

# Bumper Boat Pond Water Care

by Tom Braznell

A busy bumper boat pond presents water problems which are much different from swimming pools.

Clear, attractive and clean water is hard to obtain and maintain without some effort and knowledge. The blue water does not come from blue dye—it is the result of chemically balanced, clean water.

When your bumper boat pond water is not right you probably have one or more of the following water problems:

Algae      Oil      Cloudy Water

**Algae** appears on the wall as brown, green or mustard color, or on the floor as black spots. Caused by a lack of chlorine, algae can be cured by an excess of chlorine. The most economical way to cure an algae problem is to hit it hard and fast with a lot of chlorine, not in small doses. Use granular calcium hypochlorite and add one pound per 3,000 gallons of pond water; repeat the treatment every two days until the algae is gone. Try to maintain a chlorine level of 4.0 to 5.0 ppm (screw- driver-handle yellow on an OTO chlorine test kit).

**Oil** from the engine exhaust is a serious and difficult problem. It is important to begin the season with an oil free pond. Cloudy water, scum, black oil on the tubes and water line, clogged filters, surface oil and dirty water are the signs of oil. A few weeks ahead of the busy season, begin adding an enzyme every

week. A dose is one half-gallon per 50,000 gallons of pond water. Enzymes digest, biodegrade and remove the oil without a residue or sediment by turning the oil into CO<sub>2</sub> and water. Don't allow the oil to get ahead; begin your enzyme treatment early and add it weekly.

**Cloudy Water** is caused normally by a lack of chlorine or possibly by an excess of oil. Begin by checking your chlorine level and bringing it up to 4.0 to 5.0 ppm and see if the water clears. If not, then look for the signs of oil and begin treating with an enzyme. Water clarifiers are often used, but they are labor intensive, while a specific cure for the specific problem is much easier and more effective. Refrain from using a clarifier.

Preventing trouble is much less costly than curing water problems. Keep the chlorine level up and use an enzyme to prevent an oil accumulation. Cyanuric acid prevents the sun from destroying the chlorine. The addition of cyanuric acid/ stabilizer to a level of about 50 to 70 ppm will cut your chlorine cost about in half. Have your pool store run the test or buy a CA test kit. When starting with a zero CA level, add one pound per 3,000 gallon of pond water and check the level two weeks later. CA is very slow to dissolve, so add the granular CA through the skimmer, rather than broadcasting, and do not backwash or clean you filter for two weeks.

**A Test Kit** is the way to control the chemicals needed to maintain quality water. Buy a five bottle OTO (not DPD) test kit (Rainbow, Gardex, or equal). Use this test kit to maintain:

Have your pool store test your water periodically to be sure that your kit, test solutions and procedure are correct and your values compare to their results. Have the pool store test the calcium (keep above 300 ppm) and CA stabilizer (50 to 70 ppm) once or twice a year. These levels should not change much. Your pool store will probably not agree with the higher chemical levels, but your pond is not a swimming pool, and it has other needs, such as protecting your motor housings. Basically high-test kit levels are good, while low levels are cause for concern. Testing water is not exacting so only look for serious deviations from the ideal range. For specific assistance, call the author at **1-800-888-3120**.

Alkalinity is increased with bi-carb/ baking soda/sodium bi-carb and pH is raised with soda ash. Take care not to confuse alkalinity and pH. Liquid chlorine (bleach) and granular or tablet calcium hypochlorite (HTH) will also raise the pH, while trichlor tablets tend to reduce alkalinity. Always adjust alkalinity first, then pH.

**Motor Housings** can be severely damaged by corrosive water. This potentially serious and expensive problem requires your attention and planning. Low test kit values cause corrosive water. Chlorine, pH and calcium (in that order) will protect your housings. Do not allow a pool store to influence you to lower your pH or alkalinity to normal swimming pool levels.

Maintenance and cleaning are always important. Clean your tubes, boats, water line, deck, etc., with a strong, non-acid,

degreasing cleaner. A pressure washer with a chemical compartment will make the cleaning job easier. Do not use acid or an acid cleaner—stay with a good alkali in mid-season, or as needed, so that the filter does its job efficiently. Remove the dirt and leaves from the pond by vacuuming with a regular vac head, pole and hose periodically as needed. If leaves are a serious problem, use a leaf master which connects to a garden hose and puts leaves in a cloth bag. Run the pump and filter 24 hours a day during the busy period. Empty the pump basket often.

It is possible and not too expensive to automate the chemical control of a Bumper Boat pond. A chlorine tablet feeder will give continuous feeding of chlorine at a low cost rather than hand feeding of granular or liquid. Once the feeder is set, the chlorine and pH adjuster as needed.

If vacuuming of the pond is often necessary, then an automatic vacuum cleaner might save a lot of trouble and time. Allow the vacuum to work at night for a clean pond by morning.

If your pump and filter are large enough and have adequate capacity, it might be possible to put them on a timer to control or reduce the running time and save electricity. If the filtration system is undersized, it should be run 24 hours a day during the busy season and be cleaned often.

In summary, begin the season with the pond and water in good shape, then as the season progresses and the pond is heavily used, continuously add chlorine and enzyme on a regular schedule. Test the water weekly to maintain the proper water balance and levels. Clear, clean, blue water is not difficult or expensive.

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## **BUMPER BOAT POND WATER**

**Introduction** – A bumper boat pond is not a swimming pool and should not be treated as one in the design, filtration system and chemical test kit levels. The pond does require chlorine and filtration like a swimming pool but most frequently the pump and filter is too small for the demands of a busy gasoline powered bumper boat pond. The original pond design requires a higher turnover rate (pump and filter capacity), more skimmers and main drains plus a good chemical system. Note: Electric bumper boat ponds do not require the same specifications. Contact J&J for recommendations.

**Water Problems** – The problems of oil, algae, cloudiness and corrosive water are much easier and cheaper to prevent than they are to cure in the middle of a busy summer season. A knowledge of what causes each and how to cure them is important. Corrosive water will be discussed later. **Oil** from the engine exhaust (even from four cycle) is a serious and difficult problem that is evident by a black water line, cloudy water and filter blockage. The oil problem continues to get worse unless it is dealt with. The oil is removed from the water and filter with weekly doses of DE-SKUM natural enzyme. DE-SKUM biodegrades, digests and removes the oils effectively, if it used consistently. If the water is allowed to get too oily the clean up job will take much longer and a lot more work. Prevention is the answer to clear water. **Algae** can be green, mustard, red or black in color, is slimy and can be removed with a brush. Algae is caused by a lack of chlorine and will be cured by an excess of chlorine. To cure algae add one pound of granular calcium hypochlorite chlorine per 3,000 gallons of pond water (pre-dissolve in water for vinyl lined ponds). Repeat the treatment every two days until the algae is gone. **Cloudy water** can be caused by a low chlorine level, oils or a filter problem. Add the above algae chlorine treatment initially and treat with DE-SKUM enzyme for oil. Be aggressive with the treatment but do not over dose the enzyme. The DE-SKUM enzyme dose is fixed (at 1 to 1 ½ ounces per 1000 gallons of pond water) but you can shorten or lengthen the period of time between doses to four days, for faster treatment.

**Water chemistry** – The water chemistry levels that apply to swimming pool must be adjusted for a bumper boat pond and this will cause a conflict with your local pool store. The **chlorine** level should be tested with an OTO (not DPD) test kit (solution) because higher level of 4.0 to 5.0 PPM are needed and the OTO test kit is more accurate at these levels. The DPD test kit is more accurate at these levels. Try to maintain a consistent chlorine level without shock treating. If a cyanuric acid or stabilizer level of 70 is maintained the loss of chlorine to sunlight will be minimized with a noticeable savings in chlorine cost. The **pH** level should be 8.0 or above, the **alkalinity** should be at 120 or above and the **calcium** at 300 PPM or above to protect the lower motor housings. This is very important to prevent future large

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expenses for new motor housings. If you want to double check your test kit and its use you might want to take a water sample to your pool store once or twice a year but continue to adhere to the above chemical levels and not the swimming pool levels proposed by your pool store. To do your own water testing buy a standard OTO (not DPD) five bottle test kit (Rainbox or Guardex or equal) plus a calcium test kit and possibly a small cyanuric acid test kit too. Do not buy a fancy or expensive test kit – keep it simple and cheap. The lower motor housings are very expensive to replace and are destroyed by low levels of pH, alkalinity and calcium. Keep these three items up to the levels noted – high levels are good and low levels are bad. Testing water should not be exacting – it is used only as a warning if something is out of line. If you have questions call 800-888-3120 anytime to discuss your water problems.

**Type of Chlorine** – You can use liquid, granular or tablet chlorine in your pond. Granular calcium hypochlorite (HTH type) must be added by hand and helps in raising the calcium level. This granular chlorine can be used if there is a manufacturing source nearby so that the liquid is fresh. Hauling volumes of liquid chlorine can be discouraging and costly. Tablets are compact and concentrated thus easy to handle. The tablets and granular maintain their strength over long periods of time whereas the liquid loses strength daily. Tablets and liquid can be dispensed automatically using an automatic chemical controller to continuously test the water and dispense the chlorine. This equipment will cost about \$850 for tablets and \$1700 for liquid. If liquid is used acid should be dispensed and tested with the same chemical controller. The easiest and most economical is a Rainbow 300-29X (one or two units) tablet dispenser and a Chemtrol 205 controller – a very simple system.

**Filter Cleaning** – Sand filters are the easiest to maintain and operate but must be sized correctly with the pump to turnover the water in 4 hours – not the standard 6 or 8 hours for a swimming pool. If your bumper boat pond has a less than adequate pump and filter system then everything else must be very carefully controlled. The motors do generate oil (even four cycle) and this oil collects in the filter. This serious problem must be addressed at least twice a year with concentrated DE-SKUM FILTER CLEANER and continuously with DE-SKUM enzyme oil remover. If DE-SKUM enzyme is not used continuously then four times a year filter cleaning is needed. Once every year or two (or annually for an undersized system) remove the filter manhole cove and inspect the filter and sand to be sure that it is clean. If the sand is caked hard, remove about four inches and replace it with swimming pool grade #20/30 or .45-.60mm filter sand. If the filter is cleaned carefully and completely with DE-SKUM enzyme and DE-SKUM FILTER CLEANER this should not be necessary. The pressure gauge on the filter should be watched carefully and the filter backwashed when the pressure differential increases 15 to 20 psig. Do not backwash by time (periodically)- do it by pressure increase. Oil is the main cause of

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filter blockage and pressure increase and backwashing does not remove any of the oil. Oil must be removed with DE-SKUM enzyme and FILTER CLEANER. The use of DE-SKUM continues to be an important program to save labor and have quality pond water.

**Spring Opening** – After a dormant winter, plans must be made to clean up your bumper boat pond in preparation for the season. You do not want to begin the season “behind the eight ball”. To be in control of water clarity, algae, oil and other problems is made much more difficult when you begin the season with water problems. Allow a month or month-and-a-half to clean the pond in the spring before you open.

The pond can be cleaned either with the water in it or by draining. Draining is quicker but requires more work plus new water and chemical expense. If you drain you will need a small portable sump pump (preferably with an automatic shut off and a heavy-duty pressure washer with a detergent or chemical compartment. These can be rented at any rental store. Take care if you have a vinyl liner as they are easily torn or damaged. You will need a strong liquid degreasing detergent like DE-SKUM FILTER CLEANER to use in the pressure washer to cut the grease and oil. Use the sump pump to empty the pond (not the filter pump) and if possible put the sump pump in the main drain bowl after removing the grate. Remove the leaves and large debris by hand. Use the pressure washer to thoroughly clean the pond walls and floor. Also use the pressure washer on the boats/tubes, engines, deck, skimmers and main drains. Keep the sump pump running as you clean.

If you keep the old pond water you will need a regular pool vacuum hose and a good quality residential vacuum head and pole, connected to the filter pump. Be sure that the water level is up to the middle of the skimmers before you start the filter pump and vacuum. Turn off the main drains and plug enough skimmer pipes to create adequate vacuum suction but not so much that the vac head sticks to the floor of the pool. Be careful of a vinyl lining. Do not put too much strain on the pump by plugging everything. Run the filter pump continuously until the job is done and the water is clear and clean. Clean the filter frequently as needed to maintain adequate vacuum and good water flow. Now you must depend on chemicals to clean the water and you will have to provide at least a month to do a good job. Add DE-SKUM enzyme 1 ½ ounces per 1000 gallons of pond water. Add every 15 days and the pond should be clean of oil in about 45 days. Between doses of enzyme add granular or liquid chlorine to maintain about 2.0 to 3.0 PPM of chlorine.

Try to use city water and not well water to fill the pond. When the oil is removed increase the chlorine level to about 5.0 PPM. Follow the recommendations for the water balance already noted.

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The filter should be cleaned thoroughly with a strong degreasing detergent like DE-SKUM FILTER CLEANER (never use an acid base cleaner). After the water is clean and clear perform one good/last filter cleaning. Run the pump/filter system continuously once the season begins.

**Fall Pond Closing** – This is called winterizing in the pool industry and basically it is a down time and freezing preparation. The action you take is effected by your geographic location – the farther north and more severe winter will require greater precaution and preparation. Ask your local pool store for advice and use the following reminders:

- \* Add the following chemicals and circulate:
  - DE-SKUM enzyme 4 to 6 ounces per 1000 gallons of water
  - Algaecide – preferably copper base per directions
  - Super chlorinate
- \* Backwash and clean the filter – remove cartridges or DE grids and drain sand filter.
- \* Lower the water level to just below the skimmers and return lines
- \* Disconnect fuses and circuit breakers
- \* Remove water in the pipes and add antifreeze
- \* Empty and store skimmer baskets and pump strainer trap
- \* Put weight on skimmer lids to prevent loss
- \* Pump should be drained, add antifreeze and cover. If possible remove the pump and store it inside
- \* Disconnect and store chlorinator, controller, etc.
- \* Examine equipment for needed repairs and do it now or plan to accomplish before spring opening. Order needed equipment and chemicals
- \* Make a plan for the spring opening and list of needed items.

Broken pipes and equipment due to freezing can be very expensive. Protect your equipment and make the spring opening easy.

**Summary** - During the busy season test the water yourself at least weekly to be sure that adequate chemical levels are maintained. If you need help call 800-888-3120. Stay ahead of the oil by adding DE-SKUM enzyme weekly to every 15 days. At the first sign of algae, oil or cloudy water, determine the cause and add the needed chemical quickly. It costs less to prevent problems than it does to cure them. Your total annual chemical cost will be influenced most by how many times you get into trouble and your use of cyanuric acid.

Once or twice a year have a pool store test your water to verify the accuracy of your test kit and testing method. If you have any questions call 800-888-3120 for assistance. Have the pool store test for calcium and cyanuric acid. The pool store can be of great assistance but do not allow them to change your chemical levels to swimming pool levels or motor corrosion will result. Work with them to bring your cyanuric acid level into the correct range to reduce your use of chlorine.

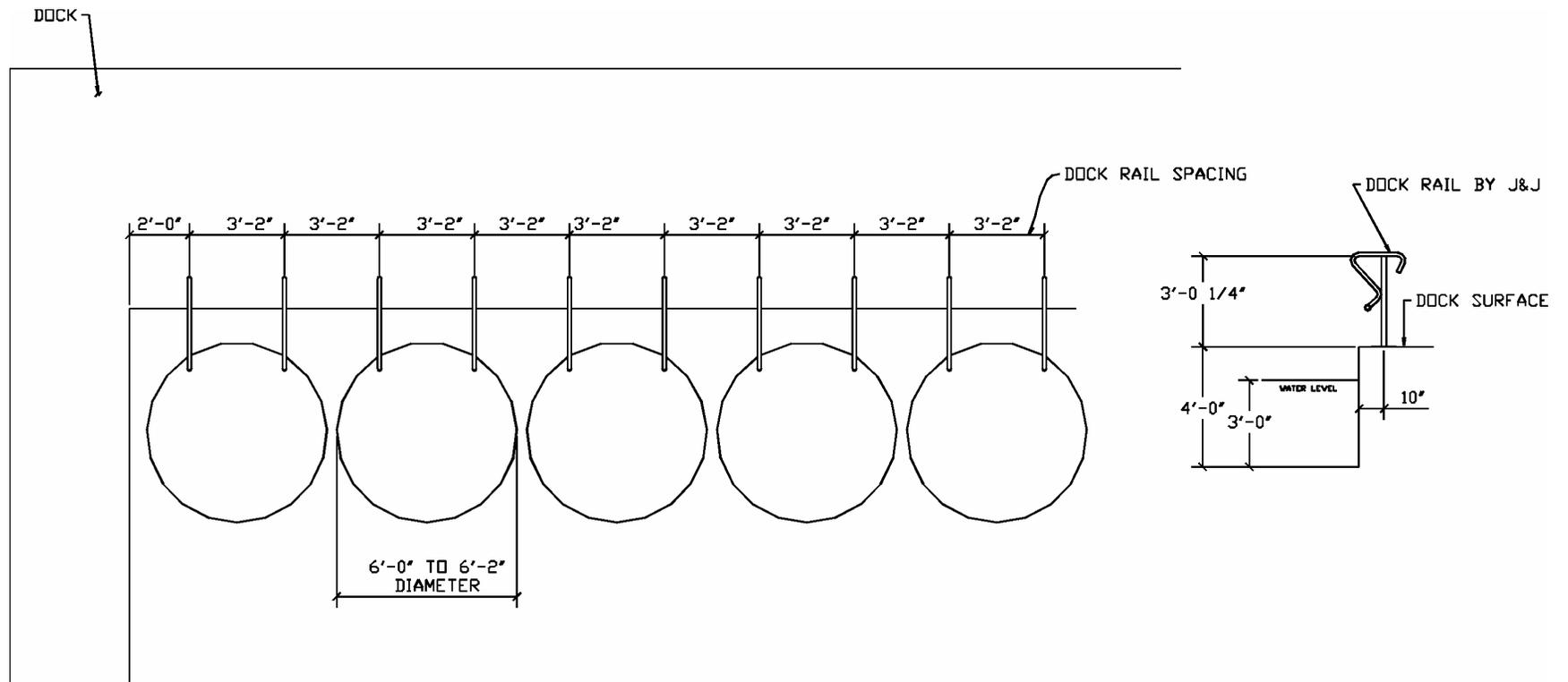
If algae appears or persists the chlorine level is not adequate or high enough. Add one pound per 3000 gallons of pond water and you should see the algae disappear. Algae is caused by a lack of chlorine and will be removed or cured with an excess of chlorine. Severe black algae will require about four times this dose – be careful of vinyl liners (pre-dissolve in water).

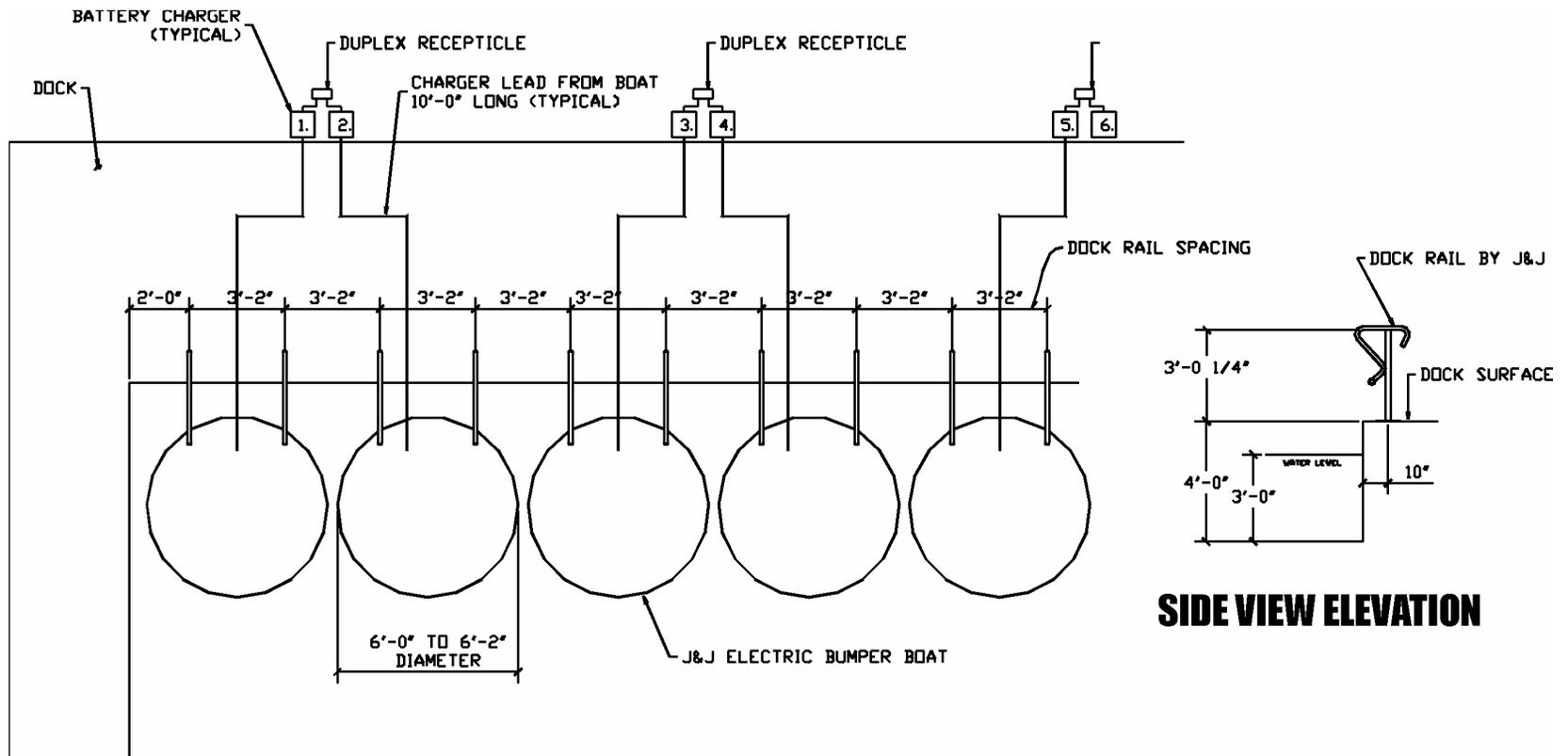
Begin each new season with a clean (oil free) pond and filter with clean, clear water. Maintain your chemical levels and add DE-SKUM during the busy season and your bumper boat pond will impress your customers.

.J&J Amusements, Inc.

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Suite 150  
Salem, OR. 97305  
(503)304-8899

**CONCEPT ONLY**  
**DOCKRAIL LAYOUT DETAIL**





## CONCEPT ONLY - ELECTRIC BUMPER BOAT CHARGER LAYOUT

### NOTES:

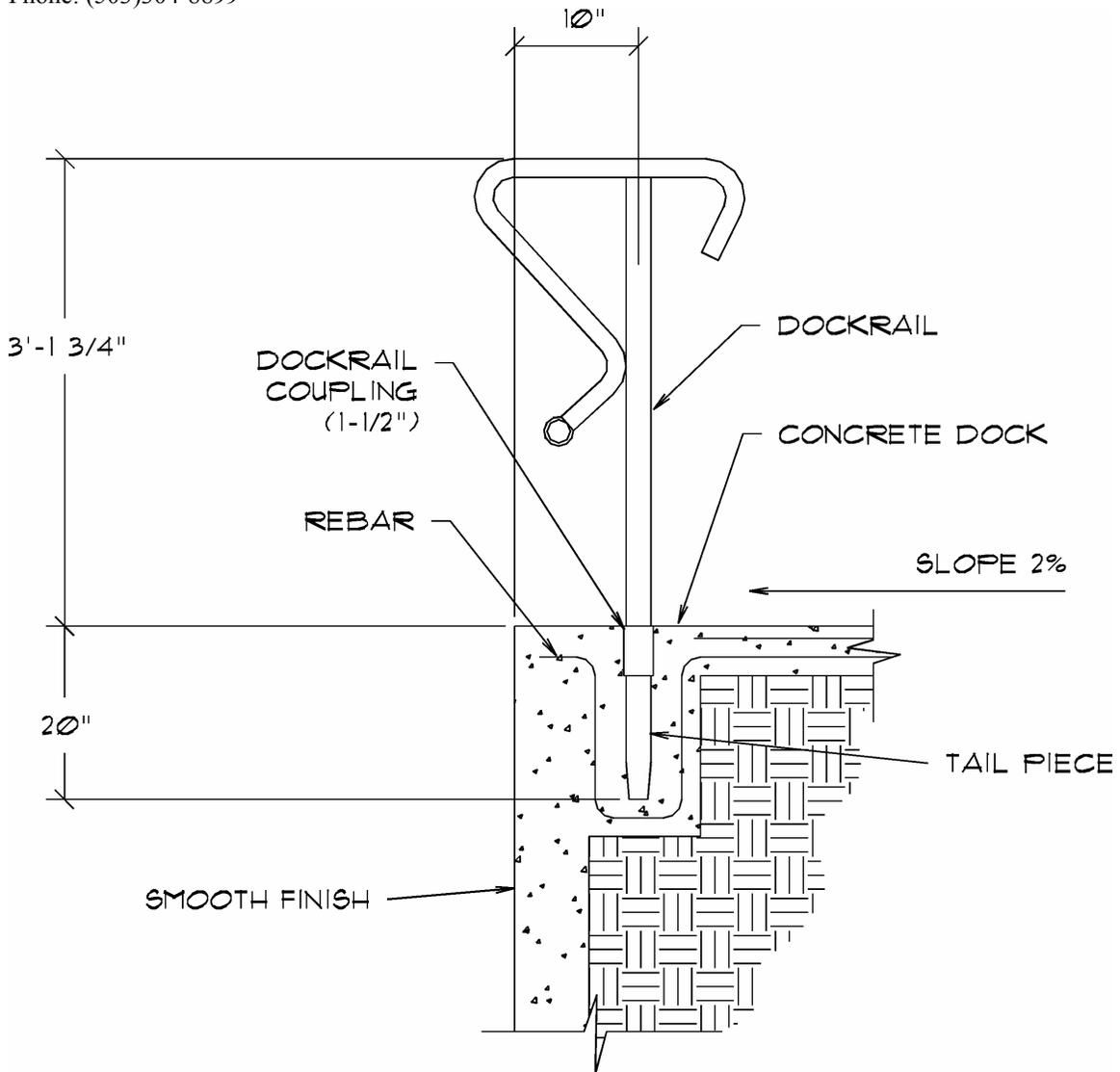
- CHECK LOCAL ELECTRICAL CODES FOR REQUIREMENTS.
- AMPERE DRAW OF EACH CHARGER - 6.9 AMPS AC.
- TAIL PIECES AND COUPLERS FOR DOCK RAILS MUST BE INSTALLED WHEN CONCRETE IS POURED.

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X:\Customer info request\General Info Bumper Boat\Electric B.B\EBB Charger Information\ELECTRIC BOAT CHARGER LAYOUT.doc

# Concept Only CONCRETE DOCK RAIL

J&J AMUSEMENTS  
4897 Indian School Rd.  
Salem, OR. 97305  
Phone: (503)304-8899

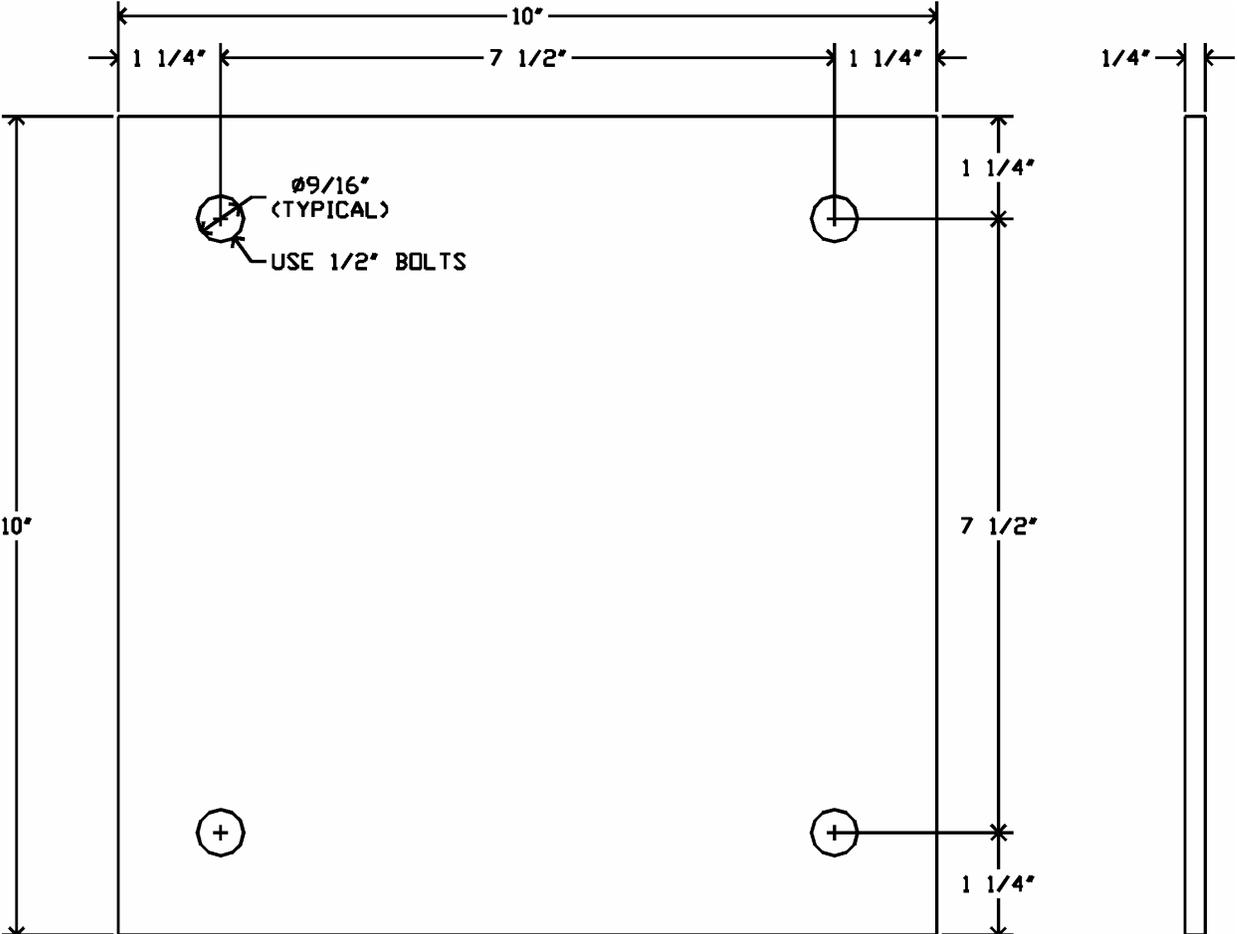


**NOTE:**  
DOCKRAIL COUPLING AND TAIL PIECE SHOULD BE INSTALLED WHEN CONCRETE IS  
POURED.  
DOCKRAIL THREADS INTO COUPLING AND CAN BE INSTALLED AFTER CONCRETE HAS  
SET.

Document Location: X:\Customer info request\General Info Bumper Boat\Concrete Dock Rail.doc

**Concept Only**  
**WOODEN DOCK RAIL BASE**

J&J AMUSEMENTS  
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Material is 1/4" Stainless Steel T304  
J&J Part # 00714OSS  
J&J DRAWING # 00714OSS