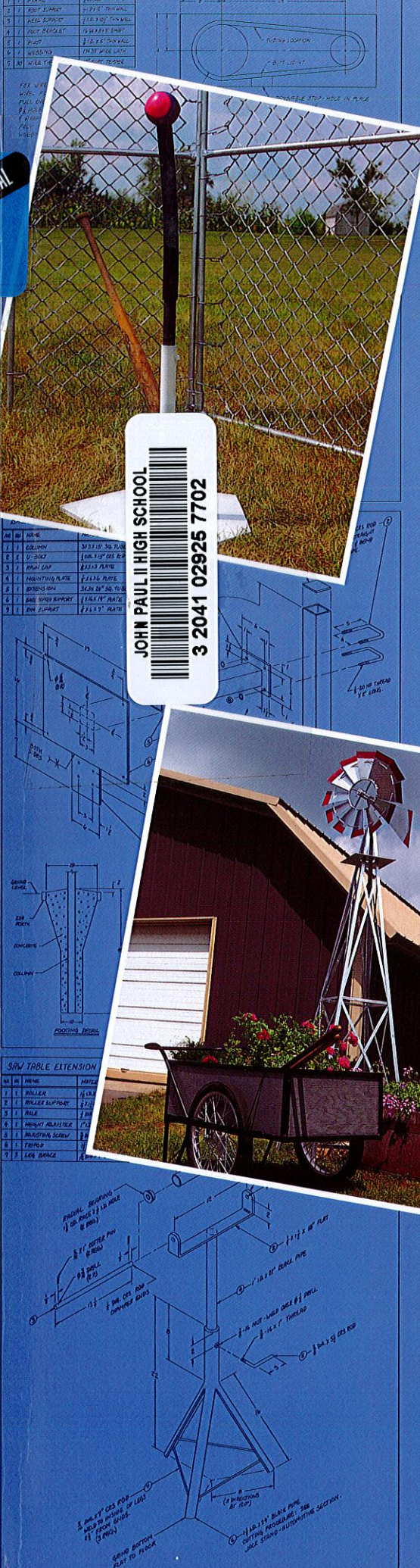


Welding Projects

Sports Equipment • Gym Equipment
Shop Equipment • Auto Equipment
Home Equipment • Yard Equipment

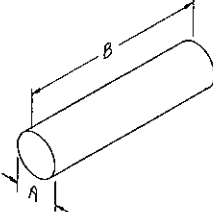
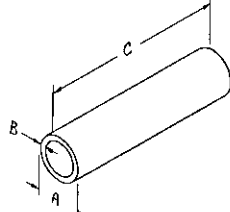
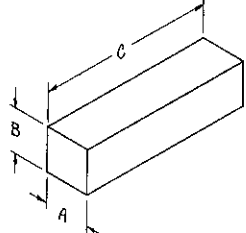
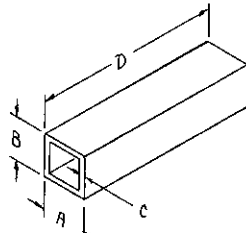
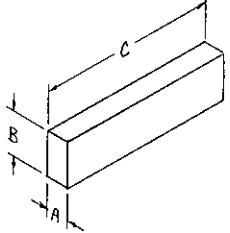
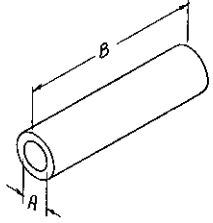
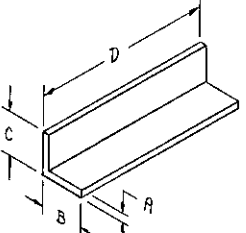
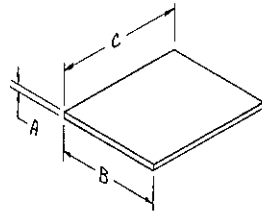
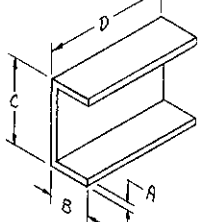
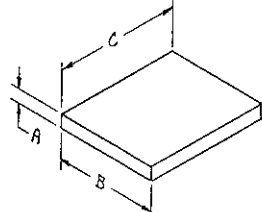
JOHN PAUL II HIGH SCHOOL
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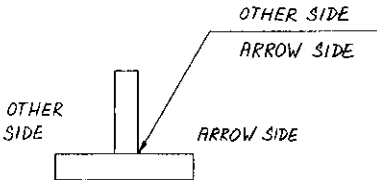
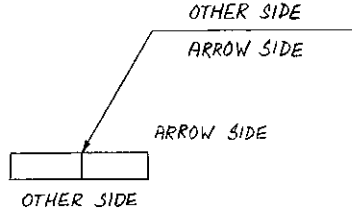
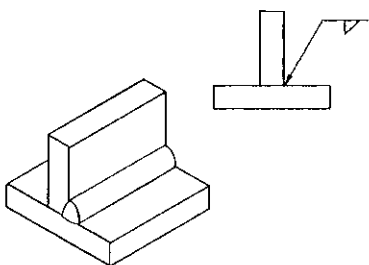
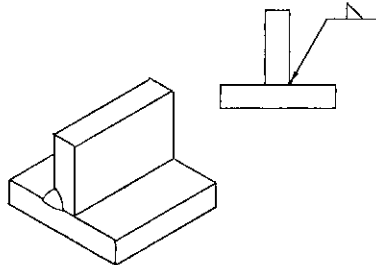
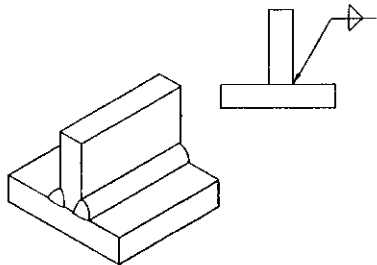
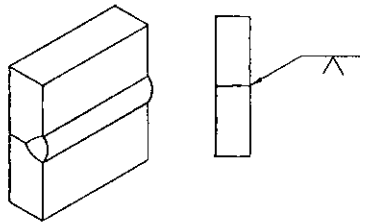
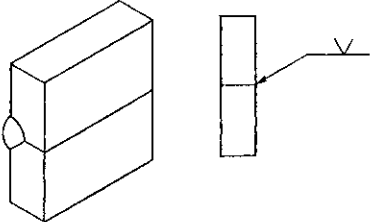
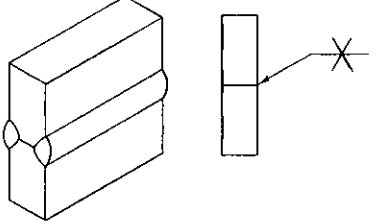
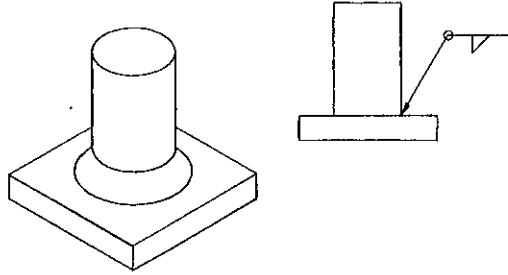
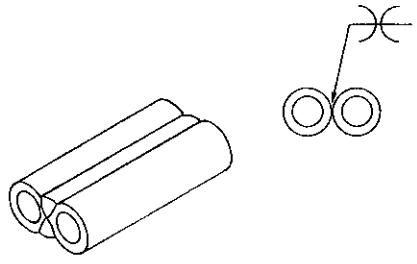
James A. Ruck

IMPORTANT INFORMATION

Material Identification

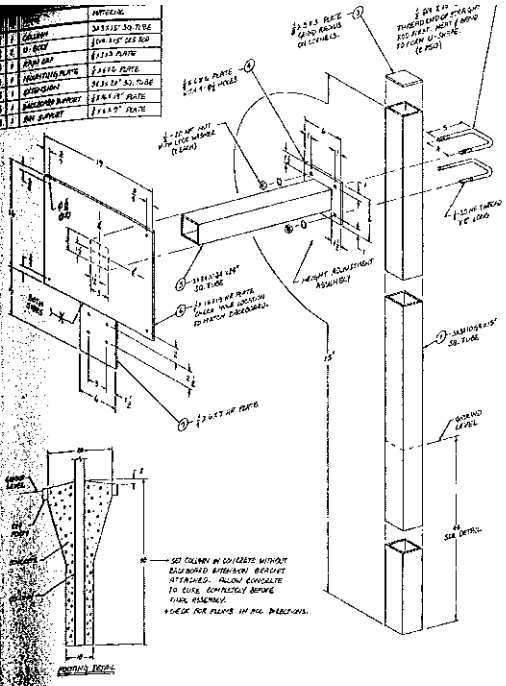
MATERIAL IDENTIFICATION	
<p>ROUNDS ϕ HR - HOT ROLLED & CR - COLD ROLLED</p>  <p>A - OUTSIDE DIAMETER B - LENGTH</p>	<p>ROUND TUBING BY FRACTIONAL O.D. & WALL THICKNESS</p>  <p>A - OUTSIDE DIAMETER B - WALL THICKNESS C - LENGTH</p>
<p>SQUARES \square HR - HOT ROLLED & CR - COLD ROLLED</p>  <p>A - WIDTH B - HEIGHT C - LENGTH</p>	<p>SQUARE TUBING WELDED STEEL & STRUCTURAL STEEL</p>  <p>A - WIDTH B - HEIGHT C - WALL THICKNESS D - LENGTH</p>
<p>FLATS BAR HR - HOT ROLLED & CR - COLD ROLLED</p>  <p>A - THICKNESS B - WIDTH C - LENGTH</p>	<p>STANDARD BLACK PIPE SCHEDULE #40 NOMINAL I.D. SIZES</p>  <p>A - NOMINAL I.D. (COMMON FRACTION) B - LENGTH</p>
<p>ANGLES \angle HR - HOT ROLLED</p>  <p>A - FLANGE THICKNESS B - FLANGE WIDTH C - FLANGE HEIGHT D - LENGTH</p>	<p>SHEETS $\frac{3}{16}$" THICK OR LESS</p>  <p>A - THICKNESS (FRACTION OR GAUGE) B - WIDTH C - LENGTH</p>
<p>CHANNELS C HR - HOT ROLLED</p>  <p>A - FLANGE THICKNESS B - FLANGE WIDTH C - CHANNEL HEIGHT D - LENGTH</p>	<p>PLATE $\#$ MORE THAN $\frac{3}{16}$" THICK</p>  <p>A - THICKNESS (FRACTION OR INCHES) B - WIDTH C - LENGTH</p>

Welding Symbols

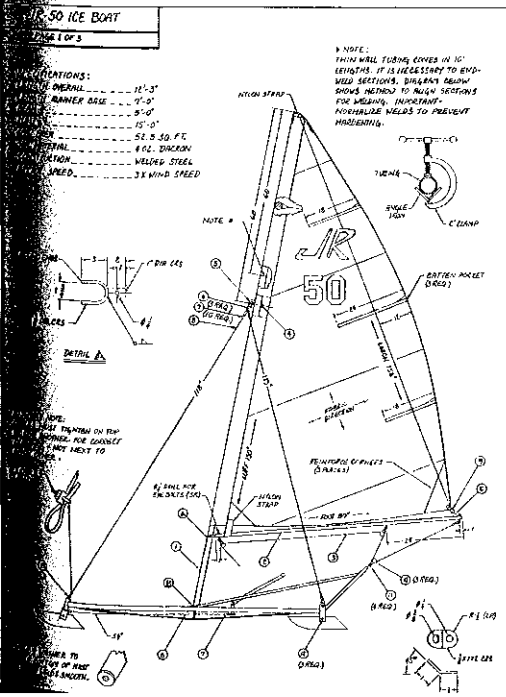
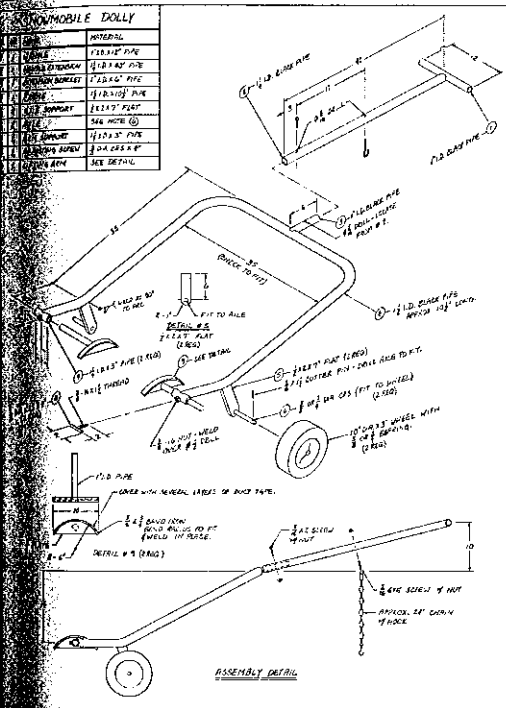
WELDING SYMBOLS USED IN PROJECTS		
<p>ARROW SIDE & OTHER SIDE FILLET WELD</p>  <p>OTHER SIDE</p> <p>OTHER SIDE</p> <p>ARROW SIDE</p> <p>ARROW SIDE</p>		<p>ARROW SIDE & OTHER SIDE GROOVE WELD</p>  <p>OTHER SIDE</p> <p>ARROW SIDE</p> <p>ARROW SIDE</p> <p>OTHER SIDE</p>
<p>ARROW SIDE FILLET WELD</p> 	<p>OTHER SIDE FILLET WELD</p> 	<p>BOTH SIDES FILLET WELD</p> 
<p>ARROW SIDE GROOVE WELD</p> 	<p>OTHER SIDE GROOVE WELD</p> 	<p>BOTH SIDES GROOVE WELD</p> 
<p>WELD-ALL-AROUND SYMBOL</p> 		<p>BOTH SIDES FLARE -V WELD</p> 

Upholstery

UPHOLSTERY	
<p>STEP 1. CUT UPHOLSTERY MATERIAL TO SIZE. LEAVE MATERIAL LARGE ENOUGH TO FOLD OVER FORM PADDING & COVER PLYWOOD BY 2".</p>	
<p>STEP 2. FIRST - PULL MATERIAL TIGHT FROM BOTH SIDES & STAPLE NEAR CENTER. SECOND - PULL MATERIAL TIGHT FROM BOTH ENDS & STAPLE NEAR CENTER. CHECK TOP FOR WRINKLES.</p>	
<p>STEP 3. PULL SIDES TIGHT & STAPLE FULL LENGTH.</p>	
<p>STEP 4. PULL CORNER MATERIAL INTO A PARALLEL FOLD & STAPLE SIDES & ENDS TO CORNERS.</p>	
<p>STEP 5. PULL CORNERS TIGHT & FOLD OVER PLYWOOD. CUT ENDS TO MATCH OVERLAP LENGTH & STAPLE IN PLACE.</p>	



Sports Equipment



Batting "T" 12

Baseball Backstop 13

Basketball Backboard Stand 14

Water Ski/Wakeboard Trick Trainer 15

Quad-Snowmobile Repair Lift 16

Snowmobile Dolly 17

Snowmobile Stand 18

Bear Paw Style Snowshoe 19

Canadian Style Snowshoe 20

JR 50 Ice Boat 21

Deer Hunting Tree Stand 24

BMX Storage Rack 25

Parallel Bars 26

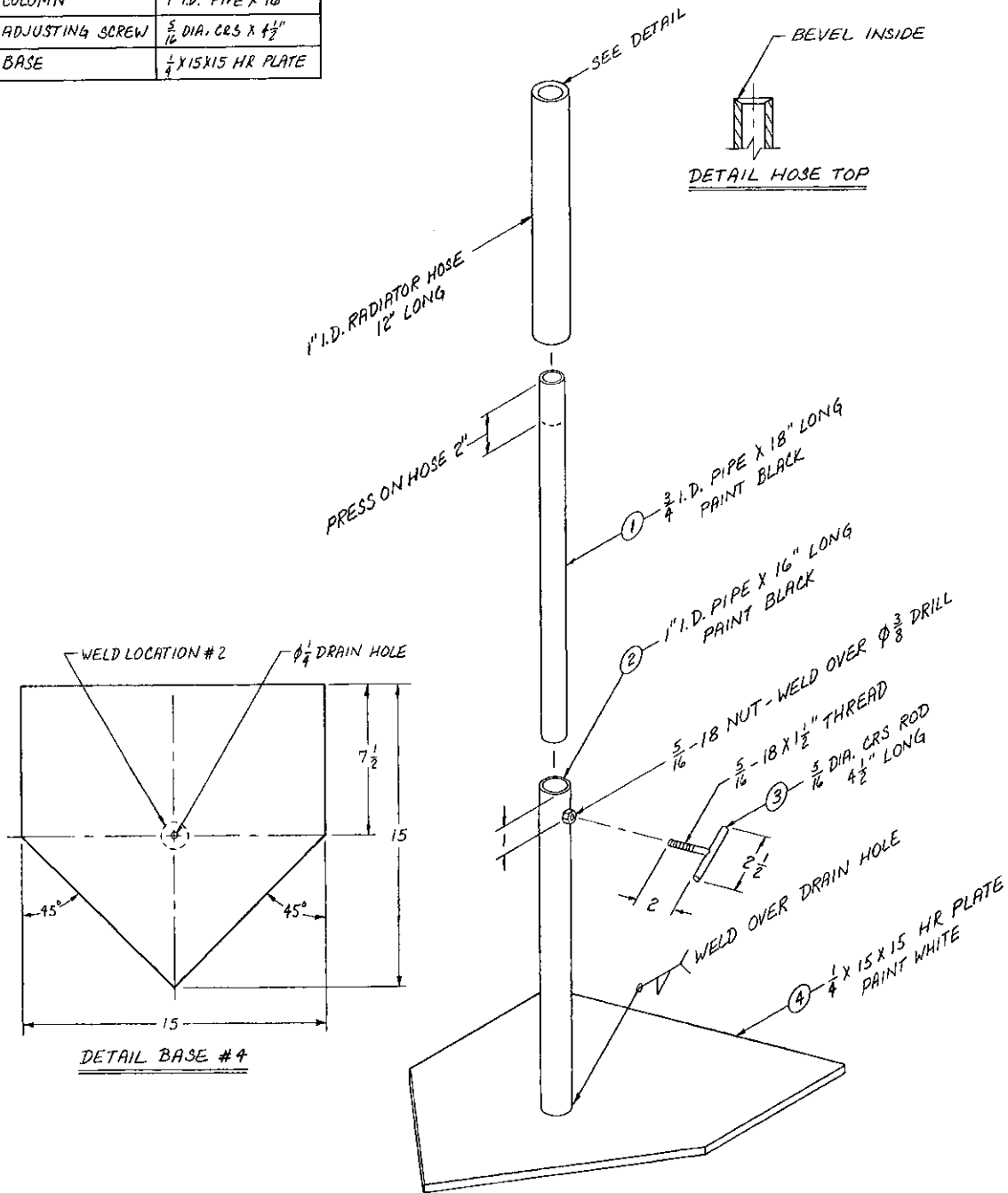
Skateboard Rail Slide 27

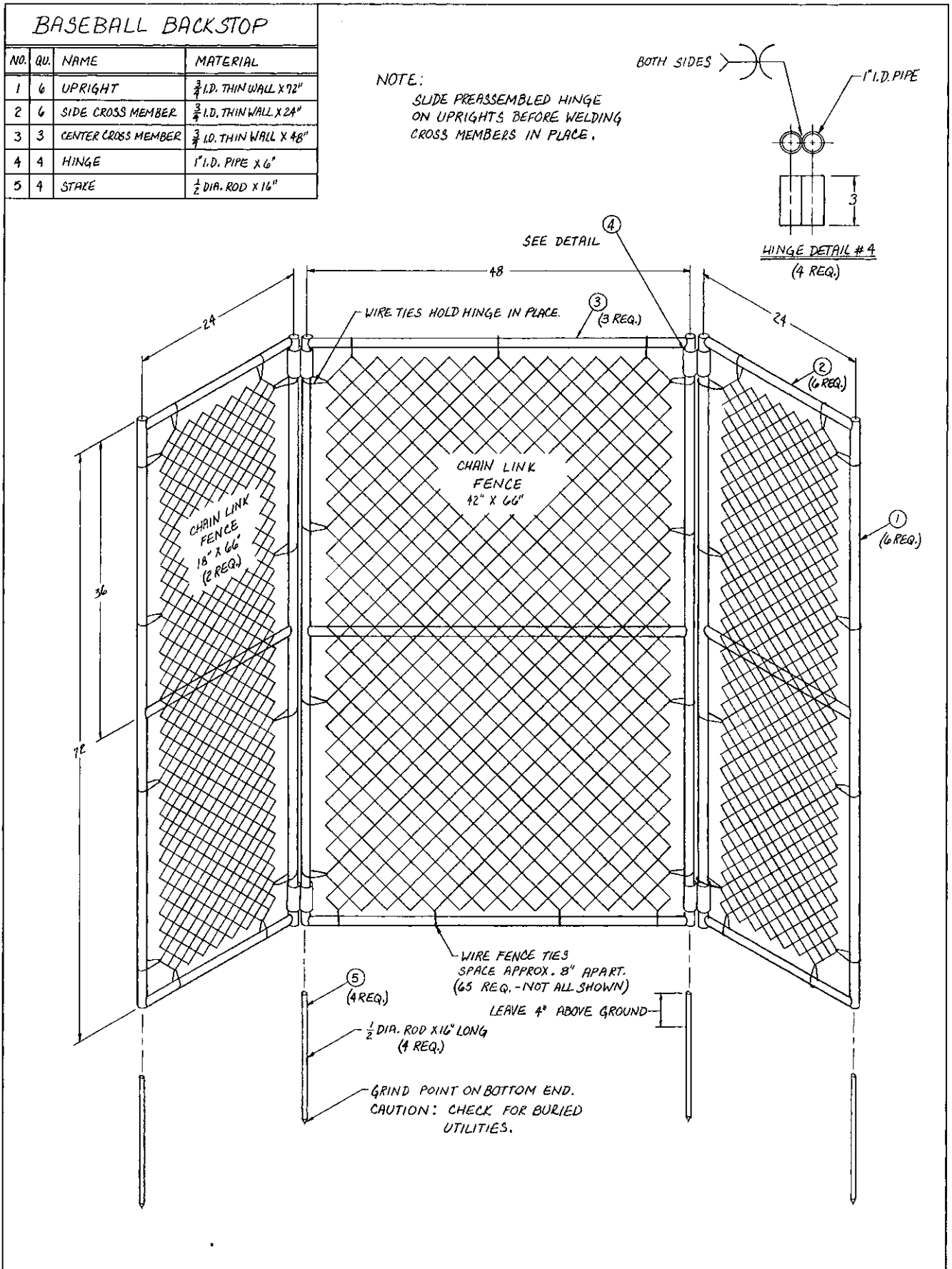
Boat Anchor 28

Soccer Goal 29

BATTING "T"

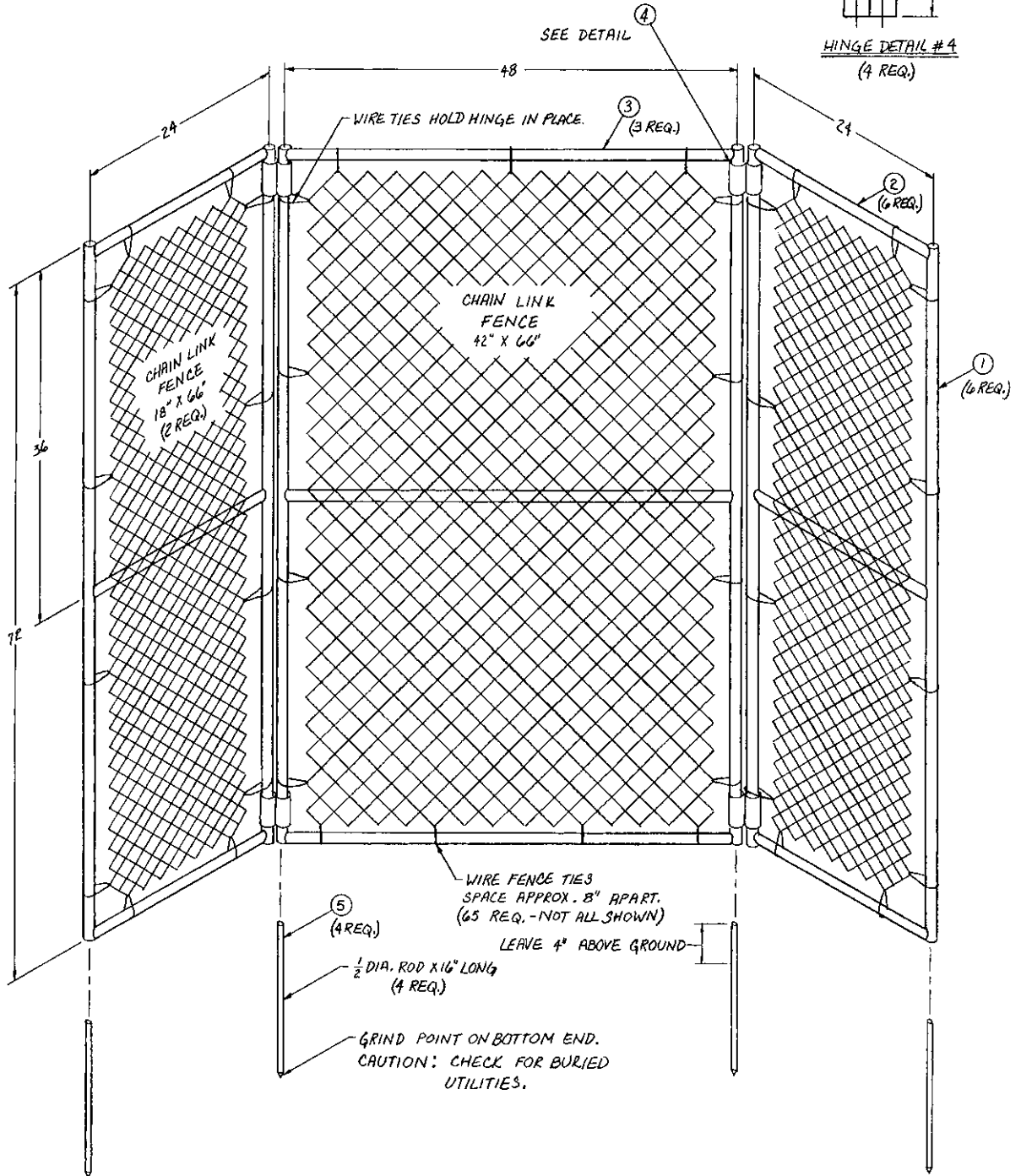
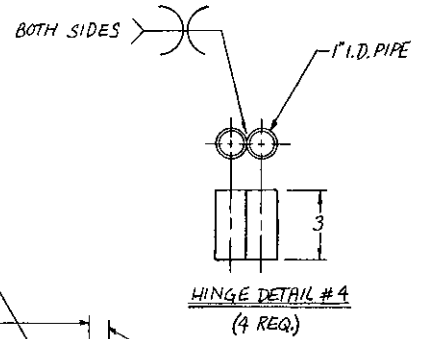
NO.	QU.	NAME	MATERIAL
1	1	HEIGHT ADJUSTER	$\frac{3}{4}$ " I.D. PIPE X 18"
2	1	COLUMN	1" I.D. PIPE X 16"
3	1	ADJUSTING SCREW	$\frac{5}{16}$ " DIA. CRS X $4\frac{1}{2}$ "
4	1	BASE	$\frac{1}{4}$ " X 15 X 15 HR PLATE





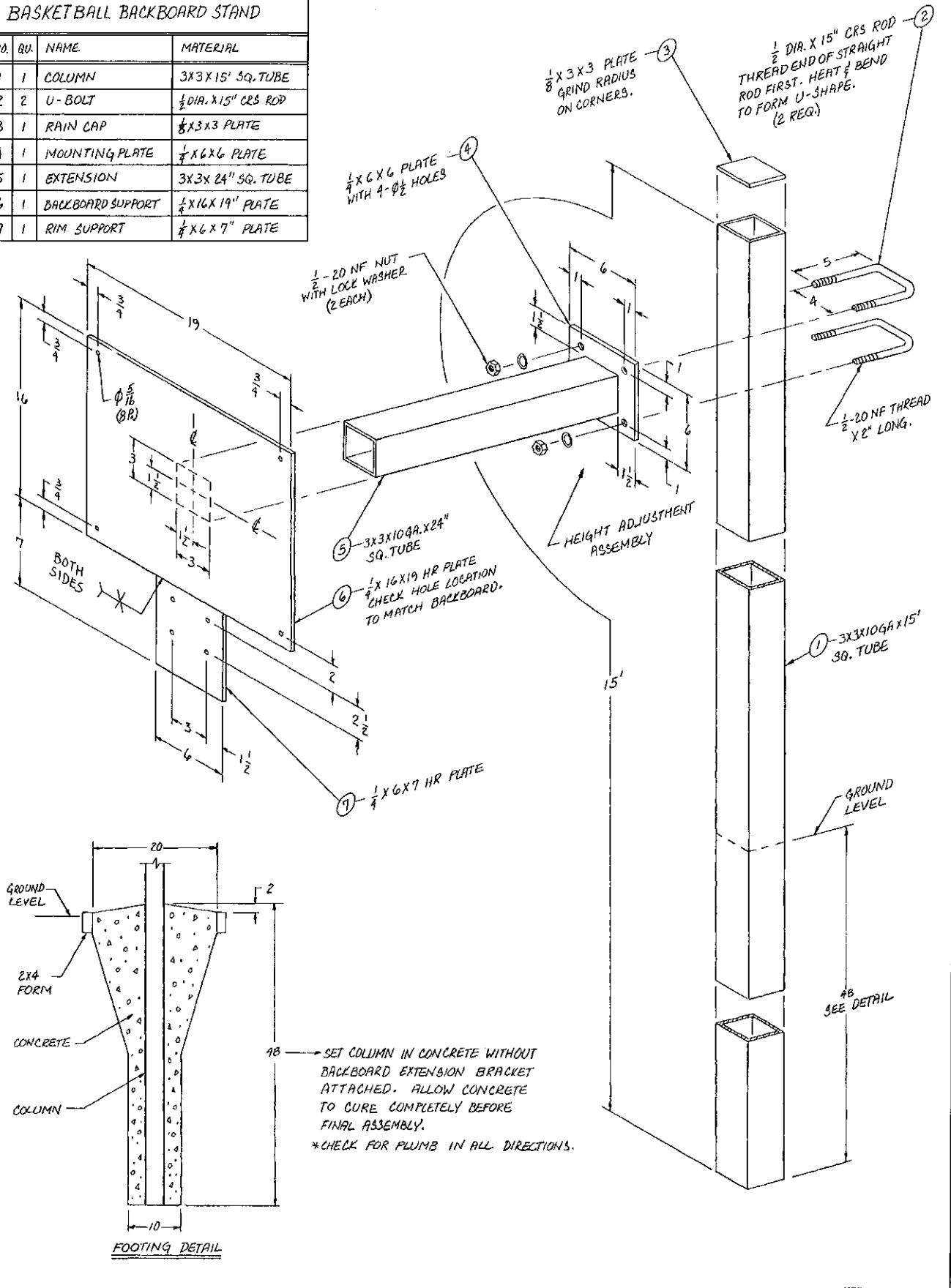
BASEBALL BACKSTOP			
NO.	QU.	NAME	MATERIAL
1	6	UPRIGHT	$\frac{3}{4}$ " I.D. THIN WALL X 72"
2	6	SIDE CROSS MEMBER	$\frac{3}{4}$ " I.D. THIN WALL X 24"
3	3	CENTER CROSS MEMBER	$\frac{3}{4}$ " I.D. THIN WALL X 48"
4	4	HINGE	1" I.D. PIPE X 6"
5	4	STAKE	$\frac{1}{2}$ " DIA. ROD X 16"

NOTE:
 SLIDE PREASSEMBLED HINGE ON UPRIGHTS BEFORE WELDING CROSS MEMBERS IN PLACE.

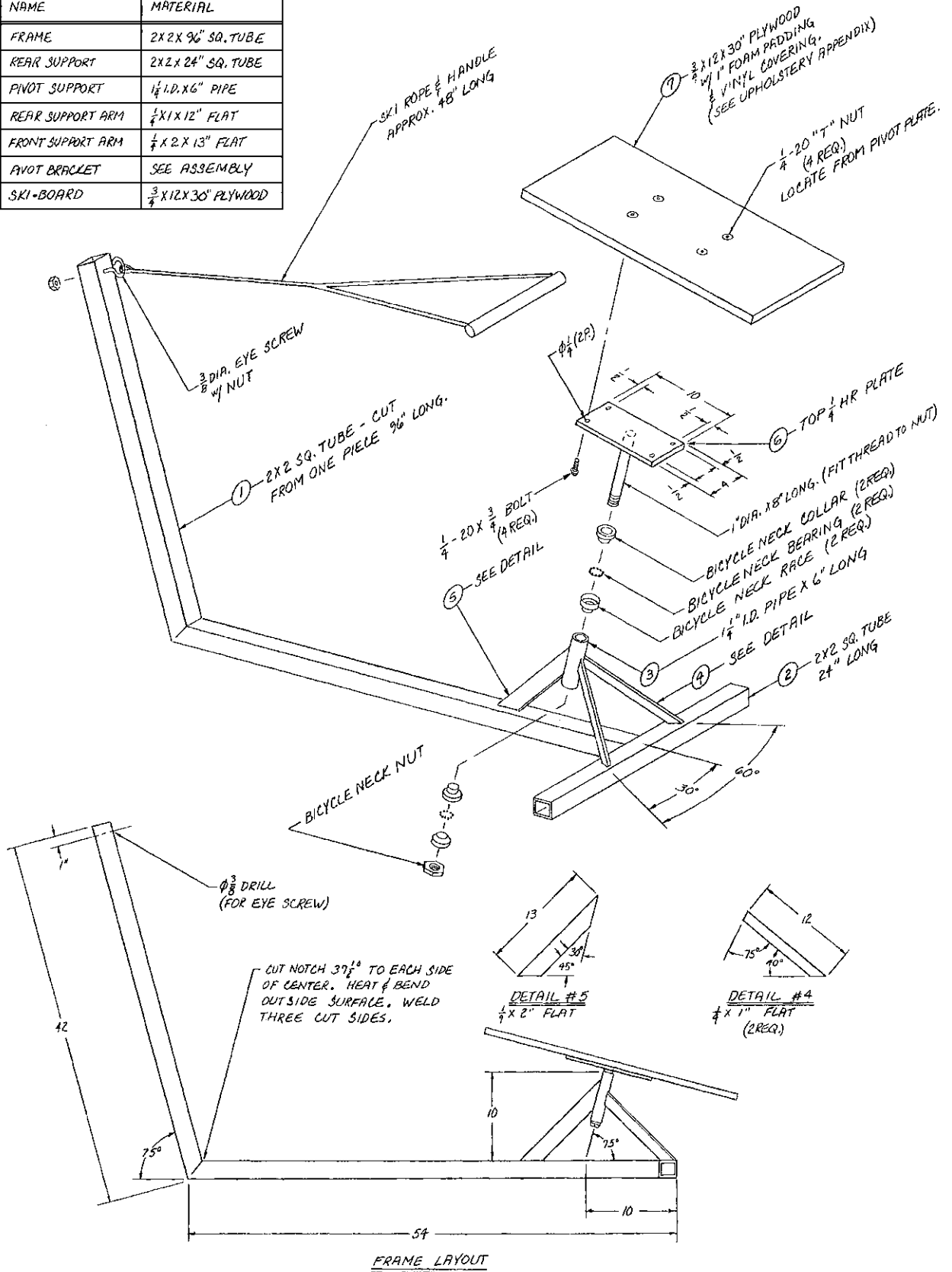


BASKET BALL BACKBOARD STAND

NO.	QU.	NAME	MATERIAL
1	1	COLUMN	3X3X15' SQ. TUBE
2	2	U-BOLT	1/2 DIA. X 15" CRS ROD
3	1	RAIN CAP	1/8 X 3 X 3 PLATE
4	1	MOUNTING PLATE	1/4 X 6 X 6 PLATE
5	1	EXTENSION	3X3X 24" SQ. TUBE
6	1	BACKBOARD SUPPORT	1/4 X 16 X 19" PLATE
7	1	RIM SUPPORT	1/4 X 6 X 7" PLATE



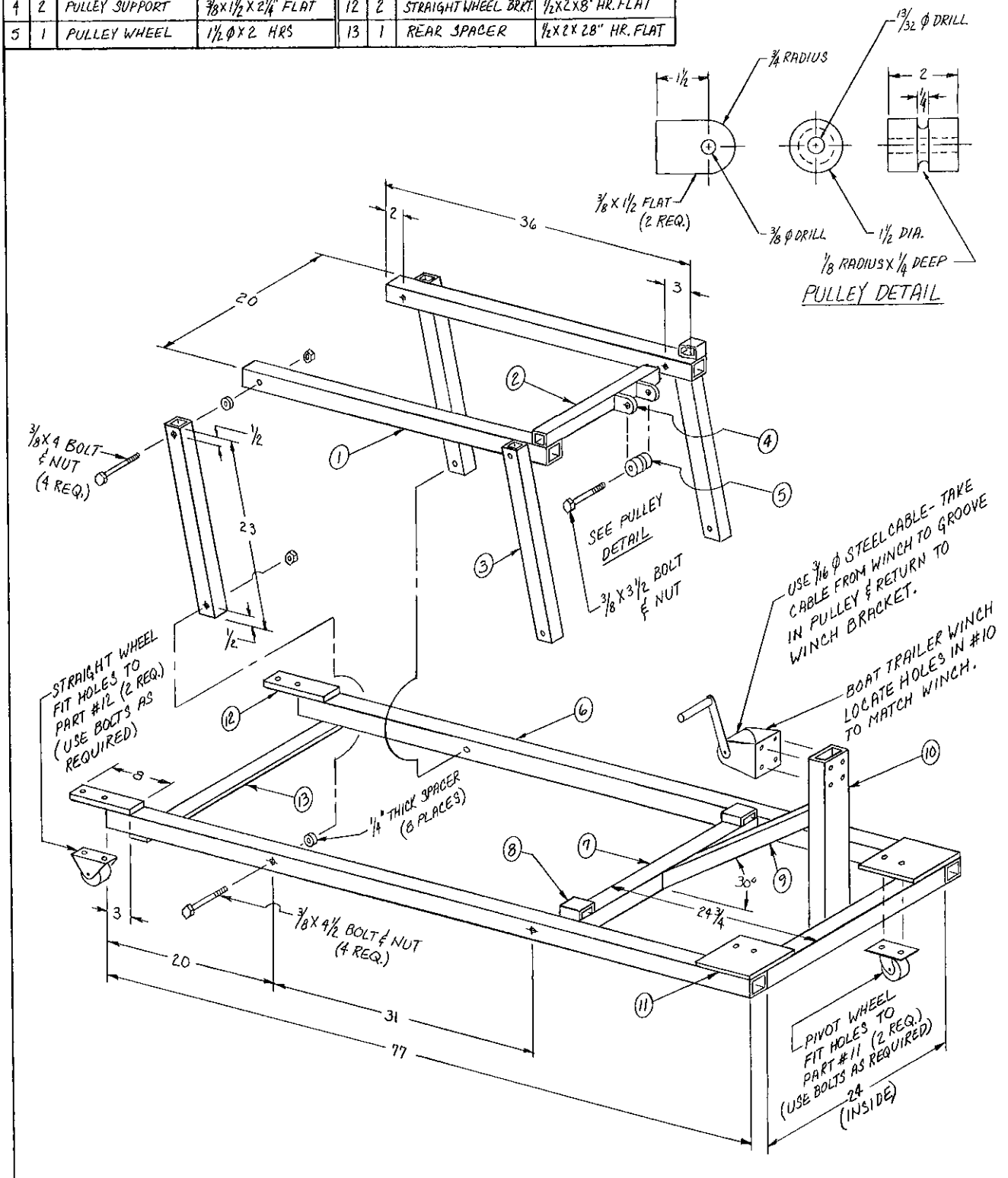
WATER SKI/WAKEBOARD TRICK TRAINER			
NO.	QV.	NAME	MATERIAL
1	1	FRAME	2X2X 96" SQ. TUBE
2	1	REAR SUPPORT	2X2X 24" SQ. TUBE
3	1	PIVOT SUPPORT	1 1/4" I.D. X 6" PIPE
4	2	REAR SUPPORT ARM	1/4" X 12" FLAT
5	1	FRONT SUPPORT ARM	1/4" X 2 X 13" FLAT
6	1	AVOT BRACKET	SEE ASSEMBLY
7	1	SKI-BOARD	3/4" X 12 X 30" PLYWOOD



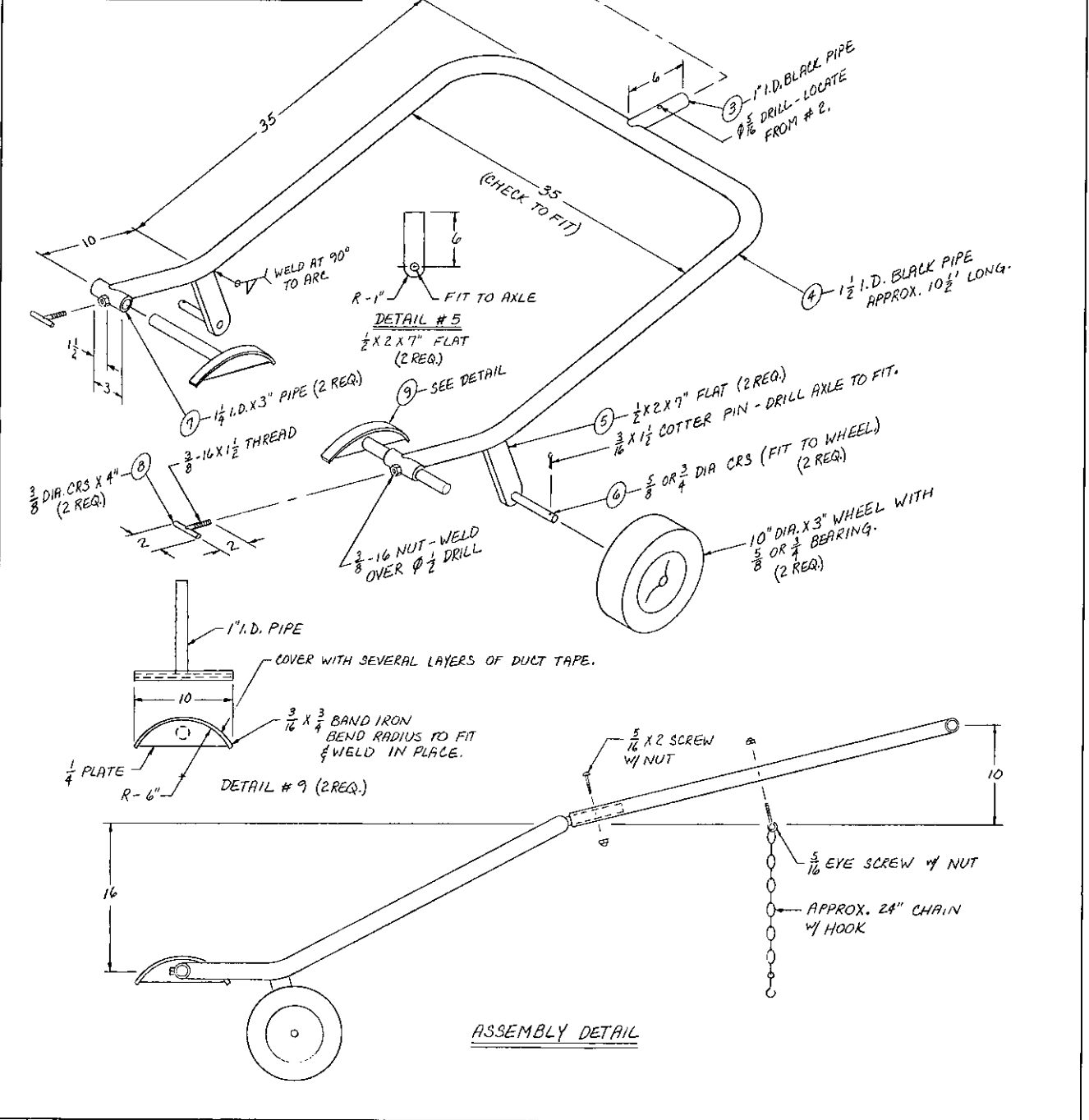
QUAD - SNOWMOBILE REPAIR LIFT			
NO.	QTY.	NAME	MATERIAL
1	2	LIFTING RAIL	2X2X $\frac{1}{8}$ X36" SQ. TUBE
2	1	UPPER CROSSBAR	1 $\frac{1}{2}$ X $\frac{1}{2}$ X $\frac{1}{8}$ X20" SQ. TUBE
3	4	SWING ARM	1 $\frac{1}{2}$ X $\frac{1}{2}$ X $\frac{1}{8}$ X23" SQ. TUBE
4	2	PULLEY SUPPORT	$\frac{3}{8}$ X $\frac{1}{2}$ X2 $\frac{1}{4}$ " FLAT
5	1	PULLEY WHEEL	1 $\frac{1}{2}$ " ϕ X 2" HRS
6	2	FRAME RAIL	2X2X $\frac{1}{8}$ X77" SQ. TUBE
7	2	FRAME CROSSBAR	2X2X $\frac{1}{8}$ X24" SQ. TUBE
8	2	SWING ARM STOP	1X2X $\frac{3}{16}$ X2" CHANNEL
9	1	SUPPORT BRACE	2X2X $\frac{1}{8}$ X25" SQ. TUBE
10	1	WINCH SUPPORT	2X3X $\frac{1}{8}$ X20" SQ. TUBE
11	2	PIVOT WHEEL BRKT.	$\frac{1}{4}$ X6X6 H.R. PLATE
12	2	STRAIGHT WHEEL BRKT.	$\frac{1}{2}$ X2X8" H.R. FLAT
13	1	REAR SPACER	$\frac{1}{2}$ X2X28" HR. FLAT

NOTES:

1. ALL HOLES DRILL TO $\frac{7}{8}$ " ϕ UNLESS OTHERWISE SPECIFIED.
2. PART #8 (SWING ARM STOP) ADJUST LOCATION TO STOP SWING ARM MOVEMENT TO 10° PAST T.D.C.

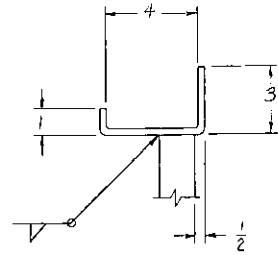


SNOWMOBILE DOLLY			
NO.	QU.	NAME	MATERIAL
1	1	HANDLE	1" I.D. X 12" PIPE
2	1	HANDLE EXTENSION	1 1/4" I.D. X 40" PIPE
3	1	EXTENSION BRACKET	1" I.D. X 6" PIPE
4	1	FRAME	1 1/2" I.D. X 10 1/2" PIPE
5	2	AXLE SUPPORT	1/2 X 2 X 7" FLAT
6	2	AXLE	SEE NOTE (6)
7	2	ARM SUPPORT	1 1/4" I.D. X 3" PIPE
8	2	ADJUSTING SCREW	3/8 DIA. CRS X 4"
9	2	LIFTING ARM	SEE DETAIL

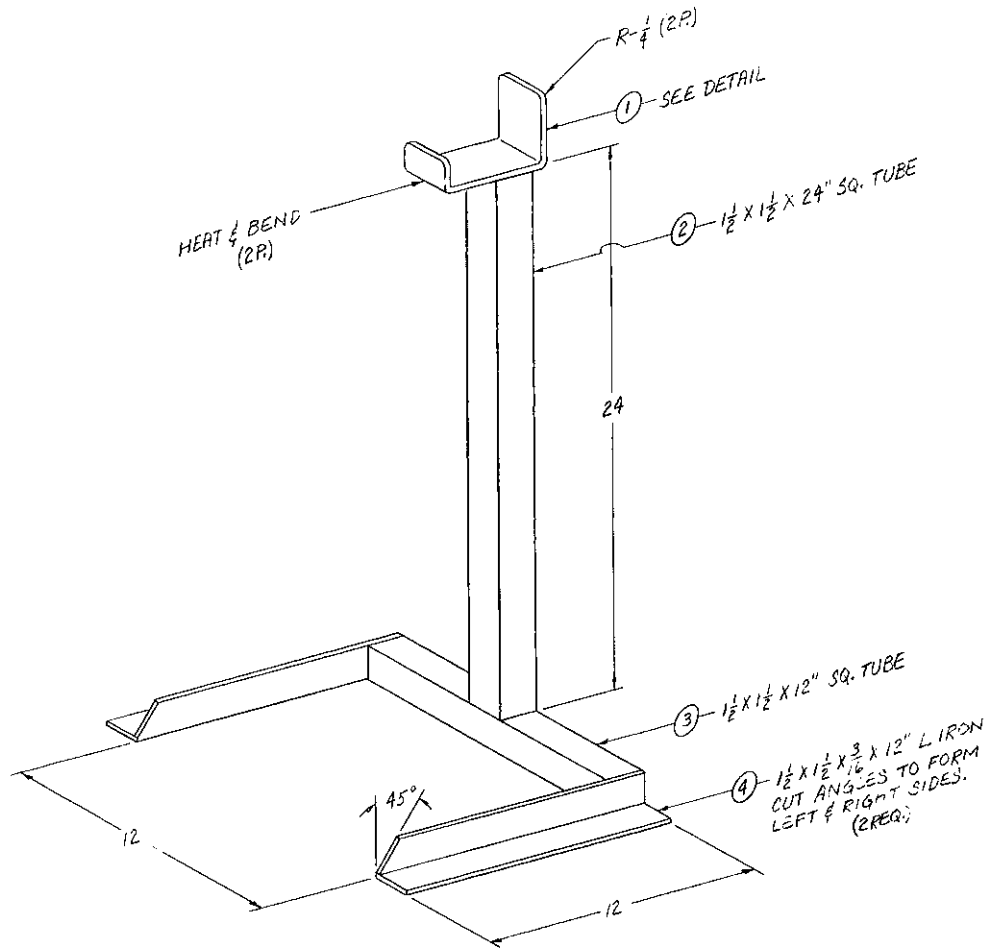


SNOWMOBILE STAND

NO.	QU.	NAME	MATERIAL
1	1	SUPPORT BRACKET	$\frac{1}{4}$ " X 2 X 8" FLAT
2	1	UPRIGHT	$1\frac{1}{2}$ X $1\frac{1}{2}$ X 24" SQ. TUBE
3	1	REAR SUPPORT	$1\frac{1}{2}$ X $1\frac{1}{2}$ X 12" SQ. TUBE
4	2	LEG	$1\frac{1}{2}$ X $1\frac{1}{2}$ X $\frac{3}{16}$ X 12" L IRON



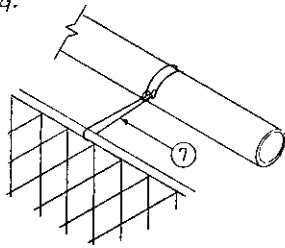
DETAIL SUPPORT BRACKET
 $\frac{1}{4}$ " X 2 X 8" FLAT



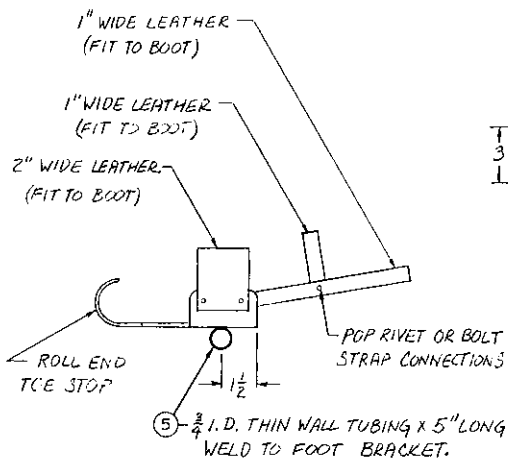
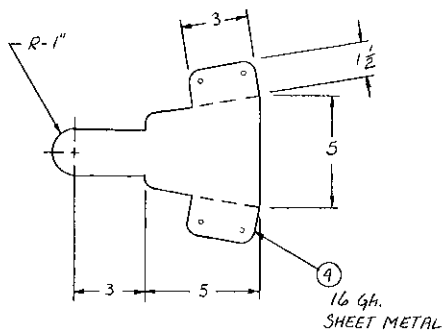
BEAR PAW STYLE SNOWSHOE

NO.	QU.	NAME	MATERIAL
1	1	FRAME	$\frac{1}{2}$ I.D. X $8\frac{1}{4}$ " THIN WALL
2	1	FOOT SUPPORT	$\frac{1}{2}$ I.D. X 12" THIN WALL
3	1	HEEL SUPPORT	$\frac{1}{2}$ I.D. X $10\frac{1}{2}$ " THIN WALL
4	1	FOOT BRACKET	16 GA X 8 X 9" SHEET
5	1	PIVOT	$\frac{3}{4}$ I.D. X 5" THIN WALL
6	1	WEBBING	13 X 33" WIRE LATH
7	30	WIRE TIES	10" SOFT TEMPER

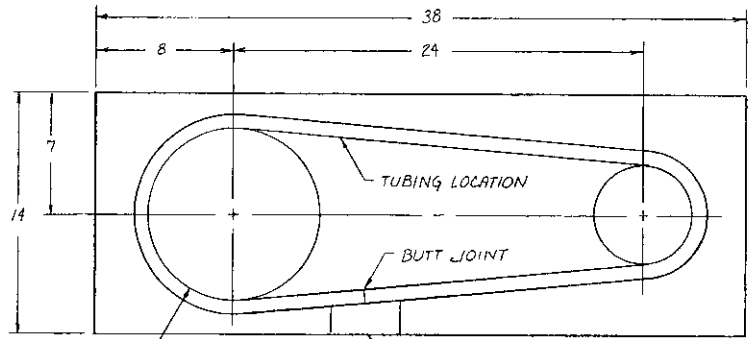
FOR WIRE TIES USE SOFT TEMPER WIRE. FOLD 10" LENGTH IN HALF & PULL OVER HEM. FEED ENDS THROUGH $\phi \frac{1}{8}$ " HOLE IN FRAME. BEND OVER TOP & WRAP AROUND LOOP. PULL WIRES FROM OPPOSITE SIDES TO CENTER WEBBING.



DETAIL WIRE TIES

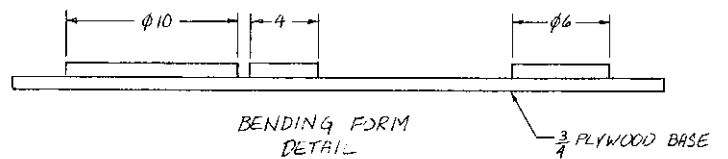


MATERIALS SHOWN PRODUCE ONE SNOWSHOE

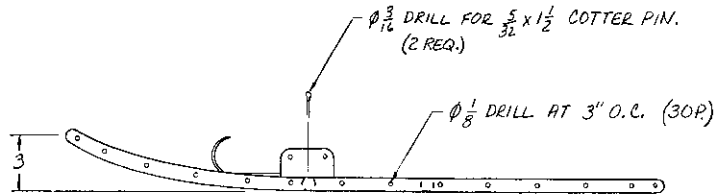
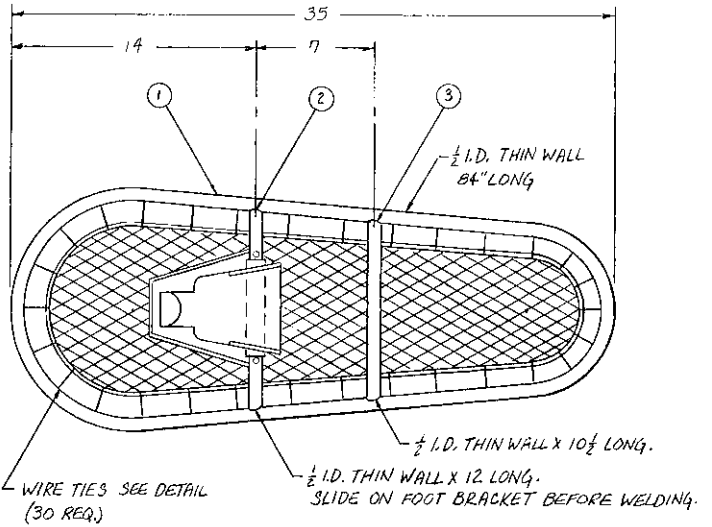


$\frac{3}{4}$ PLYWOOD SCREW & GLUE TO BASE.

REMOVABLE STOP - HOLD IN PLACE WITH C' CLAMP.



SPRING BACK IN TUBING INCREASES SIZE FROM BENDING FORM.



6 - USE WIRE LATH FOR WEBBING. LAYOUT SIZE DIRECTLY FROM INSIDE EDGE OF SNOWSHOE FRAME. FOLD $\frac{1}{4}$ " DOUBLE HEM WITH HAND SEAMER AROUND OUTSIDE EDGE OF WIRE LATH WEBBING.

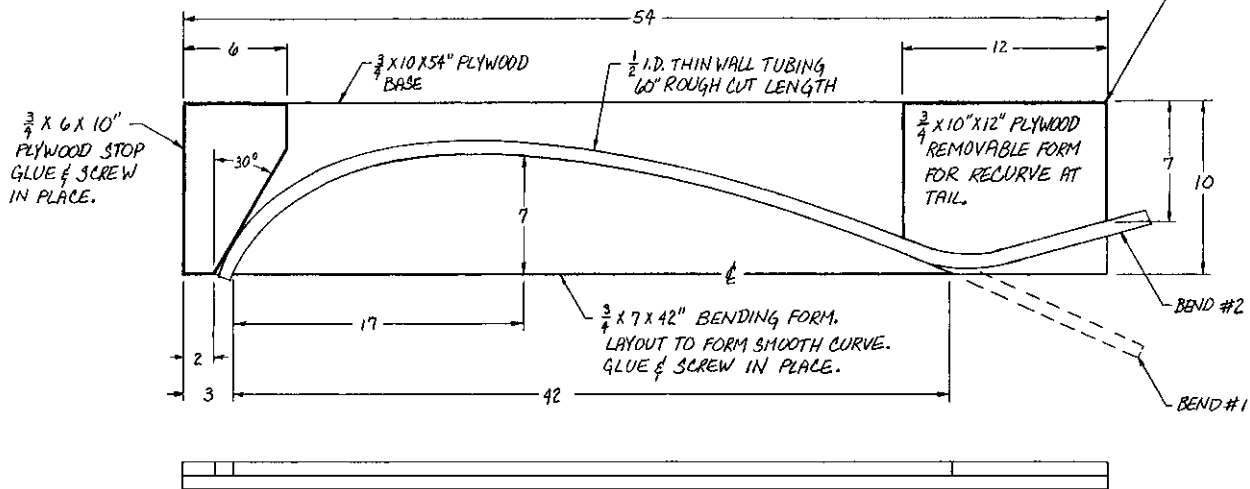
CANADIAN STYLE SNOWSHOE

MATERIALS SHOWN PRODUCE ONE SNOWSHOE.

NO.	QU.	NAME	MATERIAL
1	2	FRAME	$\frac{1}{2}$ I.D. X 60" THIN WALL
2	1	FOOT SUPPORT	$\frac{1}{2}$ I.D. X 12 $\frac{1}{2}$ " THIN WALL
3	1	HEEL SUPPORT	$\frac{1}{2}$ I.D. X 11 $\frac{1}{2}$ " THIN WALL

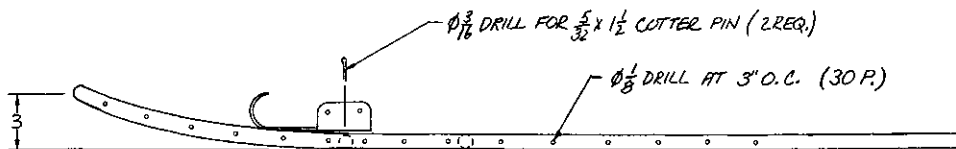
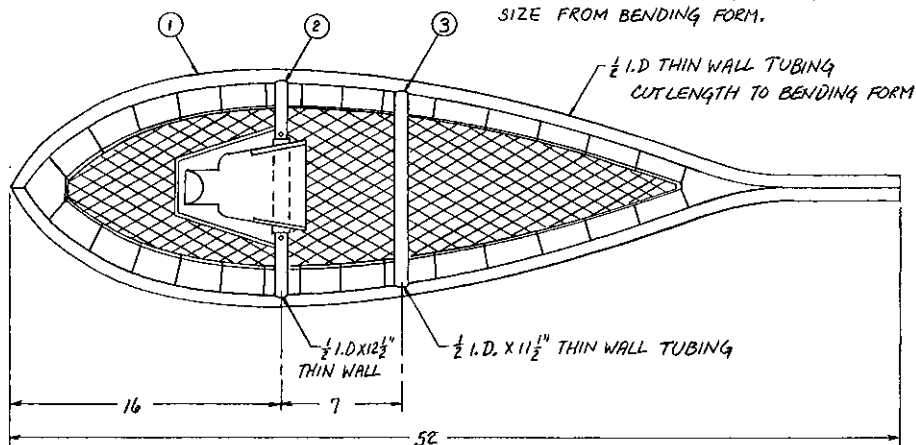
OTHERWISE, SAME AS BEAR PAW STYLE SNOWSHOE

C' CLAMP IN PLACE AFTER BEND #1 & FORM BEND #2. TAIL WILL SPRING BACK PARALLEL TO ϕ .



BENDING FORM
DETAIL

SPRING BACK IN TUBING CHANGES SIZE FROM BENDING FORM.



JR 50 ICE BOAT

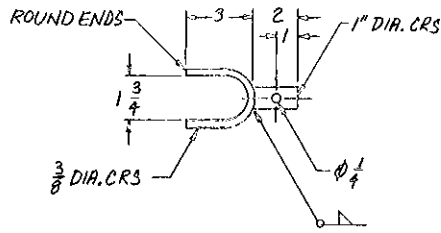
PAGE 1 OF 3

SPECIFICATIONS:

- LENGTH OVERALL ----- 12'-3"
- LENGTH RUNNER BASE ----- 7'-0"
- BEAM ----- 5'-0"
- MAST ----- 15'-0"
- SAIL AREA ----- 52.5 SQ. FT.
- SAIL MATERIAL ----- 4 OZ. DACRON
- CONSTRUCTION ----- WELDED STEEL
- APPROX. SPEED ----- 3X WIND SPEED

* NOTE:

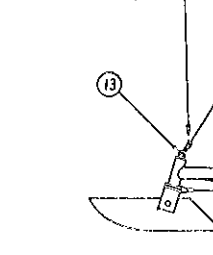
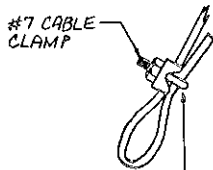
THIN WALL TUBING COMES IN 10' LENGTHS. IT IS NECESSARY TO END-WELD SECTIONS. DIAGRAM BELOW SHOWS METHOD TO ALIGN SECTIONS FOR WELDING. IMPORTANT - NORMALIZE WELDS TO PREVENT HARDENING.



DETAIL A

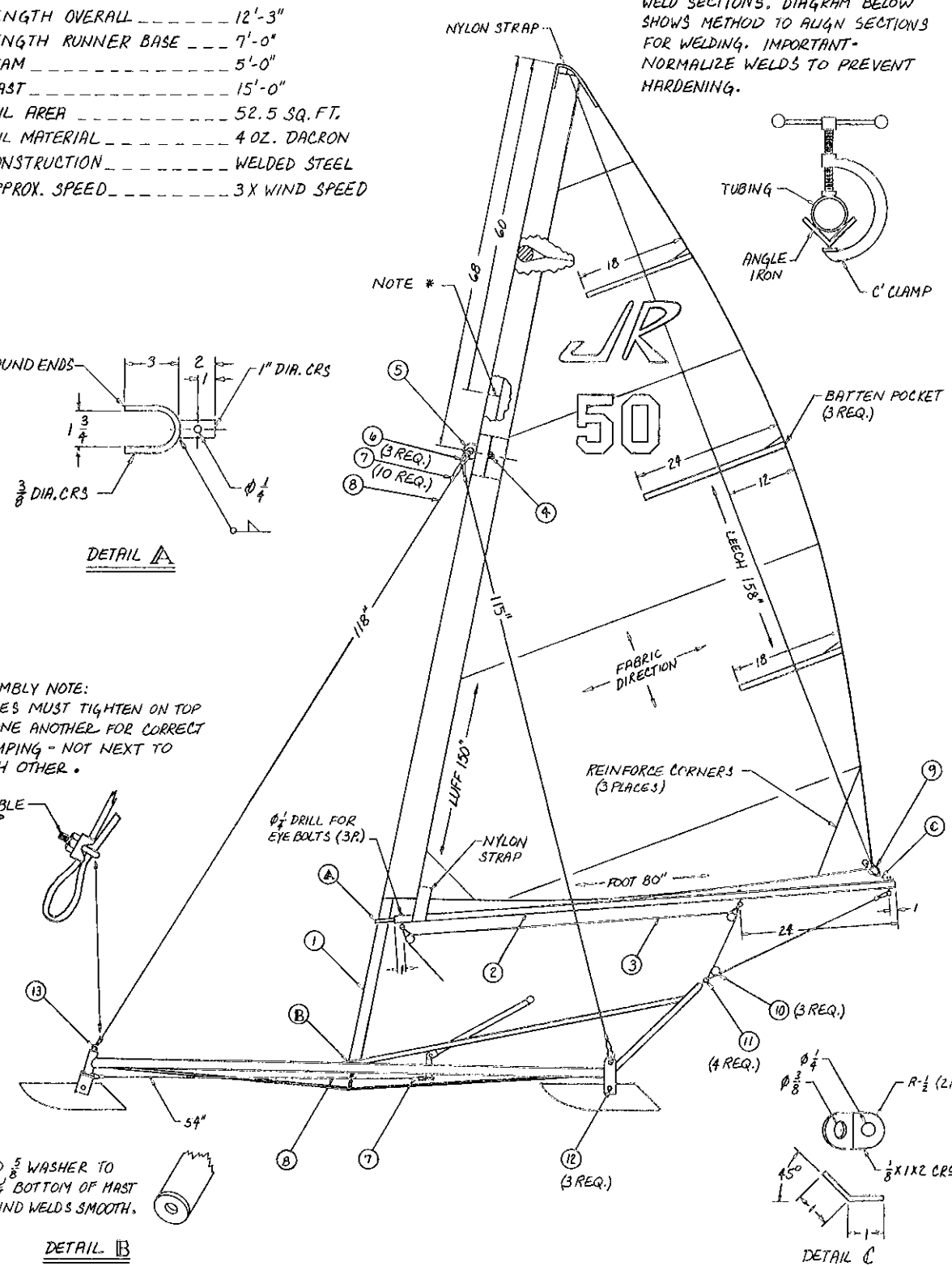
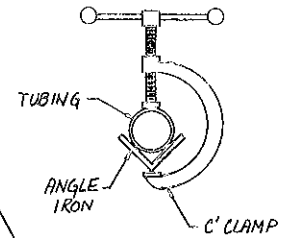
ASSEMBLY NOTE:

CABLES MUST TIGHTEN ON TOP OF ONE ANOTHER FOR CORRECT CLAMPING - NOT NEXT TO EACH OTHER.



WELD 3/8 WASHER TO TOP & BOTTOM OF MAST & GRIND WELDS SMOOTH.

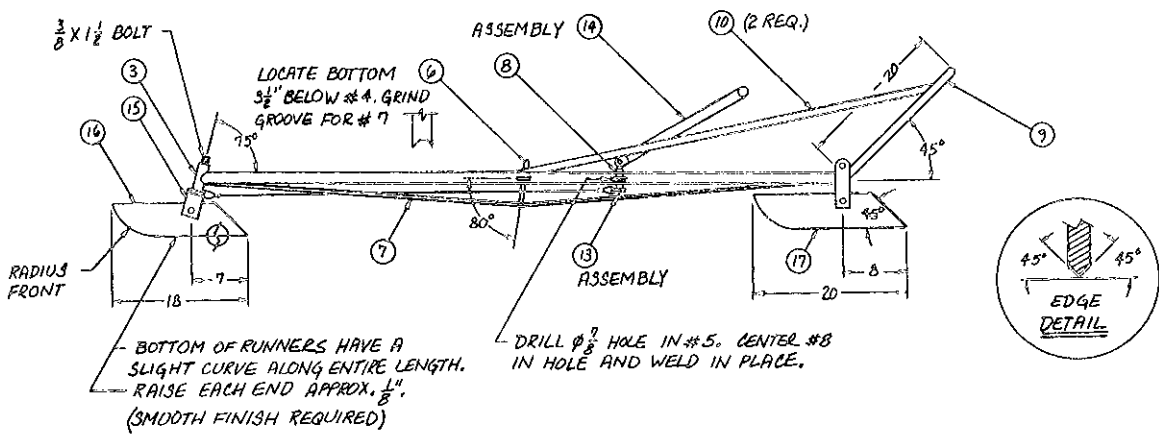
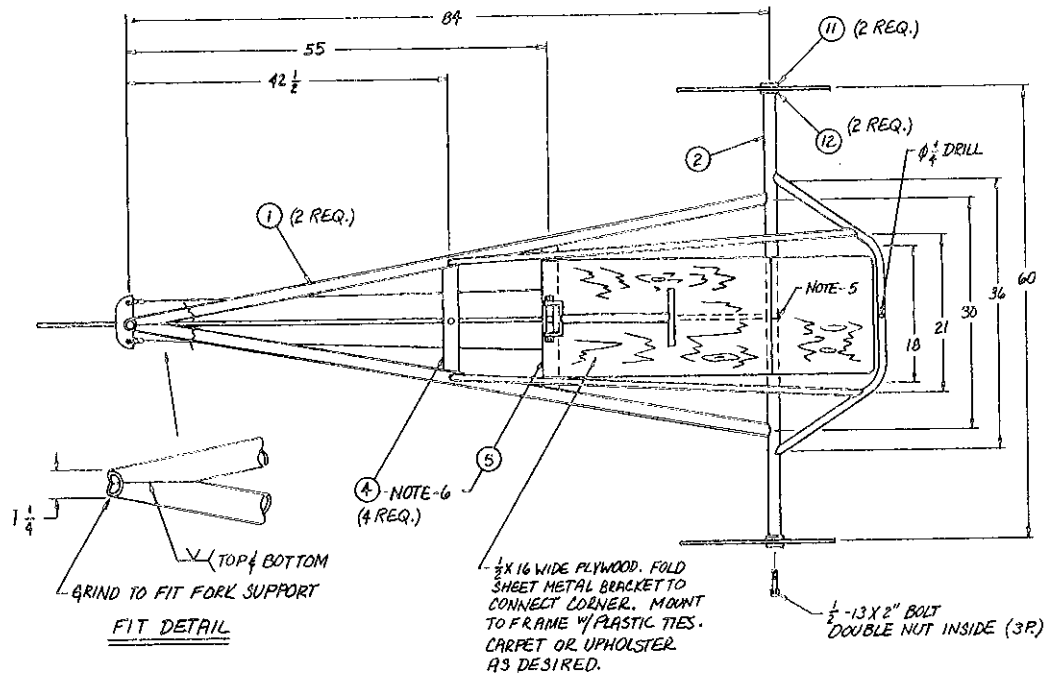
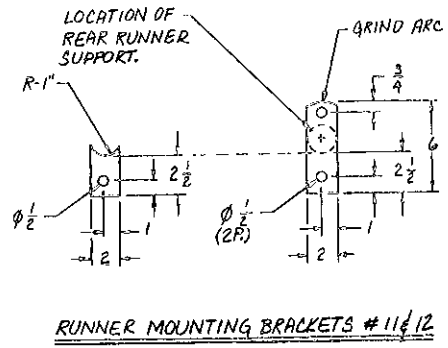
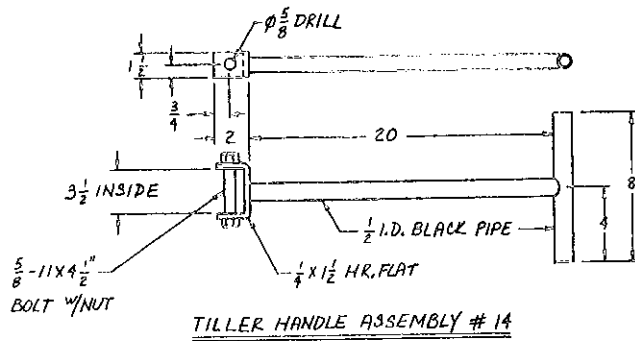
DETAIL B



DETAIL C

JR 50 ICE BOAT

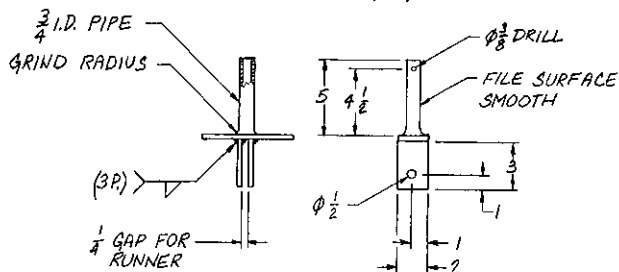
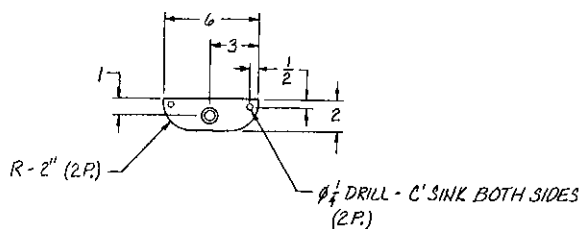
PAGE 2 OF 3



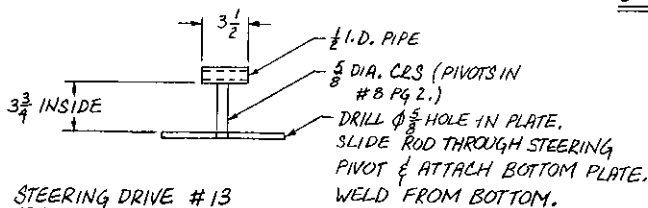
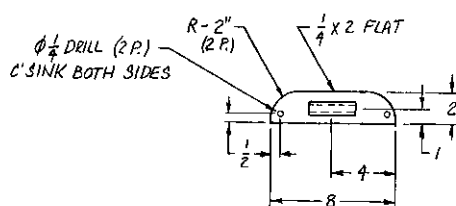
JR 50 ICE BOAT			
PAGE 3 OF 3			
MATERIALS FROM PAGE 1			
NO.	QU.	NAME	MATERIAL
1	1	MAST	1 1/2" I.D. X 15' THIN WALL
2	1	BOOM	1" I.D. X 7'-3" THIN WALL
3	1	SHEET LINE	3/8" DIA. ROPE X 15'
4	1	CROWN NUT	3/8" - 16 THREAD
5	1	EYE (FORGED)	3/8" - 16 THREAD
6	3	CHAIN LINK	3/8" DIA.
7	10	CABLE CLAMPS	1/4" - 20 THREAD
8	50'	CABLE	1/8" BRAIDED STEEL
9	1	CHAIN LINK	1/4" DIA.
10	3	BLOCK PULLEY	1 1/2" DIA. WHEEL
11	4	EYE BOLT	1/4" DIA.
12	3	BOLT & DOUBLE NUT	1/2" - 13 X 2"
13		BOLT & NUT	3/8" - 16 X 1 1/2"
MATERIALS FROM PAGE 2			
1	2	SIDE	1/4" I.D. X 85" PIPE
2	1	REAR RUNNER SUPT.	1 1/2" I.D. X 60" PIPE
3	1	FORK SUPPORT	1" I.D. X 4" PIPE
4	4	MAST SUPPORT	1/4" X 2 X 19" HR FLAT
5	1	STEERING-SEAT SUPT.	1/2" X 2 X 19" HR FLAT
6	1	MAST STEP	1/2" DIA. X 6" CRS
7	1	TENSION ROD	3/8" DIA. X 86" CRS
8	1	TILLER PIVOT	1/2" I.D. X 3" PIPE
9	1	SEAT BACK SUPT.	1/2" I.D. X 60" PIPE
10	2	SEAT BACK BRACE	1/2" I.D. X 53" PIPE
11	2	OUTER BRACKET	1/4" X 2 X 6" HR FLAT
12	2	INNER BRACKET	1/4" X 2 X 3" HR FLAT
13	1	STEERING DRIVE	SEE DETAIL Pg. 3
14	1	TILLER HANDLE	SEE DETAIL Pg. 2
15	1	STEERING FORK	SEE DETAIL Pg. 3
16	1	FRONT RUNNER	1/4" X 4 X 18" HR FLAT
17	2	REAR RUNNER	1/4" X 4 X 20" HR FLAT

NOTES:

1. WHEN ICE BOATING ALWAYS WEAR A SAFETY HELMET & CHECK FOR SAFE ICE CONDITIONS BEFORE SAILING.
2. ICE BOAT RIGGING IS SUBJECT TO TREMENDOUS STRESS. ALWAYS CHECK ALL CONNECTIONS & FASTENERS BEFORE SAILING.
3. SIDE SHROUDS 115" SHOULD HAVE SLACK.
4. STEERING CABLES # 8 SHOULD NOT BE TAUT OR STEERING WILL BE DIFFICULT.
5. TENSION ROD INSTALLATION. DRILL $\phi \frac{3}{8}$ HOLE THROUGH # 2. WELD # 7 TO FRONT OF FRAME & THROUGH $\phi \frac{3}{8}$ HOLE. DRAW TENSION ROD TIGHT WITH CROW BAR & WELD IN PLACE TO # 2.
6. MAST SUPPORT # 4 & SEAT SUPPORT # 5, LAY OUT EXACT LENGTH & ANGLES FROM SIDES # 1.
7. SNUG NUTS ON RUNNER BRACKETS SO RUNNERS CAN SWIVEL UP & DOWN BUT HAVE NO SIDE WOBBLE.
8. LUBRICATE STEERING FORK WITH GREASE.
9. PART # 5 MAST EYE - MUST BE EXTREMELY STRONG. BOAT BOW EYE WORKS WELL.
10. PART # 13 $\frac{3}{8}$ " - 16 X 1 1/2" BOLT - HOLDS STEERING FORK IN PLACE & IS LOWER CONNECTION OF FORE STAY.
11. BATTENS - $\frac{1}{2}$ " X $\frac{3}{4}$ " OAK. LENGTH SAME AS POCKET.
12. ADD 8" TO BOTH ENDS OF RIGGING & STEERING CABLES TO FORM LOOPS.
13. WELD LOOP IN ALL EYE SCREWS CLOSED.
14. SAIL CAN BE STORED BY ROLLING ON MAST.



STEERING FORK # 15

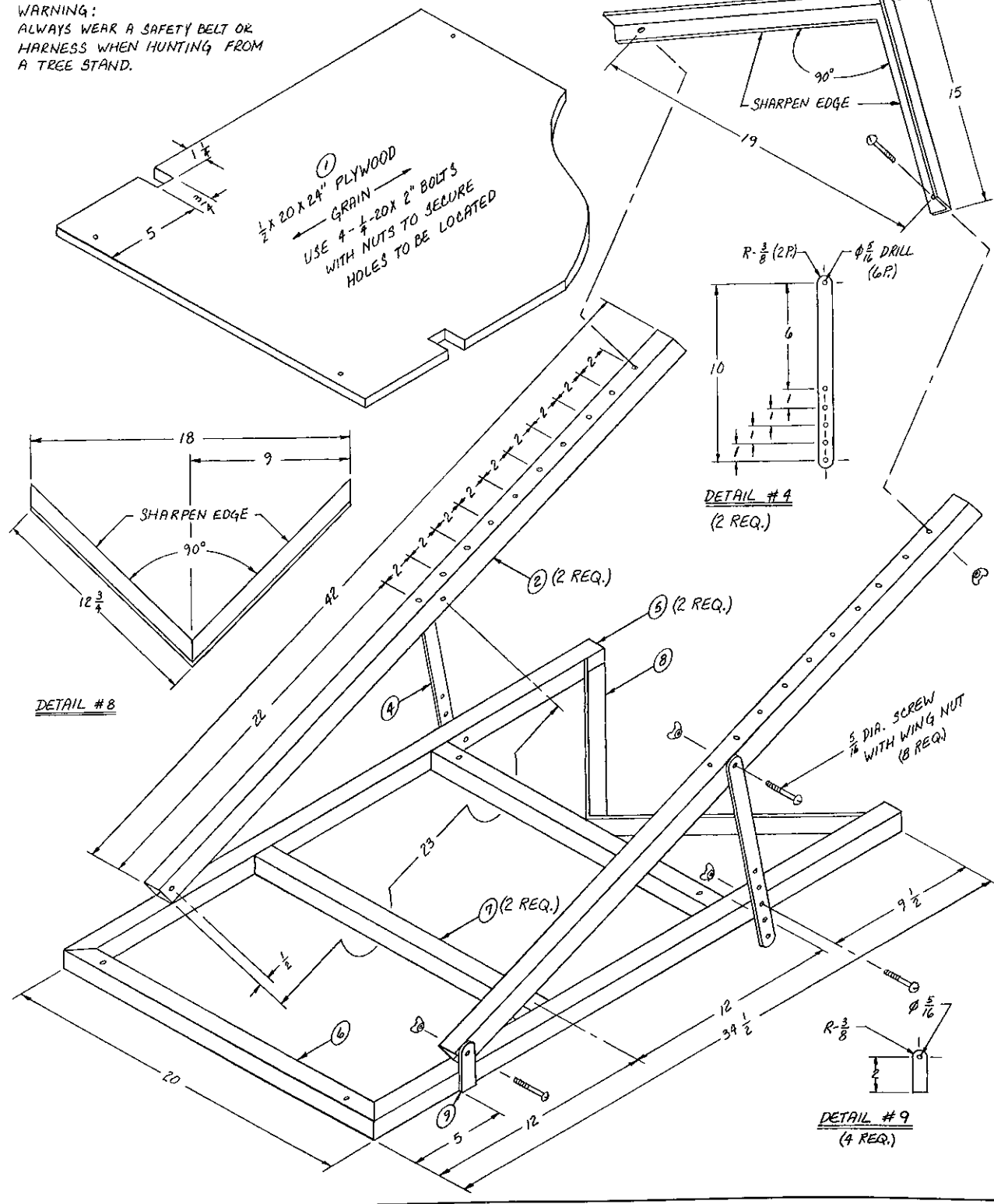


STEERING DRIVE # 13

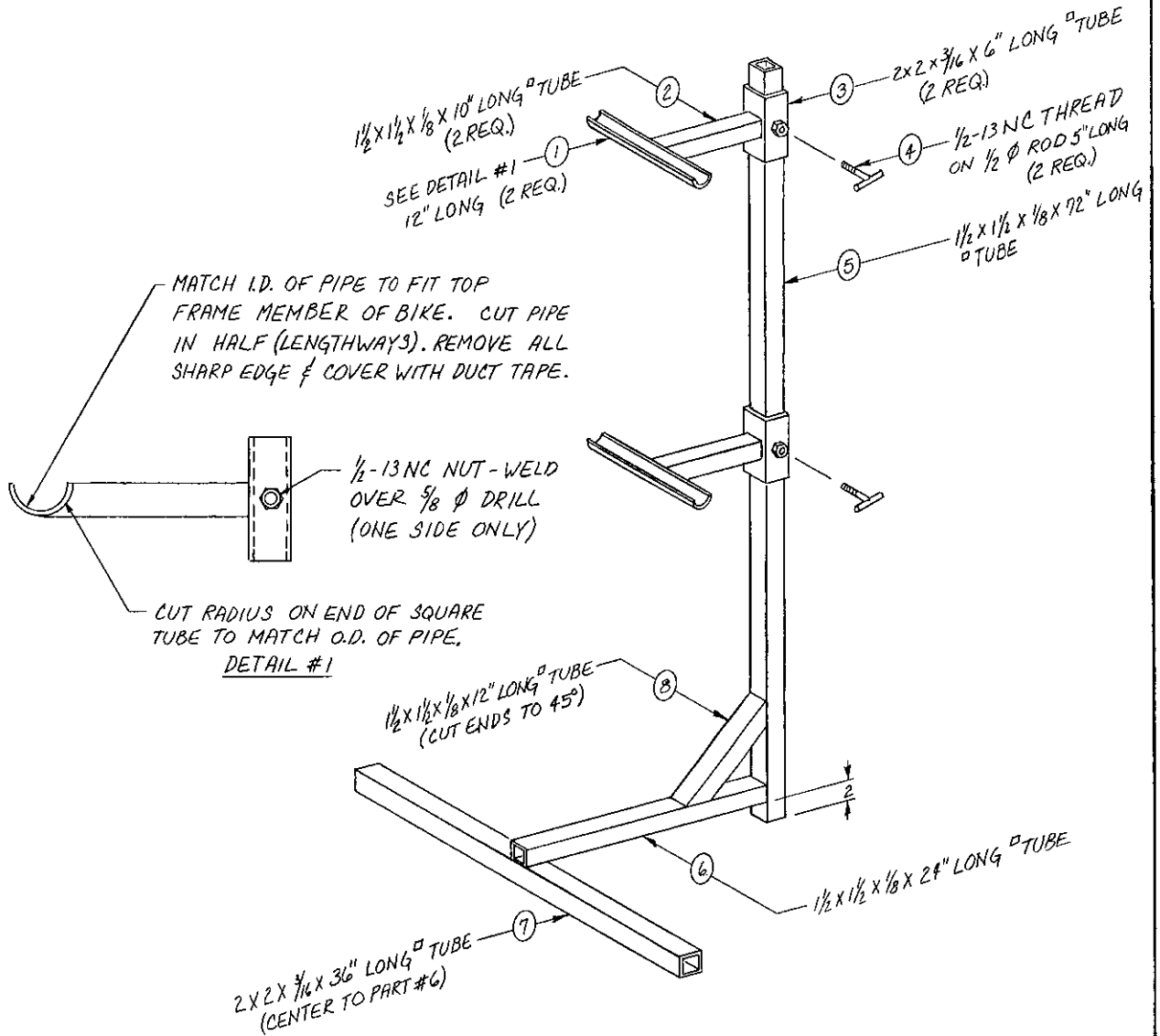
DEER HUNTING TREE STAND			
NO.	QU.	NAME	MATERIAL
1	1	PLATFORM	$\frac{1}{2}$ " X 20 X 24" PLYWOOD
2	2	ADJUSTING ARM	1 X 1 X 42" SQ. TUBE
3	1	TOP CLAMP	1 X 1 X $\frac{3}{16}$ " X 30" L IRON
4	2	PIVOT ARM	$\frac{3}{16}$ " X $\frac{3}{4}$ " X 10 $\frac{3}{4}$ " BAND IRON
5	2	SIDE FRAME	1 X 1 X 34 $\frac{1}{2}$ " SQ. TUBE
6	1	END FRAME	1 X 1 X 20" SQ. TUBE
7	2	CENTER SUPPORT	1 X 1 X 18" SQ. TUBE
8	1	BOTTOM CLAMP	1 X 1 X $\frac{3}{16}$ " X 28" L IRON
9	4	PIVOT BRACKET	$\frac{3}{16}$ " X $\frac{3}{4}$ " X 2 $\frac{3}{8}$ " BAND IRON

NOTE:
 $\phi \frac{5}{16}$ DRILL ALL HOLES.
 (UNLESS OTHERWISE NOTED)

WARNING:
 ALWAYS WEAR A SAFETY BELT OR
 HARNESS WHEN HUNTING FROM
 A TREE STAND.

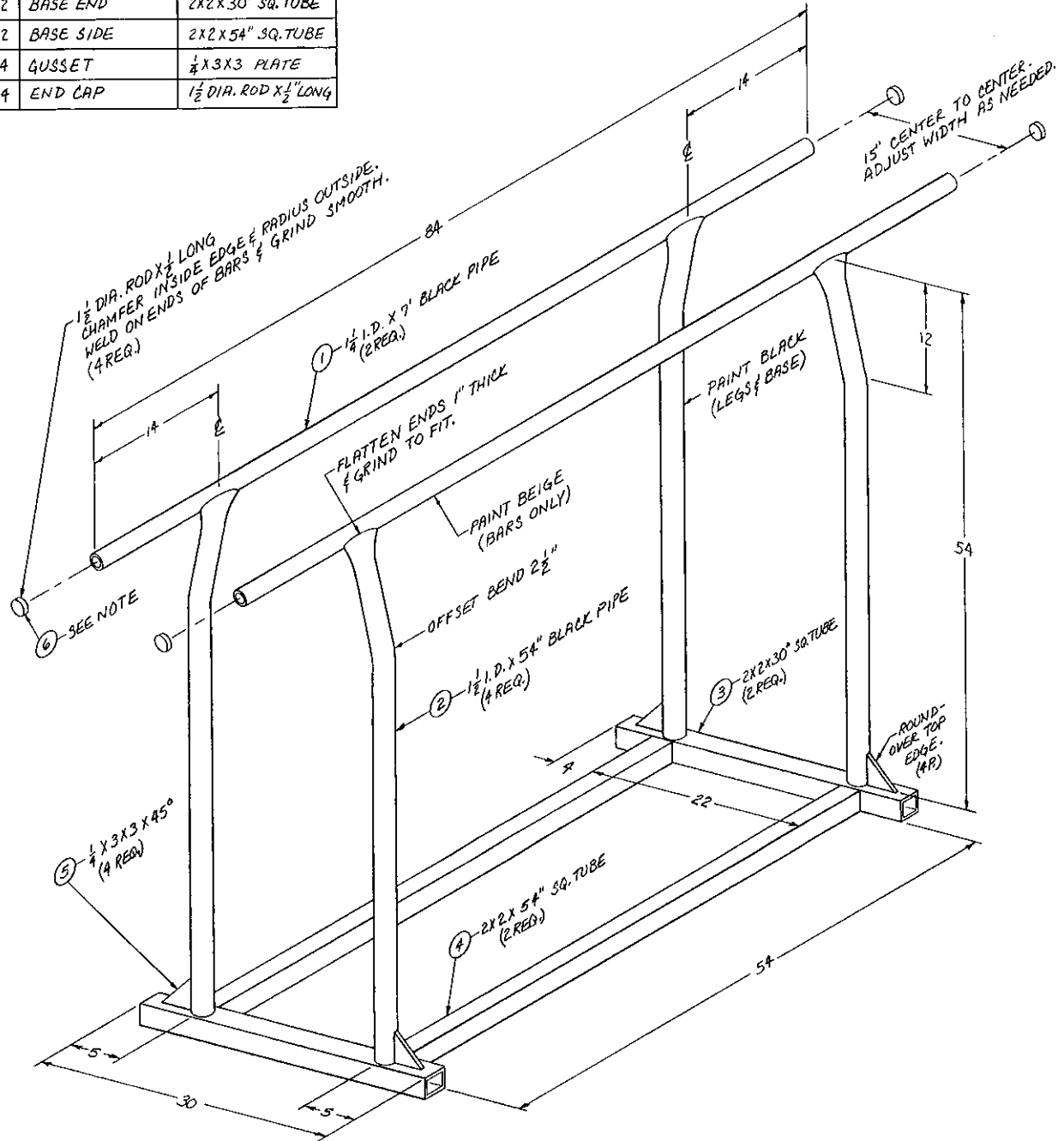


ADJUSTABLE HEIGHT BMX STORAGE RACK			
NO.	QU.	NAME	MATERIAL
1	2	FRAME REST	SEE NOTE
2	2	ARM	1 1/2 x 1 1/2 x 1/8 x 10" TUBE
3	2	SLIDE	2 x 2 x 3/16 x 6" TUBE
4	2	LOCT "T" HANDLE	1/2" Ø ROD 5"
5	1	COLUMN	1 1/2 x 1 1/2 x 1/8 x 72" TUBE
6	1	BASE EXTENSION	1 1/2 x 1 1/2 x 1/8 x 24" TUBE
7	1	FRONT BASE	2 x 2 x 3/16 x 36" TUBE
8	1	GUSSET	1 1/2 x 1 1/2 x 1/8 x 12" TUBE



PARALLEL BARS

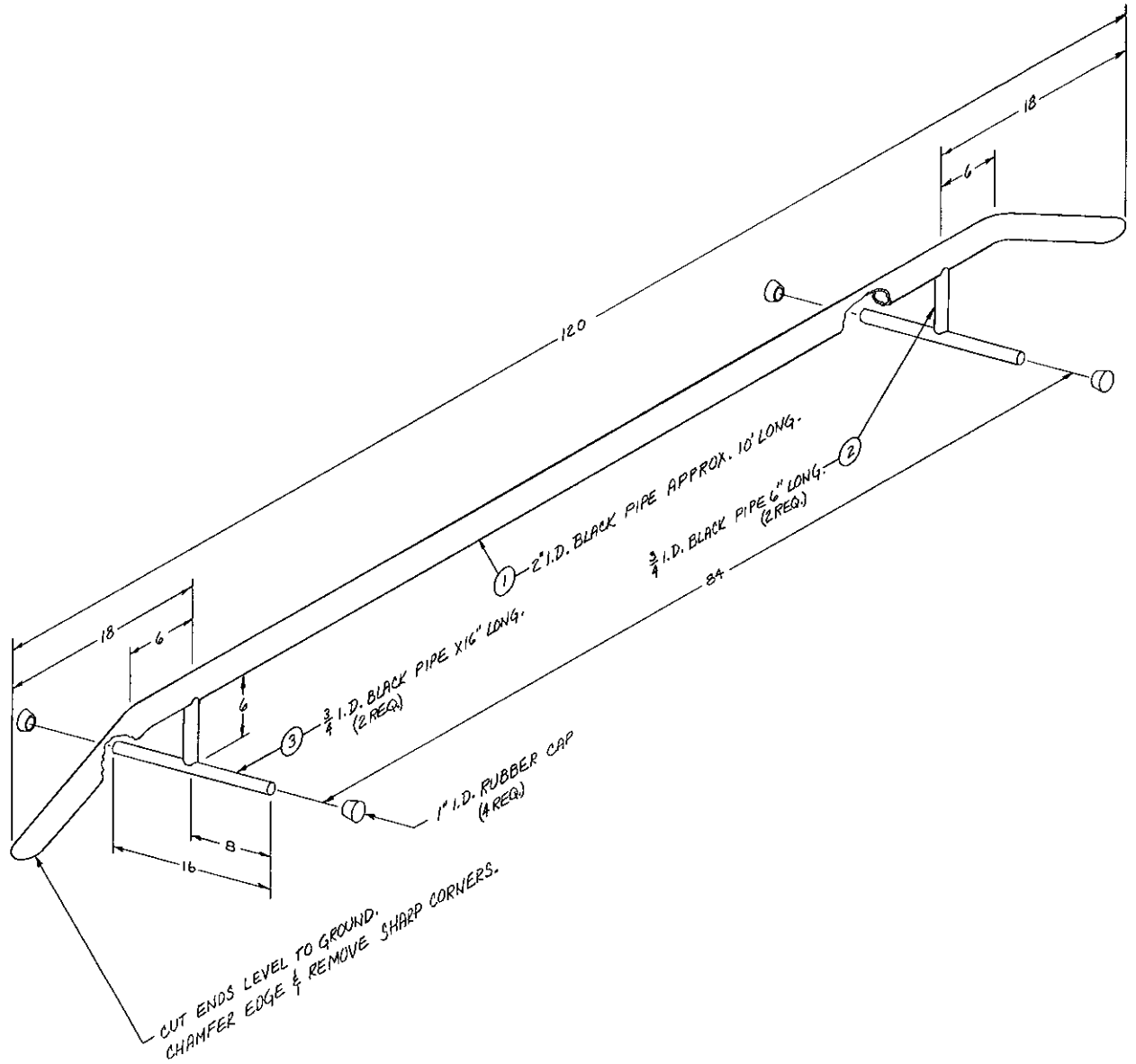
NO.	QU.	NAME	MATERIAL
1	2	BAR	1 1/2" I.D. X 7' PIPE
2	4	LEG	1 1/2" I.D. X 54" PIPE
3	2	BASE END	2 X 2 X 30" SQ. TUBE
4	2	BASE SIDE	2 X 2 X 54" SQ. TUBE
5	4	GUSSET	1/4" X 3 X 3 PLATE
6	4	END CAP	1 1/2" DIA. ROD X 1/2" LONG



* FOR OUTSIDE OR PLAYGROUND USE
BURY BASE IN SAND 5" DEEP.

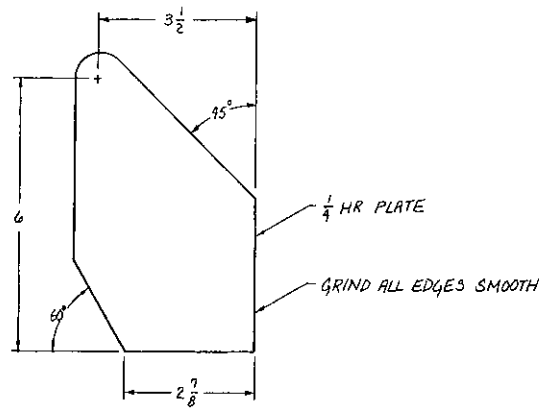
SKATEBOARD RAIL SLIDE

NO.	QU.	NAME	MATERIAL
1	1	RAIL	2" I.D. PIPE X 10'
2	2	LEG	$\frac{3}{4}$ " I.D. PIPE X 6"
3	2	BASE	$\frac{3}{4}$ " I.D. PIPE X 16"

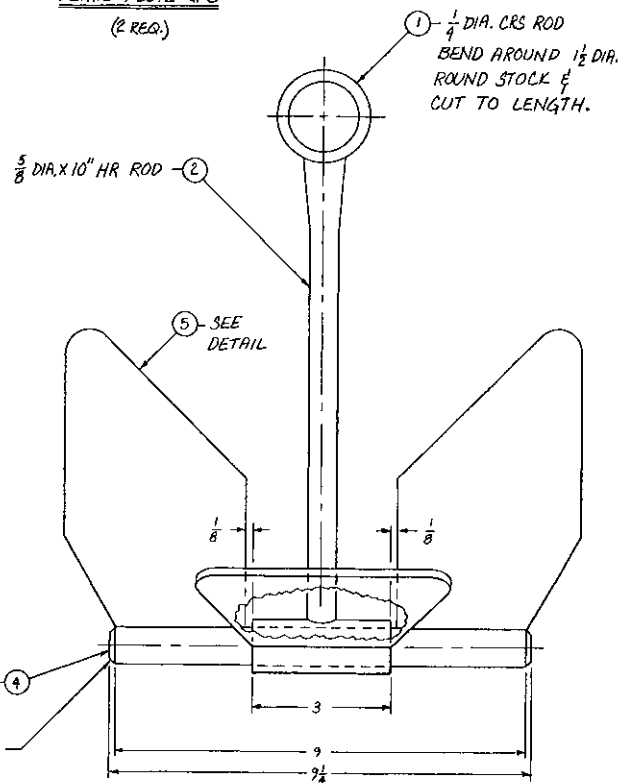
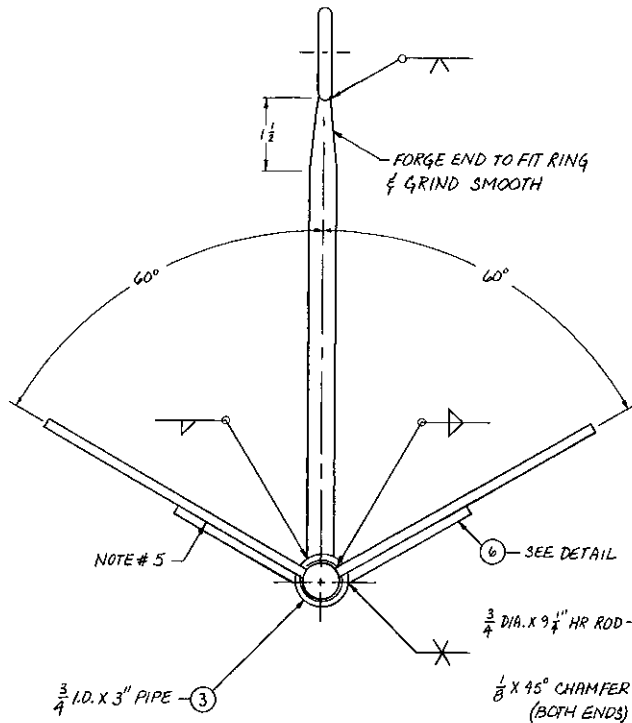


BOAT ANCHOR

NO.	QU.	NAME	MATERIAL
1	1	RING	$\frac{1}{4}$ " DIA. CRS X APPROX 7"
2	1	SHANK	$\frac{5}{8}$ " DIA. X 10" HR ROD
3	1	PIVOT	$\frac{3}{4}$ " I.D. X 3" PIPE
4	1	SWIVEL ARM	$\frac{3}{4}$ " DIA. X 9 $\frac{1}{4}$ " HR ROD
5	2	FLUTE	SEE DETAIL
6	2	CROWN	SEE DETAIL

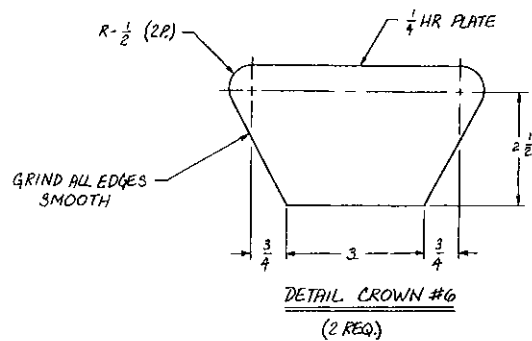


DETAIL FLUTE #5
(2 REQ.)



ASSEMBLY SEQUENCE:

1. WELD RING #1 TO SHANK # 2.
2. WELD SHANK # 2 TO PIVOT # 3.
3. WELD ONE FLUTE # 5 TO SWIVEL ARM # 4.
4. SLIDE SWIVEL ARM THROUGH PIVOT & WELD 2ND FLUTE IN PLACE. (ALLOW $\frac{1}{8}$ " CLEARANCE)
5. PLACE FLUTES AT 60° TO ONE SIDE OF SHANK & POSITION CROWN PLATE # 6 PARALLEL TO FLUTES. WELD IN PLACE.
6. REPEAT STEP # 5 ON OPPOSITE SIDE.

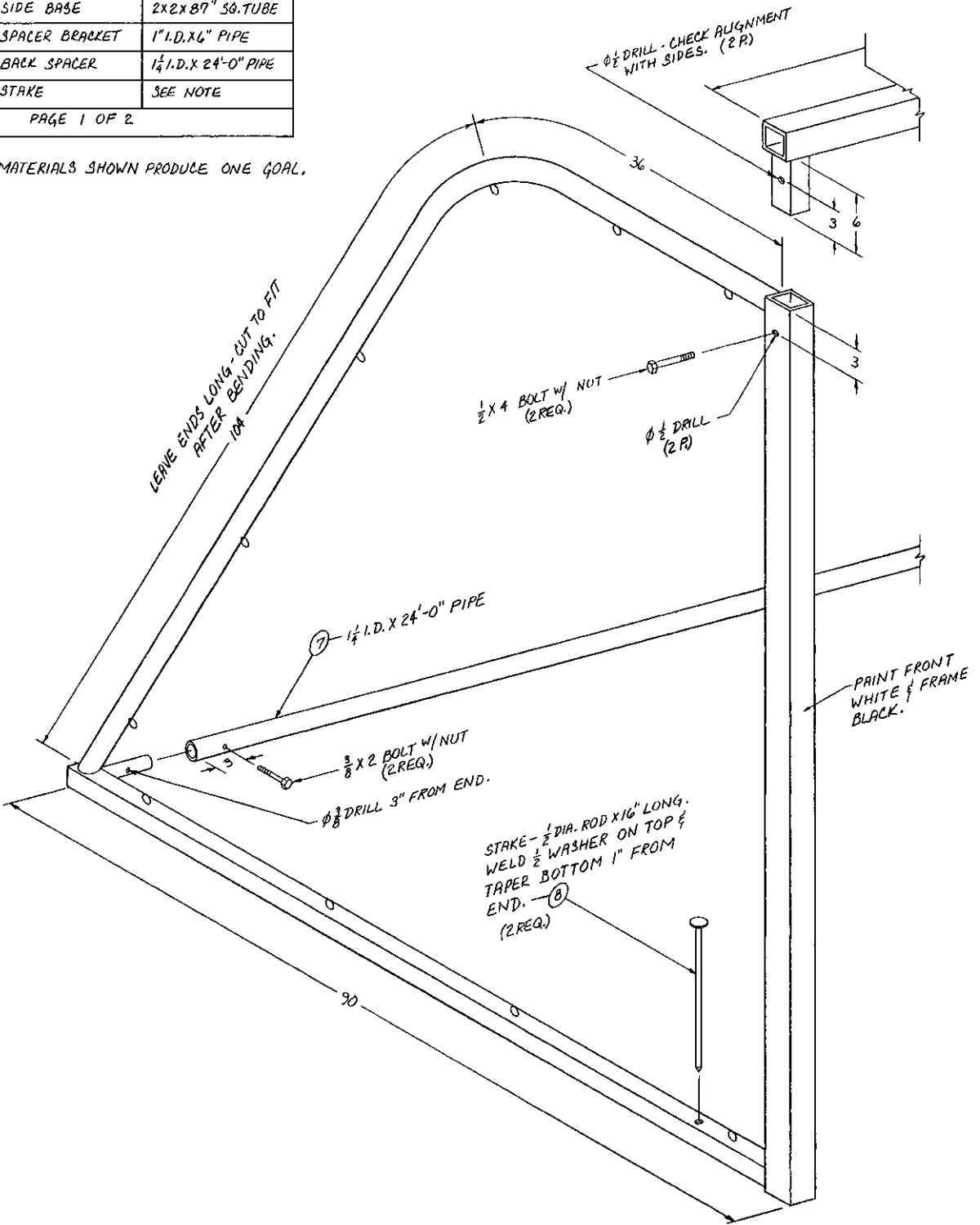


DETAIL CROWN #6
(2 REQ.)

SOCCER GOAL			
NO.	QU.	NAME	MATERIAL
1	1	TOP BEAM	3X3X10GA.X 24'-6" SQ.
2	2	TOP MOUNTING BRACKET	2½ X 2½ X 6" SQ. TUBE
3	2	SIDE UPRIGHT	3X3X96" SQ. TUBE
4	2	REAR SIDE SUPPORT	1½ I.D.X 140" PIPE
5	2	SIDE BASE	2X2X 87" SQ. TUBE
6	2	SPACER BRACKET	1" I.D.X 6" PIPE
7	1	BACK SPACER	1½ I.D.X 24'-0" PIPE
8	2	STAKE	SEE NOTE

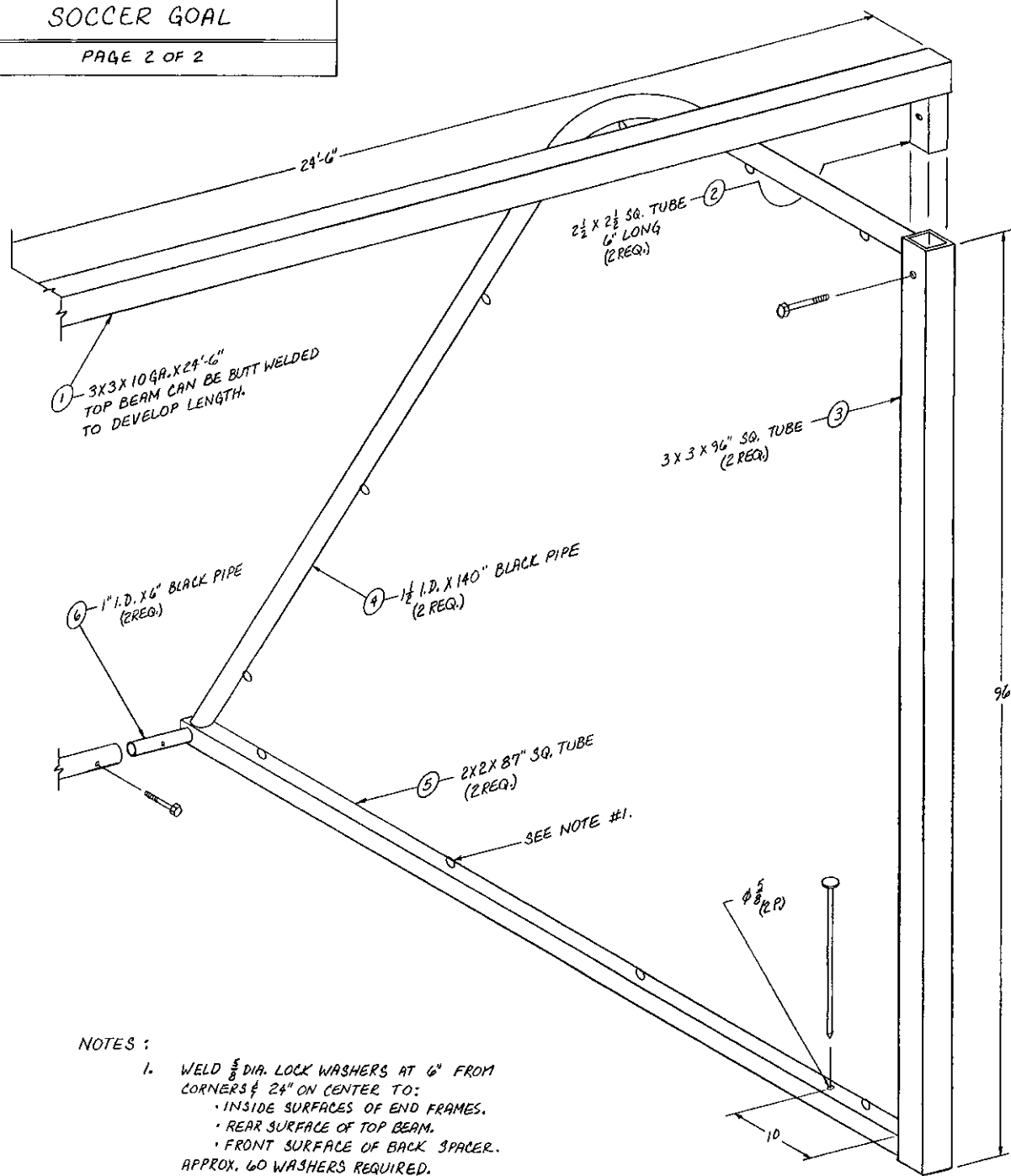
PAGE 1 OF 2

MATERIALS SHOWN PRODUCE ONE GOAL.



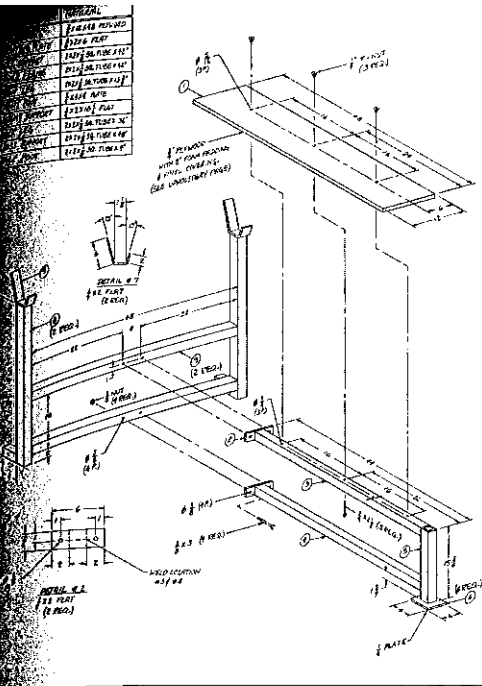
SOCCER GOAL

PAGE 2 OF 2

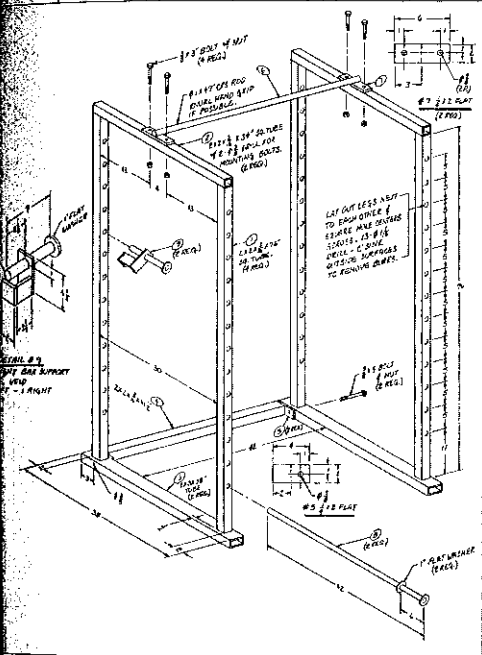


NOTES :

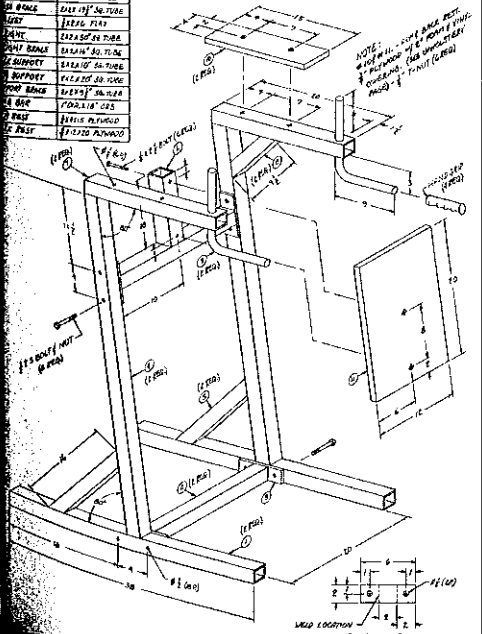
- WELD $\frac{5}{8}$ " DIA. LOCK WASHERS AT 6" FROM CORNERS & 24" ON CENTER TO:
 - INSIDE SURFACES OF END FRAMES.
 - REAR SURFACE OF TOP BEAM.
 - FRONT SURFACE OF BACK SPACER.
 APPROX. 60 WASHERS REQUIRED.
- FRAMES ARE DESIGNED FOR STANDARD SOCCER GOAL NET.



ITEM	QTY	DESCRIPTION	SIZE	UNIT	REMARKS
CHIN-UP BAR	1	PIPE	1 1/2" DIA	FT	12'00" (12'00")
POST	1	PIPE	2" DIA	FT	12'00" (12'00")
WELDING	1	WELDING			
ASSEMBLY	1	ASSEMBLY			



ITEM	QTY	DESCRIPTION	SIZE	UNIT	REMARKS
WEIGHTLIFTING BENCH	1	PIPE	2" DIA	FT	12'00" (12'00")
POST	1	PIPE	2" DIA	FT	12'00" (12'00")
WELDING	1	WELDING			
ASSEMBLY	1	ASSEMBLY			



ITEM	QTY	DESCRIPTION	SIZE	UNIT	REMARKS
DIP PRESS/LEG LIFT	1	PIPE	2" DIA	FT	12'00" (12'00")
POST	1	PIPE	2" DIA	FT	12'00" (12'00")
WELDING	1	WELDING			
ASSEMBLY	1	ASSEMBLY			

Gym Equipment

- Push-Up Bars 32
- Butterfly Bench 33
- Sit-Up Bench 34
- Curling Bench 35
- Weightlifting Bench 37
- Inclined Bench 38
- Lat Machine 39
- Squat Rack 41
- Stair Stepper 42
- Dip Press/Leg Lift 44
- Chin-Up Bar 45
- Weight Storage Tree 46
- Dead Lift Bar 47

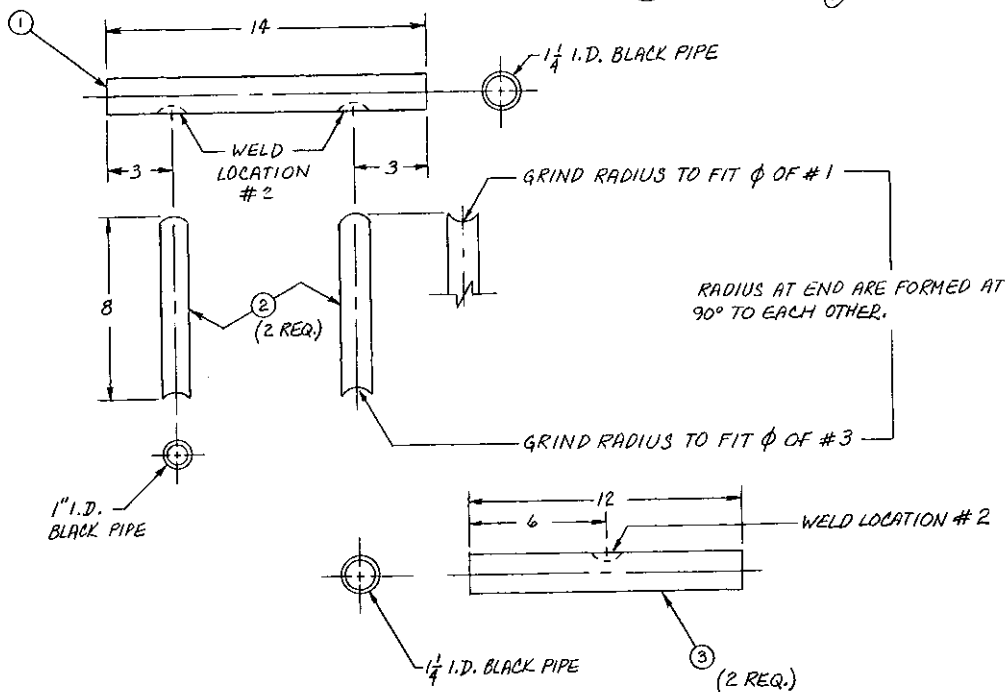
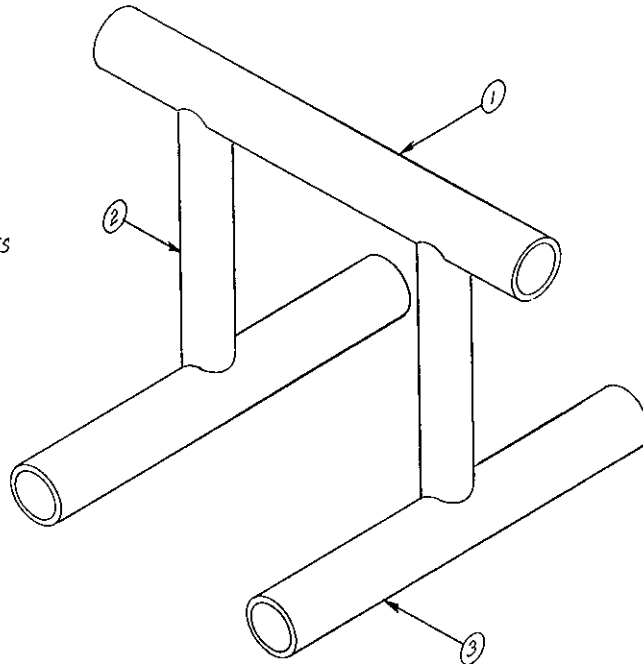
PUSH-UP BARS SET OF 2

NO.	QU.	NAME	MATERIAL
1	1	HAND GRIP	1 1/4" I.D. X 14" BLACK PIPE
2	2	UPRIGHT	1" I.D. X 8" BLACK PIPE
3	2	BASE	1 1/4" I.D. X 12" BLACK PIPE

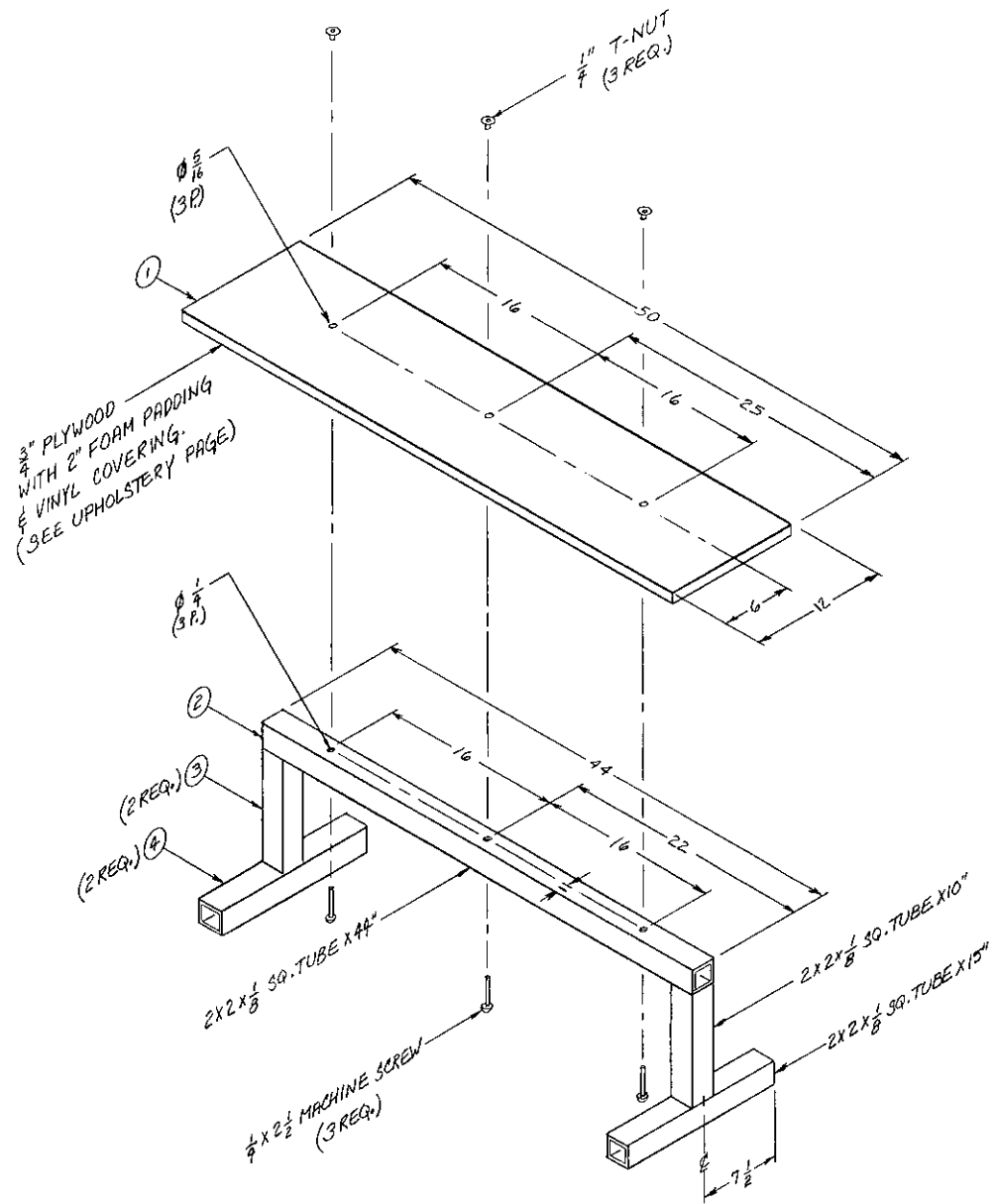
MATERIALS X 2 FOR SET

NOTES:

1. ACCURACY ON DEVELOPING SQUARE JOINTS AND PARALLEL PARTS IS ESSENTIAL.
2. CLAMP, TACK, AND CHECK ALL JOINTS BEFORE FINAL WELDING.
3. CHECK FLATNESS TO FLOOR BEFORE FINAL WELDING.

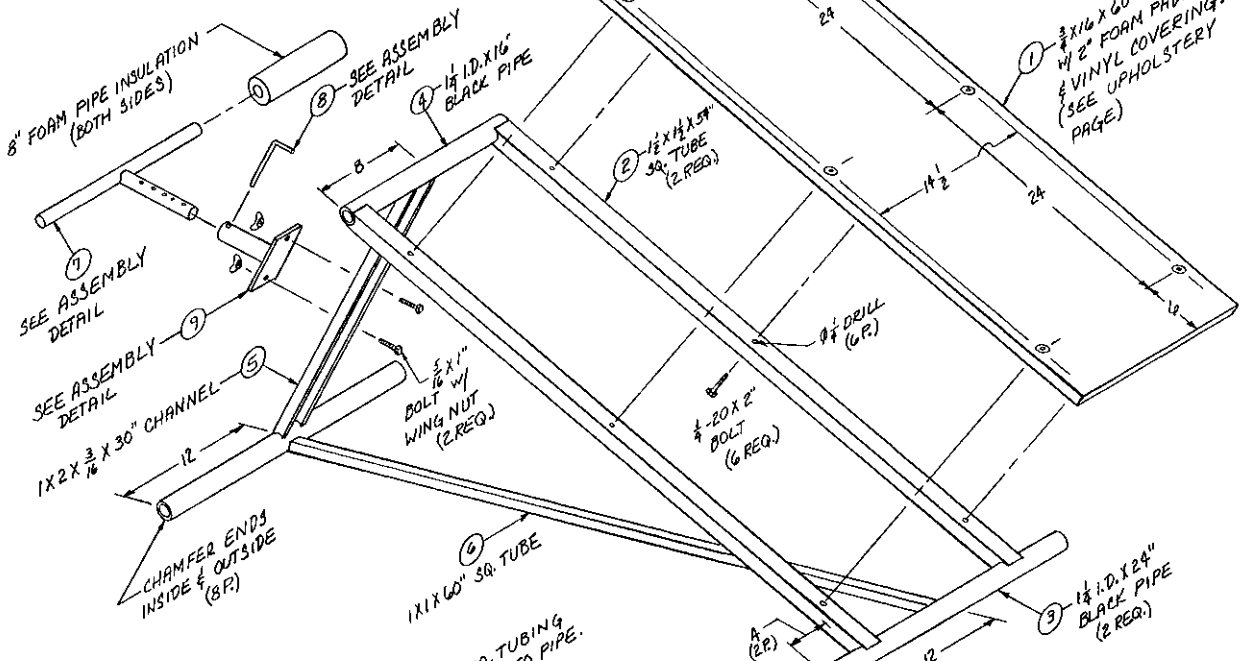
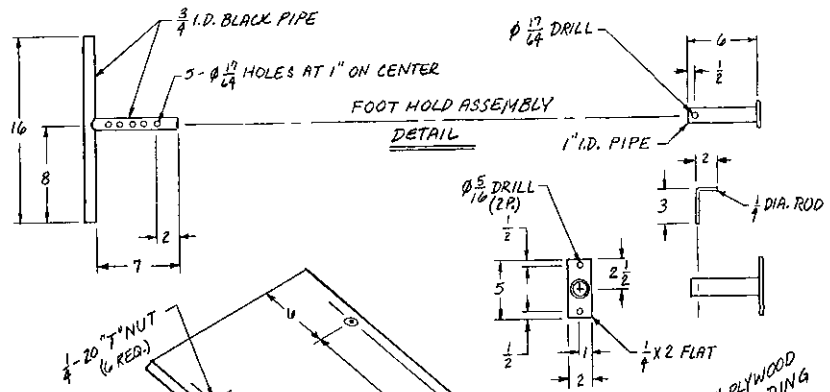


BUTTERFLY BENCH			
NO.	QU.	NAME	MATERIAL
1	1	SEAT	$\frac{3}{4}$ " X 12 X 50 PLYWOOD
2	1	SEAT SUPPORT	2 X 2 X $\frac{1}{8}$ " SQ. TUBE X 44"
3	2	LEG	2 X 2 X $\frac{1}{8}$ " SQ. TUBE X 10"
4	2	BASE	2 X 2 X $\frac{1}{8}$ " SQ. TUBE X 15"



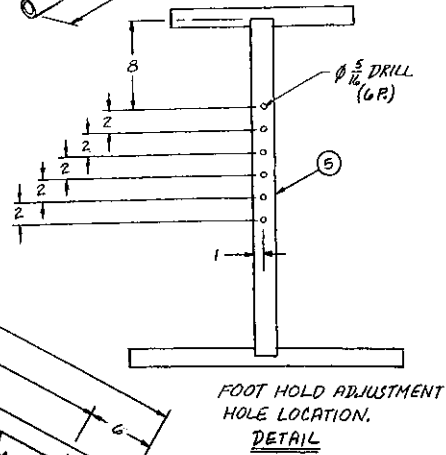
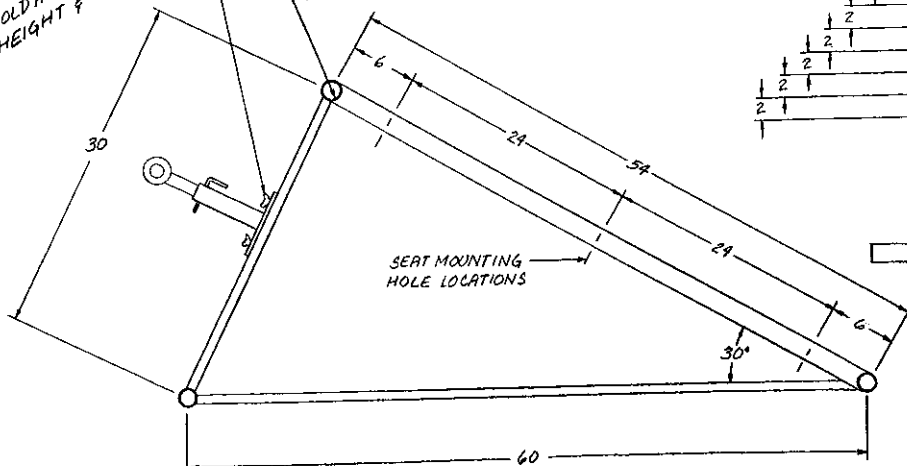
SIT-UP BENCH

NO.	QU.	NAME	MATERIAL
1	1	SEAT	$\frac{3}{4}$ " X 16" X 60" PLYWOOD
2	2	SEAT SUPPORT	$1\frac{1}{2}$ " X $1\frac{1}{2}$ " X 54" SQ. TUBE
3	2	BASE	$1\frac{1}{4}$ " I.D. X 24" PIPE
4	1	TOP SUPPORT	$1\frac{1}{4}$ " I.D. X 16" PIPE
5	1	FRONT SUPPORT	1 X 2 X $\frac{3}{16}$ " X 30" CHANNEL
6	1	BASE CONNECTOR	1 X 1 X 60" SQ. TUBE
7	1	FOOT HOLD	$\frac{3}{4}$ " I.D. X 23" PIPE
8	1	ADJUSTER PIN	$\frac{1}{4}$ " DIA. X 5" ROD
9	1	ADJUSTER BASE	SEE ASSEMBLY

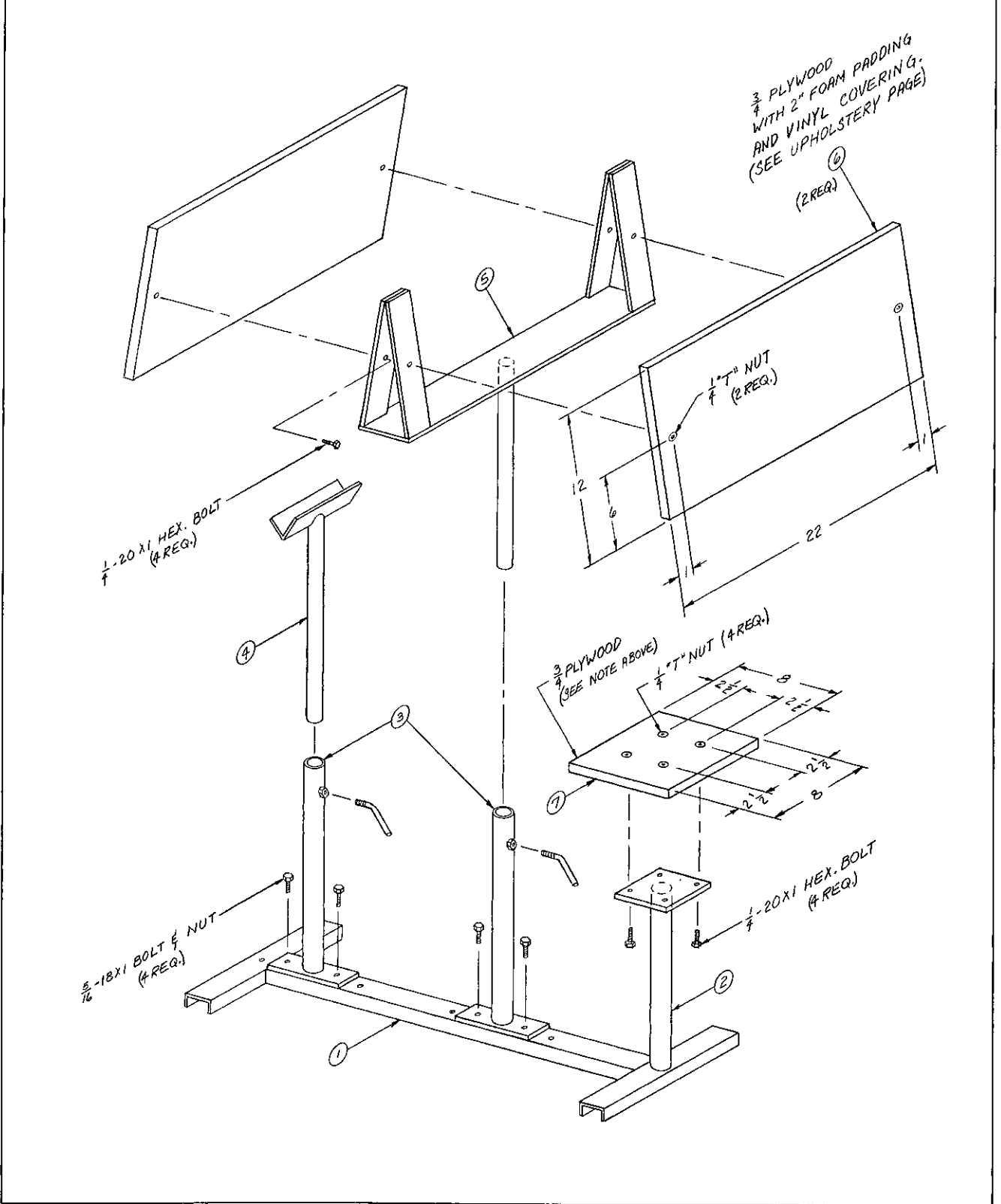


FOOT HOLD ASSEMBLY ADJUSTS BOTH HEIGHT & LENGTH.

RADIUS END OF SQ. TUBING & CHANNEL TO FIT TO PIPE.

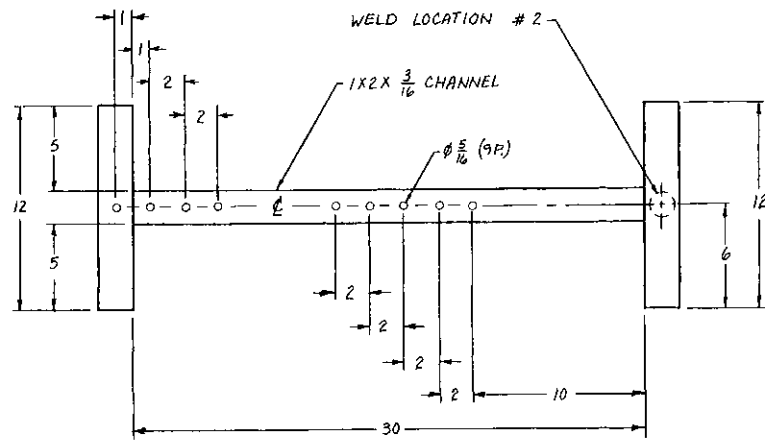


CURLING BENCH				3	2	HEIGHT ADJUSTER	ASSEMBLY	PAGE 1 OF 2
No.	QU.	NAME	MATERIAL	4	1	WEIGHT REST	ASSEMBLY	
1	1	BASE	ASSEMBLY	5	1	BODY SUPPORT	ASSEMBLY	
2	1	SEAT SUPPORT	ASSEMBLY	6	2	SUPPORT BOARD	$\frac{3}{4}$ " X 12 X 22 PLYWOOD	
				7	1	SEAT BOARD	$\frac{3}{4}$ " X 8 X 8 PLYWOOD	

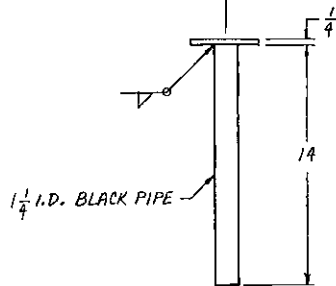
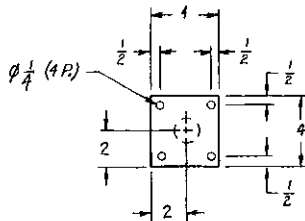


CURLING BENCH

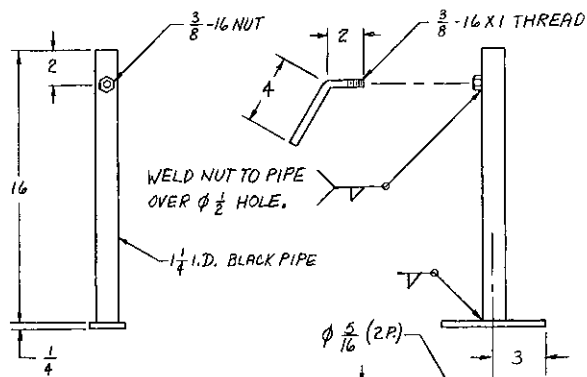
PAGE 2 OF 2



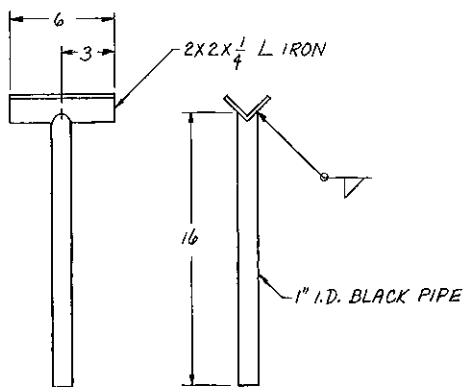
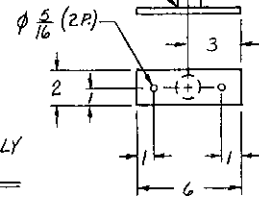
#1 BASE ASSEMBLY DETAIL



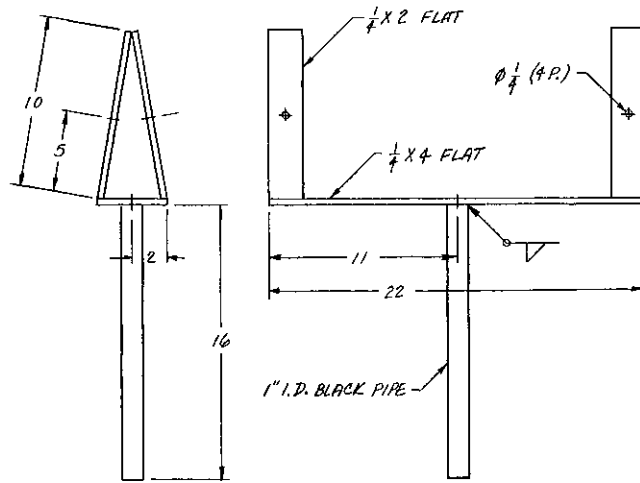
#2 SEAT SUPPORT ASSEMBLY DETAIL



#3 HEIGHT ADJUSTER ASSEMBLY DETAIL
(2 REQ.)

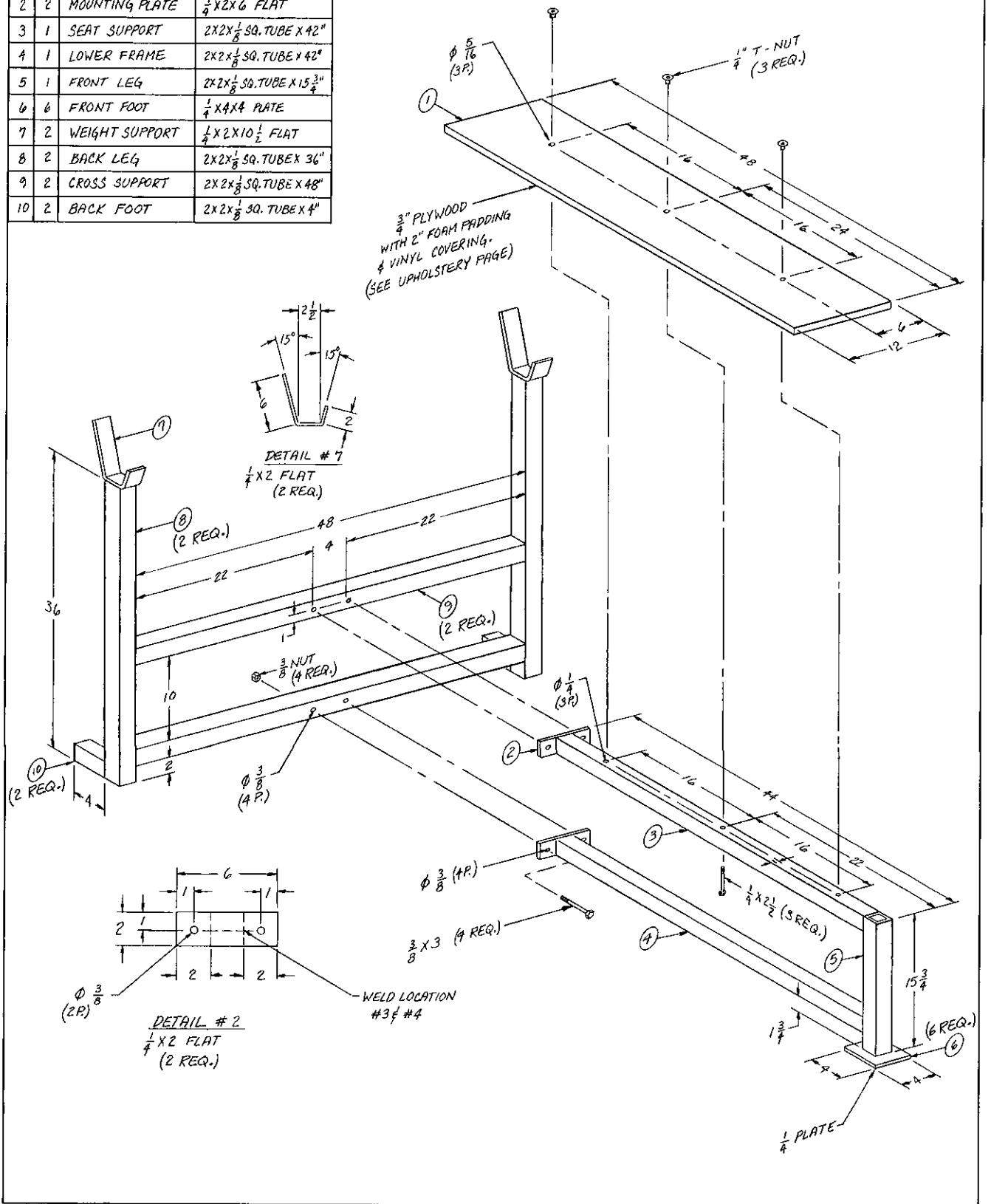


#4 WEIGHT REST ASSEMBLY DETAIL

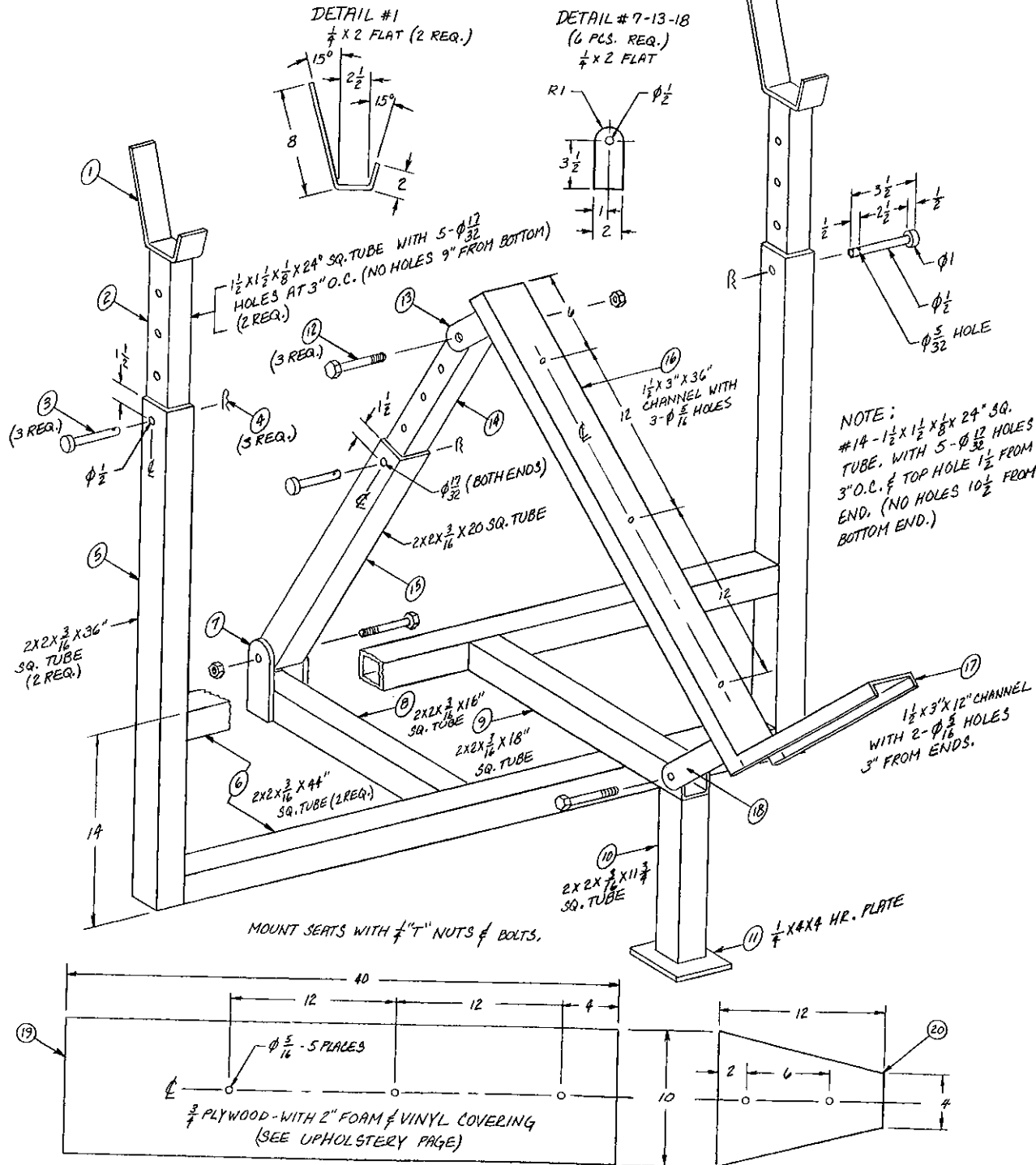


#5 BODY SUPPORT ASSEMBLY DETAIL

WEIGHTLIFTING BENCH			
NO.	QU.	NAME	MATERIAL
1	1	SEAT	$\frac{3}{4}$ " X 12 X 48 PLYWOOD
2	2	MOUNTING PLATE	$\frac{1}{4}$ " X 2 X 6 FLAT
3	1	SEAT SUPPORT	2 X 2 X $\frac{1}{8}$ " SQ. TUBE X 42"
4	1	LOWER FRAME	2 X 2 X $\frac{1}{8}$ " SQ. TUBE X 42"
5	1	FRONT LEG	2 X 2 X $\frac{1}{8}$ " SQ. TUBE X $15\frac{3}{4}$ "
6	6	FRONT FOOT	$\frac{1}{4}$ " X 4 X 4 PLATE
7	2	WEIGHT SUPPORT	$\frac{1}{4}$ " X 2 X $10\frac{1}{2}$ " FLAT
8	2	BACK LEG	2 X 2 X $\frac{1}{8}$ " SQ. TUBE X 36"
9	2	CROSS SUPPORT	2 X 2 X $\frac{1}{8}$ " SQ. TUBE X 48"
10	2	BACK FOOT	2 X 2 X $\frac{1}{8}$ " SQ. TUBE X 4"

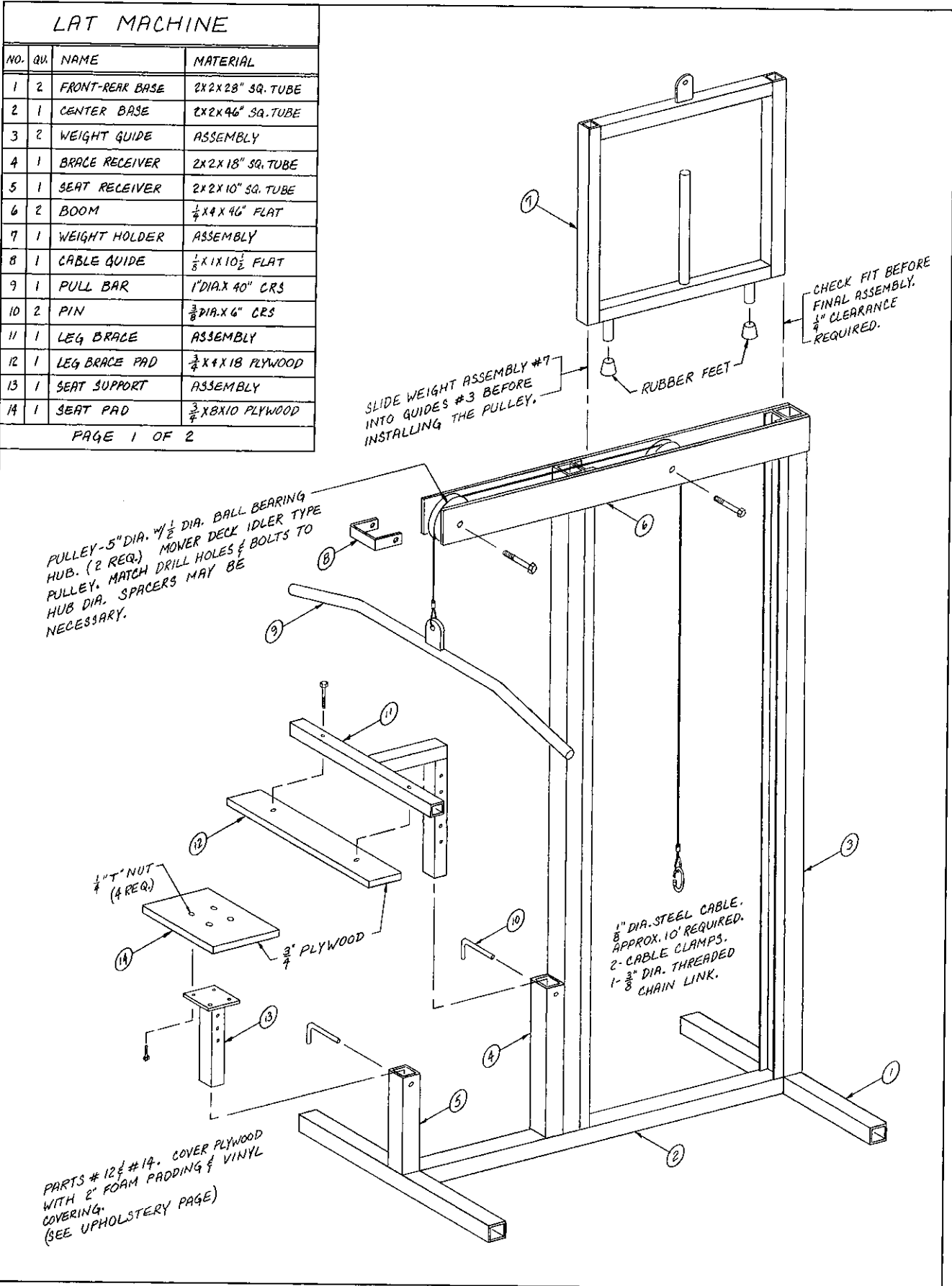


INCLINED BENCH			
NO.	QU.	NAME	MATERIAL
1	2	WEIGHT SUPPORT	$\frac{1}{2} \times 2 \times 12\frac{1}{2}$ "
2	2	EXTENDER	$1\frac{1}{2} \times 1\frac{1}{2} \times \frac{1}{8} \times 24$ "
3	3	PIN	$\phi 1" \times 3\frac{1}{2}$ CRS
4	3	QUICK CLIP	HARDWARE
5	2	UPRIGHT	$2 \times 2 \times \frac{3}{16} \times 36$ "
6	2	CROSS MEMBER	$2 \times 2 \times \frac{3}{16} \times 44$ "
7	2	PIVOT	$\frac{1}{4} \times 2 \times 4\frac{1}{2}$ "
8	1	REAR SUPPORT	$2 \times 2 \times \frac{3}{16} \times 16$ "
9	1	FRONT SUPPORT	$2 \times 2 \times \frac{3}{16} \times 18$ "
10	1	LEG	$2 \times 2 \times \frac{3}{16} \times 11\frac{3}{4}$ "
11	1	FOOT	$\frac{1}{4} \times 4 \times 4$
12	3	BOLT & NUT	$\frac{1}{2}$ -13 NC X 3"
13	2	PIVOT	$\frac{1}{4} \times 2 \times 4\frac{1}{2}$ "
14	1	SEAT EXTENDER	$1\frac{1}{2} \times 1\frac{1}{2} \times \frac{1}{8} \times 24$ "
15	1	SEAT UPRIGHT	$2 \times 2 \times \frac{3}{16} \times 20$ "
16	1	BACK SUPPORT	$1\frac{1}{2} \times 3 \times 36$ "
17	1	SEAT SUPPORT	$1\frac{1}{2} \times 3 \times 12$ "
18	2	PIVOT	$\frac{1}{2} \times 2 \times 4\frac{1}{2}$ "
19	1	SEAT BACK	$\frac{3}{4} \times 10" \times 40"$
20	1	SEAT BOTTOM	$\frac{3}{4} \times 10" \times 12"$



LAT MACHINE			
NO.	QU.	NAME	MATERIAL
1	2	FRONT-REAR BASE	2X2X28" SQ. TUBE
2	1	CENTER BASE	2X2X46" SQ. TUBE
3	2	WEIGHT GUIDE	ASSEMBLY
4	1	BRACE RECEIVER	2X2X18" SQ. TUBE
5	1	SEAT RECEIVER	2X2X10" SQ. TUBE
6	2	BOOM	1/2 X 4 X 46" FLAT
7	1	WEIGHT HOLDER	ASSEMBLY
8	1	CABLE GUIDE	1/8 X 1 X 10 1/2" FLAT
9	1	PULL BAR	1" DIA. X 40" CRS
10	2	PIN	3/8 DIA. X 6" CRS
11	1	LEG BRACE	ASSEMBLY
12	1	LEG BRACE PAD	3/4 X 4 X 18 PLYWOOD
13	1	SEAT SUPPORT	ASSEMBLY
14	1	SEAT PAD	3/4 X 8 X 10 PLYWOOD

PAGE 1 OF 2



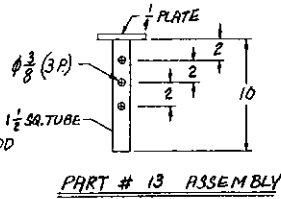
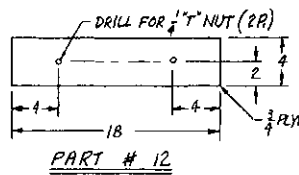
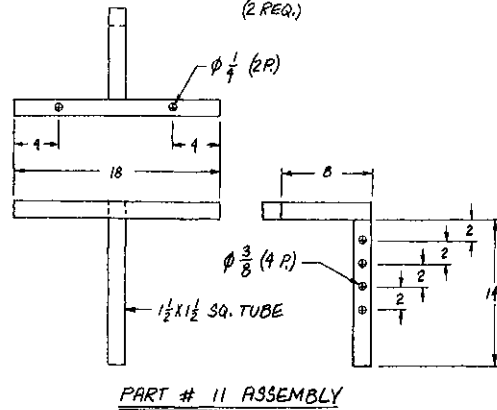
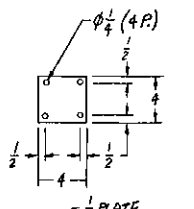
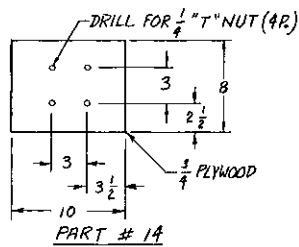
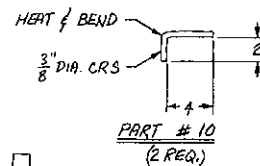
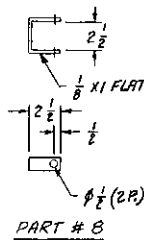
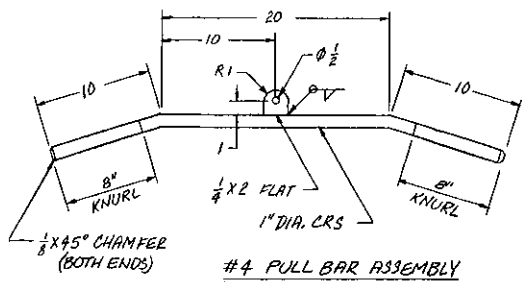
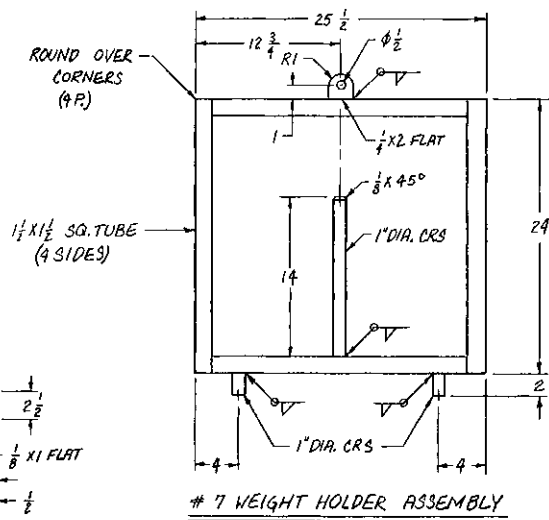
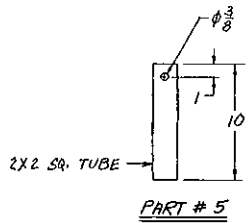
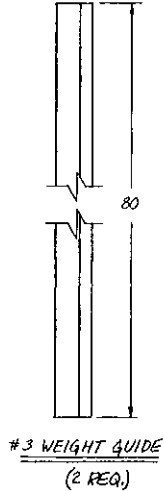
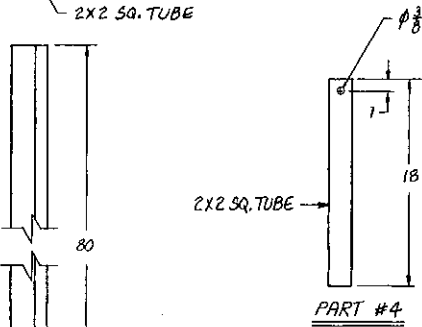
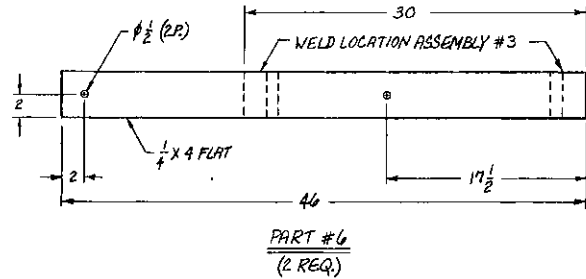
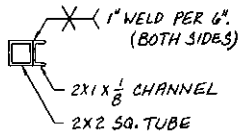
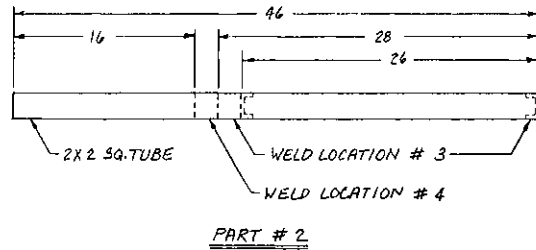
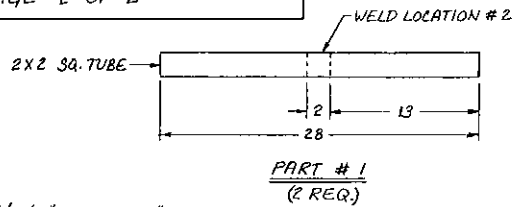
PULLEY-5" DIA. 1/2" DIA. BALL BEARING HUB. (2 REQ.) MOVER DECK IDLER TYPE PULLEY. MATCH DRILL HOLES & BOLTS TO HUB DIA. SPACERS MAY BE NECESSARY.

1" DIA. STEEL CABLE. APPROX. 10' REQUIRED. 2- CABLE CLAMPS. 1- 3/8" DIA. THREADED CHAIN LINK.

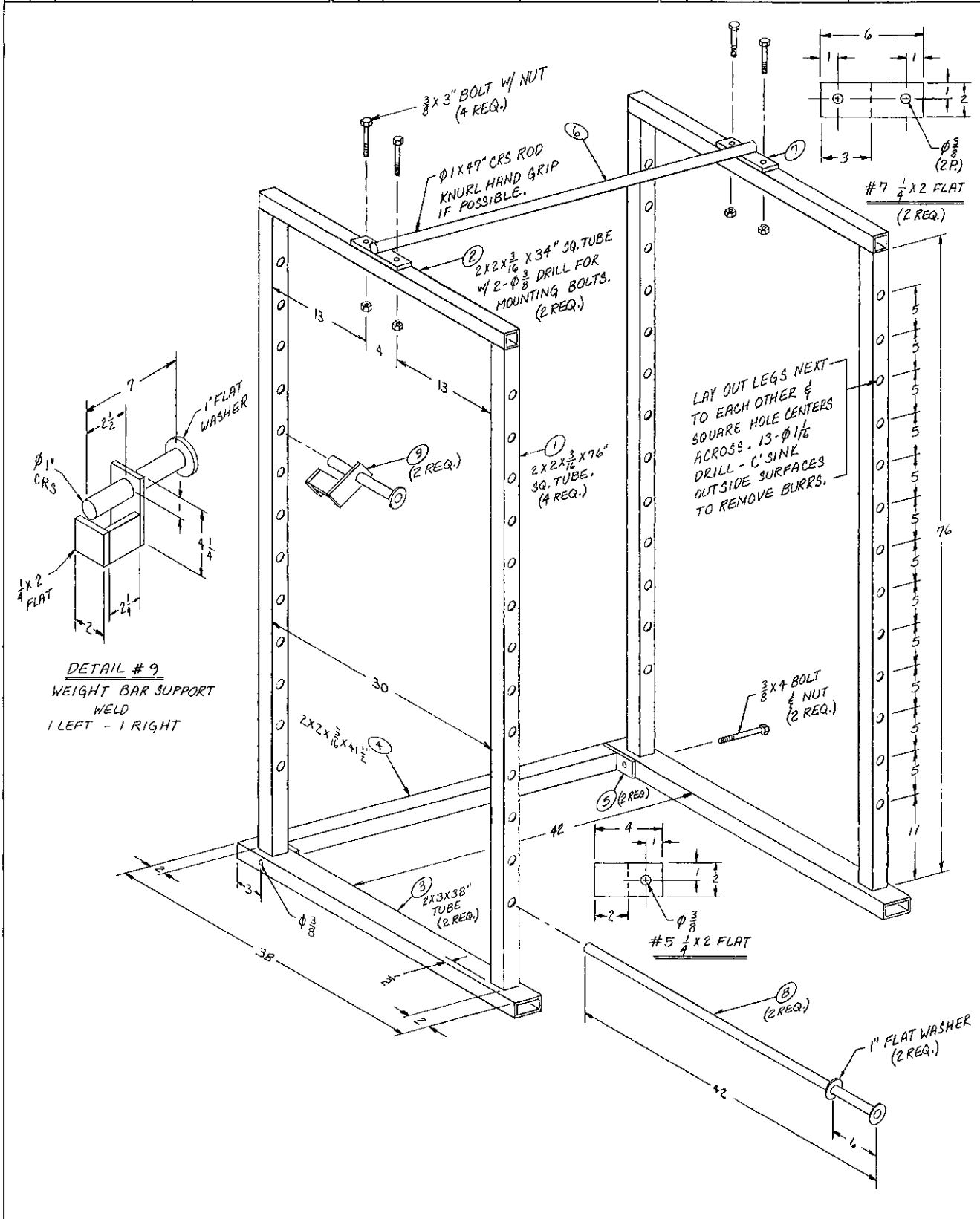
PARTS # 12 & # 14. COVER PLYWOOD WITH 2" FOAM PADDING & VINYL COVERING. (SEE UPHOLSTERY PAGE)

LAT MACHINE

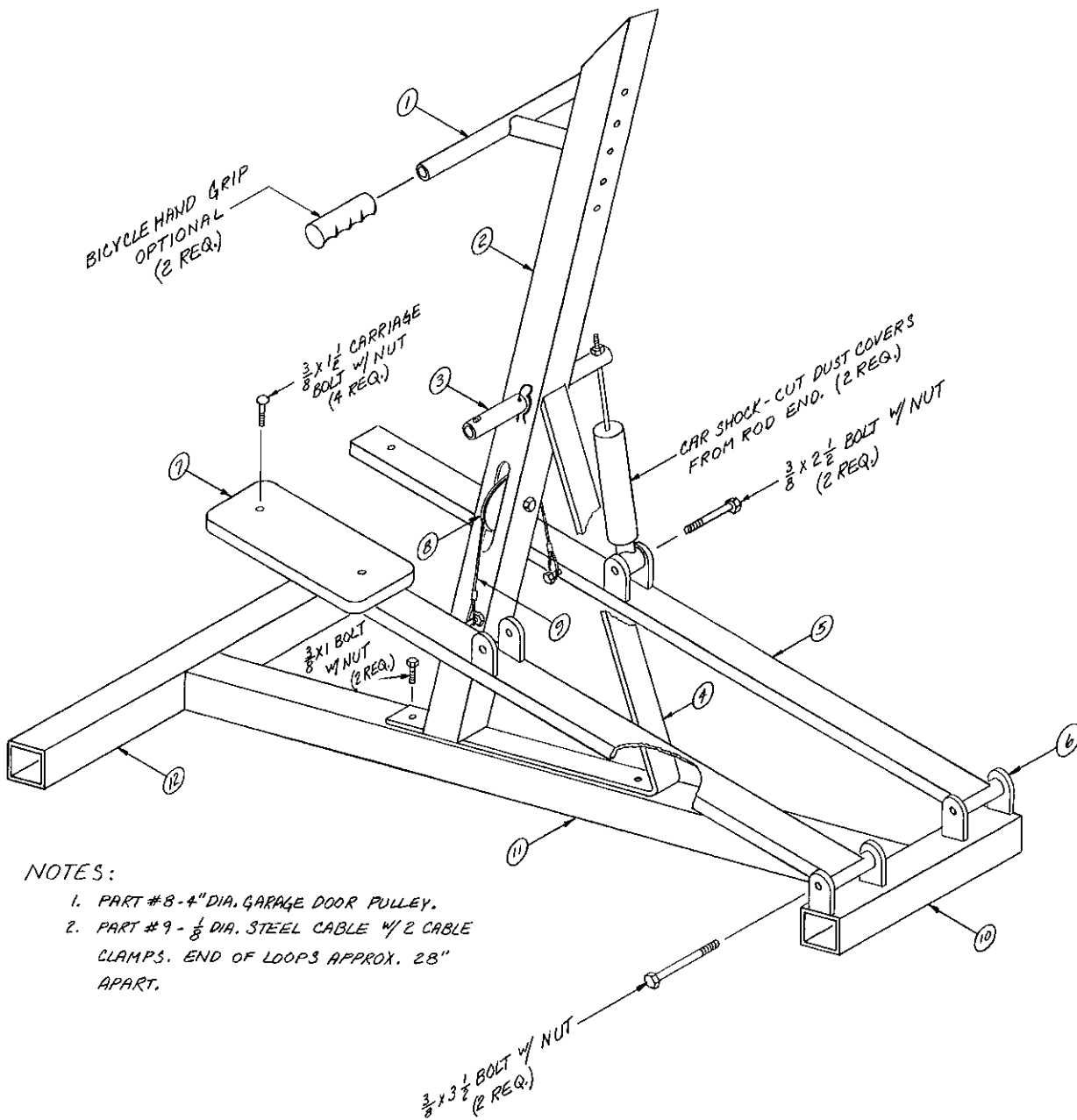
PAGE 2 OF 2



SQUAT RACK W/ CHINNING BAR			
NO.	QU.	NAME	MATERIAL
2	2	HEADER	2X2X $\frac{3}{16}$ X34"
3	2	BASE	2X3X38"
4	1	REAR SUPPORT	2X2X $\frac{3}{16}$ X41 $\frac{1}{2}$ "
5	2	SUPPORT BRACKETS	$\frac{1}{4}$ X2X4 FLAT
6	1	CHIN-UP BAR	1" DIA. X 47" CRS
7	2	BAR BRACKET	$\frac{1}{4}$ X2X6 FLAT
8	2	SAFETY BAR	ASSEMBLY
9	2	WEIGHT BAR SUPT.	ASSEMBLY



NO.		QU.	NAME	MATERIAL
STAIR STEPPER				6 8 PIVOT BRACKET $\frac{3}{8} \times 1\frac{1}{2} \times 2\frac{1}{4}$ "
				7 2 FOOT PAD $\frac{3}{4} \times 5 \times 12$ PLYWOOD
				8 1 PULLEY SEE NOTE #1
1	1	HANDLE BAR	ASSEMBLY	9 1 CABLE $\frac{1}{8}$ STEEL CABLE 36"
2	1	COLUMN	$2\frac{1}{2} \times 2\frac{1}{2} \times \frac{1}{8} \times 48$ "	10 1 FRONT SUPPORT $2\frac{1}{2} \times 2\frac{1}{2} \times \frac{1}{8} \times 18$ "
3	1	RAM SUPPORT	$\frac{1}{2}$ I.D. PIPE $\times 10\frac{1}{2}$ "	11 1 CENTER SUPPORT $2\frac{1}{2} \times 2\frac{1}{2} \times \frac{1}{8} \times 48$ "
4	1	COLUMN BRACE	$\frac{1}{4} \times 2 \times 42$ "	12 1 REAR SUPPORT $2\frac{1}{2} \times 2\frac{1}{2} \times \frac{1}{8} \times 24$ "
5	2	PIVOT ARM	ASSEMBLY	PAGE 1 OF 2

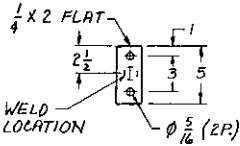
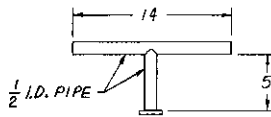


NOTES:

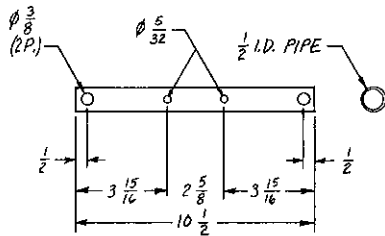
- PART #8 - 4" DIA. GARAGE DOOR PULLEY.
- PART #9 - $\frac{1}{8}$ DIA. STEEL CABLE $\frac{1}{2}$ CABLE CLAMPS. END OF LOOPS APPROX. 28" APART.

STAIR STEPPER

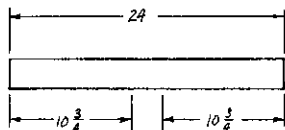
PAGE 2 OF 2



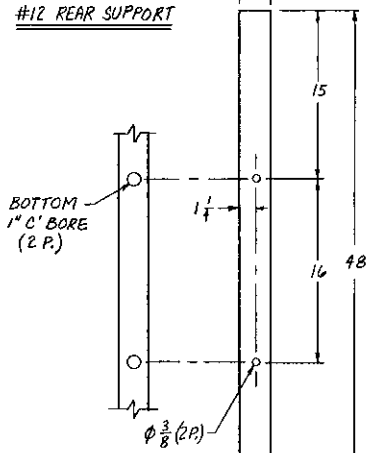
DETAIL
ASSEMBLY #1
HANDLE BAR



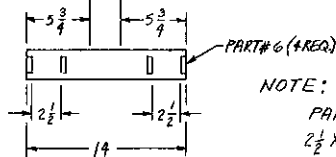
#3 RAM SUPPORT
2 X SCALE



#12 REAR SUPPORT

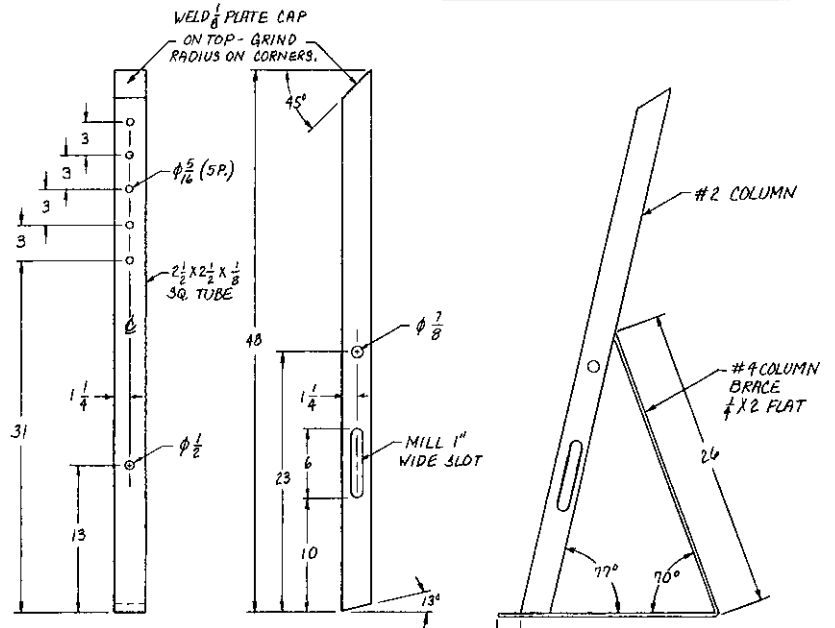


#11 CENTER SUPPORT

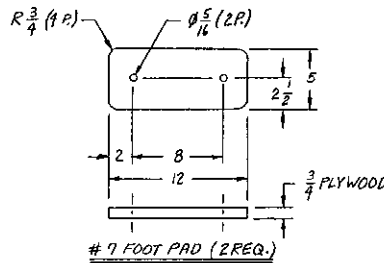
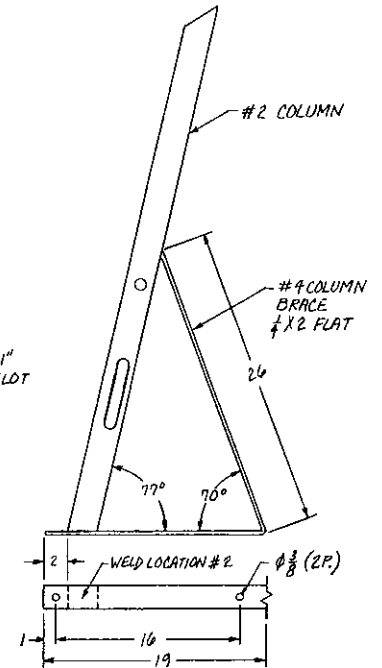


#10 FRONT SUPPORT

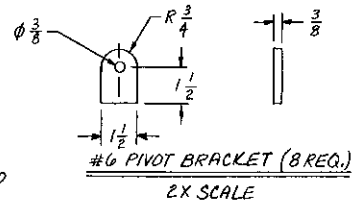
NOTE:
PART NOS. 10-11-12
2 1/2 X 2 1/2 X 1/8 SQ. TUBE



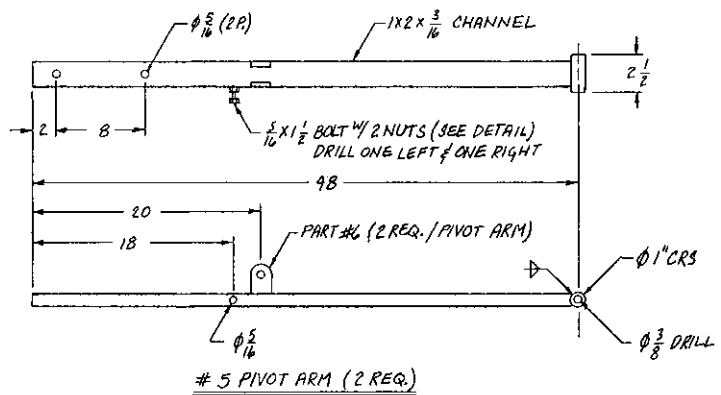
#2 COLUMN



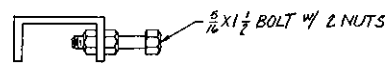
#7 FOOT PAD (2 REQ.)



#6 PIVOT BRACKET (8 REQ.)
2 X SCALE



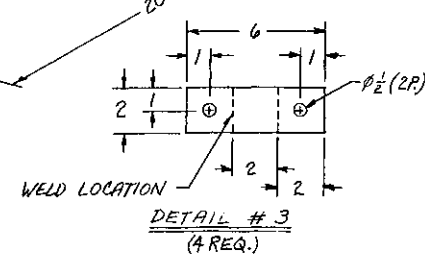
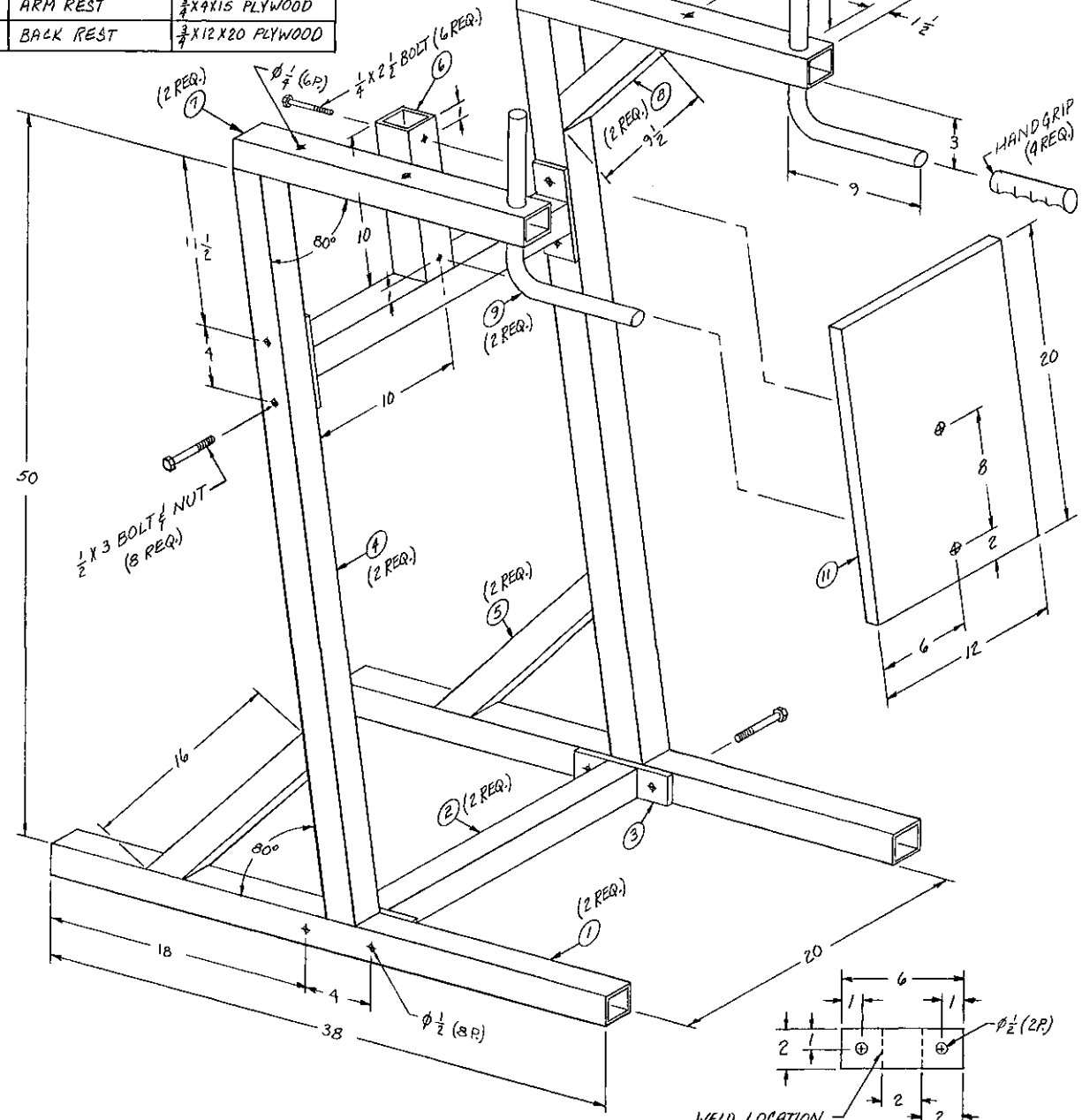
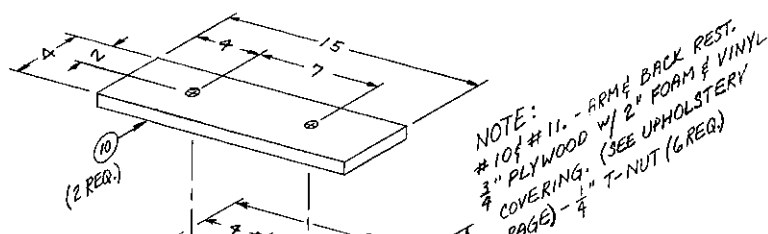
#5 PIVOT ARM (2 REQ.)



DETAIL
CABLE CONNECTOR
ONE LEFT - ONE RIGHT

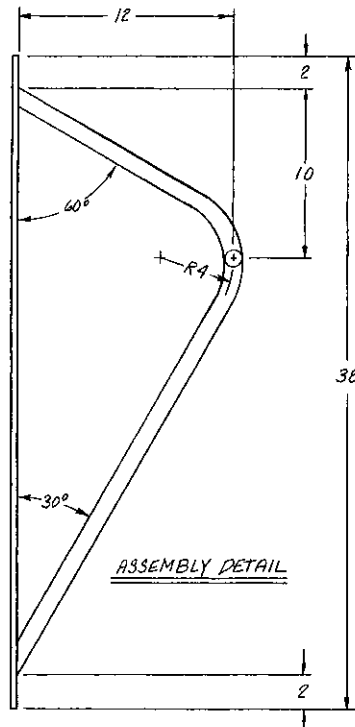
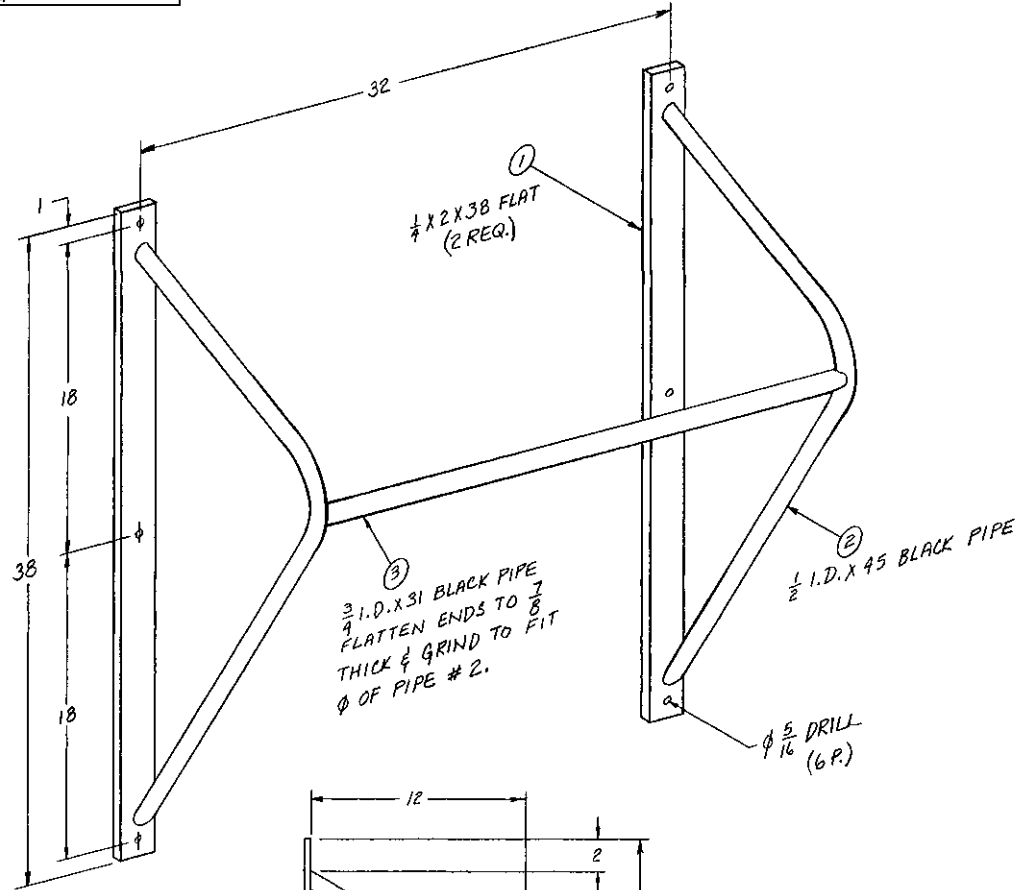
DIP PRESS - LEG LIFT

NO.	QU.	NAME	MATERIAL
1	2	BASE	2X2 X 38" SQ. TUBE
2	2	CROSS BRALE	2X2 X 19 1/2" SQ. TUBE
3	4	BRACKET	1/4" X 2 X 6 FLAT
4	2	UPRIGHT	2X2 X 50" SQ. TUBE
5	2	UPRIGHT BRALE	2X2 X 16" SQ. TUBE
6	1	BACK SUPPORT	2X2 X 10" SQ. TUBE
7	2	ARM SUPPORT	2X2 X 20" SQ. TUBE
8	2	SUPPORT BRACE	2X2 X 9 1/2" SQ. TUBE
9	2	GRAB BAR	1" DIA. X 18" CRS
10	2	ARM REST	3/4" X 9 X 15 PLYWOOD
11	1	BACK REST	3/4" X 12 X 20 PLYWOOD



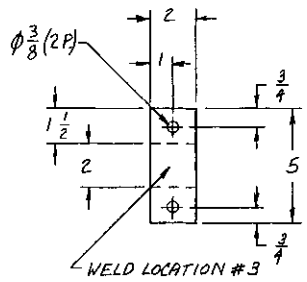
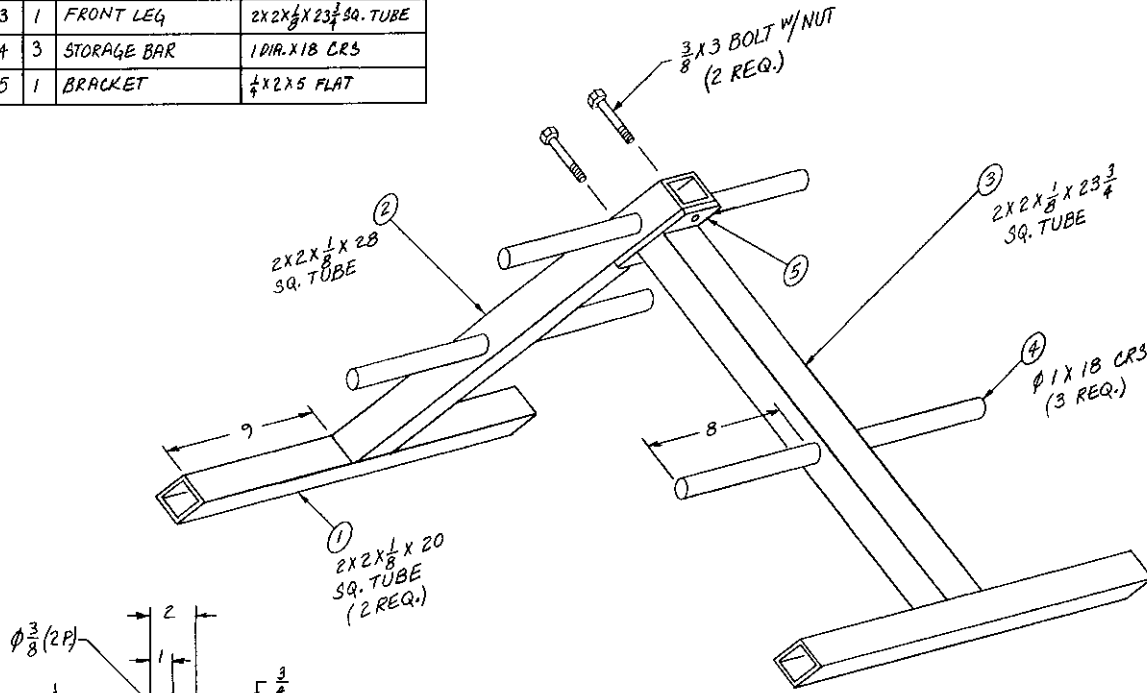
CHIN-UP BAR

NO.	QU.	NAME	MATERIAL
1	2	WALL BRACKET	$\frac{1}{4}$ " X 2 X 38 FLAT
2	2	BAR SUPPORT	$\frac{1}{2}$ " I.D. X 45 PIPE
3	1	BAR	$\frac{3}{4}$ " I.D. X 31 PIPE

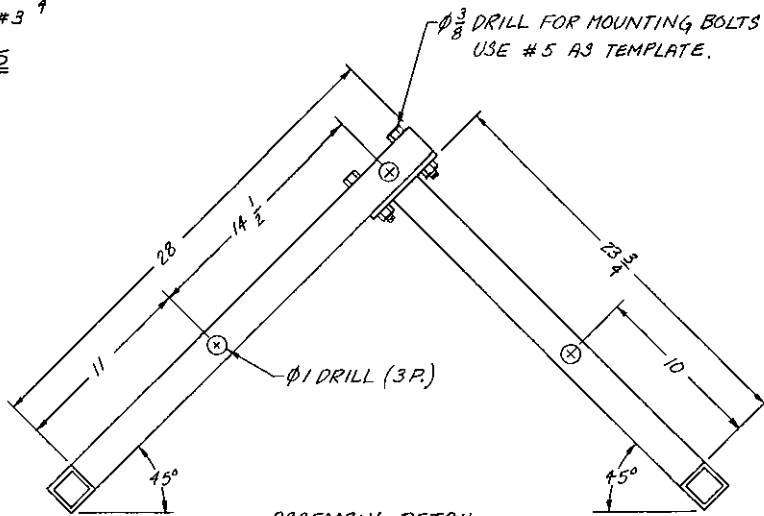


WEIGHT STORAGE TREE

NO.	QU.	NAME	MATERIAL
1	2	BASE	2X2X $\frac{1}{8}$ X20 SQ. TUBE
2	1	REAR LEG	2X2X $\frac{1}{8}$ X28 SQ. TUBE
3	1	FRONT LEG	2X2X $\frac{1}{8}$ X23 $\frac{3}{4}$ SQ. TUBE
4	3	STORAGE BAR	1 DIA. X 18 CRS
5	1	BRACKET	$\frac{1}{4}$ X2X5 FLAT



DETAIL # 5
 $\frac{1}{4}$ X2 FLAT



ASSEMBLY DETAIL

DEAD LIFT BAR			
NO.	QU.	NAME	MATERIAL
1	2	WEIGHT BAR	1" DIA. CRS 14"
2	2	YOKE	1" DIA. CRS 42" APPROX.
3	2	HANDLE	1" DIA. CRS 9"

