

REVISIONS

NO.	DATE	DESCRIPTION
1	10-15-81	GENERAL
2	11-14-81	INLET & DIM. 1, 2, 3, 4, 5, 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

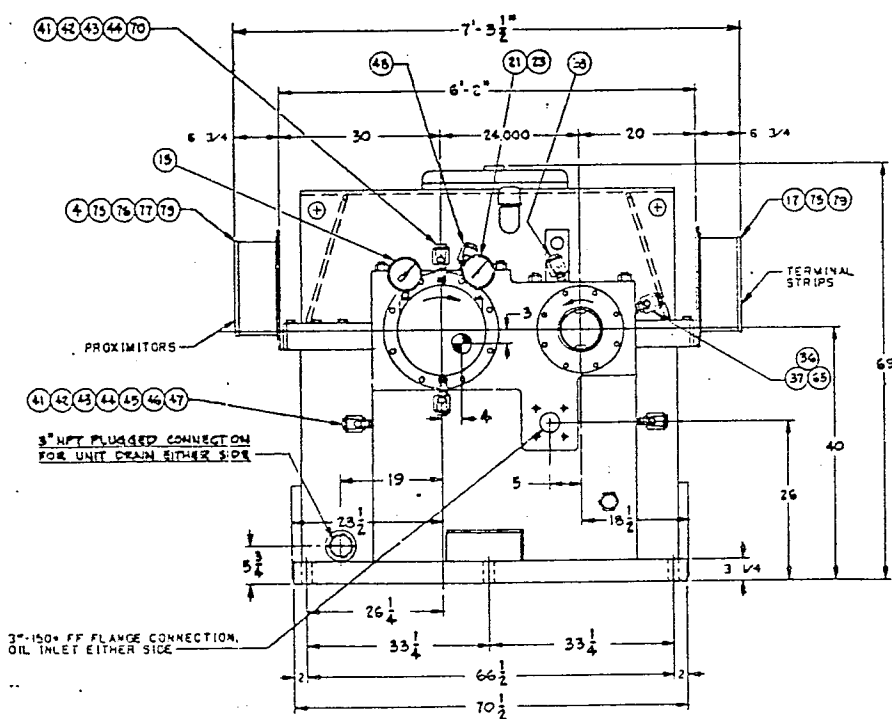
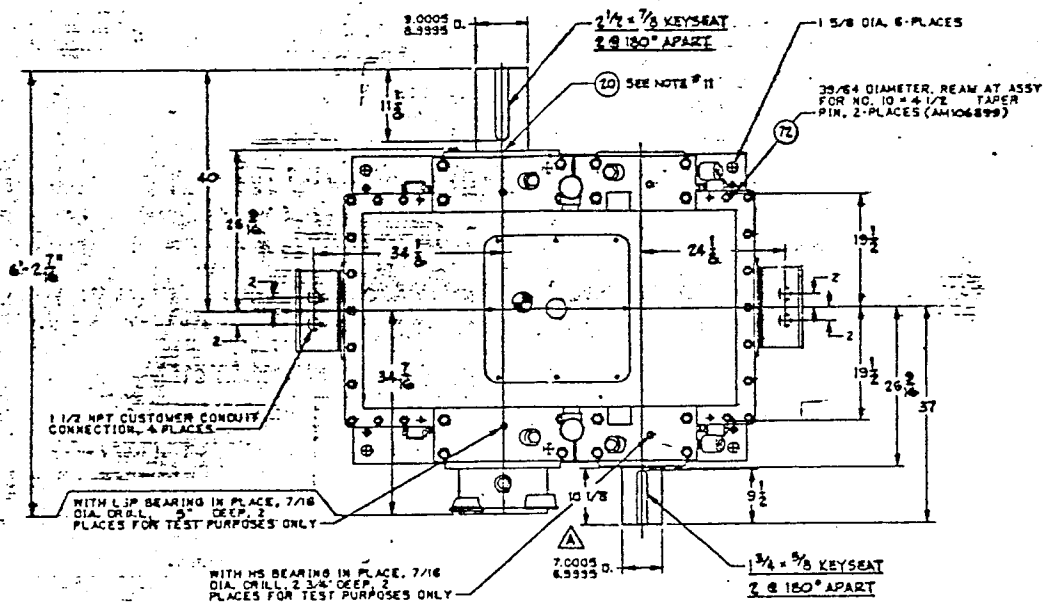
WESTINGHOUSE CANADA LIMITED

TURBINE AND GENERATOR DIVISION, HAMILTON, CANADA

M 33 TURBINE, SPEED RED. & GENERATOR

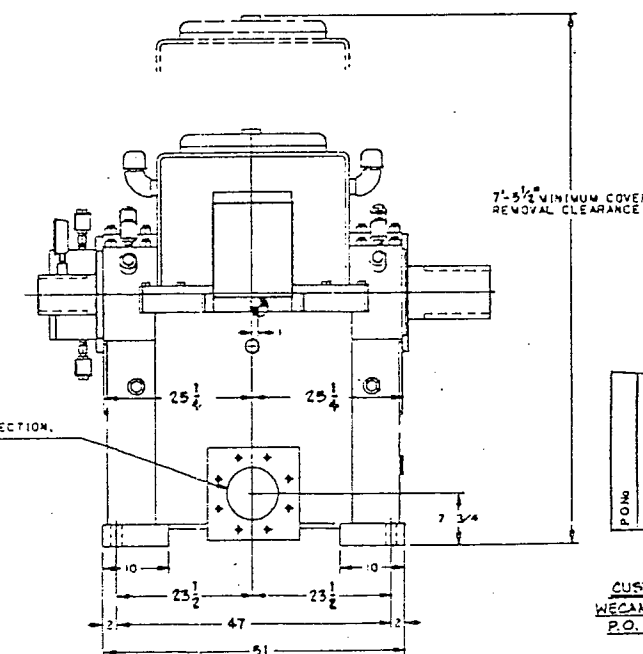
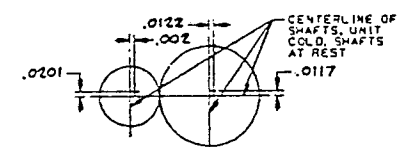
OUTLINE

119E770



- NOTES:**
- Interconnecting Piping Furnished By Customer Must Be Chemically Cleaned And Inhibited Before Operation.
 - Vibration Probe - Bentley-Neveada 7200 Series, 0.5 Meter Lead Length, Model No. 21573-02-12-05-02, 6 Probes - 2 Radial At Each HS Bearing Journal, 1 Radial At Each LSP Bearing - normal.
 - Extension Cable - Bentley-Neveada 7200 Series, 4.5 Meter Length, Model No. 21747-045-00.
 - Proximitors - Bentley-Neveada 7200 Series, 5 Meter Effective Cable Length, Model No. 18745-03.
 - Interconnecting Cable To Be Run In Rigid Conduit From Service Tee Head To (Weatherproof) Junction Box For Both T/C's And Vibration Probes.
 - Embedded T/C - Minco TC344TU548, "T" Calibration - Copper Constantan, 125°D, Stainless Steel Overraid, 6 Sensors - One Each Radial Bearing And Two In Thrust Bearing (1 - Inboard Side And 1 - Outboard Side).
 - Heaviest Maintenance Lift = 7,500 Lbs. (LSP Assembly).
 - Estimated Net Unit Weight = 19,000 Lbs.
 - Refer To Parts List For Balloned Items.
 - ⊙ - Denotes Center Of Gravity.
 - Installation Of Westinghouse Rotor Grounding Device Per Drawing, SK9333-2 On Low Speed Shaft Extension.

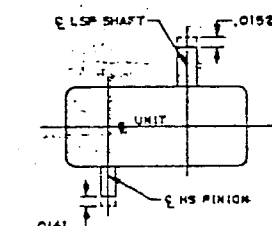
NOTE: High Speed Shaft Extension Length And Keyseat Length Are Subject To Change Pending Receipt Of Certified Coupling Print From Customer.



LUFKIN INDUSTRIES, INC.
LUFKIN, TEXAS

CUSTOMER: WESTINGHOUSE CANADA, INC.
CUSTOMER ORDER NO.: T4C-57973
LUFKIN ORDER NO.: A16310
INPUT 5285 RPM, OUTPUT 1800 RPM, RATIO 3.325:1
AGMA MECH. RATING, SF+H.O., 23,870 HP
SERVICE RATING, SF+H.O., 18,110 HP
RECOM'D. LUBE OR LIGHT TURBINE OIL 330 AT 100°F
RECOM'D. WATER FLOW --- GPM AT --- °F MAX. TEMP.
UNITS LESS LUBE SYSTEM
RECOM'D. OIL FLOW 92 GPM AT 20° PSI & 120 °F
HEAT REJECTION RATE 610,980 BTU/Hr

CERTIFIED DATE



WESTINGHOUSE CANADA INC.
NOTE - VENDOR DRAWING ASSIGNED WE CAN
DRAWING NUMBER FOR FILING PURPOSES ONLY
APPROVED: *[Signature]*
DISTRIBUTION: *[Signature]*
DWG NO 385SD41
VAILT INSTRUCTION - MICROFILM ONLY

CUSTOMER MARKINGS:
WE CAN NO: 25-S-8890-41
P.O. NO: T4C-57973

NOV 25 1980

REV.	DESCRIPTION OF CHANGE	DATE
A	HS SHAFT EXT. DIA. HAS 7/16"	11-18
	ADDED 10 1/8" DIMENSION	

CUSTOMER
CUSTOMER ORDER NO.
LUFKIN ORDER NO.
PRELIMINARY ☐
CERTIFIED FOR CONSTRUCTION ☐
BY _____ DATE _____

THIS DRAWING AND ALL INFORMATION
HEREON IS CONFIDENTIAL AND IS THE
PROPERTY OF LUFKIN INDUSTRIES, INC.
IT SHALL BE USED ONLY AS AUTHORIZED
BY LUFKIN INDUSTRIES, INC. AND IS
SUBJECT TO RETURN ON DEMAND.

ITEM	QTY	UNIT	DESCRIPTION
1	1	EA	PERFECTORS TO 7 A SO USED ON
2	1	EA	PARTS LIST
3	1	EA	NF5407C-4724

MATERIAL SPECIFICATIONS	LUFKIN NF5407C SPEED REDUCER PLAN, INSTALLATION, L-R UNIT RATIO 3.325:1, C'W ROTATION
DESIGNED BY: DAJ	DATE: 10-7-80
CHECKED BY: NTS	DATE: 11-18-80
LUFKIN INDUSTRIES, INC.	
SKI5086-8	

ANSI B1G-5
2" NOM. BORE

27.5 US GAL / MIN
29.4" C
40" C
1.0" W.G
16 FT. WD.

AA MAKES ON RISING LEVEL
BB MAKES ON FALLING LEVEL
CONTACTS RATED 1 MAX. VOLTAGE
AC 50 A / 440 V. / 2000 VA
LEAK DETECTOR CONN. DIAGRAM

1/2 B.S.P. ST. ST. TAPPED BOSS ON EACH
WATER CONNECTION. 1/2" B.S.P. PLUGS
SUPPLIED & FITTED BY B.E.M. LTD.

QTY.	REF.	PART No.	DESCRIPTION	MATL.	SPEC.	CODE No.	MATL. SIZE
------	------	----------	-------------	-------	-------	----------	------------

A hand-drawn diagram of a motor winding box. The box is rectangular with a hatched pattern. It has a top flange labeled 'GANGE'. On the left side, there is a vertical line labeled 'AUXILIARY TERM. BOX, STATOR WINDING R.D.'. On the right side, there is a vertical line labeled 'DATING LINE X (INDICATING GEOMETRIC CENTRE)'. At the bottom, there is a horizontal line labeled 'BEARING THRM. THERMOCOUPLES'. Inside the box, there are several labels: 'AIR INLET & OUTLET THRM.' at the top, 'THERMOCOUPLES, DE & MDE' in the middle, and 'BEARING THRM. THERMOCOUPLES' at the bottom.

[illegible]

NOTE:- THE PROVISION OF ANY COUPLING GUARD AT THIS END OF THE GENERATOR IS THE RESPONSIBILITY OF THE TURBINE MAKER.

BEARING PROXIMITY HOUSINGS, BENTLEY-NEVADA VIBRATION PROBES MOUNTED IN Y' AXIS.

HEATER TERMINAL BOX.

EXCH SOLEPLATE - 3 HOLES
FOR FOUNDATION BOLTS
Ø 43 C BORED Ø 102 = 43 DEEP

WEL PINS SUPPLIED BY B.E.M LTD BUT NOT FITTED.
THE HOLE Ø 24.5 TO BE DRILLED INTO THE SOLEPLATE AFTER FINAL ALIGNMENT OF Ø 24.5 HOLES IN STATOR FEET AND SIDES. FINALLY REAM HOLES AND FIT 25 DOWELS.

1915 OVER HANDLES

1525 WITHDRAWAL SPACE

1100

1300

800

1200

500 C.R.S.

500

1380

WATER OUTLET

WATER INLET

1/2 AIR RELEASE COCK

1/2 BSP WATERBOX DRAIN

NEUTRAL CUBICLE

LINE CUBICLE

ROTATION

1000

1020

2989

1820 B. MC. 5m. OF LINES (725)

340

250

150

80

4 EYEBOLTS - M24. FOR LIFTING COOLER ONLY

STATOR LIFTING BARS Ø 100 REMOVE COOLER FOR ACCESS

HOWBRAY MAGNETIC LEVEL SWITCHES - 2 OFF TYPE 501 / F83

4 EYEBOLT EACH 1/8-IN LINE AND NEUTRAL CUBICLE FOR LIFTING CUBICLES ONLY.

SEQUENCE FOR ROTATION ANTI-CLOCKWISE (NON-DRIVE END) (CLOCKWISE ON DRIVE END)

NOTE - THE FOLLOWING ITEMS ARE REMOVED FOR TRANSIT

- 1 TOP MOUNTED WATER COOLED AIR COOLER
- 2 LINE SIDE TERMINAL CUBICLE
- 2 NEUTRAL SIDE TERMINAL CUBICLE

JACKING PADS AT BOTH ENDS OF STATOR FOR AXIAL JACKING.

12 EARTHING PADS DIAGONALLY OPPOSITE ON STATOR FRAME, STUD & SOCKET AT ONE END.

DETAIL OF EARTH STUD

(e) PHASE SEQUENCE
T1-T3-T2 FOR ROTATION ANTI-CLOCKWISE
LOOKING ON NON-DRIVE END (CLOCKWISE
ON DRIVE END)

NOTE - THE FOLLOWING ITEMS ARE REMOVED FOR TRANSIT

⑥	1	TOP MOUNTED WATER COOLED AIR COOLER
	2	LINE SIDE TERMINAL CUBICLE
	3	NEUTRAL SIDE TERMINAL CUBICLE.

JACKING PADS AT BOTH ENDS OF
STATOR FOR AXIAL JACKING.

2 EARTHING PADS DIAGONALLY OPPOSITE
ON STATOR FRAME, STUD & SOCKET AT ONE END.

HEATER CONNECTION DIAGRAM:

HEATER CONNECTION DIAGRAM:

HE1

HE2

HE3

ALTERNATOR - 6 HEATERS E
 RATED 150 VOLTS 60 WATTS
 EXCITER - 2 HEATERS EACH
 RATED 250 VOLTS 30 WATTS
 LINE CUBICLE - 2 HEATERS E
 RATED 150 VOLTS 55 WATTS
 NEUTRAL CUBICLE - 2 HEATERS E
 RATED 250 VOLTS 55 WATTS
 TOTAL WATTS - 1253

NOTE: DYNAMIC LOADS ARE ADJUSTED TO STATIC LOAD.

191-23 KN
264.5 KN
337.7 KN

LINE TO LINE SHORT CIRCUIT
FAULTS SYNCHRONOUS

ADDITIONAL		
	↓	
	191-23 KN	STATIC LOAD
CIRCUIT	+ 264.5 KN	DYNAMIC LOAD
ING	= 457.7 KN	DYNAMIC LOAD

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

LUBRICANT LUBRICATION DETAILS:
 GRADE OF OIL = 150 GRADE VG 32 OIL
 OIL SUPPLY PRESSURE (NORMAL) = 20 P.S.I.
 OIL FLOW TO DRIVE END BRG. =
 OIL FLOW TO NON DRIVE END BRG. =
 OIL INLET TEMP = 49° C (120° F)
 OIL OUTLET TEMP =
 OIL EMERGENCY OIL SUPPLY PRESSURE (RUMDOWN) = 7-8 P.S.I.
 OIL EMERGENCY OIL FLOW = DRIVE END =
 NON DRIVE END = P.S.I.C.
 OIL EMERGENCY OIL SUPPLY TEMP = 71° C (160° F)
 THE BEARINGS ARE NOT DESIGNED TO TAKE IN EXCESSIVE LOADS. A LIMITED OIL FLOWING MUST BE FITTED. RUBBERS ARE INSULATED FROM HOUSINGS AND FITTED WITH DETACHABLE SHOCKING LINK.

400V 3 PHASE SUPPLY
DELTA CONNECTED

ALTERNATOR

STATOR
COURT BLOCK

NEUTRAL CUBICLE

EXCITER

W1 W2 W3 W4
W5 W6 W7 W8
W9 W10 W11 W12
W13 W14 W15 W16
W17 W18 W19 W20
W21 W22 W23 W24
W25 W26 W27 W28
W29 W30 W31 W32
W33 W34 W35 W36
W37 W38 W39 W40
W41 W42 W43 W44
W45 W46 W47 W48
W49 W50 W51 W52
W53 W54 W55 W56
W57 W58 W59 W60
W61 W62 W63 W64
W65 W66 W67 W68
W69 W70 W71 W72
W73 W74 W75 W76
W77 W78 W79 W80
W81 W82 W83 W84
W85 W86 W87 W88
W89 W90 W91 W92
W93 W94 W95 W96
W97 W98 W99 W100
W101 W102 W103 W104
W105 W106 W107 W108
W109 W110 W111 W112
W113 W114 W115 W116
W117 W118 W119 W120
W121 W122 W123 W124
W125 W126 W127 W128
W129 W130 W131 W132
W133 W134 W135 W136
W137 W138 W139 W140
W141 W142 W143 W144
W145 W146 W147 W148
W149 W150 W151 W152
W153 W154 W155 W156
W157 W158 W159 W160
W161 W162 W163 W164
W165 W166 W167 W168
W169 W170 W171 W172
W173 W174 W175 W176
W177 W178 W179 W180
W181 W182 W183 W184
W185 W186 W187 W188
W189 W190 W191 W192
W193 W194 W195 W196
W197 W198 W199 W200
W201 W202 W203 W204
W205 W206 W207 W208
W209 W210 W211 W212
W213 W214 W215 W216
W217 W218 W219 W220
W221 W222 W223 W224
W225 W226 W227 W228
W229 W230 W231 W232
W233 W234 W235 W236
W237 W238 W239 W240
W241 W242 W243 W244
W245 W246 W247 W248
W249 W250 W251 W252
W253 W254 W255 W256
W257 W258 W259 W260
W261 W262 W263 W264
W265 W266 W267 W268
W269 W270 W271 W272
W273 W274 W275 W276
W277 W278 W279 W280
W281 W282 W283 W284
W285 W286 W287 W288
W289 W290 W291 W292
W293 W294 W295 W296
W297 W298 W299 W300
W301 W302 W303 W304
W305 W306 W307 W308
W309 W310 W311 W312
W313 W314 W315 W316
W317 W318 W319 W320
W321 W322 W323 W324
W325 W326 W327 W328
W329 W330 W331 W332
W333 W334 W335 W336
W337 W338 W339 W340
W341 W342 W343 W344
W345 W346 W347 W348
W349 W350 W351 W352
W353 W354 W355 W356
W357 W358 W359 W360
W361 W362 W363 W364
W365 W366 W367 W368
W369 W370 W371 W372
W373 W374 W375 W376
W377 W378 W379 W380
W381 W382 W383 W384
W385 W386 W387 W388
W389 W390 W391 W392
W393 W394 W395 W396
W397 W398 W399 W400
W401 W402 W403 W404
W405 W406 W407 W408
W409 W410 W411 W412
W413 W414 W415 W416
W417 W418 W419 W420
W421 W422 W423 W424
W425 W426 W427 W428
W429 W430 W431 W432
W433 W434 W435 W436
W437 W438 W439 W440
W441 W442 W443 W444
W445 W446 W447 W448
W449 W450 W451 W452
W453 W454 W455 W456
W457 W458 W459 W460
W461 W462 W463 W464
W465 W466 W467 W468
W469 W470 W471 W472
W473 W474 W475 W476
W477 W478 W479 W480
W481 W482 W483 W484
W485 W486 W487 W488
W489 W490 W491 W492
W493 W494 W495 W496
W497 W498 W499 W500
W501 W502 W503 W504
W505 W506 W507 W508
W509 W510 W511 W512
W513 W514 W515 W516
W517 W518 W519 W520
W521 W522 W523 W524
W525 W526 W527 W528
W529 W530 W531 W532
W533 W534 W535 W536
W537 W538 W539 W540
W541 W542 W543 W544
W545 W546 W547 W548
W549 W550 W551 W552
W553 W554 W555 W556
W557 W558 W559 W560
W561 W562 W563 W564
W565 W566 W567 W568
W569 W570 W571 W572
W573 W574 W575 W576
W577 W578 W579 W580
W581 W582 W583 W584
W585 W586 W587 W588
W589 W590 W591 W592
W593 W594 W595 W596
W597 W598 W599 W600
W601 W602 W603 W604
W605 W606 W607 W608
W609 W610 W611 W612
W613 W614 W615 W616
W617 W618 W619 W620
W621 W622 W623 W624
W625 W626 W627 W628
W629 W630 W631 W632
W633 W634 W635 W636
W637 W638 W639 W640
W641 W642 W643 W644
W645 W646 W647 W648
W649 W650 W651 W652
W653 W654 W655 W656
W657 W658 W659 W660
W661 W662 W663 W664
W665 W666 W667 W668
W669 W670 W671 W672
W673 W674 W675 W676
W677 W678 W679 W680
W681 W682 W683 W684
W685 W686 W687 W688
W689 W690 W691 W692
W693 W694 W695 W696
W697 W698 W699 W700
W701 W702 W703 W704
W705 W706 W707 W708
W709 W710 W711 W712
W713 W714 W715 W716
W717 W718 W719 W720
W721 W722 W723 W724
W725 W726 W727 W728
W729 W730 W731 W732
W733 W734 W735 W736
W737 W738 W739 W740
W741 W742 W743 W744
W745 W746 W747 W748
W749 W750 W751 W752
W753 W754 W755 W756
W757 W758 W759 W760
W761 W762 W763 W764
W765 W766 W767 W768
W769 W770 W771 W772
W773 W774 W775 W776
W777 W778 W779 W780
W781 W782 W783 W784
W785 W786 W787 W788
W789 W790 W791 W792
W793 W794 W795 W796
W797 W798 W799 W800
W801 W802 W803 W804
W805 W806 W807 W808
W809 W810 W811 W812
W813 W814 W815 W816
W817 W818 W819 W820
W821 W822 W823 W824
W825 W826 W827 W828
W829 W830 W831 W832
W833 W834 W835 W836
W837 W838 W839 W840
W841 W842 W843 W844
W845 W846 W847 W848
W849 W850 W851 W852
W853 W854 W855 W856
W857 W858 W859 W860
W861 W862 W863 W864
W865 W866 W867 W868
W869 W870 W871 W872
W873 W874 W875 W876
W877 W878 W879 W880
W881 W882 W883 W8

EXCITER FIELD & PMG INT DIAGRAM

P.M.G.
TTTTT
EXC. FIELD
TTTTT

16 AMP
1 PULSE

16V TERM
80
12 AMP
100VPM

DEFLECTOR

	LS	N
1	T	T
2	T	T
3	T	T
4	T	T
5	T	T
6	T	T

TURN BACK TO AVR FROM APP TO EARTH FAULT MONITOR

OVERVOLTAGE AS INDICATED BY DEFLECTORS TEMPERATURE AROUND THE

WINDING COLOUR		PHASE
WHITE	RED	
TR1.1, TR1.2, TR1.3	1	
TR2.1, TR2.2, TR2.3	2	
TR3.1, TR3.2, TR3.3	3	
TR4.1, TR4.2, TR4.3	1	
TR5.1, TR5.2, TR5.3	2	
TR6.1, TR6.2, TR6.3	3	

E PROTECTION DEVICES FITTED TO STATOR WINDING (1 TO 6).

E DETECTORS DISTRIBUTED TO STATOR WINDING 2 PER PHASE

NORMAL PHASE

STATOR WINDING 270° WITH VOLTAGE PROTECTION DEVICES.

THERMOCOUPLES (COPPER CONSTANTAN)

M.B.E. B.E. M.W. AIR AIR

B.B.C. INLET INLET OUTLET OUTLET

1 1/2 1 1/2 2 1 1/2 2 1 1/2

+ + + + + + + + + +

TR1.2 TR1.3
TR2.2 TR2.3
TR3.2 TR3.3
TR4.2 TR4.3
TR5.2 TR5.3
TR6.2 TR6.3

THERMOCOUPLES (COPPER CONSTANTAN)

T.C. COM STARTER

T.C. COM STARTER

T.C. COM STARTER

T.C. COM STARTER

T.C. COM STARTER

T.C. COM STARTER

T.C. COM STARTER

T.C. COM STARTER

T.C. COM STARTER

T.C. COM STARTER

T.C. COM STARTER

T.C. COM STARTER

T.C. COM STARTER

T.C. COM STARTER

T.C. COM STARTER

T.C. COM STARTER

T.C. COM STARTER

T.C. COM STARTER

T.C. COM STARTER

T.C. COM STARTER

T.C. COM STARTER

THERMOCOUPLES (COPPER CONSTANTAN)

THERMOCOUPLES (COPPER CONSTANTAN)

THERMOCOUPLES (COPPER CONSTANTAN)

THERMOCOUPLES (COPPER CONSTANTAN)

THERMOCOUPLES (COPPER CONSTANTAN)

THERMOCOUPLES (COPPER CONSTANTAN)

THERMOCOUPLES (COPPER CONSTANTAN)

THERMOCOUPLES (COPPER CONSTANTAN)

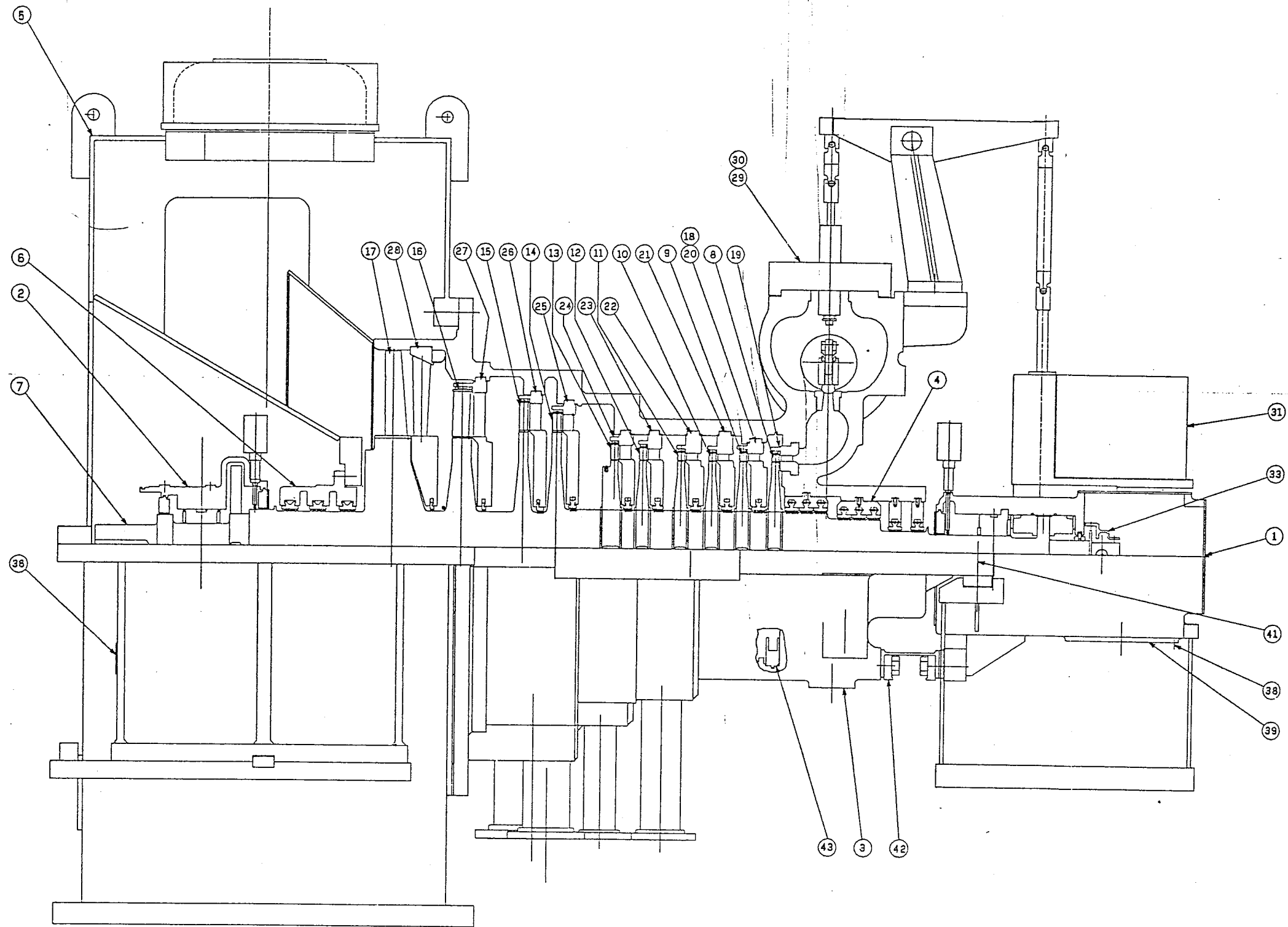
[illegible][illegible]

ROTOR DETAILS		WEIGHT
ROTOR SHAFT	5525 K _g	TOTAL ROTOR
POLE TIPS (4)	1088 K _g	EXC' ARM
ROTOR COILS (4)	1300 K _g	TOTAL ST
ROTOR FANS (2)	260 K _g	BEARINGS
EXCITER ARM & PMG	370 K _g	EXCITER
		COOLER
ROTOR WEIGHT	8540 K _g	SOLE PLATE
(MC EXC' ARM)		
GD ² OF ROTOR	2512 K _g M ²	
(WR ² OF ROTOR	14880 IN R ²)	
RADIUS OF CYRATION	= .771 M (10+47 INCHES)	TOTAL EXCLUDED

MOTOR WEIGHT INC
 8540 Kg
 MOTOR WEIGHT INC
 31360 Kg
 2640 Kg
 1120 Kg


	<p>CONTRACT 01/60786 A</p> <p>CUSTOMER WESTINGHOUSE CANADA INC FOR BLOUNT/WARREN CO LTD</p> <p>FRAME B56MHW 116-2D/4P</p> <p>OUTPUT 15000 KVA 13500 KW</p> <p>SPEED 1800 R.P.M</p> <p>VOLTS 13800</p> <p>AMPS 627.5</p> <p>PHASES 3</p> <p>PERIODS 60</p> <p>P.F. 0.9</p> <p>AMBIENT 40°C</p> <p>ENCLOSURE C.A.C.W</p>
--	--

[illegible]

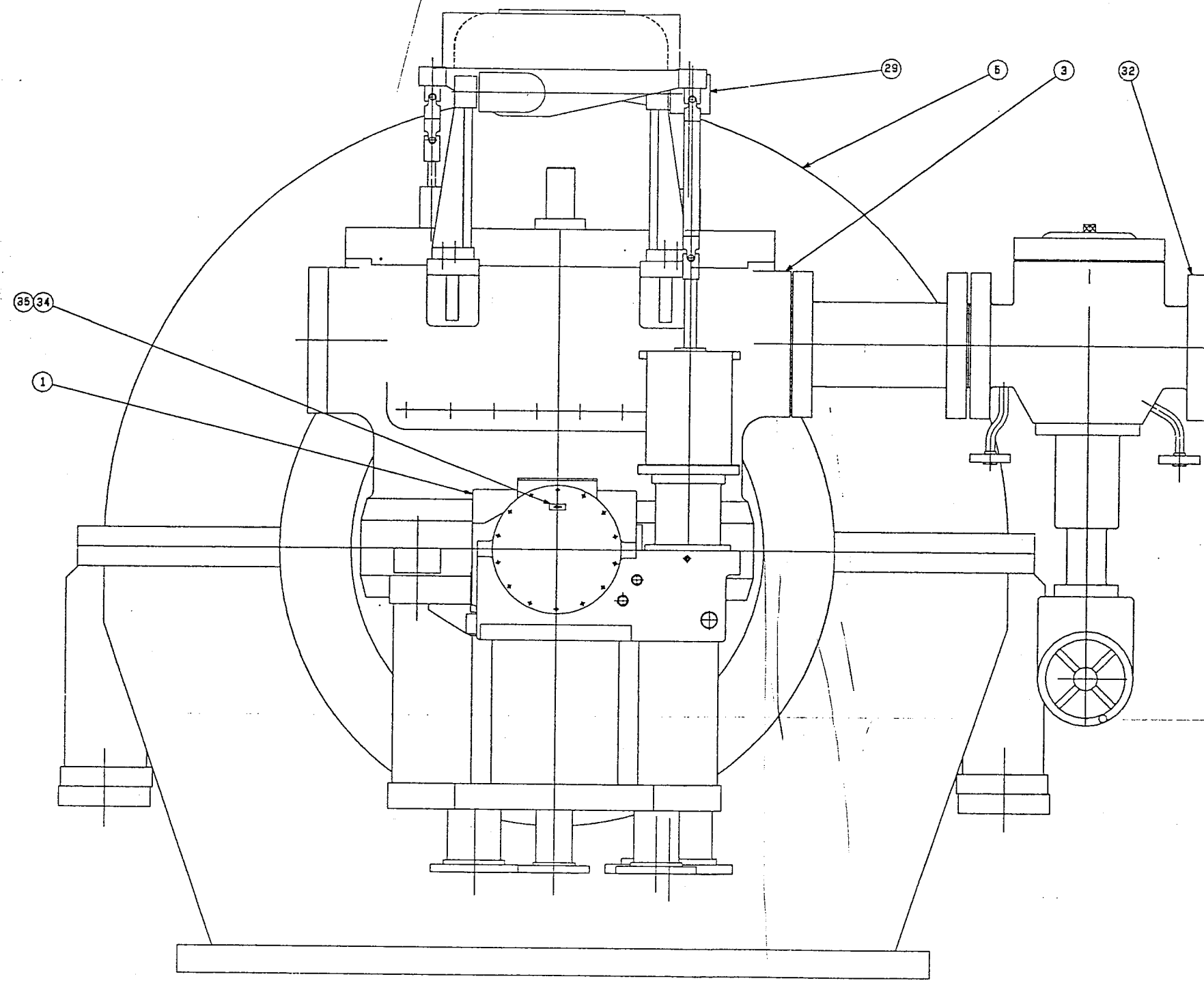


CADD'S DRAWING NO MANUAL CHANGES ALLOWED
CERTIFIED FOR CONSTRUCTION

TURCE

Westinghouse Canada Inc.		
TUBES AND GENERATOR DIVISION HAMILTON CANADA		
M 25/33 STEAM TURBINE		
LONGITUDINAL SECTION		
DATE	SCALE	119E892
11/11/82	1/2" = 1'-0"	1

E
D
C
B
A



PART NO.		PAGE		WESTINGHOUSE CANADA INC.	
119E892		1		M 25/33 STEAM TURBINE LONGITUDINAL SECTION	
ITEM NO.	DESCRIPTION	SIZE-REF. INFORMATION	IDENTIFICATION	QTY	UNIT
01	BEARING BKT. (INL. END)				
02	BEARING BKT. (EXH. END)				
03	INLET CYL. BASE & COVER ASSY.				
04	INL. SEAL RING & MSG. ASSY.				
05	EXH. CYL. BASE & COVER ASSY.				
06	LAND EXHAUST ASSY.				
07	ROTOR SHAFT ASSY.				
08	BLADE & DISC ASSY.	(RATEAU 1 STG. # 1)			
09	BLADE & DISC ASSY.	(RATEAU 1 STG. # 2)			
10	BLADE & DISC ASSY.	(RATEAU 1 STG. # 3)			
11	BLADE & DISC ASSY.	(RATEAU 1 STG. # 4)			
12	BLADE & DISC ASSY.	(RATEAU 1 STG. # 5)			
13	BLADE & DISC ASSY.	(RATEAU 1 STG. # 6)			
14	BLADE & DISC ASSY.	(RATEAU 1 STG. # 7)			
15	BLADE & DISC ASSY.	(RATEAU 1 STG. # 8)			
16	BLADE & DISC ASSY.	(RATEAU 1 STG. # 9)			
17	BLADE & DISC ASSY.	(RATEAU 1 STG. # 10)			
18	DIAPH. SEAL RINGS & ADJUSTING BLOCKS				
19	NOZZLE BLOCK MAB				
20	DIAPHRAGM (STG. 2)				
21	DIAPHRAGM (STG. 3)				
22	DIAPHRAGM (STG. 4)				
23	DIAPHRAGM (STG. 5)				
24	DIAPHRAGM (STG. 6)				
25	DIAPHRAGM (STG. 7)				
26	DIAPHRAGM (STG. 8)				
27	DIAPHRAGM (STG. 9)				
28	DIAPHRAGM (STG. 10)				
29	STEAM CHEST COVER & LINKAGE ASSY.				
30	STEAM CHEST VALVE ASSY.				
31	SERVO MOTOR & ACTUATOR LINKAGE ASSY.				
32	TRIP & THROTTLE VALVE				
33	SPEED PICK-UP ASSY.				
34	NAMEPLATE (ROTATION)				
35	ADHESIVE EPOXY RESIN				
36	NAMEPLATE (RATING)				
37	HARDWARE DETAILS				
38	BOLT HEX. HD. 875X2.25				
39	GASKET				
40	OVERSPEED TRIP WRENCH				
41	CYLINDER SUPPORT	(INL. END)			
42	CENTERING CHANNEL	(INL. END)			
43	BLADE BAFFLE	(FIRST STAGE)			

D

11

- [



11


LIST OF TERMINAL POINTS			
CONN NO.	DESCRIPTION	CONDITIONS	NOTES
B1	T & T VALVE INLET	600 PSIG 752°F, 126979 LB/HR	6
B2	EXHAUST	2.5" HgA, 108841 LB/HR	6
B15	T & T VLV ABOVE SEAT DRAIN	600 PSIG 752°F	1,4,6
B16	T & T VLV BELOW SEAT DRAIN	600 PSIG 752°F	1,2,6
B11	1ST STAGE DRAIN	357 PSIG 722°F	1,2,6,17
B24	EJECTOR MOTIVE STEAM SUPPLY	600 PSIG 752°F 100 LB/HR	6,15
B65	INLET GLAND HP LEAKOFF DRAIN	33 PSIG 690°F	1,2,6,17
B34H	INLET GLAND IP LEAKOFF	3 PSIG 692°F 140 LB/HR TO	1,6
	LEAKOFF AT STARTUP,	3 PSIG 687°F 218 LB/HR FROM	
	LEAKOFF AT FULL LOAD		
B34A	EXHAUST GLAND SEALING STEAM SUPPLY	3 PSIG 350°F 269 LB/HR 100 PSIG MAX.	1,6
B34J	EXHAUST GLAND SEALING STEAM SUPPLY	3 PSIG NORMAL 100 PSIG MAX.	6
	PRESS. GAUGE CONN.		
B74	DEAERATOR EXTRACTION (#4 EXT'N)	84.4 PSIA, 392.3°F, 7961 LB/HR	6,8,11,19
B75	DEAERATOR EXTRACTION (#3 EXT'N)	50.0 PSIA, 299.4°F, 4304 LB/HR	6,8,11,19
B24A	EJECTOR SUPPLY STRAINER DRAIN	600 PSIG 752°F	1,2,6
X2	RUPTURE DISC DISCHARGE	5 PSIG 108841 LB/HR	14
B34B	SEALING STEAM TO EXHAUST GLAND	SEE B34A	1,6,9,10,12
B34C	CONNECTION TO INLET GLAND IP LEAKOFF	SEE B34H	1,6,9,12
B34D	STEAM SUPPLY	600 PSIG 752°F 385 LB/HR	6,9,12
B34E	RELIEF VALVE DISCHARGE	2 IN HgA 700°F	1,3,6
B34F	RUPTURE DISC	BURSTS AT 100 PSIG, MAX. FLOW 800 LB/HR	6,14
B34G	PRESS. CONTROLLER AND GAUGE CONN.	3 PSIG NORMAL 100 PSIG MAX. MUM	6
B35A	DESUPERHEATER WATER SUPPLY	125 PSIG MAX., 34 LB/HR, 85°F	9,10,12, 6
F6A	AIR SUPPLY, SEALING STEAM SUPPLY UNIT	100 PSIG	1,6
X1	SEALING STEAM DRAIN	3 PSIG 350°F NORMAL	10,6,1
		100 LB/HR, 85°F VALVE FAILED OPEN	
F18	GLAND CONDENSER VENT		6
B25	GLAND CONDENSER CONDENSATE DRAIN	14.7 PSIA 210°F, 280 LB/HR	6,1
B27	GLAND CONDENSER COOLING WATER SUPPLY	125 PSIG MAX; 85°F; 87 USGPM	6
B28	GLAND CONDENSER COOLING WATER DRAIN	95°F	6,1
B76	HEATER #2 EXTRACTION	23.1 PSIA, 235.7°F, 5667 LB/HR	6,8,11,19
B77	HEATER #1 EXTRACTION	9.5 PSIA, 190.5°F, 7809 LB/HR	6,8,11,19
E58C	SOLENOID VALVE	125 VOC	6,7
E93	LOCAL CONTROL PANEL		6,7

DEVICE LIST						
MECHANICAL IDENT.	ELECTRICAL IDENT.	ITEM NO.	DESCRIPTION	SETTING	INDICATION	DEVICE LOCATION
PI001		1	SUPPLY STEAM PRESSURE			A
PI002A/B		2	GLAND SEAL STEAM PRESSURE		3 PSIG	A,D
PI003		3	GLAND EJECTOR SUCTION PRESSURE		2-3 IN Hg VAC	A
PI004		4	TURBINE 1st STAGE PRESSURE			A
PI005		5	EXHAUST STEAM PRESSURE		2.5 IN Hg VAC	A
PSHG005A	63VA	6	PRESSURE SWITCH - EXHAUST	ALARM AT 22 inHg VAC DECR		B
PSHH005B	63VT	7	PRESSURE SWITCH - EXHAUST	TRIP AT 18 inHg VAC DECR		B
PI006		8	INLET GLAND OUTER LEAKOFF PRESSURE		2-3 IN Hg VAC	D
PI007		9	EXHAUST GLAND OUTER LEAKOFF PRESSURE		2-3 IN Hg VAC	D
PIC PI 008		10	PRESSURE CONTROLLER-GLAND SEAL STEAM	SET AT 3 PSIG	3 PSIG	D
PCV008		11	PRESSURE CONTROL VALVE-GLAND SEAL STM			D
PSL008	63SA	12	PRESSURE SWITCH-GLAND SEAL STEAM	ALARM AT 0 PSIG DECR.		B
TE009	RTD 31	13	TEMPERATURE SENSOR - EXHAUST STEAM			B
TI009	TI38-1	14	EXHAUST STEAM TEMPERATURE		109°F	A
TSLO10	26SA	15	TEMPERATURE SWITCH-GLAND SEAL STEAM	SET TO SHUT OFF WATER		D
				AT 300°F DECREASING		
TIC/TI 011		16	TEMPERATURE CONTROLLER-GLAND SEAL STM	SET AT 350°F	350 °F	D
TCV011		17	CONTROL VALVE-GLAND STEAM			D
TSV012	VS6	18	SOLENOID VALVE-AIR SHUT-OFF			D
			(GLAND STEAM)			
TE011		19	TEMP. SENSOR-GLAND SEAL STEAM	30 FT LENGTH WITH FLEX		D
				ARMOUR UNION CONNOC.		
				TEO BULB .56 DIA. x 7.0 LG		
PT014	XT38-3	20	1st STAGE PRESS. TRANSMITTER	4-20 mA / 0-600 PSIG		B
ZS15	33TT1-1	21	T & T VALVE OPEN			B
ZS16A	33TT1-2	22	T & T VALVE CLOSED	TURBINE TRIPPED		B
ZS16B	33TT1-3	23	T & T VALVE CLOSED	OPEN BREAKER		B
PI017		24	HEATER #2 EXTRACTION PRESSURE			A
PI018		25	HEATER #1 EXTRACTION PRESSURE			A
PT106	XT38-3	26	STEAM CHEST PRESSURE TRANSMITTER, 4-20mA / PSIG			B

DEVICE LOCATIONS IDENTIFIED AS FOLLOWS:

- A — FRONT OF LOCAL CONTROL PANEL
- B — REAR OF LOCAL CONTROL PANEL
- C — INSIDE LOCAL CONTROL PANEL
- D — ON EQUIPMENT AT MEASURING POINT

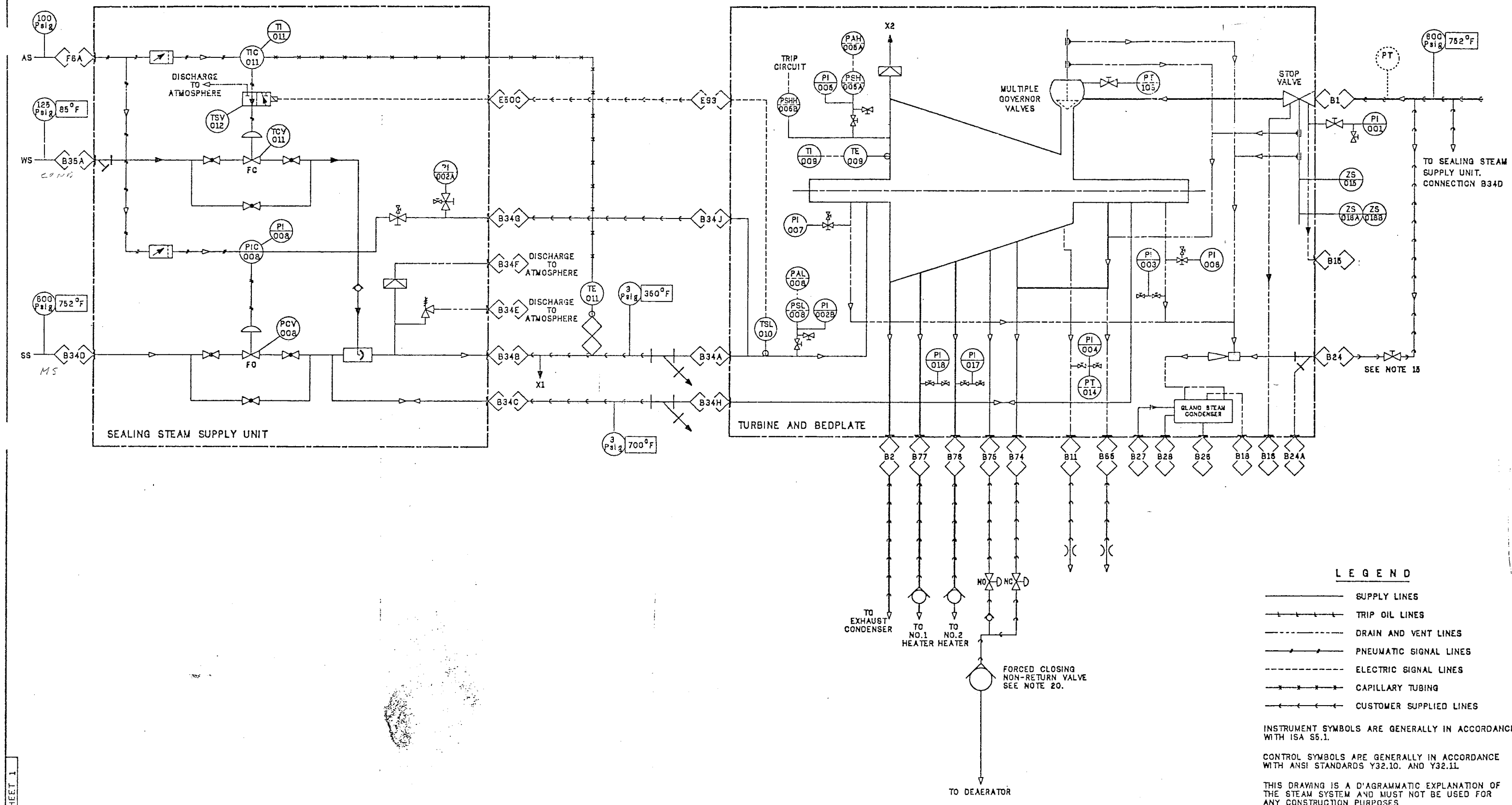
NOTES

1. PIPING TO SLOPE AWAY FROM TURBINE, KEEPING PIPE FITTINGS TO A MINIMUM AND USING LARGE RADIUS BENDS IN PIPING.
2. CONNECT TO CONDENSER WITH THROTTLING TYPE ISOLATION VALVE OR SUITABLE AUTOMATIC CONDENSATE TRAPS. NO PART OF DRAIN PIPING SHOULD BE BELOW THE TERMINAL CONNECTION ON THE CONDENSER.
3. CONNECT TO CONDENSER WITH NO VALVES OR OTHER OBSTRUCTIONS IN LINE. DRAIN MAY BE COMBINED WITH OTHER DRAINS DOWNSTREAM OF ORIFICE/ISOLATION VALVES IN A COMMON OVERSIZE LINE NO PART OF DRAIN PIPING SHOULD BE BELOW THE TERMINAL CONNECTION ON THE CONDENSER.
4. WHERE THE STEAM SUPPLY LINE TO THE TRIP & THROTTLE (T & T) VALVE APPROACHES FROM BELOW THE TURBINE, THE ABOVE SEAT DRAIN CAN BE CONTINUOUS BY GRAVITY TO THE LOWEST POINT ON THE INLET STEAM LINE. OTHERWISE THE DRAIN SHALL BE RUN TO SEWER OR BOILER BLOWDOWN VESSEL OR EQUIVALENT THROUGH A THROTTLING TYPE ISOLATION VALVE OR A SUITABLE AUTOMATIC CONDENSATE TRAP.
5. FOR WIRING DETAILS REFER TO ELECTRICAL SCHEMATICS AND INTERCONNECTIONS.
6.  INDICATES PURCHASER CONNECTION POINTS
PIPE FITTINGS, GAUGES, ETC. OUTSIDE CONNECTION POINTS, NOT SUPPLIED BY WECAN.
7. FOR PHYSICAL LOCATIONS AND RATINGS OF CONNECTIONS REFER TO:
A) T.G. SET (OUTLINE) DWG. NO. 119E770
B) CUSTOMER CONNECTIONS DWG. NO. 119E771
C) SEALING STEAM SUPPLY UNIT OUTLINE DWG. NO. 3856 D02
8. NON-RETURN VALVE IN EACH EXTRACTION LINE NOT SUPPLIED BY WECAN. NON-RETURN VALVES AND SHUT OFF VALVES IN EACH EXTRACTION LINE TO BE SUPPLIED BY PURCHASER. SEE NOTE 19 SUBMIT FINAL DRAWINGS OF NRV'S TO WECAN FOR REVIEW.
9. THE SEALING STEAM SUPPLY UNIT SHALL BE LOCATED 45 FEET NOMINAL (35 FEET MIN.) UPSTREAM OF THE TURBINE GLANDS. 10 FEET (MIN.) STRAIGHT PIPE TO BE PROVIDED DOWNSTREAM OF THE SPRAY SECTION. THE TEMP. SENSOR TO BE LOCATED AT THE DOWNSTREAM END OF THE STRAIGHT LENGTH. INSULATE STEAM LINES BETWEEN SEALING STEAM SUPPLY UNIT AND TURBINE.
10. A CONTINUOUS DRAIN TO BE PROVIDED FROM THE GLAND SUPPLY LINE APPROXIMATELY 5 FEET DOWNSTREAM OF THE DESUPERHEATING SPRAY NOZZLE. THE DRAIN MUST BE DESIGNED AS A GRAVITY TYPE TO ACCOMMODATE ALL WATER INJECTED INTO THE GLAND SUPPLY PIPE, SHOULD THE DESUPERHEATER WATER VALVE FAIL WIDE OPEN.
11. EXTRACTION PIPES MUST HAVE A SEPARATE DRAIN FROM THE HEATER SIDE AND A SEPARATE DRAIN FROM THE TURBINE SIDE OF SHUTOFF AND NON-RETURN VALVES. THE DRAINS MUST NOT BE COMBINED BUT MUST BE ROUTED SEPARATELY TO THE CONDENSER SHELL OR DRAIN MANIFOLD. IT IS RECOMMENDED THAT EXTRACTION PIPE DRAINS OPEN AUTOMATICALLY ON TURBINE TRIP OR HEATER HIGH WATER LEVEL. EXTRACTION LINE PIPING AND DRAINS SHOULD CONFORM TO ASME STD. TDP-1-1980.
12. THE SEALING STEAM SUPPLY UNIT MAY BE LOCATED ABOVE TURBINE CENTRELINE PROVIDED THAT THE INTERCONNECTING PIPING LOOPS DOWN BELOW THE TURBINE AND A CONTINUOUS DRAIN IS PROVIDED AT THE LOW POINT (OR POINTS) IN THE PIPING.
13. ITEM NUMBERS CORRESPOND TO ITEM NUMBERS ON CONTROL SETTINGS DRAWING.
14. TO BE ARRANGED TO DISCHARGE FLOW UPWARDS OR AWAY FROM AREAS WHERE PEOPLE MAY BE LOCATED.
15. ADJUST EJECTOR MOTIVE STEAM TO MAINTAIN 2-3 IN. HG. VACUUM AT GLANDS.
16. FOR ADDITIONAL INFORMATION SEE TURBINE OUTLINE SUPPLEMENT DESIGN NOTES.
17. AS AN ALTERNATIVE THE DRAIN MAY BE CONTINUOUS AS SHOWN. IT IS RECOMMENDED THAT CONTINUOUS DRAINS ARE PLUG RESISTANT ORIFICE ASSEMBLIES.
18. REFER TO ELECTRICAL SCHEMATICS AND CONTROL SETTINGS DRAWING FOR RANGES AND SETTINGS OF ALL DEVICES.
19. INSTALL NON-RETURN VALVES IN DEAERATOR AND FEEDWATER HEATER EXTRACTION LINES IN ACCORDANCE WITH ASME STD. TDP-1-1980. NON-RETURN VALVES SHOULD BE LOCATED AS CLOSE AS POSSIBLE TO TURBINE EXTRACTION CONNECTION.
20. INSTALLATION OF A FORCED CLOSING NON-RETURN VALVE IN THE EXTRACTION LINE BETWEEN THE TURBINE AND DEAERATOR IS MANDATORY FOR SAFE OPERATION OF THE TURBINE. THE RECOMMENDED SUPPLIER IS GIMPEL CORPORATION (LANGHORNE, PA.). SUBMIT FINAL DRAWINGS OF FCNRV TO WECAN FOR REVIEW.
21. DEVICE WIRED TO TERMINAL BLOCKS LOCATED INSIDE LOCAL CONTROL PANEL.

10	2555570-13	GENERAL 2	REVISED	AC	86-07-17
11		LIST OF TERMINAL POINTS:			
12		EXTRACTION FLOWS,			
13		TEMP. PRESS ADDED,			
14		INLET & EXHAUST			
15		FLOW ADDED			
16		GLAND COND COOLING			
17		WATER WAS 65 USGPM			
18		DEVICE LIST:			
19		ELECTRICAL IDENT			
20		ITEM NOS ADDED			
21		REVISED 647 SETTINGS			
22		11, 20 RANGE ADDED.			
23		NOTES 5, 20 & 21			
24		ADDED			
25		NOTES 7, 13, 18 REVISED			
26		SEE SHT. 1			
27		AAE			
28		SEE SHT. 1			
29		HR			
30		210312/330411			
31		PT 106 ADDED.			
32		J.P. 7/24/87			

THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF WESTINGHOUSE CANADA INC. AND IS TO BE KEPT IN CONFIDENTIALITY. IT IS TO BE USED ONLY FOR THE PURPOSES SPECIFIED IN THE ORDER.	
DRAFTSMAN LAYOUT DESIGN CHECKED APPROVED DATE SCALE	Westinghouse Canada Inc. TURBINE AND GENERATOR DIVISION, HAMILTON, CANADA STEAM SYSTEM SCHEMATIC 3820D27

SHEET 1



1	2	3	4	5
REVISED	REVISED	REVISED	REVISED	REVISED
D.HALL/G.B.	D.HALL/G.B.	D.HALL/G.B.	D.HALL/G.B.	D.HALL/G.B.
P.J.	P.J.	P.J.	P.J.	P.J.
F.R. 86-07-17	F.R. 86-07-17	F.R. 86-07-17	F.R. 86-07-17	F.R. 86-07-17
B11A DELETED.	B11A DELETED.	B11A DELETED.	B11A DELETED.	B11A DELETED.
PT013 DELETED.	PT013 DELETED.	PT013 DELETED.	PT013 DELETED.	PT013 DELETED.
PT001 WAS ON T&T M.V.	PT001 WAS ON T&T M.V.	PT001 WAS ON T&T M.V.	PT001 WAS ON T&T M.V.	PT001 WAS ON T&T M.V.
BELOW SEAT DRAIN.	BELOW SEAT DRAIN.	BELOW SEAT DRAIN.	BELOW SEAT DRAIN.	BELOW SEAT DRAIN.
GLAND LEAKOFF BALANCE	GLAND LEAKOFF BALANCE	GLAND LEAKOFF BALANCE	GLAND LEAKOFF BALANCE	GLAND LEAKOFF BALANCE
VALVES DELETED.	VALVES DELETED.	VALVES DELETED.	VALVES DELETED.	VALVES DELETED.
FCRV DETAILS DELETED.	FCRV DETAILS DELETED.	FCRV DETAILS DELETED.	FCRV DETAILS DELETED.	FCRV DETAILS DELETED.
E50C WAS E50B	E50C WAS E50B	E50C WAS E50B	E50C WAS E50B	E50C WAS E50B
SEE SHEET 1	SEE SHEET 1	SEE SHEET 1	SEE SHEET 1	SEE SHEET 1
O.B. B.N.	O.B. B.N.	O.B. B.N.	O.B. B.N.	O.B. B.N.
S.H. T.M. 87-3-4	S.H. T.M. 87-3-4	S.H. T.M. 87-3-4	S.H. T.M. 87-3-4	S.H. T.M. 87-3-4
CONN B34E WAS	CONN B34E WAS	CONN B34E WAS	CONN B34E WAS	CONN B34E WAS
DISCHARGED TO	DISCHARGED TO	DISCHARGED TO	DISCHARGED TO	DISCHARGED TO
CONDENSER ISOLATION	CONDENSER ISOLATION	CONDENSER ISOLATION	CONDENSER ISOLATION	CONDENSER ISOLATION
VALVE AT B34E	VALVE AT B34E	VALVE AT B34E	VALVE AT B34E	VALVE AT B34E
DELETED	DELETED	DELETED	DELETED	DELETED
V.J. B.N. S.H.	V.J. B.N. S.H.	V.J. B.N. S.H.	V.J. B.N. S.H.	V.J. B.N. S.H.
M.M. 87.3.12 T.M. 87.3.12	M.M. 87.3.12 T.M. 87.3.12	M.M. 87.3.12 T.M. 87.3.12	M.M. 87.3.12 T.M. 87.3.12	M.M. 87.3.12 T.M. 87.3.12
PT 108 ADDED	PT 108 ADDED	PT 108 ADDED	PT 108 ADDED	PT 108 ADDED
V.J.	V.J.	V.J.	V.J.	V.J.
ST-10288.05	ST-10288.05	ST-10288.05	ST-10288.05	ST-10288.05
LAYER 0	LAYER 0	LAYER 0	LAYER 0	LAYER 0

CO. 10288.05

ST-10288.05

LAYER 0

CADDS DRAWING

NO MANUAL CHANGES ALLOWED

NOTES:

THE INFORMATION CONTAINED HEREON WHICH IS THE PROPERTY OF WESTINGHOUSE CANADA INC. MUST BE KEPT IN CONFIDENCE AND NO PORTION OF THIS DRAWING MAY BE REPRODUCED OR USED, WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE COMPANY.

DRAWN BY	V.L.S.
CHECKED BY	P.J.
DESIGNED BY	M.M.
DATE	
ISSUE DATE	
FIRST FRAME	

Westinghouse Canada Inc.

TURBINE AND GENERATOR DIVISION, HAMILTON, CANADA

STEAM SYSTEM SCHEMATIC

SHEET 1 OF 2

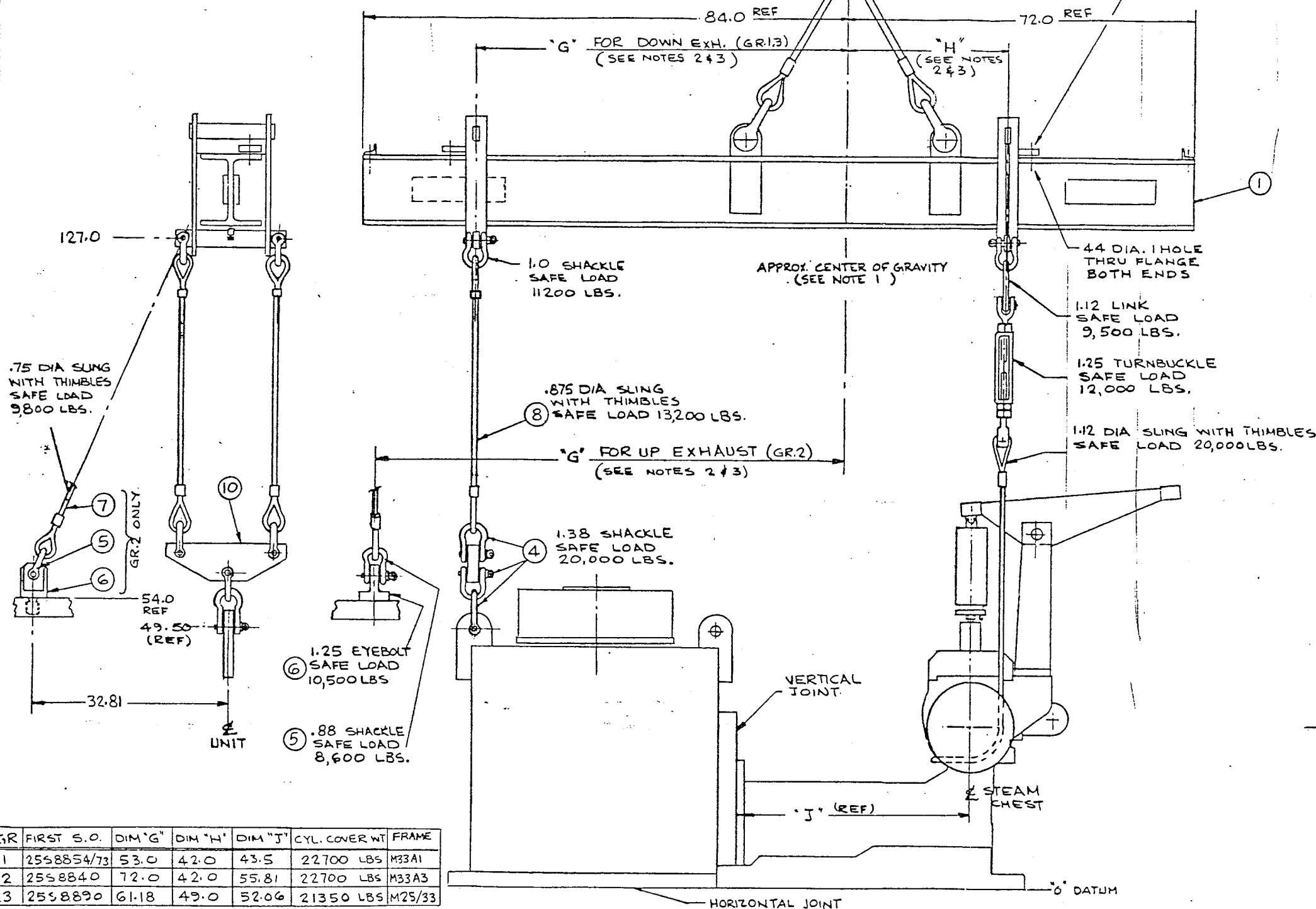
3820D2705

215.0
MIN HOOK HEIGHT REQ'D FOR
HORIZ. JT. TO CLEAR ROTOR.

MAX. HOOK LOAD
30,000 LBS.

LOCATE YOKES PER NOTES 1 & 3.
USE PILOT HOLE IN LUG TO DRILL
TOP FLANGE OF I-BEAM.

182.0



GR	FIRST S.O.	DIM "G"	DIM "H"	DIM "J"	CYL. COVER WT	FRAME
1	2558854/73	53.0	42.0	43.5	22700 LBS	M33A1
2	2558840	72.0	42.0	55.81	22700 LBS	M33A3
3	2558890	61.18	49.0	52.06	21350 LBS	M25/33

B/M		3812D61		3	M33	STEAM TURBINE	Westinghouse Canada Inc.
UNITS					CYL. COVER LIFT. GEAR	B/M	TURBINE & GENERATOR DIVISION HAMILTON CANADA
ITEM	DESCRIPTION	SIZE - REF. INFORMATION	IDENTIFICATION	NOTE	NOTE	NOTE	NOTE
A 01	LIFTING BEAM ASSY		6281C03601				
02	LINK	1.12	270A385004	1	1	1	
03	TURN BUCKLE	1.50	270A101H59	1	1	1	
04	SHACKLE	1.38	460B139013	4	-	4	
05	SHACKLE	.875	460B139009	-	2	-	
06	EYEBOLT-SPECIAL	1.25 (ANGULAR LIFT)	270A172H01	-	2	-	
B 07	SLING	.75 DIA	628C659068	-	2	-	
B 08	SLING	.875 DIA	628C661050	2	-	2	
B 09	SLING	1.12 DIA	628C66200	1	1	1	
10	HANGER		8773A97H01	1	-	1	

A-BEAM IS DESIGNED TO LIFT CYL. COVER OR ROTOR.

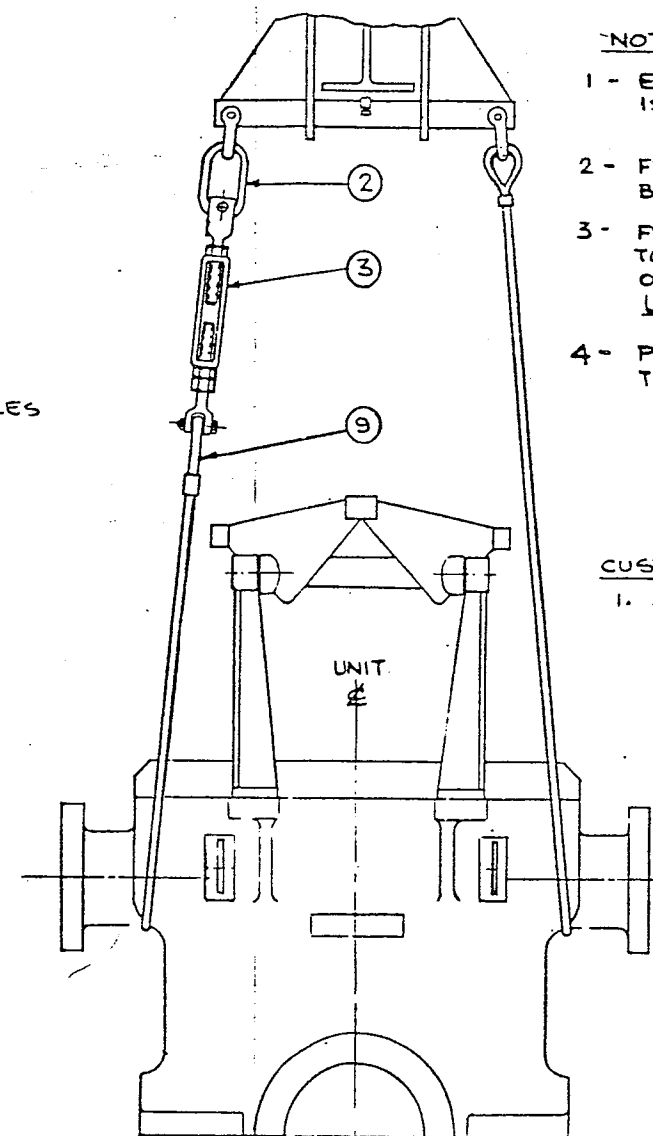
B-SLINGS ARE FOR LIFTING CYL. COVER ONLY. FOR ROTOR
LIFTING GEAR DETAILS SEE DWG. 3812D60

NOTES:

- 1 - EXACT CENTRE OF GRAVITY IS TO BE OBTAINED BY TRIAL.
- 2 - FINAL DIMENSIONS ARE TO BE OBTAINED BY TRIAL.
- 3 - FINAL POSITIONS OF YOKES TO BE MARKED AND IDENTIFIED ON TOP SURFACE USING 1/2 IN LOW STRESS STAMP.
- 4 - PROVIDE WEIGHT OF CYLINDER TO ENG. DEPT. FOR RECORDS.

CUSTOMER NOTE

1. REVIEW LIFTING INSTRUCTIONS IN INSTRUCTION MANUAL BEFORE LIFTING CYLINDER COVER OR ROTOR.



NO	DATE	BY	CHKD	APP'D	REVISION
1	255885	36	1		
2	2558890-36	2			
3	2558890-36	2			
4	2558890-36	2			
5	2558890-36	2			
6	2558890-36	2			
7	2558890-36	2			
8	2558890-36	2			
9	2558890-36	2			
10	2558890-36	2			

THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF WESTINGHOUSE CANADA INC. MUST BE MAINTAINED IN CONFIDENCE AND NO PORTION OF THIS DRAWING MAY BE REPRODUCED OR USED IN ANY MANNER WITHOUT THE EXPRESS PERMISSION OF THIS COMPANY.	
DRAWN BY 85.11.21 AMX	Westinghouse Canada Inc. TURBINE AND GENERATOR DIVISION HAMILTON CANADA
LAYOUT BY 85.11.21 AMX	
CHECKED BY 85.11.21 AMX	
APPROVED BY 85.11.21 AMX	
DATE 85.11.21	
SCALE 1:1	
FOR INFO 85.11.21	
ISSUE DATE 85.11.21	
FRAME M33A1	
SCALE NTS	
SHT. 1 OF 1	
3812D61	

