

PIPELINE GAS DEMONSTRATION PLANT

Phase I

ABBREVIATED VERSION
DEMONSTRATION PLANT PROCESS DESIGN

VOLUME 2

BOOK 3 - SUPPLEMENT

SECTION 3

DEMONSTRATION PLANT AREA DESCRIPTIONS
(PLANT AREAS 217 THROUGH 220)

MASTER

ROBERT J. EBY

ILLINOIS COAL GASIFICATION GROUP

122 S. MICHIGAN AVENUE
SUITE 2014
CHICAGO, ILLINOIS 60603
(312) 431-4925

Date Published - August 1980

PREPARED FOR THE
UNITED STATES DEPARTMENT OF ENERGY
(ENERGY TECHNOLOGY, FOSSIL ENERGY, COAL CONVERSION)

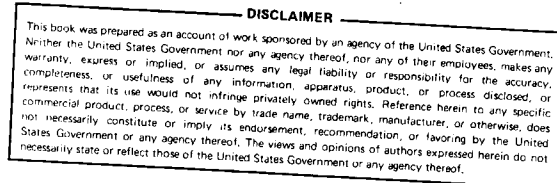
UNDER CONTRACT NO. EF-77-C-01-2012

DISCLAIMER

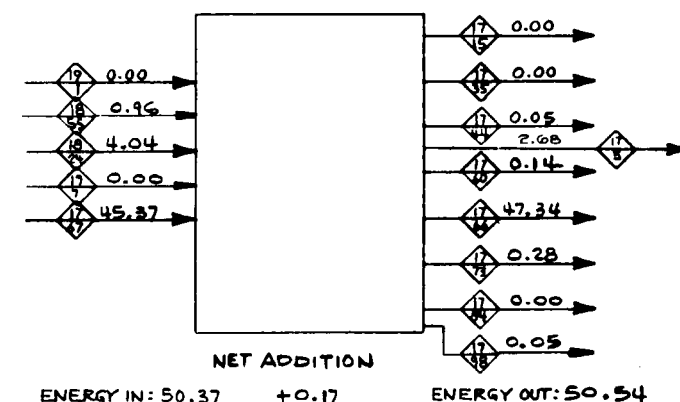
This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

DISCLAIMER

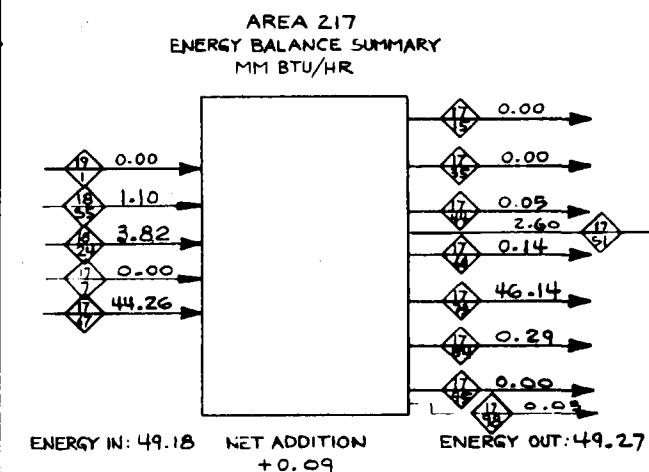
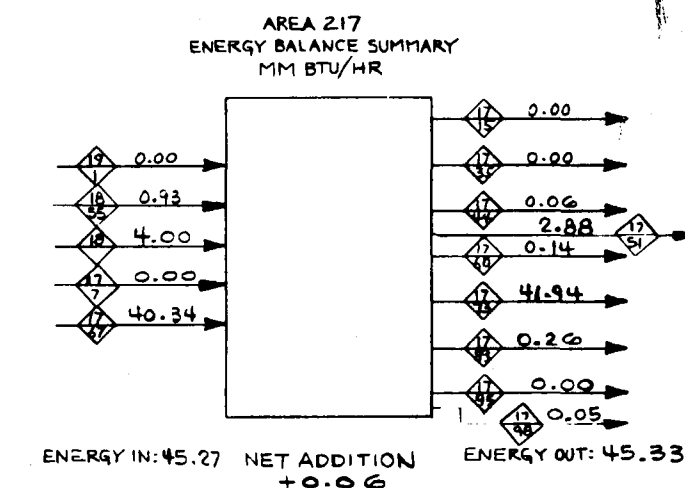
Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.



AREA 217
ENERGY BALANCE SUMMARY
MM BTU/HR



REVISIONS						REVISIONS						REVISIONS						DRAWING STATUS				TITLE		PROJECT NO	
NO.	DATE	BY	CH'D	APP'D	NO.	DATE	BY	CH'D	APP'D	NO.	DATE	BY	CH'D	APP'D	DESIGNED	DATE	ISSUED	DATE	PROCESS FLOW DIAGRAM AREA 217 WATER TREATMENT CLARIFICATION		7051				
1	1/10/80	MM	SWH	JWH	1	1/10/80	MM	SWH	JWH	1	1/10/80	MM	SWH	JWH	NOBLETT	1/23/80			U.S. DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012		217-100-1A				
2					2					2					1/25/80	1/25/80	2:15			CASE					
3					3					3					1/30/80	1/30/80				DC					
4					4					4					2/15/80	2/15/80				REV.					
5					5					5					2/15/80	2/15/80				REV.					
6					6					6					2/15/80	2/15/80				REV.					
7					7					7					2/15/80	2/15/80				REV.					
8					8					8					2/15/80	2/15/80				REV.					
9					9					9					2/15/80	2/15/80				REV.					
10					10					10					2/15/80	2/15/80				REV.					
11					11					11					2/15/80	2/15/80				REV.					
12					12					12					2/15/80	2/15/80				REV.					
13					13					13					2/15/80	2/15/80				REV.					
14					14					14					2/15/80	2/15/80				REV.					
15					15					15					2/15/80	2/15/80				REV.					
16					16					16					2/15/80	2/15/80				REV.					
17					17					17					2/15/80	2/15/80				REV.					
18					18					18					2/15/80	2/15/80				REV.					
19					19					19					2/15/80	2/15/80				REV.					
20					20					20					2/15/80	2/15/80				REV.					
21					21					21					2/15/80	2/15/80				REV.					
22					22					22					2/15/80	2/15/80				REV.					
23					23					23					2/15/80	2/15/80				REV.					
24					24					24					2/15/80	2/15/80				REV.					
25					25					25					2/15/80	2/15/80				REV.					
26					26					26					2/15/80	2/15/80				REV.					
27					27					27					2/15/80										

[illegible][illegible][illegible]

	BY	DATE	DRAWING STATUS	
DESIGNED	MOBLETT	12-2-79	ISSUED	DATE
DRAWN	IZYDORCZYK	1-28-80	PDPB RECORD AND DDPD	2-15-80
CHECKED	HUGHES	1-30-80	FOR COMMENTS AND/OR	
DRAWN APP'D	<i>[Signature]</i>	2-15-80	APPROVAL	
ICSB APP'D	<i>[Signature]</i>	2-15-80	FOR CUSTOMER APPROVAL	ICSB <i>[Signature]</i>
DOE APP'D			AND/OR COMMENTS	DOE
			APPROVAL FOR CONSTRUCTION	
SCALE	<i>[Signature]</i>			

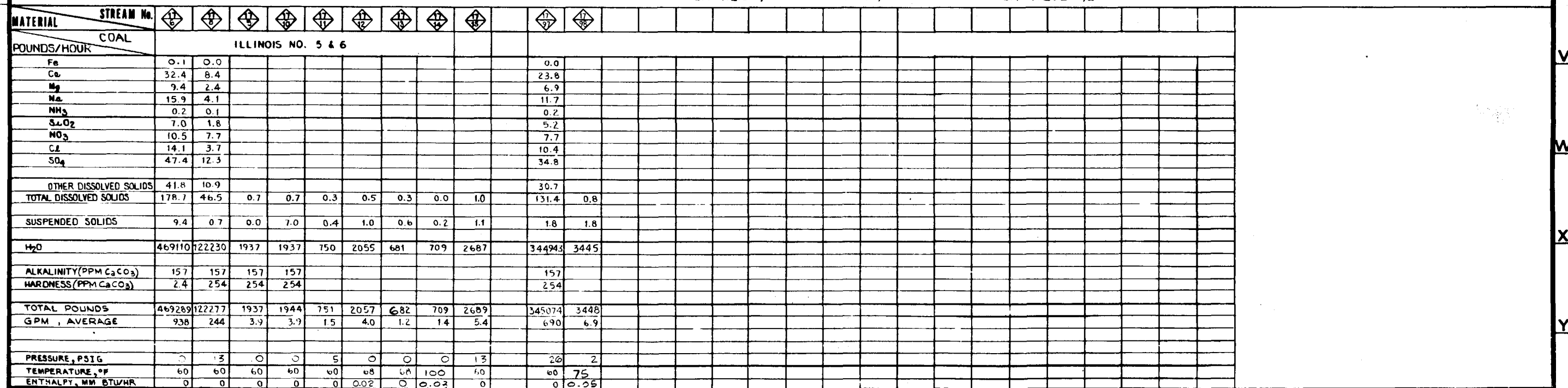
TITLE PROCESS FLOW DIAGRAM AREA 217 WATER TREATMENT CLARIFICATION	PROJECT NO 7051
	DRAWING NO. 217-100-1B
U.S. DoE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012	CASE DC
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAYO CORPORATION PITTSBURGH, PA.	REV. 

[illegible]

BY		DATE	DRAWING STATUS	
DESIGNED	NOBLETT	12-31-79	ISSUED	DATE
DRAWN	M. KERN	1-28-80	PDBP RECORD AND DPPD	2-15-80
CHECKED	HUGHES	1-30-80	FOR COMMENTS AND/OR	
DRAW APP'D	C. W. [Signature]	1-15-80	APPROVAL	
ICGS APP'D	S. L. [Signature]	2-15-80	FOR CUSTOMER APPROVAL	ICGS [Signature]
DOE APP'D			AND/OR COMMENTS	DOE
			APPROVAL FOR	
			CONSTRUCTION	
SCALE	[Signature]			

TITLE	PROCESS FLOW DIAGRAM AREA 217 WATER TREATMENT FILTRATION
U.S. DoE	ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAGO CORPORATION PITTSBURGH, PA.	

PROJECT NO
7051
DRAWING NO
217-100-2B
CASE
DC
REV. 

[illegible]

ON DRAWING

VE-001-212

217-41956-1,2
217-100-2A

217-35922
217-100-1A
217-41944-1,2
217-100-2A
217-35922
217-100-1A

PROCESS & POTABLE WATER OZONE CONTACTOR
217-35927

PROCESS & POTABLE FILTERED WATER TANK
217-34933

FILTERED WATER OZONE CONTACTOR
217-35923

FILTERED WATER STORAGE TANK
217-34930

PROCESS & POTABLE WATER CATION EXCHANGER FEED PUMP
217-41953-1,2

BOILER WATER DEIONIZER FEED PUMP
217-41957-1,2

COOLING TOWER WATER CATION EXCHANGER FEED PUMP
217-41956-1,2

217-45305-1,2
217-100-7
217-41952-1,2
217-100-5
217-45306-1,2
217-100-5A
217-34217
217-100-6A

217-35924
217-100-6A
217-41910-1,2
217-100-4
217-100-6A

217-47920
217-100-6A

[illegible]

Q
R
S
T
U
V
W
X
Y
Z

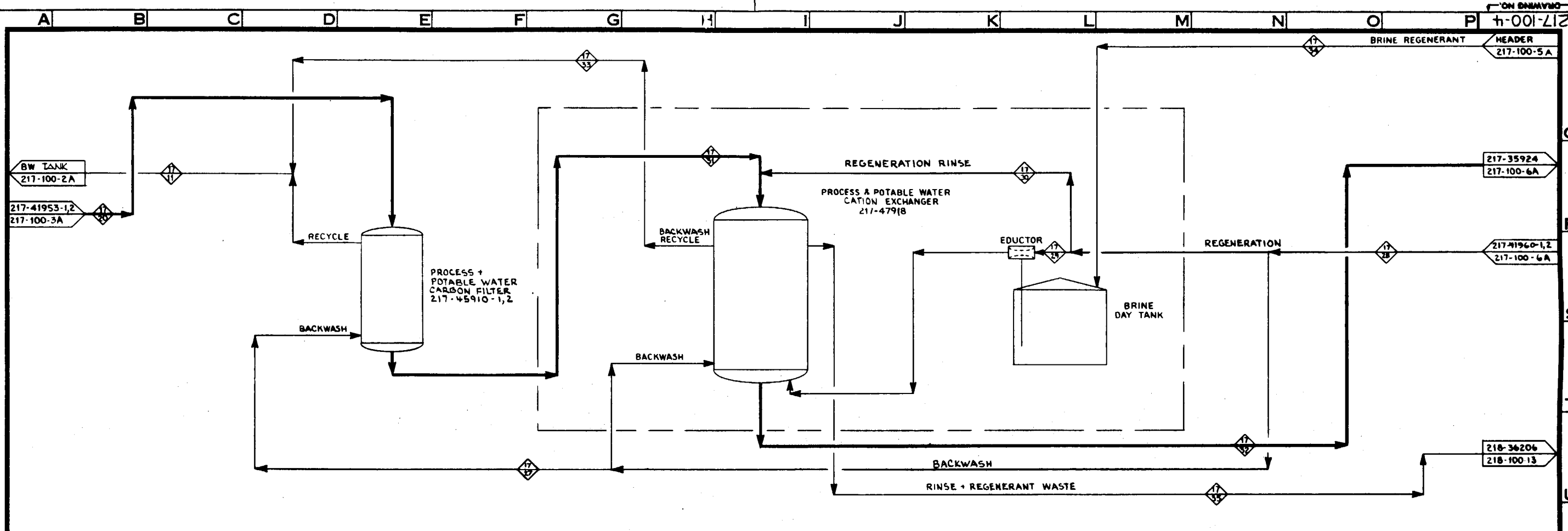
V
W
X
Y
Z

	BY	DATE	DRAWING STATUS	
DESIGNED	NOBLETT	12-31-79	ISSUES	DATE
DRAWN	IZYDORCZYK	1-28-80	PDBP RECORD AND DPPD	2-15-80
CHECKED	HUGHES	1:30-80	FOR COMMENTS AND/OR	
DRAWN APP'D	<i>W. G. Gough</i>	2-15-80	APPROVAL	
ICGS APP'D	<i>W. G. Gough</i>	2-15-80	FOR CUSTOMER APPROVAL	ICGS <i>WGC</i>
DoE APP'D			AND/OR COMMENTS	DoE
SCALE	<i>1/4"</i>		APPROVAL FOR CONSTRUCTION	

PROJECT NO.
7051
DRAWING NO.
217-100-3B

CASE
DC

REV. 



MATERIAL	STREAM No.	17 11	17 20	17 27	17 28	17 29	17 30	17 31	17 32	17 33	17 34	17 35																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
----------	------------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

U

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

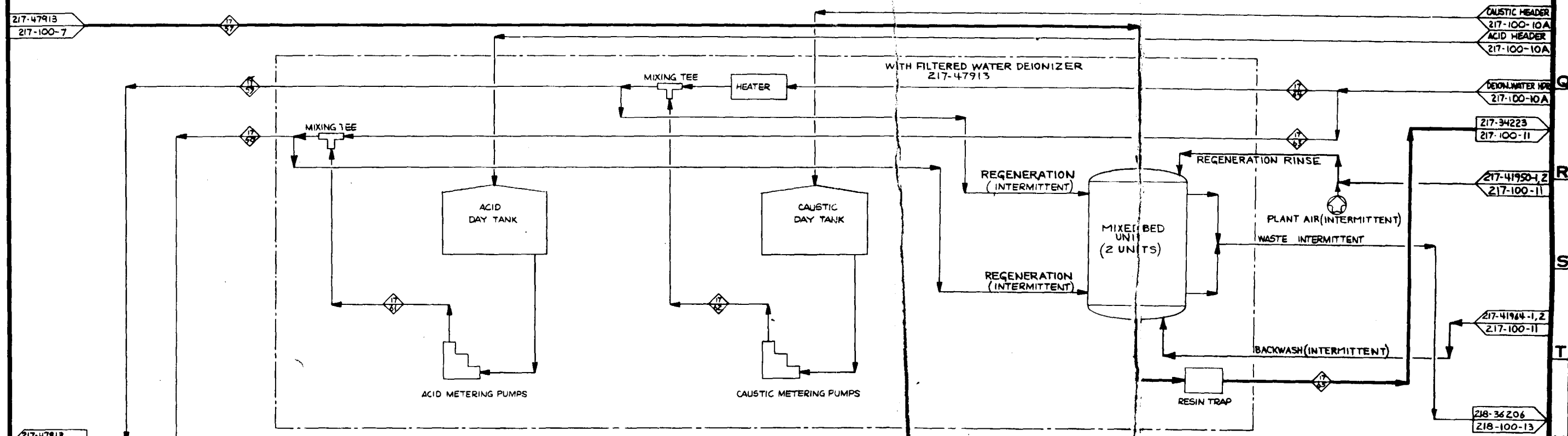
E

Q
R
S
T
U

V
W
X
Y
Z

z

DO NOT SCALE THIS DRAWING.
IT MAY BE REDUCED FROM ORIGINAL SIZE.



PRELIMINARY NOT APPROVED FOR CONSTRUCTION

217-100-7		STREAM NO.																													
MATERIAL		COAL										ILLINOIS NO. 5 & 6										PITTSBURGH NO. 8									
POUNDS/HR.																															
TOTAL DISSOLVED SOLIDS		1.0										0.8										0.8									
H ₂ O		136219	3988	2346	3.4	25	3985	2321	136219			137260	3921	2252	3.5	24.4	3917	2228	137260			123950	3533	2058	2	22.6	3530	2035	123950		
H ₂ SO ₄ (100%)			46		46								46.4		46.4								42								
NaOH (100%)				25		25								24.4		24.4								22.6							
TOTAL POUNDS		136220	4034	2371	49.4	50	3985	2321	136219			137261	3967	2276	50	49	3917	2228	137260			123951	3575	2081	5	45	3530	2035	123950		
GPM, AVERAGE		272	8	4.8	<0.1	<0.1	8	4.6	272			275	7.8	4.5	<0.1	<0.1	7.8	4.4	275			248	7	4	3.1	<0.1	7	4	248		
PRESSURE, PSIG		45	26	26	27	27	27	27	15			45	26	26	27	27	27	27	15			45	26	26	2	27	27	27	15		
TEMPERATURE, °F		70	92	110	70	70	92	92	70			70	92	110	70	70	92	92	70			71	92	110	3	70	92	92	71		
ENTHALPY, MM BTU/HR		1.36	0.13	0.12	0	0	0.13	0.07	1.36			1.37	0.13	0.11	0	0	0.13	0.07	1.37			1.36	0.11	0.10	0	0	0.11	0.07	1.36		
REVISIONS		DATE BY CH'D APP'D NO.										REVISIONS										DATE BY CH'D APP'D NO.									
A DC-DEMONSTRATION CONCEPT		11/90 MN SWH JWH										A PRELIMINARY ISSUE										11/90 ACE CFA JWH									
												B PRELIMINARY ISSUE FOR BASELINING										11/90 MN SWH JWH									
												C PDBP RECORD AND DPPD										11/90 MN SWH JWH									

DESIGNED	NOBLETT	12-31-77	DATE	
DRAWN	GIANNELLA	1-28-80	PDBP	
CHECKED	HUGHES	1-30-80	FOR CGL	
DRAGO APP'D	1-30-80	APPROX		
ICGG APP'D	2-15-80	FOR CU		
DOE APP'D		AND/O		
SCALE		CONSTR		

DRAWING STATUS		TITLE	
ISSUED	DATE	PROCESS FLOW DIAGRAM	
ORD AND DPPD	2-15-80	AREA 217	
		WATER TREATMENT	
		FILTERED WATER POLISHING	
		U.S. DOE ENERGY TECHNOLOGY	
		FOSSIL ENERGY PROGRAMS	
		CONTRACT NO. EF-77-C-01-2012	
		PREPARED FOR THE	
		ILLINOIS COAL GASIFICATION GROUP	
		BY	
		DRAGO CORPORATION PITTSBURGH, PA.	

PROJECT NO.	7051
DRAWING NO.	217-100-8
CASE	DC
REV.	

[illegible][illegible][illegible]

Q

R

LS

T

U

V

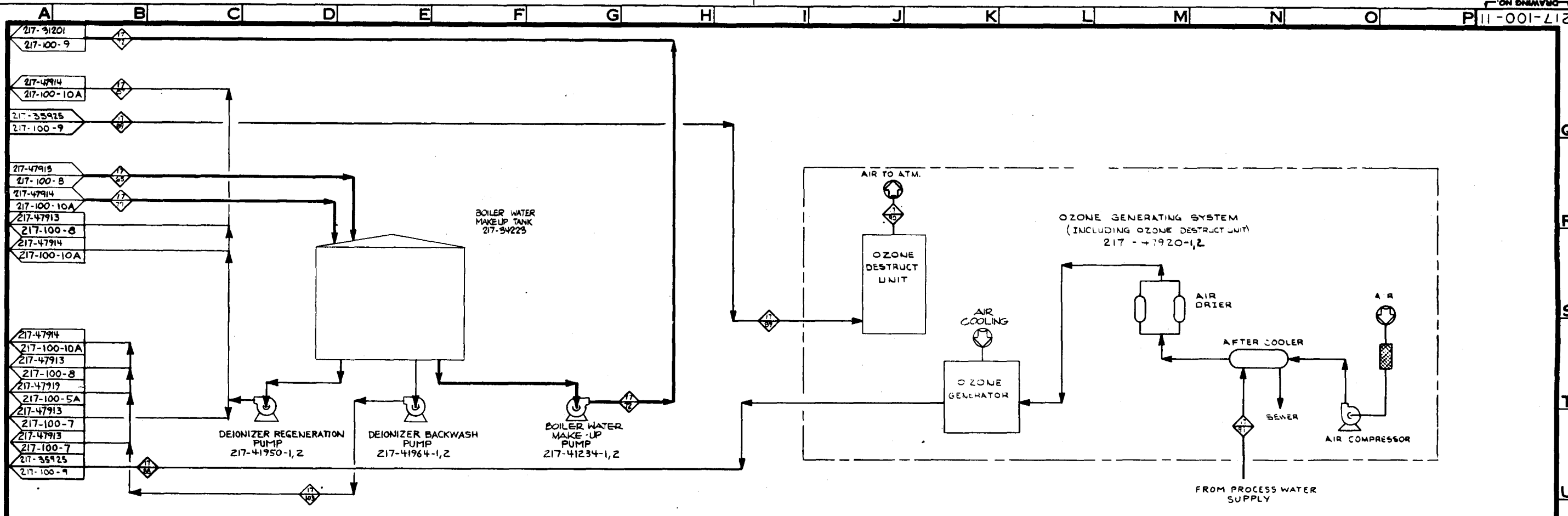
W

人

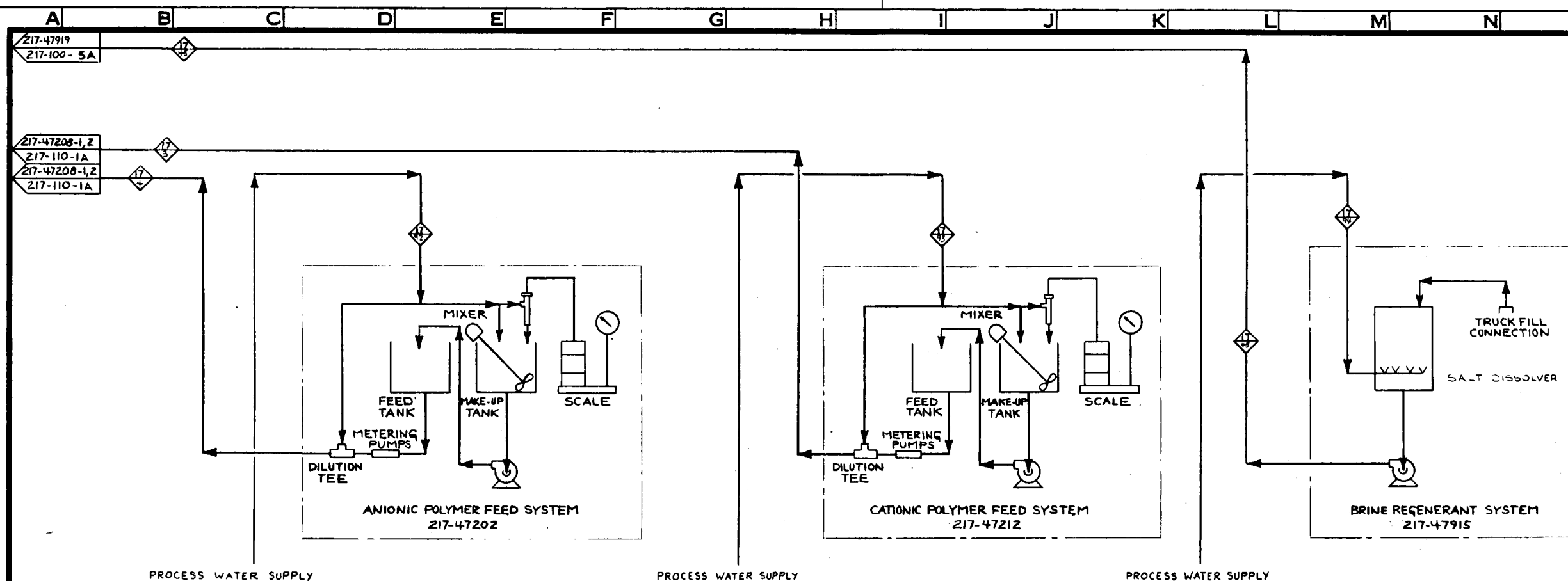
F

F

LZ



MATERIAL	STREAM No.	17-25	17-26	17-27	17-28	17-29	17-30	17-31	17-32	17-33	17-34	17-35	17-36	17-37	17-38	17-39	17-40	17-41	17-42	17-43	17-44	17-45	17-46	17-47	17-48	17-49	17-50	17-51	17-52	17-53	17-54	17-55	17-56	17-57	17-58	17-59	17-60	17-61	17-62	17-63	17-64	17-65	17-66	17-67	17-68	17-69	17-70	17-71	17-72	17-73	17-74	17-75	17-76	17-77	17-78	17-79	17-80	17-81	17-82	17-83	17-84	17-85	17-86	17-87	17-88	17-89	17-90	17-91	17-92	17-93	17-94	17-95	17-96	17-97	17-98	17-99	17-100	17-101	17-102	17-103																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
COAL		ILLINOIS NO. 566										PITTSBURGH NO. 8										WESTERN SUBBITUMINOUS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							

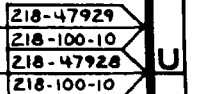


MATERIAL	STREAM No.																																																																																																																																																																													
----------	------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

[illegible]

	BY	DATE	DRAWING STATUS	
DESIGNED	NOBLETT	1-2-80	ISSUED	DATE
DRAWN	KJR	1-29-80	PDBP RECORD AND DPPD	2-15-80
CHECKED	HUGHES	1-30-80	FOR COMMENTS AND/OR APPROVAL	
DRAWN APP'D	<i>W. J. Hughes</i>	2-15-80		
ICGG APP'D	<i>W. J. Hughes</i>	2-15-80	FOR CUSTOMER APPROVAL	ICGG <i>Enc</i>
DOE APP'D			AND/OR COMMENTS	DOE
			APPROVAL FOR CONSTRUCTION	
SCALE	<i>H</i>			

TITLE PROCESS FLOW DIAGRAM AREA 217 WATER TREATMENT CHEMICAL FEED SYSTEMS	PROJECT NO. 7051 DRAWING NO. 217-100-12
U.S. DoE FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-212	CASE DC
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRACO CORPORATION PITTSBURGH, PA.	REV. 



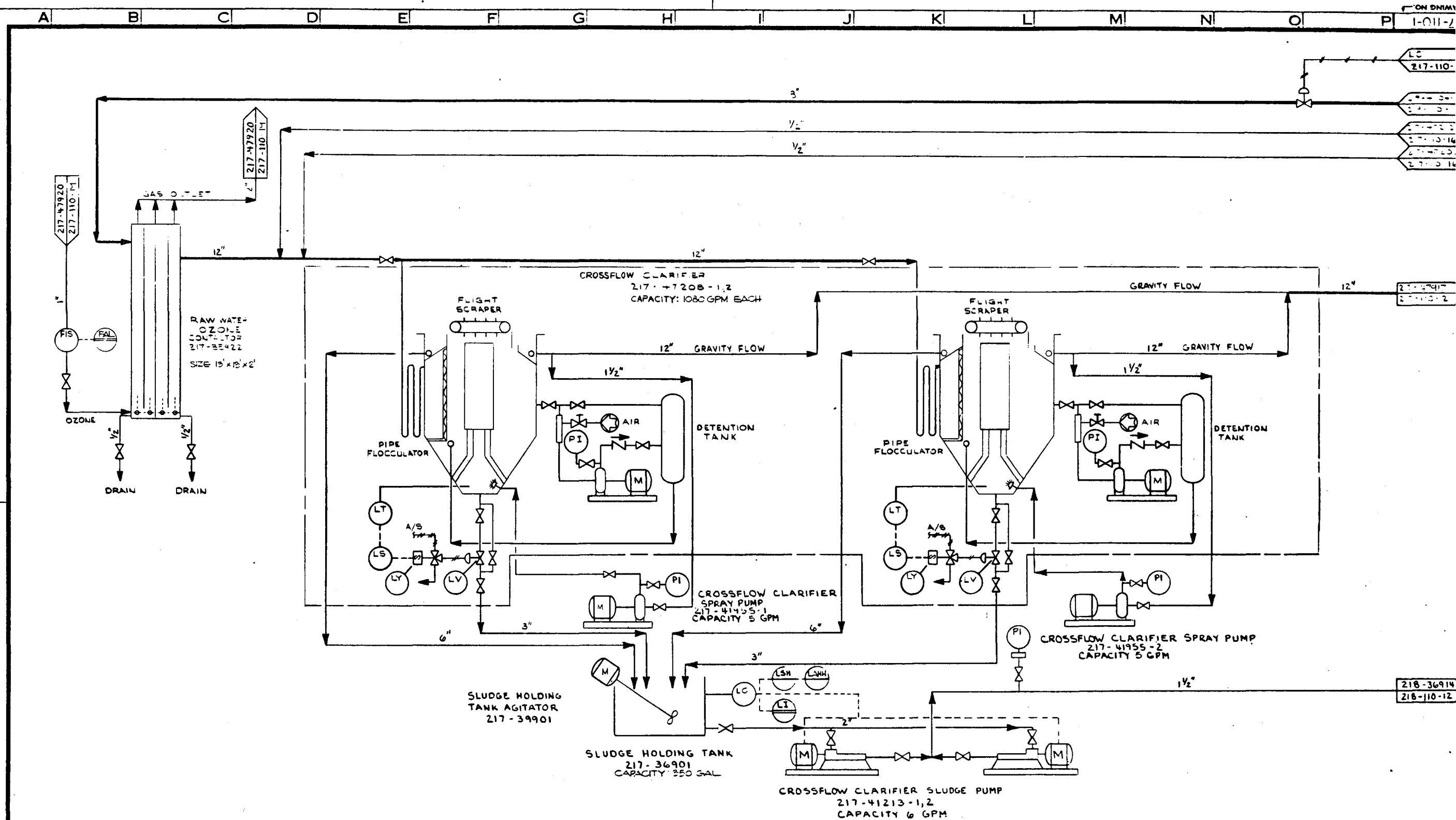
218-47929	U
218-100-10	
218-47928	
218-100-10	

218-47929	U
218-100-10	
218-47928	
218-100-10	

218-47929	U
218-100-10	
218-47928	
218-100-10	

218-47929	U
218-100-10	
218-47928	
218-100-10	

218-47929	U
218-100-10	
218-47928	
218-100-10	

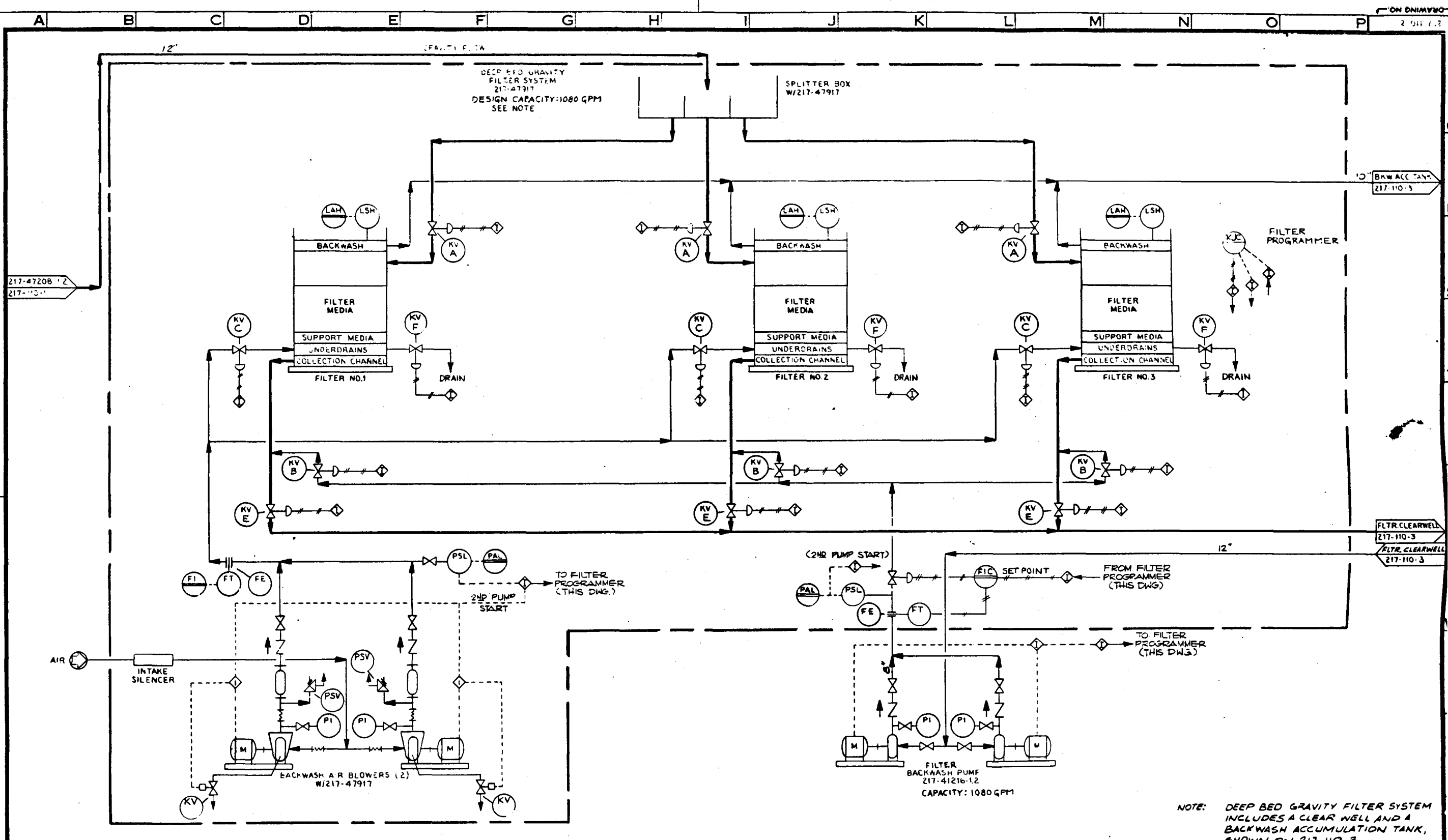


NO.	REVISIONS	DATE	BY	CHK'D	APPROV'D	NO.	REVISIONS	DATE	BY	CHK'D	APPROV'D	NO.	REVISIONS	DATE	BY	CHK'D	APPROV'D
1	CC-DEMOMSTRATION CONCEPT	8/10/80	WJH			1	PRELIMINARY ISSUE	8/10/80	WJH			1	FOR BASELINING	8/10/80	WJH		
2						2	FOR RECORD AND REVISION	8/10/80	WJH			2					
3						3						3					
4						4						4					
5						5						5					
6						6						6					
7						7						7					
8						8						8					
9						9						9					
10						10						10					

BY	DATE	DRAWING STATUS
DESIGNED	A C G	3-78
DRAWN	W J H	8-80
CHECKED	W J H	8-80
DRAGO APP'D		FOR COMMENTS AND/OR APPROVAL
ICGG APP'D		FOR CUSTOMER APPROVAL
DOE APP'D		AND/OR COMMENTS
SCALE		APPROVAL FOR CONSTRUCTION

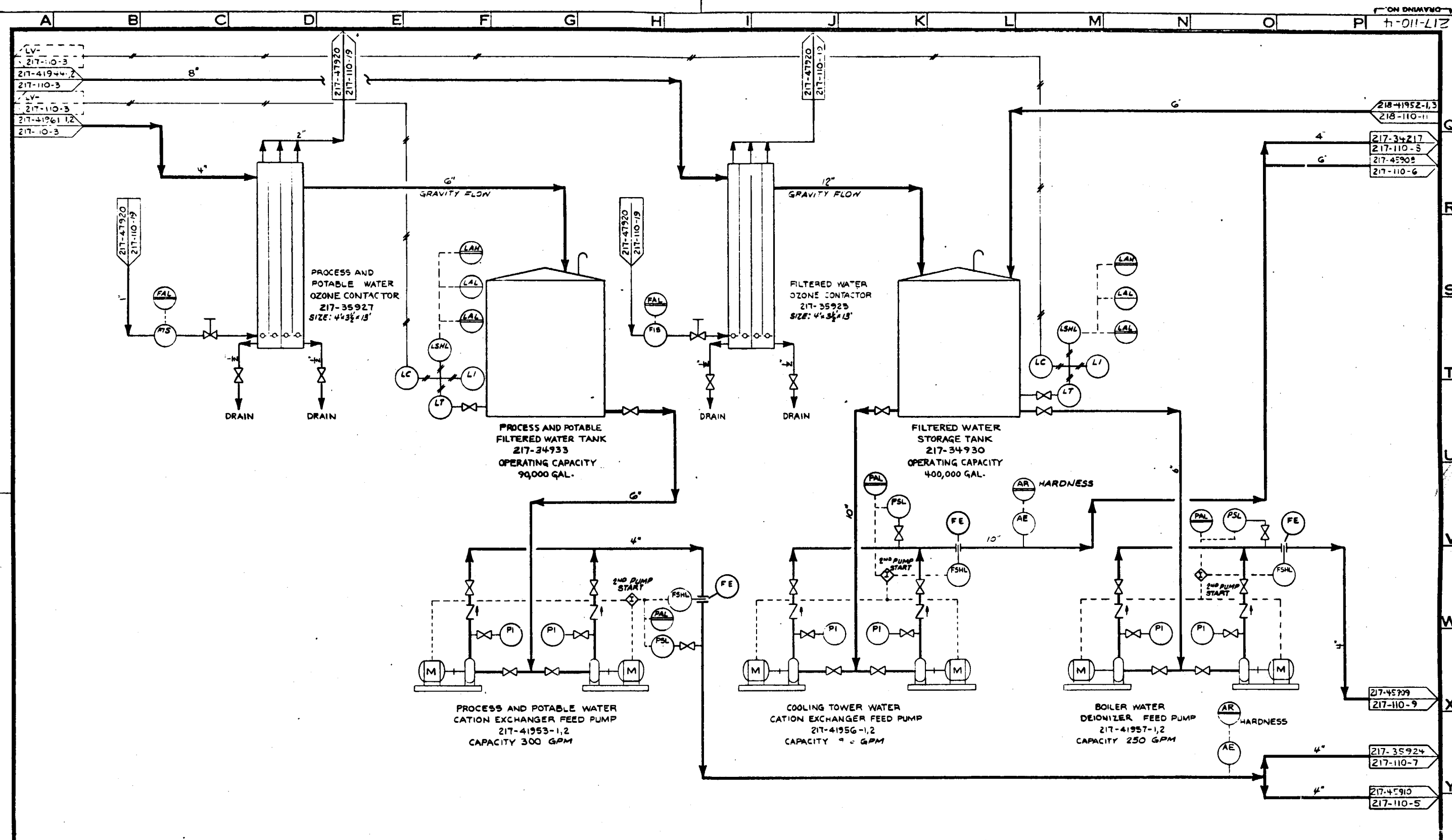
TITLE	6 & I DIAGRAM AREA 217 WATER TREATMENT CLARIFICATION	PROJECT NO 7051 DRAWING NO 217-110-1
U.S. DoE	ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012	CASE DC
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAGO CORPORATION PITTSBURGH, PA		REV.

DO NOT SCALE THIS DRAWING
IT MAY BE REDUCED FROM ORIGINAL SIZE



NOTE: DEEP BED GRAVITY FILTER SYSTEM INCLUDES A CLEAR WELL AND A BACKWASH ACCUMULATION TANK, SHOWN ON 217-110-3

NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D	BY	DATE	DRAWING STATUS	TITLE	PROJECT NO.
1	OC-DEMONSTRATION CONCEPT	10/10/00	ACG	MN	JWH	1	PRELIMINARY ISSUE FOR BASELINING	10/10/00	ACG	MN	JWH	1	PRELIMINARY ISSUE FOR BASELINING	10/10/00	ACG	MN	JWH	DESIGNED	10/10/00	ISSUED	AREA 217 WATER TREATMENT FILTRATION	7051
2						2	DEEP RECORD AND DPO	10/10/00	ACG	MN	JWH	2	DEEP RECORD AND DPO	10/10/00	ACG	MN	JWH	DRAWN	10/10/00	FOR COMMENTS AND/OR APPROVAL	U.S. DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012	217-110-2
3																		CHECKED	10/10/00	FOR CUSTOMER APPROVAL	PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAVO CORPORATION PITTSBURGH PA	
4																		DRAGO APP'D	10/10/00	AND/OR COMMENTS		
5																		DOE APP'D	10/10/00	CONSTRUCTION		
6																		SCALE				



REVISIONS					REVISIONS					REVISIONS				
NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D
1	8-8-80	ACG	MN	JW	1	8-8-80	ACG	MN	JW	1	8-8-80	ACG	MN	JW
2					2					2				
3					3					3				
4					4					4				
5					5					5				
6					6					6				
7					7					7				
8					8					8				
9					9					9				
10					10					10				

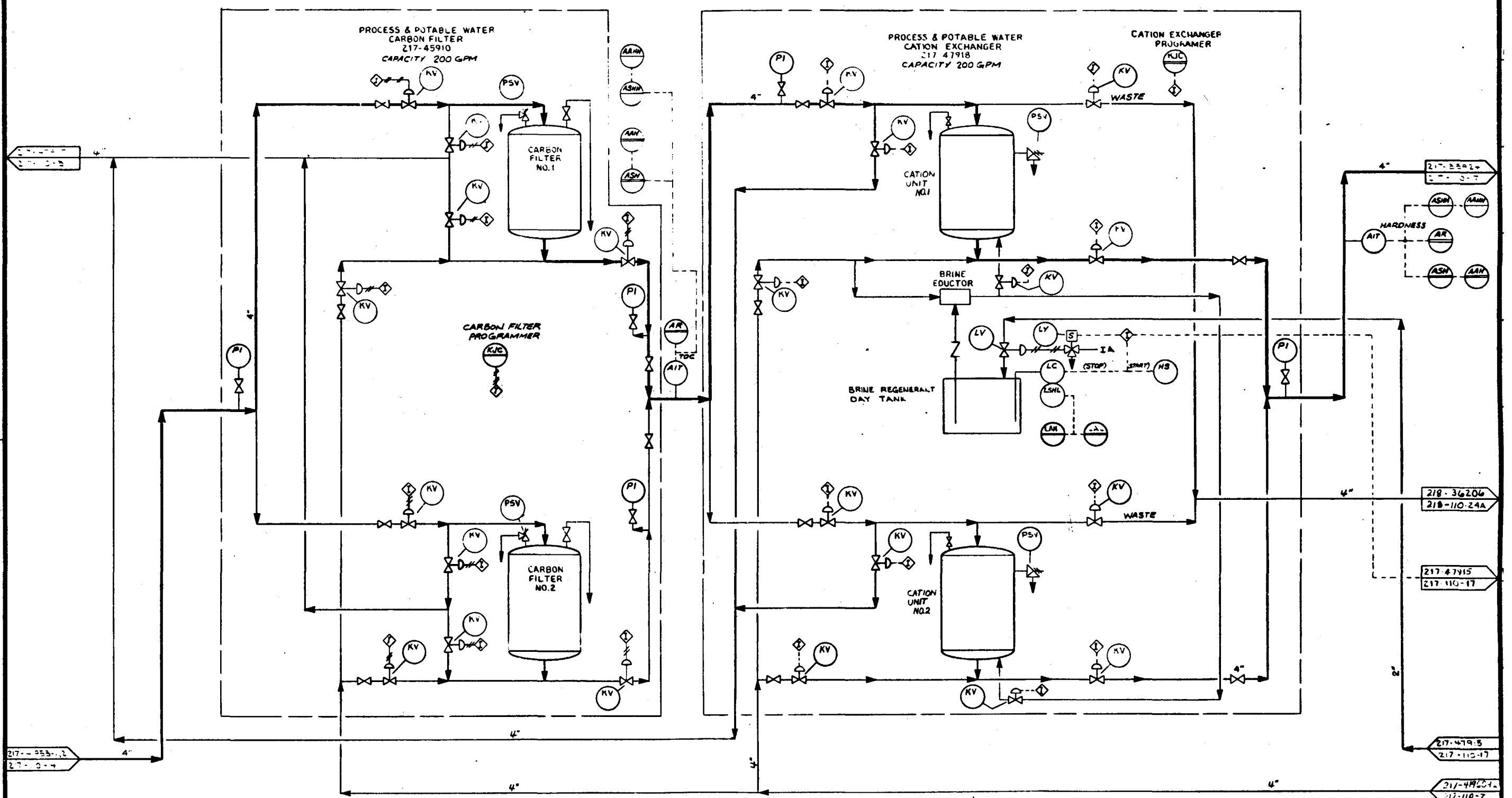
DESIGNED	BY	DATE	ISSUED	DATE
217-41953-1,2	ACG	8-8-80	217-41956-1,2	8-8-80
217-41957-1,2	ACG	8-8-80	217-41958-1,2	8-8-80
217-41959-1,2	ACG	8-8-80	217-41960-1,2	8-8-80
217-41961-1,2	ACG	8-8-80	217-41962-1,2	8-8-80
217-41963-1,2	ACG	8-8-80	217-41964-1,2	8-8-80
217-41965-1,2	ACG	8-8-80	217-41966-1,2	8-8-80
217-41967-1,2	ACG	8-8-80	217-41968-1,2	8-8-80
217-41969-1,2	ACG	8-8-80	217-41970-1,2	8-8-80
217-41971-1,2	ACG	8-8-80	217-41972-1,2	8-8-80
217-41973-1,2	ACG	8-8-80	217-41974-1,2	8-8-80
217-41975-1,2	ACG	8-8-80	217-41976-1,2	8-8-80
217-41977-1,2	ACG	8-8-80	217-41978-1,2	8-8-80
217-41979-1,2	ACG	8-8-80	217-41980-1,2	8-8-80
217-41981-1,2	ACG	8-8-80	217-41982-1,2	8-8-80
217-41983-1,2	ACG	8-8-80	217-41984-1,2	8-8-80
217-41985-1,2	ACG	8-8-80	217-41986-1,2	8-8-80
217-41987-1,2	ACG	8-8-80	217-41988-1,2	8-8-80
217-41989-1,2	ACG	8-8-80	217-41990-1,2	8-8-80
217-41991-1,2	ACG	8-8-80	217-41992-1,2	8-8-80
217-41993-1,2	ACG	8-8-80	217-41994-1,2	8-8-80
217-41995-1,2	ACG	8-8-80	217-41996-1,2	8-8-80
217-41997-1,2	ACG	8-8-80	217-41998-1,2	8-8-80
217-41999-1,2	ACG	8-8-80	217-42000-1,2	8-8-80

PROJECT NO.	7051
DRAWING NO.	217-110-4
CASE	DC
REV.	

TITLE	P&ID DIAGRAM AREA 217 WATER TREATMENT FILTERED WATER STORAGE
U.S. DoE	ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012
PREPARED FOR THE	ILLINOIS COAL GASIFICATION GROUP
BY	DRACO CORPORATION PITTSBURGH, PA.

"D"

DO NOT SCALE THIS DRAWING
IT MAY BE REDUCED FROM ORIGINAL SIZE

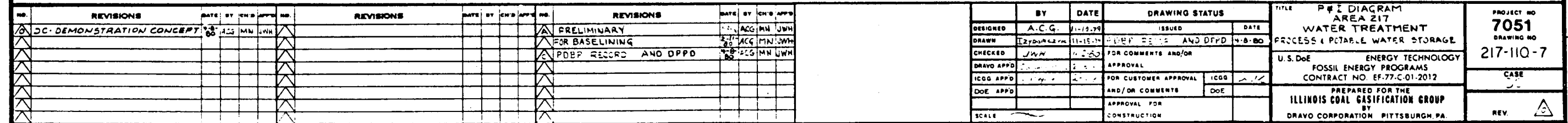


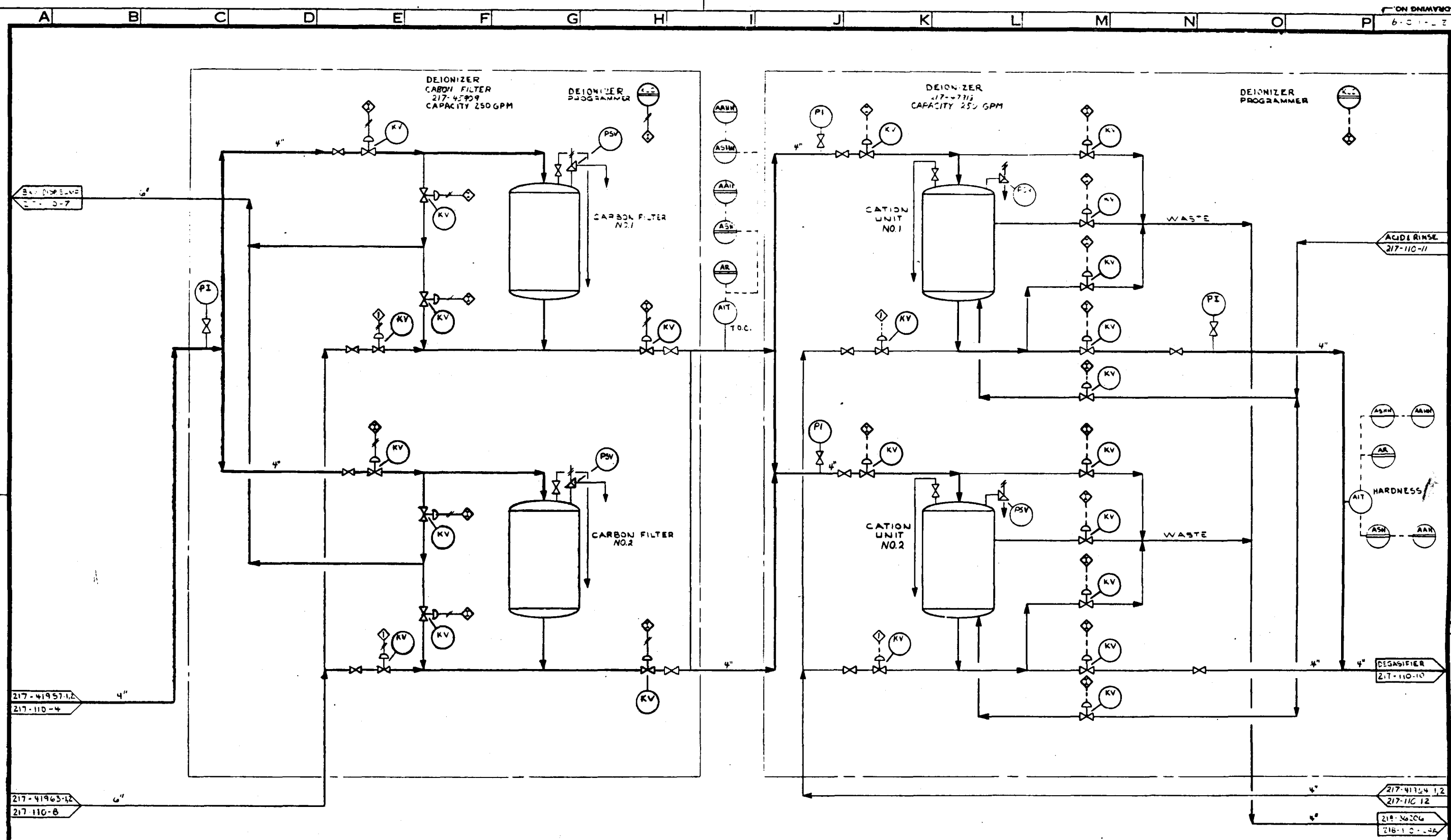
REVISIONS					REVISIONS					REVISIONS				
NO.	DATE	BY	CHK'D	APPR'D	NO.	DATE	BY	CHK'D	APPR'D	NO.	DATE	BY	CHK'D	APPR'D
1	05-11-82	ACG	MN	JWH	1	05-11-82	ACG	MN	JWH	1	05-11-82	ACG	MN	JWH
2	05-11-82	ACG	MN	JWH	2	05-11-82	ACG	MN	JWH	2	05-11-82	ACG	MN	JWH
3	05-11-82	ACG	MN	JWH	3	05-11-82	ACG	MN	JWH	3	05-11-82	ACG	MN	JWH
4	05-11-82	ACG	MN	JWH	4	05-11-82	ACG	MN	JWH	4	05-11-82	ACG	MN	JWH
5	05-11-82	ACG	MN	JWH	5	05-11-82	ACG	MN	JWH	5	05-11-82	ACG	MN	JWH
6	05-11-82	ACG	MN	JWH	6	05-11-82	ACG	MN	JWH	6	05-11-82	ACG	MN	JWH
7	05-11-82	ACG	MN	JWH	7	05-11-82	ACG	MN	JWH	7	05-11-82	ACG	MN	JWH
8	05-11-82	ACG	MN	JWH	8	05-11-82	ACG	MN	JWH	8	05-11-82	ACG	MN	JWH
9	05-11-82	ACG	MN	JWH	9	05-11-82	ACG	MN	JWH	9	05-11-82	ACG	MN	JWH
10	05-11-82	ACG	MN	JWH	10	05-11-82	ACG	MN	JWH	10	05-11-82	ACG	MN	JWH

BY	DATE	DRAWING STATUS	
DESIGNED	ACG	ISSUED	DATE
DRAWN	ACG	FOR RECORD AND DDPD	4-8-80
CHECKED	JWH	FOR COMMENTS AND/OR APPROVAL	
DRAVO APPD	ACG	FOR CUSTOMER APPROVAL	ICGG
ICGG APPD	ACG	AND/OR COMMENTS	DOE
DOE APPD		APPROVAL FOR CONSTRUCTION	
SCALE			

TITLE	PROCESS & POTABLE WATER TREATMENT
U.S. DOE	ENERGY TECHNOLOGY
FOSSIL ENERGY PROGRAMS	CONTRACT NO. EF-77-C-01-2012
PREPARED FOR THE	ILLINOIS COAL GASIFICATION GROUP
BY	DRAVO CORPORATION PITTSBURGH, PA.

PROJECT NO.	7051
DRAWING NO.	217-110-5
CASE	DO
REV.	0



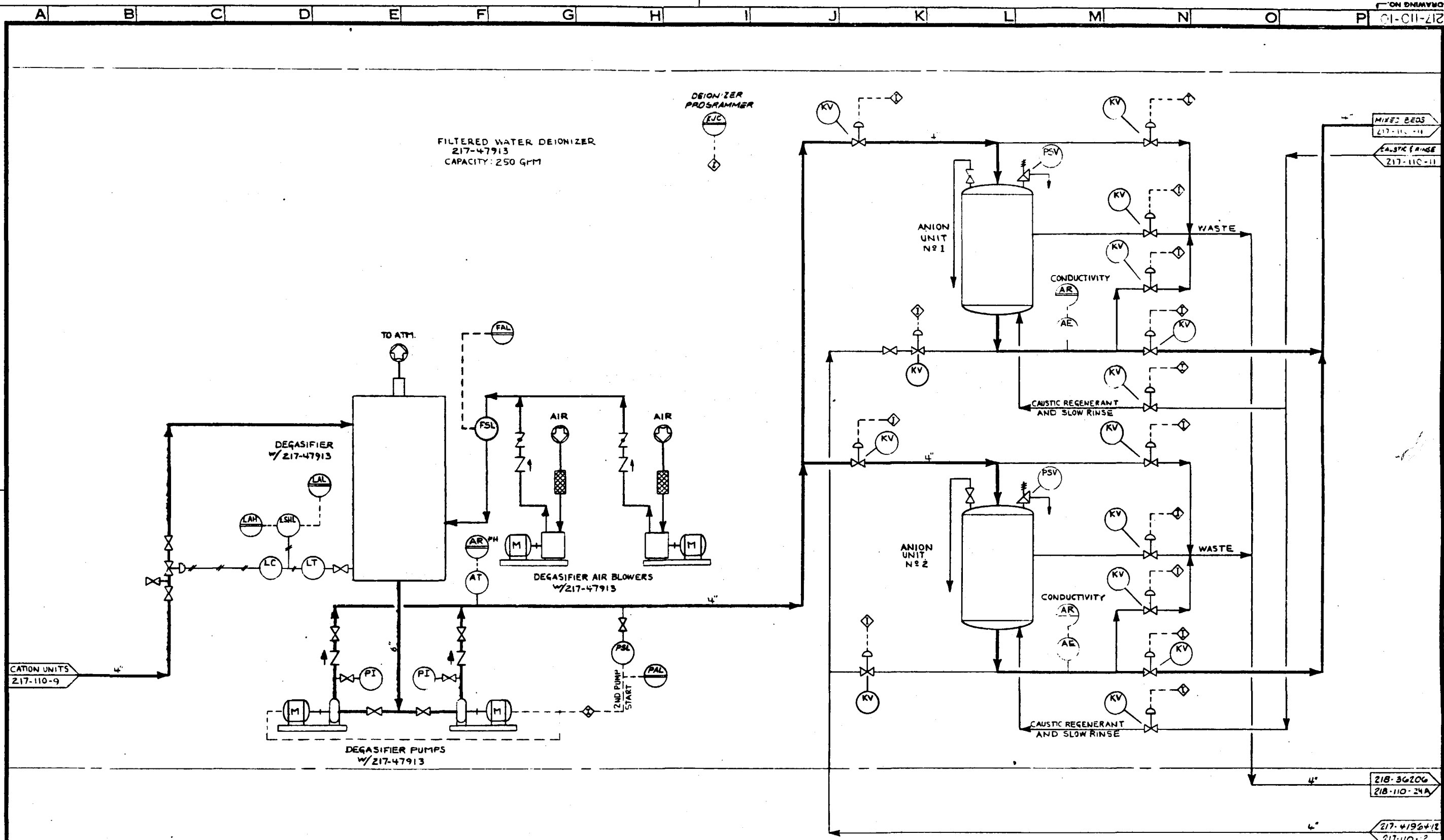


REVISIONS					REVISIONS					REVISIONS				
NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D
1	12-1-80	AG	MM	LWH	1	12-1-80	AG	MM	LWH	1	12-1-80	AG	MM	LWH
2	12-1-80	AG	MM	LWH	2	12-1-80	AG	MM	LWH	2	12-1-80	AG	MM	LWH
3	12-1-80	AG	MM	LWH	3	12-1-80	AG	MM	LWH	3	12-1-80	AG	MM	LWH
4	12-1-80	AG	MM	LWH	4	12-1-80	AG	MM	LWH	4	12-1-80	AG	MM	LWH
5	12-1-80	AG	MM	LWH	5	12-1-80	AG	MM	LWH	5	12-1-80	AG	MM	LWH
6	12-1-80	AG	MM	LWH	6	12-1-80	AG	MM	LWH	6	12-1-80	AG	MM	LWH
7	12-1-80	AG	MM	LWH	7	12-1-80	AG	MM	LWH	7	12-1-80	AG	MM	LWH
8	12-1-80	AG	MM	LWH	8	12-1-80	AG	MM	LWH	8	12-1-80	AG	MM	LWH
9	12-1-80	AG	MM	LWH	9	12-1-80	AG	MM	LWH	9	12-1-80	AG	MM	LWH
10	12-1-80	AG	MM	LWH	10	12-1-80	AG	MM	LWH	10	12-1-80	AG	MM	LWH

DESIGNED	BY	DATE	ISSUED	DATE
1	AG	12-1-80	1	12-1-80
2	AG	12-1-80	2	12-1-80
3	AG	12-1-80	3	12-1-80
4	AG	12-1-80	4	12-1-80
5	AG	12-1-80	5	12-1-80
6	AG	12-1-80	6	12-1-80
7	AG	12-1-80	7	12-1-80
8	AG	12-1-80	8	12-1-80
9	AG	12-1-80	9	12-1-80
10	AG	12-1-80	10	12-1-80

PROJECT NO	7051
DRAWING NO	217-110-9
CASE	DC
REV	1

DO NOT SCALE THIS DRAWING
IT MAY BE REDUCED FROM ORIGINAL SIZE

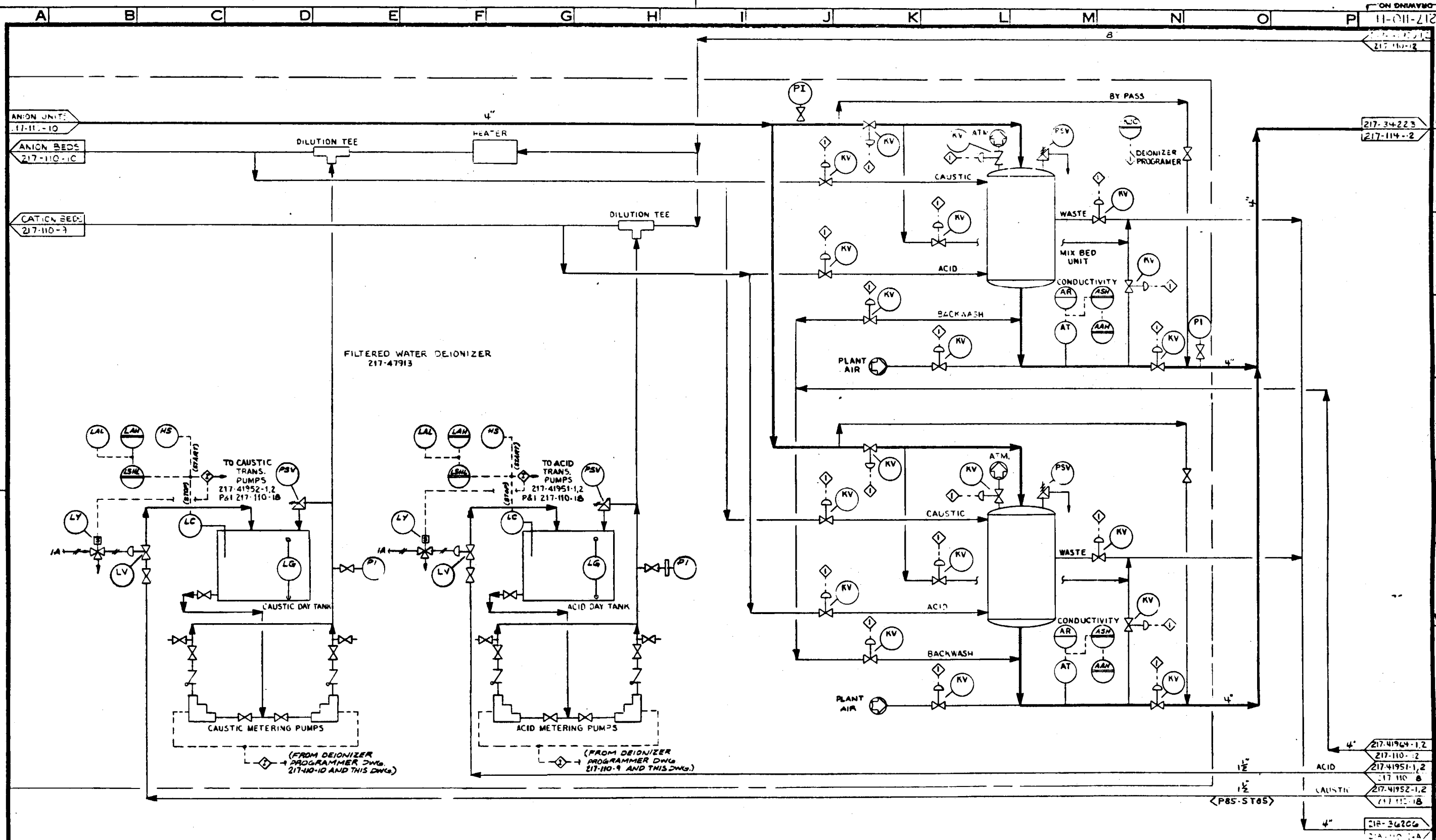


REVISIONS				REVISIONS				REVISIONS						
NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D
1	01-01-12	ACG			1	01-01-12	ACG			1	01-01-12	ACG		
2	01-01-12	ACG			2	01-01-12	ACG			2	01-01-12	ACG		
3	01-01-12	ACG			3	01-01-12	ACG			3	01-01-12	ACG		
4	01-01-12	ACG			4	01-01-12	ACG			4	01-01-12	ACG		
5	01-01-12	ACG			5	01-01-12	ACG			5	01-01-12	ACG		
6	01-01-12	ACG			6	01-01-12	ACG			6	01-01-12	ACG		
7	01-01-12	ACG			7	01-01-12	ACG			7	01-01-12	ACG		
8	01-01-12	ACG			8	01-01-12	ACG			8	01-01-12	ACG		
9	01-01-12	ACG			9	01-01-12	ACG			9	01-01-12	ACG		
10	01-01-12	ACG			10	01-01-12	ACG			10	01-01-12	ACG		

DESIGNED	BY	DATE	DRAWING STATUS	DATE
ACG	ACG	01-01-12	ISSUED	01-01-12
CHECKED	ACG	01-01-12	FOR COMMENTS AND/OR	
DRAWN	ACG	01-01-12	APPROVAL	
ICGG APP'D	ACG	01-01-12	FOR CUSTOMER APPROVAL	ICGG
DCE APP'D	ACG	01-01-12	AND/OR COMMENTS	DOE
SCALE			APPROVAL FOR	
			CONSTRUCTION	

PROJECT NO	7051
DRAWING NO	217-110-10
CASE	DC
REV.	

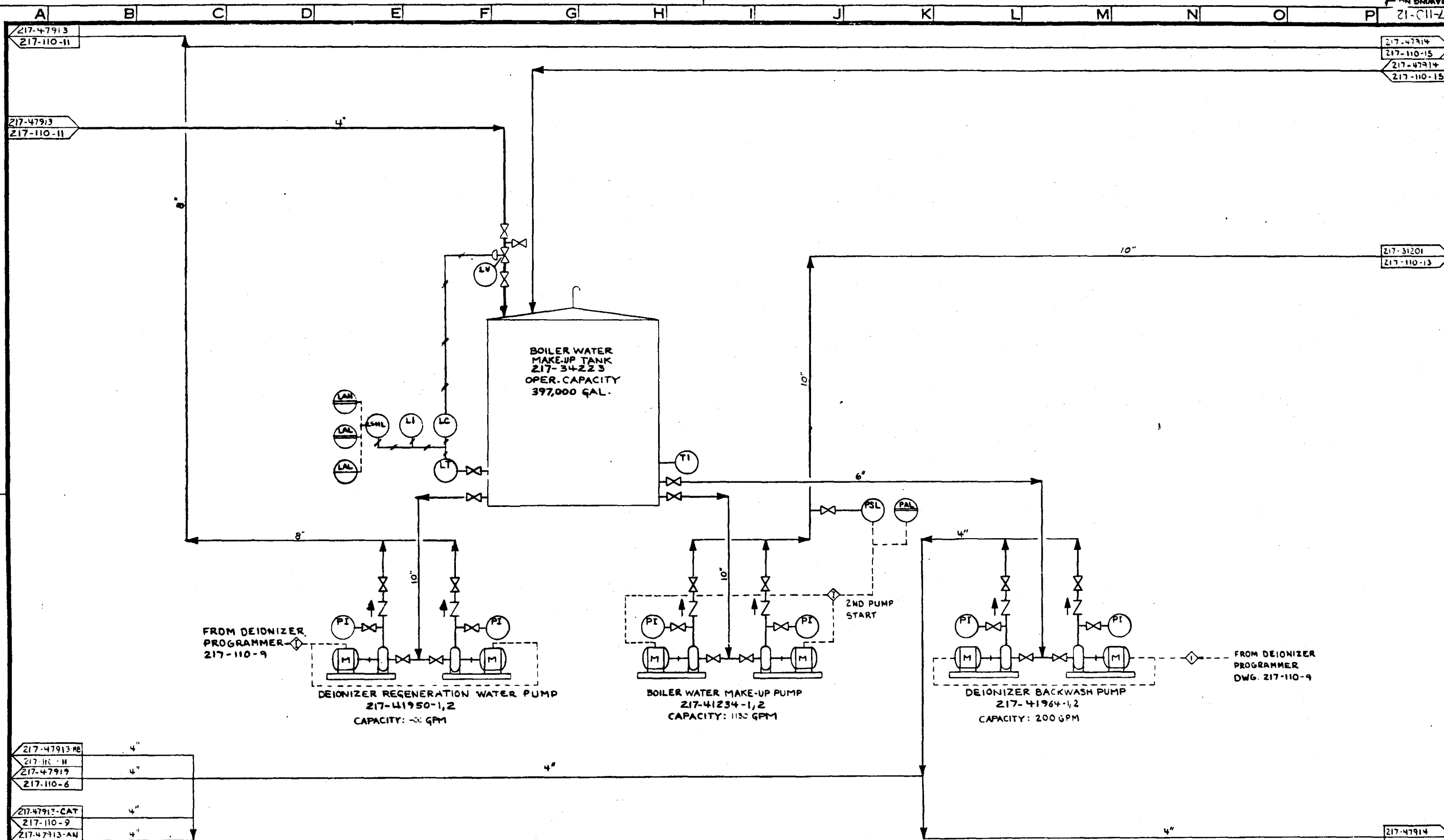
PEI DIAGRAM
AREA 217 WATER TREATMENT
DEIONIZATION
DEGASIFIER & ANION UNITS
U.S. DOE ENERGY TECHNOLOGY
FOSSIL ENERGY PROGRAMS
CONTRACT NO. EF-77-C-01-2012
PREPARED FOR THE
ILLINOIS COAL GASIFICATION GROUP
BY
DRAVO CORPORATION PITTSBURGH, PA.



REVISIONS				REVISIONS				REVISIONS			
NO.	DATE	BY	CHK'D APP'D NO.	NO.	DATE	BY	CHK'D APP'D NO.	NO.	DATE	BY	CHK'D APP'D NO.
1	10-1-80	ACG	1	1	10-1-80	ACG	1	1	10-1-80	ACG	1
2	10-1-80	ACG	1	2	10-1-80	ACG	1	2	10-1-80	ACG	1
3	10-1-80	ACG	1	3	10-1-80	ACG	1	3	10-1-80	ACG	1
4	10-1-80	ACG	1	4	10-1-80	ACG	1	4	10-1-80	ACG	1
5	10-1-80	ACG	1	5	10-1-80	ACG	1	5	10-1-80	ACG	1
6	10-1-80	ACG	1	6	10-1-80	ACG	1	6	10-1-80	ACG	1
7	10-1-80	ACG	1	7	10-1-80	ACG	1	7	10-1-80	ACG	1
8	10-1-80	ACG	1	8	10-1-80	ACG	1	8	10-1-80	ACG	1
9	10-1-80	ACG	1	9	10-1-80	ACG	1	9	10-1-80	ACG	1
10	10-1-80	ACG	1	10	10-1-80	ACG	1	10	10-1-80	ACG	1

DESIGNED	BY	DATE	DRAWING STATUS	DATE
ACG	ACG	10-1-80	ISSUED	10-1-80
DRAWN	ACG	10-1-80	FOR COMMENTS AND/OR APPROVAL	
CHECKED	ACG	10-1-80	FOR COMMENTS AND/OR APPROVAL	
DRAWN APP'D	ACG	10-1-80	FOR COMMENTS AND/OR APPROVAL	
ICGG APP'D	ACG	10-1-80	FOR CUSTOMER APPROVAL	
DOE APP'D	ACG	10-1-80	FOR CUSTOMER APPROVAL	
SCALE			APPROVAL FOR CONSTRUCTION	

TITLE	PROJECT NO
P&I DIAGRAM	7051
AREA 217 WATER TREATMENT	DRAWING NO
DEIONIZATION REGENERANT	217-110-11
AND MIXED BED UNITS	
U.S. DOE	CASE
ENERGY TECHNOLOGY	
FOSSIL ENERGY PROGRAMS	
CONTRACT NO. EF-77-C-01-2012	
PREPARED FOR THE	REV
ILLINOIS COAL GASIFICATION GROUP	
BY	
DRAGO CORPORATION PITTSBURGH PA	



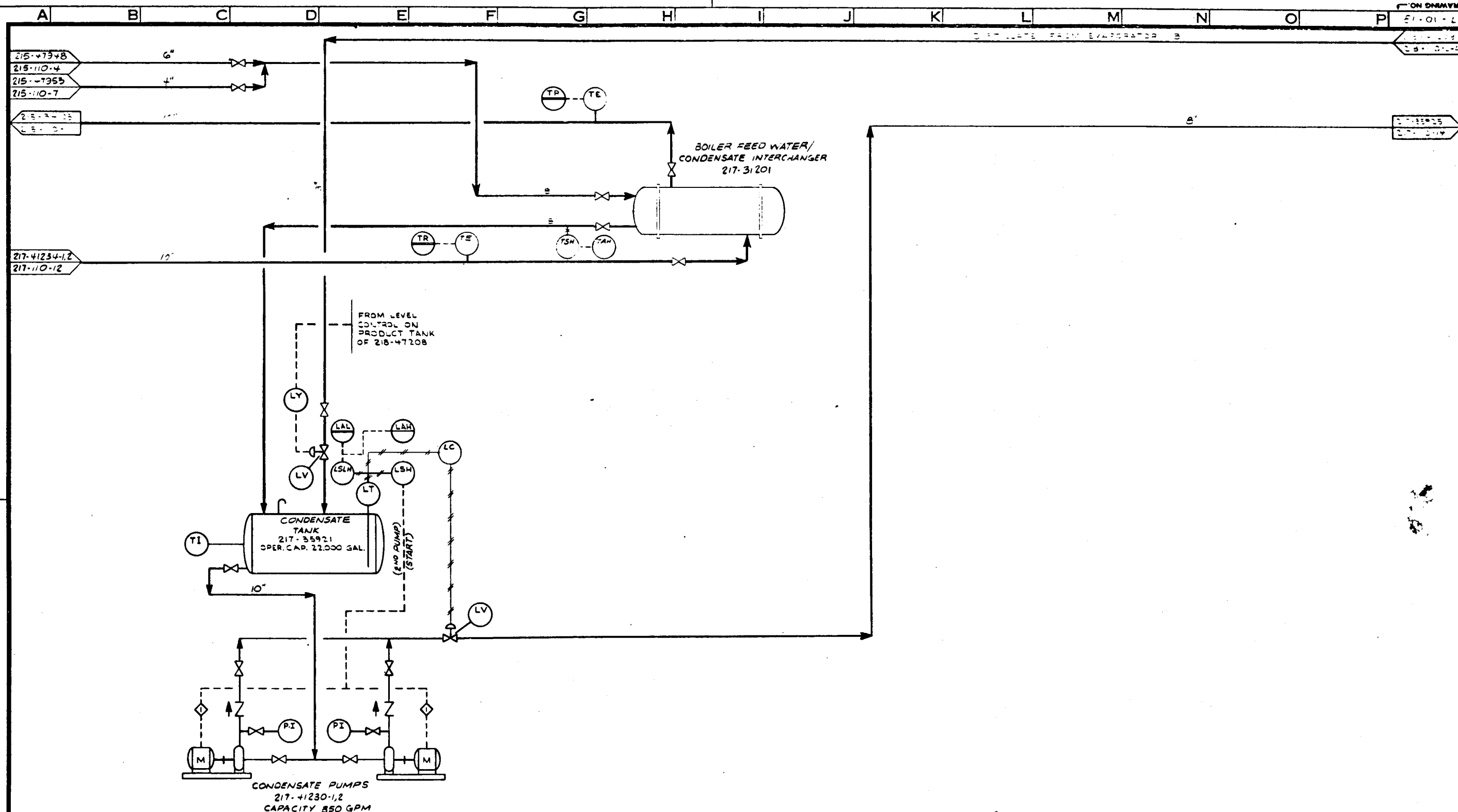
217-47913-RE	4"
217-110-11	4"
217-47919	4"
217-110-6	4"
217-47913-CAT	4"
217-110-9	4"
217-47913-AN	4"
217-110-10	4"

NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D
1	DC-DEMONSTRATION CONCEPT	11-15-79	ACG	MM	JWH	1	PRELIMINARY	11-15-79	ACG	MM	JWH	1	FOR BASELINING	11-15-79	ACG	MM	JWH
							PDEP RECORD AND DEED		ACG	MM	JWH						

BY	DATE	DRAWING STATUS
DESIGNED	ACG	11-15-79
DRAWN	ZYDORCZYK	11-15-79
CHECKED	JWH	11-15-79
DRAYO APP'D	Dr. Samuel	11-15-79
ICGG APP'D		
DCE APP'D		
SCALE	1/4" = 1'-0"	

TITLE P&I DIAGRAM
AREA 217 WATER TREATMENT
BOILER FEEDWATER STORAGE
 U.S. DoE ENERGY TECHNOLOGY
 FOSSIL ENERGY PROGRAMS
 CONTRACT NO. EF-77-C-01-2012
 PREPARED FOR THE
 ILLINOIS COAL GASIFICATION GROUP
 BY
 ORAVO CORPORATION PITTSBURGH, PA

PROJECT NO	7051
DRAWING NO	217-110-12
CASE	DC
REV	

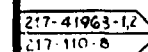


NO.	REVISIONS	DATE	BY	CHKD	APPD	NO.	REVISIONS	DATE	BY	CHKD	APPD	NO.	REVISIONS	DATE	BY	CHKD	APPD
1	DC-DEMONSTRATION CONCEPT	11-01-80	WJH	WJH	WJH	1	PRELIMINARY	11-01-80	WJH	WJH	WJH	1	FOR BASELINING	11-01-80	WJH	WJH	WJH
2						2	FOR BASELINING	11-01-80	WJH	WJH	WJH	2	PDBP RECORDS INC-PO	11-01-80	WJH	WJH	WJH
3						3						3					
4						4						4					
5						5						5					
6						6						6					
7						7						7					
8						8						8					

BY	DATE	DRAWING STATUS	TITLE	PROJECT NO.
DESIGNED	WJH	ISSUED	AREA 27 WATER TREATMENT	7051
DRAWN	WJH	FOR RECORD	CONDENSATE COLLECTION	DRAWING NO.
CHECKED	WJH	FOR COMMENTS AND/OR APPROVAL	U.S. DOE ENERGY TECHNOLOGY	217-110-13
DRAYO APPD	WJH	FOR CUSTOMER APPROVAL	FOSSIL ENERGY PROGRAMS	CASE
ICGG APPD	WJH	AND/OR COMMENTS	CONTRACT NO. EF-77-CG-2012	20
DOE APPD	WJH	APPROVAL FOR CONSTRUCTION	PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP	REV
SCALE			BY DRAYO CORPORATION PITTSBURGH PA	

"D"

DO NOT SCALE THIS DRAWING
IT MAY BE REDUCED FROM ORIGINAL SIZE

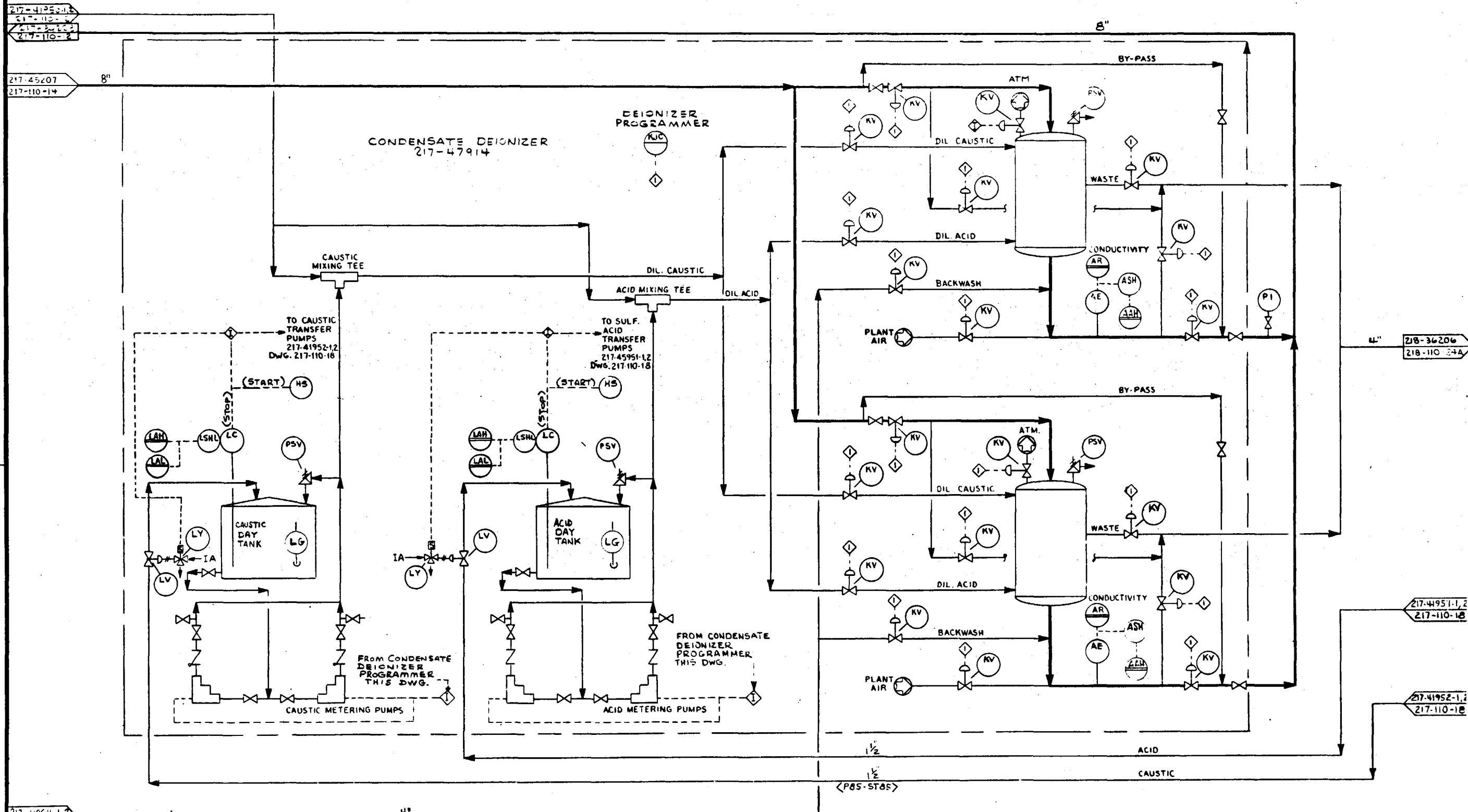


BY		DATE	DRAWING STATUS	
DESIGNED	A.C.G.	11-6-79	ISSUED	DATE
DRAWN	EJG/CR/ZYK	11-17-79	NOT RECORDED ANY CDS	4-8-80
CHECKED	C.W.H.	11-26-79	FOR COMMENTS AND/OR	
DRAWN APPD	[Signature]	[Signature]	APPROVAL	
ICGG APPD	[Signature]	[Signature]	FOR CUSTOMER APPROVAL	ICGG
DOE APPD	[Signature]	[Signature]	AND/OR COMMENTS	DOE
SCALE 1/4"			APPROVAL FOR CONSTRUCTION	

PROJECT NO
7051
DRAWING NO
217-110-14

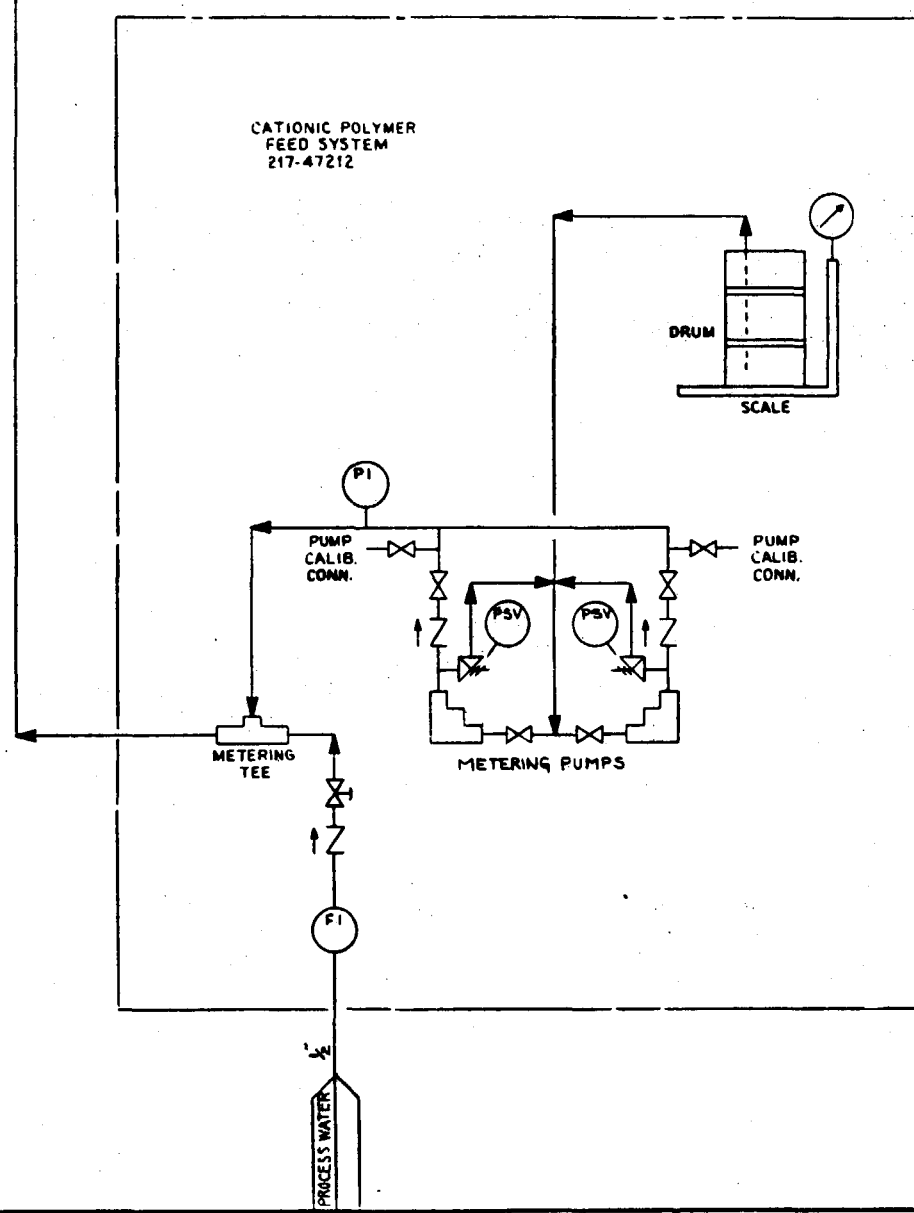
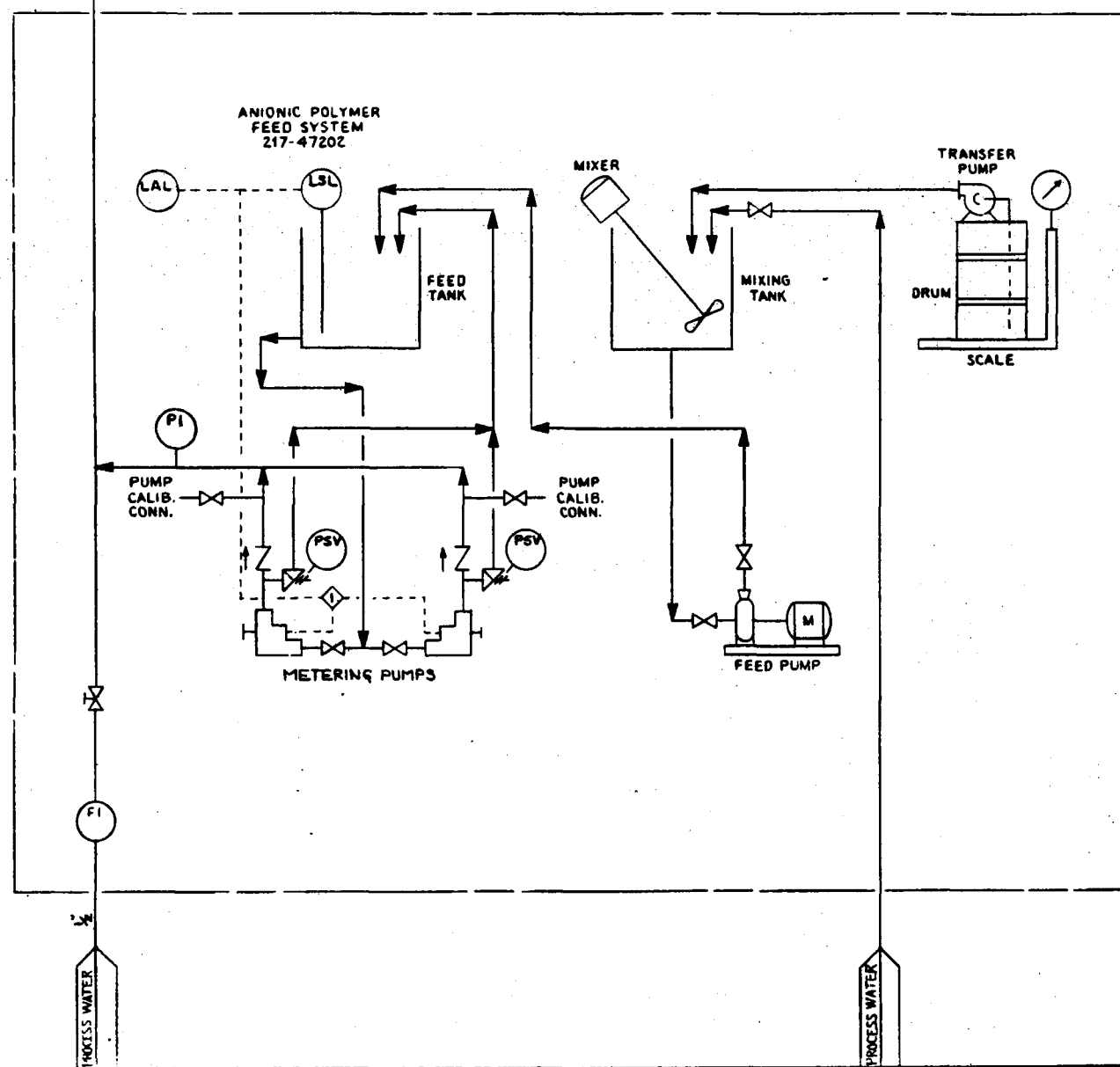
CASE
DC

REV. 

[illegible]

	BY	DATE	DRAWING STATUS		TITLE	PROJECT NO.
DESIGNED	W.B.	11-2-80	ISSUED	DATE	AREA 217 WATER TREATMENT CONDENSATE DEIONIZATION	7051
DRAWN	W.B.	11-2-80	FOR RECORD	DATE		DRAWING NO.
CHECKED	J.W.H.	11-2-80	FOR COMMENTS AND/OR APPROVAL		U.S. DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-CO1-2012	217-110-1
DRAVO APPD			FOR CUSTOMER APPROVAL			CASE
ICGG APPD			ICGG		PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAVO CORPORATION PITTSBURGH PA	25
DOE APPD			AND/OR COMMENTS	DOE		REV
SCALE			APPROVAL FOR CONSTRUCTION			

217-47208-1.1
217-110-1
217-47208-1.2
217-110-1



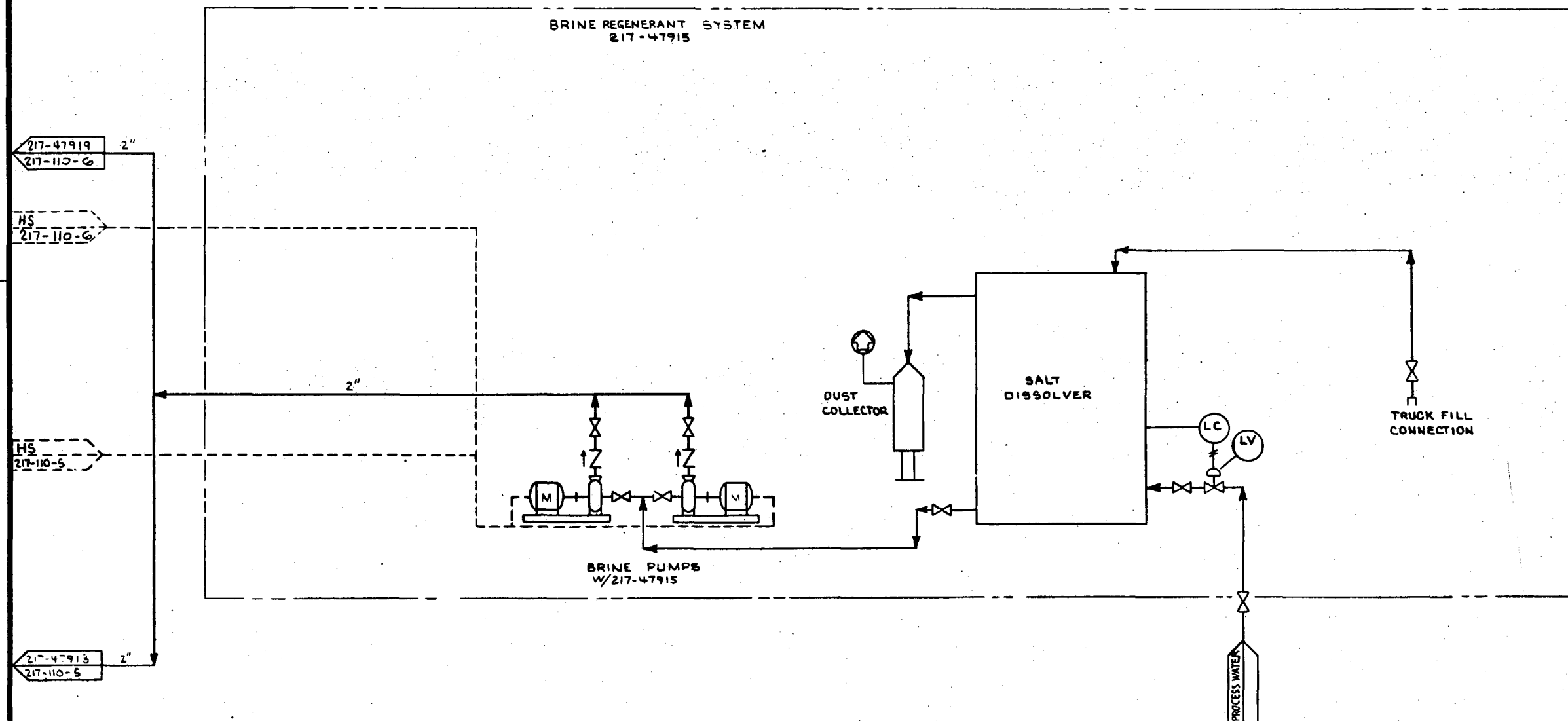
NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D		
1	DC DEMONSTRATION CONCEPT	10/1/11	ICGG	ML	JWH	1	PRELIMINARY	10/1/11	VS	ACG	MIN	JWH	1	PRELIMINARY	10/1/11	VS	ACG	MIN	JWH
							FOR BASELINING	10/1/11	VS	ACG	MIN	JWH	2	FOR BASELINING	10/1/11	VS	ACG	MIN	JWH
							PDEP RECORD AND DFD	10/1/11	VS	ACG	MIN	JWH	3	PDEP RECORD AND DFD	10/1/11	VS	ACG	MIN	JWH

DO NOT SCALE THIS DRAWING.
IT MAY BE REDUCED FROM ORIGINAL SIZE.

DESIGNED	BY	DATE	DRAWING STATUS	TITLE	PROJECT NO
ICGG	J.W.H.	10/1/11	ISSUED	P&ID DIAGRAM AREA 217 WATER TREATMENT POLYMER ADDITION	7051
DRAWN	J.W.H.	10/1/11	FOR RECORD		DRAWING NO
CHECKED	J.W.H.	10/1/11	FOR COMMENTS AND/OR		217-110-16
DRAWN APP'D	J.W.H.	10/1/11	APPROVAL		CASE
ICGG APP'D	J.W.H.	10/1/11	FOR CUSTOMER APPROVAL		C
DOE APP'D	J.W.H.	10/1/11	AND/OR COMMENTS		REV.
SCALE			APPROVAL FOR		
			CONSTRUCTION		

U.S. DOE ENERGY TECHNOLOGY
FOSSIL ENERGY PROGRAMS
CONTRACT NO. EF-77-C-01-2012
PREPARED FOR THE
ILLINOIS COAL GASIFICATION GROUP
BY
DRACO CORPORATION PITTSBURGH, PA.

PROJECT NO
7051
DRAWING NO
217-110-16
CASE
C
REV.



NO.	REVISIONS	DATE	BY	CHK'D	APPR'D	NO.	REVISIONS	DATE	BY	CHK'D	APPR'D	NO.	REVISIONS	DATE	BY	CHK'D	APPR'D	
1	DC DEMONSTRATION CONCEPT	10/10/80	ACG	MN	UWH	1	PRELIMINARY	10/10/80	ACG	MN	UWH	1						
2						2	FOR BASELINING	2/11/81	ACG	MN	UWH	2						
3						3	PDBP RECORD AND LFL	5/8/81	ACG	MN	UWH	3						
4												4						
5												5						
6												6						
7												7						
8												8						
9												9						
10												10						
11												11						
12												12						
13												13						
14												14						
15												15						
16												16						
17												17						
18												18						
19												19						
20												20						
21												21						
22												22						
23												23						
24												24						
25												25						
26												26						
27												27						
28												28						
29												29						
30												30						
31												31						
32												32						
33												33						
34												34						
35												35						
36												36						
37												37						
38												38						
39												39						
40												40						
41												41						
42												42						
43												43						

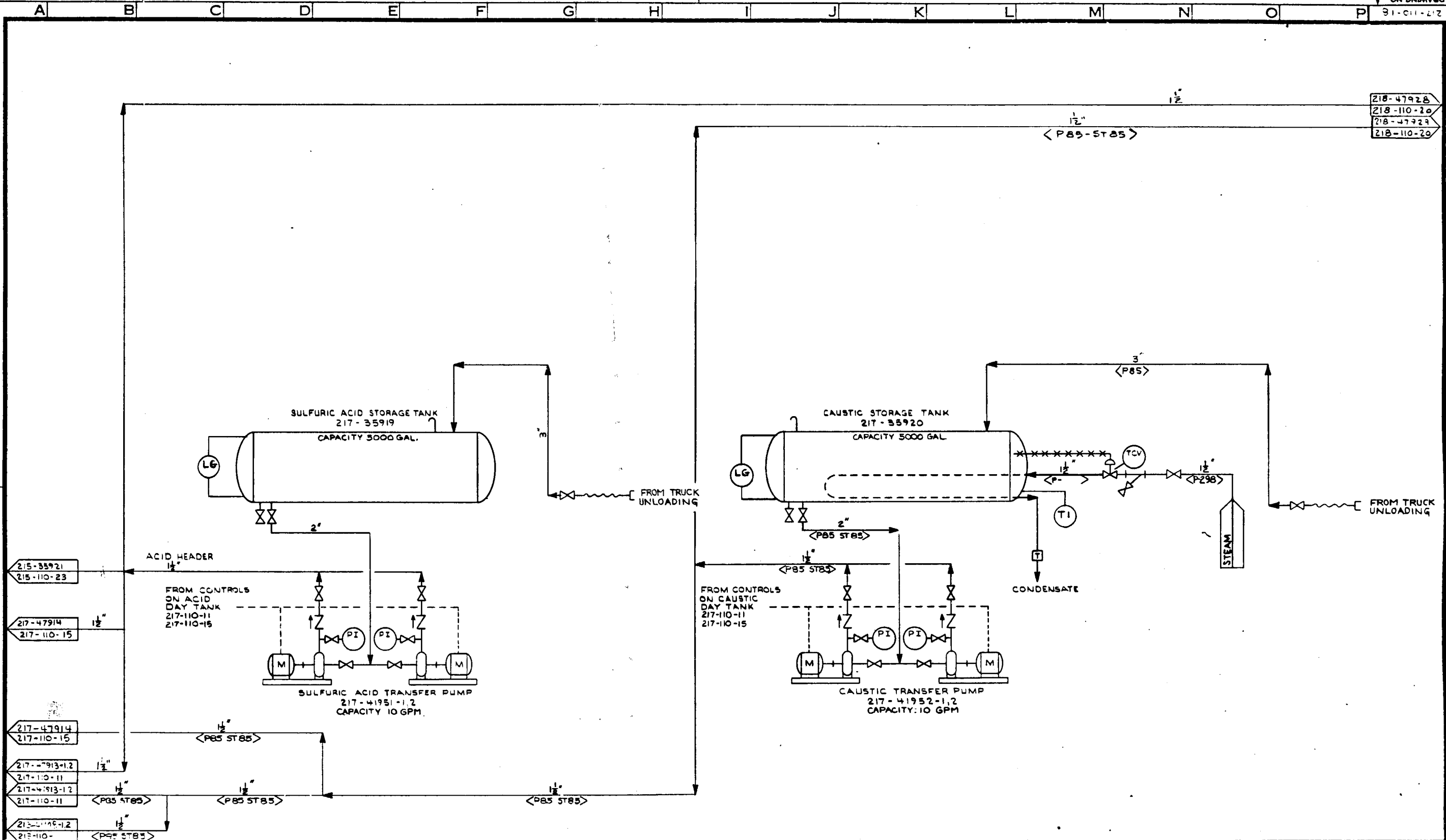
DESIGNED	BY	DATE	DRAWING STATUS	TITLE
ACG	ACG	10/10/80	ISSUED	P & I DIAGRAM
DRAWN	KLF	10/10/80	FOR RECORD AND OFF	AREA 210 WATER TREATMENT
CHECKED	JLS H	10/21/80	FOR COMMENTS AND/OR APPROVAL	RAKE MAKE-UP SYSTEM
DRAW APPD				U.S. DOE ENERGY TECHNOLOGY
ICGG APPD			FOR CUSTOMER APPROVAL	FOSSIL ENERGY PROGRAMS
DOE APPD			AND/OR COMMENTS	CONTRACT NO EF-77-C-01-2012
			APPROVAL FOR CONSTRUCTION	PREPARED FOR THE
SCALE				ILLINOIS COAL GASIFICATION GROUP
				BY
				DRAGO CORPORATION PITTSBURGH, PA.

PROJECT NO	7051
DRAWING NO	217-11C-17
CASE	DC
REV	△

"D"

DO NOT SCALE THIS DRAWING.
IT MAY BE REDUCED FROM ORIGINAL SIZE.

218-47928
218-110-20
218-47929
218-110-20

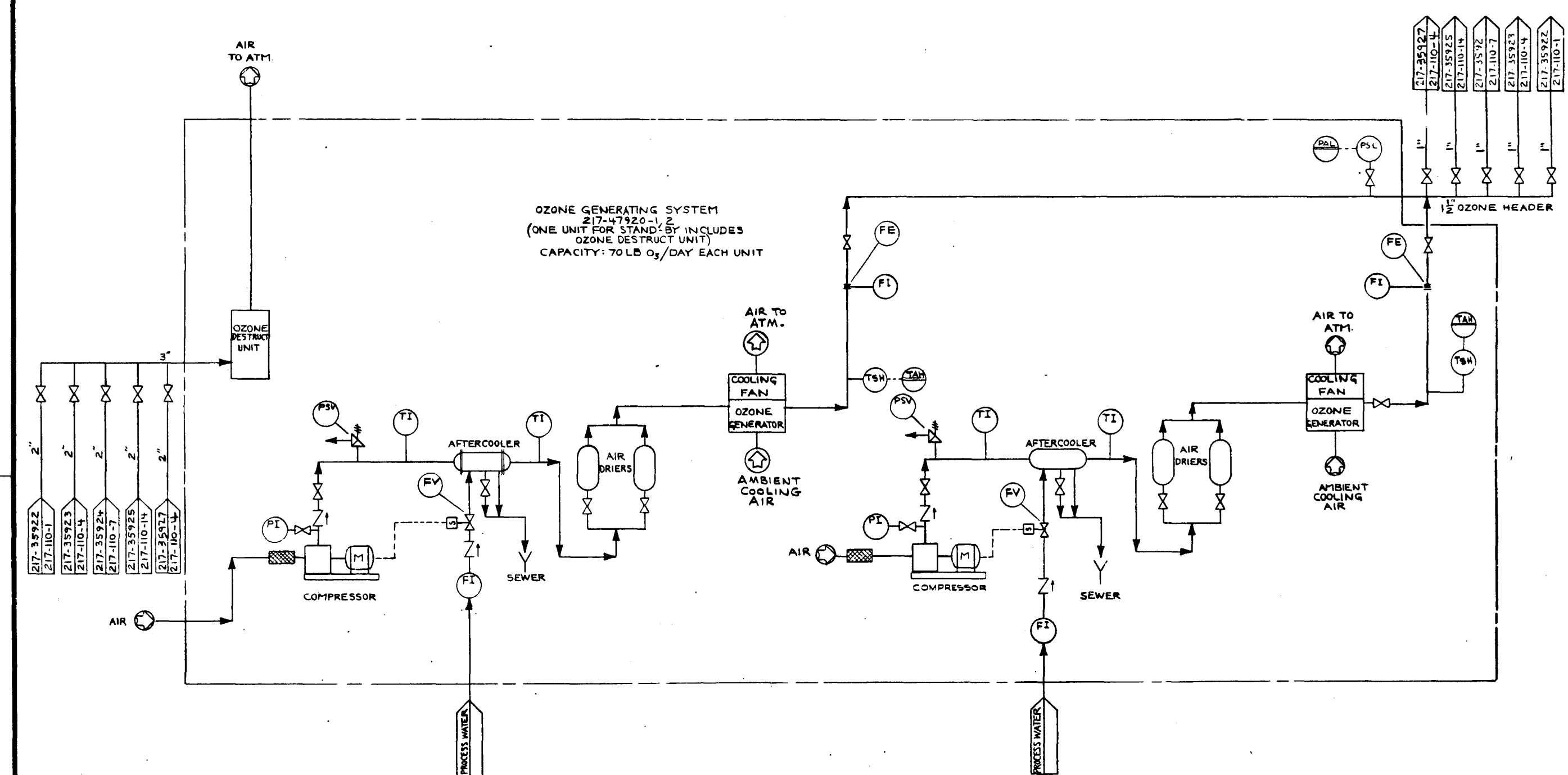


REVISIONS					REVISIONS					REVISIONS				
NO.	DATE	BY	CHKD	APPR	NO.	DATE	BY	CHKD	APPR	NO.	DATE	BY	CHKD	APPR
1	10/1/80	ACG	MN	LWH	1	10/1/80	ACG	MN	LWH	1	10/1/80	ACG	MN	LWH
2	10/1/80	ACG	MN	LWH	2	10/1/80	ACG	MN	LWH	2	10/1/80	ACG	MN	LWH
3	10/1/80	ACG	MN	LWH	3	10/1/80	ACG	MN	LWH	3	10/1/80	ACG	MN	LWH
4	10/1/80	ACG	MN	LWH	4	10/1/80	ACG	MN	LWH	4	10/1/80	ACG	MN	LWH
5	10/1/80	ACG	MN	LWH	5	10/1/80	ACG	MN	LWH	5	10/1/80	ACG	MN	LWH
6	10/1/80	ACG	MN	LWH	6	10/1/80	ACG	MN	LWH	6	10/1/80	ACG	MN	LWH
7	10/1/80	ACG	MN	LWH	7	10/1/80	ACG	MN	LWH	7	10/1/80	ACG	MN	LWH
8	10/1/80	ACG	MN	LWH	8	10/1/80	ACG	MN	LWH	8	10/1/80	ACG	MN	LWH
9	10/1/80	ACG	MN	LWH	9	10/1/80	ACG	MN	LWH	9	10/1/80	ACG	MN	LWH
10	10/1/80	ACG	MN	LWH	10	10/1/80	ACG	MN	LWH	10	10/1/80	ACG	MN	LWH

DESIGNED	BY	DATE	DRAWING STATUS	ISSUED	DATE
ACG	ACG	10/1/80	ISSUED	ACG	10/1/80
DRAWN	ACG	10/1/80	FOR RECORD	ACG	10/1/80
CHECKED	MN	10/1/80	FOR COMMENTS AND/OR APPROVAL	ACG	10/1/80
DRAGO APPD	ACG	10/1/80	FOR CUSTOMER APPROVAL	ICGG	10/1/80
ICGG APPD	ACG	10/1/80	AND/OR COMMENTS	DOE	10/1/80
DOE APPD	ACG	10/1/80	APPROVAL FOR CONSTRUCTION		
SCALE					

PROJECT NO	7051
DRAWING NO	217-110-18
CASE	EC
REV.	

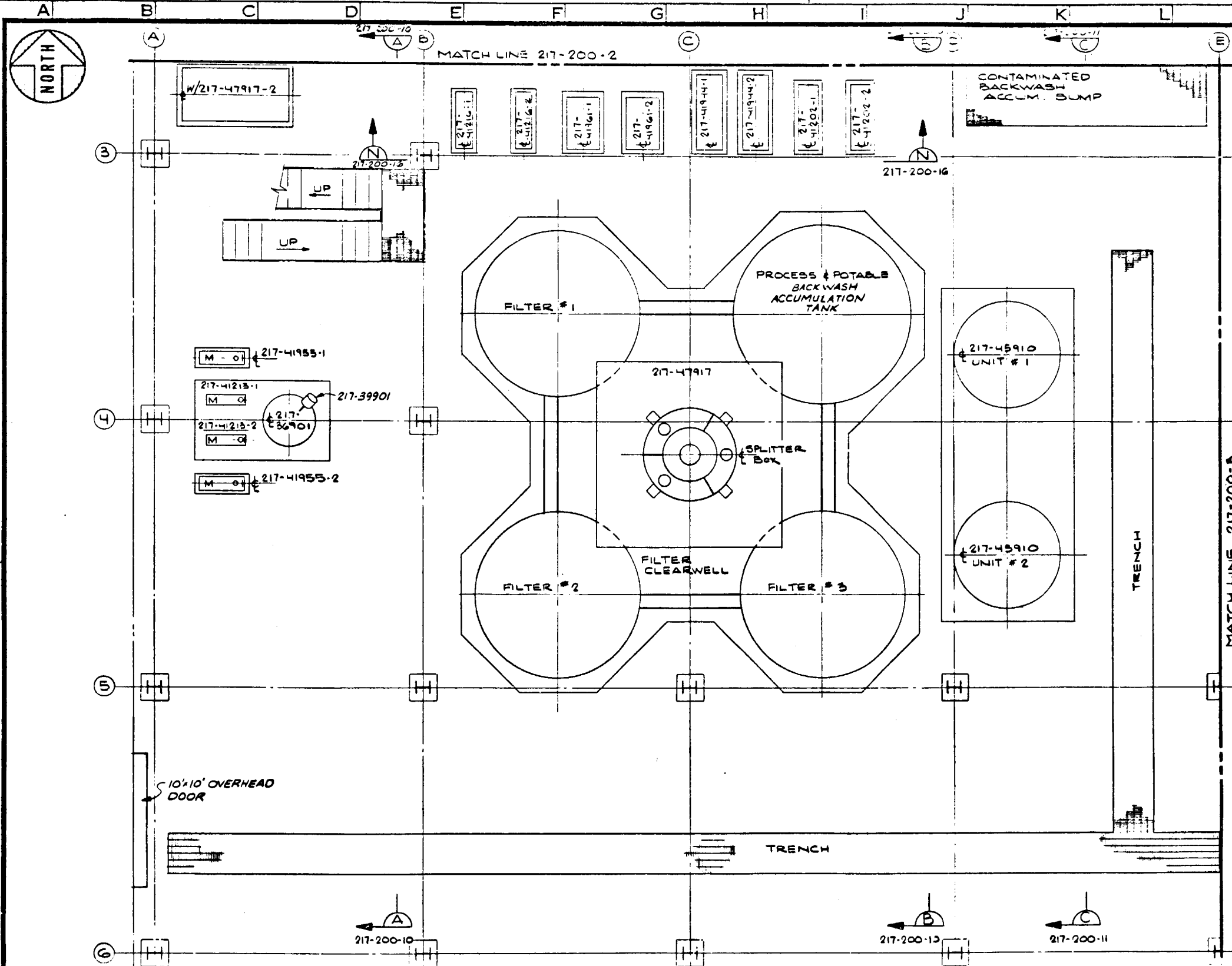
TITLE	P&I DIAGRAM AREA 217 WATER TREATMENT ACID AND CAUSTIC STORAGE
U.S. DOE	ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012
PREPARED FOR THE	ILLINOIS COAL GASIFICATION GROUP BY DRAGO CORPORATION PITTSBURGH PA



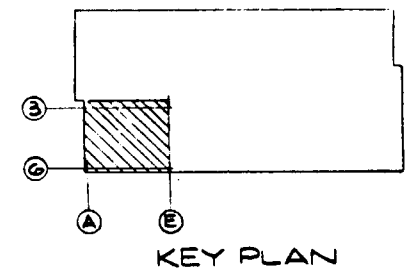
REVISIONS					REVISIONS					REVISIONS				
NO.	DATE	BY	CHK'D	APPR	NO.	DATE	BY	CHK'D	APPR	NO.	DATE	BY	CHK'D	APPR
1	10-1-80	AGG	NM	JWH	1		AGG	NM	JWH	1	10-1-80	AGG	NM	JWH
										2	10-1-80	AGG	NM	JWH
										3	10-1-80	AGG	NM	JWH
										4	10-1-80	AGG	NM	JWH

"D"

DO NOT SCALE THIS DRAWING
IT MAY BE REDUCED FROM ORIGINAL SIZE



EQUIPMENT LIST	
ITEM NO.	DESCRIPTION
217-36901	SLUDGE HOLDING TANK
217-39901	SLUDGE HOLDING TANK AGITATOR
217-41202-1&2	PROCESS & POTABLE BACKWASH DISPOSAL PUMP
217-41213-1&2	CROSSFLOW CLARIFIER SLUDGE PUMP
217-41216-1&2	FILTER BACKWASH PUMP
217-41944-1&2	FILTERED WATER MAKE-UP PUMP
217-41955-1&2	CROSSFLOW CLARIFIER SPRAY PUMP
217-41967-1&2	PROCESS & POTABLE WATER MAKE-UP PUMP
217-45910	PROCESS & POTABLE WATER CARBON FILTER
217-47917	DEEP BED GRAVITY FILTER SYSTEM
M/217-47917-2	BACKWASH AIR BLOWER

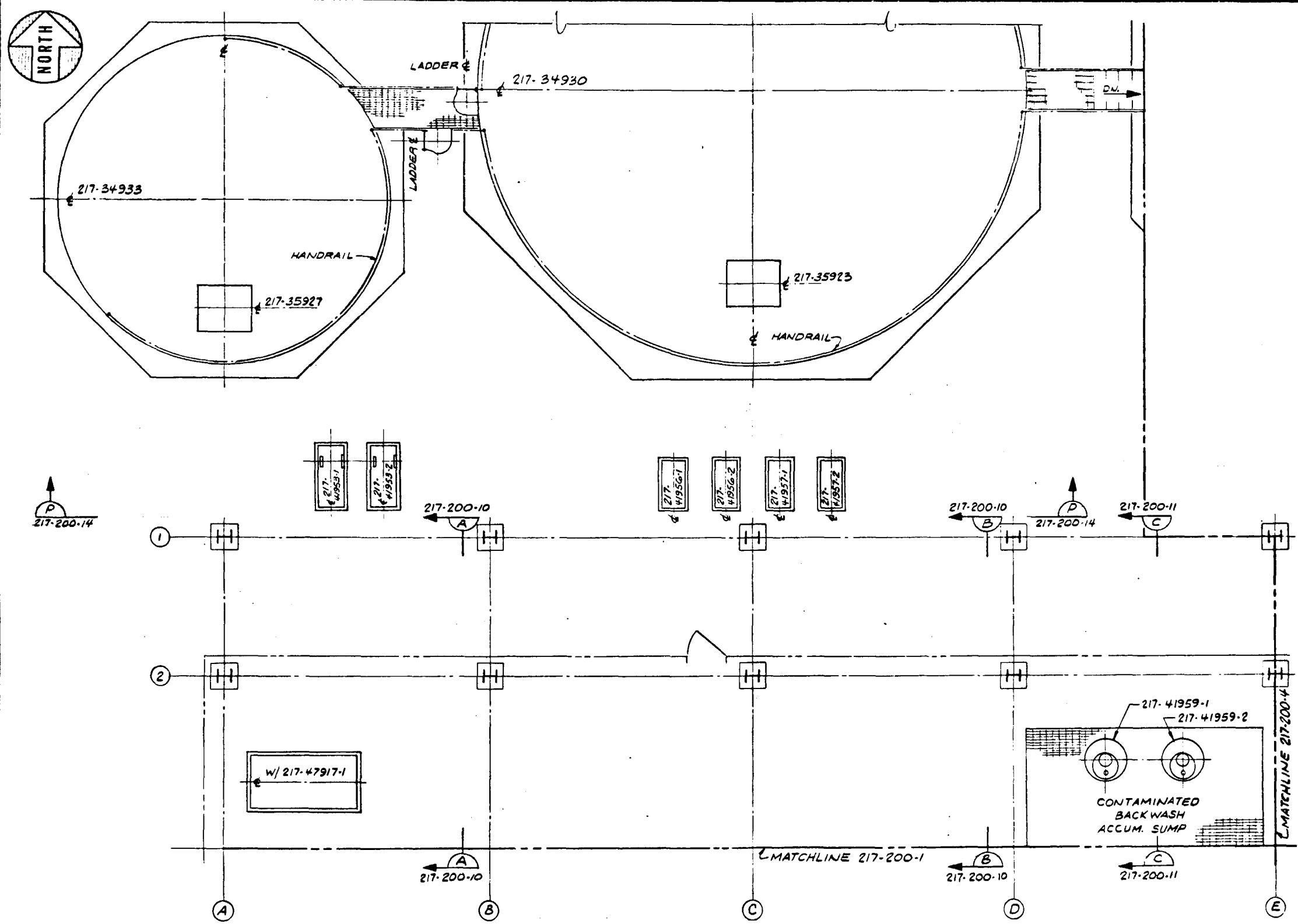


PRELIMINARY NOT APPROVED FOR CONSTRUCTION

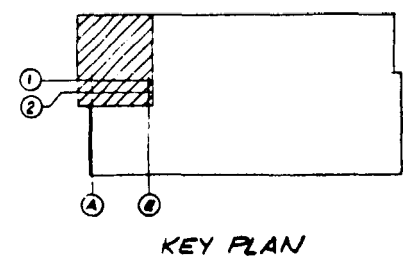
REVISIONS					REVISIONS					REVISIONS				
NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D
1	11/11/11	...	...	...	...	...	...	...	...	...	...	...	...	...
2	11/11/11	...	...	...	...	...	...	...	...	...	...	...	...	...

BY		DATE		DRAWING STATUS	
DESIGNED	...	ISSUED	...	DATE	...
DRAWN	...	FOR OFFD REVIEW	...	DATE	...
CHECKED	...	FOR COMMENTS AND/OR APPROVAL	...	DATE	...
DRAWN APP'D	...	FOR CUSTOMER APPROVAL	...	DATE	...
CHK. APP'D	...	AND/OR COMMENTS	...	DATE	...
CHK. APP'D	...	APPROVAL FOR CONSTRUCTION	...	DATE	...

TITLE		PROJECT NO
WATER TREATMENT LAYOUT PLAN		7051
U.S. DoE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. FE770012712		DRAWING NO
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAYO CORPORATION PITTSBURGH PA		217-200-1
CASE		CC
REV		...



ITEM NO.	DESCRIPTION
217-34930	FILTERED WATER STORAGE TANK
217-34933	PROCESS & POTABLE FILTERED WATER TANK
217-35923	FILTERED WATER OZONE CONTACTOR
217-35927	PROCESS & POTABLE WATER OZONE CONTACTOR
217-41953-1&2	PROCESS & POTABLE WATER CATION EXCHANGER FEED PUMP
217-41956-1&2	COOLING TOWER WATER CATION EXCHANGER FEED PUMP
217-41957-1&2	HOTTER WATER DEIONIZER FEED PUMP
217-41958-1&2	CONTAMINATED BACKWASH DISPOSAL PUMP
W/217-47917-1	BACKWASH AIR BLOWER



PRELIMINARY NOT APPROVED FOR CONSTRUCTION

1 2 3 4 5 6 7 8 9 10 11 12
14"=1'-0"

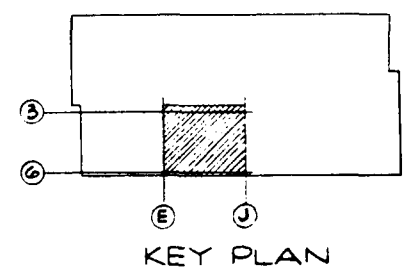
NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D
1	ISSUED FOR CONSTRUCTION	11/1/11	EC														
2	ISSUED FOR CONSTRUCTION	11/1/11	EC														
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	

BY	DATE	DRAWING STATUS
DESIGNED		ISSUED
DRAWN	EC	FOR CONSTRUCTION
CHECKED		FOR COMMENTS AND/OR APPROVAL
DRAWN APP'D		FOR CUSTOMER APPROVAL
ICG APP'D		AND/OR COMMENTS
DATE APP'D		APPROVAL FOR CONSTRUCTION

WATER TREATMENT LAYOUT PLAN
U.S. DOE ENERGY TECHNOLOGY FOSS. ENERGY PROGRAMS
CONTRACT NO. DE-AC01-01-OR-21424
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP
BY DRAVCO CORPORATION, PITTSBURGH, PA

PROJECT NO. 7051
DRAWING NO. 217-200-2
CASE EC
REV

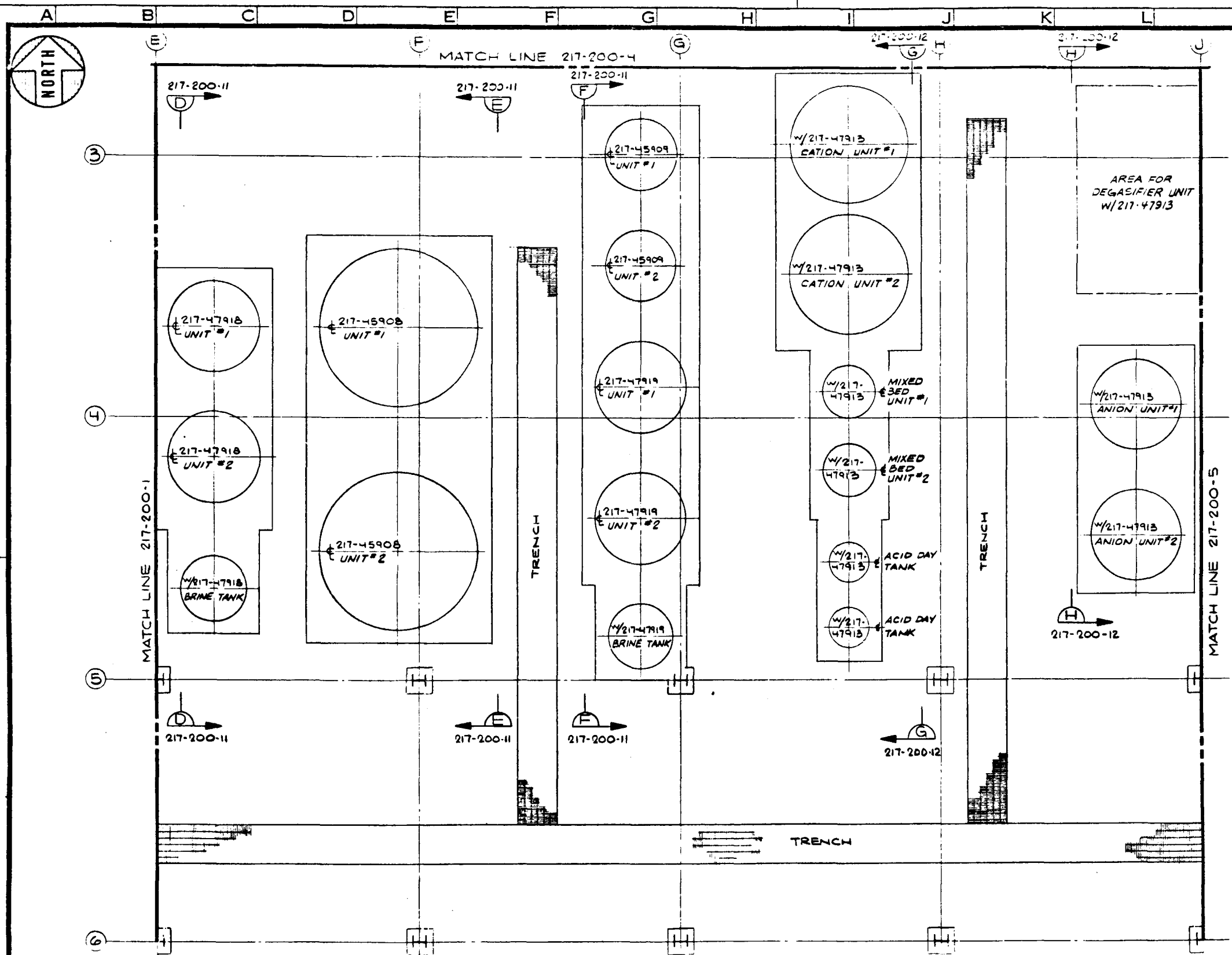
ITEM NO.	EQUIPMENT LIST
217-45908	COOLING TOWER WATER CARBON FILTER
217-45909	DEIONIZER CARBON FILTER
217-47913	FILTERED WATER DEIONIZER
W/217-47913	CATION UNIT 1&2
W/217-47913	DEGASIFIER
W/217-47913	MIXED BED UNIT 1&2
W/217-47913	ANION UNIT 1&2
W/217-47913	CAUSTIC DAY TANK & METERING PUMPS
W/217-47913	ACID DAY TANK & METERING PUMPS
217-47918	PROCESS & POTABLE WATER CATION EXCHANGER
W/217-47918	BRINE REGENERANT DAY TANK
217-47919	COOLING TOWER WATER CATION EXCHANGER
W/217-47919	BRINE REGENERANT DAY TANK



PRELIMINARY

NOT APPROVED FOR CONSTRUCTION

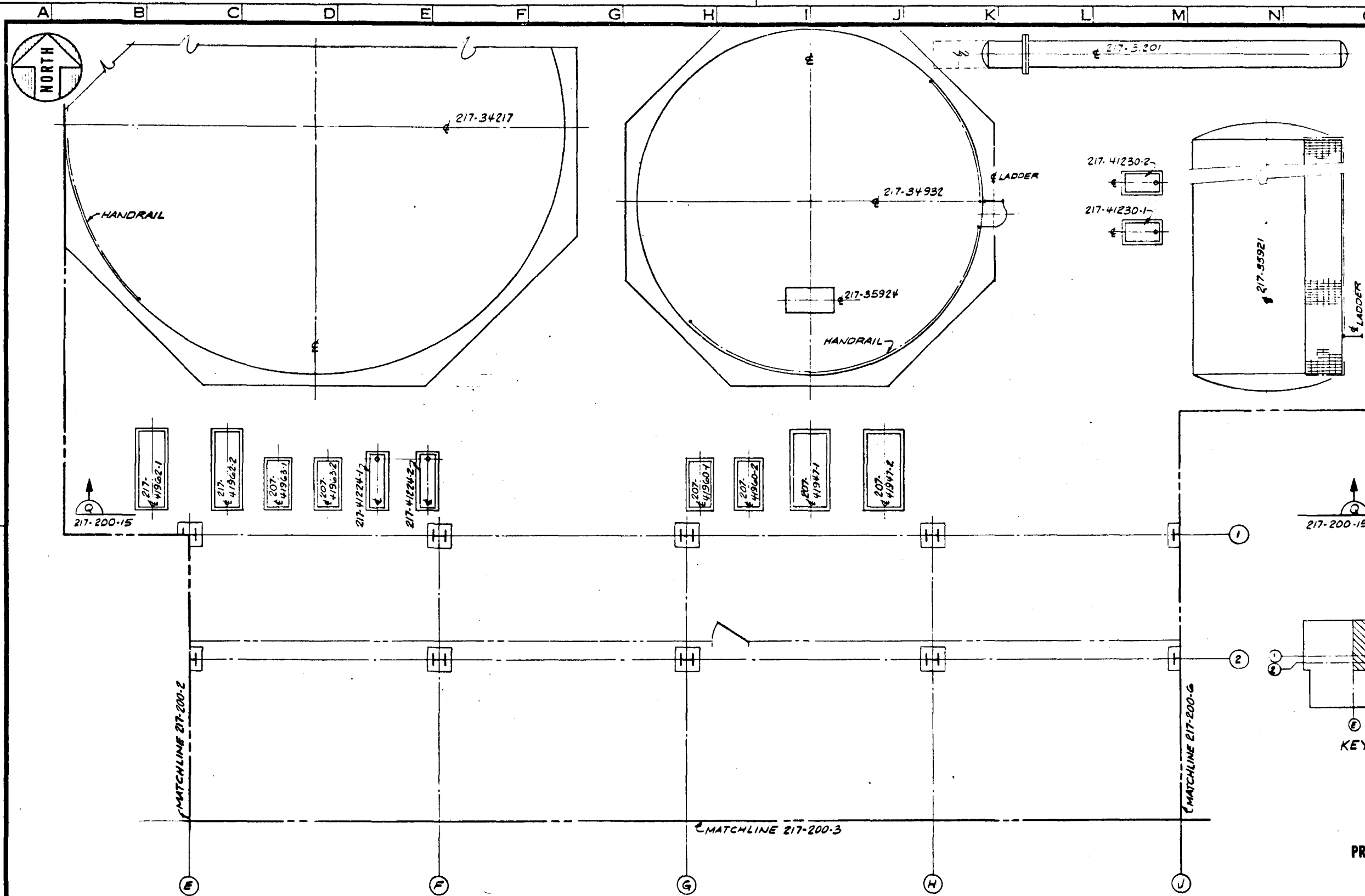
0 1 2 3 4 5 6 7 8 9 10 11 12
1"=10'-0"



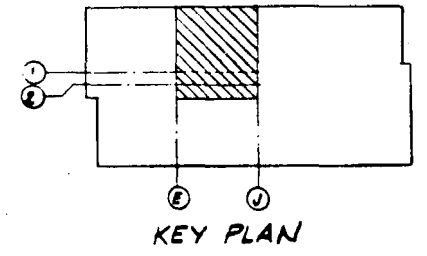
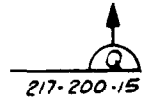
NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D
1	ISSUED FOR BASELINE	10/1/12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	ISSUED FOR RFPD REVIEW	10/1/12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3						...						...					
4						...						...					
5						...						...					
6						...						...					

BY	DATE	DRAWING STATUS
DESIGNED	...	ISSUED
DRAWN	...	FOR COMMENTS AND/OR APPROVAL
CHECKED	...	FOR COMMENTS AND/OR APPROVAL
DRAWN APPD	...	FOR CUSTOMER APPROVAL
ICGG APPD	...	AND/OR COMMENTS
ICGE APPD	...	APPROVAL FOR CONSTRUCTION
SCALE	1"=10'-0"	

TITLE	WATER TREATMENT LAYOUT PLAN	PROJECT NO.	7051
U.S. DoE	ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS	DRAWING NO.	217-200-3
CONTRACT NO.	EF 77-C 01-2512	CASE	DC
PREPARED FOR THE	ILLINOIS COAL GASIFICATION GROUP	REV.	...
BY	DRAYO CORPORATION PITTSBURGH PA		



EQUIPMENT LIST	
ITEM NO	DESCRIPTION
217-31201	BOILER FEED WATER CLEAN CONDENSATE INTERCHANGER
217-34217	COOLING TOWER MAKE-UP TANK
217-34932	PROCESS & POTABLE WATER STORAGE TANK
217-35921	HOT CONDENSATE HOLDING TANK
217-35924	PROCESS & POTABLE WATER COOLING CONTACTOR
217-41224-1&2	COOLING TOWER MAKE-UP PUMP
217-41230-1&2	HOT CONDENSATE HEAT EXCHANGER PUMP
217-41947-1&2	PROCESS & POTABLE WATER PUMP
217-41960-1&2	PROCESS & POTABLE BACKWASH & REGENERATION PUMP
217-41962-1&2	COOLING TOWER CATION EXCHANGER REGENERATION PUMP
217-41963-1&2	CARBON FILTER BACKWASH PUMP



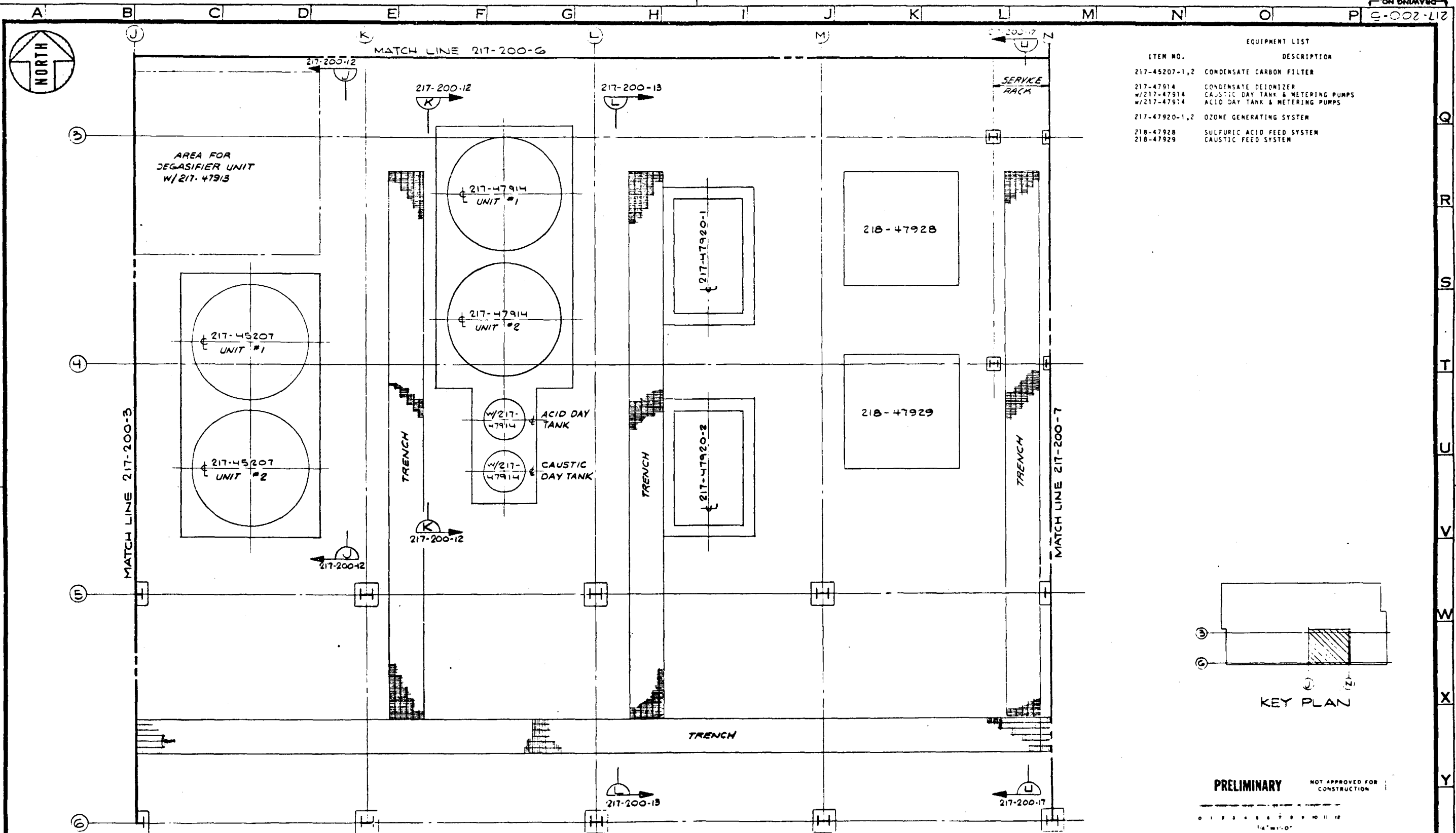
PRELIMINARY NOT APPROVED FOR CONSTRUCTION

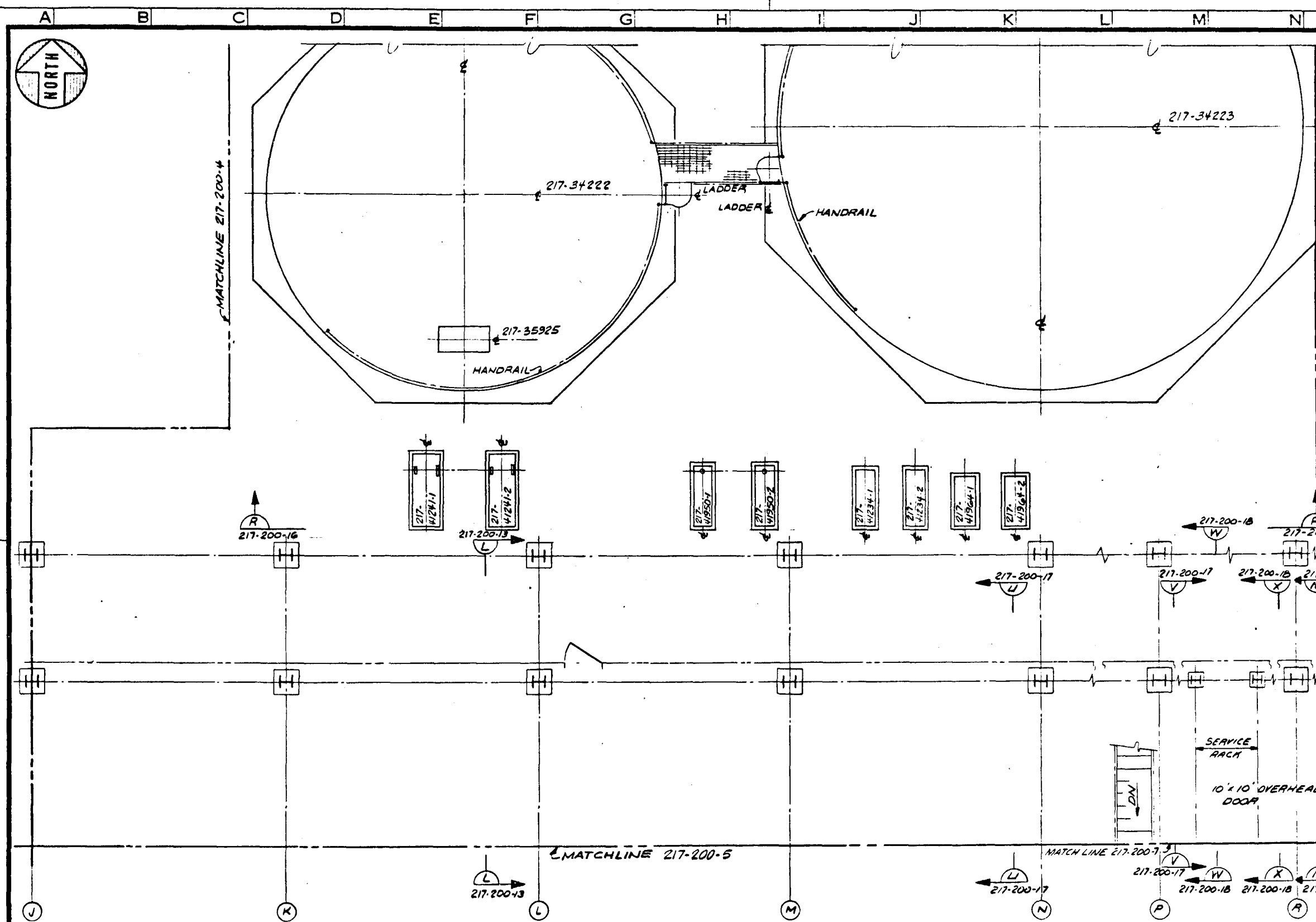
NO.	REVISIONS	DATE	BY	CHK'D	APPR'D	NO.	REVISIONS	DATE	BY	CHK'D	APPR'D	NO.	REVISIONS	DATE	BY	CHK'D	APPR'D	NO.
1	ISSUED FOR REVIEW	11/1/80																
2	ISSUED FOR CONSTRUCTION	11/1/80																

DO NOT SCALE THIS DRAWING
IT MAY BE REDUCED FROM ORIGINAL SIZE

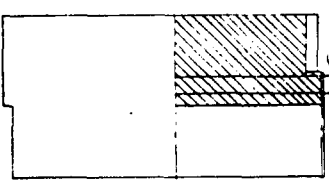
BY	DATE	DRAWING STATUS
DESIGNED		ISSUED
DRAWN	11/1/80	FOR CONSTRUCTION
CHECKED		FOR COMMENTS AND/OR APPROVAL
DRAWN APP'D		FOR CUSTOMER APPROVAL
ICGG APP'D		FOR CUSTOMER APPROVAL
ONE APP'D		FOR CUSTOMER APPROVAL
SCALE		CONSTRUCTION

WATER TREATMENT LAYOUT PLAN		PROJECT NO 7051
U.S. DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EY-11-01-2012		DRAWING NO 217-200-4
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP		CASE DC
DRAGO CORPORATION PITTSBURGH PA		REV A

[illegible]



ITEM NO.	DESCRIPTION
217-34222	CONDENSATE DEIONIZER FEED TANK
217-34223	BOILER WATER MAKE-UP TANK
217-35925	CONDENSATE OZONE CONTACTOR
217-41234-1&2	BOILER WATER MAKE-UP PUMP
217-41241-1&2	CONDENSATE DEIONIZER FEED PUMP
217-41950-1&2	DEIONIZER REGENERATION PUMP
217-41964-1&2	DEIONIZER BACKWASH PUMP



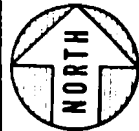
KEY PLAN

PRELIMINARY NOT APPROVED FOR CONSTRUCTION
1/4" = 1'-0"

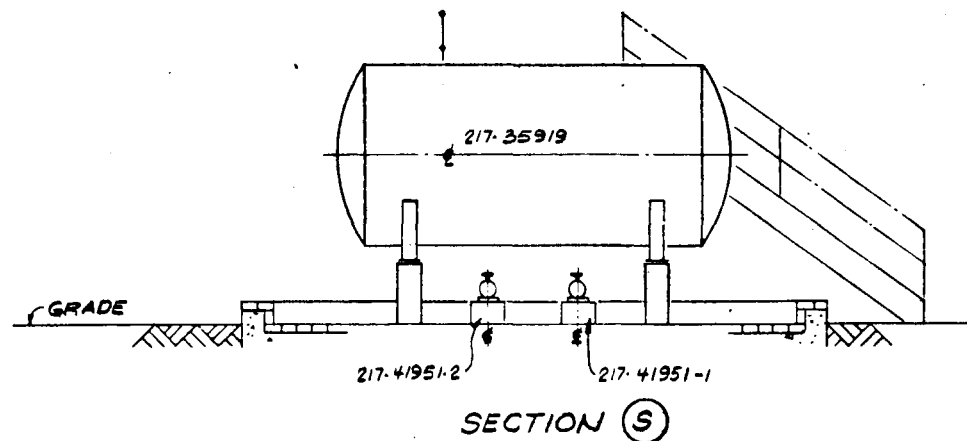
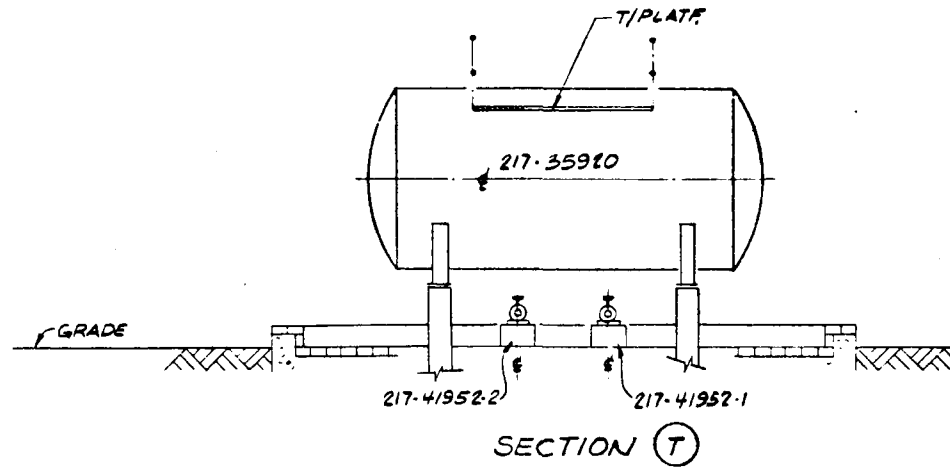
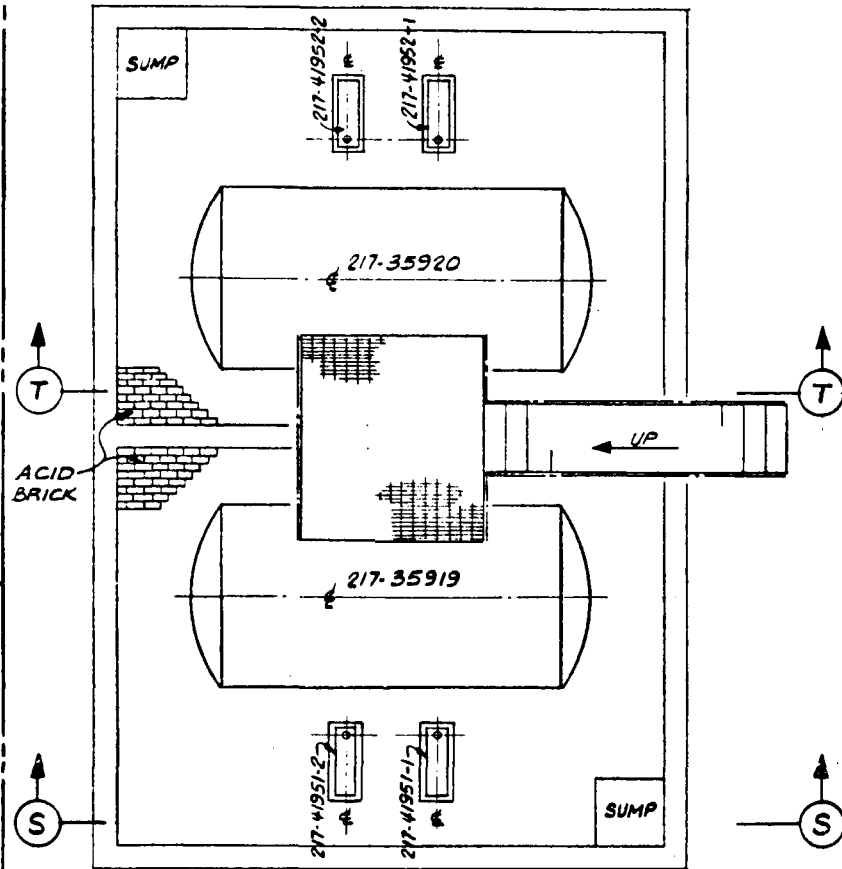
NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D
1	ISSUED FOR BRIEFING	10/1/03	...	...	...	...						...					
2	ISSUED FOR O&M REPORT	10/1/03	...	...	...	...						...					
3						...						...					
4						...						...					
5						...						...					
6						...						...					
7						...						...					
8						...						...					
9						...						...					
10						...						...					
11						...						...					
12						...						...					

BY	DATE	DRAWING STATUS	DATE
DESIGNED	...	ISSUED	...
DRAWN	...	FOR COMMENTS AND/OR APPROVAL	...
CHECKED	...	FOR CUSTOMER APPROVAL	...
DRAWN APP'D	...	AND/OR COMMENTS	...
ICGG APP'D	...	APPROVAL FOR CONSTRUCTION	...
DATE APP'D	...		
SCALE	...		

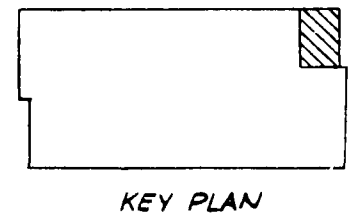
TITLE WATER TREATMENT LAYOUT PLAN		PROJECT NO. 7051
U.S. DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012		DRAWING NO. 217-200-6
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DHAVID CORPORATION PITTSBURGH PA		CASE 20
		REV A



MATCHLINE 217-200-G



EQUIPMENT LIST	
ITEM NO.	DESCRIPTION
217-35919	SULFURIC ACID STORAGE TANK
217-35920	CAUSTIC STORAGE TANK
217-41951-1&2	SULFURIC ACID TRANSFER PUMP
217-41952-1&2	CAUSTIC TRANSFER PUMP



PRELIMINARY NOT APPROVED FOR CONSTRUCTION

1"=10'-0"

REVISIONS					REVISIONS					REVISIONS				
NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D
1	12/15/88	FOR AMENDING												
2	1/15/89	FOR LAYOUT												
3	1/15/89	FOR LAYOUT												
4	1/15/89	FOR LAYOUT												
5	1/15/89	FOR LAYOUT												
6	1/15/89	FOR LAYOUT												
7	1/15/89	FOR LAYOUT												
8	1/15/89	FOR LAYOUT												
9	1/15/89	FOR LAYOUT												
10	1/15/89	FOR LAYOUT												
11	1/15/89	FOR LAYOUT												
12	1/15/89	FOR LAYOUT												

DESIGNED	BY	DATE	DRAWING STATUS	DATE
DRAWN	ECKER	1/15/89	FOR CONSTRUCTION	1/15/89
CHECKED			FOR COMMENTS AND/OR APPROVAL	
DRAWN APP'D			FOR CUSTOMER APPROVAL	1/15/89
CHK'D APP'D			AND/OR COMMENTS	
APP'D			APPROVAL FOR CONSTRUCTION	

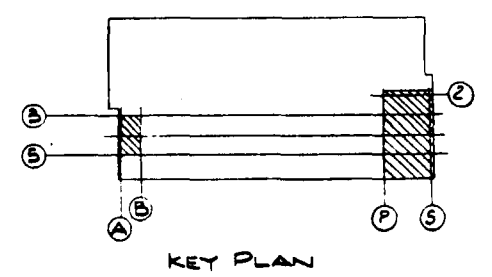
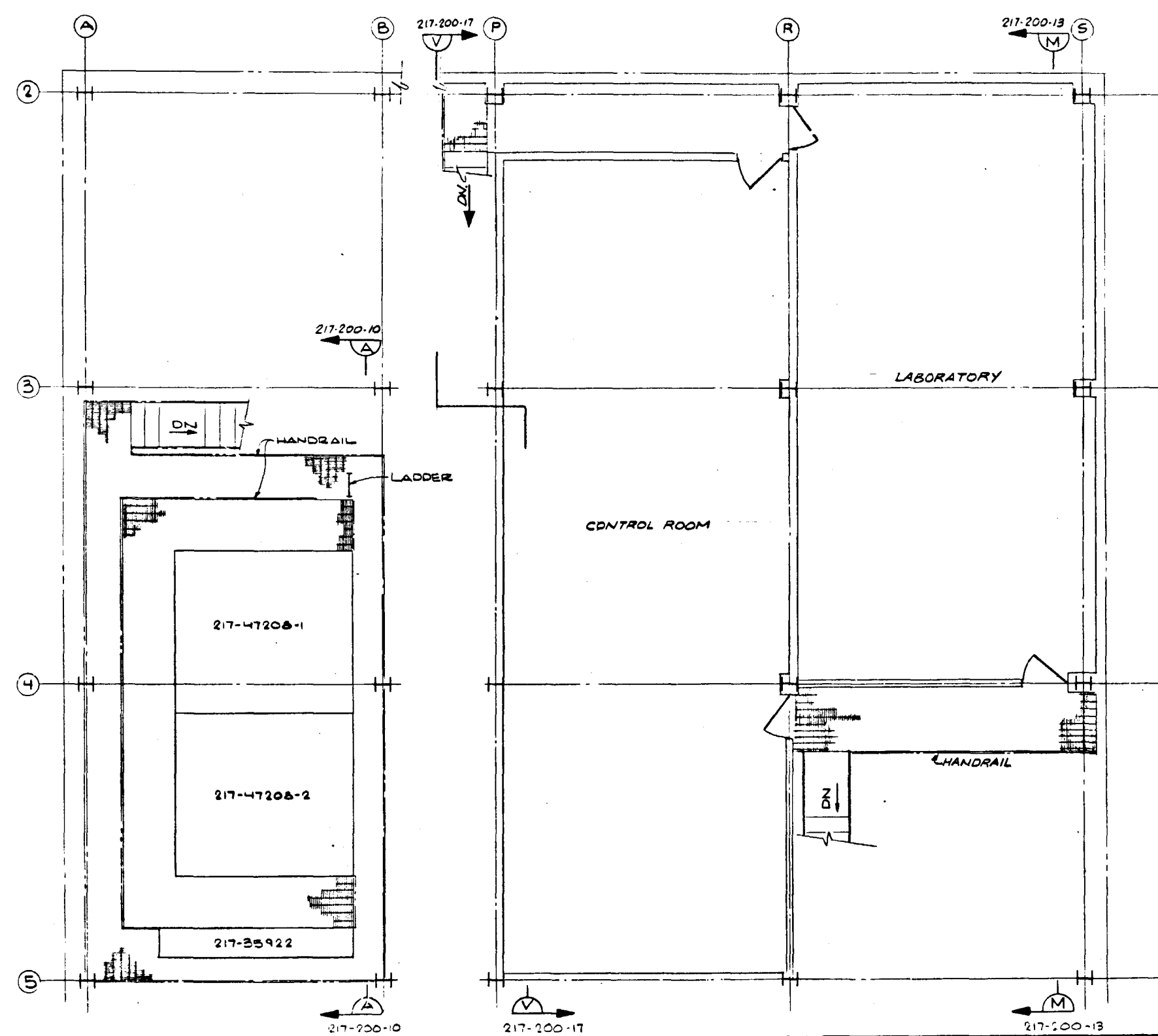
PROJECT NO.	7051
DRAWING NO.	217-200-8
CASE	30
REV	A

U.S.D.E. ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EY-77-CO-1-2012
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DAYCO CORPORATION PITTSBURGH PA

DO NOT SCALE THIS DRAWING IT MAY BE REDUCED FROM ORIGINAL SIZE



EQUIPMENT LIST	
ITEM NO.	DESCRIPTION
217-35922	RAW WATER OZONE CONTACTOR
217-47208-1,2	CROSSFLOW CLARIFIER w/DAF



PRELIMINARY NOT APPROVED FOR CONSTRUCTION

0 1 2 3 4 5 6 7 8 9 10 11 12
1/4" = 1'-0"

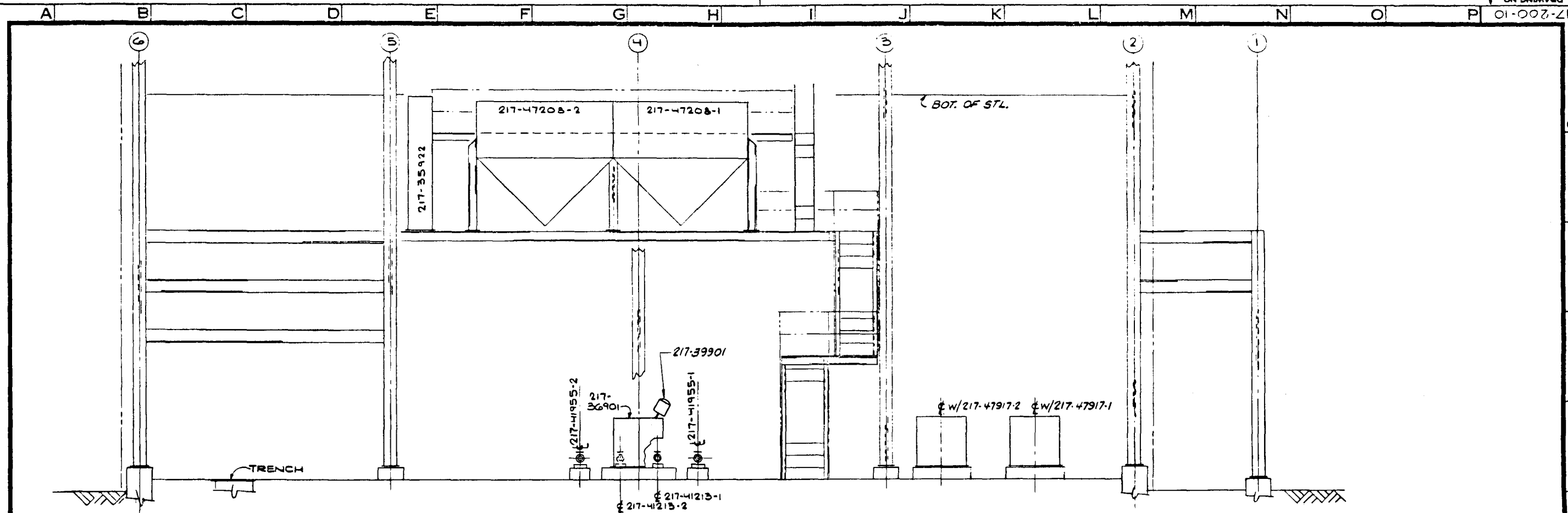
REVISIONS					REVISIONS					REVISIONS				
NO.	DATE	BY	CHK'D	APPR'D	NO.	DATE	BY	CHK'D	APPR'D	NO.	DATE	BY	CHK'D	APPR'D
1	10/1/87	WJG												
2	10/1/87	WJG												
3	10/1/87	WJG												
4	10/1/87	WJG												
5	10/1/87	WJG												
6	10/1/87	WJG												
7	10/1/87	WJG												
8	10/1/87	WJG												
9	10/1/87	WJG												
10	10/1/87	WJG												
11	10/1/87	WJG												
12	10/1/87	WJG												
13	10/1/87	WJG												
14	10/1/87	WJG												
15	10/1/87	WJG												
16	10/1/87	WJG												
17	10/1/87	WJG												
18	10/1/87	WJG												
19	10/1/87	WJG												
20	10/1/87	WJG												
21	10/1/87	WJG												
22	10/1/87	WJG												
23	10/1/87	WJG												
24	10/1/87	WJG												
25	10/1/87	WJG												
26	10/1/87	WJG												
27	10/1/87	WJG												
28	10/1/87	WJG												
29	10/1/87	WJG												
30	10/1/87	WJG												
31	10/1/87	WJG												
32	10/1/87	WJG												
33	10/1/87	WJG												
34	10/1/87	WJG												
35	10/1/87	WJG												
36	10/1/87	WJG												
37	10/1/87	WJG												
38	10/1/87	WJG												
39	10/1/87	WJG												
40	10/1/87	WJG												
41	10/1/87	WJG												
42	10/1/87	WJG												
43	10/1/87	WJG												
44	10/1/87	WJG												
45	10/1/87	WJG												
46	10/1/87	WJG												
47	10/1/87	WJG												
48	10/1/87	WJG												
49	10/1/87	WJG												
50	10/1/87	WJG												
51	10/1/87	WJG												
52	10/1/87	WJG												
53	10/1/87	WJG												
54	10/1/87	WJG												
55	10/1/87	WJG												
56	10/1/87	WJG												
57	10/1/87	WJG												
58	10/1/87	WJG												
59	10/1/87	WJG												
60	10/1/87	WJG												
61	10/1/87	WJG												
62	10/1/87	WJG												
63	10/1/87	WJG												
64	10/1/87	WJG												
65	10/1/87	WJG												
66	10/1/87	WJG												
67	10/1/87	WJG												
68	10/1/87	WJG												
69	10/1/87	WJG												
70	10/1/87	WJG												
71	10/1/87	WJG												
72	10/1/87	WJG												
73	10/1/87	WJG												
74	10/1/87	WJG												
75	10/1/87	WJG												
76	10/1/87	WJG												
77	10/1/87	WJG												
78	10/1/87	WJG												
79	10/1/87	WJG												
80	10/1/87	WJG												
81	10/1/87	WJG												
82	10/1/87	WJG												
83	10/1/87	WJG												
84	10/1/87	WJG												
85	10/1/87	WJG												
86	10/1/87	WJG												
87	10/1/87	WJG												
88	10/1/87	WJG												
89	10/1/87	WJG												
90	10/1/87	WJG												
91	10/1/87	WJG												
92	10/1/87	WJG												
93	10/1/87	WJG												
94	10/1/87	WJG												
95	10/1/87	WJG												
96	10/1/87	WJG												
97	10/1/87	WJG												
98	10/1/87	WJG												
99	10/1/87	WJG												
100	10/1/87	WJG												

BY		DATE	DRAWING STATUS	
DESIGNED			ISSUED	DATE
DRAWN	WJG	10/1/87	FOR COMMENTS AND/OR APPROVAL	
CHECKED			FOR CUSTOMER APPROVAL	10/1/87
DRAWG APPR			AND/OR COMMENTS	
ICSG APPR			APPROVAL FOR CONSTRUCTION	
TIME APPR				
SCALE				

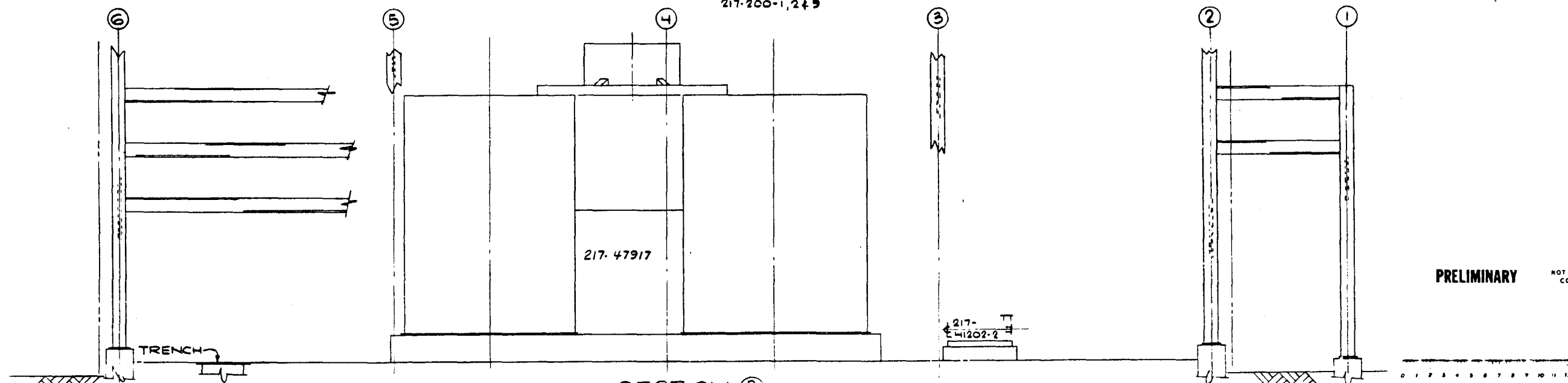
TITLE	
WATER TREATMENT LAYOUT	
PLANCE 49346	
U.S. DOE	ENERGY TECHNOLOGY
FOSSIL ENERGY PROGRAMS	
CONTRACT NO. EA-77-CG-2212	
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP	
BY DRAYO CORPORATION PITTSBURGH PA	

PROJECT NO	7051
DRAWING NO	217-200-9
CASE	CIC
REV	A

DESIGNED	BY	DATE	DRAWING STATUS	TITLE	PROJECT NO
DRAWN	WJG	10/1/87	ISSUED	DATE	7051
CHECKED			FOR COMMENTS AND/OR APPROVAL		DRAWING NO
DAWG APPR			FOR CUSTOMER APPROVAL		217-200-9
ICG APPR			AND/OR COMMENTS		CASE
FILE APPR			APPROVAL FOR CONSTRUCTION		D/C
SCALE					REV
			U.S. DoE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-CG1-2012		
			PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRACO CORPORATION PITTSBURGH PA		



SECTION (A)
217-200-1,249



SECTION (B)
217-200-42

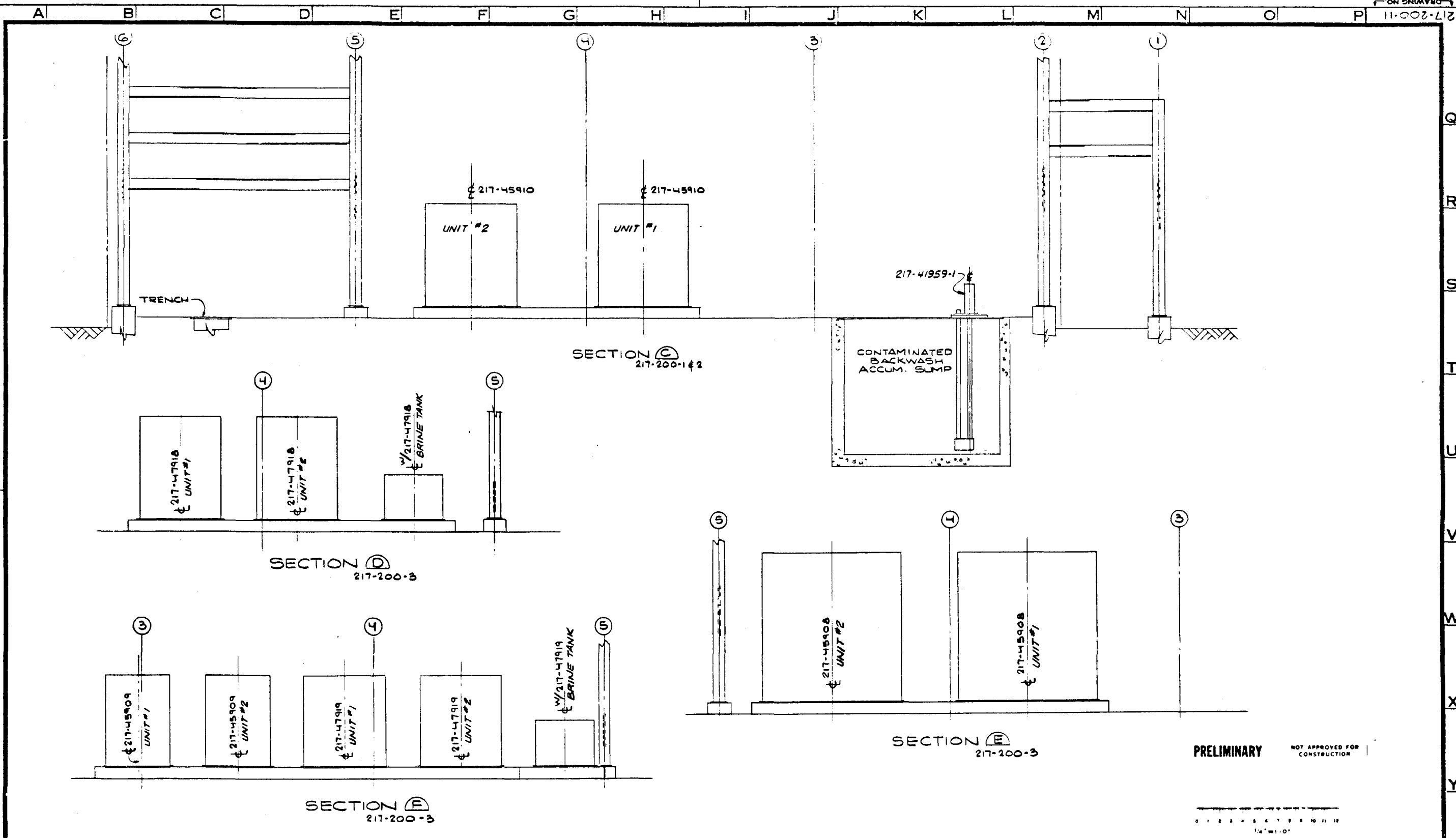
PRELIMINARY **NOT APPROVED FOR CONSTRUCTION**

[illegible]

	BY	DATE	DRAWING STATUS	
DESIGNED			ISSUED	DATE
DRAWN	RAYDOL	7-20	FOR COMMENTS AND/OR APPROVAL	
CHECKED			FOR CUSTOMER APPROVAL	YES
ENGRD APPD			AND/OR COMMENTS	NO
ECG APPD			APPROVAL FOR CONSTRUCTION	
FILE APPD				
SCALE	1/4" = 1'-0"			

TITLE	WATER TREATMENT LAYOUT SECTION
U. S. DoE	ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF 77-C 01 2012
	PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP E. DRAGO CORPORATION PITTSBURGH PA

PROJECT NO 7051 DRAWING NO 217-200-10	CASE CC
REV.	

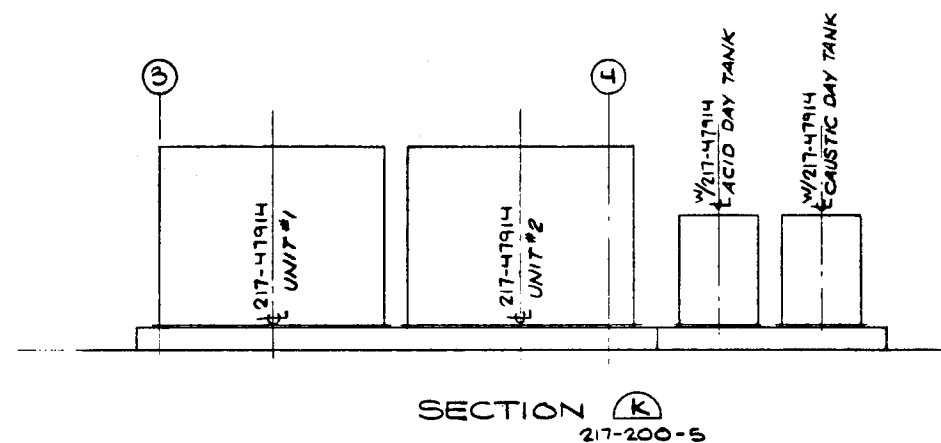
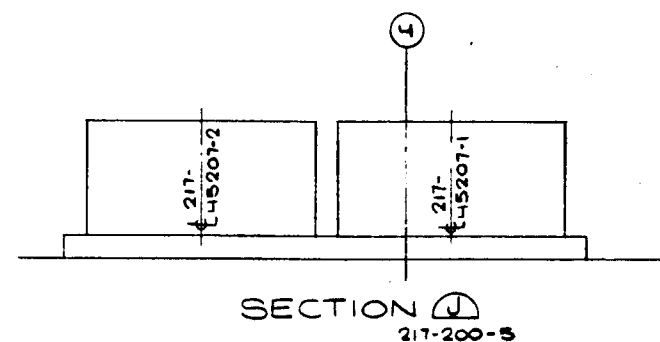
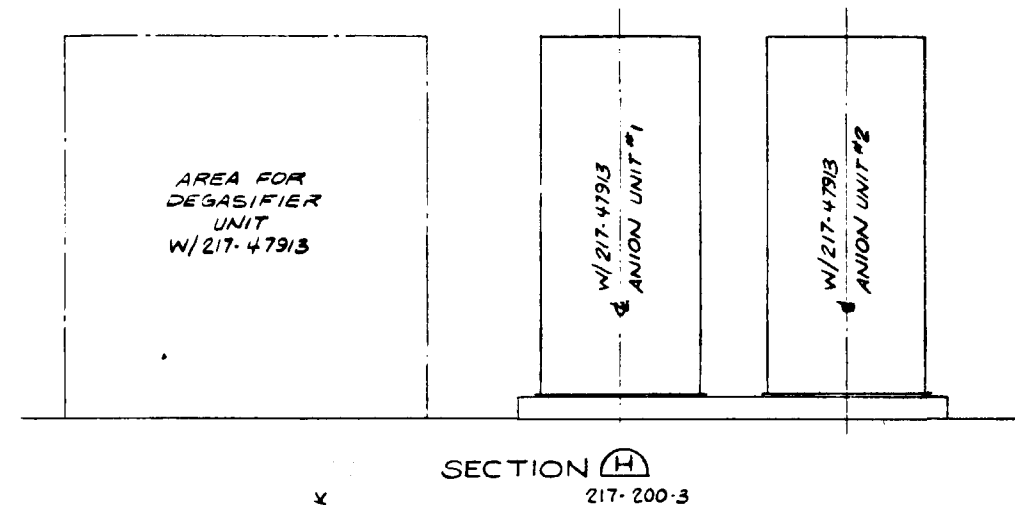
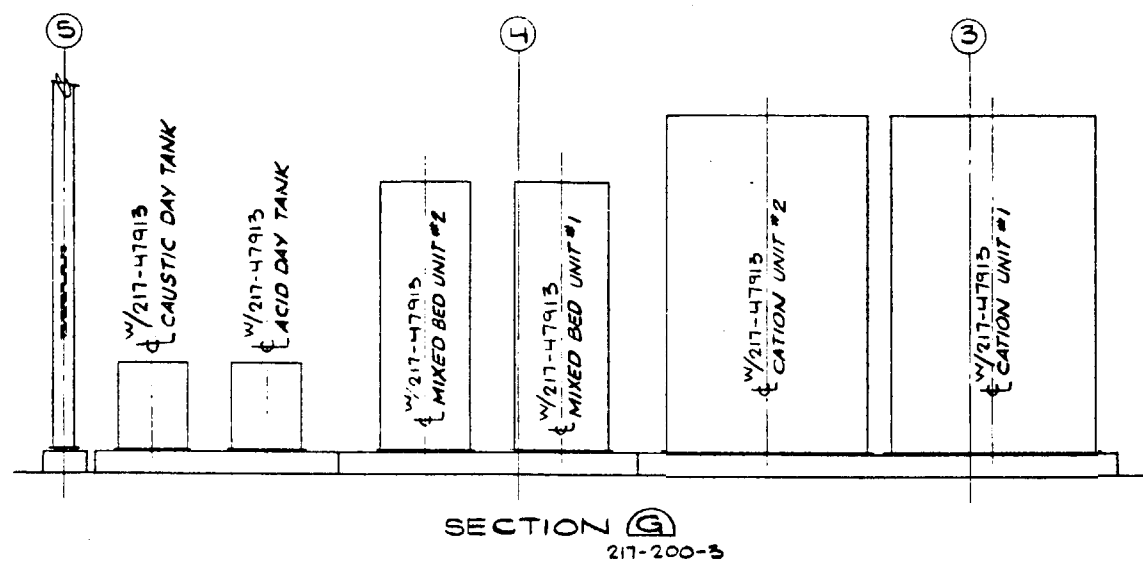


PRELIMINARY NOT APPROVED FOR CONSTRUCTION

REVISIONS					REVISIONS					REVISIONS					REVISIONS				
NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D
1	11-01-11	WJH																	
2	11-01-11	WJH																	
3	11-01-11	WJH																	
4	11-01-11	WJH																	
5	11-01-11	WJH																	
6	11-01-11	WJH																	
7	11-01-11	WJH																	
8	11-01-11	WJH																	
9	11-01-11	WJH																	
10	11-01-11	WJH																	
11	11-01-11	WJH																	
12	11-01-11	WJH																	

DESIGNED	BY	DATE	ISSUED	DATE
DRAWN	WJH	11-01-11	PAID TO PRINT	11-01-11
CHECKED			FOR COMMENTS AND/OR APPROVAL	
DRAWN APP'D			FOR CUSTOMER APPROVAL	
ICG APP'D			AND/OR COMMENTS	
ICG APP'D			APPROVAL FOR CONSTRUCTION	
SCALE				

TITLE		PROJECT NO.
WATER TREATMENT LAYOUT SECTION 5		7051
U S DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF77-CG1-2012		DRAWING NO. 217-200-11
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAYO CORPORATION PITTSBURGH PA		CASE 100
		REV

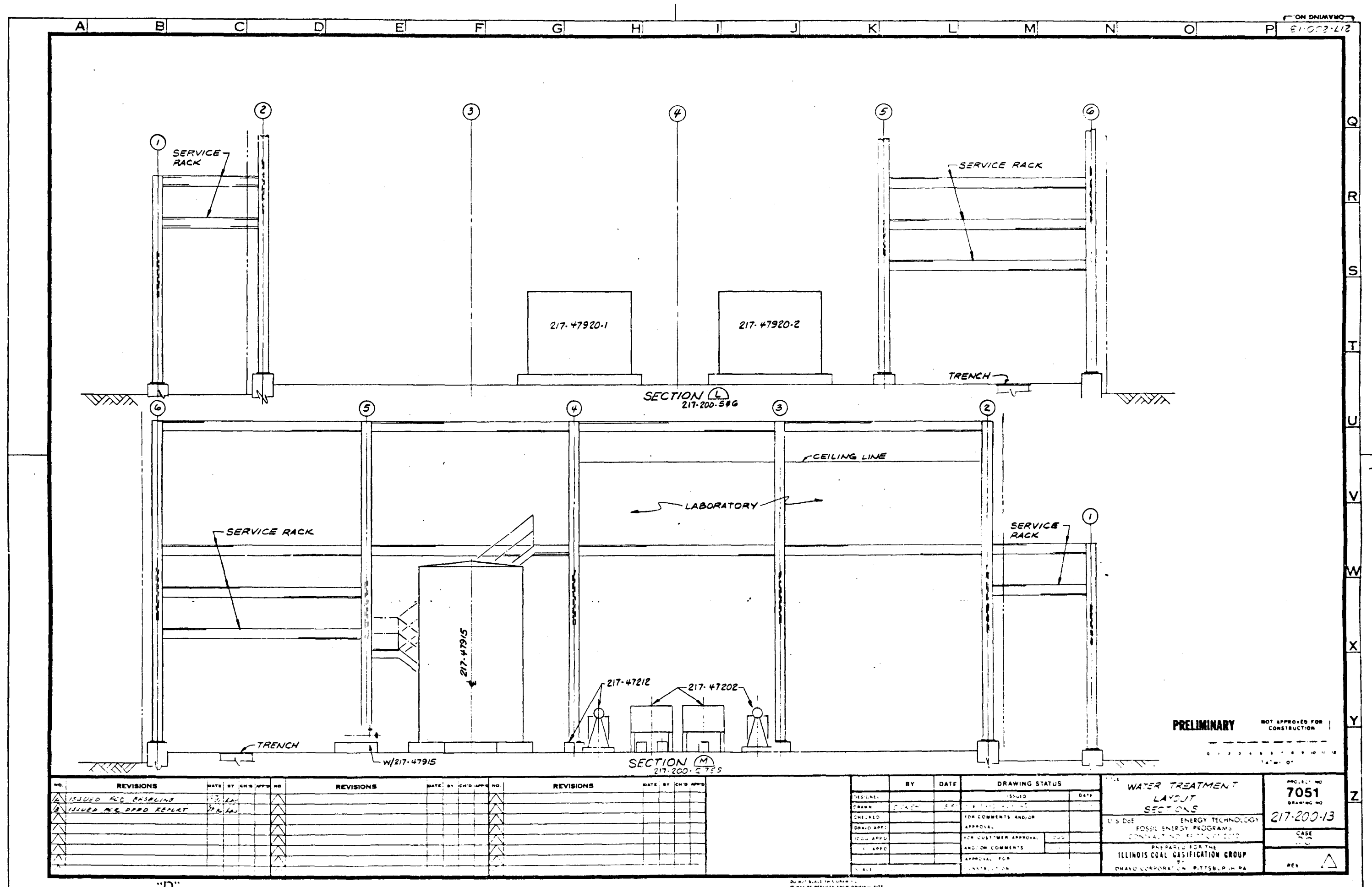


PRELIMINARY

NOT APPROVED FOR
CONSTRUCTION

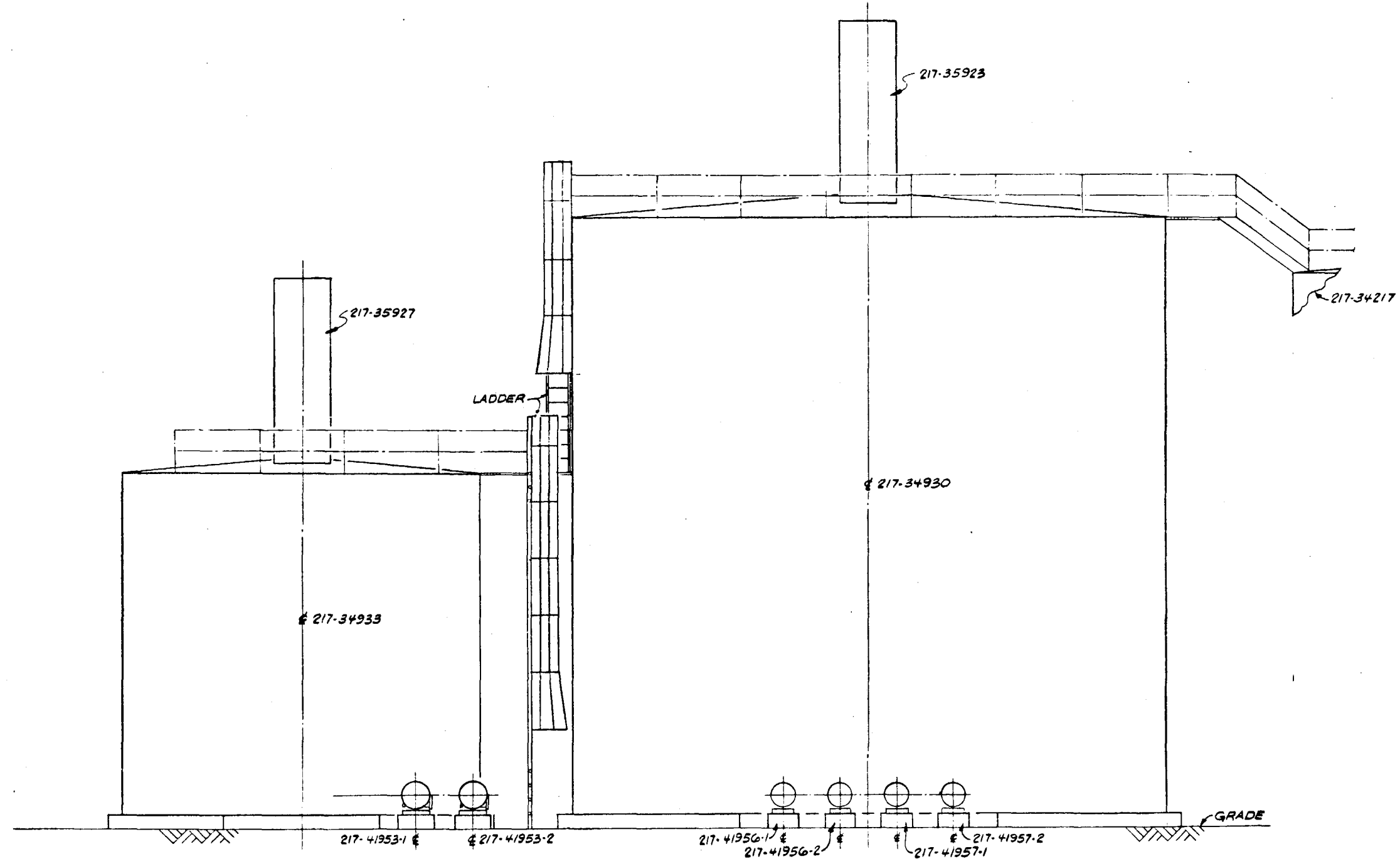
[illegible]

"D"



A B C D E F G H I J K L M N O P

Q
R
S
T
U
V
W
X
Y
Z



SECTION (P)
217-200-2

PRELIMINARY NOT APPROVED FOR CONSTRUCTION

0 1 2 3 4 5 6 7 8 9 10 11 12
INCHES

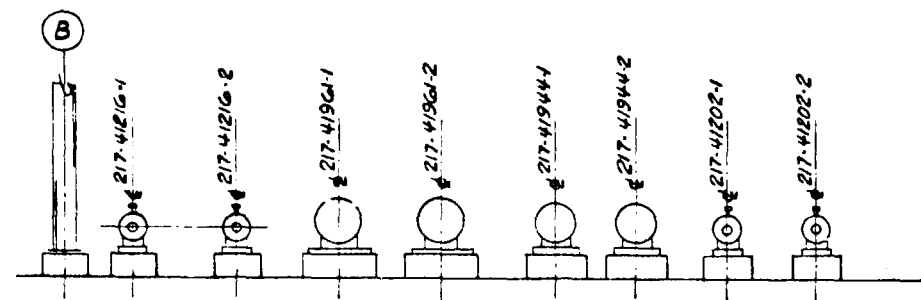
REVISIONS					REVISIONS					REVISIONS					REVISIONS				
NO.	DATE	BY	CH'D	APP'D	NO.	DATE	BY	CH'D	APP'D	NO.	DATE	BY	CH'D	APP'D	NO.	DATE	BY	CH'D	APP'D
1	1/15/50	ETC/ER																	
2	1/15/50	ETC/ER																	



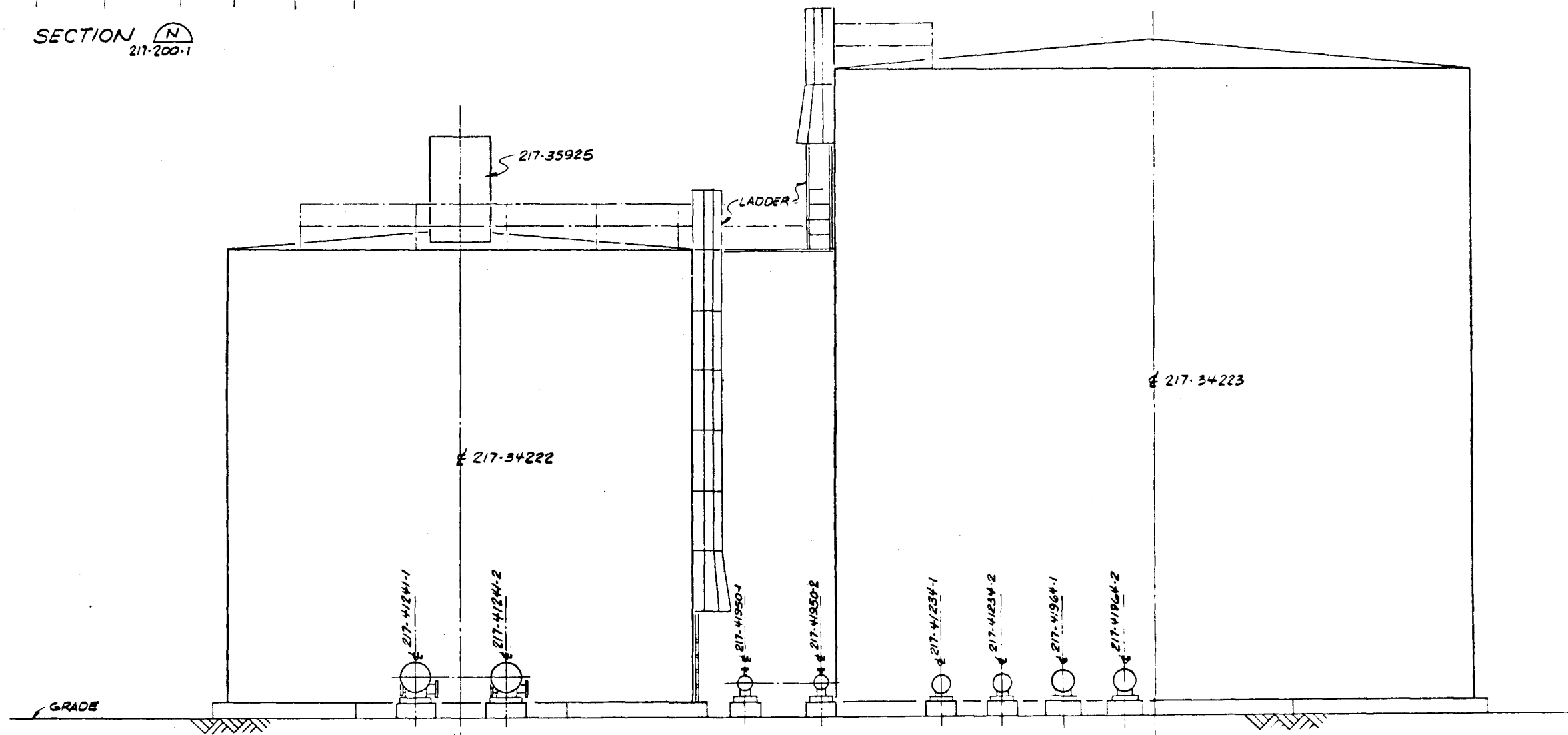
REVISIONS					REVISIONS					REVISIONS					DRAWING STATUS			TITLE		PROJECT NO	
NO	DATE	BY	CHK'D	APPR	NO	DATE	BY	CHK'D	APPR	NO	DATE	BY	CHK'D	APPR	DESIGNED	DATE	ISSUED	DATE	7051		
1	ISSUED FOR CONSTRUCTION														DRAWN	1/10/72	1/10/72	1/10/72	DRAWING NO		
2	ISSUED FOR FIELD REPORT														CHECKED				217-200-15		
															APPROVAL				CASE		
															FOR CUSTOMER APPROVAL				DC		
															AND/OR COMMENTS				REV		
															APPROVAL FOR CONSTRUCTION						

"D"

DO NOT SCALE THIS DRAWING
IT MAY BE REDUCED FROM ORIGINAL SIZE.



SECTION N
217-200-1



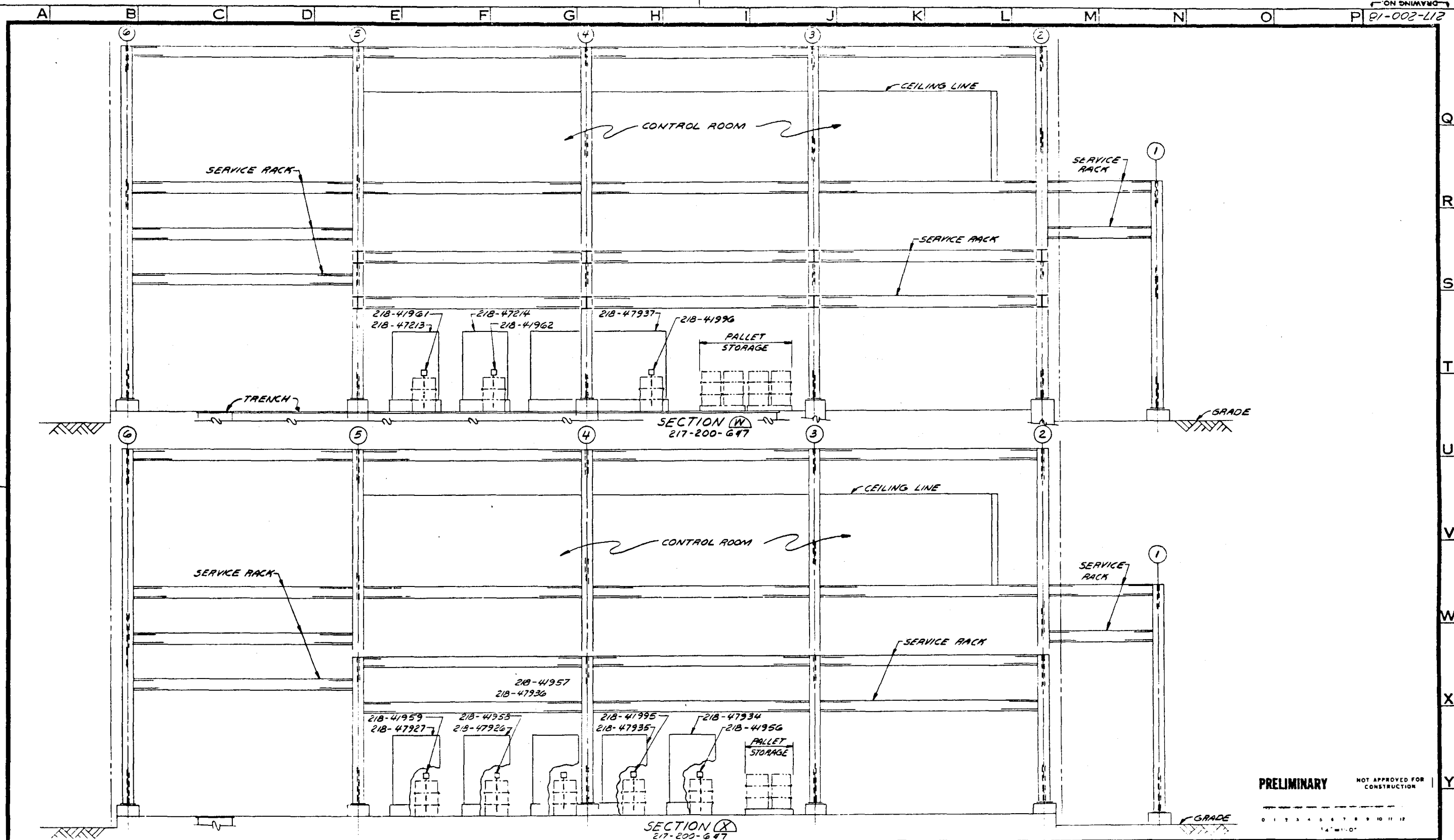
SECTION R
217-200-6

PRELIMINARY NOT APPROVED FOR CONSTRUCTION

REVISIONS					REVISIONS					REVISIONS				
NO.	DATE	BY	CHK'D	APPR'D	NO.	DATE	BY	CHK'D	APPR'D	NO.	DATE	BY	CHK'D	APPR'D
1	ISSUED FOR BASELINE													
2	ISSUED FOR DFD REFORMAT													

DESIGNED	BY	DATE	ISSUED	DATE
DRAWN	E. C. C.			
CHECKED			FOR COMMENTS AND/OR	
CRANE APP'D			APPROVAL	
ELUG. APP'D			FOR CUSTOMER APPROVAL	
APP'D			AND/OR COMMENTS	
FILE			APPROVAL FOR	
			CONSTRUCTION	

WATER TREATMENT LAYOUT SECTIONS		PROJECT NO. 7051
U.S. DEPT. OF ENERGY TECHNOLOGY		DRAWING NO. 217-200-16
FOSSIL ENERGY PROGRAMS		CASE 55
CONTRACT NO. 14-77-0001-0001		REV. 1
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP		
BY DRAVO CORPORATION, PITTSBURGH, PA.		



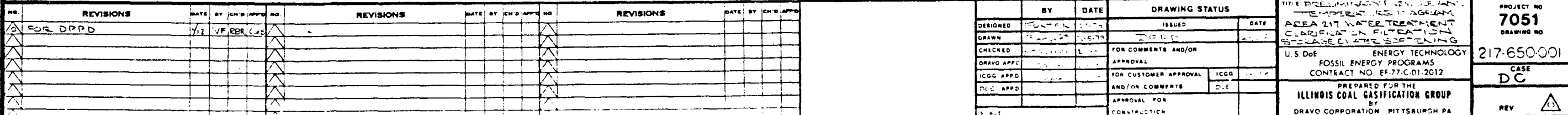
PRELIMINARY NOT APPROVED FOR CONSTRUCTION

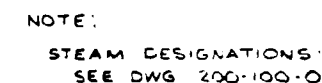
0 1 2 3 4 5 6 7 8 9 10 11 12
1" = 10'-0"

NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D
1	ISSUED FOR BASELINE	12/1/83	DLB														
2	ISSUED FOR DDPD REPORT	12/1/83	DLB														

BY	DATE	DRAWING STATUS	DATE
DESIGNED		ISSUED	
DRAWN	DLB/83	FOR DDPD REPORT	
CHECKED		FOR COMMENTS AND/OR	
DRAWN APP'D		APPROVAL	
ICGG APP'D		FOR CUSTOMER APPROVAL	ICGG
CHK APP'D		AND/OR COMMENTS	
		APPROVAL FOR	
		CONSTRUCTION	

TITLE WATER TREATMENT LAYOUT SECTIONS		PROJECT NO 7051 DRAWING NO 217-200-1B
U.S. DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. ET-77-CG-1-2002		CASE DC
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY ORAVO CORPORATION, PITTSBURGH, PA		REV A



[illegible]

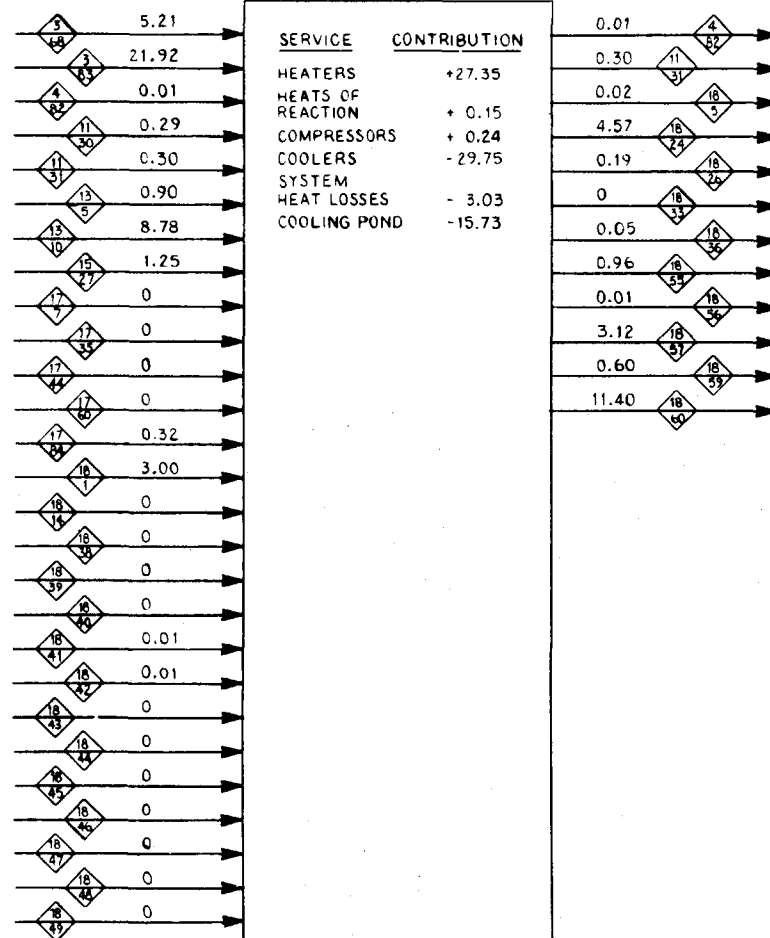
INDEX PRECEDING PRT
IDENTIFIES COAL TYPE.

1. ILLINOIS #5 & 6
2. PITTSBURGH #8
3. WESTERN SUB BITUMINOUS

STEAM DESIGNATIONS
SEE DWG. 200-100-0

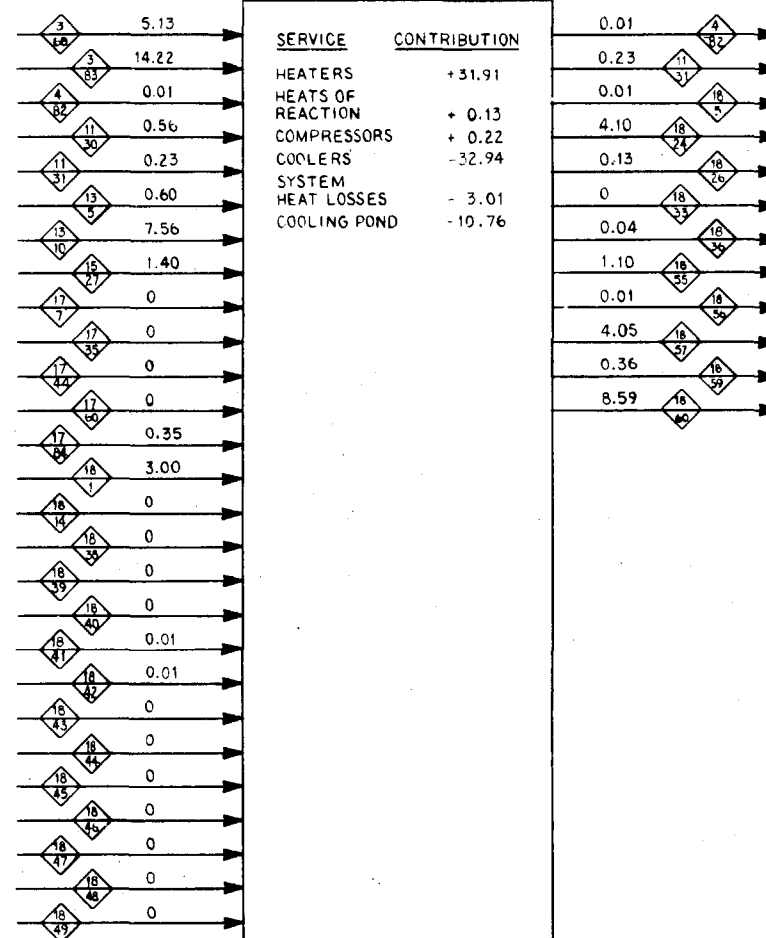
[illegible]

AREA 218
ENERGY BALANCE SUMMARY
MM BTU/HR



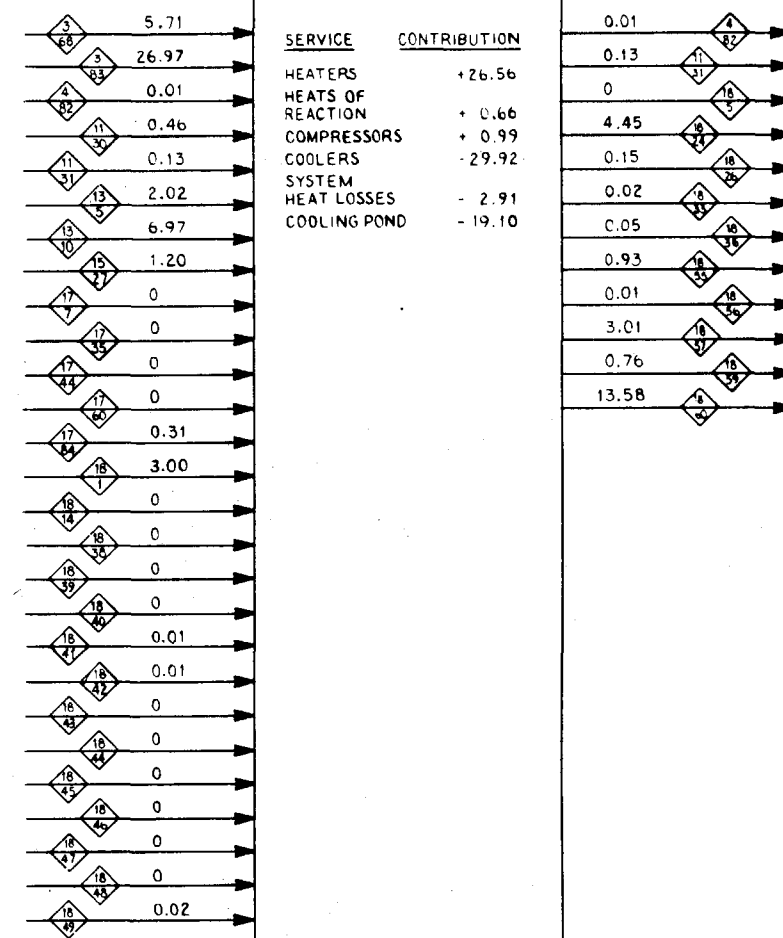
ILLINOIS NO. 5&6 SEAM COAL

AREA 218
ENERGY BALANCE SUMMARY
MM BTU/HR



PITTSBURGH NO. 8 SEAM COAL

AREA 218
ENERGY BALANCE SUMMARY
MM BTU/HR



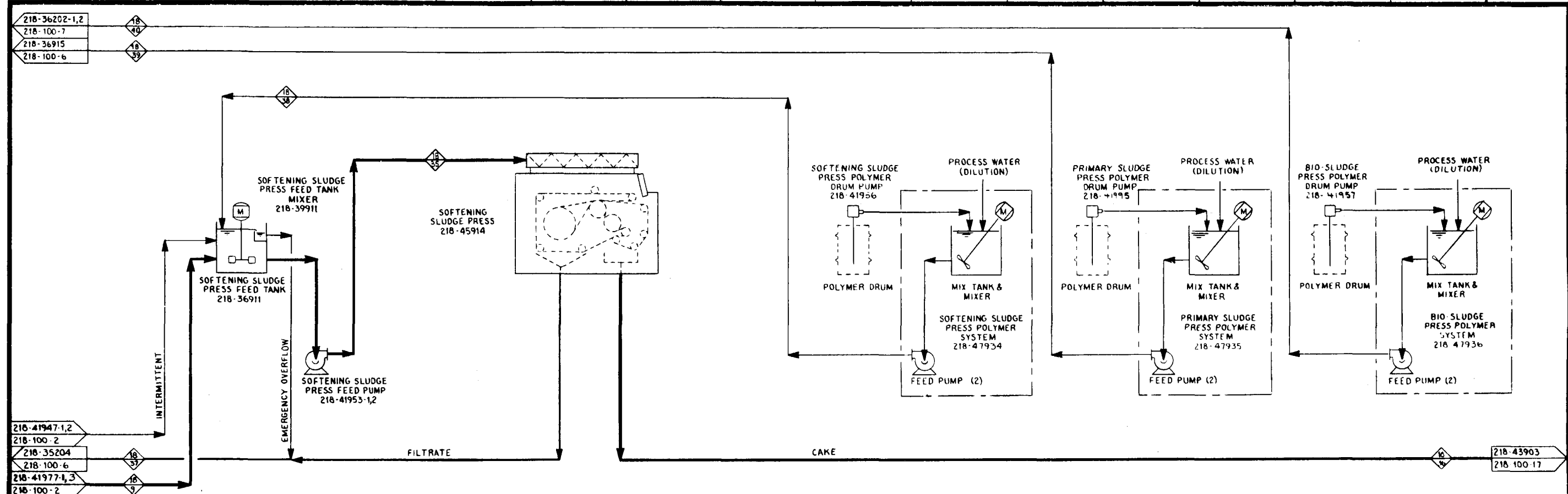
WESTERN SUB-BITUMINOUS COAL

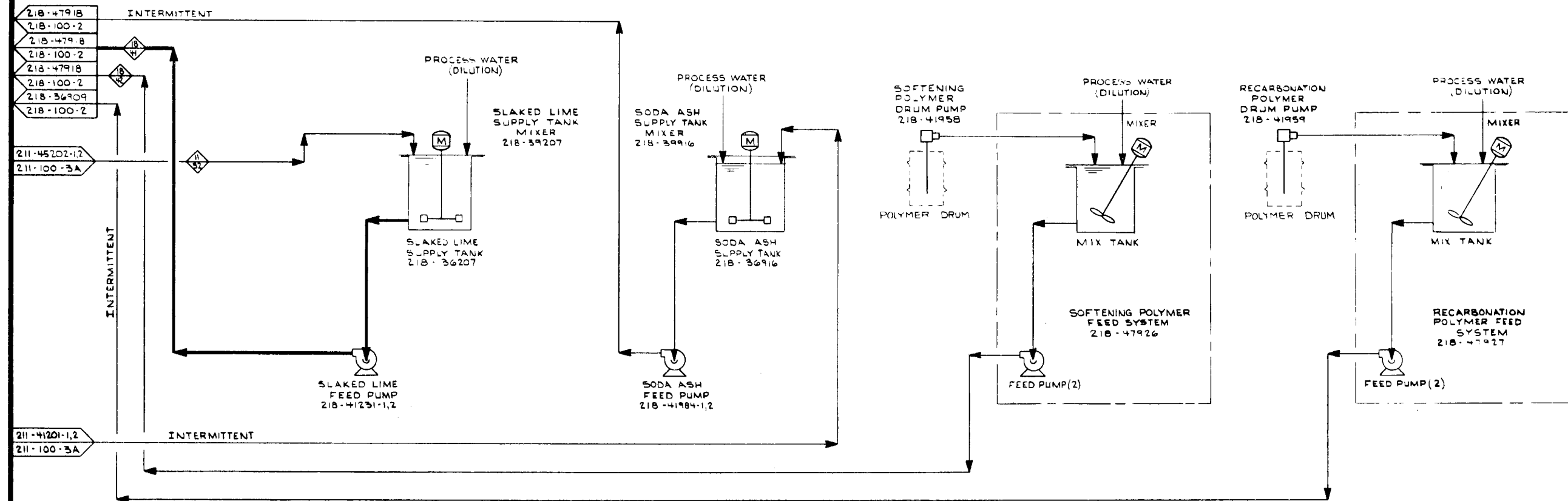
NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.
1	DC-DEMONSTRATION CONCEPT	2/1/80	RFH	SWH	JWH	1	PRELIMINARY ISSUE	2/1/80	RFH	SWH	JWH	1	FOR BASELINING	2/1/80	RFH	SWH	JWH	1
2						2	PDBP RECORD AND DPPD	2/1/80	RFH	SWH	JWH	2						2
3						3						3						3
4						4						4						4
5						5						5						5
6						6						6						6
7						7						7						7
8						8						8						8
9						9						9						9
10						10						10						10

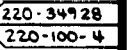
DESIGNED	BY	DATE	DRAWING STATUS	ISSUED	DATE
DESIGNED	R.F.H.	1-31-80	ISSUED		
DRAWN	M.J.L.	2-5-80	PDBP RECORD AND DPPD		2-15-80
CHECKED	S.W.H.	2-6-80	FOR COMMENTS AND/OR		
DRAVO APP'D	<i>Ed Dwyer</i>	2-15-80	APPROVAL		
ICGG APP'D	<i>W. Hagan</i>	2-15-80	FOR CUSTOMER APPROVAL	ICGG	<i>W.H.</i>
DOE APP'D			AND/OR COMMENTS	DOE	
SCALE			APPROVAL FOR		
			CONSTRUCTION		

TITLE	PROCESS FLOW DIAGRAM AREA 218 WASTE TREATMENT & DISPOSAL OVERALL ENERGY BALANCES
U.S. DoE	ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012
PREPARED FOR THE	ILLINOIS COAL GASIFICATION GROUP
BY	DRAVO CORPORATION PITTSBURGH, PA.

PROJECT NO.	7051
DRAWING NO.	218-100-1B
CASE	DC
REV.	

[illegible]

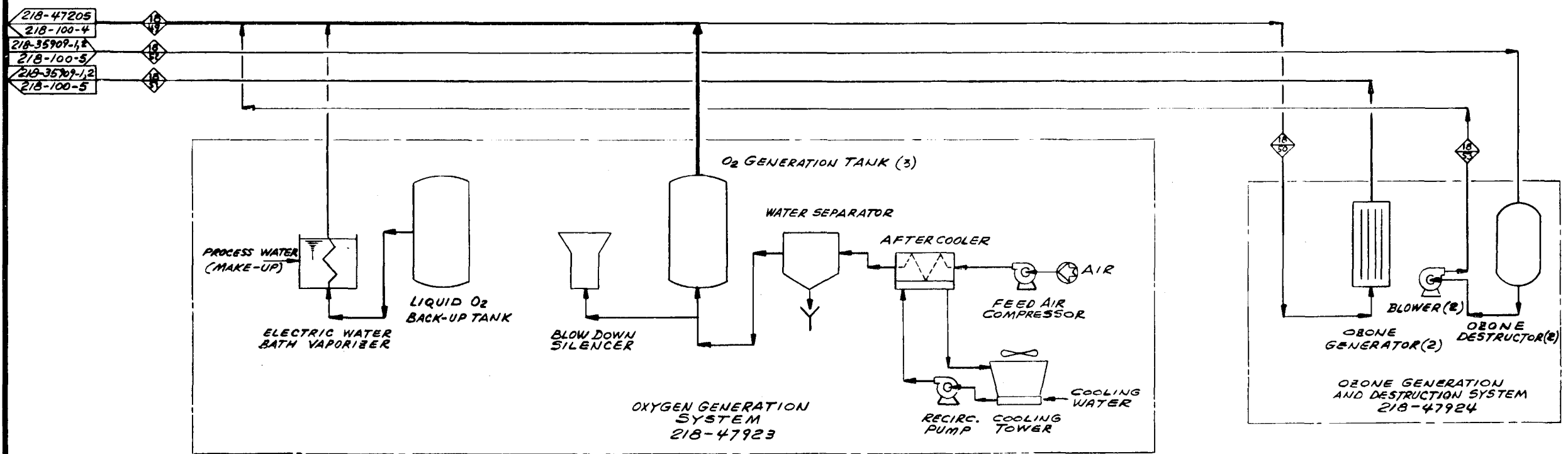
[illegible]

[illegible]

PROJECT NO
7051
DRAWING NO
3-100-11

CASE

REV. 

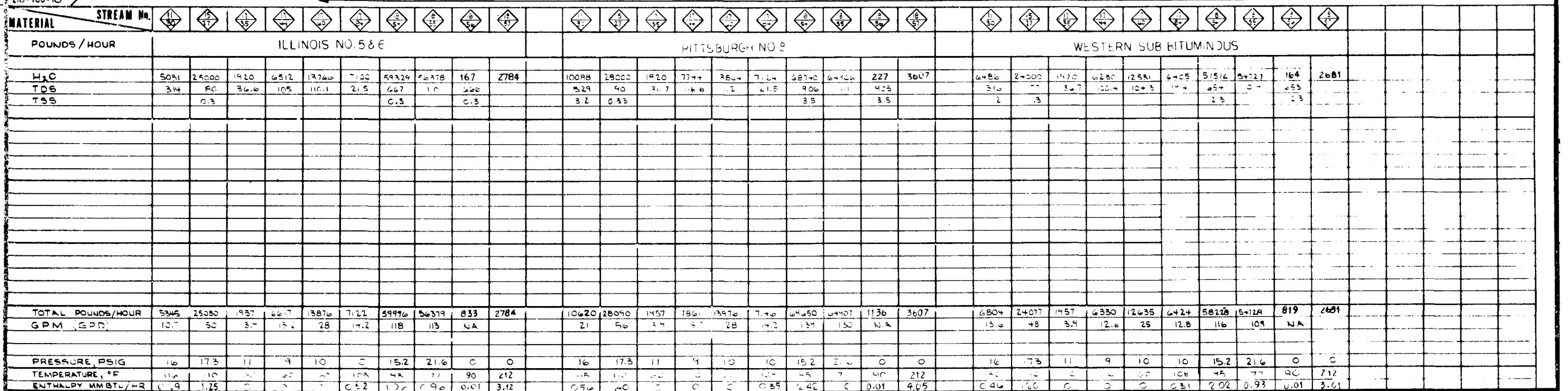


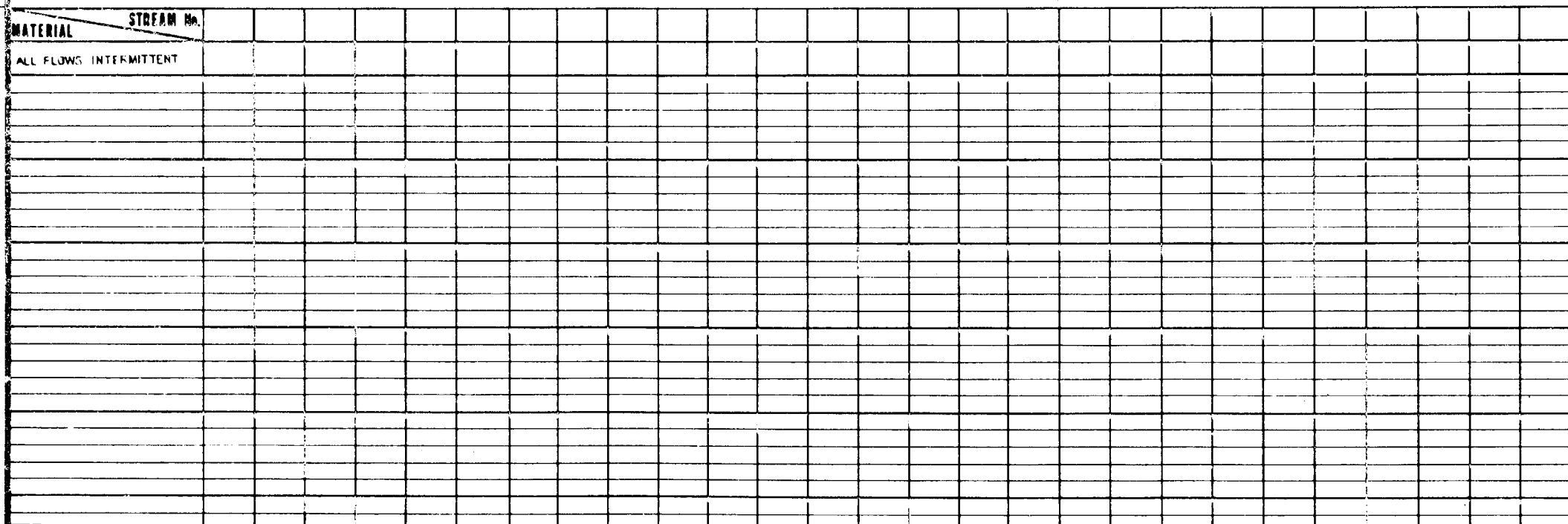
MATERIAL	STREAM No.	1A	1B	1C	1D	1E	1F	1G	1H	1I	1J	1K	1L	1M	1N	1O
		1A	1B	1C	1D	1E	1F	1G	1H	1I	1J	1K	1L	1M	1N	1O
POUNDS / HOUR		ILLINOIS NO. 5 FG					PITTSBURGH NO. 8					WESTERN SUB-BITUMINOUS				
O ₂		698	90	87	87	87	638	87	84	84	84	3190	90	87	87	87
O ₃				2.7	.3				2.0	.3				2.7	.3	
TOTAL POUNDS/HOUR		698	90	90	87	87	638	87	87	84	84	3190	90	90	87	87
GPM		142	18.4	18.1	17.8	17.8	130	11.7	17.5	17.2	17.2	651	18	18.1	17.8	17.8
ACFM																
PRESSURE, PSIG		40	40	7.0	2.0	40	40	40	7.0	2.0	40	40	40	7.0	2.0	40
TEMPERATURE, °F		77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
ENTHALPY, MM BTU/HR		0	0	0	0	0	0	0	0	0	0	0.02	0	0	0	0

NO.	REVISIONS	DATE	BY	CHK'D	APPR'D	NO.	REVISIONS	DATE	BY	CHK'D	APPR'D	NO.	REVISIONS	DATE	BY	CHK'D	APPR'D
1	DC-DEMONSTRATION CONCEPT	7/80	SWH	RFH	JWH	1	PRELIMINARY ISSUE FOR BASELINING	7/80	SWH	RFH	JWH	1	FOR COMMENTS AND/OR APPROVAL	7/80	SWH	RFH	JWH
2						2	PDBP RECORD AND DPPD	7/80	SWH	RFH	JWH	2	FOR CUSTOMER APPROVAL	7/80	SWH	RFH	JWH
3						3						3	AND/OR COMMENTS				
4						4						4	APPROVAL FOR CONSTRUCTION				
5						5						5					
6						6						6					
7						7						7					
8						8						8					
9						9						9					
10						10						10					

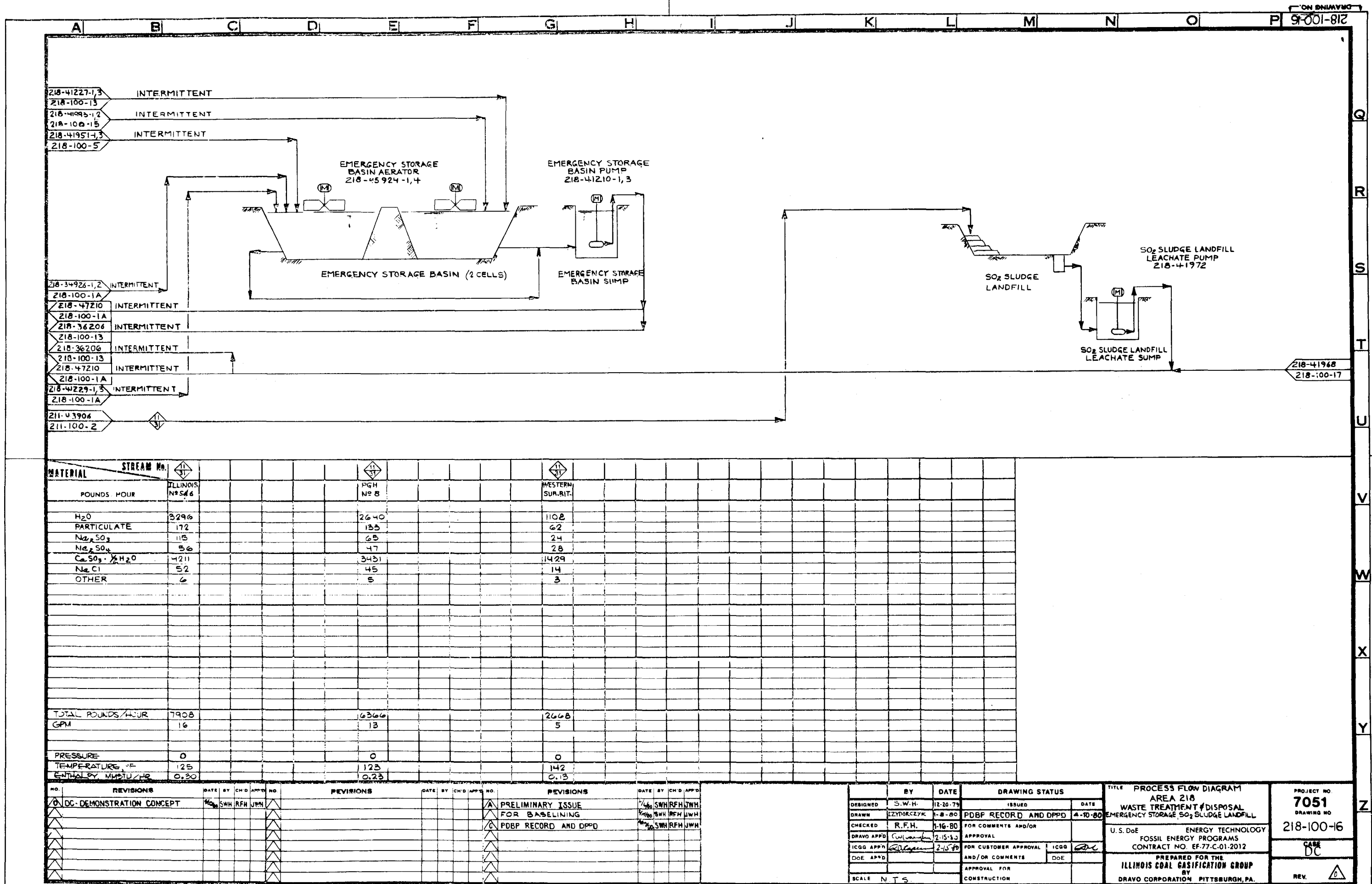
DESIGNED	SWH	DATE	7/80	ISSUED	DATE	2/15/80
DRAWN	DICK SCOTT	DATE	7/80	PDBP RECORD AND DPPD	DATE	2/15/80
CHECKED	R.F.H.	DATE	7/80	FOR COMMENTS AND/OR APPROVAL	DATE	7/80
DRAWN APP'D	SWH	DATE	7/80	FOR CUSTOMER APPROVAL	DATE	7/80
ICGG APP'D	SWH	DATE	7/80	AND/OR COMMENTS	DATE	7/80
DOE APP'D	SWH	DATE	7/80	APPROVAL FOR CONSTRUCTION	DATE	7/80
SCALE	N.T.S.					

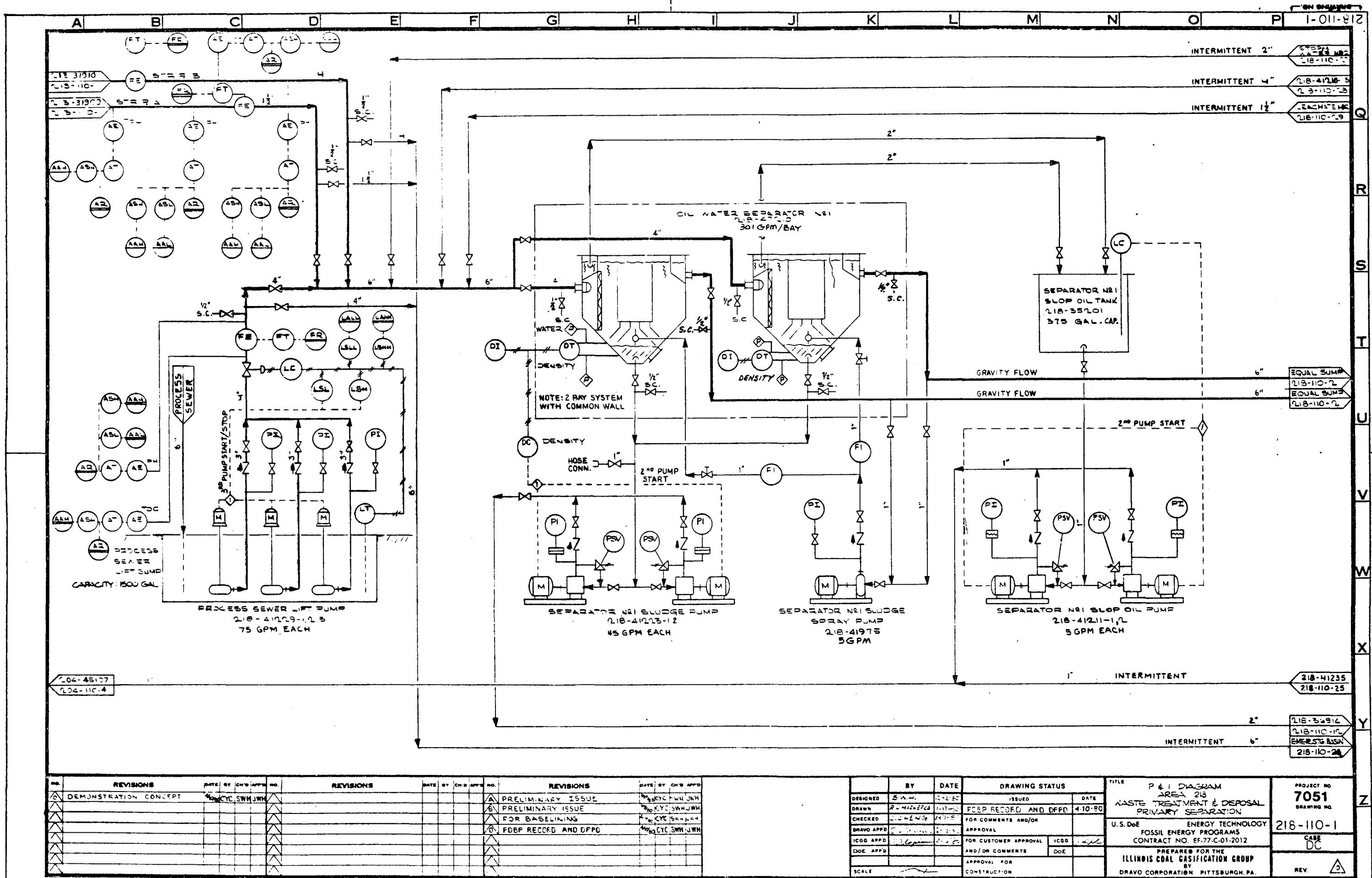
TITLE	PROCESS FLOW DIAGRAM AREA 218 WASTE TREATMENT DISPOSAL OXYGEN/OZONE GENERATION	PROJECT NO	7051
U.S. DOE	ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012	DRAWING NO	218-100-12
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP		CASE	DC
BY DRAGO CORPORATION PITTSBURGH, PA.		REV	0

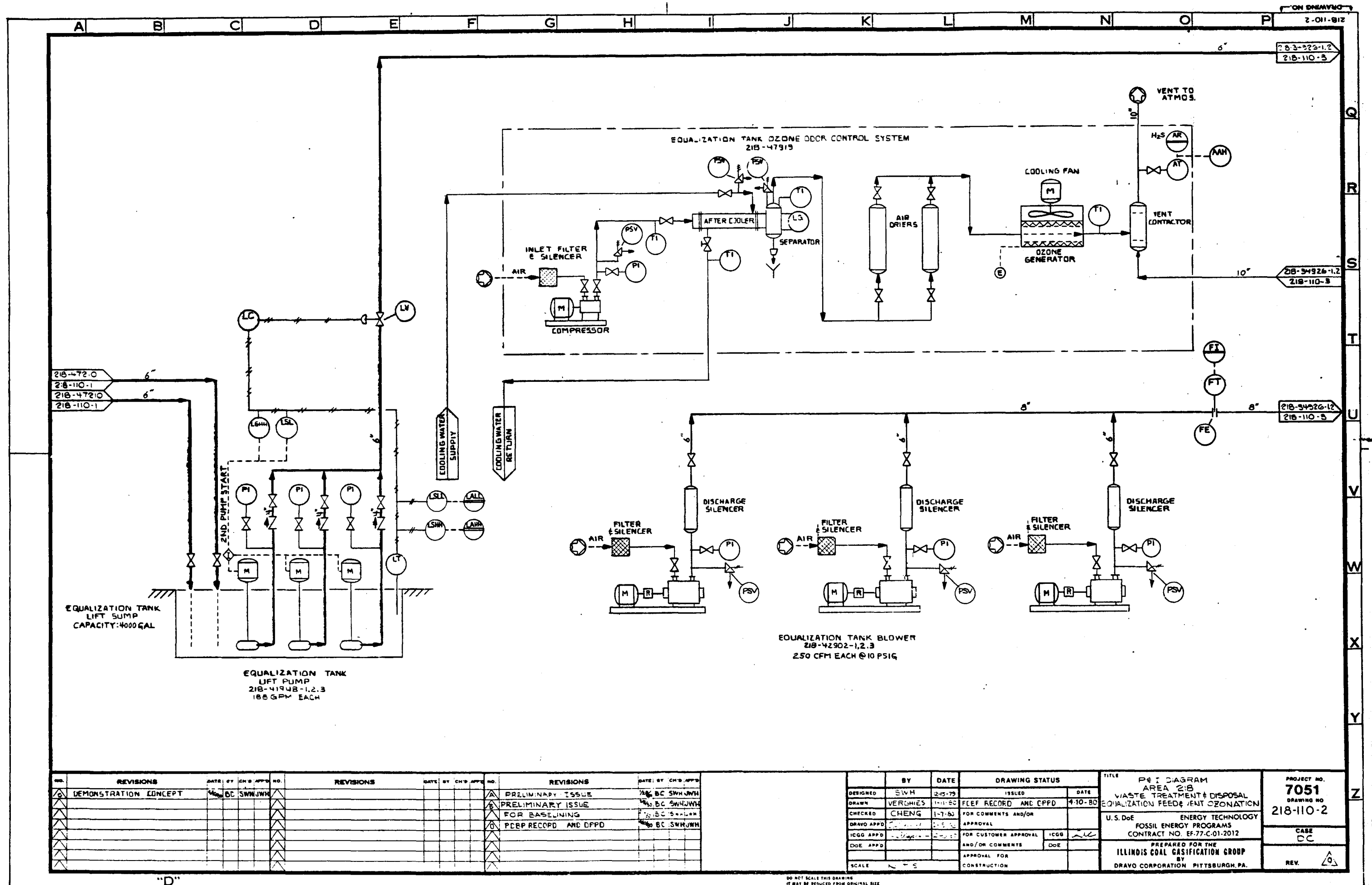
[illegible]

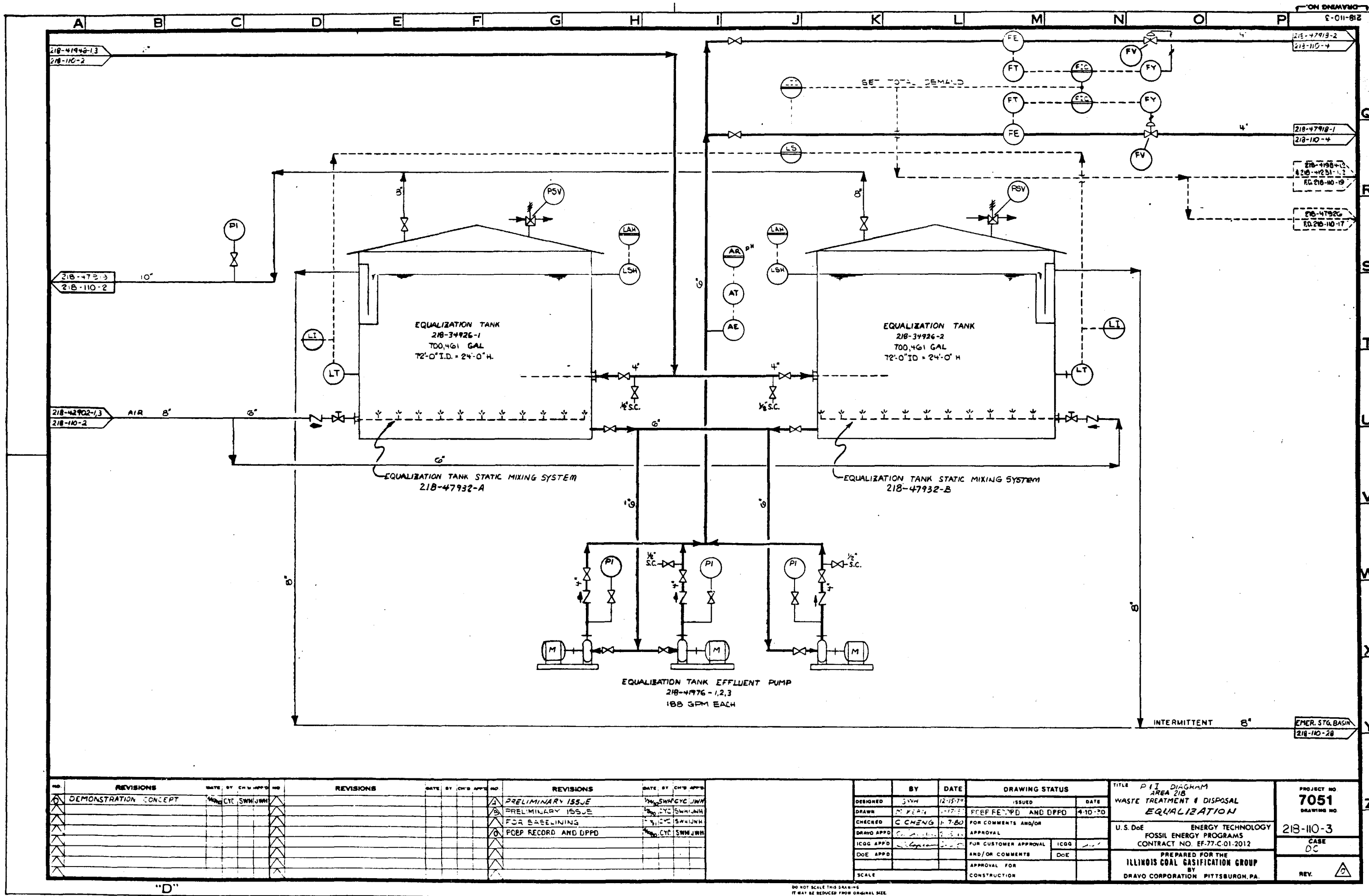


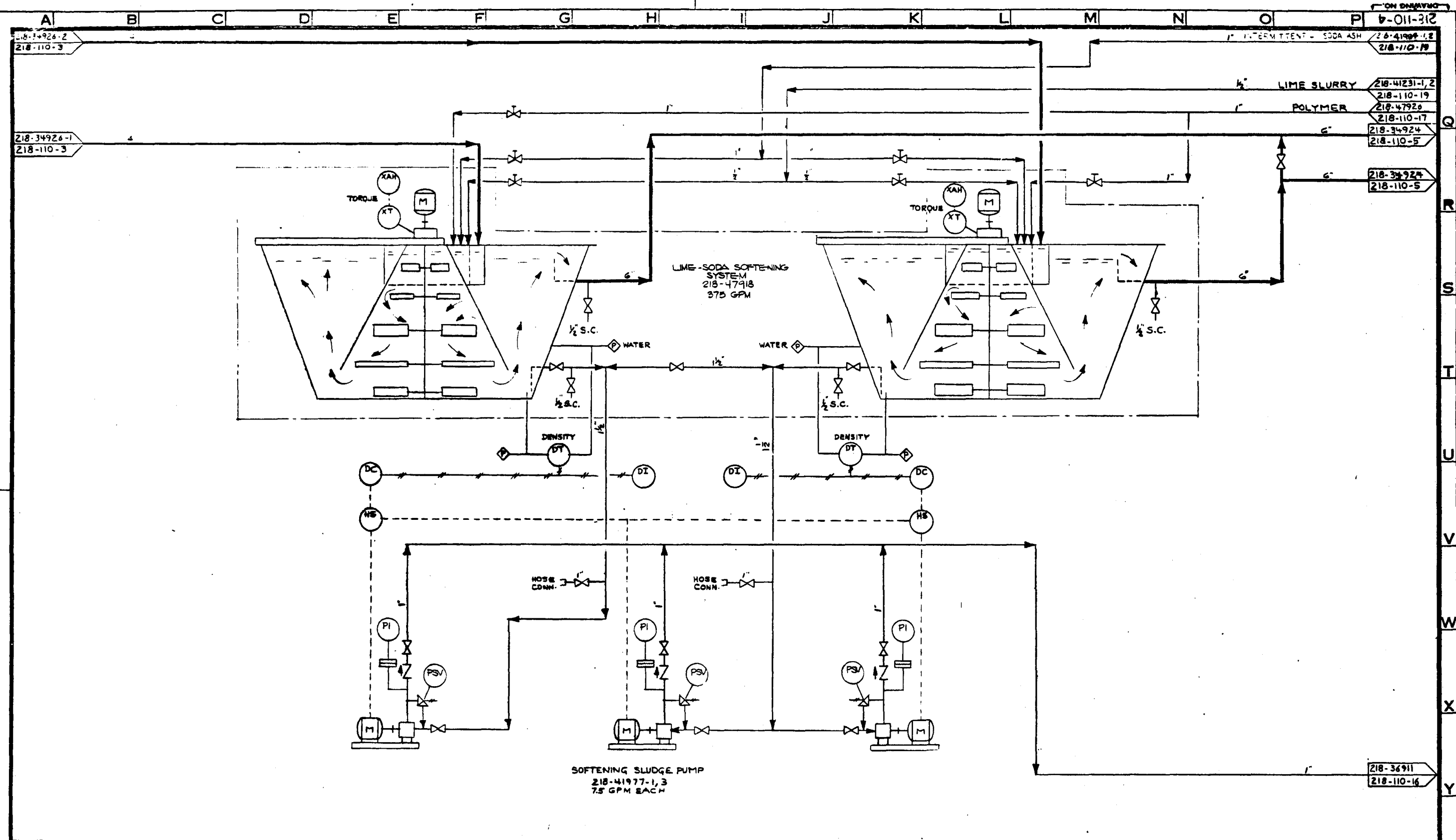
DO NOT SCALE THIS DRAWING.
IT MAY BE REDUCED FROM ORIGINAL SIZE.











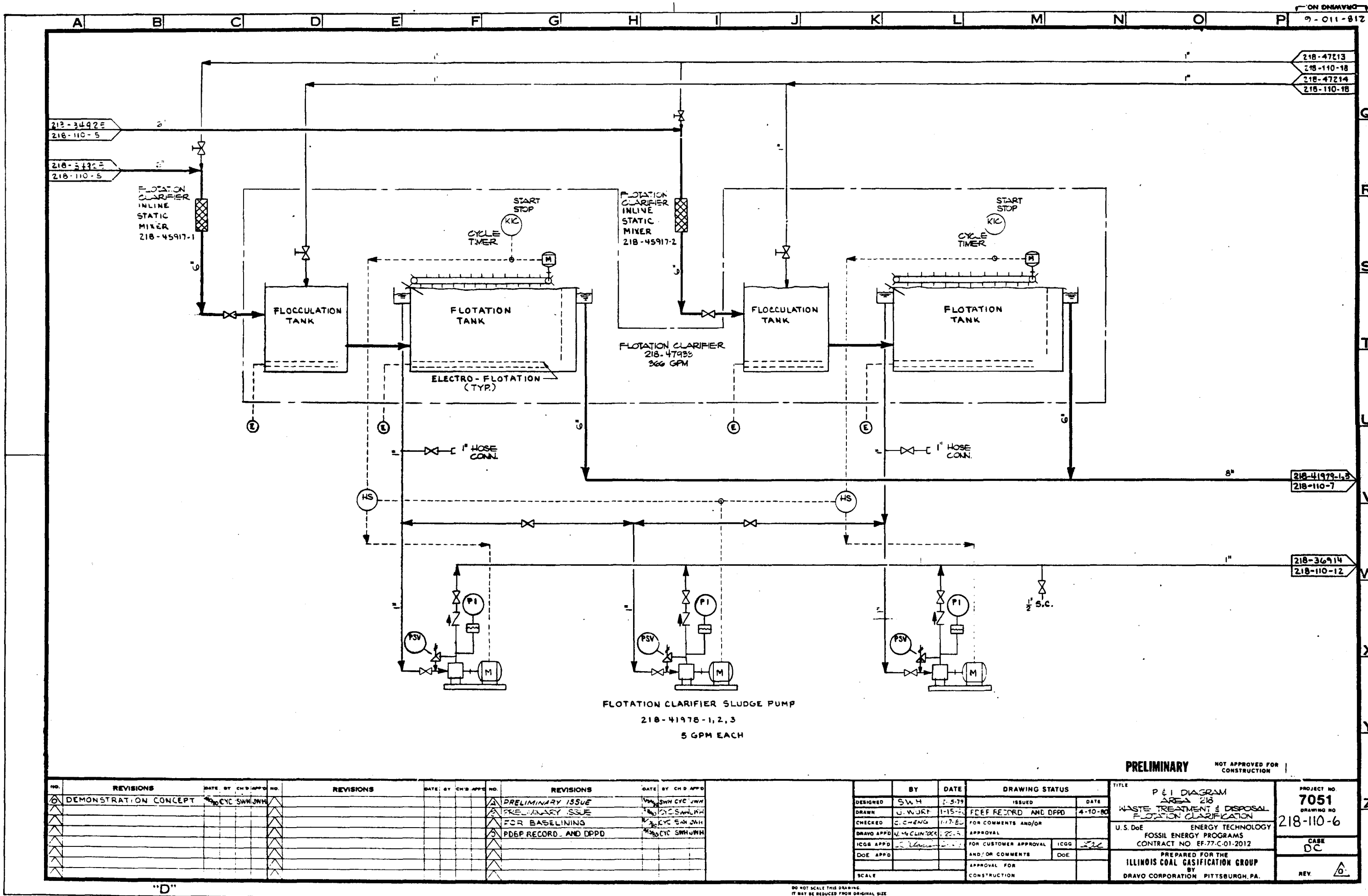
REVISIONS					REVISIONS					REVISIONS				
NO.	DATE	BY	CHK'D	APPR'D	NO.	DATE	BY	CHK'D	APPR'D	NO.	DATE	BY	CHK'D	APPR'D
1					1					1				
2					2					2				
3					3					3				
4					4					4				
5					5					5				
6					6					6				
7					7					7				
8					8					8				
9					9					9				
10					10					10				
11					11					11				
12					12					12				
13					13					13				
14					14					14				
15					15					15				
16					16					16				

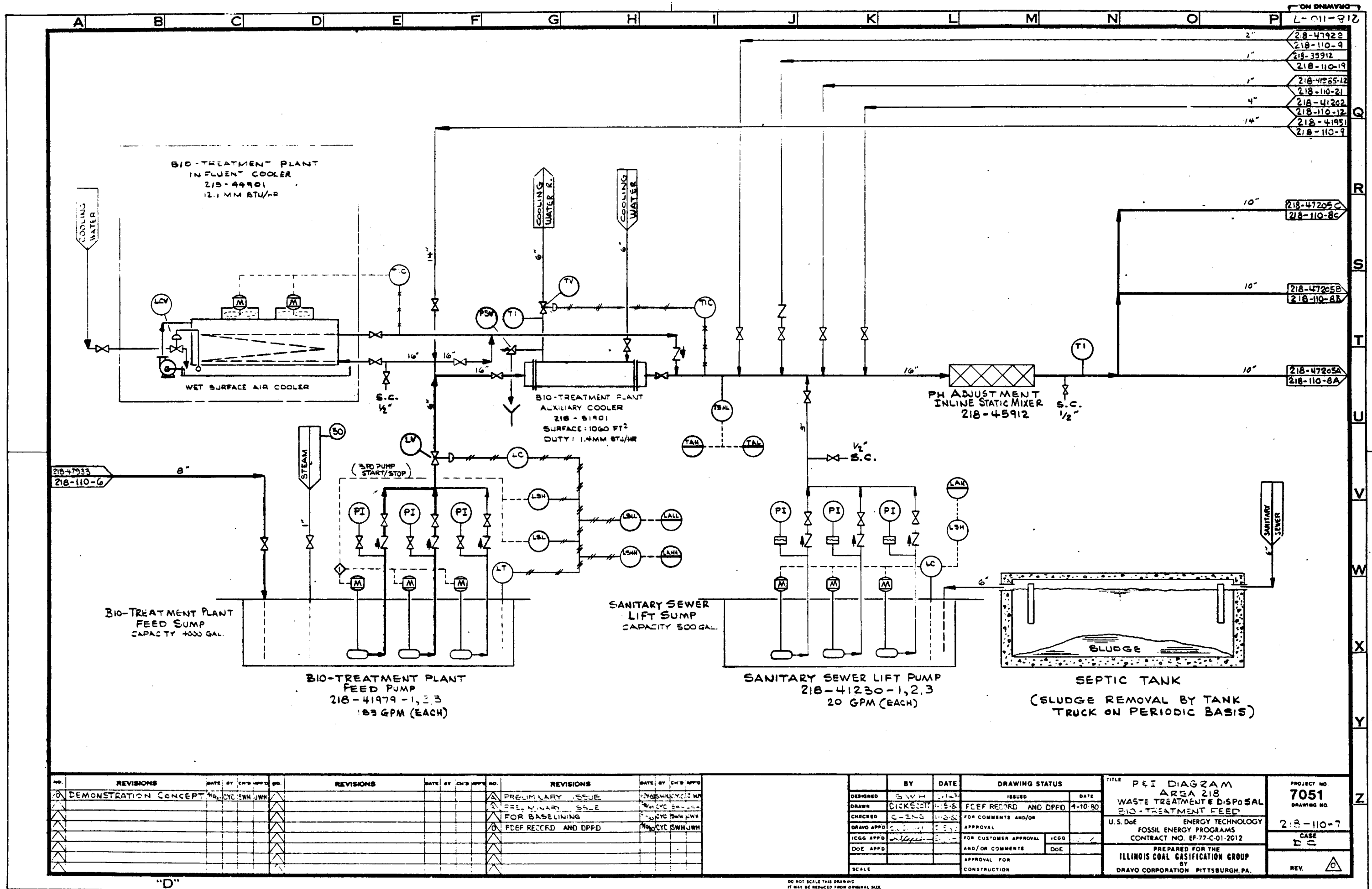
DESIGNED	BY	DATE	ISSUED	DATE
SWH	SWH	12-12-77		
DRAWN	BY	DATE	FOR RECORD AND OFFD	DATE
CHENG	CHENG	1-10-80		4-10-80
CHECKED	BY	DATE	FOR COMMENTS AND/OR	
CHENG	CHENG	1-10-80		
DRAWN APPD	BY	DATE	APPROVAL	
CHENG	CHENG	1-10-80		
ICGG APPD	BY	DATE	FOR CUSTOMER APPROVAL	ICGG
CHENG	CHENG	1-10-80		
DOE APPD	BY	DATE	AND/OR COMMENTS	DOE
CHENG	CHENG	1-10-80		
SCALE	BY	DATE	APPROVAL FOR	
1" = 10'	CHENG	1-10-80	CONSTRUCTION	

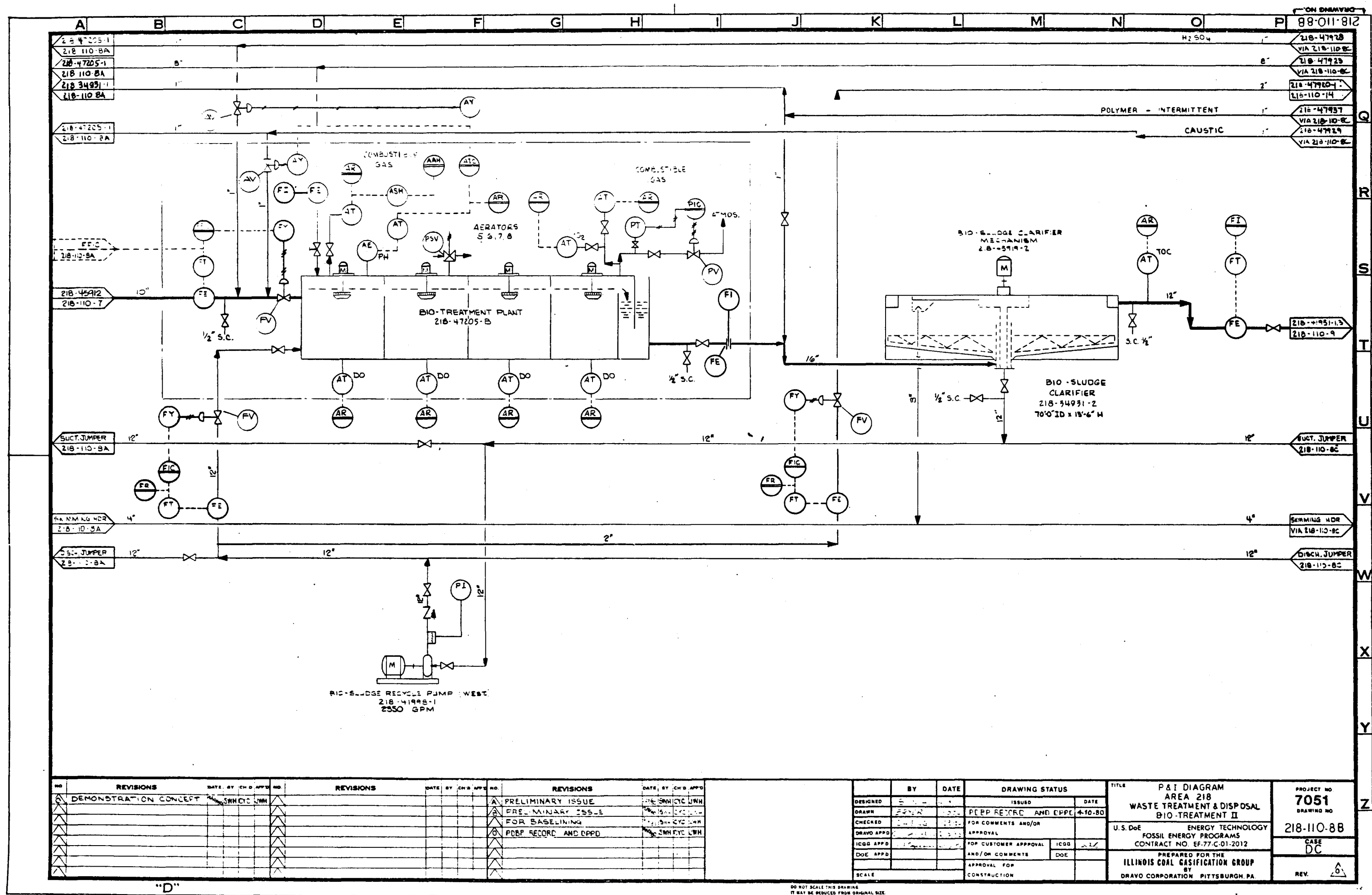
TITLE	P & I DIAGRAM AREA 218 WASTE TREATMENT & DISPOSAL LIME-SODA SOFTENING	PROJECT NO 7051 DRAWING NO 218-110-4
U.S. DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012		CASE DC
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAVO CORPORATION PITTSBURGH, PA.		REV. 1

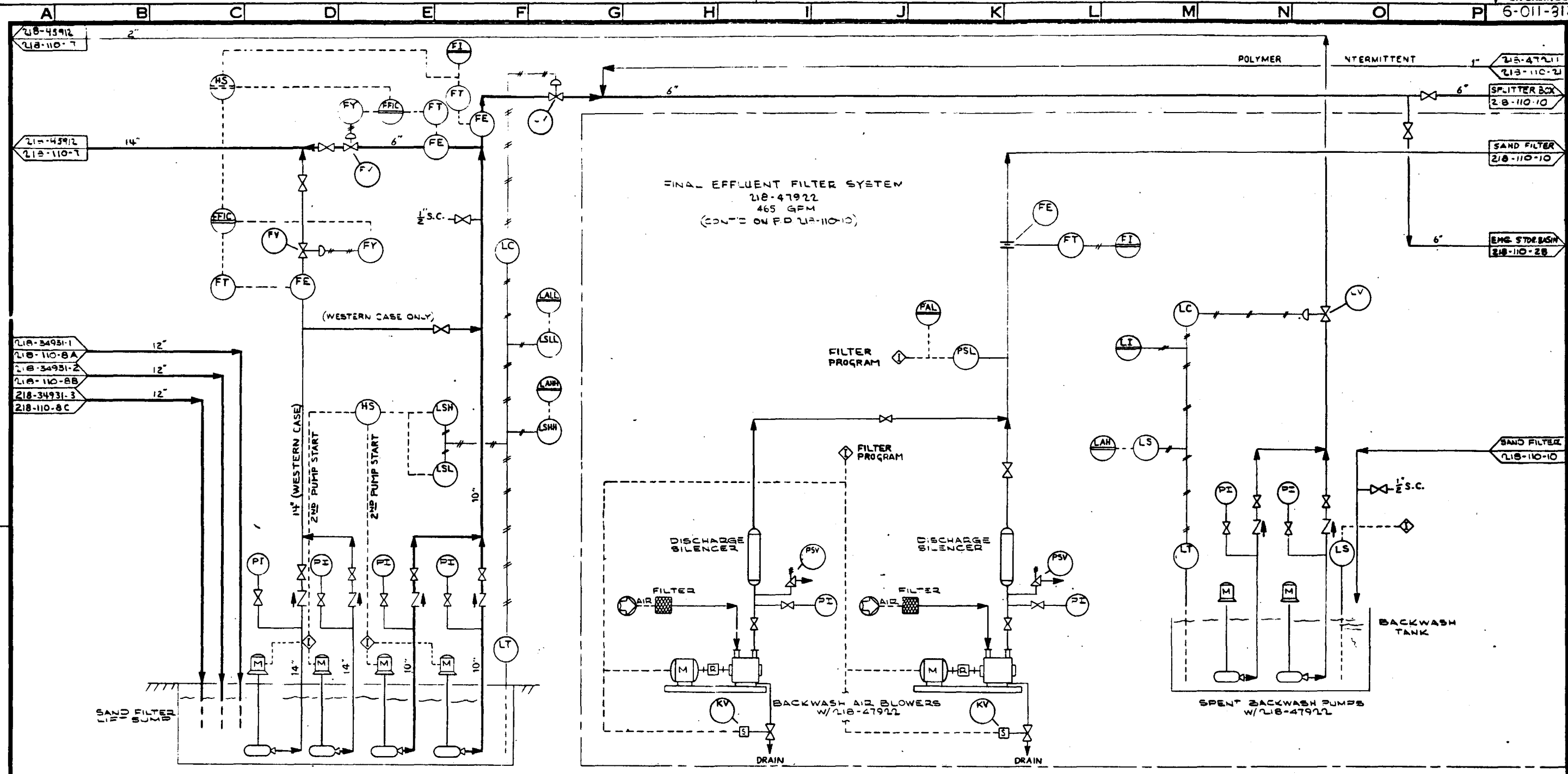
"D"

DO NOT SCALE THIS DRAWING
IT MAY BE REDUCED FROM ORIGINAL SIZE









SAND FILTER LIFT PUMP (WEST) 218-41999-1,2 1900 GPM EACH

SAND FILTER LIFT PUMP 218-41951-1,2 1100 GPM EACH

DISCHARGE SILENCER

DISCHARGE SILENCER

BACKWASH AIR BLOWERS W/ 218-47922

SPENT BACKWASH PUMPS W/ 218-47922

BACKWASH TANK

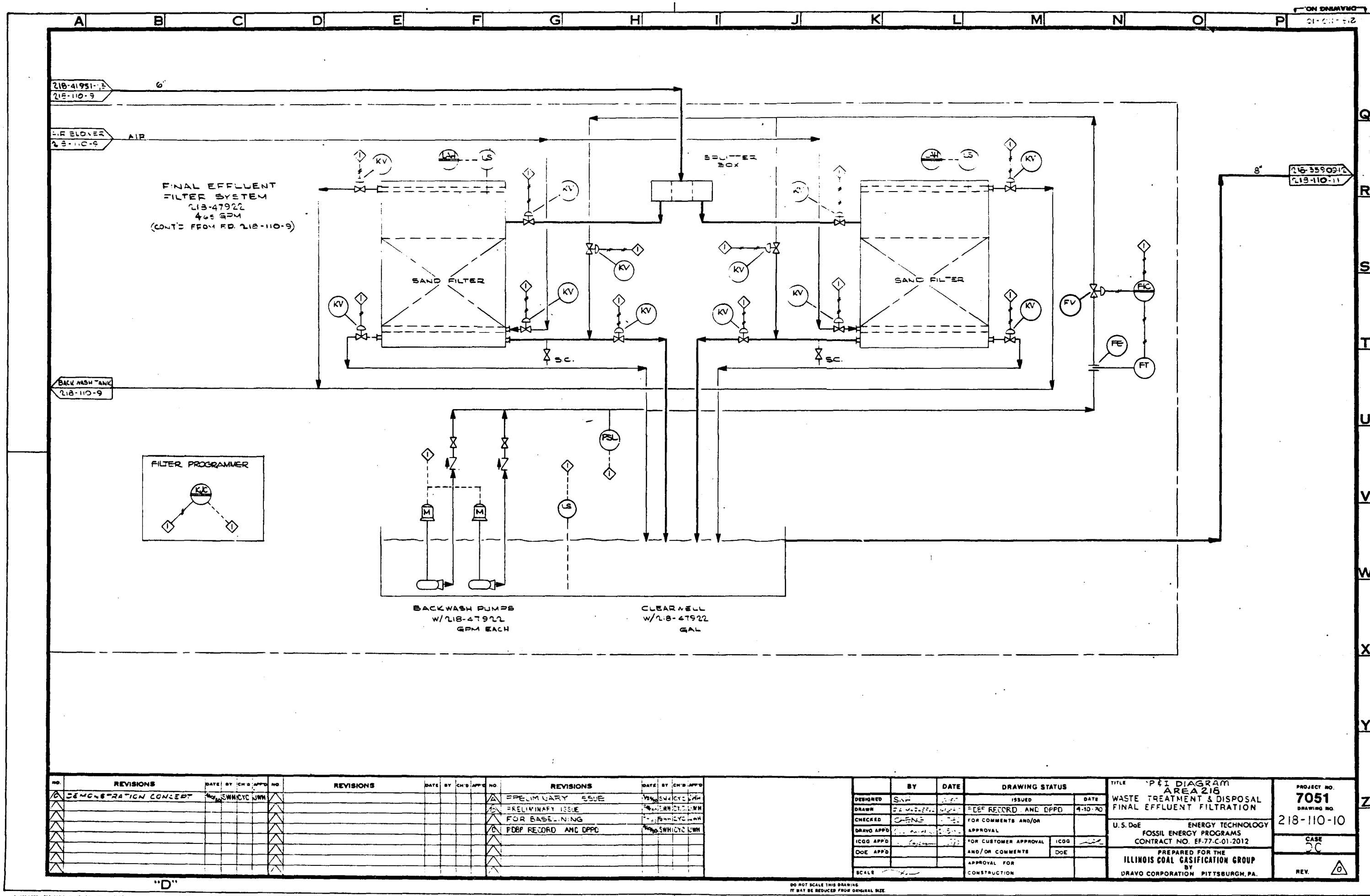
REVISIONS					REVISIONS					REVISIONS				
NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D
1		SNH/CYC	JWH		1		SNH/CYC	JWH		1		SNH/CYC	JWH	
2		SNH/CYC	JWH		2		SNH/CYC	JWH		2		SNH/CYC	JWH	
3		SNH/CYC	JWH		3		SNH/CYC	JWH		3		SNH/CYC	JWH	
4		SNH/CYC	JWH		4		SNH/CYC	JWH		4		SNH/CYC	JWH	
5		SNH/CYC	JWH		5		SNH/CYC	JWH		5		SNH/CYC	JWH	
6		SNH/CYC	JWH		6		SNH/CYC	JWH		6		SNH/CYC	JWH	
7		SNH/CYC	JWH		7		SNH/CYC	JWH		7		SNH/CYC	JWH	
8		SNH/CYC	JWH		8		SNH/CYC	JWH		8		SNH/CYC	JWH	
9		SNH/CYC	JWH		9		SNH/CYC	JWH		9		SNH/CYC	JWH	
10		SNH/CYC	JWH		10		SNH/CYC	JWH		10		SNH/CYC	JWH	

DESIGNED	BY	DATE	DRAWING STATUS	ISSUED	DATE
SNH	SNH	4-10-30	ISSUED	SNH	4-10-30
CHECKED	CHENG	4-10-30	FOR COMMENTS AND/OR APPROVAL		
ICGG APP'D			FOR CUSTOMER APPROVAL	ICGG	4-10-30
DOE APP'D			AND/OR COMMENTS	DOE	
SCALE	1" = 10'		APPROVAL FOR CONSTRUCTION		

TITLE	F&I DIAGRAM AREA 218 WASTE TREATMENT & DISPOSAL FINAL EFFLUENT FILTRATION FEED	PROJECT NO. 7051
U.S. DoE	ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012	DRAWING NO. 218-110-9
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP		CASE DC
BY DRAVO CORPORATION PITTSBURGH PA.		REV. A

"D"

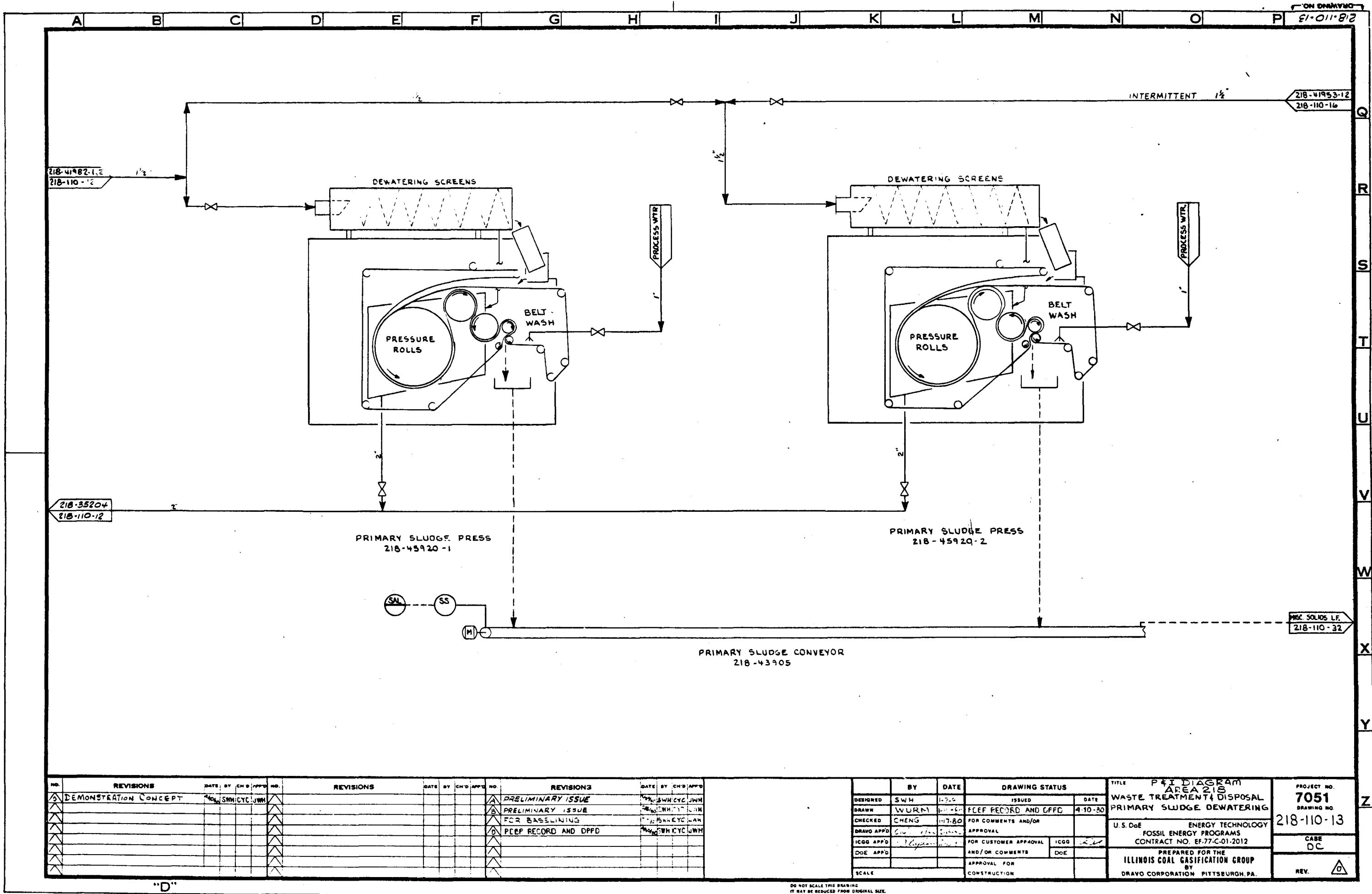
DO NOT SCALE THIS DRAWING
IT MAY BE REDUCED FROM ORIGINAL SIZE

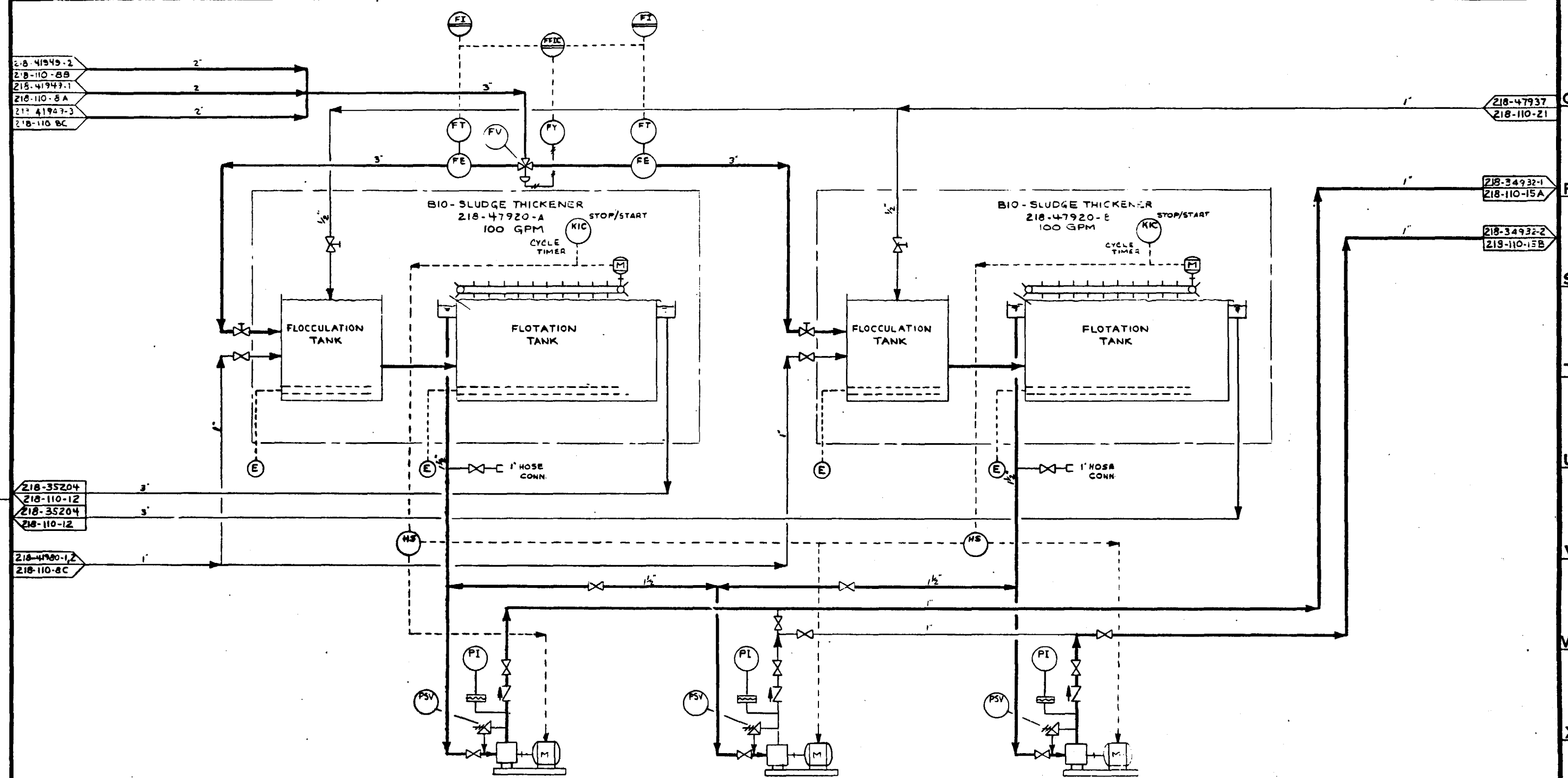


NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.
1	DEMONESTRATION CONCEPT						1	PRELIMINARY ISSUE					1	PRELIMINARY ISSUE				
2							2	PRELIMINARY ISSUE					2	FOR BASE LING				
3							3	FOR BASE LING					3	FOR BASE LING				
4							4	FOR BASE LING					4	FOR BASE LING				
5							5	FOR BASE LING					5	FOR BASE LING				
6							6	FOR BASE LING					6	FOR BASE LING				
7							7	FOR BASE LING					7	FOR BASE LING				
8							8	FOR BASE LING					8	FOR BASE LING				
9							9	FOR BASE LING					9	FOR BASE LING				
10							10	FOR BASE LING					10	FOR BASE LING				

DESIGNED	BY	DATE	ISSUED	DATE
SNH	SNH	4-10-70	FOR RECORD AND DPPD	4-10-70
CHK'D	CHS	4-10-70	FOR COMMENTS AND/OR	
DRWG APP'D			APPROVAL	
ICGG APP'D			FOR CUSTOMER APPROVAL	ICGG
DOE APP'D			AND/OR COMMENTS	DOE
SCALE			APPROVAL FOR CONSTRUCTION	

TITLE	PEI DIAGRAM AREA 218 WASTE TREATMENT & DISPOSAL FINAL EFFLUENT FILTRATION	PROJECT NO.	7051
U.S. DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012		DRAWING NO.	218-110-10
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY ORAVO CORPORATION PITTSBURGH, PA.		CASE	2C
		REV.	0





BIO-SLUDGE THICKENER SLUDGE PUMPS
218-41983-1,2,3
12 GPM EACH

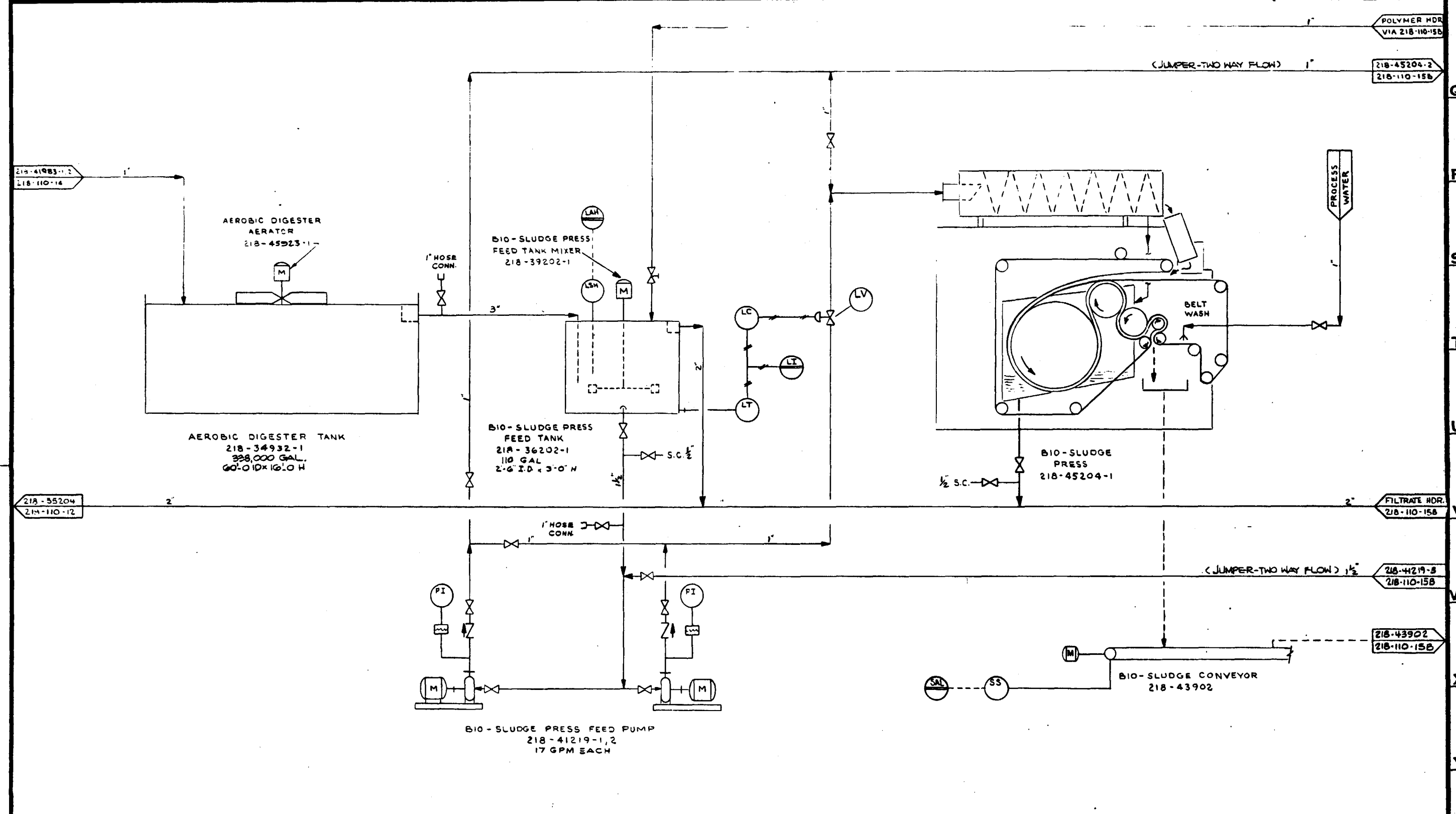
REVISIONS					REVISIONS					REVISIONS				
NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D
1	10-10-73	SWH	CYC	JWH	1	10-10-73	SWH	CYC	JWH	1	10-10-73	SWH	CYC	JWH
2					2					2				
3					3					3				
4					4					4				
5					5					5				
6					6					6				
7					7					7				
8					8					8				
9					9					9				
10					10					10				

DESIGNED	BY	DATE	DRAWING STATUS	ISSUED	DATE
SWH	SWH	10-10-73	ISSUED	SWH	10-10-73
DRAWN	CHENG	10-10-73	FOR RECORD AND DFPD	CHENG	10-10-73
CHECKED	CHENG	10-10-73	FOR COMMENTS AND/OR	CHENG	10-10-73
DRAWN APP'D	CHENG	10-10-73	APPROVAL	CHENG	10-10-73
ICGG APP'D	CHENG	10-10-73	FOR CUSTOMER APPROVAL	ICGG	10-10-73
DOE APP'D	CHENG	10-10-73	AND/OR COMMENTS	DOE	10-10-73
SCALE	1"=10'		APPROVAL FOR		
			CONSTRUCTION		

TITLE		PROJECT NO.	
P&I DIAGRAM		7051	
AREA 218		DRAWING NO.	
WASTE TREATMENT & DISPOSAL		218-110-14	
BIO-SLUDGE THICKENING		CASE	
U.S. DOE		DOE	
ENERGY TECHNOLOGY		REV.	
FOSSIL ENERGY PROGRAMS			
CONTRACT NO. EF-77-C-01-2012			
PREPARED FOR THE			
ILLINOIS COAL GASIFICATION GROUP			
BY			
DRAVO CORPORATION PITTSBURGH, PA.			

"D"

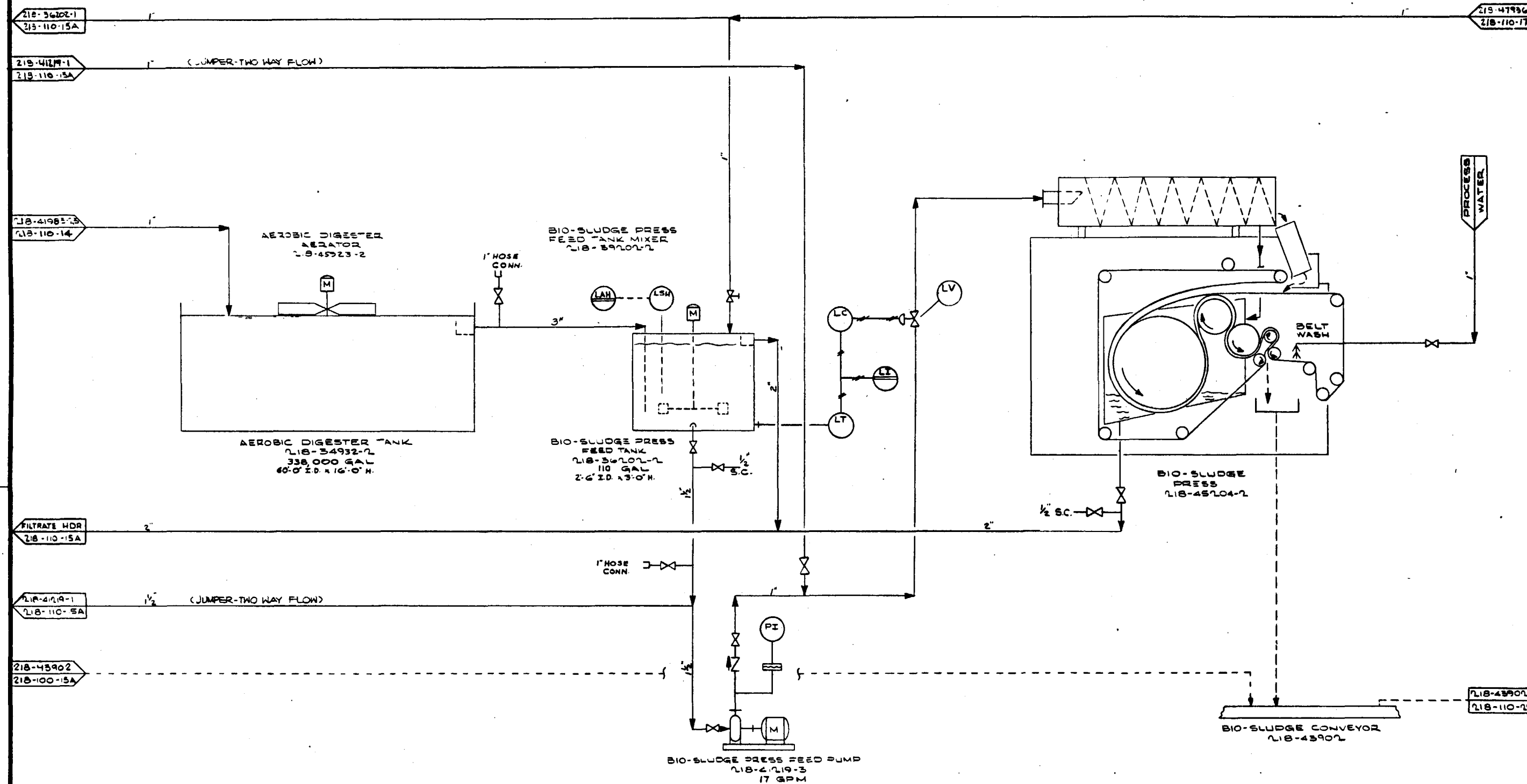
DO NOT SCALE THIS DRAWING
IT MAY BE REDUCED FROM ORIGINAL SIZE



REVISIONS					REVISIONS					REVISIONS				
NO	DATE	BY	CHK'D	APP'D	NO	DATE	BY	CHK'D	APP'D	NO	DATE	BY	CHK'D	APP'D
1					1					1				
2					2					2				
3					3					3				
4					4					4				
5					5					5				
6					6					6				
7					7					7				
8					8					8				
9					9					9				
10					10					10				
11					11					11				
12					12					12				
13					13					13				
14					14					14				
15					15					15				
16					16					16				
17					17					17				
18					18					18				
19					19					19				
20					20					20				
21					21					21				
22					22					22				
23					23					23				
24					24					24				
25					25					25				
26					26					26				
27					27					27				
28					28					28				
29					29					29				
30					30					30				
31					31					31				
32					32					32				
33					33					33				
34					34					34				
35					35					35				
36					36					36				
37					37					37				
38					38					38				
39					39					39				
40					40					40				
41					41					41				
42					42					42				
43					43					43				
44					44					44				
45					45					45				
46					46					46				
47					47					47				
48					48					48				
49					49					49				
50					50					50				
51					51					51				
52					52					52				
53					53					53				
54					54					54				
55					55					55				
56					56					56				
57					57					57				
58					58					58				
59					59					59				
60					60					60				
61					61					61				
62					62					62				
63					63					63				
64					64					64				
65					65					65				
66					66					66				
67					67					67				
68					68					68				
69					69					69				
70					70					70				
71					71					71				
72					72					72				
73					73					73				
74					74					74				
75					75					75				
76					76					76				
77					77					77				
78					78					78				
79					79					79				
80					80					80				
81					81					81				
82					82					82				
83					83					83				
84					84					84				
85					85					85				
86					86					86				
87					87					87				
88					88					88				
89					89					89				
90					90					90				
91					91					91				
92					92					92				
93					93					93				
94					94					94				
95					95					95				
96					96					96				
97					97					97				
98					98					98				
99					99					99				
100					100					100				

BY		DATE	DRAWING STATUS		TITLE	PROJECT NO.
DESIGNED	SWH	1-10-85	ISSUED	DATE	WASTE TREATMENT & DISPOSAL BIO-SLUDGE DIGESTION & DEWATERING I	7051
DRAWN	R KADLIK	1-10-85	FIELD RECORD AND CHECKED	4-10-80		DRAWING NO.
CHECKED	CHENS	1-17-85	FOR COMMENTS AND/OR APPROVAL		U.S. DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-212	218-110-15A
DRAWN APP'D	SWH	2-5-85	FOR CUSTOMER APPROVAL	ICG		CASE
ICG APP'D	W. H. Hagan	2-5-85	AND/OR COMMENTS	DOE		DC
DOE APP'D			APPROVAL FOR CONSTRUCTION		PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP DRACO CORPORATION PITTSBURGH, PA.	REV. 
SCALE						

DO NOT SCALE THIS DRAWING
IT MAY BE REDUCED FROM ORIGINAL SIZE

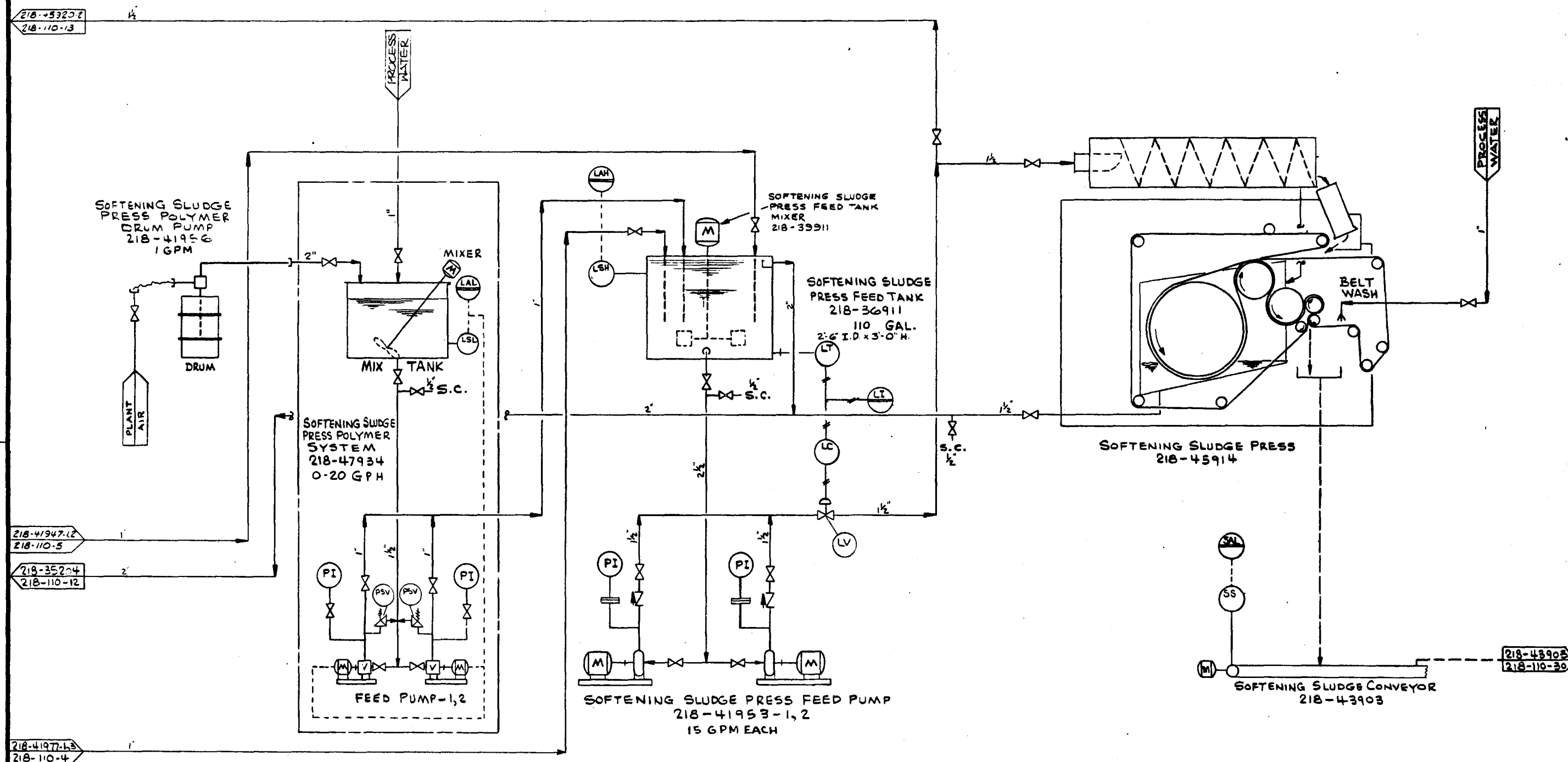


REVISIONS				REVISIONS			
NO.	DATE	BY	CHK'D	NO.	DATE	BY	CHK'D
10	10/10/80	SWH	CYC	1		SWH	CYC
9				2		SWH	CYC
8				3		SWH	CYC
7				4		SWH	CYC
6				5		SWH	CYC
5				6		SWH	CYC
4				7		SWH	CYC
3				8		SWH	CYC
2				9		SWH	CYC
1				10		SWH	CYC

BY		DATE		DRAWING STATUS	
DESIGNED	SWH	10/10/80		ISSUED	DATE
DRAWN	CHENG	10/10/80		FOR RECORD AND OPD	4-10-80
CHECKED	CHENG	10/10/80		FOR COMMENTS AND/OR	
BRAVO APP'D				APPROVAL	
ICGG APP'D				FOR CUSTOMER APPROVAL	ICGG
DOE APP'D				AND/OR COMMENTS	DOE
SCALE				APPROVAL FOR	
				CONSTRUCTION	

TITLE		PROJECT NO.
PEI DIAGRAM AREA-218		7051
WASTE TREATMENT & DISPOSAL		DRAWING NO.
BIO-SLUDGE DIGESTING & DEWATERING II		218-110-15B
U.S. DOE ENERGY TECHNOLOGY		CASE
FOSSIL ENERGY PROGRAMS		OC
CONTRACT NO. EF-77-C-01-2012		REV.
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAVO CORPORATION PITTSBURGH, PA.		

DO NOT SCALE THIS DRAWING.
IT MAY BE REDUCED FROM ORIGINAL SIZE.

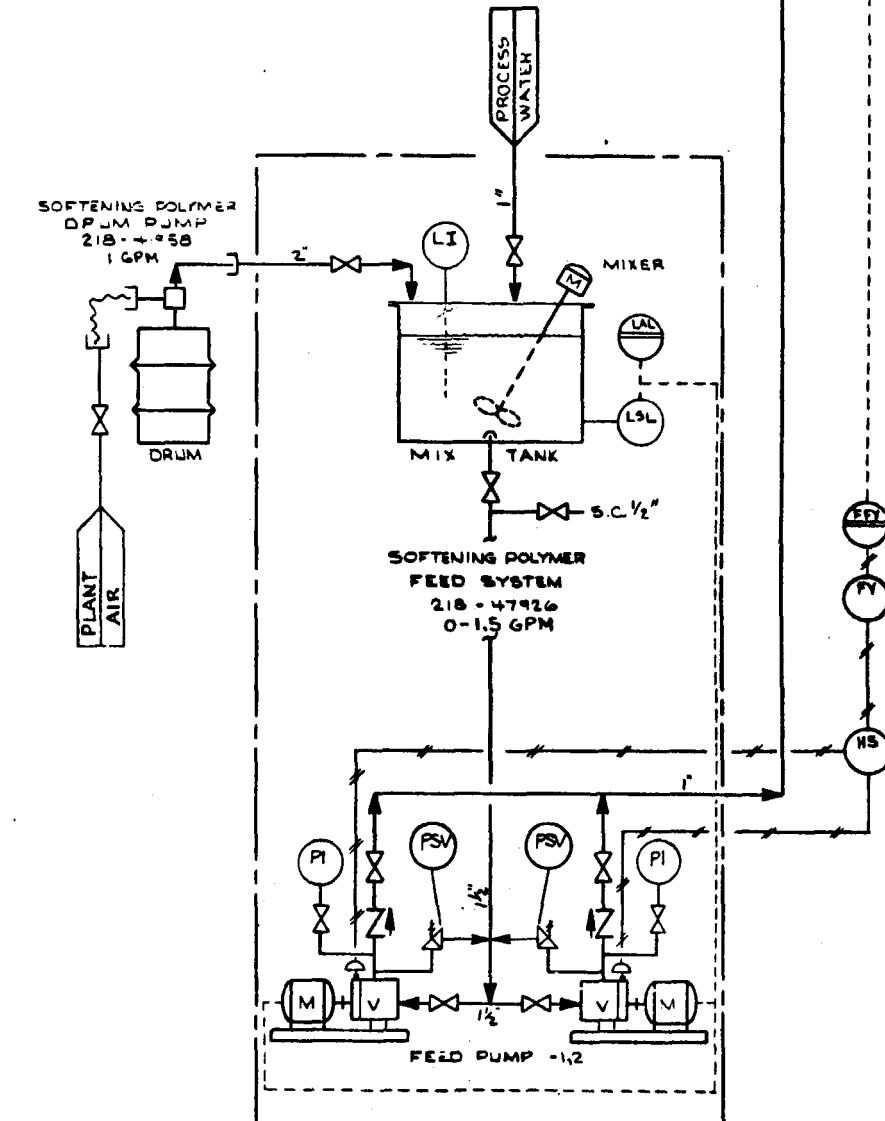
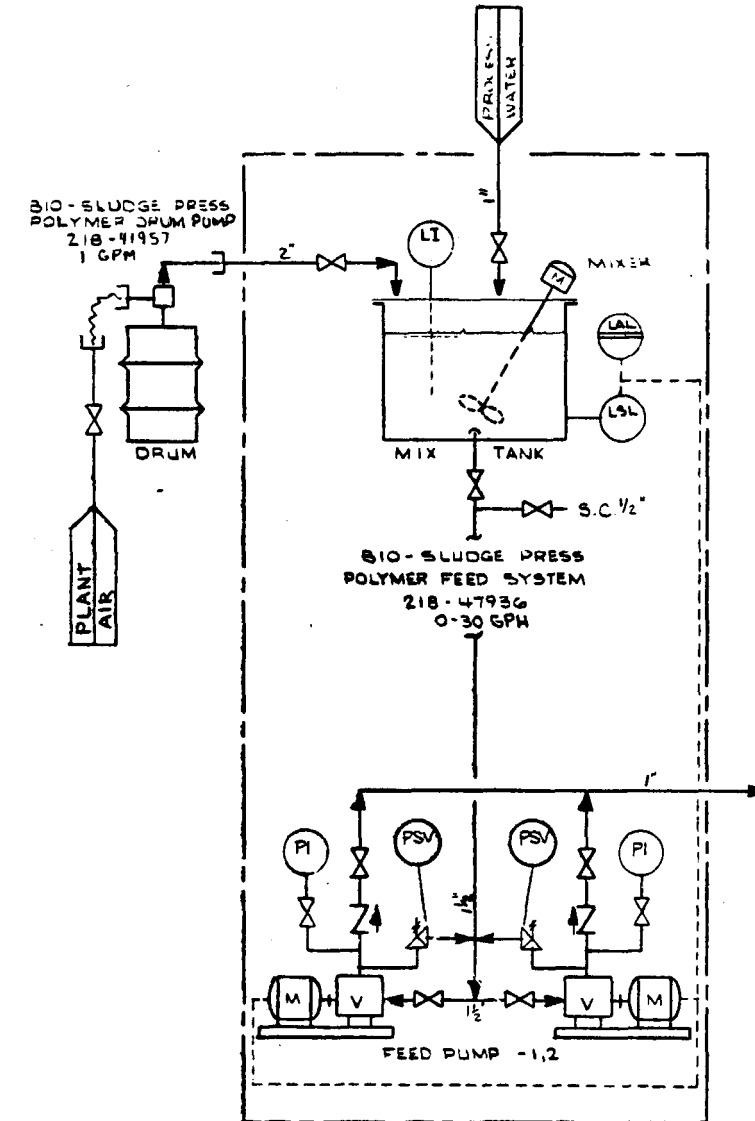
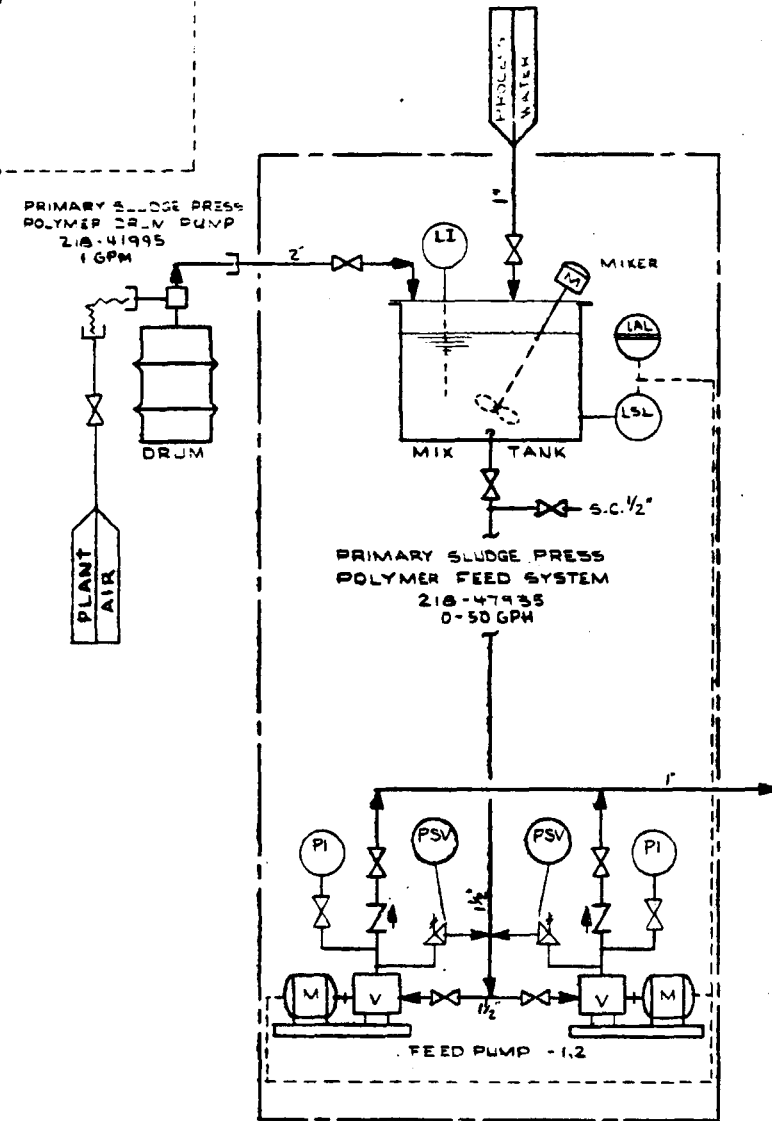


REVISIONS				REVISIONS				REVISIONS			
NO.	DATE	BY	CHK'D APP'D NO.	NO.	DATE	BY	CHK'D APP'D NO.	NO.	DATE	BY	CHK'D APP'D NO.
1				1				1			
2				2				2			
3				3				3			
4				4				4			
5				5				5			
6				6				6			
7				7				7			
8				8				8			
9				9				9			
10				10				10			

DESIGNED	BY	DATE	DRAWING STATUS	ISSUED	DATE
SWH	SWH	11-1-87	FOR RECORD AND DFD	4-10-80	
DRAWN	SWH	11-1-87	FOR COMMENTS AND/OR APPROVAL		
CHECKED	SWH	11-1-87	FOR CUSTOMER APPROVAL		
ICGB APP'D	SWH	11-1-87	AND/OR COMMENTS		
DOE APP'D	SWH	11-1-87	APPROVAL FOR CONSTRUCTION		
SCALE	1" = 1'-0"				

TITLE	AREA 218 WASTE TREATMENT & DISPOSAL SOFTENING SLUDGE DEWATERING	PROJECT NO.	7051
U.S. DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012		DRAWING NO.	218-110-10
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAYO CORPORATION PITTSBURGH, PA.		CASE	IC
		REV.	1

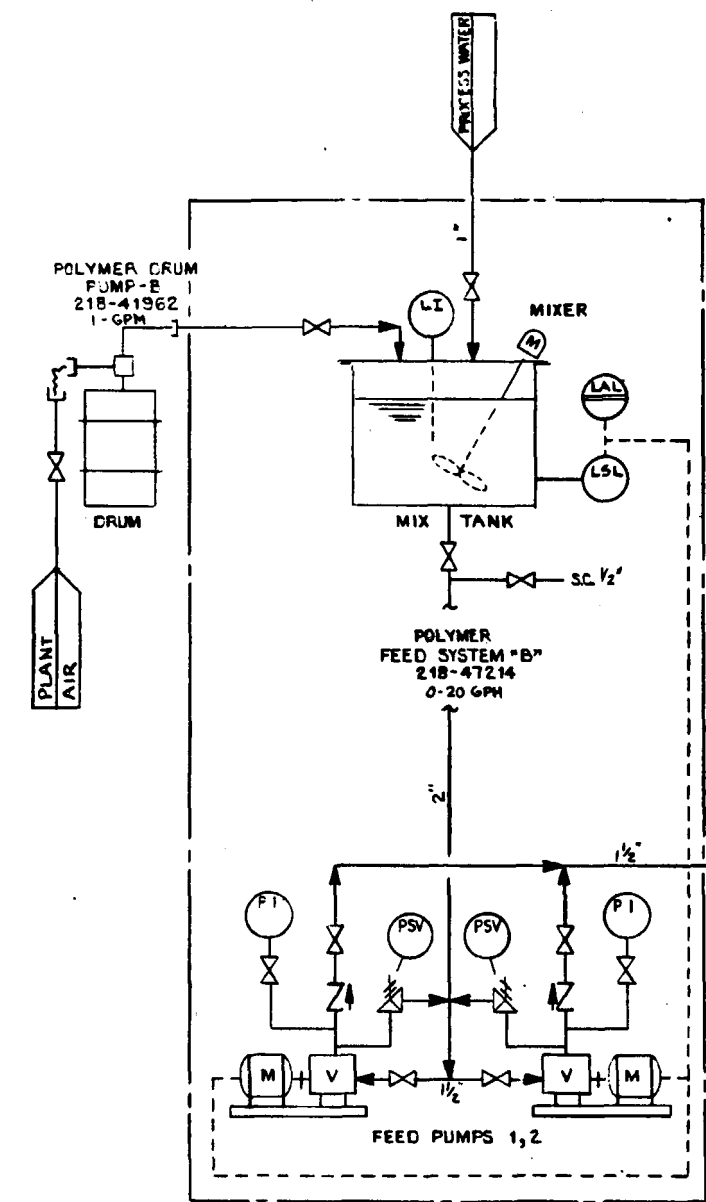
218-56202-12
218-110-158
218-47787-2
218-110-4
218-56915
218-110-12



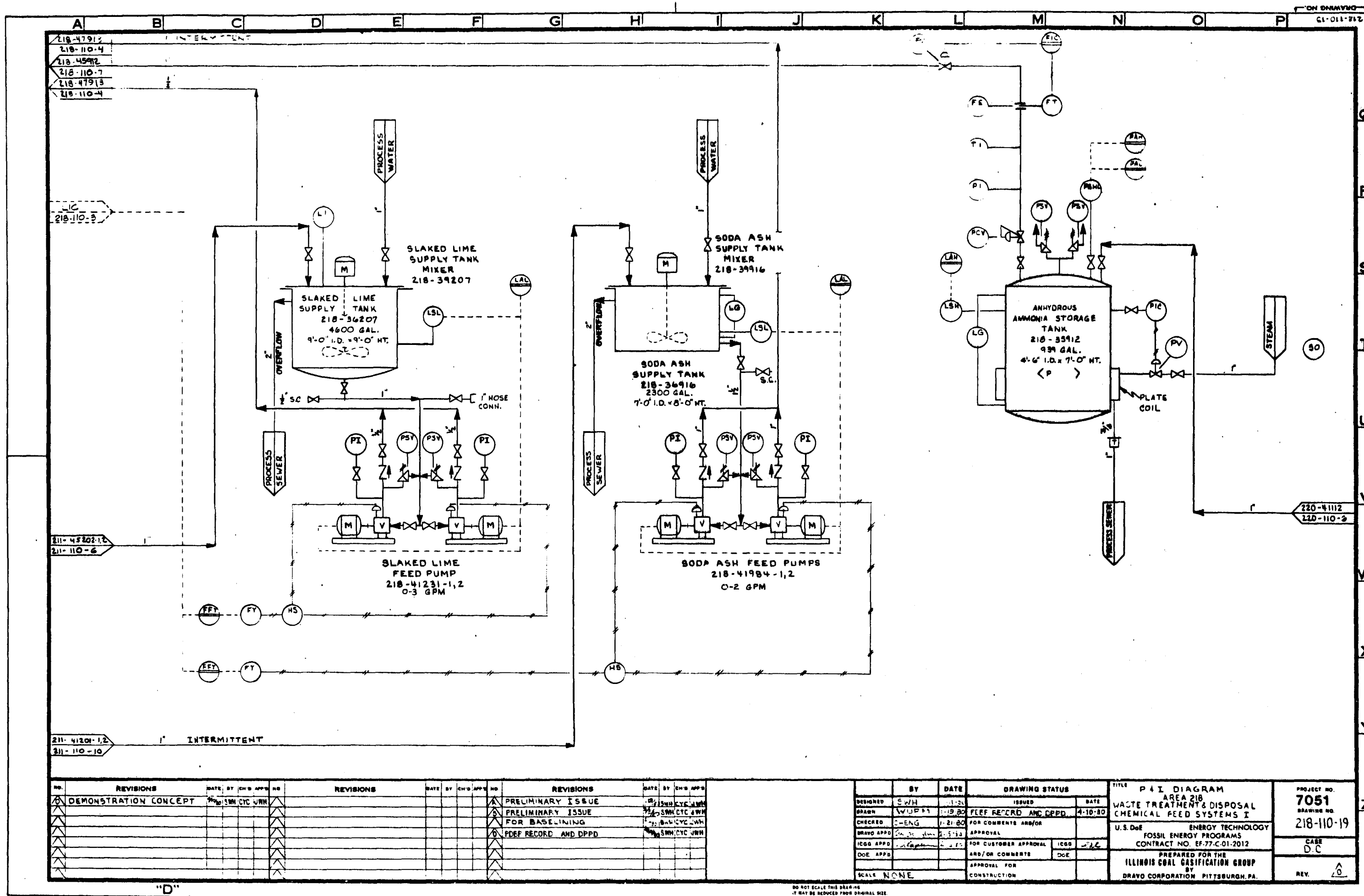
NO.	REVISIONS	DATE	BY	CHKD	APPD	NO.	REVISIONS	DATE	BY	CHKD	APPD	NO.	REVISIONS	DATE	BY	CHKD	APPD	NO.
1	DC DEMONSTRATION CONCEPT	10-1-80	SWH	CYC	JWH	1	PRELIMINARY ISSUE	10-1-80	SWH	CYC	JWH	1	PRELIMINARY ISSUE	10-1-80	SWH	CYC	JWH	1
2						2	FOR BASELINING	10-1-80	SWH	CYC	JWH	2						2
3						3	PDBP RECORD AND DFPD	10-1-80	SWH	CYC	JWH	3						3

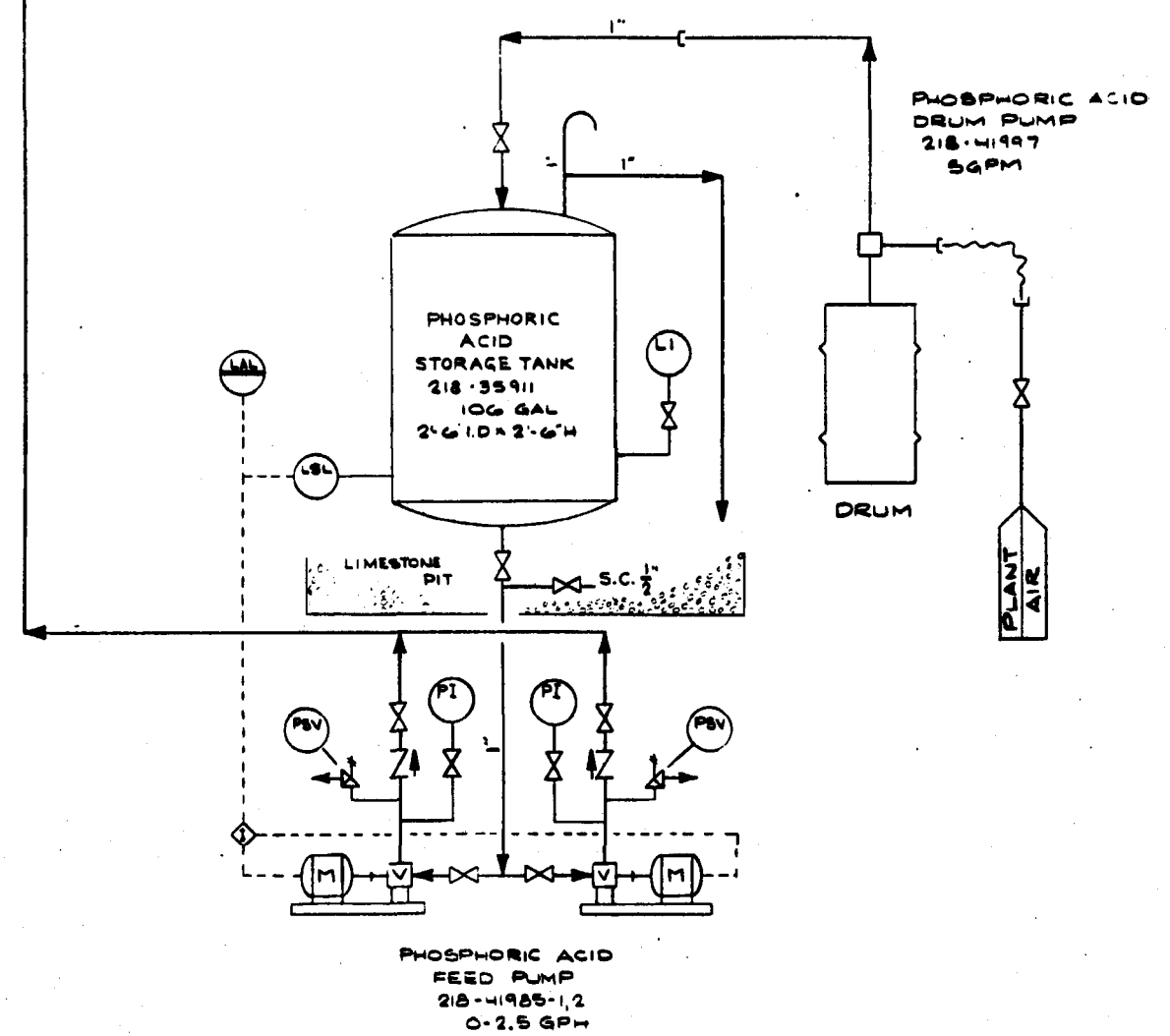
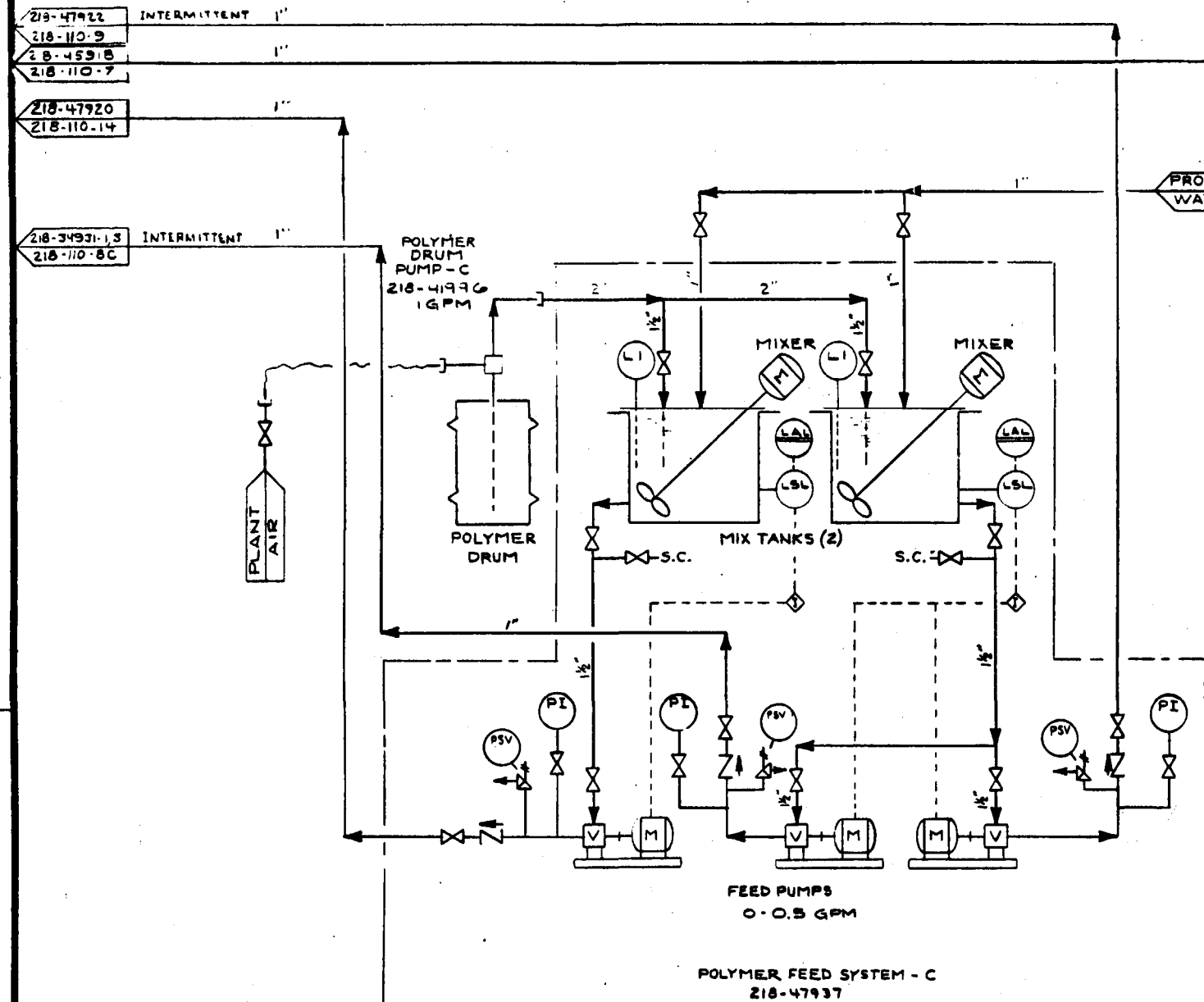
	BY	DATE	DRAWING STATUS		TITLE	PROJECT NO.
DESIGNED	SWH	10-1-80	ISSUED	DATE	PEI DIAGRAM AREA 218	7051
DRAWN	KJR	10-1-80	FOR RECORD AND CFPD	4-10-80	WASTE TREATMENT & DISPOSAL POLYMER FEED SYSTEMS I	DRAWING NO.
CHECKED	CHENG	10-8-80	FOR COMMENTS AND/OR APPROVAL		U.S. DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS	218-110-17
DRAWG APPD	CHENG	10-8-80	FOR CUSTOMER APPROVAL	ICGG	CONTRACT NO. EF-77-C-01-2012	CASE
ICGG APPD	CHENG	10-8-80	AND/OR COMMENTS	DOE	PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP	DOE
DOE APPD			APPROVAL FOR CONSTRUCTION		BY DRACO CORPORATION PITTSBURGH, PA.	REV.
SCALE						

INTERVIEW



TITLE P & I DIAGRAM AREA 218 WASTE TREATMENT & DISPOSAL POLYMER FEED SYSTEMS II	PROJECT NO. 7051 DRAWING NO.
U.S. DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012	218-110-18
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAGO CORPORATION PITTSBURGH, PA.	CASE DC
	REV. 

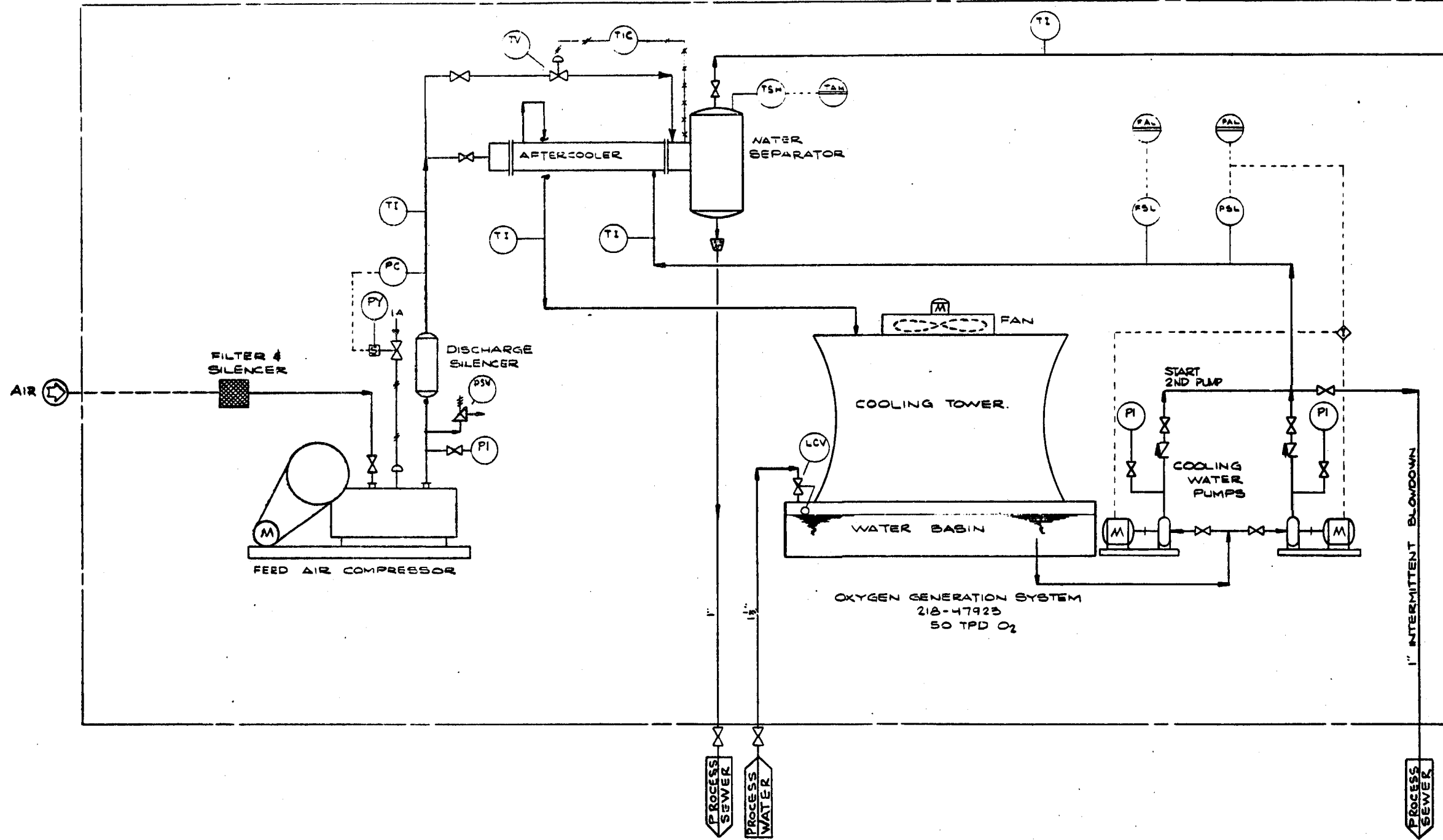




NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D
1	DC-DEMONSTRATION CONCEPT	1-12-80	SWH	CYC	JWN	1	PRELIMINARY ISSUE	1-12-80	SWH	CYC	JWN	1	PRELIMINARY ISSUE	1-12-80	SWH	CYC	JWN
2						2	FOR BASELINING	1-18-80	SWH	CYC	JWN	2	PDEF RECORD AND DPPD	1-18-80	SWH	CYC	JWN
3						3						3					
4						4						4					
5						5						5					
6						6						6					
7						7						7					
8						8						8					
9						9						9					
10						10						10					

DESIGNED	BY	DATE	DRAWING STATUS	TITLE	PROJECT NO.
SWH	SWH	1-12-80	ISSUED	P&I DIAGRAM AREA 218 WASTE TREATMENT & DISPOSAL CHEMICAL FEED SYSTEMS III	7051
DRAWN	SWH	1-12-80	FOR RECORD AND DPPD	U.S. DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012	DRAWING NO 218-110-21
CHECKED	SWH	1-18-80	FOR COMMENTS AND/OR APPROVAL		CASE DC
DRAWN APP'D	SWH	1-18-80	FOR CUSTOMER APPROVAL		REV. 0
ICGG APP'D	SWH	1-18-80	AND/OR COMMENTS		
DOE APP'D	SWH	1-18-80	APPROVAL FOR CONSTRUCTION		
SCALE	AS SHOWN			ILLINOIS COAL GASIFICATION GROUP BY DRAGO CORPORATION PITTSBURGH, PA.	

DO NOT SCALE THIS DRAWING IT MAY BE REDUCED FROM ORIGINAL SIZE

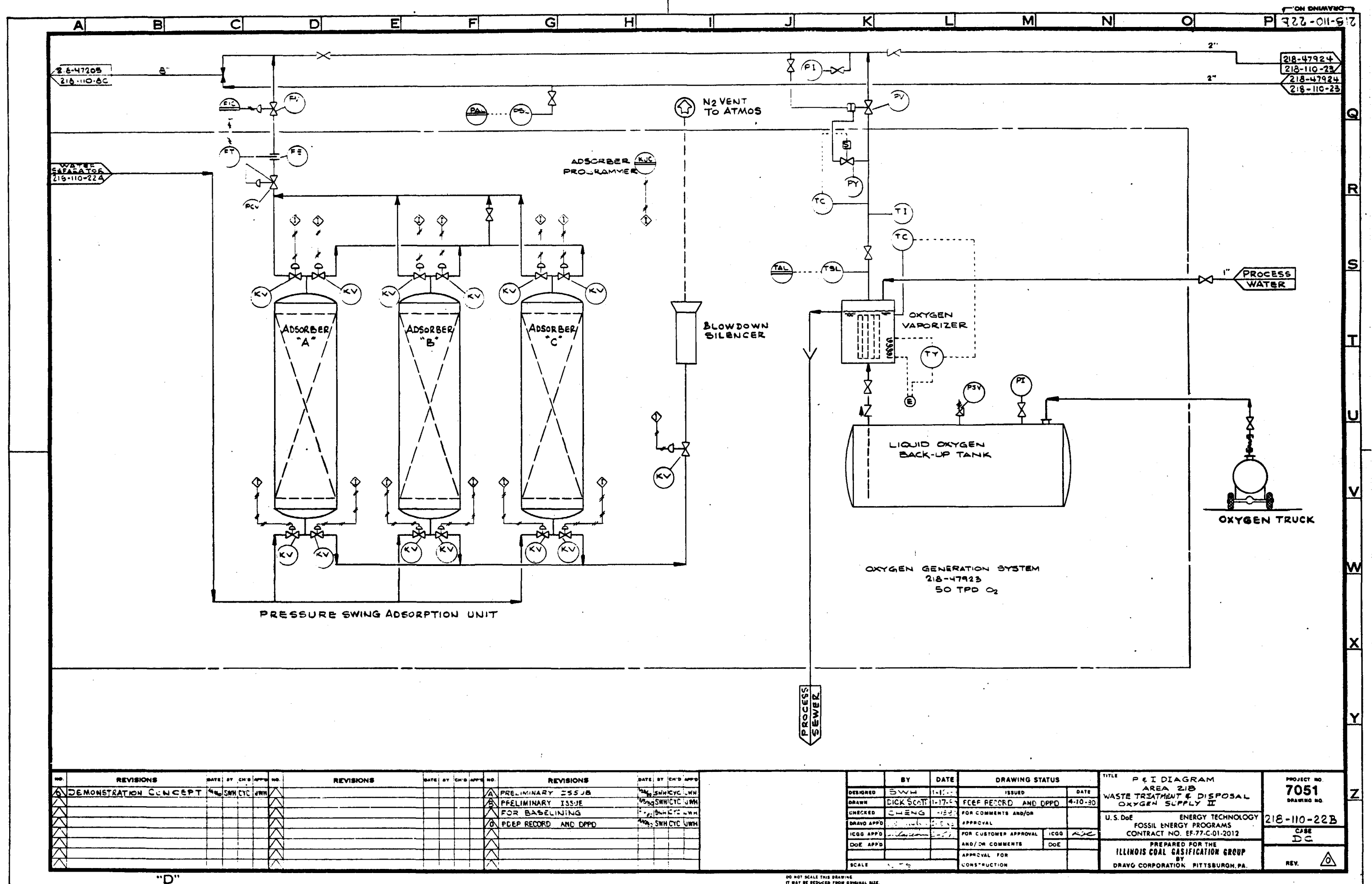


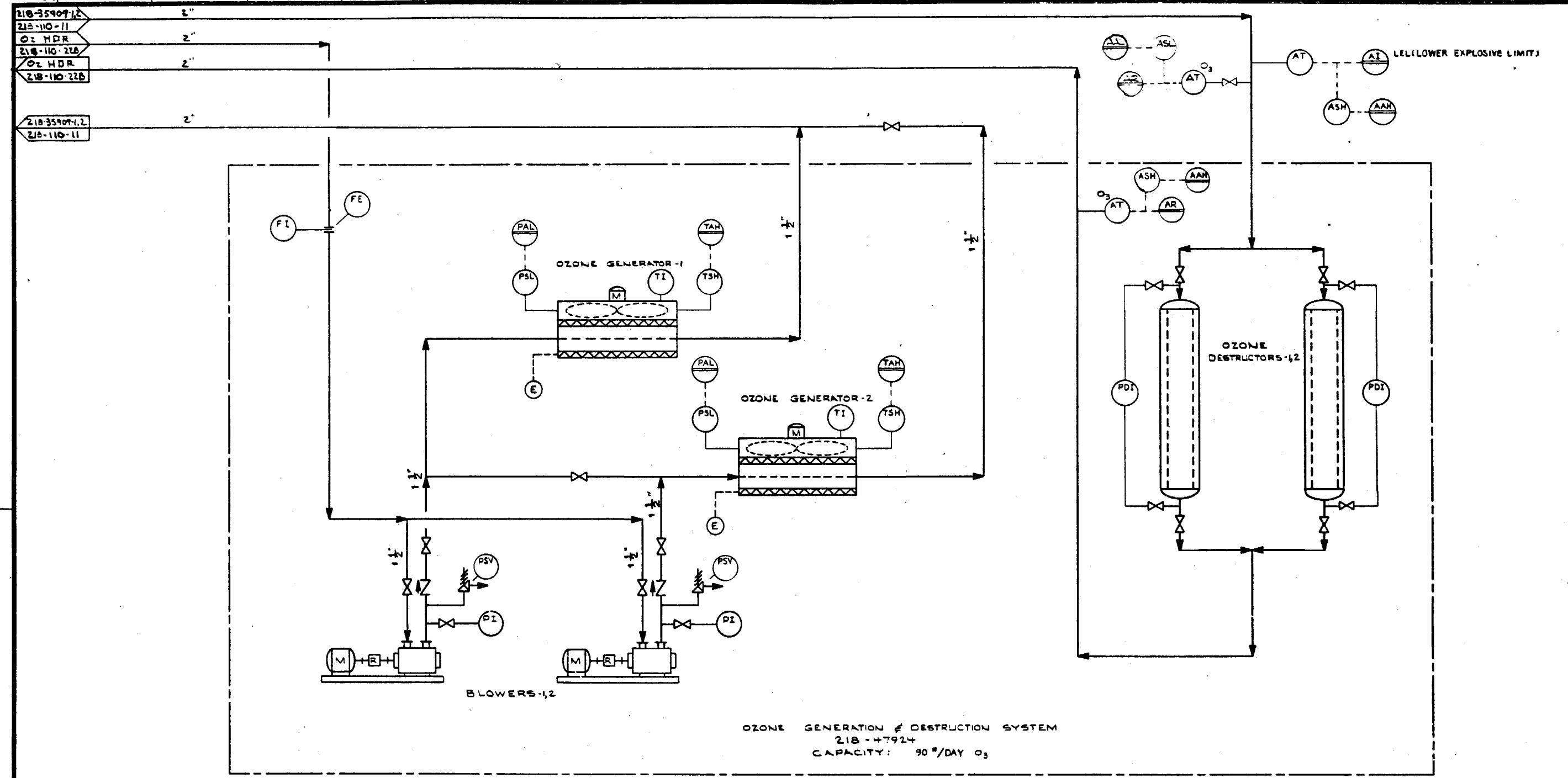
REVISIONS				REVISIONS				REVISIONS							
NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D	
0	DEMONSTRATION CONCEPT	10/15	SWH	CYC	JWH					A	PRELIMINARY ISSUE	10/15	SWH	CYC	JWH
										B	PRELIMINARY ISSUE	10/15	SWH	CYC	JWH
										C	FOR BASELINING	10/15	SWH	CYC	JWH
										D	PDEP RECORD AND DPPO	10/15	SWH	CYC	JWH

DESIGNED				DRAWING STATUS			
DESIGNED	SWH	10-15-80	10-15-80	ISSUED	DATE	4-10-80	
DRAWN	DICKSON	10-15-80	10-15-80	FOR RECORD AND DFPD	DATE	4-10-80	
CHECKED	CLENS	10-15-80	10-15-80	FOR COMMENTS AND/OR	DATE		
DRAWN APPD	SWH	10-15-80	10-15-80	APPROVAL	DATE		
ICGS APPD	SWH	10-15-80	10-15-80	FOR CUSTOMER APPROVAL	ICGS		
DOE APPD	SWH	10-15-80	10-15-80	AND/OR COMMENTS	DOE		
SCALE				APPROVAL FOR	DATE		
				CONSTRUCTION	DATE		

TITLE		PROJECT NO.
P&I DIAGRAM AREA 218		7051
WASTE TREATMENT & DISPOSAL		DRAWING NO.
OXYGEN SUPPLY I		
U.S. DOE ENERGY TECHNOLOGY		218-110-22A
FOSSIL ENERGY PROGRAMS		CASE
CONTRACT NO. EF-77-C-01-2012		DC
PREPARED FOR THE		REV.
ILLINOIS COAL GASIFICATION GROUP		
BY		
DRAVO CORPORATION PITTSBURGH, PA.		

DO NOT SCALE THIS DRAWING
IT MAY BE REDUCED FROM ORIGINAL SIZE.

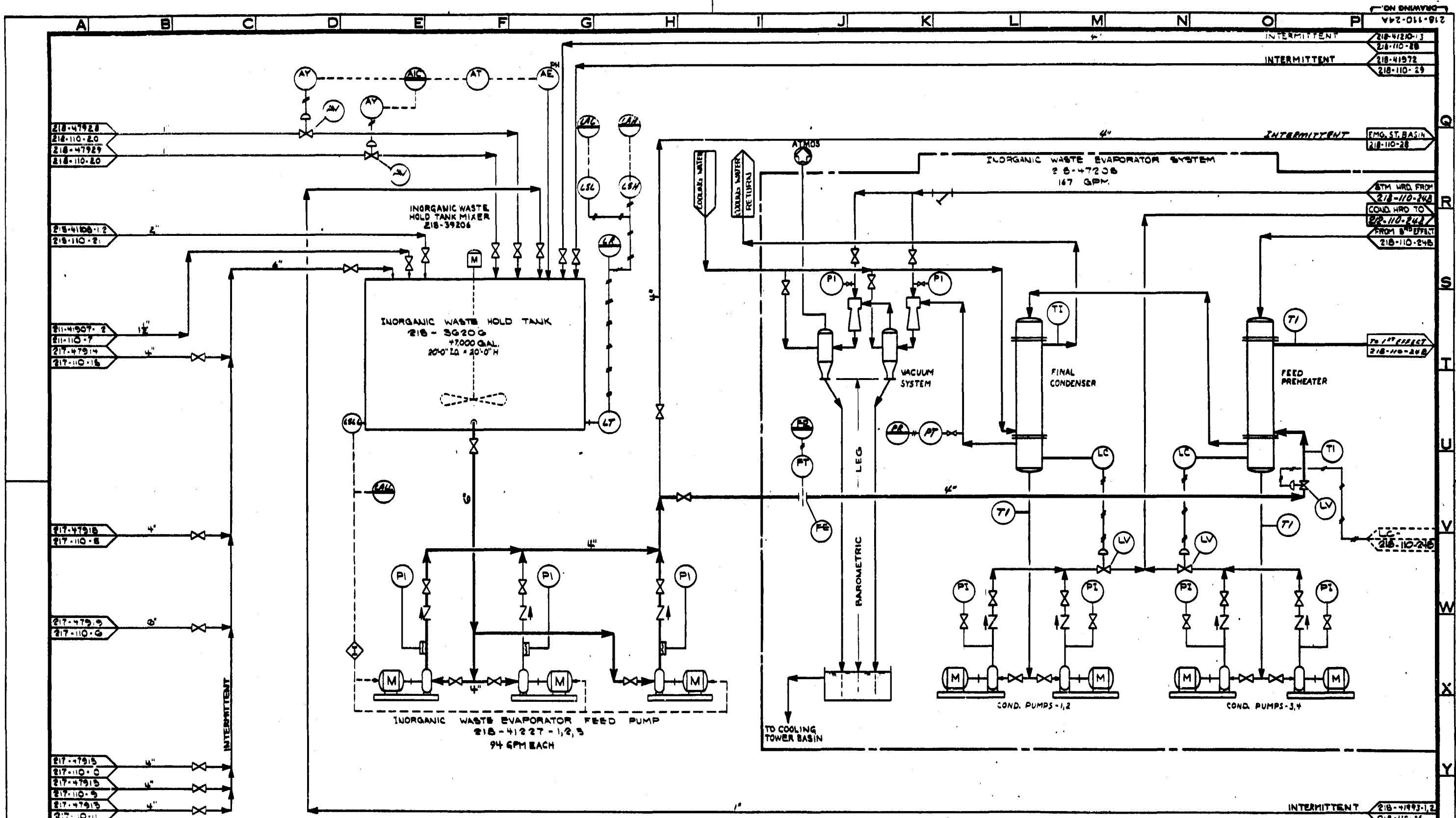




NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D
1	DC-DEMONSTRATION CONCEPT	10-10-80	SWH	CYC	JWH	1	PRELIMINARY ISSUE	10-10-80	SWH	CYC	JWH	1	PRELIMINARY ISSUE	10-10-80	SWH	CYC	JWH
2						2	PRELIMINARY ISSUE	10-10-80	SWH	CYC	JWH	2	FOR BASELINING	10-10-80	SWH	CYC	JWH
3						3	FOR BASELINING	10-10-80	SWH	CYC	JWH	3	FOR BASELINING	10-10-80	SWH	CYC	JWH
4						4	FOR BASELINING	10-10-80	SWH	CYC	JWH	4	FOR BASELINING	10-10-80	SWH	CYC	JWH
5						5	FOR BASELINING	10-10-80	SWH	CYC	JWH	5	FOR BASELINING	10-10-80	SWH	CYC	JWH
6						6	FOR BASELINING	10-10-80	SWH	CYC	JWH	6	FOR BASELINING	10-10-80	SWH	CYC	JWH
7						7	FOR BASELINING	10-10-80	SWH	CYC	JWH	7	FOR BASELINING	10-10-80	SWH	CYC	JWH
8						8	FOR BASELINING	10-10-80	SWH	CYC	JWH	8	FOR BASELINING	10-10-80	SWH	CYC	JWH
9						9	FOR BASELINING	10-10-80	SWH	CYC	JWH	9	FOR BASELINING	10-10-80	SWH	CYC	JWH
10						10	FOR BASELINING	10-10-80	SWH	CYC	JWH	10	FOR BASELINING	10-10-80	SWH	CYC	JWH

BY	DATE	DRAWING STATUS
DESIGNED	SWH	10-10-80
DRAWN	KUR	10-10-80
CHECKED	CHENG	10-10-80
DRAWN APP'D	SWH	10-10-80
ICGG APP'D	SWH	10-10-80
DOE APP'D	SWH	10-10-80
SCALE	1" = 1'	

TITLE	P&I DIAGRAM AREA 218 WASTE TREATMENT & DISPOSAL OZONE GENERATION & DESTRUCTION U.S. DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012 PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY GRAVO CORPORATION PITTSBURGH PA
PROJECT NO	7051
DRAWING NO	218-110-23
CASE	CC
REV.	A

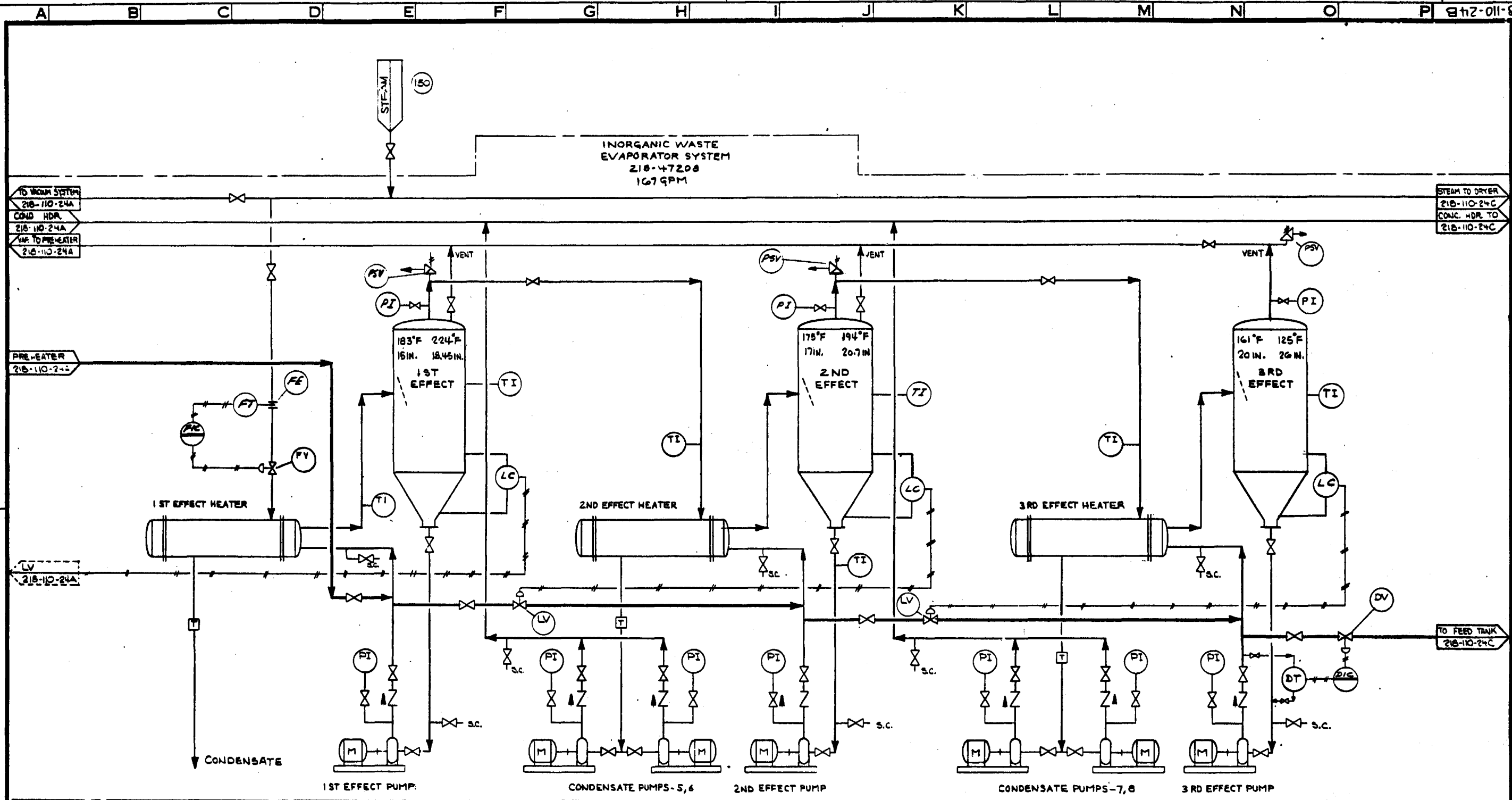


NO.	REVISIONS	DATE	BY	CHK	APP	NO.	REVISIONS	DATE	BY	CHK	APP	NO.	REVISIONS	DATE	BY	CHK	APP
1	DEMONSTRATION CONCEPT		SWH	CYC	JWH	1	PRELIMINARY ISSUE		SWH	CYC	JWH	1	PRELIMINARY ISSUE		SWH	CYC	JWH
2						2	PRELIMINARY ISSUE		SWH	CYC	JWH	2	FOR BASELINING		SWH	CYC	JWH
3						3	FOR BASELINING		SWH	CYC	JWH	3	PDP RECORD AND DDPD		SWH	CYC	JWH
4						4	PDP RECORD AND DDPD		SWH	CYC	JWH	4			SWH	CYC	JWH
5						5			SWH	CYC	JWH	5			SWH	CYC	JWH
6						6			SWH	CYC	JWH	6			SWH	CYC	JWH
7						7			SWH	CYC	JWH	7			SWH	CYC	JWH
8						8			SWH	CYC	JWH	8			SWH	CYC	JWH
9						9			SWH	CYC	JWH	9			SWH	CYC	JWH
10						10			SWH	CYC	JWH	10			SWH	CYC	JWH

BY	DATE	DRAWING STATUS	TITLE	PROJECT NO.
SWH	1-24-80	ISSUED	P&ID DIAGRAM	7051
SWH	1-24-80	FOR RECORD AND DDPD	WASTE TREATMENT & DISPOSAL	218-110-24A
C. CHENG	1-28-80	FOR COMMENTS AND/OR	INORGANIC WASTE EVAPORATION I	
SWH	1-28-80	APPROVAL	U.S. DOE ENERGY TECHNOLOGY	
SWH	1-28-80	FOR CUSTOMER APPROVAL	FOSSIL ENERGY PROGRAMS	
SWH	1-28-80	AND/OR COMMENTS	CONTRACT NO. EP-77-C-01-2012	
SWH	1-28-80	APPROVAL FOR	PREPARED FOR THE	
SWH	1-28-80	CONSTRUCTION	ILLINOIS COAL GASIFICATION GROUP	
			DRACO CORPORATION PITTSBURGH, PA.	

"D"

DO NOT SCALE THIS DRAWING
IT MAY BE REDUCED FROM ORIGINAL SIZE



REVISIONS				REVISIONS				REVISIONS			
NO.	DATE	BY	CHK'D APP'D	NO.	DATE	BY	CHK'D APP'D	NO.	DATE	BY	CHK'D APP'D
1		SWH	CYC JWH	1		SWH	CYC JWH	1		SWH	CYC JWH
2				2				2			
3				3				3			
4				4				4			
5				5				5			
6				6				6			
7				7				7			
8				8				8			
9				9				9			
10				10				10			

BY		DATE		DRAWING STATUS	
DESIGNED	SWH	1-30-80		ISSUED	
DRAWN	IZYDORCZYK	2-2-80		FOR RECORD AND DFPD	4-10-80
CHECKED	C-ELC	3-2-80		FOR COMMENTS AND/OR	
DRAWN APP'D				APPROVAL	
ICGG APP'D				FOR CUSTOMER APPROVAL	ICGG
DOE APP'D				AND/OR COMMENTS	DOE
SCALE				APPROVAL FOR	
				CONSTRUCTION	

TITLE		PROJECT NO
P&I DIAGRAM		7051
AREA 218		DRAWING NO
WASTE TREATMENT & DISPOSAL		218-110-248
INORGANIC WASTE EVAPORATION II		
U.S. DOE		CASE
ENERGY TECHNOLOGY		DC
FOSSIL ENERGY PROGRAMS		REV.
CONTRACT NO. EF-77-C-01-2012		
PREPARED FOR THE		
ILLINOIS COAL GASIFICATION GROUP		
BY		
DRAVO CORPORATION PITTSBURGH, PA.		

217-35921
217-110-13

STM. HDR.
218-110-248
COND. HDR.
218-110-248

3RD EFFECT
218-110-248

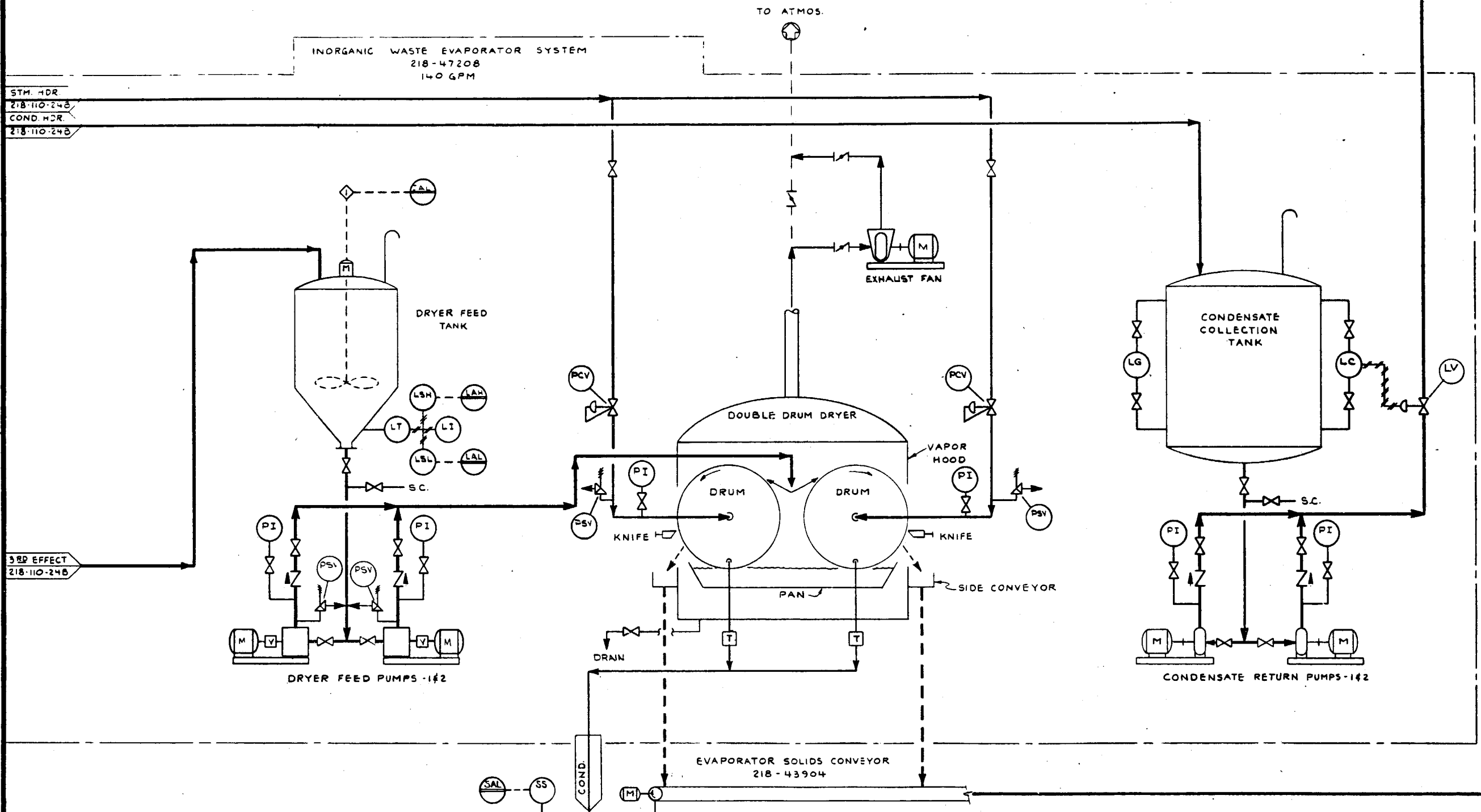
REVISIONS				REVISIONS				REVISIONS						
NO.	DATE	BY	CHD APPD	NO.	DATE	BY	CHD APPD	NO.	DATE	BY	CHD APPD			
1		SWH	CYC	JWH	1		SWH	CYC	JWH	1		SWH	CYC	JWH
2					2				2					
3					3				3					
4					4				4					
5					5				5					
6					6				6					
7					7				7					
8					8				8					
9					9				9					
10					10				10					

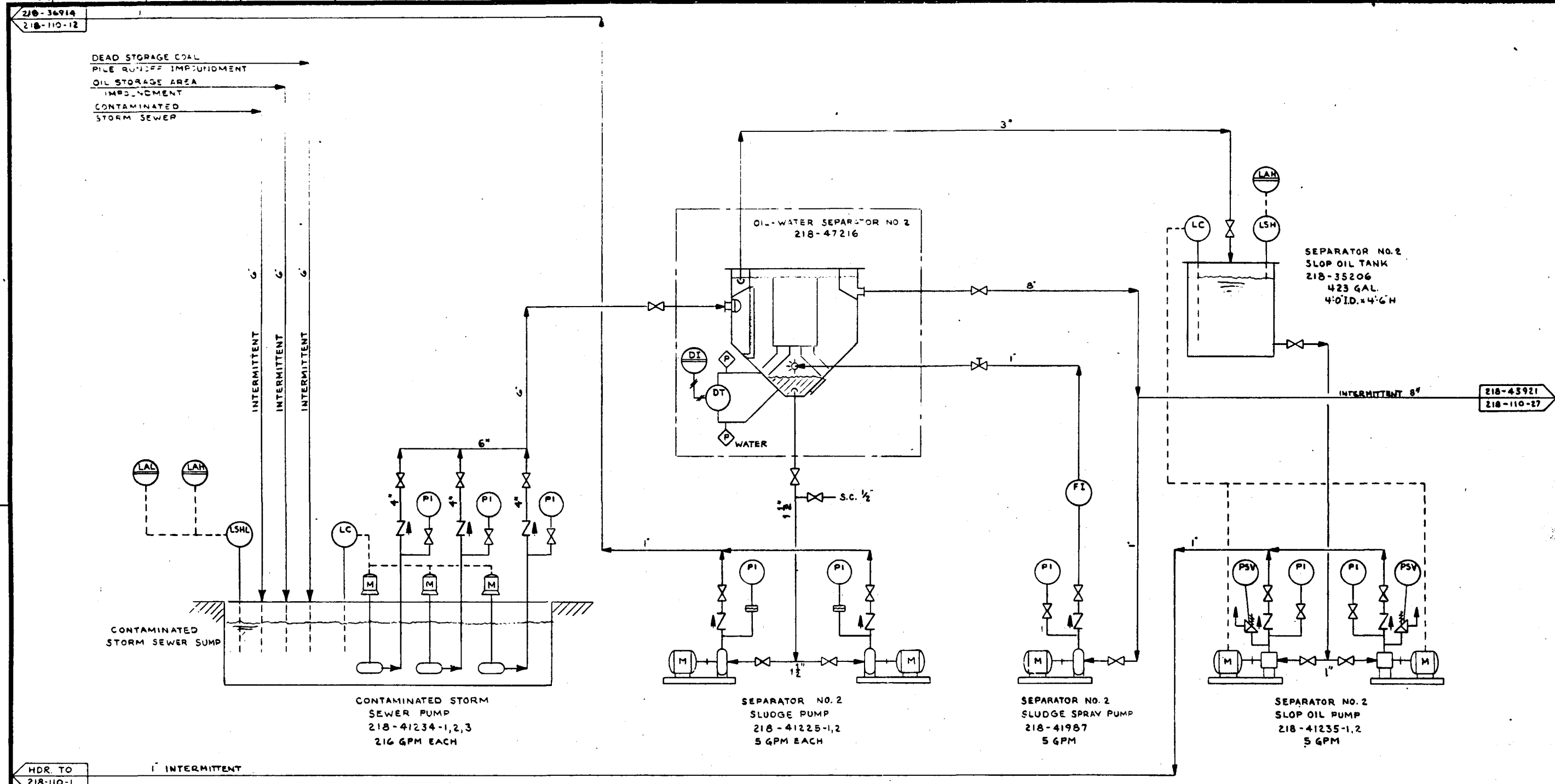
DESIGNED	BY	DATE	ISSUED	DATE
SWH	SWH	4-10-50	PEEP RECORD AND DFPD	4-10-50
DRAWN	JAZ	4-10-50	FOR COMMENTS AND/OR	
CHECKED	C-ENG	4-10-50	APPROVAL	
DRAGO APPD		4-10-50	FOR CUSTOMER APPROVAL	ICGG
ICGG APPD		4-10-50	AND/OR COMMENTS	DOE
DOE APPD		4-10-50	APPROVAL FOR	
SCALE			CONSTRUCTION	

TITLE	PROJECT NO.
PEI DIAGRAM	7051
AREA 218	DRAWING NO.
WASTE TREATMENT & DISPOSAL	218-110-248
INORGANIC WASTE EVAPORATION III	
U.S. DOE ENERGY TECHNOLOGY	CASE
FOSSIL ENERGY PROGRAMS	DC
CONTRACT NO. EF-77-C-01-2012	REV
PREPARED FOR THE	
ILLINOIS COAL GASIFICATION GROUP	
BY	
DRAGO CORPORATION PITTSBURGH, PA.	

"D"

DO NOT SCALE THIS DRAWING
IT MAY BE REDUCED FROM ORIGINAL SIZE





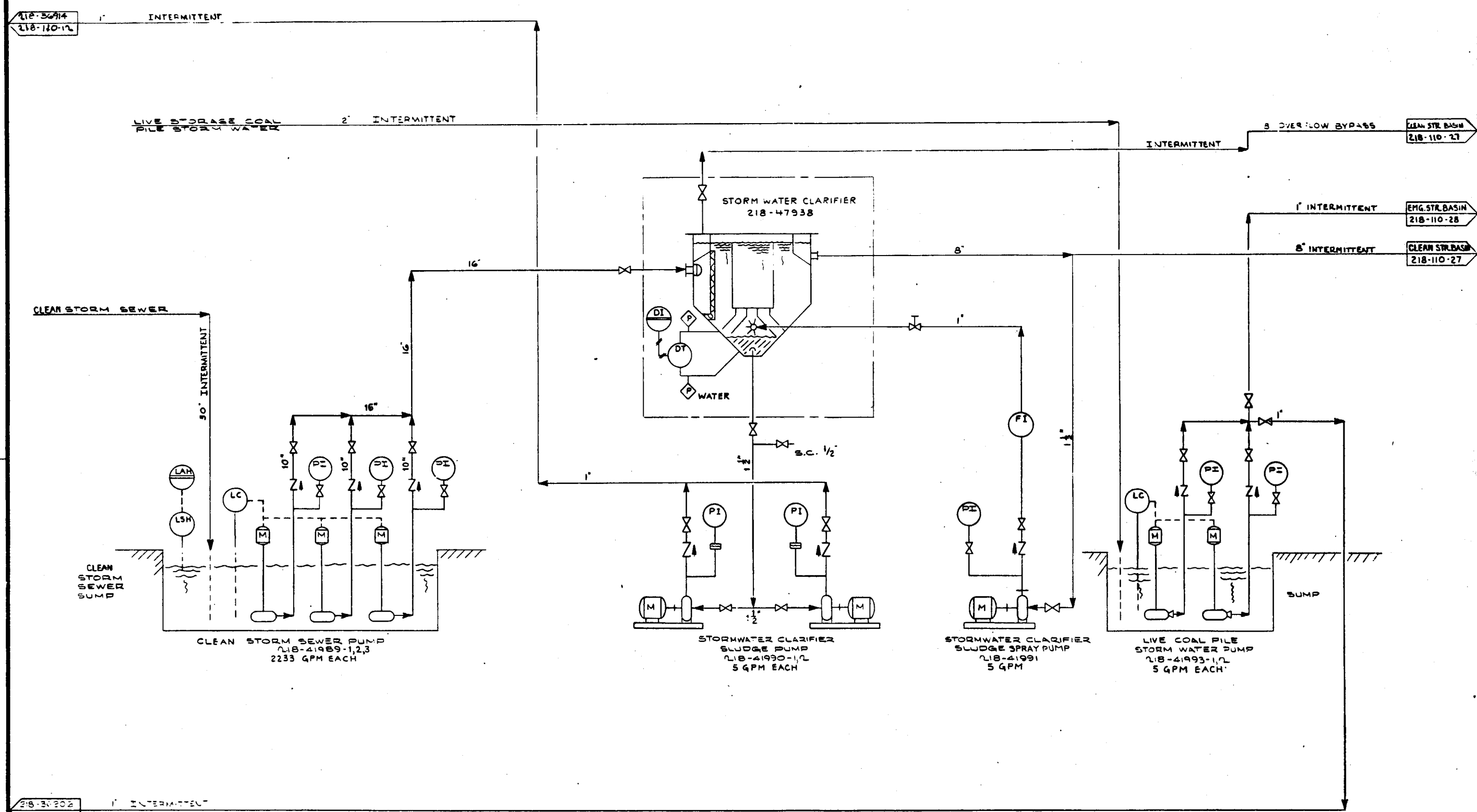
REVISIONS					REVISIONS					REVISIONS				
NO.	DATE	BY	CHK'D	APPR'D	NO.	DATE	BY	CHK'D	APPR'D	NO.	DATE	BY	CHK'D	APPR'D
1	1-15-80	SWH	CYC	JWH	1	1-15-80	SWH	CYC	JWH	1	1-15-80	SWH	CYC	JWH
2	1-17-80	SWH	CYC	JWH	2	1-17-80	SWH	CYC	JWH	2	1-17-80	SWH	CYC	JWH
3	1-18-80	SWH	CYC	JWH	3	1-18-80	SWH	CYC	JWH	3	1-18-80	SWH	CYC	JWH
4	1-18-80	SWH	CYC	JWH	4	1-18-80	SWH	CYC	JWH	4	1-18-80	SWH	CYC	JWH
5	1-18-80	SWH	CYC	JWH	5	1-18-80	SWH	CYC	JWH	5	1-18-80	SWH	CYC	JWH
6	1-18-80	SWH	CYC	JWH	6	1-18-80	SWH	CYC	JWH	6	1-18-80	SWH	CYC	JWH
7	1-18-80	SWH	CYC	JWH	7	1-18-80	SWH	CYC	JWH	7	1-18-80	SWH	CYC	JWH
8	1-18-80	SWH	CYC	JWH	8	1-18-80	SWH	CYC	JWH	8	1-18-80	SWH	CYC	JWH
9	1-18-80	SWH	CYC	JWH	9	1-18-80	SWH	CYC	JWH	9	1-18-80	SWH	CYC	JWH
10	1-18-80	SWH	CYC	JWH	10	1-18-80	SWH	CYC	JWH	10	1-18-80	SWH	CYC	JWH

DESIGNED	BY	DATE	DRAWING STATUS	ISSUED	DATE
SWH	SWH	1-15-80	ISSUED	SWH	1-15-80
DRAWN	CHENG	1-17-80	FOR COMMENTS AND/OR	CHENG	1-17-80
CHECKED	CHENG	1-18-80	APPROVAL	CHENG	1-18-80
DRAWN APPD	CHENG	1-18-80	FOR CUSTOMER APPROVAL	CHENG	1-18-80
ICGO APPD	CHENG	1-18-80	AND/OR COMMENTS	CHENG	1-18-80
APPD	CHENG	1-18-80	APPROVAL FOR	CHENG	1-18-80
SCALE	SCALE	SCALE	CONSTRUCTION	SCALE	SCALE

TITLE	PROJECT NO.
PFI DIAGRAM, AREA 218	7051
WASTE TREATMENT & DISPOSAL	DRAWING NO.
CONTAMINATED STORMWATER TREATMENT	218-110-25
U.S. DOE ENERGY TECHNOLOGY	CASE
FOSSIL ENERGY PROGRAMS	DC
CONTRACT NO. EF-77-C-01-2012	REV.
PREPARED FOR THE	
ILLINOIS COAL GASIFICATION GROUP	
BY	
DRACO CORPORATION PITTSBURGH, PA.	

"D"

DO NOT SCALE THIS DRAWING
IT MAY BE REDUCED FROM ORIGINAL SIZE.

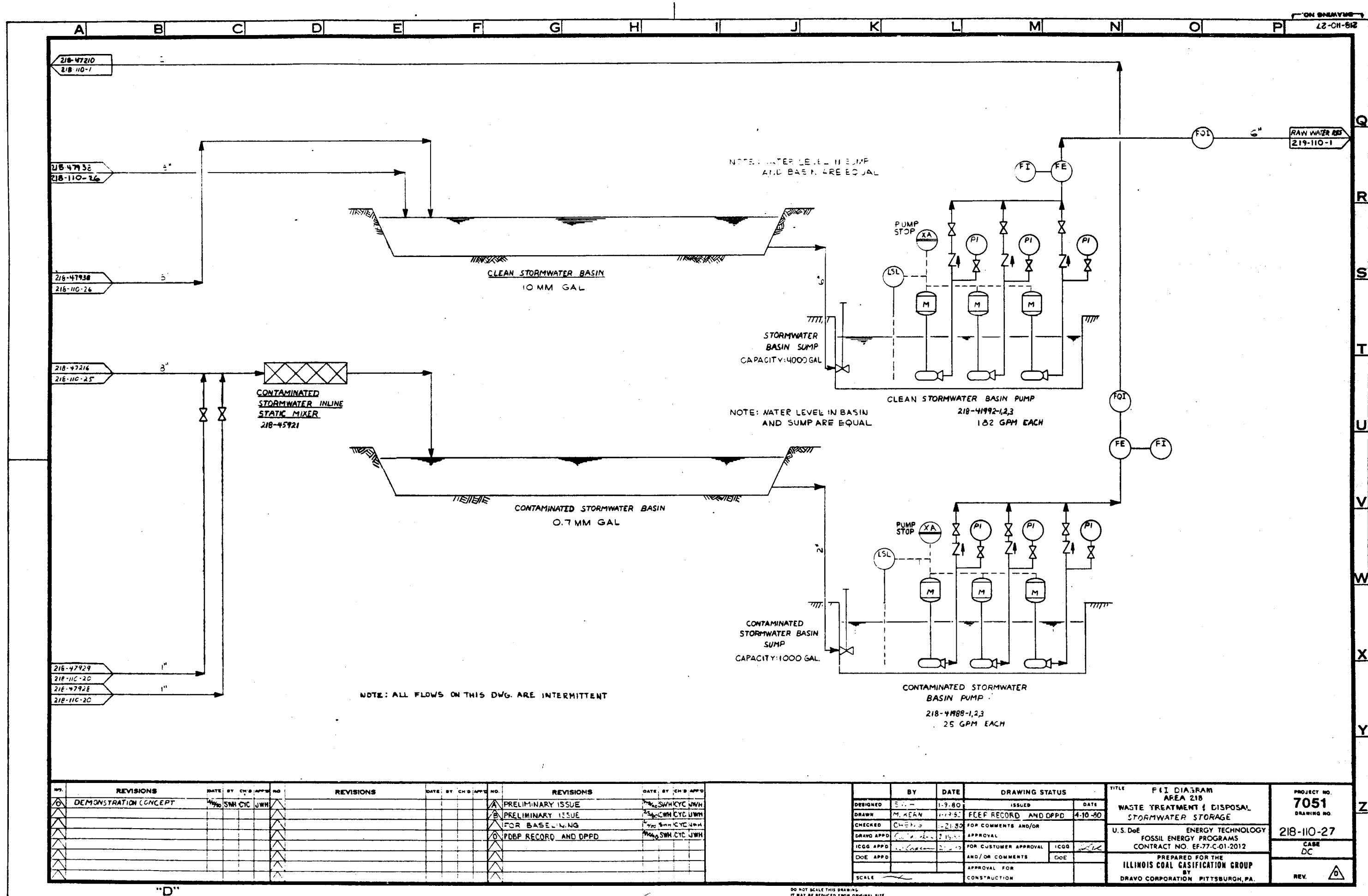


REVISIONS					REVISIONS					REVISIONS				
NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D
1	10-20-90	SWH	CYC	JWH	1	10-20-90	SWH	CYC	JWH	1	10-20-90	SWH	CYC	JWH
2					2					2				
3					3					3				
4					4					4				
5					5					5				
6					6					6				
7					7					7				
8					8					8				
9					9					9				
10					10					10				

DESIGNED	BY	DATE	ISSUED	DATE
SWH	SWH	10-20-90	10-20-90	10-20-90
DRAWN	SWH	10-20-90	FOR RECORD AND EPC	10-20-90
CHECKED	SWH	10-20-90	FOR COMMENTS AND/OR	
DRAGO APP'D	SWH	10-20-90	APPROVAL	
ICGG APP'D	SWH	10-20-90	FOR CUSTOMER APPROVAL	ICGG
APP'D	SWH	10-20-90	AND/OR COMMENTS	
SCALE			APPROVAL FOR	
			CONSTRUCTION	

TITLE	P&ID DIAGRAM AREA 218 WASTE TREATMENT & DISPOSAL CLEAN STORMWATER TREATMENT
U.S. DoE	ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012
PREPARED FOR THE	ILLINOIS COAL GASIFICATION GROUP BY DRAGO CORPORATION PITTSBURGH, PA.

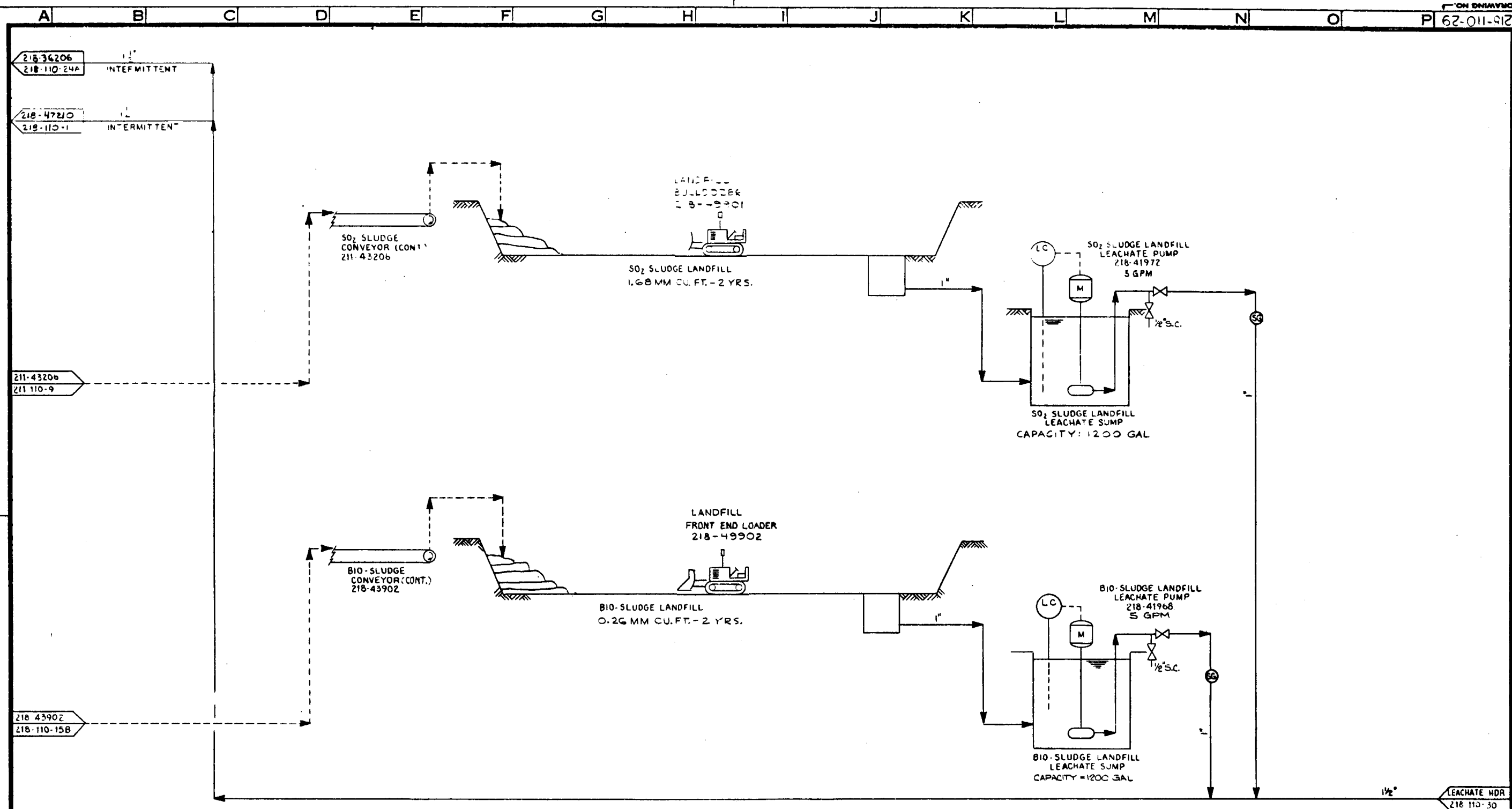
PROJECT NO.	7051
DRAWING NO.	218-110-26
CASE	DC
REV.	3



NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D
1	DEMONSTRATION CONCEPT	4-10-80	SMH	CYC	JWH	1	PRELIMINARY ISSUE	4-10-80	SMH	CYC	JWH	1	PRELIMINARY ISSUE	4-10-80	SMH	CYC	JWH
2						2	FOR BASE LING	4-10-80	SMH	CYC	JWH	2	FOR BASE LING	4-10-80	SMH	CYC	JWH
3						3	PDBP RECORD AND DPPD	4-10-80	SMH	CYC	JWH	3	PDBP RECORD AND DPPD	4-10-80	SMH	CYC	JWH
4						4						4					
5						5						5					
6						6						6					
7						7						7					
8						8						8					
9						9						9					
10						10						10					

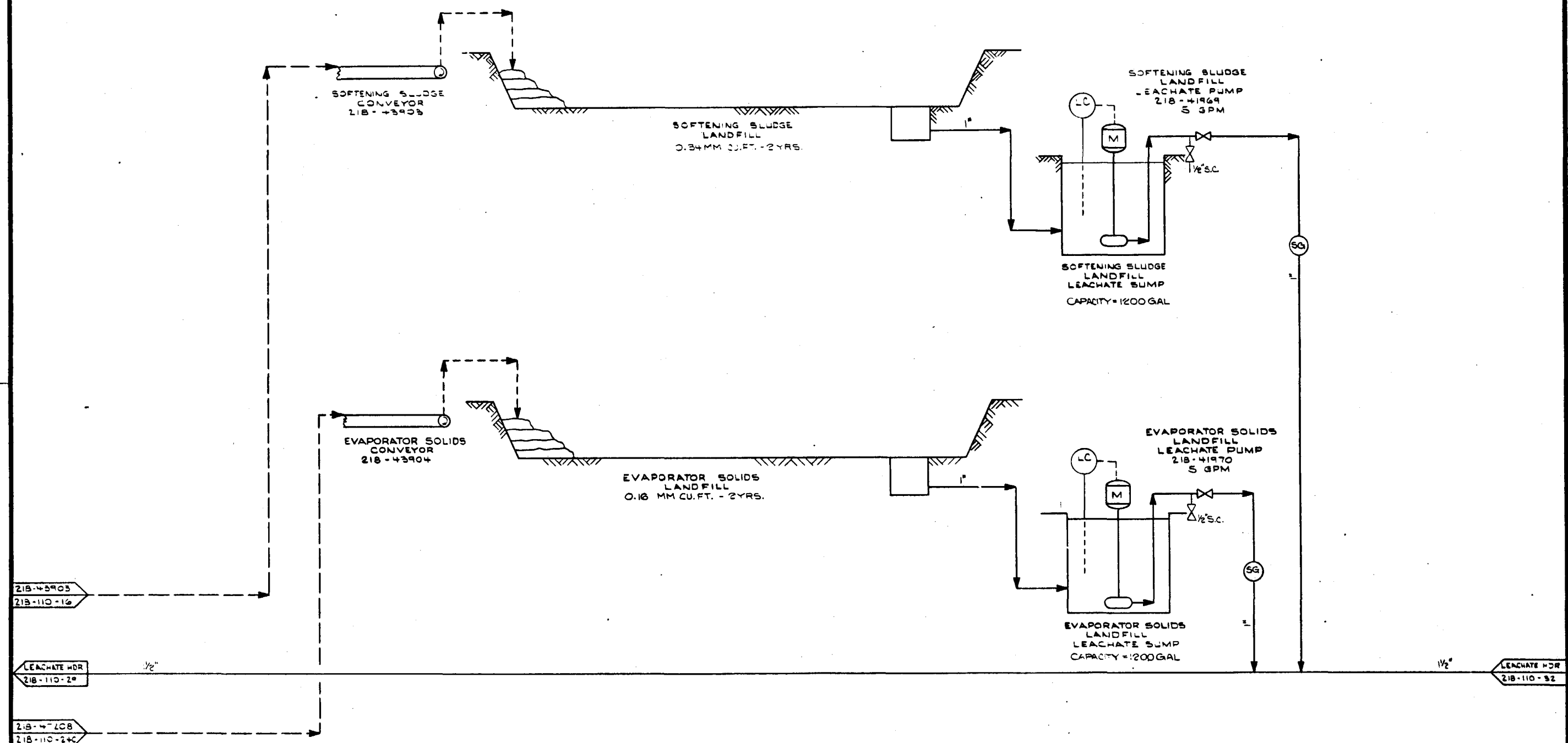
DESIGNED	BY	DATE	DRAWING STATUS	ISSUED	DATE
SMH	SMH	4-10-80	ISSUED	SMH	4-10-80
DRAWN	M. KERN	4-10-80	FOR RECORD AND DPPD	SMH	4-10-80
CHECKED	CHEN	4-10-80	FOR COMMENTS AND/OR		
DRAWN APPD	CHEN	4-10-80	APPROVAL		
ICGG APPD	CHEN	4-10-80	FOR CUSTOMER APPROVAL	ICGG	
DOE APPD	CHEN	4-10-80	AND/OR COMMENTS	DOE	
SCALE			APPROVAL FOR CONSTRUCTION		

TITLE	F&I DIAGRAM AREA 218 WASTE TREATMENT & DISPOSAL STORMWATER STORAGE	PROJECT NO. 7051 DRAWING NO. 218-110-27
U.S. DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012	PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRACO CORPORATION PITTSBURGH, PA.	CASE DC
REV.		

[illegible]

"D"

DO NOT SCALE THIS DRAWING.
IT MAY BE REDUCED FROM ORIGINAL SIZE.



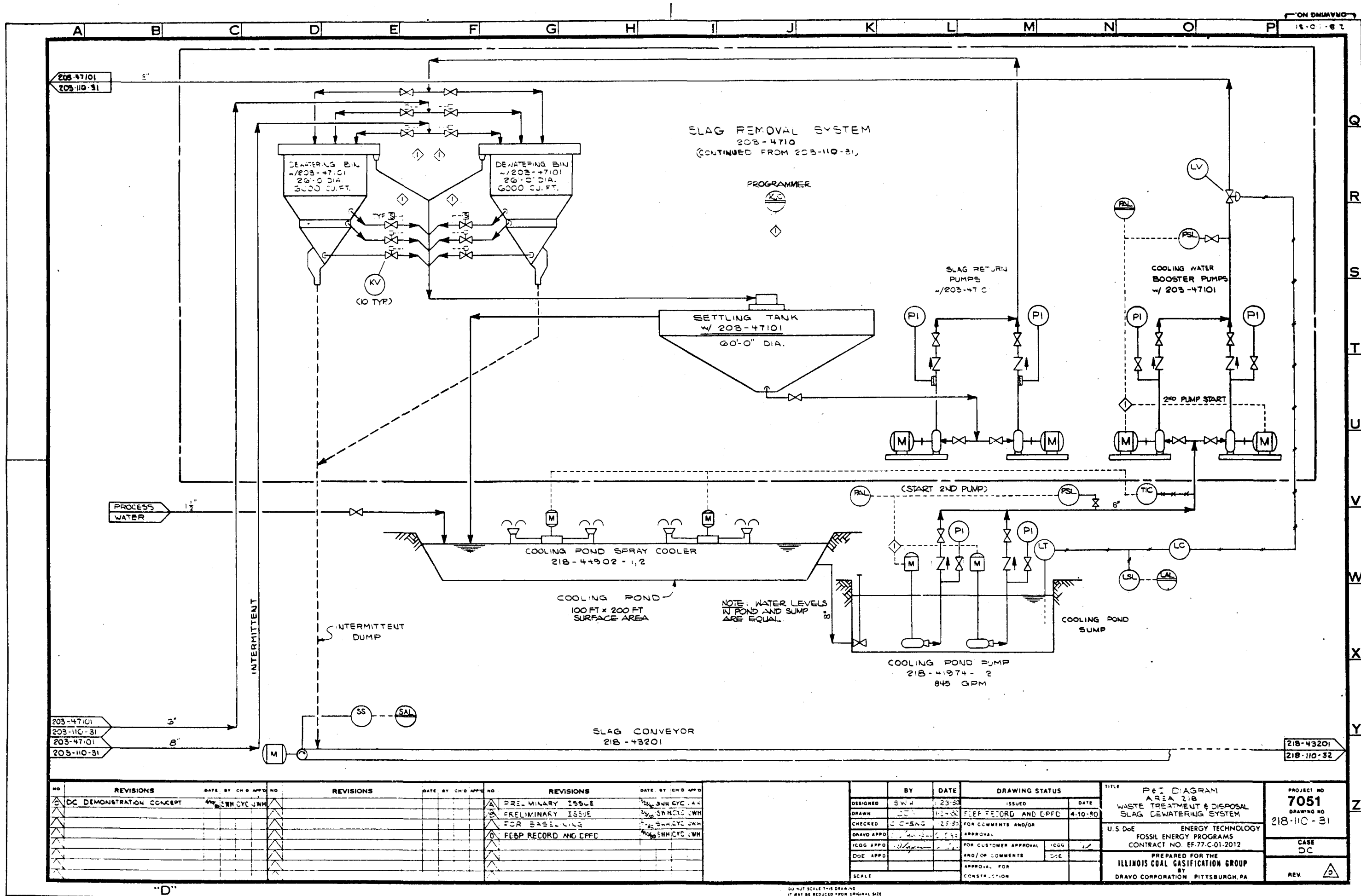
REVISIONS					REVISIONS					REVISIONS				
NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D
1	10-10-90	SWH	CYC	JWH	1	10-10-90	SWH	CYC	JWH	1	10-10-90	SWH	CYC	JWH
2	10-10-90	SWH	CYC	JWH	2	10-10-90	SWH	CYC	JWH	2	10-10-90	SWH	CYC	JWH
3	10-10-90	SWH	CYC	JWH	3	10-10-90	SWH	CYC	JWH	3	10-10-90	SWH	CYC	JWH
4	10-10-90	SWH	CYC	JWH	4	10-10-90	SWH	CYC	JWH	4	10-10-90	SWH	CYC	JWH
5	10-10-90	SWH	CYC	JWH	5	10-10-90	SWH	CYC	JWH	5	10-10-90	SWH	CYC	JWH
6	10-10-90	SWH	CYC	JWH	6	10-10-90	SWH	CYC	JWH	6	10-10-90	SWH	CYC	JWH
7	10-10-90	SWH	CYC	JWH	7	10-10-90	SWH	CYC	JWH	7	10-10-90	SWH	CYC	JWH
8	10-10-90	SWH	CYC	JWH	8	10-10-90	SWH	CYC	JWH	8	10-10-90	SWH	CYC	JWH
9	10-10-90	SWH	CYC	JWH	9	10-10-90	SWH	CYC	JWH	9	10-10-90	SWH	CYC	JWH
10	10-10-90	SWH	CYC	JWH	10	10-10-90	SWH	CYC	JWH	10	10-10-90	SWH	CYC	JWH

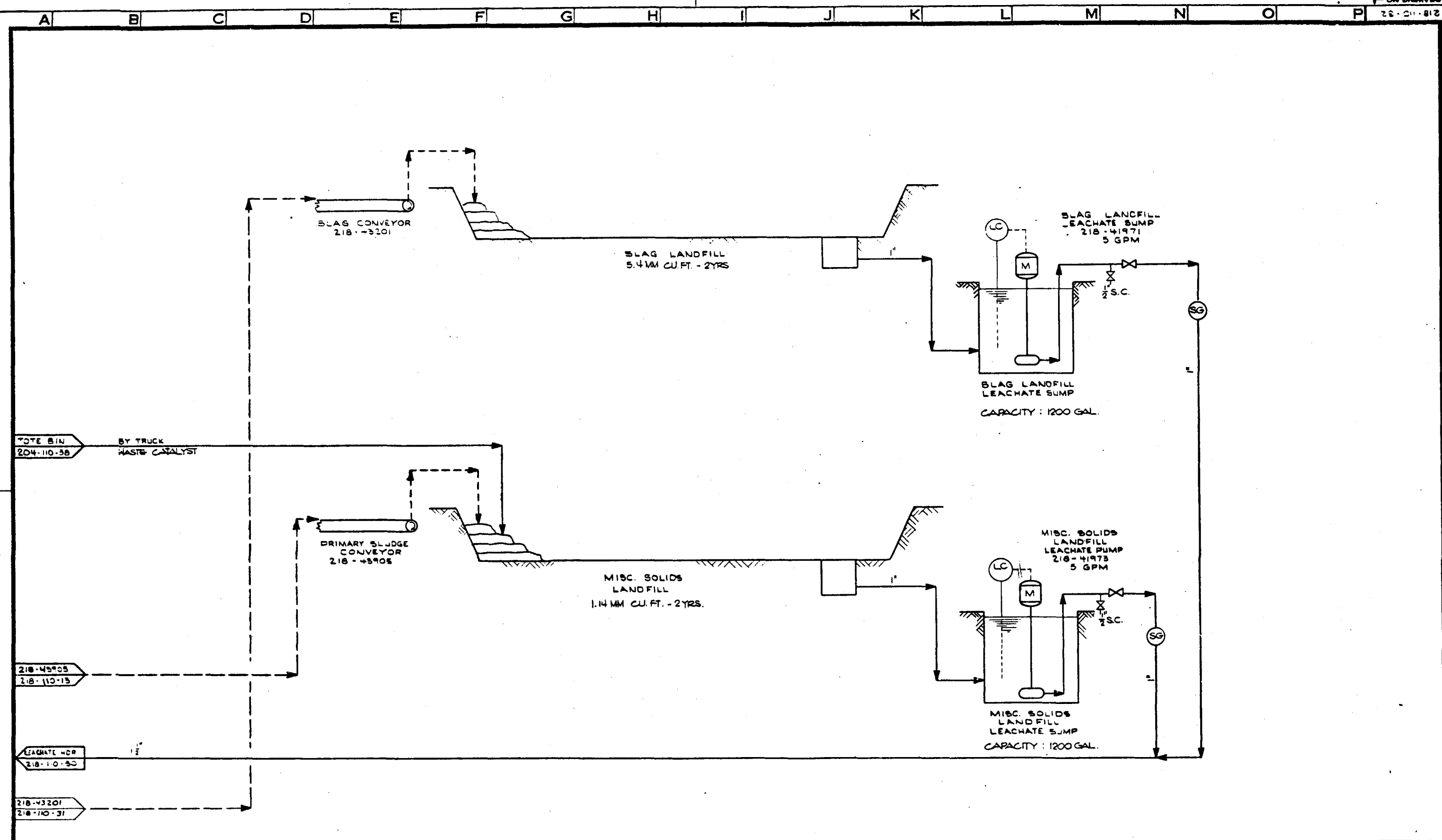
DESIGNED	BY	DATE	ISSUED	DATE
SWH	SWH	10-10-90	SWH	10-10-90
DRAWN	SWH	10-10-90	FOR RECORD AND CPD	10-10-90
CHECKED	SWH	10-10-90	FOR COMMENTS AND/OR	
DRAWG APPD	SWH	10-10-90	APPROVAL	
ICGG APPD	SWH	10-10-90	FOR CUSTOMER APPROVAL	ICGG
DOE APPD	SWH	10-10-90	AND/OR COMMENTS	DOE
SCALE	1" = 10'		APPROVAL FOR CONSTRUCTION	

TITLE	PFE DIAGRAM AREA 218	PROJECT NO.	7051
	WASTE TREATMENT & DISPOSAL	DRAWING NO.	218-110-30
	SOFTENING & EVAP. SOLIDS LANDFILLS	CASE	DC
	U.S. DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS	REV.	
	CONTRACT NO. EF-77-C-01-2012		
	PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAVO CORPORATION PITTSBURGH, PA.		

"D"

DO NOT SCALE THIS DRAWING
IT MAY BE REDUCED FROM ORIGINAL SIZE

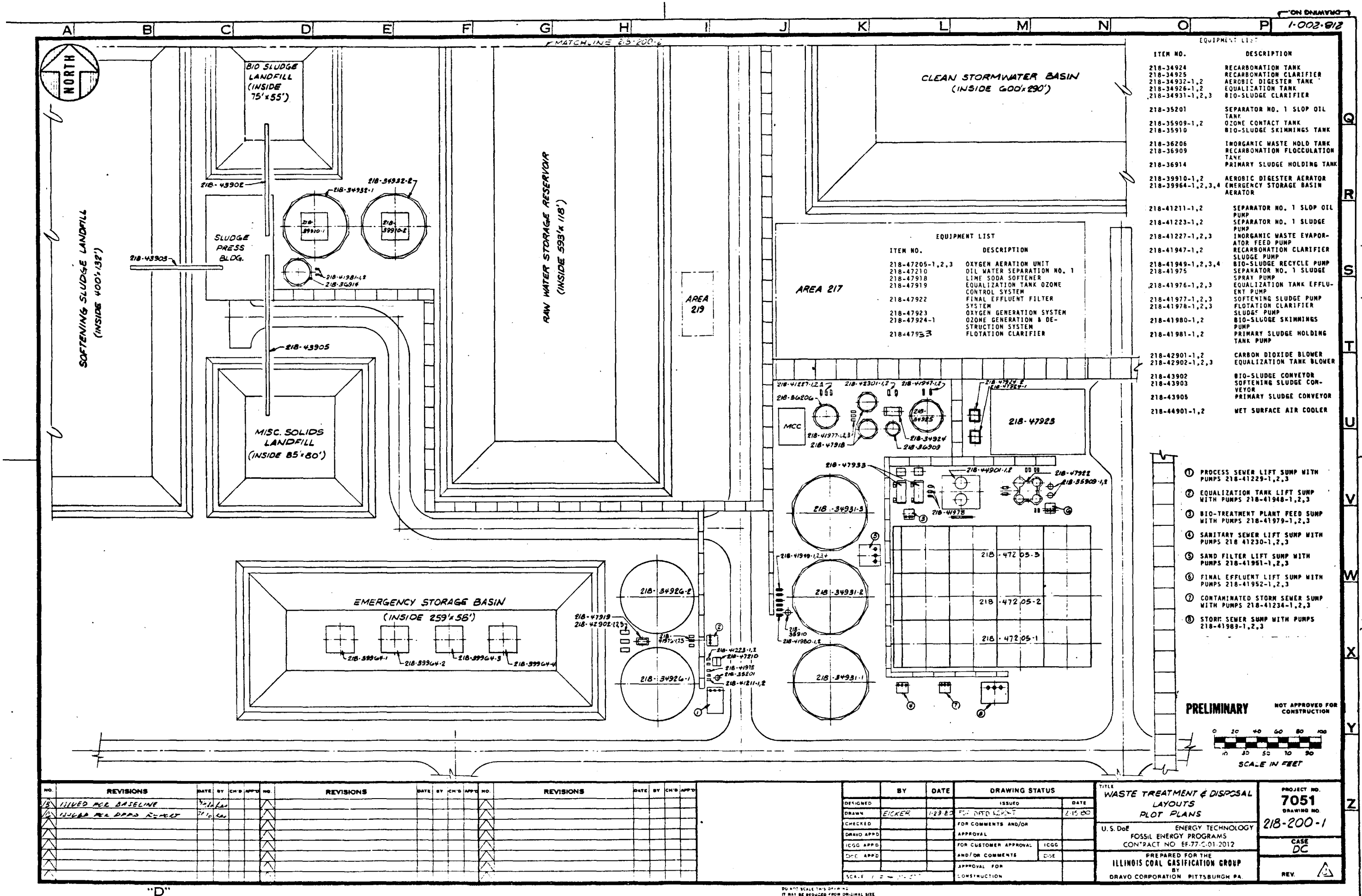


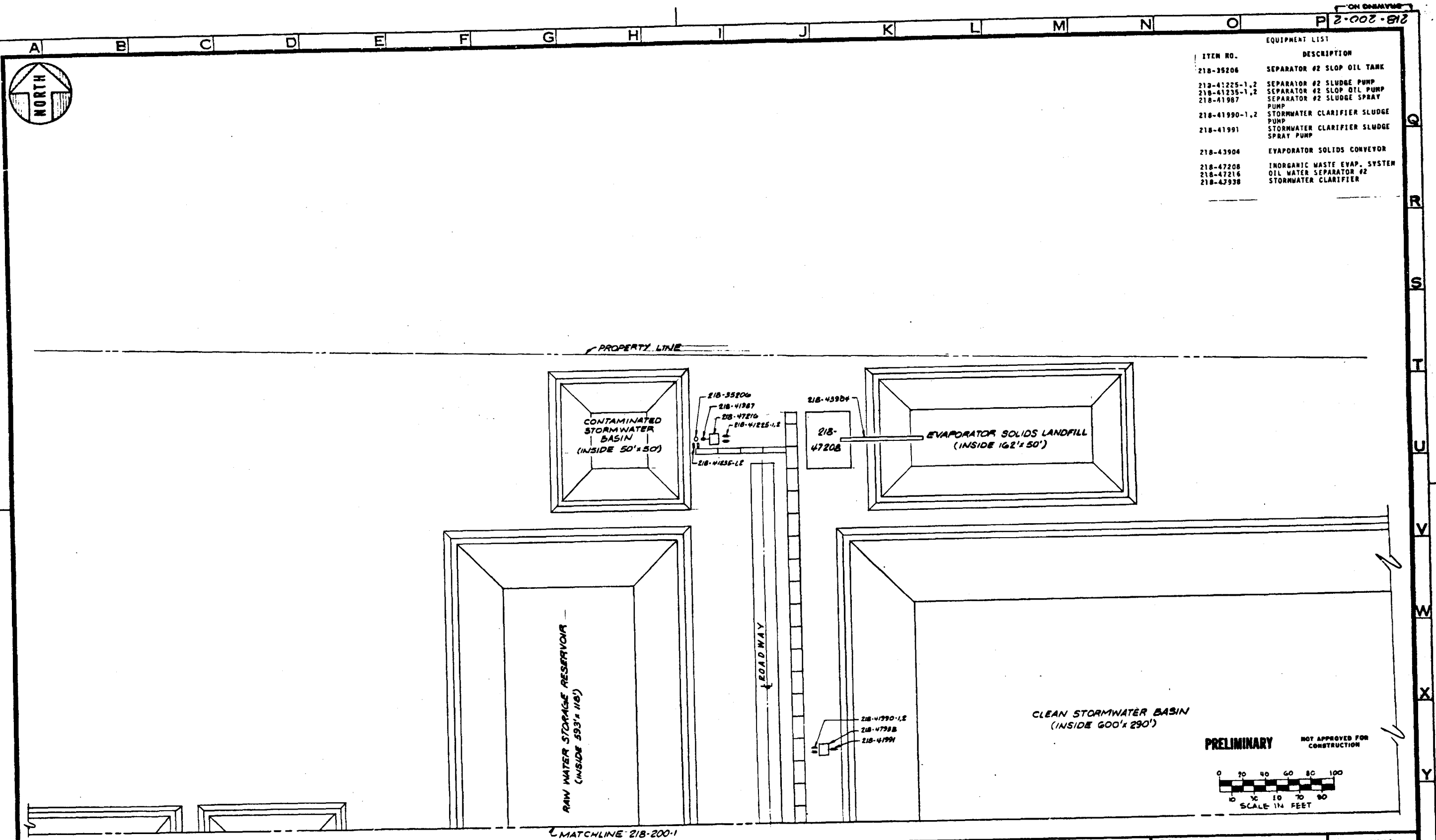


REVISIONS				REVISIONS				REVISIONS			
NO.	DESCRIPTION	DATE	BY	CHKD	APPD	NO.	DESCRIPTION	DATE	BY	CHKD	APPD
1	DC-DEMONSTRATION CONCEPT	10-10-80	SWH	CYC	JWH	1	PRELIMINARY ISSUE	10-10-80	CYC	SWH	JWH
2						2	PRELIMINARY ISSUE	10-10-80	SWH	CYC	JWH
3						3	FOR BASELINING	10-10-80	SWH	CYC	JWH
4						4	FOR RECORD AND DDPD	10-10-80	SWH	CYC	JWH
5											
6											
7											
8											
9											
10											

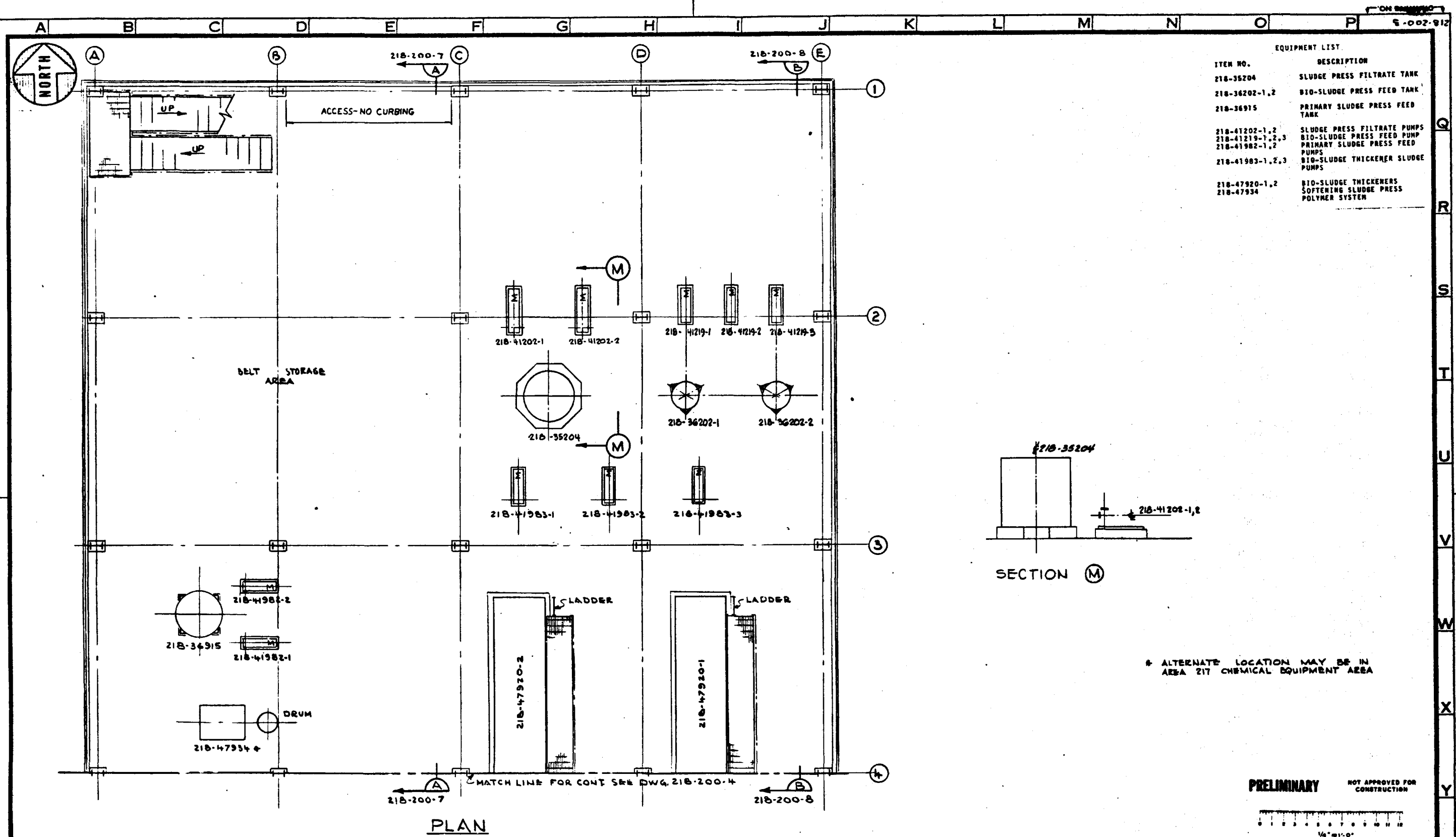
DESIGNED	BY	DATE	DRAWING STATUS	ISSUED	DATE
SWH	SWH	10-10-80	ISSUED		
DRAWN	BY	DATE	FOR COMMENTS AND/OR APPROVAL	FOR CUSTOMER APPROVAL	ICGG
SWH	SWH	10-10-80			
CHECKED	BY	DATE	AND/OR COMMENTS	DOE	
CHENG	CHENG	10-10-80			
DRAWN APPD	BY	DATE	APPROVAL FOR CONSTRUCTION		
SWH	SWH	10-10-80			
ICGG APPD	BY	DATE			
DOE APPD	BY	DATE			
SCALE	DATE				
1\"/>					

TITLE		PROJECT NO
P&I DIAGRAM		7051
AREA 218		DRAWING NO
WASTE TREATMENT & DISPOSAL		218-110-32
SLAG & MISC. SOLIDS LANDFILLS		CASE
U.S. DOE		DC
ENERGY TECHNOLOGY		REV.
FOSSIL ENERGY PROGRAMS		
CONTRACT NO. EF-77-C-01-2012		
PREPARED FOR THE		
ILLINOIS COAL GASIFICATION GROUP		
BY		
DRAGO CORPORATION PITTSBURGH, PA.		

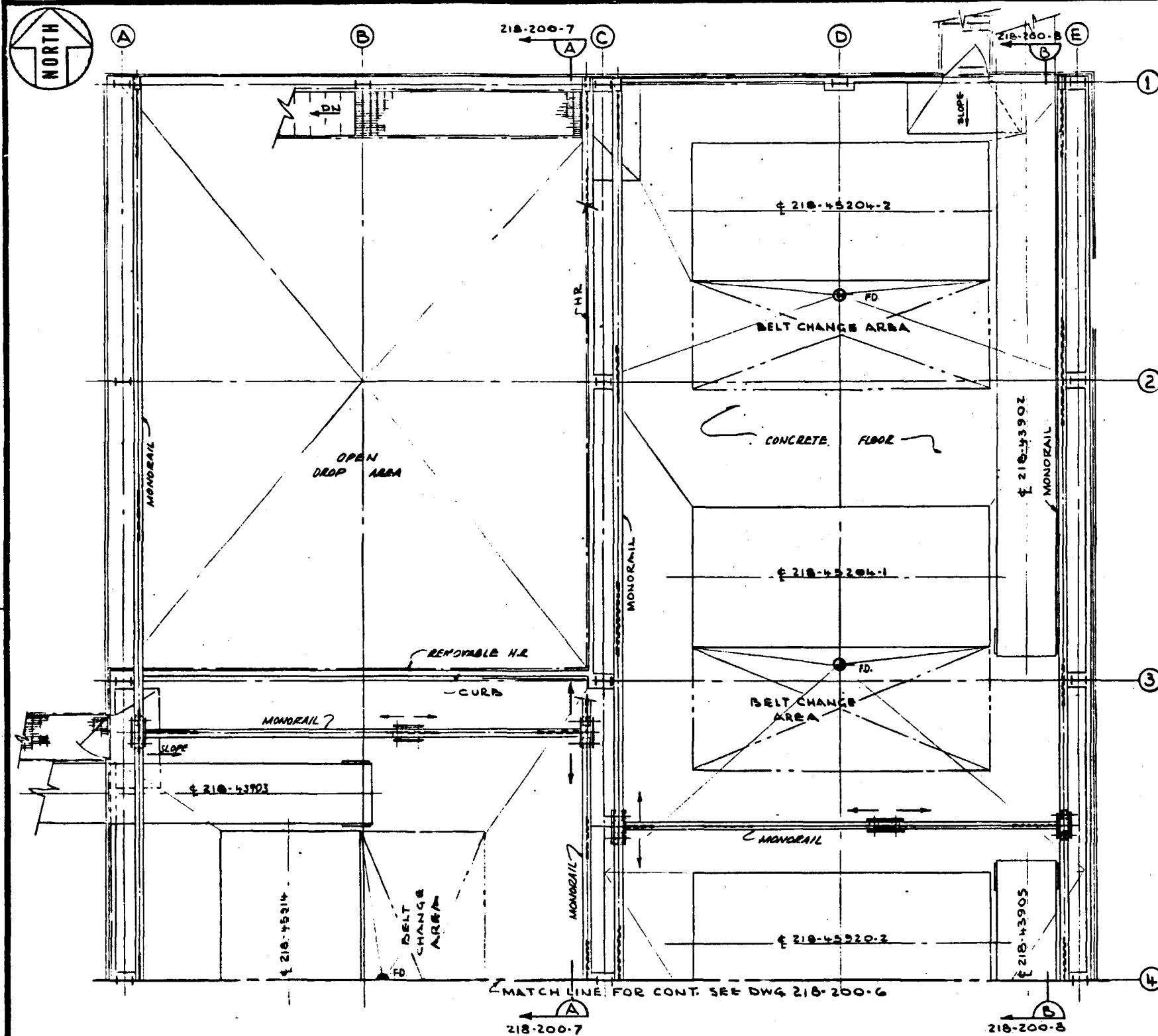




REVISIONS					REVISIONS					REVISIONS					BY	DATE	DRAWING STATUS		TITLE WASTE TREATMENT & DISPOSAL LAYOUTS PLOT PLANS	PROJECT NO. 7051 DRAWING NO.	
NO.	DATE	BY	CHK'D	APPR'D	NO.	DATE	BY	CHK'D	APPR'D	NO.	DATE	BY	CHK'D	APPR'D	DESIGNED	ISSUED	DATE	U. S. DoE			ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012
1	11-11-80	WJL														11-30-80	FOR DFPD REPORT	2-15-81	PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAVO CORPORATION PITTSBURGH, PA.	218-200-2	
2	11-11-80	WJL																			CASE DC
																					REV.
										</											

[illegible]

ITEM NO.	DESCRIPTION
218-43902	BIO-SLUDGE CONVEYOR
218-43903	SOFTENING SLUDGE CONVEYOR
218-43905	PRIMARY SLUDGE CONVEYOR
218-45204-1,2	BIO-SLUDGE PRESS
218-45914	SOFTENING SLUDGE PRESS
218-45920-2	PRIMARY SLUDGE PRESS

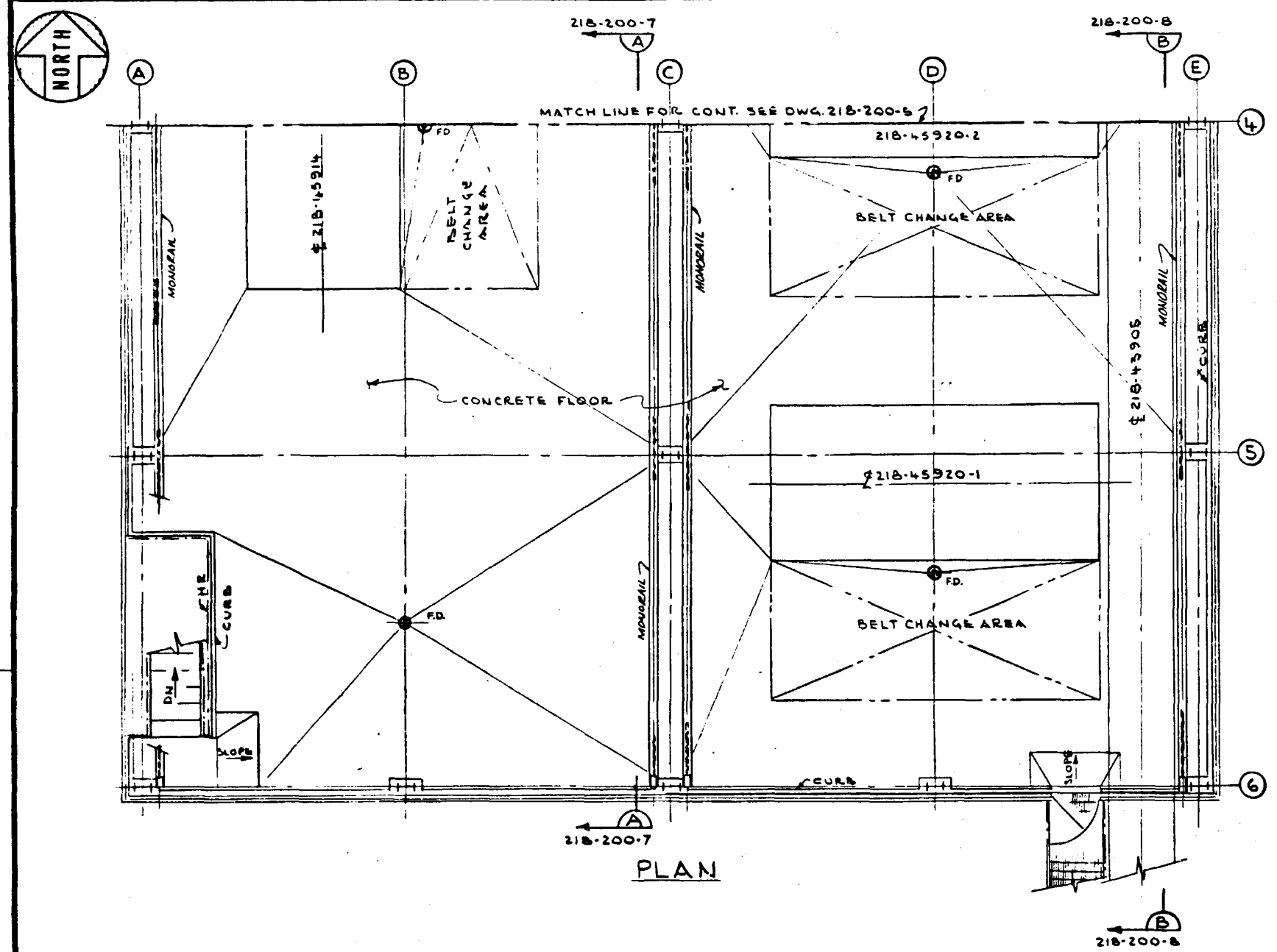


PRELIMINARY **NOT APPROVED FOR CONSTRUCTION**

[illegible]

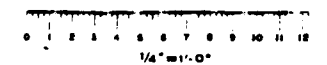
	BY	DATE	DRAWING STATUS	
DESIGNED			ISSUED	DATE
DRAWN	U. GAYLOR		FOR OFF KEPT	2-15-68
CHECKED			FOR COMMENTS AND/OR	
DRAWN APPD			APPROVAL	
ICGG APPD			FOR CUSTOMER APPROVAL	ICGG
DOE APPD			AND/OR COMMENTS	DOE
			APPROVAL FOR	
SCALE	1/4" = 1'-0"		CONSTRUCTION	

TITLE WASTE TREATMENT & DISPOSAL SLUDGE PRESS BUILDING-LAYOUT PLAN	PROJECT NO. 7051 DRAWING NO. 218-200-5
U.S. DoE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012	CASE DC
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAYO CORPORATION PITTSBURGH PA	REV. 



EQUIPMENT LIST	
ITEM NO.	DESCRIPTION
218-43905	PRIMARY SLUDGE CONVEYOR
218-45920-2	PRIMARY SLUDGE PRESS
218-45914	SOFTENING SLUDGE PRESS
218-45920-1	PRIMARY SLUDGE PRESS

PRELIMINARY **NOT APPROVED FOR CONSTRUCTION**

[illegible]

BY		DATE	DRAWING STATUS	
DESIGNED			ISSUED	DATE
DRAWN	W. J. BARKER	12-1-60	FOR DEED REPORT	2-15-60
CHECKED			FOR COMMENTS AND/OR	
DRAW APPD			APPROVAL	
ICGG APPD			FOR CUSTOMER APPROVAL	ICGG
DEED APPD			AND/OR COMMENTS	DEED
			APPROVAL FOR	
			CONSTRUCTION	
SCALE 1/4" = 1'-0"				

WASTE TREATMENT & DISPOSAL
SLUDGE PRESS BUILDING-LAYOUT
PLAN

U. S. DoE ENERGY TECHNOLOGY
FOSSIL ENERGY PROGRAMS
CONTRACT NO EF-77-C-01-2012

PREPARED FOR THE
ILLINOIS COAL GASIFICATION GROUP
BY
DRAYO CORPORATION PITTSBURGH PA

PROJECT NO.
7051
DRAWING NO.
218-200-6

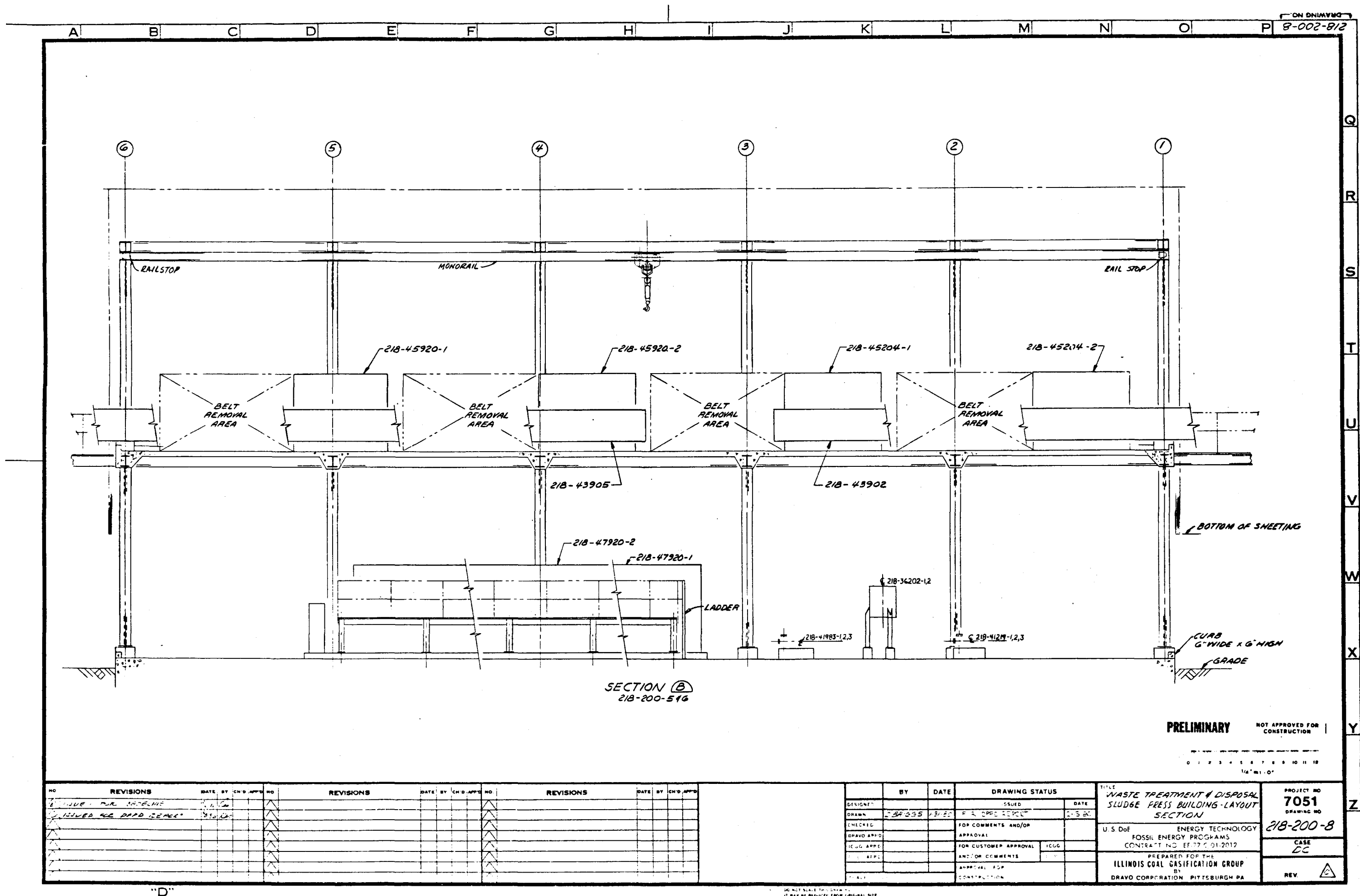
CASE
5C

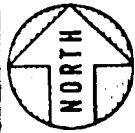
REV. 



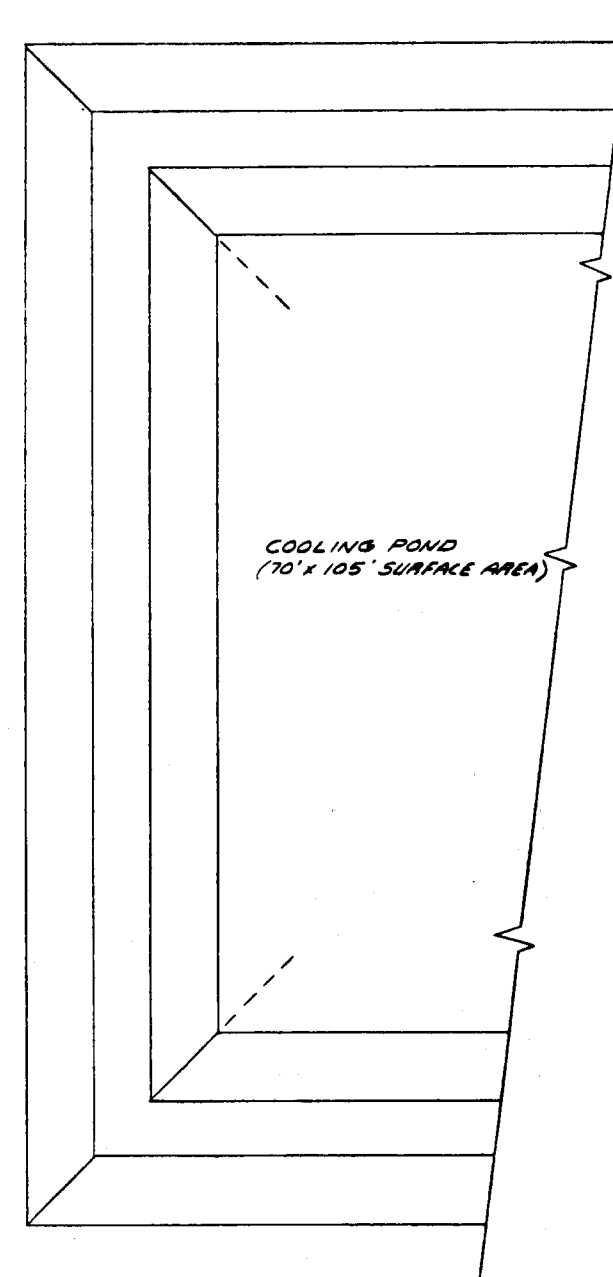
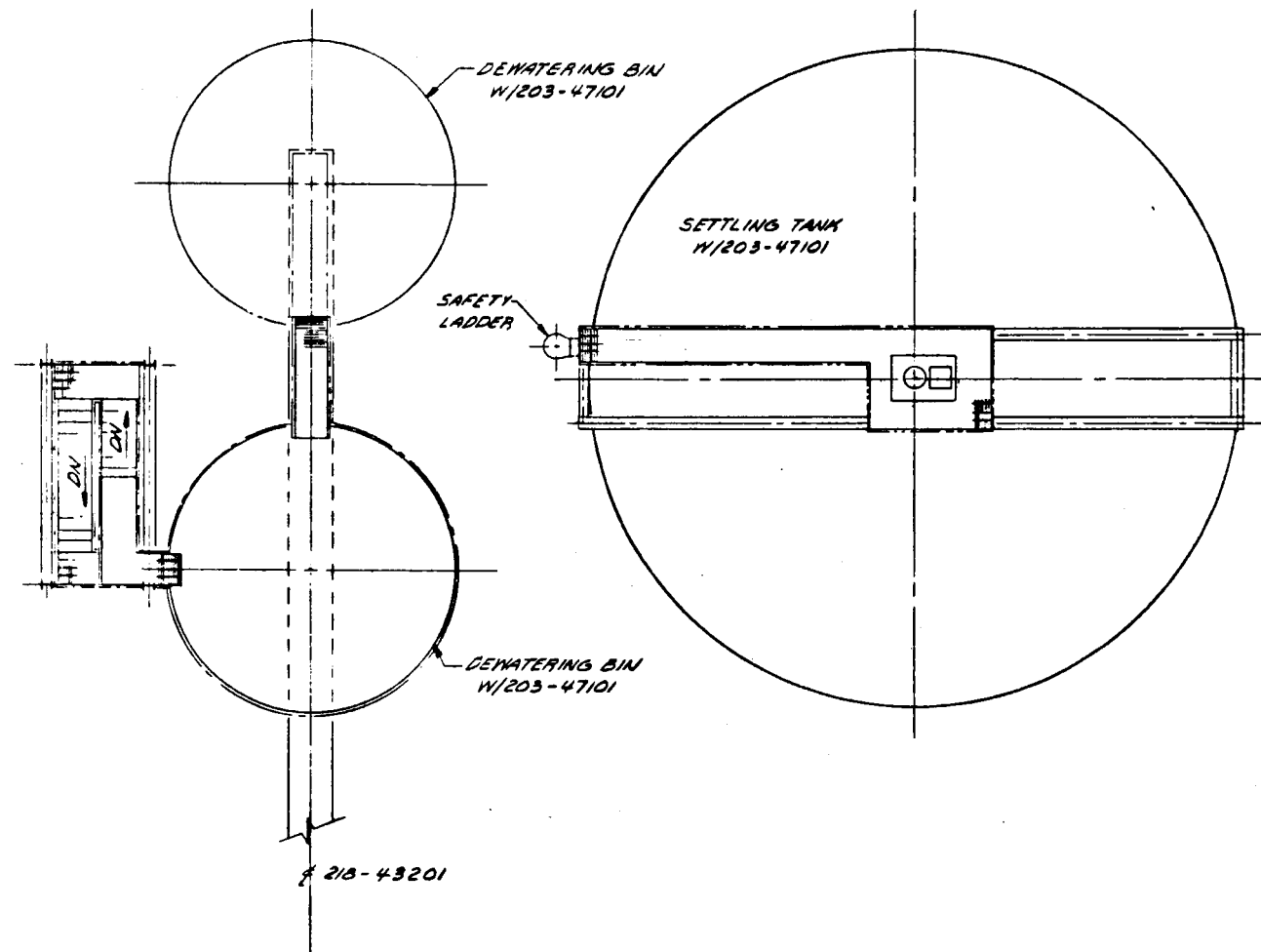
0 1 2 3 4 5 6 7 8 9 10 11

[illegible]





EQUIPMENT LIST	
ITEM NO.	DESCRIPTION
w/203-47101	DEWATERING BIN
w/203-47101	SETTLING TANK
218-43201	SLAG CONVEYOR



PRELIMINARY **NOT APPROVED FOR CONSTRUCTION**

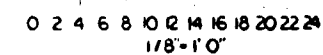
0 2 4 6 8 10 12 14 16 18 20 22 24
1/8"=1'-0"

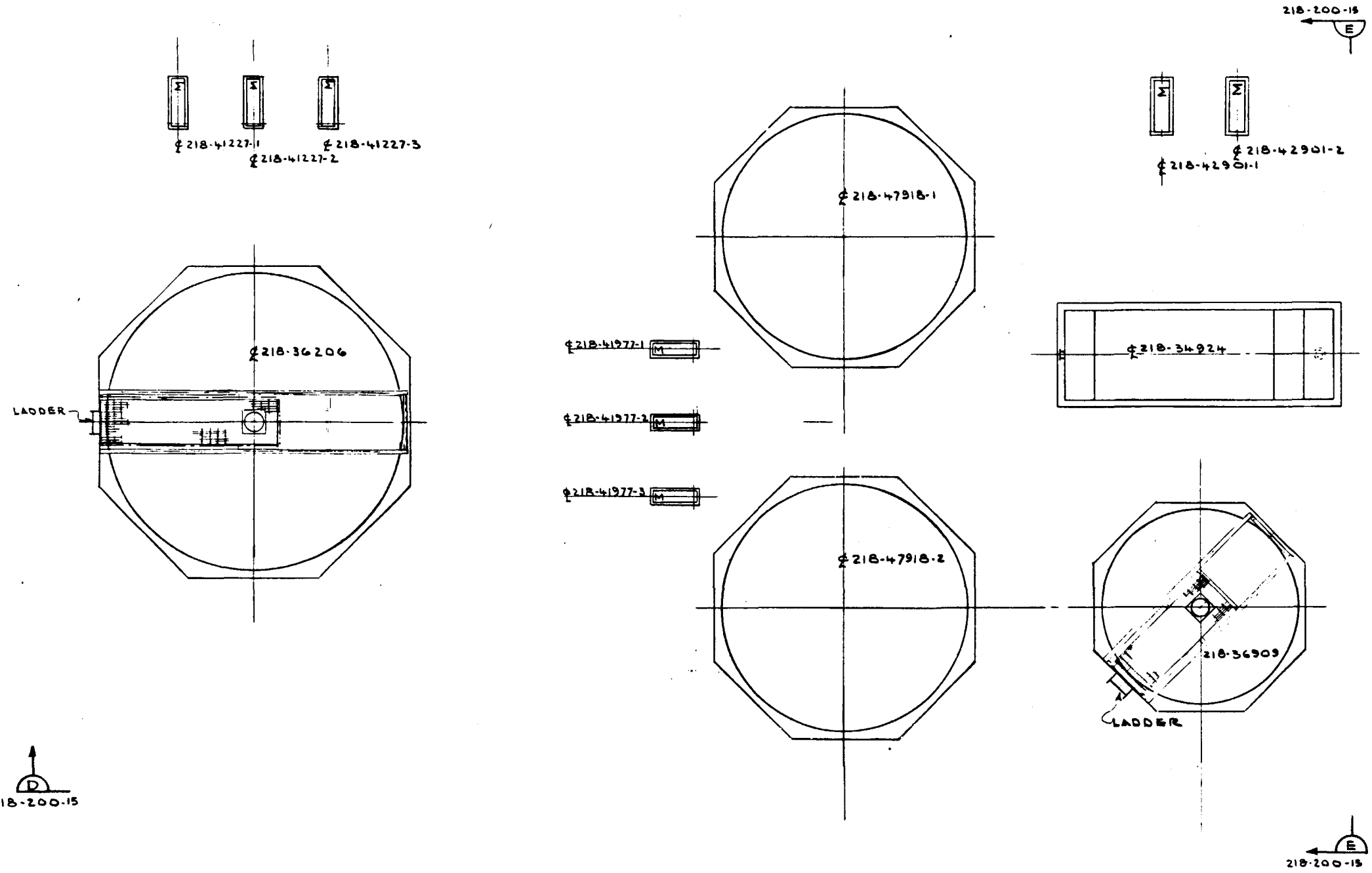
[illegible]

	BY	DATE	DRAWING STATUS	
DESIGNED			ISSUED	DATE
DRAWN	J. B. GOS	11-80	FOR OWNER REVIEW	11-80
CHECKED			FOR COMMENTS AND/OR	
DRAWN APPR			APPROVAL	
ECG APPR			FOR CUSTOMER APPROVAL	ECG
APP			AND/OR COMMENTS	DATE
			APPROVAL FOR	
			CONSTRUCTION	

TITLE	
WASTE TREATMENT & DISPOSAL SLAG DEWATERING SYSTEM LAYOUT PLAN	
U.S. DnE	ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS
CONTRACT NO. EE-77-C-01 2912	
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAYO CORPORATION PITTSBURGH PA	

PROJECT NO
7051
DRAWING NO
218-200-9
CASE
CC
REV.

[illegible]



EQUIPMENT LIST	
ITEM NO.	DESCRIPTION
218-36206	INORGANIC WASTE HOLD TANK
218-36909	RECARBONATION FLOCCULATION TANK
218-41227-1,2&3	INORGANIC WASTE EVAPORATOR
218-41977-1,2&3	FEED PUMP
218-42901-1&2	SOFTENING SLUDGE PUMP
218-42901-1&2	CARBON DIOXIDE BLOWER
218-47918-1&2	LINE-SODA SOFTENING SYSTEM

PLAN

PRELIMINARY NOT APPROVED FOR CONSTRUCTION

NO	REVISIONS	DATE	BY	CHK'D	APP'D	NO	REVISIONS	DATE	BY	CHK'D	APP'D	NO	REVISIONS	DATE	BY	CHK'D	APP'D
1	ISSUED FOR BASELINE	2-15-80															
2	REVISED FOR DRPD REPORT	2-15-80															

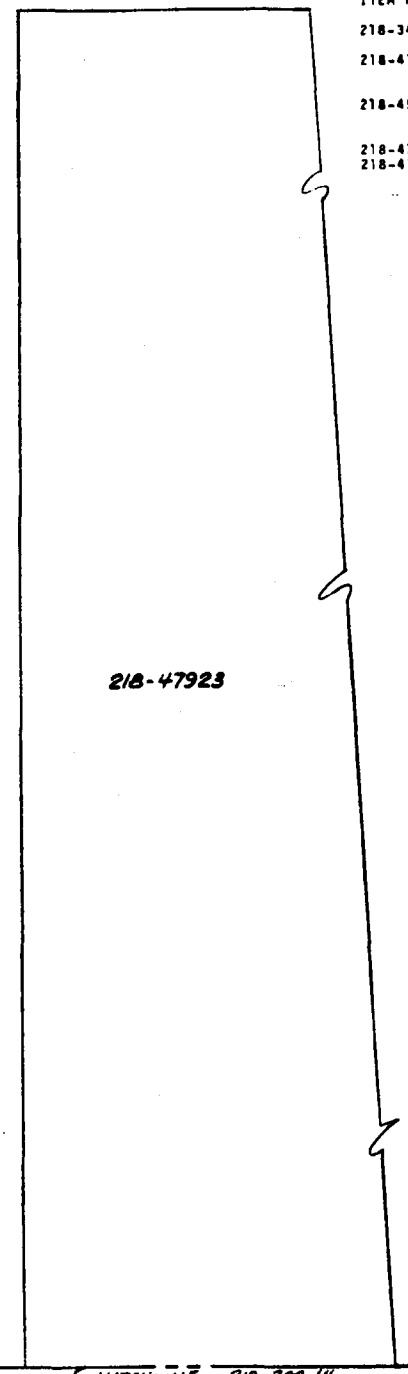
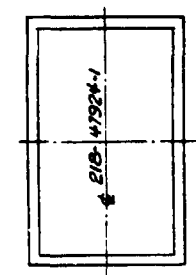
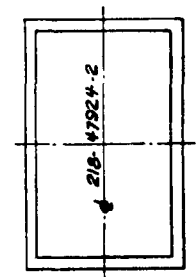
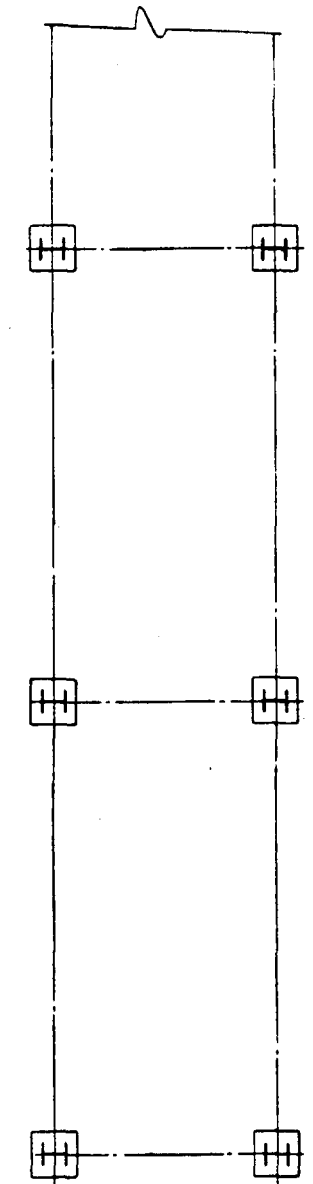
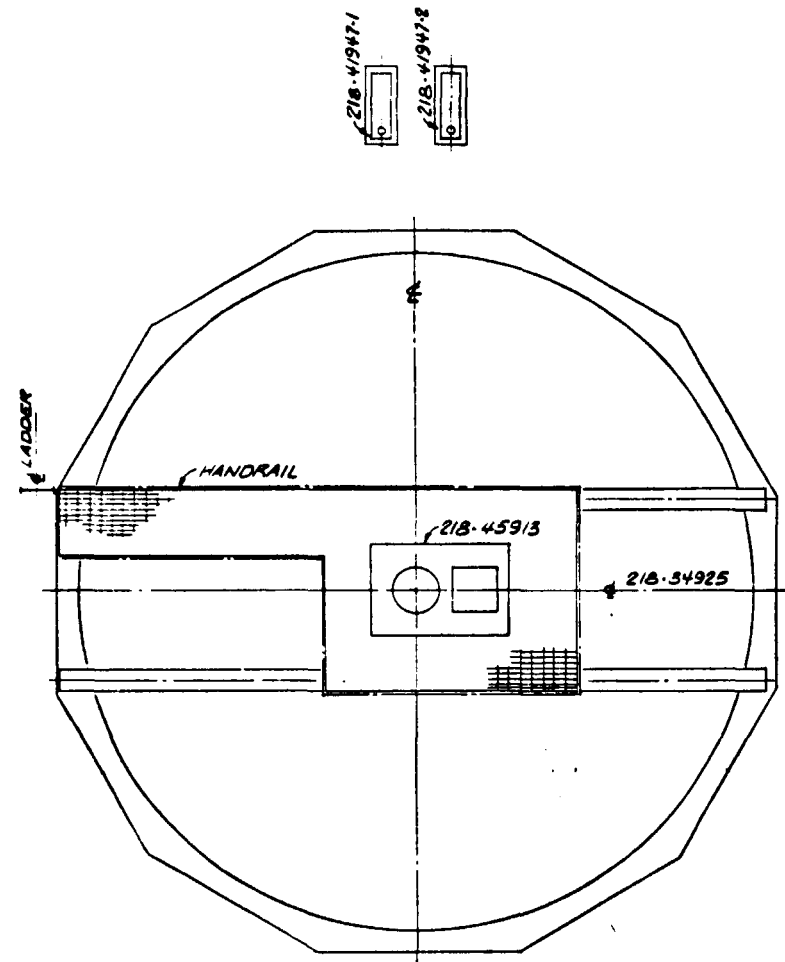
	BY	DATE	DRAWING STATUS	
DESIGNED			ISSUED	DATE
DRAWN			FOR DRPD REPORT	2-15-80
CHECKED			FOR COMMENTS AND/OR APPROVAL	
DRAWN APP'D			APPROVAL	
ICGG APP'D			FOR CUSTOMER APPROVAL	ICGG
ICGG APP'D			AND/OR COMMENTS	ICGG
			APPROVAL FOR CONSTRUCTION	
SCALE				

TITLE WASTE TREATMENT & DISPOSAL LAYOUT PLAN		PROJECT NO. 7051 DRAWING NO. 218-200-11
U.S. DoE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF 77-C-01-2012		CASE DC
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAGO CORPORATION PITTSBURGH PA		REV.

DO NOT SCALE THIS DRAWING
IT MAY BE REDUCED FROM ORIGINAL SIZE



MATCHLINE 21B-200-11



EQUIPMENT LIST	
ITEM NO.	DESCRIPTION
21B-34925	RECARBONATION CLARIFIER
21B-41947-1,2	RECARBONATION CLARIFIER SLUDGE PUMP
21B-45913	RECARBONATION CLARIFIER MECHANISM
21B-47923	OXYGEN GENERATION SYSTEM
21B-47924-1,2	OZONE GENERATION & DE- STRUCTION SYSTEM

21B-200-16

21B-200-16

MATCHLINE 21B-200-13

MATCHLINE 21B-200-14

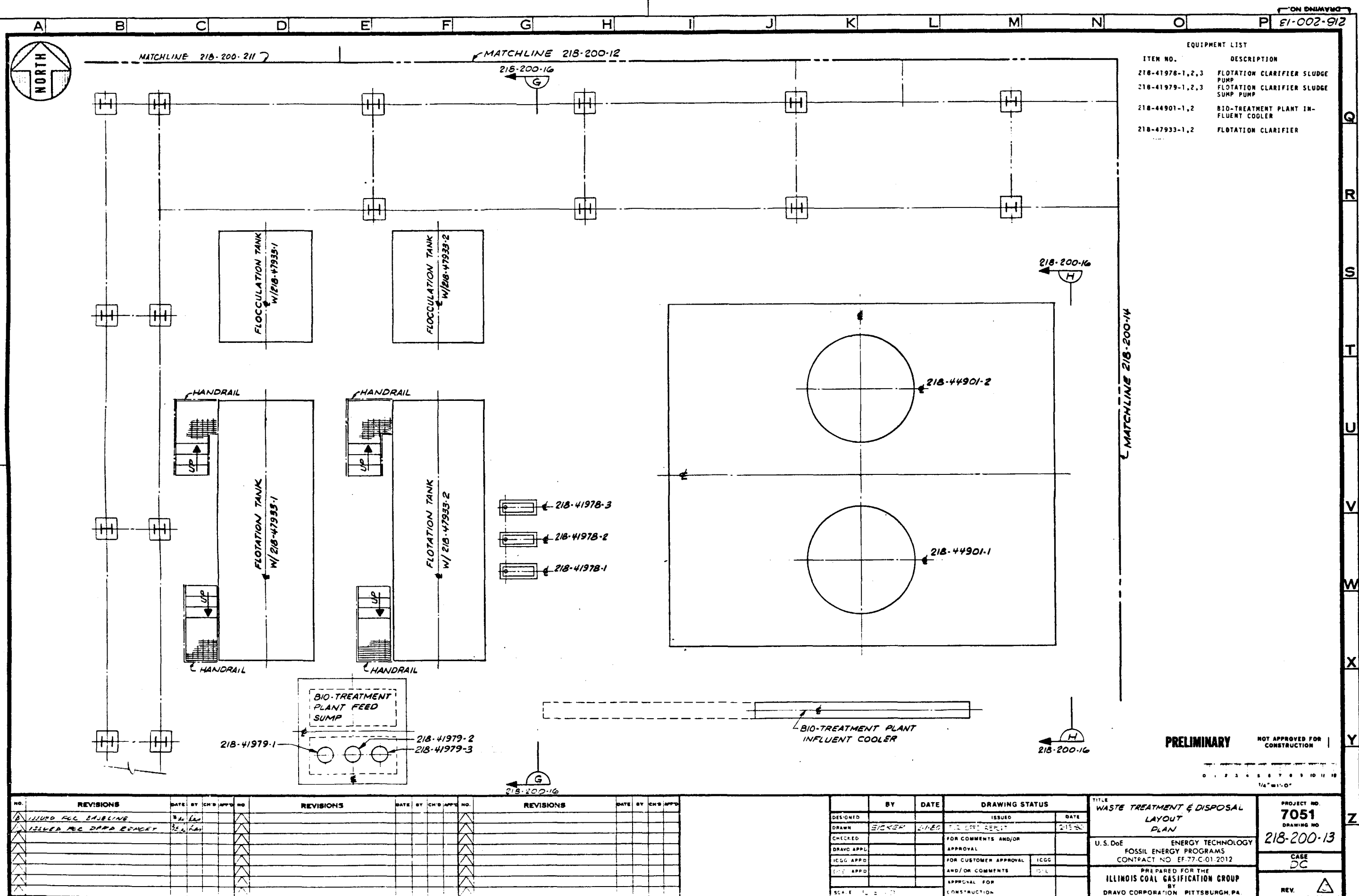
PRELIMINARY NOT APPROVED FOR CONSTRUCTION
0 1 2 3 4 5 6 7 8 9 10 11 12
1/4"=1'-0"

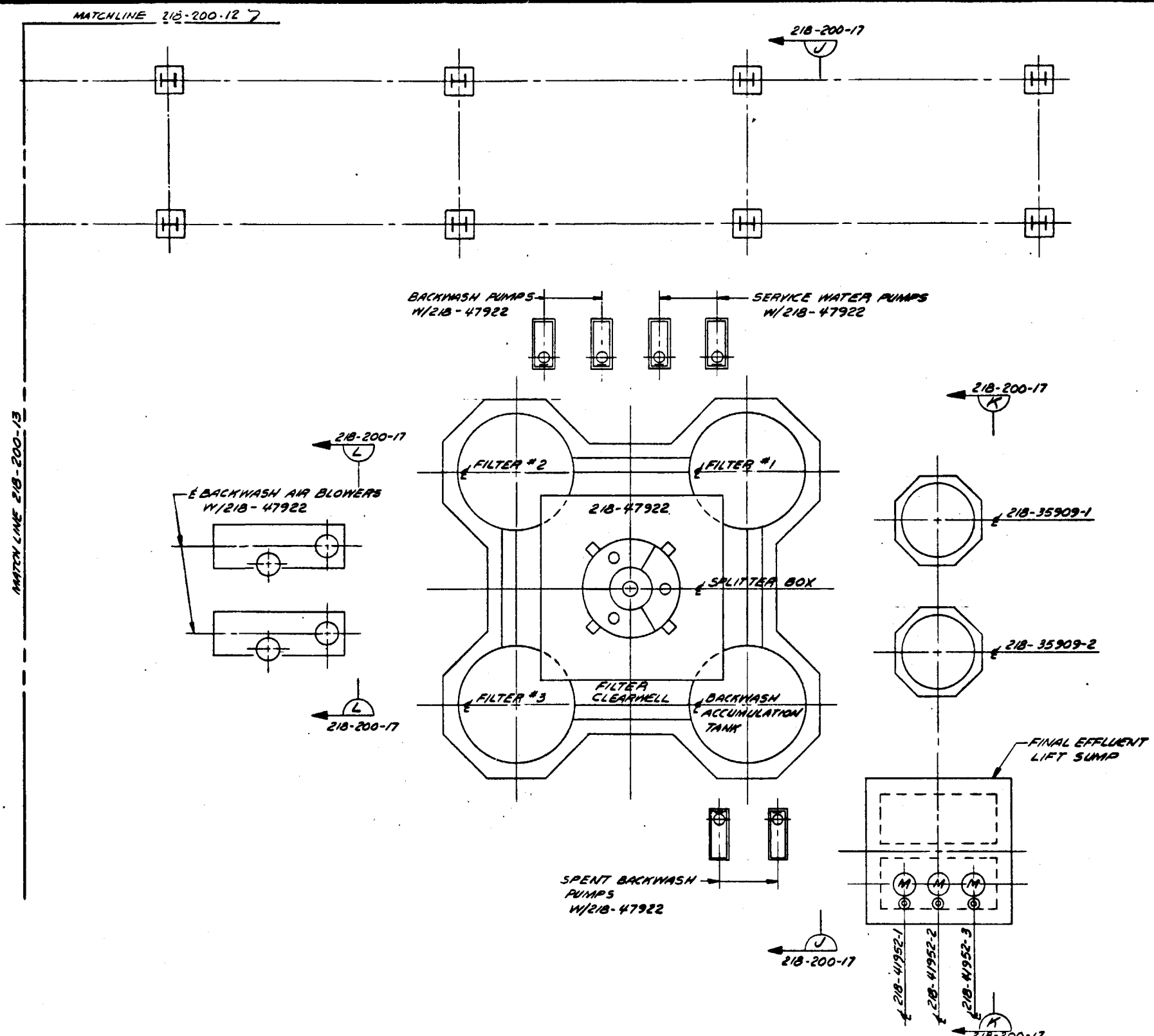
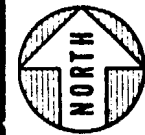
NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.
1	ISSUED FOR BRICKING	7.1.12																
2	ISSUED FOR BRICKING	7.1.12																

BY	DATE	DRAWING STATUS		DATE
DESIGNED		ISSUED		
DRAWN	ECKER	PA. DED. EIGHT		04.12.12
CHECKED		FOR COMMENTS AND/OR		
GRAVO APP'D		APPROVAL		
ICGG APP'D		FOR CUSTOMER APPROVAL	ICGG	
DC APP'D		AND/OR COMMENTS	DC	
SCALE	1/4"=1'-0"	APPROVAL FOR		
		CONSTRUCTION		

TITLE
WASTE TREATMENT & DISPOSAL
LAYOUT
PLAN
U.S. DOE ENERGY TECHNOLOGY
FOSSIL ENERGY PROGRAMS
CONTRACT NO. EF-77-C-01-2012
PREPARED FOR THE
ILLINOIS COAL GASIFICATION GROUP
BY
GRAVO CORPORATION PITTSBURGH PA.

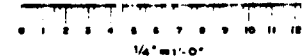
PROJECT NO.
7051
DRAWING NO.
21B-200-12
CASE
DC
REV.





EQUIPMENT LIST	
ITEM NO.	DESCRIPTION
218-35909-1,2	OZONE CONTACT TANK
218-41952-1,2,3	FINAL EFFLUENT LIFT PUMP
218-47922	FINAL EFFLUENT FILTER SYSTEM
W/218-47922	BACKWASH AIR BLOWERS
W/218-47922	BACKWASH PUMPS
W/218-47922	SERVICE WATER PUMPS
W/218-47922	SPENT BACKWASH PUMPS

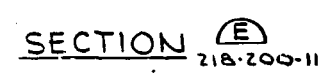
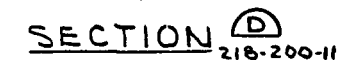
PRELIMINARY NOT APPROVED FOR CONSTRUCTION



REVISIONS					REVISIONS					REVISIONS				
NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D
1	11/15/80	FOR BASELINE	FOR	FOR										
2	11/15/80	ISSUED FOR DDPD REPORT	FOR	FOR										
			</											

BY		DATE		DRAWING STATUS	
DESIGNED				ISSUED	DATE
DRAWN	L. B. G. S.	11/15/80		FOR DDPD REPORT	11/15/80
CHECKED				FOR COMMENTS AND/OR APPROVAL	
DRAWN APP'D				FOR CUSTOMER APPROVAL	ICGG
ICGG APP'D				AND/OR COMMENTS	DOE
DOE APP'D				APPROVAL FOR CONSTRUCTION	
SCALE	1/4" = 1'-0"				

TITLE		PROJECT NO.
WASTE TREATMENT & DISPOSAL LAYOUT PLAN		7051
		DRAWING NO.
		218-200-14
U.S. DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012		CASE DC
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAVO CORPORATION PITTSBURGH PA		REV.

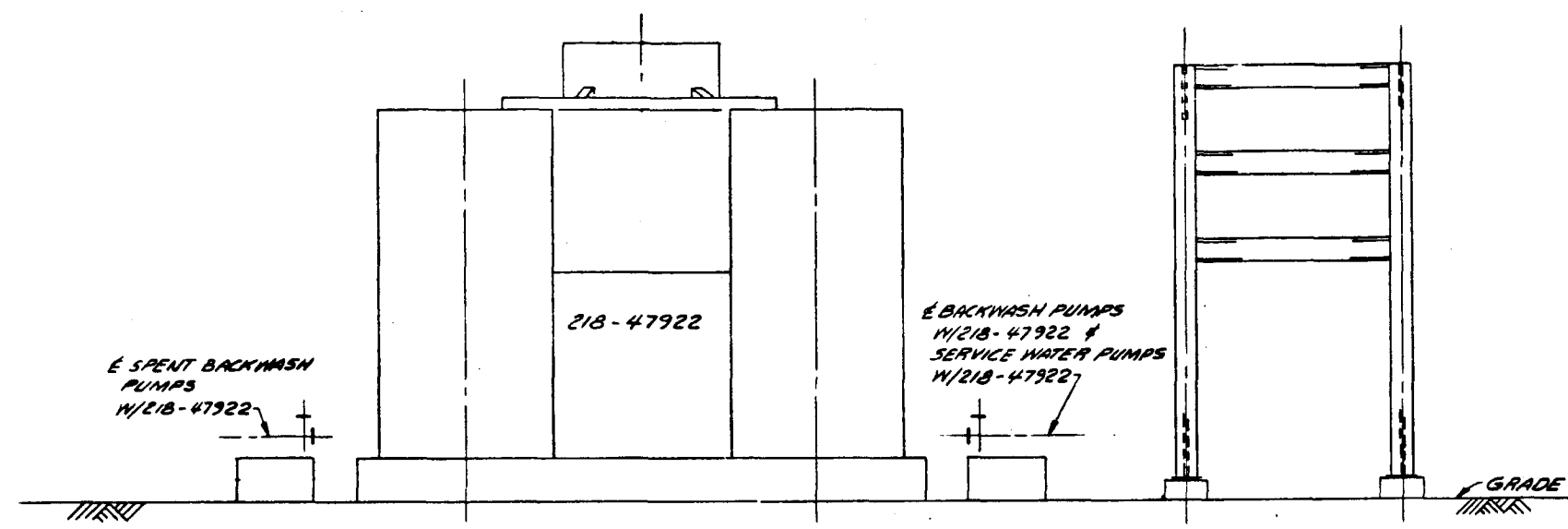
[illegible]



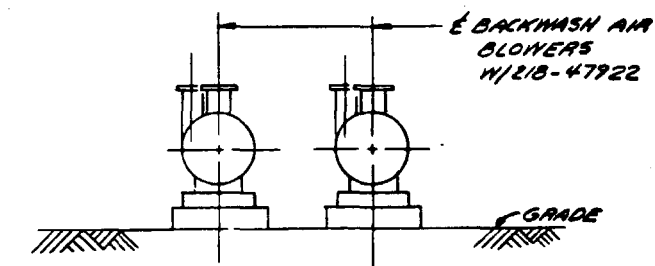
**NOT APPROVED FOR
CONSTRUCTION**

REV.

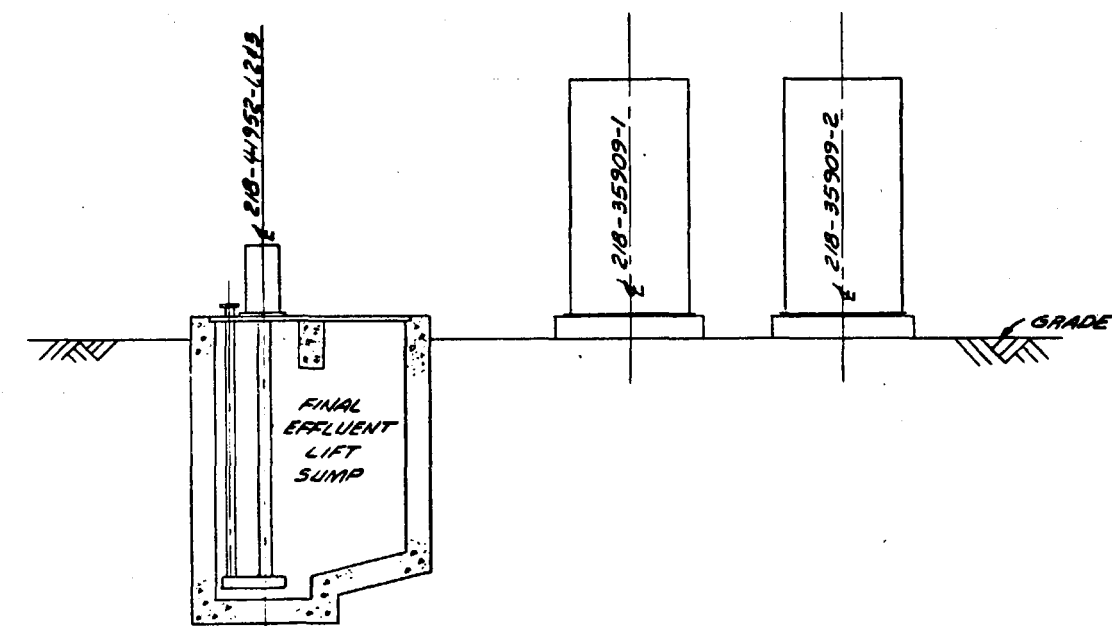
	BY	DATE	DRAWING STATUS	
DESIGNED			ISSUED	DATE
DRAWN	E. C. E. P.	04-80	FOR APPROVAL	
CHECKED			FOR COMMENTS AND/OR	
DRAW APPD			APPROVAL	
ICGG APPD			FOR CUSTOMER APPROVAL	CSG
ENR APPD			AND/OR COMMENTS	
			APPROVAL FOR	
SCALE			CONSTRUCTION	



SECTION J
21B-200-14

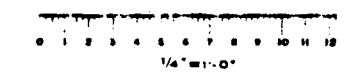


SECTION L
21B-200-14



SECTION K
21B-200-14

PRELIMINARY NOT APPROVED FOR CONSTRUCTION



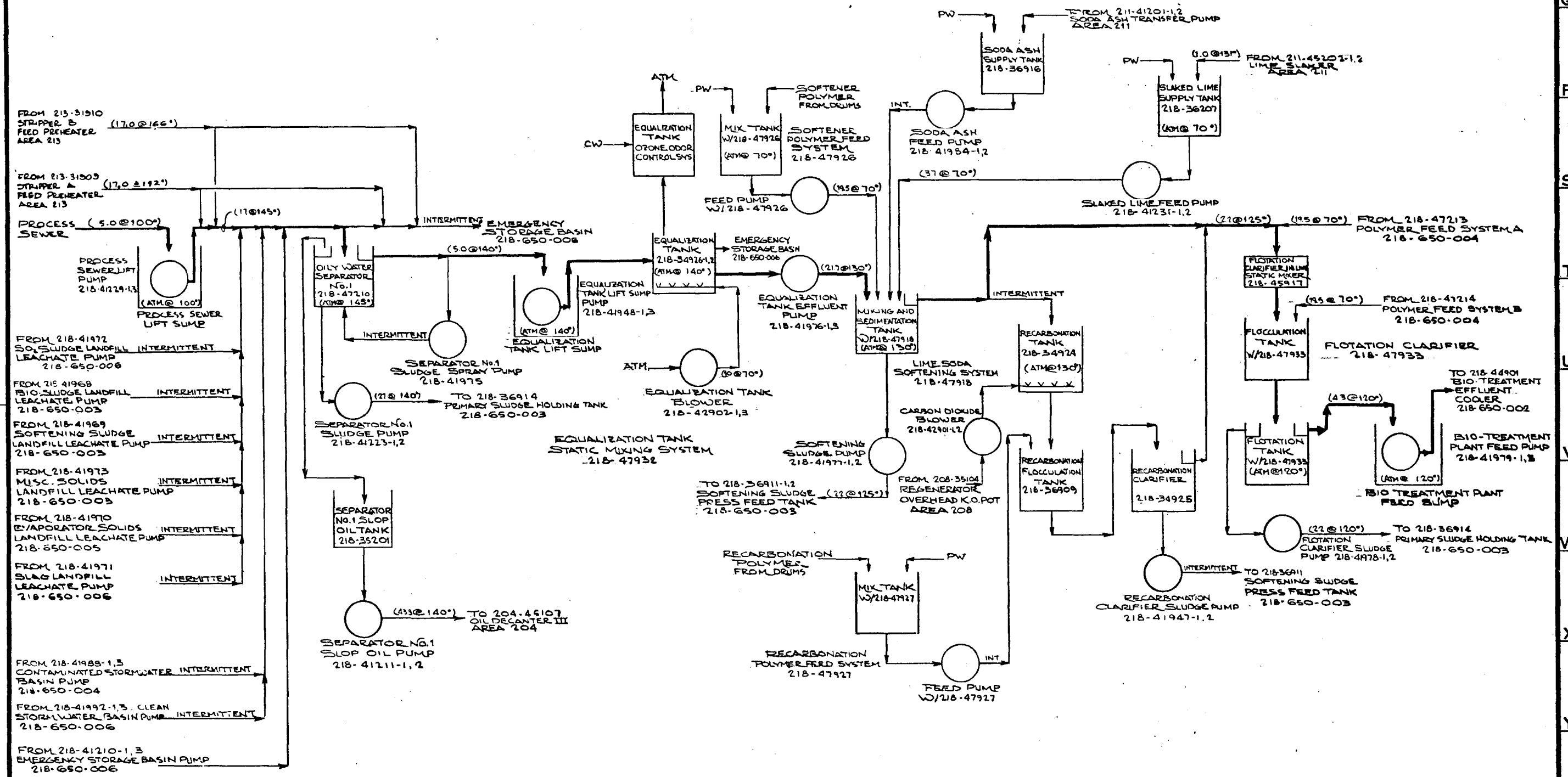
NO.	REVISIONS	DATE	BY	CHK'D	APPR'D	NO.	REVISIONS	DATE	BY	CHK'D	APPR'D	NO.	REVISIONS	DATE	BY	CHK'D	APPR'D
1	ISSUED FOR BASELINE	2/1/80															
2	ISSUED FOR DAPP REPORT	2/4/80															

BY	DATE	DRAWING STATUS
DESIGNED		ISSUED
DRAWN	J. BRIGGS 2/4/80	FOR DAPP REPORT
CHECKED		FOR COMMENTS AND/OR APPROVAL
DRAWN APP'D		FOR CUSTOMER APPROVAL
ICGG APP'D		AND/OR COMMENTS
DAPP APP'D		APPROVAL FOR CONSTRUCTION
SCALE	1/4"=1'-0"	

TITLE
WASTE TREATMENT & DISPOSAL LAYOUT SECTIONS

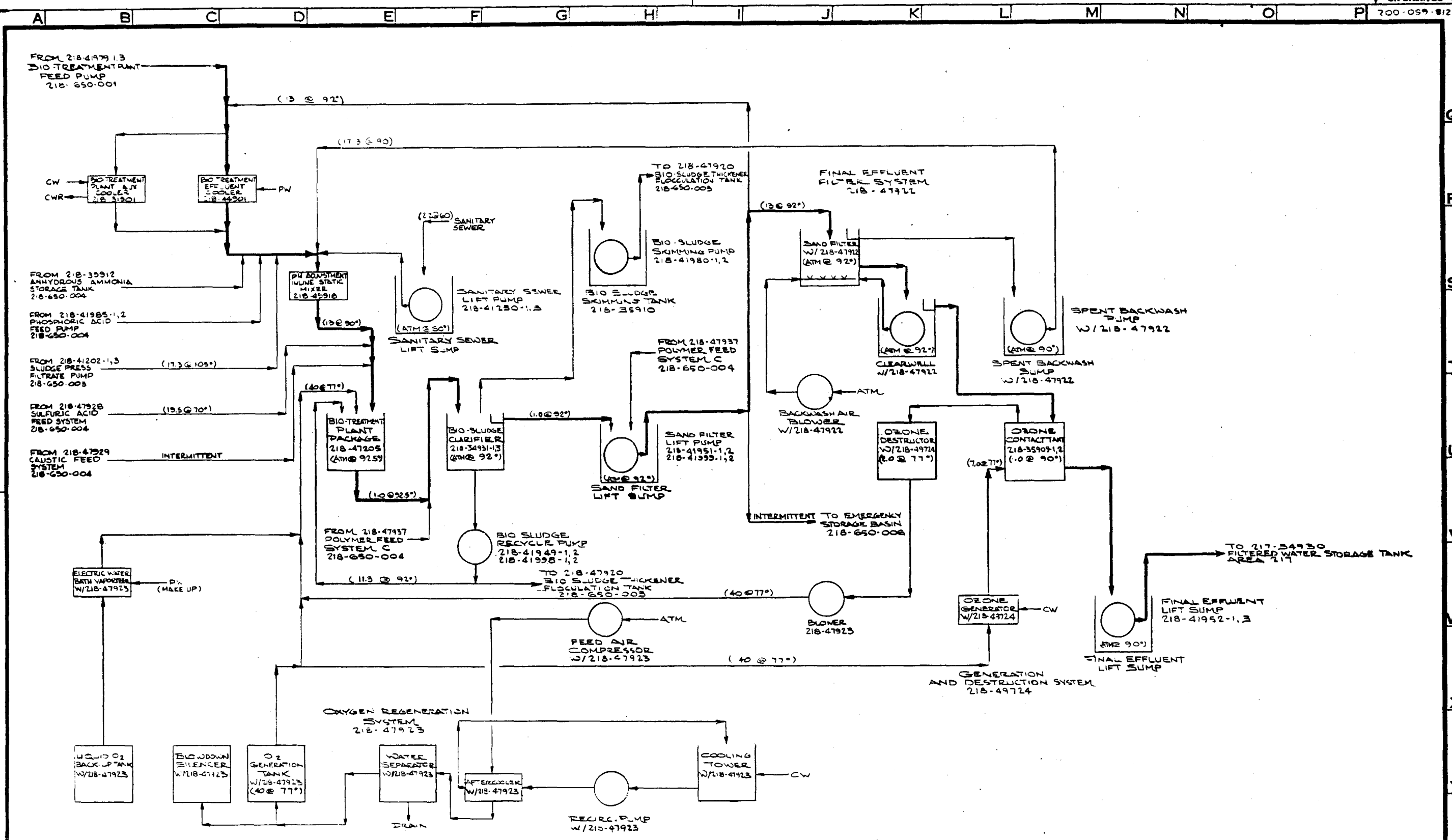
U.S. DoE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS
CONTRACT NO. E-77-C-01-2012
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP
BY DRAVO CORPORATION PITTSBURGH PA

PROJECT NO.
7051
DRAWING NO.
21B-200-17
CASE
CC
REV.



REVISIONS				REVISIONS				REVISIONS			
NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D
1	OPPO	2-12-80	JL	RBR	CWB	1	OPPO	2-12-80	JL	RBR	CWB
2	TASK VI	5-3-80	JL	RBR	CWB	2	TASK VI	5-3-80	JL	RBR	CWB
3	OPPO TASK VI	6-7-80	JL	RBR	CWB	3	OPPO TASK VI	6-7-80	JL	RBR	CWB
4						4					
5						5					
6						6					
7						7					
8						8					
9						9					
10						10					

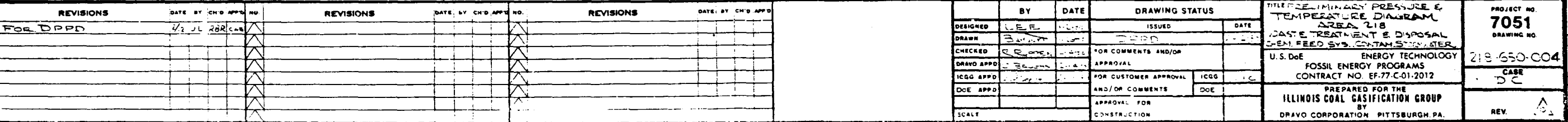
DESIGNED	BY	DATE	DRAWING STATUS	TITLE	PROJECT NO.
J. LEE	J. LEE	1-14-80	ISSUED	WASTE TREATMENT & DISPOSAL	7051
DRWN	BURGESS	1-14-80	OPPO TASK VI	PRIMARY SEPARATION & EQUALIZATION	218-650-001
CHKD	R. RUPPEN	2-12-80	FOR COMMENTS AND/OR	U.S. DOE ENERGY TECHNOLOGY	CASE
DRWO APPD	C. BAUGHN	2-12-80	APPROVAL	FOSSIL ENERGY PROGRAMS	DC
ICGG APPD			FOR CUSTOMER APPROVAL	CONTRACT NO. EF-77-C-01-2012	REV.
OGG APPD			AND/OR COMMENTS	PREPARED FOR THE	
			APPROVAL FOR	ILLINOIS COAL GASIFICATION GROUP	
			CONSTRUCTION	BY	
SCALE				DRAGO CORPORATION PITTSBURGH, PA.	



REVISIONS				REVISIONS				REVISIONS			
NO.	DESCRIPTION	DATE	BY	NO.	DESCRIPTION	DATE	BY	NO.	DESCRIPTION	DATE	BY
1	OPPD	2/16/1980	CWB								
2											
3											
4											
5											
6											
7											
8											
9											
10											

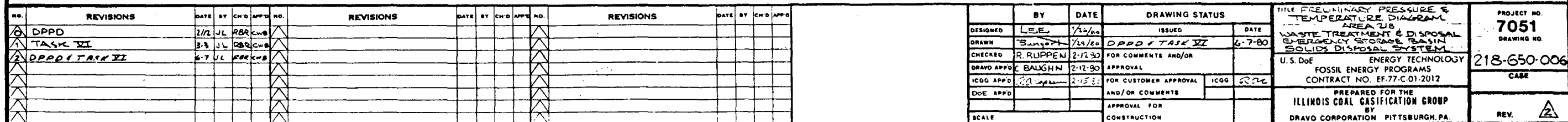
DESIGNED	BY	DATE	DRAWING STATUS	DATE
DRWN	OPPD	2/16/1980	ISSUED	2/16/1980
CHECKED	R. PIPER	2/16/1980	FOR COMMENTS AND/OR APPROVAL	
DRAGO APPD	L. BAUGH	2/16/1980	APPROVAL	
ICGG APPD			FOR CUSTOMER APPROVAL	
DOE APPD			AND/OR COMMENTS	
SCALE			APPROVAL FOR CONSTRUCTION	

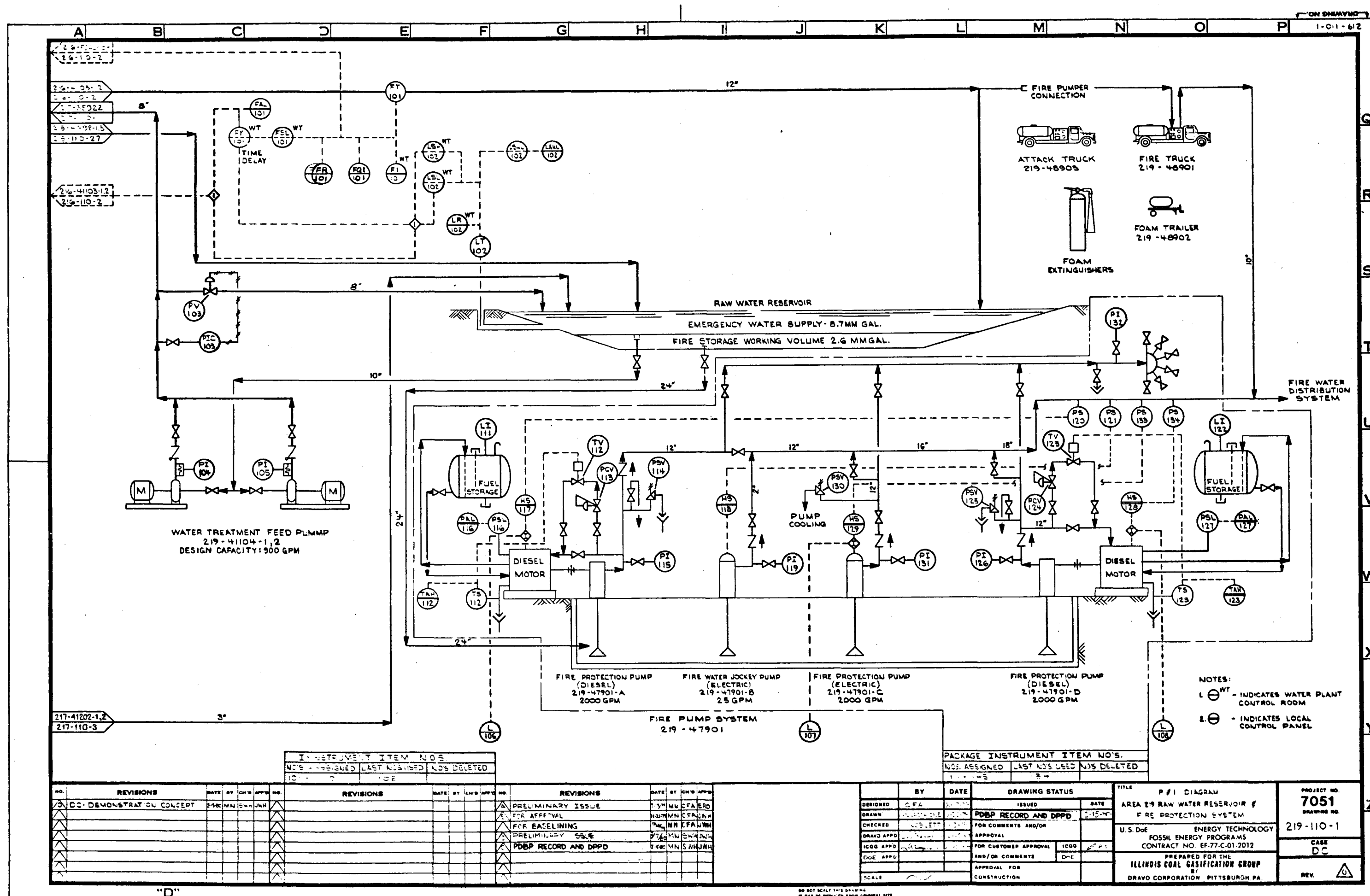
TITLE: PRELIMINARY PRESSURE & TEMPERATURE DIAGRAM AREA 218 WASTE TREATMENT & DISPOSAL BIO-TREATMENT & DISPOSAL OZONE TREATMENT & DISPOSAL	PROJECT NO. 7051 DRAWING NO. 218-650-002
U.S. DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012	CASE DC
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAGO CORPORATION PITTSBURGH, PA.	REV. 1





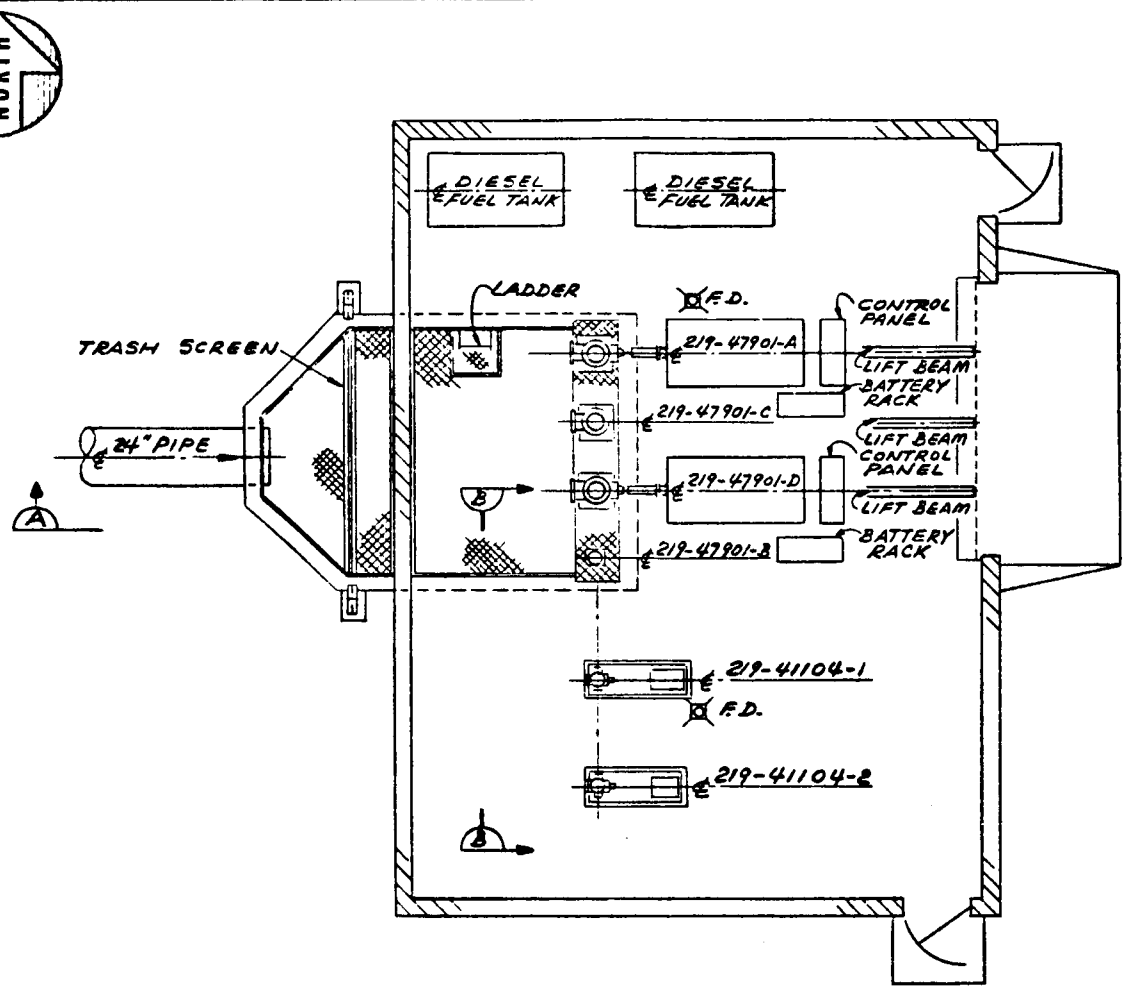
"D"



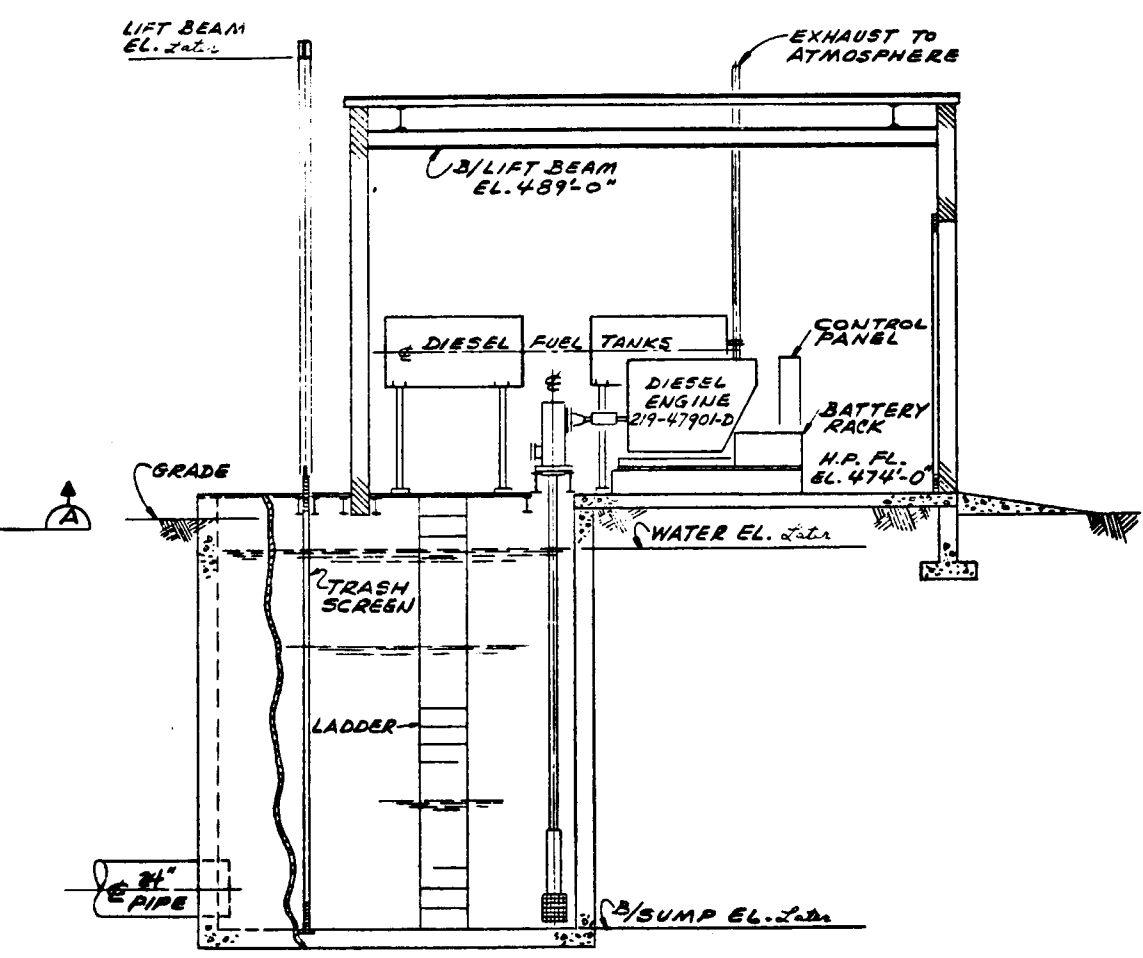




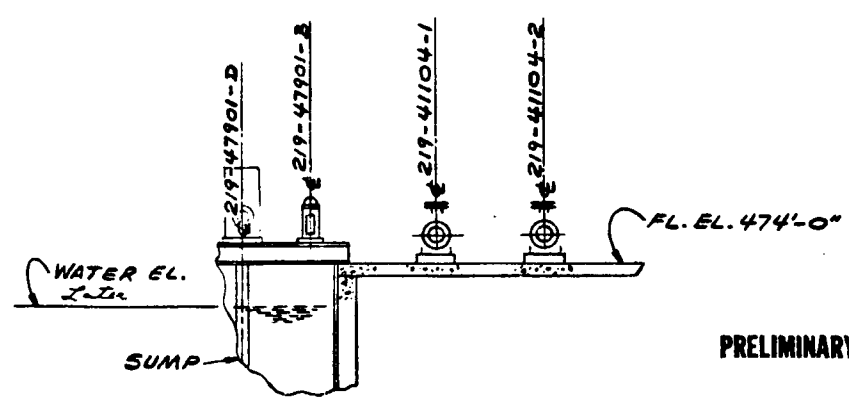
ITEM NO.	DESCRIPTION
219-41104-1&2	WATER TREATMENT FEED PUMPS
219-47901-A&D	FIRE PROTECTION PUMPS (DIESEL)
219-47901-B	FIRE WATER JOCKEY PUMP
219-47901-C	FIRE PROTECTION PUMP



PLAN



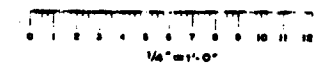
SECTION A



SECTION B

PRELIMINARY

NOT APPROVED FOR CONSTRUCTION



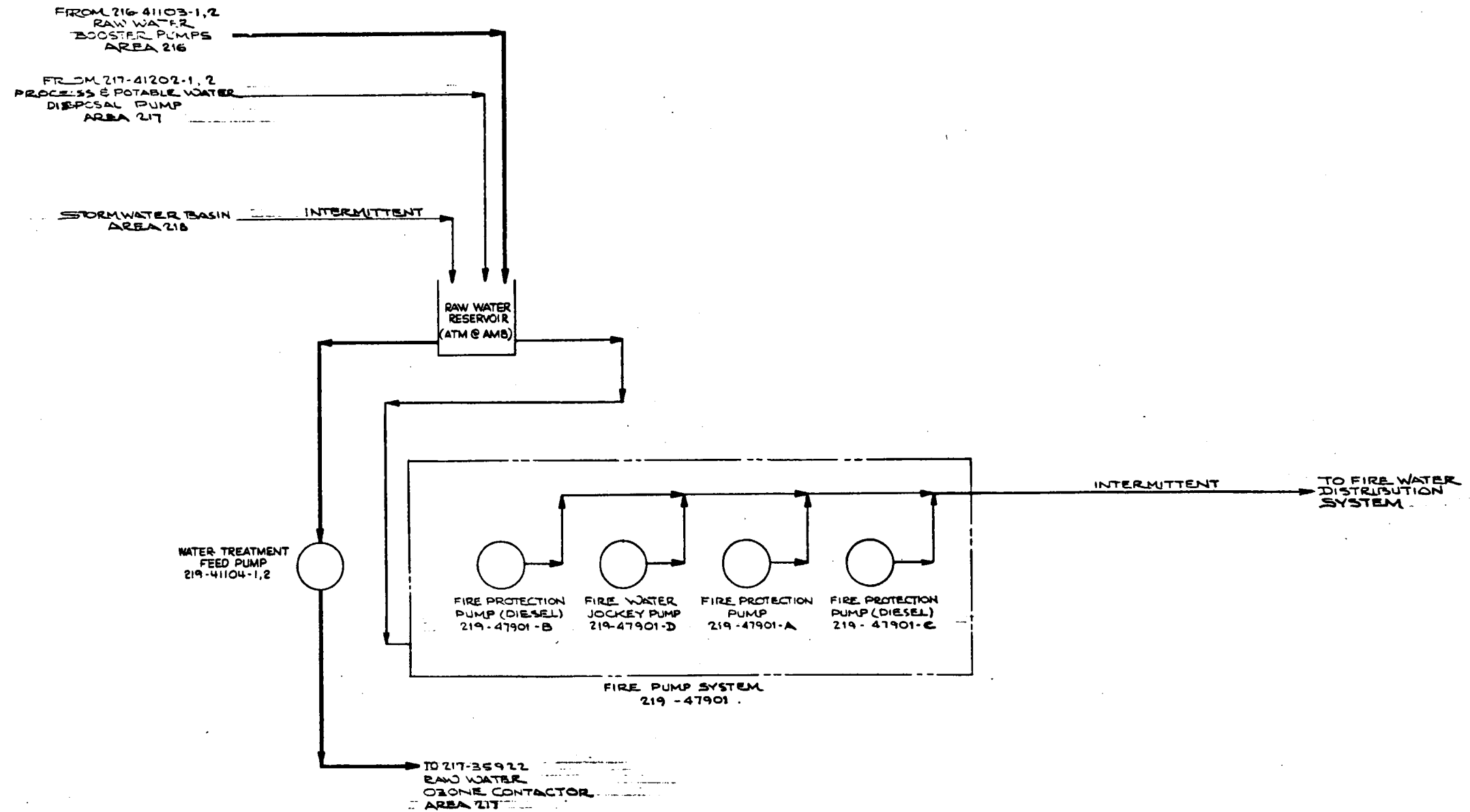
NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D
1	ISSUED FOR CONSTRUCTION	11-1-79															
2	ISSUED FOR UPD REPORT	11-1-79															

BY	DATE	DRAWING STATUS	DATE
DESIGNED		ISSUED	
DRAWN	11-1-79	FOR OPD REPORT	11-1-79
CHECKED		FOR COMMENTS AND/OR APPROVAL	
DRAWN APP'D		APPROVAL	
ICGG APP'D		FOR CUSTOMER APPROVAL	ICGG
DOE APP'D		AND/OR COMMENTS	DOE
SCALE	1/4" = 1'-0"	APPROVAL FOR CONSTRUCTION	

TITLE FIRE PUMP HOUSE LAYOUT PLAN AND SECTIONS		PROJECT NO. 7051
U.S. DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012		DRAWING NO. 219-200-1
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAVO CORPORATION PITTSBURGH PA		CASE DC
		REV.

"D"

DO NOT SCALE THIS DRAWING
IT MAY BE REDUCED FROM ORIGINAL SIZE



REVISIONS				REVISIONS				REVISIONS				DRAWING STATUS				TITLE		PROJECT NO.	
NO.	DATE	BY	CHK'D	APPR'D	NO.	DATE	BY	CHK'D	APPR'D	NO.	DATE	BY	CHK'D	APPR'D	NO.	DATE	BY	CHK'D	APPR'D
1	FOR DPPP	7/16	JVF	RECEIVED								DESIGNED	WSE/MSK	2/17/11			ISSUED		
												DRAWN	SAK/MLA	2/17/11					
												CHECKED	WSE/MSK	2/17/11			FOR COMMENTS AND/OR		
												DRAWN APP'D	WSE/MSK	2/17/11			APPROVAL		
												ICGG APP'D					FOR CUSTOMER APPROVAL	ICGG	
												APPR'D					AND/OR COMMENTS		
												SCALE					APPROVAL FOR		
																	CONSTRUCTION		
																U.S. DoE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-CG-01-2012			
																PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAVO CORPORATION PITTSBURGH, PA.			
																CASE DC			
																REV.			

AREA 220
ENERGY BALANCE SUMMARY
MM BTU/HR

SERVICE		CONTRIBUTION	
0.04	HEATERS	+0.25	0.01
0.17	COOLERS	-0.08	0.26
0.40	HEAT OF REACTION	0	0.17
0	HEAT LOSS: VESSELS	-0.04	0.37
0.02	NET INCREASE	0.18	0
ENERGY IN 0.63		NET ADDITION +0.18	ENERGY OUT 0.81

AREA 220
ENERGY BALANCE SUMMARY
MM BTU/HR

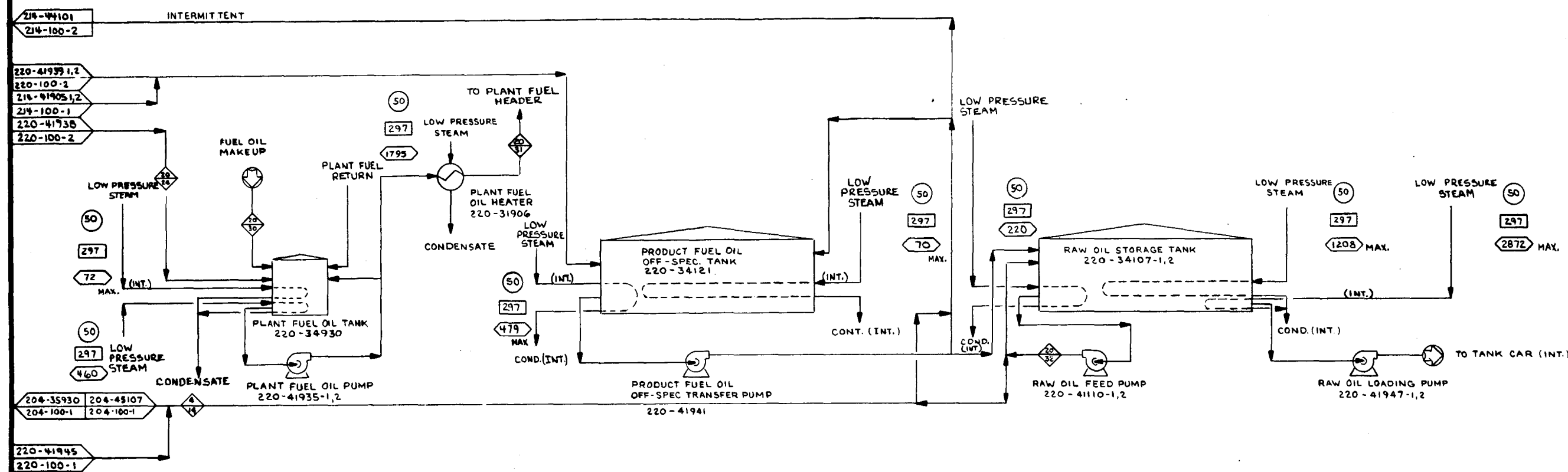
AREA 220	
ENERGY BALANCE SUMMARY	
MM BTU/HR	
	SERVICE HEATERS COOLERS HEAT OF REACTION HEAT LOSS VESSELS NET INCREASE CONTRIBUTION + 0.40 - 0.04 0 0 0.36
0.05 0.30 0.12 0 0.03	0.01 0 0.30 0.55 0.01
ENERGY IN 0.50	NET ADDITION: +0.36
	ENERGY OUT 0.86

	BY	DATE	DRAWING STATUS		TITLE PROCESS FLOW DIAGRAM AREA 220 FACILITIES NAPHTHA PRODUCT STORAGE	PROJECT NO. 7051 DRAWING NO. 220-100-1B
DESIGNED	H.L. JESTER	6-13-79	ISSUED	DATE		
DRAWN	IANNACCHIONE	8-17-79	PDBP RECORD AND DFPD		2-15-80	ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012
CHECKED	K. MIGHT	1-30-80	FOR COMMENTS AND/OR			
DRAWN APP'D	C.L. [Signature]	2-15-80	APPROVAL			U.S. DOE FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012
ICGB APP'D	[Signature]	2-15-80	FOR CUSTOMER APPROVAL		ICGB [Signature]	
DOE APP'D			AND/OR COMMENTS		DOE	PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAWING CORPORATION, PITTSBURGH, PA
SCALE			APPROVAL FOR CONSTRUCTION			

[illegible]

BY		DATE	DRAWING STATUS	
DESIGNED	H.L. JESTER	8-7-79	ISSUED	DATE
DRAWN	J.O. EGER	8-17-79	POBP RECORD AND DPPD	2-13-80
CHECKED	K. MIGUT	1-30-80	FOR COMMENTS AND/OR	
DRAWN APP'D	<i>W.D. Dyer</i>	2-15-80	APPROVAL	
ICGS APP'D	<i>W.D. Dyer</i>	2-15-80	FOR CUSTOMER APPROVAL	ICGS <i>Rae</i>
DOE APP'D			AND/OR COMMENTS	DOE
SCALE	<i>1/4" = 1'-0"</i>		APPROVAL FOR	
			CONSTRUCTION	

TITLE PROCESS FLOW DIAGRAM AREA 220 FACILITIES PRODUCT STORAGE I	PROJECT NO. 7051 DRAWING NO.
	220-100-28
U.S.DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012	CADD DC
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAYCO CORPORATION PITTSBURGH, PA.	REV. 

[illegible]

	BY	DATE	DRAWING STATUS		TITLE	PROCESS FLOW DIAGRAM AREA 220 FACILITIES PRODUCT STORAGE II	PROJECT NO. 7051 DRAWING NO.
DESIGNED	H.L. JESTER	1/12/80	ISSUED	DATE			
DRAWN	R. KARLIK	1/18/80	PDBP RECORD AND DPFD		2-15-80		
CHECKED	K. MIGHT	1/30/80	FOR COMMENTS AND/OR APPROVAL				
DRAWO APP'D	<i>W. Brown</i>	2-15-80					
ICGB APP'D	<i>W. Brown</i>	2-15-80	FOR CUSTOMER APPROVAL	ICGB	<i>W. Brown</i>		
DOE APP'D			AND/OR COMMENTS	DOE			
			APPROVAL FOR CONSTRUCTION				
SCALE							

U.S. DoE	ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012	220-100-3A
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAGO CORPORATION PITTSBURGH, PA.		
		CASE DC
		REV. 

[illegible]

BY		DATE	DRAWING STATUS	
DESIGNED	H.L. JESTER	1-4-80	ISSUED	GATE
DRAWN	TERRELLYN	1-12-80	POBP RECORD AND DPPD 2-15-80	
CHECKED	K. MIGHT	1-30-80	FOR COMMENTS AND/OR	
DRAWN APP'D	G. J. [Signature]	2-15-80	APPROVAL	
ICGG APP'D	G. J. [Signature]	2-15-80	FOR CUSTOMER APPROVAL	ICGG [Signature]
DOE APP'D			AND/OR COMMENTS	DOE
SCALE	1" = 10'		APPROVAL FOR CONSTRUCTION	

PROJECT NO.
7051
DRAWING NO.
220-100-3B

CASE
DC

REV. 

[illegible]

TITLE PROCESS FLOW DIAGRAM
AREA 220 FACILITIES
AMMONIA & NITROGEN
STORAGE

U.S. DOE ENERGY TECHNOLOGY
FOSSIL ENERGY PROGRAMS
CONTRACT NO. EF-77-C-01-2012

PREPARED FOR THE
ILLINOIS COAL GASIFICATION GROUP
BY
DRAYO CORPORATION PITTSBURGH, PA.

PROJECT NO.
7051
DRAWING NO.
220-100-4A

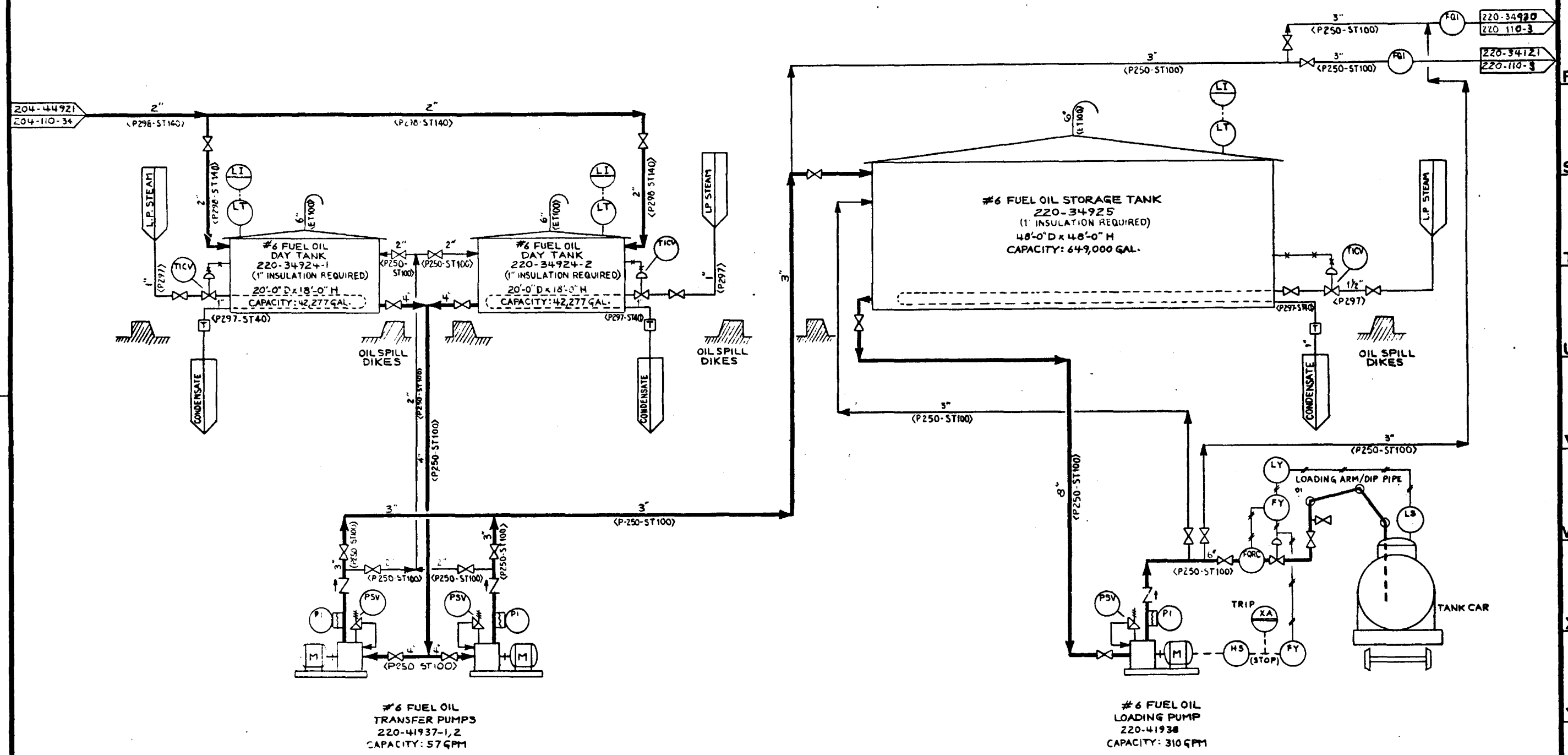
CASE
DC

REV. 

[illegible]

	BY	DATE	DRAWING STATUS	
DESIGNED	H.L. JESTER	6-13-79	ISSUED	DATE
DRAWN	TRIVAN VO	1-17-80	POBP RECORD AND DPPD	2-15-80
CHECKED	K. MIGUT	1-30-80	FOR COMMENTS AND/OR	
DRAWN APP'D	<i>Ed Brumfield</i>	2-15-80	APPROVAL	
ICGG APP'D	<i>J.A. Giger</i>	2-15-80	FOR CUSTOMER APPROVAL	ICGG
DOE APP'D			AND/OR COMMENTS	DOE
			APPROVAL FOR	
SCALE			CONSTRUCTION	

"D"



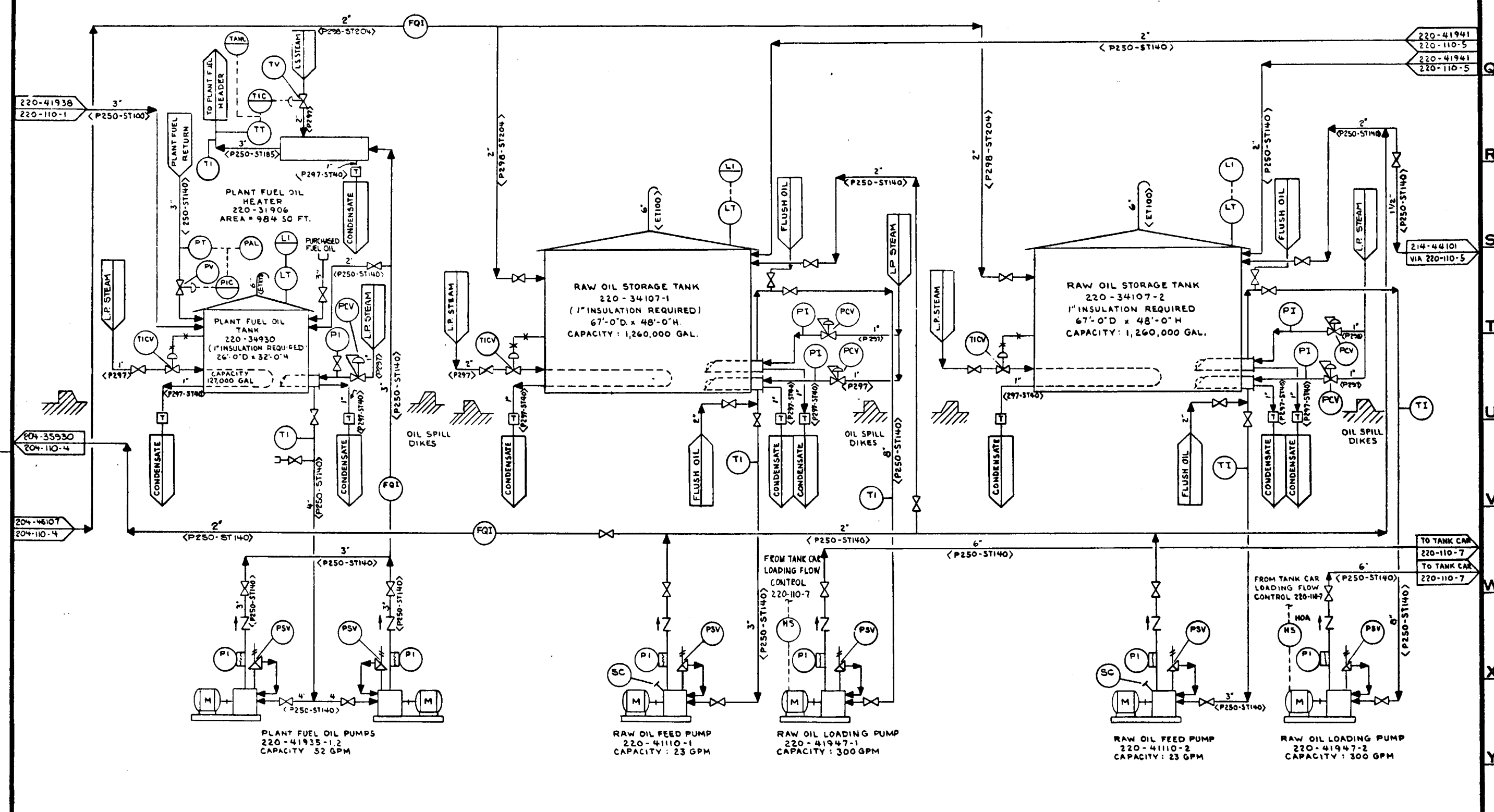
REVISIONS					REVISIONS					REVISIONS				
NO.	DATE	BY	CHK'D	APPR'D	NO.	DATE	BY	CHK'D	APPR'D	NO.	DATE	BY	CHK'D	APPR'D
1	12/14/11	AM	LA		1	12/14/11	AM	LA		1	12/14/11	AM	LA	
2					2					2				
3					3					3				
4					4					4				
5					5					5				
6					6					6				
7					7					7				
8					8					8				
9					9					9				
10					10					10				

DESIGNED	BY	DATE	DRAWING STATUS	ISSUED	DATE
12/14/11	AM	12/14/11	ISSUED	12/14/11	12/14/11
12/14/11	AM	12/14/11	FOR RECORD AND DEED	12/14/11	12/14/11
12/14/11	AM	12/14/11	FOR COMMENTS AND/OR APPROVAL	12/14/11	12/14/11
12/14/11	AM	12/14/11	FOR CUSTOMER APPROVAL	12/14/11	12/14/11
12/14/11	AM	12/14/11	AND/OR COMMENTS	12/14/11	12/14/11
12/14/11	AM	12/14/11	APPROVAL FOR CONSTRUCTION	12/14/11	12/14/11

TITLE	P&I DIAGRAM	PROJECT NO	7051
AREA 220	FACILITIES	DRAWING NO.	220-110-1
OIL STORAGE I		CASE	DC
U.S. DOE	ENERGY TECHNOLOGY	REV.	
FOSSIL ENERGY PROGRAMS			
CONTRACT NO. EP-77-C-01-2012			
PREPARED FOR THE			
ILLINOIS COAL GASIFICATION GROUP			
BY			
DRAYO CORPORATION PITTSBURGH, PA.			



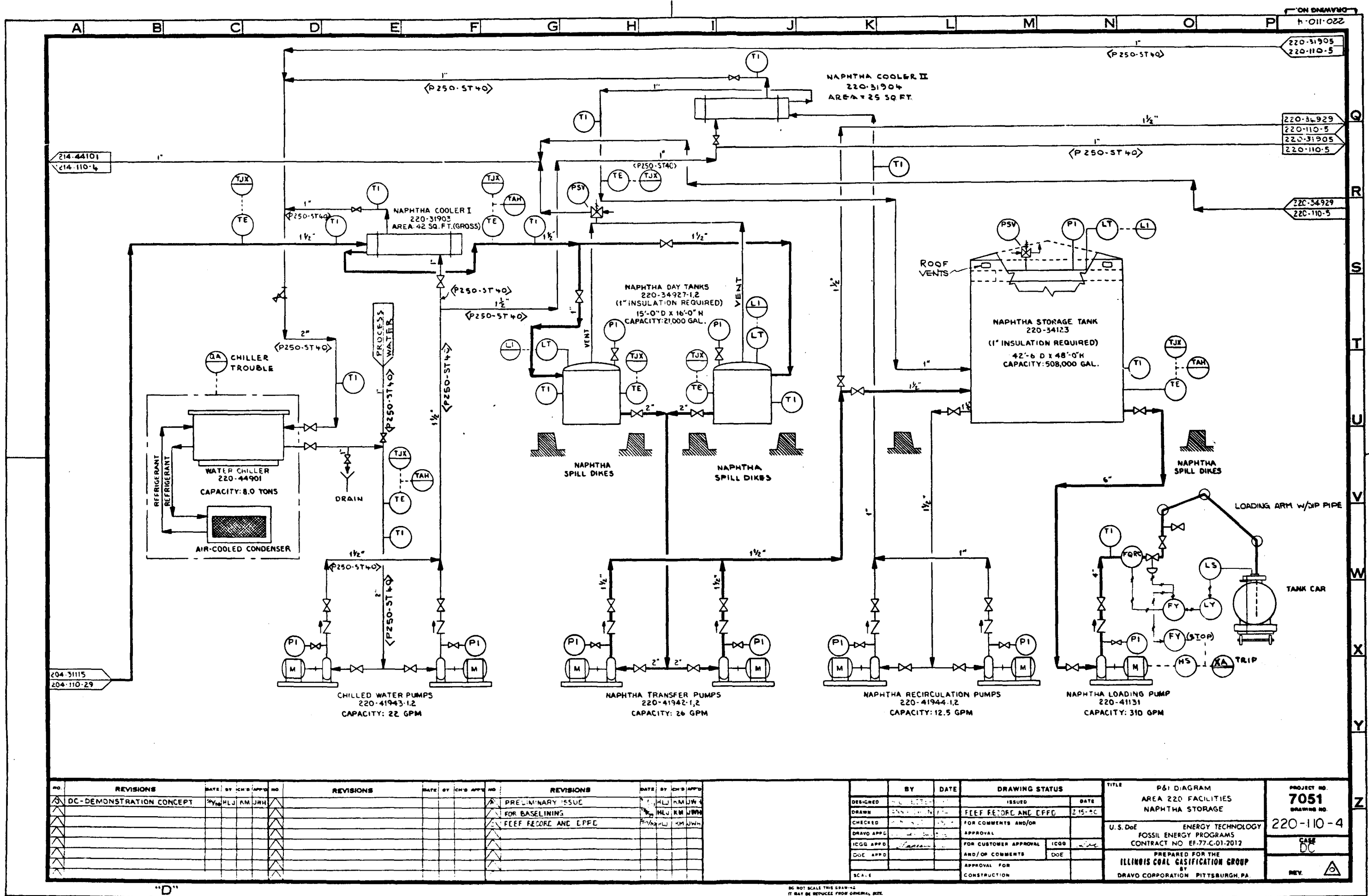
"D"



REVISIONS					REVISIONS					REVISIONS				
NO.	DATE	BY	CHK'D	APPR'D	NO.	DATE	BY	CHK'D	APPR'D	NO.	DATE	BY	CHK'D	APPR'D
1	10/1/80	H. J. RM	JWH		1	10/1/80	H. J. RM	JWH		1	10/1/80	H. J. RM	JWH	
2	10/1/80	H. J. RM	JWH		2	10/1/80	H. J. RM	JWH		2	10/1/80	H. J. RM	JWH	
3	10/1/80	H. J. RM	JWH		3	10/1/80	H. J. RM	JWH		3	10/1/80	H. J. RM	JWH	
4	10/1/80	H. J. RM	JWH		4	10/1/80	H. J. RM	JWH		4	10/1/80	H. J. RM	JWH	
5	10/1/80	H. J. RM	JWH		5	10/1/80	H. J. RM	JWH		5	10/1/80	H. J. RM	JWH	
6	10/1/80	H. J. RM	JWH		6	10/1/80	H. J. RM	JWH		6	10/1/80	H. J. RM	JWH	
7	10/1/80	H. J. RM	JWH		7	10/1/80	H. J. RM	JWH		7	10/1/80	H. J. RM	JWH	
8	10/1/80	H. J. RM	JWH		8	10/1/80	H. J. RM	JWH		8	10/1/80	H. J. RM	JWH	
9	10/1/80	H. J. RM	JWH		9	10/1/80	H. J. RM	JWH		9	10/1/80	H. J. RM	JWH	
10	10/1/80	H. J. RM	JWH		10	10/1/80	H. J. RM	JWH		10	10/1/80	H. J. RM	JWH	

BY	DATE	DRAWING STATUS
DESIGNED	10/1/80	ISSUED
DRAWN	R. KARLIK	PDEP RECORD AND DPPD
CHECKED	K. M. F. U. T.	FOR COMMENTS AND/OR APPROVAL
DRAGO APPD	10/1/80	FOR CUSTOMER APPROVAL
ICGG APPD	10/1/80	AND/OR COMMENTS
ONE APPD	10/1/80	APPROVAL FOR CONSTRUCTION
SCALE		

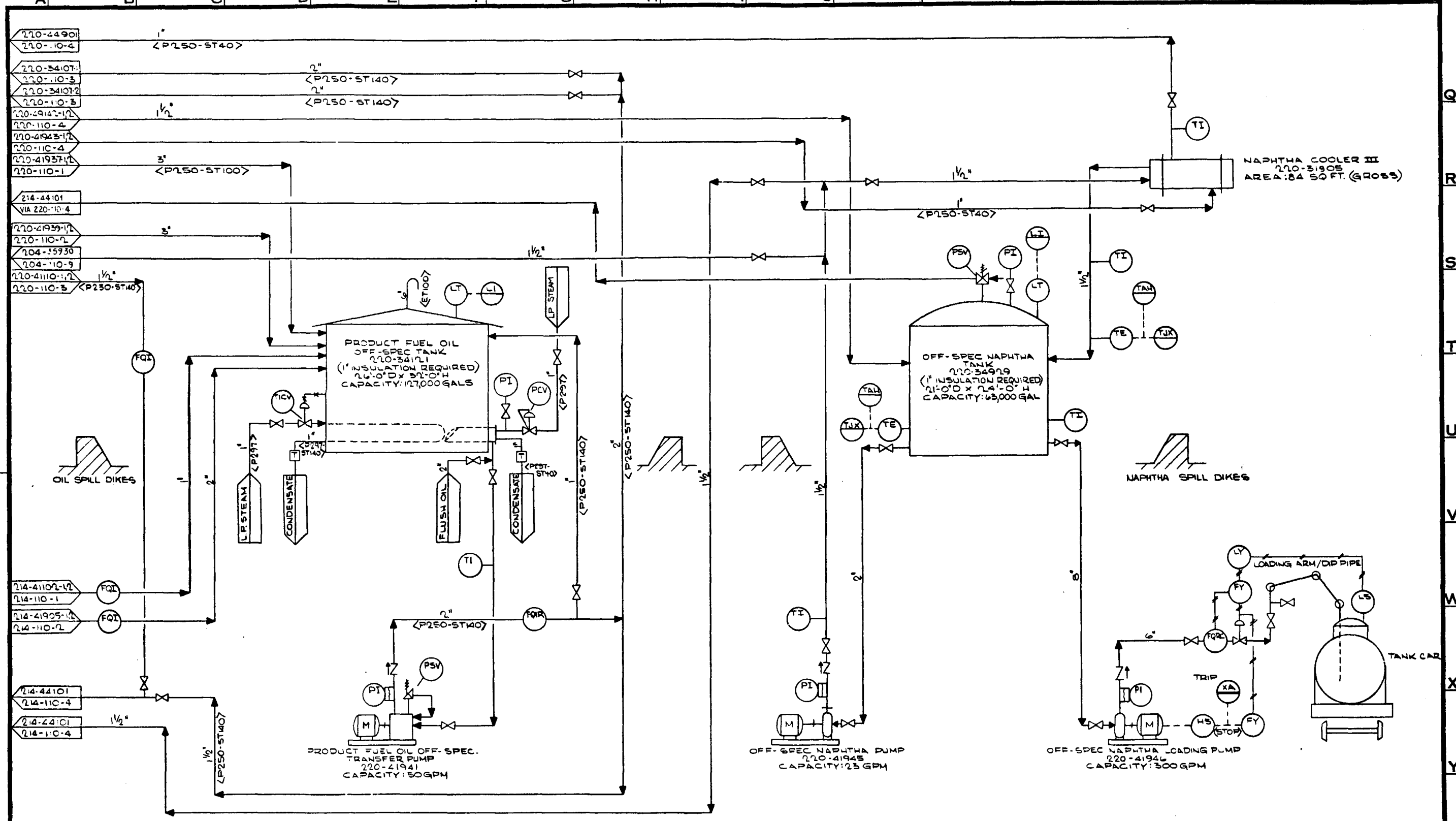
TITLE	P & I DIAGRAM AREA 220 - FACILITIES RAW OIL & PLANT FUEL OIL STORAGE	PROJECT NO. 7051 DRAWING NO. 220-110-3
U.S. DoE	ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012	CASE DC
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAGO CORPORATION PITTSBURGH PA		REV.



REVISIONS				REVISIONS			
NO.	DATE	BY	CHK'D	NO.	DATE	BY	CHK'D
1	10/15/10	HLJ	AM	1	10/15/10	HLJ	AM
2	10/15/10	HLJ	AM	2	10/15/10	HLJ	AM
3	10/15/10	HLJ	AM	3	10/15/10	HLJ	AM
4	10/15/10	HLJ	AM	4	10/15/10	HLJ	AM
5	10/15/10	HLJ	AM	5	10/15/10	HLJ	AM
6	10/15/10	HLJ	AM	6	10/15/10	HLJ	AM
7	10/15/10	HLJ	AM	7	10/15/10	HLJ	AM
8	10/15/10	HLJ	AM	8	10/15/10	HLJ	AM
9	10/15/10	HLJ	AM	9	10/15/10	HLJ	AM
10	10/15/10	HLJ	AM	10	10/15/10	HLJ	AM

BY		DATE		DRAWING STATUS	
DESIGNED	HLJ	10/15/10	10/15/10	ISSUED	2/15/10
DRAWN	HLJ	10/15/10	10/15/10	FOR RECORD AND EFPD	
CHECKED	HLJ	10/15/10	10/15/10	FOR COMMENTS AND/OR	
DRAWN APPD	HLJ	10/15/10	10/15/10	APPROVAL	
ICGG APPD	HLJ	10/15/10	10/15/10	FOR CUSTOMER APPROVAL	
DOE APPD	HLJ	10/15/10	10/15/10	AND/OR COMMENTS	
SCALE				APPROVAL FOR CONSTRUCTION	

P&I DIAGRAM AREA 220 FACILITIES NAPHTHA STORAGE		PROJECT NO. 7051 DRAWING NO. 220-110-4	
U.S. DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C-01-2012		CASE DC	
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAYO CORPORATION PITTSBURGH, PA.		REV. A	



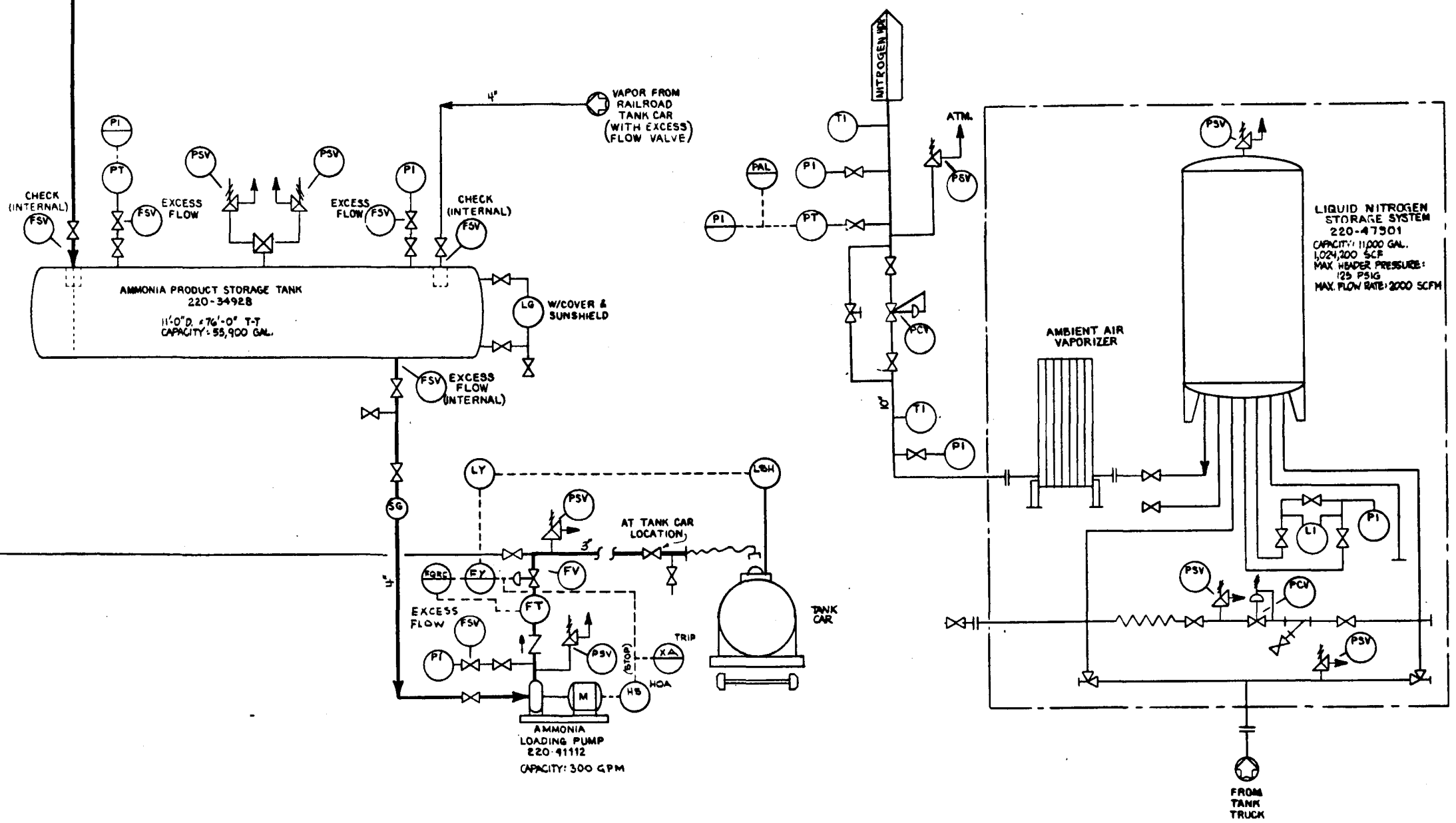
NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D
1	DC-DEMONSTRATION CONCEPT	12/15/11	KMM	JWH		1	PPE MINISTRY ISSUE (NEW DRAWING)	12/15/11	HLJ	KMM	JWH	1	PPE MINISTRY ISSUE (NEW DRAWING)	12/15/11	HLJ	KMM	JWH
2						2	PDBP RECORD AND DPPD	12/15/11	HLJ	KMM	JWH	2	PDBP RECORD AND DPPD	12/15/11	HLJ	KMM	JWH
3						3						3					
4						4						4					
5						5						5					
6						6						6					
7						7						7					
8						8						8					
9						9						9					
10						10						10					

DESIGNED	BY	DATE	DRAWING STATUS	ISSUED	DATE
AL JESTER	AL JESTER	12/15/11	ISSUED		
DRAWN	D.A. NIKNEKA	12/15/11	PDBP RECORD AND DPPD		12/15/11
CHECKED	HLJ	12/15/11	FOR COMMENTS AND/OR		
DRAWN APP'D	HLJ	12/15/11	APPROVAL		
ICGG APP'D	HLJ	12/15/11	FOR CUSTOMER APPROVAL	ICGG	12/15/11
DOE APP'D	HLJ	12/15/11	AND/OR COMMENTS	DOE	
SCALE			APPROVAL FOR		
			CONSTRUCTION		

TITLE	DC DEMONSTRATION CONCEPT	PROJECT NO	7051
AREA 220	OFF-SPEC OIL AND NAPHTHA STORAGE	DRAWING NO	220-110-5
U.S. DOE	ENERGY TECHNOLOGY	CASE	DC
FOSSIL ENERGY PROGRAMS	CONTRACT NO. EF-77-C 01-2012	REV.	
PREPARED FOR THE	ILLINOIS COAL GASIFICATION GROUP		
BY	DRAGO CORPORATION PITTSBURGH, PA		

213-41107
213-110-

218-35912
218-110-19

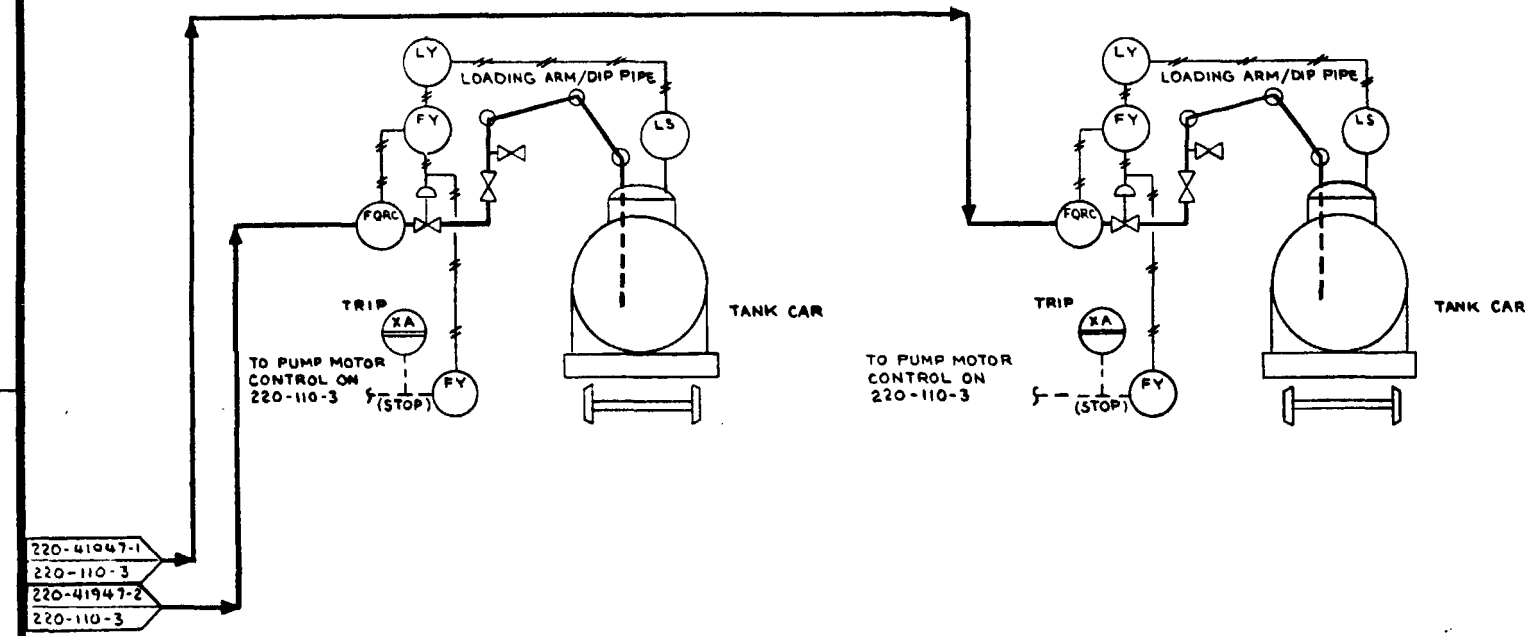


REVISIONS					REVISIONS					REVISIONS				
NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D
1	7/1/82	HLJ	KM	JR	1	7/1/82	HLJ	KM	JR	1	7/1/82	HLJ	KM	JR
2					2					2				
3					3					3				
4					4					4				
5					5					5				
6					6					6				
7					7					7				
8					8					8				
9					9					9				
10					10					10				

BY		DATE		DRAWING STATUS	
DESIGNED				ISSUED	
DRAWN				PDEP REVIEW AND	
CHECKED				FOR COMMENTS AND/OR	
DRAWN APPD				APPROVAL	
ICGG APPD				FOR CUSTOMER APPROVAL	
APPD				AND/OR COMMENTS	
SCALE				APPROVAL FOR	
				CONSTRUCTION	

TITLE		PROJECT NO.	
P&ID DIAGRAM		7051	
AREA 220 FACILITIES		DRAWING NO.	
AMMONIA & NITROGEN STORAGE		220-110-6	
U.S. DoE ENERGY TECHNOLOGY		CASE	
FOSSIL ENERGY PROGRAMS		DC	
CONTRACT NO. EF-77-C-01-2012		REV.	
PREPARED FOR THE			
ILLINOIS COAL GASIFICATION GROUP			
BY			
DRAVO CORPORATION PITTSBURGH, PA.			

DO NOT SCALE THIS DRAWING
IT MAY BE REDUCED FROM ORIGINAL SIZE



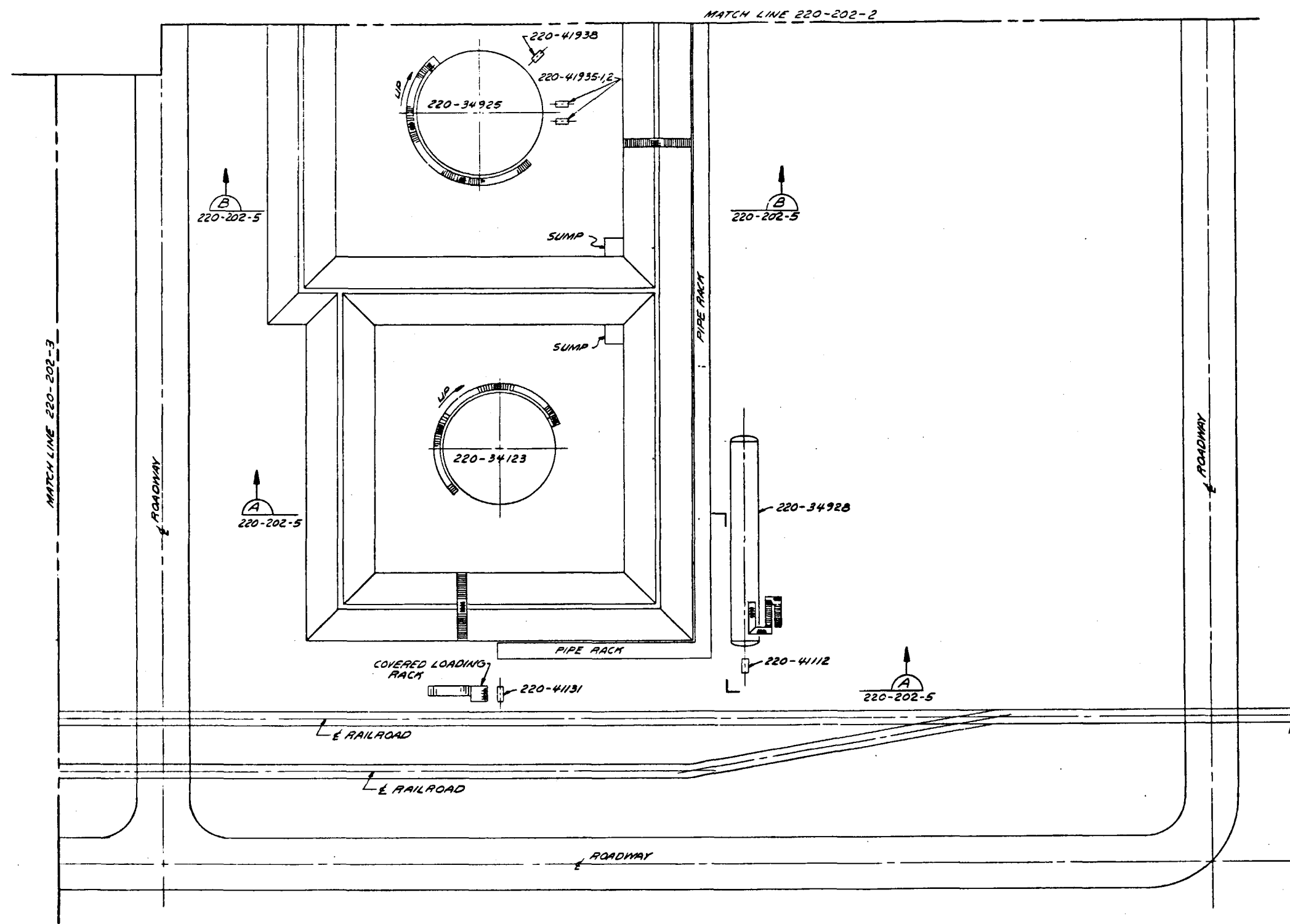
220-41047-1
220-110-3
220-41947-2
220-110-3

REVISIONS					REVISIONS					REVISIONS				
NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D
1					1					1				
2					2					2				
3					3					3				
4					4					4				
5					5					5				
6					6					6				
7					7					7				
8					8					8				
9					9					9				
10					10					10				

BY		DATE	DRAWING STATUS		TITLE		PROJECT NO.
DESIGNED	H. JESTER	1/20/84	ISSUED	DATE	P & I DIAGRAM AREA 220 FACILITIES HEAVY OIL LOADING STATION		7051
DRAWN	E. JESTER	1/21/84	P&BP RECORD AND DPPD	2/1/85			DRAWING NO.
CHECKED	K. MIGHT	1/21/84	FOR COMMENTS AND/OR		U.S. DOE ENERGY TECHNOLOGY		220-110-7
DRAWN APP'D	E. JESTER	2/15/85	APPROVAL		FOSSIL ENERGY PROGRAMS		CASE
ICGG APP'D			FOR CUSTOMER APPROVAL	ICGG	CONTRACT NO. EF-77-C-01-2012		DC
DOE APP'D			AND/OR COMMENTS	DOE	PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP		REV.
SCALE			APPROVAL FOR CONSTRUCTION		BY DRAVO CORPORATION PITTSBURGH PA		

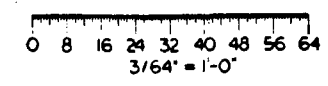
DO NOT SCALE THIS DRAWING
IT MAY BE REDUCED FROM ORIGINAL SIZE

ON DRAWING
1-202-022



ITEM NO.	DESCRIPTION
220-34123	NAPHTHA STORAGE TANK
220-34925	#6 FUEL OIL STORAGE TANK
220-34928	AMMONIA PRODUCT STORAGE TANK
220-41112	AMMONIA LOADING PUMP
220-41131	NAPHTHA LOADING PUMP
220-41935-1,2	PLANT FUEL PUMP
220-41938	#6 FUEL OIL LOADING PUMP

PRELIMINARY NOT APPROVED FOR CONSTRUCTION



NO.	REVISIONS	DATE	BY	CHK'D	APPR'D	NO.	REVISIONS	DATE	BY	CHK'D	APPR'D	NO.	REVISIONS	DATE	BY	CHK'D	APPR'D
1	ISSUED FOR 3-SECURE																
2	ISSUED FOR 2200 REMAP																

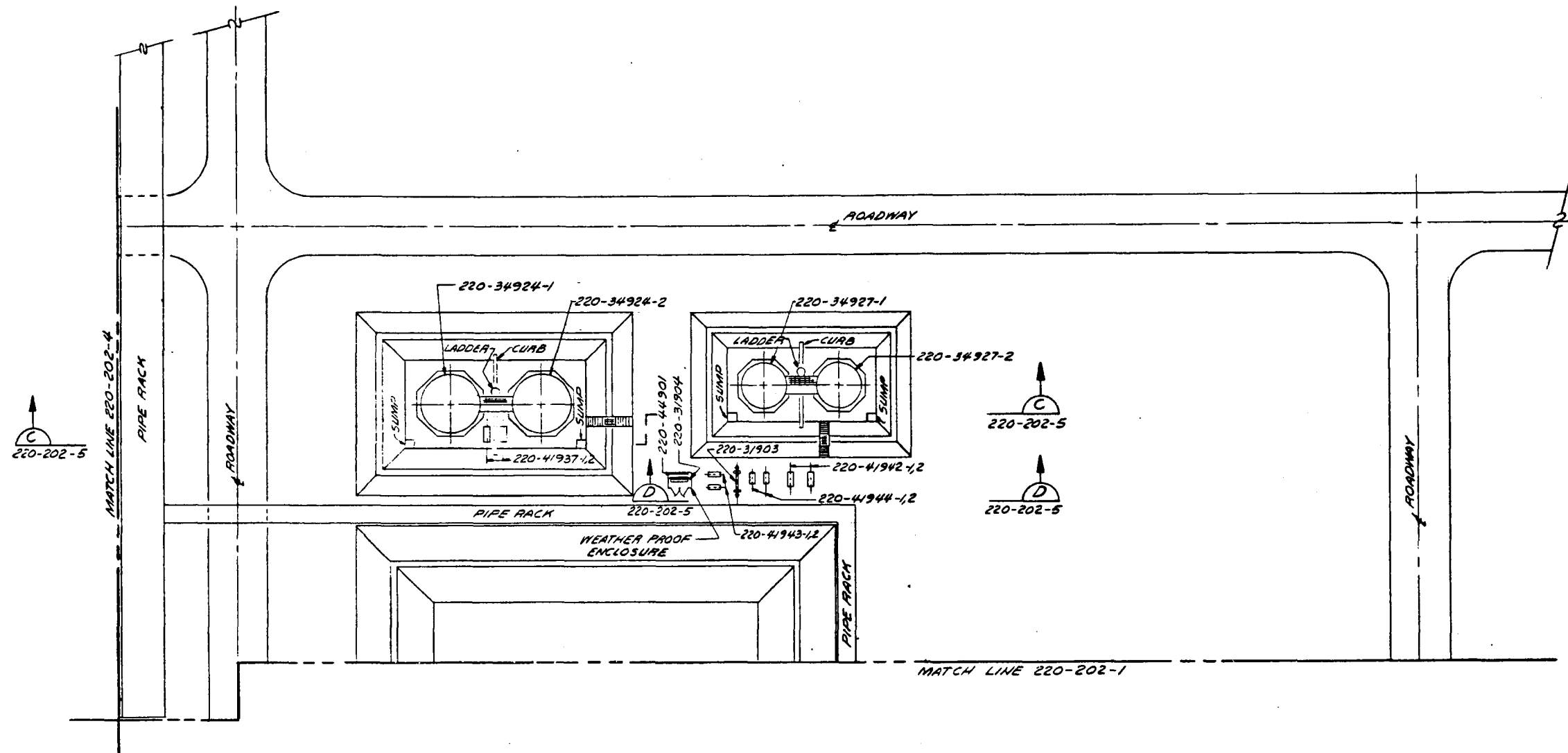
	BY	DATE	DRAWING STATUS	
DESIGNED			ISSUED	DATE
DRAWN	J. F. 535	1-1-80	FOR DDPD REPERT	2-15-80
CHECKED			FOR COMMENTS AND/OR	
DRAWN APPD			APPROVAL	
ICGS APPD			FOR CUSTOMER APPROVAL	ICGS
APPD			AND/OR COMMENTS	
			APPROVAL FOR	
SCALE	1" = 1'-0"		CONSTRUCTION	

TITLE PRODUCT STORAGE LAYOUT PLAN	PROJECT NO. 7051
U.S. DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-C 01 2012	DRAWING NO. 220-202-1
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRACO CORPORATION PITTSBURGH, PA.	CASE DC

ON DRAWING 2-202-022

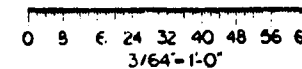


ITEM NO.	EQUIPMENT LIST
DESCRIPTION	
220-31903	NAPHTHA COOLER I
220-31904	NAPHTHA COOLER II
220-34924-1,2	#6 FUEL OIL DAY TANK
220-34927-1,2	NAPHTHA DAY TANK
220-41937-1,2	#6 FUEL OIL TRANSFER PUMP
220-41942-1,2	NAPHTHA TRANSFER PUMP
220-41943-1,2	CHILLED WATER PUMP
220-41944-1,2	NAPHTHA RECIRCULATION PUMP
220-44901	WATER CHILLER



PRELIMINARY

NOT APPROVED FOR CONSTRUCTION

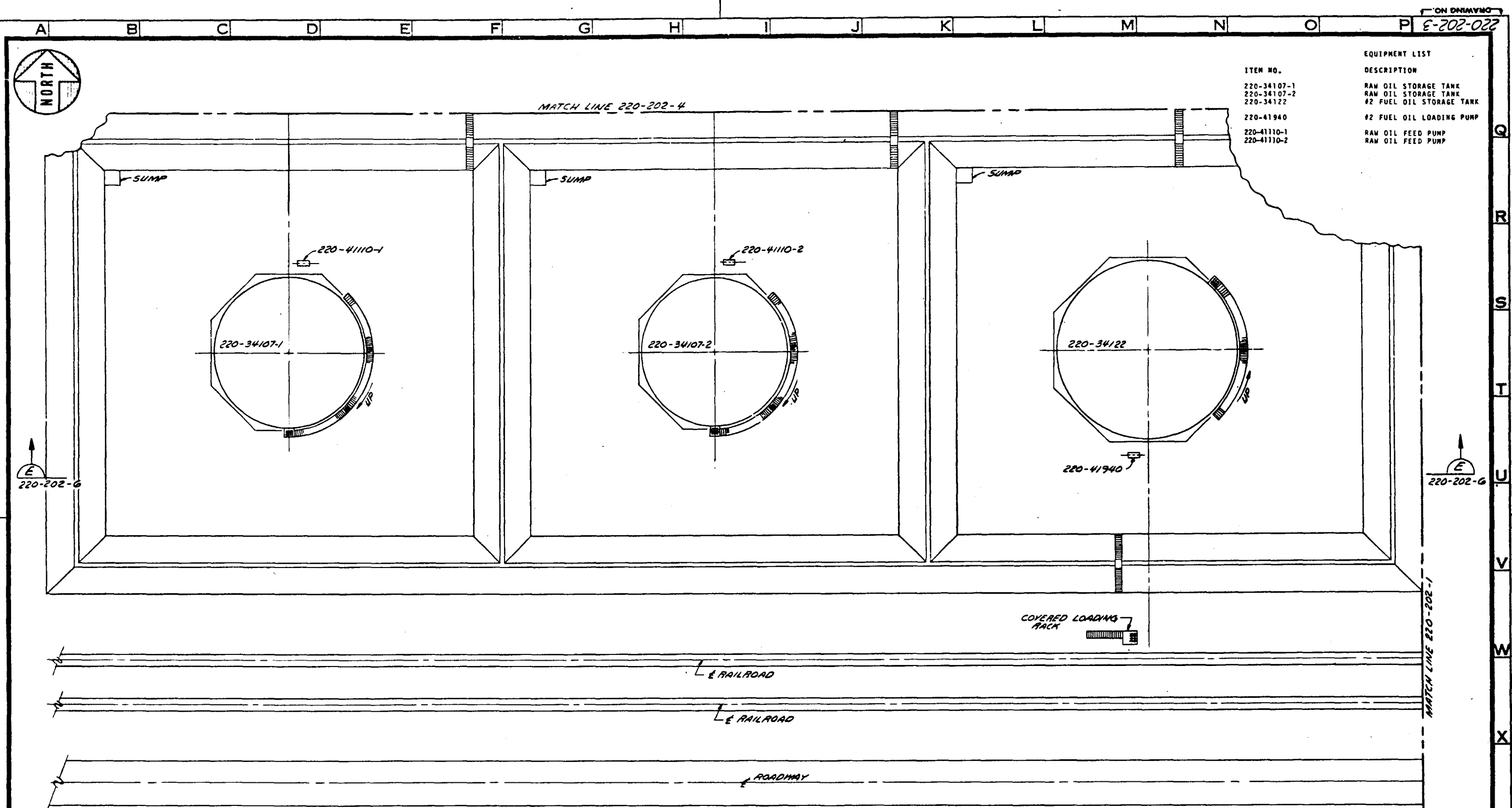


NO.	REVISIONS	DATE	BY	CHK'D	APPR'D	NO.	REVISIONS	DATE	BY	CHK'D	APPR'D	NO.	REVISIONS	DATE	BY	CHK'D	APPR'D	NO.
1	ISSUED FOR BIDDING	11/1/64																
2	ISSUED FOR CONSTRUCTION	11/1/64																

BY	DATE	DRAWING STATUS	DATE
DESIGNED		ISSUED	
DRAWN	11-1-64	FOR DDPD REPORT 2-15-64	
CHECKED		FOR COMMENTS AND/OR	
DRAWN APPR		APPROVAL	
ILGW APPR		FOR CUSTOMER APPROVAL	ICGW
APPR		AND/OR COMMENTS	
		APPROVAL FOR	
		CONSTRUCTION	

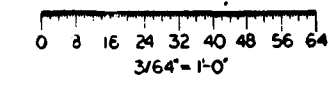
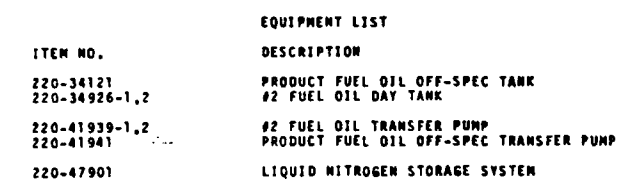
TITLE	PROJECT NO.
PRODUCT STORAGE LAYOUT PLAN	7051
	DRAWING NO.
U.S. DEE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EY-77-CO-2012	220-202-2
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAYO CORPORATION PITTSBURGH PA	CASE DC
	REV. A

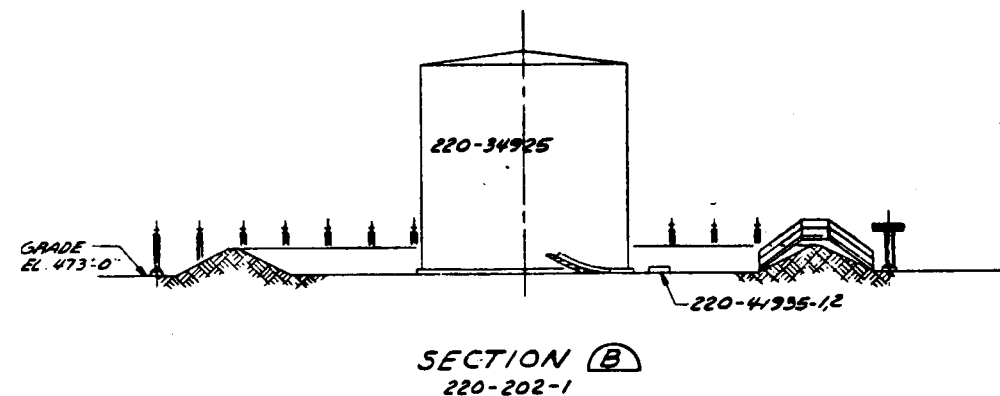
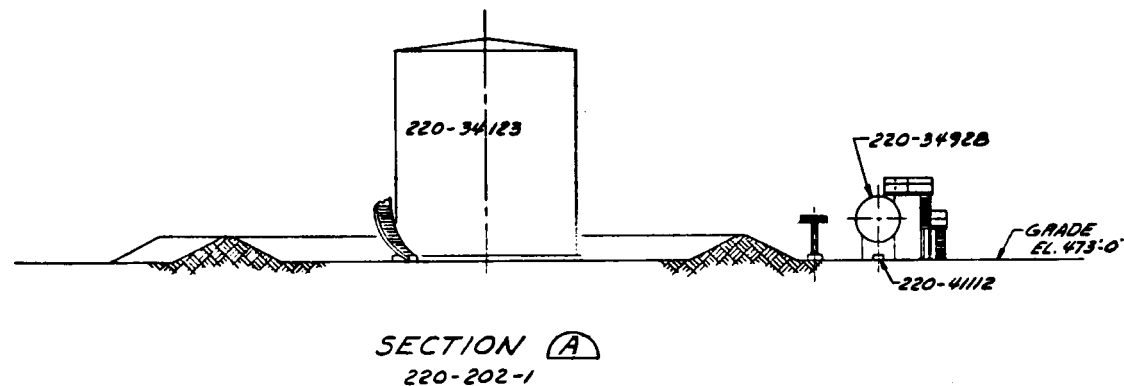
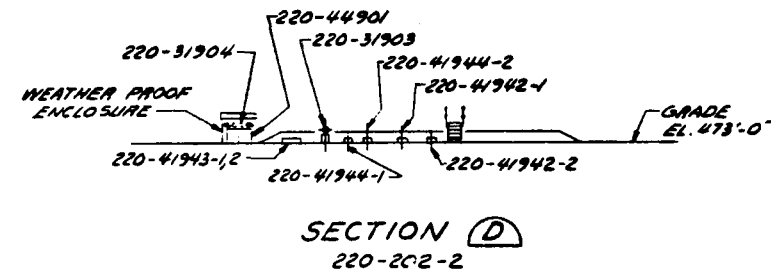
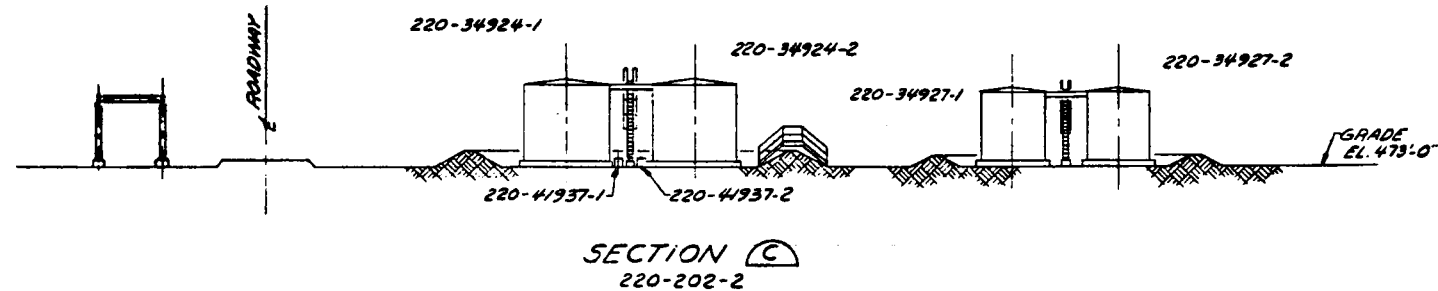
DO NOT SCALE THIS DRAWING IT MAY BE REDUCED FROM ORIGINAL SIZE

[illegible]

"D"

DO NOT SCALE THIS DRAWING
IT MAY BE REDUCED FROM ORIGINAL SIZE

[illegible]



PRELIMINARY NOT APPROVED FOR CONSTRUCTION

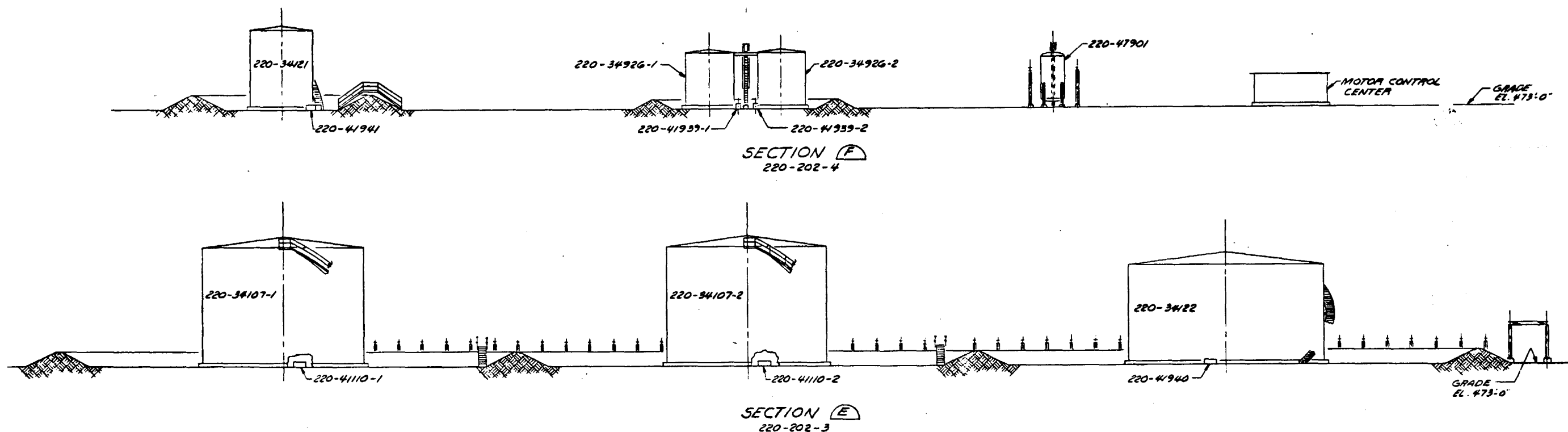
0 8 16 24 32 40 48 56 64
3/64"=1'-0"

REVISIONS					REVISIONS					REVISIONS					DRAWING STATUS			TITLE		PROJECT NO.	
NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D	NO.	DATE	BY	CHK'D	APP'D	DESIGNED	ISSUED	DATE	PRODUCT STORAGE LAYOUT SECTION		7051	
1	11/10/01	CL													CL	11/10/01	11/10/01	U.S. DoE ENERGY TECHNOLOGY		220-202-5	
2	11/10/01	CL													FOR COMMENTS AND/OR APPROVAL			FOSSIL ENERGY PROGRAMS		CASE	
															FOR CUSTOMER APPROVAL	ICGG		CONTRACT NO. EF-77-C-01-2012		DC	
															AND/OR COMMENTS	DCL		PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP		REV.	
															APPROVAL FOR CONSTRUCTION			BY DRAYO CORPORATION PITTSBURGH PA		REV.	
															SCALE						

"D"

DO NOT SCALE THIS DRAWING
IT MAY BE REDUCED FROM ORIGINAL SIZE

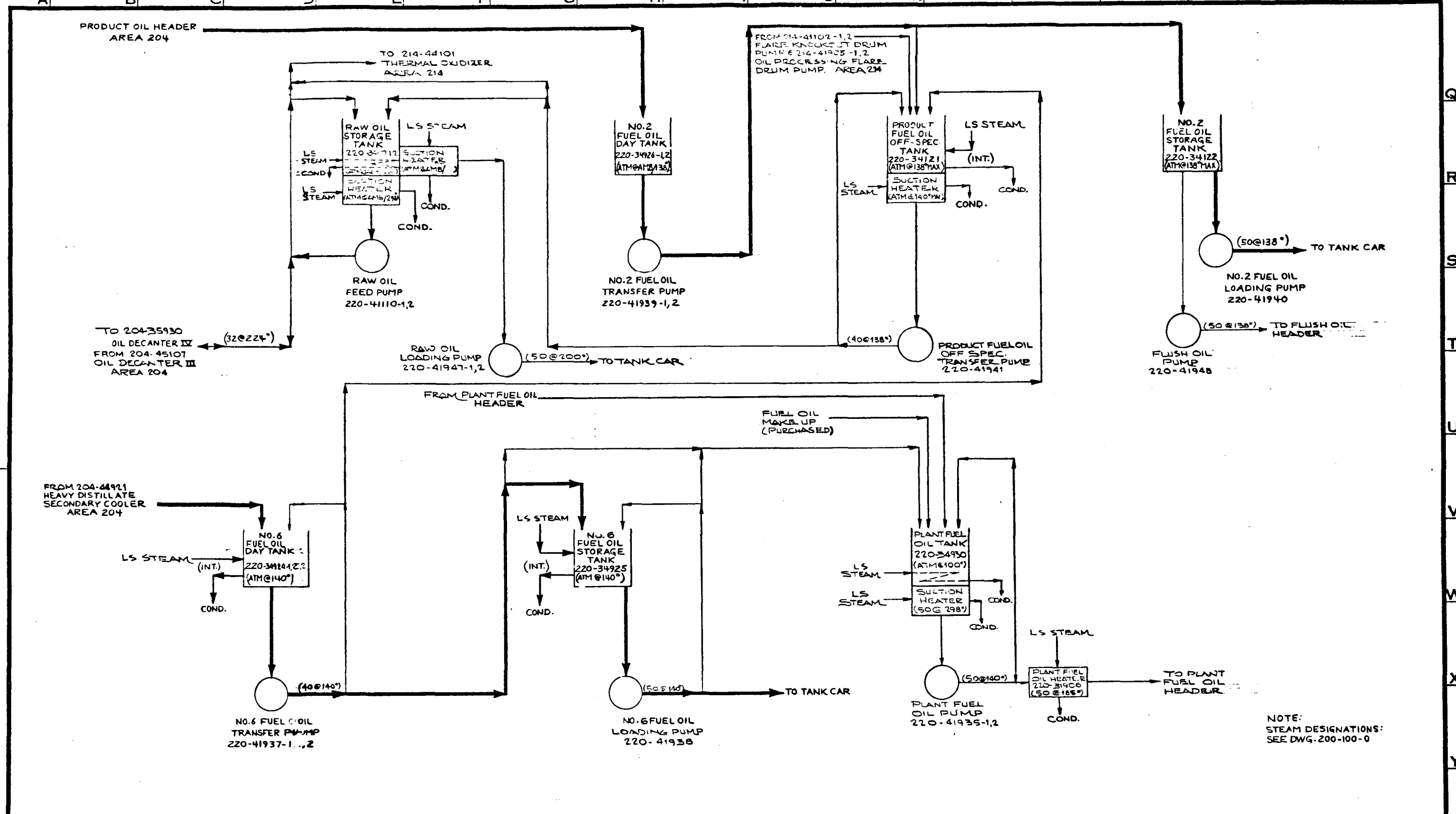
	Q
	R
	S
	T
	U
	V
	W
	X
	Y
	Z



PRELIMINARY

**NOT APPROVED FOR
CONSTRUCTION**

[illegible]



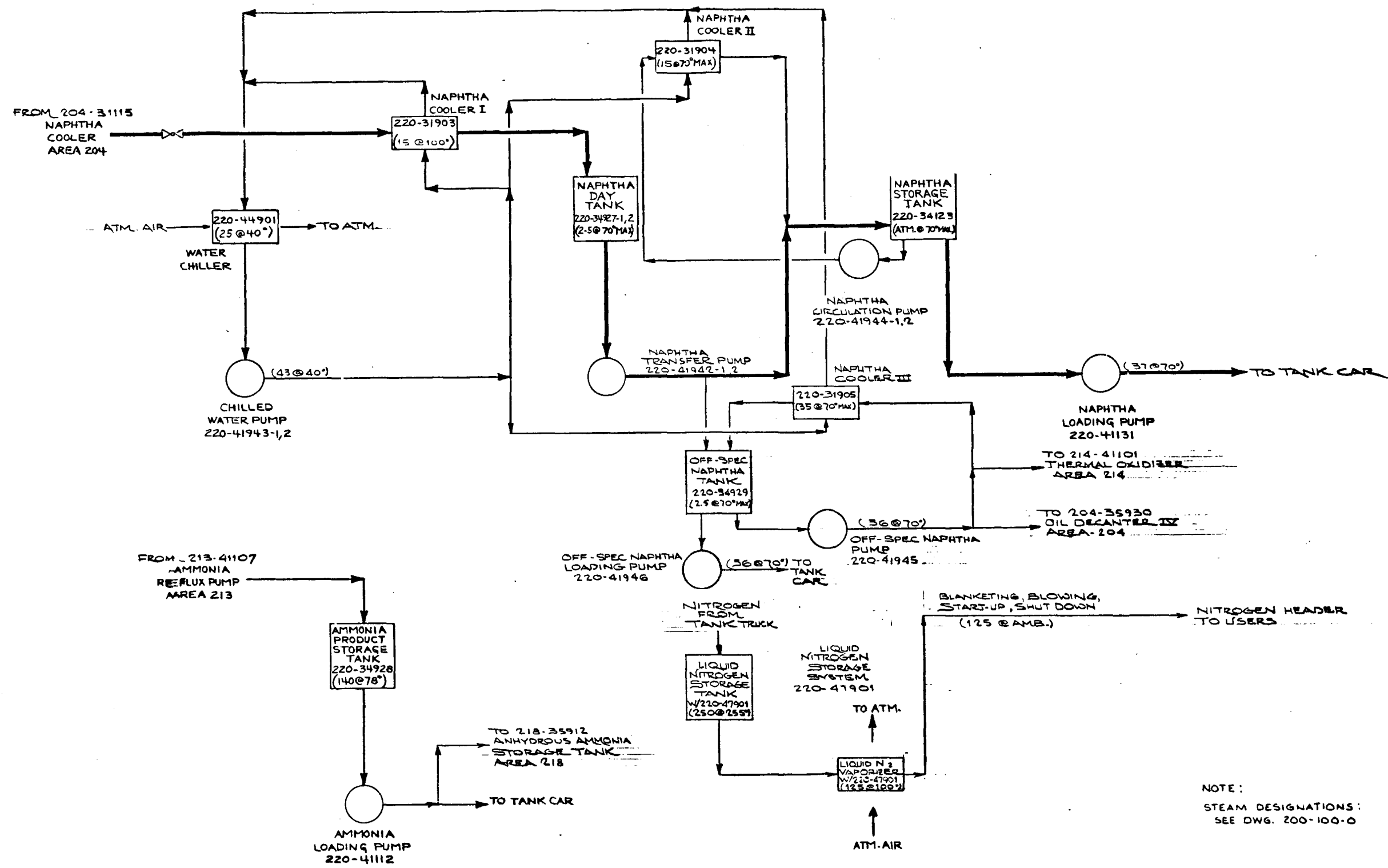
REVISIONS					REVISIONS					REVISIONS				
NO.	DATE	BY	CHK'D	APPR'D	NO.	DATE	BY	CHK'D	APPR'D	NO.	DATE	BY	CHK'D	APPR'D
1		DPPD												
2														
3														
4														
5														
6														
7														
8														
9														
10														

BY	DATE	DRAWING STATUS
DESIGNED	2-12-80	ISSUED
DRAWN	2-12-80	DPPD
CHECKED	2-12-80	FOR COMMENTS AND/OR APPROVAL
DRAWN APPR'D	2-12-80	APPROVAL
ICGG APPR'D		FOR CUSTOMER APPROVAL
APPR'D		AND/OR COMMENTS
SCALE		APPROVAL FOR CONSTRUCTION

TITLE: PRELIMINARY PRESSURE AND TEMPERATURE DIAGRAMS-AREA Z20 FACILITIES	PROJECT NO. 7051
PRODUCT STORAGE I AND II	DRAWING NO. 220-650-001
U.S. DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-CO1 2012	CASE DC
PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRACO CORPORATION PITTSBURGH, PA.	REV.

"D"

DO NOT SCALE THIS DRAWING
IT MAY BE REDUCED FROM ORIGINAL SIZE



NOTE:
STEAM DESIGNATIONS:
SEE DWG. 200-100-0

NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.	REVISIONS	DATE	BY	CHK'D	APP'D	NO.
1	DPPD	2-12-82	JR	JR	WGS													

DESIGNED	BY	DATE	DRAWING STATUS	DATE
DRAWN			ISSUED	
CHECKED			FOR COMMENTS AND/OR APPROVAL	
DRAWN APP'D			APPROVAL	
ICGG APP'D			FOR CUSTOMER APPROVAL	ICGG
DC APP'D			AND/OR COMMENTS	DC
SCALE			APPROVAL FOR CONSTRUCTION	

TITLE PRELIMINARY PRESS. AND TEMPERATURE DIAGRAM - AREA 200 FACILITIES

BY-PRODUCT & CHEMICAL STORAGE

U.S. DOE ENERGY TECHNOLOGY FOSSIL ENERGY PROGRAMS CONTRACT NO. EF-77-CO1-2012

PREPARED FOR THE ILLINOIS COAL GASIFICATION GROUP BY DRAYO CORPORATION PITTSBURGH, PA

PROJECT NO. 7051

DRAWING NO. 220-650-002

CASE DC

REV.

"D"

DO NOT SCALE THIS DRAWING
IT MAY BE REDUCED FROM ORIGINAL SIZE