PURPOSE

The purpose of this chapter is to assist the school district and the Design Professional with purchase and development of a site.

INTRODUCTION

In each case of purchase and development, there are several required criteria to be in compliance with the Ohio School Facilities Commission guidelines. If these items are not in compliance, an approval to deviate must be obtained.

SITE SELECTION CRITERIA

The site selection criteria given are not the only factors in selecting a site for a new facility. These criteria have an impact on development and use of a facility, however large or small. The school district and the Design Professional may supplement the criteria, if so desired. Several of the criteria have been determined to be significant enough that they must be complied with during consideration of a site and others must be in compliance prior to purchase of the site.

SITE DESIGN

General site design requirements for new facilities have been developed for all new buildings and are listed in Section 3200. Specific requirements unique to each building category are listed in Section 3300 for Elementary Schools, Section 3400 for Middle Schools, and Section 3500 for High Schools.

Throughout the site design requirements are references to "provide for" and "plan for." Where the term "provide for" is used, the Ohio School Facilities Commission will fund these items. Where the term "plan for" is used, the school district will fund, except for the site preparation, which generally are changes in topography.

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A. GENERAL

1. Site selection criteria applies to new construction. A review of the site selection criteria is required for additions to existing facilities to determine if the existing site can accommodate the site design requirements. The site selection is to be done by the school district with the assistance of a design professional.

2. Factors to be used for judging the merits of a site under consideration are:

   a. Site Size
   b. Topography
   c. Vehicle Access
   d. Soil Characteristics
   e. Site Utilities
   f. Site Preparation
   g. Codes and Zoning
   h. Adjacent Property
   i. Easements/Rights-of-Way
   j. Environmental Restrictions
   k. Testing
   l. Aesthetic Considerations
   m. Proximity to other school district operated facilities.

3. The order of the factors does not establish importance or priority of each factor.

4. Sustainable Site Design Factors:
   a. Building orientation for daylighting and natural ventilation
   b. Minimize building footprint
   c. Minimize impervious surface
   d. Site and athletic field maintenance using integrated pest management and water efficient irrigation systems

5. Factors may have a short- or long-term effect on site selection.

6. Where requirements differ between local/state authorities and Ohio School Facilities Commission guidelines, the project must comply with the greater of the two. Every site is unique, and situations may arise that are unforeseen by these guidelines. In the event that a special exception to these guidelines should be considered, the proposed variance to the guidelines should be discussed early in the planning process with the Ohio School Facilities Commission.

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A. SITE SIZE

1. The recommended site sizes are:

   a. Elementary School: 10 acres plus 1 acre per 100 students

   b. Middle School: 20 acres plus 1 acre per 100 students

   c. High School: 35 acres plus 1 acre per 100 students

   d. Combination Schools:
      K-12 School: 40 acres plus 1 acre per 100 students
      K-8 School: 20 acres plus 1 acre per 100 students
      6-12 School: 35 acres plus 1 acre per 100 students

   e. Career-Technical School: 35 acres plus 1 acre per 100 students

B. URBAN SITE SIZE

1. The site sizes given attempt to accommodate a range of available site sizes. It is also recognized that not all sites will be able to accommodate a new or replacement facility, even with the smallest site size recommended in this Design Manual. A list of possible site size reductions is provided below for the administration and Design Professional to analyze the different options. The list is not all-inclusive and all decisions need to involve all interested parties prior to deleting or reducing a program.

   a. Decrease the footprint percentages from the ideal target sizes identified in the Proposed Building Footprint chart in paragraph D that follows.

   b. Decrease the amount of visitor and staff parking to be provided.

   c. Decrease the amount of student parking provided.

   d. Decrease the amount of mechanical yard space to be provided.

   e. Delete the bus drop-off and parent drop-off areas and provide a curbside service only.

f. Reduce the amount of greenspace to be provided.

g. Reduce/decrease the size/number of playfields/ playgrounds to be provided.

C. URBAN SITE INTRODUCTION

1. The following site size recommendations are intended as guidelines for evaluating the facilities required for schools of certain grade levels and student populations.

2. The design professional should review the recommended site sizes with the local school district with regard to their educational program, community needs, availability of existing recreational facilities within the community and other extenuating circumstances.

3. Paragraph D presents the building sizes recommended for various grade levels and student populations. Paragraph D also indicates what portion of that area should be reflected in the footprint of the building, i.e., what portion should remain on the first floor of the building.
   a. After evaluation of all possible factors affecting the size of the new or existing site, the Design Professional shall submit the itemized evaluation to the OSFC for review and approval.

4. Paragraph E presents total parking spaces recommended for various grade levels and student populations.

5. Paragraphs F, G, and H present the total site area recommended for elementary schools of various student populations.

6. Paragraphs I, J, and K present the total site area recommended for middle schools of various student populations.

7. Paragraphs L, M, N and O present the total site area recommended for high schools of various student populations.

8. Paragraph P presents total area required for each type of outdoor athletic or recreation facility, and is intended as a guideline in adjusting recommended site sizes.

D. URBAN BUILDING FOOTPRINT

1. The following chart is intended to assist with building footprint size selection:

Percentage of Building Footprint to Total Area (GSF)								
Building Size	GSF	40%	50%	60%	70%	80%	90%	100%
ELEMENTARY SCHOOLS								
400 students	50,000							50,000
550 students	64,520				45,164	51,616		
700 students	80,920				56,644	64,736		
MIDDLE SCHOOLS								
450 students	67,950				47,565	54,360		
600 students	85,725			51,435	60,007			
750 students	105,750			63,450	74,025			
HIGH SCHOOLS								
450 students	81,000				56,700	64,800		
800 students	***132,800***			***79,680***	***92,960***			
1200 students	***198,000***		***99,000***	***118,800***				
1600 students	***259,200***		***129,600***	***155,520***				

E. URBAN PARKING

1. The following chart is intended to assist in the development of the minimum parking for new facilities.

2. Provide the required accessible parking within quantities allocated.

3. Confirm all parking quantities with the local building, planning and/or zoning departments.

4. Contain staff parking in a secured area separate from other facility parking.

Description	Elementary Schools			Middle Schools			High Schools				
Building Capacity	400	550	700	450	600	750	450	800	1200	1600	
Teaching Stations	16	22	28	18	24	30	18	32	48	64	See Note 1
Staff Parking											
Teachers	16	22	28	22	29	36	22	38	57	76	See Note 2
Ancillary Staff	8	11	14	9	12	15	5	8	12	16	See Note 3
Administration	5	7	9	6	8	10	7	10	15	17	See Note 4
Custodial/Maintenance	3	4	5	3	4	5	3	6	8	11	See Note 5
Food Service	4	5	6	4	5	6	4	7	10	13	See Note 6
Total Staff Parking	**36**	**49**	**62**	**44**	**58**	**72**	**41**	**69**	**102**	**133**	
Total Visitor Parking	**8**	**11**	**14**	**9**	**12**	**15**	**9**	**16**	**24**	**32**	See Note 7
High School Student Parking							**90**	**160**	**240**	**320**	See Note 8
Min. Required Parking	**44**	**60**	**76**	**53**	**70**	**87**	**140**	**245**	**366**	**485**	See Note 9

5. Verify that the minimum required parking equals or exceeds the requirements of the local governing agencies.

Note 1: Teaching stations are determined at a percentage of 1 per 25 students.
Note 2: Teachers are calculated at the following utilization of teaching stations: Elementary 100%; Middle-85%; High School-85%. Calculation: Teaching Station/Utilization percentage = Number of Teachers (24/.85 = 29)
Note 3: Ancillary staff includes teaching aides, media center specialist, special education staff, etc. Total is calculated as percentage of the student population as follows: Elementary-2%; Middle-2%; High-1%.
Note 4: Administration includes principals, secretarial, and itinerant staff.
Note 5: Custodial/maintenance staff includes full-time staff for regular school hours. Calculation: 1 staff per 150 students.
Note 6: Food service staff is calculated at 1 staff per 100 meals served with 80% building capacity participation for a full-service kitchen. Satellite kitchen would reduce staff by approximately 50-75%.
Note 7: Visitor parking is calculated at 2% of building student capacity.
Note 8: Student parking is calculated at 20% of all High School students.
Note 9: Minimum required parking is determined by the total of staff, visitor, and student parking or by required zoning.

F. URBAN ELEMENTARY SCHOOL – 400 students

Building Footprint (One-Story)	50,000 SF	1.15 acres
K-2/3-5 Playgrounds (see Note 1)	20,000 SF	0.46 acre
Parking and Drives (see Note 2)	17,600 SF	0.40 acre
Play Fields (see Note 3): One multipurpose field (360' x 250'), one softball field (200' outfield), and one basketball court	117,340 SF	2.69 acres
Subtotal	204,940 SF	4.70 acres
Add 20% Greenspace (see Note 4)	40,988 SF	0.94 acre
TOTAL	245,928 SF	5.64 acres
Recommended site size		5.75 acres

Note 1: This space footage, based on 50 SF per student, allows for a hard surface play area and a soft surface play equipment area for each playground.

Note 2: This estimate of area, based on 400 SF per car, allows for drives, a drop-off/pick-up zone, and a service area drive.

Note 3: Softball fields may partially overlap multipurpose field.

Note 4: 20% of the site square footage requirements as greenspace ensures adequate space for separation of the various elements located on each site. Includes site landscaping.

G. URBAN ELEMENTARY SCHOOL – 550 students

Building Footprint (Two-Story)	51,616 SF	1.19 acres
K-2/3-5 Playgrounds (see Note 1)	27,500 SF	0.63 acre
Parking and Drives (see Note 2)	24,000 SF	0.55 acre
Play Fields (see Note 3): One multipurpose field (360' x 250'), one softball field (200' outfield), and one basketball court	117,340 SF	2.69 acres
Subtotal	220,456 SF	5.06 acres
Add 20% Greenspace (see Note 4)	44,091 SF	1.02 acres
TOTAL	264,547 SF	6.07 acres
Recommended site size		6.25 acres

Note 1: This space footage, based on 50 SF per student, allows for a hard surface play area and a soft surface play equipment area for each playground.

Note 2: This estimate of area, based on 400 SF per car, allows for drives, a drop-off/pick-up zone, and a service area drive.

Note 3: Softball fields may partially overlap multipurpose field.

Note 4: 20% of the site square footage requirements as greenspace ensures adequate space for separation of the various elements located on each site. Includes site landscaping.

H. URBAN ELEMENTARY SCHOOL – 700 students

Building Footprint (Two-Story)	64,736 SF	1.49 acres
K-2/3-5 Playgrounds (see Note 1)	35,000 SF	0.80 acre
Parking and Drives (see Note 2)	30,400 SF	0.70 acre
Play Fields (see Note 3): One multipurpose field (360' x 250'), Two softball fields (200' outfield), and one basketball court	139,040 SF	3.19 acres
Subtotal	269,176 SF	6.18 acres
Add 20% Greenspace (see Note 4)	53,835 SF	1.24 acre
TOTAL	323,011 SF	7.42 acres
Recommended site size		7.50 acres

Note 1: This space footage, based on 50 SF per student, allows for a hard surface play area and a soft surface play equipment area for each playground.

Note 2: This estimate of area, based on 400 SF per car, allows for drives, a drop-off/pick-up zone, and a service area drive.

Note 3: Softball fields may partially overlap multipurpose field.

Note 4: 20% of the site square footage requirements as greenspace ensures adequate space for separation of the various elements located on each site. Includes site landscaping.

I. URBAN MIDDLE SCHOOL – 450 students

Building Footprint (Two-Story)	54,360 SF	1.25 acres
Parking and Drives (see Note 1)	21,200 SF	0.48 acre
Play Fields (see Note 2): One six-lane running track, One soccer/football and events field in track interior, One baseball field (350' outfield), One softball field (200' outfield), and one basketball court	363,300 SF	8.34 acres
Subtotal	438,860 SF	10.07 acres
Add 30% Greenspace (see Note 3)	131,658 SF	3.02 acres
TOTAL	570,518 SF	13.09 acres
Recommended site size		13.25 acres

Note 1: This estimate of area, based on 400 SF per car, allows for drives, a drop-off/pick-up zone, and a service area drive.

Note 2: Pole vault is not included at track.

Note 3: 30% of the site square footage requirements as greenspace ensures adequate space for separation of the various elements located on each site. Includes site landscaping.

J. URBAN MIDDLE SCHOOL – 600 students

Building Footprint (Two-Story)	60,007 SF	1.38 acres
Parking and Drives (see Note 1)	28,000 SF	0.64 acre
Play Fields (see Note 2): One six-lane running track, One soccer/football and events field in track interior, One baseball field (350' outfield), Two softball fields (200' outfield), and two basketball courts	407,191 SF	9.35 acres
Subtotal	495,198 SF	11.37 acres
Add 30% Greenspace (see Note 3)	148,559 SF	3.41 acres
TOTAL	643,757 SF	14.78 acres
Recommended site size		15.00 acres

Note 1: This estimate of area, based on 400 SF per car, allows for drives, a drop-off/pick-up zone, and a service area drive.

Note 2: Pole vault is not included at track.

Note 3: 30% of the site square footage requirements as greenspace ensures adequate space for separation of the various elements located on each site. Includes site landscaping.

K. URBAN MIDDLE SCHOOL – 750 students

Building Footprint (Two-Story)	74,025 SF	1.70 acres
Parking and Drives (see Note 1)	34,800 SF	0.80 acre
Play Fields (see Note 2): One six-lane running track, One soccer/football and events field in track interior, One baseball field (350' outfield), Two softball fields (200' outfield), and two basketball courts	407,191 SF	9.35 acres
Subtotal	516,016 SF	11.85 acres
Add 30% Greenspace (see Note 3)	154,805 SF	3.55 acres
TOTAL	670,821 SF	15.40 acres
Recommended site size		15.50 acres

Note 1: This estimate of area, based on 400 SF per car, allows for drives, a drop-off/pick-up zone, and a service area drive.

Note 2: Pole vault is not included at track.

Note 3: 30% of the site square footage requirements as greenspace ensures adequate space for separation of the various elements located on each site. Includes site landscaping.

L. URBAN HIGH SCHOOL – 450 students

Building Footprint (Two-Story)	64,800 SF	1.49 acres
Parking and Drives (see Note 1)	56,000 SF	1.29 acres
Play Fields (see Note 2): One six-lane running track, One soccer/football and events field in track interior, One practice football field, One baseball field (400' outfield), One softball field (250' outfield), Four tennis courts, and two basketball courts	439,231 SF	10.08 acres
Subtotal	560,031 SF	12.86 acres
Add 35% Greenspace (see Note 3)	196,010 SF	4.50 acres
TOTAL	756,041 SF	17.36 acres
Recommended site size		17.50 acres

Note 1: This estimate of area, based on 400 SF per car, allows for drives, a drop-off/pick-up zone, and a service area drive.

Note 2: Pole vault is not included at track.

Note 3: 35% of the site square footage requirements as greenspace ensures adequate space for separation of the various elements located on each site. Includes site landscaping.

M. URBAN HIGH SCHOOL – 800 students

Building Footprint (Two-Story)	***92,960 SF***	***2.13*** acres
Parking and Drives (see Note 1)	98,000 SF	2.25 acres
Play Fields (see Note 2): One eight-lane running track, One soccer/football and events field in track interior, One practice football field, One practice soccer field, One baseball field (400' outfield), One softball field (250' outfield), Six tennis courts, and four basketball courts	532,839 SF	12.23 acres
Subtotal	***723,799 SF***	***16.61*** acres
Add 35% Greenspace (see Note 3)	***253,330 SF***	5.82 acres
TOTAL	***977,129 SF***	***22.43*** acres
Recommended site size		22.50 acres

Note 1: This estimate of area, based on 400 SF per car, allows for drives, a drop-off/pick-up zone, and a service area drive.

Note 2: Pole vault is not included at track.

Note 3: 35% of the site square footage requirements as greenspace ensures adequate space for separation of the various elements located on each site. Includes site landscaping.

N. URBAN HIGH SCHOOL – 1,200 students

Building Footprint	***118,800 SF***	***2.73*** acres
Parking and Drives (see Note 1)	146,400 SF	3.36 acres
Play Fields (see Note 2): One eight-lane running track, One soccer/football and events field in track interior, One practice football field, One practice soccer field, Two baseball fields (400' outfield), Two softball fields (250' outfield), Ten tennis courts, and six basketball courts	775,823 SF	17.81 acres
Subtotal	***1,041,023 SF***	***23.90*** acres
Add 35% Greenspace (see Note 3)	***364,358 SF***	***8.36*** acres
TOTAL	***1,405,381 SF***	***32.26*** acres
Recommended site size		32.50 acres

Note 1: This estimate of area, based on 400 SF per car, allows for drives, a drop-off/pick-up zone, and a service area drive.

Note 2: Pole vault is not included at track.

Note 3: 35% of the site square footage requirements as greenspace ensures adequate space for separation of the various elements located on each site. Includes site landscaping.

O. URBAN HIGH SCHOOL – 1,600 students

Building Footprint	***155,520 SF***	***3.57*** acres
Parking and Drives (see Note 1)	194,000 SF	4.45 acres
Play Fields (see Note 2): One eight-lane running track, One soccer/football and events field in track interior, One practice football field, One practice soccer field, Two baseball fields (400' outfield), Three softball fields (250' outfield), Ten tennis courts, and six basketball courts	821,908 SF	18.87 acres
Subtotal	***1,171,428 SF***	***26.89*** acres
Add 35% Greenspace (see Note 3)	***410,000 SF***	***9.41*** acres
TOTAL	***1,581,428 SF***	***36.30*** acres
Recommended site size		36.50 acres

Note 1: This estimate of area, based on 400 SF per car, allows for drives, a drop-off/pick-up zone, and a service area drive.

Note 2: Pole vault is not included at track.

Note 3: 35% of the site square footage requirements as greenspace ensures adequate space for separation of the various elements located on each site. Includes site landscaping.

P. SPACE REQUIREMENTS FOR OUTDOOR ATHLETIC AND RECREATION FIELDS

1. The following information is intended as a guideline in adjusting the recommended site sizes by adding or deleting playing fields.

2. The designer should note that paragraphs F through O of this chapter use some overlap of recreational fields in determining total area required for all fields at each site.

3. The designer must consider configuration of each field in determining the actual area to add or delete for each field. Refer to design guidelines for court and field dimensions.

4. The designer should also consider drainage, circulation, access, and the need for bleacher seating.

5. Baseball: Estimate is based on 350' radius to centerfield and 300' radius to right and left outfield with 60' offset from baseline to sideline fence. 135,806 SF 3.12 acres

Softball:
One field with outfield overlapping multi-purpose field:
(includes 360' x 195' multi-purpose field)
91,200 SF 2.09 acres
One field – no overlap 53,824 SF 1.24 acres

Soccer/multipurpose field: 70,200 SF 1.61 acres

Track & field events:
6-lane track, with interior field (no events)
146,000 SF 3.35 acres
6-lane track, with interior field and discus/shot-put combo:
173,222 SF 3.98 acres
8-lane track, with interior field & events
187,500 SF 4.30 acres

Tennis: 10 courts 66,530 SF 1.53 acres
4 courts 24,480 SF 0.56 acre

Basketball: Courts are 84' x 50'. Courts in quantity of 1-2 have 5' surrounding and between courts. Courts in quantity of 3 and up have 10' on ends and 5' to sides and between courts.

1 court	5,640 SF	0.13 acre
2 courts	10,810 SF	0.25 acre
4 courts	23,400 SF	0.54 acre
6 courts	34,840 SF	0.80 acre

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A. TOPOGRAPHY

1. A level area is required to accommodate buildings, perimeter walks, vehicular circulation, mechanical/service yard, parking areas, outdoor student playgrounds, and physical education areas.

2. There should be sufficient slope across the site to allow for positive drainage to a storm sewer outlet, legal storm drain, or other discharge point.

3. Significant changes in topography increase site development costs if retaining walls, steps, and ramps are required to create level areas.

4. A preliminary site topography survey can be obtained from the 7.5 minute quadrangle series maps produced by the United States Geological Survey. This information can provide necessary preliminary topography information.

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A. VEHICULAR ACCESS

1. The site shall be accessible from collector, rural, or arterial roads that are suitable for buses, cars, and service vehicles.

2. Limited access roads that are congested at peak times of arrival and dismissal of students from the school site should not be considered.

3. A traffic study may be required by the authorities having jurisdiction to predict the impact of the school at peak times of arrival and dismissal.

4. Review site distances along the roadway from existing or proposed entry/entrance.

5. Consult local street or highway department having jurisdiction for turn lane, passing blister, drive width, and radius requirements for allowable entry/exit point locations.

6. Two or three entry/exit points into the site are recommended to provide the appropriate separation of car and bus traffic. A high volume of cars at special events may necessitate more than one entry/exit point for safe and efficient circulation.

7. A careful study of vehicular, bicycle, and pedestrian traffic must be performed to reduce the potential hazards of merging, crossing, and turning traffic.

8. Review opportunities for regional transportation improvement funding from FHWA, ODOT, county, township, and/or municipality.

9. ***Minimize the amount of impervious material associated with vehicle access and parking.***

10. ***Consider storm water solutions that utilize the area under parking lots for ground water recharge.***

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A. SOIL CHARACTERISTICS

1. Soil conditions and characteristics may impact total building design. A county soil survey may be obtained from the local soil conservation service for review.

2. Soil characteristics will determine foundation design, pavement design, storm sewer design, and excavation requirements.

3. Soil drainage characteristics and the presence of high ground water may result in the need for an under drainage system.

4. Presence of high ground water or seasonally wet soils can adversely affect the cost of construction. Lime or other soil stabilization may be necessary to correct wet soil conditions.

5. Erosion characteristics will affect the need for temporary devices, such as silt fence, and permanent devices, such as erosion control blanket and riprap, to prevent topsoil and subsoil loss.

6. Avoid sites that may require rock excavation.

7. ***Analyze soil characteristics for ground water recharge capability.***

8. ***Evaluate wet soils or seasonal high water profiles for surface water feature potential – ponds, swales, etc.***

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A. STORM SEWER

1. Storm water must be detained on site and released at a rate that will not exceed current runoff rates and meets requirements of the authority having jurisdiction.
2. A storm sewer line, legal drain, or other approved outlet should be located close to the site.
3. Consider opportunities for multiple, low-volume detention basins (in lieu of single large-volume basin).
4. ***Encourage storm water management system design that day lights as much of the storm water as possible.***
5. ***Look for site design opportunities that will handle storm water on site, recharge the local aquifers, and minimize the load on the civil infrastructure.***
6. ***Investigate alternative ways of handling parking lot discharge, including the use of the area under the paved surfaces.***

B. SANITARY SEWER

1. An evaluation of the expected sewage impact from the new facility is required. The following values are typically used:

   a. Elementary School: 15 x gallons per student per day
   b. Middle School: 20 x gallons per student per day
   c. High School: 20 x gallons per student per day
   d. Career-Technical: 20 x gallons per student per day

2. Sewage from school buildings shall be discharged into an approved sewage system. If a public sewage system is not available, an on-site sewage treatment facility will be required.

C. DOMESTIC WATER

1. A domestic water system is required from either a local water company or an on-site well.

2. Coordination with the local water company will be necessary.

3. A flow test will provide data on the available flow in gallons per minute (gpm), static pressure available, and available residual pressure for fire protection systems.

4. It should be noted that local fire departments or water companies may have additional requirements for the incoming service that are specific to that particular community and must be fully investigated by the Site Design Professional.

5. If a local water service is not available, an on-site well system is required. The on-site well system shall be required to provide water for domestic use and fire protection systems. When a well is considered, a test well is to be drilled. The Environmental Protection Agency must be contacted to make an evaluation of the proposed well system.

D. GAS SERVICE

1. The Site Design Professional is required to evaluate the need and method to provide gas service to the building. If natural gas service is not available, the installation of liquid propane (LP) gas should be investigated.

E. ELECTRICAL

1. Adequate electrical service must be evaluated for all sites under consideration. The minimum requirement is a 480-volt, 3-phase service.

F. PHONE

1. Coordination with the local Service Provider (SP) will be necessary.
2. Underground Conduit(s) will be required from the SP's facilities or between buildings located on the same campus.
3. Depending on the length of the conduit(s), underground splice points or pulling points (hand-holes or man-holes) may be required.

G. CATV

1. Coordination with the local Service Provider (SP) will be necessary.
2. Underground Conduit(s) will be required from the SP's facilities or between buildings located on the same campus.
3. Depending on the length of the conduit(s), underground splice points or pulling points (hand-holes or man-holes) may be required.

H. FIBER/DA-Site

1. Coordination with the local Service Provider (SP) will be necessary.
2. Underground Conduit(s) will be required from the SP's facilities or between buildings located on the same campus.
3. Depending on the length of the conduit(s), underground splice points or pulling points (hand-holes or man-holes) may be required.

A. SITE DEMOLITION

1. Demolition of existing improvements such as buildings, pavement, and vegetation will be required to develop the proposed site plan and should be kept at a minimum.

2. Refer to Section 3111, Testing, for demolition of underground tanks and asbestos.

3. Look for ways to salvage or recycle all material resulting from the deconstruction of existing buildings and the proposed site.

B. CONSTRUCTION STAGING

1. Adequate space should be available on site for construction staging--location for soil stockpiles, portable field offices, storage of construction materials, and equipment.

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A. CODES AND ZONING

1. Incompatible or nonconforming zoning may necessitate a zoning change variance or a special exception land use permit.

2. Zoning ordinance restrictions such as building height, setback, fence height, landscaping, screening requirements, placement and design of site signage, and size of parking spaces can affect site development costs and flexibility.

3. The process of requesting a variance or zoning change can slow the planning process.

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A. ADJACENT PROPERTY

1. The use of adjacent properties should be reviewed for their potential to enhance or detract from the school site.

2. Screening of noise and views may be required.

3. Consider the safety of children walking to and from the school site and during use of outdoor athletic and play facilities.

4. Adjacent railroad rights-of-way or busy streets may require the use of earth berms, landscaping, and/or fencing.

5. Consider site location within the school district boundaries and proximity to residential areas it will serve.

6. Proximity to manufacturing and industrial districts may be a concern for pollution or safety.

7. Consider proximity to adjacent land-owners utilities including domestic water wells (and aquifer).

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A. EASEMENTS/RIGHTS-OF-WAY

1. Easements and rights-of-way for roads, sewers, gas, power, water, and oil lines should be researched for potential development restrictions.

2. Consult local, county, and state highway departments for proposed rights-of-way that are required with the development of a new school.

3. Acquisition of additional rights-of-way may be required to accommodate left turn lanes, tapers, passing blisters, and utility extensions.

4. Presence of an existing legal storm water drain through the site may require replacement or relocation. A legal drain may impact building location on the site.

5. Contact ODOT regional office representative and review ODOT "State Highway Access Management Manual" criteria when improving site adjacent or in close proximity to a state highway.

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A. ENVIRONMENTAL RESTRICTIONS

1. Site location within an existing flood plain or floodway may limit the site development and is subject to approval by the Army Corps of Engineers, Ohio Department of Natural Resources, Ohio Environmental Protection Agency, United States Fish and Wildlife Service, State Historical Preservation Office, and other authorities having jurisdiction.

2. Wetland delineation must be performed if the presence of a wetland is suspected.

3. A designated wetland may prevent site development.

4. Mitigation will be required if a wetland must be disturbed. Replacement ratios will be higher than the wetland being impacted. The most pristine wetlands are considered "unmitigable" -- not allowed to be disturbed or replaced.

5. For erosion control measures, earth-disturbing activities of 5 or more acres during construction will be subject to review and approval by the Division of Surface Water with the Ohio Environmental Protection Agency, Environmental Protection Agency District Office, County Soil and Water Conservation District, or other authorities having jurisdiction.

6. Prior to the purchase of new land for a new school facility or related site improvements, soil borings should be obtained for a soils investigation report to determine suitability.

7. Unusual or potentially expensive site development costs for a new site should be discussed with the School Facilities Commission.

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A. TESTING

1. Prior to the purchase of any site, a Phase I Environmental Assessment should be completed to evaluate the potential for environmental liabilities associated with current and past property use and to assess regulatory compliance.

2. Perform a site investigation and records search of hazardous materials used, stored, or disposed of on the property; proximity to landfills; adjoining property uses; proximity to properties listed on the United States Environmental Protection Agency, Comprehensive Environmental Response, Compensation, and Liability Information System; and Ohio Environmental Protection Agency "Master Sites List."

3. A Phase II Environmental Assessment may be required for areas of the site which indicate the potential for asbestos and other contaminants.

4. Site demolition costs will be increased if underground tanks, landfill, asbestos, or other buried materials are present.

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A. AESTHETIC CONSIDERATION

1. It is preferable to choose a site with mature trees and other natural features compatible and complementary to the proposed building and site development.

2. A predominantly wooded site on which the majority of trees will need to be removed is not favorable.

3. Water features such as lakes, ponds, rivers, and creek frontage, while aesthetic and valuable for the interactive teaching features, could be a potential liability and safety problem.

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A. GENERAL

1. The site design requirements in this section apply to all new school building sites, including Career-Technical.

2. Additional requirements are in the following sections:

   a. Elementary School Section 3300
   b. Middle School Section 3400
   c. High School Section 3500

3. The design requirements are:

   a. Vehicular circulation
   b. Pedestrian circulation
   c. Emergency vehicle access
   d. Bicycle circulation
   e. Storm drainage
   f. Sanitary sewerage
   g. Directional signage
   h. Physical education
   i. Playgrounds
   j. Fencing
   k. Lighting
   l. Mechanical/electrical yard
   m. Landscaping
   n. Site furnishings
   o. Exterior security provisions
   p. Snow storage

4. This chapter, in addition to stating design requirements, indicates items the school district and the Design Professional should 'plan for' for future improvements. Items indicated to be planned for future improvements are not funded by the Ohio School Facilities Commission.

B. TRAFFIC IMPACT STUDY

1. A traffic impact study (TIS) is necessary early in the process and immediately after a site has been chosen in order to determine the serviceability of the adjacent roadway or street system, including all intersections in the area. The TIS should be prepared by a traffic engineer in accordance with the ODOT Highway Access Management Manual Section 5.6.

2. The TIS should include a signal input warrant analysis, turn lane analysis, an opening day traffic count, and a build-out (20 year) traffic count.

3. The TIS and a conceptual site plan should be submitted to the local authority over the roads or streets upon which the site in located.

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A. BUS LOADING AND UNLOADING

1. Maintain separate car and bus circulation.

2. Buses should not be required to back up.

3. Diagonal bus parking spaces should be 12 feet to 13 feet wide by the length of the bus. Spaces should be aligned at a 45-degree to 60-degree angle to the curb. See Figure A-1 and Figure A-2 for minimum dimensions to the curb for “peel-off” or “free access” departure.

4. Angle diagonal bus parking spaces so the bus exit door will allow children to exit in front of the adjacent bus.

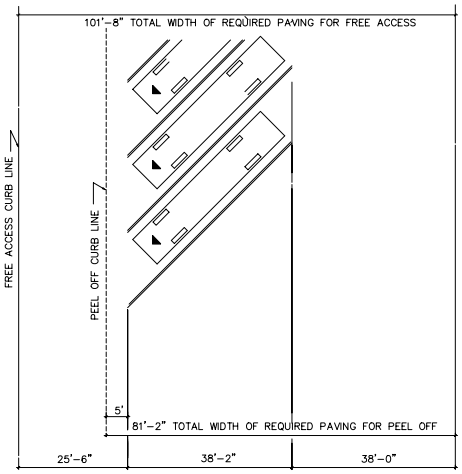
5. Turning radius at the end of the bus lot is to be sized to allow one smooth turn.

6. Locate bus-parking spaces close to a main building classroom entry***, but no closer than 25 feet to building wall.***

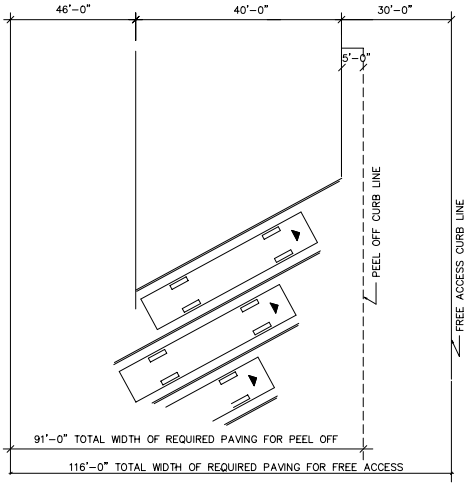
7. Provide a curbed sidewalk along the bus drop-off/pick-up lane and in front of the diagonal bus parking spaces.

8. Bus pavement shall be heavy-duty.

9. This paved area can have a “dual-use,” utilized for playground use when the buses are not present. Refer to Chapter 3, Section 3301, Elementary School Site Design; Section 3401, Middle School Site Design; and Section 3501, High School Site Design for special requirements. Refer to Section 3201, Paragraph E, for Special Event Parking.

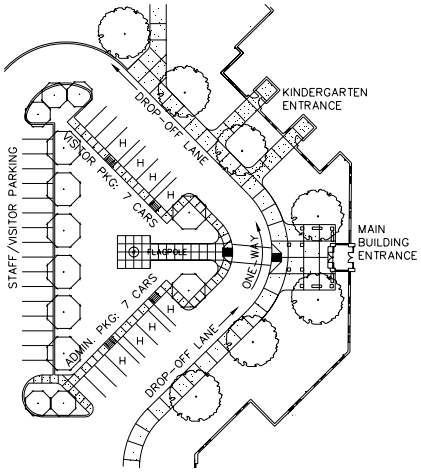


45 Degree Diagonal Bus Parking
Figure A-1



60 Degree Diagonal Bus Parking
Figure A-2

B. VEHICLE DROP-OFF/PICK-UP DRIVE



Typical Vehicle Drop-Off/
Pick-up Drive
Figure B-1

1. Maintain separation from bus circulation patterns.
2. Maintain one-way traffic.
3. Locate near main building entrance, close to administration office***, but no closer than 25 feet to building wall.***
4. Pavement is to be standard-duty if there is no bus or delivery truck access on this drive.
5. The drive width is to be a minimum of 24 feet.
6. Refer to specific requirements for Elementary School Site Design, Chapter 3, Section 3301.

C. VISITOR PARKING

1. Locate near main building entrance, close to administration office.
2. Minimum recommended parking space is 9-feet wide by 19-feet long.
3. Accessible Parking Spaces: Refer to Chapter 3, Section 3201, Paragraph G.
4. Check local building code for recommended number of parking spaces and dimensions that may override this standard.
5. Refer to Chapter 3, Section 3301, Elementary School Site Design; Section 3401, Middle School Site Design; and Section 3501, High School Site Design.

D. STAFF PARKING

1. Provide a parking space for each staff member. Include spaces for part-time staff and student teachers.

2. Provide a minimum of 8 parking spaces near delivery/receiving area for food service and custodial staff.

3. Locate staff parking near visitor parking for economy of pavement design where possible. Staff parking can also be located to one side of the bus parking lot in the area not required for bus traffic.

4. Parking space dimensions are a minimum of 9 feet by 19 feet with 24-foot wide aisles.

5. Refer to Chapter 3, Section 3201, Paragraph G, for Accessible Parking Spaces.

E. SPECIAL EVENT PARKING

1. Over-stripe bus parking lot with car parking spaces for use in after school hours Special Event Parking.

2. Striping for car parking shall be 4-inch wide, white lines.

3. Striping for bus parking shall be 4-inch wide, yellow lines.

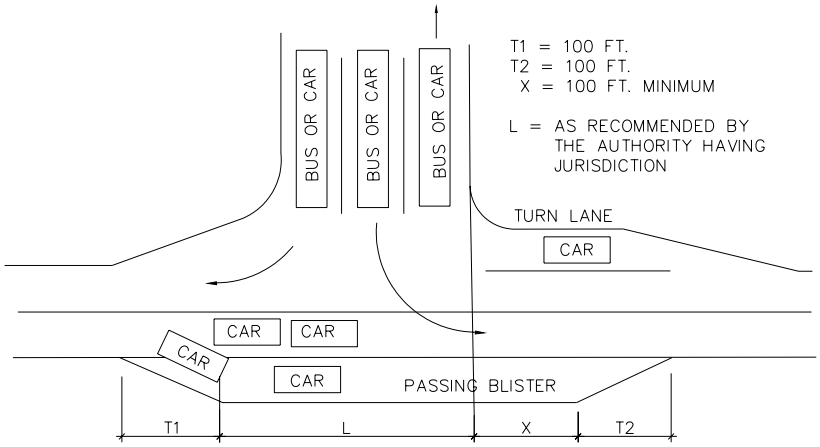
4. Striping for handicap shall be 4-inch wide, blue lines.

F. DRIVEWAY ENTRANCE

1. Design passing blisters with extended turn lanes.

2. Provide left turn lanes and taper lanes as directed by the authority having jurisdiction. See Figure F-1.

3. Provide 2 outgoing lanes and 1 incoming lane for bus exit drive. The minimum width is 30 feet.



Typical Turn Lane
Figure F-1

G. ACCESSIBLE PARKING SPACES

1. Comply with the authorities having jurisdiction. Codes may exceed or override the minimum recommendations. Comply with the Americans with Disabilities Act guidelines.

2. Provide a minimum of 1 accessible parking space or 2 percent of the total number of parking spaces in each parking lot (whichever is greater).

3. Locate parking space on shortest accessible route of travel to an accessible building entrance.

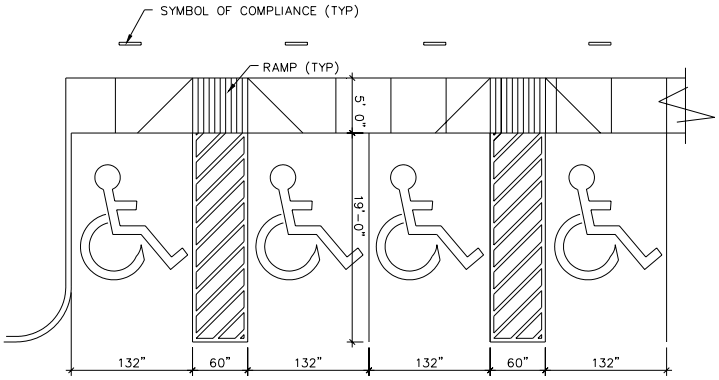
4. Accessible pedestrian routes should not cross drives or vehicular parking areas, where possible. If necessary, provide crosswalk painted on pavement and signs to designate pedestrian rights-of-way.

5. Provide universal parking space for all accessible spaces as shown in Figure G-1 or provide typical car parking spaces to be 96 inches with 60-inch wide aisle and van parking spaces to be 96 inches with 96-inch wide aisle as shown in Figure G-2.

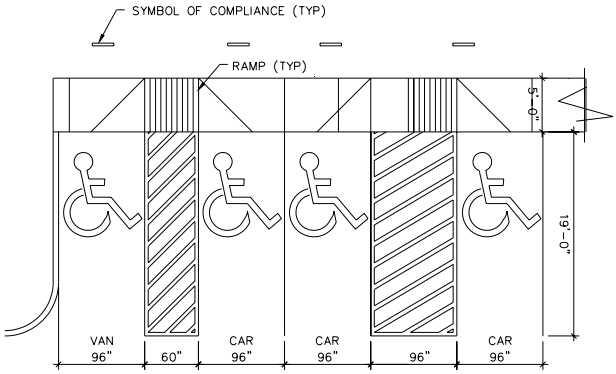
6. Provide 1 van parking space for every 8 accessible spaces if universal space is not used.

7. Two adjacent parking spaces may share common access aisle.

8. Provide sign with international symbol at each accessible parking space. Refer to Chapter 3, Section 3207, for signage requirements of typical parking, van parking, and universal parking spaces.

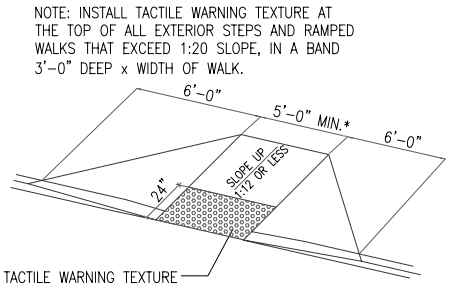


ADA: Universal Parking Space
Figure G-1



ADA: Typical Car/Van Parking Space
Figure G-2

G. ACCESSIBLE PARKING SPACES (cont.)



Typical Curb Ramp
Figure G-3

9. Provide curb ramps along accessible route. Ramp is to be a minimum of 5-foot wide with a maximum 1:12 slope, and a maximum 6-inch rise. Flared ramp sides shall not exceed 1:10. If the distance to the back of the ramp is less than 4 feet, sides shall not exceed a 1:12 slope. See Figure G-3.

10. The accessible route is not to exceed a 1:20 slope.

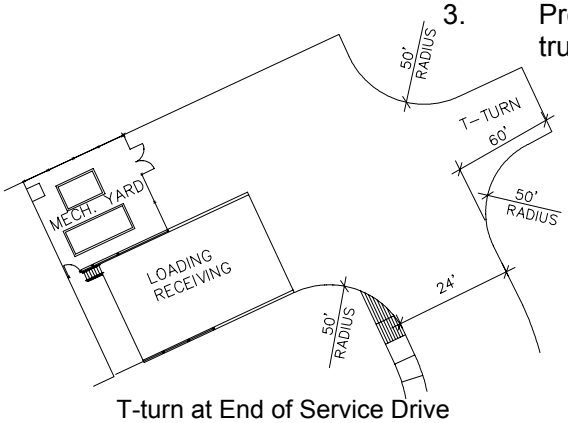
11. Ramp surface is to have medium broom finish, and include detectable warning surface per ADAAG, if not otherwise designated by local codes.

H. TRASH PICK-UP AND SERVICE DRIVE

1. Pavement is to be heavy-duty with a concrete pad area for dumpster approach of truck front or rear axle to reinforce area subject to loading when dumpster is lifted.

2. Locate adjacent to bus parking for economy of pavement design, where possible.

3. Provide T-turn with 50-foot radius for maneuvering of large trucks. See Figure H-1.



T-turn at End of Service Drive
Figure H-1

4. ***Trash dumpster shall not be located within 25 feet of any wall of the building.***

I. PERIMETER CURBS

1. Provide 6-inch high curb to separate car and pedestrian circulation routes.

2. Locate curbs as required to direct flow of storm water toward storm sewer inlets.

3. Provide curb at planted islands.

I. PERIMETER CURBS (cont.)

4. Provide curbs along drives adjacent to storm detention ponds or other abrupt slopes adjacent to drive.

5. Provide wheel stops where parking is perpendicular to edge of pavement and curbs are not used. Do not use wheel stops in front of curbs.

6. Straight curb or curb and gutter may be used.

A. PEDESTRIAN CIRCULATION

1. Provide walks a minimum of 8-foot wide and a maximum of 12-foot wide from major drop-off drives to major entrances. Refer to Chapter 3, Section 3203, Paragraph A, Emergency Vehicle Circulation, for additional requirements.

2. Minor connecting walks are to be a minimum of 5-foot wide.

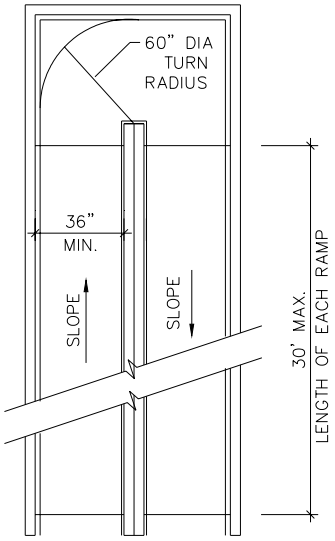
3. Major connecting walks at building entrance and along bus loading and unloading area are to be a minimum of 8-foot wide.

4. Walks are to be reinforced concrete, a minimum of 4-inches thick, with light broom finish.

5. Walk slope is to be a minimum of 1 percent and a maximum of 1:20. If walk exceeds 1:20, it shall be designed as a ramp.

6. Provide walks from the building to public walks if public walks serve the school site. This is a minor connecting walk.

B. RAMPS



Typical Ramp with Landing
Figure B-1

1. Verify with authorities having jurisdiction that may exceed or override these minimum recommendations.

2. The maximum slope is 1:12 with a maximum 30-inch rise per ramp segment.

3. The minimum width is 36 inches. There shall be a 36-inch clearance between handrails.

4. At the top and bottom of each ramp segment, there is to be a landing at least as wide as the ramp section leading to it. Landing length is a minimum of 60 inches clear. If the direction of the ramp changes, provide a 60-inch diameter wheelchair turning radius. See Figure B-1.

5. Handrails are to be 1 1/4 inches in diameter, and a minimum of 34 inches to a maximum of 38 inches above the ramp surface. Provide handrails on both sides of ramp and extend the handrails a minimum of 12 inches beyond the top and bottom of each ramp segment. Handrails are to be parallel to the ramp surface.

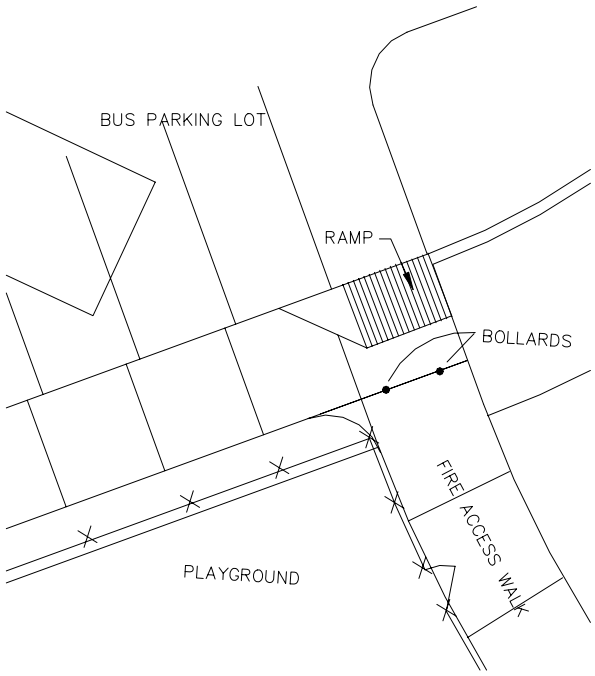
6. The ramp surface is to be nonslip.

A. EMERGENCY VEHICLE CIRCULATION

1. Walks or paths are to accommodate emergency vehicles around the perimeter of the building where vehicular drives are not present.

2. Review emergency vehicle circulation and construction with authorities having jurisdiction.

3. Provide removable or hinged bollards at the end of the emergency access path where it meets vehicular drives to prevent use of path by other than emergency vehicles. Space bollards to be a minimum of 5 foot on center. See Figure A-1.



Typical Location for Bollards at End
of Emergency Access Path
Figure A-1

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A. BICYCLE CIRCULATION

1. Provide future bicycle parking where there is the potential for safe bicycle access to the site by way of designated routes.

2. Locate bicycle parking adjacent to a pedestrian walk near a building entry, but away from a main building entrance.

3. Provide future racks or loops for bicycles to be secured with a lock.

4. Provide curb ramps along the bicycle route. Refer to Chapter 3, Section 3201, Figure G-3.

5. Maintain separation from pedestrian and vehicular routes.

6. If a bicycle route is to be adjacent to a vehicular route, pavement is to be striped pavement. Plan for signage to designate the bicycle lane.

7. Minimum width of 8 feet is required for a bicycle route.

8. Reference AASHTO guidelines when designing bikeways integral to regional transportation systems.

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A. STORM SEWER SYSTEM

1. Create positive drainage away from the building. ***Visibly slope grade within 10 feet of building foundation.***

2. Slope the site grades to allow natural drainage of storm water toward inlets and detention area.

3. Collect storm water in a series of inlets or swales to be detained on site.

4. Connect the building site storm drainage system by means of downspouts or roof drains to the building storm drainage system.

5. All storm piping shall be designed using the 10-year return period and intensity-duration curves consistent with the region.

6. All castings shall be heavy-duty for both paved and lawn areas. No “beehive” or “dome” castings are to be used.

7. All manholes shall be lettered “storm.”

8. All storm piping and culverts shall have a smooth interior. All pipe with a diameter greater than 24 inches shall be concrete***,*** aluminized steel, or HDPE. For pipes 24 inch and smaller, see page 9102-15, Section 2630.

9. All storm pipe jointing shall be water and silt tight.

10. Runoff from adjoining properties must be verified and the storm sewer system shall be designed to accommodate the runoff.

11. All castings are to comply with the Americans with Disabilities Act guidelines and be bicycle safe.

B. DISCHARGE REQUIREMENTS

1. All discharge rates shall meet the requirements of the authorities having jurisdiction over release rates.

2. Regardless of the authority having jurisdiction over release rates, the downstream capacity of the storm sewer, legal drain, or approved outlet must be verified by the Site Design Professional, and downstream capacity must not be exceeded.

C. DETENTION POND DESIGN

Detention ponds are to be designed to prevent storm water from flowing off the site at a rate greater than permitted by the authorities having jurisdiction. Detention ponds are normally dry except after rainfalls.

1. Side slopes shall not exceed 4:1 and may be increased to 2:1 in the immediate vicinity of headwalls or other discharge control devices.

2. Headwalls shall be graded and conform to the side slopes of the pond.

3. All detention ponds which serve an area greater than 15 acres shall be designed using an appropriate hydrograph method. The inflow hydrograph shall be routed through the pond using standard engineering methods to obtain the discharge hydrograph.

4. Provide riprap or other erosion control measures at inlet and outlet of pond.

D. STORM RETENTION POND

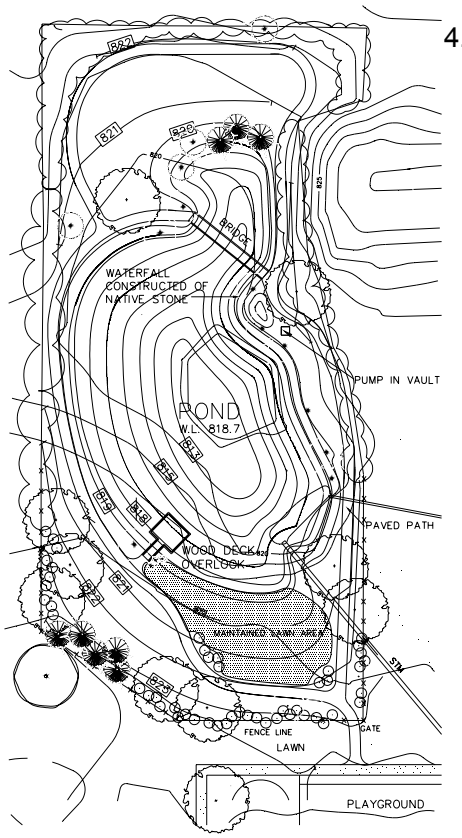
Retention ponds serve the same function as detention ponds (see Section 3205) and normally retain a level of water.

1. If it is desired as part of the educational program, the pond can be designed to retain water 3-foot to 8-foot deep and used as a “Nature Area.” See Figure D-1.

2. The fringe edge of the pond will accommodate the fluctuating water level with each storm event. If the pond is designed to retain water, provide fencing to surround pond.

3. Plan for future “Nature Area,” if a part of educational program, with paved walkways, wood deck overlooks, bridges, or other access to pond. Plan for future waterfall, fountain, or other means of keeping water aerated.

4. If the soil type is not conducive to retaining water, a pond liner may be required.



Storm Retention Pond
Figure D-1

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A. SANITARY SEWERAGE

1. Provide sanitary sewerage disposal for the facility.

2. The method for the treatment of sanitary sewerage on site shall be approved by the Ohio Environmental Protection Agency and the local health department.

3. The disposal of sanitary sewerage to the local utility shall be approved by the local authority having jurisdiction.

4. Appropriate methods for the disposal or treatment of sanitary sewerage consists of conventional gravity sewer, force main, septic with leach field system, or sand filter and on-site treatment plants.

5. Evaluate the ability to capture, filter, and reuse grey water.

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A. BUILDING IDENTIFICATION SIGN

1. Provide sign on building face if it is visible from the road, or provide independent sign near entry drive or center sign between entrance drives.

2. Sign should be readable from an appropriate distance along the major access road to the site, but should not block view of cars entering or exiting site.

3. Verify with authorities having jurisdiction over signage for any limitations or requirements that may override these design parameters.

B. DIRECTIONAL SIGNAGE

1. Provide adequate signage to direct separation of bus loading and unloading areas, staff parking, visitor parking, and vehicle drop-off/pick-up drive.

2. Signage shall provide direction to delivery trucks and other service vehicles.

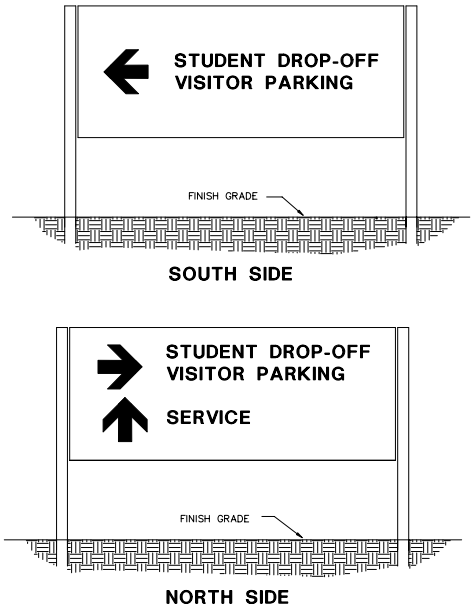
3. Graphics are to be reflective white on a contrasting background.

4. The design shall be post and panel, low profile.

5. The minimum letter height is 3 inches.

6. Verify with authorities having jurisdiction over signage for any limitations or requirements that may override these design parameters.

7. ***Use materials with a high recycled content.***



Example of Directional Signage
Figure B-1

C. TRAFFIC REGULATORY SIGNAGE

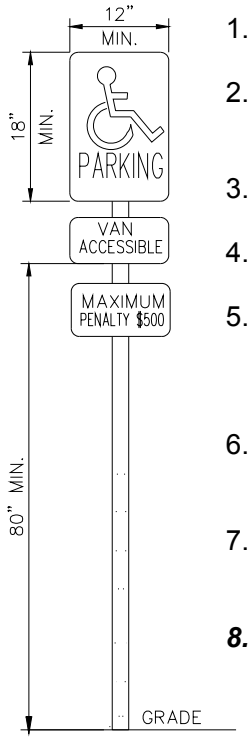
1. Provide "Stop," "Yield," "No Parking," "One-Way," "Do Not Enter," or other signs as necessary to maintain a fluid traffic stream.

2. Signs, and the installation of signs, are to meet the requirements of the authority having jurisdiction.

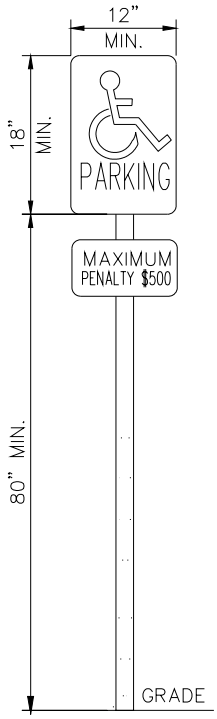
D. SIGN PLACEMENT

1. All signs placed at all intersections should be checked using appropriate sight distance requirements in accordance with the American Association of State Highway and Transportation Officials Design Guide.

E. ACCESSIBLE PARKING SIGNS



Sign for Van Parking Space
Figure E-2



Sign for Car Parking or "Universal" Parking Space
Figure E-1

1. Provide 1 sign for each accessible parking space.

2. Mount signs on posts and locate out of accessible route of travel, centered on each parking space.

3. The minimum height of signs is 80 inches above grade.

4. The minimum sign size is 12 inches wide by 18 inches high.

5. If the universal parking space design is not used, an additional sign will be required at each van accessible space to read "Van Accessible." See Figure E-1 and Figure E-2.

6. All signage and pavement markings should be in accordance with the *Manual of Uniform Traffic Control Devices*.

7. 6" x 12", 18 gauge steel sign with lettering "Maximum Penalty $500".

8. ***Use materials with a high recycled content.***

A. DIMENSIONS AND NUMBERS OF PHYSICAL EDUCATION FIELDS

1. Refer to specific requirements in Chapter 3, Section 3302, Elementary School Site Design; Section 3402, Middle School Site Design; and Section 3502, High School Site Design.

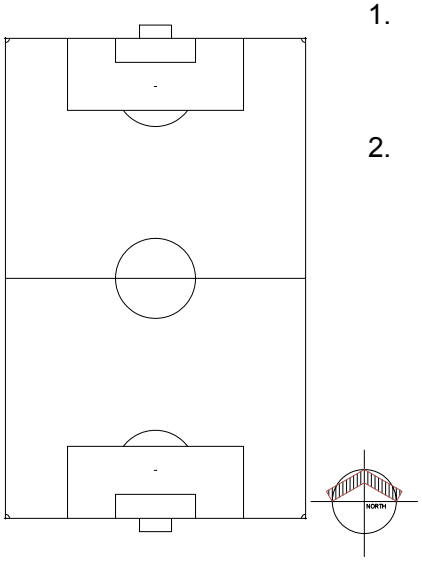
2. Provide necessary grading and seeding for physical education fields only. All other improvements such as bleacher/grandstand seating, fencing, etc., are for reference and planning purposes only.

3. The import of fill material for the purpose of constructing athletic and physical education fields is not funded by the Ohio School Facilities Commission.

B. PHYSICAL EDUCATION FIELD ORIENTATION

1. Football, soccer, basketball, and tennis orientation should be north-south along the long axis of the field/court. See Figure B-1.

2. To determine orientation for baseball and softball fields, strike a line from home plate to second base. This line is to run east-northeast. An optional orientation, but less desirable, is north-south with batter facing north.



Typical Orientation:
Soccer Field
Figure B-1

C. FUTURE WATER AND RESTROOM FACILITIES

1. Plan for future drinking water and restrooms for outdoor physical education facilities that are remote from the school building.

D. BLEACHER/GRANDSTAND SEATING

1. Plan space for bleacher/grandstand seating adjacent to physical education facilities.

2. Design of bleacher/grandstand should be certified by an Engineer.

3. Comply with authorities having jurisdiction for code requirements including percentage of elevated seats, aisle width, permissible travel distance to an aisle, number of aisles required, rise:run ratio, enclosed spaces between footboards and seats, guardrail and handrail design, and step and ramp design.

4. Locate bleachers/grandstand so sight lines are not obstructed by dugouts, player bench seating, or light poles.

A. PLAYGROUND DESIGN

1. Refer to specific requirements in Chapter 3, Section 3303, Elementary School Site Design; and Section 3403, Middle School Site Design.

2. ***Promote permeable surfaces.***

3. ***Specify play surface and equipment with high recycled content materials.***

4. ***Promote the trend toward more natural, less structured play environments.***

B. PLAY EQUIPMENT

1. Play equipment to be in compliance with "ASTM F 1487-95 or most current version of the Standard Consumer Safety Performance Specification for Playground Equipment for Public Use" and the current guidelines for public play equipment by the United States Consumer Product Safety Commission.

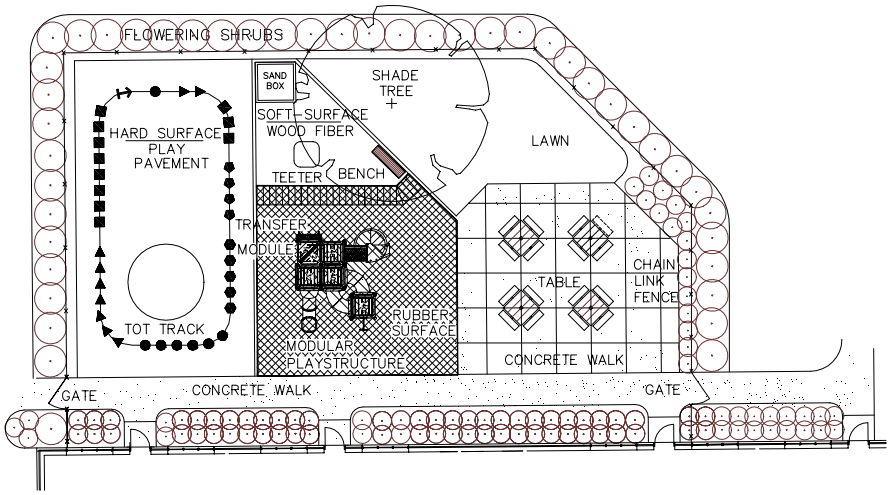
2. The design of play equipment shall comply with Americans with Disabilities Act guidelines.

3. Play equipment located in hard and soft surface areas are funded by the Ohio School Facilities Commission.

C. SURFACING FOR PLAY AREAS

1. Provide hard surface and soft surface play areas. See Figure C-1.

2. Provide for games or educational features painted on hard surfaces. A hard surface is light-duty asphalt pavement.



Typical Play Area with Hard and Soft Surface
Figure C-1

C. SURFACING FOR PLAY AREAS (cont.)

3. Provide a firm, stable, slip-resistant, and resilient soft surface under and around play equipment. Depth and type of soft surfaces shall comply with ASTM F 1292-99 or most current version of Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment."

4. Provide an accessible route of travel through soft-surface play area, a minimum of 5-foot wide, with a maximum 1:20 slope. Choice of surfacing and minimum areas of surfacing required shall comply with Americans with Disabilities Act guidelines.

D. LOCATION OF PLAY AREAS

1. Locate near exit from classrooms for each age group and centrally locate close to student dining.

2. Locate hard surface play areas away from building walls.

3. Provide noise buffer between classroom windows and playground.

4. Do not obscure view into play areas. Design the play areas to promote careful supervision and quick emergency response.

A. GENERAL

1. Locate fence in curb in high maintenance areas.

2. Top and bottom of fencing selvage shall be knuckled.

B. SITE PERIMETER FENCE

1. Provide fencing at the portion of the site where adjacent to open water, busy street, railroad tracks, and where other safety hazards occur.

C. FENCE INTERIOR TO THE SITE

1. Provide fence to enclose mechanical yards, equipment, trash/service areas, and where other safety hazards occur.

2. Provide fencing around agriculture education area for security. Paved area to be heavy-duty concrete.

3. Provide fencing around lab areas involving work on or with vehicles, equipment, or animals for security and safety.

D. PLAYGROUND FENCING

1. Provide fencing around playground perimeter where there is a potential for children to run out into parking areas, adjacent streets, and/or other hazardous conditions.

2. Provide a minimum of 4-foot high fencing for pre-kindergarten and grade 1 play areas.

3. Provide fencing around perimeter of basketball courts for ball control.

E. PHYSICAL EDUCATION FIELDS

1. Plan for perimeter fencing of tennis courts, track, and baseball/softball fields as described in Chapter 3, Section 3402, Middle School Site Design; and Section 3502, High School Site Design.

2. Plan for 8-foot high fencing around perimeter of physical education fields if there is an admission fee charged for viewing events.

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A. SECURITY LIGHTING

1. Provide a 10-footcandle-illumination level at main building entrances.

2. Provide a 5-footcandle-illumination level at all entrances except main entrance.

3. Light fixtures shall be wall-mounted, high-intensity discharge type located directly over doors or high-intensity discharge type recessed in overhangs or soffits located directly over doors. Fixtures shall be designed for exterior use. Wall-mounted fixtures shall be vandal resistant.

B. DRIVES & PARKING AREAS

1. Provide an illumination level of 0.5 footcandles at entrance/exit drives.

2. Provide an illumination level of 1.0 footcandles within parking areas and bus drop-off/pick-up areas.

3. Lighting shall be high-intensity discharge type located on poles with a concrete base. Pole height shall be a maximum of 39 feet.

4. ***Lighting fixtures should be high lateral cut off type to eliminate up lighting from the site.***

5. ***Consider packaged site lighting using photovoltaics.***

C. CIRCULATION & PEDESTRIAN AREAS

1. Provide an illumination level of 0.5 footcandles at pedestrian routes from parking areas and bus drop-off/pick-up areas to building entrances.

2. Lighting of pedestrian routes shall be of high-intensity discharge type. Fixture shall be bollard type or pole-mounted type.

D. BUILDING IDENTIFICATION

1. Provide an illumination level of 10 footcandles to building identification signage located on the building or to identification sign located on site.

2. Lighting shall be of high-intensity discharge type.

E. CONTROLS

1. Lighting shall be controlled by photoelectric cells and time clocks. The Site Design Professional shall have discussions with the school district to determine light fixture switching and time clock programming.

MECHANICAL/ELECTRICAL YARD

A. SURFACE

1. Provide 3-inch deep stone over woven geotextile and underdrain tubing between equipment pads in mechanical/electrical yard areas.

B. PERIMETER

1. Provide curb or edging separation between stone and adjacent lawn or pavement areas.

2. Provide fence around perimeter of mechanical/electrical yards.

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A. LAWN

1. Seed or sod all disturbed areas of the site.

2. Do not exceed 3:1 slope on lawn areas where mowing is required.

3. Sod may be utilized in close proximity to primary building entrance and in flow line of storm drainage swales.

4. A fiber mulch seeding and mulching operation may be used when necessary to establish a quick catch for erosion prevention or sediment control.

5. Minimize seeded areas in favor of more robust natural landscape.

B. EROSION CONTROL

1. On slopes greater than 3:1 provide slope controlled vegetation per ODOT standards to retard erosion.

2. Prior to seeding, provide erosion control fabric in disturbed areas where slope is 4:1 or greater.

C. SHADE

1. Provide a large species of deciduous trees and smaller, ornamental canopy trees for shade of the building, parking lots, and playground areas.

D. WIND AND VISUAL SCREEN

1. Provide evergreen trees and shrubs as a wind screen for building and site development. Provide wind screens at main building entrances.

2. Provide visual screen of service areas and adjacent properties that may be incompatible with school use.

E. MAIN BUILDING ENTRIES

1. Provide low maintenance shrubs and flowering trees to emphasize main building entries.

F. LANDSCAPE

1. Landscape for energy conservation, edible plants, and local wildlife.

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A. TREE GRATES

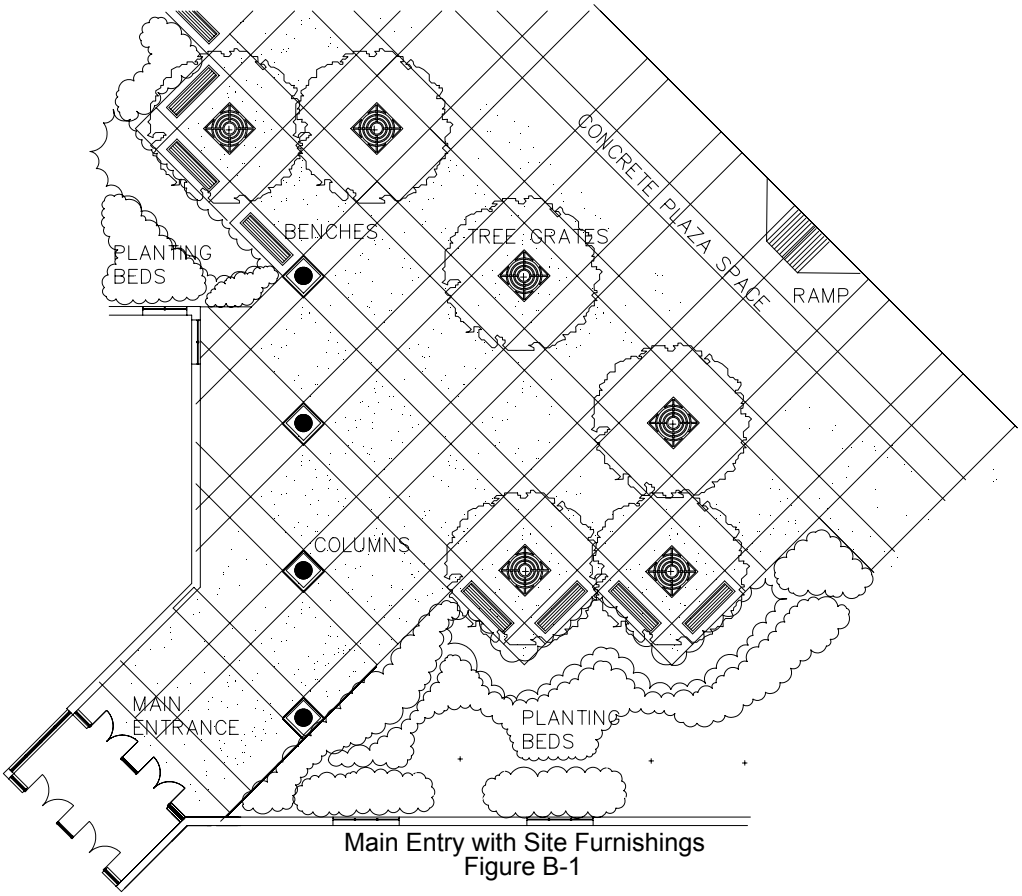
1. Provide tree grates where trees will be planted within pedestrian routes. Openings in grates should meet Americans with Disabilities Act guidelines. See Figure B-1.

B. FURNISHINGS (See Figure B-1)

1. Provide fixed benches and enclosed trash receptacles along walks to main building entrances.

2. Provide fixed tables, benches, and enclosed trash receptacles in playground areas.

3. ***Consider furnishings from materials with high recycled content.***



Main Entry with Site Furnishings
Figure B-1

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SITE SECURITY PROVISIONS

A. EXTERIOR PROTECTION

1. ***Consider providing an exterior perimeter defense system consisting of site fencing, surveillance cameras, and an exterior door access control system.***

B. FENCING

1. Consider providing 8' high chain link fence around selected portions of the site with gates to control main vehicular and pedestrian arteries.

C. EXTERIOR DOORS

1. Consider a minimum number of exterior doors to be equipped with access control devices. The system would be on a programmed schedule that automatically unlocks and locks the doors at prearranged times. Refer to Chapter 8.

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A. BUS LOADING AND UNLOADING

1. "Dual-use" of the bus parking lot for playground pavement and special event parking is possible when buses are not present.

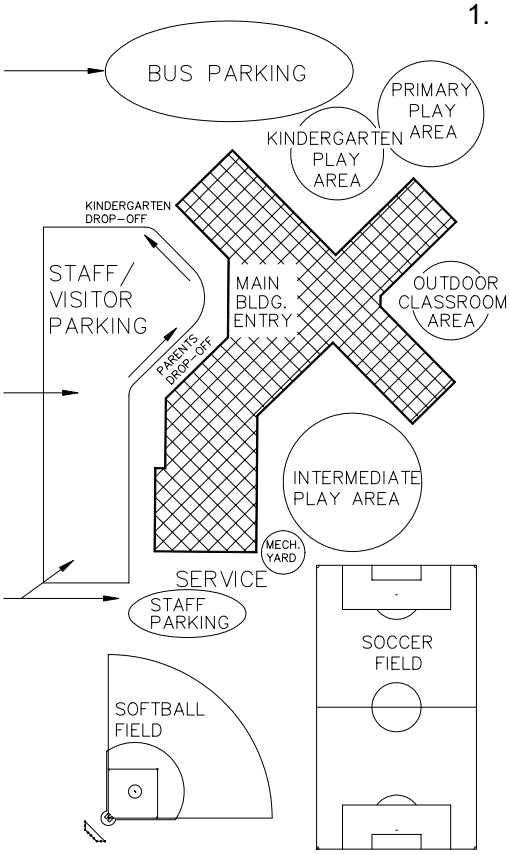
2. Minimize painted games and lines on vehicular pavement areas. Use different color lines for game striping than used for vehicular parking striping.

3. Provide gate(s) at parking lot entrance to prevent use of the lot by vehicles when used for a playground.

4. ***Locate all drop offs and parking so that idling vehicles are not a source of interior air pollution.***

B. VEHICLE DROP-OFF/PICK-UP DRIVE

1. Locate drop-off/pick-up drive close to kindergarten and pre-kindergarten classrooms. See Figure B-1.



Site Design: Elementary School
Figure B-1

C. STAFF AND VISITOR PARKING

1. Refer to page 3101-4 for minimum parking space requirements.

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A. PHYSICAL EDUCATION FIELDS

1. Provide grading only for 1 softball field and 1 multipurpose field where import of fill material is not required.

2. Provide grading of fields with a 1 percent to 1 1/2 percent slope.

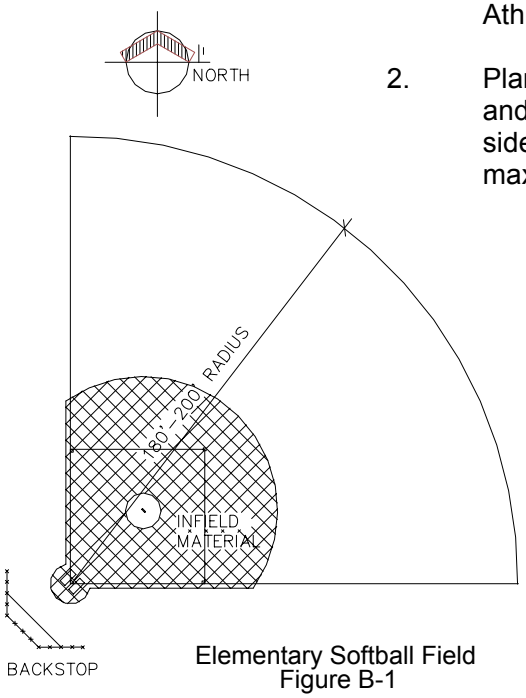
3. Softball field radius shall be 180 feet to 200 feet. See Figure B-1.

4. The multipurpose field size shall be 195 feet wide and 360 feet long.

B. SOFTBALL FIELD

1. Plan for infield area in compliance with the Ohio High School Athletic Association guidelines. See Figure B-1.

2. Plan for a backstop having a 17-foot 6-inch overhang height; and a 10-foot high by 20-foot wide back panel with 10-foot wide side panels. Locate backstop a minimum of 25 feet and a maximum of 30 feet behind home plate.



Elementary Softball Field
Figure B-1

C. MULTIPURPOSE FIELD

1. Grading is to crown at center of field and slope to sidelines.

2. Plan for future under drains and irrigation.

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A. AREA REQUIRED

1. Provide 50-75 square feet of play area per student. This area includes both hard surfaces and soft surfaces.

B. SEPARATION OF PLAY AREAS

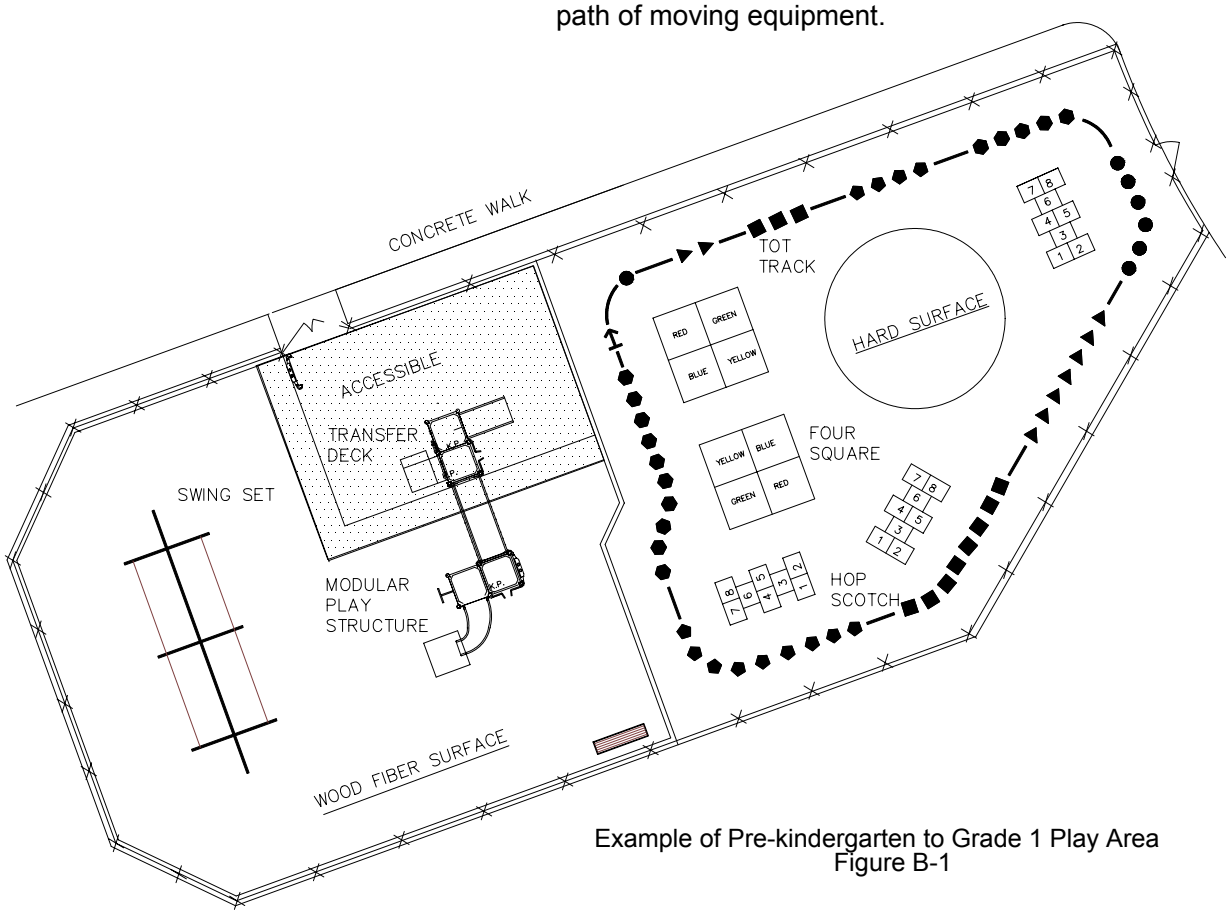
1. Provide playground areas to allow for difference in age, ability, and varying interests.

2. Follow applicable safety guidelines for different age groups.

3. Pre-kindergarten to grade 1 play area. See Figure B-1.

   a. Provide play activities that include rocking, swinging, balancing, climbing, and sliding.

   b. Locate equipment with moving parts, such as swings, at the perimeter of the play area. Use fence or planting beds to prevent children from inadvertently stepping into path of moving equipment.



Example of Pre-kindergarten to Grade 1 Play Area
Figure B-1

B. SEPARATION OF PLAY AREAS (cont.)

4. Primary Play Area (See Figure B-2)

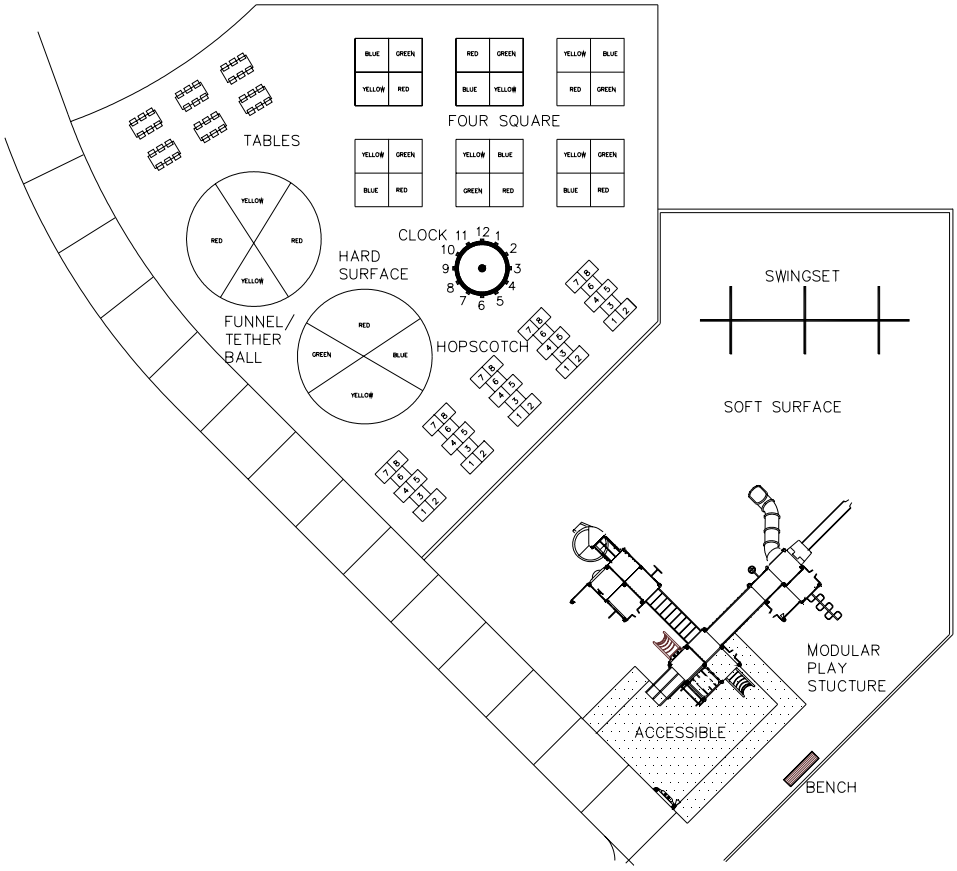
   a. Design for grades 1 through 3.

   b. Provide play activities that include rocking, swinging, balancing, climbing, and sliding.

   c. Provide upper-body strengthening devices such as a parallel bar and overhead ladder play equipment.

   d. Provide half-court basketball and dropshot/funnel ball.

   e. Provide a grouping of tables and benches for use as an outdoor classroom setting.



Example of Primary Play Area
Figure B-2

B. SEPARATION OF PLAY AREAS (cont.)

5. Intermediate Play Area (See Figure B-3)

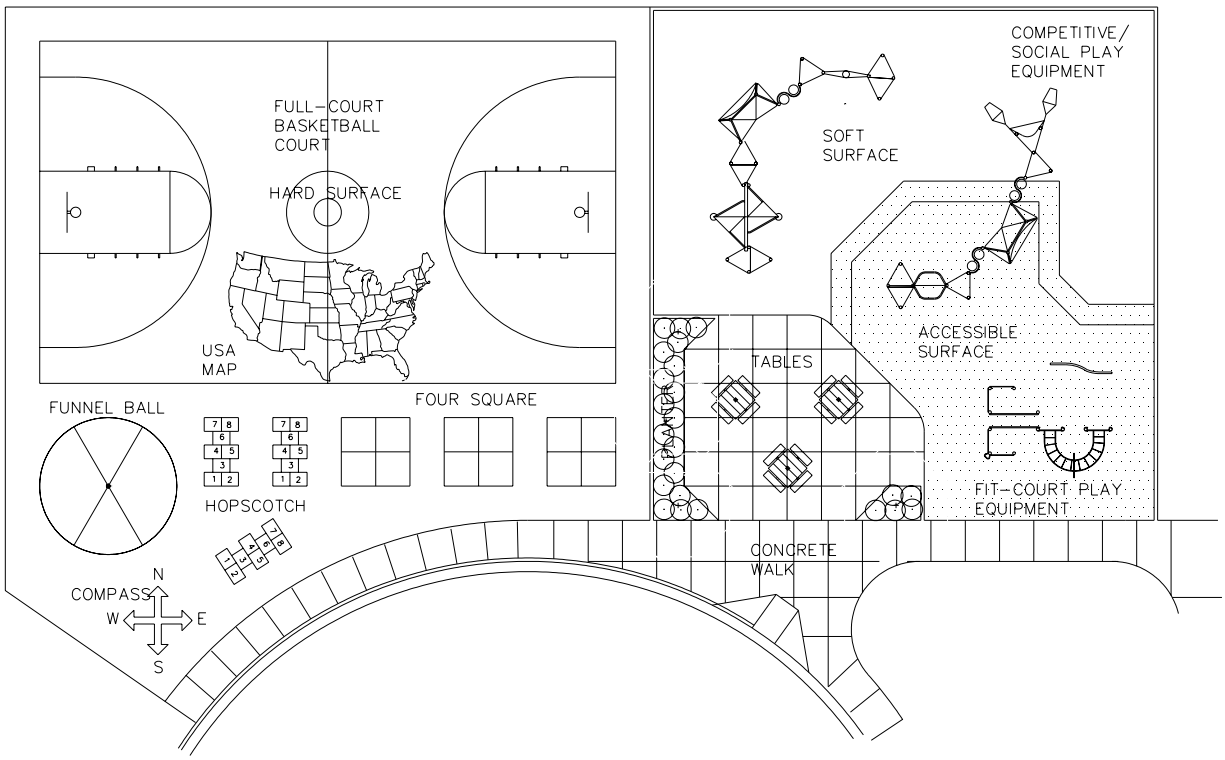
a. Design for grades 4 and 5.

b. Intermediate play area may be combined with primary play area.

c. Provide fitness structures and competitive equipment.

d. Provide 1 or 2 full basketball courts (50 feet by 84 feet) or 2 half courts (50 feet by 42 feet).

e. Provide for groupings of benches and tables for social or passive play. This area can also serve as an outdoor classroom.



Example of Intermediate Play Area
Figure B-3

C. HARD SURFACE PLAY AREA

1. Provide paved area for full- or half-court basketball. Locate on bus pavement where possible.

2. Painted games could include four square, hopscotch, tetherball, kickball, dodgeball, games played in a large circle, a tot track with sequenced shapes or perimeter line for running relays or laps.

3. Educational features could include a USA or world map, counting line, compass, and clock.

D. SOFT SURFACE PLAY AREA

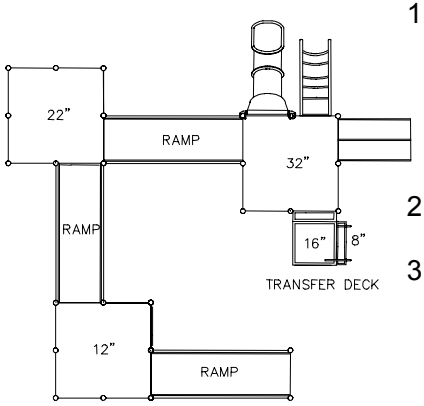
1. Surfacing is to be a nonsplintering surface where children may be crawling. Avoid using black surfacing.

2. Provide edging to keep loose fill soft surface within bounds of the play area. Depress loose fill soft surface material below edging. Provide under drain system and geotextile below loose fill soft surface.

3. Increase the depth of soft surface material in areas of high use such as the base of swings and slides.

4. Provide play structures.

E. ACCESSIBILITY STANDARDS



Typical Ramp and Transfer Deck
Figure E-1

1. Provide ramps and/or transfer points on composite play structures for access to play components on elevated decks. Meet the Americans with Disabilities Act guidelines for percentage of components that are to be accessible by ramp and by transfer deck. See Figure E-1.

2. Provide table and benches along accessible route.

3. Provide future upper-body strengthening devices as appropriate for age group and amount of supervision.

A. BUS LOADING AND UNLOADING

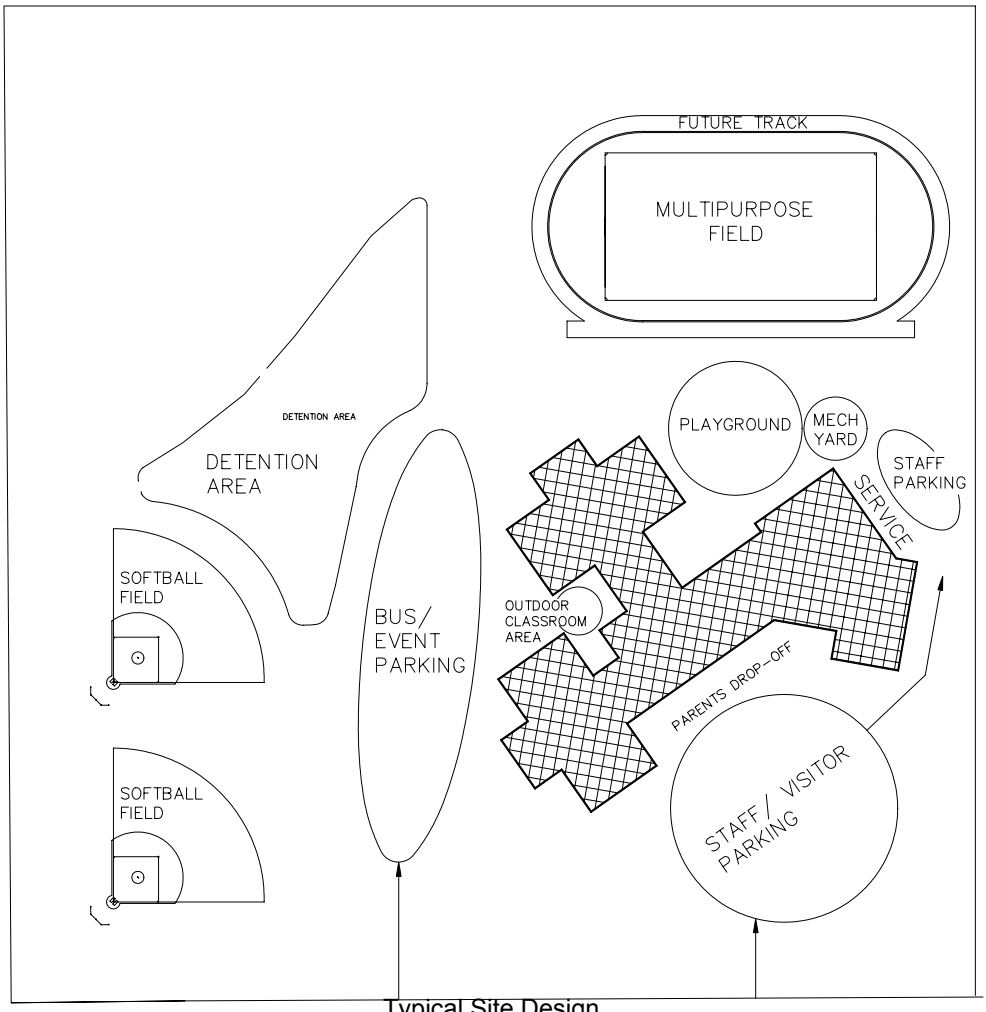
1. "Dual-use" of the bus parking lot for playground pavement and special event parking is possible when buses are not present.

2. Provide gate(s) at "dual-use" parking lot entrance to prevent use of the lot by vehicles when used as a playground.

3. Locate all drop offs and parking so that idling vehicles are not a source of interior air pollution.

B. STAFF AND VISITOR PARKING

1. Refer to page 3101-4 for minimum parking requirements.



Typical Site Design
Figure B-1

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A. PHYSICAL EDUCATION FIELDS

1. Provide grading only for 1 softball field and 1 multipurpose field where import of fill material is not required.

2. Plan for 1 baseball field, 8 to 12 tennis courts, 6- or 8-lane, 400-meter running track/football field, and field events.

3. Provide grading of fields with 1 percent to 1 1/2 percent slope.

4. The multipurpose field is to be 195 feet wide and 360 feet long.

B. SOFTBALL FIELD

1. Softball field radius is 185 feet to 300 feet. See Figure B-1.
   a. 185 feet – 235 feet for female or male fast pitch.
   b. 250 feet – 275 feet for female or male fast pitch.
   c. 275 feet – 300 feet for male slow pitch.

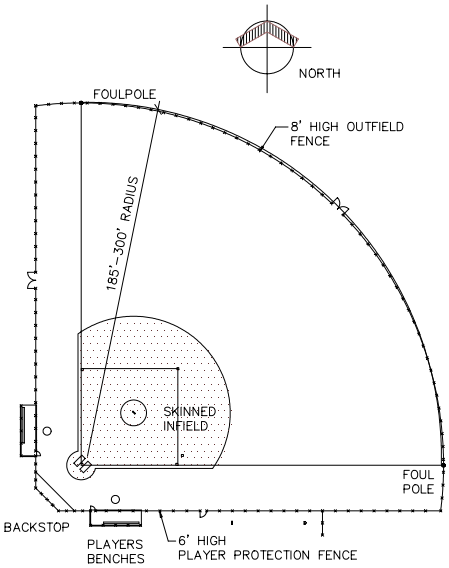
2. Plan for an infield area in compliance with the Ohio High School Athletic Association guidelines. See Figure B-1.

3. Plan for a backstop having a 17-foot 6-inch overhang height; and a 10-foot high by 20-foot wide back panel with 10-foot wide side panels. Locate backstop a minimum of 25 feet and a maximum of 30 feet behind home plate.

4. Plan for 6-foot high chain link, player protection fence.

5. Plan for future 8-foot high chain outfield fencing, foul poles, and top rail protective pad.

6. Plan for player benches, set back from side fence line.



Typical Softball Field
Figure B-1

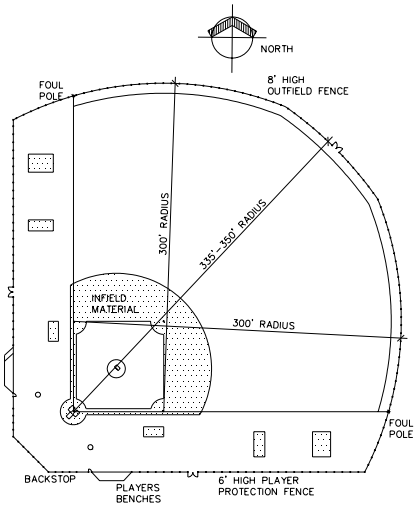
C. MULTIPURPOSE FIELD

1. Grading is to crown at center of field and slope to sidelines.

2. Plan for future under drains and irrigation.

3. Plan for portable or combination football/soccer goals.

D. FUTURE IMPROVEMENTS



Middle School Baseball Field
Figure D-1

1. Baseball Field

   a. Radius is to be 300 feet/335 feet to 350 feet. See Figure D-1.

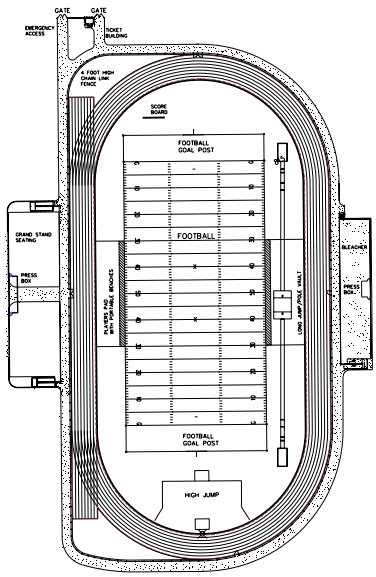
   b. Plan for infield area in compliance with Ohio High School Athletic Association guidelines. See Figure D-1.

   c. Plan for 24-foot high backstop a minimum of 60 feet from home plate.

   d. Plan for a protection fence that is 6-foot high chain link fence offset 60 feet from first and third base lines.

   e. Plan for outfield fencing that is 8-foot high chain link fence with top rail protective pad between foul lines. Plan for foul poles.

   f. Plan for player benches, set back from side fence line.



Middle School Track
with Football Field
Figure D-2

2. Running Track/Football Field

   a. Plan for 6- or 8-lane, 400-meter running track/football field. See Figure D-2.

   b. Design track radius to allow for a soccer or football field inside the track.

   c. Plan for field events that include high jump, long/triple jump, discus, and shot-put.

   d. Plan for 4-foot high chain link perimeter fence surrounding track with gates at center field and as needed for maintenance.

D. FUTURE IMPROVEMENTS (cont.)

3. Tennis Courts

a. Plan each court to be 36-foot wide and 78-foot long with a minimum of 21 feet behind each base line to the fence and a minimum of 12 feet from sideline to adjacent court or fence.

b. It is recommended to have no more that 3 courts side-by-side within 1 fenced area.

c. Plan for perimeter fence to be 10-foot to 12-foot high. Fence between adjacent banks of courts should be a minimum of 4-foot high.

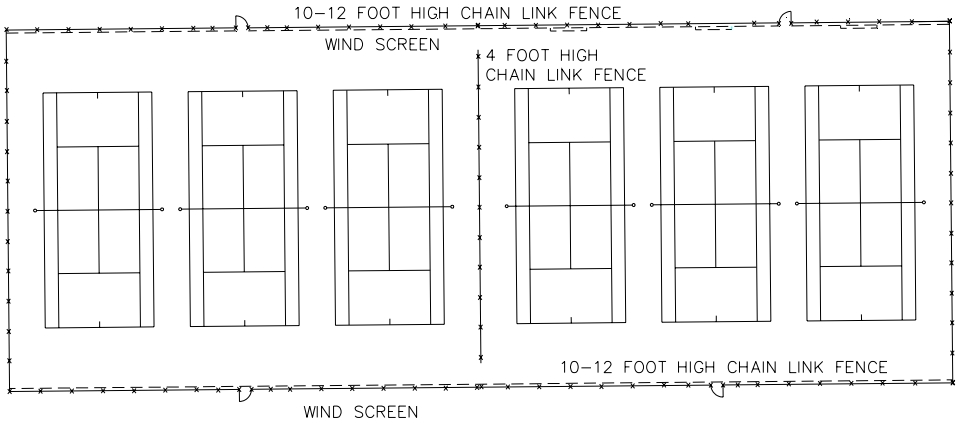
d. Plan to install windscreen on chain link fence for wind reduction and at ends of courts for increased ball visibility.

e. Backboards located on chain link fence at ends of courts for teaching are optional.

f. Plan to modify spacing, depth of footings, and post size of fencing as required for additional wind load of future windscreen or backboard.

g. Recommended slope is 1" in 10' (0.833 percent); maximum 1 percent.

h. The direction of slope in order of preference: 1) side-to-side, 2) end-to-end, and 3) corner-to-corner.



Middle School Tennis Courts
Figure D-3

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A. HARD SURFACE PLAY AREA

1. Provide paved area for basketball full- or half-courts. Locate on bus pavement where possible.

2. Provide grouping of tables and benches for use as an outdoor classroom setting.

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A. BUS LOADING AND UNLOADING

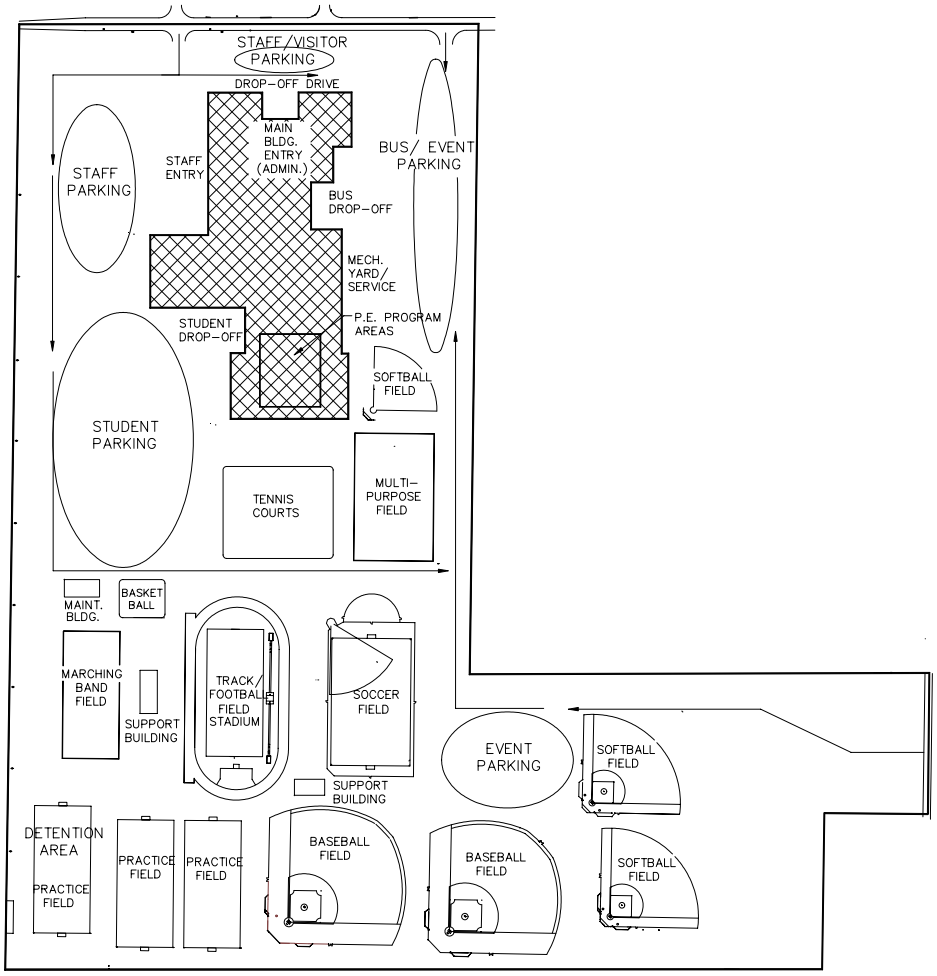
1. "Dual-use" of the bus parking lot for special event parking is possible when buses are not present.

B. *STAFF AND* VISITOR PARKING

1. ***Refer to page 3101-4 for minimum parking requirements.***

C. STUDENT PARKING

1. Student parking area is to be separate from bus and staff parking. Provide ***minimum of spaces for 20% of student capacity.*** See Figure C-1.



Typical Site Design
Figure C-1

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A. PHYSICAL EDUCATION FIELDS

1. Provide grading only for 1 softball field and 1 multipurpose field where import of fill material is not required.

2. Plan for 1 baseball field, 8 to 12 tennis courts, 8-lane, 400-meter running track/football field, and field events, and 2 additional multipurpose fields.

3. Provide grading of fields with 1 percent to 1 1-2 percent slope.

4. The multipurpose field is to be 225-foot wide and 360-foot long.

B. SOFTBALL FIELD

1. The softball field radius is 185 feet to 300 feet. See Figure B-1.
   a. 185 feet - 235 feet for female or male fast pitch
   b. 250 feet - 275 feet for female slow pitch
   c. 275 feet - 300 feet for male slow pitch

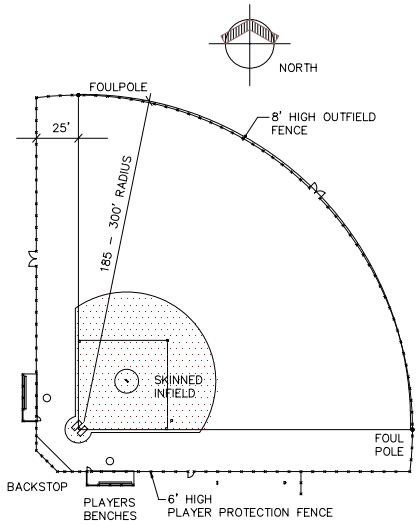
2. Provide infield area in compliance with the Ohio High School Athletic Association guidelines. See Figure B-1.

3. Plan for a backstop having a 17-foot 6-inch overhang height; and a 10-foot high by 20-foot wide back panel with 10-foot wide side panels. Locate backstop a minimum of 25 feet and a maximum of 30 feet behind home plate.

4. Plan for 6-foot high chain link, player protection fence.

5. Plan for future 8-foot high chain outfield fencing, foul poles, and top rail protective pad.

6. Plan for player benches, set back from side fence line.

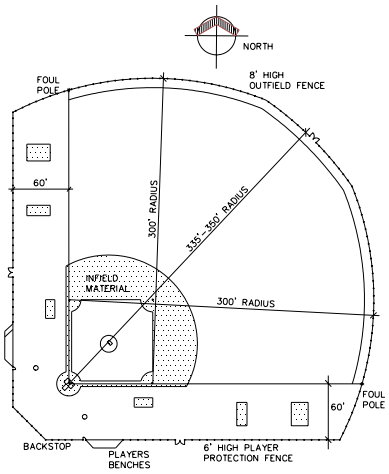


Typical Softball Field
Figure B-1

C. MULTIPURPOSE FIELD

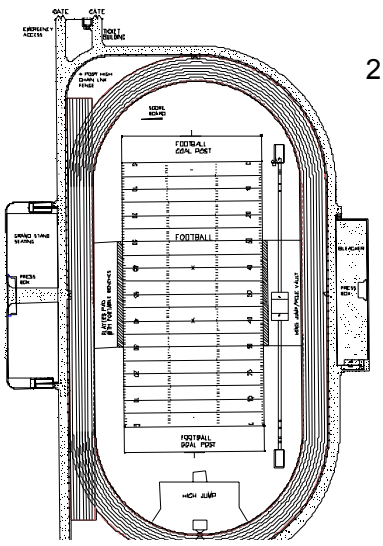
1. Grading is to crown at center of the field and slope to sidelines.
2. Plan for future under drains and irrigation.
3. Plan for portable or combination football/soccer goals.

D. FUTURE IMPROVEMENTS



High School Baseball Field
Figure D-1

1. Baseball Field
   a. Radius is to be 300 feet/335 feet to 350 feet. See Figure D-1.
   b. Plan for infield area in compliance with Ohio High School Athletic Association guidelines. See Figure D-1.
   c. Plan for a 24-foot high backstop a minimum of 60 feet from home plate.
   d. Plan for a protection fence that is 6-foot high chain link fence offset 60 feet from first and third base lines.
   e. Plan for outfield fencing and foul poles that are 8-foot high chain link fence with top rail protective pad between foul lines.
   f. Plan for player benches, set back from side fence line.



High School Track
with Football Field
Figure D-2

2. Running Track/Football Field
   a. Plan for 8-lane, 400-meter running track/football field. See Figure D-2.
   b. Design track radius to allow for a soccer or football field inside the track.
   c. Plan for field events that include high jump, long/triple jump, discus, and shot-put.
   d. Plan for a 4-foot high chain link perimeter fence surrounding track with gates at center field and as needed for maintenance.

D. FUTURE IMPROVEMENTS (cont.)

3. Tennis Courts (See Figure D-3)

a. Plan each court to be 36-foot wide by 78-foot long with a minimum of 21 feet behind each base line to the fence and a minimum of 12 feet from sideline to adjacent court or fence.

b. It is recommended to have no more than 3 courts side-by-side within 1 fenced area.

c. Plan for perimeter fence to be 10-foot to12-foot high. Fence between adjacent banks of courts should be a minimum of 4-foot high.

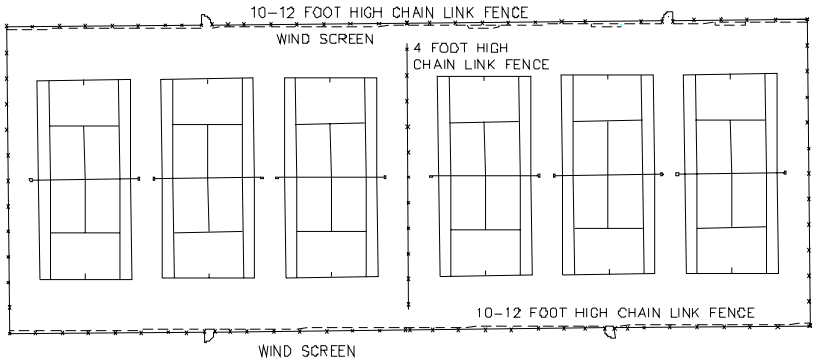
d. Plan to install windscreen on chain link fence for wind reduction and at ends of courts for increased ball visibility.

e. Backboards located on chain link fence at ends of courts for teaching is optional.

f. Plan to modify spacing, depth of footings, and post size of fencing as required for additional wind load of future windscreen or backboard.

g. Recommended slope is 1" in 10' (0.833 percent); maximum 1 percent.

h. The direction of slope in order of preference: 1) side-to-side, 2) end-to-end, and 3) corner-to-corner.



High School Tennis Courts
Figure D-3

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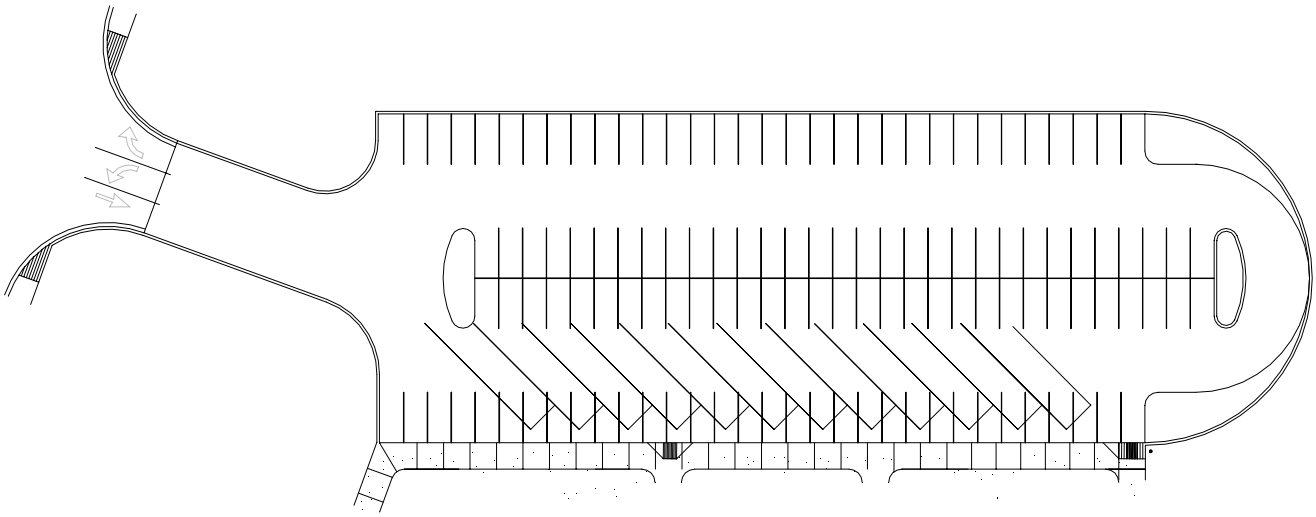
A. BUS LOADING AND UNLOADING

1. "Dual-use" of the bus parking lot for playground pavement and basketball courts is possible when buses are not present.

2. Over-stripe the bus parking lot for special event parking. Design the lot for optimum number of cars by setting the width of the pavement to allow for four rows (two aisles) of cars. See Figure C-1.



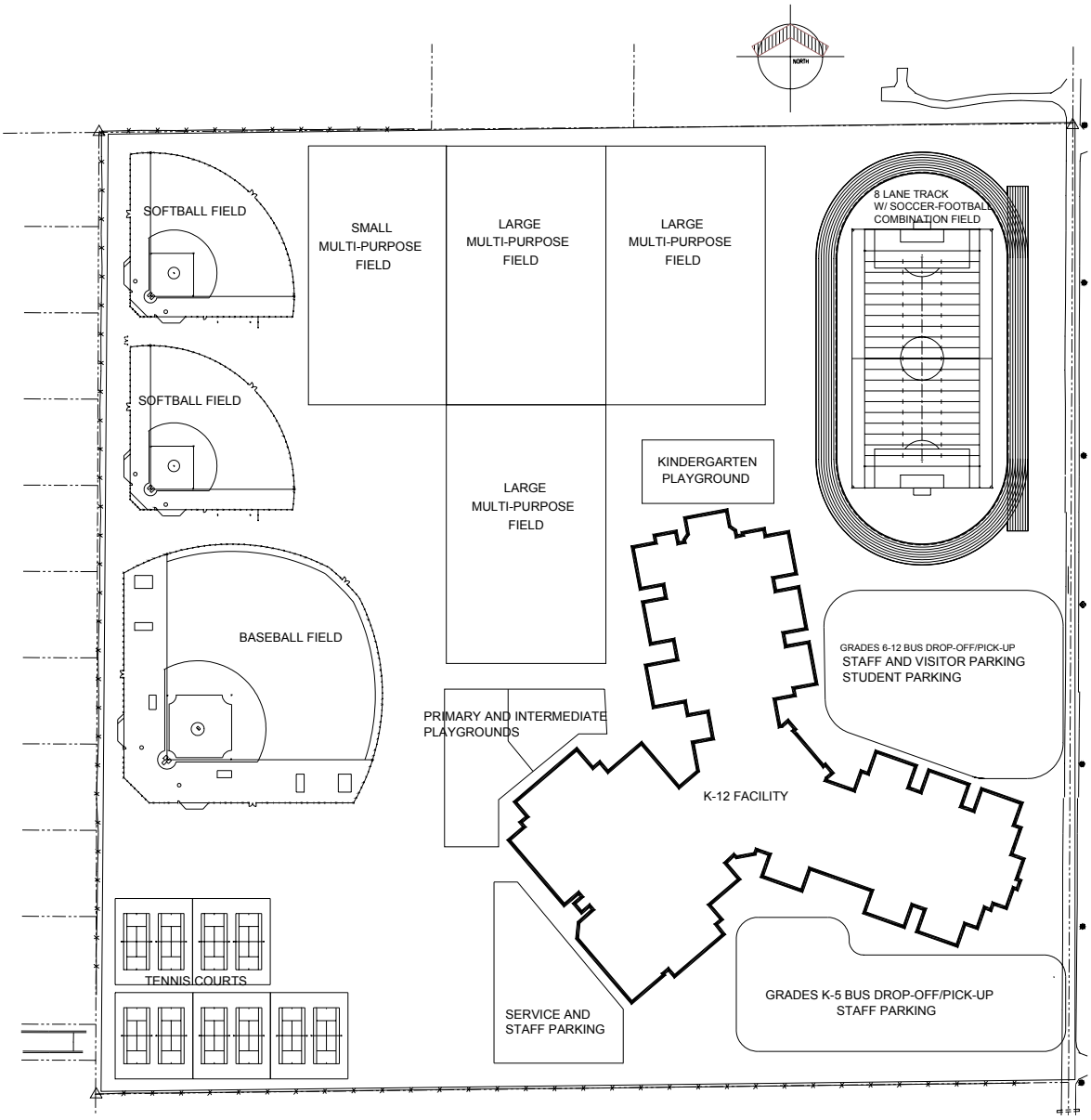
Typical Bus Parking Lot Design
Figure C-1

B. VISITOR PARKING

1. Provide a minimum of 15 parking spaces.

C. STUDENT PARKING

1. Student parking area is to be separate from bus, visitor, and staff parking. Provide 1 space for every 3 High School students (calculating this on the basis of High School students being 30% of the student body). Example for 1000 students = 100 spaces. See Figure C-2.



Typical Site Design
Figure C-2

A. PHYSICAL EDUCATION FIELDS

1. Provide grading only for 2 softball fields and 2 multipurpose fields where import of fill material is not required.

2. Plan for 1 baseball field, 10 tennis courts, 8-lane, 400-meter running track/football field, and field events, and 2 additional multipurpose fields.

3. Provide grading of fields with 1 percent to 1 1-2 percent slope.

4. The multipurpose field: 3 fields are to be 225-foot wide and 360-foot long and 1 field is to be 195-foot wide and 360-foot long.

B. SOFTBALL FIELD

1. The softball field radius: one field is to be 225 feet to 275 feet and one field is to be 180 feet to 200 feet. See Figure B-1.

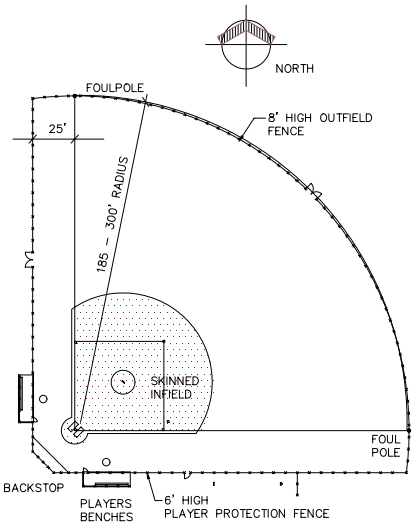
2. Provide infield area in compliance with the Ohio High School Athletic Association guidelines. See Figure B-1.

3. Plan for a backstop having a 17-foot 6-inch overhang height; and a 10-foot high by 20-foot wide back panel with 10-foot wide side panels. Locate backstop a minimum of 25 feet and a maximum of 30 feet behind home plate.

4. Plan for 6-foot high chain link, player protection fence.

5. Plan for future 8-foot high chain outfield fencing, foul poles, and top rail protective pad.

6. Plan for player benches, set back from side fence line.

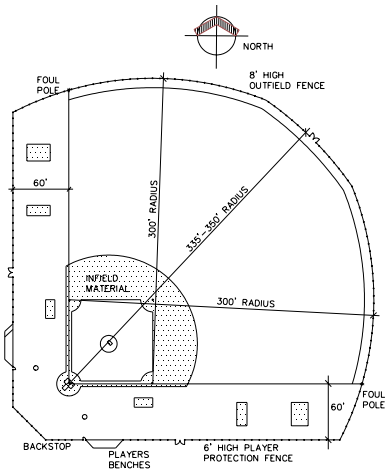


Typical Softball Field
Figure B-1

C. MULTIPURPOSE FIELD

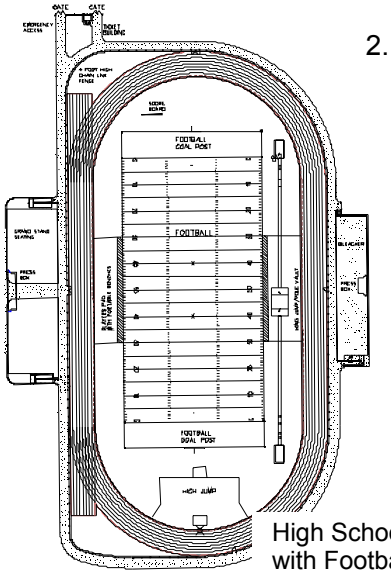
1. Grading is to crown at center of the field and slope to sidelines.
2. Plan for future under drains and irrigation.
3. Plan for portable or combination football/soccer goals.

D. FUTURE IMPROVEMENTS



High School Baseball Field
Figure D-1

1. Baseball Field
   a. Radius is to be 300 feet/335 feet to 350 feet. See Figure D-1.
   b. Plan for infield area in compliance with Ohio High School Athletic Association guidelines. See Figure D-1.
   c. Plan for a 24-foot high backstop a minimum of 60 feet from home plate.
   d. Plan for a protection fence that is 6-foot high chain link fence offset 60 feet from first and third base lines.
   e. Plan for outfield fencing and foul poles that are 8-foot high chain link fence with top rail protective pad between foul lines.
   f. Plan for player benches, set back from side fence line.



High School Track
with Football Field
Figure D-2

2. Running Track/Football Field
   a. Plan for 8-lane, 400-meter running track/football field. See Figure D-2.
   b. Design track radius to allow for a soccer or football field inside the track.
   c. Plan for field events that include high jump, long/triple jump, discus, and shot-put.
   d. Plan for a 4-foot high chain link perimeter fence surrounding track with gates at center field and as needed for maintenance.

D. FUTURE IMPROVEMENTS (cont.)

3. Tennis Courts (See Figure D-3)

a. Plan each court to be 36-foot wide by 78-foot long with a minimum of 21 feet behind each base line to the fence and a minimum of 12 feet from sideline to adjacent court or fence.

b. It is recommended to have no more than 3 courts side-by-side within 1 fenced area.

c. Plan for perimeter fence to be 10-foot to12-foot high. Fence between adjacent banks of courts should be a minimum of 4-foot high.

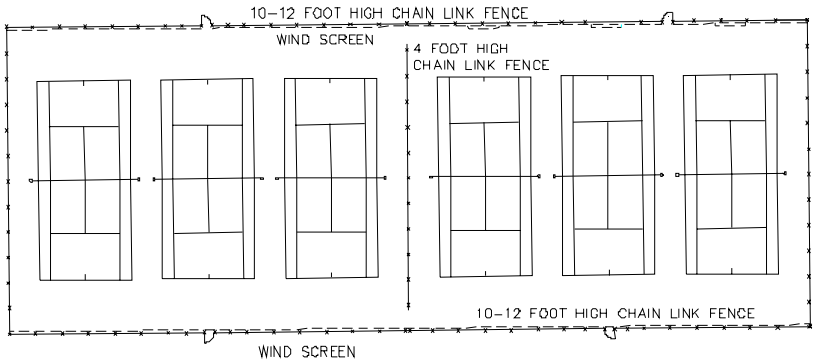
d. Plan to install windscreen on chain link fence for wind reduction and at ends of courts for increased ball visibility.

e. Backboards located on chain link fence at ends of courts for teaching is optional.

f. Plan to modify spacing, depth of footings, and post size of fencing as required for additional wind load of future windscreen or backboard.

h. Recommended slope is 1” in 10’ (0.833 percent); maximum 1 percent.

i. The direction of slope in order of preference: 1) side-to-side, 2) end-to-end, and 3) corner-to-corner.



High School Tennis Courts
Figure D-3

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A. AREA REQUIRED

1. Provide 50-75 square feet of play area per student in grades Kindergarten- 5th grade (estimate 45% of the overall students as being in K-5). Example: for a 1000 student school, provide for 450 students or 33,750 square feet. This area includes both hard surfaces and soft surfaces.

B. SEPARATION OF PLAY AREAS

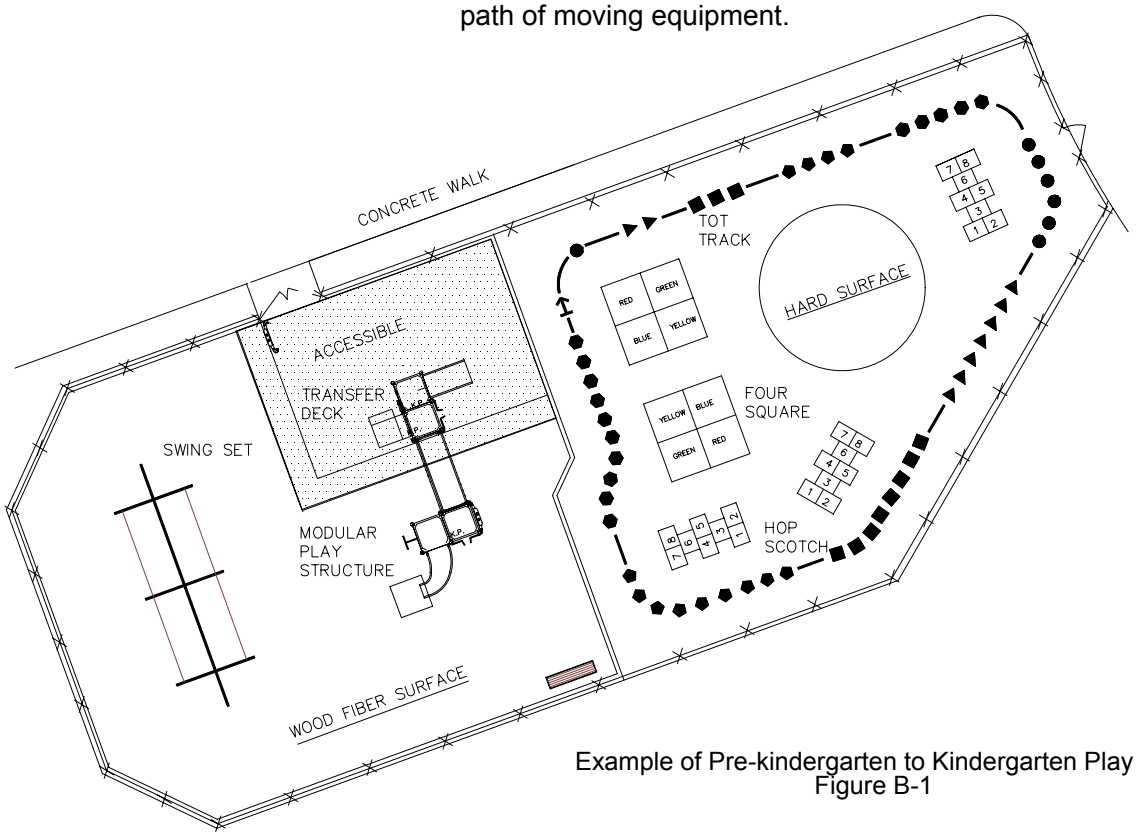
1. Provide playground areas to allow for difference in age, ability, and varying interests. If space is a consideration, one play area can accommodate all grades as long as pre-school is not a consideration.

2. Follow applicable safety guidelines for different age groups.

3. Pre-kindergarten and kindergarten play area. See Figure B-1.

   a. Provide play activities that include rocking, swinging, balancing, climbing, and sliding.

   b. Locate equipment with moving parts, such as swings, at the perimeter of the play area. Use fence or planting beds to prevent children from inadvertently stepping into path of moving equipment.



Example of Pre-kindergarten to Kindergarten Play Area
Figure B-1

B. SEPARATION OF PLAY AREAS (cont.)

4. Primary Play Area (See Figure B-2)

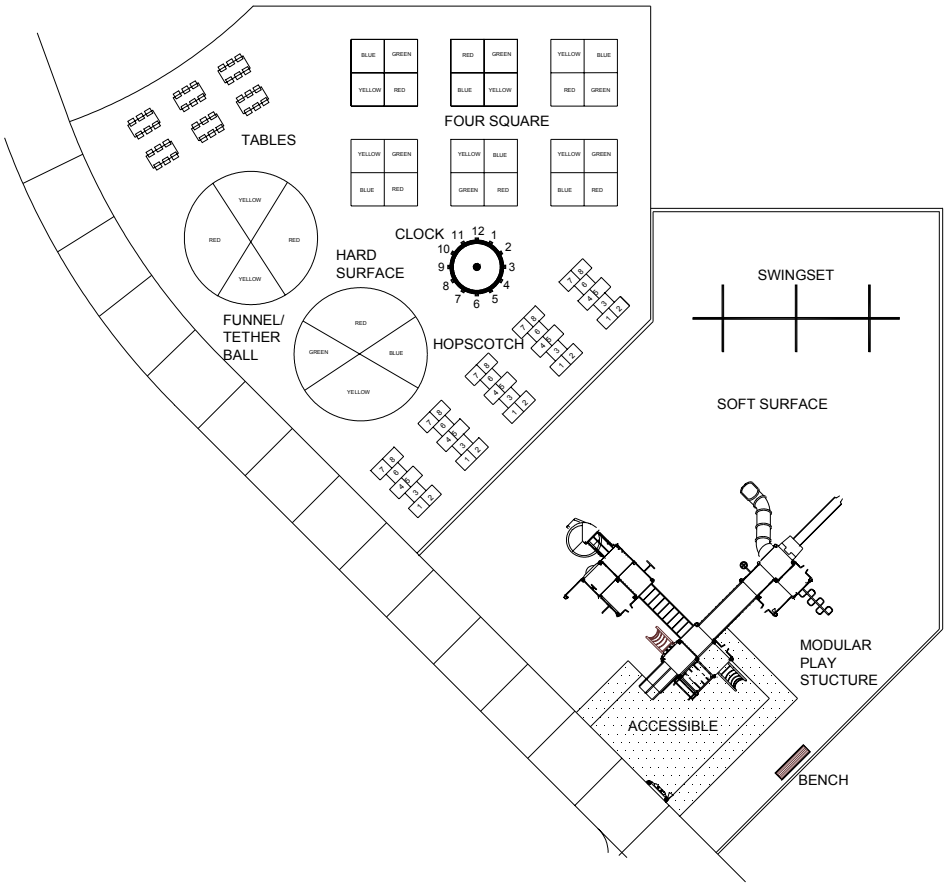
   a. Design for grades 1 through 3.

   b. Provide play activities that include rocking, swinging, balancing, climbing, and sliding.

   c. Provide upper-body strengthening devices such as a parallel bar and overhead ladder play equipment.

   d. Provide half-court basketball and dropshot/funnel ball.

   e. Provide a grouping of tables and benches for use as an outdoor classroom setting.



Example of Primary Play Area
Figure B-2

B. SEPARATION OF PLAY AREAS (cont.)

5. Intermediate Play Area (See Figure B-3)

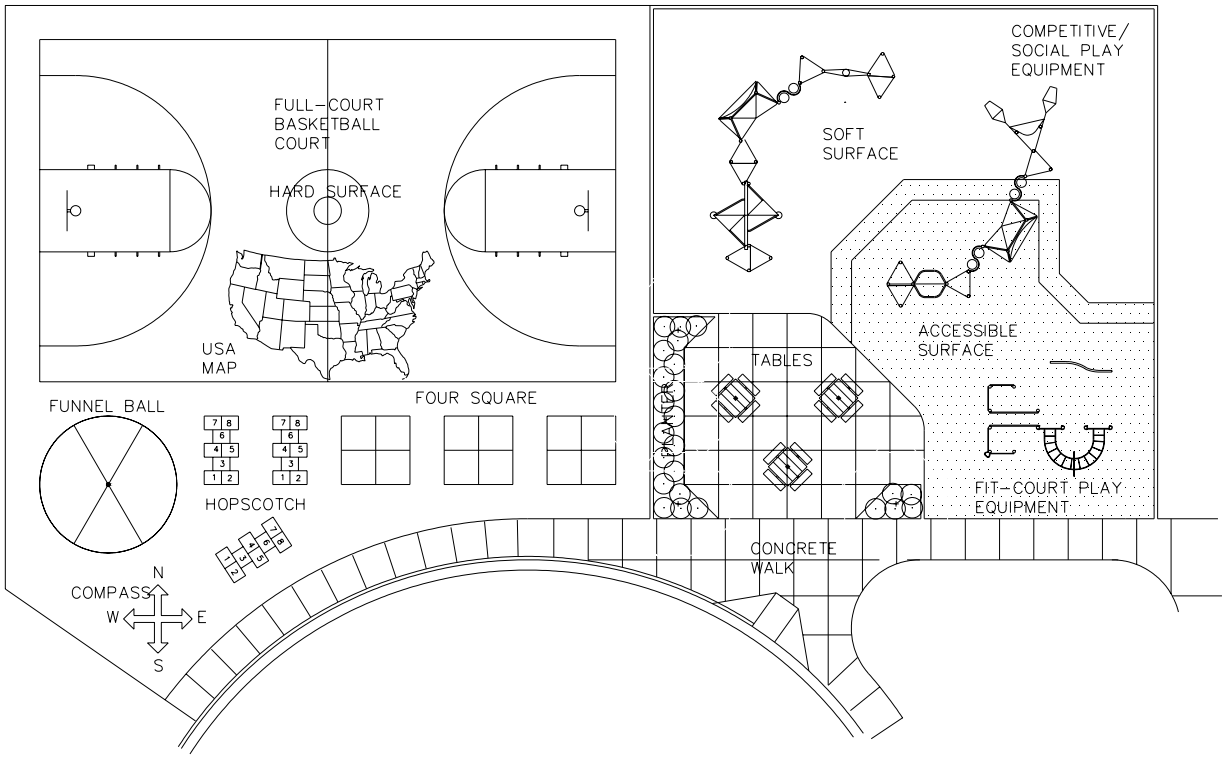
a. Design for grades 4 and 5.

b. Intermediate play area may be combined with primary play area.

c. Provide fitness structures and competitive equipment.

d. Provide 1 full basketball court (50 feet by 84 feet) or 2 half courts (50 feet by 42 feet).

e. Provide for groupings of benches and tables for social or passive play. This area can also serve as an outdoor classroom.



Example of Intermediate Play Area
Figure B-3

C. HARD SURFACE PLAY AREA

1. Provide paved area for full- or half-court basketball. Locate on bus pavement where possible. Bus pavement should be adjacent or within view of other elementary play spaces for shared supervision.

2. Painted games could include four square, hopscotch, tetherball, kickball, dodgeball, games played in a large circle, a tot track with sequenced shapes or perimeter line for running relays or laps.

3. Educational features could include a USA or world map, counting line, compass, and clock.

D. SOFT SURFACE PLAY AREA

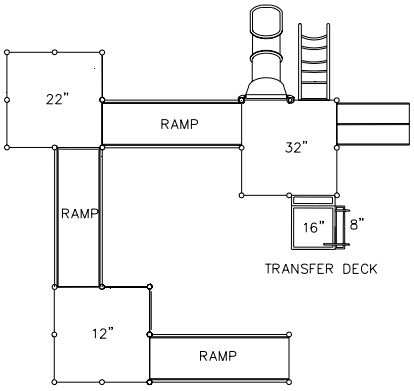
1. Surfacing is to be resilient, and installed at a sufficient depth to meet current safety guidelines. If should be a nonsplintering surface where children may be crawling. Avoid using black surfacing.

2. Provide edging to keep loose fill soft surface within bounds of the play area. Depress loose fill soft surface material below edging. Provide under drain system and geotextile below loose fill soft surface.

3. Increase the depth of soft surface material in areas of high use such as the base of swings and slides.

5. Provide play structures.

E. ACCESSIBILITY STANDARDS



Typical Ramp and Transfer Deck
Figure E-1

1. Provide ramps and/or transfer points on composite play structures for access to play components on elevated decks. Meet the Americans with Disabilities Act guidelines for percentage of components that are to be accessible by ramp and by transfer deck. See Figure E-1.

2. Provide table and benches along accessible route.

3. Provide future upper-body strengthening devices as appropriate for age group and amount of supervision.

A. VISITOR PARKING

1. Provide parking spaces for between 2%-3% times the student capacity as determined by Design Professional.

B. STUDENT PARKING

1. Student parking area is to be separate from bus and staff parking. Provide 3 spaces for every 4 students.

C. CUSTOMER PARKING

1. Provide 10 spaces for each program serving outside customers except the restaurant program. Provide 1 space for every 2 seats within the restaurant.

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