

EXISTING DATA DESIGN DATA SECTION PROPERTIES

	Section 1					Section 2					Section 3				
	$Q (m^3/s) 2.85$ $n 1.018$ $s 1/4770$ $y (m) 1.40$ $b 12.00$ $V (m/s) 0.87$ $z 1.25$ $Frb (m) 0.30$ $CCA (ha) 36011$					$Q (m^3/s) 2.75$ $n 1.018$ $s 1/4770$ $y (m) 1.38$ $b 12.00$ $V (m/s) 0.87$ $z 1.25$ $Frb (m) 0.30$ $CCA (ha) 35540$					$Q (m^3/s) 0.55$ $n 1.018$ $s 1/4770$ $y (m) 1.35$ $b 10.00$ $V (m/s) 0.83$ $z 1.25$ $Frb (m) 0.30$ $CCA (ha) 354423$				
DESIGNED FULL SUPPLY LEVEL	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07
DESIGNED BED LEVEL	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07
DISTANCE (m)	0+00	0+20	0+40	0+60	0+80	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280
STATION (m)	0+00	0+20	0+40	0+60	0+80	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280
LATEST FULL SUPPLY LEVEL	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07
N S L RIGHT	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07
N S L LEFT	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07
BED LEVEL	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07
RIGHT OF WAY LEFT (ft)	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07
RIGHT OF WAY RIGHT (ft)	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07
R.D. (ft)	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07	197.07

DESCRIPTION	SYMBOLS
WATER COURSE (with R.D mark)	
REGULATOR	
AQUEDUCT	
BRIDGE (BR)	
ARTERIAL BRIDGE (AR)	
DISTRICT ROAD BRIDGE (DR)	
VILLAGE ROAD BRIDGE (VR)	
FOOT BRIDGE (FB)	
RAILWAY BRIDGE (RB)	
OPERATION & MAINTENANCE (O&M)	
ROAD BRIDGE	
TUNNEL / CULVERT SECTION	
CROSS DRAINAGE CULVERT	
INVERTED SIPHON	
OUTLET LEFT (OL)	
OUTLET RIGHT (OR)	
FALL/DROP (DF)	
CROSS REGULATOR	
MEASUREMENT STRUCTURE	
WATERCOURSE CROSSING	
TRANSITION	
STEP LEFT (SPL)	
STEP RIGHT (SPR)	
ESCAPE	
LINED PORTION	
PFE	
DESIGN STRUCTURE NUMBER	
RAILWAY LINE	
RIGHT OF WAY	
DESIGN CENTER LINE	
EXISTING CENTER LINE	
DESIGN BANK	
EXISTING BANK	
DESIGN F & L	
DESIGN BED LEVEL	
N S L RIGHT	
N S L LEFT	
BED LEVEL	
Building, Village, Mosque, Tomb	
Road, metalled, unmetalled, cart-track	
Electric line, Telephone line	
River with flow, Water Course, Pond	
Tree, Jungle	
Grass, Cross	
DISCHARGE (cumec)	Q
OUTLET DISCHARGE (cumec)	q
BED WIDTH	b
ROUGHNESS COEFFICIENT	n
VELOCITY	V
CANAL COMMAND AREA	CCA
BED SLOPE	s
SIDE SLOPE	z
WATER DEPTH	y
FREE BOARD	Frb
TAIL LEFT	TL
TAIL RIGHT	TR
TAIL FRONT	TF

REVISION	NO.	DATE	BY	APPROVED
A				
B				
C				
D				

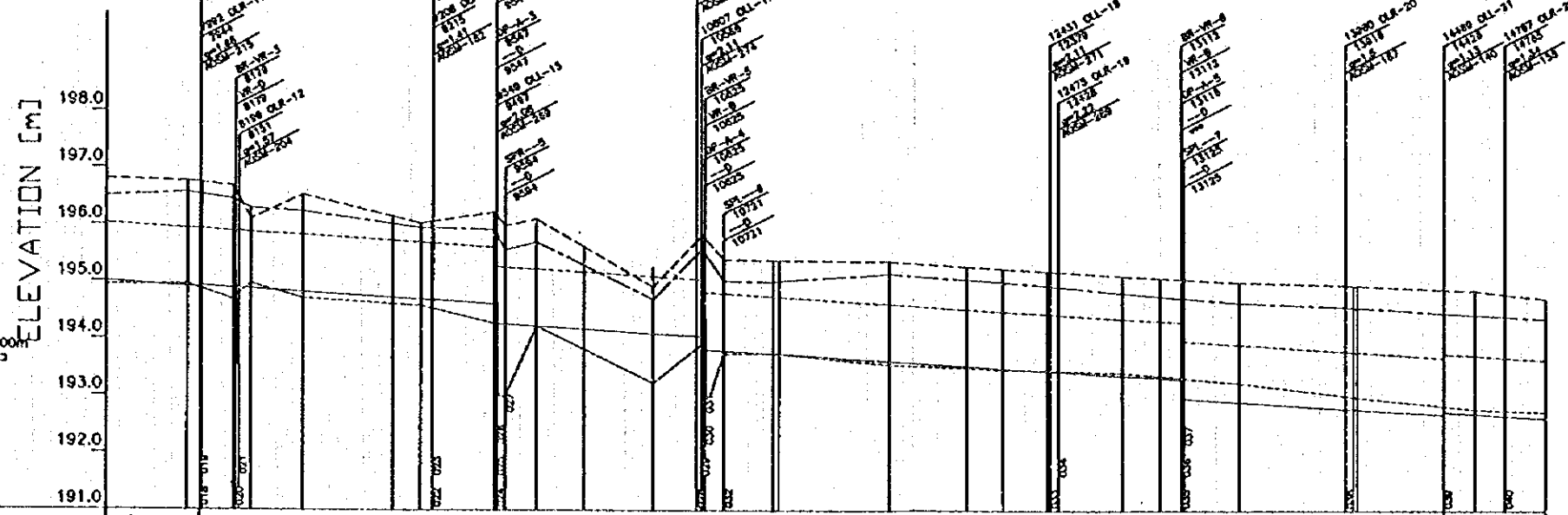
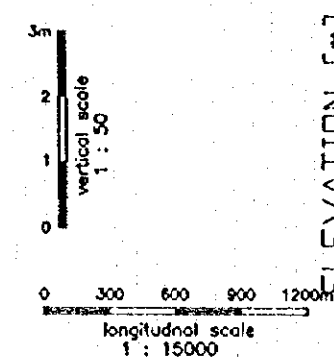
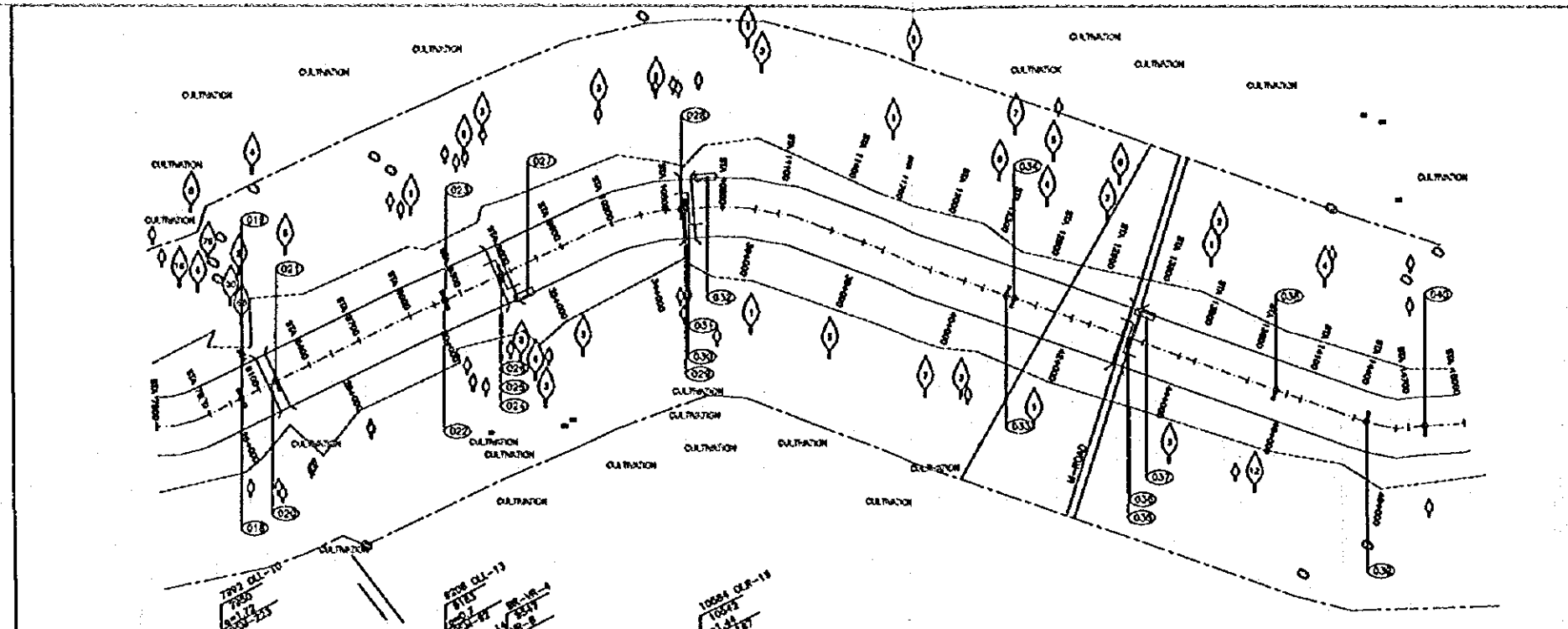
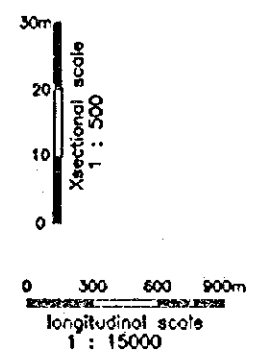
ISLAMIC REPUBLIC OF PAKISTAN  
 GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

PLAN AND PROFILE OF  
 CANAL SYSTEM: L J C  
 DISTRIBUTARY: KIRANA  
 MINOR: --

FROM SIA 000 (00+000) TO: 7500 (24+600)

JAPAN INTERNATIONAL COOPERATION AGENCY LJC-16



EXISTING DATA DESIGN SECTION PROPERTIES

	Section 3	Section 4	Section 5
DESIGNED FULL SUPPLY LEVEL	197.50	197.50	197.50
DESIGNED BED LEVEL	196.50	196.50	196.50
DISTANCE (m)	7500	7500	7500
STATION (m)	7500	7500	7500
LATEST FULL SUPPLY LEVEL	197.50	197.50	197.50
N S L RIGHT	197.50	197.50	197.50
N S L LEFT	197.50	197.50	197.50
BED LEVEL	196.50	196.50	196.50
RIGHT OF WAY LEFT (ft)	197.50	197.50	197.50
RIGHT OF WAY RIGHT (ft)	197.50	197.50	197.50
R.D. (ft)	197.50	197.50	197.50

DESCRIPTION	SYMBOLS
WATER COURSE (with R.O mark)	
REGULATOR	
AQUEDUCT	
BRIDGE (BR)	
ARTERIAL BRIDGE (AR)	
DISTRICT ROAD BRIDGE (DR)	
VILLAGE ROAD BRIDGE (VR)	
FOOT BRIDGE (FB)	
RAILWAY BRIDGE (RB)	
OPERATION & MAINTENANCE (O&M) ROAD BRIDGE	
TUNNEL / CULVERT SECTION	
GROSS DRAINAGE CULVERT	
INVERTED SYPHON	
OUTLET LEFT (OLL)	
OUTLET RIGHT (OLR)	
FALL/DROP (DP)	
GROSS REGULATOR	
MEASUREMENT STRUCTURE	
WATERCOURSE CROSSING	
TRANSITION	
STEP LEFT (SPL) STEP RIGHT (SPR)	
ESCAPE	
LINED PORTION	
FFE	
DESIGN STRUCTURE NUMBER	
RAILWAY LINE	
RIGHT OF WAY	
DESIGN CENTER LINE	
EXISTING CENTER LINE	
DESIGN BANK	
EXISTING BANK	
DESIGN F S L	
N S L RIGHT	
N S L LEFT	
BED LEVEL	
Building, Village, Mosque, Tomb	
Road: metalled, unmetalled, cart-track	
Electric line, Telephone line	
River with flow, Water Course, Pond	
Tree, Jungle	
Groves, Grass	
DISCHARGE (cumec)	Q
OUTLET DISCHARGE (cusec)	q
BED WIDTH	b
ROUGHNESS COEFFICIENT	n
VELOCITY	V
CANAL COMMAND AREA	CCA
BED SLOPE	s
SIDE SLOPE	z
WATER DEPTH	y
FREE BOARD	Frb
TAL LEFT	TL
TAL RIGHT	TR
TAL FRONT	TF

REVISION NO.	REVISION DATE	DESIGNER NAME/DATE	APPROVED NAME/DATE
A			
B			
C			
D			

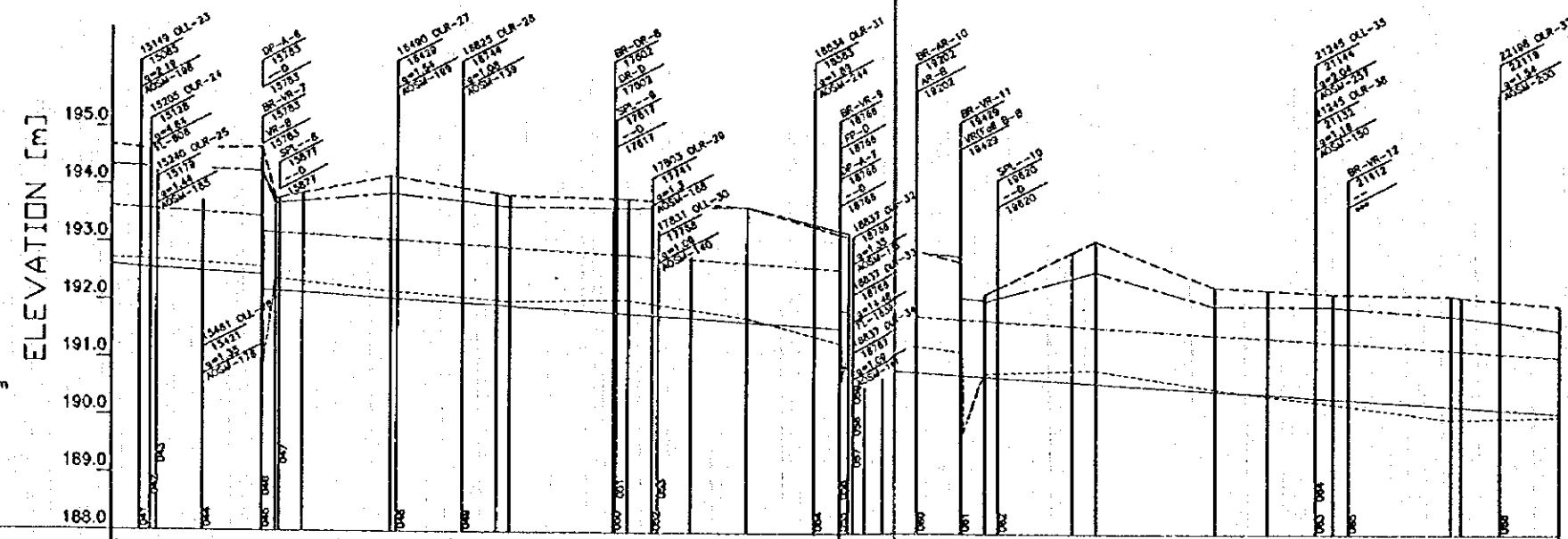
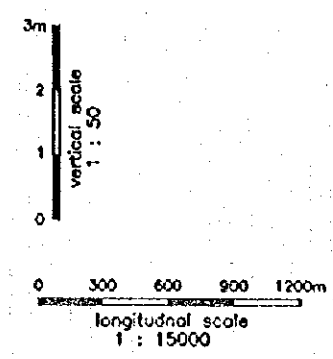
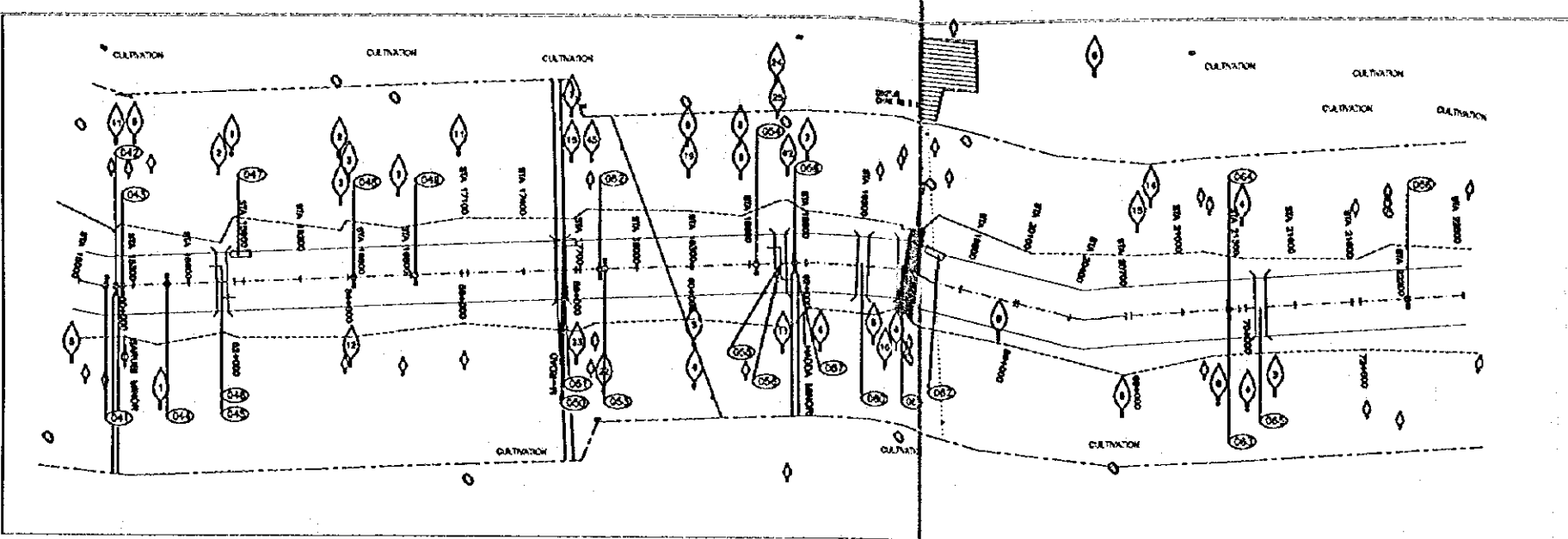
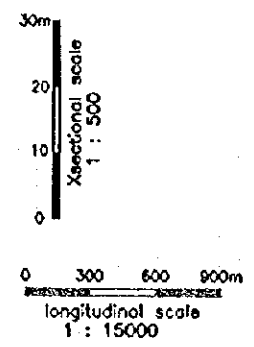
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

PLAN AND PROFILE OF  
CANAL SYSTEM: L J C  
DISTRIBUTARY : KIRANA  
MINOR : --

FROM STA 7500 (24+600) TO : 15000 (49+200)

JAPAN INTERNATIONAL COOPERATION AGENCY LJC-17



EXISTING DATA DESIGN DATA SECTION PROPERTIES

	Section 5	Section 6
DESIGNED FULL SUPPLY LEVEL	194.85	194.85
DESIGNED BED LEVEL	190.00	190.00
DISTANCE (m)	15000	22500
STATION (m)	15000	22500
LATEST FULL SUPPLY LEVEL	194.85	194.85
N S L RIGHT	194.85	194.85
N S L LEFT	194.85	194.85
BED LEVEL	190.00	190.00
RIGHT OF WAY LEFT (ft)	194.85	194.85
RIGHT OF WAY RIGHT (ft)	194.85	194.85
R.D. (ft)	194.85	194.85

DESCRIPTION	SYMBOLS
WATER COURSE (with R.D. mark)	
REGULATOR	
AQUEDUCT	
BRIDGE (BR)	
ARTERIAL BRIDGE (AR)	
DISTRICT ROAD BRIDGE (DR)	
VILLAGE ROAD BRIDGE (VR)	
FOOT BRIDGE (FB)	
RAILWAY BRIDGE (RS)	
OPERATION & MAINTENANCE (O&M) ROAD BRIDGE	
TUNNEL / CULVERT SECTION	
CROSS DRAINAGE CULVERT	
INVERTED SITION	
OUTLET LEFT (OLL)	
OUTLET RIGHT (OLR)	
FALL/DROP (DP)	
CROSS REGULATOR	
MEASUREMENT STRUCTURE	
WATERCOURSE CROSSING	
TRANSITION	
STEP LEFT (SPL) STEP RIGHT (SPR)	
ESCAPE	
LINED PORTION	
PIPE	
DESIGN STRUCTURE NUMBER	
RAILWAY LINE	
RIGHT OF WAY	
DESIGN CENTER LINE	
EXISTING CENTER LINE	
DESIGN BANK	
EXISTING BANK	
DESIGN F S L	
DESIGN BED LEVEL	
N S L RIGHT	
N S L LEFT	
BED LEVEL	
Building, Village, Mosque, Tomb	
Road: metalled, unmetalled, cart-track	
Electric line, Telephone line	
River with flow, Water Course, Pond	
Tree Jungle	
Grave, Grass	
DISCHARGE (cumec) Q	
OUTLET DISCHARGE (cumec) q	
BED WIDTH b	
ROUGHNESS COEFFICIENT n	
VELOCITY V	
CANAL COMMAND AREA CCA	
BED SLOPE s	
SOE SLOPE s'	
WATER DEPTH y	
FREE BOARD Ffb	
TAL LEFT TL	
TAL RIGHT TR	
TAL FRONT TF	

REVISION NO.	REVISION DATE	CHANGED BY	APPROVED BY
A			
B			
C			
D			

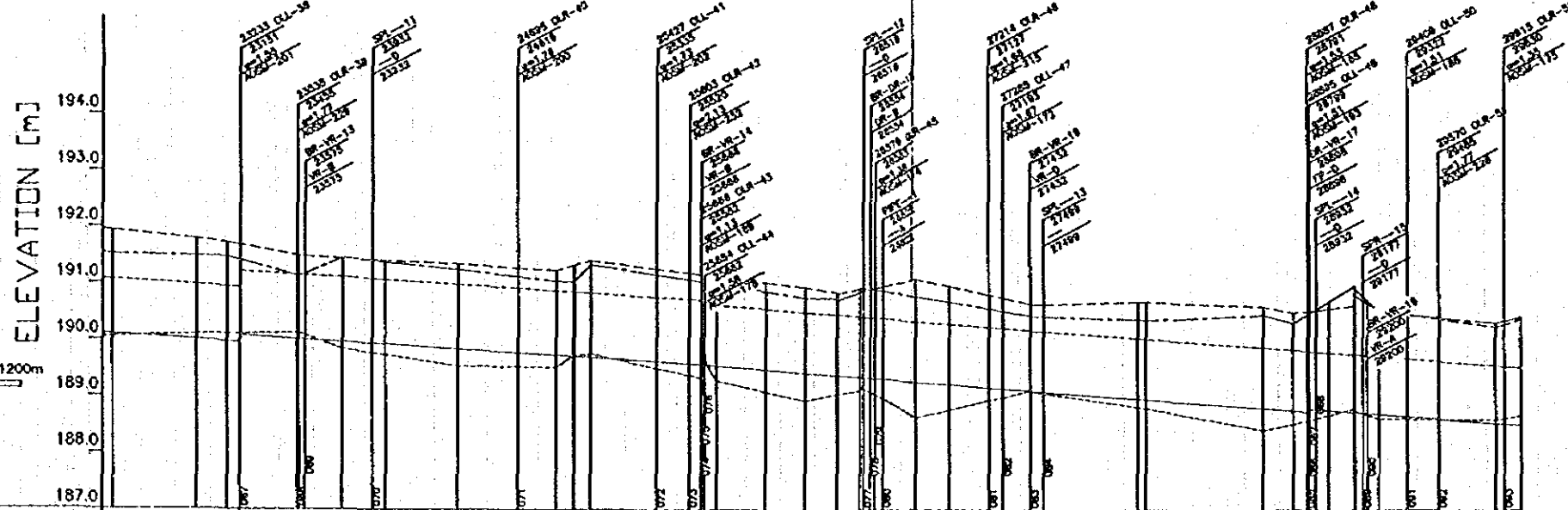
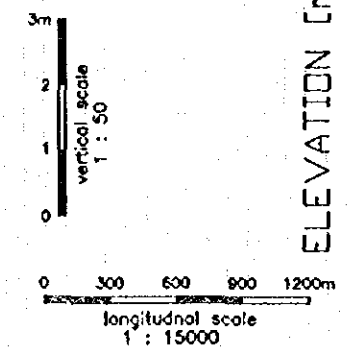
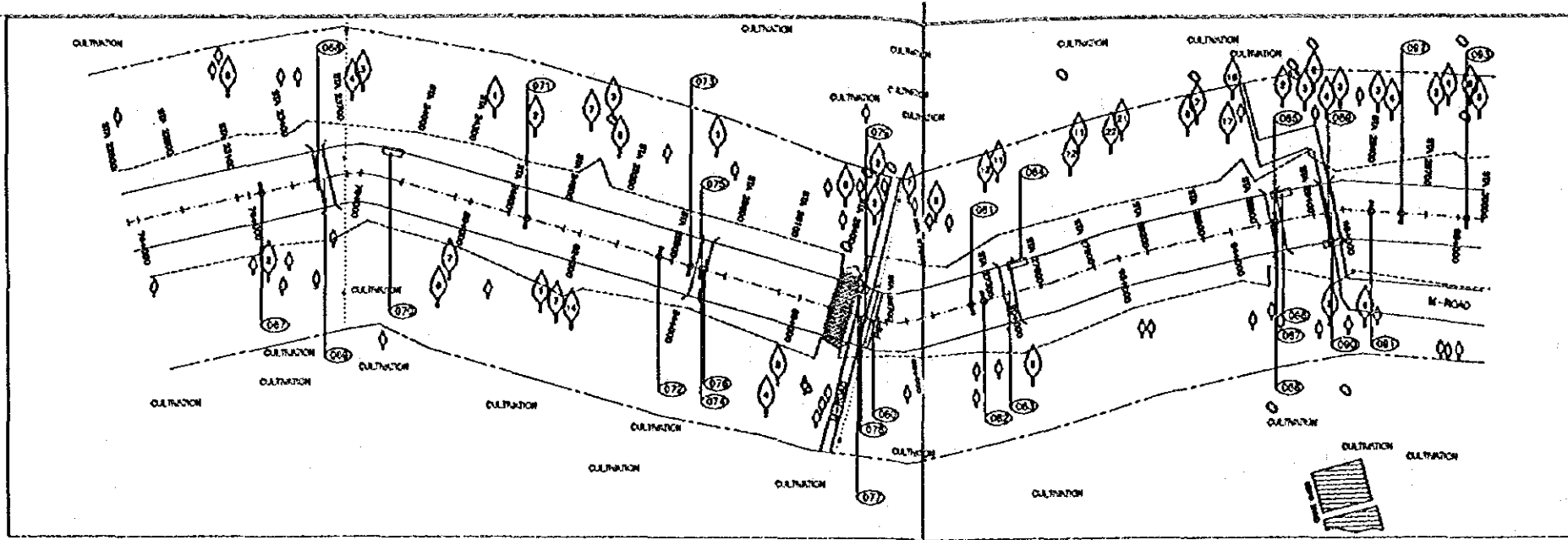
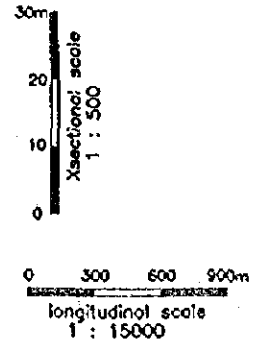
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

PLAN AND PROFILE OF  
CANAL SYSTEM: L J C  
DISTRIBUTARY: KIRANA  
MINOR: --

FROM STA 15000 (49+200) TO: 22500 (73+800)

JAPAN INTERNATIONAL COOPERATION AGENCY LIC-18



EXISTING DATA DESIGN PROPERTIES

	Section 6	Section 7	Section 8	Section 9
DESIGNED FULL SUPPLY LEVEL	193.80	193.80	193.80	193.80
DESIGNED BED LEVEL	190.00	190.00	190.00	190.00
DISTANCE (m)	22500	23000	23500	24000
STATION (m)	22500	23000	23500	24000
LATEST FULL SUPPLY LEVEL	193.80	193.80	193.80	193.80
N S L RIGHT	193.80	193.80	193.80	193.80
N S L LEFT	193.80	193.80	193.80	193.80
BED LEVEL	190.00	190.00	190.00	190.00
RIGHT OF WAY LEFT (ft)	193.80	193.80	193.80	193.80
RIGHT OF WAY RIGHT (ft)	193.80	193.80	193.80	193.80
R.D. (ft)	193.80	193.80	193.80	193.80

DESCRIPTION	SYMBOLS
WATER COURSE (with R.D. mark)	
REGULATOR	
AQUEDUCT	
BRIDGE (BR)	
ARTERIAL BRIDGE (AR)	
DISTRICT ROAD BRIDGE (DR)	
VILLAGE ROAD BRIDGE (VR)	
FOOT BRIDGE (FB)	
RAILWAY BRIDGE (RS)	
OPERATION & MAINTENANCE (O&M)	
ROAD BRIDGE	
TUNNEL / CULVERT SECTION	
CROSS DRAINAGE CULVERT	
INVERTED Siphon	
OUTLET LEFT (OLL)	
OUTLET RIGHT (OLR)	
FALL/DROP (DP)	
CROSS REGULATOR	
MEASUREMENT STRUCTURE	
WATERCOURSE CROSSING	
TRANSITION	
STEP LEFT (SPL)	
STEP RIGHT (SPR)	
ESCAPE	
LINED PORTION	
PIPE	
DESIGN STRUCTURE NUMBER	
RAILWAY LINE	
RIGHT OF WAY	
DESIGN CENTER LINE	
EXISTING CENTER LINE	
DESIGN BANK	
EXISTING BANK	
DESIGN F.S.L.	
DESIGN BED LEVEL	
N.S.L. RIGHT	
N.S.L. LEFT	
BED LEVEL	
Building, Village, Mosque, Tomb	
Road: metalled, unmetalled, cart-track	
Electric line, Telephone line	
River with flow, Water Course, Pond	
Tree, Jungle	
Graves, Groves	
DISCHARGE (cumec)	Q
OUTLET DISCHARGE (cumec)	q
BED WIDTH	b
ROUGHNESS COEFFICIENT	n
VELOCITY	V
CANAL COMMAND AREA	CCA
BED SLOPE	s
SIDE SLOPE	z
WATER DEPTH	y
FREE BOARD	Frb
TAIL LEFT	TL
TAIL RIGHT	TR
TAIL FRONT	TF

NO.	REVISION	DATE	BY	APPROVED
A				
B				
C				
D				

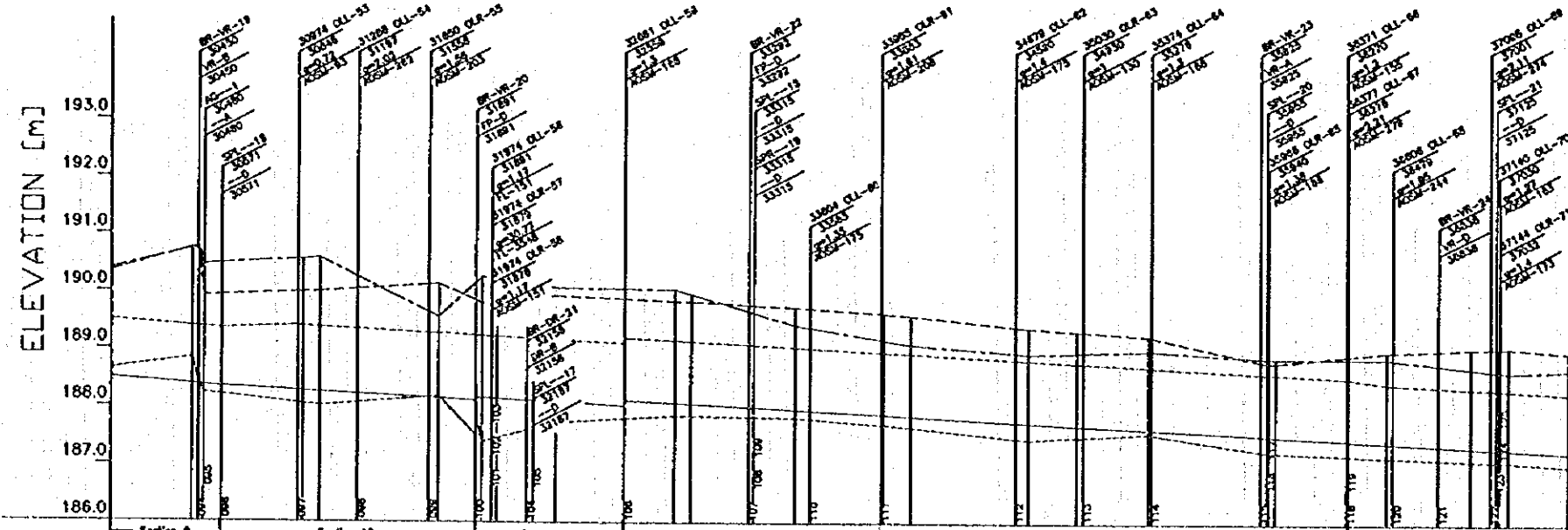
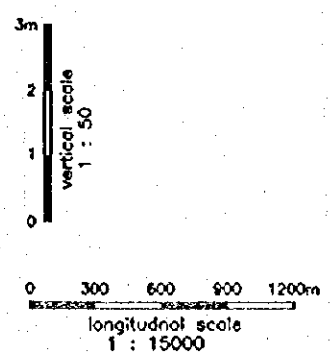
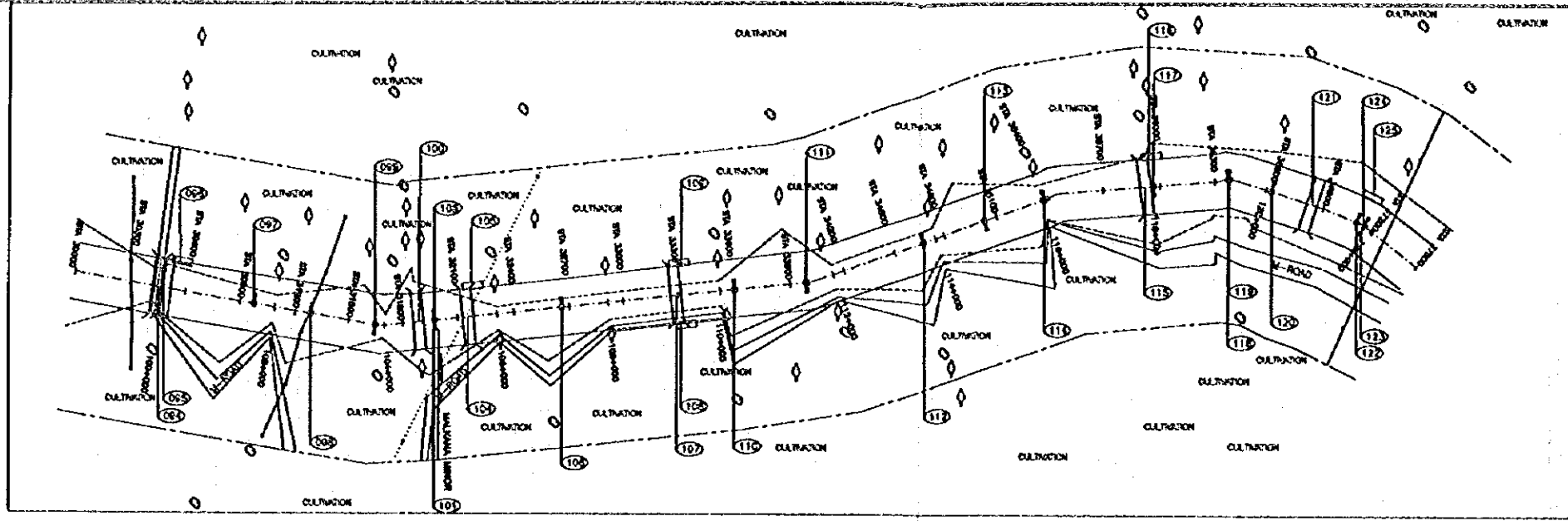
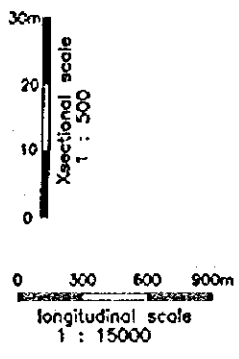
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

PLAN AND PROFILE OF  
CANAL SYSTEM: L J C  
DISTRIBUTARY : KIRANA  
MINOR : -

FROM STA 22500 (73+800) TO : 30000 (98+400)

JAPAN INTERNATIONAL COOPERATION AGENCY | LJC-19



EXISTING DATA DESIGN SECTION PROPERTIES

	Section 9	Section 10	Section 11	Section 12	Section 13
DESIGNED FULL SUPPLY LEVEL	192.80	192.80	192.80	192.80	192.80
DESIGNED BED LEVEL	188.50	188.50	188.50	188.50	188.50
DISTANCE (m)	3000	3000	3000	3000	3000
STATION (m)	30000	33000	36000	39000	42000
LATEST FULL SUPPLY LEVEL	192.80	192.80	192.80	192.80	192.80
N S L RIGHT	192.80	192.80	192.80	192.80	192.80
N S L LEFT	192.80	192.80	192.80	192.80	192.80
BED LEVEL	188.50	188.50	188.50	188.50	188.50
RIGHT OF WAY LEFT (ft)	192.80	192.80	192.80	192.80	192.80
RIGHT OF WAY RIGHT (ft)	192.80	192.80	192.80	192.80	192.80
R.D. (ft)	192.80	192.80	192.80	192.80	192.80

DESCRIPTION	SYMBOLS
WATER COURSE (with R.D. mark)	
REGULATOR	
AQUEDUCT	
BRIDGE	
ARTERIAL BRIDGE (AR)	
DISTRICT ROAD BRIDGE (DR)	
VILLAGE ROAD BRIDGE (VR)	
FOOT BRIDGE (FB)	
RAILWAY BRIDGE (RB)	
OPERATION & MAINTENANCE (O&M)	
ROAD BRIDGE	
TUNNEL / CULVERT SECTION	
CROSS DRAINAGE CULVERT	
INVERTED SIFON	
OUTLET LEFT (OL)	
OUTLET RIGHT (OR)	
FALL/DROP (DF)	
CROSS REGULATOR	
MEASUREMENT STRUCTURE	
WATERCOURSE CROSSING	
TRANSITION	
STEP LEFT (SL)	
STEP RIGHT (SR)	
ESCAPE	
LINED PORTION	
PIPE	
DESIGN STRUCTURE NUMBER	
RAILWAY LINE	
RIGHT OF WAY	
DESIGN CENTER LINE	
EXISTING CENTER LINE	
DESIGN BANK	
EXISTING BANK	
DESIGN F.S.L.	
N.S.L. RIGHT	
N.S.L. LEFT	
BED LEVEL	
Building, Village, Mosque, Tomb	
Road, metalled; unmetalled; cart-track	
Electric line, Telephone line	
River with flow, Water Course, Pond	
Tree, Jungle	
Grass, Cross	
DISCHARGE (cumec)	Q
OUTLET DISCHARGE (cumec)	q
BED WIDTH	b
ROUGHNESS COEFFICIENT	n
VELOCITY	V
CANAL COMMAND AREA	CCA
BED SLOPE	s
SIDE SLOPE	z
WATER DEPTH	y
FREE BOARD	Frb
TAIL LEFT	TL
TAIL RIGHT	TR
TAIL FRONT	TF

RECH'D	RECH'D	DESIGN	APPROX
NO.	DATE	NO./DATE	NO./DATE
A			
B			
C			
D			

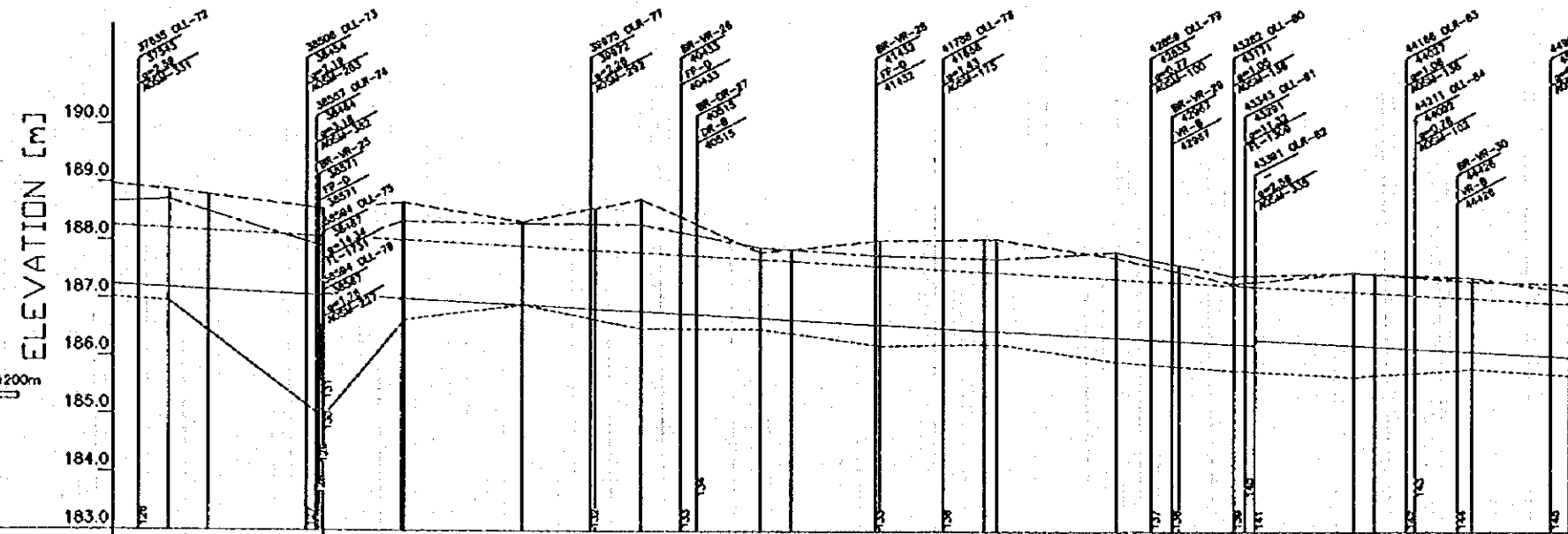
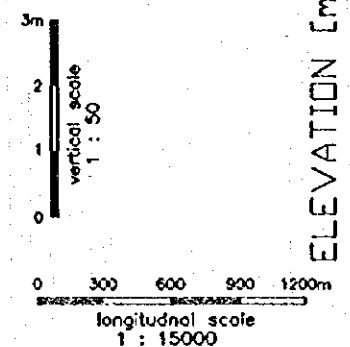
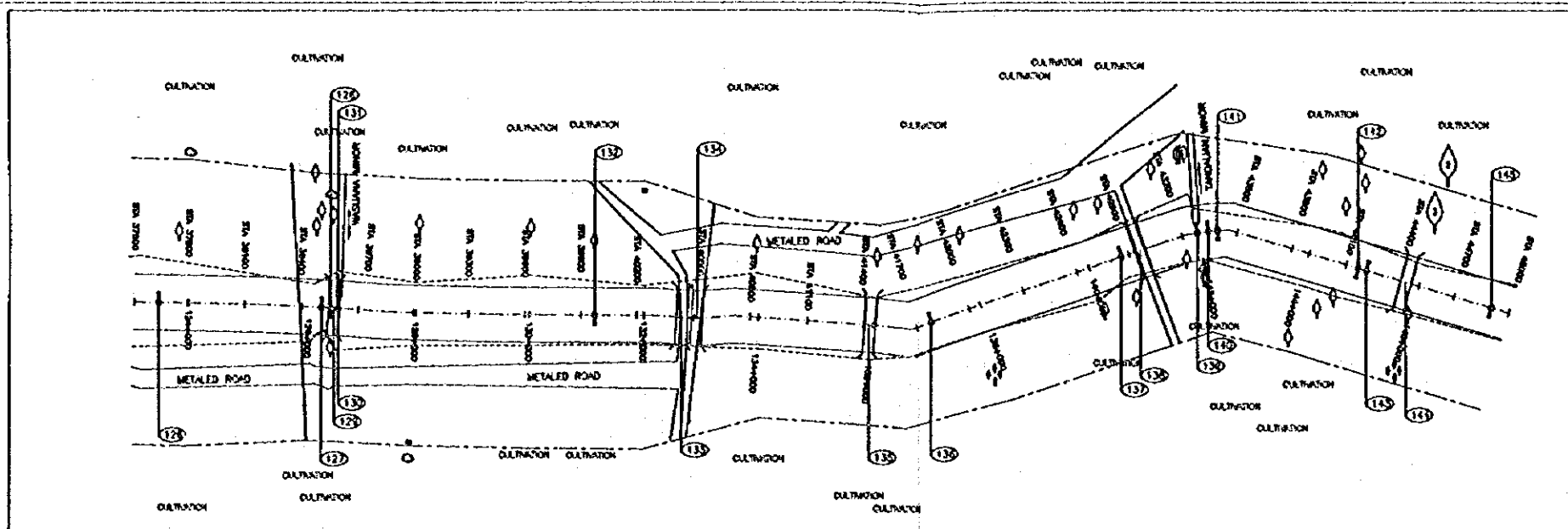
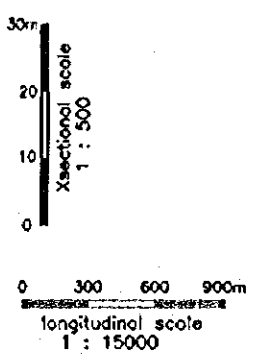
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

PLAN AND PROFILE OF  
CANAL SYSTEM: L J C  
DISTRIBUTARY : KIRANA  
MINOR : -

FROM STA 30000 (98+400) TO : 37500 (123+000)

JAPAN INTERNATIONAL COOPERATION AGENCY LJC-20



EXISTING DATA DESIGN DATA SECTION PROPERTIES

	Section 13	Section 14	Section 15
DESIGNED FULL SUPPLY LEVEL	187.20	187.20	187.20
DESIGNED BED LEVEL	187.20	187.20	187.20
DISTANCE (m)	37500	37500	37500
STATION (m)	37500	37500	37500
LATEST FULL SUPPLY LEVEL	187.20	187.20	187.20
N S L RIGHT	187.20	187.20	187.20
N S L LEFT	187.20	187.20	187.20
BED LEVEL	187.20	187.20	187.20
RIGHT OF WAY LEFT (ft)	187.20	187.20	187.20
RIGHT OF WAY RIGHT (ft)	187.20	187.20	187.20
R.D. (ft)	187.20	187.20	187.20

DESCRIPTION	SYMBOLS
WATER COURSE (with R.D. mark)	
REGULATOR	
AQUEDUCT	
BRIDGE (BR)	
ARTERIAL BRIDGE (AR)	
DISTRICT ROAD BRIDGE (DR)	
VILLAGE ROAD BRIDGE (VR)	
FOOT BRIDGE (FB)	
RAILWAY BRIDGE (RB)	
OPERATION & MAINTENANCE (O&M) ROAD BRIDGE	
TUNNEL / CULVERT SECTION	
CROSS DRAINAGE CULVERT	
INVERTED SIPHON	
OUTLET LEFT (OLL)	
OUTLET RIGHT (OLR)	
FALL/DROP (DF)	
CROSS REGULATOR	
MEASUREMENT STRUCTURE	
WATERCOURSE CROSSING	
TRANSITION	
STEP LEFT (SPL) STEP RIGHT (SPR)	
ESCAPE	
LINED PORTION	
PPC DESIGN STRUCTURE NUMBER	
RAILWAY LINE	
RIGHT OF WAY	
DESIGN CENTER LINE	
EXISTING CENTER LINE	
DESIGN BANK	
EXISTING BANK	
DESIGN F.S.L.	
DESIGN B.D.L.	
N.S.L. RIGHT	
N.S.L. LEFT	
BED LEVEL	
Building, Mosque, Tomb	
Road: metalled; unmetalled; cart-track	
Electric line, Telephone line	
River with flow, Water Course, Pond	
Tree, Jungle	
Graves, Grass	
DISCHARGE (cumec) Q	
OUTLET DISCHARGE (cumec) q	
BED WIDTH b	
ROUGHNESS COEFFICIENT n	
VELOCITY V	
CANAL DEMAND AREA CCA	
BED SLOPE s	
SIDE SLOPE z	
WATER DEPTH y	
FREE BOARD Ffb	
TAIL LEFT TL	
TAIL RIGHT TR	
TAIL FRONT TF	

DESIGN NO.	DESIGN DATE	DESIGNER	APPROVED
A			
B			
C			
D			

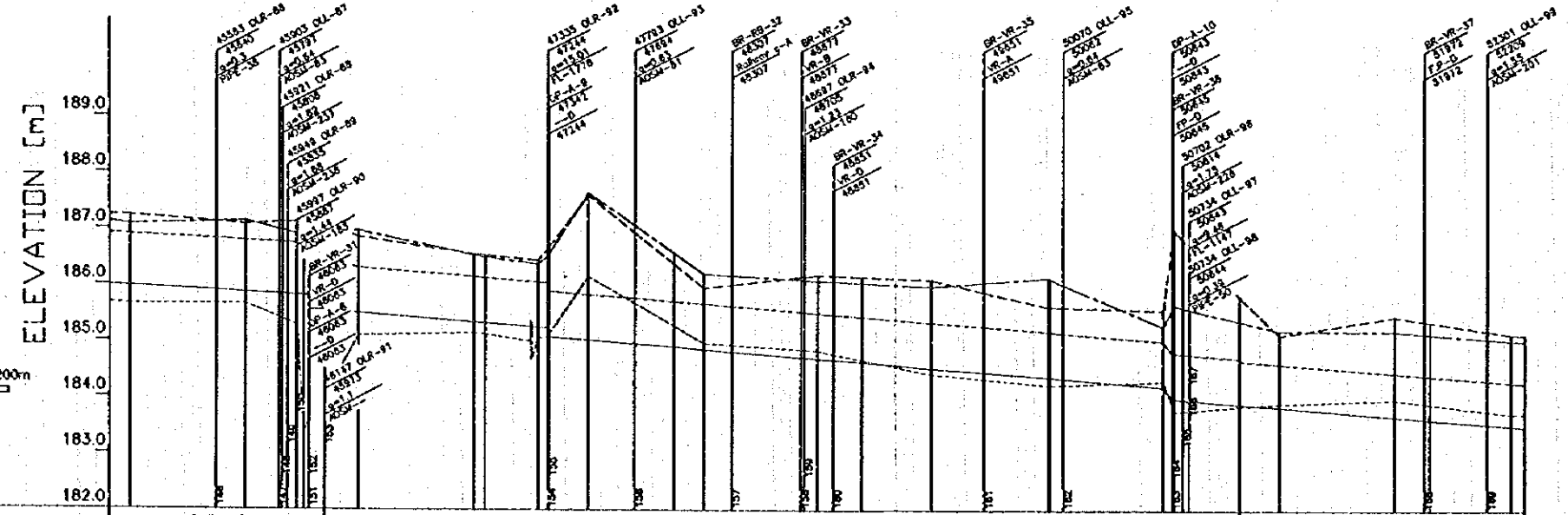
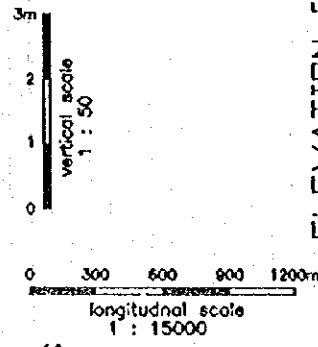
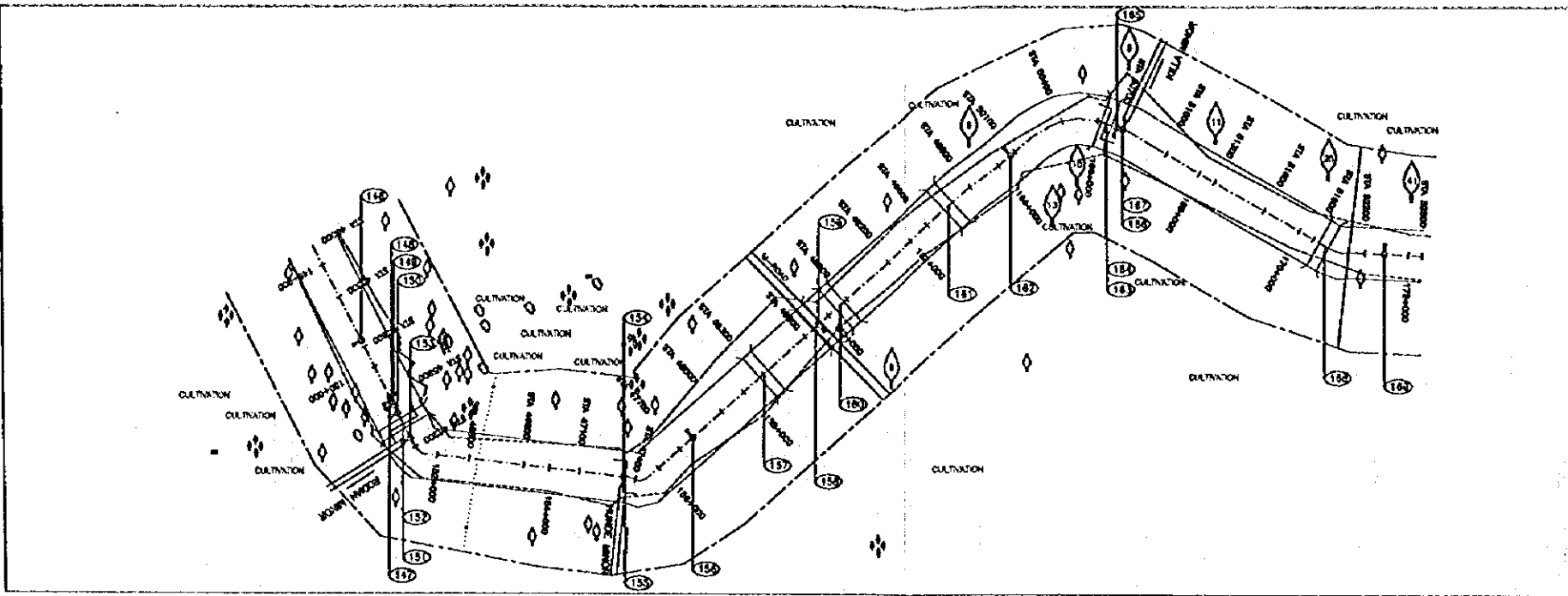
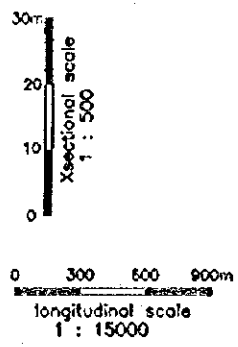
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

PLAN AND PROFILE OF  
CANAL SYSTEM: L J C  
DISTRIBUTARY : KIRANA  
MINOR : -

FROM STA 37500 (123+000) TO : 45000 (147+600)

JAPAN INTERNATIONAL COOPERATION AGENCY LJC-21



EXISTING DATA DESIGN DATA

	Section 15	Section 16	Section 17
DESIGNED FULL SUPPLY LEVEL	187.00	187.00	187.00
DESIGNED BED LEVEL	185.00	185.00	185.00
DISTANCE (m)	45000	45000	45000
STATION (m)	45000	45000	45000
LATEST FULL SUPPLY LEVEL	187.00	187.00	187.00
N S L RIGHT	187.00	187.00	187.00
N S L LEFT	187.00	187.00	187.00
BED LEVEL	185.00	185.00	185.00
RIGHT OF WAY LEFT (ft)	187.00	187.00	187.00
RIGHT OF WAY RIGHT (ft)	187.00	187.00	187.00
R.D. (ft)	187.00	187.00	187.00

DESCRIPTION	SYMBOLS
WATER COURSE (with R.D. mark)	
REGULATOR	
AQUEDUCT	
BRIDGE (BR)	
ARTERIAL BRIDGE (AR)	
DISTRICT ROAD BRIDGE (DR)	
VILLAGE ROAD BRIDGE (VR)	
FOOT BRIDGE (FB)	
RAILWAY BRIDGE (RB)	
OPERATION & MAINTENANCE (O&M) ROAD BRIDGE	
TUNNEL / CULVERT SECTION	
CROSS DRAINAGE CULVERT	
INVERTED SIPHON	
OUTLET LEFT (OLL)	
OUTLET RIGHT (OUR)	
FALL/DROP (DP)	
CROSS REGULATOR	
MEASUREMENT STRUCTURE	
WATERCOURSE CROSSING	
TRANSITION	
STEP LEFT (SPL) STEP RIGHT (SFR)	
ESCAPE	
LINED PORTION	
PIPE	
DESIGN STRUCTURE NUMBER	
RAILWAY LINE	
RIGHT OF WAY	
DESIGN CENTER LINE	
EXISTING CENTER LINE	
DESIGN BANK	
EXISTING BANK	
DESIGN F S L	
DESIGN BED LEVEL	
N S L RIGHT	
N S L LEFT	
BED LEVEL	
Building, Village, Mosque, Tomb	
Road: metalled, unmetalled, cart-track	
Electric line, Telephone line	
River with flow, Water Course, Pond	
Tree Jungle	
Grass, Grass	
DISCHARGE (cumec) Q	
OUTLET DISCHARGE (cumec) q	
BED WIDTH b	
ROUGHNESS COEFFICIENT n	
VELOCITY V	
CANAL COMMAND AREA CCA	
BED SLOPE s	
SIDE SLOPE s	
WATER DEPTH y	
FREE BOARD Fb	
TAIL LEFT TL	
TAIL RIGHT TR	
TAIL FRONT TF	

REVISION	REASON	DATE	BY
A			
B			
C			
D			

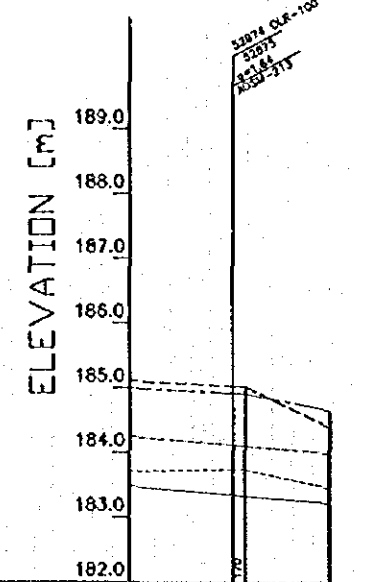
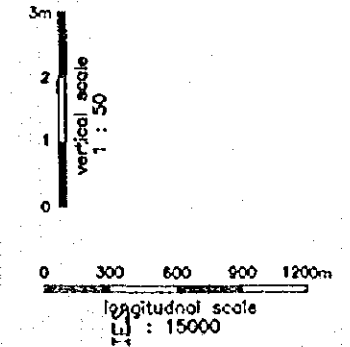
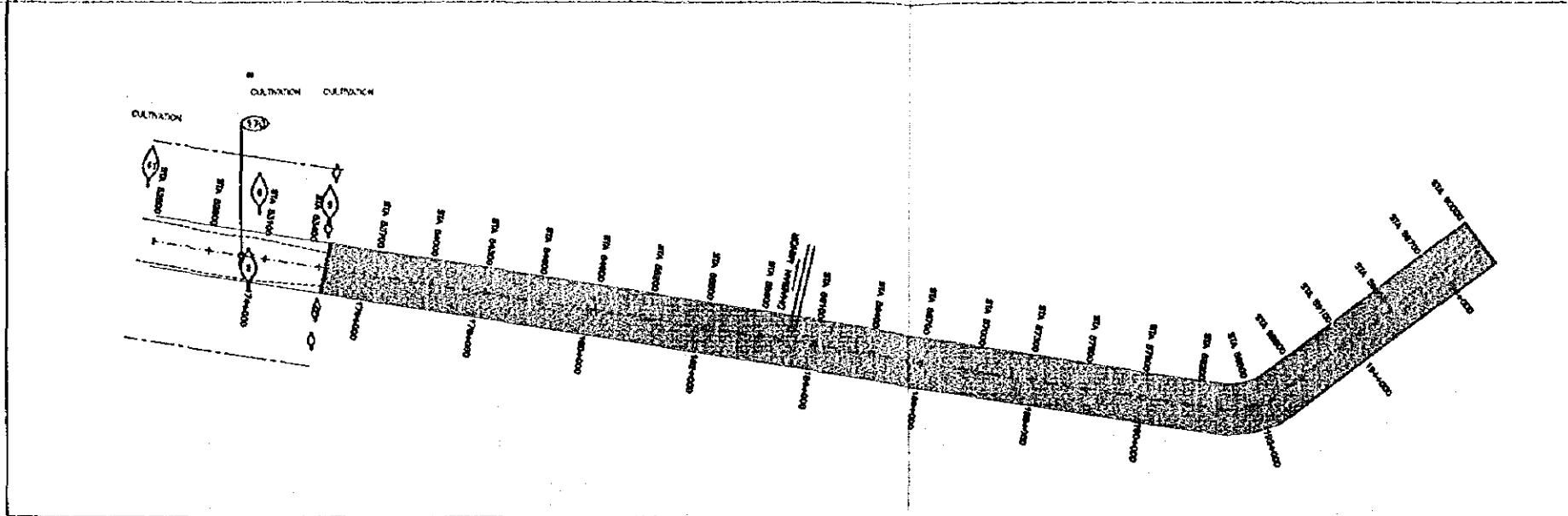
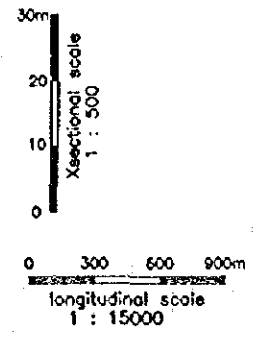
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

PLAN AND PROFILE OF  
CANAL SYSTEM: L J C  
DISTRIBUTARY: KIRANA  
MINOR: -

FROM STA 45000 (147+600) TO: 52500 (172+200)

JAPAN INTERNATIONAL COOPERATION AGENCY LJC-22



EXISTING DATA DESIGN DATA	Section 17	
	DESIGNED	LATEST
DESIGNED FULL SUPPLY LEVEL	188.5	188.5
DESIGNED BED LEVEL	183.5	183.5
DISTANCE (m)	0	0
STATION (m)	52500	52500
LATEST FULL SUPPLY LEVEL	188.5	188.5
N S L RIGHT	183.5	183.5
N S L LEFT	183.5	183.5
BED LEVEL	183.5	183.5
RIGHT OF WAY LEFT (ft)	183.5	183.5
RIGHT OF WAY RIGHT (ft)	183.5	183.5
R.D. (ft)	183.5	183.5

DESCRIPTION	SYMBOLS
WATER COURSE (with R.D. mark)	
REGULATOR	
AQUEDUCT	
BRIDGE (BR)	
ARTERIAL BRIDGE (AR)	
DISTRICT ROAD BRIDGE (DR)	
VILLAGE ROAD BRIDGE (VR)	
FOOT BRIDGE (FB)	
RAILWAY BRIDGE (RS)	
OPERATION & MAINTENANCE (O&M) ROAD BRIDGE	
TUNNEL / CULVERT SECTION	
CROSS DRAINAGE CULVERT	
INVERTED SIPHON	
OUTLET LEFT (OL)	
OUTLET RIGHT (OR)	
FALL/DROP (DF)	
CROSS REGULATOR	
MEASUREMENT STRUCTURE	
WATERCOURSE CROSSING	
TRANSITION	
STEP LEFT (SPL) STEP RIGHT (SPR)	
ESCAPE	
LINED PORTION	
PIPE	
DESIGN STRUCTURE NUMBER	
RAILWAY LINE	
RIGHT OF WAY	
DESIGN CENTER LINE	
EXISTING CENTER LINE	
DESIGN BANK	
EXISTING BANK	
DESIGN F S L	
DESIGN BED LEVEL	
N S L RIGHT	
N S L LEFT	
BED LEVEL	
Building, Village, Mosque, Tomb	
Road metalled, unmetalled, cart-track	
Electric line, Telephone line	
River with flow, Water Course, Pond	
Tree Jungle	
Grove, Grass	
DISCHARGE (cumec) Q	
OUTLET DISCHARGE (cumec) q	
BED WIDTH b	
ROUGHNESS COEFFICIENT n	
VELOCITY V	
CANAL COMMAND AREA CCA	
BED SLOPE s	
SIDE SLOPE s	
WATER DEPTH y	
FREE BOARD Fb	
TAIL LEFT TL	
TAIL RIGHT TR	
TAIL FRONT TF	

REACH NO.	REACH NAME	ORDER NO.	OFFICE NO.
A			
B			
C			
D			

ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

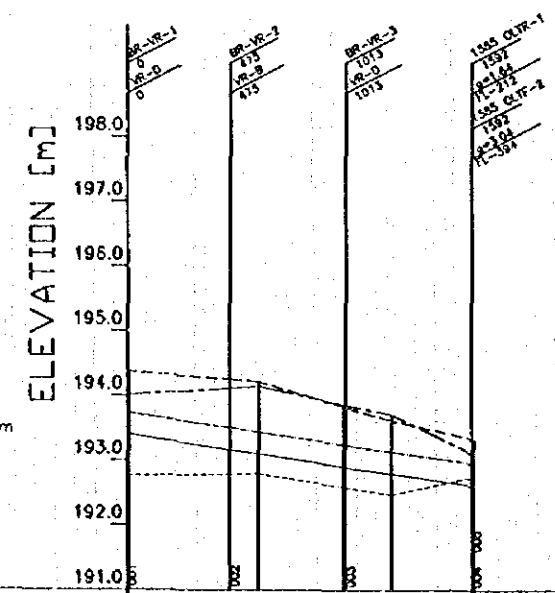
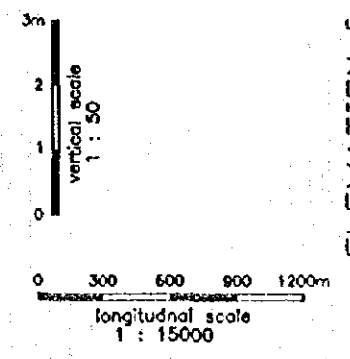
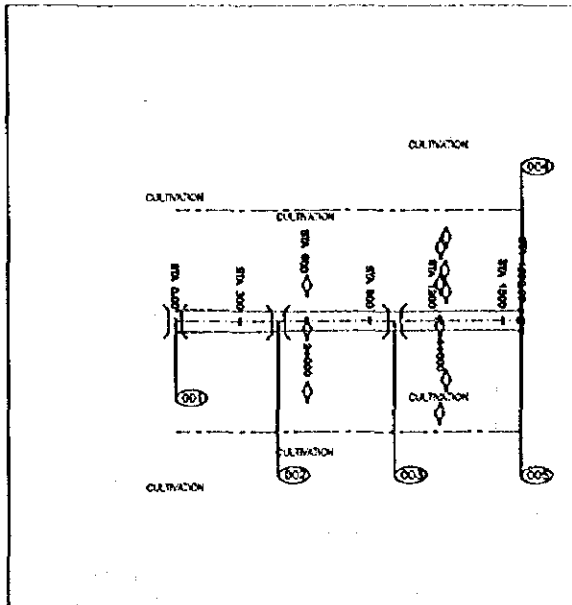
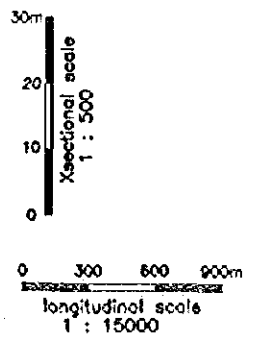
THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

PLAN AND PROFILE OF  
CANAL SYSTEM: L J C  
DISTRIBUTARY : KIRANA  
MINOR : --

FROM STA 52500 (172+200) TO : 53427 (175+241)

JAPAN INTERNATIONAL COOPERATION AGENCY | LJC-23





EXISTING DATA DESIGN DATA DESIGN PROPERTIES

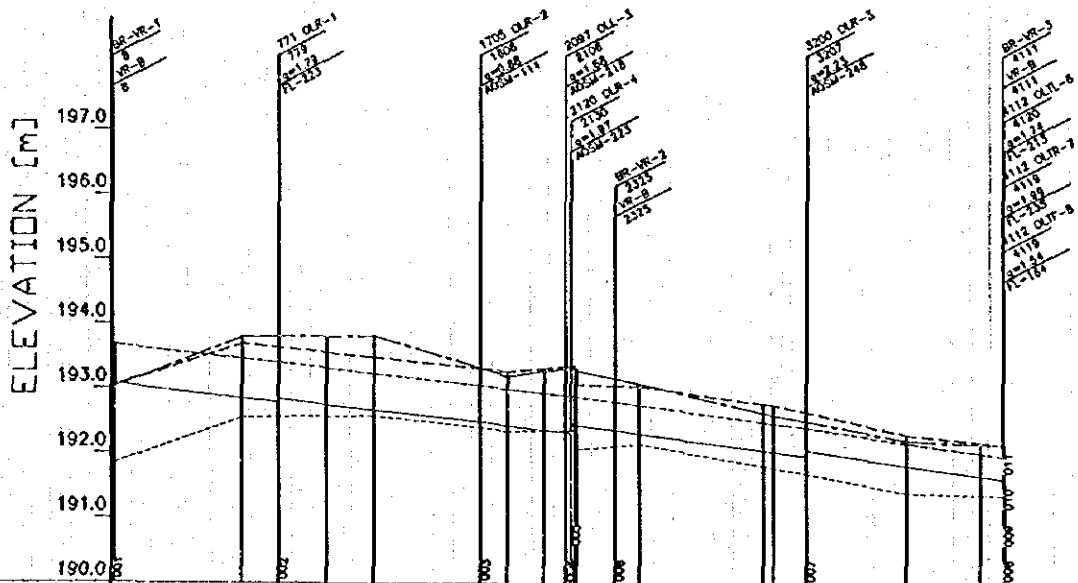
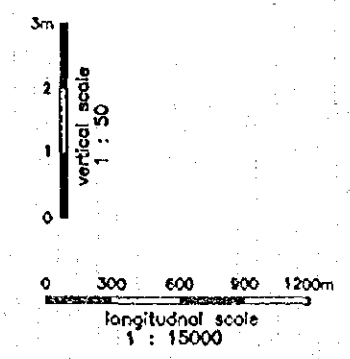
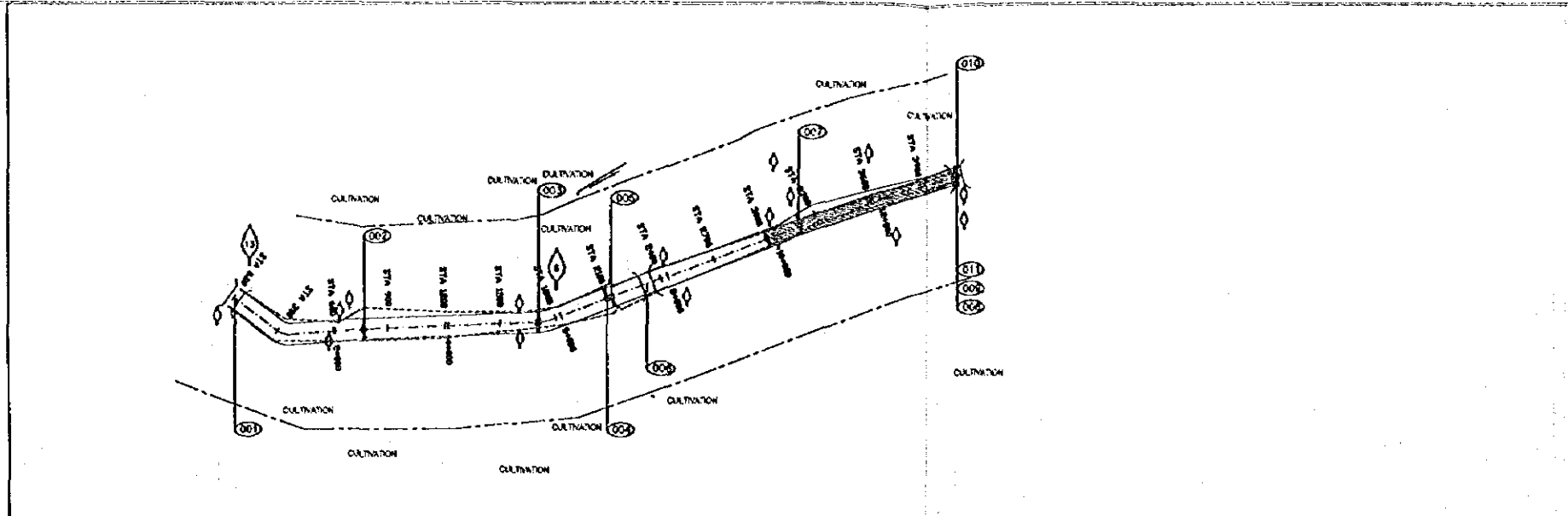
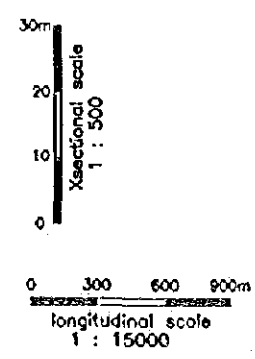
EXISTING DATA	DESIGN DATA	DESIGN PROPERTIES
DESIGNED FULL SUPPLY LEVEL	193.10	193.10
DESIGNED BED LEVEL	191.00	191.00
DISTANCE (m)	0	0
STATION (m)	0	0
LATEST FULL SUPPLY LEVEL	193.10	193.10
N S L RIGHT	193.10	193.10
N S L LEFT	193.10	193.10
BED LEVEL	191.00	191.00
RIGHT OF WAY LEFT (ft)	193.10	193.10
RIGHT OF WAY RIGHT (ft)	193.10	193.10
R.D. (ft)	193.10	193.10

Section 1  
 $n = 0.016$   
 $s = 1/2000$   
 $V = 0.48$   
 $V = 0.45$   
 $Z = 1.25$   
 $Frb Cb = 0.15$   
 $CCA Cb =$

DESCRIPTION	SYMBOLS
WATER COURSE (with R.O mark)	
REGULATOR	
AQUEDUCT	
BRIDGE	(BR)
ARTERIAL BRIDGE	(AR)
DISTRICT ROAD BRIDGE	(DR)
VILLAGE ROAD BRIDGE	(VR)
FOOT BRIDGE	(FB)
RAILWAY BRIDGE (RB)	(RB)
OPERATION & MAINTENANCE (O&M) ROAD BRIDGE	
TUNNEL / CULVERT SECTION	
CROSS DRAINAGE CULVERT	
INVERTED SIPHON	
OUTLET LEFT (OLL)	
OUTLET RIGHT (OLR)	
FALL/DROP (OP)	
CROSS REGULATOR	
MEASUREMENT STRUCTURE	
WATERCOURSE CROSSING	
TRANSITION	
STEP LEFT (SOL) STEP RIGHT (SPR)	
ESCAPE	
LINED PORTION	
PIPE	
DESIGN STRUCTURE NUMBER	
RAILWAY LINE	
RIGHT OF WAY	
DESIGN CENTER LINE	
EXISTING CENTER LINE	
DESIGN BANK	
EXISTING BANK	
DESIGN F S L	
DESIGN BED LEVEL	
N S L RIGHT	
N S L LEFT	
BED LEVEL	
Building, Village, Mosque, Tomb	
Road: metalled; unmetalled; cart-track	
Electric line, Telephone line	
River with flow, Water Course, Pond	
Tree, Jungle	
Drains, Grows	
DISCHARGE (cumec)	Q
OUTLET DISCHARGE (cumec)	q
BED WIDTH	B
ROUGHNESS COEFFICIENT	n
VELOCITY	V
CANAL COMMAND AREA	CCA
BED SLOPE	s
SIDE SLOPE	z
WATER DEPTH	y
FREE BOARD	Frb
TAIL LEFT	TL
TAIL RIGHT	TR
TAIL FRONT	TF

REVISION NO.	REVISION DESCRIPTION	DESIGNED BY	APPROVED BY
A			
B			
C			
D			

ISLAMIC REPUBLIC OF PAKISTAN  
 GOVERNMENT OF PUNJAB  
 THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB  
 PLAN AND PROFILE OF  
 CANAL SYSTEM: L J C  
 DISTRIBUTARY : KIRANA  
 MINOR : SARULI  
 FROM STA 000 (00+000) TO : 1593 (5+225)  
 JAPAN INTERNATIONAL COOPERATION AGENCY LJC-24



EXISTING DATA	SECTION PROPERTIES			
	Section 1	Section 2	Section 3	Section 4
DESIGNED FULL SUPPLY LEVEL	193.2	193.2	193.2	193.2
DESIGNED BED LEVEL	192.5	192.5	192.5	192.5
DISTANCE (m)	0	100	200	300
STATION (m)	0+00	0+100	0+200	0+300
LATEST FULL SUPPLY LEVEL	193.0	193.0	193.0	193.0
N S L RIGHT	193.5	193.5	193.5	193.5
N S L LEFT	192.5	192.5	192.5	192.5
BED LEVEL	192.5	192.5	192.5	192.5
RIGHT OF WAY LEFT (ft)	193.5	193.5	193.5	193.5
RIGHT OF WAY RIGHT (ft)	193.5	193.5	193.5	193.5
R.D. (ft)	193.5	193.5	193.5	193.5

DESCRIPTION	SYMBOLS
WATER COURSE (with R.O mark)	
REGULATOR	
AQUEDUCT	
BRIDGE (BR)	
ARTERIAL BRIDGE (AR)	
DISTRICT ROAD BRIDGE (DR)	
VILLAGE ROAD BRIDGE (VR)	
FOOT BRIDGE (FB)	
RAILWAY BRIDGE (RB)	
OPERATION & MAINTENANCE (O&M) ROAD BRIDGE	
TUNNEL / CULVERT SECTION	
CROSS DRAINAGE CULVERT	
INVERTED SIPHON	
OUTLET LEFT (OLL)	
OUTLET RIGHT (OLR)	
FALL/DROP (DP)	
CROSS REGULATOR	
MEASUREMENT STRUCTURE	
WATERCOURSE CROSSING	
TRANSITION	
STEP LEFT (SPL)	
STEP RIGHT (SPR)	
ESCAPE	
LINED PORTION	
PIPE	
DESIGN STRUCTURE NUMBER	
RAILWAY LINE	
RIGHT OF WAY LINE	
DESIGN CENTER LINE	
EXISTING CENTER LINE	
DESIGN BANK	
EXISTING BANK	
DESIGN F S L	
DESIGN BED LEVEL	
N S L RIGHT	
N S L LEFT	
BED LEVEL	
Building, Village, Mosque, Tomb	
Road: metalled, unmetalled, cart-track	
Electric line, Telephone line	
River with flow, Water Course, Pond	
Tree, Jungle	
Grass, Grass	
DISCHARGE (cumec) Q	
OUTLET DISCHARGE (cumec) q	
BED WIDTH b	
ROUGHNESS COEFFICIENT n	
VELOCITY V	
CANAL COMMAND AREA CCA	
BED SLOPE s	
SIDE SLOPE z	
WATER DEPTH y	
FREE BOARD Fb	
TAL LEFT TL	
TAL RIGHT TR	
TAL FRONT TF	

REVISION NO.	REVISION DESCRIPTION	DATE	APPROVED SIGNATURE
A			
B			
C			
D			

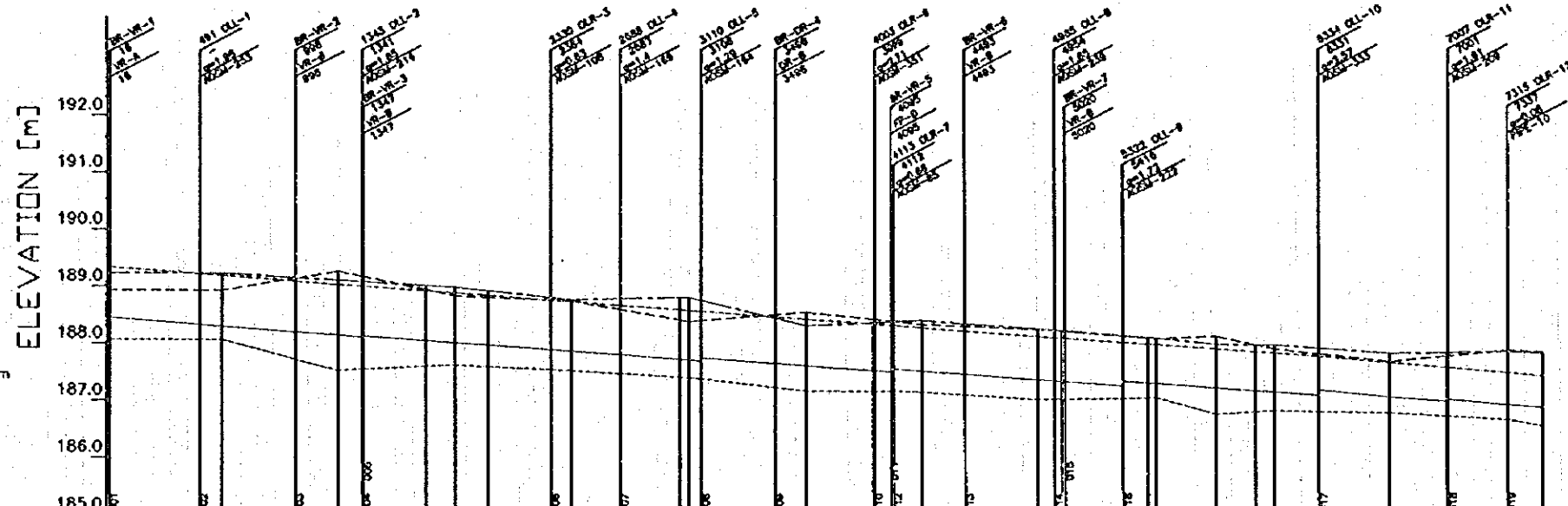
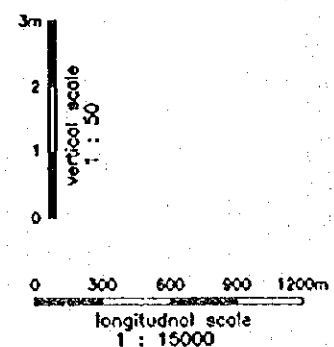
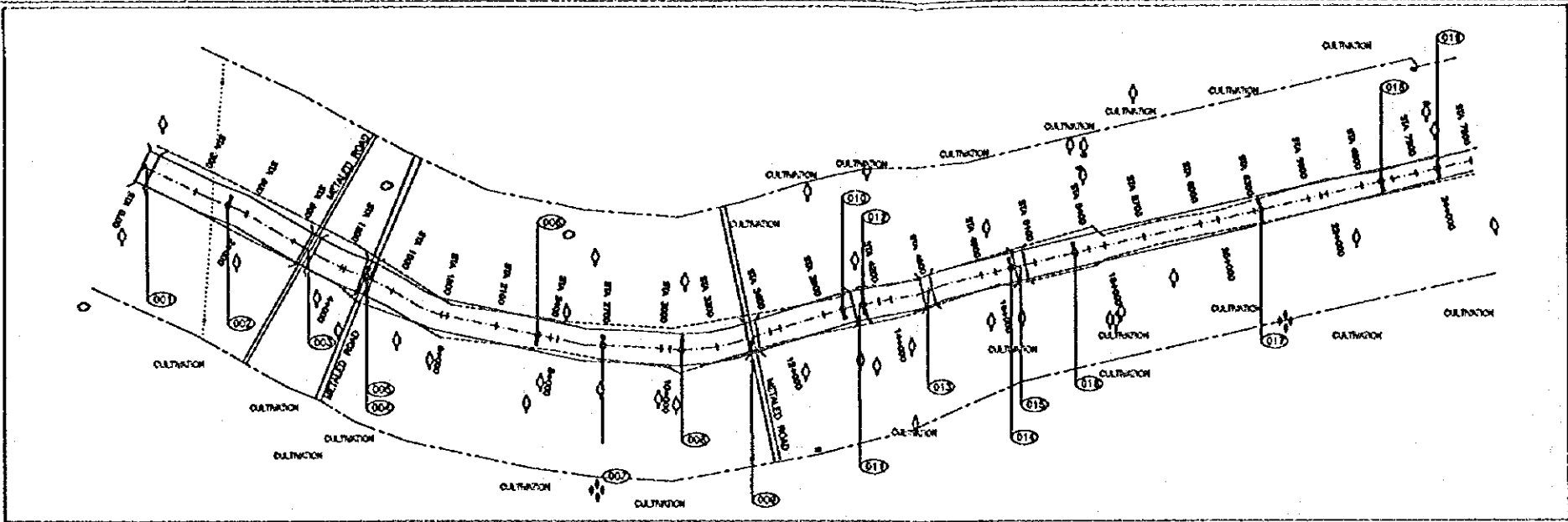
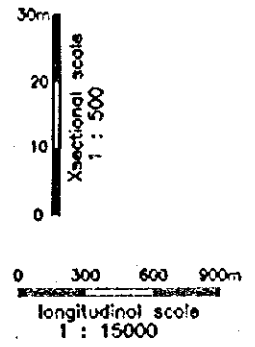
ISLAMIC REPUBLIC OF PAKISTAN  
 GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

PLAN AND PROFILE OF  
 CANAL SYSTEM: L J C  
 DISTRIBUTARY : KIRANA  
 MINOR : HADDA

FROM STA 000 (00+000) TO : 4120 (13+514)

JAPAN INTERNATIONAL COOPERATION AGENCY LJC-25



EXISTING DATA	DESIGN DATA						
	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7
DESIGNED FULL SUPPLY LEVEL	188.33	188.33	188.33	188.33	188.33	188.33	188.33
DESIGNED BED LEVEL	187.50	187.50	187.50	187.50	187.50	187.50	187.50
DISTANCE (m)	0	100	200	300	400	500	600
STATION (m)	0+000	0+100	0+200	0+300	0+400	0+500	0+600
LATEST FULL SUPPLY LEVEL	188.33	188.33	188.33	188.33	188.33	188.33	188.33
N S L RIGHT	188.33	188.33	188.33	188.33	188.33	188.33	188.33
N S L LEFT	188.33	188.33	188.33	188.33	188.33	188.33	188.33
BED LEVEL	187.50	187.50	187.50	187.50	187.50	187.50	187.50
RIGHT OF WAY LEFT (ft)	77.00	77.00	77.00	77.00	77.00	77.00	77.00
RIGHT OF WAY RIGHT (ft)	77.00	77.00	77.00	77.00	77.00	77.00	77.00
R.D. (ft)	77.00	77.00	77.00	77.00	77.00	77.00	77.00

DESCRIPTION	SYMBOLS
WATER COURSE (with R.O. mark)	
REGULATOR	
AQUEDUCT	
BRIDGE (BR)	
ARTERIAL BRIDGE (AR)	
DISTRICT ROAD BRIDGE (DR)	
VILLAGE ROAD BRIDGE (VR)	
FOOT BRIDGE (FB)	
RAILWAY BRIDGE (RB)	
OPERATION & MAINTENANCE (O&M) ROAD BRIDGE	
TUNNEL / CULVERT SECTION	
CROSS GRADE CULVERT	
INVERTED SIPHON	
OUTLET LEFT (OLL)	
OUTLET RIGHT (OLR)	
FALL/DROP (DF)	
CROSS REGULATOR	
MEASUREMENT STRUCTURE	
WATERCOURSE CROSSING	
TRANSITION	
STEP LEFT (SPL) STEP RIGHT (SPR)	
ESCAPE	
LINED PORTION	
PIPE	
DESIGN STRUCTURE NUMBER	
RAILWAY LINE	
RIGHT OF WAY	
DESIGN CENTER LINE	
EXISTING CENTER LINE	
DESIGN BANK	
EXISTING BANK	
DESIGN F.S.L.	
DESIGN BED LEVEL	
N.S.L. RIGHT	
N.S.L. LEFT	
BED LEVEL	
Building, Village, Mosque, Tomb	
Road: metalled, unmetalled, cart-track	
Electric line, Telephone line	
River with flow, Water Course, Pond	
Tree, Jungle	
Graves, Cross	
DISCHARGE (cumec)	Q
OUTLET DISCHARGE (cumec)	q
BED WIDTH	b
ROUGHNESS COEFFICIENT	n
VELOCITY	V
CANAL COMMAND AREA	CCA
BED SLOPE	s
SIDE SLOPE	z
WATER DEPTH	y
FREE BOARD	Frb
TAIL LEFT	TL
TAIL RIGHT	TR
TAIL FRONT	TF

REVISION NO.	REASON FOR CHANGE	CHECKED BY/DATE	APPROVED BY/DATE
A			
B			
C			
D			

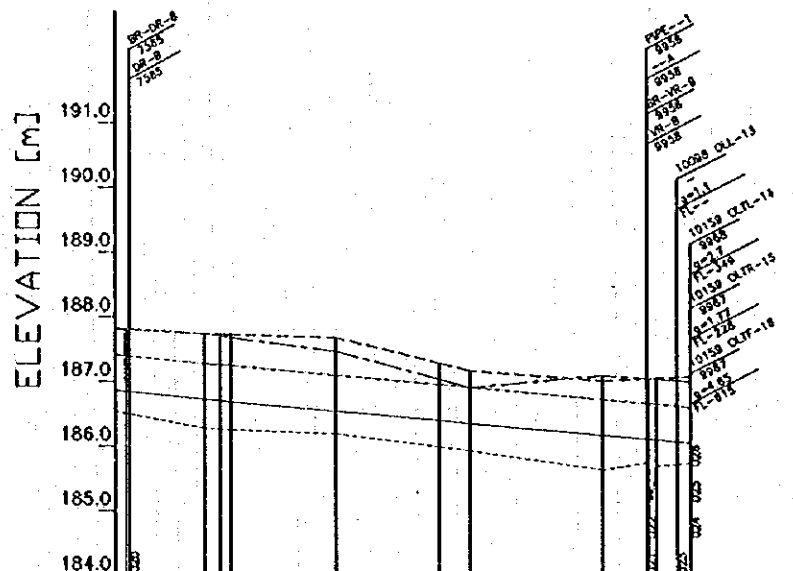
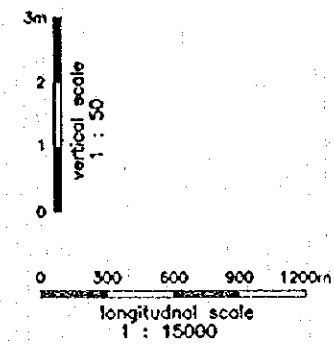
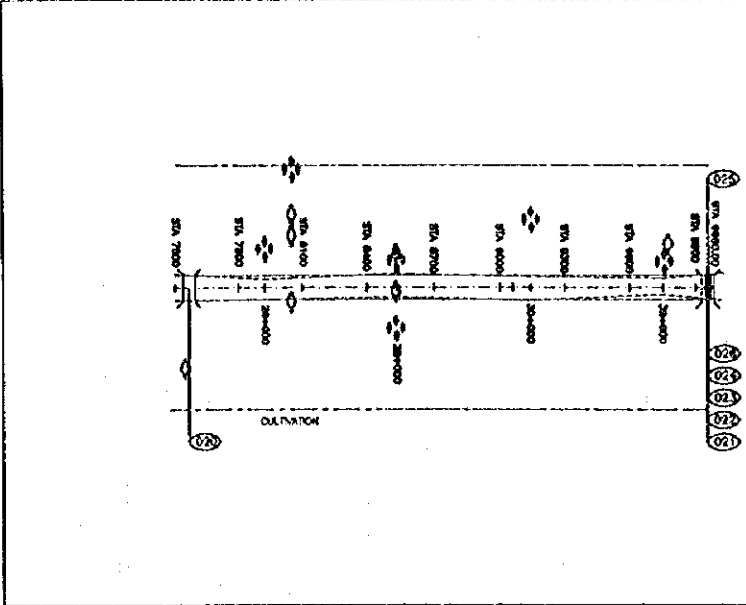
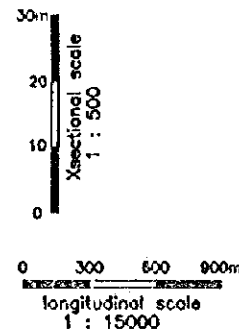
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

PLAN AND PROFILE OF  
CANAL SYSTEM: L J C  
DISTRIBUTARY : KIRANA  
MINOR : MALKANA

FROM STA 000 (00+000) TO : 7500 (24+600)

JAPAN INTERNATIONAL COOPERATION AGENCY | LJC-26



EXISTING DATA DESIGN SECTION PROPERTIES

DESIGNED FULL SUPPLY LEVEL	DESIGNED BED LEVEL	DISTANCE (m)	STATION (m)	LATEST FULL SUPPLY LEVEL	N S L RIGHT	N S L LEFT	BED LEVEL	RIGHT OF WAY LEFT (ft)	RIGHT OF WAY RIGHT (ft)	R.D. (ft)
187.10	186.50	0	7500	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	100	7600	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	200	7700	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	300	7800	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	400	7900	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	500	8000	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	600	8100	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	700	8200	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	800	8300	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	900	8400	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	1000	8500	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	1100	8600	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	1200	8700	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	1300	8800	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	1400	8900	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	1500	9000	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	1600	9100	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	1700	9200	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	1800	9300	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	1900	9400	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	2000	9500	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	2100	9600	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	2200	9700	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	2300	9800	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	2400	9900	187.10	187.10	187.10	187.10	187.10	187.10	187.10
187.10	186.50	2500	10000	187.10	187.10	187.10	187.10	187.10	187.10	187.10

Section 7  
 Q km/s 0.30  
 n 0.018  
 s 1/3540  
 y (m) 0.70  
 D' 0.48  
 V (m/s) 0.47  
 z 1.25  
 Frb (m) 0.15  
 CCA 6ha/228

DESCRIPTION	SYMBOLS
WATER COURSE (with R.D. mark)	
REGULATOR	
AQUEDUCT	
BRIDGE (BR)	
ARTERIAL BRIDGE (AR)	
DISTRICT ROAD BRIDGE (DR)	
VILLAGE ROAD BRIDGE (VR)	
FOOT BRIDGE (FB)	
RAILWAY BRIDGE (RB)	
OPERATION & MAINTENANCE (O&M) ROAD BRIDGE	
TUNNEL / CULVERT SECTION	
CROSS DRAINAGE CULVERT	
INVERTED SYPHON	
OUTLET LEFT (OLL)	
OUTLET RIGHT (OUR)	
FALL/DROP (DF)	
CROSS REGULATOR	
MEASUREMENT STRUCTURE	
WATERCOURSE CROSSING	
TRANSITION	
STEP LEFT (SPL) STEP RIGHT (SPR)	
ESCAPE	
LINED PORTION	
PIPE	
DESIGN STRUCTURE NUMBER	
RAILWAY LINE	
RIGHT OF WAY	
DESIGN CENTER LINE	
EXISTING CENTER LINE	
DESIGN BANK	
EXISTING BANK	
DESIGN F S L	
DESIGN BED LEVEL	
N S L RIGHT	
N S L LEFT	
BED LEVEL	
BUILDING, Village, Mosque, Tomb	
Road: metalled, unmetalled, cart-track	
Electric line, Telephone line	
River with flow, Water Course, Pond	
Tree, Jungle	
Drains, Gorse	
DISCHARGE (cumec) Q	
OUTLET DISCHARGE (cumec) q	
BED WIDTH b	
ROUGHNESS COEFFICIENT n	
VELOCITY V	
CANAL COMMAND AREA CCA	
BED SLOPE s	
SHOE SLOPE z	
WATER DEPTH y	
FREE BOARD Frb	
TAIL LEFT TL	
TAIL RIGHT TR	
TAIL FRONT TF	

REVISION NO.	REVISION DATE	DESIGNED DATE	APPROVED DATE
A			
B			
C			
D			

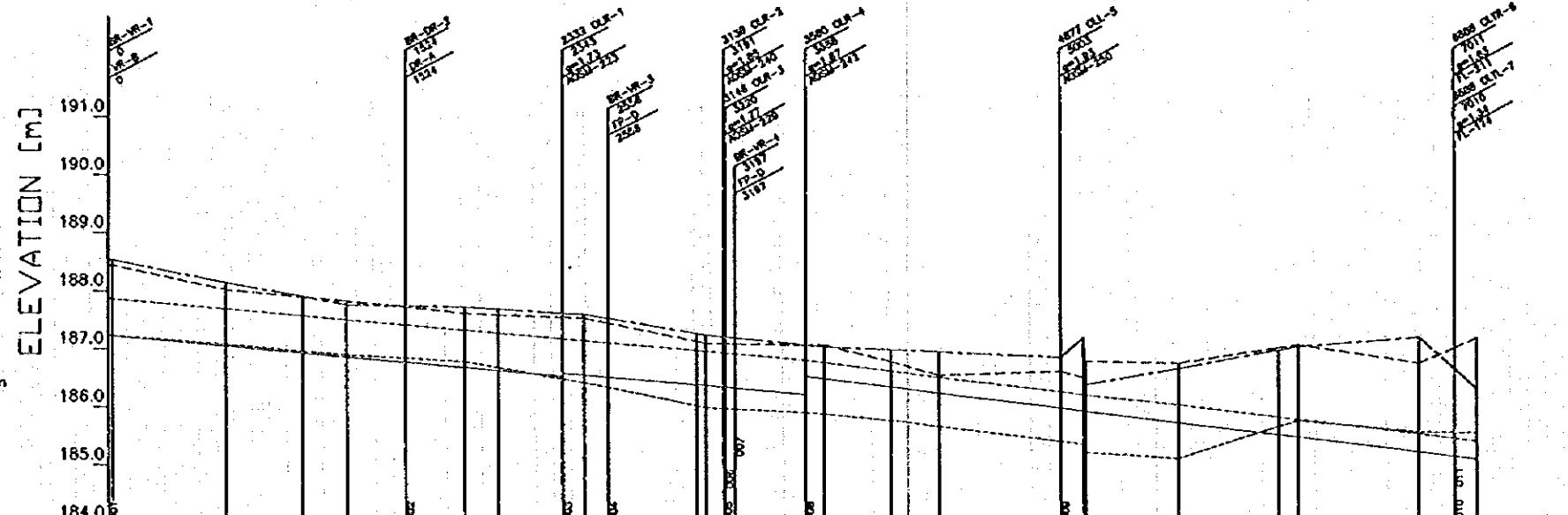
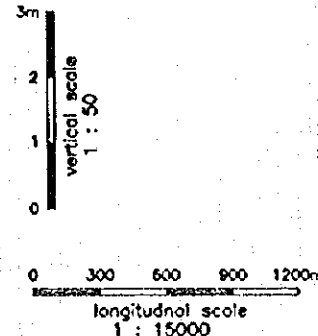
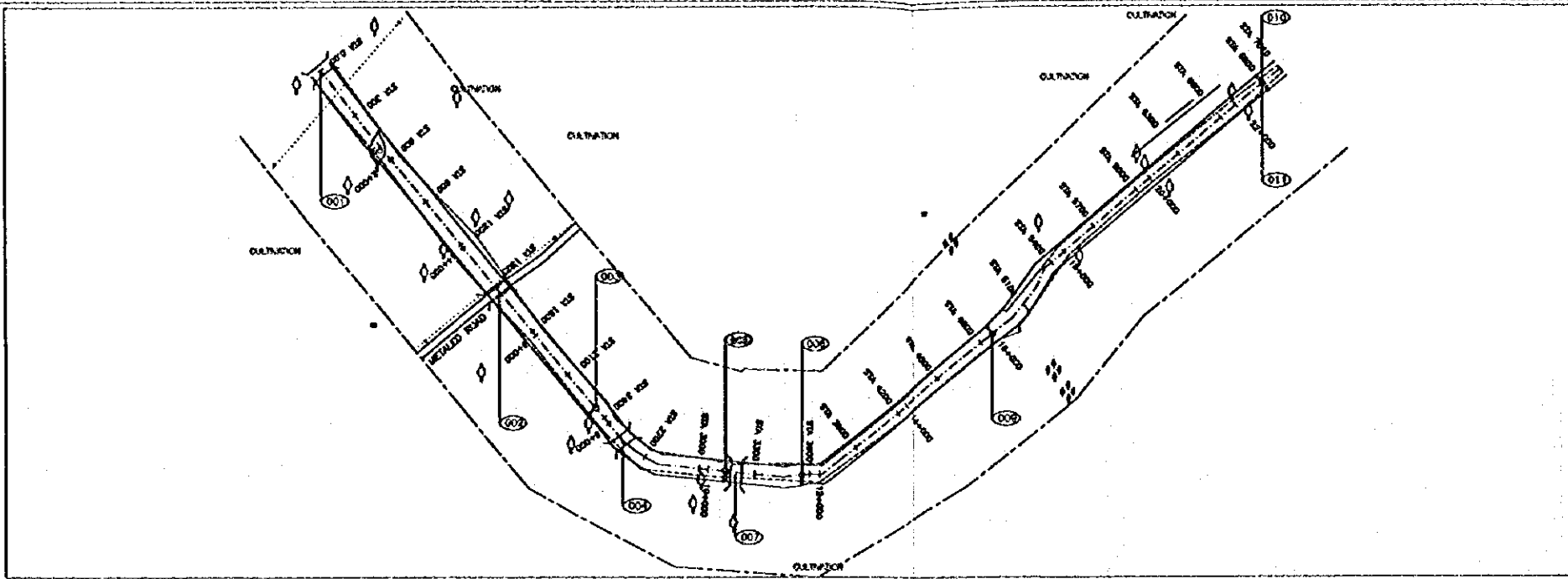
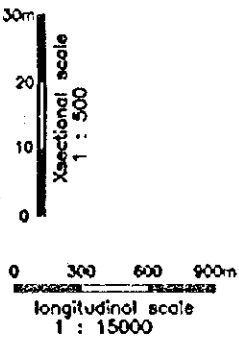
ISLAMIC REPUBLIC OF PAKISTAN  
 GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

PLAN AND PROFILE OF  
 CANAL SYSTEM: L J C  
 DISTRIBUTARY : KIRANA  
 MINOR : MALKANA

FROM STA 7500 (24+600) TO : 10159 (33+322)

JAPAN INTERNATIONAL COOPERATION AGENCY LJC-27



EXISTING DATA	DESIGN DATA			
	Section 1	Section 2	Section 3	Section 4
DESIGNED FULL SUPPLY LEVEL	188.00	187.50	187.00	186.50
DESIGNED BED LEVEL	184.00	184.00	184.00	184.00
DISTANCE (m)	0-1000	1000-2000	2000-3000	3000-4000
STATION (m)	000+00	1000+00	2000+00	3000+00
LATEST FULL SUPPLY LEVEL	188.00	187.50	187.00	186.50
N S L RIGHT	188.00	187.50	187.00	186.50
N S L LEFT	188.00	187.50	187.00	186.50
BED LEVEL	184.00	184.00	184.00	184.00
RIGHT OF WAY LEFT (ft)	188.00	187.50	187.00	186.50
RIGHT OF WAY RIGHT (ft)	188.00	187.50	187.00	186.50
R.D. (ft)	188.00	187.50	187.00	186.50

DESCRIPTION	SYMBOLS
WATER COURSE (with R.O. mark)	
REGULATOR	
AQUEDUCT	
BRIDGE (BR)	
ARTERIAL BRIDGE (AB)	
DISTRICT ROAD BRIDGE (DR)	
VILLAGE ROAD BRIDGE (VR)	
FOOT BRIDGE (FB)	
RAILWAY BRIDGE (RB)	
OPERATION & MAINTENANCE (O&M)	
ROAD BRIDGE	
TUNNEL / CULVERT SECTION	
CROSS GRADE CULVERT	
INVERTED SIPHON	
OUTLET LEFT (OLL)	
OUTLET RIGHT (OUR)	
FALL/DROP (DF)	
CROSS REGULATOR	
MEASUREMENT STRUCTURE	
WATERCOURSE CROSSING	
TRANSITION	
STEP LEFT (SL)	
STEP RIGHT (SR)	
ESCAPE	
LINED PORTION	
PIPE	
DESIGN STRUCTURE NUMBER	
RAILWAY LINE	
RIGHT OF WAY	
DESIGN CENTER LINE	
EXISTING CENTER LINE	
DESIGN BANK	
EXISTING BANK	
DESIGN F.S.L.	
DESIGN BED LEVEL	
N.S.L. RIGHT	
N.S.L. LEFT	
BED LEVEL	
Building, Village, Mosque, Tomb	
Road: metalled, unmetalled, cart-track	
Electric line, Telephone line	
River with flow, Water Course, Pond	
Tree, Jungle	
Graves, Cross	
DISCHARGE (cumec) Q	
OUTLET DISCHARGE (cumec) q	
BED WIDTH b	
ROUGHNESS COEFFICIENT n	
VELOCITY V	
CANAL COMMAND AREA CCA	
BED SLOPE s	
SIDE SLOPE z	
WATER DEPTH y	
FREE BOARD Fb	
TAIL LEFT TL	
TAIL RIGHT TR	
TAIL FRONT TF	

REVISION NO.	REVISION DATE	CHECKED DATE	APPROVED DATE
A			
B			
C			
D			

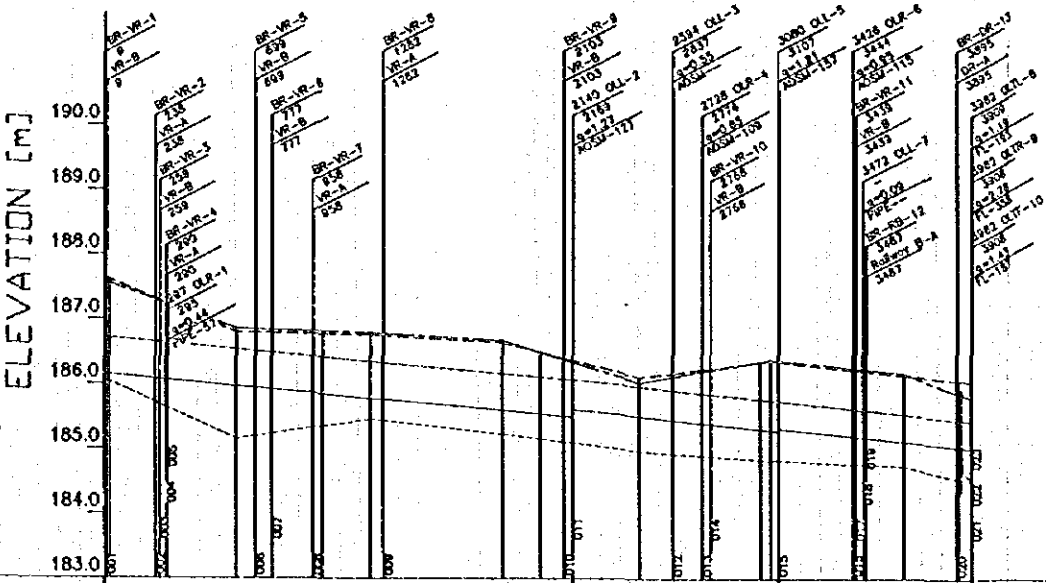
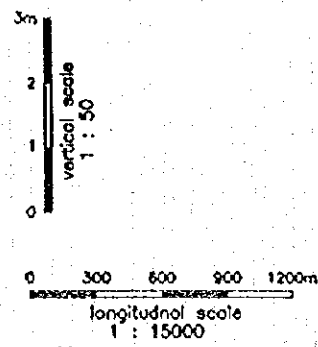
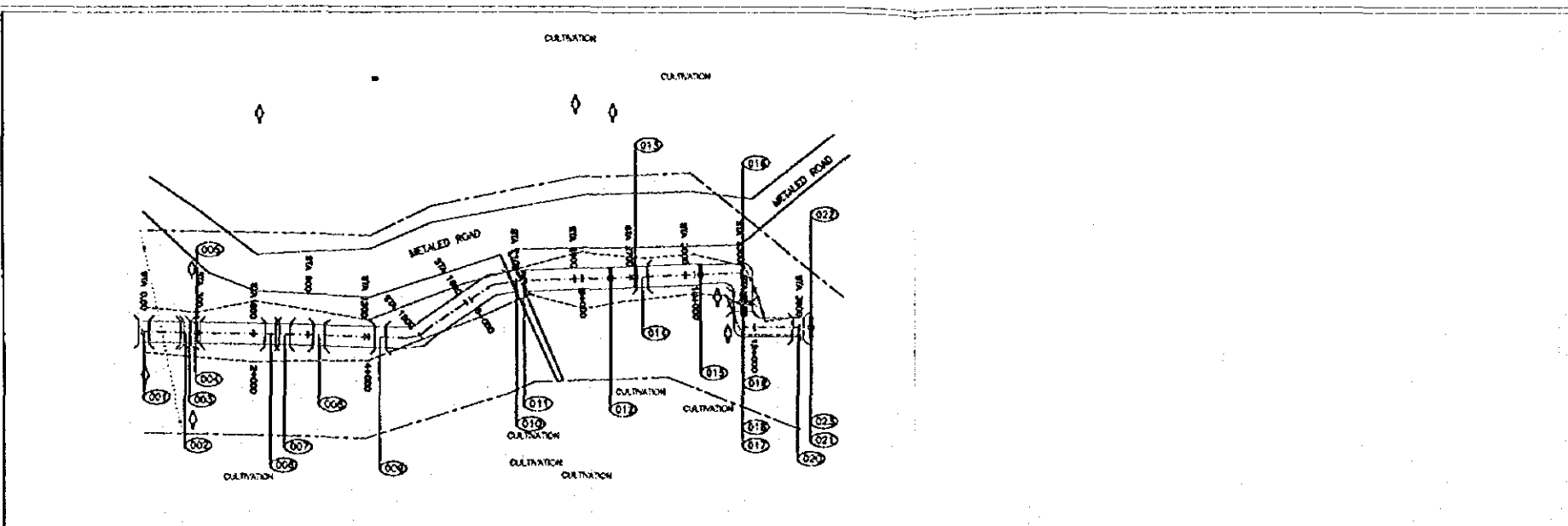
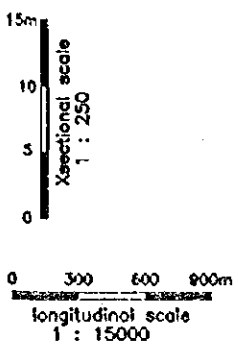
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

PLAN AND PROFILE OF  
CANAL SYSTEM: L J C  
DISTRIBUTARY : KIRANA  
MINOR : WASUANA

FROM STA 000 (00+000) TO : 7006 (22+980)

JAPAN INTERNATIONAL COOPERATION AGENCY LJC-28



EXISTING DATA DESIGN DATA DESIGN PROPERTIES	Section 1			Section 2			Section 3		
	Q (m <sup>3</sup> /s)	n	S	Q (m <sup>3</sup> /s)	n	S	Q (m <sup>3</sup> /s)	n	S
DESIGNED FULL SUPPLY LEVEL	187.25	0.016	1/2650	187.25	0.016	1/2650	187.25	0.016	1/2650
DESIGNED BED LEVEL	186.5	0.016	1/2650	186.5	0.016	1/2650	186.5	0.016	1/2650
DISTANCE (m)	100			100			100		
STATION (m)	3692			3692			3692		
LATEST FULL SUPPLY LEVEL	187.25			187.25			187.25		
N S L RIGHT	187.25			187.25			187.25		
N S L LEFT	187.25			187.25			187.25		
BED LEVEL	186.5			186.5			186.5		
RIGHT OF WAY LEFT (ft)	187.25			187.25			187.25		
RIGHT OF WAY RIGHT (ft)	187.25			187.25			187.25		
R.D. (ft)	187.25			187.25			187.25		

DESCRIPTION	SYMBOLS
WATER COURSE (with R.D. mark)	
REGULATOR	
AQUEDUCT	
BRIDGE	
ARTERIAL BRIDGE (AR)	
DISTRICT ROAD BRIDGE (DR)	
VILLAGE ROAD BRIDGE (VR)	
FOOT BRIDGE (FB)	
RAILWAY BRIDGE (RB)	
OPERATION & MAINTENANCE (O&M) ROAD BRIDGE	
TUNNEL / CULVERT SECTION	
CROSS DRAINAGE CULVERT	
INVERTED SIPHON	
OUTLET LEFT (OL)	
OUTLET RIGHT (OR)	
FALL/DROP (DP)	
CROSS REGULATOR	
MEASUREMENT STRUCTURE	
WATERCOURSE CROSSING	
TRANSITION	
STEP LEFT (SL) STEP RIGHT (SR)	
ESCAPE	
LINED PORTION	
PIPE	
DESIGN STRUCTURE NUMBER	
RAILWAY LINE	
RIGHT OF WAY	
DESIGN CENTER LINE	
EXISTING CENTER LINE	
DESIGN BANK	
EXISTING BANK	
DESIGN F.S.L.	
DESIGN BED LEVEL	
N.S.L. RIGHT	
N.S.L. LEFT	
BED LEVEL	
Building, Village, Mosque, Tomb	
Road: metalled, unmetalled, cart-track	
Electric line, Telephone line	
River with flow, Water Course, Pond	
Tree, Jungle	
Grass, Grass	
DISCHARGE (cumec) Q	
OUTLET DISCHARGE (cumec) q	
BED WIDTH b	
ROUGHNESS COEFFICIENT n	
VELOCITY V	
CANAL COMMAND AREA CCA	
BED SLOPE s	
SIDE SLOPE z	
WATER DEPTH y	
FREE BOARD Fb	
TAL LEFT TL	
TAL RIGHT TR	
TAL FRONT TF	

REVISION NO.	REVISION DATE	REVISION DESCRIPTION	APPROVED SIGNATURE
A			
B			
C			
D			

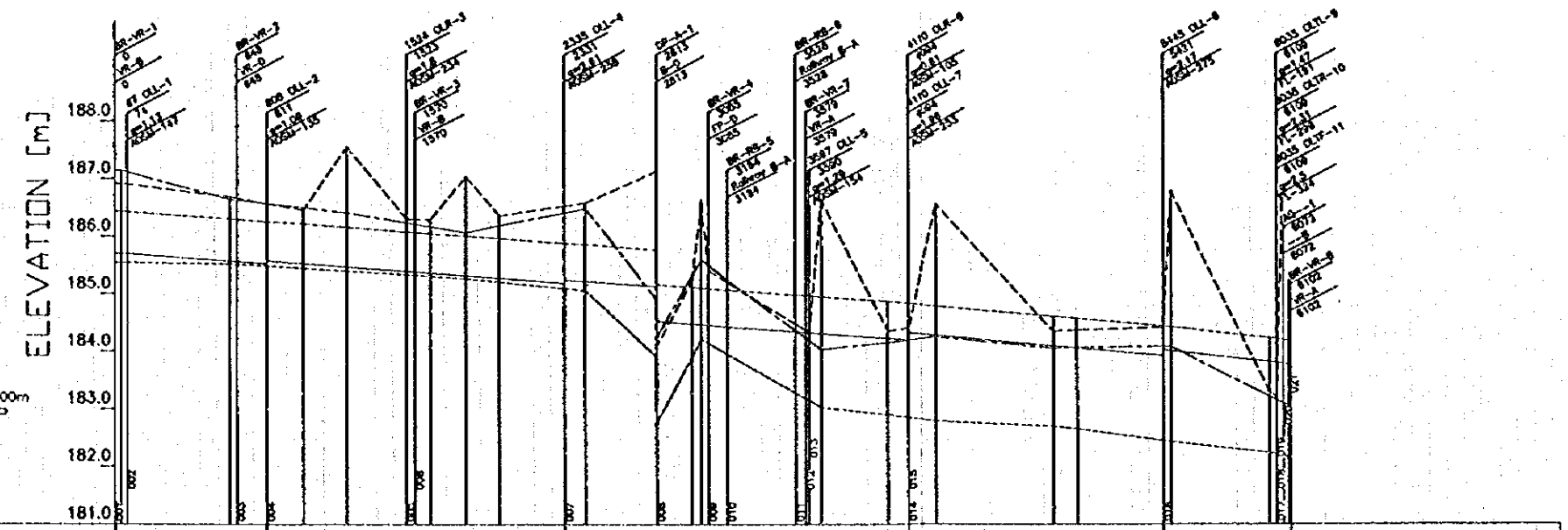
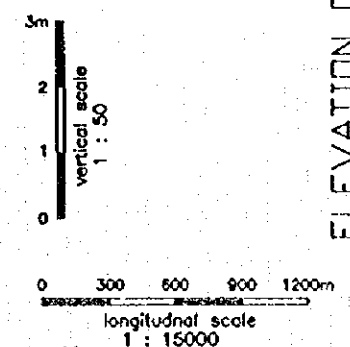
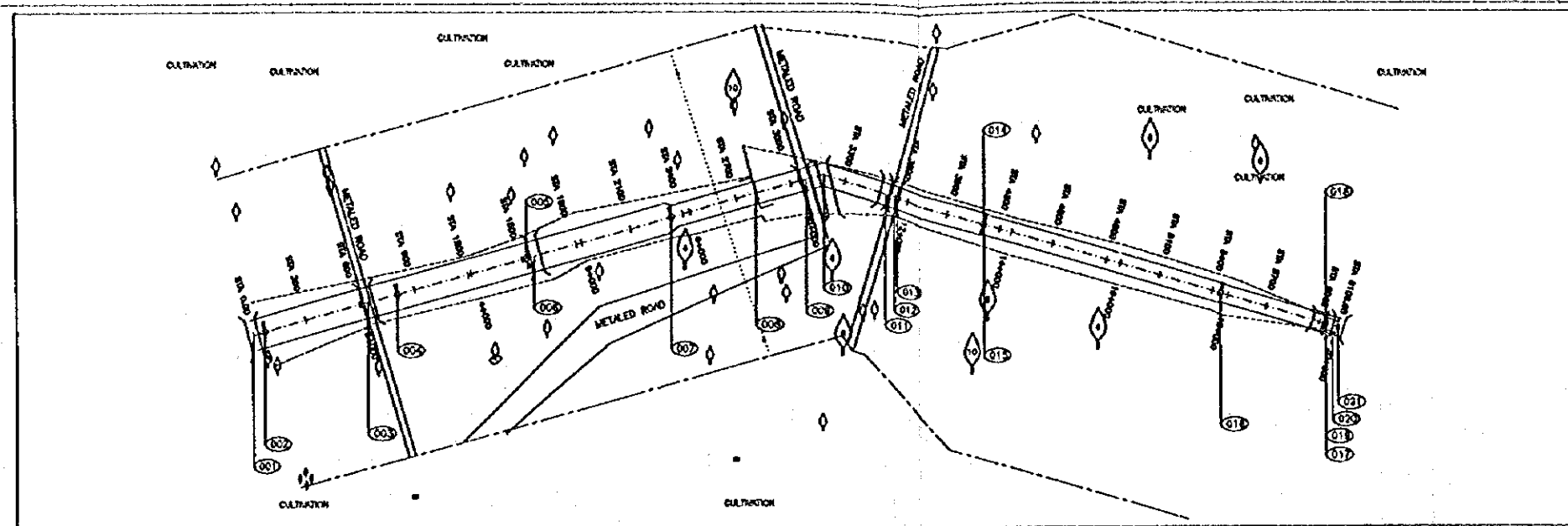
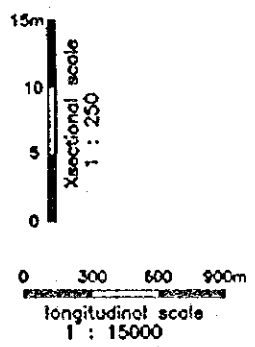
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

PLAN AND PROFILE OF  
CANAL SYSTEM: L J C  
DISTRIBUTARY : KIRANA  
MINOR : TANDALIAN

FROM STA 000 (00+000) TO : 3692 (12+995)

JAPAN INTERNATIONAL COOPERATION AGENCY | LJC-29



EXISTING DATA DESIGN DATA

	Section 1	Section 2	Section 3	Section 4	Section 5
DESIGNED FULL SUPPLY LEVEL	187.50	187.50	187.50	187.50	187.50
DESIGNED BED LEVEL	186.50	186.50	186.50	186.50	186.50
DISTANCE (m)	35	140	140	140	140
STATION (m)	0+00	0+35	0+175	0+315	0+455
LATEST FULL SUPPLY LEVEL	187.50	187.50	187.50	187.50	187.50
N S L RIGHT	187.50	187.50	187.50	187.50	187.50
N S L LEFT	187.50	187.50	187.50	187.50	187.50
BED LEVEL	186.50	186.50	186.50	186.50	186.50
RIGHT OF WAY LEFT (ft)	187.50	187.50	187.50	187.50	187.50
RIGHT OF WAY RIGHT (ft)	187.50	187.50	187.50	187.50	187.50
R.D. (ft)	187.50	187.50	187.50	187.50	187.50

DESCRIPTION	SYMBOLS
WATER COURSE (with R.D. mark)	
REGULATOR	
AQUEDUCT	
BRIDGE (BR)	
ARTERIAL BRIDGE (AR)	
DISTRICT ROAD BRIDGE (DR)	
VILLAGE ROAD BRIDGE (VR)	
FOOT BRIDGE (FB)	
RAILWAY BRIDGE (RB)	
OPERATION & MAINTENANCE (O&M) ROAD BRIDGE	
TUNNEL / CULVERT SECTION	
CROSS DRAINAGE CULVERT	
INVERTED SIFON	
OUTLET LEFT (OL)	
OUTLET RIGHT (OR)	
FALL/DROP (DP)	
GROSS REGULATOR	
MEASUREMENT STRUCTURE	
WATERCOURSE CROSSING	
TRANSITION	
STEP LEFT (SL)	
STEP RIGHT (SR)	
ESCAPE	
LINED PORTION	
PIPE	
DESIGN STRUCTURE NUMBER	
RAILWAY LINE	
RIGHT OF WAY	
DESIGN CENTER LINE	
EXISTING CENTER LINE	
DESIGN BANK	
EXISTING BANK	
DESIGN F S L	
DESIGN BED LEVEL	
N S L RIGHT	
N S L LEFT	
BED LEVEL	
Building, Village, Mosque, Tomb	
Road: metalled, unmetalled, cart-track	
Electric line, Telephone line	
River with flow, Water Course, Pond	
Tree, Jungle	
Graves, Cross	
DISCHARGE (cumec) Q	
OUTLET DISCHARGE (cumec) q	
BED WIDTH b	
ROUGHNESS COEFFICIENT n	
VELOCITY V	
CANAL COMMAND AREA CCA	
BED SLOPE s	
SIDE SLOPE s	
WATER DEPTH y	
FREE BOARD Fb	
TAIL LEFT TL	
TAIL RIGHT TR	
TAIL FRONT TF	

REVISION NO.	REASON	DATE	BY
A			
B			
C			
D			

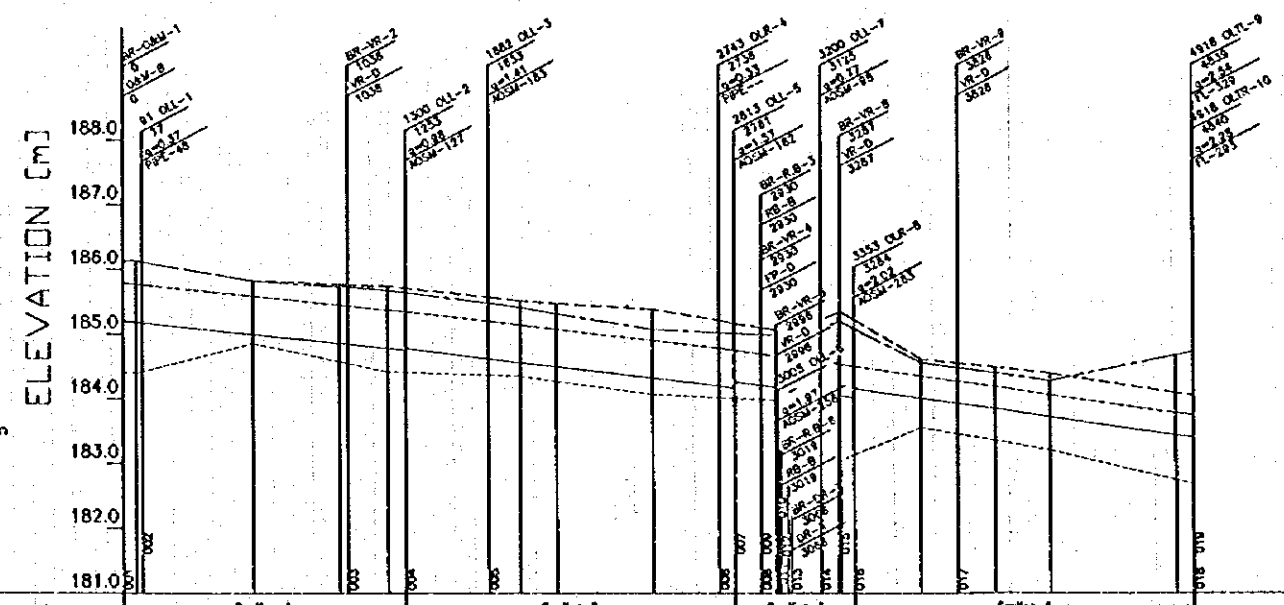
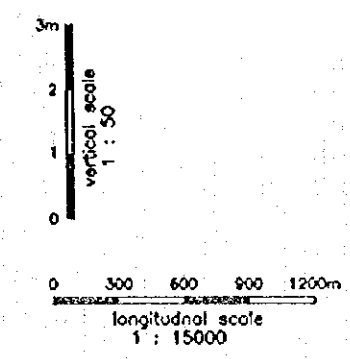
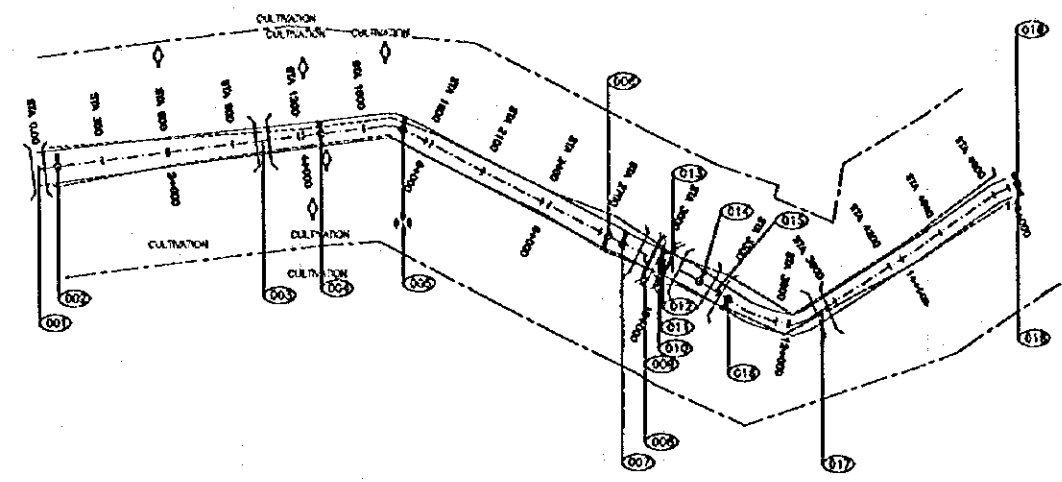
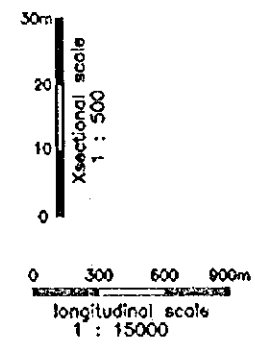
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

PLAN AND PROFILE OF  
CANAL SYSTEM: L J C  
DISTRIBUTARY : KIRANA  
MINOR : RODIAN

FROM STA 000 (00+000) TO : 6110 (20+041)

JAPAN INTERNATIONAL COOPERATION AGENCY | LJC-30



EXISTING DATA	DESIGN SECTION PROPERTIES			
	Section 1	Section 2	Section 3	Section 4
DESIGNED FULL SUPPLY LEVEL	187.80	187.70	187.60	187.50
DESIGNED BED LEVEL	184.50	184.40	184.30	184.20
DISTANCE (m)	0	100	200	300
STATION (m)	000	100	200	300
LATEST FULL SUPPLY LEVEL	187.80	187.70	187.60	187.50
N S L RIGHT	187.80	187.70	187.60	187.50
N S L LEFT	187.80	187.70	187.60	187.50
BED LEVEL	184.50	184.40	184.30	184.20
RIGHT OF WAY LEFT (ft)	187.80	187.70	187.60	187.50
RIGHT OF WAY RIGHT (ft)	187.80	187.70	187.60	187.50
R.D. (ft)	187.80	187.70	187.60	187.50

DESCRIPTION	SYMBOLS
WATER COURSE (with R.D. mark)	
REGULATOR	
AQUEDUCT	
BRIDGE, (BR)	
ARTERIAL BRIDGE (AR)	
DISTRICT ROAD BRIDGE (DR)	
VILLAGE ROAD BRIDGE (VR)	
FOOT BRIDGE (FB)	
RAILWAY BRIDGE (RB)	
OPERATION & MAINTENANCE (OM)	
ROAD BRIDGE	
TUNNEL / CULVERT SECTION	
CROSS DRAINAGE CULVERT	
INVERTED SIPHON	
OUTLET LEFT (OLL)	
OUTLET RIGHT (OLR)	
FALL/DROP (DF)	
CROSS REGULATOR	
MEASUREMENT STRUCTURE	
WATERCOURSE CROSSING	
TRANSITION	
STEP LEFT (SPL)	
STEP RIGHT (SPR)	
ESCAPE	
LINED PORTION	
PIPE	
DESIGN STRUCTURE NUMBER	
RAILWAY LINE	
RIGHT OF WAY	
DESIGN CENTER LINE	
EXISTING CENTER LINE	
DESIGN BANK	
EXISTING BANK	
DESIGN F S L	
DESIGN BED LEVEL	
N S L RIGHT	
N S L LEFT	
BED LEVEL	
Building, Village, Mosque, Tomb	
Road: metalled, unmetalled, cart-track	
Electric line, Telephone line	
River with flow, Water Course, Pond	
Tree, Jungle	
Grove, Grass	
DISCHARGE (cumec) Q	
OUTLET DISCHARGE (cumec) q	
BED WIDTH b	
ROUGHNESS COEFFICIENT n	
VELOCITY V	
CANAL COMMAND AREA CCA	
BED SLOPE s	
SIDE SLOPE z	
WATER DEPTH z	
FREE BOARD Ffb	
TAIL LEFT TL	
TAIL RIGHT TR	
TAIL FRONT TF	

REVISION	NO.	DATE	BY	CHECKED	DATE	APPROVED
A						
B						
C						
D						

ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

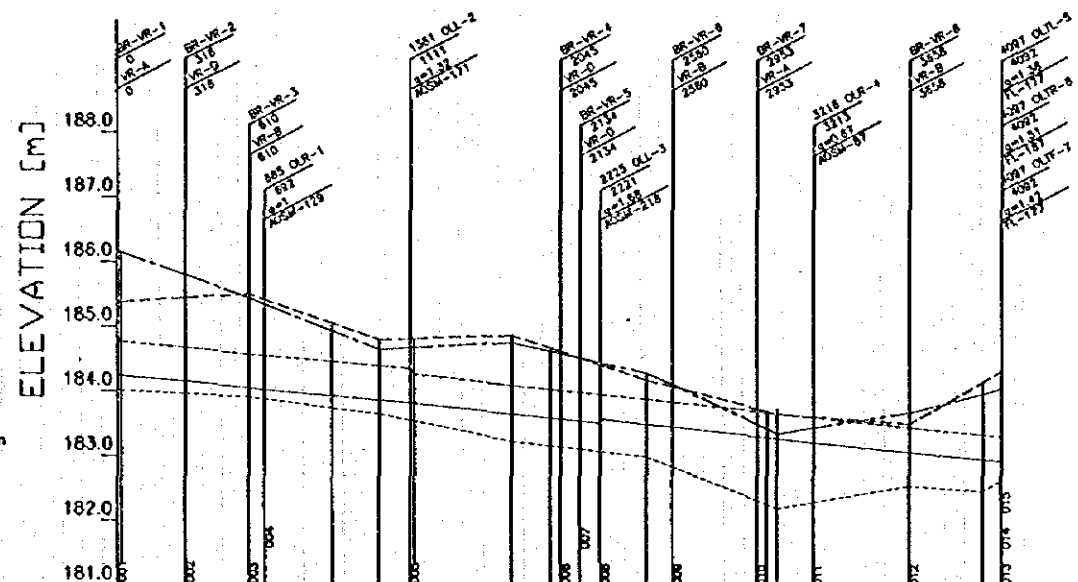
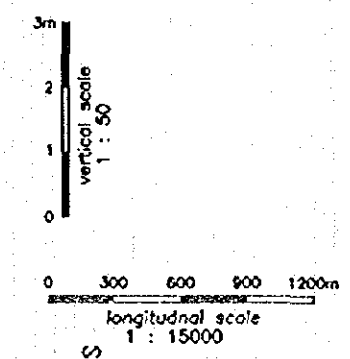
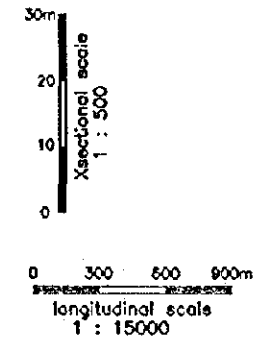
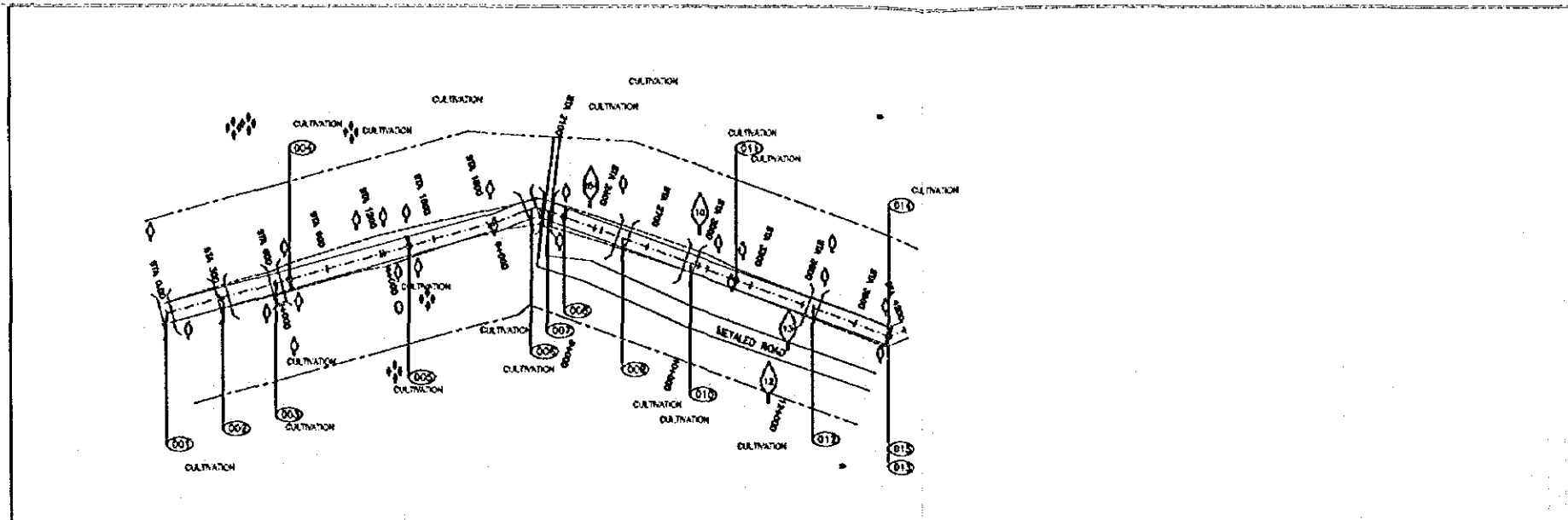
PLAN AND PROFILE OF  
CANAL SYSTEM: L J C  
DISTRIBUTARY: KIRANA  
MINOR: HUNDE

FROM STA 000 (00+000) TO: 4918 (16+131)

JAPAN INTERNATIONAL COOPERATION AGENCY LJC-31



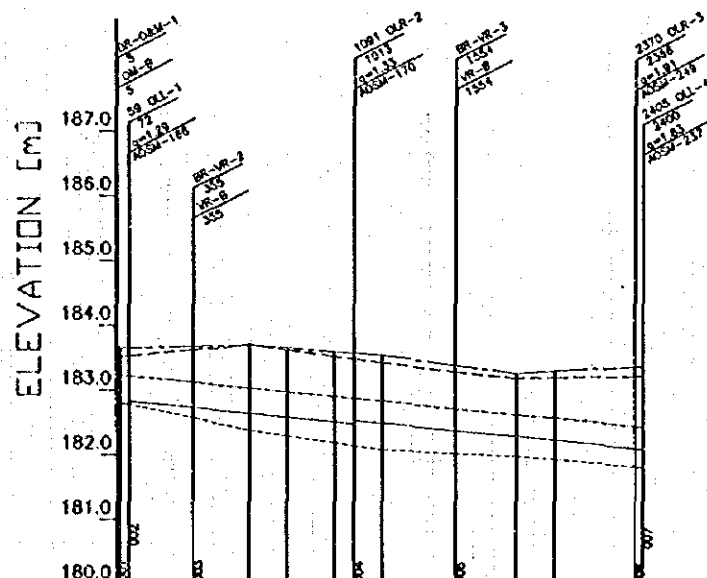
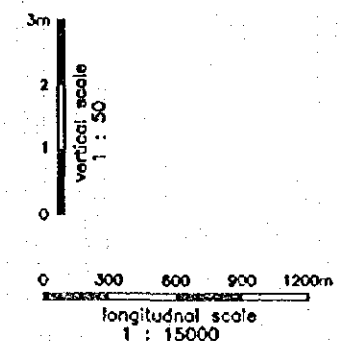
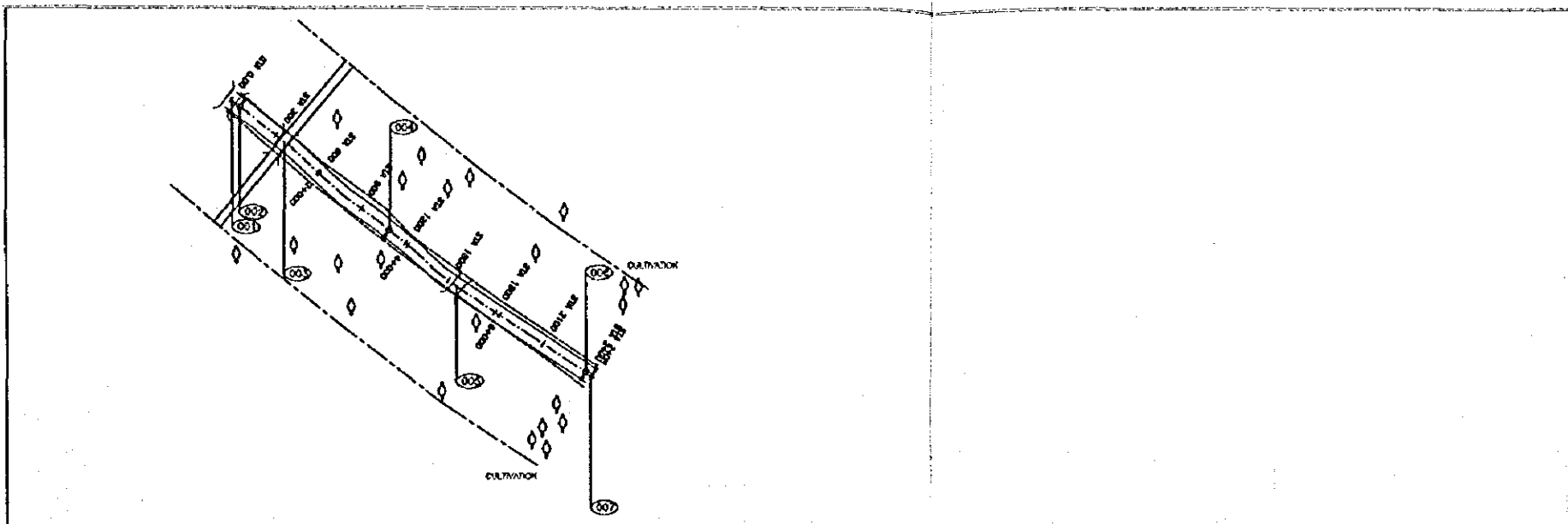
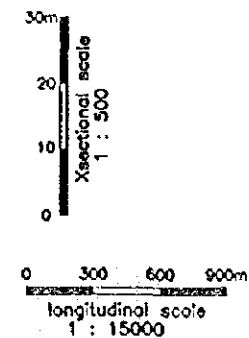
DESCRIPTION	SYMBOLS
WATER COURSE (with R.D. mark)	
REGULATOR	
AQUEDUCT	
BRIDGE (BR)	
ARTERIAL BRIDGE (AR)	
DISTRICT ROAD BRIDGE (DR)	
VILLAGE ROAD BRIDGE (VR)	
FOOT BRIDGE (FB)	
RAILWAY BRIDGE (RB)	
OPERATION & MAINTENANCE (O&M) ROAD BRIDGE	
TUNNEL / CULVERT SECTION	
CROSS DRAINAGE CULVERT	
INVERTED SYPHON	
OUTLET LEFT (OL)	
OUTLET RIGHT (OR)	
FALL/DROP (DP)	
CROSS REGULATOR	
MEASUREMENT STRUCTURE	
WATERCOURSE CROSSING	
TRANSITION	
STEP LEFT (SPL) STEP RIGHT (SPR)	
ESCAPE	
LINED PORTION	
PIPE	
DESIGN STRUCTURE NUMBER	
RAILWAY LINE	
RIGHT OF WAY	
DESIGN CENTER LINE	
EXISTING CENTER LINE	
DESIGN BANK	
EXISTING BANK	
DESIGN F S L	
DESIGN BED LEVEL	
N S L RIGHT	
N S L LEFT	
BED LEVEL	
Building, Village, Mosque, Tomb	
Road: metalled, unmetalled, cart-track	
Electric line, Telephone line	
River with flow, Water Course, Pond	
Tree, Jungle	
Grass, Grass	
DISCHARGE (cumec) Q	
OUTLET DISCHARGE (cumec) q	
BED WIDTH b	
ROUGHNESS COEFFICIENT n	
VELOCITY V	
CANAL COMMAND AREA CCA	
BED SLOPE s	
SIDE SLOPE z	
WATER DEPTH y	
FREE BOARD Ffb	
TAIL LEFT TL	
TAIL RIGHT TR	
TAIL FRONT TF	



EXISTING DATA DESIGN DATA	Section 1		Section 2		Section 3	
	Q (m³/s)	n	Q (m³/s)	n	Q (m³/s)	n
DESIGNED FULL SUPPLY LEVEL	187.2	1/2800	187.5	1/2800	187.8	1/2800
DESIGNED BED LEVEL	184.5	1/2800	184.8	1/2800	185.1	1/2800
DISTANCE (m)	0		100		200	
STATION (m)	0+00		0+100		0+200	
LATEST FULL SUPPLY LEVEL	187.0		187.3		187.6	
N S L RIGHT	186.5		186.8		187.1	
N S L LEFT	186.0		186.3		186.6	
BED LEVEL	184.5		184.8		185.1	
RIGHT OF WAY LEFT (ft)	185.5		185.8		186.1	
RIGHT OF WAY RIGHT (ft)	185.5		185.8		186.1	
R.D. (ft)	185.0		185.3		185.6	

SECTION	DESIGNED	DESIGNED	APPROX
NO.	INLET	OUTLET	INLET
A			
B			
C			
D			

ISLAMIC REPUBLIC OF PAKISTAN  
 GOVERNMENT OF PUNJAB  
 THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB  
 PLAN AND PROFILE OF  
 CANAL SYSTEM: L J C  
 DISTRIBUTARY : KIRANA  
 MINOR : KILLA  
 FROM STA 000 (00+000) TO : 4097 (13+438)  
 JAPAN INTERNATIONAL COOPERATION AGENCY LJC-32



EXISTING DATA DESIGN PROPERTIES

	Section 1	Section 2	Section 3
DESIGNED FULL SUPPLY LEVEL	186.7	186.5	186.3
DESIGNED BED LEVEL	183.5	183.2	183.0
DISTANCE (m)	0	1000	2000
STATION (m)	0+000	1+000	2+000
LATEST FULL SUPPLY LEVEL	186.7	186.5	186.3
N S L RIGHT	186.7	186.5	186.3
N S L LEFT	186.7	186.5	186.3
BED LEVEL	183.5	183.2	183.0
RIGHT OF WAY LEFT (ft)	186.7	186.5	186.3
RIGHT OF WAY RIGHT (ft)	186.7	186.5	186.3
R.D. (ft)	186.7	186.5	186.3

DESCRIPTION	SYMBOLS
WATER COURSE (with R.D. mark)	
REGULATOR	
AQUEDUCT	
BRIDGE (DR)	
ARTERIAL BRIDGE (AR)	
DISTRICT ROAD BRIDGE (DR)	
VILLAGE ROAD BRIDGE (VR)	
FOOT BRIDGE (FB)	
RAILWAY BRIDGE (RB)	
OPERATION & MAINTENANCE (O&M) ROAD BRIDGE	
TUNNEL / CULVERT SECTION	
GROSS DRAINAGE CULVERT	
INVERTED SIPHON	
OUTLET LEFT (OLL)	
OUTLET RIGHT (OOR)	
FALL/DROP (OF)	
GROSS REGULATOR	
MEASUREMENT STRUCTURE	
WATERCOURSE CROSSING	
TRANSITION	
STEP LEFT (SPL) STEP RIGHT (SPR)	
ESCAPE	
LINED PORTION	
PFE	
DESIGN STRUCTURE NUMBER	
RAILWAY LINE	
RIGHT OF WAY	
DESIGN CENTER LINE	
EXISTING CENTER LINE	
DESIGN BANK	
EXISTING BANK	
DESIGN F S L	
N S L RIGHT	
N S L LEFT	
BED LEVEL	
Building, Village, Mosque, Tomb	
Road: matched; unmatched; cart-track	
Electric line, Telephone line	
River with flow, Water Course, Pond	
Tree, Jungle	
Grove, Grass	
DISCHARGE (cumec)	
OUTLET DISCHARGE (cumec)	
BED WIDTH	
ROUGHNESS COEFFICIENT	
VELOCITY	
CANAL COMMAND AREA	
BED SLOPE	
SIDE SLOPE	
WATER DEPTH	
FREE BOARD	
TAL LEFT	
TAL RIGHT	
TAL FRONT	

REV/NO	BY/DATE	CHKD/DATE	APPROV/DATE
A			
B			
C			
D			

ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

PLAN AND PROFILE OF  
CANAL SYSTEM: L J C  
DISTRIBUTARY : KIRANA  
MINOR : DHABIAN

FROM STA 000 (00+000) TO : 7895 (25+896)

JAPAN INTERNATIONAL COOPERATION AGENCY | LJC-33