

**Playground Design Guidelines  
Aurora Public Schools  
Updated 2-21-2012**

**Vision Statement**

Play is an essential part of a child's daily life. Research studies have documented the health benefits of children being active for 20 to 30 minutes each day. Play benefits children in areas besides physical development as well. Children engaging in pretend play develop the ability to express their ideas and feelings amongst their peers. Play stimulates thinking in an active fashion and teaches children how to socialize and communicate with their peers. Children who participate in play/recess as a part of their regular school day are found to be more prepared to learn in the classroom. The district vision for playgrounds is that the built environment exists as a safe, fun, and inviting place to play, which not only supports physical development and the goals of the physical education curriculum, but also encourages children's social and emotional development and promotes readiness to perform in the classroom.

**I. APPLICATION OF THIS STANDARD:**

- A. All new and redeveloped district playgrounds shall meet the minimum requirements of this Standard.
- B. This Standard applies to Playgrounds for ages 2-5 and 5-12.
  - 1. In ages 2-5, Early Childhood Education (ECE) programs will utilize the Kindergarten Playground.
- C. This Standard also applies to district sites that may contain community playgrounds.
- D. This Standard is complementary to playground information contained in the district Technical Guidelines:
- E. This Standard is complementary to playground information contained in district Educational Guidelines.

**II. Design Guidelines:**

- A. SAFETY:
  - 1. American Society for Testing and Materials (ASTM) designation F 1487 – 98 (or current issue) "Standard Consumer Safety Performance Technical guidelines for Playground Equipment for Public Use"
    - (a.) U.S. Consumer Product Safety Commission (CPSC) "Handbook for Public Playground Safety" (Publication No. 325) (based on ASTM F 1487) Internet address: [www.cpsc.gov/CPSC/PUBS/325.pdf](http://www.cpsc.gov/CPSC/PUBS/325.pdf)
    - (b.) CPSC "Playground Surfacing Materials" (Publication No. 3005)
    - (c.) National Playground Safety Institute (NPSI) standards
- B. ACCESSIBILITY:
  - 1. Americans with Disabilities Act (ADA) "Accessibility Guidelines (ADAAG) for Buildings and Facilities; Play Areas, Final Rule Internet address: [www.accessboard.gov/play/finalrule.htm](http://www.accessboard.gov/play/finalrule.htm)
  - 2. Guide to ADA Accessibility for Play Areas, Internet address: <http://www.access-board.gov/play/guide/intro.htm>
- C. ECE / PRE-SCHOOL:

1. State of Colorado, Department of Human Services, Division of Child Care, "Rules Regulating Child Care Centers"

(a.) Applies to licensed Early Childhood Education (ECE) programs

**D. PLANNING AND DESIGN FOR EDUCATIONAL PROGRAMS:**

1. District Technical Guidelines
2. District Educational Specifications

**III. GENERAL DESIGN CONSIDERATIONS:**

**A. GENERAL CRITERIA:**

1. District playgrounds shall be designed to address student needs and to complement the district's curriculum.

**2. SEPARATION BETWEEN AGE GROUPS:**

(a.) On APS sites it is generally preferable to create separate play apparatus areas for each of the following student groups.

(1.) Pre-primary

(2.) Primary

(b.) State ECE regulations require physical enclosure of ECE playground areas. Separation between other age groups shall be determined for each individual site and project. Criteria often include supervision, safety, security, and flexibility.

(c.) Chain link fencing often provides physical separation; alternate landscape barriers may be considered.

**B. STUDENTS:**

**3. ELEMENTARY:**

**(a.) PRE-PRIMARY**

(1.) Includes Early Childhood Education (ECE) and Kindergarten

(2.) Ages 2 – 5

**(b.) PRIMARY:**

(1.) Includes Grades 1 - 6

(2.) Ages 5 – 12

**B. COMMUNITY USE:**

1. While community use of school playgrounds is a factor in planning and design, the primary focus of planning and design of district playgrounds shall be support of the educational program and students' needs.

2. District playgrounds shall be designed to accommodate unsupervised community use.

3. Any playground modification will require a Facilities Modification Form be filled out. Operations and maintenance will deny, approve and coordinate the request.

**C. PROTOTYPES:**

1. The Playground Designer shall consult with APS Facility Management and utilize existing prototypes.

**D. CURRENT STANDARDS RELATIVE TO EXISTING PLAYGROUNDS:**

1. Where a district playground is substantially altered the existing playground is required to be brought into compliance with current guidelines, standards, and regulations.

**E. AREA REQUIREMENTS:**

1. Colorado ECE regulations include minimum area requirements.
2. Area needs are to be determined by district prototype guidelines. Variations may occur according to site conditions, size of school, space constraints, budgetary requirements, and other appropriate factors.

**F. QUANTITY OF PLAY APPARATUS:**

**Four Tier Plus Playground serving 150-200 students out of a total capacity of 675 students**

**Primary Learners Grades 1-5**

- Provide one soccer field, with preferred orientation along the north/south axis. Soccer field shall be 150'x300' minimum.
- Primary play pad shall be 7200-9200 square feet of asphalt. Paint lines to accommodate the following activities:
  - 2 pair of basketball goals one at 10' (Half court only)
  - 2 triple hoops
  - 2 tetherball courts
  - 4 four square courts
  - 1 United States Map (optional)
- Primary apparatus area shall be 6300-8100 square feet of EWF surfacing. This space shall accommodate the following activities:
  - Composite structure "s" will have a minimum of 18-20 activities and be ADA compliant
  - 4 individual play units, examples are fitness units, slides and rainbow climbers.
  - 8 swings, one will be ADA compliant (Optional)
  - Pair of soccer goals, nets purchased by school. (Portable soccer goals)

**Pre-K and Kindergarten Playground serving 40-50 Students**

- Pre-K and Kindergarten play pad shall be approximately 1000-1150 square feet of surfacing. This space shall accommodate the following activities:
  - Pre-K and Kindergarten apparatus area shall be 3100-4000 square feet of EWF surfacing. This space shall accommodate the following activities:
    - Composite structure "s" will have a minimum of 6-10 activities and be ADA compliant
    - 4 spring base type activities
  - Chain link fence to enclose the entire area or appropriate barriers
  - Include a road, path or labyrinth integrated into the hard and or soft-scape areas.

**Four Tier Playground serving 125-175 students out of a total capacity of 600 students**

**Primary Learners Grades 1-5**

- Provide one soccer field, with preferred orientation along the north/south axis. Soccer field shall be 150'x300' minimum.
- Primary play pad shall be 7200-9200 square feet of asphalt. Paint lines to accommodate the following activities:
  - 2 pair of basketball goals one at 10'(Half court only)
  - 2 triple hoops
  - 2 tetherball courts
  - 2 four square courts
- Primary apparatus area shall be 6300-8100 square feet of EWF surfacing. This space shall accommodate the following activities:
  - Composite structure "s" will have a minimum of 14-16 activities and be ADA compliant

- 4 individual play units, examples are fitness units, slides and rainbow climbers.
- 8 swings, one will be ADA compliant (Optional)
- Pair of soccer goals, nets purchased by school. (Portable soccer goals)

### **Pre-K and Kindergarten Playground serving 40-50 students**

- Pre-K and Kindergarten play pad shall be approximately 1000-1150 square feet of surfacing. This space shall accommodate the following activities:
- Pre-K and Kindergarten apparatus area shall be 3100-4000 square feet of EWF surfacing. This space shall accommodate the following activities:
- Composite structure “s” will have a minimum of 6-10 activities and be ADA compliant
- 4 spring base type activities
- Chain link fence to enclose the entire area or appropriate barriers
- Include a road, path or labyrinth integrated into the hard and or soft-scape areas.

### **Three Tier Plus Playground serving 100-150 students out of a total capacity of 450 students**

#### **Primary Learners Grades 1-5**

- Provide one soccer field, with preferred orientation along the north/south axis. Soccer field shall be 150'x300' minimum.
- Primary play pad shall be 7200-9200 square feet of asphalt. Paint lines to accommodate the following activities:
- 2 pair of basketball goals one at 10' (Half court only)
- 2 triple hoops
- 2 tetherball courts
- 4 four square courts
- Primary apparatus area shall be 6300-8100 square feet of EWF surfacing. This space shall accommodate the following activities:
- Composite structure “s” will have a minimum of 10-12 activities and be ADA compliant
- 4 individual play units, examples are fitness units, slides and rainbow climbers.
- 8 swings, one will be ADA compliant (Optional)
- Pair of soccer goals, nets purchased by school. (Portable soccer goals)

### **Pre-K and Kindergarten Playground serving 40-50 students**

- Pre-K and Kindergarten play pad shall be approximately 1000-1150 square feet of surfacing. This space shall accommodate the following activities:
- Pre-K and Kindergarten apparatus area shall be 3100-4000 square feet of EWF surfacing. This space shall accommodate the following activities:
- Composite structure “s” with a minimum of 6-10 activities and be ADA compliant
- 4 spring base type activities
- 4' Chain link fence, with gates to enclose the entire area or appropriate barriers
- Include a road, path or labyrinth integrated into the hard and or soft-scape areas.

#### **G. SAFETY:**

1. Guidelines (voluntary standards) for public playground safety are contained in ASTM F1487-98
  - (a.) The CPSC Handbook (also referenced above) illustrates and clarifies the ASTM F 1487-98 safety guidelines.
2. District playgrounds shall be designed and constructed to comply with ASTM F1487-98, NPSI, and CPSC standards

#### **H. ACCESSIBILITY:**

## 1. DISTRICT MAINTENANCE & OPERATIONS/RISK MANAGEMENT

### DEPARTMENT REVIEW:

(a.) During design and prior to bid, every playground design shall be submitted to district Student Support Services, Risk Management and Operations and Maintenance.

### 2. QUANTITIES OF ACCESSIBLE PLAY APPARATUS:

(a.) Provide minimum quantities of accessible play apparatus stated in the ADAAG.

### 3. DESIGN OF ACCESSIBLE PLAYGROUNDS:

#### (a.) NEW SITES AND BUILDINGS:

(1.) Develop sites so that general areas are accessible to individuals with disabilities. Include:

- (i.) Hard-surfaced play areas
- (ii.) Soft-surfaced play areas including play apparatus pits
- (iii.) Play fields, as well as other exterior areas such as:
  - Walkways
  - Vehicle drop-off / pick-up areas do not create blind spots or present a hazard.
  - Viewing areas

#### (b.) EXISTING SITES AND BUILDINGS:

(1.) When the opportunity arises to make changes to a site or a portion of a site, the objectives of the ADAAG shall be met if reasonable to do so.

(2.) The ultimate objective is for all sites to reasonably accommodate all people.

(c.) Playground Designer shall assess requirements and provisions for landscape accessibility for each individual site and project.

## I. PHYSICAL EDUCATION

1. The Playground Designer shall ensure that the needs and goals of the school's physical education program are met.

## J. SECURITY:

1. Avoid creating areas of concealment.
2. Avoid design of elements that would allow climbing onto adjacent buildings.

## K. VARIETY OF SURFACES

1. Colorado ECE regulations require that two play surfaces shall be provided in each ECE playground.

## L. DRAINAGE:

1. Playground Designer shall study drainage requirements for each individual site and project, and shall design playground drainage systems. No dry wells. Playgrounds shall be designed to prevent erosion and standing water.

## M. MAINTENANCE CONSIDERATIONS:

### 1. SNOW REMOVAL:

(a.) Design locations and orientations of playgrounds to enhance natural (solar assisted) snow and ice removal.

### 2. LAWN MOWING:

(a.) Design playground landscapes to minimize damage from trimming or mowing equipment.

### 3. MAINTAINING SAFETY SURFACING:

(a.) District Facilities will provide engineered wood fiber (EWF) maintenance tools for each site, including “corn cob forks” and “clam rakes.”

(b.) Maintenance of smooth grades and transitions for access for disabled individuals

**N. NO LOOSE PARTS:**

1. All components of APS playgrounds shall be built in or anchored securely to permanent construction.

**O. SOLAR ORIENTATION:**

**1. SNOW AND ICE MELT:**

(a.) Avoid placing play apparatus in areas that will not receive enough solar exposure to melt snow and ice.

**P. CHECKLISTS:**

1. District *Playground Planning Checklist* is included in the appendix to these Playground Standards.

2. Safety assessment checklists are furnished by district Operations and Maintenance to each school.

**IV. SAFETY SURFACING:**

**A. GENERAL:**

1. Safety surfacing shall be installed under all play apparatus and within all play apparatus fall zones, use zones, and safety zones.

2. Safety surfacing materials shall have a Critical Height value (see CPSC guidelines) of at least the height of the highest accessible part of the play apparatus.

3. Finish grade on safety surfacing not to exceed 2% slope.

**B. ACCEPTABLE ENGINEERED WOOD FIBER (EWF) SAFETY SURFACING:**

**1. EWF SYSTEM DESIGN:** EWF will need periodic maintenance and replacement

**(a.) DEPTH OF EWF:**

(1.) Minimum compacted (aged and used 90 days) depth of EWF is 12” in all safety surfacing areas.

(2.) Initially install EWF to a minimum depth of 15” in all playground areas requiring safety surfacing. It is anticipated that the EWF will compact over time to the minimum required 12” depth.

**(b.) DRAINAGE LAYER BENEATH EWF:**

(1.) Provide a minimum 3” deep layer of drainage rock beneath the entire EWF surface per manufacturer recommendation of EWF.

(2.) The sub grade beneath the drainage layer shall be designed to direct water to a storm water drainage system or to daylight.

**(c.) CONTAINMENT OF EWF:**

(1.) Design perimeters of EWF areas with a minimum curb height of 3” above the surface of the compacted EWF. Where the site allows grade will be flush with the top of the curb wall. (36” sidewalk around EWF)

(2.) Include geotextile fabric between the EWF and the drainage layer.

**(d.) RAMPS AND ACCESS PATHS:**

- (1.) Playground Designer shall design ramps for accessible transitions between play area perimeters and surface of EWF. Refer to the play pit ramp drawing attached to this standard.
- (2.) Access paths shall not contain dead ends. Design continuous paths or paths 5' wide to allow disabled students to turn around once play activities are completed or provide a second means of egress.

(e.) GEOTEXTILE FABRIC:

- (1.) Locations shall be designed by Playground Designer to contain EWF.

2. DRAINAGE SYSTEM DESIGN:

- (a.) Playground Designer shall design EWF drainage system.
- (b.) Playground Designer shall design a subsurface drainage system sufficient to prevent standing water in EWF areas.
- (c.) Design drainage system so that no free water remains 12 hours after precipitation ends.

3. SUBMITTALS (provided by Supplier to Playground Designer and APS):

- (a.) PRODUCT DATA
- (1.) EWF

4. EWF SYSTEM MATERIAL TECHNICAL GUIDELINESS:

- (a.) ACCEPTABLE EWF SYSTEMS:
  - (1.) "Fibar"
  - (2.) "Woodcarpet"
  - (3.) Or pre-approved equivalent
- (b.) GEOTEXTILE FABRIC:
  - (1.) Minimum 3.5 OZ/SY
  - (2.) Synthetic Fabric Non Woven

**V. PLAY APPARATUS:**

A. OVERALL DESIGN CRITERIA:

1. Play apparatus standards apply primarily to elementary school level playgrounds, for children through 12 years of age.
2. Separation of play apparatus by age group is recommended. See Standards section IV.A.3.
3. Combinations of composite play structures and individual elements of play apparatus are anticipated.
4. Accessible play elements shall be integrated into every play area.

B. SAFETY:

1. SAFETY ZONES, FALL ZONES & USE ZONES:
  - (a.) Determined by Playground Designer and Manufacturer
  - (b.) Shall be indicated for both existing and new play apparatus
  - (c.) Shall be indicated on construction drawings
  - (d.) Shall be indicated on manufacturer's shop drawings

C. ACCESSIBILITY:

1. CERTIFICATIONS:

(a.) Play apparatus identified as accessible shall be in accordance with the ADA Accessibility Guidelines for Play Areas.

2. ACCESSIBLE PATHS WITHIN COMPOSITE PLAY APPARATUS STRUCTURES:

(a.) Meet minimum dimensions recommended by standards referenced above.

(b.) Consider the possibility that a mobility impaired student may be able to crawl up steps from the transfer platform. Maximum four steps are allowable from one platform to another.

(c.) Where a wheelchair accessible ramp is provided for access onto a composite play structure, a continuous accessible route shall be provided to another accessible exit from the play structure. Where a separate accessible exit is not feasible, a platform of 60" diameter shall be provided to allow a student using a wheelchair adequate space to turn around in order to exit.

D. PLAYGROUND SAFETY SIGNS:

1. The playground apparatus manufacturer shall provide a permanent sign at each play area that indicates the age groups that the play apparatus is designed to accommodate.

2. Each playground shall have a sign stating age appropriateness and playground use rules.

E. SPECIFIC PLAY COMPONENTS:

1. SAND BOX :

(a.) Allowed on new construction with appropriate cover

2. ACTIVITY PANELS:

(a.) Unacceptable types of activity panels include:

(1.) Activity panels that contain only painted graphic images

(2.) Panels containing clear acrylic windows or mirrors

(3.) Steering wheels

(b.) Acceptable types of activity panels include:

(1.) Tic tac toe games or similar panels

(2.) Games such as picture match, number sequences, shape and color sequences.

(3.) Learning panels

3. SWINGS:

(a.) Provide minimum one accessible swing at each playground.

(b.) An accessible swing cannot share a bay with a standard swing.

(c.) As stated in CPSC No dissimilar swings sharing bays.

4. BOULDERS:

(a.) Optional

F. MINIMUM APPARATUS REQUIREMENTS TO PROMOTE DEVELOPMENTAL SKILLS

1. New play apparatus shall be provided to promote specific developmental skills, in the following approximate proportions:

(a.) 40% upper body / large motor skills

(b.) 30% passive / imaginary / sensory skills

(c.) 30% motion skills



#### G. PLAY APPARATUS NOT PERMITTED:

1. Roller slides
2. Open bed slides 8 feet high.
3. Multi occupant swings
4. Rope swings
5. Chain rings or bars
6. Merry-go-rounds
7. Seesaws and teeter totters
8. Trampolines
9. Gliders
10. Swings attached to composite play structures
11. Stirring sky wheels
12. Chain Ladders
13. No moving parts other than:
  - (a.) C spring toys
  - (b.) Swings
  - (c.) Panels

#### H. EXISTING APPARATUS:

##### 1. EVALUATION:

- (a.) Playground Designer and owner shall evaluate existing apparatus that may be affected by a construction project. Evaluation shall be relative to these standards.
- (b.) Evaluation will be used to determine whether individual pieces and assemblies of play apparatus should be left untouched or modified in place, relocated, or demolished.

##### 2. RELOCATION:

- (a.) When it is feasible to relocate existing play apparatus, responsibilities for removal, modification, and reinstallation shall be clearly indicated by the Playground Designer in the construction documents.
- (b.) District Outside Services will be assigned the responsibility of relocating or modifying existing play apparatus only with prior approval of district Risk Management.
- (c.) No relocation or modification of apparatuses listed in VI H.

##### 3. MODIFICATION:

- (a.) When it is feasible to modify existing play apparatus, the Playground Designer shall assure that the designed modifications meet all current applicable safety and accessibility guidelines and requirements.

#### VI. DISTRICT REVIEW:

A. If planning a playground project initiated by an individual school or department, have the Resident Facility coordinator submit a *Facility Modification Request (FMR)* to the maintenance help desk.

B. During funding, planning and design phases, district O&M, Risk Management, Student Support Services shall review all playground projects.

C. During construction, all playgrounds shall be inspected and accepted by district O&M, Risk Management, and Student Support Services.

D. These requirements apply to all district playground projects, notwithstanding sources of funding, design, and construction.

E. NEW APPARATUS:

1. INSTALLER QUALIFICATIONS AND AGREEMENT:

(a.) Only personnel trained and certified by the play apparatus manufacturer shall install new play apparatus.

(b.) A construction agreement is required for every play apparatus installation,

(1.) Every construction agreement for play apparatus shall contain insurance requirements acceptable to the district.

(c.) Acceptable installers:

(1.) District maintenance employees (with approval of Risk Management)

(2.) Any manufacturer specific-certified play apparatus installers

2. SUBMITTALS (provided by Supplier to Playground Designer and the district):

(a.) SHOP DRAWINGS

(1.) Both plan view and three-dimensional

(2.) Indicate fall zones, safety zones, and use zones.

(b.) PRODUCT DATA

(c.) COLOR SAMPLES

(1.) Will be submitted to district project manager and coordination with school principal.

(d.) CERTIFICATIONS

(e.) STATEMENT OF ACCESSIBILITY

(1.) Manufacturer shall indicate the total quantity of new play components to be provided for each project.

(2.) Designer shall indicate which components of new play apparatus are accessible as defined by the ADAAG.

3. EXTENDED WARRANTY:

(a.) None required for play apparatus.

4. OPERATIONS AND MAINTENANCE:

(a.) Tools

(b.) Touch-up paint

(c.) Maintenance recommendations

(d.) Recommendations for graffiti removal

(e.) Spare parts including spare nuts and bolts

5. UNACCEPTABLE MATERIALS:

(a.) Wood

(b.) Recycled plastic on composite structure or play apparatus.

(c.) Synthetic lumber on composite structure or play apparatus.

(d.) Concrete(EXCEPT for Material Containment Curbs and Sidewalks)

(e.) Rubber vehicle tires

(f.) "Home made" apparatus

6. MATERIALS AND FABRICATION:

(a.) SUPPORT POSTS, UPRIGHTS:

(1.) Material: Galvanized steel, minimum 12 gauge.

- (2.) Size: Minimum 4 1/2" outside diameter (5" outside diameter preferred)
  - (i.) Smaller diameters may be approved for Pre-Primary playgrounds only, and only by the district Project Manager.
  - (ii.) Note: No posts on district sites shall be smaller than 3-1/2" diameter.
- (3.) Finish: Baked on, polyester powder coated paint
  - (i.) Epoxy or hybrid paints not acceptable

(b.) OTHER STRUCTURAL MEMBERS, INCLUDING HANDRAILS AND GUARDRAILS:

- (1.) Material: Galvanized steel
- (2.) Size: Diameter of steel tubing will vary according to manufacturer's recommendations. Minimum 1 5/16" outer diameter.
- (3.) Finish: Baked on, polyester powder coated paint
  - (i.) Epoxy or hybrid paints not acceptable
  - (ii.) On handrails, textured or knurled surfaces are preferred for better grip.

(c.) PLASTIC COMPONENTS:

- (1.) Material: rotationally molded, linear, low density polyethylene with UV inhibitors
- (2.) Minimum wall thickness: 0.250" (Except as allowed for roofs)

(d.) DECKS, INCLUDING PLATFORMS, RAMPS, WALKING SURFACES, BRIDGES, SLIDE LADDERS:

- (1.) Vinyl coated
- (2.) Fully welded
- (3.) Perforated 12 gauge steel horizontal surfaces

(e.) SLIDES:

- (1.) One piece double wall plastic.

(f.) CHAIN:

- (1.) Galvanized or stainless 670# working load with 4.0 welded links

(g.) ROOFS:

- (1.) Rotationally molded plastic acceptable

(h.) HARDWARE, ACCESSORIES, FITTINGS:

(1.) POST CAPS:

- (i.) Cast aluminum
- (ii.) Finish: Baked on, polyester powder coated paint
  - Epoxy or hybrid paints not acceptable

(2.) CLAMPS:

- (i.) Cast or die cast aluminum or stainless steel
- (ii.) Finish: Baked on, polyester powder coated paint
  - Epoxy or hybrid paints not acceptable

(3.) FASTENERS:

- (i.) All fasteners shall be tamper-proof stainless steel.
- (ii.) All nuts shall be lock nuts.
- (iii.) Lock nuts shall have safety caps.
- (iv.) All swings to have pipe swing hangers.

(4.) PERMANENT LABELS:

- (i.) Apply to apparatus, or on sign close to apparatus.
- (ii.) Identify play apparatus manufacturer.
- (iii.) Include appropriate safety warnings.
- (iv.) Indicate age appropriateness of equipment.

(5.) ELEVATION OF SAFETY SURFACING:

- (i.) Manufacturer shall permanently mark optimum safety surfacing grade level on every post. Marking shall be a simple line and shall not be identified.

7. INSTALLATION:

- (a.) Playground Designer and Installer shall ensure that all potential underground utilities and structures are located prior to digging.
- (b.) Installer shall verify that sub grades are properly prepared and compacted.
- (c.) Beginning of installation indicates acceptance of existing conditions.
- (d.) Installer shall field verify locations of all apparatus with district representative before proceeding with installation.
- (e.) Installer shall provide concrete footings to dimensions indicated by play apparatus manufacturer.
  - (1.) Concrete shall meet district Technical Guidelines.
- (f.) Protect all excavations from erosion and flooding during apparatus installation.
- (g.) General installation procedure:
  - (1.) Set apparatus in position, and temporarily brace.
  - (2.) Install concrete in footing voids.
  - (3.) Remove temporary bracing after concrete has set for 48 hours minimum.
  - (4.) Place geotextile fabric as detailed by Playground Designer, and secure to each post with manufacturer's recommended adhesive.
  - (5.) Set components plumb, level, and free of warp or racking.
  - (6.) Secure components in position using anchorage devices recommended by the apparatus manufacturer.
  - (7.) Apply thread adhesive to anchors.
  - (8.) Protect components from staining, use, cracking, chipping, vandalism, and damage until apparatus has been accepted by district.
  - (9.) Owner representative to inspect and sign off on each phase of construction
    - (i.) Drainage
    - (ii.) Sub grade
    - (iii.) Equipment installation

- (iv.) Safety surfacing
- (v.) Completion

## **VII. OTHER PLAYGROUND LANDSCAPE COMPONENTS:**

### **A. EDGES AND CONTAINMENT:**

#### **1. FENCES:**

- (a.) Refer to district Technical Guidelines.
- (b.) Chain link fencing has been found to be the most economical, durable, and maintainable fencing material for district playgrounds. Other types of metal fencing may be considered, as appropriate for specific circumstances and budgets.
- (c.) Ensure that there are no sharp edges or protrusions on completed fencing.
- (d.) Wood shall not be used for fencing on district sites.
- (e.) Ensure fence footings are a minimum 4" below sub grade

#### **2. 36" CONTAINMENT WALKWAYS:**

- (a.) Playground Designer shall design 36" containment walkways at perimeters of EWF, PIP.
  - (1.) Top of containment walkway shall be minimum 3 inches above finished surface with flow material and flush with PIP of material to be contained.
  - (2.) Do not use wood for retaining curbs at fencing or other perimeters
- (b.) Do not use synthetic lumber (composed of wood chips or sawdust in a synthetic binder) for curbs.
- (c.) Preferred containment walkway materials include cast-in-place concrete.

#### **3. GEOTEXTILE FABRIC:**

- (a.) Minimum 3.5 OZ/SY
- (b.) Non Woven synthetic

#### **4. LANDSCAPE EDGING:**

- (a.) Edging at landscape transitions such as edges of lawns and planting beds shall be resilient material only. A concrete mow band is acceptable.
- (b.) Metal edging of any type shall not be used on district playground sites.

### **B. WALKS AND PAVING:**

- 1. Some schools need sidewalks within playgrounds for tricycles and other rolling play equipment.
- 2. Do not use asphalt for sidewalks.
- 3. Refer to district Technical Guidelines.

### **C. PLANT MATERIALS:**

- 1. Refer to district Technical Guidelines.

### **D. IRRIGATION:**

- 1. All plant materials on all district sites shall be irrigated by automatic irrigation

systems. Refer to district Technical Guidelines.

**E. WATER:**

1. For safety reasons, standing water of any depth greater than ½” is not allowed on district elementary school sites.
2. Exterior drinking fountains have been found to be largely not maintainable and subject to severe vandalism. Exterior drinking fountains are not permitted on district sites.
3. If possible, locate student playgrounds close to building entrances where interior drinking fountains may be accessed easily.

**F. LANDSCAPE FURNISHINGS:**

1. Refer to district Technical Guidelines.
2. Place site furnishings on pavement or other inorganic surfacing.

**VIII. HARD SURFACE PLAY:**

**A. GAME LINES:**

1. Playground Designer shall design and lay out game lines on plans. Requirements to be determined by individual schools.
2. At minimum, provide one wheelchair hopscotch game on each site.
3. If templates are used for marking game lines they must be given to maintenance upon completion.
4. Mark Exterior Doors adjacent to hard surface play areas with a semicircle indicating door swing.

**B. GAME EQUIPMENT:**

**1. GENERAL:**

- (a.) Playground Designer shall design and lay out game equipment on all landscape surfaces.
- (b.) Relocation and modification of existing equipment is often feasible; to be determined through evaluation by Playground Designer.
- (c.) Poles in paved surfaces shall be painted “safety yellow” to a minimum height of 6 feet above grade.

**2. “FUNNEL BALL” (ALSO “DROP SHOT,” “TOSS UP,” ETC.):**

- (a.) Normally provided by play apparatus manufacturer. Name and style vary by manufacturer.

**C. ROLLER HOCKEY:**

1. Roller hockey is not permitted on district sites.

**IX. FIELD ACTIVITIES:**

**A. GENERAL:**

1. Layouts, facilities, and dimensions will vary from site to site. The district does have minimum standards for field activities, refer to Elementary Educational Specifications.
2. Playground Designer shall consult with the district Project Manager for unique requirements for each site and project.
3. IRRIGATION:
  - (a.) All sod and all trees on district sites shall be irrigated.

(b.) Refer to district Technical Guidelines.

**B. MATERIALS:**

1. Native turf low grow mix

(a.) Used for fields where sod and irrigation cannot be provided. See owner for technical guidelines

2. SOD:

(a.) Refer to district Technical Guidelines.

(b.) Do not use artificial turf on elementary school sites.