Abstract
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A -- traffic study
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Design Scheme I

Design Scheme IA

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Design Scheme III

Resource Material
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Magazines
Government Publications
Journals
Pamphlets
This book is a compilation of an academic year's endeavor to take a project as close to working drawings as possible. Because of dissatisfaction with the size of the preliminary design, I analyzed the design the second quarter to remove the excess space while using the same scheme. Because of the extra effort to reduce the size of the building, I did not get as involved in detailing the mechanical, structural, or electrical systems as required in the second quarter thesis program.

The program for Marion College's Field House was compiled from interviews with Marion College's Athletic Department, Marion College's Administration, and Ball State University's Athletic Department as well as pamphlets, bulletins, and reports by Marion College. Berry May, Marion College Athletic Director, and I worked together to list the facilities that the college needed and wanted in the new building.

The concept of having horizontal circulation around the gymnasium under the bowl and vertical circulation divided into levels for spectator and athletic use, was developed in Design Scheme I. The building was located on the site to be compatible with pedestrian traffic and the outdoor facilities that were designed but not under construction.

Design Scheme IA was the result of a short design period in which modifications were made to the site plan and the
entrance/lobby area, because I was dissatisfied with the compatibility with pedestrian circulation.

The reduction in the size of the Field House came in Design Scheme II, winter quarter, when I analyzed the size, quantity, and capacity of each area of the building. The site was also analyzed and design modifications resulted. The result of the investigation was a 30 per cent decrease in the size of the building and the addition of a few activities on the site.

Design Scheme III was the period when the architecture of the building was unified. The major part of the work was trying to make the entrances part of the total building instead of elements on the building.

The total effort of my 30 week endeavor is bound in this book. The project is the evidence of five years of education, which only scratches the surface of the knowledge that I need to survive in the real world.
The next major building project on Marion College's Master Plan is a Field House. After talking with the Administration, they agreed to work with me as a client.

Marion College, located in Marion, Indiana, is a small private co-educational church institution with an enrollment of approximately a thousand students with one-third of the students commuting. In 1968, the college went intercollegiate with their athletic program. In 1972, the Athletic Department began work on its new outdoor facilities which were a baseball diamond, an all-weather track, eight tennis courts, and a soccer field.

Marion College's indoor facility is a gymnasium which has a basketball court with a seating capacity of 200 people. The present outdoor facilities are two tennis courts, a soccer field, and a baseball diamond. The school rents the additional facilities needed so students can fulfill the physical education requirements. The facilities are located throughout Marion which makes it inconvenient for students.

Since Marion College is a small private college, the school must work on a limited budget. As Dr. Goodman, president of Marion College, said, "We want a 2 million dollar Field House for 750 thousand dollars." The Administration feels that the school could raise 1 million dollars. The idea
of phasing has interested the Administration as a possible solution for a more complete facility.

The site that the Administration is considering is the Athletic Field which is located on the corner of South Nebraska and East Forty-first Street in Marion. The tract is flat open land with new outdoor athletic facilities. The Athletic Field has residential housing on the north and east, an elementary school on the south, and college buildings on the west.

Because of limited funds, the Field House must be very flexible with as many areas serving multi-functions as possible. Also, phasing of the facility, though not desired, could be another solution for the problem of limited funds.

In the first interview with Berry May, Athletic Director, he gave a general list of facilities that the college would like to see in the building. The list follows:

- Basketball court to accommodate pro teams
- Seating capacity of 4000-5000 people
- Indoor track
- Wrestling room
- Gymnastic room
- Locker rooms
  - men
  - women
  - faculty
  - visiting teams
- Weight room
List continued

Sauna
Handball courts
Olympic size pool with diving pit
Administration offices
Classrooms
Trophy case
Concession area
Training room/first aid room
Parking

There are three reasons why I have chosen this project. The first reason is that I feel capable of handling this building. The second reason is that it will give me a chance to look closely at budgeting and to work with monetary limitations. The third reason is that the project is a real project.
Marion College was organized in 1920 by The Wesleyan Methodist Church of America as a liberal arts four year college with professional preparation for church service and public school teaching. Beginning in 1906, The Wesleyan Methodist Church of America operated Fairmount Bible School at Fairmount, Indiana, which became the religion department of Marion College. In 1968, The Wesleyan Methodist Church effected a merger with the Pilgrim Holiness Church to form the Wesleyan Church.

From the beginning, Marion College has been approved by the Indiana State Department of Public Instruction for teacher education programs. In 1966, the college was granted membership in the North Central Association of Colleges and Secondary Schools and was accredited by that organization.

The athletic program consisted of two organizations made from the student body that participated in intramural competition until 1969. In that year, Marion College began participation in intercollegiate competition, having been given approval from the Board of Directors the previous year. At the same time the college was given approval to offer a major in Physical Education and Health.
Purpose

We, Marion College, believe in the education of the total person which includes the spiritual, intellectual, and physical. As far as the education of the physical is concerned, the college believes the major objectives of this area to include the development of the mental, social, organic, and neuromuscular.

Education through movement may be achieved in several areas. First of all movement education takes place in the required physical education program at Marion College; when, all men and women take four semester hours of physical education. Another area where education through movement takes place is in the intramural program whereby all students may take part in various physical activities on a voluntary basis. A third aspect is in the area of women's extramurals who have special talents in certain sports activities may participate on a voluntary basis.¹

One of Marion College's major goals once the Field House is constructed is to have it serve the college as much as possible in all the previous named areas -- physical

¹ Marion College Physical Education and Athletic Outdoor Facilities 1972.
education, intramural, extramural, and intercollegiate sports. Also, the college would make every attempt to serve the recreational needs of the students and community in their pursuit of leisure time activities.

Need

The need for a new athletic facility to serve Marion College is great. The physical education program has out grown the present facilities and needs facilities not available on the campus. To meet the need, the college presently rents facilities throughout Marion for the students. At present, the college rents Marion Coliseum for basketball games and buys memberships to the YMCA for swimming classes.

An inventory reveals that the facilities are inadequate. The indoor facility consists of a gymnasium that is about thirty years old with a heating plant that is also outdated. In the building, there are no support facilities such as locker rooms, first aid room, or rest rooms. The building houses a basketball court with a seating capacity of 200 people, and a stage at one end of the court. Other activities for which the building is used are volleyball, badminton, gymnastics, wrestling, and a trampoline. As one can see, the variety of activities is very limited in the present structure.
A better variety of activities are available in the existing outdoor facilities which includes two lighted tennis courts, a soccer/football field, a baseball diamond, a cross country course, and open green space. The outdoor activities will be improved as soon as all the funding is available for the completion of the Athletic Field. The facilities that will be built are eight tennis courts, a baseball diamond, an all-weather track and field events, and a soccer/football field.
Neighborhood

Marion College is located in a middle-class, single family detached, residential area. The location is around Washington Street and Forty-first Street in the southern part of Marion, Indiana. Center Elementary School, where observation is done by education majors from the college, is located southeast of the campus, and adjacent to the Athletic Field. Commercial centers are located two blocks north and eight blocks south of the campus. The facilities located north of the college are a drug store, gas station, a barber shop, and small transient businesses. The shopping center located south of the college has a department store, a drug store, a grocery store, a card shop, a clothing store, and four gas stations.

City

Marion, Indiana, is an industrial city of about 40,000 population, located 7 miles west of Interstate 69, 65 miles northeast of Indianapolis, and 50 miles southwest of Fort Wayne. The five major industries located in the city are:

Bell Fiber Corporation
Dana Corporation
Fisher Body
General Tire, Inc.
Radio Corporation of America
There are two denominational headquarters and a mission headquarters located in Marion. The organizations are the Regional Headquarters of the United Methodist Church, the World headquarters of the Wesleyan Church, and the World Gospel Mission.

The public transportation that services Marion are four bus lines, one of which is the local system, and an airline.

**Region**

Within a 30 mile radius of Marion, there are seven institutions of higher learning and an experimental farm whose names are:

- Anderson College
- Ball State University
- Huntington College
- Indiana University Branch
- Manchester College
- Marion College
- Taylor University
- Miller Purdue
- Experimental Farm
- Anderson, Ind.
- Muncie, Ind.
- Huntington, Ind.
- Kokomo, Ind.
- North Manchester, Ind.
- Marion, Ind.
- Upland, Ind.

Within this same 30 mile radius, there are five state parks or recreational areas that are listed below:

- Frances Slocum State Recreation Area
- Little Turtle State Recreation Area
- Mississewa Reservoir
- Huntington Reservoir
List continued

Lost Bridge State Recreation Area  Salamonie Reservoir
Miami State Recreation Area  Mississeea Reservoir
Mounds State Park  Anderson, Indiana
Salamonie Forest State Recreation Area  Salamonie Reservoir

There are six cities of comparable size or larger in the same 30 mile area.

Anderson  60,000 pop.
Huntington  20,000 pop.
Kokomo  50,000 pop.
Muncie  60,000 pop.
Peru  15,000 pop.
Wabash  15,000 pop.

Adjacent Influence

The site placement and design of the Field House must respond to the influence of the surrounding buildings. The area of most concern should be the one story, single family detached, middle-income housing that surrounds the site on two and a half sides. Starting from the southeast corner of Nebraska Street and Forty-first Street and going east 500 feet on the north edge of the site, there is a road which is a barrier between the houses and the site. The next 800 feet on the north edge has no barrier between
the houses and the site, which is the same condition for the next 725 feet on the east edge of the site. The 1375 feet on the south edge of the site are adjacent to Center Elementary School's playground. There is a road, Nebraska Street, on the west edge of the site, which is a barrier for 600 feet of one story, single family detached, middle-income housing and the remaining 350 feet is college buildings. On the northwest corner of Nebraska and Forty-first Street, there is a small orchard that Marion College owns.

Traffic

Since the site has no direct access to a major artery and no sidewalks which lead to the tract, there could be a pedestrian/vehicular conflict. Because parking is planned for the site, a traffic study will be made to eliminate the problems that will arise. See Appendix A for the results and recommendations made from the study.

Site

The site is flat open land with no vegetation except grass. The tract consist of 31\(\frac{1}{2}\) acres of which 7 acres are being purchased. Two-thirds of the area is planned for the outdoor facilities which are waiting final funding.
Soil

There are two buildings built by Marion College adjacent to the site. Both facilities are east of the site and less than 7 years old. See Appendix B for soil conditions and water table.

Utilities

The utilities that are available to the site are:

- Water: 6" main, 50 psi pressure
- Storm Sewer: 24" main, .16% fall
- Sanitary Sewer: 10" main, .15% fall
- Gas: 8" main, medium pressure
- Telephone: 16 pair line, buried
- Electricity: single phase, 7200 volts overhead; three phase, 4000 volts overhead
Future Enrollment

The 1972-1973 enrollment in Marion College is about 775 students, which is down from the 1970-1971 enrollment which was 869. The 1970-1971 enrollment was the highest enrollment in the college's history. The drop in student enrollment is viewed as a temporary situation caused by the economic squeeze in the teaching profession. The college officials are still confident of seeing an enrollment of 1,115 students in the 1975-1976 academic year. In the following years, the Administration sees very little increase in student enrollment. See Appendix C for enrollment.

Financing

Since Marion College is a small independent institution, it must finance all projects through donations, fund raising campaigns, and some government assistance. The $875,000 Science Hall, which was built in 1969, was partially financed through the United States Government. The break down of funding was:

1/3 HEW Grant
1/3 HEW Loan
1/3 Marion College

Since 1969, federal grants and loans have been decreasing in number. Therefore, financing of the Field House will depend mainly on donations and fund raising campaigns. Private
enterprise could be tapped to provide monies on a "matching fund" basis.

Construction Implications

Because of the limited budget, there are two definite implications. The first area of concern is interior construction. Since the college has a small enrollment, all the facilities in the Field House will never be in use at the same time. Therefore, the spaces must be flexible to allow different activities to use the space by proper scheduling. By considering equipment erection, removal, and storage, equipment that is "permanent" will be located in places that will allow maximum flexibility with a minimum of inconvenience.

The second area of concern is the exterior shell. Although the college wants to build the complex at one time, the need might arise to phase the building. Although the school would not have a complete complex, it would have a core element that could be added to as the need arises or the funds become available.

The building could have two to four phases by different combinations of areas. Three possible examples are:
<table>
<thead>
<tr>
<th>Example 1</th>
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</thead>
<tbody>
<tr>
<td>Phase I</td>
<td>Gymnasium/Support</td>
</tr>
<tr>
<td>Phase II</td>
<td>Administration</td>
</tr>
<tr>
<td>Phase III</td>
<td>Gymnastics/Wrestling</td>
</tr>
<tr>
<td>Phase IV</td>
<td>Pool</td>
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</table>

<table>
<thead>
<tr>
<th>Example 2</th>
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<tr>
<td>Phase I</td>
<td>Gymnasium/Support/Administration</td>
</tr>
<tr>
<td>Phase II</td>
<td>Gymnastics/Wrestling</td>
</tr>
<tr>
<td>Phase III</td>
<td>Pool</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Example 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase I</td>
<td>Gymnasium/Support/Administration/Pool</td>
</tr>
<tr>
<td>Phase II</td>
<td>Gymnastics/Wrestling</td>
</tr>
</tbody>
</table>
The site is zoned R-1 (suburban residential) with the exception of a small section of land which the college is in the process of purchasing. The section is not zoned presently. The land will have to be rezoned to B-2 (business) so that a sports building can be built on the site. With the B-2 classification, there is a parking requirement which is: For every 5 seats there must be 1 parking space.
Public Facilities

The public facilities are placed in the building to serve the people, students, or guests, who come to observe activities that are scheduled or to attend classes in the complex. The location of each element should be in a prominent spot since the building will be new to many people who attend athletic events. Some of the areas need to be accessible whenever the building is open; whereas, some areas must be lockable since it's use is periodic. The facilities must be equipped for durability and easy maintenance because of the high volume of traffic that will use these areas.

Support Facilities

The support facilities shall serve the people who will use the apparatus in the Field House and/or the outdoor facilities. The location of each element shall have access to the athletic facilities, indoor and outdoor, and the public facilities. The elements shall offer security, privacy, personal hygiene or assistance to the user. The facilities must be equipped for durability and easy maintenance because of the high volume of traffic that the area will handle and sanitary conditions that must be maintained.
Athletic Facilities

The athletic facilities shall serve the participants that are involved in an athletic event. The elements shall be accessible to the support facilities. The areas shall be designed for the safety of the participants and for flexibility with compatible events. The areas shall be equipped to meet the rules that govern intercollegiate competition.

Administration Facilities

The administration facilities shall serve the faculty in their preparation for classes or athletic events and in governing the athletic program. The elements shall be accessible to the students and guest who have need to see faculty or staff. The total area should be flexible so that it can adapt to future needs of the administration.

Education Facilities

The education facilities shall be used for instruction. The elements shall be accessible to the students as well as one element accessible from the support facilities. The area shall be equipped for durability and easy maintenance,
as well as accepting teaching aids. The total area should be flexible so that it can adapt to future needs of education.

Environmental Facilities

The environmental facilities shall provide heating, air-conditioning, and ventilation. The equipment shall be zoned to meet the needs of different activities. In sizing the equipment, concern should be given to people surges. The equipment shall be accessible for easy maintenance and/or repair.
Public Facilities

Area
Ticket Office
100 SF

Ticket Booth
70 SF (2 @ 35 SF)

Vestibule
1400 SF

Concession Stand
300 SF

Concession Lobby
1400 SF

Coat Check
1000 SF

Vending Area
200 SF

Public Rest Room
600 SF (2 @ 300 SF)
Men

Women

Total Area 5070 SF

Support Facilities

Locker Room
6600 SF

gym lockers, street lockers, benches,
bulletin board, mirrors, fountains
<table>
<thead>
<tr>
<th>Area</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Locker Room (cont.)</strong></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>300 gym lockers</td>
</tr>
<tr>
<td>1600 SF</td>
<td>100 street lockers</td>
</tr>
<tr>
<td>Women</td>
<td>300 gym lockers</td>
</tr>
<tr>
<td>1600 SF</td>
<td>100 street lockers</td>
</tr>
<tr>
<td>Team (men)</td>
<td>60 gym lockers</td>
</tr>
<tr>
<td>1000 SF</td>
<td>60 street lockers</td>
</tr>
<tr>
<td>Team (women)</td>
<td>40 gym lockers</td>
</tr>
<tr>
<td>800 SF</td>
<td>40 street lockers</td>
</tr>
<tr>
<td>Team (visiting)</td>
<td>50 gym lockers</td>
</tr>
<tr>
<td>850 SF</td>
<td>50 street lockers</td>
</tr>
<tr>
<td>Faculty (men)</td>
<td>24 gym lockers</td>
</tr>
<tr>
<td>340 SF</td>
<td>8 street lockers</td>
</tr>
<tr>
<td>Faculty (women)</td>
<td>18 gym lockers</td>
</tr>
<tr>
<td>260 SF</td>
<td>6 street lockers</td>
</tr>
<tr>
<td>Referee</td>
<td>3 street lockers</td>
</tr>
<tr>
<td>Shower Room</td>
<td>shower heads, antiseptic box,</td>
</tr>
<tr>
<td>610 SF</td>
<td>towel area</td>
</tr>
<tr>
<td>Men, Faculty, Team</td>
<td>20 shower heads</td>
</tr>
<tr>
<td>200 SF</td>
<td></td>
</tr>
<tr>
<td>Women, Team</td>
<td>20 shower heads</td>
</tr>
<tr>
<td>200 SF</td>
<td></td>
</tr>
<tr>
<td>Faculty (women)</td>
<td>4 shower heads</td>
</tr>
<tr>
<td>40 SF</td>
<td></td>
</tr>
<tr>
<td>Team (visiting)</td>
<td>15 shower heads</td>
</tr>
<tr>
<td>150 SF</td>
<td></td>
</tr>
</tbody>
</table>
Area
Shower Room (cont.)
  Referee
  20 SF
Toilets
  345 SF
  Men, Faculty, Team
  125 SF
  Women, Faculty, Team
  125 SF
  Team (visiting)
  75 SF
  Referee
  20 SF
Training Aid Station
  examination table, shower, sink, cabinet
  Men
  300 SF
  Women
  200 SF
  Team (visiting)
  100 SF
Team Room
  1000 SF
Equipment Room
  700 SF
Equipment
  2 shower heads
Toilets
  water closets, lavatories
  urinals
  bench
  urinals
Training Aid Station
  examination table, shower, sink, cabinet
  large whirlpool, 2 small whirlpools, ultrasound
  chalk board, movie screen, tack board, seats
  shelves, cabinets, closets
Area

Equipment Room (cont.)

Men
400 SF

Women
300 SF

Equipment Repair & Cleaning Room
300 SF

Total Area 10155 SF

Athletic Facilities

Basketball 23,560 SF

Court
7980 SF
94' x 50'

Seating
12,540 SF
3,000 spectators

Equipment Storage
25 SF

Mechanical Control Room
50 SF

Gymnastics 2,935 SF

Equipment

work bench, sink, floor drain, washer, dryer
Area

Gymnastics (cont.)

Apparatus Room
2400 SF

Equipment
excercise mat, side horse, vaulting
buck, horizontal bar, uneven bars,
rings, balance beam, trampoline
(optional), score's bench, 20' min.
ceiling

Seating
18" seats with 3' aisles
310 SF
100 spectators

Equipment Storage
200 SF

Mechanical Control
Room
25 SF

Wrestling
1750 SF

Mat Room
mat with 10' circle
1500 SF
36' x 36'

Seating
18" seats with 3' aisles
310 SF
100 spectators

Mat Storage
mat rack
125 SF

Mechanical Control
Room
25 SF

Handball Courts
3700 SF
Area

Handball Courts (cont.)

Single Wall one wall 20' high
2100 SF (2 @ 1050 SF)
35' x 30'

Four Wall two side walls & front wall 20' high
1600 SF (2 @ 800 SF) with ceiling and a back wall of 12'
20' x 40' min. height

Tennis
21,625 SF

Court net, 32' min. ceiling
21,600 SF (3 @ 7200 SF)
36' x 78'

Equipment Storage
25 SF

Boxing
1625 SF

Ring mats, rope,
1600 SF
24' x 24'

Equipment Storage
25 SF

Volleyball
6073 SF

Court net, 25' min. ceiling
6048 SF (2 @ 3024 SF)
30' x 60'

Equipment Storage
25 SF
Area
Badminton
2665 SF

Court
2640 SF (3 @ 880 SF)
20' x 44'

Equipment Storage
25 SF

Weight Training
650 SF

Weight Room
600 SF

Equipment Storage
50 SF

Weight, racks, mats, weights

Sauna
135 SF

Men
100 SF

Women
35 SF

Swimming Pool
4960 SF

Pool
3690 SF
82'-0½" x 45'-0"

Seating
620 SF

Equipment
net, 25' min ceiling

Racks

Sauna cabin

6 take-off blocks, lane markers for
6 lanes

18" seats with 3' aisles

200 spectators
Area                                      Equipment

Swimming Pool (cont.)
  Viewing Area
  100 SF

  Filter Room
  500 SF

  Equipment Storage
  25 SF

  Mechanical Control Room
  25 SF

Diving Pool
  2520 SF

  Diving Pit
  1400 SF
two 1 meter boards, 3 meter board

  Seating
  620 SF
  200 spectators

  Viewing Area
  100 SF

  Filter Room
  375 SF

  Mechanical Control Room
  25 SF

Indoor Track & Field
  33,716 SF

  146.6 Yard Track
  4 lanes, two banked curves
  17,600 SF
Area

Indoor Track & Field (cont.)
60 Yard Track 6 lanes, starting blocks, 20 yard
4920 SF deceleration apron

Pole Vault planting pit, 12' x 16' min landing
784 SF pit, 130' runway, 2 uprights

High Jump 12' x 16' min landing pit, 68' radius
7244 SF runway, 2 uprights

Long Jump take off board, 9' x 15' min jump pit,
682 SF 130' runway

Shot Put 7' dia. shot circle, stop board,
2486 SF 70' throw radius

Total Area 105,914 SF

Administration Facilities

Reception Area seating
150 SF

Secretarial Pool desk, filing cabinets, counter
250 SF

Offices desk, filing cabinet, shelves
1000 SF

Athletic Director
200 SF

Coaches (women) 200 SF (2 @ 100 SF)
Area

Offices (cont.)
  Coaches (men)
    600 SF (6 @ 100 SF)

Conference/Lounge
  750 SF
    Room
      500 SF
    Kitchenette
      75 SF
    Storage
      175 SF

Trophy Case
  100 SF

Reference Room
  200 SF

Total Area
  2450 SF

Equipment

Table, movie screen, seating, TV receptacle, chalk board, tack board

Sink, hot plate, coffee urn, counter, refrigerator

Shelves

Seating, shelves, tables

Education Facilities

Classroom
  2100 SF
    Movie screen, chalk board, TV receptacle, Tack board

30 Station Room
  900 SF (2 @ 450 SF)

40 Station Room
  1200 SF (2 @ 600 SF)
Area
Computer Terminal Room 100 SF
Human Performance Lab 1000 SF

Equipment
terminal, chair, tack board
large treadmill, bicycle ergometer, Fisher gas analyzer, cardiotachimetric controller

Total Area 3200 SF

Environmental Facilities

Mechanical Area (10% of ASF)
12,679 SF

Circulation

Area (20% of ASF)
27,694 SF

Total Area

Total Assigned Square Feet 166,162 SF

Total Cost

Total Cost Based on $30 per SF $4,984,860
Recommendations

After investigation of the pedestrian and the vehicular traffic patterns to the site, there is indication that a conflict between people and autoes will occur at the intersection of Forty-first Street and Nebraska Street. This conflict will be at it's peak following an activity at the Field House because of the large volume of people that will be departing the building at the same time.

To eliminate the problem, I recommend that parking for the field House be placed on the south side of the site and the building be placed on the northwest corner of the site. Vehicular traffic will be allowed to come too the facility from the north on Nebraska Street before the activity begins because arrival time will be spread over a longer period of time. When departing from the activity, all traffic from the parking lot shall be routed south on Nebraska Street to Forty-fifth Street and dispersed east to State Road 15 or west to Harmon or Washington Streets. To implement this plan, Marion College must get the city to improve Forty-fifth Street to a major artery from Nebraska Street to Washington Street.

To improve the pedestrian circulation, Forty-first Street between Nebraska Street and Harmon/Washington Streets should be closed to vehicular traffic and made into a pedestrian mall with Selby Street open for north-south traffic.
SOIL BORINGS
(BALDWIN FOOD CENTER)

Silty Clay

Sand

Gravel

Organic Matter