AD601511

293

Technical Note N-596

POLAR STRUCTURES - SPECIFICATIONS FOR THE NCEL WANIGANS

BY

G. E. Sherwood

11 June 1964

DDC
RECEIVED
JUN 25 1964
DDC-IRA B

U. S. NAVAL CIVIL ENGINEERING LABORATORY
Port Hueneme, California

BEST AVAILABLE COPY

20041215106

POLAR STRUCTURES - SPECIFICATIONS FOR THE NCEL WANIGANS

Y-F015-11-01-144

Type C

by

G. E. Sherwood

ABSTRACT

A family of wanigans was developed to provide portable shelters for use in polar regions. These wanigans are of two types: sled wanigans are mounted on cargo sleds for trail use; portable camp wanigans are built with a skid system for limited movement around a camp or work area. All of the wanigans are 20 feet long and 8 feet high. Both types are made in standard 8-foot widths for assembled air shipment, and in extra-wide 10-foot widths for flexibility in interior arrangement. Standard accessories for the wanigans are: a heating and ventilating system, an electrical harness, and a side-mounted fuel tank. This technical note contains the specifications for the NCEL wanigans presented in the Naval Civil Engineering Laboratory Technical Report R-309, "Polar Structures - NCEL Family of Wanigans."

Qualified requesters may obtain copies of this note from DDC

INTRODUCTION

Portable structures called wanigans were developed to house facilities for polar trail parties and transient polar camps or work areas. These wanigans are of modular sandwich panel construction. They are 20 feet long and 8 feet high. Sled wanigans are mounted on sleds for trail use. Portable wanigans are built on a skid system for movement around a camp or work area. Both types are made in standard 8-foot widths for assembled air shipment, and in extra-wide 10-foot widths which permit better interior arrangement. Accessories for the wanigans include a heating and ventilating system, an electrical harness, and a side-mounted fuel tank.

This technical note contains the specifications for the NCEL family of wanigans which are presented in Laboratory Technical Report R-309, "Polar Structures - NCEL Family of Wanigans." Standard specifications referenced in the text are listed in Appendix A.

DESCRIPTION OF WANIGAN COMPONENTS

The NCEL family of wanigans and their standard accessories are detailed in the drawings contained in Appendix B. The major components of the wanigans are:

1. Panels. All panels are 4 feet wide and 2 inches thick. They are constructed of wood framing with 1/4-inch plywood skin on both sides. The inside plywood has aluminum backing to serve as a vapor barrier, and the panels are insulated with 1-1/2-inch fiberglas blankets. Panels are bolted together through gasketed lap joints.

2. Portable Wanigan Floor. The portable wanigan floor is mounted on two steel skids. Timber cross members rest on the skids at 4-foot spacing and support the floor panels which are constructed of tongue and groove 2 by 6's. The wanigan walls are attached to a 2 by 8 frame around the perimeter of the building. The skid system is provided with a tongue which can be attached to either end for towing.

3. Heating and Ventilating System. Heat for the wanigan is

supplied by a 25,000 Btuh oil-fired space heater of the type commonly used in house trailers. A drip pan is provided under the heater, and a conventional vent pipe and roof jack are supplied. Copper tubing is used as a supply line from the fuel tank to the heater. An air intake blower is provided near the heater, and an air exhaust blower is provided as far as possible from the intake. Both blowers are mounted in fixtures with closures for adjusting the amount of fresh air and recirculated air.

4. Electrical Harness. The electrical harness provides general lighting and outlets for general purpose use. The fixtures and outlets are wired into a distribution panel. A house trailer-type connection is provided for connecting the distribution panel to the power source. No power source is included with the harness.

5. Side-Mounted Fuel Tank. The fuel tank is a special design for mounting on the sidewall of a wanigan. The mounting brackets match the bolts used for connecting panels together. The tank is 4 feet wide to conform to the building module, and only 8 inches thick so that it fits flat against the wanigan sidewall. The tank capacity is 80 gallons. It is provided with fittings for connecting a fuel line and for filling and draining the tank.

SPECIFICATIONS FOR THE WANIGANS

1. Scope. The work shall include the furnishing of all material and equipment, and performing all labor for the complete fabrication of the items indicated on the drawings and described and specified herein. The contractor's proposal shall be based on the drawings and specifications herewith and no deviations shall be accepted except as approved in writing by the Contracting Officer.

2. Materials

A. Wood

(1) Lumber. Kiln dried Douglas Fir, conforming to WCLA Grading Rules No. 15, Par. 183-b vertical grain for portable wanigan floor panels, and Par. 184-b flat grain for all other.

(2) Plywood. Plywood shall be Douglas Fir, exterior type, Grade AC with the A face on the outside of the panels, and shall conform to Specification NN-P-530a.

B. Steel

(1) Sheet or Strip. Conform to Specification QQ-S-640, FS-1020.

(2) Bar Stock. Conform to Specification QQ-S-633a.

(3) Structural. Conform to "Standard Specifications for Structural Steel for Bridges and Buildings," Serial Designation A-7 of the American Society for Testing Materials.

C. Aluminum

(1) Cladding for Plywood. The aluminum cladding shall be alloy 3003H14, .015 inch thick with mill finish, no backing, and raw edges.

D. Fastenings

(1) Nails. The nails shall be steel, cement coated, either standard or countersunk head and size as indicated on the drawings, and shall conform to Specification FF-N-105.

(2) Screws. Wood screws shall be steel, of the size and type indicated on the drawings and shall conform to Specification FF-S-111b.

(3) Bolts, Nuts, Washers.

(a) Bolts, carriage, square neck, and nuts. Conform to Type C-2, Table X, of Specification FF-B-571a and nuts Type A-1, Table XII.

(b) Bolts and nuts, hexagonal. Conform to Specification FF-B-571a, Type B-1, Table V and nuts Type A-1, Table XII.

(c) Washers. The washers shall be standard commercial cut steel of the type and size indicated on the drawings.

(d) Finishes. All bolts, nuts, and washers shall be finished with a zinc coating conforming to Type II or III, Class 2 of Specification QQ-Z-325a or cadmium plating Type II or III, Class 2 of Specification QQ-P-416a.

(4) Adhesive. The adhesive used for adhering wood to wood (other than the manufacture of plywood) shall be "room temperature resorcinol glue" (synthetic resin type) applied in accordance with manufacturer's instructions, and shall conform to MIL-A-397B.

E. Gaskets

(1) Panel Joints. Gaskets for joints shall conform to

Specification MIL-C-3133, Class RS, Grade 41.

F. Insulation

(1) Panels. Insulation shall be 1-1/2-inch-thick fiberglas blanket with a density of 3/4 pound per cubic foot.

G. Coatings

(1) Galvanizing. Conform to Specification QQ-A-325a, Type II, Class I zinc coating.

(2) Cadmium Plating. Conform to Specification QQ-P-416a, Class I, Type II.

H. Paints

(1) Primer. The primer shall conform to Specification TT-P-636c.

(2) Enamel. The enamel shall conform to Specification TT-E-529a, Class A.

I. Hardware

(1) Hinges. Hinges shall conform to Specification FF-H-116c, Type 2171H.

(2) Door Latch Set. The door latch set shall be the type used in walk-in coolers. It shall be easily operated from either inside or outside the door by a person wearing polar-type mittens.

(3) Chain. All chain and chain attachments shall conform to Specification RR-C-271a.

J. Electrical Materials

(1) Miscellaneous. Materials listed below shall conform to specifications as noted:

Materials	Specification
(a) Wire connectors	W-S-610, Type IA, Style 1.
(b) Outlet boxes	W-J-800a, Type 3, Size H.

Materials	Specification
(c) Panelboards	W-P-131a(2), Class 1.
(d) Receptacles and plugs	W-C-596, Style A-4.

(2) Conductors. Conductors in buildings shall be copper, of size indicated, color coded; insulation to be of a type to withstand bending at -50 F without damage.

(3) Lighting Fixtures. Conform to Specification 97h.

K. Heating and Ventilating Materials and Equipment

(1) Space Heater. Diesel oil fired, gravity type with float control and pot-type burner. It shall have an output of 25,000 Btuh.

(2) Air Intake and Exhaust Blowers. The blowers shall operate on 115 volt, 60 cycle, single-phase current and deliver a minimum of 60 cfm.

(3) Fuel Line. Supply line shall be copper tubing conforming to Specification WW-T-799a, Type K.

(4) Vents and Vent Caps. Joints shall be a snap-lock type, easily assembled and disassembled. All fittings and vent caps shall match vent and be of the same manufacture. Sizes as indicated on the drawings.

3. Fabrication

A. Panels

(1) Frame. All framing members shall be fabricated of one continuous piece (no splice), and lap joint construction shall be used at all corner intersections of framing members. All laminated framing members shall be glued and nailed with 3d zinc-coated nails. All rib joints shall be glued and toe-nailed to the frame with 6d finishing nails in pre-drilled holes of smaller diameter than the nail.

(2) Plywood. All plywood shall be secured to the frame and ribs with glue and 2d zinc-coated nails on 6-inch centers. When panels require widths of plywood greater than 4 feet, a scarf joint shall be used for the splice. Aluminum cladding shall be factory bonded to the plywood.

(3) Insulation. Insulation blankets shall be spot cemented to one face of the panels at four corners and at 12 inches on center along edges.

(4) Joint Gaskets. All bolted joints between panels shall contain a gasket fastened one side only with contact cement. Gasket shall be secured on outer lap of all lap joints and the outer lap side of all corner joints. Bolt holes shall be cut in the gasket after installation on the panel.

(5) Paint. One coat of primer and two coats of enamel shall be applied. All exterior surfaces shall be painted international orange. All interior surfaces shall be painted light green. All aluminum surfaces shall be unpainted. Metal surfaces shall be degreased before painting.

(6) Marking. Panels shall be stenciled for the mark number at the top of each face for wall panels, and at one end each face for roof and other panels.

B. Portable Wanigan Floor

(1) Welding. All welding shall conform to A.W.S. Specifications.

(2) Connectors. All nuts and bolts, except carriage type, bearing on wood shall have flat washers.

(3) Paint. All surfaces shall be painted with one coat of primer and two coats of enamel. Floor panels shall be light green or gray. All other surfaces shall be international orange.

Appendix A

STANDARD SPECIFICATIONS

The standard specifications given in the following list or mentioned in the text shall govern in all cases where references to standard specifications are made. In case of difference between these standard specifications and this specification or its accompanying drawings, this specification or its accompanying drawings shall govern. Especial care shall be exercised to refer in requests for quotations, in orders, and in subcontacts to the standard specifications and to all modifications thereof.

Military

MIL-A-397B	Feb. 3, 1953	Adhesive, room-temperature and intermediate-temperature setting resin (phenol, resorcinal, and melamine base)
MIL-C-3133	Feb. 14, 1950	Cellular rubber products, general purpose (except ebonite)

NAVDOCKS

9Yh	Sept. 1956	Electrical apparatus, distributing systems, and wiring

Federal

W-C-596	Aug. 19, 1959	Connector, plug, electrical; connector, receptacle, electrical; plate, wall, electrical
W-F-406a	June 9, 1960	Fittings for electrical cable and flexible metal conduit
W-J-800a	Apr. 2, 1958	Junction box; extension, junction box; cover, junction box, (steel, cadmium or zinc-coated)

W-P-131a(2)	Apr. 13, 1951	Panelboards; equipped with automatic circuit-breakers
W-S-610	Apr. 2, 1958	Splice, conductor
FF-B-571a	Jan. 9, 1934	Bolts, nuts, studs, and top rivets (and material for same)
FF-H-116c	July 3, 1957	Hinges, hardware, builder's
FF-N-105	Oct. 6, 1952	Nails, wire; and staples
FF-S-111b	May 15, 1961	Screws, wood
NN-P-530a	Nov. 2, 1961	Plywood; flat panel
QQ-P-416a	Dec. 11, 1956	Plating, cadmium (electro-deposited)
QQ-S-633a	Nov. 6, 1957	Steel bars, carbon, cold finished and hot rolled (general purpose)
QQ-S-640	Aug. 8, 1952	Steel; carbon, sheet and strip
QQ-Z-325a	May 13, 1959	Zinc coating, electro-deposited, requirements for
TT-E-529a	Oct. 30, 1959	Enamel, alkyed, semi-gloss
TT-P-636b	Feb. 23, 1954	Primer coating, synthetic, wood and ferrous metal
WW-T-799a(1)	June 27, 1946	Tubing, copper, seamless (for use with soldered or flared fittings)

Non-Government

All of the following specifications shall be of latest date unless indicated otherwise:

American Society for Testing Materials

Douglas Fir Plywood Association

West Coast Lumberman's Association Grading Rules No. 15

Appendix B

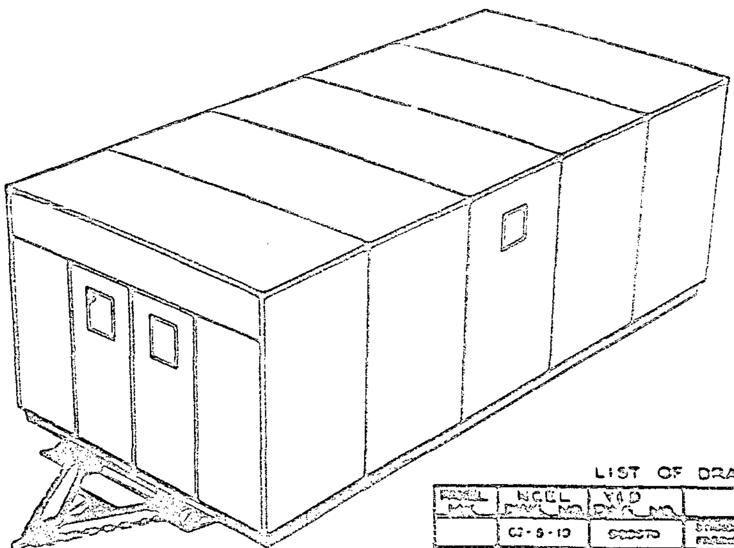
DRAWINGS FOR THE NCEL WANIGANS

The original of the drawings listed below and shown at reduced scale are available at the U. S. Naval Civil Engineering Laboratory, Port Hueneme, California.

YCD Drawing No.	Title
993670	Standard portable wanigan fabrication requirements
993671	Standard portable wanigan assembly
993672	Extra-wide portable wanigan fabrication requirements
993673	Extra-wide portable wanigan assembly
993674	Standard sled wanigan fabrication requirements
993675	Standard sled wanigan assembly
993676	Extra-wide sled wanigan fabrication requirements
993677	Extra-wide sled wanigan assembly
993678	Standard portable wanigan floor assembly
993679	Standard portable wanigan floor skids and cross members
993680	Standard portable wanigan floor frame, panels, and connectors

Y&D Drawing No.	Title
993681	Standard portable wanigan floor tongue
993682	Extra-wide portable wanigan floor assembly
993683	Extra-wide portable wanigan floor skids and cross members
993684	Extra-wide portable wanigan floor frame, panels, and connectors
993685	Extra-wide portable wanigan floor tongue
993686	Standard sled wanigan floor MK-28 and MK-30 panels
993687	Standard sled wanigan floor MK-29 panel
993688	Extra-wide sled wanigan floor MK-1 and MK-3 panels
993689	Extra-wide sled wanigan floor MK-2 panel
993690	Wanigan sidewall MK-4 and MK-6 panels
993691	Wanigan sidewall MK-5 panel
993692	Standard portable wanigan endwall MK-25 and MK-26 panels
993693	Standard portable wanigan endwall MK-27 panel
993694	Extra-wide portable wanigan endwall MK-14 and MK-17 panels
993695	Extra-wide portable wanigan endwall MK-18 panel

MCD Drawing	Title
993696	Standard sled wanigan endwall MK-31 and MK-32 panels
993697	Extra-wide sled wanigan endwall MK-8 and MK-10 panels
993698	Sled wanigan door MK-9 panel
993699	Portable wanigan door MK-20 panel
993700	Portable wanigan door MK-21 panel
993701	Standard wanigan roof MK-22 panel
993702	Standard wanigan roof MK-23 panel
993703	Standard wanigan roof MK-24 panel and MK-7 gusset plate
993704	Extra-wide wanigan roof MK-11 panel
993705	Extra-wide wanigan roof MK-12 panel
993706	Extra-wide wanigan roof MK-13 panel and MK-7 gusset plate
993707	Wanigan accessories heating and ventilating system
993708	Wanigan accessories electrical harness
993709	Wanigan accessories side-mounted fuel tank



LIST OF DRAWINGS

PANEL MK.	NCEL DWG. NO.	Y&D DWG. NO.	TITLE
	[illegible]	[illegible]	STANDARD PORTABLE WANIGAN FABRICATION REQUIREMENTS
	[illegible]	[illegible]	STANDARD PORTABLE WANIGAN ASSEMBLY
[illegible]	[illegible]	[illegible]	WANIGAN [illegible] [illegible] PANELS
[illegible]	[illegible]	[illegible]	WANIGAN [illegible] [illegible] PANEL
[illegible]	[illegible]	[illegible]	STANDARD WANIGAN ROOF [illegible] PANEL
[illegible]	[illegible]	[illegible]	STANDARD WANIGAN ROOF [illegible] PANEL
[illegible]	[illegible]	[illegible]	STANDARD WANIGAN ROOF [illegible]
[illegible]	[illegible]	[illegible]	STANDARD PORTABLE WANIGAN [illegible] [illegible] PANELS
[illegible]	[illegible]	[illegible]	STANDARD PORTABLE WANIGAN [illegible] [illegible] PANEL
[illegible]	[illegible]	[illegible]	PORTABLE WANIGAN [illegible] [illegible] PANEL
[illegible]	[illegible]	[illegible]	PORTABLE WANIGAN [illegible] [illegible] PANEL
	[illegible]	[illegible]	STANDARD PORTABLE WANIGAN FLOOR ASSEMBLY
	[illegible]	[illegible]	STANDARD PORTABLE WANIGAN FLOOR [illegible]
	[illegible]	[illegible]	STANDARD PORTABLE WANIGAN FLOOR [illegible]
	[illegible]	[illegible]	STANDARD PORTABLE WANIGAN FLOOR [illegible]

GENERAL NOTES

[illegible]

ALL LUMBER SIZES CALLED OUT ARE FINISHED SIZES

[illegible]

ALL FRAMING MEMBERS SHALL BE DOUGLAS FIR [illegible]

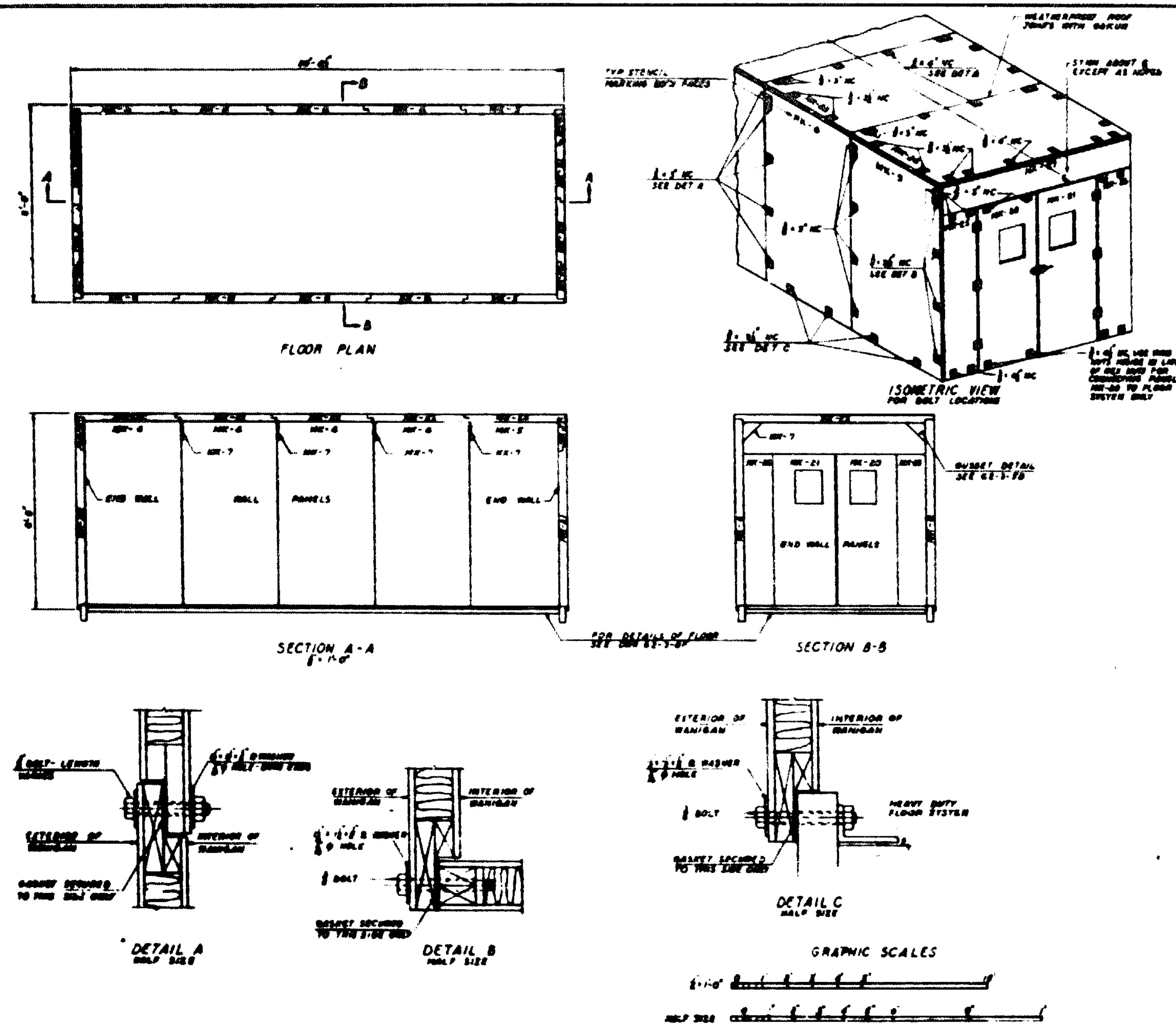
[illegible]

U.S. NAVAL CIVIL ENGINEERING LABORATORY

NCEL WANIGANS

STANDARD PORTABLE WANIGAN FABRICATION REQUIREMENTS

62-3-10



LIST OF MATERIAL

PANEL MK	NO REQD	NAME OF PART	DWG NO
MK-6	4	WALL PANEL	[illegible]
MK-[illegible]	[illegible]	WALL PANEL	[illegible]
MK-[illegible]	[illegible]	WALL PANEL	[illegible]
MK-[illegible]	1	ROOF PANEL	[illegible]
MK-[illegible]	3	ROOF PANEL	[illegible]
MK-[illegible]	1	ROOF PANEL	[illegible]
MK-[illegible]	[illegible]	END WALL PANEL	[illegible]
MK-[illegible]	[illegible]	END WALL PANEL	[illegible]
MK-[illegible]	[illegible]	END WALL PANEL	[illegible]
MK-[illegible]	[illegible]	END DOOR PANEL	[illegible]
MK-21	[illegible]	END DOOR PANEL	[illegible]
MK-7	[illegible]	GUSSET PLATE	[illegible]
	[illegible]	PLATE WASHER [illegible]	
	96	[illegible]	
	72	[illegible]	
	14	[illegible]	
	14	[illegible]	
	120	HEX NUT	
	[illegible]	[illegible] NUT	

NOTES

FOR GENERAL NOTES, & LIST OF DWGS SEE DWG 993870

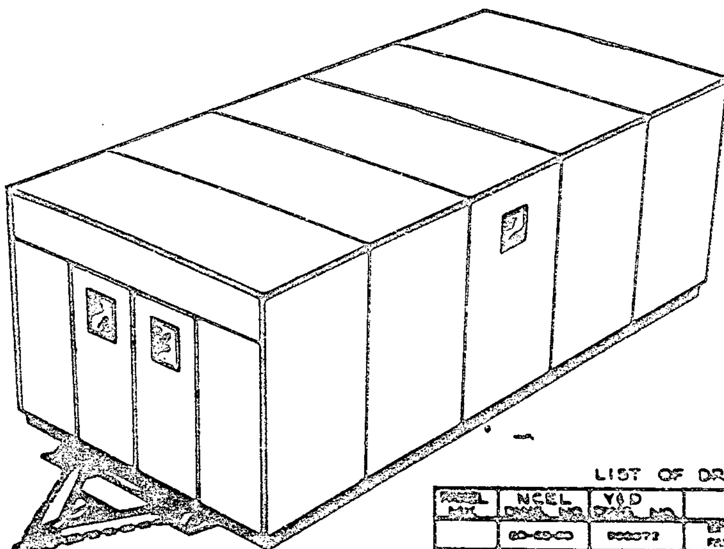
62-3-2D

U.S. NAVAL CIVIL ENGINEERING LABORATORY

NCEL WANIGANS

STANDARD PORTABLE WANIGAN ASSEMBLY

993871



LIST OF DRAWINGS

PANEL MK.	NCEL DWG. NO.	Y&D DWG. NO.	TITLE
	60-25-30	900072	EXTRA-WIDE PORTABLE WANIGAN FABRICATION REQUIREMENTS
	60-25-40	900073	EXTRA-WIDE PORTABLE WANIGAN ASSEMBLY
MK 4, MK 5	60-25-70	[illegible]	WANIGAN ENDWALL MK-4 AND MK-5 PANELS
MK 8	60-25-80	[illegible]	WANIGAN SIDEWALL MK-8 PANEL
MK 11	60-25-110	[illegible]	EXTRA-WIDE WANIGAN ROOF MK-11 PANEL
MK 12	60-25-120	[illegible]	EXTRA-WIDE WANIGAN ROOF MK-12 PANEL
MK 7, MK 13	60-25-130	[illegible]	EXTRA-WIDE WANIGAN ROOF MK-13 PANEL AND MK-7 GUSSET PLATE
MK 16, MK 17	60-25-160	[illegible]	EXTRA-WIDE PORTABLE WANIGAN ENDWALL MK-16 AND MK-17 PANELS
MK 19	60-25-170	[illegible]	EXTRA-WIDE PORTABLE WANIGAN SIDEWALL MK-19 PANEL
MK 20	60-25-190	[illegible]	PORTABLE WANIGAN DOOR MK-20 PANEL
MK 21	60-25-200	[illegible]	PORTABLE WANIGAN DOOR MK-21 PANEL
	[illegible]	[illegible]	EXTRA-WIDE PORTABLE WANIGAN FLOOR ASSEMBLY
	[illegible]	[illegible]	EXTRA-WIDE PORTABLE WANIGAN FLOOR [illegible]
	[illegible]	[illegible]	EXTRA-WIDE PORTABLE WANIGAN FLOOR [illegible] PANELS AND CONNECTORS
	[illegible]	[illegible]	EXTRA-WIDE PORTABLE WANIGAN FLOOR [illegible]

GENERAL NOTES

A VAPOR BARRIER IS PROVIDED THROUGH THE USE OF ALUMINUM CLAD PLYWOOD [illegible]

ALL LUMBER SIZES CALLED OUT ARE FINISHED SIZES.

ALL FRAMING MEMBERS SHALL BE [illegible]

ALL [illegible] FRAMING MEMBERS SHALL BE GLUED AND NAILED WITH 8d ZINC COATED NAILS.

ALL END JOINTS SHALL BE GLUED AND TOE-NAILED TO FRAME WITH 6d FINISHING NAILS IN PRE-DRILLED HOLES OF SMALLER DIAMETER THAN THE NAIL.

ALL PLYWOOD SHALL BE SECURED TO FRAME [illegible] GLUE AND 6d ZINC COATED NAILS ON ABOUT 6" CENTERS.

[illegible]

GLUE USED SHALL BE [illegible]

ALL [illegible] SHALL BE DOUGLAS FIR [illegible]

ALL PANELS SHALL BE INSULATED WITH FIBER GLASS [illegible]

PLYWOOD SPECIFIED SHALL BE DOUGLAS FIR, EXTERIOR TYPE, GRADE A-C WITH THE "A" FACE ON THE OUTSIDE OF THE PANELS.

ALL EXTERIOR [illegible]

ALL BOLTED JOINTS BETWEEN PANELS SHALL CONTAIN A [illegible]

PANELS SHALL BE STENCILED FOR MARK NO. AT TOP OF [illegible]

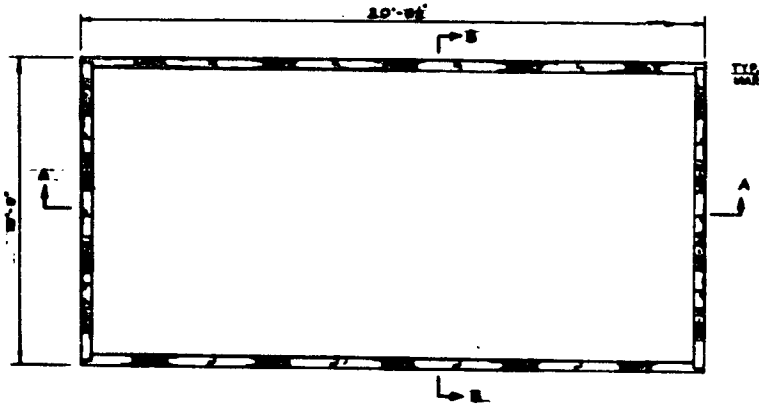
60-25-30

U.S. NAVAL CIVIL ENGINEERING LABORATORY

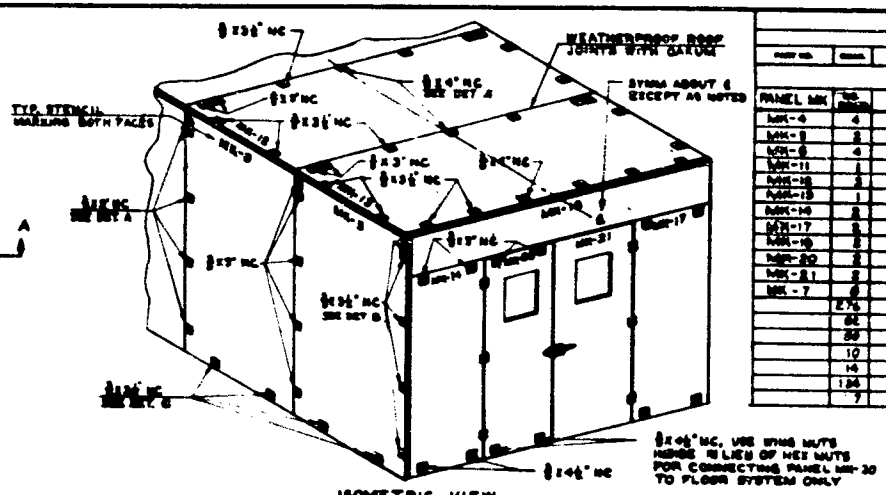
NCEL WANIGANS

EXTRA-WIDE PORTABLE WANIGAN

FABRICATION REQUIREMENTS



FLOOR PLAN

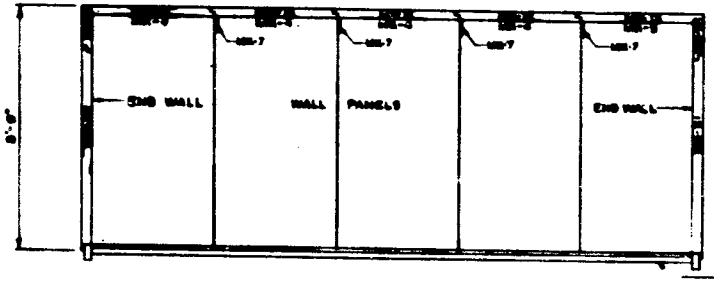


ISOMETRIC VIEW
FOR BOLT LOCATIONS

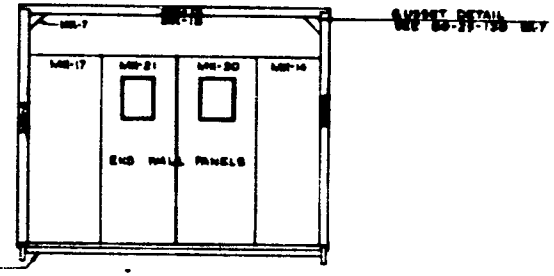
LIST OF MATERIAL

PANEL MK	NO. REQD	NAME OF PART	DWG. NO.
MK-4	4	WALL PANEL	[illegible]
MK-5	2	WALL PANEL	[illegible]
MK-6	4	WALL PANEL	[illegible]
MK-11	1	ROOF PANEL	[illegible]
MK-12	2	ROOF PANEL	[illegible]
MK-13	1	ROOF PANEL	[illegible]
MK-14	2	END WALL PANEL	[illegible]
MK-17	2	END WALL PANEL	[illegible]
MK-18	2	END WALL PANEL	[illegible]
MK-20	2	END DOOR PANEL	[illegible]
MK-21	2	END DOOR PANEL	[illegible]
MK-7	8	GASKET PLATE	[illegible]
	276	PLATE WASHER	[illegible]
	82	[illegible] NC HEX HEAD BOLT	
	89	[illegible] NC HEX HEAD BOLT	
	10	[illegible] NC HEX HEAD BOLT	
	14	[illegible] NC HEX HEAD BOLT	
	184	[illegible] HEX NUT	
	7	[illegible] WING NUT	

[illegible] NC, USE WING NUTS INSTEAD IN LIEU OF HEX NUTS FOR CONNECTING PANEL MK-20 TO FLOOR SYSTEM ONLY



SECTION A-A
[illegible]"=1'-0"

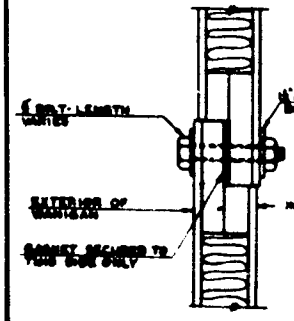


SECTION B-B

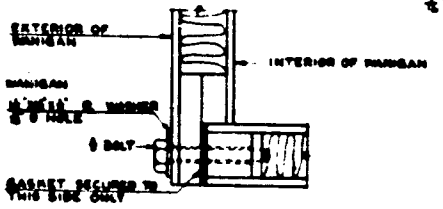
FOR DETAILS OF FLOOR SEE DWG 60-25-21F

NOTES

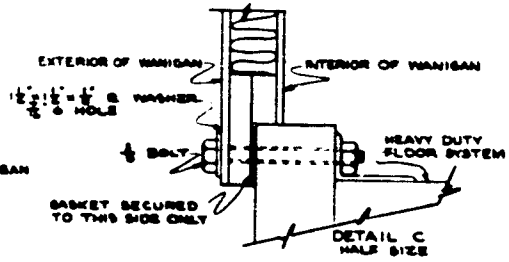
FOR GENERAL NOTES & LIST OF DWGS. SEE DWG. 993672



DETAIL A
HALF SIZE

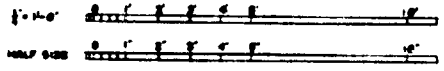


DETAIL B
HALF SIZE



DETAIL C
HALF SIZE

GRAPHIC SCALE



60-25-4D

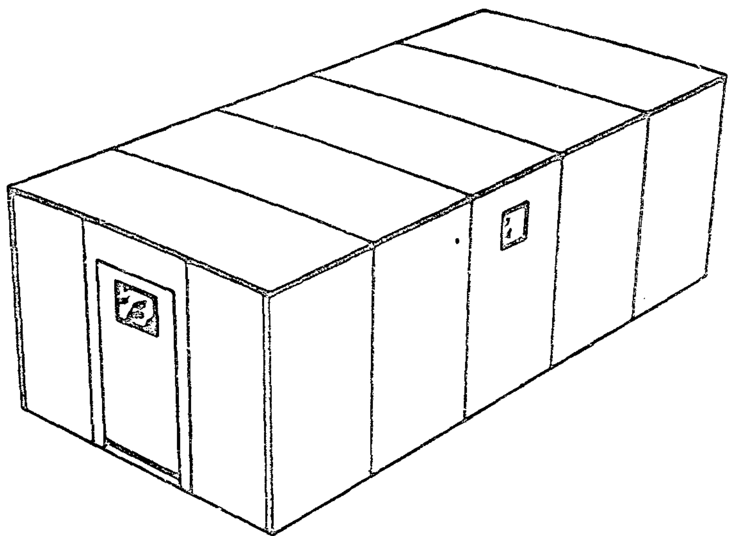
U.S. NAVAL CIVIL ENGINEERING LABORATORY

NCEL WANIGANS

EXTRA-WIDE PORTABLE WANIGAN ASSEMBLY

AS NOTED

993673



LIST OF DRAWINGS

PANEL NO.	NCEL DWG NO.	Y&D DWG NO.	TITLE
	62-5-1D	993674	STANDARD SLED WANIGAN FABRICATION REQUIREMENTS
	62-5-2D	993675	STANDARD SLED WANIGAN ASSEMBLY
MK-29	62-5-3D	993687	STANDARD SLED WANIGAN FLOOR MK-29 PANEL
MK-28 MK-30	62-5-4D	993686	STANDARD SLED WANIGAN FLOOR MK-28 AND MK-30 PANELS
MK-4 MK-6	60-25-7D	993600	WANIGAN SIDEWALL MK-4 AND MK-6 PANELS
MK-5	60-25-8D	993601	WANIGAN SIDEWALL MK-5 PANEL
MK-31 MK-32	62-5-5D	993696	STANDARD SLED WANIGAN ENDWALL MK-31 AND MK-32 PANELS
MK-9	60-25-10D	993090	SLED WANIGAN DOOR MK-9 PANEL
MK-22	62-3-3D	993701	STANDARD WANIGAN ROOF MK-22 PANEL
MK-23	62-3-4D	993702	STANDARD WANIGAN ROOF MK-23 PANEL
MK-26 MK-7	62-3-5D	993703	STANDARD WANIGAN ROOF MK-26 PANEL AND MK-7 GUSSET PLATE

LIST OF MATERIAL

GENERAL NOTES

ALL LUMBER [illegible] CALLED OUT ARE [illegible]

ALL [illegible] SHALL BE [illegible] PIECE (NO SPLICES). AT THE CORNER INTERSECTIONS OF LAMINATED FRAMING MEMBERS LAP JOINT CONSTRUCTION SHALL BE USED

ALL LAMINATED FRAMING MEMBERS SHALL BE GLUED AND NAILED WITH [illegible] ZINC COATED NAILS

ALL RIB JOINTS SHALL BE GLUED AND [illegible] [illegible] NAILS IN PRE-DRILLED HOLES OF SMALLER DIAMETER THAN THE NAIL

ALL PLYWOOD SHALL BE SECURED TO FRAME AND RIBS WITH GLUE AND [illegible] ZINC COATED NAILS ON ABOUT 6" CENTERS

WHEN PANELS REQUIRE [illegible] GREATER THAN 8'-0" A SCARF JOINT SHALL BE USED FOR THE SPLICE

GLUE USED SHALL BE [illegible]

ALL FRAMING MEMBERS SHALL BE [illegible]

ALL PANELS SHALL BE INSULATED WITH [illegible]

A VAPOR BARRIER IS PROVIDED THROUGH THE USE OF ALUMINUM CLAD PLYWOOD FOR THE INTERIOR FACE OF ALL PANELS. THE PLYWOOD [illegible] EXTERIOR TYPE, WITH THE WOOD FACE [illegible] METAL FACE [illegible] ALUMINUM. THE PANELS FOR [illegible] THE METAL FACE [illegible] TOWARD THE INTERIOR OF THE PANEL [illegible] THE METAL FACE [illegible]. SPECIFICATION AS TO THE [illegible] OF THE METAL FACE WILL BE [illegible] OF THE [illegible]

PLYWOOD SPECIFIED SHALL BE [illegible] FOR EXTERIOR TYPE, GRADE A-C WITH THE "A" FACE ON THE [illegible] OF THE PANELS

ALL EXTERIOR [illegible] SHALL BE PAINTED WITH [illegible] PRIMER COAT AND TWO (2) FINISH COATS [illegible]. ALL [illegible] SHALL BE PAINTED WITH [illegible] PRIMER COAT AND TWO (2) FINISH COATS OF LIGHT [illegible] METAL SURFACE SHALL [illegible] ALL ALUMINUM SURFACES TO BE UNPAINTED.

ALL BOLTED JOINTS BETWEEN PANELS SHALL CONTAIN A [illegible] THICK CELLULAR [illegible] GASKET [illegible] WITH CONTACT CEMENT. BOLT HOLES TO BE CUT IN GASKET AFTER INSTALLATION ON PANEL. GASKET TO BE [illegible] LAP OF ALL LAP JOINTS EXCEPT [illegible] JOINTS [illegible] ON OUTSIDE LAP [illegible] OF ALL CORNER JOINTS

PANELS SHALL BE STENCILED [illegible] AT TOP OF EACH [illegible] FOR WALL PANELS AND AT ONE END EACH FACE FOR ROOF OR FLOOR PANELS

U.S. NAVAL CIVIL ENGINEERING LABORATORY

62-5-1D

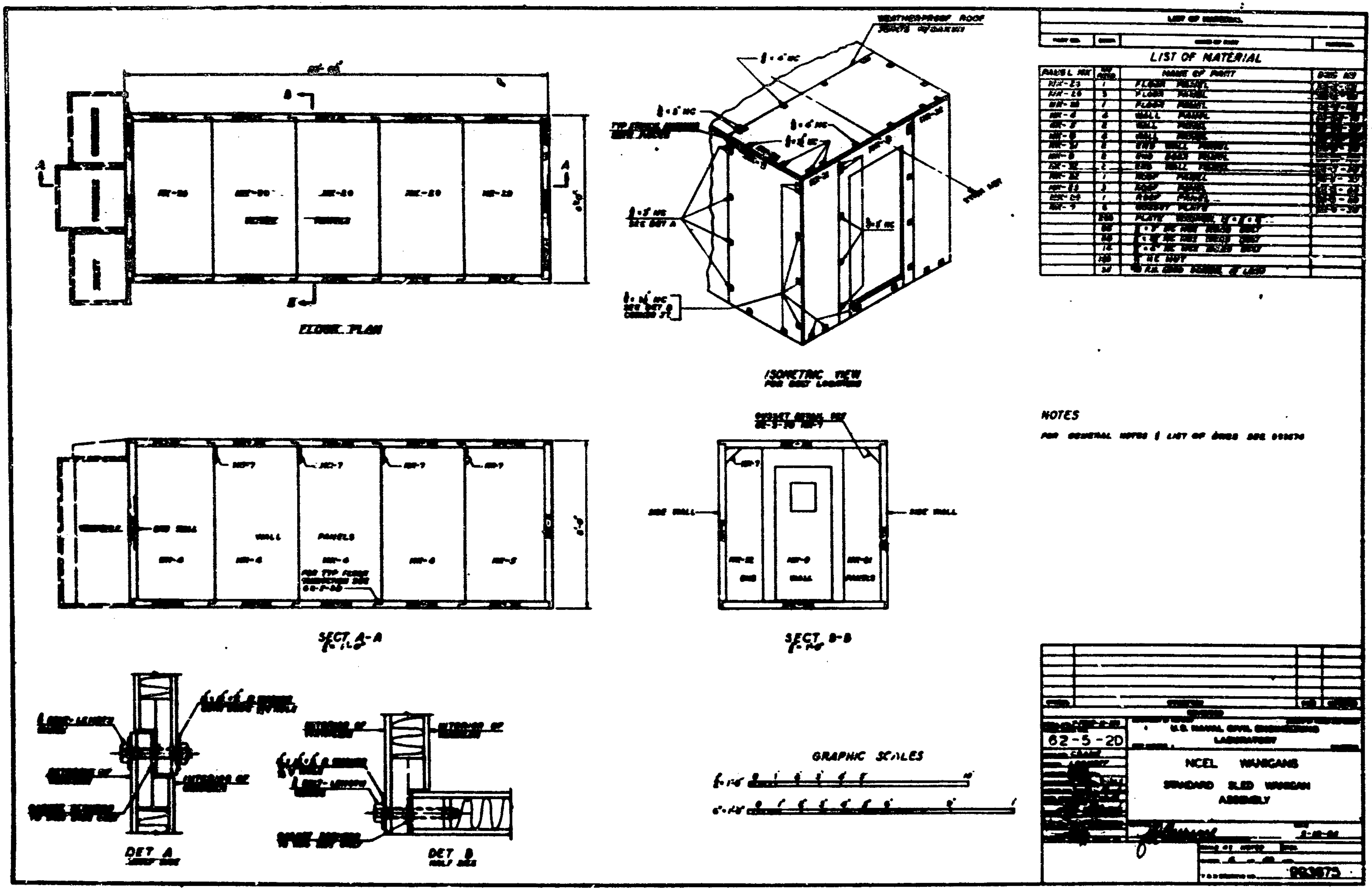
NCEL WANIGANS

STANDARD SLED WANIGAN

FABRICATION REQUIREMENTS

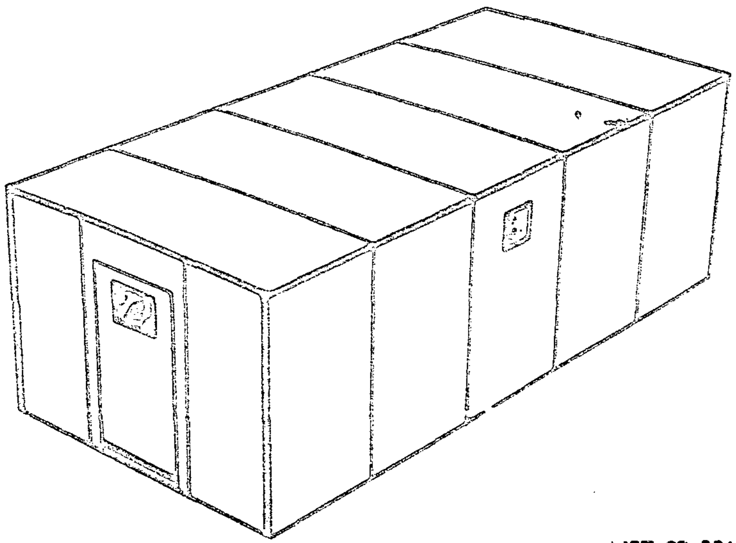
5-18-62

993674


LIST OF MATERIAL
PANEL MK
NAME OF PART
FLOOR PANEL
WALL PANEL
END WALL PANEL
ROOF PANEL
GUSSET PLATE
WEATHERPROOF ROOF
FLOOR PLAN
ISOMETRIC VIEW
SECT A-A
SECT B-B
SIDE WALL
WALL
PANELS
DET A
DET B
GRAPHIC SCALES
NOTES
U.S. NAVAL CIVIL ENGINEERING LABORATORY
62-5-2D
NCEL WANIGANS
STANDARD SLED WANIGAN ASSEMBLY

GENERAL NOTES

[illegible]

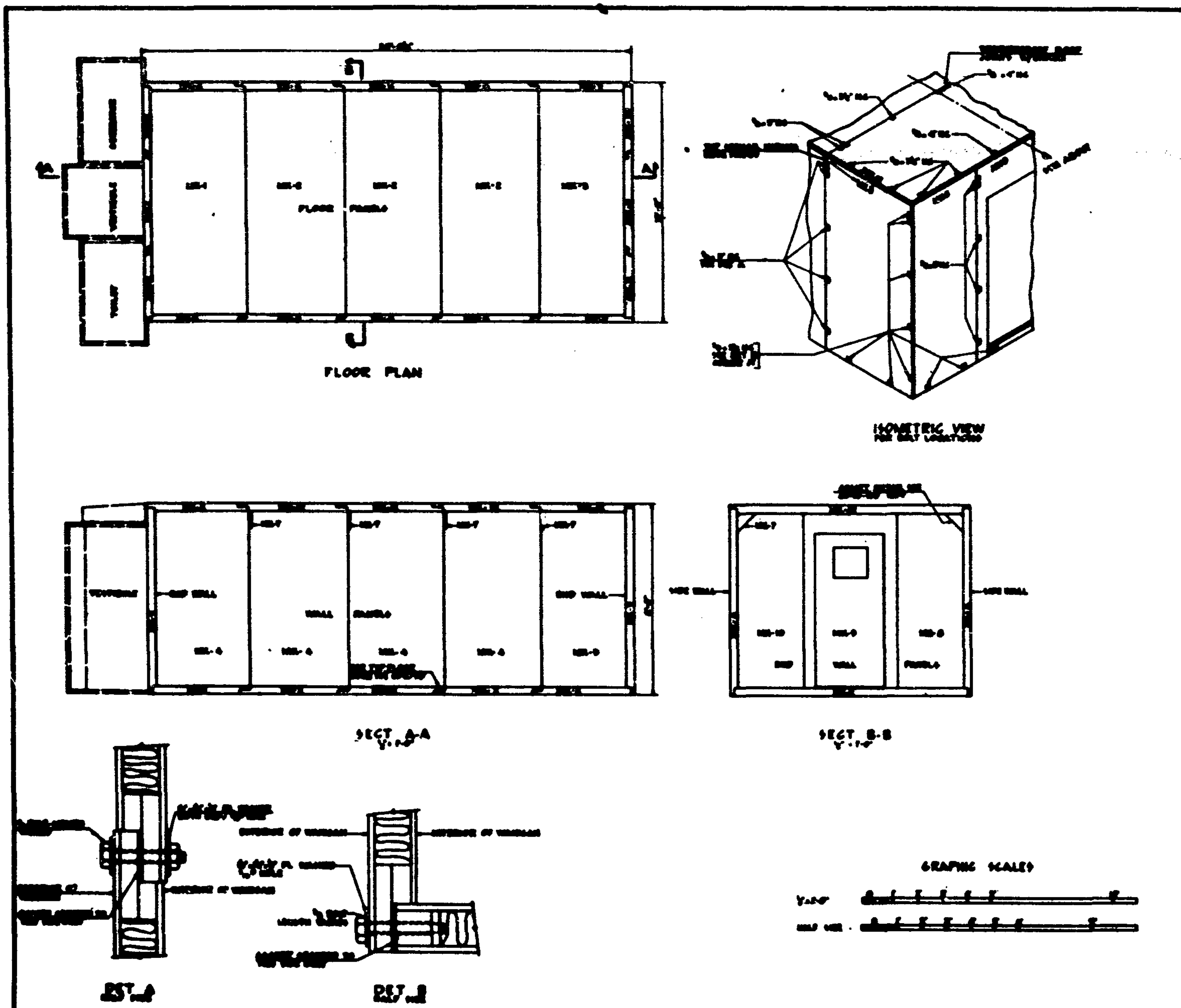


LIST OF DRAWINGS

[illegible]	[illegible]	[illegible]	TITLE
	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

CD-25-10

EXTRA-[illegible]



LIST OF MATERIAL

PIECE NO.	REQ'D	NAME OF PART	DWG. NO.
[illegible]	1	FLOOR PANEL	[illegible]
[illegible]	2	FLOOR PANEL	[illegible]
[illegible]	1	FLOOR PANEL	[illegible]
[illegible]	4	WALL PANEL	[illegible]
[illegible]	4	WALL PANEL	[illegible]
[illegible]	[illegible]	WALL PANEL	[illegible]
[illegible]	1	END WALL PANEL	[illegible]
[illegible]	1	END WALL PANEL	[illegible]
[illegible]	[illegible]	END WALL PANEL	[illegible]
[illegible]	1	ROOF PANEL	[illegible]
[illegible]	[illegible]	ROOF PANEL	[illegible]
[illegible]	1	ROOF PANEL	[illegible]
[illegible]	8	ANGLE PLATE	[illegible]
	[illegible]	PLATE WASHER	
	[illegible]	HEX HEAD BOLT	
	[illegible]	HEX HEAD BOLT	
	10	HEX HEAD BOLT	
	[illegible]	NUT	
	40	WOOD SCREW	

NOTES
FOR GENERAL NOTES & LIST OF DWGS SEE [illegible]

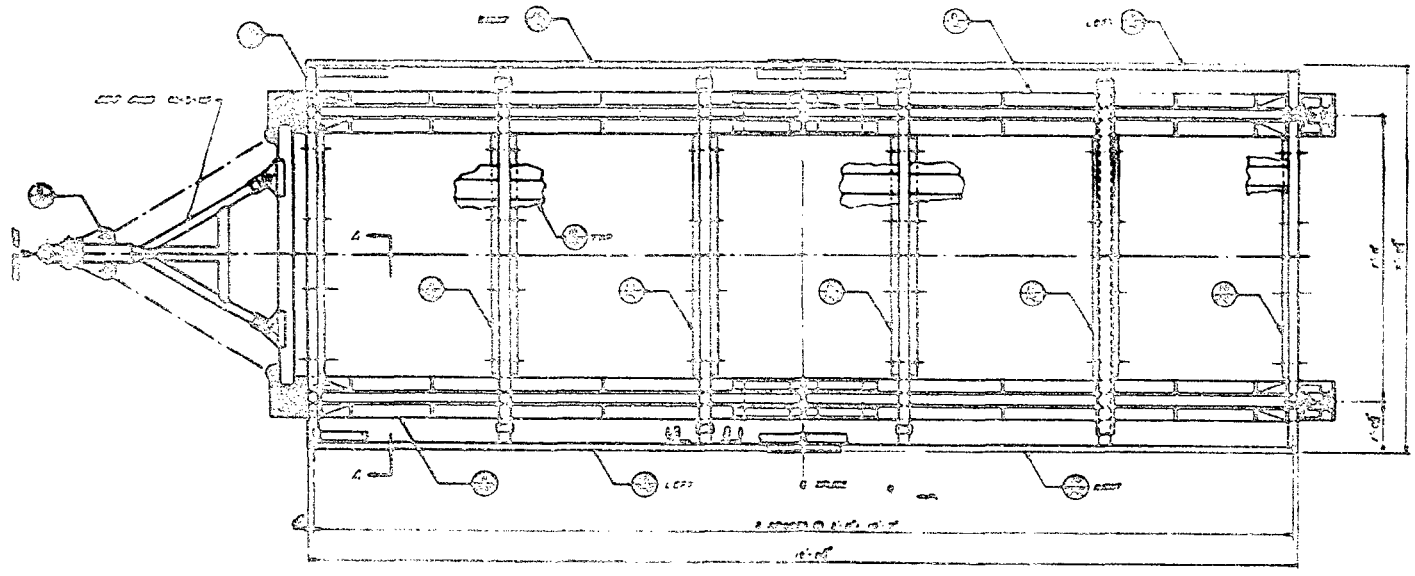
U.S. NAVAL CIVIL ENGINEERING LABORATORY

NCEL WANIGANS

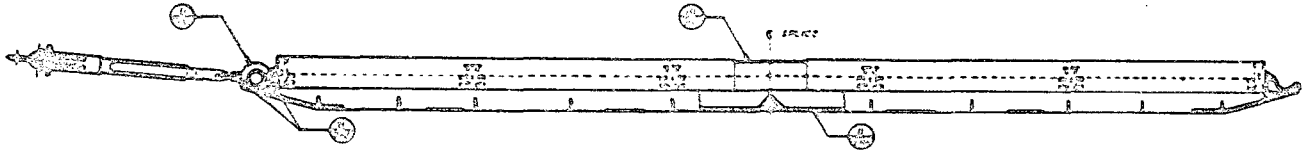
EXTRA-WIDE SLED WANIGAN ASSEMBLY

60-25-2D

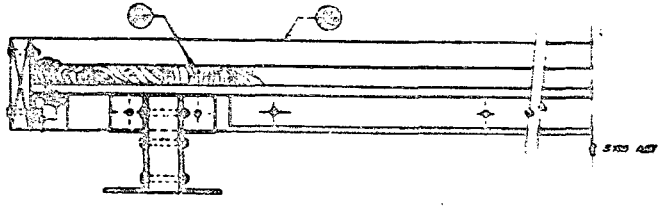
993877



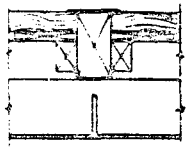
PLAN



ELEVATION
TOBOGGAN GENERAL ASSEMBLY



SECTION A-A



SECTION B-B

GENERAL NOTES

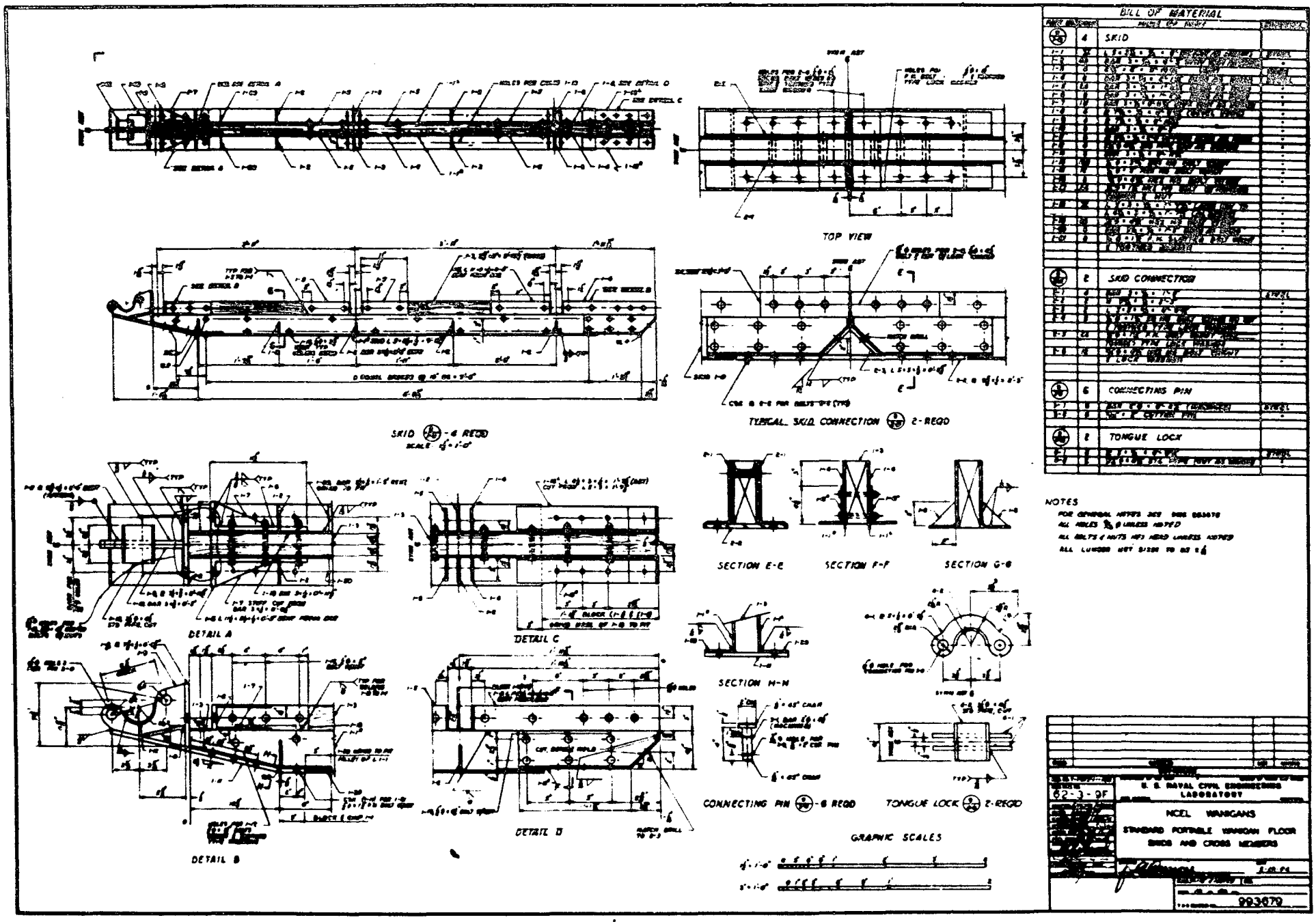
GRAPHIC SCALES

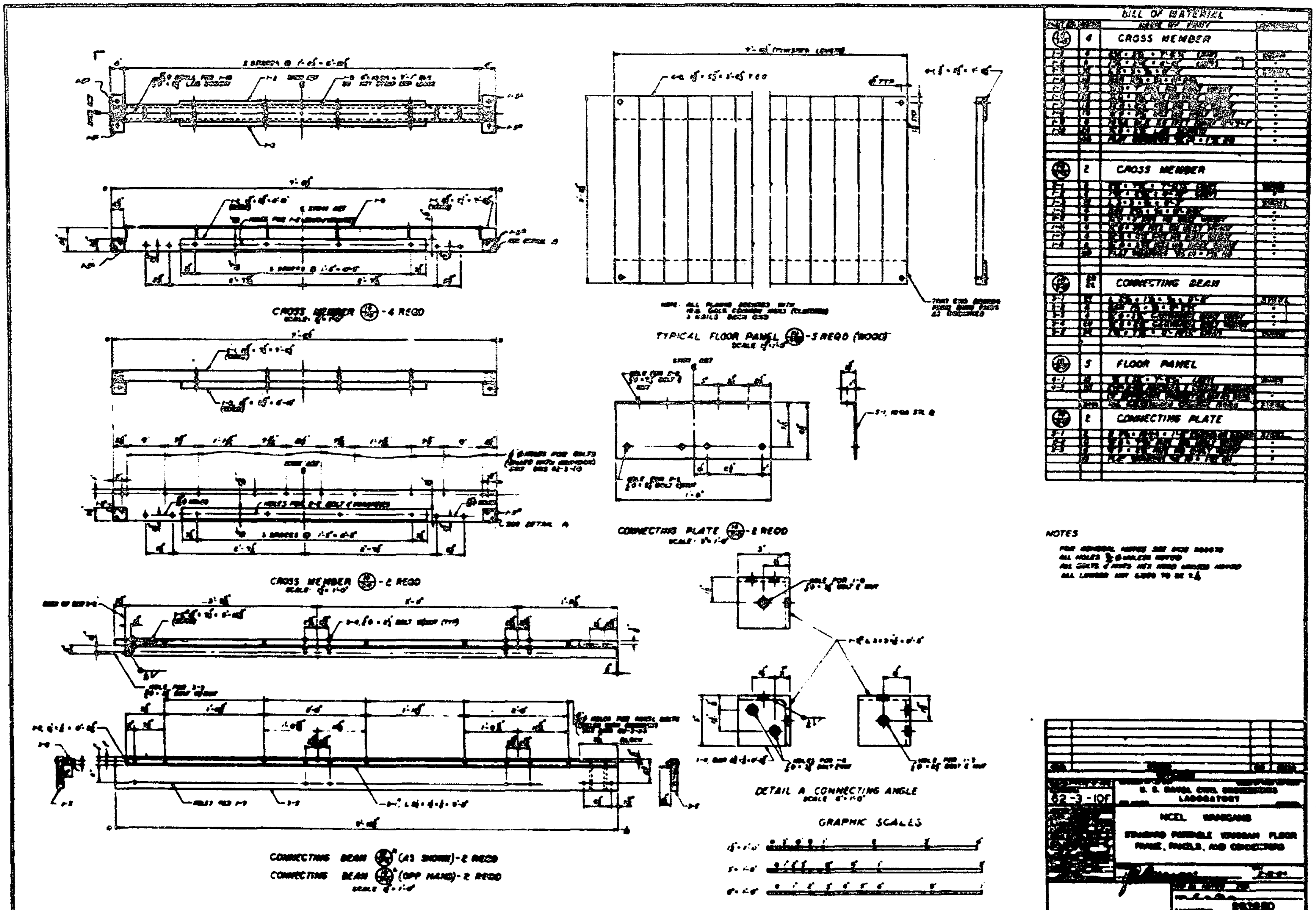
U. S. NAVAL CIVIL ENGINEERING LABORATORY

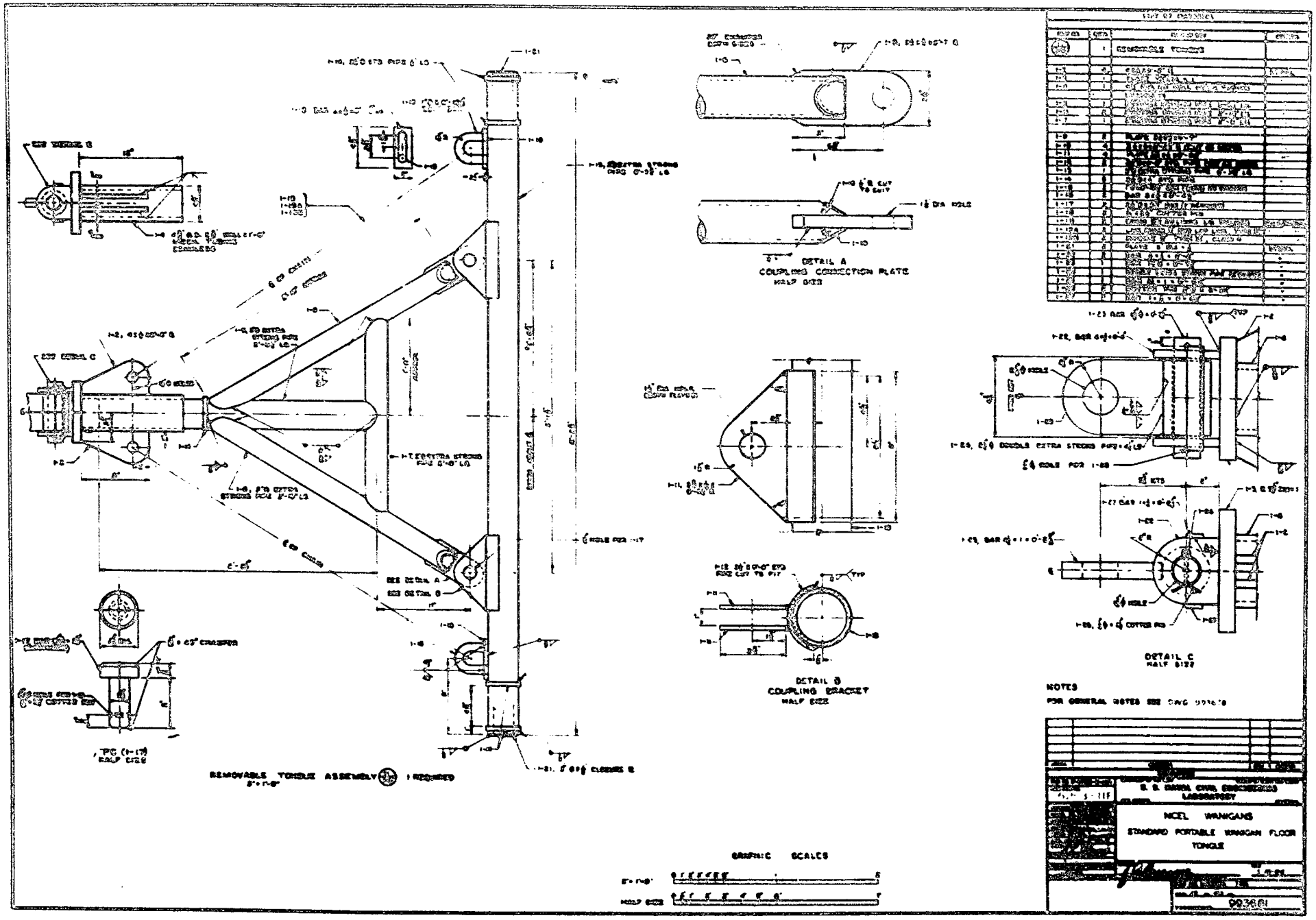
NCEL

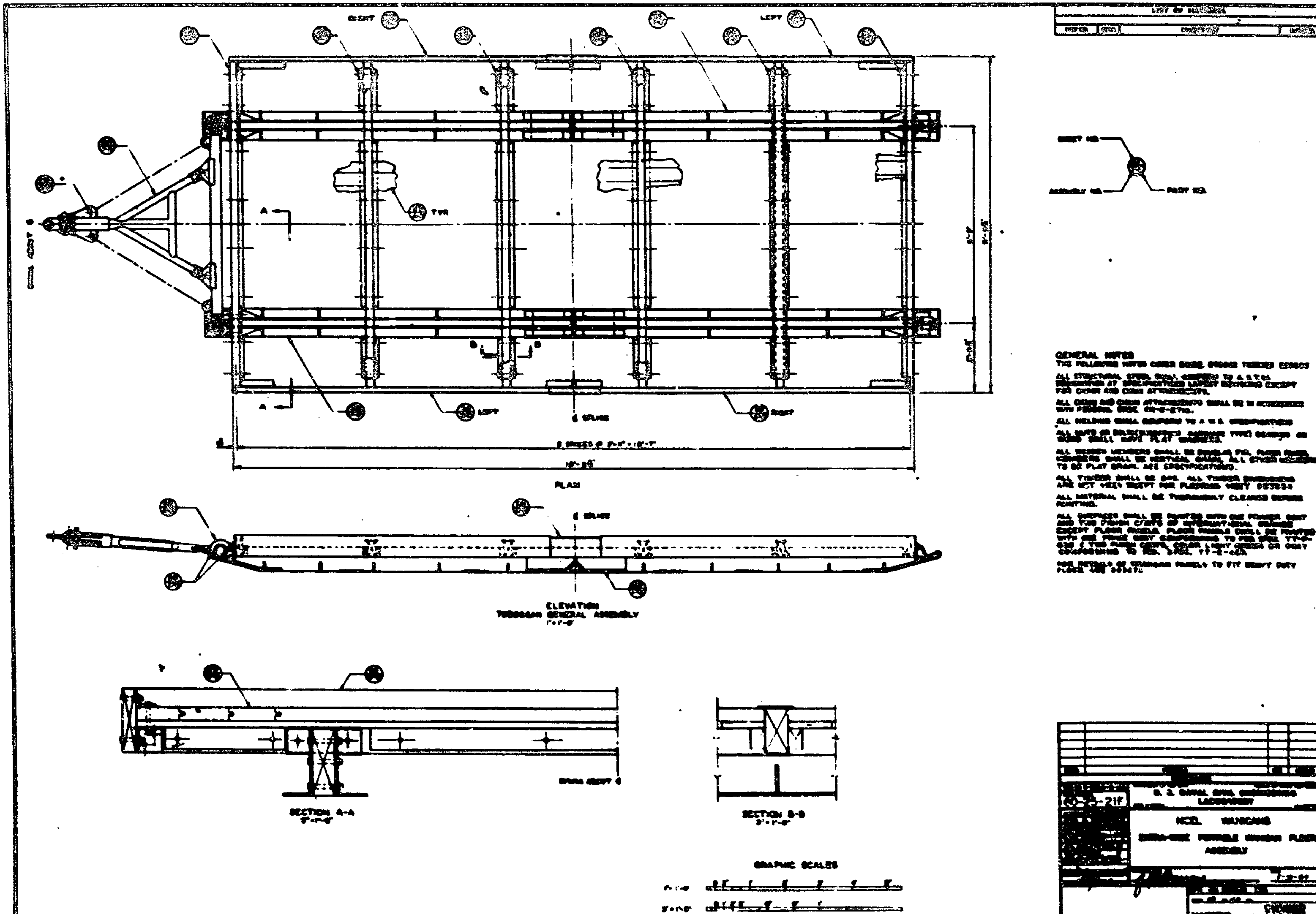
STANDARD PORTABLE WINDOW FLOOR ASSEMBLY

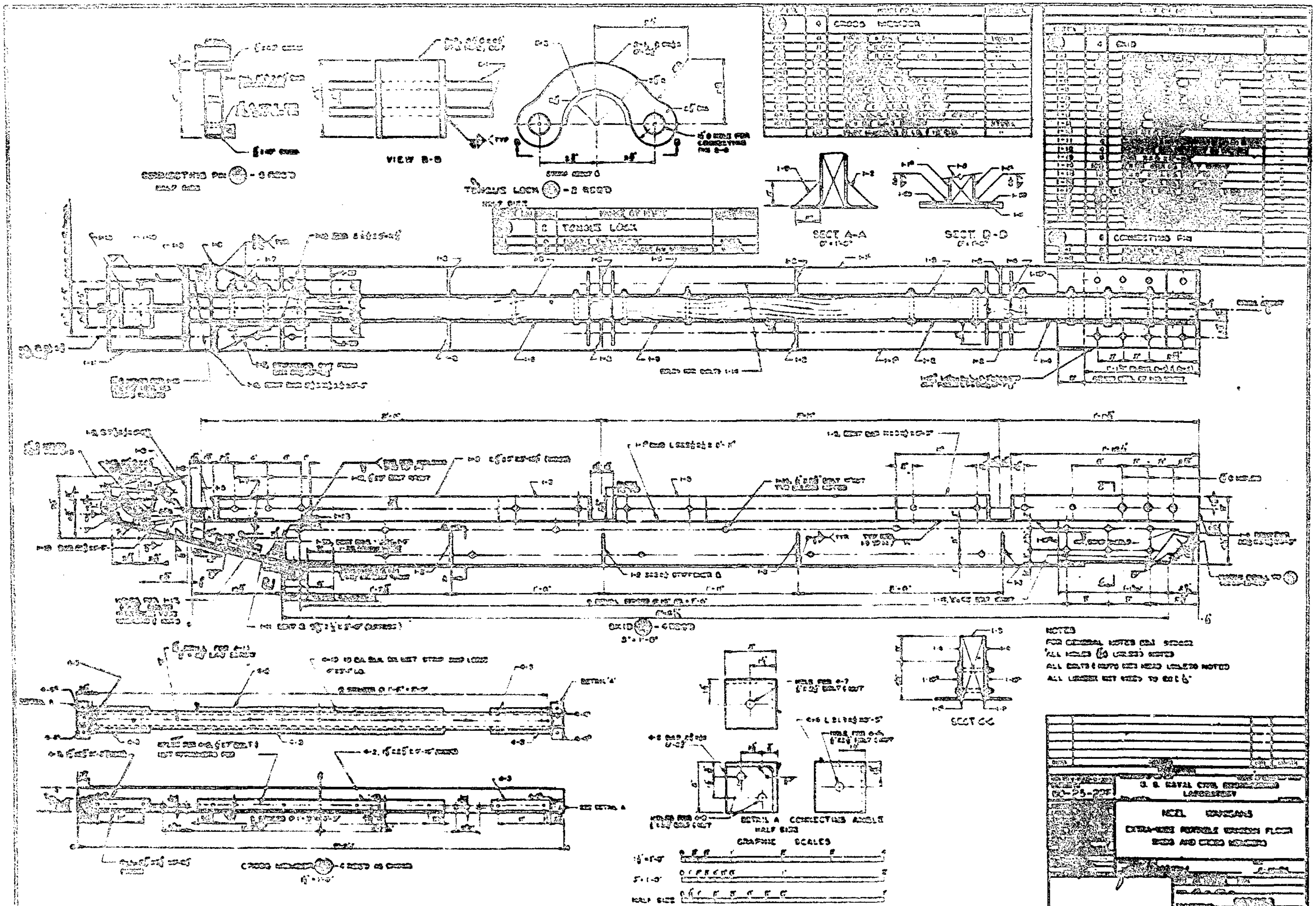
62-3-05

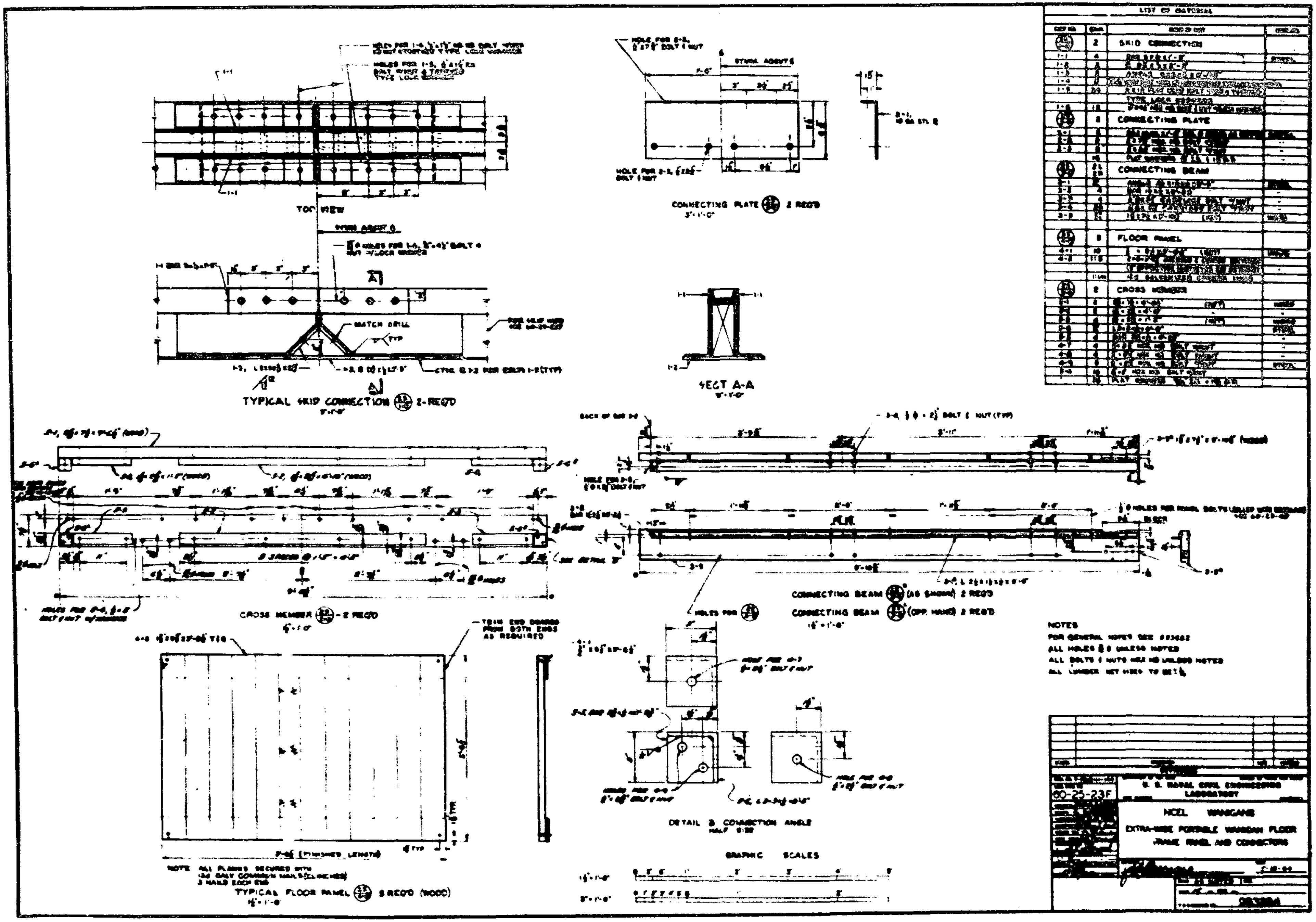

BILL OF MATERIAL
4 SKID
2 SKID CONNECTION
6 CONNECTING PIN
2 TONGUE LOCK
TOP VIEW
SKID - 4 REQD
TYPICAL SKID CONNECTION - 2 REQD
SECTION E-E
SECTION F-F
SECTION G-G
DETAIL A
DETAIL C
SECTION H-H
DETAIL B
DETAIL D
CONNECTING PIN - 6 REQD
TONGUE LOCK - 2 REQD
GRAPHIC SCALES
NOTES
U. S. NAVAL CIVIL ENGINEERING LABORATORY
NCEL WANGANS
STANDARD PORTABLE WANGAN FLOOR SKIDS AND CROSS MEMBERS
62-3-9F
993679

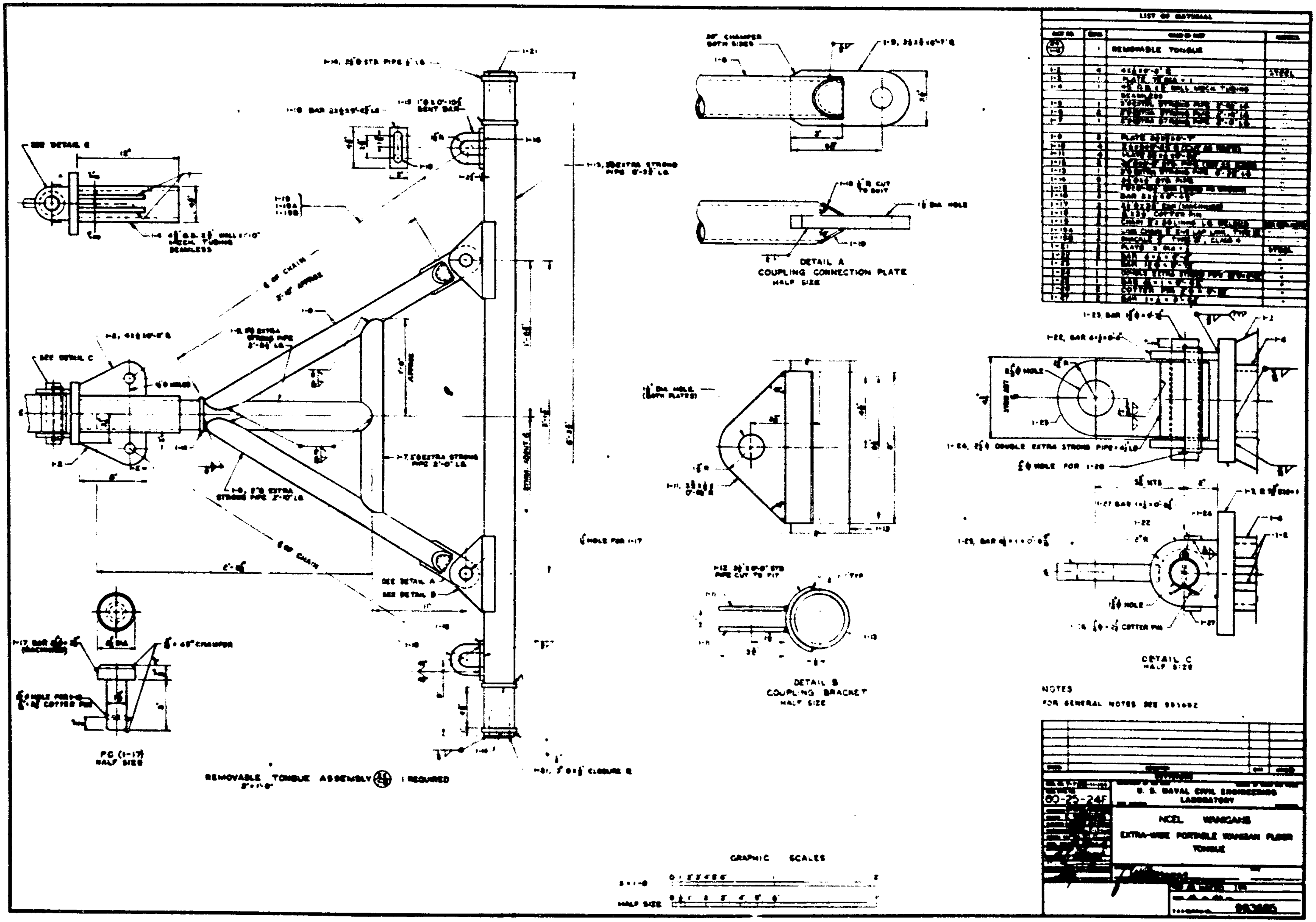

BILL OF MATERIAL
CROSS MEMBER
CROSS MEMBER
CONNECTING BEAM
FLOOR PANEL
CONNECTING PLATE
CROSS MEMBER -4 REQD
TYPICAL FLOOR PANEL -5 REQD (WOOD)
CONNECTING PLATE -2 REQD
CROSS MEMBER -2 REQD
DETAIL A CONNECTING ANGLE
GRAPHIC SCALES
CONNECTING BEAM (AS SHOWN)-2 REQD
CONNECTING BEAM (OPP HAND)-2 REQD
NOTES
U. S. NAVAL CIVIL ENGINEERING LABORATORY
NCEL VANGARD
62-3-10F

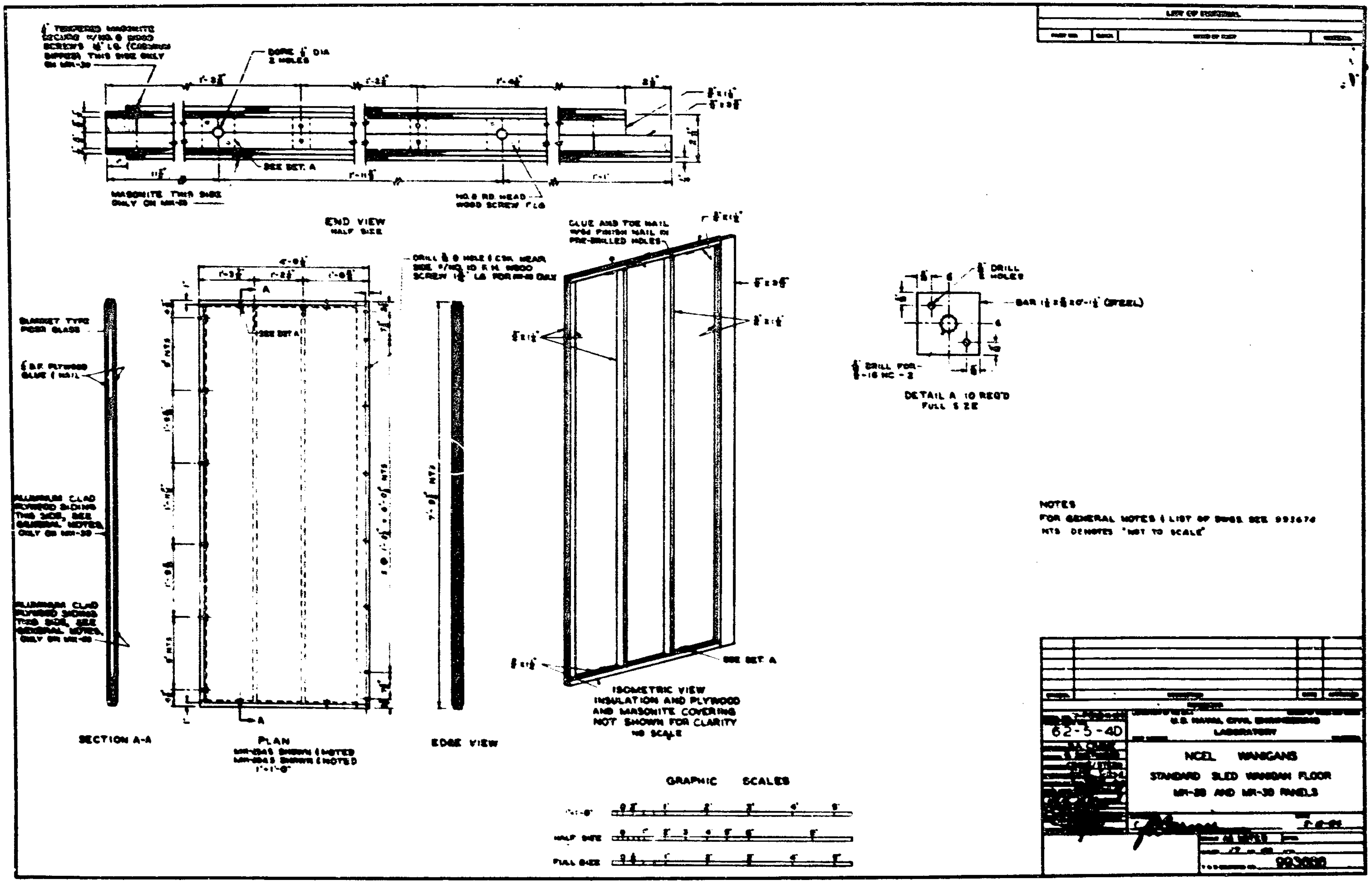

DETAIL A
COUPLING CONNECTION PLATE
HALF SIZE
DETAIL B
COUPLING BRACKET
HALF SIZE
DETAIL C
HALF SIZE
REMOVABLE TONGUE ASSEMBLY
GRAPHIC SCALES
NOTES
NICEL WANIGANS
STANDARD PORTABLE WANIGAN FLOOR TONGUE
LABORATORY


RIGHT
LEFT
TYP
PLAN
ELEVATION
TOBOGGAN GENERAL ASSEMBLY
SECTION A-A
SECTION B-B
GRAPHIC SCALES
GENERAL NOTES
U. S. NAVAL CIVIL ENGINEERING LABORATORY
NCEL

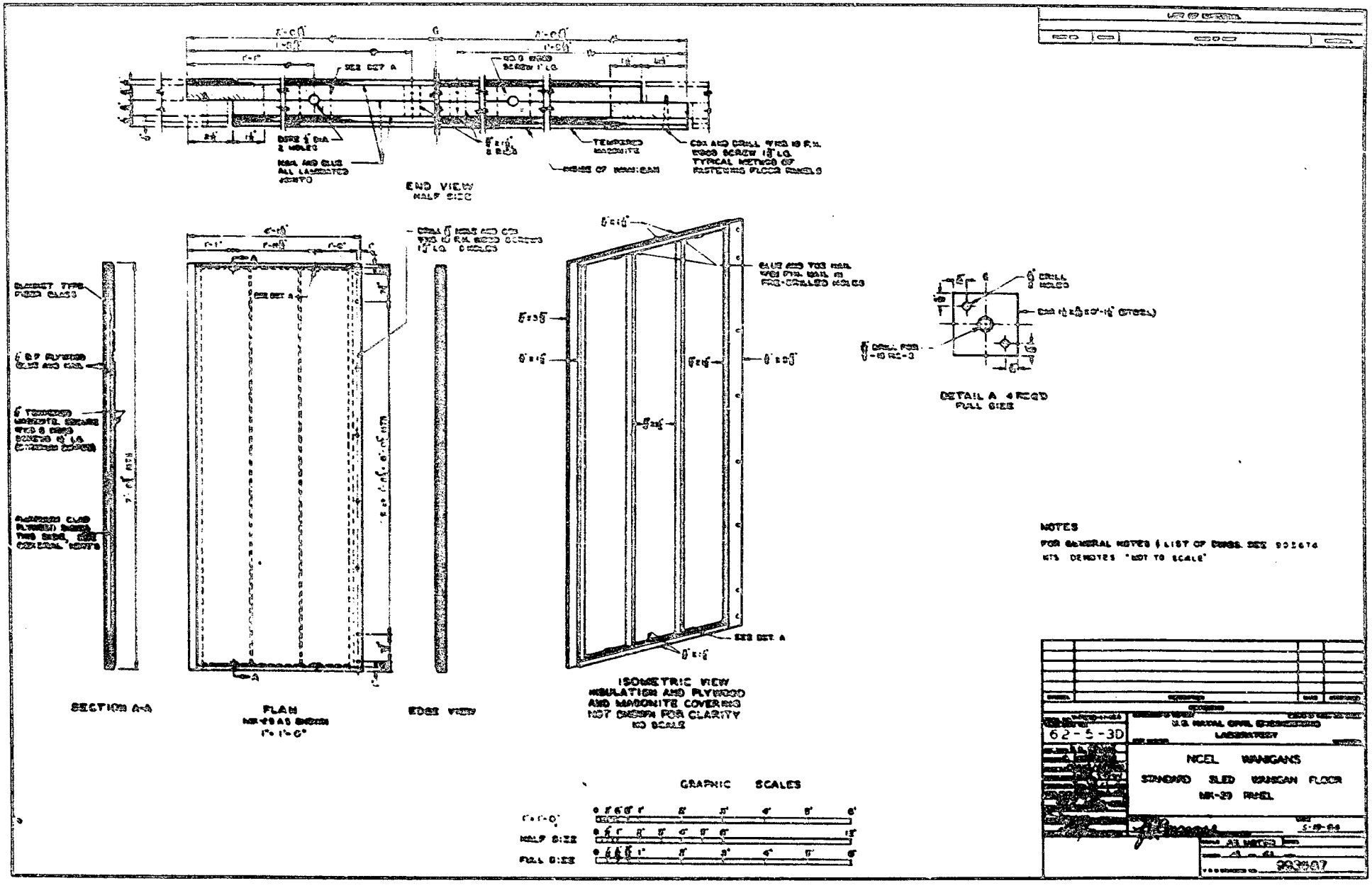

VIEW B-B
SECT A-A
SECT B-B
SECT C-C
NOTES
DETAIL A CONNECTING ANGLE
HALF SIZE
GRAPHIC SCALES

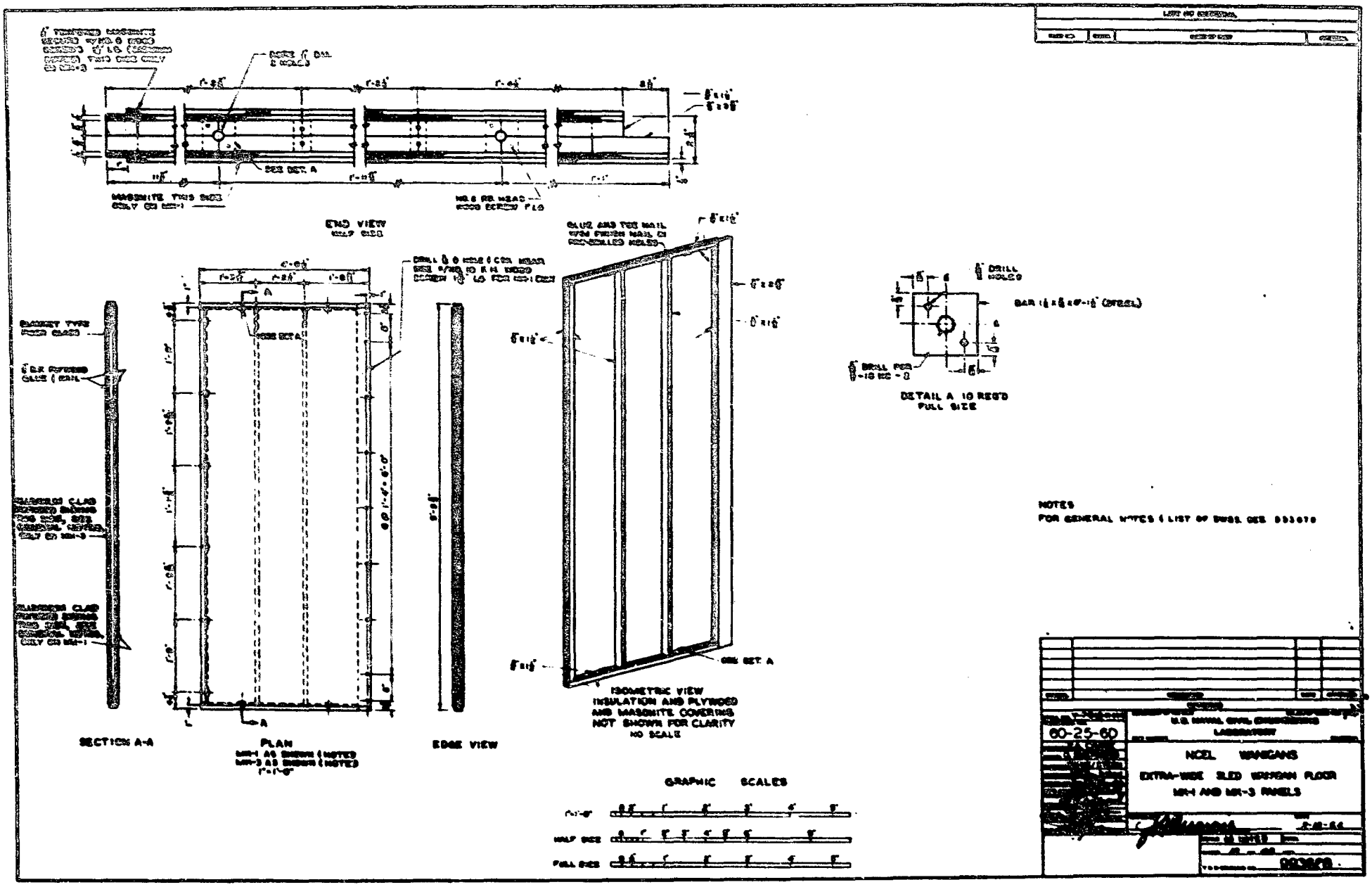

LIST OF MATERIAL
SKID CONNECTION
CONNECTING PLATE
CONNECTING BEAM
FLOOR PANEL
CROSS MEMBER
TOP VIEW
MATCH DRILL
TYPICAL SKID CONNECTION 2-REQ'D
SECT A-A
CONNECTING PLATE 2 REQ'D
CONNECTING BEAM (AS SHOWN) 2 REQ'D
CONNECTING BEAM (OPP. HAND) 2 REQ'D
CROSS MEMBER 2 REQ'D
TYPICAL FLOOR PANEL 8 REQ'D (WOOD)
DETAIL B CONNECTION ANGLE
GRAPHIC SCALES
NOTES
U. S. NAVAL CIVIL ENGINEERING LABORATORY
NCEL WANIGANS
EXTRA-WIDE PORTABLE WANIGAN FLOOR FRAME PANEL AND CONNECTORS
60-25-23F

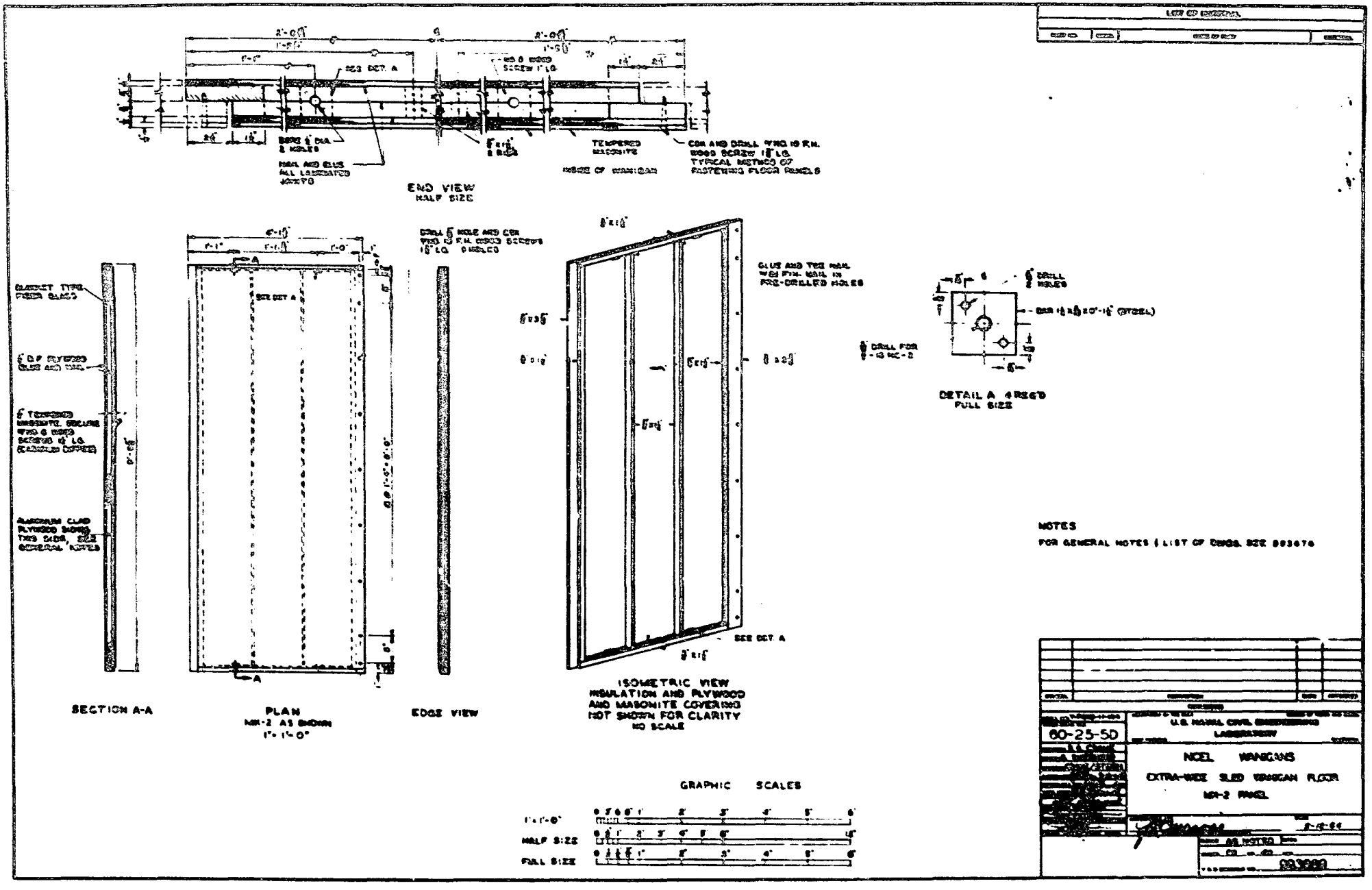

LIST OF MATERIAL
REMOVABLE TONGUE
STEEL
DETAIL A
COUPLING CONNECTION PLATE
HALF SIZE
DETAIL B
COUPLING BRACKET
HALF SIZE
DETAIL C
HALF SIZE
SEE DETAIL A
SEE DETAIL B
SEE DETAIL C
PC (1-17)
HALF SIZE
REMOVABLE TONGUE ASSEMBLY 1 REQUIRED
NOTES
FOR GENERAL NOTES SEE 993692
GRAPHIC SCALES
HALF SIZE
U. S. NAVAL CIVIL ENGINEERING LABORATORY
60-25-24F
NCEL WANIGANS
EXTRA-WIDE PORTABLE WANIGAN FLOOR
TONGUE

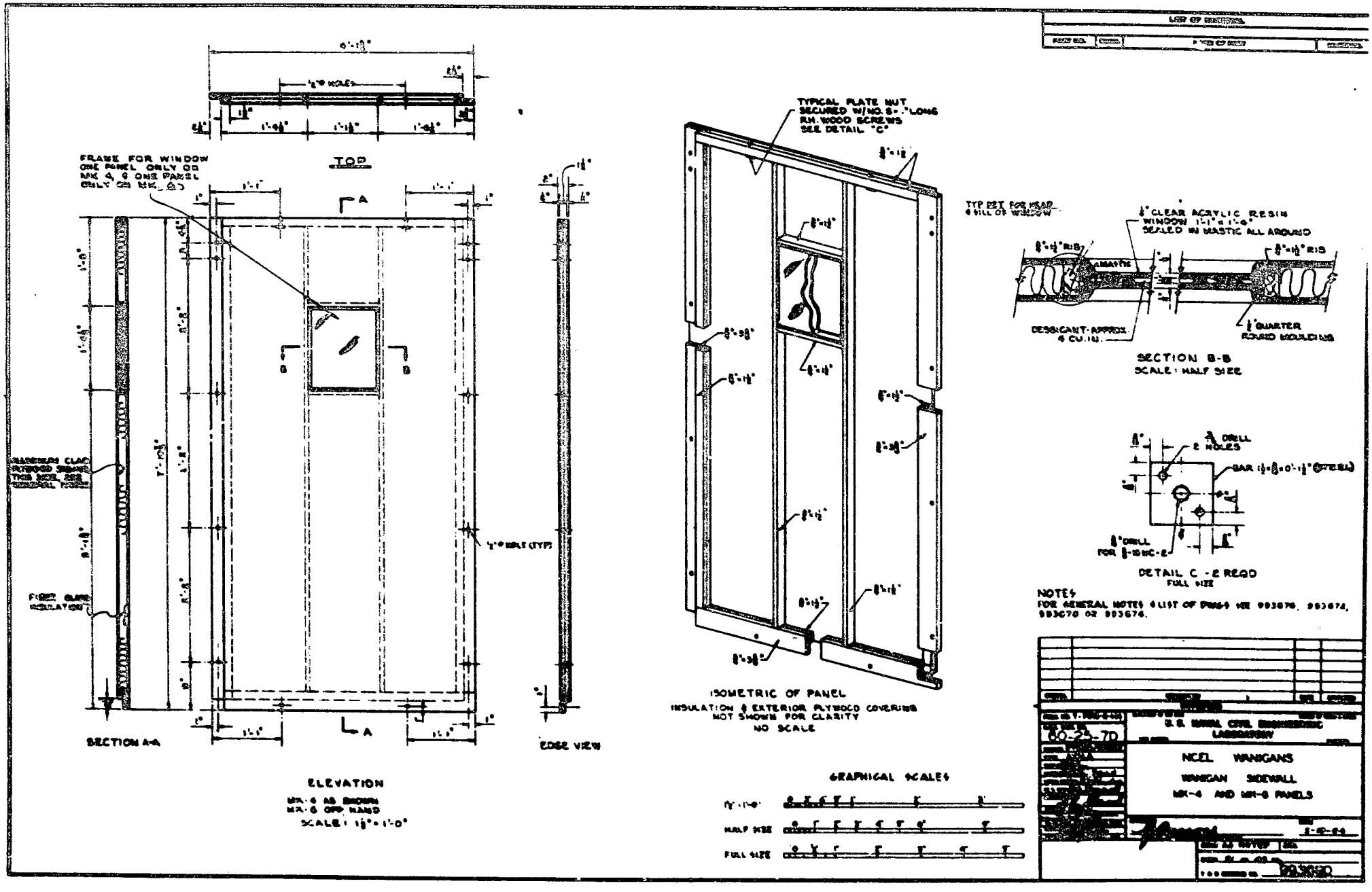


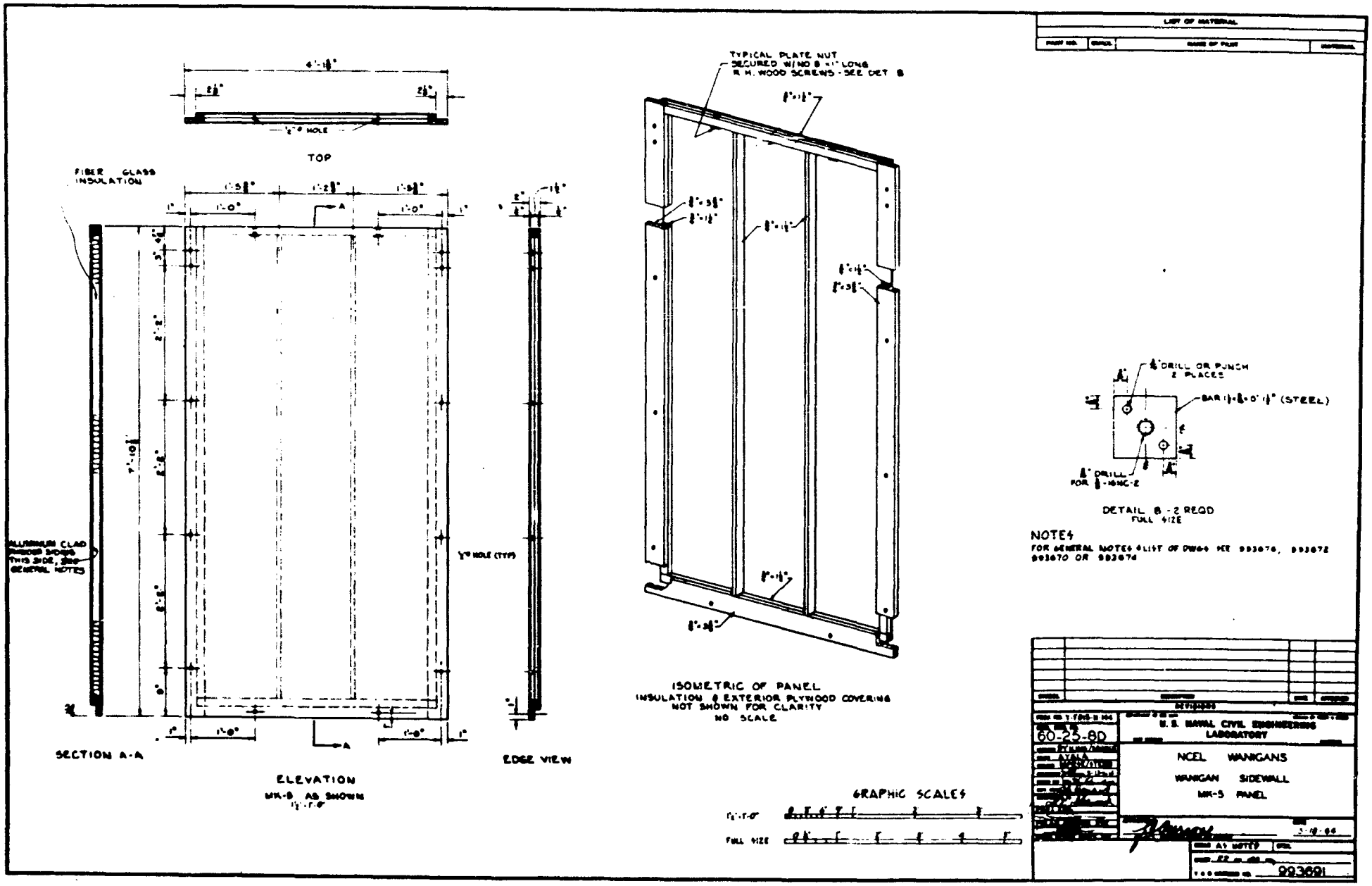
END VIEW
HALF SIZE
BORE 1/2" DIA 2 HOLES
SEE DET. A
MASONITE THIS SIDE ONLY ON MR-30
NO. 8 RD HEAD WOOD SCREW
GLUE AND TOE NAIL
PRE-DRILLED HOLES
DETAIL A 10 REQ'D
FULL SIZE
BLANKET TYPE FIBER GLASS
SECTION A-A
PLAN
EDGE VIEW
ISOMETRIC VIEW
INSULATION AND PLYWOOD AND MASONITE COVERING NOT SHOWN FOR CLARITY
NO SCALE
GRAPHIC SCALES
HALF SIZE
FULL SIZE
NOTES
FOR GENERAL NOTES & LIST OF DWGS SEE 993674
NTS DENOTES "NOT TO SCALE"
62-5-4D
U.S. NAVAL CIVIL ENGINEERING LABORATORY
NCEL WANIGANS
STANDARD SLED WANIGAN FLOOR
MR-28 AND MR-30 PANELS
993000

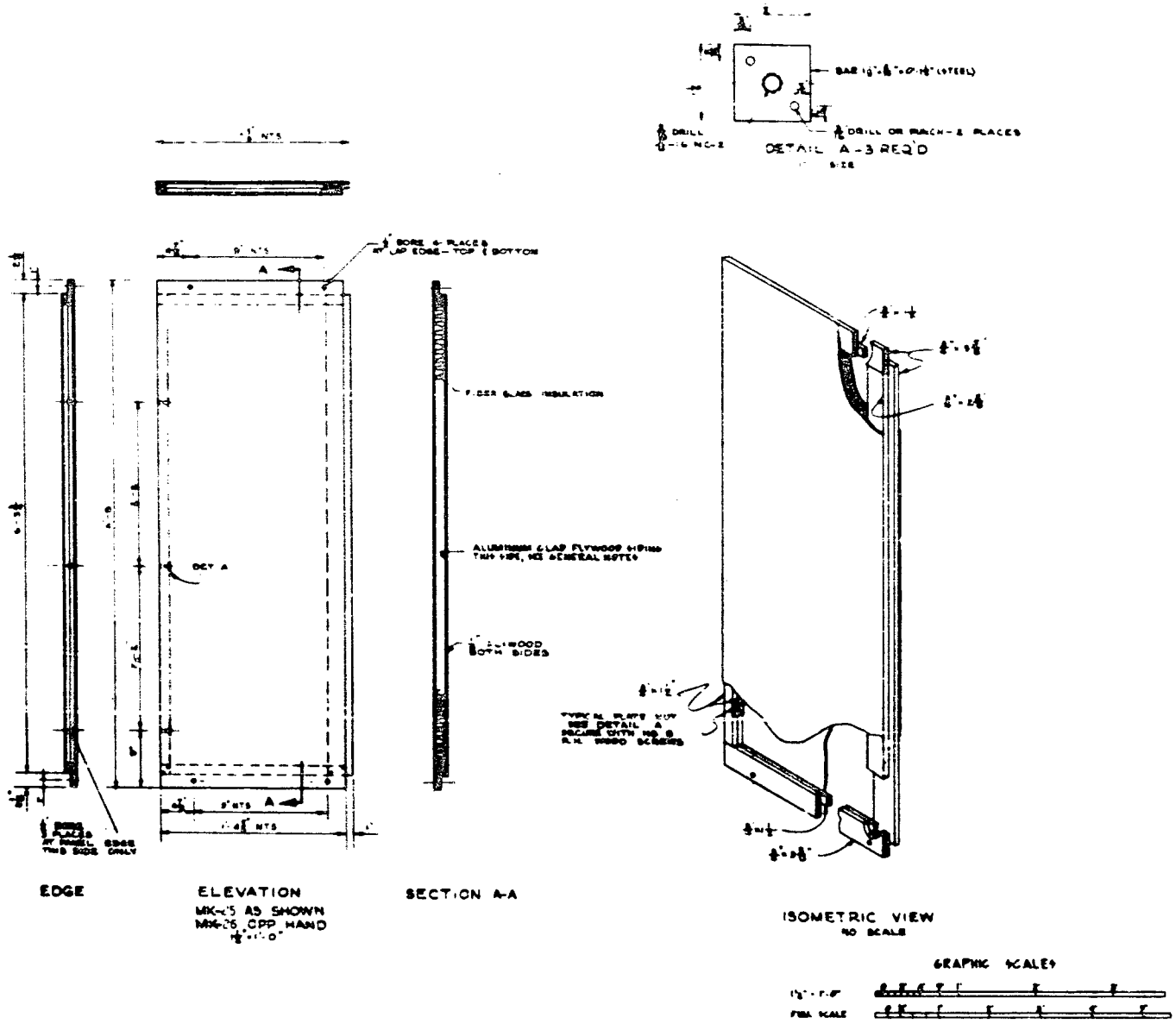

END VIEW
HALF SIZE
SECTION A-A
FLAT
EDGE VIEW
ISOMETRIC VIEW
INSULATION AND PLYWOOD
AND MASONITE COVERING
NOT SHOWN FOR CLARITY
NO SCALE
DETAIL A 4 REQ'D
FULL SIZE
NOTES
GRAPHIC SCALES
HALF SIZE
FULL SIZE
62-5-30
NICEL WANIGANS
STANDARD SLED WANIGAN FLOOR
MK-29 PANEL


END VIEW
HALF SIZE
SECTION A-A
PLAN
MH-1 AS SHOWN (NOTED)
MH-3 AS SHOWN (NOTED)
EDGE VIEW
ISOMETRIC VIEW
INSULATION AND PLYWOOD
AND MASONITE COVERING
NOT SHOWN FOR CLARITY
NO SCALE
DETAIL A 10 REQ'D
FULL SIZE
DRILL HOLES
NOTES
GRAPHIC SCALES
HALF SIZE
FULL SIZE
60-25-60
U.S. NAVAL CIVIL ENGINEERING LABORATORY
NCEL WANIGANS
EXTRA-WIDE SLED WANIGAN FLOOR
MH-1 AND MH-3 PANELS


END VIEW
HALF SIZE
SECTION A-A
PLAN
MK-2 AS SHOWN
EDGE VIEW
ISOMETRIC VIEW
INSULATION AND PLYWOOD
AND MASONITE COVERING
NOT SHOWN FOR CLARITY
NO SCALE
DETAIL A 4 REQ'D
FULL SIZE
NOTES
GRAPHIC SCALES
HALF SIZE
FULL SIZE
60-25-50
U.S. NAVAL CIVIL ENGINEERING LABORATORY
NCEL WANIGANS
EXTRA-WIDE SLED WANIGAN FLOOR
MK-2 PANEL


TOP
FRAME FOR WINDOW ONE PANEL ONLY ON MK 4, & ONE PANEL ONLY ON MK 6
SECTION A-A
EDGE VIEW
ELEVATION
MK-4 AS SHOWN
MK-6 OPP. HAND
SCALE: 1½" = 1'-0"
TYPICAL PLATE NUT SECURED W/NO. 6-1" LONG R.H. WOOD SCREWS SEE DETAIL "C"
ISOMETRIC OF PANEL
INSULATION & EXTERIOR PLYWOOD COVERING NOT SHOWN FOR CLARITY
NO SCALE
TYP SET FOR HEAD & SILL OF WINDOW
⅛" CLEAR ACRYLIC RESIN WINDOW 1'-1" x 1'-4" SEALED IN MASTIC ALL AROUND
MASTIC
DESICCANT - APPROX. 4 CU. IN.
¼" QUARTER ROUND MOULDING
SECTION B-B
SCALE: HALF SIZE
2 HOLES
BAR
DETAIL C - 2 REQD
FULL SIZE
NOTES
FOR GENERAL NOTES & LIST OF DWGS SEE 993670, 993674, 993670 OR 993676.
GRAPHICAL SCALES
1½" = 1'-0"
HALF SIZE
FULL SIZE
U.S. NAVAL CIVIL ENGINEERING LABORATORY
NCEL WANIGANS
WANIGAN SIDEWALL
MK-4 AND MK-6 PANELS
60-52-70


LIST OF MATERIAL
TOP
FIBER GLASS INSULATION
SECTION A-A
ELEVATION
MK-8 AS SHOWN
EDGE VIEW
TYPICAL PLATE NUT SECURED W/NO 8 R.H. WOOD SCREWS - SEE DET B
ISOMETRIC OF PANEL
INSULATION & EXTERIOR PLYWOOD COVERING NOT SHOWN FOR CLARITY
NO SCALE
DRILL OR PUNCH 2 PLACES
BAR (STEEL)
DRILL FOR
DETAIL B - 2 REQD
FULL SIZE
NOTES
FOR GENERAL NOTES & LIST OF DWGS SEE 993670, 993672 993670 OR 993674
GRAPHIC SCALES
FULL SIZE
60-25-8D
U.S. NAVAL CIVIL ENGINEERING LABORATORY
NCEL WANIGANS
WANIGAN SIDEWALL
MK-5 PANEL
993691



NOTES
FOR GENERAL NOTES & LIST OF DRAWINGS
SEE 993470
NTS DENOTES "NOT TO SCALE"

LIST OF MATERIAL			

62-3-6D

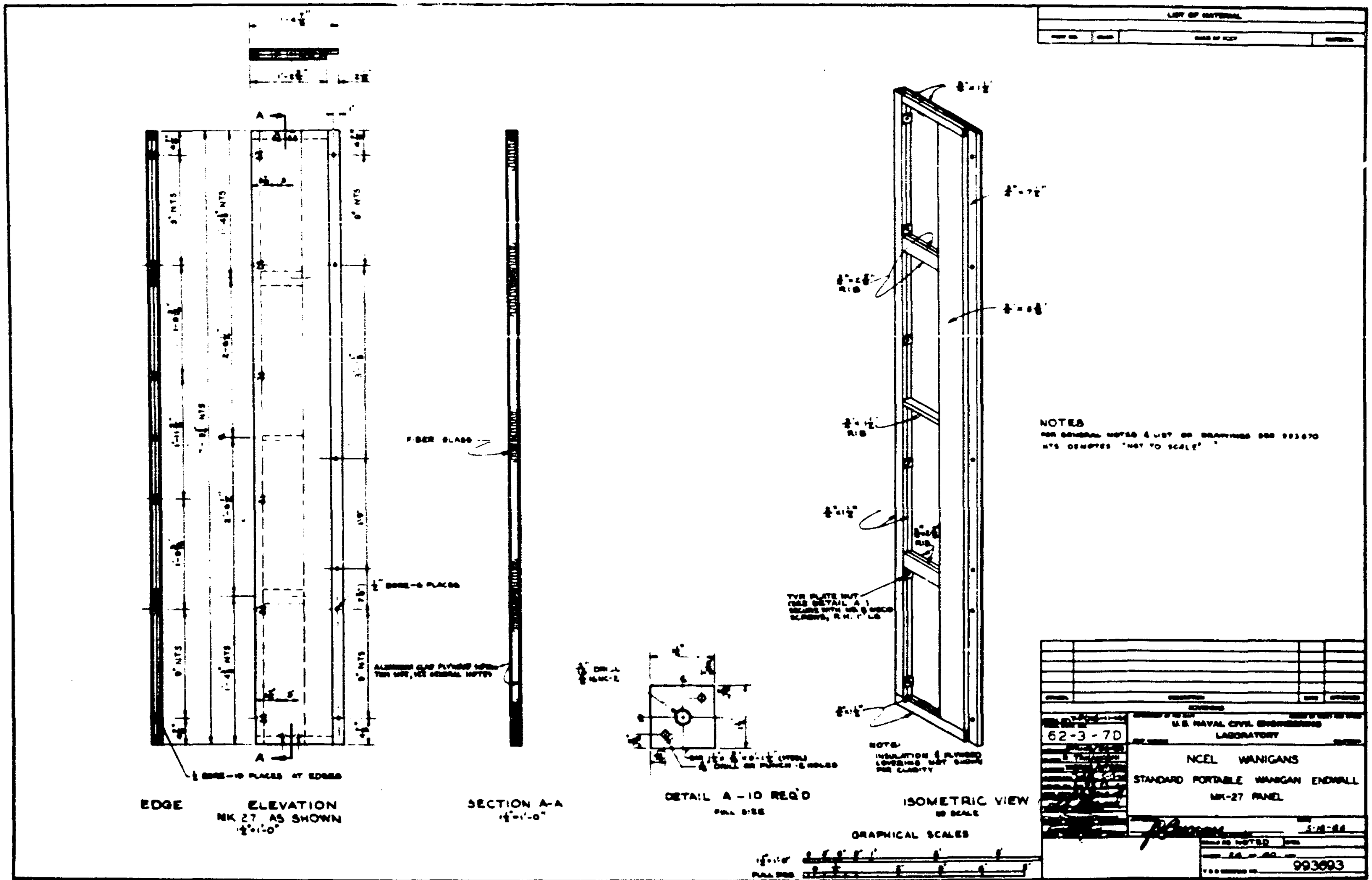
U.S. NAVAL CIVIL ENGINEERING LABORATORY

NCEL WANIGANS

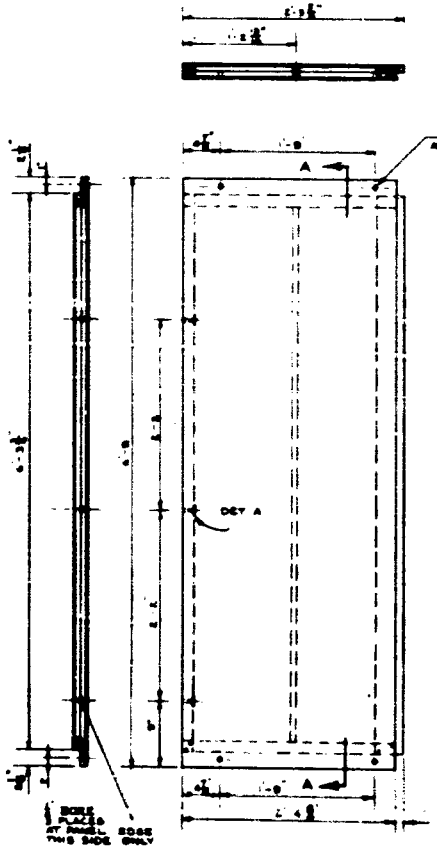
STANDARD PORTABLE WANIGAN ENDWALL
MK-25 AND MK-26 PANELS

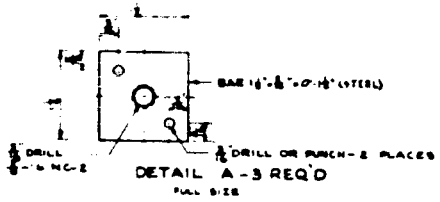
SCALE AS NOTED

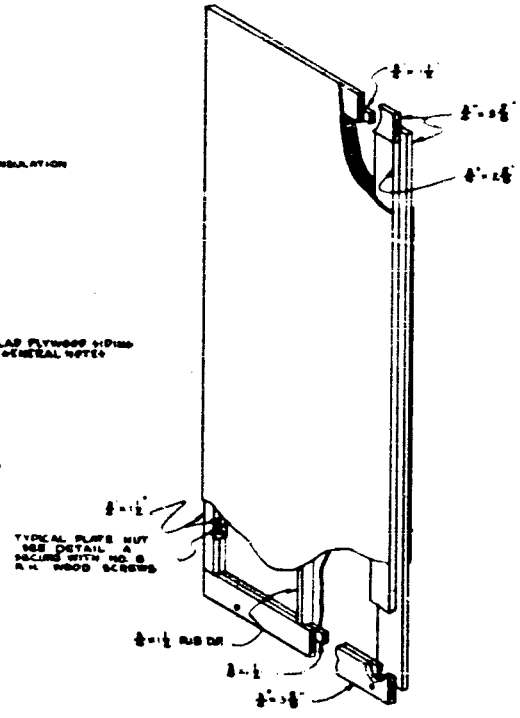
993692



EDGE
ELEVATION
MK 27 AS SHOWN
SECTION A-A
FIBER GLASS
DETAIL A - 10 REQ'D
FULL SIZE
ISOMETRIC VIEW
NO SCALE
GRAPHICAL SCALES
FULL SIZE
NOTES
NTS DENOTES "NOT TO SCALE"
NOTE:
INSULATION & PLYWOOD COVERING NOT SHOWN FOR CLARITY
RIB
LIST OF MATERIAL
U.S. NAVAL CIVIL ENGINEERING LABORATORY
NCEL WANIGANS
STANDARD PORTABLE WANIGAN ENDWALL
MK-27 PANEL
62-3-7D
993693







NOTES
FOR GENERAL NOTES & LIST OF DRAWINGS
SEE 993672

GRAPHIC SCALES

U.S. NAVAL CIVIL ENGINEERING LABORATORY

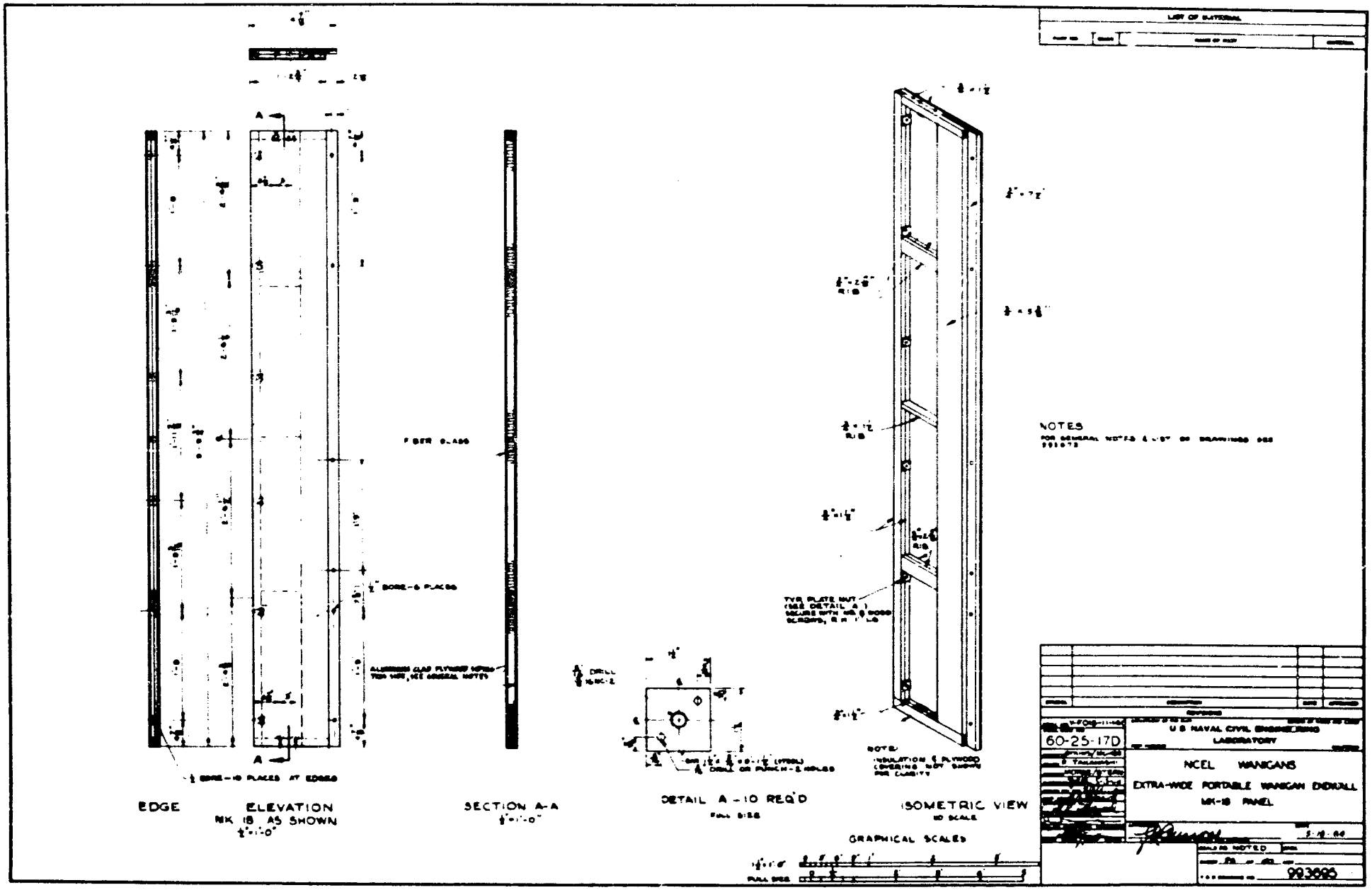
60-25-160

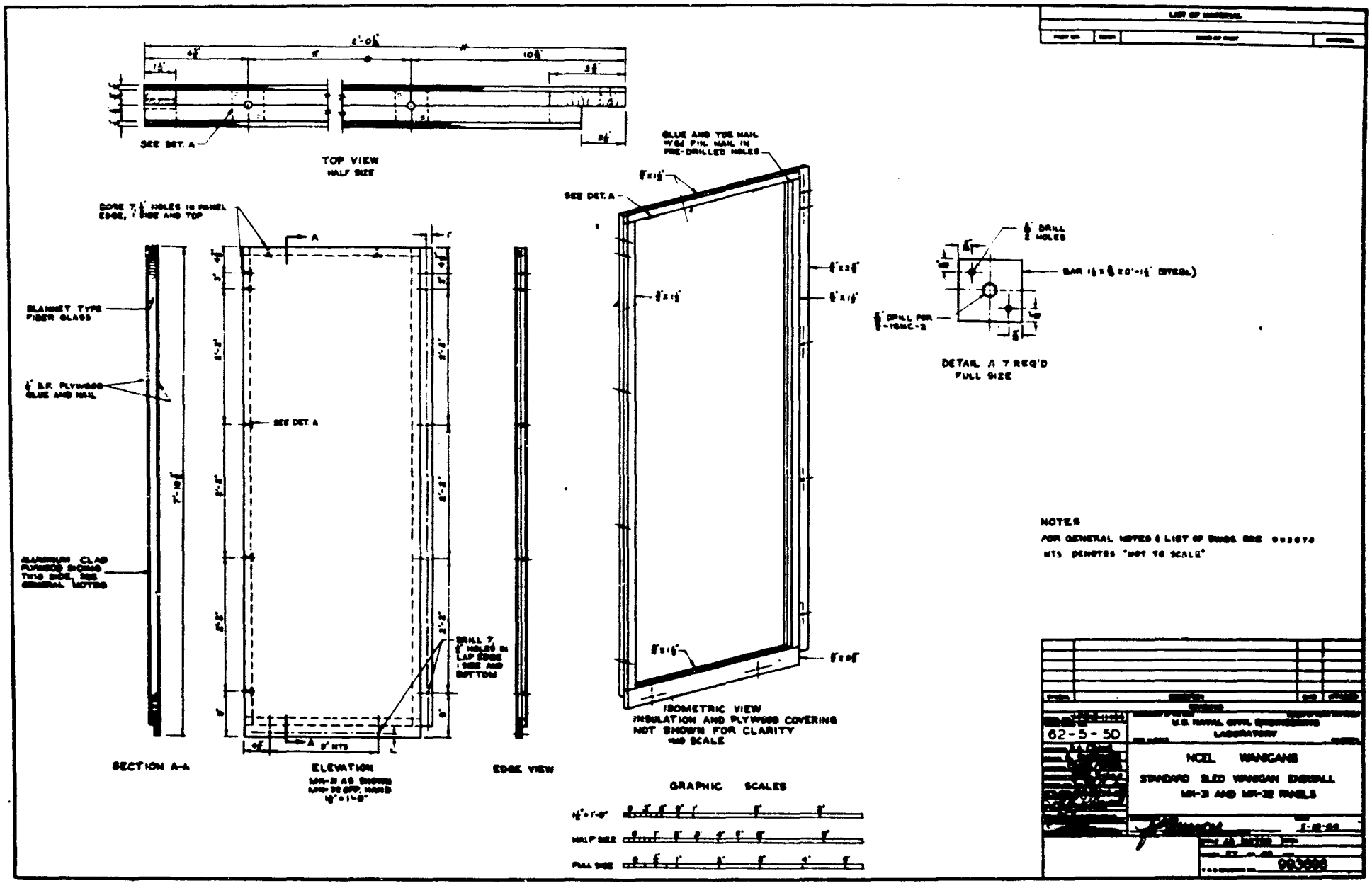
NCEL WANIGANS

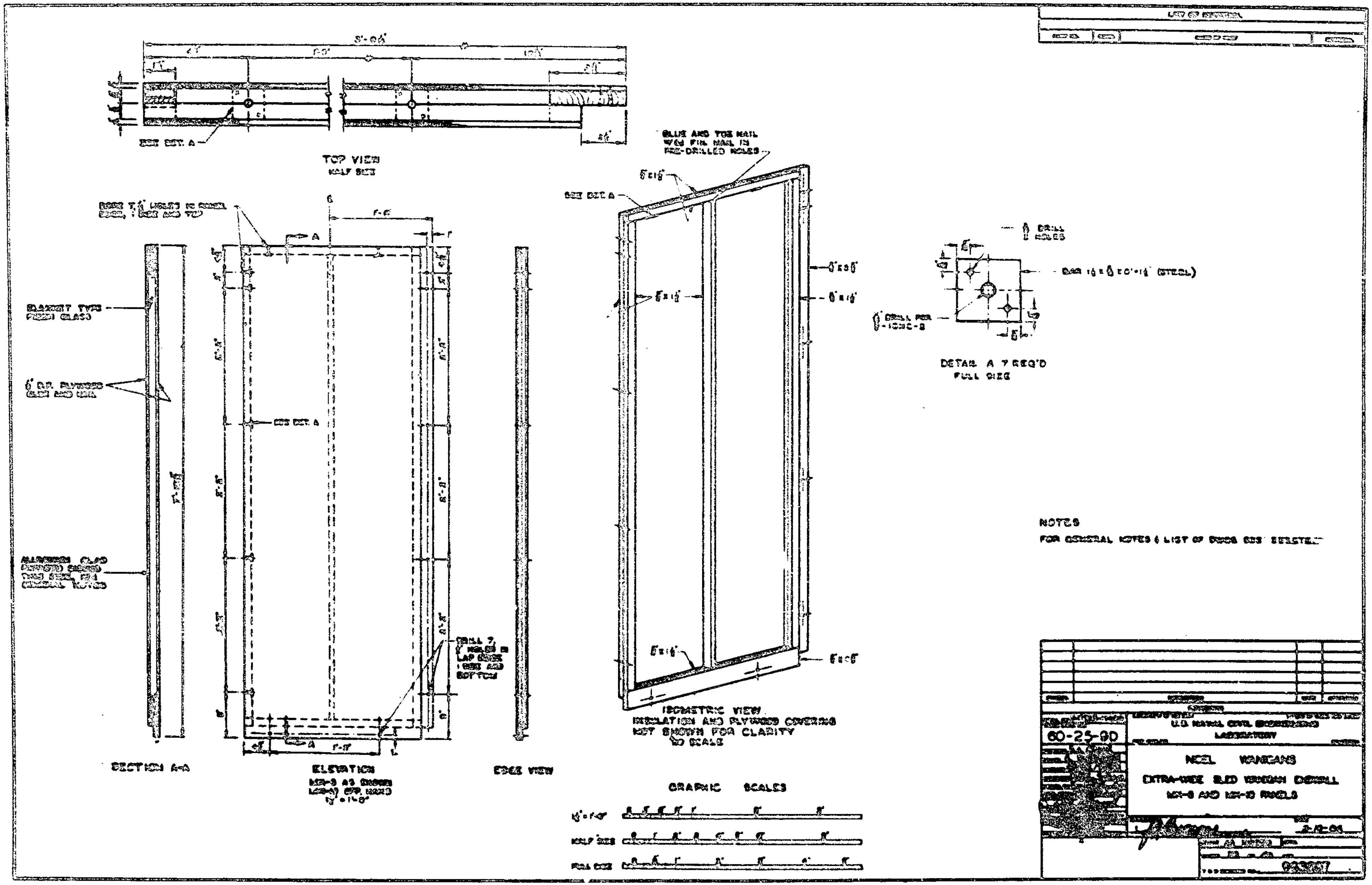
EXTRA-WIDE PORTABLE WANIGAN ENDWALL

MK-14 AND MK-17 PANELS

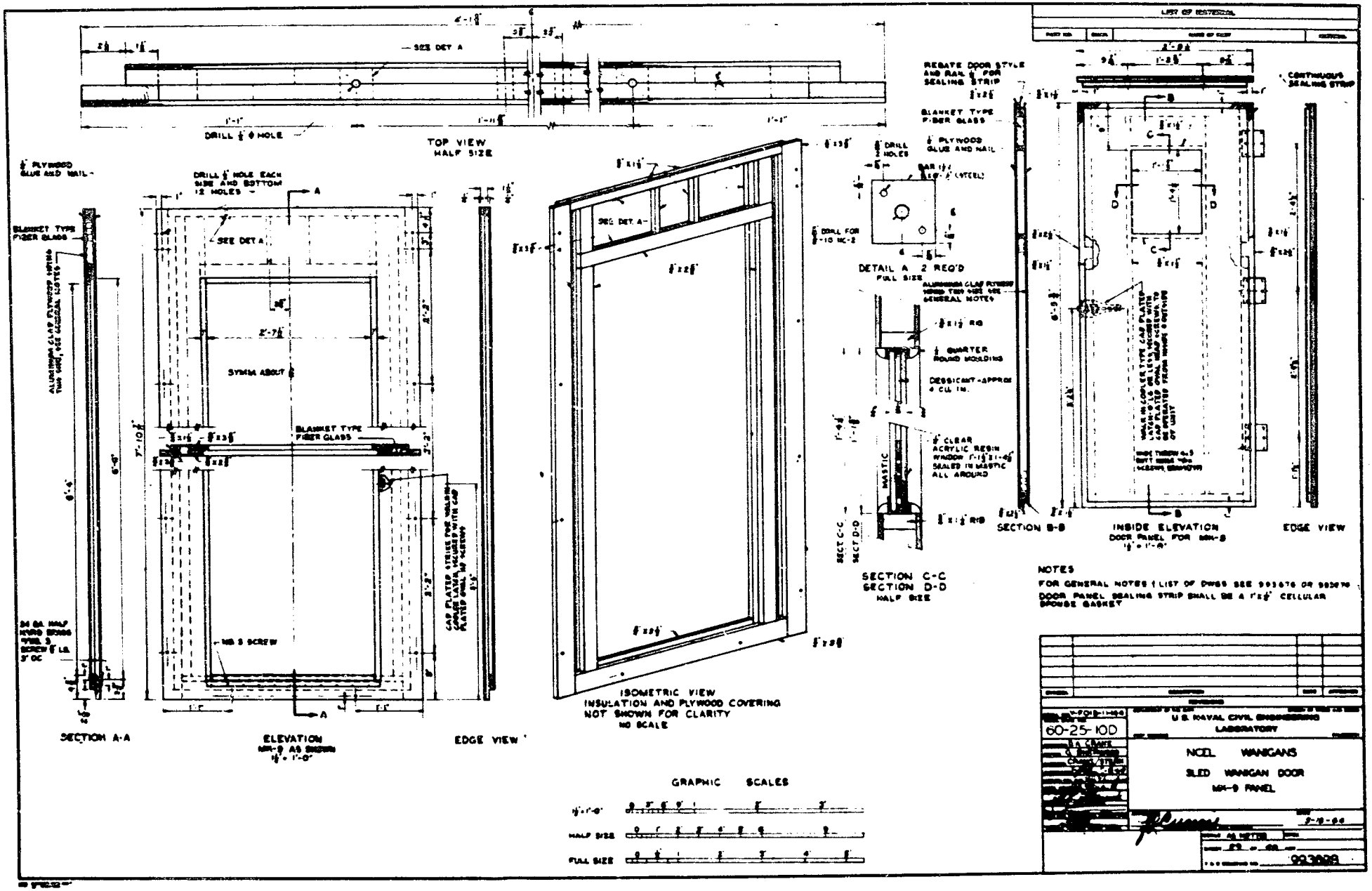
993694

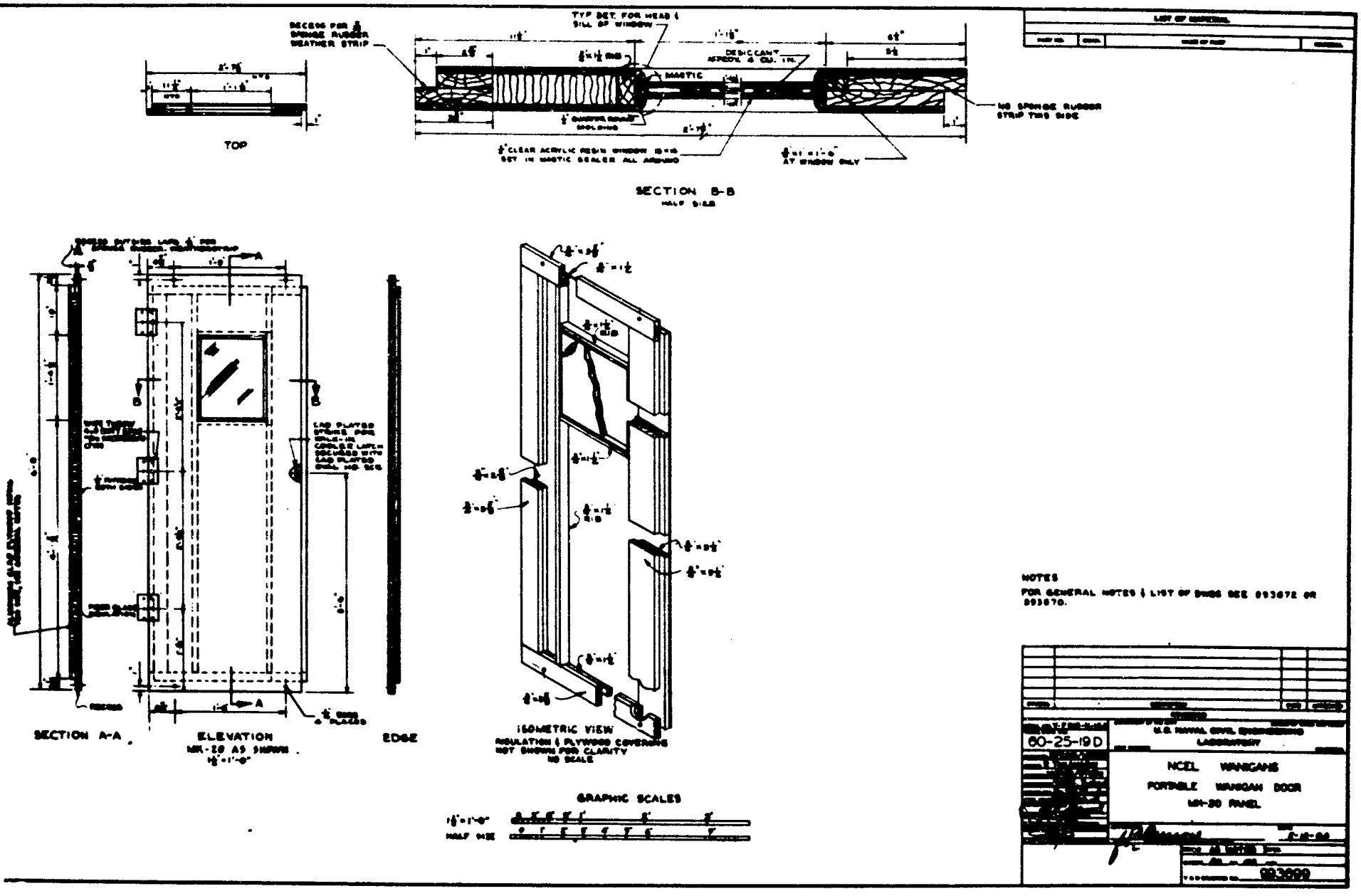

LIST OF MATERIAL
EDGE
ELEVATION
MK 18 AS SHOWN
SECTION A-A
DETAIL A - 10 REQ'D
ISOMETRIC VIEW
GRAPHICAL SCALES
NOTES
60-25-17D
U.S. NAVAL CIVIL ENGINEERING LABORATORY
NCEL WANGANS
EXTRA-WIDE PORTABLE WANGAN DIDWALL
MK-18 PANEL
993693

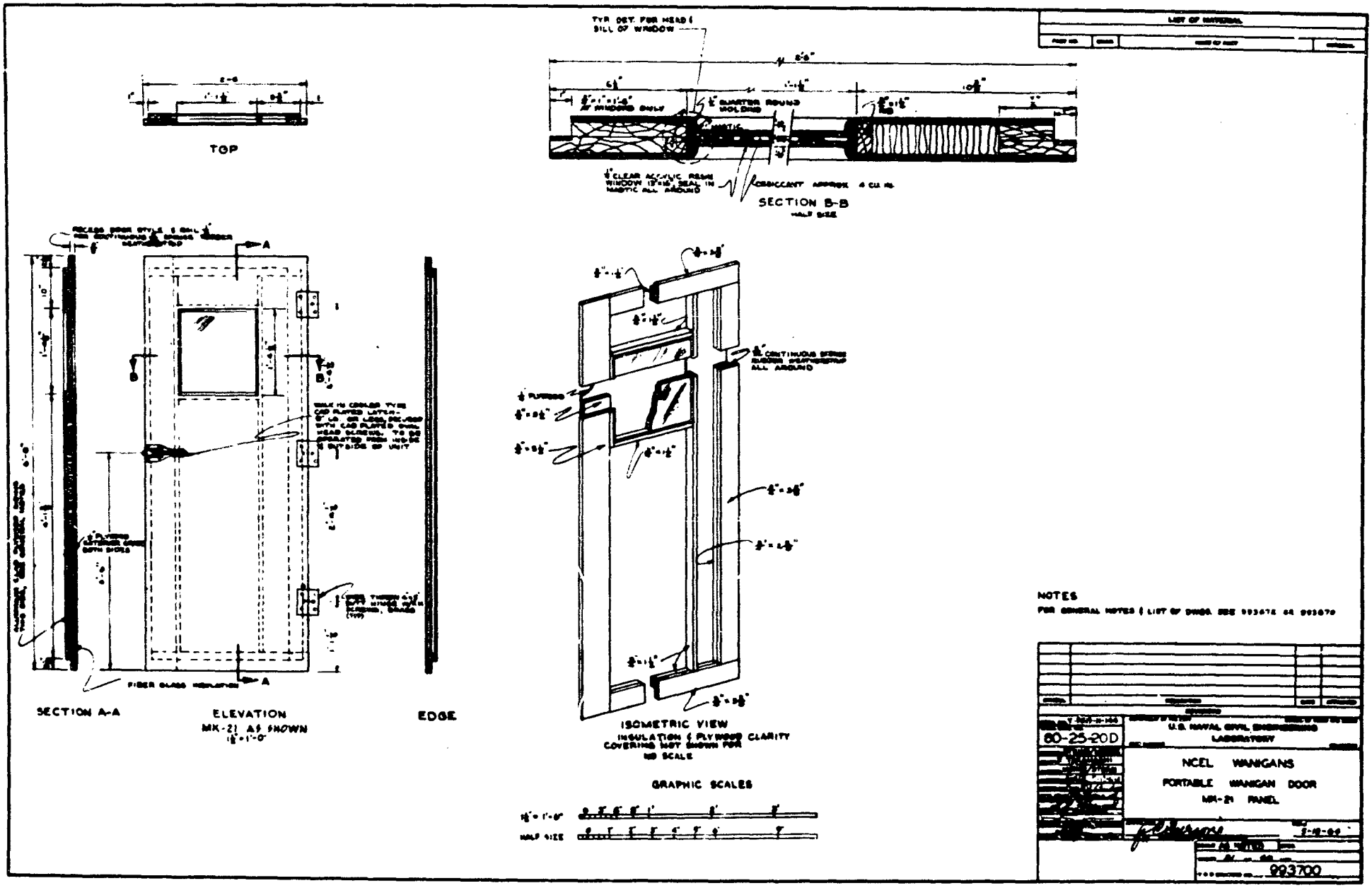

TOP VIEW
HALF SIZE
SEE DET. A
BORE 7 HOLES IN PANEL EDGE, 1 SIDE AND TOP
BLANKET TYPE FIBER GLASS
SEE DET. A
ALUMINUM CLAD PLYWOOD SIDING TWO SIDE, SEE GENERAL NOTES
DRILL 7 HOLES IN LAP EDGE 1 SIDE AND BOTTOM
SECTION A-A
ELEVATION
EDGE VIEW
GLUE AND TOE NAIL WSJ PIN NAIL IN PRE-DRILLED HOLES
SEE DET. A
ISOMETRIC VIEW
INSULATION AND PLYWOOD COVERING NOT SHOWN FOR CLARITY
NOT SCALE
DETAIL A 7 REQ'D
FULL SIZE
NOTES
GRAPHIC SCALES
HALF SIZE
FULL SIZE
62-5-50
U.S. NAVAL CIVIL ENGINEERING LABORATORY
NCEL WANGANS
STANDARD SLED WANGAN ENSWALL
MK-3 AND MK-32 PANELS

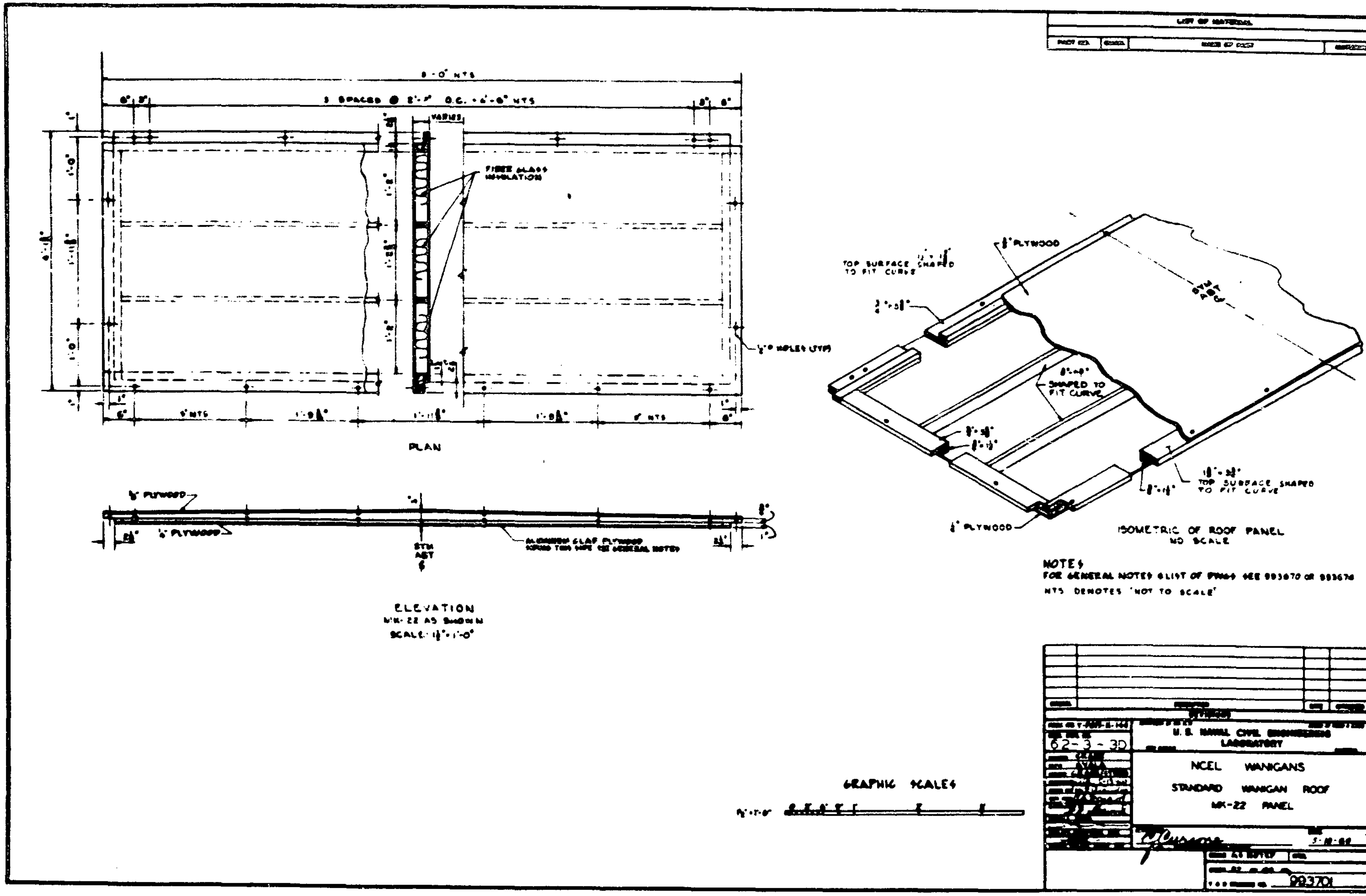


TOP VIEW
HALF SIZE
SEE DET. A
ELEVATION
SECTION A-A
EDGE VIEW
ISOMETRIC VIEW
INSULATION AND PLYWOOD COVERING NOT SHOWN FOR CLARITY
NO SCALE
GLUE AND TOE NAIL
PRE-DRILLED HOLES
DETAIL A 7 REQ'D
FULL SIZE
GRAPHIC SCALES
HALF SIZE
FULL SIZE
NOTES
60-25-90
U.S. NAVAL CIVIL ENGINEERING LABORATORY
NCEL WANIGANS

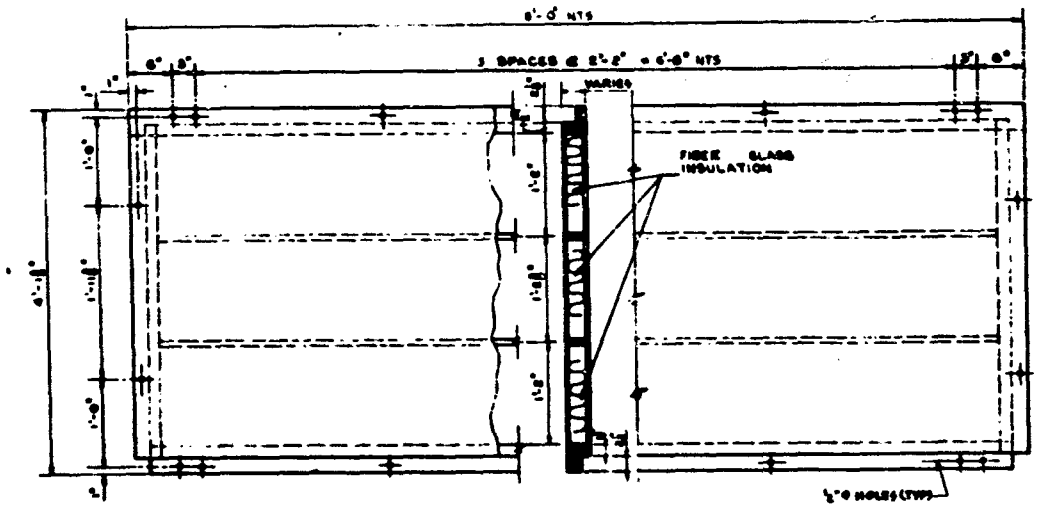

TOP VIEW
HALF SIZE
DRILL ½ ϕ HOLE
SEE DET A
DRILL ½ HOLE EACH SIDE AND BOTTOM 12 HOLES
SEE DET A
SYMM ABOUT ℄
BLANKET TYPE FIBER GLASS
NO 3 SCREW
CAP PLATED STRIKE FOR WALKER LATCH LAVA, HOLDER WITH CAP PLATED SHALL NO SCREWS
SECTION A-A
ELEVATION
MK-9 AS SHOWN
½" = 1'-0"
EDGE VIEW
ISOMETRIC VIEW
INSULATION AND PLYWOOD COVERING
NOT SHOWN FOR CLARITY
NO SCALE
DETAIL A 2 REQ'D
FULL SIZE
REBATE DOOR STYLE AND RAIL ½ FOR SEALING STRIP
BLANKET TYPE FIBER GLASS
½ PLYWOOD GLUE AND NAIL
½ QUARTER ROUND MOULDING
DESSICANT-APPROX 4 CU IN.
½ CLEAR ACRYLIC RESIN WINDOW SEALED IN MASTIC ALL AROUND
MASTIC
SECTION C-C
SECTION D-D
HALF SIZE
SECTION B-B
INSIDE ELEVATION
DOOR PANEL FOR MK-9
½" = 1'-0"
CONTINUOUS SEALING STRIP
EDGE VIEW
NOTES
FOR GENERAL NOTES & LIST OF DWGS SEE 993676 OR 993679
DOOR PANEL SEALING STRIP SHALL BE A 1"x½" CELLULAR SPONGE GASKET
GRAPHIC SCALES
½"=1'-0"
HALF SIZE
FULL SIZE
60-25-10D
U.S. NAVAL CIVIL ENGINEERING LABORATORY
NCEL WANGANS
SLED WANGAN DOOR
MK-9 PANEL
993688


TOP
SECTION B-B
HALF SIZE
MASTIC
NO SPONGE RUBBER STRIP THIS SIDE
SECTION A-A
ELEVATION
EDGE
ISOMETRIC VIEW
INSULATION & PLYWOOD COVERING NOT SHOWN FOR CLARITY
NO SCALE
GRAPHIC SCALES
NOTES
FOR GENERAL NOTES & LIST OF DWGS SEE 993672 OR 993670.
60-25-19D
U.S. NAVAL CIVIL ENGINEERING LABORATORY
NCEL WANGANS
PORTABLE WANGAN DOOR
MH-20 PANEL
993699

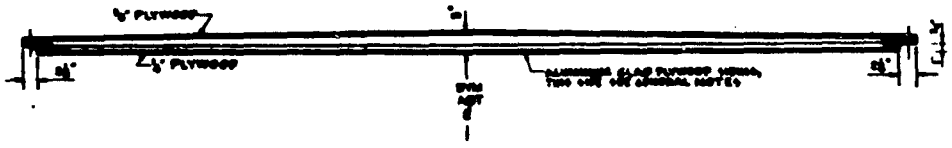

LIST OF MATERIAL
TOP
TYP. DET. FOR HEAD & SILL OF WINDOW
SECTION B-B
HALF SIZE
SECTION A-A
ELEVATION
MK-21 AS SHOWN
EDGE
ISOMETRIC VIEW
INSULATION & PLYWOOD CLARITY COVERING NOT SHOWN FOR
NO SCALE
GRAPHIC SCALES
NOTES
U.S. NAVAL CIVIL ENGINEERING LABORATORY
80-25-20D
NCEL WANIGANS
PORTABLE WANIGAN DOOR
MK-21 PANEL
993700



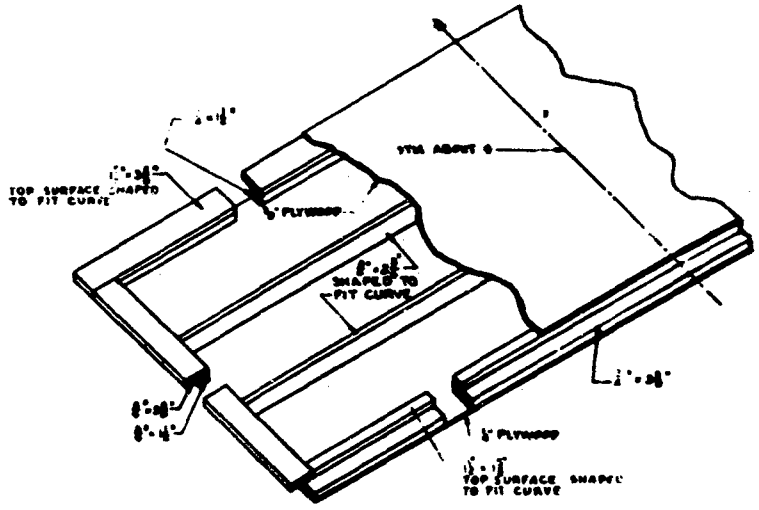
LIST OF MATERIAL
8'-0" NTS
3 SPACED @ 2'-7" O.C. = 6'-6" NTS
VARIES
FIBER GLASS INSULATION
1/2" Ø HOLES (TYP)
PLAN
1/4" PLYWOOD
1/4" PLYWOOD
STM ASY
ELEVATION
MK-22 AS SHOWN
SCALE: 1 1/2" = 1'-0"
1/4" PLYWOOD
TOP SURFACE SHAPED TO FIT CURVE
SHAPED TO FIT CURVE
TOP SURFACE SHAPED TO FIT CURVE
1/4" PLYWOOD
ISOMETRIC OF ROOF PANEL
NO SCALE
NOTES
FOR GENERAL NOTES & LIST OF DWGS SEE 993670 OR 993674
NTS DENOTES 'NOT TO SCALE'
GRAPHIC SCALES
U. S. NAVAL CIVIL ENGINEERING LABORATORY
62-3-3D
NCEL WANIGANS
STANDARD WANIGAN ROOF
MK-22 PANEL
5-11-62
993701



PLAN



ELEVATION
MR-23 AS SHOWN
SCALE: 1½" = 1'-0"



ISOMETRIC OF ROOF PANEL
NO SCALE

NOTES
FOR GENERAL NOTES & LIST OF DRAWS SEE 993070 OR 993070
NTS DENOTES "NOT TO SCALE"

GRAPHIC SCALES

U.S. NAVAL CIVIL ENGINEERING LABORATORY

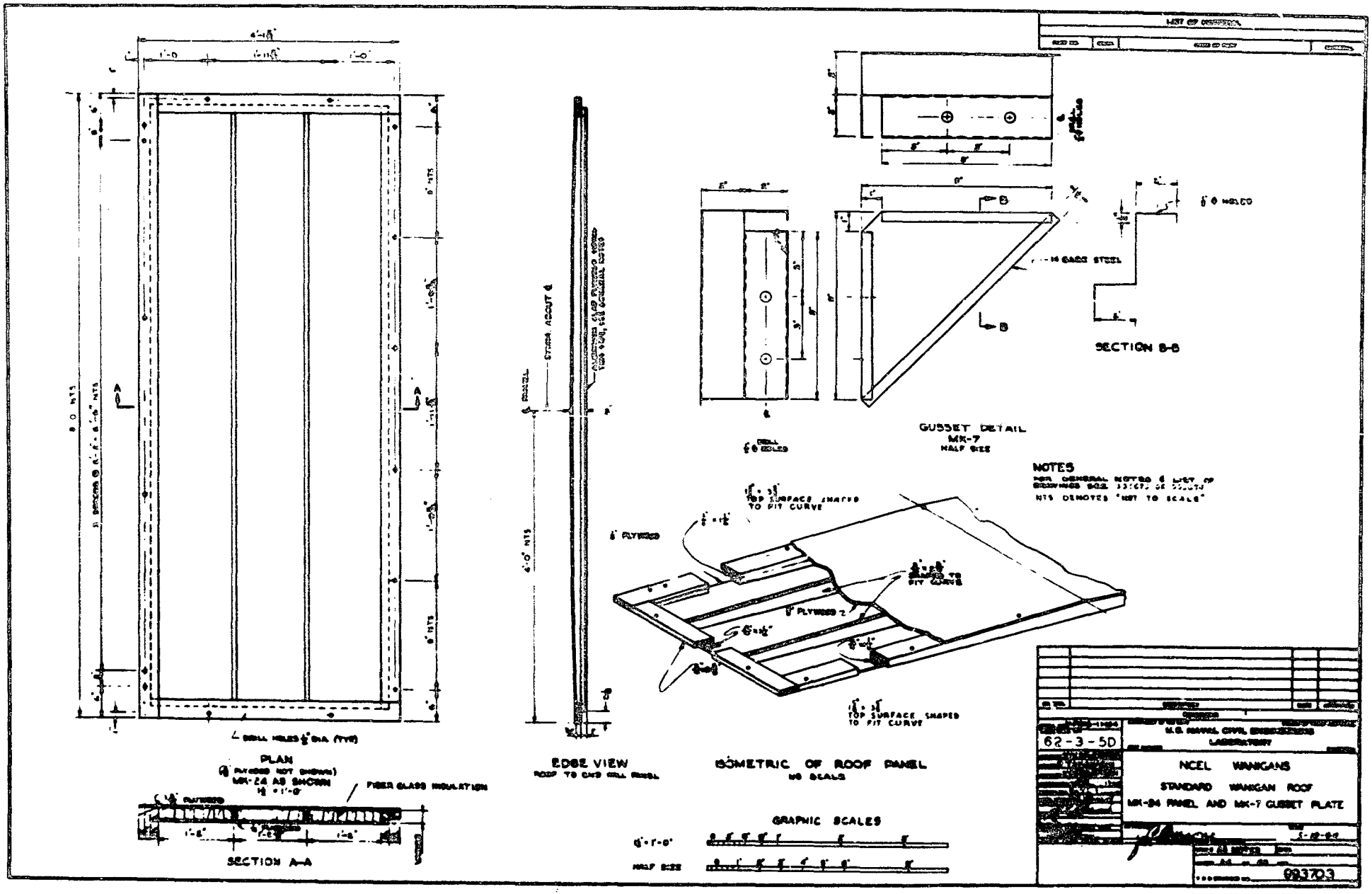
62-3-4D

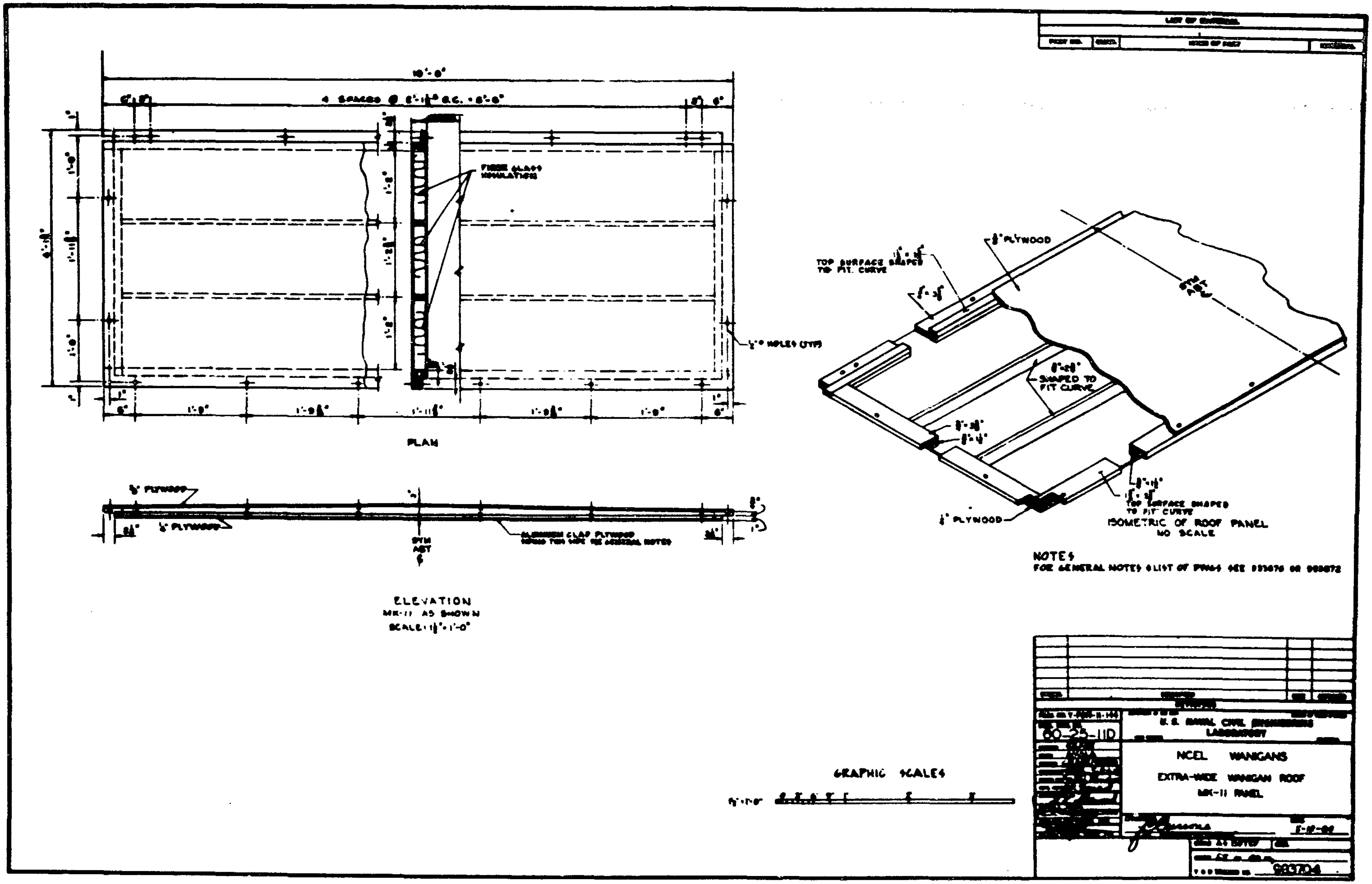
NCEL WANIGANS

STANDARD WANIGAN ROOF
MR-23 PANEL

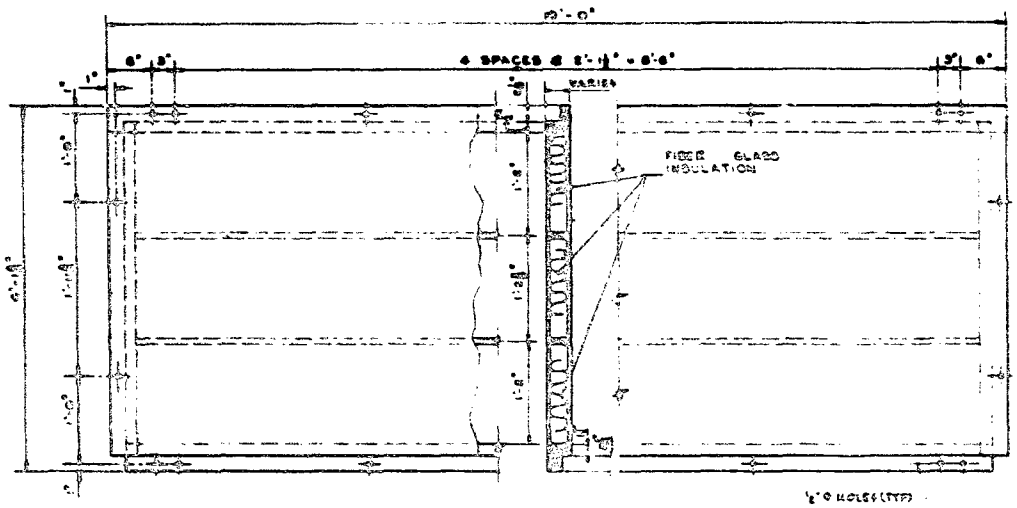
1-8-64

603702

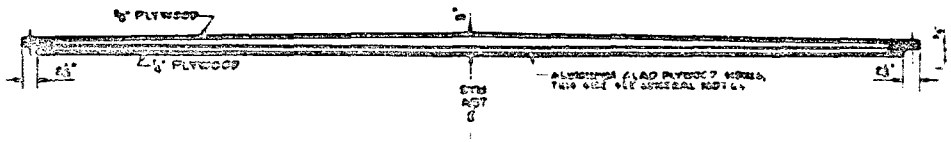

PLAN
MK-24 AS SHOWN
FIBER GLASS INSULATION
SECTION A-A
EDGE VIEW
ROOF TO CMU WALL PANEL
GUSSET DETAIL
MK-7
HALF SIZE
SECTION B-B
NOTES
NTS DENOTES "NOT TO SCALE"
TOP SURFACE SHAPED TO FIT CURVE
6" PLYWOOD
ISOMETRIC OF ROOF PANEL
NO SCALE
GRAPHIC SCALES
HALF SIZE
U.S. NAVAL CIVIL ENGINEERING LABORATORY
62-3-5D
NCEL WANIGANS
STANDARD WANIGAN ROOF
MK-24 PANEL AND MK-7 GUSSET PLATE
093703



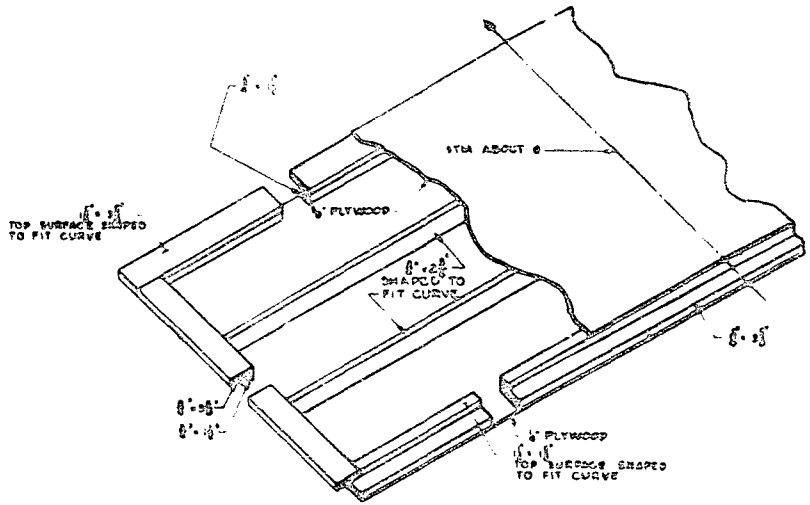
PLAN
ELEVATION
MK-II AS SHOWN
FIBER GLASS INSULATION
1/2" HOLES (TYP)
TOP SURFACE SHAPED TO FIT CURVE
SHAPED TO FIT CURVE
PLYWOOD
ISOMETRIC OF ROOF PANEL
NO SCALE
NOTES
GRAPHIC SCALES
U.S. NAVAL CIVIL ENGINEERING LABORATORY
NCEL WANIGANS
EXTRA-WIDE WANIGAN ROOF
MK-II PANEL
60-25-11D
983704



PLAN



ELEVATION
MX-12 AS SHOWN
SCALE: 1½" = 1'-0"



ISOMETRIC OF ROOF PANEL
NO SCALE

NOTES
FOR GENERAL NOTES & LIST OF DWGS SEE 593678 OR 593672

GRAPHIC SCALES

½" = 1'-0"

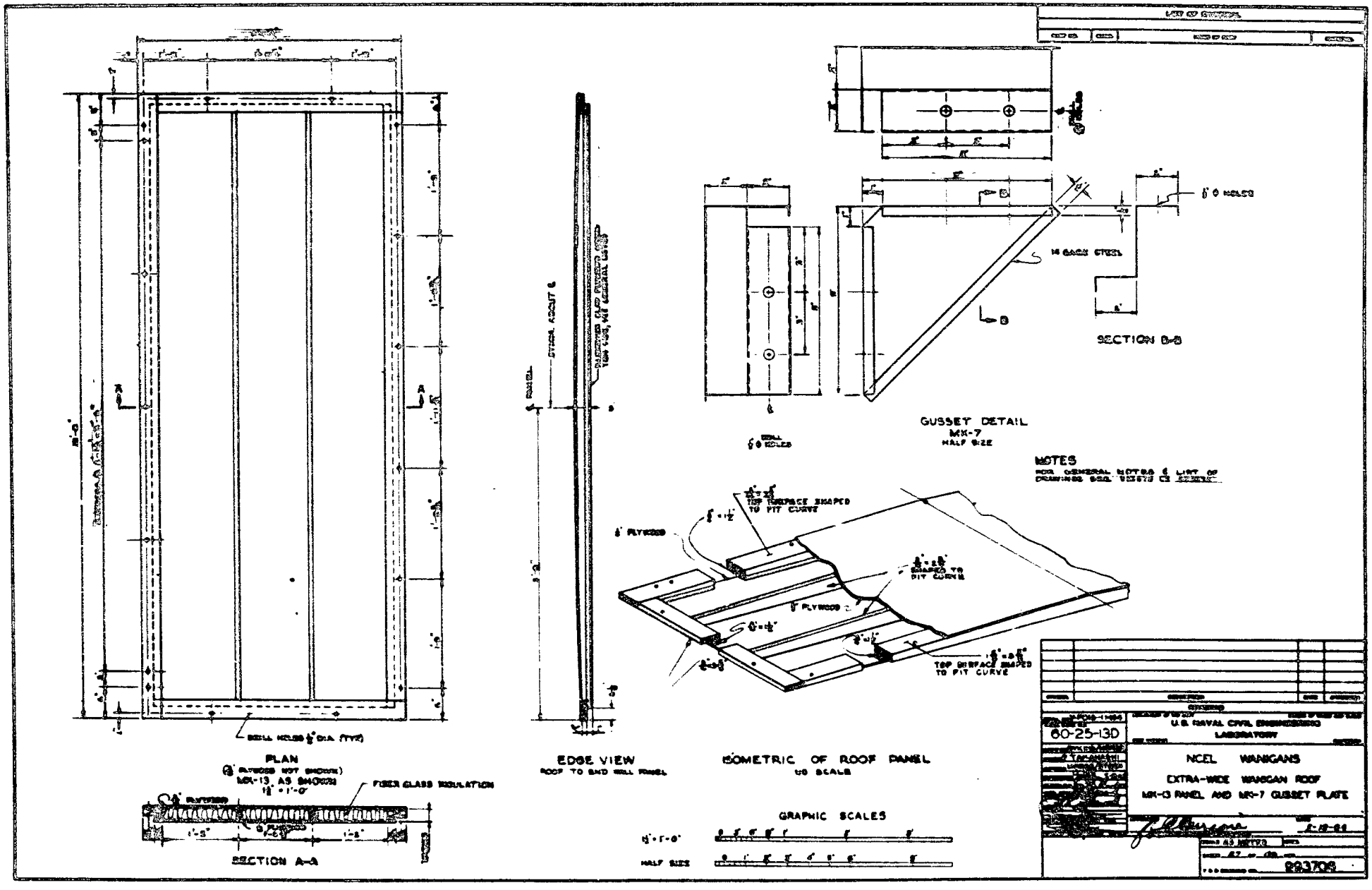
U.S. NAVAL CIVIL ENGINEERING LABORATORY

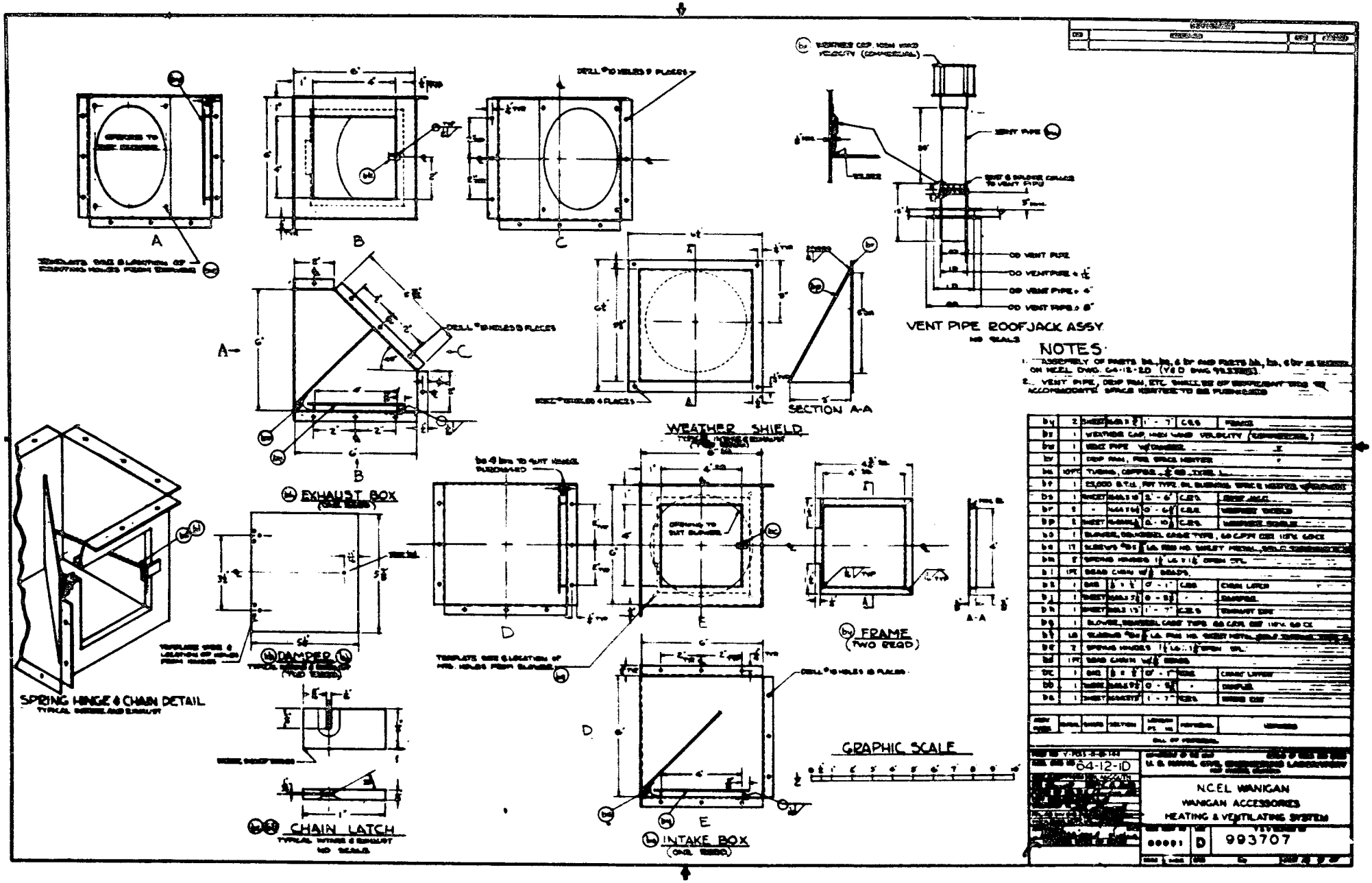
60-25-12D

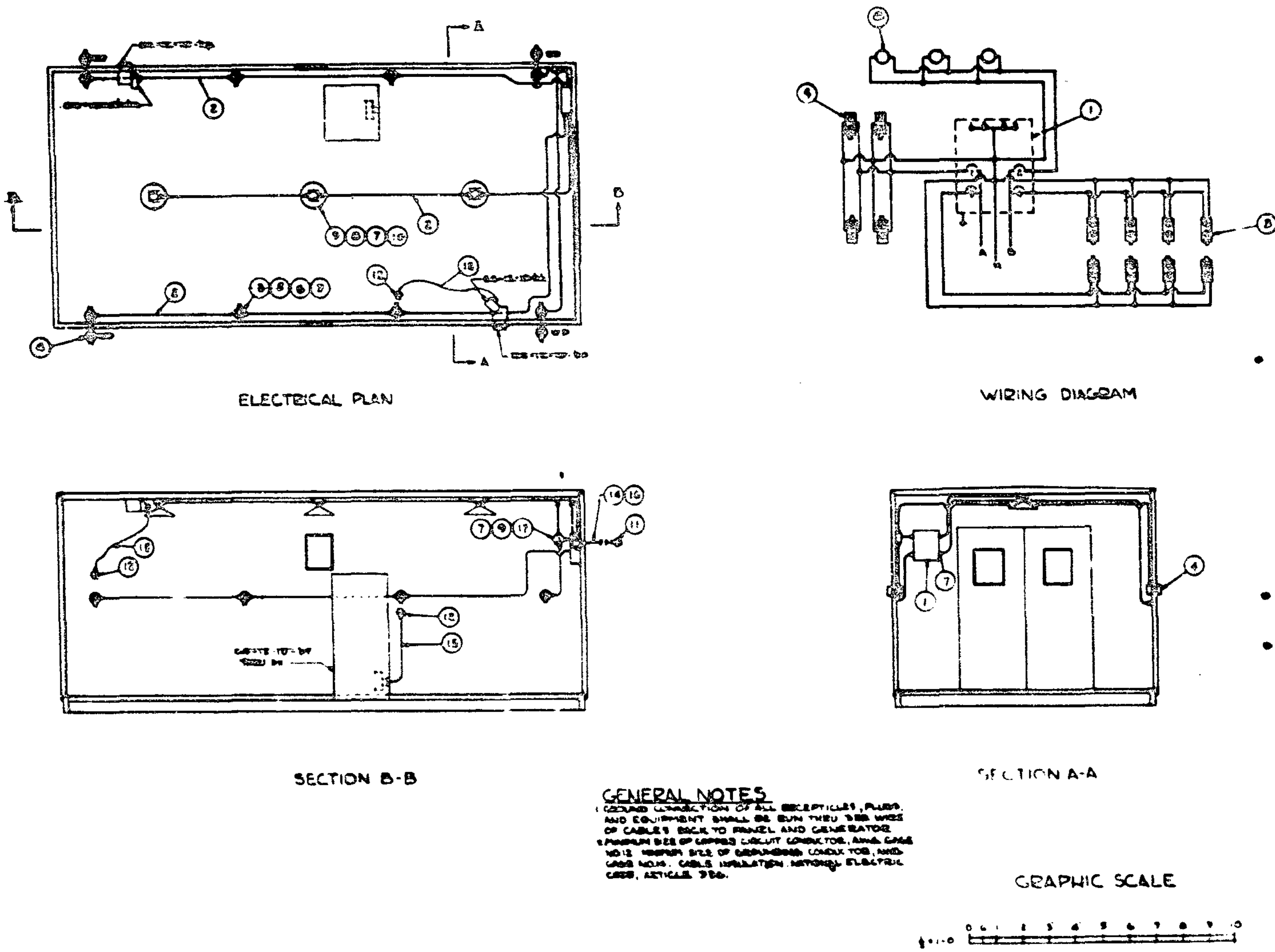
NCEL WANIGANS

EXTRA-WIDE WANIGAN ROOF
MX-12 PANEL

593705


PLAN
EDGE VIEW
ROOF TO END WALL PANEL
ISOMETRIC OF ROOF PANEL
GUSSET DETAIL
MK-7
HALF SIZE
SECTION B-B
SECTION A-A
FIBER GLASS INSULATION
NOTES
GRAPHIC SCALES
HALF SIZE
60-25-130
U.S. NAVAL CIVIL ENGINEERING LABORATORY
NCEL WANIGANS
EXTRA-WIDE WANIGAN ROOF
MK-13 PANEL AND MK-7 GUSSET PLATE
223708


A
B
C
VENT PIPE ROOFJACK ASSY.
NO SCALE
WEATHER SHIELD
SECTION A-A
EXHAUST BOX
DAMPER
SPRING HINGE & CHAIN DETAIL
TYPICAL INTAKE AND EXHAUST
CHAIN LATCH
TYPICAL INTAKE & EXHAUST
NO SCALE
D
E
INTAKE BOX
FRAME
(TWO REQD)
GRAPHIC SCALE
NOTES
64-12-1D
N.C.E.L. WANIGAN
WANIGAN ACCESSORIES
HEATING & VENTILATING SYSTEM
D
993707



NOTE

• ITEMS TO BE SUPPLIED ONLY WHEN THE HEATING AND VENTILATING SYSTEM [illegible]

GENERAL NOTES

1. GROUND CONNECTION OF ALL RECEPTACLES, PLUGS, AND EQUIPMENT SHALL BE RUN THRU [illegible] OF CABLES BACK TO PANEL AND GENERATOR.
2. MINIMUM SIZE OF COPPER CIRCUIT CONDUCTOR, AWG GAGE NO 12. [illegible] SIZE OF GROUNDING CONDUCTOR, AWG GAGE NO 14. CABLE INSULATION, NATIONAL ELECTRIC CODE, ARTICLE 750.

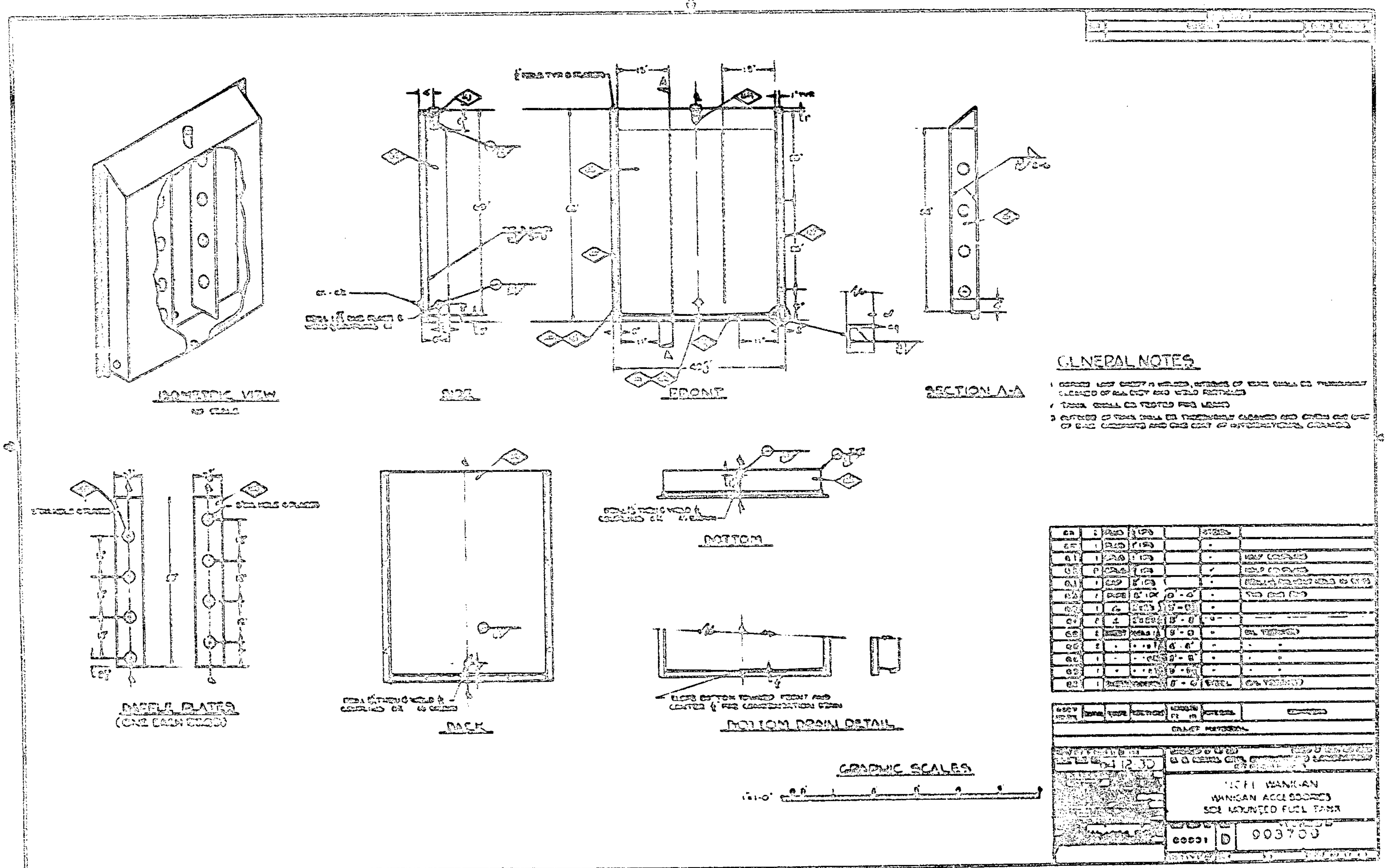
17	1	COVER - 4" OCTAGON BOX [illegible]
16	1	CONNECTOR - CABLE, WP 1" KO [illegible]
15	[illegible]	CORD - FLEXIBLE, [illegible]
14	[illegible]	[illegible]
13	50	STAPLES - INSULATED FOR ITEM 2
12	5	PLUG CAP - [illegible]
11	1	CONNECTOR - 3 PRONG, TWIST LOCK, 60 AMP.
10	5	[illegible]
9	4	BOX - [illegible] 4" OCTAGON
8	3	[illegible]
7	24	CONNECTORS - NON METALLIC CABLE 1/2" KO [illegible]
6	8	COVER DUPLEX RECEPTACLE FOR ITEM 3 [illegible]
5	8	BOX - [illegible] 4" x 2" 1/2 KO
4	4	DUPLEX OUTLET [illegible]
3	8	DUPLEX OUTLET [illegible] 15A 115V.
2	100	CABLE, SHEATHED - NON METALLIC [illegible]
1	1	ENTRANCE PANEL - [illegible]
[illegible]	[illegible]	DESCRIPTION

PARTS LIST

E4-12-2D

NCEL WANIGANS
WANIGAN ACCESSORIES
ELECTRICAL HARNESS

D 993708



ISOMETRIC VIEW
NO SCALE
SIDE
FRONT
SECTION A-A
GENERAL NOTES
BAFFLE PLATES
BACK
BOTTOM
BOTTOM DRAIN DETAIL
GRAPHIC SCALES
WANIGAN ACCESSORIES
SIDE MOUNTED FUEL TANK
D
903700