

LAYOUT PLANS OF LABORATORY TRAILERS

To accompany Paper 67-23

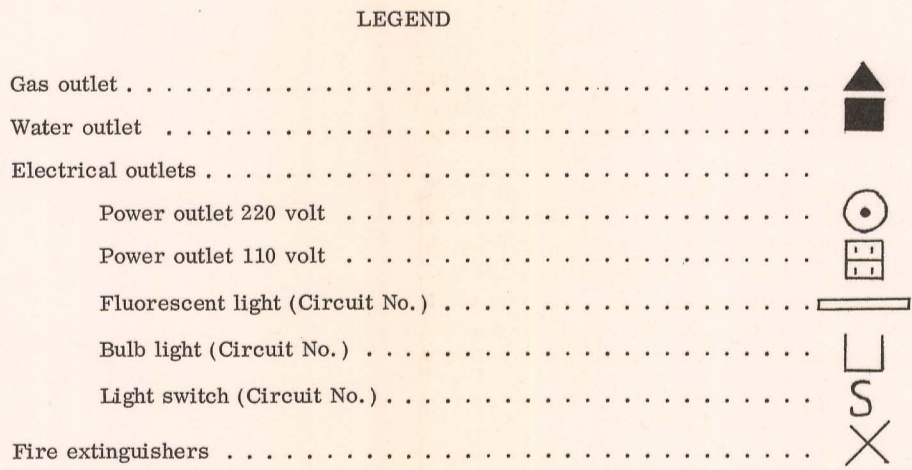
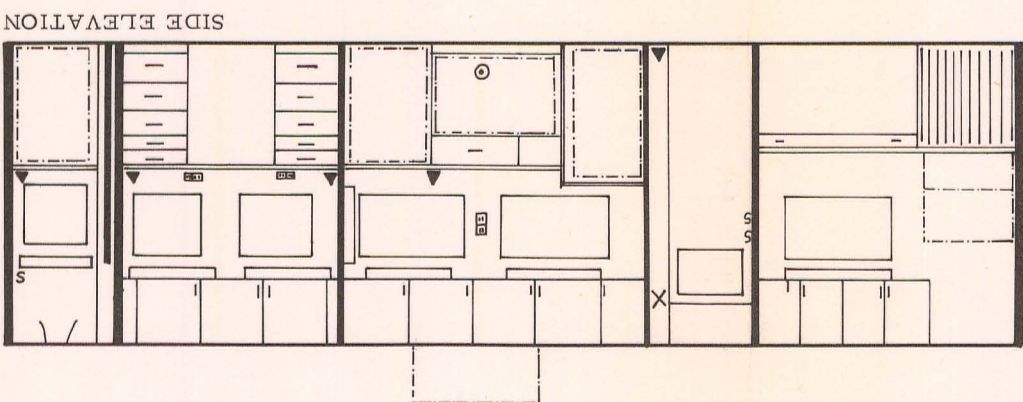
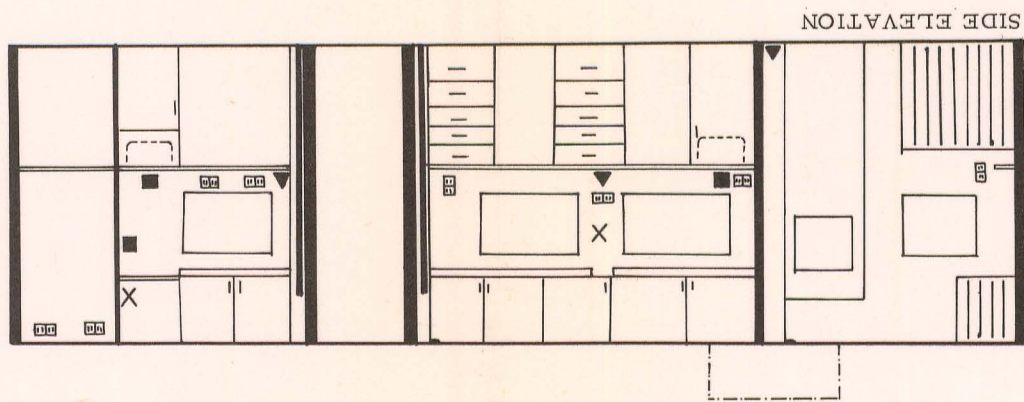
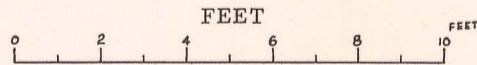
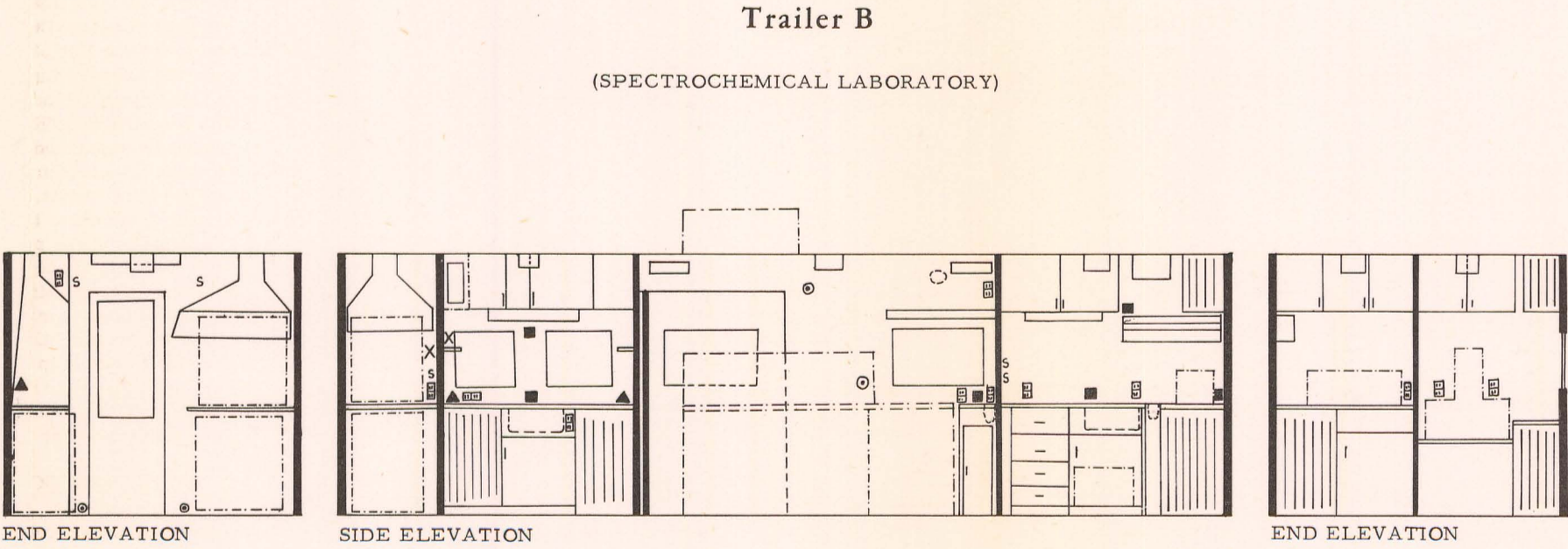
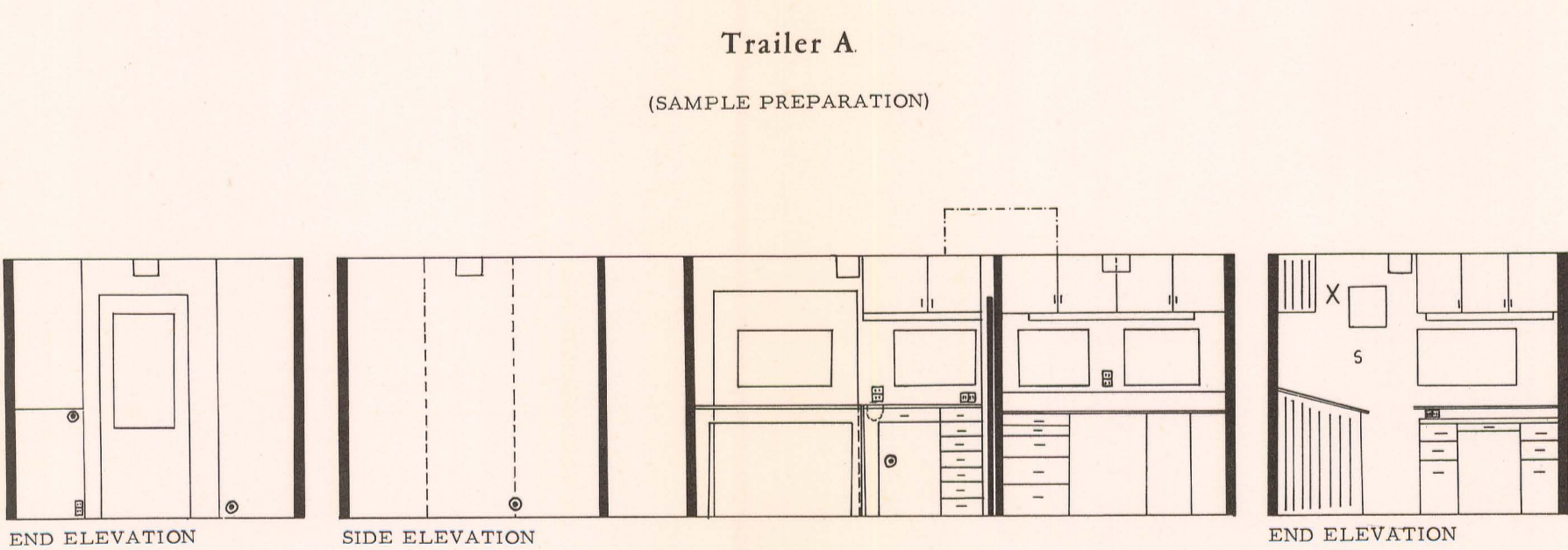


FIGURE B2

For clarity of the layout plans some details of the power, water and gas outlets have been omitted on some parts of the drawing. However, all these details do appear at least once on some part of the drawing.

Each trailer was supplied on the basis of layout plans of the type shown above. All the interior fittings and cabinet work were supplied by the manufacturer to specifications which are described in detail below. In each case the manufacturer was responsible for the installation of the outlets and connections for propane gas, water and electricity. It was estimated that no more than 1,500 lb. of equipment, exclusive of cabinet work and permanent fittings, would be placed in each trailer.

E. H. W. H.

DETAILED TRAILER SPECIFICATIONS

TRAILER SHELL Dimensions, length 24', width 8' with 7' ceiling clearance, maximum weight on hitch not to exceed 800 lb. **Body and Framework** No. 1 kiln dried fir or spruce, nailed, glued and screwed. **Chassis** Heavy duty 6" channel iron outriggers reinforced at points of stress. **Hitch** "A" frame with 2" ball together with adjustable jack-type hoist and castor wheel. **Safety chain** and "Warner" breakaway safety switch provided. **Running Gear** 10,000 lb. tandem running gear. 72" track axles, springs and equalized bars. **Wheels** 550 x 15 truck wheels with demountable rims S. A. E. standard. **Tires** 700 x 15, 8 ply, heavy duty trailer tires, and tubes of first line quality. **Spare wheel** and tire. **Exterior** 20 gauge crimped aluminum - waterproofed with tape and caulking compound attached with clutch head screws for replacing panels. 1/4" G. I. S. fir plywood walls and ceiling moulding installed over all internal joints. All interior walls finished in off-white paint with light grey cupboards and benches and a white ceiling. **Floor** From bottom to topside - steel chassis, 3/8" fir plywood with sealed joints, 2 x 4 framing on 16" centres 2" fibreglass bats and 2" air space within the framing 3/4" fir plywood, lap jointed, glued and screwed. No. 1 grade Battleship linoleum laid with waterproof glue. **Windows** Standard Dual Pane windows, aluminum frame construction opening type equipped with screens, fitted with venetian blinds. Closest standard size to those shown on sketch. **Insulation** 2" fibreglass bats with attached vapour barrier were used in walls, floor and ceiling. Floor walls and ceiling of both sample drying and subsampling room in trailer A and the furnace room in trailer B are fire proofed with asbestos sheet lining. **Roof** From ceiling up 1/4" G. I. S. fir plywood 2 x 4 rafters on 16" centres pitched for watershed. 2" fibreglass bats and 2" air space within framing. 1/4" painted plywood. 20 gauge flat aluminum overlapped joints filled with 1 1/2" "Prestite" tape attached with clutch head screws. Caulked at all seams. Provision of 1 - 12" diameter fan ventilator above each sample drying cabinet in Trailer A and above the fume hood the special extractor fan supplied with the fume hood. In trailer B a 12" extractor fan is placed above the fume hood and another above the furnace hood. **Walls** From inside out - 3/8" G. I. S. fir plywood (in trailer A) - 1/4" G. I. S. fir plywood (in trailer B) lap jointed glued and screwed. 2 x 2 framing on 16" centres. 2" fibreglass insulation with attached vapour barrier 1/4" plywood to prevent movement of the aluminum, overlapped joints attached with clutch head screws for easy replacement. Caulked and taped at all seams. **Steps** Attached metal steps that can be folded back when the trailer is in motion. **Brakes** Four wheel electric brakes c/w towing vehicle control switch. **Parking Jacks** Four screw type parking jacks. **Ventilators** Small ventilators on roof in trailer A and in wall in trailer B to afford some cooling during transit. **Canopies** Outside trailer sides and rear wall fitted with guides for attachment of canopies.

INTERIOR PARTITIONS AND DOORS Partitions as shown on layout plans. Darkroom partition in trailer B lightproof. **Doors** All internal doors 6'6" high. Sliding doors with windows (plain glass) were fitted at each end of the sample storage and at the front of the sample preparation room in trailer A, and at each end of the chemical laboratory in trailer B. A light proof door is fitted to the darkroom in trailer B. A folding door is fitted in the densitometer room (trailer B) which may be removed during installation of the instrument. All doors painted light grey. **Outside doors** Doors with windows as indicated on the layout plan. All outside doors to have heavy duty catches and locks. Same key for both doors in each trailer. 4 keys provided. **Movable panel** In order to allow access of the heavy items of equipment, a movable panel (complete with window) is provided as indicated on the layout plan. The panel is fixed by bolts to the trailer and is dustproof when in position. **Fume Hoods** A stainless steel fume hood with exhaust unit is built above the furnace table in the furnace room of trailer B. The exhaustor for the furnace room fume hood and the chemical fume hood in the same room is Nutone 10" model 8170 type installed in the roof. In trailer A the fume hood in the sample drying and subsampling room is a Canadian Laboratory Supplies type 'Labconco' Fibreglass 28 Fume Hood complete with exhaust fan.

FURNITURE **Benches** All solid birch, light grey painted laboratory units, fillers and panels as indicated on the layout plan. **Bench tops** are 24" deep, unless shown otherwise, 3/4" black heavy duty arborite with 4" high splash backs in trailer A. In trailer B the bench tops are of the same material but 18" deep unless shown otherwise. **Faucets** Chromium plated wall faucets and cocks. **Sinks** Stainless steel self rimming sinks as shown on layout sketch. No traps in trailer A traps are provided in trailer B. **Metal sheathing of benches** Bench and sink unit in the sample drying and subsampling room in trailer A is covered with stainless steel. Benches and sink units in the darkroom in trailer B are covered with stainless steel. This material is used to line the photographic tank in the darkroom. **Wall cabinets and cupboards** Except for sliding doors on floor cabinet all wall cabinets and cupboards are fitted with adjustable shelf and hinged doors. **Refrigerator** An under table type, 5 cu. ft. capacity, laboratory refrigerator (electric) is installed in the spectrochemical laboratory in trailer B. **Spectrograph Table** A movable spectrograph stand of rigid light weight construction, provided with 3" castors for movement of the instrument, and special anchorage blocks for installation on the floor of the spectrochemical laboratory is provided in trailer B. **Locks** All drawers, cabinets and cupboards fitted with locks. Keys of a single type provided for all locks in the same room.

ELECTRICAL WIRING AND FITTINGS **External connection** In each trailer connection is provided for the supply of 110 and 220 volts 60 cycle 100 amp service from external source via 100 ft. cable. In trailer A, a locker is provided for stowing the cable. **Internal connections** All the electrical connections inside the trailer are made to C. S. A. specifications, and circuits are accessible (by removal of wall panels). **Breaker Circuits** Lighting, wall outlets, air conditioning, drying cabinet fans and heater plugs are on different breaker circuits. **Wall outlets** 110 Volt wall outlets are all of the three pin grounded type. In trailer B two outlets are wired separately to receive regulated supply from the voltage regulator in the spectrograph room. **Lights** Both fluorescent tube fixtures with reflectors and bulb type fixtures are present in each room. **Lights** on the sample drying and subsampling room are 18" from cabinets in trailer A. Photographic safelight mounted on the wall in the dark room. **External outlets** Weatherproof outlets are installed on the outside of each trailer near the doors. **Airconditioner** Built into the roof of each trailer capable of cooling rooms in the trailers (exclusive of the sample preparation and subsampling room in trailer A and the furnace room in trailer B) to a temperature of 70° F inside when the outside temperature is 90° F. The units are mounted as shown on the layout plan and the mountings are vibration free. **External lights** 12 volt running lights, directional, signal lights, stop lights, etc. to comply with Department of Highways of Ontario specifications. **Exhausters** The exhausters in the drying cabinets in the sample drying and subsampling room (of trailer A) have separate switches, as do the exhausters in the fume hoods. **Ventilating Fans** In trailer B there is a small ventilating fan between the chemical laboratory and the spectrochemical laboratory, there is a similar ventilating fan in the wall between the dark room and the densitometer room to ensure a circulation of air through the dark room when the door is shut.

WATER AND PLUMBING FITTINGS **Water tanks** 200 gallon water tanks are mounted under the floor of each trailer and are available for standing use. **Pressure unit** Vibration free, quiet operating pressure unit maintaining a useful water pressure at all water outlets; this is integral with the water pump. **Water filter** inlet for connecting water system to outside supply is easily accessible from outside the trailer at front mounted with the piston type pump unit and Fisher type backflushing filter. **Water cooler unit** A water cooler unit is installed in the dark room of trailer B. This unit is a General Electric Model 21 RSA6EY2 (115 v 60 cycle 27 amp 1/6th H. P.). The unit was cut into two parts to facilitate installation in the locker. **Drain cocks** The entire system is provided with easily accessible drain cocks which must not project below the axle level.

PROPANE GAS FITTINGS **Gas bottles** Two 100 lb. propane gas bottles installed at the front of the trailer. **Gas lines** All are accessible from inside or outside the trailer. **Propane Heater** A 5,000 B. T. U. propane heater is installed in the office of trailer A and another in the spectrochemical laboratory of trailer B.