Field Build Notes

General notes on Drawing Package:

- Drawing numbers
  - JB is for Jubilee Best
  - A Is for Main Assembly (There is only one)
  - SA is for Sub-Assembly (This is all constructed assemblies that make up the main)
  - P is for Part (These are all of the drawings for cutting and drilling)
  - Note there are some Sub-Assemblies and some Parts that represent purchased parts that do not exist as drawings. They are parts if you are in the Solid Works files but are not shown as dimensioned parts in the drawing documents
- Main assembly
  - We have tried to simplify field set-up by having the parts define the locations
  - The field is based on the 12'x12' quadrant playing area
    - Note it is important to verify the quadrants are accurate and square, as they are critical to the field layout
  - The Sub-Assembly *SA-1200*, (Trolley base and Pivot) is placed in the outside corner of the quadrant, with the outside legs squared to the two sides of the field
  - The Sub-Assembly *SA-2000* will be placed on the right side (facing the field from the spotters area) with its back legs lined up evenly on the outside of the 12' quadrant and the near side legs square to the side of the Trolley Base Pivot Leg.
  - The Sub-Assembly *SA-5000* will be placed on the left side with it base outside the quadrant, the inside edge of the base is lined up with the outside edge of the quadrant and the near side of the "MUX" scoring post square to the side of the Trolley Base Pivot Leg
  - The Drivers area becomes a 2' deep rectangle that can be laid out by extending tape from the back of the Area 2 scoring base, with the inside edge of the tape extending from the edge of the base coming out 2' from the edge of the quadrant. The other side of the box will be formed by extending tape from the end of the quadrant with the inside edge even with the edge of the quadrant extending out 2' from the side of the quadrant. The outside of the box will be formed by running tape between the two extended sides with the inside edge 2' from the side of the quadrant. (inside refers to the inside of the Drivers Box)
    - Note this is not an even dimension but is just slightly bigger than 2' square and makes things line up with minimal measurements

- The Blind Scoring area, *SA-3000* will be placed with the sloped scoring area facing away from the field, with its legs square to the end of the Area 1 Scoring assembly, so that the inside of the long legs of the Blind scoring area are even with the inside short legs of the main Area 1 scoring
- The Area 3 scoring *SA-4000* is placed so that the corner and sides line up with the inside corner and sides of the quadrant. The four pieces will form a pyramid in the middle of the field. (Note we have not shown anything but there is space in the center to mount something without interfering with the game play should a hub choose to use for advertising or enhancement)
- The Trolley, *SA-1000* is then screwed to the mounting blocks (2x4's) that are on the Pivot Base, *SA 1200*, which provides proper positioning of the Trolley
- The Safety Arc can be laid out by running an arc of tape which follows the path of the wheels on the far end of the trolley, as this is the purpose of the arc, to prevent a team from damaging the trolley unit by trying to run over a piece in the path of the wheels

- Assembling the Trolley
  - My recommendation is to start with the far end, deck piece *P-1004*, side rails *P-1020*, and top rails *P-1012*
    - Check the width of the deck board end to end and verify the 300mm width, if this is off over 2 or 3 mm make a pencil mark to establish a line for setting the side rail straight
    - Starting at the far end line the side rail up with the corner of the deck board, or with your pencil mark and fasten the first screw
    - Work your way down the board, fastening the screws one at a time maintaining a straight line down the deck board. We found this process helpful in dealing with the bends that you will have in the 1x4. (try to pick boards that are not twisted for the side rails, a little bow will easily be taken out by screwing them down with the method above) Repeat with the other side
    - Attach the top rails *P-1012*, using the same procedure keeping the outside edge lined up with the outside of the side rail
      - As noted on *P-1012* the last four 5/16" holes are best drilled by match drilling with the side rail
      - To match drill flip the piece with the top rails down and while one person or clamp holds the top rail even with the side rail, drill thru the top rail using the hole in the side rail as the guide
      - Attach with a bolt and repeat for the next hole and repeat on the other side. With the second hole drilled the bolt can be removed

- Next would be to assemble the other end of the Trolley, the Deck *P-1003*, the side rails *P-1002*, and the top rails *P-1011*
    - Using the end deck unit fit the Crank end deck board P-1003 and side rails *P-1002* together
        - Line up the deck boards and side rails to get everything as square as possible. Using another board as a straight edge on the outside will help in keeping everything straight. Small gaps in the bottom deck (2-3mm less than 1/8" will not cause a problem, nor will gaps up to 6mm or less than ¼" on the side rails)
        - Mark the location of the side rails to the deck board so that they can be attached
    - Now starting from the middle end attach the side rail to the deck by holding the alignment marks just made fasten the first screw
    - With the one screw in on both sides flip the unit over and line up and drill the first splice bolt hole and temporarily install the bolt. Then align and drill the second splice hole, and again temporarily fasten with the bolt
    - Using the same process as above, continue down the rail fastening one screw at a time. Note the third and fourth holes from the end are to be skipped at this stage as they will be used to connect the outrigger later in the assembly
    - Next refit the two deck units back together and align the side rails square. Using the splice holes as a guide drill through the far end rails into the Crank end bottom deck, and fasten splice bolts
    - Now align the far end top rails with the Crank end Side rails and use the side rail hole as a guide to drill thru from the bottom and fasten the other splice bolts.
    - Next align the crank end top rails *P-1011* at the splice and begin fastening one screw at a time working back to the Crank end on both sides
- Assembling the Drive Pulley *SA-1600*
    - Take two of the Toilet Flanges and Drill out the holes to 5/16"

- To drill the holes in the Bucket Lid and get centered, use four 57mm long pieces of 1x2 to center the flange inside the lid (see fig 1)

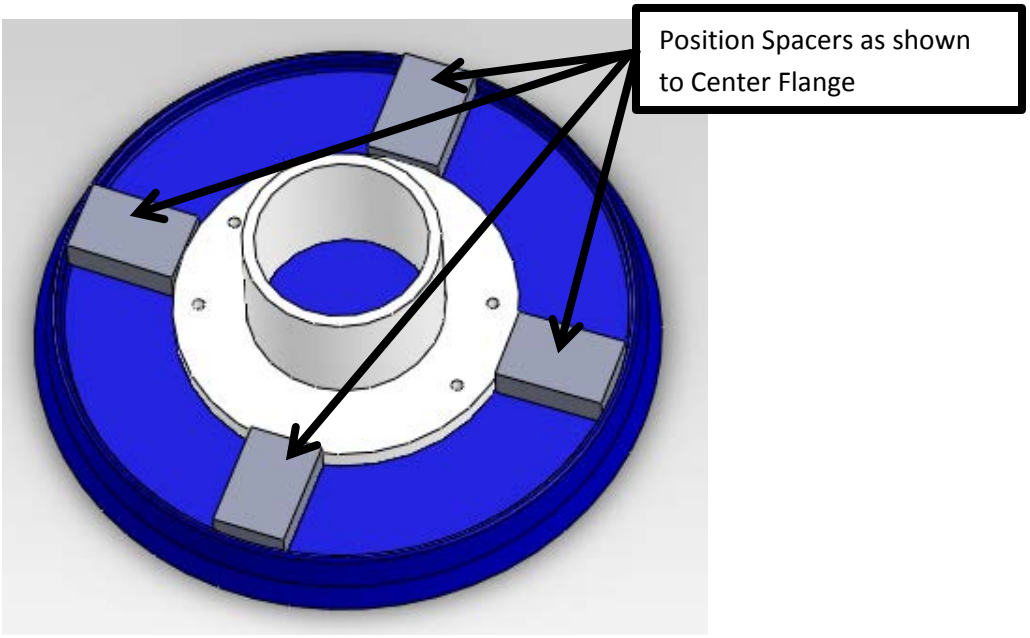

Figure 1

  - Drill Both lids with this method
- To Drill the spacer board *P-1603* center the flange on the board and match drill the holes with 5/16” bit
  - Note the spacer does not have to be perfectly centered it must only fit inside the lid tops when put together
- Assemble the Drive pulley by lining up one flange on bottom of one bucket lid and inserting the four connecting bolts. Then put on the spacer board, the second lid and the second flange and finally the washers and nuts.
  - Before tightening you may want to align the two lids and place a wrap of tape around them to hold them in place while the bolts are tightened down against the spacer board (see fig 2)

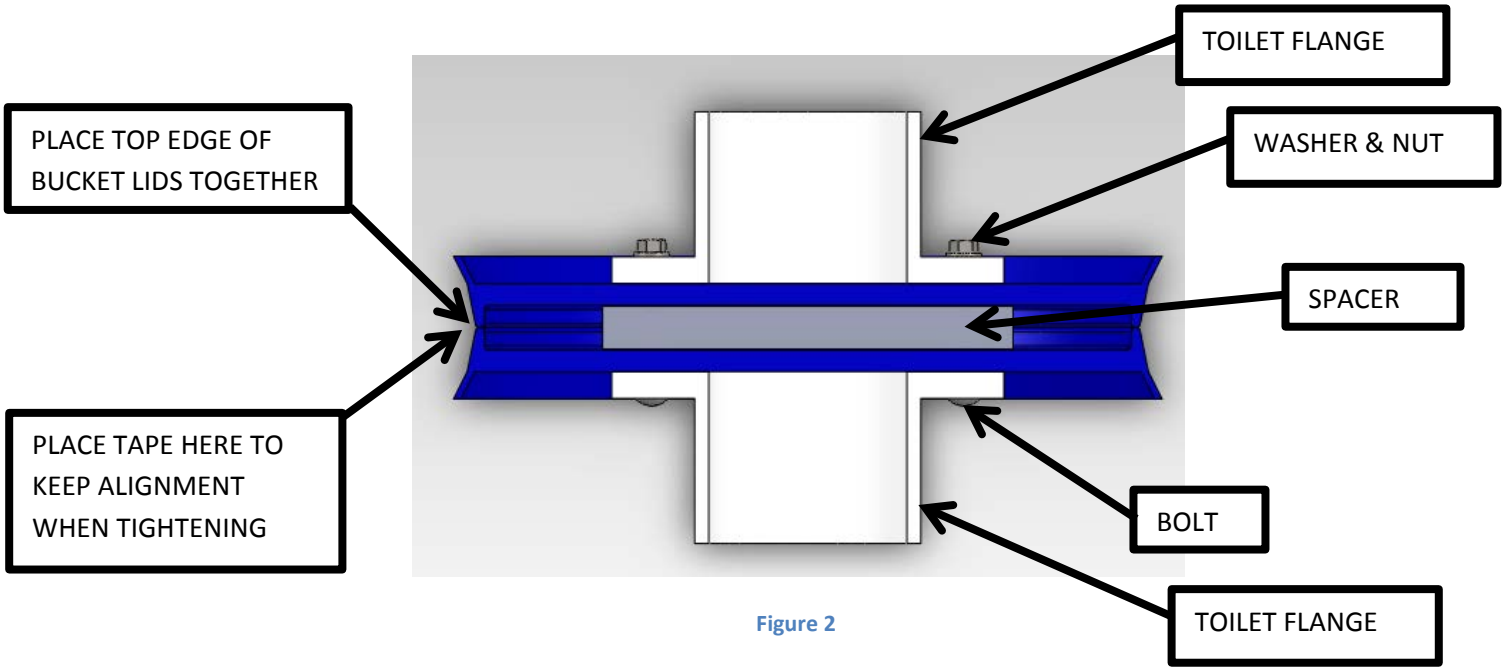

Figure 2

- Assembling the Crank Unit *SA-1500*
  - Start with the two Side Plates *P-1502* and attach to each; the Top Belt Guard Bracket, *P-1510* and the Crank Mounting Block, *P-1508*
  - To one of the Side Plates attach the two U-bolt Belt Guide Mounting Brackets, *P-1506* and the Guide Pulley Mounting Bracket, *P-1505*
    - It is probably easier to install the U-Bolt belt guides before assembling, and if doing so you must pay attention and install both so that the U-Bolt is facing toward the spotter/The Belt side guard
    - The same is true for the Guide Pulley Mounting Bracket to which the Caster can be attached, but then must be installed with the Caster to the bottom and facing the Field
  - Next attach the two Outrigger Braces, *P-1501* to each Side Plate
  - The two side plates can now be connected by attaching the U-Bolt guides and the Guide Pulley Mounting Bracket to the other side, and by attaching the Top Belt guard *P-1503* to their mounting brackets *P-1510*
    - Leave off the Side Belt Guard until the Trolley Unit is complete, Belt is installed and proper tracking has been verified
  - The two Crank Handle Assemblies *SA-1400* can now be prepared for assembly
  - Fasten the modified Flange *P-1509* to each Handle Assembly
    - To cut the flange we found a Jig similar to that shown in Fig 3, Fig 4, and Fig 5, worked well with a Cut-off saw or Miter Saw

Figure 3

Figure 4

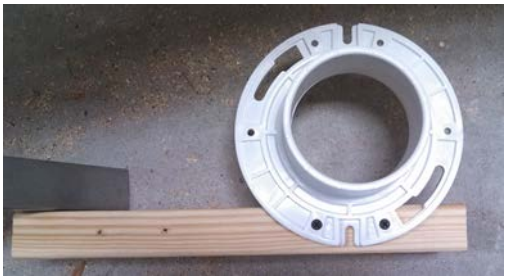

Figure 5

- The Drive Pulley Axle, *P-1504* can now be installed by using a mallet to hammer one axle into each flange so that the Axle goes all the way in and touches the wood handle *P-1402*
    - Note the Flanges are tapered so when cut off the fit will be tight and will require a fair amount of force, therefore the mallet, to assemble. The next step to secure with a screw may not be required but better safe than sorry
    - A 1/8" Pilot hole can now be drilled through each Flange and Axle assembly and the 1-1/8" dry wall screw inserted to secure in place
- To complete the Crank Assembly the Drive pulley must be centered and attached to the Axles
    - To do this set the Pulley Assembly *P-1600* between the Side Plates and push a Crank Handle Unit through each Side Plate and into the Pulley Assembly
    - Bump the handle assemblies into the Drive Pulley until the Pulley is centered and the Flanges on the Handle sides have an even gap between 1/8" and ¼", this is important so that the assembly does not have too much play side to side that would allow the pulley to get out of align and run the belt off track.
    - Adjust the handles so that they are 180 degrees out from one another and drill two 1/8" Pilot holes, one from each side, thru the pulley flange and into the axle and secure with 1-1/8" screws

I hope you find these notes helpful in constructing the field, and please let me know if you have additional questions and we will try to clarify.