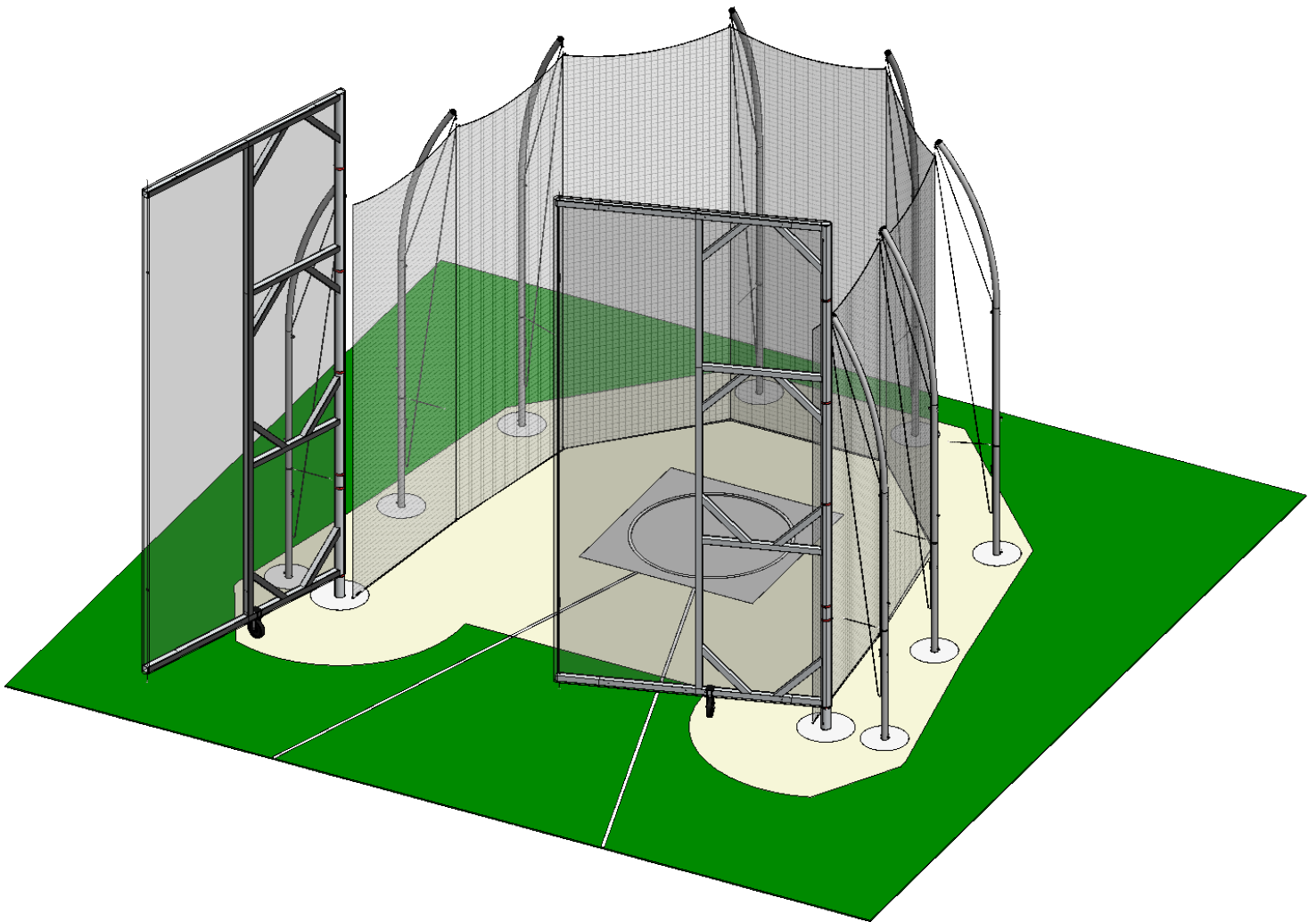


# CHDC-EH

## Extended Height NCAA Hammer-Discus Cage

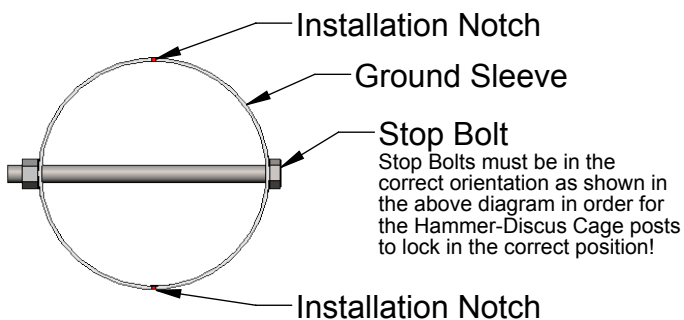
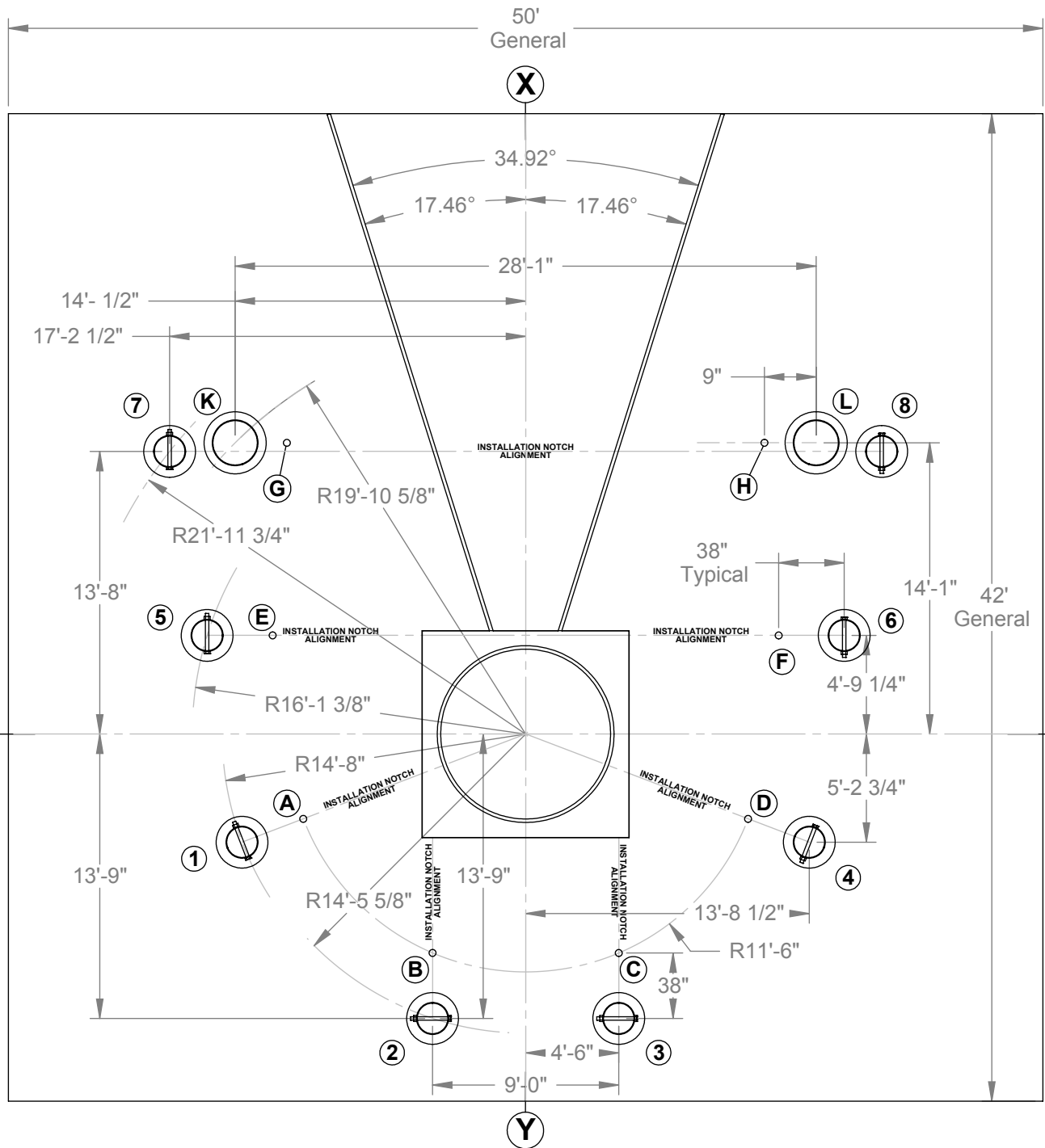


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# CHDC-EH

## Extended Height NCAA Hammer-Discus Cage

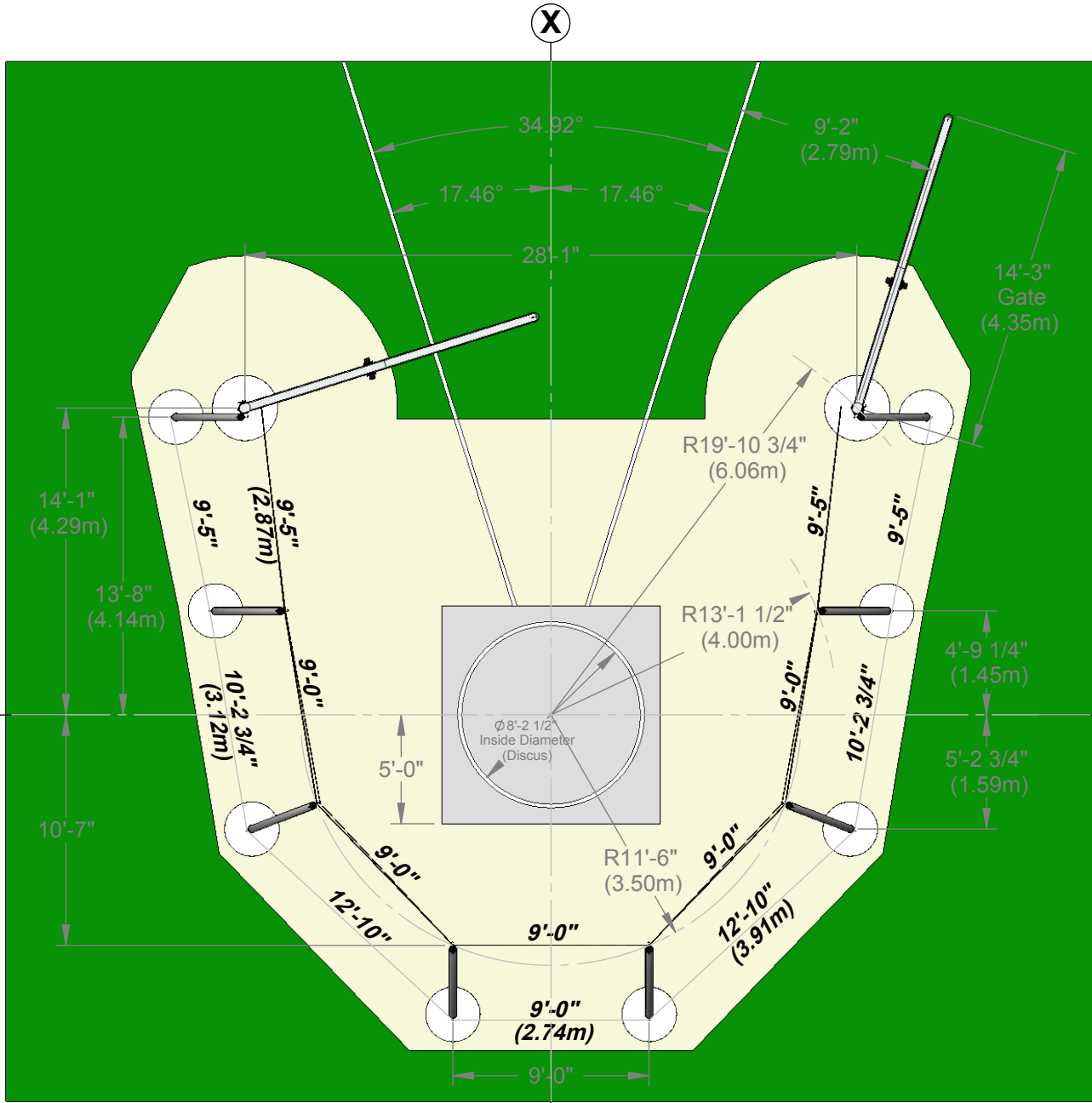
### Ground Sleeve Placements



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DESCRIPTION: <b>CHDC-EH - Ground Sleeve Placements</b>		
NOTE: Extended Height NCAA Hammer-Discus Cage		
MODEL: CHDC-EH	CATEGORY: CUSTOMER	DATE: 09/23/11
DWN. BY: ARP	CAD FILE: CHDC-EH Packet	DWG. NO. CHDC-EH-C-001

# CHDC-EH Extended Height NCAA Hammer-Discus Cage Plan View Layout



AAE recommends that a 6" - 8" thick concrete pad be poured for the entire throwing area (as shown).  
**Important:** concrete must cover an 8' radius from the gate posts (K & L) to create a level surface for the gate wheel.

**\*Meets and Exceeds All NCAA Rules & Specifications\***

**\*Gate Exceeds NCAA Recommended Min. Ht. of 26'-3" (8m)\***  
**\*Total gate height is 30' (9.14m)\***

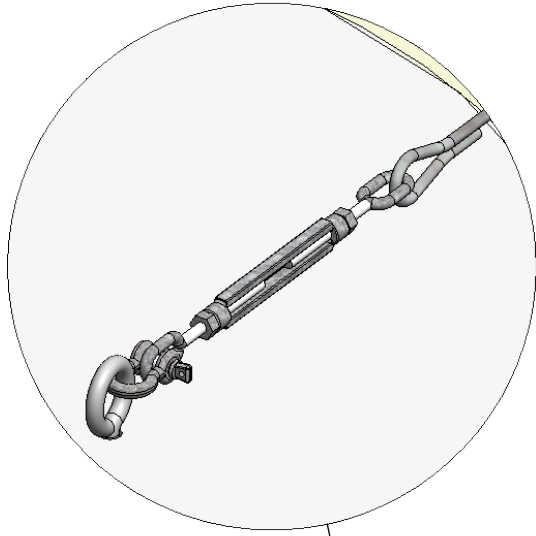
**Main Net Size = 24'-0" High x 65'-0" Perimeter**  
**Optional Barrier Net Size = 8'-0" High x 74'-0" Perimeter**



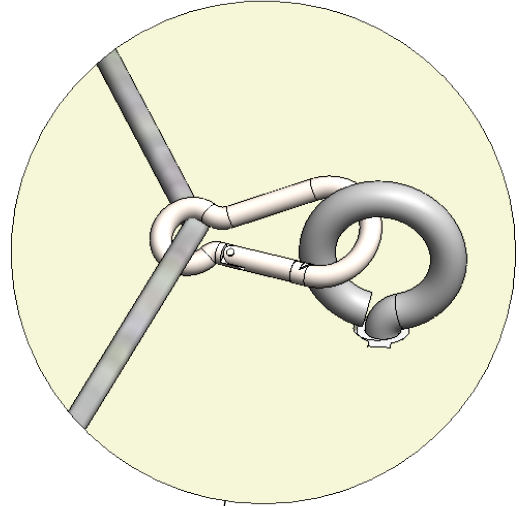
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DESCRIPTION: <b>CHDC-EH - Plan View Layout</b>		
NOTE: Extended Height NCAA Hammer-Discus Cage		
MODEL: CHDC-EH	CATEGORY: <b>CUSTOMER</b>	DATE: 09/23/11
DWN. BY: ARP	CAD FILE: CHDC-EH Packet	DWG. NO. CHDC-EH-C-002

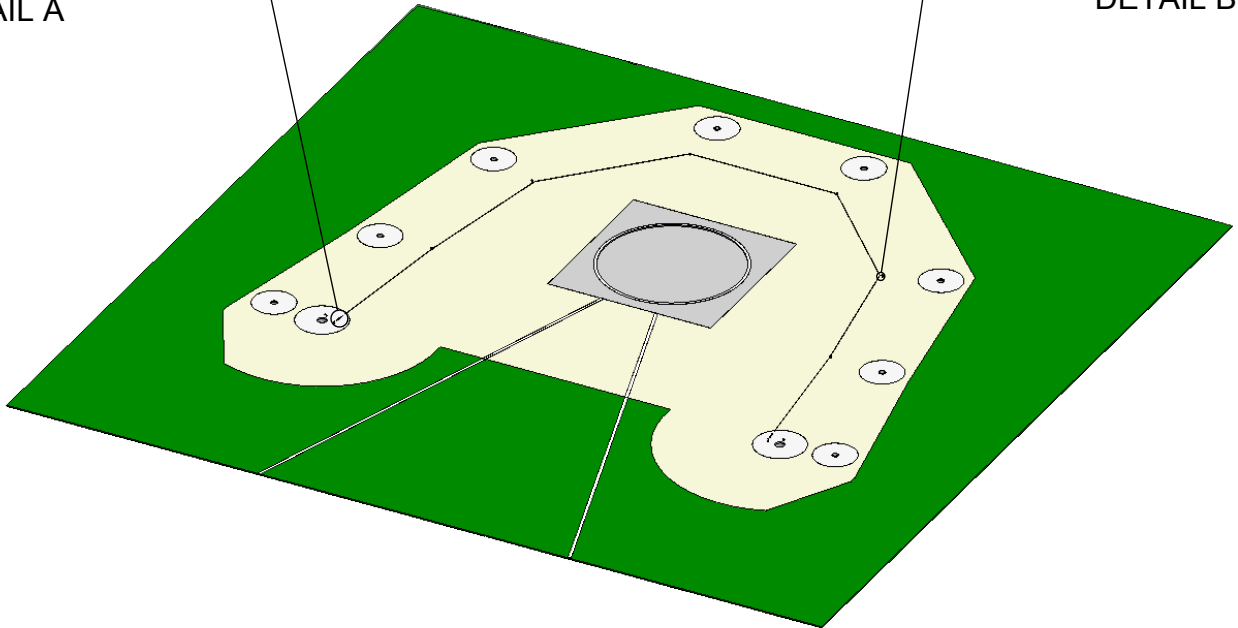
# CHDC-EH Extended Height NCAA Hammer-Discus Cage Ground Cable Specifications



DETAIL A



DETAIL B



**Notes:**

- $\varnothing$  1/4" x 61'-6" long vinyl-coated galvanized steel cable with a galvanized thimble, galvanized turnbuckle, and galvanized anchor shackle at each end (total of 2 of each)
- Anchor shackles attach the cable to eyebolts at the mouth of the cage (Detail A)
- Stainless steel pear clips attach the cable to eyebolts around the perimeter of the cage net (Detail B)
- Plastic wire ties secure the bottom of the net to the ground cable about every 18"



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DESCRIPTION: <b>CHDC-EH - Ground Cable Specifications</b>		
NOTE: Extended Height NCAA Hammer-Discus Cage		
MODEL: CHDC-EH	CATEGORY: CUSTOMER	DATE: 01/12/12
DWN. BY: ARP	CAD FILE: CHDC-EH Packet	DWG. NO. CHDC-EH-C-003

6

5

4

3

2

1

# CHDC-EH Extended Height NCAA Hammer-Discus Cage Gate Specifications

F

F

E

E

D

D

C

C

B

B

A

A

14'-3"  
Overall Width

14 15 16 22

5 steel collars, spaced evenly, hold the vertical gate post cable close to the gate post for continuous net coverage throughout the whole cage

Main cage netting attaches to gate using plastic zip-ties wrapped around a steel cable every 6" to hold the net as close to the gate as possible.

28'-8"  
Net Height  
30'-0"  
Gate Height

37'-0"  
Overall Length

A horizontal cable system hooks onto a steel post collar 78" up on each gate post. With net retractors attached to each upright, the cable holds the net back, preventing it from bowing into the throwing area

6" Thick Full Throwing Area Concrete Pad

84" to UHMW Insert

90" Ground Sleeve

CONCRETE  
23 24 25 26 32 33

See drawing no. HDC-C-001  
HDC Wheel Assembly

Factory-installed UHMW insert in the bottom of the ground sleeve allows for smooth gate rotation

8" Crushed Stone

36"



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DESCRIPTION: <b>CHDC-EH - Gate Specifications</b>		
NOTE: Extended Height NCAA Hammer-Discus Cage		
MODEL: CHDC-EH	CATEGORY: <b>CUSTOMER</b>	DATE: 10/24/11
DWN. BY: ARP	CAD FILE: CHDC-EH Packet	DWG. NO. CHDC-EH-C-003

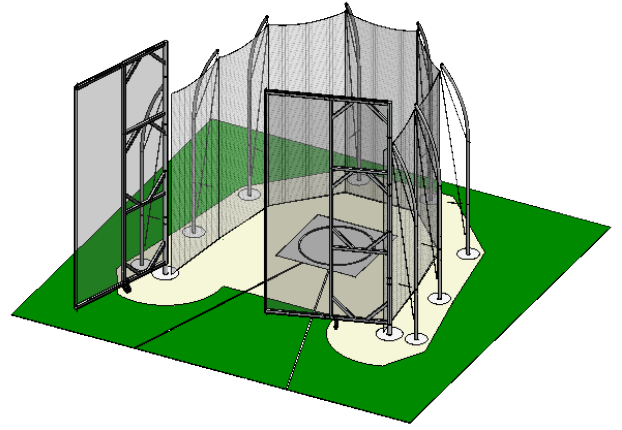
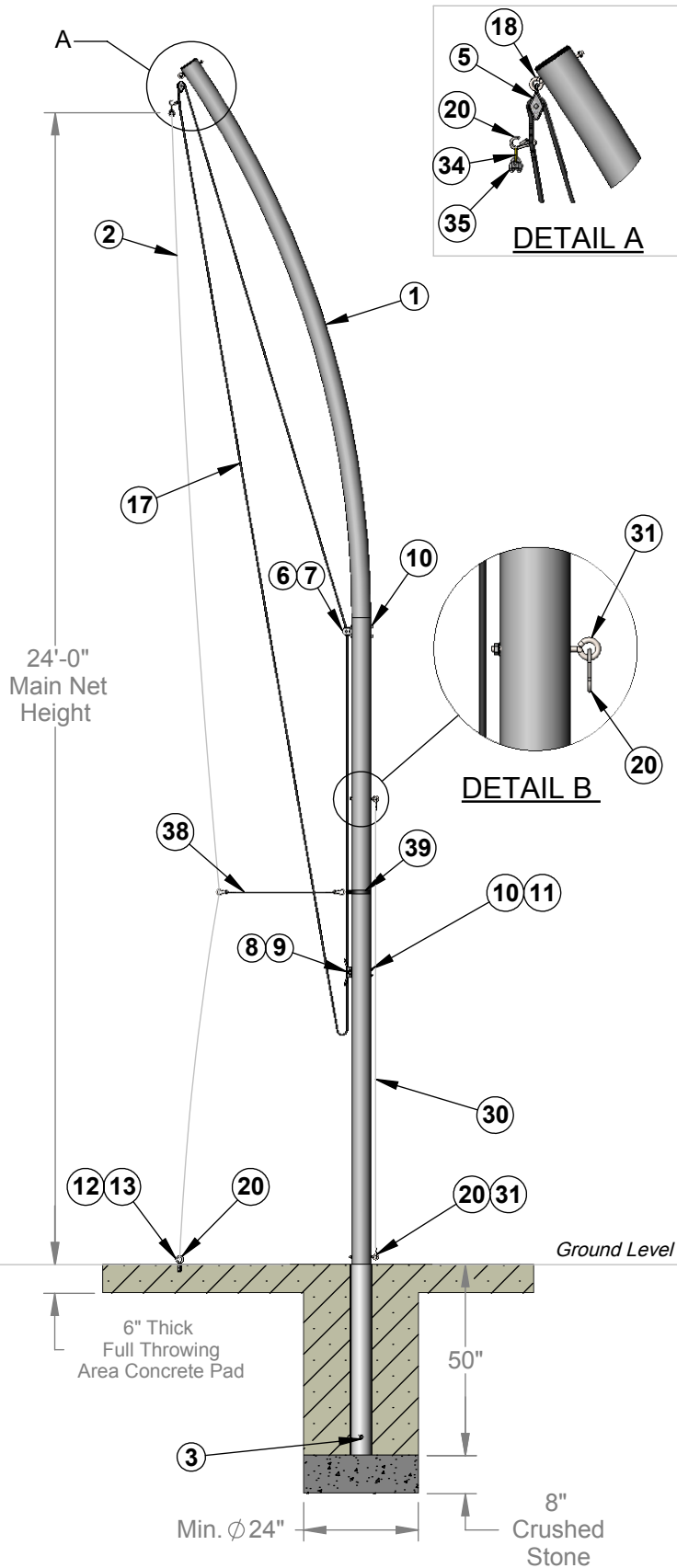
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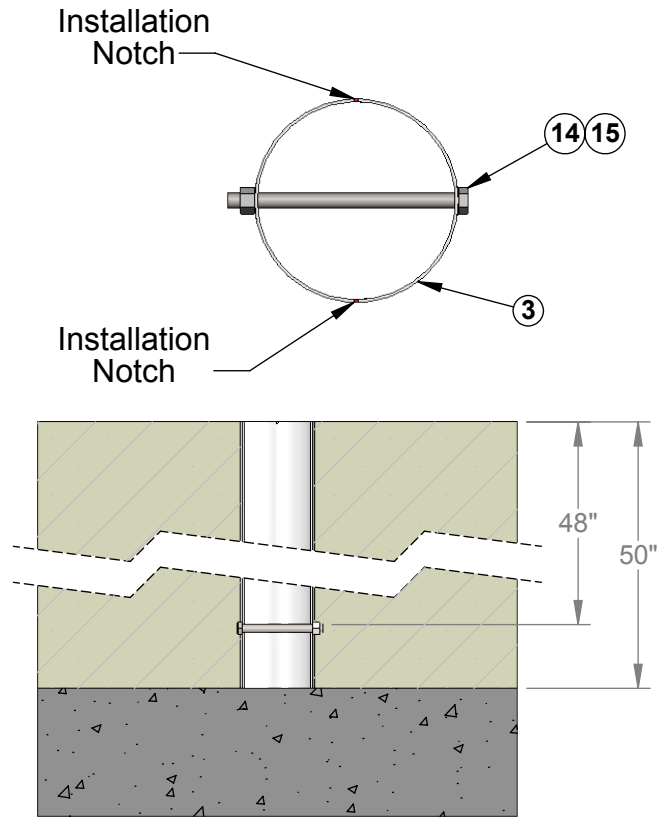
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1

# CHDC-EH Extended Height NCAA Hammer-Discus Cage Installation/Upright Specifications



## CHDC-EH Ground Sleeve



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DESCRIPTION:  
**CHDC-EH - Installation/Upright Specifications**

NOTE:  
Extended Height NCAA Hammer-Discus Cage

MODEL: CHDC-EH	CATEGORY: CUSTOMER	DATE: 09/23/11
DWN. BY: ARP	CAD FILE: CHDC-EH Packet	DWG. NO. CHDC-EH-C-004

\*Consult Local Codes\*

**CHDC-EH  
EXTENDED HEIGHT NCAA HAMMER-DISCUS CAGE  
PARTS LIST**

Pt#	Item	Description	Qty.
1	Upright	4.00" O.D. x .226 x 28'-0" aluminum tube, 36" arc offset, 6061T6	8
2	Main Net	#820H - 24' x 85', framed with 3/8" rope, B-treated, 1 3/4" square w/ integrated anti-sag cable	1
3	Upright Ground Sleeve	4.35" O.D. x .100" x 40" aluminum tube, 6061T6 with factory-installed stop bolt	8
4	Gate Ground Sleeve	6.625" O.D. x .200" x 90" aluminum tube, 6061T6 with factory-installed UHMW insert	2
5	Hanging Swivel Pulley	#3-5 fast eye, galvanized steel, swivel pulley	8
6	Fixed Pulley	#1 deck block galvanized steel pulley	8
7	Pulley Bolt	1/4"-20 x 4 1/2" hex bolt, S.S.	16
8	Cleat	6" galvanized steel cleat	8
9	Cleat Bolt	1/4"-20 x 5 1/2" hex bolt, S.S.	16
10	Hex Nut	1/4"-20 steel hex nylon lock nut, S.S.	32
11	Acorn Nut	1/4"-20 steel acorn nut, S.S.	16
12	Eyebolt	3/8"-16 x 2 1/2" eyebolt, S.S.	8
13	Concrete Anchor	3/8"-16 tampin insert, P25T	8
14	Hex Bolt	1/2"-13 x 5" steel hex bolt, S.S.	36
15	Hex Nut	1/2"-13 steel hex nylon lock nut, 18-8 S.S.	36
16	Washer	1/2" flat washer, S.S.	28
17	Hoisting Rope	5/16" polypropylene black braided rope w/ pear clip, 32' long	8
18	Eyebolt	5/16"-18 x 6" steel eyebolt, S.S.	8
19	Hex Nut	5/16"-18 steel hex nylon lock nut, 18-8 S.S.	8
20	Pear Clip	Spring hook clip, 1/4" dia. (*2 extra per upright with optional barrier net)	24 (*40)
21	Main Gate Frame	Rotating Gate main frame (7'-0" x 30' with 6" x 37'-0" post)	2
22	Gate Extension Arm	4" sq. x .250" wall x 7'-3" 6061T6 aluminum welded frame with 1/2" thick pre-drilled welded plate	4
23	Fixed Caster	12" fixed caster, 15" high	2
24	Caster Bolt	3/8"-16 x 5" steel hex bolt, S.S.	8
25	Hex Nuts	3/8"-16 steel hex nylon lock nut, 18-8 S.S.	8
26	Washer	3/8" lock washer, S.S.	8
27	Vertical Gate Post Cable Assembly	Assembly comprised of: 1 ea. 22'-8" lg. 1/4" galvanized cable 2 ea. 1/4" galvanized thimbles 1 ea. Galvanized turnbuckle 3 ea. Galvanized post collars vinyl-coated black 2 ea. 3/8" -16 x 2 1/2" forged closed eyebolts 1 ea. 3/8" -16 x 2 1/2" forged open eyebolt	2

**CHDC-EH  
EXTENDED HEIGHT NCAA HAMMER-DISCUS CAGE  
PARTS LIST**

Pt#	Item	Description	Qty.
28	Gate Extension Assembly	6 ea. 3/8" -16 hex nylon lock nuts, S.S. Assembly comprised of:	2
	Cable	1 ea. 28'-0" lg. 1/4" galvanized cable	
	Assembly	2 ea. 1/4" galvanized thimbles 1 ea. Galvanized turnbuckle 2 ea. 3/8"-16 x 6" forged eyebolts 2 ea. 3/8" flat washers, S.S. 2 ea. 3/8" hex nylon lock nuts, S.S.	
29	Gate Net	N820H - 28'-8" high, 29' around, 1 end open, framed, B-treated	2
*30	Barrier Net	N820H- 8'x 74' framed with 3/8" rope, B-treated	1
*31	Eyebolt (Barrier Net)	5/16" – 18 x 2 1/4" eyebolt, S.S. (optional)	16
32	Caster Plate	6 1/4" x 4 3/4" x 1/8" pre-drilled attachment plate	2
33	Caster Shims	4" x 5" aluminum shims to ensure constant contact between the gate wheel and the concrete pad; eight 1/4" thick, two 1/8" thick	6
34	O-Ring	1" I.D. brass O-ring	8
35	Cable Clamp	Galvanized steel cable clamp assembly	8
36	Ground Cable Assembly	Assembly Comprised of: 1 ea. 83'-0" lg. 1/4" vinyl-coated galvanized cable 2 ea. 1/4" galvanized thimble 2 ea. Galvanized turnbuckle 2 ea. Galvanized anchor shackle	1
37	Horizontal Pull-Back Cable	83'-0" lg. 1/4" vinyl-coated galvanized cable looped with galvanized thimbles at both ends	1
38	Net Retractor	5/16" polypropylene black braided rope w/ pear clip on each end, 24" long	6
39	Galvanized Post Collar	4" I.D. galvanized steel collar vinyl-coated black w/ 3/8" stainless steel hardware	16

**\* OPTIONAL ITEMS FOR BARRIER NET**

**FOR TECHNICAL ASSISTANCE, CALL 1-800-523-5471**

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**CHDC-EH**  
**EXTENDED HEIGHT NCAA HAMMER-DISCUS CAGE**  
**LAYOUT AND INSTALLATION INSTRUCTIONS**

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**LAYOUT** - (Refer to Drawing No. CHDC-EH-C-001 & 002 for details)

- Step No. 1                      Using masonry string, establish perpendicular lines "MN" and "XY", which intersect at point "O", the center of the hammer circle.
- Step No. 2                      Refer to drawing no. CHDC-EH-C-001 to locate points "1" thru "8".  
**NOTE: Points "1" thru "8" are the location of the center of the ground sleeves (for the main uprights) to be installed.**
- Step No. 3                      Refer to drawing no. CHDC-EH-C-001 to locate points "A" thru "H".  
**NOTE: Points "A" thru "H" are the location of the eyebolts that will anchor the Ground Cable Assembly.**
- Step No. 4                      Refer to drawing CHDC-EH-C-001 to locate points "K" and "L".  
**NOTE: Points "K" and "L" are the location of the center of the rotating gate ground sleeves to be installed.**

**INSTALLATION**

- Step No. 1  
Full Throwing Area  
Concrete Pad  
Excavation  
  
**See Drawing No.  
CHDC-EH-C-002**
- Dig an area for the 6"-8" thick Full Throwing Area Concrete Pad (minimum recommended coverage shown in drawing no. CHDC-EH-C-002). The pad must include an area with a radius of at least 8' from the gate posts (K & L) to create a level area for the gate wheel to roll.  
**Consult local building codes for depth and drainage requirements.**  
**NOTE:** AAE recommends that a concrete pad be installed for the entire throwing area to reduce maintenance around the net. This eliminates the need to cut grass around the net, reducing the risk of cutting the net with maintenance equipment. This also reduces the risk of debris collecting in the ground sleeves and concrete anchors. AAE also recommends a dedicated warm-up area of concrete or artificial turf to prevent mud, grass, etc. from being tracked into the throwing area. This is not only aesthetically beneficial, but keeping the throwing area free of debris of any kind is essential for the throwers' safety.
- Step No. 2  
Placing Ground  
Sleeves  
  
**See Drawing No.  
CHDC-EH-C-001  
& 002 for Steps 2-  
5**
- Drill or dig 24"-30" diameter holes a minimum of 58" deep (**Consult local building codes for concrete depth and drainage requirements.**) at points "1" thru "8" and minimum 36" diameter and 98" deep at points "K" and "L" (Gate Sleeves). Fill the bottom of each hole with approximately 8" of crushed stone, so the depth from ground level to the top of the stone is 50" for holes "1" thru "8" and 90" for holes "K" and "L". Insert the upright ground sleeves (Item No. 3) at points "1" thru "8" ("bolt side" down). Make sure the ground sleeves are flush with the ground, centered, leveled, (individually, as well as with each other), and plumb. Also, rotate the ground sleeves so that

**CHDC-EH**  
**EXTENDED HEIGHT NCAA HAMMER-DISCUS CAGE**  
**LAYOUT AND INSTALLATION INSTRUCTIONS**

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the two (2) grooves (Installation notches) on top of the ground sleeve are aligned correctly - See drawing no. CHDC-EH-C-001 for details. A masons string or straight edge may be used to aid in the aligning process.

**NOTE:** All listed depths are measured from the desired ground level at completion.

**NOTE:** It is **extremely important** that the installation notches on top of the ground sleeve are in proper alignment, so the key slot in the main upright will lock the upright into its proper position when set into the ground sleeve.

Step No. 3  
Placing Gate  
Ground Sleeves

Install the gate ground sleeves (Item No. 4) "UHMW side" down at points "K" and "L". Make sure the ground sleeves are flush with the ground, centered, and plumb. Be sure the inside depth of the ground sleeve to the UHMW insert is 84". The rotating gate ground sleeves have no installation notches, and thus require no special positioning.

Step No. 4  
Pouring Full  
Throwing Area  
Concrete Pad

When all the ground sleeves are in the proper position and alignment, the concrete can be poured for the entire throwing area. **(Be sure not to get any concrete inside the ground sleeves!)** As the concrete cures, constantly check to see that the ground sleeves are flush with the ground, centered, plumb, and in the correct alignment. Add expansion joints to the pad as necessary.

Step No. 5  
Drilling and  
Installing Concrete  
Anchors

Drill 3/4" diameter holes 1 3/4" deep at points "A" thru "H". Use a hammer to tap a concrete anchor (Item No. 13), "thread-side" down, into each of the holes. Allow a small amount of the anchor to protrude from the hole (about 1/4" or less) for maximum expansion. Thread 3/8"-16 eyebolts (Item No. 12) into the anchors until tight.

Step No. 6  
Ground Cable  
Assembly  
Installation

**See Drawing No.**  
**CHDC-EH-C-003**

Lay out the Ground Cable Assembly (Item No. 36) around the perimeter of the cage (marked by eyebolts at points "A" thru "H"). Attach the anchor shackle at each end of the Ground Cable Assembly to the eyebolts at point "G" and "H" (See Detail A in drawing no. CHDC-EH-C-003). Use pear clips (Item No. 20) to secure the cable to each of the other eight (8) eyebolts at points "A" thru "F" (See Detail B in drawing no. CHDC-EH-C-003). Tension the cable using the turnbuckles at both ends.

Step No. 7  
Upright Assembly

**See Drawing No.**  
**CHDC-EH-C-004**

Attach the swivel pulley, w/ attached eyebolt and hoisting rope assembly, (Item Nos. 5, 6, 17, 18, & 20) to the top hole of the upright using a 5/16"-18 hex nylon lock nut (Item No. 19). (If there are 2 holes present at the top of the upright, mount the pulley and eyebolt through the **top** hole.)

Attach the fixed pulley (Item no. 6) through the middle set of holes

**CHDC-EH**  
**EXTENDED HEIGHT NCAA HAMMER-DISCUS CAGE**  
**LAYOUT AND INSTALLATION INSTRUCTIONS**

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using 1/4"-20 x 4-1/2" hex bolts (Item No. 7) and 1/4"-20 hex nylon lock nuts (Item No. 10).

Attach one cleat (Item No. 8) through the lower set of holes using 1/4"-20 x 5-1/2" hex bolts (Item No. 9) and 1/4"-20 hex nylon lock nuts (Item No. 10). Cap threads with 1/4" -20 acorn nuts (Item No. 11). Secure the hoisting rope to the cleat.

After concrete cures, insert assembled upright into ground sleeve. Repeat procedures to assemble remaining uprights.

Step No. 8  
Rotating Gate  
Assembly

**See Drawing No.**  
**CHDC-EH-C-003**  
**& HDC-C-001**

Lay entire assembled gate horizontally on carpenter's horses. Attach Gate Extension Arms (Item No. 22) to the top and bottom of the Main Gate Frame (Item No. 21) using 1/2" hardware listed (Item Nos. 14, 15, & 16).

Attach Gate Extension Cable assembly (Item No. 28) by placing the 3/8"-16 x 6" closed eyebolts in the holes at the ends of the Gate Extension Arms and securing with a 3/8" flat washer and 3/8"-16 hex nylon lock nuts. Adjust and tighten if necessary.

Attach 12" caster (Item No. 23) to the bottom of Gate Main Frame using 3/8" hardware listed (Item Nos. 24, 25, & 26) (See drawing no. HDC-C-001). Open and spread out gate net envelope, and slide the open part of the envelope over the top, and down the gate. Use zip ties, positioned every 6"-8", to close the bottom of the gate net around the bottom of the gate.

Attach the Vertical Gate Post Cable Assembly (Item No. 27) to the pivot post of the rotating gate by placing the pre-assembled post collar-cable assembly around the post on the inside of the net, 6' from the top of the post, leaving the cable outside of the net. Install the other collar just below the bottom of the gate (about 100" from the bottom of the post), attach the cable to the bottom collar, and tighten in place. Tension the cable using the turnbuckle at the bottom of the cable, being sure the cable runs up the throwing side of the gate (with the rubber facing) on the outside of the net. Adjust and tighten as necessary.

Using a mechanical hoisting device, crane, or a front-end loader, (after concrete has cured) raise the assembled gate until it is perfectly perpendicular to the ground, and slowly lower the main post of the rotating gate into the ground sleeve. Use the included shims (Item No. 33) to adjust the height of the 12" caster so it remains in contact with the concrete pad through the gate's entire range of motion (See drawing no. HDC-C-001).

Repeat entire procedure to erect and install the other gate.

Step No. 9

Lower hoisting ropes on each post so the pear clip is reachable.

**CHDC-EH**  
**EXTENDED HEIGHT NCAA HAMMER-DISCUS CAGE**  
**LAYOUT AND INSTALLATION INSTRUCTIONS**

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Main Net  
Installation

Attach a cable clamp and O-ring (Item Nos. 34 & 35) to the cable woven into the top of the main net (Item No. 2) at each hoisting location, marked by a red stripe (See drawing no. CHDC-EH-C-002 for distances between hoisting locations if a red stripe is missing). Clip each post's pear clip to the O-ring at its respective hoisting location.

Raise the main net, and subsequently attach each front edge of the net to the Vertical Gate Post Cable Assembly using the zip-ties provided (spaced EVERY 6 in.) Zip-ties attach the net to the cable, but slide easily to allow the net to be raised and lowered. **DO NOT** over-tighten zip-ties!

Raise the net all the way by the hoisting rope and secure the end of the rope firmly and professionally to the cleat. (Consult former Navy personnel or handbook for proper method.)

With the net fully raised, use an extension ladder or lift to install three Galvanized Post Collars (Item No. 39) on each gate post. Space them evenly up the post (approx. 7', 12'-8", & 18'-4"). As with the top and bottom collars, place them inside the net with the bolt flange sticking out. Place the Vertical Gate Post Cable between the two flanges and between the bolt and the post, securing it in place close to the gate post.

Clip the bottom cable of the net to the eyebolts at points A-J. Attach the bottom of the net to the Ground Cable Assembly (Item No. 36) using the provided zip-ties spaced about every 12-18" around the perimeter of the net.

Step No. 10  
Horizontal Pull-  
Back Cable  
Installation

**See Drawing No.**  
**CHDC-EH-C-002**

Install a Galvanized Post Collar (Item No. 39) at a height of 78" on each of the gate posts with the bolt side facing the back of the cage. Clip one end of the Horizontal Pull-Back Cable (Item No. 37) to the bolt on the Galvanized Post Collar on gate post "L" using a Pear Clip (Item No. 20). Weave the cable through three or four squares of the Main Net (Item No. 2). Run the cable along the inside (throwing side) of the net to point "F". Weave the cable through three or four squares of the Main Net at point "F". Repeat for each subsequent point, making sure to run the cable between points on the inside of the net. Clip the other end of the cable to the collar on the other gate post ("K") using a Pear Clip.

Attach a Galvanized Post Collar (Item No. 39) to upright nos. "1"- "6" at a height of 78". Clip one pear clip from each Net Retractor (Item No. 38) to the collar on each of the uprights. Clip the other pear clip to the Net Retractor Cable Assembly at points "A" thru "F" where the cable is woven through the net.

## **CHDC-EH EXTENDED HEIGHT NCAA HAMMER-DISCUS CAGE LAYOUT AND INSTALLATION INSTRUCTIONS**

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### **OPTIONAL Barrier Net Installation (Purchased separately)**

Screw in eyebolts (Item No. 31) into threaded inserts located on the rear of each main upright (2 per upright). Clip the top and bottom of net to the eyebolts with pear clips (Item No. 20) at each location marked with a red stripe. Any excess net may be wrapped around the end upright. Use two Galvanized Post Collars (Item No. 39) per upright on upright nos. "7" & "8" to hold the backup net to the post. Space the collars about every 32" between the two backup net eyebolts. Loop the collar through the net and clamp it tight to the post. This keeps the net tight on the post to ensure safety and give a consistently clean look.

### **OPERATION, CARE, AND SPECIAL INSTRUCTIONS**

1. When cage is not in use, gates should be closed and loosely attached to one another. Be sure the wheel brakes are OFF to allow the gates to move and absorb wind forces safely.
2. NEVER pin or lock the gates in place as this can result in damage to the lock, the concrete pad, or the gate itself due to wind.
3. When the cage is in use, use the wheel brakes to hold the gates in the appropriate position for the throwing event. Wheel brakes should always be ON during use to prevent unwanted gate movement.
4. In the event of high winds, lower the Main Net and Barrier Net. DO NOT use the cage and keep out of the throwing area in high wind conditions.
5. During the off-season, removal and storage of the Main Net, Gate Nets and Barrier Net will prolong the life of the nets. Nets should be stored in a sealed drum (See AAE Model No. ND-P Net Drums) in a dry location to protect them from moisture and pests.

**FOR TECHNICAL ASSISTANCE, CALL 1-800-523-5471**

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