

CHAPTER 11

DOCKSIDE UTILITIES FOR SHIP SERVICE

11-1. Water service.

Water service should be provided in sufficient capacity to permit the filling of a vessel's tank in such time as to avoid delays in the operation of the vessel.

a. Quantity and pressure requirement. A minimum flow of 100 gallons per minute, with a minimum residual pressure of 25 pounds per square inch at the most remote outlet, should be provided.

b. Piping and outlets. One 2½ inch connection at each service outlet should be installed. All potable water outlets on piers and wharves may have a reduced pressure-type backflow prevention device. The piping will be insulated and electrically heat-traced if the lines are normally full of water and subject to freezing temperatures. Where thermal expansion is a problem, provision should be made for expansion joints or loops. Figure 11-1 shows a typical water-supply connection in the pier deck.

11-2. Electric power.

a. Electrical system characteristics. The main electrical system providing power to ships will be nominal 480 volts, three-phase, 60 Hertz, supplied from substations preferably located on piers. For lighting service, a 120-volt, 60-cycle, single-phase power may be provided.

b. Ground system. At piers, wharves, and other waterfront structures, a ground system that will measure not more than 3 ohms should be provided for all permanent electrical equipment.

11-3. Location and numbers of service points.

A minimum of two service points will be provided for each berth, located for the convenience of the using vessels. Each service point will supply electric power and water service as outlined above. Depending upon the details of each specific installation, the takeoff points for each service may be located in a single service box or placed in separate but closely grouped boxes. Boxes should be located as close as practicable to the berthing face of the structure so that connected hoses and electric cables are not subject to traffic damage.

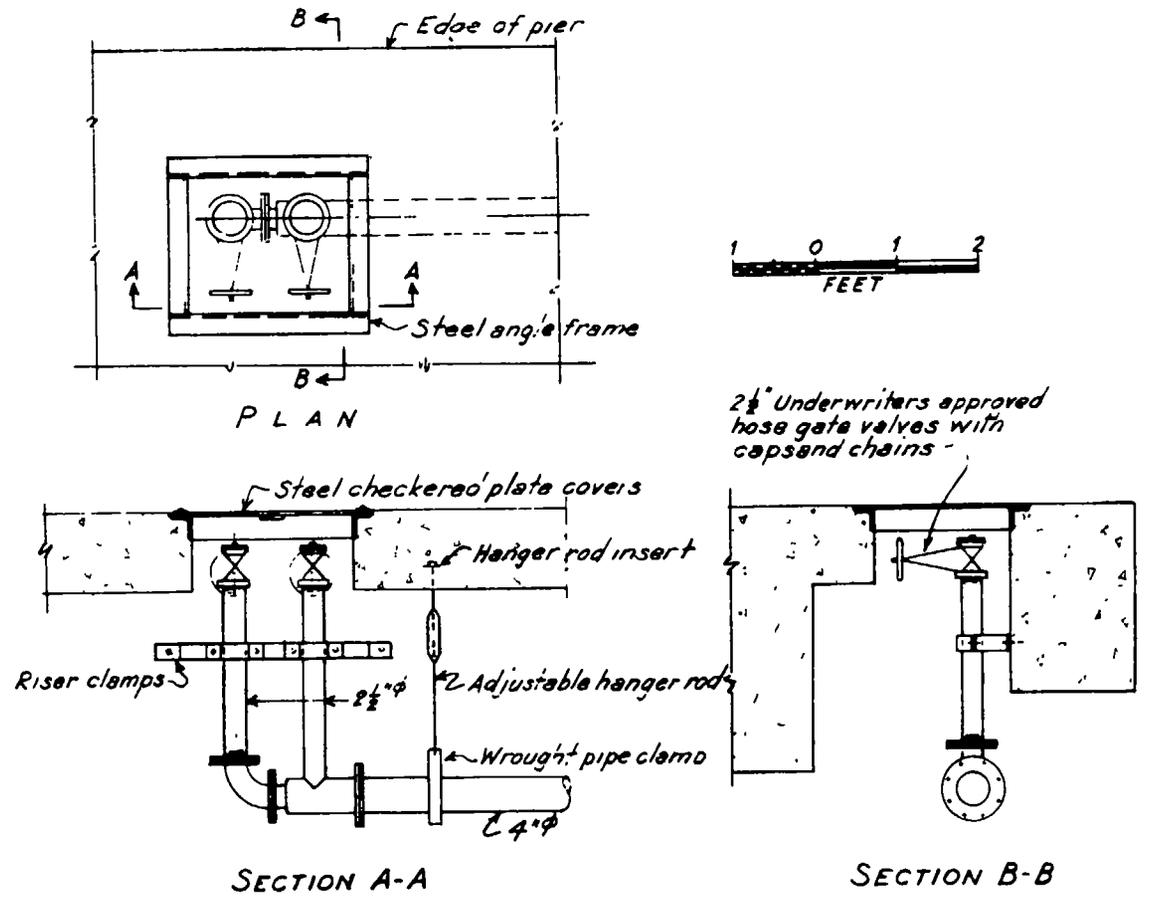
11-4. Miscellaneous.

a. Telephone service. Telephone outlets should be installed at each ship's service outlet location.

b. Lighting. Satisfactory illumination should be assured for night operation. For open watering areas on the pier where ship loading or unloading occurs, a lighting intensity of at least 5 footcandles should be maintained. The illumination level of 5 footcandles should also be provided for warehouses or storage buildings.

c. Fire protection. Fire protection should be in accordance with AR 420-90 (See App. A).

d. Sanitary facilities and sewage disposal. Sanitary facilities are usually confined to such buildings as warehouses, transit sheds, administration rooms, and the like. Flow requirements for such facilities are very small, approximately 5 to 10 gallons per minute. A dockside connection to a sewage disposal system should be provided for the disposal of sewage and other wastes from vessels.



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Figure 11-1. Typical water-supply connection in deck of pier
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