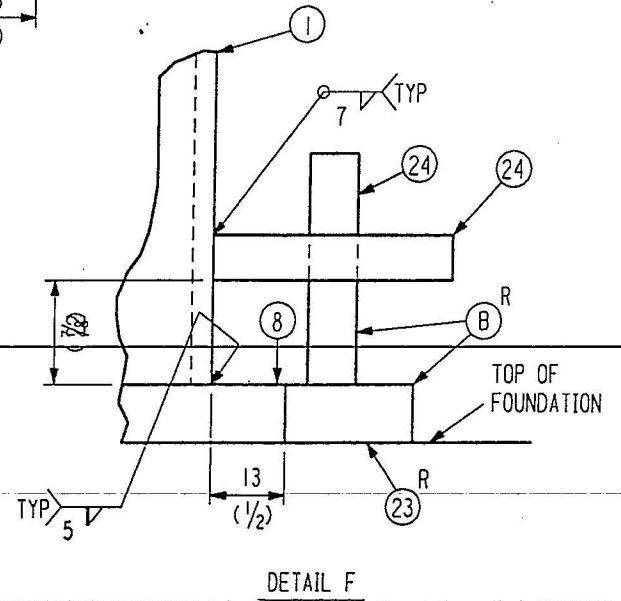
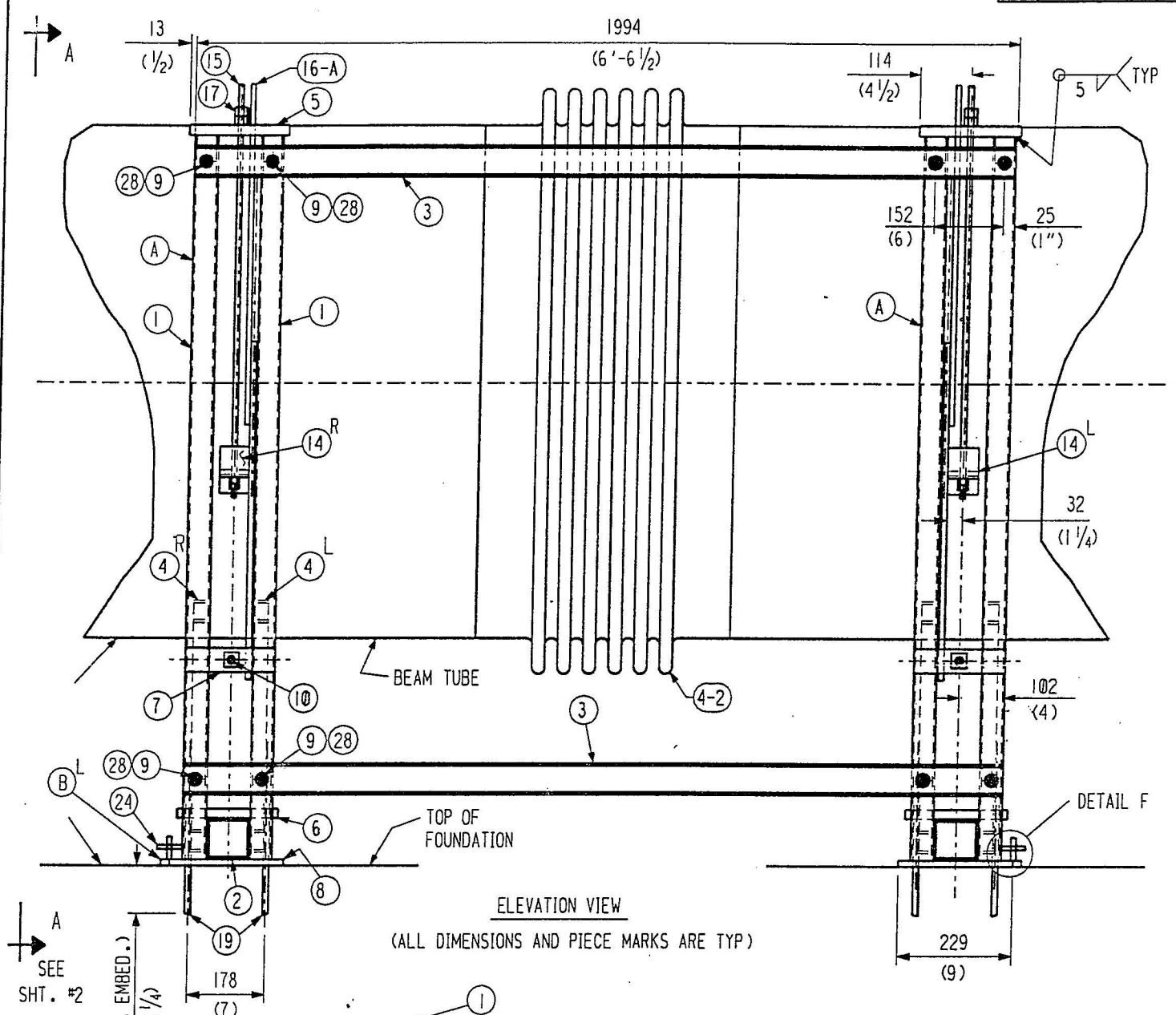


SHP PC	MARK	ASSM PC	DESCRIPTION	LENGTH MM	SPEC	D
			AND ONE 38 (1 1/2) LG ZINC PL			
**	19-31		CPLG 13 (1/2) DIA-13UNC W/ INTERNAL STOP (1 7/8 LG) ZINC PL	48	ETD-150	C
**	19-32		LOCK WASHER 13 (1/2) DIA		CS ZINC PL	C
**	19-33		SAME AS PC. 19-19 ZINC PL.	****	A193-B7	C

(L) = QUANTITY REQD AT LIVINGSTON
(H) = QUANTITY REQD AT HANFORD
* = POLYURETHANE, 80A DUREMETER
W/ TENSILE STRENGTH = 4500 PSI (MIN)
** = FIELD TO DETERMINE FINAL QUANTITY
*** = SA340-TP304L
**** = FIELD TO DETERMINE LENGTH

SHP PC	MARK	ASSM PC	DESCRIPTION	LENGTH MM	SPEC	D
2	19-A		GUIDED SUPPORT ASSEMBLY			
	19-1	8	TUBE 76 X 51 X 5 X SK (3 X 2 X 3/16 X 5'-6 1/2 LONG)	1689	A500 GR.B	C
	19-2	2	TUBE 102 X 102 X 5 (4 X 4 X 3/16 X 5'-6 1/4)	1683	A500 GR.B	C
	19-4 R/L	8	C 76 X 4.1 (C 3 X 4.1 X 2'-5 25/32 LONG) X SK	756	A36	C
	19-5	4	PL 102 X 10 (4 X 3/8) W/ HOLE	229 (9)	A36	C
	19-8	4	PL 114 X 13 (4 1/2 X 1/2)	229 (9)	A36	C
	19-24	2	PL SK X 13 (1/2)		A36	C
2	19-B R/L		ALIGNMENT BASE PLATE ASSEMBLY			
	19-23 R/L	2	PL SK X 13 (1/2)		A36	C
	19-24	2	PL SK X 13 (1/2)		A36	C
4	19-3		C 76 X 4.1 (C 3 X 4.1 X 6'-6 1/2 LONG) X SK	1994	A36	C
4	19-6		PL SK X 19 (3/4)		A36	C
4	19-7		PL 102 X 10 (4 X 3/8) W/ HOLE	203 (8)	A36	C
16	19-9		BOLT 13 (1/2) DIA HVY HEX	127 (5)	A307 GR.B	Ac
48	19-10		NUT 13 (1/2) DIA HVY HEX		A307 GR.B	Ac
4(L)	19-11		CABLE 6 (1/4) DIA (7 X 19 OR 6 X 19) GALV. W/ TWO 13 (1/2) DIA 76 (3) LONG THREADED PLUGS ZINC PL.	889 (2'-11)	CS	C
4(L)	19-12		WASHER 13 (1/2) DIA HVY DUTY HARDENED		F436	Ac
8(H)						
2	19-13		PL SK X 13 (1/2) (SHOP ATT. TO 16-A)		***	C
4	19-14 R/L		PL SK X 13 (1/2) (SHOP ATT. TO 16-A)		***	C
4	19-15		CABLE 10 (3/8) DIA (7 X 19 OR 6 X 19) GALV. W/ TWO 19 (3/4) DIA THREADED PLUGS ZINC PL., ONE 254 (10) LONG AND ONE 76 (3) LONG	1092 (3'-7)	CS	C
4	19-16		WASHER 19 (3/4) DIA HVY DUTY HARDENED		F436	Ac
16	19-17		NUT 19 (3/4) DIA HVY HEX		A307 GR.B	Ac
4	19-18		GROMMET X SK		*	C
8	19-19		ANCHOR BOLT 13 (1/2) DIA HILT HY-150 (4 1/4 EMBED) W/ 3 NUTS AND ADHESIVE	279 (11)	A193-B7	C
16	19-20		BELLEVILLE WASHER 13 (1/2) DIA SPEC #B1000-073-S		S5	C
4	19-21		GROMMET X SK MICARTA		GRADE G11	C
4	19-22		GROMMET X SK MICARTA		GRADE G11	C
4	19-24		PL SK X 13 (1/2)		A36	C
2	19-25		PL SK X 13 (1/2)		A36	C
4	19-26		GROMMET X SK		*	C
4	19-27		PL SK X 10 (3/8)		A36	C
64	19-28		WASHER 13 (1/2) DIA HARDENED		F436	Ac
4(H)	19-29		PIPE CPLG 10 (3/8) DIA (1 1/4 LG)	32	A53 GALV	C
4(H)	19-30		CABLE 6 (1/4) DIA (7 X 19 OR 6 X 19) (2'-11 1/2 LG) GALV. W/ TWO 13 (1/2) DIA THREADED PLUGS, ONE 76 (3) LG	902	CS	C

APPROVED
M. Tellalian 4-23-97
CBI DATE
J. Jones 7/24/97
CALTECH DATE



- NOTES:
1. POSITION PC. (7) SO CABLE (11) IS KEPT LEVEL. PC. (7) DOES NOT WELD TO PC. (1).
 2. WORK THIS DRAWING WITH DRAWINGS #4 AND 16.
 3. ALL SUPPORT COMPONENTS TO BE FABRICATED PER SPEC. C-SUPT-1.
 4. PROVIDE TUBULAR MEMBERS (THAT ARE CLOSED ON THE ENDS) WITH 13 (1/2) DIA. HOLES ON ANY TWO OPPOSITE SIDES AT THE TUBE ENDS AS REQUIRED FOR GALVANIZING.
 5. AFTER STACKING TWO BELLEVILLE WASHERS PER ANCHOR BOLT, FINGER TIGHTEN NUTS ON PC. (19). TIGHTEN NUTS IN INCREMENTS OF 1/2 TURN MAKING SURE TO ALTERNATE BETWEEN THE NUTS ON EACH END OF PC. (6). STOP TIGHTENING NUTS AS SOON AS BELLEVILLE WASHERS ARE COMPLETELY FLAT.
 6. IN THE EVENT THE ANCHOR BOLTS (PC. (19)) ARE NOT LONG ENOUGH TO ALLOW DOUBLE NUTS, A SINGLE NUT WITH LOCK WASHER MAY BE USED, OR THE ANCHOR BOLT MAY BE CUT AND EXTENDED WITH A COUPLING AS SHOWN IN DETAIL G.
 7. ALL WELDED JOINTS MUST BE SEAL-WELDED TO PREVENT RUST FROM BLEEDING OUT OF THE JOINT.

DETAILED AND BILLED FOR (1), (200) REQD AT HANFORD
(200) REQD AT LIVINGSTON

CBI LIGO BEAM TUBE HANFORD, WA & LIVINGSTON, LA BEAM TUBE GUIDED SUPPORT ELEVATION		SUPPLIER'S / PURCHASER'S NO
CUSTOMER'S NO BY WAW CHKD DET DATE 3-15-94 M.L. TELLALIAN ENGINEERING ASSIGNED	CONTRACT NO 953571 DWG 19 SHT 1 REV 9	REVISIONS BY DATE 1 4-23-97 2 7-24-97 3 9-13-96 4 9-13-96 5 9-13-96 6 9-13-96 7 9-13-96 8 9-13-96 9 9-13-96 10 9-13-96 11 9-13-96 12 9-13-96 13 9-13-96 14 9-13-96 15 9-13-96 16 9-13-96 17 9-13-96 18 9-13-96 19 9-13-96 20 9-13-96 21 9-13-96 22 9-13-96 23 9-13-96 24 9-13-96 25 9-13-96 26 9-13-96 27 9-13-96 28 9-13-96 29 9-13-96 30 9-13-96 31 9-13-96 32 9-13-96 33 9-13-96 34 9-13-96 35 9-13-96 36 9-13-96 37 9-13-96 38 9-13-96 39 9-13-96 40 9-13-96 41 9-13-96 42 9-13-96 43 9-13-96 44 9-13-96 45 9-13-96 46 9-13-96 47 9-13-96 48 9-13-96 49 9-13-96 50 9-13-96 51 9-13-96 52 9-13-96 53 9-13-96 54 9-13-96 55 9-13-96 56 9-13-96 57 9-13-96 58 9-13-96 59 9-13-96 60 9-13-96 61 9-13-96 62 9-13-96 63 9-13-96 64 9-13-96 65 9-13-96 66 9-13-96 67 9-13-96 68 9-13-96 69 9-13-96 70 9-13-96 71 9-13-96 72 9-13-96 73 9-13-96 74 9-13-96 75 9-13-96 76 9-13-96 77 9-13-96 78 9-13-96 79 9-13-96 80 9-13-96 81 9-13-96 82 9-13-96 83 9-13-96 84 9-13-96 85 9-13-96 86 9-13-96 87 9-13-96 88 9-13-96 89 9-13-96 90 9-13-96 91 9-13-96 92 9-13-96 93 9-13-96 94 9-13-96 95 9-13-96 96 9-13-96 97 9-13-96 98 9-13-96 99 9-13-96 100 9-13-96 101 9-13-96 102 9-13-96 103 9-13-96 104 9-13-96 105 9-13-96 106 9-13-96 107 9-13-96 108 9-13-96 109 9-13-96 110 9-13-96 111 9-13-96 112 9-13-96 113 9-13-96 114 9-13-96 115 9-13-96 116 9-13-96 117 9-13-96 118 9-13-96 119 9-13-96 120 9-13-96 121 9-13-96 122 9-13-96 123 9-13-96 124 9-13-96 125 9-13-96 126 9-13-96 127 9-13-96 128 9-13-96 129 9-13-96 130 9-13-96 131 9-13-96 132 9-13-96 133 9-13-96 134 9-13-96 135 9-13-96 136 9-13-96 137 9-13-96 138 9-13-96 139 9-13-96 140 9-13-96 141 9-13-96 142 9-13-96 143 9-13-96 144 9-13-96 145 9-13-96 146 9-13-96 147 9-13-96 148 9-13-96 149 9-13-96 150 9-13-96 151 9-13-96 152 9-13-96 153 9-13-96 154 9-13-96 155 9-13-96 156 9-13-96 157 9-13-96 158 9-13-96 159 9-13-96 160 9-13-96 161 9-13-96 162 9-13-96 163 9-13-96 164 9-13-96 165 9-13-96 166 9-13-96 167 9-13-96 168 9-13-96 169 9-13-96 170 9-13-96 171 9-13-96 172 9-13-96 173 9-13-96 174 9-13-96 175 9-13-96 176 9-13-96 177 9-13-96 178 9-13-96 179 9-13-96 180 9-13-96 181 9-13-96 182 9-13-96 183 9-13-96 184 9-13-96 185 9-13-96 186 9-13-96 187 9-13-96 188 9-13-96 189 9-13-96 190 9-13-96 191 9-13-96 192 9-13-96 193 9-13-96 194 9-13-96 195 9-13-96 196 9-13-96 197 9-13-96 198 9-13-96 199 9-13-96 200 9-13-96 201 9-13-96 202 9-13-96 203 9-13-96 204 9-13-96 205 9-13-96 206 9-13-96 207 9-13-96 208 9-13-96 209 9-13-96 210 9-13-96 211 9-13-96 212 9-13-96 213 9-13-96 214 9-13-96 215 9-13-96 216 9-13-96 217 9-13-96 218 9-13-96 219 9-13-96 220 9-13-96 221 9-13-96 222 9-13-96 223 9-13-96 224 9-13-96 225 9-13-96 226 9-13-96 227 9-13-96 228 9-13-96 229 9-13-96 230 9-13-96 231 9-13-96 232 9-13-96 233 9-13-96 234 9-13-96 235 9-13-96 236 9-13-96 237 9-13-96 238 9-13-96 239 9-13-96 240 9-13-96 241 9-13-96 242 9-13-96 243 9-13-96 244 9-13-96 245 9-13-96 246 9-13-96 247 9-13-96 248 9-13-96 249 9-13-96 250 9-13-96 251 9-13-96 252 9-13-96 253 9-13-96 254 9-13-96 255 9-13-96 256 9-13-96 257 9-13-96 258 9-13-96 259 9-13-96 260 9-13-96 261 9-13-96 262 9-13-96 263 9-13-96 264 9-13-96 265 9-13-96 266 9-13-96 267 9-13-96 268 9-13-96 269 9-13-96 270 9-13-96 271 9-13-96 272 9-13-96 273 9-13-96 274 9-13-96 275 9-13-96 276 9-13-96 277 9-13-96 278 9-13-96 279 9-13-96 280 9-13-96 281 9-13-96 282 9-13-96 283 9-13-96 284 9-13-96 285 9-13-96 286 9-13-96 287 9-13-96 288 9-13-96 289 9-13-96 290 9-13-96 291 9-13-96 292 9-13-96 293 9-13-96 294 9-13-96 295 9-13-96 296 9-13-96 297 9-13-96 298 9-13-96 299 9-13-96 300 9-13-96 301 9-13-96 302 9-13-96 303 9-13-96 304 9-13-96 305 9-13-96 306 9-13-96 307 9-13-96 308 9-13-96 309 9-13-96 310 9-13-96 311 9-13-96 312 9-13-96 313 9-13-96 314 9-13-96 315 9-13-96 316 9-13-96 317 9-13-96 318 9-13-96 319 9-13-96 320 9-13-96 321 9-13-96 322 9-13-96 323 9-13-96 324 9-13-96 325 9-13-96 326 9-13-96 327 9-13-96 328 9-13-96 329 9-13-96 330 9-13-96 331 9-13-96 332 9-13-96 333 9-13-96 334 9-13-96 335 9-13-96 336 9-13-96 337 9-13-96 338 9-13-96 339 9-13-96 340 9-13-96 341 9-13-96 342 9-13-96 343 9-13-96 344 9-13-96 345 9-13-96 346 9-13-96 347 9-13-96 348 9-13-96 349 9-13-96 350 9-13-96 351 9-13-96 352 9-13-96 353 9-13-96 354 9-13-96 355 9-13-96 356 9-13-96 357 9-13-96 358 9-13-96 359 9-13-96 360 9-13-96 361 9-13-96 362 9-13-96 363 9-13-96 364 9-13-96 365 9-13-96 366 9-13-96 367 9-13-96 368 9-13-96 369 9-13-96 370 9-13-96 371 9-13-96 372 9-13-96 373 9-13-96 374 9-13-96 375 9-13-96 376 9-13-96 377 9-13-96 378 9-13-96 379 9-13-96 380 9-13-96 381 9-13-96 382 9-13-96 383 9-13-96 384 9-13-96 385 9-13-96 386 9-13-96 387 9-13-96 388 9-13-96 389 9-13-96 390 9-13-96 391 9-13-96 392 9-13-96 393 9-13-96 394 9-13-96 395 9-13-96 396 9-13-96 397 9-13-96 398 9-13-96 399 9-13-96 400 9-13-96 401 9-13-96 402 9-13-96 403 9-13-96 404 9-13-96 405 9-13-96 406 9-13-96 407 9-13-96 408 9-13-96 409 9-13-96 410 9-13-96 411 9-13-96 412 9-13-96 413 9-13-96 414 9-13-96 415 9-13-96 416 9-13-96 417 9-13-96 418 9-13-96 419 9-13-96 420 9-13-96 421 9-13-96 422 9-13-96 423 9-13-96 424 9-13-96 425 9-13-96 426 9-13-96 427 9-13-96 428 9-13-96 429 9-13-96 430 9-13-96 431 9-13-96 432 9-13-96 433 9-13-96 434 9-13-96 435 9-13-96 436 9-13-96 437 9-13-96 438 9-13-96 439 9-13-96 440 9-13-96 441 9-13-96 442 9-13-96 443 9-13-96 444 9-13-96 445 9-13-96 446 9-13-96 447 9-13-96 448 9-13-96 449 9-13-96 450 9-13-96 451 9-13-96 452 9-13-96 453 9-13-96 454 9-13-96 455 9-13-96 456 9-13-96 457 9-13-96 458 9-13-96 459 9-13-96 460 9-13-96 461 9-13-96 462 9-13-96 463 9-13-96 464 9-13-96 465 9-13-96 466 9-13-96 467 9-13-96 468 9-13-96 469 9-13-96 470 9-13-96 471 9-13-96 472 9-13-96 473 9-13-96 474 9-13-96 475 9-13-96 476 9-13-96 477 9-13-96 478 9-13-96 479 9-13-96 480 9-13-96 481 9-13-96 482 9-13-96 483 9-13-96 484 9-13-96 485 9-13-96 486 9-13-96 487 9-13-96 488 9-13-96 489 9-13-96 490 9-13-96 491 9-13-96 492 9-13-96 493 9-13-96 494 9-13-96 495 9-13-96 496 9-13-96 497 9-13-96 498 9-13-96 499 9-13-96 500 9-13-96 501 9-13-96 502 9-13-96 503 9-13-96 504 9-13-96 505 9-13-96 506 9-13-96 507 9-13-96 508 9-13-96 509 9-13-96 510 9-13-96 511 9-13-96 512 9-13-96 513 9-13-96 514 9-13-96 515 9-13-96 516 9-13-96 517 9-13-96 518 9-13-96 519 9-13-96 520 9-13-96 521 9-13-96 522 9-13-96 523 9-13-96 524 9-13-96 525 9-13-96 526 9-13-96 527 9-13-96 528 9-13-96 529 9-13-96 530 9-13-96 531 9-13-96 532 9-13-96 533 9-13-96 534 9-13-96 535 9-13-96 536 9-13-96 537 9-13-96 538 9-13-96 539 9-13-96 540 9-13-96 541 9-13-96 542 9-13-96 543 9-13-96 544 9-13-96 545 9-13-96 546 9-13-96 547 9-13-96 548 9-13-96 549 9-13-96 550 9-13-96 551 9-13-96 552 9-13-96 553 9-13-96 554 9-13-96 555 9-13-96 556 9-13-96 557 9-13-96 558 9-13-96 559 9-13-96 560 9-13-96 561 9-13-96 562 9-13-96 563 9-13-96 564 9-13-96 565 9-13-96 566 9-13-96 567 9-13-96 568 9-13-96 569 9-13-96 570 9-13-96 571 9-13-96 572 9-13-96

