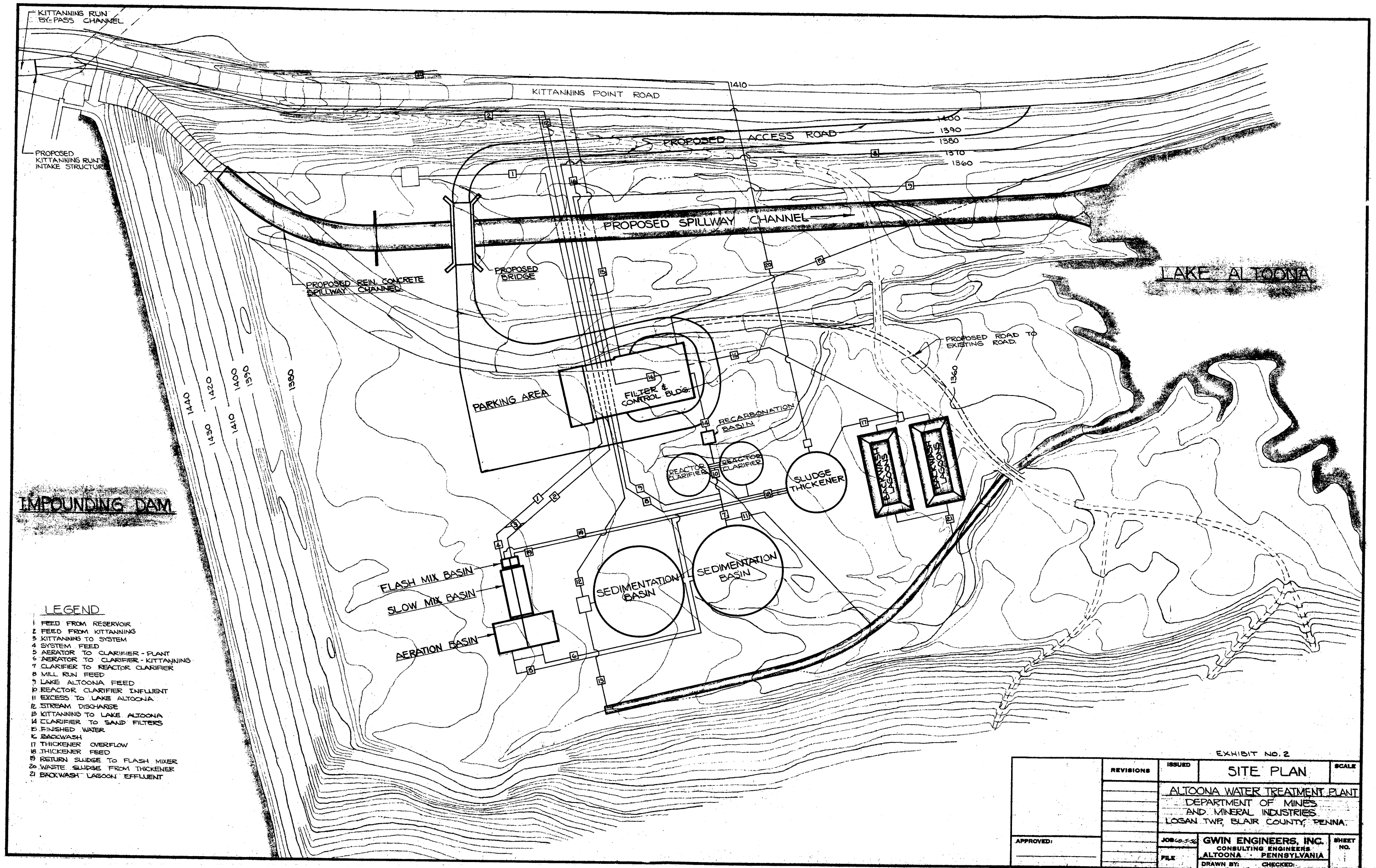


SITE PLAN
HORSESHOE CURVE RESERVOIRS
ALTOONA MINE WATER TREATMENT PLANT
DEPARTMENT OF MINES
AND
MINERAL INDUSTRIES
LOGAN TWP., BLAIR COUNTY, PENNA.

EXHIBIT - NO. 1



KITTANNING RUN BY-PASS CHANNEL

KITTANNING POINT ROAD

1410

1400

1390

1380

1370

1360

PROPOSED KITTANNING RUN INTAKE STRUCTURE

PROPOSED ACCESS ROAD

PROPOSED SPILLWAY CHANNEL

PROPOSED REIN. CONCRETE SPILLWAY CHANNEL

PROPOSED BRIDGE

LAKE ALTOONA

PROPOSED ROAD TO EXISTING ROAD

1360

PARKING AREA

FILTER & CONTROL BLDG.

RECARBONATION BASIN

REACTOR CLARIFIER

REACTOR CLARIFIER

SLUDGE THICKENER

BACKWASH LAGOON

BACKWASH LAGOON

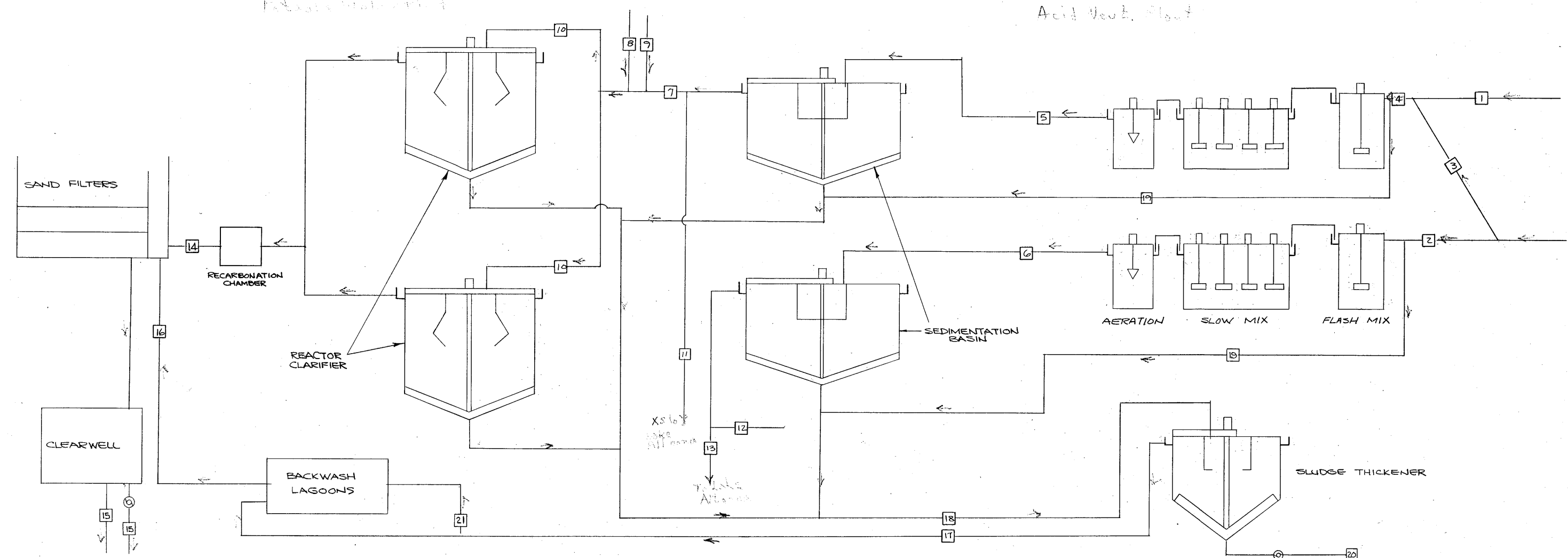
IMPOUNDING DAM

LEGEND

- 1 FEED FROM RESERVOIR
- 2 FEED FROM KITTANNING
- 3 KITTANNING TO SYSTEM
- 4 SYSTEM FEED
- 5 AERATOR TO CLARIFIER - PLANT
- 6 AERATOR TO CLARIFIER - KITTANNING
- 7 CLARIFIER TO REACTOR CLARIFIER
- 8 MILL RUN FEED
- 9 LAKE ALTOONA FEED
- 10 REACTOR CLARIFIER INFLUENT
- 11 EXCESS TO LAKE ALTOONA
- 12 STREAM DISCHARGE
- 13 KITTANNING TO LAKE ALTOONA
- 14 CLARIFIER TO SAND FILTERS
- 15 FINISHED WATER
- 16 BACKWASH
- 17 THICKENER OVERFLOW
- 18 THICKENER FEED
- 19 RETURN SLUDGE TO FLASH MIXER
- 20 WASTE SLUDGE FROM THICKENER
- 21 BACKWASH LAGOON EFFLUENT

EXHIBIT NO. 2

REVISIONS	ISSUED	SITE PLAN	SCALE
		ALTOONA WATER TREATMENT PLANT	
		DEPARTMENT OF MINES AND MINERAL INDUSTRIES	
		LOGAN TWP, BLAIR COUNTY, PENNA.	
APPROVED:	JOB NO. 5-32	GWIN ENGINEERS, INC.	SHEET NO.
	FILE	CONSULTING ENGINEERS	
		ALTOONA, PENNSYLVANIA	
		DRAWN BY: CHECKED:	



LINE No.	LOCATION	PH		ALKALINITY		ACIDITY		FLOW-MGD		IRON		MAGANESE		HARDNESS		SULFATES		TOTAL SOLIDS		SUSPENDED SOLIDS		COLOR	TURB.		
		RANGE	AVE.	RANGE	AVE.	RANGE	AVE.	RANGE	AVE.	RANGE	AVE.	RANGE	AVE.	RANGE	AVE.	RANGE	AVE.	RANGE	AVE.	RANGE	AVE.				
1	FEED FROM RESERVOIR	3.2	3.5	0	0	78	175	2	8	6	4.9	10	2.5	4.0	160	260	180	365	150	414	4	5	0	9	
2	FEED FROM KITTANNING	2.8	3.2	0	0	180	420	1	8	4	32	70	4	12	11	*	*	267	652	305	6	8	4	14	
3	KITTANNINGTO SYSTEM	SAME AS LINE 2																							
4**	SYSTEM FEED	SAME AS LINE 1																							
5	AERATOR TO CLARIFIER PLANT	-	-	-	-	-	-	4	8	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6	AERATOR TO CLARIFIER KITTANNING	-	-	-	-	-	-	1	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7	CLARIFIER TO REACTOR CLARIFIER	5.3	7.6	6.6	9	18	4	4	6	6	.2	.6	.7	3.5	228	305	210	360	165	478	5	5	5	10	
8	MILL RUN FEED	6.6	7.4	7.1	16	16	0	0	2	2	0.1	0.2	0	0	5	2	7	10	44	84	1	1	0	2	
9	LAKE ALTOONA FEED	SAME AS LINE 7																							
10	REACTOR CLARIFIER INFLUENT	6.4	7.2	6.8	8	9	8	0	4	3.5	0.4	1.2	1.6	2.4	332	375	200	350	75	618	4	3	4	7	
11	EXCESS TO LAKE ALTOONA	SAME AS LINE 7																							
12	STREAM DISCHARGE	SAME AS LINE 7																							
13	KITTANNING TO LAKE ALTOONA	SAME AS LINE 7																							
14	CLARIFIER TO SAND FILTERS	-	-	-	-	-	-	4	8	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15	FINISHED WATER	7.1	8.3	7.7	65	86	0	0	4	7	0	0	0	0	44	90	264	337	72	550	0	0	0	0	
16	BACK WASH																								
17	THICKENER OVERFLOW																								
18	THICKENER FEED																								

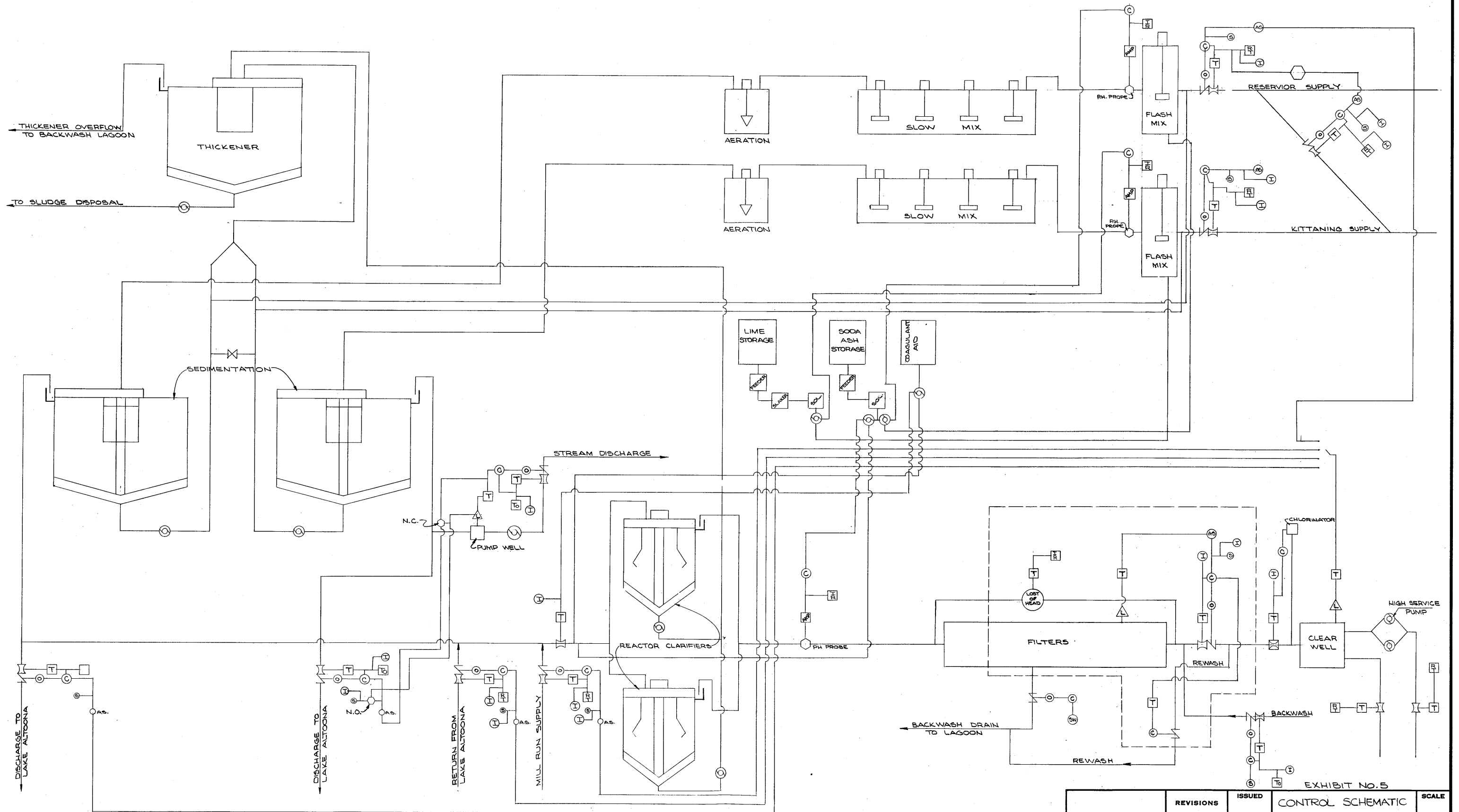
* COLOR INTERFERENCE ** RESULTS DO INCLUDE KITTANNING RUN FLOW

CHEMICAL	TYPE	POINT OF APPLICATION	AVERAGE DOSE PPM	#/DAY
LIME	PEBBLE LIME - 2 SHAKERS	Kittinging Run-Flash Mix Unit	316	9224
		Impounding Dam-Flash Mixer	100	2919
		Softener Units	35	2044
SODA ASH	2-Slurry Feeders	Kittinging Run-Flash Mix Unit	0	0
		Impounding Dam-Flash Mix Unit	0	0
		Softener Units	400	23,352
COAGULANT AID	Liquid-Volumetric Feeder	Softener Units	3	175
CHLORINE	Gas-Solution Feed Type	Finished Water	2	118
PO4	Liquid-Volumetric Feeder	Finished Water	1	59

UNITS	No. OF UNITS	SIZE	CAPACITY	RETENTION TIME AT AVG. FLOW	OVERFLOW RATE	FILTER	RATE
						@ AVG. FLOW	@ MAX. FLOW
FLASH MIXER	2	11'x11'x7.5' S.W.D.	6,788 GALLONS	5 MIN.			
SLOW MIX	2	15'x60'x12' S.W.D.	81,000 GALLONS	15 MIN.			
AERATION	2	38'x38'x14' S.W.D.	151,200 GALLONS	29 MIN.			
SEDIMENTATION	2	115' DIA. 20' CD	1,290,000 GALLONS	4 HOURS	152 G.P.M. C.F.		
REACTOR-CLARIFIER	2	56' DIA. x15' S.W.D.	534,700 GALLONS	110 MIN.	125 G.P.M./FT ² UPFLOW RATE		
SAND FILTERS	6	24'x20'				2 G.P.M./FT ²	2.7 G.P.M./FT ²
THICKENERS	1	75' DIA. x 14' CD.					
BACKWASH LAGOONS	2	BOTTOM 24'x80' 6' SWD	151,000 GALLONS				

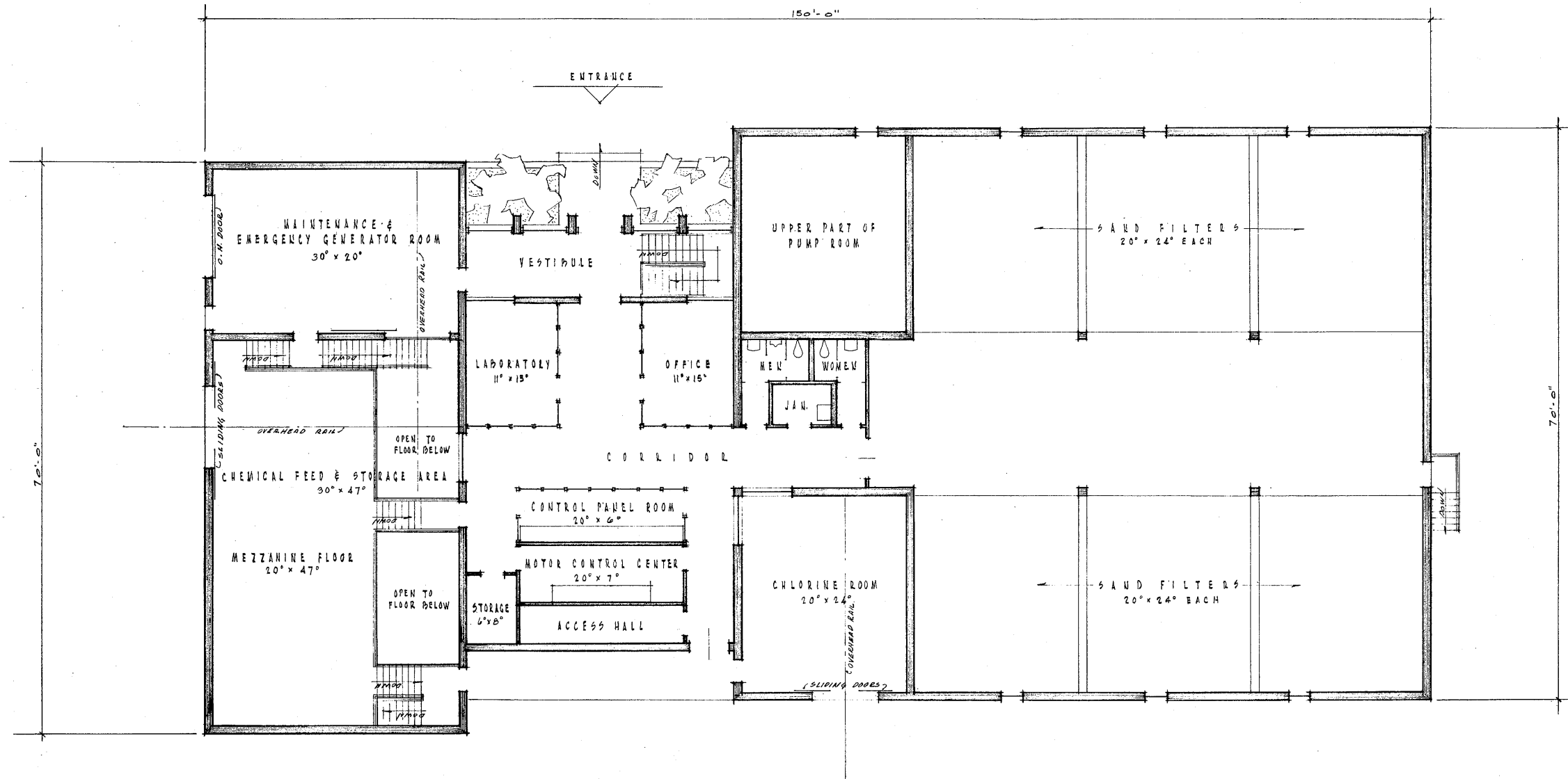
EXHIBIT NO. 3

APPROVED:	REVISIONS	ISSUED	FLOW SCHEMATIC	SCALE
	ALTOONA WATER TREATMENT PLANT			
DEPARTMENT OF MINES & MINERAL INDUSTRIES				
LOGAN TWP, BLAIR COUNTY, PENNA.				
FILE	JOB	GWIN ENGINEERS, INC.		SHEET NO.
	FILE	CONSULTING ENGINEERS		
DRAWN BY:		ALTOONA PENNSYLVANIA		
CHECKED:				



- Ⓢ = CONTROLLER
- Ⓢ = VALVE OPERATOR
- Ⓢ = TRANSMITTER
- Ⓢ = FLOW TUBE
- Ⓢ = CONTROL VALVE
- Ⓢ = PUMP
- Ⓢ = INDICATOR
- Ⓢ = RECORDER
- Ⓢ = TOTALIZER
- Ⓢ = MANUAL SET
- Ⓢ = AUTOMATIC SET
- Ⓢ = PH AMPLIFIER
- Ⓢ = LEVEL CONTROL

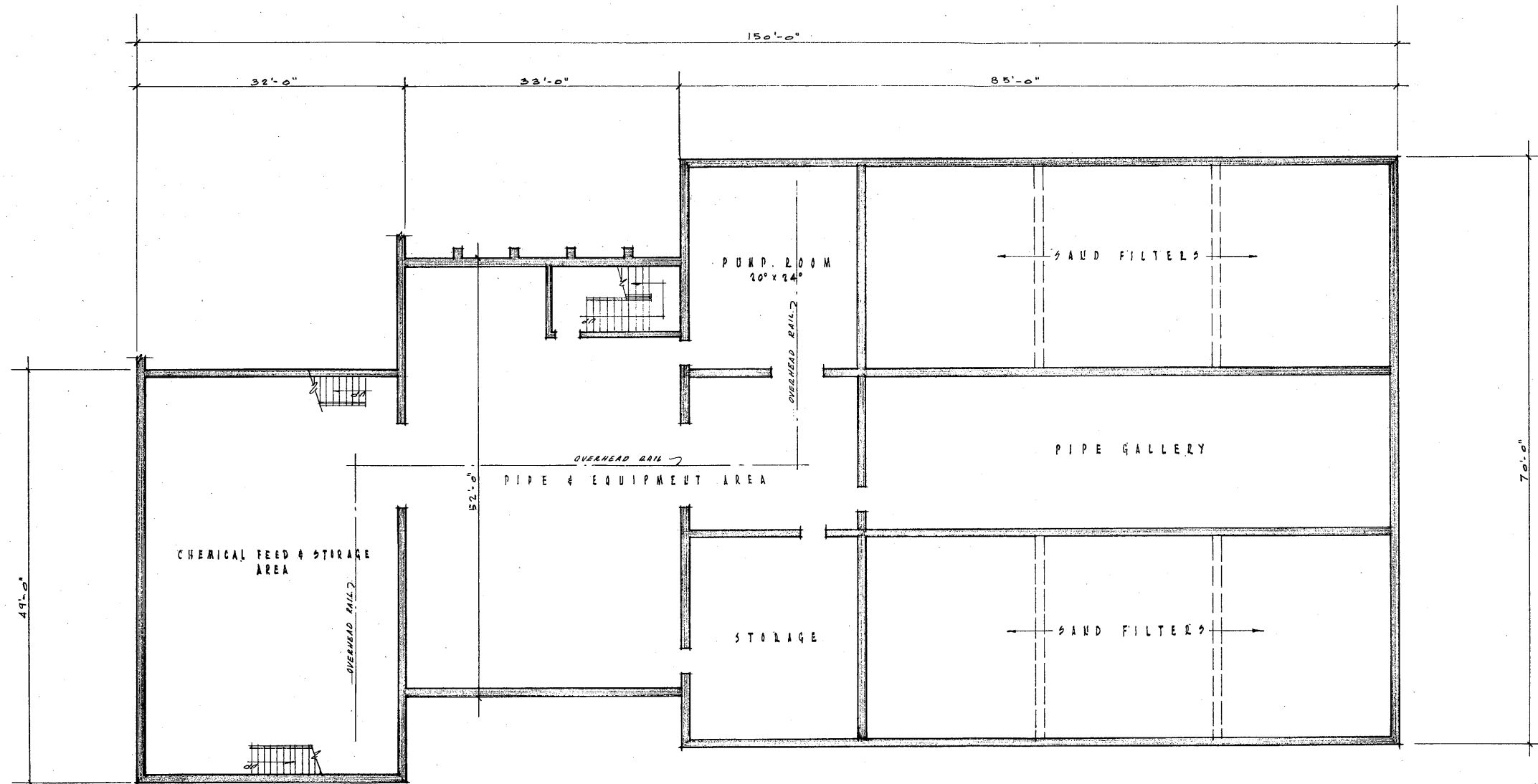
	REVISIONS	ISSUED	CONTROL SCHEMATIC	SCALE
			ALTOONA WATER TREATMENT PLANT	
			DEPARTMENT OF MINES & MINERAL INDUSTRIES	
			LOGAN TWP, BLAIR COUNTY, PENNA.	
			JOB	GWIN ENGINEERS, INC.
			FILE	CONSULTING ENGINEERS
				ALTOONA · PENNSYLVANIA
			DRAWN BY:	CHECKED:
APPROVED:				SHEET NO.



MAIN FLOOR PLAN

EXHIBIT 0 - A

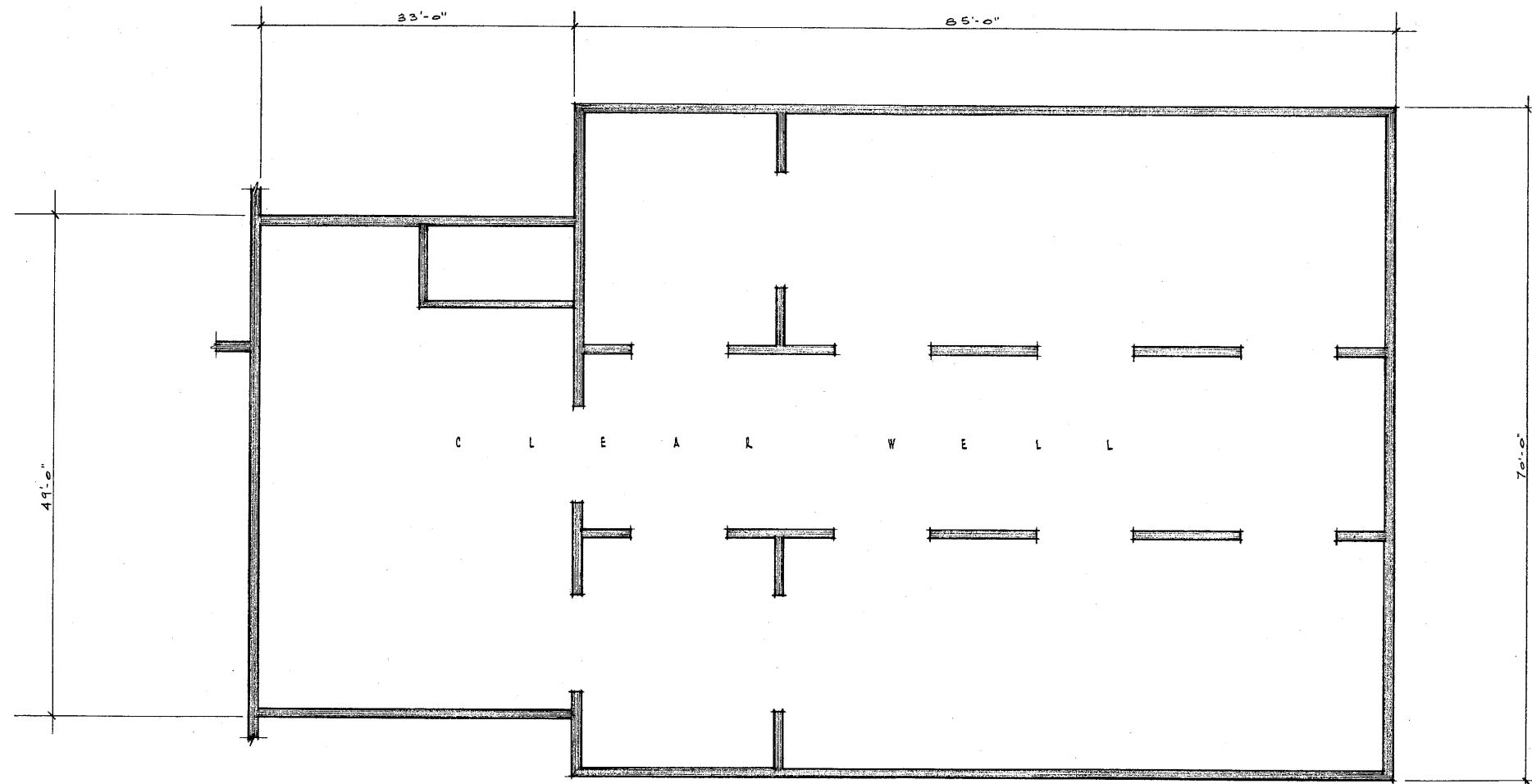
APPROVED:	REVISIONS	ISSUED	CONTROL BUILDING PLAN - MAIN FLOOR	SCALE 1/8" = 1'-0"
			ALTOONA WATER TREATMENT PLANT DEPARTMENT OF MINES & MINERAL INDUSTRIES LOGAN TWP., BLAIR COUNTY, PENNA.	
		JOB 68-5-54	GWIN ENGINEERS, INC. CONSULTING ENGINEERS ALTOONA - PENNSYLVANIA	SHEET NO.
		FILE	DRAWN BY: _____ CHECKED: _____	



PLAN - FIRST SUB-LEVEL

EXHIBIT 6-B

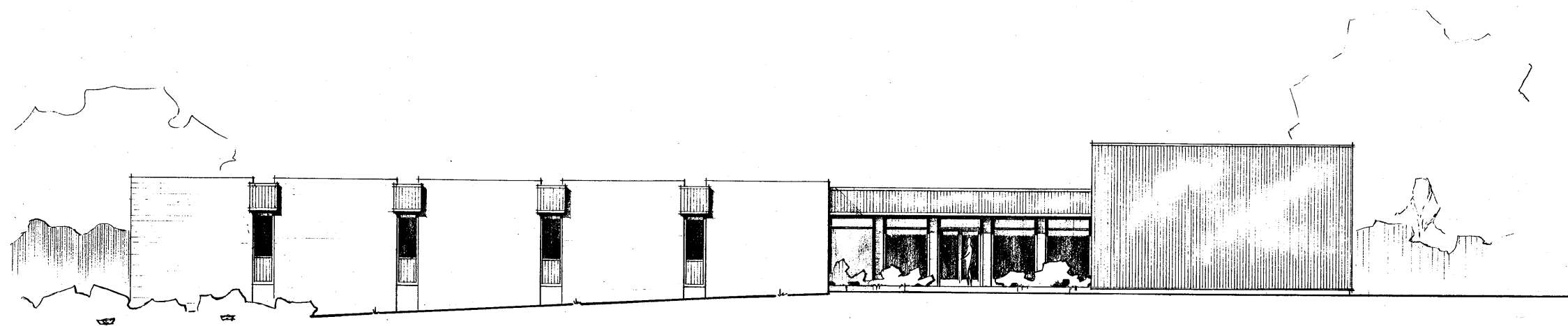
	REVISIONS	ISSUED	CONTROL BUILDING PLAN - FIRST SUB-LEVEL	SCALE 1/8" = 1'-0"
			ALTOONA WATER TREATMENT PLANT DEPARTMENT OF MINES & MINERAL INDUSTRIES LOGAN TWP., BLAIR COUNTY, PENNA.	
		JOB 68-5-56	GWIN ENGINEERS, INC. CONSULTING ENGINEERS ALTOONA - PENNSYLVANIA	
	APPROVED:	FILE	DRAWN BY:	CHECKED:



PLAN - SECOND SUB-LEVEL

EXHIBIT 6-C

	REVISIONS	ISSUED	CONTROL BUILDING PLAN - SECOND SUB-LEVEL	SCALE 1/8" = 1'-0"	
			ALTOONA WATER TREATMENT PLANT DEPARTMENT OF MINES & MINERAL INDUSTRIES LOGAN TWP., BLAIR COUNTY, PENNA.		
			JOB 68-534	GWIN ENGINEERS, INC. CONSULTING ENGINEERS ALTOONA - PENNSYLVANIA	SHEET NO.
			FILE	DRAWN BY:	CHECKED:
			APPROVED:		



NORTH ELEVATION

EXHIBIT 6-D

	REVISIONS	ISSUED	CONTROL BUILDING NORTH ELEVATION	SCALE 1/8"=1'-0"
			ALTOONA WATER TREATMENT PLANT DEPARTMENT OF MINES & MINERAL INDUSTRIES LOGAN TWP., BLAIR COUNTY, PENNA.	
		JOB 68-5-56	GWIN ENGINEERS, INC. CONSULTING ENGINEERS ALTOONA - PENNSYLVANIA	SHEET NO.
		FILE	DRAWN BY: CHECKED:	
APPROVED:				