

**HORIUCHI  SOLIEN**  
LANDSCAPE ARCHITECTS

2006 JUN 27 PM 11:41  
CITY CLERK  
NEWTON, MA. 02159

**MEMORANDUM**

HORIUCHI SOLIEN INC.  
P.O. BOX 914  
200 MAIN STREET  
FALMOUTH MA 02541  
  
508 540-5320  
FAX 508 540-8651

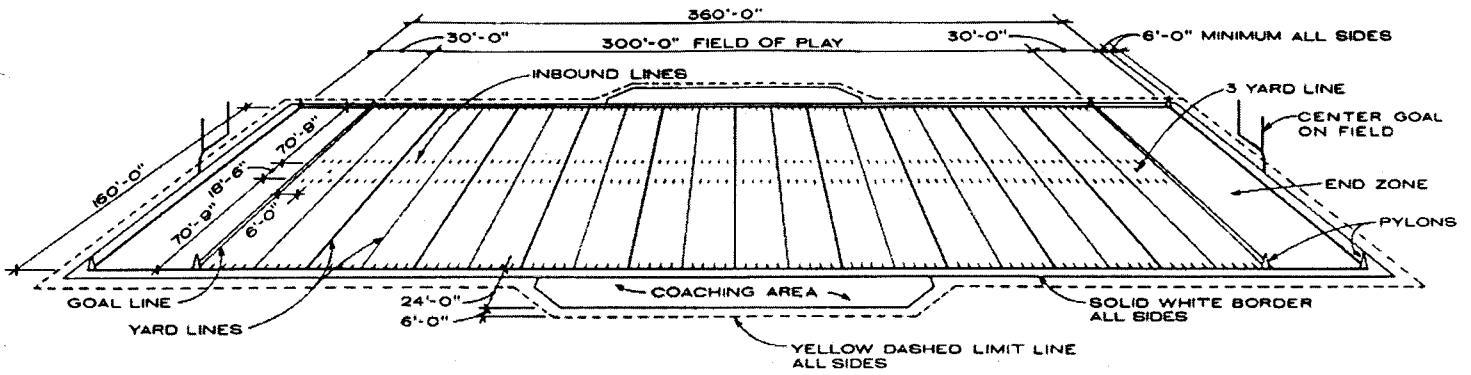
To: Newton North High School Design Team  
From: Dan Solien  
Date: June 27, 2006  
Re: Sports Field Orientation

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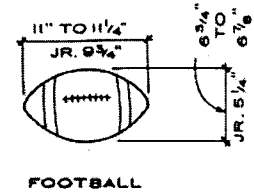
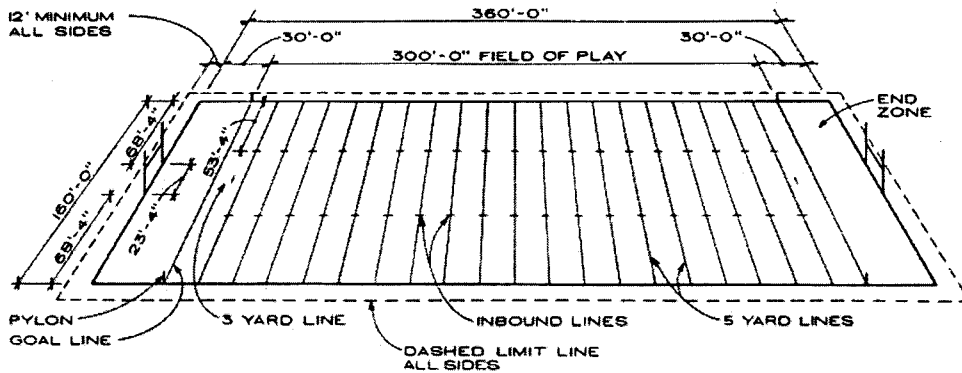
EDGARTOWN  
MARTHA'S VINEYARD  
  
508 627-4133  
FAX 508 627-4811

Attached is documentation from *Architectural Graphic Standards* regarding the orientation of tennis courts, baseball/softball and football fields. The text regarding the orientation has been highlighted for your reference.

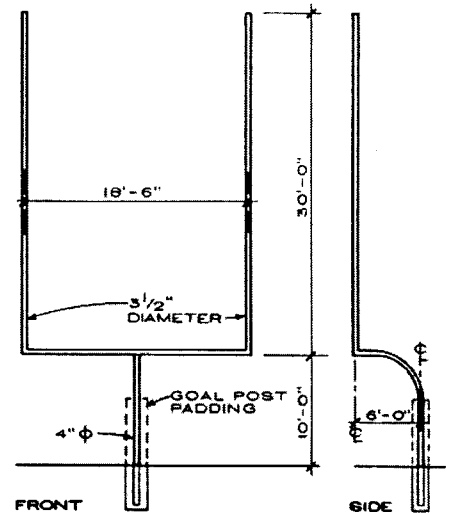
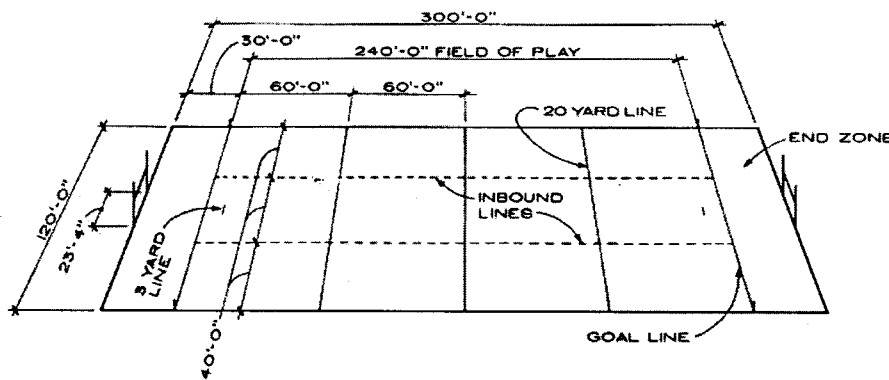




**FOOTBALL - NATIONAL FOOTBALL LEAGUE (NFL)**



**FOOTBALL - NATIONAL COLLEGIATE ATHLETIC ASSOCIATION (NCAA)**



**GOAL POSTS MUST BE PADDED IN A MANNER PRESCRIBED BY THE LEAGUE GOAL POSTS (NFL)**

**TOUCH AND FLAG FOOTBALL**

**PROFESSIONAL FOOTBALL (NFL)**

The playing field is 360 ft. long by 160 ft. wide. Preferred orientation is with long axis northwest-southeast with no recommended slope. (For further information, contact the NFL.) All lines are 4 in. wide except the goal lines and yellow lines, which are 8 in. wide. All lines are marked with a nontoxic material.

The football, a prolate spheroid with a long axis of 11 in. to 11 1/4 in., weighs from 14 oz. to 15 oz.

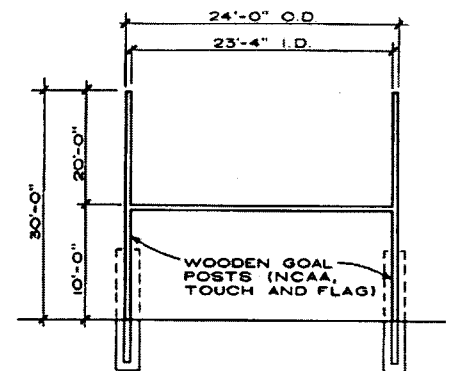
**NCAA FOOTBALL**

The playing field is 300 ft. long by 160 ft. wide with an additional 12 ft. allowed for on all sides. Preferred orientation is with the long axis northwest-southeast. Grading of the field should be from the centerline. Subsoil drainage may be necessary. All field dimension lines are 4 in. wide,

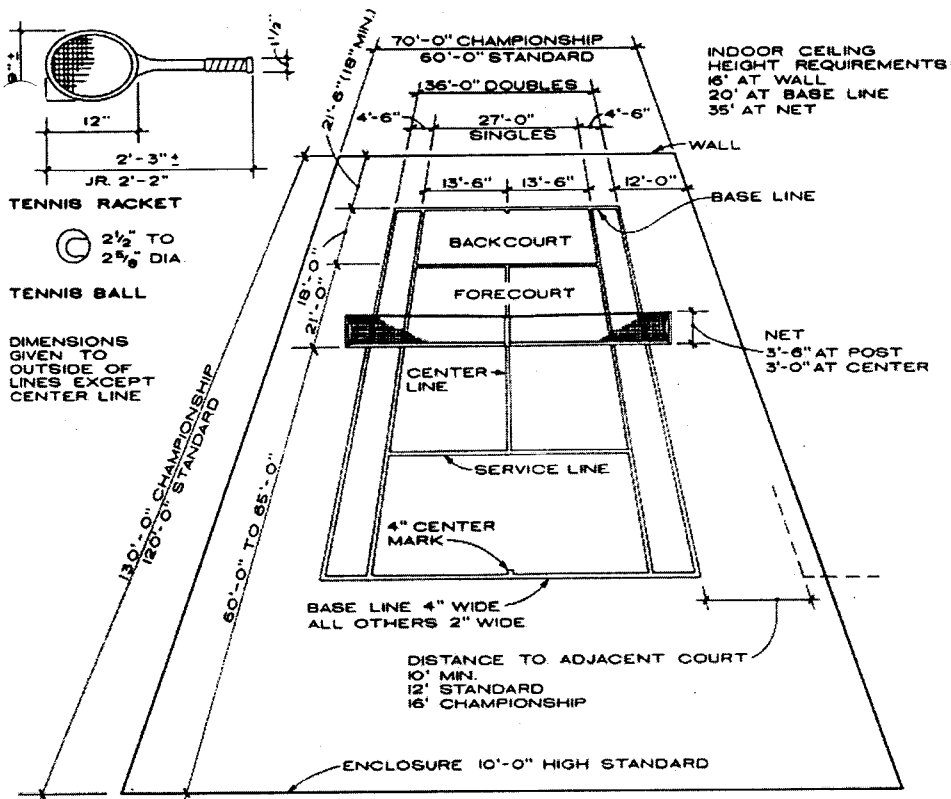
and are marked with a white, nontoxic material. All measurements are from the wide edge of lines marking boundaries. End zone marking should not overlap goal lines, side lines, and end lines. Location of inbound lines is 53 ft. 4 in. for college football. Marks should be 4 in. wide by 2 ft. long.

**TOUCH AND FLAG FOOTBALL**

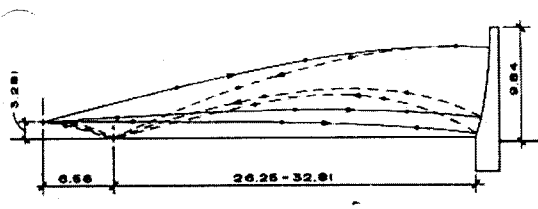
The playing field is 300 ft. long by 120 ft. wide with an additional 6 ft. allowed for on all sides. Preferred orientation is for the long axis to run northwest-southeast. The recommended slope of 1 percent for proper drainage should run away from each side of the center long axis. All measurements are from the inside edge of the lines, which are 4 in. wide and are marked with a white, nontoxic material.



**GOAL POSTS**



TENNIS COURT



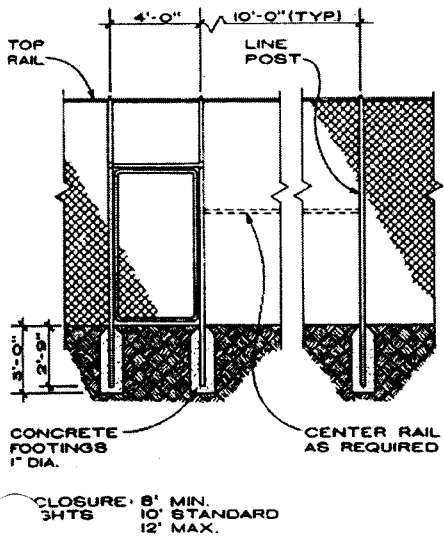
6.66	6.66	6.66
6.66	6.66	6.66
6.66	6.66	6.66
6.66	6.66	6.66
6.889	6.889	6.889
7.086	7.086	7.086
7.48	7.48	7.48
8.07	8.07	8.07
8.85	8.85	8.85
9.64	9.64	9.64
10.83	10.83	10.83
12.20	12.20	12.20
13.92	13.92	13.92
15.14	15.14	15.14
16.80	16.80	16.80

ALL DIMENSIONS IN FEET

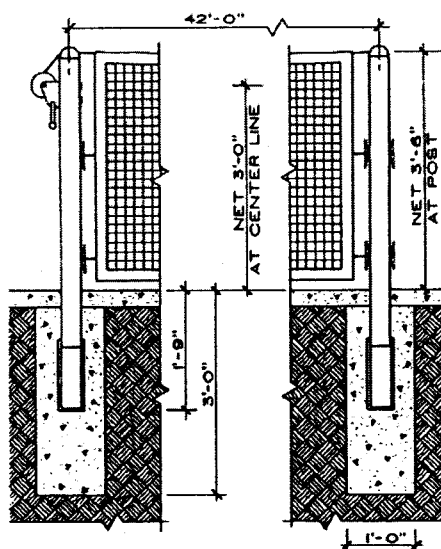
WALL THICKNESS IN INCHES  
 WALL HEIGHT IN FEET  
 DETAILED PARABOLIC WALLS

SECTION

PRACTICE COURT



ELEVATION OF ENCLOSURE



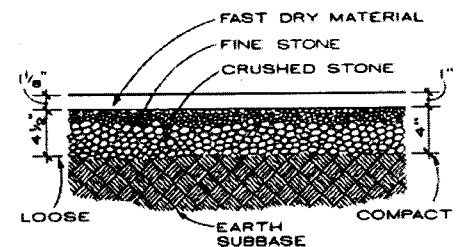
TENNIS POSTS

ORIENTATION

For the northern states the north-south orientation is recommended. North-northwest by south-southeast at approximately 22° (true north) is recommended for outdoor courts south of the 41st parallel. Particular site characteristics, length of tennis season, and latitude should be taken into consideration when deciding on the most desirable court orientation angle.

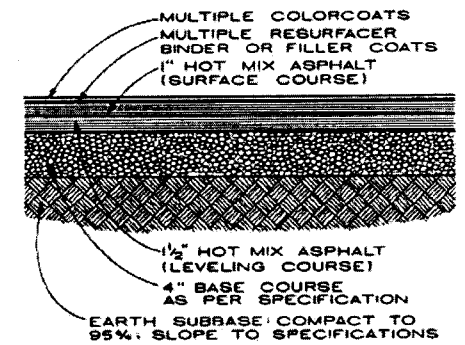
NOTES

- SURFACE DRAINAGE:** Pitch 1 in. per 10 ft for porous and nonporous courts. Each court should be in one plane and pitch side to side; never up or down to middle court.
- SUBSOIL DRAINAGE:** Need for drainage systems depends on soil conditions.



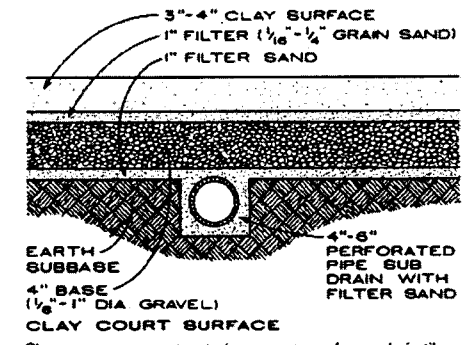
FAST-DRYING SURFACE

Fast-drying courts are successive layers of crushed green stone or burnt brick and finely ground rock particles mixed with a chemical binder. This surface provides a uniform bounce and allows sliding. A sprinkler system, frequent maintenance, and annual resurfacing are recommended.



NON-POROUS NON-CUSHIONED SURFACE

Hot mix asphalt is a mixture of asphalt and aggregate laid in place and compacted before cooling. This surface is laid on a 4 in. base of stone, gravel or perforated macadam, depending on soil conditions.



Clay courts are constructed on a system of open drain tiles overlaid by a bed of gravel sandwiched between two filter layers of sand or fine gravel, and topped by a thick (3 in.-4 in.) layer of clay. A clay surface also allows sliding and a uniform bounce.

TENNIS COURT SURFACES