so constructed as to give a minimum
clearance of 2 inches around handle.
(4) Manner of application. Uncoupling
levers shall be securely fastened with
bolts or rivets.
(g) Couplers. Locomotives shall be
equipped with automatic couplers at
rear of tender and front of locomotive.

§ 231.16 Steam locomotives used in
switching service.
(a) Footboards—(1) Number. Two or
more.
(2) Dimensions. (i) Minimum width of
tread, 10 inches.
(ii) Minimum height of back stop, 4
inches above tread.
(iii) Height from top of rail to top of
tread, not more than 12 nor less than 9
inches.
(iv) If made of wood, minimum thick-
ness of tread shall be 1 1⁄2, preferably 2
inches.
(v) Footboards may be made of mate-
rial other than wood which provides
the same as or a greater degree of safe-
ty than wood of 1 1⁄2 inches thickness.
When made of material other than
wood, the tread surface shall be of anti-
skid design and constructed with suffi-
cient open space to permit the elimi-
nation of snow and ice from the tread
surface.
(3) Location. Ends or sides. If on ends,
they shall extend not less than 18
inches outside of gauge of straight
track, and shall be not more than 12
inches shorter than buffer-beam at
each end.
(4) Manner of application. (i) End foot-
boards may be constructed in two sec-
tions, provided that practically all
space on each side of coupler is filled;
each section shall be not less than 3
feet in length.
(ii) Footboards shall be securely
bolted to two 1- by 4-inch metal brack-
ets, provided footboard is not cut or
notched at any point.
(iii) If footboard is cut or notched or
in two sections, not less than four 1- by
3-inch metal brackets shall be used,
two located on each side of coupler.
Each bracket shall be securely bolted
to buffer-beam, end sill or tank frame
by not less than two 7⁄8-inch bolts.
(iv) If side footboards are used, a sub-
stantial handhold or rail shall be ap-
plied not less than 30 inches nor more
than 60 inches above tread or foot-
board.
(b) Sill steps—(1) Number. Two or
more.
(2) Dimensions. (i) Lower tread of step
shall be not less than 8 by 12 inches,
metal. (May have wooden treads.)
(ii) If stirrup steps are used, clear
length of tread shall be not less than
10, preferably 12, inches.
(3) Location. One or more on each side
at gangway secured to locomotive or
tender.
(4) Manner of application. Sill steps
shall be securely fastened with bolts or
rivets.
(c) End handholds—(1) Number. Two.
(2) Dimensions. Minimum diameter, 1
inch, wrought iron or steel. Minimum
clearance, 4 inches, except at coupler
casting or braces when minimum clear-
ance shall be 2 inches.
(3) Location. One on pilot, buffer-
beam; one on rear end of tender, ex-
tending across front end of locomotive
and rear end of tender. Ends of
handholds shall be not more than 6
inches from ends of buffer-beam or end
sill, securely fastened at ends.
(4) Manner of application. End
handholds shall be securely fastened
with bolts or rivets.
(d) Side handholds—(1) Number. Four.
(2) Dimensions. Minimum diameter,
seven-eighths of an inch, wrought iron
or steel. Clear length equal to approxi-
mate height of tank. Minimum clear-
ance, 2, preferably 2 1⁄2 inches.
(3) Location. Vertical. One on each
side of tender near front corner; one on
each side of locomotive at gangway.
(4) Manner of application. Side
handholds shall be securely fastened
with bolts or rivets.
(e) Uncoupling levers—(1) Number. Two
double levers, operative from either
side.
(2) Dimensions. (i) Handles of front-
end levers shall be not more than 12,
preferably 9, inches from ends of buff-
er-beam, and shall be so constructed as
to give a minimum clearance of 2
inches around handle.
(ii) Rear-end levers shall extend
across end of tender with handles not
more than 12, preferably 9, inches from
side of tender, with a guard bent on
handle to give not less than 2 inches
clearance around handle.
(3) Location. One on rear end of tender and one on front end of locomotive.

(f) Handrails and steps for headlights. Switching locomotives with sloping tenders with manhole or headlight located on sloping portion of tender shall be equipped with secure steps and handrail or with platform and handrail leading to such manhole or headlight.

(g) End-ladder clearance. No part of locomotive or tender except draft rigging, coupler and attachments, safety chains, buffer block, footboard, brake pipe, signal pipe, steam-heat pipe or arms of uncoupling lever shall extend to within 14 inches of a vertical plane passing through the inside face of knuckle when closed with horn of coupler against buffer block or end sill.

(h) Couplers. Locomotives shall be equipped with automatic couplers at rear of tender and front of locomotive.

§ 231.17 Specifications common to all steam locomotives.

(a) Hand brakes. (1) Hand brakes will not be required on locomotives nor on tenders when attached to locomotives.

(2) If tenders are detached from locomotives and used in special service, they shall be equipped with efficient hand brakes.

(b) Running boards—(1) Number. Two.

(2) Dimensions. Not less than 10 inches wide. If of wood, not less than 1½ inches in thickness; if of metal, not less than three-sixteenths of an inch, properly supported.

(3) Location. One on each side of boiler extending from cab to front end near pilot-beam. (Running boards may be in sections. Flat-top steam chests may form section of running board.)

(4) Manner of application. (i) Running boards shall be securely fastened with bolts, rivets, or studs.

(ii) Locomotives having Wootten type boilers with cab located on top of boiler more than 12 inches forward from boiler head shall have suitable running boards running from cab to rear of locomotive, with handrailings not less than 20 nor more than 48 inches above outside edge of running boards, securely fastened with bolts, rivets, or studs.

(c) Handrails—(1) Number. Two or more.

(2) Dimensions. Not less than 1 inch in diameter, wrought iron or steel.

(3) Location. One on each side of boiler extending from near cab to near front end of boiler, and extending across front end of boiler, not less than 24 nor more than 66 inches above running board.

(4) Manner of application. Handrails shall be securely fastened to boiler.

(d) Tenders of Vanderbilt type. (1) Tenders known as the Vanderbilt type shall be equipped with running boards; one on each side of tender not less than 10 inches in width and one on top of tender not less than 48 inches in width, extending from coal space to rear of tender.

(2) There shall be a handrail on each side of top running board, extending from coal space to rear of tank, not less than 1 inch in diameter and not less than 20 inches in height above running board from coal space to running board.

(3) There shall be a handrail extending from coal space to within 12 inches of rear of tank, attached to each side of tank above side running board not less than 30 nor more than 66 inches above running board.

(4) There shall be one vertical end handhold on each side of Vanderbilt type of tender, located within 8 inches of rear of tank extending from within 8 inches of top of end sill to within 8 inches of side handrail. Post supporting rear end of side running board, if not more than 2 inches in diameter and properly located, may form section of handhold.

(5) An additional horizontal end handhold shall be applied on rear end of all Vanderbilt type of tenders which are not equipped with vestibules. Handhold to be located not less than 30 nor more than 66 inches above top of end sill. Clear length of handhold to be not less than 48 inches.

(6) Ladders shall be applied at forward ends of side running boards.

(e) Handrails and steps for headlights. (1) Locomotives having headlights which can not be safely and conveniently reached from pilot-beam or steam chests shall be equipped with secure handrails and steps suitable for the use of men in getting to and from such headlights.