Kauffman Stadium Assessment

JCSCA + Burns & McDonnell

This document contains information pertaining to the condition of Kauffman Stadium as documented by the Jackson County Sports Complex Authority (JCSCA), including descriptions, conditions, and exhibits which have been reviewed by Burns & McDonnell and documented in this report.

JACKSON COUNTY Sports Complex Authority

BURNS McDONNELL architecture + engineering

TABLE OF CONTENTS

TABLE OF FIGURES

PURPOSE AND SCOPE

Purpose

The Kansas City Royals organization has a lease with the Jackson County Sports Complex Authority (JCSCA) that requires the organization to maintain Kauffman Stadium to a level consistent with a First-Class MLB Baseball Stadium. The purpose of this study is to report the overall condition of Kauffman Stadium and the immediate environs to determine if the team is upholding their lease agreement.

Scope

Burns & McDonnell, in conjunction with the JCSCA, has developed a Facility Assessment Report that reviews and documents the stadium condition. During 2018, the Jackson County Sports Complex Authority conducted an inspection of every space in Kauffman Stadium. Each room was carefully examined and documented using iPad technology (Fuze Inspections mobile application by Evoco Inc.) for the walkthrough. This application allowed the Jackson County Sports Complex Authority to build a database containing photos, condition ratings, and an inventory of building elements in each room. These elements included: a rating of overall room, electrical components, mechanical components, and various pieces of equipment, including, a listing of the type of floors, walls, and ceilings in each room. Checks of mechanical and plumbing equipment, including, life safety systems, such as 24 hour monitored control rooms and fire suppression systems were also completed. Burns & McDonnell reviewed the database, interviewed Kansas City Royals staff and received maintenance records. This report is based on the above review in conjunction with on-site evaluations by Burns & McDonnell engineers and architects.

Burns & McDonnell's scope is limited in nature and did not include an entire facility room-by-room inspection or evaluation. An on-site walk through of the stadium and the immediate environs was performed by Burns & McDonnell's engineers and architects to spot-check rooms and areas, comparing the overall conditions reported in the Jackson County Sports Complex Authority's condition reports to the actual conditions observed. Additionally, Burns & McDonnell has provided recommendations for observed maintenance issues that may need to be rectified in a timely manner.

EXECUTIVE SUMMARY

General Description

Kauffman Stadium is located at One Royal Way in Kansas City, Missouri. The renovation, completed in 2010, was intended to enhance the fan's game day experience, increase revenue generation, and improve the day-to-day operations of the Kansas City Royals and other users of the facility. The stadium holds approximately 38,000 fans and offers amenities such as an outfield concourse, kids' area, bars, restaurants, hall of fame/conference center, and various other spaces geared towards large scale entertainment.

General Condition

In general, Kauffman Stadium and the immediate environs were observed to be in satisfactory condition. It is apparent the Kansas City Royals have performed the ordinary cleaning and maintenance obligations consistent with a First-Class MLB Baseball Stadium.

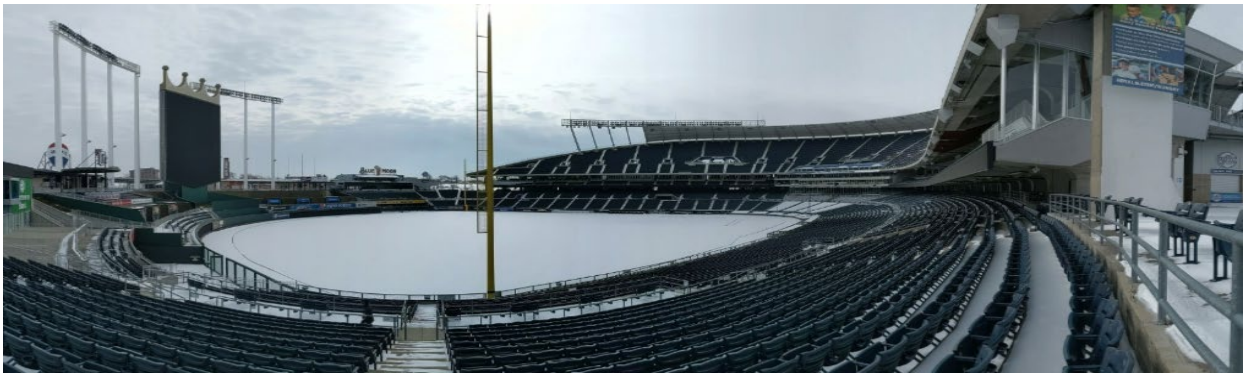
Minor physical deficiencies were observed throughout various locations within Kauffman Stadium and the immediate environs. Such deficiencies are expected in such a large facility and typical of a high-use facility. Most deficiencies can be easily addressed by the Kansas City Royals through standard maintenance procedures.

Recommendations

The final section of this document, labeled "Summary of Recommendations" includes recommendations for the deficiencies observed for each building or site category. Most observed deficiencies are generally minor and may require attention in a timely manner. Critical, more hazardous issues are less frequent, and the level of importance has been noted in the document to reflect the need for a resolution.

KC Royals Response Plan

The Kansas City Royals have developed a response plan to rectify the deficiencies observed by Burns & McDonnell this year. This plan includes the location of each deficiency, an action to correct or maintain the item of concern, and a date for which each item is to be addressed. This report can be found as **"Exhibit A"** attached to the end of this document.



EXISTING CONDITIONS

Site Flatwork

Kauffman Stadium is comprised of a significant amount of paved area within the concourse. These paved areas serve mostly as access walkways for pedestrians to traverse the stadium grounds, both inside and outside the security fencing. In addition to the walkways, stairs, curbing, and retaining walls make up the site flatwork. Overall, the site flatwork at Kauffman Stadium was observed to be in satisfactory condition, apart from a few mild site defects.

Pavement cracking was the most prominent site defect observed. Transverse, fatigue, and corner cracking was found in several areas throughout the concourse. Figure C-1 displays a typical example of transverse cracking found on site. Figure C-2 shows an example of fatigue cracking from stadium use. Figure C-3 shows an example of corner cracking approximately ¼" wide. Pavement cracking that exceeds ¼" should be further inspected and considered for replacement as it leaves room for water to infiltrate the pavement slab causing displacement due to freeze-thaw conditions. Figure C-4 is another example of fatigue cracking, this time being located near a footing.

Dilapidated joint sealants were also commonly observed around site. Sealant deterioration provides the opportunity for water to penetrate the pavement which also can cause displacement due to freeze thaw conditions. Figure C-5 shows an example of sealant degradation found on site, leaving the sealant detached from sections of pavement. Damaged curbing and seating wall were another defect typically encountered on site, Figure C-6 shows an example of a broken section of seat wall.

Figure C-1: Transverse Cracking
Location: Adjacent To Batting Cages

Figure C-2: Fatigue Cracking
Location: Adjacent To Putting Golf Course

Figure C-3: Corner Cracking
Location: Stairway Located Northeast of East Helix Ramp

Figure C-4: Footing Cracking
Location: Adjacent To Batting Cages

Figure C-5: Detached And Deteriorated Sealant
Location: Adjacent To Standing Area Near Section 248

Figure C-6: Curb Damage
Location: Adjacent to East Helix Ramp

Other site appurtenances on site were evaluated, this included fencing, decorative walls, hand railings, light poles, and drainage structures. Minor site defects were observed and most of which was deemed to be in acceptable condition. Figure C-7 shows a trench drain found on site filled with leaves random debris.

Figure C-7: Trench Drain Filled With Debris
Location: Bottom Of Stairway Located Northeast of East Helix Ramp

Landscaping and Appurtenances

Various species of native planting and grass can be found between walkways and within planting beds surrounding the stadium. Landscaping around the stadium improves aesthetic appeal of the facility and provides visual breaks within the otherwise largely paved surface. Overall, the landscaping features were observed to be in acceptable condition, with only a few landscaping features containing defects. Figure L-1 shows deterioration of the mulch bed and decorative rock.

Figure L-1: **Deteriorated Landscape Bedding**
Location: **Adjacent To Rivals Tables**

Structure

The substructure is primarily concrete drilled piles with pile caps. Cast-in-place (CIP) grade beams are located around the perimeter and throughout the foundation system. CIP mat foundations support the stair and elevator core walls and CIP single spread footings also exist for lighter loaded structures. Floating slabs-on-grade exist throughout the facility.

No significant settlement of the structure was observed. The slab-on-grade is primarily in satisfactory condition. No major cracks or spalling of the concrete slab-on-grade was observed. The slab-on-grade at the Hall of Fame entrance was consistently cracked. This is most likely due to the lack of control joints in the slab-on-grade. See **Figure S-6**. A few control joints and expansion joints need repair or replacement. Concrete was observed to be spalling and rusting around various steps and handrail posts as shown in **Figures S-1** and **S-2.**

Figure S-1: Concrete Spalling
Location: Bottom of Section 115

Figure S-2: Handrail Rusting
Location: Home Dugout Suite 01.09.02

The original superstructure is primarily cast-in-place (CIP) reinforced concrete columns and walls for the vertical support system with reinforced concrete pan joist slab system. During major renovation stages, additions were constructed which consisted primarily of CIP reinforced concrete walls and steel wide flange columns. Other vertical support systems include Hollow Structural Section (HSS) columns and concrete masonry (CMU) load bearing shear walls.

The Plaza level consists of a suspended reinforced concrete slab/beam system. Other framing systems include a light weight slab-on-foam fill bearing on suspended concrete slab and composite deck supported by steel wide flange beams. The Broadcast, Writing Press and Loge level primarily consists of light weight concrete composite deck supported by steel wide flange beams. Main Roof and Outfield Roof levels primarily consist of steel wide flange and Hollow Structural Section (HSS) beams supporting standing seam metal roof deck. This level also consists of metal roof deck supported by steel wide flange beams. The scoreboard consists of a mixture of steel wide flange beams, Hollow Structural Sections (HSS) tubes and steel angles. The floor system is steel grating.

While some cracking and spalling was observed, the original reinforced concrete columns and walls are in satisfactory condition. The vertical column and wall surfaces are flat and smooth. Concrete patchwork of the original structure was observed to be flat and smooth and is in satisfactory condition as well. The expansion joints at the original superstructure to the renovation superstructure are in satisfactory condition. No deterioration was observed.

The original reinforced concrete pan joist slab systems are currently in satisfactory condition. No major cracks or widespread spalling was observed. However, minor cracking and some spalling exists which has exposed the reinforcement in the concourse at the top of section 234, as shown in **Figure S-3**. Minor cracking and spalling was also observed while standing in the concourse at the top of section 312, shown in **Figure S-4**.

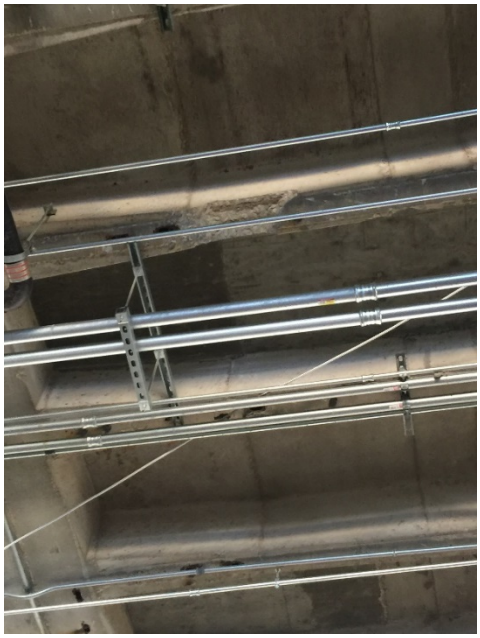


Figure S-3: Exposed Reinforcement
Location: Concourse 03.10.01

Figure S-4: Exposed Reinforcement
Location: Adjacent to Signature Suite 05.17.01

The reinforced concrete walls of the renovation stage are in satisfactory condition. No major cracks or spalling was observed, and the vertical wall surface is flat and smooth. The steel beams and connections of the renovation stage are generally in satisfactory condition. No corrosion or deflection was observed.

Handrails and handrail anchorage was inspected in various locations throughout the stadium. At (2) locations inspected, it was observed that anchorage was either loose, as shown in **Figure S-5,** or missing. Additionally, various washers and anchors associated with the handrails surrounding the Hall of Fame Suite have developed rust.

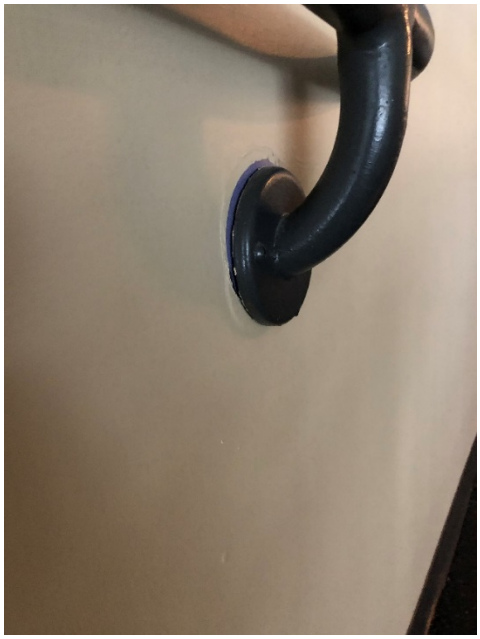


Figure S-5: Loose Handrail Anchors
Location: Stair 16 Room S16.01

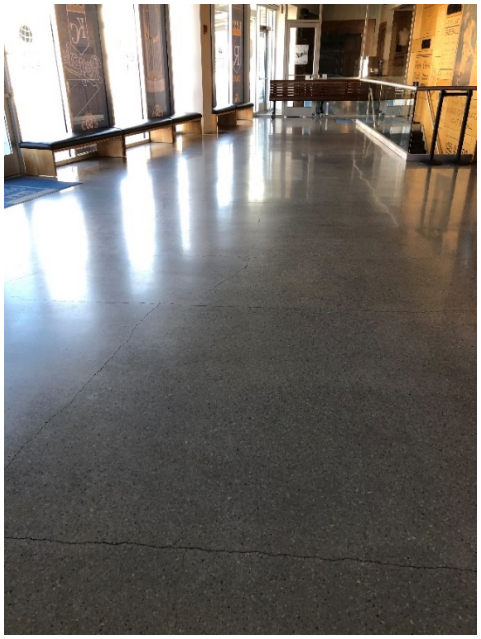


Figure S-6: Cracking of Slab-on-grade
Location: Hall of Fame Entrance

Exterior ungalvanized steel was present at several locations throughout the stadium. This was mostly likely due to paint peeling or chipping off. **Figure S-7** shows paint missing on the external perforated metal panel system. **Figure S-8** shows paint missing on the outfield steel light tower columns.

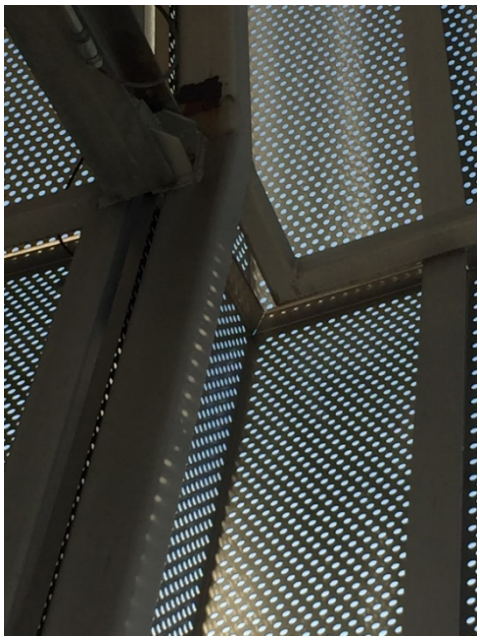


Figure S-7: Exposed Ungalvanized Steel
Location: Adjacent to Escalator ES01.03

Figure S-8: Paint Chipping
Location: Outside Steel Light Towers

Temporary structures around the stadium were also inspected. The wood Leinenkugel stand beyond the scoreboard in the outfield was in satisfactory condition. The Miller Lite stand on the upper concourse was also assessed and was in satisfactory condition.

Façades

Kauffman stadium incorporates a variety of finish materials that are used in the composition of the exterior façade, as shown in **Figure AF-1**. The primary surface materials include structural concrete, insulated metal panel, curtainwall, and patterned perforated metal panels on galvanized steel structure.

Stone veneer and glass storefront systems are utilized extensively along the base of the stadium, in addition to miscellaneous structures such as a metal entry canopy, gates, and fencing.

Figure AF-1: Kauffman Stadium Overall Exterior
Location: South-West Parking Lot

All facades, in general, appear to be in satisfactory condition. Glass storefronts and curtainwall systems appear to be in satisfactory condition, as shown in **Figure AF-2**. Aluminum frame and mullions were observed to be free of staining, fading, or degradation of any kind. Seals and flashing around storefront appear to be in satisfactory condition.

Figure AF-2: Masonry Cladding Systems Exterior
Location: Kauffman Stadium Exterior at Dugout Concourse and Concessions at View Level

Masonry cladding systems appear to be in satisfactory condition, as shown in **Figure AF-2**. No chipping or staining of the stone or grout was observed.

Glass storefront systems appear to be in satisfactory conditions, as shown in **Figure AF-3.** Aluminum frame and mullions were observed to be free of staining, fading, or degradation of any kind. Seals and flashing around storefront appear to be in satisfactory condition.

Figure AF-3: Glass Storefront Systems
Location: View Level 7 – 07.24.03 Satellite Retail / Concourse 07.24.04 Royals Fan Zone

Glazing, in general, appears to be free of damage or defects. It was noted in previous year reports various ticketing windows had minor cracks. Images were taken at ticketing structure 03.17.01 as shown in **Figure AF-4**. All ticketing windows have since been replaced and repaired as necessary. Upon exiting the ticketing structure, we observed the rubber base is no longer adhered to the wall, causing the door to catch on it. We also observed there is a significant gap between the floor transition strip and the bottom of the door leaf, allowing large amounts of cold air and moisture to enter.

Figure AF-4: Repaired Glass at Ticketing Building (left, middle) and loose wall base (right)
Location: Plaza Level 3 - 03.17.01 Ticketing Building

Additionally, internal storefront systems appear to be in satisfactory conditions, as shown in **Figure AF-5.** Aluminum frame and mullions were observed to be free of staining, fading, or degradation of any kind. Seals and flashing around storefront appear to be in satisfactory condition. It was noted in the 2017 report storefront flashing outside room 03.23.02 was bent outwards exposing an opening in the system. We observed the storefront flashing had since been repaired.

Figure AF-5: Interior Storefront (left) and Storefront Flashing (right)
Location: Plaza Level 3 – 03.23.02 Fan Accommodations

Insulated metal panels systems were observed to be in satisfactory condition. In general, no oil canning, staining, or degradation of any kind was observed, as shown in **Figure AF-6** (left). However, on the South-Western face of the Rivals Sports Bar, minimal amounts of rust and streaking was observed at locations of penetrations. This was noted in the 2017 report and still exists today as shown in **Figure AF-6** (right).

Figure AF-6: Insulated Metal Panel System
Location: Plaza Level 3 - 03.78.01 Rivals Sports Bar

Perforated metal panels and graphic mesh systems appear to be in satisfactory condition, as shown in **Figure AF-7.** No oil canning, staining, or degradation of any kind was observed, and galvanized sub-structure appears to be free of corrosion or rust.

Figure AF-7: Exterior Perforated Metal Panel System
Location: Kauffman Stadium North-West Exterior

Roofing

The roofing structures throughout Kauffman stadium vary greatly in composition. The primary roofing material utilized at the interior structures is a Polyvinyl-Chloride (PVC) membrane on R-24 thermal insulation.

Alternative roofing materials are also utilized at various external structures and over the stadium concourses, including standing seam metal roof panels and in some cases perforated metal panels. Coping and fascia panels, finished to match adjacent metal panels, provide moisture protection at roof eaves and parapet conditions.

Roofing membranes appear to be in satisfactory condition. Roofing membranes observed were free of rips, tears, or defects. as shown in **Figure AR-1**.

Figure AR-1: Coping (left) and Roofing Membrane (right)
Location: Catwalk on Press Level

Coping and fascia panels at roof eaves and parapets were observed to be in satisfactory condition. Though pooling was not observed at the time of observation, the membrane roof observed from the catwalk area at the Writing Press Level shows evidence that pooling still occurs as noted in the 2017 assessment.

Miscellaneous Exterior Observations

At the home dugout, the platform structure paint was observed to be chipping off and exposing the raw steel in the 2017 report. The steel shows surface rust, which was also noted in the 2016 report. It was observed the platforms within the dugout had been replaced completely, as shown in **Figure AME-1.**

Figure AME-1: Surface Rust on Platform Support Brackets
Location: Clubhouse Level 1 - Royal's Dugout

At the patio deck outside the storefront glazing system of Taking the Field 03.51.01, it had been observed some of the metal plates anchoring various railings to the concrete were missing, as shown in **Figure AME-2.** While under pressure from fans using the facility, these missing plates can compromise the railing's structural integrity and safety. Without the various plates in place, the railing has the ability to move back and forth quite easily in the horizontal direction.

Figure AME-2: Missing Support Base Plates
Location: Plaza Level 3 - 03.51.01 Exterior Patio – Taking the Field

In most locations joint sealant and caulking appears to be in satisfactory condition. However, at various locations throughout the stadium, sealant was observed to be cracked or separating, as shown in **Figure AME-3**, in the South-West Plaza Concourse near 03.14.01. This condition may create a potential moisture problem in various service spaces under the stadium.

Figure AME-3: Joint Sealant
Location: South-West Plaza Level 3 - Concourse near 03.14.01

It was observed that the non-slip texture is beginning to wear away from typical use in various locations in the Upper Seating Bowl 07.18.23, as shown in **Figure AME-4**. This could become a slip and fall hazard to patrons, especially during the earlier and later portions of the MLB season.

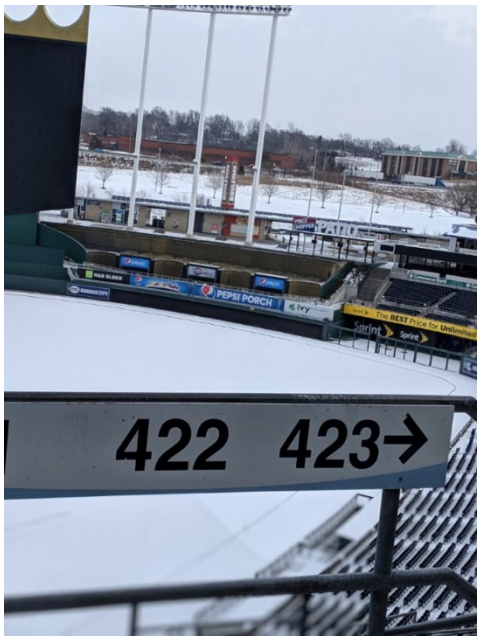


Figure AME-4: **Non-Slip Coating**
Location: **Upper Seating Bowl Level 7 - 07.18.23 Upper Seating Bowl Section 423**

Interior Elements

Interior finishes within Kauffman stadium encompass a broad range of materials for floors, walls, and ceilings. The primary flooring systems are composed of epoxy and sealed concrete, as shown in **Figure AI-1** and **AI-2.** These surfaces were observed to be in satisfactory condition, typically. Minor cracking was observed at various locations throughout the facility, which is considered normal given the expansion and contraction properties of the materials. No excessive cracking was observed during the walk-through.

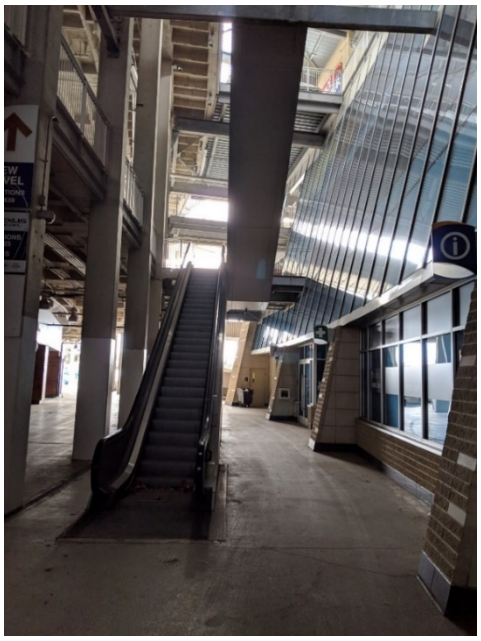


Figure AI-1: Typical Concourse Flooring
Location: Plaza Level 3 – South West Concourse

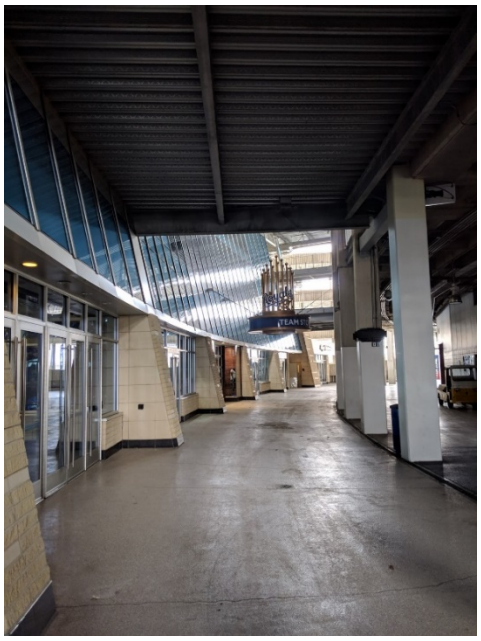


Figure AI-2: Typical Concourse Flooring
Location: Plaza Level 3 – South West Concourse

Carpet flooring was generally observed to be in satisfactory condition. No signs of rips, tears, or discoloration were observed aside from what is considered normal wear and tear. In the 2017 report, it was noted that a large stain was prominent on the carpet at the Visitor's Locker Room 01.27.03, as shown in **Figure AI-3**. This stain appeared to be fixed by cutting, pulling up, and patching the carpet at that location.

Figure AI-3: **Carpet Flooring**
Location: **Clubhouse Level 1 - 01.27.03 Visitor's Locker Room**

Porcelain/Ceramic tile flooring areas appear to be in satisfactory condition. No signs of grout discoloration or cracking were observed. However, it was noted in the 2017 report that the door to Men's Restroom 03.23.01 in the Diamond Club was slightly damaged, dragging on the floor when opening and had begun to wear on the tile flooring, as shown in **Figure AI-4**. The issue has been resolved as the same conditions were not observed during the walk-through this year.

Figure AI-4: Ceramic Tile Flooring
Location: Plaza Level 3 - 03.23.01 Diamond Club Men's Restroom

Wall materials at Kauffman stadium typically include painted or exposed Concrete Masonry Units (CMU) or painted gypsum board on metal stud framing. Alternative wall materials include porcelain or ceramic tile, glass tile, wood veneer, and glass storefront systems.

In general, interior wall surfaces were observed to be in satisfactory condition. Painted gypsum board walls appear to be in satisfactory condition. In general, no punctures, holes, or scratches were observed. It was noted in the 2017 report at the Police Open Office 02.26.07 a significant amount of damage to the gypsum board was observed, typically at standard chair heights. The walls within this space have since been painted with the same colors, as shown in **Figure AI-5.**

Figure AI-5: **Gypsum Board**
Location: **Service Level 2 - 02.26.07 Police Open Office**

Ceramic tile walls generally appear to be in satisfactory condition, as shown in **Figure AI-6.** No visible chipping, flaking, or cracking of the tile or grout was observed.

Figure AI-6: Ceramic Tile
Location: Club Level 3 - 03.22.01 Diamond Club

Wood paneling, typically, is in satisfactory condition. As shown in **Figure AI-7**, no signs of scratching, fading, or deterioration of any kind were observed at the Hall of Fame Suites or the Royal's Clubhouse.

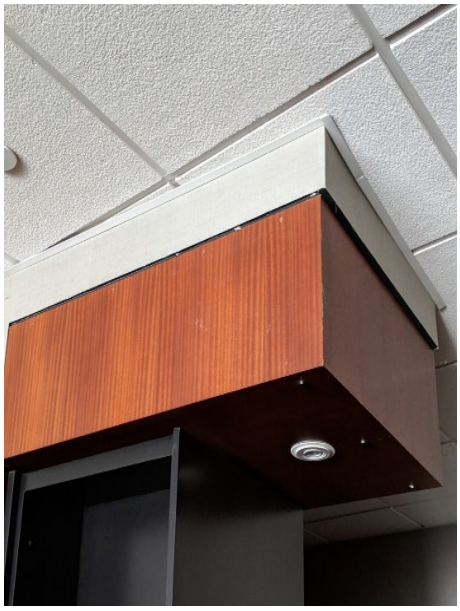


Figure AI-7: Wood Veneer Panels
Location (left): Clubhouse Level 1 - 01.21.03 Royals Clubhouse
Location (right): Plaza Level 3 - 03.51.02 Hall of Fame Suites

Ceilings in Kauffman stadium are generally concrete which has been left exposed or painted. Refer to the “Structure” section for observations of concrete surfaces. Other ceiling types located within the interior spaces of the stadium include gypsum board, acoustical ceiling tile, and wood paneling in some cases.

Exposed ceilings typically appear to be in satisfactory condition. It had been observed in the 2016 and 2017 assessments that several foil-faced batt insulation sections in the Clubhouse Batting Tunnels 01.13.01 were hanging down due to suspected impact from baseballs or a potential gap in the expansion joint above. From observation underneath, the issue appears to have been resolved as well as the outlier area noted in the 2017 report as shown in **Figure AI-8** (right).

Figure AI-8: **Foil Faced Batt Insulation**
Location: **Clubhouse Level 1 - Batting Tunnels 01.13.01**

Gypsum board ceilings appear to be in satisfactory condition, typically. No punctures, stains, scrapes, or tears were observed. Refer to **Figure AI-9** for typical condition.

Figure AI-9: Gypsum Board Ceilings
Location: Club Level 3 - 03.22.01 Diamond Club

Acoustical ceiling tile is the primary material used for interior spaces. The typical condition of the acoustical ceiling tile appears to be in satisfactory condition. Refer to **Figure AI-10** for typical condition at observed interior ACT ceilings. Previously noted in the 2017 report, locations in the Dugout Concourse 02.11.02 were observed to have been stained, as shown in **Figure AI-11, right & left**.

Figure AI-10: Acoustic Ceiling Tile
Location: Plaza Level 3 - 03.51.02 Hall of Fame Suites

Figure AI-11: Stained Acoustic Ceiling Tile
Location (right): Service Level 2 - 02.11.02 Dugout Concourse

Wood ceiling panels, where present, were observed to be in satisfactory condition. Surface conditions appear to be new and are free of scuffs, scratches, warps, or deterioration as shown in **Figure AI-12**.

Figure AI-12: **Wood Plank Ceilings and Accents**
Location: **Plaza Level 3 - 03.20.01 Boulevard Concessions**

Door types and styles throughout Kauffman Stadium include painted hollow metal doors and frames, flush wood doors, aluminum glazed doors, overhead coiling doors, and an occasional access door.

It was observed in the 2017 assessment that the hollow metal door to the men's restroom adjacent to the Diamond Club had been replaced with a flush wood door that was once again damaged. Upon current observation the door had been replaced with another flush wood door, as shown previously in **Figure AI-5**.

Generally, painted hollow metal doors were observed to be in satisfactory condition. The Police Open Office 02.26.07 had been noted with a damaged door in the 2017 report at the entrance. The door appeared to have been replaced and functioning properly with an updated card reader. All doors in the Open Office appeared to have updates upon walking through. Example as shown in **Figure AI-13**.

Figure AI-13: Hollow Metal Door
Location: Service Level 2 - 02.26.07 Police Open Office

Miscellaneous Interior Observations

It was noted in the 2017 report that upon observation of Concessions 03.14.01 fiberglass reinforced plastic at the head of an opening had fallen off and left the underside exposed. During the walk-through, it appeared the condition was repaired as shown in **Figure AMI-1**. Exposure of construction adhesive materials in a concession environment may not comply with retail / health standards and the potential safety hazard was identified.

Figure AMI-1: **Missing Header Cap**
Location: **Plaza Level 3 - 03.14.01 Concession Stand**

Several fire extinguishers were checked throughout the facility for verification of updated inspection tags in order to maintain current fire safety protocol. All fire extinguishers observed upon walk-through were inspected and punched within the last year, as shown in **Figure AMI-2**.

Figure AMI-2: Fire Extinguisher Inspection Tags
Location: Broadcast Level 4 - 04.21.03 Corridor

Mechanical

Kauffman stadium contains a variety of mechanical and plumbing equipment. Indoor areas are generally heated and cooled by central air handling units with chilled water cooling and electric heating coils. Remotely located areas are conditioned by stand-alone direct expansion (DX) cooling units with electric heating. Many transient spaces are heated and ventilated only. Other types of main equipment serving the stadium include mini-split systems, condensing units, hot water boilers, water heaters, exhaust fans, air cooled chillers, and pumps (serving fire water, domestic water, and chilled water systems). In general, the mechanical systems were observed to be in satisfactory condition.

There were a few general maintenance items that were noted during the assessment. First, some filters on equipment appeared to be excessively dirty and should be changed to keep the equipment operating at maximum efficiency. A blower coil unit in Electrical Room 02.19.01 was specifically observed to have dirty filters, as shown in **Figure M-1**, but all filters should be checked to make sure they have been recently changed.

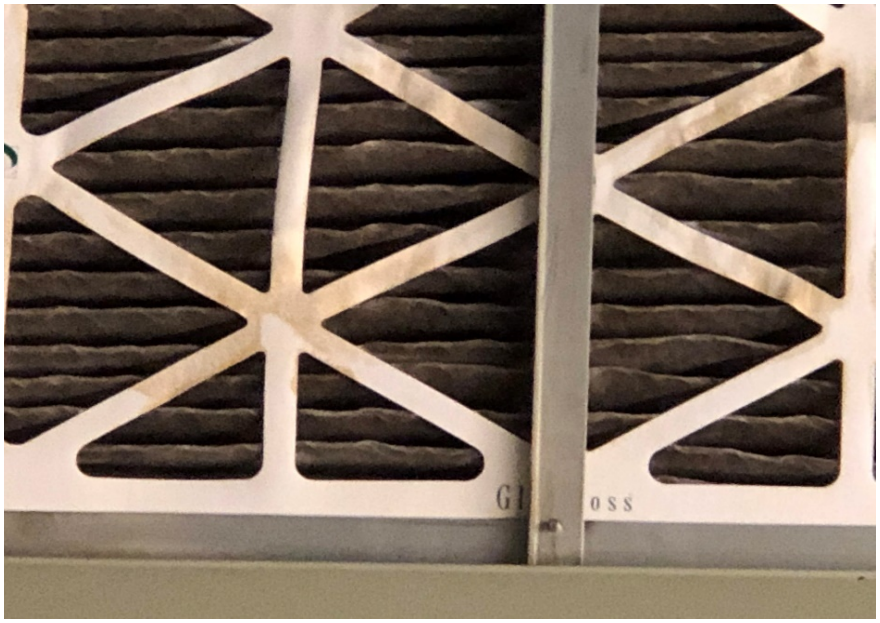


Figure M-1: Dirty Filter on Blower Coil Unit
Location: Service Level – 02.19.01 Electrical Room

Another general item was excessively dirty ceiling diffusers and grilles. These were observed in back-of-house and cooking spaces and should be kept clean to ensure proper airflow. **Figure M-2** shows a grille in Vendor Commissary 02.04.01, but all grilles in a similar state should be cleaned.

Figure M-2: Dirty Ceiling Grilles
Location: Service Level – 02.04.01 Vendor Commissary

Some piping insulation and jacketing was observed to be ripped in high-traffic areas. This should be repaired to maintain the integrity of the insulation. One place this was observed was in Electrical Room 02.28.06, as shown in **Figure M-3**, but all piping insulation in high-traffic areas should be inspected for tears and repaired.

Figure M-3: Torn Piping Insulation and Jacketing
Location: Service Level – 02.28.06 Electrical Room

This year's assessment walk-through included the clubhouse areas, which were in excellent condition. One deficiency that was noted was the lack of ADA cover insulation on the lavatory supply and waste piping under the counters. This is a requirement of the ADA to prevent burns and should be added. This condition was observed in restrooms serving Royals Clubhouse 01.21.03, as shown in **Figure M-4**, Coaches Clubhouse 01.21.02, as shown in **Figure M-5**, and Visiting Lockers 01.27.03, as shown in **Figure M-6**. All lavatories should be checked since there is a risk of burns and possibly litigation.

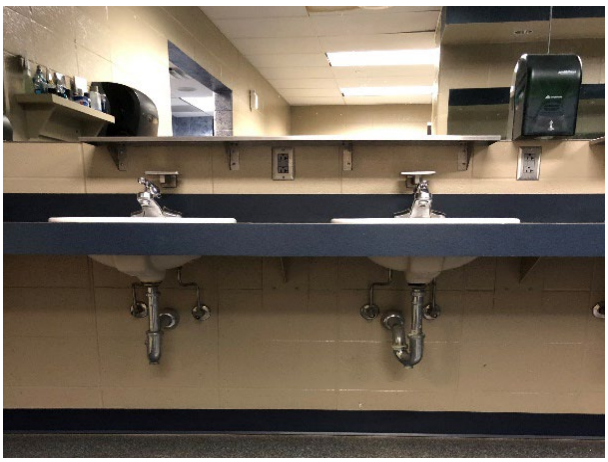


Figure M-4: Missing Insulation
Location: Clubhouse Level – 01.21.03

Figure M-5: Missing Insulation
Location: Clubhouse Level – 01.21.02

Figure M-6: Missing Insulation
Location: Clubhouse Level – 01.27.03 Visiting Lockers

On the View Level, there is exhaust discharge for the cooking areas on levels below. The fan sits on top of Satellite Retail 07.24.03 and blows up onto the bottom of the seating structure. The air that this fan discharges contains grease and dirt which is beginning to stick to the structure and create an unsightly deposit, as shown in **Figure M-7**. This should be cleaned for appearance and to prevent damage to the structure.

Figure M-7: Discharge from Kitchen Exhaust Fan
Location: View Level – 07.24.03 Satellite Retail

Last year's report from 2017 noted a leaking union and a missing belt guard in Boiler Room 02.26.03. The union has been repaired and the lime-scale discharge cleaned. The belt guard on the fan has also been replaced. The chilled water pumps in the Boiler Room were also observed and in good condition, as shown in **Figure M-8**.

Figure M-8: Chilled Water Pumps
Location: Service Level – 02.26.03 Boiler Room

Many fire protection systems were observed, and all had current inspection tags and appeared in good condition, as shown in **Figures M-9, M-10, M-11**.

Figure M-9: Halon System
Location: Press Level – 04.21.03 Corridor

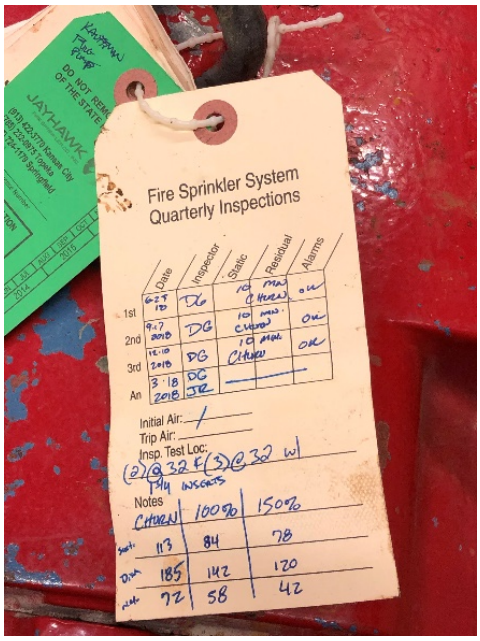


Figure M-10: Fire Pump Inspection Tag
Location: Service Level – 02.27.11 Fire Pump

Figure M-11: Fire Pump
Location: Service Level – 02.27.11 Fire Pump

Electrical

The electrical service at Kauffman stadium consists of (7) 3,000A, (2) 1600A and (2) 4000A, 480Y/277V 3 phase, 4 wire main switchgears along with transformers ranging in size from 45 KVA to 225 KVA. The switchgear is spread throughout the service and plaza levels of the stadium. Emergency power is provided to the stadium through a 1600A switchgear at 480Y/277V, 3-phase, 4-wire and is connected to a 1000KW on-site generator. Lighting and appliance panelboards are in each electrical room on every stadium level.

Telecommunications are fed from an underground vault and routed to the main telecommunications equipment room on the service level. The backbone cabling is routed via cable tray to each of the telecommunication rooms on each level.

The overall electrical system present installation was observed to be in satisfactory condition. However, the following conditions have been observed:

In the Clubhouse level shower rooms, 01.19.04 and 01.29.07, as shown in **Figures E-1 and E-2**, existing light fixture trims are rusted. These fixtures should be replaced with a fixture that is UL wet-listed.

Figure E-1: Royals Shower
Location: Clubhouse Shower Room 01.19.04

Figure E-2: Visitors Shower
Location: Clubhouse Shower Room 01.29.07

The fused switches in the distribution board in mechanical room 01.15.02 (M032), as shown in **Figure E-3**, were observed to be missing labels that indicate the equipment description.

Figure E-3: Fuse Labeling
Location: Mechanical Room 01.15.02

There are scaffoldings located in front of panel EB2L2A, sections 1 and 2, in electrical room 02.19.01, as shown in **Figure E-4**, that impede the working clearance. Branch circuit breakers in panel EB2L2 in electrical room 02.19.01, as shown in **Figure E-5**, are not numbered.

Figure E-4: Remove Scaffolding
Location: Electrical Room 02.19.01

Figure E-5: Numbered Breakers
Location: Electrical Room 02.19.01

On the service level electrical room 02.09.04 (E137), as shown in **Figure E-6**, panel schedule for panel B1C1A was observed to no have all breakers labeled, and as shown in **Figure E-7**, indicating load description and spare breakers.

Figure E-6: Panel B1C1A1
Location: Electrical Room 02.09.04

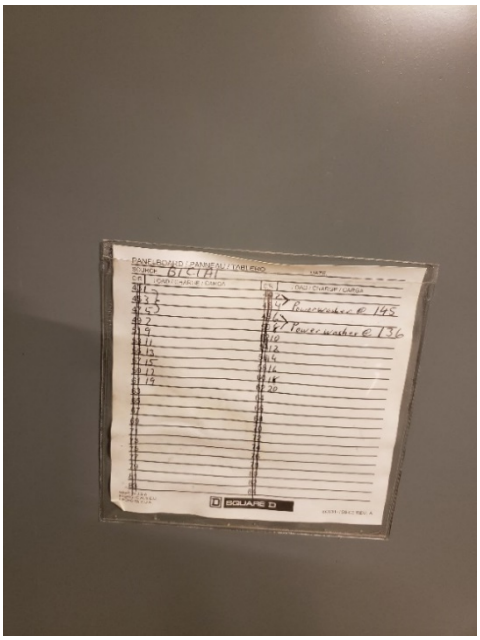


Figure E-7: Panel Schedule B1C1A1
Location: Electrical Room 02.09.04

Emergency bug eye light in boiler room 02.26.03, as shown in **Figure E-8**, is not functioning with the intended design in mind.

Figure E-8: **Egress Lighting**
Location: **Boiler Room 02.26.03**

In electrical room 02.20.05 Panel B3AH2B, as shown in **Figures E-9 and E-10**, the installation and schedule do not match. Three pole breakers are installed in locations that indicate a single pole breaker in the schedule.

Figure E-9: **B3AH2B Section 1 Panel**
Location: **Electrical Room 02.20.05**

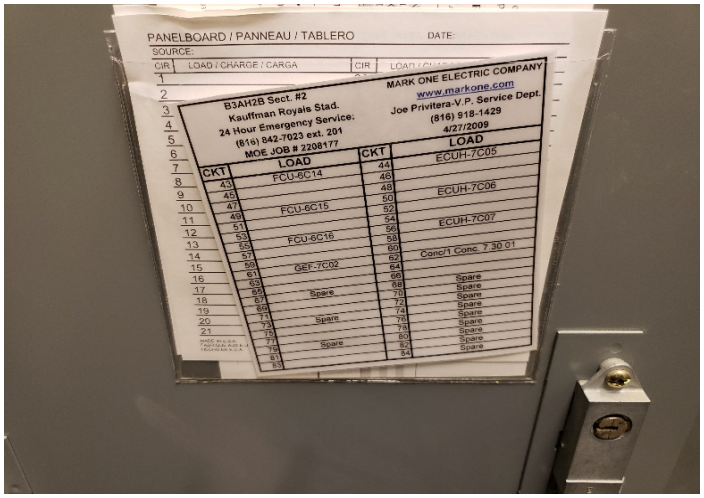


Figure E-10: **B3AH2B Section 1 Schedule**
Location: **Electrical Room 02.20.05**

In vending commissary 02.04.01, as shown in **Figure E-11**, the light lens is not clean. The panelboard B1C1A3 installation and the schedule do not match, as shown in **Figure E-12**. Branch circuits 23,25,27 are installed as a 3-pole breaker while the schedule indicates (3) single pole branch circuit breakers.

Figure E-11: Replaced Light Lens
Location: Vending Commissary 02.04.01

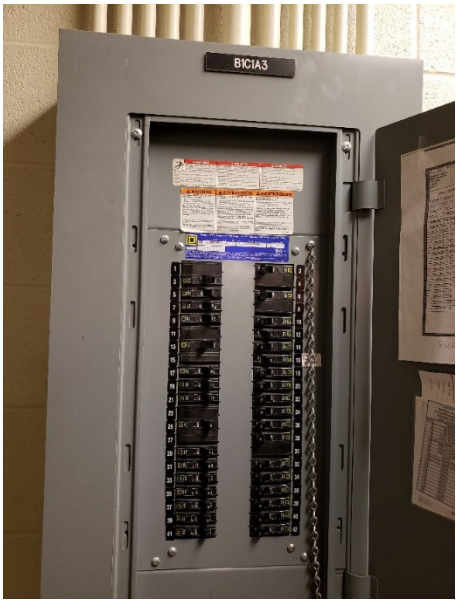


Figure E-12: Panel B1C1A3
Location: Vending Commissary 02.04.01

The receptacle at column 26 in concourse 07.25.05, as shown in **Figure E-13**, was observed to not have a while-in-use coverplate.

Figure E-13: Receptacle Cover Missing
Location: Column 26, Concourse 07.25.05

Site Flatwork

The majority of flatwork at Kauffman was observed to be in acceptable condition. Regular site maintenance to the should be continued throughout the year to sustain the quality of the concourse. Some of the following specific observations should be addressed:

- Pavement cracking throughout the stadium concourse should be monitored closely or repaired. Cracks exceeding ¼" in width should be replaced or sealed to avoid pavement damage during freeze-thaw conditions. Significant displaced of pavement can create a tripping hazard for pedestrians and are aesthetically unpleasant. Refer to Figure C-1 to see area adjacent to the Batting Cages; Refer to Figure C-2 to see area adjacent to Putting Golf Course; Refer to Figure C-3 to see stairway located northeast of East Helix Ramp; and Refer to Figure C-4 to see another area adjacent to Batting Cages.
- Joint sealant that is deteriorated or damaged will need to be repaired. Deficient joint sealant can allow water to flow into paved walkways or footings and displace the pavement during freeze-thaw conditions. Refer to Figure C-5 to see area adjacent to standing area near Section 248.
- Broken or damaged site appurtenances. Damaged site amenities adjacent to East Helix Ramp, as shown in Figure C-6, don't pose as a hazard for stadium visitors but will improve the stadium's overall aesthetic quality.
- Clear any area drains from obstructions. Any stormwater drains that are blocked or filled with debris will not function as intended. See example as shown in Figure C-7 which is at the bottom of the stairway located northeast of East Helix Ramp.

<u>The following comments pertain to elements that may pose potential safety concerns and should be addressed as soon as possible.</u>

- Any major pavement faulting (1" or greater) observed or warned of in this report will need to be addressed. Displaced pavement from freeze-thaw conditions can be a tripping hazard and is a threat to pedestrian safety.

Landscaping and Appurtenances

The landscaping and appurtenances within the stadium concourse were found to be mostly in acceptable condition. Routine maintenance should be performed to sustain the concourse landscaping, so it is to remain in acceptable condition. General landscape recommendations area as follows:

- Landscape beds with barren or unhealthy plantings should be replanted and replaced. Refurbishing these beds will improve the aesthetic quality of the concourse. Weed

control should also be provided. Refer to Figure L-1 to see example adjacent to Rivals Tables.

Structure

The majority of all substructure elements were observed to be in satisfactory condition. Continue routine maintenance as required.

The majority of all superstructure elements were observed to be in satisfactory condition.

Minor cracking and spalling was observed at various handrail locations and at the original concrete pan joist system adjacent to Signature Suite 05.17.01, as shown in Figure S-4. This has led to the exposure of reinforcement. Other areas of the stadium have similar conditions.

- Concrete cracking and spalling should be routinely monitored and patched to insure rebar corrosion does not worsen.
- Continued, routine monitoring of these areas is recommended. Concrete patchwork is recommended within the next 1 to 2 years.

Hand rail anchors were observed to be loose or missing as shown in Figure S-6 at the Hall of Fame Entrance.

- Locations where handrails anchors are loose, it is recommended to replace/tighten those anchors immediately
- Locations where handrail base plate is missing, it is recommended to add base plate and secure base of handrail immediately

Paint chipping was observed at various locations throughout the stadium exposing the bare steel. Refer to Figure S-7, adjacent to Escalator EW01.03, and Figure S-8, outside of the steel Light Towers.

- It is recommended to apply touchup paint routinely as needed to keep the bare steel from rusting

Façades

Glass storefronts, in general, appear to be in satisfactory condition. However, the entry door and wall base condition at the Plaza Level 3 Ticketing Structure 03.17.01 was observed to be damaged as shown in Figure AF-4.

- Consider repairing or replacing the damaged wall base to maintain a quality appearance at the entry to the facility.
- Consider a gasket-type application for the bottom of the door to prevent the elements from ruining further interior finishes.

The Insulated Metal Panel Systems appear to be in overall satisfactory condition. However, panels on the South-Western face of the Plaza Level 3 - Rivals Sports Bar, outside 03.78.01 show minimal amounts of rust and staining, as shown in Figure AF-6 (right).

- Consider providing a topical coating after a detailed cleaning at rust areas to prevent further corrosion, where necessary.

Roofing

Roofing membranes appear to be in satisfactory condition, however, evidence of ponding water was observed at the catwalk area between the roof and the HVAC unit at the Catwalk - Writing Press Level as shown in Figure AR-1 (right). The roof slope does not appear to be sloped to the area drain which may have been incorrectly installed at the time of construction.

- The catwalk area is not susceptible to water typically, except for times of cleaning when power washing is used. Therefore, the ponding issue does not pose an immediate threat, but this area should be closely monitored and inspected to make sure that ponding water does not find a path through the membrane.

Miscellaneous Exterior Observations

Metal railing support base plates were observed to be missing in various locations on the exterior patio outside of Plaza Level 3 - Taking the Field 03.51.01 as shown in Figure AME-2.

- Consider replacing railings that demonstrate this condition. An attachment style of repair may look unsightly to the guest in attendance.

At various locations throughout the stadium, joint sealant for ground applications were observed to be cracked or separating exposing the layers below, as shown in Figure AME-3 which is south of the West Plaza Level 3 – Concourse near 03.14.01.

- Consider pulling cracked or damaged sealant and replacing with a similar or equal application.

In the Upper-Seating Bowl near section 423 the non-slip texture on stair treads has begun to wear away, as shown in Figure AME-4. This was common in various areas around the Upper-Seating Bowl.

- Consider reapplying non-stick texture to all stairs alike to prevent potential slips and falls as the rise/tread ratio is extremely steep in these areas.

Interior Elements

Interior floor, wall, and ceiling finishes were observed to be in satisfactory condition, generally. Acoustical ceiling tiles appear to be in satisfactory condition. However, locations in the Service Level 2 - Dugout Concourse 02.11.02 were observed to have been stained, as shown in Figure AI-11.

- Consider replacing ceiling tiles and/or grid to maintain a clean appearance and prevent further deterioration which may result in pieces of material falling from the ceiling.

Interior Miscellaneous Observations

In previous year reports, various conditions with missing or damaged interior finishes were observed in Concessions areas. In the 2017 report, it was noted Plaza Level 3 - Concessions 03.14.01 fiberglass reinforced plastic at the head of an opening was missing and the construction adhesive was left exposed. This specific condition was identified and repaired, as shown in Figure AMI-1.

- Consider continuous diligence in maintaining clean and proper finishes within concessions areas. Exposure of construction adhesive materials and layers of construction beyond the finish layer in a concession environment may not comply with retail / health standards and can be unsightly to the visitor's eye.

Mechanical

Overall, the mechanical systems observed were in satisfactory condition. Continue routine maintenance as required to extend the life of equipment and components.

- Replace filters that have not been changed recently. Refer to Figure M-1 as shown in Service Level – 02.19.01 Electrical Room.
- Clean ceiling grilles and diffusers in food preparation areas. Refer to Figure M-2 as shown in Service Level – 02.04.01 Vendor Commissary.
- Repair pipe insulation in service level electrical room. Refer to Figure M-3 as shown in Service Level – 02.28.06 Electrical Room.
- Install ADA compliant trap guards on all lavatories with exposed supplies and p-traps in ADA accessible locations. Refer to Figure M-4, Clubhouse Level – 01.21.03; Refer to Figure M-5, Clubhouse Level – 01.21.02; and Refer to Figure M-6, Clubhouse Level – 01.27.03 Visiting Lockers.
- Clean dirt deposits from underside of seating at exit of kitchen exhaust fans. Refer to Figure M-7, View Level – 07.24.24.03 Satellite Retail.

Electrical

In the Clubhouse Level Shower Rooms, 01.19.04 and 01.29.07, existing light fixture trims are rusted. Refer to Figures E-1 and E-2.

- It is suggested to confirm light fixtures are UL-listed for wet location. Replace trim and ensure fixtures are fully gasketed.

The fused switches in the distribution board in Mechanical Room 01.15.02 (M032) were observed to be missing labels that indicate the equipment description. Refer to Figure E-3.

- It is recommended to indicate load descriptions for branch circuit breakers as indicated in the National Electrical Code 2017 (NEC) article 408.4.

There are scaffoldings located in front of panel EB2L2A, sections 1 and 2, in electrical room 02.19.01, impeding the working clearance. Refer to Figure E-4.

- It is recommended to remove obstruction from in front of panelboards to maintain a minimum clearance of 3'-0" as indicated in the National Electrical Code 2017 (NEC), article 110.26.

Branch circuit breakers in panel EB2L2 in Electrical Room 02.19.01 are not numbered. Refer to Figure E-5.

- It is recommended to indicate load descriptions for branch circuit breakers as indicated in the National Electrical Code 2017 (NEC) article 408.4.

On the Service Level Electrical Room 02.09.04 (E137), panel schedule for panel B1C1A was observed to no have all breakers labeled indicating load description and spare breakers. Refer to Figures E-6 and E-7.

- It is recommended to indicate load descriptions for branch circuit breakers as indicated in the National Electrical Code 2017 (NEC) article 408.4.

Emergency bug eye light in Boiler Room 02.26.03 is not functioning with the intended design in mind. Refer to Figure E-8.

- It is recommended to confirm operation of fixture and ensure fixture

In Electrical Room 02.20.05 Panel B3AH2B installation and schedule do not match. Three pole breakers are installed in locations that indicate a single pole breaker in the schedule. Refer to Figures 9 and 10.

- It is recommended to indicate load descriptions for branch circuit breakers as indicated in the National Electrical Code 2017 (NEC) article 408.4.

In Vending Commissary 02.04.01 the light lens is not clean. The panelboard B1C1A3 installation and the schedule do not match. Branch circuits 23,25,27 are installed as a 3-pole breaker while the schedule indicates (3) single pole branch circuit breakers. Refer to Figures 11 and 12.

- It is recommended to indicate load descriptions for branch circuit breakers as indicated in the National Electrical Code 2017 (NEC) article 408.4.

The receptacle at Column 26 in Concourse 07.25.05 was observed to not have a while-in-use coverplate. Refer to Figure 13.

- It is recommended to provide a while-in-use coverplate to avoid electrical device exposure to outdoor elements.

2019 KAUFFMAN STADIUM ASSESSMENT - RESPONSE PLAN

ISSUE	CATEGORY	RESPONSE PLAN	DUE DATE
Concrete/Pavers Repair	Site Flatwork	Repair specific items listed with ongoing inspections	Ongoing
Joint Sealant	Site Flatwork	Caulk various joints as needed	Ongoing
Trench Drains	Site Flatwork	Remove debris in trench drain	4/26/2019
Landscaping	Landscaping	Add mulch to Rivals bed	4/26/2019
Spalling Concrete at Section 115	Structure	Will repair/replace as needed	4/26/2019
Loose Handrails	Handrails	Tighten handrail by Crown Club kitchen	4/17/2019
Paint Chipping	Structure	Touch up paint on light towers	4/26/2019
Loose Wall Base	Facades	Repair wall base in ticket office.	4/19/2019
Missing Base Plates	Railing	Replace missing base plates	5/31/2019
Lavatory ADA Cover Insulation	Mechanical	Install insulation on exposed sink plumbing	5/31/2019
Deposits on Underside of View Seating Bowl	Miscellaneous Exterior	Remove deposits	10/31/2019
Clubhouse Shower Fixtures	Electrical	Check light fixtures and replace if necessary	4/26/2019
Label Breaker Panels	Electrical	Label breaker panels	Ongoing
Remove Obstruction	Electrical	Remove panelboard obstruction	4/26/2019
Bug Eye Light	Electrical	Check emergency light fixture	4/26/2019
Missing Cover Plate	Electrical	Replace missing cover plate	4/26/2019