Orientation of Views for Engineering Drawings

Plan Views

Plan views are drawn so the direction of stream flow is from left to right or towards the top of the sheet.

Cross Sections - Parallel to Stream

These are drawn so the upstream end of sections are on the left-hand side of the sheet (flow left to right).

Cross Sections - Normal to Stream

These are drawn so they are viewed from upstream (looking downstream). When this is not practical, the orientation may be changed to give the true perspective and the position of the viewer stated in the title of the view (e.g. "looking upstream").

Channel - Profiles

These are drawn so the stations increase from left to right.

Channel - Cross Sections

These are drawn as though viewed in the direction of increasing stations.

MAP SCALES AND EQUIVALENTS

FRACTIONAL SCALE	FEET PER INCH	IN. PER 1000 FT.	INCHES PER MILE	MILES PER IN.	METERS PER IN.	ACRES PER SQ. INCH	SQ. IN. PER ACRE	SQ. MI. PER SQ. INCH
1: 500	41.667	24.00	126.72	0.008	12.700	0.0399	25.091	0.00006
1: 600	50.00	20.00	105.60	0.009	15.240	0.0574	17.424	0.00009
1: 1000	83.333	12.00	63.36	0.016	25.400	0.1594	6.273	0.00025
1: 1200	100.00	10.00	52.80	0.019	30.480	0.2296	4.356	0.00036
1: 1500	125.00	8.00	42.24	0.024	38.100	0.3587	2.788	0.00056
1: 2000	166.667	6.00	31.68	0.032	50.800	0.6377	1.568	0.00100
1: 2400	200.00	5.00	26.40	0.038	60.960	0.9183	1.089	0.0014
1: 2500	208.333	4.80	25.344	0.039	63.500	0.9964	1.004	0.0016
1: 3000	250.00	4.00	21.12	0.047	76.200	1.4348	0.697	0.0022
1: 3600	300.00	3.333	17.60	0.057	91.440	2.0661	0.484	0.0032
1: 4000	333.333	3.00	15.84	0.063	101.600	2.5508	0.392	0.0040
1: 4800	400.00	2.50	13.20	0.076	121.920	3.6731	0.272	0.0057
1: 5000	416.667	2.40	12.672	0.079	127.000	3.9856	0.251	0.0062
1: 6000	500.00	2.00	10.56	0.095	152.400	5.7392	0.174	0.0090
1: 7000	583.333	1.714	9.051	0.110	177.800	7.8117	0.128	0.0122
1: 7200	600.00	1.667	8.80	0.114	182.880	8.2645	0.121	0.0129
1: 7920	660.00	1.515	8.00	0.125	201.168	10.00	0.100	0.0156
1: 8000	666.667	1.500	7.92	0.126	203.200	10.203	0.098	0.0159
1: 8400	700.00	1.429	7.543	0.133	213.360	11.249	0.089	0.0176
1: 9000	750.00	1.333	7.041	0.142	228.600	12.913	0.077	0.0202
1: 9600	800.00	1.250	6.60	0.152	243.840	14.692	0.068	0.0230
1:10000	833.333	1.200	6.336	0.158	254.000	15.942	0.063	0.0249
1:10800	900.00	1.111	5.867	0.170	274.321	18.595	0.054	0.0291
1:12000	1000.00	1.0	5.280	0.189	304.801	22.957	0.044	0.0359
1:13200	1100.00	0.909	4.800	0.208	335.281	27.778	0.036	0.0434
1:14400	1200.00	0.833	4.400	0.227	365.761	33.058	0.030	0.0517
1:15000	1250.00	0.80	4.224	0.237	381.001	35.870	0.028	0.0560
1:15600	1300.00	0.769	4.062	0.246	396.241	38.797	0.026	0.0606
1:15840	1320.00	0.758	4.00	0.250	402.337	40.000	0.025	0.0625
1:16000	1333.333	0.750	3.96	0.253	406.400	40.812	0.024	0.0638
1:16800	1400.00	0.714	3.771	0.265	426.721	44.995	0.022	0.0703
1:18000	1500.00	0.667	3.52	0.284	457.201	51.653	0.019	0.0807
1:19200	1600.00	0.625	3.30	0.303	487.681	58.770	0.017	0.0918
1:20000	1666.667	0.60	3.168	0.316	508.002	63.769	0.016	0.0996
1:20400	1700.00	0.588	3.106	0.322	518.161	66.345	0.015	0.1037
1:21120	1760.00	0.568	3.00	0.333	536.449	71.111	0.014	0.1111
1:21600	1800.00	0.556	2.933	0.341	548.641	74.380	0.013	0.1162
1:22800	1900.00	0.526	2.779	0.360	579.121	82.874	0.012	0.1295
1:24000	2000.00	0.50	2.640	0.379	609.601	91.827	0.011	0.1435
1:25000	2083.333	0.480	2.534	0.395	635.001	99.639	0.010	0.1557
1:31680	2640.00	0.379	2.000	0.500	804.674	160.000	0.006	0.2500
1:48000	4000.00	0.250	1.320	0.758	1219.202	367.309	0.003	0.5739
1:62500	5208.333	0.192	1.014	0.986	1587.503	622.744	0.0016	0.9730
1:63360	5280.00	0.189	1.000	1.000	1609.347	640.00	0.0016	1.0000
1:96000	8000.00	0.125	0.660	1.515	2438.405	1469.24	0.0007	2.2957
1:125000	10416.667	0.096	0.507	1.973	3175.006	2490.98	0.0004	3.8922
1:126720	10560.00	0.095	0.500	2.00	3218.694	2560.00	0.0004	4.00
1:250000	20833.333	0.048	0.253	3.946	6350.012	9963.907	0.0001	15.5686
1:253440	21120.00	0.047	0.250	4.00	6437.389	10244.202	0.0001	16.00
1:500000	41666.667	0.024	0.127	7.891	12700.025	39855.627	0.0025	62.2744
1:1000000	83333.333	0.012	0.063	15.783	25400.050	159422.507	0.0062	249.0977
FORMULAS	$\frac{SCALE}{12}$	$\frac{12000}{SCALE}$	$\frac{63360}{SCALE}$	$\frac{SCALE}{63360}$	Ft. per In. X 0.3048006	$\frac{(SCALE)^2}{43560 \times 144}$	$\frac{43560 \times 144}{(SCALE)^2}$	$\frac{(Ft. per In.)^2}{(5280)^2}$

Exhibit 5-1

REFERENCE	U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE ENGINEERING & WATERSHED PLANNING UNIT UPPER DARBY, PENNSYLVANIA	RTSC-NE-ENG. 510 SHEET 1 OF 1

USDA-SCS-HYATTSVILLE, MD. 1971