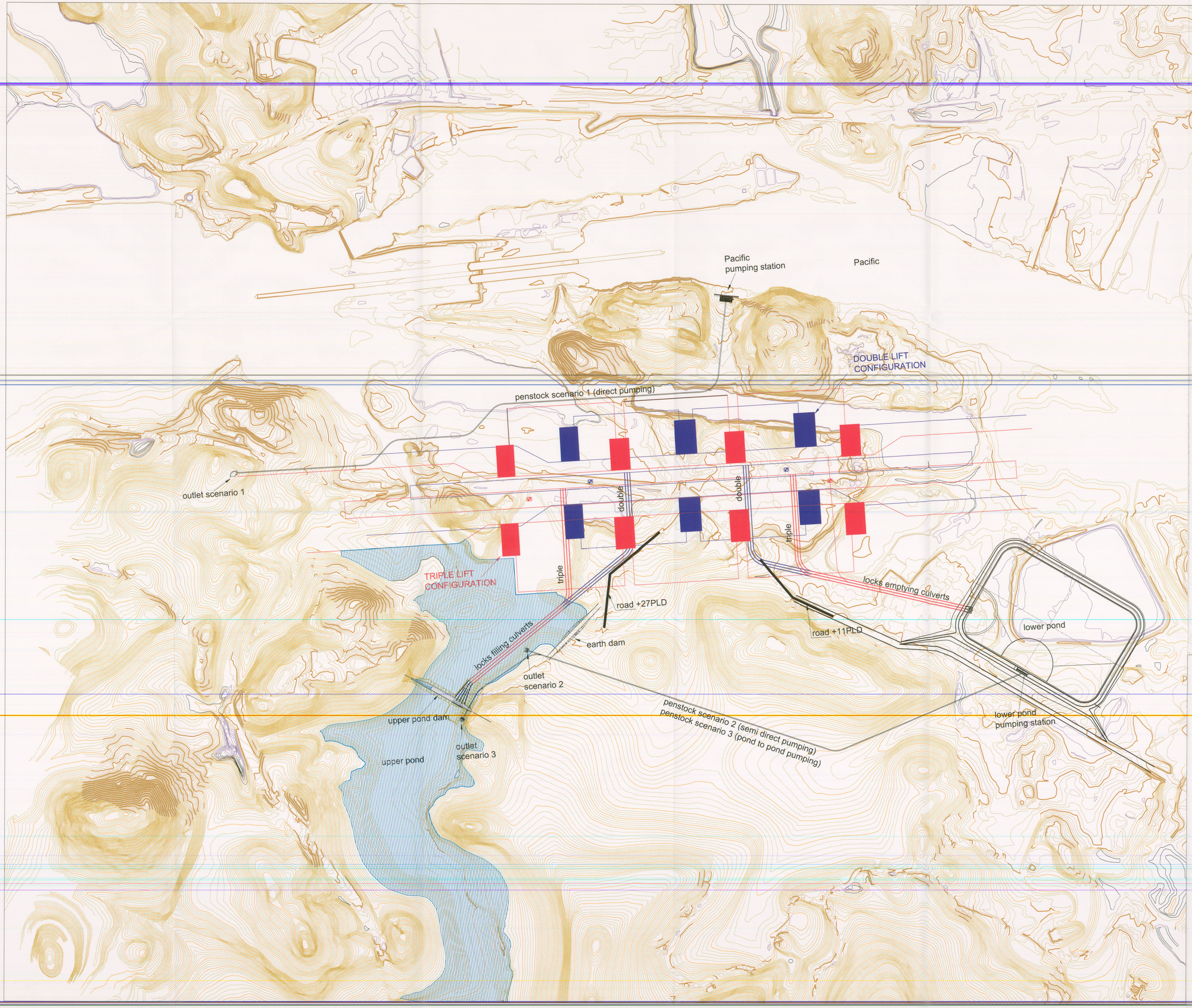


	SCENARIO 1 : DIRECT PUMPING	SCENARIO 2 : SEMI-DIRECT PUMPING	SCENARIO 3 : POND TO POND PUMPING	DRAWING nr.
dam			X	CW-002-003
lower pond		X	X	CW-006
locks emptying culverts		X	X	CW-004
locks filling culverts			X	CW-005
pumping station lower pond		X	X	CW-010
pond to pond penstock			X	CW-007
pumping station Pacific	X			CW-011
Pacific to Gatun penstock	X			CW-009
Lower Pond to Gatun penstock		X		CW-008

TECHNICAL RESOURCES CENTER - P. C. C.
00001130897
28 JUL. 2004

CPP
Consorcio Post Panamax
Tractebel Development Engineering
TECHNUM
COYNE ET BELLIER
ENR PROJETS
Avenue Ariane 7 B-1200 Brussels
In association with:
SBE IMDC

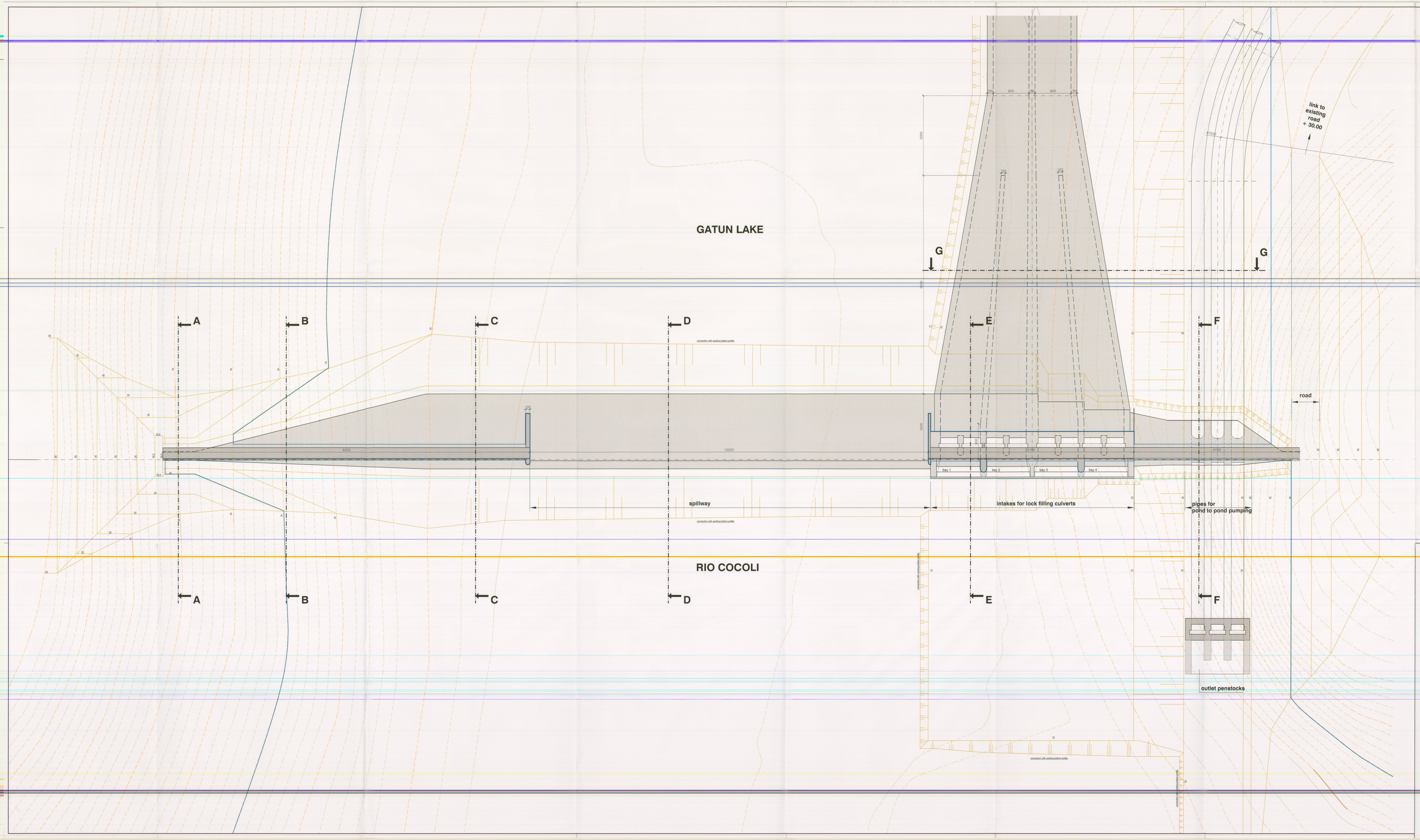
ACP
AUTORIDAD DEL CANAL DE PANAMA
División de Proyectos de Capacidad del Canal
Autoridad del Canal de Panama
Balboa
REPUBLICA DE PANAMA

Conceptual Design of Recycling of Water in Post-Panamax Locks

RECYCLING GENERAL LAYOUT

RDI	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
F					
E					
D					
C					
B					
A	31-03-04	FINAL REPORT	SBT	BME	JDR
–	12/11/03	FIRST EDITION	BME	JBI	JR

Contract	Scale:	Drawing n°:	Rev.:	Folio
SAA-110829	1/5000	CW – 001	A	1 / 1



ALL DIMENSIONS ARE ON THE LEVEL OF CONCEPT DESIGN AND HAVE TO BE CHECKED AND VALIDATED DURING FURTHER AND DETAILED DESIGN

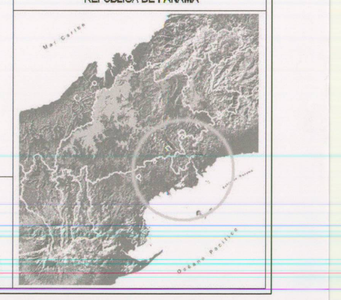
ALL DIMENSIONS ARE IN CENTIMETERS

TECHNICAL RESOURCES CENTER - P.C.C.
00001130898

CENTRO DE RECURSOS TECNICOS
AUTORIDAD DEL CANAL DE PANAMA

CPP
Consorcio Post Panamax
Tractebel Development Engineering
TECHNUM
COYNE ET BELLIER
CNR PROJETS
Avenue Ariane 7 B-1200 Brussels
In association with:
SBE IMDC

ACP
Division de Proyectos de Capacidad del Canal
Autoridad del Canal de Panama
Balboa
REPUBLICA DE PANAMA

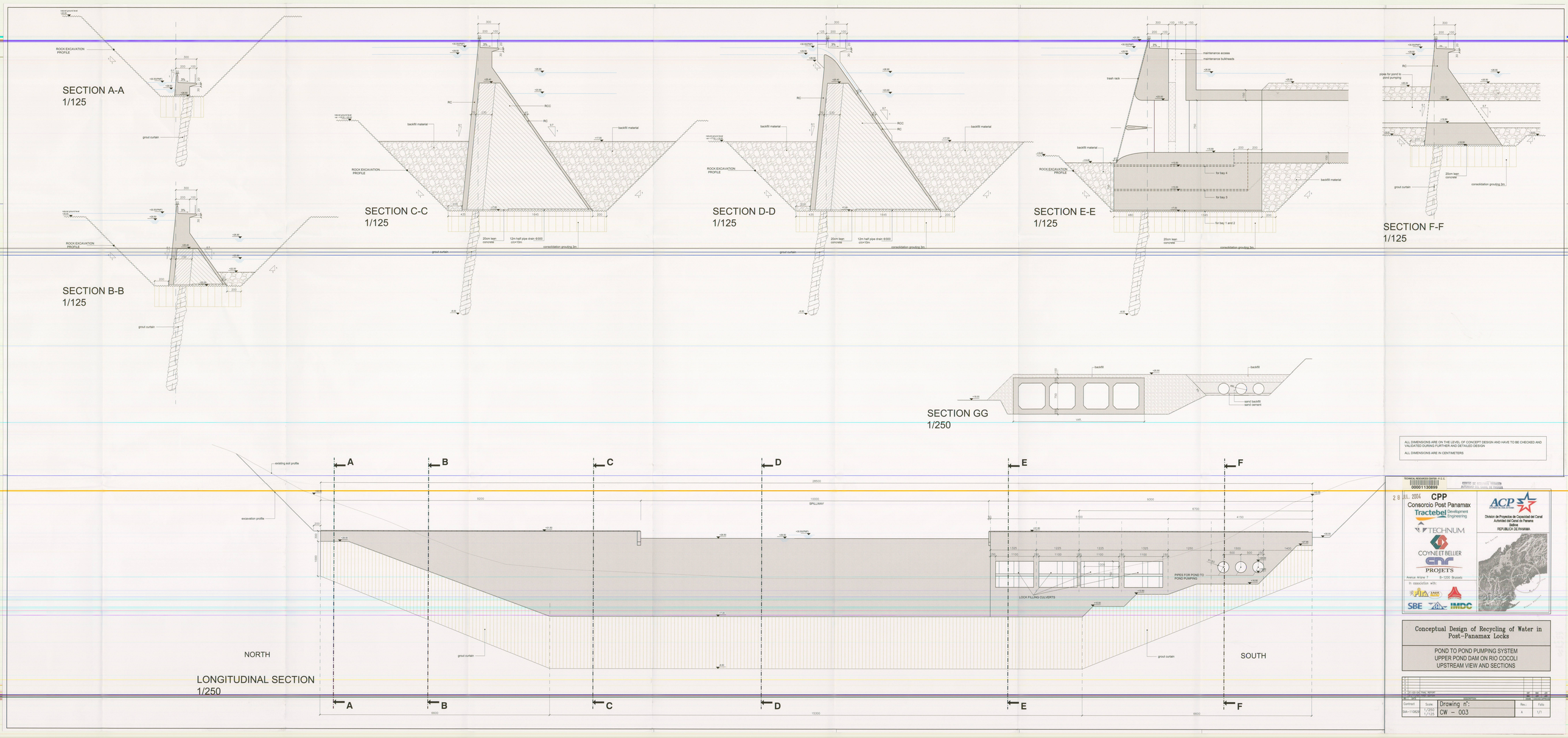


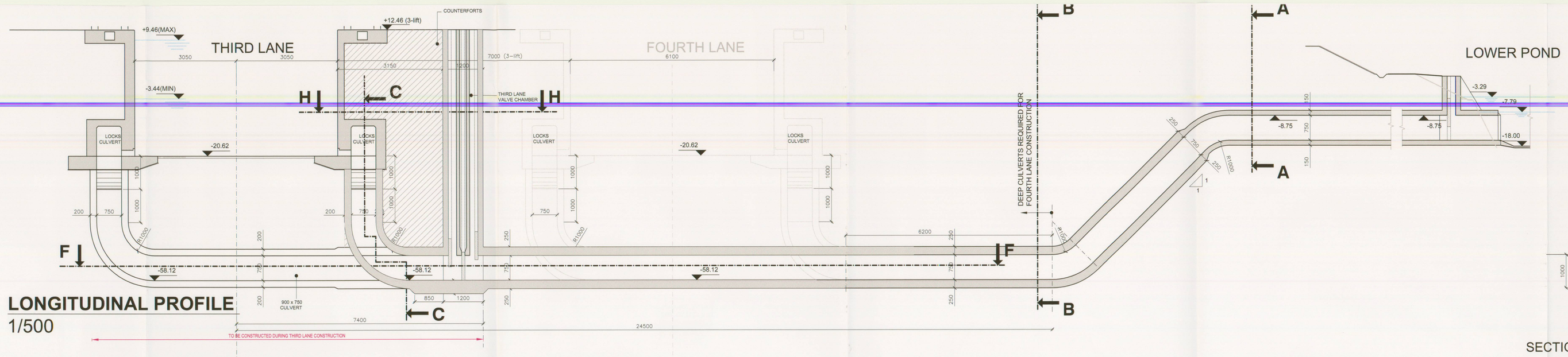
Conceptual Design of Recycling of Water in Post-Panamax Locks

POND TO POND PUMPING SYSTEM
UPPER POND DAM ON RIO COCOLI
PLAN VIEW

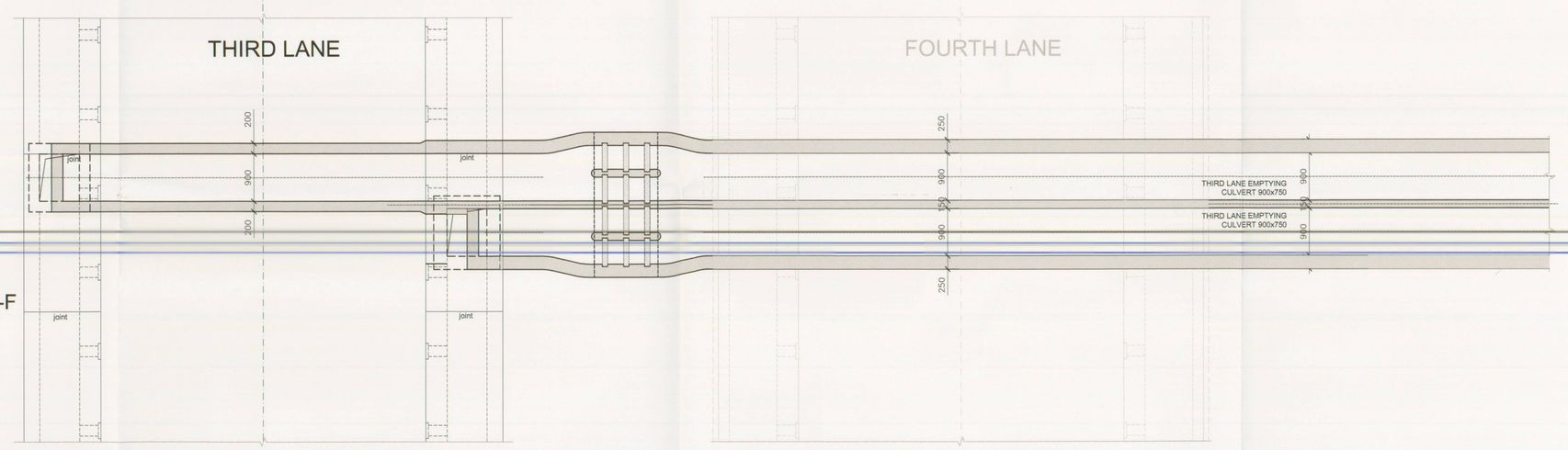
REV.	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
0	09/11/2011	FIRST EDITION			

Contract	Scale:	Drawing n°:	Rev.:	Folio
SAA-110829	1/250	CW - 002	A	1/1

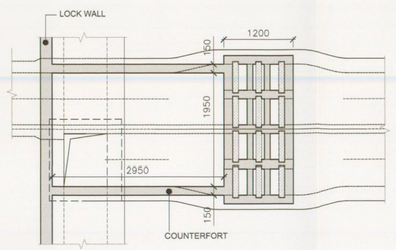

SECTION A-A
1/125
SECTION B-B
1/125
SECTION C-C
1/125
SECTION D-D
1/125
SECTION E-E
1/125
SECTION F-F
1/125
SECTION GG
1/250
LONGITUDINAL SECTION
1/250
NORTH
SOUTH
ROCK EXCAVATION PROFILE
grout curtain
backfill material
RC
RCC
20cm lean concrete
12m half pipe drain Ø300 c/c=10m
consolidation grouting 3m
maintenance access
maintenance bulkheads
trash rack
for bay 4
for bay 3
for bay 1 and 2
pipes for pond to pond pumping
existing soil profile
excavation profile
SPILLWAY
LOCK FILLING CULVERTS
PIPES FOR POND TO POND PUMPING
A
B
C
D
E
F
ALL DIMENSIONS ARE ON THE LEVEL OF CONCEPT DESIGN AND HAVE TO BE CHECKED AND VALIDATED DURING FURTHER AND DETAILED DESIGN
ALL DIMENSIONS ARE IN CENTIMETERS
TECHNICAL RESOURCES CENTER - P.E.C.
00001130899
CENTRO DE RECURSOS TECNICOS
AUTORIDAD DEL CANAL DE PANAMA
28 JUL. 2004
CPP
Consorcio Post Panamax
Tractebel Development Engineering
TECHNUM
COYNE ET BELLIER
ENR PROJETS
Avenue Ariane 7 B-1200 Brussels
In association with:
SBE
IMDC
ACP
Division de Proyectos de Capacidad del Canal
Autoridad del Canal de Panama
Balboa
REPUBLICA DE PANAMA
Conceptual Design of Recycling of Water in Post-Panamax Locks
POND TO POND PUMPING SYSTEM
UPPER POND DAM ON RIO COCOLI
UPSTREAM VIEW AND SECTIONS
Contract
SAA-110829
Scale
1/250
1/125
Drawing n°:
CW - 003
Rev.:
A
Folio
1/1



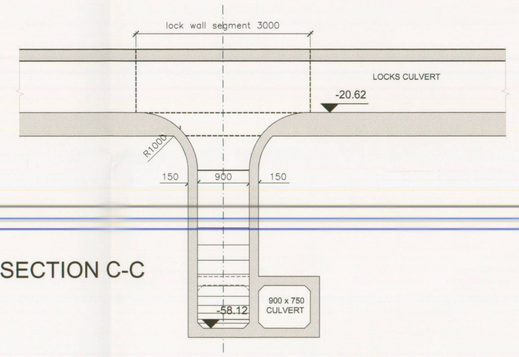
LONGITUDINAL PROFILE
1/500



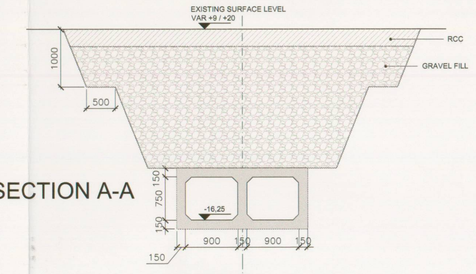
SECTION F-F



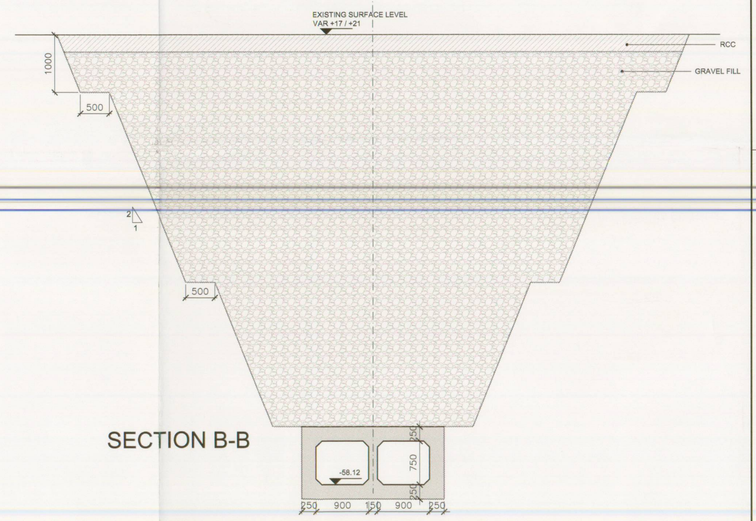
SECTION H-H



SECTION C-C

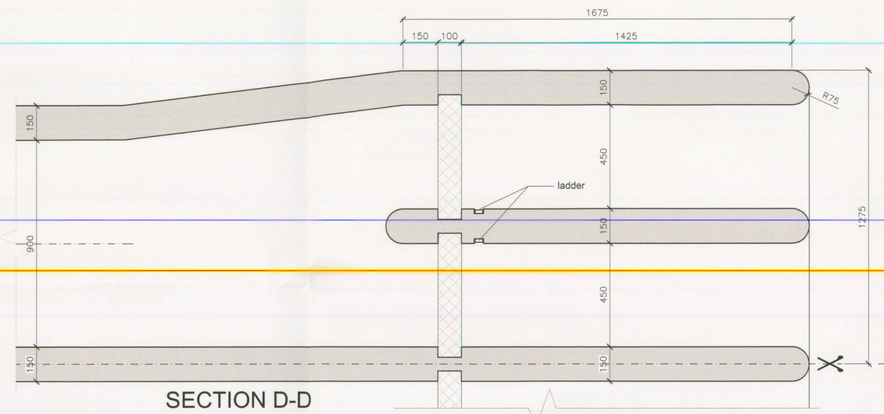


SECTION A-A

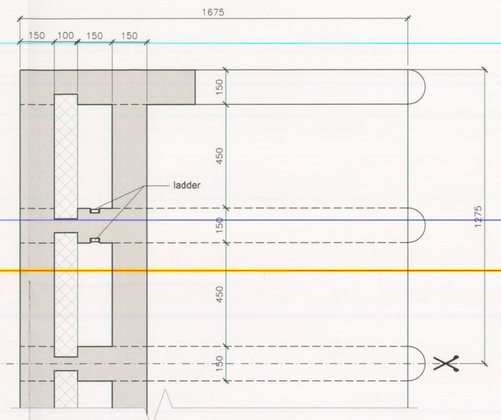


SECTION B-B

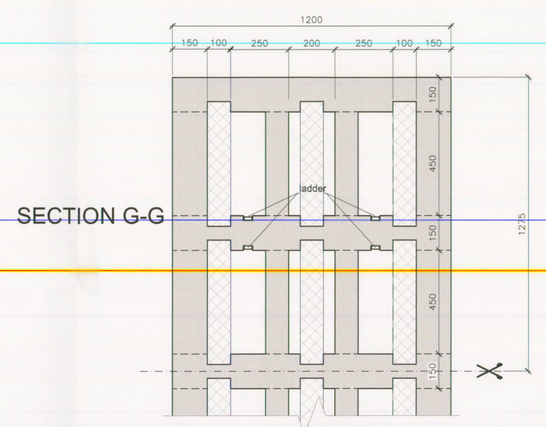
EMPTYING CULVERTS
1/500



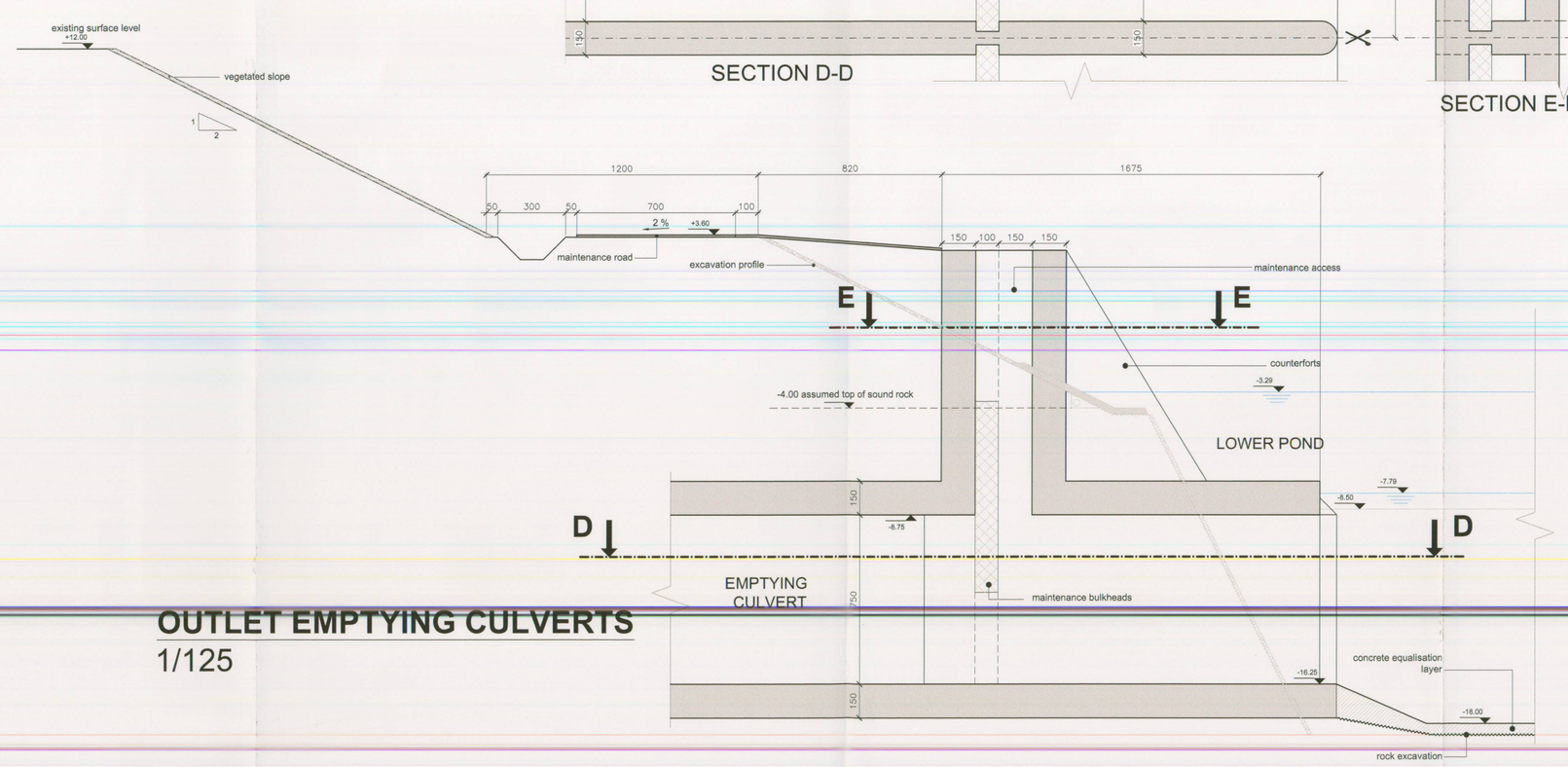
SECTION D-D



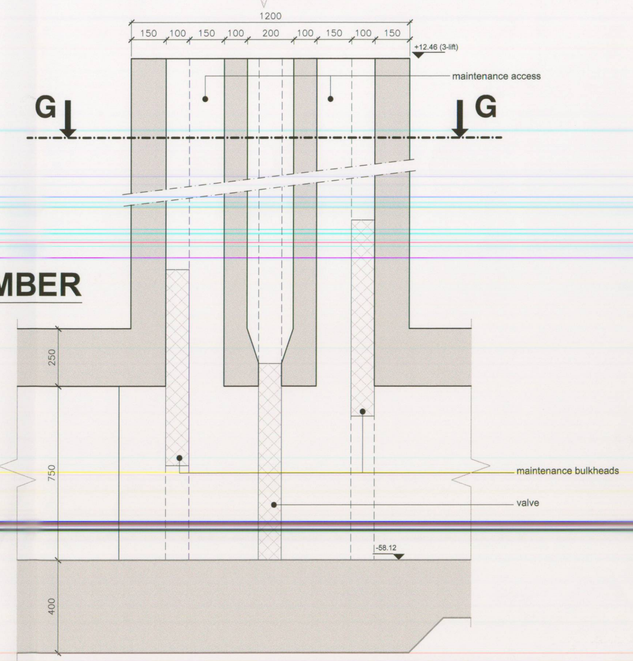
SECTION E-E



SECTION G-G



OUTLET EMPTYING CULVERTS
1/125



VALVE CHAMBER
1/125

THE EMPTYING SYSTEM IS SHOWN FOR THE TRIPLE LIFT CONFIGURATION, BUT IS ALSO APPLICABLE FOR THE DOUBLE LIFT CONFIGURATION

IMPLANTATION SEE DRAWING CW-001

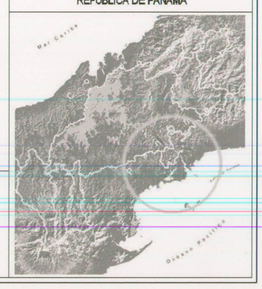
ALL DIMENSIONS ARE ON THE LEVEL OF CONCEPT DESIGN AND HAVE TO BE CHECKED AND VALIDATED DURING FURTHER AND DETAILED DESIGN

ALL DIMENSIONS ARE IN CENTIMETERS

TECHNICAL RESOURCES CENTER - P. C. C.
00001130900
Centro de Recursos Técnicos
AUTORIDAD DEL CANAL DE PANAMA
28 JUL. 2004

CPP
Consorcio Post Panamax
Tractebel Development Engineering
TECHNUM
COYNE ET BELLIER
CNR PROJETS
Avenue Ariane 7 B-1200 Brussels
In association with:
SBE IMDC

ACP
AUTORIDAD DEL CANAL DE PANAMA
División de Proyectos de Capacidad del Canal
Autoridad del Canal de Panamá
Balboa
REPUBLICA DE PANAMA

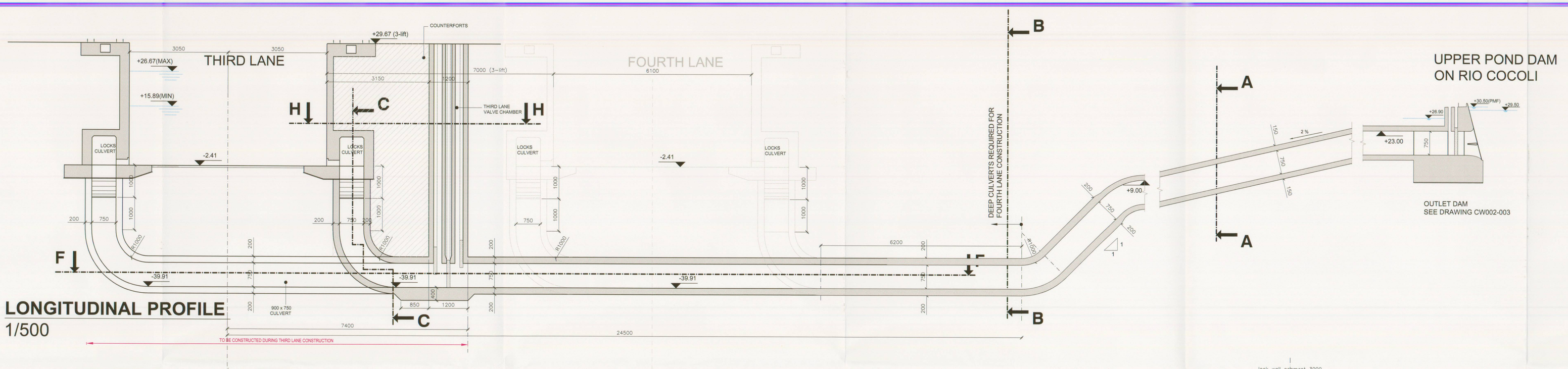


Conceptual Design of Recycling of Water in Post-Panamax Locks

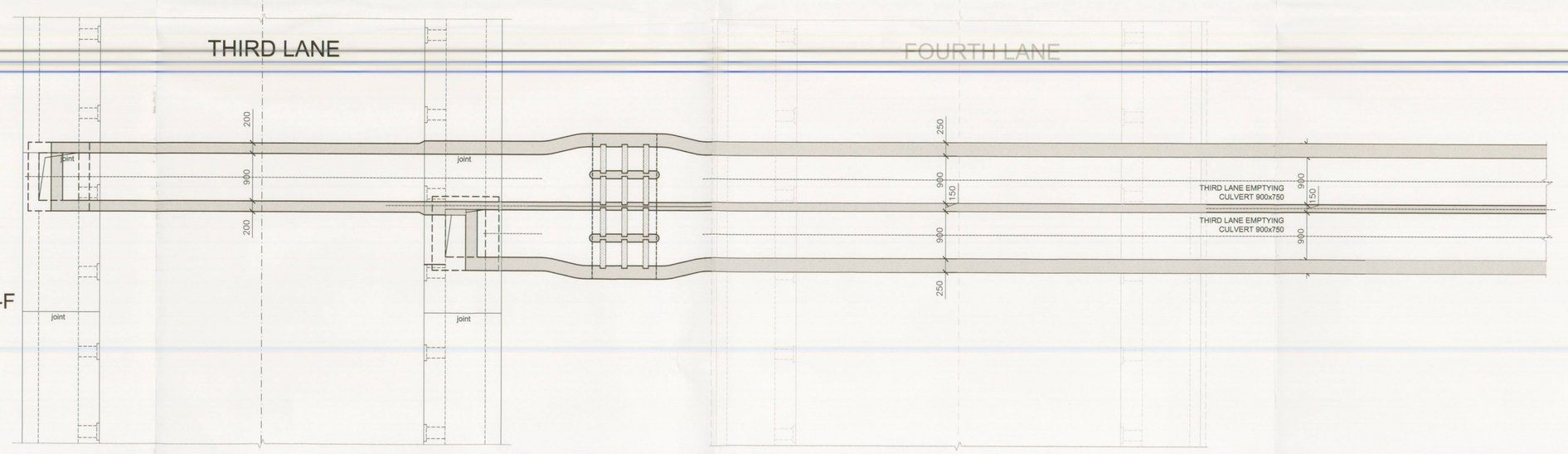
EMPTYING SYSTEM : LOCKS TO LOWER POND

REV.	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
E					
D					
C					
B					
A	31-03-04	FINAL REPORT	SBT	BMT	JSR
–	21/11/03	FIRST EDITION	BMT	JSR	JSR

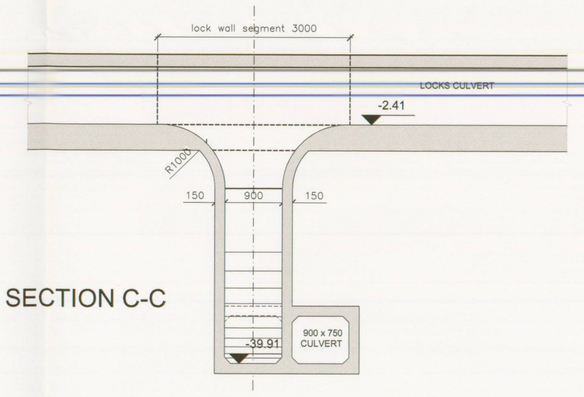
Contract	Scale:	Drawing n°:	Rev.:	Folio
SAA-110829	1/500 1/125	CW – 004	A	1/1



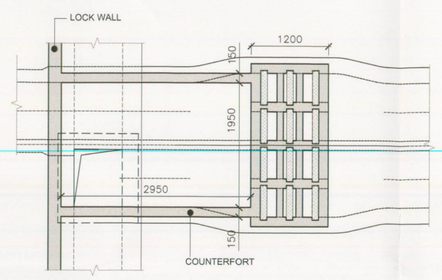
LONGITUDINAL PROFILE
1/500



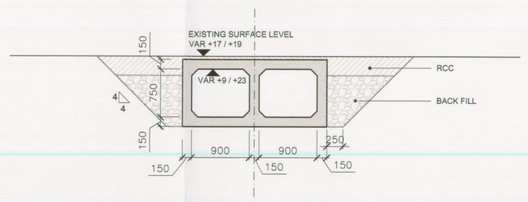
SECTION F-F



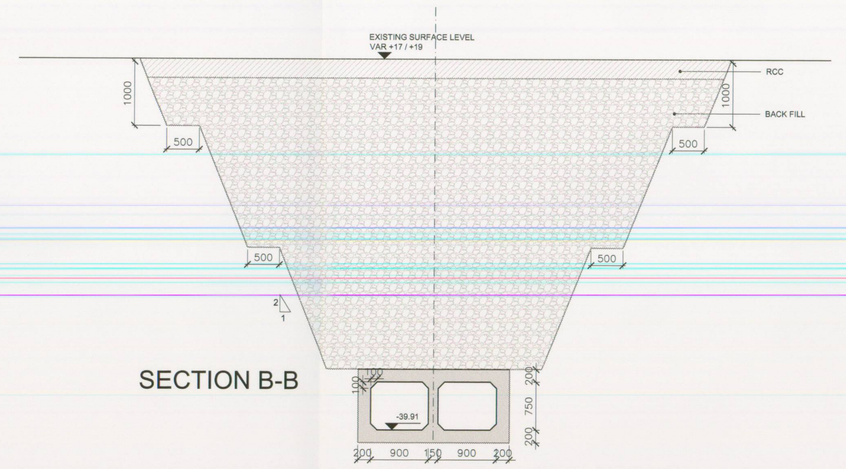
SECTION C-C



SECTION H-H

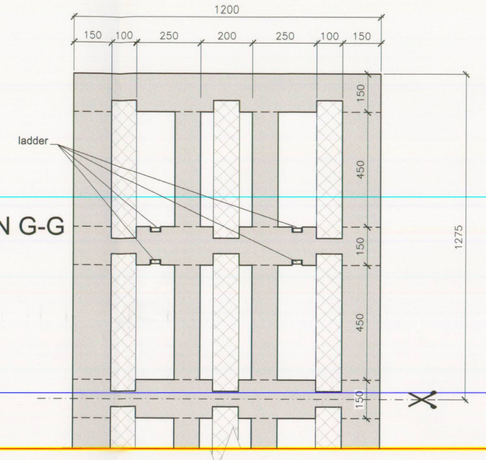


SECTION A-A

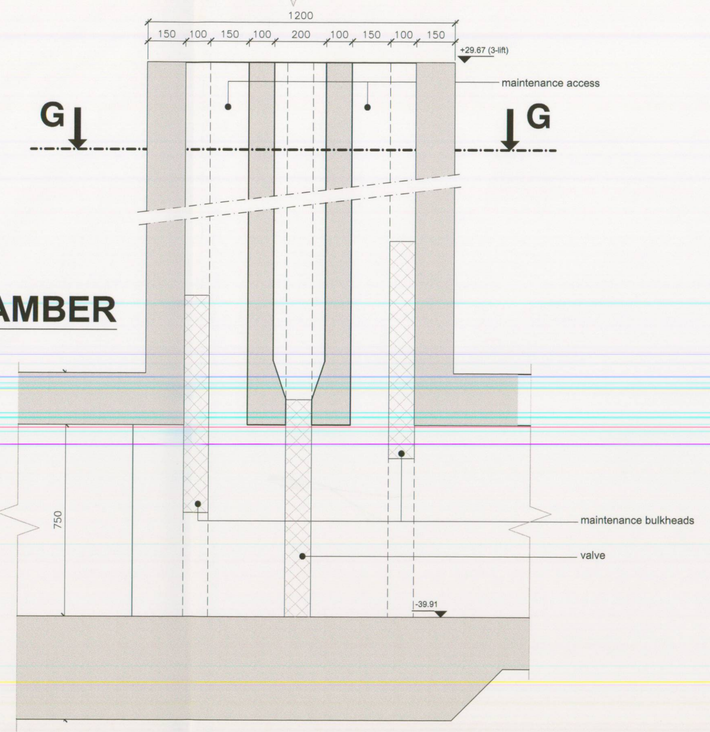


SECTION B-B

FILLING CULVERTS
1/500



SECTION G-G



VALVE CHAMBER
1/125

THE FILLING SYSTEM IS SHOWN FOR THE TRIPLE LIFT CONFIGURATION, BUT IS ALSO APPLICABLE FOR THE DOUBLE LIFT CONFIGURATION

IMPLANTATION SEE DRAWING CW-001

ALL DIMENSIONS ARE ON THE LEVEL OF CONCEPT DESIGN AND HAVE TO BE CHECKED AND VALIDATED DURING FURTHER AND DETAILED DESIGN

ALL DIMENSIONS ARE IN CENTIMETERS

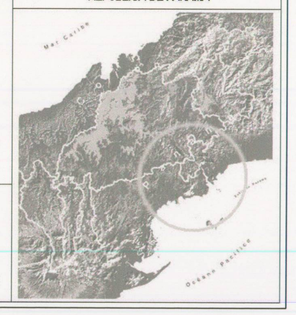
28 JUL. 2004

CENTRO DE DOCUMENTOS TECNICOS AUTORIDAD DEL CANAL DE PANAMA

TECHNICAL RESOURCES CENTER - P.C.C.
00001136801

CPP
Consorcio Post Panamax
Tractebel Development Engineering
TECHNUM
COYNE ET BELLIER
enr PROJETS
Avenue Ariane 7 B-1200 Brussels
In association with:
FIA AOSO
SBE IMDC

ACP
Division de Proyectos de Capacidad del Canal
Autoridad del Canal de Panama
Balboa
REPUBLICA DE PANAMA



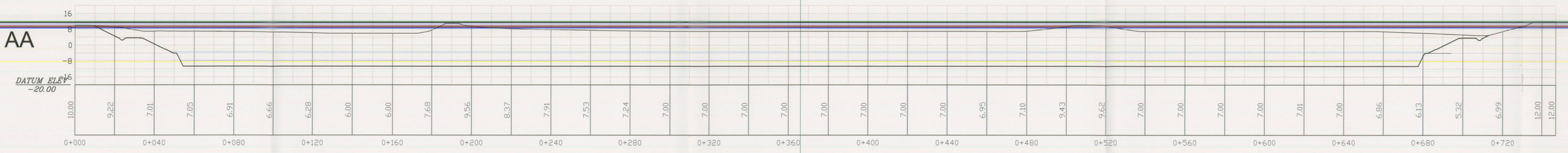
Conceptual Design of Recycling of Water in Post-Panamax Locks

FILLING SYSTEM : UPPER POND TO LOCKS

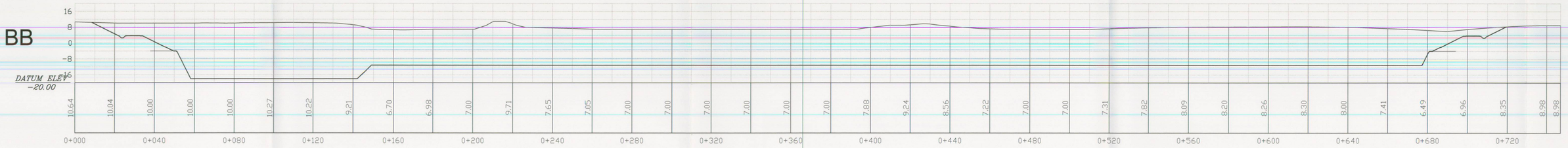
REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
A	31-03-04	FINAL REPORT	SBT	BME	JDR
-	21/11/03	FIRST EDITION	FVH	JDR	JDR

Contract	Scale:	Drawing n°:	Rev.:	Folio
SAA-110829	1/500 1/125	CW - 005	A	1/1

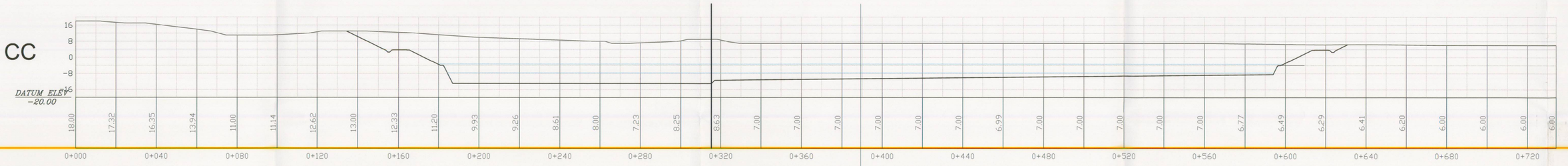
section AA



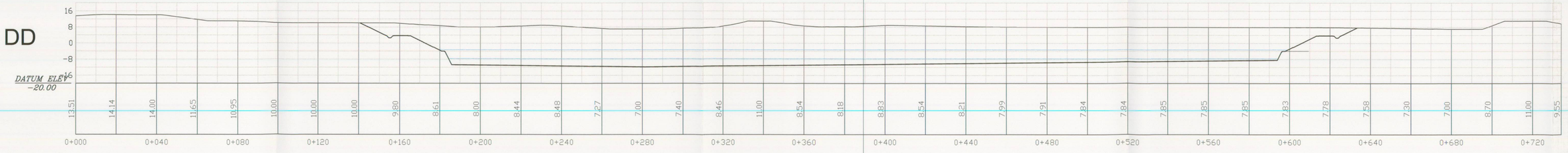
section BB



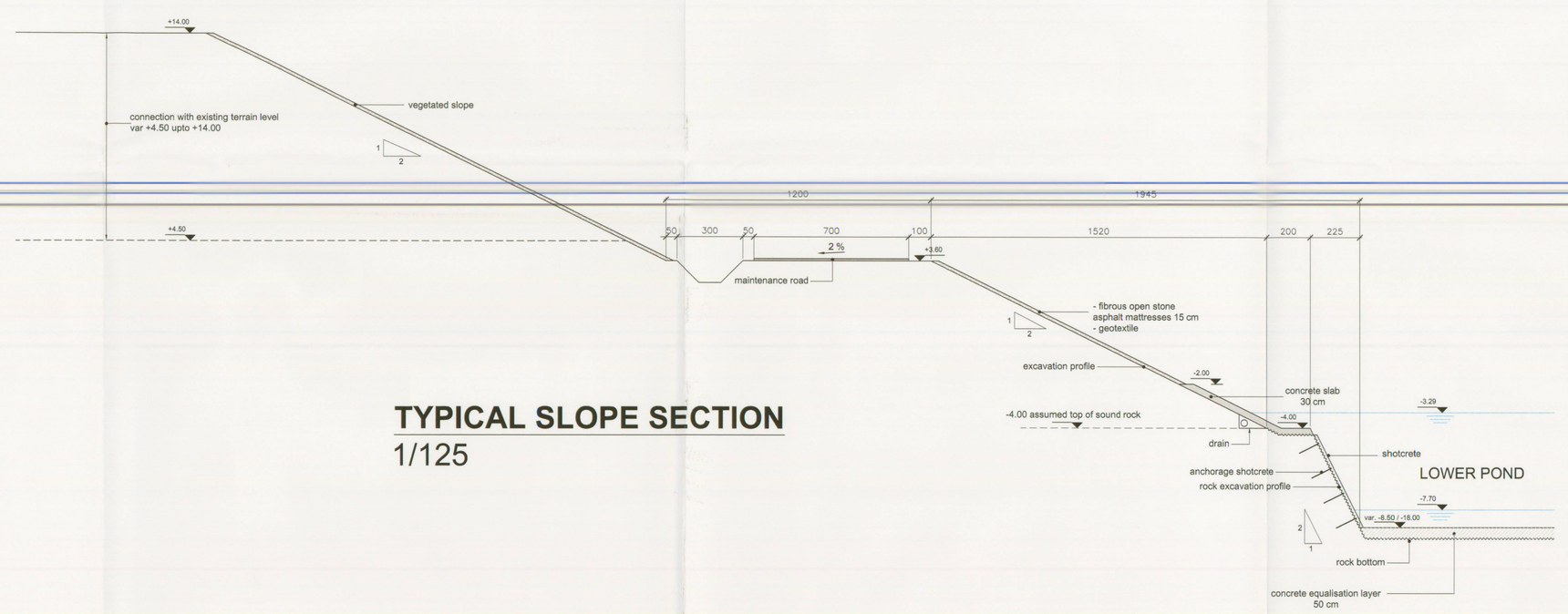
section CC



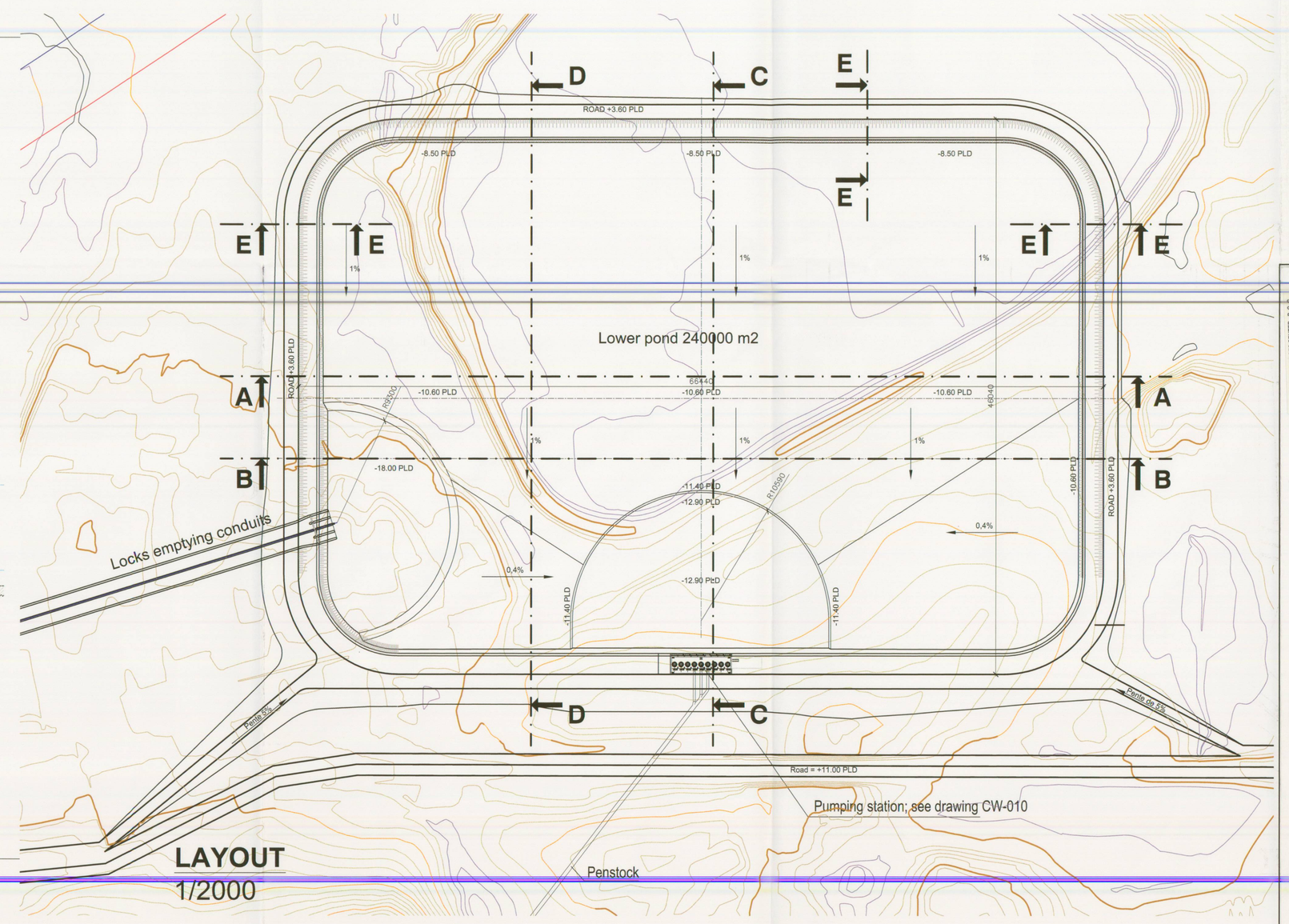
section DD



SECTIONS
1/1000



TYPICAL SLOPE SECTION
1/125



LAYOUT
1/2000

ALL DIMENSIONS ARE ON THE LEVEL OF CONCEPT DESIGN AND HAVE TO BE CHECKED AND VALIDATED DURING FURTHER AND DETAILED DESIGN

ALL DIMENSIONS ARE IN CENTIMETERS

2 8 JUL. 2004
CENTRO DE ARCHIVO TÉCNICO
AUTORIDAD DEL CANAL DE PANAMÁ

TECHNICAL DOCUMENTS CENTER N.V.S.
0000113880 2

CPP
Consorcio Post Panamax
Tractebel Development Engineering
TECHNUM
COYNE ET BELLIER
CNR PROJETS
Avenue Ariane 7 B-1200 Brussels
In association with:
SBE IMDC

ACP
AUTORIDAD DEL CANAL DE PANAMÁ
División de Proyectos de Capacidad del Canal
Autoridad del Canal de Panamá
Balboa
REPUBLICA DE PANAMA

Conceptual Design of Recycling of Water in Post-Panamax Locks

LOWER POND

REV.	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
F					
E					
D					
C					
B					
A	13-03-04	FINAL REPORT	SEF	SMC	JDR
0	01/07/03	FINAL REPORT	SMC	JFD	JDR

Contract	Scale	Drawing n°:	Rev.:	Folio
SAA-110829	1/2000 1/125	CW – 006	A	1/1

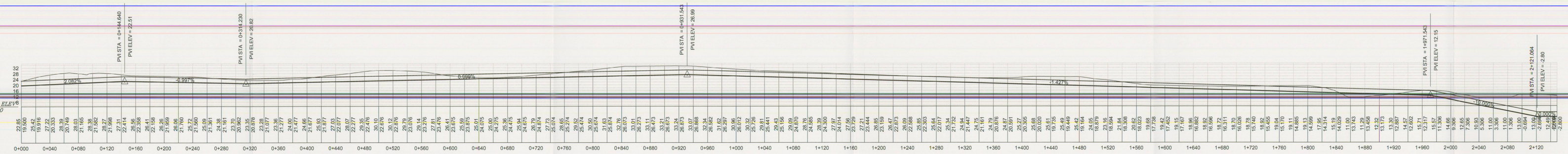
	# snips / day	1 to 5	5 to 10	10 to 15
	# conduits	1	2	3
3 lift + WSB	D=1800 mm	44255	88510	132765
3 lift, no WSB	D=2900 mm	74706	149412	224118
2 lift + WSB	D=2300 mm	56889	113778	170667
2 lift, no WSB	D=3200 mm	84712	169424	254136

SUMMARY EXCAVATION VOLUMES (m³ cut)

structure	ABRAF Square Meters	ABRAF Cubic Meters	FILLSAND Area	FILLSAND Volume	CONCRETTIE Area	CONCRETTIE Volume
0+000	86,735	0.000	786.860	0.000	786.860	0.000
0+010	76,285	0.000	786.860	0.000	786.860	0.000
0+020	64,800	0.000	786.860	0.000	786.860	0.000
0+030	63,613	0.000	786.860	0.000	786.860	0.000
0+040	63,613	0.000	484.599	0.000	2595.785	0.000
0+050	56,515	0.000	484.599	0.000	2595.785	0.000
0+060	50,000	0.000	314.874	0.000	3922.398	0.000
0+070	50,000	0.000	314.874	0.000	3922.398	0.000
0+080	50,000	0.000	314.874	0.000	3922.398	0.000
0+090	50,000	0.000	314.874	0.000	3922.398	0.000
0+100	51,597	0.000	314.874	0.000	3922.398	0.000
0+110	53,194	0.000	314.874	0.000	3922.398	0.000
0+120	54,791	0.000	314.874	0.000	3922.398	0.000
0+130	56,388	0.000	314.874	0.000	3922.398	0.000
0+140	57,985	0.000	314.874	0.000	3922.398	0.000
0+150	59,582	0.000	314.874	0.000	3922.398	0.000
0+160	61,179	0.000	314.874	0.000	3922.398	0.000
0+170	62,776	0.000	314.874	0.000	3922.398	0.000
0+180	64,373	0.000	314.874	0.000	3922.398	0.000
0+190	65,970	0.000	314.874	0.000	3922.398	0.000
0+200	67,567	0.000	314.874	0.000	3922.398	0.000
0+210	69,164	0.000	314.874	0.000	3922.398	0.000
0+220	70,761	0.000	314.874	0.000	3922.398	0.000
0+230	72,358	0.000	314.874	0.000	3922.398	0.000
0+240	73,955	0.000	314.874	0.000	3922.398	0.000
0+250	75,552	0.000	314.874	0.000	3922.398	0.000
0+260	77,149	0.000	314.874	0.000	3922.398	0.000
0+270	78,746	0.000	314.874	0.000	3922.398	0.000
0+280	80,343	0.000	314.874	0.000	3922.398	0.000
0+290	81,940	0.000	314.874	0.000	3922.398	0.000
0+300	83,537	0.000	314.874	0.000	3922.398	0.000
0+310	85,134	0.000	314.874	0.000	3922.398	0.000
0+320	86,731	0.000	314.874	0.000	3922.398	0.000
0+330	88,328	0.000	314.874	0.000	3922.398	0.000
0+340	89,925	0.000	314.874	0.000	3922.398	0.000
0+350	91,522	0.000	314.874	0.000	3922.398	0.000
0+360	93,119	0.000	314.874	0.000	3922.398	0.000
0+370	94,716	0.000	314.874	0.000	3922.398	0.000
0+380	96,313	0.000	314.874	0.000	3922.398	0.000
0+390	97,910	0.000	314.874	0.000	3922.398	0.000
0+400	99,507	0.000	314.874	0.000	3922.398	0.000
0+410	101,104	0.000	314.874	0.000	3922.398	0.000
0+420	102,701	0.000	314.874	0.000	3922.398	0.000
0+430	104,298	0.000	314.874	0.000	3922.398	0.000
0+440	105,895	0.000	314.874	0.000	3922.398	0.000
0+450	107,492	0.000	314.874	0.000	3922.398	0.000
0+460	109,089	0.000	314.874	0.000	3922.398	0.000
0+470	110,686	0.000	314.874	0.000	3922.398	0.000
0+480	112,283	0.000	314.874	0.000	3922.398	0.000
0+490	113,880	0.000	314.874	0.000	3922.398	0.000
0+500	115,477	0.000	314.874	0.000	3922.398	0.000
0+510	117,074	0.000	314.874	0.000	3922.398	0.000
0+520	118,671	0.000	314.874	0.000	3922.398	0.000
0+530	120,268	0.000	314.874	0.000	3922.398	0.000
0+540	121,865	0.000	314.874	0.000	3922.398	0.000
0+550	123,462	0.000	314.874	0.000	3922.398	0.000
0+560	125,059	0.000	314.874	0.000	3922.398	0.000
0+570	126,656	0.000	314.874	0.000	3922.398	0.000
0+580	128,253	0.000	314.874	0.000	3922.398	0.000
0+590	129,850	0.000	314.874	0.000	3922.398	0.000
0+600	131,447	0.000	314.874	0.000	3922.398	0.000
0+610	133,044	0.000	314.874	0.000	3922.398	0.000
0+620	134,641	0.000	314.874	0.000	3922.398	0.000
0+630	136,238	0.000	314.874	0.000	3922.398	0.000
0+640	137,835	0.000	314.874	0.000	3922.398	0.000
0+650	139,432	0.000	314.874	0.000	3922.398	0.000
0+660	141,029	0.000	314.874	0.000	3922.398	0.000
0+670	142,626	0.000	314.874	0.000	3922.398	0.000
0+680	144,223	0.000	314.874	0.000	3922.398	0.000
0+690	145,820	0.000	314.874	0.000	3922.398	0.000
0+700	147,417	0.000	314.874	0.000	3922.398	0.000
0+710	149,014	0.000	314.874	0.000	3922.398	0.000
0+720	150,611	0.000	314.874	0.000	3922.398	0.000
0+730	152,208	0.000	314.874	0.000	3922.398	0.000
0+740	153,805	0.000	314.874	0.000	3922.398	0.000
0+750	155,402	0.000	314.874	0.000	3922.398	0.000
0+760	156,999	0.000	314.874	0.000	3922.398	0.000
0+770	158,596	0.000	314.874	0.000	3922.398	0.000
0+780	160,193	0.000	314.874	0.000	3922.398	0.000
0+790	161,790	0.000	314.874	0.000	3922.398	0.000
0+800	163,387	0.000	314.874	0.000	3922.398	0.000
0+810	164,984	0.000	314.874	0.000	3922.398	0.000
0+820	166,581	0.000	314.874	0.000	3922.398	0.000
0+830	168,178	0.000	314.874	0.000	3922.398	0.000
0+840	169,775	0.000	314.874	0.000	3922.398	0.000
0+850	171,372	0.000	314.874	0.000	3922.398	0.000
0+860	172,969	0.000	314.874	0.000	3922.398	0.000
0+870	174,566	0.000	314.874	0.000	3922.398	0.000
0+880	176,163	0.000	314.874	0.000	3922.398	0.000
0+890	177,760	0.000	314.874	0.000	3922.398	0.000
0+900	179,357	0.000	314.874	0.000	3922.398	0.000
0+910	180,954	0.000	314.874	0.000	3922.398	0.000
0+920	182,551	0.000	314.874	0.000	3922.398	0.000
0+930	184,148	0.000	314.874	0.000	3922.398	0.000
0+940	185,745	0.000	314.874	0.000	3922.398	0.000
0+950	187,342	0.000	314.874	0.000	3922.398	0.000
0+960	188,939	0.000	314.874	0.000	3922.398	0.000
0+970	190,536	0.000	314.874	0.000	3922.398	0.000
0+980	192,133	0.000	314.874	0.000	3922.398	0.000
0+990	193,730	0.000	314.874	0.000	3922.398	0.000
1+000	195,327	0.000	314.874	0.000	3922.398	0.000
1+010	196,924	0.000	314.874	0.000	3922.398	0.000
1+020	198,521	0.000	314.874	0.000	3922.398	0.000
1+030	200,118	0.000	314.874	0.000	3922.398	0.000
1+040	201,715	0.000	314.874	0.000	3922.398	0.000
1+050	203,312	0.000	314.874	0.000	3922.398	0.000
1+060	204,909	0.000	314.874	0.000	3922.398	0.000
1+070	206,506	0.000	314.874	0.000	3922.398	0.000
1+080	208,103	0.000	314.874	0.000	3922.398	0.000
1+090	209,700	0.000	314.874	0.000	3922.398	0.000
1+100	211,297	0.000	314.874	0.000	3922.398	0.000
1+110	212,894	0.000	314.874	0.000	3922.398	0.000
1+120	214,491	0.000	314.874	0.000	3922.398	0.000
1+130	216,088	0.000	314.874	0.000	3922.398	0.000
1+140	217,685	0.000	314.874	0.000	3922.398	0.000
1+150	219,282	0.000	314.874	0.000	3922.398	0.000
1+160	220,879	0.000	314.874	0.000	3922.398	0.000
1+170	222,476	0.000	314.874	0.000	3922.398	0.000
1+180	224,073	0.000	314.874	0.000	3922.398	0.000
1+190	225,670	0.000	314.874	0.000	3922.398	0.000
1+200	227,267	0.000	314.874	0.000	3922.398	0.000
1+210	228,864	0.000	314.874	0.000	3922.398	0.000
1+220	230,461	0.000	314.874	0.000	3922.398	0.000
1+230	232,058	0.000	314.874	0.000	3922.398	0.000
1+240	233,655	0.000	314.874	0.000	3922.398	0.000
1+250	235,252	0.000	314.874	0.000	3922.398	0.000
1+260	236,849	0.000	314.874	0.000	3922.398	0.000
1+270	238,446	0.000	314.874	0.000	3922.398	0.000
1+280	240,043	0.000	314.874	0.000	3922.398	0.000
1+290	241,640	0.000	314.874	0.000	3922.398	0.000
1+300	243,237	0.000	314.874	0.000	3922.398	0.000
1+310	244,834	0.000	314.874	0.000	3922.398	0.000
1+320	246,431	0.000	314.874	0.000	3922.398	0.000
1+330	248,028	0.000	314.874	0.000	3922.398	0.000
1+340	249,625	0.000	314.874	0.000	3922.398	0.000
1+350	251,222	0.000	314.874	0.000	3922.398	0.000
1+360	252,819	0.000	314.874	0.000	3922.398	0.000
1+370	254,416	0.000	314.874	0.000	3922.398	0.000
1+380	256,013	0.000	314.874	0.000	3922.398	0.000
1+390	257,610	0.000	314.874	0.000	3922.398	0.000
1+400	259,207	0.000	314.874	0.000	3922.398	0.000
1+410	260,804	0.000	314.874	0.000	3922.398	0.000
1+420	262,401	0.000	314.874	0.000	3922.398	0.000
1+430	263,998	0.000	314.874	0.000	3922.398	0.000
1+440	265,595	0.000	314.874	0.000	3922.398	0.000
1+450	267,192	0.000	314.874	0.000	3922.398	0.000
1+460	268,789	0.000	314.874	0.000	3922.398	0.000
1+470	270,386	0.000	314.874	0.000	3922.398	0.000
1+480	271,983	0.000	314.874	0.000	3922.398	0.000
1+490	273,580	0.000	314.874	0.000	3922.398	0.000
1+500	275,177	0.000	314.874	0.000	3922.398	0.000
1+510	276,774	0.000	314.874	0.000	3922.398	0.000
1+520	278,371	0.000	314.874	0.000	3922.398	0.000
1+530	279,968	0.000	314.874	0.000	3922.398	0.000
1+540	281,565	0.000	314.874	0.000	3922.398	0.000
1+550	283,162	0.000	314.874	0.000	3922.398	0.000
1+560	284,759	0.000	314.874	0.000	3922.398	0.000
1+570	286,356	0.000	314.874	0.000	3922.398	0.000
1+580	287,953	0.000	314.874	0.000	3922.398	0.000
1+590	289,550	0.000	314.874	0.000	3922.398	0.000
1+600	291,147	0.000	314.874	0.000	3922.398	0.000
1+610	292,744	0.000	314.874	0.000	3922.398	0.000
1+620	294,341	0.000	314.874	0.000	3922.398	0.000
1+630	295,938	0.000	314.874	0.000	3922.398	0.000
1+640	297,535	0.000	314.874	0.000	3922.398	0.000
1+650	299,132	0.000	314.874	0.000	3922.398	0.000
1+660	300,729	0.000	314.874	0.000	3922.398	0.000
1+670	302,326	0.000	314.874	0.000	3922.398	0.000
1+680	303,923	0.000	314.874	0.000	3922.398	0.000
1+690	305,520	0.000	314.874	0.000	3922.398	0.000
1+700	307,117	0.000	314.874	0.000	3922.398	0.000
1+710	308,714	0.000	314.874	0.000	3922.398	0.000
1+720	310,311	0.000	314.874	0.000	3922.398	0.000
1+730	311,908	0.000	314.874	0.000	3922.398	0.000
1+740	313,505	0.000	314.874	0.000	3922.398	0.000
1+750	315,102	0.000	314.874	0.000	3922.398	0.000
1+760	316,699	0.000	314.874	0.000	3922.398	0.000
1+770	318,296	0.000	314.874	0.000	3922.398	0.000
1+780	319,893	0.000	314.874	0.000	3922.398	0.000
1+790	321,490	0.000	314.874	0.000	3922.398	0.000
1+800	323,087	0.000	314.874	0.000	3922.398	0.000
1+810	324,684	0.000	314.874	0.000	3922.398	0.000
1+820	326,281	0.000	314.874	0.000	3922.398	0.000
1+830	327,878	0.000	314.874	0.000	3922.398	0.000
1+840	329,475	0.000	314.874	0.000	3922.398	0.000
1+850	331,072	0.000	314.874	0.000	3922.398	0.000
1+860	332,669	0.000	314.874	0.000	3922.398	0.000
1+870	334,266	0.000	314.874	0.000	3922.398	0.000
1+880	335,863	0.000	314.874	0.000	3922.398	0.000
1+890	337,460	0.000	314.874	0.000	3922.398	0.000
1+900	339,057	0.000	314.874	0.000	3922.398	0.000
1+910	340,654	0.000	314.874	0.000	3922.398	0.000
1+920	342,251	0.000	314.874	0.000	3922.398	0.000
1+930	343,848	0.000	314.874	0.000	3922.398	0.000
1+940	345,445	0.000	314.874	0.000	3922.398	0.000
1+950	347,042	0.000	314.874	0.000	3922.398	0.000
1+960	348,639	0.000	314.874	0.000	3922.398	0.000
1+970	350,236	0.000	314.874	0.000	3922.398	0.000
1+980	351,833	0.000	314.874	0.000	3922.398	0.000
1+990	353,430	0.000	314.874	0.000	3922.398	0.000
2+000	355,027	0.000	314.874	0.000	3922.398	0.000
2+010	356,624	0.000	314.874	0.000	3922.398	0.000
2+020	358,221	0.000	314.874	0.000	3922.398	0.000
2+030	359,818	0.000	314.874	0.000	3922.398	0.000
2+040	361,415	0.000	314.874	0.000	3922.398	0.000
2+050	363,012	0.000	314.874	0.000	3922.398	0.000
2+060	364,609	0.000	314.874	0.000	3922.398	0.000
2+070	366,206	0.000	314.874	0.000	3922.398	0.000
2+080	367,803	0.000	314.874	0.000	3922.398	0.000
2+090	369,400	0.000	314.874	0.000	3922.398	0.000
2+100	370,997	0.000	314.874	0.000	3922.398	0.000
2+110	372,594	0.000	314.874	0.000	3922.398	0.000
2+120	374,191	0.000	314.874	0.000	3922.398	0.000
2+130	375,788	0.000	314.874	0.000	3922.398	0.000
2+140	377,385	0.000	314.874	0.000	3922.398	0.000
2+150	378,982	0.000	314.874	0.000	3922.398	0.000
2+160	380,579	0.000	314.874	0.000	3922.398	0.000
2+170	382,176	0.000	314.874	0.000	3922.398	0.000
2+180	383,773	0.000	314.874	0.000	3922.398	0.000
2+190	385,370	0.000	314.874	0.000	3922.398	0.000
2+200	386,967	0.000	314.874	0.000	3922.398	0.000
2+210	388,564	0.000	314.874	0.000	3922.398	0.000
2+220	390,161	0.000	314.874	0.000	3922.398	0.000
2+230	391,758	0.000	314.874	0.000	3922.398	0.000
2+240	393,355	0.000	314.874	0.000	3922.398	0.000
2+250	394,952	0.000	314.874	0.000	3922.398	0.000
2+260	396,549	0.000	314.874	0.000	3922.398	0.000
2+270	398,146	0.000	314.874	0.000	3922.398	0.000
2+280	399,743	0.000	314.874	0.000	3922.398	0.000
2+290	401,340	0.000	314.874	0.000	3922.398	0.000
2+300	402,937	0.000	314.874	0.000	3922.398	0.000
2+310	404,534	0.000	314.874	0.000	3922.398	0.000
2+320	406,131	0.000	314.874	0.000	3922.398	0.000
2+330	407,728	0.000	314.874	0.000	3922.398	0.000
2+340	409,325	0.000	314.874	0.000	3922.398	0.000
2+350	410,922	0.000	314.874	0.000	3922.398	0.000
2+360	412,519	0.000	314.874	0.000	3922.398	0.000
2+370	414,116	0.000	314.874	0.000	3922.398	0.000
2+380	415,713	0.000	314.874	0.000	3922.398	0.000
2+390	417,310	0.000	314.874	0.000	3922.398	0.000
2+400	418,907	0.000	314.874	0.000	3922.398	0.000
2+410	420,504	0.000	314.874	0.000	3922.398	0.000
2+420	422,101	0.000	314.874	0.000	3922.398	0.000
2+430	423,698	0.000	314.874	0.000	3922.398	0.000
2+440	425,295	0.000	314.874	0.000	3922.398	0.000
2+450	426,892	0.000	314.874	0.000	3922.398	0.000
2+460	428,489	0.000	314.874	0.000	3922.398	0.000
2+470	430,086	0.000	314.874	0.000	3922.398	0.000
2+480	431,683	0.000	314.874	0.000	3922.398	0.000
2+490	433,280	0.000	314.874	0.000	3922.398	0.000
2+500	434,877	0.000	314.874	0.000	3922.398	0.000
2+510	436,474	0.000	314.874	0.000	3922.398	0.000
2+520	438,071	0.000	314.874	0.000	3922.398	0.000
2+530	439,668	0.000	314.874	0.000	3922.398	0.000
2+540	441,265	0.000	314.874	0.000	3922.398	0.000
2+550	442,862	0.000	314.874	0.000	3922.398	0.000
2+560	444,459	0.000	314.874	0.000	3922.398	0.000
2+570	446,056	0.000	314.874	0.000	3922.398	0.000
2+580	447,653	0.000	314.874	0.000	3922.398	0.000
2+590	449,250	0.000	314.874	0.000	3922.398	0.000
2+600	450,847	0.000	314.874	0.000	3922.398	0.000
2+610	452,444	0.000	314.874	0.000	3922.398	0.000
2+620	454,041	0.000	314.874	0.000	3922.398	0.000
2+630	455,638	0.000	314.874	0.000	3922.398	0.000
2+640	457,235	0.000	314.874	0.000	3922.398	0.000
2+650	458,832	0.000	314.874	0.000	3922.398	0.000
2+660	460,429	0.000	314.874	0.000	3922.398	0.000
2+670	462,026	0.000	314.874	0.000	3922.398	0.000
2+680	463,623	0.000	314.874	0.000	3922.398	0.000
2+690	465,220	0.000	314.874	0.000	3922.398	0.000
2+700	466,817	0.000	314.874	0.000	3922.398	0.000
2+710	468,414	0.000	314.874	0.000	3922.398	0.000
2+720	470,011	0.000	314.874	0.000	3922.398	0.000
2+730	471,608	0.000	314.874	0.000	3922.398	0.000
2+740	473,205	0.000	314.874	0.000	3922.398	0.000
2+750	474,802	0.000	314.874	0.000	3922.398	0.000
2+760	476,399	0.000	314.874	0.000	3922.398	0.000
2+770	477,996	0.000	314.874	0.000	3922.398	0.000
2+780	479,593	0.000	314.874	0.000	3922.398	0.000
2+790	481,190	0.000	314.874	0.000	3922.398	0.000
2+800	482,787	0.000	314.874	0.000	3922.398	0.000
2+810	484,384	0.000	314.874	0.000	3922.398	0.000
2+820	485,981	0.000	314.874	0.000	3922.398	0.000
2+830	487,578	0.000	314.874	0.000	3922.398	0.000
2+840	489,175	0.000	314.874	0.000	3922.398	0.000
2+850	490,772	0.000	314.874	0.000	3922.398	0.000
2+860	492,369	0.000	314.874	0.000	3922.398	0.000
2+870	493,966	0.000	314.874	0.000	3922.398	0.000
2+880	495,563	0.000	314.874	0.000	3922.398	0.000
2+890	497,160	0.000	314.874	0.000	3922.398	0.000
2+900	498,757	0.000	314.874	0.000	3922.398	0.000
2+910	500,354	0.000	314.874	0.000	3922.398	0.000
2+920	501,951	0.000	314.874	0.000	3922.398	0.000
2+930	503,548	0.000	314.874	0.000	3922.398	0.000
2+940	505,145	0.000	314.874	0.000	3922.398	0.000
2+950	506,742	0.000	314.874	0.000	3922.398	0.000
2+960	508,339	0.000	314.874	0.000	3922.398	0.000
2+970	509,936	0.000	314.874	0.000	3922.398	0.000
2+980	511,533	0.000	314.874	0.000	3922.398	0.000
2+990	513,130	0.000	314.874	0.000	3922.398	0.000
3+000	514,727	0.000	314.874	0.000	3922.398	0.000
3+010	516,324	0.000	314.874	0.000	3922.398	0.000
3+020	517,921	0.000	314.874	0.000	3922.398	0.000
3+030	519,518	0.000	314.874	0.000	3922.398	0.000
3+040	521,115	0.000	314.874	0.000	3922.398	0.000
3+050	522,712	0.000	314.874	0.000	3922.398	0.000
3+060	524,309	0.000	314.874	0.000	3922.398	0.000
3+070	525,906	0.000	314.874	0.000	3922.398	0.000
3+080	527,503	0.000	314.874	0.000	3922.398	0.000
3+090	529,100	0.000	314.874	0.000	3922.398	0.000
3+100	530,697	0.000	314.874	0.000	3922.398	0.000
3+110	532,294	0.000	314.874	0.000	3922.398	0.000
3+120	533,891	0.000	314.874	0.000	3922.398	0.000
3+130	535,488	0.000	314.874	0.000	3922.398	0.000
3+140	537,085	0.000	314.874	0.000	3922.398	0.000
3+150	538,682	0.000	314.874	0.000	3922.398	0.000
3+160	540,279	0.000	314.874	0.000	3922.398	0.000
3+170	541,876	0.000	314.874	0.000	3922.398	0.000
3+180	543,473	0.000	314.874	0.000	3922.398	0.000
3+190	545,070	0.000	314.874	0.000	3922.398	0.000
3+200	546,667	0.000	314.874	0.000	3922.398	0.000
3+210	548,264	0.000	314.874	0.000	3922.398	0.000
3+220	549,861	0.000	314.874	0.000	3922.398	0.000
3+230	551,458	0.000	314.874	0.000	3922.398	0.000
3+240	553,055	0.000	314.874	0.000	3922.398	0.000
3+250	554,652	0.000	314.874	0.000	3922.398	0.000
3+260	556,249	0.000	314.874	0.000	3922.398	0.000
3+270	557,846	0.000	314.874	0.000	3922.398	0.000
3+280	559,443	0.000	314.874	0.000	3922.398	0.000
3+290	561,040	0.000	314.874	0.000	3922.398	0.000
3+300	562,637	0.000	314.874	0.000	3922.398	0.000
3+310	564,234	0.000	314.874	0.000	3922.398	0.000
3+320	565,831	0.000	314.874	0.000	3922.398	0.000
3+330	567,428	0.000	314.874	0.000	3922.398	0.000
3+340	569,025	0.000	314.874	0.000	3922.398	0.000
3+350	570,622	0.000	314.874	0.000	3922.398	0.000
3+360	572,219	0.000	314.874	0.000	3922.398	0.000
3+370	573,816	0.000	314.874	0.000	3922.398	0.000
3+380	575,413	0.000	314.874	0.000	3922.398	0.000
3+390	577,010	0.000	314.874	0.000	3922.398	0.000
3+400	578,607	0.000	314.874	0.000	3922.398	0.000
3+410	580,204	0.000	314.874	0.000	3922.398	0.000
3+420	581,801	0.000	314.874	0.000	3922.398	0.000
3+430	583,398	0.000	314.874	0.000	3922.398	0.000
3+440	584,995	0.000	314.874	0.000	3922.398	0.000
3+450	586,592	0.000	314.874	0.000	3922.398	0.000
3+460	588,189	0.000	314.874	0.000	3922.398	0.000
3+470	589,786	0.000	314.874	0.000	3922.398	0.000
3+480	591,383	0.000	314.

	# ships / day	1 to 5	5 to 10	10 to 15
	# conduits	1	2	3
3 lift + WSB	D=1800 mm	41054	82103	123162
3 lift, no WSB	D=2900 mm	68654	137308	205962
2 lift + WSB	D=2300 mm	52512	105024	157536
2 lift, no WSB	D=3200 mm	77684	155368	233052

SUMMARY EXCAVATION VOLUMES (m³ cut)



LONGITUDINAL PROFILE shown for d=3200 (2-lift without WSB)

H:1/2000 ;V:1/1000

STATION	AREAS Square Meters CUT	AREAS Square Meters FILL	VOLUMES Cubic Meters CUT	VOLUMES Cubic Meters FILL	CUMULATIVE VOLUMES Cubic Meters CUT	CUMULATIVE VOLUMES Cubic Meters FILL
0+000	31.72	0.000	0.000	0.000	0.000	0.000
0+010	33.53	0.000	326.25	0.000	326.25	0.000
0+020	43.573	0.000	431.03	0.000	757.28	0.000
0+030	53.614	0.000	486.93	0.000	1244.21	0.000
0+040	63.761	0.000	583.04	0.000	1827.258	0.000
0+050	67.187	0.000	653.51	0.000	2480.766	0.000
0+060	71.707	0.000	692.94	0.000	3173.706	0.000
0+070	71.363	0.000	715.69	0.000	3889.395	0.000
0+080	71.019	0.000	642.888	0.000	4532.283	0.000
0+090	63.245	0.000	671.32	0.000	5203.603	0.000
0+100	59.438	0.000	613.13	0.000	5816.73	0.000
0+110	56.758	0.000	581.96	0.000	6398.69	0.000
0+120	55.753	0.000	565.08	0.000	6963.77	0.000
0+130	55.753	0.000	556.88	0.000	7520.65	0.000
0+140	56.878	0.000	566.31	0.000	8086.96	0.000
0+150	56.373	0.000	561.25	0.000	8648.21	0.000
0+160	55.868	0.000	556.21	0.000	9204.42	0.000
0+170	55.363	0.000	551.16	0.000	9755.58	0.000
0+180	54.858	0.000	546.11	0.000	10301.69	0.000
0+190	54.353	0.000	541.06	0.000	10842.75	0.000
0+200	53.848	0.000	536.01	0.000	11378.76	0.000
0+210	53.343	0.000	530.96	0.000	11909.72	0.000
0+220	52.838	0.000	525.91	0.000	12435.63	0.000
0+230	52.333	0.000	520.86	0.000	12956.49	0.000
0+240	51.828	0.000	515.81	0.000	13472.31	0.000
0+250	51.323	0.000	510.76	0.000	13983.07	0.000
0+260	50.818	0.000	505.71	0.000	14488.78	0.000
0+270	50.313	0.000	500.66	0.000	14989.44	0.000
0+280	49.808	0.000	495.61	0.000	15485.05	0.000
0+290	49.303	0.000	490.56	0.000	15975.61	0.000
0+300	48.798	0.000	485.51	0.000	16461.12	0.000
0+310	48.293	0.000	480.46	0.000	16941.58	0.000
0+320	47.788	0.000	475.41	0.000	17416.99	0.000
0+330	47.283	0.000	470.36	0.000	17887.35	0.000
0+340	46.778	0.000	465.31	0.000	18352.66	0.000
0+350	46.273	0.000	460.26	0.000	18812.92	0.000
0+360	45.768	0.000	455.21	0.000	19268.13	0.000
0+370	45.263	0.000	450.16	0.000	19718.29	0.000
0+380	44.758	0.000	445.11	0.000	20163.40	0.000
0+390	44.253	0.000	440.06	0.000	20603.46	0.000
0+400	43.748	0.000	435.01	0.000	21038.47	0.000
0+410	43.243	0.000	429.96	0.000	21468.43	0.000
0+420	42.738	0.000	424.91	0.000	21893.34	0.000
0+430	42.233	0.000	419.86	0.000	22313.20	0.000
0+440	41.728	0.000	414.81	0.000	22728.01	0.000
0+450	41.223	0.000	409.76	0.000	23137.77	0.000
0+460	40.718	0.000	404.71	0.000	23542.48	0.000
0+470	40.213	0.000	399.66	0.000	23942.14	0.000
0+480	39.708	0.000	394.61	0.000	24336.75	0.000
0+490	39.203	0.000	389.56	0.000	24726.31	0.000
0+500	38.698	0.000	384.51	0.000	25110.82	0.000
0+510	38.193	0.000	379.46	0.000	25490.28	0.000
0+520	37.688	0.000	374.41	0.000	25864.69	0.000
0+530	37.183	0.000	369.36	0.000	26234.05	0.000
0+540	36.678	0.000	364.31	0.000	26598.36	0.000
0+550	36.173	0.000	359.26	0.000	26957.62	0.000
0+560	35.668	0.000	354.21	0.000	27311.83	0.000
0+570	35.163	0.000	349.16	0.000	27661.99	0.000
0+580	34.658	0.000	344.11	0.000	28007.10	0.000
0+590	34.153	0.000	339.06	0.000	28347.16	0.000
0+600	33.648	0.000	334.01	0.000	28682.17	0.000
0+610	33.143	0.000	328.96	0.000	28012.13	0.000
0+620	32.638	0.000	323.91	0.000	27341.09	0.000
0+630	32.133	0.000	318.86	0.000	26670.05	0.000
0+640	31.628	0.000	313.81	0.000	25999.01	0.000
0+650	31.123	0.000	308.76	0.000	25327.97	0.000
0+660	30.618	0.000	303.71	0.000	24656.93	0.000
0+670	30.113	0.000	298.66	0.000	23985.89	0.000
0+680	29.608	0.000	293.61	0.000	23314.85	0.000
0+690	29.103	0.000	288.56	0.000	22643.81	0.000
0+700	28.598	0.000	283.51	0.000	21972.77	0.000
0+710	28.093	0.000	278.46	0.000	21301.73	0.000
0+720	27.588	0.000	273.41	0.000	20630.69	0.000
0+730	27.083	0.000	268.36	0.000	19959.65	0.000
0+740	26.578	0.000	263.31	0.000	19288.61	0.000
0+750	26.073	0.000	258.26	0.000	18617.57	0.000
0+760	25.568	0.000	253.21	0.000	17946.53	0.000
0+770	25.063	0.000	248.16	0.000	17275.49	0.000
0+780	24.558	0.000	243.11	0.000	16604.45	0.000
0+790	24.053	0.000	238.06	0.000	15933.41	0.000
0+800	23.548	0.000	233.01	0.000	15262.37	0.000
0+810	23.043	0.000	227.96	0.000	14591.33	0.000
0+820	22.538	0.000	222.91	0.000	13920.29	0.000
0+830	22.033	0.000	217.86	0.000	13249.25	0.000
0+840	21.528	0.000	212.81	0.000	12578.21	0.000
0+850	21.023	0.000	207.76	0.000	11907.17	0.000
0+860	20.518	0.000	202.71	0.000	11236.13	0.000
0+870	20.013	0.000	197.66	0.000	10565.09	0.000
0+880	19.508	0.000	192.61	0.000	9894.05	0.000
0+890	19.003	0.000	187.56	0.000	9223.01	0.000
0+900	18.498	0.000	182.51	0.000	8551.97	0.000
0+910	17.993	0.000	177.46	0.000	7880.93	0.000
0+920	17.488	0.000	172.41	0.000	7209.89	0.000
0+930	16.983	0.000	167.36	0.000	6538.85	0.000
0+940	16.478	0.000	162.31	0.000	5867.81	0.000
0+950	15.973	0.000	157.26	0.000	5196.77	0.000
0+960	15.468	0.000	152.21	0.000	4525.73	0.000
0+970	14.963	0.000	147.16	0.000	3854.69	0.000
0+980	14.458	0.000	142.11	0.000	3183.65	0.000
0+990	13.953	0.000	137.06	0.000	2512.61	0.000
1+000	13.448	0.000	132.01	0.000	1841.57	0.000
1+010	12.943	0.000	126.96	0.000	1170.53	0.000
1+020	12.438	0.000	121.91	0.000	499.49	0.000
1+030	11.933	0.000	116.86	0.000	0.000	616.45
1+040	11.428	0.000	111.81	0.000	0.000	1733.41
1+050	10.923	0.000	106.76	0.000	0.000	2850.37
1+060	10.418	0.000	101.71	0.000	0.000	3967.33
1+070	9.913	0.000	96.66	0.000	0.000	5084.29
1+080	9.408	0.000	91.61	0.000	0.000	6201.25
1+090	8.903	0.000	86.56	0.000	0.000	7318.21
1+100	8.398	0.000	81.51	0.000	0.000	8435.17
1+110	7.893	0.000	76.46	0.000	0.000	9552.13
1+120	7.388	0.000	71.41	0.000	0.000	10669.09
1+130	6.883	0.000	66.36	0.000	0.000	11786.05
1+140	6.378	0.000	61.31	0.000	0.000	12903.01
1+150	5.873	0.000	56.26	0.000	0.000	14019.97
1+160	5.368	0.000	51.21	0.000	0.000	15136.93
1+170	4.863	0.000	46.16	0.000	0.000	16253.89
1+180	4.358	0.000	41.11	0.000	0.000	17370.85
1+190	3.853	0.000	36.06	0.000	0.000	18487.81
1+200	3.348	0.000	31.01	0.000	0.000	19604.77
1+210	2.843	0.000	25.96	0.000	0.000	20721.73
1+220	2.338	0.000	20.91	0.000	0.000	21838.69
1+230	1.833	0.000	15.86	0.000	0.000	22955.65
1+240	1.328	0.000	10.81	0.000	0.000	24072.61
1+250	0.823	0.000	5.76	0.000	0.000	25189.57
1+260	0.318	0.000	0.71	0.000	0.000	26306.53
1+270	0.000	0.000	0.000	0.000	0.000	27423.49
1+280	0.000	0.000	0.000	0.000	0.000	28540.45
1+290	0.000	0.000	0.000	0.000	0.000	29657.41
1+300	0.000	0.000	0.000	0.000	0.000	30774.37
1+310	0.000	0.000	0.000	0.000	0.000	31891.33
1+320	0.000	0.000	0.000	0.000	0.000	33008.29
1+330	0.000	0.000	0.000	0.000	0.000	34125.25
1+340	0.000	0.000	0.000	0.000	0.000	35242.21
1+350	0.000	0.000	0.000	0.000	0.000	36359.17
1+360	0.000	0.000	0.000	0.000	0.000	37476.13
1+370	0.000	0.000	0.000	0.000	0.000	38593.09
1+380	0.000	0.000	0.000	0.000	0.000	39710.05
1+390	0.000	0.000	0.000	0.000	0.000	40827.01
1+400	0.000	0.000	0.000	0.000	0.000	41943.97
1+410	0.000	0.000	0.000	0.000	0.000	43060.93
1+420	0.000	0.000	0.000	0.000	0.000	44177.89
1+430	0.000	0.000	0.000	0.000	0.000	45294.85
1+440	0.000	0.000	0.000	0.000	0.000	46411.81
1+450	0.000	0.000	0.000	0.000	0.000	47528.77
1+460	0.000	0.000	0.000	0.000	0.000	48645.73
1+470	0.000	0.000	0.000	0.000	0.000	49762.69
1+480	0.000	0.000	0.000	0.000	0.000	50879.65
1+490	0.000	0.000	0.000	0.000	0.000	51996.61
1+500	0.000	0.000	0.000	0.000	0.000	53113.57
1+510	0.000	0.000	0.000	0.000	0.000	54230.53
1+520	0.000	0.000	0.000	0.000	0.000	55347.49
1+530	0.000	0.000	0.000	0.000	0.000	56464.45
1+540	0.000	0.000	0.000	0.000	0.000	57581.41
1+550	0.000	0.000	0.000	0.000	0.000	58698.37
1+560	0.000	0.000	0.000	0.000	0.000	59815.33
1+570	0.000	0.000	0.000	0.000	0.000	60932.29
1+580	0.000	0.000	0.000	0.000	0.000	62049.25
1+590	0.000	0.000	0.000	0.000	0.000	63166.21
1+600	0.000	0.000	0.000	0.000	0.000	64283.17
1+610	0.000	0.000	0.000	0.000	0.000	65400.13
1+620	0.000	0.000	0.000	0.000	0.000	66517.09
1+630	0.000	0.000	0.000	0.000	0.000	67634.05
1+640	0.000	0.000	0.000	0.000	0.000	68751.01
1+650	0.000	0.000	0.000	0.000	0.000	69867.97
1+660	0.000	0.000	0.000	0.000	0.000	70984.93
1+670	0.000	0.000	0.000	0.000	0.000	72101.89
1+680	0.000	0.000	0.000	0.000	0.000	73218.85
1+690	0.000	0.000	0.000	0.000	0.000	74335.81
1+700	0.000	0.000	0.000	0.000	0.000	75452.77
1+710	0.000	0.000	0.000	0.000	0.000	76569.73
1+720	0.000	0.000	0.000	0.000	0.000	77686.69
1+730	0.000	0.000	0.000	0.000	0.000	78803.65
1+740	0.000	0.000	0.000	0.000	0.000	79920.61
1+750	0.000	0.000	0.000	0.000	0.000	81037.57
1+760	0.000	0.000	0.000	0.000	0.000	82154.53
1+770	0.000	0.000	0.000	0.000	0.000	83271.49
1+780	0.000	0.000	0.000	0.000	0.000	84388.45
1+790	0.000	0.000	0.000	0.000	0.000	85505.41
1+800	0.000	0.000	0.000	0.000	0.000	86622.37
1+810	0.000	0.000	0.000	0.000	0.000	87739.33
1+820	0.000	0.000	0.000	0.000	0.000	88856.29
1+830	0.000	0.000	0.000	0.000	0.000	89973.25
1+840	0.000	0.000	0.000	0.000	0.000	91090.21
1+850	0.000	0.000	0.000	0.000	0.000	92207.17
1+860	0.000	0.000	0.000	0.000	0.000	93324.13
1+870	0.000	0.000	0.000	0.000	0.000	94441.09
1+880	0.000	0.000	0.000	0.000	0.000	95558.05
1+890	0.000	0.000	0.000	0.000	0.000	96675.01
1+900	0.000	0.000	0.000	0.000	0.000	97791.97
1+910	0.000	0.000	0.000	0.000	0.000	98908.93
1+920	0.000	0.000	0.000	0.000	0.000	100025.89
1+930	0.000	0.000	0.000	0.000	0.000	101142.85
1+940	0.000	0.000	0.000	0.000	0.000	102259.81
1+950	0.000	0.000	0.000	0.000	0.000	103376.77
1+960	0.000	0.000	0.000	0.000	0.000	104493.73
1+970	0.000	0.000	0.000	0.000	0.000	105610.69
1+980	0.000	0.000	0.000	0.000	0.000	106727.65
1+990	0.000	0.000	0.000	0.000	0.000	107844.61
2+000	0.000	0.000	0.000	0.000	0.000	108961.57
2+010	0.000	0.000	0.000	0.000	0.000	110078.53
2+020	0.000	0.000	0.000	0.000	0.000	111195.49
2+030	0.000	0.000	0.000	0.000	0.000	112312.45
2+040	0.000	0.000	0.000	0.000	0.000	113429.41
2+050	0.000	0.000	0.000	0.000	0.000	114546.37
2+060	0.000	0.000	0.000	0.000	0.000	115663.33
2+070	0.000	0.000	0.000	0.000	0.000	116780.29
2+080	0.000	0.000	0.000	0.000	0.000	117897.25
2+090	0.000	0.000	0.000	0.000	0.000	119014.21
2+100	0.000	0.000	0.000	0.000	0.000	120131.17
2+110	0.000	0.000	0.000	0.000	0.000	121248.13
2+120	0.000	0.000	0.000	0.000	0.000	122365.09
2+130	0.000	0.000	0.000	0.000	0.000	123482.05
2+140	0.000	0.000	0.000	0.000	0.000	124599.01
2+150	0.000	0.000	0.000	0.000	0.000	125715.97
2+160	0.000	0.000	0.000	0.000	0.000	126832.93
2+170	0.000	0.000	0.000	0.000	0.000	127949.89
2+180	0.000	0.000	0.000	0.000	0.000	129066.85
2+190	0.000	0.000	0.000	0.000	0.000	130183.81
2+200	0.000	0.000	0.000	0.000	0.000	131300.77
2+210	0.000	0.000	0.000	0.000	0.000	132417.73
2+220	0.000	0.000	0.000	0.000	0.000	133534.69
2+230	0.000	0.000	0.000	0.000	0.000	134651.65
2+240	0.000	0.000	0.000	0.000	0.000	135768.61
2+250	0.000	0.000	0.000	0.000	0.000	136885.57
2+260	0.000	0.000	0.000	0.000	0.000	138002.53
2+270	0.000	0.000	0.000	0.000	0.000	139119.49
2+280	0.000	0.000	0.000	0.000	0.000	140236.45
2+290	0.000	0.000	0.000	0.000	0.000	141353.41
2+300	0.000	0.000	0.000	0.000	0.000	142470.37
2+310	0.000	0.000	0.000	0.000	0.000	143587.33
2+320	0.000	0.000	0.000	0.000	0.000	144704.29
2+330	0.000	0.000	0.000	0.000	0.000	145821.25
2+340	0.000	0.000	0.000	0.000	0.000	146938.21
2+350	0.000	0.000	0.000	0.000	0.000	148055.17
2+360	0.000	0.000	0.000	0.000	0.000	149172.13
2+370	0.000	0.000	0.000	0.000	0.000	150289.09
2+380	0.000	0.000	0.000	0.000	0.000	151406.05
2+390	0.000	0.000	0.000	0.000	0.000	152523.01
2+400	0.000	0.000	0.000	0.000	0.000	153639.97
2+410	0.000	0.000	0.000	0.000	0.000	154756.93
2+420	0.000	0.000	0.000	0.000	0.000	155873.89
2+430	0.000	0.000	0.000	0.000	0.000	156990.85
2+440	0.000	0.000	0.000	0.000	0.000	158107.81
2+450	0.000	0.000	0.000	0.000	0.000	159224.77
2+460	0.000	0.000	0.000	0.000	0.000	160341.73
2+470	0.000	0.000	0.000	0.000	0.000	161458.69
2+480	0.000	0.000	0.000	0.000	0.000	162575.65
2+490	0.000	0.000	0.000	0.000	0.000	163692.61
2+500	0.000	0.000	0.000	0.000	0.000	164809.57
2+510	0.000	0.000	0.000	0.000	0.000	165926.53
2+520	0.000	0.000	0.000	0.000	0.000	167043.49
2+530	0.000	0.000	0.000	0.000	0.000	168160.45
2+540	0.000	0.000	0.000	0.000	0.000	169277.41
2+550	0.000	0.000	0.000	0.000	0.000	170394.37
2+560	0.000	0.000	0.000	0.000	0.000	171511.33
2+570	0.000	0.000	0.000	0.000	0.000	172628.29
2+580	0.000	0.000	0.000	0.000	0.000	173745.25
2+590	0.000	0.000	0.000	0.000	0.000	174862.21
2+600	0.000	0.000	0.000	0.000	0.000	175979.17
2+610	0.000	0.000	0.000	0.000	0.000	177096.13
2+620	0.000	0.000	0.000	0.000	0.000	178213.09
2+630	0.000	0.000	0.000	0.000	0.000	179330.05
2+640	0.000	0.000	0.000	0.000	0.000	180447.01
2+650	0.000	0.000	0.000	0.000	0.000	181563.97
2+660	0.000	0.000	0.000	0.000	0.000	182680.93
2+670	0.000	0.000	0.000	0.000	0.000	183797.89
2+680	0.000	0.000	0.000	0.000	0.000	184914.85
2+690	0.000	0.000	0.000	0.000	0.000	186031.81
2+700	0.000	0.000	0.000	0.000	0.000	187148.77
2+710	0.000	0.000	0.000	0.000	0.000	188265.73
2+720	0.000	0.000	0.000	0.000	0.000	189382.69
2+730	0.000	0.000	0.000	0.000	0.000	190499.65
2+740	0.000	0.000	0.000	0.000	0.000	191616.61
2+750	0.000	0.000	0.000	0.000	0.000	192733.57
2+760	0.000	0.000	0.000	0.000	0.000	193850.53
2+770	0.000	0.000	0.000	0.000	0.000	194967.49
2+780	0.000	0.000	0.000	0.000	0.000	196084.45
2+790	0.000	0.000	0.000	0.000	0.000	197201.41
2+800	0.000	0.000	0.000	0.000	0.000	198318.37
2+810	0.000	0.000	0.000	0.000	0.000	199435.33
2+820	0.000	0.000	0.000	0.000	0.000	200552.29
2+830	0.000	0.000	0.000	0.000	0.000	201669.25
2+840	0.000	0.000	0.000	0.000	0.000	202786.21
2+850	0.000	0.000	0.000	0.000	0.000	203903.17
2+860	0.000	0.000	0.000	0.000	0.000	205020.13
2+870	0.000	0.000	0.000	0.000	0.000	206137.09
2+880	0.000	0.000	0.000	0.000	0.000	207254.05
2+890	0.000	0.000	0.000	0.000	0.000	208371.01
2+900	0.000	0.000	0.000	0.000	0.000	209487.97
2+910	0.000	0.000	0.000	0.000	0.000	210604.93
2+920	0.000	0.000	0.000	0.000	0.000	211721.89
2+930	0.000	0.000	0.000	0.000	0.000	212838.85
2+940	0.000	0.000	0.000	0.000	0.000	213955.81
2+950	0.000	0.000	0.000	0.000	0.000	215072.77
2+960	0.000	0.000	0.000	0.000	0.000	216189.73
2+970	0.000	0.000	0.000	0.000	0.000	217306.69
2+980	0.000	0.000	0.000	0.000	0.000	218423.65
2+990	0.000	0.000	0.000	0.000	0.000	219540.61
3+000	0.000	0.000	0.000	0.000	0.000	220657.57
3+010	0.000	0.000	0.000	0.000	0.000	221774.53
3+020	0.000	0.000	0.000	0.000	0.000	222891.49
3+030	0.000	0.000	0.000	0.000	0.000	224008.45
3+040	0.000	0.000	0.000	0.000	0.000	225125.41
3+050	0.000	0.000	0.000	0.000	0.000	226242.37
3+060	0.000	0.000	0.000	0.000	0.000	227359.33
3+070	0.000	0.000	0.000	0.000	0.000	228476.29
3+080	0.000	0.000	0.000	0.000	0.000	229593.25
3+090	0.000	0.000	0.000	0.000	0.000	230710.21
3+100	0.000	0.000	0.000	0.000	0.000	231827.17
3+110	0.000	0.000	0.000	0.000	0.000	232944.13
3+120	0.000	0.000	0.000	0.000	0.000	234061.09
3+130	0.000	0.000	0.000	0.000	0.000	235178.05
3+140	0.000	0.000	0.000	0.000	0.000	236295.01
3+150	0.000	0.000	0.000	0.000	0.000	237411.97
3+160	0.000	0.000	0.000	0.000	0.000	238528.93
3+170	0.000	0.000	0.000	0.000	0.000	239645.89
3+180	0.000	0.000	0.000	0.000	0.000	240762.85
3+190	0.000	0.000	0.000	0.000	0.000	241879.81
3+200	0.000	0.000	0.000	0.000	0.000	242996.77
3+210	0.000	0.000	0.000	0.000	0.000	244113.73
3+220	0.000	0.000	0.000	0.000	0.000	245230.69
3+230	0.000	0.000	0.000	0.000	0.000	246347.65
3+240	0.000	0.000	0.000	0.000	0.000	247464.61
3+250	0.000	0.000	0.000	0.000	0.000	248581.57
3+260	0.000	0.000	0.000	0.000	0.000	249698.53
3+270	0.000	0.000	0.000	0.000	0.000	250815.49
3+280	0.000	0.000	0.000	0.000	0.000	251932.45
3+290	0.000	0.000	0.000	0.000	0.000	253049.41
3+300	0.000	0.000	0.000	0.000	0.000	254166.37
3+310	0.000	0.000	0.000	0.000	0.000	255283.33
3+320	0.000	0.000	0.000	0.000	0.000	256400.29
3+330	0.000	0.000	0.000	0.000	0.000	257517.25
3+340	0.000	0.000	0.000	0.000	0.000	258634.21
3+350	0.000	0.000	0.000	0.000	0.000	259751.17
3+360	0.000	0.000	0.000	0.000	0.000	260868.13
3+370	0.000	0.000	0.000	0.000	0.000	261985.09
3+380	0.000	0.000	0.000	0.000	0.000	263102.05
3+390	0.000	0.000	0.000	0.000	0.000	264219.01
3+400	0.000	0.000	0.000	0.000	0.000	265335.97
3+410	0.000	0.000	0.000	0.000	0

	# ships / day	1 to 5	5 to 10	10 to 15
	# conduits	1	2	3
3 lift + WSB	D=1800 mm	26979	53959	80936
3 lift, no WSB	D=2900 mm	45656	91312	136968
2 lift + WSB	D=2300 mm	34761	69522	104283
2 lift, no WSB	D=3200 mm	51882	103764	155646

1+900 upto end	371.000 extra

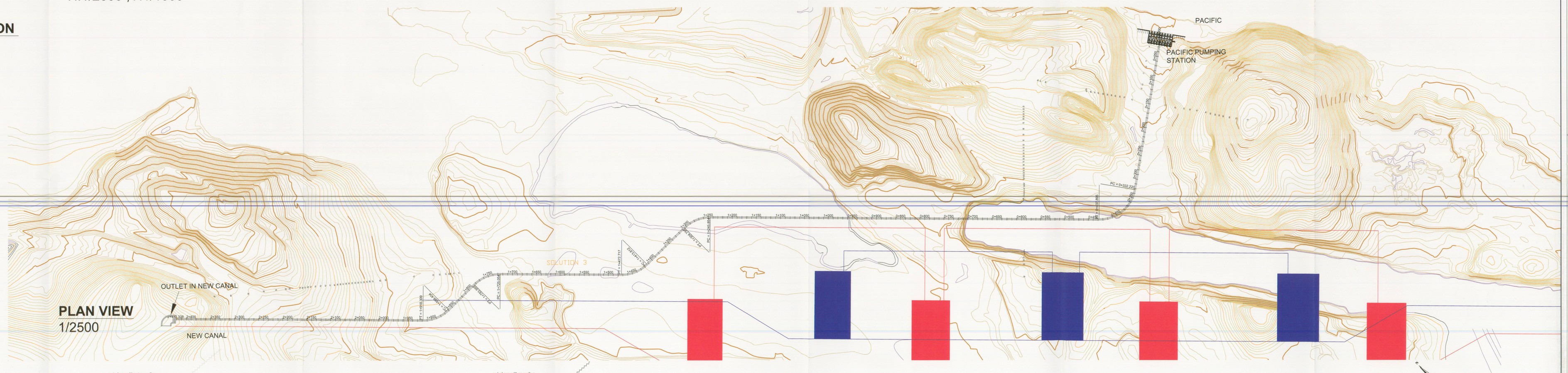
SUMMARY EXCAVATION VOLUMES (m³ cut)

STATION	AREAS Bypass	AREAS Below	VOLUMES Cycle	VOLUMES Below	CUMULATIVE VOLUMES Cycle	CUMULATIVE VOLUMES Below
	CUT	FILL	CUT	FILL	CUT	FILL
0+000	0.000	0.000	0.000	0.000	0.000	0.000
0+010	49.857	0.000	527.065	0.000	527.065	0.000
0+020	47.828	0.000	496.424	0.000	1023.537	0.000
0+030	38.456	0.000	431.419	0.000	1454.956	0.000
0+040	19.973	0.000	293.744	0.000	1748.699	0.000
0+050	19.973	0.000	199.776	0.000	1948.476	0.000
0+060	47.456	0.000	334.645	0.000	2283.121	0.000
0+070	69.388	0.000	581.221	0.000	2864.342	0.000
0+080	79.333	0.000	748.605	0.000	3612.947	0.000
0+090	79.333	0.000	793.665	0.000	4406.612	0.000
0+100	79.173	0.000	747.591	0.000	5154.203	0.000
0+110	77.890	0.000	781.645	0.000	5935.848	0.000
0+120	77.733	0.000	777.616	0.000	6713.464	0.000
0+130	77.733	0.000	781.783	0.000	7495.248	0.000
0+140	81.080	0.000	792.991	0.000	8288.239	0.000
0+150	81.080	0.000	812.748	0.000	9100.987	0.000
0+160	79.890	0.000	799.850	0.000	9900.837	0.000
0+170	79.890	0.000	799.350	0.000	10699.538	0.000
0+180	74.819	0.000	748.860	0.000	11448.398	0.000
0+190	74.819	0.000	748.190	0.000	12196.588	0.000
0+200	74.594	0.000	746.767	0.000	12943.355	0.000
0+210	69.208	0.000	694.592	0.000	13637.947	0.000
0+220	64.511	0.000	670.776	0.000	14308.723	0.000
0+230	64.511	0.000	645.614	0.000	14954.337	0.000
0+240	63.979	0.000	637.811	0.000	15592.148	0.000
0+250	63.979	0.000	639.791	0.000	16231.939	0.000
0+260	64.499	0.000	642.662	0.000	16874.601	0.000
0+270	64.499	0.000	645.000	0.000	17519.601	0.000
0+280	64.127	0.000	641.264	0.000	18160.865	0.000
0+290	63.127	0.000	631.270	0.000	18792.135	0.000
0+300	62.127	0.000	621.270	0.000	19413.405	0.000
0+310	56.979	0.000	576.113	0.000	19989.518	0.000
0+320	53.811	0.000	548.950	0.000	20538.468	0.000
0+330	51.813	0.000	526.706	0.000	21065.174	0.000
0+340	51.813	0.000	518.126	0.000	21583.300	0.000
0+350	50.306	0.000	503.594	0.000	22086.894	0.000
0+360	47.792	0.000	490.994	0.000	22577.888	0.000
0+370	43.933	0.000	458.625	0.000	23036.513	0.000
0+380	43.933	0.000	439.330	0.000	23475.843	0.000
0+390	43.933	0.000	439.330	0.000	23915.173	0.000
0+400	43.933	0.000	439.330	0.000	24354.503	0.000
0+410	41.867	0.000	430.132	0.000	24784.635	0.000
0+420	41.867	0.000	418.669	0.000	25203.304	0.000
0+430	41.867	0.000	418.669	0.000	25621.973	0.000
0+440	41.867	0.000	418.669	0.000	26040.642	0.000
0+450	41.867	0.000	418.669	0.000	26459.311	0.000
0+460	41.867	0.000	418.669	0.000	26877.980	0.000
0+470	41.867	0.000	418.669	0.000	27296.649	0.000
0+480	41.867	0.000	418.669	0.000	27715.318	0.000
0+490	41.867	0.000	418.669	0.000	28133.987	0.000
0+500	41.867	0.000	418.669	0.000	28552.656	0.000
0+510	41.867	0.000	418.669	0.000	28971.325	0.000
0+520	41.867	0.000	418.669	0.000	29389.994	0.000
0+530	41.867	0.000	418.669	0.000	29808.663	0.000
0+540	41.867	0.000	418.669	0.000	30227.332	0.000
0+550	41.867	0.000	418.669	0.000	30646.001	0.000
0+560	41.867	0.000	418.669	0.000	31064.670	0.000
0+570	41.867	0.000	418.669	0.000	31483.339	0.000
0+580	41.867	0.000	418.669	0.000	31902.008	0.000
0+590	41.867	0.000	418.669	0.000	32320.677	0.000
0+600	41.867	0.000	418.669	0.000	32739.346	0.000
0+610	41.867	0.000	418.669	0.000	33158.015	0.000
0+620	41.867	0.000	418.669	0.000	33576.684	0.000
0+630	41.867	0.000	418.669	0.000	33995.353	0.000
0+640	41.867	0.000	418.669	0.000	34414.022	0.000
0+650	41.867	0.000	418.669	0.000	34832.691	0.000
0+660	41.867	0.000	418.669	0.000	35251.360	0.000
0+670	41.867	0.000	418.669	0.000	35670.029	0.000
0+680	41.867	0.000	418.669	0.000	36088.698	0.000
0+690	41.867	0.000	418.669	0.000	36507.367	0.000
0+700	41.867	0.000	418.669	0.000	36926.036	0.000
0+710	41.867	0.000	418.669	0.000	37344.705	0.000
0+720	41.867	0.000	418.669	0.000	37763.374	0.000
0+730	41.867	0.000	418.669	0.000	38182.043	0.000
0+740	41.867	0.000	418.669	0.000	38600.712	0.000
0+750	41.867	0.000	418.669	0.000	39019.381	0.000
0+760	41.867	0.000	418.669	0.000	39438.050	0.000
0+770	41.867	0.000	418.669	0.000	39856.719	0.000
0+780	41.867	0.000	418.669	0.000	40275.388	0.000
0+790	41.867	0.000	418.669	0.000	40694.057	0.000
0+800	41.867	0.000	418.669	0.000	41112.726	0.000
0+810	41.867	0.000	418.669	0.000	41531.395	0.000
0+820	41.867	0.000	418.669	0.000	41950.064	0.000
0+830	41.867	0.000	418.669	0.000	42368.733	0.000
0+840	41.867	0.000	418.669	0.000	42787.402	0.000
0+850	41.867	0.000	418.669	0.000	43206.071	0.000
0+860	41.867	0.000	418.669	0.000	43624.740	0.000
0+870	41.867	0.000	418.669	0.000	44043.409	0.000
0+880	41.867	0.000	418.669	0.000	44462.078	0.000
0+890	41.867	0.000	418.669	0.000	44880.747	0.000
0+900	41.867	0.000	418.669	0.000	45299.416	0.000
0+910	41.867	0.000	418.669	0.000	45718.085	0.000
0+920	41.867	0.000	418.669	0.000	46136.754	0.000
0+930	41.867	0.000	418.669	0.000	46555.423	0.000
0+940	41.867	0.000	418.669	0.000	46974.092	0.000
0+950	41.867	0.000	418.669	0.000	47392.761	0.000
0+960	41.867	0.000	418.669	0.000	47811.430	0.000
0+970	41.867	0.000	418.669	0.000	48230.099	0.000
0+980	41.867	0.000	418.669	0.000	48648.768	0.000
0+990	41.867	0.000	418.669	0.000	49067.437	0.000
1+000	41.867	0.000	418.669	0.000	49486.106	0.000
1+010	41.867	0.000	418.669	0.000	49904.775	0.000
1+020	41.867	0.000	418.669	0.000	50323.444	0.000
1+030	41.867	0.000	418.669	0.000	50742.113	0.000
1+040	41.867	0.000	418.669	0.000	51160.782	0.000
1+050	41.867	0.000	418.669	0.000	51579.451	0.000
1+060	41.867	0.000	418.669	0.000	51998.120	0.000
1+070	41.867	0.000	418.669	0.000	52416.789	0.000
1+080	41.867	0.000	418.669	0.000	52835.458	0.000
1+090	41.867	0.000	418.669	0.000	53254.127	0.000
1+100	41.867	0.000	418.669	0.000	53672.796	0.000
1+110	41.867	0.000	418.669	0.000	54091.465	0.000
1+120	41.867	0.000	418.669	0.000	54510.134	0.000
1+130	41.867	0.000	418.669	0.000	54928.803	0.000
1+140	41.867	0.000	418.669	0.000	55347.472	0.000
1+150	41.867	0.000	418.669	0.000	55766.141	0.000
1+160	41.867	0.000	418.669	0.000	56184.810	0.000
1+170	41.867	0.000	418.669	0.000	56603.479	0.000
1+180	41.867	0.000	418.669	0.000	57022.148	0.000
1+190	41.867	0.000	418.669	0.000	57440.817	0.000
1+200	41.867	0.000	418.669	0.000	57859.486	0.000
1+210	41.867	0.000	418.669	0.000	58278.155	0.000
1+220	41.867	0.000	418.669	0.000	58696.824	0.000
1+230	41.867	0.000	418.669	0.000	59115.493	0.000
1+240	41.867	0.000	418.669	0.000	59534.162	0.000
1+250	41.867	0.000	418.669	0.000	59952.831	0.000
1+260	41.867	0.000	418.669	0.000	60371.500	0.000
1+270	41.867	0.000	418.669	0.000	60790.169	0.000
1+280	41.867	0.000	418.669	0.000	61208.838	0.000
1+290	41.867	0.000	418.669	0.000	61627.507	0.000
1+300	41.867	0.000	418.669	0.000	62046.176	0.000
1+310	41.867	0.000	418.669	0.000	62464.845	0.000
1+320	41.867	0.000	418.669	0.000	62883.514	0.000
1+330	41.867	0.000	418.669	0.000	63302.183	0.000
1+340	41.867	0.000	418.669	0.000	63720.852	0.000
1+350	41.867	0.000	418.669	0.000	64139.521	0.000
1+360	41.867	0.000	418.669	0.000	64558.190	0.000
1+370	41.867	0.000	418.669	0.000	64976.859	0.000
1+380	41.867	0.000	418.669	0.000	65395.528	0.000
1+390	41.867	0.000	418.669	0.000	65814.197	0.000
1+400	41.867	0.000	418.669	0.000	66232.866	0.000
1+410	41.867	0.000	418.669	0.000	66651.535	0.000
1+420	41.867	0.000	418.669	0.000	67070.204	0.000
1+430	41.867	0.000	418.669	0.000	67488.873	0.000
1+440	41.867	0.000	418.669	0.000	67907.542	0.000
1+450	41.867	0.000	418.669	0.000	68326.211	0.000
1+460	41.867	0.000	418.669	0.000	68744.880	0.000
1+470	41.867	0.000	418.669	0.000	69163.549	0.000
1+480	41.867	0.000	418.669	0.000	69582.218	0.000
1+490	41.867	0.000	418.669	0.000	70000.887	0.000
1+500	41.867	0.000	418.669	0.000	70419.556	0.000
1+510	41.867	0.000	418.669	0.000	70838.225	0.000
1+520	41.867	0.000	418.669	0.000	71256.894	0.000
1+530	41.867	0.000	418.669	0.000	71675.563	0.000
1+540	41.867	0.000	418.669	0.000	72094.232	0.000
1+550	41.867	0.000	418.669	0.000	72512.901	0.000
1+560	41.867	0.000	418.669	0.000	72931.570	0.000
1+570	41.867	0.000	418.669	0.000	73350.239	0.000
1+580	41.867	0.000	418.669	0.000	73768.908	0.000
1+590	41.867	0.000	418.669	0.000	74187.577	0.000
1+600	41.867	0.000	418.669	0.000	74606.246	0.000
1+610	41.867	0.000	418.669	0.000	75024.915	0.000
1+620	41.867	0.000	418.669	0.000	75443.584	0.000
1+630	41.867	0.000	418.669	0.000	75862.253	0.000
1+640	41.867	0.000	418.669	0.000	76280.922	0.000
1+650	41.867	0.000	418.669	0.000	76699.591	0.000
1+660	41.867	0.000	418.669	0.000	77118.260	0.000
1+670	41.867	0.000	418.669	0.000	77536.929	0.000
1+680	41.867	0.000	418.669	0.000	77955.598	0.000
1+690	41.867	0.000	418.669	0.000	78374.267	0.000
1+700	41.867	0.000	418.669	0.000	78792.936	0.000
1+710	41.867	0.000	418.669	0.000	79211.605	0.000
1+720	41.867	0.000	418.669	0.000	79630.274	0.000
1+730	41.867	0.000	418.669	0.000	80048.943	0.000
1+740	41.867	0.000	418.669	0.000	80467.612	0.000
1+750	41.867	0.000	418.669	0.000	80886.281	0.000
1+760	41.867	0.000	418.669	0.000	81304.950	0.000
1+770	41.867	0.000	418.669	0.000	81723.619	0.000
1+780	41.867	0.000	418.669	0.000	82142.288	0.000
1+790	41.867	0.000	418.669	0.000	82560.957	0.000
1+800	41.867	0.000	418.669	0.000	82979.626	0.000
1+810	41.867	0.000	418.669	0.000	83398.295	0.000
1+820	41.867	0.000	418.669	0.000	83816.964	0.000
1+830	41.867	0.000	418.669	0.000	84235.633	0.000
1+840	41.867	0.000	418.669	0.000	84654.302	0.000
1+850	41.867	0.000	418.669	0.000	85072.971	0.000
1+860	41.867	0.000	418.669	0.000	85491.640	0.000
1+870	41.867	0.000	418.669	0.000	85910.309	0.000
1+880	41.867	0.000	418.669	0.000	86328.978	0.000
1+890	41.867	0.000	418.669	0.000	86747.647	0.000
1+900	41.867	0.000	418.669	0.000	87166.316	0.000
1+910	41.867	0.000	418.669	0.000	87584.985	0.000
1+920	41.867	0.000	418.669	0.000	88003.654	0.000
1+930	41.867	0.000	418.669	0.000	88422.323	0.000
1+940	41.867	0.000	418.669	0.000	88840.992	0.000
1+950	41.867	0.000	418.669	0.000	89259.661	0.000
1+960	41.867	0.000	418.669	0.000	89678.330	0.000
1+970	41.867	0.000	418.669	0.000	90096.999	0.000
1+980	41.867	0.000	418.669	0.000	90515.668	0.000
1+990	41.867	0.000	418.669	0.000	90934.337	0.000
2+000	41.867	0.000	418.669	0.000	91353.006	0.000
2+010	41.867	0.000	418.669	0.000	91771.675	0.000
2+020	41.867	0.000	418.669	0.000	92190.344	0.000
2+030	41.867	0.000	418.669	0.000	92609.013	0.000
2+040	41.867	0.000	418.669	0.000	93027.682	0.000
2+050	41.867	0.000	418.669	0.000	93446.351	0.000
2+060	41.867	0.000	418.669	0.000	93865.020	0.000
2+070	41.867	0.000	418.669	0.000	94283.689	0.000
2+080	41.867	0.000	418.669	0.000	94702.358	0.000
2+090	41.867	0.000	418.669	0.000	95121.027	0.000
2+100	41.867	0.000	418.669	0.000	95539.696	0.000
2+110	41.867	0.000	418.669	0.000	95958.365	0.000
2+120	41.867	0.000	418.669	0.000	96377.034	0.000
2+130	41.867	0.000	418.669	0.000	96795.703	0.000
2+140	41.867	0.000	418.669	0.000	97214.372	0.000
2+150	41.867	0.000	418.669	0.000	97633.041	0.000
2+160	41.867	0.000	418.669	0.000	98051.710	0.000
2+170	41.867	0.000	418.669	0.000	98470.379	0.000
2+180	41.867	0.000	418.669	0.000	98889.048	0.000
2+190	41.867	0.000	418.669	0.000	99307.717	0.000
2+200	41.867	0.000	418.669	0.000	99726.386	0.000
2+210	41.867	0.000	418.669	0.000	100145.055	0.000
2+220	41.867	0.000	418.669	0.000	100563.724	0.000
2+230	41.867	0.000	418.669	0.000	100982.393	0.000
2+240	41.867	0.000	418.669	0.000	101401.062	0.000
2+250	41.867	0.000	418.669	0.000	101819.731	0.000
2+260	41.867	0.000	418.669	0.000	102238.400	0.000
2+270	41.867	0.000	418.669	0.000	102657.069	0.000
2+280	41.867	0.000	418.669	0.000	103075.738	0.000
2+290	41.867	0.000	418.669	0.000	103494.407	0.000
2+300	41.867	0.000	418.669	0.000	103913.076	0.000
2+310	41.867	0.000	418.669	0.000	104331.745	0.000
2+320	41.867	0.000	418.669	0.000	104750.414	0.000
2+330	41.867	0.000	418.669	0.000	105169.083	0.000
2+340	41.867	0.000	418.669	0.000	105587.752	0.000
2+350	41.867	0.000	418.669	0.000	106006.421	0.000
2+360	41.867	0.000	418.669	0.000	106425.090	0.000
2+370	41.867	0.000	418.669	0.000	106843.759	0.000
2+380	41.867	0.000	418.669	0.000	107262.428	0.000
2+390	41.867	0.000	418.669	0.000	107681.097	0.000
2+400	41.867	0.000	418.669	0.000	108099.766	0.000

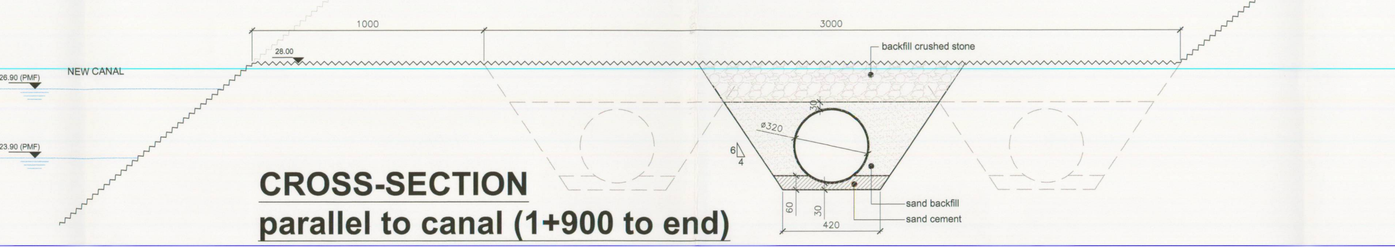
1+900 upto end	371.000 extra

EXCAVATION VOLUMES
shown for 1xD=3200
(2-lift without WSB)

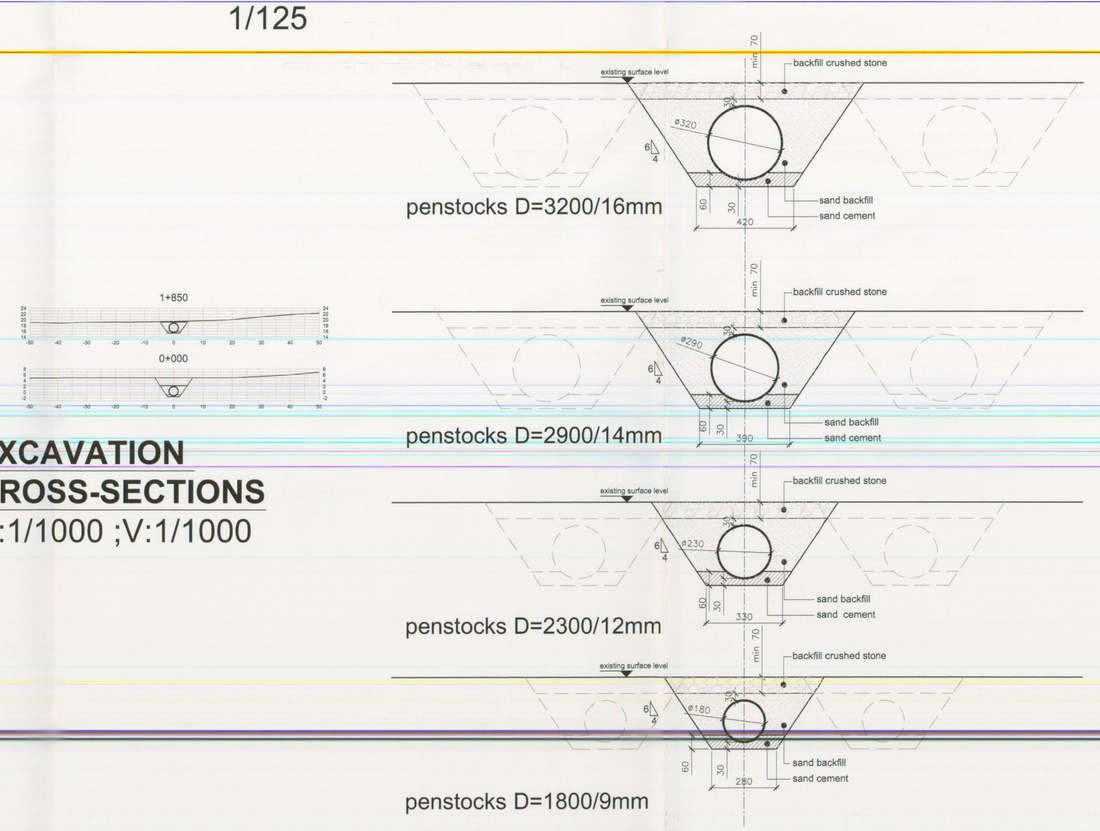
LONGITUDINAL PROFILE shown for d=3200 (2-lift without WSB)
H:1/2000 ;V:1/1000



PLAN VIEW
1/2500

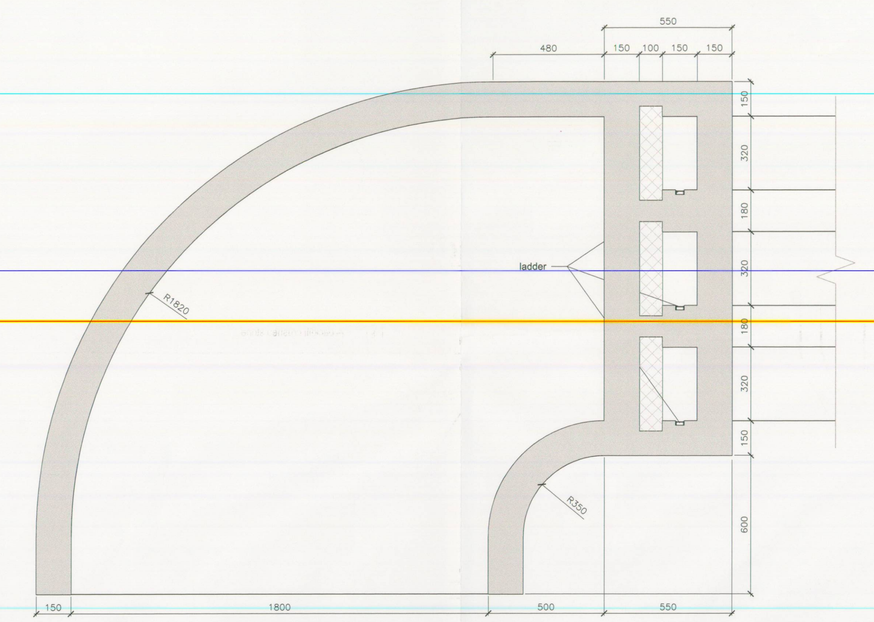


CROSS-SECTION
parallel to canal (1+900 to end)
1/125

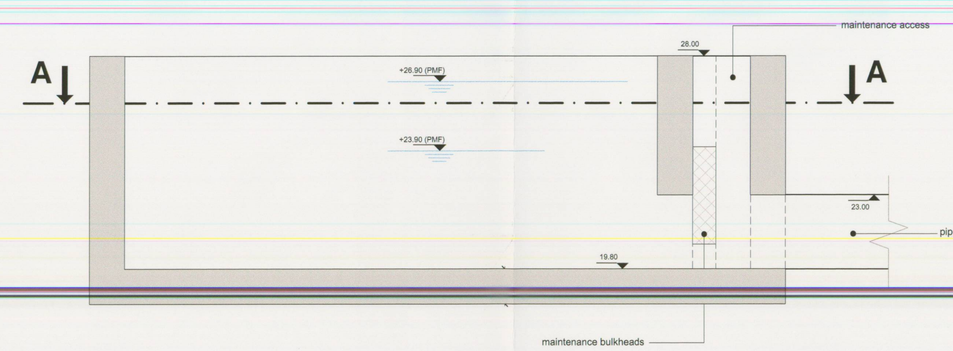


CROSS-SECTIONS
1/125

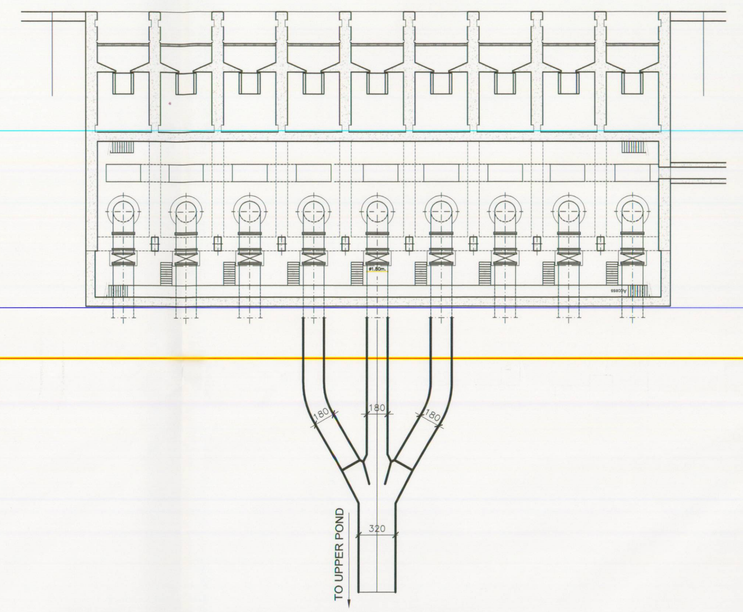
EXCAVATION CROSS-SECTIONS
H:1/1000 ;V:1/1000



SECTION A-A



OUTLET PIPES IN LAKE GATUN
1/125



TRIFURCATION AT PACIFIC PUMPING STATION
1/250

ALL DIMENSIONS ARE ON THE LEVEL OF CONCEPT DESIGN AND HAVE TO BE CHECKED AND VALIDATED DURING FURTHER AND DETAILED DESIGN

ALL DIMENSIONS ARE IN CENTIMETERS

28 JUL 2004
CENTRO DE INGENIERIA TERRESTRE
AUTORIDAD DEL CANAL DE PANAMA
TECHNICAL RESOURCES CENTRE A.C.C.
DOCUMENT CONTROL
00001138808

CPP
Consorcio Post Panamax
Tractebel Development Engineering
TECHNUM
COYNE ET BELLIER
PROJETS
Avenue Ariane 7 B-1200 Brussels
In association with:
SBE
IMDC

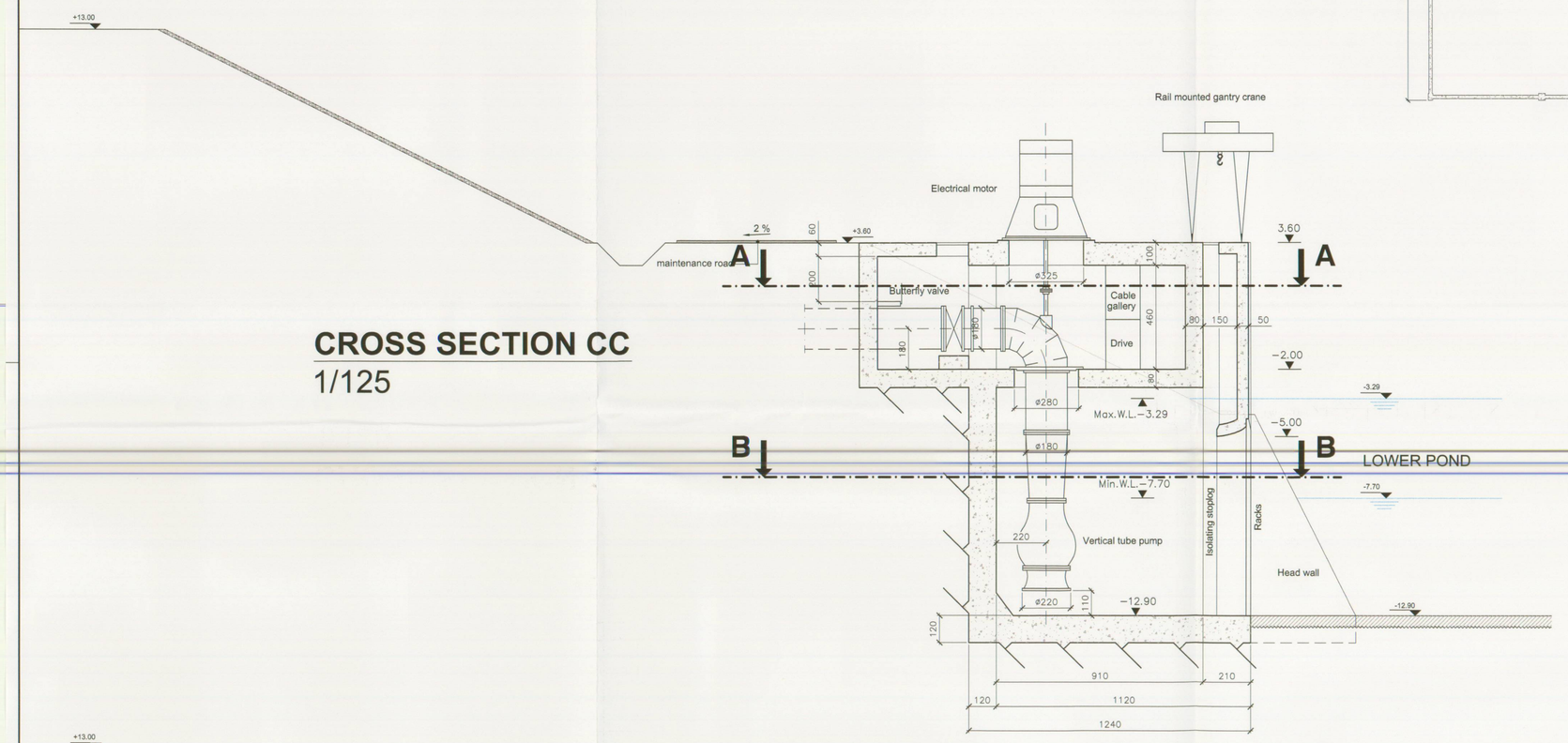
ACP
AUTORIDAD DEL CANAL DE PANAMA
División de Proyectos de Capacidad del Canal
Autoridad del Canal de Panama
Balboa
REPUBLICA DE PANAMA

Conceptual Design of Recycling of Water in Post-Panamax Locks

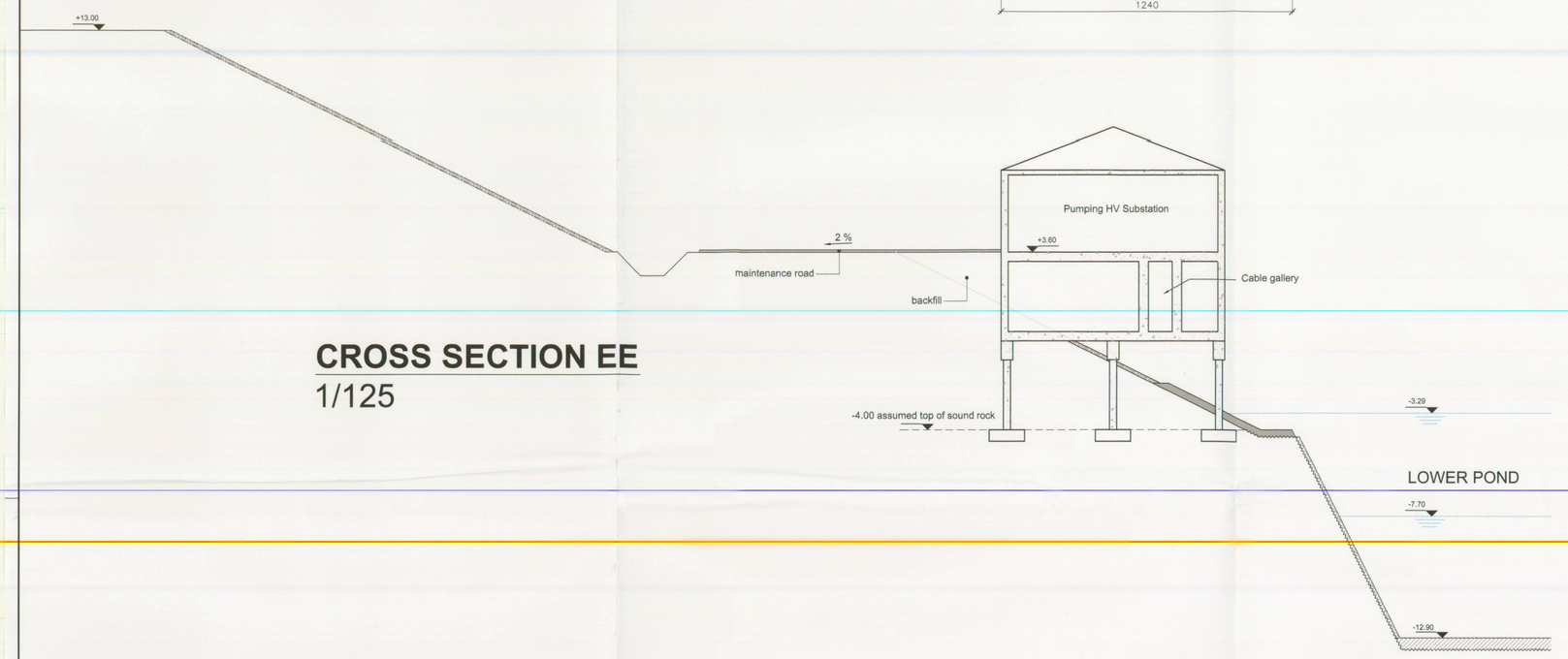
SCENARIO 1
DIRECT PUMPING

No.	Date	DESCRIPTION	DRAWN	CHECKED	APPROVED
3					
2					
1					
A	01-08-04	FINAL REPORT	SIF	BHE	JB
-	07/21/03	FIRST EDITION	SIF	BHE	JB

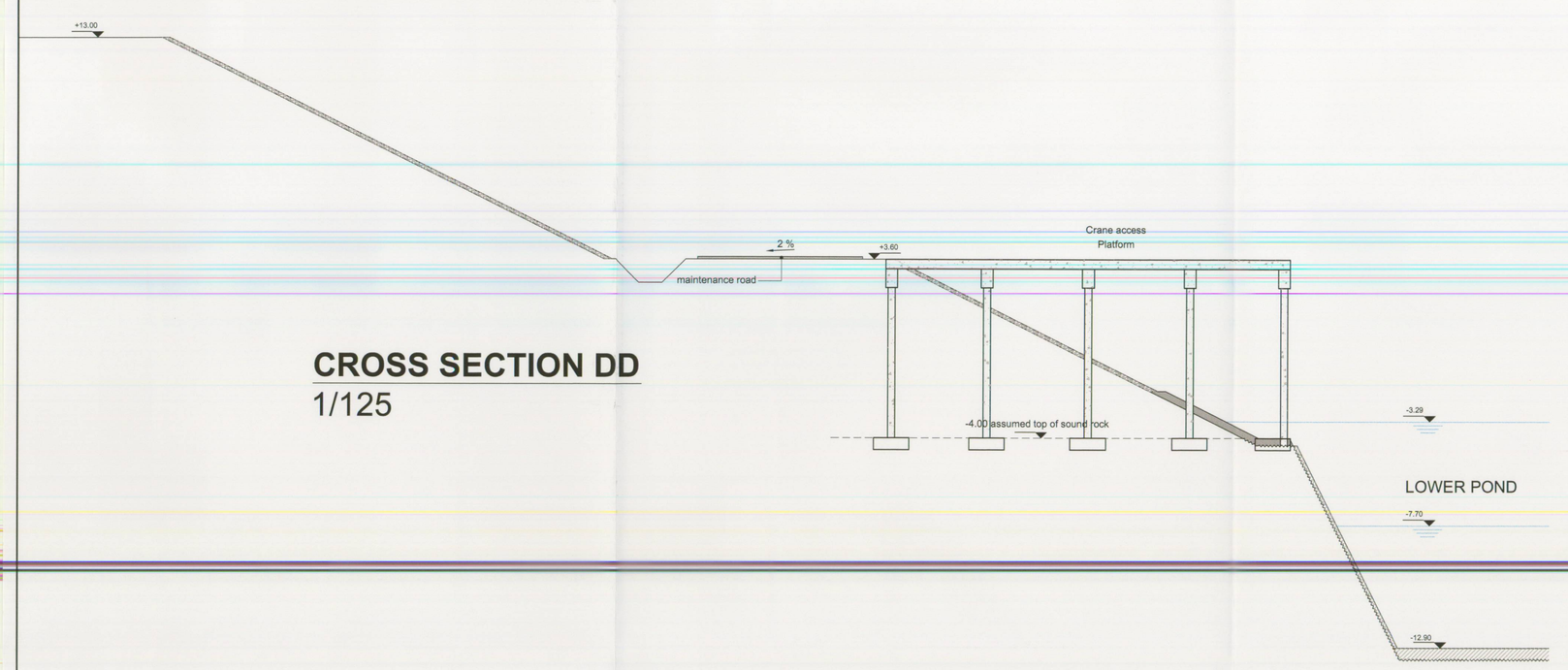
Contract	Scale:	Drawing n°:	Rev.:	Folio
SAA-110823	1/2500 1/125	CW – 009	A	1/1



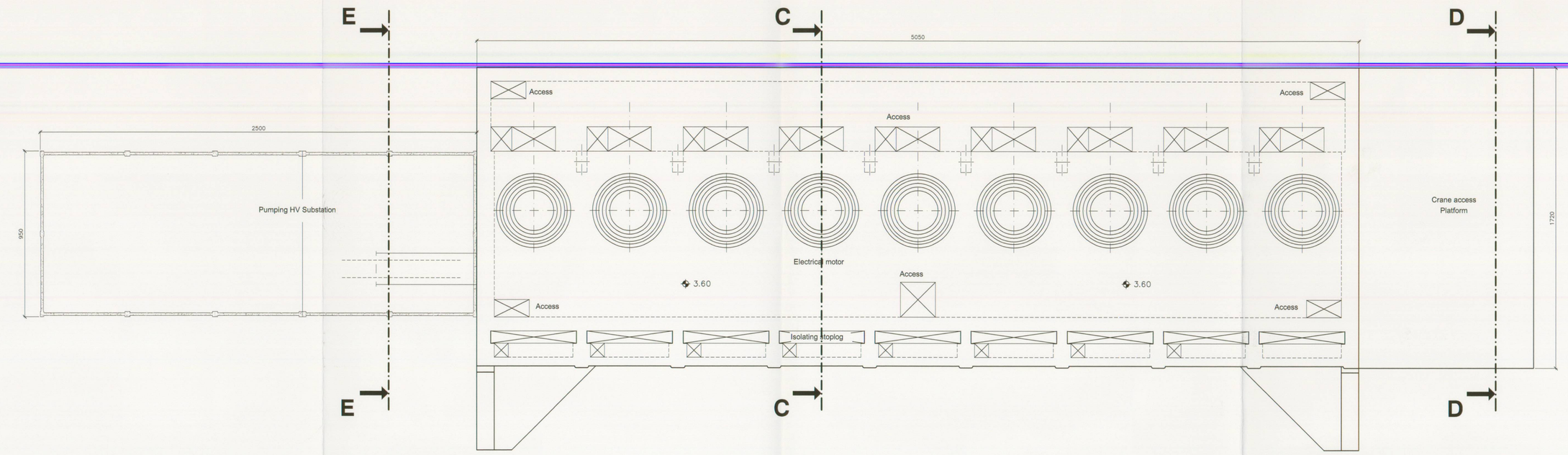
CROSS SECTION CC
1/125



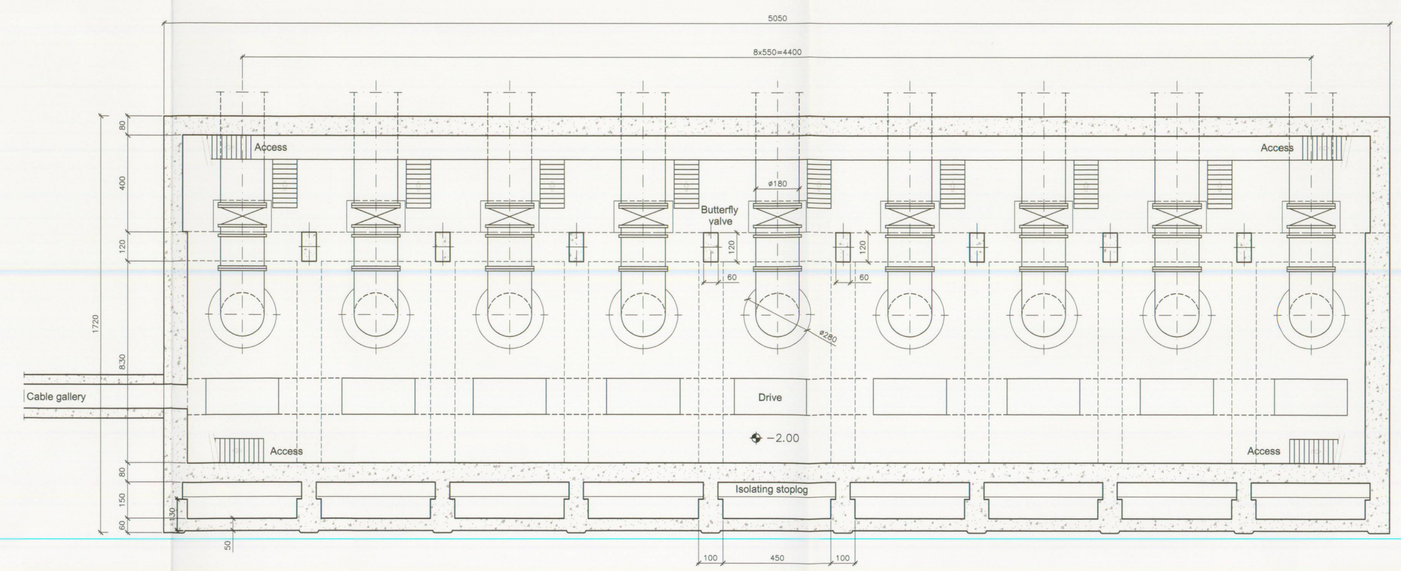
CROSS SECTION EE
1/125



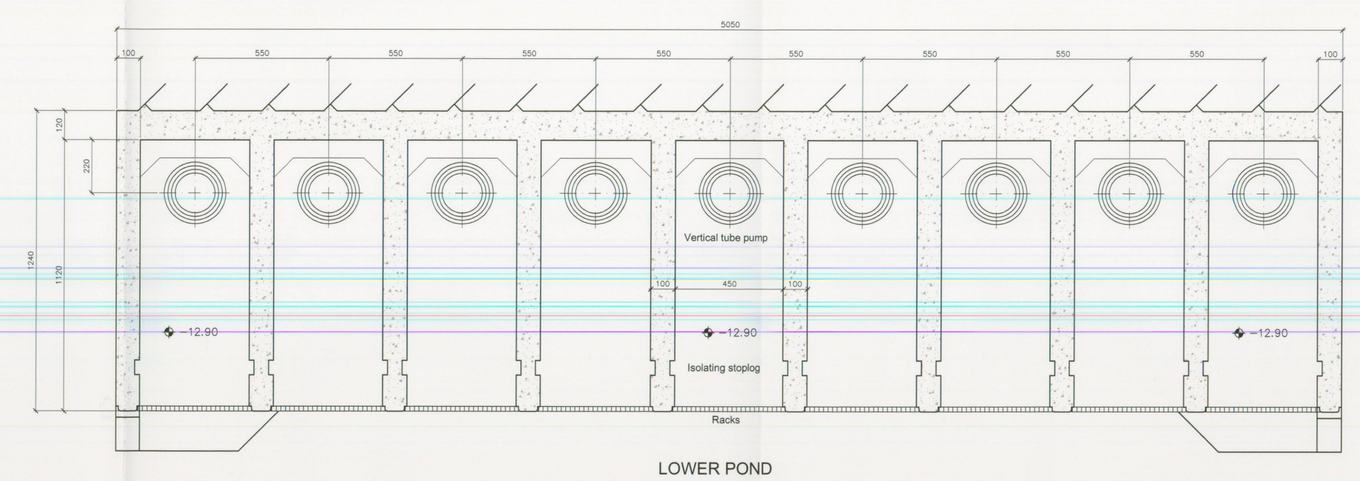
CROSS SECTION DD
1/125



PLAN VIEW
1/125



SECTION AA
1/125



SECTION BB
1/125

ALL DIMENSIONS ARE ON THE LEVEL OF CONCEPT DESIGN AND HAVE TO BE CHECKED AND VALIDATED DURING FURTHER AND DETAILED DESIGN

ALL DIMENSIONS ARE IN CENTIMETERS

28 JUL. 2004
CENTRO DE RECURSOS TECNICOS
AUTORIDAD DEL CANAL DE PANAMA
TECHNICAL RESOURCES CENTER - A.C.C.
00001135856

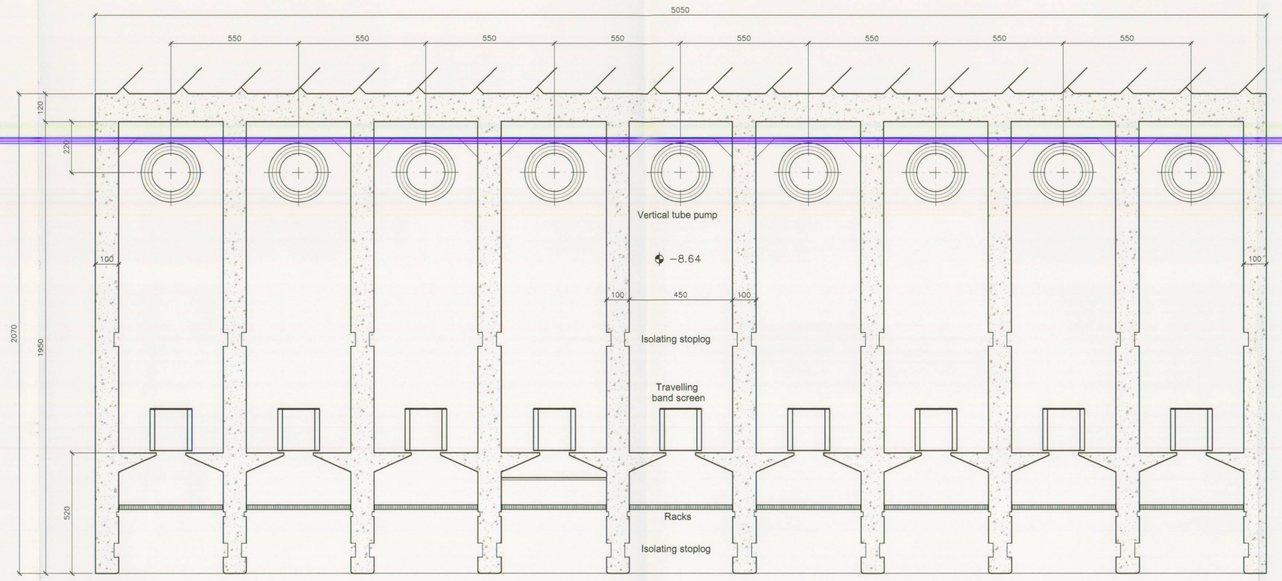
CPP
Consorcio Post Panamax
Tractebel Development Engineering
TECHNUM
COYNE ET BELLIER
CNR PROJETS
Avenue Ariane 7 B-1200 Brussels
In association with:
SBE ZAS IMDC
ACP
División de Proyectos de Capacidad del Canal
Autoridad del Canal de Panamá
Balboa
REPUBLICA DE PANAMA

Conceptual Design of Recycling of Water in Post-Panamax Locks

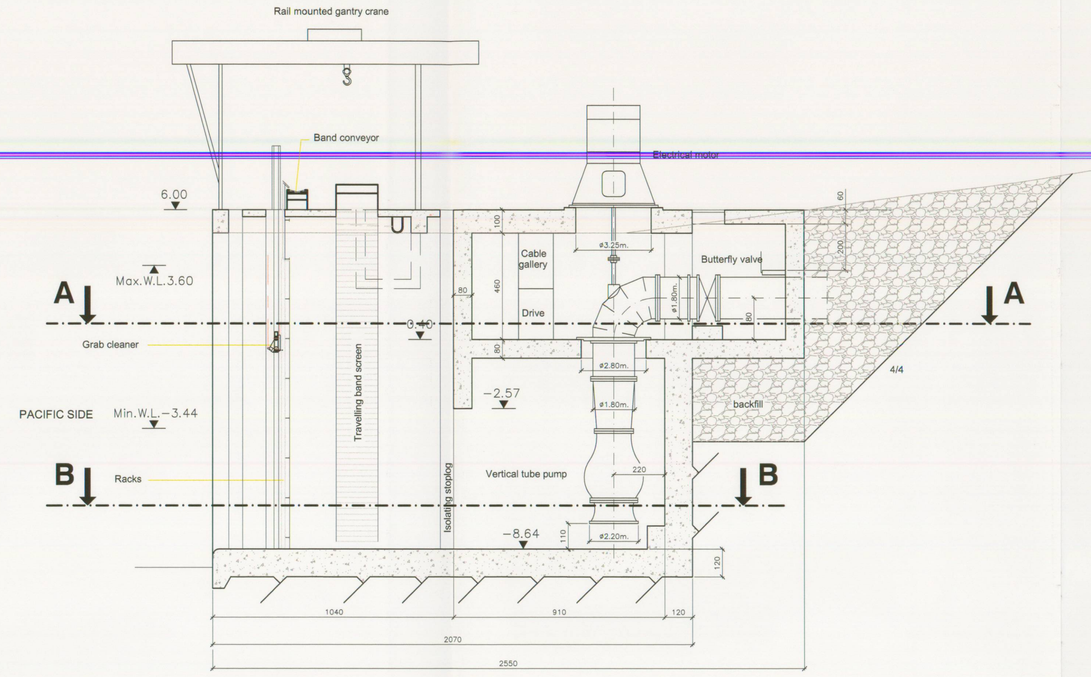
PUMPING STATION LOWER POND

REV.	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
A	21/11/03	FIRST EDITION	BMC	CGR	JGR

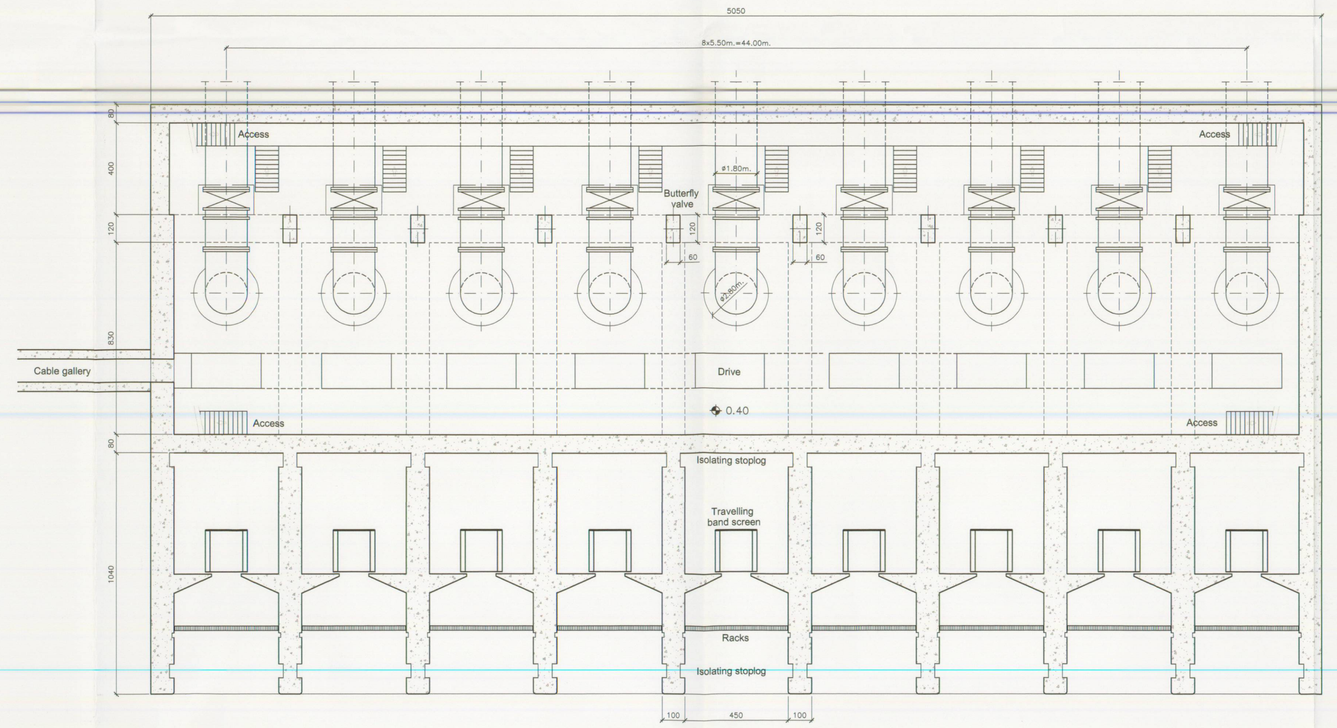
Contract	Scale:	Drawing n°:	Rev.:	Folio
SAA-110829	1/125	CW – 010	A	1/1



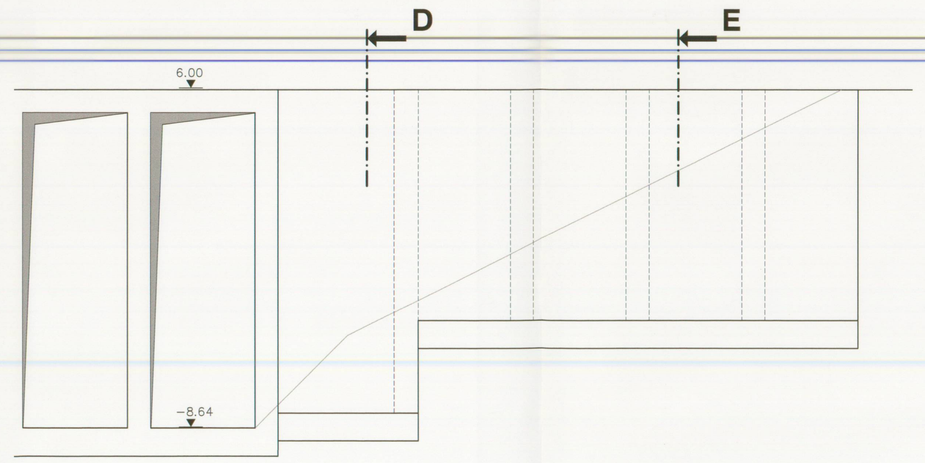
SECTION BB
1/125



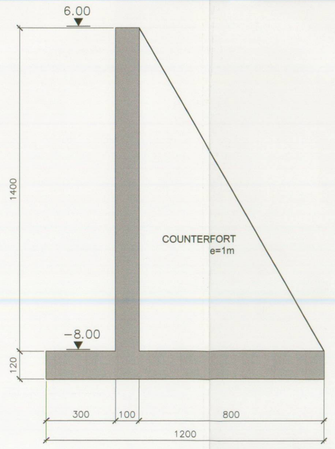
SECTION CC
1/125



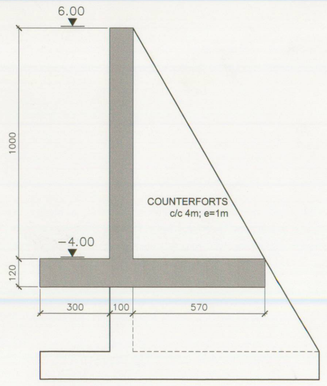
SECTION AA
1/125



FRONT VIEW WALL
1/125



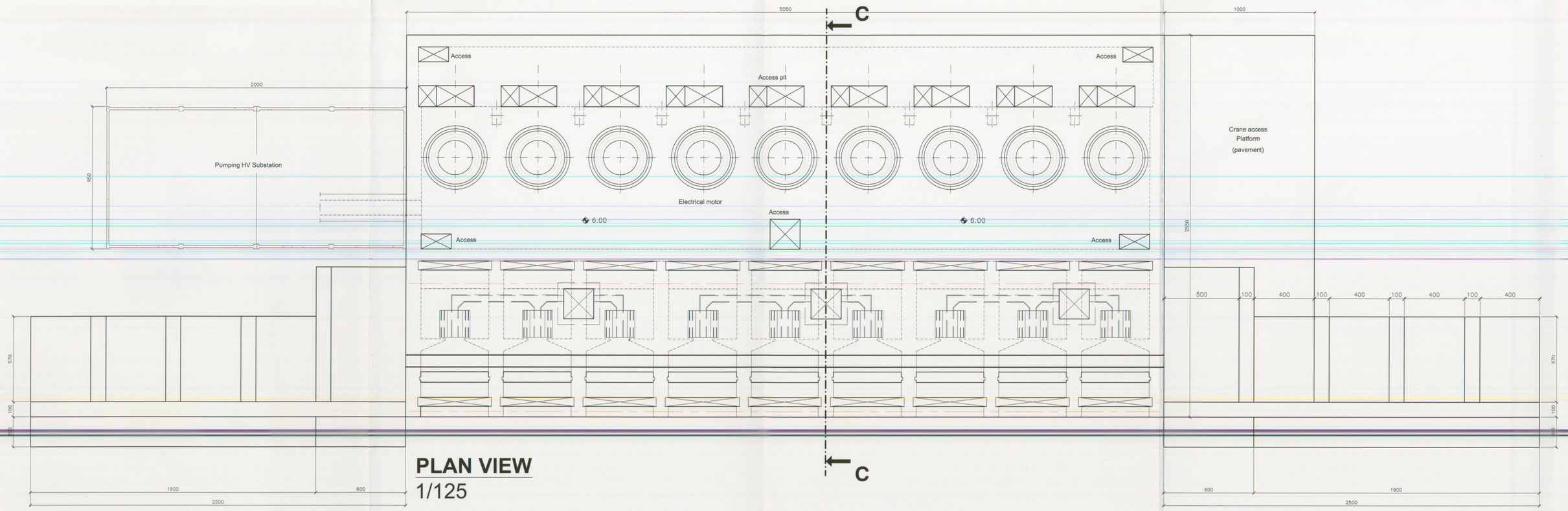
SECTION DD
1/125



SECTION EE
1/125

ALL DIMENSIONS ARE ON THE LEVEL OF CONCEPT DESIGN AND HAVE TO BE CHECKED AND VALIDATED DURING FURTHER AND DETAILED DESIGN

ALL DIMENSIONS ARE IN CENTIMETERS



PLAN VIEW
1/125

28 JUL. 2004

CENTRO DE RECURSOS TECNICOS
AUTORIDAD DEL CANAL DE PANAMA

TECHNICAL RESOURCES CENTER - P.C.C.
00001136807

CPP
Consorcio Post Panamax
Tractebel Development Engineering
TECHNUM
COYNE ET BELLIER
cnr PROJETS
Avenue Ariane 7 B-1200 Brussels
In association with:
FIA AOSO
SBE IMDC

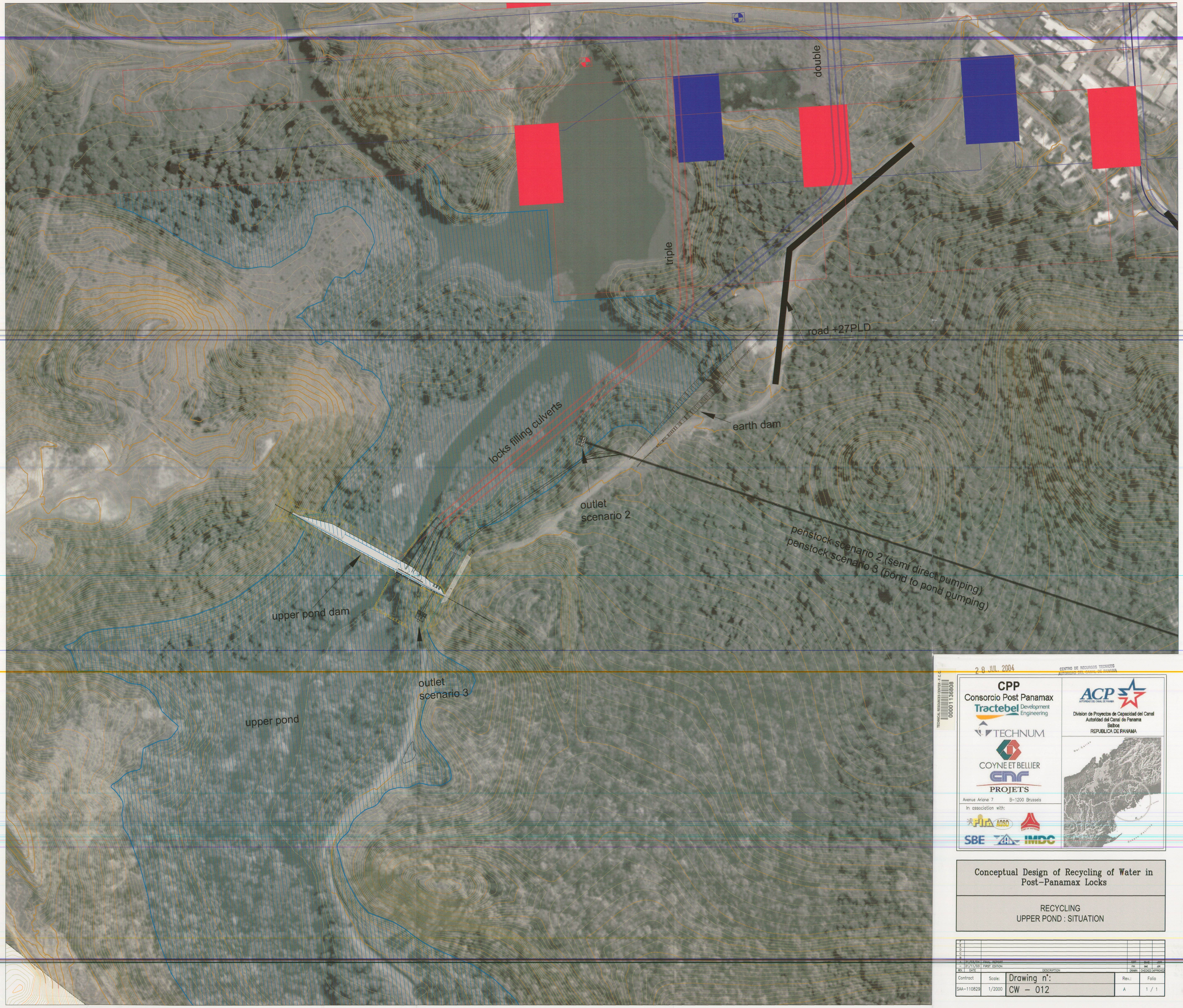
ACP
Division de Proyectos de Capacidad del Canal
Autoridad del Canal de Panama
Balboa
REPUBLICA DE PANAMA

Conceptual Design of Recycling of Water in Post-Panamax Locks

PUMPING STATION PACIFIC

REV.	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
E					
D					
C					
B					
-	31/03/04	FINAL REPORT	SBT	BME	JDR
-	21/11/03	FIRST EDITION	FVH	BME	JDR

Contract	Scale:	Drawing n°:	Rev.:	Folio
SAA-110829	1/125	CW - 011	A	1/1



28 JUL. 2004
CENTRO DE RECURSOS TECNICOS
AUTORIDAD DEL CANAL DE PANAMA
TECHNICAL RESOURCES CENTER - P.C.C.
00001136608

CPP
Consorcio Post Panamax
Tractebel Development Engineering
TECHNUM
COYNE ET BELLIER
CNR PROJETS
Avenue Ariane 7 B-1200 Brussels
In association with:
SBE IMDC

ACP
AUTORIDAD DEL CANAL DE PANAMA
Division de Proyectos de Capacidad del Canal
Autoridad del Canal de Panama
Balboa
REPUBLICA DE PANAMA

Conceptual Design of Recycling of Water in Post-Panamax Locks

RECYCLING
UPPER POND : SITUATION

REV.	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
F					
E					
D					
C					
B					
A	31/03/04	FINAL REPORT	EBT	BMC	JDR
–	21/11/03	FIRST EDITION	FIN	BMC	JDR

Contract	Scale:	Drawing n°:	Rev.:	Folio
SAA-110829	1/2000	CW – 012	A	1 / 1