DMPS FACILITY ASSESSMENT | LINCOLN HIGH SCHOOL

3.11.2024

ARCHITECTS
ENGINEERS

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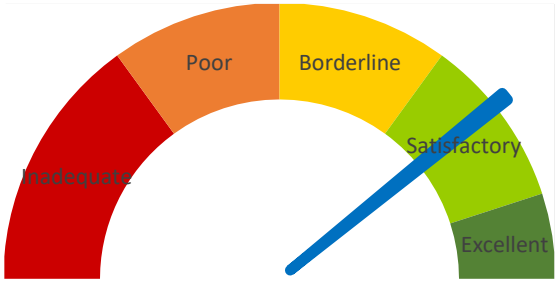


REPORT ORGANIZATION

EXECUTIVE BUILDING SUMMARY

Lincoln High School's on-site facility conditions assessment was conducted on March 11, 2024 and included visual conditions assessment from professionals covering interior architecture, exterior building envelope, the property's grounds (site), structural condition, mechanical (HVAC/Plumbing) systems, electrical systems (power, exterior lighting, interior lighting, fire alarm, and general IT), and the elevator conditions.

Many maintenance items were identified for Lincoln High School. A few of the notable short term maintenance items are: life safety corrections, interior door hardware corrections, exterior security adjustments, soil infills, exterior stair patching, water heater repairs, and MDF grounding. Additional information and maintenance items are described within the recommended potential projects section of this report. As maintenance and projects are completed keeping an updated maintenance tracking log may be helpful to stay up to date on on-going or regular maintenance items.

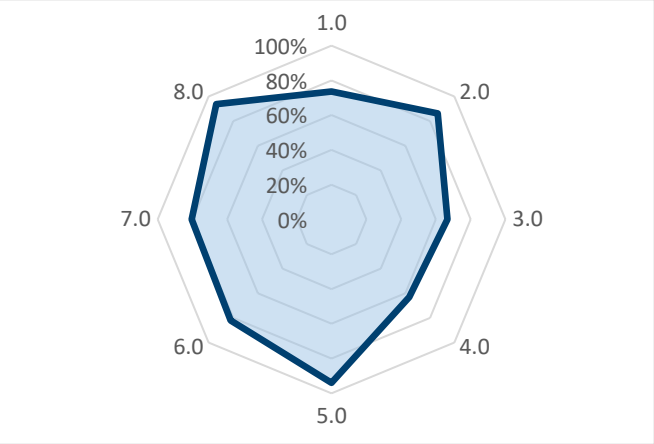
A summary of the recommended projects for Lincoln High School to be completed in the next 1-2 years are as follows:

- Interior Wall Refinish
- Interior Door Improvements
- Ceiling and Acoustic Improvements
- Exterior Door Improvements
- Exterior Building Improvements
- Lintel Refinish
- Site Repairs
- Fence Replacement
- Ramp Railing Repair
- Exterior Stair Improvements
- Loading Dock Improvements
- Hot Water Recirculation Replacement
- Fall Protection Installation
- Electrical Panel Replacement
- Exterior Lighting Improvements

More information on these projects along with all of the recommended potential projects at the 3-4 year and 5-10 year priority levels are further described within this report.

Discipline Comparison				Building Health				
Assessment Category Summary		Max Pnts	Earned Pnts	Bldg Weight Factor	Max Pnts	Earned Pnts	%	Rating
1.0	Educational Adequacy	235	173	2.00	470	346	74%	Satisfactory
2.0	Environment for Education	360	311	0.60	216	187	86%	Satisfactory
3.0	Exterior Envelope	105	70	3.00	315	210	67%	Borderline
4.0	School Site	95	60	1.50	143	90	63%	Borderline
5.0	Structural Conditions	165	155	1.30	215	202	94%	Excellent
6.0	Mechanical Systems	690	566	0.80	552	453	82%	Satisfactory
7.0	Electrical Systems	455	366	0.75	341	275	80%	Satisfactory
8.0	Elevator Conditions	65	61	1.00	65	61	94%	Satisfactory
Total					**2,251**	**1,761**	**78%**	**Satisfactory**

Lincoln High School
Discipline Comparison



Rating Table				
1-29%	30-49%	50-69%	70-89%	90-100%
Inadequate	Poor	Borderline	Satisfactory	Excellent

After totaling the scores from the various discipline assessment reports Lincoln High School scored a building health rating of 78% or "Satisfactory" per the scale described above. Per the graph shown on the cover page of this report, scores within the "green" range are considered positive scores. Lincoln High School is within this positive range. Improvements to the educational adequacy, exterior envelope, and school site as described in this report would make a largest impact in increasing the score to "Excellent".

Building Data Record

Building Name: Lincoln High

Date: 3.11.2024

Address: 2600 SW 9th St
Des Moines, IA 50315

High School Feeder System: N/A

Building SF: 312,628 SF

Site Acreage: 32.68 Acres

Date(s) of Construction: 1923

Date(s) of Roof Replacement: 2000, 2008

Current/Scheduled Projects: Flooring renovation phase 2 - 2024
Track - 2024
Locker Room Renovation - 2025

Existing Building Data:

- [x] Egress Plans
- [x] Original Docs
- [ ] Major Renovations and Additions
- [ ] Minor Projects
- [ ] Maint. Reports

Site Items:

- [ ] Student Garden
- [x] Loading Dock
- [ ] Stormwater Detention

Energy Source:

- [x] Electric
- [x] Gas
- [ ] Geothermal
- [ ] Solar

Cooling:

- [ ] DX RTU or DOAS
- [ ] Chiller
- [ ] VRF
- [x] Water Source Heat Pump
- [x] Fluid Cooler

Heating:

- [ ] Gas/Electric RTU or DOAS
- [x] Boiler
- [ ] Water-to-Water Heat Pump
- [ ] VRF
- [ ] Water Source Heat Pump

Structure Fireproofing:

- [x] No
- [ ] Yes

Construction:

- [x] Load Bearing Masonry
- [x] Steel Frame
- [x] Concrete
- [ ] Wood
- [ ] Other

Exterior Facade:

- [x] Brick
- [ ] Stucco
- [x] Metal
- [ ] Wood
- [x] Other
  Precast

Floor/Roof Structure:

- [ ] Wood Joists
- [x] Steel Joists/Beams
- [x] Slab on Grade
- [x] Struct. Slab
- [ ] Other

A | Architectural, Programming

ASSESSOR: Tim Bungert / Kaela Shoemaker

1.0 Educational Adequacy

		Weight Factor	Rating	Points	Comments
General					
1.1	**Floor materials** are appropriate for space type.	1	5	5	
Athletics					
1.2	**Gymnasium(s)** are accessible and in good condition. Space is adequate for practice and competition.	3	3	9	Only one gymnasium is provided. Other district high schools typically have two gymnasiums. This is likely a concern for in school P.E classes and when there are boys' and girls' sports practice at similar times. The current gym is in excellent condition and has a unique atmosphere and quality that makes for a nice competition facility.
1.3	Athletic department is supported with adequate **training and practice spaces.**	1	3	3	Room 2205 has been converted from locker rooms to a de-facto sports training area, but is in need of a thorough, formal renovation. As noted in the above comment there is only one gymnasium versus a practice gym and a performance gym.
1.4	Athletics are supported by adequate **locker rooms** for each sport.	2	2	4	Locker room benches were very worn. All shower areas are in need of renovation to address a number of issues. Way finding signage in corridors near locker rooms is nonexistent. There appears to be a lack of swimming locker room space for boys.
1.5	**Natatorium** is accessible and in good condition. Space is adequate for practice and competition.	2	4	8	Wayfinding signage around the natatorium was nearly nonexistent. Natatorium has significant damage to ceiling tiles throughout.
Arts					
1.6	**Vocal music room** is adequate for providing music instruction.	2	3	6	Acoustics are in need of improvements. Appears to be some cooling issues due to wall mounted fans running. These fans add additional noise to the space that also negatively impacts the acoustics.
1.7	**Band room** is adequate for providing music instruction. Practice and storage rooms are sufficient to support use and instruction.	2	5	10	
1.8	**Orchestra room** is adequate for providing music instruction. Practice and storage rooms are sufficient to support use and instruction.	2	N/A	0	No separate orchestra space provided.
1.9	**Auditorium** has sufficient arrangement, technology, and acoustics for program.	2	3	6	Auditorium is beautiful, but columns create undesirable obstructed views. Very limited access to stage from offstage areas.
1.10	**Industrial Arts** space has sufficient accommodations for program.	2	5	10	

A | Architectural, Programming

ASSESSOR: Tim Bungert / Kaela Shoemaker

		Weight Factor	Rating	Points	Comments
1.11	**Art room** has sufficient accommodations for program.	2	5	10	
1.12	**Cafeteria** has adequate space, furniture, and acoustics for efficient lunch use.	1	5	5	
1.13	**Library/Resource/Media Center** provides appropriate and attractive space.	2	0	0	Removed by previous renovation. Several classrooms appear to provide library type function but as a result have limited flexibility for student seating.
Core Classroom					
1.14	**Science** classrooms and labs have sufficient access to water, gas, and emergency safety equipment for program.	1	5	5	Biology classrooms/labs do not have student stations of water or gas. Chemistry and physics do. All meet current programming needs.
1.15	**Family Consumer Science** classrooms and labs have sufficient accommodations for program.	2	5	8	
1.16	Classroom **acoustical treatment** of ceiling, walls, and floors provide effective sound control.	3	3	9	Classrooms on L3 need acoustic treatment
1.17	**Classroom power and data receptacles** are located to support current classroom instruction.	4	3	12	24 rooms with additional power needs, especially on L3
1.18	Classroom space permits **flexibility of arrangements.**	4	3	12	Many classrooms with 30+ desks, limits flexibility.
1.19	**Furniture systems** are adequate for the intended use of the space and age of students.	1	5	5	
1.20	**Student storage** space is adequate.	2	4	8	Lack of variety in postures, styles, etc.

A | Architectural, Programming

ASSESSOR: Tim Bungert / Kaela Shoemaker

		Weight Factor	Rating	Points	Comments
1.21	**Teacher storage** space is adequate.	2	4	8	All English classrooms are overcrowded with desks and bookshelves. Math classrooms appeared to lack white-board space for small group work. Structured storage needed in science classrooms and storage areas
1.22	**Educational technology** supports instruction.	1	5	5	
Administration					
1.23	**Conference/Private meeting rooms** are adequate for large and small meetings.	2	5	10	
1.24	**Counseling suites** are provided with adequate privacy and meeting spaces.	1	5	5	
1.25	**Main office** has a check-in and waiting area.	2	4	8	Main office function is disconnected from entry, but waiting area is provided. A small bench is provided in the security check in, which is directly connected to the main entrance.
	TOTAL			171	

A | Architectural, Interior

ASSESSOR: Tim Bungert / Kaela Shoemaker

2.0 Environment for Education

Design

		Weight Factor	Rating	Points	Comments
2.1	**Traffic flow** is aided by appropriate foyers and corridors.	3	5	15	
2.2	Communication among students is enhanced by **common areas.**	3	4	12	The original building area does not include any common spaces for students to gather.
2.3	Areas for students to i**nteract are suitable to the age group.**	2	5	10	
2.4	Large group areas are designed for effective **management of students.**	2	5	10	
2.5	**Furniture Systems** are in good or like new condition.	1	5	5	
2.6	**Color schemes**, building materials, and decor are **engaging and unify** the school character.	3	3	9	Lighting in the corridors of the original building does not help create an engaging character for the building.
2.7	Windows and skylights provide access to **adequately controlled daylight** for regularly occupied spaces.	3	5	15	
2.8	Windows provide access to **quality views** (to exterior, courtyards, artwork etc.) for regularly occupied spaces.	3	5	15	
2.9	**Lighting has proper controls** to provide the required light levels for various teaching and learning needs.	2	5	10	
2.10	**Staff dedicated spaces** include conference space, work space, and dedicated restrooms.	1	5	5	

A | Architectural, Interior

ASSESSOR: Tim Bungert / Kaela Shoemaker

		Weight Factor	Rating	Points	Comments
2.11	**Main office** is visually connected to the entry as is welcoming to students, staff, and guests.	3	1	3	No visual connection to the front doors. There is a security checkpoint at the main entry.
2.12	**Break room** is adequately sized and furnished for proper use.	1	3	3	Break room appears undersized for potential use. Lacks counter space.
2.13	**Mother's room** is a separate designated space properly furnished.	1	3	3	There is a room labeled "Women's Lounge" that may be utilized as a mother's room. This space would be adequate.
Maintainability					
2.14	**Floor surfaces** throughout the learning and common areas are durable and in good condition. Spaces include classroom, offices, labs, cafeteria etc.	1	4	4	Level 3 has very squeaky floors, resulting in offices below being unable to be used during class times. Auditorium stage is showing signs of damage and wear. The orchestra pit cover is shaky and is not ideal for use as a stage extension.
2.15	**Floor surfaces** throughout the support and circulation areas are durable and in good condition.Spaces include corridors, restrooms, storage rooms etc.	1	5	5	
2.16	**Ceilings** throughout the learning and common areas are easily cleaned and resistant to stain. Spaces include classroom, offices, labs, cafeteria etc.	1	3	3	Adhered 12" x 12" tiles in auditorium, many of which are failing or have fallen down exposing adhesive pucks above. There are several areas of stained tiles throughout the classrooms. This may be related to wall moisture issues noted below.
2.17	**Ceilings** throughout the support and circulation areas are easily cleaned and resistant to stain. Spaces include corridors, restrooms, storage rooms etc.	1	4	4	Level 3 corridors have many areas of adhered 12"x12" tiles. These are starting to fail and exposing adhesive pucks above.
2.18	**Walls** throughout the learning and common areas are easily cleaned and resistant to stain. Spaces include classroom, offices, labs, cafeteria etc.	1	3	3	Moisture issues are evident on most exterior classroom's walls. Plaster and paint are bubbling and degrading in varying degrees.
2.19	**Walls** throughout the support and circulation areas are easily cleaned and resistant to stain. Spaces include corridors, restrooms, storage rooms etc.	1	5	5	
2.20	**Built-in casework** is designed and constructed for ease of maintenance.	1	5	5	Epoxy counters in room 2430

A | Architectural, Interior

ASSESSOR: Tim Bungert / Kaela Shoemaker

		Weight Factor	Rating	Points	Comments
2.21	**Doors** are either solid core wood or hollow metal with a hollow metal frame and well maintained.	3	4	12	There are several doors showing wear and damage.
2.22	**Facility doors** are keyed to standardized master keying system.	3	4	12	Medeco locks are inconsistent on exterior doors.
2.23	**Restroom partitions** are securely mounted and of durable finish.	2	5	10	
2.24	**Adequate electrical outlets** are located to permit routine cleaning in corridors and large spaces.	1	5	5	
Occupant Safety					
2.25	Classroom doors are **recessed and open outward.**	4	4	16	Doors 2007 and 2005 open into room.
2.26	Door hardware (into classrooms or any occupied rooms off of corridors) include **intruder classroom locksets.**	4	4	16	Sargent locksets, which differs from district standard Schlage hardware. Hardware in library renovation doesn't match the type and style of the rest of the building.
2.27	**Door panels** into classrooms and other occupied spaces contain **vision lite.**	4	4	16	2360 has no vision lite.
2.28	**Vision lite** in doors is clear and uncovered.	2	5	10	10 vision panels covered.
2.29	**Glass** is properly located and protected to prevent accidental injury.	2	5	10	
2.30	**Flooring** is maintained in a **non-slip** condition	2	5	10	

A | Architectural, Interior

ASSESSOR: Tim Bungert / Kaela Shoemaker

		Weight Factor	Rating	Points	Comments
2.31	**Traffic areas terminate at exit or** stairway leading to egress	5	5	25	
2.32	Multi-story buildings have at least **two stairways** from all upper levels for student egress.	5	5	25	
2.33	**Stairs (interior and exterior)** are well maintained and in good condition meeting current safety requirements.	5	3	15	Low guardrail height, grandfathered in.
2.34	At least **two independent exits** from any point in the building	5	5	25	
2.35	**Emergency lighting** is provided throughout the building.	4	5	20	
	TOTAL			371	

A | Architectural , Exterior

ASSESSOR: David Unick

3.0 Exterior Envelope

		Weight Factor	Rating	Points	Comments
Design					
3.1	Overall **design is aesthetically pleasing** and appropriate for the age of students.	2	4	8	No significant concerns.
Maintainability					
3.2	**Roofs** appear sound, have positive drainage, and are water tight.	3	4	12	Roofs are generally well-drained. Most roof areas will be nearing the end of their expected service life within 5-10 years. Roofs at Roundhouse entrance and perimeter require immediate attention.
3.3	**Roof access** is safe for all roofs.	3	3	9	Primary roof access is through door from mechanical penthouse. Roof ladders connect all primary roof areas except dome. Some upgrades necessary.
3.4	Exterior **window sealant** is fully intact without cracks or gaps.	3	2	6	Window sealant at most exterior windows is crazing or failing.
3.5	**Glazing** is low-e coated, insulated, and overall in good condition.	1	4	4	Glazing generally insulated with tinting except at original wood-framed transoms at 1921 building exit doors.
3.6	**Operable windows** are functional and safe. Operable portion of window fully seals when closed without gapping or leaking.	2	4	8	Noted one window not fully closed. Unable to confirm if functioning correctly.
3.7	**Exterior doors** are of durable material requiring minimum maintenance.	2	3	6	All exterior doors and frames are steel or fiberglass-faced. Most require painting. Two openings have significant rust damage and should be replaced. Hardware on multiple doors requires attention.
3.8	**Exterior walls** are of material and finish requiring little maintenance,	1	3	3	Primary wall materials are brick with limestone accent units. Cast concrete and metal wall panels are in place at some building additions. Repointing of stone joints will be required.
3.9	**Exterior Doors** open outward and are equipped with **panic hardware.**	1	5	5	No comments.
3.10	**Exterior Doors are monitored** or controlled by an access control system.	3	3	9	(6) Entrances have latching/operation concerns. (8) Entrances have card readers. (10) Entrances have keyed locksets. (10) Entrances have exit-only hardware. All doors (except Roundhouse Entry and two storage rooms) have exterior identification numbers.
	TOTAL			70	

C | Civil

ASSESSOR: Jack Gorman Joel Jackson

4.0 The School Site

		Weight Factor	Rating	Points	Comments
4.1	**Site topography** and grading drains water away from the building and retaining walls.	1	3	3	Water drains away from the building well. There is an eroded area to the west of the south parking lot caused from curb failure and a clogged intake, will have to repair curb and clean intake in addition to adding soil and TRM to repair issue.
4.2	**Parking areas** are in good condition.	5	2	10	The south parking lot asphalt is in poor condition, sections have been patched with PCC but the asphalt should be replaced soon. The new PCC areas are holding up well. The north parking lot asphalt is in poor condition but not as bad as the south lot.
4.3	**Drive areas** are in good condition.	3	3	9	The asphalt drive in the south parking lot needs replacement, PCC areas are in good condition. The drive to the north parking lot needs to have the cracked sections replaced as they are in poor condition. The north drive out of the north parking lot has isolated areas that need replacement
4.4	**Sufficient on-site, solid surface parking** is provided for faculty, staff, and community.	2	4	8	There is plenty of parking provided on site, many spaces were available in the north parking lot at the time of visit. Events may be challenging due to the lack of available off site parking.
4.5	**Sidewalks** around the facility are in good **condition.**	2	3	6	Sections of sidewalk across site need replacement, there are a couple of tripping hazard on the south side of the site.
4.6	**Sidewalks are located** in appropriate areas with adequate building access.	2	5	10	All building door have sidewalk access.
4.7	**Fencing** around the site is in good condition.	1	4	4	Sections of fencing north of Bell Ave need repair, fencing was in good condition otherwise
4.8	**Trash enclosure** is in good condition.	1	N/A	0	On the north side of the building is the trash collection area and the dumpsters were out in this area.
4.9	**Utilities** are in newly constructed conditions and placed in suitable locations.	1	4	4	Most of the site utilities appeared to be in good condition. One intake contributing to an erosion issue needs to be cleaned.
4.10	**Site has sufficient room** for both building and parking expansion.	1	4	4	There is a sizable plot of land to the north of the building that could be used for parking expansion. The SW side of the building could be expanded if the parking were relocated to the aforementioned area.

ASSESSOR: Jack Gorman Joel Jackson

		Weight Factor	Rating	Points	Comments
4.11	Site has **onsite bus and parent pickup** up with adequate length, good separation and general good site circulation.	1	2	2	The site circulation is a little hectic in front of the building entrance with lots of traffic between buses and students. Some congestion occurs during dismissal in both the north and south parking lots. There appeared to be conflicts between the buses and drop-off areas.
	TOTAL			60	

S | Structural

ASSESSOR: Tyler Scott

5.0 Structural Conditions

		Weight Factor	Rating	Points	Comments
Foundations					
5.1	**Foundations** appear to be in good condition with no visible cracks.	1	5	5	
5.2	There does not appear to be any **foundation settlement.**	2	5	10	
5.3	**Basement walls** do not appear to have any cracks.	1	4	4	There were no observable cracks in any of the basement walls, however, the basement wall of rooms 1080, 1100, and 1110 has observable water damage. The wall is covered by plaster, so the condition of the brick masonry could not be determined.
5.4	**Stoops** appear to be in good condition.	1	5	5	
Slab on Grade					
5.5	**Slabs on grade** do not appear to have any cracks	1	5	5	
5.6	Slabs on grade do not appear to have any **settlement.**	1	5	5	
Exterior Walls					
5.7	**Brick masonry** appears to be in good condition.	2	4	8	Weight room 2100 had observable cracks in the perimeter brick masonry walls. These walls did not have any existing control joints and the crack appear to be the result of the masonry creating relief joints. An exterior area well on the south west corner of room 2260 has two of its corners broken up and need repairs.
5.8	**Lintels** appear in good condition (no visible deflection or rust).	1	4	4	A number of steel lintels on the west elevation of the building have rusted lintels that need to be clean and refinished with rust prohibitive paint.
5.9	**CMU** is in good condition.	1	5	5	
5.10	**Precast** is in good condition.	1	5	5	

S | Structural

ASSESSOR: Tyler Scott

		Weight Factor	Rating	Points	Comments
Interior Walls					
5.11	**Interior walls** appear to be in good condition.	1	5	5	
Floor Framing (Elevated)					
5.12	**Floor framing** appears to be in good condition.	3	5	15	
5.13	Floor framing appears to meet the **code requirements.**	3	5	15	
Roof Framing					
5.14	**Roof framing** appears to be in good condition.	3	5	15	
Miscellaneous					
5.15	**Retaining walls** appear to be in good condition.	1	5	5	
5.16	**Canopies** appear to be in good condition.	1	4	4	Bottom edge of concrete stem at concrete entrance canopy to the dome has a small amount of spalled concrete. No exposed rebar.
5.17	**Loading dock concrete** appears to be in good condition.	2	4	8	The slab cap of the sidewalk accessing the loading dock is deteriorated and needs to be replaced.
5.18	**Mechanical screening** appears to be in good condition.	2	5	10	
5.19	**Stairs** appear to be in good condition.	1	4	4	Stair leading up to loading dock access sidewalk needs to be replaced. Site stair just to the north of this is in sufficient condition but the side walls are deteriorated and need to be replaced. The site stair on the south side of the dome has one tread that has spalled concrete around the base of a rail post.
5.20	**Stair railings** appear to be in good condition.	1	4	4	Stair rails leading up to the loading dock access side walk was missing and the side walk railing was lose and in need of replacement. The main west entrance ramp railings are lose and need to be anchored in new ramp pavement. The exterior site stair rails at the northeast entrance are rusted and need to be replaced

S | Structural

ASSESSOR: Tyler Scott

		Weight Factor	Rating	Points	Comments
5.21	**Pool Deck** appears in good condition without cracks.	1	4	4	Pool deck and tunnel walls were in great condition, but there was one underwater window frame in the deep end of the pool that was severely corroded.
5.22	**Balconies** appear in good, stable, condition	1	5	5	
5.23	**Tunnels** appear to be in good condition without cracks.	1	5	5	
5.24	There is a **designated hardened area** in the building.	1	0	0	All rooms had a designated plan and room to travel to for protection in the event of a tornado, but there are no designed hardened areas that would meet ICC-500 2018 code.
5.25	The hardened area appears consistent with the **ICC 2018 code.**	1	N/A	0	
	TOTAL			155	

MP | Mechanical & Plumbing

ASSESSOR: Corey Metzger

6.0 Mechanical Systems

HVAC Design

		Weight Factor	Rating	Points	Comments
6.1	**Zone Control.** Thermostats are provided in each space for individual zone control of space temperatures.	3	5	15	Appears true for most spaces
6.2	**Thermostat location.** Thermostats are properly located in the space.	3	5	15	Generally appears to be true.
6.3	Appropriate **amount of ventilation** are provided to each space.	5	5	25	Values generally appear to be acceptable (may exceed required ventilation in some areas).
6.4	**Ventilation** is provided during occupied hours.	5	5	25	Generally appears to be true.
6.5	**Outdoor air intake locations** are appropriate.	4	5	20	Generally appears to be true.
6.6	Appropriate **levels of exhaust** are provided for areas requiring this such as restrooms, janitor's closets and locker rooms.	5	5	25	Generally appears to be true.
6.7	**Building pressurization.** The design takes into account the balance between ventilation and exhaust air	2	5	10	Generally appears to be true.
6.8	**Major HVAC Equipment** appears to be within it's acceptable **service life.**	5	3	15	Much of the building equipment was installed between 2006 and 2009. Air handling units, boilers, and pumps generally appear to have remaining useful life. Heat pumps are likely nearing the end of their expected useful lives.
6.9	**Cooling loads** are within equipment operational capacity.	5	5	25	Generally appears to be true.
6.10	**Heating loads** are within equipment operations capacity.	5	5	25	Generally appears to be true.

MP | Mechanical & Plumbing

ASSESSOR: Corey Metzger

		Weight Factor	Rating	Points	Comments
6.11	**Dehumidification** is provided and addressed humidity loads in incoming outside air.	4	5	20	Generally appears to be true.
6.12	Appropriate levels of ventilation, cooling and dehumidification are being provided within **Natatorium.**	5	2	10	Ventilation and heating appear to be provided. Cooling does not appear to be provided.
Plumbing Design					
6.13	**Water Supply Pressure** is adequate to allow for operation of plumbing fixtures.	5	5	25	Generally appears to be true.
6.14	Appropriate **backflow preventer** is provided at connection to city water supply.	5	5	25	Separate backflow preventers for main building and roundhouse. Both are single RPZ type units.
6.15	**Domestic hot-water systems** are within equipment operational capacity.	5	3	15	Appears to be generally true, however one water heater appears to be leaking and there is a large "pond" around the unit. Likely needs to be serviced or replaced in near future.
6.16	Domestic **hot-water recirculating systems** allow for hot-water at fixtures within a reasonable amount of time.	3	2	6	Recirculation pump is installed at both main building and roundhouse. No hot water observed at outlets.
6.17	**Sanitary sewer systems** are sized and sloped to allow for proper drainage.	5	5	25	Generally appears to be true.
6.18	Appropriately sized **grease interceptors** are provided for facilities with food service.	3	5	15	Three (3) 3,000 gallon grease interceptors serve building.
6.19	**Roof drainage** systems are sized appropriately and overflow drainage systems are installed.	5	3	15	Most have overflow via scuppers, but a few do not. Locations where overflow does not exist are lower than adjacent roofs and should have overflow drains installed.
6.20	**Restroom fixtures** comply with DMPS preferences.	3	5	15	Automatic fixtures.

MP | Mechanical & Plumbing

ASSESSOR: Corey Metzger

		Weight Factor	Rating	Points	Comments
Maintainability					
6.21	Equipment is provided with **adequate service clearance** to allow for regular maintenance	3	5	15	Generally appears to be true.
6.22	AHUs and chiller are provided with **coil pull space.**	2	4	8	AHUs appear to be close to having adequate coil pull space. Likely depends on exact width of coils in each AHU. Pull may be achievable with slight angle to coil. Chiller likely doesn't require pull space (Brazed plate heat exchangers)
6.23	**Filter** sizes are standard and filter types are standard.	2	3	6	Many sizes and types observed due to variety of equipment. Not unreasonable for size of building.
6.24	**Equipment mounting heights** are reasonable.	3	5	15	Generally appears to be true.
6.25	**Floor surfaces** throughout the mechanical room are non-slip and are dry.	2	3	6	True for most of the mechanical room. Several wet spots exist including one large area at water heaters.
6.26	**Isolation valves** are located in the plumbing and hydronic systems to allow for isolation of only portions of the system for servicing.	2	5	10	Generally appears to be true.
6.27	Appropriate means are provided for **airflow and water balancing.**	3	5	15	Generally appears to be true.
6.28	**Hose Bibbs** located in proximity to **outdoor condensers and condensing units**. Is cottonwood an issue at this location?	2	N/A	0	N/A
6.29	**Fall protection** is provided for equipment within 15 ft of roof edge.	2	2	4	Not for many fans and parts of cooling towers
6.30	**Building devices are on DDC controls** and fully visible through Building Automation System. No pneumatic controls remain.	4	4	16	Yes - N2 vintage generally observed with some newer engines installed.

MP | Mechanical & Plumbing

ASSESSOR: Corey Metzger

Occupant Safety

		Weight Factor	Rating	Points	Comments
6.31	**Backflow prevention** is provided at all **cross-connections** to non-potable water.	5	5	25	Generally appears to be true.
6.32	Building is fully **sprinklered.**	5	5	25	True.
6.33	**Domestic hot-water temperature** at lavatories used by students or staff is provided with a thermostatic mixing valve and adjusted properly.	5	0	0	Mixing valves not observed.
6.34	**Emergency eye-washes and tempering valves** are located where required.	5	0	0	Not observed. Recommend evaluation with an occupational safety and health professional to determine necessity of eye wash(es) for facility spaces.
6.35	**Emergency boiler stop switches** are located at exits from boiler rooms.	5	5	25	Yes
6.36	**Refrigeration evacuation systems** are provided in rooms with chillers.	5	N/A	0	N/A
6.37	**Carbon Monoxide monitoring** and alarming is provided for areas with gas-fired equipment.	5	5	25	Yes
	TOTAL			566	

E | Electrical

ASSESSOR: David Carlson/Abe Contreras

7.0 Electrical Systems

Electrical Design

		Weight Factor	Rating	Points	Comments
7.1	**Transformer location** is easily accessible by utility line truck to allow for rapid transformer replacement in the event of an issue.	5	5	25	Lincoln has two service entrances; one serving the main building (2000kVA 480/277V) and another serving the Roundhouse (750kVA 208/120V).
7.2	**Transformer** has adequate clearance from non-combustible building components, paths of egress, etc. 10' clear working area in front of doors.	5	5	25	
7.3	**The MDP environment** is safe, has adequate clearances and exiting.	3	5	15	MDP is Eaton Cutler-Hammer Pow-R-Line C Switchboard rated at 4000A, 4000A main circuit breaker. MDP2 serving the Roundhouse is Eaton Cutler-Hammer Pow-R-Line C Switchboard rated at 3000A, 3000A main circuit breaker.
7.4	The **MDP** appears serviceable.	4	4	16	Both MDP and MDP2 were manufactured in 2006. (-1 point for age greater than 10 years, but less than 25)
7.5	The MDP is **maintainable.**	3	5	15	
7.6	The MDP will support **future expansion.**	4	3	12	MDP has 1 of 14 positions remaining for future expansion (2, for ~10% spare capacity) MDP2 has 3 of 12 positions remaining for future expansion (4, for 25% spare capacity)
7.7	The Distribution Panel **environment is safe**, has adequate clearances and exiting.	4	3	12	Scores are average of 6 distribution panels observed (DP, LDP, DGC, "Dist Panel", HDP, DLE). If panel is not referenced, score of 5. DP and LDP have floor cleaner/polisher parked in front of panel clear area, 2 for heavy equipment obstructing access. "Dist Panel" obstructed by folding chairs (2).
7.8	The Distribution Panel appears **serviceable.**	4	4	16	All except "Dist Panel" are Eaton Cutler-Hammer switchboard or panelboards manufactured in 2006, score of 4. "Dist Panel" is a Kinney/Westinghouse panel and is in fair condition for its age, but should be removed from service. (2)
7.9	The Distribution Panel is **maintainable.**	4	4	16	All save "Dist Panel" are scored at 5. Dist Panel is a 0 for all manufacturers being defunct.
7.10	The Distribution Panel will support **future expansion.**	4	3	12	DP: 1/15 spare, score of 2. LDP: 3/24 spare, score of 2. DGC: 3/12 spare, score of 4. "Dist Panel": 1/4, score of 4 but not recommended for use. HDP: 2/12 spare, score of 3. DLE: 1/8 spare, score of 2.

E | Electrical

ASSESSOR: David Carlson/Abe Contreras

		Weight Factor	Rating	Points	Comments
7.11	**Electrical panels and disconnect switches** observed during assessment are safe, serviceable, and maintainable.	2	4	8	Unless noted here, panels observed were Eaton make, manufactured in 2006 and are in good condition (Score 5). Panels H1 and P1C in tunnel off of Fan Room 1010 do not have appropriate clearance due to ductwork. Library and Science panels are Kinney and should be replaced.
7.12	Building has adequate and appropriately located, **safe exterior power** to allow for regular maintenance activities.	1	1	1	Two receptacles noted on exterior; one outside the auto shop, and one outside the Roundhouse. Auto shop receptacle does not have an in-use cover but is otherwise in good condition. Roundhouse receptacle cover is broken off.
7.13	Building has adequate **exterior lighting** to promote safety and security of the property.	5	4	20	Exterior lighting around building is generally good, with exceptions at the East side of the building and building insets around Roundhouse. Motion sensing lights at Dock do not allow security cameras adequate lighting when there is no motion.
Electronic System Design					
7.14	MDF is **neatly organized** and has appropriate clearances and working spaces. Cables are neatly laced or trained. Entry to the room is restricted.	4	5	20	Some materials were strewn about the space, but can be attributed to ongoing service work on FACP and fiber racks.
7.15	MDF Equipment Racks have adequate space for **future growth.**	4	3	12	8/45 rack units available for additional horizontal cabling or equipment. MDF is removed from main building so much of the building's cabling is done from IDF/FEXs.
7.16	MDF is equipped with UPS to back up main switch(es), providing **backup power** to necessary equipment in the event of a power outage.	5	5	25	Local circuits backed up by 15kVA Vertiv Liebert EXM UPS.
7.17	MDF Power is supplied by **20A circuits and receptacles.**	1	5	5	
7.18	MDF Power is supplied from a branch panel located in the room with **adequate spare circuit capacity.**	1	4	4	Panel PDG is fed by the UPS, which is backed up by a natural gas generator.
7.19	MDF employs up-to-date **network cabling.**	2	4	8	Majority of cabling present in MDF and observed IDFs is CAT5e. (-1 point for less than 6/6A)
7.20	MDF is connected to Intermediate Distribution Frame (IDF) closets with **fiber optic cabling.**	1	3	3	IDFs connected via OM3 MM cable.

E | Electrical

ASSESSOR: David Carlson/Abe Contreras

		Weight Factor	Rating	Points	Comments
7.21	MDF has adequate **grounding busbar capacity.**	2	3	6	Grounding busbar capacity in MDF and all observed IDFs was excellent, but missing connections to equipment in the room in some case. No connections to cable tray, fiber distribution equipment racks, or FO cable armored sheathing.
7.22	Building is equipped with an **addressable fire alarm system.**	5	3	15	Service work ongoing on main building FACP. Roundhouse FACP has two Trouble codes that should be investigated.
7.23	Building is equipped with an **access control system.**	5	2	10	25 entrances noted. 7 entrances have card reader access, the remainder do not. Of the remaining 18, 3 do not have exterior hardware and are not intended as entrances but still pose a risk of entry if door is propped open. (2 points for less than 50% of doors monitored/controlled)
7.24	Building is equipped with a **CCTV system.**	5	5	25	Cameras by dock and auto shop render in B&W due to lighting on motion sensors.
7.25	Building is equipped with an **intercom system.**	4	5	20	
7.26	Building is equipped with a **master clock system.**	4	5	20	DMPS standard Primex wireless system. Primex head end located in Level 3 IDF2/FEX 112, room 3180.
	TOTAL			366	

EV | Elevator

ASSESSOR: Mike Brown - ATIS

8.0 Elevator Conditions

		Weight Factor	Rating	Points	Comments
Design					
8.1	**Size** meets minimum as directed by ADA.	2	5	10	
8.2	**Control protections and signals** meet ADA standards.	2	5	10	
8.3	**Signage** meets code requirements.	1	5	5	
Operation and Safety					
8.4	Elevators have **proper level accuracy and door times.**	1	5	5	
8.5	**Safety devices** are in place and operable.	1	5	5	
Condition and Maintainability					
8.6	**Equipment is easily accessible** for periodic maintenance.	1	5	5	
8.7	**Equipment** is at an acceptable point in the life cycle, and does not contain obsolete parts.	2	5	10	
8.8	**Finishes** are adequate and maintainable.	1	5	5	
8.9	**Maintenance** is adequate.	1	4	4	Elevator 2, the call acknowledge light is missing on 2nd floor car call button.
8.10	**Testing** is up to date, and all **record and logbooks** are present and filled out.	1	2	2	Elevators 3 and 4 need testing completed to comply with code.
	TOTAL			61	

RECOMMENDED PROJECTS AND COST ESTIMATING METHODOLOGIES

One of the major impetuses for our facility condition assessment work is the need to support strategic fiscal and maintenance planning for their facilities. As such, DMPS requires that recommended projects be assigned a total project cost in order to support the strategic planning needs of the District. A total project cost is a cost that includes the estimated construction cost as well as the various other 'hard' and 'soft' costs of a construction project such as professional design fees, contractor overhead, required contingencies, inflation, direct costs (e.g. permitting costs), etc. The full list of these hard and soft costs are defined later in this section.

Project Descriptions

Every building assessment report includes a section titled Recommended Projects and Priorities. This section is divided into the following subcategories: "Short Term Maintenance", "1-2 Year Project Priorities", "3-4 Year Project Priorities", "5 - 10 Year Project Priorities", and "Projects Requiring a Study". Each of these subcategories includes a list of project recommendations. The projects listed in each subcategory are grouped by discipline and listed in the following order: interior architecture, exterior architecture, civil (site), structural, mechanical, electrical, and elevator projects. The discipline order as described mirrors the order of the discipline Scoring Reports section found earlier in the building assessment report. The projects listed within Short Term Maintenance section do not include a cost. It is assumed that DMPS will perform this work. Additionally, projects which recommend furniture repair or replacement do not include a cost since furniture systems are selected and procured via a separate process. All other projects associated with the remaining subcategories, other than "Projects Requiring a Study" are provided an estimated total project cost.

Projects Requiring a Study

The projects listed within Projects Requiring a Study are provided estimated professional design fees to produce the recommended design study. In the future, once commissioned and completed, these recommended studies will not produce a completed design. Rather, the completed study will provide recommended project descriptions and estimated total project costs similar to the projects listed in this assessment report. For studies that most likely will result in a substantial project with a substantial cost associated, an "anticipated capital investment" cost number has been provided to help assist the District's strategic planning. This anticipated capital investment cost is based on a 5-10 Year Priority completion date and very high level general 'rules of thumb' estimations since it is unknown exactly what conclusions or recommendations will be determined by the study before the study is commissioned and completed.

Cost Estimating

To achieve the total project cost reflected in this building report, the recommended projects incorporate construction costs with added percentages to account for professional design services, design phase contingency, construction contingency, general contractor overhead and profit, other direct costs incurred by the project, and year-over-year inflation dependent on how many years out the recommended project is recommended to be completed. Not included in the total project cost are costs associated with hazardous materials abatement, testing, surveys, or site exploration (geotechnical testing, etc.). Additionally, for projects that are expected to produce a minimal amount of waste that is normally acceptable to City of Des Moines collection, costs for dumpsters have been excluded. To arrive at the final estimated total project cost as described above, the following methodology was used by the assessment team for each recommended project:

Step 1: Determine estimated direct cost of construction in 2024 dollars.

The recommended projects are conceptual in nature; therefore, all cost multipliers are overall systems level and/or unit costs. (These costs are not based on itemized breakdowns.) The cost information used is based on current available information which is in 2024 dollars and is a mixture of recent bids, firm experience, manufacturer provided information, and RS Means costing data.

Step 2: For recommended projects that are smaller in scale, scope, and estimated cost, a "small project fee" additive cost is applied to the estimated direct cost of construction determined in Step 1. This additive cost works to cover outsized mobilization, staffing, and equipment costs that are incurred on a small scale project the same as for a large project with a large economy of scale. These costs are as follows:

For projects with a Step 1 cost of $4,999.99 or less, an additive cost of $5,000.00 has been added.

For projects with a Step 1 cost of $5,000.00 to $14,999.99, a graduated additive cost from $5,000.00 to $0 has been added.

For all other projects (Step 1 cost of $15,000.00 and above) this step is skipped.

Step 3: Add 10% of the estimated direct construction cost for construction contingency.

RECOMMENDED PROJECTS AND COST ESTIMATING METHODOLOGIES

Step 4: Add a percentage of estimated direct construction cost plus construction contingency for inflation.
The projects are grouped based on how many years out it is recommended that the project is started. Projects closer to 2024 are more urgent projects. As project start times move further and further away from 2024, inflation must be added to best estimate how 2024 dollars will translate into the future. 5% year-over-year inflation was chosen as a reasonable assumption for this work.

- For projects assigned the 1-2 Year Priority add 10% of the estimated construction cost.
- For projects assigned the 3-4 Year Priority add 20% of the estimated construction cost.
- For projects assigned the 5-10 Year Priority add 50% of the estimated construction cost.

Step 5: Add 5% of the estimated direct construction cost, construction contingency, plus inflation for general conditions.
This cost covers the incidental costs incurred by the contractor to perform the work that are not directly tied to the specific materials and labor; examples include mobilizing to the site and final cleaning.

Step 6: Add 10% of the estimated direct construction cost, construction contingency, inflation, plus inflation for general contractor overhead and profit; combined, this is the total construction cost.

Step 7: Add 10% of the total construction cost for professional design services.
These services include, when appropriate: architectural design and project management, civil engineering, structural engineering, mechanical engineering, and electrical engineering. These services are for conceptual design through construction phase work.

Step 8: Add 5% of the total construction cost and professional design services for other direct costs.
These costs cover various other costs directly associated with the project such as printing, equipment, required permits, etc.

At the conclusion of Step 8, the total project cost for the recommended project is finalized.

PROJECT RECOMMENDATIONS

Below are recommended maintenance, projects, and studies based on the previous assessment scoring information. Short Term Maintenance items are items requiring DMPS attention in less than a year's time and is less than $5,000. Costs for these items are not estimated. 1-2 year priority projects are projects that require attention within the next 2 years. 3-4 year priority projects are projects that require attention within the next 4 years. 5-10 year priority projects are projects that require attention within the next 10 years. Project quantities are all estimated based on observations. These are not measured or verified quantities. Project costs are listed. Project requiring Study are items where project scope is not able to be defined at this time and further investigation is required. Costs for these items are design service fees, not project costs. See the Cost Methodology description for additional information.

Short Term Maintenance

Egress Plan Update	Update egress plans to show any recent project modifications as well as lowest level of roundhouse locker rooms and pool deck.
Shade Replacements	Replace paper coverings with blinds or shades in room 2261. Replace exterior window blinds in room 2220.
Interior Window Repairs	Perlite insulation beads are falling out around window frame in room 2350. Repair portion of wall and replace sealant.
Leak Repair	Faucet is leaking in office 3131. Corrosion is evident around faucet and sink piping.
Roof Drain Cleaning	Clean roof drain in window well outside of 3190. Roof access to this area is unclear/unknown.
Life Safety Corrections	Remove ceiling hung blanket from room 3230. Blanket blocks sprinklers from properly working as designed. Determine reason for blanket being hung and correct issue to prevent future occurrences. FCS room 2170 had a fire system trouble hood error in station 2. Remove occupied office space from room 1175. This space under the stairs is too short to be a legally occupiable space.
Light Diffuser Repairs	Lighting diffusers in 4 locations are either missing or damaged. 1490, RR outside of 1280, 1400, 2260.

Interior Door Hardware Adjustments	Adjust door closer and install silencers to frames in room 3050 and 220. Adjust door hinges and latch set on door 3150 so door fully latches. Add screws to top door hinge at door 3420 so door fully latches. Adjust closer in door 3220. Replace door hardware at door 2260 to be right-side up. Replace closer covers at exterior double doors outside of the Roundhouse. Repair door coordinators to doors 1078 and 1170. Reverse the swing of classroom doors 2007 and 2005 to open out of the room.
Exterior Security Adjustments	Entrances 6, 7, and 17 do not consistently latch. Entry 15 should be adjusted to eliminate bouncing of door during closure. Entrances 11 (Roundhouse main entry), and 23 are difficult to open. They appear to be hanging up on the frame/mullion. Entry 12 has loose keyway, making it non-operational from key side. Operation of Doors 5 and 8 were not assessed at time of visit. Verify latching operation of these openings.
Close Window Unit	The western small operable unit of middle large arch-top window assembly on north wall of (Gymnasium) 2100 is partially open. Close or repair so that it does fully close.
Roof Drain Cleaning	Remove debris from roof drains and scuppers/downspouts. Multiple roof levels have vegetative debris build-up around dome strainers. This should include cleaning of roof drain in window well outside of 3190. Roof access to this area is unclear/unknown.
Window Screen Replacement	Repair/replace damaged window screens, throughout the building perimeter. Repair bent aluminum sill flashing along east wall of Auto Shop wing.
Clean Intake	Remove debris from intake to restore draining capacity. For location, refer to the civil site plan found in the appendix of this report.
Add Soil and Sod	Add soil and sod to prevent further erosion. For locations, refer to the civil site plan found in the appendix of this report.

Soil Infill	Fill hole in ground adjacent to window well at SW corner of north court. Remove tree growing in area well at SE corner of Media Center 2260 (1960 Addition).
Patch Stairs	Patch the concrete stairs to improve safety and prolong life of stair pavement. For locations, refer to the civil site plan found in the appendix of this report.
Repair Guard Rail Post Embed	Repair spalled concrete at embedment point of stair rail post embedment located at the base of the site stair at the south entrance to the dome. Cut out approximately 12"x12"x7" portion of concrete tread around post. Clean rust and paint post base with rust prohibitive paint. Patch concrete and dowel with (4) #4x1'-0" epoxy dowels drilled and epoxied into sound concrete (2 per side of tread).
Concrete Patch Repair	Repair spalled concrete on concrete stem of dome canopy. Remove lose and spalling concrete down to sound concrete. Patch with vertical concrete repair compound designed for exterior applications and follow manufactures repair procedures. Size of repair is approximately 1 cubic foot.
Service/Replace Water Heater	Service or replace existing water heater in main building (not roundhouse) that appears to be leaking and is not operational.
Exterior Receptacle Replacement	Replace broken weatherproof in-use cover on exterior receptacle at Roundhouse south entrance. Replace non in-use cover at auto shop with in-use cover.
MDF Grounding	Install #6 grounding conductors from TMGB to equipment racks housing fiber distribution equipment, to cable tray serving fiber equipment racks, and to each armored OM3 MM fiber cable at both ends of cable.
Exterior Lighting	Consider maintenance to defeat motion sensors at key locations such as dock and auto shop areas so cameras function better, even when motion sensors aren't activated.
Complete Annual Testing	Perform testing to comply with ANSI A 17.1 covered by the maintenance provider.

Elevator Repairs	Repair the 2nd floor car call acknowledge light.	

1 - 2 Year Priority

		Project Costs
Interior Wall Refinish	3,000 SF of plaster repair and wall paint at exterior classroom walls. Most of these walls have evidence of moisture damage. Approximately 35 classrooms affected.	$55,000
Interior Door Improvements	Paint and install door protection plates on both sides of several high traffic doors; at entry door 387, add 3' armor plate at both sides. (4) single doors and frames and (2) double doors and frames. Refinish door and frame and install kick plates to both sides of the door base at door 1074. (1) single door and frame. Refinish door and frame and install kick plates to both sides of the door base at door 2376. (1) single door and frame. Replace door, including all hardware, to room 3320. (1) single wood door with existing hollow metal frame. Replace door, including hardware, into room 2360 to contain vision lite. (1) single wood door with existing hollow metal frame.	$25,000
Ceiling and Acoustic Improvements	7,500 SF of acoustic ceiling panels dirty or water stained to be replaced. Existing grid may remain. This affects approximately 60 rooms throughout the building. Auditorium, 2010, 12"x12" ceiling tiles should be replaced with gypsum board and acoustic clouds or baffles. Approximately 5,500 of ceiling removal and new gypsum replacement. Approximately 2,600 SF of new acoustic material. 12x12 adhered tiles in southeast level 2 classrooms should be removed and replaced with 2'x2' acoustic ceiling tile and grid. Approximately 4,500 SF total of ceiling should be removed and replaced. New suspended acoustic ceilings should be installed in classrooms on level 2 southeast corner, 2030 - 2120. Approximately 8 classrooms for a total of 6,000 SF. New suspended acoustic ceilings should be installed in classrooms on level 3 southeast corner, 3370 - 3400. Approximately 7 classrooms for a total of 5,000 SF.	$550,000

Replace exterior doors/frames	At Entry 1 the center mullion of south door pair is not anchored at base, and door leaf is warped. Replace door pair and frame. Entry 23 (Auto Shop 230) frame is rusted and door binding on frame. Replace both. (3' x 7' door with 18" sloped transom/infill panel.) Paint doors and frames.	$30,000
Exterior Door Improvements	Remove rust as required and repaint steel doors/frames at Entries 1-3, 5-10, 12-14, 16-18, 21, and 26-27. ((6) single doors, (2) single doors with transom, (6) pair doors, (6) pair doors with transom, (1) pair doors with transom and sidelight, and (1) pair doors with sidelights.) Repair damaged finish or replace exterior pulls at Entries 3, 21, and 24 ((4) pair doors and (1) single door.) Replace rusting hinges on (1) pair doors at Roundhouse Entry (east pair.) Replace damaged weatherstripping at Entries 2, 13,15, 24, 26, 27 and Roundhouse Entry (1 single openings and 11 double openings). Repaint steel frames and metal spandrel panels at Roundhouse link and Roundhouse wall. ((2) 6'x12' frames ea. with 36 SF spandrel, (2) 12'x12' frames ea. with 36 SF spandrel, (2) 30'x15' frames ea. with 90 SF spandrel, and 3'x12' frame with 36 SF spandrel.) Repaint steel window frame at west side Auto Shop 230 (3'x9'), and adjacent garage door jambs (8"x4"x9' steel tubes.)	$95,000
Replace Roof B and Patch/Paint Concrete	Replace existing PVC membrane roof on Roof B (barrel vaulted entry to Roundhouse.) and perimeter deck of Roof A (Roundhouse perimeter) with code compliant TPO and insulation. See appendix for roof identification plan. (900 SF at entry; 3,580 SF at Roundhouse soffit). Membrane appears to be directly attached to concrete deck in both areas. Patch/repair concrete deck spalling at underside and face of deck (20 SF total at several areas). Repaint both interior and exterior soffit/fascia surfaces. (900 SF at entry, 6,700 SF at soffit)	$150,000
Reseal and Coat Stone Parapet Caps	Remove and reseals joints in stone parapet caps surrounding original building and light wells--Roofs P, Q, R, S, and T. Replace damaged cap units (8 LF at 18" wide). Apply elastomeric coating to top and rear faces of stone. (Approximately 510 sealant joints at 2' ea.; 4000 SF elastomeric coating.)	$35,000

Repoint Stone and Brick Joints	Repoint cracked/missing joints in stone sills, lintels, upper band, and water table on 1921 Building and stone joints at 1960 Addition (SW wing). (Approx. 1,200 LF.) Repoint deteriorated brick mortar joints at north and south side of Auditorium (above Roofs P and T), in north and south light courts (above Roofs Q and S), and at chimney structure. (Approx. 130 SF) Clean mildew from surface of stone projections, and coat top surface of upper stone band with elastomeric coating. (800 SF)	$30,000
Joint Sealant Replacement	Remove and replace joint sealant at perimeter of windows at all areas except those installed under 2009 West Entry Improvements. Remove and replace sealant in joints between stone and brick on 1921 building (quoins and window surrounds), and at 1960 addition (SW wing). Replace sealant in brick and in precast concrete soft joints at entire building perimeter (approx. 1,5250 LF total.)	$180,000
Lintel Refinish	Remove rust from existing lintels at 1921 Shop and Boiler Wing (west side, Rooms 100 and 110 and north side of Rooms 120 and 130.) (Approximately (26) openings at 5' plus garage door lintel at Room 140. 140 LF total.) Repaint steel jambs of large louver on south side of Room 130. (30 SF).	$8,000
Pavement Replacement	Remove and replace 92 SY of PCC and 3949 SY of asphalt. For locations, refer to the civil site plan found in the appendix of this report.	$530,000
Sidewalk Repairs	Repair damaged sidewalks across the site. Approximately 260 SY. For locations, refer to civil site plan exhibit found in the appendix of this report.	$45,000
Curb Repairs	Return damaged curbs to new condition. Approximately 52 LF of 6" curbs. For locations, refer to civil site plan exhibit found in the appendix of this report.	$8,000
Fence Replacement	Remove and replace 70 LF of 6' chain link fence. For locations, refer to civil site plan exhibit found in the appendix of this report.	$11,000

Erosion Repair	Repair the broken curb to prevent water from flowing over them, and add soil and TRM to stabilize hillside. The maintenance project to clean the intake should be coordinated to take place prior to erosion repair. For location, refer to civil site plan exhibit found in the appendix of this report.	$9,000
Ramp Railing Repair	The west main entrance ramp guard rails need to be anchored into new grout pockets. Ramp pavement is 4' wide by 36' long. 18 ramp rail posts shall be embedded into new grout filled holes. Grout holes are assumed to be 4" deep by 3"Ø.	$20,000
Site Stair Replacement (West Main Entrance)	Replace concrete site stair. Stair is approximately 10'-8" wide by 4'-0" deep with a base slab thickness of 8" deep. Provide epoxy coated #5 bars at 12" o.c. each way and (4) - #4 x 7'-0" epoxy coated nosing bars.	$9,000
Loading Dock Improvements	Replace concrete site stair and walls. Stair is approximately 5'-0" wide by 9'-0" deep with an 8" base slab thickness. Walls are 8" thick, 9'-0" long and 5' tall at the top of the stair and slope down to 1'-4" tall at the bottom. Stair Rebar: Epoxy coated #5 bars at 12" o.c. each way. (8) - #4 x 6'-0" nosing bars. Wall Rebar: Epoxy coated #5 bars at 12" o.c. each way. Replace access sidewalk cap with new 5" thick x 45'-0" long slab with #4 epoxy coated bars at 12" o.c. each way. Cut down top of supporting wall 12" to support new thickened turned down slab pour (12" thick x 8" wide x 45'-0" long). Provide epoxy coated #4 x 2'-6" bent dowels drilled and epoxied into top of wall with 6" embedment at 12" o.c. and bend into slab cap. Provide new 55' long galvanized steel guard rail.	$60,000
Replace Site Stair Guard Rails	Replace Site Stair Guard Rails at northeast entrance. Rails are approximately 7'-0 long and are on both sides of stair. Replace with new galvanized steel railings.	$7,000
Brick Repairs at Area Well	Repair damaged brick masonry at 2 outside corners of area well, outside of room 2340. Approximately 12 square feet of masonry repair.	$6,000
Concrete Crack Repairs	Concrete repairs are needed at the dome eyebrow slab. Inject and seal concrete cracks with injectable concrete crack repair epoxy (top and bottom side of slab). Estimated lineal feet of repair = 165 ft.	$11,000

Overflow Roof Drains Installation	Add overflow roof drains to approximately three roof levels that don't currently have an overflow path.	$25,000
Fall Protection Installation	Add fall protection for multiple locations at roof where equipment is near roof edge.	$30,000
Thermostatic Mixing Valves and Recirculation Pumps	Add central digital thermostatic mixing valve(s) at both the Roundhouse and the Main Building to limit domestic hot water supply temperature. Replace domestic hot-water recirculation pumps at same time.	$25,000
Electrical Panel Replacement	Replace existing Kinney panels throughout the original portion of the building. One panel ("Dist. Panel") appears to feed the existing library panels and the panels in the science wing corridor. Replace with new in same location and refeed all existing circuits.	$75,000
Exterior Lighting	Add lighting for perimeter on east side of building and at NE and SE sides of Roundhouse where it connects to the main building.	$12,000
	Total 1-2 Year Project Costs	**$2,041,000.00**

3 - 4 Year Priority

		Project Costs
Flooring Replacement	Replace VCT in classrooms with new LVT. Approximately 25,500SF. Rooms 100, 110, 2090, 3230, 3240, 3420, 3470, 3490, 3480, 3460, 3280, 3250, 3270, 2090, 1200, 1230, 1230A, 1234, 1071.	$250,000
Sub-Floor Replacement	Remove and salvage wood flooring and replace subfloor with acoustic interlayer in rooms 3010, 3390, and 3310. Replace wood floor with salvaged historic wood flooring. Approximately 2,600SF total.	$120,000
Improve Roof Access/Safety	Provide guardrails at (3) roof hatches. Modify or replace (1) ladder to include upper landing with horizontal rails (18 VLF wall side + 5 VLF parapet side for new unit.) Remove existing side-access ladder from Roof G to F at north wall. Install new ladder near south end of roof. (6 VLF)	$25,000

Exterior Painting	Repaint (8) roof ladders--(5) @ 6 VLF, (2) @ 10 VLF, and (1) @ 15 VLF. Paint three-story fire escape stair and railings at south side of 1974 Addition. (Overall dimensions 20' x 10'-6", with 27 VLF upper landing to grade. Continuous pipe guardrail at outer edge. Continuous wall-mounted pipe handrail at inner edge.)	$25,000
Repair Stucco	Repair surface cracking in stucco on west face of Mechanical Room 130. (40 LF) Repaint entire wall. (450 SF)	$8,000
Pavement Replacement	Remove and replace 85 SY of PCC and 6946 SY of asphalt. For locations, refer to the civil site plan found in the appendix of this report.	$990,000
Sidewalk Repairs	Repair damaged sidewalks across the site. Approximately 272 SY. For locations, refer to civil site plan exhibit found in the appendix of this report.	$50,000
Replace Brick Pavers	Replace 38 LF of brick pavers. For location, refer to civil site plan exhibit found in the appendix of this report.	$8,000
Stair Replacement	Remove and replace the staircase on the south side of the building. For location, refer to civil site plan exhibit found in the appendix of this report.	$40,000
Interior Brick Masonry Wall Repairs	Clean and remove loose paint from areas of efflorescence and water damage. Remove loose mortar from joints down to sound material, and tuck point. Estimated surface area = 275 SF. Fill masonry cracks with injectable repair epoxy. Estimated lineal feet of crack repair = 100 ft.	$14,000
Natatorium Conditioning Improvements	Add cooling to natatorium.	$680,000

Increased Power Access	Access to power is lacking in most all classroom spaces. 24 classrooms were noted with large power strips to provide power to the center of classrooms. Provide under carpet power systems in 8 classrooms, 3050, 3080,3200, 3220, 3270, 3490, 3460, and 2000. Provide additional power outlets on exterior wall for 15 other rooms as required. Surface mounted raceway system has been recommended based on other DMPS solutions for project scope costing. Approximately 110 LF of raceway per classroom.	$80,000
Lighting Controls, Partial	It was observed that most all counselor offices had covered or supplemental lighting such as string lights of lamps to provide more appropriate lighting levels for space use. Recommended to add dimming controls for approximately 7 offices.	$15,000
	Total 3-4 Year Project Costs:	**$2,305,000.00**

5 - 10 Year Priority

		Project Costs
Replace Roofing	Remove and replace membrane Roofs A and C through Z plus two small penthouses at Roofs P and T with code compliant insulation and TPO roofing: (149,000 SF). See study below about existing skylight openings on Roof M. Remove abandoned fan assembly on Roof N. Consider removal and infill of ventilator openings on Roofs P, R, and T (19 units at 4' x 4'.)	$4,800,000
Pavement Replacement	Remove and replace 188 SY of PCC and 2495 SY of asphalt. For locations, refer to the civil site plan found in the appendix of this report.	$480,000
Sidewalk Repairs	Repair damaged sidewalks across the site. Approximately 415 SY. For locations, refer to civil site plan exhibit found in the appendix of this report.	$95,000
Stair Replacement	Remove and replace the staircase on the north side of the building. For location, refer to civil site plan exhibit found in the appendix of this report.	$35,000
Replace Water Source Heat Pumps	Heat pumps were installed in 2006-2009 and will likely be nearing their end of useful life in this time interval. Replace with 2-speed units to meet partial loads and provide better dehumidification.	$5,200,000
	Total 5-10 Year Project Costs:	**$10,610,000.00**

Projects Requiring Study

		Design Services Fee
Skylight Study	Study to determine if it is possible to reopen and use existing skylight locations at roof M.	$5,000
Athletic Support Addition	A spatial and site study should be conducted to add an addition to house additional athletic practice space. A 2nd practice gym was not present, wrestling room was noted as located in Kurtz versus on-site. Locker room spaces appeared to be missing for boys swimming and girl's sports. Addition size estimated at 8,500 SF. Anticipated Capital Investment: $3,800,000	$5,000
North and South Light Courts Infill	The two-story light courts on north and south sides of Auditorium have been partially infilled with one-story spaces, leaving inaccessible courtyard with both concrete paving/area drains two-stories below roof level and roofing one story below adjacent roofs. Most windows overlooking these light courts have been infilled. Brick walls require repair/repointing. Recommend study to enclose these areas at Level 3 roof line, with potential floor infill and/or installation of skylight shaft serving the current Level 2 and 3 classrooms.	$15,000
Courtyard 1587 Infill	The light court labeled 1587 (South of 1170) is approximately 18' x 12' with concrete slab and a single area drain. It is a resultant space created during building expansion which is too small to utilize as an exterior programmed space and is full of leaves/debris. While the space provides daylight into adjacent Rooms 1290 and 1171, it also creates risk of flooding into the adjacent classrooms/corridor in the event of a drain blockage. Recommend study to enclose this space to create an alcove at the corridor. An overhead skylight may be used to maintain daylighting for the classrooms.	$15,000
Designated Hardened Area	No designated hardened area was observed. Study to determine the feasibility of adding a designated hardened area to the building including location within the existing building, schematic design concept if deemed feasible, and preliminary project costs.	$2,500
Stair and Pavement Study	The staircase and pavement adjacent to the building in the trash collection is failing. A study is needed to determine how best to repair the area.	$2,000

HVAC Retrofit/Replacement Study	The existing HVAC system at Lincoln utilizes various system types but is predominantly a water-source heat pump system with boiler/tower. Though ok for an elementary or medium sized middle school, this type of system may be less practical for a high school as the quantity of water source heat pumps is significant. This leads to more maintenance and more frequent replacement projects at the zone level as heat pump life span is typically 20 yrs. Lincoln also utilizes a number of water-to-glycol heat-exchangers and pumps to separate the water source system from other systems, which adds complexity. Study options for moving towards a more centralized system with heating water and chilled water with fan coils in the spaces. Evaluate whether geothermal is an option for the centralized system.	$50,000

Anticipated Capital Investment Costs:	**$3,800,000**
Total Study Design Service Fees:	**$94,500**

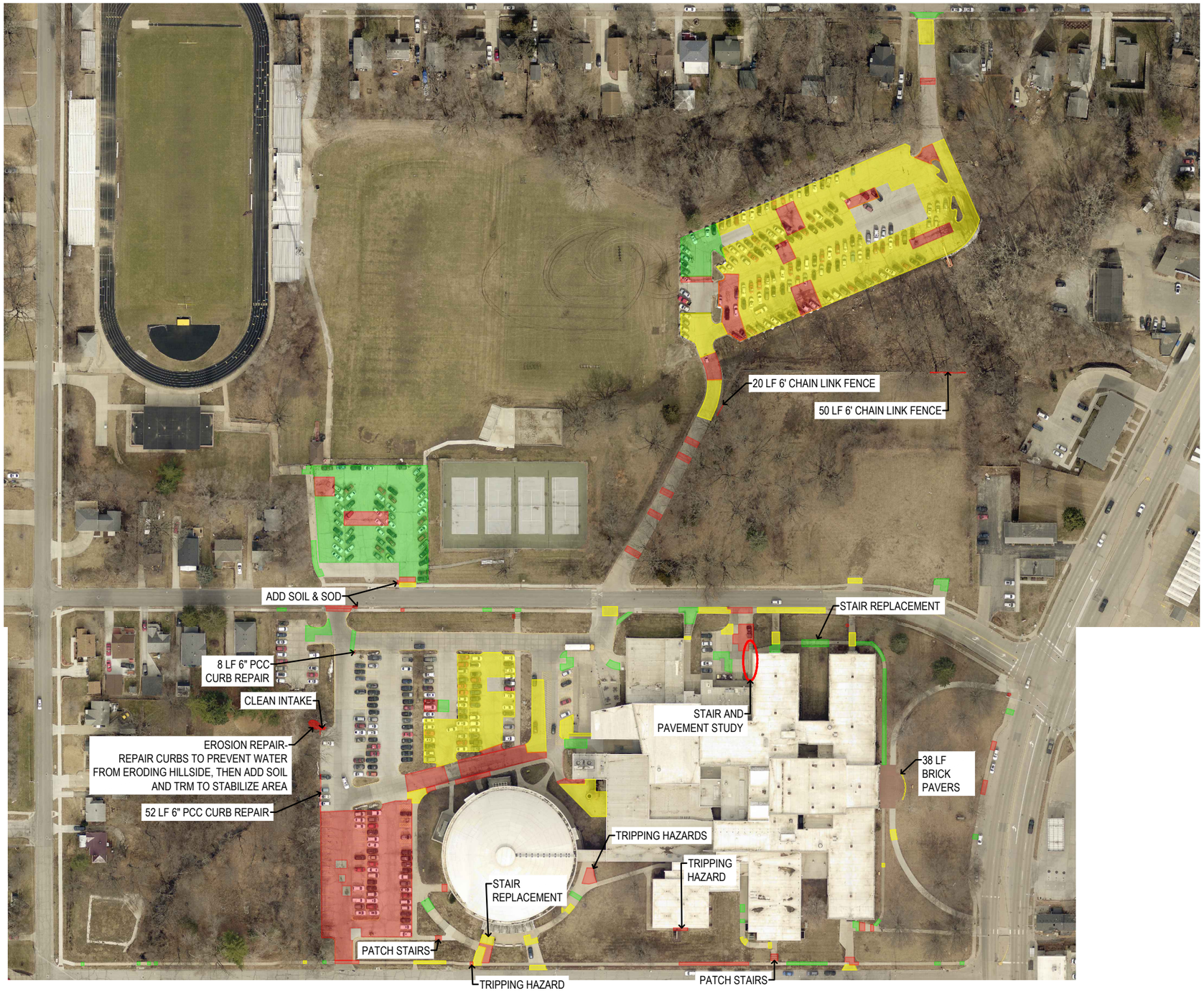
APPENDIX

PAVEMENT QUANTITIES (SY)			
	SIDEWALK	PCC	ASPHALT
	415	188	2495
	272	85	6946
	260	92	3949

5+ YEAR REPLACEMENT

3-4 YEAR REPLACEMENT

1-2 YEAR REPLACEMENT



NORTH

GRAPHIC SCALE

150 0 60 150 300

bbs ARCHITECTS ENGINEERS

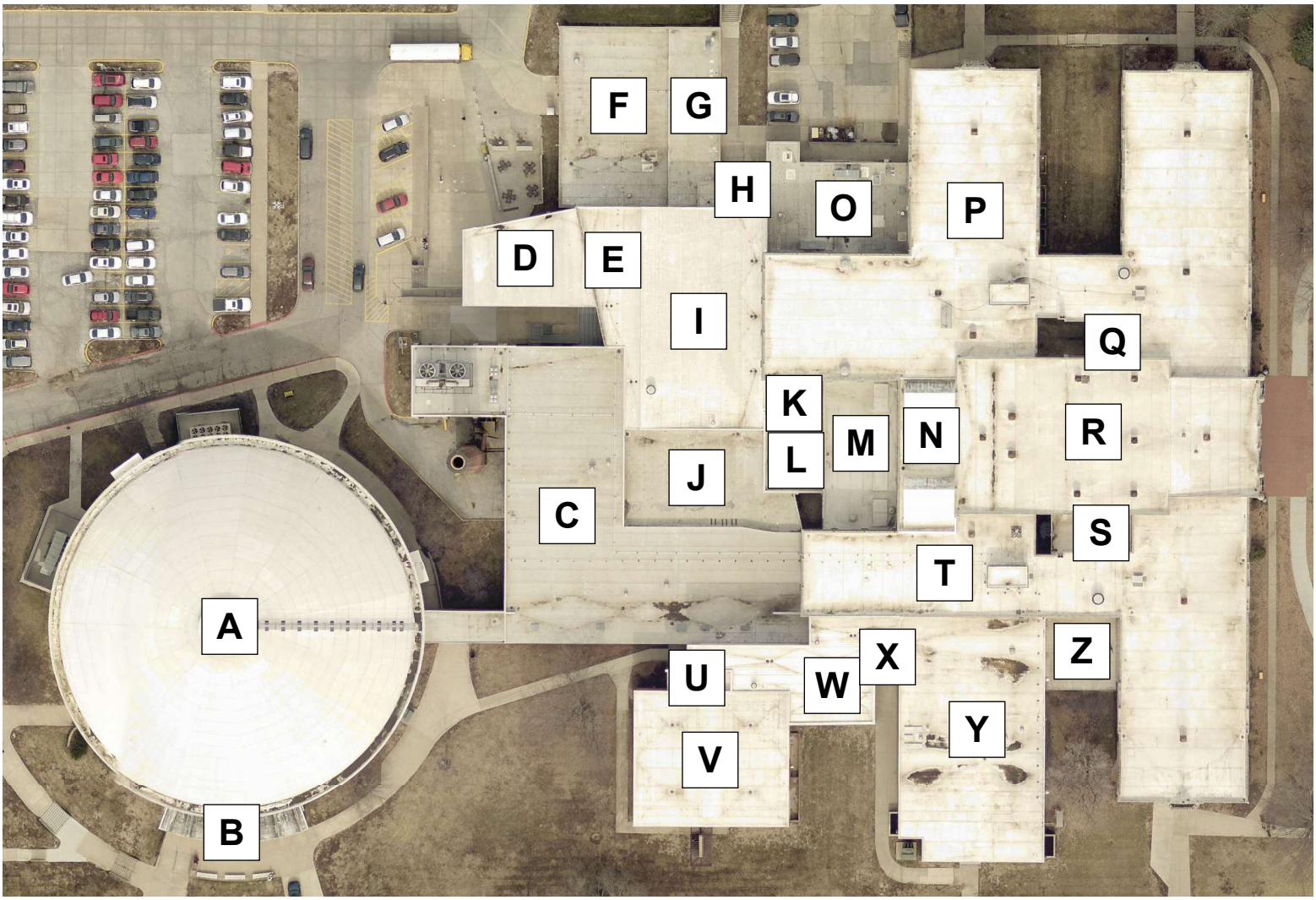
BISHOP ENGINEERING +

LINCOLN HIGH SCHOOL

EXHIBIT

PROJECT # 230286-51

DATE 3/8/2024



N

bbs ARCHITECTS ENGINEERS

23055 - DMPS Facility Conditions Assessment
Roof Identification Image
Lincoln High School
3.11.2024

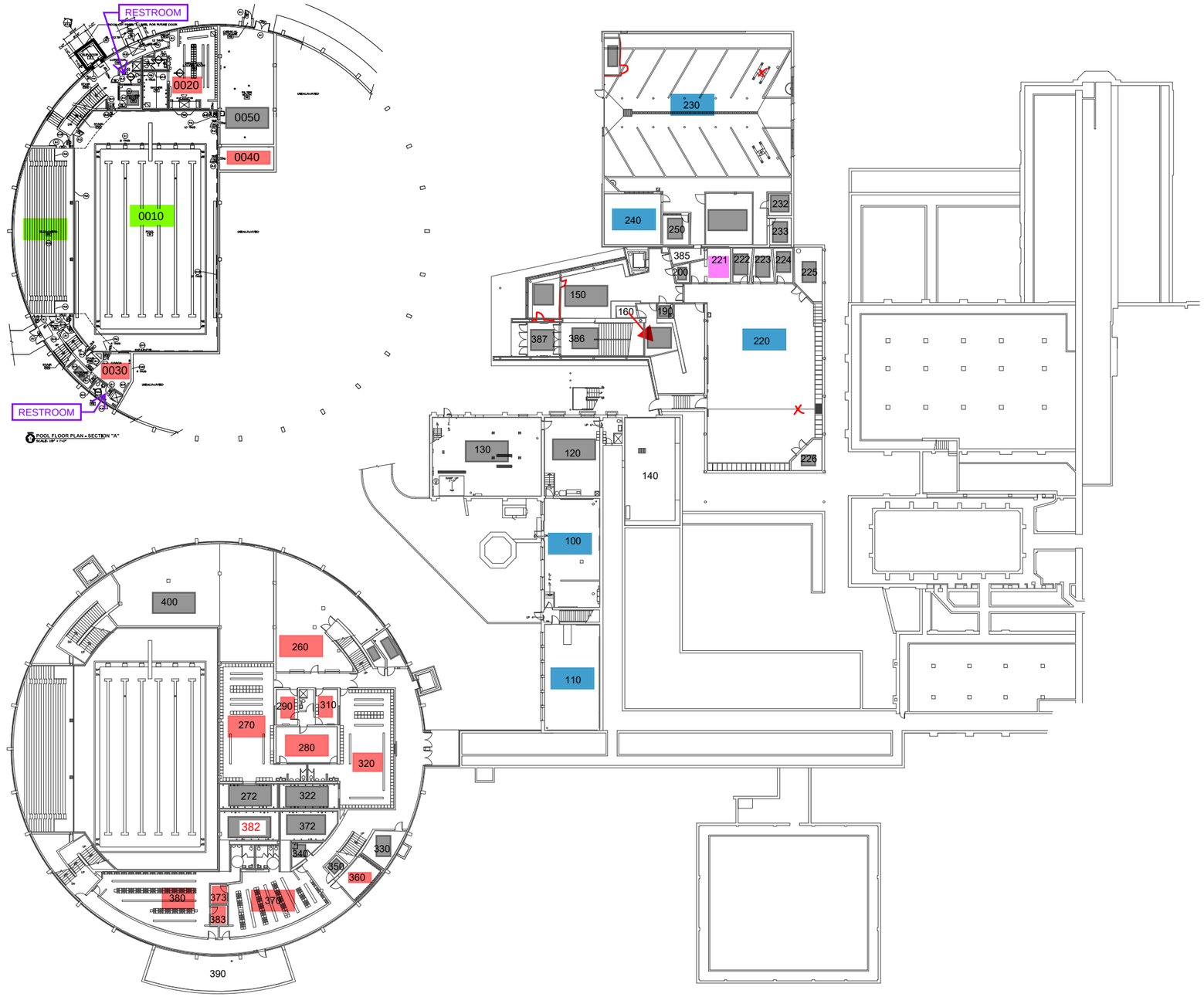
LINCOLN HIGH SCHOOL

2600 SW 9TH STREET
DES MOINES, IOWA 50315

LOWER LEVEL

NORTH

*Room numbers on this floor plan are not guaranteed to match current conditions as the plan was not part of the original egress set.



- Core Classroom
- Student Support
- Administration
- Large Shared Space
- Other

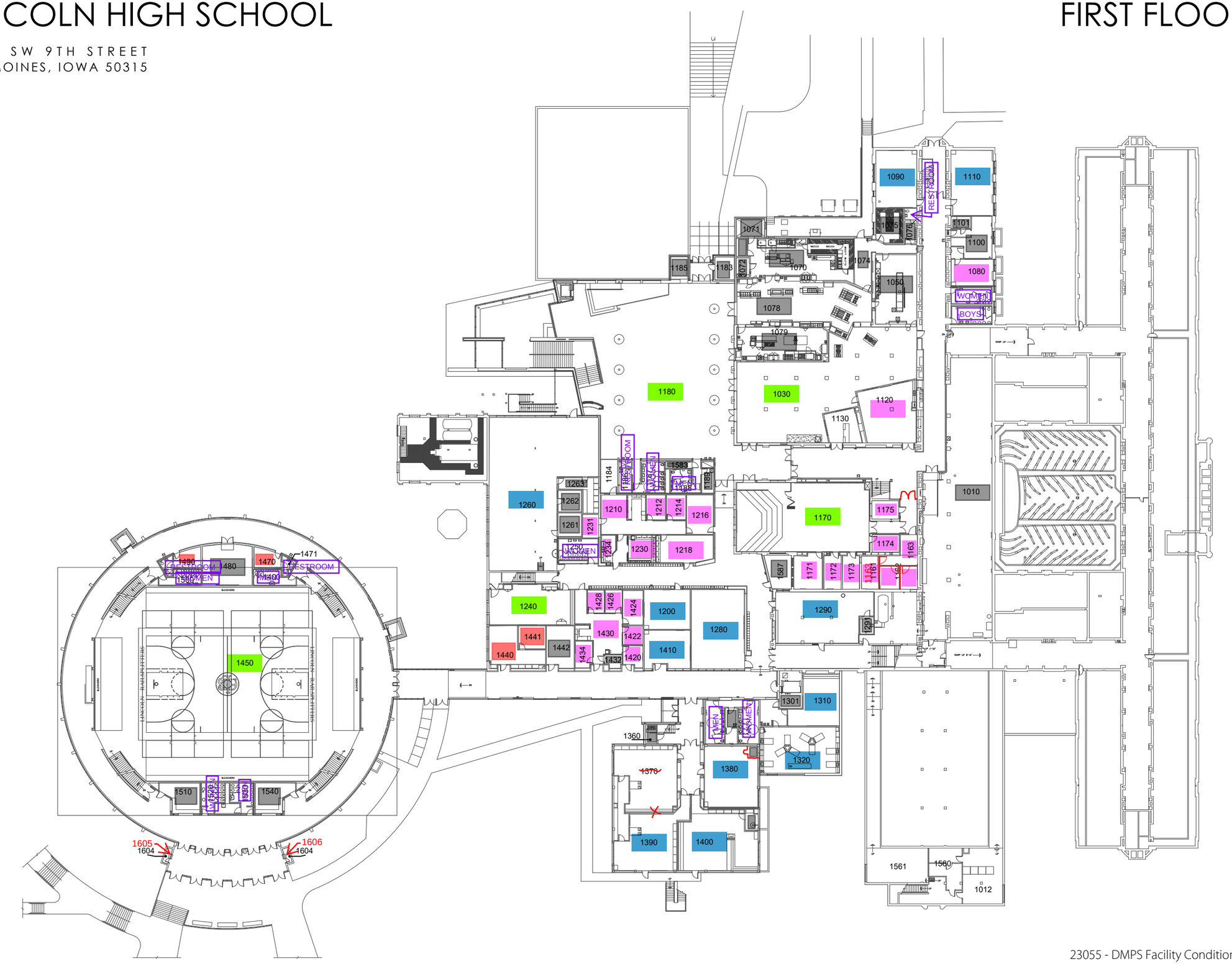
bbs ARCHITECTS ENGINEERS

LINCOLN HIGH SCHOOL

2600 SW 9TH STREET
DES MOINES, IOWA 50315

FIRST FLOOR

NORTH



- Core Classroom
- Student Support
- Administration
- Large Shared Space
- Other

bbs ARCHITECTS ENGINEERS

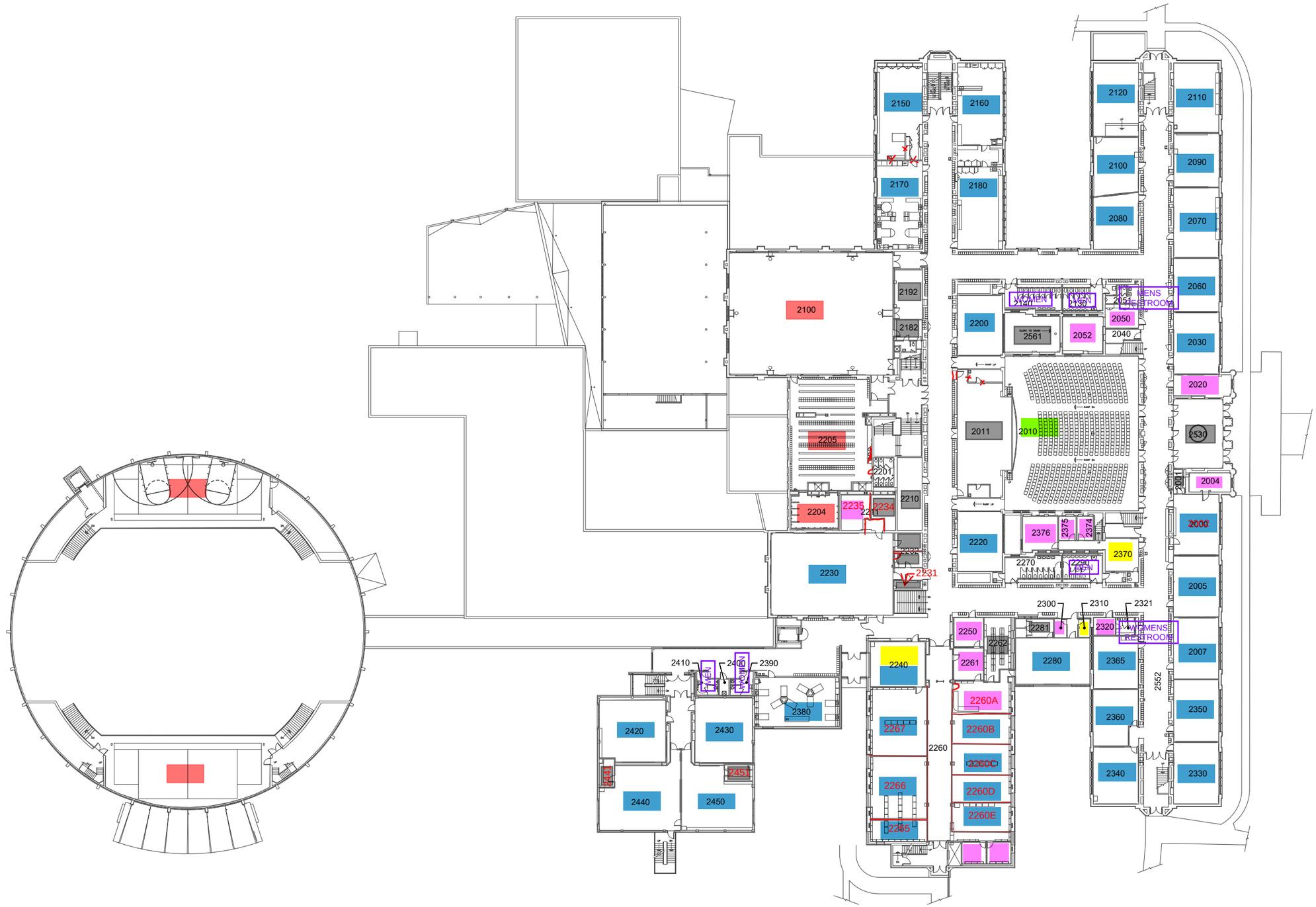
DesMoines PUBLIC SCHOOLS

LINCOLN HIGH SCHOOL

2600 SW 9TH STREET
DES MOINES, IOWA 50315

SECOND FLOOR

NORTH



bbs ARCHITECTS ENGINEERS

23055 - DMPS Facility Conditions Assessment

3.13.2024

LINCOLN HIGH SCHOOL

2600 SW 9TH STREET
DES MOINES, IOWA 50315

THIRD FLOOR

NORTH

- Core Classroom
- Student Support
- Administration
- Large Shared Space
- Other

bbs ARCHITECTS ENGINEERS

23055 - DMPS Facility Conditions Assessment

3.13.2024