

(Oct. 1990)

United States Department of the Interior
National Park Service

National Register of Historic Places
Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name James Benson Dudley Senior High School and Gymnasium
other names/site number _____

2. Location

street & number 1200 Lincoln Street n/a not for publication
city or town Greensboro n/a vicinity
state North Carolina code NC county Guilford code 081 zip code 27401

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set for in 36 CFR Part 60. In my opinion, the property meets does not meet the National Register criteria. I recommend that this property be considered significant nationally statewide locally. (See continuation sheet for additional comments.)

James Crow SHPO 2/25/03
Signature of certifying official/Title Date
North Carolina Department of Cultural Resources
State or Federal agency and bureau

In my opinion, the property meets does not meet the National Register criteria. (See Continuation sheet for additional comments.)

Signature of certifying official/Title Date
State or Federal agency and bureau

4. National Park Service Certification

I hereby certify that the property is:

Signature of the Keeper

Date of Action

entered in the National Register.
 See continuation sheet

determined eligible for the National Register.
 See continuation sheet

determined not eligible for the National Register.

removed from the National Register.

other,

(explain:)

James Benson Dudley Senior High
School and Gymnasium
Name of Property

Guilford County, NC
County and State

5. Classification

Ownership of Property
(Check as many boxes as apply)

Category of Property
(Check only one box)

Number of Resources within Property
(Do not include previously listed resources in count.)

- private
- public-local
- public-State
- public-Federal
- building(s)
- district
- site
- structure
- object

Contributing	Noncontributing	
2	0	buildings
0	0	sites
0	0	structures
0	0	objects
2	0	Total

Name of related multiple property listing
(Enter "N/A" if property is not part of a multiple property listing.)

Historic and Architectural Resources of Greensboro, North Carolina,
1880-1941

**Number of Contributing resources previously listed
in the National Register**

n/a

6. Function or Use

Historic Functions
(Enter categories from instructions)

EDUCATION/School
RECREATION AND CULTURE/Sports Facility

Current Functions
(Enter categories from instructions)

Vacant
RECREATION AND CULTURE/Sports Facility

7. Description

Architectural Classification
(Enter categories from instructions)

Other: Classical Revival-influenced
Other: Late Gothic Revival-influenced

Materials
(Enter categories from instructions)

foundation Brick
walls Brick
roof Asphalt
other

Narrative Description

(Describe the historic and current condition of the property on one or more continuation sheets.)

8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- A** Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B** Property is associated with the lives of persons significant in our past.
- C** Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D** Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations

(Mark "x" in all the boxes that apply.)

Property is:

- A** owned by a religious institution or used for religious purposes.
- B** removed from its original location.
- C** a birthplace or grave.
- D** a cemetery.
- E** a reconstructed building, object, or structure.
- F** a commemorative property.
- G** less than 50 years of age or achieved significance within the past 50 years.

Narrative Statement of Significance

(Explain the significance of the property on one or more continuation sheets.)

Areas of Significance

(Enter categories from instructions)

- Education
- Ethnic Heritage: Black
- Architecture

Period of Significance

- 1929-1953
- 1959

Significant Dates

- 1929
- 1936
- 1959

Significant Person

(Complete if Criterion B is marked)

n/a

Cultural Affiliation

n/a

Architect/Builder

- Hartmann, Charles C. (architect/school)
- Jenkins, W. Edward (architect/gymnasium)
- Barnes, H.D. (contractor/gymnasium)

9. Major Bibliographical References

Bibliography

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

- preliminary determination of individual listing (36 CFR 67) has been requested
- previously listed in the National Register
- Previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey
- # _____
- recorded by Historic American Engineering Record # _____

Primary location of additional data:

- State Historic Preservation Office
- Other State Agency
- Federal Agency
- Local Government
- University
- Other

Name of repository:

James Benson Dudley Senior High
School and Gymnasium
Name of Property

Guilford County, NC
County and State

10. Geographical Data

Acreage of Property Approximately 3 ac.

UTM References

(Place additional UTM references on a continuation sheet.)

1	<u>17</u> Zone	<u>611231</u> Easting	<u>3991072</u> Northing	3	<u> </u> Zone	<u> </u> Easting	<u> </u> Northing
2	<u> </u>	<u> </u>	<u> </u>	4	<u> </u>	<u> </u>	<u> </u>

See continuation sheet

Verbal Boundary Description

(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification

(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

name/title Jennifer F. Martin
organization Edwards-Pitman Environmental, Inc. date December 17, 2002
street & number 5400 Glenwood Avenue, Suite 412 telephone 919/785-9702
city or town Raleigh state NC zip code 27612

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

A **USGS map** (7.5 or 15 minute series) indicating the property's location

A **Sketch map** for historic districts and properties having large acreage or numerous resources.

Photographs

Representative **black and white photographs** of the property.

Additional items

(Check with the SHPO or FPO for any additional items.)

Property Owner

(Complete this item at the request of SHPO or FPO.)

name Guilford County Schools, Terry B. Grier, Superintendent
street & number 712 N. Eugene Street telephone 336-370-8100
city or town Greensboro state NC zip code 27401

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listing. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 *et seq.*)

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P. O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Projects (1024-0018), Washington, DC 20303.

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James Benson Dudley Senior High School and Gymnasium
Guilford County, NC

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Setting

The James Benson Dudley Senior High School and Gymnasium are located on approximately three acres of a seventy-two-and-a-half-acre campus occupying a roughly square parcel at 1200 Lincoln Street in the Nocho Park neighborhood on the east side of the city of Greensboro. East Lee Street borders the seventy-two-and-a-half acre property to the north; US 220/29/70, also known as the O. Henry Parkway, to the west; Tuscaloosa Street to the south; and Willow Road forms the eastern boundary. The school complex is surrounded on all sides by dense, mostly residential development. The approximately three-acre parcel containing the nominated buildings is nearly flat on its north side, but slopes down at the south where the gymnasium stands. The immediate grounds are grass-covered and contain a few shrubs and trees.

James B. Dudley Senior High School, completed in 1929, faces west and occupies a site near the center of the greater school parcel. Lincoln Street, a north-south running corridor, terminates just to the southwest of the school building and due west of the gymnasium. A concrete sidewalk extends westward from a raised concrete step at the front door then crosses a grass lawn and terminates at a circular driveway in front of the building. Sidewalks also extend along the front and sides of the building. A service road extends from Lincoln Street toward the east and runs between the school and gym. A sugar maple tree stands on each side of the west end of the sidewalk. A red maple is northwest of the entrance and a large pine tree stands in the southwest corner of the front lawn. Crape myrtles grow just in front of both the auditorium wing and the wing that originally contained the school's first gym.

The gymnasium, built in 1959, stands approximately fifty yards south of the south end of the school. Its front door faces due north. The gym was built below the grade of the school.

Several other school buildings occupy the seventy-two-and-a-half-acre parcel, but because of their dates of construction they are not being nominated. A low, flat-roofed brick building constructed in 1961 to serve as a science building for Dudley High School stands to the north of the original school and is oriented with its front door facing west. It is connected to the original school by an open, metal-roofed walkway. Designed by the Greensboro firm of Andrews & McGeady, the building has a low horizontal massing typical of schools of the period. The English building—a flat-roofed brick building constructed in 1963 to house English and related subjects for Dudley High School—stands just to the northwest of the science building. Lincoln Middle School, a complex of buildings constructed in the 1980s and 1990s stands on the west side of Lincoln Street opposite the science and English buildings.

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A group of athletic fields and sports-related structures and buildings occupy a portion of the parcel just south of Lincoln Middle School. Most of these fields and buildings date to the late 1960s and 1970s. A brick building known as the auxiliary gym stands to the southwest of the 1959 gym. Architect Clinton E. Gravely of Greensboro designed the 1982 building. Bluford Elementary, a modern school, occupies a site on the south end of the seventy-two acre parcel, but because of vegetation it is barely visible from Dudley.

In late July 2002, the Guilford County School system demolished a substantial one-story, U-shaped brick wing that stood directly behind the 1929 high school building. Constructed in 1957, the flat-roofed building was connected to the original building with open walkways and oriented so that the tops of the "U" faced the rear of the school. The building contained classrooms, the cafeteria, musical instruction areas, and the home economics department. The area where the 1957 building stood is completely clear and level.

James Benson Dudley Senior High School

1929: Original Building

1936: Gymnasium Addition

Contributing Building

James B. Dudley Senior High School is a handsome three-story, load-bearing, common-bond brick building which exhibits elements of the Classical Revival style in its front entrance and the Collegiate Gothic style in the battlements crowning the stair towers.

The foundation consists of spread footings. The first floor is slab on grade, while the second and third floors consist of a three-inch concrete slab on metal deck or steel bar joists. Two lines of cast-in-place concrete posts and beams inside and along the length of the corridor walls provide supports. The stair towers are formed with cast-in-place concrete. The building's roof is concrete on metal deck with steel bar joints. Concrete beams and columns provide interior support for the roof and load bearing brick masonry provides exterior support. The auditorium is framed with steel trusses, joists, and columns.

The largely unaltered edifice displays sophisticated cast stone detailing. When the original section of the school was completed in 1919, it consisted of the nearly rectangular main block and the gymnasium wing at the north end. A crenellated stair tower, identical to the one on the north stair tower, marked the building's south end. The gymnasium was attached to the south end in 1936. The only substantive alterations occurred in 1960-1961 and in 1991. In the early 1960s, the original

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windows were replaced with vinyl sash windows and several classrooms on the first floor were converted to offices. In 1991, the 1936 gym was converted to classroom space.

Exterior

The school is U-shaped with its long, west-facing façade of thirteen bays flanked by the auditorium and gymnasium wings that project toward the front parking lot. A one-story slightly projecting portico shelters the front entrance. Substantial Doric columns support the portico's wide entablature. A tall multi-paned transom surmounts the half-glazed double doors, while narrow multi-paned and wood paneled sidelights flank the doors. Brick buttresses with cast stone caps separate the single and paired groups of double-hung sash on the facade. A stepped parapet with cast stone coping shelters the building's flat poured asphalt roof. The stair towers rise slightly above the main block's parapet. At ground level, each tower displays double metal doors surmounted by a stepped stone lintel with a keystone. Above the door on each tower are paired round-arched windows. Above the arched windows—at the third story level—are two rows of vertical windows each with four fixed square lights. Stepped brick buttresses with cast stone caps and a crenellated parapet with cast stone coping crown each stair tower.

The auditorium and gymnasium wings flanking the main block of the school are identical although the gym's windows and doors were bricked in when that wing was converted to classrooms in 1991. Architect Clinton E. Gravely designed the conversion of this space. A projecting one-story entrance bay is centered on the façade of each wing. The auditorium wing's entrance consists of four wide buttresses with cast stone caps framing three double-leaf metal and glass doors with divided-light arched transoms. At the first level, two windows with cast stone sills occupy the wall surface on each side of the projecting entrance. At the upper level above the projecting entrance three pairs of windows with cast stone sills pierce the wall. All of the windows on this elevation are separated in groups of two by brick buttresses with cast stone caps. The brick buttresses vary in width with the more substantial located at the corners. A crenellated parapet with cast stone coping surmounts this elevation of the auditorium.

The corresponding elevation on the former gym wing is identical except that the bays have been completely or partially filled with brick. The fenestration arrangement is intact as are the cast stone sills beneath each window and the bold brick buttresses that outline the bays.

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The north-facing elevation of the auditorium wing features five groups of paired vertical four-light windows similar to the windows on the upper level of the stair towers. Alternating narrow and wide brick buttresses separate each pair of windows. A double-leaf metal door surmounted by a stepped lintel with a keystone is located at the west end of the elevation. Above the door are a pair of windows. Another double-leaf metal door is located on the east end of this north elevation. On the east side of the door—at both the first and second levels—three one-over-one sash windows pierce the wall. On the far east end of this elevation is the north side of a small, one-story mechanical room devoid of windows.

The rear elevation consists of the three-story central block featuring a centered, square, brick smokestack. Eight sash—four on each side of the smokestack—pierce each level of the main block's elevation. The auditorium's rear (east) two-story wall flanks the three-story block to the north. Three windows are located on the upper level, while a single-leaf metal door and two windows appear at the first level. A small one-story, flat-roofed mechanical room attaches to and projects from the north end of the auditorium's rear wall. The rear wall of the former gym features four windows on the second level and two double-leaf metal doors and two windows on the first level. A flat metal canopy shelters one of the doors.

The south elevation of the former gym originally appeared similar to the north elevation, but during the 1991 renovation the original windows were partially bricked in to reduce their size; the original shape of the windows is apparent in the contrasting brick used to partially fill the bays. Five pairs of these reduced windows extend in a row along the second level; three pair occur on the first floor. A double-leaf metal door surmounted by a stepped lintel with a keystone flank the windows on the first floor. The arrangement of brick buttresses on this elevation mirrors the north elevation. On the far east end the a larger multi-light window marks the second floor.

Interior

The building's interior has a central, double-loaded corridor plan extending the length of the school; classrooms, offices, and restrooms flank the corridor on each of the building's three levels. The interior is plainly finished with original tile floors and plaster walls. In the classrooms, original blackboards remain in place and original storage closets between classrooms are intact. Fluorescent lights illuminate each corridor and the classrooms. Walls in the stair towers are exposed brick and a divided-light transom crowns each door connecting the stair towers to the corridors.

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The first floor of the school's main block originally consisted of four classrooms and offices for administrators and the guidance counselor. In 1960-1961, the first floor was renovated and the front northern classroom converted to office space. Two classrooms along the east wall of the first floor, opposite the entrance to the school, were also renovated for use as classrooms. This level also contains restrooms, the records office, and storage closets.

The second floor retains its original arrangement of rooms. Three classrooms occupy the front or west side of the corridor. The small storage closets built on each side of the central classroom are intact. Four classrooms, boys' and girls' restrooms, a lounge, and the former art room occupy the east side of the corridor.

The third level contains three classrooms on the west side of the corridor and four classrooms on the east side of the corridor. There are no restrooms on this level. Until 1957 when the rear building (now demolished) was constructed, the cafeteria was located on this floor.

The auditorium wing features a vestibule on its front side or west side. Three double doors with divided-light transom mimic the front doors and allow access from the vestibule into the large open space. Original wooden and metal fold-down chairs with the monogram "JBD" on the end panel fill the auditorium. A small balcony extends along the west wall. The stage extends along the east wall. A dressing room for boys occupies the northeast corner of the auditorium, while the girls' dressing room stands in the southeast corner of the space.

The former gym wing has undergone dramatic alterations since its construction in 1936. In 1991 it was remodeled to accommodate classrooms. The original open plan was changed and a second story was added. Where there was a single open space, seven classrooms were added on the first level and four classrooms were created on the second level. A staircase was installed in the southwest corner. Few changes were made in the rooms along the east wall where classrooms and offices already existed.

Gymnasium
1959

Contributing Building

The James Benson Dudley Senior High School gymnasium is a brick building with prominent bottle green colored corrugated glass fiber-reinforced polyester panels filling the space beneath the arched roofline on four elevations. Hinged openings that allow for ventilation are interspersed with the panels. W. Edwards Jenkins, the project architect, made use of a groin vault to form the intersection of the

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vaults, and integrated into those vaults, four smaller steel bow arches to form the arched roofline on each elevation. This system creates a large building where the floor space is uninterrupted by vertical support beams. Exposed metal arch columns set on concrete bearing plates at the building's four corners provide support for the two main arches.¹ These metal arch columns are approximately twenty feet high on the building's east side and a little over fifteen feet high on the west side where the earth under the foundation is more built up. Vertical tension banding on each column acts to support the tension rings that stabilize the long columns at a point where they would tend to gyrate or bend. The brick walls add stability to the smaller bow arches. Buttresses add rigidity to the brick walls.

The gym is set on a concrete foundation with concrete footings. A scored concrete slab extends along the front (north) facade of the building. A wide set of concrete steps is located on the northeast corner of the building. The stairs have pipe railing and lead from the slab up to a scored concrete walkway and then to the front entrance. Narrow concrete stairs on each side of the main stair lead down to the lower level which is below grade. A flat roofed metal canopy supported with square metal posts shelters the walkway. The entrance is contained in a flat roofed brick block that projects from the building. Its façade is symmetrical with a small ticket office centered on the elevation. Four sets of double steel doors with vertical windows flank the ticket office. A band of six windows is located on the east and west sides of the entrance.

At the lower level, a room with windows on both the east and west elevations is contained under the scored concrete walkway that leads from the main steps to the ticket office and main entrance. This space was originally used for drivers' education training and health classes. At the lower level, double doors identical to those at the entrance pierce the north wall. These entrances were originally designated for use by students.

The east and west elevations have hinged windows which pierce the upper and lower levels of the brick projection. Jalousie windows of varying sizes and a single-leaf metal door appear along the long side walls of the gym. Within the corrugated plastic window wall, square jalousie windows provide ventilation for the upper reaches of the gym's interior. Each overhanging corner of the metal roof shelters the columns anchored at each corner of the east and west elevations. A single-leaf metal door at ground level is found beneath the overhanging roof at each corner.

¹ Architect Edward Jenkins used the term "arch columns" to describe the corner supports on his original drawings of the gymnasium. Drawings in the collection of Guilford County Schools Maintenance Office, Greensboro, North Carolina.

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The south (rear) elevation features a projecting one-story, flat-roofed boiler room with doors on its east and south elevations. At the center of the wall, a brick flue rises from the boiler room. A set of metal steps leads directly from ground level on the east side of the boiler room to a single-leaf metal door located at the upper level.

The two-story interior space remains completely intact. Entrance from the front of the building is into the balcony level; students' entrances are at court level. The most prominent feature is the intersecting vault arches at the ceiling. The regulation eighty-four-foot-by-fifty-foot basketball court dominates the lower level. Folding bleachers extend the length of the east and west sides of the court. The north side of this level contains the students' foyer, the drivers' education classroom, and a storage room directly beneath the ticket office. The first aid and trainer's room is located in the northeast corner, while the varsity locker room, varsity equipment room, and visitors' locker room is located along the east side. The boiler room occupies the south side of this level. The main locker room, showers, and a towel room occupy the west side of the lower level. All of the rooms surrounding the court retain their ceramic tile and quarry tile floors and walls.

The gym's upper level contains a public foyer which extends along the north side of the building just inside the entrance doors. Public restrooms occupy the northeast and northwest corners. A public aisle with a metal pipe balustrade extends from each end of the foyer along the east and west sides and above the court. Permanent wooden bleachers rise above each public aisle and overlook the court.

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Summary

James Benson Dudley Senior High School and Gymnasium stand on the east side of the city of Greensboro in Nocho Park, a historically African American suburb platted in 1924. The school, built in 1929 from the designs of Greensboro architect Charles C. Hartmann, is a three-story, load-bearing brick building in an eclectic style incorporating classical and medieval elements. In 1936, a wing identical to an auditorium wing on the north end was added to the south end of the school for use as a gymnasium. The school retains its overall integrity, although in 1991 the gym wing was converted to classroom space and its exterior bays were filled with brick. The school—the first high school for African Americans in the city—was named for James Benson Dudley (1859-1925), a Wilmington native who served as president of the North Carolina Agricultural and Mechanical College in Greensboro from 1896 to 1925. James B. Dudley Senior High School holds local significance in the areas of education and black ethnic heritage for its role in the development of black education in Greensboro in the early twentieth century. The school is also significant under Criterion C as an intact representation of institutional period revival-style architecture that combines classical elements with medieval features. The school was designed by Charles C. Hartmann, who also designed Greensboro High School (now Grimsley High), L. Richardson Memorial Hospital, the Jefferson Standard Life Insurance Company Building (NR, 1976) and several other prominent buildings in Greensboro. Dudley High School functioned as a school from its construction until the end of the 2001-2002 academic year. Context 2, “Modern Suburbanization and Industrialization, 1900-1941,” in “Historic and Architectural Resources of Greensboro, North Carolina, 1880-1941,” (MPDF) provides the context for establishing James B. Dudley High School’s eligibility. The school falls under Property Type 5a, “Educational Buildings” and meets Registration Requirement, page F-33. Additional context is provided herein. The period of significance for James Dudley High School building is 1929 to 1953.

The James B. Dudley Senior High School Gymnasium, built in 1959, meets National Register Criterion C in the area of architecture. The steel-framed groin vaulted building with four brick elevations displaying corrugated glass fiber-reinforced polyester panels stands as an exceptional example of the Modernist movement in school planning and design in Greensboro. Project architect W. Edward Jenkins (1923-1988), a 1949 graduate of North Carolina Agricultural and Technical College’s architectural engineering program, worked for the firm of Loewenstein-Atkinson Architects, AIA from 1949 to 1961. The firm was the only one in Greensboro in the 1950s that hired African American architects. Jenkins designed the gym during a period when architecture schools and architectural journals espoused the use of innovative laminated wood and thin-shell concrete vaulted forms, but local school systems typically chose more utilitarian designs—namely flat-roofed, brick buildings—for classrooms and physical education facilities. African American architects of the period, including

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Jenkins, saw modernism as a new beginning and as a symbol of the promise the future held for African Americans in the segregated South. Jenkins's use of arch columns set on concrete bearing plates to support two massive intersecting steel arches that form the principal roofline remains a unique design in institutional architecture in Greensboro. So innovative was the design that the National Association of School Architects chose a scale model of the gym to display at their annual conference in Atlantic City in 1959. The following year, the American Institute of Steel Construction awarded the Dudley High School gymnasium one of twelve Architectural Awards of Excellence for outstanding esthetic in design in structural steel. The local chapter of the American Institute of Architects bestowed the award on Loewenstein-Atkinson Architects at its meeting in the fall of 1960. Jenkins operated his own practice in Greensboro from 1962 until his death in 1987. Among his Greensboro commissions were a prominent Modernist residence for Kenneth Lee at 1021 Broad Avenue in Greensboro, St. Mathews Methodist Church on Florida Street, and the football stadium and Business and Math Building at North Carolina A&T. He also designed several post offices and numerous churches including the White Rock Baptist Church in Durham. The Dudley High School gymnasium meets Criteria Consideration G because of its exceptional importance as a steel-vaulted free-span Modernist design in Greensboro.

Historical Background/Education and Ethnic Heritage/Black Context

After the citizens of Greensboro approved a school bond referendum in 1926 which allotted over two million dollars for the construction of several schools, the city undertook a major building campaign.² On June 7, 1928, the Greater Greensboro School District purchased a 76.53 acre parcel located at the eastern boundary of the Nocho Park development from Central Industrial Bank in order to build the city's first high school for African American students.³

Charles C. Hartmann, a native of New York who opened an architectural firm in Greensboro in the early 1920s, was chosen to design both the new high school for African American students and Greensboro Senior High School, a school for whites. Hartmann came to Greensboro in the early 1920s when he received the commission to design the Jefferson Standard Life Insurance Company Building. He operated his firm in Greensboro until his retirement in 1969.⁴

² N.L. Engelhardt, "School Building Needs of Greensboro, North Carolina," in *School Building Programs in American Cities* (New York: Teachers College, Columbia University, 1928), 226.

³ Guilford County Deed Book 553, page 70.

⁴ "Architects' and Firms' Records Known to have been Destroyed, Lost, or Dispersed," North Carolina State University Library, http://www.lib.ncsu.edu/archives/architects/Lost_Collections.html (20 August 2002); Charlotte V. Brown, "The Day of the Great Cities: The Professionalization of Building, 1900-1945," in Catherine Bishir et al., *Architects and Builders in North Carolina: A History of the Practice of Building* (Chapel Hill: University of North Carolina Press, 1990), 295.

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Construction of James Dudley Senior High School began in 1928 and was completed in the spring of 1929. Although 375 students moved into the school at the time of its completion, 1929-1930 was the first full academic year of the building's service. On the eve of the city school system's first day of classes in 1929, the *Greensboro Daily News* heralded the completion of the city's seven new school buildings.⁵ Although the majority of the article was devoted to the high school for white students, the reporter provided a description of Dudley High School:

Its setting in a large grove is pretty, and the building itself is one of the most striking of the entire number. In many respects its equipment is equal to that of the new senior high school. It has the same type of built-in lockers, and a Mason and Hamlin concert grand piano occupies a prominent part on the stage. The auditorium is all that could be desired.

The newspaper went on to describe Dudley and the other new buildings as "ultra-modern."⁶

When plans for the school were initially drawn in 1928, the building was simply labeled "Negro High School, Nocho Park."⁷ At a dedication ceremony in December 1929, the school was officially named for James Benson Dudley (1859-1925), a Wilmington native who served as president of the North Carolina Agricultural and Mechanical College in Greensboro for twenty-five years and a critic of racial segregation and its effect on the health care and educational opportunities afforded African Americans.⁸

As enrollment at Dudley increased, the school plant was expanded. In 1931, a frame, U-shaped, two-story building known as the annex was built about one hundred feet southeast of the school. The annex contained several classrooms. In 1936, the school system attached a gym to the south end of the school building using brick identical to those used to build the school. This wing matched the auditorium

⁵ The new school buildings were Greensboro Senior High School (now Grimsley High School) and its free-standing cafeteria, Gillespie Park Junior High School, Hunter School at Pomona, Clara Peck School, Lindley Grammar School and Dudley Senior High School.

⁶ *Greensboro Daily News*, September 8, 1929.

⁷ "Plans for Negro School" dated 1928 in the collection of Guilford County Schools Maintenance Office, Greensboro, North Carolina.

⁸ Jeffrey J. Crow, Paul D. Escott, and Flora J. Hatley, *A History of African Americans in North Carolina* (Raleigh: Division of Archives and History, North Carolina Department of Cultural Resources, 1992), 123.

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wing so that the building's front elevation became symmetrical. In 1939, a frame field house was constructed southwest of the annex. Both the annex and the field house were later demolished.⁹

By 1943-1944, 671 students attended Dudley High School.¹⁰ In 1951, enrollment had decreased slightly to 664.¹¹ In May 1954 the United States Supreme Court ruled in the case *Brown v. Board of Education* that the law of separate but equal facilities was unconstitutional. The white reaction in North Carolina was overwhelmingly negative and the actual integration of schools would not come until seventeen years after *Brown*. In 1955, the state legislature formed the North Carolina Advisory Committee on Education headed by Thomas J. Pearsall to study the effect *Brown* might have on the state's schools. The committee recommended an adoption to the state constitution—known as the Pearsall Plan—that provided money for parents to send their children to private schools instead of integrated schools; permitted communities to suspend school if integration created intolerable conditions; and allowed parents to apply to send their children to the school of their choosing. In essence, the Pearsall Plan allowed parents to ignore *Brown*. In 1956, as a result of an open vote, the plan became part of the state constitution.¹²

Greensboro was one of the first cities in the state to begin the process of desegregation. In May 1954, the city school board passed a resolution to take the necessary steps to comply with the ruling in *Brown*. In 1957, six African American students in Greensboro requested and were granted transfers to all white schools in the city. Josephine Ophelia Boyd, who had been a student at Dudley Senior High School until her senior year, transferred to Greensboro High School and became the first African American graduate of a white high school in North Carolina.¹³

In the December 1957, a seven million dollar bond issue for capital improvements for both Greensboro and Guilford County schools was approved.¹⁴ The bond issue proved crucial to an increasingly overcrowded Dudley High School because it allowed for the construction of a substantial one-story

⁹ State School Commission and the State Board of Health, "Operation of Plant and Sanitation Survey of North Carolina Public Schools (1940)," North Carolina State Archives, Raleigh.

¹⁰ Department of Public Instruction, Division of Negro Education, Special Subject File, "Colleges and Secondary Schools for Negro Youth Approved by the Executive Committee and the Southern Association of Colleges and Secondary Schools, 1943-1944," North Carolina State Archives, Raleigh.

¹¹ Department of Public Instruction, Division of Negro Education, Southern Association of Colleges and Secondary Schools, "Annual Report of the Dudley High School (1950-1951)," North Carolina State Archives, Raleigh.

¹² Crow et al, 169-170.

¹³ Josephine Ophelia Boyd Bradley, "Wearing My Name: School Desegregation, Greensboro, North Carolina, 1954-1958" (Ph.D. diss, Emory University, 1995), 39-40.

¹⁴ Bradley, 187.

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classroom building. The brick building contained classrooms and spaces for music and home economics instruction, as well as a modern cafeteria and kitchen.¹⁵ This building was demolished in July 2002.

As enrollment at Dudley High School increased throughout the 1950s, the original gymnasium became inadequate as the school's athletic programs expanded. The gym proved sorely insufficient for the school's mens' basketball team which was one of the best in the state. In a 1951 evaluation of Dudley High School, a reviewer for the Southern Association of College and Secondary Schools indicated that "a modern gymnasium is needed. This would give both pupils and teachers opportunities to develop a more extensive program of activities. At present, the space for boys and girls is inadequate."¹⁶ Also spurring the construction of a new gym for Dudley High School was a controversy surrounding the mens' basketball team's use of the gym at the city's white high school. In the years leading up to the construction of the gym in 1959, the team gained permission to use Greensboro High School's gym for its home games. Apparently, this arrangement proved controversial among many of the city's white citizens.¹⁷

In late 1957 or early 1958, the school board hired Loewenstein-Atkinson Architects, AIA of Greensboro to design a gymnasium for Dudley High School. W. Edward Jenkins, who had joined the firm soon after graduating from North Carolina Agricultural and Technical College in 1949, was assigned as project architect for Dudley High School Gym.¹⁸

W. Edward Jenkins was born in Raleigh in 1923. He served in the United States Army until honorably discharged in 1946. In 1949 he received a Bachelor of Architectural Engineering from North Carolina Agriculture and Technical College in Greensboro. Jenkins graduated with highest honors and was chosen for *Who's Who in American Colleges and Universities* in 1948. In 1949, the firm of Loewenstein-Atkinson Architects, AIA hired Jenkins as a project architect. According to Major Sanders Jr., AIA, a Greensboro architect and former associate of Jenkins', Loewenstein-Atkinson was the only firm in the city that would hire African Americans. Because of the entrenched social order

¹⁵ Plans for Classroom Building for Dudley High School in the collection of the Guilford County Schools Maintenance Office, Greensboro, North Carolina.

¹⁶ Department of Public Instruction, Division of Negro Education, Southern Association of Colleges and Secondary Schools, "The Evaluation of Dudley High School in Greensboro, North Carolina, April 1951," North Carolina State Archives., Raleigh.

¹⁷ Jim Schlosser (reporter for the (Greensboro) *News & Record*) phone interview with author, August 21, 2002.

¹⁸ Plans for Physical Education Building for Dudley High School, dated March 12, 1958, in the collection of the Guilford County Schools Maintenance Office, Greensboro, North Carolina.

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prevalent in southern society, Jenkins' work space was located in a carriage house behind the firm's main office. Jenkins received his architectural registration in North Carolina in 1953—just three years after the census recorded only two African American architects in the entire state.¹⁹ In 1962, Edward Jenkins opened his own architectural practice in Greensboro and became the first African American architect to receive a state government contract and the first African American to serve on the North Carolina Board of Architectural Registration.²⁰ Jenkins became a member of the American Association of Architects and a member of the Piedmont North Carolina section of AIA. Among his commissions were the football stadium and Business and Math Building at North Carolina Agriculture and Technical College, the Communications Building and Law School building at North Carolina Central University, a residence hall at Palmer Institute, St. Mathews Methodist Church in Greensboro, a residence for attorney Kenneth Lee in Greensboro, White Rock Baptist Church in Durham and several post offices across North Carolina and in Florida. Edward Jenkins died on March 18, 1988.²¹

When the gymnasium was dedicated on February 3, 1959, the local newspaper labeled it “one of the most modern physical education plants in the state.” Three thousand people attended the dedication where Dr. W.T. Armstrong, state commissioner of the Negro High School Athletic Association, served as the main speaker. He called the gym “one of the finest to be found in the association which has 165 schools as members.” Later that month, the National Association of School Architects displayed a model of the building at its annual meeting in Atlantic City.²² The highest honor the new gym received came in the fall of 1960 when the American Institute of Steel Construction bestowed an Architectural Award of Excellence on the Dudley gym and eleven other buildings for their outstanding esthetic design in structural steel. The Piedmont chapter of the AIA presented Loewenstein-Atkinson with the award at a meeting later that year.²³

As baby boom children began to reach high school age in the early 1960s, school plants in North Carolina expanded. At Dudley High School, a one-story, flat-roofed brick building devoted to science

¹⁹ *Census of Population: 1950. Vol. 2, Characteristics of the Population, Part 33, North Carolina* (Washington, D.C.: Government Printing Office, 1952), 241.

²⁰ The census indicates that there were a total of five black architects working in North Carolina in 1960, *Census of Population: 1960. Vol. 1, Characteristics of the Population, Part 35, North Carolina* (Washington, D.C.: Government Printing Office, 1961), 443.

²¹ Major Sanders Jr., AIA, phone interview with the author, August 16, 2002; Prospectus for W. Edward Jenkins, AIA, Architect, n.d.; Obituary for Willie Edward Jenkins, (Greensboro) *News-Record*, March 21, 1988.

²² *Greensboro Daily News*, February 4, 1929.

²³ “Twelve Buildings Cited as A.I.S.C. Makes its First Architectural Awards of Excellence,” *Architectural Record* (September 1960): 12-13.

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classrooms was built just north of the original school building. In 1963 a building containing mostly English classes was constructed northwest of the science building.²⁴

Despite Greensboro's rapid response to *Brown* in 1954, majority one-race schools remained the norm in the city during the early 1960s. In order to comply with Title VI of the 1964 Civil Rights Act, Guilford County schools instituted a freedom of choice program in 1965. Under the plan, each student or his or her parent chose the school the student would attend. The result of the plan was that the school system remained mostly segregated. Throughout the 1960s, the number of black students allowed to attend previously all-white schools increased slowly, while the transfer of white students to all-black schools was nearly nonexistent. On August 25, 1971, Greensboro schools opened and were fully compliant with federal desegregation guidelines set for by the Department of Health, Education, and Welfare.²⁵

In 2000, the Guilford County School Board voted to demolish Dudley High School and replace it with a new school building. The Committee to Save Dudley, a group made up of primarily alumni, asked the school board to reconsider the decision. In 2001, Preservation Greensboro commissioned David C. Fischetti, P.E., president of DCF Engineering, Incorporated, to provide a physical assessment of the main building and the 1959 gymnasium. Fischetti concluded that both buildings are sound and that restoring them would be less costly than replacing them.²⁶

James Dudley Senior High School served the city from its opening in 1929 to the end of the 2001-2002 academic year. The building now stands vacant.

Numerous prominent African Americans graduated from Dudley High School. Ezell Blair Jr. and David Richmond, both members of the class of 1959, along with two other young men, staged the sit-in at downtown Greensboro's lunch counter in February 1960. This event served as a major building block for the Civil Rights movement in the United States. Walter Johnson, who graduated in 1958, was

²⁴ Files in the Guilford County School Maintenance Office, Greensboro, North Carolina.

²⁵ Jane Cary Chapman Peck, "School Desegregation in Greensboro, North Carolina, 1954-1971: A Case Study in Positive Social Change" (Ph.D. diss, Boston University, 1974), 106, 151-152.

²⁶ (Greensboro) *News-Record*, October 30, 2001; David C. Fischetti, P.E. to Heather Seifert, July 2001, Typescript report in the possession of the author.

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the first African American to graduate from Duke Law School. Fred "Curly" Neal, a 1959 graduate, went on to gain worldwide fame as a member of the Harlem Globetrotters basketball team.²⁷

Architectural Context/James B. Dudley Senior High School and Gymnasium

James B. Dudley Senior High School, 1929 and 1936

In the 1920s, North Carolina funded the construction of hundreds of schools across the state. This building campaign occurred in conjunction with the consolidation movement which combined small schools into large, centrally located facilities. These new schools typically included auditoriums and gymnasiums. Throughout the 1930s and 1940s, additions were made to schools built in the 1920s to accommodate ever-expanding courses of study. The Department of Public Instruction oversaw much of the construction of consolidation schools and offered guidance on the building materials, layout and site development of primary and secondary schools. Across North Carolina, schools were built in a variety of styles including Colonial Revival, Neoclassical Revival, Tudor Revival and Collegiate Gothic.

In Greensboro, where these brick buildings of the era exhibited classical, Gothic and Moderne features, schools became community centers. Constructed in 1929 with additions built in 1936, James B. Dudley Senior High School combines elements of the Classical Revival and Gothic Revival styles. The widely-publicized World's Columbian Exposition held in Chicago in 1893 sparked the revival of classicism in the early twentieth century. The style proved popular for modern institutional buildings constructed after World War I. Across North Carolina architects designed monumental courthouses, post offices and schools with classical porticos, domes, detailed cornices and pilasters that interrupted the broad massing of a building's main block. At Dudley High School, the most prominent classical features are its Doric portico and brick pilasters that extend from ground level to the cornice.

Along with classicism, architects in North Carolina favored Gothic Revival and the Collegiate Gothic styles for school design because of their association with medieval institutions in England. Several prominent Collegiate Gothic schools were built in the state in the 1920s including Gastonia High School, designed by architect Hugh White. Architect Julian Abele designed a Gothic Revival campus at Duke University rivaling those at Princeton and Oxford. Largely completed by 1930, it remains the

²⁷ Tommie Morton Young, *Report of the Way We Were: Oral Histories of Four Former All-Black Public Schools in Two North Carolina Counties* (sponsored by the Afro-American Genealogy and History Society and paid for by a grant from the North Carolina Humanities Council, 1991), in the Special Collections of the Greensboro Public Library.

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state's most complete Collegiate Gothic complex. From its most high style execution to more subtle expressions, the Gothic Revival style exhibits a wide range of elements. In its most modest form, Gothic Revival buildings display brick buttresses, towers that rise above the principal roofline and crenellated parapets with cast stone or terra cotta trim. More high style buildings can include pointed-arch windows, complex stone carvings and polychrome masonry.

Dudley High School represents the melding of Classical Revival, a style popular for institutional buildings constructed after World War I, and the Gothic Revival, an appropriate idiom for schools and education-related buildings in the 1920s. The 1929 Dudley High School along with the 1936 gymnasium addition chronicle the state's building campaign that began in the 1920s and ended in the 1940s and the trend toward the use of classicism and the Gothic Revival style in school architecture during the 1920s.

Modern Institutional Architecture in North Carolina

Modernism in architecture began in the 1920s, but gained more widespread popularity after World War II. After the war, many architects and designers shared a profound feeling that modern design had contributed to the allies' victory in the war. To many, technology, in the form of the latest weaponry, lightweight materials such as aluminum and standardized design, provided the United States with a strategic advantage. At the end of the war, the debate between modernists and revivalists that had raged in the 1920s and 1930s seemed nearly put to rest.²⁸ In a September 1948 issue of the British journal *The Architectural Review*, one writer proclaimed that "modern architecture has now won its battle against period revivalism and against the denial of the technical revolution that the use of reminiscent styles implies."²⁹

In North Carolina, the School of Design at North Carolina State College in Raleigh made great strides in promoting and showcasing modernism after World War II. Henry Leveke Kamphoefner, a professor of architecture from the University of Oklahoma, became the school's first dean in 1948. The school and its faculty produced important landmarks of modernism—buildings which helped to promote the state's association with innovative post-war architecture. The school also brought several architectural icons to Raleigh including Frank Lloyd Wright, Mies van der Rohe, and Buckminster Fuller.³⁰

²⁸ L. Hilberseimer, *Contemporary Architecture: Its Roots and Trends* (Chicago: Paul Theobald and Company, 1964), 131.

²⁹ "In Search of Modernity," *The Architectural Review* (September 1948): 116.

³⁰ Ernest H. Wood III, "The Opportunities are Unlimited: Architects and Builders Since 1945," in Catherine Bishir et al., 359.

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The most prominent representation of post-war modernist design in the state is J.S. Dorton Arena (NR, 1972). Built in 1953 and located at the state fairgrounds in Raleigh, the revolutionary edifice represents what was then a rare integration of engineering and architecture. Designed by Matthew Nowicki, a Pole who arrived in Raleigh in 1948 to serve as acting head of the architecture department at the School of Design, the arena employs two oblique-angled parabolic arches with intersecting bases. Below ground where the arches terminate, pre-stressed steel cables hold the arch ends together. Steel cables span the opening in opposing directions to form a saddle-surface roof. This framing was one of the first systems of compression and tension in architecture. Glass panels in the wall piers form a continuously glazed exterior surface. The panels contain green-tinted glass that is alternated with hinged windows to allow for natural ventilation. The building's ingenious skeleton allows for an uninterrupted interior arrangement suitable for sporting events.³¹

Charlotte architect A.G. Odell Jr., a 1939 graduate of Cornell University, trained in the Beaux Arts tradition, but designed several important modernist buildings in the Queen City.³² Odell's most high-profile promotion of the modernist institutional idiom in Charlotte was his design for the 1956 Charlotte Coliseum, a prominent dome-roofed building with large concrete arched exterior walls surmounting glass panels.

Modernist ideals found their way into school design in the 1950s. In a 1952 issue of *The New Yorker*, Lewis Mumford proclaimed that schools of the period were built on a more human scale and distinguished by a flexible use of space and cross-axial plans. According to Mumford, schools were becoming less barrack-like than they were during the New Deal construction campaign and more suited for human occupation and learning. In the post-war era, schools in suburban areas no longer rose as multi-leveled boxes built of heavy masonry. Architects promoted various ideas about school design—almost always espousing certain forms and styles as creating the best environment for learning. Common during this period were single-story buildings with glass-front classroom wings centered on open courtyards. San Mateo, California's Hillside High School, built in 1955-1956 from the designs of architect John Lyon Reed, had a modular plan with moveable panels that allowed educators to reconfigure interior space. By the late 1950s and early 1960s, federal funding to improve educational opportunities for poor children led to an increase in school construction and a period of innovation in school design. Complex and dynamic forms appeared on campuses across the country.³³

³¹ "J.S. Dorton Arena," National Register Nomination, August 14, 1972.

³² Sarah A. Woodard and Sherry Joines Wyatt, "Motorized Landscape: The Development of Modernism in Charlotte, 1945-1965" (report for the Survey and Planning Branch, North Carolina Office of Archives and History, 2000), 27.

³³ Carole Rifkind, *A Guide to Contemporary American Architecture* (New York: Penguin Putnam, Inc., 1998), 230, 239.

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As elsewhere in the country, modernism became a popular idiom for school design in North Carolina after the war. The 1949 appointment of School of Design architect Edward Waugh to supervise North Carolina's Office of School House Planning strengthened that institution's connection to educational design. In 1949 and 1950, the School of Design promoted the benefits of modernism by hosting three-day workshops for architects and local officials. Architects were encouraged to utilize glass for improved natural lighting, reduce ornamentation, and integrate the landscape, site and building.³⁴ In 1959, a North Carolina architecture critic declared that in school design, "the 'gingerbread' façade of a half century ago is both expensive and a poor way to build.... Today's school buildings are attractive workshops, rather than grim monuments of fifty years ago."³⁵

In North Carolina, schools built in the 1950s shared several characteristics. Classroom buildings were almost always one-story, brick, and topped with a flat roof. Single-level buildings were most widely accepted because they were less costly than multi-storied schools. A plan consisting of classrooms along a central corridor found the most favor. In order to encourage as much natural light as possible, continuous rows of windows were set in exterior walls.

In North Carolina, gymnasium design received less attention than classroom building styles with the result that most gyms built in the 1950s emulated the overall massing of classroom buildings and were simple rectangular brick buildings with flat or gable roofs built using the common roof truss and purlin method. These forms proved sufficient for smaller gyms because they could accommodate a regulation-sized basketball court and bleachers. Occasionally, larger gymnasiums in North Carolina were constructed in more innovative barrel-roofed forms. In 1958, architect Robert H. Stephens, AIA, designed a gymnasium for Manteo High School with laminate wood arches and wood decking. The roof extends downward to form a covered walkway along each side of the gym.³⁶ Architect Jesse M. Page, AIA employed a progressive method for the construction of a gym at Murfreesboro High School in Hertford County. The structure covers an area measuring 112 feet by eighty feet with interior ties or columns under a roof sloped at a pitch of four to twelve inches and composed of two parabolic arches, A-front bents, longitudinal and transverse ties at the walls and angle bracing. The vertical members of the A-front bents are supported by the longitudinal walls and the horizontal thrust forms vertical loads on the parabolic arches in the plane of the roof. From the exterior, the building appears as a typical

³⁴ "School House Plans," *Raleigh News and Observer* November 20, 1949, IV-1, cited in "Early Modern Architecture in Raleigh Associated with the Faculty of the North Carolina State University School of Design, Raleigh, North Carolina," National Register of Historic Places Multiple Property Documentation Form, 1994, E-16.

³⁵ "Facts and Fancies about School Buildings," *Southern Architect* (October 1959): 14.

³⁶ "Manteo High School, Manteo, North Carolina," *Southern Architect* (February 1958): 21.

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gable-roofed gymnasium.³⁷ *Southern Architect*, the journal of the North Carolina chapter of American Institute of Architects that featured both the Manteo and Murfreesboro gymnasiums, did not profile any gyms with groin vault roofs in the late 1950s and early 1960s.

More innovative ideas about gymnasium design prevailed in national journals of the period. In 1959, an article in an issue of *Architectural Record* devoted to school design quoted a representative of a Massachusetts high school as asserting ‘that physical education be contained not in the standard box gymnasium, whose dimensions are determined by the rules of basketball, but in a field house...contained in a geodesic dome.’³⁸ In 1960, *Progressive Architecture* featured a newly-built gym at St. Joseph’s High School in Brownsville, Texas. Caudill, Bowlett & Scott, Architect-Engineers executed the design using laminate wood arches to form a dome with exposed cross vaults on the inside.³⁹ The same critic who condemned uniformity in school design in the May 1960 issue of *Architectural Record*, noted that “the dome (geodesic and otherwise) [is] now coming into use as a structure for large places of assembly and for gymnasiums.” He also pointed out that although the geometry of the dome was developed by Buckminster Fuller in 1917 and hundreds have been built, “only now is the structure being considered for public education.”⁴⁰

The gym built at Dudley High School in 1959 represented a departure in form and materials from typical gyms of the period in Greensboro. Jenkins’ use of corrugated glass fiber-reinforced panels was reminiscent of both Dorton Arena and the Charlotte Coliseum, while the exposed arch columns supporting the groin vault at each corner showcased his integration of engineering and architecture, a skill he learned as a student at North Carolina Agricultural and Technical College. The vertical tension banding on the steel columns acts to support the compression rings that stabilize the narrow columns at the point where they would tend to bend and ultimately fail. The brick walls do not support the groin vault, although they likely stabilize the lower bow arches. Buttresses in the brick add rigidity to the walls.⁴¹ His propensity for leaving functional structures exposed carries over to the interior where the two principal intersecting arches are left uncovered as are the smaller junior arched beams set at right angles.

In the context of Greensboro, the Dudley High School gym is the city’s only modernist school gymnasium. The gym at Grimsley High School (formerly Greensboro High School) dates to 1954 and

³⁷ “Physical Education Building, Murfreesboro, North Carolina,” *Southern Architect* (July 1958): 11.

³⁸ Harold B. Gores, “Educational Change and Architectural Consequence,” *Architectural Record* (August 1959): 157-158.

³⁹ “St. Joseph’s Academy,” *Progressive Architecture* (December 1960): 119-121.

⁴⁰ Educational Facilities Laboratories, Inc., “Schools for Tomorrow,” *Architectural Record* (May 1960): 196.

⁴¹ David R. Black, AIA/APT, e-mail communication with author, December 12, 2002.

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is a flat-roofed brick building with few windows. The gymnasium at Page High School is similar in style and dates to the late 1960s. The 1963 gym at Smith High School is a brick, flat-roofed building nearly devoid of windows.

The Groined Vault and Vault Construction Techniques in Modern Building

Groined vaults are based on the intersection of barrel vaults at right angles to each other with the excess surface inside the intersection omitted. In the case of the Dudley gym where the groined vault is over a square plan, the four main walls are arch-headed. These walls extend upward to the vault crown and can be pierced for windows to allow an infusion of light into the interior. The thrusts of the vault are counterbalanced by concentrated buttresses at four points—as in the arch columns at Dudley gym. The four walls forming the square only have to support their own weight. Dudley gym, like all groined vaults over four walls, is a lobed shell carried on four legs at its corners.⁴²

Although the groined vault system that architect W. Edward Jenkins employed in the gymnasium is one of the defining characteristics that identify it as an important modern building, the groined vault is an ancient structure first developed by the Romans. Its development allowed for the construction of great halls such as the Basilica of Constantine and the halls of the public baths. Between the twelfth and seventeenth centuries, the English employed vaulting for Gothic cathedrals. During the middle ages, the Moslems showed great skill in vault construction by using a variety of materials to create ingenious designs. Cut stone vaults were not developed until the Renaissance and Baroque periods when the technical knowledge and labor became available. French church architects and builders elevated vaulting to a new sophistication in the seventeenth century. They created nave vaults pierced by cross vaults at a lower level out of limestone or marble. The Pantheon in Paris represents the French skill in vault building.⁴³

In the United States, masonry vaults remained rare until the early nineteenth century when architects and builders worked to develop a fireproof building. Among the most impressive masonry vaults of the century can be seen in the basement of the United States Capitol and in the state capitols of North Carolina and Tennessee. After the development of iron manufacturing, masonry vaults nearly disappeared.

⁴² Talbot Hamlin, ed. *Forms and Functions of Twentieth-Century Architecture, Volume 1: The Elements of Building* (New York: Columbia University Press, 1952), 524.

⁴³ *Ibid.*, 525-531.

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In modern architecture, vaults have been built of laminated wood, concrete and steel. A 1956 edition of *Architectural Record* featured an advertisement for Rilco Laminated Products, Inc. The featured building was a combination gymnasium-auditorium with a roof constructed with laminated wood arches and purlins. Laminated wood roofs are built of small sections of wood pieced together to form a diagonal web that can be designed to curve over wide spans. Despite their popularity in the building trades in the 1950s and 1960s, they were often deemed unsuitable for public buildings because they were not fireproof.⁴⁴

Reinforced concrete for the construction of vaults, developed in Europe between the world wars, not only protected against fire, but was widely available during World War II when steel proved difficult to obtain. Reinforced concrete vault systems made up of thin shells of concrete take up all the tensile stresses inherent in this method of construction and distribute them evenly by using deep arched ribs or arched web walls to carry the heaviest loads.⁴⁵ The Lambert-St. Louis Airport, completed in 1956, provides an excellent example of thin shell concrete vault construction. Architects Hellmuth, Yamasaki and Leinweber of St. Louis and Detroit designed the building which *Architectural Record* labeled “a bold and imaginative concept.” The terminal is made up of three intersecting barrel vaults which span a 120-foot-wide space. According to Buford Pickens, who served as the dean of the School of Architecture at Washington University in 1956, the building’s arches exhibit “a combination of lightness and tension which, when supported on the square base, seemed to float like bulbous clouds.”⁴⁶

Edward Jenkins’ inspiration for the Dudley gym remains unknown. According to his long-time associate, Major Sanders, AIA, Jenkins could have been influenced by the Byzantine use of the vault. But Jenkins, who was trained in a program that combined engineering and architecture, likely found encouragement in the innovative groin-vaulted and barrel-vaulted buildings that were being designed and constructed all over the world. Among the most innovative and high profile of these were Dorton Arena (1953), Lambert-St Louis Airport (1956), Eero Saarinen’s design for the TWA terminal at Dulles Airport (1958) and the Centre Nationale des Industries et Techniques (1958) in Paris.⁴⁷ In addition, architectural journals of the period featured numerous schools and banks with lemellar and thin shell concrete roofs.

⁴⁴ Advertisement for Rilco Laminated Products, Inc. in *Architectural Record* (January 1956): 114.

⁴⁵ Hamlin, 548-554.

⁴⁶ Buford L. Pickens, “Proud Architecture and the Spirit of St Louis” *Architectural Record* (April 1956): 197, 199.

⁴⁷ *Encyclopedia of Modern Architecture* (New York: Harry N. Abrams, Inc., 1964), 109.

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Geographical Data

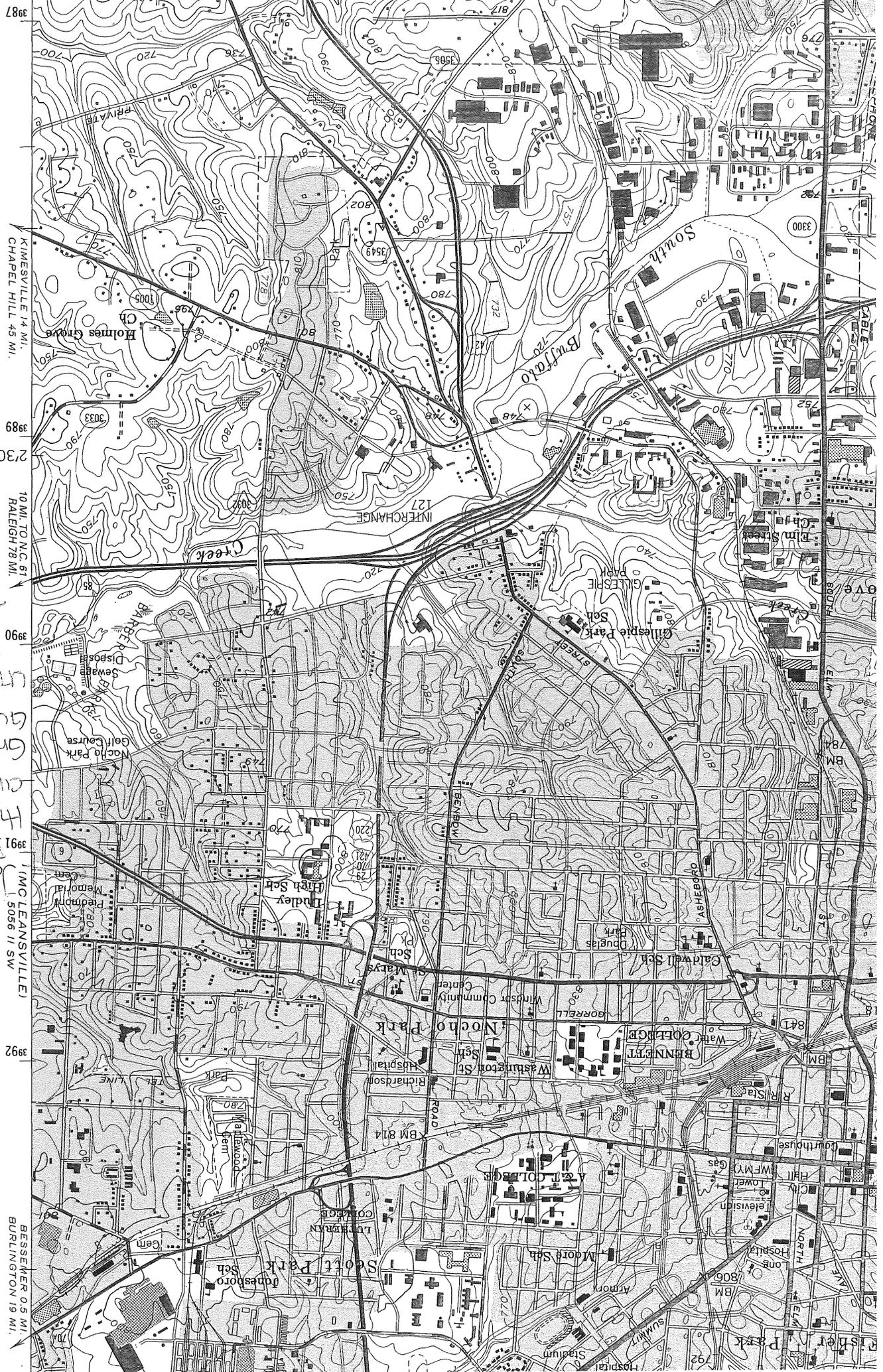
Verbal Boundary Description

The boundaries for the James Benson Dudley Senior High School and Gymnasium are shown as the bold black line in the accompanying map entitled "Sketch Map, James B. Dudley Senior High School and Gymnasium." The high school and gym occupy approximately three acres at the central portion of the seventy-two-and-a-half-acre parcel (parcel # 000001320000100001) the Greater Greensboro School District purchased from Central Industrial Bank for construction of the high school in 1928.

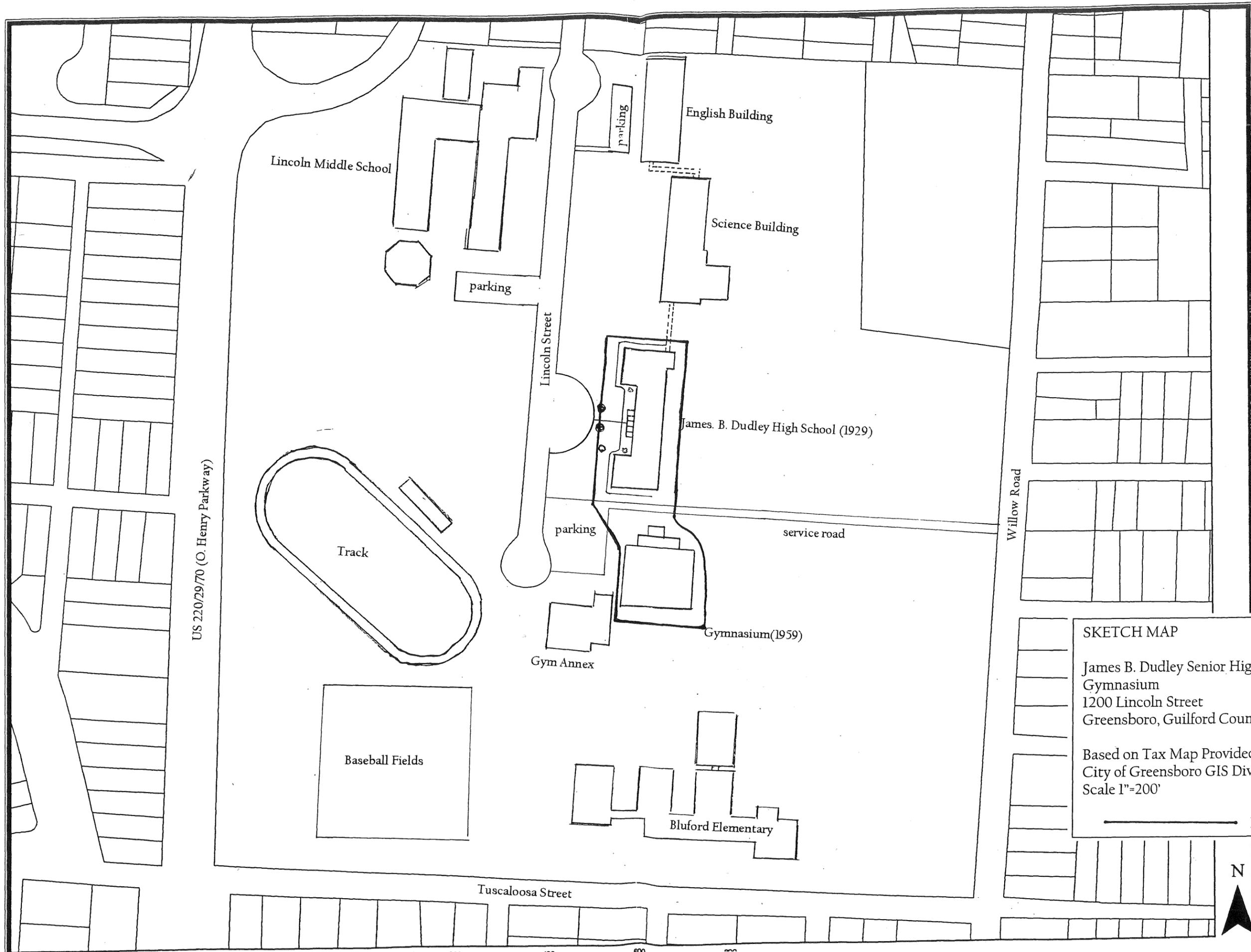
Boundary Justification

The boundaries for the James Benson Dudley Senior High School and Gymnasium include the 1929 school and 1959 gym and exclude the post 1959 buildings, structures, and acreage which do not meet the National Register criteria.

James Fenson
and Gymnasium
High School
Greensboro,
Guilford Co., NC
UTM Ref.:
Zone 17
611331
391072 N
Greensboro Quad



3987
KIMESVILLE 14 MI.
CHAPEL HILL 45 MI.
3989
10 MI. TO N.C. 61
RALEIGH 78 MI.
3990
3991
10 MI. (LEANSVILLE)
5056 11 SW
3992
BESSEMER 05 MI.
BURLINGTON 19 MI.



SKETCH MAP

James B. Dudley Senior High School and
Gymnasium
1200 Lincoln Street
Greensboro, Guilford County, NC

Based on Tax Map Provided by the
City of Greensboro GIS Division
Scale 1"=200'

————— NR Boundary



