

Mfg. Interactive Waterplay  
Ride: model 400  
Kiddie

## ASSEMBLY, OPERATION

AND

## MAINTENANCE MANUAL

Michael,  
This is manual on  
Quiet water PARK  
Ford in file

Allen

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**SECTION 1**

**ASSEMBLY INSTRUCTIONS**

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# **SPECIALIZED COMPONENT SUPPLY**

Interactive WaterPlay® Systems

**MODEL 400**

## **INSTALLATION INSTRUCTIONS**

### **INTRODUCTION**

Thank you for purchasing an SCS play system. The Model 400, like all SCS play systems, has been designed to ensure safe play and hours of fun for everyone. With the many different effects controlled by participants through valves, nozzles, jets, and waterfalls, everyone can enjoy and learn from the waterplay experience.

**PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING TO UNLOAD, ASSEMBLE OR OPERATE THE PLAY STRUCTURE.**

These instructions have been prepared to provide a thorough overview of the play system and step by step assembly guidelines. By reading and following these instructions, installation and start-up should be accomplished with minimal complications.

If any questions or problems arise, please call SCS at (503) 842-7001 and ask for technical assistance.

**DO NOT MAKE ANY MODIFICATIONS WITHOUT FIRST CONTACTING SCS**

### **MODEL DESCRIPTION**

The Model 400, simply put, is a structural water distribution system. The unit consists of a superstructure of flanged steel stand pipes and cross pipes which in turn supports a number of secondary components such as platforms, handrails and slides. The piping components distribute water from a remote manifold system to the various waterplay effects integrated within the play structure design.

The manifold system includes valves which allow the operator to throttle and control the individual waterplay effects to obtain maximum safe operating pressures and flows. The manifold is purely a safety system and is not accessible to play participants. System start-up and manifold valve adjustment procedures are addressed later in this manual.

The play structure itself includes a number of valves which are for the use of play participants. These valves allow users to manipulate, regulate and re-direct the flow of water at the play structure. This participatory play concept is at the heart of SCS play design.

In design, the Model 400 is not complicated. The entire unit bolts together with conventional fasteners. The following text will describe how to identify, align and install the various play system components.

## PRE-ASSEMBLY INSTRUCTIONS

**NECESSARY TOOLS AND EQUIPMENT:** The assembly of the Model 400 will require a forklift and/or a small crane to position several of the components and 2 x 4's for bracing. A variety of nylon rigging slings will be needed for lifting and positioning the components.

As mentioned above, the entire play structure bolts together. Socket wrenches, box end wrenches, and other simple hand tools will suffice for most of the work. The majority of the flanged connections will require either a 15/16" or 1 1/8" wrench size. A large, tapered drift punch will help greatly in aligning flange connections. The only power tools needed are a drill motor and a sabre or reciprocating saw.

**TIME AND MANPOWER REQUIREMENTS:** Using a crew five to six men, assembly of the play structure can be complete within 7 to 10 days.

**PROTECTIVE WRAPPING:** The Model 400 will arrive on site secured on several skids. Most components will be in boxes or covered with a protective wrapping. SCS takes great care in packing the components at the factory to prevent damage to the painted pipe surfaces and galvanized subsurfaces. We strongly advise that this wrapping be left on the components until assembly is complete. This is to the advantage of the contractor, as less touch-up work will be required at the end of the project.

It will be necessary to remove some wrapping from the components to identify piping and make structural connections. Remove the wrapping by hand if possible. If using a knife to remove wrapping, take care not to cut into the paint finishes.

**UNLOADING AND INVENTORY:** Before starting assembly, we advise that all components be unloaded and a complete inventory be performed. A complete packing list has been included in the back of this manual to assist you in performing the inventory. The packing list identifies all components as to type, quantity, function, size and location on the structure. The inventory will accomplish two useful tasks:

1. An inventory will insure that no parts are missing. If you discover that any parts are missing from your shipment, contact SCS immediately at (503) 842-7001 and ask for customer assistance.
2. By doing an inventory, all parts will be identified and can be arranged in similar groups to facilitate easy assembly.

## COMPONENT DESCRIPTION AND IDENTIFICATION

Following is a listing of the most common components comprising an SCS play structure and a description of how to identify the components for inventory. Depending on the model and size of the structure, there may be other components which have not been included here. However, once you are familiar with the packing list and methods for identifying the various components, a complete inventory will be relatively simple.

1. **STAND PIPES:** Stand pipes are lettered A, B, C, D, etc.. These stand pipe letters correspond to the pipe locations identified on the Model 400 detail sheets included in this manual. The Model 400 is laid out on a grid system. This means that some stand pipe letters are repetitive. For instance, one grid will be comprised of stand pipes A, B, C and D. The next grid will be comprised of stand pipes A2, B2, C2 and D2. Drawing 400-05 shows a complete

layout and plan for all stand pipes. For assembly purposes, you will find the lettering for base stand pipes on the top face of the pipe base flanges.

Some of the stand pipes are two piece components with a butterfly valve between sections. The lower section of a two piece stand pipe will be lettered A, A1, B, B1, etc., and the upper section will be labeled A', A2', B', B2', etc.. For assembly, the lettering for these components will be found on the inside of the pipe, at the lower end.

The packing list refers to stand pipes in the same fashion as described above; A, B, C, etc.. The protective wrapping will be marked with these letter designations.

**2. CROSS PIPES:** Cross pipes are labeled XAB, XDE, etc.. Pipe XAB would connect between stand pipes A and B. Cross pipes will be lettered with both pipe and connection point designations. For example, cross pipe XAB would be lettered A or B on one end to designate connection at that end to either stand pipe A or B. The other end of the cross pipe would be lettered XAB. The lettering for cross pipes will be found on the inside of the pipe, at the ends.

As with the stand pipes, due to the grid system some cross pipe designations are repetitive. For example, cross pipe XAB would attach to stand pipes A and B, cross pipe XAB2 would attach to stand pipes A2 and B2 and so on.

Again, the packing list and protective wrapping identify cross pipes as described; XAB, XDE, etc.

During assembly, it will be helpful to refer to the plan and elevation drawings included with this manual. Most of the stand pipes and cross pipes are lettered on the drawings. If you are confused about the location of a pipe, the drawings will usually indicate its proper location on the structure.

**3. VALVES:** All of the participatory play valves used on the Model 400 are butterfly valves. There are two different types of handles which will be used for the participatory valves; direct drive handwheels and lever handles. Both handwheels and lever handles will be shipped already mounted to the valves.

The other type of butterfly valves used on the play structure are throttle valves. These valves are used for the adjustment of water effects which are not directly controllable at the manifold. An example of this type of application would be for a stand pipe which feeds two separate water effects. One effect would be valved at the manifold and the other would be controlled by a throttle valve on the structure. Throttle valves are not supplied with handles, but instead are supplied with a safety cap. Once adjusted with a wrench, the valves are capped to prevent further adjustment by play participants. The throttle valves will be shipped with the caps attached.

Every valve assembly will include a companion valve shell. Valve shells serve two functions; they visually hide the valve body for a more finished appearance and they prevent children from trapping fingers between the valves and connecting bolts. The packing list refers to valve shells by size. For example; 6" valve shell.

The packing list identifies all valves as to type, size and location on the structure. For example; 6" BFV(butterfly valve) with DD(direct drive) handwheel(E). The letter E designates that the valve is located on stand pipe E.

The valves and valve shells will be packed in protective wrapping and marked as to size and type.

4. PLATFORMS: Platforms consist of a fiberglass reinforced plastic shell mounted to a steel frame. The platforms bolt up to hanger brackets on the stand pipes. The lettering for platforms will be located on the inside face of the platform frames at the corners, relative to the stand pipes each corner connects to.

The packing list refers to platforms by size and location. For example; FRP(fiberglass reinforced plastic) platform ABCD 72" x 72". Platforms are shipped unwrapped and are easily identifiable.

5. HANDRAILS: Handrail sections are fabricated steel and bolt up to hanger tabs on the standpipes. The only exception are watergun handrail sections, which will have flanged connections on the bottom to allow water flow to the waterguns. Handrails are lettered on the underside of the bottom horizontal rail relative to the standpipes they connect to. For example; handrail XAB will connect between standpipes A and B, handrail XAB2 will connect between stand pipe A2 and B2 and so on.

The packing list refers to handrail sections by location; handrail XAB, XCD, etc.. The handrail sections will be covered by protective wrapping. The wrapping will be marked the same as the packing list.

6. STAIR SETS: Stair sets, like platforms, are fabricated from fiberglass reinforced plastic. Stair sets are shipped unwrapped. Stair sets do not have any identification markings but are easy to identify by size and location. This is how they are referred to on the packing list. For example; FRP(fiberglass reinforced plastic) Stair Unit XAB (2 step x 65"). This would indicate a two step stair with a 65" width located between stand pipes A and B.

Some stair sets will be indicated as being notched on the packing list. These stair sets are the lower ones which will rest on the pool floor. The notches are to allow the back of the stair sets to clear the stand pipe base flanges.

7. PVC ROOF STRUCTURES: Roof structures are fabricated from PVC pipe, fittings and sheet stock. Roof structures are shipped in shrink wrap and are easily identifiable. The packing list refers to roof structures by location. For example; PVC roof ABCD. This would indicate the roof structure is located on top of stand pipes A, B, C and D.

8. CRAWL TUNNELS AND FRAMES: Crawl tunnels consist of a polyethylene tunnel section sitting on a steel support frame. The frame bolts up to hangers on the stand pipes. Like platform frames, tunnel frames are lettered on the corners, relative to the stand pipe connection points.

Crawl tunnels are shipped in shrink wrap with the tunnel resting in the frame. The packing list refers to crawl tunnel assemblies by location. For example; crawl tunnel frame ABCD.

9. PVC SKIRTS: Skirting is fabricated out of PVC sheet stock. Skirts bolt up to mounting tabs on the stand pipes. Skirts are crated and will be shipped inside the shrink wrap covering the roof structure. Skirting should not be uncrated until ready for installation. If skirts are laid flat in the sun, they may warp.

The packing list refers to skirt sections by location on the structure. For example; PVC skirt XAB.

10. TUNNEL SLIDES: Tunnel slides consist of individual sections of polyethylene tubing which are bolted together to form a continuous slide. Slides may be shipped assembled, unassembled or in several partially assembled sections depending on shipping requirements. If slides are assembled, they will be shipped in shrink wrap. If unassembled, they will be shipped with individual tube sections in boxes.

The packing list will call out slides by individual tube components. For example; slide straight section @ 24", slide 30 degree elbow section, etc..

11. TIRE SWINGS: Tire swings are shipped in a box, with the chains and swivel already assembled. The tire swing will bolt to a bracket on the appropriate cantilever cross pipe. The packing list will call out tire swings as "tire swing assemblies".

12. MANIFOLDS: Supply manifolds are either constructed of galvanized steel or PVC pipe. Steel manifolds are shipped unwrapped. PVC manifolds are shipped covered with cardboard and shrink wrapped. The packing list refers to manifolds by size and type. For example; 8" PVC manifold.

13. PLUMBING KITS: For models with supply manifolds located underneath the structure, plumbing kits are supplied to allow connection to stand pipe supply drops. Plumbing kits consist of a variety of PVC fittings, valves and piping. Pipe will be shipped unwrapped with the various sizes and lengths taped together. Fittings and valves will be packed in one or more boxes. The packing list identifies each individual fitting for inventory purposes. For example; 3" PVC ball valve, 2" PVC 90 degree ell, etc.

For assembly and identification purposes, refer to the manifold/above grade plumbing drawings included with this manual.

14. BOLTS: SCS playstructures utilize two basic types of bolts, painted, galvanized steel bolts for flange connections and stainless steel bolts for platforms, handrails, skirts, etc.. These bolts come in a variety of thread sizes and lengths. Bolts will be shipped in boxes. The packing list refers to bolts by size and use. For example; 3/4" x 3" with nut, galvanized and painted for 6" flange joints or 5/16" x 2" S.S. with nylock nut and 2 washers for handrails.

15. PAINT KIT: Every playstructure is supplied with a paint kit for touch up and maintenance. The paint kit will consist of primer, activator and paint for every color used on the structure. The paint kit will be shipped in boxes. Each can will be marked as to color.

16. MISCELLANEOUS COMPONENTS: Components such as waterguns, pull rope valve assemblies and umbrella jet nozzles will be shipped in individual boxes. The packing list will refer to these items by name and quantity. Boxes will always be marked to identify these components.

## COMPONENT ALIGNMENT

As an aid in properly positioning pipes and pipe effects, all of the structural piping components will have raised dots on the flange edges at one or both ends. These dots are usually located on the underside of the flanges. When assembling the play structure, align the dots to correctly position all components. This manual will also frequently refer to the proper orientation of jets, nozzles, etc., as another reference.

## POOL FLOOR LAYOUT

An accurate layout of the play structure on the pool floor will ensure ease of assembly. As mentioned above, drawing 400-05 of this manual shows a complete pool floor layout and a plan of all stand pipes. Recreate the stand pipe plan to scale on the pool floor using chalk lines and circles, then letter the stand pipe locations.

## ASSEMBLY PROCEDURES

WHEN BOLTING THE PLAY STRUCTURE TOGETHER, IT IS RECOMMENDED TO INITIALLY USE ONLY FOUR EVENLY SPACED BOLTS WITH ONE GASKET PER FLANGE. FLANGE CONNECTIONS WITH VALVES DO NOT REQUIRE GASKETS. TIGHTEN CONNECTIONS ONLY ENOUGH TO RESTRAIN EXCESS MOVEMENT, THIS WILL ALLOW ENOUGH PLAY BETWEEN FLANGES TO PROPERLY ALIGN THE REMAINING COMPONENTS.

USE EXTREME CAUTION AND NECESSARY BRACING TO PREVENT STAND PIPES FROM FALLING OVER, SEVERE INJURY OR DAMAGE COULD RESULT. For example: Use adequate 2 x 4 bracing securely attached to stand pipes.

NOTE: When this manual calls out dimensional heights of flanged pipe drops, the dimension listed is always from the bottom of the base flange to the centerline of the drop.

1. Erect stand pipe A on its designated footing connection. Orient the pipe so that the 72" high x 6" flanged drop faces stand pipe footer A2. Bolt stand pipe to below grade connection tee.
2. Assemble on the ground stand pipes A2 and A2' with lever handle valve and valve shell between pipes. Valve stem should point in line with the 72" high x 6" flanged drop. Correctly align components using dots on flange edges and bolt together using 3/4" x 5" painted bolts and nuts. Erect the stand pipe assembly on its designated footing connection. Orient the pipe assembly so that the 72" high x 6" flanged drop faces towards A. Bolt assembly to below grade connection tee.
3. Assemble on the ground stand pipes B and B' with handwheel valve and valve shell between pipes. The valve stem should point directly opposite the 2" flanged drops on B'. Correctly align components using dots on flange edges and bolt together using 3/4" x 5" painted bolts and nuts. Erect the stand pipe assembly on its designated footing connection. Orient the pipe assembly so that the 72" high x 6" flanged drop faces stand pipe circle D2. Bolt assembly to below grade connection tee.
4. Install the 54" x 120" bridge platform ABA2D2 between stand pipes A, B, and A2. Bolt platform loosely to platform hanger brackets using 1/2" x 1 1/4" stainless bolts and nylocks.
5. Erect stand pipe D2 on its designated location. Orient the pipe so that the 72" high x 6" flanged drop faces stand pipe B. Bolt stand pipe to platform using 1/2" x 1 1/4" stainless bolt and nylock.
6. Attach cross pipe XBD2 between stand pipes B and D2. Properly align cross pipe using dots on flange edges and bolt at both ends using 3/4" x 3" painted bolts and nuts. The row of inset jets should point straight down.

7. Attach cross pipe XAA2 between stand pipes A and A2. Properly align cross pipe using dots on flange edges and bolt using 3/4" x 3" painted bolts and nuts.
8. Assemble on the ground stand pipes B2 and B2' with a handwheel valve and valve shell between. The valve stem should point directly opposite the 2" flanged drops on B2'. Correctly align components using dots on flange edges and bolt together using 3/4" x 5" painted bolts and nuts. Erect the stand pipe assembly on its designated footing connection. Orient the pipe so that the 72" high x 6" flanged drop faces circle D3. Bolt assembly to connection tee.
9. Assemble on the ground stand pipes C2 and C2' with a lever handle valve and valve shell between. The valve stem should point in line with the 72" x 6" flanged drop. Align components using dots on flange edges and bolt together using 3/4" x 5" painted bolts and nuts.
10. Install the 72" x 72" platform ABCD2 between stand pipes A2, B2 and D2. Bolt platform loosely using 1/2" x 1 1/4" stainless bolts and nylocks.
11. Erect the C2 stand pipe assembly on its designated circle. Orient pipe so that the 72" high x 6" flanged drop faces stand pipe circle A3. Bolt stand pipe to platform using a 1/2" x 1 1/4" stainless bolt and nylock.
12. Assemble on ground stand pipes A3 and A3' with a lever handle valve and valve shell between. The valve stem should point in line with the 78" high x 6" flanged drop. Align components using dots and bolt together with 3/4" x 5" painted bolts and nuts.
13. Erect the A3 assembly on its designated circle. Orient pipe so that the 72" high x 6" flanged drop faces C2. BRACE SECURELY TO PREVENT FALLING OVER.
14. Install the 54" x 120" bridge platform AD3BC2 between stand pipes A3, B2 and C2. Bolt platform to pipe brackets using 1/2" x 1 1/4" stainless bolts and nylocks.
15. Erect stand pipe D3 on its designated circle. Orient pipe so that the 72" high x 6" flanged drop faces B2. Bolt pipe to platform using a 1/2" x 1 1/4" stainless bolt and nylock.
16. Install cross pipe XB2D3 between stand pipes B2 and D3. Align cross pipe using dots on flange edges and bolt to stand pipes using 3/4" x 3" painted bolts and nuts. The row of inset jets should point straight down.
17. Install cross pipe XA3C2 between stand pipes A3 and C2. Align cross pipe and bolt to stand pipes using 3/4" x 5" painted bolts and nuts.
18. Install bridge handrail (watergun handrail) XAA2 between stand pipes A and A2 above the platform. Remember, handrails are marked on the underside rail. The 12" x 12" openings in the handrail should be at the top of the handrail section. Bolt the handrail flanges to the flanged drops on the stand pipes using 5/8" x 2 3/4" painted bolts and nuts. Install the three remaining bridge handrails (XBD2, XB2D3 and XC2A3) following the same procedure as above.
19. Install spiral slide handrail section XAB2. The entry arch for the spiral slide will be towards A2. Bolt handrail to hanger tabs on stand pipes using 5/16" x 2" stainless bolts, washers and nylocks.
20. Erect stand pipe B3 on its designated circle. Orient pipe so that the 78" high x 6" flanged drop faces cross pipe XAB3. BRACE SECURELY TO PREVENT FALLING.

21. Install the 72" x 72" platform ABCD3 between stand pipes A3, B3 and D3. Bolt platform to pipe brackets using 1/2" x 1 1/4" stainless bolts and nylocks.
22. Erect stand pipe C3 on its designated circle. Orient pipe so that the 88" high x 4" flanged drop faces stand pipe circle J3. Bolt stand pipe to platform using a 1/2" x 1 1/4" stainless bolt and nylock.
23. Attach cross pipe XAB3 to stand pipes A3 and B3. The cross pipe will attach to the 78" high drops on the stand pipes. Align cross pipe using dots on flanges and bolt using 3/4" x 3" painted bolts and nuts. Next attach handrail section XAB3. Bolt to hanger tabs using 5/16" x 2" stainless bolts, nuts and nylocks.
24. Assemble on the ground stand pipes Y and Z with cross pipe XYZ between. Lay pipe Y at its respective circle so that the 80" high x 6" flanged drop faces up and the 80" high x 4" flanged drop faces Z. Lay pipe Z so that the 81 1/2" high x 4" flanged drop faces up and the 80" high x 4" flanged drop faces Y. Align cross pipe using dots on flanges and bolt to stand pipes using 5/8" x 2 3/4" painted bolts and nuts.
25. Erect the Y and Z assembly on the designated circles. BRACE SECURELY TO PREVENT FALLING OVER.
26. Install steel watercurtain cross piece XCZ between stand pipes C3 and Z. The circle of holes on top of the watercurtain will be towards the C3 end once installed. Bolt the watercurtain to the 81 1/2" high x 4" flanged drops on the standpipes using 5/8" x 2 3/4" bolts and nuts.
27. Install cross pipe XBY1 between stand pipes B3 and Y with a throttle valve and valve shell at the B3 end. The valve stem will point horizontal towards C3. Correctly align components using dots on flange edges and bolt together using 3/4" x 5" painted bolts and nuts at the valved end and 3/4" x 3" painted bolts and nuts at the other end. Once installed, the row of inset jets should point straight down and the 6" flanged drop should be towards the B3 end, pointing straight up.
28. Install pipe XCZ2 on top of the steel watercurtain XCZ. Orient pipe so that the single 10 1/2" high x 1 1/2" flanged drop is facing Z. Bolt pipe to watercurtain using 3/4" x 3" painted bolts and nuts.
29. Install pipe XBY2 on the 6" flanged drop on top of cross pipe XBY1. Orient pipe so that the single 13" high by 1 1/2" flanged drop is facing Y. Bolt components together using 3/4" x 3" painted bolts and nuts.
30. Install the 72" x 72" platform BCYZ between pipes XBY2, XCZ2, Y and Z. Bolt platform to pipe brackets using 1/2" x 1 1/4" stainless bolts and nylocks.
31. Install the diagonal handrail sections XBY-1 and XCZ-1. Bolt the handrail flanges to the stand pipe flanges using 1/2" x 2 1/4" painted bolts and nuts. When installed, the hand rail grab loops should be at the top of the handrail sections and pointing in.
32. Install the two tunnel slide handrails XBY-2 and XCZ-2. Remember to keep the lettering on the bottom. Attach the handrail sections using 5/16" x 2" stainless steel bolts, washers and nylocks.
33. Install watergun handrail section XYZ. Attach the handrail section using 1/2" x 2 1/4" painted bolts and nuts for the flanged connections and 5/16" x 2" stainless bolts, nuts and nylocks for the top brackets.

34. Attach cross piece XCJ3 to the 88" high x 4" flanged drop on stand pipe C3. The row of jets on the cross piece should point straight up. Attach to stand pipe using 5/8" x 2 3/4" painted bolts and nuts.
35. Erect stand pipe J3 and attach to cross piece XCJ3 with a lever handle butterfly valve and valve shell between. The valve stem should point horizontal and inward, towards stand pipe circle L3. Bolt components together using 5/8" x 4 1/2" painted bolts and nuts.
36. Install crawl tunnel frame CDJL3 between stand pipes C3, D3 and J3. Bolt frame to 9" high hanger brackets using 1/2" x 1 1/4" stainless bolts and nylocks. Rest crawl tunnel section on frame saddles.
37. Install 72" x 72" platform CDJL3 between stand pipes C3, D3 and J3. Bolt platform to hanger brackets using 1/2" x 1 1/4" stainless bolts and nylocks.
38. Erect stand pipe L3 on it's designated circle. Orient stand pipe so that the 88" high x 4" flanged drop is facing stand pipe D3. Bolt platform and crawl tunnel frame to hanger brackets on stand pipe using 1/2" x 1 1/4" stainless bolts and nylocks.
39. Attach cross piece XDL3 between stand pipes D3 and L3 with a throttle valve and valve shell on the L3 end. The valve stem and cap should point horizontal and outward, away from the platform. Align the cross piece using dots on flange edges. The row of 1/2" jets should point horizontal and outward, away from the platform. Bolt the cross piece in place using 5/8" x 2 1/4" painted bolts and nuts at the D3 end and 5/8" x 4 1/2" painted bolts and nuts at the L3 end.
40. Attach cross piece XKL3' to the 64" high x 4" flanged drop on stand pipe L3. Properly align cross piece using dots on flange edges and bolt to stand pipe using 5/8" x 2 3/4" painted bolts and nuts.
41. Assemble on the ground stand pipes K3 and K3' with a handwheel valve and valve shell between. The valve stem and handwheel should point directly opposite the flanged elbow at the top of K3'. Align components using dots on flange edges and bolt together with 5/8" x 4 1/2" painted bolts and nuts.
42. Erect stand pipe assembly K3, K3' on it's designated circle and bolt to cross piece XKL3' using 5/8" x 2 3/4" painted bolts and nuts.
43. Attach 2" piece XKL3 to cross piece XKL3' with a lever handle valve and valve shell between. The valve stem should be at 90° to cross piece XKL3' and pointing towards stand pipe circles G3 and I3. Properly position pipe using dots on flange edges and bolt together using 5/8" x 4" painted bolts and nuts.
44. Assemble on the ground stand pipes G3 and G3' with a handwheel valve and valve shell between. The valve stem should point directly opposite the handrail loop on G3'. Align dots on flange edges and bolt components together using 3/4" x 5" painted bolts and nuts.
45. Erect stand pipe assembly G3, G3' on it's designated circle. BRACE SECURELY TO PREVENT FALLING.
46. Install 60" x 120" platform GHJK3 as labeled between stand pipes G3, J3 and K3. Attach frame to hanger brackets using 1/2" x 1 1/4" stainless bolts and nylocks.
47. Erect stand pipe H3 on it's designated circle. Orient pipe so that the 64" high x 4" flanged drop faces stand pipe G3 and bolt to platform using 1/2" x 1 1/4" stainless bolt and nylock.

48. Assemble on ground stand pipe I3 and cross piece XGH3 with a handwheel valve and valve shell between. The valve stem should point directly opposite the 17" high x 3" flanged drop on I3. Align components using dots on flange edges and bolt together with 5/8" x 4 1/2" painted bolts and nuts.

49. Install the I3, XGH3 assembly between stand pipes G3 and H3. The long row of jets on XGH3 will be pointing up and out at 45°, away from the structure. Bolt components in place using 5/8" x 2 3/4" painted bolts and nuts.

50. Install cross piece XIL3 to the tops of stand pipes I3 and L3 using 5/8" x 2 3/4" painted bolts and nuts.

51. Install handrail sections XCJ3, XDL3, XHI3, XGI3 and XKL3. Install handrails to tabs on stand pipes using 5/16" x 2" stainless bolts, washers and nylocks.

At this point in assembly, you should be familiar with the basic methods of installation, types and sizes of bolts to be used, how to identify pipe components, platforms, handrails, etc. If you refer to the plan view drawing #400-OPI, you will notice that the remaining 4' and 2' platform modules are similar and repetitive in layout. From this point on, the instructions will be abbreviated in order to simplify the instructions and save time. Remember to refer to the drawings and the packing list if you have any questions.

52. Erect stand pipe D on it's designated circle. BRACE SECURELY TO PREVENT FALLING.

53. Install 72" x 72" platform ABCD and bolt to stand pipe hanger brackets on pipes A, B and D.

54. Erect stand pipe C on it's designated circle and bolt to platform.

55. Install PVC watercurtain XBC between stand pipes B and C. The watercurtain dump should face away from the structure.

56. Install tunnel slide handrail section XAD and handrail section XBC.

57. Attach cross piece XCJ to the 88" high x 4" drop on stand pipe C. The row of jets should point straight up.

58. Erect stand pipe J and attach to cross piece XCJ with a lever handle valve and valve shell between. The valve stem should be horizontal and point towards stand pipe circle L.

59. Install 72" x 72" platform CDJL and attach to hanger brackets on stand pipes.

60. Erect stand pipe L on it's designated circle. Orient properly and attach to platform.

61. Install cross piece XDL between stand pipes with throttle valve and valve shell at L end. Valve stem should point horizontal and outward, away from platform. The row of jets should also point horizontal and outward.

62. Attach cross piece XKL' to the 64" high x 4" flanged drop on L.

63. Assemble on the ground stand pipe sections K and K' with handwheel valve and valve shell between. Valve stem should point directly opposite the platform hanger bracket on K.

64. Erect stand pipe assembly K, K' and attach to XKL'.

65. Attach 2" piece XKL to XKL' with a lever handle valve and valve shell between.

66. Erect stand pipe G on it's designated circle. Orient properly and BRACE SECURELY TO PREVENT FALLING.
67. Install 60" x 120" platform GHJK between stand pipes as labeled and bolt to hanger brackets.
68. Assemble on the ground stand pipe sections H and H' with lever handle valve and valve shell between. Valve stem should point directly opposite the looped handrail on H'.
69. Erect stand pipe assembly H, H' and bolt to platform.
70. Assemble on ground stand pipe I and cross piece XGH with handwheel valve and valve shell between. Valve stem should point directly opposite the 17" high x 3" flanged drop on I.
71. Erect the I, XGH assembly and bolt to stand pipes G and H.
72. Install cross piece XIL with a throttle valve and valve shell at the L end. The valve stem should point towards K.
73. Install handrail sections XCJ, XDL, XHI, XGI and XKL.
74. Attach cross piece XCJ2 to the 88" high x 4" drop on stand pipe C2. The row of jets should point straight up.
75. Erect stand pipe J2 and attach to cross piece XCJ2 with a lever handle valve and valve shell between. The valve stem should be horizontal and point towards stand pipe circle L.
76. Install crawl tunnel frame CDJL2 as labeled and attach to lower hanger brackets on stand pipes. Rest tunnel section on saddles.
77. Install 72" x 72" platform CDJL2 and attach to hanger brackets on stand pipes.
78. Erect stand pipe L2 on it's designated circle. Orient properly and attach to platform.
79. Install cross piece XDL2 between stand pipes with throttle valve and valve shell at the L2 end. Valve stem should point horizontal and outward, away from platform. The row of jets should also point horizontal and outward.
80. Attach cross piece XKL2' to the 64" high x 4" flanged drop on L.
81. Assemble on the ground stand pipe sections K2 and K2' with handwheel valve and valve shell between. Valve stem should point directly opposite the platform hanger bracket on K2.
82. Erect stand pipe assembly K2, K2' and attach to XKL2'.
83. Attach 2" piece XKL2 to XKL2' with a lever handle valve and valve shell between.
84. Assemble on the ground stand pipe sections G2 and G2' with a lever handle valve and valve shell between. Valve stem should point directly opposite the looped handrail on G2'.
85. Erect stand pipe assembly G2, G2' on it's designated circle. Orient properly and BRACE SECURELY TO PREVENT FALLING.
86. Install 60" x 120" platform GHJK2 between stand pipes as labeled and bolt to hanger brackets.
87. Erect stand pipe H2 on it's designated circle and bolt to platform.

88. Assemble on ground stand pipe I2 and cross piece XGH2 with handwheel valve and valve shell between. Valve stem should point directly opposite the 17" high x 3" flanged drop on I2.
89. Erect the I2, XGH2 assembly and bolt to stand pipes G2 and H2.
90. Install cross piece XIL2 with a throttle valve and valve shell at the L2 end. The valve stem should point towards K2.
91. Install cross piece XJH2 between J2 and H2.
92. Install handrail sections XCJ2, XDL2, XHI2, XGI2, XJH2 and XKL2.
93. Erect stand pipe section F on it's designated footing and bolt down. Attach cross piece XAF to A and F with a handwheel valve and valve shell between F and XAF. The valve stem should be at 90° to XAF and pointing away from the structure.
94. Erect stand pipe section F2 on it's designated footing and bolt down. Attach cross piece XAF2 to A2 and F2 with a handwheel valve and valve shell between F2 and XAF2. the valve stem should be at 90° to XAF2 and pointing away from the structure.
95. Erect pipe F3 and attach to stand pipe B3 with a handwheel valve and valve shell between. Valve stem should be horizontal and pointing away from structure.
96. Erect pipe F4 and attach to stand pipe Z with a handwheel valve and valve shell between. Valve stem should be horizontal and pointing towards Y.
97. Attach waterwheel arch section XAD2 to the tops of stand pipes A2 and D2. The spout on top of the arch should point over platform ABCD2.
98. Attach waterwheel arch section XBC2 to the tops of stand pipes B2 and C2. The spout should point over platform ABCD2.
99. Lift double dump PVC roof structure ABCD and attach to tops of stand pipes. The feed leg corner of the roof will be connected to stand pipe D. The sides of the roof structure will face out between stand pipes A-D and B-C. Be sure to adequately sling the roof structure before lifting to prevent damage.
100. Lift single dump PVC roof structure ABCD3 and attach to tops of stand pipes. The feed leg corner of the roof will be connected to stand pipe D3. The dump side of the roof will face out between stand pipes A3-B3. Again, be careful not to damage roof while lifting.
101. Attach tire swing cross piece XA3 to stand pipe A3 with a throttle valve and valve shell between. The valve stem should point straight up.
102. Attach remaining cantilever cross pieces XH, XG, XH2, XG2, XH3 and XG3 to proper stand pipes.

All stand pipes, cross pieces, valves, handrail sections and roof structures should now be in place. The remaining bolts may now be put in place and all structural components securely bolted together. Make sure all components are properly positioned and gaskets are in place between flanges.

Start with footing stand pipes and cross pieces, then work outward along the structure. Bolt pipe components first, then platforms and handrails, finishing up with roof structures. Make sure platforms are properly aligned before bolting down. It may be necessary to repeat this process several times to insure that all components are properly fastened together and all bolts are in place.

## PLAY STRUCTURE PLUMBING

Above grade plumbing installation may be done at this time. All above grade plumbing will be located below the 2' and 4' high platforms. Refer to above grade piping details 400-01AG, 02AG and 03AG for the proper orientation of PVC supply manifolds and piping to feed the stand pipes. All pipe and fittings required for installation have been supplied. Be sure to keep all above grade piping within the perimeter of the platforms so as not to interfere with the installation of skirting later.

Special attention should be given to the plumbing of the three bubbler jet manifolds to ensure that adequate clearance is allowed for remaining supply lines to feeder flanges. These manifolds are indicated on the plumbing details as squares with small circles at the corners and dotted lines between.

Install supply piping for the bubbler jets from cross pieces XKL, XKL2 and XKL3. Install the assemblies on the pool floor, below the two foot platforms and align assemblies with the pre-drilled holes in the platforms. Bubbler risers must be trimmed to be 1" finished height below the platforms. After trimming, connect bubbler risers to base assembly. Connect complete bubbler jet assembly to 2" threaded supply drop from cross pieces using supplied PVC fittings.

After connecting bubbler assemblies, install the remaining above grade supply piping as shown in drawings.

## STAIR SETS

The stair sets can now be installed. All stair sets must be bolted top and bottom to prevent floating. The top edge of all stair sets will be captive between the platform support frame and the fiberglass platform. The platforms have been pre-drilled for attachment to the stair sets. Start with the notched, pool floor stair sets.

To install the stair sets, tilt the top edge back and slide into place. Mark the pre-drilled holes from the platform to the stair set. Mark the edge of the fiberglass anchor bracket on the pool floor from inside the stairs, then remove the stairs. Drill holes in the top of the stair set to match the platform holes. Install the fiberglass angle bracket on the pool floor as shown on drawing 400-10. Use stainless steel anchor bolts with sleeves (not supplied by scs). Set stairs back in place and securely bolt in place.

Continue with platform stair sets. With the top edge properly in place and aligned, drill necessary holes then bolt securely at bottom using 3/8"x 2-1/2" S.S. bolts.

## TUNNEL SLIDES

There are three tunnel slides on the model 400. Two of these slides are located on either side of the 8' high platform BCYZ. To facilitate shipment, these slides have been partially assembled in two sections each. Each of these slides will have three support saddles of various lengths. Refer to plan and elevation drawings for illustration of slide location, layout and position of support saddles.

Using an appropriate lifting device, set the upper sections of the slides into place and bolt to the slide entrance panels which have been factory installed in the handrails. The top 30° elbow section should point straight down when properly positioned. Bolt each slide to its handrail entrance panel using 3/8" x 1" stainless bolts and washers.

Install the 57" tall slide support saddles to support the upper slide sections while completing assembly. DO NOT ATTACH SUPPORTS TO POOL FLOOR.

Attach the lower slide sections to the upper sections using 3/8" x 1 1/4" stainless button head bolts, washers and nylocks. There are also 1/3 circle, rolled flat bar washers which must be installed on both sides of the connection (3 per side).

Install bottom slide supports and bolt to pool floor using stainless sleeve anchors (not supplied). Install upper slide saddles, locating as necessary to provide adequate support. Plumb the stands and bolt to pool floor.

The third tunnel slide is located at 6' high platform ABCD. This slide is fully assembled. To install, lift into place and bolt to entrance panel. Install single support saddle at bottom of slide and bolt to pool floor.

### DOUBLE POLY SLIDE

This slide is located at 4' high platform CDJL. To install, lift into place and attach to entrance using 3/8" x 1" stainless bolts and washers. Attach support foot piece to pool floor.

### SPIRAL SLIDE

The spiral slide is located at platform ABCD2. This slide has been shipped unassembled, in manufacturers containers. Assemble slide using supplied manufacturers instructions.

### WATERWHEELS AND TROUGHS

There are two waterwheel assemblies with troughs and runnels located over platform ABCD2. Start with waterwheel XAD2:

1. Lift waterwheel assembly with 20" long flanged stainless spool into place on arch section XAD2. Bolt spool to arch using 5/8" x 2 3/4" painted bolts and nuts.
2. Lift waterwheel trough A2D2 with 2 flanges into place on arch section XAD2 and bolt to arch using 5/8" x 2 3/4" stainless bolts and nylocks. The trough dump should be over bridge platform AD3BC2.
3. Lift arch runnel and bolt mounting arms to the three mounting holes in each side of trough A2D2 at the end using 3/8" x 1 1/4" stainless button head bolts, washers and nylocks.

Continue with waterwheel XBC2:

1. Lift waterwheel assembly with stainless mounting arm in place on arch section XBC2 and bolt to the 42" high x 3" flange using 5/8" x 2 3/4" painted bolts and nuts.
2. Lift waterwheel trough C2 into place and bolt to the 10" high by 3" flange on arch XBC2 using 5/8" x 2 3/4" stainless bolts and nylocks.
3. Lift arch runnel and bolt mounting arms to the three mounting holes in each side of trough C2 at the end using 3/8" x 1 1/4" stainless button head bolts, washers and nylocks.

## POOLS AND FALLS

The pools and falls consists of three cascade runnel basins mounted to stands of various heights. The pools and falls is located at the end of the structure, under cantilever pipe XH (see plan view drawings 400-0P1 and 0P2). Assemble the pools and falls as follows:

1. Mount long runnel basin R3 to the short runnel base RB1 using 1/2" x 1 1/4" stainless bolts and nylocks with two washers each. Line the runnel trough with the arrow on the base plate before bolting. This runnel will swivel on a 120° arc.
2. Mount medium runnel R2 to the medium length runnel base RB2 using the same size bolts as above. Again, line the runnel with the arrow.
3. Mount short runnel R1 to tall runnel base RB3 using same bolts as above. This runnel is fixed.
4. Place the bases on layout in the pool as shown on drawing 400-05, then orient the arrows on the base plates so the troughs will point as shown on the plan view drawings. Mount the base plates to the pool floor using stainless sleeve anchors (not supplied).

## PVC SKIRTING

LEAVE THE SKIRTS AROUND SUPPLY MANIFOLDS OFF UNTIL PLAY STRUCTURE IS IN FULL OPERATION, THIS WILL ALLOW ACCESS TO VALVES FOR EFFECTS BALANCING.

Like the stair sets, the top edge of skirts will be captive between the fiberglass platforms and platform frames. Skirts will bolt at the bottom to hanger tabs on the stand pipes. Skirts at the sides of crawl tunnels will bolt to the tunnel frames. Many of the skirts have a fiberglass angle piece bolted to the backside of the skirt at the bottom to act as a stiffener. Be sure to keep the angle to the back when mounting. Skirts will bolt up using 3/8" x 1 1/4" stainless button head bolts and nylocks.

Begin by positioning the skirts as labeled on the upper backside corners, starting with crawl tunnel ends. Some deformation of the tunnel tubes may be required to fit the tunnels into the skirting holes. Make certain that the tunnel assemblies are correctly aligned with the openings in skirting before bolting. Continue with the rest of the play structure skirting, then fasten into place by bolting at the bottom.

## TIRE SWING

The tire swing assembly will hang from the end of pipe XA3 and bolt to a steel plate on the bottom with 3/8" x 1 1/4" stainless button head bolts and nylocks.

FOLLOWING ARE INSTRUCTIONS ON INSTALLATION OF WATERGUNS AND OTHER SMALL JET ASSEMBLIES. IT IS RECOMMENDED THAT THESE ASSEMBLIES NOT BE INSTALLED UNTIL THE PLAY STRUCTURE HAS BEEN STARTED UP AND FLUSHED OF DEBRIS. THIS WILL PREVENT CLOGGING OR DAMAGE TO THE JETS.

## WATER GUNS

The water gun assemblies will attach to the handrail mounts on the bridge platforms using 5/16" x 1 1/4" stainless button head bolts, washers and nylocks. Simply attach the mount assemblies and connect the supply hoses to the handrails.

## OVERHEAD PULL VALVES

The pull ropes, valves, and nozzle assemblies will connect to pipes XG, XH2 and XH3. Simply thread these assemblies into place and secure with integral clamp.

## UMBRELLA JET

The umbrella jet will thread into the end of pipe XZ, above the tire swing connection plate. Use the supplied 4"x 3" threaded PVC bushing between jet and pipe coupling.

## HOSE JETS

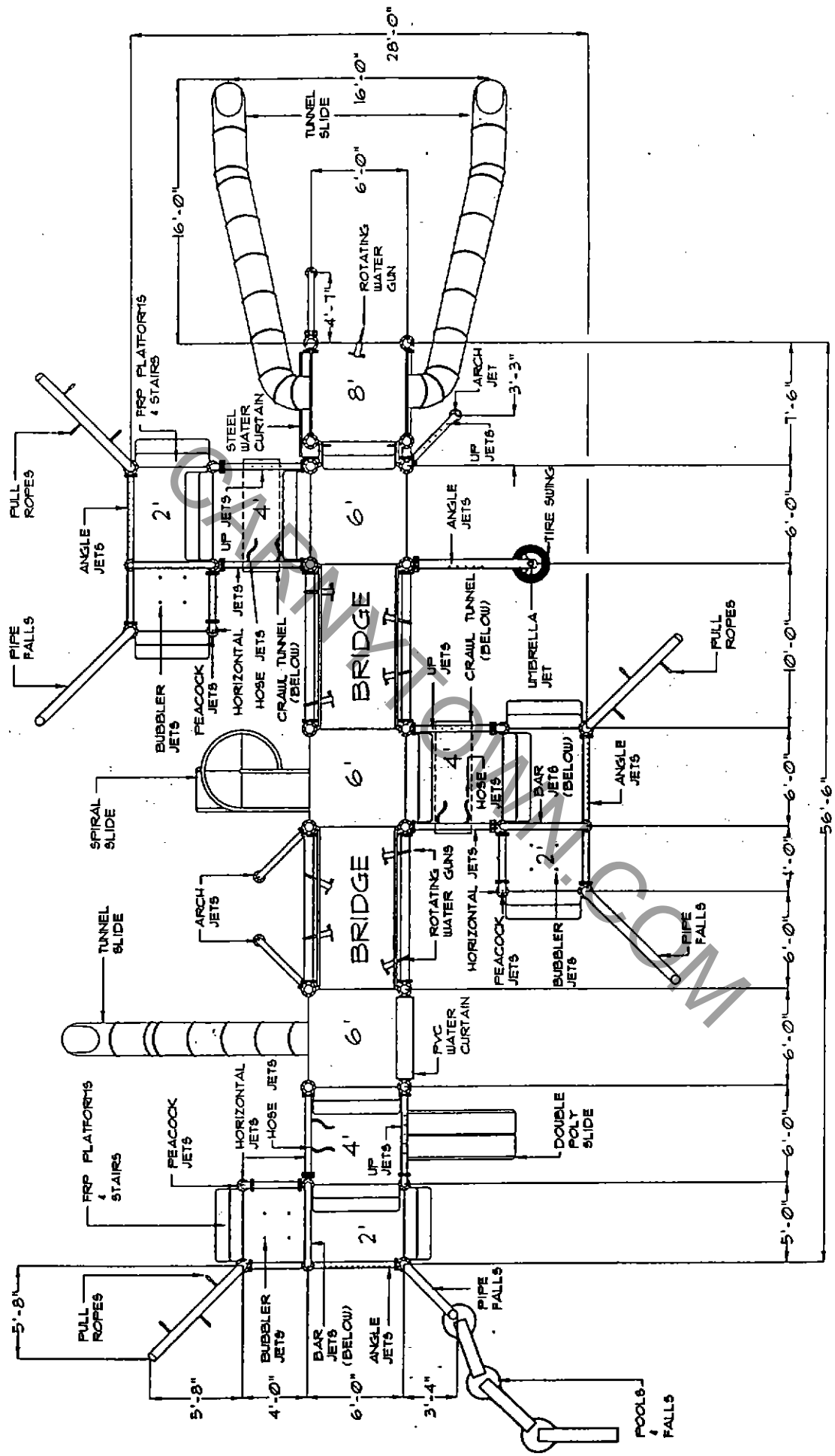
Hose jets are located on cross pieces XDL1, 2 and 3. Simply thread the stainless adapters into the jet wells.

Assembly of the play structure is now complete except for installation of small jet assemblies and skirts around above grade plumbing. Check once more to see that all components are in place and properly secured before proceeding to system start-up.

**SECTION 2**

**MODEL 400 DRAWINGS**

CARPLYTOWN.COM



STANDARD MODEL 400

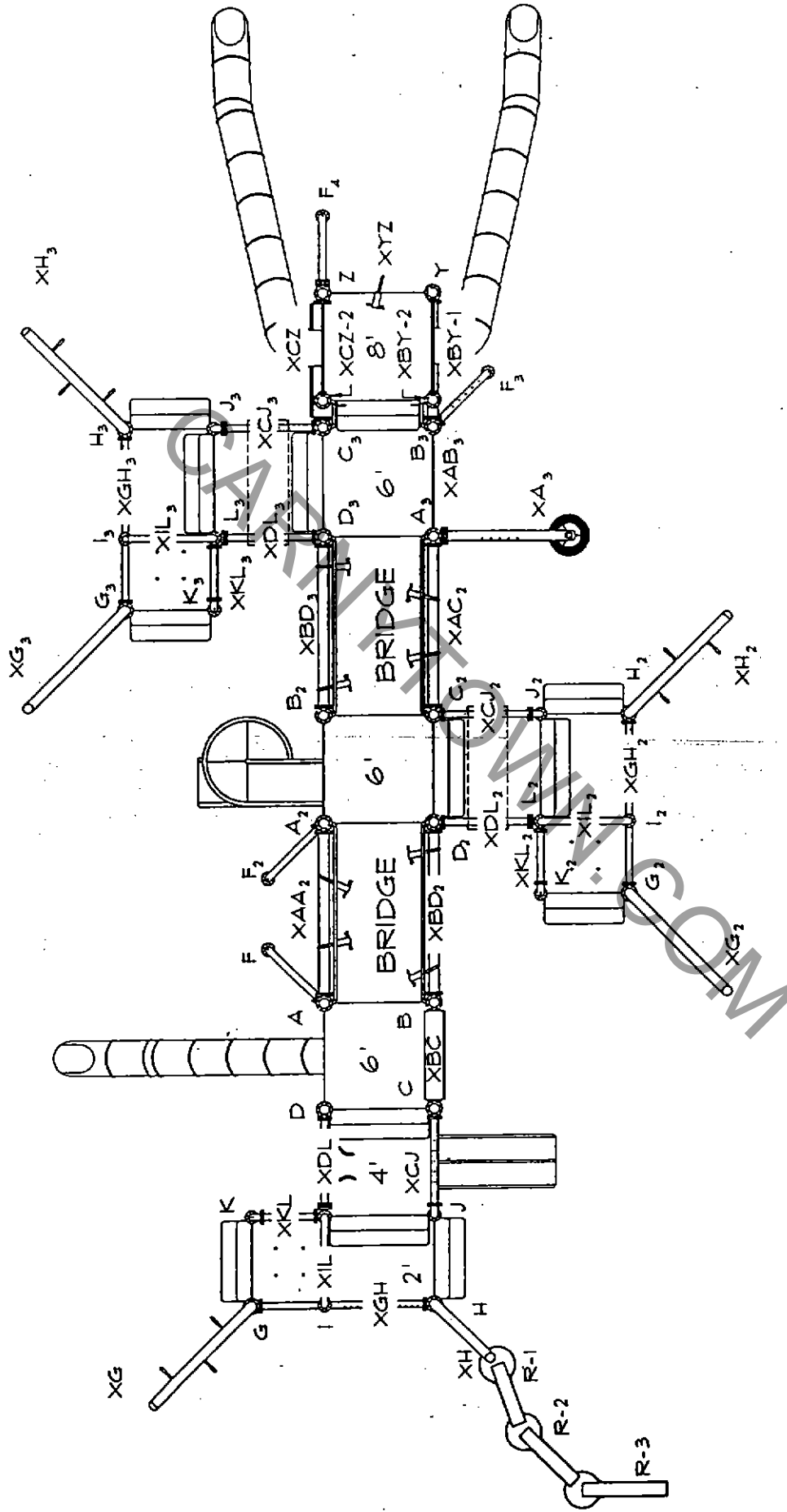
# PLAN VIEW

400-0P1

DATE: 11/4/94  
SCALE: NONE  
DWG BY: RICH

# SOS

COMPANY



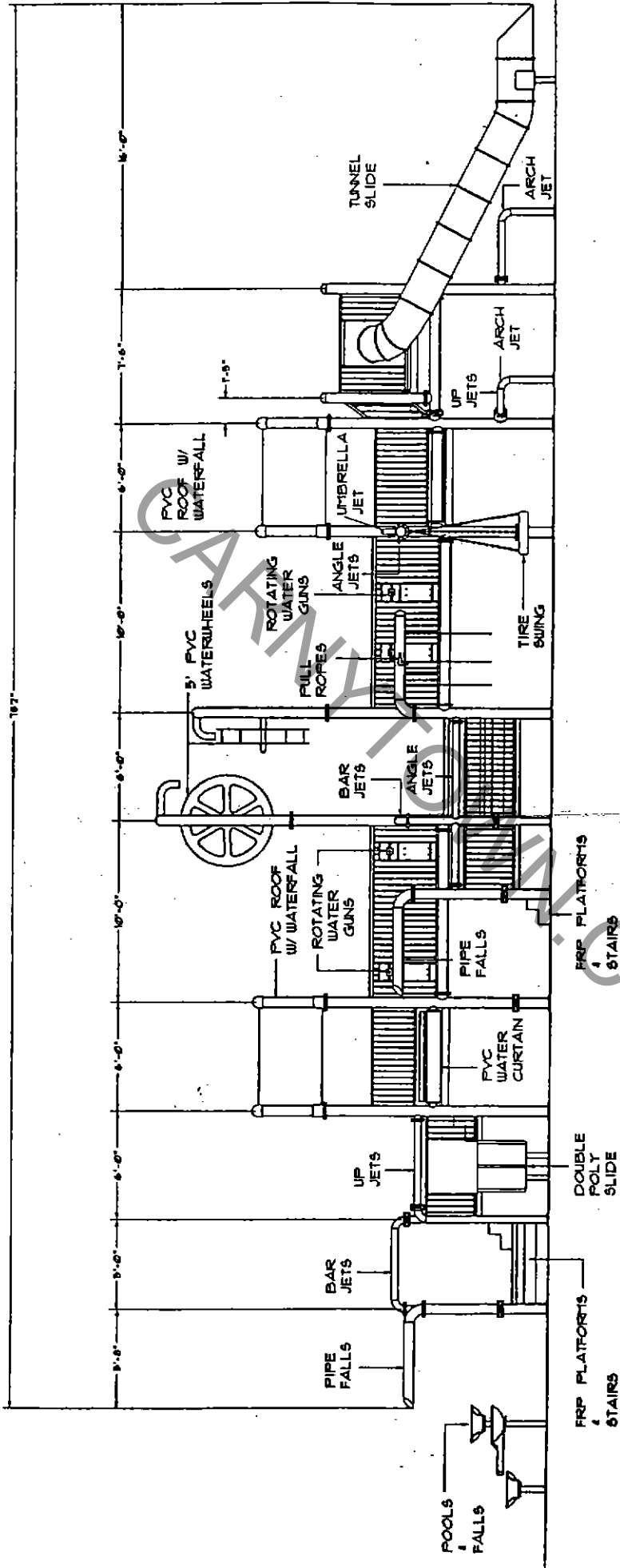
400-0F2

STANDARD MODEL 400

PLAN VIEW  
PIPE DESIGNATION

DATE: 11/4/34  
SCALE: NONE  
DWG BY: RICH

**SCS**  
C O M P A N Y

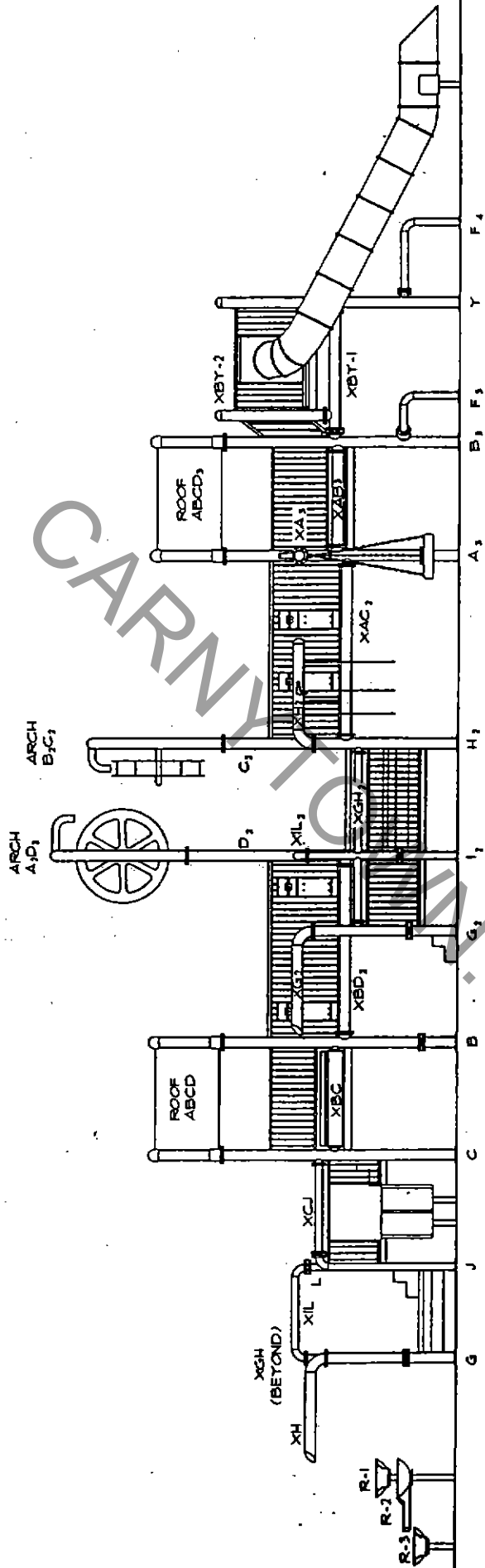


400-01A

STANDARD MODEL 400

FRONT ELEVATION

DATE: 11/94  
 SCALE: NONE  
 DWG BY: RICH

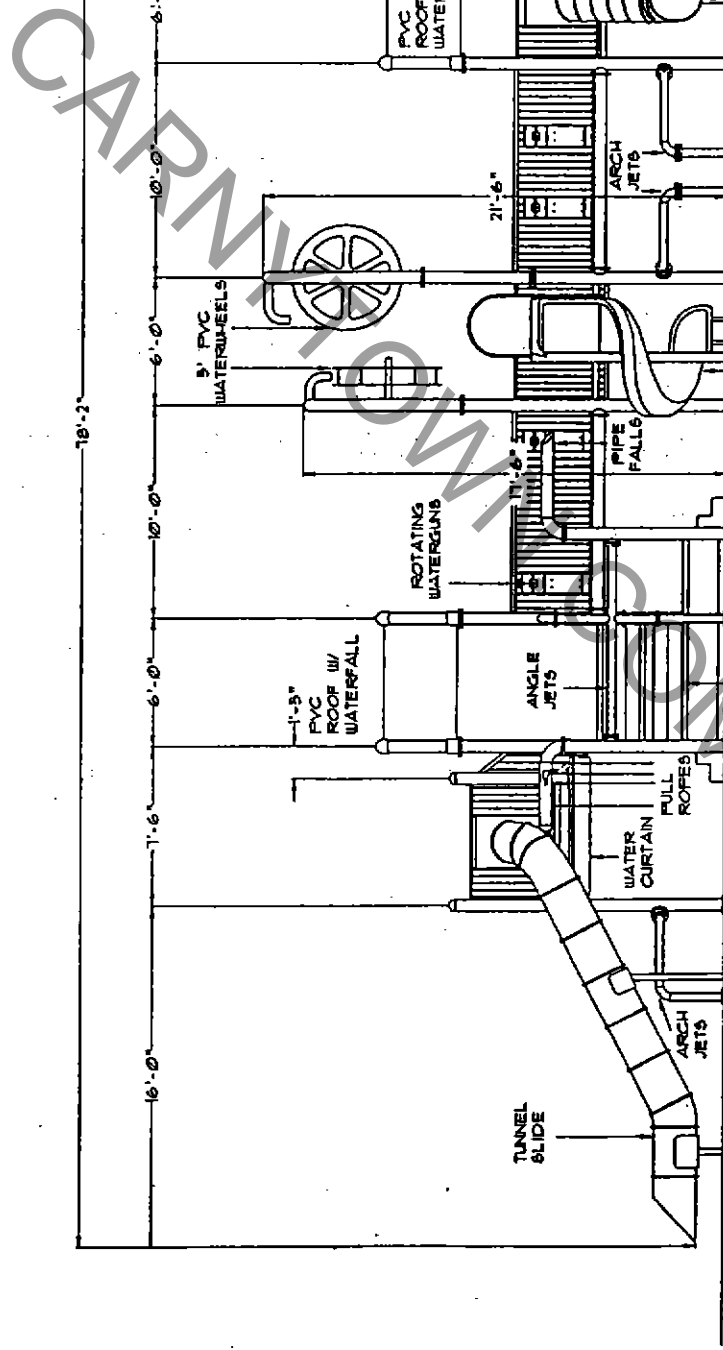


400 - 01B

STANDARD MODEL 400  
 FRONT ELEVATION  
 PIPE DESIGNATION

DATE: 11/9/94  
 SCALE: NONE  
 DWG BY: RICH

SCS  
 COMPANY



400 - 02A

STANDARD MODEL 400

REAR ELEVATION

DATE: 11/10/94  
 SCALE: NONE  
 DUG BY: RICH

**SCS**  
 COMPANY

CARNYTON

ARCH AD<sub>1</sub>

ARCH BC<sub>1</sub>

ROOF ABCD<sub>1</sub>

XGZ<sub>1</sub>

XIL

XOL

XG

RB-3

RB-2

RB-1

F<sub>1</sub> Z

H<sub>1</sub>

I<sub>1</sub>

G<sub>1</sub>

B<sub>1</sub>

A<sub>1</sub>

F<sub>1</sub>

A

D

K

G

400 - 40002B

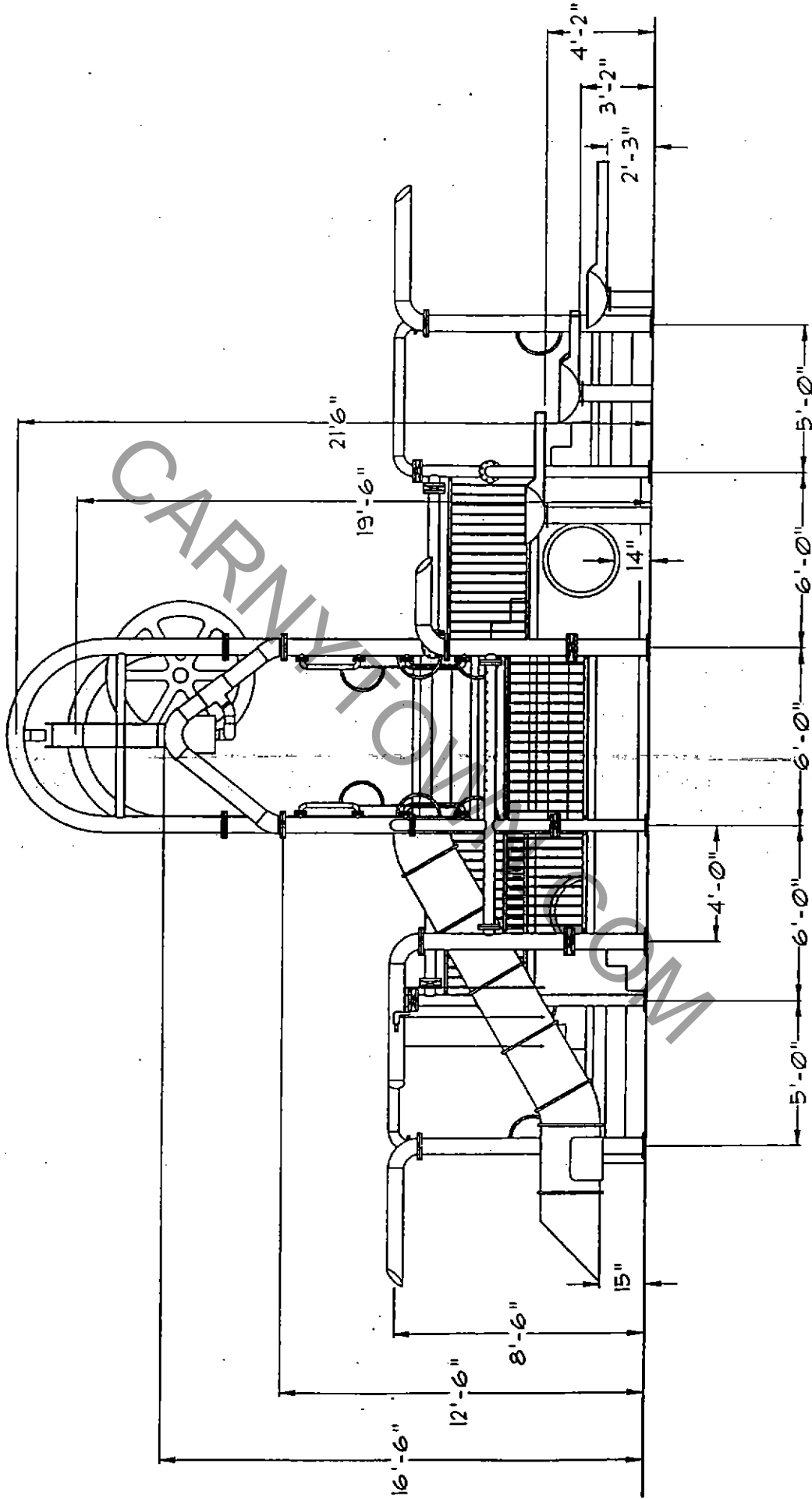
STANDARD MODEL 400

# REAR ELEVATION PIPE DESIGNATION

DATE: 11/1/94  
SCALE: NONE  
DWG BY: RICH

# SCS

COMPANY



400 - 03A

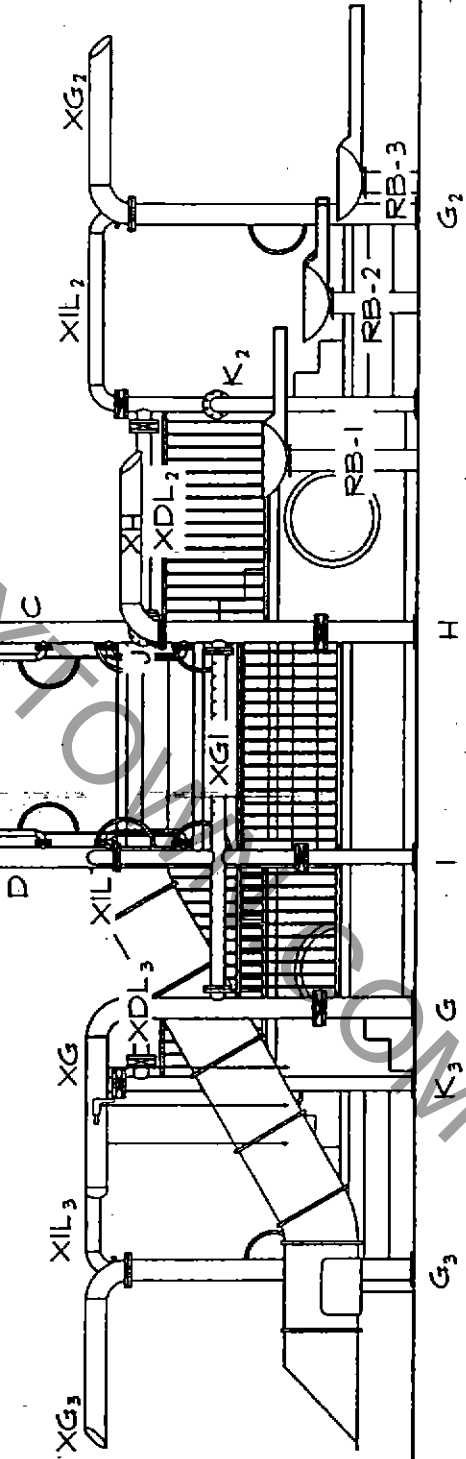
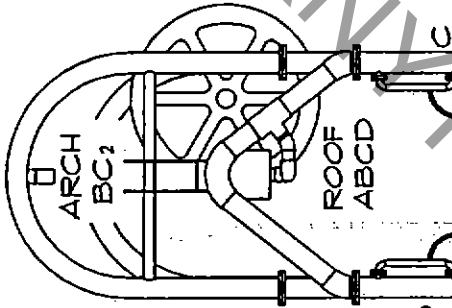
STANDARD MODEL 400

LEFT ELEVATION

DATE: 11/8/34  
 SCALE: NONE  
 DWG BY: RICH

SCS  
 COMPANY

ARCH  
AD<sub>2</sub>



400 - 03B

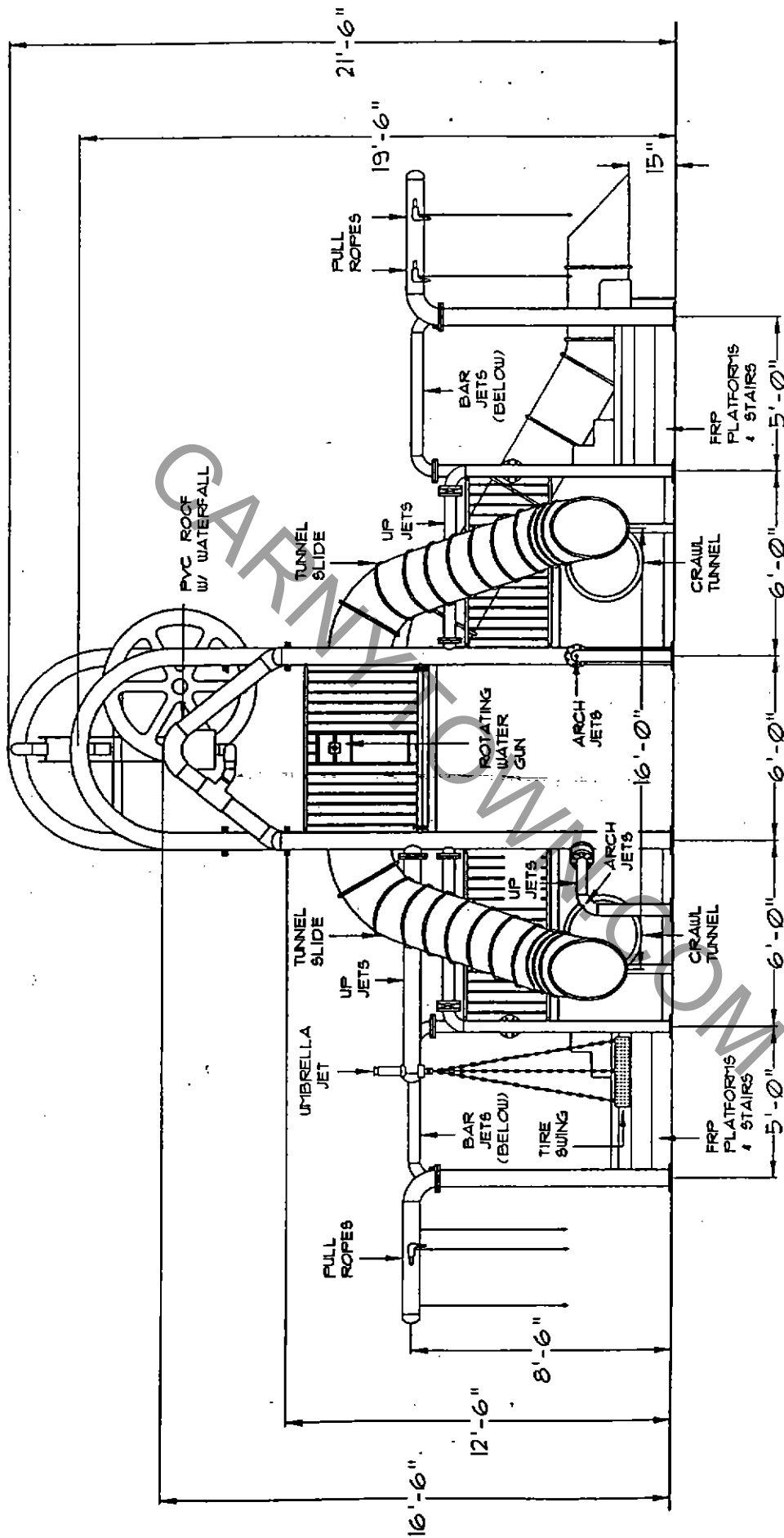
STANDARD MODEL 400

# LEFT ELEVATION PIPE DESIGNATION

DATE: 11/9/34  
SCALE: NONE  
DWG BY: RICH

# SOS

COMPANY



400 - 04A

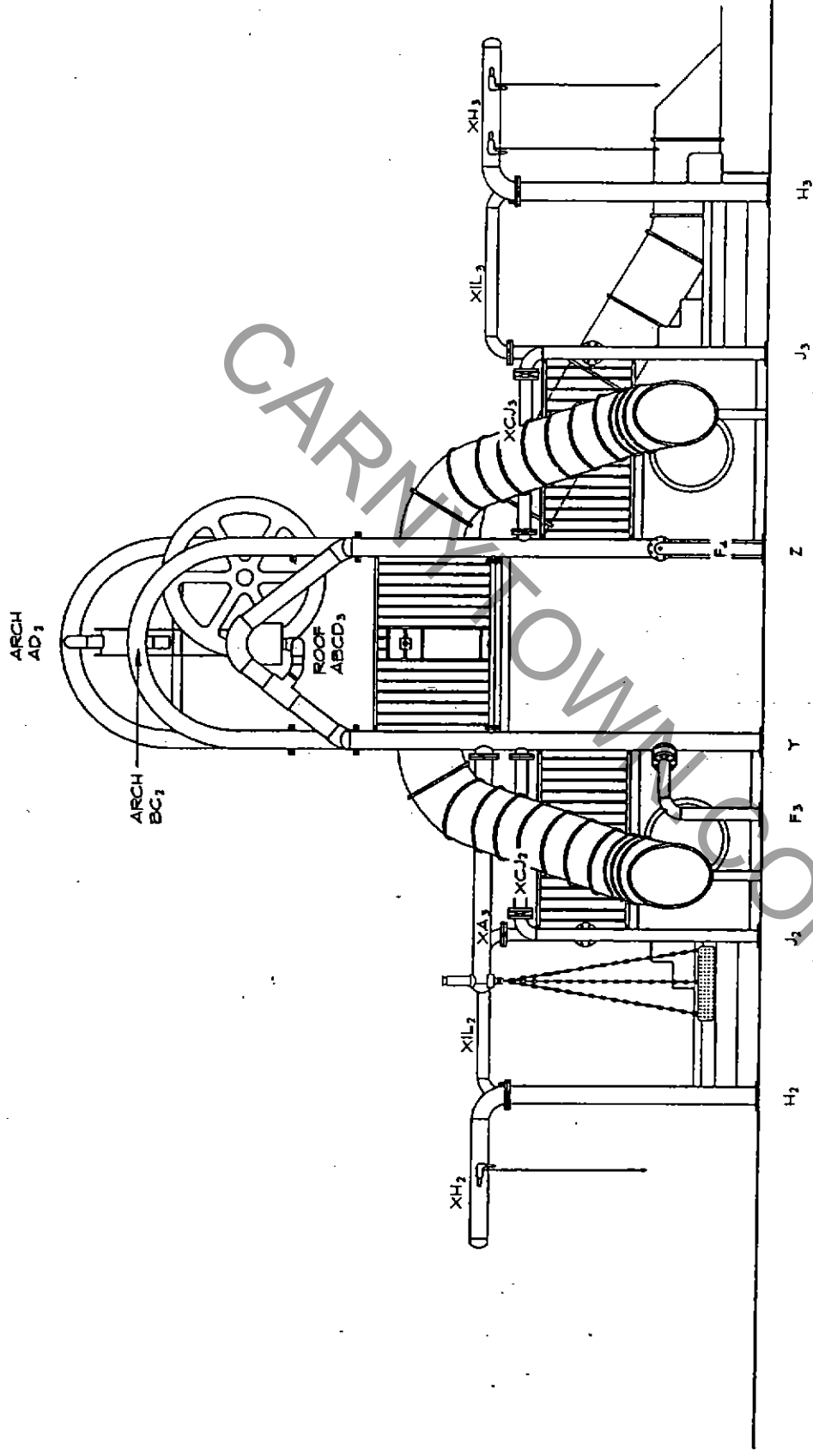
STANDARD MODEL 400

# RIGHT ELEVATION

DATE: 11/9/94  
 SCALE: NONE  
 DWG BY: RICH

# SOS

COMPANY

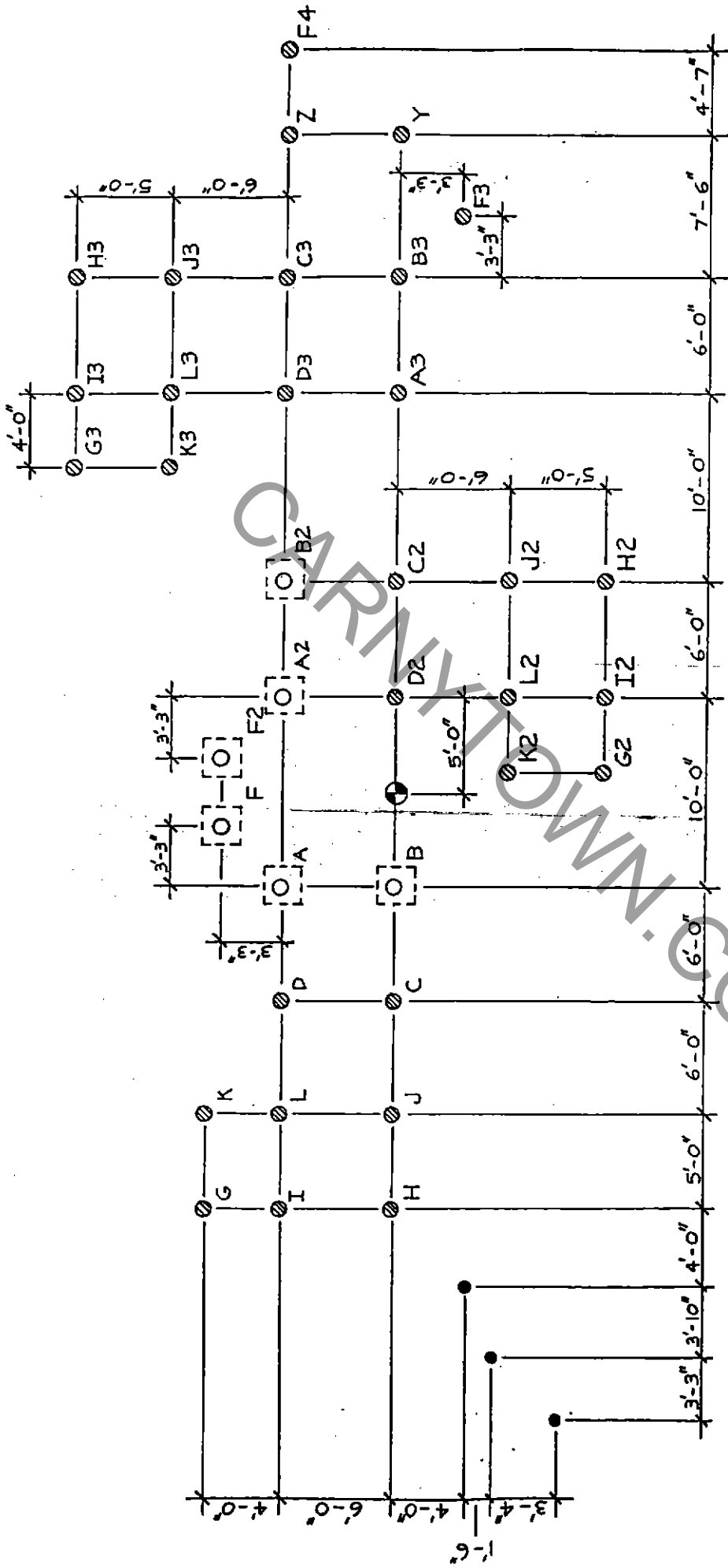


400 - 04B

STANDARD MODEL 400  
 RIGHT ELEVATION  
 PIPE DESIGNATION

DATE: 11/9/34  
 SCALE: NONE  
 Dwg BY: RICH

**SCS**  
 COMPANY



### SYMBOLS

- CONNECTION TEE (SEE DETAIL 400-07)
- STAND PIPE (SEE DETAIL 400-08)
- RUNNEL STAND (SEE PLAN VIEW)
- CENTERLINE FOR BELOW GRADE PIPING (SEE DETAIL 400-06)

DRAWING #

400-05

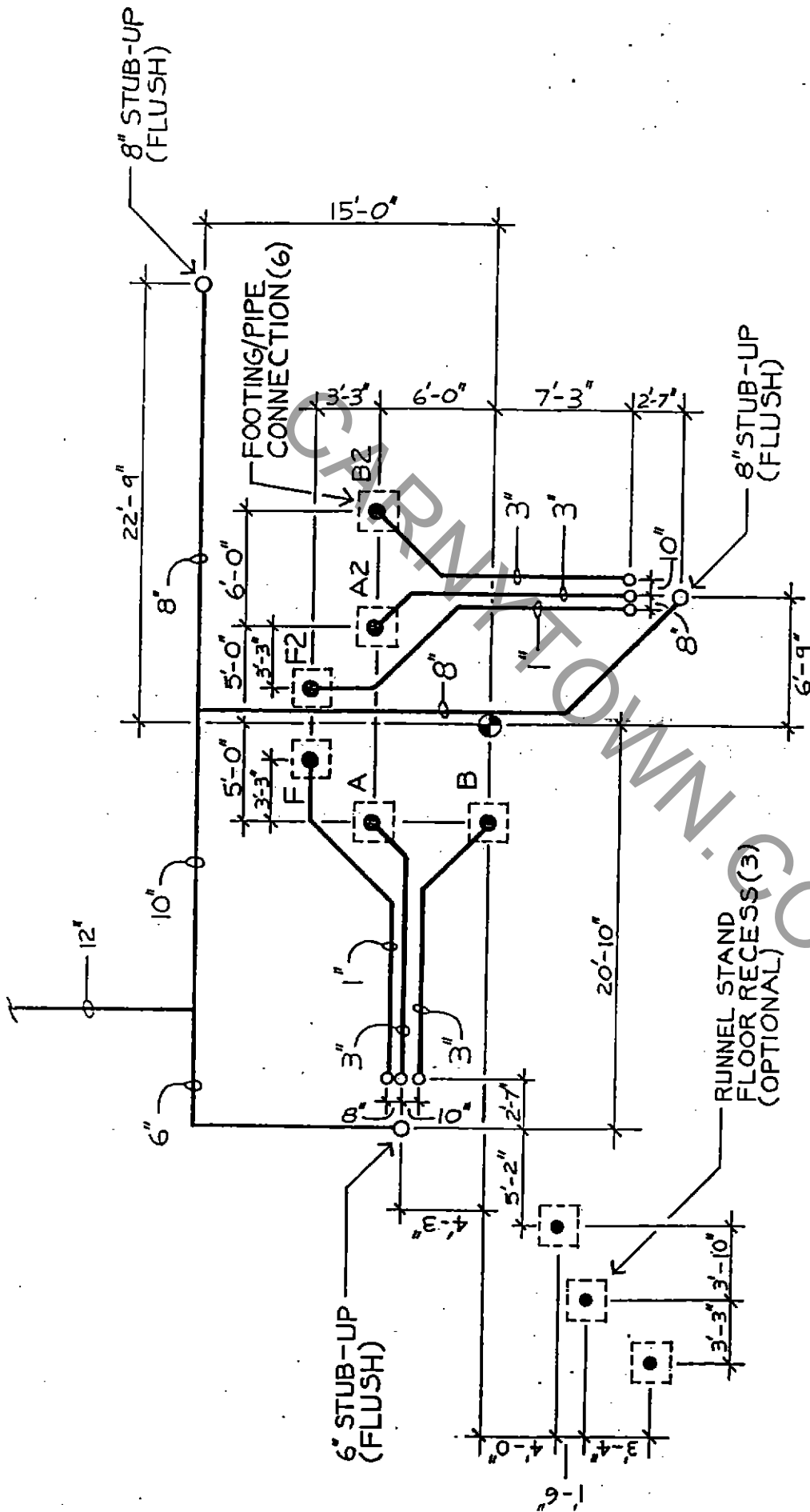
## MODEL 400 - LAYOUT PLAN

DATE: 2/27/95

SCALE: 1/8" = 1'-0"

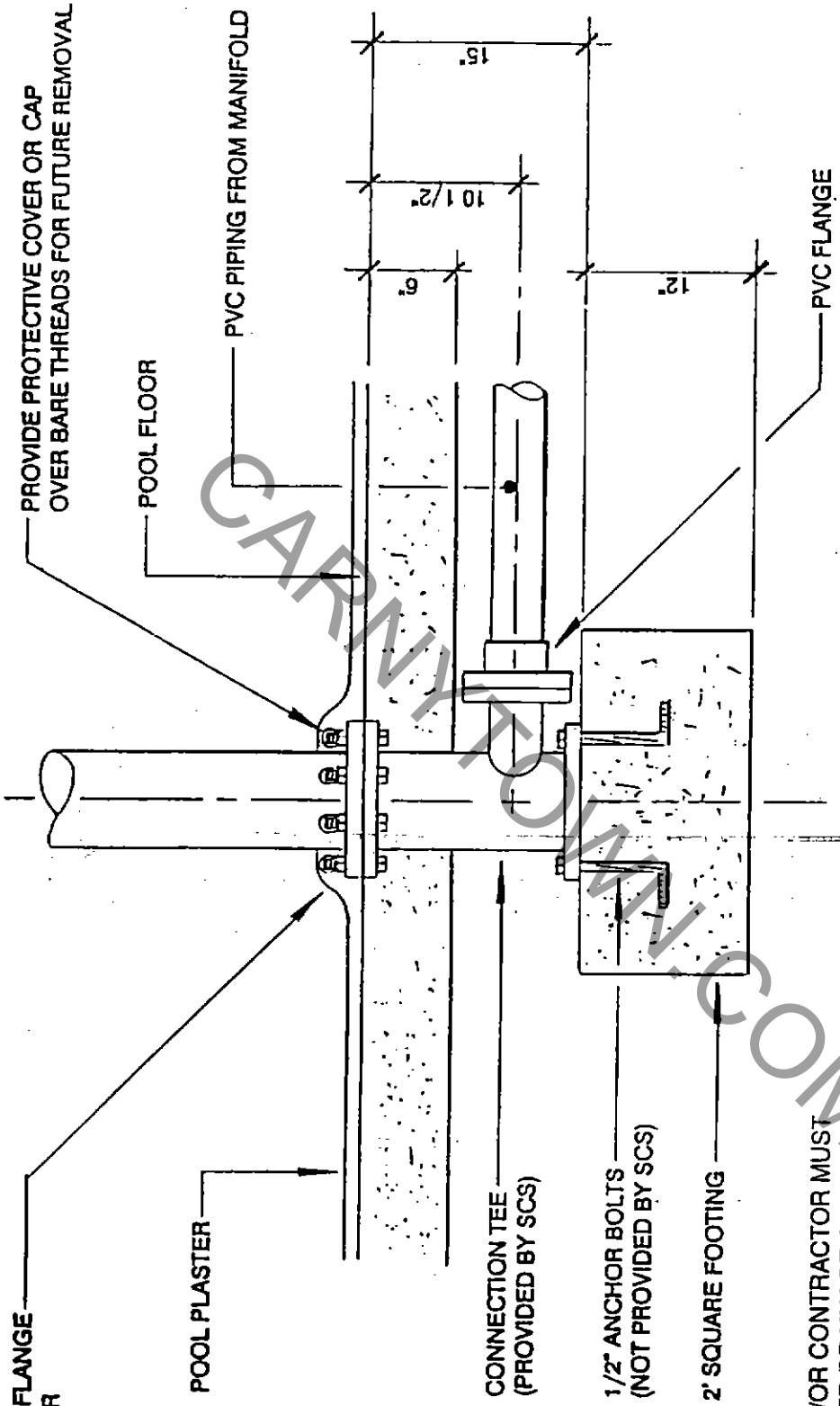
REVISIONS:

**SCS**  
C O M P A N Y



NOTE: 6" AND 8" PENETRATION STUB-UPS TO BE PVC BELL END OR COUPLING FLUSH WITH POOL FLOOR. OTHER STUB-UPS TO BE PIPE SIZE AS SHOWN PROTRUDING ABOVE POOL FLOOR.

DRAWING # 400-06	MODEL 400 - LAYOUT/BELOW GRADE PIPING	DATE: 2/27/95 SCALE: 1/8" = 1'-0" REVISIONS:	
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COVER BOLTS AND FLANGE WITH POOL PLASTER

POOL PLASTER

POOL FLOOR

PVC PIPING FROM MANIFOLD

CONNECTION TEE (PROVIDED BY SCS)

1/2" ANCHOR BOLTS (NOT PROVIDED BY SCS)

2' SQUARE FOOTING

PVC FLANGE

15"

10 1/2"

6"

12"

NOTE: OWNER AND/OR CONTRACTOR MUST PROVIDE FOR WINTER DRAINAGE OF BELOW GRADE LINES IN FREEZING CLIMATES.

NOTE: SCS WILL PROVIDE THE CONTRACTOR WITH CONNECTION TEES AND TEMPLATE. CONNECTION TEES MUST BE PRECISELY LOCATED BELOW THE POOL FLOOR TO INSURE PROPER INSTALLATION OF THE PLAY STRUCTURE.

NOTE: TYPICAL PLAY STRUCTURE FOOTING IS TO BE 24" SQUARE. INSTALL THE TOP OF FOOTING 15" BELOW FINISHED CONCRETE SURFACE. DEPTH OF FOOTING MUST BE DETERMINED BY LOCAL FROST CONDITIONS.

DRAWING #

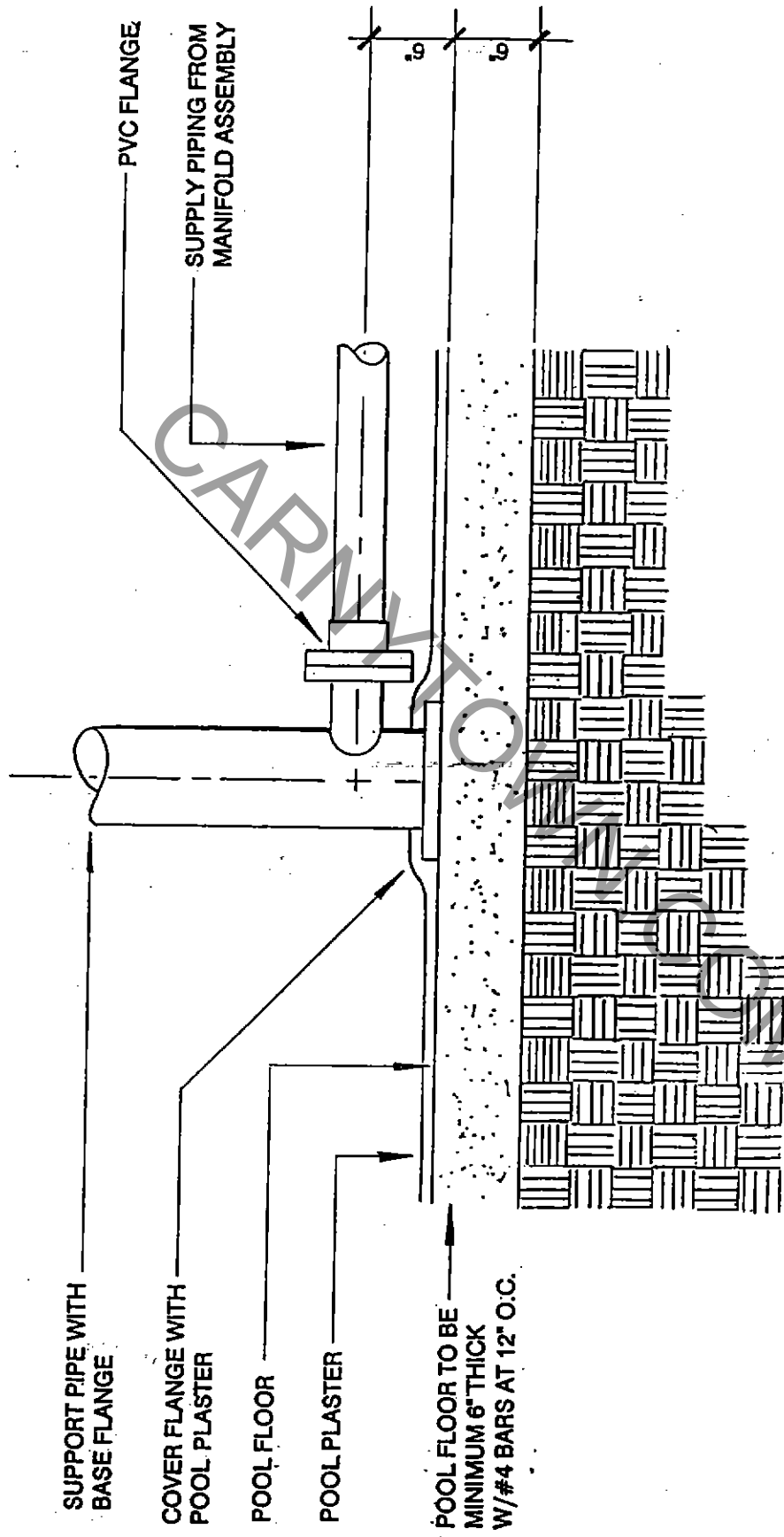
400-07

MODEL 400 - FOOTING/PIPE CONNECTION

DATE: 2/27/95

SCALE: 1" = 1'-0"





DRAWING #

400-08

MODEL 400 - FLOOR PIPE CONNECTION

DATE: 2/27/95

SCALE: 1" = 1'-0"

SCS  
 COMPANY

**PVC FITTINGS REQUIRED:**  
(ALL SCH. 80)

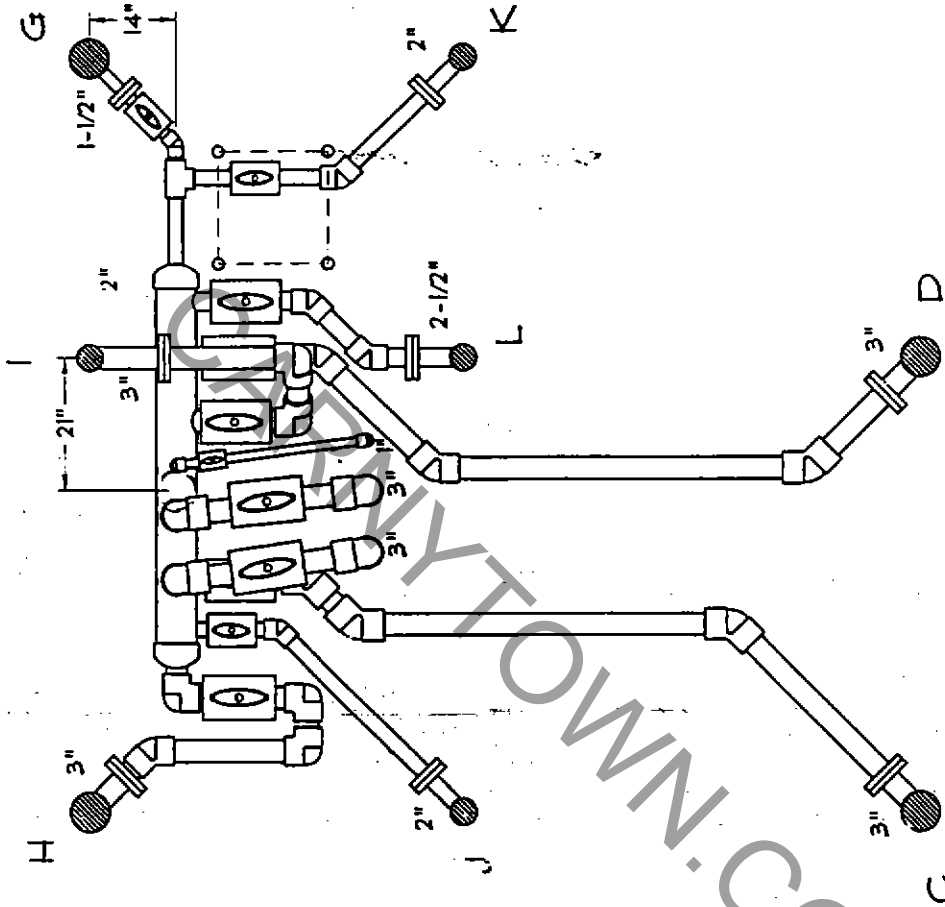
- 3" 90° EL. .... 9-F.C.
- 3" 45° EL. .... 1-F.C.
- 2-1/2" 45° EL. .... 2-F.C.
- 2" 45° EL. .... 2-F.C.
- 1-1/2" 45° EL. .... 1-F.C.
- 1" 90° EL. .... 2-F.C.
- 2" X 1-1/2" BUSHING - 1-F.C.
- 2" TEE ..... 1-F.C.

**PVC BALL VALVES:**

- 3" ..... 6-F.C.
- 2-1/2" ..... 1-F.C.
- 2" ..... 2-F.C.
- 1-1/2" ..... 1-F.C.
- 1" ..... 1-F.C.

**PVC FLANGES:**

- 3" ..... 4-F.C.
- 2-1/2" ..... 1-F.C.
- 2" ..... 2-F.C.
- 1-1/2" ..... 1-F.C.



DWG • 400-AG1

STANDARD MODEL 400

**SEC. #1 ABOVE GRADE PLUMBING**

DATE: 12/13/96  
SCALE: NONE  
DWG BY: DN

**SCS**  
C O M P A N Y

PVC FITTINGS REQUIRED:  
(ALL SCH. 80)

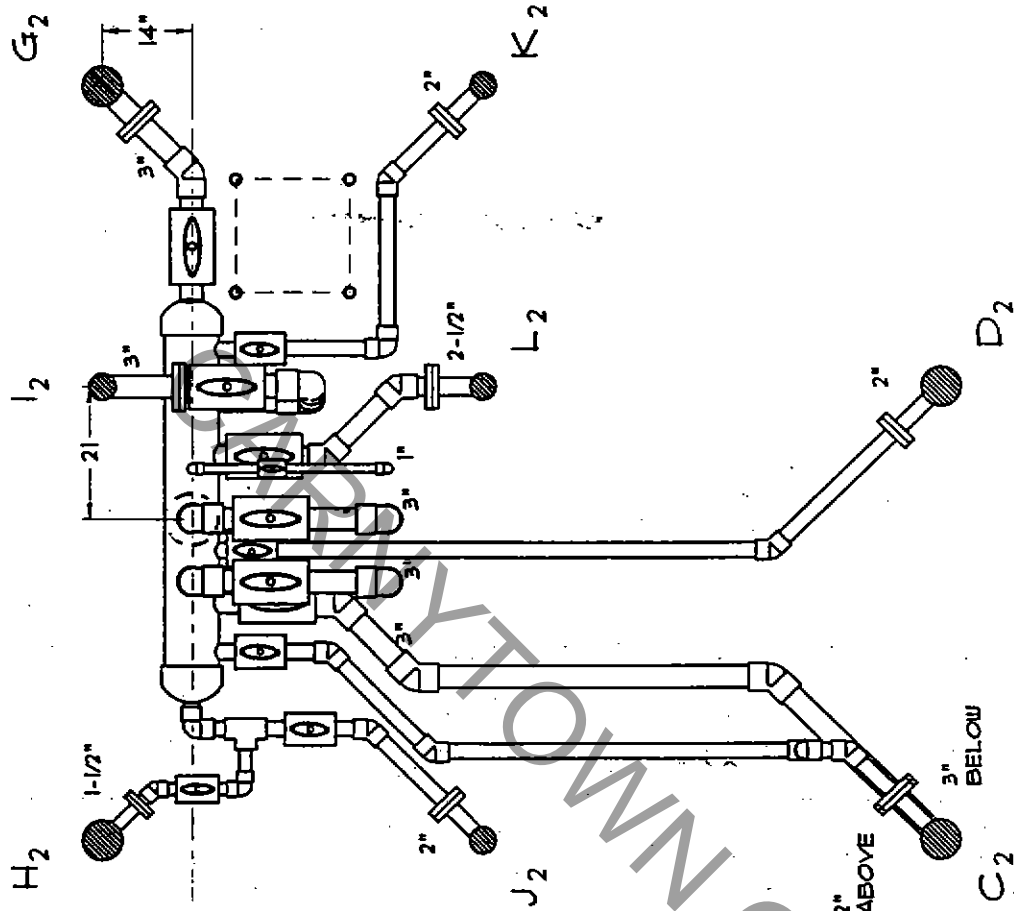
3" 90° EL	6-PC.
3" 45° EL	4-PC.
2" 90° EL	4-PC.
2" 45° EL	6-PC.
1-1/2" 90° EL	1-PC.
1-1/2" 45° EL	1-PC.
1" 90° EL	1-PC.
1" 45° EL	1-PC.
2" TEE	1-PC.
2" X 1/2" BUSHING	1-PC.

PVC BALL VALVES

3" .....	5-PC.
2-1/2" .....	1-PC.
2" .....	4-PC.
1-1/2" .....	1-PC.
1" .....	1-PC.

PVC FLANGES

3" .....	3-PC.
2-1/2" .....	1-PC.
2" .....	4-PC.
1-1/2" .....	1-PC.



DWG # 400-AG2

STANDARD MODEL 400

SEC. #2 ABOVE GRADE PLUMBING

DATE: 12/13/86  
SCALE: NONE  
DWG BY: ICKY

**SCS**  
C O M P A N Y

**PVC FITTINGS REQUIRED:**  
(ALL SCH. 80)

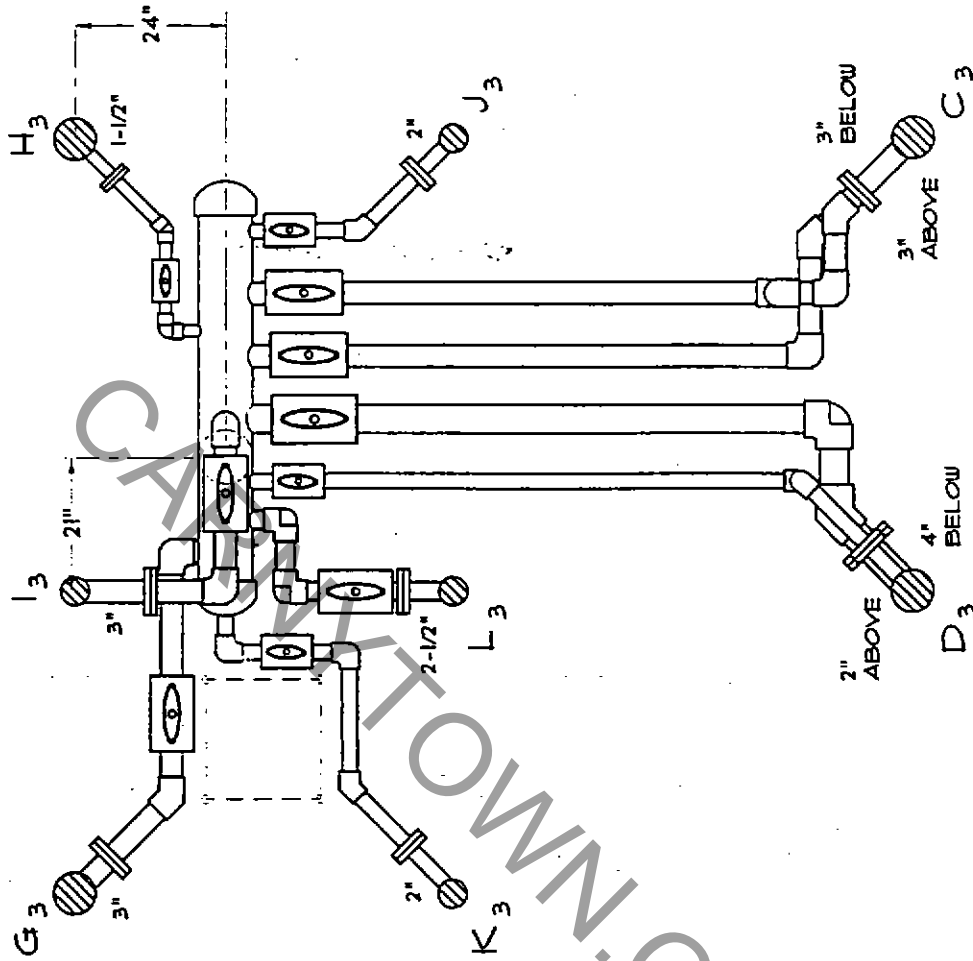
- 4" 90° EL. .... 1-PC.
- 4" 45° EL. .... 1-PC.
- 3" 45° EL. .... 3-PC.
- 3" 90° EL. .... 1-PC.
- 2" 45° EL. .... 2-PC.
- 2" 90° EL. .... 4-PC.
- 2-1/2" 90° EL. .... 2-PC.
- 1-1/2" 45° EL. .... 1-PC.
- 1-1/2" 90° EL. .... 1-PC.

**PVC BALL VALVES:**

- 4" ..... 1-PC.
- 3" ..... 4-PC.
- 2-1/2" ..... 1-PC.
- 2" ..... 3-PC.
- 1-1/2" ..... 1-PC.

**PVC FLANGES:**

- 4" ..... 1-PC.
- 3" ..... 4-PC.
- 2-1/2" ..... 1-PC.
- 2" ..... 3-PC.
- 1-1/2" ..... 1-PC.



DWG • 400-AG3

STANDARD MODEL 400

**SEC. #3 ABOVE GRADE PLUMBING**

DATE: 12/16/86  
SCALE: NONE  
DWG BY: ICKY

**SCS**  
C O M P A N Y

**SECTION 3**

**START-UP AND OPERATION**

CARVYTTOWN.COM

# **SPECIALIZED COMPONENT SUPPLY**

Interactive WaterPlay® System

## **MODEL 400**

### **START-UP AND OPERATION INTRUCTIONS**

#### **BACKGROUND**

The overall design intent of an SCS water play structure is to allow play participants to turn handwheels and lever valves, pull ropes, and operate various other mechanisms in order to control the flow of water for their fun and enjoyment. Realizing however, that the water pressures must be monitored and adjusted to guarantee that the structure operates safely, we have integrated into the design a manifold system that controls all of the effects. The model 400 has three manifolds. These manifolds are to be accessible only to the operator/owner of the structure and are where all the final adjustments are made to each effect.

Once the highest operating levels are properly set at the manifold(s), the people who are playing on the structure can open or close all the valves to adjust the effects as they wish. They can always throttle the effects down, but never higher than what you have set at the manifold.

The manifold system allows the operator to adjust all of the various effects to any setting desired. We encourage experimentation with different adjustments for each effect to achieve what your park feels are the best results. Sometimes this involves balancing the safety aspects of a certain pressure against the visual effect at a higher pressure. Whenever in doubt, always run the effect at the lower pressure.

A few of the effects are either not controlled at the manifold(s) or are connected with another effect which is controlled at the manifold and requires separate adjustment. To adjust these effects we have provided an additional throttle valves located next to the particular effect. Once adjusted, these valves are covered with a protective cap (supplied) which prevents adjustment by play participants.

Some of the effects are not controllable by the patrons. These effects are left on at all times so that the pump always has a means to relieve built up pressure created by the other valves being closed. In addition, this allows the play structure to look active when patrons turn everything else off.

The following information has been put together to aid you in adjusting all the effects to the correct pressure. However, this aid is primarily visual. You will need to use your judgement as well as that of lifeguards and operations personnel concerning safe pressures.

## BEFORE YOU BEGIN

1. Before water is put into the pool, the valves on the manifolds should be labeled relative to the pipes they feed (see drawings 400-AG1, AG2 and AG3). In other words, where the 2" line to pipe J connects to manifold #1, write "J".

If possible, you should also write the name of the effect which the valve controls. This will make identification easier and adjustment quicker when the structure is turned on.

2. All manifolds are located under the two foot high platforms. Each valve on each manifold controls at least one effect. These are:

FEED	PIPE EFFECT	LOCATION
<b>MANIFOLD ONE</b>		
A	Watercurtain XAD	Roof ABCD
A	Waterguns	Handrail XAA2
B	Bar Jets	Cross piece XBD2
C	Water Curtain	Watercurtain XBC
D	Watercurtain XBC2	Roof ABCD
F	Single Angle Jet	Pipe F/XAF
G	Pull Rope Valves	Cantilever pipe XG
H	Pipe Falls for Pools and Falls	Cantilever pipe XH
I	Angle Jets	Cross piece XGH
J	Up Jets	Cross piece XCJ
K	Peacock Jets/Horizontal Jets	Pipe K
L	Bubbler Jets	2' Platform GHJK
L (Throttle @ XDL)	Arch Jets/Hose Jets	Cross piece XDL
L (Throttle @ XIL)	Bar Jets	Cross piece XIL
<b>MANIFOLD TWO</b>		
A2	Waterwheel	Arch piece XAD2
B2	Bar Jets	Cross piece XB2D3
C2 (Upper 2")	Waterguns	Handrail XC2A3
C2 (Lower 3")	Waterwheel	Arch piece XBC2
D2	Waterguns	Handrail XBD2
F2	Single Angle Jet	Pipe F2/XAF2
G2	Pipe Falls	Cantilever pipe XG2
H2	Pull Rope Valves	Cantilever pipe XH2
I2	Angle Jets	Cross piece XGH2
J2	Up Jets	Cross piece XCJ2
K2	Peacock Jets/Horizontal Jets	Pipe K
L2	Bubbler Jets	2' Platform GHJK2
L2 (Throttle @ XDL2)	Arch Jets/Hose Jets	Cross piece XDL2
L2 (Throttle @ XIL2)	Bar Jets	Cross piece XIL2

### MANIFOLD THREE

C3 (Upper 3")	Water Curtain	Watercurtain XCZ
C3 (Upper 3")	Single Angle Jet	Pipe F4
C3 (Lower 3")	Watercurtain XAB3	Roof ABCD3
C3 (Lower 3")	Waterguns	Handrails XCZ / XYZ
C3 (Lower 3")	Bar Jet	Cross piece XBY
(Throttle @ XBY)		
C3 (Lower 3")	Up Jets	Pipe F3
D3 (Upper 2")	Waterguns	Handrail XB2D3
D3 (Lower 4")	Bar Jet	Cantilever pipe XA3
(Throttle @ XA3)		
G3	Pipe Falls	Cantilever pipe XG3
H3	Pull Rope Valves	Cantilever pipe XH3
I3	Angle Jets	Cross piece XGH3
J3	Up Jets	XCJ3
K3	Peacock Jets/Horizontal Jets	Pipe K3
L3	Bubbler Jets	2' Platform GHJK3
L3 (Throttle @ XDL3)	Arch Jets/Hose Jets	Cross piece XDL3
L3 (Throttle @ XIL3)	Bar Jets	Cross piece XIL3

### BEFORE THE PUMP IS STARTED

1. Remove all small orifice nozzles from the play structure to prevent clogging by objects or debris that may be in the line due to construction or winter shut down. These nozzles include the overhead rope pull nozzles, keg washers, and watergun.
2. Completely open all valves on the manifolds and all butterfly valves on the play structure.
3. Remove the side panels around the lower platforms so that the manifold valves will be easily accessible for adjustment.
4. Since water will be in the pool and parts of the manifolds and valves may be under water, the person that will do the actual adjusting should wear appropriate attire and be ready to get wet. Once this initial adjustment is done, it should not be required again during the operating season unless problems develop.
5. A minimum of three people should be on-site for start-up. One should be an operations person or owner who will make the final decision regarding the visual impact and safe operating pressure for each individual effect. Another should be in the pool to do the actual adjusting of the play structure while it is running. A third person should stand by the pump and be ready to turn it off if any problems occur. A radio should be used to communicate with the person standing by at the pump.
6. Be sure all strainers are clean and valves opened to the pump suction and discharge. The pump should be "bumped" prior to start-up to check rotation.

## START-UP

1. When the play structure is first operated, all personnel should stand at least 20' away from all effects. Since all the valves are completely open, some jets may spray out a very long distance. This may catch some people unaware and possibly cause injury if they are too close.

2. Turn the pump on. It will take a minute or so for the water to fill the pipes and basins each time it is turned on. Once the water routes it's way through the play structure and is flowing out of several effects, continue to run the pump for several minutes then turn it off. As this is the first time the play structure has been started the water will likely contain silt and debris from construction and installation of the underground piping. Continue to run the play structure until you feel all of the debris has been flushed out of the system.

Observe the operation of the structure carefully during this first few minutes to see if any jets are shooting water outside of the pool area. If this is happening, go to the corresponding valve(s) on the manifold and close them half way.

Some of the effects may not operate while all of the manifold valves are wide open. Since some of the effects are at a higher elevation (pipe falls and water curtains) and others are lower (bubblers and arch jets), throttling of some effects at the manifolds will be required to obtain the full effect to others at a higher elevation. In general this will be done within the system as individual effects adjustments are made.

3. With the pump off, connect the waterguns, rope pulls and hose jets.

4. The pump can now be started and allowed to run while you make the final adjustments to all the effects.

The following is a brief description of how each effect should appear and operate. The order that these adjustments are made is not important. You will find that you may have to go back and re-adjust a valve that was adjusted earlier after you have fine tuned a different one.

All of the effects are interdependent of each other and will attain a natural balance once you have worked with all of them. If the water is not getting to a particular effect, go on and work with the others. After several of the valves are throttled down, the pressure will equalize and distribute water to all areas of the system. The entire adjusting procedure should not take more than a couple of hours.

## PEACOCK JETS / HORIZONTAL JETS

There are three sets of these jets on pipes K, K2 and K3. The peacock jets are a set of four angle jets which come off the 4" 90 degree elbow and shoot into the air. The horizontal jets are below at 90 degrees and shoot straight out from the side of the 4" stand pipe. The horizontal jets are the most critical for adjustment because they are at child height. They should be adjusted so that the water shoots out about four feet out then arches down into the pool. In general you should be able to hold your hand in front of the jets for at least thirty seconds without discomfort.

## OVERHEAD ROPE PULLS

There are two different rope pull effects nozzles. The first is a full cone spray (similar to a shower head) which sprays water down when the rope is pulled. The other is simply a straight length of pipe which shoots water when the rope is pulled. The manifold valves which control these should be adjusted so the pressure from the sprays will not hurt your face if you look up into them, basically about the same as a shower.

## BUBBLER JETS

These three jet assemblies which are located beneath the two foot platforms should be valved so the jets bubble up through the platform holes approximately one to two feet above the platform.

## UP JETS

These jets are located on pipes XCJ, XCJ2 and XCJ3. These jets shoot streams of water directly up into the air. The streams should project about three to four feet up in the air. These jets should be adjusted with the participatory valves completely open.

## ARCH JETS

These jets are located on pipes XDL, XDL2 and XDL3. They produce streams of water which shoot out horizontally, then arch down. They should project out about three to four feet before arching down to the pool. These jets are adjusted by throttle valves on the jet pipes.

## HOSE JETS

These are located opposite the arch jets on the same pipes. Adjust flows to accommodate the arch jets, and the hose jets will be properly set.

## WATER CURTAINS

There are five watercurtains on the model 400. Watercurtains are not adjusted by patrons once set. The objective in adjusting these is to get as thick a sheet of water as possible without it breaking up, while retaining a translucent quality. If the water curtain has too little flow, the water will appear to have an intermittent flow and will break up a foot or two from the top. If the flow is too great the water will have a rough and heavy texture and you will not be able to see through it. The correct adjustment will result in a clean, crisp curtain of water about 1" thick all the way to the pool water level.

## ANGLE JETS

These jets are intended to shoot up and out, arching into the pool about 8 or 10 feet, over the heads of those next to the structure. These jets are located on pipes XGH, XGH2 and XGH3. Again, remember to leave the participatory play valves fully open while adjusting the jets.

## WATERGUNS

The waterguns are one of the most critical items for adjustment. Since the patrons can aim them at others, the pressure must be carefully adjusted so as not to hurt anyone.

The waterguns are intentionally placed on the platforms at higher elevations so they will not shoot directly at the body or heads of others. Rather, the water will fall or arch down on the intended target.

Since adults are taller, the stream of water is more of a problem for them. The best way to adjust these is to have an adult stand at various locations while someone else "shoots" them with water to determine what is safe.

## SINGLE ANGLE JETS

These jets will shoot the furthest of any jet due to the fact that they only have a single orifice. The jet should be adjusted to shoot as far as possible and stay inside of the pool (preferably about 15 to 20 feet). Be sure that the required pressure to do this is safe. These jets are located on pipes F, F2 and F4.

## WATERWHEELS

The two waterwheels should be adjusted to produce a constant rotation of the wheels while keeping splash to a minimum.

## BAR JETS

The bar jets produce streams of water which fall straight down into the pool. They should be adjusted so that they will not cause discomfort to those underneath them. The bar jets are located on pipes X1L, X1L2, X1L3, XBD2, XB2D3, XBY and XA3.

## PIPE FALLS

The pipe falls are simply open end pipes which spill water out like a pitcher spout. They can be adjusted to any setting which achieves the affect desired at the particular site.

Once all the effects have been balanced at the manifolds, go around and turn all of the valves that are to be operated by the children on and off a few times. This will insure that each one works correctly and that the maximum flow does not exceed what you feel is desireable. Once you are satisfied as to all adjustments, turn the pump off and install the PVC skirts around all of the platforms.

**MAKE SURE ALL THE SKIRTS ARE ATTACHED SECURELY TO THE STRUCTURE SO THERE IS NO POSSIBILITY OF CHILDREN REMOVING THEM AND BECOMING ENTRAPPED UNDERNEATH THE PLATFORMS.**

## OPERATION

We recommend at least an hour or so of play testing before you open the play structure to the public. This should involve bringing in several children that are known to the operators of the park and letting them play randomly on the structure for a period of time. Lifeguards should be present, but the adults should not point out effects or help the children discover anything. Rather, let them explore the play opportunities themselves and watch for any problem areas that may develop.

If problems should become apparent that are part of the structure (i.e., having to do with railings, steps, piping, etc.) or are what you perceive as improper or unsafe operation, remove the children, turn the pump off and contact this office immediately. If the problem requires immediate attention, we will have a representative visit the site as soon as possible to correct it.

**DO NOT MAKE ANY MODIFICATIONS TO THE PLAY SYSTEM YOURSELF WITHOUT FIRST CONTACTING THE SCS OFFICE.**

Once the play structure has been play tested and you are satisfied that it is operating correctly, you may open it to the public. Since this SCS structure is fairly complicated, we recommend that you observe all operations carefully the first few days to ensure that all is working properly and it is indeed operating at safe water pressures.

If there are any questions as to the safe or correct method of operation of any part of this structure, please give the SCS office a call at (503) 842-7001.

**SECTION 4**

**MAINTENANCE PROGRAM**

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# SPECIALIZED COMPONENT SUPPLY

## Interactive WaterPlay® Systems

### MAINTENANCE AND WINTERIZATION PROGRAM

#### INTRODUCTION

The following has been provided to assist owners and operators of SCS® Interactive Systems with general maintenance and repair information. The procedures described are only recommendations, but if followed will help to ensure trouble free operation of the play equipment.

#### MAINTENANCE SCHEDULE

- |                 |  |
|-----------------|--|
| Daily           | <ul style="list-style-type: none"><li>* Check operating pressure and flow to all effects.</li></ul>  |
| Weekly          | <ul style="list-style-type: none"><li>* Check operation of jets/ nozzles and clean as required.</li><li>* Inspect the tire swing chain.</li><li>* Check valve operating assemblies.</li></ul>  |
| End of Season   | <ul style="list-style-type: none"><li>* Drain play structure.</li><li>* Inspect components for damage.</li><li>* Clean pipe as needed.</li><li>* Inspect and repair any damaged paint and/or galvanizing.</li><li>* Remove and store small parts.</li><li>* Apply a coat of wax to piping.</li></ul>                             |
| Start of Season | <ul style="list-style-type: none"><li>* Apply a second coat of wax to piping.</li><li>* Check system plumbing, repair as needed.</li><li>* Start pump and flush system plumbing and play structure piping.</li><li>* Shut off pump. Re-install small parts.</li><li>* Restart system and adjust effects for operation.</li></ul> |

The following sections will describe the elements of the above listed maintenance procedures in detail.

## DAILY MAINTENANCE

Virtually each water line that runs to a play structure is valved in the pump room or at the structure itself. These valves are for the use of the owner/operator to regulate and adjust the flow of water to each individual effect to achieve safe operating pressures. Once these adjustments are made, the valves should be **marked or tagged** so that they can be returned to the desired position if they are accidentally moved or when the play unit is started-up at the beginning of a new season. All of these controls are in a location that is not accessible to the general public.

Insuring that these initial adjustments are properly maintained is important for safe and fun use of the play structure. The valve settings should be visually checked or the play unit should be observed in operation at the beginning of the day to insure that none of the correct settings have been altered.

## WEEKLY MAINTENANCE

All play structure jets and nozzles should be routinely checked for proper operation. Most of the piping effects consist simply of nipples recessed in the piping. These nipples will sometimes become clogged with debris. Usually, inserting a bottle brush or a piece of wire into the pipe orifice will suffice to clean out the debris.

There are several overhead nozzles which should also be checked. Specifically, these consist of the umbrella jet and the pull rope valve assemblies. Like the pipe jets, these nozzles will sometimes become clogged with debris. When this occurs, the nozzles should be removed and cleaned.

The umbrella jet is a two piece assembly consisting of a 3" brass sleeve and a brass cone which can be adjusted to allow more or less water to flow through the sleeve. It is the gap between the sleeve and the cone which will become clogged. To disassemble the umbrella jet, simply remove the hex screw from the top of the cone, then turn the cone counter clockwise until it comes off.

There are two problems which can occur with the pull rope valves. Like the other nozzles, they will sometimes become clogged. Also, these valves will occasionally freeze up, causing the valve to remain in an open position when the rope is pulled. Both of these conditions can be corrected by disassembling the valve and cleaning the valve components.

To disassemble a pull rope valve, remove the threaded cap from the back of the valve with a wrench. Once the cap is removed, a spring will be visible. Remove the spring and then push the valve stem inward to remove the operating mechanism. Clean all parts with soap and water or a mild solvent and allow to dry. To correct a sticking valve, remove the small O-ring from the valve stem and clean the stem and stem sleeve with emery cloth. Then simply replace the O-ring and reassemble the valve.

The tire assembly should also be checked weekly. This simply requires a visual check of components for wear and tear. Make sure connection points and the chains are secure and undamaged.

The final item of weekly maintenance is to check the participatory valve assemblies. These consist of the handwheels and lever handles. Check that handwheels and lever handles are securely bolted to the valve bodies. Check the resilient handwheels for damage. Open and close the valves to check that they are working properly. Check throttle valves to insure that the protective caps are in place.

## END OF SEASON MAINTENANCE

The end of the operating season is the time when a thorough inspection of the entire play structure should be performed. This ensures that if any repairs are needed, they can be performed before the next operating season.

The first item of maintenance is to drain the pool and play unit of all water. The play unit has been built with drain plugs at the base of all manifolds, bubbler jet assemblies and tower roof plumbing. Each roof assembly has five plugs; one at the base of each roof leg and one at the bottom of the dump trough. These plugs should be removed for the entire winter season. The plugs can be removed with an adjustable wrench allowing the water to drain out. When draining the structure, make sure that all structure valves are open. Leave valves open during the winter season.

Secondly, the entire play structure should be examined one last time before the winter season for any damage to components, especially the piping. To insure long life and to maintain the visual appearance of your play structure it is very important that all painted surfaces are cleaned and checked for any damage.

Depending on the chemical balance of the pool water and water treatment methods, a mineral build-up(scale) may appear on the painted surfaces. Although the appearance of the pipe with this mineral build-up may not look good, it is not harmful to the pipe or paint. However, if the owner wishes to remove it for appearance purposes, removal can be accomplished by mild scrubbing with a weak solution of muriatic acid or other phosphorous based product. Use only soft brushes. Wire brushes or abrasive scrubbers will damage the painted surfaces.

Each play structure is galvanized inside and out as primary protection then is primed and painted with two coats of epoxy paint as secondary protection. If the paint has been chipped or removed, these areas must be carefully inspected to see if the galvanizing has been damaged, if so, you will need to remove the paint in the immediate area, prime and repaint.

On areas where the paint has only been chipped, and the galvanizing has not been disturbed, simple touch-up will protect from additional damage.

Your play structure was originally supplied with touch-up paint in all colors. If additional coating materials are needed you may contact SCS<sup>®</sup> Oregon to obtain the necessary color code information for your play structure. More specific instructions for surface preparation, paint mixing and application are included at the end of this document.

Once the painted surfaces have been inspected and repaired as needed, a thorough check of other structure components should also be performed. Fiberglass platforms and stairs should be checked for cracking or excessive wear to the integral non-slip surfacing. The platform frames should be checked to see that all bolts are in place and securely tightened. Tunnel slides should be checked for cracks or tears in the polyethylene tube components. All bolts should be checked for tightness. As with weekly maintenance, the tire swing assembly should be thoroughly inspected. All handrail connections should be checked for tightness. Pull ropes should be checked for excessive wear.

Some small parts can also be removed during the off season and stored for protection from corrosion and ultraviolet exposure. These include handwheels and lever handles, waterguns, hose jets and small nozzles such as pull rope valves and umbrella jets. These parts are relatively easy to remove and do not require large amounts of space for storage. Each part should be tagged with some sort of identification to facilitate easy replacement during the operating season. For waterguns, it is recommended that they be blown out with air to remove any debris which might clog the nozzles. If nozzles and jets are removed, the receptacles should be plugged until the jets are re-installed.

A good procedure to protect the pipe surfaces is to apply a coat of automotive wax to the piping surfaces. As with any painted metal surface, wax will add another layer of protection and help to extend the life and color of the paint.

## START OF SEASON MAINTENANCE

Prior to starting the system for operation it is recommended to again apply a coat of wax to the piping surfaces. Once this has been done, follow the check list below to help with the operating season start-up procedure:

1. Check for any damage to the structure plumbing, including the manifold assembly.
2. If not already done, remove all small orifice nozzles from the play structure to prevent clogging by objects or debris that may be in the line due to construction or winter shut down. These nozzles include the overhead rope pull valves, umbrella jet, hose jets and watergun(s).
3. Completely open all valves on the manifold and all the participatory butterfly valves on the structure itself.
4. If the system manifold is located underneath the play structure, remove skirting as needed to allow easier access to the manifold and valves below.
5. Since water will be in the pool and parts of the manifold and valves may be under water, the person that will do the actual adjusting should wear appropriate attire. (Once this initial adjustment is done, it should not be required again during the operating season unless problems develop).
6. A minimum of three people should be on hand for the start-up. One should be an operations person or owner who will make the final decision regarding the visual impact and safe operating pressure for each individual effect. Another should be in the pool to do the actual adjusting on the play structure while it is running. A third person should stand by the pump ready to turn it off if any problems occur. A radio should be used to communicate with the person standing by at the pump.
7. Be sure all the strainers are clean and valves opened to the pump suction and discharge piping.
8. When the structure is started-up all personnel should stand at least 20' away on all sides. Since the valves are completely open, some jets may spray out a long distance, catching people unaware and possibly causing injury if they are close by.

9. Turn the pump on. After water begins coming out of several effects, run it for a few minutes then shut it off.
10. With the pump off, connect the watergun, rope pulls and other parts which may have been removed during the off season.
11. The pump can now be re-started and allowed to run while final adjustments are made to all the effects.

## REPLACEMENT PARTS

Due to the continual use and possible abuse of your SCS® play structure and no matter how well you adhere to your maintenance program, eventually some components will need repair and/or replacement, this may include the following.

1. Watergun(s) every 1 to 3 years
2. Overhead rope pulls valves every 1 to 2 years
3. Resilient handwheels every 2 to 3 years
4. Tire swing every 5 years
5. Spiral slide every 5 to 7 years
6. Tunnel slide every 5 to 7 years
7. Hose jets every 1 to 2 years

When it comes time to repair or replace one or more of the above mentioned components, contact the SCS® Oregon office to obtain new equipment or have the old components repaired. In regards to the larger components like the slides and tire swing, we will help arrange delivery of replacements if needed.

Please contact SCS® at (503) 842-7001 and ask for technical assistance if you have any questions or need to discuss maintenance or start-up procedures of your play structure. Please remember, SCS® is at your service when you need assistance with any aspect of operation or maintenance of all SCS® play structures and equipment.

**SECTION 5**

**PAINTING GUIDELINES**

CARPENTRYTOWN.COM

# SPECIALIZED COMPONENT SUPPLY

## Interactive WaterPlay® Systems

### PAINTING GUIDELINES

#### GENERAL INFORMATION

The painted surfaces of an SCS® playstructure consist of a layer of galvanizing followed by an epoxy primer and an overcoating of polyurethane enamel paint. When touch-up work is required, there are several important items to remember:

1. **TAKE CARE TO PROTECT THE GALVANIZING.** The galvanizing process acts as the primary protective coating for the steel piping, handrails and hardware. If this galvanizing is damaged or removed, rust problems are more likely to develop. When sanding pipe surfaces in preparation for painting, try only to sand the paint, leaving the galvanized subsurface intact.

If the galvanizing has been damaged prior to touch-up and rust has developed, it is important to sand down to bare metal prior to painting. The epoxy primer can then act as a seal over the bare steel. If the rust is heavy and difficult to remove, a rust preventer/inhibitor can be applied prior to painting. This inhibitor reacts chemically with the rust, preventing further oxidation.

2. **MAKE SURE ALL SURFACES TO BE PAINTED ARE CLEAN AND DRY.** Particles of dirt, oil, water or other substances adhering to the pipe during painting will cause both application and adhesion problems, resulting in poor results. After preparing the pipe for paint, wipe surfaces down with a tack cloth or a clean cloth dampened with paint thinner. This will remove fine particles from the pipe, leaving a clean surface.

In locations with water hardness problems, there may be a mineral scale build-up which needs to be removed prior to surface preparation. This scale may usually be removed by application of a weak solution of muriatic acid or phosphorous. Scrub the pipe with soft brushes only, so as not to damage the paint or galvanizing and rinse with water.

3. **MIX ONLY SMALL QUANTITIES OF PAINT AT ONE TIME.** The primers and paints used by SCS® are catalyzed coatings, and therefore must be used quickly once mixed. After a period of time the paints will become hard and unusable. It is best to mix only a quantity which can be used within one hour.

4. **BE SURE SURFACES ARE WARM.** SCS® primers and paints may be applied at a temperature range between 50 and 85 degrees F., with 70 degrees being ideal. For small areas of spot touch-up, paints may be applied at colder temperatures, although it is not generally recommended.

5. **USE ONLY QUALITY PAINT APPLICATORS.** Spraying is the ideal method for applying SCS® coatings. However, brushes are fine providing the proper type is used. We recommend high quality, pure bristle brushes. Brushes in which the bristles are bonded rather than glued are best. Also, the thicker the bristles, the more paint the brush will hold. This allows for a better coating process.

## PREPARATION AND APPLICATION

1. Sand entire area to be painted with 120 - 180 grit sandpaper, feathering out all edges. After sanding, wipe down with tack cloth.
2. Mix four parts of E61A280 epoxy primer with one part V66A282 catalyst/activator. Remember to mix only a quantity to be used immediately. Paints must be mixed accurately to achieve proper results. Use a measuring cup or some other graduated measure.
3. Apply one good coat of primer. Allow to dry a minimum of one hour or until thoroughly dry.
4. Mix two parts Polane HS Plus Polyurethane enamel of proper color with one part Polane HS Plus V66V55 catalyst/activator.
5. Apply at least one coat of paint at a thickness of three to four mils. If more than one coat of paint is to be applied, allow to dry one to two hours between coats. Second coat same as first. Allow to dry a minimum of twelve hours at 70° for full cure. Dry time will vary with temperature.

If you have any questions about these instructions or need further help in regards to play systems maintenance, please call SCS® at (503) 842-7001 and ask for technical assistance.

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## WARRANTY

SCS Interactive Incorporated warrants all equipment manufactured by SCS to be free from defects in workmanship or material for a period of 12 months from the date of installation or for 18 months from the date of shipment to the contractor. If a part is defective within that period, SCS will repair, or at our option replace the defective unit or part.

### LIMITS OF LIABILITY

SCS assumes no liability for consequential damages caused by use or misuse of equipment sold to the buyer or by the buyers employees. SCS assumes no liability for injury to buyers employees caused by use or misuse of the equipment or attached equipment.

A defect within the warranty conditions if repairable, shall be repaired and not considered as cause to reject the entire equipment sold. Misapplication shall also not be cause to return the equipment under warranty.

### WARRANTY EXCLUSIONS

Equipment not manufactured by SCS is covered ONLY by it's manufacturer's warranties. SCS will co-ordinate the resulting warranty effort but will abide by the original manufactures warranty decisions. The buyer will be responsible for any charges incurred by SCS.

This warranty does not apply to any defect or defects which are proven to have been caused by accident, alteration, abuse or misuse, by purchaser negligence, acts of God, use under conditions which are not within the service range of pressure, temperature, flow-rate and chemical compatibility limitations for which they are manufactured, or by use under conditions which are not recommended in the service literature.

### FREIGHT DAMAGE

Inspect all packages upon receipt. If any damage is apparent, notify the carrier and file a claim. Save all packing in the condition when the damage was first noted. Notify SCS for damage repair or replacement estimates to be forwarded to the carrier. Freight damage must be reported within the time frame required by the carrier.

### RETURN OF MATERIAL

Call the service department for a return authorization number prior to returning the merchandise. Merchandise will not be accepted without prior authorization. Include as much information as possible with the returned merchandise concerning the problem with the equipment to expedite repair and avoid extra charges.

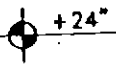
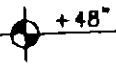
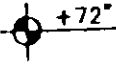
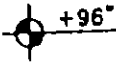
Return merchandise to 6260 Blimp Boulevard, Tillamook, Oregon 97141. Mark the container with the model number, project name and the word "repair".

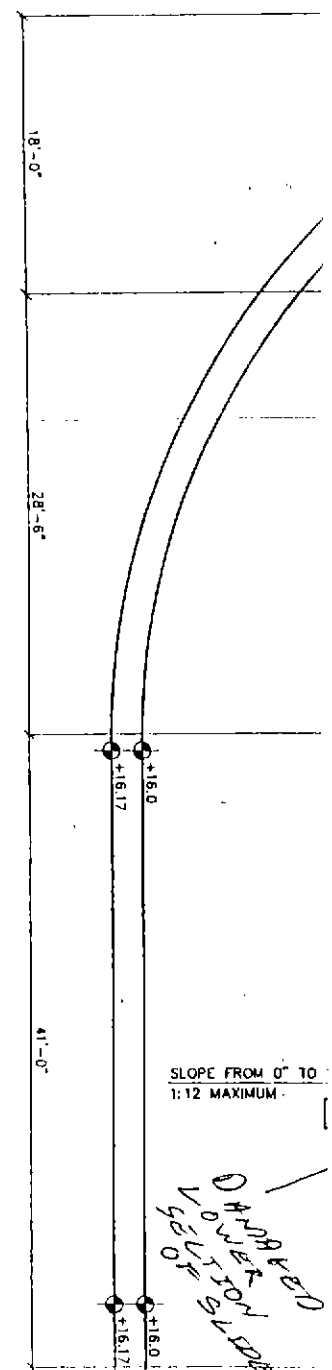
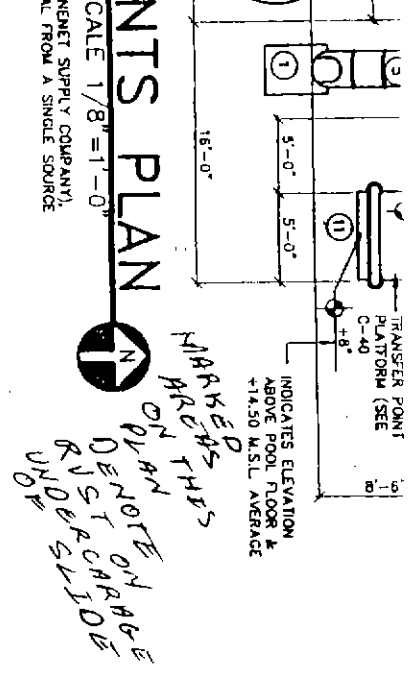
SCS MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED OTHER THAN THE WARRANTY HEREIN CONTAINED. ANY OTHER WARRANTIES ARE SPECIFICALLY DENIED AND SCS DISCLAIMS ANY LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR ANY BREACH OF WARRANTY.

# WATER ACTIVITY COMPONENTS

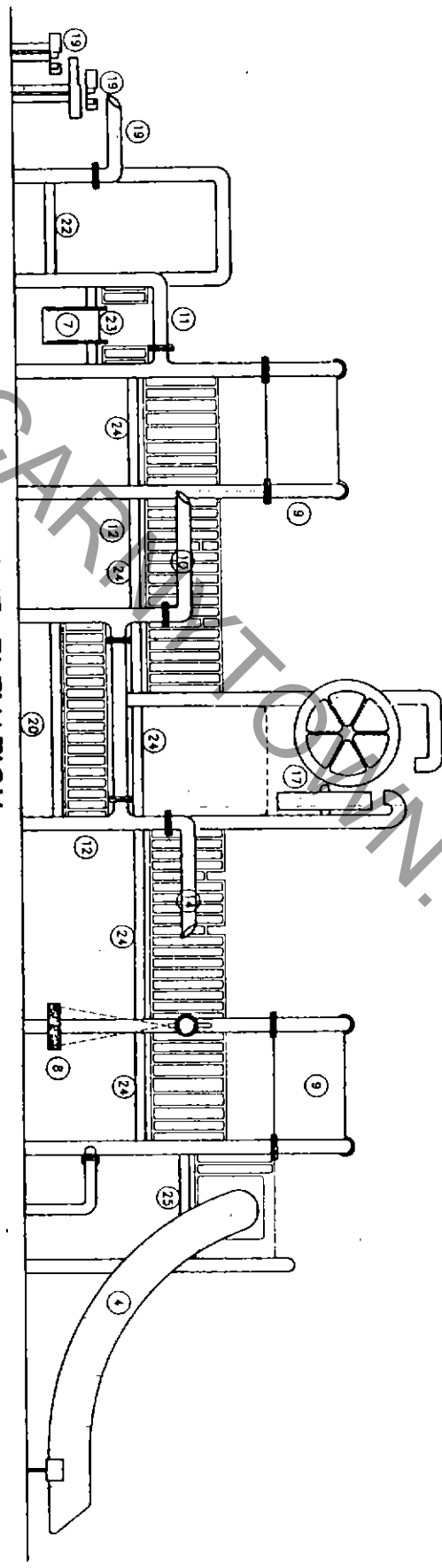
NOTE: WATER ACTIVITY COMPONENTS AS SHOWN MAY BE ORDERED FROM S.C.S COMPANY (SPEC. PHONE 1-619-459-4849, MODEL NO.: 400. EQUAL SUBSTITUTIONS MAY BE SUBSTITUTED SUPPLIER.

## LEGEND

- |   |   |
|---|---|
| ① 3'x4' MIN. RESILIENT SURFACE TYP. ● BOTTOM OF ALL SLIDES                  | ①⑦ PIPE ARCHES W/ 5' DIAMETER WATER WHEELS 2 TOTAL  |
| ② 8'x8' RESILIENT SURFACE   | ①⑧ OVERHEAD RUNNELS (UNDER WATER WHEELS) 2 TOTAL  |
| ③ H.C. ACCESS TRANSFER POINT W/ 18" DOUBLE GRAB BARS AND H.C. INSIGNIA SIGN | ①⑨ RUNNELS (POOL FLOOR) 3 TOTAL   |
| ④ 20' CURVED TUNNEL SLIDE FROM 8' PLATFORM                                  | ②⑩ CRAWL TUNNELS 2 TOTAL  |
| ⑤ 16' STRAIGHT TUNNEL SLIDE FROM 6' PLATFORM                                | ②⑪ FUNNY MIRRORS 2 TOTAL  |
| ⑥ OPEN SPIRAL SLIDE FROM 6' PLATFORM  | ②⑫  3 2'-0" HIGH PLATFORMS   |
| ⑦ 4' OPEN STRAIGHT SLIDE FROM 4' PLATFORM                                   | ②⑬  3 4'-0" HIGH PLATFORMS  |
| ⑧ TIRE SWING  | ②⑭  6 6'-0" HIGH PLATFORMS |
| ⑨ 16' CENTRAL FALLS 3 TOTAL   | ②⑮  1 8'-0" HIGH PLATFORMS |
| ⑩ PIPE FALLS 3 TOTAL  | ②⑯ 2 6'-0" HIGH BRIDGES   |
| ⑪ 7' WATER CURTAINS 3 TOTAL   | ②⑰ UMBRELLA JETS 3 TOTAL  |
| ⑫ BAR JETS UNDER PLATFORMS 60 TOTAL   | ○ ⑱ 8 WATERGUNS   |
| ⑬ UMBRELLA JETS 1 TOTAL   | ○ ⑳ 4 HOSE JETS   |
| ⑭ OVERHEAD ROPE PULLS 9 TOTAL   | ○ ㉑ 15 UP JETS  |
| ⑮ PEACOCK JETS 24 TOTAL   | ○ ㉒ 27 HORIZONTAL JETS  |
| ⑯ SINGLE ANGLE JETS 4 TOTAL   | ○ ㉓ 44 ANGLE JETS   |



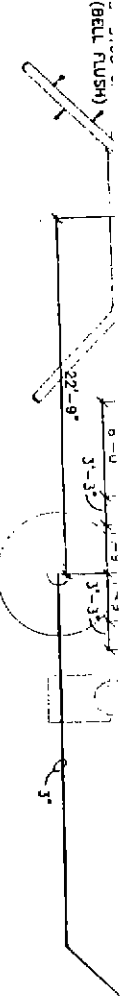
**WATER ACTIVITY POOL PL.**



**WATER ACTIVITY POOL DETAIL**

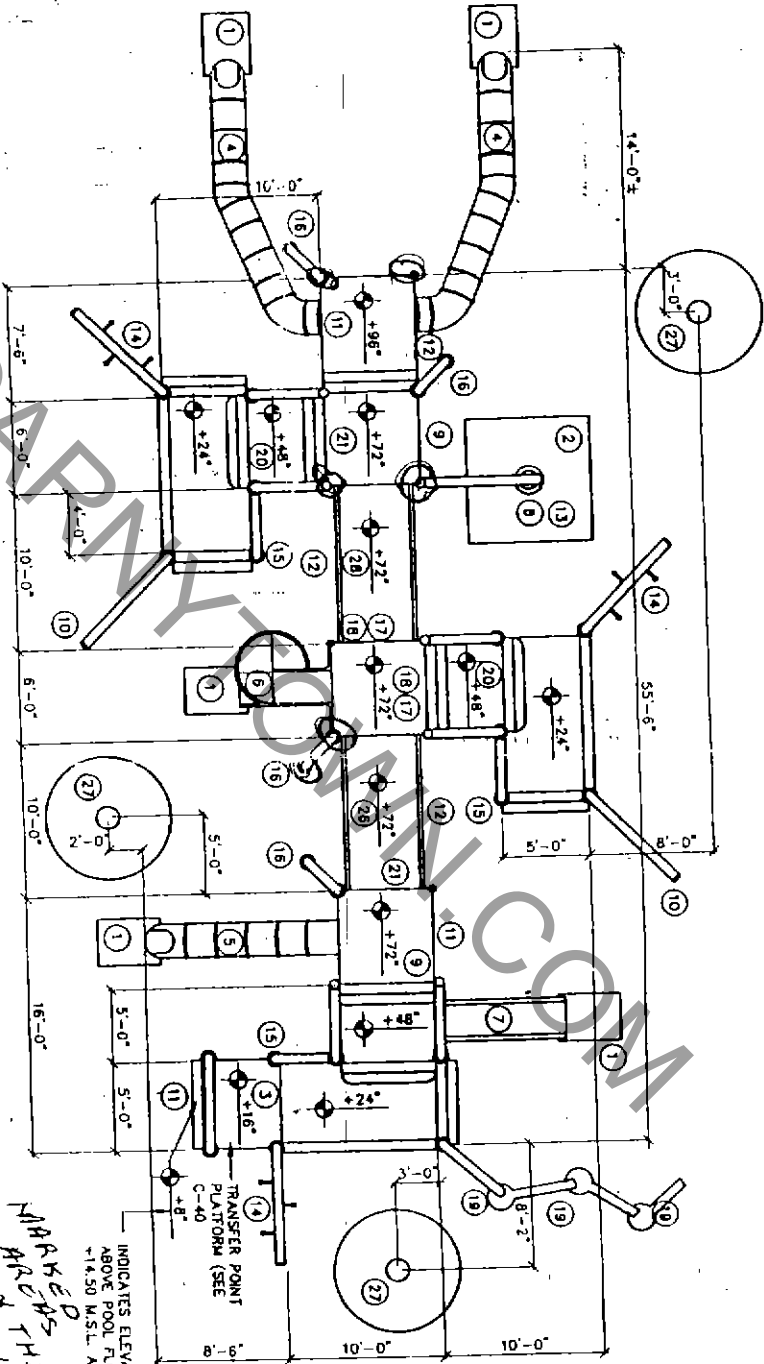
1. ACTIVITY PLAY COMPONENTS SHOWN ARE THE MODEL 400 AS MANUFACTURED BY SCS COMPANY (SPECIALIZED COMPONENT SUPPLY COMPANY) PHONE 1-619-459-4649. CONTRACTOR MAY SUBSTITUTE AN APPROVED EQUAL SINGLE SOURCE SUPPLIER PROVIDING ALL COMPONENT FEATURES AND SPECIFICATIONS CAN BE MET.

NET SUPPLY COMPANY),  
FROM A SINGLE SOURCE



# WATER ACTIVITY PIPING PLAN

SCALE 1/8" = 1'-0"



# WATER ACTIVITY COMPONENTS PLAN

SCALE 1/8" = 1'-0"



NOTE:  
 WATER ACTIVITY COMPONENTS AS SHOWN MAY BE ORDERED FROM S.C.S. COMPANY (SPECIALIZED COMPONENT SUPPLY COMPANY).  
 WATER PHONE: 1-819-459-4849, MODEL NO.: 400. EQUAL SUBSTITUTIONS MAY BE SUBSTITUTED FOR APPROVAL FROM A SINGLE SOURCE SUPPLIER.

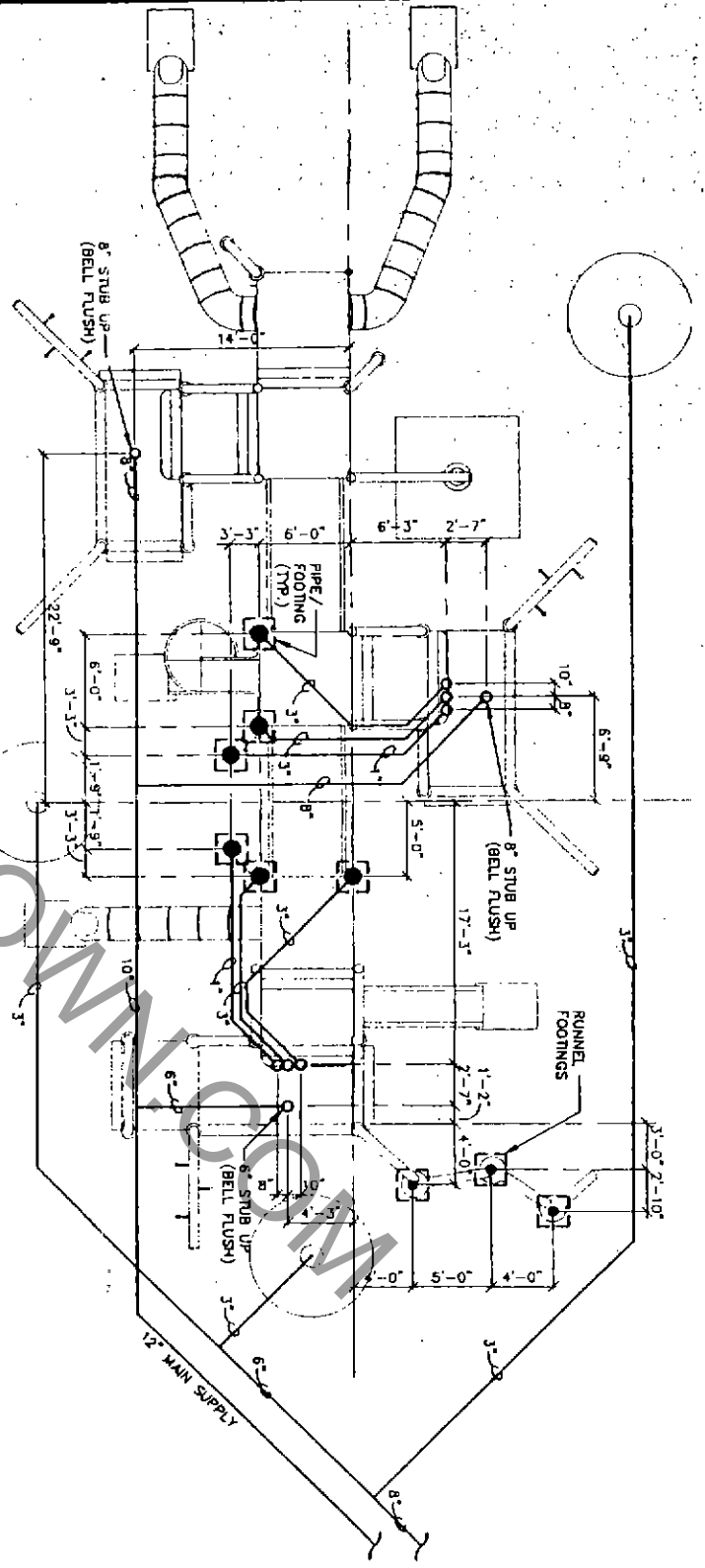
**LEGEND**

- ① 3/4" MIN. RESUIANT SURFACE
- ② TYP. @ BOTTOM OF ALL SUDS
- ③ PIPE ARCHES W/ 5' DIAMETER
- ④ WATER WHEELS
- ⑤ 2 TOTAL
- ⑥ OVERHEAD RUNNELS (UNDER)

INDICATES ELEVATION  
 ABOVE POOL FLOOR &  
 +14.50 M.S.L. AVERAGE

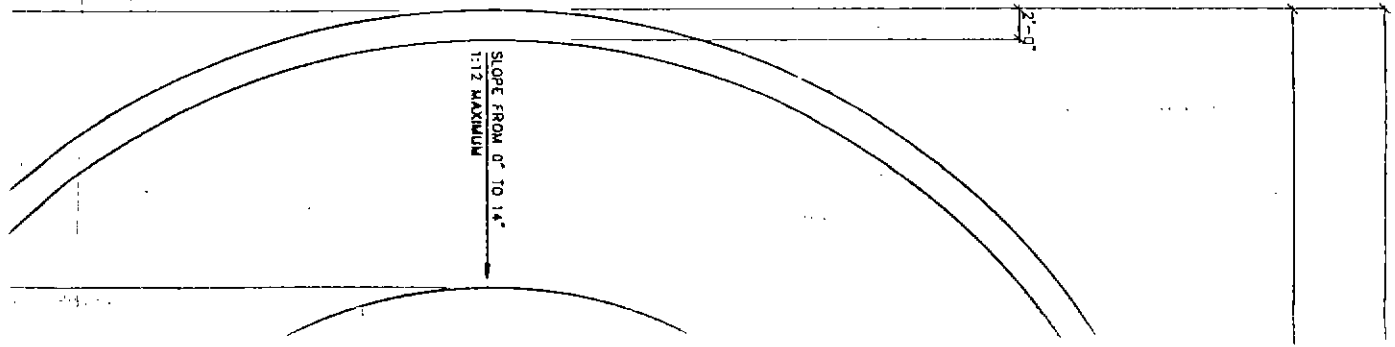
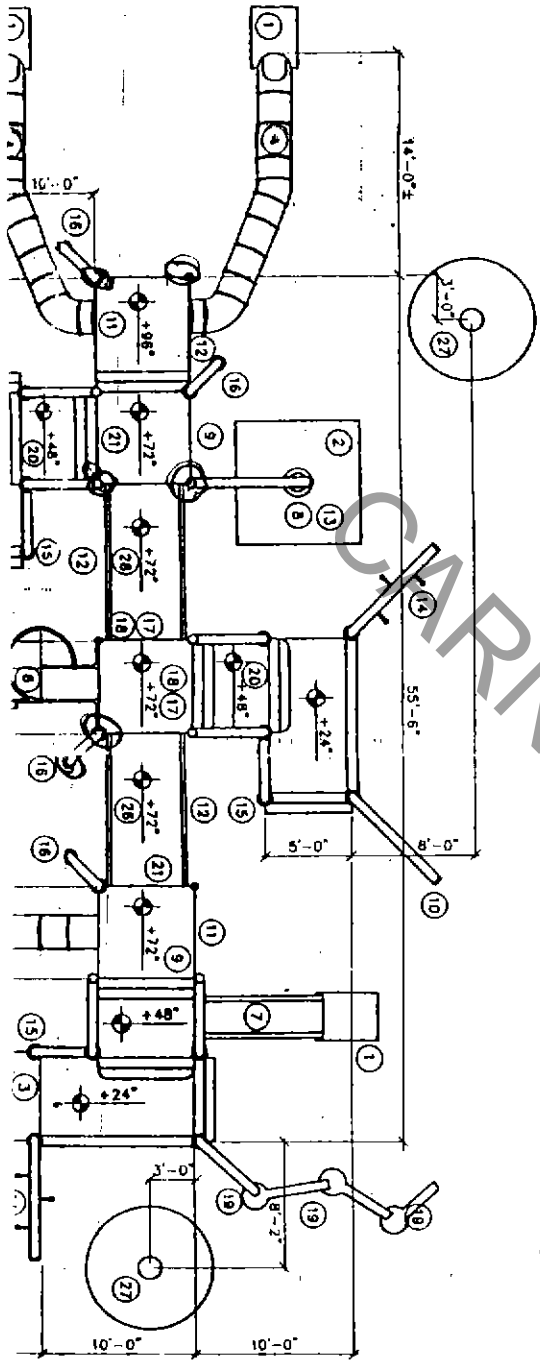
MARKED  
 AREAS  
 ON PLAN  
 DENOTE ON AGE  
 RESTRICTIONS  
 UNDER SIDE  
 OF

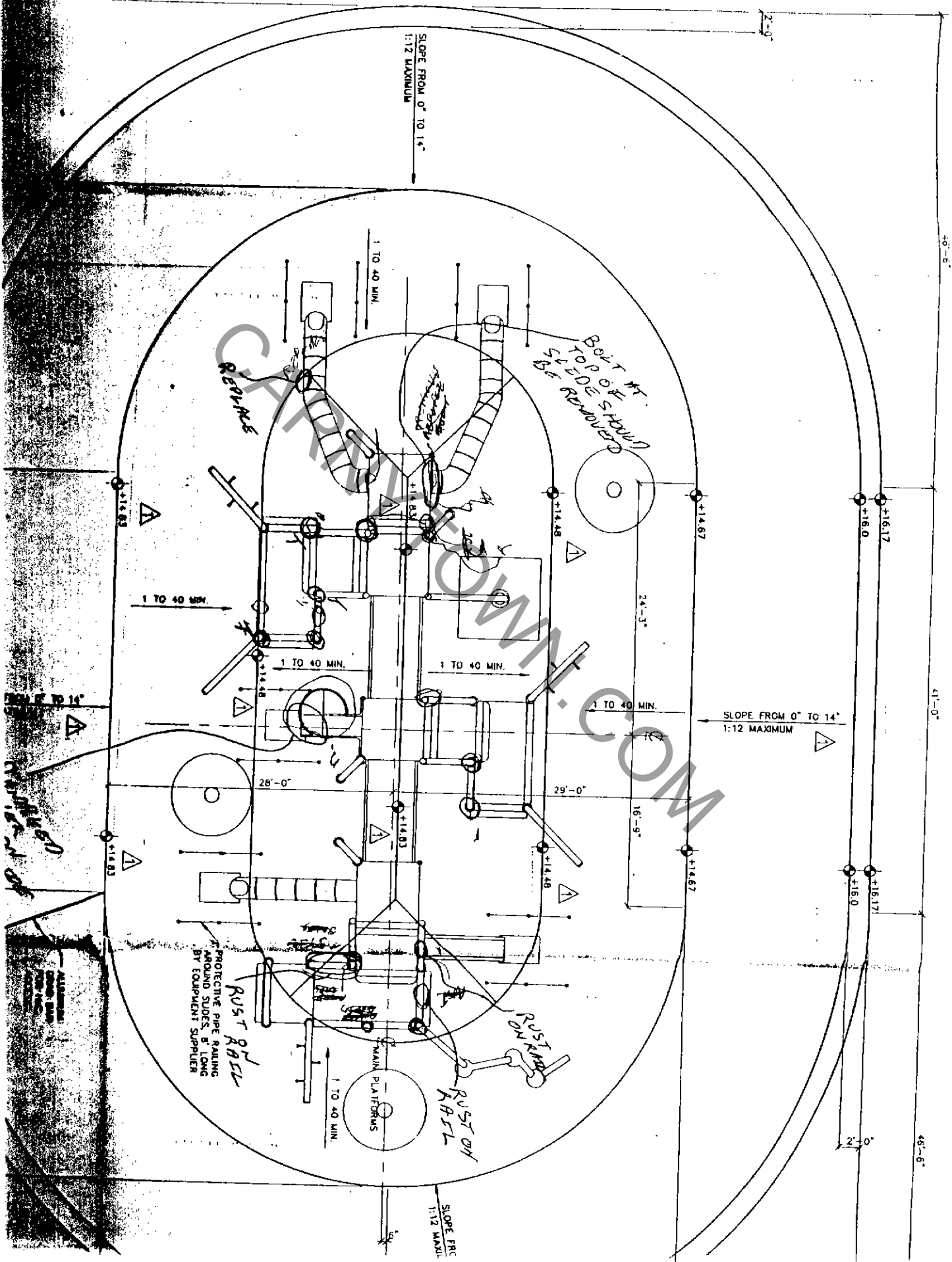
SLOPE FROM 0° TO  
 1:12 MAXIMUM



# WATER ACTIVITY PIPING PLAN

SCALE 1/8" = 1'-0"





SLOPE FROM 0" TO 14"  
1:12 MAXIMUM

1 TO 40 MIN.

REPLACE

BOLT AT TOP OF SLIDE SHOULD BE REMOVED

1 TO 40 MIN.

1 TO 40 MIN.

1 TO 40 MIN.

1 TO 40 MIN.

SLOPE FROM 0" TO 14"  
1:12 MAXIMUM

28'-0"

29'-0"

16'-9"

24'-3"

PROTECTIVE PIPE RAILING AROUND SLIDES, TO BE LOW BY EQUIPMENT SUPPLIER

RUST PROTECTANT

1 TO 40 MIN.

MAIN PLATFORMS

RUST PROTECTANT

SLOPE FROM 0" TO 14"  
1:12 MAXIMUM

40'-5"

41'-0"

48'-6"

+16.17  
+16.0

+16.17  
+16.0

+14.83

+14.83

+14.48

+14.48

+14.67

+14.67

2'-0"

ALTERNATE  
CONCRETE  
CURB AND  
GUTTER  
TO BE  
INSTALLED  
BY  
EQUIPMENT  
SUPPLIER