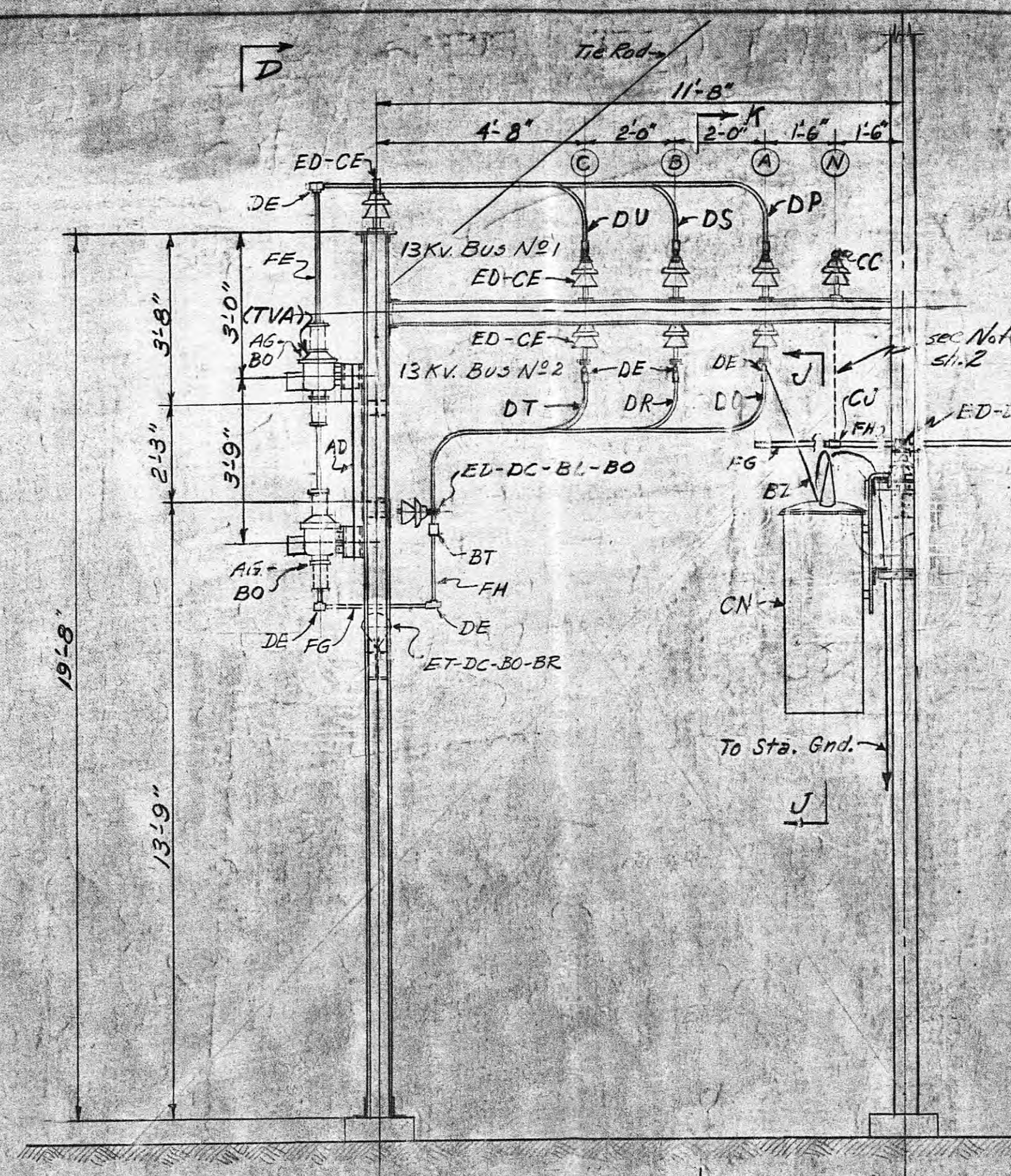
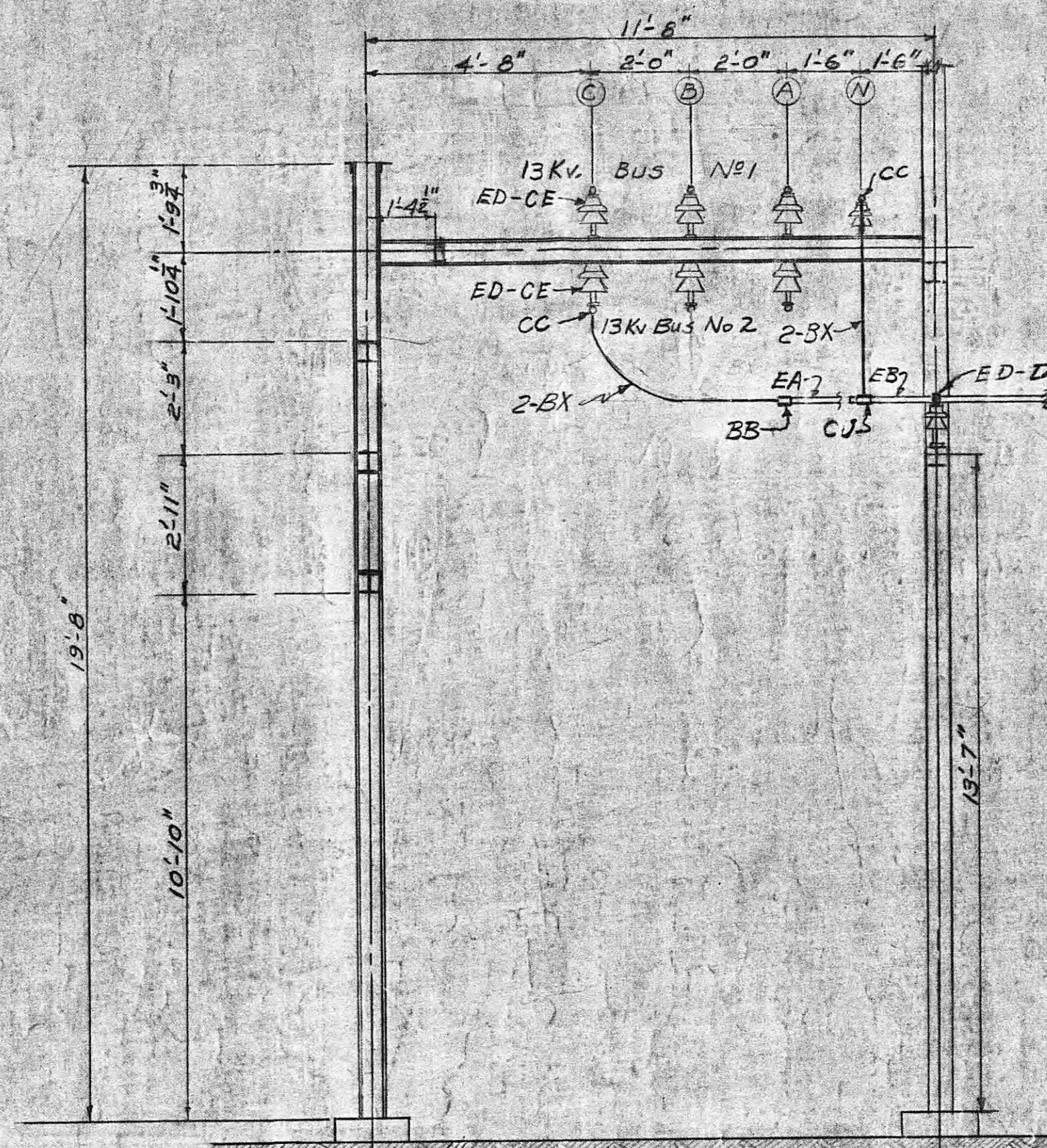
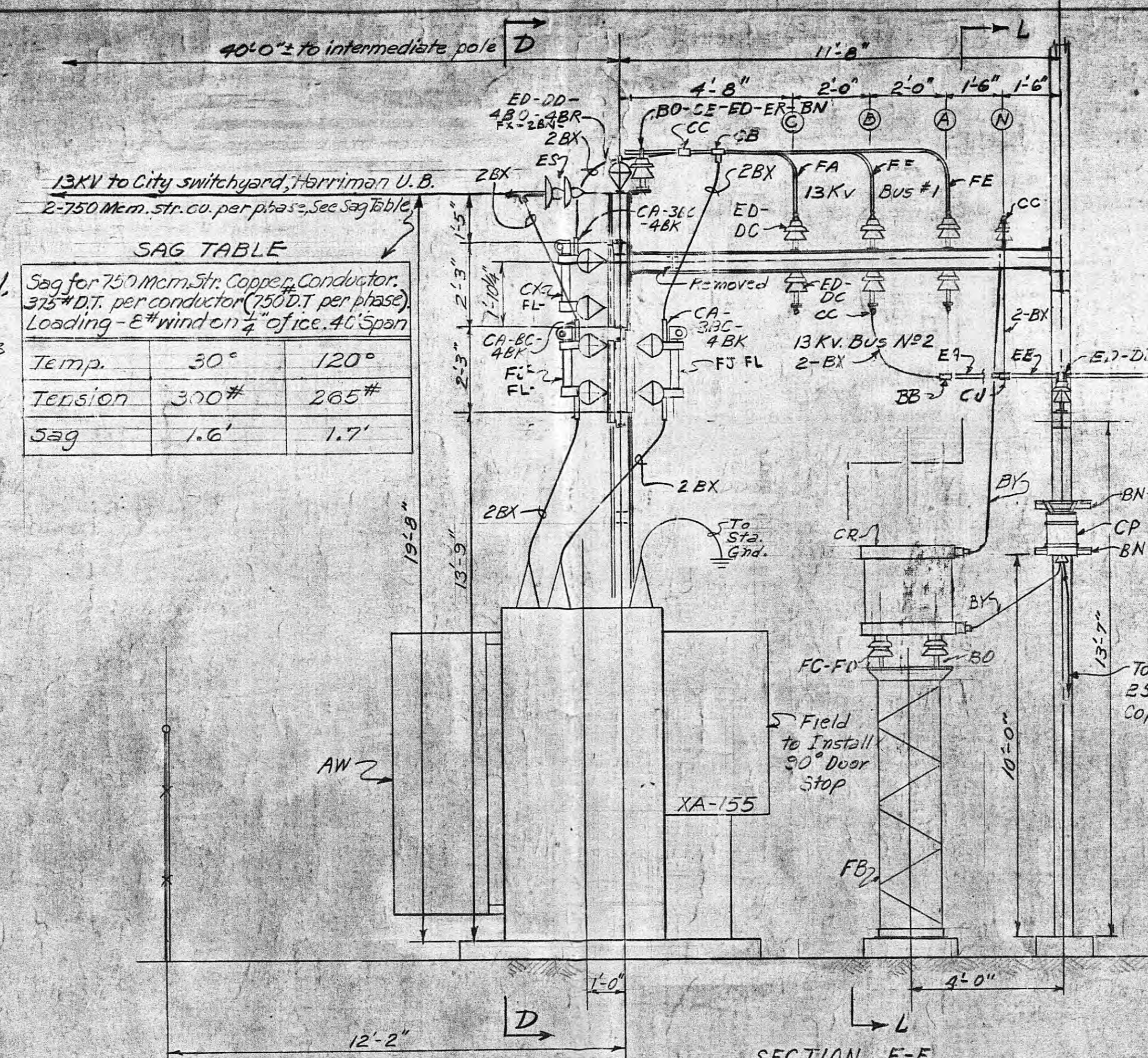




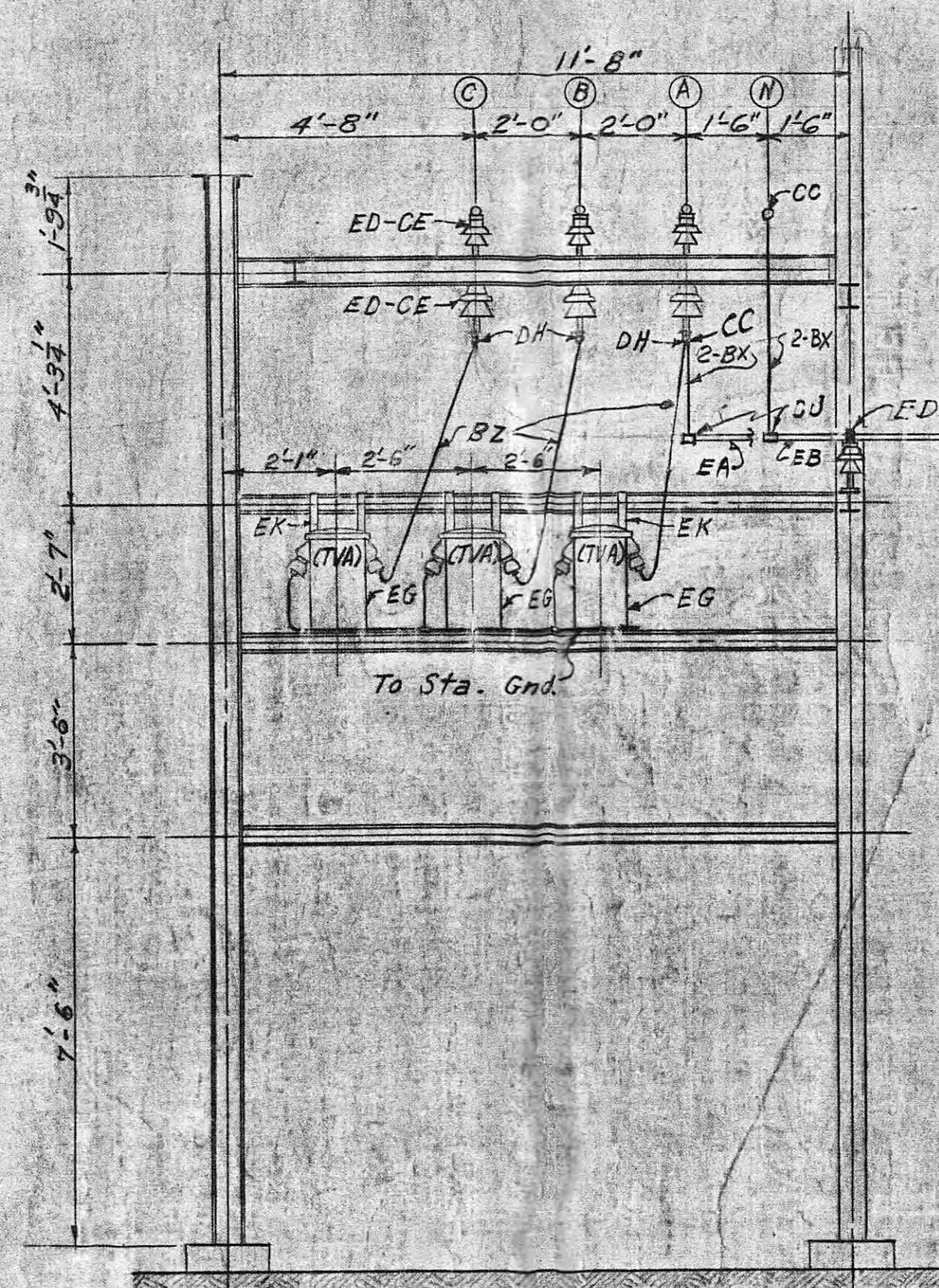
SECTION E-E



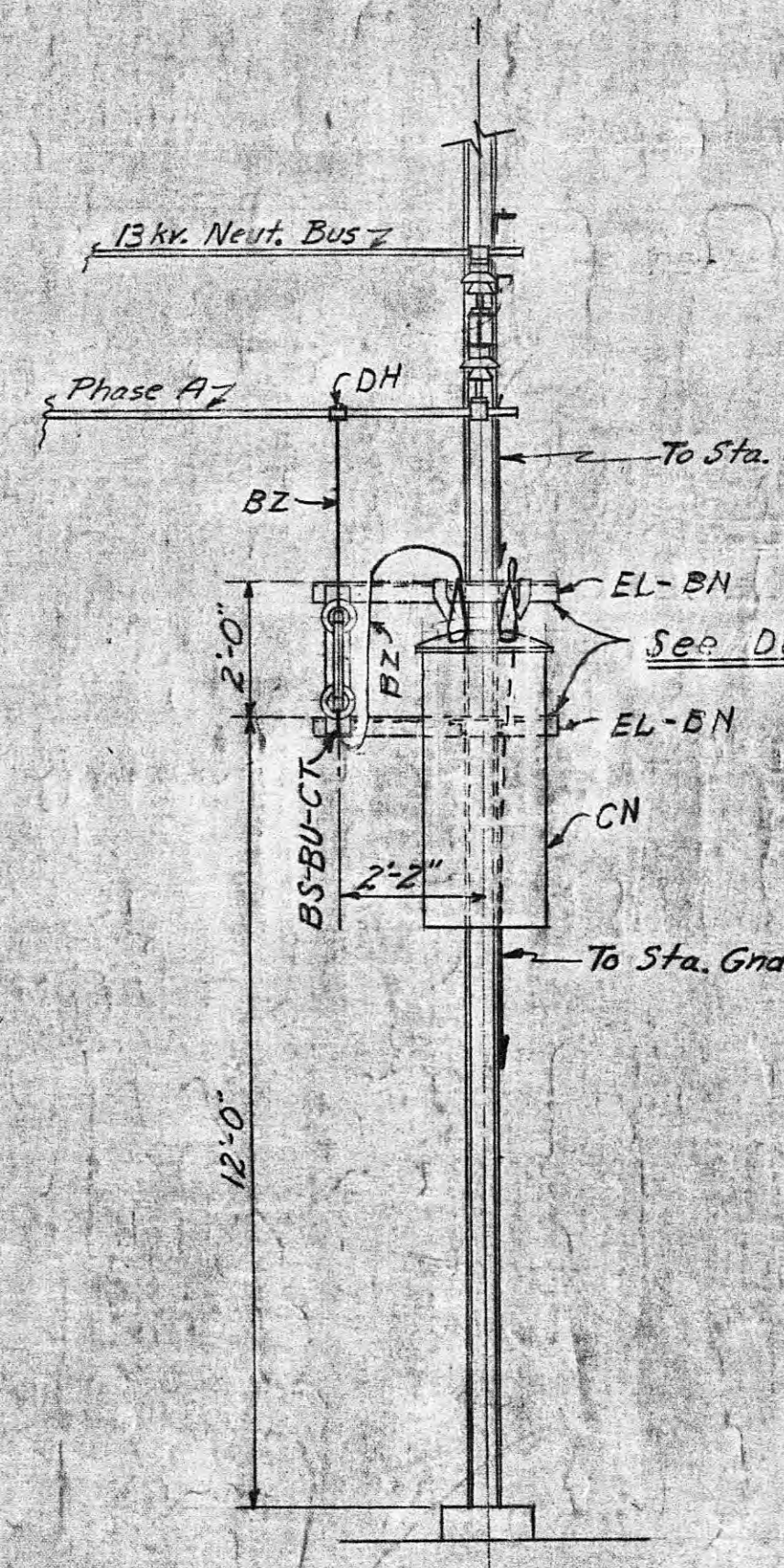
SECTION G-G



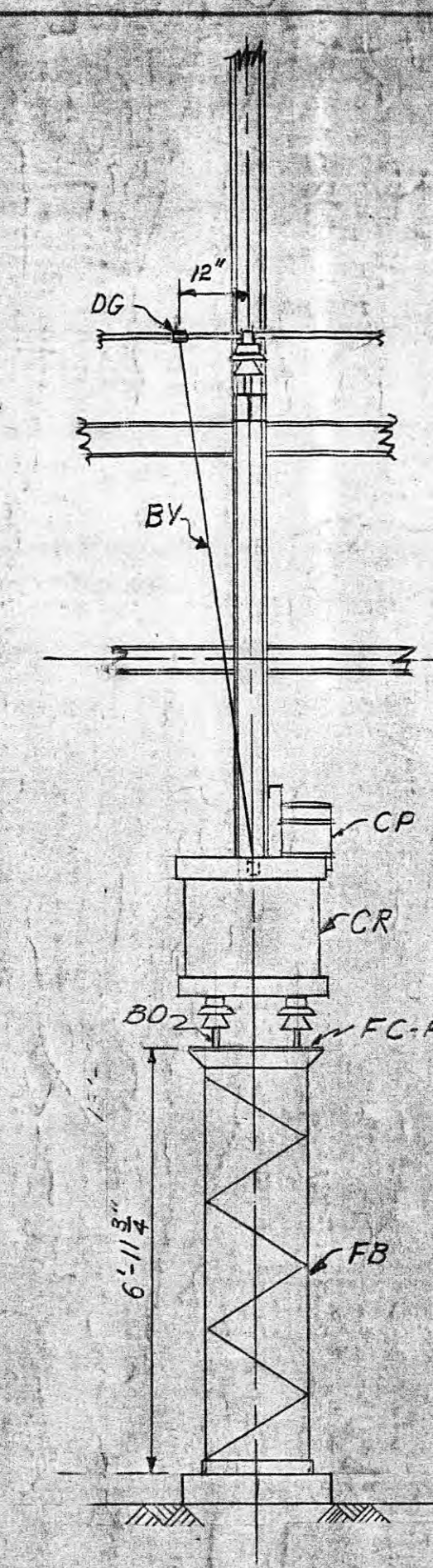
SECTION F-F



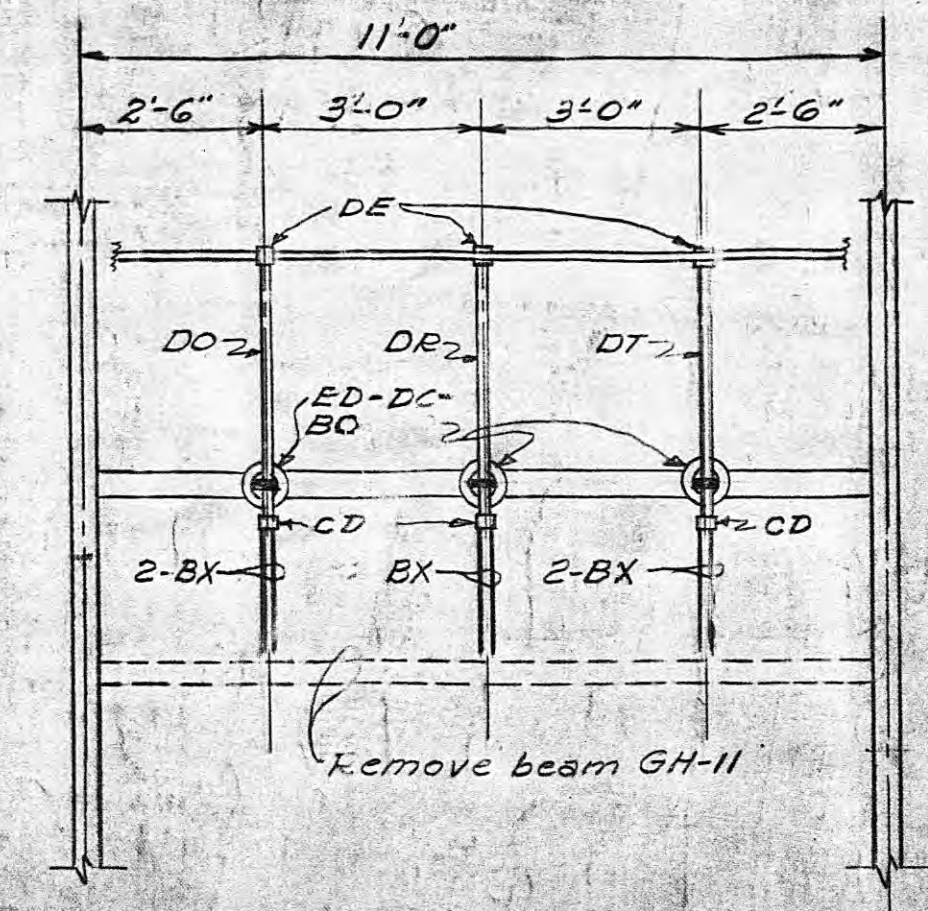
SECTION H-H



SECTION K-K



SECTION L-L

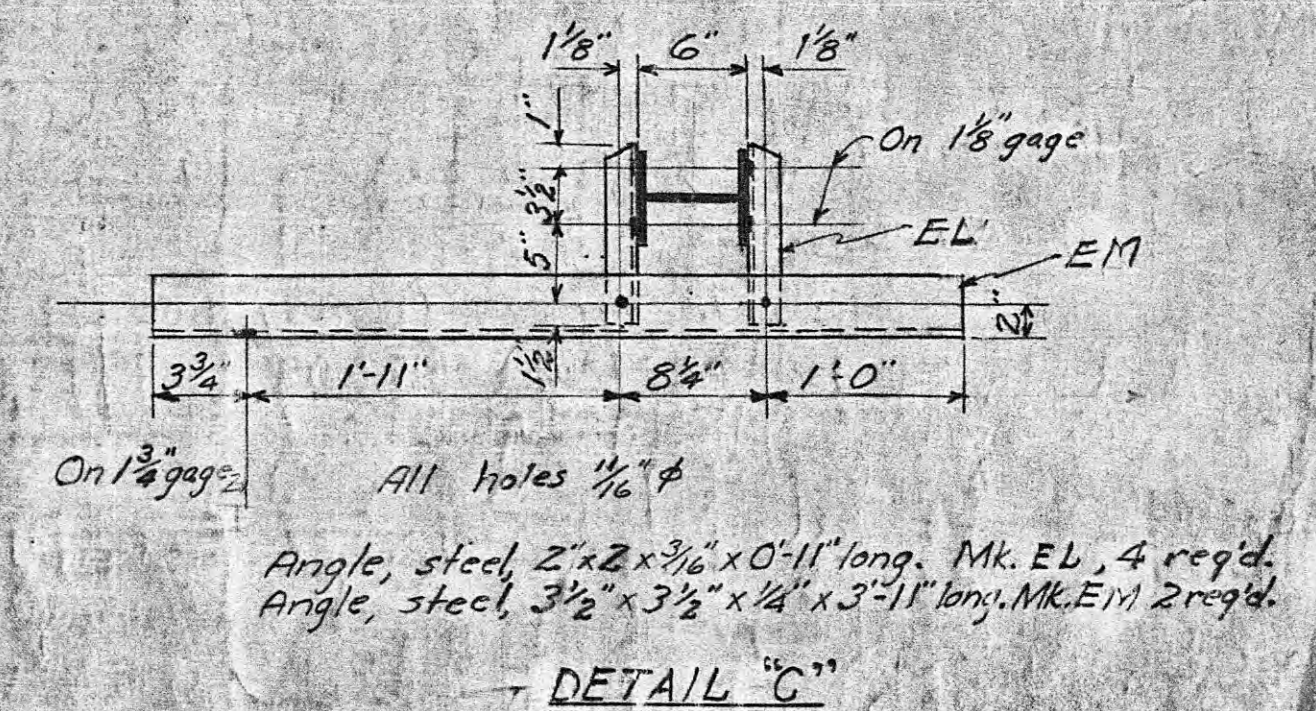


SECTION JJ

SAG TABLE

Sag for 750 MCM Str. Copper Conductor, 575# D.T. per conductor (250 D.T. per phase) Loading - 2# wind on 4' of ice, 46' Span

Temp.	30°	120°
Tension	370#	265#
Sag	1.6'	1.7'



DETAIL C

REVISION NOTE 1:-
Removed 2.3Kv. transf. bank and 2.3Kv. equipment.
Changed relaying C.T.s and location.
Changed bus tie connection.
Added Sta. Serv. Transf.
Note 2: Move 150/5 amp. metering C.T.s. Rockwood Feeder to operate OCB relays. Install new 400/5 amp. C.T.s to operate OCB relays in Oakdale circuit.

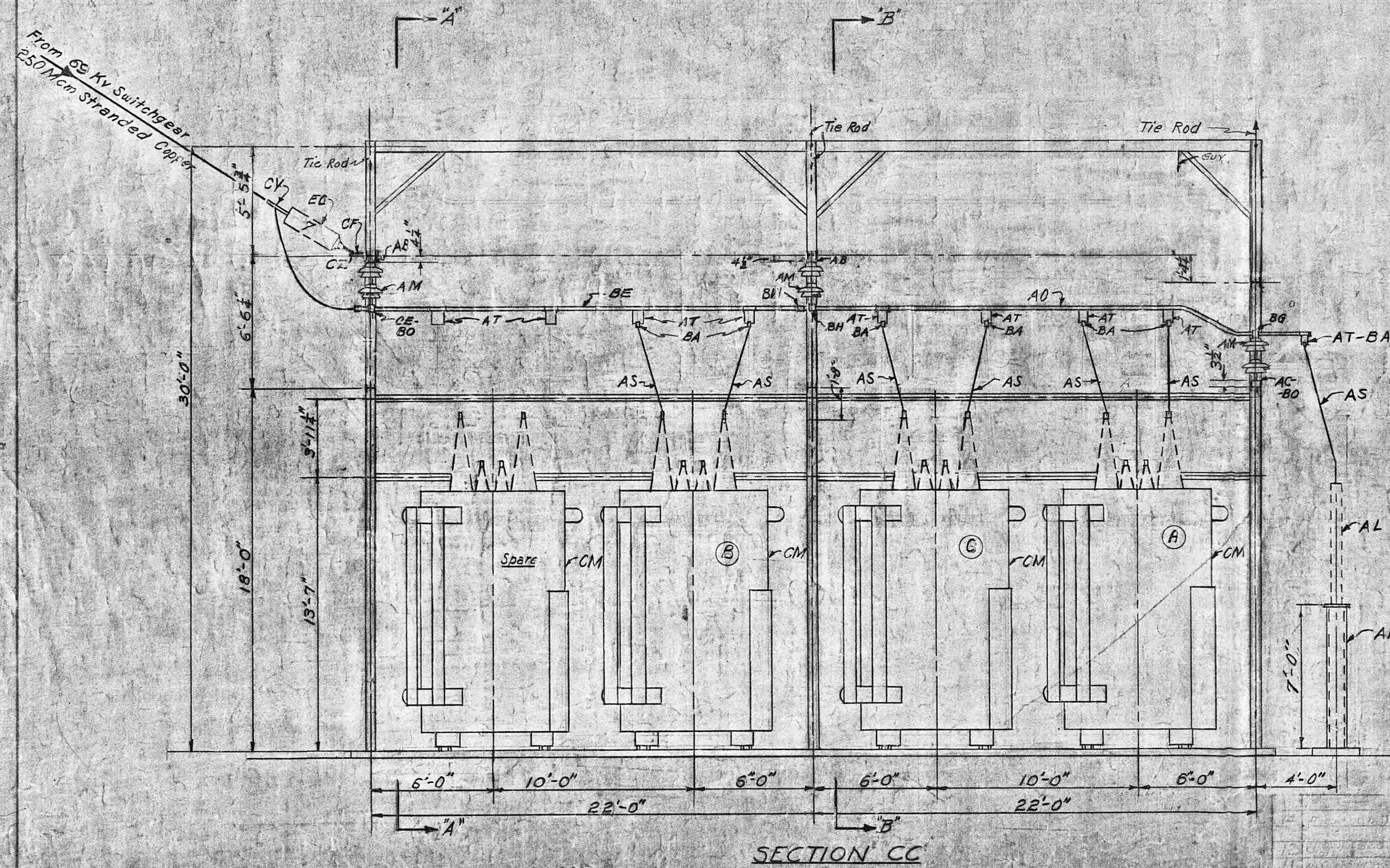
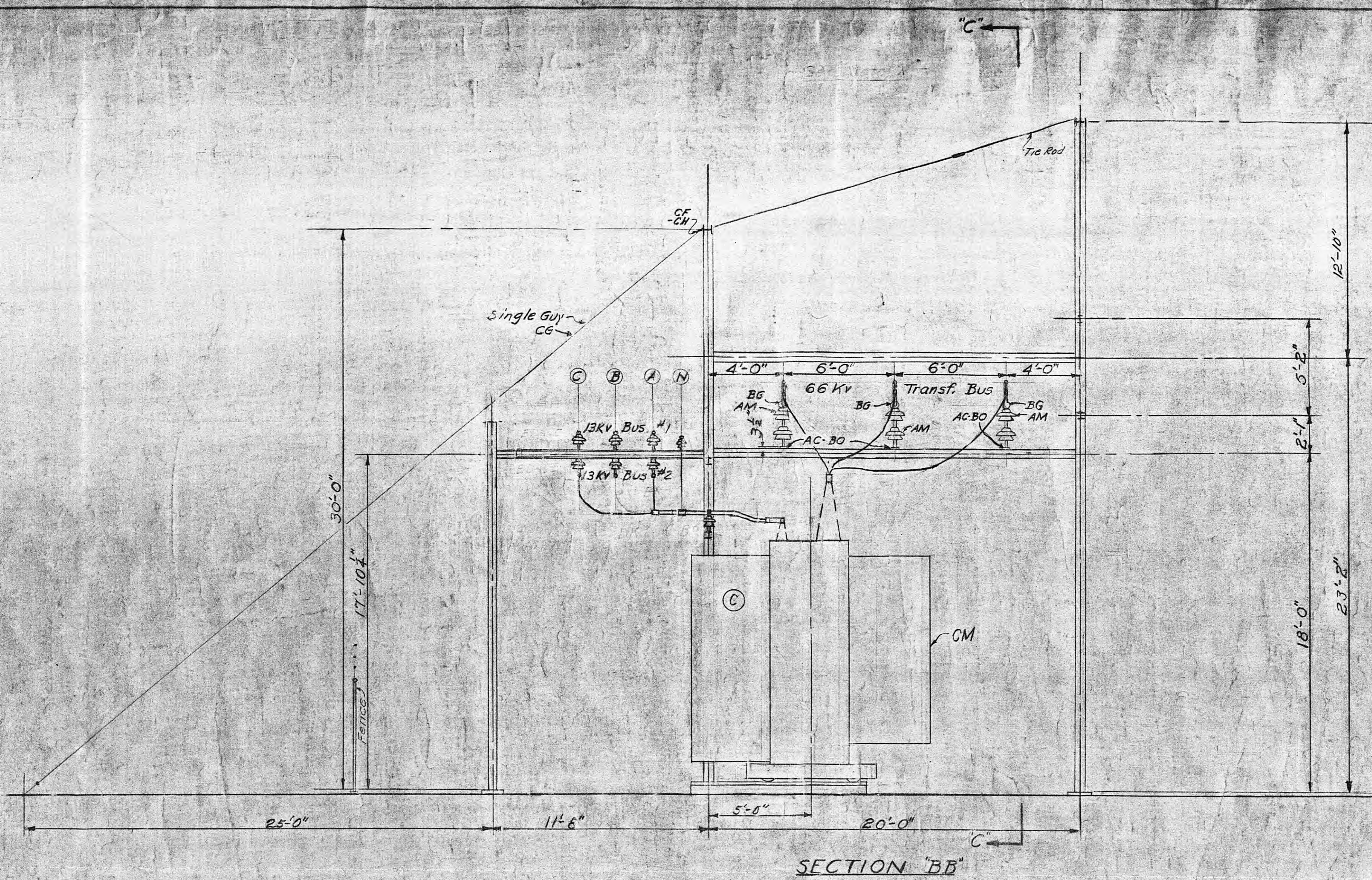
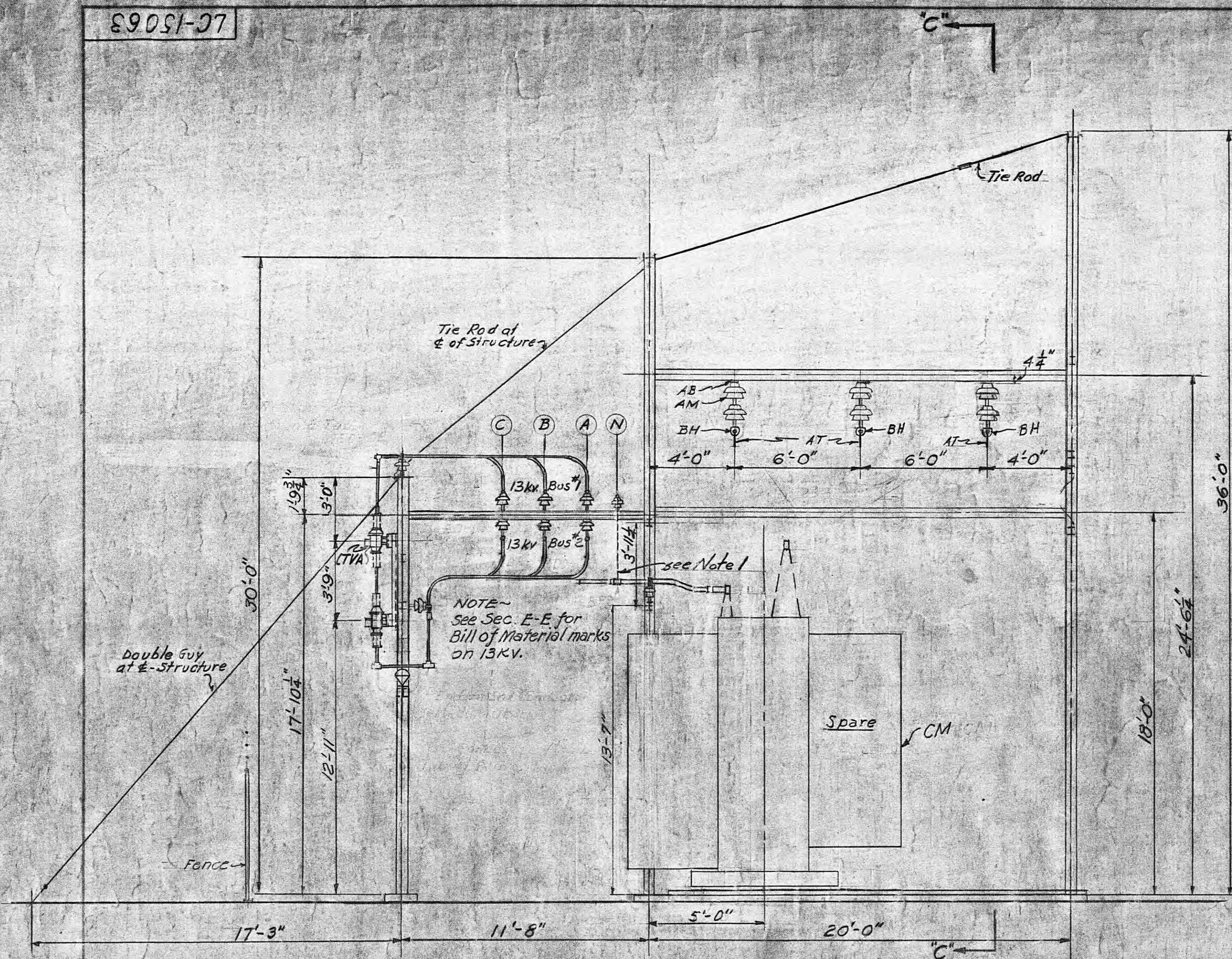
REFERENCE:
Bill of Material - BMC-15064

NOTES:
1. All phasing shown is TVA designation.
2. This sheet was sheet #2 of LC-15065.

17	W.O. 47830.01 - Lease-purchase to Harriman U.B. except 13KV metering C.T.'s & V.T.'s.	2/10/64	DOA
16	W.O. 35644 - See Rev. 1	2/10/64	LEB
15	Field changes.	12-9-63 ROK	LEB
14	W.O. 24620 - See Revision 1	5-6-66	DOF
13	W.O. 24620 - See Revision 1	11-3-66	DOF
12	W.O. 45117 - Field Changes	6-23-64	JRS

11	W.O. 45117 - Alterd 2.3KV bus	1-26-62	DDT
10	W.O. 45117 - Alterd 2.3KV bus	6-28-62	CDK
9	Field Change	3-19-61	GAO
8	Removed Rockwood Feeder	3-19-61	JTL
7	Field Changes	5-21-60	JLB
6	See Revision Note 2	1-28-60	LEP
5	See Revision Note 1	5-3-59	NWA
4	Added 100/5 C.T.s to 2.3KV bus	5-3-59	LEP
3	Changed 100/5 C.T.s to 100/5	10-4-58	LEP
2	Added 2500 volt connection to 2500Kva 2.3KV trans.	6-24-58	LEP
1	See Revision Note 1	1-26-58	LEP

TENNESSEE VALLEY AUTHORITY DEPARTMENT OF POWER ENGINEERING AND CONSTRUCTION HARRIMAN, TENN. SUBSTATION-69KV POWER TRANSFORMER BANK AND 13KV SWITCHGEAR-PLAN & SECTIONS			
SCALE: 3/8"=1'-0"	SUBMITTED: H.G.G.	APPROVED: 6-24-64	DATE: 7-26-63
DESIGNED: H.G.G.	CHECKED: R.W. Wilton	DATE: 7-26-63	SHEET 4 OF 4
LC-15063			R-17



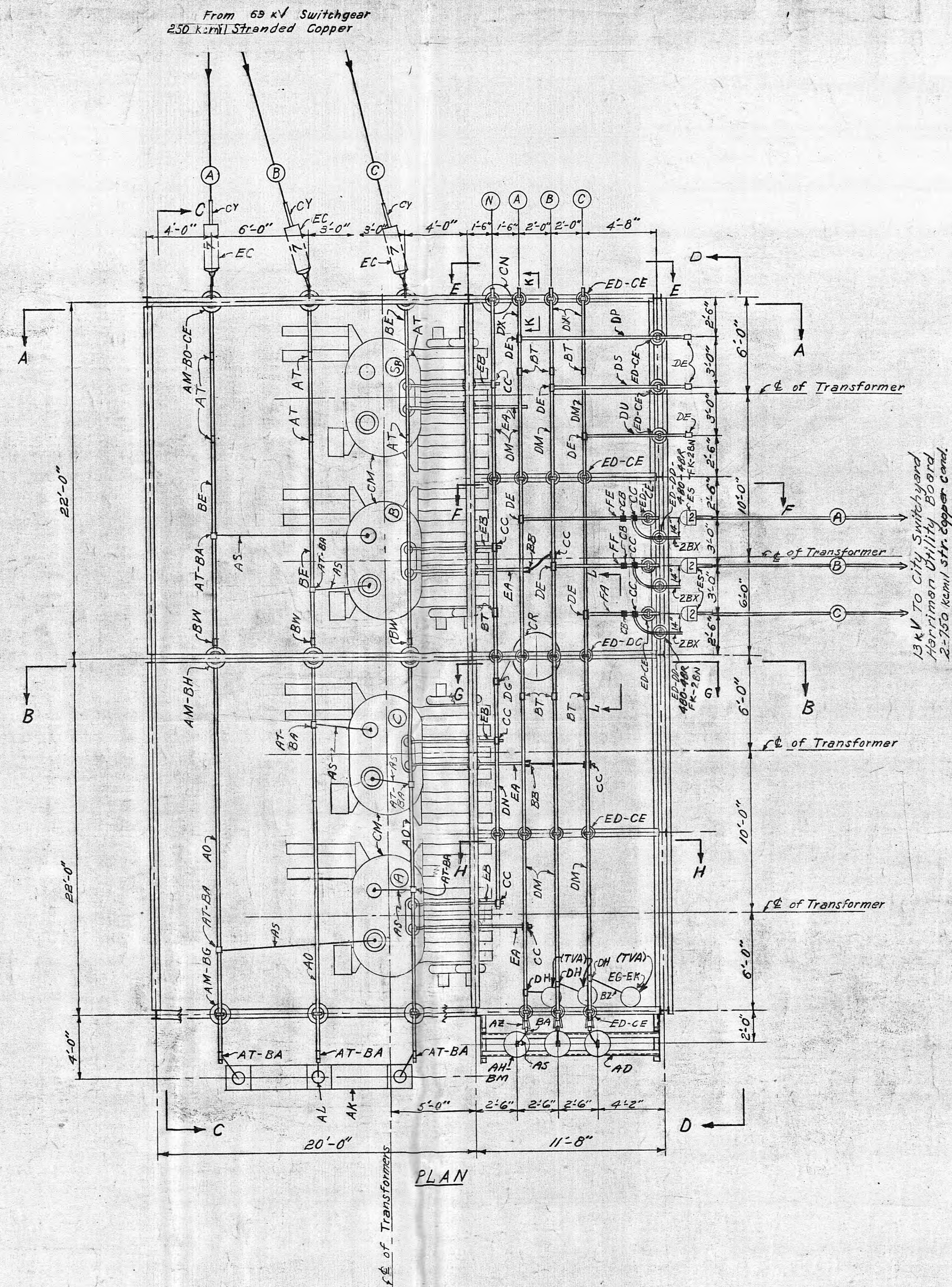
NOTE 1:-
Material for spare transformer neutral jumper is provided in Bill of Material. Jumper to be stored in the substation for future use.

REFERENCE:
Bill of Material. --- BMC-15164

REVISION NOTES:
1. Increase capacity. Remove 66 Kv upper bus, fuse, switch, and Lorain City, Rockwood, and Petros feeders. Relocate and install new 68Kv L.A.'s. Added feeder for 66 Kv switchgear. Was sheet # of 1 sheets. Title was, "66/12 Kv Transformer Bank Assembly."

NOTE: All phase markings are T.V.A. designations.

TENNESSEE VALLEY AUTHORITY DEPARTMENT OF POWER ENGINEERING AND CONSTRUCTION HARRIMAN, TENN. SUBSTATION-69 KV POWER TRANSFORMER BANK AND 13 KV SWITCHGEAR- PLAN & SECTION			
SCALE: 1"=10'	SUBMITTED: 6-24-43	DATE: 7-28-43	SHEET 2 OF 4 SHEETS
DESIGNED: AMR	APPROVED: [Signature]	LC15063	R-15



Revision Note #6:
W.O. # 35644; Installed 13 kV Voltage Regulator,
Switches & Associated Material.

Revision Note #4-
W.O. 35262 Installed One 600-5 amp multi-ratio
slip-over type C.T. on the H₂ bushing of each power
transformer. Replaced fuse tube of station
service transformer fuse.

Revision Note 3-
W.O. 44620, Replaced 1200 amp. bus tie switches with
2000 amp. switches. Added six 15KV, 3000-5 amp.
current transformers for metering and relaying,
three 15KV station type lightning arresters,
increased conductor to two 750 Mcm str. copper
cables from transformers to 13KV bus, bus tie
bay and Harriman U.B. bay, replaced 1 1/2" IPS copper
tube with 1 1/2" IPS copper tube. Removed one 14.4KV
O.C.B., and nine 15KV, 1200 amp. disconnect switches,
three 15KV distribution type lightning arresters, and three
15KV, 1200-5 ampere current transformers.

REFERENCES:
Bill of Material ----- BMC-15064
General Arrangement Plan ----- LC-14924
Foundation Plan ----- LC-15067
66 Kv Switchgear Assembly ----- LC-27061
For Steel Structure Details, See T.E.P. Drawing Nos.:
12487, 66248, 66249, 66250, 66252, 66253

For T.E.P. Layout, See T.E.P. Co. 16-C-45 & 16-C-46

W.O. 45117

7	W.O. 47230.01- Lease-purchase to Harriman U.B. except 134 metering V.T.s.	2/ 10/ 44	DOA
6	W.O. 35244.01- Sp. Rev. Note 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 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	7-2-71	HJT
5	Field changes.	12-26-43	RWK
4	W.O. 35262. See Rev. Note 4.	6-6-44	EHL
3	W.O. 35262. See Revision Note 3.	2-27-45	MFL
2	W.O. 45117. Fld.Changes	6-29-45	V.D.B.
1	W.O. 45117. Increase capacity, Added this sheet	6-29-45	CDK
ISSUE	REVISION.	DATE	SIGN.

TENNESSEE VALLEY AUTHORITY DIVISION OF POWER ENGINEERING AND CONSTRUCTION	
HARRIMAN, TENN. SUBSTATION-69KV POWER TRANSFORMER BANK AND 13 KV SWITCHGEAR-PLAN & SECTIONS	
SCALE: 1/4"=1'-0"	DATE: 7-26-43
DRAWN: AMR	CHECKED: R. W. WILSON
TRACED: JDF	APPROVED: H. M. MASON
CORRECT: JRS	SHEET 1 OF 4 SHEETS
LC-15063	

