SPECIFICATIONS INDEX

SITE WORK
MARCH 2024

SECTION 01 56 39

TEMPORARY TREE AND PLANT PROTECTION

PART 1 GENERAL

1.1 DESCRIPTION

A. Work under this Section shall include all labor, materials, services, equipment and accessories necessary to provide protection of existing trees, shrubs and transplanted trees in accordance with the specifications and applicable drawings.

B. Related work:

1. Section 31 00 00, Site Earthwork.

1.**2** METHODOLOGY

A. The limit of disturbance around existing trees or shrubs shall be limited to five (5) feet from the trunk of the tree(s) or shrub being protected. All reasonable precautions shall be taken to protect the root zone within the drip line of the tree(s) being protected. Erecting protective fencing around the tree a minimum of five (5) feet from the new planting pit shall protect trees that have been transplanted. Provide protective fencing for shrubs at the limit of planting bed or individual shrub. Fence shall be secured in place by metal or wood post.

PART 2 PRODUCTS

2.1 MATERIALS

A. Acceptable fence materials include, four (4) foot high chain link or wood snow fence secured to sturdy metal or wood post driven securely into the ground, spaced at intervals to provide support to maintain the fence in an erect position with no snags.

PART 3 EXECUTION

3.1 PROTECTION

A. Install protective fence around trees and shrubs that have been identified on plans and by project Landscape Architect.

B. Where branching of trees extends beyond the limits of the fence, all efforts shall be made to limit the use of heavy equipment within the drip line that may cause damage to branches.

C. Protection fencing shall be maintained by the Contractor for duration of project.

3.2 EXCAVATION

A. Excavation within the root zone of the existing trees shall be executed in such a manner as to limit drainage to roots as well as canopy branching. Excavation within the root

zone, eighteen (18) inches from back of proposed curbing shall be completed by hand, carefully removing soil from roots. Cut exposed roots cleanly, back to the curb line. Prior to installing gravel fill and or curbing, moisten soil and exposed root zone.

B. Fill within the dripline shall be limited to three (3) inches of loam. Finish grade shall direct runoff away from trunks of existing trees. Cutting of areas adjacent to existing trees shall limit the extent of root disturbance to the minimum extent possible. Where necessary, perform excavation by hand, cleanly cutting exposed roots back to soil cut.

C. The use of heavy equipment and or storage of construction materials shall be prohibited from within the dripline of trees with exception of the entry drive construction.

…END OF SECTION 01 56 39

SECTION 024100

DEMOLITION

PART 1 GENERAL

1.1 DESCRIPTION

A. Perform demolition as shown and specified. The work shall include and is not limited to:

1. Removal of existing objects or improvements, whether indicated on Drawings or not, that would, in the opinion of the Owner, prevent or interfere with progress or completion of proposed work.

2. Permits, fees and licenses shall be secured and paid for by Contractor, including disposal charges as required to ensure progress of work will proceed.

3. Work shall comply with requirements of governing authorities in demolition of existing pavement, drainage structures and utilities as may be required.

4. Salvaging the following materials and stockpiling on-site:

   a. All stone and boulders

   b. Downed trees/limbs 4'' caliper and greater

   c. All topsoil and backfill meeting standards

5. Demolition requires removal and disposal charges as required to ensure progress of work will proceed.

6. Protecting existing site features including:

   a. Trees and vegetation

   b. Adjacent paved areas.

   c. Light poles

   d. Existing utilities

1.2 SUBMITTALS

A. Shop Drawings and Schedule: Describe demolition, removal procedures, sequence and schedule.

B. Closeout Submittals - Project Record Documents: Record actual locations of capped utilities.

1.3 PROJECT CONDITIONS

A. Structures to be demolished will be discontinued in use and vacated prior to start of work.

B. Owner assumes no responsibility for condition of structures to be demolished.

C. Conditions existing at time of inspection for bidding purposes will be maintained by Owner in so far as practicable. Variations within structure may occur by Owner's removal and salvage operations prior to start of demolition work.

D. Items of salvageable value to Contractor may be removed from structure as work progresses. Salvaged items must be transported from site as they are removed. Storage or sale of removed items on site will not be permitted.

E. Explosives shall not be brought to site or used without written consent of authorities having jurisdiction. Such written consent will not relieve Contractor of total responsibility for injury to persons or for damage to property due to blasting operations. Rock or ledge blasting shall not be allowed.

1.4 PROTECTIONS

A. SUMMARY

1. Conduct operations to prevent damage to adjacent buildings, structures, other facilities, or injury to persons.

2. Promptly repair damages caused to adjacent facilities by demolition operations at no cost to Owner.

3. Maintain existing utilities indicated to remain, keep in service and protect against damage during demolition operations.

4. Make arrangements, before initiating demolition, for relocating, disconnection, rerouting, abandoning, or similar action as may be required relative to utilities and other underground piping, to permit work to proceed without delay.

5. Use water sprinkling and other suitable methods to limit dust and dirt rising and scattering in air to lowest practical level.

6. Comply with governing regulations pertaining to environmental protection.

7. Clean adjacent structures, streets and improvements of dust, dirt and debris caused by demolition operations. Return adjacent areas to condition existing prior to start of work.

PART 2 PRODUCTS

2.1 MATERIAL:

A. Fill Material: Refer to Specifications Division 31 – Earthwork.

PART 3 EXECUTION

3.1 IMPLEMENTATION

A. Permits - Perform all work in accordance with the demolition requirements of the applicable building code as adopted and, if applicable, amended by the authority having jurisdiction. Apply for, pay for and obtain required demolition permits.

B. Preparation

1. Call local Utility Line Information service “Dig Safe” as per their notification requirements. Request underground utilities to be located and marked within and surrounding construction areas.

2. Provide, erect, and maintain temporary barriers and security devices as directed by the Owner or landscape architect.

C. Standards

1. Conduct operations with minimum interference to public or private accessways.

2. Maintain egress and access at all times. Do not close or obstruct roadways, sidewalks without permits.

3. Cease operations immediately when adjacent structures appear to be in danger. Notify authority having jurisdiction and Owner’s Representative.

4. Disconnect, remove and cap designated utilities to a location acceptable to authority having jurisdiction and utility company. Identify utilities at termination of demolition. Record termination or capped location on Record Documents.

5. Demolish concrete and masonry in small sections.

6. Demolish and remove below grade construction and concrete slabs on grade to a minimum depth of 18 inches below proposed subgrade.

3.2 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove from the site all debris, rubbish and other materials resulting from demolition.

B. Demolition debris removed from the site shall be disposed of at an approved licensed recycling or disposal facility in accordance with state regulations. **Disposal location shall be reported to the Owner in writing prior to debris taken from the site.**

C. No burning of any materials, debris or trash on-site will be allowed.

D. Leave areas of work in clean condition.

…END OF SECTION 02 41 00

SECTION 312513

EROSION AND SEDIMENTATION CONTROL

PART 1 GENERAL

1.1 DESCRIPTION

A. This Plan has been developed as a strategy to control soil erosion and sedimentation during and after construction of the Village Elementary School Playground, York, Maine. This plan is based on the Maine Erosion and Sedimentation Control Handbook for Construction, Best Management Practices, March 2003.

B. The project consists of site improvements. The site improvements and their associated grading define the limits of proposed earth movement for the development.

PART 2 METHOD AND PRODUCTS

2.1 EROSION CONTROL PRACTICES / TEMPORARY MEASURES

A. The following temporary measures to control erosion and sedimentation shall be utilized:

1. Each ground area, opened or exposed, whether directly or indirectly due to the development, shall be minimized and shall be stabilized within 15 days of initial disturbance of soil and shall be permanently stabilized within seven days of final grading. This statement applies to disturbed areas beyond the limits of the proposed road. Exposed areas shall be stabilized prior to a rain event.

2. Temporary soil stabilization shall be either by temporary mulching, temporary seeding, permanent base gravel, or rip-rap as follows:

Temporary Seeding. Seed shall be Aroostook rye applied at 2.60#/1000 SF. Lime shall be agricultural ground limestone applied at 138#/1000 SF. Fertilizer shall be 10-10-10 classification applied at 13.8#/1000 SF. Mulch shall consist of hay or straw mulch and spread evenly at a rate of 70-90#/1000 SF. Temporary seedings shall only be made between April 15 and October 1, and shall not be placed over snow.

Temporary Mulching. Mulch shall consist of chopped hay or straw mulch and spread by mechanical blower evenly at a rate of 150-200#/1000 SF. Temporary mulch shall be removed prior to permanent soil stabilization. Mulch must not be placed over snow. Snow shall be removed prior to mulching.

Permanent Base Gravel. Base gravel shall be suitable as temporary soil stabilization under the following conditions:

a. Slopes shall be less than eight percent.

b. Gravel shall meet the specifications for base or subbase gravel for the proposed completed surface.

2.2. EROSION CONTROL PRACTICES / PERMANENT MEASURES

A. The following permanent measures to control erosion and sedimentation shall be utilized:

1. Permanent seeding shall be performed during construction operations as each disturbed area has been brought to finish grade. Permanent seedings shall be made as dormant seeding after the first killing frost. Dormant seeding and mulch shall be used at two times the permanent seeding and mulching rate shown below for both lawn as well as embankments, avoid application of grass seed in bioretention areas. Seed, loam, lime, fertilizer and mulch are to be as follows:

- Seed. The seed mixture shall consist of seeds proportioned by weight. All seed shall be fresh, clean, "new crop" seed. Harmless inert matter and weed seeds shall be permitted up to one percent of the gross weight of each variety of seed. All seed supplied shall be packed in approved containers bearing the manufacturer's name and analysis of contents. The following materials and application rates shall be required for permanent seeding:

Creeping red fescue:	0.69#/1000 SF
Kentucky bluegrass:	0.57#/1000 SF
Perennial ryegrass:	0.46#/1000 SF
Redtop:	0.12#/1000 SF
Total:	1.84#/1000 SF

- Loam. Loam shall be free of grasses, roots, large stone and inorganic debris. Place loam at four inches minimum depth over all disturbed areas. Final grading of all lawn areas to be approved by Landscape Architect prior to seeding.

- Lime. Lime shall be agricultural ground limestone and applied as per recommendation of a State Commercial Soil Testing Laboratory.

- Fertilizer. Fertilizer shall be 10-20-20 classification and applied as per recommendation of a State Commercial Soil Testing Laboratory.

- Mulch. Mulch shall consist of hay or straw mulch. Mulch shall be spread evenly at a rate of two and one half tons per acre over all seeding. After application, the mulch shall be thoroughly wetted. In steep areas, the mulch shall be held in place by the use of jute erosion control netting or approved alternative netting material. Note: All exposed soil must be covered regardless of mulching rates specified.

- Erosion Control Fabrics. Fabrics shall be installed on all slopes exceeding 3:1. Fabric to be placed after seeding has occurred.

- The contractor shall maintain the seeded and mulched areas until final acceptance of the work. Maintenance shall consist of providing proper watering, protection against traffic and repairing any areas damaged due to wind, water, erosion, fire or other causes. Such damaged areas shall be repaired to re-establish the condition and grade of the soil prior to seeding and shall then be refertilized, reseeded and remulched.

2. Winter Construction. The winter construction period is from November 1 through April 15. Winter excavation and earthwork shall be competed such that no more than 1 acre of the site is without stabilization at any one time. Limit the exposed area to those areas in which work is expected to be undertaken during the proceeding 15 days and that can be mulched

in one day prior to any snow event. Hay and straw mulch rates shall be a minimum of 150#/1000 SF (3 tons/acre) and shall be properly anchored. The contractor must install any added measures which may be necessary to control erosion/sedimentation from the site dependent upon the actual site and weather conditions. Continuation of earthwork operations on additional areas shall not begin until the exposed soil surface on the area being worked has been stabilized in order to minimize areas without erosion control protection.

PART 3 EXECUTION

3.1 CONSTRUCTION SEQUENCE

A. The general sequence of work shall be as follows:

1. Install erosion control devices (silt fence, stabilized construction entrance and or sediment barrier). Note: when frozen ground conditions exist, silt fence shall be replaced with woodwaste filter berms.

2. Demolition of site elements.

3. Temporarily stabilize disturbed areas by mulching all exposed soil within 15 days of initial disturbance.

4. Complete site grading, path preparation and planting bed preparation.

5. Install permanent vegetation on all exposed areas within 15 days of final grading.

6. Perform continuing maintenance on all erosion and sedimentation control devices and measures.

3.2 SITE INSPECTION & MAINTENANCE

A. Weekly inspections, as well as routine inspections following rainfalls of 0.5” over a consecutive 24-hour period, shall be conducted by the Site Contractor, of all temporary and permanent erosion control devices until final acceptance of the project. Necessary repairs shall be made to correct undermining or deterioration. Final acceptance shall include a site inspection to verify the stability of all disturbed areas and slopes. Until final inspection, all erosion and sedimentation control measures shall immediately be cleaned and repaired by the General Contractor after storm events. Disposal of all temporary erosion control devices shall be the responsibility of the Site Contractor.

B. Continued temporary maintenance and long-term provisions for permanent maintenance of all erosion and sedimentation control facilities after acceptance of the project shall be the responsibility of the York School Department.

END OF SECTION 312513

SECTION 321000

WALKS

PART 1. GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE

A. Site Earthwork - Section 31 00 00

B. Demolition- Section 02 41 00

C. Construction Drawings.

SUBMITTALS

A. Product Data and Manufacturers information:

1. Stone dust gradation

PART 2. PRODUCTS

2.1 STONE DUST

A. 3/8'' Stonedust material conforming to the following gradations:

Sieve Designation	Percentage by weight passing square mesh sieves
No. 6	100
No. 8	55-80
No. 16	40-70
No. 30	25-50
No. 200	6-15

B. Manufacturer: Hadlock mix, Pike Industries, Westbrook ME or approved equal

C. Geotextile Fabric: Nonwoven needle punched geotextile made from polyolefins or polyesters with elongation, greater than 50 percent complying with AASHTOM 288 and the following: apparent opening size: No. 40 sieve, maximum; ASTM D 4751 Permittivity: 0.5 per second, minimum; ASTM D 4491.

PART 3. EXECUTION

3.1 SUBGRADE PREPARATION

A. Compact subgrade to 95% optimum density. Shape to smooth surface free of irregularities. Refer to Specifications Section 31 00 00 Earthwork.

3.2 AGGREGATE SUBBASE

A. On prepared subgrade, construct gravel subbase conforming to details on drawings and specifications herein.

B. Construct subbase in one course when depth required is 6'' or less and two courses when depth required is over 6''. Compact each course to required density. Required course thickness is after compaction.

3.3 AGGREGATE BASE

A. Construct aggregate base course on prepared subbase to lines, grades and sections shown on the drawings.

B. Construct base course in one course. Thickness is after final compaction.

3.4 STONEDUST

A. Construct stonedust areas on prepared base to lines, grades and sections shown on the drawings and details.

B. Compact base to 95% density.

C. Install and compact stonedust to 95% density. Areas shall be smooth, level and flush with adjacent finish.

D. During the final grading of disturbed lawn areas, bring loam to stonedust edges and grades. Create a smooth line where loam meets stonedust. Keep stonedust and loam from becoming mixed.

END OF SECTION 32 10 00

SECTION 321216

ASPHALT PAVING

PART 1 GENERAL

1.1 DESCRIPTION:

A. Work under this section includes furnishing and installing asphalt paving on the project site.

B. Related work:

1. Section 31 05 12, Site Earthwork.

1.2 SUBMITTALS:

A. General: Submit the following

1. Submit materials certificate to onsite independent testing laboratory which is signed by material producer and Contractor, certifying that materials comply with, or exceed, the requirements herein.

1.3 QUALITY ASSURANCE:

A. Reference: State of Maine Department of Transportation Standard Specifications Highways and Bridges, latest revision, hereafter designated as MDOT Specifications.

PART 2 PRODUCTS

2.1 MATERIAL:

A. Bituminous Concrete - An approved hot plant mix conforming to MDOT Standard Specifications (latest revision).

PART 3 EXECUTION

3.1 INSTALLATION:

A. The Contractor shall be responsible that gravel is in proper condition to pave before starting work.

B. Proof roll prepared base material surface to check for areas requiring additional compaction and areas requiring removal and recompaction.

C. Do not begin paving work until deficient base material areas have been corrected and are ready to receive paving.

D. Pavement mix for parking areas and sidewalks shall be as herein specified and shall consist of the following courses after compaction:

Hot Mix Asphalt	Base Course (19mm)	Surface Course (9.5 mm)
Standard Duty Pavement	2.5"	1"
Sidewalk Pavement		2" - installed in two 1” lifts

E. The spreading of bituminous concrete shall be done wherever practicable by an approved mechanical spreader. Place mixture while it is still hot (+250 D.F.). Rolling shall be done as soon as practicable after spreading and in no case after the mixture is cooled. The exposed finished surface shall present a true, smooth plane, free from roller marks, conspicuous joining lines, patches, voids or other imperfections. Where brown spots or other serious imperfections occur they shall be cut down to the base course and replaced by new pavement rather than by attempting to patch the surface. Feathered edge patches will not be permitted.

F. Apply successive lifts of asphaltic concrete in transverse directions with the surface course placed in the direction of surface-water flow. Place in typical strips not less than 10' - 0" wide.

G. Make joints between old and new pavements or between successive days' work, to ensure continuous bond between adjoining work. Construct joints to have same texture, density and smoothness as other sections of asphalt concrete course. Joints at existing street paving and new paving shall be saw cut. Clean contact surfaces and apply tack coat.

H. Mix placed by hand shall be placed on a steel dump board or wheelbarrow from the truck and then shoveled into place.

I. Rolling and Compaction

1. The mixture, after being spread, shall be thoroughly compacted by rolling as soon as it will bear the weight of the rollers without undue displacement. Mixture shall be compacted to a minimum of 92% theoretical maximum density. The number, weight and types of rollers and sequences of rolling operations shall be such that the required density and surface are consistently attained while the mixture is in workable condition.

2. Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.

3. Breakdown Rolling: Accomplish breakdown or initial rolling immediately following rolling of joints and outside edge. Check surface after breakdown rolling, and repair displaced areas by loosening and filling, if required, with hot material.

4. Second Rolling: Follow breakdown rolling as soon as possible, while mixture is hot. Continue second rolling until mixture has been thoroughly compacted.

5. Finish Rolling: Perform finish rolling while mixture is still warm enough for removal of roller marks. Continue rolling until roller marks are eliminated and course has attained maximum density.

6. Patching: Remove and replace paving areas mixed with foreign materials and defective areas. Cut out such areas and fill with fresh, hot asphalt concrete. Compact by rolling to maximum surface density and smoothness.

7. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

8. Do not permit maneuvering of excavating equipment, lifts or other vehicles with tight turning or tracking capabilities on finished surface. Damaged areas shall be restored by Contractor at no additional expense to Owner.

3.2 INSPECTION:

A. Grade Control: Establish and maintain required lines and elevations.

B. Thickness: In-place compacted thickness shall not be less than thickness specified on the Drawings. Areas of deficient paving thickness shall receive a tack coat and a minimum one (1) inch overlay; or shall be removed and replaced to the proper thickness, at the discretion of the Owner's Representative and or Owner; until specified thickness of the course is met or exceeded at no additional expense to the Owner.

C. Surface Smoothness: Testing shall be performed on the finished surface of each asphalt concrete course for smoothness, using 10' - 0" straightedge applied parallel with, and at right angles to centerline of paved area.

The results of these tests shall be made available to the Owner upon request. Surfaces will not be acceptable if exceeding following tolerances for smoothness:

Base Course Surface:	1/4"
Wearing Course Surface:	3/16"

D. Check surface areas at intervals necessary to eliminate ponding areas. Remove and replace unacceptable paving as directed by Owner's Representative and or Owner.

E. Compaction: Field density tests for in-place materials shall be performed by examination of field cores in accordance with one of the following standards:

1. Bulk specific gravity of paraffin-coated specimens: ASTM D-1188.
2. Bulk specific gravity using saturated surface-dry specimens: ASTM D-2726.

F. Rate of testing shall be one (1) core per 20,000 square feet of pavement, with a minimum of three (3) cores from heavy-duty areas and three (3) cores from standard-duty areas. Cores shall be cut from areas representative of the project.

G. Areas of insufficient compaction shall be delineated, removed and replaced in compliance with the specifications at no expense to the Owner. Areas damaged by construction equipment shall be repaired to satisfaction of Owner at no expense to Owner.

…END OF SECTION 321216

SECTION 323000

SITE IMPROVEMENTS

PART 1. GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE

A. Site Earthwork - Section 31 00 00
B. Construction Drawings.

1.2 SUMMARY

Boulders
Vertical log edging
Horizontal log edging
Play Tunnel
Wood structures (Wood benches)

1.3 QUALITY ASSURANCE

A. Comply with all applicable manufacturer instructions, local, State, and federal requirements regarding materials and methods of work.
B. Installer qualifications: Engage an experienced installer who has at least three years' experience and has successfully completed projects with the same material and of similar scope of that indicated for this project with a successful construction record of in-service performance.

1.4 SUBMITTALS

A. Product Data and Manufacturer's information: Submit shop drawings and installation information for:
   1. Shop Drawings for Arbor, Stage, Tree Platform (west), Play Fence

PART 2. PRODUCTS

MATERIALS

Preservative Treatment by Pressure Process: AWPA U1; Use Category UC3b for exterior construction not in contact with the ground and Use Category UC4a for items in contact with the ground. Kiln-dry material after treatment to a maximum moisture content of 19 percent for lumber.

Species: spruce-pine-fir; NLGA
White cedar: Northern white cedar clear grade occasional knot.
Preservative Chemicals: Micronized Copper Azole, MCA

DESCRIPTION

2.1 BOULDERS

A. Boulders shall be weathered, matching in color, appearance, shape and texture. Boulders must be free of scars, gouges and other marks from mechanical sources. Selected boulders shall have smooth edges or the ability to bury or remove sharp angles.

   Small: 2' tall x 2' wide (2' diameter)

   Large: 30''-36'' tall x 30''x36'' wide (3' diameter)

B. Natural variations and markings which are characteristics of the stone and do not impair strength or appearance are acceptable. Provide only sound stone, free from defects detrimental to appearance and durability.

2.3 VERTICAL LOG RETAINING WALLS AND VERTICAL LOGS IN EDGING

A. Logs shall be very rot resistant hardwood varieties including (Black Locust, Cedar, White Oak), 6-inch minimum diameter.

2.4 HORIZONTAL LOG EDGING

A. Logs shall be hardwood varieties- 8'' diameter minimum

B. Length: 3-foot minimum

2.5 PLAY TUNNEL

A. Tunnel shall be ADS N-12, 30-inch diameter smooth interior corrugated pipe.

B. Supplier shall be ADS Pipe, 44 Pine Aire Way, Winthrop, ME (207) 450.9987 or approved equal.

2.6 WOOD STRUCTURES

A. Fabricate to dimensions, profiles and details indicated with smooth white cedar or hemlock members or sizes indicated. Fasten components with hot-dipped galvanized fasteners.

PART 3. EXECUTION

3.1 INSPECTION

A. Examine substrate and installation conditions for compliance with requirements for correct and level finished grade, mounting surfaces, installation tolerances, and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

B. Do not build on frozen ground.

3.2 PREPARATION

A. Comply with manufacturers written installation instructions unless more stringent requirements are indicated. Establish lines, levels, and approximate grades. Install site improvements level, plumb, true, and securely anchored at locations indicated on Drawings.

1. Finish grade and prepare adjacent surfacing as shown on plans.

3.3 INSTALLATION

A. Install all items plumb, level and secure according to manufacturers written instructions and Drawings. Adjust, level anchor to provide stable installation.

3.4 BOULDERS AND CLIMBING ROCKS

A. Excavate material as necessary to set boulders minimum 1/3 diameter into ground and on existing base material. Compact base material as necessary.

B. Set boulders in accordance with grading plan and site details. Set boulders plumb, level and in alignment. Use care in moving to avoid scratching, chipping or gouging the surfaces. Adjust elevations of boulders by shimming as necessary.

C. Backfill around boulders with excavated material and grade adjacent areas as shown on grading plan and site details.

3.6 PLAY TUNNEL

A. Excavate material as necessary to set wood tunnel as shown on layout plan and site detail. Compact base material as necessary.

B. Set tunnel in accordance with plan and site details. Set tunnel level.

C. Backfill around tunnel with excavated material and grade adjacent areas as shown on grading plan and site details.

D. Finish grade and prepare adjacent surfacing as shown on plans.

3.8 CLEANING

A. Clean visible surfaces and repair or replace damaged items

END OF SECTION 32 30 00

EXAMPLE IMAGES (IMAGES ARE REPRESENTATIVE ONLY)

Detail : LOG & BOULDER EDGING

BEACON
design . performance . technology

DATE: | LOCATION:

TYPE: | PROJECT:

CATALOG #:

VIPER Area/Site

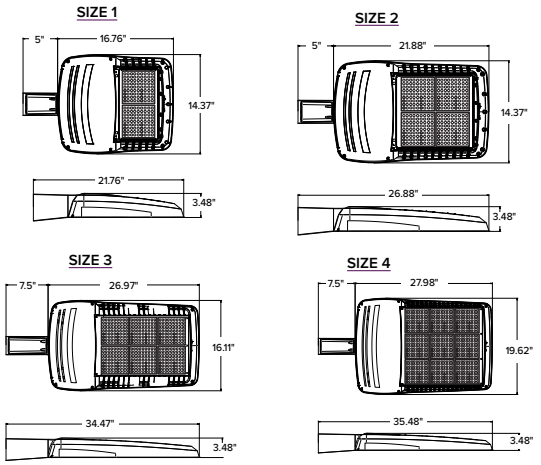
VIPER LUMINAIRE

MICRO STRIKE | OPTICS STRIKE

FEATURES

- Low profile LED area/site luminaire with a variety of IES distributions for lighting applications such as auto dealership, retail, commercial, and campus parking lots
- Featuring two different optical technologies, Strike and Micro Strike Optics, which provide the best distribution patterns for retrofit or new construction
- Rated for high vibration applications including bridges and overpasses. All sizes are rated for 1.5G
- Control options including photo control, occupancy sensing, NX Lighting Controls™, LightGRID+ and 7-Pin with networked controls
- New customizable lumen output feature allows for the wattage and lumen output to be customized in the factory to meet whatever specification requirements may entail
- Field interchangeable mounting provides additional flexibility after the fixture has shipped

c UL us | IP65 | DLC LISTED | DLC LISTED PREMIUM | ida DARK SKY APPROVED 2016 | BAA | TAA



CONTROL TECHNOLOGY

NX CONNECT | NX WIRED | NX WIRELESS | LIGHTGRID

SERVICE PROGRAMS

STOCK | QS10

SPECIFICATIONS

CONSTRUCTION

- Die-cast housing with hidden vertical heat fins are optimal for heat dissipation while keeping a clean smooth outer surface
- Corrosion resistant, die-cast aluminum housing with 1000 hour powder coat paint finish
- External hardware is corrosion resistant

OPTICS

- Micro Strike Optics (160, 320, 480, or 720 LED counts) maximize uniformity in applications and come standard with mid-power LEDs which evenly illuminate the entire luminous surface area to provide a low glare appearance. Catalog logic found on page 2
- Strike Optics (36, 72, 108, or 162 LED counts) provide best in class distributions and maximum pole spacing in new applications with high powered LEDs. Strike optics are held in place with a polycarbonate bezel to mimic the appearance of the Micro Strike Optics so both solutions can be combined on the same application. Catalog logic found on page 3
- Both optics maximize target zone illumination with minimal losses at the house-side, reducing light trespass issues. Additional backlight control shields and house side shields can be added for further reduction of illumination behind the pole
- One-piece silicone gasket ensures a weatherproof seal
- Zero up-light at 0 degrees of tilt
- Field rotatable optics

INSTALLATION

- Mounting patterns for each arm can be found on page 11
- Optional universal mounting block for ease of installation during retrofit applications. Available as an option (ASQU) or accessory for square and round poles
- All mounting hardware included
- Knuckle arm fitter option available for 2-3/8" OD tenon
- For products with EPA less than 1 mounted to a pole greater that 20ft, a vibration damper is recommended

ELECTRICAL

- Universal 120-277 VAC or 347-480 VAC input voltage, 50/60 Hz
- Ambient operating temperature -40˚C to 40˚C
- Drivers have greater than 90% power factor and less than 20% THD
- LED drivers have output power over-voltage, over-current protection and short circuit protection with auto recovery
- Field replaceable surge protection device provides 20kA protection meeting ANSI/ IEEE C62.41.2 Category C High and Surge Location Category C3; Automatically takes fixture off-line for protection when device is compromised
- Dual Driver option provides 2 drivers within luminaire but only one set of leads exiting the luminaire, where Dual Power Feed provides two drivers which can be wired independently as two sets of leads are extended from the luminaire. Both options cannot be combined

CONTROLS

- Photo control, occupancy sensor programmable controls, and Zigbee wireless controls available for complete on/off and dimming control
- Please consult brand or sales representative when combining control and electrical options as some combinations may not operate as anticipated depending on your application
- 7-pin ANSI C136.41-2013 photocontrol receptacle option available for twist lock photocontrols or wireless control modules (control accessories sold separately)

CONTROLS (CONTINUED)

- 0- 10V Dimming Drivers are standard and dimming leads are extended out of the luminaire unless control options require connection to the dimming leads. Must specify if wiring leads are to be greater than the 6" standard
- NX Lighting Controls™ available with in fixture wireless control module, features dimming and occupancy sensor
- LightGRID+ available with in fixture wireless control module, features dimming and occupancy sensor. Also available in 7-pin configuration

	EPA				
	VP1 (Size 1)	VP2 (Size 2)	VP3 (Size 3)	VP4 (Size 4)	Config.
Single Fixture	0.454	0.555	0.655	0.698	
Two at 180	0.908	1.110	1.310	1.396	
Two at 90	0.583	0.711	0.857	0.948	
Three at 90	1.037	1.266	1.512	1.646	
Three at 120	0.943	1.155	1.392	1.680	
Four at 90	1.166	1.422	1.714	1.896	

CERTIFICATIONS

- DLC® (DesignLights Consortium Qualified), with some Premium Qualified configurations. Not all product variations listed in this document are DLC® qualified. Refer to http://www.designlights.org for the most up-to-date list.
- Listed to UL1598 and CSA C22.2#250.0-24 for wet locations and 40˚C ambient temperatures
- 1.5 G rated for ANSI C136.31 high vibration applications
- Fixture is IP65 rated
- Meets IDA recommendations using 3K CCT configuration at 0 degrees of tilt
- This product meets federal procurement law requirements under the Buy American Act (FAR 52.225-9) and Trade Agreements Act (FAR 52.225-11). See Buy America(n) Solutions (link to https://www.currentlighting.com/resources/america-solutions).

WARRANTY

- 5 year warranty

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DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

VIPER Area/Site

VIPER LUMINAIRE

STRIKE OPTIC – ORDERING GUIDE

Example: VP–ST–1–36L-39–3K7–2–UNV–A–BLT

CATALOG # VP-ST-1-36L-55-3K7-5W-UNV-ASQU-DBT

VP –

Series	
VP	Viper

– | Optic Platform | |
|---|---|
| ST | Strike |

– | Size | |
|---|---|
| 1 | Size 1 |
| 2 | Size 2 |
| 3 | Size 3 |
| 4 | Size 4 |

– | Light Engine | |
|---|---|
| 36L-39 [8] | 5500 lumens |
| 36L-55 [8] | 7500 lumens |
| 36L-85 | 10000 lumens |
| 36L-105 | 12500 lumens |
| 36L-120 | 14000 lumens |
| 72L-115 | 15000 lumens |
| 72L-145 | 18000 lumens |
| 72L-180 | 21000 lumens |
| 72L-210 | 24000 lumens |
| 72L-240 | 27000 lumens |
| 108L-215 [8] | 27000 lumens |
| 108L-250 | 30000 lumens |
| 108L-280 | 33000 lumens |
| 108L-325 | 36000 lumens |
| 108L-365 | 40000 lumens |
| 162L-320 | 40000 lumens |
| 162L-365 [10] | 44000 lumens |
| 162L-405 | 48000 lumens |
| 162L-445 | 52000 lumens |
| 162L-485 | 55000 lumens |
| 162L-545 [8] | 60000 lumens |
| CLO | Custom Lumen Output [1] |

– | CCT/CRI | |
|---|---|
| AM | monochromatic amber, 595nm |
| 27K8 | 2700K, 80 CRI |
| 3K7 | 3000K, 70 CRI |
| 3K8 | 3000K, 80 CRI |
| 3K9 | 3000K, 90 CRI |
| 35K8 | 3500K, 80 CRI |
| 4K7 | 4000K, 70 CRI |
| 4K8 | 4000K, 80 CRI |
| 4K9 | 4000K, 90 CRI |
| 5K7 | 5000K, 70 CRI |
| 5K8 | 5000K, 80 CRI |

– | Distribution | |
|---|---|
| FR | Auto Front Row |
| 2 | Type 2 |
| 3 | Type 3 |
| 4F | Type 4 Forward |
| 4W | Type 4 Wide |
| 5QN | Type 5 Square Narrow |
| 5QW | Type 5 Square Wide |
| 5QM | Type 5 Square Medium |
| 5W | Type 5 Wide (Round) |
| 5RW | Type 5 Rectangular |
| C | Corner Optic |
| TC | Tennis Court Optic |

– | Optic Rotation | |
|---|---|
| BLANK | No Rotation |
| L | Optic rotation left |
| R | Optic rotation right |

– | Voltage | |
|---|---|
| UNV | 120-277V |
| 120 | 120V |
| 208 | 208V |
| 240 | 240V |
| 277 | 277V |
| 347 | 347V |
| 480 | 480V |

–

Mounting	
A	Arm mount for square pole/flat surface
A_	Arm mount for round pole [3]
ASQU	Universal arm mount for square pole
A_U	Universal arm mount for round pole [3]
AAU	Adjustable arm for pole mounting (universal drill pattern)
AA_U	Adjustable arm mount for round pole [3]
ADU	Decorative upswept Arm (universal drill pattern)
AD_U	Decorative upswept arm mount for round pole [3]
MAF	Mast arm fitter for 2-3/8" OD horizontal arm
K	Knuckle
T	Trunnion
WB	Wall Bracket, horizontal tenon with MAF
WM	Wall mount bracket with decorative upswept arm
WA	Wall mount bracket with adjustable arm

– | Color | |
|---|---|
| BLT | Black Matte Textured |
| BLS | Black Gloss Smooth |
| DBT | Dark Bronze Matte Textured |
| DBS | Dark Bronze Gloss Smooth |
| GTT | Graphite Matte Textured |
| LGS | Light Grey Gloss Smooth |
| LGT | Light Grey Gloss Textured |
| PSS | Platinum Silver Smooth |
| WHT | White Matte Textured |
| WHS | White Gloss Smooth |
| VGT | Verde Green Textured |

Color Option	
CC	Custom Color

– | Options | |
|---|---|
| F | Fusing |
| E | Battery Backup [1,2,7,8,9] |
| 2PF | Dual Power Feed |
| 2DR | Dual Driver |
| TE | Tooless Entry |
| BC | Backlight Control |
| TB | Terminal Block |

Network Control Options	
NXWS16F	NX Networked Wireless Enabled Integral NXSMP2-LMO PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming [1,4,5]
NXWS40F	NX Networked Wireless Enabled Integral NXSMP2-HMO PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming [1,4,5]
NXW	NX Networked Wireless Radio Module NXRM2 and Bluetooth Programming, without Sensor [4,5]
WIR	LightGRID+ In-Fixture Module [4,5]
WIRSC	LightGRID+ Module and Occupancy Sensor [4,5]

Stand Alone Sensors	
BTS-14F	Bluetooth® Programmable, BTSMP-LMO PIR Occupancy Sensor with Automatic Dimming Photocell and 360° Lens
BTS-40F	Bluetooth® Programmable, BTSMP-HMO PIR Occupancy Sensor with Automatic Dimming® Photocell and 360° Lens
BTSO-12F	Bluetooth® Programmable, BTSMP-OMNI-O PIR Occupancy Sensor with Automatic Dimming Photocell and 360° Lens
7PR	7-Pin Receptacle [4]
7PR-SC	7-Pin Receptacle with shorting cap [4]
3PR	3-Pin twist lock [4]
3PR-SC	3-Pin receptacle with shorting cap [4]
3PR-TL	3-Pin PCR with photocontrol [4]

Programmed Controls	
SCP-_F	Sensor Control Programmable, 8F or 40F [11]
ADD	AutoDim Timer Based Dimming [4]
ADT	AutoDim Time of Day Dimming [4]

Photocontrols	
PC	Button Photocontrol [4,7]

1 – Items with a grey background can be done as a custom order. Contact brand representative for more information
2 – Battery temperature rating -20C to 55C
3 – Replace "_" with "3" for 3.5"-4.13" OD pole, "4" for 4.18"-5.25" OD pole, "5" for 5.5"-6.5" OD pole
4 – Networked Controls cannot be combined with other control options
5 – Not available with 2PF option
6 – Not available with 480V
7 – Not available with 347 or 480V
8 – Not available with Dual Driver option
9 – Only available in Size 1 housing, up to 105 Watts
10 – Some voltage restrictions may apply when combined with controls
11 – At least one SCPREMOTE required to program SCP motion sensor. Must select 8ft or 40ft.

VIPER Area/Site

VIPER LUMINAIRE

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

ORDERING GUIDE (CONT'D)

CATALOG #

Accessory Type		Size		Option		Color	
SHD	Shield	**1**	Size 1	**HSS-90-B**	House Side Shield 90° Back	**BLS**	Black Gloss Smooth
		2	Size 2	**HSS-90-F**	House Side Shield 90° Front	**BLT**	Black Matte Textured
		3	Size 3	**HSS-90-S**	House Side Shield 90° Side	**DBS**	Dark Bronze Gloss Smooth
		4	Size 4	**HSS-270-BSS**	House Side Shield 270° Back/Side/Side	**DBT**	Dark Bronze Matte Textured
				HSS-270-FSS	House Side Shield 270° Front/Side/Side	**GTT**	Graphite Matte Textured
				HSS-270-FSB	House Side Shield 270° Front/Side/Back	**LGS**	Light Gray Gloss Smooth
				HSS-360	House Side Shield 360°	**PSS**	Platinum Silver Smooth
				BC	Back Light Control	**WHS**	White Gloss Smooth
MTG	Mounting			**A**	Arm Mount for square pole/flat surface	**WHT**	White Matte Textured
				ASQU	Universal Arm Mount for square pole	**VGT**	Green Landscape Decorative
				AAU	Adjustable Arm for pole mounting	**LEG**	Legacy Colors
				ADU	Decorative upswept Arm	**Color Option**	
				RPA	Round Pole Adapter	**CC**	Custom Color
				MAF	Mast Arm Fitter for 2-3/8" OD horizontal arm		
				K	Knuckle		
				T	Trunnion		
				WB	Wall Bracket (compatible with universal arm mounts)		

Accessory Type		Option	
MSC	Miscellaneous	**BIRD SPK**	Bird Spike

Current Control Solutions — Accessories (Sold Separately)

NX Lighting Controls

☐ **NXOFM-1R1D-UNV** — On-fixture Module (7-pin), On / Off / Dim, Daylight Sensor with NX Radio and Bluetooth® Radio, 120–480VAC

LightGRID+ Lighting Control

☐ **WIR-RME-L** — On-fixture Module (7-pin or 5-pin), On / Off / Dim, Daylight Sensor with LightGRID+ Radio, 110–480VAC

☐ **SCP-REMOTE** — Remote Control for SCP/_F option. Order at least one per project to program and control the occupancy sensor

For additional information related to these accessories please visit currentlighting.com/beacon. Options provided for use with integrated sensor, please view specification sheet ordering information table for details.

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DATE: LOCATION:

TYPE: PROJECT:

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VIPER Area/Site

VIPER LUMINAIRE

OUTDOOR LIGHTING CONTROLS OPTIONS

CONTROLS FUNCTIONALITY

LIGHTGRID+

	Control Option Ordering Logic & Description		Control Option Functionality									Control Option Components	
			Networkable	Grouping	Scheduling	Occupancy/ Motion	Daylight Harvesting	0-10V Dimming	On/Off Control	Bluetooth App Programming	Sensor Height		
NX Wireless	NXOFM1R1D-UNV	NX 7-Pin Twist-Lock® with NX Networked Wireless Radio, Integral Automatic Dimming Photocell, Integral Single Pole Relay with Dimming, and Bluetooth Programming	✓	✓	✓	Paired with external control	✓	✓	✓	✓	–		NXOFM-1R1D-UV
NX Wireless	NXW	NX Networked Wireless Radio Module NXRM2 and Bluetooth Programming, without Sensor	✓	✓	✓	–	–	✓	✓	✓	–		NXRM2-H
NX Wireless	NXWS12F	NX Networked Wireless Enabled Integral NXSMP2-OMNI-O PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming	✓	✓	✓	✓	✓	✓	✓	✓	12ft		NXSMP2-OMNI-O
NX Wireless	NXWS16F	NX Networked Wireless Enabled Integral NXSMP2-LMO PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming	✓	✓	✓	✓	✓	✓	✓	✓	16ft		NXSMP2-LMO
NX Wireless	NXWS40F	NX Networked Wireless Enabled Integral NXSMP2-HMO PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming	✓	✓	✓	✓	✓	✓	✓	✓	40ft		NXSMP2-HMO
LightGRID+	WIR	LightGRID+ In-Fixture Module	✓	–	✓	–	–	✓	✓	Gateway	–		WIR
LightGRID+	WIR-RME-L	LightGRID+ On Fixture Module	✓	–	✓	–	–	✓	✓	Gateway	–		WIR-RME-L
LightGRID+	WIRSC	LightGRID+ Module and Occupancy Sensor	✓	✓	✓	✓	✓	✓	✓	Gateway	14ft - 40ft		BTMSP
Independent	BTSO-12F	Bluetooth® Programmable, BTSMP-OMNI-O PIR Occupancy Sensor with Automatic Dimming Photocell and 360° Lens	–	–	–	✓	✓	✓	✓	✓	12ft		BTSMP-OMNI-O
Independent	BTS-14F	Bluetooth® Programmable, BTSMP-LMO PIR Occupancy Sensor with Automatic Dimming Photocell and 360° Lens	–	–	–	✓	✓	✓	✓	✓	14ft		BTSMP-LMO
Independent	BTS-40F	Bluetooth® Programmable, BTSMP-HMO PIR Occupancy Sensor with Automatic Dimming Photocell and 360° Lens	–	–	–	✓	✓	✓	✓	✓	40ft		BTSMP-HMO

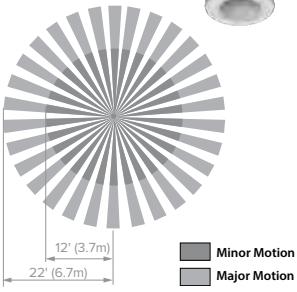
DEFAULT SETTINGS

NX Wireless	
Occupancy Sensor	Enabled
Occupancy Sensor Sensitivity	7
Occupancy Sensor Timeout	15 Minutes
Occupied Dim Level	100%
Unoccupied Dim Level	0%
Daylight Sensor	Disabled
Bluetooth	Enabled
2.4GHz Wireless Mesh	On
"Passcode Factory Passcode: HubbN3T!"	Enabled

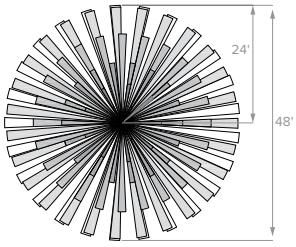
Stand Alone	
Occupancy Sensor	Enabled
Occupancy Sensor Sensitivity	7
Occupancy Sensor Timeout	8 Minutes
Occupied Dim Level	100%
Unoccupied Dim Level	50%
Daylight Sensor	Disabled

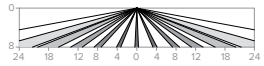
NX WIRELESS COVERAGE PATTERNS

NXSMP2-OMNI



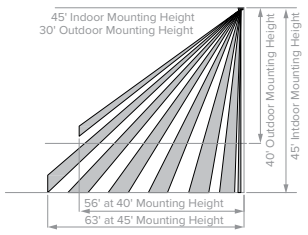
NXSMP2-LMO





Sensor Lens Coverage and Detection Patterns When Mounted at 8ft with Low Mount Lens

NXSMP2-HMO



Sensor Lens Coverage and Detection Patterns When Mounted at 40ft and 45ft with Standard Lens

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VIPER Area/Site

VIPER LUMINAIRE

DATE: | LOCATION:

TYPE: | PROJECT:

CATALOG #:

NX LIGHTING CONTROLS FREE APP

The NX Lighting Controls App is free to use mobile application for programming both NX Lighting Controls System or Standalone Bluetooth Sensors. The mobile app allows you to configure devices, discover and setup wireless enable luminiares and program NX system settings.

Apple App: https://apps.apple.com/us/app/nx-lighting-controls/id962112904

Google Play: https://play.google.com/store/apps/details?id=io.cordova.NXBTR&hl=en_US&gl=US

Apple App

Google Play

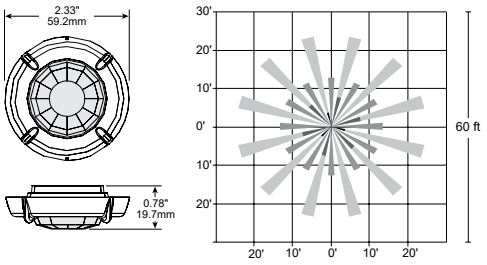
CONTROLS TECH SUPPORT 800-888-8006 (7:00 AM - 7:00 PM)

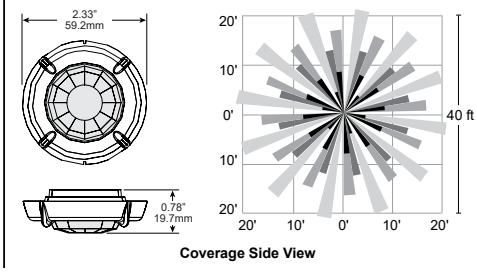
OUTDOOR LIGHTING CONTROLS OPTIONS

CONTROLS FUNCTIONALITY

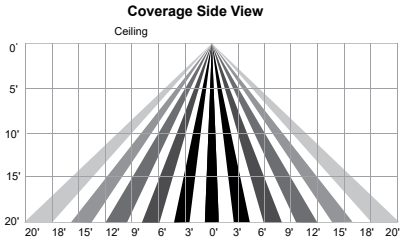
	Control Option Ordering Logic & Description		Control Option Functionality									Control Option Components
			Networkable	Grouping	Scheduling	Occupancy/ Motion	Daylight Harvesting	0-10V Dimming	On/Off Control	Bluetooth App Programming	Sensor Height	
Independent	SCP_F	Sensor Control Programmable, 8F or 40F	–	–	–	✓	✓	✓	✓	–	8ft or 40ft	SCP_F
	ADD	AutoDIM Timer Based Dimming	–	–	✓	–	–	–	✓	–	–	ADD
	ADT	AutoDIM Time of Day Dimming	–	–	✓	–	–	–	✓	–	–	ADT
	7PR	7-Pin Receptacle	–	–	Paired with external control	–	Paired with external control	–	Paired with external control	–	–	7PR
	7PR-SC	7-Pin Receptacle with shorting cap	–	–	–	–	–	–	–	–	–	7PR-SC
	3PR	3-Pin twist lock	–	–	–	–	–	–	Paired with external control	–	–	3PR
	3PR-SC	3-Pin Receptacle with shorting cap	–	–	–	–	–	–	–	–	–	3PR-SC
	3PR-TL	3-Pin with photocontrol	–	–	–	–	✓	–	✓	–	–	3PR-TL

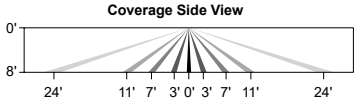
COVERAGE PATTERNS FOR SCP_F

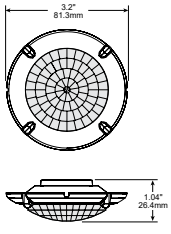


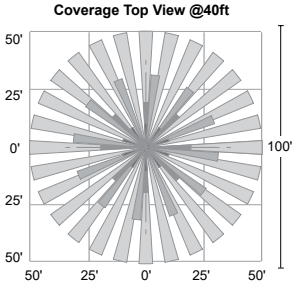


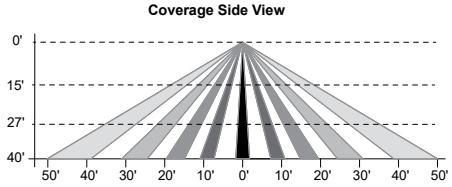
Coverage Side View











VIPER Area/Site

VIPER LUMINAIRE

PROGRAMMED CONTROLS

ADD-AutoDim Timer Based Options

- Light delay options from 1-9 hours after the light is turned on to dim the light by 10-100%. To return the luminaire to its original light level there are dim return options from 1-9 hours after the light has been dimmed previously.

EX: ADD-6-5-R6

ADD Control Options	Configurations Choices	Example Choice Picked
Auto-Dim Options	1-9 Hours	6 - Delay 6 hours
Auto-Dim Brightness	10-100% Brightness	5 - Dim to 50% brightness
Auto-Dim Return	Delay 0-9 Hours	R6 - Return to full output after 6 hours

ADT-AutoDim Time of Day Based Option

- Light delay options from 1AM-9PM after the light is turned on to dim the light by 10-100%. To return the luminaire to its original light level there are dim return options from 1AM-9PM after the light has been dimmed previously.

EX: ADT-6-5-R6

ADD Control Options	Configurations Choices	Example Choice Picked
Auto-Dim Options	12-3 AM and 6-11 PM	6 - Dim at 6PM
Auto-Dim Brightness	10-100% Brightness	5 - Dim to 50%
Auto-Dim Return	12-6 AM and 9-11P	R6 - Return to full output at 6AM

DELIVERED LUMENS

For delivered lumens, please see Lumens Data PDF on www.Currentlighting.com

PROJECTED LUMEN MAINTENANCE

Ambient Temp.	0	25,000	*TM-21-11 36,000	50,000	100,000	Calculated L_{70} (Hours)
25°C / 77°F	1.00	0.97	0.96	0.95	0.91	408,000
40°C / 104°F	0.99	0.96	0.95	0.94	0.89	356,000

LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)

Ambient Temperature		Lumen Multiplier
0°C	32°F	1.03
10°C	50°F	1.01
20°C	68°F	1.00
25°C	77°F	1.00
30°C	86°F	0.99
40°C	104°F	0.98

Micro Strike Lumen Multiplier			
CCT	70 CRI	80 CRI	90 CRI
2700K	–	0.841	–
3000K	0.977	0.861	0.647
3500K	–	0.900	–
4000K	1	0.926	0.699
5000K	1	0.937	0.791
AP-Amber Phosphor Converted Multiplier			
Amber	0.710		

Strike Lumen Multiplier			
CCT	70 CRI	80 CRI	90 CRI
2700K	0.9	0.81	0.62
3000K	0.933	0.853	0.659
3500K	0.959	0.894	0.711
4000K	1	0.9	0.732
5000K	1	0.9	0.732
Monochromatic Amber Multiplier			
Amber	See Amber Spec Sheet		

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

VIPER Area/Site

VIPER LUMINAIRE

ELECTRICAL DATA: STRIKE

# OF LEDS	36				
NOMINAL WATTAGE	39	55	85	105	120
SYSTEM POWER (W)	39.6	56.8	83.6	108.2	120.9
INPUT VOLTAGE (V)	CURRENT (Amps)				
120	0.33	0.46	0.71	0.88	0.96
208	0.19	0.26	0.41	0.50	0.55
240	0.16	0.23	0.35	0.44	0.48
277	0.14	0.20	0.31	0.38	0.42
347	0.11	0.16	0.24	0.30	0.33
480	0.08	0.11	0.18	0.22	0.24

# OF LEDS	72				
NOMINAL WATTAGE	115	145	180	210	240
SYSTEM POWER (W)	113.7	143.2	179.4	210.2	241.7
INPUT VOLTAGE (V)	CURRENT (Amps)				
120	1.00	1.21	1.50	1.75	1.79
208	0.58	0.70	0.87	1.01	1.03
240	0.50	0.60	0.75	0.88	0.90
277	0.43	0.52	0.65	0.76	0.78
347	0.35	0.42	0.52	0.61	0.62
480	0.25	0.30	0.38	0.44	0.45

# OF LEDS	108				
NOMINAL WATTAGE	215	250	280	325	365
SYSTEM POWER (W)	214.8	250.8	278.3	324.7	362.6
INPUT VOLTAGE (V)	CURRENT (Amps)				
120	2.00	2.08	2.33	3.04	2.67
208	1.15	1.20	1.35	1.75	1.54
240	1.00	1.04	1.17	1.52	1.33
277	0.87	0.90	1.01	1.32	1.16
347	0.69	0.72	0.81	1.05	0.92
480	0.50	0.52	0.58	0.76	0.67

# OF LEDS		162				
NOMINAL WATTAGE	320	365	405	445	485	545
SYSTEM POWER (W)	322.1	362.6	403.6	445.1	487.1	543.9
INPUT VOLTAGE (V)		CURRENT (Amps)				
120	2.71	2.67	3.38	3.71	4.04	4.54
208	1.56	1.54	1.95	2.14	2.33	2.62
240	1.35	1.33	1.69	1.85	2.02	2.27
277	1.17	1.16	1.46	1.61	1.75	1.97
347	0.94	0.92	1.17	1.28	1.40	1.57
480	0.68	0.67	0.84	0.93	1.01	1.14

VIPER Area/Site

VIPER LUMINAIRE

DATE: LOCATION:

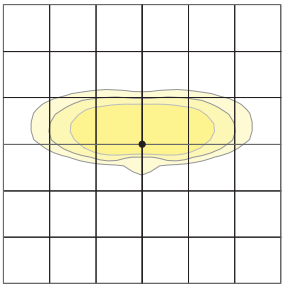
TYPE: PROJECT:

CATALOG #:

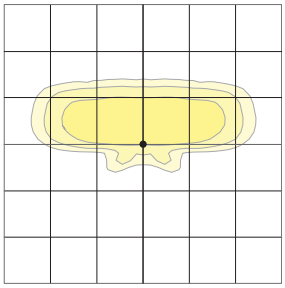
OPTIC STRIKE PHOTOMETRY

The following diagrams represent the general distribution options offered for this product. For detailed information on specific product configurations, see website photometric test reports.

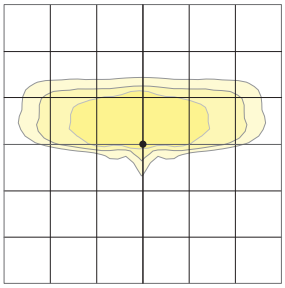
Type FR – Front Row/Auto Optic



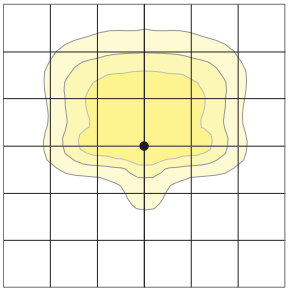
Type 2



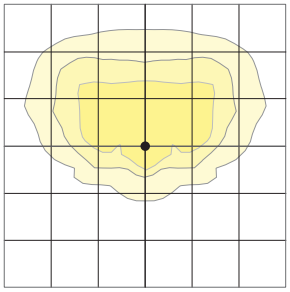
Type 3



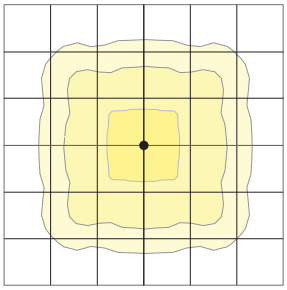
Type 4 Forward



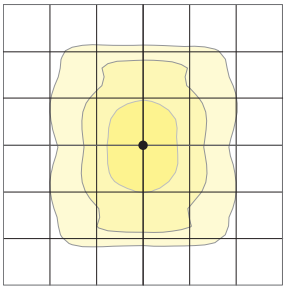
Type 4 Wide



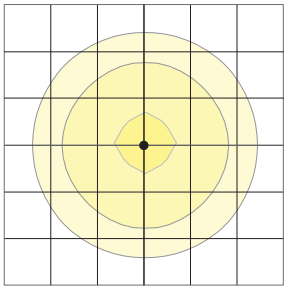
Type 5QM



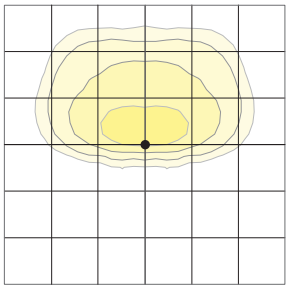
Type 5RW (rectangular)



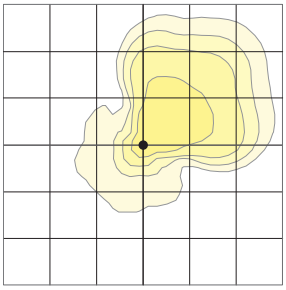
Type 5W (round wide)



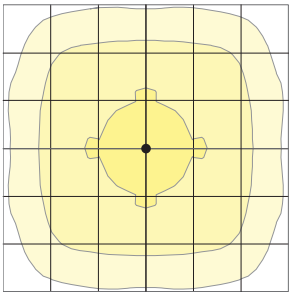
Type TC



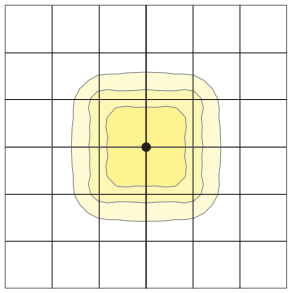
Type Corner



Type 5QW



Type 5QN



BEACON
design . performance . technology

DATE: LOCATION:

TYPE: PROJECT:

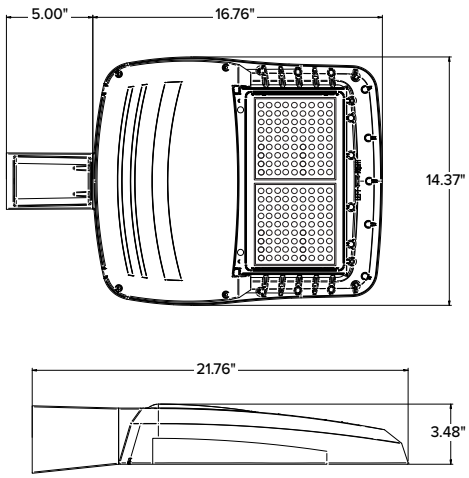
CATALOG #:

VIPER Area/Site

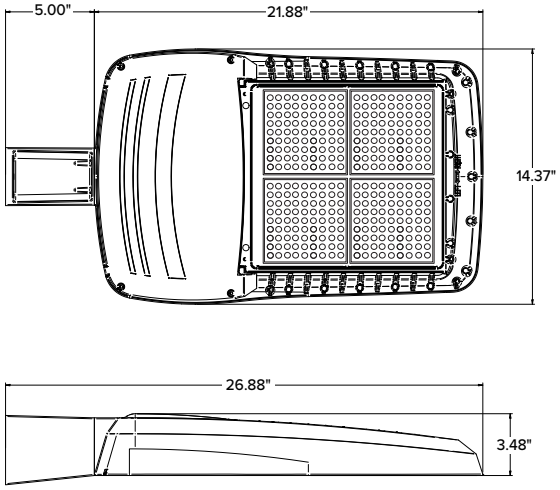
VIPER LUMINAIRE

DIMENSIONS

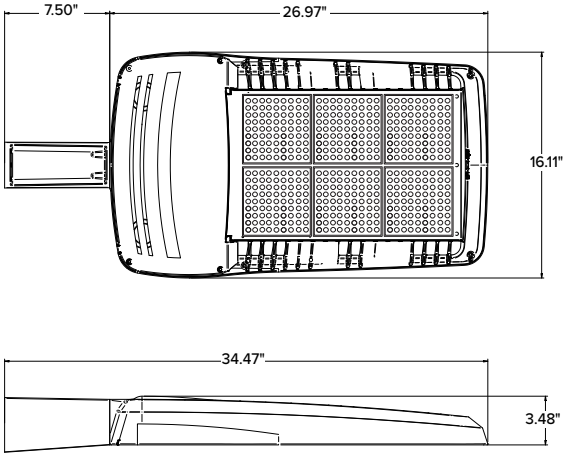
SIZE 1



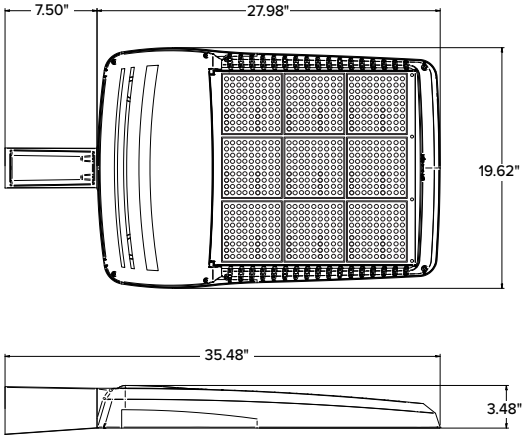
SIZE 2



SIZE 3



SIZE 4



	EPA				
	VP1 (Size 1)	VP2 (Size 2)	VP3 (Size 3)	VP4 (Size 4)	Config.
Single Fixture	0.454	0.555	0.655	0.698	
Two at 180	0.908	1.110	1.310	1.396	
Two at 90	0.583	0.711	0.857	0.948	
Three at 90	1.037	1.266	1.512	1.646	
Three at 120	0.943	1.155	1.392	1.680	
Four at 90	1.166	1.422	1.714	1.896	

	Weight	
	lbs	kgs
VP1 (Size 1)	13.7	6.2
VP2 (Size 2)	16.0	7.26
VP3 (Size 3)	25.9	11.7
VP4 (Size 4)	30.8	13.9

VIPER Area/Site

VIPER LUMINAIRE

DATE: LOCATION:

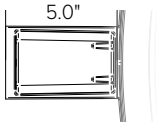
TYPE: PROJECT:

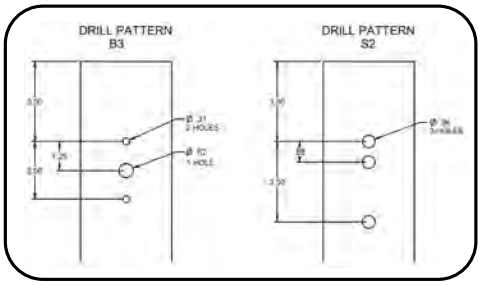
CATALOG #:

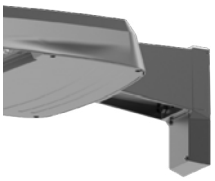
MOUNTING

A–STRAIGHT ARM MOUNT

Fixture ships with integral arm for ease of installation. Compatible with Current Outdoor B3 drill pattern for ease of installation on square poles. For round poles add applicable suffix (2/3/4/5)

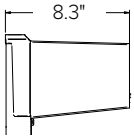


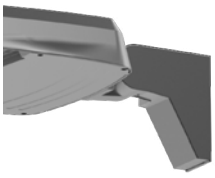




ASQU–UNIVERSAL ARM MOUNT

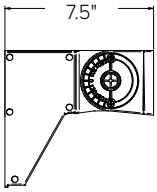
Universal mounting block for ease of installation. Compatible with drill patterns from 1.5" to 5.25" and Current drill pattern S2. For round poles add applicable suffix (2/3/4/5)

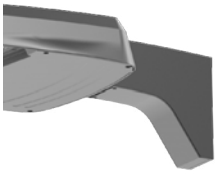




AAU–ADJUSTABLE ARM FOR POLE MOUNTING

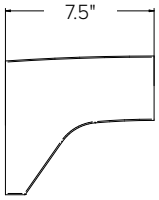
Rotatable arm mounts directly to pole. Compatible with drill patterns from 1.5" to 5.25" and Current drill pattern S2 and B3. For round poles add applicable suffix (2/3/4/5). Rotatable in 15˚ aiming angle increments. Micro Strike configurations have a 45° aiming limitation.
Strike configurations have a 30° aiming limitation.

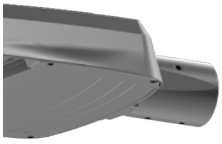




ADU–DECORATIVE UPSWEPT ARM

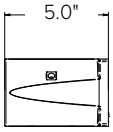
Upswept Arm compatible with drill patterns from 1.5" to 5.25" and Current drill pattern S2. For round poles add applicable suffix (2/3/4/5).

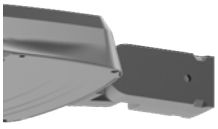




MAF–MAST ARM FITTER

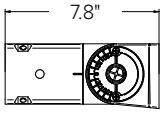
Fits 2-3/8" OD horizontal tenons.

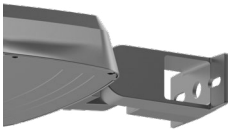




K–KNUCKLE

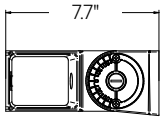
Knuckle mount 15˚ aiming angle increments for precise aiming and control, fits 2-3/8" tenons or pipes. Micro Strike configurations have a 45° aiming limitation. Strike configurations have a 30° aiming limitation.





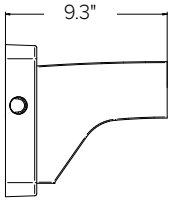
T–TRUNNION

Trunnion for surface and crossarm mounting using (1) 3/4" or (2) 1/2" size through bolts. Micro Strike configurations have a 45° aiming limitation. Strike configurations have a 30° aiming limitation.



WM–WALL MOUNT

Compatible with universal arm mount, adjustable arm mount, and decorative arm mount. The WA option uses the same wall bracket but replaces the decorative arm with an adjustable arm.



VIPER Area/Site

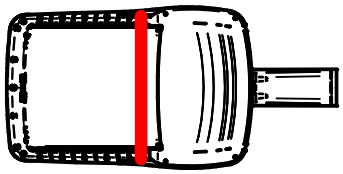
VIPER LUMINAIRE

ADDITIONAL INFORMATION (CONTINUED)

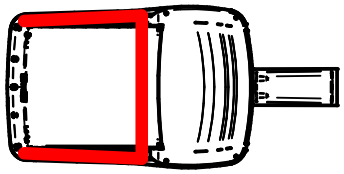
HOUSE SIDE SHIELD FIELD INSTALL ACCESSORIES

HSS has a depth of 5" for all Viper sizes
Not to be used with Occupancy Sensors as the shield may block the light to the sensor.

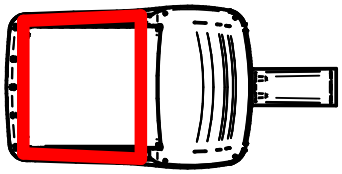
VPR2x HSS-90-B-xx



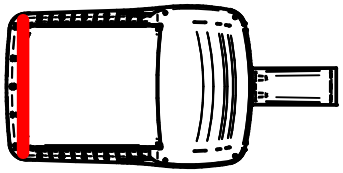
VPR2x HSS-270-BSS-xx



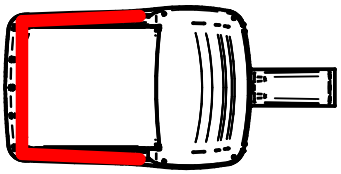
VPR2x HSS-360-xx



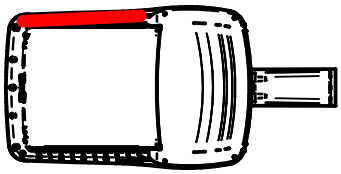
VPR2x HSS-90-F-xx



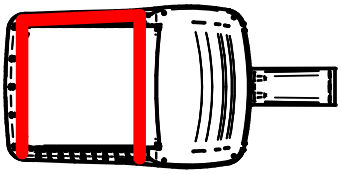
VPR2x HSS-270-FSS-xx



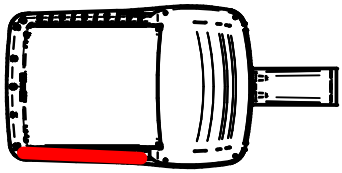
VPR2x HSS-90-S-xx



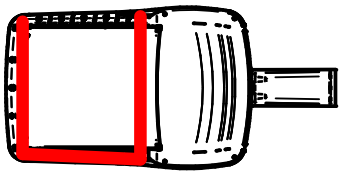
VPR2x HSS-270-FSB-xx



VPR2x HSS-90-S-xx



VPR2x HSS-270-FSB-xx



SECTION 323100

FENCES AND GATES

PART 1 GENERAL

1.1 DESCRIPTION

B. Work under this section includes furnishing and installing:

1. Commercial Grade Chain link Fence with thermally-bonded and fused polymer color coating
2. Auto latch/ Child proof latch
3. Concrete for post footings

C. Related work:

1. Section 31 05 12, Site Earthwork.

1.2 SUBMITTALS

A. General: Submit the following

1. Shop Drawings: Layout of fence and gates with dimensions, installation details, and finishes of component accessories and post foundations.

2. Product Data: In the form of manufacturer's technical data, specifications, and installations for fence posts, gate uprights, post caps, gates, gate hardware/childproof latch and accessories

3. Samples: for finish product specified.

1.3 QUALITY ASSURANCE

A. Installer qualifications: Engage an experienced installer who has at least three years' experience and has successfully completed projects with the same material and of similar scope of that indicated for this project with a successful construction record of in-service performance.
B. Single-Source Responsibility: Obtain metal fences and gates, including accessories, fittings and fastenings from a single source.

1.4 DELIVERY

A. Package, handle, deliver and store access fencing at the project site in a manner that will avoid damage.

1.5 PROJECT CONDITIONS

A. Field Measurements: Verify layout information for fences and gates shown on the drawingsin relation to the property survey and existing structures. Verify dimensions by field measurements.

1.6 WARRANTY

A. Manufacturer's Warranty: 30 year non-prorated limited warranty as it applies to commercial applications.

PART 2 PRODUCTS

2.1 MANUFACTURER:

A. Chain Link Fence and gates per plan as provided by All Around Fence Co., Belgrade, ME, 207-495-2300, info@allaroundfencecompany.com. Product of other manufacturers may be considered subject to compliance with the requirements as judged by the Landscape Architect and or Owner's Representative.
B. Auto latch (at each gate)

2.2 MATERIALS:

4' CHAIN LINK FENCE

A. Posts: 2 3/8" O.D. Terminal/End/Corner; 1 7/8" O.D. Line

B. Fabric: 9GA x 2" Mesh- PVC Coated, BLACK

C. Top rail: 1 5/8" O.D.

D. Post Caps: Dome Style

E. Ties: 9GA Aluminum

F. Footings: Terminal posts 42" deep x 12"; Line Posts 36" x 10";

G. Concrete: 3000 PSI

AUTO LATCH

A. Allow gate to swing both ways
B. Can be padlocked form either side
C. Self-latching

PART 3 EXECUTION

3.1 EXAMINATION:

A. Verify areas to receive fencing are completed to final grades and elevations.

B. Ensure property lines and legal boundaries of work are clearly established.

3.2 INSTALLATION:

A. Chain Link Fence, Gates and latches.

1. Contractor shall place and install fence and gate sections and auto latch in quantity and sizes as shown on drawings and per manufacturer requirements.

3.3 CLEANING:

A. Clean up debris and unused material and remove from site.

END OF SECTION

SECTION 116800 - PLAY EQUIPMENT AND STRUCTURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes playground equipment as follows:

1. Freestanding playground equipment.

1.2 DEFINITIONS

A. Definitions in ASTM F 1487 apply to Work of this Section.

B. IPEMA: International Play Equipment Manufacturers Association.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For each type of playground equipment.

1. Include plans, elevations, sections, and attachment details.
2. Include fall heights and use zones for playground equipment, coordinated with the critical-height values of protective surfacing specified in Section 321816 "Playground Protective Surfacing."

C. Samples for Initial Selection: For each type of exposed finish.

1. Manufacturer's color charts.
2. Include Samples of accessories involving color selection.

D. Samples for Verification: For each type of exposed finish on the following products:

1. Include Samples of accessories to verify color and finish selection.
2. Molded Plastic: Minimum 3 inches square.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer, manufacturer, and testing agency.

B. Product Certificates: For each type of playground equipment.

C. Material Certificates: For the following items:

1. Shop finishes.
2. Wood-Preservative Treatment: Include certification by treating plant that states type of preservative solution and pressure process used, net amount of preservative retained, and compliance with applicable standards.

D. Sample Warranty: For manufacturer's special warranties.

1.6 CLOSEOUT SUBMITTALS

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

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications: A firm whose playground equipment components have been certified by IPEMA's third-party product certification service.

B. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

1.8 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of playground equipment that fail 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 and use.

2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Safety Standard: Provide playground equipment according to ASTM F 1487.

2.2 FREESTANDING PLAYGROUND EQUIPMENT

A. Swing Set : Single posts providing upright support.

1. Basis-of-Design Product Subject to compliance with requirements, provide “Three Bay 8’ ht Swing” by PlayVentures Inc. (800-799-7529)-Salesperson Margie Salt- Park Street

Playgrounds, msalt@parkstreetplaygrounds.com, 978-337-6698 or comparable product by one of the following:

a. Henderson Recreation

b. PlayVentures Inc.
c. GameTime; a PlayCore, Inc. company.

2. Metal/Wood Frame: Galvanized-steel pipe or tubing or Southern Yellow Pine Posts
   a. Color: As selected by Architect from manufacturer's full range.

3. Overhead Beam Height: 8 ft. from pivot point to protective surfacing below.
4. Suspension Members: Manufacturer's standard.

   a. Color: As selected by Architect from manufacturer's full range.
5. Swing Hanger: Galvanized manufacturer's standard.
6. Swing Seats: Infant.

   a. Color: As selected by Architect from manufacturer's full range.

7. Capacity: 3 Bay. Six swings total.
8. Age Appropriateness: 2-12.

B. Disc Swing

1. Basis-of-Design Product Subject to compliance with requirements, provide “Cloud 9 Swing” by Berliner Seilfabrik- Salesperson Margie Salt- Park Street Playgrounds, msalt@parkstreetplaygrounds.com, 978-337-6698 or comparable product.

C. Climber: Berliner Spaceball Medium

1. Basis-of-Design Product: Subject to compliance with requirements, provide “Medium Spaceball” climbing net by Berliner Seilfabrik- Salesperson Margie Salt- Park Street Playgrounds, msalt@parkstreetplaygrounds.com, 978-337-6698 or comparable product.

2. Colors: As selected by Architect from manufacturer's full range.

D. Spinner: Rotating seating around a vertical axis.

1. Basis-of-Design Product: Subject to compliance with requirements, provide “Tannenbaum 3.1” by Berliner Seilfabrik- Salesperson Margie Salt- Park Street Playgrounds, msalt@parkstreetplaygrounds.com, 978-337-6698

2. Body

   a. Color: As selected by Architect from manufacturer's full range.
3. Age Appropriateness: 2 through 12 years.

E. Metal Climbing Bars.

1. Basis-of-Design Product: Subject to compliance with requirements, provide “Space Station” by Henderson Recreation- Salesperson Margie Salt- Park Street Playgrounds, msalt@parkstreetplaygrounds.com, 978-337-6698

2. Body

a. Color: As selected by Architect from manufacturer's full range.

F. Turning Bars.

1. Basis-of-Design Product: Subject to compliance with requirements, provide “Turning Bars (2-level)” by Henderson Recreation- Salesperson Margie Salt- Park Street Playgrounds, msalt@parkstreetplaygrounds.com, 978-337-6698

2. Body

a. Color: As selected by Architect from manufacturer's full range.

3. Age Appropriateness: 5 through 12 years.

FABRICATION

G. 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.

H. 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.

I. Composite Frame: Fabricate main-frame upright support posts from metal and plastic. Fabricate secondary frame members, bracing, and connections from either steel or aluminum.

2.3 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. Suspension Chain and Fittings: ASTM A 467/A 467M, Class CS, 4/0 or 5/0, welded-straight-link coil chain; hot-dip galvanized; with commercial-quality, hot-dip galvanized steel connectors and swing or ring hangers.

F. Iron Castings and Hangers: Malleable iron, ASTM A 47/A 47M, Grade 32510, hot-dip galvanized.

G. Post Caps: Cast aluminum or color-impregnated, UV-stabilized, mold-resistant polyethylene or polypropylene; color to match posts.

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.

2.4 CAST-IN-PLACE CONCRETE

A. Concrete Materials and Properties: Comply with manufacturer requirements for normal-weight, air-entrained concrete with minimum 28-day compressive strength of 3500 psi, 3-inch slump, and 1-inch-maximum-size aggregate.

2.5 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.

B. PVC Finish: UV-stabilized, mold-resistant, slip-resistant, matte-textured, dipped or sprayed-on PVC finish, with flame retardant added, and with minimum dry film thickness of 80 mils. Comply with coating manufacturer's written instructions for pretreatment and application.

2.6 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.

B. PVC Finish: UV-stabilized, mold-resistant, slip-resistant, matte-textured, dipped or sprayed-on PVC finish, with flame retardant added, and with minimum dry film thickness of 100 mils. Comply with coating manufacturer's written instructions for pretreatment and application.

PART 3 - EXECUTION

3.1 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.

3.2 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 manufacturer requirements 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.

3.3 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Perform the following tests and inspections with the assistance of a factory-authorized service representative.

1. Perform inspection and testing for each type of installed playground equipment according to ASTM F 1487.

C. Playground equipment items will be considered defective if they do not pass tests and inspections.

D. Prepare test and inspection reports.

E. Notify Architect and Owner 48 hours in advance of date(s) and time(s) of testing and inspection.

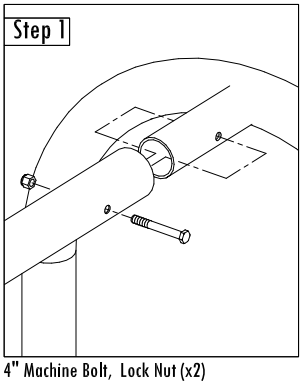
END OF SECTION

Arch Swing 8' 1-Bay

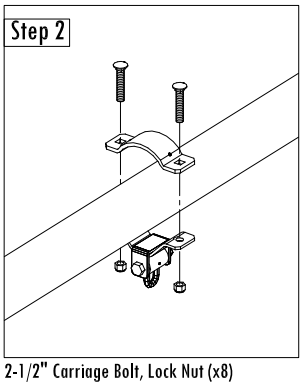
SA-SW340-00

Parts List

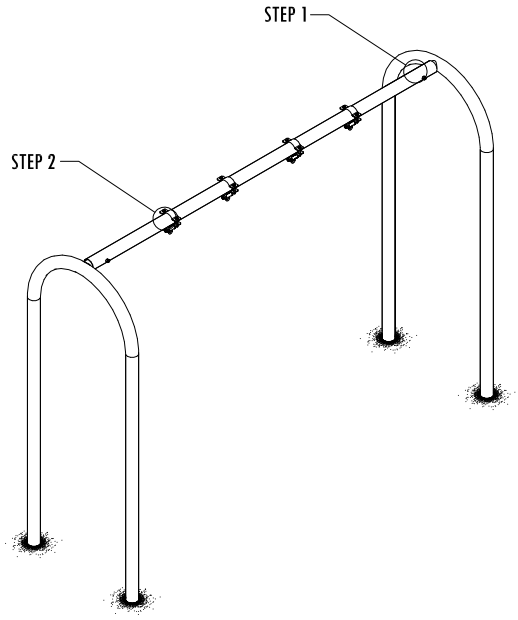
1	1M-SA-SWP00900-00	Swing Topbar - Heavy Duty
2	1M-SA-SWP01200-01	8' Arch Swing End Frame
4	1M-SA-SWP01500-00	Swing Bearing
8	1C-0710	Carriage Bolt 7/16" x 2-1/2" Gr. 5
2	1M-0816	Machine Bolt 1/2" x 4"
8	4L-0700	Lock Nut w/ Nylon Locking 7/16"
2	4L-0800	Lock Nut w/ Nylon Locking 1/2"

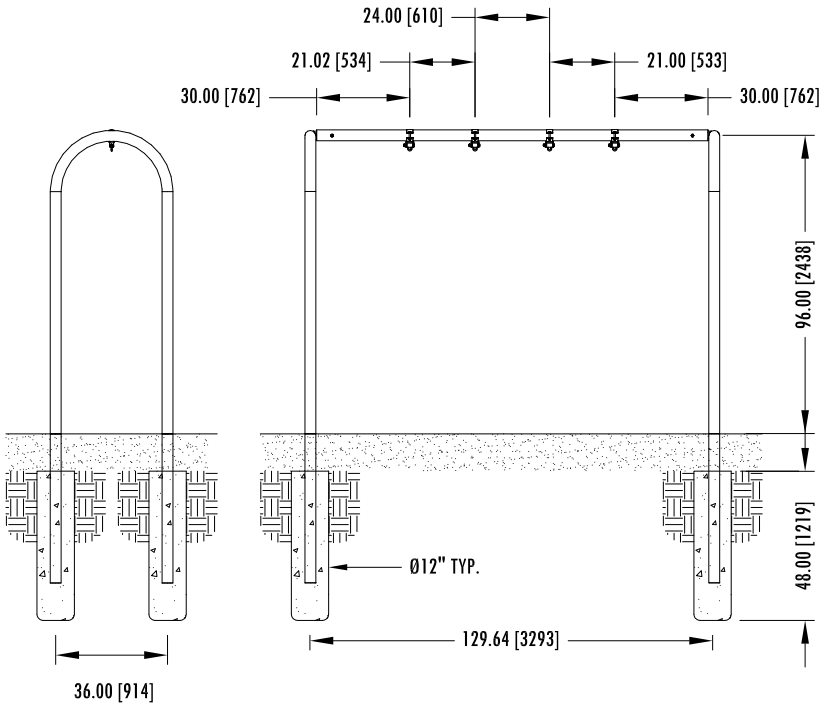


4" Machine Bolt, Lock Nut (x2)



2-1/2" Carriage Bolt, Lock Nut (x8)





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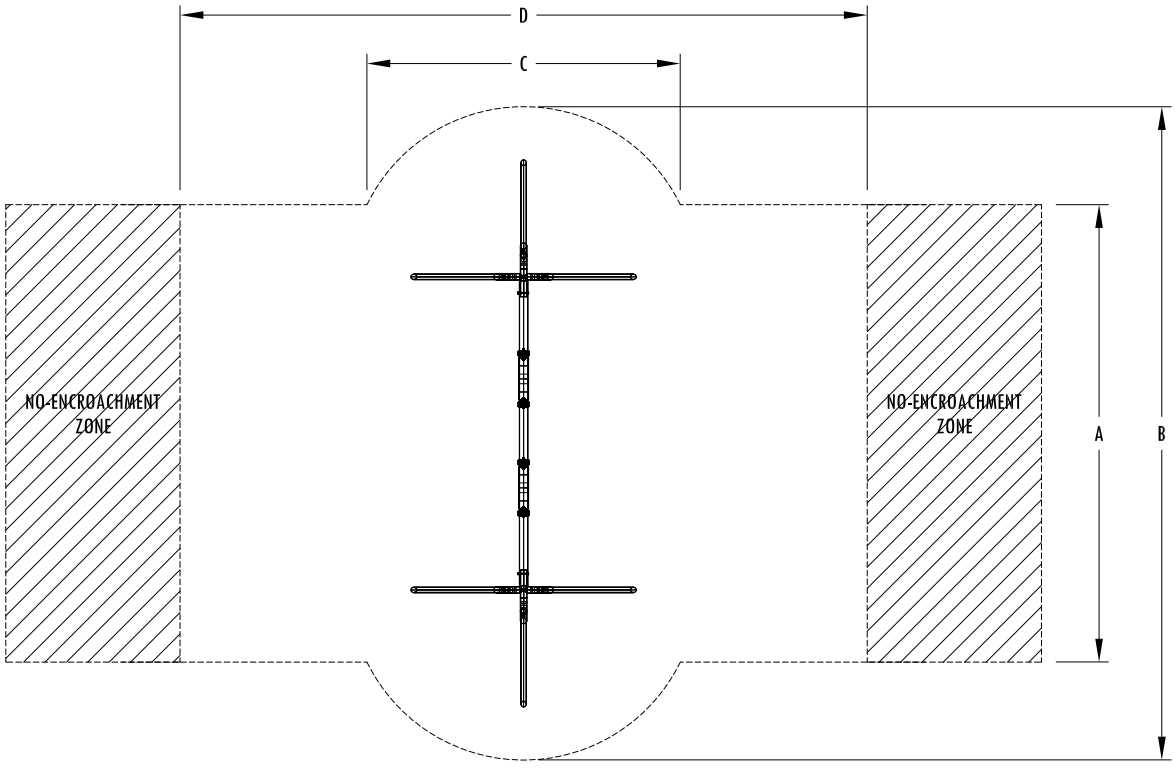
11 Gilbertson Drive P.O. Box 68 Simcoe, Ontario, Canada N3Y 4K8 1-800-265-5462 Fax (519) 426-1132

Henderson
recreation equipment limited

Canadian Swing Zones

See Below For Included Modules

Model #	Swing Style	"A"	"B"	"C"	"D" Belt Seat	"D" Baby Seat
SW080	7' T Frame Swing	241.00 (6121)	270.00 (6858)	86.65 (2201)	284.00 (7214)	236.00 (5994)
SW300	8' Standard Swing	189.00 (4801)	270.00 (6858)	129.50 (3289)	332.00 (8433)	284.00 (7214)
SW305	8' Standard Swing - Accessible	201.00 (5105)	282.00 (7163)	129.50 (3289)	332.00 (8433)	332.00 (8433)
SW310	10' Standard Swing	189.00 (4801)	270.00 (6858)	129.50 (3289)	428.00 (10871)	380.00 (9652)
SW315	10' Standard Swing - Accessible	201.00 (5105)	282.00 (7163)	129.50 (3289)	428.00 (10871)	428.00 (10871)
SW320	8' Standard Swing - Heavy Duty	189.00 (4801)	270.00 (6858)	129.50 (3289)	332.00 (8433)	284.00 (7214)
SW325	8' Standard Swing - Accessible Heavy Duty	201.00 (5105)	282.00 (7163)	129.50 (3289)	332.00 (8433)	332.00 (8433)
SW330	10' Standard Swing - Heavy Duty	189.00 (4801)	270.00 (6858)	129.50 (3289)	428.00 (10871)	380.00 (9652)
SW335	10' Standard Swing - Accessible Heavy Duty	201.00 (5105)	282.00 (7163)	129.50 (3289)	428.00 (10871)	428.00 (10871)
SW340	8' Arch Swing	189.00 (4801)	270.00 (6858)	129.50 (3289)	332.00 (8433)	284.00 (7214)
SW345	8' Arch Swing - Accessible	201.00 (5105)	282.00 (7163)	129.50 (3289)	332.00 (8433)	332.00 (8433)
SW350	10' Arch Swing	189.00 (4801)	270.00 (6858)	129.50 (3289)	428.00 (10871)	380.00 (9652)
SW355	10' Arch Swing - Accessible	201.00 (5105)	282.00 (7163)	129.50 (3289)	428.00 (10871)	428.00 (10871)
SW360	8' Single Post Swing	189.00 (4801)	270.00 (6858)	129.50 (3289)	332.00 (8433)	284.00 (7214)
SW365	8' Single Post Swing - Accessible	201.00 (5105)	282.00 (7163)	129.50 (3289)	332.00 (8433)	332.00 (8433)
SW370	8' Arch Swing - Heavy Duty	189.00 (4801)	270.00 (6858)	141.50 (3594)	332.00 (8433)	284.00 (7214)
SW375	8' Arch Swing - Accessible Heavy Duty	201.00 (5105)	282.00 (7163)	141.50 (3594)	332.00 (8433)	332.00 (8433)
SW380	10' Arch Swing - Heavy Duty	189.00 (4801)	270.00 (6858)	141.50 (3594)	428.00 (10871)	380.00 (9652)
SW385	10' Arch Swing - Accessible Heavy Duty	201.00 (5105)	282.00 (7163)	141.50 (3594)	428.00 (10871)	428.00 (10871)



Last Updated - August 30, 2012
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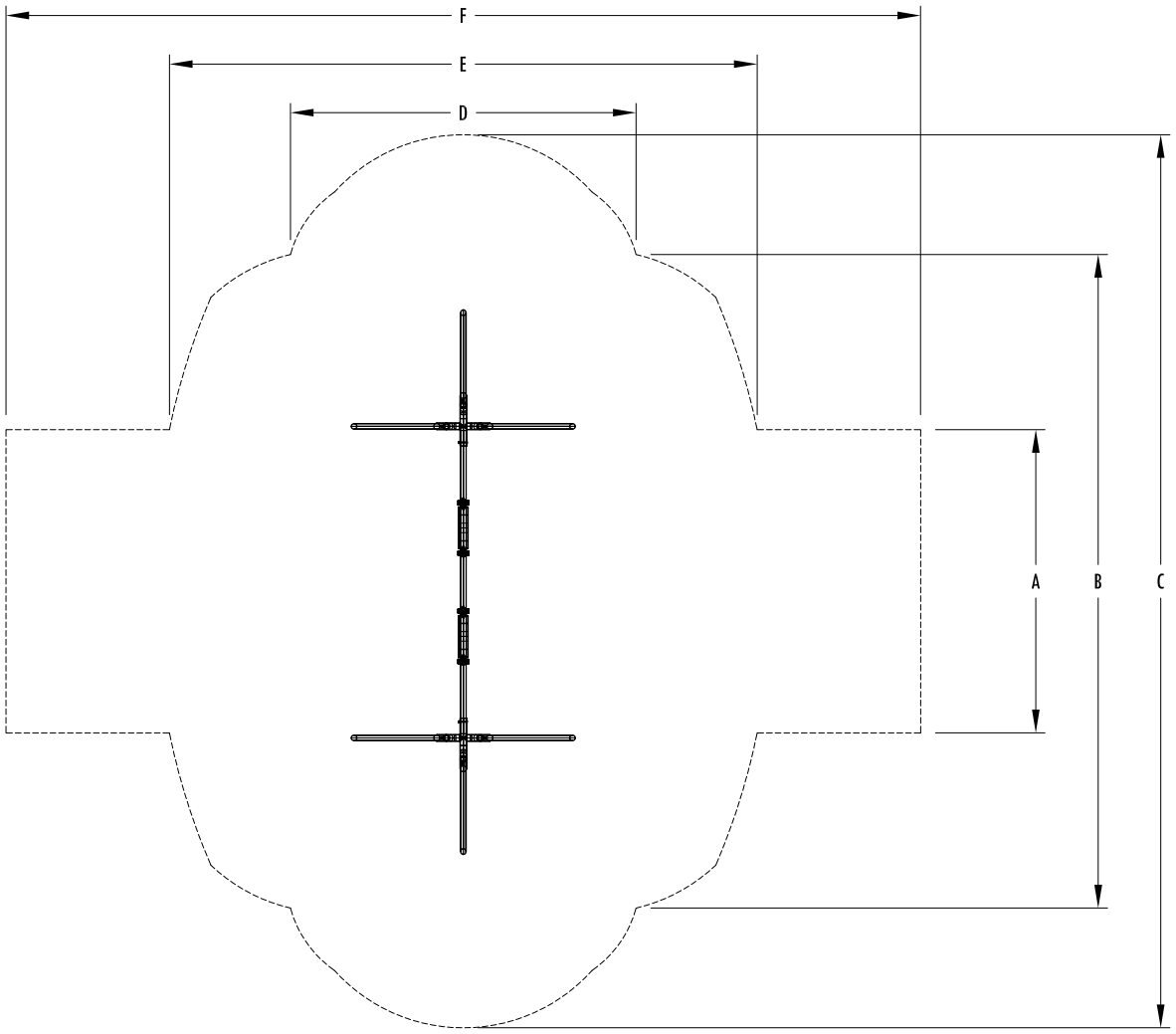
Henderson
recreation equipment limited

American Swing Zones

See Below For Included Modules

Model	Swing Style	"A"	"B"	"C"	"D"	"E"	"F" Belt Seat	"F" Baby Seat
SW080	7' T Frame Swing	180.00 (4572)	N/A	270.00 (6858)	134.00 (3404)	N/A	332.00 (8433)	236.00 (5994)
SW300	8' Standard Swing	126.00 (3200)	272.00 (6901)	371.00 (9424)	144.00 (3658)	245.00 (6223)	380.00 (9652)	284.00 (7214)
SW305	8' Standard Swing - Accessible	138.00 (3505)	284.00 (7214)	383.00 (9728)	144.00 (3658)	245.00 (6223)	380.00 (9652)	380.00 (9652)
SW310	10' Standard Swing	126.00 (3200)	272.00 (6901)	390.00 (9906)	144.00 (3658)	257.00 (6528)	476.00 (12090)	380.00 (9652)
SW315	10' Standard Swing - Accessible	138.00 (3505)	284.00 (7214)	402.00 (10211)	144.00 (3658)	257.00 (6528)	476.00 (12090)	476.00 (12090)
SW320	8' Standard Swing - Heavy Duty	126.00 (3200)	272.00 (6901)	371.00 (9424)	144.00 (3658)	245.00 (6223)	380.00 (9652)	284.00 (7214)
SW325	8' Standard Swing - Accessible Heavy Duty	138.00 (3505)	284.00 (7214)	383.00 (9728)	144.00 (3658)	245.00 (6223)	380.00 (9652)	380.00 (9652)
SW330	10' Standard Swing - Heavy Duty	126.00 (3200)	272.00 (6901)	390.00 (9906)	144.00 (3658)	257.00 (6528)	476.00 (12090)	380.00 (9652)
SW335	10' Standard Swing - Accessible Heavy Duty	138.00 (3505)	284.00 (7214)	402.00 (10211)	144.00 (3658)	245.00 (6223)	476.00 (12090)	476.00 (12090)
SW340	8' Arch Swing	126.00 (3200)	N/A	277.00 (7036)	177.00 (4496)	N/A	380.00 (9652)	284.00 (7214)
SW345	8' Arch Swing - Accessible	138.00 (3505)	N/A	289.00 (7341)	177.00 (4496)	N/A	380.00 (9652)	380.00 (9652)
SW350	10' Arch Swing	126.00 (3200)	N/A	277.00 (7036)	177.00 (4496)	N/A	476.00 (12090)	380.00 (9652)
SW355	10' Arch Swing - Accessible	138.00 (3505)	N/A	289.00 (7341)	177.00 (4496)	N/A	476.00 (12090)	476.00 (12090)
SW360	8' Single Post Swing	126.00 (3200)	N/A	277.00 (7036)	149.00 (3785)	N/A	380.00 (9652)	284.00 (7214)
SW365	8' Single Post Swing - Accessible	138.00 (3505)	N/A	289.00 (7341)	149.00 (3785)	N/A	380.00 (9652)	380.00 (9652)
SW370	8' Arch Swing - Heavy Duty	132.00 (3353)	N/A	277.00 (7036)	198.00 (5029)	N/A	380.00 (9652)	284.00 (7214)
SW375	8' Arch Swing - Accessible Heavy Duty	145.00 (3683)	N/A	295.00 (7493)	198.00 (5029)	N/A	380.00 (9652)	380.00 (9652)
SW380	10' Arch Swing - Heavy Duty	132.00 (3353)	N/A	277.00 (7036)	198.00 (5029)	N/A	476.00 (12090)	380.00 (9652)
SW385	10' Arch Swing - Accessible Heavy Duty	145.00 (3683)	N/A	295.00 (7493)	198.00 (5029)	N/A	476.00 (12090)	476.00 (12090)



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3- BAY SWING (6 SWINGS TOTAL)
5 BELT SWINGS & 1 HC SEAT

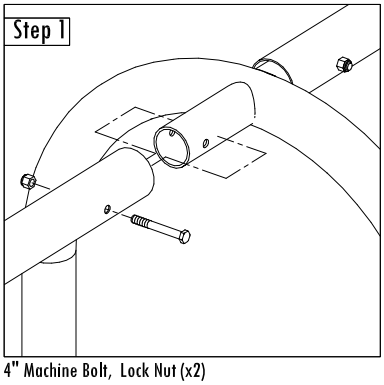
HC SWING SEAT- TYPICAL

Arch Swing 8' Extend-A-Bay

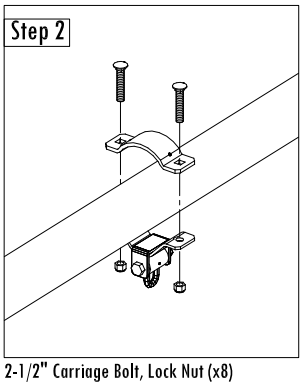
SA-SW341-00

Parts List

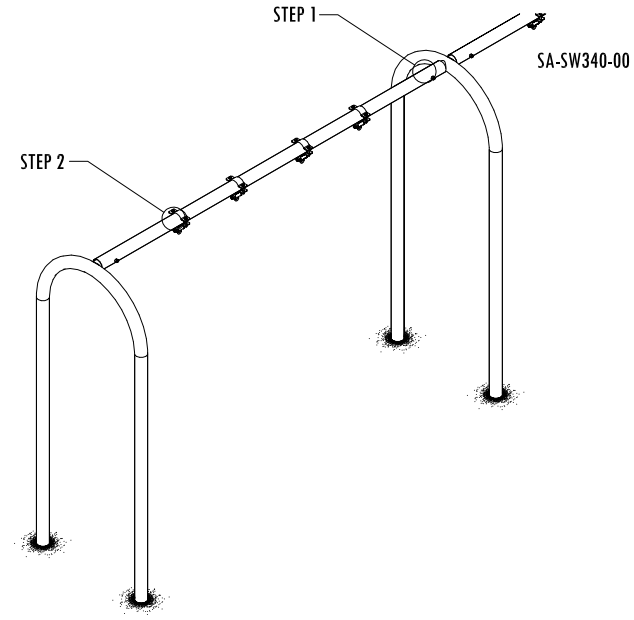
1	1M-SA-SWP00900-00	Swing Topbar - Heavy Duty
2	1M-SA-SWP01300-01	8' Arch Swing Centre Frame
4	1M-SA-SWP01500-00	Swing Bearing
8	1C-0710	Carriage Bolt 7/16" x 2-1/2" Gr. 5
2	1M-0816	Machine Bolt 1/2" x 4"
8	4L-0700	Lock Nut w/ Nylon Locking 7/16"
2	4L-0800	Lock Nut w/ Nylon Locking 1/2"

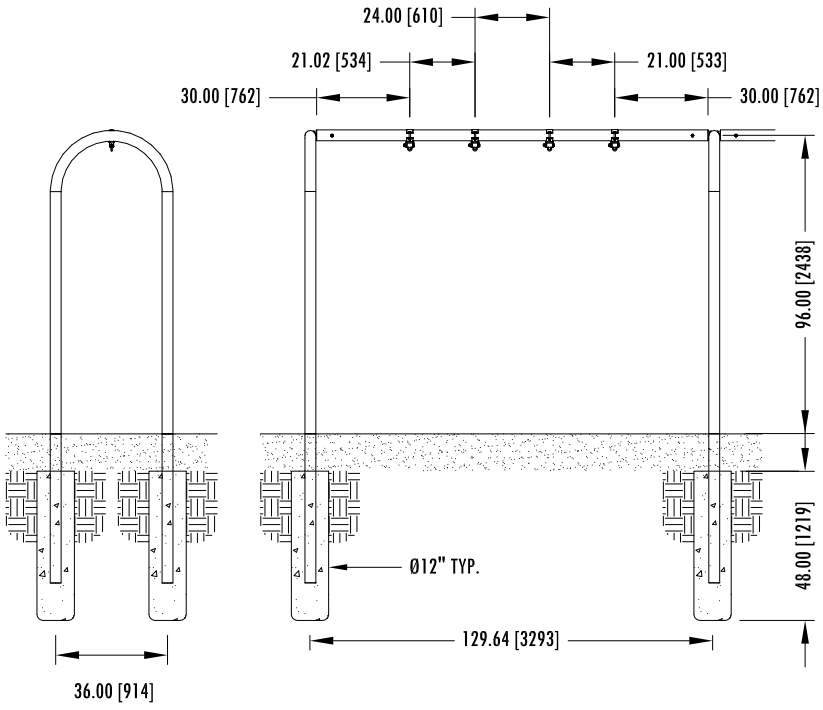


4" Machine Bolt, Lock Nut (x2)



2-1/2" Carriage Bolt, Lock Nut (x8)





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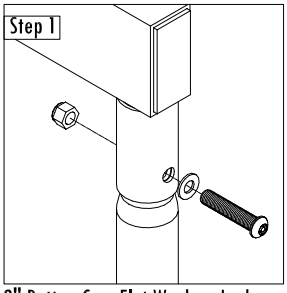
Henderson
recreation equipment limited

Space Station
SA-TE020-03

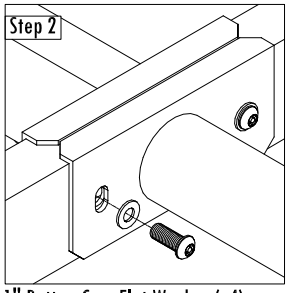
Parts List

4	1M-P1-OHE05700-00	90° Triangle Overhead
2	1M-SA-TEP05900-02	Rung Ladder
2	1M-SA-TEP06100-02	Tower Ladder
2	1M-SA-TEP06300-02	Short Connector
1	1M-SA-TEP06400-01	Support Leg
1	1M-SA-TEP06900-01	Long Connector

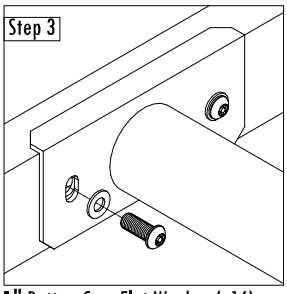
24	2T-0604	Button Cap Torx w/ Pin 3/8" x 1"
4	2T-0608	Button Cap Torx w/ Pin 3/8" x 2"
4	4L-0600	Lock Nut w/ Nylon Locking 3/8"
28	5F-0500	Flat Washer 5/16" S/S w/ 3/8" Hole



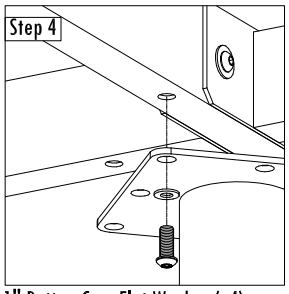
2" Button Cap, Flat Washer, Lock Nut (x4)



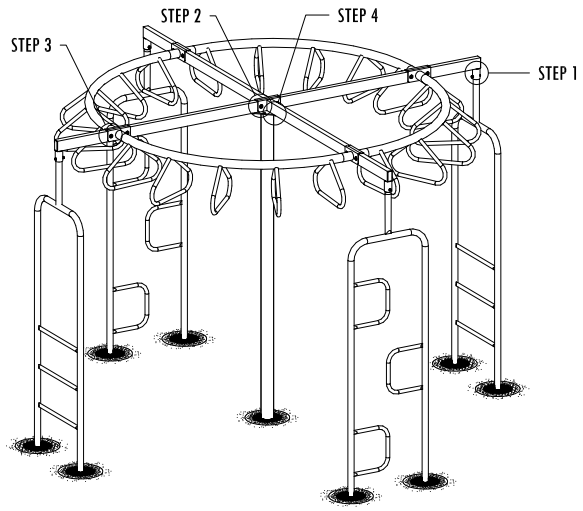
1" Button Cap, Flat Washer (x4)

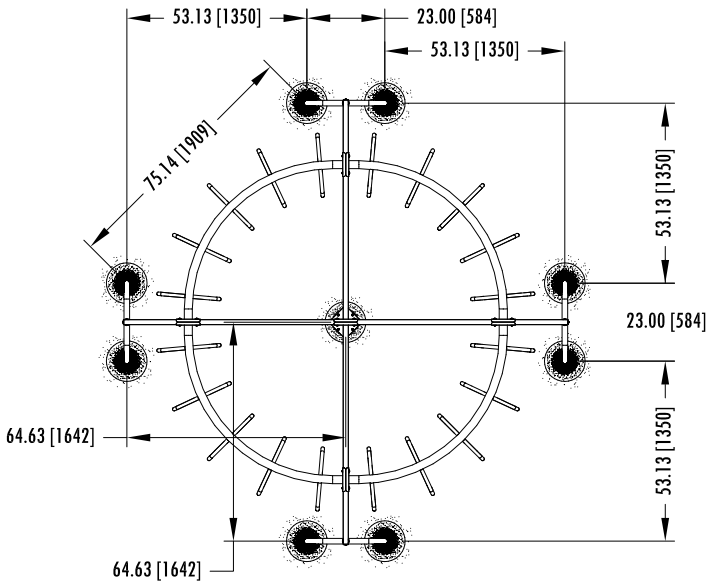


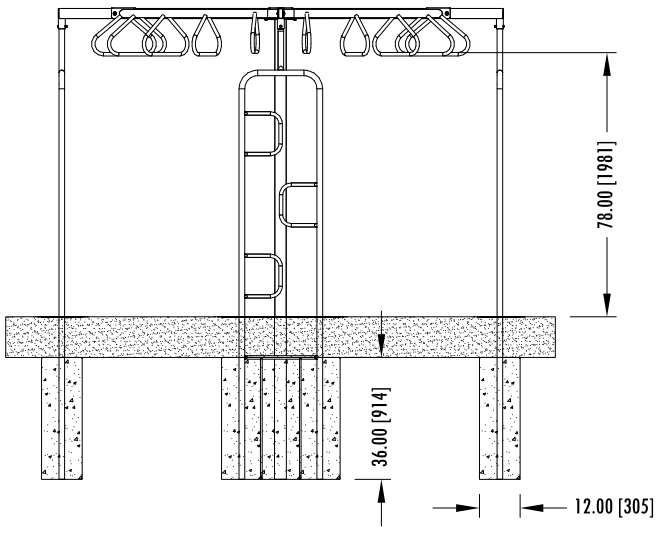
1" Button Cap, Flat Washer (x16)



1" Button Cap, Flat Washer (x4)







Last Updated - 01/29/2014

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Spaceball M – Product Specification

Univers – Classics among rope playground equipment

Net structures offer hours of fun and adventure on several levels – climbing and swinging, up and down, horizontally and vertically – space on earth.

The original spatial nets: Born over 40 years ago as a play concept, continuously further developed in form and detail, still popular even after several generations.

Spaceball M – at a glance.

Product Family:	**Univers**	Number of Foundations:	**4 pc.**
Item Number:	**90.100.041**	Concrete Volume C20/C25:	**1.5 m³ (53.0 ft³)**
Children's Age:	**5+**	Number of skilled installers required:	**2**
Fall Height (DIN EN 1176):	**1.49 m (4'-11")**	Installation Time without foundation:	**6 hours**
Length x Width x Height:	**4.4 m x 4.4 m x 3.7 m (14'-5" x 14'-5" x 12'-0")**	Dimensions of largest part:	**ø 0.1 m x 1.8 m (0'-4" x 5'-11")**
Protective Surfacing Area (DIN EN 1176):	**7.4 m x 7.4 m**	Weight of heaviest part:	**130 kg (286.6 lbs)**
Protective Surfacing Area (ASTM 1487):	**8.1 m x 8.1 m (26'-5" x 26'-5")**	Shipping Volume:	**2.7 m³ (95.3 ft³)**
		Spare part guarantee:	**Lifelong**
Minimum space required DIN EN 1176:	**40.8 m²**	Certificate according to DIN EN 1176:	**No.: Z2 16 01 10256 246 TÜV Product Service**
Minimum space required ASTM 1487:	**48.7 m² (524.2 sf)**		

Berliner

Berliner Seilfabrik
Play Equipment Corporation
96 Brookfield Oaks Drive, Suite 140
Greenville, SC 29607

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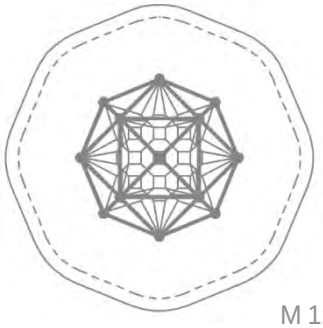
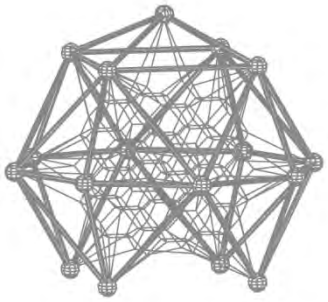
F + 1 864 627 1178

www.berliner-playequipment.com
info@berliner-seilfabrik.com

Spaceball M – Product Specification



M 1:200



Technical Data.

The following text can also be used for tenders.

Tube framework:
Frameworx-steel tubes, Ø 60.3 mm (2 3/8''); anti-corrosion treatment and color finish: sandblasting and solvent-free zinc-/ epoxy-/ polyester-process

Nodes:
Frameworx-aluminum ball connectors; Ø 250 mm (9-13/16''); anti-corrosion treatment and color finish: sandblasting and solvent-free zinc-/ epoxy-/ polyester-process; incorporating an ASTEM TT net tensioning system; securely closed with durable EPDM- caps

Ropes:
U-Rope®-round strand ropes with galvanized and covered wires: external strands with non-abrasive UV-resistant Polyester-yarn (no Polypropylene); rope-diameter Ø 16 mm (5/8")

Spacial netting:
Rope crossing points are localized with durable, forged aluminum-alloy cloverleaf rings and forged aluminum-alloy ballknots (no plastic connections); in situ-replaceable rope strands (no special tools required)

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Berliner Seilfabrik
Play Equipment Corporation
96 Brookfield Oaks Drive, Suite 140
Greenville, SC 29607

T + 1 864 627 1092
F + 1 864 627 1178

www.berliner-playequipment.com
info@berliner-seilfabrik.com

foundation template: SPACEBALL M

4 pcs. tube $2\frac{3}{8}$"x5'-$11\frac{7}{8}$"

4 pcs. found.tube $2\frac{3}{8}$"x2'-$8\frac{1}{2}$"

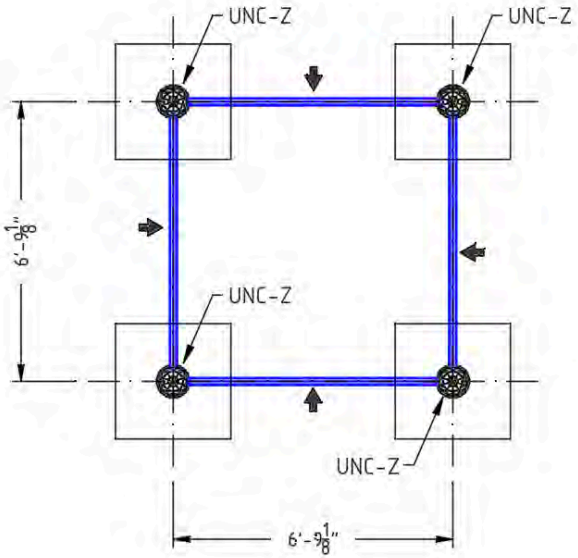
4 pcs. ball type UNC-Z

foundations: l/b/h

4 pcs. 2'-$7\frac{1}{2}$"x2'-$7\frac{1}{2}$"x1'-$11\frac{5}{8}$"

BERLINER SEILFABRIK			UNIVERS Compact foundation plan Spaceball M 90.100.041	
Lengeder Str. 4 13407 Berlin Tel. 030 / 41 47 24-0				
2002	date	name	drawing no.	scale
work on	14.03	Stoppek	SRN041.11	1/4"=1'
change	21.08	Inhüksen		

scale 1/4"=1'

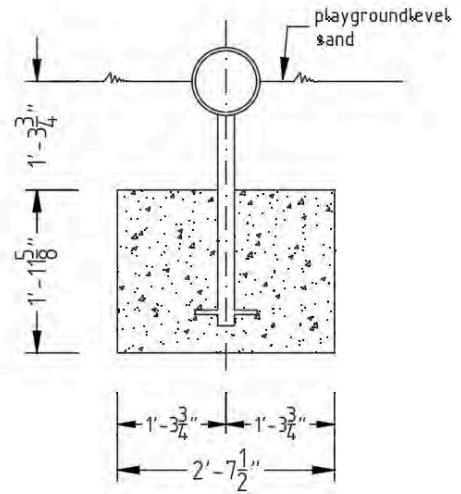


After curing of the foundations remove all tubes marked with an arrow (⬅) and use them in correct position of the framework.

Minimum quality for the concrete of 3500 pci.

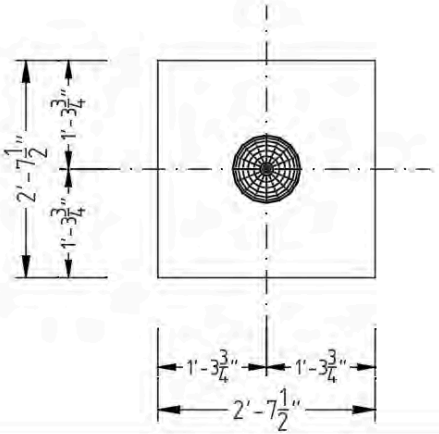
cutting

scale 1/2"=1'

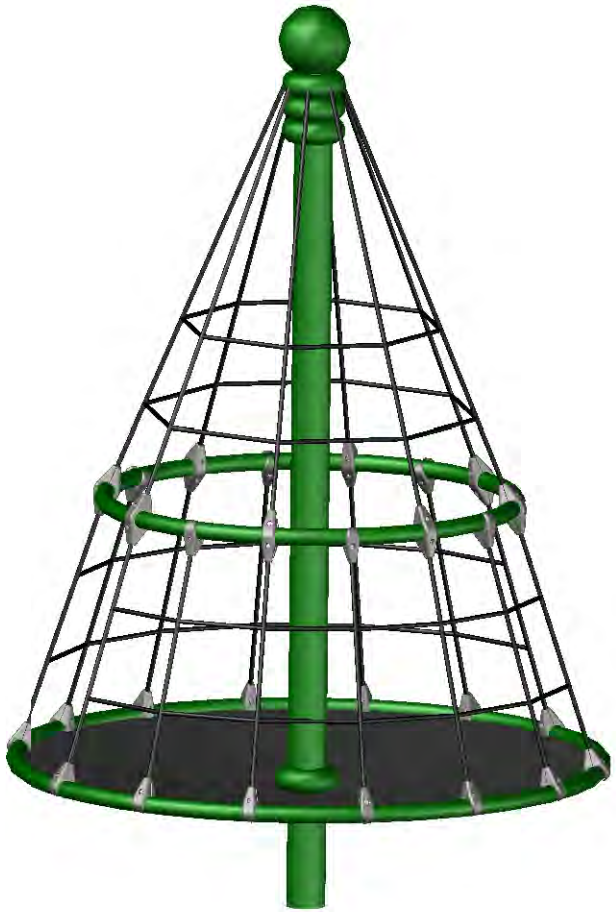


top view

scale 1/2"=1'



O'Tannebaum
KSK.097



Berliner Seilfabrik GmbH & Co.
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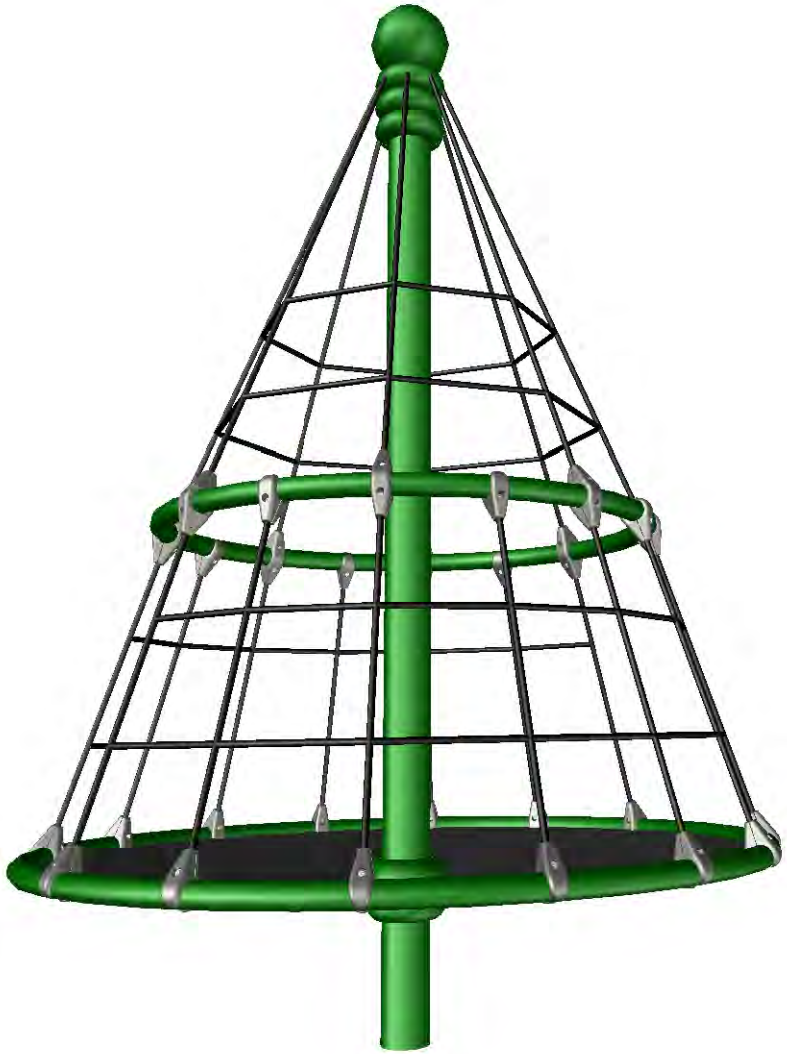
13407 Berlin

Tel. +49.(0)30.41 47 24-0
Fax +49.(0)30.41 47 24-33

info@berliner-seilfabrik.com
www.berliner-seilfabrik.com



O'Tannebaum

KSK.097.01

Dimensions (l x w x h)
('-")6-10 x 6-10 x 10-3

Free height of fall
('-") 6-7

Minimum space required
('-")18-10 x 18-10

Surface
sqft 277

Format
DIN A4 (21,0 x 29,7 cm)

Scale
-:-

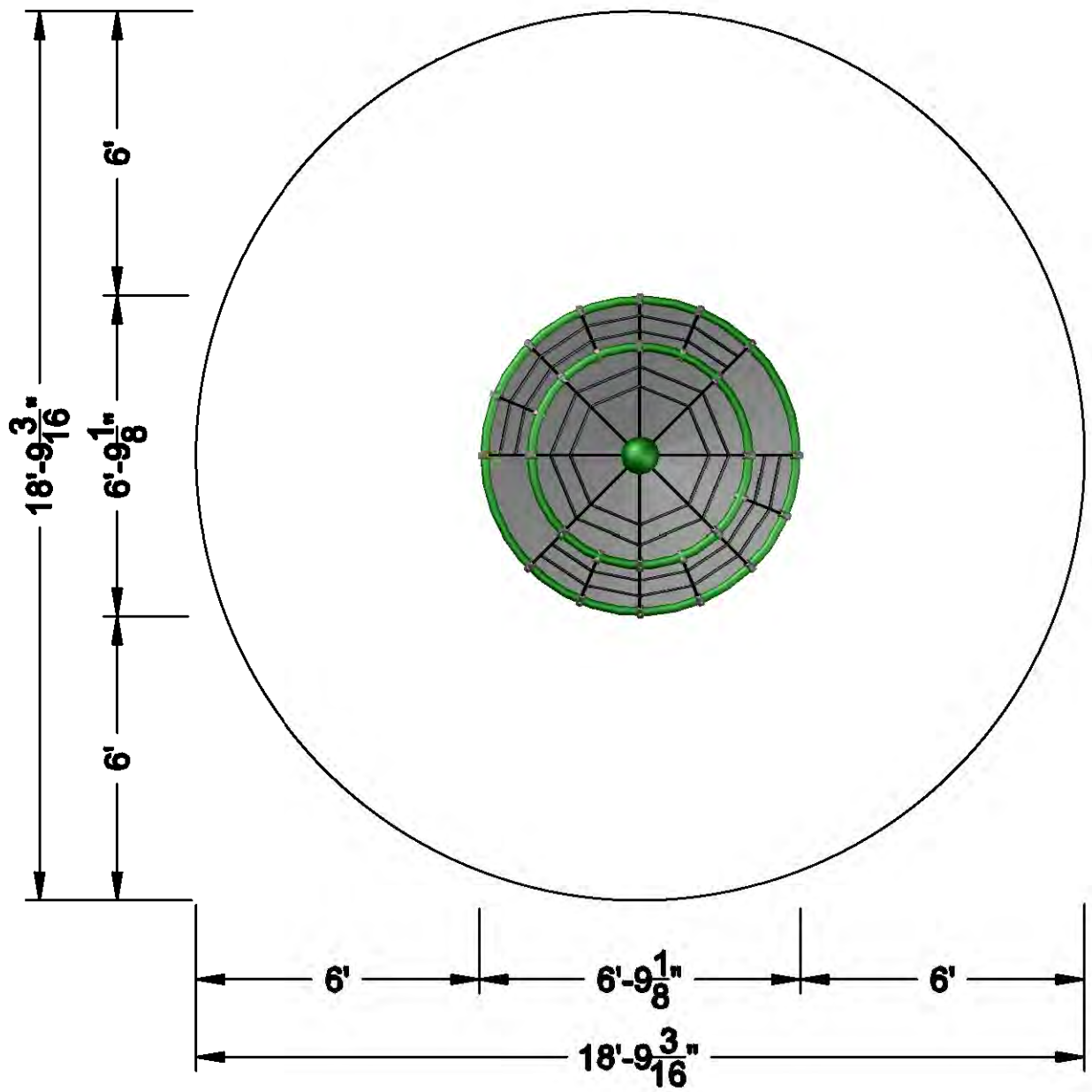
Date
27.05.2021

Name
KOTTE

Change (Name)
1.
2.
3.
4.

Please note: Current design is for conceptual purposes only and is subject to change.

Berliner



O'Tannebaum

KSK.097.02

Dimensions (l x w x h)
('-")6-10 x 6-10 x 10-3

Free height of fall
('-") 6-7

Minimum space required
('-")18-10 x 18-10

Surface
sqft 277

Format
DIN A4 (21,0 x 29,7 cm)

Scale
-:-

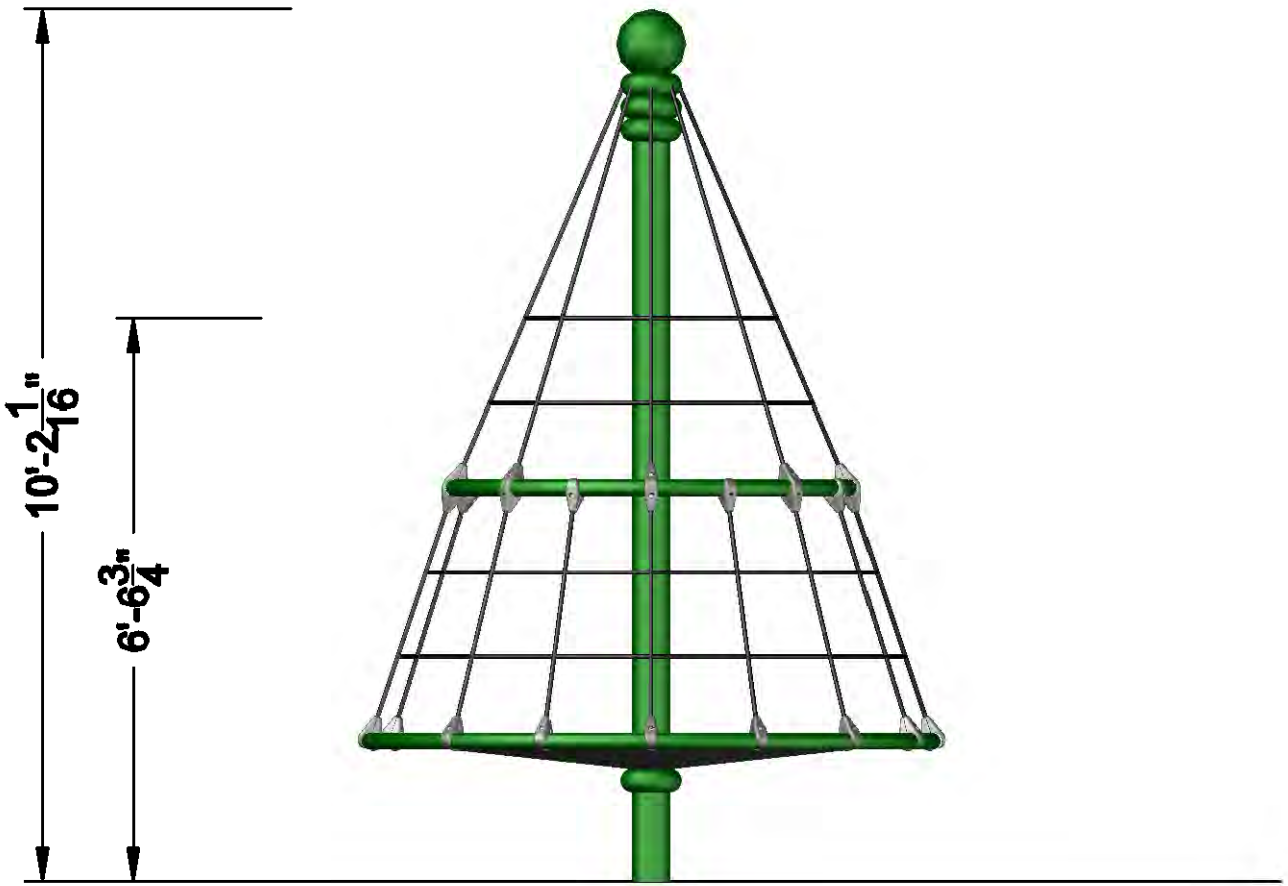
Date
27.05.2021

Name
KOTTE

Change (Name)
1.
2.
3.
4.

Please note: Current design is for conceptual purposes only and is subject to change.

Berliner



O'Tannebaum

KSK.097.03

Dimensions (l x w x h)
('-")6-10 x 6-10 x 10-3

Free height of fall
('-") 6-7

Minimum space required
('-")18-10 x 18-10

Surface
sqft 277

Format
DIN A4 (21,0 x 29,7 cm)

Scale
-:-

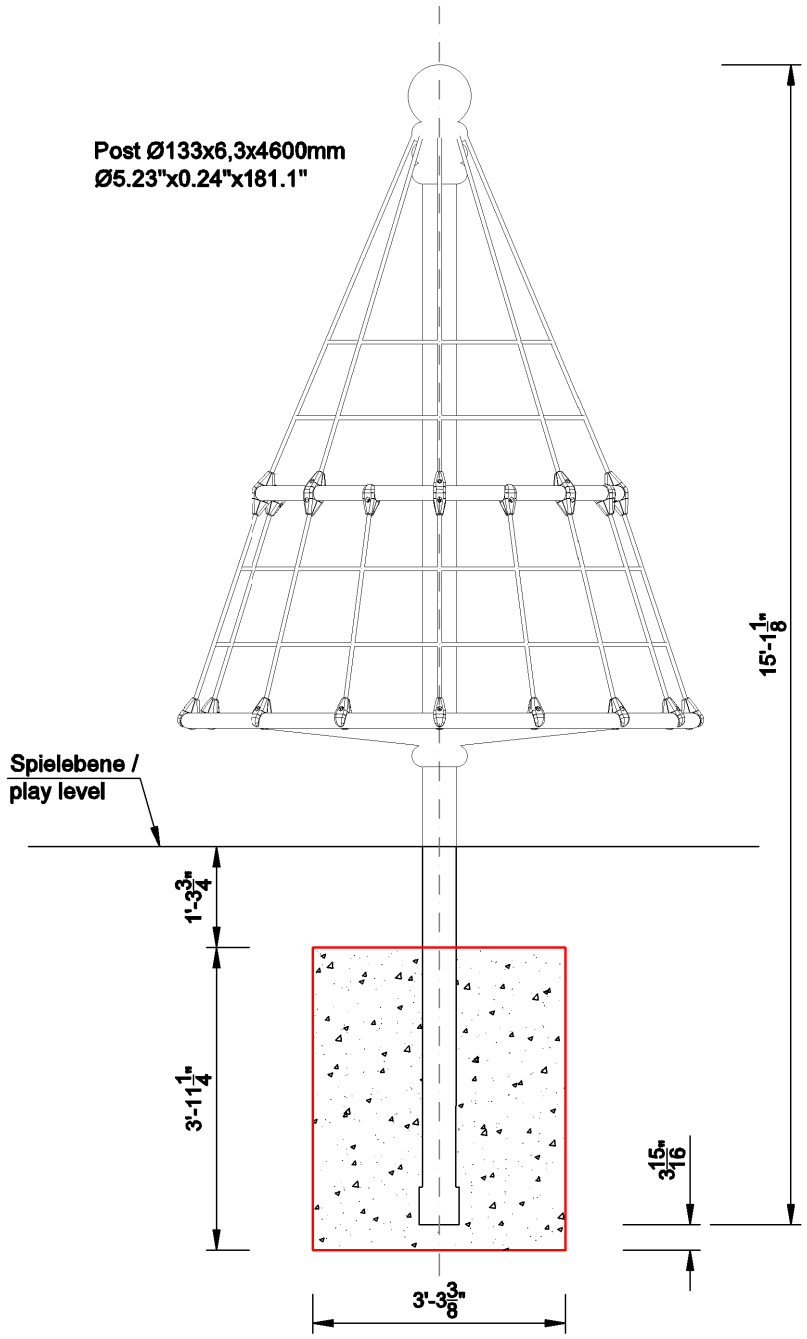
Date
27.05.2021

Name
KOTTE

Change (Name)
1.
2.
3.
4.

Please note: Current design is for conceptual purposes only and is subject to change.

Berliner



Foundation size:
1000x1000x1200mm/ 39.37x39.37x47.24"

O'Tannebaum

KSK.097.11

Dimensions (l x w x h)
('-")6-10 x 6-10 x 10-3

Free height of fall
('-") 6-7

Minimum space required
('-")18-10 x 18-10

Surface
sqft 277

Format
DIN A4 (21,0 x 29,7 cm)

Scale
-:-

Date
07.22.2021

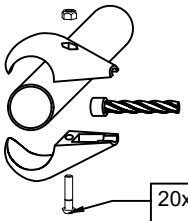
Name
Fabrice

Change (Name)
1.
2.
3.
4.

Please note: Current design is for conceptual purposes only and is subject to change.

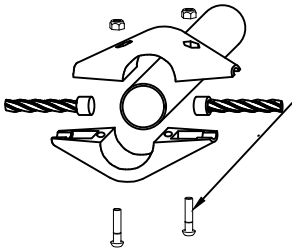
Berliner

Ring-tube-01 Ø60,3 x 2,9 x Ø1400mm
Ø2.37"x0.11"x55.11"
Ring-tube-02 Ø60,3 x 2,9 x Ø2000mm
Ø2.37"x0.11"x78.74"



20x Rope connection with tube:

1x safety screw M10x45 ISO7380 PIN TX45
1x hexagon nut M10 DIN985

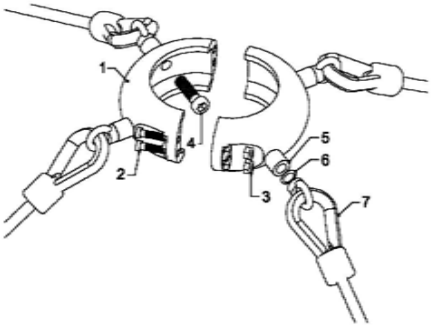


8x Rope connection with tube:

1x safety screw M10x45 ISO7380 PIN TX45
1x hexagon nut M10 DIN985

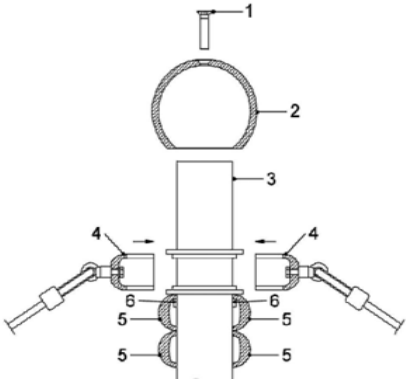
T-clamp Alb17 connection:

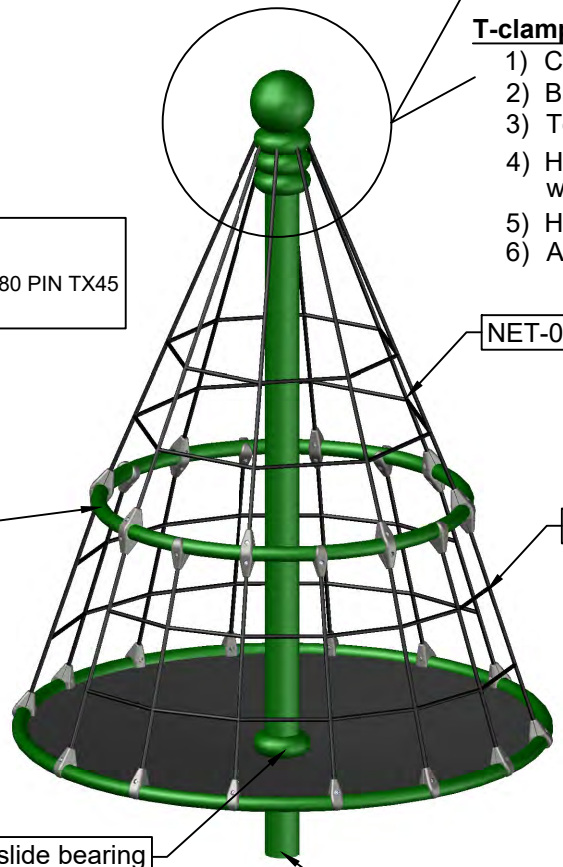
1) Half of Terranos clamp
2) Screw M10 x 45mm
3) Self-locking nut M10
4) Hexagon socket head screw M16 x 60mm DIN6912
5) Distance washer Ø 27 x 26mm
6) Safety washer M16
7) Rope end with ring nut



T-clamp Alb17 connection:

1) Counter sunk bolt M20 x 90mm
2) Ball type Albero
3) Terranos post
4) Half of Terranos clamp Øi = 155mm (6 1/8") with rope end and ring nut
5) Half of Terranos clamp Øi = 133mm (5 1/4")
6) Antiskid bolt M8 x 16mm





NET-02 KSK.097.06.002

NET-01 KSK.097.06.001

Ring-tube-01 Ø60,3 x 2,9 x Ø1400mm
Ø2.37"x0.11"x55.11"

2x t-clamp middle with slide bearing

Post Ø133x6,3x4600mm
Ø5.23"x0.24"x181.1"

Berliner

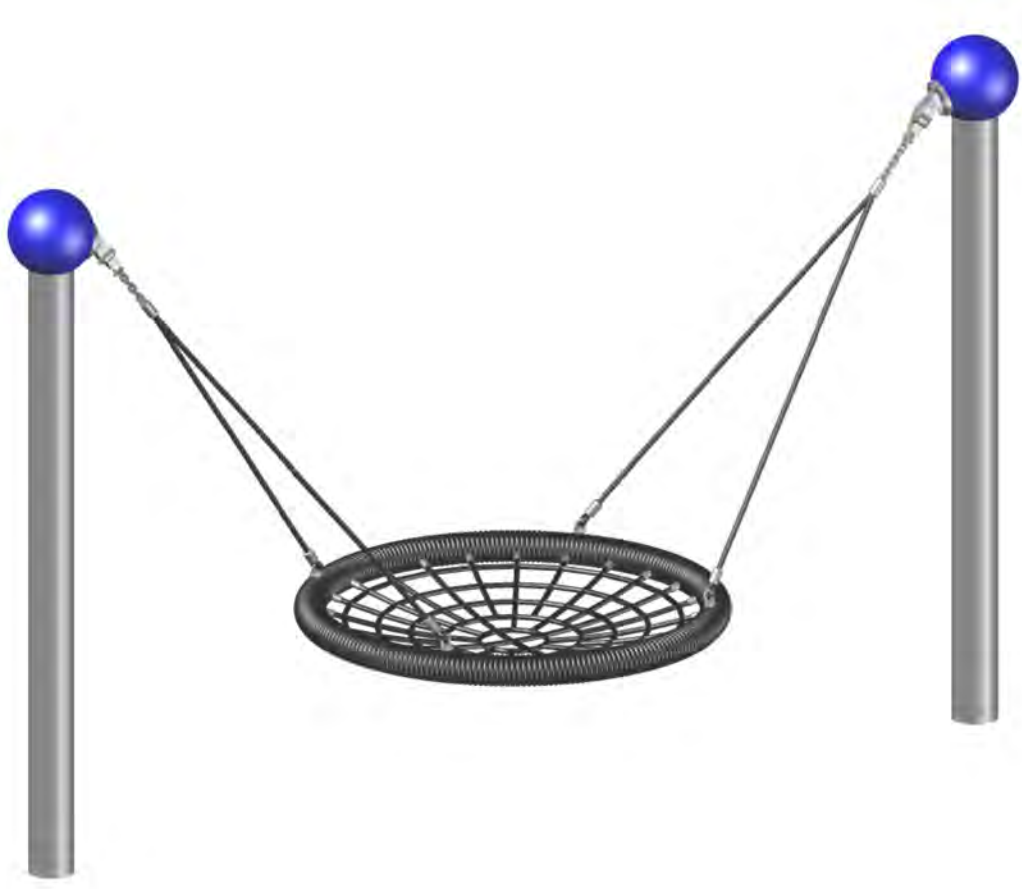
O'Tannebaum

KSK.097.10

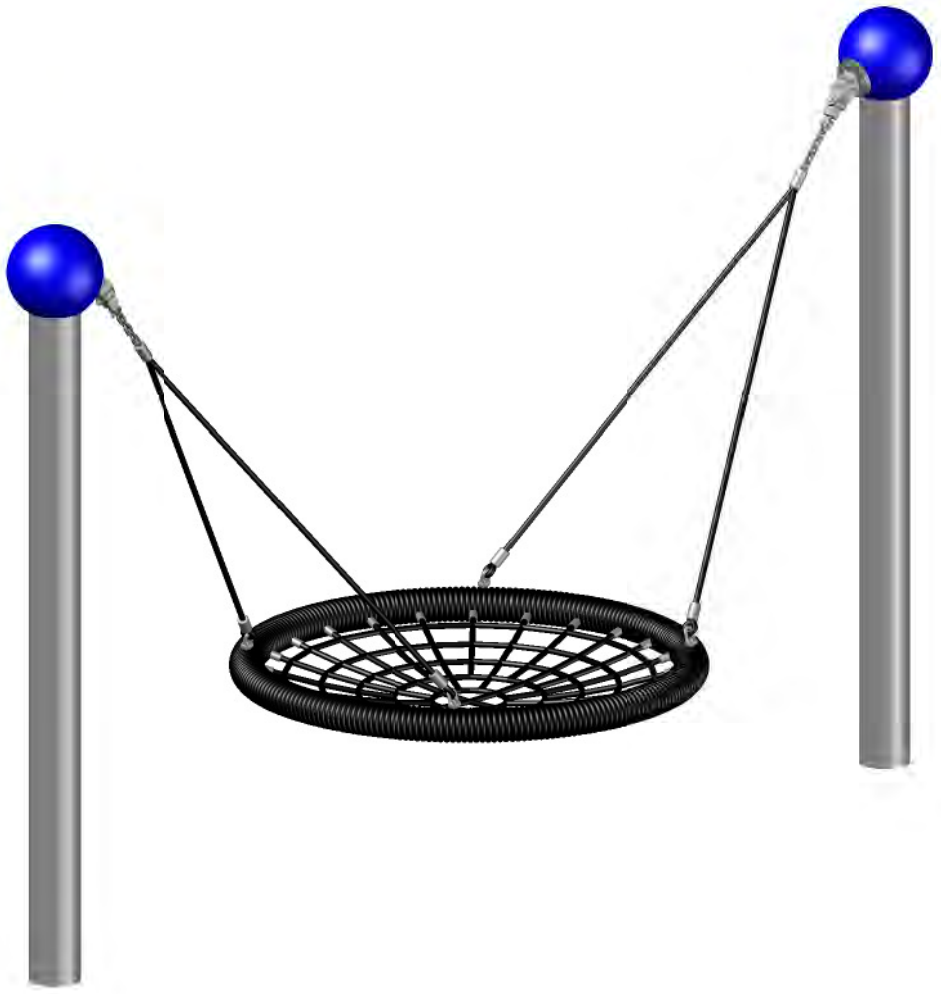
Dimensions (l x w x h)	('-")6-10 x 6-10 x 10-3
Free height of fall	('-") 6-7
Minimum space required	('-")18-10 x 18-10
Surface	sqft 277
Format	DIN A4 (21,0 x 29,7 cm)
Scale	-:-
Date	07.22.2021
Name	Fabrice
Change (Name)	1. 3. 2. 4.

HODGE PODGE®

SET OF DRAWINGS



Berliner Seilfabrik
GmbH & Co.
Lengeder Straße 4
D - 13407 Berlin
Fon: 030 - 414724 - 0
Fax: 030 - 414724 - 33



HODGE PODGE
CLOUD 9

№ HOD.025.00

(m) 3,25 x 1,25 x 2,04
('-") 10'-8" x 3'-11" x 6'-9"

EN 1176 (m²) 22,56
ASTM/CSA (m²) 35,19
Australian Standard (m²) 22,56

(m) 1,76
('-") 6'-2"

EN 1176 (m) 20,38
ASTM/CSA (m) 25,35
Australian Standard (m) 20,38

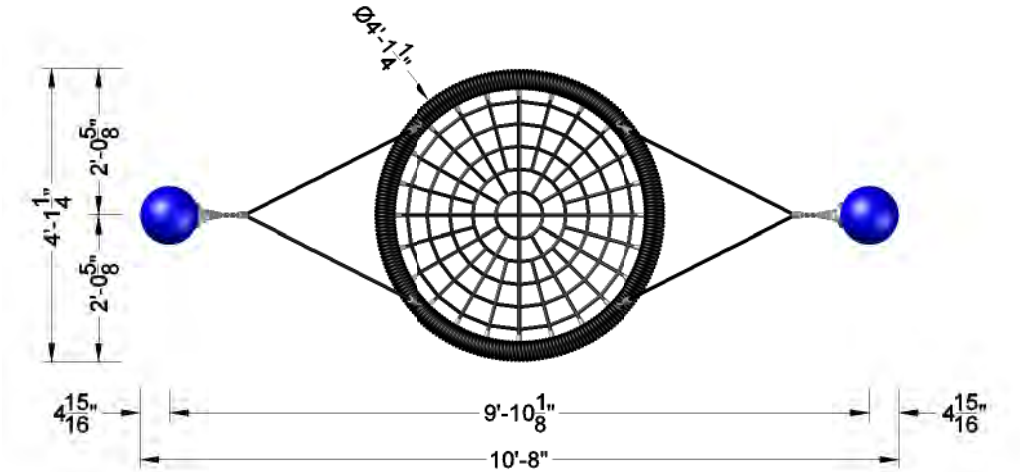
Anno 10.08.2012

02.10.2013
26.03.2014
--.--.----

Kotte

ANSI A
8.5" x 11"

BerlinerSeilfabrik



HODGE PODGE
CLOUD 9

№ HOD.025.01

(m) 3,25 x 1,25 x 2,04
('-") 10'-8" x 3'-11" x 6'-9"

EN 1176 (m²) 22,56
ASTM/CSA (m²) 35,19
Australian Standard (m²) 22,56

(m) 1,76
('-") 6'-2"

EN 1176 (m) 20,38
ASTM/CSA (m) 25,35
Australian Standard (m) 20,38

Anno 10.08.2012

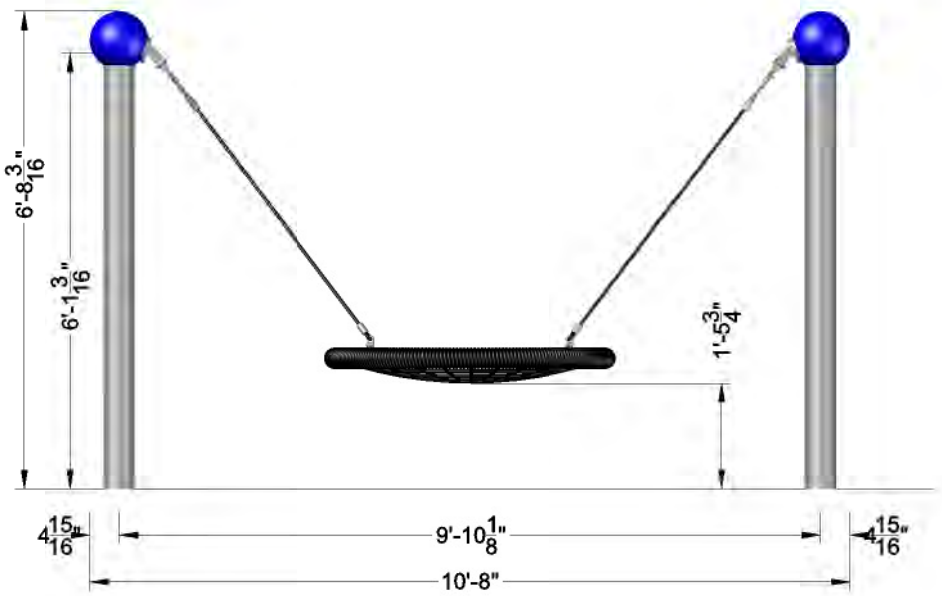
02.10.2013
26.03.2014
--.--.----

Kotte

ANSI A
8.5" x 11"

3/8"=1'-0"

BerlinerSeilfabrik



HODGE PODGE
CLOUD 9

№ HOD.025.02

(m) 3,25 x 1,25 x 2,04
('-") 10'-8" x 3'-11" x 6'-9"

EN 1176 (m²) 22,56
ASTM/CSA (m²) 35,19
Australian Standard (m²) 22,56

(m) 1,76
('-") 6'-2"

EN 1176 (m) 20,38
ASTM/CSA (m) 25,35
Australian Standard (m) 20,38

Anno 10.08.2012

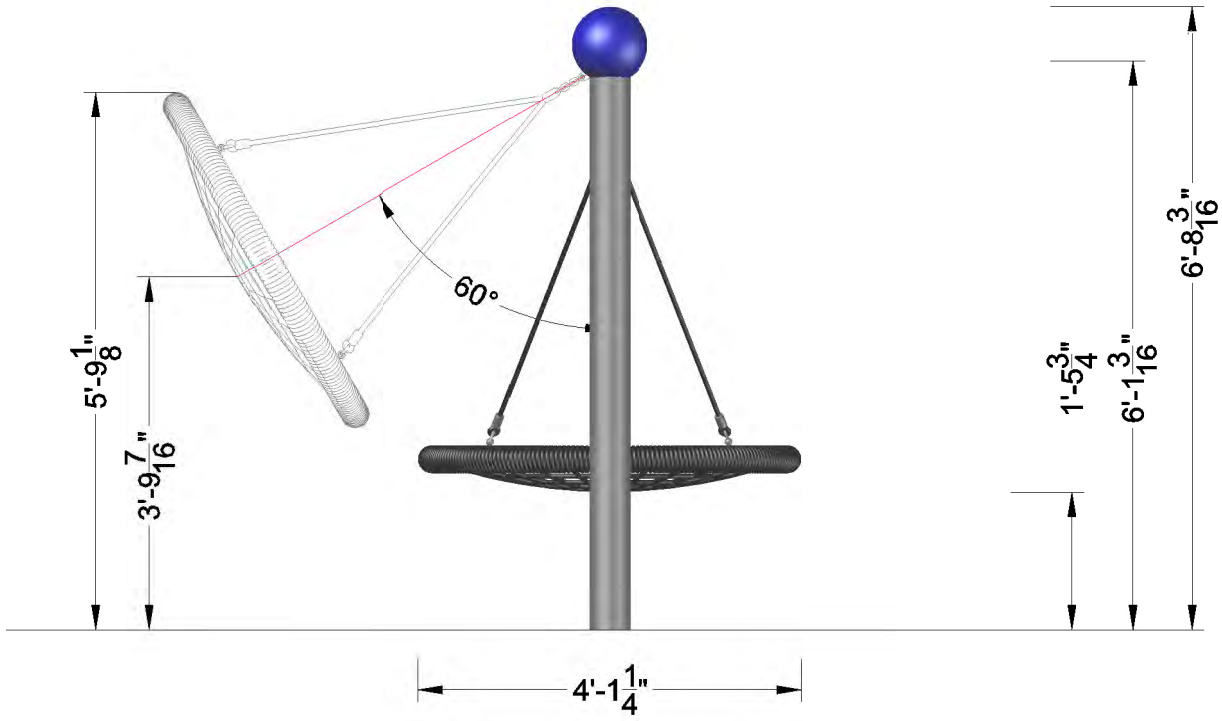
02.10.2013
26.03.2014
--.--.----

Kotte

ANSI A
8.5" x 11"

3/8"=1'-0"

BerlinerSeilfabrik



HODGE PODGE
CLOUD 9

№ HOD.025.03

(m) 3,25 x 1,25 x 2,04
('-") 10'-8" x 3'-11" x 6'-9"

EN 1176 (m²) 22,56
ASTM/CSA (m²) 35,19
Australian Standard (m²) 22,56

(m) 1,76
('-") 6'-2"

EN 1176 (m) 20,38
ASTM/CSA (m) 25,35
Australian Standard (m) 20,38

Anno 10.08.2012

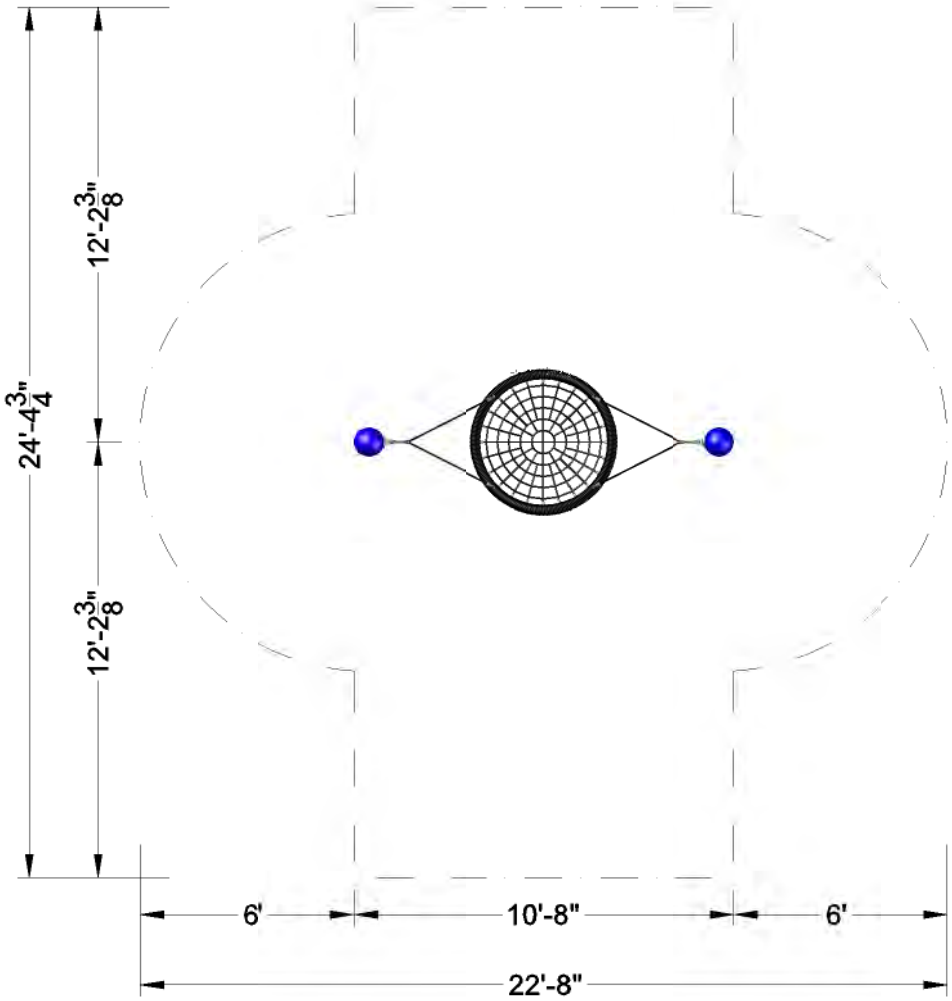
02.10.2013
26.03.2014
--.---.----

Kotte

ANSI A
8.5" x 11"

1/2"=1'-0"

BerlinerSeilfabrik



ASTM/CSA

HODGE PODGE
CLOUD 9

№ HOD.025.09

(m) 3,25 x 1,25 x 2,04
('-") 10'-8" x 3'-11" x 6'-9"

EN 1176 (m²) 22,56
ASTM/CSA (m²) 35,19
Australian Standard (m²) 22,56

(m) 1,76
('-") 6'-2"

EN 1176 (m) 20,38
ASTM/CSA (m) 25,35
Australian Standard (m) 20,38

Anno 10.08.2012

02.10.2013
26.03.2014
--.--.----

Kotte

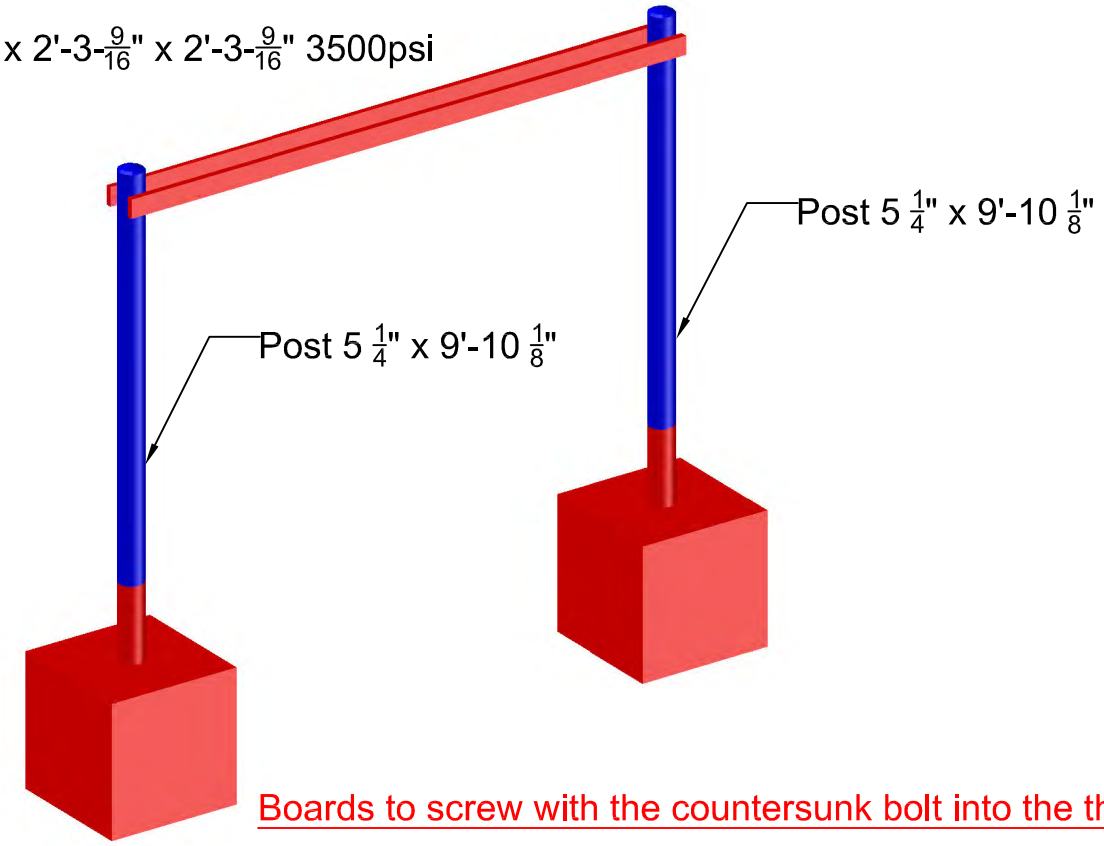
ANSI A
8.5" x 11"

1/8"=1'-0"

BerlinerSeilfabrik

Foundations

2x VIII 2'-3-$\frac{9}{16}$" x 2'-3-$\frac{9}{16}$" x 2'-3-$\frac{9}{16}$" 3500psi



Boards to screw with the countersunk bolt into the threads on both sides

HODGE PODGE
CLOUD 9

№ HOD.025.11
foundation plan

(m) 3,25 x 1,20 x 2,00
('-") 10'-8" x 3'-11" x 6'-11"

EN 1176 (m²) 22,52
ASTM/CSA (m²) 35,96

(m) 2,00
('-") 6'-7"

EN 1176 (m) 19,24
ASTM/CSA (m) 26,12

Anno 03.08.2010

--.--.----
--.--.----
--.--.----

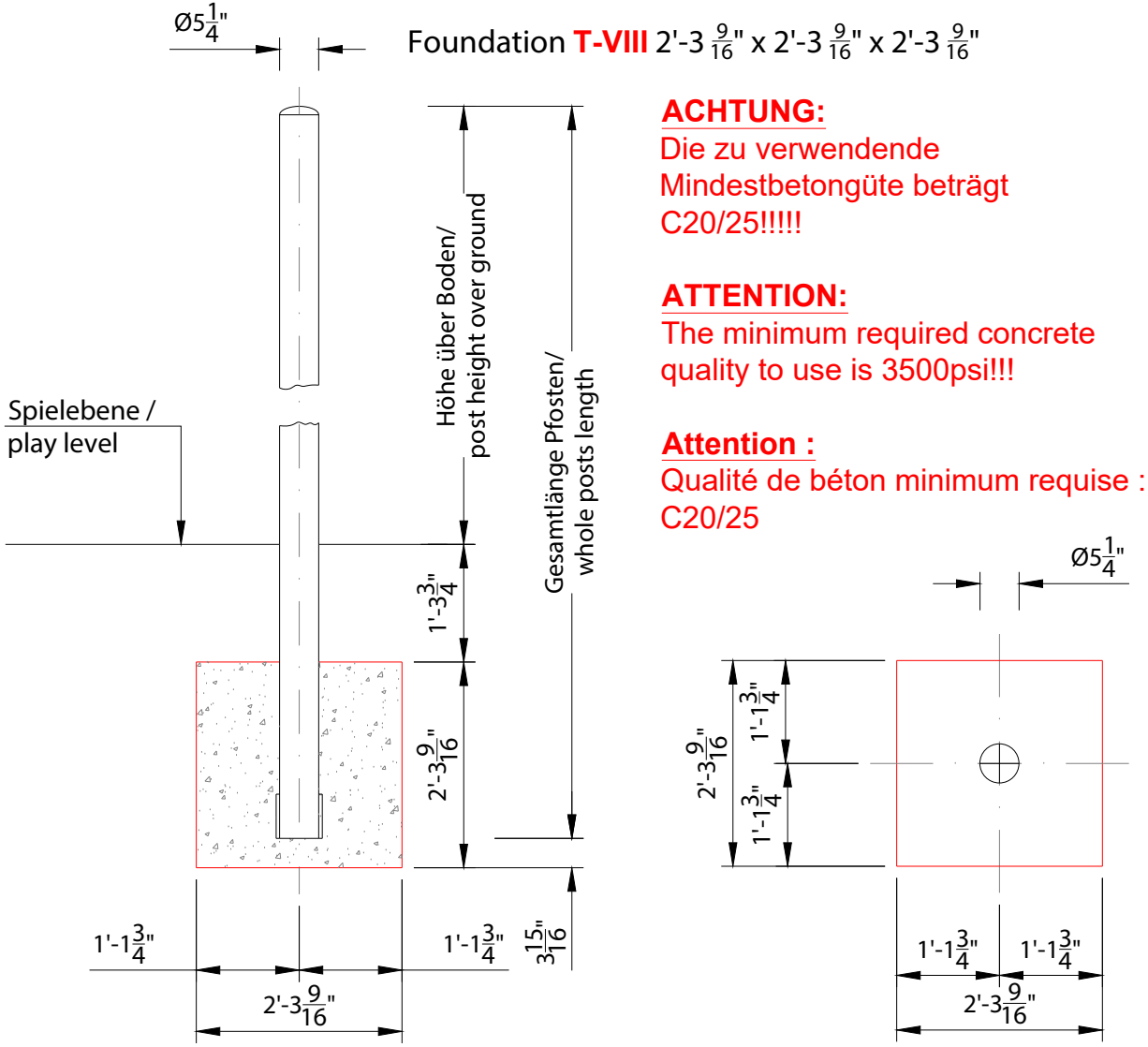
M. Ernst

ANSI A
8.5" x 11"

3/8"=1'

Please note: Current design is for conceptual purposes only and is subject to change.

Berliner



Foundation **T-VIII** 2'-3 9/16" x 2'-3 9/16" x 2'-3 9/16"

ACHTUNG:
Die zu verwendende Mindestbetongüte beträgt C20/25!!!!!

ATTENTION:
The minimum required concrete quality to use is 3500psi!!!

Attention :
Qualité de béton minimum requise : C20/25

HODGE PODGE
CLOUD 9

HOD.025.11
Fundamentplan

(m) 3,25 x 1,20 x 2,00
('-") 10'-8" x 3'-11" x 6'-11"

EN 1176 (m²) 22,52
ASTM/CSA (m²) 35,96

(m) 2,00
('-") 6'-7"

EN 1176 (m) 19,24
ASTM/CSA (m) 26,12

03.08.2010

14.03.2019
--.--.----
--.--.----

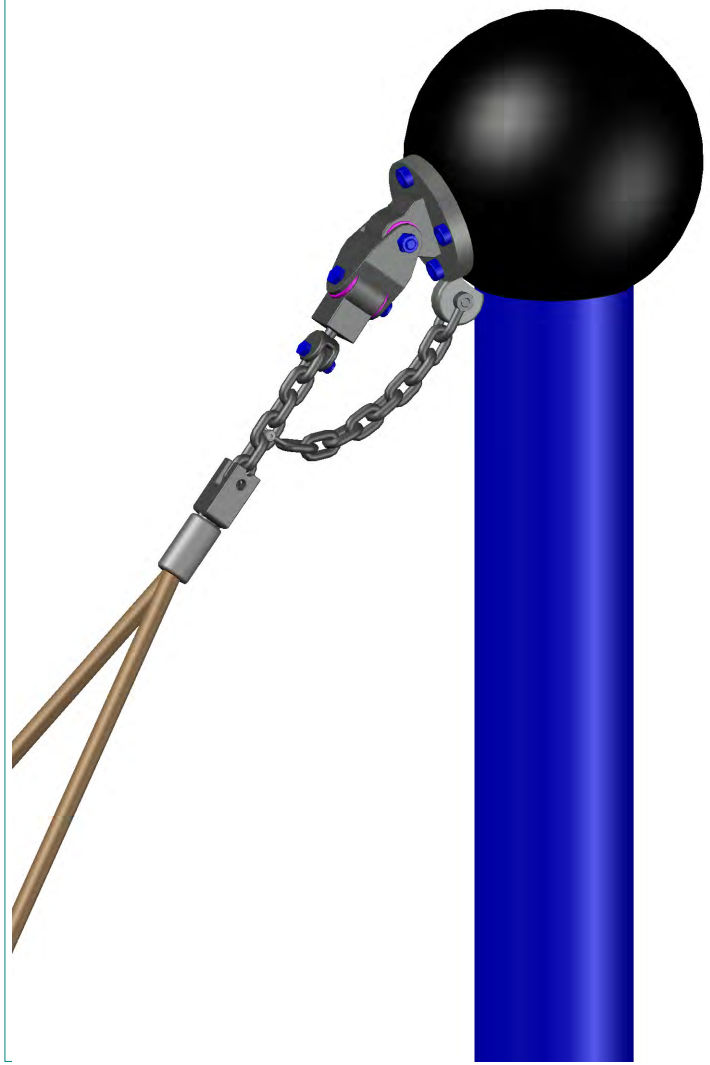
M. Ernst
C. Bader
Fabrice

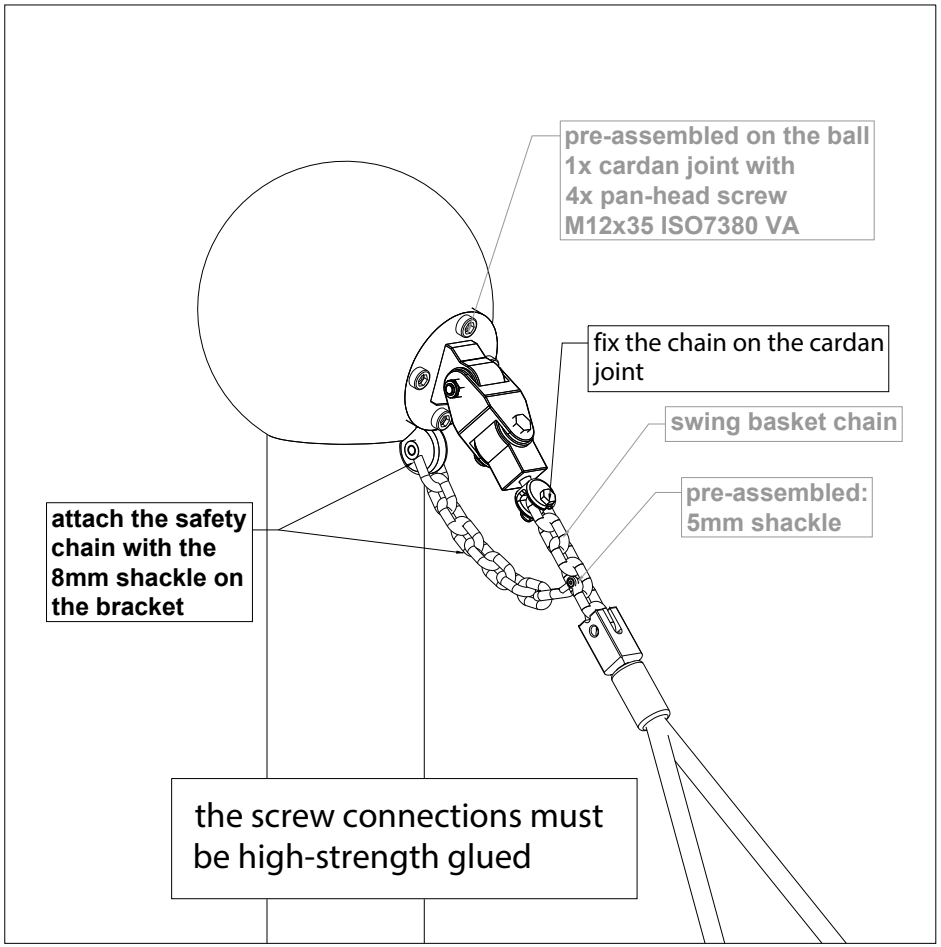
ANSI A
8.5" x 11"

1/2"=1'

Please note: Current design is for conceptual purposes only and is subject to change.

Berliner





HODGE PODGE
CLOUD 9

№ HOD.025.10
Frameworx

(m) 3,25 x 1,20 x 2,00
('-") 10'-8" x 3'-11" x 6'-11"

EN 1176 (m^2) 22,52
ASTM/CSA (m^2) 35,96

(m) 2,00
('-") 6'-7"

EN 1176 (m) 19,24
ASTM/CSA (m) 26,12

Anno 03.08.2010

14.03.2019
--.--.----
--.--.----

M. Ernst
C. Bader
Fabrice

ANSI A
8.5" x 11"

Please note: Current design is for conceptual purposes only and is subject to change.

Berliner

GOALIATH®

MODEL NO.

B2251

GB54cs2.0

BASKETBALL SYSTEM

OWNER'S MANUAL

1. **Read this manual carefully before starting assembly.** Read each step completely before beginning each step.
2. **Some smaller parts may be shipped inside larger parts. Check inside all parts and cartons before assembling or ordering parts.**
3. **To make assembly of your basketball system easier, use the Hardware Identifier on page 4 to identify and sort all fasteners. Check all cartons for kits. All hardware may not be located in one kit.**
4. **Do not tighten hardware until instructed to do so.** If hardware is tightened too soon, mounting holes may not align and parts may not easily fit together. Leave locknuts slightly loose until you are instructed to tighten them.
5. An electric screwdriver is helpful in assembly. However, please **set at low torque and use caution** because you could overtighten the hardware and strip the screws.
6. **Save this instruction and your proof of purchase (receipt) in the event that the manufacturer has to be contacted for replacement parts.**

Please Do Not Return This Product To The Store!

Contact Escalade® Sports customer service department at:

Phone: 1-888-USA-GOAL Toll Free!
Fax: 1-866-873-3536 Toll Free!
E-mail: basketball@escaladesports.com
Mailing Address (correspondence only):
Escalade Sports
PO Box 889
Evansville, IN 47706

ITEMS NEEDED (NOT INCLUDED)

- 11 - 80 lb. bags of concrete
- 1 - Post hole digger (optional)
- 1 - Concrete form (see note after step 2)
- 1 - 15/16" Open end Wrench
- 1 - 15/16" Socket and Ratchet (optional)
- 1 - 9/16" Deep Well Socket & Ratchet
- 1 - 9/16" Open end Wrench
- 1 - 3/4" Socket & Ratchet
- 1 - 3/4" Open end Wrench
- 1 - Cordless drill & 9/64" drill bit
- 1 - 5/16" socket driver (for cordless drill)
- 1 - wheel barrow
- 1 - garden hose
- 1 - Phillips Screwdriver
- 1 - Level
- 1 - Tape Measure
- 1 - Rubber Mallet
- 1 - Set of Padded Saw Horses
- 1 - Safety glasses
- 1 - Ladder

Please visit our World Wide Web site at: www.escaladesports.com

ON-LINE TROUBLE SHOOTING **TECHNICAL ASSISTANCE**

ON-LINE PARTS REQUESTS **FREQUENTLY ASKED QUESTIONS**

ADDITIONAL ESCALADE® SPORTS PRODUCT INFORMATION

2L-7539-01

ESCALADE® SPORTS

LY11/17
PO# 623755

SAFETY INSTRUCTIONS

FAILURE TO FOLLOW THESE WARNINGS MAY RESULT IN SERIOUS INJURY AND/OR PROPERTY DAMAGE.
Owner must ensure that all players know and follow these rules for safe operation of the system.

WARNING

FAILURE TO FOLLOW THESE WARNINGS MAY RESULT IN SERIOUS INJURY AND/OR PROPERTY DAMAGE.

Owner must ensure that all players know and follow these rules for safe operation of the system.

- Do not dunk on this unit
- Do not hang from any part of the unit, including the backboard, rim, support braces, or net.
- Do not slide, climb, or play on pole.
- Keep organic material away from pole base. Grass, litter, etc. could cause corrosion and /or deterioration.
- Check pole system for signs of corrosion (rust, pitting, chipping). Remove rust and/or loose paint completely and repaint with exterior enamel paint. If rust has penetrated through the steel anywhere, replace pole immediately.
- Check system before each use for proper ballast, loose hardware, excessive wear, and signs of corrosion and repair before using.
- During play, use extreme caution to keep players face away from the backboard, rim, and net. Serious injury could occur if teeth/face come in contact with backboard, rim, or net.
- Wear a mouth guard when playing to avoid dental injuries.
- When adjusting height, keep hands and fingers away from moving parts.
- During play, do not wear jewelry (rings, watches, necklaces, etc.). Objects may entangle in net.
- Do not allow children to adjust system.
- Check system before each use for instability.
- Never play on damaged equipment.

4L-7609-00

SAFETY INSTRUCTIONS

FAILURE TO FOLLOW THESE SAFETY INSTRUCTIONS MAY RESULT IN SERIOUS INJURY, PROPERTY DAMAGE AND WILL VOID WARRANTY.

Owner must ensure that all players know and follow these rules for safe operation of the system.

To ensure safety, do not attempt to assemble this system without following the instructions carefully. Proper and complete assembly, use and supervision is essential for proper operation and to reduce the risk of accident or injury. A high probability of serious injury exists if this system is not installed, maintained, and operated properly.

- If using a ladder during assembly, use extreme caution.
- 4 people are recommended for this operation.
- Seat the pole sections properly (if applicable). Failure to do so could allow the pole sections to separate during play.
- Before digging contact utility company to locate underground power cables, gas and water lines. Ensure there are no overhead power lines within 20 ft. (7m) radius of pole location.
- Climate, corrosion or misuse could result in system failure.
- If technical assistance is required, contact the manufacturer.
- Minimum operational height is 6'6" (1.98m) to the bottom of backboard.

Most injuries are caused by misuse and/or not following instructions.
Use caution when using this system.

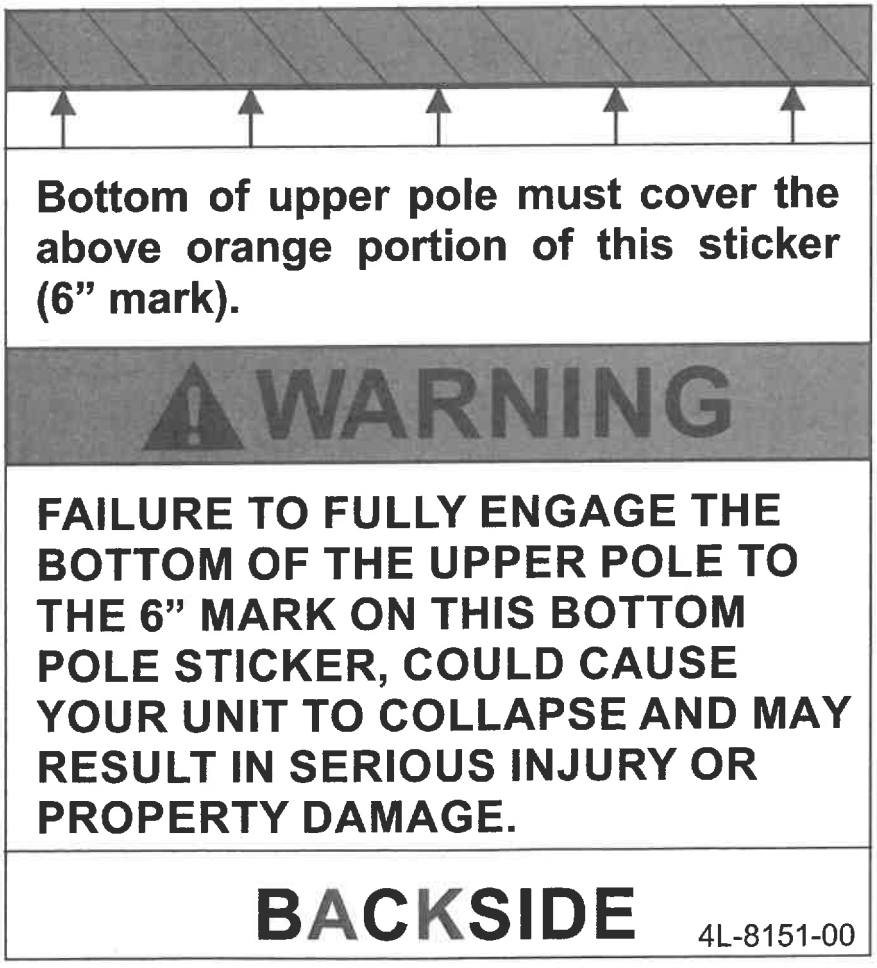
WARNING!

Failure to observe this warning may cause property damage and/or serious injury.

(Affixed to backboard)

This product is NOT designed to support a player hanging from any component of this basketball system.
Rim height adjustments should be made under parental supervision.
Wear a mouth guard when playing to avoid dental injuries.
During play, do not wear jewelry (rings, watches, necklaces, etc).
Objects may entangle in net.

(Affixed to Top Post)



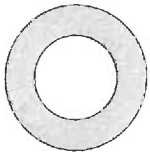
(Affixed to Bottom Post)

BASKETBALL SYSTEM'S HARDWARE IDENTIFIER

Note: Check all cartons for hardware. All hardware is not packed in one kit.

Pivot Tube
(1 Piece)

8 X 1/2"
Thread Forming
Screw
(4 Pieces)



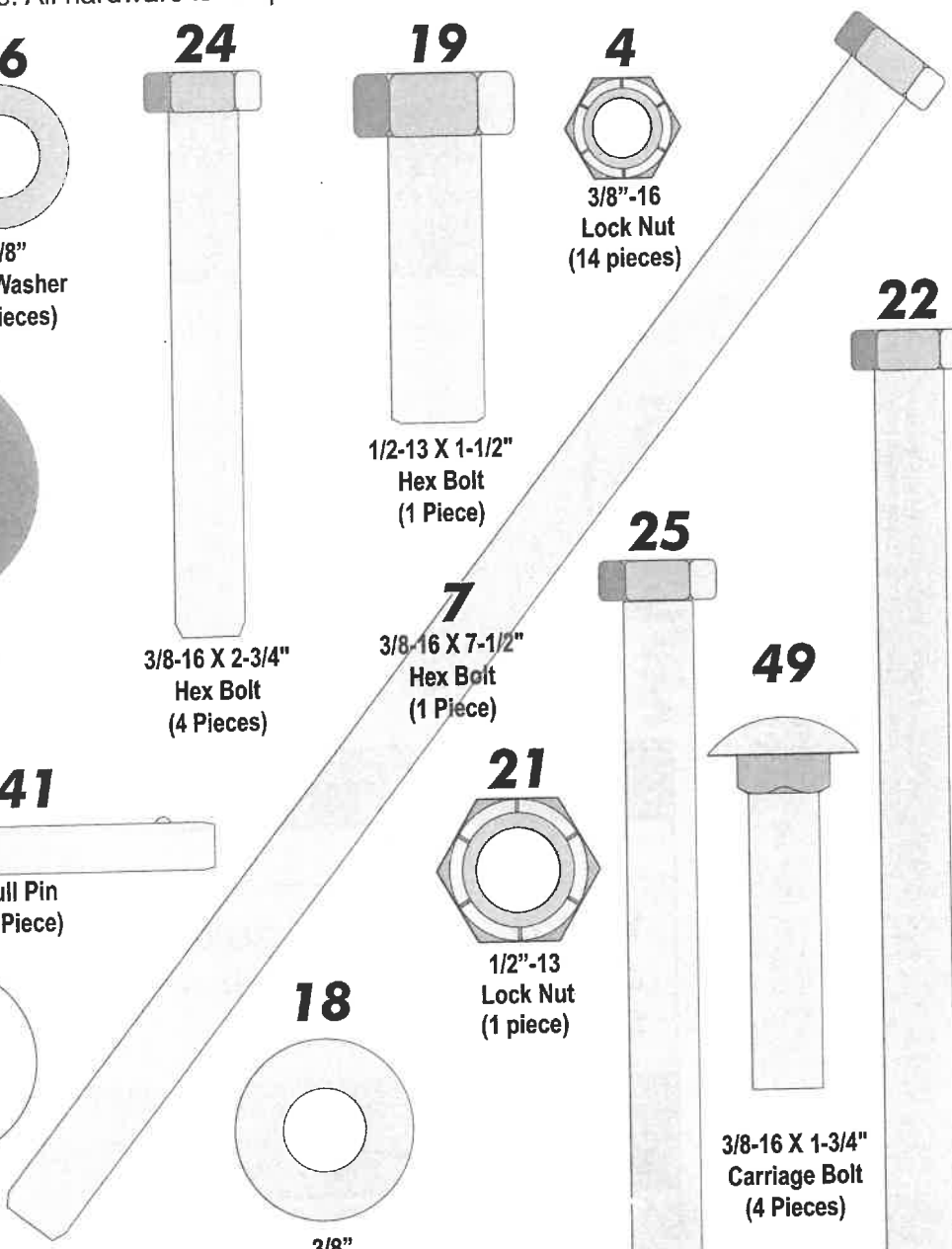
3/8"
Flat Washer
(4 Pieces)

1-1/4" Dia.
Plastic Washer
(8 Pieces)

3/8-16 X 2-3/4"
Hex Bolt
(4 Pieces)

1/2-13 X 1-1/2"
Hex Bolt
(1 Piece)

3/8"-16
Lock Nut
(14 pieces)



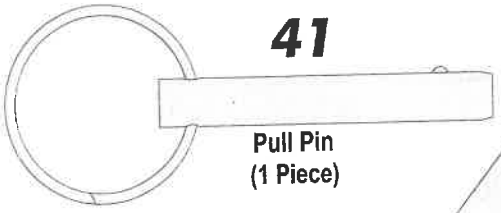
3/8-16 X 7-1/2"
Hex Bolt
(1 Piece)

3/8-16 X 7"
Hex Bolt
(3 Pieces)

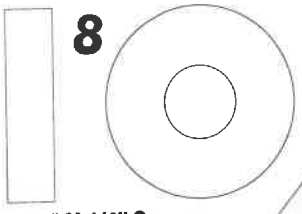
3/8-16 X 5"
Hex Bolt
(2 Pieces)

3/8-16 X 1-3/4"
Carriage Bolt
(4 Pieces)

1/2"-13
Lock Nut
(1 piece)

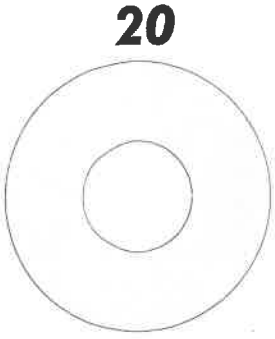


Pull Pin
(1 Piece)

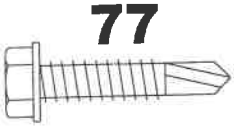


1" X 1/4" Spacer
(2 Pieces)

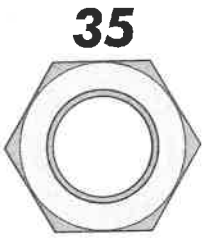
3/8"
Flat Washer
(18 Pieces)



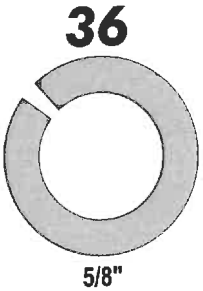
1/2" Flat Washer
(2 Pieces)



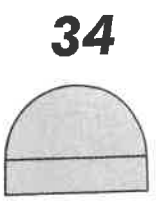
#10 X 1"
Self Tapping Screw
(10 Pieces)



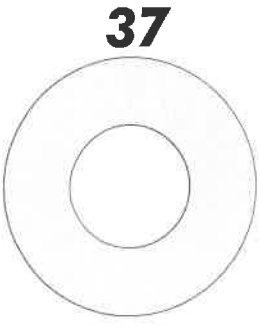
5/8"
Hex Nut
(12 Pieces)



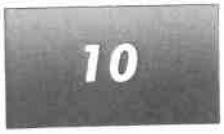
5/8"
Split Washer
(4 Pieces)



5/8" Thread
Protector Cap
(4 Pieces)



5/8" Flat Washer
(8 Pieces)



Stop Spacer (2 Pieces)

INSTALLATION TIMELINE

1. Prior to anchor system and goal assembly, call utility services for location of underground utility lines before you dig.

2. Vertical main post assembly is a two part process.

PART 1

Day 1. Complete Anchor System Installation Instructions. (Below)

Day 2-4. Allow concrete to cure.

PART 2

Day 5. Complete Goaliath®assembly instructions. (Requires four adults)

ANCHOR SYSTEM INSTALLATION INSTRUCTIONS (Day 1)

⚡WARNING⚡

Before digging hole for anchor system, check for buried power, gas, water, and telecommunication lines! Failure to do so could result in serious or fatal injury! Contact your local utility company if unsure.

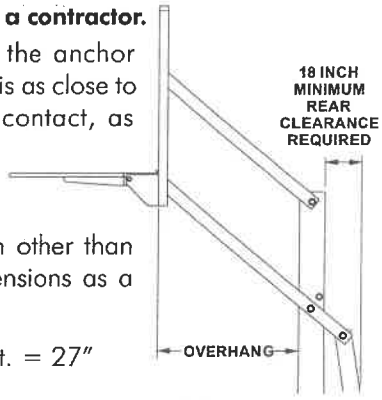
Items needed for Anchor Installation (not included)

- 9 - 80 lb. bags of concrete (2-3 extra recommended)
- 1 - post hole digger (optional)
- 1 - 15/16" open end wrench
- 1 - 15/16" socket and ratchet (optional)
- 1 - concrete form (see note after step 2)
- 1 - wheel barrow
- 1 - garden hose
- 1 - level
- 1 - tape measure

Note: For best results with less vibration, anchor system should be independent of court. If pouring concrete for both at same time, add an expansion joint in between.

Note: When digging hole, if you hit rock and cannot dig through contact a contractor.

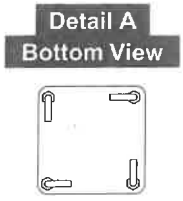
1. Determine the location of the anchor system. The proper location is as close to the court without making contact, as shown in Figure 1. This, however, is a general rule. If you need to locate the anchor system in a location other than this, use the following dimensions as a guide.



Overhang when adjusted to 10 ft. = 27"

Note: Minimum of 18" rear clearance is required behind pole.

2. Assemble anchor system as follows: Thread nut (#35) to bottom of threads on anchor bolt (#39) insert threads of anchor bolt (#39) through hole on anchor plate (#38) and secure with nut (#35). Repeat this step for the remaining anchor bolts. See Figure 2. Note: Each leg of anchor bolts should face the anchor bolt to the right. See Detail A.



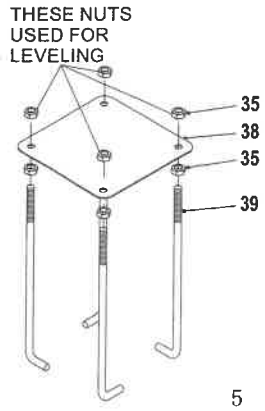
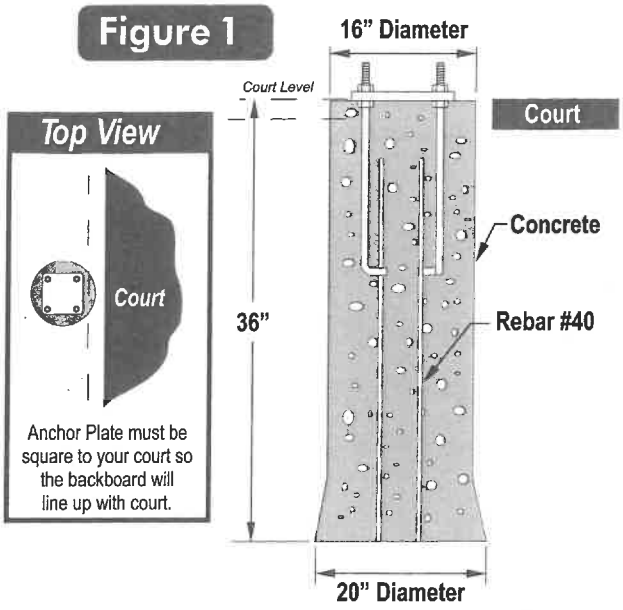


Figure 2

Figure 1



Note: Using a concrete form for the top 4" of the concrete is recommended. Cardboard forms can be purchased at some hardware and home stores or a wooden form can be constructed out of 2 x 4's.

Note: Failure to dig and fill hole as instructed will result in increased system vibration.

***Tip: It is always a good idea to purchase two or three extra bags of concrete, just in case you need them. If extra bags are not used you can return them to the store.**

3. Mix and pour concrete into hole. Follow instructions on concrete bag. Stop about 18" below court level.

4. Insert four reinforcement bars (#40) into concrete 8" apart creating a square in center on hole.

5. Finish pouring concrete up to court level.

6. Push anchor system into concrete and agitate to work out voids in concrete. Immediately use a level to level and square anchor plate to playing surface. Clean off any concrete that may be on exposed threads.

Note: The bottom four nuts will be forever embedded in concrete. The top four nuts remain on bolts and are used for leveling. (See Step 12 on page 11).

Let concrete cure for a MINIMUM of 72 hours.

ASSEMBLY INSTRUCTIONS (Day 5)

TOOLS REQUIRED FOR THE FOLLOWING STEPS

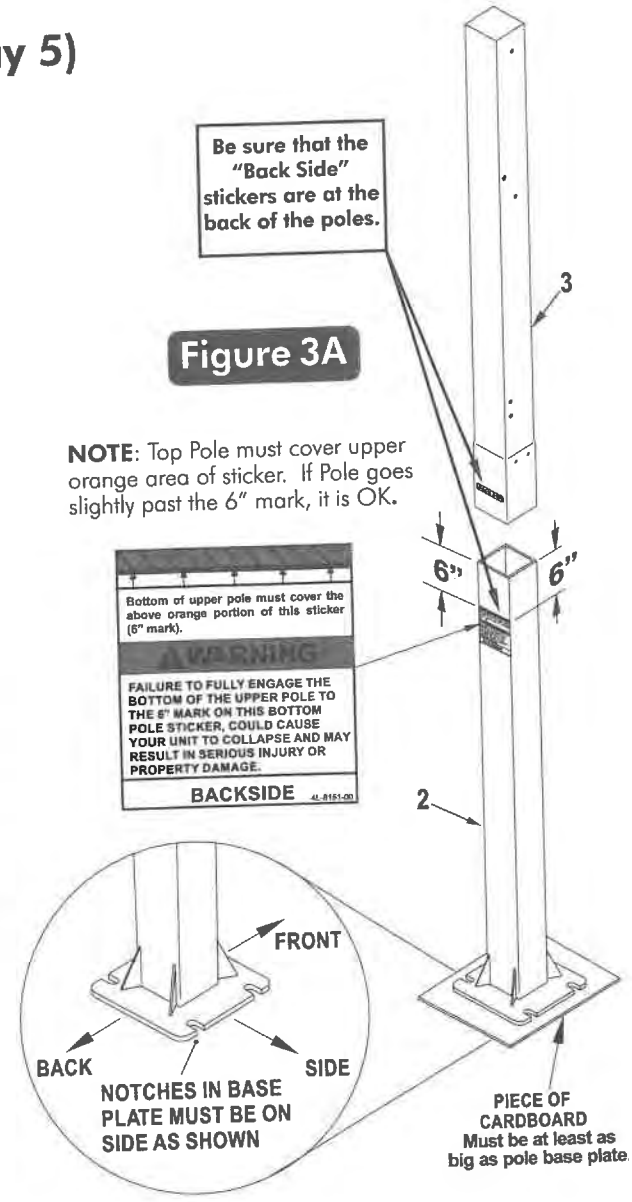
- 1 - 15/16" Open end Wrench
- 1 - 15/16" Socket and Ratchet (optional)
- 1 - 9/16" Deep Well Socket & Ratchet
- 1 - 9/16" Open end Wrench
- 1 - 3/4" Socket & Ratchet
- 1 - 3/4" Open end Wrench
- 1 - Cordless drill & 9/64" drill bit
- 1 - 5/16" socket driver (for cordless drill)
- 1 - Phillips Screwdriver
- 1 - Level
- 1 - Tape Measure
- 1 - Rubber Mallet
- 1 - Set of Padded Saw Horses
- 1 - Safety glasses
- 1 - Ladder

1. Before putting any of the poles tubes together, make sure that the orange area of the Warning Sticker on Pole (#2) is 6 inches from the top end. **Be sure that the "Back Side" stickers are at the back of the pole.** See **Figure 3A.**

If you want to see a video on how to put the poles together go to:
http://www.escaladesports.com/customer-service/instruction-videos/basketball

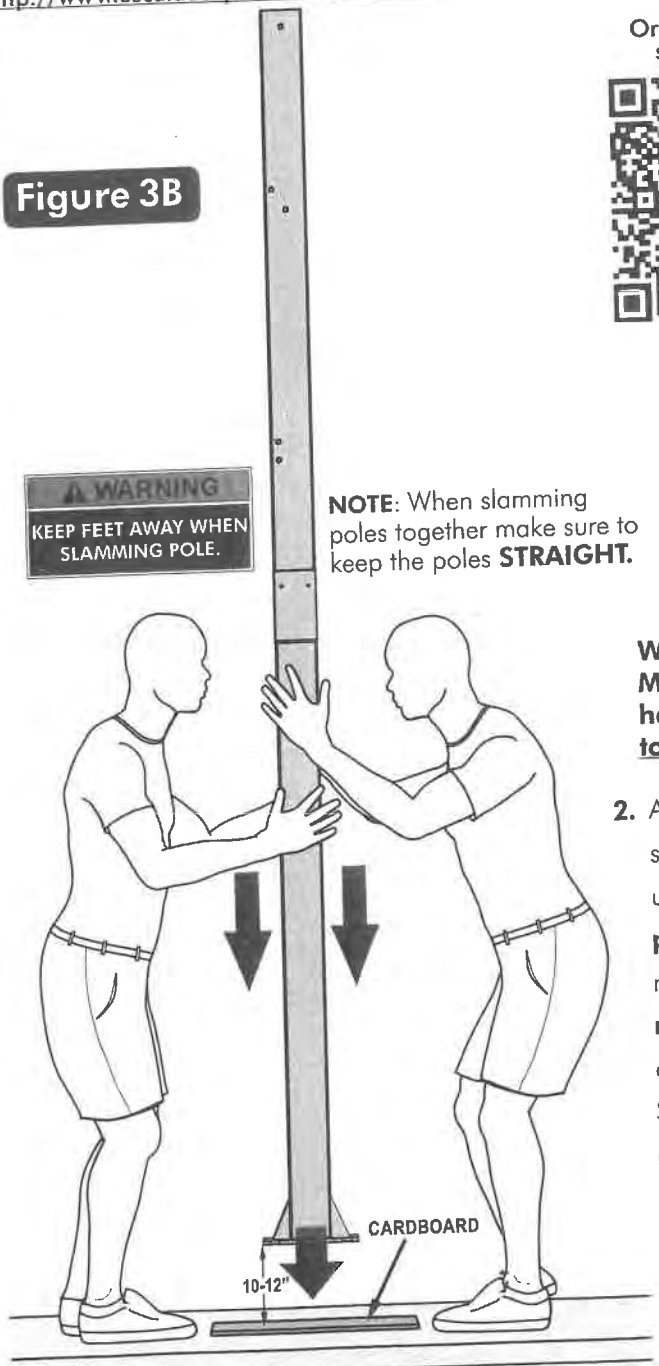
Or Scan with your smart phone:

Figure 3A



NOTE: Top Pole must cover upper orange area of sticker. If Pole goes slightly past the 6" mark, it is OK.

Figure 3B



NOTE: When slamming poles together make sure to keep the poles **STRAIGHT.**

NOTE: When Slamming the pole together make sure you place the cardboard on a **flat surface** like concrete or

WARNING: This pole assembly is heavy. Step 2 will require two adults Make sure you can control the pole when slamming it together. Have a helper stand on the opposite side of the pole. Attention should be pai to one's feet and toes during entire slamming process.

2. Align the upper pole (#3) with the bottom pole (#2) as shown in **Figure 3A** and slide them together. While maintaining control of the pole assembly stand poles up **STRAIGHT** on a piece of cardboard from your box, **lift poles up by botton pole** below the 6" mark shown on sticker and slam down the bottom pole as many times as needed on the cardboard **until the bottom of the upper pole reaches the 6"** mark (on Sticker) on the bottom pole. Lift the pole 10-12 inche off the ground when slamming the poles together. **See Figure 3A & 3B.** Should any concerns exist about damaging your driveway, use a 12" X 12" piece of Plywood or mdf board.

IMPORTANT! DO NOT hit poles with hammer or sledge hammer to attach poles together you will damage your pole or pole cap.

NOTE: When slamming poles together make sure to keep the poles **STRAIGHT.** Slamming the poles down crooked will damage the bottom of the pole and base plate. Top Pole must cover upper orange area of sticker. If Pole goes slightly past the 6" mark, it is OK.

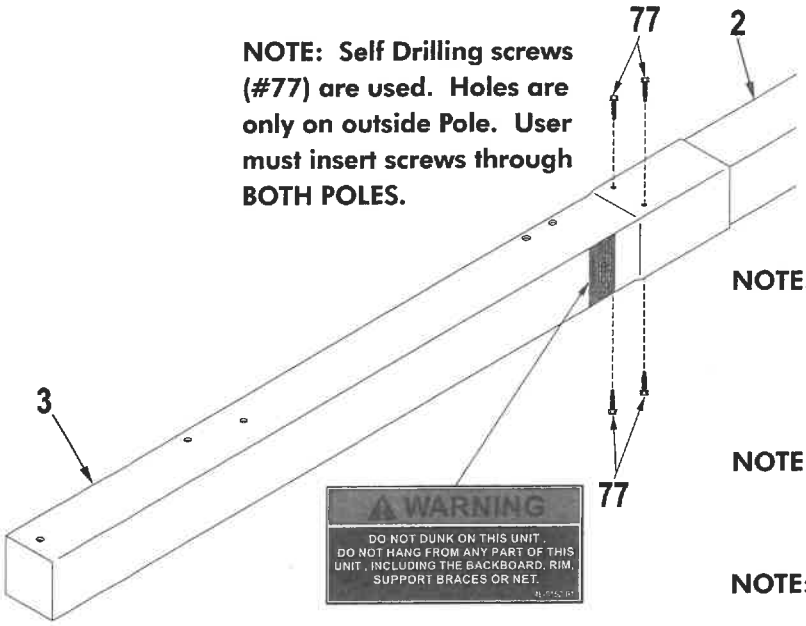


Figure 4

CAUTION

SCREWS (#77) MUST BE INSTALLED TO POLE AS DESCRIBED IN STEP 3. FAILURE TO INSTALL SCREWS COULD RESULT IN SERIOUS INJURY OR PROPERTY DAMAGE.

NOTE: Cordless drill required for screw installation. Do not over tighten screws causing screws to strip. Once Screw heads touch pole, STOP! Overtightening will cause Pole to Warp and damage system.

NOTE: To install screws, it will be easier if you use a cordless drill with 5/16" socket (instead of Phillips head).

NOTE: Screws #77, used in step 3, are Self Drilling screws and can be installed without drilling pilot holes. However, it will be easier to install screws if you drill 9/64" pilot holes in bottom pole. WEAR SAFETY GLASSES if drilling holes.

3. Once the Top pole is to the 6" Mark on the Warning Sticker, lay Pole Assembly on its side on two padded saw horses. Insert a (#77) Screw into each 3/16" hole in top Pole, two on each side of the Post Assembly. You will need someone to hold the Pole assembly while inserting screws. Screw must go through both Top and Bottom (Inner) Poles. Make sure to not strip screws once they are all they way through. See **Figure 4**.

4. Attach Post Ears (#30) to holes near the bottom of Top Post (#3) using two Hex Bolts (#25) four Washers (#18) and two Lock Nuts (#4). **Do not** tighten nuts (#4) completely until instructed to do so. See **Figure 5**.

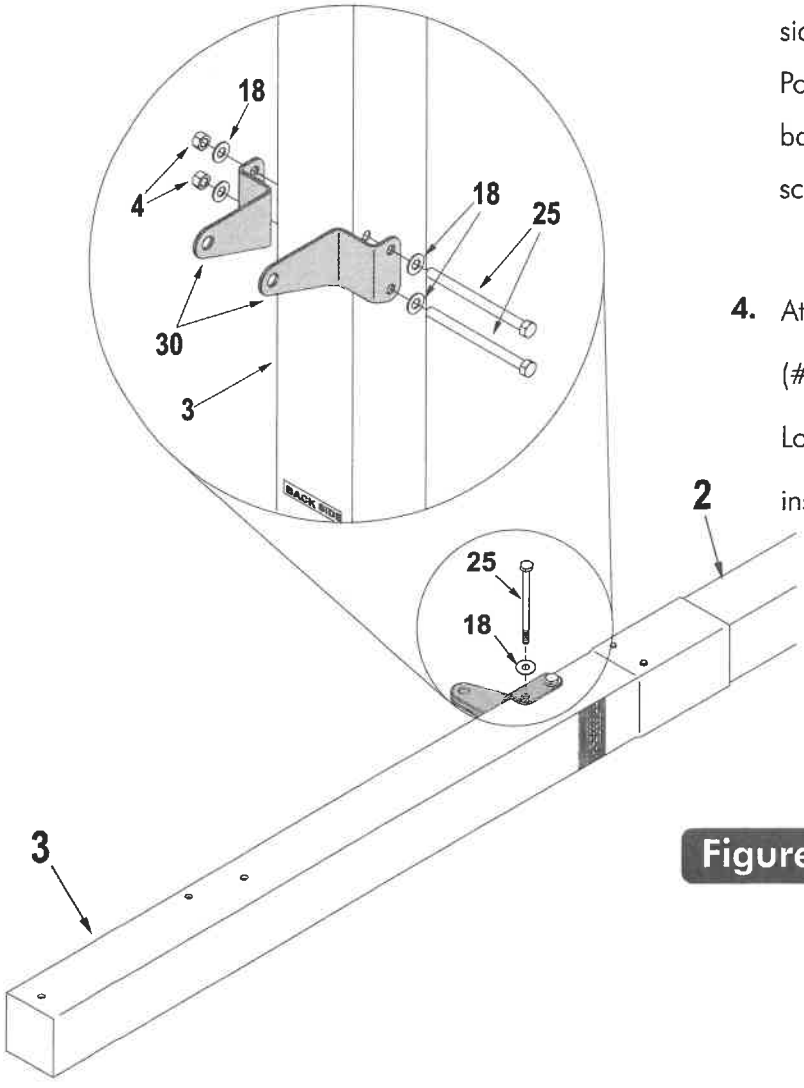


Figure 5

5. If not already pre-assembled, slide Plastic Actuator Sleeve (#15) over Steel Actuator (#16) and place Actuator Cap (#13) on top. Align holes in all 3 parts and slide Pivot Tube (#14) through holes in Actuator Cap (#13), Plastic Actuator Sleeve (#15) and Steel Actuator Tube (#16) until equal amounts stick out through both sides of actuator See **Figure 6.**

NOTE: If necessary use a rubber mallet to tap in Pivot Tube (#14)

NOTE: Make sure (#14) Pivot Tube is installed through all three parts:

1. **Actuator Cap (#13)**
2. **Plastic Sleeve (#15)**
3. **Steel Actuator Tube (#16)**

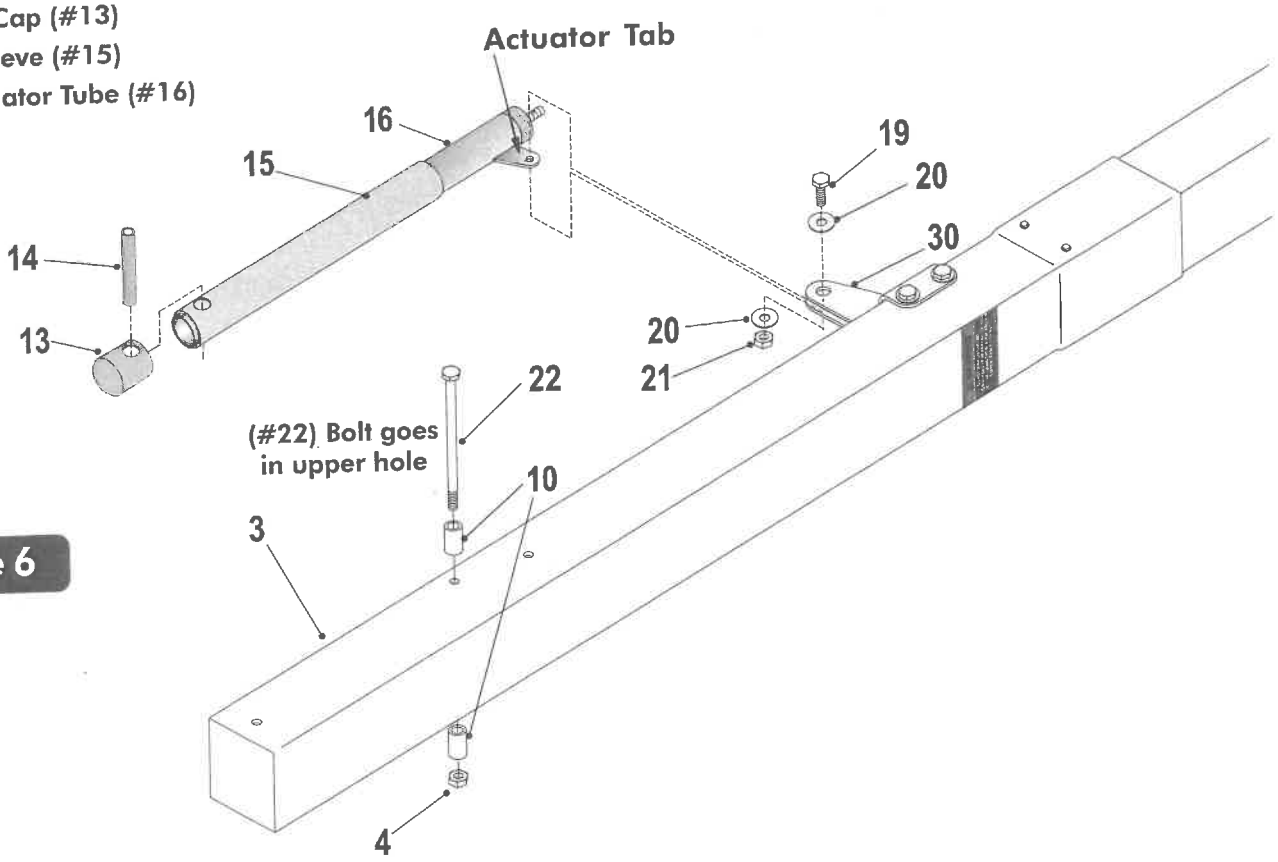


Figure 6

6. While still on the two padded saw horses, Slide tab on Actuator (#16) between Post Ears (#30) and secure using one bolt (#19), two washers (#20) and one lock nut (#21). Tighten Lock Nut (#21) snug but **do not over tighten**. See **Figure 6**. At this time **also tighten nuts** (#4) from **Step 4**.

7. Secure two stop spacers (#10) to pole, as shown in **Figure 6**, using one hex bolt (#22) and one lock nut (#4). Tighten Lock Nut (#4) but **do not over tighten**.

IMPORTANT! Nylon washers (#5) adequately space painted parts at all pivot points. Neglecting the use of these washers will result in rusted parts.

NOTE: All board arms are made of rectangular tubing. Tightening hardware too tight may damage tubing and make adjustment of system difficult.

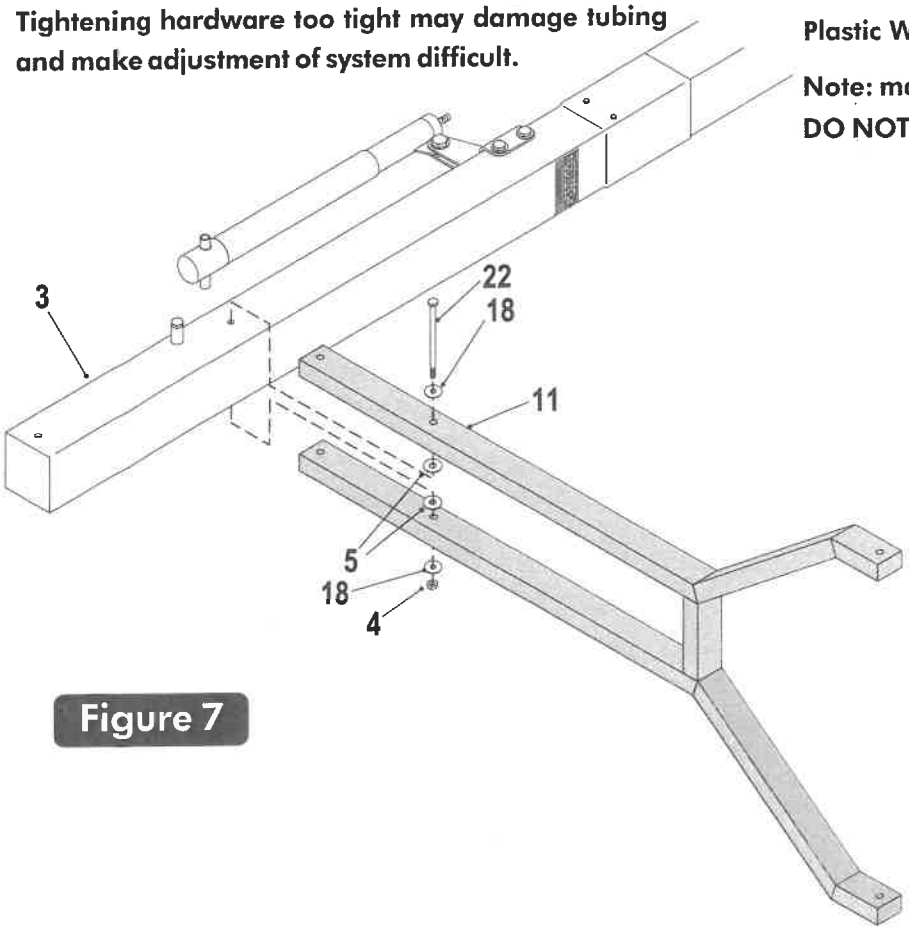


Figure 7

8. Attach lower arms (#11) to Top Pole (#3), as shown in **Figure 7**, using a hex bolt (#22), two flat washers (#18), two plastic washers (#5) and lock nut (#4).

Note: Small amounts of clear tape can be used to adhere Plastic Washers (#5) to Pole. This will make assembly easier

Note: make sure lettering is right side up. (See Side View). DO NOT tighten bolt (#22) at this time. (See Figure 7.)

9. Secure Actuator (#16) to Lower Arms (#11) using one bolt (#22), two flat washers (#18), two plastic washers (#5) and one lock nut (#4). See **Figure 8.** Tighten both bolts (#22) **snug but, do not over tighten. Board Arms must pivot freely.**

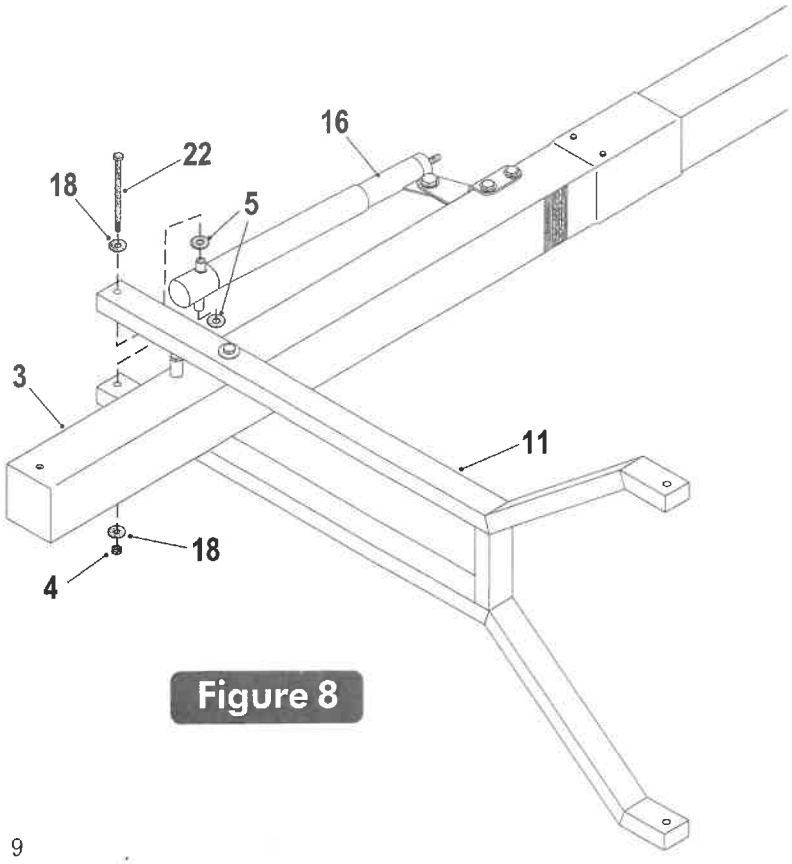


Figure 8

10. Attach long leg of Upper Arms (#6) to Top Pole (#3), as shown in **Figure 9**, using a bolt (#7), two flat washers (#18), two spacers (#8) and one lock nut (#4).

Note: Tighten bolts snug but, do not over tighten. Board Arms must pivot freely

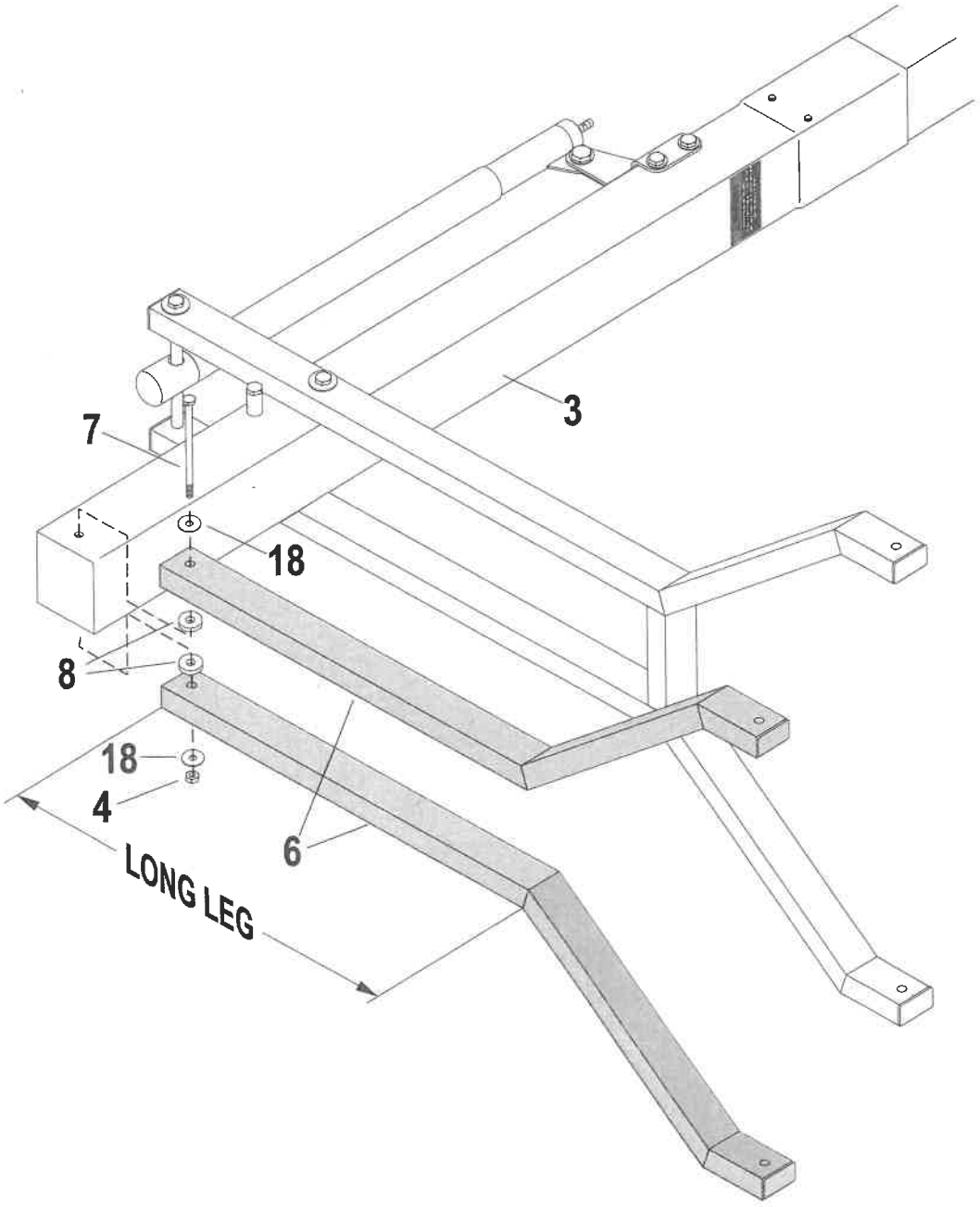


Figure 9

11. Locate hardware needed to mount pole to anchor bolts. You will need, eight flat washers (#37), four lock washers (#36), four hex nuts (#35) and four thread protectors (#34).

NOTE: Do not remove the nuts #35 you installed in step 2 (pg. 5).

⚠ CAUTION ⚠

PLACING THE POST ON THE ANCHOR SYSTEM REQUIRES AT LEAST FOUR CAPABLE ADULTS. POLE WILL WANT TO LEAN WHILE ATTEMPTING TO STAND IT UP ON ANCHOR BOLTS.

12. Put a flat washer (#37) on each anchor bolt. Lift post onto anchor system and secure with one flatwasher (#37), one lock washer (#36) and one hex nut (#35) for each anchor bolt. Tighten Fasteners finger tight, leave loose enough to level pole. Place a level on pole and adjust bottom nuts #35 until pole is level (left to right and front to back). **Tighten top four hex nuts #35 tight.** Place a thread protector (#34) on each anchor bolt. See **Figure 10**.

13. Push on Thread Cap (#34) until it is securely in place. Cap may be tight, push hard but **DO NOT** hit with a hammer! See **Figure 10** and **Detail A**.

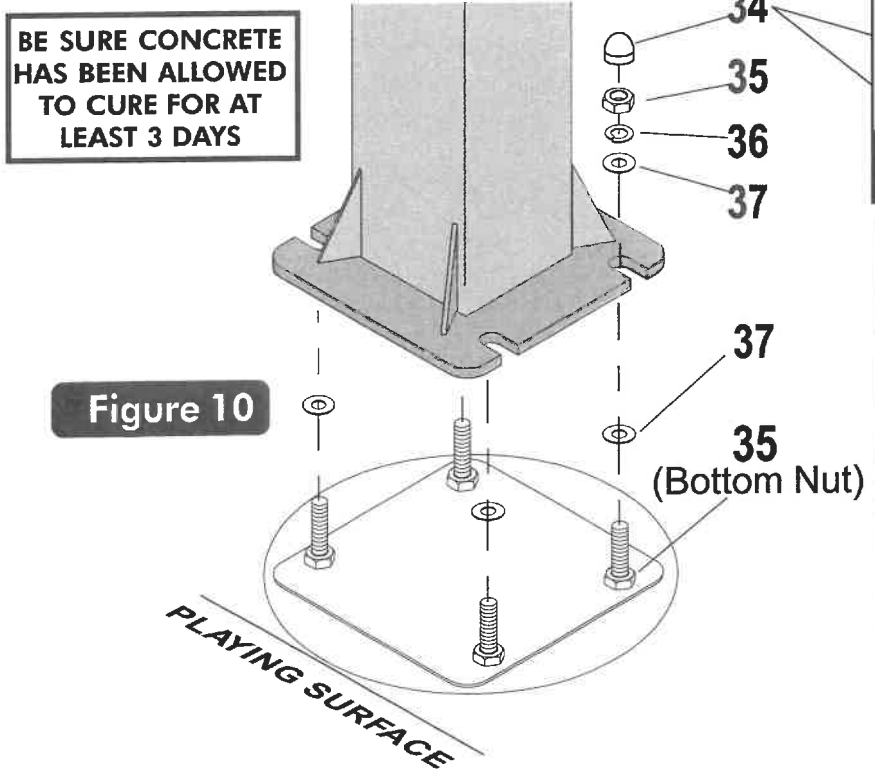
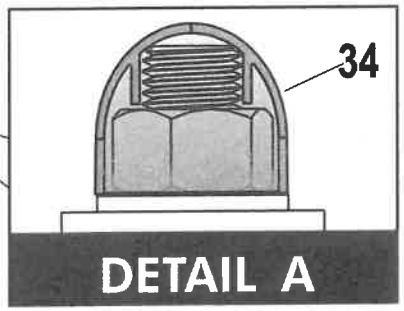


Figure 10



NOTE:
If basketball system needs to be moved, **do not** try to salvage caps. Caps (#34) will be tight, please remove with plyers and discard. New caps will come in new anchor system.

NOTE:
If (#34) caps are missing for any reason please call customer service.

NOTE:
Bottom nuts #35 can be used for leveling system. See **Step 12**.

14. Slide Actuator Crank (#42) onto shaft on the bottom of Actuator (#16). Line up hole in shaft with hole in Actuator Crank and insert Pin (#41) to secure. See **Figure 11.**

15. To aid in the assembly of the backboard, lower the backboard, by turning the Actuator Handle, until the lower arm makes contact with Stop Spacer (#10).

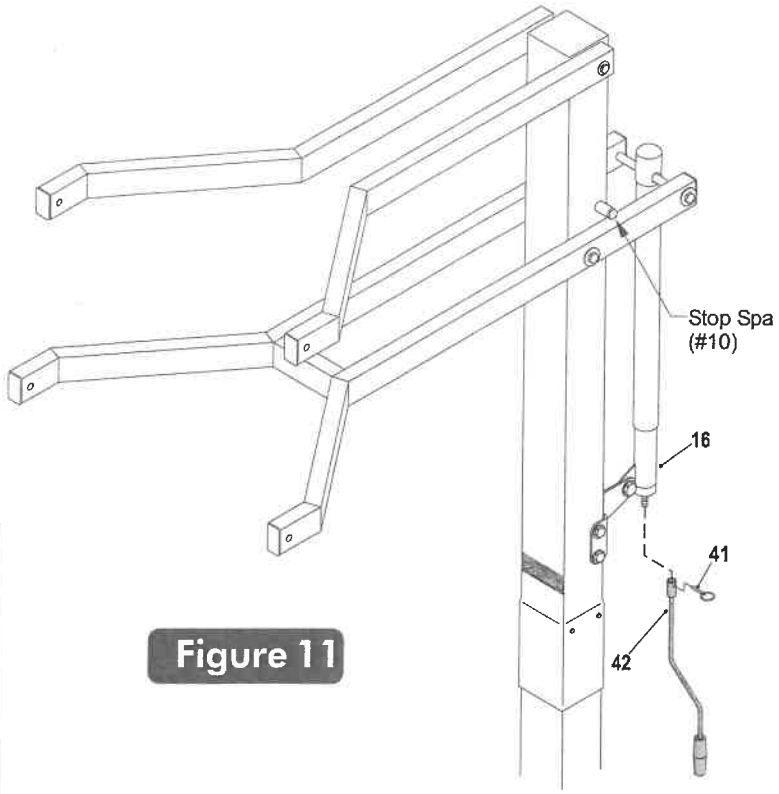


Figure 11

⚠ CAUTION ⚠

HANDLE BACKBOARD WITH CARE, IT IS A GLASS PRODUCT. ALWAYS WEAR SAFETY GLASSES AND GLOVES WHEN HANDLING GLASS.

⚠ CAUTION ⚠

ATTACHING BACKBOARD TO BOARD ARMS REQUIRES AT LEAST FOUR CAPABLE ADULTS.

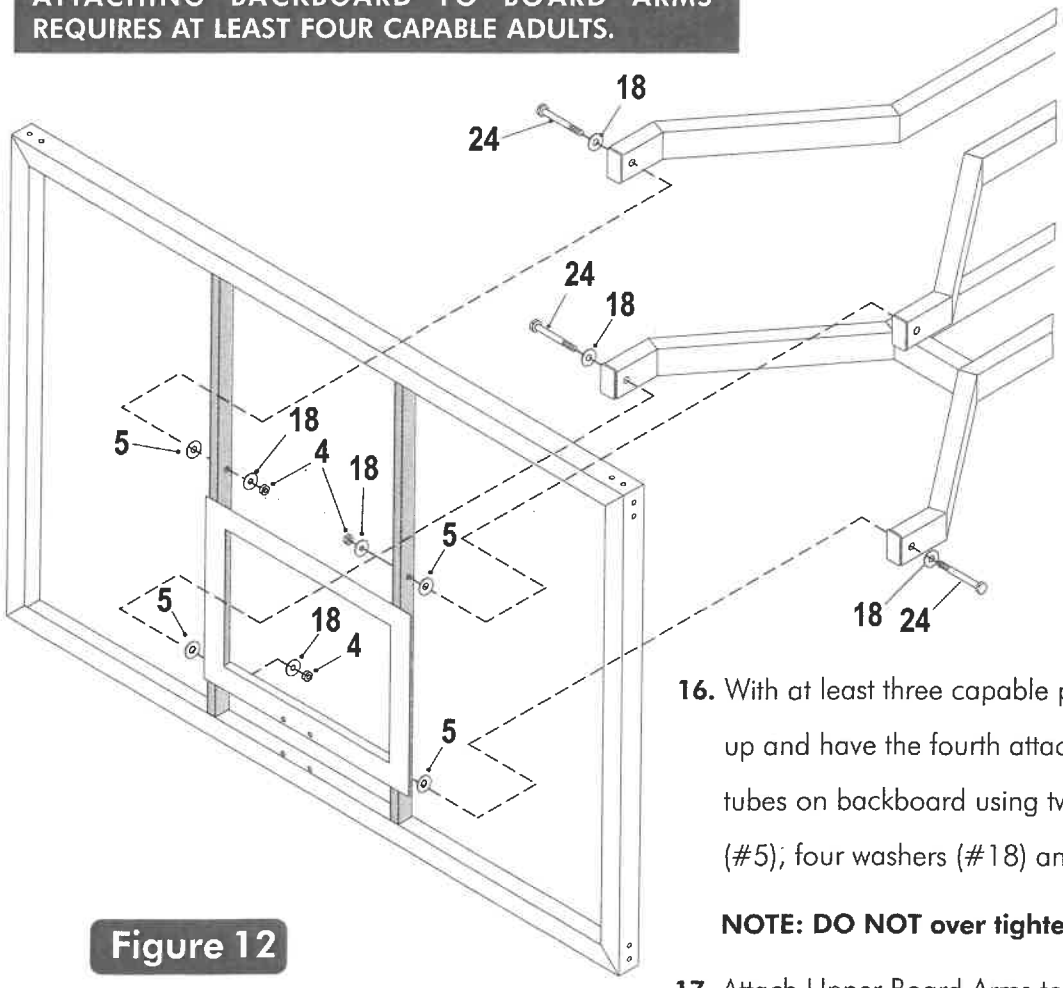


Figure 12

16. With at least three capable people, raise the backboard assembly up and have the fourth attach Lower Board Arms to lower mountin tubes on backboard using two bolts (#24), two plastic washers (#5), four washers (#18) and two lock nuts (#4). See **Figure 12**.

NOTE: DO NOT over tighten these bolts. This is a pivot point.

17. Attach Upper Board Arms to upper mounting tubes on backboard using two bolts (#24), two plastic washers (#5), four washers (#18) and two lock nuts (#4). See **Figure 12**.

NOTE: DO NOT over tighten these bolts. This is a pivot point.

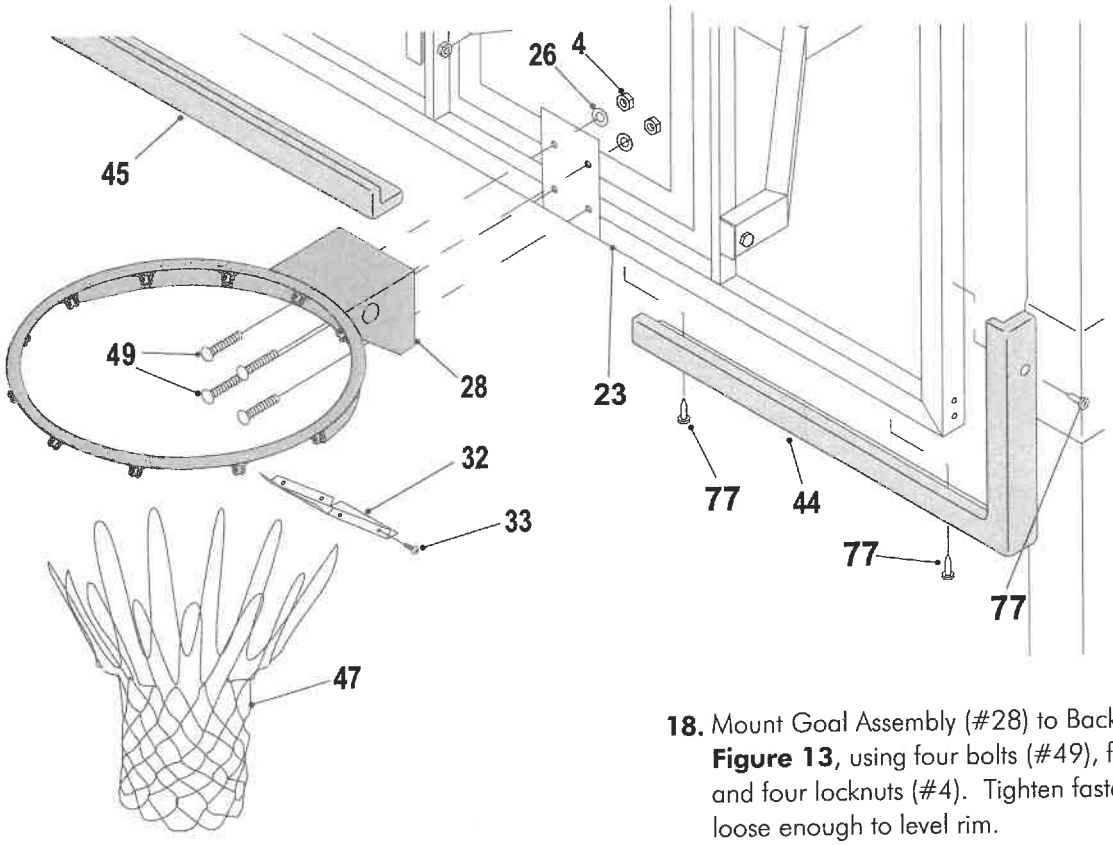
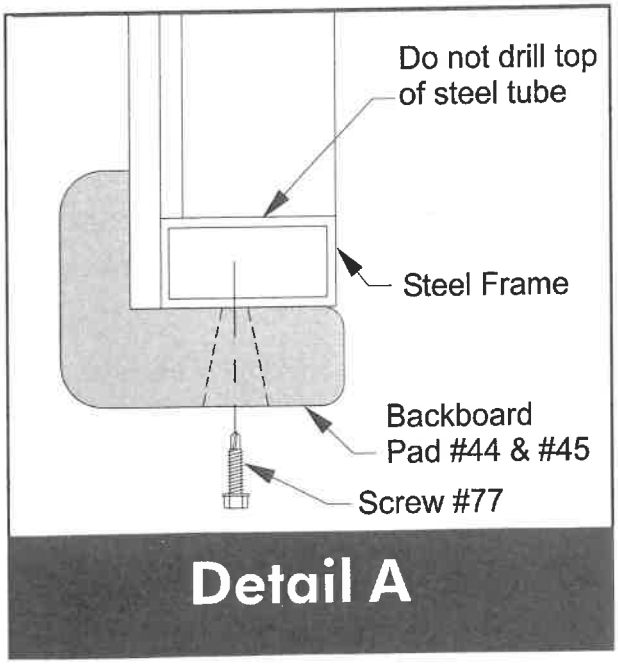


Figure 13

18. Mount Goal Assembly (#28) to Backboard, as shown in **Figure 13**, using four bolts (#49), four washers (#26), and four locknuts (#4). Tighten fasteners, but leave them loose enough to level rim.

19. Place a level across rim assembly and adjust rim until it is level. Finish tightening the four nuts.



Detail A

⚠ CAUTION ⚠

NEVER USE RIM WITH COVER PLATE REMOVED!

20. Attach Rim Cover Plate (#32) using four screws (#33). See Figure 13.

21. Check all nuts and bolts and make sure everything is tightened properly. **DO NOT over tighten** pivot points, snug is tight enough.

22. Use the Backboard Pads (#44) and (#45) as a template and mark the hole locations on the backboard frame. See **Figure 13** and **Detail A**.

Note: Screws (#77), used in step 24, are Self Drilling screws and can be installed without drilling pilot holes. However, it will be easier to install screws if you drill 9/64" pilot holes. WEAR SAFETY GLASSES if drilling holes.

23. Drill 9/64" pilot holes into steel backboard frame. See **Detail A. Do not drill through both sides of backboard tube frame.**

Note: Cordless drill recommended for screw installation. Do not over tighten screws causing screws to strip.

Note: To install screws, it will be easier if you use a cordless drill with 5/16" socket (instead of Phillips head).

24. Secure Backboard Pads (#44) and (#45), as shown, using screws (#77). Note: Tighten screws tight but, **do not over tighten.**

25. Raise Backboard to 10 FT. regulation playing height. Measure from top of rim straight down to the playing surface.

26. Using tape - mark the **side** of the steel actuator (#16) just under the plastic actuator sleeve (#15) at this 10 ft rim height. See **Figure 14**.

27. Lower backboard all the way down. Do not force actuator once backboard is in it's lowest position. See **Figure 15**.

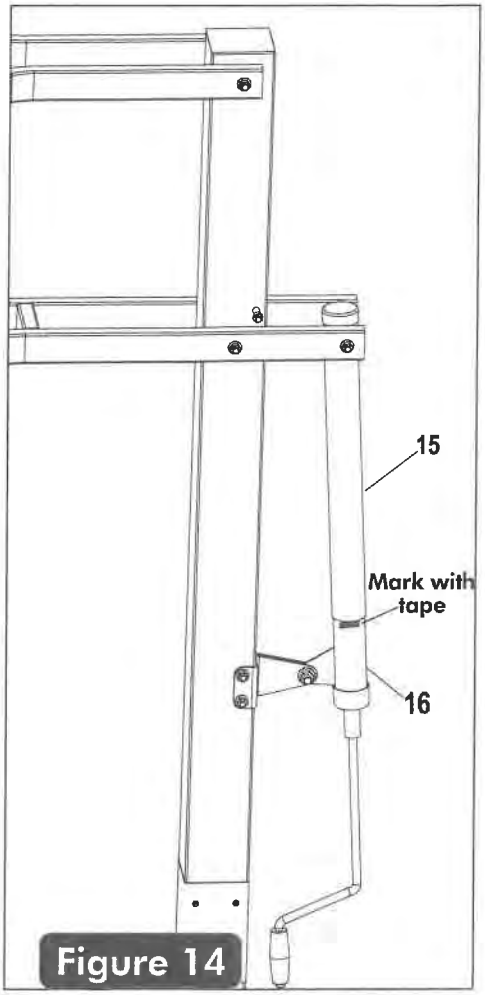


Figure 14

Set at 10 feet

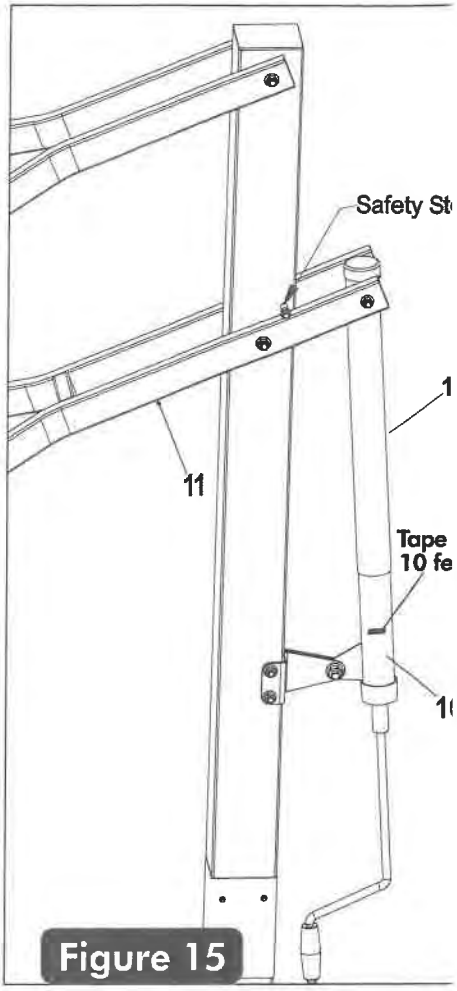


Figure 15

Lowered all the way down

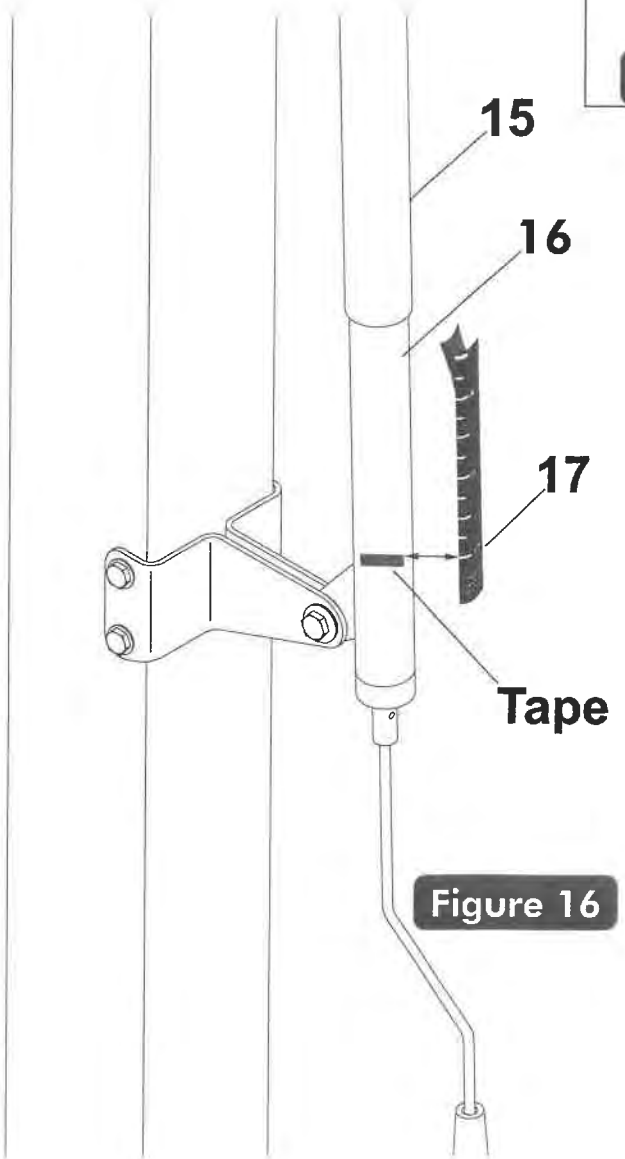


Figure 16

28. **Do not** remove adhesive backing from height decal (#17) yet. Carefully place height decal on backside of steel actuator (#16) and line up the 10 ft mark on the tape with the 10 ft mark on the height decal. Decal should fit correctly onto the backside of the steel actuator. (If not , simply trim to fit the top of the actuator decal).

29. Remove the adhesive backing from the Height Decal (#17). Next, carefully align and stick decal to backside of steel actuator (#16) starting at the **10 ft mark first**. Be sure to keep the height decal straight and rub out all air bubbles. See **Figure 16**.

Two adults are recommended for this step, one to level and one to adjust the bottom #35 nuts.

30. If further leveling is required loosen top #35 nuts but do not loosen past the top of #39 "J" Bolt. **DO NOT REMOVE NUTS #35.** Place a level on pole and adjust bottom nuts #35 with a 15/16" open end wrench until pole is level. Tighten top #35 hex nuts. See Detail B.

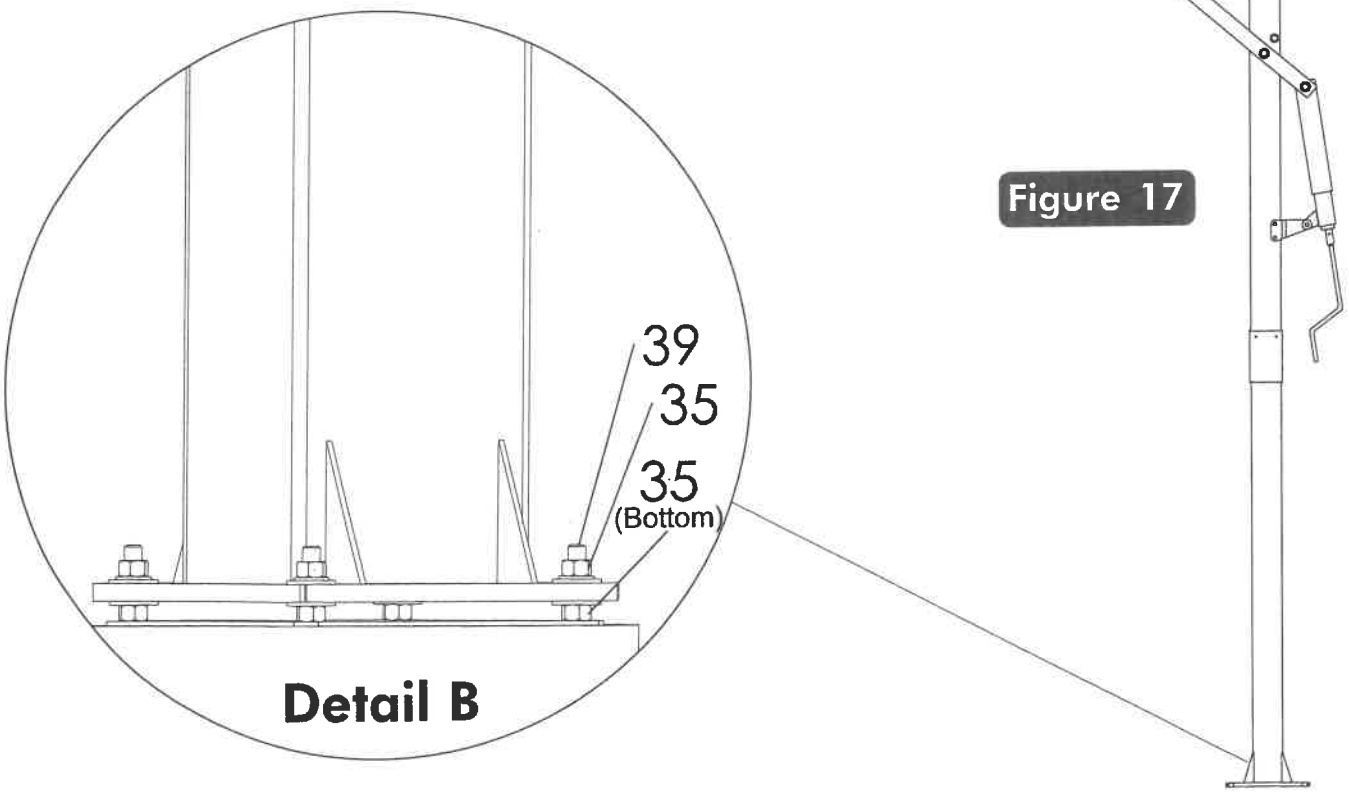


Figure 17

LIMITED 5 YEAR WARRANTY

This consumer warranty extends to the original consumer purchase of any Escalade® Sports Product (hereinafter referred to as the "Product").

WARRANTY COVERAGE: Escalade® Sports warrants to the original Consumer Purchaser that any Product of its manufacture is free from defects in material and workmanship. THIS WARRANTY IS VOID IF THE PRODUCT HAS BEEN DAMAGED BY ACCIDENT, UNREASONABLE USE, NEGLIGENCE, IMPROPER SERVICE, FAILURE TO FOLLOW INSTRUCTIONS PROVIDED WITH THE PRODUCT OR OTHER CAUSES NOT ARISING OUT OF DEFECTS IN MATERIAL OR WORKMANSHIP.

Subject to proper installation and normal Residential use, Escalade® Sports warrants, subject to the limitations below, to the original retail purchaser all structural components of the Goaliath® System to be free of defects in material and workmanship for a period of five (5) years from the original purchase.

Merchandise must be shipped prepaid with a copy of proof of purchase to Escalade® Sports factory for examination to determine if the basketball system needs to be repaired or replaced. Any labor costs, travel expenses and any other changes involved in the removal, installation or replacement of the defective/repaired parts from/to your Goaliath® System will be the purchaser's responsibility. Shipping charges for replaced or warranted merchandise sent back to the customer from Escalade® Sports factory must be prepaid by the customer in advance. If not, the replacement shipment will be sent out collect.

Escalade® Sports reserves the right to examine photographs or physical evidence of merchandise claimed to be defective, and to recover said merchandise, prior to authorization of warranty claims. A "Returned Goods Authorization" number may be required, please call for details prior to the return of any photographs or merchandise.

This limited 5 year warranty is expressly in lieu of all warranties, expressed or implied, including warranties of merchantability or fitness for use. Escalade® Sports does not assume or authorize any person or representative to assume for us, any other liability in connection with the sale of our products.

The remedy of repair or replacement stated above is Escalade® Sports exclusive remedy. Escalade® Sports will not be liable for any other damages or expenses which may incur, including but not limited to incidental or consequential damages. Escalade® Sports assumes no other obligations or liability on the part of the purchaser, and Escalade® Sports neither assumes nor authorizes any other person to assume for it any other liability in connection with the goods sold.

This warranty shall not apply in any manner to parts or accessories not manufactured by Escalade® Sports.

NOT COVERED BY THIS WARRANTY

- Merchandise not intended to be in places of public assembly, such as, but not limited to, schools, parks, public or private recreational facilities.
- Any merchandise subjected to Non-residential abuse, negligence, improper installation, vandalism, acts of God, alteration of product, or any other events beyond the control of Escalade® Sports.
- Paint or rusted parts. If rust should appear, remove loose paint, sand lightly, primer and paint with exterior flat matte finish enamel paint.
- HANGING ON RIM WILL VOID THE WARRANTY: Rims are not warranted for any defects other than workmanship. Torn back plates, damaged springs, bent rings, damaged eyebolts, and torn or distorted rim supports result from hanging on the rim and are not warranted.
- Shipping charges both ways. Note: Any merchandise shipped to Escalade® Sports collect will be refused.
- Dealer service charges, labor charges and travel expenses associated with replacement of repair of warranty item.

WARRANTY DISCLAIMERS: ANY IMPLIED WARRANTIES ARISING OUT OF THIS SALE, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION. ESCALADE® SPORTS SHALL NOT BE LIABLE FOR LOSS OF USE OF THE PRODUCT OR OTHER CONSEQUENTIAL OR INCIDENTAL COSTS. EXPENSES OR DAMAGES INCURRED BY THE CONSUMER OF ANY OTHER USE.

Some states do not allow the exclusion or limitation of implied warranties or consequential or incidental damages, so the above limitations or exclusions may not apply to you.
LEGAL REMEDIES: This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state.

WARRANTY GUIDELINES IS REQUIRED FOR ALL WARRANTY CLAIMS

1. Proof of Purchase (original retail purchaser) is required for all warranty claims.
2. Call or write Escalade® Sports to receive a Return Authorization # and determine specific needs.

Phone: 1-888-USA-GOAL / Warranty Dept.
Or Write Escalade® Sports at: Escalade® Sports - P.O. Box 889, Evansville, IN 47706 - Attn: Warranty Dept.
Or E-mail us at: basketball@escaladesports.com

GOALIATH CARE INFORMATION

- BACKBOARD -

Items needed to clean backboard:
- 100% cotton soft cloth, (only)
- Glass Cleaner

Clean backboard using a **100% Cotton** soft cloth and glass cleaner. Clean glass as you would household windows. Strong cleansers will damage backboard and void warranty.

– RIM –

HANGING ON THE RIM WILL VOID YOUR WARRANTY. Rims are not warranted for any defects other than workmanship. Torn back plates, damaged springs, bent rings, damaged eye bolts, and torn or distorted rim supports result from hanging on the rim and are not warranted.

The goal should not be cranked under 7-1/2' or over 10'. Adjustments of the goal should be done under adult supervision.

When attempting slam dunk activity you should always wear a mouth guard to avoid dental injury.

– MAINTENANCE –

To ensure ease of operation, lubricate all pivot points at least every 6 months or as needed with a good lubricant such as WD-40.

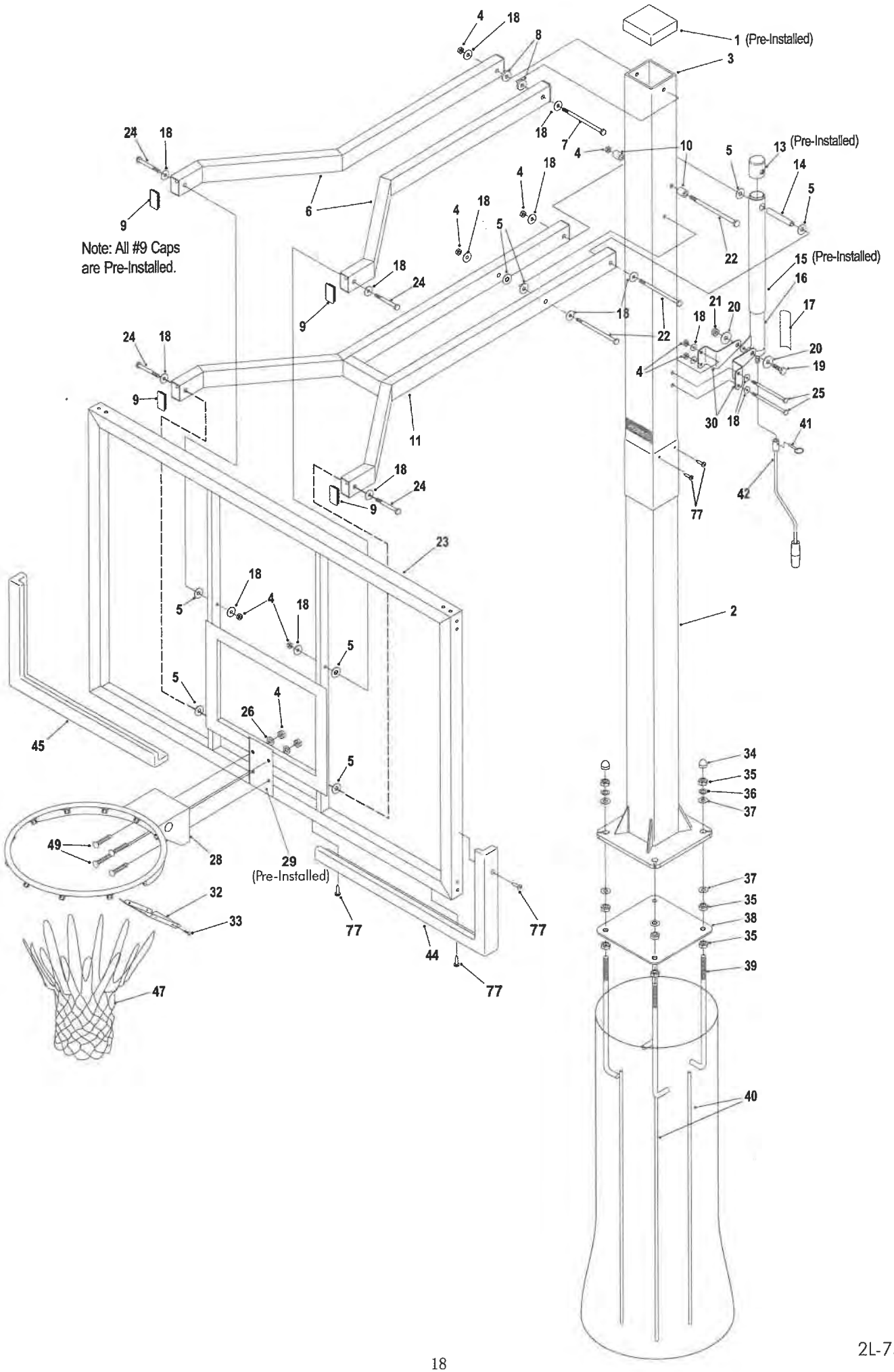
– RUST –

Inspect your pole periodically, if rust should appear, remove loose paint, sand lightly, primer and paint with exterior flat matte finish enamel paint.

B2251 REPLACEMENT PARTS LIST

Key#	Part #	Description	Qty.
1	3M-6850-00	4" Square Tube Plug	1
2	1A-7686-01	Bottom Post	1
3	8S-6898-00	Top Post	1
4	901-28	3/8-16 Nylon Lock Nut	14
5	3M-6883-00	1-1/4" OD Plastic Washer	8
6	8S-6630-02	Upper Board Arm	2
7	1B-6483-10	3/8-16 X 7.5" Hex Bolt-Grade 5	1
8	3M-6269-00	1/4" Spacer	2
9	3M-6548-00	1 X 2 Tube Plug	8
10	8S-6657-00	Stop Spacer	2
11	1A-6331-02	Lower Board Arm	1
12	Not Used		
13	3M-6467-00	Actuator Cap	1
14	8S-6658-00	Pivot Tube	1
15	3M-6542-00	Actuator Sleeve	1
16	4A-6605-00	Actuator	1
17	4L-7501-00	Height Decal	1
18	701-50	3/8 STD Washer	18
19	1B-6486-10	1/2-13 X 1-1/2" Hex Bolt	1
20	2B-6093-00	1/2 Flat Washer	2
21	2B-6095-00	1/2-13 Nylon Lock Nut	1
22	1B-6484-10	3/8-16 X 7" Hex Bolt-Grade 5	3
23	6A-7548-00	Backboard Assembly-33x54" Glass	1
24	1B-6195-00	3/8-16 X 2.75" Hex Bolt	4

Key#	Part #	Description	Qty.
25	1B-6485-10	3/8-16 X 5" Hex Bolt	2
26	2B-6114-00	3/8 Flat Washer	4
27	Not Used		
28	6A-6374-01	Goal Assembly	1
29	3M-6835-00	Goal Spacer Plate (Pre-Installed)	1
30	2S-6795-02	Post Ear	2
31	NOT USED		
32	2S-6427-01	Rim Cover Plate	1
33	1B-6788-00	#8 x 1/2 Thread Forming Scr.	4
34	3M-9040-00	5/8 Thread Protector	4
35	2B-6097-00	5/8-11 Hex Nut	12
36	2B-6099-00	5/8 Split Lockwasher	4
37	2B-6098-01	5/8 SAE FLAT WSHR ZNC	8
38	2S-6453-00	Anchor Template	1
39	2B-6112-00	5/8-11 X 14 "J" Bolt	4
40	1S-6167-00	#3 X 30" Rebar	4
41	7B-6255-00	Pull Pin	1
42	4A-6606-00	Actuator Handle	1
43	2L-7539-01	This Manual	1
44	3M-6580-00	48" Board Pad Right	1
45	3M-6581-00	48" Board Pad Left	1
46	Not Used		
47	3F-6010-00	Net	1
48	Not Used		
49	1B-6782-00	3/8-16 x 1 3/4" Carriage Bolt	4
50	Not Used		
77	1B-7039-00	Self Tapping Screw-#10 x 1"	10


Note: All #9 Caps
are Pre-Installed.
1 (Pre-Installed)
13 (Pre-Installed)
15 (Pre-Installed)
29
(Pre-Installed)

2L-7539-01

Potential Play equipment installers. List provided for courtesy only. No guarantee of availability.

- Hickey Brothers, NorthEast Playgrounds LLC, neplaygrounds@gmail.com; 508-272-8857

- Probuilt Designs, LLC, Peter
  - 839 Webster St.
    Marshfield, MA 02050
    781-837-8738
    781-837-8737 fax
    probuiltusa@yahoo.com

- Chris Martin, Ultiplay email: cmartin@ultiplayus.com
  - C: 774.287.9182
  - T: 866.575.PLAY
  - W: ultiplayus.com
  - Home Office Address: 179 Spring St, Farmington, NH 03835
  - Main Office Address: 43 Main Street, Blackstone, MA 01504

SECTION 329100

PLANTING PREPARATION

PART 1 GENERAL

1.1 DESCRIPTION

A. Work under this section shall include all labor, materials, services, equipment and accessories necessary to prepare planting soil, provide planting mix and soil amendments in accordance with the specifications and applicable Drawings.

B. Related work:

1. Section 31 00 00, Site Earthwork.

1.2 SUBMITTALS

A. Tests specified in this Section shall be paid for by the Contractor. **Certifications required must be submitted to the Landscape Architect and or Owner's Representative for approval before use of materials on the site.**

B. The **Contractor shall be required to take representative soil samples of the topsoil** to be provided from several locations (on-site) in the area(s) under consideration for testing. Imported topsoil shall also require test results prior to placement. Tests shall be made by a State Commercial Soil Testing Laboratory using methods approved by the Association of Official Agricultural Chemist or the State Agricultural Experiment Station, or by the University of Maine at Orono. Testing shall include chemical balance (pH) **as well as organic content.** The required pH level shall be between 6.6-7.3% and the organic content shall be between 6.5-8%.

C. The Contractor shall provide testing data for composted soil amendment if required to supplement the required minimum organic content. Testing shall inform moisture absorption capacity, organic matter content and PH.

1.3 QUALITY ASSURANCE

A. Workmanship: Perform work in accordance with the best standards of practice for Landscape work and under the continual supervision of a competent foreman capable of interpreting the Drawings and Specifications.

B. Any and all substitutions due to unavailability must be requested in writing prior to confirmation of ordering.

C. Certificate of Acceptability: Inspection of the work covered by this Section to determine completion of the work involved will be made at the conclusion of the Maintenance Period upon written notice requesting such inspection submitted by the Landscape Contractor at least ten (10) days prior to the anticipated date. The condition of plantings will be noted and determination made by the Landscape Architect whether maintenance shall continue.

1.4 MAINTENANCE

A. Maintenance shall begin immediately after each plant is planted and shall continue until project acceptance (certification of acceptability). The Contractor shall provide water for irrigation if none is available on site.
B. Maintenance shall consist of pruning, watering, cultivating, weeding, mulching, removal of dead material, repairing and replacing of tree stakes, tightening and repairing of guys, resetting plants to proper grades and upright position, and necessary work to keep plants free of insects and disease and in a healthy growing condition.
C. Following acceptance, maintenance of plant material shall become the Owner's Representative's responsibility. Provide instructions and service as follows:
    a. Provide Owners Representative with written recommended maintenance program at time of Project Acceptance
    b. Make periodic inspections as necessary during the guarantee period at no additional cost to the Owner, to inspect the condition of all plant materials. Submit written report of each inspection to the Owner's Representative outlining corrective measures required to keep the guarantee valid.

1.5 GUARANTEE

A. Plants shall be guaranteed for one (1) full year after certification of acceptability by the Landscape Architect and shall be alive and in satisfactory growth at the end of the guarantee period, except for damage resulting from causes beyond the responsibility of the Contractor. The Contractor shall provide the Owner with a written guarantee upon certification of acceptability. For plant material in question at the end of the guarantee, the Landscape Architect, Owner and Contractor shall determine a reasonable extension of the guarantee period.

PART 2 PRODUCTS

2.1 MATERIALS

TOPSOIL

A. The Contractor shall furnish and place topsoil to give the specified depths. **The Contractor shall furnish and place 18 inches of loam in all shrub beds, and 6 inches rolled under all turf areas**. For shrubs located within the wooded areas, topsoil mix shall be placed in shrub pits. Topsoil mix shall be placed in all tree and shrub pits as shown on the Drawings. Natural loam topsoil shall be of uniform quality, free from hard clods, still clay, hard pan sods, stones over ¾ inches and undesirable inorganic materials. The Owner and/or Landscape Architect reserves the right to reject on or after delivery any materials which do not, in his or her opinion, meet these Specifications.
B. Topsoil shall be obtained from a previously established stockpile on the site to the extent that suitable material is available. Additional topsoil required shall be obtained from off-site sources.
C. Topsoil, whether stripped from the site or supplied form off-site, shall be sandy-loam as defined by the USDA Soil Conservation Service. Organic matter content shall be 4-12% of total dry weight.

D. Additives:

1. Humus - Ground or shredded peat that has been stockpiled at least one year prior to use, or commercial bagged peat.

2. Manure - Well-rotted unleached stable manure with no more that 25% straw, shavings, or sawdust content. A mixture of one (1) cubic yard of peat humus or

peat moss and 100 lbs. of commercial dehydrated-bagged manure such as Bovung or Spurigon may be used.

3. Lime - Commercial ground lime with no less than 85% total carbonates, 50% passing a 100 mesh sieve and 90% passing a 200 mesh sieve as approved by the Landscape Architect. Coarser material will be accepted provided that specific rates of application increased proportionately.

4. Compost soil amendment – Compost shall be highly organic dark brown to black containing 6-10% organic matter, tested on a dry weight basis with pH between 6.0-8.0; free of plants, roots, debris; other extraneous matter >1 in. diameter and shall be uncontaminated by foreign matter or substances harmful to plant growth. Do not use soil for planting while in a frozen or muddy condition. Compost shall conform to EPA Chapter 40 CFR 503 (pathogen, metals and vector attraction reduction) as well as applicable state regulations. Compost/manure shall be well-composted and free of unwanted weed seed.

PLANTING SOIL

A. Planting soil shall be a mixture of 3 parts topsoil and 1 part compost by volume.
B. Planting soil shall have a pH range of 5.5-7.0
   a. If planting soil mixture does not fall within the required pH range, limestone or aluminum sulfate shall be added to bring the pH within the specified limit

MULCH

A. Mulch shall be a 100% fine-shredded pine bark of uniform size and free from rot, leaves, twigs debris, stones or any material harmful to plant growth. Bark shall have been shredded and stockpiled no less than two months and no more than two years before use.

PART 3 EXECUTION

3.1 INSTALLATION

A. Pre-Plant Weed Control

1. Herbicide use is not permitted. If live perennial weeds exist on site at the beginning of work, bag and remove weeds from the site.

2. Maintain site weed free until final acceptance by Owner utilizing mechanical and manual methods.

B. Loaming

1. Compost Manufactured Topsoil – The soil (source material) shall be free of lumps, plants, weeds, roots and other debris over 2 inches in any dimension and free of stones over inch in any dimension. The organic compost shall be uniformly incorporated into the loam source by rolling and tumbling, by a front-end loader or by processing in a mixing plant. The material shall be mixed sufficiently to produce a homogenous soil, free of lumps and clods.
2. Prior to placing loam, scarify subgrade areas; remove all rocks over two (2) inches and debris; and set grade stakes as necessary. Place topsoil evenly over all areas to be loamed to a minimum thickness of six (6) inches. Hand rake to remove clods, lumps, brush, roots, and stones over ¾ inches in diameter. Hand

roll to show depressions and uneven grades. Regrade as necessary to obtain smooth, even grades. Surplus topsoil shall become the property of the Contractor and shall be removed off the site.

3. Apply additives (lime, fertilizer, compost etc.) as per the recommendation of the testing lab. Apply additives and harrow into top two (2) inches of the seedbed.

4. Repair damage resulting from erosion, gullies, washouts or other similar causes if such damage occurs before certification of acceptability planting beds by the Landscape Architect.

C. Maintenance

1. Maintenance shall begin immediately after each plant is planted and shall continue until project acceptance (certification of acceptability). The Contractor shall provide water for irrigation if none is available on site.
2. Planting areas shall be kept free of weeds, grass and other undesired vegetative growth
3. Maintenance shall consist of pruning, watering, cultivating, weeding, mulching, removal of dead material, repairing and replacing of tree stakes, tightening and repairing of guys, resetting plants to proper grades and upright position, and necessary work to keep plants free of insects and disease and in a healthy growing condition.

3.4 CLEANUP

A. The Landscape Contractor shall remove all debris, construction equipment, excess fill, rocks, and other excess material caused by his work, from the site upon completion of his portion of the work.

END OF SECTION 32 91 00

PROFESSIONAL TURF MIXES

PENN STATE SUPREME MIXTURE

35%	Creeping Red Fescue
25%	Proprietary Kentucky Bluegrass
20%	Proprietary Perennial Ryegrass
20%	Kentucky Bluegrass VNS

Common and proprietary varieties for a strong, well-adapted turf for the Northeast. Adapted from sunny to moderately-shaded areas. Ability to create a fine-textured lawn at a more economical price.
PLANTING RATE: 4-5 lb. per 1,000 sq. feet

PREMIUM LAWN MIXTURE

80%	2X Proprietary Tall Fescue
15%	Proprietary Perennial Ryegrass
5%	Proprietary Kentucky Bluegrass

Features elite turf-type tall fescues to provide tolerance to heat, drought and wear. Requires less fertility and water than bluegrass or ryegrass mixtures.
PLANTING RATE: 7-8 lb. per 1,000 sq. feet

PRO ATHLETIC MIXTURE

85%	2-3X Proprietary Kentucky Bluegrass
15%	Proprietary Perennial Ryegrass

High quality mixture for establishing or renovating athletic fields, quality bluegrasses with the ability to self-repair turf surfaces.
PLANTING RATE: 4-5 lb. per 1,000 sq. feet

PRO LANDSCAPE MIXTURE

65%	2X Proprietary Perennial Ryegrass
25%	Creeping Red Fescue
10%	Kentucky Bluegrass

Quality general purpose mixture combining quick establishment, dark green color and fine texture. Popular for new lawn establishment in a wide range of soils.
PLANTING RATE: 6-7 lb. per 1,000 sq. feet

CUSTOM BLENDING AVAILABLE UPON REQUEST

Ernst Conservation Seeds
8884 Mercer Pike
Meadville, PA 16335
(800) 873-3321 Fax (814) 336-5191
www.ernstseed.com

Date: March 19, 2024

Mesic to Dry Native Pollinator Mix - ERNMX-105

	Botanical Name	Common Name	Price/Lb
30.00 %	*Schizachyrium scoparium, Fort Indiantown Gap-PA Ecotype*	Little Bluestem, Fort Indiantown Gap-PA Ecotype	14.62
19.00 %	*Elymus virginicus, Madison-NY Ecotype*	Virginia Wildrye, Madison-NY Ecotype	10.45
12.30 %	*Sorghastrum nutans, NY4 Ecotype*	Indiangrass, NY4 Ecotype	14.46
8.50 %	*Echinacea purpurea*	Purple Coneflower	43.20
5.00 %	*Panicum clandestinum, Tioga*	Deertongue, Tioga	22.08
3.50 %	*Verbena hastata, PA Ecotype*	Blue Vervain, PA Ecotype	38.40
3.20 %	*Penstemon digitalis, PA Ecotype*	Tall White Beardtongue, PA Ecotype	168.00
3.00 %	*Coreopsis lanceolata*	Lanceleaf Coreopsis	28.80
3.00 %	*Rudbeckia hirta*	Blackeyed Susan	31.20
2.00 %	*Heliopsis helianthoides, PA Ecotype*	Oxeye Sunflower, PA Ecotype	33.60
1.50 %	*Lespedeza capitata, RI Ecotype*	Roundhead Lespedeza, RI Ecotype	115.20
1.30 %	*Zizia aurea, PA Ecotype*	Golden Alexanders, PA Ecotype	72.00
1.00 %	*Asclepias tuberosa, PA Ecotype*	Butterfly Milkweed, PA Ecotype	312.00
1.00 %	*Aster pilosus, PA Ecotype*	Heath Aster, PA Ecotype	264.00
1.00 %	*Chamaecrista fasciculata, PA Ecotype*	Partridge Pea, PA Ecotype	12.00
1.00 %	*Senna hebecarpa, VA & WV Ecotype*	Wild Senna, VA & WV Ecotype	28.80
0.70 %	*Asclepias incarnata, PA Ecotype*	Swamp Milkweed, PA Ecotype	177.60
0.60 %	*Rudbeckia triloba, WV Ecotype*	Browneyed Susan, WV Ecotype	57.60
0.50 %	*Baptisia australis, Southern WV Ecotype*	Blue False Indigo, Southern WV Ecotype	96.00
0.50 %	*Eupatorium perfoliatum, PA Ecotype*	Boneset, PA Ecotype	192.00
0.40 %	*Monarda fistulosa, Fort Indiantown Gap-PA Ecotype*	Wild Bergamot, Fort Indiantown Gap-PA Ecotype	96.00
0.30 %	*Asclepias syriaca, PA Ecotype*	Common Milkweed, PA Ecotype	96.00
0.20 %	*Solidago bicolor, PA Ecotype*	White Goldenrod, PA Ecotype	240.00
0.20 %	*Solidago nemoralis, PA Ecotype*	Gray Goldenrod, PA Ecotype	264.00
0.10 %	*Pycnanthemum incanum, MD Ecotype*	Hoary Mountainmint, MD Ecotype	432.00
0.10 %	*Solidago juncea, PA Ecotype*	Early Goldenrod, PA Ecotype	336.00
0.10 %	*Solidago rugosa, PA Ecotype*	Wrinkleleaf Goldenrod, PA Ecotype	264.00

100.00 % **Mix Price/Lb Bulk: $36.69**

Seeding Rate: 20 lbs/acre with 30 lbs/acre of a cover crop. For a cover crop use either grain oats (1 Jan to 31 Jul) or grain rye (1 Aug to 31 Dec).

Herbaceous Flowering Species - Herbaceous Perennial; Pollinator Favorites; Uplands & Meadows

The native wildflowers and grasses in this mix provide an attractive display of color from spring to fall. Designed for mesic to upland sites and full sun to lightly shaded areas. This mix will attract a variety of pollinators and songbirds. Mix formulations are subject to change without notice depending on the availability of existing and new products. While the formula may change, the guiding philosophy and function of the mix will not.

Price quotes guaranteed for 30 days.
All prices are FOB Meadville, PA.
Please check our web site at www.ernstseed.com
for current pricing when placing orders.