Constants used in Construction and Calculations

SQUARE

144 sq. Inches	= 1 sq. Foot
9 square feet	= 1 square yard
100 square feet	= 1 square
43,560 sq. Foot	= 1 acre
640 acres	= 1 sq. Mile

CUBIC

1728 cubic inches	= 1 cubic ft.
27 cubic ft.	= 1 cubic yard
1 cubic ft.	= 7.48 gallons

WATER

1-gallon weighs	= 8.34 lbs.
1 cubic ft. Weighs	= 62.4 lbs.
231 cubic inches	= 1 gallon
7.48 gallons	= 1 cubic ft.
1' high column of water	=.433 p.s.i.

MISCELLANEOUS

1 cubic ft. Of steel	= 490 lbs.
2000 lbs.	= 1 ton
45^0	= 1.414
1mil	= 1/1,000 of an inch
1 meter	= 3.28 feet
1 mile	= 5,280 l.f.

Common Fractions Stated in Decimals

1/16	=	0.0625	9/16	=	0.5625
1/8	=	0.125	5/8	=	0.625
3/16	=	0.1875	11/16	=	0.6875
1/4	=	0.25	3/4	=	0.75
5/16	=	0.3125	13/16	=	0.8125
3/8	=	0.375	7/8	=	0.875
7/16	=	0.4375	15/16	=	0.9375
1/2	=	0.5	8/8	=	1.0

ESTIMATING GRID LAYOUTS

CONCRETE & EXCAVATION (C.Y.)	L’ X W’ = S.F. X D’ / 27 = C.Y.
PAVING & STUCCO (S.Y.)	L’ X W’ = S.F / 9 = S.Y.
ROOF AREA (S.F.)	L’ X W’ = S.F. X FACTOR = S.F. ROOF AREA / 100 = # SQUARES
RAKE OR GABLE FASCIA (LF)	SPAN OF GABLE X FACTOR = TRUE LENGTH
HIP OR VALLEY (LF)	SPAN OF VALLEY OR HIP X HIP/VALLEY FACTOR = TRUE LENGTH
SITE (ACRES)	L’ X W’ = S.F. / 43,560 = ACRES
BOARD FEET (BF)	L' X T" X W" / 12 = BOARD FEET
SPACING: STUDS, REBAR, ETC...	L' / (SPACING IN FEET) + 1 = NUMBER OF REQUIRED MEMBERS
BRICK (QUANTITY)	L’ X W’ = S.F. X BRICK PER S.F. = TOTAL
CONCRETE MASONRY UNITS (C.M.U.)	L’ X W’ = S.F. X 1.125 = # OF 8"X8"X16" BLOCKS
BASE PLATE STEEL	L" X W" X T" / 1728 = C.F. X 490 LBS. = LBS / 2000 = TONS
WATER PRESSURE	HEIGHT OF WATER COLUMN X .433 = P.S.I. THE WATER ITSELF WILL GENERATE
PRESSURE TO LIFT WATER	HEIGHT TO BE LIFTED X .433 = REQUIRED PRESSURE TO LIFT WATER. REMEMBER TO ADD DELIVERY PRESSURE, IF ANY
STATION ELEVATION	STEP 1) B.M. + B.S. = H.I. STEP 2) H.I. - F.S. = S.E.
FORE SIGHT ROD READING	STEP 1) B.M. + B.S. = H.I. STEP 2) H.I. - S.E. = F.S.
EXTRA CONCRETE REQUIRED FOR A SLAB WITH A THICKENED EDGE	C/L LENGTH OF THICKENED EDGE X .01 = C.Y. (TO BE ADDED TO THE SLAB QUANTITY)
CENTER LINE RULE	ADD OR SUBTRACT 4 TIMES THE THICKNESS (WIDTH) FROM THE PERIMETER.
GALLONS OF PAINT, ECT...	AREA X 144 X MILS / 231 = GALLONS
COMPACTION	CUBIC YARDS ÷ % = C.Y OF COMPACTION
SWELL	CUBIC YARDS X % = C.Y OF SWELL
BTUH	“U” X AREA IN S.F. X T.D. = BTUH
GALLONS OF WATER	L’ X W’ X D’ X 7.48 = NUMBER OF GALLONS