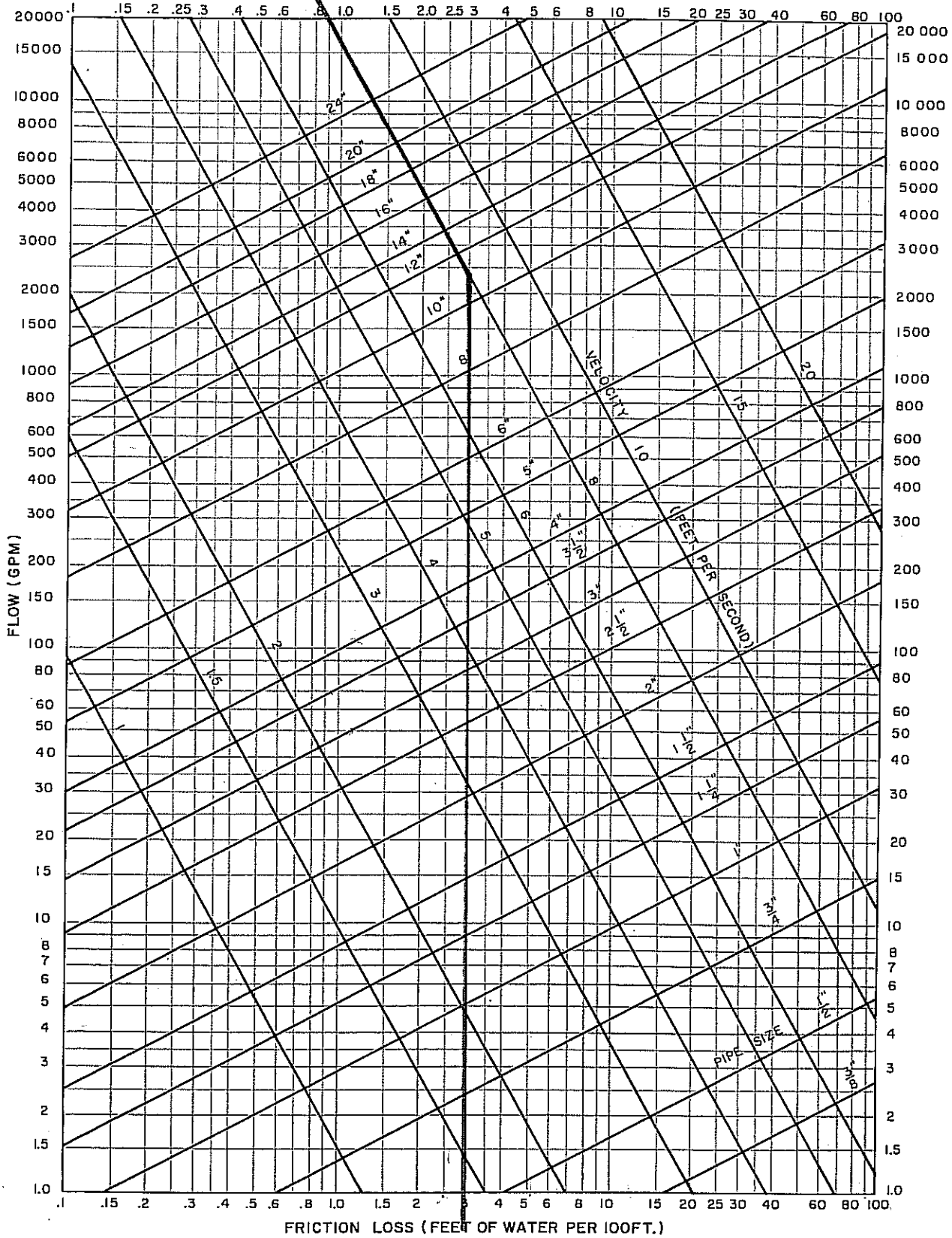
REFERENCE

ACCEPTABLE LIMITS

CHART 4—FRICTION LOSS FOR OPEN PIPING SYSTEMS

Schedule 40 Pipe



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REFERENCE

ACCEPTABLE LIMITS

CHART 3—FRICTION LOSS FOR CLOSED PIPING SYSTEMS

Schedule 40 Pipe

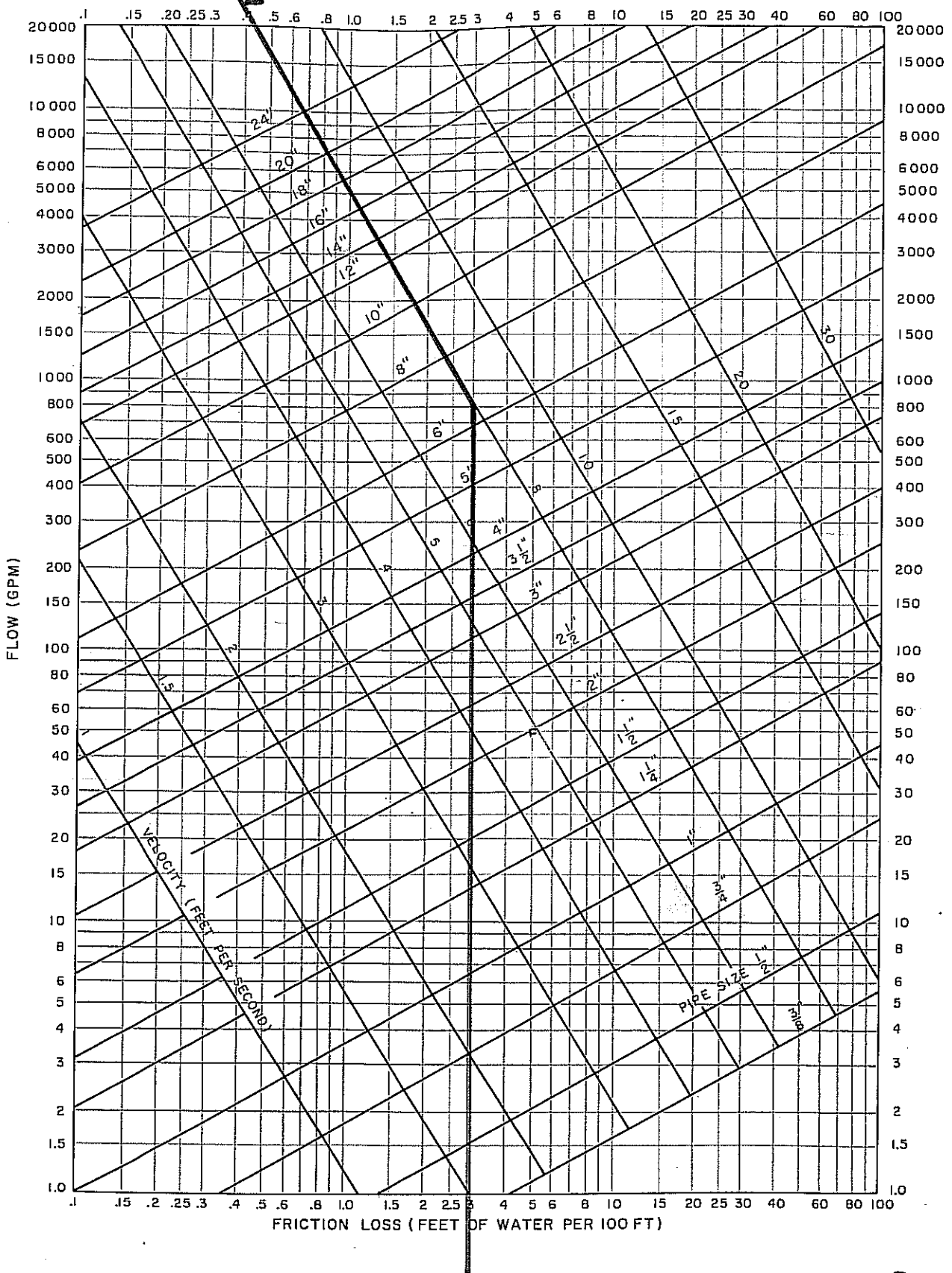

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TABLE OF EQUIVALENTS

Lengths

1 foot = 0.3048 meters
1 kilometer = 0.621 miles

Capacities & Volumes

1 cubic foot = 7.481 gallons of water
1 cubic yard = 0.765 cubic meters
1 gallon of water = 8.33 pounds
1 gallon of water = 3.785 liters

Weights & Mass

1 kilogram = 2.205 pounds
1 ton = 2000 pounds
1 metric ton = 1.102 tons

Electrical

1 HP = 748 watts
1 KW = volts x amps (x 1.73 for 3Ø only)

Pressure

1 psi = 2.31 feet of water
1 psi = 2.036 inches of mercury

Temperature

°C = [°F - 32] x 5/9
°F = [°C x 9/5] + 32

Energy

1 cubic foot (natural gas) = 1100 BTU (with specific gravity of 0.65)
1 therm = 100,000 BTU
1 gallon (fuel oil) = 140,000 BTU (approximately)
1 ton (coal) = 27,000 MBTU (average)
1 ton of refrigeration = 12,000 BTU per hour
1 watt = 3.42 BTU per hour
1 HP = 2545 BTU per hour
1 boiler HP = 33,479 BTU per hour output
1 boiler HP = 30 pounds steam per hour (w/feedwater temp of 100 °F. & 70 lb. press.)

Miscellaneous

BTU = gpm x 500 x temp. Δ
pump HP = [gpm x feet of head] / 3960
sensible heat (Q_s) = 1.1 x cfm x temp. Δ
latent heat (Q_l) = 0.69 x cfm x grain Δ
Total heat (Q_t) = 4.5 x cfm x enthalpy Δ