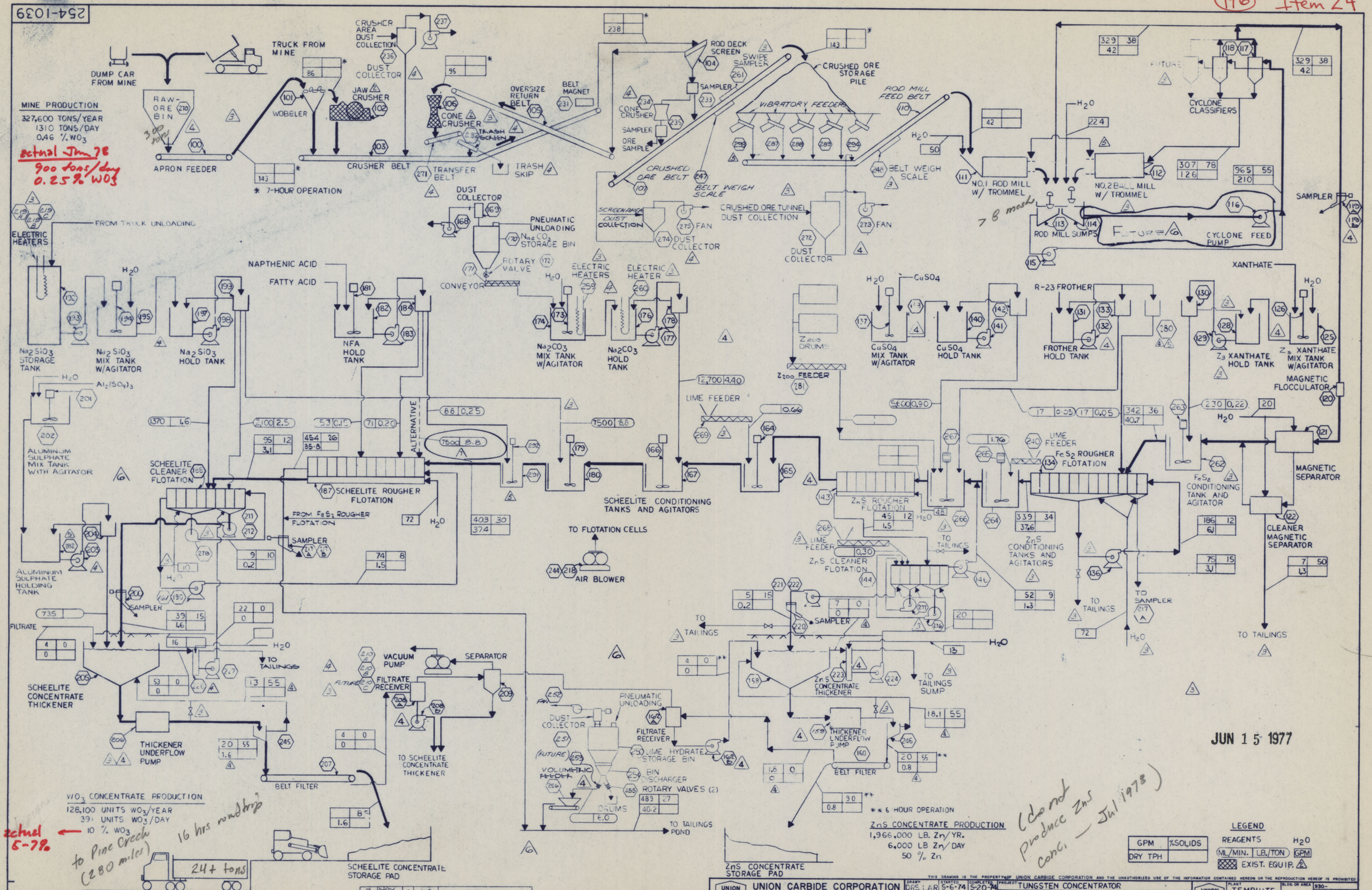
(176) Item Z4

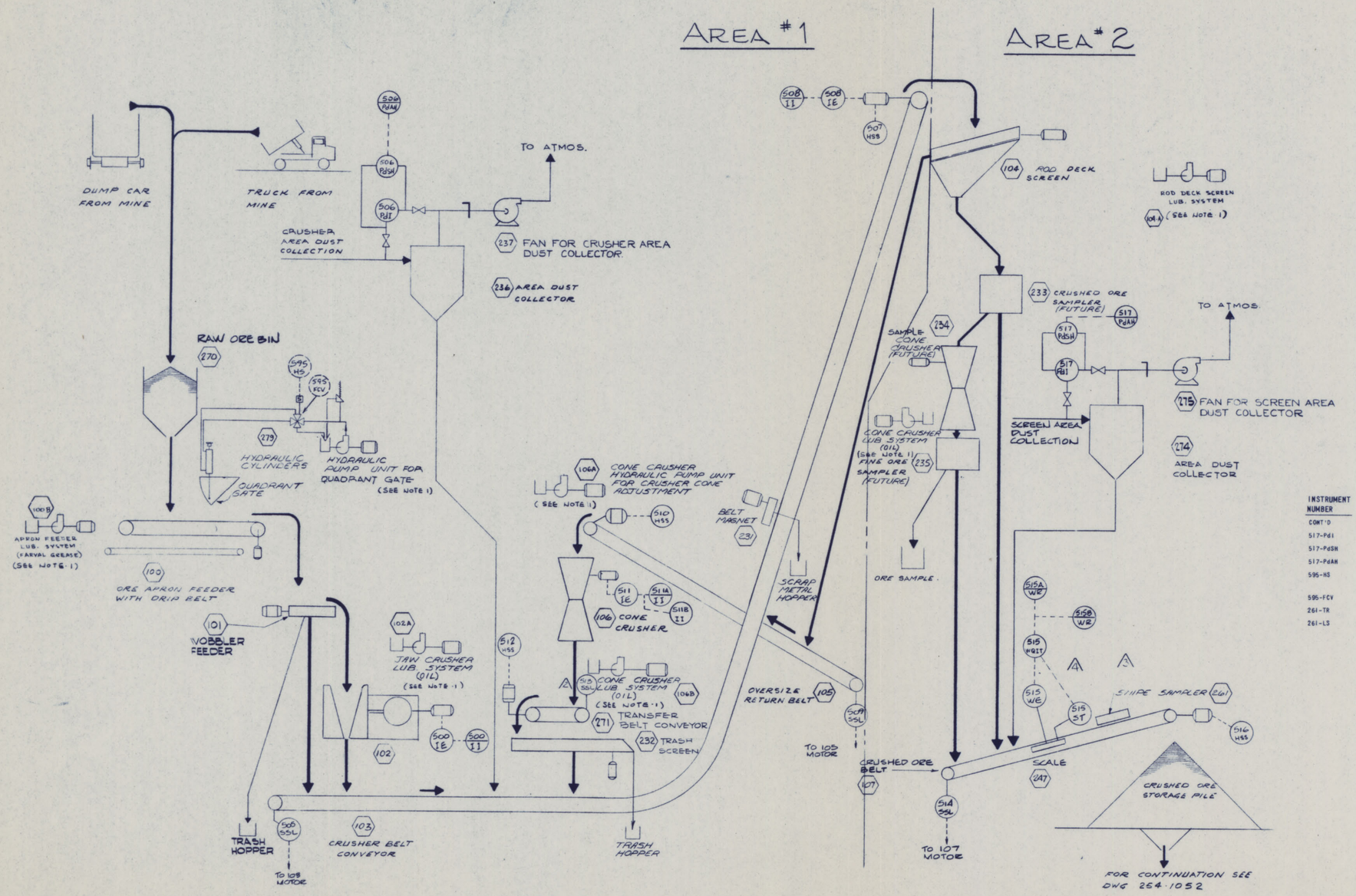
254-1039



4790 0021

254-1051

NOTE (1): SEE DWG. NO. 254-1402 FOR CRUSHER & EQ. LUB. AND HYDRAULIC SYSTEM PIPING DETAILS AND INSTRUMENTATION



EQUIPMENT NUMBER	EQUIPMENT DESCRIPTION	INSTALLATION DETAIL
100	ORE APRON FEEDER	254-1076
100B	APRON FEEDER GREASE LUB.	254-1076
101	WOBBLER FEEDER (USED)	254-1076
102	JAW CRUSHER (USED)	254-1075
102A	JAW CRUSHER LUB. OIL	254-1074
103	CRUSHER BELT CONVEYOR	254-1074
104	ROD DECK SCREEN	254-1085
104A	SCREEN GREASE LUB.	254-1085
105	OVERSIZE RETURN BELT	254-1085
106	CONE CRUSHER (USED)	254-1075
106A	HYDRAULIC PUMP CONE LIFT	254-1075
106B	CONE CRUSHER OIL LUB.	254-1074
107	CRUSHED ORE BELT	254-1085
231	BELT MAGNET	254-1074
232	TRASH SCREEN	254-1074
233	CRUSHED ORE SAMPLER (FUTURE)	254-1085
234	CONE CRUSHER (FUTURE)	254-1085
234A	SAMPLE CONE CRUSHER OIL LUB. (FUTURE)	254-1085
235	FINE ORE SAMPLER (FUTURE)	254-1085
236	DUST COLLECTOR FOR CRUSHER AREA	254-1074
237	FAN FOR CRUSHER AREA DUST COLLECTOR	254-1074
247	BELT WEIGH SCALE CRUSHED ORE	254-1085
261	BELT SWIPE SAMPLER	254-1296
270	RAW ORE BIN	254-1077
271	TRANSFER BELT CONVEYOR	254-1074
274	DUST COLLECTOR FOR SCREEN AREA	254-1085
276	FAN FOR SCREEN AREA DUST COLLECTOR	254-1085
279	QUADRANT GATE & HYD. PUMP UNIT	254-1076

INSTRUMENT NUMBER	INSTRUMENT DESCRIPTION	
500-1E	CURRENT TRANSFORMER	254-1376
500-11	AMMETER	254-1377
505-SSL	SPEED SWITCH	254-1394
506-PdI	PRESSURE INDICATOR	254-1501
506-PdSH	D.P. SWITCH	254-1501
506-PdAH	ANNUNCIATOR	254-1377
507-HSS	ROPE PULL SWITCH	254-1397
508-1E	CURRENT TRANSFORMER	254-1376
508-11	AMMETER	254-1377
509-SSL	SPEED SWITCH	254-1397
510-HSS	ROPE PULL SWITCH	254-1396
511-1E	CURRENT TRANSFORMER	254-1376
511A-11	AMMETER	254-1377
511B-11	AMMETER	254-1377
512-HSS	ROPE PULL SWITCH	254-1394
513-SSL	SPEED SWITCH	254-1394
514-SSL	SPEED SWITCH	254-1397
515-ST	MAG. SPEED TRANSMITTER	254-1397
515-WE	BELT SCALE	254-1397
515-WQIT	INTEGRATING TRANSMITTER	254-1377
515A-WR	TICKET PRINTER	254-1377
515B-WR	CHART RECORDER	254-1377
516-HSS	ROPE PULL SWITCH	254-1397

INSTRUMENT NUMBER	INSTRUMENT DESCRIPTION	INSTALLATION NUMBER
CONT'D		
517-PdI	PRESSURE INDICATOR	254-1501
517-PdSH	D.P. SWITCH	254-1501
517-PdAH	ANNUNCIATOR	254-1377
595-HS	MANUAL HYDRAULIC SWITCH	
595-FCV	SOLENOID VALVE	254-1396
261-TR	INTERVAL TIMER	254-1088
261-LS	LIMIT SWITCH	254-1088

JUN 15 1977

LEGEND

- INSTRUMENT MOUNTED IN CRUSHER CONTROL PANEL
- INSTRUMENT MOUNTED LOCAL TO EQUIPMENT
- INSTRUMENT IS SHOWN ELSEWHERE IN MORE DETAIL AND IS SHOWN HERE FOR INFORMATION ONLY.

THIS DRAWING SHALL BE USED IN CONJUNCTION WITH DRAWING 254-1052 TO 254-1056

REV.	DATE	BY	APPR	
4	NOV 1976	LAR	RAK	REMOVED 515W01
3	1976	LAR	RAK	REMOVED 261LS & 261TR
2	APR 1976	LAR	RAK	GENERAL REVISION
1	DEC 1975	J.C.	GEW	GENERAL REVISION
5	DEC 16-76	DRS	GEW	ADDED LINE NUMBERS TO PIPING

ACRES AMERICAN INCORPORATED BUFFALO NEW YORK

UNION CARBIDE CORPORATION
MINING AND METALS DIVISION
TECHNOLOGY DEPARTMENT
P.O. BOX 179 NIAGARA FALLS, N.Y. 14302

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DRAWN: NOV. 74 | STARTED: NOV. 74 | COMPLETED: AUG. 75 | SCALE:
CHK. | PROJ. ENG. W. Clarke

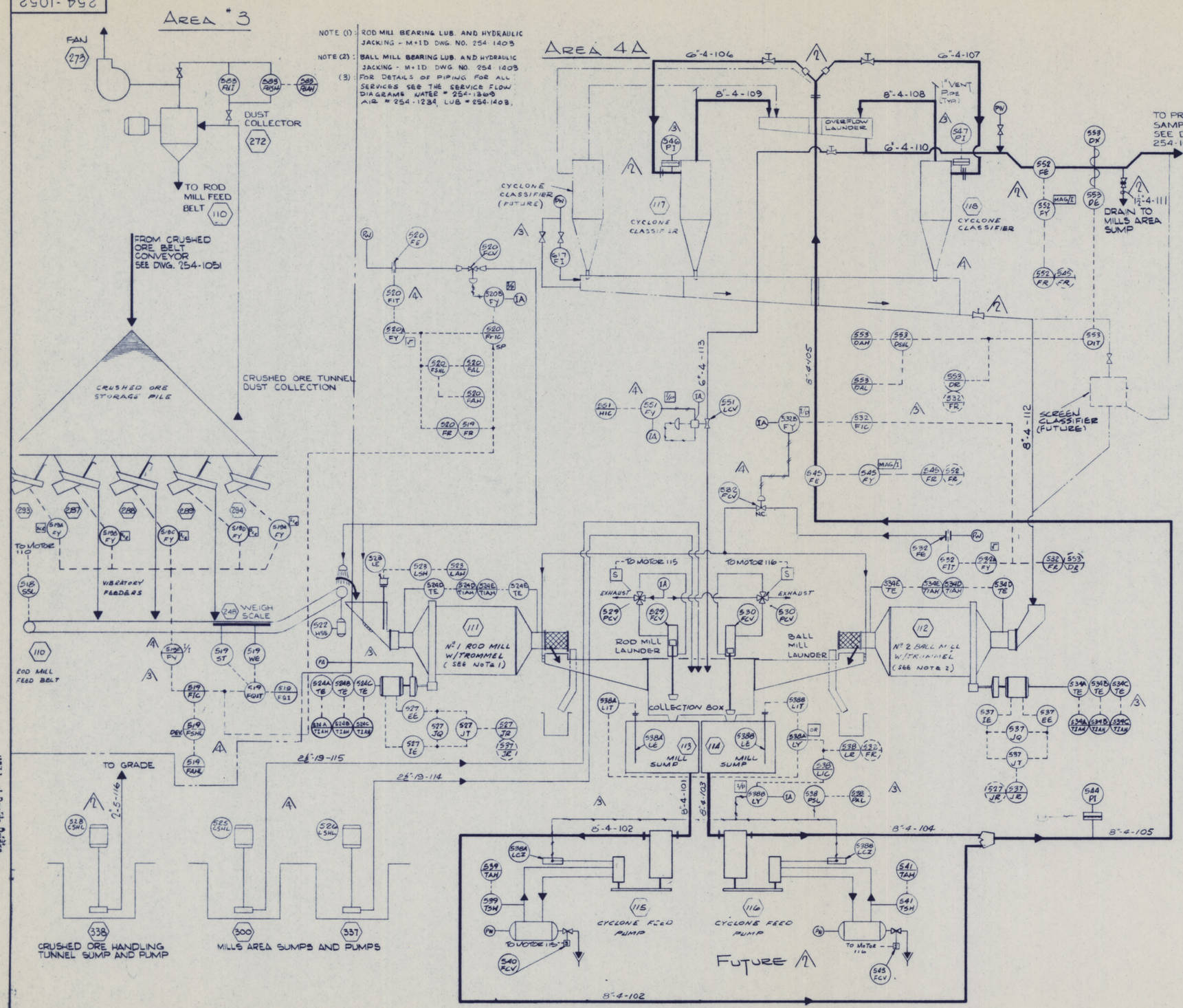
PROJECT: TUNGSTEN CONCENTRATOR
DWG. TITLE: MECHANICAL & INSTRUMENT FLOW DIAGRAM CRUSHING FACILITY SHEET 1 OF 6

UNION CARBIDE MINING AND METALS DIVISION
PLANT: TEMPIUTE | BLDG. OR AREA: 1 & 2 | 930-936-1156
DWG. NO. 2 5 4 - 1 0 5 1 | REV. NO. 5

FILING CLASSIFICATION: FLOW SHEET 4790 0021 ACRES DWG No. 3902-C-1051

Niagara Falls Bridge
Niagara Falls, N.Y.

254-1052



NOTE (1): ROD MILL BEARING LUB. AND HYDRAULIC JACKING - M+ID DWG. NO. 254-1403

NOTE (2): BALL MILL BEARING LUB. AND HYDRAULIC JACKING - M+ID DWG. NO. 254-1403

(3): FOR DETAILS OF PIPING FOR ALL SERVICES SEE THE SERVICE FLOW DIAGRAMS WATER # 254-1369 AIR # 254-1234, LUB # 254-1408.

LEGEND

- INSTRUMENT MOUNTED IN MILL CONTROL PANEL.
- INSTRUMENT MOUNTED IN BACK OF MILL PANEL.
- INSTRUMENT MOUNTED LOCAL TO EQUIPMENT
- INSTRUMENT SHOWN ELSEWHERE AS WELL.

EQUIPMENT NUMBER	EQUIPMENT DESCRIPTION	INSTALLATION DETAIL
110	ROD MILL FEED BELT	254-1300
111	NO. 1 ROD MILL	254-1314
112	NO. 2 BALL MILL	254-1314
113	MILL SUMP	254-1313
114	MILL SUMP	254-1313
115	CYCLONE FEED PUMP	254-1313
116	CYCLONE FEED PUMP	254-1313
117	CYCLONE CLASSIFIERS	254-1316
118	CYCLONE CLASSIFIERS	254-1316
248	BELT WEIGH SCALE MILL FEED	254-1302
272	CRUSHED ORE DUST COLLECTOR	254-1302
273	EXHAUST FAN FOR CRUSHED ORE DUST COLLECTOR	254-1302
287	VIBRATORY FEEDER	254-1300
288	VIBRATORY FEEDER	254-1300
289	VIBRATORY FEEDER	254-1300
293	VIBRATORY FEEDER	254-1300
294	VIBRATORY FEEDER	254-1300
300	MILL AREA SUMP AND PUMP	254-1313
337	MILL AREA SUMP AND PUMP	254-1313
338	CRUSHED ORE HANDLING TUNNEL SUMP AND PUMP	254-1300

INSTRUMENT NUMBER	INSTRUMENT NUMBER	INSTALLATION DETAIL
CONT'D.		
538-A-LCZ	POSITION PILOT	254-1448
538-A-LE	CAPACITANCE PROBE	
538-LIC	P & I CONTROLLER	254-1379
538-LR	CHART RECORDER	254-1379
538-A-LIT	CAPACITANCE TRANSMITTER	
538-A-LY	MERCURY RELAY	254-1380
538- PAL	ANNUNCIATOR	254-1380
538- PSL	PRESSURE SWITCH	
538-B-LCZ	POSITION PILOT	254-1448
538-B-LE	CAPACITANCE PROBE	
538-B-LIT	CAPACITANCE TRANSMITTER	
538-B-LY	I/P TRANSDUCER	
539-TAH	ANNUNCIATOR	254-1380
539-TSH	SWITCH	
540-FCV	SOLENOID VALVE	
541-TAH	ANNUNCIATOR	254-1380
541-TSH	TEMPERATURE SWITCH	
543-FCV	SOLENOID VALVE	
544-PI	PRESSURE GAUGE	
545-FE	MAG. FLOW TUBE	254-1383
545-FR	CHART RECORDER	254-1379
545-FY	MAG./CURRENT CONVERTER	254-1383
546-PI	PRESSURE GAUGE	
547-PI	PRESSURE GAUGE	
551-HIC	MANUAL LOADING STATION	254-1379
551-LCV	PINCH CONTROL VALVE	254-1449
552-FE	MAG. FLOW TUBE	254-1383
552-FR	CHART RECORDER	254-1379
552-FY	MAG./CURRENT CONVERTER	254-1383
553-DAH	ANNUNCIATOR	254-1380
553-DAL	ANNUNCIATOR	254-1380
553-DE	NUCLEONIC RECEIVER	254-1502
553-DIT	NV/I TRANSMITTER	254-1502
553-DR	CHART RECORDER	254-1379
553-DSHL	CURRENT SWITCH	254-1379
553-DX	NUCLEONIC SOURCE	254-1502
583-PdI	PRESSURE INDICATOR	254-1501
583-PdSH	DP SWITCH	254-1380
583-PdAH	ANNUNCIATOR	254-1379
617-FI	ROTAMETER	254-1383

INSTRUMENT NUMBER	INSTRUMENT DESCRIPTION	
518-SSL	SPEED SWITCH	254-1488
519A/E-FY	SCR FEEDER CONTROLS	
519F-FY	CURRENT REPEATER	
519-FAHL	ANNUNCIATOR	254-1380
519-FIC	P & I CONTROLLER	254-1379
519-FQIT	INTEGRATING TRANSMITTER	254-1379
519-FQI	INDICATING INTEGRATOR	254-1379
519-FR	CHART RECORDER	254-1379
519-FSHL	DEVIATION SWITCH	254-1379
519-ST	MAG. SPEED TRANSMITTER	254-1488
519-WE	BELT SCALE	254-1488
520-FAH	ANNUNCIATOR	254-1380
520-FAL	ANNUNCIATOR	254-1380
520-FCV	GLOBE VALVE	254-1449
520-FE	ORIFICE PLATE	254-1383
520-FR	CHART RECORDER	254-1379
520-FrIC	P & I RATIO CONTROLLER	254-1379
520-FSHL	CURRENT SWITCH	254-1379
520-FIT	DP TRANSMITTER	254-1383
520A-FY	SQ ROOT EXTRACTOR	254-1379
520B-FY	CURRENT TO PNEUMATIC CONVERTER	
522-NSS	ROPE PULL SWITCH	254-1487
523-LAH	ANNUNCIATOR	254-1380
523-LE	CAPACITANCE PROBE	
523-LSH	CAPACITANCE SWITCH	
524-A/E-TE	STATOR WINDING TEMP. RTD.	254-1487
524-D/E-TE	BEARING TEMP RTD	
524-A/E-TIAH	INDICATING ANNUNCIATOR	254-1379
525-LSHL	LEVEL SWITCH	
526-LSHL	LEVEL SWITCH	
527-EE	POTENTIAL TRANSFORMER	
527-IE	CURRENT TRANSFORMER	
527-JQ	WATT-HOUR METER	
527-JR	CHART RECORDER	254-1379
527-JT	POWER TRANSDUCER	
528-LSHL	LEVEL SWITCH	
529-FCV	PISTON OPERATOR	254-1314
529-PCV	SOLENOID VALVE	254-1487
529-FCV	PISTON OPERATOR	254-1314
530-FCV	PISTON OPERATOR	254-1314
530-PCV	SOLENOID VALVE	254-1487
532-FE	ORIFICE PLATE	254-1383
532-FCV	GLOBE VALVE	254-1448
532-FR	CHART RECORDER	254-1379
532-FIT	D.P. TRANSMITTER	254-1383
532A-FY	SQ ROOT EXTRACTOR	254-1379
532B-FY	CURRENT/PNEUMATIC CONVERTER	
532-FIC	P&I INDICATING CONTROLLER	
537-IE	CURRENT TRANSFORMER	
537-EE	POTENTIAL TRANSFORMER	
537-JT	POWER TRANSDUCER	
537-JQ	WATT HOUR METER	
537-JR	CHART RECORDER	254-1379
534A/E-TIAH	INDICATING ANNUNCIATOR	
534A/E-TE	STATOR WINDING TEMP RTD	
534D/E-TE	BEARING TEMP RTD	

JUN 15 1977

LINE NUMBERS

100 & 200	SERIES	- SLURRY SERVICE
300	SERIES	- REAGENT SERVICE
400	SERIES	- PLANT AIR & INSTR. AIR
500	SERIES	- AIR FLOTATION & VACUUM
600	SERIES	- WATER, FIRE & SERVICE

REV.	DATE	BY	APPR	
3	10-1-76	L.A.C.		GEN'L REV.
2	APR. 1976			PINCH VALVE ADDED, LINE 6-3200 REVISED, B46 & 547 DI, RELOCATED, INDICATED GROUP, 116 AS FUTURE, STAND PIPE @ ½" LAUNDER ALTERED.
1	DEC. 1975	J.C.	GEW	GENERAL REVISION
5	DEC. 16-76	DRS	GEW	ADDED LINE NUMBERS TO PIPING
4	NOV. 8-76	L.A.C.		GENERAL REVISION

ACRES AMERICAN INCORPORATED
BUFFALO NEW YORK

UNION CARBIDE CORPORATION
MINING AND METALS DIVISION
TECHNOLOGY DEPARTMENT
P.O. BOX 699 NIAGARA FALLS, N.Y. 14302

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DRAWN ✓ STARTED DEC. 74 COMPLETED AUG. 75
CHK. H
PROJ. ENG. WOR
PROJECT TUNGSTEN CONCENTRATOR
DWG TITLE MECHANICAL & INSTRUMENT FLOW DIAGRAM MILLING FACILITY SHEET 2 OF 6
FILING CLASSIFICATION FLOW SHEET

UNION CARBIDE MINING AND METALS DIVISION
PLANT TEMPIUTE
BLDG. OR AREA 930-936-1158
DWG. NO. 2 5 4 - 1 0 5 2
REV. NO. 5

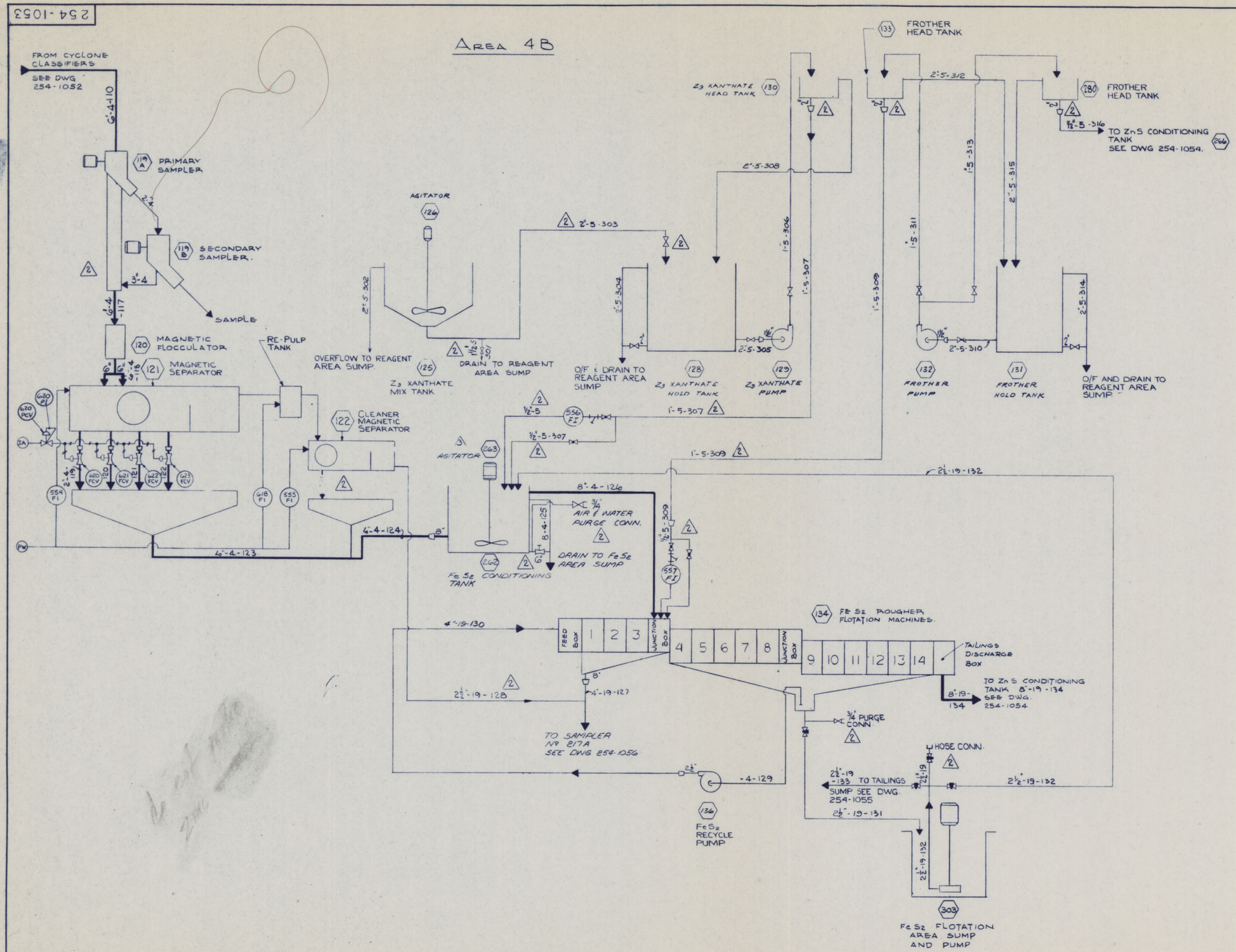
ACRES DWG Nº 3902-C-1052

4790 0021

Niagara Falls Bridge Commission Niagara Falls, N.Y.

254-1053

AREA 4B



EQUIPMENT NUMBER	EQUIPMENT DESCRIPTION	INSTALLATION DETAIL
119A	PRIMARY SAMPLER (CYCLONE OVERFLOW)	254-1316
119B	SECONDARY SAMPLER (CYCLONE OVERFLOW)	254-1316
120	MAGNETIC FLOCCULATOR	254-1316
121	MAGNETIC SEPARATOR	254-1316
122	CLEANER MAGNETIC SEPARATOR	254-1316
125	Z3 XANTHATE MIX TANK	254-1283
126	Z3 XANTHATE MIX TANK AGITATOR	254-1283
128	Z3 XANTHATE HOLD TANK	254-1282
129	Z3 XANTHATE TRANSFER PUMP	254-1282
130	Z3 XANTHATE HEAD TANK	254-1284
131	FROTHER HOLD TANK	254-1282
132	FROTHER TRANSFER PUMP	254-1282
133	FROTHER HEAD TANK	254-1284
134	Fe S2 ROUGHER FLOTATION MACHINE	254-1283
136	Fe S2 RECYCLE PUMP	254-1283
262	Fe S2 CONDITIONING TANK	254-1283
263	AGITATOR FOR Fe S2 CONDITIONING TANK	254-1283
280	FROTHER HEAD TANK	254-1284
303	Fe S2 FLOTATION AREA SUMP AND PUMP	254-1282
554-FI	ROTAMETER	
555-FI	ROTAMETER	
556-FI	ROTAMETER	
557-FI	ROTAMETER	

INSTRUMENT NUMBER	INSTRUMENT DESCRIPTION	
3		
554-FI	ROTAMETER	254-1383
555-FI	ROTAMETER	254-1383
556-FI	ROTAMETER	254-1383
557-FI	ROTAMETER	254-1383
618-FI	ROTAMETER	254-1283
620-FCV	PINCH CONTROL VALVE	254-1500
620-PCV	PRESSURE REGULATOR	254-1500
620-PI	PRESSURE GAUGE	254-1500
621-FCV	PINCH CONTROL VALVE	254-1500
622-FCV	PINCH CONTROL VALVE	254-1500
623-FCV	PINCH CONTROL VALVE	254-1500

JUN 15 1977

LEGEND

⊖ INSTRUMENT LOCATED AT FLOATION ALARM PANEL.

⊖ INSTRUMENT LOCATED INSIDE FLOTATION ALARM PANEL.

THIS DRAWING SHALL BE USED IN CONJUNCTION WITH DRAWING 254-1051, 1052, & 254-1054 TO 1056

REV.	DATE	BY	APPR					
3	8-4-76	LAR		REMOVED 263EAL, 263E3L				
2	APR. 19 76			HOSE & PURGE CONN. ORFICE & LINE SIZES ADDED. GATE VALVE WAS GLOBE PIPING ALTERED AT SAMPLERS.				
1	2-20-75	E.S.	GAM	GENERAL REVISION	4	DEC 14-76	DRS	ADDED LINE NUMBERS TO PIPING

ACRES AMERICAN INCORPORATED BUFFALO NEW YORK

UNION CARBIDE CORPORATION MINING AND METALS DIVISION TECHNOLOGY DEPARTMENT P.O. BOX 579 NIAGARA FALLS, N.Y. 14302

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DRAWN: E.S. 2-20-74 | CHK. | PROJ. ENG. | STARTED: DEC. 74 | COMPLETED: AUG 75 | SCALE:

PROJECT: TUNGSTEN CONCENTRATOR

DWG. TITLE: MECHANICAL & INSTRUMENT FLOW DIAGRAM FeS2 FLOTATION & REAGENTS SHEET 3 OF 6

FILING CLASSIFICATION: FLOWSHEET

UNION CARBIDE MINING AND METALS DIVISION

PLANT: TEMPIUTE | BLDG. OR AREA: | DWG. NO. 930-936-1156

DWG. NO. 2 5 4 - 1 0 5 3 | REV. NO. 4

ACRES DWG No 3902-C-1053

4790 0021

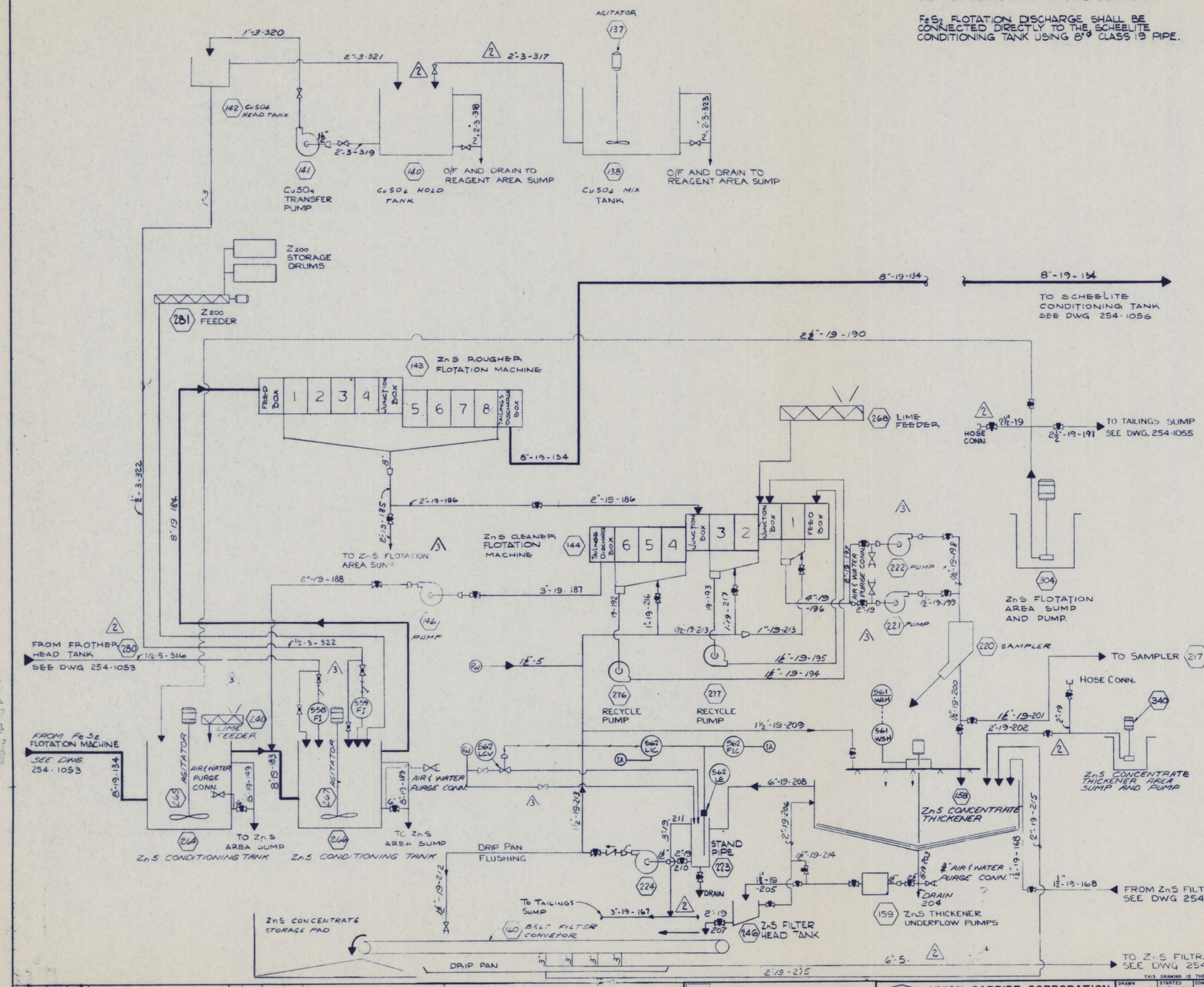
254-1054

AREA 4B

NOTE:-

ALL COMPONENTS SHOWN ON THIS SHEET WILL BE INSTALLED AT A LATER DATE, AND DO NOT FORM PART OF THIS CONTRACT.

FeS_2 FLOTATION DISCHARGE SHALL BE CONNECTED DIRECTLY TO THE SCHEELITE CONDITIONING TANK USING 8"ø CLASS 19 PIPE.



EQUIPMENT NUMBER	EQUIPMENT DESCRIPTION	INSTALLATION DETAIL
137	AGITATOR FOR Cu SO4 MIX TANK	254-1283
138	Cu SO4 MIX TANK	254-1283
140	Cu SO4 HOLD TANK	254-1282
141	Cu SO4 TRANSFER PUMP	254-1282
142	Cu SO4 HEAD TANK	254-1284
143	Zn S ROUGHER FLOTATION MACHINES	254-1283
144	Zn S CLEANER FLOTATION MACHINES	254-1282
146	Zn S TAILS RECYCLE PUMP	254-1282
158	ZnS CONCENTRATE THICKENER	254-1310
159	ZnS THICKENER UNDER FLOW PUMP	254-1310
160	ZnS CONCENTRATE BELT FILTER	254-1283
220	ZnS CONCENTRATE SAMPLER	254-1284
221	ZnS CONCENTRATE PUMP	254-1282
222	ZnS CONCENTRATE PUMP	254-1282
223	ZnS THICKENER STAND PIPE	254-1310
224	ZnS THICKENER OVERFLOW PUMP	254-1310
240	LIME HYDRATE FEEDER	254-1283
246	ZnS FILTER HEAD TANK	254-1283
264	ZnS CONDITIONING TANK	254-1283
265	ZnS CONDITIONING TANK AGITATOR	254-1283
266	ZnS CONDITIONING TANK	254-1283
267	ZnS CONDITIONING TANK AGITATOR	254-1283
268	LIME FEEDER	254-1282
276	ZnS RECYCLE PUMP	254-1282
277	ZnS RECYCLE PUMP	254-1282
281	Z-200 FEEDER	254-1283
304	ZnS FLOTATION AREA SUMP AND PUMP	254-1282
340	ZnS CONCENTRATE THICKENER AREA SUMP AND PUMP	254-1310

INSTRUMENT NUMBER	INSTRUMENT DESCRIPTION	
558-FI	ROTAMETER	254-1383
559-FI	ROTAMETER	254-1383
561-WAH	ANNUNCIATOR	254-1472
561-WSH	TORQUE SWITCH	254-1444
562-FIC	CONSTANT DIFF. RELAY	254-1502
562-LCV	GLOBE VALVE	254-1413
562-LE	BUBBLER TUBE	254-1502
562-LIC	PRESSURE CONTROLLER	254-1502

JUN 15 1977

LEGEND

- (—) INSTRUMENT LOCATED AT FLOTATION ALARM PANEL.
- (---) INSTRUMENT LOCATED INSIDE FLOTATION ALARM PANEL.

THIS DRAWING SHALL BE USED IN CONJUNCTION WITH DRAWING 254-1051 TO 254-1053 & 254-1055 & 1056

REV.	DATE	BY	APPR	
3	8-4-76	LAR	[illegible]	GEN'L REV.
2	APR 1976			LINE SIZES ALTERED HOSE CONN & EQUIP Nº 280 ADDED GATE VALVE WAS GLOBE.
1	SEP 75	E.G.	GEN	GENERAL REVISION
4	DEC 10-76	DRS	GEN	ADDED LINE NUMBERS TO PIPING

ACRES AMERICAN INCORPORATED BUFFALO NEW YORK

UNION CARBIDE CORPORATION
MINING AND METALS DIVISION
TECHNOLOGY DEPARTMENT
P.O. BOX 579 NIAGARA FALLS, N.Y. 14302

DRAWN [illegible] STARTED NOV. 74 COMPLETED AUG. 75 CHK. [illegible] SCALE PROJ. ENG. [illegible]

PROJECT TUNGSTEN CONCENTRATOR
DWG. TITLE MECHANICAL & INSTRUMENT FLOW DIAGRAM ZnS FLOTATION & REAGENTS SHEET 4 OF 6
FILING CLASSIFICATION FLOWSHEET

UNION CARBIDE MINING AND METALS DIVISION
PLANT TEMPIUTE
BLDG. OR AREA 930-936-1156
DWG. NO. 2 5 4 - 1 0 5 4
REV. NO. 4

ACRES DWG Nº 3902-C-1054

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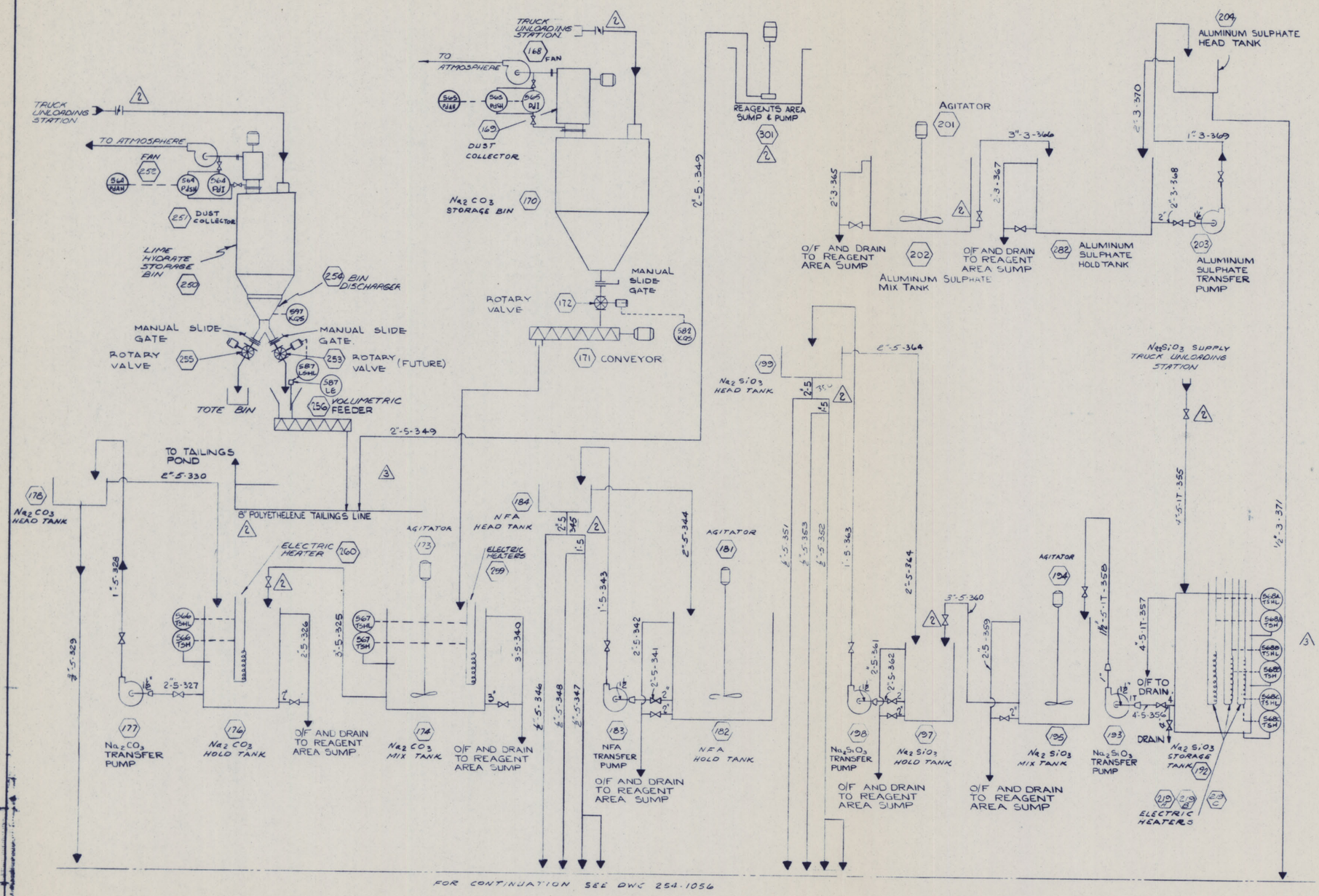
4790 0021

254-1055

AREA 4B



EQUIPMENT NUMBER	EQUIPMENT DESCRIPTION	INSTALLATION DETAIL
168	Na_2CO_3 FAN	254-1303
169	Na_2CO_3 DUST COLLECTOR	254-1303
170	Na_2CO_3 STORAGE BIN	254-1303
171	Na_2CO_3 SCREW CONVEYOR	254-1303
172	Na_2CO_3 ROTARY VALVE	254-1303
173	Na_2CO_3 MIX TANK AGITATOR	254-1283
174	Na_2CO_3 MIX TANKS	254-1283
176	Na_2CO_3 HOLD TANK	254-1282
177	Na_2CO_3 TRANSFER PUMP	254-1282
178	Na_2CO_3 HEAD TANK	254-1284
181	NFA HOLD TANK AGITATOR	254-1282
182	NFA HOLD TANK	254-1282
183	NFA TRANSFER PUMP	254-1283
184	NFA HEAD TANK	254-1284
192	Na_2SiO_3 STORAGE TANK	254-1303
193	Na_2SiO_3 TRANSFER PUMP	254-1303
194	Na_2SiO_3 MIX TANK AGITATOR	254-1283
195	Na_2SiO_3 MIX TANK	254-1283
197	Na_2SiO_3 HOLD TANK	254-1282
198	Na_2SiO_3 TRANSFER PUMP	254-1282
199	Na_2SiO_3 HEAD TANK	254-1284
201	ALUMINUM SULPHATE AGITATOR	254-1283
202	ALUMINUM SULPHATE MIX TANK	254-1283
203	ALUMINUM SULPHATE PUMP	254-1282
204	ALUMINUM SULPHATE HEAD TANK	254-1284
213	TAILINGS SUMP	254-1303
219A	Na_2SiO_3 TANK HEATER	254-1303
219B	Na_2SiO_3 TANK HEATER	254-1303
219C	Na_2SiO_3 TANK HEATER	254-1303
250	LIME HYDRATE STORAGE BIN	254-1303
251	DUST COLLECTOR FOR LIME HYDRATE STORAGE BIN	254-1303
252	EXHAUST FAN FOR LIME DUST COLLECTOR	254-1303
253	LIME ROTARY VALVE (FUTURE)	254-1303
254	LIME BIN DISCHARGER	254-1303
255	LIME ROTARY VALVE	254-1303
256	LIME VOLUMETRIC FEEDER	254-1303
259	TANK HEATER Na_2CO_3 MIX TANK	254-1283
260	TANK HEATER Na_2CO_3 HOLD TANK	254-1282
282	ALUMINUM SULPHATE HOLD TANK	254-1282

INSTRUMENT NUMBER	INSTRUMENT DESCRIPTION	
564-Pdi	D.P. INDICATOR	254-1501
564-PdSH	D.P. SWITCH	254-1501
564-PdAH	ANNUNCIATOR	254-1380
565-Pdi	D.P. INDICATOR	254-1501
565-PdSH	D.P. SWITCH	254-1501
565-PdAH	ANNUNCIATOR	254-1380
566-TSHL	THERMOSTAT	254-1442
566-TSH	TEMPERATURE SWITCH	254-1442
567-TSHL	THERMOSTAT	254-1442
567-TSH	TEMPERATURE SWITCH	254-1442
568-A-TSHL	THERMOSTAT	254-1443
568-A-TSH	TEMPERATURE SWITCH	254-1443
568-B-TSHL	THERMOSTAT	254-1443
568-B-TSH	TEMPERATURE SWITCH	254-1443
568-C-TSHL	THERMOSTAT	254-1443
568-C-TSH	TEMPERATURE SWITCH	254-1443

3

582-KQS	TIMMED SWITCH	254-1442
587-LE	CAPACITANCE PROBE	254-1502
587-LSHL	CAPACITANCE SWITCH	254-1502
597-KQS	TIMED SWITCH	254-1443

LEGEND

- INSTRUMENT MOUNTED IN MILL CONTROL PANEL
- INSTRUMENT MOUNTED LOCAL TO EQUIPMENT

JUN 15 1977

THIS DRAWING SHALL BE USED IN CONJUNCTION WITH DRAWING 254-1051 TO 1054 & 254-1056

REV.	DATE	BY	APPR	
3	8-6-76	LAR		GEN'L REV.
2	APR 1976			VALVES, TAILINGS LINE, SUMP PUMP 301, AND LINE SIZES ADDED. GATE VALVES WERE GLOBES.
1	DEC 75	E.S.	GBW	GENERAL REVISION
4	DEC 16/76	DRS	GBW	ADDED LINE NUMBERS TO PIPING

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BUFFALO NEW YORK

UNION CARBIDE CORPORATION
MINING AND METALS DIVISION
TECHNOLOGY DEPARTMENT
P.O. BOX 579 NIAGARA FALLS, N.Y. 14302

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DRAWN: STARTED DEC 74 COMPLETED AUG-75
CHK: SCALE
PROJ ENG: W. Clare

PROJECT: TUNGSTEN CONCENTRATOR
DWG. TITLE: MECHANICAL/INSTRUMENT FLOW DIAGRAM SCHEELITE (WO_3) REAGENTS SHEET 5 OF 6

UNION CARBIDE MINING AND METALS DIVISION
PLANT: TEMPIUTE
BLDG. OR AREA: 930 – 936 – 1156
DWG. NO. 2 5 4 – 1 0 5 5
REV. NO. 4

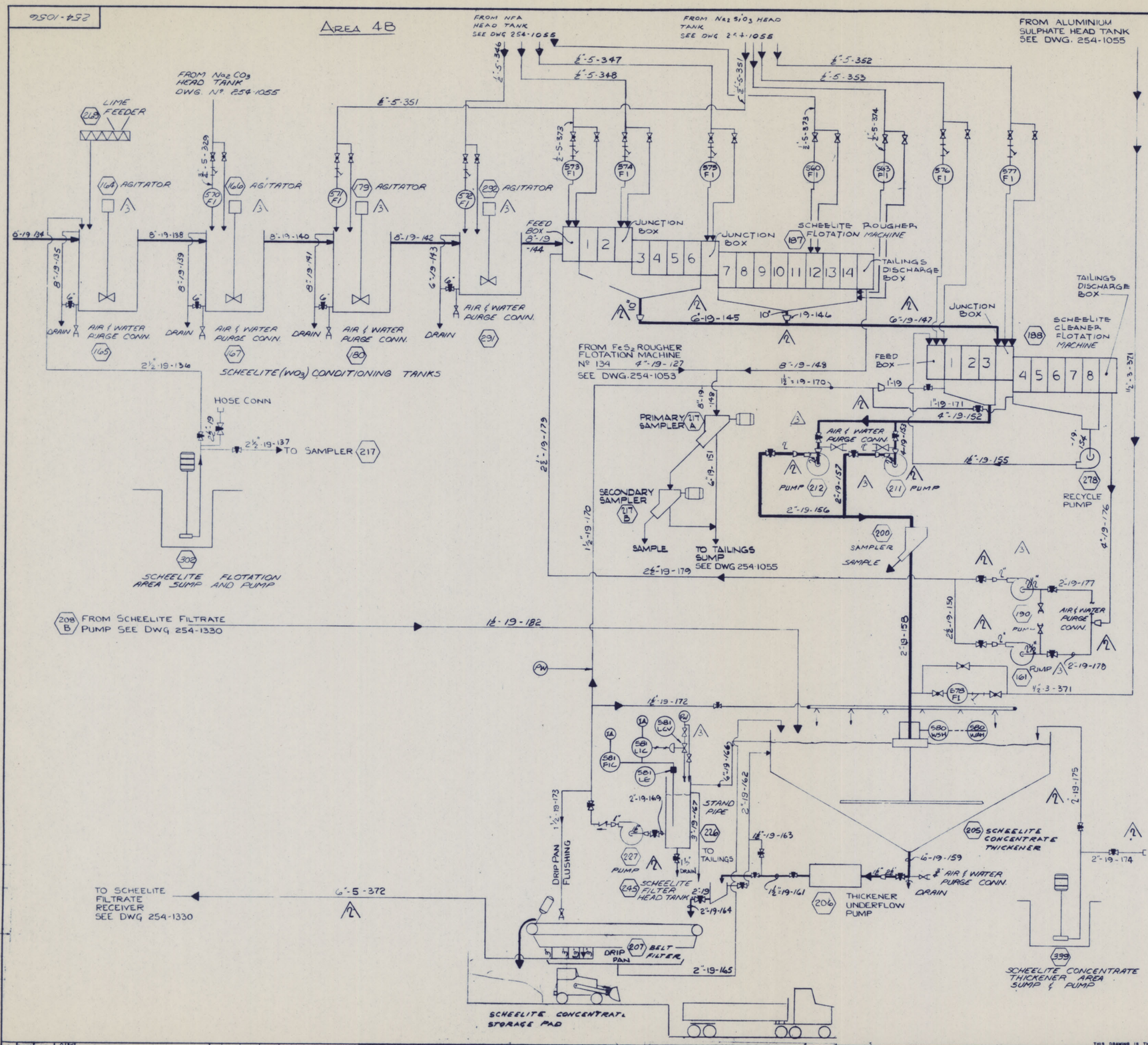
FILING CLASSIFICATION: FLOWSHEET

ACRES DWG. Nº 3902-C-1055

4790 0021

Technical Parts Bridge
Niagara Falls, N.Y.

254-1056



EQUIPMENT NUMBER	EQUIPMENT DESCRIPTION	INSTALLATION DETAIL
161	SCHEELITE CLEANER TAILS TRANSFER PUMP	254-1282
164	AGITATOR FOR WO_3 CONDITIONING TANK	254-1283
165	SCHEELITE WO_3 CONDITIONING TANK	254-1283
166	AGITATOR FOR WO_3 CONDITIONING TANK	254-1283
167	SCHEELITE WO_3 CONDITIONING TANK	254-1283
179	AGITATOR FOR WO_3 CONDITIONING TANK	254-1283
180	SCHEELITE WO_3 CONDITIONING TANK	254-1283
187	WO_3 ROUGHER FLOTATION MACHINE	254-1283
188	WO_3 CLEANER FLOTATION MACHINE	254-1282
190	SCHEELITE CLEANER TAILS TRANSFER PUMP	254-1282
200	WO_3 CONCENTRATE SAMPLER	254-1284
205	WO_3 CONCENTRATE THICKENER	254-1310
206	WO_3 THICKENER UNDER-FLOW PUMP	254-1310
207	WO_3 CONCENTRATE BELT FILTER	254-1283
211	WO_3 CONCENTRATE TRANSFER PUMP	254-1282
212	WO_3 CONCENTRATE TRANSFER PUMP	254-1282
217A	TAILINGS SAMPLER (PRIMARY)	254-1282
217B	TAILINGS SAMPLER (SECONDARY)	254-1282
226	WO_3 THICKENER OVER-FLOW STAND PIPE	254-1310
227	WO_3 THICKENER OVER-FLOW PUMP	254-1310
245	SCHEELITE FILTER HEAD TANK	254-1283
269	LIME FEEDER	254-1283
278	WO_3 RECYCLE PUMP	254-1283
291	SCHEELITE WO_3 CONDITIONING TANK	254-1282
292	AGITATOR FOR WO_3 CONDITIONING TANK	254-1282
302	SCHEELITE FLOTATION AREA SUMP AND PUMP	254-1282
339	SCHEELITE CONCENTRATE THICKENER AREA SUMP AND PUMP	254-1310

INSTRUMENT NUMBER	INSTRUMENT DESCRIPTION	
570-FI	ROTAMETER	254-1383
571-FI	ROTAMETER	254-1383
572-FI	ROTAMETER	254-1383
573-FI	ROTAMETER	254-1383
574-FI	ROTAMETER	254-1383
575-FI	ROTAMETER	254-1383
576-FI	ROTAMETER	254-1383
577-FI	ROTAMETER	254-1383
578-FI	ROTAMETER	254-1383
580-WAH	ANNUNCIATOR	254-1472
580-WSH	TORQUE SWITCH	254-1444
581-FIC	CONSTANT DIFF. RELAY	254-1502
581-LCV	GLOBE VALVE	254-1419
581-LE	BUBBLE TUBE	254-1502
581-LIC	PRESSURE CONTROLLER	254-1502

JUN 15 1977

LEGEND

- INSTRUMENT LOCATED AT FLOTATION ALARM PANEL.
- INSTRUMENT LOCATED INSIDE FLOTATION ALARM PANEL.

THIS DRAWING SHALL BE USED IN CONJUNCTION WITH DRAWING 254-1051 TO 254-1055

REV.	DATE	BY	APPR	
3	DEC 74	LAE	DRS	GEN'L REV'S
2	APR. 1976			PUSH CONN AT 188 AND LINE SIZES ADDED. PIPING AT 190 & 190 AND LINE SIZES ALTERED.
1	OCT. 25	E.S.	GEW	GENERAL REVISION
4	DEC 14-76		DRS	GEW ADDED LINE NUMBERS TO PIPING

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UNION CARBIDE CORPORATION
MINING AND METALS DIVISION
TECHNOLOGY DEPARTMENT
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DRAWN LEW STARTED DEC 74 COMPLETED Aug-75 SCALE

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PROJECT: TUNGSTEN CONCENTRATOR

DWG. TITLE: MECHANICAL & INSTRUMENT FLOW DIAGRAM SCHEELITE (WO_3) FLOTATION SHEET 6 OF 6

UNION CARBIDE MINING AND METALS DIVISION — PLANT: TEMPIUTE — DWG. NO. 254-1056 — REV. NO. 4

BLDG. OR AREA: 532-, 534-1156

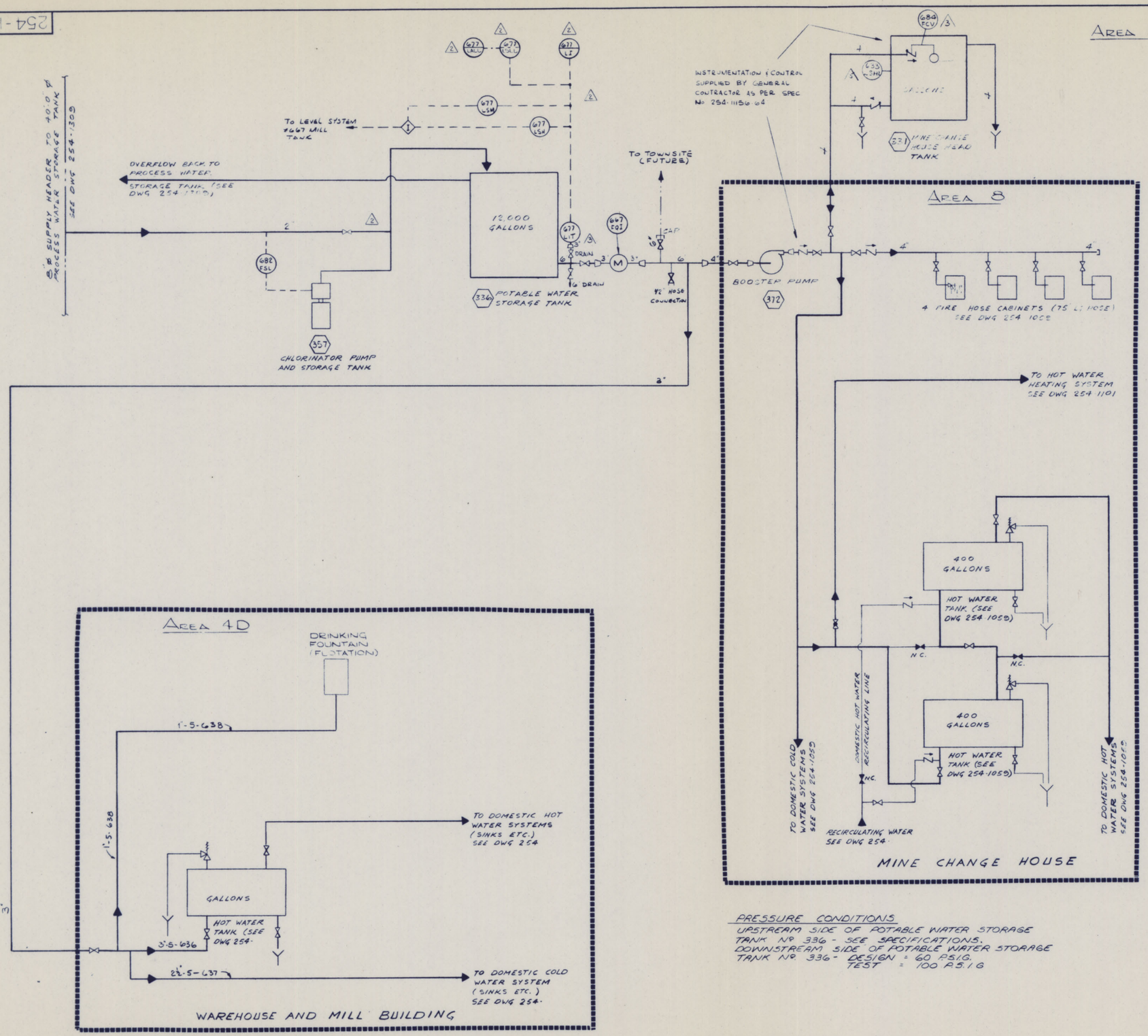
FILING CLASSIFICATION: FLOWSHEET

ACRES DWG. No. 3902-C-1056

4790 0021

Niagara Falls Public Library Niagara Falls, N.Y.

254-1233



EQUIPMENT NUMBER	EQUIPMENT DESCRIPTION	INSTALLATION DETAIL
331	MINE CHANGE HOUSE HEAD TANK	254-1069
336	POTABLE WATER STORAGE TANK	254-1069
357	CHLORINATOR PUMP AND STORAGE TANK	254-1069
372	MINE CHANGE HOUSE BOOSTER PUMP	254-1475

INSTRUMENT NUMBER	INSTRUMENT DESCRIPTION	INSTALLATION DETAIL
4 633-LSHL	BW PROBE LEVEL SWITCH	
667-FQI	WATER METER	254-1069
677-LALL	ANNUNCIATOR	254-1380
2 677-LI	LEVEL GAUGE	254-1379
2 677-LIT	D.P. TRANSMITTER	254-1445
677-LSH	CURRENT SWITCH	254-1471
2 677-LSLL	CURRENT SWITCH	254-1380
2 677-LSL	CURRENT SWITCH	254-1471
682-FSL	VANE FLOW SWITCH	254-1383
3 684-FCV	4" FLOAT VALVE	

JUN 15 1977

PRESSURE CONDITIONS
UPSTREAM SIDE OF POTABLE WATER STORAGE TANK Nº 336 - SEE SPECIFICATIONS.
DOWNSTREAM SIDE OF POTABLE WATER STORAGE TANK Nº 336 - DESIGN = 60 PSIG
TEST = 100 PSIG

LEGEND:
- GATE VALVE
- GLOBE VALVE
- CHECK VALVE
- VALVE - NORMALLY CLOSED
- PRESSURE RELIEF VALVE
- (331) EQUIPMENT NUMBER
- INSTRUMENT LOCATED IN MILL CONTROL PANEL
- INSTRUMENT LOCATED INSIDE MILL CONTROL PANEL
- INSTRUMENT LOCATED AT EQUIPMENT

SEE REFERENCE DWG Nº 254-11666.

REV.	DATE	BY	APPR.	
4	DEC 16-76	DRS	GEM	ADDED LINE NUMBERS TO PIPING
3	JUNE 15-76	LAR	RJA	GENL REVS
2	APR. 13-76			REMOVED 677/LCV & 677B/LI
1	DEC 15-75	DEE	GEM	GENERAL REVISION

5 | 5/23 | GM | GM | ADDED 633 LSHL

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UNION CARBIDE CORPORATION
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TECHNOLOGY DEPARTMENT
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DRAWN: STARTED JUNE 13-75 | COMPLETED | CHK. | PROJ. ENG. W.C. Parks | SCALE NONE

PROJECT: TUNGSTEN CONCENTRATOR
DWG. TITLE: POTABLE WATER SYSTEM FLOW DIAGRAM
FILING CLASSIFICATION: FLOWSHEET

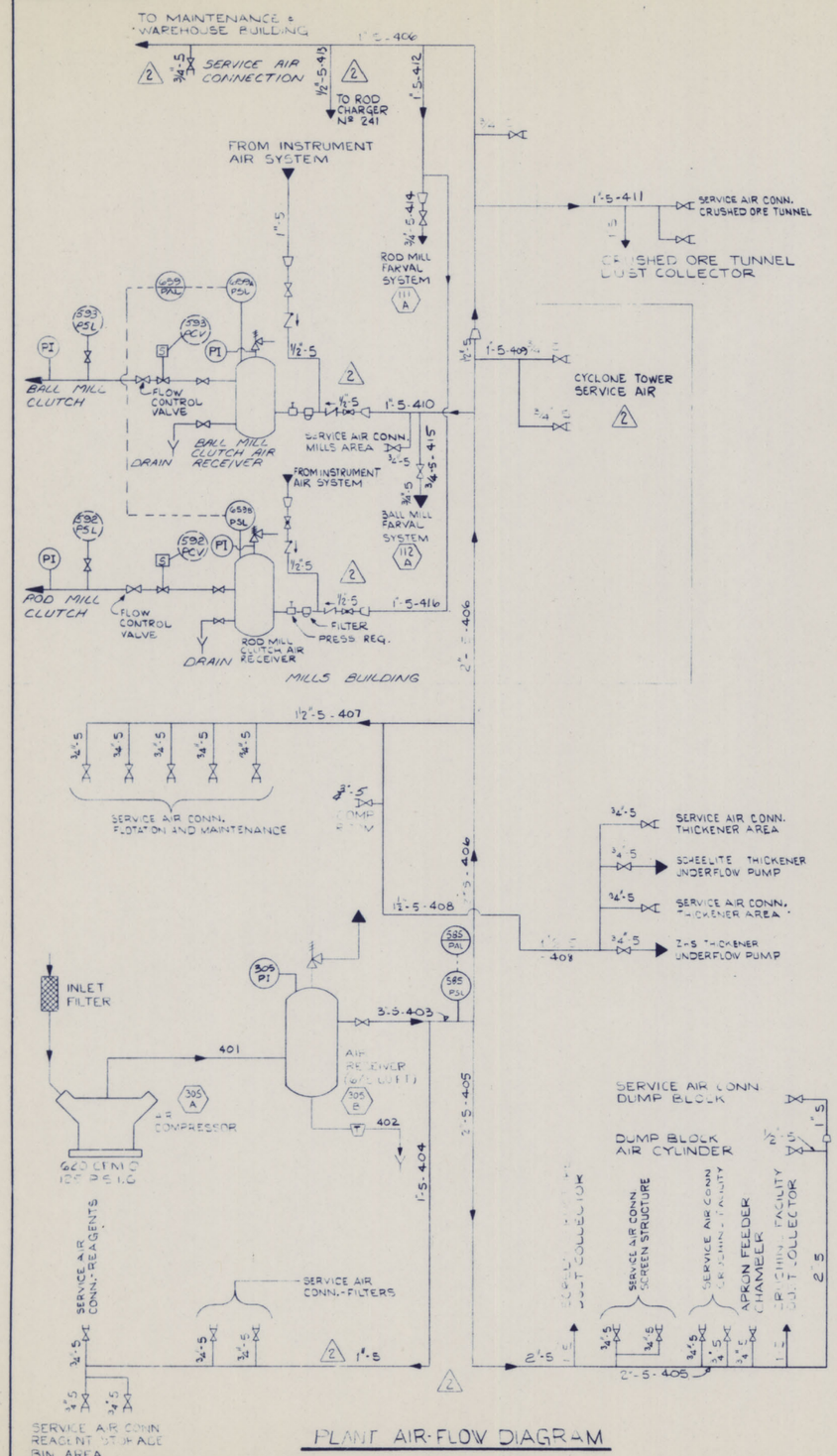
UNION CARBIDE MINING AND METALS DIVISION | PLANT: TEMPIUTE | BLDG. OR AREA | 930-936-1156 | DWG. NO. 2 5 4 - 1 2 3 3 | REV. NO. 5

ACRES DWG NO 3902-C-1233

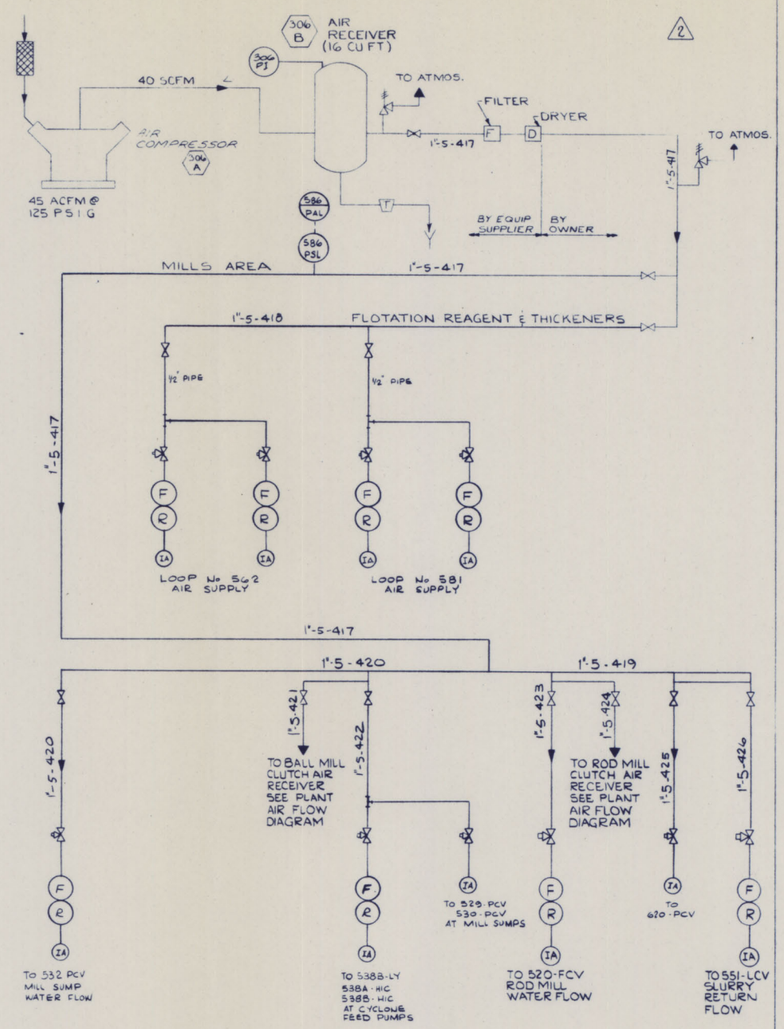
4790 0021

Rapids Bridge
Niagara Falls, N.Y.

254-1234



PLANT AIR-FLOW DIAGRAM



INSTRUMENT AIR - FLOW DIAGRAM

EQUIPMENT NUMBER	EQUIPMENT DESCRIPTION	INSTALLATION DETAIL
305A	PLANT AIR COMPRESSOR	254-1306
305B	PLANT AIR RECEIVER	254-1306
306A	INSTRUMENT AIR COMPRESSOR	254-1306
306B	INSTRUMENT AIR RECEIVER	254-1306

INSTRUMENT NUMBER	INSTRUMENT DESCRIPTION	INSTALATION DETAIL
305-PI	PRESSURE GAUGE	
306-PI	PRESSURE GAUGE	
585-PAL	ANNUNCIATOR	254-1380
585-PSL	PRESSURE SWITCH	254-1466
586-PAL	ANNUNCIATOR	254-1380
586-PSL	PRESSURE SWITCH	254-1466
592-PCV	SOLENOID VALVE	254-1487
2 592-PSL	PRESSURE SWITCH	254-1501
593-PCV	SOLENOID VALVE	254-1487
2 593-PSL	PRESSURE SWITCH	254-1501
659-PAL	ANNUNCIATOR	254-1380
659A-PSL	PRESSURE SWITCH	254-1487
659B-PSL	PRESSURE SWITCH	254-1487

JUN 15 1977

LEGEND

- INSTRUMENT LOCATED AT MILL CONTROL PANEL.
- INSTRUMENT LOCATED INSIDE MILL CONTROL PANEL.
- INSTRUMENT LOCATED LOCAL TO EQUIPMENT.
- INSTRUMENT SHOWN ELSEWHERE AND IS SHOWN HERE FOR PIPING CLARITY
- F R FILTER REGULATOR
- 3-WAY BALL VALVE - VENT PORT PLUGGED

NOTE:-
DESIGN PRESSURE = 125 PSIG
TEST PRESSURE = 200 PSIG

REV.	DATE	BY	APPR	
3	DEC 9/76	DRS	GEW	ADDED LINE NUMBERS TO PIPING
2	APR 6/76			LINE SIZES ADDED INSTR. AIR DISTRIBUTION AND PIPING AT MILLS CLUTCH AIR RECEIVERS ALTERED
1	[illegible]	DR	[illegible]	[illegible]

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DRAWN [illegible] STARTED MAR 2 COMPLETED JAN/75
CHK. [illegible] SCALE NONE
PROJ ENG. [illegible]

PROJECT TEMPIUTE CONCENTRATOR
DWG TITLE PLANT & INSTRUMENT AIR FLOW DIAGRAM

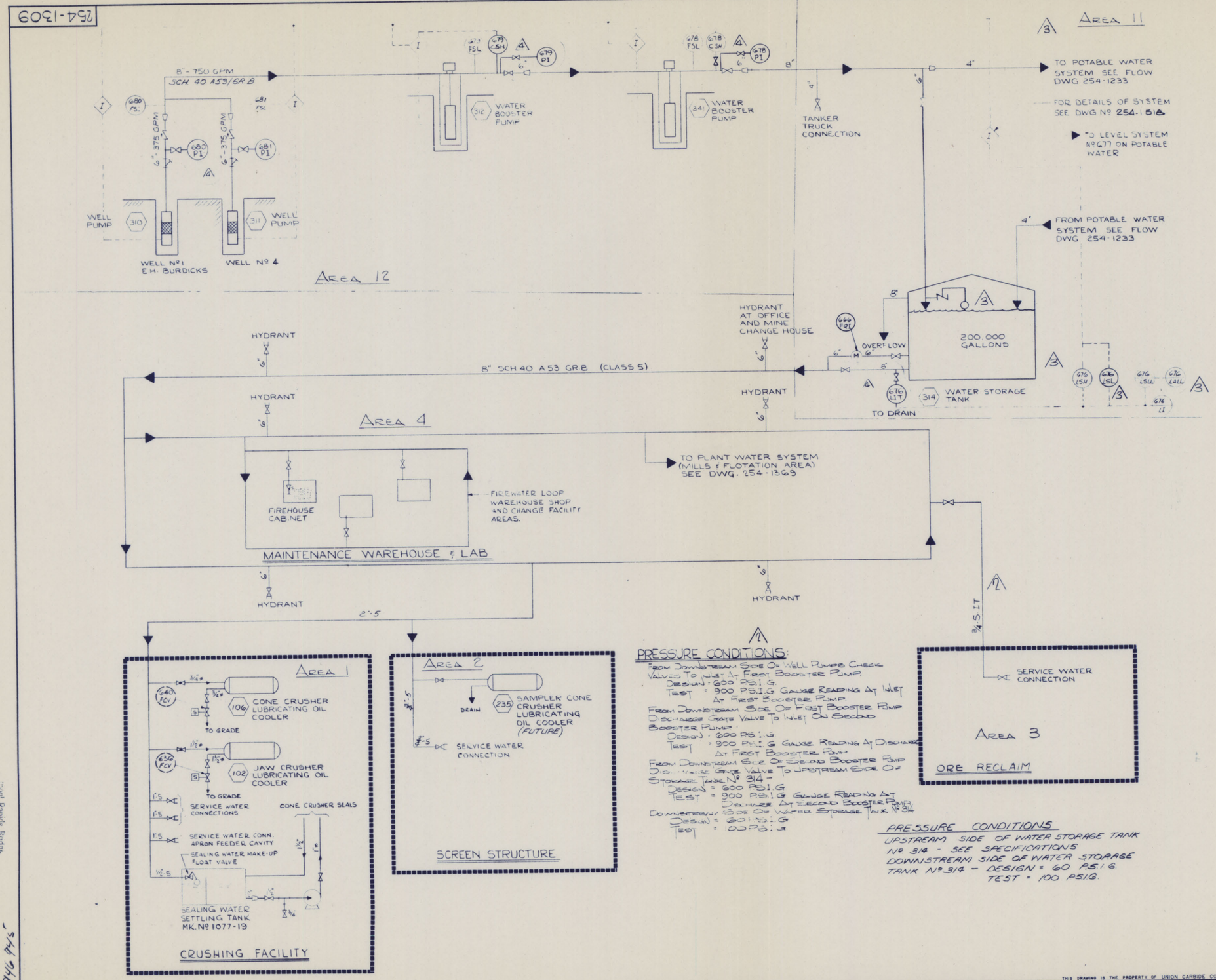
UNION CARBIDE MINING AND METALS DIVISION
PLANT TEMPIUTE NEVADA
BLDG. OR AREA 4
930-
930-1156
DWG. NO. 254-1234
REV. NO. 3

FILING CLASSIFICATION FLOW SHEET

ACRES DWG Nº 3902-C-12.94 Ecw

4790 0021

254-1309



EQUIPMENT NUMBER	EQUIPMENT DESCRIPTION	INSTALLATION DETAIL
102	CONE CRUSHER LUBE-OIL COOLER	254-1074
106	JAW CRUSHER LUBE-OIL COOLER	254-1074
235	SAMPLE CONE CRUSHER LUBE-OIL COOLER	254-1085
310	WELL PUMP	254-1231
311	WELL PUMP	254-1231
312	WATER BOOSTER PUMP	254-1231
313	WATER BOOSTER PUMP	254-1231
314	WATER STORAGE TANK	254-1069
341	WATER BOOSTER PUMP	254-1231
342	WATER BOOSTER PUMP	254-1231

INSTRUMENT NUMBER	INSTRUMENT DESCRIPTION	
636-FCV	SOLENOID VALVE	254-1394
640-FCV	SOLENOID VALVE	254-1394
666-FQI	WATER METER	254-1069
676-LALL	ANNUNCIATOR	254-1380
676 -LI	LEVEL GAUGE	254-1379
676-LIT	D.P. TRANSMITTER	254-1485
676-LSH	CURRENT SWITCH	254-1471
676-LSLL	CURRENT SWITCH	254-1380
676-LSL	CURRENT SWITCH	254-1471
678-FSL 678 CSH 678-PI	VANE FLOW SWITCH CONDUCTIVITY SWITCH PRESSURE GAUGE	254-1383
679-FSL 679 CSH 679 PI	VANE FLOW SWITCH CONDUCTIVITY SWITCH PRESSURE GAUGE	254-1383
680-FSL 680-PI	VANE FLOW SWITCH PRESSURE GAUGE	254-1383
681-FSL 681-PI	VANE FLOW SWITCH PRESSURE GAUGE	254-1383
683 FCV	FLOAT VALVE	

PRESSURE CONDITIONS:

FROM DOWNSTREAM SIDE OF WELL PUMPS CHECK VALVES TO INLET AT FIRST BOOSTER PUMP.
DESIGN = 600 PSI G.
TEST = 900 PSI G GAUGE READING AT INLET AT FIRST BOOSTER PUMP

FROM DOWNSTREAM SIDE OF FIRST BOOSTER PUMP DISCHARGE GATE VALVE TO INLET ON SECOND BOOSTER PUMP
DESIGN = 600 PSI G
TEST = 900 PSI G GAUGE READING AT DISCHARGE AT FIRST BOOSTER PUMP

FROM DOWNSTREAM SIDE OF SECOND BOOSTER PUMP DISCHARGE GATE VALVE TO UPSTREAM SIDE OF STORAGE TANK Nº 314 -
DESIGN = 600 PSI G
TEST = 900 PSI G GAUGE READING AT DISCHARGE AT SECOND BOOSTER PUMP

DOWNSTREAM SIDE OF WATER STORAGE TANK Nº 314
DESIGN = 60 PSI G
TEST = 100 PSI G

PRESSURE CONDITIONS

UPSTREAM SIDE OF WATER STORAGE TANK Nº 314 - SEE SPECIFICATIONS
DOWNSTREAM SIDE OF WATER STORAGE TANK Nº 314 - DESIGN = 60 PSI G
TEST = 100 PSIG.

JUN 15 1977

LEGEND

- INSTRUMENT LOCATED AT MILL CONTROL PANEL.
- INSTRUMENT LOCATED INSIDE MILL CONTROL PANEL.
- INSTRUMENT LOCATED LOCAL TO EQUIPMENT.
- INSTRUMENT SHOWN ELSEWHERE IN MORE DETAIL AND IS SHOWN HERE FOR INFORMATION ONLY

SEE REFERENCE DRAWING 254-1166.

REV.	DATE	BY	APPR	
4	9/14/76	LAR	RD	GENL REVS.
3	9/1/76	AB	RDH	ADDED FLOAT SWITCH & VALVE IN WATER STORAGE TANK
2	APR 1976			PRESSURE CONDITIONS REVISED SUPPLY TO ORE RECLAIM REVISED
1	JAN 76	DR	RGV	GENERAL REVISION

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DRAWN DR 12/8 | STARTED JUNE/75 | COMPLETED JAN. 76 | SCALE NONE
PROJ. ENG. N. Paris

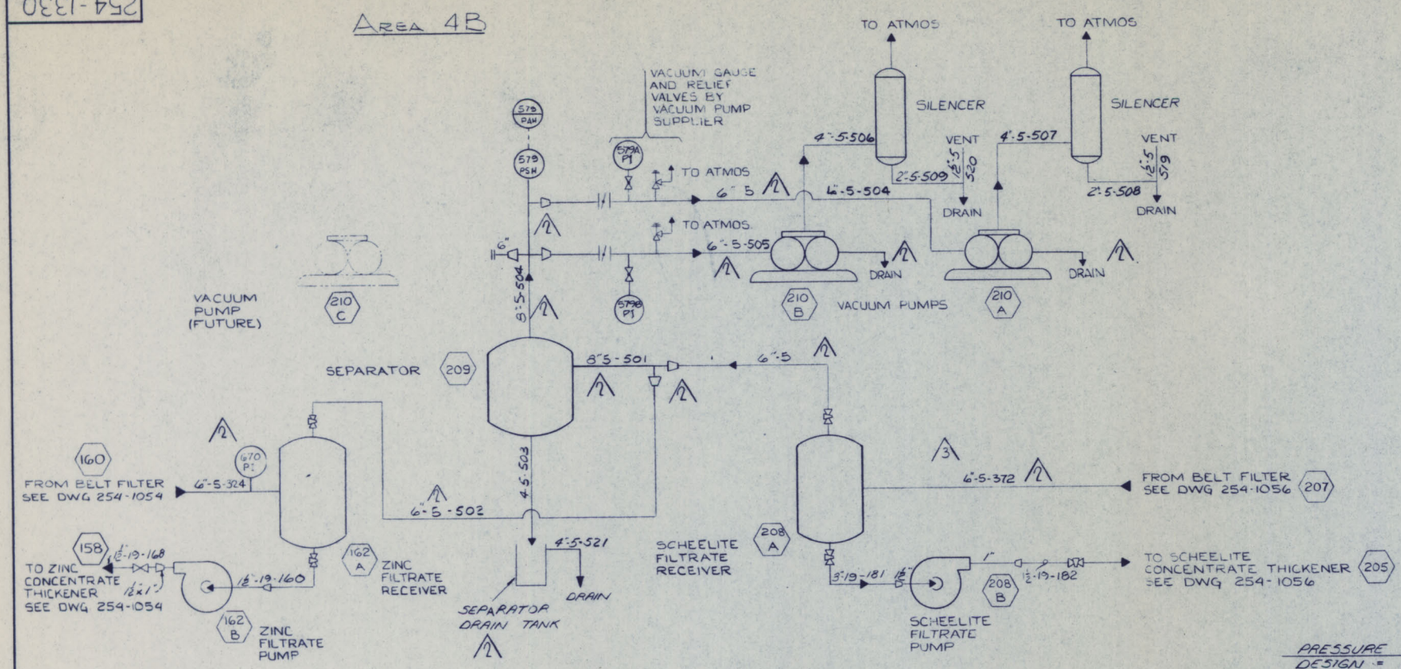
PROJECT TUNGSTEN CONCENTRATOR
DWG TITLE PLANT WATER SYSTEM (BURIED) FLOW DIAGRAM
FILING CLASSIFICATION FLOW SHEET

UNION CARBIDE MINING AND METALS DIVISION
PLANT TEMPIUTE
BLDG. OR AREA 930-936-1156
DWG NO 2 5 4 - 1 3 0 9
REV NO. 4

ACRES DWG. Nº 3502-C-309

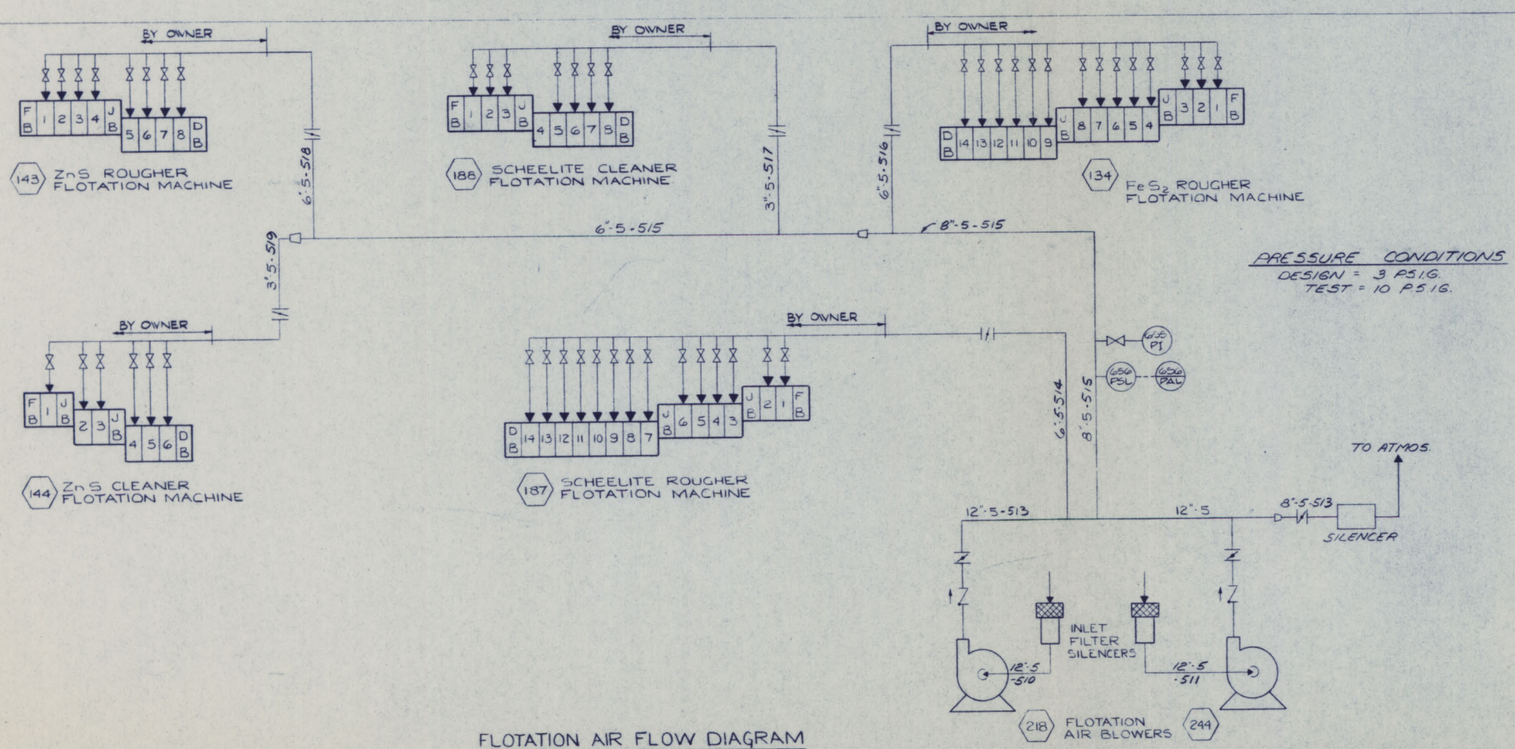
4790 0021

254-1330



PRESSURE CONDITIONS
DESIGN = 22" HG. VACUUM
TEST = 20 P.S.I.G.

VACUUM AIR FLOW DIAGRAM



PRESSURE CONDITIONS
DESIGN = 3 P.S.I.G.
TEST = 10 P.S.I.G.

FLOTATION AIR FLOW DIAGRAM

EQUIPMENT NUMBER	EQUIPMENT DESCRIPTION	INSTALLATION DETAIL
134	FeS_2 ROUGHER FLOTATION MACHINE	254-1283
143	ZnS ROUGHER FLOTATION MACHINE	254-1283
144	ZnS CLEANER FLOTATION MACHINE	254-1282
162A	ZINC FILTRATE RECEIVER	254-1283
162B	ZINC FILTRATE PUMP	254-1283
187	SCHEELITE ROUGHER FLOTATION MACHINE	254-1283
188	SCHEELITE CLEANER FLOTATION MACHINE	254-1282
208A	SCHEELITE FILTRATE RECEIVER	254-1283
208B	SCHEELITE FILTRATE PUMP	254-1283
209	SEPARATOR	254-1284
210A	VACUUM PUMP	254-1306
210B	VACUUM PUMP	254-1306
218	FLOTATION AIR BLOWER	254-1306
244	FLOTATION AIR BLOWER	254-1306

INSTRUMENT NUMBER	INSTRUMENT DESCRIPTION	
579-PAH	ANNUNCIATOR	254-1380
579-PSH	PRESSURE SWITCH	254-1501
579A-PI	VACUUM GAUGE	254-1501
579B-PI	VACUUM GAUGE	254-1501
655-PI	PRESSURE GAUGE	254-1380
656-PAL	ANNUNCIATOR	254-1380
656-PSL	PRESSURE SWITCH	254-1501
670-PI	PRESSURE GAUGE	254-1501
671-PI	PRESSURE GAUGE	254-1501

LEGEND

JUN 15 1977

- INSTRUMENT LOCATED AT MILL CONTROL PANEL.
- INSTRUMENT MOUNTED LOCAL TO EQUIPMENT.

REV.	DATE	BY	APPR				
3	AUG 1976	LAR		REMOVED 671PI			
2	APR. 1976			GENERAL REVISION 670 & 671 PI RELOCATED			
1	DEC 1975	ES		GENERAL REVISION	4	DEC 4/76	DRS	ADDED LINE NUMBER TO PIPING

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DRAWN LHR | STARTED JULY/75 | COMPLETED AUG/75 | SCALE NONE

PROJECT TUNGSTEN CONCENTRATOR

DWG. TITLE VACUUM AND FLOTATION AIR FLOW DIAGRAM

PLANT TEMPIUTE | BLDG. OR AREA 930-936-11756

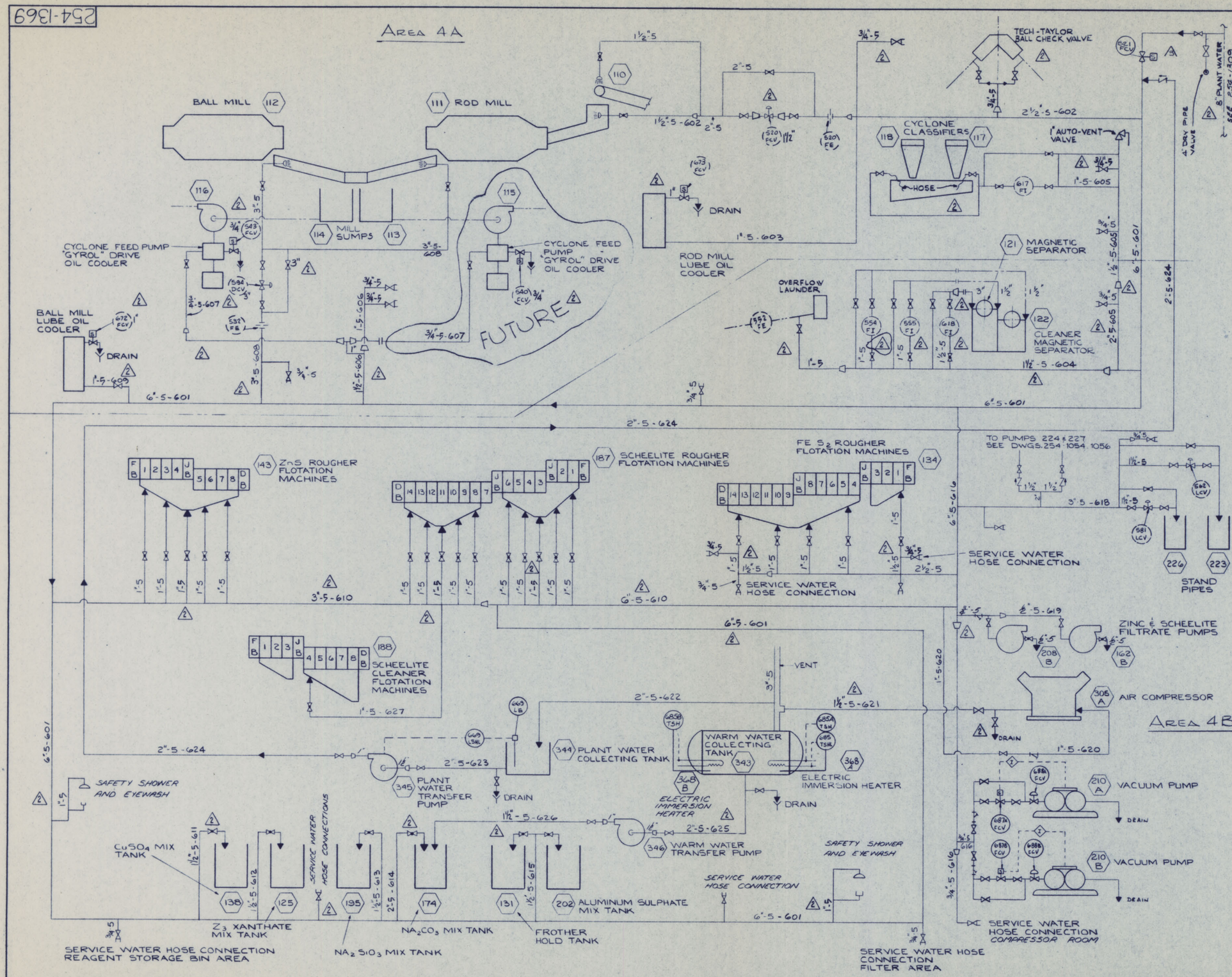
DWG. NO. 254-1330 | REV. NO. 4

FILING CLASSIFICATION FLOW SHEET

ACRES DWG Nº 3902-C-1330

4790 0021

254-1369



EQUIPMENT NUMBER	EQUIPMENT DESCRIPTION	INSTALLATION DETAIL
110	ROD MILL FEED CONVEYOR	254-1297
111	ROD MILL	254-1314
112	BALL MILL	254-1314
113	MILL SUMP	254-1313
114	MILL SUMP	254-1313
115	CYCLONE FEED PUMP	254-1313
116	CYCLONE FEED PUMP	254-1313
117	CYCLONE CLASSIFIER	254-1316
118	CYCLONE CLASSIFIER	254-1316
121	MAGNETIC SEPARATOR	254-1316
122	CLEANER MAGNETIC SEPARATOR	254-1316
125	Z3 XANTHATE MIX TANK	254-1283
131	FROTHER HOLD TANK	254-1282
134	FE S2 ROUGHER FLOTATION MACHINES	254-1288
138	$CuSO_4$ MIX TANK	254-1283
143	ZnS ROUGHER FLOTATION MACHINES	254-1283
1628	ZINC FILTRATE PUMP	254-1283
174	NA_2CO_3 MIX TANK	254-1283
187	SCHEELITE ROUGHER FLOTATION MACHINES	254-1283
188	SCHEELITE CLEANER FLOATATION	254-1282
195	NA_2SiO_3 MIX TANK	254-1283
202	ALUMINUM SULPHATE MIX TANK	254-1283
208B	SCHEELITE FILTRATE PUMP	254-1283
210A	VACUUM PUMP	254-1306
210B	VACUUM PUMP	254-1306
223	STAND PIPE	254-1310
226	STAND PIPE	254-1310
305A	AIR COMPRESSOR	254-1306
343	WARM WATER COLLECTING TANK	254-1282
344	PLANT WATER COLLECTING TANK	254-1282
345	PLANT WATER TRANSFERPUMP	254-1282
346	WARM WATER TRANSFER PUMP	254-1282
368A	ELECTRIC TANK HEATER	254-1282
368B	ELECTRIC TANK HEATER	254-1282
520-FCV	GLOBE VALVE	254-1449
520-FE	ORIFACE PLATE	254-1383
532-FE	ORIFACE PLATE	254-1383
540-FCV	SOLENOID VALVE	254-1487
542-FCV	SOLENOID VALVE	254-1487
554-FI	ROTAMETER	254-1383
555-FI	ROTAMETER	254-1383
562-LCV	GLOBE VALVE	254-1413
581-LCV	GLOBE VALVE	254-1413
594-DCV	GLOBE VALVE	254-1448
617-FI	ROTAMETER	254-1383
618-FI	ROTAMETER	254-1383
669-LE	CAPACITANCE PROBE	254-1502
669-LSHL	CAPACITANCE SWITCH	254-1502
672-FCV	SOLENOID VALVE	254-1487
673-FCV	SOLENOID VALVE	254-1487
685A-TSH	TEMPERATURE SWITCH	254-1442
685B-TSH	TEMPERATURE SWITCH	254-1442
685-TSHL	THERMOSTAT	254-1442
687A-FCV	SOLENOID VALVE	
687B-FCV	SOLENOID VALVE	
688A-FCV	CONTROL VALVE	254-1307
688B-FCV	CONTROL VALVE	254-1307

INDICATES INSTRUMENT SHOWN ELSEWHERE AND IS SHOWN HERE FOR PIPING CLARITY

JUN 15 1977

PRESSURE CONDITIONS
DESIGN = 60 P.S.I.G
TEST = 100 P.S.I.G

REV.	DATE	BY	APPR	
4	DEC 4-76	DRS		ADDED LINE NUMBERS TO PIPING
3	2 APR 76	LDA	RCT	GEN. REVISION! ADDED 5" FCV
2	4-17-76	RCES	GEV	GENERAL REVISION
1	2-5-75	ZS	GEV	GENERAL REVISION

ACRES AMERICAN INCORPORATED BUFFALO NEW YORK

UNION CARBIDE CORPORATION
METALS DIVISION
TECHNOLOGY DEPARTMENT — ENGINEERING
P.O. BOX 97 NIAGARA FALLS, N.Y. 14302

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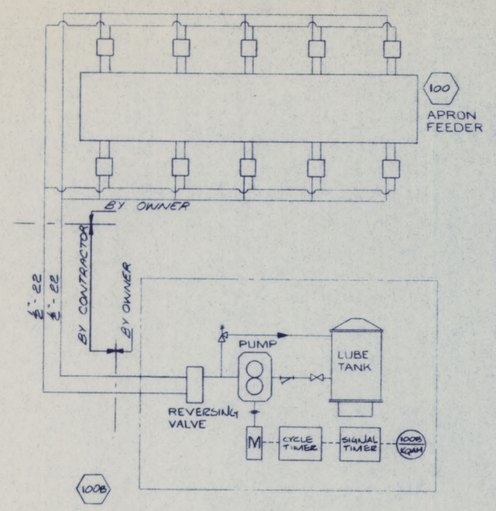
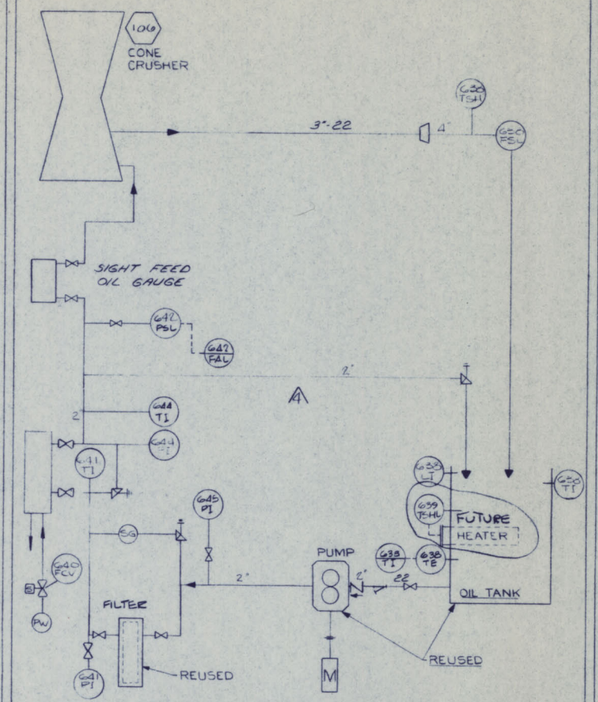
DRAWN DR STARTED OCT/75 COMPLETED JAN/76
SCALE NONE
PROJECT TUNGSTEN CONCENTRATOR
DWG TITLE PLANT WATER SYSTEM (MILLS AND FLOTATION AREA) FLOW DIAGRAM
PLANT TEMPIUTE BLDG. OR AREA 4A & 4B 930-936-1156
DWG. NO. 254-1369 REV. NO. 4
FILING CLASSIFICATION FLOWSHEET
ACRES DWG. No. 3902-C-1369

4790 0021

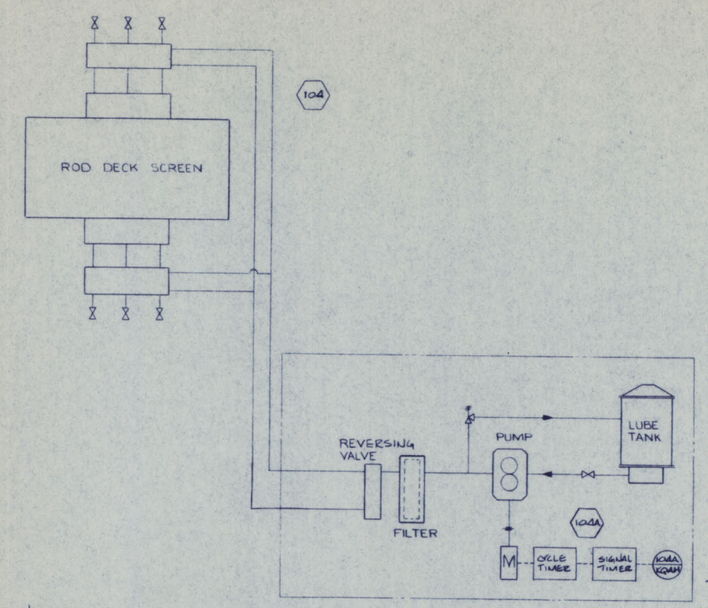
254-1402



APRON FEEDER LUBRICATING SYSTEM 100B



CONE CRUSHER LUBRICATING SYSTEM 106B

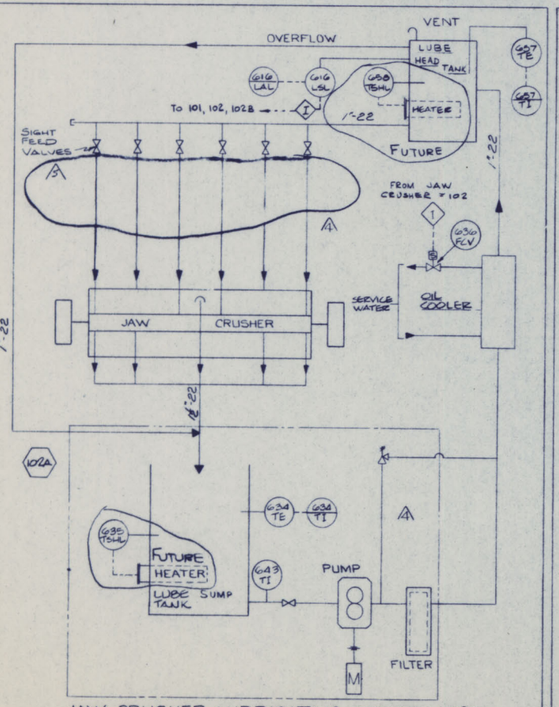


NOTE
THIS DIAGRAM IS SUBJECT TO CONFIRMATION ON RECEIPT OF MANUFACTURERS DRAWINGS

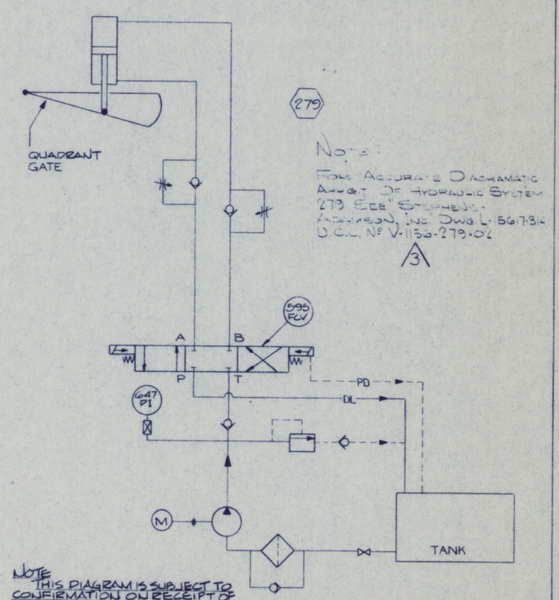
ROD DECK SCREEN LUBRICATING SYSTEM 104A

EQUIPMENT NUMBER	EQUIPMENT DESCRIPTION	INSTALLATION DETAIL
100	ORE APRON FEEDER	254-1076
100B	ORE APRON FEEDER - LUBRICATING UNIT	254-1076
102	JAW CRUSHER	254-1075
102A	JAW CRUSHER - LUBRICATING UNIT	254-1074
104	ROD DECK SCREEN	254-1085
104A	ROD DECK SCREEN - LUBRICATING UNIT	254-1085
106	CONE CRUSHER	254-1075
106A	CONE CRUSHER HYDRAULIC - ADJUSTING UNIT	254-1075
106B	CONE CRUSHER - LUBRICATING UNIT	254-1074
279	QUADRANT GATE AND HYDRAULIC UNIT	254-1076

INSTRUMENT NUMBER	INSTRUMENT DESCRIPTION	INSTALLATION DETAIL
100B-KQAH	ANNUNCIATOR	254-1377
104B-KQAH	ANNUNCIATOR	254-1377
595-FCV	SOLENOID VALVE	254-1396
616-LAL	ANNUNCIATOR	254-1377
616-LSL	LEVEL SWITCH	
628-PSL	PRESSURE SWITCH	254-1501
634-TE	THERMOCOUPLE	254-1502
634-TI	INDICATOR	254-1377
634-TSHL	THERMOSTAT	254-1396
635-FCV	SOLENOID VALVE	254-1396
638-TE	THERMOCOUPLE	254-1502
638-TI	INDICATOR	254-1377
639-TSHL	THERMOSTAT	254-1396
640-FCV	SOLENOID VALVE	254-1396
641-PI	PRESSURE GAUGE	
642-LAL	ANNUNCIATOR	254-1377
642-FSL	FLOW SWITCH	254-1396
643-TI	THERMOMETER	254-1502
644-TI	THERMOMETER	254-1502
645-PI	PRESSURE GAUGE	254-1501
646-PI	PRESSURE GAUGE	254-1501
647-PI	PRESSURE GAUGE	254-1076
648-PI	PRESSURE GAUGE	254-1075
657-TE	THERMOCOUPLE	254-1502
657-TI	INDICATOR	254-1377
658-TSHL	THERMOSTAT	254-1396



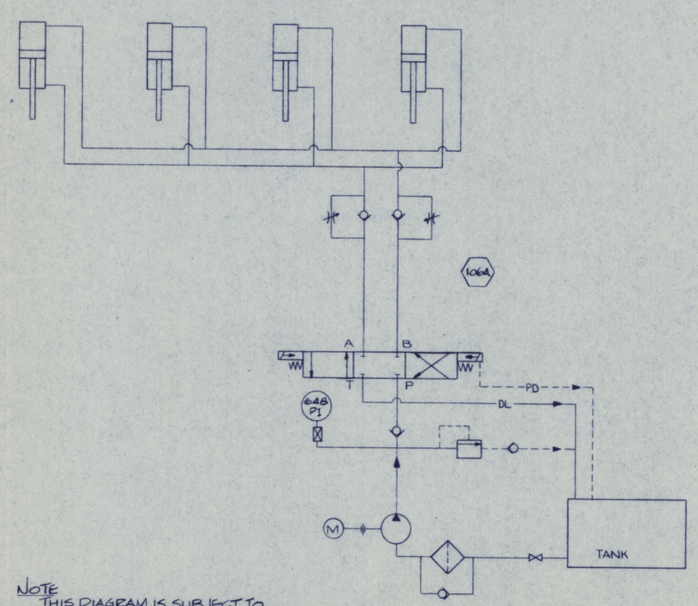
JAW CRUSHER LUBRICATING SYSTEM 102A



NOTE
FOR ACCURATE DIAGRAMATIC ARRGT. OF HYDRAULIC SYSTEM 279 SEE "STEPHENSON ASSOCIATES, INC. DWG. L-5617-314 U.C.C. Nº V-1150-279-02

NOTE
THIS DIAGRAM IS SUBJECT TO CONFIRMATION ON RECEIPT OF MANUFACTURERS DRAWINGS

QUADRANT GATE HYDRAULIC SYSTEM 279



NOTE
THIS DIAGRAM IS SUBJECT TO CONFIRMATION ON RECEIPT OF MANUFACTURERS DRAWINGS

CONE CRUSHER HYDRAULIC SYSTEM 106A

JUN 5 1977

PRESSURE CONDITIONS
SEE U.C.C. PIPING STANDARDS CLASS 22 DWG. Nº 335-0022

REV.	DATE	BY	APP'D	
4	SEPT 1976	LAR	HH	REVISED JAW CRUSHER & CONE CRUSHER LUBRICATING SYSTEMS
3	APRIL 1976			NOTE ADDED.
2	MARCH 1976	LAR		REMOVED 634TT, 638TT, 657TT
1	JAN 76	DR	GRW	GENERAL REVISION

REV.	DATE	BY	
5	MAY 4/77	RTS	RTS REMOVED AS FINAL JAW CRUSHER

ACRES AMERICAN INCORPORATED
BUFFALO NEW YORK
O.R. Gaulke — H. Fore

UNION CARBIDE CORPORATION
MINING AND METALS DIVISION
TECHNOLOGY DEPARTMENT
P.O. BOX 579 NIAGARA FALLS, N.Y. 14302

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DRAWN DR | STARTED SEPT/75 | COMPLETED JAN. 76 | PROJECT TUNGSTEN CONCENTRATOR
CHK. HH | SCALE NONE
PROJ. ENG. M. Parisi
DWG. TITLE CRUSHING AND MILLING FACILITY HYDRAULIC AND LUBRICATION SYSTEM FLOW DIAGRAM SHT. 1 OF 2

UNION CARBIDE MINING AND METALS DIVISION | PLANT TEMPLETE | BLDG. OR AREA 1, 2 | 930-936-1156
DWG. NO. 254-1402 | REV. Nº 5

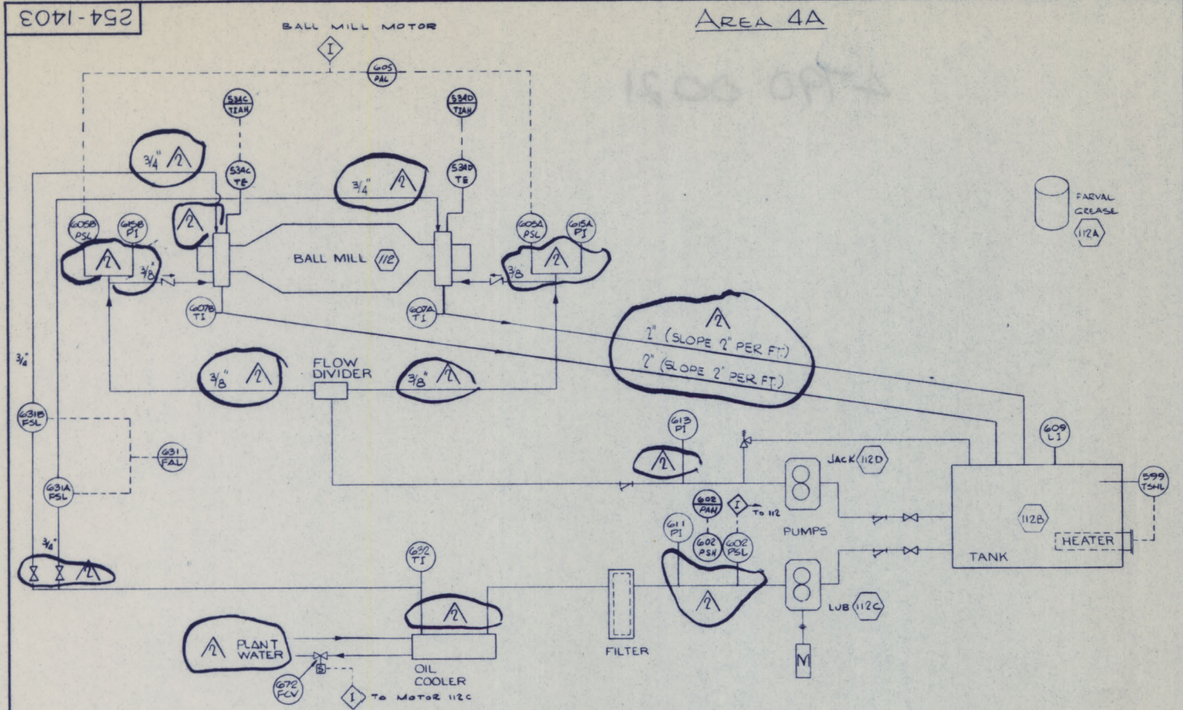
FILING CLASSIFICATION FLOW SHEET

ACRES DWG. NO. 3902-2-1402

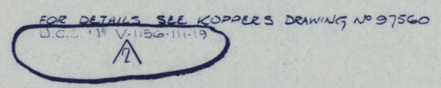
4790 0021

254-1403

AREA 4A



OIL LUBRICATION SYSTEM FOR BALL MILL 112



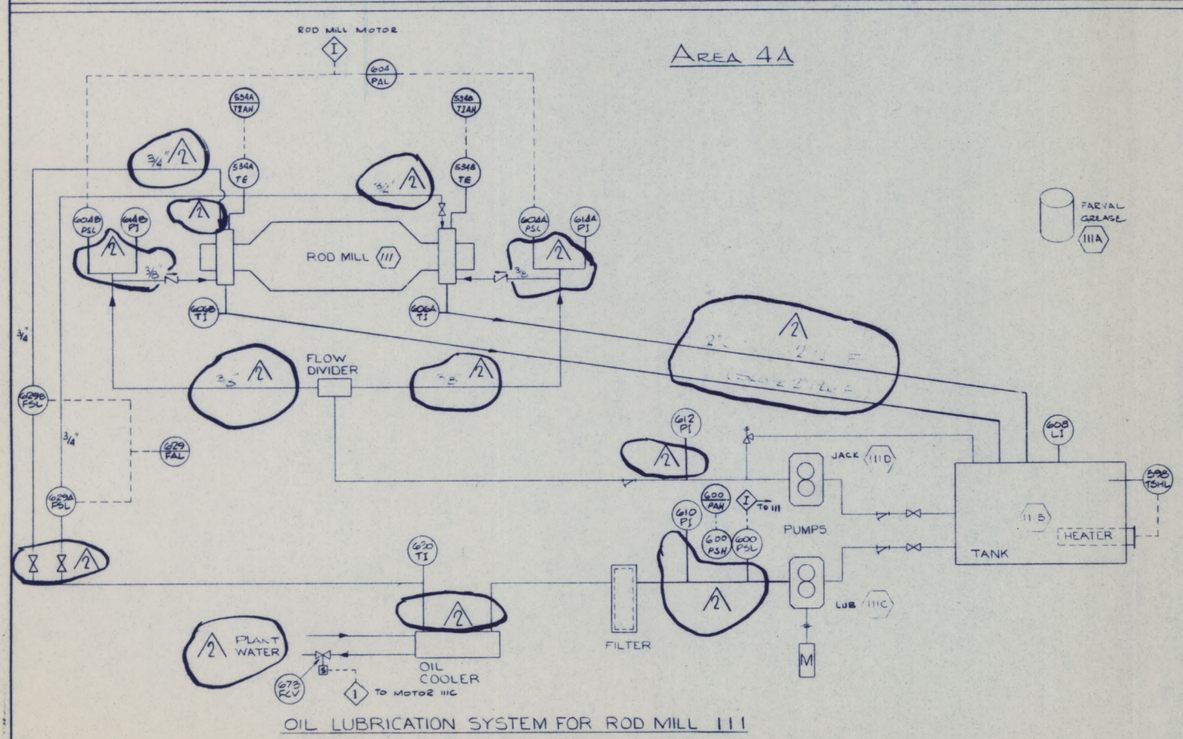
GREASE LUB SYSTEM FOR BALL MILL

EQUIPMENT NUMBER	EQUIPMENT DESCRIPTION	INSTALLATION DETAIL
111	ROD MILL	254-1314
111A	FARVAL GREASE PUMP	254-1490
111B	LUBE-TANK AND HEATER	254-1490
111C	LUBE-PUMP	254-1490
111D	JACKING PUMP	254-1490
112	BALL MILL	254-1314
112A	FARVAL GREASE PUMP	254-1491
112B	LUBE-TANK AND HEATER	254-1491
112C	LUBE-PUMP	254-1491
112D	JACKING PUMP	254-1491

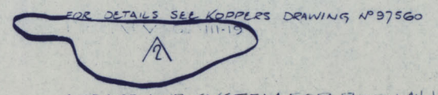
INSTRUMENT NUMBER		
534A-TE	BEARING TEMP. RTD.	254-1487
534A-TIAH	INDICATING ANNUNCIATOR	254-1379
534B-TE	BEARING TEMP. RTD.	254-1487
534B-TIAH	INDICATING ANNUNCIATOR	254-1379
534C-TE	BEARING TEMP. RTD.	254-1487
534C-TIAH	INDICATING ANNUNCIATOR	254-1379
534D-TE	BEARING TEMP. RTD.	254-1487
534D-TIAH	INDICATING ANNUNCIATOR	254-1379
598-TSHL	BEARING OIL THERMOSTAT	254-1487
599-TSHL	BEARING OIL THERMOSTAT	254-1487
600-PAH	ANNUNCIATOR	254-1380
600-PSH	PRESSURE SWITCH	254-1487
600-PSL	PRESSURE SWITCH	254-1487
602-PAH	ANNUNCIATOR	254-1380
602-PSH	PRESSURE SWITCH	254-1487
602-PSL	PRESSURE SWITCH	254-1487
604-PAL	ANNUNCIATOR	254-1380
604A-PSL	PRESSURE SWITCH	254-1487
604B-PSL	PRESSURE SWITCH	254-1487
605-PAL	ANNUNCIATOR	254-1380
605A-PSL	PRESSURE SWITCH	254-1487
605B-PSL	PRESSURE SWITCH	254-1487
606A-TI	THERMOMETER	254-1490
606B-TI	THERMOMETER	254-1490
607A-TI	THERMOMETER	254-1491
607B-TI	THERMOMETER	254-1491
608-LI	LEVEL GAUGE	254-1490
609-LI	LEVEL GAUGE	254-1491
610-PI	PRESSURE GAUGE	254-1490
611-PI	PRESSURE GAUGE	254-1491
612-PI	PRESSURE GAUGE	254-1490
613-PI	PRESSURE GAUGE	254-1491
614A-PI	PRESSURE GAUGE	254-1490
614B-PI	PRESSURE GAUGE	254-1490
615A-PI	PRESSURE GAUGE	254-1491
615B-PI	PRESSURE GAUGE	254-1491
629-FAL	ANNUNCIATOR	254-1380
629A-FSL	FLOW SWITCH	254-1487
629B-FSL	FLOW SWITCH	254-1487
630-TI	THERMOMETER	254-1502
631-FAL	ANNUNCIATOR	254-1380
631A-FSL	FLOW SWITCH	254-1487
631B-FSL	FLOW SWITCH	254-1487
632-TI	THERMOMETER	254-1502
672-FCV	SOLENOID VALVE	254-1487
673-FCV	SOLENOID VALVE	254-1487

JUN 15 1977

AREA 4A



OIL LUBRICATION SYSTEM FOR ROD MILL 111



GREASE LUB SYSTEM FOR ROD MILL

PRESSURE CONDITIONS
SEE U.C.C. PIPING STANDARDS
CLASS 22 DWG. Nº 935-0022

REV.	DATE	BY	APPR	
2	APR 1976	AR	GEN	LINE SIZES ADDED VALVE DESIGNATION REVISED
1	JAN 76	CHR	GEN	GENERAL REVISION

ACRES AMERICAN INCORPORATED
BUFFALO NEW YORK

UNION CARBIDE CORPORATION
MINING AND METALS DIVISION
TECHNOLOGY DEPARTMENT
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DRAWN	STARTED	COMPLETED	PROJECT
CHR	SEPT 75	JAN 76	TUNGSTEN CONCENTRATOR
CHK.		SCALE NONE	DWG. TITLE
PROJ. ENG.			CRUSHING AND MILLING FACILITY HYDRAULIC AND LUBRICATION SYSTEMS FLOW DIAGRAM SHT 2 OF 2

UNION CARBIDE MINING AND METALS DIVISION
PLANT TEMPIUTE
BLDG. OR AREA 930-936-1156
DWG. NO. 254-1403
REV. NO. 2

FILING CLASSIFICATION FLOWSHEET

ACRES DWG Nº 3902-C-1403

4790 0021