SKATEPARK SLAB DATA

The “slab” or floor of a skatepark is as important a component as the elements themselves. A poorly executed slab can undermine the skateability of even the best-designed and constructed park.

It is important to provide as level a site for the skate elements as possible. Ideally, the only slope that would exist at all in a slab is for drainage. Additionally, it is important to limit or control cracking, create a smooth but not too smooth surface, limit puddling, and minimize riders looking into the sun.

The following are general specifications for both concrete and asphalt slabs on which skatepark equipment may be installed. Please note that these are ideals, and other types or specifications of slabs may be acceptable. We recommend concrete surfaces over asphalt, but asphalt if done properly can be acceptable. Please call Spohn Ranch, Inc. with any questions.

CONCRETE SLAB SPECIFICATIONS

It is important to note that concrete cures at different rates depending upon the constituent ingredients and the ambient conditions to which it is exposed. Concrete contains air, which causes it to expand and contract with changes in atmosphere and ground temperature. Concrete also absorbs and releases moisture as humidity fluctuates. The best way to determine what slab specifications are best for a given location is to consult with a local engineer or concrete contractor who will be experienced with weather and soil conditions.

What a skatepark user is looking for is a surface that does not distract them from carving a line or executing a trick. A flat, smooth, hard, monolithic, concrete slab as close to level as drainage will permit is ideal. The type of concrete slab poured for tennis courts minus any texturing is perfect. No joints, control lines, etc. should be wider than 1/4”; for this reason the slab should not have any expansion joints.

However, generally, what works best for a home will work for a skatepark. The greatest concentrated load a skatepark will endure will be from that of the heaving of the ground below it. Perimeter footings are a good idea because they lock the slab in place and reinforce the edges, protecting it when equipment rolls up onto it.

It is the inherent nature of concrete to crack; this is unavoidable. However, there are measures that can be taken to minimize or control cracking. In the case of a slab of concrete, cracking tends to occur two and a half to three times in feet the depth of a slab in inches. A four-inch thick slab should have a grid of control lines every ten to twelve feet. To prevent or minimize cracking, the concrete may be poured over a grid of tensioned cables. Once the concrete has hardened the cables are released and they work to pull the slab together. This tensioned slab creates the best riding surface because it does not require “joints” and therefore is extremely smooth.

At the very least concrete should always be reinforced with a steel grid of some kind, such as rebar, and then control lines should be cut into it after it has cured. The control lines should also be laid out in a grid and should placed approximately every ten feet running the length and the width of the slab. The control lines or joints should not be so deep that they expose the steel reinforcement and they should be filled with traffic grade caulk to allow for expansion and contraction and to keep the joints clean and dry. Additional steps in crack control

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can be taken by adding fiberglass reinforcement into the concrete as it is poured and managing the rate of cure with chemicals or blankets.

The concrete slab in a skatepark represents the majority of the riding surface so consideration should be given to the finish. The concrete should not be made too smooth or glassy because there will not be enough traction for the wheels of skateboards or bikes. Poor traction will decrease the fun factor and increase the injury factor. Excessive roughness also increases injuries.

It is recommended that the slab be sealed with a standard chemical concrete sealant after cutting and caulking have been completed. A sealant will help moderate curing, prevent the formation of dust, minimize pitting, and prolong the life of the slab.

Inconsistencies in the grade of the slab should be avoided. A perfectly flat and level surface is ideal in terms of ride-ability but is not practical. There must be some slope to allow for drainage. Too much slope will make it difficult get speed in the uphill direction. A one- percent grade is sufficient for run-off. Rises and dips should also be minimized. They can compromise installation of the ramps and will lead to puddles. Puddles increase dry time, which can lead to more down time after a storm. **The maximum deviation should be specified at no more than plus or minus an eighth of an inch over ten feet.** A slab of this type requires more skill and labor to produce and is consequently more expensive.

Thickness:		4” with 6” thickened edges
PSI:		4000
Aggregate:		Small to Medium (3/4” maximum)
Finish:		Steel-Troweled Between Light Broom and Glassy Chemical Sealant
Camber:		~1% or 1/8” per foot
Maximum Deviation:		1/8” over 10’ (puddle-free)
Curing Time:		2 weeks
Dusting:		Not Permitted
Reinforcement:		Post-Tension with Fiberglass (Ideal)
	OR	Steel-Reinforced
If not post-tension, Control Lines:		1/4” wide x 3/4” deep in a 10’ x 10’ grid Filled with traffic-grade silicone caulk

ASPHALT SLAB SPECIFICATIONS

Asphalt is not the best choice for the surface of a skatepark but can be a viable and more economical alternative to concrete. While generally asphalt is less expensive than concrete, be advised that the fact that it is much softer than concrete makes it very difficult to anchor skate elements permanently in place increasing installation costs. In order to adequately fix certain elements to the surface of park that has an asphalt slab it may be necessary to locate and pour 12” wide by 12” wide by 16” deep concrete footings to provide locations for anchoring. Asphalt is often a coarser surface than concrete and thus makes it less desirable but steps can be taken to mitigate or minimize this. Using finer aggregate and creating greater densification can promote a smoother, “faster” finish. Double rolling asphalt is also a good idea. A further step in achieving smoothness in both new and existing asphalt is to put a slurry seal over the entire slab. This is a mixture of emulsified asphalt, well-graded fine aggregate, mineral filler or other or

other additives, and water. A slurry seal will fill minor cracks, restore a uniform surface texture, and restore friction values. Grade preparation for an asphalt slab is similar to that of concrete. The site should be leveled and compacted and a gravel base should be laid. Slope or camber should be the minimum to provide drainage but no more and surface grade deviation should be no more than plus or minus 1/8" over 10'. Adequate cure time should be factored into the construction process before the installation occurs so that the slab is firm and less likely to be damaged by heavy equipment. The following are very basic, general guidelines.

Thickness:	4" Minimum
Soil:	Must be graded and compacted
Aggregate:	Fine graded
Camber:	~1% or 1/8" per foot
Curing Time:	1 month
Finish:	Double Rolled or Slurry-Seal (Ideal)

The slab details must be engineered by a local professional. The kind of stresses the pavement will endure must be accounted for, such as trucks vs. cars, and other factors such as soil conditions and climate. Thickness and composition also depend on what materials you intend to use in the asphalt and what materials might be present in the lower layers of the pavement. All these considerations are combined to obtain the pavement thickness.

The types of materials are also chosen for specific applications. For example, an intersection may require a different mix from a city street. An intersection requires more strength because cars and trucks are going to be standing on it, as well as starting, stopping, and turning. This puts a great deal of stress on the pavement surface, which will require a stiffer mix. Asphalt pavement is very much an engineered product.

SKATEPARK SURFACES IN ORDER OF PREFERENCE

1. **Concrete**
   Poured Over Post Tensioned Cables

2. **Concrete**
   Poured Over Rebar Grid
   Caulk Filled Control Lines in 10' by 10'

3. **Concrete**
   Poured Over Mesh
   Caulk Filled Control Lines in 10' by 10' Grid

4. **Asphalt**
   With Slurry Seal

5. **Asphalt**

DISCLAIMER: These are very general specifications to be used as guidelines. It is strongly recommended that these be submitted to your local engineer or paving contractor who is familiar with the soil and weather conditions in your area as well as local building code requirements. Spohn Ranch, Inc. is not a paving engineer and accepts no liability.

ASPHALT INSTALLATION AUTHORIZATION

The following is an authorization form for our records, indicating that you are aware of the potential issues with installing the skatepark equipment on an asphalt slab, and authorize Spohn Ranch, Inc. to proceed.

1. I acknowledge and understand that Spohn Ranch, Inc. does not recommend the use of asphalt as a base for the installation of skatepark equipment.
2. I acknowledge and understand that Spohn Ranch, Inc. is not qualified to test asphalt and determine its suitability for the purpose of installing skatepark equipment.
3. I acknowledge and understand that, in a small percentage of installations, skatepark equipment can settle into asphalt if it is not composed of the proper aggregate and hardness.
4. I authorize Spohn Ranch, Inc. to proceed with installing the skatepark equipment onto my asphalt slab. I release Spohn Ranch, Inc. of all responsibility for any injuries or issues that may occur resulting from the use of asphalt as the skatepark base.

SIGNED: _____ DATE: _____

NAME: _____ TITLE: _____

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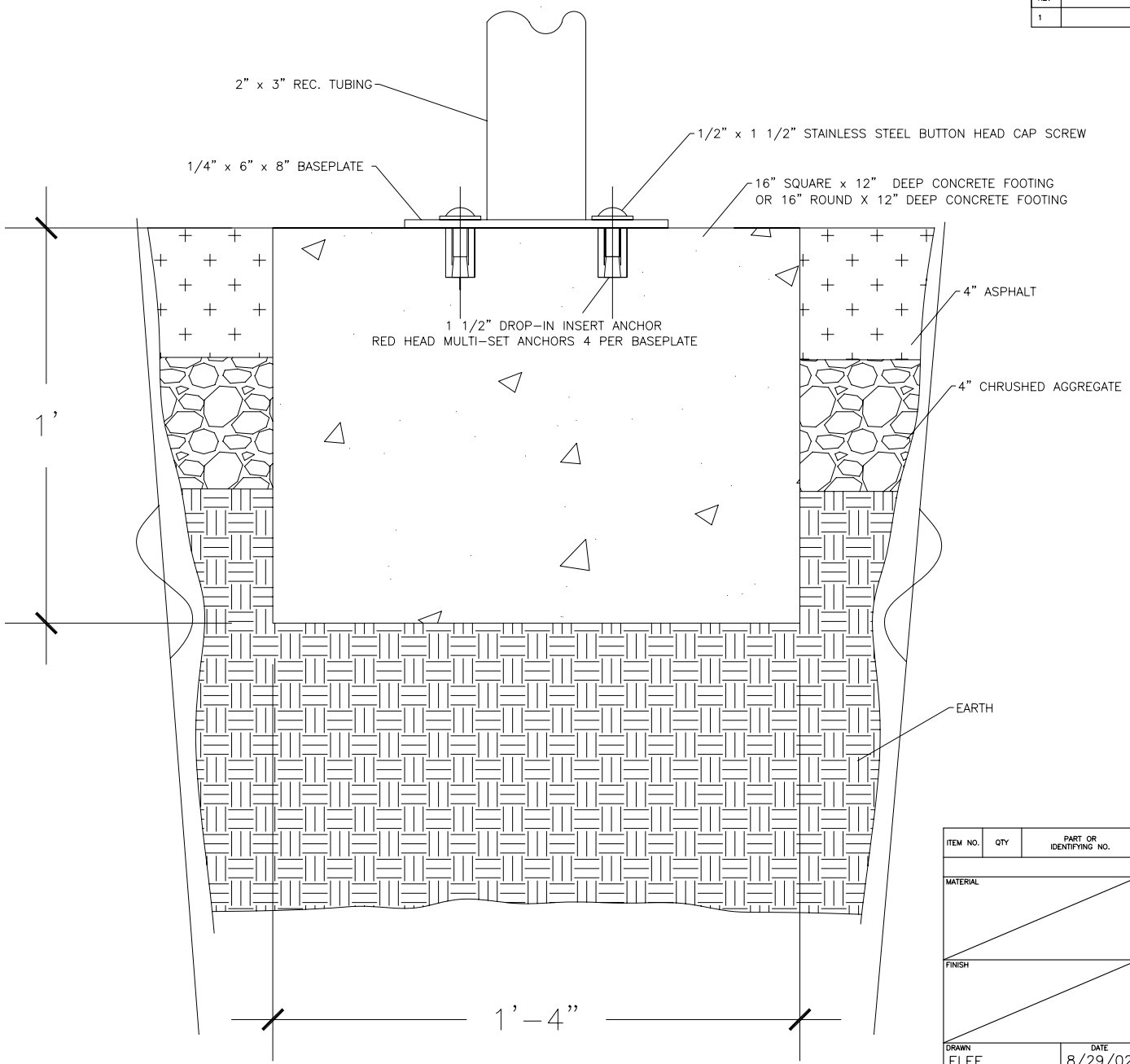
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1	CHANGED FOOTING DIMENSIONS	02.10.05	DPS



ITEM NO.	QTY	PART OR IDENTIFYING NO.	DESCRIPTION

PARTS LIST

MATERIAL

FINISH

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TITLE
ASPHALT ATTACHMENT DETAIL
FREESTANDING GRINDRAIL ATTACHMENT

DRAWN	DATE	SIZE	PROJECT	DRAWING NO.	REV.
ELEE	8/29/02	C		100013	
REVISED DPS	DATE 2/15/05	SCALE CUSTOM		SHEET 1 OF 1	