



ASBA 2023

ASBA TECHNICAL MEETING & TRADE SHOW

Pickleball

What's New and What's Changed in 2023



Carl Schmits

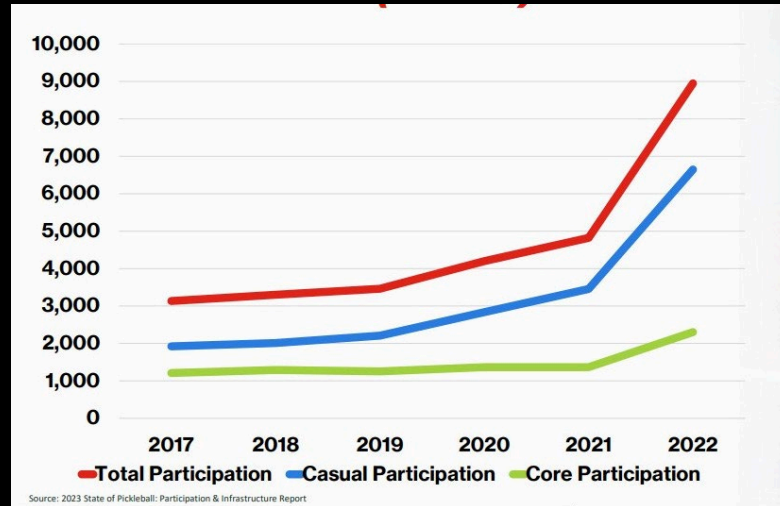
USA Pickleball Managing Director
Equipment Standards & Facility Development

Alex Levitsky

Global Sports & Tennis Design Group LLC
Sports Facility Design Consultant

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TENNIS

In eight years (2014-2022) tennis grew from 17.8 million to 23.6 million. 1 million in 2022. 4.4%.

(Statista)

PICKLEBALL

There were 8.95 million pickleball players in the United States at the end of 2022. That was an increase of 4.1 million from 2021. 86.5%

In eight years (2014-2022) pickleball grew from 2.2 million to 8.9 million. (Statista)

A report funded by Walmart, puts the shortage of courts to meet the current demand at 25,000.

TRENDS in Pickleball in 2023

- Pickleball remains the fastest growing sport; 85% (YoY), 158% in 3 years.
- Increasing demographic diversity; 25-34 year-olds largest group.
- More opportunities to develop industrial, commercial, retail spaces
- Visibility continues to increase:
 - Ath-lebrities bringing more media visibility; and
 - Audience increases with ESPN, Tennis Channel, and CBS.
- Increasing USAP project engagements ~\$300M



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CHANGES in Pickleball in 2023

- Increased diversity in the business models;
- A demographic shift has increased sustainability;
- Shifted away from tennis court conversions to new courts;
- Recognition & development of equipment for acoustically-sensitive areas;
and
- Purpose-built features designed-in early in development cycle.



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Court & Facility CHALLENGES for 2024

- Funding for municipalities;
- Increased early engagement needed;
- Encourage master-plan approach for larger scale facilities; and
- Ramp up business planning support for new entrants.



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EXPECTATIONS for 2024

- Continued build out of franchises / chains;
- Acoustic impact in every feasibility study;
- Build virtual networks of clubs/leagues on top of new/existing facilities;
 - Greater Ambassador engagement in all stages; vision to ribbon to program.
- More consistent 'build-to-spec' for facilities seeking USAP support / 'medallion';
- Structured tournament progress will driving facility upgrades,
in both scale and amenities.





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Since 2016, USA PICKLEBALL and ASBA have worked together to create and later update

Pickleball Courts: Construction & Maintenance Manual

Every three years, a joint editorial board made up of members of both USA Pickleball and the ASBA goes through the Manual and updates it. The work includes adding information, revising text and seeing to it that the Manual remains the primary reference for designers and builders of pickleball courts. This year marks the publication of the 3rd Edition.

50 changes were made - **20 you need to know.**

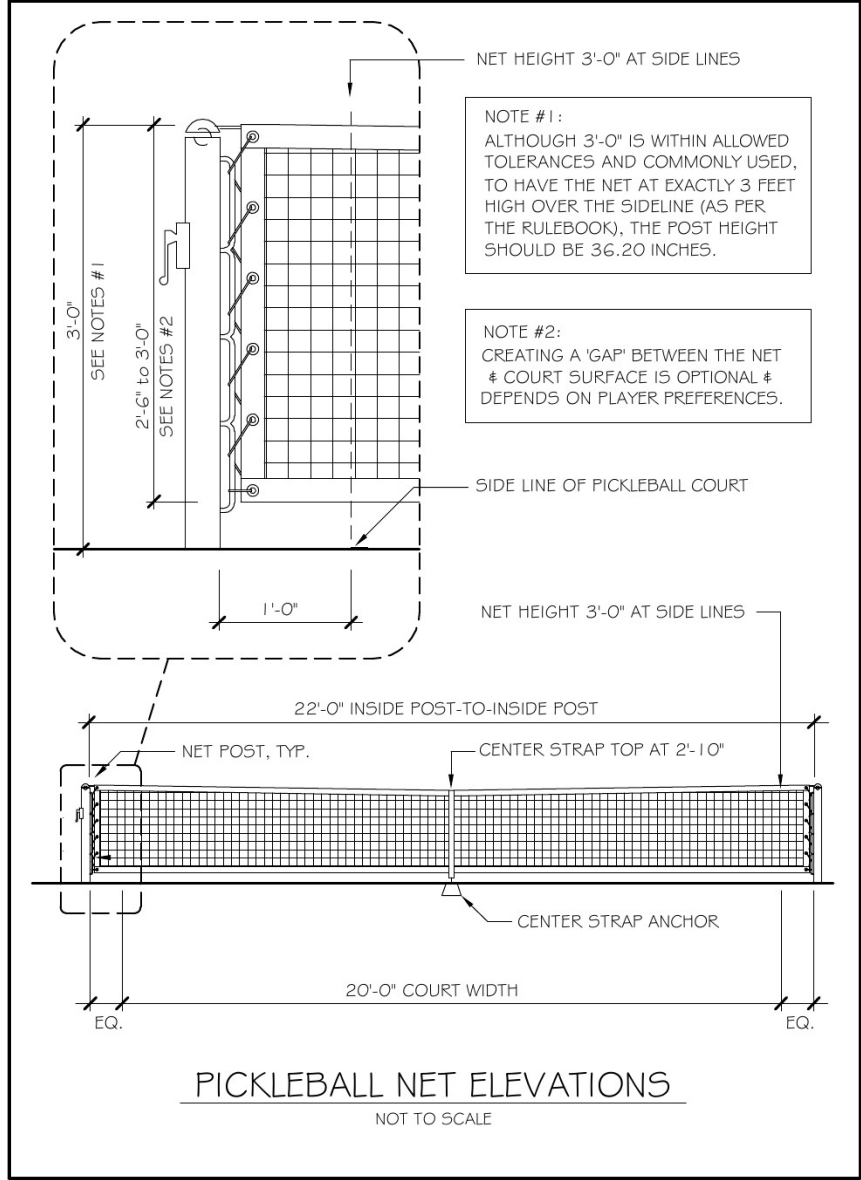
Also, **1** significant “typo”.



Pickleball Courts: Construction & Maintenance Manual 2023

20 changes you need to know.

- | | | |
|------------------------|-------------------------|-----------------------|
| 3 36" Net @ Side Line | 15 Cleaner Aggregate | 41 Outdoor Padding |
| 5 Divider Net Distance | 16 1½ "+ Single Lift | 43 Shelter Footprints |
| 6 Acoustics Issue | 23 Fast-Dry Court Slope | 44 Cat6 Cables |
| 7 Safety First | 29 7' High Mid-rail | 45 Indoor Padding |
| 8 Side Line to Fence | 30 Cut Corners Reduced | |
| 11 Measuring Courts | 32 Lights Temperatures | |
| 13 More Base Stone | 35 Net Posts – 36.2 in. | |
| 14 Thicker Asphalt | 36 Strap Foundations | |

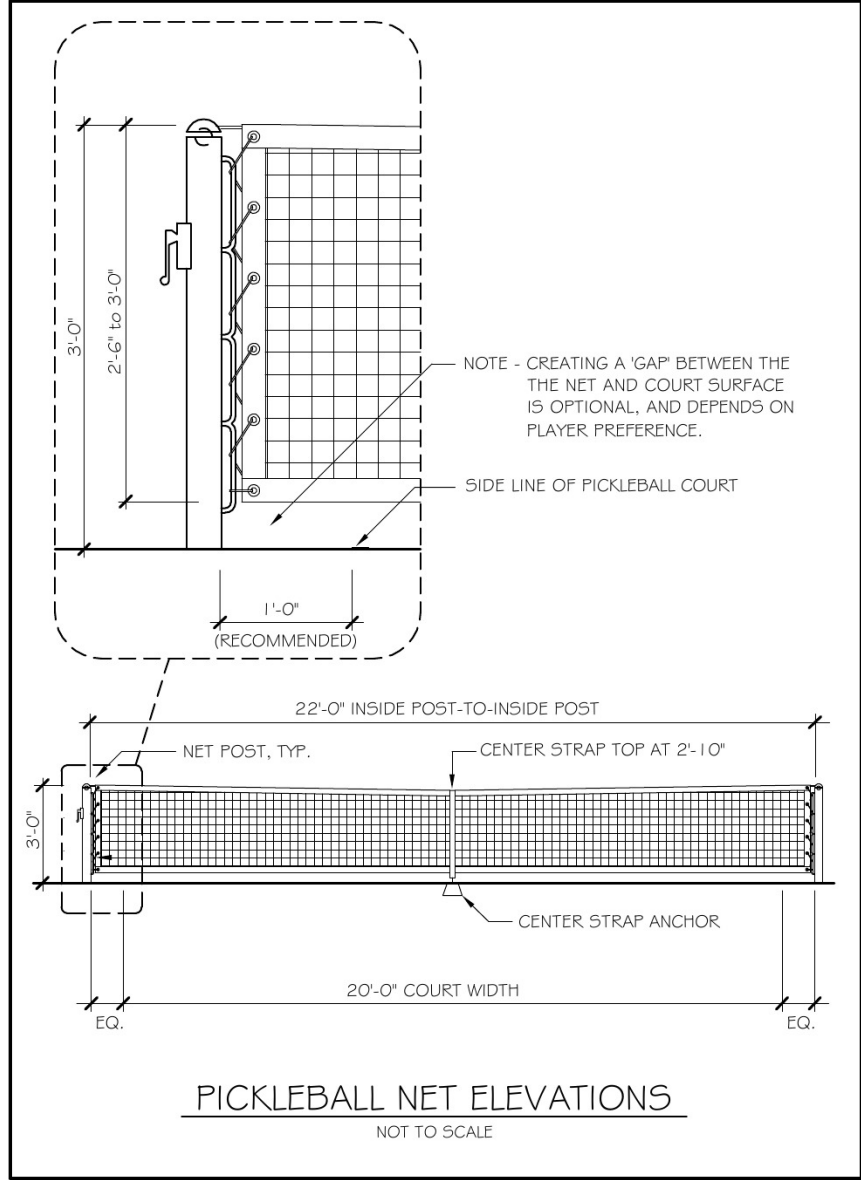


O2rNETELEV.AVL.23

2023

3 FT. HEIGHT

3
35



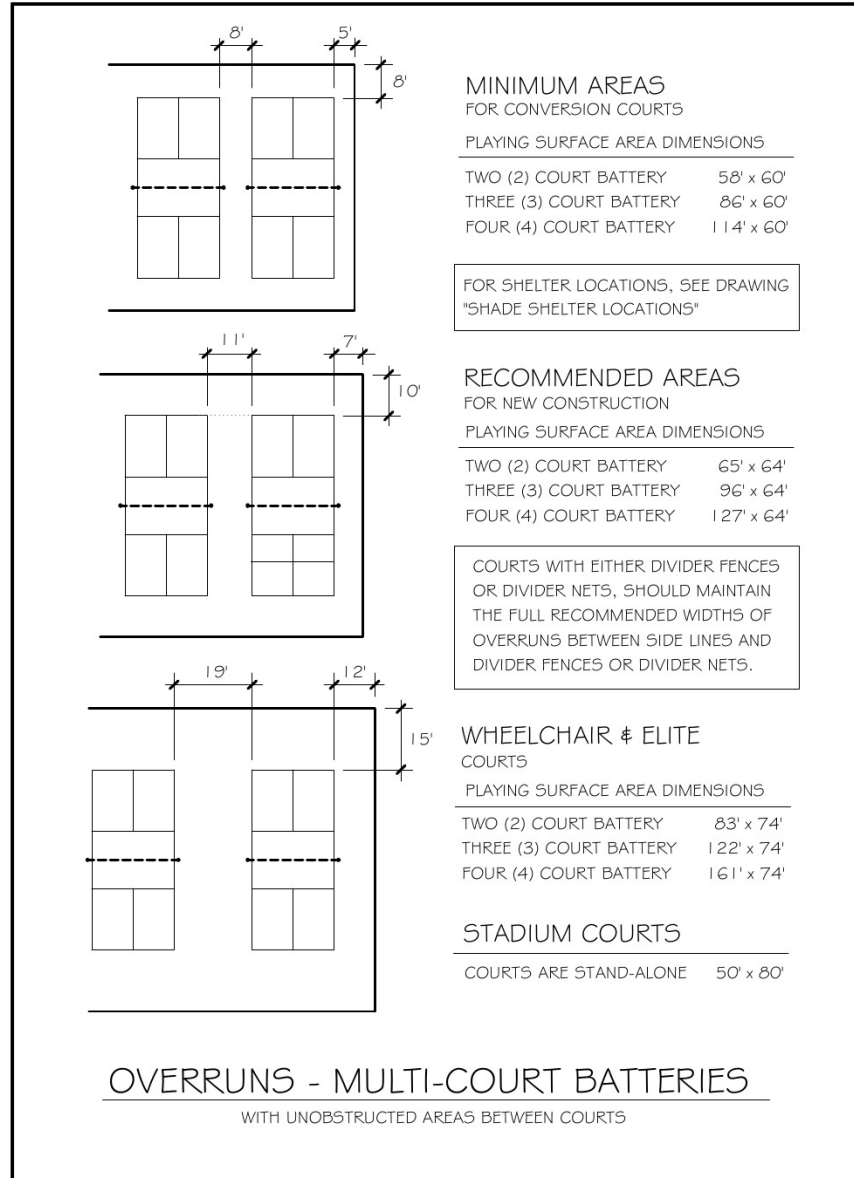
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2020



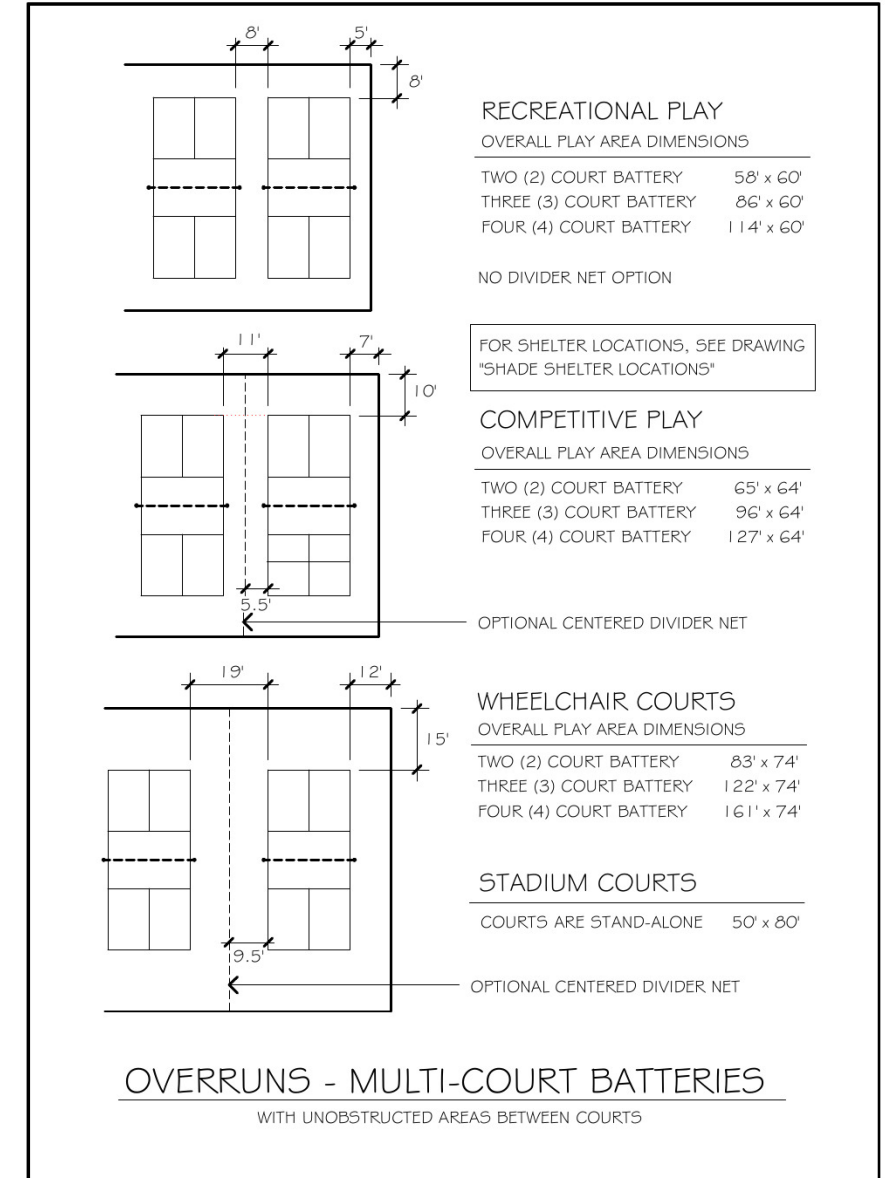
OVERRUNS

5



05BATTERY.SIZES.AVL.23

2023



05BATTERY.SIZES.AVL.20

2020

MINIMIZING HAZARDS 2023

First Stage – Eliminate. This is mostly in the design stage, where columns can be relocated and distances changed.

Second Stage – Guard. This is also commonly a design option. For example, to add a wall, fence or even drop curtain in front of the hazard.

Third – Protect. Padding is a good example of protecting against the hazard.

Fourth – Warn. The last resort is to post signs or paint objects bright colors to make them clearly visible.

7

MINIMIZING HAZARDS 2020

Previous Manuals did not address the issue of minimizing hazards.



7

Level 1: Eliminating Hazards

All fixed object are completely clear of the overall playing area.



7

Level 2 & 3: Guarded & Protected Against Hazards

Nearest light pole is
screened off (guarded)
from players.

All fixed object near the
overall playing area are
padded (protected) and



7

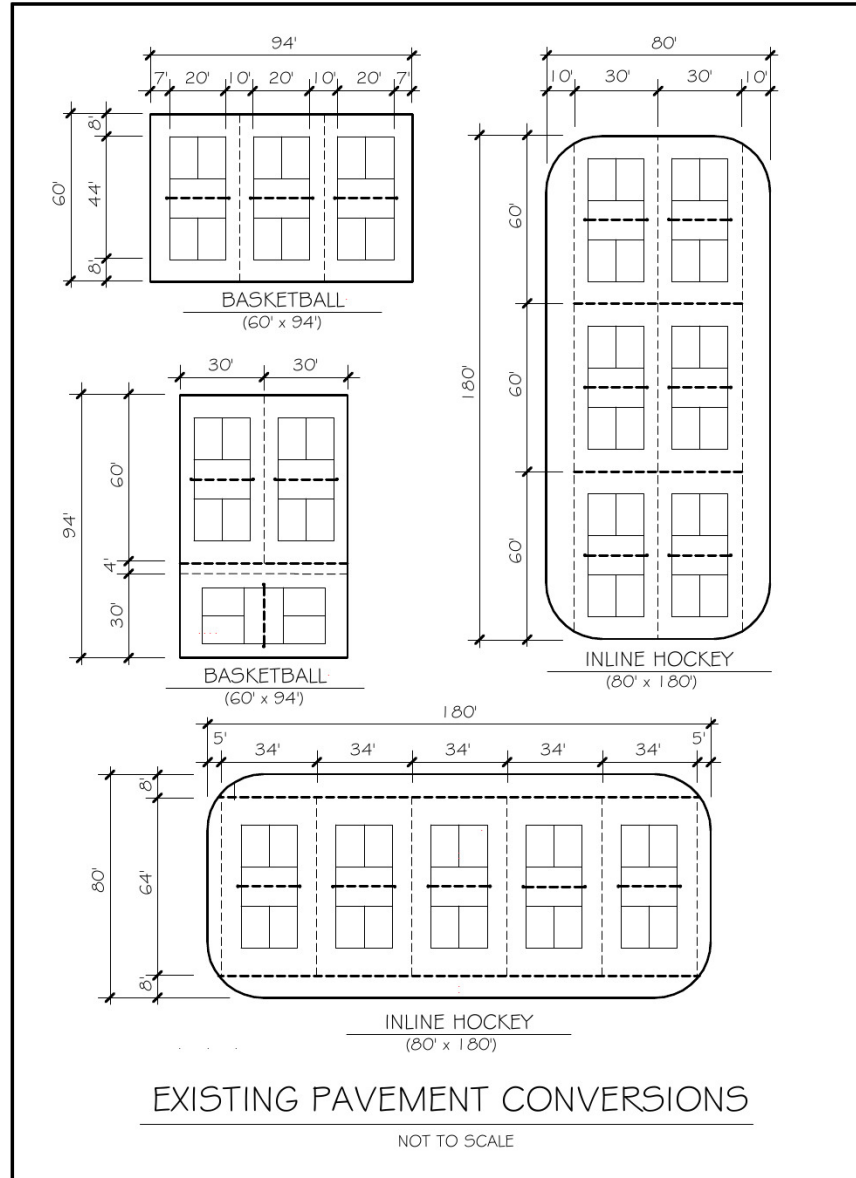
Level 3 & 4: **Protected & Warned Against Hazards**

Some columns along the overall playing area are padded (protected) while others are only painted a bright color to bring attention to them (warning).



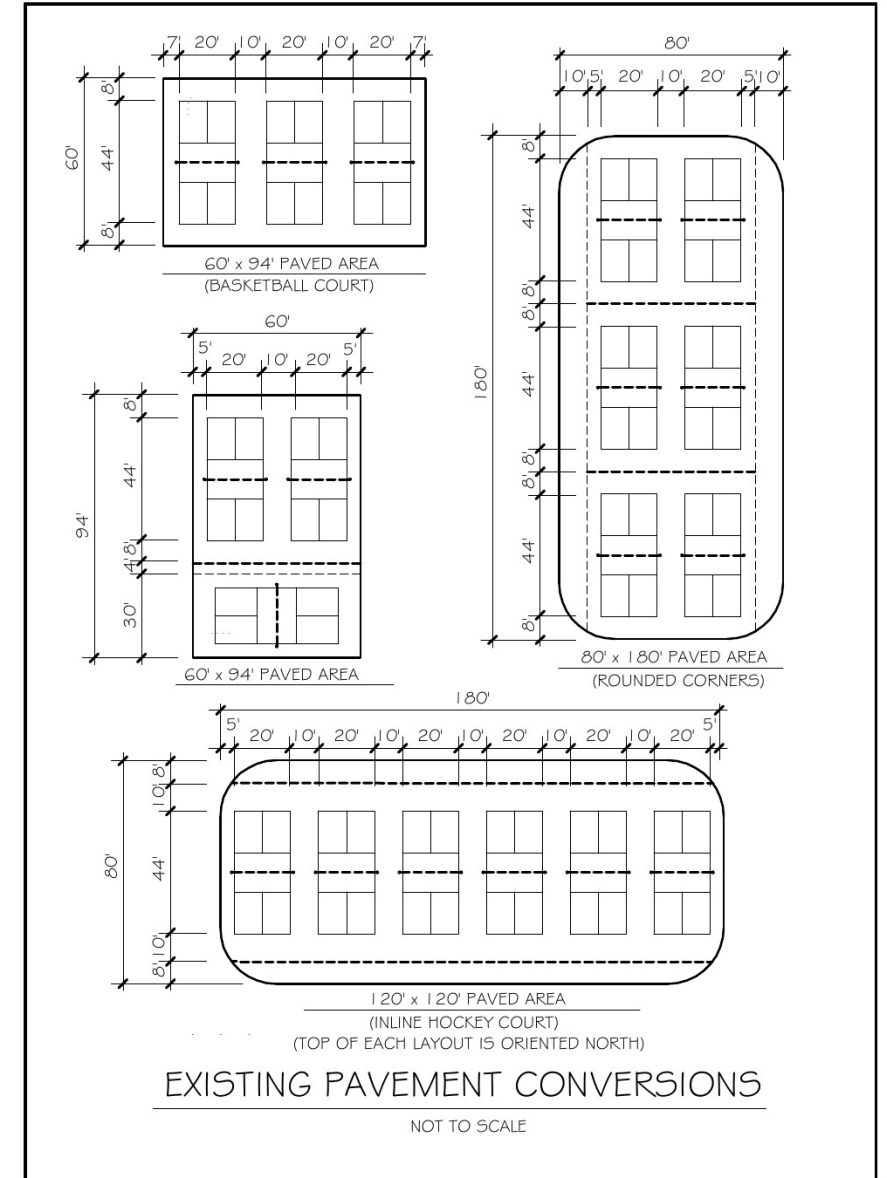
CONVERSIONS

8



08rCONVERSIONS2.AVL.23

2023



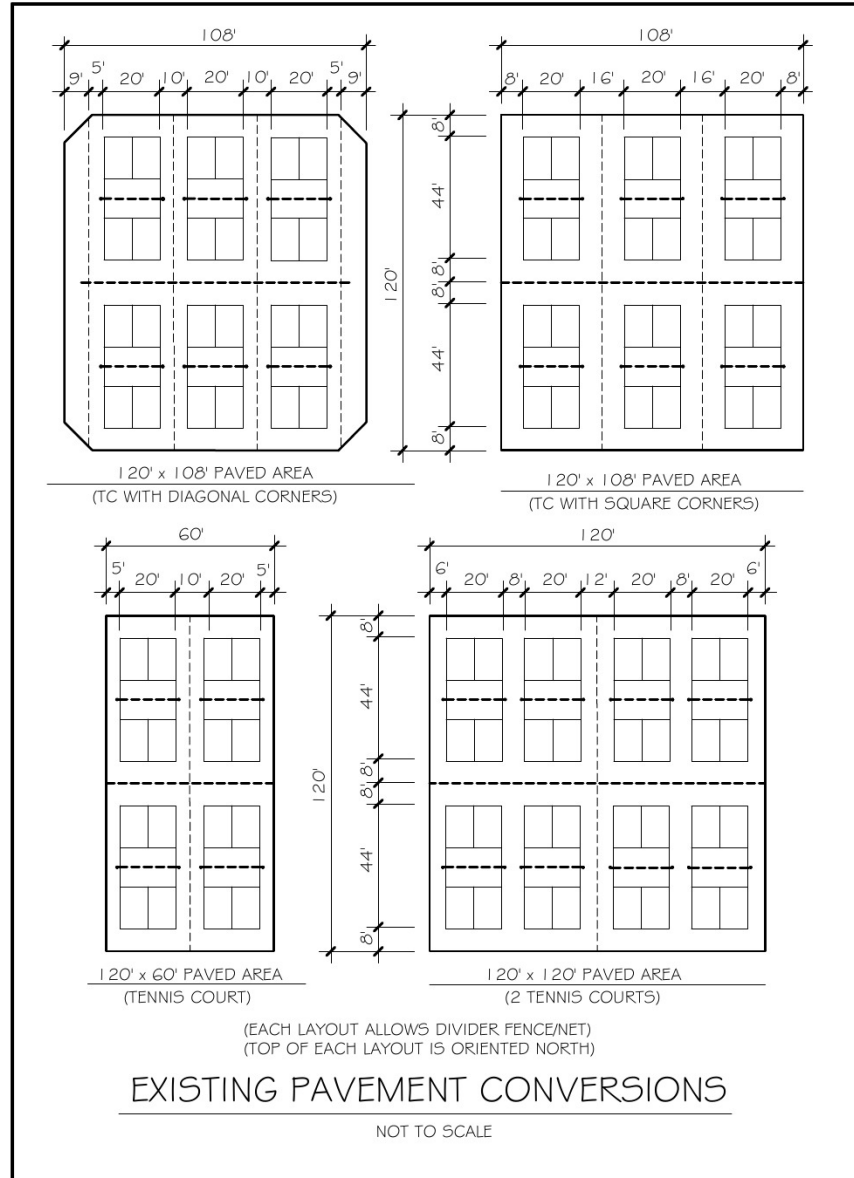
08CONVERSIONS2.AVL.20

2020



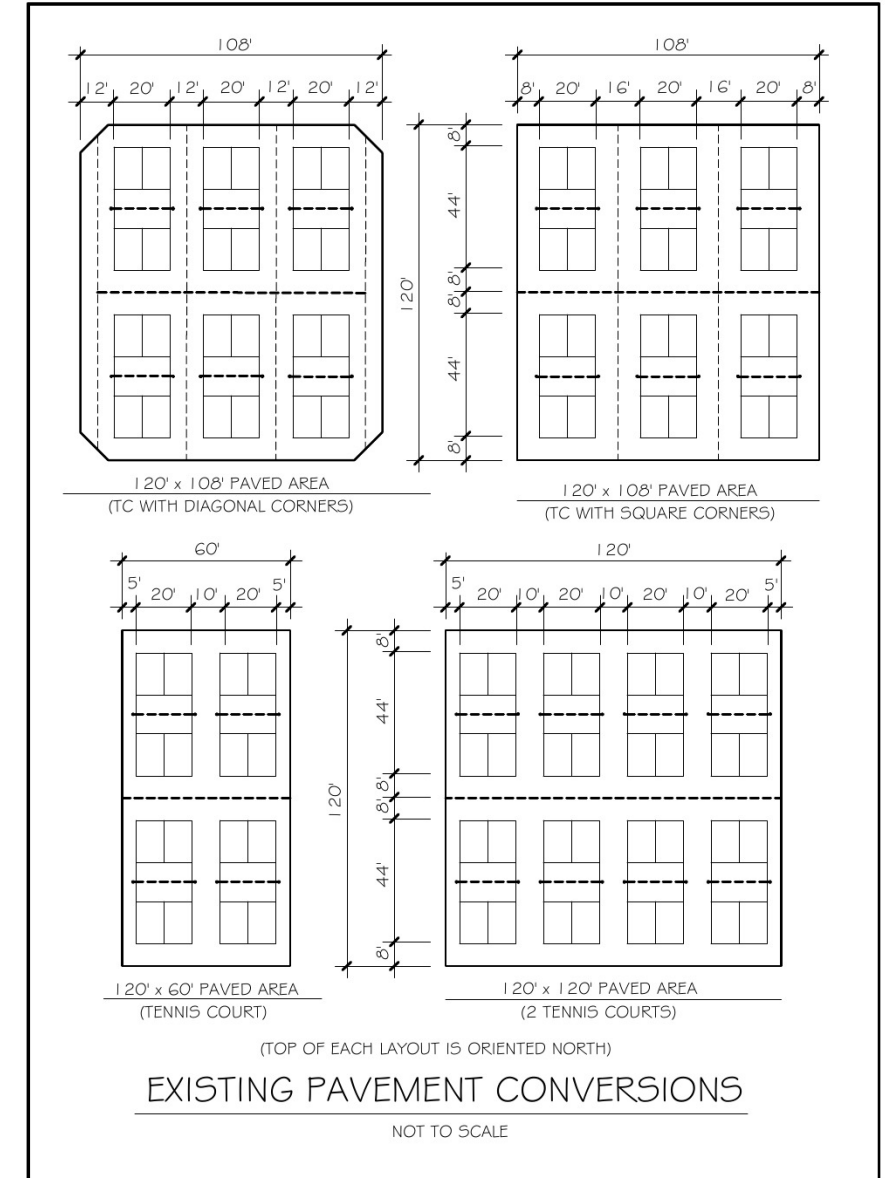
CONVERSIONS

11



07rCONVERSIONS1.AVL.23

2023



07CONVERSIONS1.AVL.20

2020



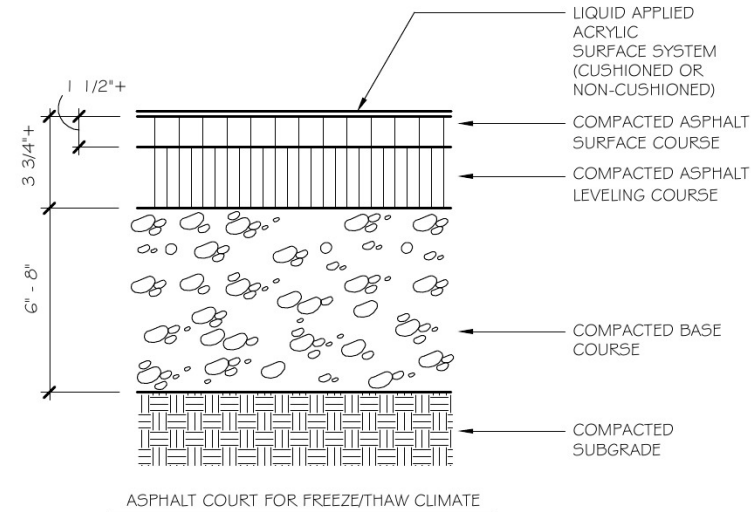
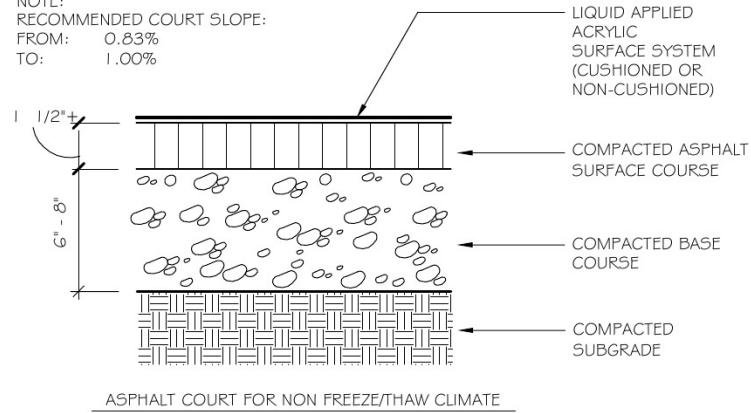
ASPHALT SECTIONS

13

14

16

NOTE:
RECOMMENDED COURT SLOPE:
FROM: 0.83%
TO: 1.00%



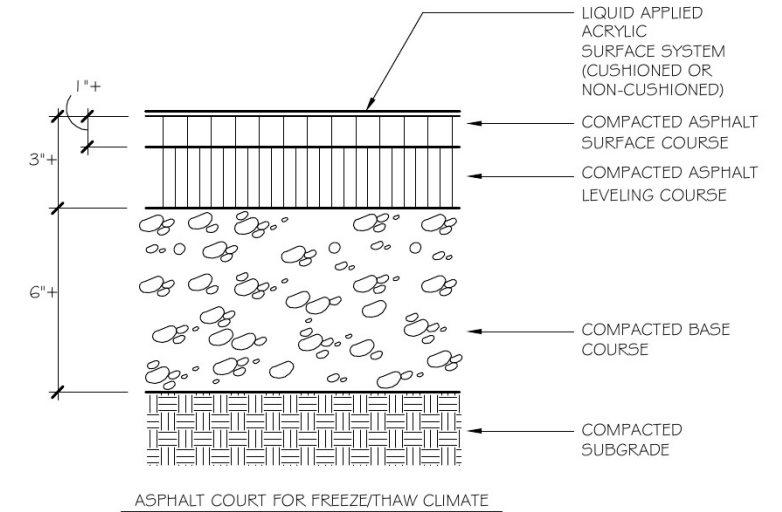
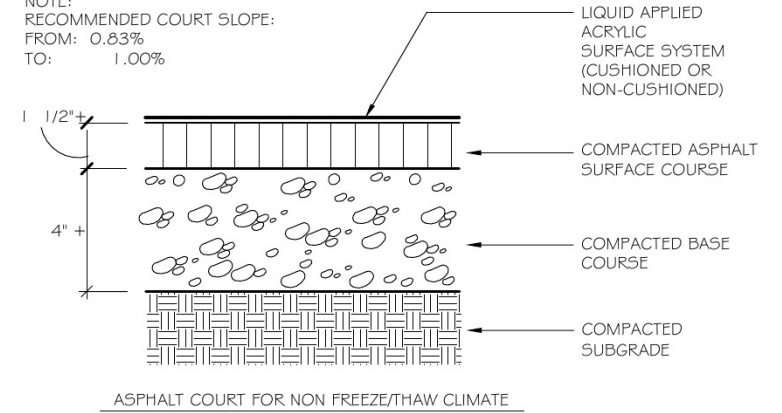
ASPHALT COURT SECTIONS

NOT TO SCALE

12rASPH.AVL.23

2023

NOTE:
RECOMMENDED COURT SLOPE:
FROM: 0.83%
TO: 1.00%



ASPHALT COURT SECTIONS

NOT TO SCALE

12ASPH.AVL.20

2020



ASPHALT MIX 2023

15

Aggregate

Largest aggregate shouldn't be larger than 1/3 the thickness of the lift. (Not mentioned in 2020.)

Mix

The mix should be free of RAP, RAS, mineral pyrites, marcasites, wood and organic material, and deleterious materials. (Not mentioned in 2020.)

FASTDRY SLOPE 2023

23

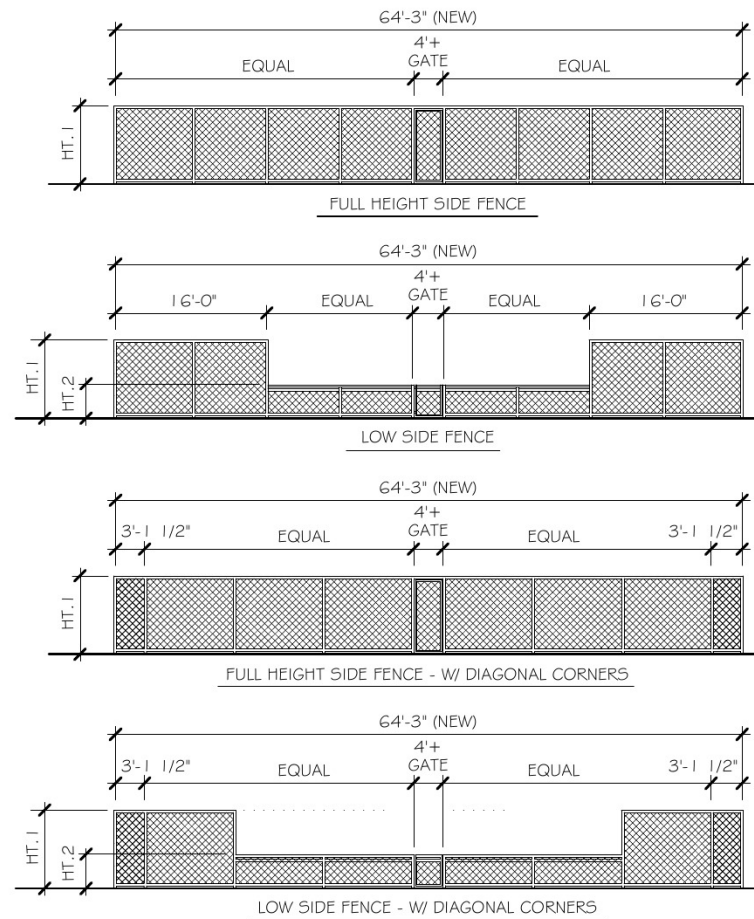
The 2020 Edition's sub-surface irrigated courts grading range was changed from:
0.14% (1 in. in 60 ft.(1:720)) to
0.28% (1 in. in 30 ft.(1:360))

To the **2023** Edition range of:
0.21% (1 in. in 40 ft.(1:480)) to
0.35% (1 in. in 24 ft.(1:288)).



FENCE ELEVATIONS

29



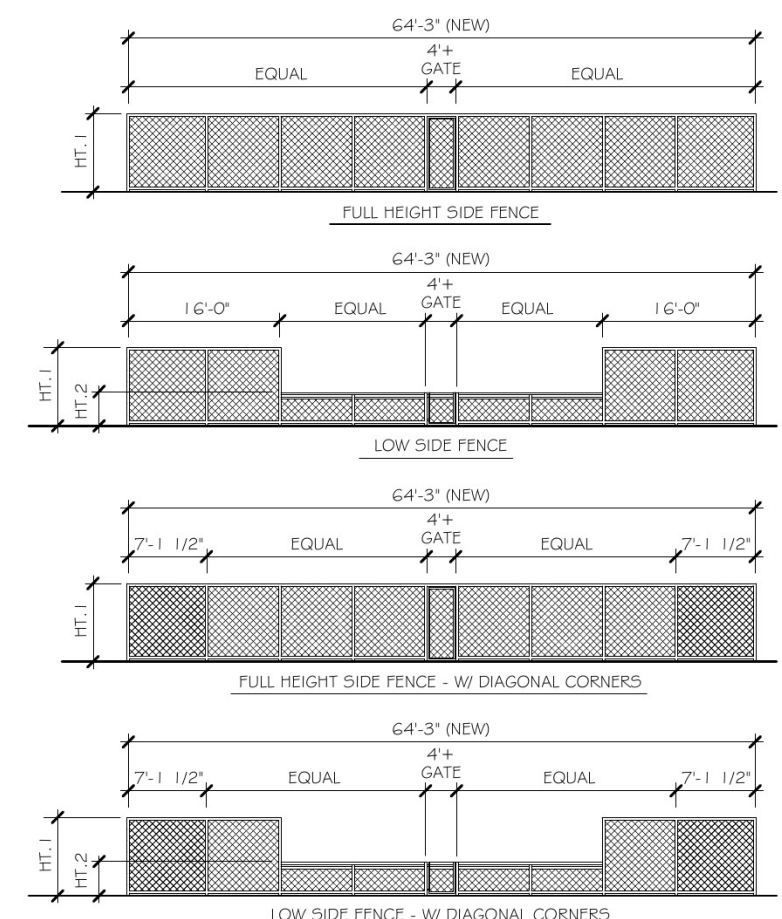
HT.1 - HIGH FENCES MAY VARY FROM 7' TO 20'+; 7'-8' HIGH IS MOST COMMON.
HT.2 - LOW FENCES ARE COMMONLY 3'-6".
THE IDEAL HEIGHT OF ANY FENCE SHALL BE BASED ON PARTICULAR PLAYER
AND SPECTATOR NEEDS AND THE THE SPECIFIC SITE CONDITIONS.
FENCE HEIGHTS AT CONVERSIONS MAY BE DICTATED BY EXISTING FENCES.

SIDE FENCE ELEVATIONS

NOT TO SCALE

25rFENCELV.AVL.23

2023



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SIDE FENCE ELEVATIONS

NOT TO SCALE

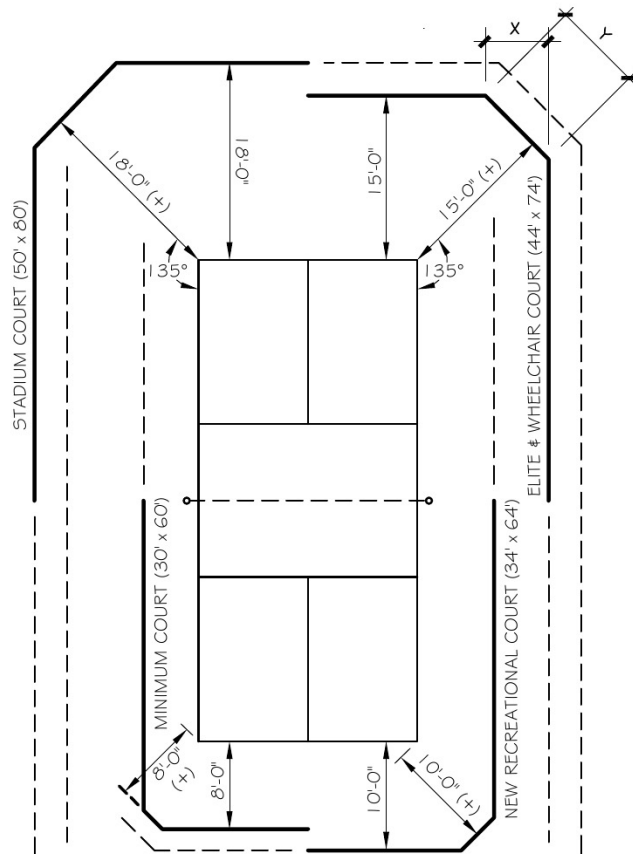
25FENCELV.AVL.20

2020



DIAGONAL CORNERS

30



PREFERRED DISTANCE TO DIAGONAL FENCE TO MATCH OR EXCEED DISTANCE FROM BASE LINE TO BASE LINE FENCE

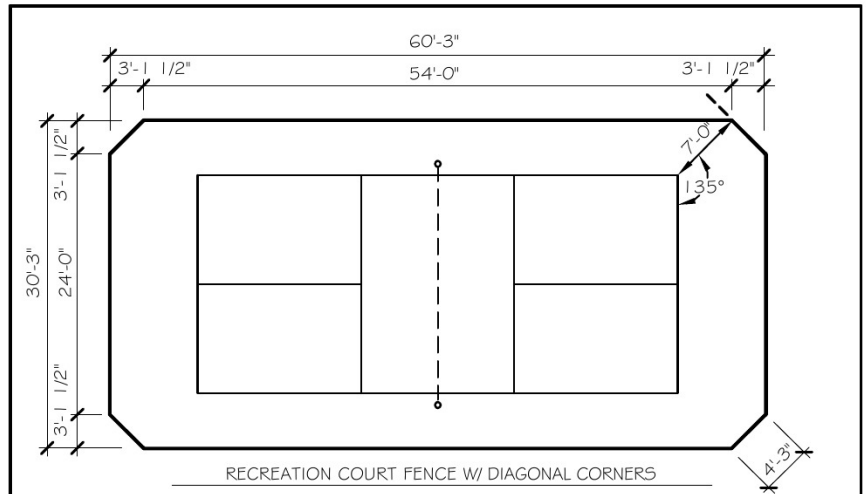
COURT SIZE	X (Maximum)	Y (Maximum)
30' x 60'	1'-10"	2'-5 3/4"
34' x 64'	3'-0"	4'-1 3/4"
44' x 74'	5'-10 3/4"	8'-4"
50' x 80'	7'-6 1/2"	10'-10"

FENCE PLANS - DIAGONAL CORNER

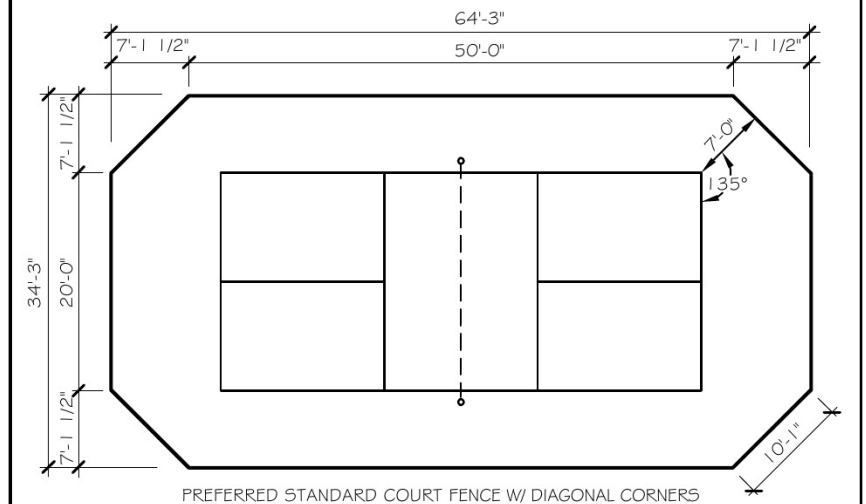
NOT TO SCALE

23rFENCCUT.AVL.23

2023



RECREATION COURT FENCE W/ DIAGONAL CORNERS



PREFERRED STANDARD COURT FENCE W/ DIAGONAL CORNERS

FENCE DIMENSIONS ARE MEASURED TO THE CENTER LINE OF FENCES. THESE LINES ARE OFTEN 1-1/2" BEYOND THE OVERRUN DISTANCES TO ACCOMMODATE THE THICKNESS OF THE FENCE.

FENCE PLANS - DIAGONAL CORNER

NOT TO SCALE

23FENCCUT.AVL.20

2020



LED LIGHTING 2023

The recommended Correlated Color Temperature (CCT) range outdoor is 3800K (Kelvins) to 5000K, but note – Some municipalities require 3000K.

For indoors, warmer color temperatures are preferred (3000K - 4000K).

The recommended upper limit remains at 5000K, not 3000K as printed; that's a "typo".

32

LED LIGHTING 2020

The recommended Correlated Color Temperature (CCT) range was from 3800K (Kelvins) to 5000K for both Indoor and Outdoor lighting.

Lighting temperatures over 5000K appear 'blue-ish' and are not recommended for sports lighting.



STRAP ANCHOR FOUNDATION 2023

36

STRAP ANCHOR FOUNDATION 2020

The top of the strap anchor foundation is now shown poured up to the underside of the pavement, similar to the net post foundation.

The top of the strap anchor foundation is shown poured up to the underside of the crushed stone base, not the same as the net post foundation.

Note: **10**

If a tennis court is lined with one centered pickleball court, two additional strap anchor can be located along the tennis court net line, 10 ft. on either side of the center strap anchor.



PADDING 2023

Outdoors

Recommend padding **Fixed Objects** within 3 ft. of the overall playing area, where there is no fence or barrier.

Indoors

Recommend padding **Fixed Objects** within 3 ft. of the overall playing area, where there is no fence or barrier.

Continuous Surfaces, like walls, that are within 1 ft. of the overall playing area, opaque curtain or suspended netting should be padded.

41

PADDING 2020

Indoors

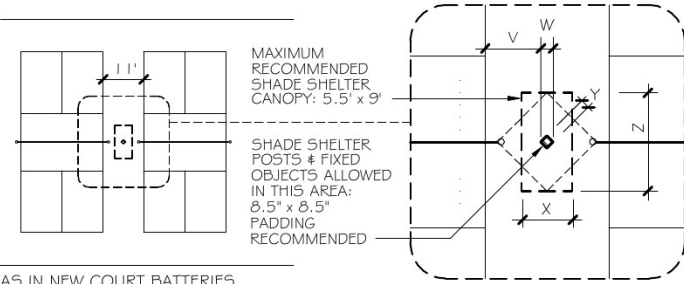
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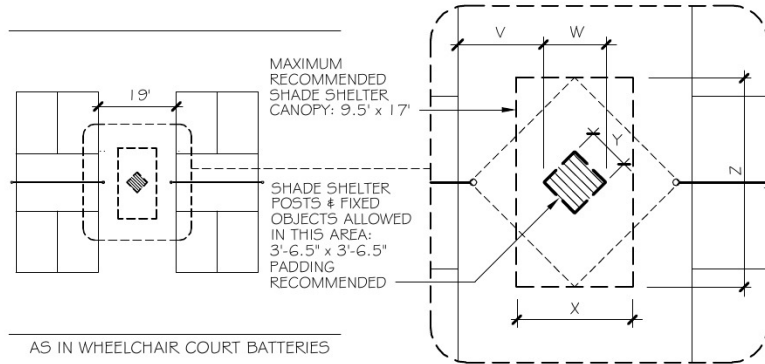


FIXED OBJECTS

43



AS IN NEW COURT BATTERIES



AS IN WHEELCHAIR COURT BATTERIES

OVERRUN	V	W	X	Y	Z
11'	5.00'	1.0'	5.5'	8.5'	9'
12'	5.25'	1.5'	6.0'	1.06'	10'
13'	5.50'	2.0'	6.5'	1.42'	11'
14'	5.75'	2.5'	7.0'	1.76'	12'
15'	6.00'	3.0'	7.5'	2.12'	13'
16'	6.25'	3.5'	8.0'	2.47'	14'
17'	6.50'	4.0'	8.5'	2.83'	15'
18'	6.75'	4.5'	9.0'	3.18'	16'
19'	7.00'	5.0'	9.5'	3.54'	17'

ALL FIXED STRUCTURES TO BE SMOOTH AND WITHOUT PROJECTIONS SUCH AS HOOKS, FROM THE PLAYING SURFACE TO A HEIGHT OF 7'-0".

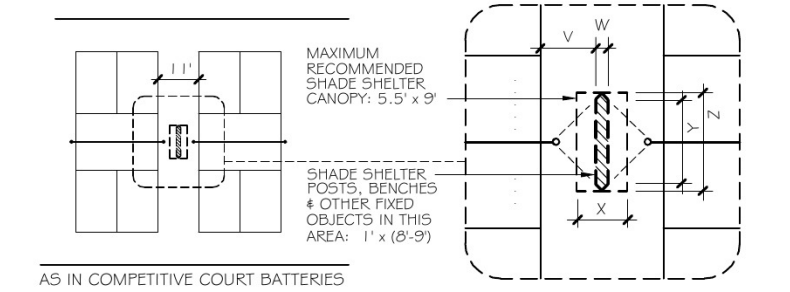
THE SURFACE UNDER THE SHELTER SHOULD ALIGN WITH THE PLAYING AREA AND BE A SIMILAR TEXTURE AND SLIP RESISTANCE QUALITIES.

SHADE SHELTER LOCATIONS

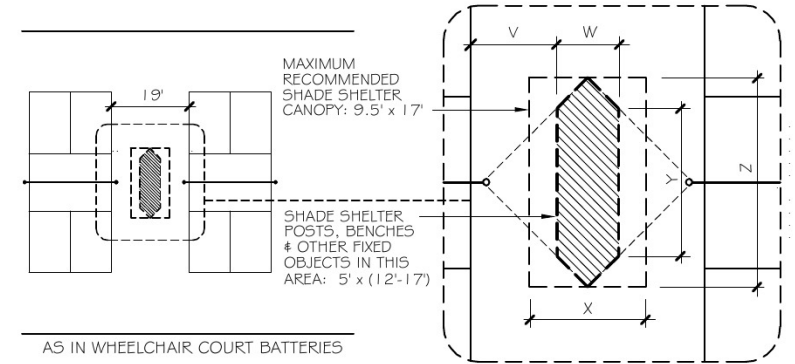
AND OTHER FIXED OBSTRUCTION BETWEEN COURTS

34r55HLTR.AVL.23

2023



AS IN COMPETITIVE COURT BATTERIES



AS IN WHEELCHAIR COURT BATTERIES

OVERRUN	V	W	X	Y	Z
11'	5.00'	1.0'	5.5'	8.0'	9'
12'	5.25'	1.5'	6.0'	8.5'	10'
13'	5.50'	2.0'	6.5'	9.0'	11'
14'	5.75'	2.5'	7.0'	9.5'	12'
15'	6.00'	3.0'	7.5'	10.0'	13'
16'	6.25'	3.5'	8.0'	10.5'	14'
17'	6.50'	4.0'	8.5'	11.0'	15'
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SHADE SHELTER LOCATIONS

AND OTHER FIXED OBSTRUCTION BETWEEN COURTS

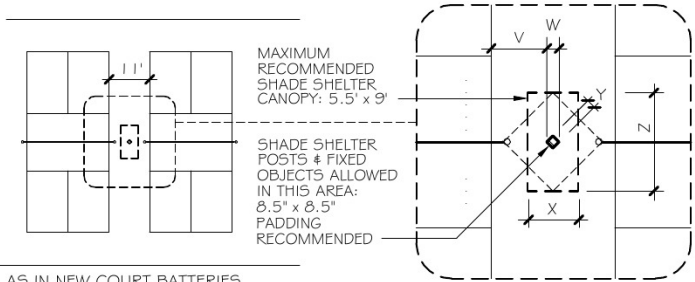
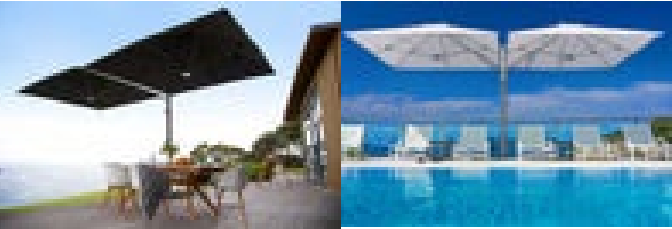
3455HLTR.AVL.20

2020

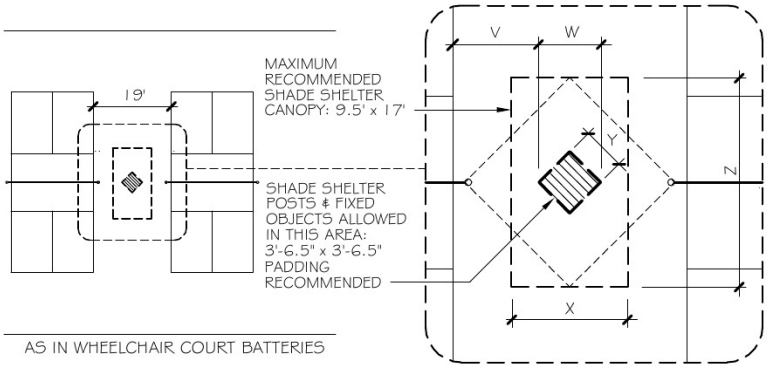


FIXED
OBJECTS

43



AS IN NEW COURT BATTERIES



AS IN WHEELCHAIR COURT BATTERIES

OVERRUN	V	W	X	Y	Z
11'	5.00'	1.0'	5.5'	8.5"	9'
12'	5.25'	1.5'	6.0'	1.06'	10'
13'	5.50'	2.0'	6.5'	1.42'	11'
14'	5.75'	2.5'	7.0'	1.76'	12'
15'	6.00'	3.0'	7.5'	2.12'	13'
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ALL FIXED STRUCTURES
TO BE SMOOTH AND
WITHOUT PROJECTIONS
SUCH AS HOOKS, FROM
THE PLAYING SURFACE
TO A HEIGHT OF 7'-0".

THE SURFACE UNDER
THE SHELTER SHOULD
ALIGN WITH THE PLAYING
AREA AND BE A SIMILAR
TEXTURE AND SLIP
RESISTANCE QUALITIES.

SHADE SHELTER LOCATIONS

AND OTHER FIXED OBSTRUCTION BETWEEN COURTS

34r5SHLTR.AVL.23

2023





6

ACOUSTICS





9 TOURNAMENT CONSIDERATIONS





39
LOGOS,
GRAPHICS
&
REVENUES





QUESTIONS ?

USA Pickleball Managing Director
Equipment Standards & Facility Development

Global Sports & Tennis Design Group LLC
Sports Facility Design Consultant





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Pickleball Courts: Construction & Maintenance Manual 2023

20 changes you need to know.

- | | | | | | |
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| 3 | 36" Net @ Side Line | 15 | Cleaner Aggregate | 41 | Outdoor Padding |
| 5 | Divider Net Distance | 16 | 1½ "+ Single Lift | 43 | Shelter Footprints |
| 6 | Acoustics Issue | 23 | Fast-Dry Court Slope | 44 | Cat6 Cables |
| 7 | Safety First | 29 | 7' High Mid-rail | 45 | Indoor Padding |
| 8 | Side Line to Fence | 30 | Cut Corners Reduced | | |
| 11 | Measuring Courts | 32 | Lights 3000K-5000K | | |
| 13 | More Base Stone | 35 | Net Posts – 36.2 in. | | |
| 14 | Thicker Asphalt | 36 | Strap Foundations | | |



PICKLEBALL MANUAL 2023 - LIST OF 50 CHANGES MADE FROM THE 2020 MANUAL

Prepared by: **Global Sports & Tennis Design Group, llc - Alex Levitsky** November 18, 2023

TOPICS	2023 Page #	2020 Page #	Type of Change	CHANGES
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Introduction	xi	xi	Added	<i>"For more information, visit USAPickleball.org..."</i>
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Chapter 1

1	Preface	3	1	Updated	In three years, Player number jumped from 3.5 million to 9 million. Courts from 33,000 to 45,000.
		3	1	Replace	<i>"The rules for the sport of Pickleball can be found in USA Pickleball's "Official Rulebook" (available at USAPickleball.org), which is updated annually. "</i> replaced the non-court related "Pickleball Rules" paragraphs that were eliminated.
2	Pickleball Court	4	2	Added	Rule numbers added where rules are quoted.
3	Playing Line Layout Drwg	5	3	Revised	Note regarding 36" net height at side line, NOT at the net post.
4	Net Elevation Drawing	6	4	Revised	Note regarding 36" net height at side line, NOT at the net post.
5	Multi-Court Overruns Drwg	13	11	Revised	Courts with either divider fences, or divider nets, should maintain the full recommended widths of overruns between side lines and divider fences or nets.

Chapter 2

6	Site Considerations Acoustics	17	-	New	USA Pickleball recommends doing an Acoustic site analysis, consulting with an acoustic specialist and investigating acoustic panels and other solutions, some available in the "Quiet Category". See USAPickleball.org for more information.
7	Safety First	20-21	-	New	In an effort to reduce the potential of player injury, a section was added that suggests one way to reduce hazardous conditions near the playing area. First - Eliminate, Second - Guard, Third - Protect and Finally - Warn.
8	Existing Court Conversion Drwg	27	21	Revised	The recommended layout for converting 120'x120' pavements has changed to allow more distance between the side lines and fences (6' instead of 5') and the distances between the courts and the diagonal fences.
9	Tournament Considerations	28	-	New	A separate section was added, after 'Other Planning Considerations' of Chapter 2 for 'Tournament Considerations' as specific items to consider for tournament venues.
10	Adding Strap Anchors on TCs	28	19	New	For the 'One Pickleball Court Per Tennis Court' session, an option for adding two net strap anchors along the net line is suggested.
11	Measuring the Court	30	-	New	A note was added to explain that the resulting pickleball courts that measure 30'x60' to the center line of their fence posts, satisfy the 30' x 60' recommended minimum.

PICKLEBALL MANUAL 2023 - LIST OF 50 CHANGES MADE FROM THE 2020 MANUAL

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	TOPICS	2023 Page #	2020 Page #	Type of Change	CHANGES
12	Existing Court Conversion 2 Drwg	29	22	Revised	The 'Inline Hockey' area was been revised from 6 to 5 recommended pickleball courts. All conversions are shown with the option of divider fences.
	Chapter 3				
13	Asph. Stone Base	38	30	Revised	Base stone thickness changed from 4"-6" to 6"-8" to match tennis standard.
14	Asphalt Pavement	39	31	Revised	Intermediate Asphalt thickness changed from 1.5"-2" to 2.25"-3". Surface Course Asphalt thickness changed from 1"-1.5" to "at least 1.5".
15	Asphalt Mix	39	31	Added	Recommendations made regarding aggregates size; and avoidance of RAP, RAS, mineral pyrites, marcasites, wood particles and deleterious materials. Recommendation for stress relief joints.
16	Asphalt Court (Warn Weather)	39	31	Revised	Drawing includes dimensions listed above. Include 1.5"+ for single course asphalt.
17	P.E & I	40	32	Revised	Planarity, Evenness & Irregularities drawing made consistent to tennis manual.
18	CMU Edging Drwg.	42	34	Revised	Sections include tapered asphalt to edging.
19	Vapor Retarder	50	-	Added	For reinforced concrete slabs, a recommendation for use of a vapor retarder added.
20	Color Contrast	50	-	Added	Recommendation to select darker contrasting (to ball) colors for the court surface.
21	Modular Surfaces	55	45	Added	Note to contact manufacturer for slope and other requirements.
22	Rolled Goods	55	-	Added	Membrane system is applied in strips and seamed together.
23	Fast-Dry Courts	57	55	Revised	Subsurface irrigated courts grading range changed from 0.14%-0.28% to 0.21%-0.35%.
24	Crack Repair	128-131	49-53	Moved	Moved to Chapter 9: Care & Maintenance.
25	Clay Court - Maint.	131-133	56	Moved	Moved to Chapter 9: Care & Maintenance.
	Chapter 4				
	Chapter 5				
26	Drinking Fountain	-	63	Deleted	Drinking fountain eliminated as a between-court accessory.
27	Netting & Ball-stop	70	-	Added	Netting and Ball-stops can be used as an alternative to permanent fencing.
28	Acoustic Panels	70	-	Added	If adding acoustic panels, the fence should be additionally reinforced.
29	Mid-rail height	71	65	Added	Height of midrails for 12 ft. high fences should be 7 ft.
30	Diagonal Corners	73	67	Revised	Recommended diagonal corners for each size court have been reduced.
31	Side Elevations	75	69	Revised	Elevations with cut corners revised to show smaller diagonal corners.
	Chapter 6				
32	CCT - Color	83	75	Added	Indoors, there is often a preference for warmer lighting, 3000K to 4000K.

PICKLEBALL MANUAL 2023 - LIST OF 50 CHANGES MADE FROM THE 2020 MANUAL

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	TOPICS	2023 Page #	2020 Page #	Type of Change	CHANGES
32	CCT - Color			Typo	Above 5000K is bluish and is not recommended, not 3000K.
		83	75	Note	Some municipalities call for 3000K outdoors. So, range is 3000K to 5000K. Most Clubs/Parks are 5000K, most Residential/HOA prefer 4000K.
33	Temp. Light Towers	84	-	Added	Information about temporary light towers for tournaments added.
34	Light Controls	92	-	Added	Section added on lighting controls for LEDs. Exceptional variety of options.
	Chapter 7				
35	Net Post Drwg	96	84	Revised	Note #2 explains that the actual net post height should be 36.20 in. to have the net 36 in. at the side line.
36	Strap Anchor Drwg	97	85	Revised	Strap anchor concrete footing poured to same height as net post foundations.
37	Foundation Tops	98	-	Added	If concrete goes through the asphalt pavement it should be round.
38	Temporary Nets	98	-	Added	Many types of temporary pickleball net systems available, including tensioned.
39	Windscreens	100-101	-	Added	Windscreens on low fences is popular at tournaments. Logos on windscreens.
40	Divider Netting	101	88-89	Added	Description of divider netting expanded.
41	Padding	102	-	New	Recommended padding fixed objects within 3 ft. of the playing area, where there is no fencing. Pad from the ground to a height of 7 ft.
42	Benches	102	89	Added	Preferred that no furniture is placed in the 34'x64' playing area.
43	Shelter Locations	103	91	Revised	The recommended allowance for the footprint of the area between side lines has been dramatically reduced to increase area for play. The allowance is centered between the net post.
44	On Court Video	106	-	New	Recommendation to consider Cat6 cabling for the video option.
	Chapter 8				
45	Indoor Padding	111	97	Revised	Fixed objects within 3 ft. of the playing area should be padded. Continuous Surfaces within 1 ft. of the play area, opaque curtain or suspended netting should be padded.
46	Resurfacing	119	103	Added	Recommend resurfacing every 5-7 years, except for heavily used courts every 3-5 yrs.
	Chapter 9				
47	Crack Repair	128-130	49-53	Moved	Moved to Chapter 9: Care & Maintenance. Crack descriptions enhanced.
48	Winterizing	133	112	Added	In cold climates, drain water, clean and lubricated rollers.
49	Light Maintenance	136	115	Added	Contact manufacturer for proper light fixture maintenance practices.
50	Covid-19	-	117	Deleted	No long a primary concern.