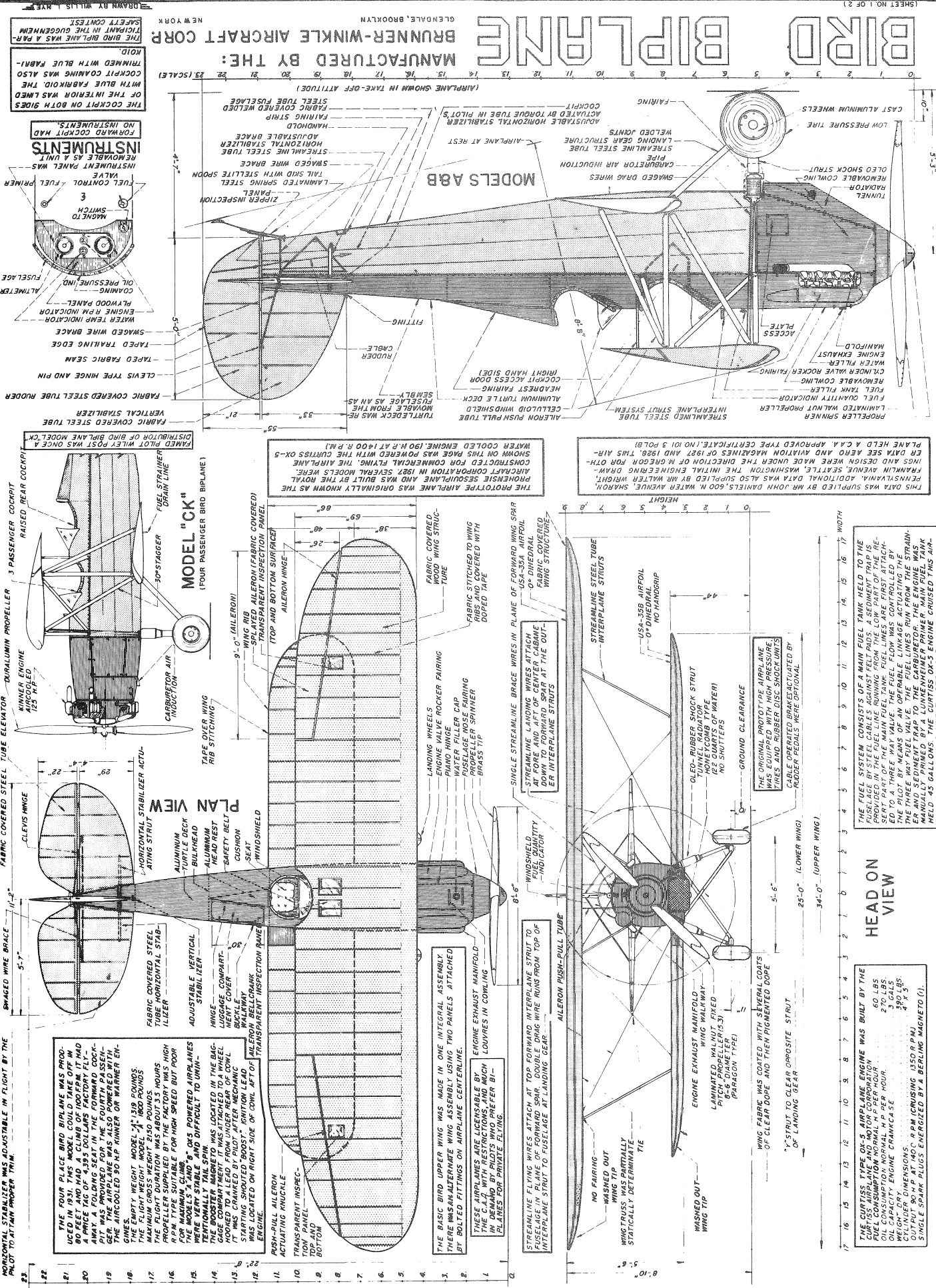


# BIRD Biplane

## MANUFACTURED BY THE: BRUNNER-WINKLE AIRCRAFT CORP.



SAFETY CONTEST.  
THE BIRD BIPLANE WAS A PARTICIPANT IN THE QUINCENTENNIAL SAFETY CONTEST.

NO INSTRUMENTS  
INSTRUMENT PANEL WAS REMOVABLE AS A UNIT  
FORWARD COCKPIT HAD INSTRUMENTS  
THE COCKPIT ON BOTH SIDES OF THE INTERIM WAS LINED WITH BLUE FABRIKOID, THE COCKPIT COUPLING WAS ALSO THINNED WITH BLUE FABRIKOID.

MODEL "CK"  
(FOUR PASSENGER BIRD BIPLANE)

THE FOUR PLACE BIRD BIPLANE WAS PRODUCED IN 1931. THIS MODEL COULD TAKE OFF IN 80 FEET AND HAD A CLIMB OF 100 FPM. IT HAD A PRICE TAG OF \$395 DOLLARS FACTORY DELIVERED. THE BIRD BIPLANE WAS THE FOURTH PASSENGER BIPLANE TO BE BUILT BY BRUNNER-WINKLE AIRCRAFT CORP. THE BIPLANE WAS ALSO POWERED WITH A 30-HP ENGINE. THE BIPLANE WAS THE ONLY BIPLANE TO BE BUILT BY BRUNNER-WINKLE AIRCRAFT CORP. THE BIPLANE WAS THE ONLY BIPLANE TO BE BUILT BY BRUNNER-WINKLE AIRCRAFT CORP.

THE BASIC BIRD UPPER WING WAS MADE IN ONE INTEGRAL ASSEMBLY. THERE WAS AN ALTERNATE WING ASSEMBLY USING TWO PANELS ATTACHED BY BOLTED FITTINGS ON AIRPLANE CENTERLINE.

THESE AIRPLANES ARE LICENSEABLE BY THE C.A.A. WITH RESTRICTIONS, AND MUCH IN DEMAND BY PILOTS WHO PREFER BIPLANES FOR PROSTATE FLIGHT.

STREAMLINE FLYING WIRES ATTACH AT TOP FORWARD INTERPLANE STRUT TO FUSELAGE IN PLANE OF FORWARD SPAR. DOUBLE DRAG WIRE RUNS FROM TOP OF INTERPLANE STRUT TO FUSELAGE AT LANDING GEAR.

WING FABRIC WAS COATED WITH SEVERAL COATS OF CLEAR DOPE AND THEN PIGMENTED DOPE.

THE CURTISS TYPE OX-5 AIRPLANE ENGINE WAS BUILT BY THE CURTISS AIRPLANE AND MOTOR CORPORATION. FUEL CONSUMPTION NORMAL 14 P.P.H. (PER HOUR). OIL CAPACITY ENGINE CRANKCASE 3 GALLONS. WEIGHT - 375 LBS. OUTPUT 80 H.P. AT 1400 R.P.M. (CRUISING 1350 R.P.M.) SINGLE SPARK PLUGS ENERGIZED BY A BERLING MAGNETO (C).

THE ORIGINAL PROTOTYPE BIPLANE WAS EQUIPPED WITH HIGH PRESSURE WIRE AND RUBBER RISE RODS. RUBBER PEDALS WERE OPTIONAL.

THE FUEL SYSTEM CONSISTS OF A MAIN FUEL TANK HELD TO THE FUSELAGE BY STEEL CABLES AGAINST FUEL PADS. A SEDIMENT TRAP IS PROVIDED IN THE FUEL LINE RUNNING FROM THE LOW PART OF THE RESERVOIR TO THE FUEL VALVE. THE FUEL FLOW WAS CONTROLLED BY A THREE WAY VALVE. THE FUEL FLOW WAS CONTROLLED BY THE PILOT BY MEANS OF AN OPERABLE LINKAGE ACTUATING THE THREE WAY FUEL VALVE. THE FUEL LINES RUN FROM THE STRAIN, MANUALLY PRIMED BY A LUNENHEIMER PRIMER. MAIN FUEL TANK HELD 45 GALLONS. THE CURTISS OX-5 ENGINE CRUISED THIS AIRPLANE ON 7 GALLONS OF FUEL PER HOUR.

PHENYLAIRMA. ADDITIONAL DATA WAS ALSO SUPPLIED BY MR. WATER WRIGHT, PHOENIX, ARIZONA. THE BIPLANE WAS BUILT BY THE ROYAL AIRCRAFT CORPORATION IN 1927. SPECIAL MODELS WERE CONSTRUCTED FOR COMMERCIAL FLYING. THE AIRPLANE SHOWN ON THIS PAGE WAS POWERED WITH THE CURTISS OX-5 WATER COOLED ENGINE. (90 H.P. AT 1400 R.P.M.)

BRUNNER-WINKLE AIRCRAFT CORP.  
GLENDALE, BROOKLYN  
NEW YORK

MODEL "CK"  
(FOUR PASSENGER BIRD BIPLANE)

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RAISED REAR COCKPIT  
30-HP STAGGER  
FUEL STRAINER  
DRAIN LINE  
CARRIAGE AIR INDUCTION  
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AIRCOOLED ENGINE  
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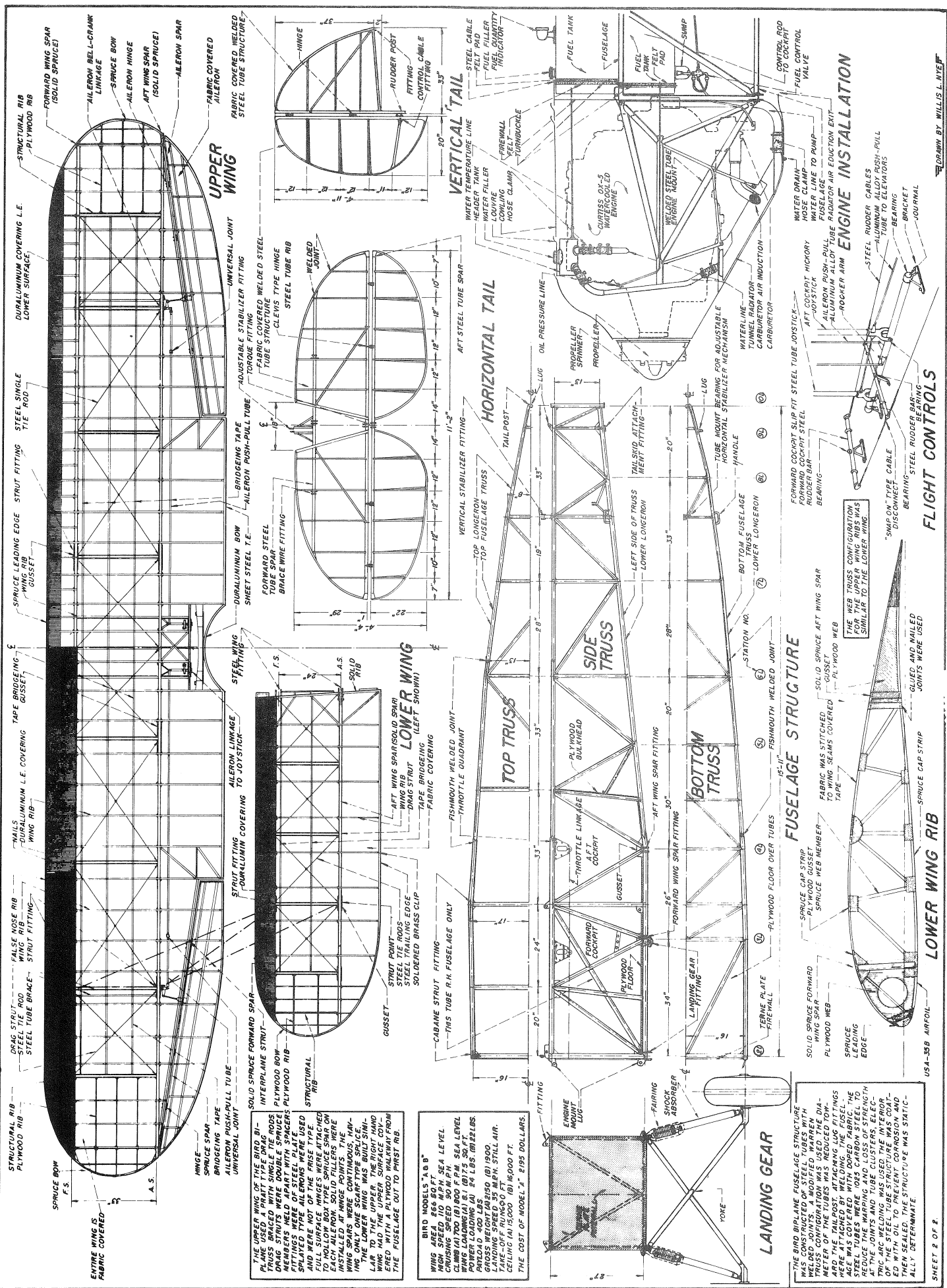
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HORIZONTAL STABILIZER WAS ADJUSTABLE IN FLIGHT BY THE SHAGED WIRE BRACE... FABRIC COVERED STEEL TUBE ELEVATOR... DURALUMINUM PROPELLER... PASSENGER CONTROL...



**BIRD MODELS 18" B"**  
 WING AREA 256.80 FT.  
 HIGH SPEED 110 M.P.H. SEA LEVEL  
 CRUISING SPEED 80 M.P.H. SEA LEVEL  
 MAXIMUM SPEED 100 M.P.H. SEA LEVEL  
 WING LOADING 141.81 (107.5 SOFT)  
 POWER LOADING 14.84 LBS. (12.8 LBS.)  
 GROSS WEIGHT 14.850 (10) 1900  
 LANDING SPEED 35 M.P.H. STILL AIR.  
 TAKE-OFF RUN 600 FT.  
 CLIMBING 14 15000 (10) 16000 FT.  
 THE COST OF MODEL "A" 2155 DOLLARS.

**LANDING GEAR**  
 THE BIRD BUILT THE FUSELAGE STRUCTURE THE BIRD BUILT THE FUSELAGE STRUCTURE WITH WELDED JOINTS. A MODIFIED WARREN TRUSS CONFIGURATION WAS USED. THE DIAGONAL MEMBERS WERE ATTACHED TO THE WING AND THE TAILPOST BY ATTACHING LUG FITTINGS WERE ATTACHED BY WELDING. THE FUSELAGE WAS ATTACHED TO THE WING AND THE TAILPOST BY WELDING. THE STEEL TUBES WERE 100% CORROSION RESISTANT. TO REDUCE THE WARPING AND LOSS OF STRENGTH AT THE JOINTS AND TUBE CLUSTERS, ELECTROLYTIC WELDING WAS USED. THE INTERIOR OF THE STRUCTURE WAS PAINTED WITH AN ANTI-RUST OIL TO PREVENT CORROSION AND THEN SEALED. THE STRUCTURE WAS STATISTICALLY DETERMINED.

DRAWN BY WILLIS L. NEEF  
 SHEET 2 OF 2