

drawing title:
PARTIAL FLOOR PLAN
HVAC

drawn:
D.R.M., S.C.
D.R.M.

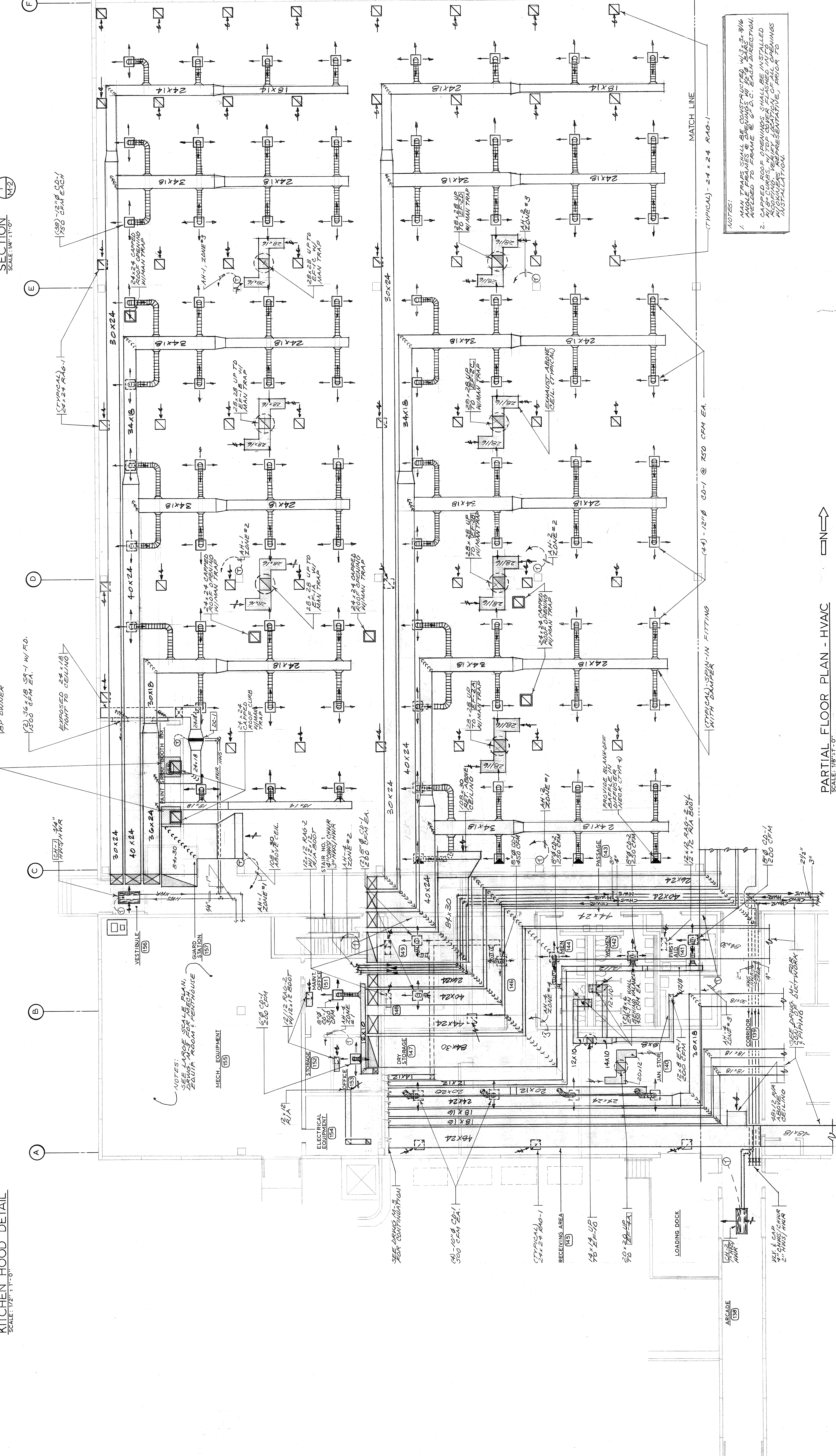
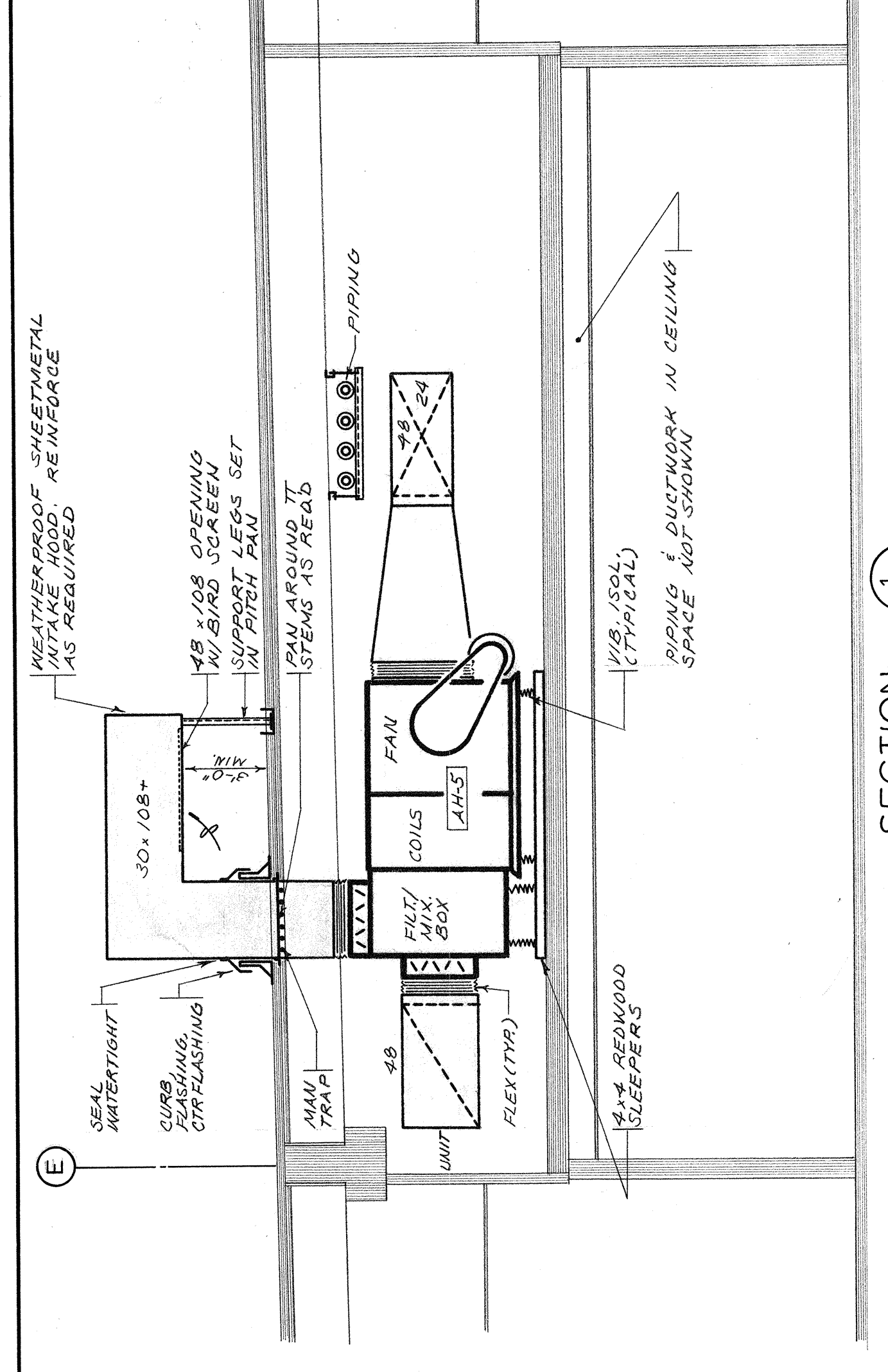
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D.R.M.

issued:
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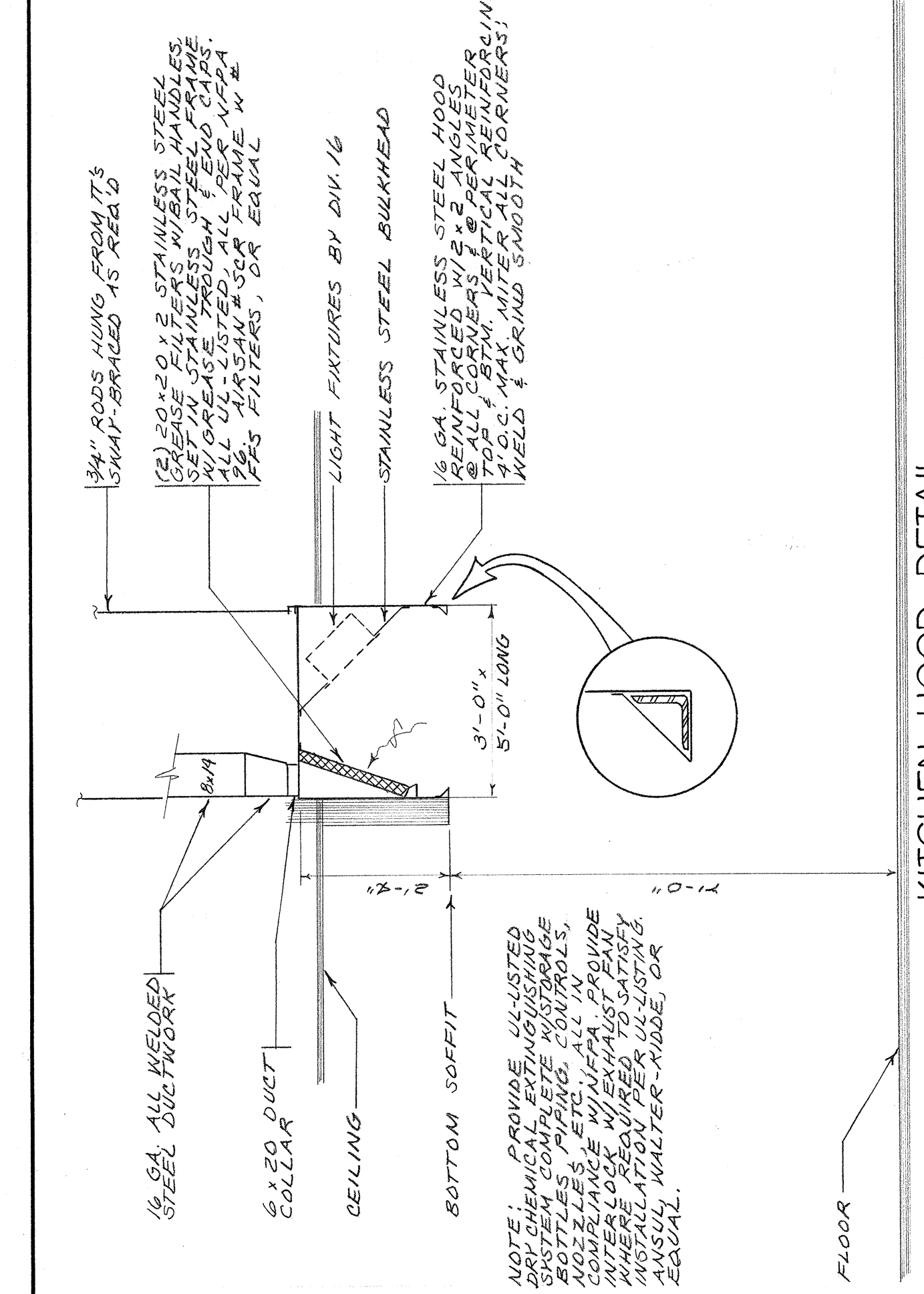
revised:

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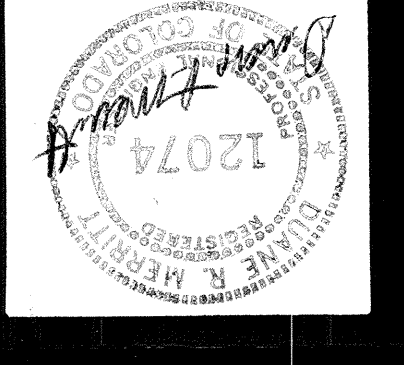
drawing
m-2
of 6



- NOTES:**
1. MAIN TRAPS SHALL BE CONSTRUCTED WITH 3\"/>
 2. CAPPED ROOF OPENINGS SHALL BE INSTALLED WITH APPROVED FLASHING. VERIFY LOCATION OF ALL OPENINGS PRIOR TO INSTALLATION. PRESENTATION, FIGURE 15.



PARTIAL FLOOR PLAN - HVAC
SCALE: 1/8\"/>



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 3650 north nevada avenue
 colorado springs, colorado 80907

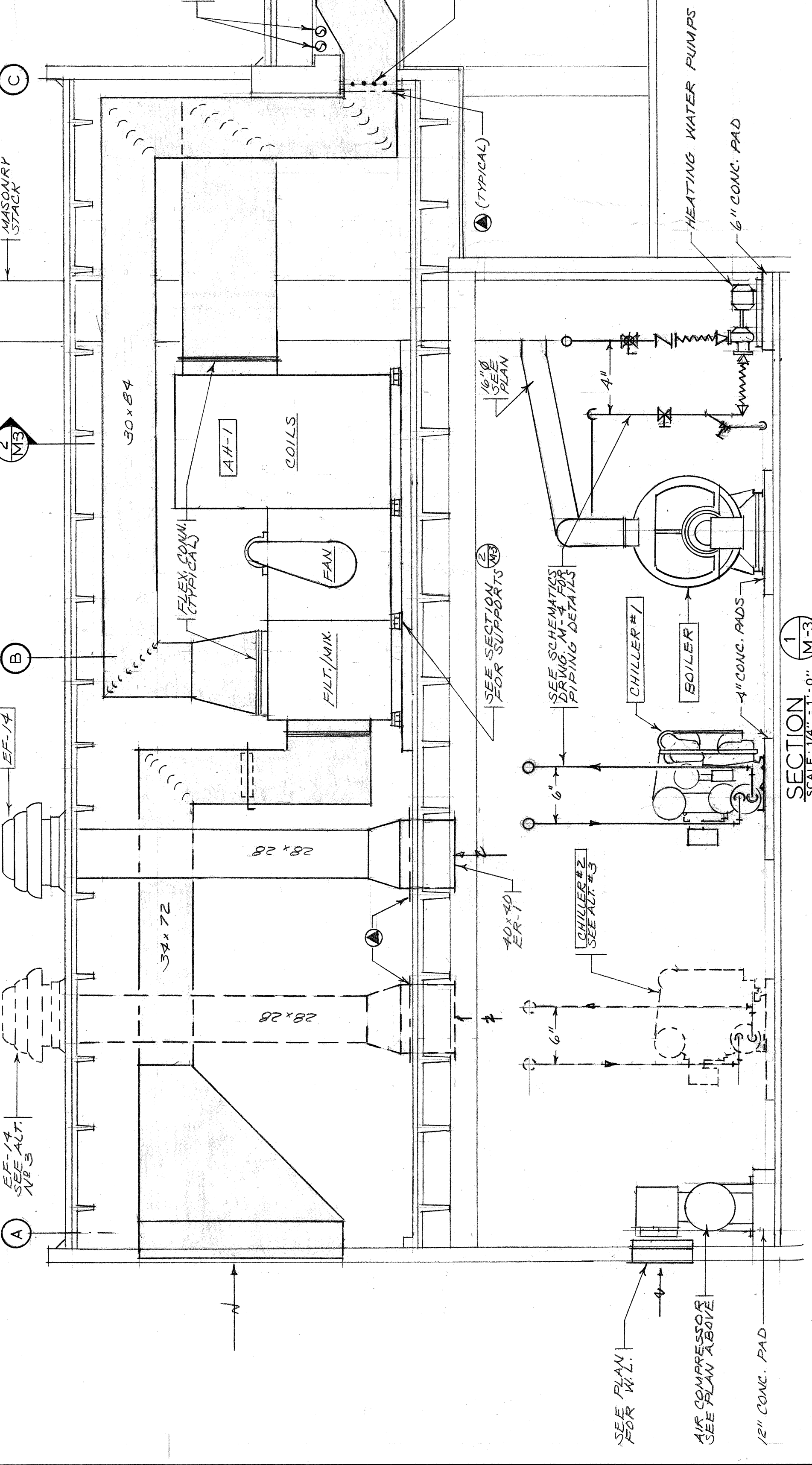
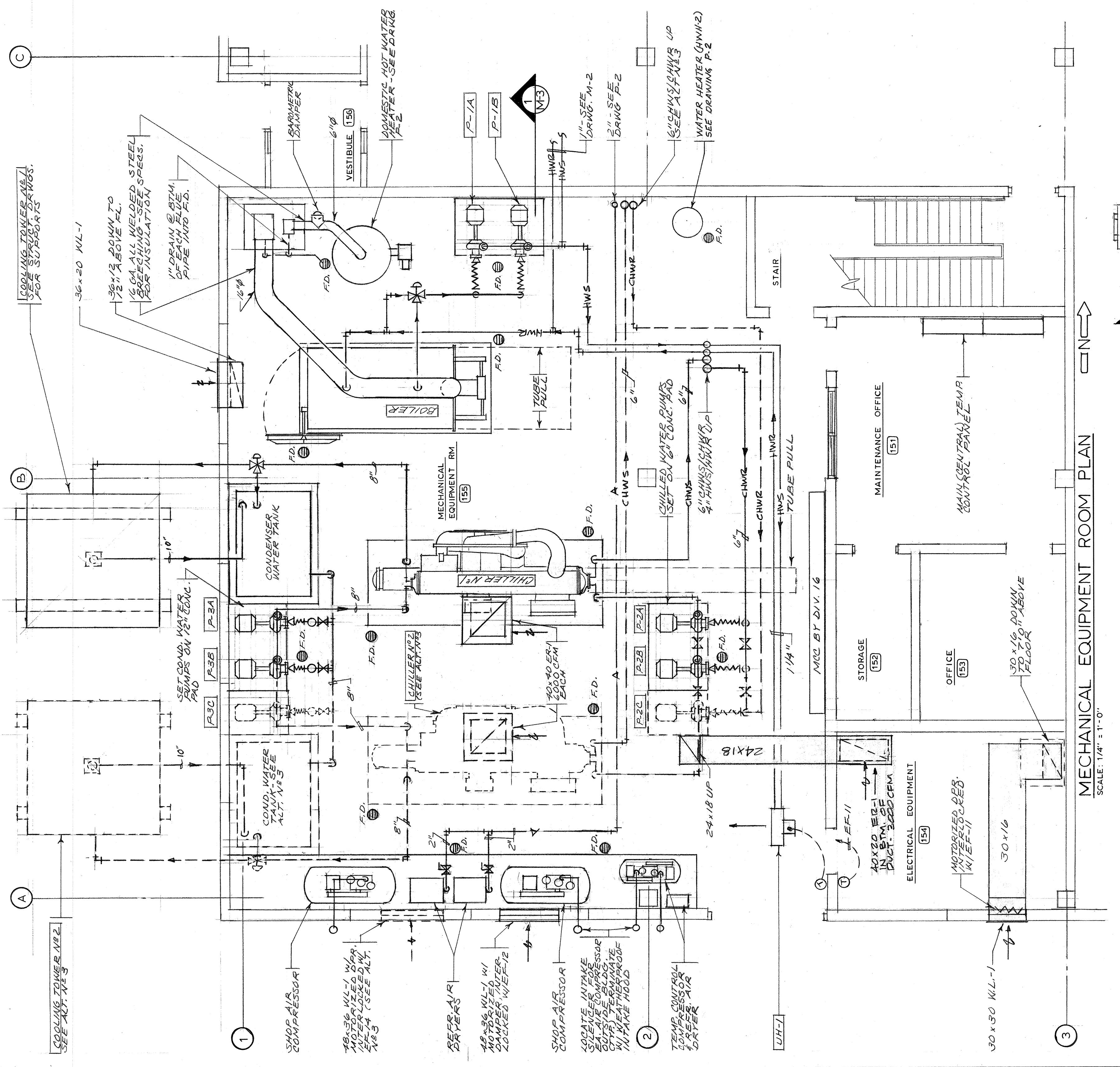
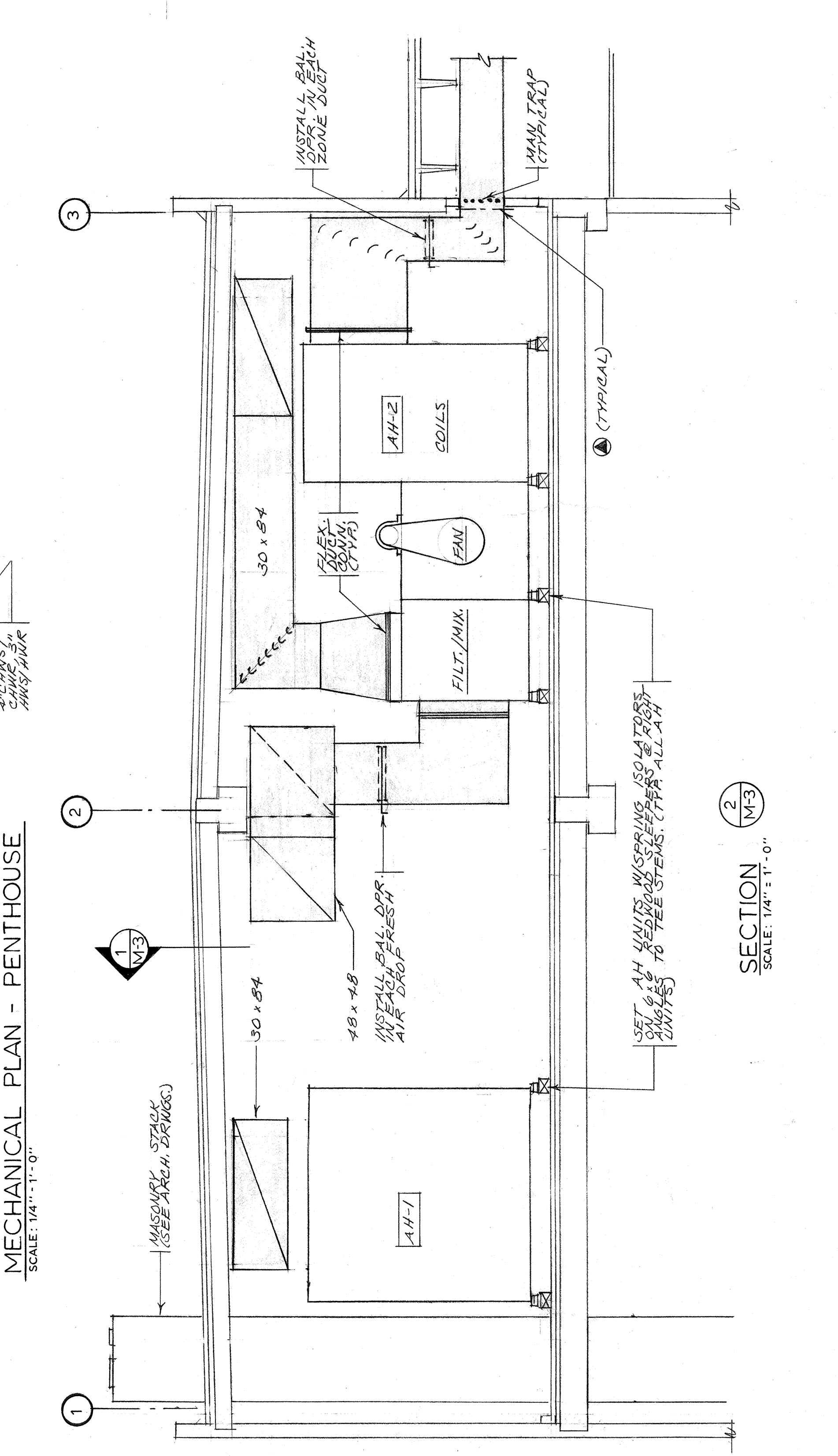
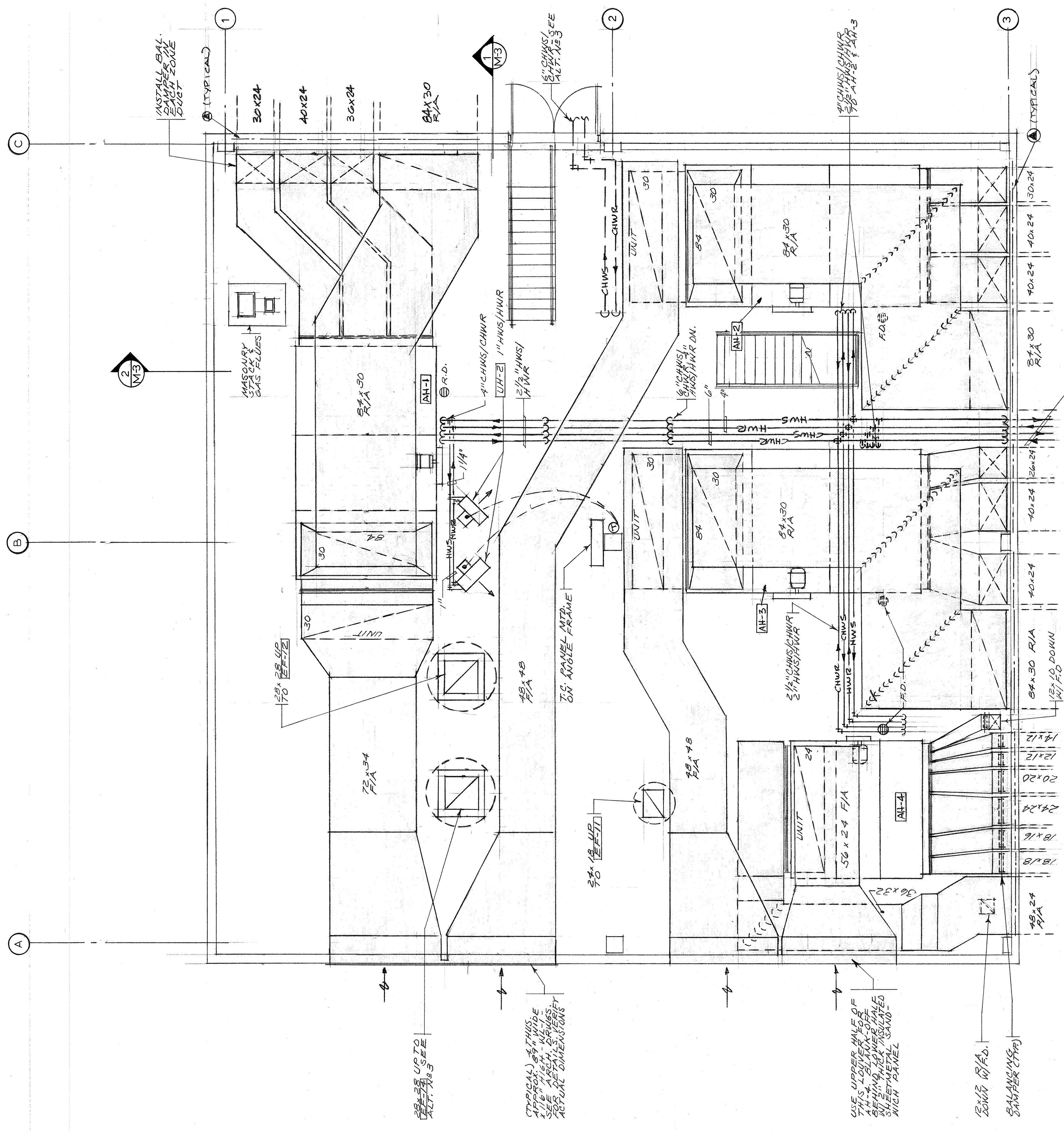


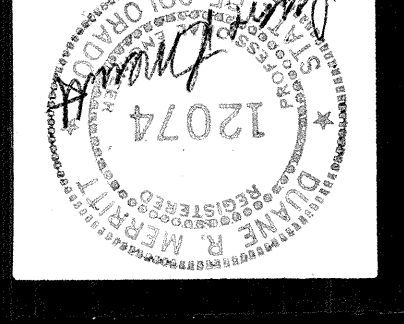
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drawing title:
 MECHANICAL EQUIP. ROOM PLAN - PENTHOUSE

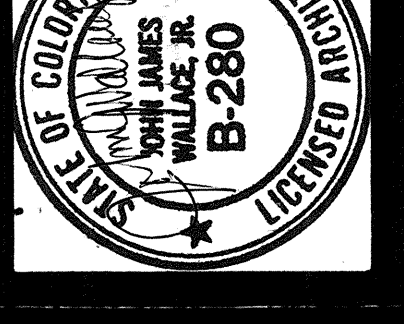
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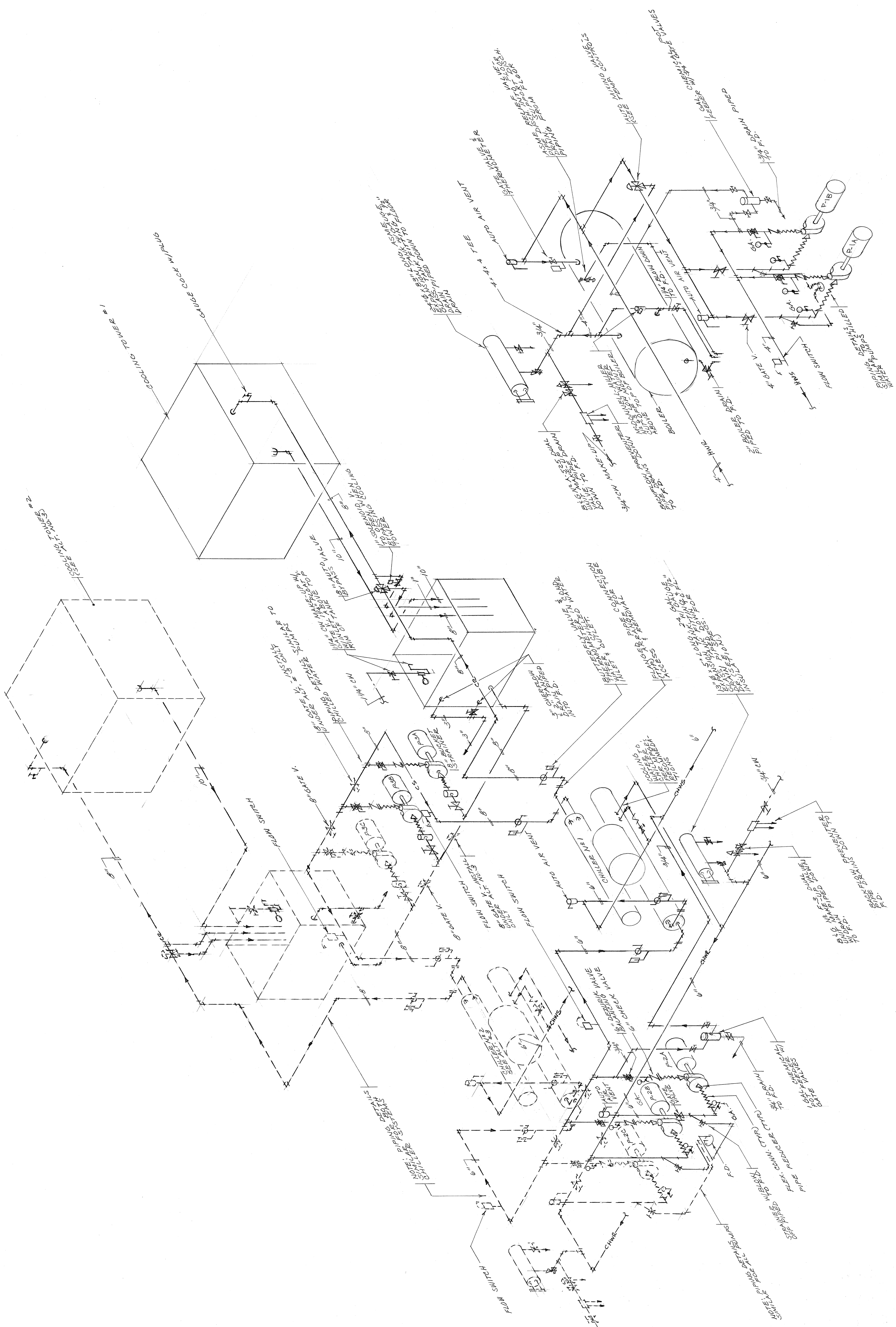


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drawing title:
 CHILLER & BOILER
 PIPING SCHEMATICS

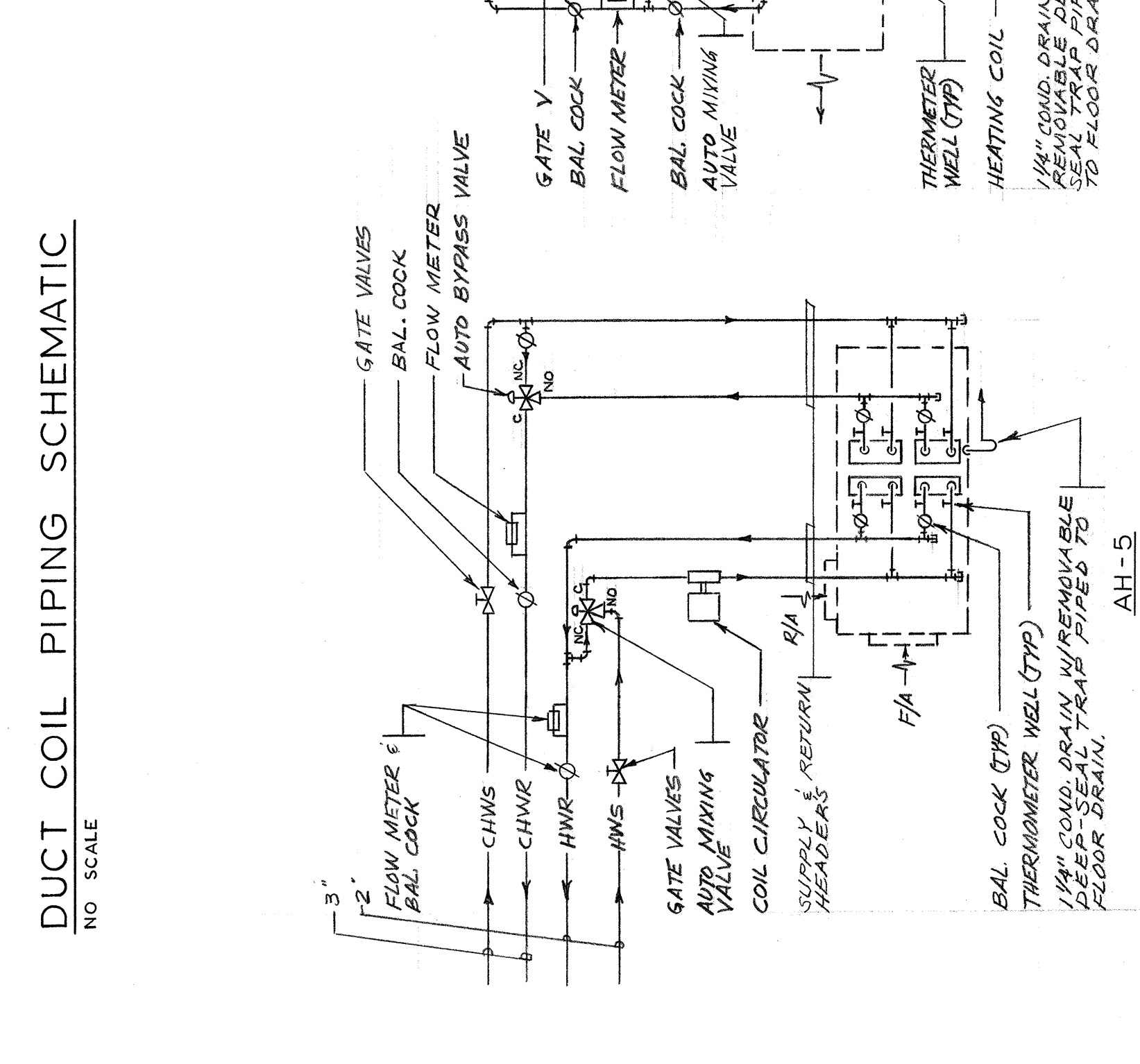
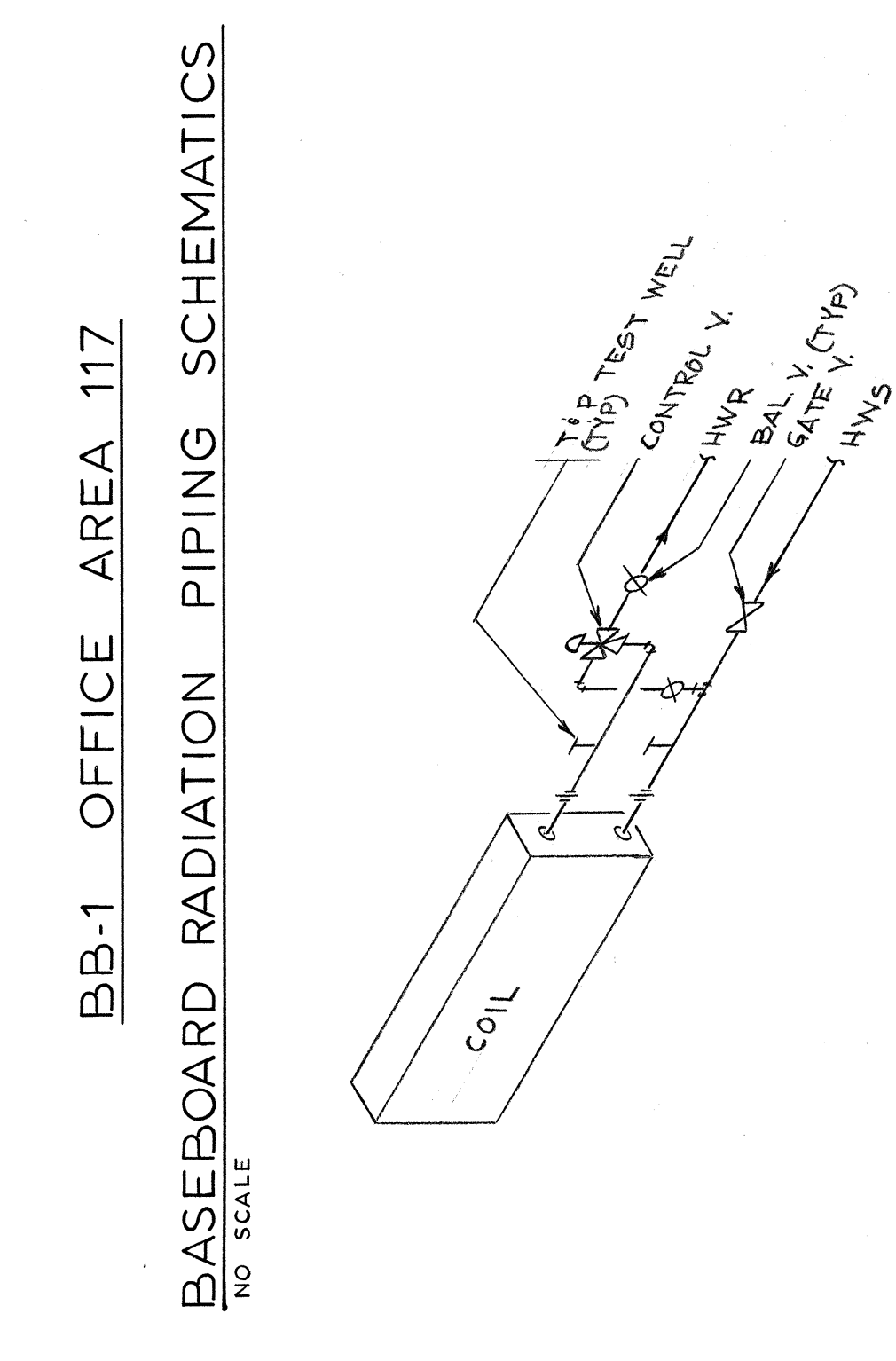
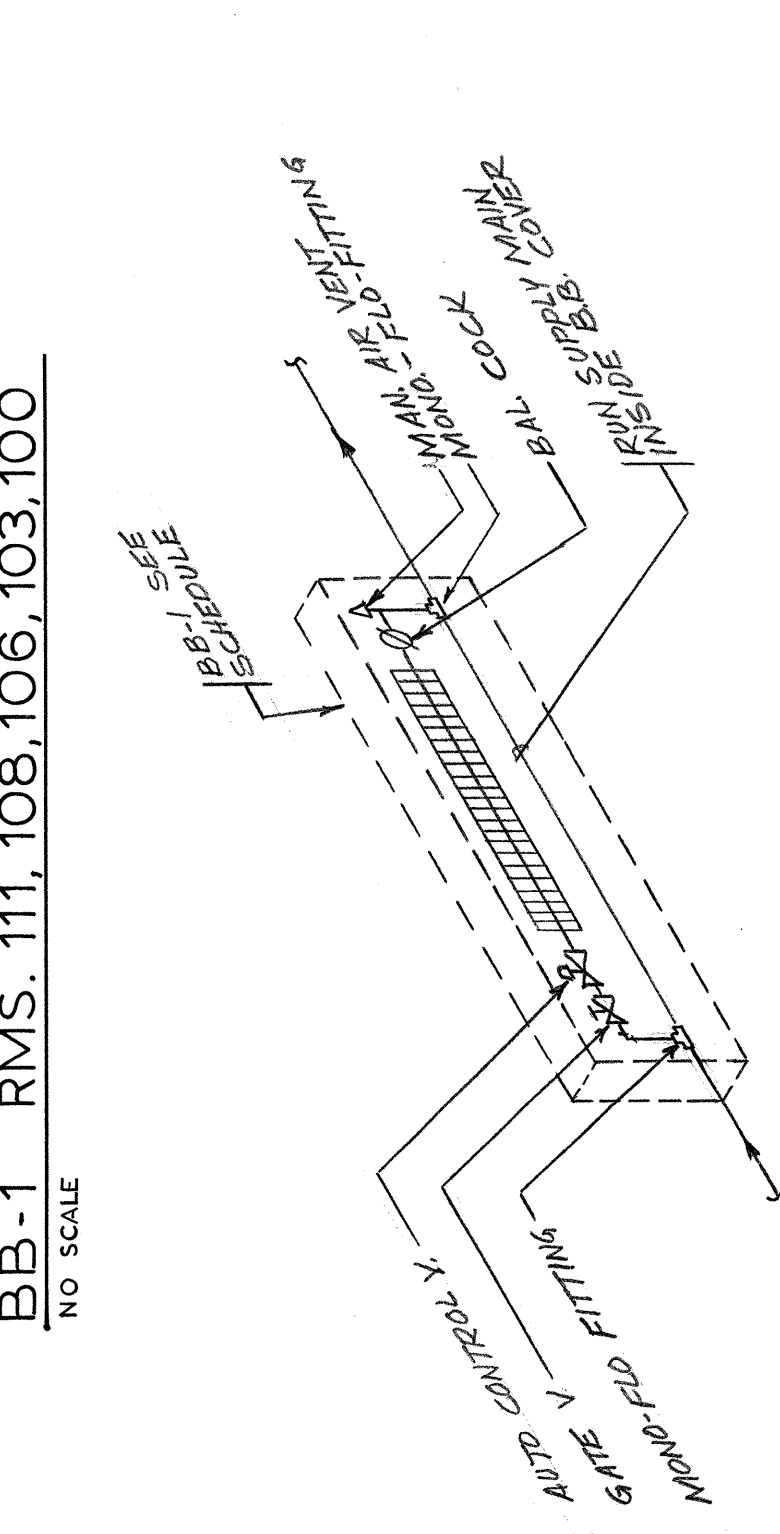
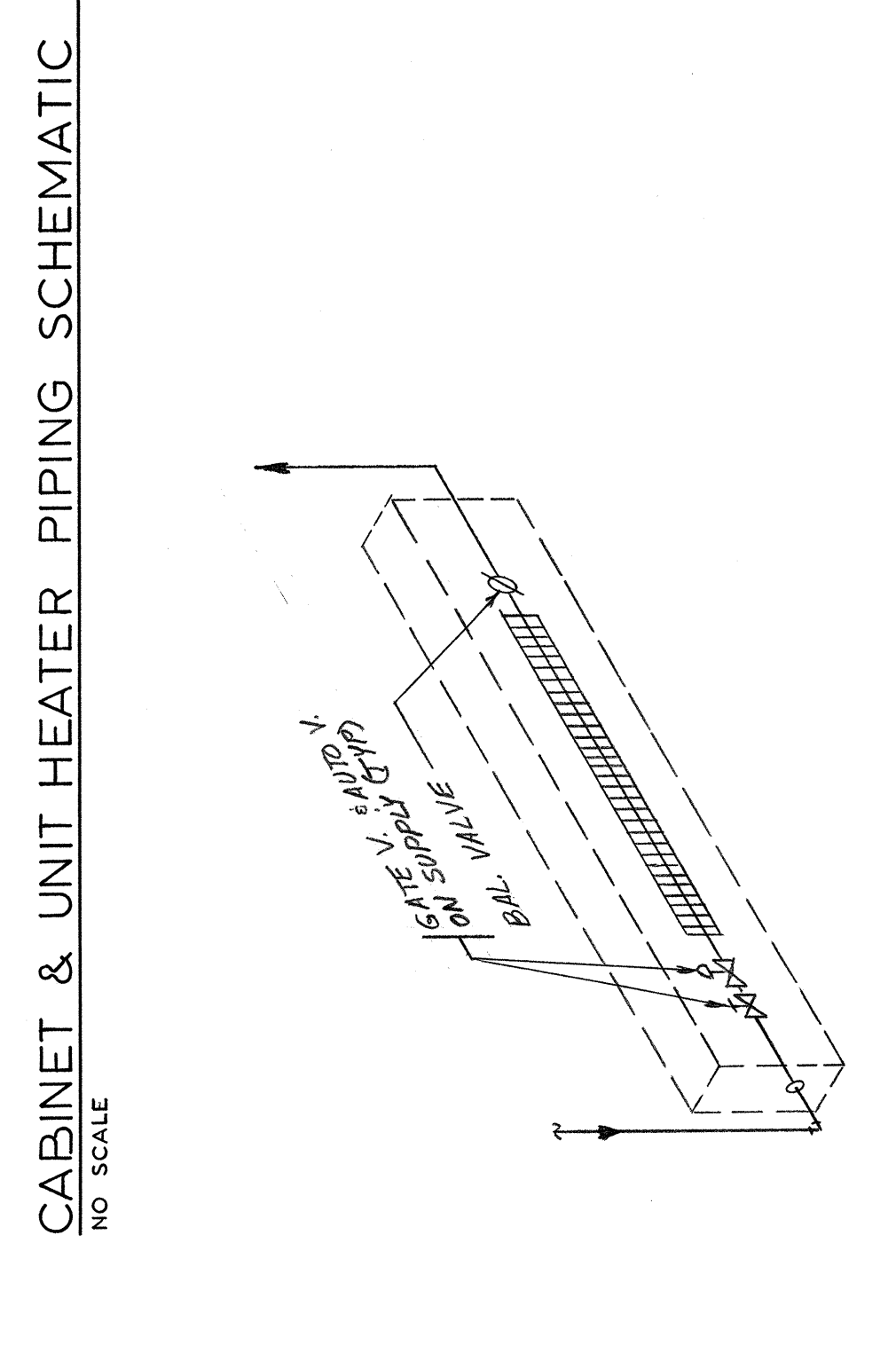
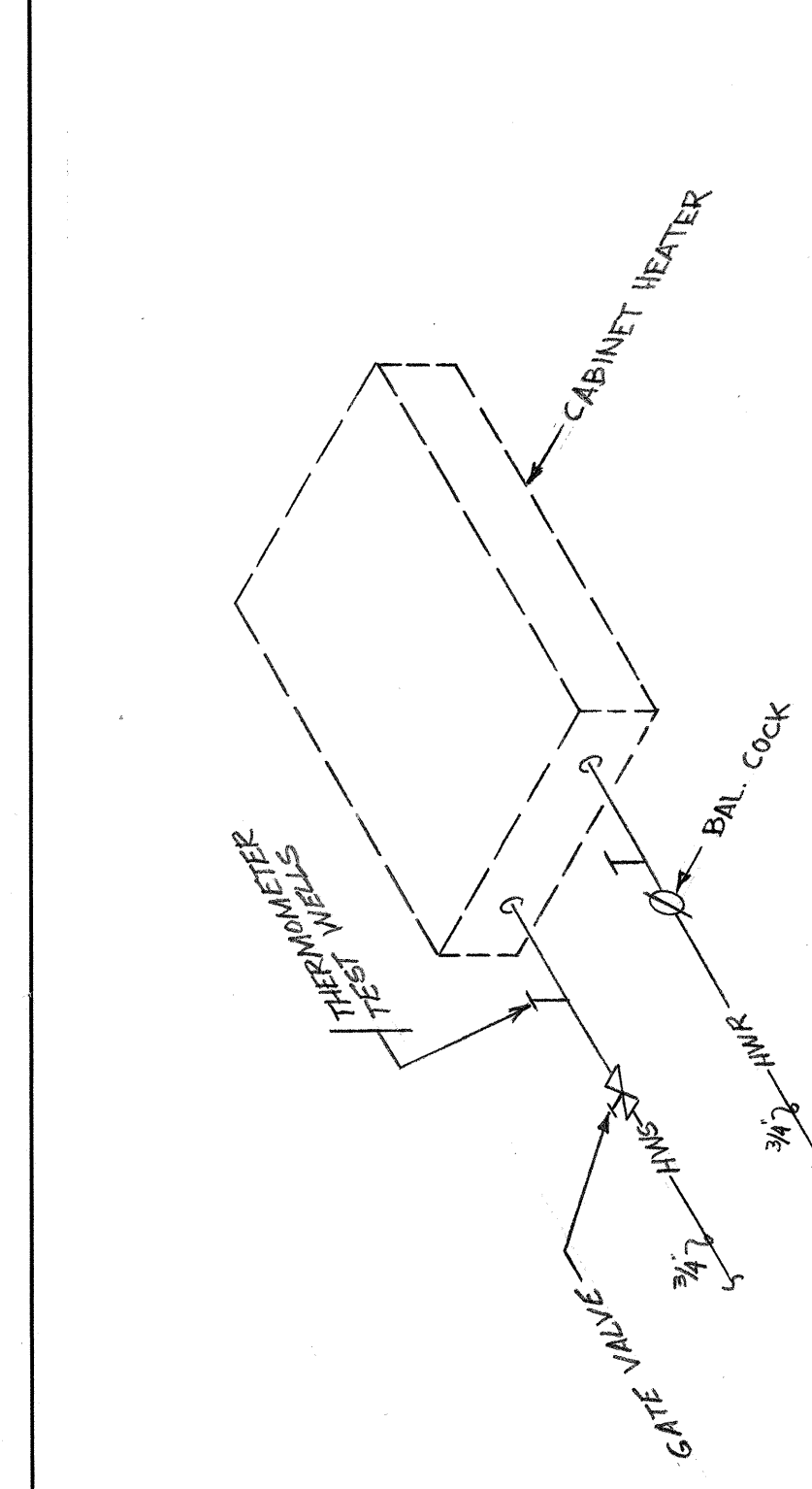
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drawing m-4
 of 6



CHILLER PIPING SCHEMATIC
 NO SCALE

BOILER PIPING SCHEMATIC
 NO SCALE



EXHAUST FAN SCHEDULE

FAN NO.	C.F.M.	S.P. W.G.	R.P.M.	MOTOR HP	MIN. VOLTS	MAX. AMP.	REMARKS
EF-1A	6400	3/8"	340	1	480/3	4.1	ACME MODEL P161Z, W/STANDARD ROOF CURB, BIRD SCREEN, MOTOR OPERATED DAMPER, (MOTOR BY T.C.)
EF-2A	2500	3/8"	490	1/2	120/1	3.8	ACME MODEL P245, W/SOUND ATTEN. ROOF CURB, BIRD SCREEN, MOTOR OPER. DAMPER, (MOTOR BY T.C.)
EF-3A	4000	3/8"	480	3/4	120/1	5.2	ACME MODEL P27H, W/SOUND ATTEN. ROOF CURB, BIRD SCREEN, MOTOR OPER. DAMPER, (MOTOR BY T.C.)
EF-4A	1200	3/8"	830	1/4	120/1	5.2	ACME MODEL P161Z, W/SOUND ATTEN. ROOF CURB, BIRD SCREEN, MOTOR OPER. DAMPER, (MOTOR BY T.C.)
EF-5A	500	3/8"	910	1/6	120/1	3.5	ACME MODEL P1003, W/SOUND ATTEN. ROOF CURB, GRAVITY DAMPER, BIRD SCREEN
EF-6	1200	3/8"	830	1/4	120/1	5.2	ACME MODEL P161Z, W/SOUND ATTEN. ROOF CURB, BIRD SCREEN, MOTOR OPER. DAMPER, (MOTOR BY T.C.)
EF-7	500	3/8"	910	1/6	120/1	3.5	ACME MODEL P1003, W/SOUND ATTEN. ROOF CURB, GRAVITY DAMPER, BIRD SCREEN
EF-8	1200	3/8"	830	1/4	120/1	5.2	ACME MODEL P161Z, W/SOUND ATTEN. ROOF CURB, BIRD SCREEN, MOTOR OPER. DAMPER, (MOTOR BY T.C.)
EF-9	800	3/8"	1100	1/6	120/1	8.5	ACME MODEL P1003, UPBLAST DISCHARGE, STANDARD ROOF CURB, BIRD SCREEN, GRAV. DFR.
EF-10	1100	3/8"	800	1/4	120/1	5.0	ACME MODEL P161Z SOUND ATTN. ROOF CURB, GRAV. DFR., BIRD SCREEN.
EF-11	3000	3/8"	480	3/4	120/1	5.2	ACME MODEL P27H, STANDARD ROOF CURB, GRAVITY DFR., BIRD SCREEN.
EF-12	6000	3/8"	490	1-1/2	480/3	5.3	ACME MODEL P20K, STAND. ROOF CURB, GRAV. DFR., BIRD SCREEN.
EF-13	1800	1-1/2"	995	1	480/3	--	EXIST. - FAN TO BE REMOVED & RELOC. TO NEW BLDG. PROVIDE RELOC. TO NEW BLDG. ON ROOF OF EXIST. BLDG.
EF-14	6000	3/8"	490	1-1/2	480/3	5.3	SAME AS EF-12 (SEE ALT. #3)
EF-15	1500	5/8"	630	3/4	120/1	8.5	ACME MODEL P1003, UPBLAST DISCH., STAND. ROOF CURB, BIRD SCREEN.
EF-16	90	1/8"	1030	50	120/1	--	1.6 PENNY VENTILATOR MODEL Z-6
EF-17	1600	3/8"	700	1/4	120/1	4.2	ACME P-18E, STAND. ROOF CURB, GRAV. DFR., BIRD SCREEN.
EF-18	2400	3/8"	490	1/2	120/1	3.8	ACME MODEL P245, STAND. ROOF CURB, GRAVITY DAMPER, BIRD SCREEN.

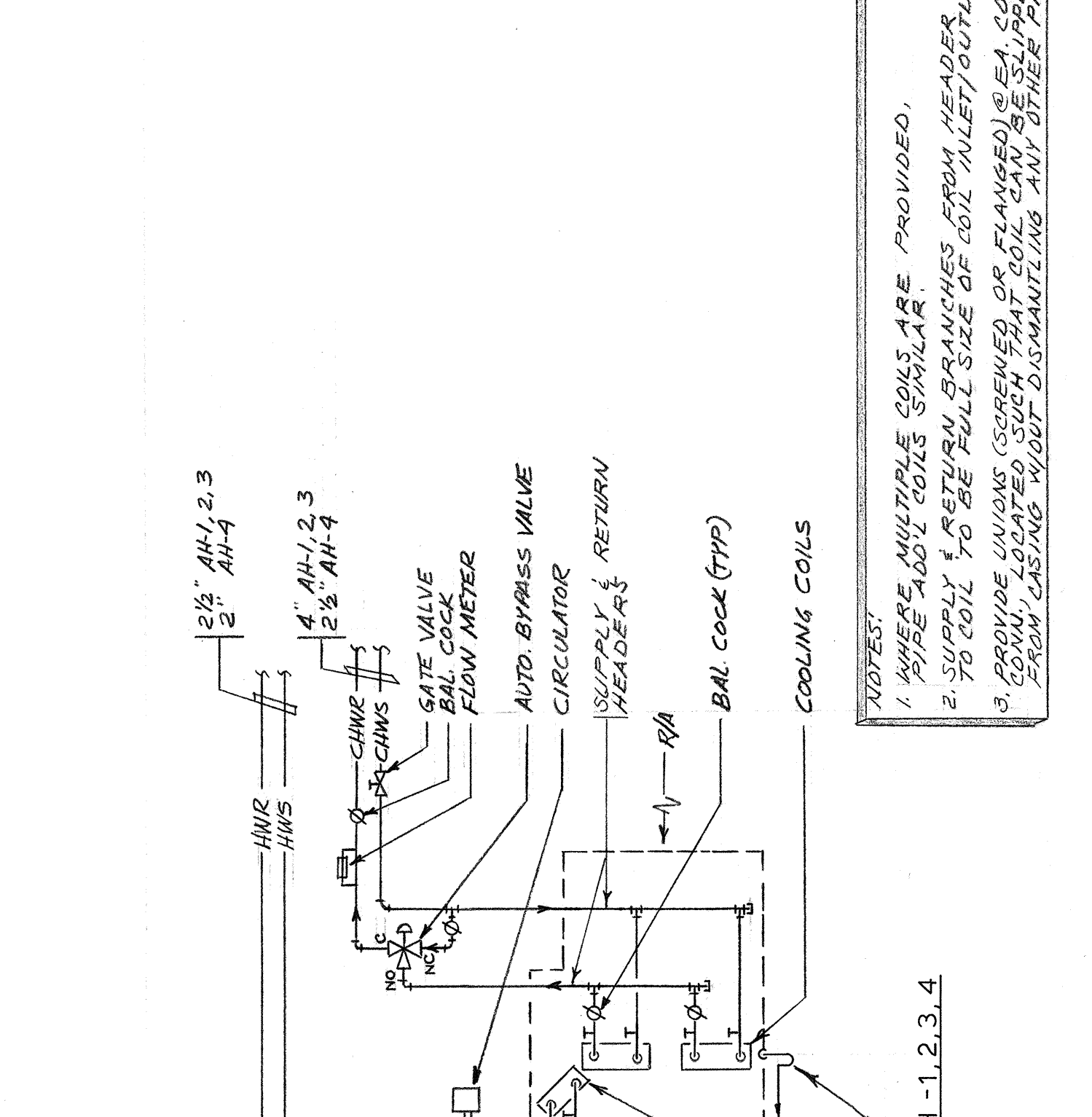
VAV LEGEND

KEY	DESCRIPTION
☒	TERMINAL CONTROL UNIT.
▬	SLOT DIFFUSER, ONE WAY, ONE SLOT, TRANE MODEL VOLC.
▬	SLOT DIFFUSER, ONE WAY, TWO SLOTS, TRANE MODEL VOLC.
▬	SLOT DIFFUSER, TWO WAY, TWO-SLOT, TRANE MODEL VOLC.
▬	RETURN AIR SLOT, ONE WAY, ONE SLOT, TRANE MODEL VOLC.
▬	RETURN AIR SLOT, ONE WAY, TWO SLOTS, TRANE MODEL VOLC.
▬	RETURN AIR SLOT, TWO WAY, TWO-SLOT, TRANE MODEL VOLC.
▬	MEDIUM PRESSURE FLEXIBLE DUCT.
▬	LOW PRESSURE FLEXIBLE DUCT.

NOTE: SLOT DIFF. & RET. AIR SLOTS 113, 108, 106, 103, 100, 102, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

DUCT SILENCER SCHEDULE

KEY	DESCRIPTION
DS-1	ENCLD. AIRFOURSTAT. MODEL SLR, TWO 20" x 30" UNITS, EACH UNIT RATED FOR 8,500 CFM, 51-0" LONG, 35 DB INSERTION LOSS, 500HZ FREQUENCY, - 1,000 FPM FACE VELOCITY.



AIR DISTRIBUTION SCHEDULE

KEY	DESCRIPTION	MATERIAL	FINISH	REMARKS
AD-1	CELLING DIFFUSER, RECESSED, 24" x 24" INDUSTRIAL CORE, OPPOSED BLADE DAMPER.	STEEL	WHITE ENAMEL	T & B - DIF
AD-2	SAME AS AD-1 EXCEPT SURFACE FIN.	STEEL OR ALUMINUM	WHITE ENAMEL	T & B - DIF
AD-3	SAME AS AD-2, EXCEPT 12" x 12" FACE.	STEEL OR ALUMINUM	WHITE ENAMEL	T & B - DIF
AD-4	CELLING DIFFUSER, SURFACE MTD., ONE-WAY DISCHARGE, OPPOSED BLADE DAMPER.	ALUMINUM	ACRYLIC TL	T & B ANE STYLE
AD-5	CELLING DIFFUSER, SAME AS AD-4 EXCEPT 2-WAY DISCHARGE.	ALUMINUM	ACRYLIC 2L	T & B ANE STYLE
AD-6	CELLING DIFFUSER, SAME AS AD-4 EXCEPT 3-WAY DISCHARGE.	ALUMINUM	ACRYLIC 3S	T & B ANE STYLE
AD-7	SUBRAIL SUPPLY RECESSED, DOUBLE CENTERS, 1-1/4" MARGIN, OPPOSED BLADE DAMPER.	ALUMINUM	ACRYLIC	T & B AS57
AD-8	RETURN AIR GRILLE - CELLING RECESSED, 1/2" x 1/2" GRID CORE.	ALUMINUM	ACRYLIC	T & B CR500U
AD-9	SAME AS AD-8 EXCEPT SURFACE MTD., 1-1/4" MARGIN.	ALUMINUM	ACRYLIC	T & B CR500
AD-10	EXHAUST RECESSED, SURFACE MTD., 1-1/4" MARGIN, OPPOSED BLADE VOLUME DAMPER.	ALUMINUM	ACRYLIC	T & B AN78
AD-11	WALL LOWER "STANDARD" 45° ANGLE BLADES, 1/2" GAUGE, CONTINUOUS WITH MULLIONS, 48" O.C., GALV. BIRD SCREEN ON INSIDE.	STEEL	PRIME COAT	LOWER & DAMPER EL-100, STYLE 1T FRAME.
AD-12	EDGE DAMPER, U.L., WITH ACCESS DOOR.	--	--	--
AD-13	TURNING VALVE, SUPPLY AND RETURN AIR DUCTWORK.	--	--	SOUND CONTROL PRODUCTS CO. "SONO-TURN".

PUMP SCHEDULE

UNIT NO.	GPM	HEAD	FLUP	MOTOR HP	RPM	VIO	REMARKS
P-1A	130	55	230°	5	1750	480/3	HEATING WATER PUMPS, B & G SERIES 1510, No. 1-1/2" BB
P-1B	650	90	95°	25	1750	480/3	CHILLED WATER PUMPS, B & G SERIES 1510, No. 5" BB.
P-2C	650	90	95°	25	1750	480/3	SAME AS P-1A, 2A, (SEE ALTERNATE NO. 3)
P-3A	810	70	90°	20	1750	480/3	CONDENSER WATER PUMPS, B & G SERIES 1510, No. 5" BB
P-3C	810	70	90°	20	1750	480/3	SAME AS P-3A (SEE ALTERNATE NO. 3)
P-4	41	13	230°	1/4	1750	120/1	COIL CIRCULATOR AH-1, B & G No. 2-1/2"
P-5	43	13	230°	1/4	1750	120/1	COIL CIRCULATOR AH-2, B & G No. 2-1/2"
P-6	45	13	230°	1/4	1750	120/1	COIL CIRCULATOR AH-3, B & G No. 2-1/2"
P-7	24	10	230°	1/6	1750	120/1	COIL CIRCULATOR AH-4, B & G No. 2"
P-8	19	10	230°	1/6	1750	120/1	COIL CIRCULATOR AH-5, B & G No. 2"
P-9	20	90	45°	1-1/2	1750	480/3	BOOSTER PUMPS P-59 THERMATRON MACHINE, B & G SERIES 80, No. 1-1/2" x 1-1/2"
P-11	26	90	45°	1-1/2	1750	480/3	BOOSTER PUMPS P-62 THERMATRON, B & G SERIES 80, No. 1-1/2" x 1-1/2"
P-19							17 (SEE ALT. NO. 3)

NOTE: FURNISH STARTERS FOR P-9 THRU P-19 WITH PUSH BUTTON START-STOP STATION.

BASEBOARD RADIATION SCHEDULE

KEY	DESCRIPTION
BB-1	TRANE CO. TYPE 01, 1-1/2" STEEL TUBE, SERIES 80 FINS, 2-1/2" x 5-1/4" (1800 BTU/H) LINE 1500 AVERAGE WATER TEMP. CONER TO RUN CONTINUOUS WITH ELEMENT LENGTHS AS SHOWN. COVER TO HAVE PRIME COAT FINISH. (SEE ARCHITECTURAL DRAWINGS FOR MOUNTING UNDER WINDOWS.)

DUCT COIL SCHEDULE

UNIT NO.	SIZE L x W	ROWS	MEH	CFM	AP	EAT	GPM	ΔP	EW	REMARKS
DC-1	36x24	1	104	3000	0.15"	55°	4	2'	200°	TRANE #TT

AIR HANDLING UNIT SCHEDULE

UNIT NUMBER	AH-1	AH-2	AH-3	AH-4	AH-5
FAN (SIZE & TYPE)	48" A.F. 2,10 S.P. (TOTAL)	48" A.F. 2,20 S.P. (TOTAL)	48" A.F. 2,20 S.P. (TOTAL)	48" A.F. 2,20 S.P. (TOTAL)	48" A.F. 2,20 S.P. (TOTAL)
H.P. (F.P.M.) MAX.	500	500	500	500	500
VOLTS/Φ	480/3	480/3	480/3	480/3	480/3
HEATING COIL	822,000 E.A.T. 85° L.A.T.	861,000 E.A.T. 85° L.A.T.	861,000 E.A.T. 85° L.A.T.	861,000 E.A.T. 85° L.A.T.	861,000 E.A.T. 85° L.A.T.
COOLING COIL	670,000 E.A.T. 62° F.W.T. 55° L.A.T.	702,000 E.A.T. 62° F.W.T. 55° L.A.T.	722,000 E.A.T. 62° F.W.T. 55° L.A.T.	287,000 E.A.T. 62° F.W.T. 55° L.A.T.	361,000 E.A.T. 62° F.W.T. 55° L.A.T.
WATER FLOW VELOCITY (F.P.M.)	500	523	539	440	485
UNIT OPERATING WEIGHT	8400#	8400#	8400#	3800#	4350#
REMARKS	TRANE MODEL 65 HORIZONTAL BLOW THRU MULTIZONE UNIT				

NOTE: EACH UNIT TO BE FURNISHED WITH FACTORY INSULATED COMBINATION FILTER/MIXING BOX. THE FILTERS WILL BE FURNISHED TO THE CONTRACTOR BY THE OWNER AT COMPLETION OF THE PROJECT. ALL COOLING COILS SHALL BE MINIMUM 6 ROW DEEP.

CABINET AND UNIT HEATER SCHEDULE

UNIT NO.	C.F.M.	H.P.	VOLTS/Φ	BTU/H	REMARKS
CH-1	300	1/30	120/1	28,400	TRANE SIZE 03, FORCE-FLO UNIT, INTEGRAL INLET & OUTLET.
CH-2	600	1/9	120/1	52,800	TRANE SIZE 06, FORCE-FLO UNIT, INTEGRAL INLET & OUTLET.
UH-1	4100	1/2	120/1	149,000	TRANE MODEL 260-5, HORIZONTAL UNIT HEATER.
UH-2	1535	1/8	120/1	50,800	TRANE MODEL 100-5, HORIZONTAL UNIT HEATER.

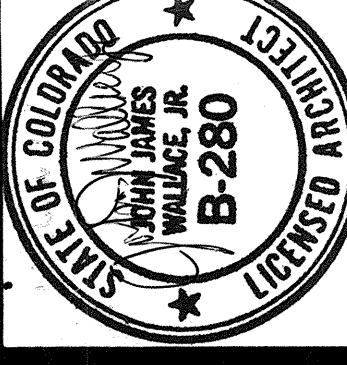
TERMINAL CONTROL UNIT SCHEDULE

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TRW CS-3

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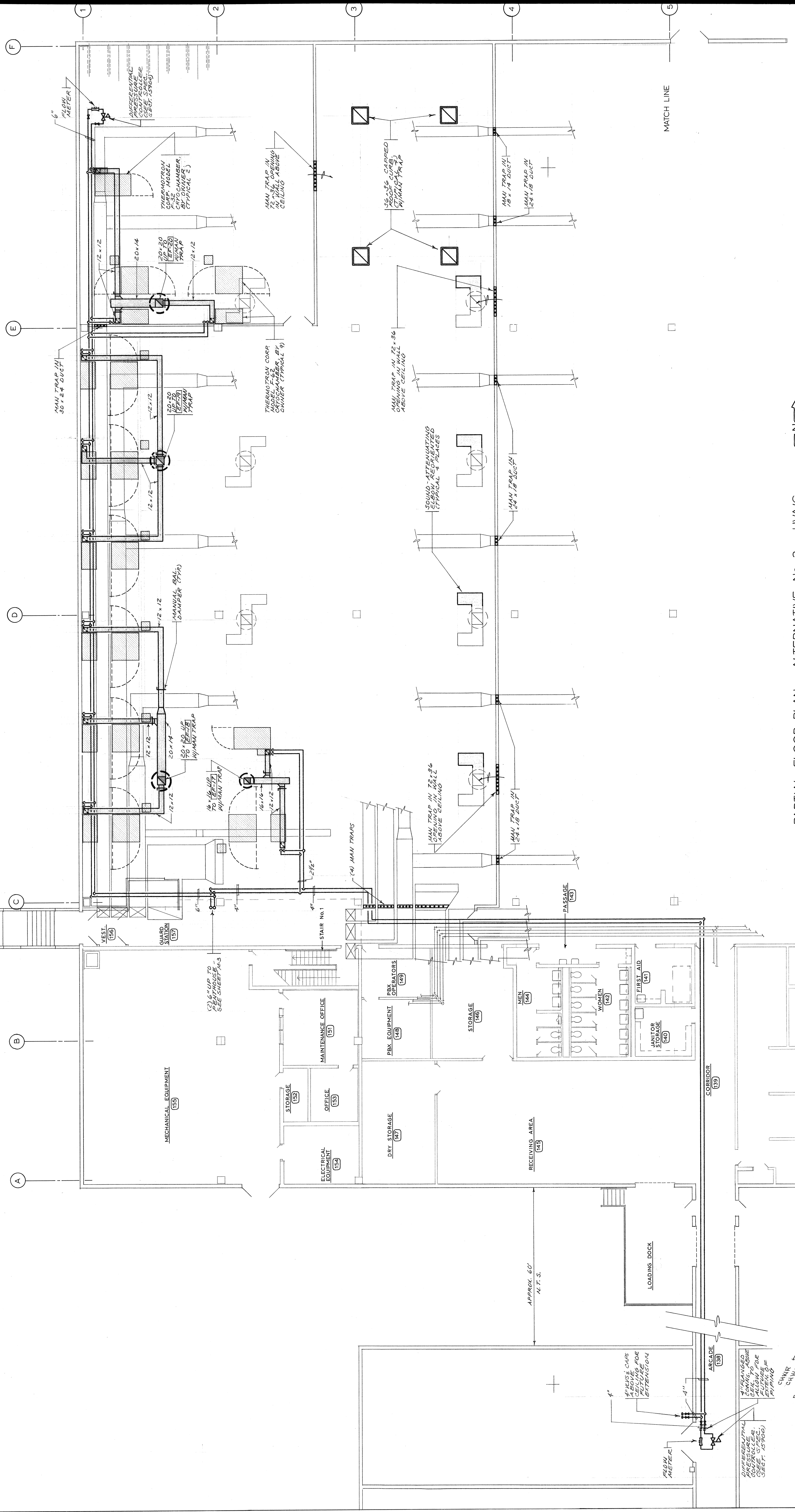


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303-632-2623
a.i.a.

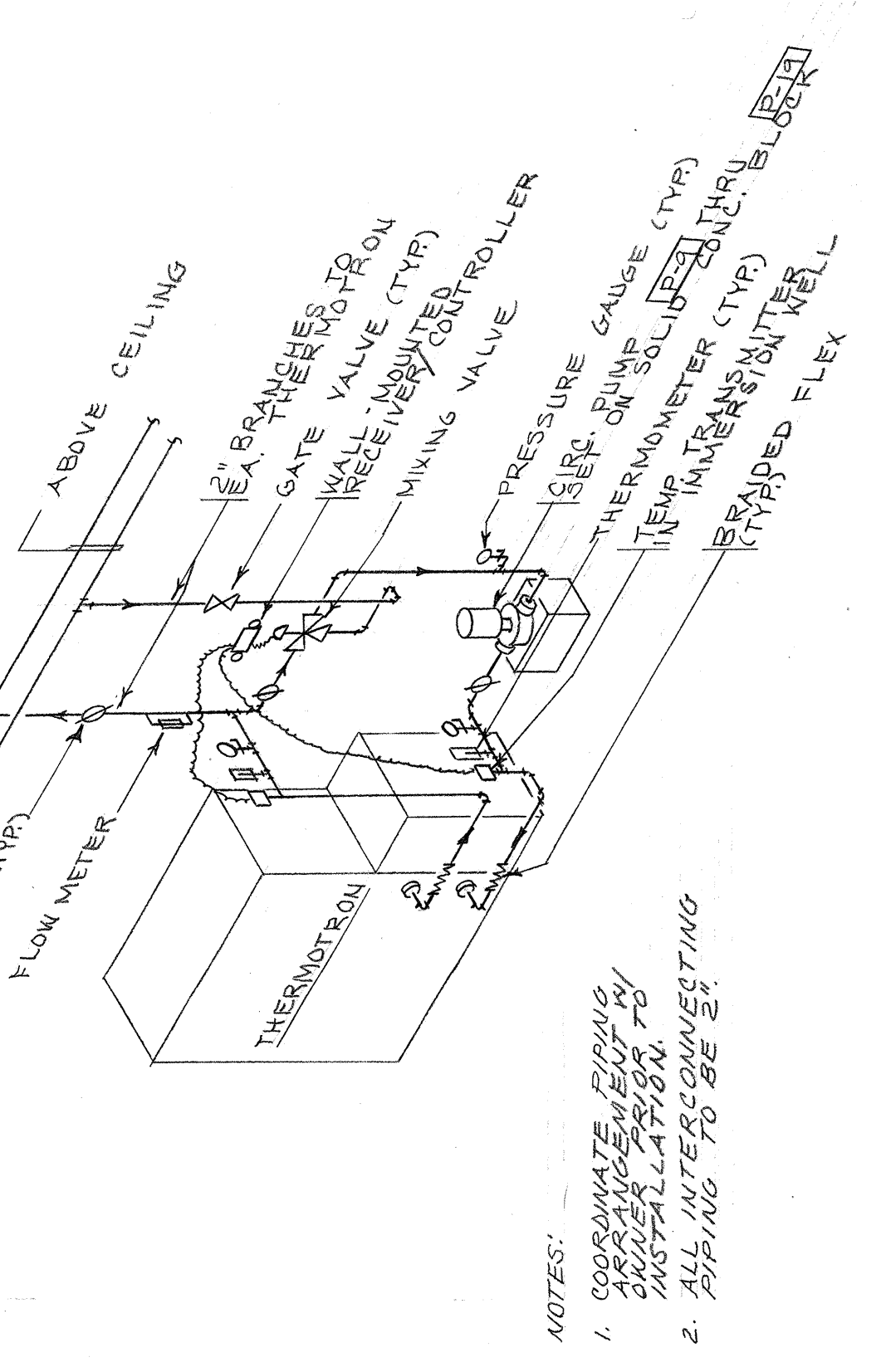
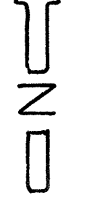
drawing title:
PARTIAL FLOOR PLAN
ALTERNATIVE NO. 3
HVAC

drawn: S.G.F., S.C.
checked: D.R.M.
issued: [initials]
revised: [initials]

jjwa 7904
drawing m-6
of 6



PARTIAL FLOOR PLAN - ALTERNATIVE NO. 3 - HVAC
SCALE: 1/8" = 1'-0"



- NOTES:
- COORDINATE PIPING TO MECHANICAL ROOM PRESSURE CONTROLLER. INSTALL PIPING TO ALLOW FOR THERMOTRON PIPING (SEE SECT. 10-900).
 - INSTALL PIPING TO ALLOW FOR CONVERTING THERMOTRON TO BE S.I.

THERMOTRON PIPING SCHEMATIC
NO SCALE