Crow-Applegate-Lorane School District No. 66

Educational Facility Master Plan & Facility Assessment

June, 2016

gLAs Architects, LLC

Contents:

PLANNING FOR THE FUTURE

SETTING PRIORITIES

PRIORITY 1

1. SAFETY AND SECURITY UPGRADES, INCLUDING:

- RELOCATE SCHOOL OFFICE TO PROVIDE A DIRECT VISUAL CONNECTION TO EVERYONE ENTERING THE FACILITY
- CENTRALIZED MAGNETIC DOOR CONTROLS AND NEW EXTERIOR DOORS FOR LOCKDOWNS
- ATTRACTIVE BUT SECURE FENCING TO IMPROVE PERIMETER SECURITY
- UPDATED FIRE ALARM SYSTEM
- NEW, MORE SECURE AND ADA COMPLIANT CLASSROOM DOOR HARDWARE
- ADA IMPROVEMENTS FOR SAFE ACCESS FOR ALL STUDENTS

2. IMPROVEMENTS FOR ADEQUATE LEARNING SPACES INCLUDE:

- CEILING MOUNTED INTEGRATED AV SYSTEMS TO FREE UP CLASSROOM SPACE
- ADD DATA OUTLETS FOR BETTER COMPUTER ACCESS AT EACH CLASSROOM

3. RENEWAL AND REPLACEMENT OF VITAL BUILDING SYSTEMS, INCLUDING:

- REMODEL STAFF AND STUDENT TOILET ROOMS
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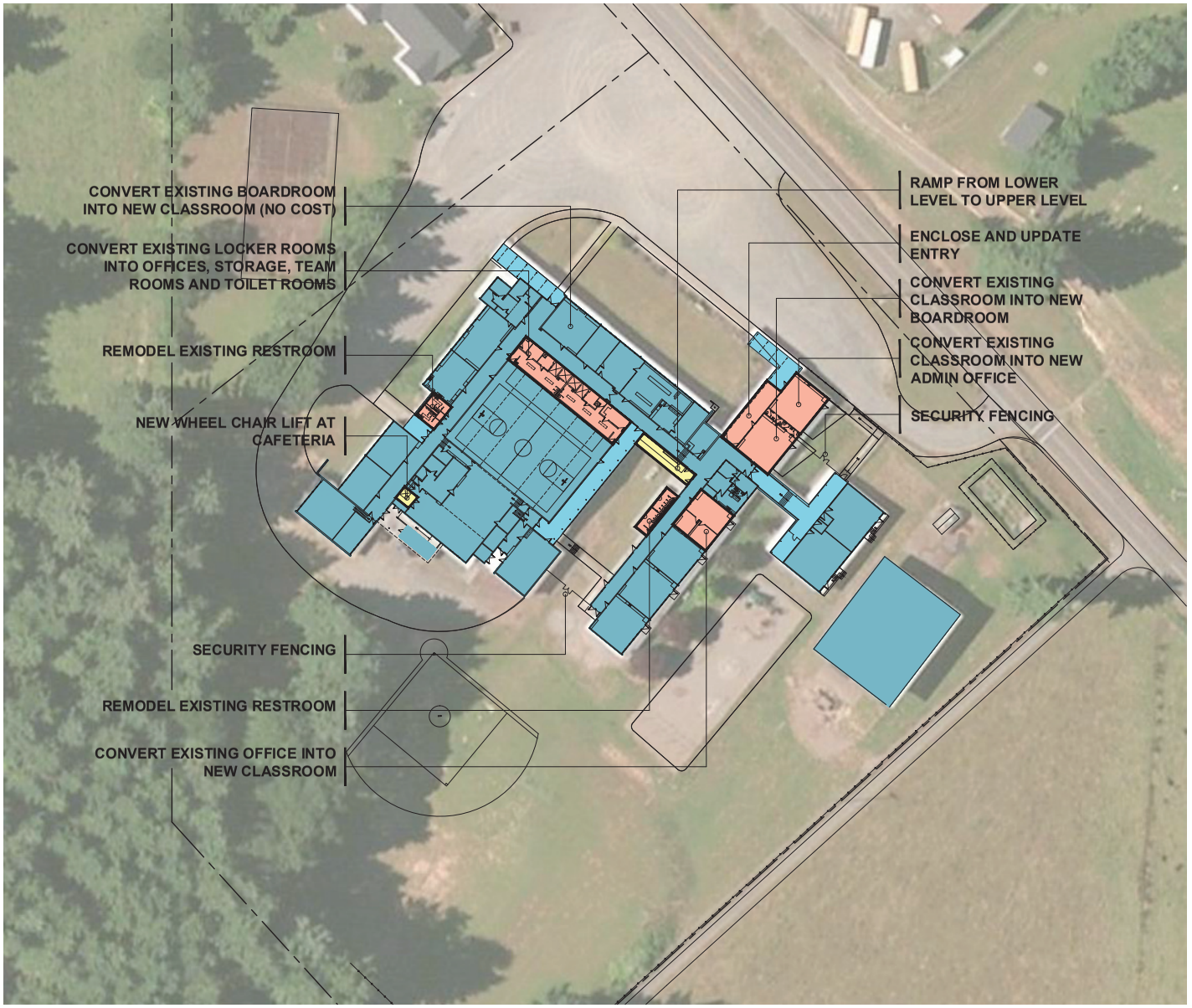
- NEW HIGH EFFICIENCY HEATING AND VENTILATION EQUIPMENT IN CLASSROOMS AT AT THE GYMNASIUM
- IMPROVED DRAINAGE AT BUS LOOP EXIT
- RETROFIT EXISTING LIGHTING FOR IMPROVED ENERGY EFFICIENCY

PRIORITY 2

1. PROVIDE WHEELCHAIR ACCESS FROM THE LOWER LEVEL TO THE UPPER LEVEL.

2. PROVIDE WHEEL CHAIR ACCESS TO THE CAFETERIA



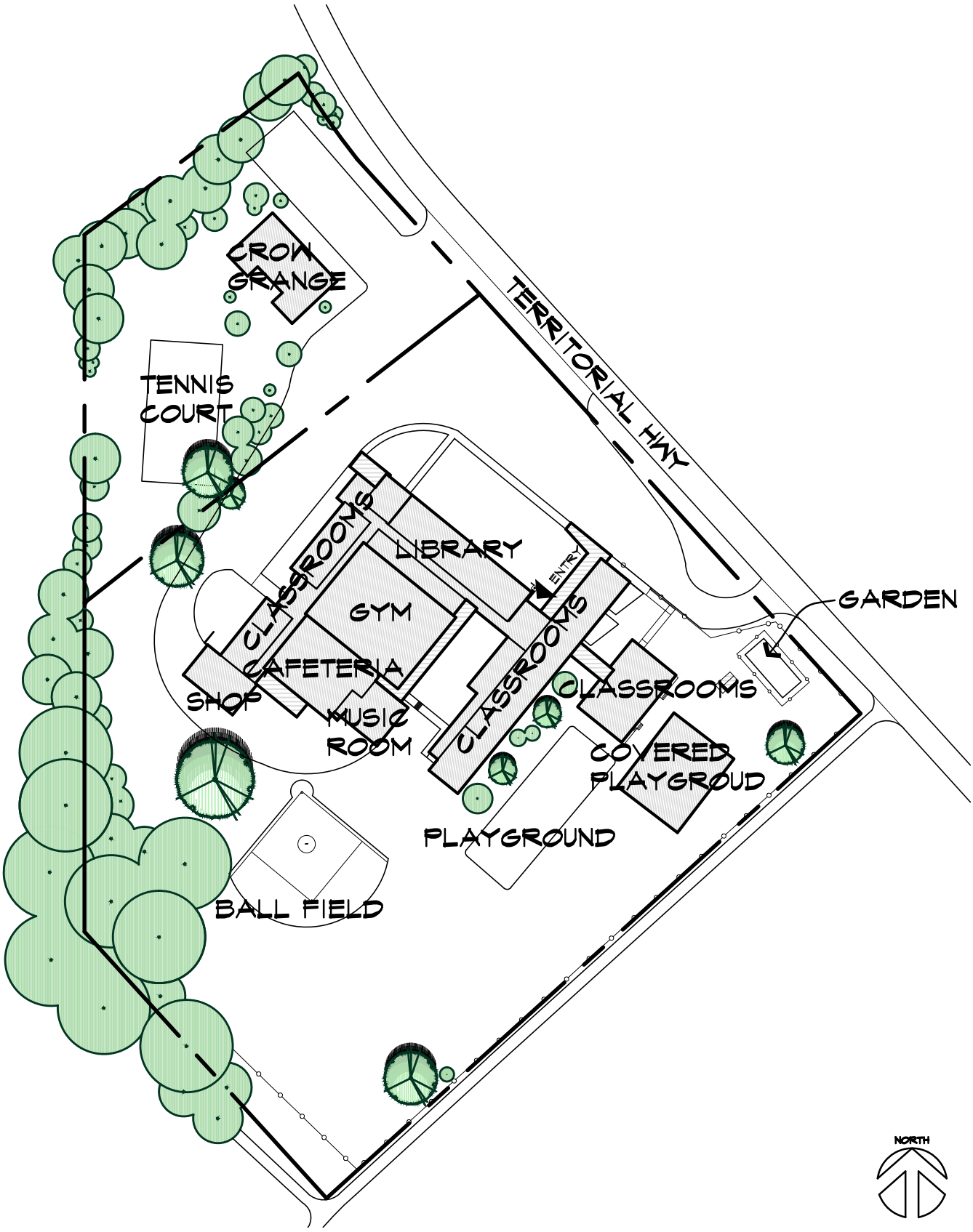
0 7.5' 30' 60' 120'

APPLEGATE ELEMENTARY SCHOOL MASTER SITE PLAN

CROW APPLEGATE LORANE SCHOOL DISTRICT

MAY 26, 2016

gLAs Architects, LLC



APPLEGATE ELEMENTARY SCHOOL

EXISTING SITE PLAN

1 / A1

SCALE: 1" = 120'-0"

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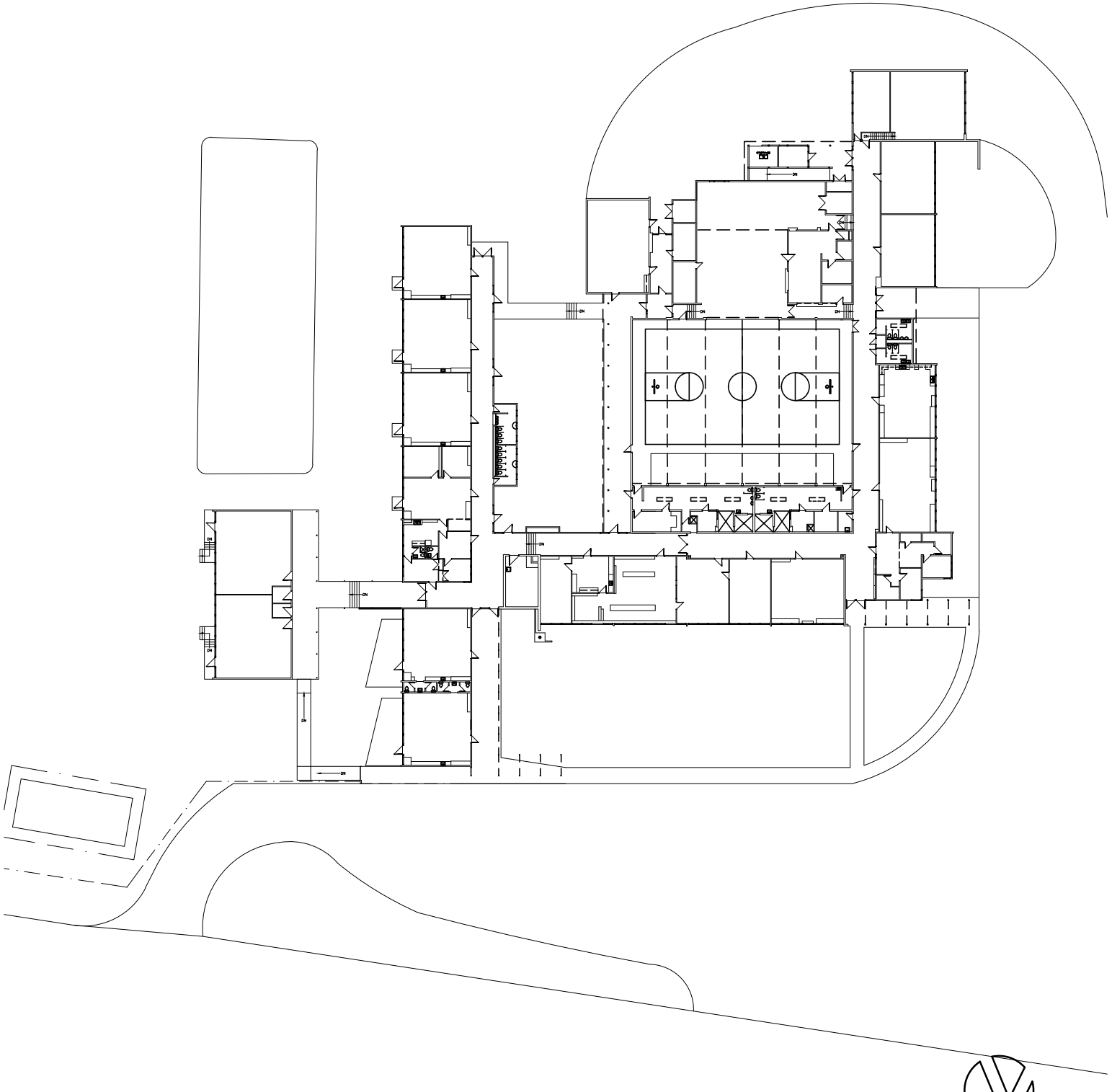

NORTH

APPLEGATE ELEMENTARY SCHOOL

EXISTING FLOOR PLAN

1
A2

SCALE: 1" = 60'-0"

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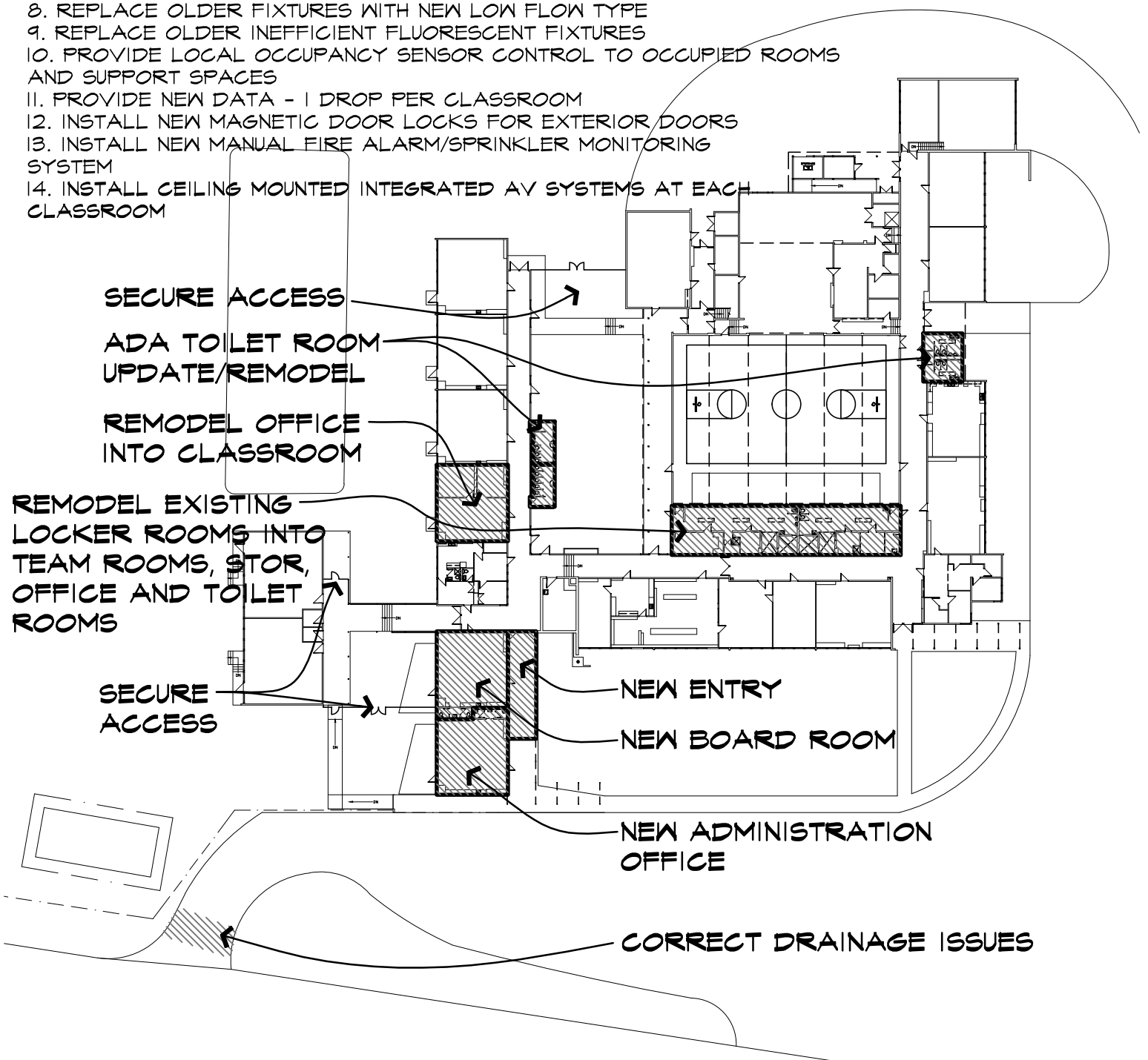
PRIORITY 1 - ADDITIONAL IMPROVEMENTS

1. PROVIDE LEVER HARDWARE
2. REROUTE DRAINAGE AT EAST DRIVE END
3. REPLACE CLASSROOM HVAC UNITS
4. INSTALL NEW TOILET ROOM EXHAUST FANS
5. INSTALL VENTILATION UNIT FOR GYM WITH HEAT RECOVERY
6. INSTALL AN ELECTRONIC HVAC CONTROL SYSTEM
7. SEISMICALLY BRACE BASEMENT WATER HEATER
8. REPLACE OLDER FIXTURES WITH NEW LOW FLOW TYPE
9. REPLACE OLDER INEFFICIENT FLUORESCENT FIXTURES
10. PROVIDE LOCAL OCCUPANCY SENSOR CONTROL TO OCCUPIED ROOMS AND SUPPORT SPACES
11. PROVIDE NEW DATA - 1 DROP PER CLASSROOM
12. INSTALL NEW MAGNETIC DOOR LOCKS FOR EXTERIOR DOORS
13. INSTALL NEW MANUAL FIRE ALARM/SPRINKLER MONITORING SYSTEM
14. INSTALL CEILING MOUNTED INTEGRATED AV SYSTEMS AT EACH CLASSROOM



APPLEGATE ELEMENTARY SCHOOL

FLOOR PLAN - PRIORITY 1

1 / A3

SCALE: 1" = 60'-0"

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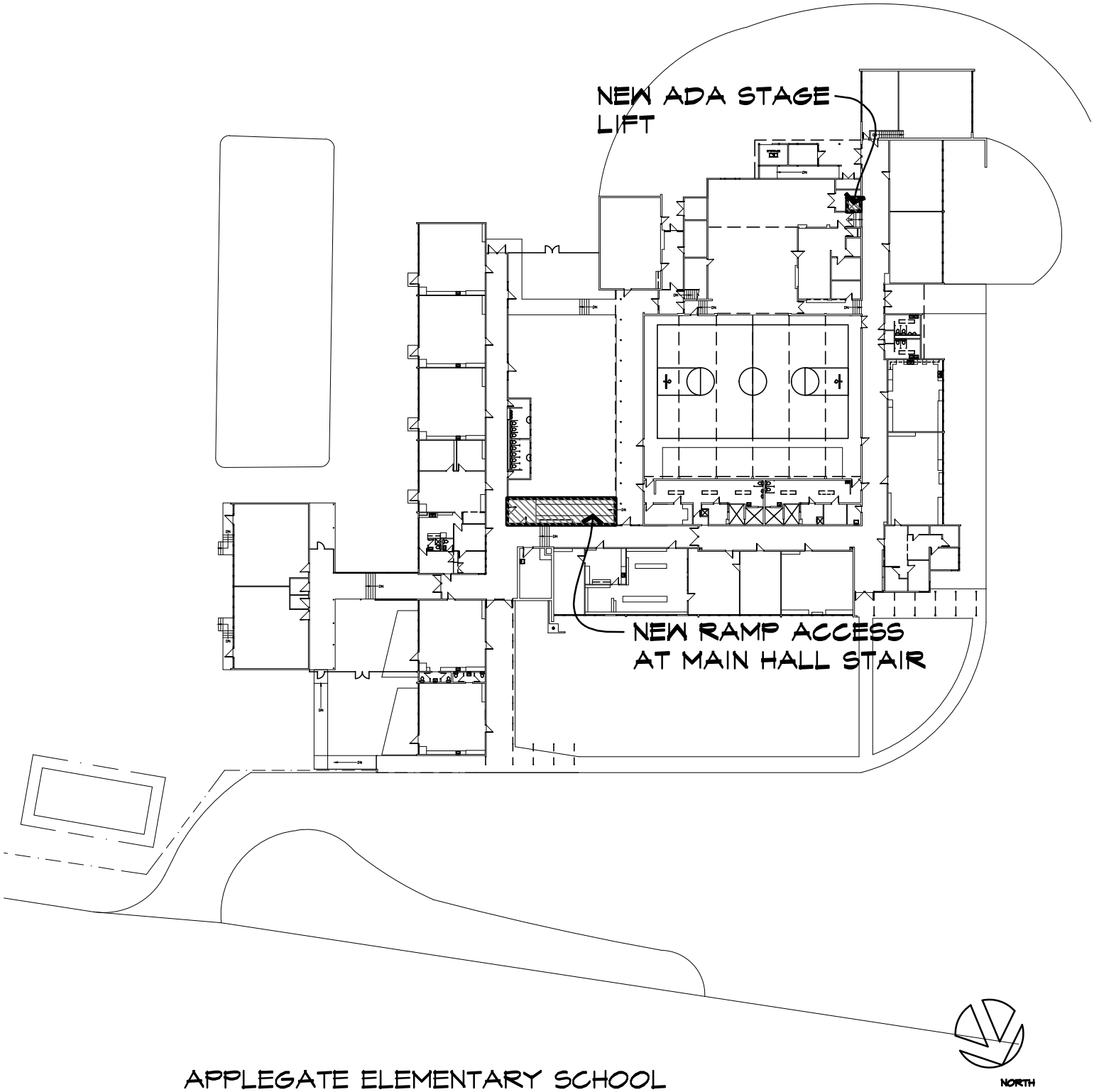

APPLEGATE ELEMENTARY SCHOOL

FLOOR PLAN - PRIORITY 2

1
A4

SCALE: 1" = 60'-0"

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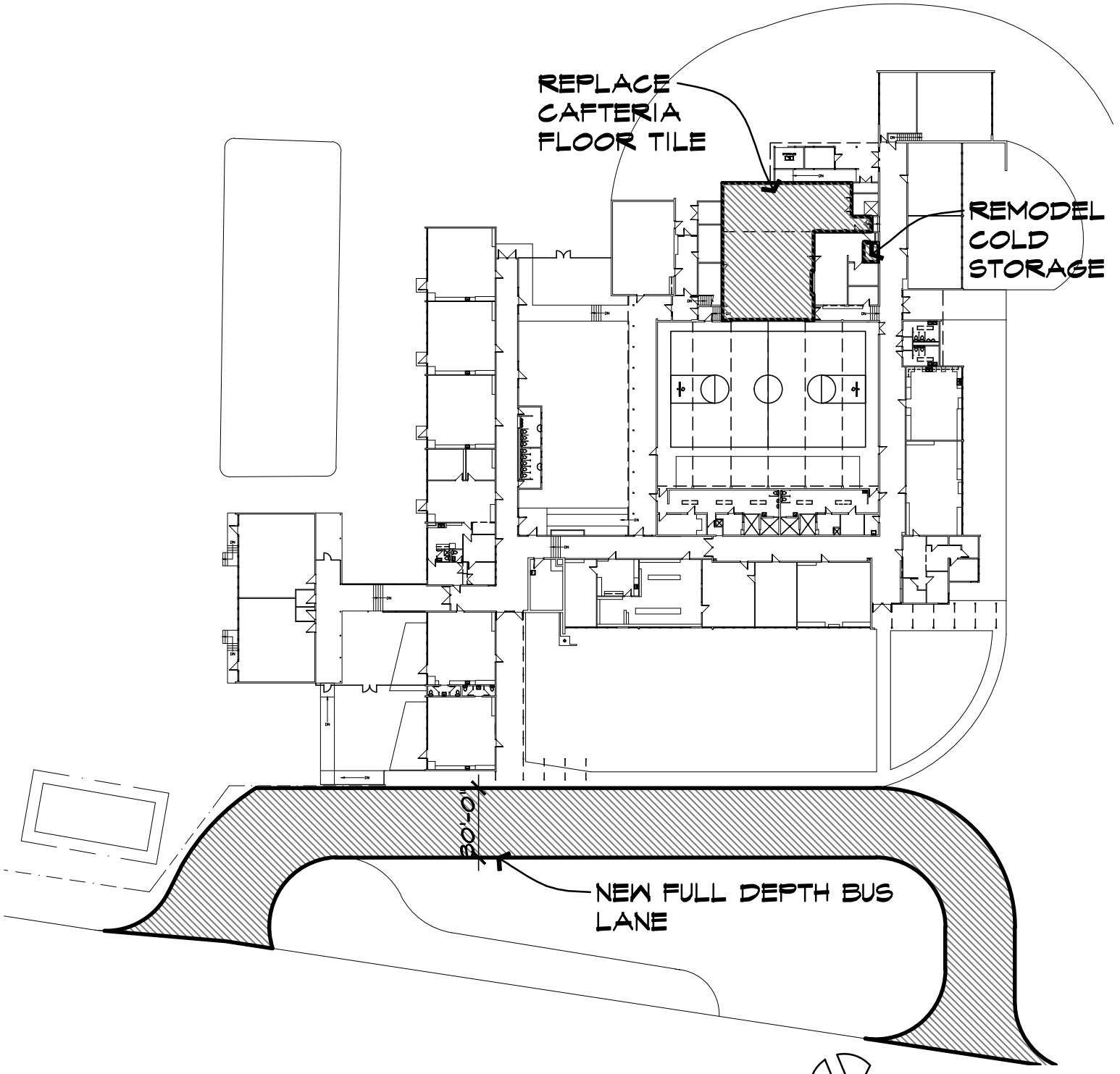
PRIORITY 3 - ADDITIONAL IMPROVEMENTS

1. REPLACE DRINKING FOUNTAINS
2. MODIFY CLASSROOM SINK FAUCETS FOR ADA
3. SEISMIC RETROFIT (SCOPE TBD)



APPLEGATE ELEMENTARY SCHOOL

FLOOR PLAN - PRIORITY 3

1 / A5

SCALE: 1" = 60'-0"

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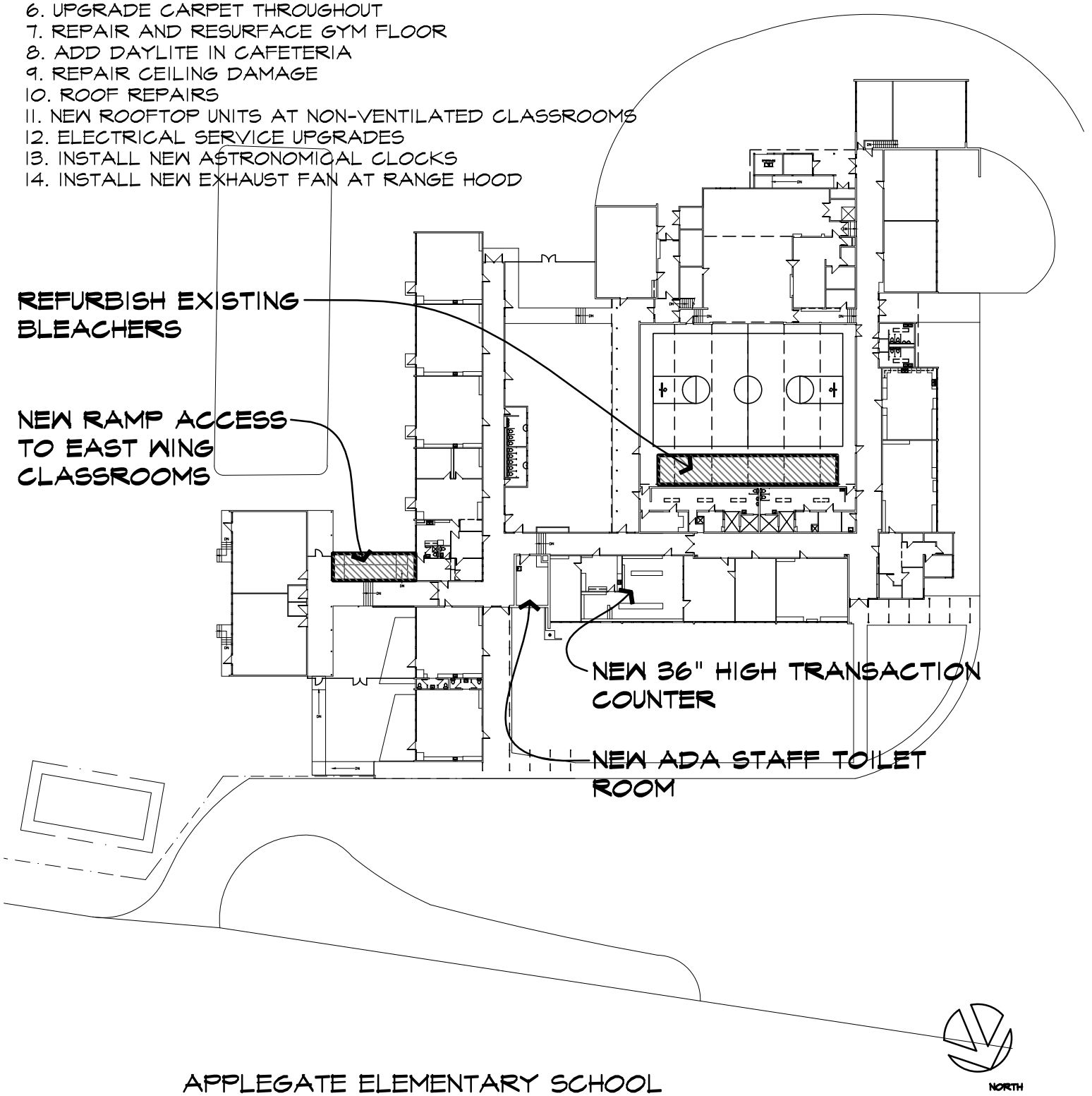
PRIORITY 5 - ADDITIONAL IMPROVEMENTS

1. NEW AUTOMATIC FIRE SURPRESSION SYSTEM
2. INSULATE DOMESTIC WATER PIPING WHERE NEEDED
3. ABATE AND REPLACE ASBESTOS FLOOR TILE
4. UPGRADE SIDING
5. UPGRADE WINDOWS THROUGHOUT
6. UPGRADE CARPET THROUGHOUT
7. REPAIR AND RESURFACE GYM FLOOR
8. ADD DAYLITE IN CAFETERIA
9. REPAIR CEILING DAMAGE
10. ROOF REPAIRS
11. NEW ROOFTOP UNITS AT NON-VENTILATED CLASSROOMS
12. ELECTRICAL SERVICE UPGRADES
13. INSTALL NEW ASTRONOMICAL CLOCKS
14. INSTALL NEW EXHAUST FAN AT RANGE HOOD



APPLEGATE ELEMENTARY SCHOOL

FLOOR PLAN - PRIORITY 5

1 / A6

SCALE: 1" = 60'-0"

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CROW-APPLEGATE-LORANE SCHOOL DISTRICT - APPLEGATE ELEMENTARY SCHOOL

FACILITIES ASSESSMENT - DEFICIENCIES AND RECOMMENDATIONS - JANUARY 30, 2016

ABBR:					NOTES:					
ADA = ADA Upgrades			Safety = Safety and Security		1. Needs further study. Feasible solution not identified.					
Deficient = Facility Deficiencies			Tech = Technology							
LS = Lump Sum			Elect = Electrical Systems							
Maint = Maintenance Needs			Mech = Mechanical Systems							

No.	School	Category	Priority Source	Item	Qty	Units	Unit Price ($)	Const. Cost ($)	With Soft Cost (1.45%)	Notes
APPLEGATE ELEMENTARY SCHOOL				**Priority 1 Total Cost**				**$1,601,740**	**$2,322,523**	
1	Main Bldg	Safety	1	Front entry is not visually observed by office - move office	1,900	SF	160	304,000	440,800	
2	Main Bldg	Safety	1	Control entry for visitors - new doors, see elect for locks	9	EA	7,500	67,500	97,875	
3	Main Bldg	ADA	1	Upgrade student toilet rooms to ADA	4	EA	40,000	160,000	232,000	
4	Main Bldg	ADA	1	Provide lever hardware	62	EA	500	31,000	44,950	
5	Site	Maint	1	Reroute drainage at east drive end	1	LS	8,000	8,000	11,600	
6	Site	ADA	1	Provide new ADA parking	540	SF	6	3,240	4,698	
7	Main Bldg	Maint	1	Replace Classroom Unit Ventilator Consoles with VRF style units	20	ea	4,500	90,000	130,500	Use VRF
8	Main Bldg	Maint	1	• Install new toilet exhaust fans for each toilet room or toilet room group.	6	ea	3,000	18,000	26,100	
9	Main Bldg	Maint	1	• Install ventilation unit for Gym with heat recovery.	1	ea	25,000	25,000	36,250	
10	Main Bldg	Maint	1	• Install an electronic control system.	1	ea	15,000	15,000	21,750	
11	Main Bldg	Safety	1	• Seismically brace basement water heater.	1	ea	500	500	725	
12	Main Bldg	Maint	1	• Replace older fixtures with new low flow fixtures.	25	ea	300	7,500	10,875	
13	Main Bldg	Maint	1	• Replace existing fluorescent surface wrap luminaires with new – common areas and support areas.	1	lot	45,000	45,000	65,250	

No.	School	Category	Priority Source	Item	Qty	Units	Unit Price ($)	Const. Cost ($)	With Soft Cost (1.45%)	Notes
14	Main Bldg	Maint	1	• Replace existing fluorescent acrylic linear pendant luminaires with new – cafeteria and kitchen.	1	lot	20,000	20,000	29,000	
15	Main Bldg	Maint	1	• Provide local occupancy sensor control to occupied rooms and support spaces.	1	lot	34,000	34,000	49,300	
16	Main Bldg	Deficient	1	• Provide A/V media equipment at each classroom, and permanent conduit and junction box provisions for installation of ceiling projectors, media connectivity at the teacher's station, and speakers.	11	lot	5,000	55,000	79,750	
17	Main Bldg	Maint	1	• Replace horizontal copper cabling and upgrade to CAT 6. 1 drop per classroom.	1	lot	5,000	5,000	7,250	
18	Main Bldg	Safety	1	• Provide magnetic door locks for exterior doors, centrally controlled from the office, and replace doors.	8	lot	6,000	48,000	69,600	
19	Main Bldg	Safety	1	• Provide new manual fire alarm/sprinkler monitoring system with voice evacuation/alarm communication and visual strobe notification	1	lot	65,000	65,000	94,250	
20	Main Bldg	ADA	1	Convert existing locker rooms to two team rooms, two single occupancy toilet rooms, an office and an equipment storage room.	2,000	SF	300	600,000	870,000	
21										
22				**Priority 2 Total Cost**				**$103,000**	**$149,350**	
23	Main Bldg	ADA	2	Add ramp access around main hall stair	1	LS	60,000	60,000	87,000	
24	Main Bldg	ADA	2	Provide ADA access to cafeteria stage - add lift	1	EA	40,000	40,000	58,000	
25	Main Bldg	ADA	2	Replace drinking fountains	2	EA	1,500	3,000	4,350	
26										
27				**Priority 3 Total Cost**				**$161,154**	**$233,673**	

No.	School	Category	Priority Source	Item	Qty	Units	Unit Price ($)	Const. Cost ($)	With Soft Cost (1.45%)	Notes
28	Main Bldg		3	Cafeteria floor tile	2,718	SF	3	8,154	11,823	
29	Main Bldg	ADA	3	Modify classroom sink faucets to ADA	7	EA	500	3,500	5,075	
30	Main Bldg	Seismic	3	Seismic retrofit				0	0	
31	Main Bldg	Deficient	3	Update cold storage room - upgrade exhaust	1	EA	1,500	1,500	2,175	
32	Site	Maint	3	Improve bus lane - new full depth base	15,000	SF	9	135,000	195,750	
33	Main Bldg	Safety	3	• Replace select fixtures in corridor egress paths and at gym with local battery pack ballast with 90-minute backup in order to illuminate egress paths with minimum code required footcandle levels. Provide constant-hot charging branch circuit.	1	lot	13,000	13,000	18,850	
34										
35				**Priority 5 Total Cost**				**$818,578**	**$1,186,938**	
36	Main Bldg	ADA	5	Provide ADA staff toilet room and improve finishes	1	EA	25,000	25,000	36,250	
37	Main Bldg	ADA	5	Provide 36" high transaction counter in Library	1	EA	1,000	1,000	1,450	
38	Main Bldg	Energy	5	Upgrade windows	2,920	SF	65	189,800	275,210	
39	Main Bldg	Maint	5	Upgrade siding		SF	6	0	0	
40	Main Bldg	Safety	5	Abate and replace asbestos floor tile	16,600	SF	12	199,200	288,840	
41	Main Bldg	Maint	5	Provide new bleachers	1	EA	40,000	40,000	58,000	
42	Main Bldg	Deficient	5	Add daylight in cafeteria	1	EA	5,000	5,000	7,250	
43	Main Bldg	Maint	5	Update carpeting				0	0	
44	Main Bldg	Maint	5	Repair ceilings				0	0	
45	Main Bldg	Seismic	5	Provide positive connections at basement columns	1	LS	3,000	3,000	4,350	
46	Main Bldg	Maint	5	Repair & resurface gym floor				0	0	
47	Main Bldg	Safety	5	• Provide new packaged rooftop units for non-ventlated rooms	3	ea	5,000	15,000	21,750	

No.	School	Category	Priority Source	Item	Qty	Units	Unit Price ($)	Const. Cost ($)	With Soft Cost (1.45%)	Notes
48	Main Bldg	Safety	5	• Install the correct style exhaust fan for the range hood and a makeup air source.	1	ea	3,500	3,500	5,075	
49	Main Bldg	Maint	5	• Insulate domestic water piping where needed.	400	LF	20	8,000	11,600	
50	Main Bldg	Deficient	5	• Install an automatic fire suppression system.	43,526	sf	3	130,578	189,338	
51	Main Bldg	Safety	5	• Install a hood fire suppression system.	1	ea	8,500	8,500	12,325	
52	Main Bldg	Maint	5	• Service #1: Replace with a new 800-amp 120/240-volt 1-phase service equipment. Remove overhead service and install underground service lateral with utility termination cabinet and meter located on the exterior wall outside of the electrical room. Coordinate with utility company for new service provisions and removal of overhead.	1	lot	55,000	55,000	79,750	
53	Main Bldg	Safety	5	• Service #2: Test distribution circuit breakers by current injection method and replace failed, as needed. Torque check of feeder terminations. Test (Megger) feeder conductors to panelboards. Visually inspect internal bussing for signs of corrosion. De-energize and clean interior of dust and debris. Check supply houses for circuit breaker and hardware availability.	1	lot	20,000	20,000	29,000	
54	Main Bldg	Maint	5	• Replace all branch panels with new panelboards.	1	lot	70,000	70,000	101,500	
55	Main Bldg	Maint	5	• Provide astronomical time clock controls for corridors and common areas, and exterior lighting.	1	lot	20,000	20,000	29,000	

No.	School	Category	Priority Source	Item	Qty	Units	Unit Price ($)	Const. Cost ($)	With Soft Cost (1.45%)	Notes
56	Main Bldg	Maint	5	• Demolish/remove old clock/speaker system and cabling. Provide new central synchronized clock system, capable of networking with school network and interfacing with server software applications.	1	lot	25,000	25,000	36,250	
57										
58				**M Total Cost**				**$45,000**	**$65,250**	
59	Main Bldg	Maint	M	Check roofing schedule				0	0	
60	Main Bldg	Maint	M	• Replace all luminaires in locker rooms with new impact resistant surface mount lensed wraps, LED type.	1	lot	5,000	5,000	7,250	
61	Main Bldg	Safety	M	• Provide new intercom/bell system and speakers, compatible with the new school phone system. Intercom system shall be capable of networking with school network and interfacing with server software applications.	1	lot	40,000	40,000	58,000	
								$2,729,472	**3,957,734**	

PLANNING FOR THE FUTURE

SETTING PRIORITIES

PRIORITY 1

1. SAFETY AND SECURITY UPGRADES, INCLUDING:

- RECONFIGURED SCHOOL OFFICE TO PROVIDE A DIRECT VISUAL CONNECTION TO EVERYONE ENTERING THE FACILITY
- CENTRALIZED MAGNETIC DOOR CONTROLS AND NEW EXTERIOR DOORS FOR LOCKDOWNS
- ATTRACTIVE BUT SECURE FENCING TO IMPROVE PERIMETER SECURITY
- UPDATED FIRE ALARM SYSTEM
- NEW, MORE SECURE AND ADA COMPLIANT CLASSROOM DOOR HARDWARE
- ADA IMPROVEMENTS FOR SAFE ACCESS FOR ALL STUDENTS

2. IMPROVEMENTS FOR ADEQUATE LEARNING SPACES INCLUDE:

- CEILING MOUNTED INTEGRATED AV SYSTEMS TO FREE UP CLASSROOM SPACE
- A NEW MAINTENANCE BUILDING THAT WILL FREE UP THE EXISTING AUTO SHOP AND ALLOW THAT PROGRAM TO RESTART

3. RENEWAL AND REPLACEMENT OF VITAL BUILDING SYSTEMS, INCLUDING:

- NEW HIGH EFFICIENCY HEATING AND VENTILATION EQUIPMENT IN CLASSROOMS
- IMPROVED DRAINAGE AT THE NORTH PARKING AREA
- RETROFIT EXISTING LIGHTING FOR IMPROVED ENERGY EFFICIENCY

PRIORITY 2

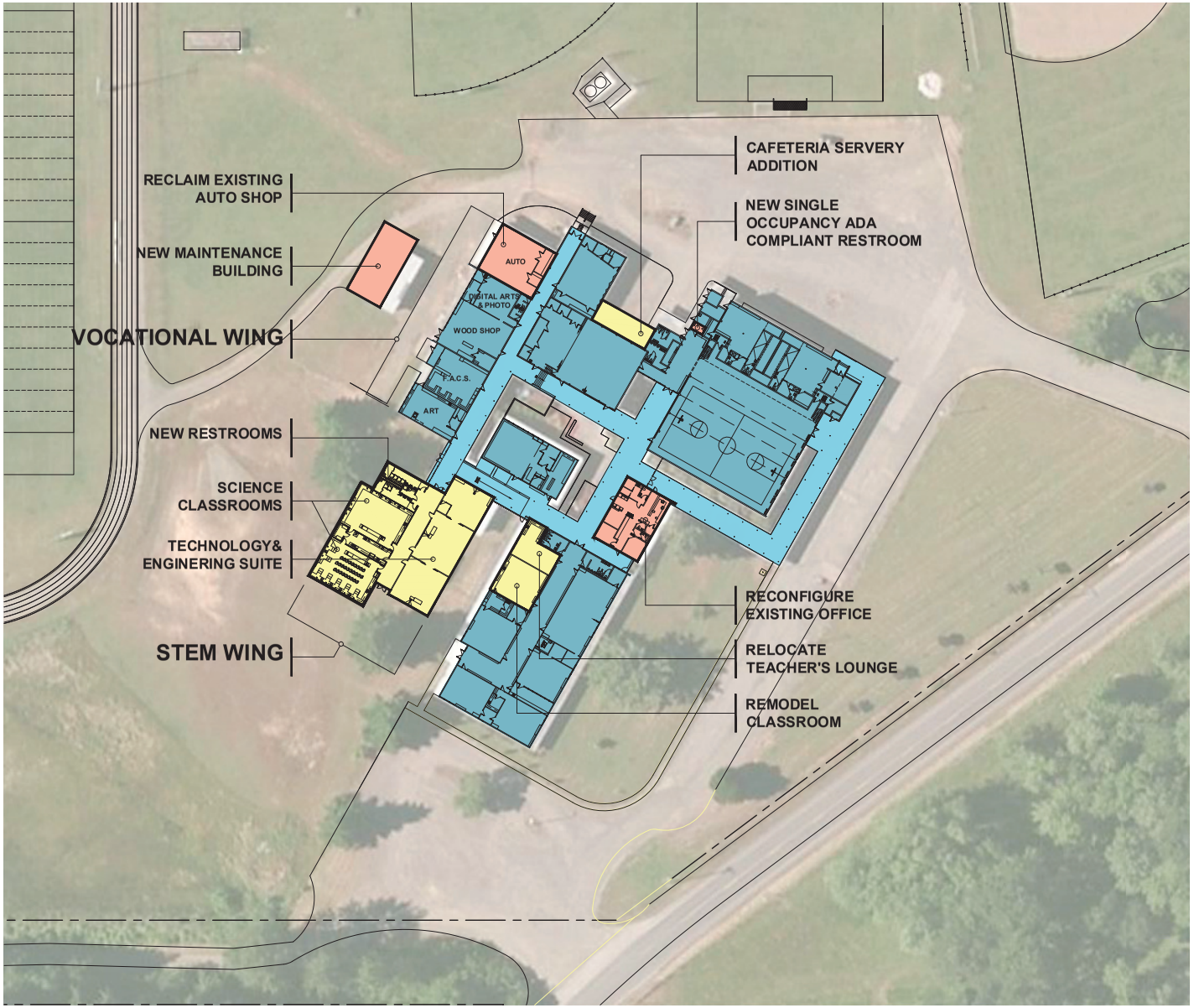
1. ADD A NEW STEM WING

- TWO NEW SCIENCE ROOMS, ONE DESIGNED FOR MIDDLE SCHOOL SCIENCE AND ONE SET UP WITH LAB SPACES, SINKS AND A FUME HOOD FOR HIGH SCHOOL LEVEL SCIENCE CLASSES
- CREATE A NEW ENGINEERING AND TECHNOLOGY SUITE BY RECONFIGURING THE EXISTING COMPUTER LAB AND PROVIDING LECTURE, LARGE PROJECT AND SMALL PROJECT SPACES.
- TWO NEW FULLY ADA COMPLIANT RESTROOMS

2. ADD A NEW SERVERY AT THE CAFETERIA

- SPACE FOR FOOD WARMERS, SINKS, DISHWASHER AND A SERVING LINE
- STORAGE FOR STAGE PROPS
- A NEW JANITORS CLOSET

3. REPLACE THE BUS LOOP PAVING

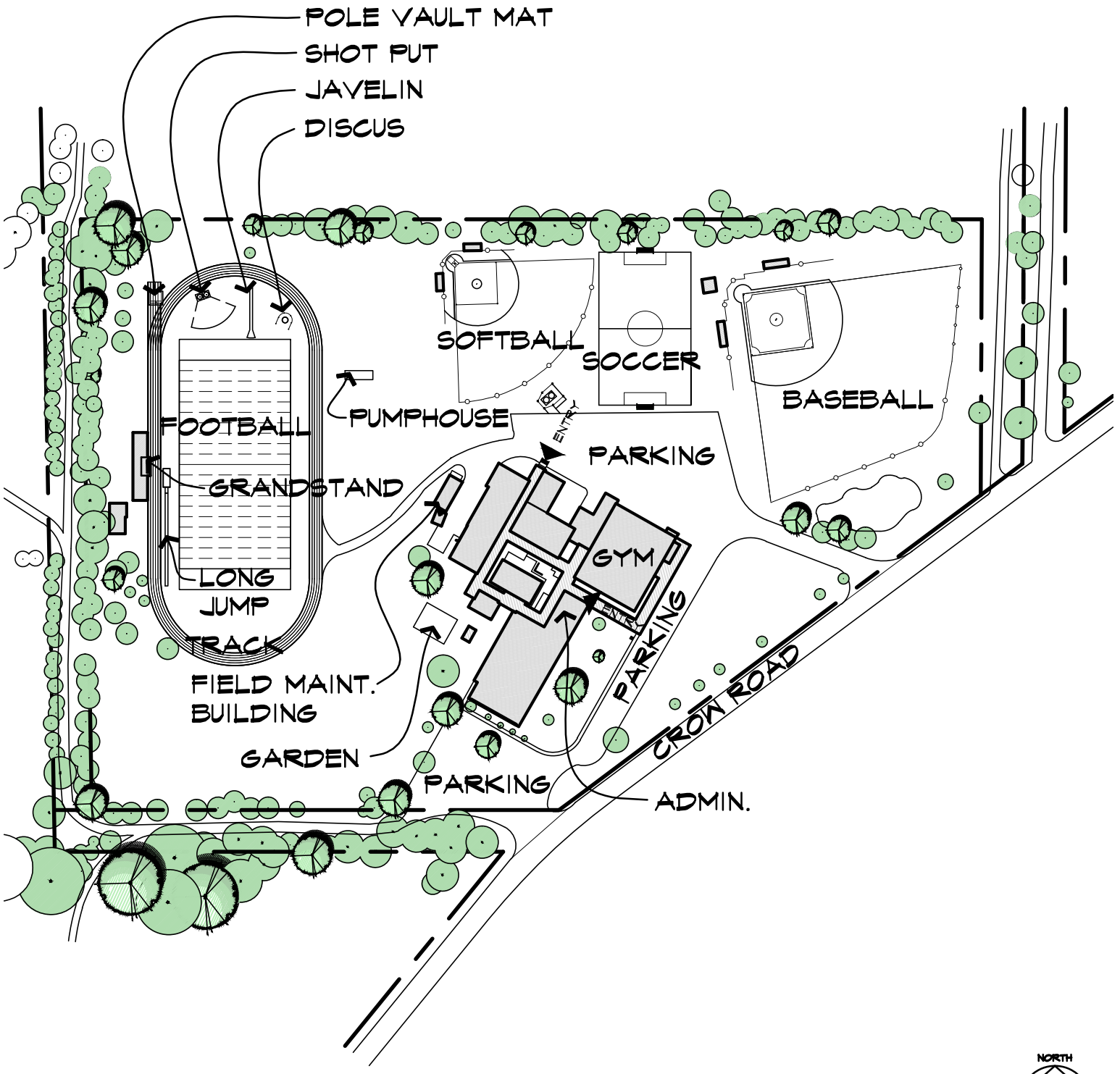


CROW HIGH SCHOOL MASTER SITE PLAN

CROW APPLEGATE LORANE SCHOOL DISTRICT

MAY 26, 2016

gLAs Architects, LLC



CROW MIDDLE SCHOOL

EXISTING SITE PLAN

1
A1

SCALE: 1" = 200'-0"

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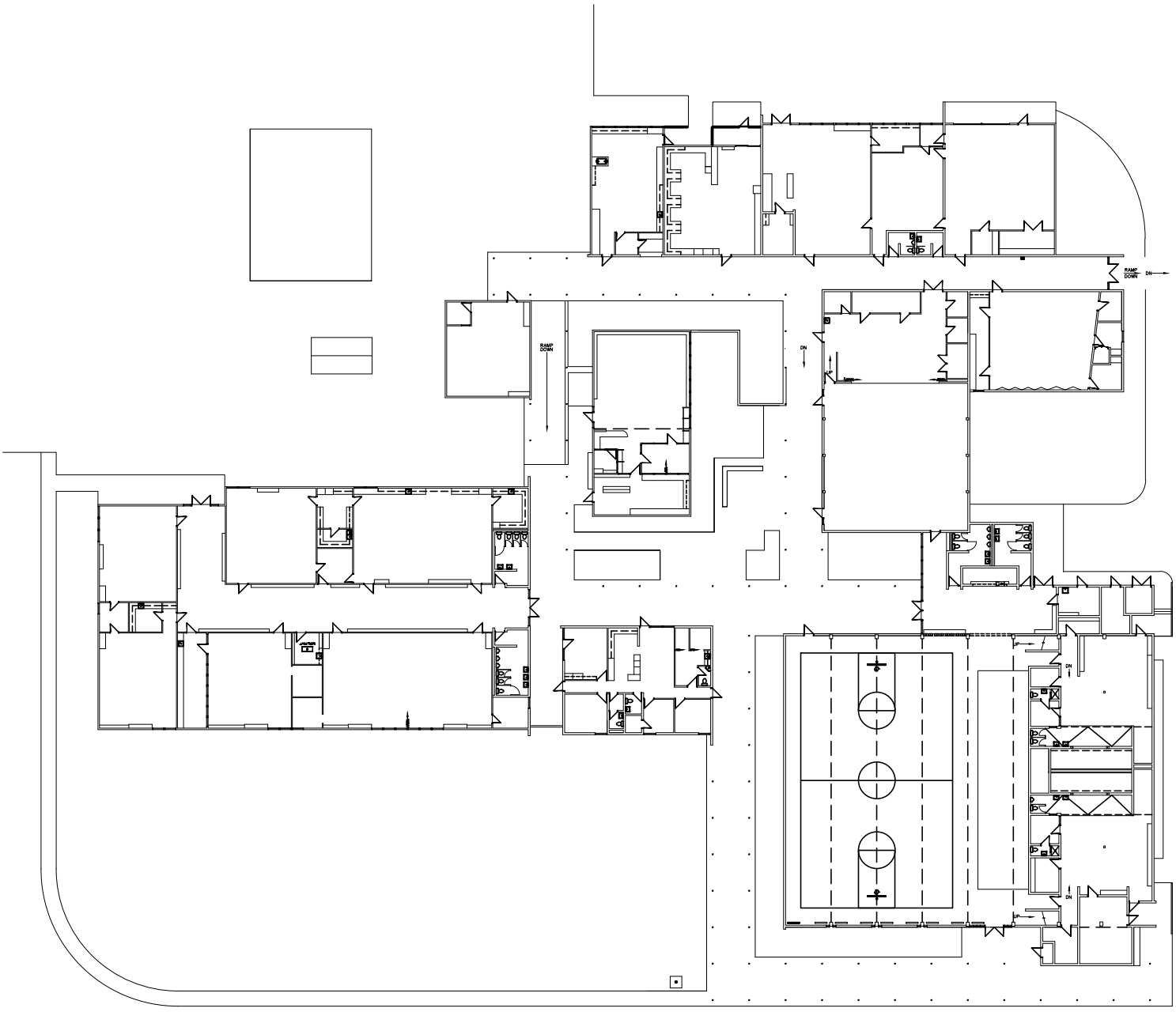


NORTH

CROW MIDDLE SCHOOL

EXISTING FLOOR PLAN

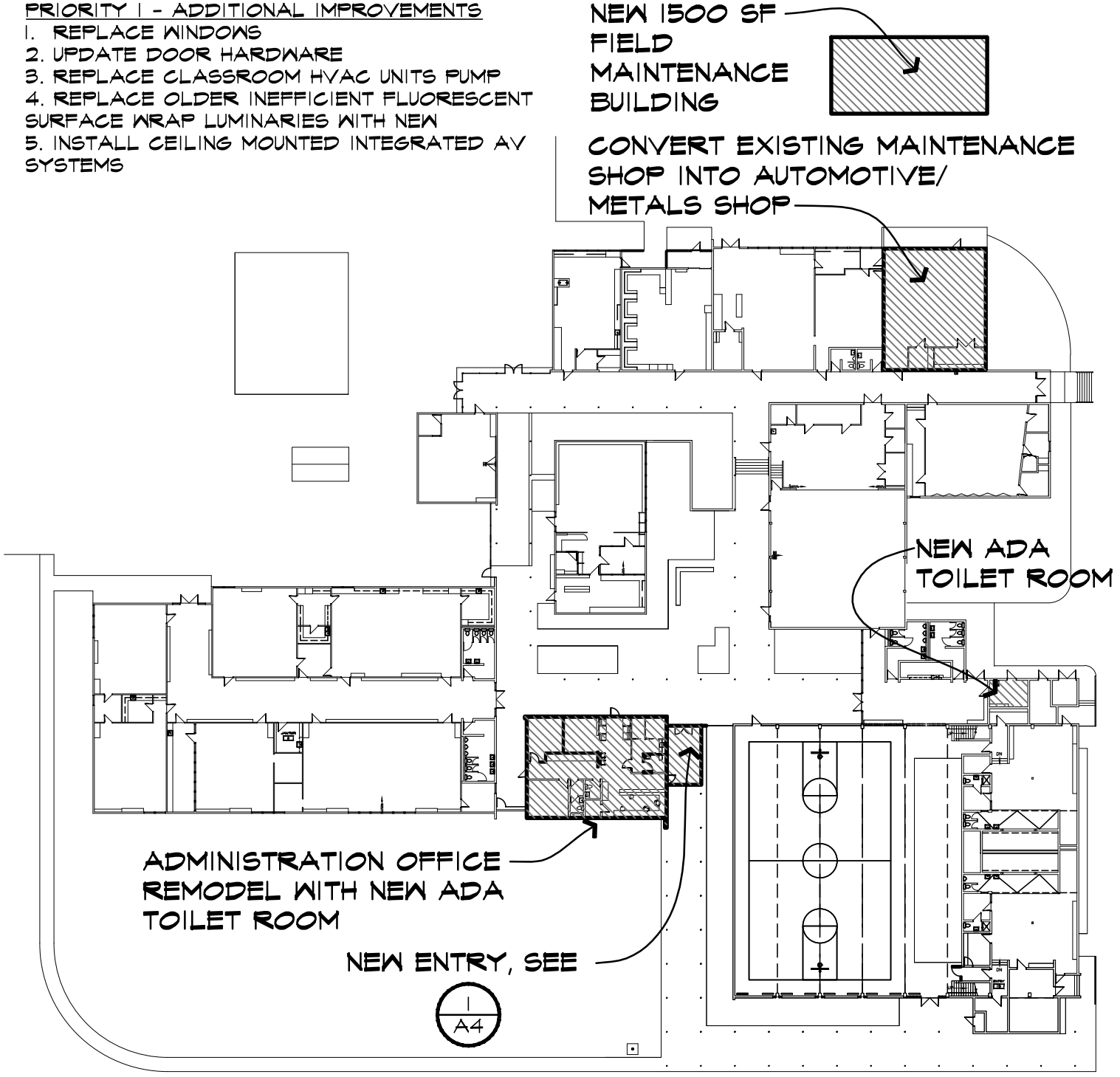
1
A2

SCALE: 1" = 50'-0"

gLAs Architects, LLC

PRIORITY 1 - ADDITIONAL IMPROVEMENTS

1. REPLACE WINDOWS
2. UPDATE DOOR HARDWARE
3. REPLACE CLASSROOM HVAC UNITS PUMP
4. REPLACE OLDER INEFFICIENT FLUORESCENT SURFACE WRAP LUMINARIES WITH NEW
5. INSTALL CEILING MOUNTED INTEGRATED AV SYSTEMS



NORTH

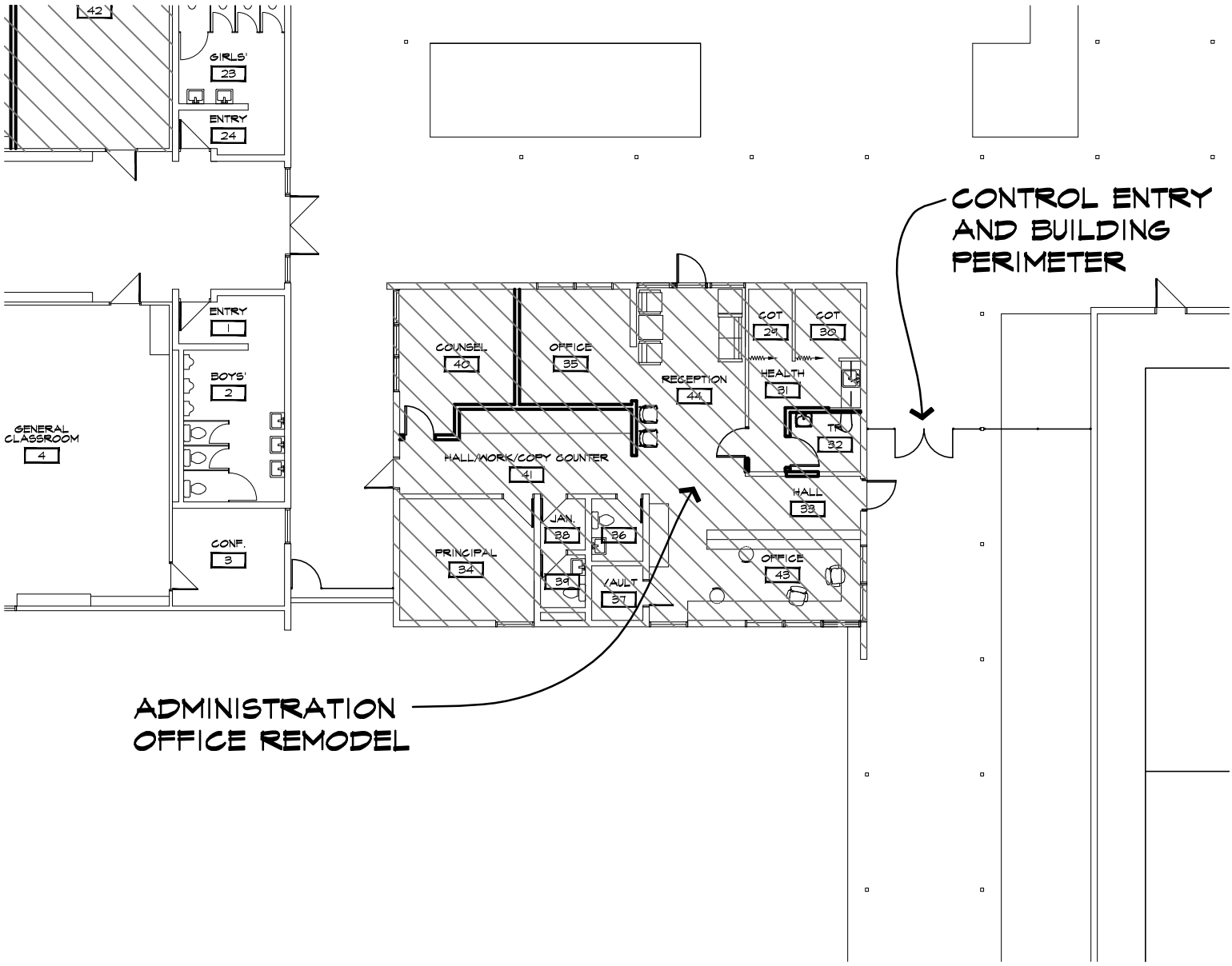
CROW MIDDLE SCHOOL

1
A3

FLOOR PLAN - PRIORITY 1

SCALE: 1" = 50'-0"

gLAs Architects, LLC



NORTH

CROW MIDDLE SCHOOL

ENLARGED FLOOR PLAN - PRIORITY 1

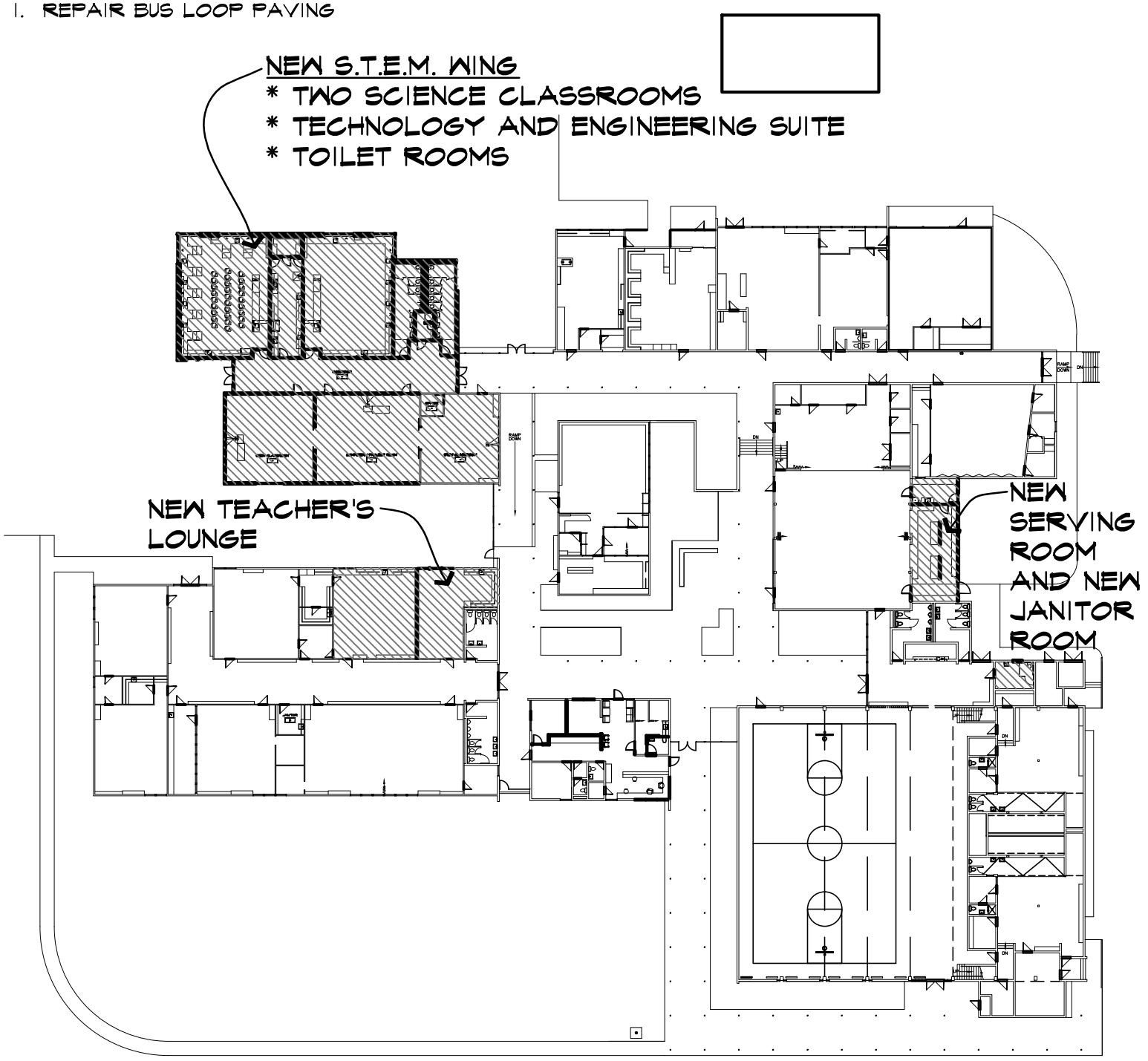
SCALE: 1/16" = 1'-0"

1
A4

gLAs Architects, LLC

PRIORITY 2 - ADDITIONAL IMPROVEMENTS

1. REPAIR BUS LOOP PAVING



NORTH

CROW MIDDLE SCHOOL

FLOOR PLAN - PRIORITY 2

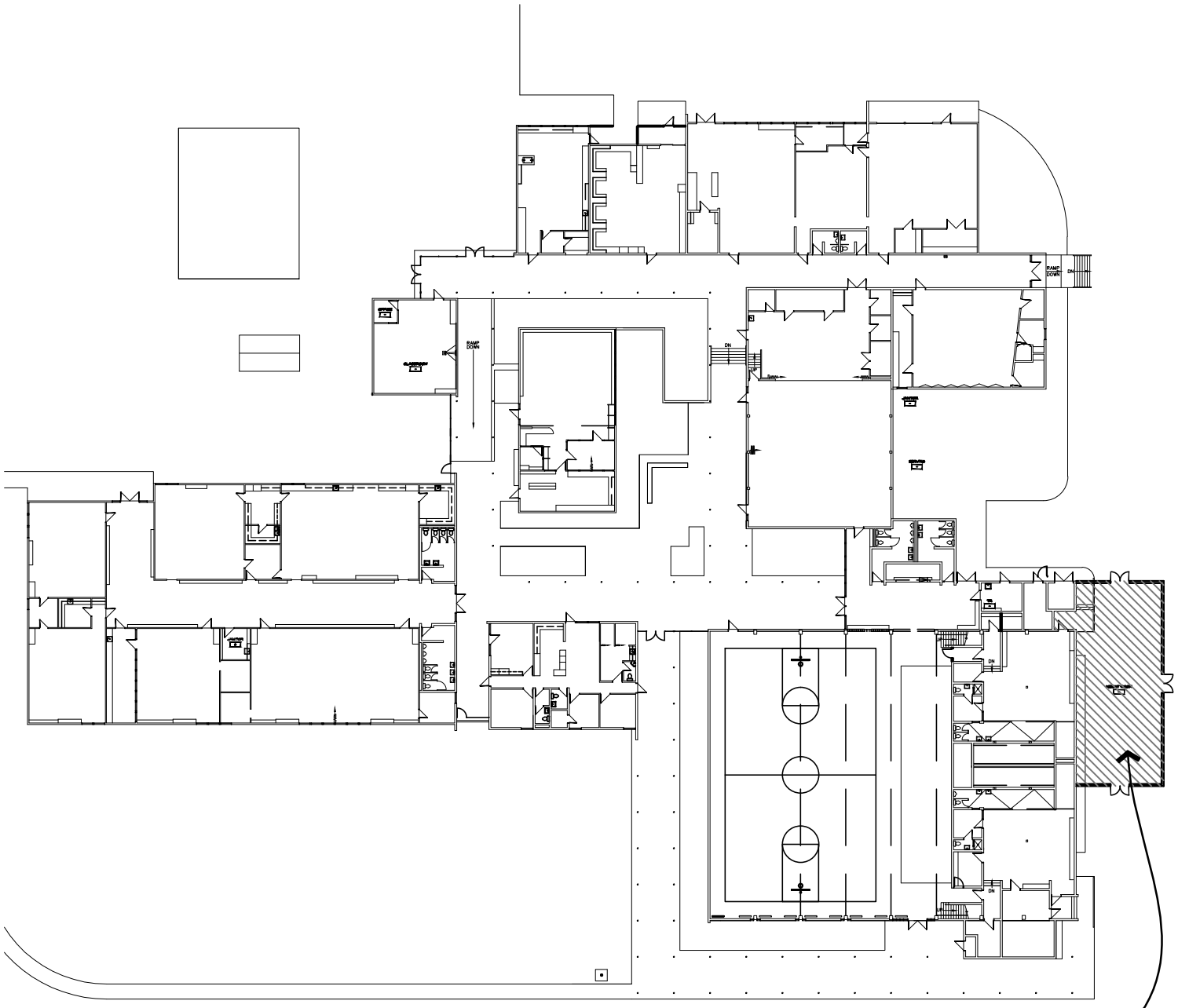
1 / A5

SCALE: 1" = 50'-0"

gLAs Architects, LLC

PRIORITY 3 - ADDITIONAL IMPROVEMENTS

1. REPLACE LOCKER ROOM EXHAUST SYSTEM.
2. REPLACE ALL ROOF EXHAUST FANS.
3. REPLACE EXISTING GALVANIZED WATER PIPING.



NEW WRESTLING WING

NORTH

CROW MIDDLE SCHOOL

FLOOR PLAN - PRIORITY 3

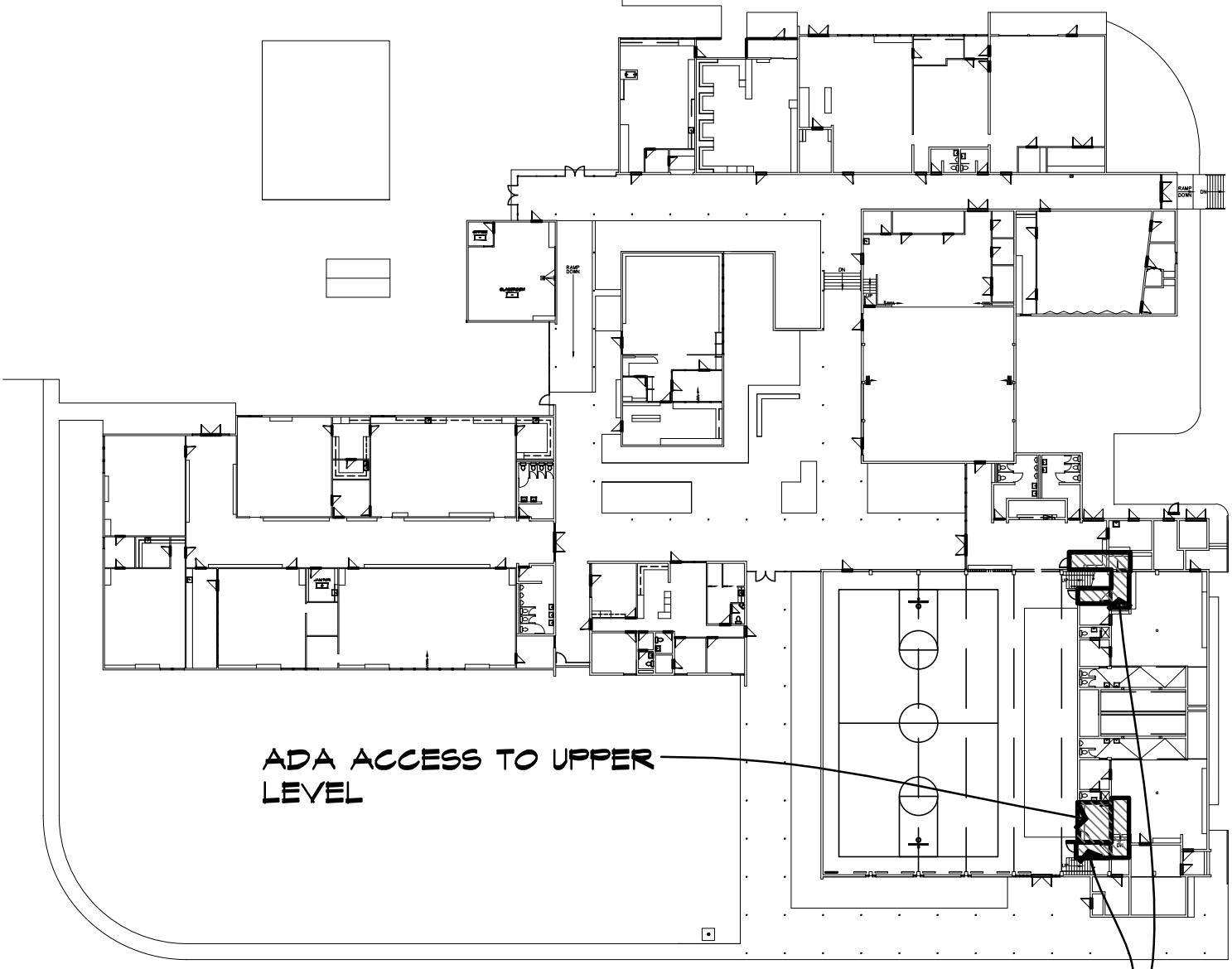
1
A6

SCALE: 1" = 50'-0"

gLAs Architects, LLC

PRIORITY 5 - ADDITIONAL IMPROVEMENTS

1. UPDATE PLUMBING FIXTURES.
2. REPLACE AND ABATE ASBESTOS FLOOR TILE.
3. RETROFIT OR REPLACE FOOTBALL GRANDSTAND.
4. ADD SEISMIC BRACING AT MECHANICAL AND PLUMBING UNITS.
5. INSTALL A NEW AUTOMATIC FIRE SUPRESSION SYSTEM.
6. INSTALL NEW ELECTRICAL SYSTEM UPGRADES.



ADA ACCESS TO UPPER LEVEL

REMODEL LOCKER ROOM, SHOWERS, AND THEIR ENTRIES FOR ADA ACCESSIBILTY

NORTH

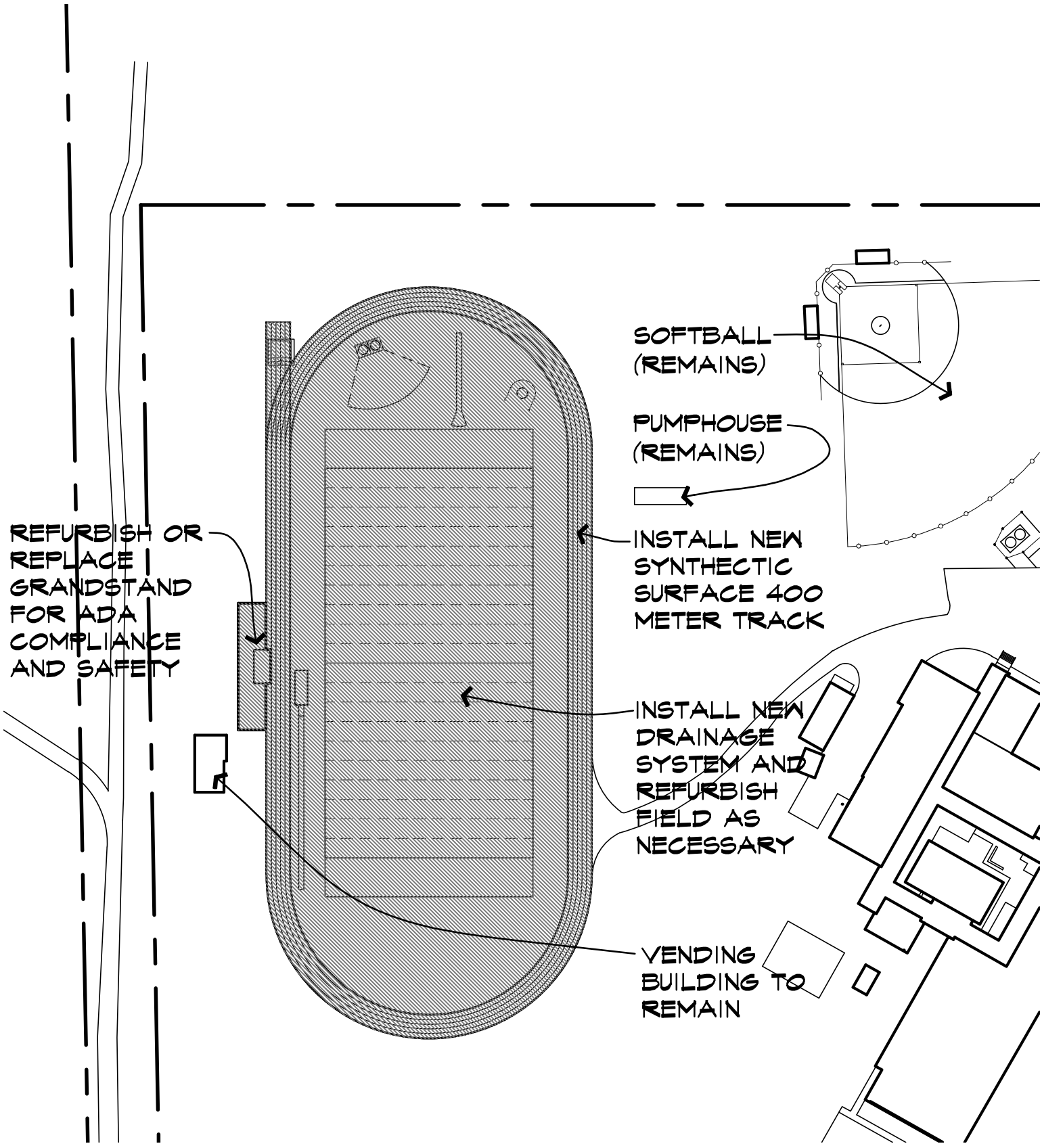
CROW MIDDLE SCHOOL

FLOOR PLAN - PRIORITY 5

SCALE: 1" = 50'-0"

1
A7

gLAs Architects, LLC



CROW MIDDLE SCHOOL

SITE PLAN - PRIORITY 5

SCALE: 1" = 100'-0"

1 / A8

NORTH

gLAs Architects, LLC

CROW-APPLEGATE-LORANE SCHOOL DISTRICT - CROW MIDDLE/HIGH SCHOOL

FACILITIES ASSESSMENT - DEFICIENCIES AND RECOMMENDATIONS - JANUARY 30, 2016

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No.	School	Category	Priority Source	Item	Qty	Units	Unit Price ($)	Const. Cost ($)	With Soft Cost (1.45%)	Notes
	CROW MS/HS			**Priority 1 Total Cost**				**$973,585**	**$1,411,698**	
1	Main Bldg	Safety	1	Main entry points are not visually observed by office - reconfigure office - study option 1	1,700	SF	160	272,000	394,400	
2	Main Bldg	Safety	1	Control entry for visitors - new doors and fencing, see elect for locks	1	LS	30,000	30,000	43,500	
3	Main Bldg	ADA	1	Update toilet rooms to ADA - add unisex room	1	LS	45,000	45,000	65,250	
4	Main Bldg	Maint	1	Update staff toilet rooms	1	LS	25,000	25,000	36,250	
5	Main Bldg	Energy	1	Replace windows	1,009	SF	65	65,585	95,098	
6	Main Bldg	ADA	1	Provide lever hardware	82	EA	500	41,000	59,450	
7	Site	Maint	1	Connect parking lot drainage - add catch basin and perforated underdrain and outflow to drainage ditch	1	LS	17,500	17,500	25,375	
8	Site	Deficient	1	Field maintenance building	1,500	SF	75	112,500	163,125	
9	Main Bldg	Maint	1	• Replace classroom consoles with heat pump consoles	10	ea	3,000	~~30,000~~	~~43,500~~	
10	Main Bldg		1	**Or** replace with VRF consoles	10	ea	4,500	45,000	65,250	VRF Cost Used
11	Main Bldg	Maint	1	• Replace existing fluorescent surface wrap luminaires with new – common areas and support areas	1	lot	45,000	45,000	65,250	
12	Main Bldg	Maint	1	• Replace existing fluorescent acrylic linear pendant luminaires with new – classrooms, support areas, cafeteria	1	lot	75,000	75,000	108,750	

No.	School	Category	Priority Source	Item	Qty	Units	Unit Price ($)	Const. Cost ($)	With Soft Cost (1.45%)	Notes
13	Main Bldg	Maint	1	• Provide local occupancy sensor control to occupied rooms and support spaces.	1	lot	40,000	40,000	58,000	
14	Main Bldg	Safety	1	• Remove old fire alarm system pull station devices and sirens. Provide new manual fire alarm/sprinkler monitoring and alarm system with voice evacuation/alarm communication and visual strobe notification	1	lot	75,000	75,000	108,750	
15	Main Bldg	Maint	1	• Demolish/remove old clock/ speaker system and cabling. Raceways are to remain to serve new systems. Provide new central synchronized clock system, capable of networking with school network and interfacing with server software applications	1	lot	25,000	25,000	36,250	
16	Main Bldg	Safety	1	• Provide magnetic door locks for exterior doors, centrally controlled from the office.	30	lot	2,000	60,000	87,000	
17										
18				**Priority 2 Total Cost**				**$2,656,480**	**$3,851,896**	
19	Main Bldg	Deficient	2	Update science in existing location: option 1 - replace cabinets	175	LF	0	0	0	Up to $250,000 for 2 rooms
20	Main Bldg	Maint	2	Update science classroom - add science wing - option 2	7,560	SF	300	2,268,000	3,288,600	
21	Site	Maint	2	Repair bus loop paving	18,720	SF	9	168,480	244,296	24' strip
22	Main Bldg	Deficient	2	Add serving area to cafeteria	800	SF	275	220,000	319,000	
23										
24				**Priority 3 Total Cost**				**$707,250**	**$1,025,513**	
25	Main Bldg	Deficient	3	Add new weight room facility	2,100	SF	275	577,500	837,375	
26	Main Bldg	Deficient	3	Replace old classroom furniture				0	0	
27	Main Bldg	Maint	3	• Replace locker room exhaust system	2	ea	4,500	9,000	13,050	
28	Main Bldg	Maint	3	• Replace all roof exhaust fans	17	ea	3,000	51,000	73,950	
29	Main Bldg	Maint	3	• Replace existing galvanized water piping	550	ea	45	24,750	35,888	

No.	School	Category	Priority Source	Item	Qty	Units	Unit Price ($)	Const. Cost ($)	With Soft Cost (1.45%)	Notes
30	Main Bldg	Maint	3	• Remove flood lights where coverage is aimed at parking and driveways. Provide new exterior pole mounted area lighting and pathway lighting to replace flood lights removed.	1	lot	20,000	20,000	29,000	
31	Main Bldg	Maint	3	• Replace all luminaires in locker rooms with new impact resistant surface mount lensed wraps, LED type.	1	lot	7,000	7,000	10,150	
32	Main Bldg	Safety	3	• Replace select fixtures in corridor egress paths, at cafeteria, and at gym with local battery pack ballast with 90-minute backup in order to illuminate egress paths with minimum code required footcandle levels. Provide constant-hot charging branch circuit.	1	lot	18,000	18,000	26,100	
33										
34				**Priority 4 Total Cost**				**$81,000**	**$117,450**	
35	Main Bldg	Deficient	4	Add storage off stage	540	SF	150	81,000	117,450	
36										
37				**Priority 5 Total Cost**				**$1,363,837**	**$1,977,564**	
38	Main Bldg	ADA	5	Provide ADA access to locker rooms	1	LS	30,000	30,000	43,500	
39	Main Bldg	ADA	5	Provide ADA access to 2nd floor in gym	1	LS	45,000	45,000	65,250	
40	Main Bldg	ADA	5	Provide accessible showers	2	EA	3,000	6,000	8,700	
41	Main Bldg	Maint	5	Replace sink on stage	1	LS	2,000	2,000	2,900	
42	Main Bldg	Maint	5	Update faucets at art room sink	1	LS	1,500	1,500	2,175	
43	Main Bldg	Maint	5	Update dust collection system	1	LS	20,000	20,000	29,000	
44	Main Bldg	Safety	5	Replace and abate asbestos floor tile				0	0	
45	Main Bldg	Maint	5	Update shop sink	1	LS	1,500	1,500	2,175	
46	Main Bldg		5	Remodel locker rooms	4,100	SF	200	820,000	1,189,000	
47	Site	Safety	5	Retrofit or replace football grandstand				0	0	

No.	School	Category	Priority Source	Item	Qty	Units	Unit Price ($)	Const. Cost ($)	With Soft Cost (1.45%)	Notes
48	Site	Safety	5	Fence parking 160' plus gate	1	LS	12,800	12,800	18,560	
49	Main Bldg	Safety	5	• Replace water heater in mechanical pit and seismically brace	1	ea	2,000	2,000	2,900	
50	Main Bldg	Safety	5	• Seismically brace pressure tanks in pump house	2	ea	500	1,000	1,450	
51	Main Bldg	Maint	5	• Replace older fixtures with new low flow fixtures	22	ea	300	6,600	9,570	
52	Main Bldg	Safety	5	• Relocate Science classroom emergency eye wash	1	ea	250	250	363	
53	Main Bldg	Safety	**5**	• Replace the existing fire pump system	1	ea	20,000	20,000	29,000	
54	Main Bldg	Deficient	5	• Install an automatic fire suppression system for the entire building.	41,329	sf	3	123,987	179,781	
55	Main Bldg	Safety	5	• Main Switchboard: Test distribution circuit breakers by current injection method and replace failed as needed. Torque check of feeder terminations. Test (Megger) feeder conductors to panelboards. Visually inspect internal bussing for signs of corrosion. De-energize and clean interior of dust and debris. Check supply houses for circuit breaker and hardware availability.	1	lot	20,000	20,000	29,000	
56	Main Bldg	Maint	5	• Replace all branch panels with new panelboards.	1	lot	115,000	115,000	166,750	
57	Main Bldg	Safety	5	• Replace pond metered service and pump/controls equipment with new.	1	lot	15,000	15,000	21,750	
58	Main Bldg	Safety	5	• Provide tap ahead of main and overcurrent device to serve fire pump improvements listed in Fire Protection improvements. Provide new underground fire pump feeder to fire pump location, approximately 250 feet away.	1	lot	25,000	25,000	36,250	

No.	School	Category	Priority Source	Item	Qty	Units	Unit Price ($)	Const. Cost ($)	With Soft Cost (1.45%)	Notes
59	Main Bldg	Safety	5	• Replace flexible cord wiring to wood shop equipment with conduit and wiring.	1	lot	1,200	1,200	1,740	
60	Main Bldg	Maint	5	• Provide astronomical time clock controls for corridors and common areas, and exterior lighting.	1	lot	20,000	20,000	29,000	
61	Main Bldg	Deficient	5	• Provide A/V media equipment at each classroom, and permanent conduit and junction box provisions for installation of ceiling projectors, media connectivity at the teacher's station, and speakers.	12	lot	5,000	60,000	87,000	
62	Main Bldg	Maint	5	• Replace horizontal copper cabling and upgrade to CAT 6. 3 drops per classroom.	1	lot	15,000	15,000	21,750	
63										
64				**M Total Cost**				**$275,000**	**$398,750**	
65	Main Bldg	Maint	M	Replace siding (in progress)				0	0	
66	Main Bldg	Maint	M	• Provide phone system upgrade to VOiP, as specified by the District IT department.	1	lot	20,000	20,000	29,000	
67	Main Bldg	Safety	M	• Provide new intercom/bell system and speakers, compatible with the new school phone system. Intercom system shall be capable of networking with school network and interfacing with server software applications.	1	lot	40,000	40,000	58,000	
68	Main Bldg	Maint		Schedule roofing work				0	0	
69	Main Bldg	Maint		• Install new packaged roof top units for interior spaces	1	ea	5,000	5,000	7,250	
70	Main Bldg	Maint		• Replace old air handling units	6	pt	35,000	210,000	304,500	
								$6,057,152	**8,782,870**	

Crow/Applegate/Lorane School District Facility Assessments: MEP Building Assessment

December 18, 2015

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Contents

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1.0 Crow-Applegate-Lorane Elementary School

1.1 Mechanical Systems

Description

Heating for most classrooms in the school is provided by individual unit ventilator consoles with electric heat. The console units were installed in the early 1980s and are beyond their normal expected service life. A few rooms have newer electric baseboard heaters, and a few rooms have electric wall heaters. Corridors have larger recessed electric cabinet unit heaters. The district office has a new LG through the wall air conditioner. The Gym is heated by three suspended unit heaters and a fan coil system located under the stage. Locker Rooms have small suspended electric unit heaters. Below the Stage/Cafeteria is a large storage room with one suspended electric unit heater and one wall heater.

Figure 1: Unit Ventilator Console

Figure 2: Electric Unit Heater in Gym

Ventilation air is absent from most rooms, except for windows that can be opened. Some rooms, such as the band room and several interior office spaces do not appear to have ventilation capabilities at all.

Toilet and Locker Room exhaust fans, where present, appear to be beyond their expected service life. The Kitchen has two new exhaust fans to serve the dishwasher hood and the range hood. The range hood fan is a downdraft style and is not code compliant. The Gym has a large wall-mounted exhaust fan high on the east wall. Several rooms with exhaust fans, mainly the Kitchen and Gym, do not have a means of makeup air. A converted classroom at the southwest corner of the building has food storage freezers and refrigerators. These units generate heat, which is dealt with by a window exhaust fan that operates continuously.

Figure 3: New Kitchen Exhaust Fans
Note: Middle unit is a downdraft style connected to the range hood.

Teachers manually operate the electric heat and open windows as deemed necessary. The school has an aggressive attitude concerning saving energy which is reducing energy consumption and utility bills.

Recommendations

- Replace existing classroom heating only consoles with heat pump consoles that have outside air intakes. These may be independent or connected to a common refrigerant system utilizing variable refrigerant flow (VRF) technology. VRF systems have a higher energy saving ability, but are more expensive.
- In classrooms with clearstory windows, remove some windows and install motorized dampers to use natural convection to relieve ventilation air from the space (whether from open windows or consoles with ventilation).
- Install new packaged rooftop units for spaces that are interior and have no other way for ventilation air. The units to be heat pump style.
- Install new toilet exhaust fans for each toilet room.
- Install ventilation unit for the Gym with heat recovery.
- Install the correct style exhaust fan for the range hood and a makeup air source.
- Install an electronic control system to automatically start and stop mechanical systems. A new digital system has the advantage of being able to trend or track unit performance and can send alarms to maintenance staff at the time of failure for quick response. Provide system capable of networking with school network and interfacing with server software applications.

1.2 Plumbing Systems

Description

Domestic Hot water is generated by two electric water heaters. A newer (2014) 119-gallon Bradford White heater with a recirculation pump is located in the old Boiler Room. The water heater is seismically secured with straps but does not have a housekeeping pad nor is it sitting in a pan.

A second 119-gallon older (2003) Bradford White electric water heater is located in the storage room below the Kitchen. This heater does not have seismic bracing or a pan.

Most if not all of the galvanized pipe in the domestic water system (hot and cold water) has been replaced with copper. Some portions of the domestic piping are not insulated, particularly near the water heaters.

Figure 4: Water Heater below Kitchen without Seismic Bracing

Roof drains appear to be older style (pipe size opening rather than a roof drain assembly), but mostly in good condition. Drains have wire cage style leaf guards.

The plumbing fixtures are typically older vintage type with high water usage faucets or flush valves. The school is implementing a program to replace older units with new fixtures with electronically actuated flush valves.

Recommendations

- Seismically brace the basement water heater.
- Insulate domestic water piping where needed.
- Replace older fixtures with new low flow fixtures.

1.3 Fire Protection Systems

Description

The building does not have a fire suppression system.

The Kitchen range hood does not have a fire suppression system.

Recommendations

- Install an automatic fire sprinkler system for the building.
- Install a hood fire suppression system with emergency shutoff switch.

1.4 Electrical Systems

Description

The elementary school campus is currently receives utility company power via two (2) separate metered electrical services, served from separate utility transformers.

Service #1, general lighting and receptacles metered service #61934 is 120/240-volt, 1-phase, 3-wire, and is served overhead from a pole mounted service transformer across the street from the main school entrance. The service entrance equipment appears to be original and in poor to fair condition at best. Nameplate information is missing from the main service switchboard, but it appears to be either 600-amp or 800-amp rated equipment.

Figure 5: Service #1 120/240V Switchboard at Electrical/Storage Room

Service #2, mechanical equipment metered service #50187 is 277/480-volt, 3-phase, 4-wire, and is served underground from pad mounted service transformers at the rear of the school building. The service entrance equipment appears to be original and in fair to good condition. Nameplate information is missing from the main service switchboard, but appears to be 800-amp rated equipment.

Figure 6: Service #2 277/480V Equipment at Building Exterior

Branch panels located in the main electrical area are vintage Square D equipment, and there are also Trumbell Electric panels flush mounted in the gym and corridors. They are old and need replacement.

There is no centralized emergency power system present on-site.

Figure 7: Trumbell Electric Panel Flush-Mounted in Gym

Recommendations

- Service #1: Replace with a new 800-amp 120/240-volt 1-phase service equipment. Remove overhead service and install underground service lateral with utility termination cabinet and meter located on the exterior wall outside of the electrical room. Coordinate with utility company for new service provisions and removal of overhead.
- Service #2: Manually cycle on/off distribution circuit breakers and replace failed, as needed. Torque check of feeder terminations. Test (Megger) feeder conductors to panelboards. Visually inspect internal bussing for signs of corrosion. De-energize and clean interior of dust and debris. Check supply houses for circuit breaker and hardware availability.
- Replace all branch panels with new panelboards.

1.5 Lighting Systems

Figure 8: Surface Wrap in Corridor

Description

Building interior lighting consists mostly of lensed T-8 linear fluorescent luminaires in corridors, classrooms, and support spaces. Some smaller spaces have compact fluorescent and incandescent lighting. All areas appear to be controlled by manual switches only.

Gym lighting has been retrofitted with fluorescent high-bay luminaires and occupancy sensor controls.

Figure 9: Linear fluorescent pendants at classroom.

Locker room luminaires are old and damaged.

Exterior lighting is controlled by photocell controls.

Emergency powered egress lighting does not appear to be present in the building.

Recommendations

- Replace all luminaires in locker rooms with new impact resistant surface mount lensed wraps, LED type.
- Replace existing fluorescent surface wrap luminaires with LED type – common areas and support areas.
- Replace existing fluorescent acrylic linear pendant luminaires with LED type – classrooms, support areas, cafeteria.
- Replace existing exterior canopy acrylic lens luminaires with new LED type.
- Provide local occupancy sensor control to occupied rooms and support spaces.

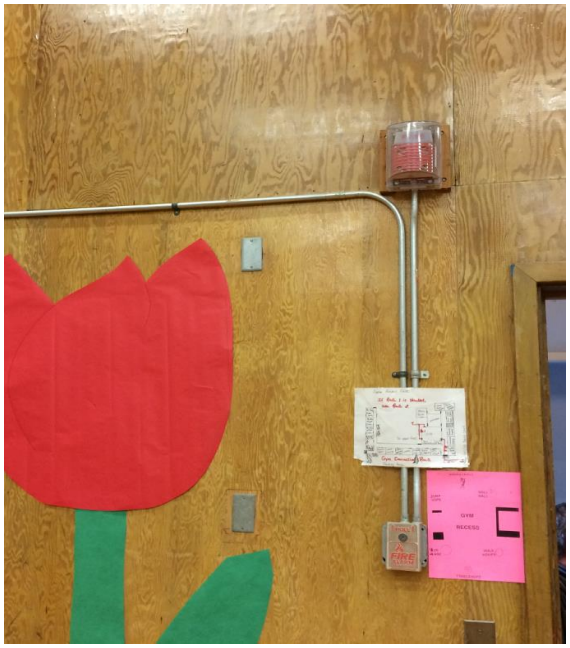
- Provide astronomical time clock controls for corridors and common areas, and exterior lighting.
- Replace select luminaires in corridor egress paths and at gym with local battery pack ballast with 90-minute backup in order to illuminate egress paths with minimum code required footcandle levels. Provide constant-hot charging branch circuit and UL924 relays to bypass manual controls as applicable.

1.6 Fire/Life Safety

Description

The fire alarm system consists of a fire alarm control panel located near Service #1 in the electrical/storage room. The panel is manufactured by Digital Monitoring Products, installed around 2008. Area smoke detection is provided at main corridors and select rooms, with manual pull station at main office and near exits. Notification appliance coverage is limited to audible devices only, with no visual strobe coverage. The auto-dialer has malfunctioned in the past and is currently deactivated due to false dial-outs.

Figure 10: Existing Fire Alarm Control Panel in Electrical/Storage Room

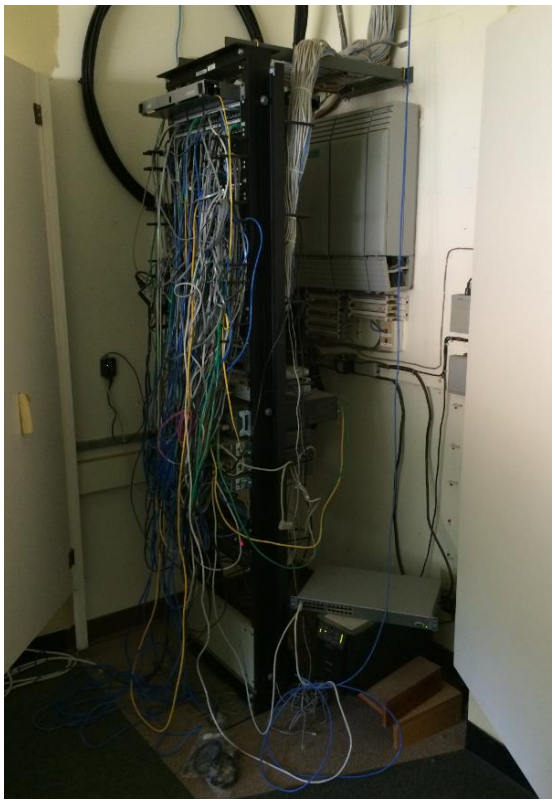


Recommendations

Provide new fire alarm/sprinkler monitoring system with voice evacuation/alarm communication and visual strobe notification, with approved dial-out equipment to central monitoring station.

Figure 11: Pull Station and Notification in Gym

1.7 Technology



Description

The existing MDF is centrally located in the building inside the computer lab classroom. Horizontal distribution is mostly CAT5e cabling and jacks.

The existing phone system is currently being upgraded and switching to VoIP. This effort will not be impacted by the bond.

The new paging system equipment was on-site but not yet installed. The IT staff plans to integrate the new devices with the new phone system.

The existing clock system is old, does not synchronize and needs replacement.

The classroom audio-visual equipment is not consistent between classrooms and permanent provisions are not present for installation of new A/V system.

Figure 12: Existing MDF Rack at Computer Lab Classroom.

Recommendations

- Provide fixed, mounted A/V media equipment at each classroom, and permanent conduit and junction box provisions for installation of ceiling projectors, media connectivity at the teacher's station, and speakers.
- Replace horizontal copper cabling and upgrade to CAT 6. 3 drops per classroom.
- Demolish/remove old clock/speaker system and cabling.
- Provide new central synchronized wireless clock system, capable of networking with school network and interfacing with server software applications.
- Provide new intercom/bell system and speakers, compatible with the new school phone system. Intercom system shall be capable of networking with school network and interfacing with server software applications.
- Provide magnetic door locks for exterior doors, centrally and manually controlled from the office as requested by the District.

2.0 Crow High School

2.1 Mechanical Systems

Figure 13: Older Unit Ventilator Console

Description

Heating for most classrooms is produced by individual unit ventilator consoles with electric heat and through the wall connections for outside air ventilation. Most consoles have been replaced over the years as units fail, with only a one original construction consoles still in service.

Figure 14: Gym Heating and Ventilation Unit

The console units are serviceable due to ongoing good maintenance plan which is extending the units use beyond their normal expected service life.

A few spaces have forced air electric heat with furnace type air handling units. These spaces include the Library, Admin, Home Ec, and the north classroom. The Gym has two larger air handling units accessible by ladder from the mezzanine.

There is also a large forced air unit located in a pit below the stage. These units appear to be 1975 vintage, and although functional are beyond their expected service life.

A few Admin rooms have electric baseboard heaters and shop areas have suspended electric unit heaters.

Figure 15: Stage Pit Forced Air Fan Unit

Ventilation for classrooms takes place by way of a motorized damper in the console outside air connection. In rooms with forced air furnaces and air handlers, ventilation air is derived from similar connections to outside louver. Most furnace units have high wall or soffit supply with floor returns, including the Gym, the Stage and Multi-Purpose room. The Shop Classroom does not appear to have ventilation.

Exhaust fans located on the roof appear to be original equipment and are starting fail with cover frames rusting. Exhaust grilles in the locker shower areas are badly rusted. Condition of connecting ductwork not established.

Figure 16: Several Roof Exhaust Fans.
The near unit with a broken cover support.

The Shop has a dust collector with under floor duct routing. The unit appears to be original equipment and is beyond the normal service life.

The building control system is new Paragon EC732 Energy Management System. The system functions as an automatic time clock for turning equipment on and off.

Figure 17: Exhaust Fan with Cover Lifted Off, Exposing Rusted Components

Recommendations

- Replace existing classroom heating only consoles with heat pump consoles. These may be independent or connected to a common refrigerant system utilizing variable refrigerant flow (VRF) technology. VRF systems have a higher energy saving ability, but are more expensive.
- Install new packaged rooftop units for spaces that are interior and have no other way for ventilation air. The units to be heat pump style.
- Replace or rebuild vintage air handling units.
- Replace locker room exhaust grilles and ductwork.
- Replace all roof exhaust fans.

2.2 Plumbing Systems

Description

Domestic Hot water is generated by two (2) new (2014) Bradford White electric water heaters, mounted in the old boiler room. The units are seismically braced, but are not on housekeeping pads or have pans.

An older water heater is located in the mechanical pit at the Stage. This unit serves the Multipurpose Room/Cafeteria. The water heater appears to be older and is not seismically braced.

An instantaneous water heater is located below a service sink in Multipurpose Janitor area.

Figure 18: Water Heater in Stage Pit without Seismic Bracing

Domestic water piping is new in the boiler room around the new water heaters, although most of the distribution piping is older galvanized pipe. The school has a well for its source of domestic water. The pumps are located in a pump house to the northwest of the main building. Two new pressure tanks are in the pump house and do not have seismic bracing.

Roof drains appear to be older style (pipe size opening rather than a roof drain assembly), but mostly in good condition. Drains have wire cage style leaf guards.

Plumbing fixtures are a mix of old and new, subject to the progress of planned upgrades and replacement of old fixtures. Older fixtures appear to be functional, but do not comply with current code water flow rates.

Figure 19: Pump House Pressure Tanks without Seismic Bracing

The Science classroom has an emergency eye wash that may splash on the electric unit ventilator console.

Figure 20: Science Room Emergency Eyewash Close to an Electric Unit Ventilator Console.

Recommendations

- Replace the water heater in the mechanical pit and seismically brace.
- Replace existing galvanized water distribution piping.
- Seismically brace pressure tanks in pump house.
- Replace older fixtures with new low flow fixtures.
- Relocate Science classroom emergency eye wash.

2.3 Fire Protection Systems

Description

The building has a wet sprinkler system for the Stage area only. It is reported that the well water fire pump assembly does not produce sufficient water flow or pressure for the system to be compliant.

Figure 21: Fire Sprinkler Riser for Stage Area

Recommendations

- Replace the existing fire pump system with a unit to produce the required flow and pressure for the Stage and other areas.
- Add fire sprinklers to remaining existing classrooms.

2.4 Electrical Systems

Description

The building main electrical service is located in dedicated electrical room, rated 1600A, 277/480VAC, 3-phase, 4-wire, Siemens ITE gear installed in 1968 – fair condition. Service comes from pad-mounted utility transformer approximately 100 feet away in the unpaved parking drive/parking area. A utility-interactive solar photovoltaic system is currently installed on this service, which appears to be new and in good condition.

Figure 22: Main Metered Service Switchboard at Electrical Room

Distribution and branch panels throughout the building are a mixture of surface and flush mounted in corridors and other spaces, same manufacturer and vintage as the service equipment.

Transformers are installed throughout the building in attic spaces.

There is a pond and separate metered pump service at the driveway entrance to the high school campus. This equipment appears to be rated 200A, 120/240VAC, 1-phase, 3-wire. The meter socket and pump connections equipment appear to be corroded and in poor condition. Nearby vegetation is grown-in and inhibits equipment access.

There is no centralized emergency power system present on-site.

Figure 23: Existing 120/240V Metered Service at Pond

The wood shop appears to have flexible cord cabling installed as a permanent wiring method, which does not comply with electrical code.

Recommendations

- Main Switchboard: Manually cycle on/off distribution circuit breakers and replace failed as needed. Torque check of feeder terminations. Test (Megger) feeder conductors to panelboards. Visually inspect internal bussing for signs of corrosion. De-energize and clean interior of dust and debris. Check supply houses for circuit breaker and hardware availability.
- Replace all branch panels with new panelboards.
- Replace pond metered service and pump/controls equipment with new.
- Provide tap ahead of main and overcurrent device to serve fire pump improvements listed in Fire Protection improvements. Provide new underground fire pump feeder to fire pump location, approximately 250 feet away.
- Replace flexible cord wiring to wood shop equipment with conduit and wiring.

2.5 Lighting Systems

Description

Building interior lighting consists mostly of lensed T-8 linear fluorescent luminaires in corridors, classrooms and support spaces. Some smaller spaces have compact fluorescent and incandescent lighting. All areas appear to be controlled by manual switches only.

Figure 24: Linear Fluorescent Pendants at Computer Lab Classroom

Gym lighting has been retrofitted with fluorescent high-bay luminaires and occupancy sensor controls. The occupancy sensors appear to be separately zoned into 4-6 isolated occupancy sensor controlled areas. These should be combined to allow an occupant to walk in and use part of the gym space without portions of it appearing dark. Locker room luminaires have damaged and/or discolored lenses.

Figure 25: Floodlight Lighting at East End of Building and Driveway

Exterior lighting is controlled by photocell controls. Canopy lighting has recently had LED sources as replacement and District is satisfied with the performance. Perimeter lighting is existing HID flood lights mounted at the top of building.

Emergency powered egress lighting is limited to battery pack bug-eye luminaires at selected locations.

Recommendations

- Remove flood lights where coverage is aimed at parking and driveways. Provide new exterior pole mounted area lighting and pathway lighting to replace flood lights removed.
- Replace all luminaires in locker rooms with new impact resistant surface mount lensed wraps, LED type.
- Combine multiple occupancy sensor control zones at Gym into a single zone, so all lights in the Gym turn on when an occupant walks in.
- Replace existing fluorescent surface wrap luminaires with LED type – common areas and support areas.
- Replace existing fluorescent acrylic linear pendant luminaires with LED type – classrooms, support areas, cafeteria.
- Provide local occupancy sensor control to occupied rooms and support spaces.
- Provide astronomical time clock controls for corridors and common areas, and exterior lighting.
- Replace select luminaires in corridor egress paths, at cafeteria, and at gym with local battery pack ballast with 90-minute backup in order to illuminate egress paths with minimum code required footcandle levels. Provide constant-hot charging branch circuit and UL924 relays to bypass manual controls as applicable.

2.6 Fire/Life Safety

Description

The fire alarm system consists of an old manual system with pull stations, and bells with several loud sirens for notification, with no visual strobe coverage. The District has expressed a concern with the annunciating sirens being excessively loud and that some devices have been physically muffled, disconnected or deactivated.

Figure 26: Fire Alarm Siren and Pull Station

Recommendations

- Remove old fire alarm system pull station devices and sirens. Provide new manual fire alarm/sprinkler monitoring and alarm system with voice evacuation/alarm communication and visual strobe notification, with approved dial-out equipment to central monitoring station.

2.7 Technology

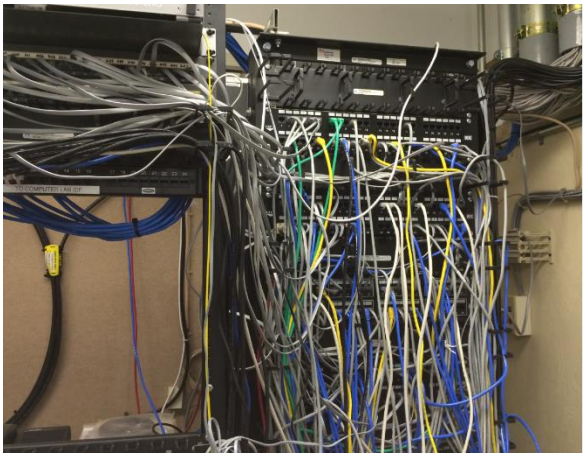


Figure 27: MDF Equipment at Computer Lab Classroom

Description

The existing MDF is located in the building inside the computer lab classroom. Horizontal distribution is mostly CAT5e cabling and jacks.

The phone system is in need of an upgrade to a VoIP system similar to the elementary school upgrade being implemented.

The existing paging system equipment was on-site but not yet installed. The IT staff plans to integrate the new devices with the new phone system.

The existing clock system is old, does not synchronized, and needs replacement.

The classroom audio-visual equipment is not consistent between classrooms, and permanent provisions are not present for installation of new A/V system.

Recommendations

- Provide phone system upgrade to VoIP, as specified by the District IT department.
- Provide A/V media equipment at each classroom, and permanent conduit and junction box provisions for installation of ceiling projectors, media connectivity at the teacher's station, and speakers.
- Replace horizontal copper cabling and upgrade to CAT 6. 3 drops per classroom.
- Demolish/remove old clock/speaker system and cabling. Raceways are to remain to serve new systems.
- Provide new central synchronized wireless clock system, capable of networking with school network and interfacing with server software applications.
- Provide new intercom/bell system and speakers, compatible with the new school phone system. Intercom system shall be capable of networking with school network and interfacing with server software applications.
- Provide magnetic door locks for exterior doors, centrally controlled from the office as requested by the District.