



WISDOM INDUSTRIES, Ltd.

BULLETIN

DATE: April 12, 2004

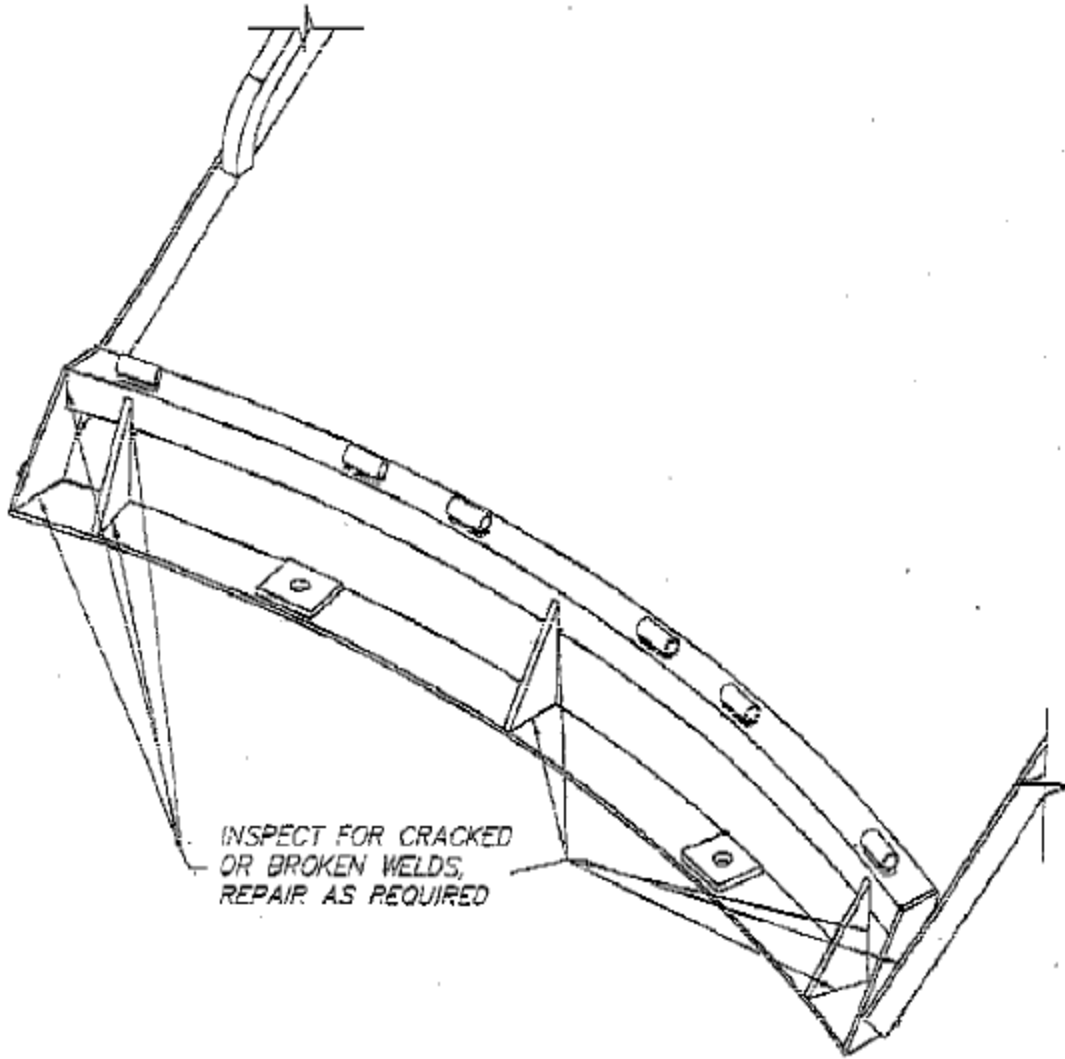
RIDE: GRAVITRON

SUBJECT: INSPECTION PROCEDURE

COMPLIANCE: IMMEDIATE

- 1) Inspect the welds and steel components of the internal frame of each panel for cracked or broken components.
 - ✓ If broken components or numerous repairs have been required contact Wisdom Industries, for information on proper repair procedure. Weld cracked or broken components with 7018 rod using good welding procedure.
 - 2) Check platform hinges for wear.
 - ✓ The best time to check the hinge for wear is when the wing is folded. Hinge bolts can be removed one at a time and the hinge checked for cracks or wear in the hinge. *NOTE: If the hinge bolt can be easily turned with the wing down check that hinge for wear.
 - 3) Check platform hinge bolts for wear.
 - ✓ Check that the 4 outer main hinge bolts are in good condition. The hinge bolts must be grade 8. After the ride is set up if any of the hinge bolts can be turned that hinge and bolt must be checked for wear.
 - 4) Check that the platform hinge bolts are grade 8.
 - 5) Check tire air pressure for 35 psi.
 - ✓ Air pressure must be within 5 psi on all 4 tires.
- *Continued on next page

- 6) Check wing level within $\frac{3}{4}$ inch of main table.
✓ **Review procedure for checking wing level and shim wing if required.**
- 7) Check bottom strap to seat angle gussets for missing or broken gussets.
✓ **If bottom strap to seat angle gussets are broken or have been welded several times, replace gussets.**
- 8) Check condition of the underwing alignment bolts. These bolts must be $\frac{7}{8}$ diameter.
- 9) Check condition of the fiberglass at the lower end of the panel. If a large amount of fiberglass is missing under the floor strap or on the vertical section just up from the floor strap this must be replaced.



INSPECT FOR CRACKED
OR BROKEN WELDS,
REPAIR AS REQUIRED



WISDOM INDUSTRIES Merino, CO 80741

APPROVED BY:

DESCRIPTION
BOTTOM OF PANEL - WELD INSPECTION

SCALE: **QUARTER**

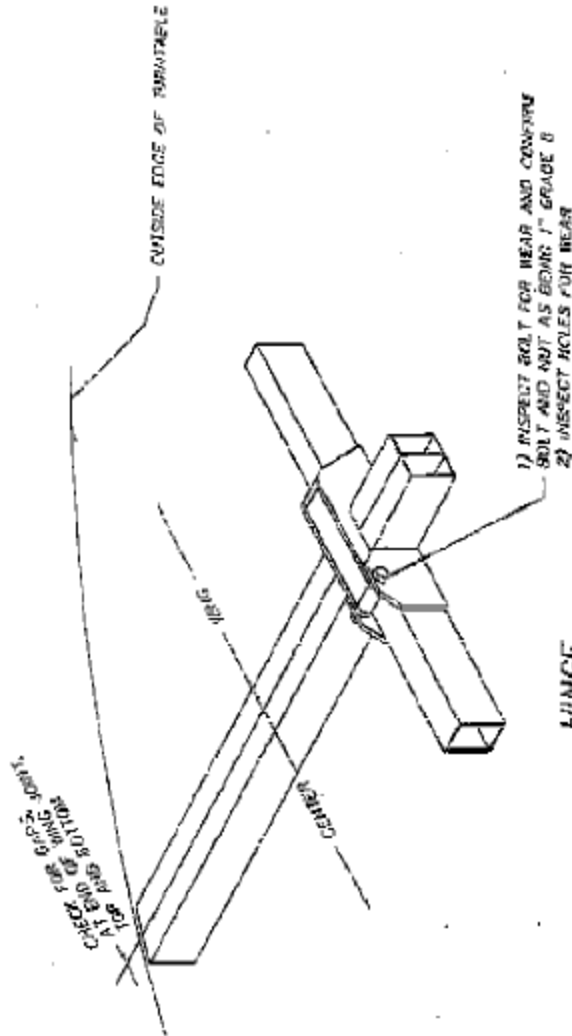
DATE: **04/08/04**

EQUIPMENT:
GRAVITRON/STARSHIP

DRAWN BY:
JJR

DRAWING NUMBER:
7W 039

APR 08 2004 14:08:08 < L:\GRAV-DWG\7W039.DWG >



HINGE

(8 PER SIDE, 4 PER SIDE)
 OUTSIDE HINGE SHOWS THE
 INSIDE HINGES ARE SQUARE

- NOTE:
1. HINGE JOINTING HINGE DESCRIBE THE HINGES FOR MOVEMENT OR SLACK.
 2. WHEN THE HINGES ARE DOWN CHECK TUBING BETWEEN THE HINGES AND DESCRIBE SECTIONS TO SEE IF THERE ARE ANY CRACKS ON THE TOP AND BOTTOM CAUSED BY BORN HINGES.
 3. HINGE BOLTS WILL BE 1" GRADE 8. THE OUTSIDE HINGES REQUIRE A LENGTH OF 8" AND THE INSIDE HINGES WILL REQUIRE A LENGTH OF 7". CUT EACH BOLT OFF 1/4" FROM THE END OF THE NUT. USE A GRADE 8 LOCKWASH.
 4. BOLTS ON THE HYDRAULIC LIFT ARE 1" GRADE 8 X 8 1/2".

NOTE: BEFORE REMOVING ANY BOLTS, INSURE THE TURNABLE IS SET UP. ALL SUPPORTS AND STABILIZER BOLTS ARE IN PLACE AND SET UP. A SOLID SUPPORT UNDER THAT SECTION THE BOLT IS TO BE REMOVED.

WISDOM INDUSTRIES Marino, CO 80741	
SCALE: 1" = 1'-0"	APPROVED BY:
DATE: 04/08/04	DRAWN BY:
DESCRIPTION: HINGE INSPECTION	
EXAMINEE:	DRAWN BY:
GRAVITRON/STARSHIP	TWP 0-1



8-12-93

RE: LEVELING PROCEDURE FOR THE GRAVITRON TURNTABLE

The platform level should be checked annually.

Procedure:

1. Set up ride and run two or three times.
2. Lower the two outriggers or remove the idler tires.
3. Measure up from one point on the ground near the end of the outrigger.
4. Measure to the middle of the wing about where the turnbuckles attach for transporting the ride.
5. Turn the ride on quarter turn and measure the center of the main part of the turntable.
6. Turn the ride another quarter turn and measure the center of the other wing.
7. Turn the ride another quarter turn and measure the other end of the turntable.
8. The measurements should be plus or minus $\frac{1}{8}$ " of the main turntable.
9. If the difference is greater than $\frac{1}{4}$ " you should shim the wing up that is low

SHIMMING PROCEDURE:

1. Loosen all the wedges on the panels.
2. Release the pressure on the hydraulics by moving the control handle with the pump turned off.
3. Jack up on the end of the wing.
4. Slide in a 16 gauge by 2" wide by 20 foot long piece of steel between the wing and main part of the turntable.
5. Let off of the hydraulic jack and remeasure.
6. After you have determined the proper thickness of shim tack it to the main part of the turntable so that it will not fall out when the ride is running.

✓ **WARNING! BE SURE TO TIGHTEN THE PINS AND WEDGES BEFORE OPERATING THE RIDE.**

GRAVITRON CHECK LIST
AFTER SET UP

OUTSIDE RIDE CHECKLIST

1. Check that trailer stands are tight.
2. Check that 4 wing safety bolts are installed, tight, and safety keyed under the main turn table at the joint.
3. Check that the outrigger braces, with the turnbuckle are pinned on the side with the low car.
4. Check that the outrigger turnbuckles are snug. Do not over tighten.
5. Check that the outrigger brace pins are all installed and have safety keys.
6. Check that skirting panels do not rub on idler tires and are not under the edge of the turntable.
7. Check that inside curved fence is safety keyed under the floor.
8. Check steps are level, stable, and no more than 8 inches to each step.
9. Check that the fence is more than three feet from the largest diameter of the turning portion of the ride.
10. Check that the cable in the canvas top is in the groove around the top of the ride panels and tight.
11. Check that work platform is folded back.
12. Check grid sign hinges and pins.
13. Check grid sign braces for safety keys.
14. Check that top sign brackets are pinned and safety keyed.
15. Check that top sign hooks are pulled down and fully engaged.
16. Check that top sign is plugged in.
17. Check that there is nothing on top of ride that can be thrown off while the ride is running.
18. Check that there is nothing that can fall onto the ride while the ride is spinning.

DRIVE SYSTEM

19. Check that drive belts are hooked up and adjusted.
20. Check that lock nut on drive belt adjusting turnbuckle is tight.
21. Check that drive wheel adjusting locknuts are tight.

- 22. Check that all wheel lug nuts are tight.
- 23. Check that all three wheel brakes work.
- 24. Check that idler tires have full tread contact.
- 25. Check air pressure in all drive and idler tires, they should be about 35 PSI.
- 26. Check that battery is filled with water and battery charger works.

INSIDE RIDE CHECKLIST

- 27. Check that 30 special top wedges are the only wedges used to pin the top of the panels to the sweeps.
- 28. Check that 16 corner pins and wedges are installed between panels behind couches. (See drawing showing pin installation).
- 29. Check that 25 wedges are installed in the floor pins and are snug.
- 30. Check that safety keys are in all wedges.
- 31. Check that couch support trusses are hooked on locks.
- 32. Check all panel frames for cracks in steel structure at corners and at main frame welds.
- 33. Check that all couches are evenly spaced and that the mounting bolts are tight. (If any are found loose use locktight but do not over tighten.)
- 34. Check that seats move up and down smoothly without catching.
- 35. Check that couplers between inside curved fence sections are all installed and pinned.
- 36. Check that door cables are in good condition and adjusted with equal tension.

DOOR CHECK LIST

- 37. Check that the door cable clamps are tight.
- 38. Check that door micro-switches are adjusted properly so that door opener stops at the right place.
- 39. Check that the door does not slip down when the door is open.
- 40. Check that trap door is unlocked.
- 41. Check that there is nothing on the floor or console that is loose or can fly out while the ride is running.

DAILY INSPECTION CHECK LISTDAY OUTSIDE RIDE

1 2 3 4 5 6 7

CHECK

- () () () () () () () Stairs level and stable.
 () () () () () () () Fence at least 3 feet from barrel outside edge.
 () () () () () () () Work platform folded back.
 () () () () () () () Top cable in groove and tight.
 () () () () () () () Top is clear of any objects or tools.
 () () () () () () () Trailer stands tight.
 () () () () () () () 4 Turntable safety bolts tight and safety keyed.

DRIVE

CHECK

- () () () () () () () Drive and idler tires adjusted to touch rim.
 () () () () () () () Drive tire adjusting lock nuts tight.
 () () () () () () () Drive belt tight.
 () () () () () () () Drive belt turnbuckle lock nut tight.
 () () () () () () () Tire lug nuts are tight.
 () () () () () () () Tire pressure 35 PSI
 () () () () () () () Skirting panels do not touch idler tires.
 () () () () () () () Skirting is outside the edge of the turntable.
 () () () () () () () Brakes are positive.
 () () () () () () () Ride clear under the turntable.
 () () () () () () () Battery terminals tight.
 () () () () () () () Battery filled with water.
 () () () () () () () Charger turned on and operating.

INSIDE RIDE

CHECK

- () () () () () () () 16 wedges and pins in corners of panels behind couches
 () () () () () () () 30 top pins and hooked wedges installed in tops of panels.
 () () () () () () () 28 Floor wedges installed on bottom of panels.
 () () () () () () () All wedges and pins tight and safety keyed.
 () () () () () () () All seat support trusses hooked.
 () () () () () () () All couch mounting bolts tight.
 () () () () () () () All cam followers turn easily and nuts tight.
 () () () () () () () All couches move up and down easy.
 () () () () () () () Trap door is unlocked.
 () () () () () () () All panel lights plugged in.
 () () () () () () () Top of light controllers and amplifier clear.
 () () () () () () () Floor and console clear of loose objects.
 () () () () () () () Carpet clean.
 () () () () () () () Console area neat and trash picked up.
 () () () () () () () Check panel frames for cracks in steel structure.

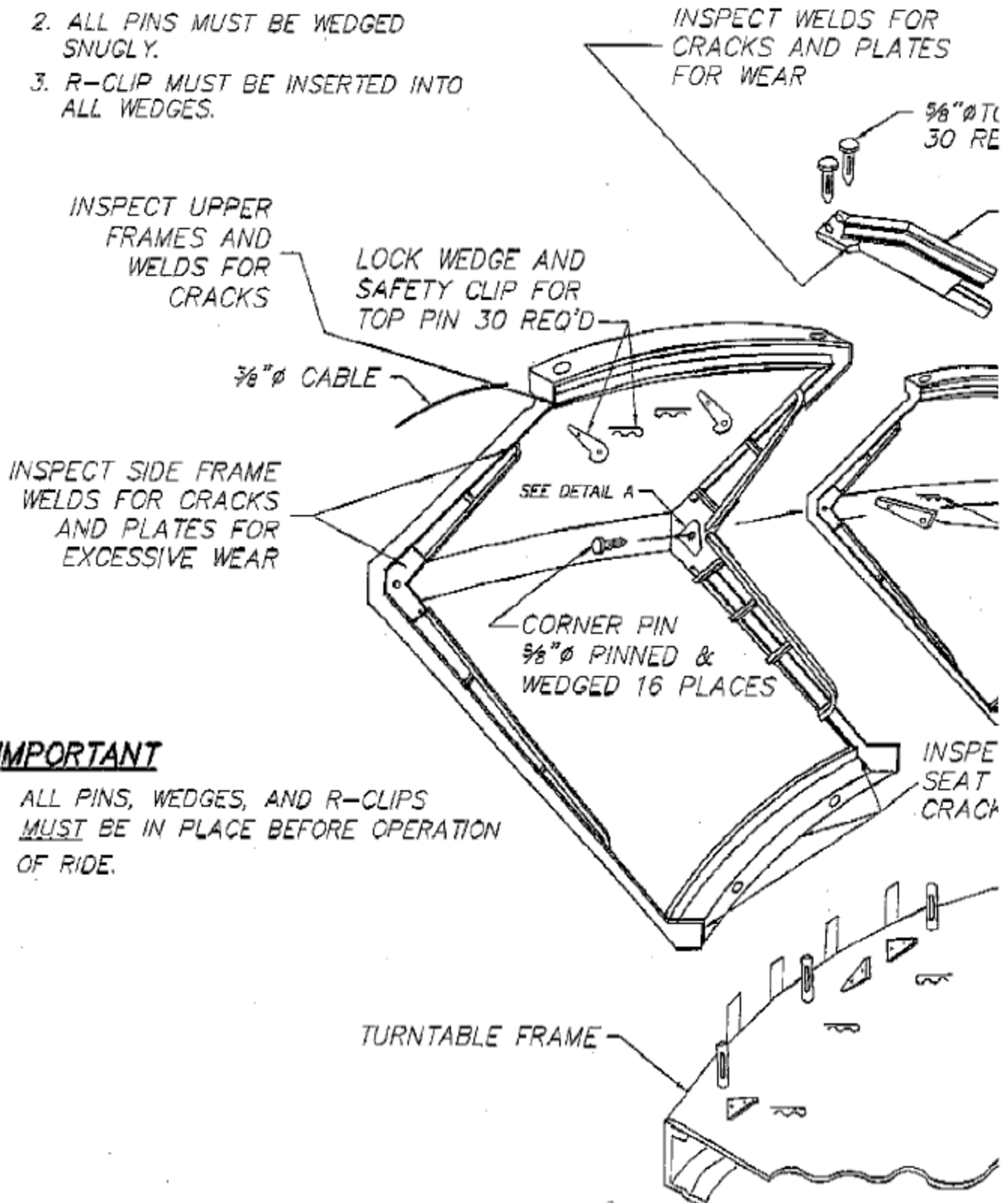
DOOR

CHECK

- () () () () () () () Tightness of door cable clamps.
 () () () () () () () Door cables are in good condition.
 () () () () () () () Open and close stops are adjusted.
 () () () () () () () Opener clutch and brake do not slip.
 () () () () () () () Door side handle installed and tightened.

NOTES:

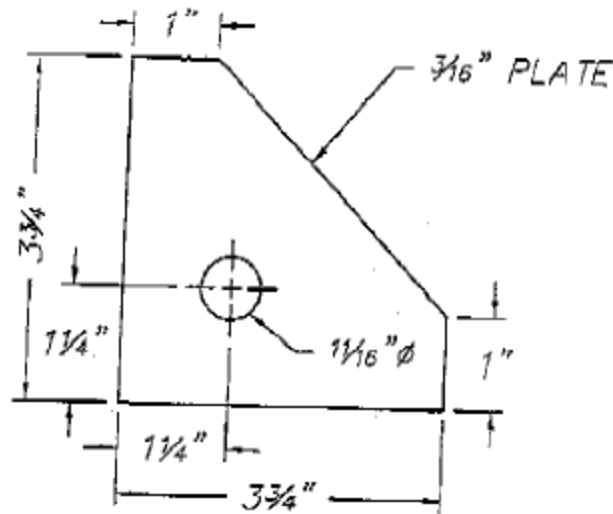
1. CORNER PIN GOES THRU BOTH PANEL SIDE FRAMES.
2. ALL PINS MUST BE WEDGED SNUGLY.
3. R-CLIP MUST BE INSERTED INTO ALL WEDGES.



IMPORTANT

ALL PINS, WEDGES, AND R-CLIPS MUST BE IN PLACE BEFORE OPERATION OF RIDE.

PIN
)
OP SWEEP



DETAIL A

CORNER PIN REINFORCEMENT
ASTM A514 T-1 STEEL PLATE

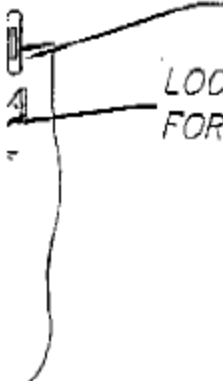
LOCK WEDGE &
SAFETY CLIP FOR
PANEL CORNER
16 REQ'D



STRAPS, SIDE FRAME,
ANGLES WELDS FOR
AND WEAR

BOTTOM PIN 3/4" ϕ SCREWED
INTO TURNTABLE, 28 REQ'D

LOCK WEDGE & SAFETY CLIP
FOR BOTTOM PINS, 28 REQ'D



1 04/05/04 ADDED WELDING AND WEAR INSPECTION JR



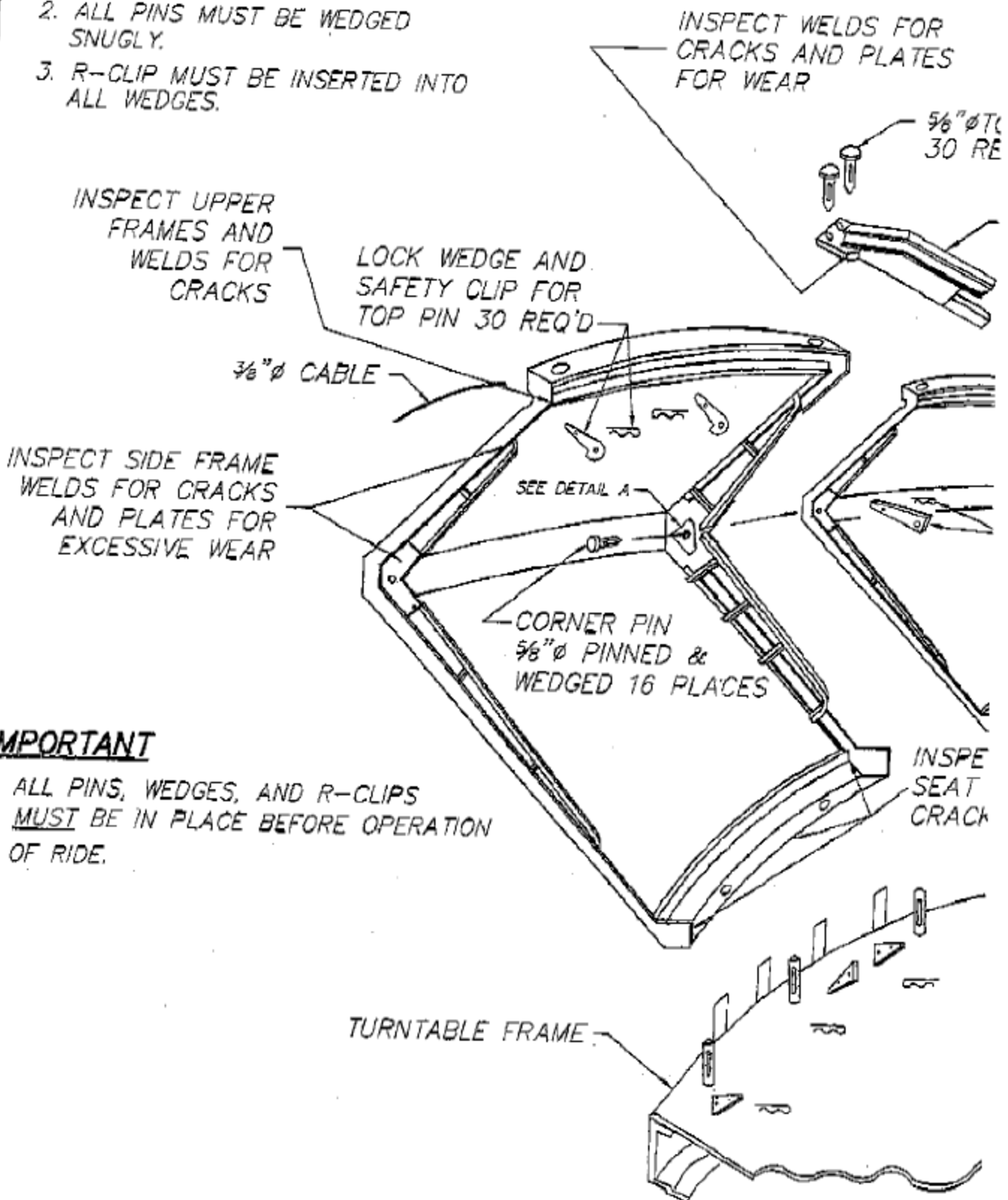
**WISDOM
INDUSTRIES**

Merino, CO 80741

SCALE: N.T.S.	APPROVED BY:	DRAWN BY: MFK
DATE: 08-25-95		REVISED
DESCRIPTION PANEL INSPECTION		
EQUIPMENT: GRAVITRON/STARSHIP 2000	DRAWING NUMBER 3W -03	

NOTES:

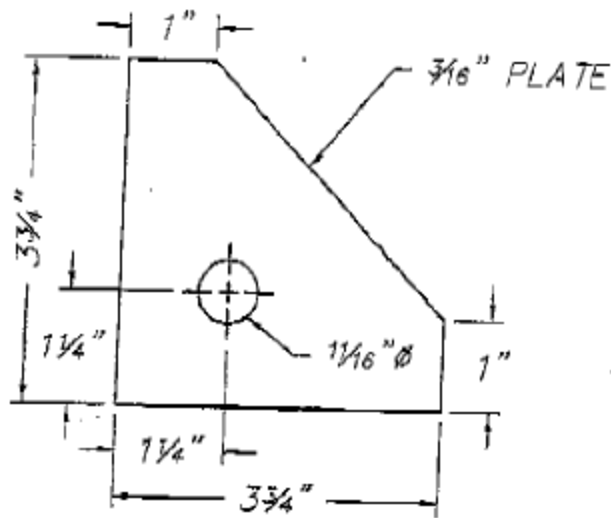
1. CORNER PIN GOES THRU BOTH PANEL SIDE FRAMES.
2. ALL PINS MUST BE WEDGED SNUGLY.
3. R-CLIP MUST BE INSERTED INTO ALL WEDGES.



IMPORTANT

ALL PINS, WEDGES, AND R-CLIPS MUST BE IN PLACE BEFORE OPERATION OF RIDE.

PIN
OP SWEEP



DETAIL A

CORNER PIN REINFORCEMENT
ASTM A514 T-1 STEEL PLATE

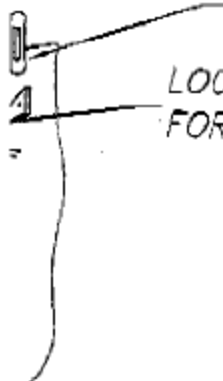
LOCK WEDGE &
SAFETY CLIP FOR
PANEL CORNER
16 REQ'D



STRAPS, SIDE FRAME,
GLES WELDS FOR
AND WEAR

BOTTOM PIN 3/4" Ø SCREWED
INTO TURNTABLE, 28 REQ'D

LOCK WEDGE & SAFETY CLIP
FOR BOTTOM PINS, 28 REQ'D



04/05/04 ADDED WELDING AND WEAR INSPECTION JJR



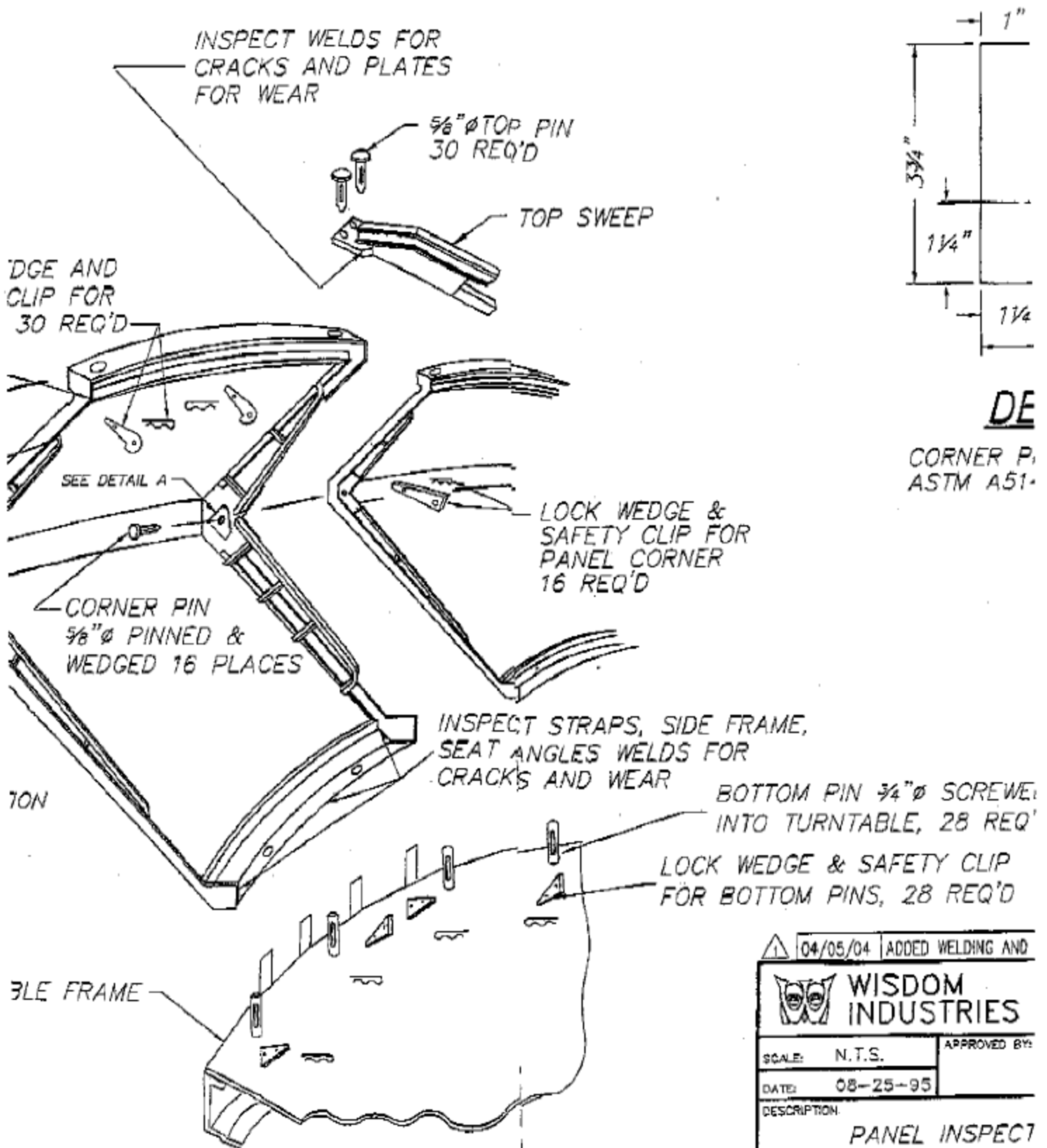
WISDOM INDUSTRIES Merino, CO 80741

SCALE: N.T.S. APPROVED BY: DRAWN BY: MFK

DATE: 08-25-95 REVISED

DESCRIPTION
PANEL INSPECTION

EQUIPMENT: **GRAVITRON/STARSHIP 2000** DRAWING NUMBER: **3W-03**



DE

CORNER P,
ASTM A51-

04/05/04 ADDED WELDING AND	
WISDOM INDUSTRIES	
SCALE: N.T.S.	APPROVED BY:
DATE: 08-25-95	
DESCRIPTION: PANEL INSPECT	
EQUIPMENT: GRAVITRON/STA	

NOTES:

- 1. CORNER PIN GOES THRU BOTH PANEL SIDE FRAMES.
- 2. ALL PINS MUST BE WEDGED SINGLY.
- 3. R-CLIP MUST BE INSERTED INTO ALL WEDGES.

INSPECT UPPER FRAMES AND WELDS FOR CRACKS

LOCK WEDGE AND SAFETY CLIP FOR TOP PIN 30 REOD

3/8" CABLE

INSPECT SIDE FRAME WELDS FOR CRACKS AND PLATES FOR EXCESSIVE WEAR

IMPORTANT

ALL PINS, WEDGES, AND R-CLIPS MUST BE IN PLACE BEFORE OPERATION OF ROOL.

INSPECT WELDS FOR CRACKS AND PLATES FOR WEAR

3/8" TOP PIN 30 REOD

TOP SIREEP

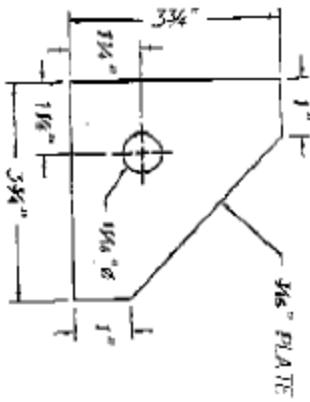
LOCK WEDGE & SAFETY CLIP FOR PANEL CORNER 16 REOD

CORNER PIN 3/8" PINNED & WEDGED 16 PLACES

INSPECT STRAPS, SIDE FRAME, SEAT ANGLES WELDS FOR CRACKS AND WEAR

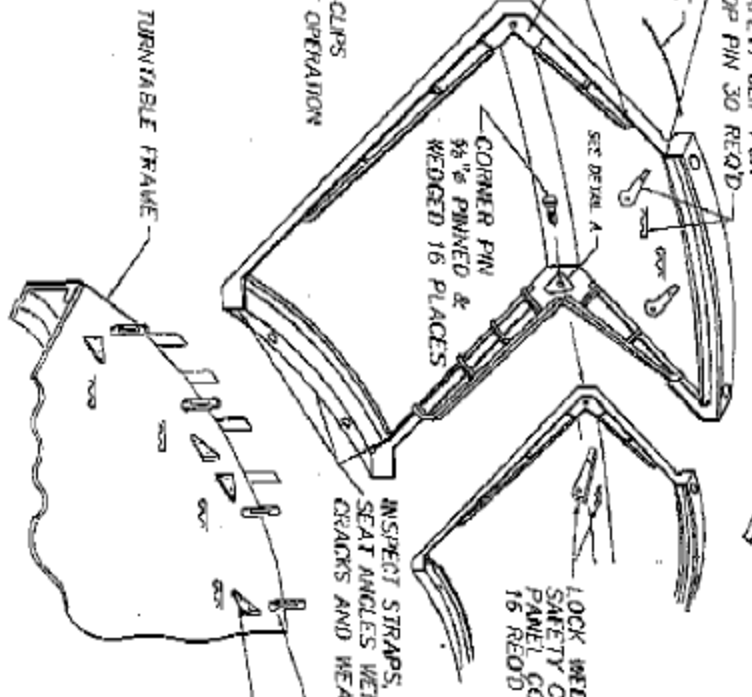
BOTTOM PIN 3/8" SCREWED INTO TURNABLE, 28 REOD
LOCK WEDGE & SAFETY CLIP FOR BOTTOM PINS, 28 REOD

TURNABLE FRAME



DETAIL A

CORNER PIN REINFORCEMENT ASIN A514 T-1 STEEL PLATE



WISDOM INDUSTRIES		Merino, CO 80741	
SCALE: N.T.S.	APPROVED BY:	DATE: 08-25-05	DRAWN BY: LDK
DESCRIPTION: PANEL INSPECTION		REVISION:	
CORRECTION: CRAWIRON/STARSHIP 2000		DRAWN/TITLE: 3W-03	

04/13/2004 14:43 9705222902