

SECTION 116800 - PLAY EQUIPMENT AND STRUCTURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section includes playground equipment as follows:
 - 1. Basketball Equipment
 - 2. Freestanding playground equipment.
 - 3. Composite playground equipment.

1.03 DEFINITIONS

- A. Fall Height: According to ASTM F 1487, "the vertical distance between a designated play surface and the protective surfacing beneath it."
- B. HDPE: High-density polyethylene.
- C. IPEMA: International Play Equipment Manufacturers Association.
- D. LLDPE: Linear low-density polyethylene.
- E. MDPE: Medium-density polyethylene.
- F. Fall Zone: According to ASTM F 1487, the "area beneath and immediately adjacent to a play structure or equipment that is designated for unrestricted circulation around the equipment and on whose surface it is predicted that a user would land when falling from or exiting the equipment."

1.04 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For each type of playground equipment.
 - 1. Include plans, elevations, sections, attachment details, 3D drawings, and pictures of equipment.
 - 2. Include fall heights and use zones for playground equipment, coordinated with the critical-height values of protective surfacing specified in Section 321816.13 "Playground Protective Surfacing."
- C. Samples for Initial Selection: For each type of playground equipment and structure indicated.
 - 1. Manufacturer's color charts.

2. Include similar Samples of playground equipment and accessories involving color selection.

1.05 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer and manufacturer.
- B. Product Certificates: For each type of playground equipment.
- C. Material Certificates: For the following items:
 1. Shop finishes.
- D. Sample Warranty: For manufacturer's special warranties.

1.06 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For playground equipment and finishes to include in maintenance manuals.

1.07 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A firm whose playground equipment components have been certified by IPEMA's third-party product certification service.
 1. Provide playground equipment and play structure components bearing the IPEMA Certification Seal, and meeting ASTM F 1487-11, and the U.S. Consumer Product Safety Commission (CPSC) guidelines.
 2. Manufacturer shall be ISO 9001:2008 and ISO 14001:2004 certified.
- B. Installer Qualifications: An employer of workers approved by manufacturer and with a minimum of 5 year experience installing similar play structures.
- C. Safety Standards: Provide playground equipment complying with or exceeding requirements in ASTM F 1487.

1.08 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of playground equipment that fails in materials or workmanship within specified warranty period.
 1. Failures include, but are not limited to, the following:
 - a. Structural failures.
 - b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 2. Warranty Period: From date of Substantial Completion or installation, whichever is later, as follows:
 - a. Lifetime limited warranty on support posts (uprights).

- b. 15 year limited warranty on punched steel decks, pipes, rails, loops, and rungs.
- c. 15 year limited warranty on molded polyethylene components.
- d. Lifetime limited warranty on fastening hardware and all other hardware.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Source Limitations: Obtain playground equipment from single source from single manufacturer.
- B. Playground equipment and components shall have the IPEMA Certification Seal.

2.02 BASKETBALL EQUIPMENT

- A. Play equipment as manufactured by Bison, Inc. or acceptable equal.
 - 1. Basketball – PR70XL package includes: Gooseneck pole 4 1/2" O.D. with 60" offset with BA777 heavy-duty galvanized steel tubing to include Model BA407U ultimate rectangular backboard (42"x54") made of bulletproof clear polycarbonate, Model BA33 outdoor flex goal and no-fail netlock system and super nylon net. Include BA700PP pole padding in color to be selected by Owner.
 - a. Embedded, concrete footer.
 - b. Install per manufacturers recommendations.

2.03 FREESTANDING PLAYGROUND EQUIPMENT

- A. Freestanding Play Structure #1 (Alternate #3)
 - 1. Basis of Design: Landscape Structures – 205800 Topsyturny Spinner (42" Bury)
- B. Freestanding Play Structure #2 (Alternate #3)
 - 1. Basis of Design: Landscape Structures – 185927 Flywheel Spinner
- C. Freestanding Play Structure #3 (Alternate #3)
 - 1. Basis of Design: Landscape Structures (as outlined in quote PEN1173779-01-01)
 - a. (2) 174018 Belt Seat w/ Proguard Chains 8' Beam Height
 - b. 177344 Single Post Swing (52" Bury)
 - c. 237297 Friendship Swing w/ Single Post Frame Additional Bay (52" Bury) Proguard Chains
- D. Freestanding Play Structure #4 (Alternate #3)
 - 1. Basis of Design: Landscape Structures – 251575 Vibra Chimes Major Chord
- E. Freestanding Play Structure #5 (Alternate #3)
 - 1. Basis of Design: Landscape Structures – 100041 Curved Balance Beam
- F. Freestanding Play Structure #6 (Alternate #3)
 - 1. Basis of Design: Landscape Structures – 164075 Double Bobble Spring Rider

- G. Freestanding Play Structure #7 (Alternate #3)
 - 1. Basis of Design: Landscape Structures – 168099 Cozy Dome

2.04 COMPOSITE PLAYGROUND EQUIPMENT

- A. Ages 5-12 Main Play Structure #1 (By Owner)
 - 1. Basis of Design – Landscape Structures – 226231 Alpha Tower
- B. Ages 5-12 Main Play Structure #2 (Alternate #3)
 - 1. Basis of Design – Landscape Structures (as outlined in quote PEN1173779-01-01)
 - a. 249010 Eclipse Climber Net
 - b. (4) 158997 Pod Climber 10” Height
 - c. 100041 Curved Balance Beam
 - d. 193173 Tightrope No Decks
 - e. 184489 Overhead Trekker No Connection Decks
 - f. 111357 Turning Bar
 - g. 193176 Boogie Board (42” Bury)
- C. PK-K Main Play Structure (Alternate #3)
 - 1. Basis of Design – Landscape Structures (as outlined in quote PEN1173779-01-01)
 - a. 132155 Double Slide
 - b. 111327 48” Step Ladder
 - c. 119515 Pilot Panel
 - d. 153020 Curved Transfer Module
 - e. 179225 Square Poly Roof w/ STD Logo
 - f. 111282 Bubble Panel
 - g. 144984 Store Panel (at Grade)
 - h. 117946 Wire Barrier Above Deck
 - i. 164146 Rock-N-Ring Panel (at Grade)
 - j. 143480 56” Spyroslide
 - k. 118099 Wire Crawl Tunnel
 - l. 153077 Mini Summit Climber
 - m. 179225 Square Poly Roof w/ STD Logo

2.05 FABRICATION

- A. Provide sizes, strengths, thicknesses, wall thickness, and weights of components as required to comply with requirements in ASTM F 1487. Factory drill components for field assembly. Unnecessary holes in components, not required for field assembly, are not permitted. Provide complete play structures, including supporting members and connections, means of access and egress, designated play surfaces, barriers, guardrails, handrails, handholds, and other components indicated or required for equipment indicated.
- B. Metal Frame: Fabricate main-frame upright support posts from metal pipe or tubing with cross-section profile and dimensions as required. Unless otherwise indicated, provide each pipe or tubing main-frame member with manufacturer's standard drainable bottom plate or support flange. Fabricate secondary frame members, bracing, and connections from either steel or aluminum.

- C. Composite Frame: Fabricate main-frame upright support posts from metal and plastic. Fabricate secondary frame members, bracing, and connections from either steel or aluminum.
- D. Play Surfaces: Manufacturer's standard elevated drainable decks, platforms, landings, walkways, ramps, and similar transitional play surfaces, designed to withstand loads; fabricated from perforated or expanded metal made into floor units with slip-resistant finish. Fabricate units in modular sizes and shapes to form assembled play surfaces indicated.
- E. Protective Barriers: Fabricate according to ASTM F 1487. Extend barriers to height above the protected elevated surface according to requirements for use by age group indicated. Fabricate from the following:
 - 1. Welded-metal pipe or tubing with vertical bars.
- F. Roofs and Canopies: Designed to discourage and minimize climbing by users.
 - 1. Fabricated from metal.

2.06 MATERIALS

- A. Aluminum: Material, alloy, and temper recommended by manufacturer for type of use and finish indicated.
- B. Steel: Material types, alloys, and forms recommended by manufacturer for type of use and finish indicated, hot-dip galvanized.
- C. Stainless-Steel Sheet: Type 304; finished on exposed faces with No. 2B finish.
- D. Opaque Plastics: Color impregnated, UV stabilized, and mold resistant.
- E. Iron Castings and Hangers: Malleable iron, ASTM A 47/A 47M, Grade 32510, hot-dip galvanized.
- F. Post Caps: Cast aluminum; color to match posts.
- G. Platform Clamps and Hangers: Cast aluminum.
- H. Hardware: Manufacturer's standard; commercial-quality; corrosion-resistant; hot-dip galvanized steel and iron, stainless steel, or aluminum; of a vandal-resistant design.
- I. Fasteners: Manufacturer's standard; corrosion-resistant; hot-dip galvanized or zinc-plated steel and iron, or stainless steel; permanently capped; and theft resistant.

2.07 CAST-IN-PLACE CONCRETE

- A. Concrete Materials and Properties: Comply with requirements in Section 033000 "Cast-in-Place Concrete" for normal-weight, air-entrained concrete with minimum 28-day compressive strength of 3000 psi, 3-inch slump, and 1-inch-maximum-size aggregate.

2.08 ALUMINUM FINISHES

- A. Baked-Enamel or Powder-Coat Finish: Minimum dry film thickness of 1.5 mils, medium gloss. Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.

2.09 IRON AND STEEL FINISHES

- A. Baked-Enamel or Powder-Coat Finish: After cleaning and pretreating, apply manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat to a minimum dry film thickness of 2 mils. Comply with coating manufacturer's written instructions for pretreatment, applying, and baking.

2.10 STAINLESS-STEEL FINISHES

- A. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.
- B. Bright, Cold-Rolled, Unpolished Finish: No. 2B.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for earthwork, subgrade elevations, surface and subgrade drainage, and other conditions affecting performance of the Work.
 - 1. Do not begin installation before final grading required for placing playground equipment and protective surfacing is completed.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Comply with manufacturer's written installation instructions for each equipment type unless more stringent requirements are indicated. Anchor playground equipment securely, positioned at locations and elevations indicated.
 - 1. Maximum Equipment Height: Coordinate installed fall heights of equipment with finished elevations and critical-height values of protective surfacing. Set equipment so fall heights and elevation requirements for age group use and accessibility are within required limits. Verify that playground equipment elevations comply with requirements for each type and component of equipment.
- B. Post and Footing Excavation: Excavate holes for posts and footings as indicated in firm, undisturbed or compacted subgrade soil.
- C. Post Set on Subgrade: Level bearing surfaces with drainage fill to required elevation.
- D. Post Set with Concrete Footing: Comply with Section 033000 "Cast-in-Place Concrete" for measuring, batching, mixing, transporting, forming, and placing concrete.

1. Set equipment posts in concrete footing. Protect portion of posts above footing from concrete splatter. Verify that posts are set plumb or at the correct angle, alignment, height, and spacing.
 - a. Place concrete around posts and vibrate or tamp for consolidation. Hold posts in position during placement and finishing operations until concrete is sufficiently cured.
2. Embedded Items: Follow equipment manufacturer's written instructions and drawings to ensure correct installation of anchorages for equipment.
3. Finishing Footings: Smooth top, and shape to shed water.

3.03 FIELD QUALITY CONTROL

- A. Tests and Inspections: For playground and playground equipment and components at final completion and to certify compliance with ASTM F 1487 and CPSC No. 325.
- B. Prepare test and inspection reports.
- C. Notify Architect 48 hours in advance of date and time of final inspection.

END OF SECTION 116800

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