overall the field is evenly ballasted and free of debris and the drain is properly sumped. Past repairs look good and are holding well. New penetration & curb details look good.

Section 11 is in good condition. The field is evenly ballasted and free of debris. The flashings appear to be well adhered and performing properly. New wall details where an addition has been added look good. An awkward transition area near a roof drain looks poor but at the same time appears watertight.

Section 12 is in fair condition. The field is evenly ballasted and free of debris. Curbs have been recently repaired at the corner details and look good. Field seams are beginning to experience lifting. There is a frozen HVAC at a pitch pan.

Recommendations:
Section 10: No additional repairs are needed at this time.

Section 11: No additional repairs are needed at this time

Section 12: The frozen HVAC line should be repaired by an HVAC contractor. The lifting field seams should be monitored.

Estimated Life:
Section 10: The roof should perform approximately 2-3 years.

Section 11: The roof should perform approximately 2-4 years.

Section 12: The roof should perform approximately 2-4 years.

Roof Section Photos
Section 13

Roof Overview Section 13

Pulling at Perimeter

Edge Metal Secured Well to Wall

Curb Nicely Repaired in The Past

Nice Flashing Repair to Division Wall

Roof Section Photos
Section 14

Roof Overview Section 14

Field Deterioration (Common)

Moderately Deteriorated Wall Flashing

Field Deterioration Around Drain

Past Repairs Now Deteriorating

Roof Section Photos
Section 15

Roof Overview Section 15

Large Bare Spots

Perimeter Edge Very Deteriorated (All Sides)

Perimeter Edge Very Deteriorated (All Sides)

Drain Details Deteriorated Exposing Felts

Past Perimeter Repair Now Starting to Fail

Roof Section Summary
Sections 13-15

Roof System:
Section 13 employs a Ballasted EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 14 employs a Gravel Built-Up roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 15 employs a Gravel Built-Up roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Roof Evaluation:
Section 13 is in fair condition. The field is evenly ballasted and free of debris. Curb repairs look good, however the perimeter edges continue to pull.

Section 14 is in fair condition. The field appears to be holding-up well, however the wall flashings appear to be moderately deteriorating and showing signs of aging. Several areas along the south are exposing felts which happens as the roof ages.

Section 15 is in poor condition. The field appears to be holding-up, but is showing signs of its age. There are areas where the field felts and edge flashings are showing noticeable signs of deterioration. Most of the perimeter edge is failing now including an area that was previously repaired with roof cement. It has deteriorated and opened up in a couple small areas.

Recommendations:
Section 13: Nothing is immediately needed. The pulling should be monitored yearly.

Section 14: No repairs are needed at this time, however the moderately deteriorating wall flashings should be monitored as well as areas of exposed felts along the south.

Section 15: The entire perimeter edge flashings should be repaired by applying roof cement and cotton membrane. If possible, a reroof could be considered soon to avoid repairing for what would be a short time (1-3 years).

Estimated Life:
Section 13: The roof should perform approximately 2-3 years.

Section 14: The roof should perform approximately 3-5 years.

Section 15: The roof should perform approximately 1-3 years with repairs.

Roof Section Photos
Section 16

Roof Overview Section 16

Bare Spots at Drain Details

Deteriorated Wall Flashing

Open Flashing at Soil Stack

Exposed Felts at Drain & Penetration Details

Newer Curb Detail Suspect

Roof Section Photos
Section 17

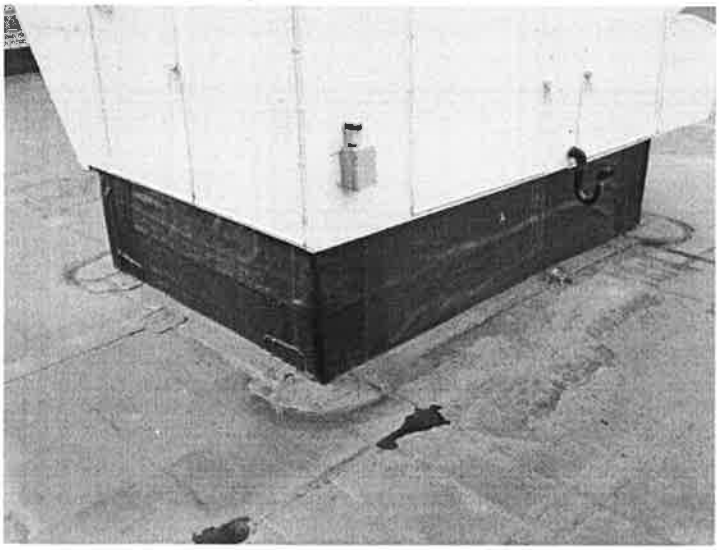
Roof Overview Section 17

Roof Overview Section 17

Crickets Installed (Look Great)

Vertical Wall Termination Nicely Done

Curb Details Nicely Done



Vertical Wall Looks Great

Roof Section Photos
Section 17A

Roof Overview Section 17A

Roof Overview Section 17A

Significant Ponding

Roof Section Photos
Section 18

Roof Overview Section 18

No Termination to Wall

Moderately Pulling Wall Flashing

Past Wall Repair Looks Good

Moderate Pulling at Curb Details

Roof Section Summary
Sections 16-18

Roof System:
Section 16 employs a Gravel Built-Up roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 17 employs a Fully Adhered EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 17A employs a Fully Adhered EPDM roof system. The roof slopes at approximately 1/8" per foot to a scupper.

Section 18 employs a Ballasted EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Roof Evaluation:
Section 16 is in fair to poor condition. The field is holding-up well for its age, however the wall and curb flashings are showing signs of deterioration. Soft spots are starting to occur. A soil stack has an open flashing and a newer curb that was installed has suspect caulking details.

Section 17 is in excellent condition. The field is well adhered. The field seams and all flashings appear to be performing properly.

Section 17A is in excellent condition. The field is well adhered. The field seams and all flashings appear to be performing properly. This section has significant ponding.

Section 18 is in fair condition. The field is evenly ballasted and free of debris. The flashings are well adhered and performing properly. There is a corner where no termination bar was installed, leaving this detail unfinished. A run of moderate pulling exists at the parapet wall.

Recommendations:
Section 16: The open flashing at the soil stack should be properly detailed. The other flashing & curb repairs as well as the deteriorating wall details should be monitored.

Section 17: Nothing is needed.

Section 17A: No repairs are needed at this time, however the severe ponding should be monitored annually. Even a small hole could let in a large amount of water.

Section 18: The roof installer of this section should be notified of the unfinished detail where the termination bar was not installed. In the event that this section is no longer under warranty, RL Craft could fix this detail. The moderate pulling at the wall should be monitored.

Estimated Life:
Section 16:The roof should perform approximately 1-3 years.

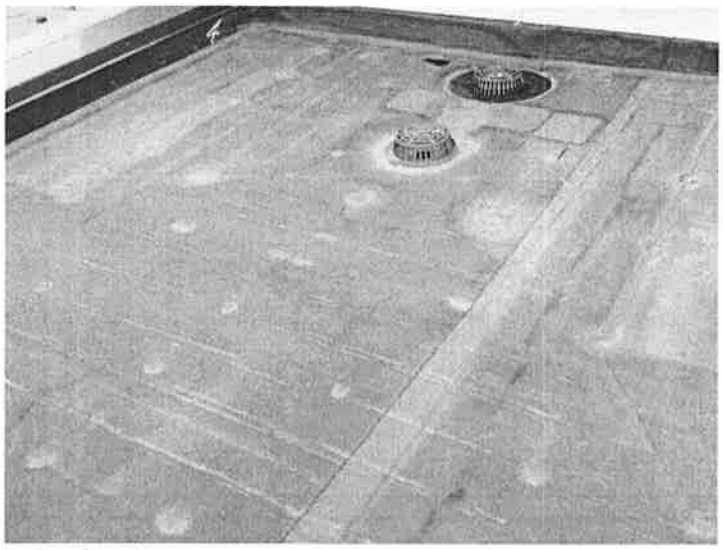
Section 17: The roof should perform approximately 15+ years.

Section 17A: The roof should perform approximately 6-8 years.

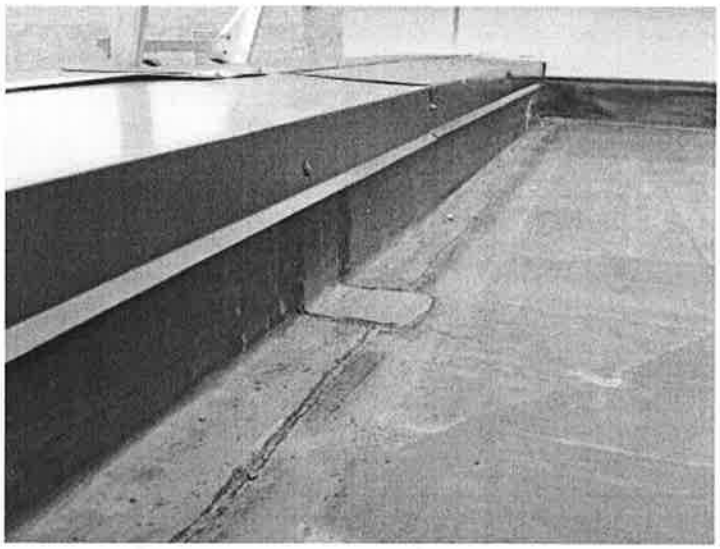
Section 18: The roof should perform approximately 3-5 years.

Roof Section Photos
Sections 19

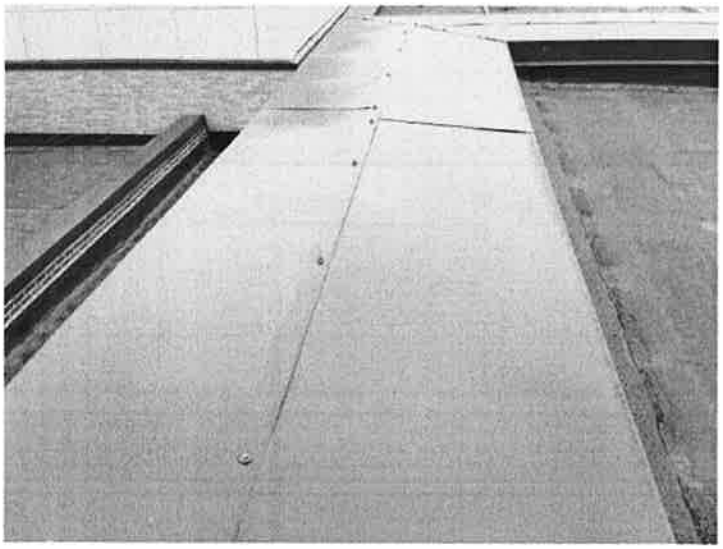
Roof Overview Section 19



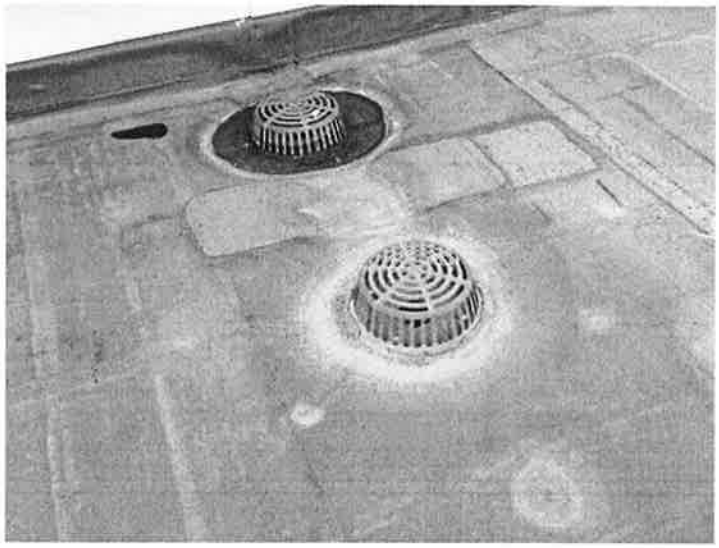
Parapet Wall Details Looks Good



Wide Cap Metal Top Fastened

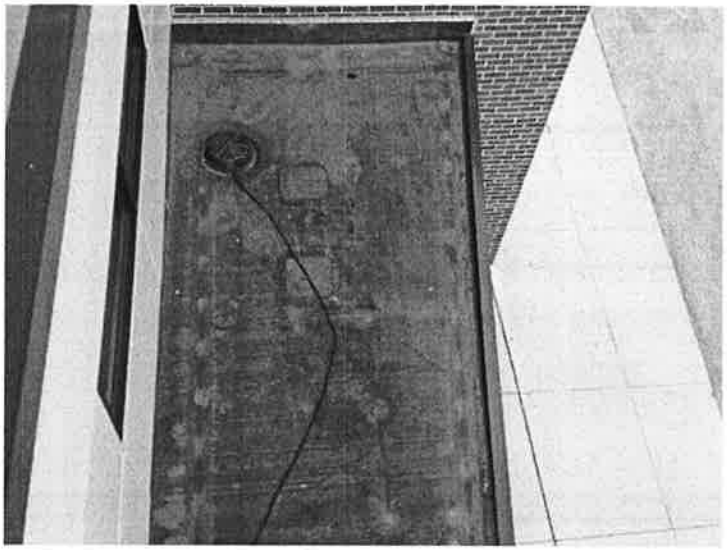


Properly Sumped Drains

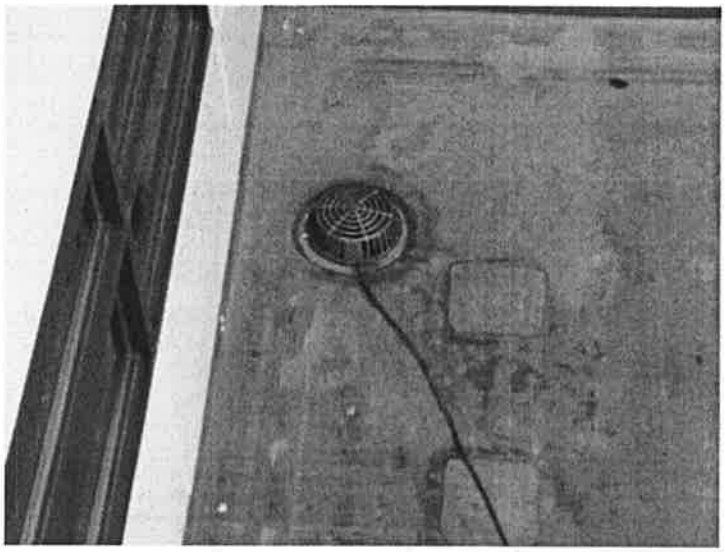


Roof Section Photos
Sections 19A

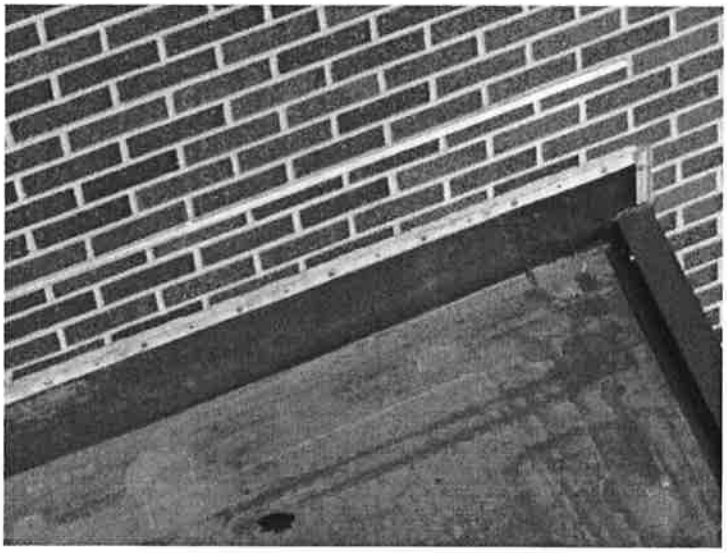
Roof Overview Section 19A



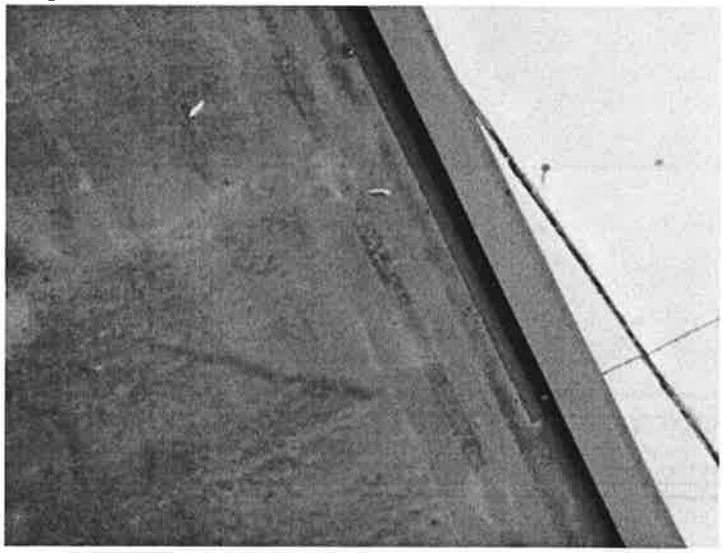
Sumped Drain Clean of Debris



Vertical Wall Termination Looks Good

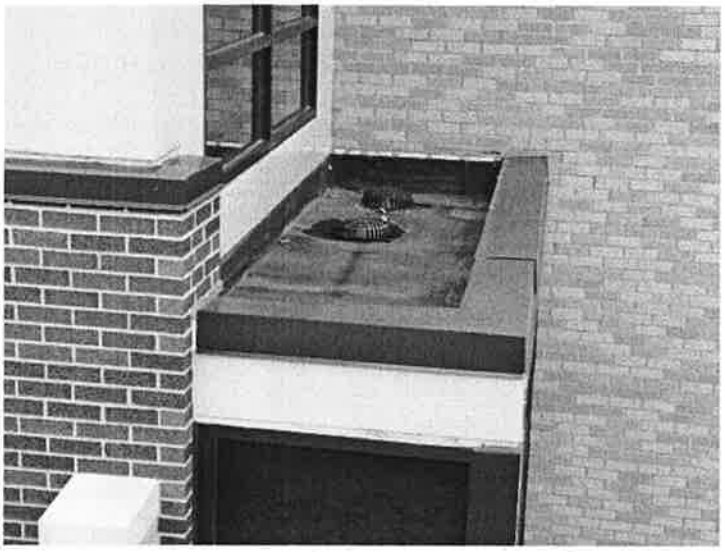


Cap Metal Secured Well

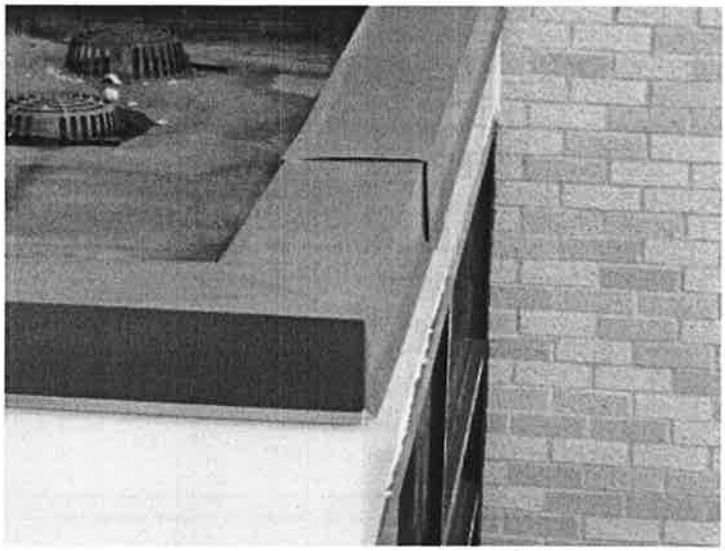


Roof Section Photos
Sections 20

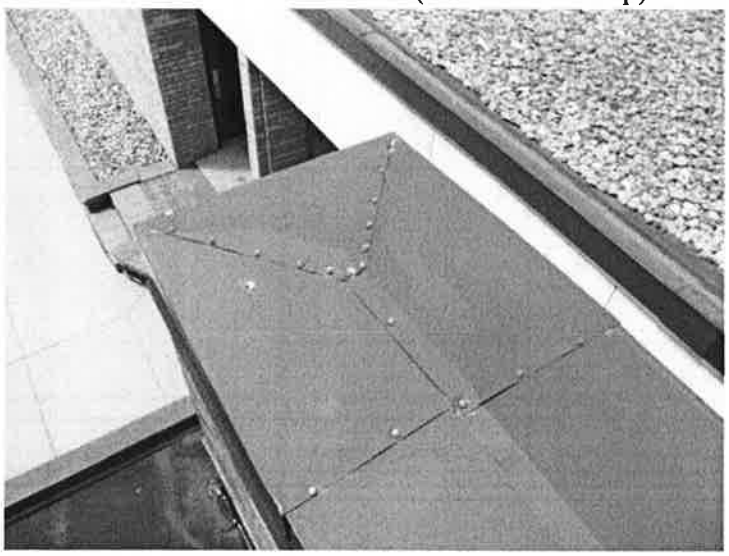
Roof Overview Section 20



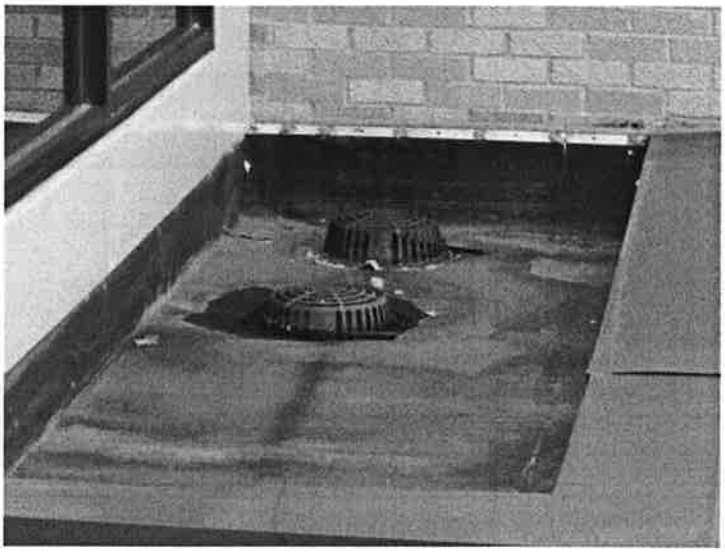
Cap Metal Secured Well



Substandard Metal Installation (Fastened on Top)



Drain Bonnets With Minor Debris



Roof Section Photos
Section 21

Roof Overview Section 21

Cap Metal Looks Good

Termination Bar Detailed Properly

Drain Point Detailed Well

Roof Section Summary
Sections 19-21

Roof System:
Section 19 employs a Fully Adhered EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 19 employs a Fully Adhered EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains

Section 20 employs a Fully Adhered EPDM roof system. The roof slopes at approximately 1/8" per foot to a scupper.

Section 21 employs a Fully Adhered EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Roof Evaluation:
Section 19 is in excellent condition. The field is well adhered. The field seams and all flashings appear to be performing properly.

Section 19A is in excellent condition. The field is well adhered. The field seams and all flashings appear to be performing properly.

Section 20 is in excellent condition. The field is well adhered. The field seams and all flashings appear to be performing properly. This section does appear to pond a large amount of water, most likely due to the scupper being installed too high for water to drain properly. The fasteners in the cap metal were installed through the top of the cap. This is not a recommended installation, because it leaves the areas around the fasteners susceptible to possible leaks.

Section 21 is in excellent condition. The field is well adhered. The field seams and all flashings appear to be performing properly.

Recommendations:
Section 19: No repairs are needed at this time.

Section 19A: No repairs are needed at this time.

Section 20: No repairs are needed at this time, however the ponding and the top fastened cap metal should be monitored annually.

Section 21: No repairs are needed at this time.

Estimated Life:
Section 19: The roof should perform approximately 15+ years.

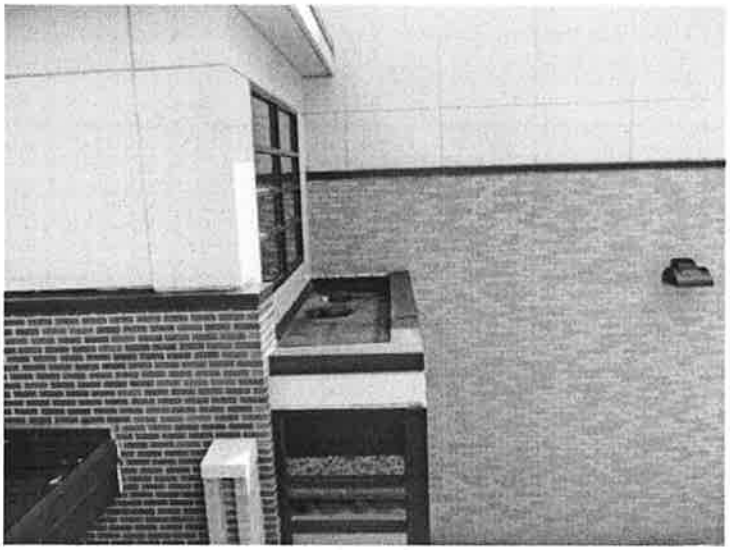
Section 19A: The roof should perform approximately 10+ years.

Section 20: The roof should perform approximately 15+ years.

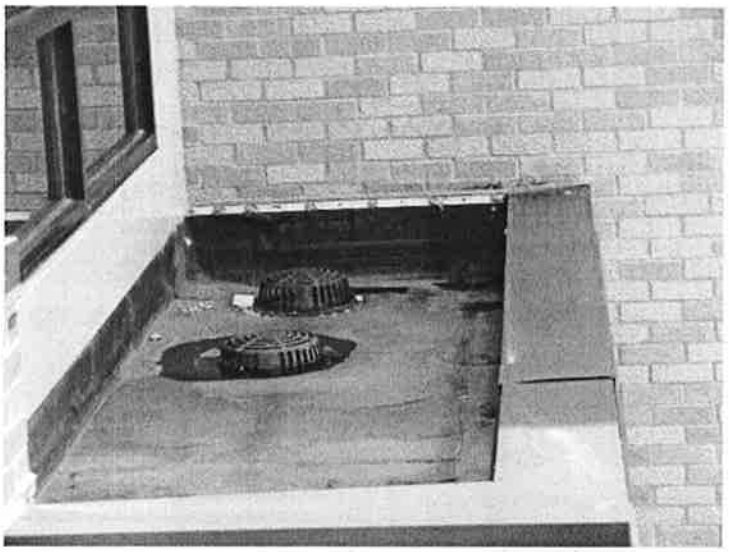
Section 21: The roof should perform approximately 15+ years.

Roof Section Photos
Section 21A

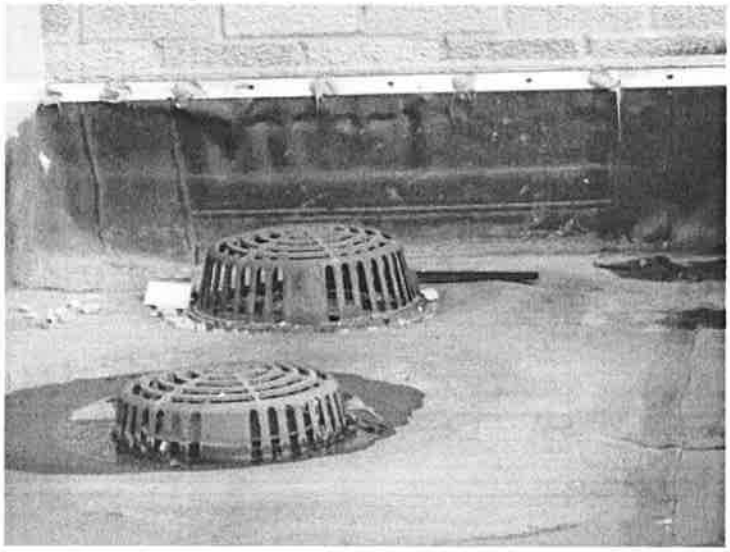
Roof Overview Section 21A



Roof Overview Section 21A

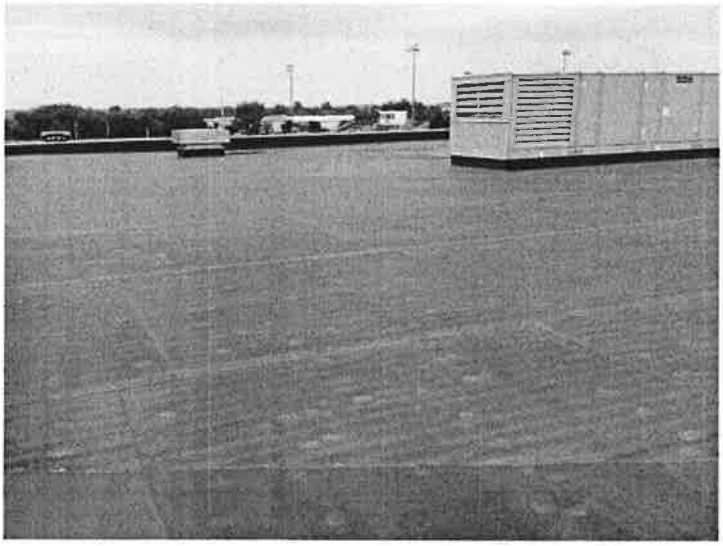


Properly Sumped Drains With Minor Debris

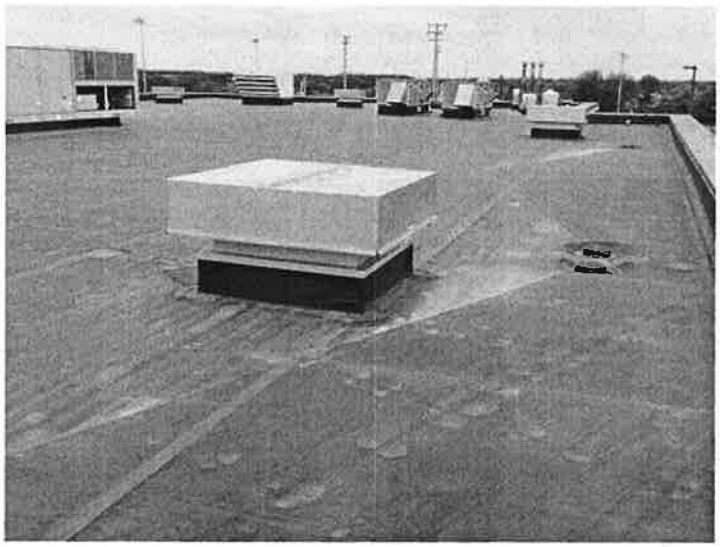


Roof Section Photos
Section 22

Roof Overview Section 22



Roof Overview Section 22



Properly Flashed Curb

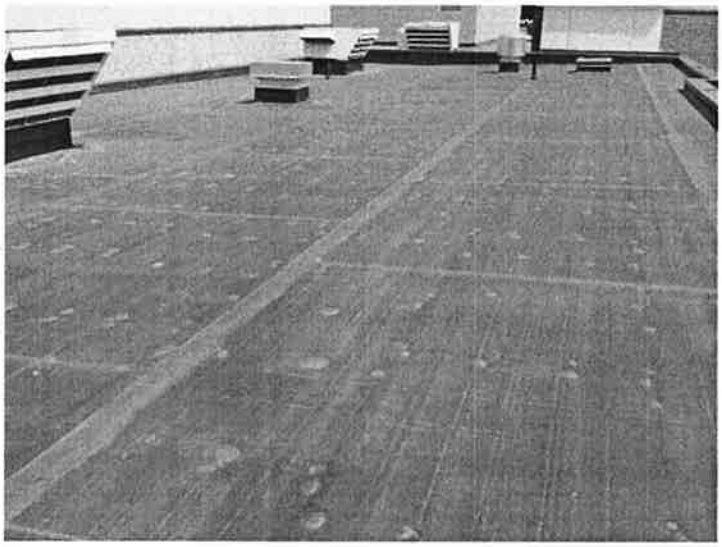
Membrane Nicely Adhered at Walls

Crickets Nicely Designed at Drains

Penetration Details Look Good

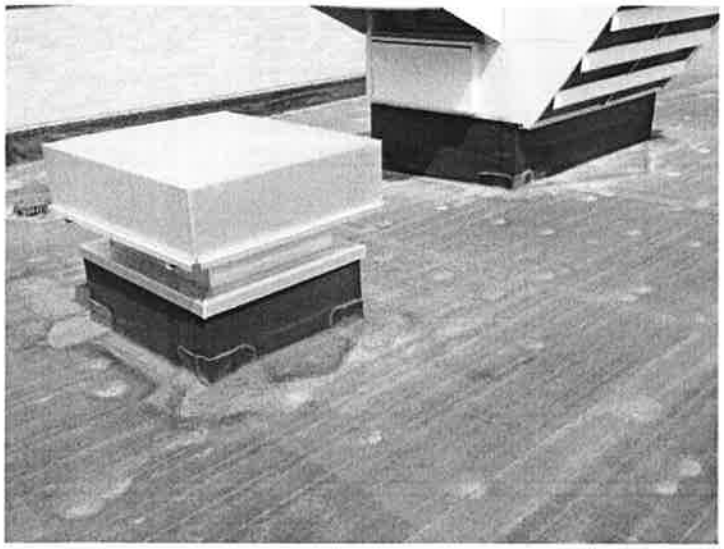
Roof Section Photos
Section 23

Roof Overview Section 23

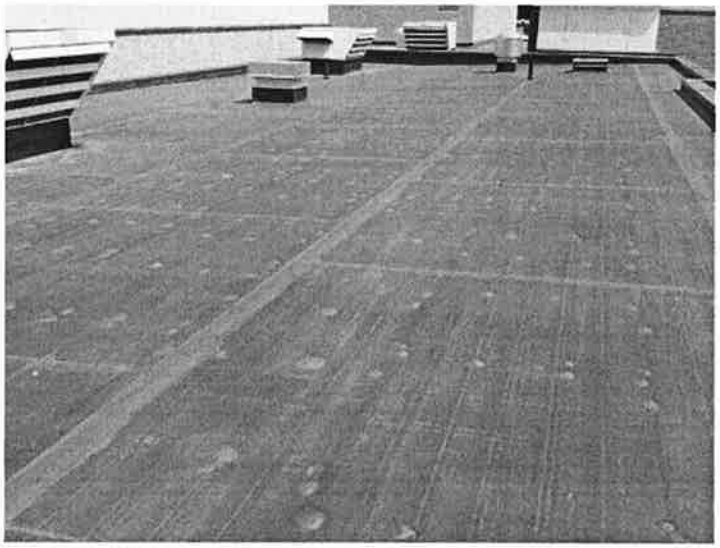


Vertical Wall Nicely Done

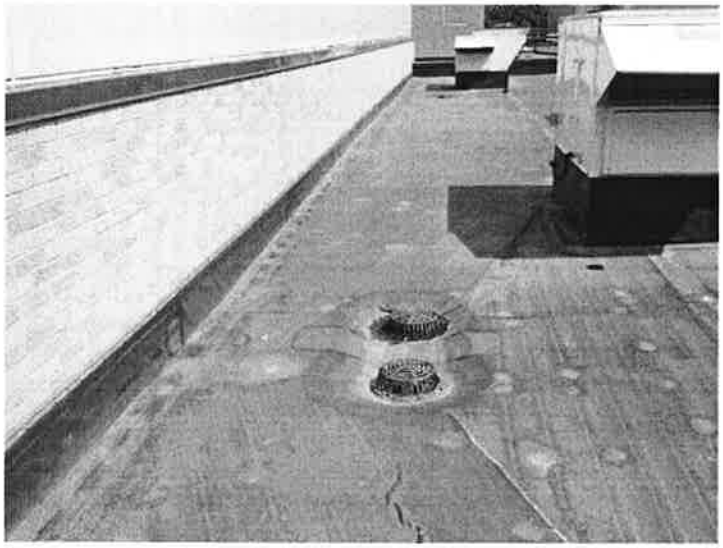
Properly Flashed Curbs



Field Well Adhered



Crickets Nicely Designed at Drains



Roof Section Summary
Sections 21A-23

Roof System:
Section 21A employs a Fully Adhered EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 22 employs a Fully Adhered EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 23 employs a Fully Adhered EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Roof Evaluation:
Section 21A is in excellent condition. The field is well adhered. The field seams and all flashings appear to be performing properly.

Section 22 is in excellent condition. The field is well adhered. The field seams and all flashings appear to be performing properly.

Section 23 is in excellent condition. The field is well adhered. Overall, the field seams and all flashings appear to be performing properly.

Recommendations:
Section 21A: No repairs are needed at this time.

Section 22: No repairs are needed at this time.

Section 23: Nothing is needed.

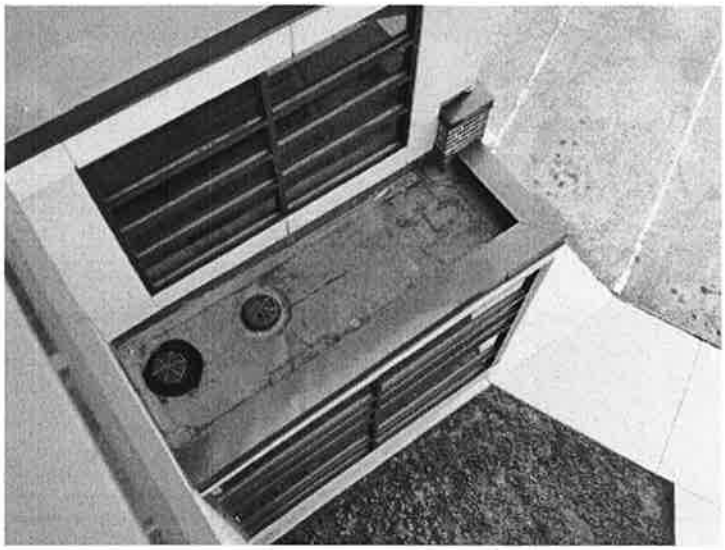
Estimated Life:
Section 21A: The roof should perform approximately 15+ years.

Section 22: The roof should perform approximately 15+ years.

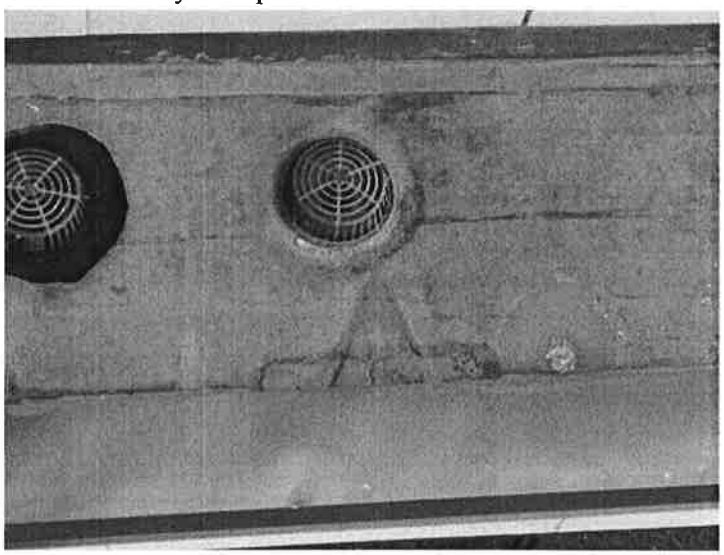
Section 23: The roof should perform approximately 15+ years.

Roof Section Photos
Sections 24

Roof Overview Section 24



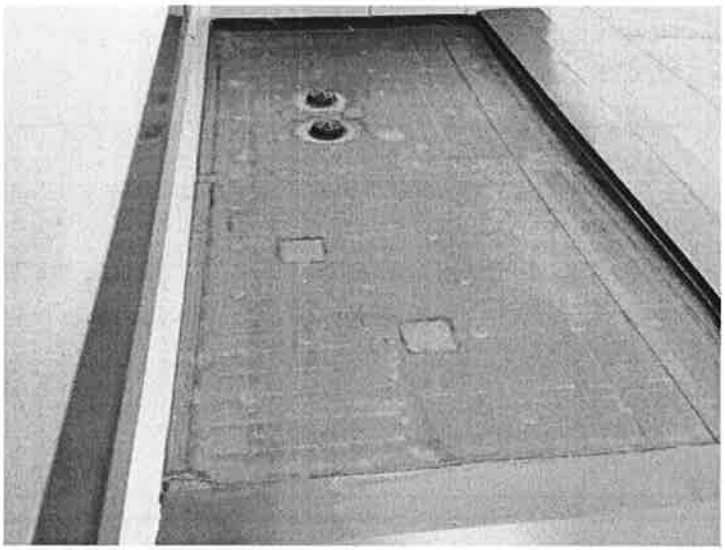
Drains Nicely Sumped



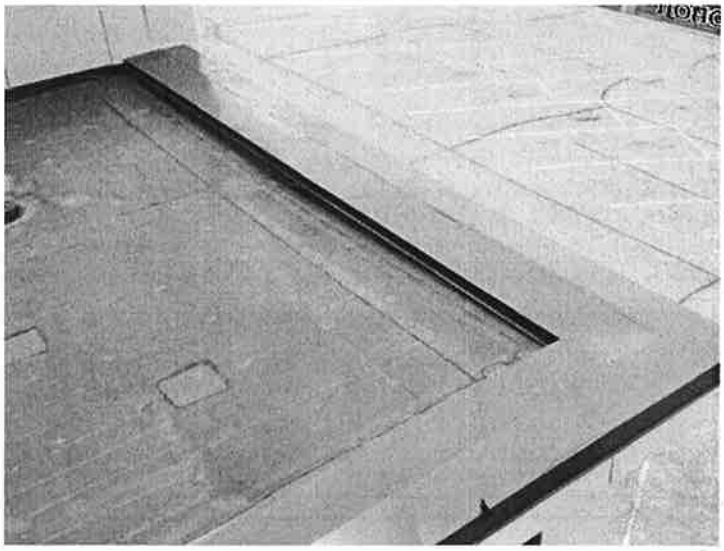
Properly Flashed Corner

Roof Section Photos
Sections 25

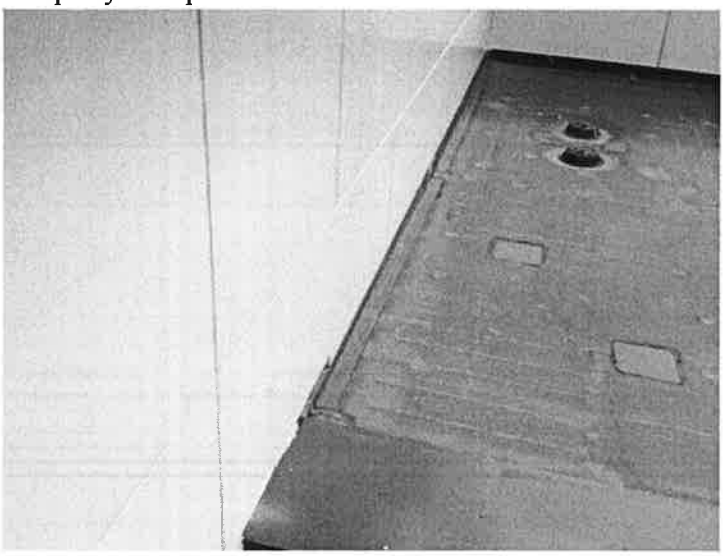
Roof Overview Section 25



Cap Metal Secured But Top Fastened (Poor Detail)



Properly Sumped Drains



Roof Section Summary
Sections 24-25

Roof System:
Section 24 employs a Fully Adhered EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 25 employs a Fully Adhered EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Roof Evaluation:
Section 24 is in excellent condition. The field is well adhered and free of debris. The field seams and all flashings appear to be performing properly.

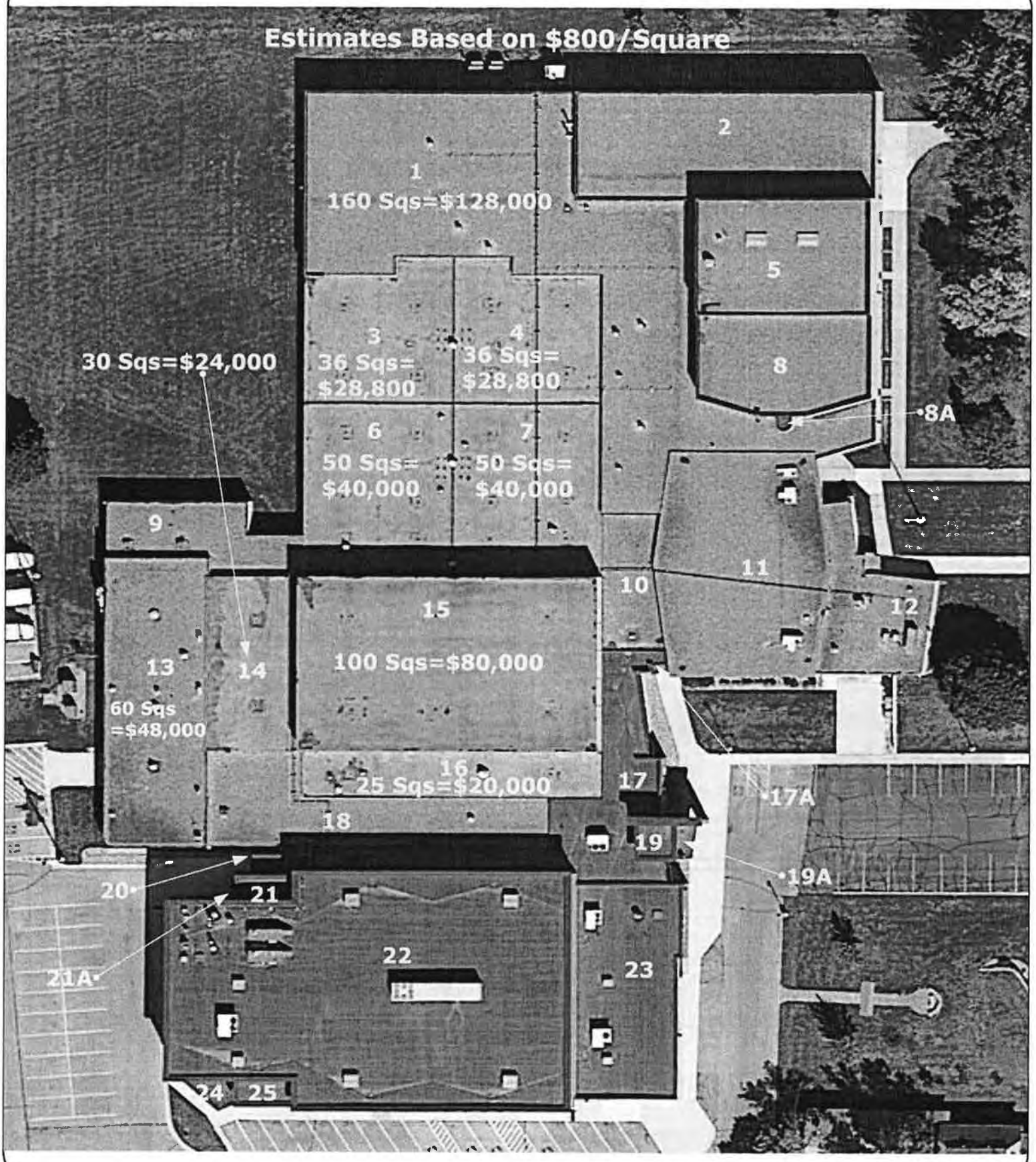
Section 25 is in excellent condition. The field is well adhered and free of debris. The field seams and all flashings appear to be performing properly.

Recommendations:
Section 24: No repairs are needed at this time.

Section 25: No repairs are needed at this time.

Estimated Life:
Section 24: The roof should perform approximately 15+ years.

Section 25: The roof should perform approximately 15+ years.



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Building Overview

Okoboji High School

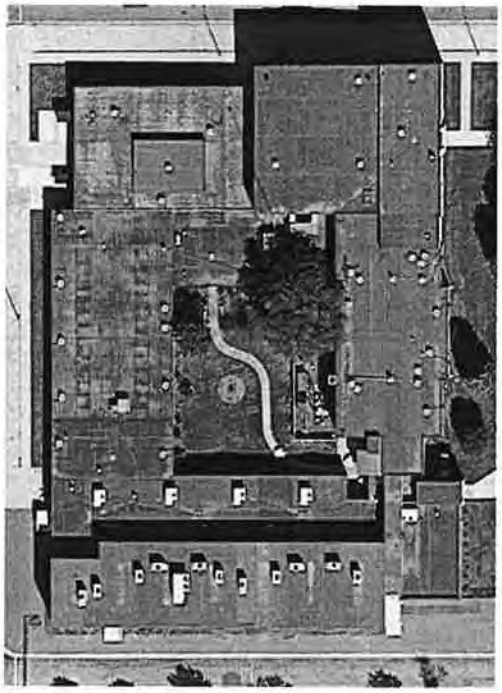
901 H Avenue, Milford, Iowa

PIONEERS

PIONEERS

Okoboji Elementary
1100 8th Street
Milford, Iowa
2015 Report

Inspected by Mike Petula



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COMMERCIAL ROOFING

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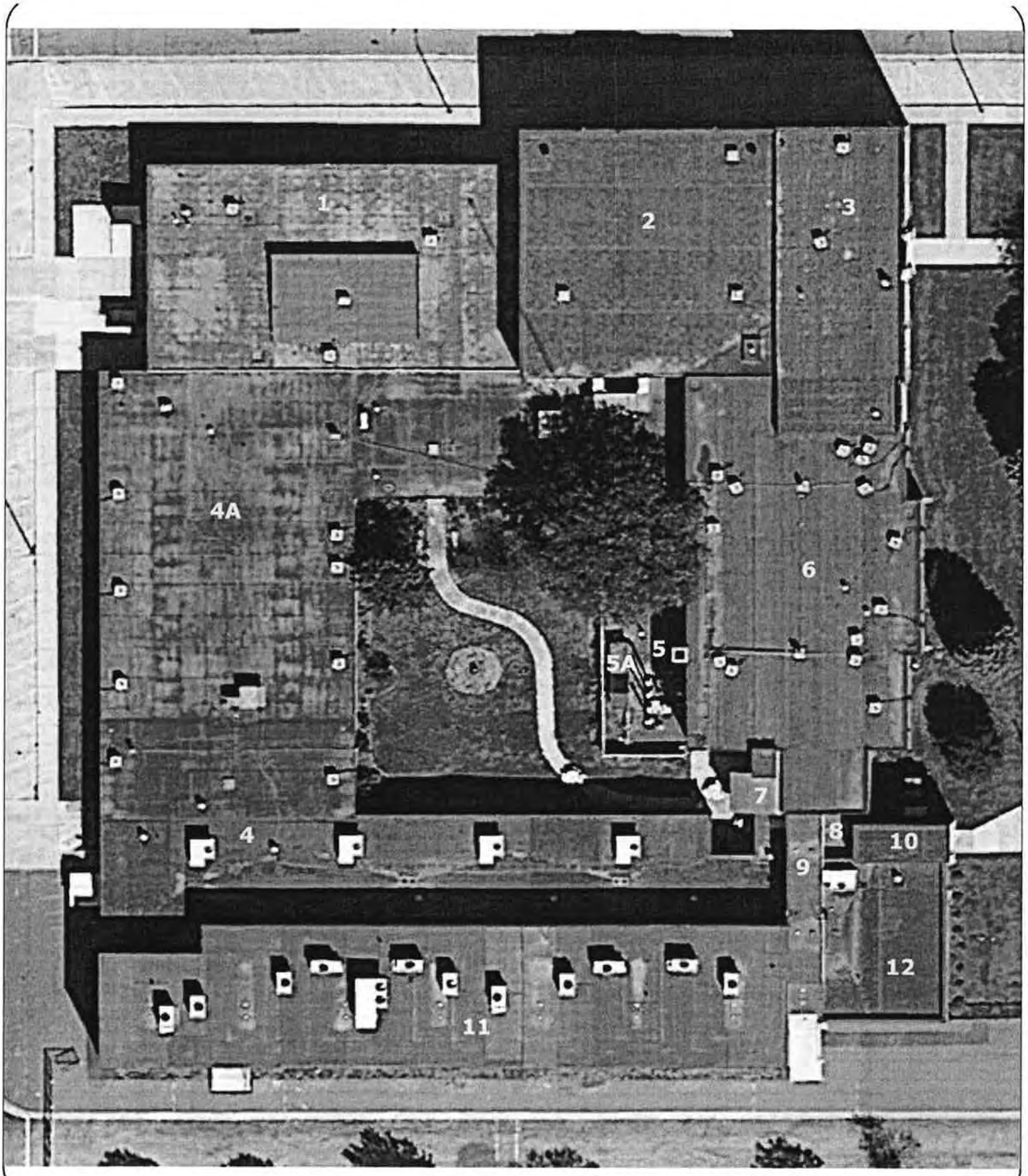


RL CRAFT
COMMERCIAL ROOFING

Building Overview

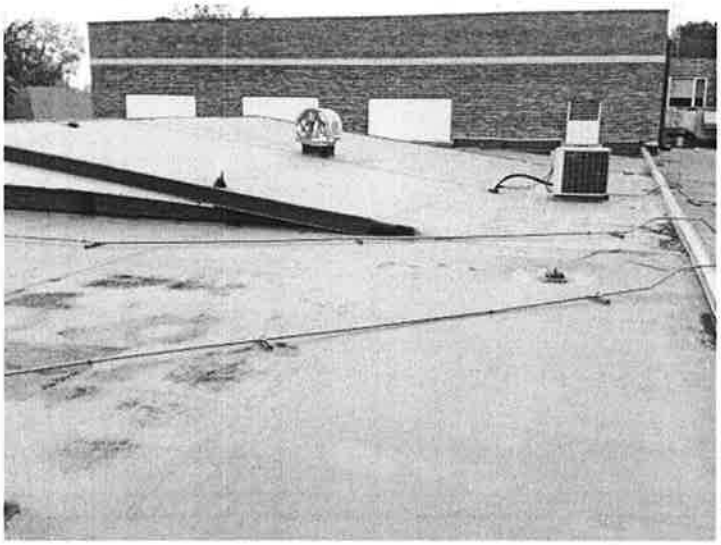
Okoboji Elementary

1100 8th Street, Milford, Iowa

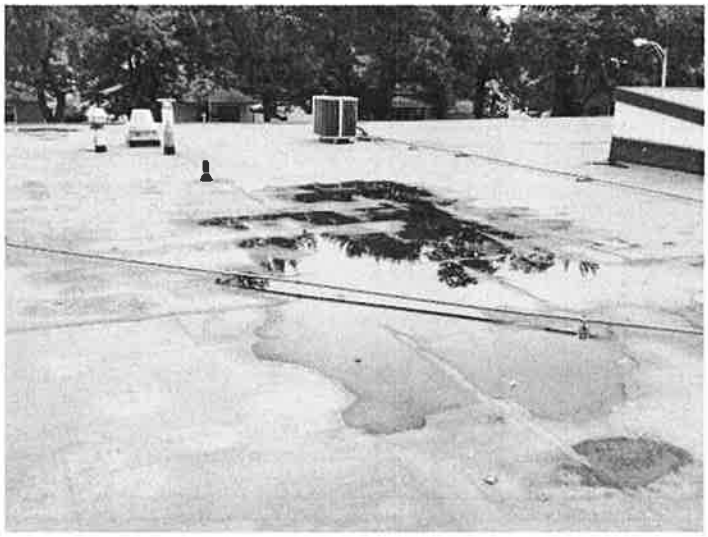
PIONEERS

Roof Section Photos
Section 1

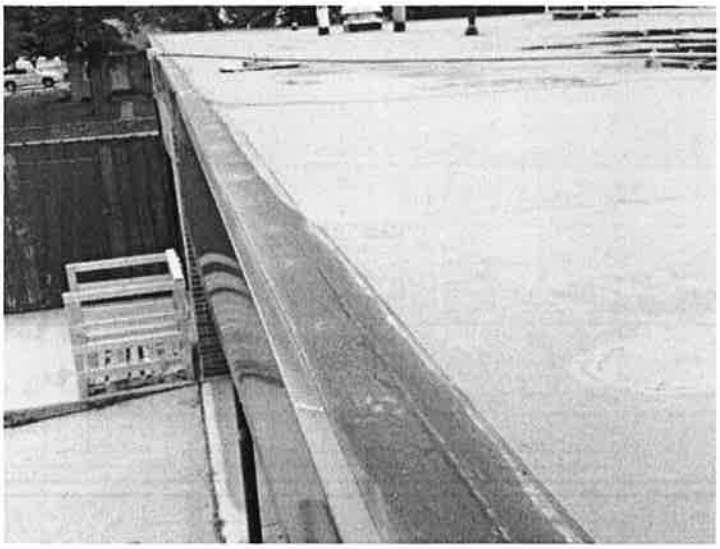
Roof Overview Section 1



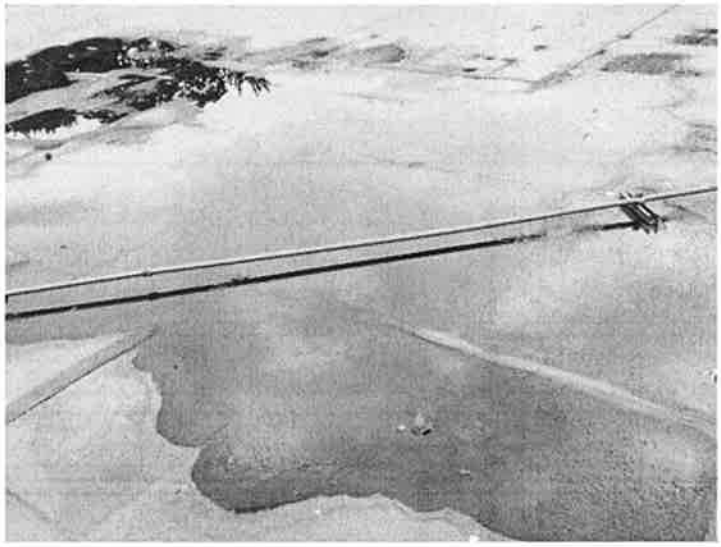
Roof Overview Section 1



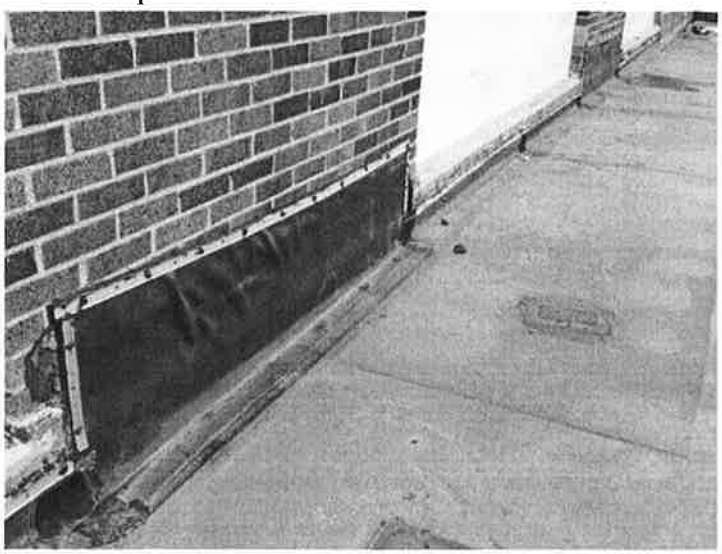
Perimeter Flashings Look Good



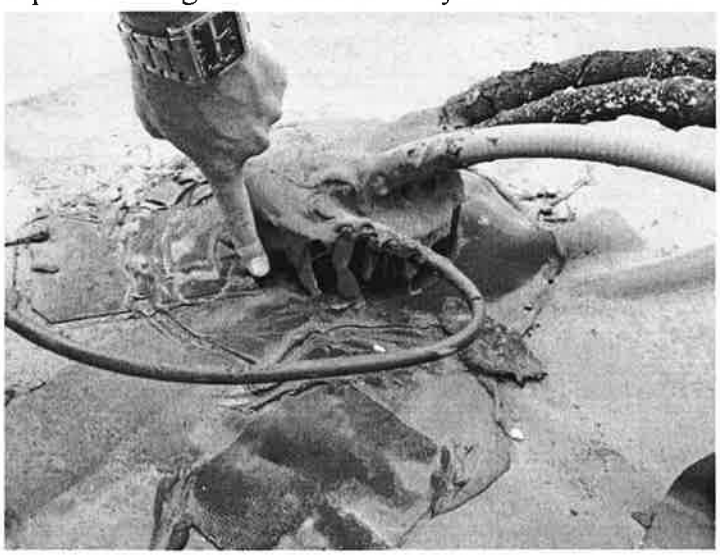
Pooling in Field



Newer Repair Work to Vertical Wall Looks Good



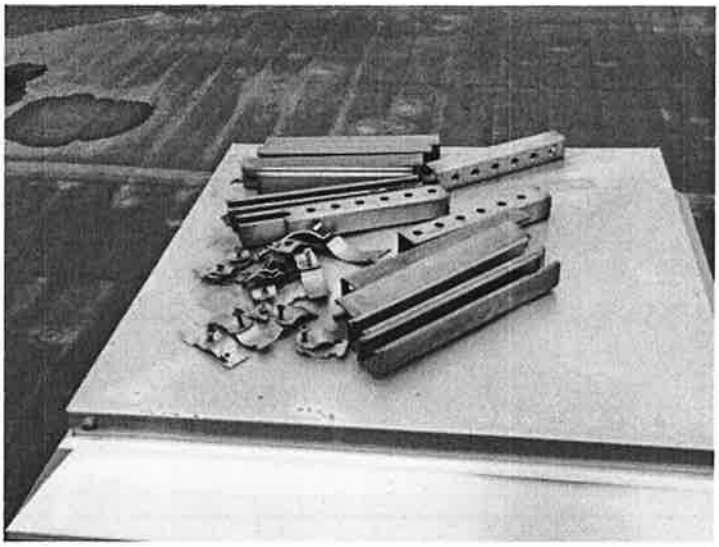
Open Flashing At Pitch Pan Likely Leak Source



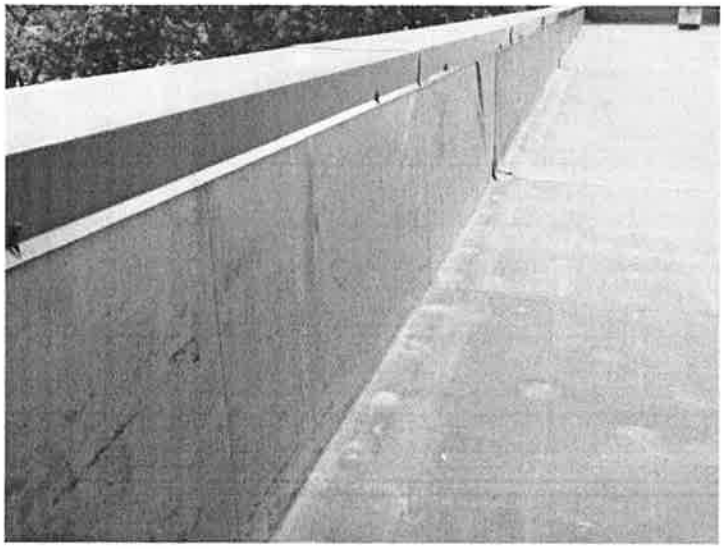
Roof Section Photos
Section 2

Roof Overview Section 2

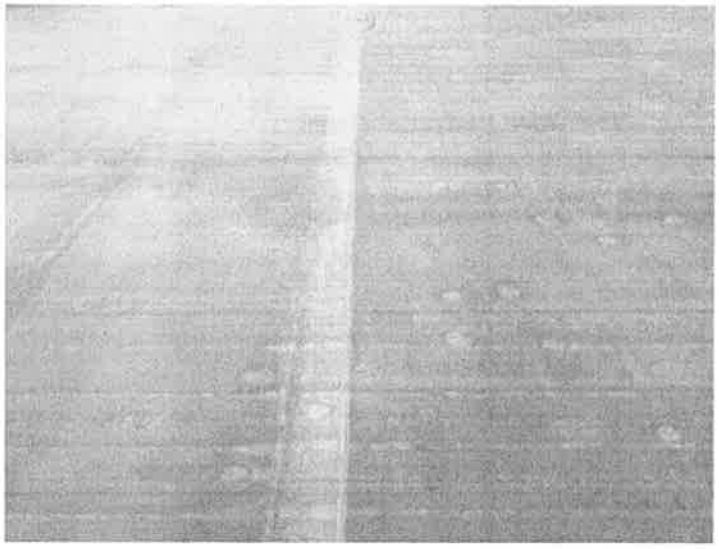
Metal Debris Left on Curb



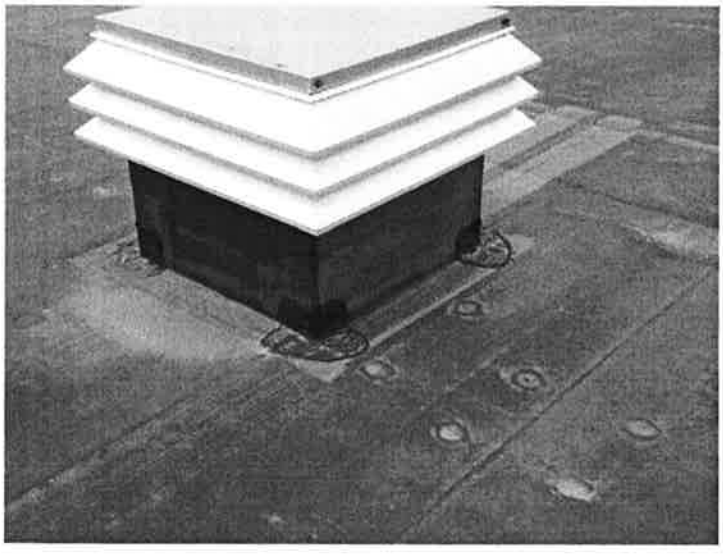
Membrane Well Adhered to Wall



Field Well Adhered

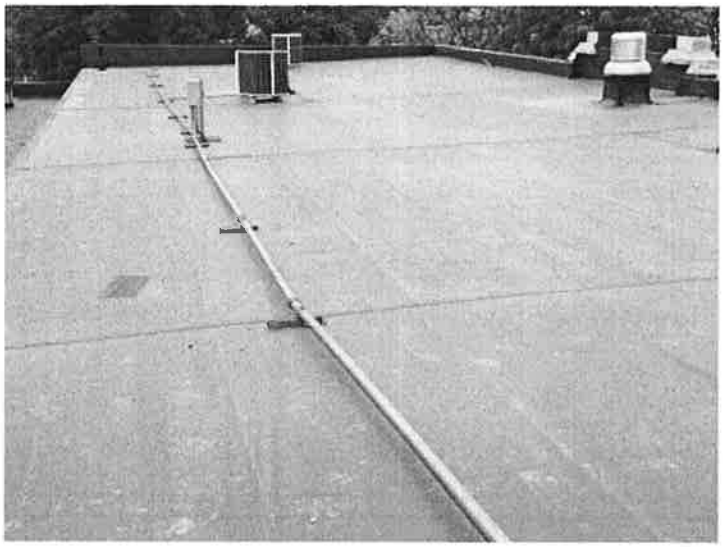


Proper Curb Detail

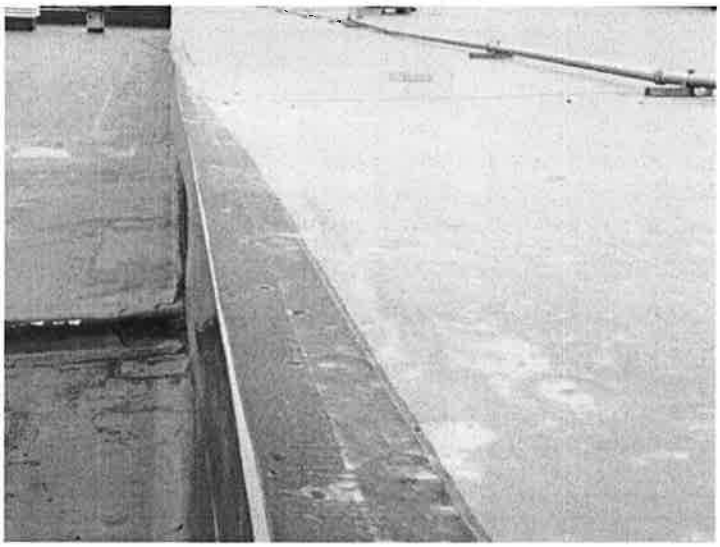


Roof Section Photos
Section 3

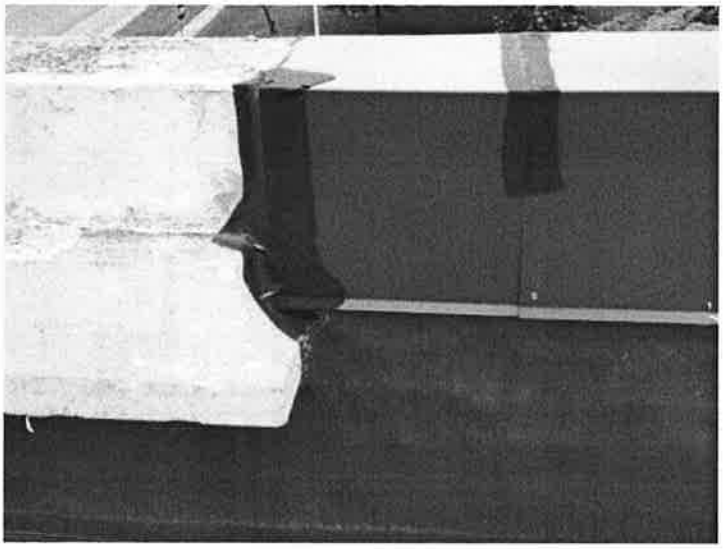
Roof Overview Section 3



Edge Metal Flashings Adhered Well

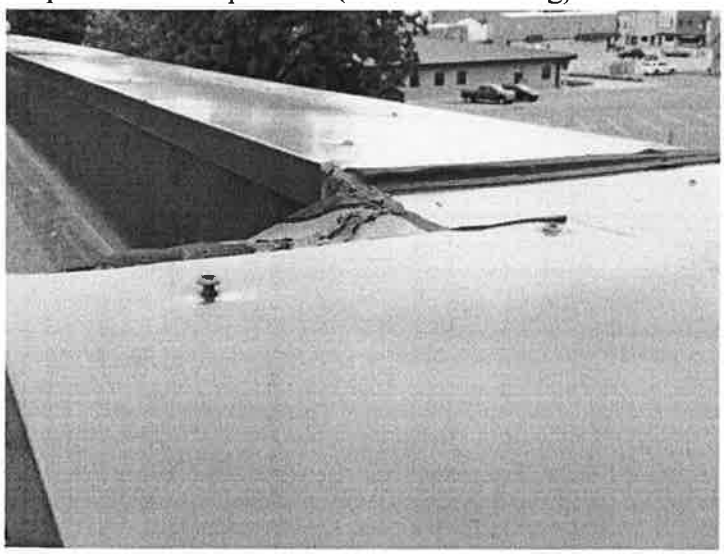


Poor Workmanship on Parapet Wall

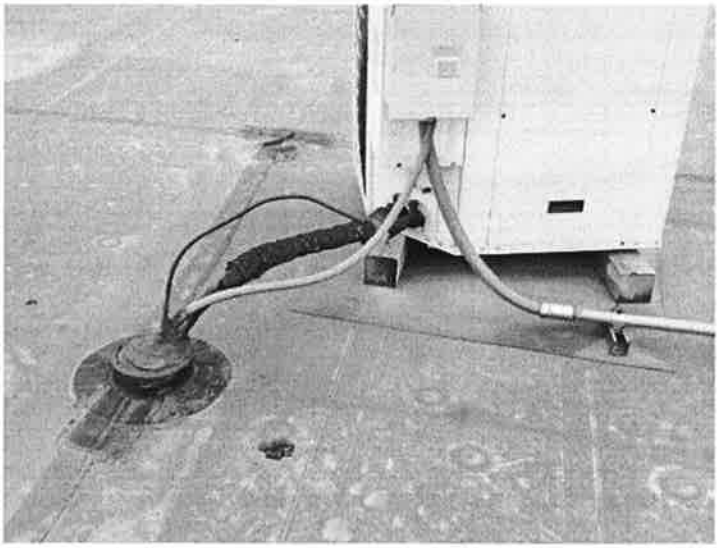


Poor Workmanship on Parapet Wall

Top Fastened Cap Metal (Fasteners Lifting)



Pitch Pan Details Look Acceptable



Roof Section Summary
Sections 1-3

Roof System:
Section 1 employs a Fully Adhered EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 2 employs a Fully Adhered EPDM roof system. The roof slopes at approximately 1/4" per foot to gutters and downspouts.

Section 3 employs a Fully Adhered EPDM roof system. The roof slopes at approximately 1/4" per foot to the roof's edge.

Roof Evaluation:
Section 1 is in good condition. The field is well adhered. The field seams and flashings appear to be holding-up well. Termination bar sags some at the vertical wall but appears to be poor craftsmanship. There is an open flashing at a pitch pan toward the south side that is a likely leak source. Water ponds in a large area.

Section 2 is in excellent condition. The field is well adhered. The field seams and flashings appear to be holding-up well. There is a curb that has rusty razor blades, bolts, brackets and pieces of metal laying on top of it. These items are hazardous to the field.

Section 3 is in good condition. The field is well adhered. The field seams and flashings appear to be holding-up well. There is an HVAC unit that has moved off of its slip sheet, also the conduit stands do not have a slip sheets, this leaves the field membrane vulnerable to puncture damage. The parapet wall and cap metal work on the street side were poorly done. Membrane is glued right over top of large variances in the wall on the back side. On the front side the membrane is not trimmed or glued to the masonry. The cap metal is fastened on the top. This makes it bow inward and pond water. Eventually, water will get through these fasteners. Lastly, a couple fasteners are lifting.

Recommendations:
Section 1: The open flashing at the pitch pan should be properly patched. The ponding water should be monitored.

Section 2: No repairs are needed at this time, however the rusty razor blades, bolts, brackets and pieces of metal laying on the curb should be removed to prevent theses items from falling and damaging the field membrane.

Section 3: No repairs are needed at this time. The HVAC unit should be placed back on the slip sheet. A slip sheet could be placed under the conduit stands. The installing contractor could be contacted about the workmanship at the parapet wall to improve the detail work as well as secure the fasteners at the cap metal.

Estimated Life:
Section 1: The roof should perform approximately 8-10 years.

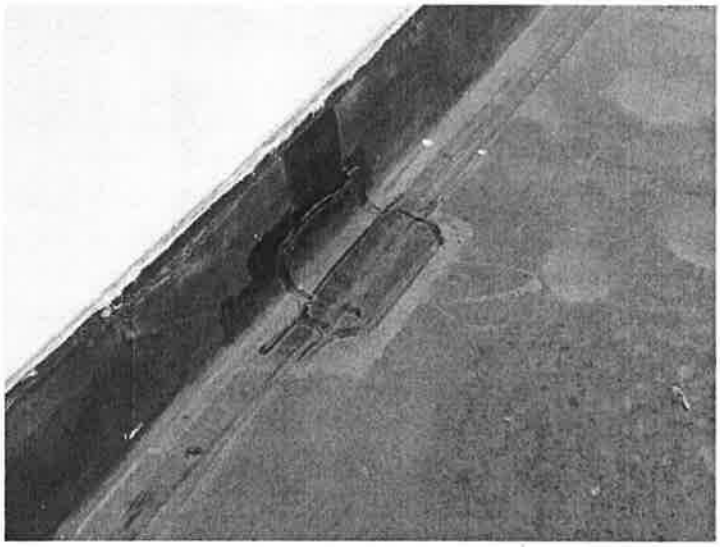
Section 2: The roof should perform approximately 10+ years.

Section 3: The roof should perform approximately 10+ years.

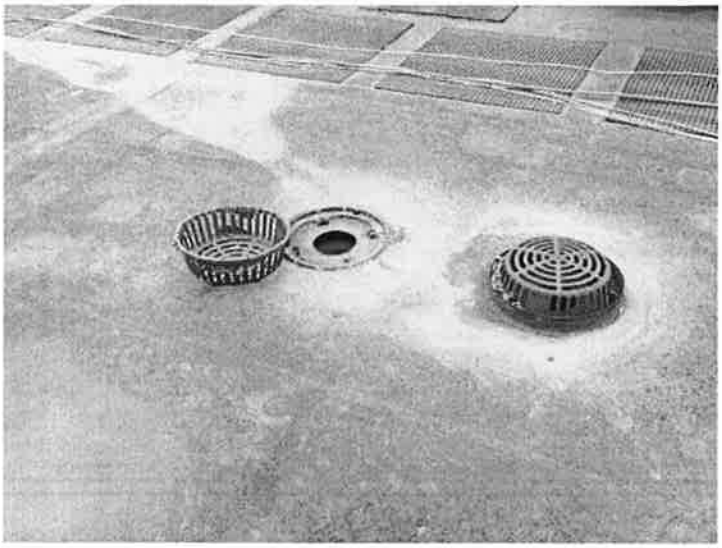
Roof Section Photos
Section 4

Roof Overview Section 4

Repairs to Vertical Wall Flashing Look Good

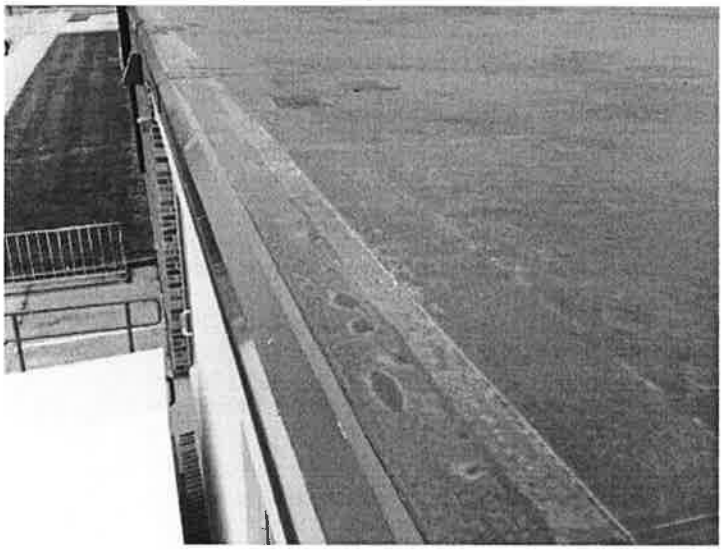


Drain Bonnet Removed (Maintenance Was Cleaning)



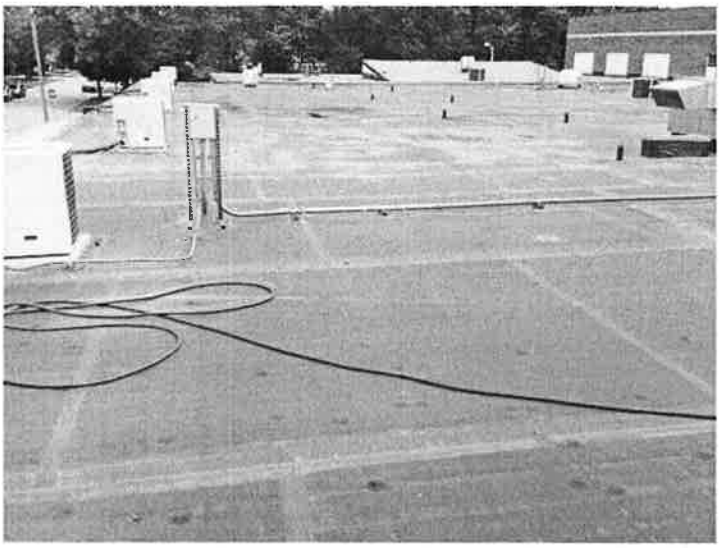
Wrinkles In Field (Perhaps A Wind Event)

Perimeter Flashings Holding Well

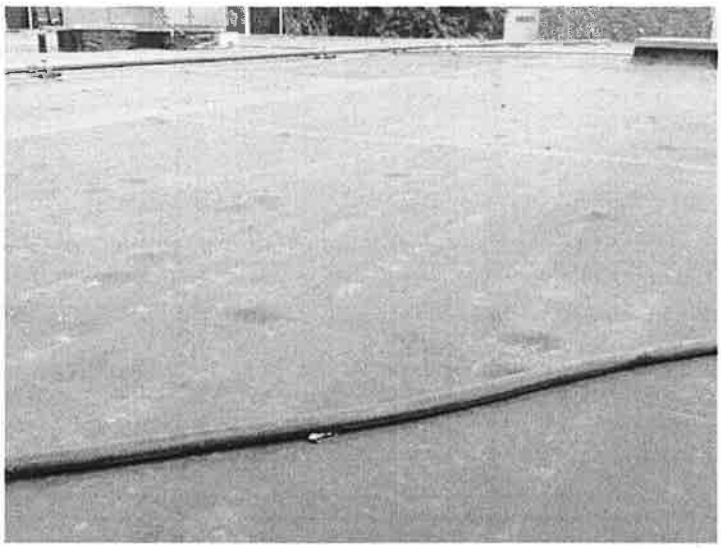


Roof Section Photos
Section 4

Roof Overview Section 4A

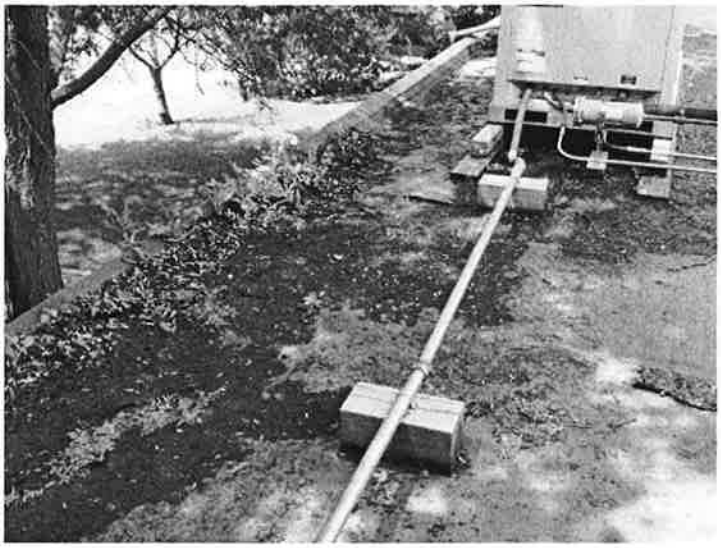


Tenting Fasteners (Common)



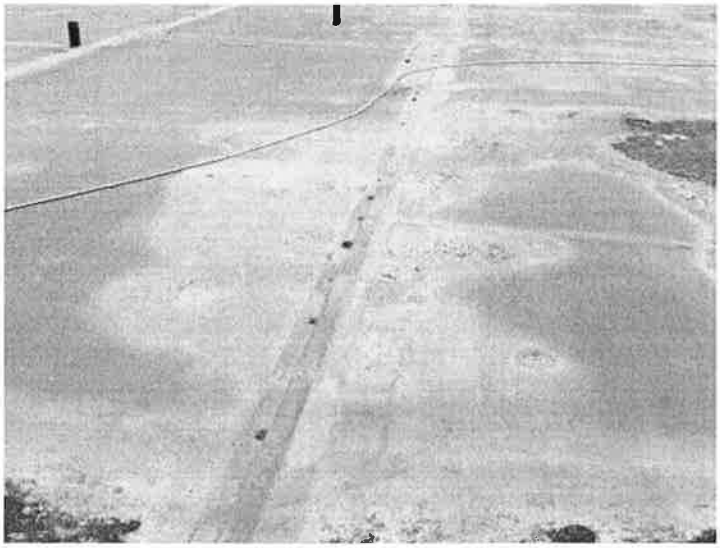
Suspect Tented Fastener

Vegetation Growth Along Edge



Minor Pulling Along Division Wall

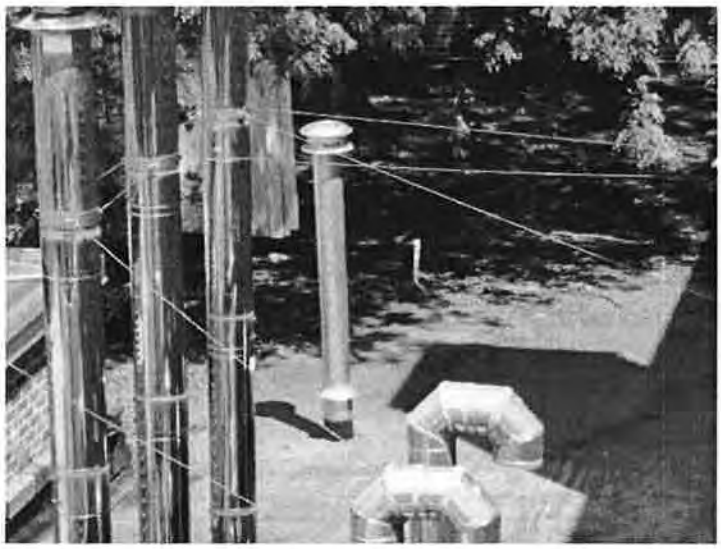
5" Quick Seam Holding But Gas Pockets Common



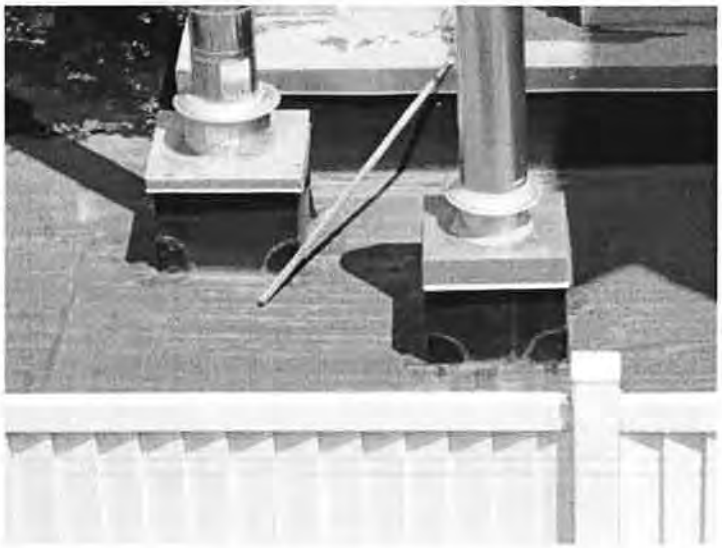
Roof Section Photos
Section 5

Roof Overview Sections 5 & 5A

Tree Debris Laying in Field



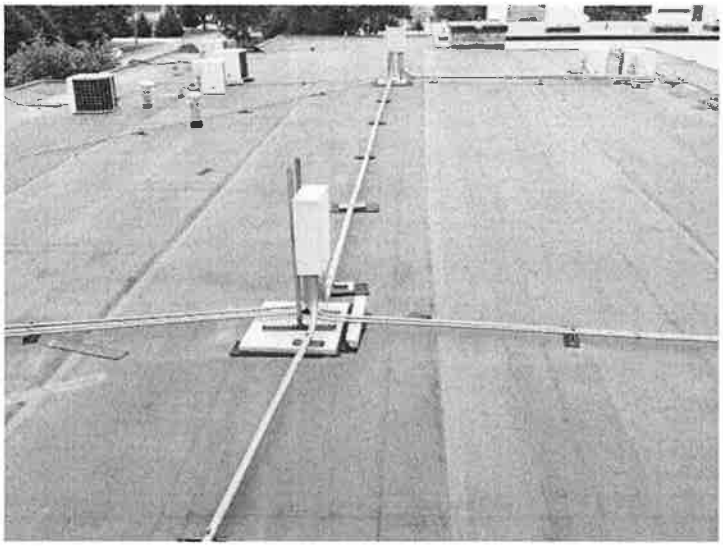
Curb Details Nicely Done



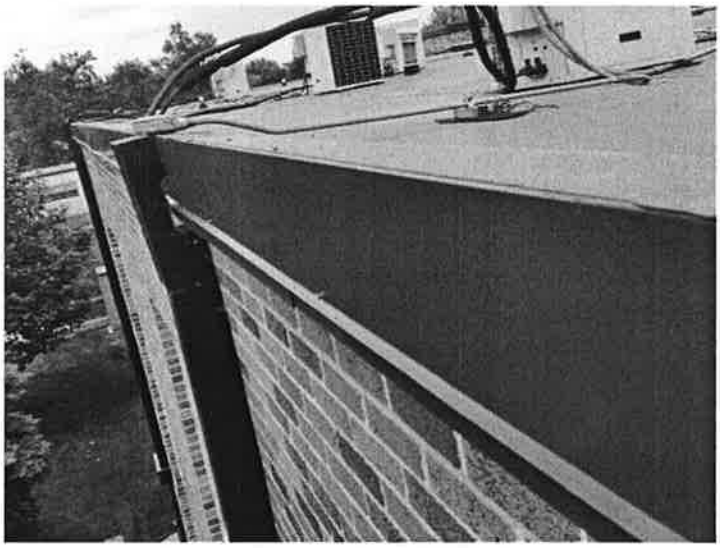
Perimeter Metal Flashings Look Acceptable

Roof Section Photos
Section 6

Roof Overview Section 6

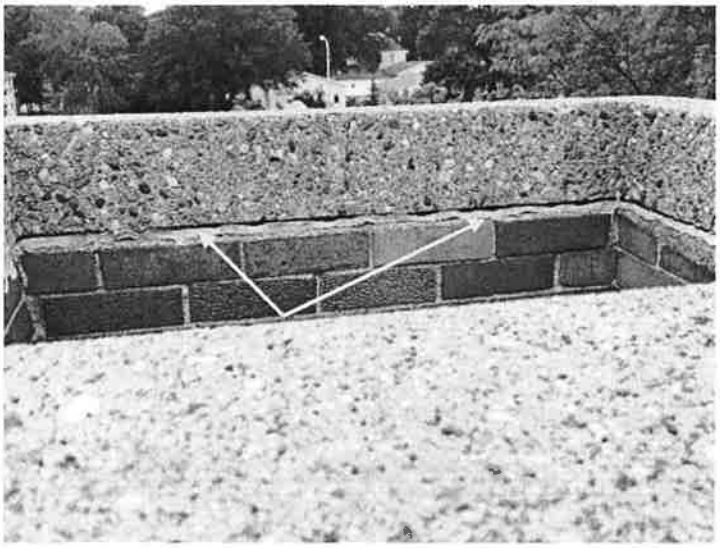


Edge Metal & Flashing Looks Good

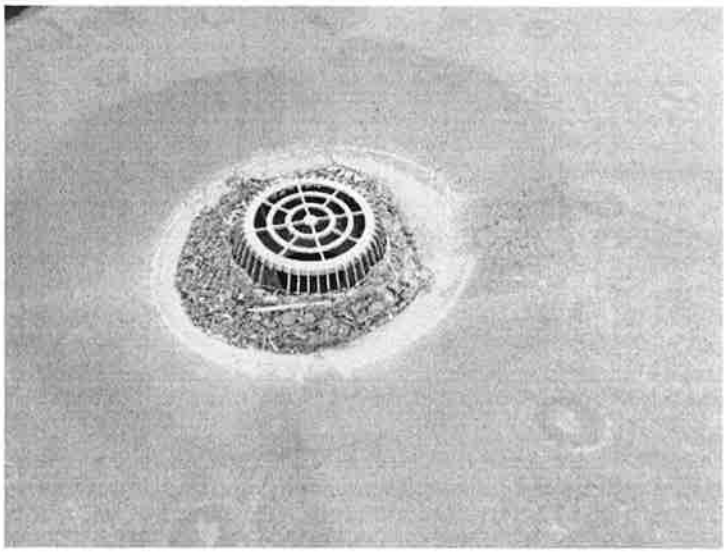


Tree Overhanging Roof

Deteriorated Sealant at Inside of Chimney



Debris at Drain



Roof Section Summary
Sections 4-6

Roof System:
Section 4 & 4A employ Fully Adhered EPDM roof systems. The roofs slope at approximately 1/8" per foot to internal drains.

Section 5 employs a Fully Adhered EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 5A employs a Fully Adhered EPDM roof system. Water flows off the backside of the roof system.

Section 6 employs a Fully Adhered EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Roof Evaluation:
Section 4 is in good condition. Overall, the field is well adhered. The field seams and flashings appear to be holding-up well. There is an area with a minor amount of delaminating field membrane perhaps from a wind event. This section has had recent repairs done to stoop leaks. A majority of the leaks have been stopped, but not 100%. There is still al leak in the vicinity of several penetrations. Lastly, this section ponds a minor amount of water.

Section 4A is in fair to poor condition. Many tenting fasteners exist. There is significant tree debris and vegetation growth in a few areas. Water ponds in many areas. The perimeter flashings do appear to be holding Insulation has delaminated in a few areas.

Section 5 is in excellent condition. The field is well adhered. The field seams and flashings appear to be properly installed and performing well.

Section 5A is in good condition. The field is well adhered. The field seams, edge flashings and metal appear to be in working order.

Section 6 is in good condition. The field is well adhered. The field seams and flashings appear to be properly installed and performing well. The base of the inside part of the chimney has deteriorated sealant. There is minor debris at an internal drain.

Recommendations:
Section 4: The roof should be further investigated for the reported leak.

4A: The debris and vegetation growth should be removed. Tented fasteners and ponding water should be closely monitored as they are not a good combination.

Section 5: No repairs are needed at this time.

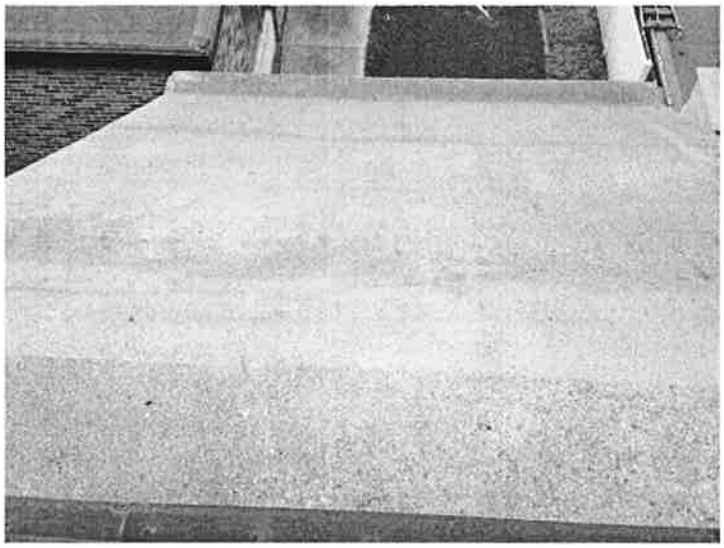
Section 5A: No repairs are needed at this time.

Section 6: No repairs are needed at this time.

Estimated Life:
Section 4: The roof should perform approximately 6-8 years.
Section 4A: The roof could perform another 2-3 years, but tenting fasteners will be chronic.
Section 5: The roof should perform approximately 7-9 years.
Section 5A: The roof should perform approximately 6-8 years.
Section 6: The roof should perform approximately 10+ years.

Roof Section Photos
Section 7

Roof Overview Section 7



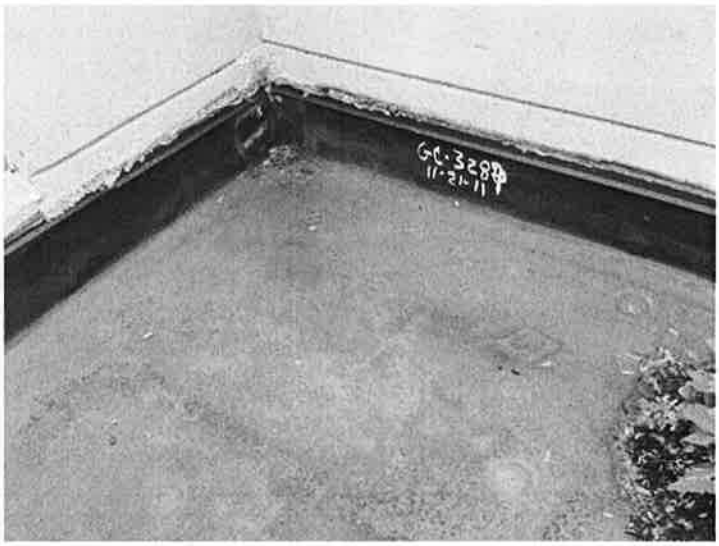
Counter Flashing Looks Good

Sealant Over Crack Holding Well

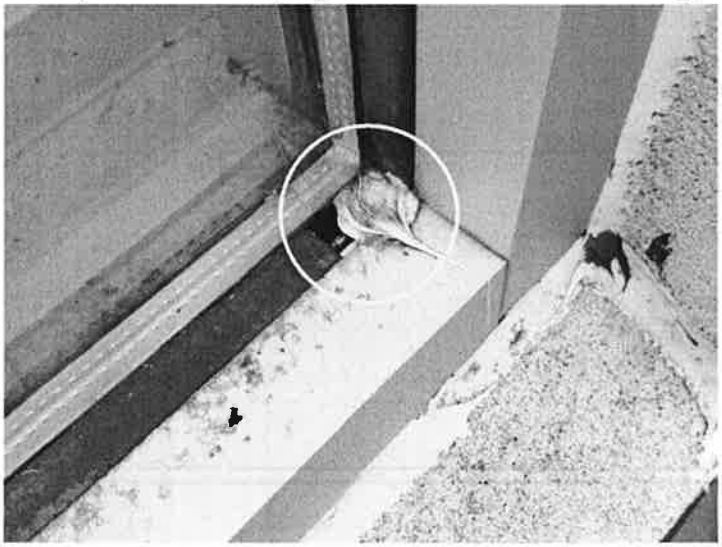
Roof Section Photos
Sections 8

Roof Overview Section 8

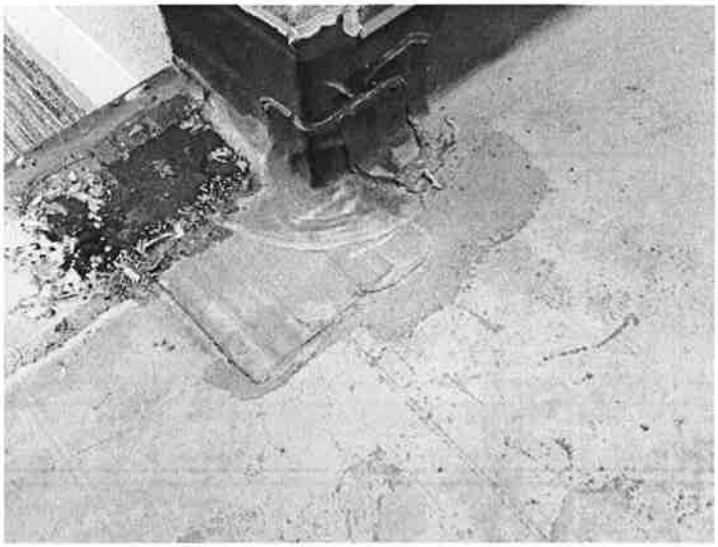
Warranty Information



Likely Leak Source (Gap In Corner Window Glazing)

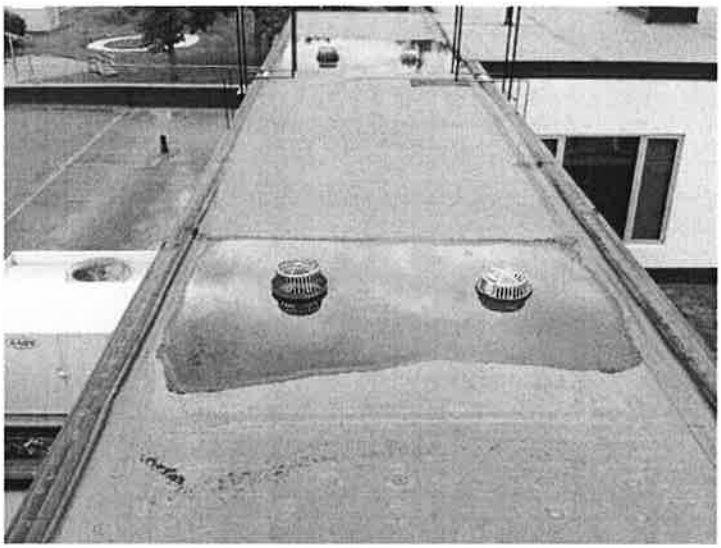


Recent Corner Flashing Repair Looks Good

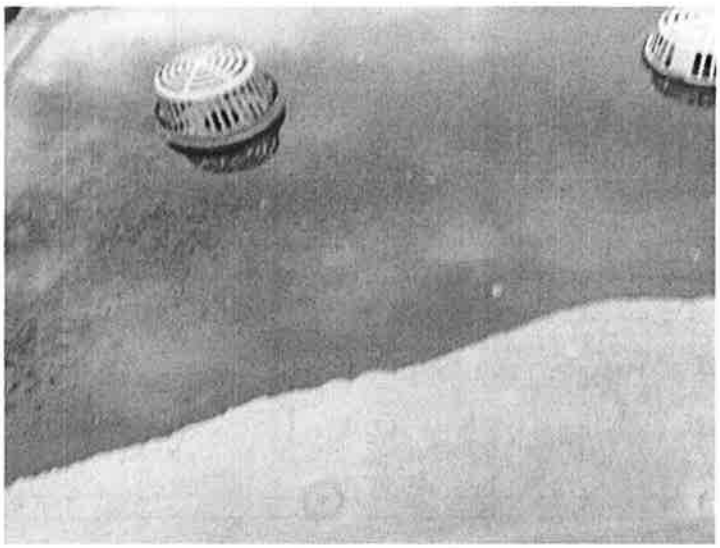


Roof Section Photos
Section 9

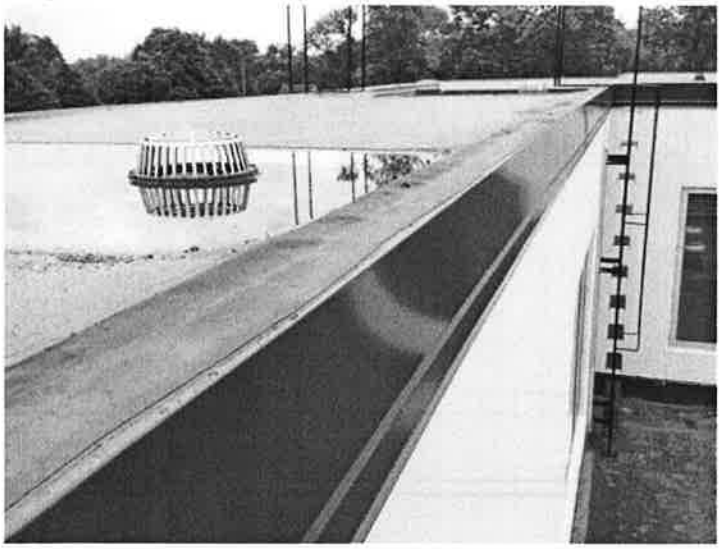
Roof Overview Section 9



Ponding At Drain



Edge Metal & Flashing Looks Good



Warranty Information

Roof Section Summary
Sections 7-9

Roof System:
Section 7 employs a concrete roof. The roof slopes at approximately 7" per foot to edge.

Section 8 employs a Fully Adhered EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 9 employs a Fully Adhered EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Roof Evaluation:
Section 7 is in good condition. The concrete had one minor crack in it that was caulked.

Section 8 is in excellent condition. The field is well adhered. The field seams and flashings appear to be properly installed and performing well. The joint where it meets the EIFS wall is suspect. There is a gap in the bottom right corner of the window glazing bead, this could be the reported leak source.

Section 9 is in excellent condition. The field is well adhered. The field seams and flashings appear to be properly installed and performing well. This section does pond a minor amount of water at the internal drains.

Recommendations:
Section 7: No repairs are needed at this time.

Section 8: The joint where the roof meets the EIFS wall should be sealed. The small gap in the window glazing should be caulked.

Section 9: No repairs are needed at this time, however the minor amount of ponding at the internal drains should be monitored annually. Even a small hole can let in a large amount of water, potentially leading to significant structural damage.

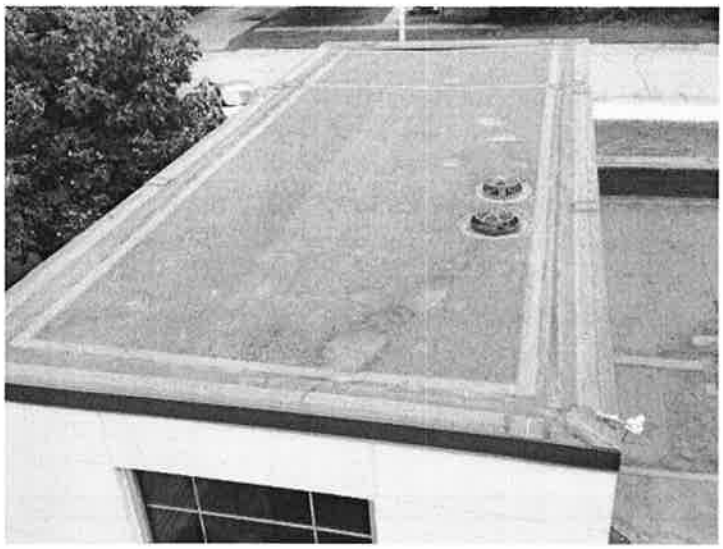
Estimated Life:
Section 7: The roof should perform approximately 10+ years.

Section 8: The roof should perform approximately 10+ years.

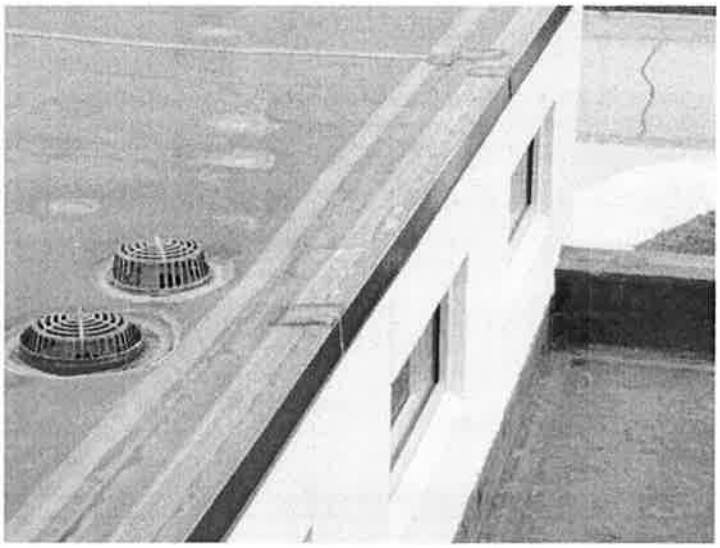
Section 9: The roof should perform approximately 10+ years.

Roof Section Photos
Section 10

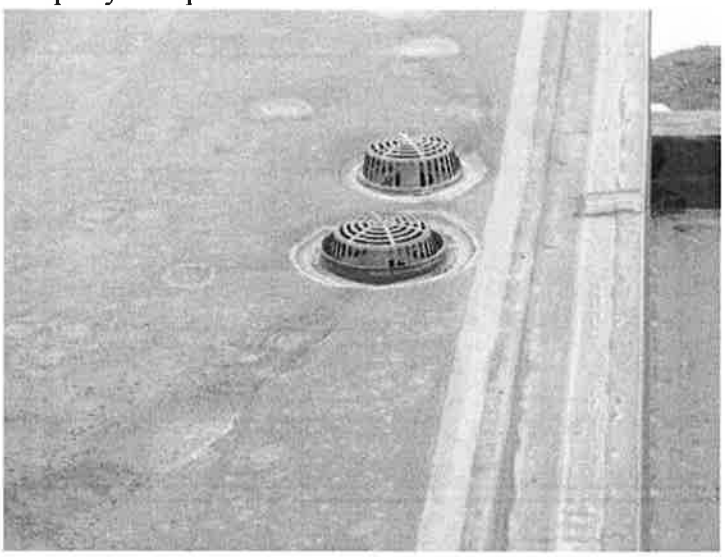
Roof Overview Section 10



Properly Flashed Roof Edge

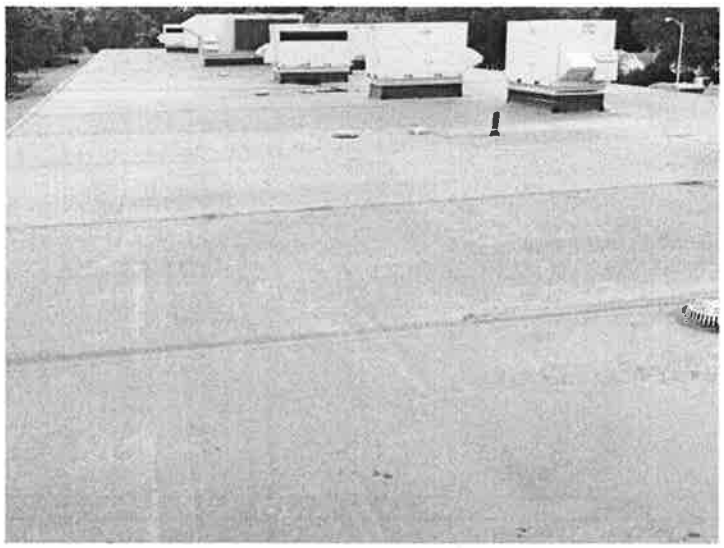


Properly Sumped Drains

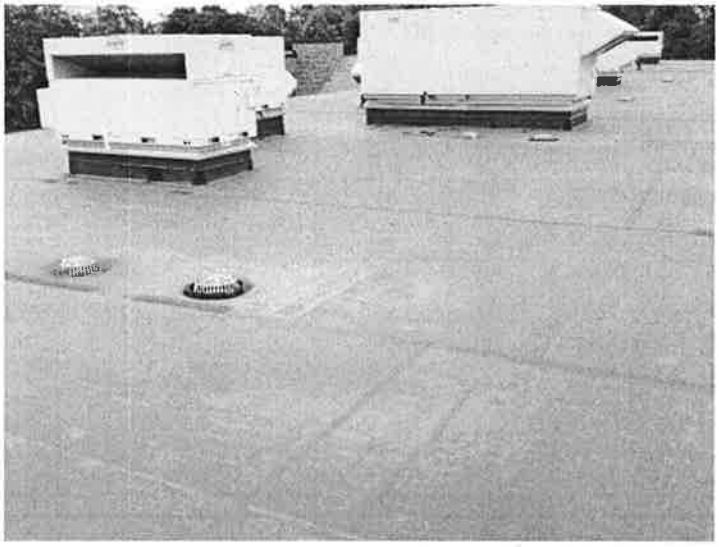


Roof Section Photos
Section 11

Roof Overview Section 11

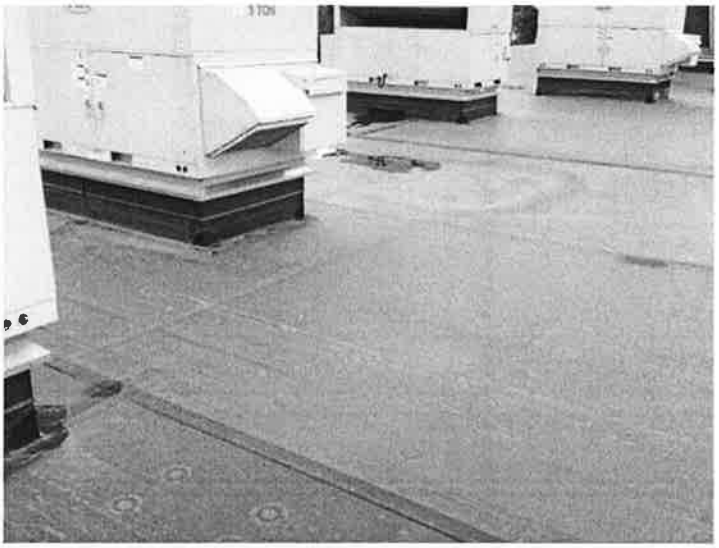


Properly Sumped Drains

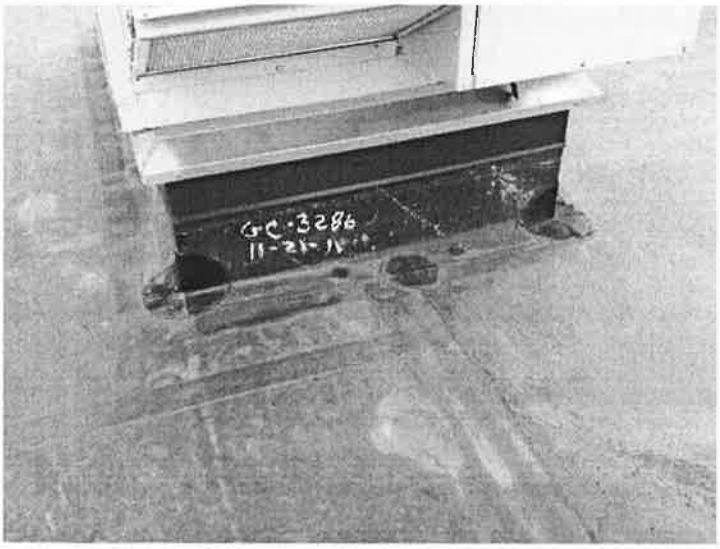


Properly Flashed Roof Edge

Properly Flashed Curb



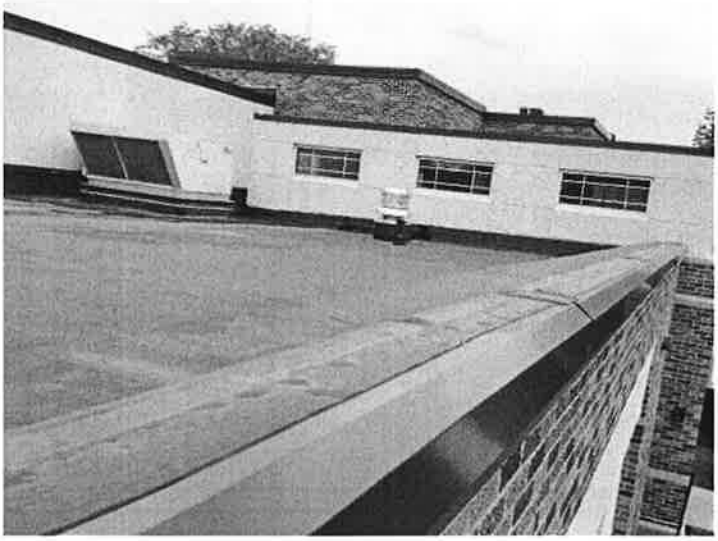
Warranty Information



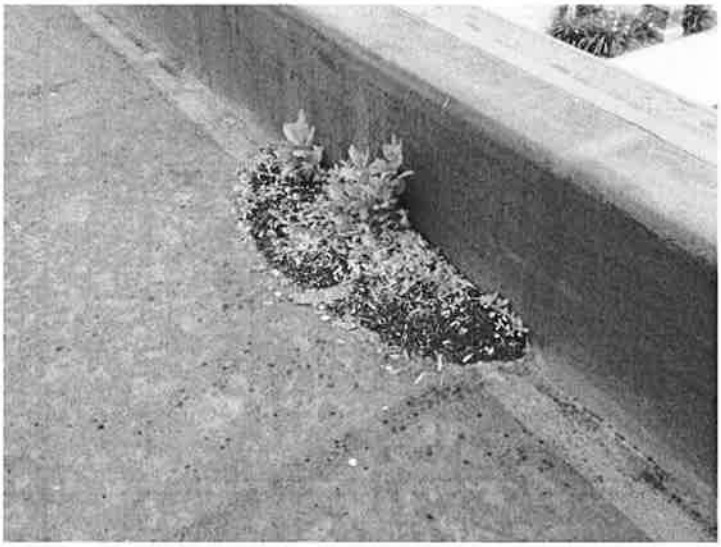
Roof Section Photos
Section 12

Roof Overview Section 12

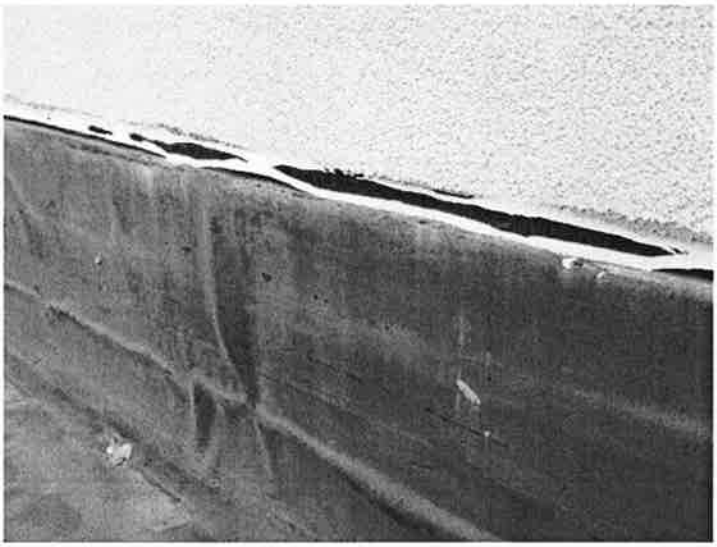
Edge Metal & Flashings Look Good



Vegetation Growth



Joint at EIFS Failing



Lifting Curb Corner Flashing

Roof Section Summary
Sections 10-12

Roof System:
Section 10 employs a Fully Adhered EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 11 employs a Fully Adhered EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 12 employs a Fully Adhered EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Roof Evaluation:
Section 10 is in excellent condition. The field is well adhered. The field seams and flashings appear to be properly installed and performing well.

Section 11 is in excellent condition. The field is well adhered. The field seams and flashings appear to be properly installed and performing well. This section ponds a very minor amount of water.

Section 12 is in excellent condition. The field is well adhered but ponds some water. The field seams and flashings appear to be properly installed and performing well. Due to the wick height, there is an unavoidable low termination detail on the upper portion of this section. The sealant above the termination bar is cracked in places. The joint where the roof meets the EIFS is failing. There is a lifted curb corner flashing near an area that ponds water.

Recommendations:
Section 10: No repairs are needed at this time.

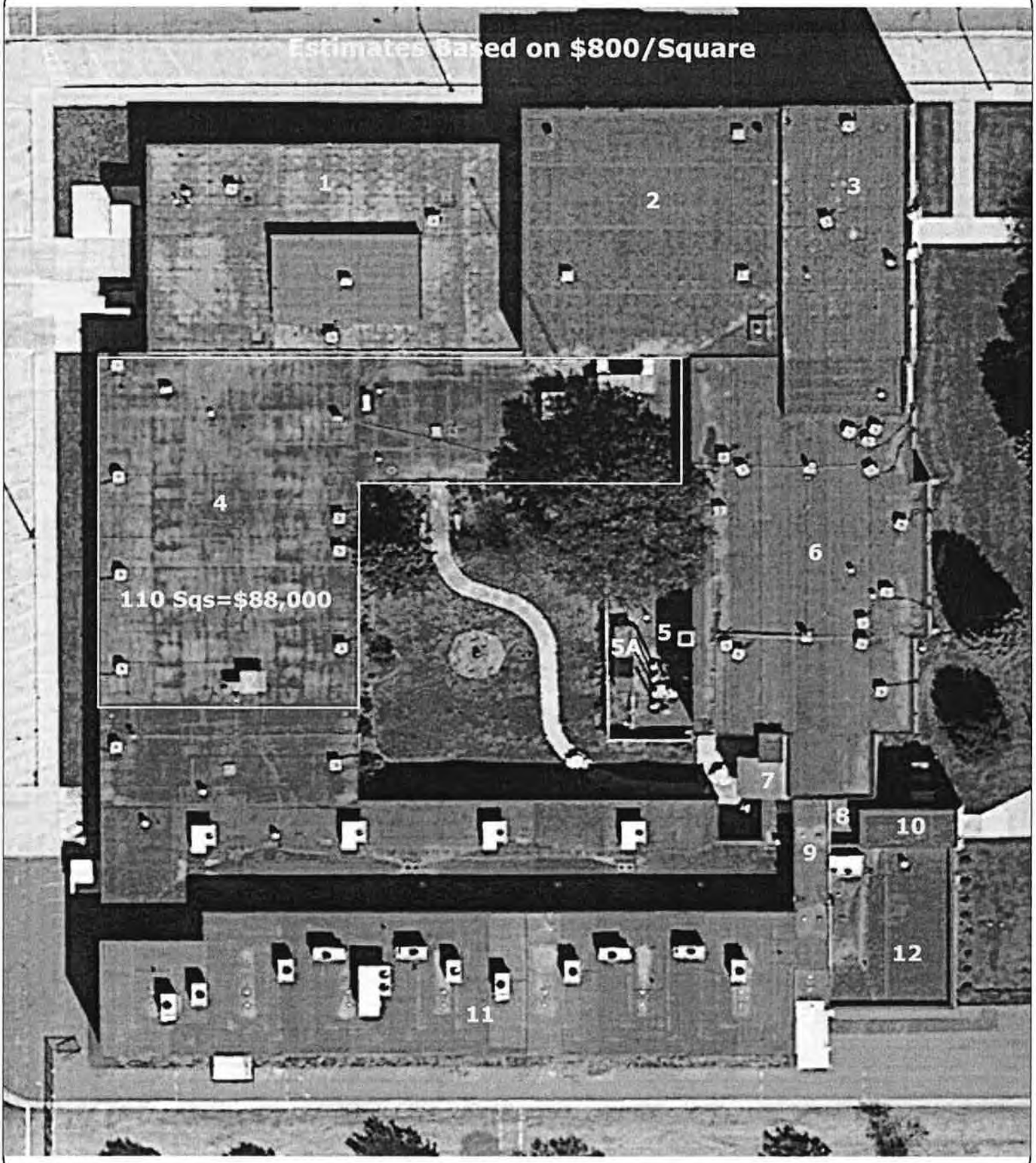
Section 11: No repairs are needed at this time. The very minor ponding should be monitored annually.

Section 12: The EIFS joints should be caulked. The drains should be cleaned. The lifted curb corner could be patched to be safe since it is near ponding water.

Estimated Life:
Section 10: The roof should perform approximately 10+ years.

Section 11: The roof should perform approximately 10+ years.

Section 12: The roof should perform approximately 10+ years.



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Building Overview

Okoboji Elementary

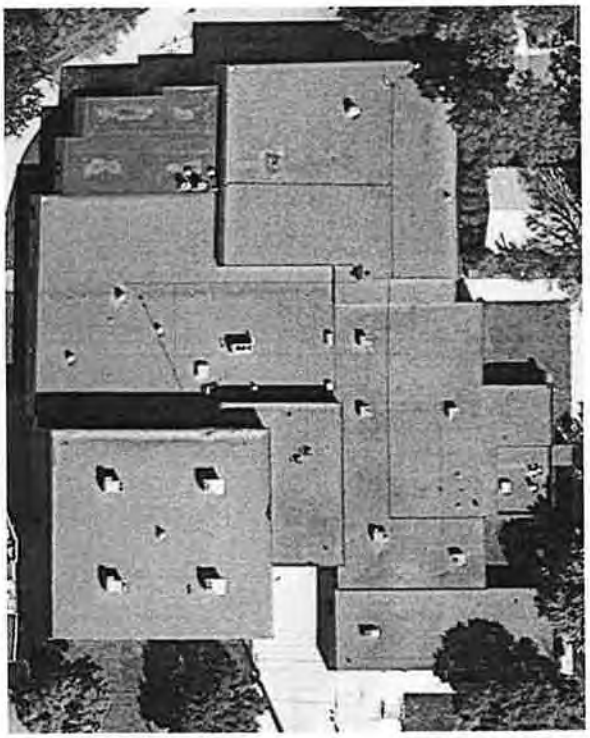
1100 8th Street, Milford, Iowa

PIONEERS

PIONEERS

Okoboji Middle School
10 Broadway
Arnold's Park, Iowa
2015 Report

Inspected by Mike Petula



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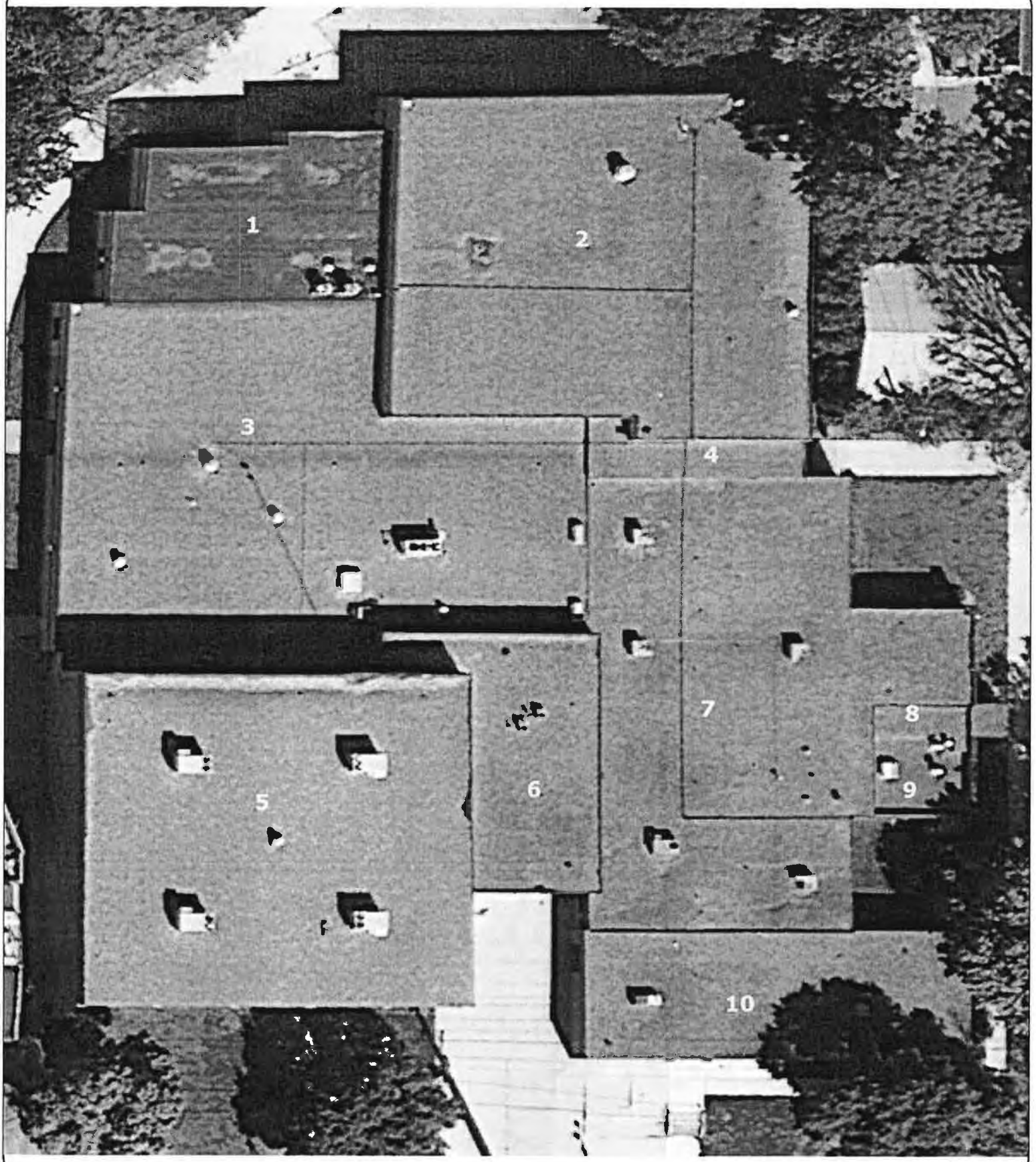

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Building Overview

Okoboji Middle School

10 Broadway, Arnold's Park, Iowa

PIONEERS

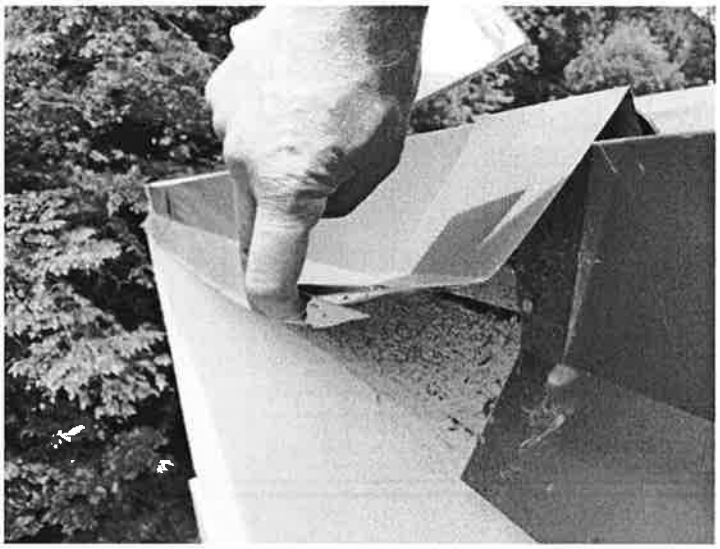
Roof Section Photos
Section 1

Roof Overview Section 1

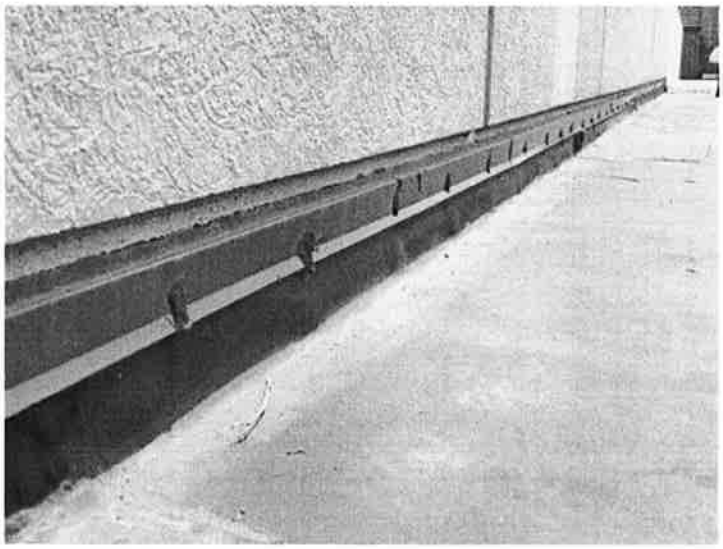
Minor Ponding at Drain

Field Seams Adhered Well

Detached Edge Metal Flashing



Vertical Flashings Look Good



Roof Section Photos
Section 2

Roof Overview Section 2

Roof Overview Section 2

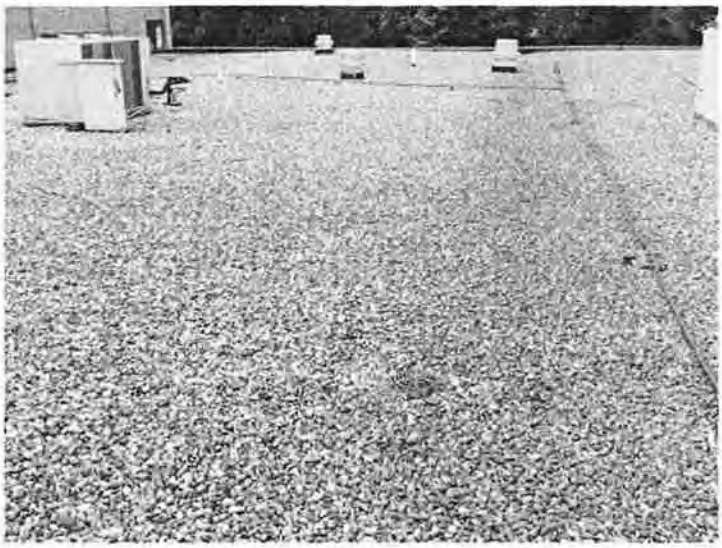
Edge Metal Looks Good

Curb Flashing Starting to Open

Pulling At Wall

Roof Section Photos
Section 3

Roof Overview Section 3



Moderate Pulling at West Wall

Curbs Corner Detail Open

Pulling at Vertical Wall

Drain & Scupper Details Look Acceptable

Vegetation Growth At South Shaded Vertical Wall

Roof Section Summary
Sections 1-3

Roof System:
Section 1 employs a Fully Adhered EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 2 employs a Ballasted EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 3 employs a Ballasted EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Roof Evaluation:
Section 1 is in good condition. The field is well adhered. The field seams and edge flashings appear to be properly installed and performing well. A piece of metal flashing is detached at the seam along the west. There is minor ponding near the drains.

Section 2 is in good condition for its age, fair overall. The field is evenly ballasted and free of debris. Overall the flashings are well adhered and performing properly. There are minor runs of pulling and curb corners are starting to come loose. This is typical as the roof ages.

Section 3 is in fair condition for its age. The field is evenly ballasted and free of debris. There is moderate pulling in runs, and pulling around curbs. A few curb corners are lifting and a couple corner details are open. This is typical as the roof ages.

Recommendations:
Section 1: The metal edge flashing along the west should be reattached.

Section 2: The pulling and curb corner details should be monitored.

Section 3: The open curb corners should be properly patched. Suspect/lifted corners could also be patched. Because the roof doesn't have many years of life left it is not cost effective to repair the pulling along the walls and therefore should continue to be monitored.

Estimated Life:
Section 1: The roof should perform approximately 7-9 years.

Section 2: The roof should perform approximately 4-6 years with repairs likely during that time.

Section 3: The roof should perform approximately 2-4 years with repairs likely during that time.

Roof Section Photos
Section 4

Roof Overview Section 4

Minor Lifting at Edge Flashing

Vertical Wall Looks God

Drain Bar Nicely Installed

Roof Section Photos
Section 5

Roof Overview Section 5

Roof Overview Section 5

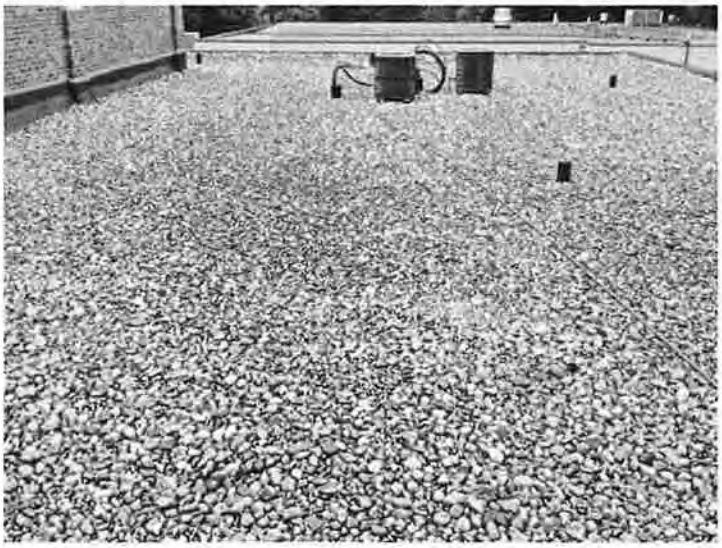
Hole Along West Perimeter Edge

Curbs Look Good

Perimeter Edge Metal Holding Well

Roof Section Photos
Section 6

Roof Overview Section 6

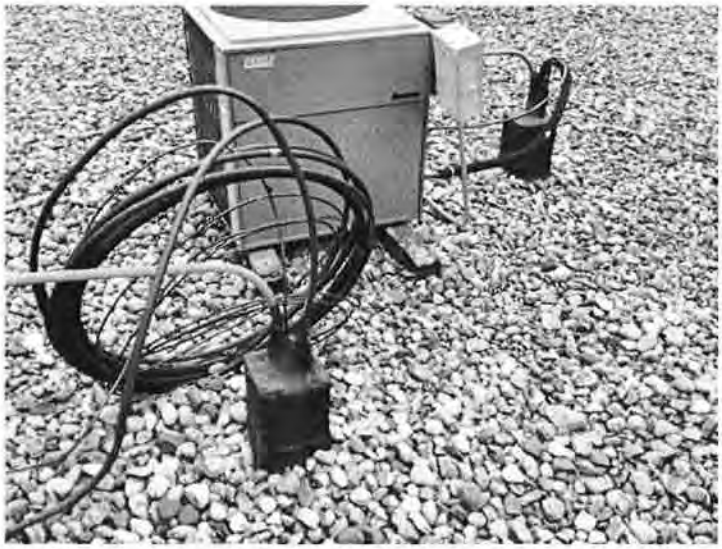


Heavy Pulling at Vertical Wall (70')

Moderate Pulling Along East Wall (80')

Hole in Penetration Flashing

Pitch Pan Details Look Good



Roof Section Summary
Sections 4-6

Roof System:
Section 4 employs a Ballasted EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 5 employs a Ballasted EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 6 employs a Ballasted EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Roof Evaluation:
Section 4 is in good condition. The field is evenly ballasted and free of debris. The flashings are well adhered and performing properly. There is one small area of lifting perimeter flashing.

Section 5 is in fair condition. The field is evenly ballasted and free of debris. The flashings are well adhered and performing properly. A hole/tear in the west wall flashing exists.

Section 6 is in poor condition. The field is evenly ballasted and free of debris. The wall flashings are severely pulling (approximately 70') and moderately pulling (80') on the east. This is typical as the type of roof system ages. There is a hole at a PVC soil stack flashing.

Recommendations:
Section 4: No repairs are needed at this time. The lifted perimeter flashing should be monitored.

Section 5: The hole in the west wall should be patched.

Section 6: Because of the severity, the severely pulled wall flashings should be reflashed (approximately 70'). The hole in the penetration flashing should be properly patched. The east pulling could be monitored as it could hold until a reroof in a few years.

Estimated Life:
Section 4: The roof should perform approximately 5-7 years.

Section 5: The roof should perform approximately 4-6 years.

Section 6: The roof should perform approximately 2-4 years after proper repairs have been completed.

Roof Section Photos
Section 7

Roof Overview Section 7

Top Fastened Cap Metal (Poor)

T-Bar at Division Wall Holding Well

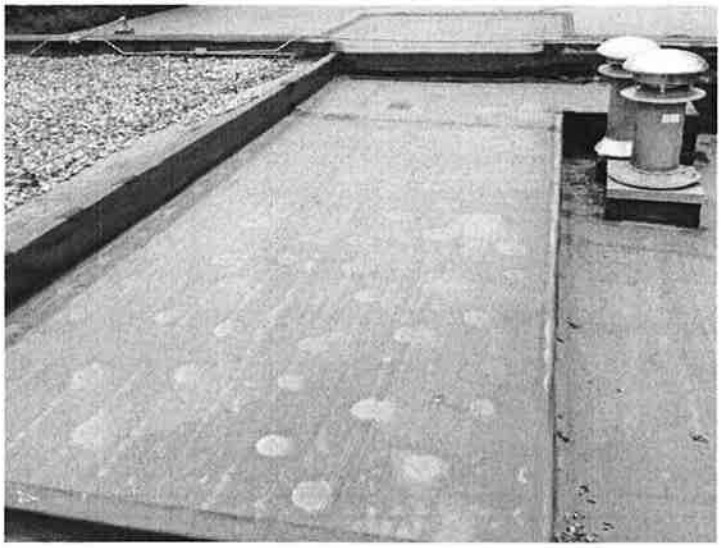
Moderate Pulling Along East Wall (30')

Field Seams Holding But Showing Age

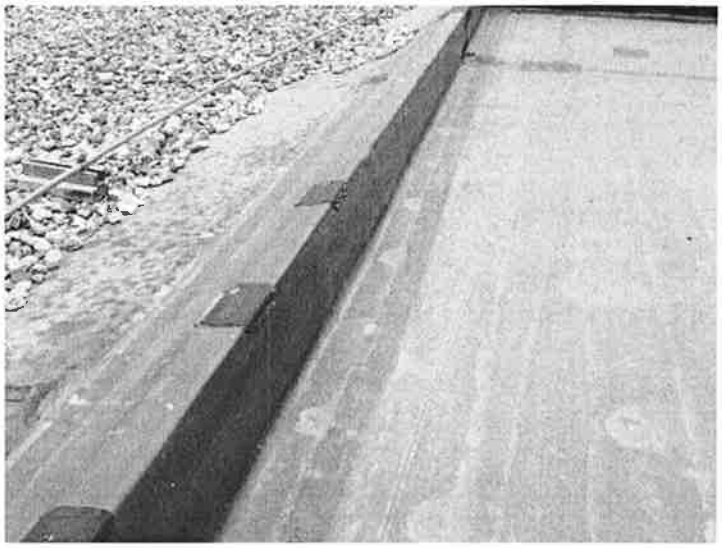
Recently Repaired Curb Corner Looks Good

Roof Section Photos
Section 8

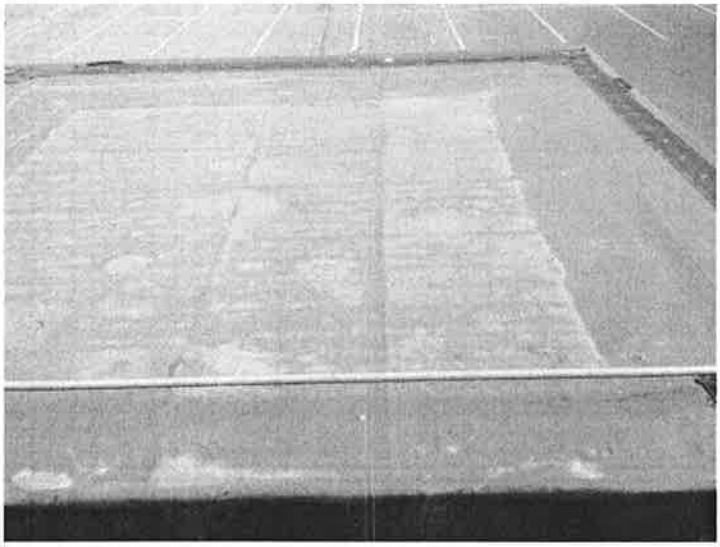
Roof Overview Section 8



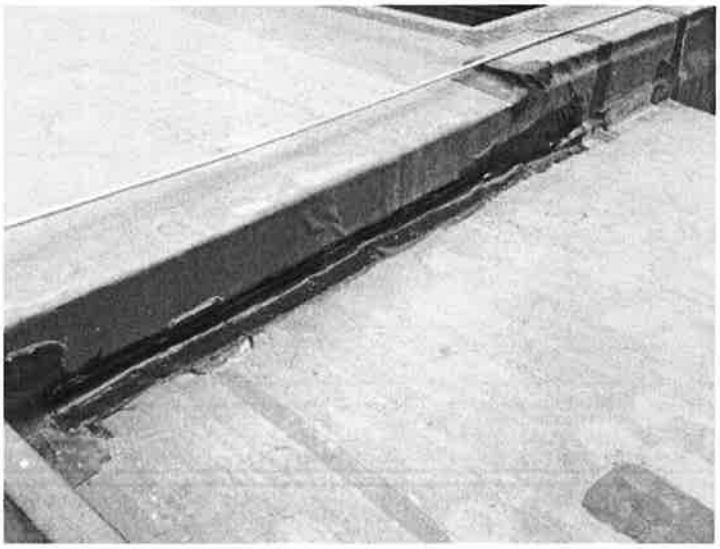
Perimeter Flashings Look Good



Field Membrane Nicely Adhered

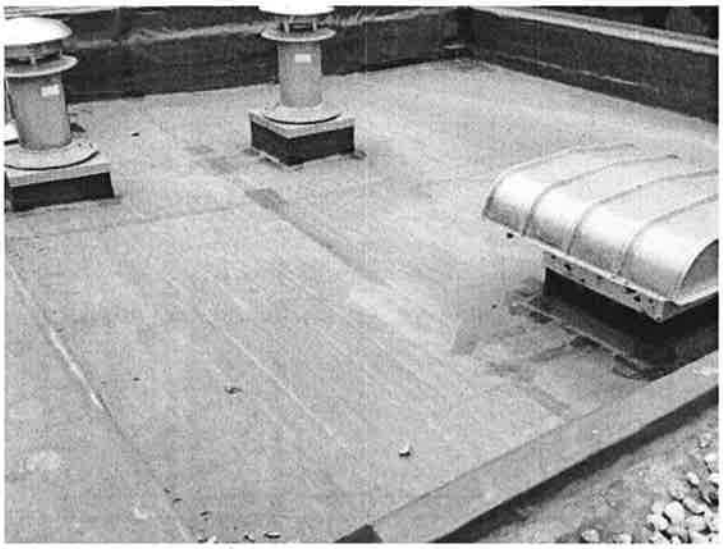


Vertical Transition Flashing Looks Acceptable

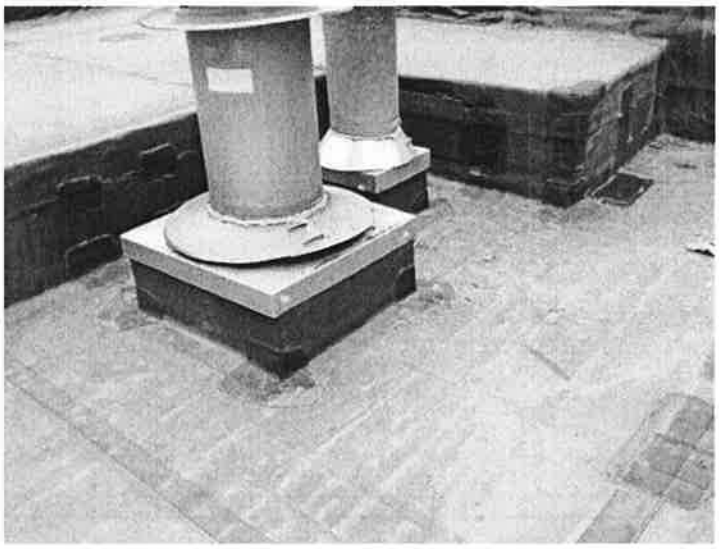


Roof Section Photos
Section 9

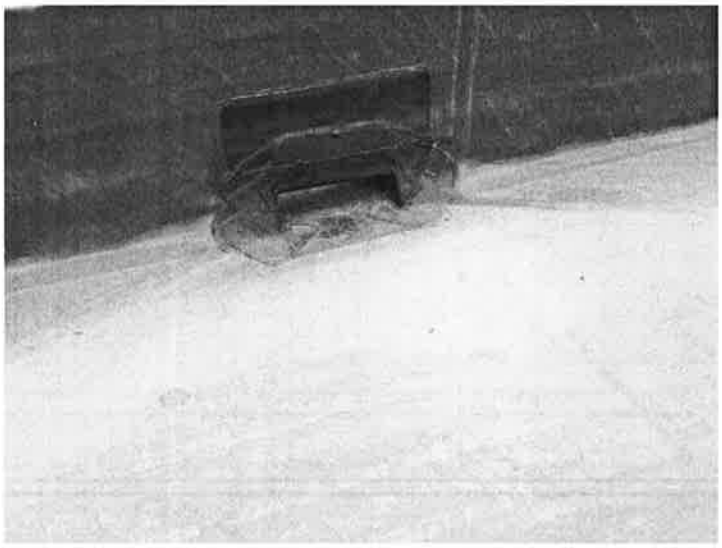
Roof Overview Section 9



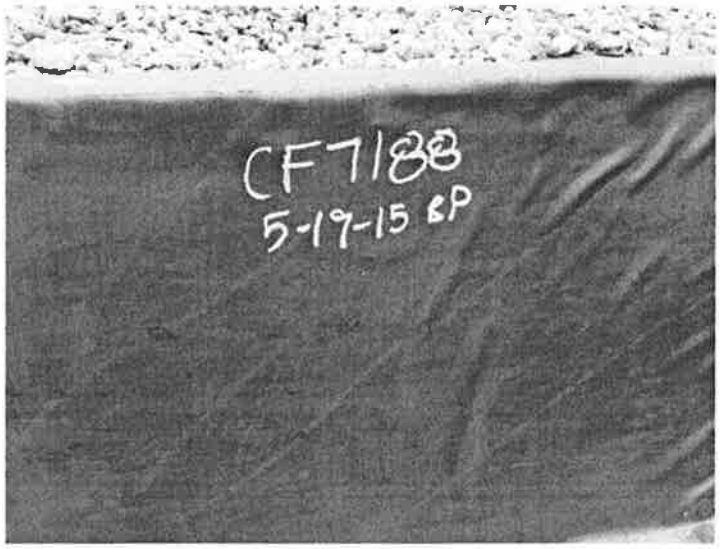
Curb Nicely Installed



Scuppers Details Look Good



Warranty Information



Roof Section Photos
Section 10

Roof Overview Section 10

Edge Metal Looks Good

EPDM Wrapped Ducting (Standard)

Penetration Detail Looks Acceptable

Properly Sumped Drain

Roof Section Summary
Sections 7-10

Roof System:
Section 7 employs a Ballasted EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 8 employs a Fully Adhered roof system. The roof slopes at approximately 1/8" per foot to drain bar.

Section 9 employs a Fully Adhered roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Section 10 employs a Ballasted EPDM roof system. The roof slopes at approximately 1/8" per foot to internal drains.

Roof Evaluation:
Section 7 is in fair condition. The field is evenly ballasted and free of debris. Overall the flashings are well adhered and performing properly. The cap metal is top fastened in some areas which is a poor detail. The fasteners lift and water can penetrate. There is also a short run of moderate pulling along the east wall.

Sections 8 and 9 are in excellent condition. The roofs are well adhered and all details look good.

Section 10 is in fair condition. The field is evenly ballasted and free of debris. The flashings are well adhered and performing properly. A couple HVAC units have been encapsulated with EPDM to likely stop leaks from the non-commissioned units. Minor ponding exists in a few areas.

Recommendations:
Section 7: The moderately pulling wall (30') should be monitored closely.

Section 8: Nothing is needed.

Section 9: Nothing is needed.

Section 10: No repairs are needed at this time.

Estimated Life:
Section 7: The roof should perform approximately 2-4 years.

Section 8: The roof should perform approximately 15+ years.

Section 9: The roof should perform approximately 15+ years.

Section 10: The roof should perform approximately 2-4 years.

MECHANICAL REVIEW 04

WPE WEST PLAINS ENGINEERING, INC.

SIOUX FALLS

4609 S. Techlink Circle ■ Sioux Falls, SD 57106
Ph: (605) 362-3753 ■ Fax (605) 362-3759

Okoboji School District
Existing Mechanical Conditions School Assessment
Milford IA
WPE #BS17055
June 12, 2017

Okoboji Elementary School

DOMESTIC COLD WATER SERVICE

There are (2) domestic cold water services serving the entire facility. Both services enter into the utility tunnels below the building. The first service enters the building on the east side of the building and appears to be the original water service. The second service enters the west side of the building and appears to have been added after the original building was expanded. Both water services appear to be in poor condition with what appeared to be the original piping material.

SANITARY SEWER SERVICE

There are (2) sanitary sewer services serving the entire facility. The first service installed with the original building is still existing and being reused. It also appears that a second service was installed after the original building was expanded to the south. The conditions of either could not be verified, but due to the age of the original service, it is anticipated that the original service is in poor condition.

HYDRONIC HEATING WATER SYSTEM

For heating, the entire building is served with (4) gas fired boilers, (4) secondary heating water pumps, (4) primary heating water pumps, and all accessories that appear to have been installed in a 2010 building expansion and remodel. The equipment appeared to be in above average condition and appeared to be well maintained. A majority of the heating water piping in the building and served by the central boiler equipment was also replaced in the 2010 remodel, with only small portions remaining and reused at that time in the Library Media Center, a block of (4) classrooms on the south, and the southeast administration area. Although it could not be verified the condition of the older piping in those areas, it is anticipated that this piping is in average condition based upon the age of the classrooms and administrative areas.

HVAC SYSTEMS - COOLING

For cooling there is a mix of HVAC systems that serve the facility. In the east wing of the building, which is mostly comprised of classrooms, both the first and second floors are served with ductless mini split systems with an indoor unit hung within the space and connected to an outdoor condensing unit. In the west block of classrooms, these same indoor units are also hung in the space and are connected to outdoor condensing units. In the north portion of the building, the kitchen is served by ductless mini split systems with indoor units hung in the space and connected to outdoor condensing units. In the gymnasium, a constant volume DX rooftop unit with ductwork distribution into the space is used to cool the space. Finally, in the Library Media Center, a variable volume DX rooftop unit with ductwork distribution and VAV boxes with reheat coils are used to serve this space. For the south portion of the

building, the classrooms on first and second floors are served with single zone DX rooftop units with ductwork distribution dedicated to each space. The administration area on the southeast corner of the building is served with a variable volume DX rooftop unit with ductwork distribution of VAV boxes with reheat coils.

It should be noted here that the condition of the equipment is as follows:

- Mini-split systems serving east and west classrooms are in below average condition.
- Rooftop unit serving the north gymnasium is in average condition.
- Rooftop unit serving the library media center is in average condition.
- Mini-split systems serving the kitchen and dining rooms are in below average condition.
- Rooftop units serving classrooms on south side of building are in average condition.
- Rooftop unit serving administrative area is in average condition.

HVAC SYSTEMS - HEATING

For heating there is a mixture of HVAC systems that serve the facility. In the east wing of the building, which is mostly comprised of classrooms, both the first and second floors are served with floor mounted units ventilators with heating coils installed on the exterior wall. In the west block of classrooms, these same ventilators with heating coils are utilized for heating in these spaces. In the north portion of the building, the kitchen is served with a combination of cabinet unit heaters and finned tube radiation. In the gymnasium, a constant volume rooftop unit with integral heating and ductwork distribution into the space is used to heat the space. Finally, in the Library Media Center, a variable volume rooftop unit with integral heating coil, ductwork distribution, and VAV boxes with reheat coils are used to serve this space. For the south portion of the building, the classrooms on first and second floors are served with single zone rooftop units with integral heating coils and ductwork distribution dedicated to each space. The Administration area on the southeast corner of the building is served with a variable volume rooftop unit with integral heating coil, ductwork distribution, and VAV boxes with reheat coils. All common entry vestibules, hallways, and like are also heated with a combination of cabinet unit heaters and radiation. All heating devices within the building are fed with heating water from the central boiler system.

It should be noted here that the condition of the equipment is as follows:

- Unit ventilators serving east and west classrooms are in below average condition.
- Rooftop unit serving the north gymnasium is in average condition.
- Rooftop unit serving the library media center is in average condition.
- Cabinet unit heaters and radiation serving the kitchen and dining rooms are in below average condition.
- Rooftop units serving classrooms on south side of building are in average condition.
- Rooftop unit serving administrative area is in average condition.
- Cabinet unit heaters and radiation serving the common entry vestibules and hallways are in below average condition.

HVAC SYSTEMS - VENTILATION

For ventilation there is a mixture of HVAC systems that serve the facility. In the east wing of the building, which is mostly comprised of classrooms, ventilation to each of the classroom spaces is through the unit ventilator installed on the exterior wall. In the west block of classrooms, ventilation is supplied directly into each classroom through a common energy recovery ventilator located on the roof. The ventilator utilizes building relief air to pre-condition the outside ventilation air being delivered to the spaces. In the north portion of the building, the kitchen did not appear to have any ventilation supplied to the space. In the gymnasium, a constant volume rooftop unit and ductwork distribution into the space is used to provide ventilation to the space. Finally, in the library media center, a variable volume rooftop unit with ductwork distribution and VAV boxes are used to provide ventilation to this space. For the south portion of the building, the classrooms on first and second floors are served with single zone rooftop units and ductwork distribution to provide ventilation to each space. The Administration area on the southeast corner of the building is served with a variable volume rooftop unit with ductwork distribution and VAV boxes to provide ventilation to these areas. All bathrooms and custodial closets appeared to have exhaust that is discharged to the exterior.

It should be noted here that the condition of the building ventilation is as follows:

- The ventilation in the east block of classrooms, both first and second floors, appeared to be poor and inadequate.
- The ventilation in the kitchen appeared to be very poor.
- The ventilation in the gymnasium appeared to be below average.
- The ventilation in the library media center appeared to be below average.
- The ventilation in the west block of classrooms appeared to be average.
- The ventilation in the south block of classrooms, both first and second floors, appeared to be average.
- The ventilation in the administrative area appeared to be average.
- The exhaust ventilation in the west, north, and east wings was spotty, but generally was very poor.
- The exhaust ventilation in the south classroom wing and administrative area was spotty, but generally was average.

GENERAL BUILDING SYNOPSIS

- Generally, the south classroom wing and administrative office area appeared to be in the best condition in the facility, which can be expected since it is the newest portion of the facility. All equipment in the south wing, included plumbing and HVAC, are in average condition, but are starting to show their age with replacement of some equipment anticipated in the next 10 years.
- The central boiler system, pumps, piping, and accessories are in above average condition and are anticipated to last beyond the next 10 years.
- A majority of the heating water piping extended from the central boiler heating system into the building is only about 5 years old, so it is anticipated that this piping will last beyond the next 10 years.
- The ventilation to the east block of classrooms, both first and second floors, appeared to be very poor with odors present. In addition, the indoor air quality in these rooms was made worse by the

indoor mini split unit being installed directly in the space and the condensate drainage issues it created. It was noted that the cooling coil condensate drainage from some of the units was leaking on to the floors below. Outside air ventilation must be added in these spaces to improve indoor air quality.

- The water services in the access tunnels are in poor condition. The domestic water piping being used in the east block of classrooms and well as in the west block of classrooms is also in poor condition and should be replaced. This piping system is not anticipated to last beyond the next 10 years, specifically at the piping joints and connections.
- Some of the sanitary waste piping inside the tunnels and serving both the west and east classroom blocks has been replaced, but in general, the piping that has not been replaced is in poor condition. This piping should be replaced, as this existing piping is not anticipated to last beyond the next 10 years, specifically at the piping joints and connections.
- The exhaust ventilation from bathrooms, specifically in the east and west block of classrooms, was poor with strong odors present. Exhaust volume needs to be increased to these areas and the exhaust equipment and fans need to be replaced in order to improve indoor air quality.

Okoboji High School

DOMESTIC COLD WATER SERVICE

There are (2) domestic cold water services serving the entire facility. The first service is original to the building, while the second service was installed as part of the south gym addition after the original building. The original water service appears to be in poor condition, while the second service is in very good condition.

SANITARY SEWER SERVICE

There are (2) sanitary sewer services serving the entire facility. The first service installed with the original gymnasium/locker building is still existing and being reused. It also appears that a second service was installed as part of the south gym addition after the original building. The conditions of either could not be verified, but due to the age of the original service, it is anticipated that the original service is in poor condition.

HYDRONIC HEATING WATER SYSTEM

The heating on the north half of the building, comprised primarily of classrooms and theater, is served by (2) natural gas boilers, (2) heating only recirculation pumps, (2) heat pump loop pumps, piping, and all accessories that are located in a mechanical room on the north end of the building. A plate and frame heat exchanger located in the mechanical room is also being utilized by the heat pump loop to inject heat from the boilers for heating. The boilers, pumps, piping, and accessories within the mechanical room appear to be in poor condition and need to be replaced. A heating only circulation loop is extended from the mechanical room to the north half of the building to serve terminal devices such as cabinet unit heaters and radiation. An additional heat pump loop is extended from the mechanical room to water source heat pumps scattered throughout above ceilings in the north half of the facility. The condition of

the piping from the mechanical room into the building has not been verified, however, due to the condition of the piping visible inside the mechanical room, it is assumed the piping throughout the building is also in poor condition since it is the same age. For the south half of the building constructed as an addition to the original building, including the main gymnasium, a second boiler system with distribution piping was installed to serve the addition. These areas include the main gymnasium, locker rooms, bathrooms, and weight room on the south portion of the building. This equipment, piping, and accessories appeared to be in very good condition and well maintained. A third heating system was added with the office addition in 2015 which consists of (3) natural gas fired boilers, (2) heating water recirculation pumps, piping, and accessories located in a mechanical room near the student commons area. Heating water piping is extended from the central heating system to the heating equipment in the east administration area. This equipment, accessories, and piping is in very good condition. Finally, for the original portions of the building, electric heaters are installed for these spaces, which include the original gymnasium and locker rooms, the ag shop, the welding shop, and all offices/classrooms serving these areas. Heating water piping has not been extended into these areas.

HYDRONIC COOLING WATER SYSTEM

The cooling on the north half of the building, comprised primarily of classrooms and theater, is served by (1) exterior cooling tower, (1) indoor condenser water sump tank, (2) heat pump loop pumps, piping, and all accessories that are located in a mechanical room on the north end of the building. A plate and frame heat exchanger located in the mechanical room is also being utilized by the heat pump loop to reject heat to the cooling tower for cooling. The cooling tower, indoor sump, piping, and accessories within the mechanical room appear to be in poor condition and need to be replaced. The heat pump loop is extended from the mechanical room to water source heat pumps scattered throughout above ceilings in the north half of the facility. The condition of the piping from the mechanical room into the building has not been verified, however, due to the condition of the piping visible inside the mechanical room, it is assumed the piping throughout the building is also in poor condition since it is the same age.

HVAC SYSTEMS - COOLING

The cooling systems on the north half of the building, comprised primarily of classrooms and theater, is served with water source heat pumps located above each space with ductwork distributed to the space they serve. The water source heat pumps are connected to the central heat pump water loop to allow both heating and cooling from the heat pumps. These heat pumps are relatively new while being replaced in the last 2 years, however, all connected ductwork is the original material. The return air to each heat pump is taken from the space it serves. For the south half of the building constructed as an addition to the original building, including the main gymnasium, large rooftop units with DX cooling are placed throughout this area and ducted to the spaces they serve. These areas include the main gymnasium, locker rooms, bathrooms, and weight room on the south portion of the building. This equipment and connected ductwork is in very good condition. The east administration area, adjacent student commons area, and kitchen is served by a single variable air volume rooftop unit with DX cooling, distribution ductwork, and VAV boxes that were installed in 2015. Due to its age, this equipment and ductwork distribution are in very good condition. The original gymnasium and locker room areas, ag, and welding shops do not currently have any cooling installed, just heating devices. Offices adjacent to the welding and ag shops have cooling equipment, however, comprised of indoor fan coil units installed inside the spaces and connected to an exterior condensing unit.

It should be noted here that the condition of the equipment is as follows:

- Heat pumps serving the north half of the facility, primarily classrooms and theater, are in very good condition.
- Rooftop units serving the south portion of the facility, including the main gymnasium, locker rooms, and weight room are in very good condition.
- Rooftop unit and VAV boxes serving the east administration office, student commons, and kitchen areas are in very good condition.
- Split systems installed for offices and classrooms adjacent to the welding and ag shops on the west side of facility are in below average condition.
- Rooftop unit serving administrative area, student commons, and kitchen are in average condition.

HVAC SYSTEMS - HEATING

The heating systems on the north half of the building, comprised primarily of classrooms and theater, is served with water source heat pumps located above each space with ductwork distributed to the space they serve. The water source heat pumps are connected to the central heat pump water loop to allow both heating and cooling from the heat pumps. These heat pumps are relatively new while being replaced in the last 2 years, however, all connected ductwork is the original material. The return air to each heat pump is taken from the space it serves. For the south half of the building constructed as an addition to the original building, including the main gymnasium, large rooftop units with integral heating water coils are placed throughout this area and ducted to the spaces they serve. These areas include the main gymnasium, locker rooms, bathrooms, and weight room on the south portion of the building. This equipment and connected ductwork is in very good condition. The east administration office area, adjacent student commons area, and kitchen is served by a single variable air volume rooftop unit with integral heating water coil, distribution ductwork, and VAV boxes with reheat coils that were installed in 2015. Due to its age, this equipment and ductwork distribution are in very good condition. For the original portions of the building, electric heaters are installed for these spaces, which include the original gymnasium and locker rooms, the ag shop, the welding shop, and all offices/classrooms serving these areas. Heating water piping has not been extended into these areas. All common entry vestibules contain terminal equipment, such as cabinet unit heaters, that have an integral heating water coil utilized to heat the space they serve. The student commons area adjacent to the administration offices also contain baseboard finned tube radiation installed along the south interior wall. Finally, within the east administration office area, radiant ceiling panels with heating water coils are installed in exterior offices.

It should be noted here that the condition of the equipment is as follows:

- Heat pumps serving the north half of the facility, primarily classrooms and theater, are in very good condition.
- Rooftop units serving the south portion of the facility, including the main gymnasium, locker rooms, and weight room are in very good condition.
- Rooftop unit and VAV boxes serving the east administration office, student commons, and kitchen areas are in very good condition.
- Electric heaters installed for the original gymnasium and adjacent lockers are in average condition.

- Rooftop unit serving administrative area, student commons, and kitchen are in average condition.
- Electric heaters installed for the ag shop, welding shop, and adjacent offices on the west side of the facility are in below average condition.

HVAC SYSTEMS - VENTILATION

The outside air ventilation system on the north half of the building, comprised primarily of classrooms and theater, is served by a single water source heat pump located in a mechanical room above the theater stage. This unit is a mixed air unit, drawing outside air in from an exterior louver and mixing it with return air from the theater before being heating or cooled. This mixed air with a percentage of outside air is ducted from the single heat pump to the inlet of each heat pump located above the ceilings in the classroom spaces. The mixed air ductwork from the single heat pump is not physically connected to the inlet of each smaller heat pump. The outside air to the mixed are heat pump is currently being preheated with a heating coil in the outside air duct which is pumped through a plate and frame heat exchanger that utilized the central boiler system as a heat source. Since the air being delivered to each smaller heat pump is mixed air only and is not physically connected to each heat pump, the indoor air quality on the north half of the building where this system exists appeared to be very poor. Since the original gymnasium and adjacent locker rooms, ag shop, welding shop, and adjacent offices and classrooms do not have any outside air ventilation, these spaces also appeared to have poor indoor air quality. For the south half of the building constructed as an addition to the original building, including the main gymnasium, large rooftop units with provide outside air ventilation to this area of the building.. These areas include the main gymnasium, locker rooms, bathrooms, and weight room on the south portion of the building. The east administration office area, adjacent student commons area, and kitchen is served by a single variable air volume rooftop unit that provide ventilation to these portions of the building. Due to its age, this equipment and ductwork distribution are in very good condition. For the original portions of the building, electric heaters are installed for these spaces, which include the original gymnasium and locker rooms, the ag shop, the welding shop, and all offices/classrooms serving these areas. Heating water piping has not been extended into these areas. All common entry vestibules contain terminal equipment, such as cabinet unit heaters, that have an integral heating water coil utilized to heat the space they serve. The student commons area adjacent to the administration offices also contain baseboard finned tube radiation installed along the south interior wall. Finally, within the east office area, radiant ceiling panels with heating water coils are installed in exterior offices.

- The ventilation in the north half of the building, comprised mostly of classrooms and theater, appeared to be very poor.
- The ventilation in the kitchen appeared to be very good.
- The ventilation in the new gymnasium appeared to be very good.
- The ventilation in the original gymnasium and adjacent locker rooms appeared to be very poor.
- The ventilation in the east administration offices and adjacent student commons area appeared to be very good.
- The ventilation in the west ag shop, welding shop, and adjacent classrooms and offices appeared to be very poor.

GENERAL BUILDING SYNOPSIS

- The equipment and piping materials in the south portion of the building, consisting of the main gymnasium, locker rooms, and weight room, are in very good condition and are anticipated to last beyond the next 10 years.
- The equipment and materials in the east portion of the building, consisting of the administration office, student commons, and kitchen are in very good condition and are anticipated to last beyond the next 10 years.
- Although the heat pumps serving the north half of the building, comprised primarily of classrooms and theater, appear to be in very good condition, the ventilation quantities and methods of delivery to these areas must be changed in order to improve indoor air quality.
- Outside air ventilation must be added in the original gymnasium, locker rooms, ag shop, welding shop, and adjacent offices and classrooms to improve indoor air quality.
- The central heating and cooling system, along with connected hydronic piping serving the north half of the building, needs to be replaced due to its age and condition. This piping system is not anticipated to last beyond the next 10 years, specifically at the piping joints and connections.
- The original water service to the building needs to be investigated to determine its true condition and replaced if necessary.
- The original sanitary sewer service to the building needs to be investigated to determine its true condition and replaced.
- The heating and cooling equipment in the ag shop, welding shop, and adjacent offices and classrooms are in below average condition and need to be replaced.
- Although the electric heaters serving the original gymnasium and locker rooms are in average condition, a more efficient approach to heating would be with heating water in lieu of electric.

Okoboji Middle School

DOMESTIC COLD WATER SERVICE

There appeared to be a single water service serving the entire facility, with the service located in the mechanical room adjacent to the gymnasium. This water service appeared to be original to the building, and due to age, is anticipated to be in poor condition. It is possible that the water service to the building was upgraded when the west addition to the school was constructed in 1993, however, that would need to be verified with existing plans.

SANITARY SEWER SERVICE

There appeared to be a single sanitary sewer service serving the entire facility, with the service installed with the original building. The condition of the piping could not be verified, however, due to its age, it is anticipated that this piping is in poor condition. It is possible that the sewer service to the building was upgraded when the west addition to the school was building in 1993 (or a second service was added), however, that would need to be verified with existing plans.

HYDRONIC AND STEAM HEATING SYSTEM

The heating for the entire facility, with the exception of the latest classroom addition on the northwest corner of the building, is served by (2) natural gas fired steam boilers, steam and condensate piping, condensate return pumps, and accessories located in the existing boiler room located on the south portion of the building. In addition, when the west building construction was done in 1993, a steam to hot water heat exchanger with heating water circulation pumps were added to provide heating water for the addition area, utilizing the existing steam boilers as the heating source. The boilers, piping, pumps, heat exchanger, and all accessories inside the existing boiler room are in very poor condition. A second heating water hydronic system was added in the latest northwest classroom addition which consists of a single boiler, (2) heating water circulation pumps, piping, and accessories. This equipment and accessories are in very good condition due to their age.

HVAC SYSTEMS - COOLING

For cooling there is a mix of HVAC systems that serve the facility. In the west portion on the facility added in 1993, which is mostly comprised of classrooms and the kitchen/dining area, these spaces are served with multiple indoor air handling units with integral DX coils and ductwork distribution to the spaces they serve. The DX coil in each air handling unit is connected to an outdoor condensing unit located on the roof. The equipment and materials in these areas are in slightly below average condition due to their age. In the original portion of the building, consisting of the main administration office and classroom areas, these areas are served with constant volume packaged DX rooftop units with ductwork distribution to the spaces they serve. The equipment and materials in these areas are in below average condition due to their age. In the original gymnasium portion of the building, this area is served with multiple packaged rooftop units with integral DX cooling and ductwork distribution into the gymnasium. This equipment and materials are also in below average condition. In the newest northwest classroom addition area, this area is served with an indoor air handling unit with integral DX coil, ductwork distribution, and VAV boxes. The DX coil in the air handling unit is connected to an outdoor condensing unit located on the roof. The equipment and materials in this portion of the facility is in very good condition due to its age.

It should be noted here that the condition of the equipment is as follows:

- The packaged DX rooftop units serving the original building portion, including the administration, classroom, and gymnasium are in below average condition.
- The indoor air handling units and connected outdoor condensing units serving the 1993 addition are in slightly below average condition.
- The indoor air handling unit and connected outdoor condensing unit serving the newest northwest classroom addition are in very good condition.

HVAC SYSTEMS - HEATING

For there is a mix of HVAC systems that serve the facility. In the west portion on the facility added in 1993, which is mostly comprised of classrooms and the kitchen/dining area, these spaces are served with multiple indoor air handling units with integral heating water coils and ductwork distribution to the spaces they serve. In addition, to the classroom air handling unit, the VAV boxes served by this unit have a reheat heating water coil installed, and common entry vestibules in this area are served with cabinet unit

heaters with integral heating coils. The heating coils are connected to the steam to heating water heat exchanger located in the main boiler room. The equipment and materials in these areas are in slightly below average condition due to their age. In the original portion of the building, consisting of the main administration office and classroom areas, these areas are served with constant volume packaged rooftop units with gas fired heat exchangers and ductwork distribution to the spaces they serve. In addition, steam terminal units (such as wall convectors, etc) are installed in these spaces and fed from the existing steam boilers located in the main boiler room. The equipment and materials in these areas are in below average condition due to their age. In the newest northwest classroom addition area, this area is served with an indoor air handling unit with integral heating water coil, ductwork distribution, and VAV boxes with reheat coils. These heating coils are connected to the newest boiler heating system located in the new addition. The equipment and materials in this portion of the facility is in very good condition due to its age.

It should be noted here that the condition of the equipment is as follows:

- The packaged rooftop units and steam terminal units serving the original building portion, including the administration, classroom, and gymnasium are in below average condition.
- The indoor air handling units and connected VAV boxes serving the 1993 addition are in slightly below average condition.
- The indoor air handling unit and connected VAV boxes serving the newest northwest classroom addition are in very good condition.

HVAC SYSTEMS - VENTILATION

For ventilation there is a mix of HVAC systems that serve the facility. In the west portion on the facility added in 1993, which is mostly comprised of classrooms and the kitchen/dining area, these spaces are served with multiple indoor air handling units which provide outside air directly to the spaces they serve. In addition, the kitchen contains exhaust hoods that are connected to rooftop exhaust fans. The equipment and materials in these areas are in slightly below average condition due to their age. In the original portion of the building, consisting of the main administration office and classroom areas, these areas are served with constant volume packaged DX rooftop units that provide outside air ventilation to the spaces they serve. The equipment and materials in these areas are in below average condition due to their age. In the original gymnasium portion of the building, this area is served with multiple packaged rooftop units with which supply outside air ventilation directly into the gymnasium. This equipment and materials are also in below average condition. In the newest northwest classroom addition area, this area is served with an indoor air handling unit that provides outside air ventilation to these areas. The equipment and materials in this portion of the facility is in very good condition due to its age.

It should be noted here that the condition of the equipment is as follows:

- The packaged rooftop units serving the original building portion, including the administration, classroom, and gymnasium are in below average condition.
- The indoor air handling units and exhaust equipment serving the 1993 addition are in slightly below average condition.
- The indoor air handling unit serving the newest northwest classroom addition are in very good condition.

GENERAL BUILDING SYNOPSIS

- The equipment and piping materials in the newest northwest portion of the facility, consisting of primarily classroom, are in very good condition and are anticipated to last beyond the next 10 years.
- The equipment and materials in original portion of the building, consisting of the administration offices, classrooms, and gymnasium are in below average condition and are anticipated to be replaced in the 10 years. In addition, outside air ventilation to these areas must be increased to improve the poor indoor air quality to these areas. The would also include an increase in exhaust ventilation from the bathrooms and locker areas within the original portion of the building.
- The equipment and materials in 1993 addition portion of the building, consisting of the primarily classrooms and the kitchen/dining area, are in below average condition and are anticipated to be replaced in the 10 years. In addition, outside air ventilation needs to be increased to the kitchen/dining area to improve the marginal indoor air quality in this area.
- The central heating system, along with the steam piping to the original building, needs to be replaced due to its age and condition. This piping system is not anticipated to last beyond the next 10 years, specifically at the piping joints and connections. We would also recommend replacing the steam boilers and system piping with more efficient heating water boilers, pumps, and distribution piping to the original portion of the building.
- The original water service to the building needs to be investigated to determine its true condition and replaced if necessary.
- The original sanitary sewer service to the building needs to be investigated to determine its true condition and replaced.

End of Report

ELECTRICAL REVIEW 05

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Okoboji School District
Existing Electrical Conditions School Assessment
Milford IA
WPE #BS17055
June 12, 2017

Okoboji Elementary School

ELECTRICAL SERVICE

The existing electrical service was installed with the 2010/2011 addition. The new service panelboard is located on the exterior to the north of the main entry doors into the school along with the utility transformer for the building. The service consists of a 3,000 amp, 120/208 volt, three-phase service that back fed the prior existing electrical service. New panels were installed as needed for this expansion and that equipment appears in good condition with adequate expansion space. Many of the remaining electrical gear and panelboards are approaching or have reached the end of their useful life. Spare parts for many panelboards of this age are becoming obsolete and if parts are available, they may be refurbished equipment. There is also a safety concern that the circuit breakers in the panels may not trip when needed due to the condition and the lack of exercising (turning the circuit breaker on and off per the manufacturers recommendations).

Due to space limitations and requirements of the National Electrical Code, the new main electrical panel was installed in an outdoor rated (NEMA 3R) enclosure. This is acceptable for the installation but could cause safety concerns during servicing and maintenance of the equipment during inclement weather. There are other panelboards installed outdoors that would have the same concern.

POWER

The original portion of the building (prior to the 2010/2011 addition), appears to be short of outlets for the needs of the space/classrooms. During the walkthrough, it was noted that there are multiple classrooms with outlets installed in the classroom marker boards and other spaces with cords running up the wall to an outlet and in some cases extension cords plugged in and then run above the ceiling space over to a different area in the room.

In the latest addition, the outlets seem to be adequate for the classrooms and in good locations to be used in the space.

LIGHTING

Lighting in the original portion of the building consisted mostly of 2x4 fixtures with acrylic lens with four lamps per fixture. The fixtures had mostly 28-watt lamps installed. Discussion with staff indicated that there were still some 32-watt lamps installed in the building but they were being phased out when possible. The lighting control in the classrooms include dual switching for turning some of the lights off in the classroom while leaving others on. There were no daylight controls in this portion of the building. The main conference room and office area have 2x4 parabolic light fixtures installed. The library/computer lab has linear direct/indirect lights installed for better light for reading and computer screens. The gymnasium

has eight (8) lamp high-bay fluorescent fixtures installed. In the back of house spaces there were fixtures with the lens removed and compact fluorescent lamps were installed.

Below are the light levels measured along with associated IESNA recommended light levels:

Area	Footcandles	IESNA Recommended FC Level
Average Classroom	65 FC +	25-30 FC
Hallways	30 FC	>.3 times the adjacent space lighting
Computer Lab	70 FC	25 FC
Gymnasium	50 FC	40 FC

*Note that the recommended light levels vary based on the age of the user in the space (i.e <25 years old, 25 to 65 yrs. old, >65). Some recommended levels were averaged do to various usages and age of users.

In the lastest addition to the building a newer style fluorescent 'basket' style fixture were installed. This addition includes the use of occupancy sensors and also photocells for control of the lights. The classrooms all have room switches, but are also controlled by the occupancy sensors for automatic controls to turn the lights off when the room is unoccupied. The rooms also include daylight harvesting (photocells) to dim the lights when natural light was available in the room. Light levels in these added classrooms were around 50 FC.

Exit and emergency lighting seems appropriate for the spaces and meet Code requirements, however it should be noted that there are many exit signs and egress lights that indicated that there is a problem of some kind (battery, wiring, etc.) that should be investigated and corrected.

In the building, there were multiple classrooms that had a blue film over the lenses of the light fixtures. During discussions with the staff, it was to help combat the sub-visible flicker of direct fluorescent lighting for children with autism that could cause headaches, eyestrain, and increased repetitive behavior. There are studies being done that compare the use of LED light fixtures in place of the fluorescent fixtures but at this time are inconclusive. Because LED lights have a driver (similar to a fluorescent ballast), research is being done with higher operating frequencies outside the known lamp flicker frequencies to see if this improves the indoor light quality.

COMMUNICATIONS / DATA

The existing communications/data outlets for the different spaces appear to be adequate for the space. There are WAP (wireless access points) throughout the building. There are two main data racks (one MDF and one IDF) located in the building. Both data racks are located on the first floor and are located in the northeast and southwest corners of the building. The building is divided east/west for the copper CAT 6 cables from the desktop/classrooms to the data racks. The School District Technology staff maintain these systems.

FIRE ALARM SYSTEM

The existing fire alarm system is a Siemens MXL addressable fire alarm system located in a closet space across from the office area. The building is fully covered by smoke/heat detectors. The system is still supported with spare parts for maintenance and expansion.

SPECIAL SYSTEMS

During a discussion with the Superintendent and district Principals, it was identified that the existing bell system needs be replaced do to operational issues and problems with the system.

The existing Simplex Building Communication System (PA - paging system) should be reviewed, as the coverage did not seem uniform throughout the building during the investigation of the building. This was also identified during a discussion with the Superintendent and district Principals.

Security cameras cover various areas both interior and exterior of the building and the entry doors have security system card readers installed.

Okoboji Middle School

ELECTRICAL SERVICE

The existing electrical service consists of a 1600 amp, 120/208 volt, three-phase service that back feds the prior existing electrical service. New panels were installed as needed for the expansions and that equipment appears in good condition with adequate expansion space.

In the existing boiler room in the basement, there are two panelboards 'H' and 'L' along with a disconnect switch that do not meet the working space requirements for the National Electrical Code (NEC). In addition, panel 'L' has a 1 inch hole (for installation of a conduit) open to the boiler environment (higher heat and humidity) that should be reviewed for corrosion to the bus bars, etc. Spare parts for the switchboard and panelboards should be available for future expansions or changes. In the janitorial closets with panelboards, the working space should be outlined on the floor such that supplies, etc. do not get stacked in front of the panelboards so they can be accessed during an emergency situation.

POWER

The original portion of the building appears to be short of outlets for the needs of the space/classrooms. During the walkthrough, it was noted that there are multiple classrooms with extension cords plugged into outlets strips to get this powered. In some office spaces, cords were run across the room to get to the power outlets that were available.

In the latest addition, the outlets seem to be adequate for the classrooms and in good locations to be used in the space.

It was also noted during the walkthrough that the boilers needed an emergency power off switch for shutting off the boilers in an emergency as required by Code.

LIGHTING

Lighting in the building consisted mostly of 2x4 fixtures with acrylic lens with three lamps per fixture. The fixtures had mostly 28-watt lamps installed. Some areas had surface mounted fluorescent acrylic fixtures installed, typically in hallways. In the boiler room and other back of house spaces, there were still incandescent lights installed. The gymnasium areas have high bay fluorescent lights installed.

The lighting control in the classrooms include dual switching for turning some of the lights off in the classroom while leaving others on. Occupancy sensors controlled lights in the hallway in the newer portion of the building.

Below are the light levels measured along with associated IESNA recommended light levels:

Area	Footcandles	IESNA Recommended FC Level
Average Classroom	55 FC +	25-30 FC
Hallways	30 FC	>.3 times the adjacent space lighting
Gymnasium	50 FC +	40 FC

*Note that the recommended light levels vary based on the age of the user in the space (i.e <25 years old, 25 to 65 yrs. old, >65). Some recommended levels were averaged do to various usages and age of users.

Exit and emergency lighting seemed appropriate for the spaces, however it should be noted that there were older exit signs that are still using incandescent lights and should be replaced with LED exit signs for reliability and energy savings.

COMMUNICATIONS / DATA

The existing communications/data outlets for the different spaces appears to be adequate for the space. There are WAP (wireless access points) throughout the building. There is one data rack (MDF) located in the building in the main IT room off the library. The building network is a CAT 6 solution from the desktop/classrooms to the data racks. The School District Technology staff maintain these systems.

FIRE ALARM SYSTEM

The existing fire alarm system is a Simplex 4002 zoned fire alarm system located in the main electrical room on the east side of the building. The building is fully covered by smoke/heat detectors. The system is still supported with spare parts for maintenance and expansion. The system is a zoned system, which means that when one of the detectors goes into alarm (trouble) there is no way of knowing which one it is unless you walk around to all the devices in the area. The elementary and the high school have an addressable system. An addressable system will identify which device is having issues and you can go directly to the device to see what is going on. There are also programming advantages for sensitivities of detectors if there are issues with the devices in different areas.

SPECIAL SYSTEMS

During a discussion with the Superintendent and district Principals, it was identified that there is no buzzer system for entry into the school.

There is a newer intercom system head end located in office area.

The camera coverage in the school covers the gathering spaces for the school. Hallways (and intersections), exterior doors, cafeteria, and exterior and interior areas of the building. The entry doors have security system card readers installed.

Okoboji High School

ELECTRICAL SERVICE

The existing electrical service has been expanded multiple times for the various building expansions. Currently they building is served by four transformers (two 120/208 volt and two 277/480 volt) located on different ends of the building. There is an existing 1600 amp, weatherproof distribution panelboard located outside on the west side of the school that feeds panelboards into the building.

Panelboards are installed throughout the building to help with the distribution. Some panelboards that are installed in janitor closets do not have the working clearance needed per the NEC and most closets have cleaning supplies up against the panelboards. Supplies are required to be a minimum of 3' away from the panelboard. There is also a panelboard located on the upper storage area in the woodworking shop that the panelboard door will not open 90 degrees and does not have the required working height to meet today's Code.

There is also a panelboard in the metal shop that the cover will not open 90 degrees for servicing that would have to be addressed to meet Code.

POWER

The original portion and the early expansion of the building appeared to be short of outlets for the needs of the space/classrooms. In the newer portions of the building the location and number of outlets seemed to be adequate for the spaces. To alleviate some of the shortages of outlets in the order portion of the school surface Wiremold outlet strips were installed along the walls with some classrooms having additional outlets surface mounted.

There is an outlet in the kitchen area (next to the chest freezer) that should be replaced due to a burn mark on the face of the outlet. This could be an indication of an overloaded outlet that did not trip the circuit breaker and should be replaced with a new outlet and the circuit breaker feeding the outlet should be replaced for safety.

LIGHTING

Lighting in the original portion and early expansion of the building consisted mostly of 2x4 fixtures with acrylic lens with three lamps per fixture. The fixtures appear to have 28-watt lamps installed. There were also surface mount wrap fixtures in the lower ceiling areas on the west side of the school in the driver's education area and classrooms. In the 2014 expansion for the office area and student activities area, the addition consisted mostly of fluorescent fixtures with a small portion of the lights being LED in the student activities areas. The lighting control in the older classrooms include dual switching for turning some of the lights off in the classroom while leaving others on. The hallways appear to have occupancy sensor control for the lights. The newest addition to the building appears to have a lighting control system that includes occupancy control and daylight harvesting to dim the lights. The main conference room and office area have a combination of fluorescent lighting and LED lighting with an integrated lighting control system. The gymnasiums has eight (8) lamp high-bay fluorescent fixtures installed.

Area	Footcandles	IESNA Recommended FC Level
Average Classroom	50 FC +	25-30 FC
Hallways	32 FC	>.3 times the adjacent space lighting
Art Room	70 FC	50 FC
Industrial Shop	30 FC	100 FC
Chemistry	55 FC	50 FC
2003 Gymnasium	50 FC	40 FC

*Note that the recommended light levels vary based on the age of the user in the space (i.e <25 years old, 25 to 65 yrs. old, >65). Some recommended levels were averaged do to various usages and age of users.

Exit and emergency lighting seemed appropriate for the spaces, however it should be noted that there were many exit signs and egress lights that indicated that there was a problem of some kind (battery, wiring, etc.) that should be investigated and corrected. In addition, there were incandescent exit signs installed. These may meet the requirements of the Code, but they utilize more energy than LED exit signs and over time the light output diminishes and the Code establishes a 'brightness' level for these exit signs.

COMMUNICATIONS / DATA

The existing communications/data outlets for the spaces for the different spaces appears to be adequate for the space. There are WAP (wireless access points) throughout the building. There are three (3) main data racks (one MDF and two IDF) located in the building. The main data rack is located in the IT office next to the media center. The network system appears to be copper CAT 6 cables from the desktop/classrooms to the data racks. The School District Technology staff maintains these systems.

FIRE ALARM SYSTEM

The existing fire alarm system is a Siemens MXL-IQ addressable fire alarm system with a remote annunciator located at the main front entry into the school. The building is fully covered by smoke/heat detectors. The system is still supported with spare parts for maintenance and expansion.

Currently the fire alarm goes into alarm during heavy rains. The problem has been reviewed and at this time, a solution to the problem has not been found.

SPECIAL SYSTEMS

During a discussion with the Superintendent and district Principals, it was identified that the security system does not monitor the position of the door (i.e. if it is open or closed). There is a problem with the doors being propped open and not being alarmed.

During the discussion, it was noted that the sound level throughout the school is not consistent/uniformed and should be further reviewed.

Various areas both interior and exterior of the building were covered by security cameras and the entry doors have security system card readers installed. There seems to be other areas that may need coverage/additional coverage. The concessions and original gym areas were noted and discussed during the meeting with the Superintendent and Principals.

Okoboji Community School District Building

ELECTRICAL SERVICE

The existing electrical service appears to have been changed from an overhead to underground electrical service with the overhead weather head remaining for the service. The existing electrical service is a 200 amp, 120/240 volt, 1 phase, 3 wire service for the building. The main panelboard is a 42 space, GE A series II panelboard located in a closet off the main conference room and appears to be in good condition.

There is a sub-fed panelboard (Square D QO load center) in the garage to feed the lights, garage door, and outlets in the area. This panel has duct-tape installed over an open pole where a circuit breaker goes in the load center. This tape should be removed and a filler space should be installed.

POWER

The existing power to the different spaces appears to be adequate for the space. There were some surge protection strip outlets that were in use at the desks, but equipment, etc. seems to be plugged into outlets that were in the general areas.

LIGHTING

The interior lighting is made up of mostly 2x4 recessed fluorescent fixtures with acrylic lens with four lamps. The installed lamps appear to be mostly Sylvania F028/850/XV/SS/ECO. The conference room has six (6) recessed can lights with an additional can light over the podium. The garage area was lit with 'egg crate' style fluorescent lights that appear to have been relocated. The light levels in the office spaces were 65-70 FC which is slightly higher than the recommended IESNA lighting standards of 30-50 FC for office spaces depending on tasks.

Exterior lighting utilizes LED fixtures for good light cutoff control and energy efficiency.

COMMUNICATIONS / DATA

The existing communications/data outlets for the different spaces appeared to be adequate for the space. There is a data rack installed on the wall of the workroom along with the associated support equipment. Network system is CAT 6 solution and the building is networked to the other school district buildings. The School District Technology staff maintains these systems.

FIRE ALARM SYSTEM

There is not a fire alarm system installed in the building.

SPECIAL SYSTEMS

There are existing security cameras at each door and card readers installed for the building. The School District Technology staff maintain theses systems.

Okoboji Sports Facilities

Light levels were measured on the baseball, softball, football/track fields on a clear night in June 2017 after 10:00 pm. All the field lights were turned on along with the parking lot lights next to the fields. Measurements were taken in a pattern on all the fields. When completed the field lights were turned off and the light levels were taken again in the parking lot on the west side of the school between the school and the baseball field. The results are as follows:

Baseball Field

Eight (8) total light poles are currently lighting the baseball field, with four (4) located in the infield and four (4) located in the outfield. The infield poles have six (6) lights apiece while the outfield poles have four (4) lights per pole. The lighting for the poles are metal halide lights on a wood pole and structure.

The average light levels measured were:

Area	Footcandles	Remarks / IESNA Recommended FC Level
Infield	25 FC	50 FC
Outfield	15 FC	30 FC
Warning Track	17 FC	See note 1 below / Part of outfield 30 FC recommended
Fence line	17 FC	See note 1 below / Part of outfield 30 FC recommended
Pitcher's Mound	13 FC	See note 2 below / Part of infield 50 FC recommended
Home Plate	43 FC	See note 2 below / Part of infield 50 FC recommended
First Base	28 FC	See note 2 below / Part of infield 50 FC recommended
Second Base	9 FC	See note 2 below / Part of infield 50 FC recommended
Third Base	22 FC	See note 2 below / Part of infield 50 FC recommended

Note 1: The average for the infield lighting is recommended to be 50 FC with a maximum to minimum of 2:1 for the light level. The highest light level was measured at home plate. This reading was 43 FC. The lowest light level reading was taken at behind second base along the infield/outfield line of 7 FC (note second base was 9 FC). This would cause a uniformity of 43 FC /7 FC or 6.14, which is more than 3x the recommended levels. The next lowest readings were taken at the location of the shortstop and the second basemen of 15 FC, which would be a uniformity of 2.9 that is almost 2x the recommended levels.

Note 2: The average outfield lighting is recommended to be 30 FC with a maximum to minimum of 2.5:1 for the light level. The highest light level was measured at 32 FC at was taken at the start of the warning track in right field in front of the light pole. The lowest light level readings taken were along the foul lines and center field. The lowest reading taken was five (5) footcandles in both centerfield and along the left field foul line. The outfield average was calculated to be 15 FC, which is below the recommended light levels, and the uniformity and the uniformity would be 32 FC / 5 FC or 6.4, which is 2.5 x greater than the recommend, light levels.

Recommendations for improving the light levels would be the following:

1. Re-lamp the existing light fixtures with new lamps. This would improve the light levels, but would not help with the uniformity levels.
2. Re-Aim the existing lights. This would help with the uniformity, but is difficult to do as there

are multiple lights contributing to the light levels in any particular location.
3. Add more light fixtures to improve the light levels and uniformity.
4. For energy savings, light levels, and uniformity install new LED sports lights for the field.

Softball Field

Four (4) total poles are currently lighting the softball field, with two (2) located in the infield and two (2) located in the corner of the outfield. The infield poles had three (3) lights apiece while the outfield poles had five (5) lights per pole. The lighting for the poles were metal halide lights on a wood pole and structure.

The average light levels measured were:

Area	Footcandles	Remarks / IESNA Recommended FC Level
Infield	37 FC	50 FC
Outfield	24 FC	30 FC
Fence line	21 FC	See note 1 below / Part of outfield 30 FC recommended
Pitcher's Mound	36 FC	See note 2 below / Part of infield 50 FC recommended
Home Plate	47 FC	See note 2 below / Part of infield 50 FC recommended
First Base	36 FC	See note 2 below / Part of infield 50 FC recommended
Second Base	42 FC	See note 2 below / Part of infield 50 FC recommended
Third Base	34 FC	See note 2 below / Part of infield 50 FC recommended

Note 1: The average for the infield lighting is recommended to be 50 FC with a maximum to minimum of 2:1 for the light level (the same as baseball). The highest light level was measured at home plate. This reading was 47 FC. The lowest light level reading was taken at behind first base along the infield/outfield line of 30 FC. This would cause a uniformity of 47 FC / 30 FC or 1.6, which is better than the recommended light levels.

Note 2: The average outfield lighting is recommended to be 30 FC with a maximum to minimum of 2.5:1 for the light level. The highest light level was measured at 28 FC at was taken in the middle of left field. The lowest light level readings taken in center field along the fence line and was 14 FC. The outfield average was calculated to be 24 FC which is slightly below the recommended light levels and the uniformity and the uniformity would be 28 FC / 14 FC or 2.0 which is better than 2.5:1 which is recommended.

Recommendations for improving the light levels would be the following:
1. Re-lamp the existing fixtures with new lamps. This would improve the light levels, but would not help with the uniformity levels.
2. Add more fixtures to improve the light levels and uniformity.
3. For energy savings and to improve the light levels, install new LED sports lights for the field.

Even though the light levels and uniformity of the field were close to the required levels. The lighting of a softball field is traditionally done typically of a baseball field with eight (8) poles or can be done with six (6) poles. With the six-pole option, four (4) poles are installed in the infield and with two poles (one installed

in left center and right center field). This helps in uniformity, light levels (both vertical and horizontal) and glare.

Football/Track Field

The field is currently being lit by four (4) poles, with twelve (12) lights on each pole. Lighting for the poles were metal halide lights on a steel pole and structure.

The average light levels measured were:

Area	Footcandles	Remarks / IESNA Recommended FC Level
Football Field	24 FC	30 FC See note 1
Track	12 FC	20 FC See note 2

Note 1: The average for the lighting is recommended to be 50 FC with a maximum to minimum of 3:1 uniformity for the light level. The highest light level was measured at what appeared to be along the out of bounds line in front of the poles. This reading was 45 FC. The lowest light level reading was taken along the back of the end zone by high jump area of 11 FC. This would cause a uniformity of 45 FC /11 FC or 4.01, which is more than the recommended levels.

Note 2: The average lighting is recommended to be 20 FC with a maximum to minimum of 4:1 uniformity for the light level. The highest light level was measured at 37 FC at was taken in lane 1 in front of a light pole. The lowest light level readings taken were taken in the final turn (turn 4). The lowest reading taken was one (1) footcandle. The uniformity would be 37 FC / 1 FC or 37, which is over 9x greater than the recommend light levels.

Since the football field was not stripped at the time of the measurements, the locations noted for the readings were approximate. A pattern of measurements was taken by surrounding landmarks (markings on the track, bleacher & light pole locations, etc.).

Light levels for the track were recorded at various locations in lane 1 and lane 8.

Recommendations for improving the light levels for the football field and the track would be the following:

1. Re-lamp the existing fixtures with new lamps. This would improve the light levels, but would not help with the uniformity levels.
2. Add more fixtures to improve the light levels and uniformity.
3. For energy savings, light levels, and uniformity install new LED sports lights for the field.

Parking Areas

Measurements for the parking lot surrounding the athletic fields were taken. The parking area is divided up into three parts. The parking area directly to the east where the busses were parked, to the north of the football field and between the baseball field and the school. The lighting in the parking lots consisted of metal halide lights. Again, note that the parking light levels were added by the field lighting except where in the parking area between the school and the baseball field where measurements were taken with and without the field lighting turned on.

The average light levels measured were:

Area	Footcandles	Remarks / IESNA Recommended FC Level
East of the football field	1.7 FC	Lowest FC reading: 0.4 FC / See note 1
North of the football field	2.5 FC	Lowest FC reading: 0.4 FC / See note 2
West of the School	2.6 FC	Lowest FC reading: 0.2 FC / See note 3
	1.5 FC	Lowest FC reading: 0.1 FC / See note 3

Note 1: The highest readings were located along the curb line next to the football field and along the south end of the parking lot. The lowest reading was taken at the north end of the parking along the curb line. It appears that the fixtures could be cleaned and re-lamped to increase the light levels in the parking lot as the light readings below the light poles varied.

Note 2: The highest reading was located along the north end of the parking by the building curb line. The lighting on the building entrance/exit doors lights increased these light level readings. It appears that the fixtures could be cleaned and re-lamped to increase the light levels in the parking lot as the light readings below the light poles varied.

Note 3: The highest reading was located along the west curb line next to the baseball field when the field lights were on. This reading was 10 FC located in the farthest corner west in the parking lot (just past first base). When the field lights were turned off, the highest reading in the parking lot was also in the same location at 5.2 FC. It appears that the fixtures could be cleaned and re-lamped to increase the light levels in the parking lot and additional fixtures could be installed on the poles or on the building to help increase the light levels.

End of Report

05 / ENERGY REPORT

9/13/2017

ENERGY CONSUMPTION COMPARISON

ELECTRICITY/NATURAL GAS FY2008-FY2016

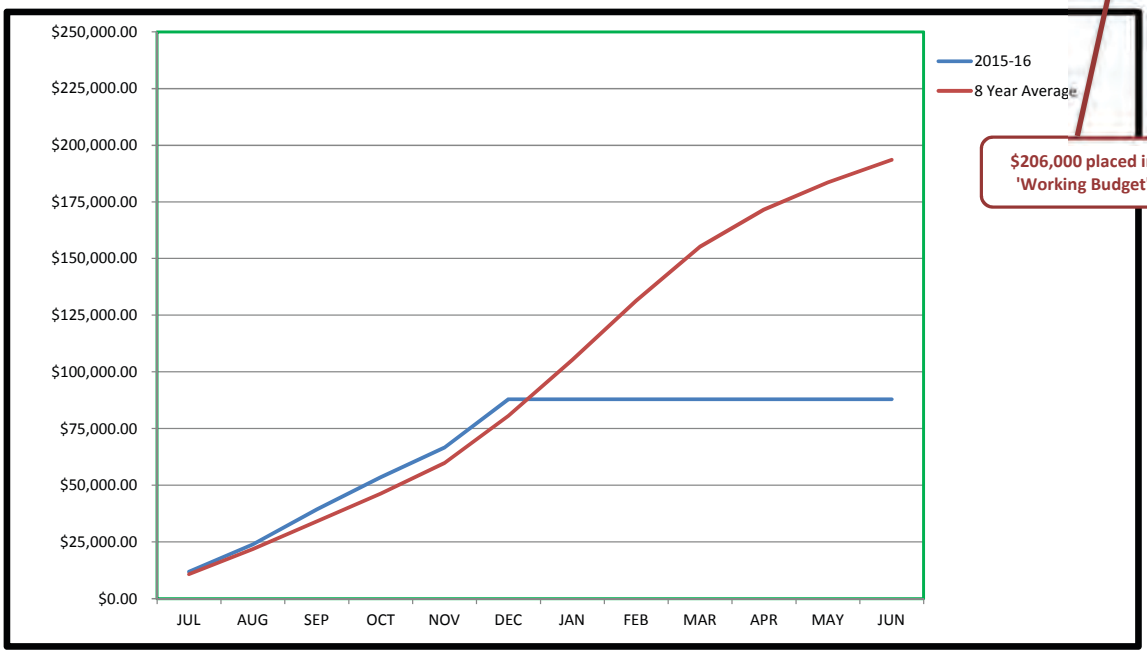
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	YEAR TO DATE
ALLIANT ENERGY													
ELECTRICITY--OMS													
2008-2009	$2,888.79	$3,124.42	$3,229.05	$2,520.13	$2,388.22	$3,259.41	$3,571.25	$3,638.00	$3,338.81	$2,821.99	$2,581.10	$2,230.87	$35,592.04
2009-2010	$3,304.34	$2,158.41	$2,703.09	$3,002.51	$2,541.68	$3,488.86	$4,889.76	$3,796.21	$3,755.64	$2,939.72	$2,554.54	$2,312.14	$37,446.90
2010-2011	$2,252.66	$3,466.05	$3,576.51	$2,852.11	$2,533.59	$4,020.13	$4,802.63	$5,143.13	$3,379.87	$2,420.82	$1,851.39	$1,206.60	$37,505.49
2011-2012	$1,220.60	$1,683.48	$2,406.65	$1,522.89	$1,609.09	$2,148.81	$2,633.94	$2,392.80	$1,947.55	$1,828.78	$939.71	$1,388.76	$21,723.06
2012-2013	$1,561.43	$1,903.15	$1,998.66	$1,578.79	$1,436.54	$2,103.33	$2,704.02	$2,821.87	$2,496.71	$2,087.22	$1,769.83	$1,503.51	$23,965.06
2013-2014	$1,463.30	$1,659.04	$2,677.15	$1,687.38	$1,837.84	$2,755.47	$3,668.71	$3,688.56	$3,139.96	$2,129.36	$1,697.27	$1,458.65	$27,862.69
2014-2015	$1,235.73	$1,538.33	$2,225.64	$1,634.74	$1,469.70	$2,934.38	$3,505.83	$2,676.60	$2,676.67	$1,783.97	$1,736.85	$1,499.97	$24,918.41
2015-2016	$1,584.73	$1,930.19	$2,453.57	$1,873.94	$1,757.57	$2,547.95							$12,147.95
$ to date +/- previous year:	$349.00	$391.86	$227.93	$239.20	$287.87	($386.43)							$1,109.43
MILFORD UTILITIES													**YEAR TO DATE**
ELECTRICITY--OHS, OES, ADM													
2008-2009	$5,256.13	$5,415.33	$6,638.02	$5,663.28	$6,146.26	$7,909.19	$8,671.37	$7,814.06	$7,923.16	$5,697.74	$6,578.80	$6,488.64	$80,201.98
2009-2010	$5,992.21	$5,229.52	$3,476.21	$8,116.08	$6,492.32	$8,441.43	$9,266.31	$8,864.96	$8,166.18	$7,074.33	$6,367.57	$7,679.61	$85,166.73
2010-2011	$7,627.07	$7,687.92	$8,373.22	$7,221.66	$6,907.42	$8,428.88	$9,408.56	$9,090.12	$9,292.08	$7,491.15	$7,185.22	$6,807.56	$95,520.86
2011-2012	$7,476.54	$9,178.34	$9,311.08	$7,001.21	$8,416.19	$8,925.41	$10,229.71	$9,126.27	$9,079.26	$6,805.30	$7,841.14	$7,104.33	$100,494.78
2012-2013	$8,188.51	$8,618.79	$9,016.09	$8,011.40	$8,725.94	$9,591.03	$9,989.92	$10,821.71	$9,541.61	$8,935.07	$9,448.33	$6,637.20	$107,525.60
2013-2014	$9,144.22	$6,097.46	$11,169.34	$9,819.02	$8,491.69	$11,149.61	$10,863.20	$11,773.14	$10,742.88	$9,403.98	$8,146.00	$8,619.90	$115,420.44
2014-2015	$7,447.40	$8,520.07	$9,246.09	$8,112.09	$8,967.10	$10,509.00	$11,616.13	$11,019.93	$11,023.39	$9,538.82	$9,330.73	$8,885.76	$114,216.51
2015-2016	$10,041.75	$9,384.40	$11,854.92	$11,210.38	$8,734.89	$11,782.37							$63,008.71
$ to date +/- previous year:	$2,594.35	$864.33	$2,608.83	$3,098.29	($232.21)	$1,273.37							$10,206.96
TOTAL ELECTRICITY													**YEAR TO DATE**
2008-2009	$8,144.92	$8,539.75	$9,867.07	$8,183.41	$8,534.48	$11,168.60	$12,242.62	$11,452.06	$11,261.97	$8,519.73	$9,159.90	$8,719.51	$115,794.02
2009-2010	$9,296.55	$7,387.93	$6,179.30	$11,118.59	$9,034.00	$11,930.29	$14,156.07	$12,661.17	$11,921.82	$10,014.05	$8,922.11	$9,991.75	$122,613.63
2010-2011	$9,879.73	$11,153.97	$11,949.73	$10,073.77	$9,441.01	$12,449.01	$14,211.19	$14,233.25	$12,671.95	$9,911.97	$9,036.61	$8,014.16	$133,026.35
2011-2012	$8,697.14	$10,861.82	$11,717.73	$8,524.10	$10,025.28	$11,074.22	$12,863.65	$11,519.07	$11,026.81	$8,634.08	$7,841.14	$7,841.14	$120,626.18
2012-2013	$9,749.94	$10,521.94	$11,014.75	$9,590.19	$10,162.48	$11,694.36	$12,693.94	$13,643.58	$12,038.32	$11,022.29	$11,218.16	$8,140.71	$131,490.66
2013-2014	$10,607.52	$7,756.50	$13,846.49	$11,506.40	$10,329.53	$13,905.08	$14,531.91	$15,461.70	$13,882.84	$11,533.34	$9,843.27	$10,078.55	$143,283.13
2014-2015	$8,683.13	$10,058.40	$11,471.73	$9,746.83	$10,436.80	$13,443.38	$15,121.96	$13,696.53	$13,700.06	$11,322.79	$11,067.58	$10,385.73	$139,134.92
2015-2016	$11,626.48	$11,314.59	$14,308.49	$13,084.32	$10,492.46	$14,330.32	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$75,156.66
$ to date +/- previous year:	$2,943.35	$1,256.19	$2,836.76	$3,337.49	$55.66	$886.94							$11,316.39
BLACK HIILS ENERGY/CONSTELLATION ENERGY													**YEAR TO DATE**
GAS--DISTRICT WIDE													
2008-2009	$1,389.23	$1,821.11	$1,436.68	$2,476.24	$4,702.92	$16,000.27	$24,800.34	$25,058.88	$17,755.83	$10,453.68	$4,839.84	$1,667.71	$112,402.73
2009-2010	$724.16	$767.22	$900.57	$2,372.16	$5,677.54	$7,271.42	$19,062.97	$19,626.95	$17,743.07	$6,226.88	$2,744.07	$2,438.69	$85,555.70
2010-2011	$1,268.76	$900.79	$1,470.78	$2,024.20	$2,731.56	$9,074.77	$12,342.33	$18,716.27	$13,467.76	$10,043.79	$5,267.91	$1,690.70	$78,999.62
2011-212	$1,175.25	$2,559.27	$311.93	$2,036.13	$3,390.91	$7,319.97	$9,201.84	$9,963.75	$8,664.99	$4,037.52	$3,112.52	$1,552.23	$53,326.31
2012-2013	$1,021.77	$879.30	$650.62	$2,182.08	$4,301.04	$6,997.74	$10,400.37	$11,844.81	$10,948.25	$13,888.20	$3,035.25	$1,423.98	$67,573.41
2013-2014	$1,305.43	$1,217.98	$675.25	$1,951.24	$3,036.54	$9,806.68	$13,592.80	$13,468.39	$22,988.83	$10,145.23	$7,629.63	$6,113.88	$91,931.88
2014-2015	$2,561.66	$2,324.28	$717.32	$2,321.85	$2,645.59	$3,261.80	$11,982.27	$17,749.28	$11,874.14	$5,120.19	$3,082.07	$1,087.03	$64,727.48
2015-2016	$264.40	$713.17	$1,213.30	$1,093.39	$2,614.08	$6,910.03							$12,808.37
$ to date +/- previous year:	($2,297.26)	($1,611.11)	$495.98	($1,228.46)	($31.51)	$3,648.23	($11,982.27)	($17,749.28)	($11,874.14)	($5,120.19)	($3,082.07)	($1,087.03)	($51,919.11)

9/13/2017

TOTAL ENERGY	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	YEAR TO DATE
2008-2009	$9,534.15	$10,360.86	$11,303.75	$10,659.65	$13,237.40	$27,168.87	$37,042.96	$36,510.94	$29,017.80	$18,973.41	$13,999.74	$10,387.22	$228,196.75
2009-2010	$10,020.71	$8,155.15	$7,079.87	$13,490.75	$14,711.54	$19,201.71	$33,219.04	$32,288.12	$29,664.89	$16,240.93	$11,666.18	$12,430.44	$208,169.33
2010-2011	$11,148.49	$12,054.76	$13,420.51	$12,097.97	$12,172.57	$21,523.78	$26,553.52	$32,949.52	$26,139.71	$19,955.76	$14,304.52	$9,704.86	$212,025.97
2011-2012	$9,872.39	$13,421.09	$12,029.66	$10,560.23	$13,416.19	$18,394.19	$22,065.49	$21,482.82	$19,691.80	$12,671.60	$10,953.66	$9,393.37	$173,952.49
2012-2013	$10,771.71	$11,401.24	$11,665.37	$11,772.27	$14,463.52	$18,692.10	$23,094.31	$25,488.39	$22,986.57	$24,910.49	$14,253.41	$9,564.69	$199,064.07
2013-2014	$11,912.95	$8,974.48	$14,521.74	$13,457.64	$13,366.07	$23,711.76	$28,124.71	$28,930.09	$36,871.67	$21,678.57	$17,472.90	$16,192.43	$235,215.01
2014-2015	$11,244.79	$12,382.68	$12,189.05	$12,068.68	$13,082.39	$16,705.18	$27,104.23	$31,445.81	$25,574.20	$16,442.98	$14,149.65	$11,472.76	$203,862.40
2015-2016	$11,890.88	$12,027.76	$15,521.79	$14,177.71	$13,106.54	$21,240.35	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$87,965.03
$ to date +/- previous year:	$646.09	($354.92)	$3,332.74	$2,109.03	$24.15	$4,535.17	($27,104.23)	($31,445.81)	($25,574.20)	($16,442.98)	($14,149.65)	$76,492.27	($27,932.34)

2015-2016 $ to date	**$11,890.88**	**$23,918.64**	**$39,440.43**	**$53,618.14**	**$66,724.68**	**$87,965.03**	**$87,965.03**	**$87,965.03**	**$87,965.03**	**$87,965.03**	**$87,965.03**	**$87,965.03**
07-08 thru 15-16 ave $ to dat	**$10,799.51**	**$21,896.76**	**$34,113.23**	**$46,398.84**	**$59,843.37**	**$80,673.11**	**$105,323.64**	**$131,460.61**	**$155,203.94**	**$171,563.15**	**$183,663.16**	**$193,556.38**
over/under ave $ to date	**$1,091.37**	**$2,021.88**	**$5,327.20**	**$7,219.30**	**$6,881.31**	**$7,291.92**	**($17,358.61)**	**($43,495.58)**	**($67,238.91)**	**($83,598.12)**	**($95,698.13)**	**($105,591.35)**

over/under 8 year average



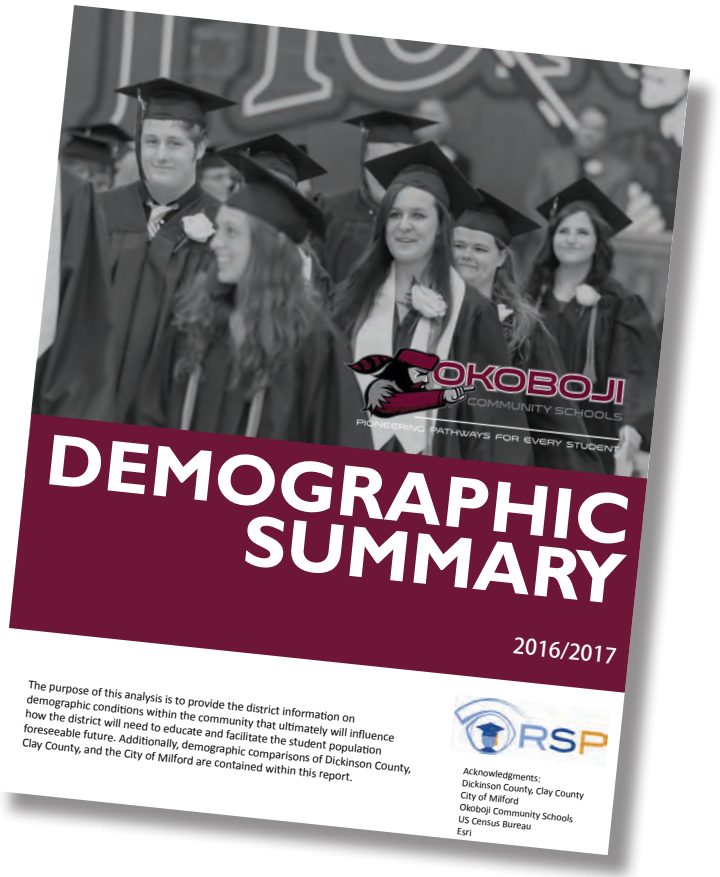
DEMOGRAPHIC INFORMATION 06

06 / DEMOGRAPHIC INFORMATION

DEMOGRAPHICS STUDY

A Demographics Study was conducted over the summer of 2017 by RSP Associates from Kansas City. RSP Associates is a well-known demographics company that only works with school districts. Many Iowa school districts have utilized RSP for their demographics. The report from RSP is not included in this report. The report is available online and hard copies are available to be reviewed at the District Office.

The Demographics Study also documents the current capacity of each of the schools and has forecasted the enrollment projections for each building. Please refer to the report from RSP Associates for those projections.



DISTRICT VEHICLE INFORMATION 07

07 / DISTRICT VEHICLE INFORMATION

DISTRICT VEHICLES

The District has 14 buses and 11 other vehicles that are used throughout the District. The buses are owned by the District and transportation has been managed by a local family. All bus routes run between 1.5 and 1.75 hours per route. All the buses are used throughout the week for activities. There is one older bus that is used as a spare if a bus happens to break down.

These vehicles are currently left outside in the weather all year round as there is no transportation facility. This puts a tremendous toll on the vehicles for wear and tear due to the elements. The diesel engines of the vehicles are also more difficult to start in cold weather due to the diesel fuel tendency to gel in cold weather.

It is preferred by school districts to have the vehicles sheltered when possible to help extend the life of the vehicle. The purchase of a vehicle comes from the general fund of the school district, which is the same fund as teacher salaries and benefits are drawn from. If the life of a bus or vehicle can be extended by being out of the elements, then the general fund is not drawn from as often for the purchase of a new vehicle or for major overhauls/maintenance. Therefore, protecting the vehicular infrastructure of a district is advantageous to the employees of the district. Considering the amount of money invested in the vehicles, it is recommended to consider a future transportation facility that can house all the vehicles.

07 / SCHOOL BUS ROUTES

Titterington Inc.

From: Abrahamson, Todd [tabrahamson@okoboji.k12.ia.us]
Sent: Tuesday, May 02, 2017 1:43 PM
To: Titterington Inc.; Katy Sporrer
Subject: FEH needs the following information for our district needs analysis

Hello,

FEH needs the following information for our district-wide needs analysis. Please send me the info by Wednesday, May 10th. If you have any questions, please let me know.

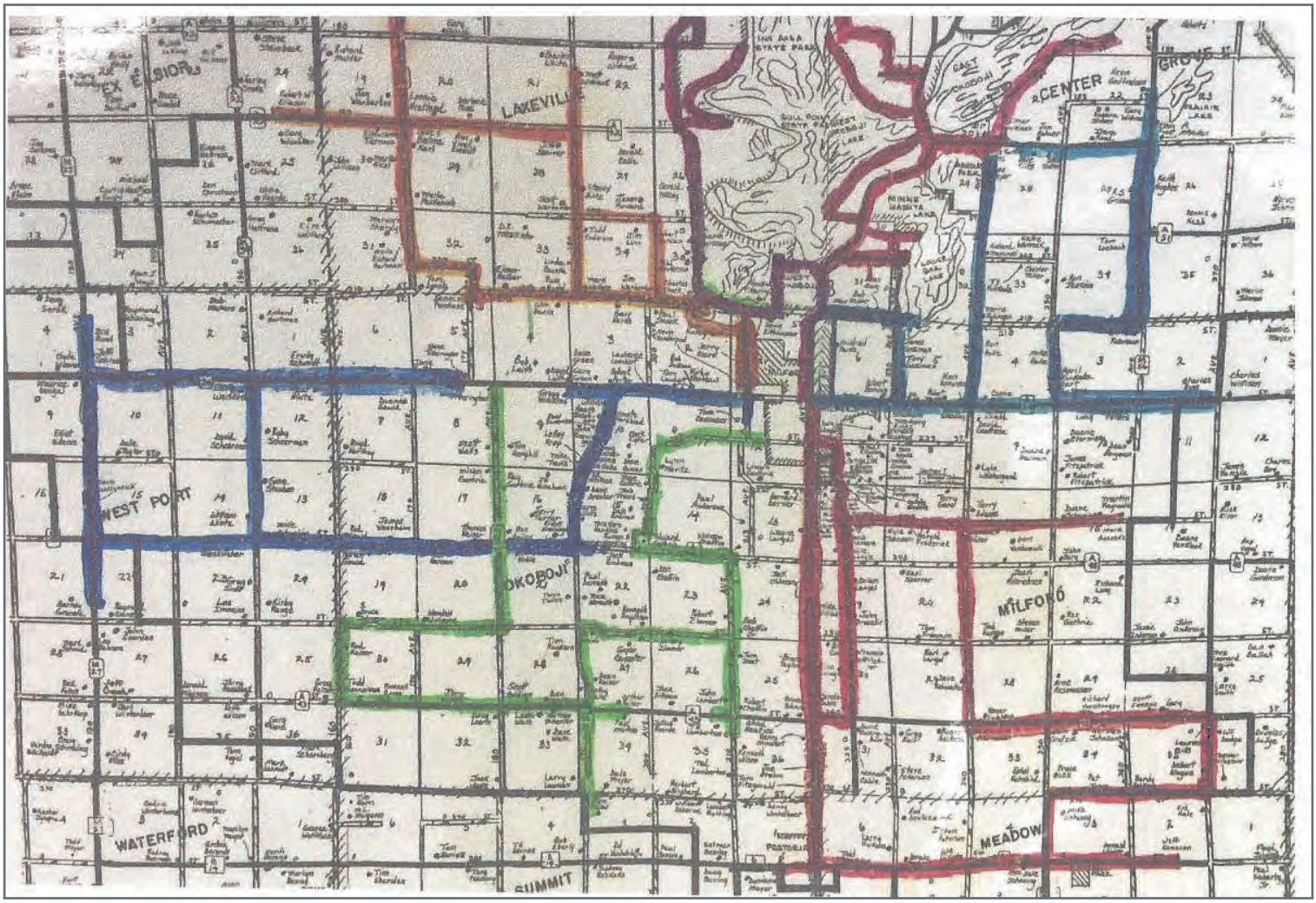
1. The frequency of bus usage...you have 14 buses and fewer bus routes, how often are the other buses being utilized.
2. A map highlighting each bus route. Does not have to be fancy, we can dress it up in the computer. So, it could be a simple map with the highlighter and colored markers.
    a. And travel times for each of the routes.

Thank you - Todd

--

Todd A. Abrahamson
Team Okoboji
Okoboji CSD: 712-338-4757
Cell: 641-295-5171
Skype: toddabrahamson
Twitter: ToddAbrahamson
E-mail: tabrahamson@okoboj.k12.ia.us (Professional & School Business)
E-mail: taabrahamson@gmail.com (Personal & Politics)

All Rts Run 1½ to 1¾ hr Per Rt
All Buses used thru week for activity. But 1 old Bus For Spare
If bus broke down


LAKEVILLE
CENTER GROVE
WEST POINT
OKOBOJI
MILFORD
WATERFORD
MEADOW
SUMMIT

FINANCIAL INFORMATION 08

Disclaimer

The information contained herein may include hypothetical interest rates or interest rate savings for a potential refunding. Interest rates used herein take into consideration conditions in today's market and other factual information such as credit rating, geographic location and market sector. Interest rates described herein should not be viewed as rates that Piper Jaffray expects to achieve for you should we be selected to act as your underwriter or placement agent. Information about interest rates and terms for SLGs is based on current publically available information and treasury or agency rates for open-market escrows are based on current market interest rates for these types of credits and should not be seen as costs or rates that Piper Jaffray could achieve for you should we be selected to act as your underwriter or placement agent. More particularized information and analysis may be provided after you have engaged Piper Jaffray as an underwriter or placement agent or under certain other exceptions as describe in the Section 15B of the Exchange Act.

General Obligation Bonds, Series 2018 ($1 Million, 5 Years)

Fiscal Year	Principal	Interest	Combined Debt	Estimated Tax Rate	Interest Rate
2019	185,000	40,000	225,000	0.16559	4.00%
2020	190,000	32,600	222,600	0.16383	4.00%
2021	200,000	25,000	225,000	0.16559	4.00%
2022	210,000	17,000	227,000	0.16706	4.00%
2023	215,000	8,600	223,600	0.16456	4.00%
Totals:	1,000,000	123,200	1,123,200	0.16533	

General Obligation Bonds, Series 2018 ($1 Million, 10 Years)

Fiscal Year	Principal	Interest	Combined Debt	Estimated Tax Rate	Interest Rate
2019	85,000	40,000	125,000	0.09200	4.00%
2020	85,000	36,600	121,600	0.08949	4.00%
2021	90,000	33,200	123,200	0.09067	4.00%
2022	95,000	29,600	124,600	0.09170	4.00%
2023	95,000	25,800	120,800	0.08890	4.00%
2024	100,000	22,000	122,000	0.08979	4.00%
2025	105,000	18,000	123,000	0.09052	4.00%
2026	110,000	13,800	123,800	0.09111	4.00%
2027	115,000	9,400	124,400	0.09155	4.00%
2028	120,000	4,800	124,800	0.09185	4.00%
Totals:	1,000,000	233,200	1,233,200	0.09076	

General Obligation Bonds, Series 2018 ($1 Million, 15 Years)

Fiscal Year	Principal	Interest	Combined Debt	Estimated Tax Rate	Interest Rate
2019	50,000	40,000	90,000	0.06624	4.00%
2020	50,000	38,000	88,000	0.06476	4.00%
2021	55,000	36,000	91,000	0.06697	4.00%
2022	55,000	33,800	88,800	0.06535	4.00%
2023	60,000	31,600	91,600	0.06741	4.00%
2024	60,000	29,200	89,200	0.06565	4.00%
2025	65,000	26,800	91,800	0.06756	4.00%
2026	65,000	24,200	89,200	0.06565	4.00%
2027	70,000	21,600	91,600	0.06741	4.00%
2028	70,000	18,800	88,800	0.06535	4.00%
2029	75,000	16,000	91,000	0.06697	4.00%
2030	75,000	13,000	88,000	0.06476	4.00%
2031	80,000	10,000	90,000	0.06624	4.00%
2032	85,000	6,800	91,800	0.06756	4.00%
2033	85,000	3,400	88,400	0.06506	4.00%
Totals:	1,000,000	349,200	1,349,200	0.06620	

General Obligation Bonds, Series 2018 ($1 Million, 20 Years)

Fiscal Year	Principal	Interest	Combined Debt	Estimated Tax Rate	Interest Rate
2019	35,000	40,000	75,000	0.05520	4.00%
2020	35,000	38,600	73,600	0.05417	4.00%
2021	35,000	37,200	72,200	0.05314	4.00%
2022	40,000	35,800	75,800	0.05579	4.00%
2023	40,000	34,200	74,200	0.05461	4.00%
2024	40,000	32,600	72,600	0.05343	4.00%
2025	40,000	31,000	71,000	0.05225	4.00%
2026	45,000	29,400	74,400	0.05476	4.00%
2027	45,000	27,600	72,600	0.05343	4.00%
2028	45,000	25,800	70,800	0.05211	4.00%
2029	50,000	24,000	74,000	0.05446	4.00%
2030	50,000	22,000	72,000	0.05299	4.00%
2031	55,000	20,000	75,000	0.05520	4.00%
2032	55,000	17,800	72,800	0.05358	4.00%
2033	60,000	15,600	75,600	0.05564	4.00%
2034	60,000	13,200	73,200	0.05387	4.00%
2035	65,000	10,800	75,800	0.05579	4.00%
2036	65,000	8,200	73,200	0.05387	4.00%
2037	70,000	5,600	75,600	0.05564	4.00%
2038	70,000	2,800	72,800	0.05358	4.00%
Totals:	1,000,000	472,200	1,472,200	0.05417	

PPEL Notes, Series 2018 ($0.67 Levy, 10 Years)

Taxable Valuation: 1,358,758,877

Fiscal Year	Principal	Interest	Combined Debt	Estimated Tax Rate	Interest Rate
2019	615,000	295,000	910,000	0.66973	4.00%
2020	640,000	270,400	910,400	0.67002	4.00%
2021	665,000	244,800	909,800	0.66958	4.00%
2022	690,000	218,200	908,200	0.66840	4.00%
2023	720,000	190,600	910,600	0.67017	4.00%
2024	745,000	161,800	906,800	0.66737	4.00%
2025	775,000	132,000	907,000	0.66752	4.00%
2026	810,000	101,000	911,000	0.67046	4.00%
2027	840,000	68,600	908,600	0.66870	4.00%
2028	875,000	35,000	910,000	0.66973	4.00%
Totals:	7,375,000	1,717,400	9,092,400	0.66917	

PPEL Notes, Series 2018 ($1.00 Levy, 10 Years)

Fiscal Year	Principal	Interest	Combined Debt	Estimated Tax Rate	Interest Rate
2019	915,000	440,000	1,355,000	0.99723	4.00%
2020	955,000	403,400	1,358,400	0.99974	4.00%
2021	990,000	365,200	1,355,200	0.99738	4.00%
2022	1,030,000	325,600	1,355,600	0.99768	4.00%
2023	1,070,000	284,400	1,354,400	0.99679	4.00%
2024	1,115,000	241,600	1,356,600	0.99841	4.00%
2025	1,160,000	197,000	1,357,000	0.99871	4.00%
2026	1,205,000	150,600	1,355,600	0.99768	4.00%
2027	1,255,000	102,400	1,357,400	0.99900	4.00%
2028	1,305,000	52,200	1,357,200	0.99885	4.00%
Totals:	11,000,000	2,562,400	13,562,400	0.99815	

PPEL Notes, Series 2018 ($1.34 Levy, 10 Years)

Fiscal Year	Principal	Interest	Combined Debt	Estimated Tax Rate	Interest Rate
2019	1,230,000	589,800	1,819,800	1.33931	4.00%
2020	1,275,000	540,600	1,815,600	1.33622	4.00%
2021	1,330,000	489,600	1,819,600	1.33916	4.00%
2022	1,380,000	436,400	1,816,400	1.33681	4.00%
2023	1,435,000	381,200	1,816,200	1.33666	4.00%
2024	1,495,000	323,800	1,818,800	1.33857	4.00%
2025	1,555,000	264,000	1,819,000	1.33872	4.00%
2026	1,615,000	201,800	1,816,800	1.33710	4.00%
2027	1,680,000	137,200	1,817,200	1.33740	4.00%
2028	1,750,000	70,000	1,820,000	1.33946	4.00%
Totals:	14,745,000	3,434,400	18,179,400	1.33794	

Sales Tax ("SAVE") Debt Service Schedule & Revenue Summary

Maximum Additional Bond Capacity - Current Enrollment, Current RPS

Okoboji Community School District, Iowa

Min Interest Rate: 2.50%

	(1)	(2)	(3)	(4)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
											Pro Forma Estimates (Zero Growth Scenario)			Pro Forma Estimates (With Growth Assumptions)		
	Existing		Dated: **7/1/2018**		Offset by Misc.	Plus Other Sales Tax		Est. Interest Rates		Est	Est. Annual		Cumulative	Est. Annual		Cumulative
Date	Principal	Interest	Principal	Interest	Interest	Cash Flow	Total FY	Reoffering	Bond	Bond	SAVE	Surplus	Surplus	SAVE	Surplus	Surplus
	Payments		Payment		Income (1)	Uses (2)	Sales Tax Obligation	Yield	Coupon	Coverage	Income	Collections	Balance	Income	Collections	Balance
1/1/17	152,000	66,905														
7/1/17	155,000	64,761			0	2,500	441,166			2.094	918,514	477,348	477,348	918,514	477,348	477,348
1/1/18	157,000	62,576														
7/1/18	159,000	60,362			0	2,500	441,438			2.129	934,395	492,957	970,306	960,593	519,155	996,503
1/1/19	161,000	58,120		43,613				2.500%	2.500%							
7/1/19	163,000	55,850	248,000	43,613	0	2,500	775,695	2.500%	2.500%	1.201	928,714	153,019	1,123,325	977,035	201,339	1,197,843
1/1/20	166,000	53,552		40,513				2.500%	2.500%							
7/1/20	168,000	51,211	253,000	40,513	0	2,500	775,288	2.500%	2.500%	1.202	928,714	153,426	1,276,751	996,575	221,287	1,419,130
1/1/21	170,000	48,842		37,350				2.500%	2.500%							
7/1/21	173,000	46,445	260,000	37,350	0	2,500	775,488	2.500%	2.500%	1.201	928,714	153,227	1,429,977	1,016,507	241,019	1,660,149
1/1/22	175,000	44,006		34,100				2.500%	2.500%							
7/1/22	178,000	41,539	266,000	34,100	0	2,500	775,245	2.500%	2.500%	1.202	928,714	153,470	1,583,447	1,036,837	261,592	1,921,741
1/1/23	180,000	39,029		30,775				2.500%	2.500%							
7/1/23	183,000	36,491	273,000	30,775	0	2,500	775,570	2.500%	2.500%	1.201	928,714	153,145	1,736,592	1,057,574	282,004	2,203,745
1/1/24	185,000	33,911		27,363				2.500%	2.500%							
7/1/24	188,000	31,302	280,000	27,363	0	2,500	775,438	2.500%	2.500%	1.202	928,714	153,277	1,889,869	1,078,725	303,288	2,507,033
1/1/25	191,000	28,651		23,863				2.500%	2.500%							
7/1/25	193,000	25,958	287,000	23,863	0	2,500	775,834	2.500%	2.500%	1.201	928,714	152,880	2,042,749	1,100,300	324,465	2,831,499
1/1/26	196,000	23,237		20,275				2.500%	2.500%							
7/1/26	199,000	20,473	294,000	20,275	0	2,500	775,760	2.500%	2.500%	1.201	928,714	152,954	2,195,703	1,122,306	346,546	3,178,044
1/1/27	202,000	17,667		16,600				2.500%	2.500%							
7/1/27	205,000	14,819	300,000	16,600	0	2,500	775,186	2.500%	2.500%	1.202	928,714	153,528	2,349,231	1,144,752	369,565	3,547,610
1/1/28	207,000	11,929		12,850				2.500%	2.500%							
7/1/28	210,000	9,010	310,000	12,850	0	2,500	776,139	2.500%	2.500%	1.200	928,714	152,576	2,501,807	1,167,647	391,508	3,939,118
1/1/29	213,000	6,049		8,975				2.500%	2.500%							
7/1/29	216,000	3,046	317,000	8,975	0	2,500	775,545	2.500%	2.500%	1.201	928,714	153,170	2,654,977	1,191,000	415,455	4,354,573
1/1/30	0	0	401,000	5,013	0	1,250	407,263	2.500%	2.500%	1.201	487,575	80,313	2,735,289	635,414	228,151	4,582,724
Totals:	4,745,000	955,740	3,489,000	597,563	0	33,750	9,821,053			1.341	########	2,735,289		########	4,582,724	

Uses of Funds	
Est Funds Available:	3,421,415
D.S. Reserve Fund:	0
Costs of Issuance:	15,250
Underwriting Costs:	52,335
Original Issue Discount:	0
Surplus:	0
Total	3,489,000

Sources of Funds	
Sales Tax Bonds:	3,489,000
Reoffering Premium:	0
Sales Tax Cash:	
Interest Income:	
Total	3,489,000

Average Maturity of Bonds:	6.85
Average Interest Rate:	2.500%
Net Interest Cost:	2.719%
Bond Yield:	2.500%
AIC	2.820%
True Interest Cost:	2.747%

(1) Includes Interest Income on Debt Service Fund, Interest Income on Reserve Fund, and release of Reserve Fund (see "CashFlow" for details)
(2) Includes project expenses out of cash flow, and other annual expenditures (see "CashFlow" for details)

09 OVERALL CONCLUSION

09 / OVERALL CONCLUSION

OVERALL CONCLUSION

Throughout the two Design Workshops, multiple discussions occurred about how to solve the significant issues at the Middle School. Some community members recommended moving the Middle School to the High School. Other members discussed the potential of acquiring property outside the city limits, acquiring enough property to build a full campus for the District to house the Elementary, Middle School, High School, Bus Barn and District Office. While there are benefits to having one campus, there is also a significant cost to the District to develop this plan. This would require the construction of three schools, the cost of the land, cost of the infrastructure for the roads and parking lots, and the cost of utility extensions required to support these facilities. Based on that consideration and the assessment of the High School and Elementary which are in reasonably good condition, this campus concept outside of the city limits was not pursued any further.

Based on the evaluation of the Middle School, there are significant needs for improvement for the safety of the students and the overall health of the students. As shown on the site concepts for the Middle School, those options do not solve the inherent issues at that site. While each option might solve an issue, it does not solve all the issues. Therefore, the Team focused on developing a plan that would solve those issues.

Based on the evaluation of the Middle School having the following characteristics:

1. Very poor vehicular circulation
2. Higher risk for students due to the drop-off/pickup configurations
3. No green space for Physical Education and recess
4. No playground
5. Limited parking availability
6. Completely landlocked by topography, roads and private property
7. Low potential for purchasing property from the adjacent owners

It is the recommendation of the Team that the Middle School be relocated. Without acquiring additional property, the location for the Middle School has been located south of the High School.

There are two Master Plans for the District and Community consideration. Both options have the following positive impacts for the District:

1. Creates safe areas for student drop-off/pickup by separating buses and parents
2. Creates green space for Physical Education
3. Creates playground space for 5th & 6th Grade students
4. Allows for future expansions of the Middle School, thus extending the life of the building. Two areas of expansion are shown on the plan but other areas are possible.
5. Create a 21st Century building for the students and staff
6. Share teaching staff
7. Share classroom space
8. Better collaboration for High School and Middle School administration
9. Shortens bus transportation times for drop-off/pickup
10. Eliminates the need for transportation between the High School & Middle School
11. Allows Middle School students:
    a. Take advanced classes
    b. Participate in athletic sports
    c. Have more daily instructional time due to eliminating transportation time
12. Consolidates maintenance needs for the District, less travel for maintenance crews for repairs
13. The new building would be constructed to current building codes
14. Energy cost for the Middle School could be significantly lower than the existing, based on improved insulation, construction methods, LED lighting and high efficiency mechanical systems.

Two additional concepts were explored for connecting the Middle School directly to the High School. One concept was to connect the Middle School to the northwest side of the High School. The other concept was to connect directly to the south side of the High School. Both options created larger issues with the site, thus raising the cost of the construction due to the need to modify parking areas and athletic fields. Additionally, both options created difficulties in vehicular site circulation. While the direct connection could be advantageous for staff sharing and Middle School students getting to advanced classes without going outside, the advantages were outweighed significantly by the additional cost and site issues that these concepts created. The Assessment team's opinion was that locating the Middle School on the same property, preferably close to the High School, would still provide the advantages to the District both for staff and students, while avoiding the difficulties of vehicular circulation paths and higher construction costs.

MASTER PLAN OPTION A

Option A provides the best solution for the Middle School and Athletic improvement needs. Locating the Middle School directly to the south of the High School improves the ability to share staff, student circulation between the schools, and shortens transportation time for drop-off/pickup for both buses and parents.

This plan requires the construction of a new stadium for football and track to the west of the current location. It would be anticipated that this construction would occur prior to the Middle School construction as it would allow the new facility to be constructed while the District continues use of the existing stadium. A new dedicated parking lot is being shown to be constructed at the south end of the property for the stadium use. To the east of this is shown the new transportation facility to house the District's buses and vehicles.

Rough anticipated construction cost:	**$22,300,000 - $25,500,000**
New Middle School:	$13,500,000 - $15,000,000
Site Development:	$1,000,000 - $1,500,000
Athletic Facilities Relocation:	$4,000,000 - $5,000,000
Bus Barn	$1,800,000
Contingency:	$2,000,000 - $2,200,000
Rough anticipated soft costs:	**$3,800,000 - $4,300,000**
Site Borings/Survey	$25,000 - $40,000
Design/Legal/Insurance/Testing	$2,025,000 - $2,300,000
Furnishings	$1,700,000 – $1,880,000
Printing & Moving Expense	$50,000 - $80,000
Total anticipated cost:	**$26,100,000 - $29,800,000**


HIGH SCHOOL
BASEBALL
HOUSE
BUS DROP OFF
FUTURE EXPANSION
SOFTBALL
EXISTING PARKING
PARENT DROP OFF
ATHLETIC STADIUM
NEW MIDDLE SCHOOL
ADMIN
FUTURE EXPANSION
PARKING
PARKING
FUTURE EXPANSION
TRANSPORTATION
HOUSE

MASTER PLAN OPTION B

Option B leaves the stadium at its current location, thus assuming improvements will be made to the stadium as noted earlier in the report. This minimizes the cost impact compared to Option A as it relates to the Stadium. But also increases the complexity of making those improvements by the need to work around the multiple athletic schedules, essentially requiring all improvements to occur during the summer.

Locating the Middle School to the south-west corner of the property still allows for all of the direct impacts previously noted above. The distance separation between the Middle School and High School is extended compared to Option A. This will create additional time needed to travel between the two buildings for staff and students. While this time need is extended, the time is significantly less than current transportation times. This additional time is also problematic during inclement weather.

This option does improve the separation between high school students and the 5th & 6th grade students. Separation between these grades is important for the younger students who are transitioning into more responsibilities, teenage years, and are more impressionable.

Rough anticipated construction cost:	**$19,700,000 - $22,500,000**
New Middle School:	$13,500,000 - $15,000,000
Site Development:	$1,000,000 - $1,500,000
Athletic Facilities Renovation:	$1,500,000 - $2,000,000
Bus Barn	$1,800,000
Contingency:	$1,900,000 - $2,200,000
Rough anticipated soft costs:	**$3,800,000 - $4,300,000**
Site Borings/Survey	$25,000 - $40,000
Design/Legal/Insurance/Testing	$2,025,000 - $2,300,000
Furnishings	$1,700,000 – $1,880,000
Printing & Moving Expense	$50,000 - $80,000
Total anticipated cost:	**$23,500,000 - $26,800,000**


HIGH SCHOOL
BASEBALL
HOUSE
SOFTBALL
ATHLETIC STADIUM
ADMIN
FUTURE EXPANSION
NEW MIDDLE SCHOOL
FUTURE EXPANSION
BUS DROP OFF
PARENT DROP OFF
PARKING
FUTURE EXPANSION
TRANSPORTATION
HOUSE

BUS TRANSPORTATION FACILITY

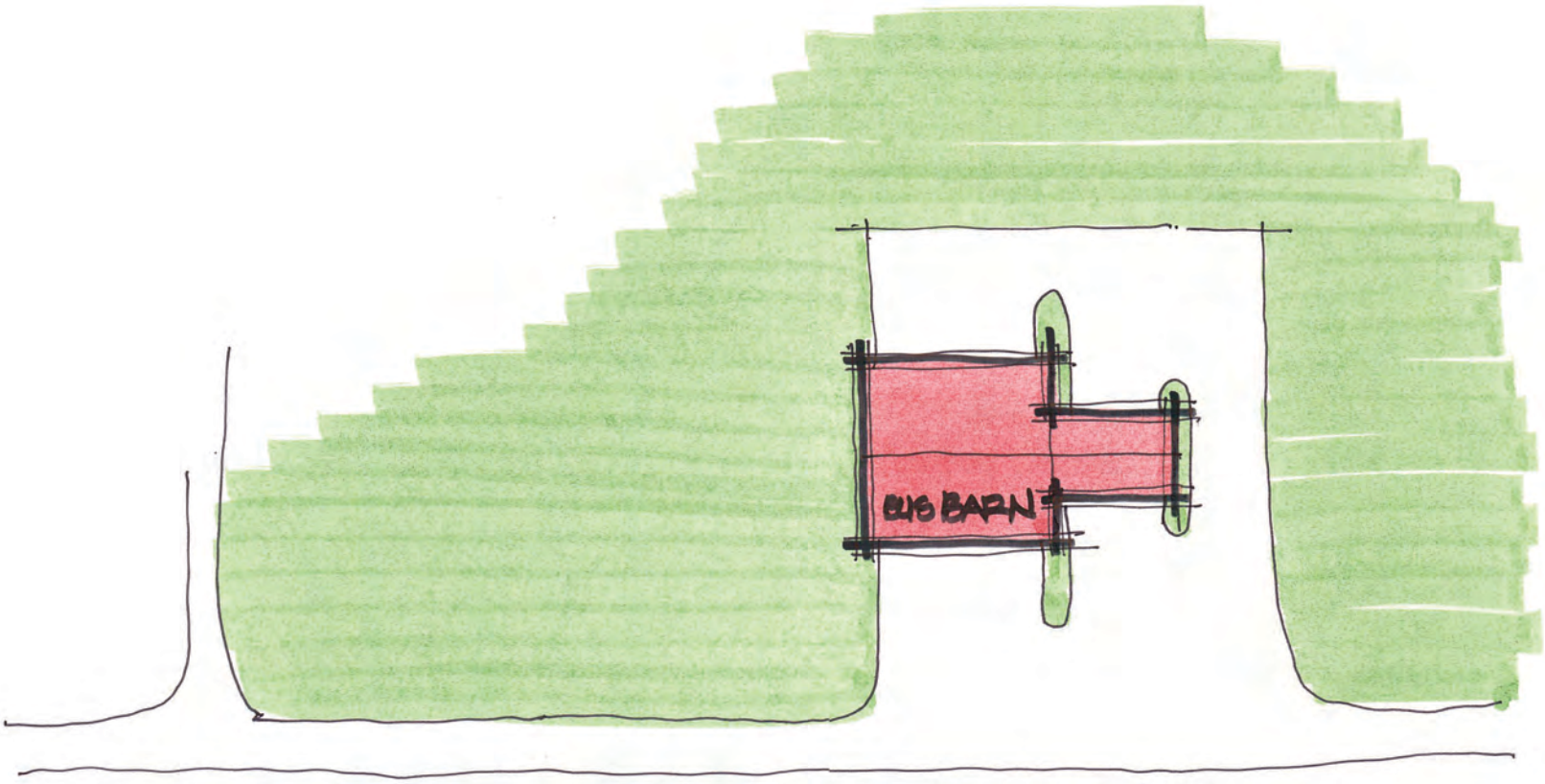
Both options show a new Bus Barn located on the south end of the High School property. As previously noted, this is an ideal location for this facility based on the available property that the District currently owns. This is not to indicate the potential to acquire additional property at another location for the Bus Barn is not possible, but this option shown is the most economical for the District.

Rough anticipated cost to construct the Bus Barn, applicable to both options: $1,800,000.

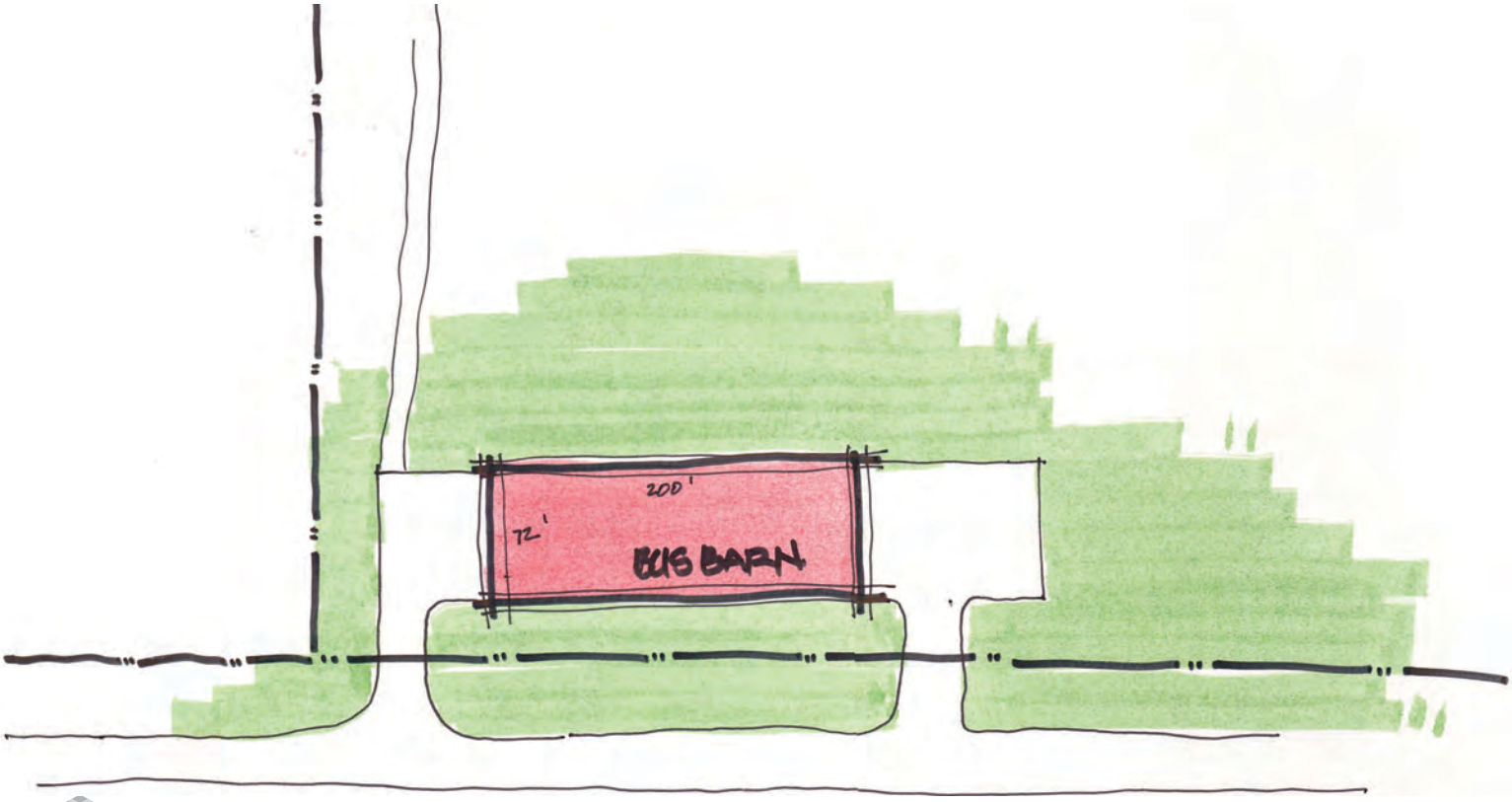
Both options also show the two residences remaining in place. While these residences are not in an ideal location as it relates to being surround by school property, the Team did not take any assumptions that these residences would be acquired by the District. Acquiring one or both of those residences would help with site circulation, parking, and available property to build upon, both options show that the facilities can be constructed with both residences remaining in place.

The two Bus Barn concept plans are provided in this report, shown after the Master Plan options. These concept plans were primarily used to gauge the size of the building as it relates to other properties within the District. Such as studying if the transportation facility could be located on the existing District Office property. While that is a possibility, the site circulation and adjacent property types are not ideal and therefore it has not been recommended to construct the facility at that location. Instead, it is being shown on the south end of the District property at the High School. This would provide good site circulation for the buses and away from residential neighborhoods. from residential neighborhoods.

BUS BARN OPTION A



BUS BARN OPTION B



WHAT TO DO WITH THE MIDDLE SCHOOL?

Based on the Master Plan concepts, the Middle School would be relocated to the District property at the High School. This creates a need to have a plan for the old Middle School upon the completion of the new building. There have been very positive discussions during the Design Workshops regarding the potential options for the building. Below are some of the options discussed.

1. The Okoboji Lakes Bible & Missionary has used the building each summer for several decades and has expressed interest in acquiring the building/property.
2. Remove the building except for the gymnasium, lobby and admin areas to create a community center.
3. Raze the building and sell the property to a developer. This property has terrific views to the lake if developed correctly.
4. Explore selling to a developer to convert to condos.

These options would be explored when the District begins developing the selected Master Plan. It will be crucial to have a plan for the building upon completion of the new building so that the building is not burdening the District with additional cost for maintenance and utilities. The difficulty is that any option to explore will not be taken seriously by any potential developer or buyer, unless the District has been able to secure the funding to move forward with the Master Plan.

Therefore, consideration for the location, the area, and the growth of the community should be taken into account by the community and District when discussing a potential plan for the building prior to any bond referendum. Based on the location, the terrific growth of the county and area, the Assessment Team is confident that a plan can be determined quickly.

09 / OVERALL CONCLUSION

CONCLUSION

This Assessment Report is to be used as a tool for the District to plan future improvements to the District facilities, along with recommendations for changes.

The District has a variety of general maintenance needs throughout the facilities including re-roofing projects, playground equipment replacement, and athletic field improvements among other mechanical and electrical improvements. There are additional maintenance needs such as caulking, painting, door hardware changes and some limited window replacements that can be completed at any time. Some of these items can be addressed with the District's annual maintenance monies. Larger improvements like the athletic field improvements require significantly more capital.

Assessment Team Recommendations:

1. Master Plan Option A is the best option that provides the best opportunity for the Middle School students to access higher level courses at the high school, opportunities for athletic team participation as well as staff sharing potential. This also streamlines the parent drop-off/pickup at both the High School and Middle School. Additionally, the bus drop-off/pickup is separated from the parents and allows for quick unloading/loading between the two schools vs. Option B which requires additional time for transportation.
2. Moving the District Office to the Alternative High School building has minimal cost for the District in moving expenses and technology integration. This allows the District to sell the existing office building and eliminate one building from the maintenance needs of the District.
3. There are immediate needs for re-roofing projects at all the buildings. However, it would be in the District's best interest to determine the direction for the Middle School and District Office before committing funds to those facilities. The District should plan to have High School and Elementary School roofs replaced during the 2018 summer and start developing construction drawings for those replacements now to allow bidding to occur in early spring 2018.

It is the Assessment Team's opinion that these recommendations are in the best interest of the District, for some immediate improvements and for the long term benefit of the District students, staff and community.

DESIGN WORKSHOPS 10

10 / DESIGN WORKSHOPS

DESIGN WORKSHOP: JUNE

The June Design Workshop was held at the Middle School cafeteria on June 13, 2017. This was the first of two design workshops to gather information from the District, from the community, and from staff. The format was an open meeting style that allowed persons to come and go throughout the day, with a presentation that night from 6pm-8pm. While the idea was to use feedback from the community to start developing concept drawings, the Team had such great attendance that only one of the team members was able to sketch two plans for the elementary parking issue developed due to the re-striping of the street from the City of Milford ordinance enforcement. The two concept plans are included in this report in the previous section specific to the Elementary.

This was a terrific experience by having such a high number of participates throughout the day and at the evening presentation. The workshop became more of an educational day for both the Team and for the persons attending. It allowed the Team to discuss some of the preliminary findings from the Assessment to the community which helped guide discussions about potential resolutions and potential changes. The primary discussion topic throughout the day was the Middle School. Most of the people attending felt that the Middle School needs some significant infrastructure improvements to solve the bus and parent drop-off/pickup and solve the lack of green space for PE and playground. Additional comments shared concerned the amount of time that students attending High School classes or athletic activities lose each day due to the transportation time between the schools. There were two individuals who felt that the Middle School should stay in Arnold's Park. However, many others did not feel that it was important to remain, instead stating that it should be moved as that is in the best interest of the students.

DESIGN WORKSHOP: AUGUST

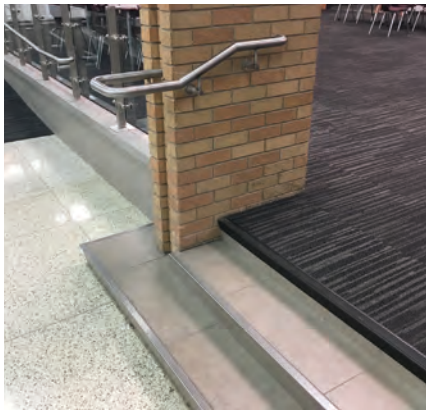
The August Design Workshop was held at the High School in the Gymnasium on August 9, 2017. This was the second and final design workshop and the same format was used as the first workshop. This workshop was also well attended throughout the day with many new participants, but not quite the same number attending as the first workshop. This allowed the team to develop several concepts based on previous comments from the first workshop, along with new comments from the new participants. The concept plans were all developed for the Middle School based on participant comments regarding student safety and for outside green space. These concept plans are included in this report in the previous section specific to the Middle School.

The evening presentation was very well attended. This presentation also included the demographics presentation by RSP Associates from Kansas City. Then the concept plans for the Middle School were presented, along with the previously developed concept plans for the Elementary. After the presentation, several community members shared some excellent comments regarding the process, their thoughts about the concepts, and the need to proceed with a Master Plan that was in the best interest to the students.

PHOTO APPENDIX 11

11 / PHOTO APPENDIX
HIGH SCHOOL

001



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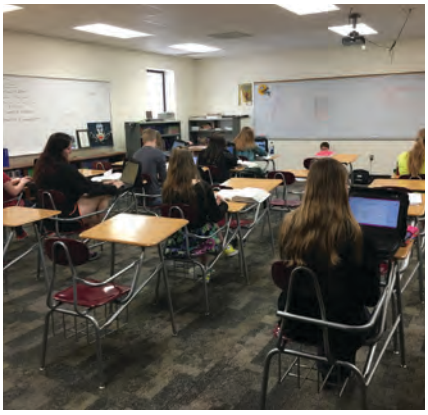

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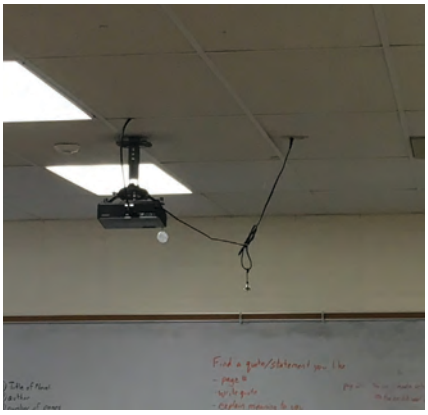

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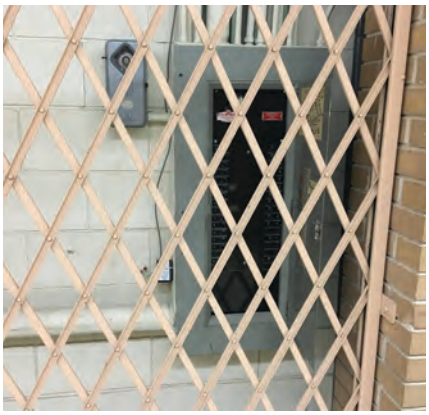

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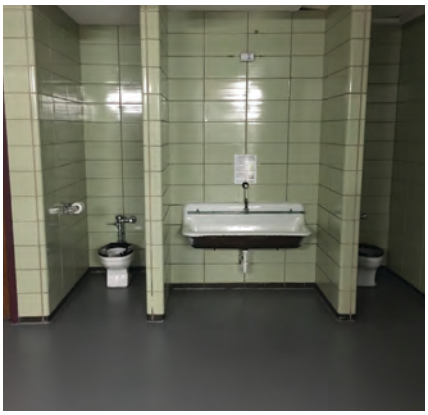

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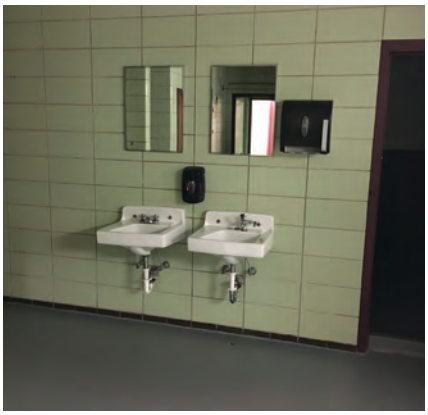

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MIDDLE SCHOOL

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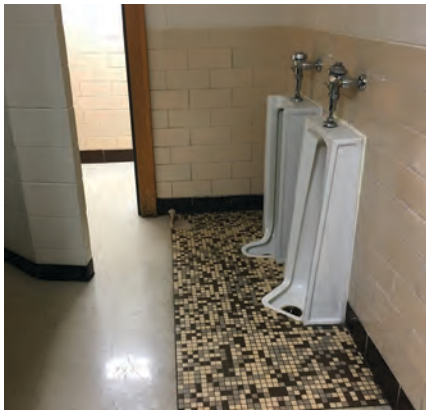

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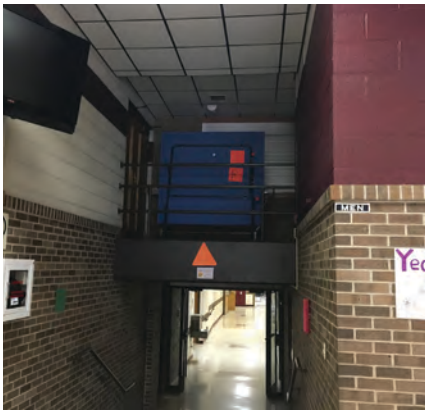

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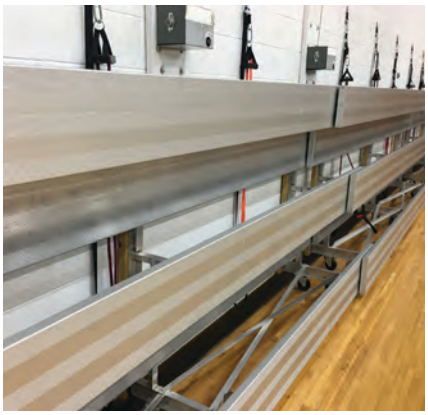

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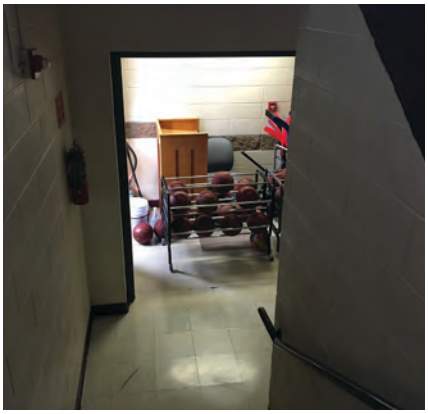

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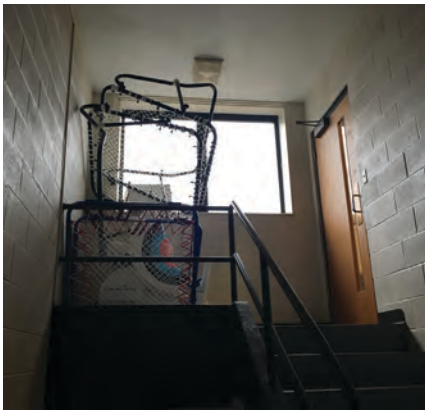

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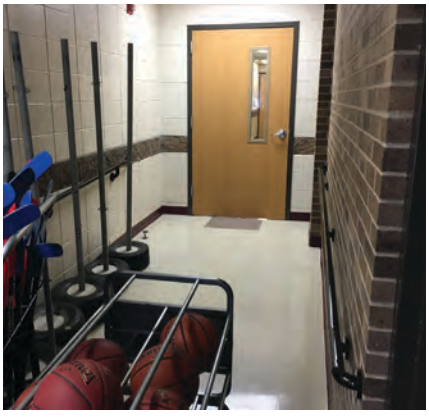

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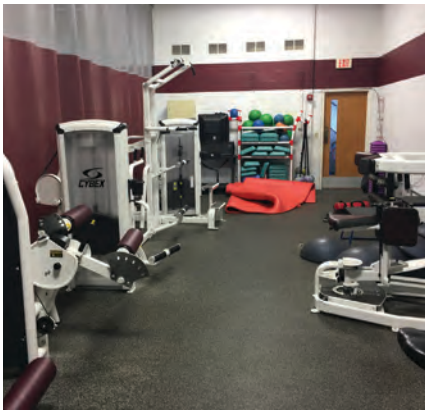

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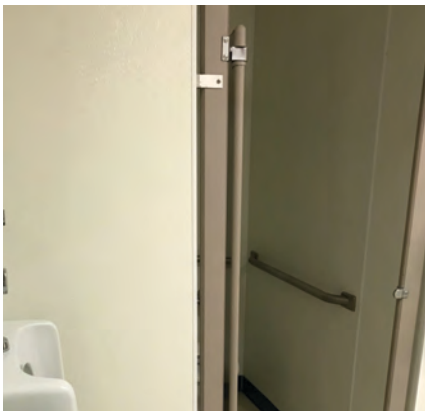

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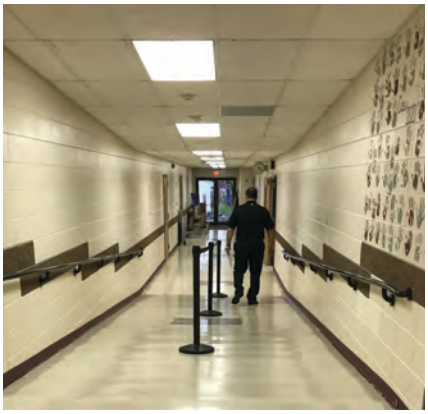

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ELEMENTARY

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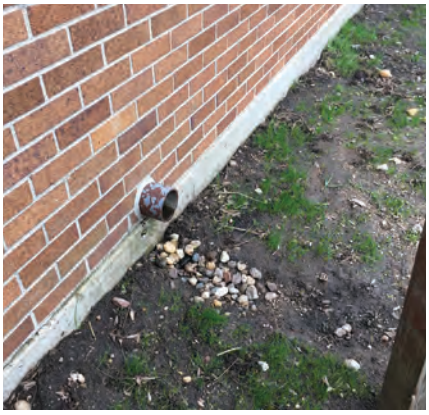

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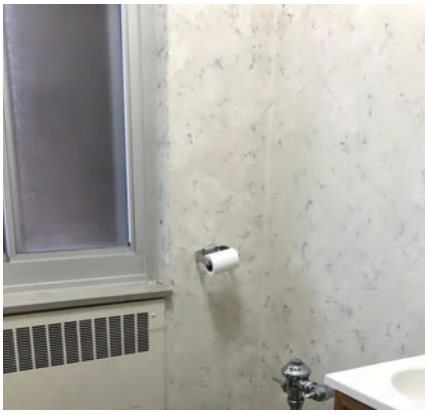

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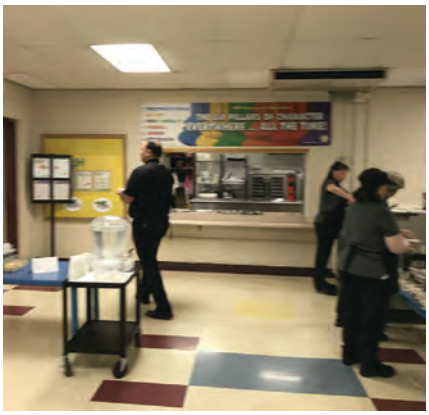

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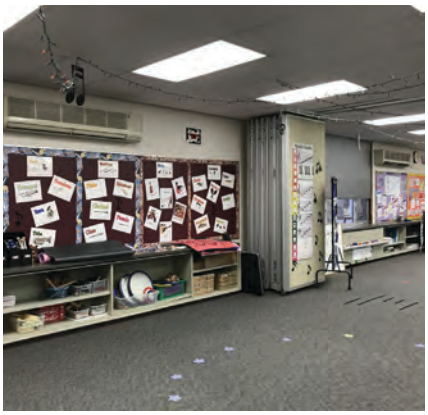

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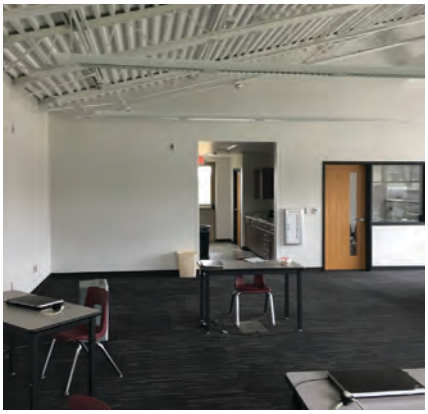
11 / PHOTO APPENDIX
ALTERNATIVE
HIGH SCHOOL



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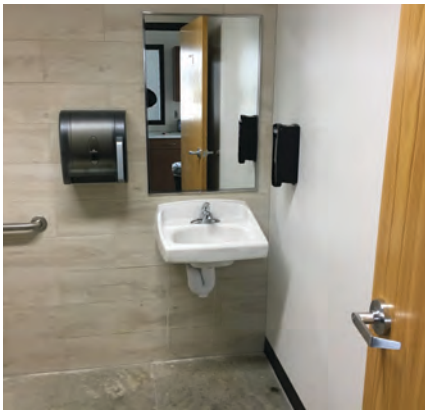

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HIGH SCHOOL
ATHLETIC FIELDS

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ADMIN BUILDING

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