

## CALWA RECREATION AND PARK DISTRICT

### FRESNO, CALIFORNIA

#### Plans, Specifications and Other Contract Documents

#### SITE PREPARATION – CALWA MINI-PITCH PROJECT in the City of Fresno, California

- I. General
  - a. All dimensions shall be verified in field and chalked, string-lined or flagged by the contractor prior to construction. Any minor adjustments made to achieve overall design shall be accepted by the owner's representative prior to construction.
  - b. Layout of the dual-pitch system shall be in a North/South direction as per Attachment "A".
- II. Grade and Excavation
  - a. Contractor to clear and grub, demolish and remove obstructions & perform site preparation necessary for the proper execution of the work.
  - b. Contractor is to locate, pothole and scope the existing utilities to verify depth and any conflicts with the proposed clear and grub. Identified conflicts are to be brought to the attention of the owner's representative immediately.
  - c. Existing items are to remain unless otherwise noted. The Contractor shall be responsible for repairing or replacing at Contractor's expense any existing item damaged or destroyed by construction operations.
    - i. Existing field lighting and related conduit/electrical wire to remain.
    - ii. Existing trees to remain.
    - iii. Existing concrete pad to remain.
    - iv. Existing irrigation lines to be removed and capped.
  - d. See Attachment "B" for diagrammatic utility layout within the project area.
    - i. There may be existing utilities not shown. Contractor shall take caution in construction and if utilities or other items of concern are discovered, the

owner's representative shall be notified immediately for direction and redirect work to avoid delay.

- e. Prior to beginning work, all crossings between new and existing utility lines shall be potholed and verified that no conflict will occur. If a conflict arises, Contractor shall notify owner's representative shall be notified immediately for direction and redirect work to avoid delay.
- f. Contractor to grade and excavate 7" of existing grass and soil within a project area sufficient for selected pad alternative. (See Section III for pad size alternatives.)
- g. Compact existing soil.
- h. Import 4" of baserock on project area and compact to 95%.

III. Concrete **OR** Asphalt Pad.

- a. 5" Concrete pad measuring 11,448 sq. ft. (116' x 108') with vapor barrier, as per Attachment "C".
- b. Asphalt pad measuring 10,800 sq. ft. (108' x 100'), with a 5' concrete ribbon along the length and width measuring 2,080 sq. ft (5' x (108' + 100') x 2), for a total area of 118' x 110'. Installation as per US Tennis Association specifications, Attachment "D".
- c. Pad to be consistent and uniform in grade.

IV. Electrical Stub In.

- a. **Stub Up Location A** will require two circuits:
  - i. 1. A 120V circuit with a dedicated breaker to power the control module.
  - ii. 2. A 240V lighting circuit to power the lights.
  - iii. This location is the closest to the service panel.
  - iv. At least 1 foot of the stub-up to be left above ground.
- b. **Stub Up Location B** will require a switch leg from location A:
  - i. 1. A 240V lighting circuit switch leg.
  - ii. At least 1 foot of the stub-up to be left above ground.
- c. **Stub Up Location A & B** to be located as per Attachment "E", titled "96 x 104 Stub In Measurements", and coordinated with Joe Weiner, Musco Project Manager at (641) 638-4088.
- d. See Attachments "F" for sample photos of stub in with attachment to electrical box.
- e. Questions regarding Electrical Stub Ins are to be directed to Joe Weiner, Musco Project Manager at (641) 638-4088.

V. Temporary Fencing

- a. Contractor is to provide temporary fencing around the project area from the time the material (concrete or asphalt) is poured until the material has fully cured.

Inquiries regarding this project should be directed to the District Administrator/Owner's Representative, Tim Chapa, (559) 344-3866.

**ATTACHMENT "A"**  
**DUAL-PITCH LAYOUT**





El Dorado Taqueria Y Botanas

Calwa Recreation & P

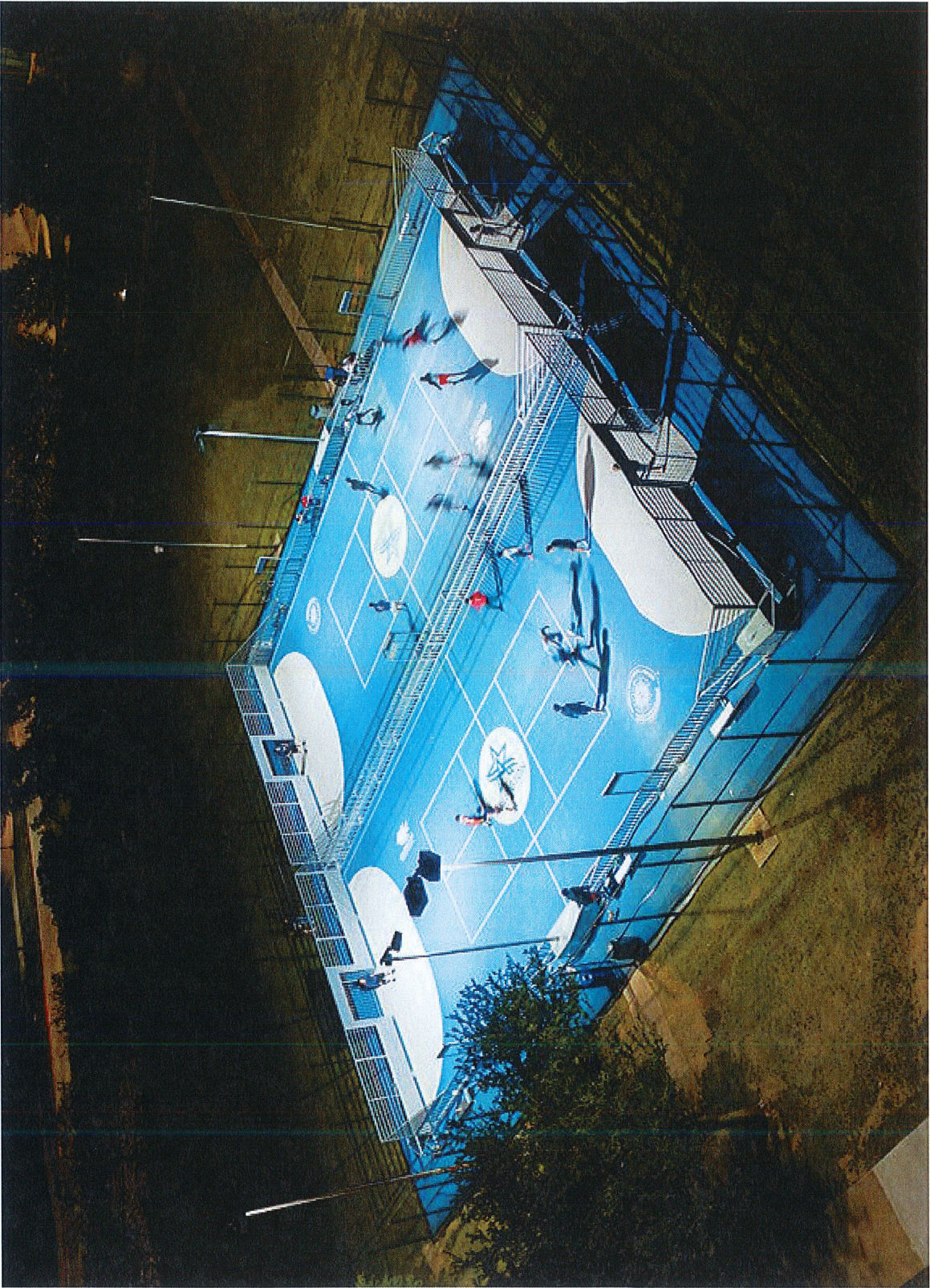
S Barton Ave

S Barton Ave

Image Landsat / Copernicus

96' X 104' Double Mini Pitch  
Two Mini Pitches with playing surfaces of 44' X 98' each





**ATTACHMENT "B"**  
**DIAGRAMMATIC UTILITY LAYOUT**



El Dorado  
Taqueria Y Botanas

Central Valley NFL  
Flag Football League

FOR INFORMATION  
ONLY

S Barton Ave

**LEGEND**

- ELECTRICAL
- UNKNOWN
- WATER
- SCAN LIMIT

LOCATION:  
545 EAST CHURCH AVENUE, FRESNO  
4545 EAST CHURCH AVENUE  
FRESNO, CA



**ATTACHMENT "C"**  
**CONCRETE PAD SPECIFICATIONS**



## Mini-Pitch System Concrete Specs

In the construction of concrete courts for the Mini-Pitch System, adherence to specific parameters is imperative to guarantee a successful installation and a long-lasting surface. The parameters included below are typical USTA guidelines for new hardcourt surfaces – all of which remain true regardless of construction type (PT or Reinforced). The crucial details are highlighted below – it is imperative these are followed. All other details pertaining to the construction of the concrete surface may be left up to the installing contractors' discretion.

**Base:** All excavating, filling, compacting, grading and leveling work will be site specific to meet each geographical location standards.

**Vapor Barrier/Retarder:** A VAPOR BARRIER OR VAPOR RETARDER SYSTEM SHOULD BE INSTALLED. This system often consists of two layers of 6 mil polyethylene sheeting (minimum), laid in opposite directions, overlapped and taped at the joints.

**Concrete:** Concrete slab shall be a MINIMUM OF FIVE (5) INCHES THICK WITH A MINIMUM 2000PSI MIX. At least a full half-court shall be placed in one (1) continuous operation without intervening joints of any kind. The surface shall have a MEDIUM BROOM FINISH or similar roughened texture. It must not be steel trowelled. A smooth surface will result in improper adhesion of surface coatings. Relief cuts are allowed, whereas expansion joints are not permitted. CURING OR HARDENING COMPOUNDS SHALL NOT BE USED.

**Reinforcement Type:** Accepted reinforcement options for the Mini-Pitch System include post-tension cables and either metal or composite rebar/wire mesh. In the case of post-tension cables, it is required that they be situated at least 2.5" below the concrete surface to facilitate the correct installation of concrete anchors. FIBER MESH IS PERMISSIBLE in the concrete mix,

**Slope:** COURTS MUST SLOPE BETWEEN .83% (1:120) AND 1.00% (1:100), with a preference for a side-to-side direction; however, end-to-end or corner-to-corner slopes are acceptable if side-to-side is impractical. AVOID CROWNING OF THE SURFACE – SURFACE SHOULD BE UNIFORM AND SLOPING IN ONE DIRECTION.

**Pad Size:** Ensuring sufficient space for the MINI-PITCH SYSTEM TO SIT ATOP THE PAD REQUIRES A MINIMUM PAD SIZE. The specific dimensions can be located on the reference drawing provided for each individual project.

**Stub up locations:** If lights are incorporated into the Mini-Pitch System, it is necessary to include stub-ups within the pad for power transmission to the electrical enclosure. The precise locations for these stub-ups are detailed in the reference drawing – THESE STUB UPS MUST BE LOCATED UNDERNEATH THE OPEN BOTTOM ELECTRICAL ENCLOSURE NEXT TO THE POLE. Coordination with the Musco project manager is recommended to ensure the correct placement of the stub-up.

**Planarity and Evenness:** Planarity refers to how closely a surface aligns with its design in a true plane. The finished court, according to the ITF, should not deviate more than +/-3/8" from the designed elevation within the Primary Playing Area. Evenness, typically assessed with a straightedge, should feature a variation of no more than 1/4" in 10' in any direction. While minor irregularities over a considerable distance may not affect play, short-distance variations should not surpass 1/8" in 18".

**Curing:** A MINIMUM OF 30 DAYS IS RECOMMENDED FOR THE SURFACE TO CURE COMPLETELY. Premature installation of the mini pitch structure and surface may compromise the longevity of both the concrete and the acrylic or tile surface.

**ATTACHMENT "D"**  
**ALTERNATIVE ASPHALT PAD SPECIFICATIONS**



# Hard Courts—Asphalt

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According to one industry poll, about 70% of the tennis courts in the U.S. are hard courts— asphalt or concrete pavements, generally covered with an acrylic colored surface coating system. The coating system protects the court from the elements, enhances its appearance, and determines the playing characteristics of the court.

In general, hard courts, both asphalt and concrete, are low-maintenance and do not require daily care. For this reason, they are an ideal choice where an owner does not plan to supervise play, has limited time to care for the court, and/or where players will be keeping courts in use for all or most of the year in colder climates. Outdoors, rain does a natural cleaning on hard courts, though regularly sweeping or cleaning a court will help avoid stains that can occur when leaves or other debris are left lying on the surface. Mildew or algae, which are sometimes a problem in warmer, more humid regions, can be removed with a mild herbicide, with a bleach and water solution or with a pressure washer.

Asphalt courts are the most common type of tennis courts because they provide good value for the cost and are easy to care for; however, cracking is a natural part of the weathering and aging of asphalt. Post-tensioned concrete, on the other hand, while generally more expensive, is especially resistant to cracking.

Generally, a hard court produces a medium pace game. This speed can be adjusted according to the type of surface system that is applied. A smooth surface will increase ball skid and decrease the effect of spin, producing a faster game, while a highly-textured surface will reduce skid and enhance the effect of spin, producing a slower game.

## Asphalt Courts

Asphalt is a liquid material refined from petroleum. When liquid asphalt is mixed with graded stone aggregate, compacted and allowed to cure, it becomes asphaltic concrete, also known as asphalt or blacktop.

Liquid asphalt can be combined, mixed and delivered to a court via various processes. Asphalt courts usually are constructed using hot plant mix asphalt. Often the choice of a specific type of asphalt and stone aggregate is determined by soil or climatic conditions, by the availability of materials in the area or by the expertise of the contractor.

Asphalt is a flexible pavement, giving slightly with the ground's movement due to settling, to the action of water or to freeze-thaw activity. However, as asphalt ages, it oxidizes, shrinks and hardens, making it less flexible and more subject to cracking.

Cracking is the most common problem with asphalt courts and occurs in all courts with age. Cracking can be expected with normal exposure to weather, temperature cycles, and aging. These cracks will continue to develop into larger cracks, which can be exacerbated with

exposure to water, vegetation or mold, so they should be treated promptly. Sometimes cracks are caused by improper use of materials, improper construction or settlement in the subgrade.

Asphalt courts are built up in several layers. First the earthen subgrade is shaped, compacted and sloped according to the site plan. Next, a gravel base is installed, usually 4" to 6" in thickness. A commonly used size and grading requirement for gravel base materials is shown below:

<i>Sieve</i>	<i>Percent Passing</i>
1-1/2"	100
3/4"	55-90
No. 4	25-60
No. 50	5-25
No. 200	3-12

On top of the properly compacted gravel base, an intermediate course of asphalt is installed and compacted. The thickness of the intermediate course varies, based on the geographic location, but in most areas is about 1-1/2" to 2". A commonly used size and grading requirement for the intermediate course aggregate is shown below:

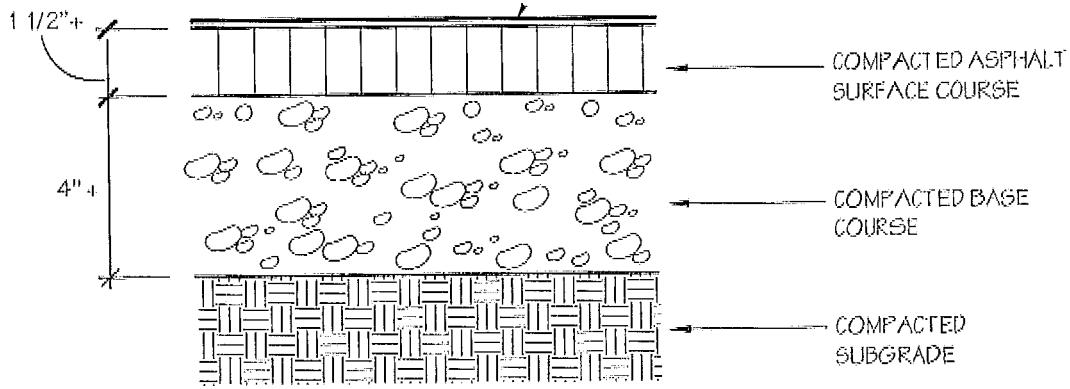
<i>Sieve</i>	<i>Percent Passing</i>
2"	100
1-1/2"	90-100
1"	80-100
1/2"	50-85
No. 4	25-60
No. 8	20-50
No. 50	8-30
No. 200	4-12

Finally, a surface course of asphalt is spread and compacted to a uniform density and thickness. The thickness of the surface course is variable based on the geographic region; however, in most areas it varies from 1" to 1-1/2". A commonly used size and grading requirement for the surface course aggregate is shown below:

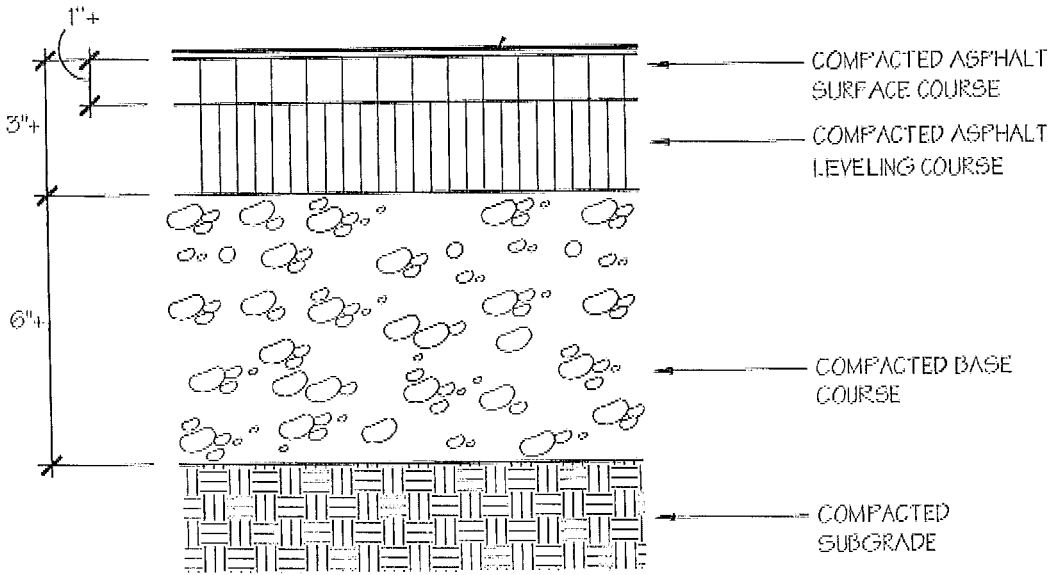
<i>Sieve</i>	<i>Percent Passing</i>
1/2"	100
3/8"	80-100
No. 4	55-75
No. 8	30-60
No. 16	20-45
No. 30	15-35
No. 50	10-30
No. 200	4-10



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



ASPHALT COURT FOR NON FREEZE/THAW CLIMATE



ASPHALT COURT FOR FREEZE/THAW CLIMATE

## ASPHALT COURT SECTIONS

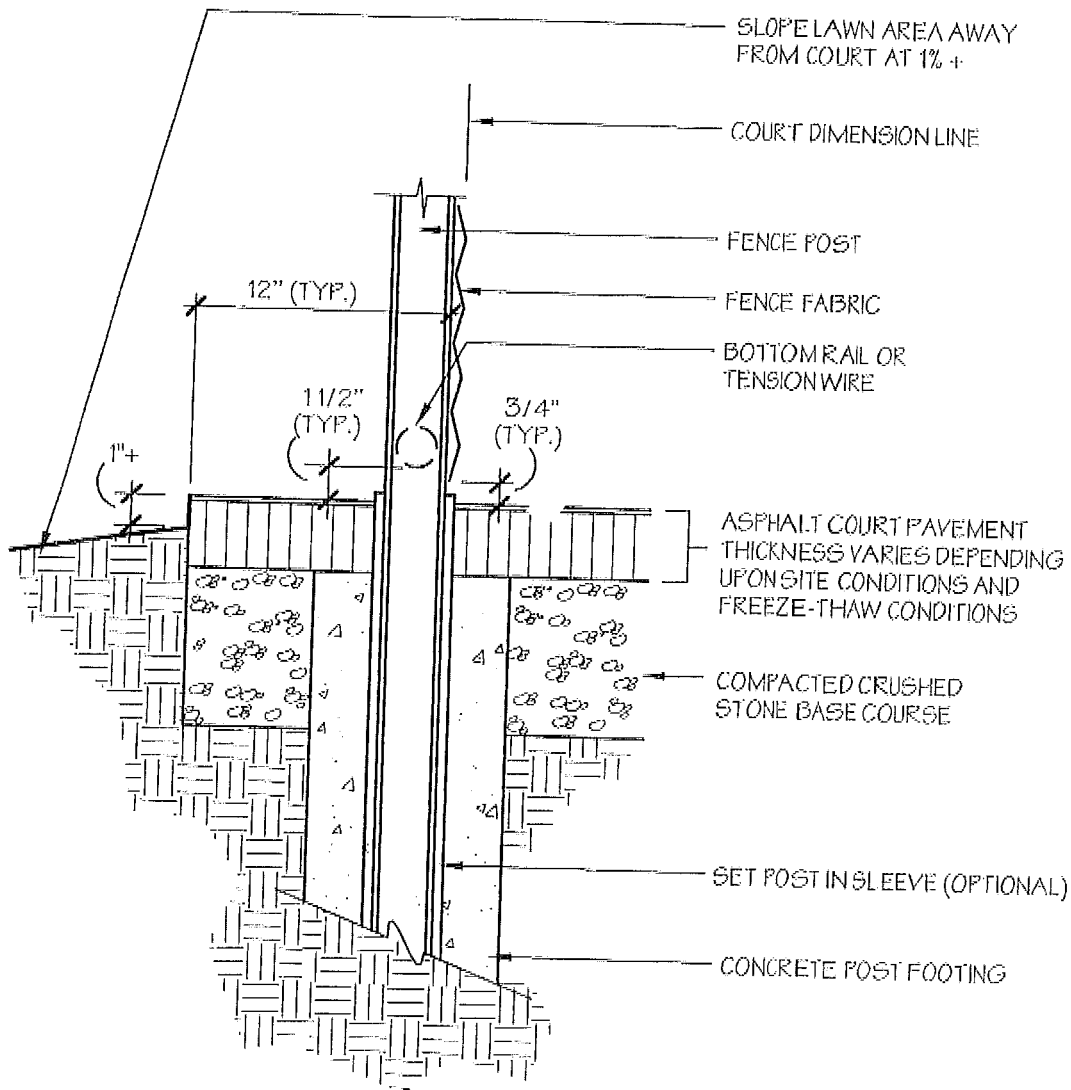
NOT TO SCALE

24-ASP11.AVL.11

USTA



DRAWINGS ARE ILLUSTRATIVE ONLY AND ASBA AND USTA ACCEPT NO RESPONSIBILITY FOR THEIR USE.



EXTENDED APRON SECTION  
AT ASPHALT COURT EDGE

NOT TO SCALE

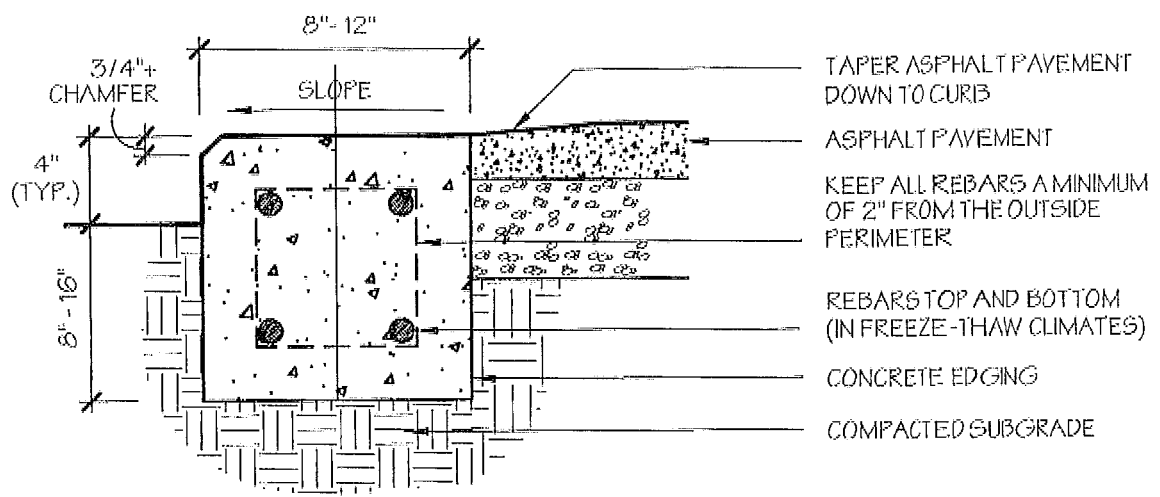
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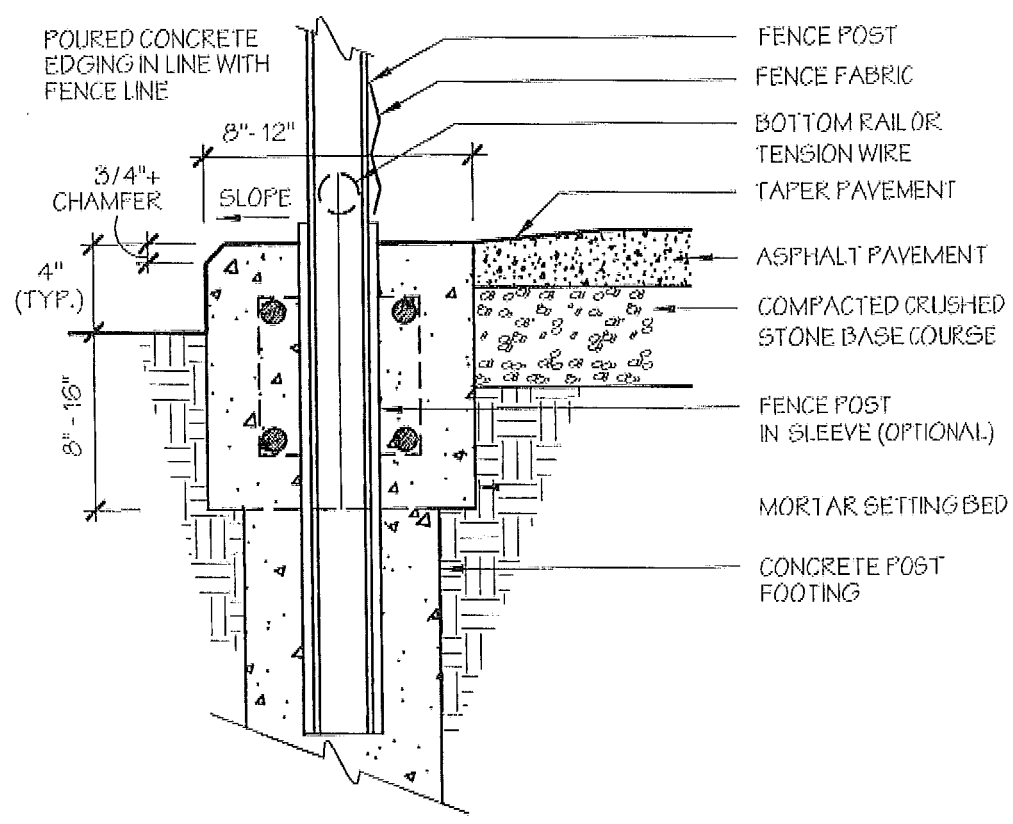
DRAWINGS ARE ILLUSTRATIVE ONLY AND ASBA AND USTA ACCEPT NO RESPONSIBILITY FOR THEIR USE.

25EDGE2.AVL.11





SECTION - CONCRETE COURT EDGING



SECTION CONCRETE EDGING @ FENCE POST

POURED CONCRETE EDGING  
FOR ASPHALT COURT

NOT TO SCALE

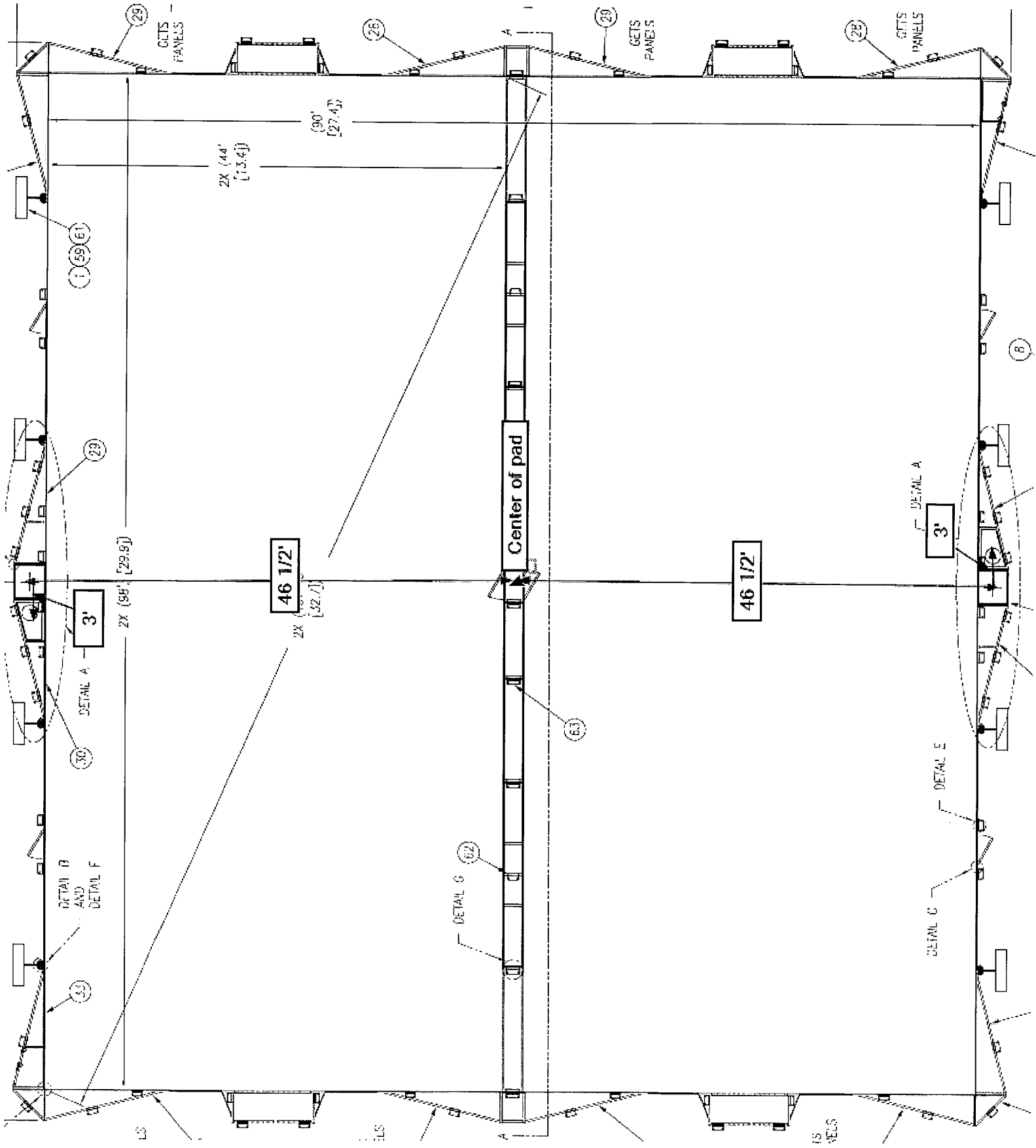
65EDGE4.AVL.11

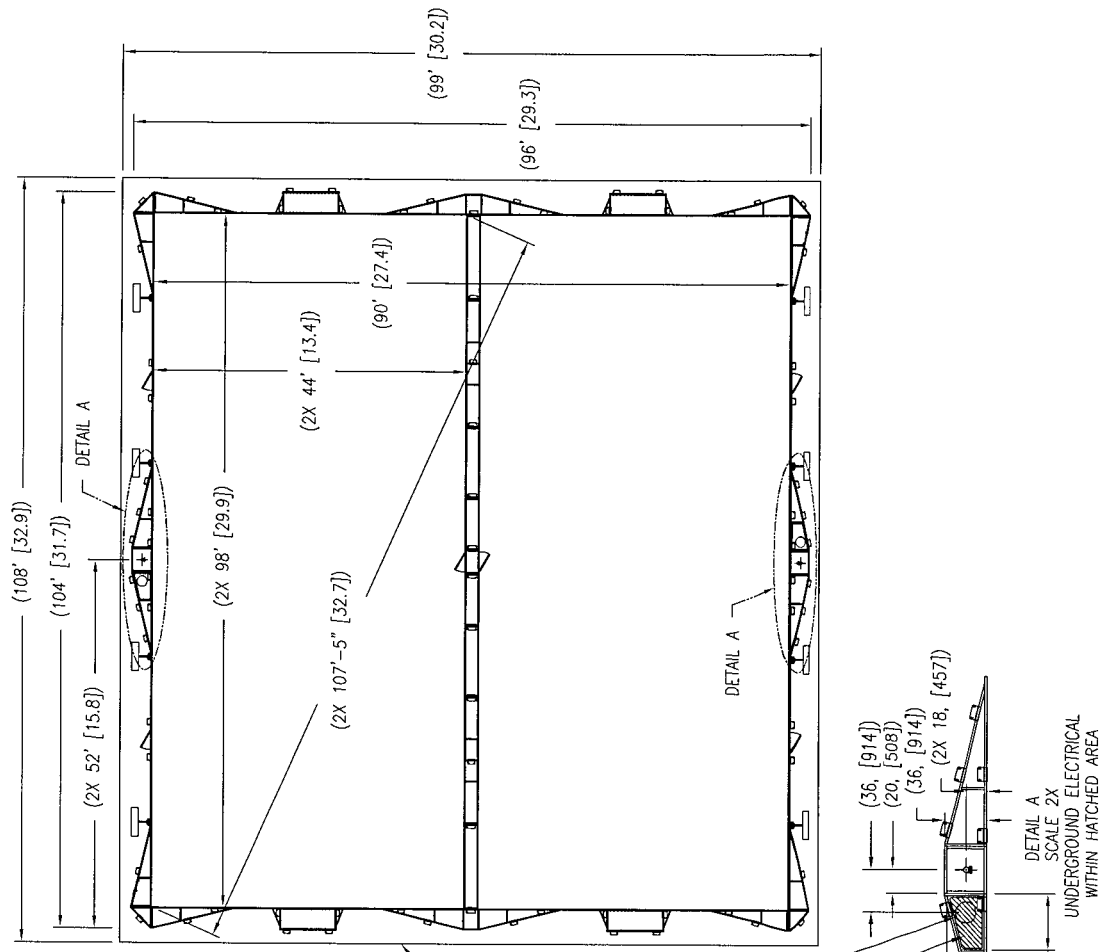


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**ATTACHMENT "E"**  
**STUB IN LOCATION INSTRUCTIONS**







ELECTRICAL NOTES: TBC

PROJECT VOLTAGE

CONTROL VOLTAGE

SURFACE TYPE TBC

MINIMUM PAD SURFACE: 108' X 99'  
 32.9M X 30.2M

NOTES:

- SPECIFICATIONS FOR ALL HARDWARE CONNECTING FRAMES.  
 SIZE: 1/2-13  
 MATERIAL: GRADE 1 STEEL OR BETTER.  
 FINISH: HOT DIP GALVANIZED C CLASS  
 GROUND ANCHOR SPECIFICATIONS. 192 ANCHORS ARE  
 USED FOR THIS FIELD SIZE.
- ASPHALT SURFACE:  
 TYPICAL PULL RESISTANCE: 2,500 LBS  
 TYPICAL SHEAR RESISTANCE: 2,500 LBS  
 2000 PSI CONCRETE SURFACE:  
 TYPICAL PULL RESISTANCE: 2,999 LBS  
 TYPICAL SHEAR RESISTANCE: 5,564 LBS  
 TYPICAL LOADING LIMITS:  
 NO. BANNERS ON STRUCTURE  
 IBC 2015 175 MPH EXPOSURE C  
 BANNERS MOUNTED ON ALL SURFACES  
 IBC 2015 120 MPH EXPOSURE C

SUGGESTED ELECTRICAL LOCATED IN CIRCLE 18" DIA  
 ECE AND CONTROL CABINET MOUNTED IN THIS CABINET AREA  
 (20, [520])  
 (32, [811])  
 (2, [51])  
 (48, [1219])  
 (36, [914])  
 (20, [508])  
 (36, [914])  
 (2X 18, [457])  
 DETAIL A  
 SCALE 2X  
 UNDERGROUND ELECTRICAL WITHIN HATCHED AREA

ENGINEERING REFERENCE DOCUMENT  
 DO NOT USE TO MANUFACTURE PRODUCT

10/11/11



**ATTACHMENT "F"**  
**SAMPLE STUB IN PHOTOS**



Control-Link control system  
**Control Cabinet**  
musco Unit ID 4 - 1

ZONE 1  
OFF ON AUTO

**MUSCO**

CE  
IP65





