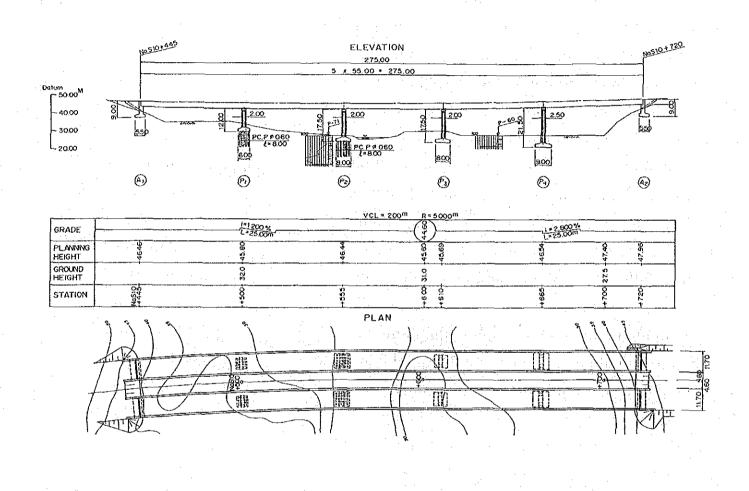
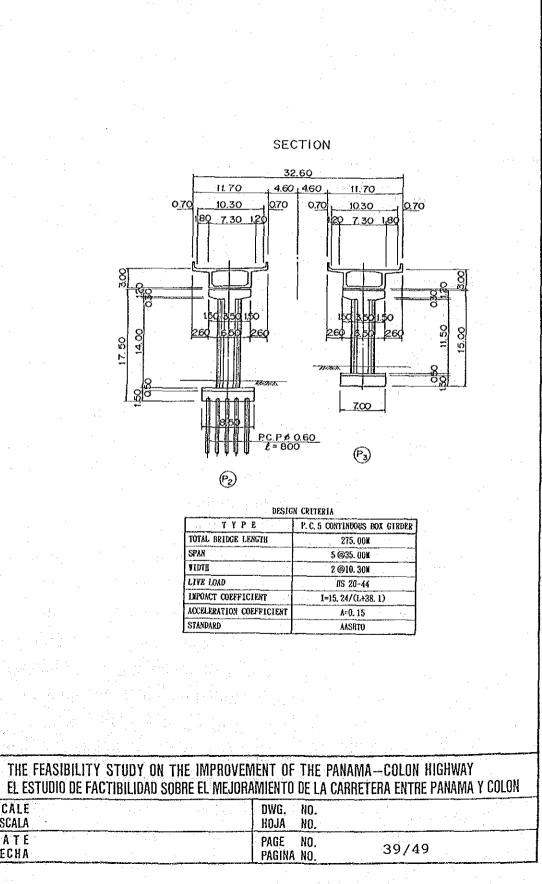
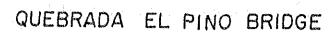
# RIO GATUN BRIDGE

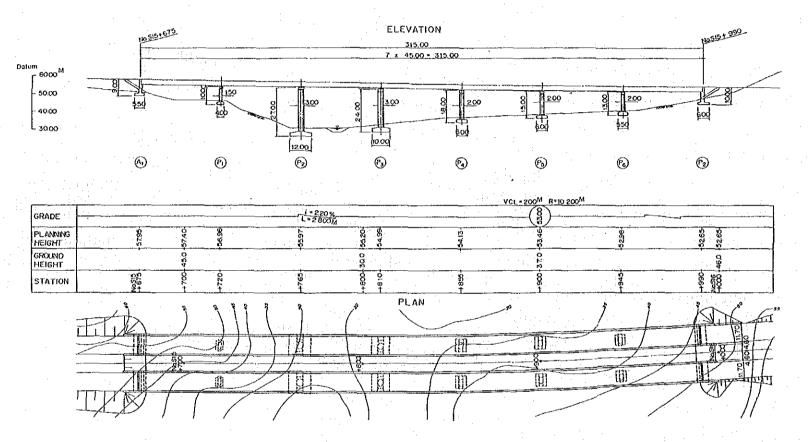


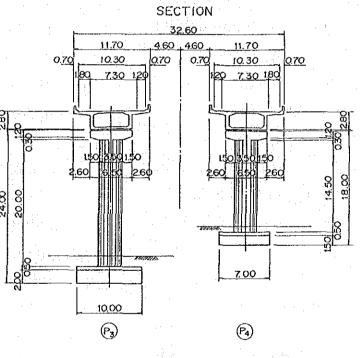
GENERAL VIEW OF BRIDGE-RIO GATUN BRIDGE<br/>VISTA GENERAL DE PUENTE-PUENTE RIO GATUNM O P<br/>MINISTRY OF PUBLIC WORKS<br/>THE REPUBLIC OF PANAMA<br/>MINISTERIO DE OBRAS<br/>PUBLICASJ I C A<br/>JAPAN<br/>INTERNATIONAL<br/>DE COPERACION<br/>INTERNATIONAL DEL JAPANTHE FEASIBILITY STUDY ON THE IMPROVI<br/>EL ESTUDIO DE FACTIBILIDAD SOBRE EL MEJO<br/>SCALE<br/>ESCALAMINISTERIO<br/>PUBLICASDE OBRAS<br/>PUBLICASJ I C A<br/>J I C A<br/>JAPANTHE FEASIBILITY STUDY ON THE IMPROVI<br/>EL ESTUDIO DE FACTIBILIDAD SOBRE EL MEJO









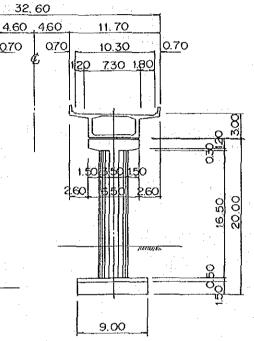


GENERAL VIEW OF BRIDGE-QUEBRADA EL PINO BRIDGE	MOP MINISTRY OF PUBLIC WORKS	JICA JAPAN INTERNATIONAL		VIENT OF THE PANAMA—COLON HIGHWAY Amiento de la carretera entre panama y colon
VISTA GENERAL DE PUENTE-PUENTE QUEBRADA EL PINC	THE REPUBLIC OF PANAMA	COOPERATION AGENCY	SCALE Escala	DWG. NO. Hoja no.
	MINISTERIO DE OBRAS Publicas	AGENCIA DE COPERACION International del Japan	D A T E Fecha	PAGE NO. PAGINA NO. 40/49

	P. C. 7 CONTINUOUS BOX GIBDER
B.	315, COM
	7 @45, 00¥
	2 @10. 30¥
	BS 20-44
T .	I=15.24/(L+38.1)
ICIENT	A=0, 15
	AASHTO

	- - -		QU	EBRADA LOPEZ BR	RIDGE		н — н н
		No.516+190	ELEVATION	No.516+3	340	SECTI	ON
		NO.J	150.00	NO.U		32, 6	50
Datu	im .	· · · · · · · · · · · · · · · · · · ·	3 x 50.00 = 150.00		· · · ·	11.70 4.60	
	F 60.00M				<u>O.</u>		070 10.30 0.70
	- 50.00				· · · · · · · · · · · · · · · · · · ·	180 7.30 1.20	120 7.30 1.80
		8 -	280 8 2.5	0			
	- 40.00	400	8	550	0 0 0		
	- 30.00				м <mark>Q Q</mark>		
	20.00		9.00		lo lo	1.50 3.50 1.50	1.50 8 50 1.50
	20.00		10.00			2.60 650 2.60	260 550 260
			(P1) (P2)	(A2)	8 8		
					0 - 53		
	CDADE		i= 0.350 % L= 4 900 M				
	GRADE						9.00
	PLANNING	-51.99 -51.95	8 6	51.60		10.00	
	HEIGHT		<u> </u>	<u> </u>			··· ·
	GROUND	42.5		27.5		PI	P2
				0 0 0 0			
	STATION	NaSi6 ++190 +200-	× × ×	+ 30 + 43 + 34		DESIGN	CRITERIA
			PLAN S	۸ <sup>0</sup>	45		P. C. 3 CONTINUOUS BOX GIRDER
						TOTAL BRIDGE LENGTH	150.00¥
	1					SPAN WIDTH	3 @50. 00₩ 2 @10. 30¥
					► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ►	LIVE LOAD	IIS 20-44
					-9-10	INPOACT COEFFICIENT	I≈15. 24/(L+38. 1)
						ACCELERATION COEFFICIENT	Λ=0. 15
	[·				1.70	STANDARD	AASIITO
				$\langle \chi \rangle$			
			where $\lambda$ is the second secon				
		₩₩₩₽₽₩₩₽₽₩₩₽₽₩₩₽₽₩₩₽₽₩₽₽₩₽₽₩₽₽₩₽₽₩₽₽₩₽₽	T			ON THE MADDOVEMENT OF	
			MOP	JICA			THE PANAMA—COLON HIGHV De la carretera entre pana
GENERAL VIEW (	of bridge-Q	UEBRADA LOPEZ BRIDGE	MINISTRY OF PUBLIC WORKS	JAPAN INTERNATIONAL	SCALE	DWG.	
VISTA GENERAL	DE PUENTE-I	PUENTE QUEBRADA LOPEZ	THE REPUBLIC OF PANAMA Ministerio de obras	COOPERATION AGENCY Agencia de coperacion	ESCALA	ALOH	NO
			PUBLICAS	INTERNATIONAL DEL JAPAN	D A T E FECHA	PAGE PAGINA	
	alan da ang ang ang ang ang ang ang ang ang an	الم جن الشعب المحمد المرجوع المكان المحمد الملك منها عن المحمد المحمد المحمد المحمد المحمد المحمد المحمد المحم المحمد المحمد	anderes response - Tapping and an and a specific section of the se	<mark>ŊĨŦŢŊĊĸŢĊĸŎĊĸĊĊĊĊĊŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎ</mark>	Martinet Internet and a first state of the second state of the sec		110   

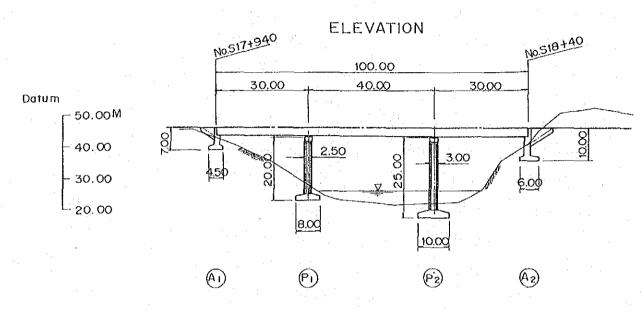




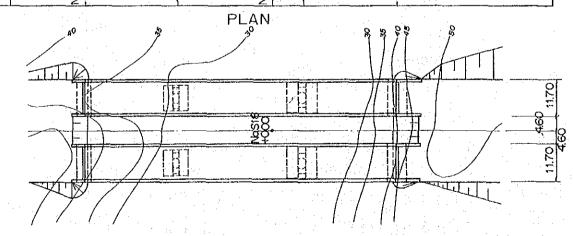


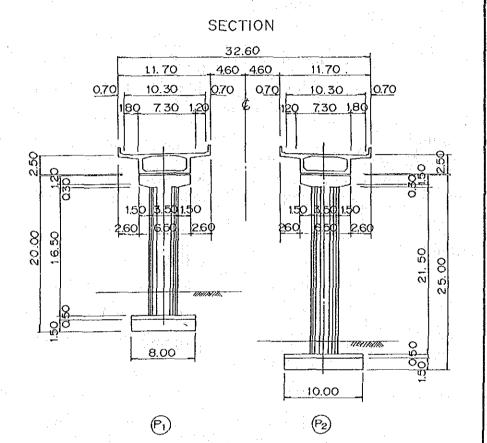
		PANAMA—COLON HIGHWAY Carretera entre panama y colon
	NO. No.	
PAGE PAGINA	NO. No.	41/49

### LAGO GATUN No. 1 BRIDGE



GRADE		<u>i≈0350%</u>	
GRADE		L= 4 900 M	
PLANNING HEIGHT	4 45.8 7, 5.8 7, 90	45.65 45.65 45.51	
GROUND HEIGHT			······································
STATION	46.517 49.40 40 40 40 40 40 40	800 0 0 0 0 0 0 0 0 0 0 0 0	



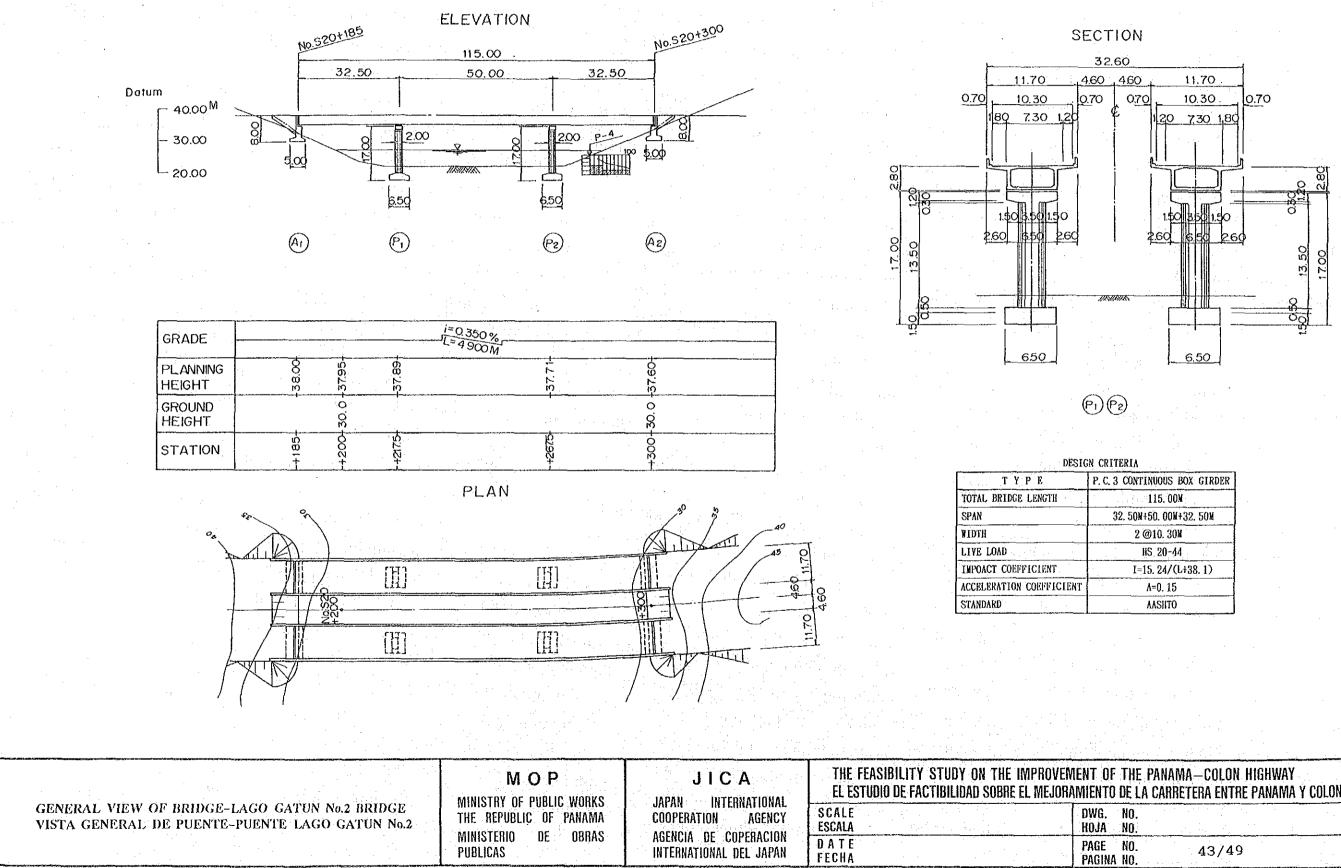


N CRITERIA		
P. C. 3 CONTINUOUS BOX GIRDER		
100.001		
30.00¥+40.00¥+30.00¥		
2 @10. 30¥		
HS 20-44		
I=15. 24/(L+38. 1)		
Λ=0. 15		
AASHTO		

	MOP	JICA	THE FEASIBILITY STUDY ON THE IMPROVED	AENT OF THE PANAMA—COLON HIGHWAY
	MINISTRY OF PUBLIC WORKS	Japan International	El estudio de factibilidad sobre el mejor	Amiento de la carretera entre panama y colon
GENERAL VIEW OF BRIDGE-LAGO GATUN No.1 BRIDGE VISTA GENERAL DE PUENTE-PUENTE LAGO GATUN No.1	THE REPUBLIC OF PANAMA	COOPERATION AGENCY	S C A L E Escala	DWG. NO. Koja no.
	MINISTERIO DE OBRAS	AGENCIA DE COPERACION	D A T E	PAGE NO. 42/49
	Publicas	International del Japan	FECHA	PAGINA NO.

DESIGN	CRI	TER	I.	

LAGO GATUN No. 2 BRIDGE

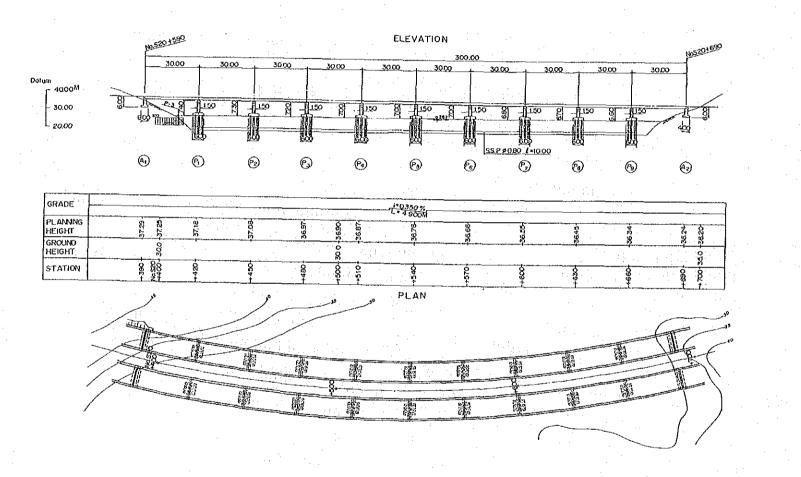




C. 3 CONTINUOUS BOX GIRDER
115. OON
32. 50N+50. 00N+32. 50N
2 @10. 30¥
lis 20-44
I=15. 24/(L+38. 1)
Λ=0. 15
AASIITO

		AMA—COLON HIGHWA Iretera entre panan	
•	NO. NO.		
NA	NO. No.	43/49	· · · · · · · · · · · · · · · · · · ·

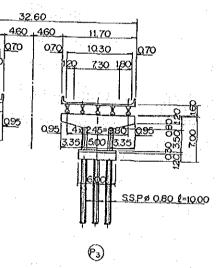
LAGO GATUN No. 3 BRIDGE



GENERAL VIEW OF BRIDGE-LAGO GATUN No.3 BRIDGE VISTA GENERAL DE PUENTE-PUENTE LAGO GATUN No.3	MOP MINISTRY OF PUBLIC WORKS THE REPUBLIC OF PANAMA MINISTERIO DE OBRAS PUBLICAS	JICA JAPAN INTERNATIONAL COOPERATION AGENCY AGENCIA DE COPERACION INTERNATIONAL DEL JAPAN	THE FEASIBILITY STUDY ON THE IMPRO EL ESTUDIO DE FACTIBILIDAD SOBRE EL ME scale escala d a t e fecha	and the second se

 $\begin{array}{c} 0.70 \\ 11.70 \\ 10.30 \\ 60 \\ 7.30 \\ 120 \\ 8 \\ 9 \\ 120 \\ 8 \\ 120 \\ 8 \\ 120 \\ 12$ 

TYPE TOTAL BRIDGE LENGTH SPAN FIDTH LIVE LOAD IMPOACT COEFFICIENT ACCELERATION COEFFICIENT STANDARD



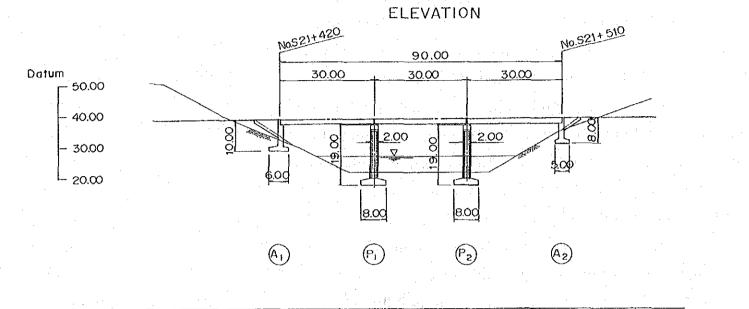
DESIGN CRITERIA

SECTION

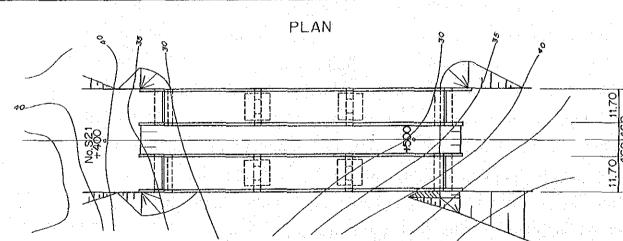
P. C.	SIMPLE COMPOSITE GIRDER
	300. GOX
	10@30.00M
	2 @10. 30N
	HS 20-44
	I=15. 24/(L+38. 1)
	A=0. 15
	AASHTO

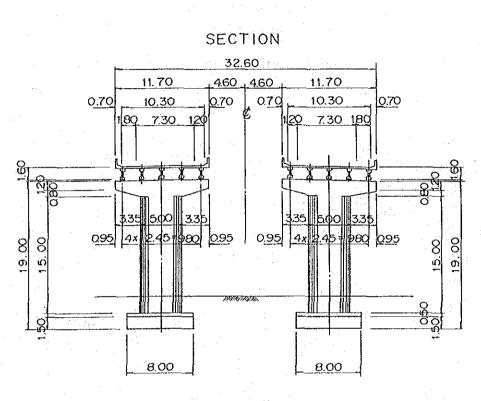
	÷н н.	and a second second						
OF THE PANAMA—COLON HIGHWAY Ito de la carretera entre panama y colon								
	NO. No.							
E Ina	ND. ND.	:	44/49					

LAGO GATUN No. 4 BRIDGE



GRADE				 <u>i=0</u>	520%		······	· · ·	**************************************	
PLANNING HEIGHT	· · · · · · · · · · · · · · · · · · ·	38.92	39.02	 39.85 T=1		20.00	39.44	-39.49-		
GROUND HEIGHT		2 4 5 4	<b>-</b>	· .		1	30.0			
STATION		+ 48	-+420	 +450		+ + 480	+500	-+510-		





DESIGN CRITERIA							
P.C. SIMPLE COMPOSITE GIRDER							
90. OOX							
3 @30. 00X							
2 @10. 30N							
IIS 20-44							
1=15.24/(L+38.1)							
٨=0, 15							
AASIITO							

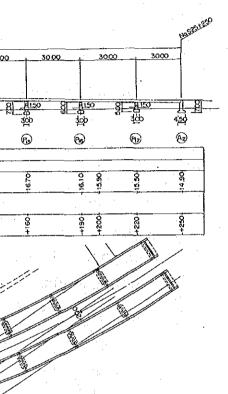
ł				<u>- 그 앱 입니 입니다.</u> - 그 방문 사가 접 문어?	
	GENERAL VIEW OF BRIDGE-LAGO GATUN No.4 BRIDGE	MOP MINISTRY OF PUBLIC WORKS	JICA JAPAN INTERNATIONAL	THE FEASIBILITY STUDY ON THE IMPROVEM EL ESTUDIO DE FACTIBILIDAD SOBRE EL MEJORA	19 T T
	VISTA GENERAL DE PUENTE-PUENTE LAGO GATUN No.4 VISTA GENERAL DE PUENTE-PUENTE LAGO GATUN No.4	THE REPUBLIC OF PANAMA Ministerio de obras	COOPERATION AGENCY Agencia de coperación	SCALE ESCALA	
		PUBLICAS	INTERNATIONAL DEL JAPAN	D A T E FECHA	
					Annual a

$$(P_1)(P_2)$$

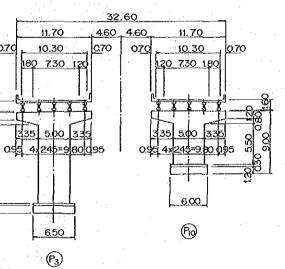
	IAMA—COLON HIGHWAY Rretera entre panama y colon
DWG. NO. Hoja No.	
PAGE NO. Pagina no.	45/49
مار از این با به باید و به به به به این از این	

## COCO SOLO VIADUCT

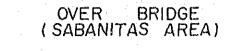
15241T10 ELEVATION 540.00 30.00 3000 30.00 30.00 30.00 30.00 30.00 30.00 30.00 30.00 30.00 30.00 30.00 30.00 30.00 <u>||20</u>0 8 1 1150 8 1.50 8 1150 8 1:50 10.00 15t <u>‡</u>\_\_ şά \$<u>00</u> 6.50 6<u>oq</u> 550 500 (A)<sub>VCL=600</sub><sup>m</sup> (B) <sub>R = 12000</sub><sup>m</sup> (B) • •  $(\mathbf{B})$ 6 ଚ  $\Theta$  $\mathbf{e}$ ⊚ ଭ 6  $\odot$ \_\_\_\_\_<u>i= 2.00 %</u>\_\_\_\_ L≃ 1000m GRADE PLANNING 2.90 HEIGHT GROUND HEIGHT STATION 88 õ PLAN 0.70 <u>e</u>lo DESIGN CRITERIA P. C. SINPLE COMPOSITE GIRDER TYPE TOTAL BRIDGE LENGTH 540. ODM 18@30.00¥ SPAN TIDTE 2 @10. 30¥ LIVE LOAD ES 20-44 INPOACT COEFFICIENT 1=15.24/(L+38.1) ACCELERATION COEFFICIENT A=0. 15 STANDARD AASHTO THE FEASIBILITY STUDY ON THE IMPROVEMI MOP JICA EL ESTUDIO DE FACTIBILIDAD SOBRE EL MEJORA MINISTRY OF PUBLIC WORKS JAPAN INTERNATIONAL COOPERATION AGENCY GENERAL VIEW OF BRIDGE-COCO SOLO VIADUCT SCALE THE REPUBLIC OF PANAMA VISTA GENERAL DE PUENTE-PUENTE COCO SOLO ESCALA MINISTERIO DE OBRAS AGENCIA DE COPERACION D A T E Fecha PUBLICAS INTERNATIONAL DEL JAPAN



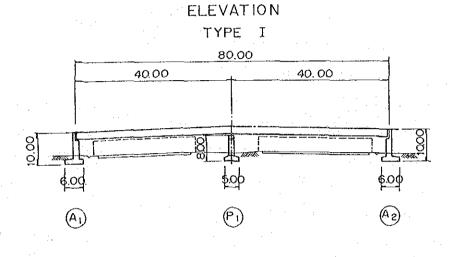
SECTION

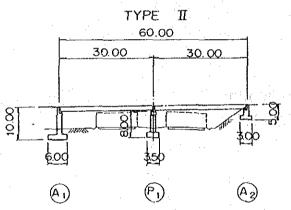


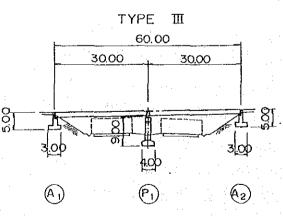
		MA-COLON Retera enti		ON
DWG. Hoja	NO. No.		 	
PAGE Pagina	NO. No.	46/49		

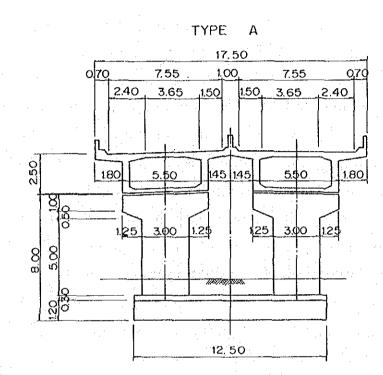


SECTION









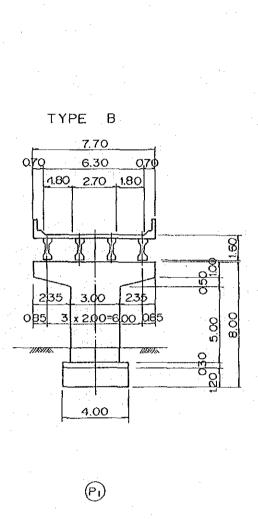
P

BRIDGE NAME	STATION	TOTAL Bridge Length(¥)	¥1DTH	T	PE
CHANPION OVER BRIDGE	\$12+330	60.00	6.30	Ц	В
"	S14+050	60.00	6.30	ъ	B
"	S15+015	60.00	6. 30	<u>1</u>	E
SABANITA INTERCEANGE BRIDGE	\$16+530	80.00	16. 10	I.	Ă
SAN JORGE OVERBRIDGE	S17+400	60.60	6.30	П	B
SAN ANDRES OVERBRIDGE	S17+850	60.00	6.30	n	8
SAN ANDRES OVER BRIDGE S19+350	\$19+350	60.00	6.30	П	E

DESIGN CRITERIA

LIVE LOAD	HS 20-44
INPACT COEFFICIENT	I=15. 24/(L+38. 1)
ACCELERATION COEFFICIENT	A=0. 15
STANDARD	AASHTO

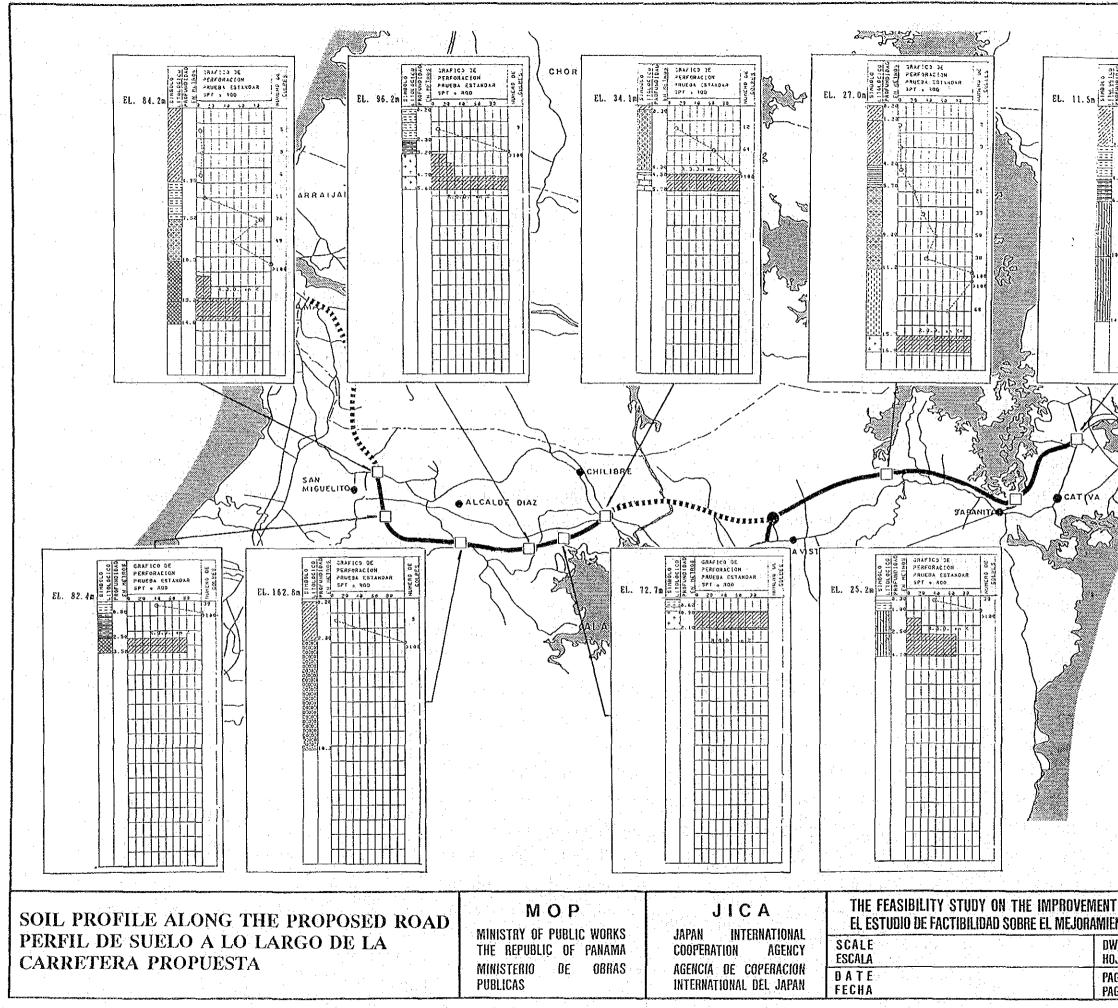
	MOP MINISTRY OF PUBLIC WORKS	JICA JAPAN INTERNATIONAL	THE FEASIBILITY STUDY ON THE IMPROVEM El estudio de factibilidad sobre el mejora	
GENERAL VIEW OF BRIDGE-OVERBRIDGE (2) VISTA GENERAL DE PUENTE-SOBRE EL PUENTE (2)	THE REPUBLIC OF PANAMA	COOPERATION AGENCY	SCALE ESCALA	DWG. Hoja
	MINISTERIO DE OBRAS Publicas	AGENCIA DE COPERACION International del Japan	D A T E FECHA	PAGE Pagin



			1997 - 1997 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -			
		MA-C etera			' COLC	IN
IG. Ja	NO. No.		•			· · ·
GE Gina		 	47	/49		:

	Ţ			<u>ئىرىمىد</u> ئىرىمىد	<u>ک</u>
	en al anti-	Сно	RRERA		and the second s
	ARRAIJAN	L		AB CRA	Alexander is
- '. -	as		entre de la companya	A A A A A A A A A A A A A A A A A A A	GATUN LAKE
	PANAMARA				P-6D S P-71 3
	P-18 P-19	ТО-РА Р-151	P-13D P-141 CHAGRES RIVER		
· · · · · · · · · · · · · · · · · · ·	Safety C-1 P-17		H CASS TO-PA	-0	
0-PA   T	uffaceous sandstone, tuffacerous siltstone	C-2 TE-GZ		C-4 K-CHA	
E-G M	ludstone, siltstone, quartz sandstone, alga		ALLAULELIA ALLANA		
f	ormation. Agglomerate and soft, fine-graine	/ P-12I	C-3 P-9D P-101		
-CHAo L	cu Formation, Cretaceous. imestone and tuff.			GATUN RIVER	\$
M-GA S	andstone, siltstone, tuff, conglomerate				
	AL CONDITION MAP ONDICION GEOLOGICA	MOP Ministry of public works The republic of panama	JICA Japan International Cooperation Agency		JDY ON THE IMPROVEMEN ILIDAD SOBRE EL MEJORAMIE DV
	O-PA 1 a B-G 6 M M-CAS 1 f f t C-CHAO 1 M-GA 6 S a OGICA	<ul> <li>Panama Formation, marine facies, Oligocene.</li> <li>P-PA</li> <li>Panama Formation, marine facies, Oligocene.</li> <li>Tuffaceous sandstone, tuffacerous siltstone, algal and foraminiferal limestone.</li> <li>B-G</li> <li>Gatuncillo Formation, Eocene.</li> <li>Mudstone, siltstone, quartz sandstone, alga and foraminiferal limestone.</li> <li>M-CAS La Cascadas Formation, Miocene. Volcanic formation. Agglomerate and soft, fine-grained tuff, and andesite.</li> <li>CHAO</li> <li>Gatun Formation, Miocene.</li> <li>Sandstone, siltstone, tuff, conglomerate and sandy mudstone.</li> </ul>	B-G       Midsione, silitsione, digatione, silitsione, algal and foraminiferal linestone.         B-G       Midsione, silitsione, digatione, silitsione, algal and foraminiferal linestone.         B-G       Midsione, silitsione, digatione, silitsione, algal and foraminiferal linestone.         B-G       Midsione, silitsione, digatione, silitsione, algal and foraminiferal linestone.         B-G       Midsione, silitsione, quarkies and soft, fine-grained tuff, and andesite.         CIIAo       Linestone and tuff.         M-GA       Satur Pormation, Kocene.         Gatur Pormation, Cretaceous.       Climestone and tuff.         M-GA       Satur Pormation, Miocene.         Gatur Pormation, Cretaceous.       Minestines of the source of tuff. conglomerate and sandy mudstone.         M-GA       Satur Pormation, Miocene.         M-GA       Satur Pormation, Miocene. <t< td=""><td>0-PA       Panama Pormation, marine facies, Oligocone, Department, P-130       P-130         0-PA       Panama Pormation, marine facies, Oligocone, Department, P-130       P-130         0-PA       Telfaceours sandstone, tuffacerous silistone, algal and fornaniferal linestone.       Catumeillo Pormation, Bocene.         8-6       Auditone, silistone, quartz sandstone, algal and fornaniferal linestone.       C-2       C-2         8-6       Auditone, silistone, quartz sandstone, algal and fornaniferal linestone.       C-2       C-2         8-6       Auditone, silistone, quartz sandstone, algal and fornaniferal linestone.       C-2       C-2       C-2         9-710       C-3       P-30       P-101       C-3       P-30         9-710       C-3       P-30       P-101       C-3       P-30         9-710       C-3       P-30       P-101       C-3       P-30       P-101         9-710       C-3       P-30       P-101       C-3       P-30       P-101</td><td>Phase Formation, marine facing, Oligonene Phase Formation, Miocene. Phase Advection and soft, fine-grained Literations, allestone, tuff, conglonerate and sadiastics. Phase Pormation, Siltatone, tuff, conglonerate Phase Formation, Miocene. Phase Advection and tuff. Phase Pormation, Siltatone, tuff, conglonerate Phase Formation, Siltatone, tuff, conglonerate Phase Formation, Siltatone, tuff, conglonerate Phase Pormation, Siltatone, tuff, conglonerate Phase Formation, Siltatone, tuff, conglonerate Phase Pormation, Phase P</td></t<>	0-PA       Panama Pormation, marine facies, Oligocone, Department, P-130       P-130         0-PA       Panama Pormation, marine facies, Oligocone, Department, P-130       P-130         0-PA       Telfaceours sandstone, tuffacerous silistone, algal and fornaniferal linestone.       Catumeillo Pormation, Bocene.         8-6       Auditone, silistone, quartz sandstone, algal and fornaniferal linestone.       C-2       C-2         8-6       Auditone, silistone, quartz sandstone, algal and fornaniferal linestone.       C-2       C-2         8-6       Auditone, silistone, quartz sandstone, algal and fornaniferal linestone.       C-2       C-2       C-2         9-710       C-3       P-30       P-101       C-3       P-30         9-710       C-3       P-30       P-101       C-3       P-30         9-710       C-3       P-30       P-101       C-3       P-30       P-101         9-710       C-3       P-30       P-101       C-3       P-30       P-101	Phase Formation, marine facing, Oligonene Phase Formation, Miocene. Phase Advection and soft, fine-grained Literations, allestone, tuff, conglonerate and sadiastics. Phase Pormation, Siltatone, tuff, conglonerate Phase Formation, Miocene. Phase Advection and tuff. Phase Pormation, Siltatone, tuff, conglonerate Phase Formation, Siltatone, tuff, conglonerate Phase Formation, Siltatone, tuff, conglonerate Phase Pormation, Siltatone, tuff, conglonerate Phase Formation, Siltatone, tuff, conglonerate Phase Pormation, Phase P

e al an an an		
gygy fan de in de sinder gjorg wiertunge er werkenninge er andere		
	)	
	、 ((	
	$\sum_{i=1}^{n}$	
	$\sim$	
S Contraction	-h	
The		
C-5		
P-1D P-21	$\mathcal{L}$	
P-21	Ň	
	.on/	
TM-GA	y .	
NGEN !		
KE CA		
P-3		
P-4 P-5		
3	$\bigcirc$	
	•.	
V		
5		
2	. 1	
	□ BOREHOLE △ TEST PIT	
		1
NT OF THE PANAMA-CO Iento de la carretera i	ilon highway Entre Panama y Colon	
DWG. NO. Ioja no.		] . ·
and the second	48/49	
AGINA AU.	n na ha a shakara na	8



	1 44.4		
			-
Sia a saufico de	<u> </u>		
SIG - PERFORACION SIG - PERFORACION SIG - PERFORACION SIG - PERFORACION SIG - PERFORACION SIG - PERFORACION	Later of		
-1 <u>x -5 30 10 50 30</u>			
01111111	_ ,   <b> </b>		
	- ** //		
	27		
	75		
	-3,144		
			1
{	vy		
A Construction			
S COFON			
m ch	¢		
6		·	
		÷	
an a	. •	: ·	
REMARKS		8	<u> </u>
Mudd	y Clay 💥	Conglomera	te
Clay	ey Mud 📊	Limolita	
Sand	y Clay ++	Sandstone	
titit Mudd	y Sand	Limestone	
	with co	Andesite	
Grav			
IT OF THE DAMA		HIOHUAY	
IT OF THE PANA Iento de la carf			COLON
INTO DE LA GAIL IWG. NO.			
IOJA NO.			
'AGE NO. 'Agina No.	49/	49	

### .

. .



a series and a series of the series of th A series of the series of th

.



