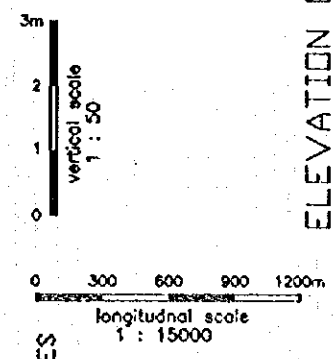
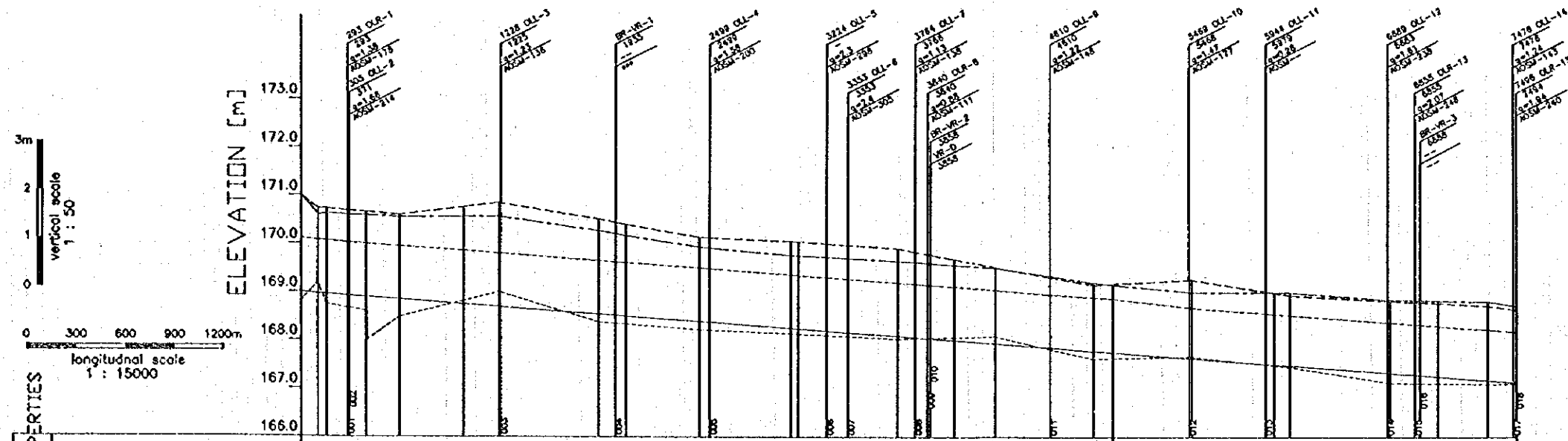
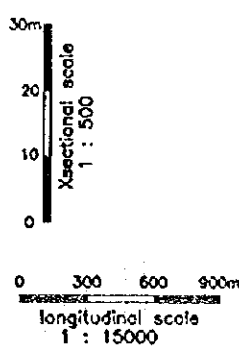
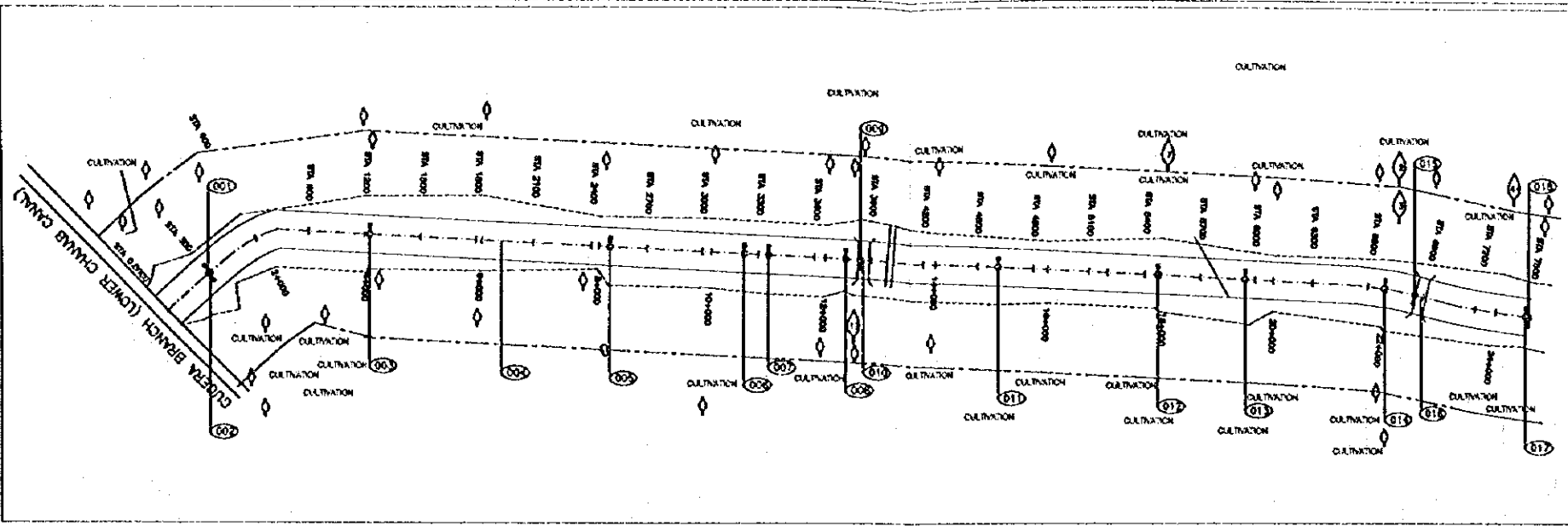


DESCRIPTION	SYMBOLS
WATER COURSE (with R.D. mark)	
REGULATOR	
AQUEDUCT	
BRIDGE (BR)	
ARTERIAL BRIDGE (AR)	
DISTRICT ROAD BRIDGE (DR)	
VILLAGE ROAD BRIDGE (VR)	
FOOT BRIDGE (FB)	
RAILWAY BRIDGE (RB)	
OPERATION & MAINTENANCE (O&M) ROAD BRIDGE	
TUNNEL / CULVERT SECTION	
CROSS DRAINAGE CULVERT	
BRICKED SYPHON	
OUTLET LEFT (OLL)	
OUTLET RIGHT (OUR)	
FALL/DROP (DF)	
GROSS 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
SIDE SLOPE	z
WATER DEPTH	y
FREE BOARD	Frb
TAL LEFT	TL
TAL RIGHT	TR
TAL FRONT	TF



EXISTING DATA DESIGN DATA SECTION PROPERTIES

	Section 1										Section 2									
DESIGNED FULL SUPPLY LEVEL	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00
DESIGNED BED LEVEL	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00
DISTANCE (m)	0	100	200	300	400	500	600	700	800	900	0	100	200	300	400	500	600	700	800	900
STATION (m)	0+00	0+100	0+200	0+300	0+400	0+500	0+600	0+700	0+800	0+900	0+00	0+100	0+200	0+300	0+400	0+500	0+600	0+700	0+800	0+900
LATEST FULL SUPPLY LEVEL	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00
N S L RIGHT	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00
N S L LEFT	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00
BED LEVEL	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00	166.00
RIGHT OF WAY LEFT (ft)	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00
RIGHT OF WAY RIGHT (ft)	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00
R.D. (ft)	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00

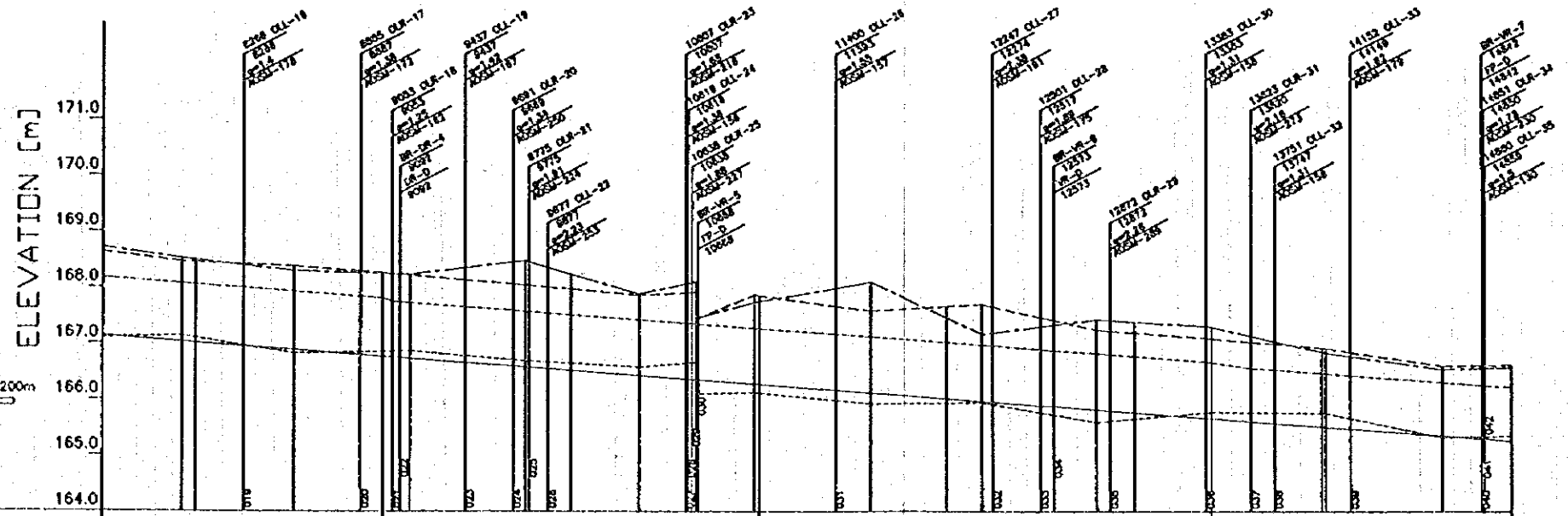
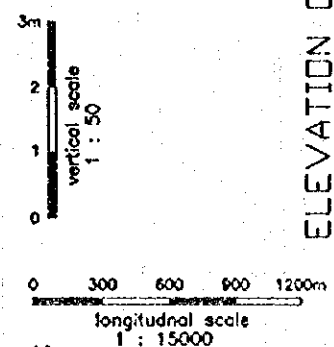
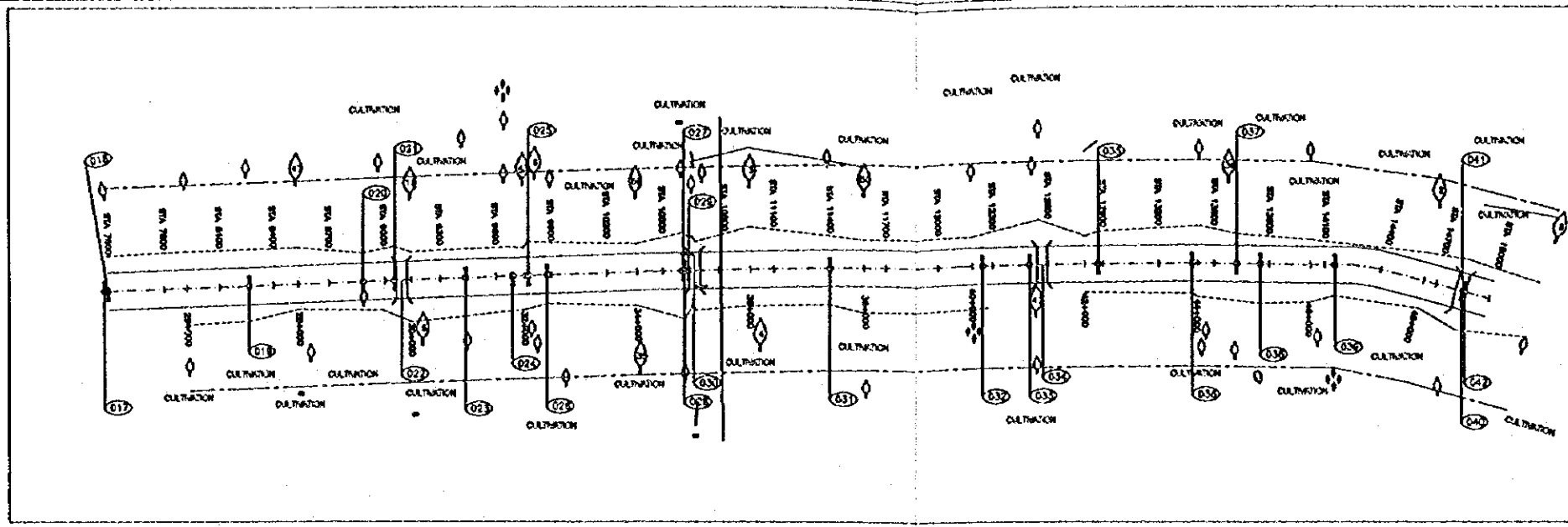
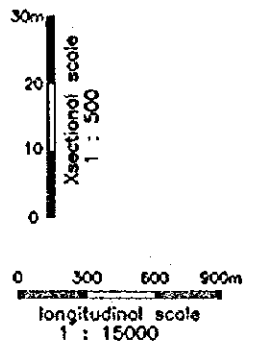
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

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

FROM STA 000 (0+000) TO : 7500 (24+600)

JAPAN INTERNATIONAL COOPERATION AGENCY LCC-22



EXISTING DATA DESIGN DATA

	Section 2	Section 3	Section 4	Section 5
DESIGNED FULL SUPPLY LEVEL	167.25	167.25	167.25	167.25
DESIGNED BED LEVEL	166.80	166.80	166.80	166.80
DISTANCE (m)	0	0	0	0
STATION (m)	7000	7000	7000	7000
LATEST FULL SUPPLY LEVEL	167.25	167.25	167.25	167.25
N S L RIGHT	167.25	167.25	167.25	167.25
N S L LEFT	167.25	167.25	167.25	167.25
BED LEVEL	166.80	166.80	166.80	166.80
RIGHT OF WAY LEFT (ft)	167.25	167.25	167.25	167.25
RIGHT OF WAY RIGHT (ft)	167.25	167.25	167.25	167.25
R.D. (ft)	167.25	167.25	167.25	167.25

DESCRIPTION	SYMBOLS
WATER COURSE (with R.O. 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 SYPHON	
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 Ene, Telephone Ene	
River with flow, Water Course, Pond	
Tree Jungle	
Grass, Gro	
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	
TAL LEFT TL	
TAL RIGHT TR	
TAL FRONT TF	

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

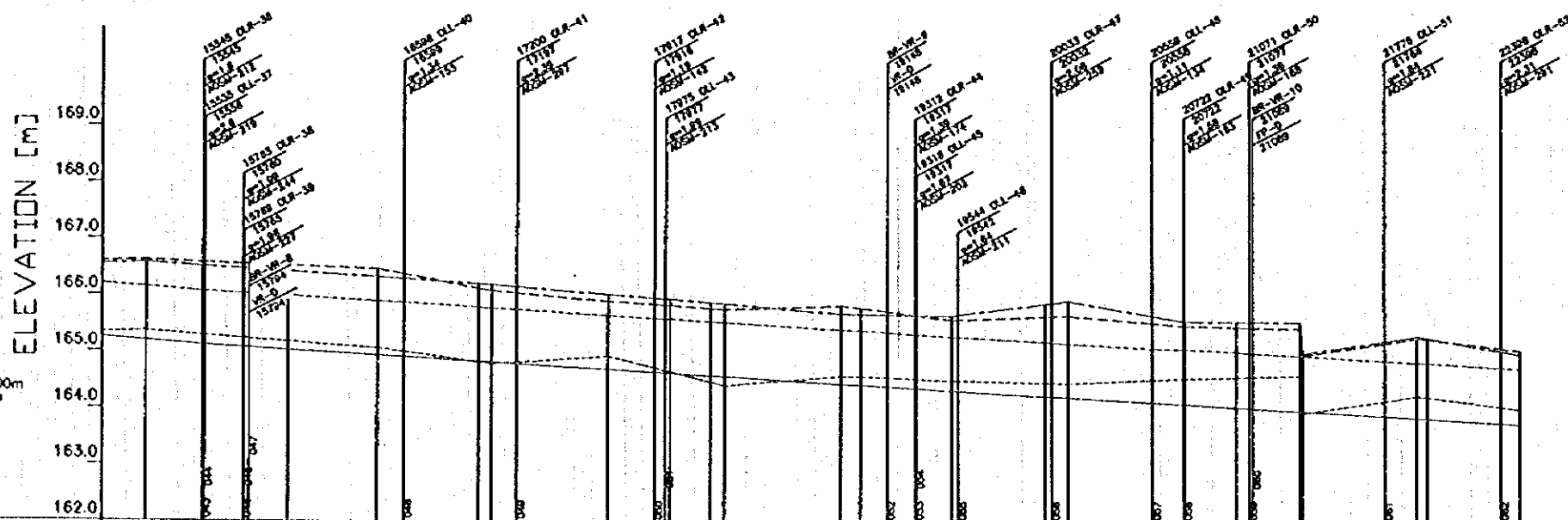
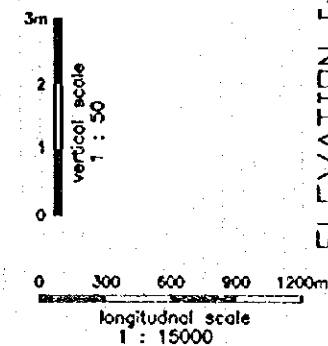
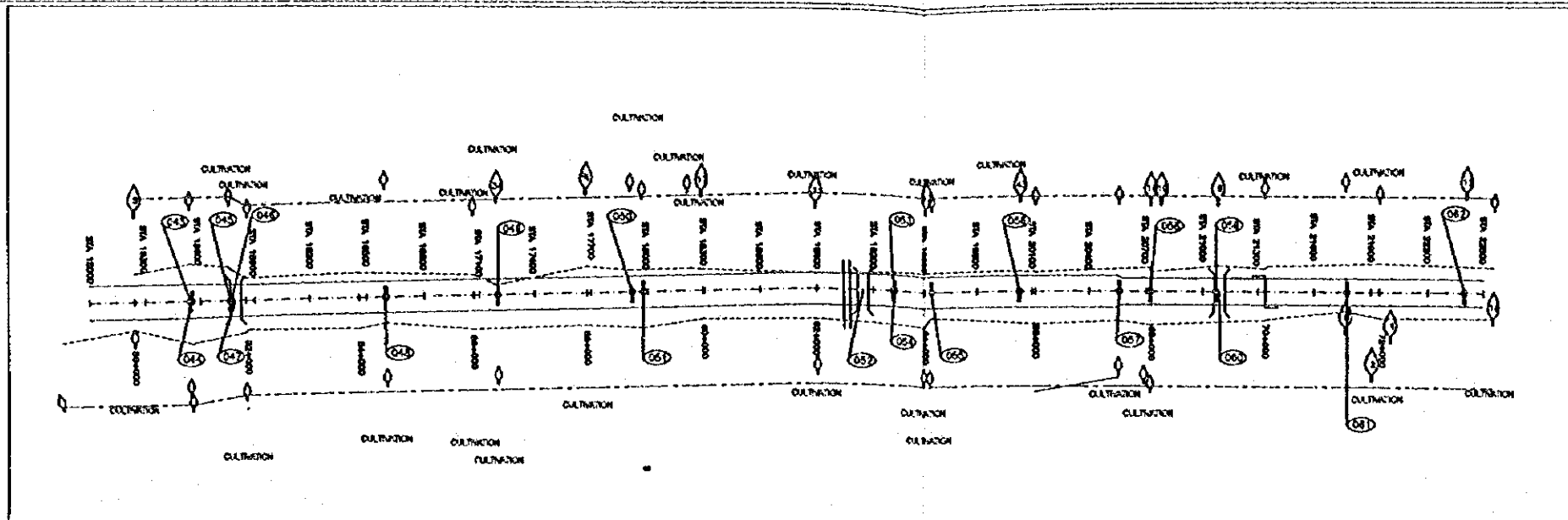
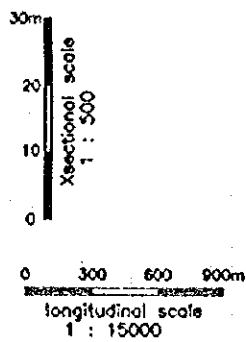
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

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

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

JAPAN INTERNATIONAL COOPERATION AGENCY LOC-23



EXISTING DATA DESIGN DRAINAGE PROPERTIES

	Section 5	Section 6	Section 7
DESIGNED FULL SUPPLY LEVEL	166.10	165.80	165.50
DESIGNED BED LEVEL	165.50	165.20	164.90
DISTANCE (m)	0	0	0
STATION (m)	15000	16000	17000
LATEST FULL SUPPLY LEVEL	166.10	165.80	165.50
N S L RIGHT	166.10	165.80	165.50
N S L LEFT	166.10	165.80	165.50
BED LEVEL	165.50	165.20	164.90
RIGHT OF WAY LEFT (ft)	166.10	165.80	165.50
RIGHT OF WAY RIGHT (ft)	166.10	165.80	165.50
R.D. (ft)	166.10	165.80	165.50

DESCRIPTION	SYMBOLS
WATER COURSE (w/ 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 (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	
BURDING, V-Slope, 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 (cumec)	q
BED WIDTH	b
ROUGHNESS COEFFICIENT	n
VELOCITY	V
CANAL DRAINAGE AREA	CCA
BED SLOPE	s
SOLE SLOPE	s
WATER DEPTH	y
FREE BOARD	F/S
TAIL LEFT	TL
TAIL RIGHT	TR
TAIL FRONT	TF

NO.	REVISION	DATE	BY	CHKD	DATE	BY	CHKD
A							
B							
C							
D							

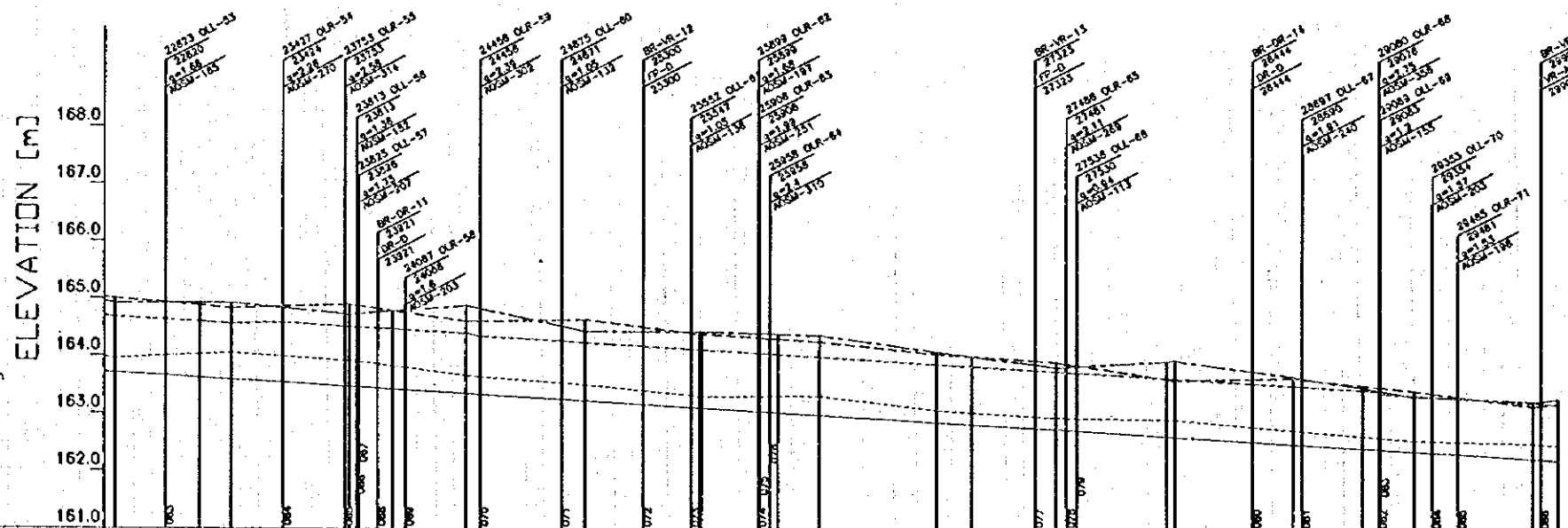
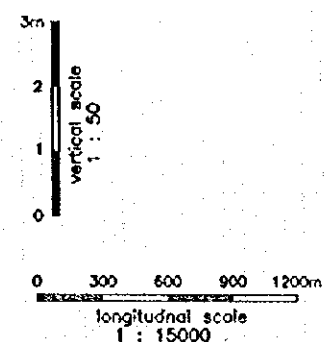
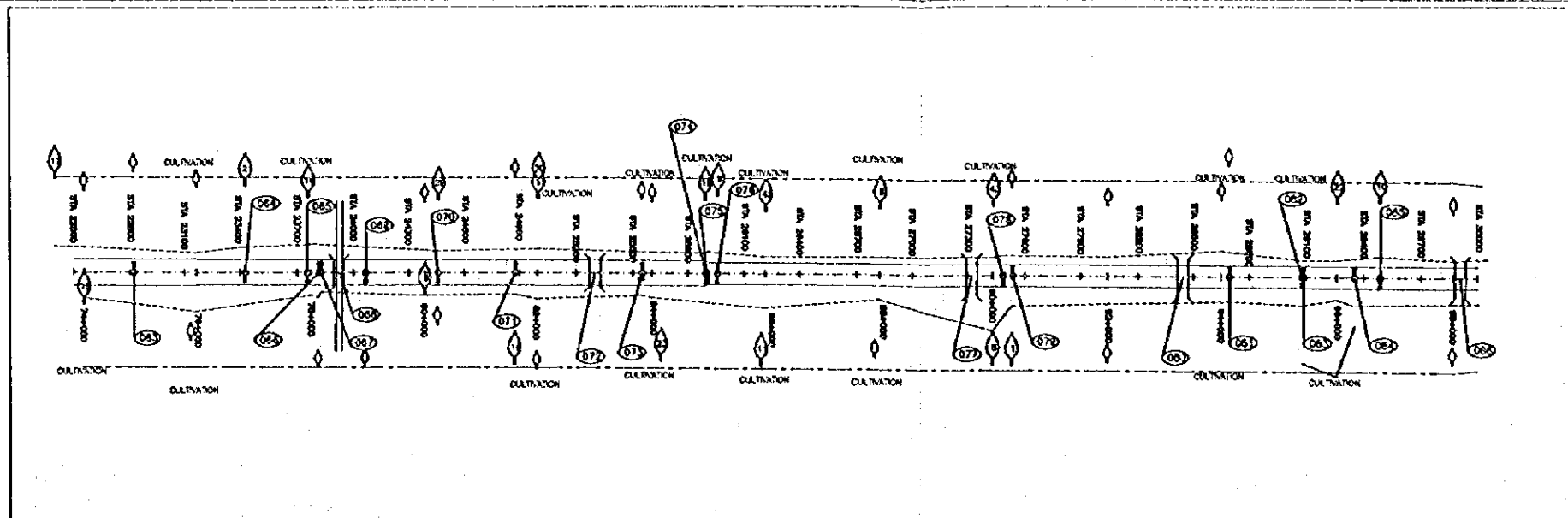
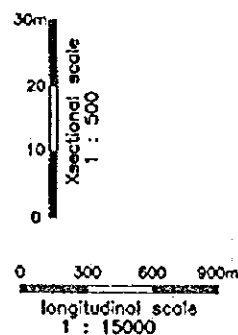
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

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

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

JAPAN INTERNATIONAL COOPERATION AGENCY | LCC-24



EXISTING DATA DESIGN SECTION PROPERTIES

	Section 7	Section 8	Section 9	Section 10	Section 11	Section 12
D (m/s)	72.38	72.10	67.81	67.58	67.11	67.23
n	0.018	0.018	0.018	0.018	0.018	0.018
s	1/5000	1/5000	1/5000	1/5000	1/5000	1/5000
y (m)	1.27	1.34	1.31	1.31	1.31	1.27
b	1.50	1.80	1.80	1.30	1.10	1.00
V (m/s)	0.88	0.85	0.83	0.81	0.59	0.57
Z	1.25	1.25	1.25	1.25	1.25	1.25
Frb (m)	0.30	0.30	0.30	0.30	0.30	0.30
CCA (ha)	36792	37556	36790	36228	35607	36234
DESIGNED FULL SUPPLY LEVEL	163.25	163.25	163.25	163.25	163.25	163.25
DESIGNED BED LEVEL	163.25	163.25	163.25	163.25	163.25	163.25
DISTANCE (m)	22500	22500	22500	22500	22500	22500
STATION (m)	22500	22500	22500	22500	22500	22500
LATEST FULL SUPPLY LEVEL	163.25	163.25	163.25	163.25	163.25	163.25
N S L RIGHT	163.25	163.25	163.25	163.25	163.25	163.25
N S L LEFT	163.25	163.25	163.25	163.25	163.25	163.25
BED LEVEL	163.25	163.25	163.25	163.25	163.25	163.25
RIGHT OF WAY LEFT (ft)	163.25	163.25	163.25	163.25	163.25	163.25
RIGHT OF WAY RIGHT (ft)	163.25	163.25	163.25	163.25	163.25	163.25
R.D. (ft)	163.25	163.25	163.25	163.25	163.25	163.25

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 (OL)	
OUTLET RIGHT (OR)	
FALL/DROP (DF)	
CROSS REGULATOR	
MEASUREMENT STRUCTURE	
WATERCOURSE CROSSING	
TRANSITION	
STEP LEFT (SL)	
STEP RIGHT (SR)	
ESCAPE	
LINED PORTION	
PPE	
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 (cumec) q	
BED WIDTH b	
ROUGHNESS COEFFICIENT n	
VELOCITY V	
CANAL COMMAND AREA CCA	
BED SLOPE s	
SOIL SLOPE z	
WATER DEPTH y	
FREE BOARD Frb	
TAL LEFT TL	
TAL RIGHT TR	
TAL FRONT TF	

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

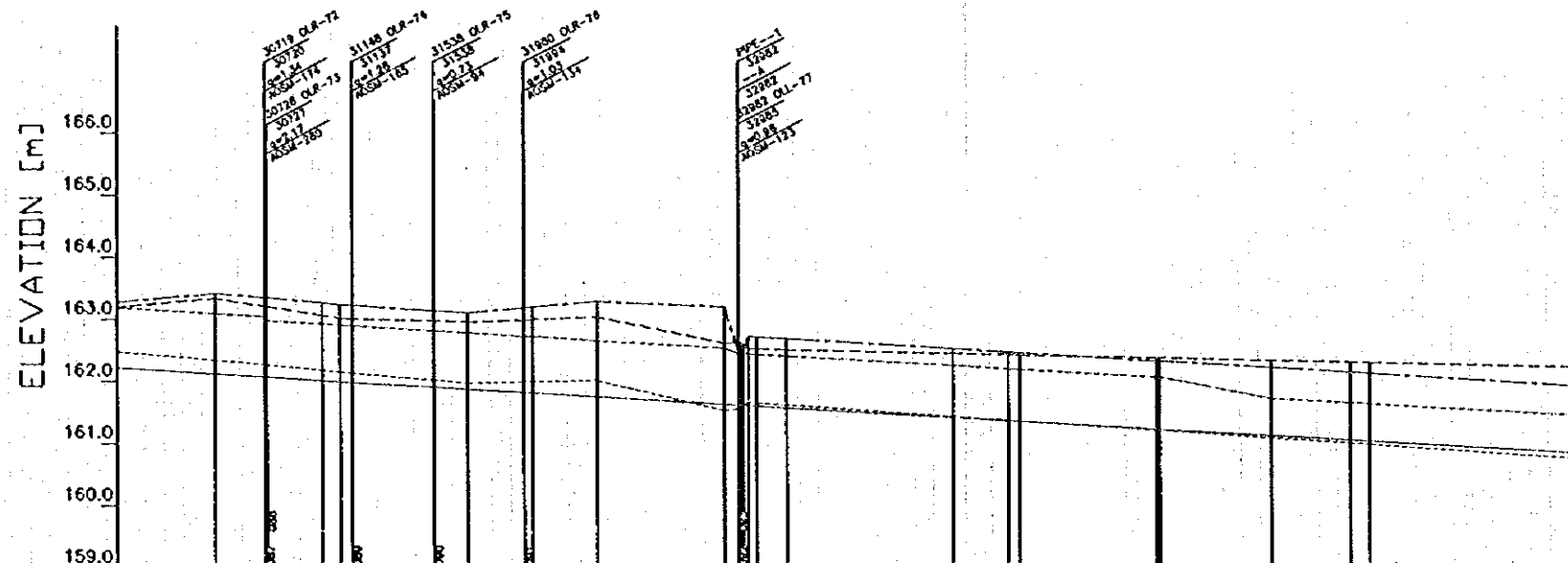
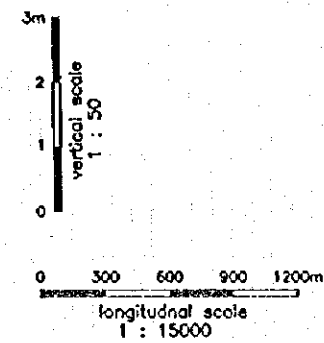
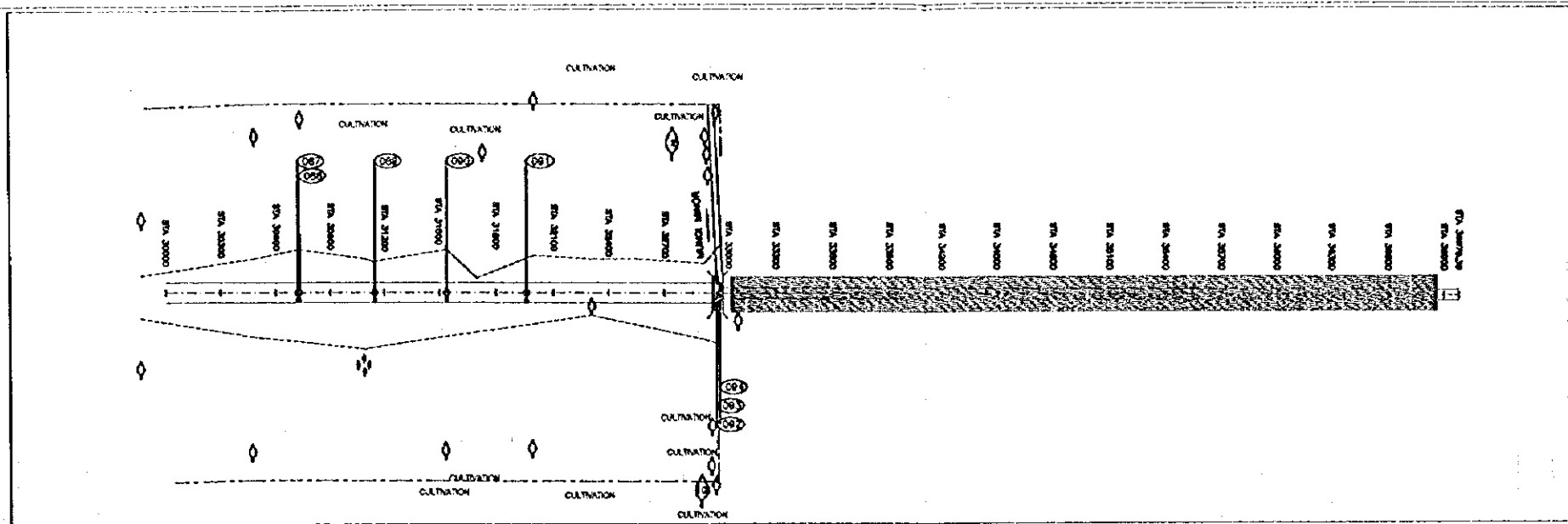
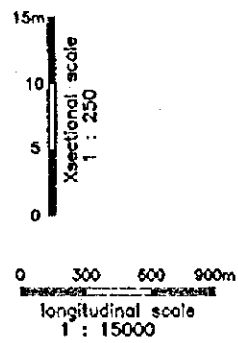
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

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

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

JAPAN INTERNATIONAL COOPERATION AGENCY | LCC-25



EXISTING DATA DESIGN DATA DESIGN PROPERTIES

	Section 12	Section 13	Section 14	Section 15
DESIGNED FULL SUPPLY LEVEL	163.00	163.00	163.00	163.00
DESIGNED BED LEVEL	162.00	162.00	162.00	162.00
DISTANCE (m)	0	0	0	0
STATION (m)	30718	31148	31558	31800
LATEST FULL SUPPLY LEVEL	163.00	163.00	163.00	163.00
N S L RIGHT	163.00	163.00	163.00	163.00
N S L LEFT	163.00	163.00	163.00	163.00
BED LEVEL	162.00	162.00	162.00	162.00
RIGHT OF WAY LEFT (ft)	163.00	163.00	163.00	163.00
RIGHT OF WAY RIGHT (ft)	163.00	163.00	163.00	163.00
R.D. (ft)	163.00	163.00	163.00	163.00

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 (OLL)	
OUTLET RIGHT (OLR)	
FALL/DROP (DP)	
CROSS REGULATOR	
MEASUREMENT STRUCTURE	
WATERCOURSE CROSSING	
TRANSITION	
STEP LEFT (SPL) STEP RIGHT (SPR)	
ESCAPE	
LINED PORTION	
PFC	
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
SOLE SLOPE	z
WATER DEPTH	y
FREE BOARD	Fb
TAIL LEFT	TL
TAIL RIGHT	TR
TAIL FRONT	TF

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

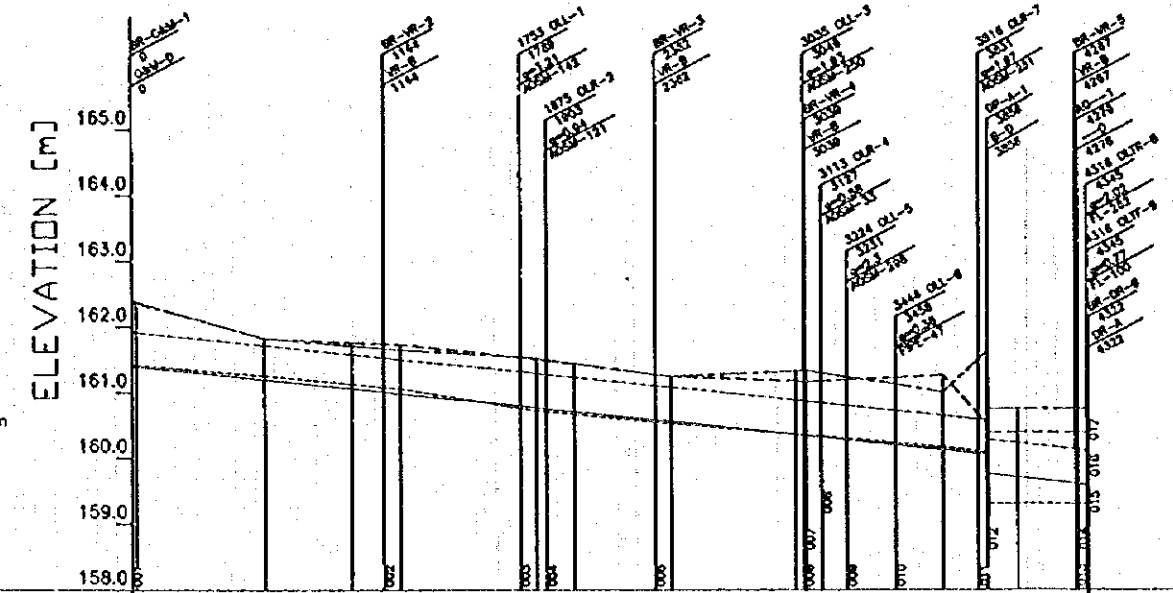
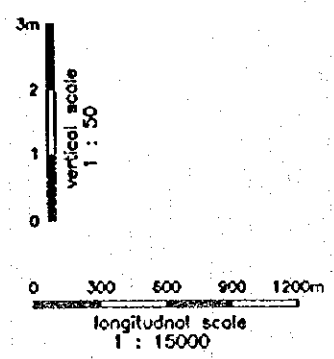
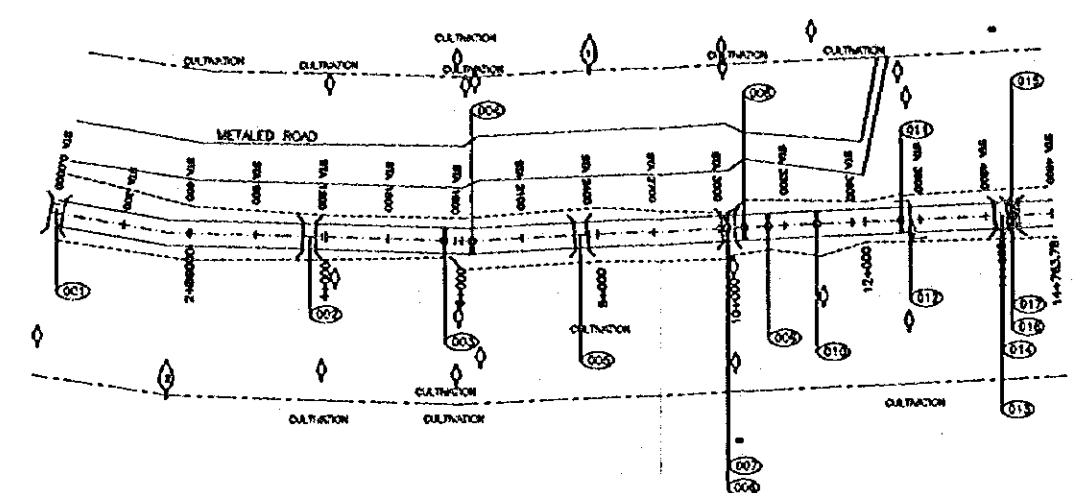
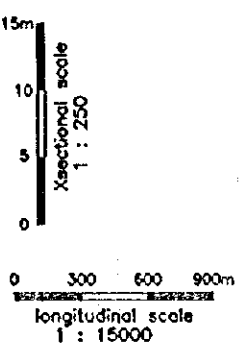
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

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

FROM STA 30000 (98+400) TO : 32995(108+233)

JAPAN INTERNATIONAL COOPERATION AGENCY | LCC-26



EXISTING DATA DESIGN SECTION PROPERTIES

Section 1	0+000	1+000	1+753	2+000	2+305	3+000	3+312	3+500	4+000	4+322
DESIGNED FULL SUPPLY LEVEL	162.00	161.80	161.50	161.30	161.10	160.90	160.70	160.50	160.30	160.10
DESIGNED BED LEVEL	161.50	161.30	161.10	160.90	160.70	160.50	160.30	160.10	159.90	159.70
DISTANCE (m)	0	1000	1753	2000	2305	3000	3312	3500	4000	4322
STATION (m)	0+000	1+000	1+753	2+000	2+305	3+000	3+312	3+500	4+000	4+322
LATEST FULL SUPPLY LEVEL	162.00	161.80	161.50	161.30	161.10	160.90	160.70	160.50	160.30	160.10
N S L RIGHT	162.00	161.80	161.50	161.30	161.10	160.90	160.70	160.50	160.30	160.10
N S L LEFT	162.00	161.80	161.50	161.30	161.10	160.90	160.70	160.50	160.30	160.10
BED LEVEL	161.50	161.30	161.10	160.90	160.70	160.50	160.30	160.10	159.90	159.70
RIGHT OF WAY LEFT (ft)	162.00	161.80	161.50	161.30	161.10	160.90	160.70	160.50	160.30	160.10
RIGHT OF WAY RIGHT (ft)	162.00	161.80	161.50	161.30	161.10	160.90	160.70	160.50	160.30	160.10
R.D. (ft)	162.00	161.80	161.50	161.30	161.10	160.90	160.70	160.50	160.30	160.10

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 (OLR)	
FALL/DROP (OF)	
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	
H.S.L. RIGHT	
H.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	
Cross, 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	Frb
TAL. LEFT	TL
TAL. RIGHT	TR
TAL. FRONT	TF

NO.	REVISION	DATE	BY	CHKD.
A				
B				
C				
D				

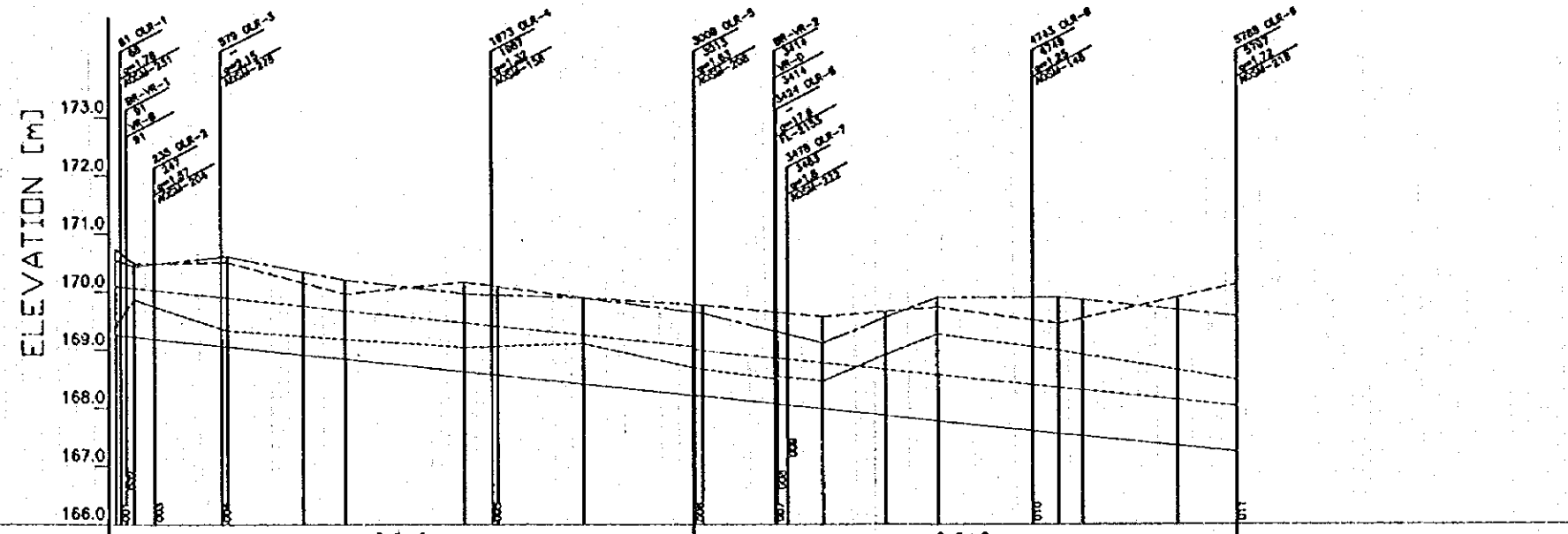
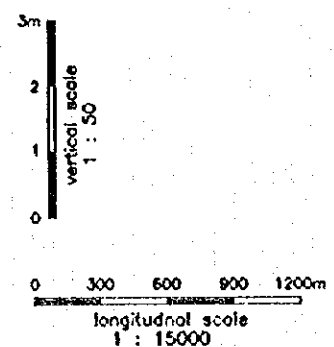
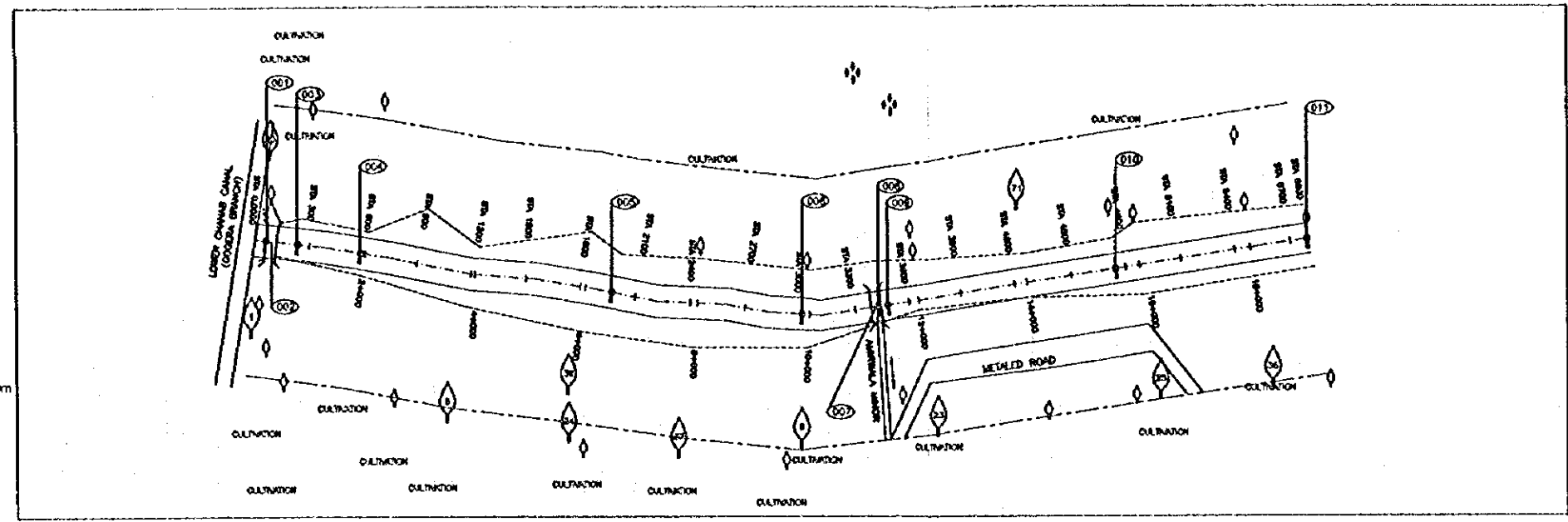
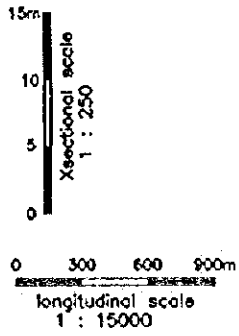
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

PLAN AND PROFILE OF  
CANAL SYSTEM: L C C  
DISTRIBUTARY : MUNGI  
MINOR : mungl

FROM STA 000 (0+000) TO : 4322 (14+176)

JAPAN INTERNATIONAL COOPERATION AGENCY LCC-27



EXISTING DATA DESIGN DATA SECTION PROPERTIES

EXISTING DATA DESIGN DATA SECTION PROPERTIES	Section 1										Section 2									
	0	100	200	300	400	500	600	700	800	900	0	100	200	300	400	500	600	700	800	900
DESIGNED FULL SUPPLY LEVEL	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80
DESIGNED BED LEVEL	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00
DISTANCE (m)	0	100	200	300	400	500	600	700	800	900	0	100	200	300	400	500	600	700	800	900
STATION (m)	0+00	0+100	0+200	0+300	0+400	0+500	0+600	0+700	0+800	0+900	1000	1010	1020	1030	1040	1050	1060	1070	1080	1090
LATEST FULL SUPPLY LEVEL	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80
N S L RIGHT	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80
N S L LEFT	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80
BED LEVEL	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00
RIGHT OF WAY LEFT (ft)	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80
RIGHT OF WAY RIGHT (ft)	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80
R.D. (ft)	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80	172.80

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 (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	
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	
SOE SLOPE z	
WATER DEPTH y	
FREE BOARD Frb	
TAI LEFT TL	
TAI RIGHT TR	
TAI FRONT TF	

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

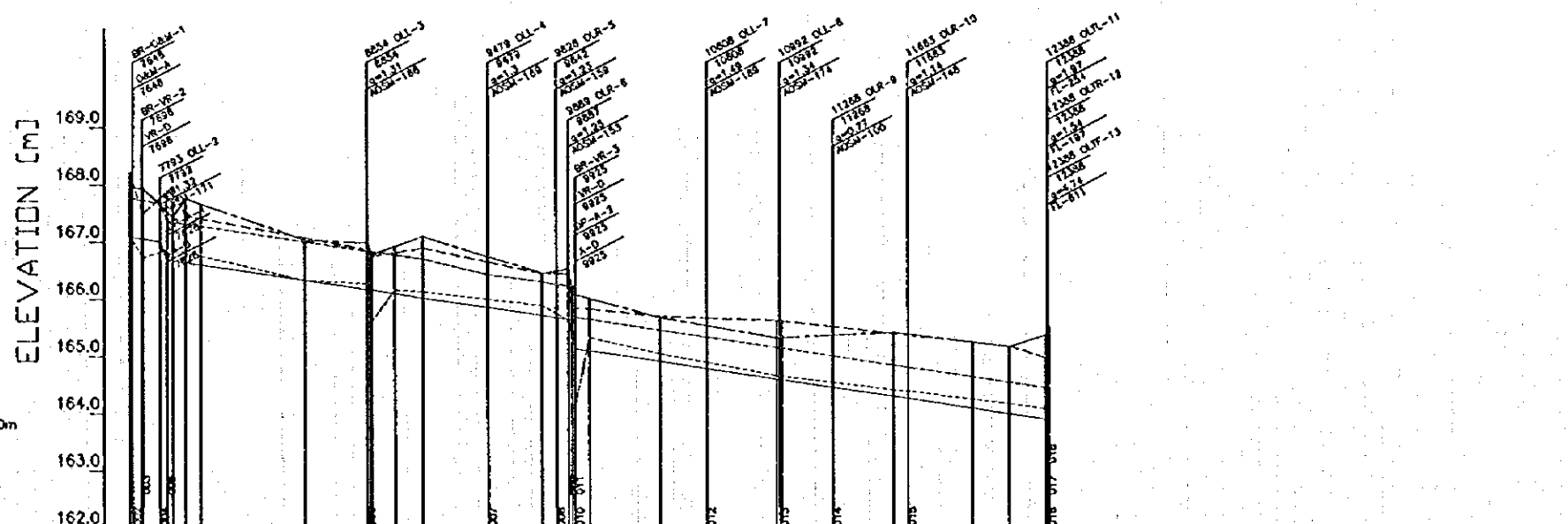
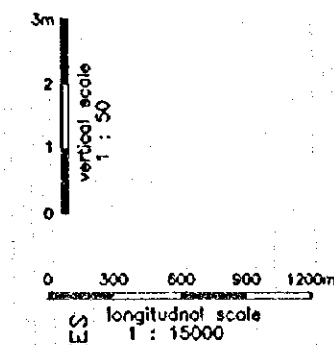
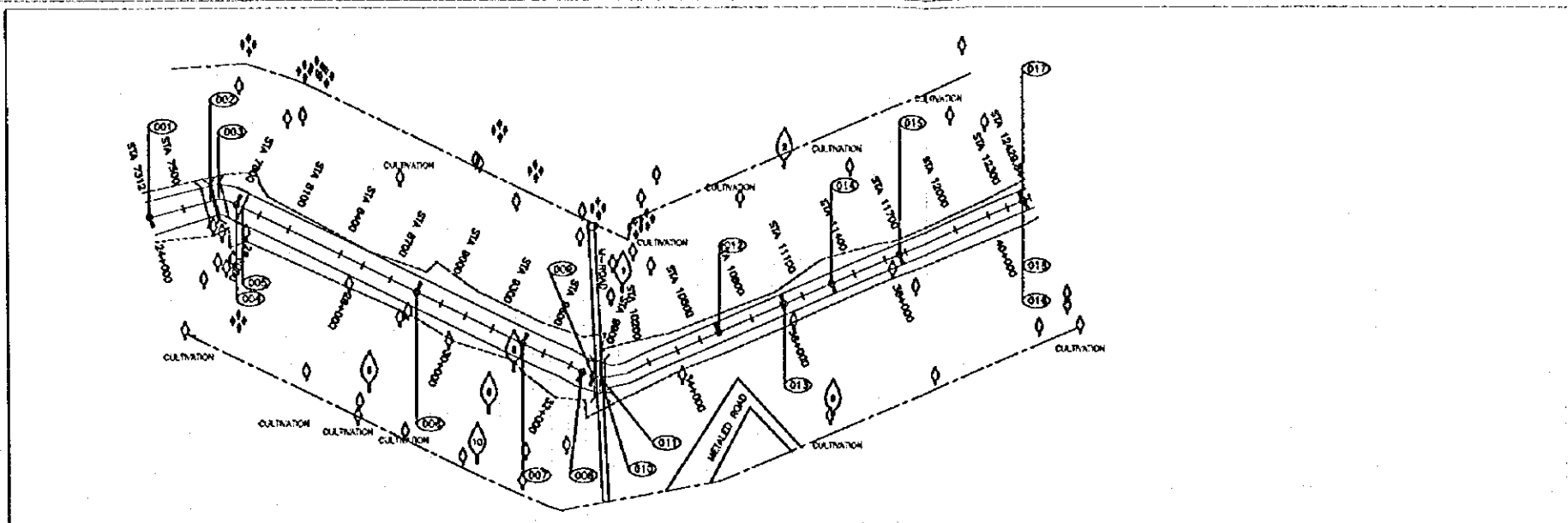
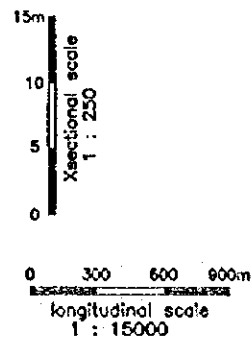
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

PLAN AND PROFILE OF  
CANAL SYSTEM: L C C  
DISTRIBUTARY : JANIWALA/HAMZA  
MINOR : -

FROM STA 000 (0+000) TO : 5788 (18+985)

JAPAN INTERNATIONAL COOPERATION AGENCY LCC-28



EXISTING DATA	Section 1			Section 2			Section 3		
	Q	n	V	Q	n	V	Q	n	V
DESIGNED FULL SUPPLY LEVEL	167.25			167.25			167.25		
DESIGNED BED LEVEL	166.50			166.50			166.50		
DISTANCE (m)	7793	8000		8000	8500		8500	9000	
STATION (m)	7793	8000		8000	8500		8500	9000	
LATEST FULL SUPPLY LEVEL	167.25			167.25			167.25		
N S L RIGHT	167.25			167.25			167.25		
N S L LEFT	167.25			167.25			167.25		
BED LEVEL	166.50			166.50			166.50		
RIGHT OF WAY LEFT (ft)	167.25			167.25			167.25		
RIGHT OF WAY RIGHT (ft)	167.25			167.25			167.25		
R.D. (ft)	167.25			167.25			167.25		

DESCRIPTION	SYMBOLS
WATER COURSE (+th 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 (CP)	
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	
Roof, matted, unroofed, cart-track	
Electric line, Telephone line	
River with ice, Water Course, Pond	
Tree, Jungle	
Groove, Grass	
DISCHARGE (cumec) Q	
OUTLET DISCHARGE (cumec) q	
BED WIDTH b	
ROUGHNESS COEFFICIENT n	
VELOCITY V	
CANAL CATCHMENT AREA CCA	
BED SLOPE s	
SIDE SLOPE z	
WATER DEPTH y	
FREE BOARD F/B	
TAL LEFT TL	
TAL RIGHT TR	
TAL FRONT TF	

REVISION NO.	REVISION DATE	DESIGNED	APPROVED
A			
B			
C			
D			

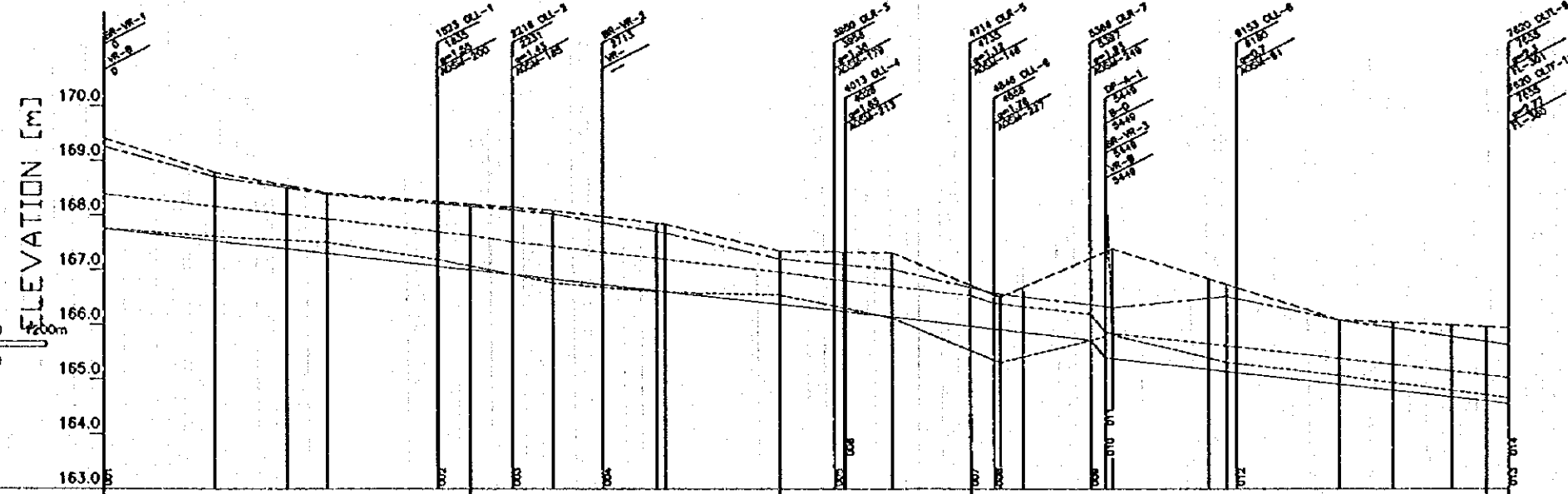
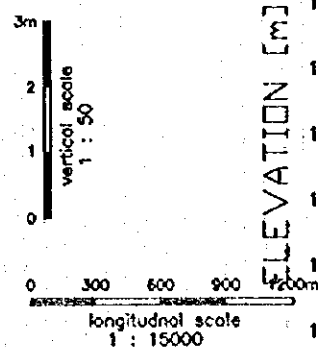
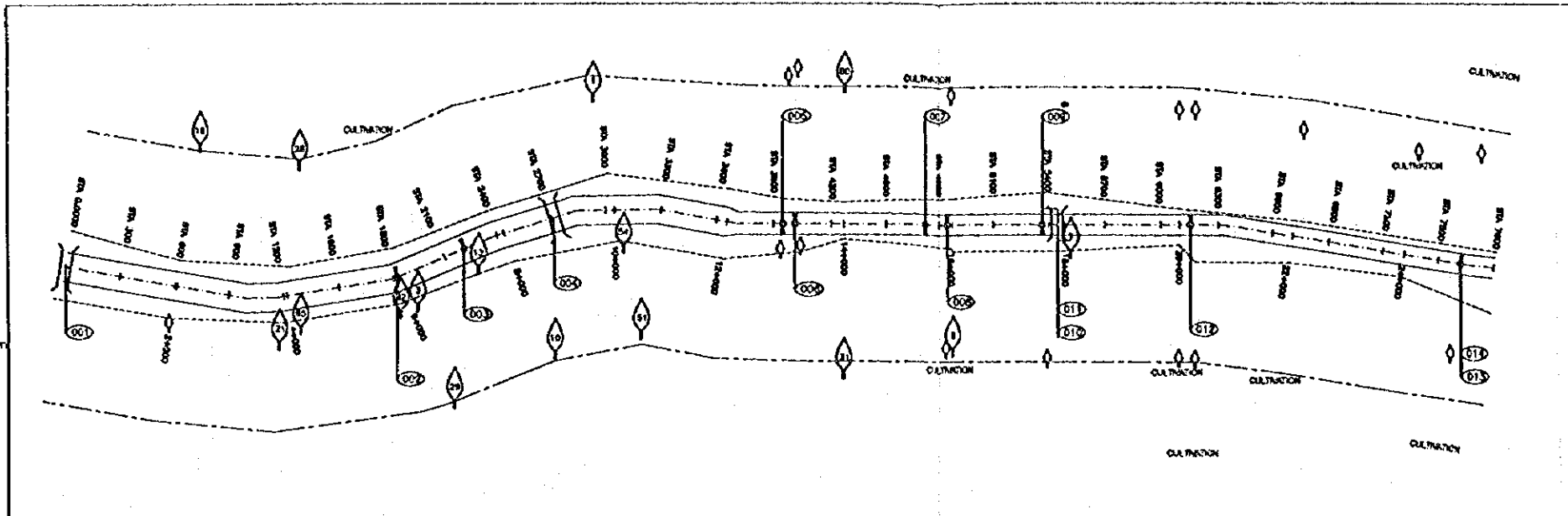
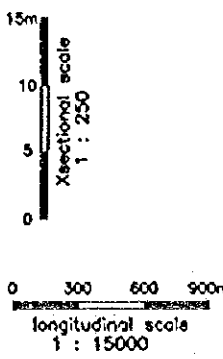
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

PLAN AND PROFILE OF  
CANAL SYSTEM: L C C  
DISTRIBUTARY : JANIWALA/HAMZA  
MINOR : -

FROM STA 7213 (23+859) TO : 12397 (40+662)





EXISTING DATA DESIGN PROPERTIES

EXISTING DATA DESIGN PROPERTIES	Section 1				Section 2				Section 3				Section 4			
	Q	s	y	V	Q	s	y	V	Q	s	y	V	Q	s	y	V
DESIGNED FULL SUPPLY LEVEL	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25
DESIGNED BED LEVEL	166.50	166.50	166.50	166.50	166.50	166.50	166.50	166.50	166.50	166.50	166.50	166.50	166.50	166.50	166.50	166.50
DISTANCE (m)	0+000	0+000	0+000	0+000	0+000	0+000	0+000	0+000	0+000	0+000	0+000	0+000	0+000	0+000	0+000	0+000
STATION (m)	0+000	0+000	0+000	0+000	0+000	0+000	0+000	0+000	0+000	0+000	0+000	0+000	0+000	0+000	0+000	0+000
LATEST FULL SUPPLY LEVEL	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25
N S L RIGHT	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25
N S L LEFT	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25
BED LEVEL	166.50	166.50	166.50	166.50	166.50	166.50	166.50	166.50	166.50	166.50	166.50	166.50	166.50	166.50	166.50	166.50
RIGHT OF WAY LEFT (ft)	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25
RIGHT OF WAY RIGHT (ft)	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25
R.D. (ft)	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25	167.25

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	
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	
SOE SLOPE z	
WATER DEPTH y	
FREE BOARD Frb	
TAIL LEFT TL	
TAIL RIGHT TR	
TAIL FRONT TF	

REVISION NO.	REVISION DESCRIPTION	DESIGNER	APPROVED
A			
B			
C			
D			

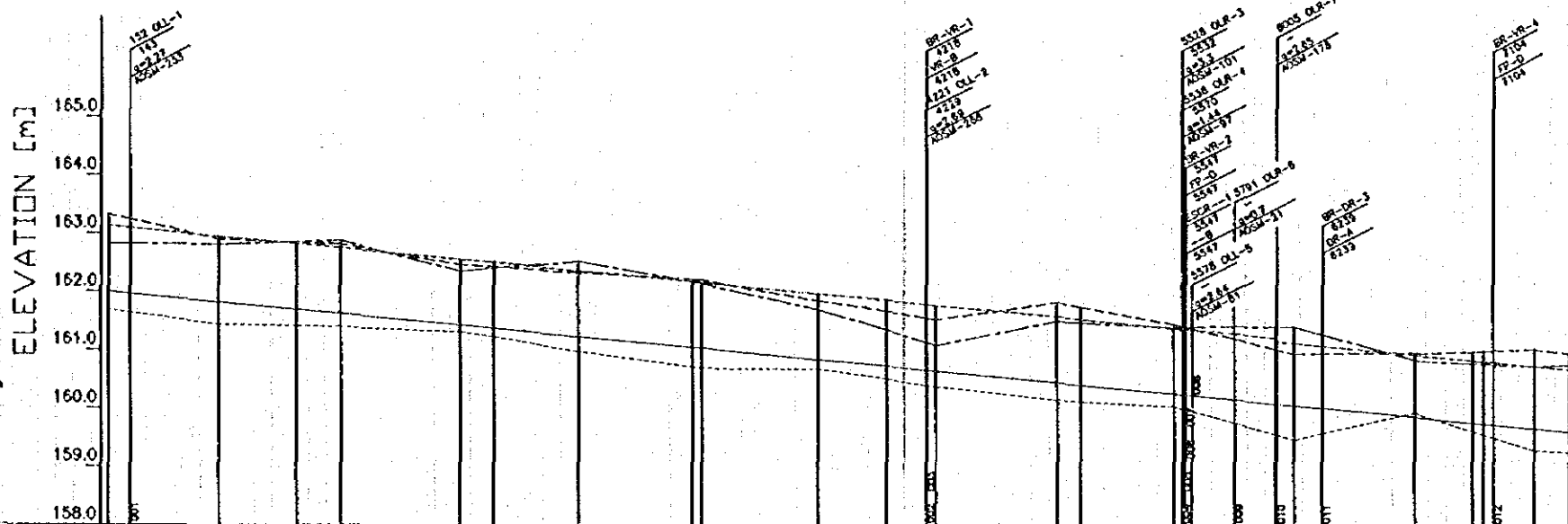
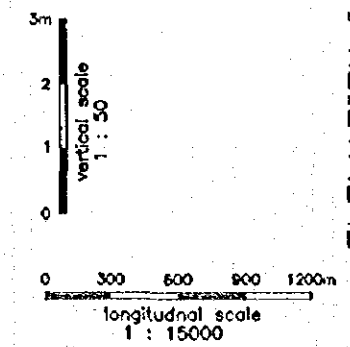
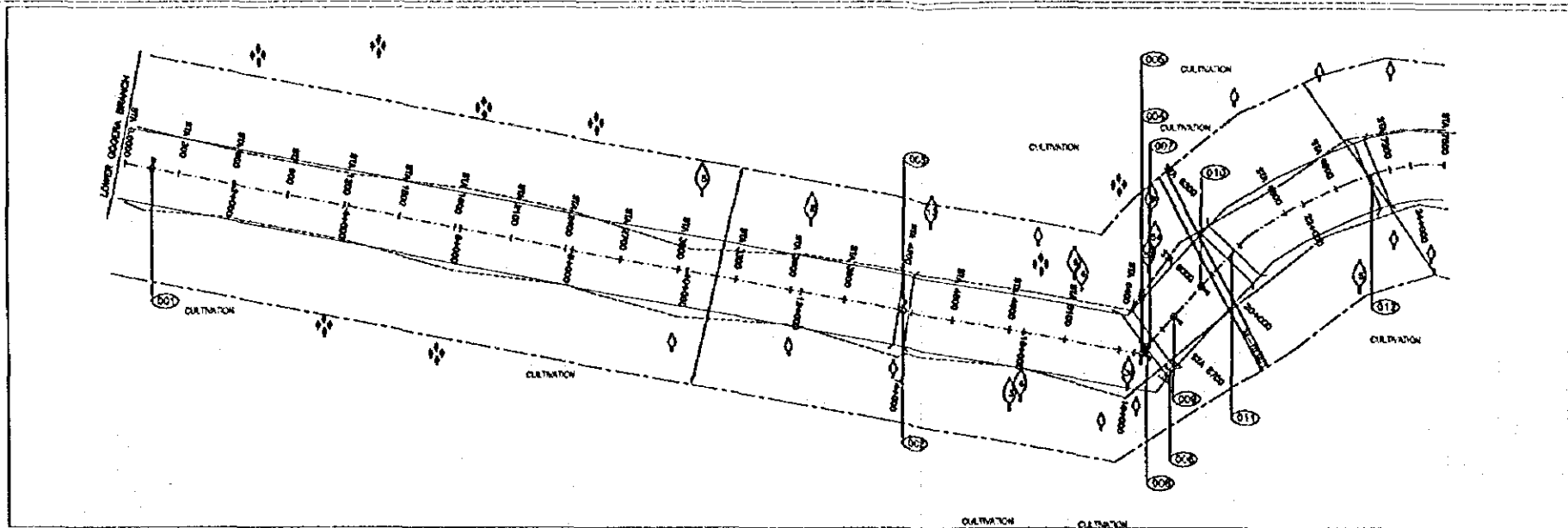
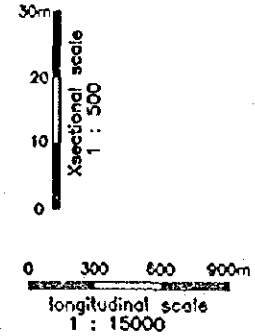
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

PLAN AND PROFILE OF  
CANAL SYSTEM: L. C. C.  
DISTRIBUTARY : JANIWALA/HAMZA  
MINOR : AMIRWALA

FROM STA 000 (0+000) TO : 7620 (24+994)

JAPAN INTERNATIONAL COOPERATION AGENCY | LCC-30



EXISTING DATA DESIGN PROPERTIES

	Section 1										Section 2									
DESIGNED FULL SUPPLY LEVEL	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00
DESIGNED BED LEVEL	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50
DISTANCE (m)	0	100	200	300	400	500	600	700	800	900	0	100	200	300	400	500	600	700	800	900
STATION (m)	0+00	0+100	0+200	0+300	0+400	0+500	0+600	0+700	0+800	0+900	0+00	0+100	0+200	0+300	0+400	0+500	0+600	0+700	0+800	0+900
LATEST FULL SUPPLY LEVEL	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00	163.00
N S L RIGHT	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50
N S L LEFT	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50
BED LEVEL	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50
RIGHT OF WAY LEFT (ft)	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50
RIGHT OF WAY RIGHT (ft)	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50
R.D. (ft)	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50	162.50

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	
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 Era, 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 CATCHMENT AREA	CCA
BED SLOPE	i
SIDE SLOPE	s
WATER DEPTH	y
FREE BOARD	Frb
TAL LEFT	TL
TAL RIGHT	TR
TAL FRONT	TF

REVISION	NO.	DATE	BY	CHKD	DATE	BY
A						
B						
C						
D						

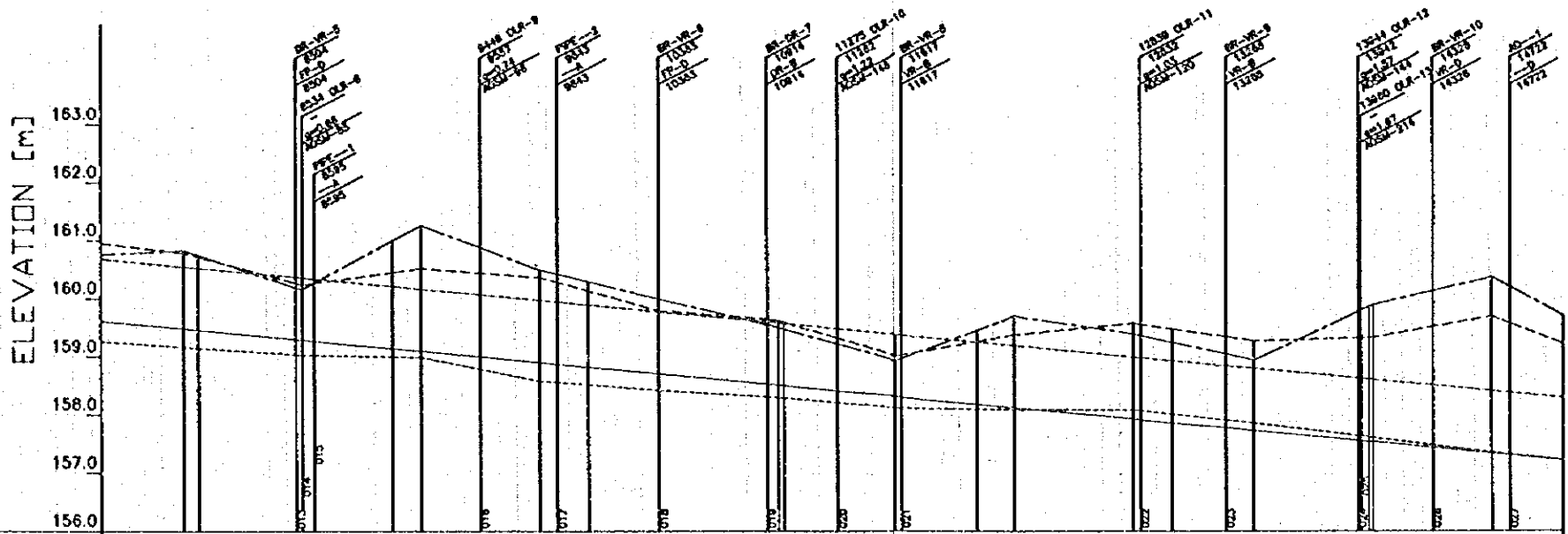
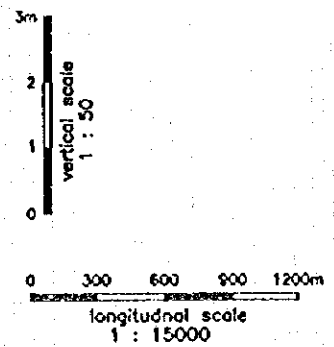
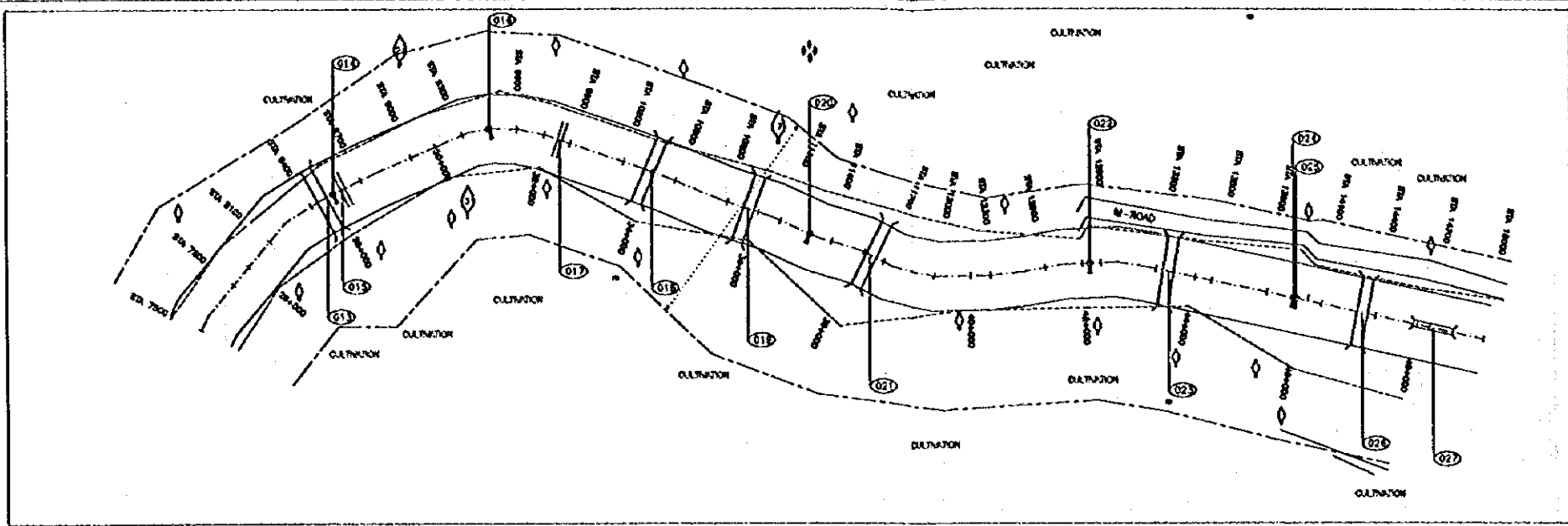
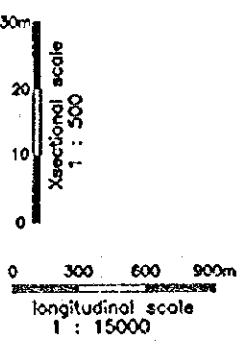
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

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

FROM STA 000 (0+000) TO : 7500 (24+600)

JAPAN INTERNATIONAL COOPERATION AGENCY | LCC-31



EXISTING DATA DESIGN DATA DESIGN 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)
162.85	162.85	0	7500	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	100	7600	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	200	7700	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	300	7800	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	400	7900	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	500	8000	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	600	8100	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	700	8200	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	800	8300	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	900	8400	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	1000	8500	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	1100	8600	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	1200	8700	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	1300	8800	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	1400	8900	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	1500	9000	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	1600	9100	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	1700	9200	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	1800	9300	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	1900	9400	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	2000	9500	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	2100	9600	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	2200	9700	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	2300	9800	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	2400	9900	162.85	162.85	162.85	162.85	162.85	162.85	162.85
162.85	162.85	2500	10000	162.85	162.85	162.85	162.85	162.85	162.85	162.85

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 (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	
PIE	
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, port-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 F/B	
TAIL LEFT TL	
TAIL RIGHT TR	
TAIL FRONT TF	

RECORD BOOK	REVISION	DESIGN	APPROVED
A			
B			
C			
D			

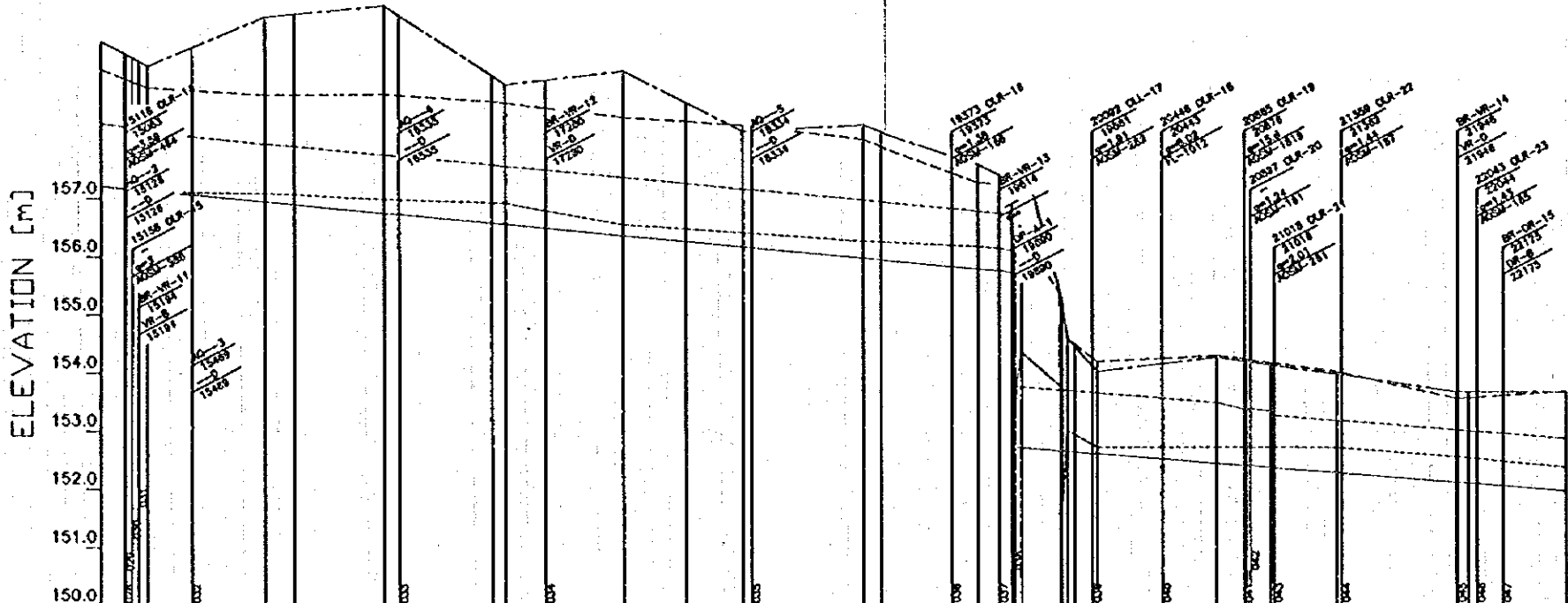
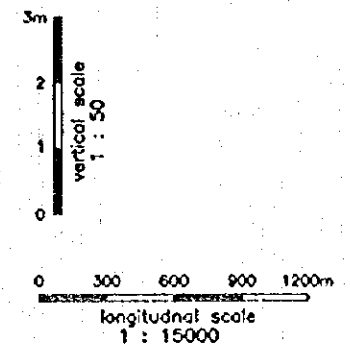
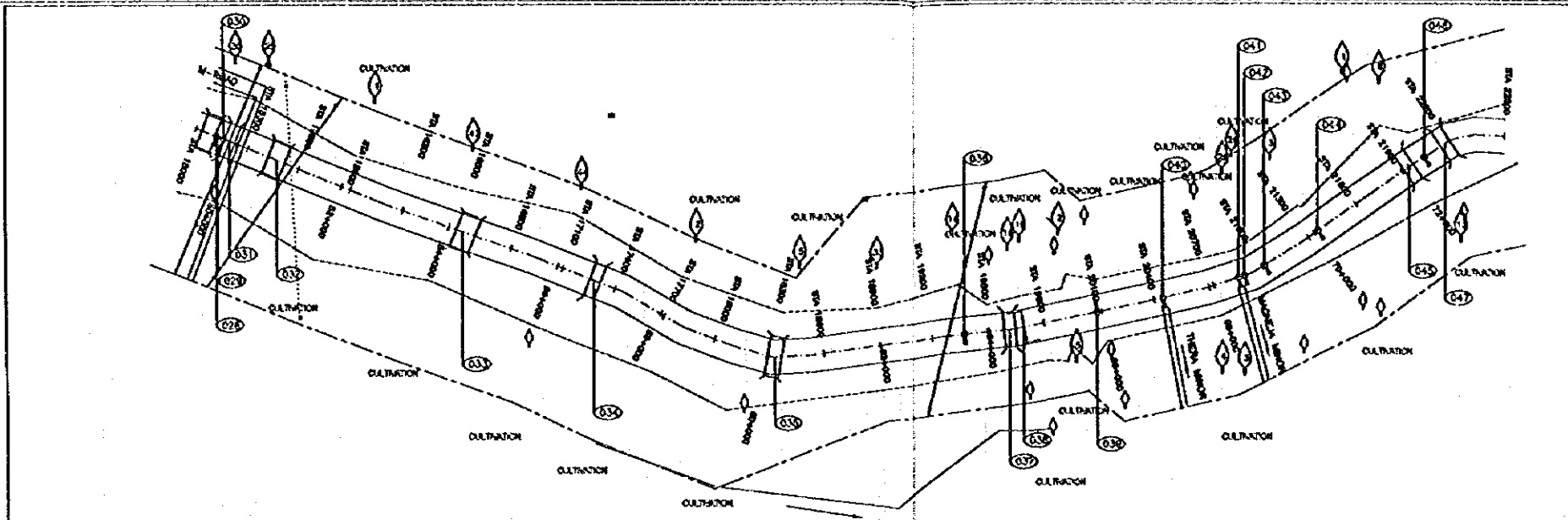
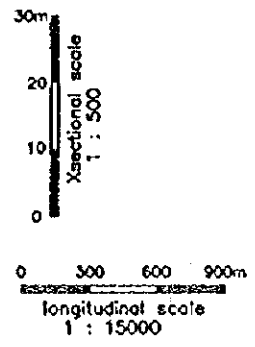
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

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

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

JAPAN INTERNATIONAL COOPERATION AGENCY | LOC-32



EXISTING DATA DESIGN DATA

PROPERTY	Section 2		Section 3		Section 4		Section 5		Section 6	
	DESIGN	EXISTING	DESIGN	EXISTING	DESIGN	EXISTING	DESIGN	EXISTING	DESIGN	EXISTING
DESIGNED FULL SUPPLY LEVEL	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2
DESIGNED BED LEVEL	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
DISTANCE (m)	0	0	0	0	0	0	0	0	0	0
STATION (m)	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000
LATEST FULL SUPPLY LEVEL	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2
N S L RIGHT	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2
N S L LEFT	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2
BED LEVEL	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
RIGHT OF WAY LEFT (ft)	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2
RIGHT OF WAY RIGHT (ft)	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2
R.D. (ft)	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2

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	
PFC	
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	
BURDING, Village, 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 <sub>o</sub>
BED WIDTH	b
ROUGHNESS COEFFICIENT	n
VELOCITY	V
CANAL COMMAND AREA	CCA
BED SLOPE	s
SIDE SLOPE	1
WATER DEPTH	y
FREE BOARD	f/b
TAIL LEFT	TL
TAIL RIGHT	TR
TAIL FRONT	TF

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

ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

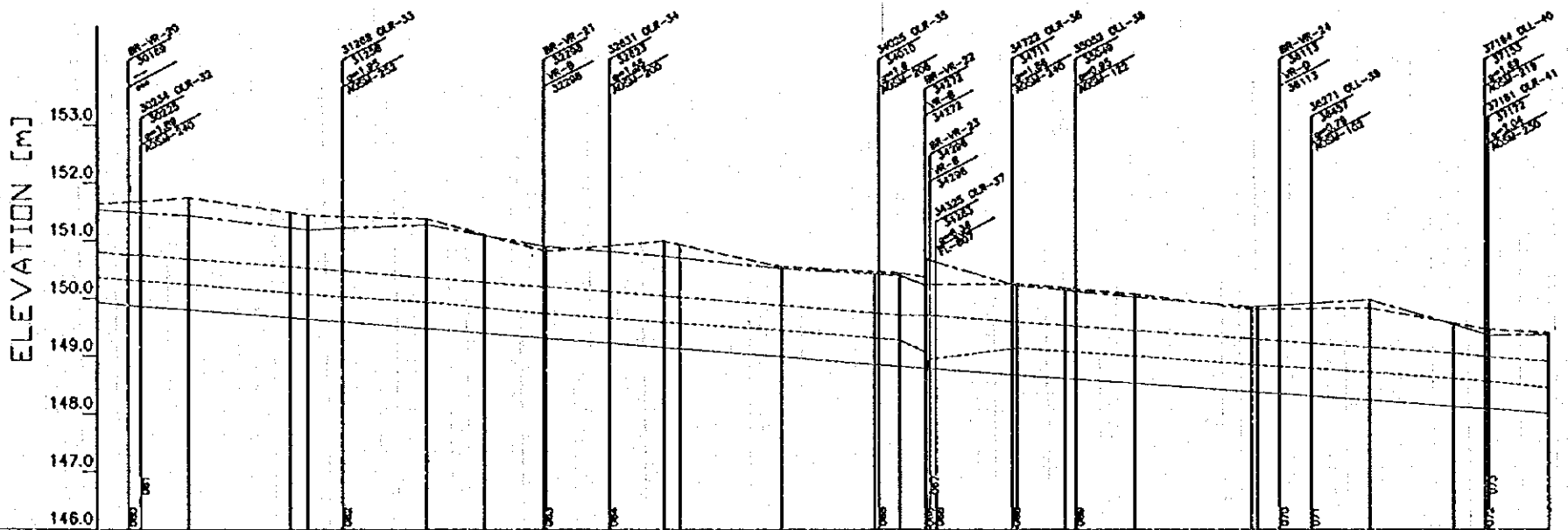
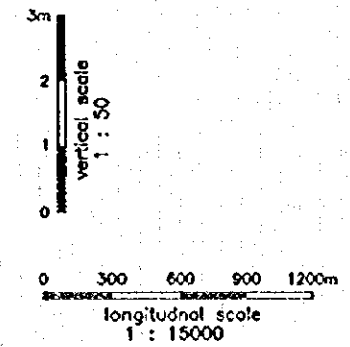
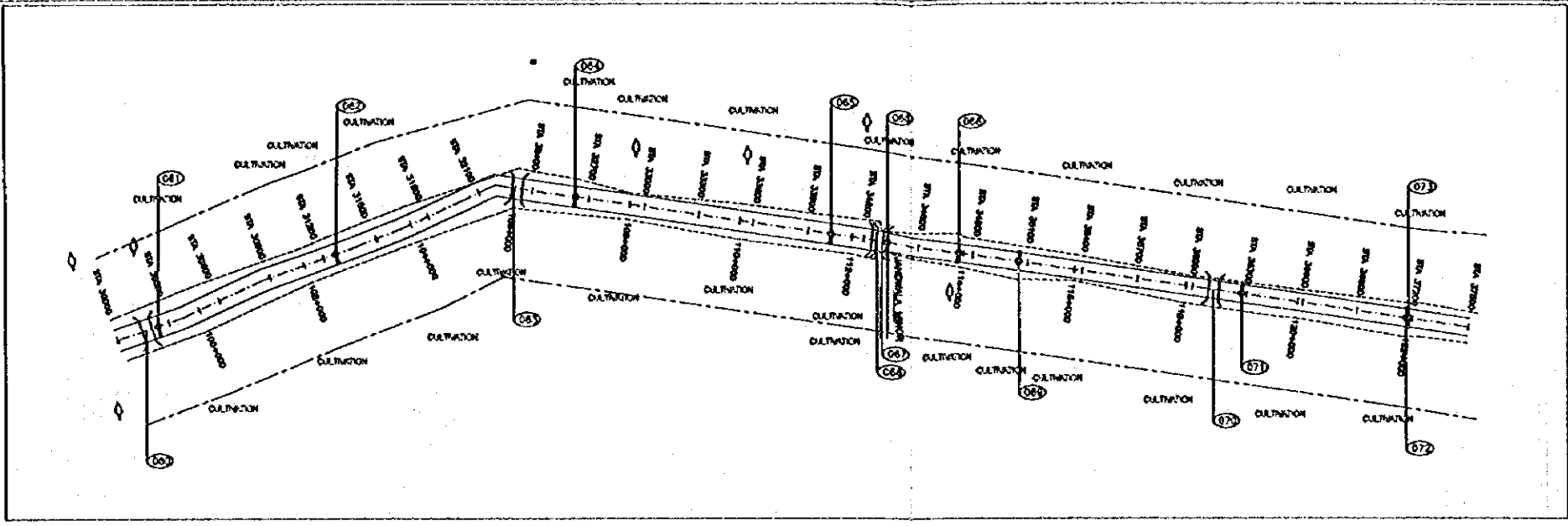
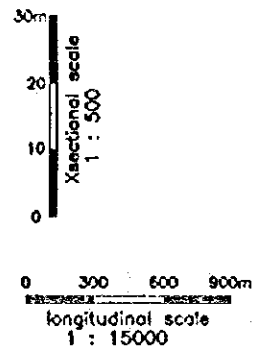
THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

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

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

JAPAN INTERNATIONAL COOPERATION AGENCY LCC-33





EXISTING DATA DESIGN DATASECTION PROPERTIES

	Section 8	Section 9	Section 10	Section 11	Section 12	Section 13
Q	0.3758	0.3740	0.3728	0.3728	0.3758	0.3788
n	0.018	0.018	0.018	0.018	0.018	0.018
s	1/3710	1/3710	1/3710	1/4170	1/4170	1/4170
y (m)	1.17	1.18	1.18	1.22	1.21	1.18
b (m)	1.80	1.30	1.10	1.10	1.70	1.80
V (m/s)	0.58	0.58	0.65	0.42	0.58	0.58
z	1.25	1.25	1.25	1.25	1.25	1.25
Frb (m)	0.30	0.30	0.30	0.30	0.30	0.30
CCA	0.2330	0.2437	0.2431	0.2431	0.2418	0.2418
DESIGNED FULL SUPPLY LEVEL	146.80	146.80	146.80	146.80	146.80	146.80
DESIGNED BED LEVEL	146.80	146.80	146.80	146.80	146.80	146.80
DISTANCE (m)	30000.00	30000.00	30000.00	30000.00	30000.00	30000.00
STATION (m)	30000.00	30000.00	30000.00	30000.00	30000.00	30000.00
LATEST FULL SUPPLY LEVEL	146.80	146.80	146.80	146.80	146.80	146.80
N S L RIGHT	146.80	146.80	146.80	146.80	146.80	146.80
N S L LEFT	146.80	146.80	146.80	146.80	146.80	146.80
BED LEVEL	146.80	146.80	146.80	146.80	146.80	146.80
RIGHT OF WAY LEFT (ft)	146.80	146.80	146.80	146.80	146.80	146.80
RIGHT OF WAY RIGHT (ft)	146.80	146.80	146.80	146.80	146.80	146.80
R.D. (ft)	146.80	146.80	146.80	146.80	146.80	146.80

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 (RB)	
OPERATION & MAINTENANCE (O&M) ROAD BRIDGE	
TUNNEL / CULVERT SECTION	
CROSS DRAINAGE CULVERT	
INVERTED SYPHON	
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	
SOE SLOPE s	
WATER DEPTH y	
FREE BOARD Fb	
TAL LEFT TL	
TAL RIGHT TR	
TAL FRONT TF	

RECORD BOOK	RECORD B/L/S/O/E	DESIGN B/L/S/O/E	APPROVED B/L/S/O/E
A			
B			
C			
D			

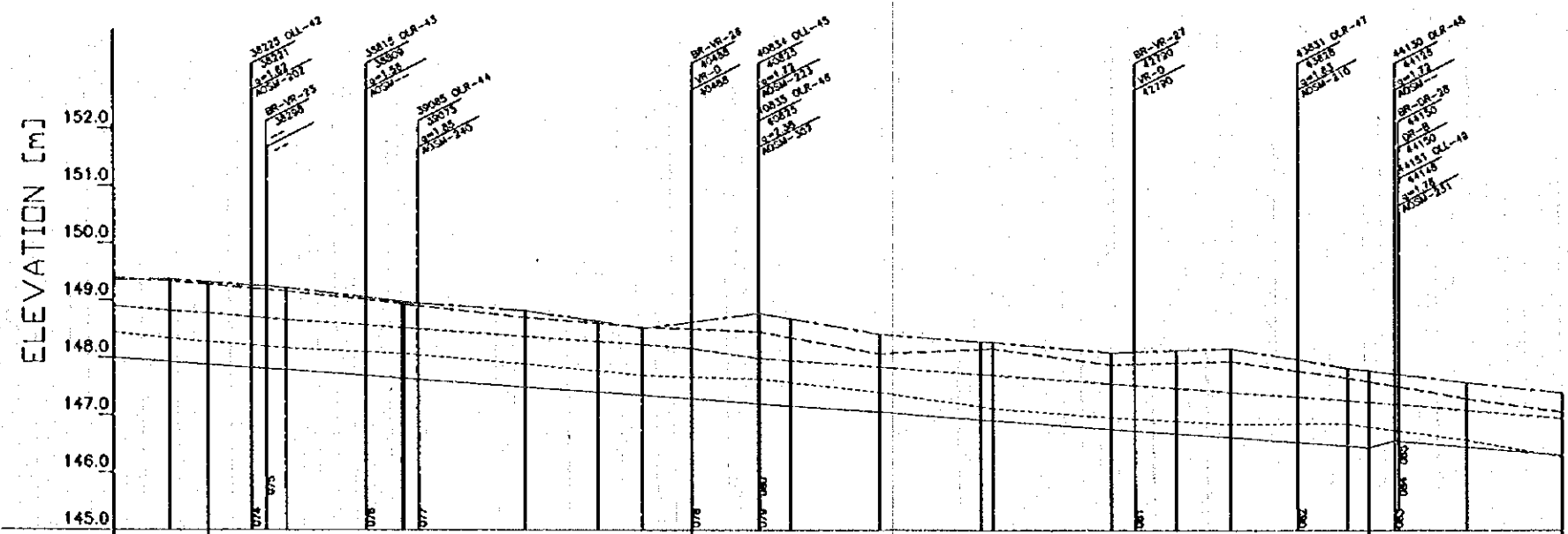
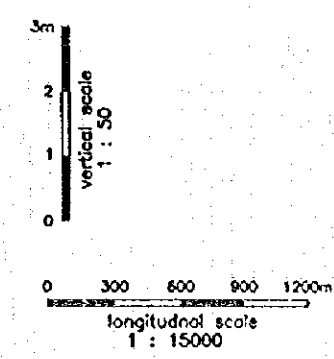
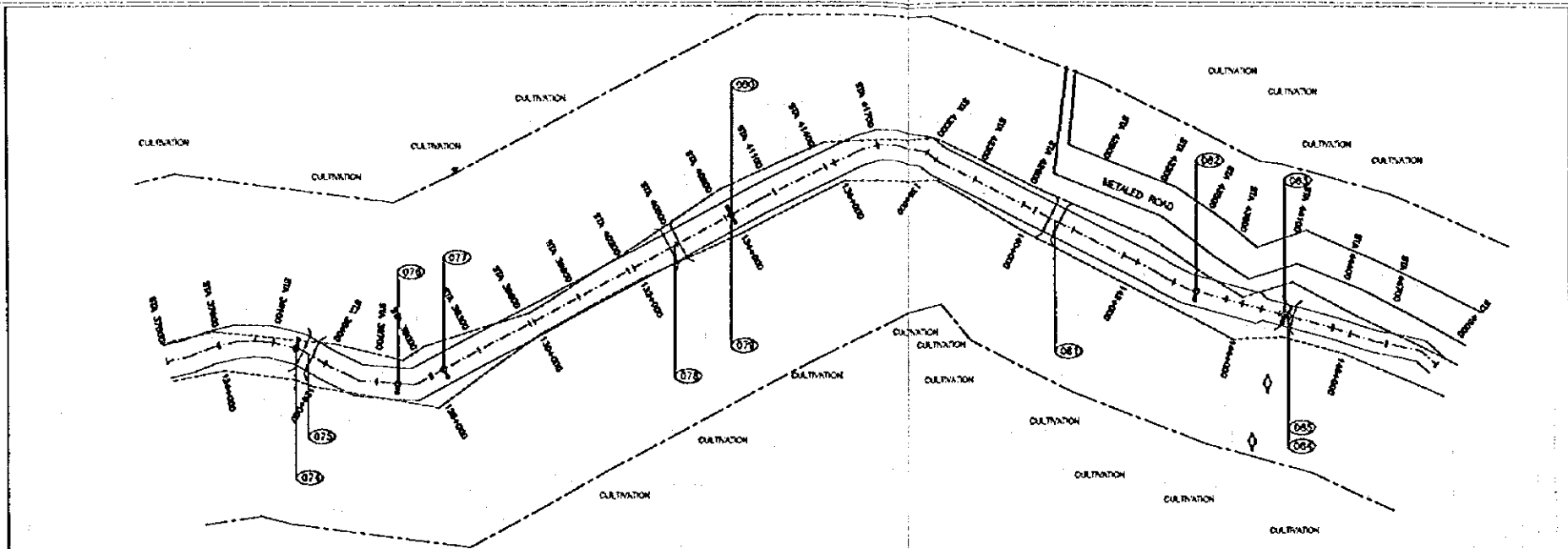
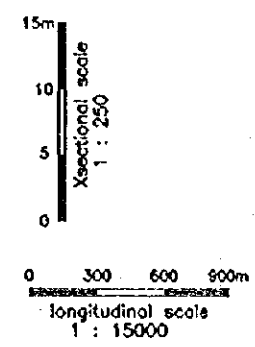
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

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

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

JAPAN INTERNATIONAL COOPERATION AGENCY | LCC-35



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 / CHAUVERT SECTION	
CROSS DRAINAGE CULVERT	
INVERTED SIPHON	
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	
Groove, Groyne	
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	
FRICTION BOARD Frb	
TAL LEFT TL	
TAL RIGHT TR	
TAL FRONT TF	

EXISTING DATA DESIGN PROPERTIES

	Section 13	Section 14	Section 15	Section 16
DESIGNED FULL SUPPLY LEVEL	147.25	147.25	147.25	147.25
DESIGNED BED LEVEL	147.25	147.25	147.25	147.25
DISTANCE (m)	37500.00	37500.00	37500.00	37500.00
STATION (m)	37500.00	37500.00	37500.00	37500.00
LATEST FULL SUPPLY LEVEL	147.25	147.25	147.25	147.25
N S L RIGHT	147.25	147.25	147.25	147.25
N S L LEFT	147.25	147.25	147.25	147.25
BED LEVEL	147.25	147.25	147.25	147.25
RIGHT OF WAY LEFT (ft)	147.25	147.25	147.25	147.25
RIGHT OF WAY RIGHT (ft)	147.25	147.25	147.25	147.25
R.D. (ft)	147.25	147.25	147.25	147.25

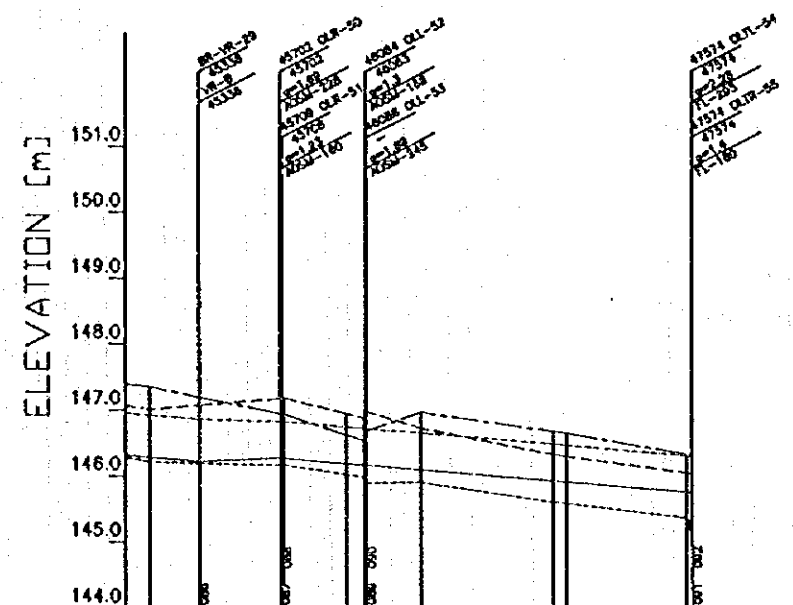
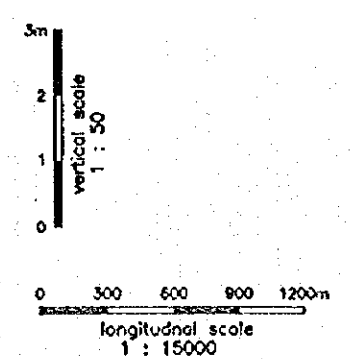
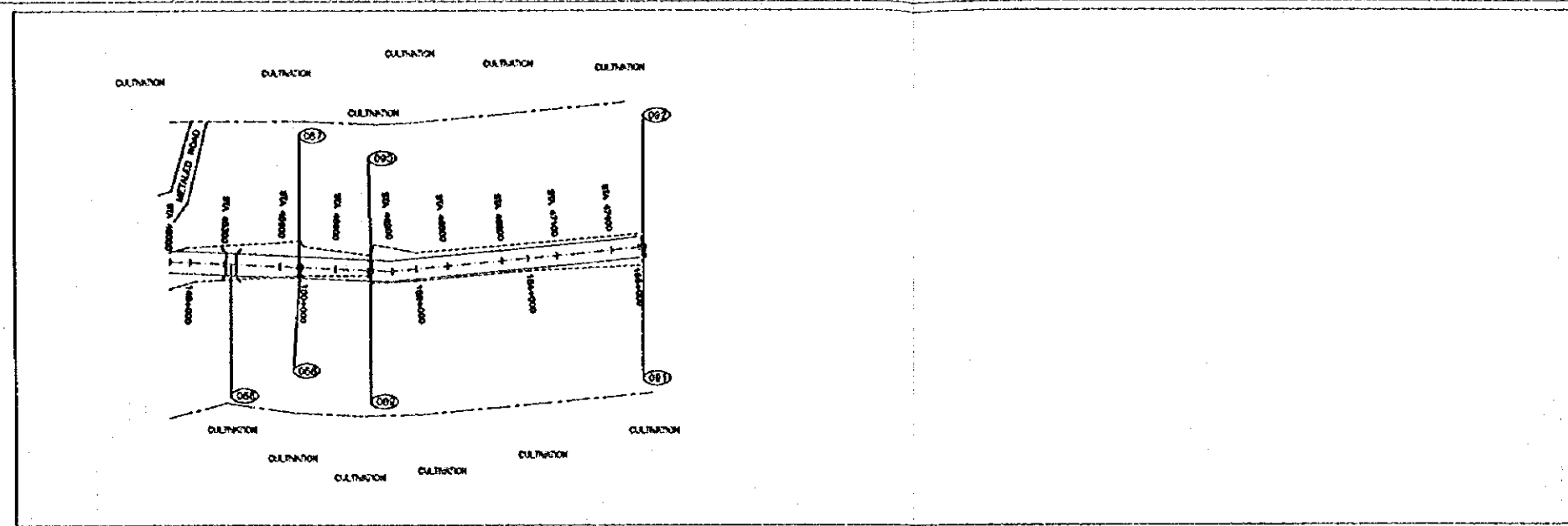
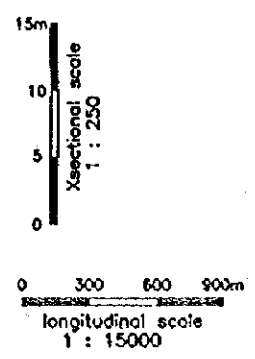
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

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

FROM STA 37500 (123+000) TO : 45000 (147+800)

JAPAN INTERNATIONAL COOPERATION AGENCY LCC-35



EXISTING DATA DESIGN DATA

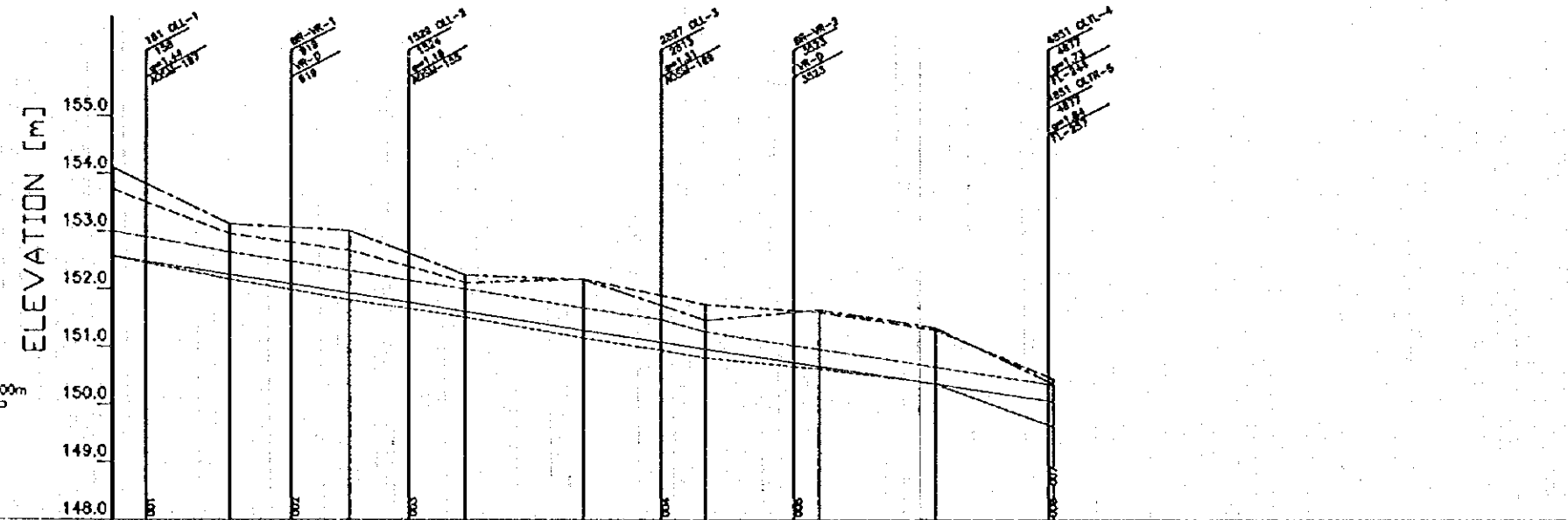
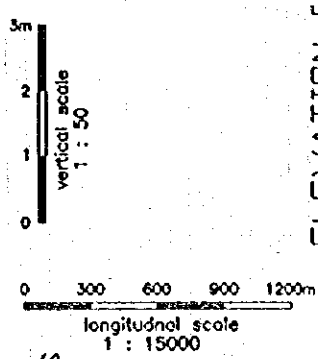
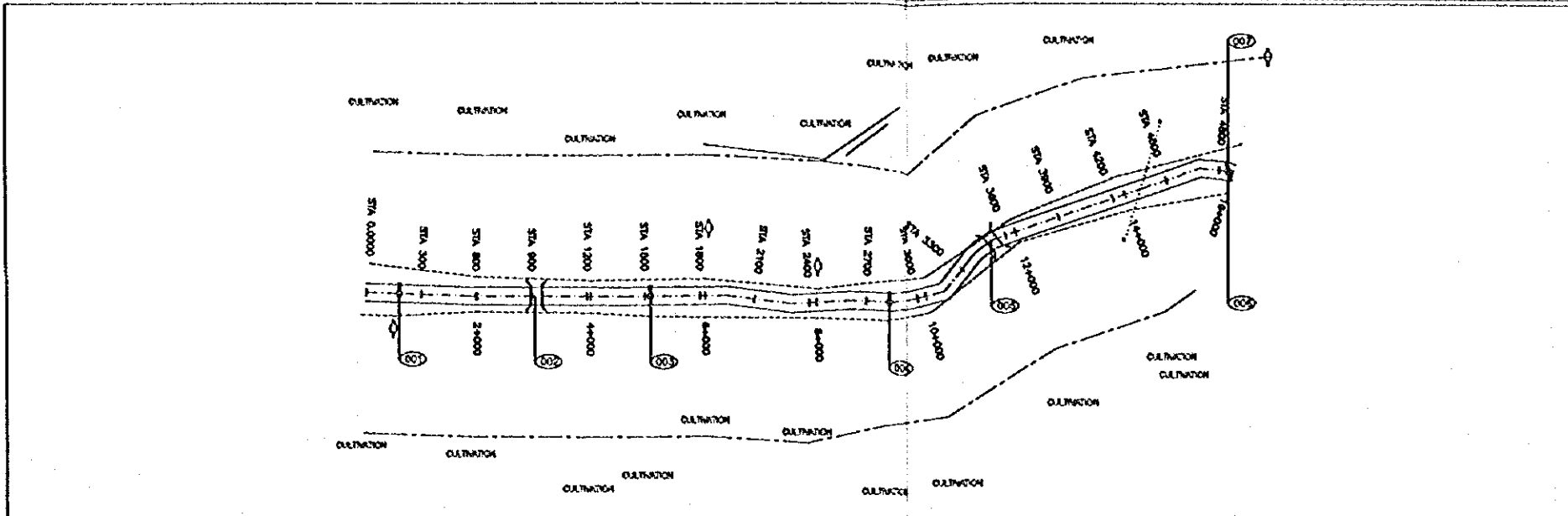
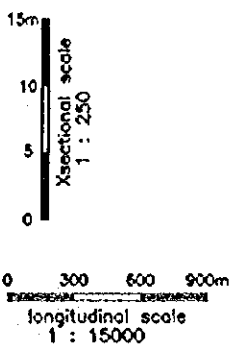
	Section 11	Section 12	Section 13	Section 14
DESIGNED FULL SUPPLY LEVEL	147.00	147.00	147.00	147.00
DESIGNED BED LEVEL	146.00	146.00	146.00	146.00
DISTANCE (m)	0	100	200	300
STATION (m)	45000	45100	45200	45300
LATEST FULL SUPPLY LEVEL	147.00	147.00	147.00	147.00
N S L RIGHT	147.00	147.00	147.00	147.00
N S L LEFT	147.00	147.00	147.00	147.00
BED LEVEL	146.00	146.00	146.00	146.00
RIGHT OF WAY LEFT (ft)	147.00	147.00	147.00	147.00
RIGHT OF WAY RIGHT (ft)	147.00	147.00	147.00	147.00
R.D. (ft)	147.00	147.00	147.00	147.00

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 SIFON	
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	
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 y	
FREE BOARD Frb	
TAIL LEFT TL	
TAIL RIGHT TR	
TAIL FRONT TF	

REVISION NO.	REVISION DATE	CHECKED 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 C C  
 DISTRIBUTARY : PIRMAHAL  
 MINOR : -  
 FROM STA 45000 (147+800) TO : 47574 (156+043)  
 JAPAN INTERNATIONAL COOPERATION AGENCY LCC-37





EXISTING DATA	DESIGN DATA		
	Section 1	Section 2	Section 3
DESIGNED FULL SUPPLY LEVEL	154.23	153.18	152.11
DESIGNED BED LEVEL	152.00	151.00	150.00
DISTANCE (m)	0-100	100-200	200-300
STATION (m)	0+000	1+000	2+000
LATEST FULL SUPPLY LEVEL	153.50	152.50	151.50
N S L RIGHT	153.50	152.50	151.50
N S L LEFT	152.50	151.50	150.50
BED LEVEL	152.00	151.00	150.00
RIGHT OF WAY LEFT (ft)	153.50	152.50	151.50
RIGHT OF WAY RIGHT (ft)	153.50	152.50	151.50
R.D. (ft)	153.50	152.50	151.50

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	
GROSS DRAINAGE CULVERT	
INVERTED SYPHON	
OUTLET LEFT (OLL)	
OUTLET RIGHT (OLA)	
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 x	
WATER DEPTH y	
FREE BOARD Fb	
TAL LEFT TL	
TAL RIGHT TR	
TAL FRONT TF	

REVISION NO.	REVISION DESCRIPTION	DATE	BY
A			
B			
C			
D			

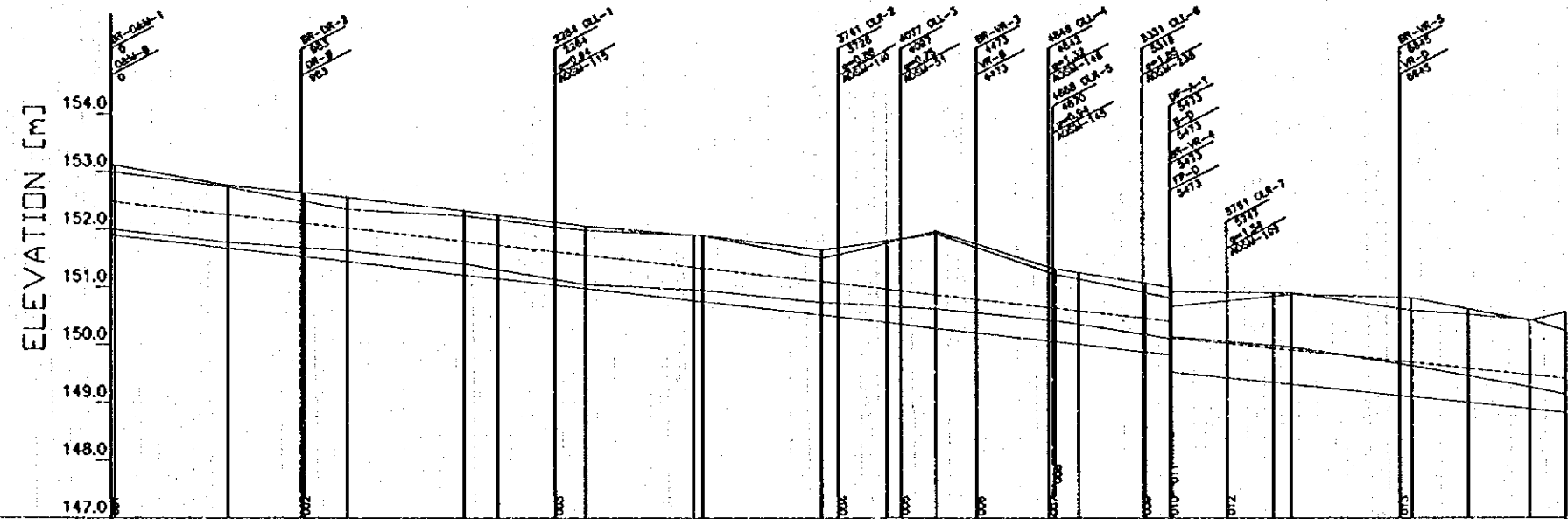
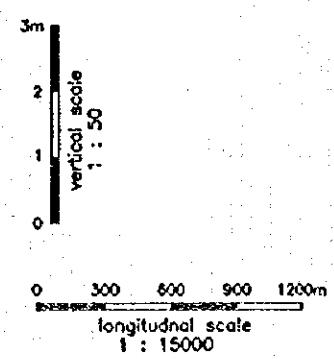
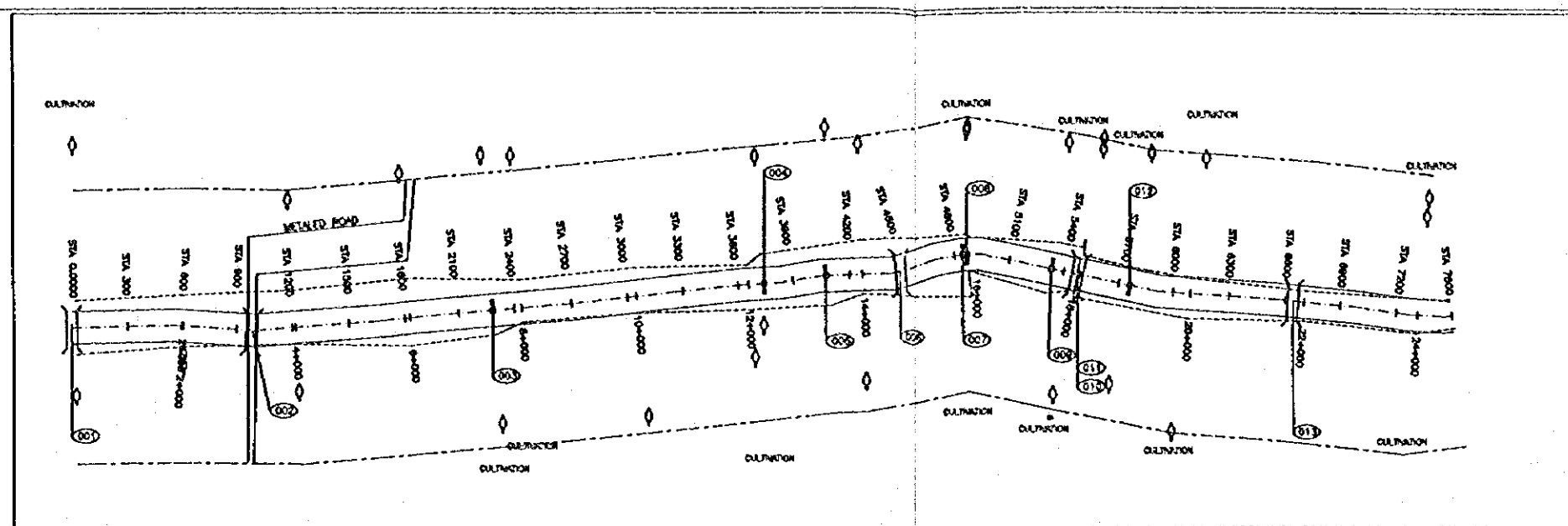
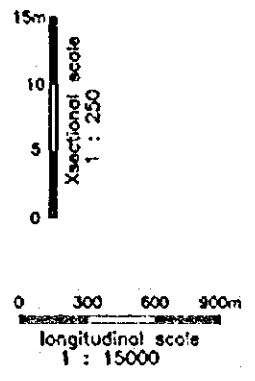
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

PLAN AND PROFILE OF  
CANAL SYSTEM: L C C  
DISTRIBUTARY : PIRMAHAL  
MINOR : THERA

FROM STA 000 (0+000) TO : 4877 (15+997)

JAPAN INTERNATIONAL COOPERATION AGENCY LCC-38



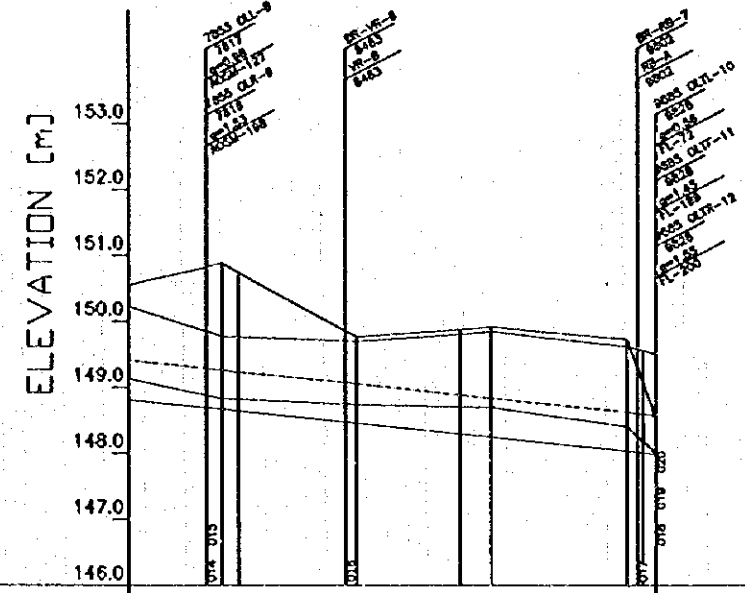
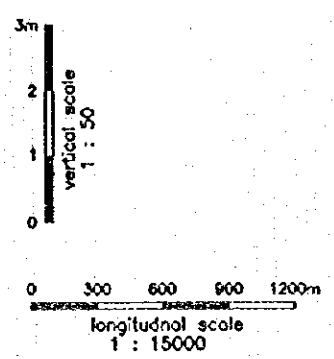
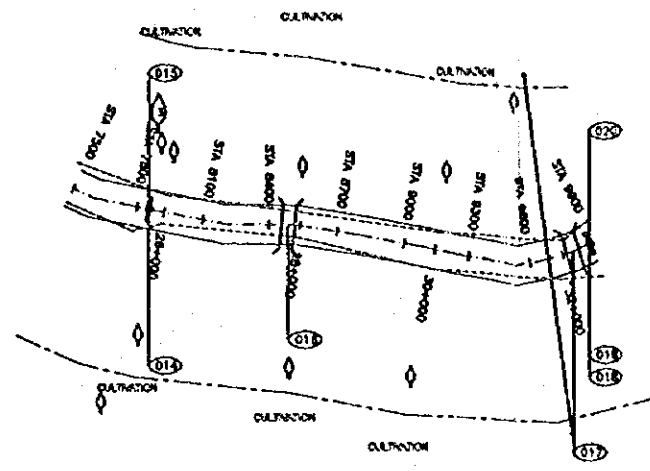
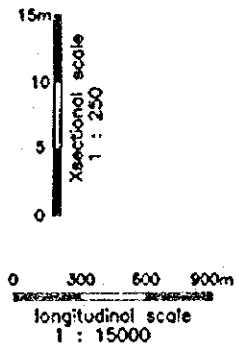
EXISTING DATA DESIGN DRAINAGE PROPERTIES

EXISTING DATA DESIGN DRAINAGE PROPERTIES	Section 1										Section 2									
	0+000	0+100	0+200	0+300	0+400	0+500	0+600	0+700	0+800	0+900	0+000	0+100	0+200	0+300	0+400	0+500	0+600	0+700	0+800	0+900
DESIGNED FULL SUPPLY LEVEL	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50
DESIGNED BED LEVEL	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50
DISTANCE (m)	0	100	200	300	400	500	600	700	800	900	0	100	200	300	400	500	600	700	800	900
STATION (m)	0+000	0+100	0+200	0+300	0+400	0+500	0+600	0+700	0+800	0+900	0+000	0+100	0+200	0+300	0+400	0+500	0+600	0+700	0+800	0+900
LATEST FULL SUPPLY LEVEL	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50
N S L RIGHT	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50
N S L LEFT	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50
BED LEVEL	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50
RIGHT OF WAY LEFT (ft)	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50
RIGHT OF WAY RIGHT (ft)	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50
R.D. (ft)	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50	147.50

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	
CROSS DRAINAGE CULVERT	
INVERTED SIPHON	
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	
PIPE	
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 Rice, Water Course, Pond	
Tree Jungle	
Graves, 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	D
FREE BOARD	Fb
TAIL LEFT	TL
TAIL RIGHT	TR
TAIL FRONT	TF

REVISION	NO.	DATE	BY	CHKD
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 C C  
 DISTRIBUTARY : PIRMAHAL  
 MINOR : MAGNEJA  
 FROM STA 000 (0+000) TO : 7500 (24+600)  
 JAPAN INTERNATIONAL COOPERATION AGENCY LCC-39



EXISTING DATA DESIGN DATA SECTION PROPERTIES

EXISTING DATA	DESIGN DATA	SECTION PROPERTIES
DESIGNED FULL SUPPLY LEVEL		Section 2 Q 0.67081 n 1.0018 s 1/2500 y (m) 1.08 b 1.00 V (m/s) 3.50 z 1.25 Frb (m) 0.30 CCA 0.67481
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)		

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	
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 <sub>o</sub>	
BED WIDTH b	
ROUGHNESS COEFFICIENT n	
VELOCITY V	
CANAL COMMAND AREA CCA	
BED SLOPE s	
SIDE SLOPE z	
WATER DEPTH y	
FREE BOARD F/b	
TAIL LEFT TL	
TAIL RIGHT TR	
TAIL FRONT TF	

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

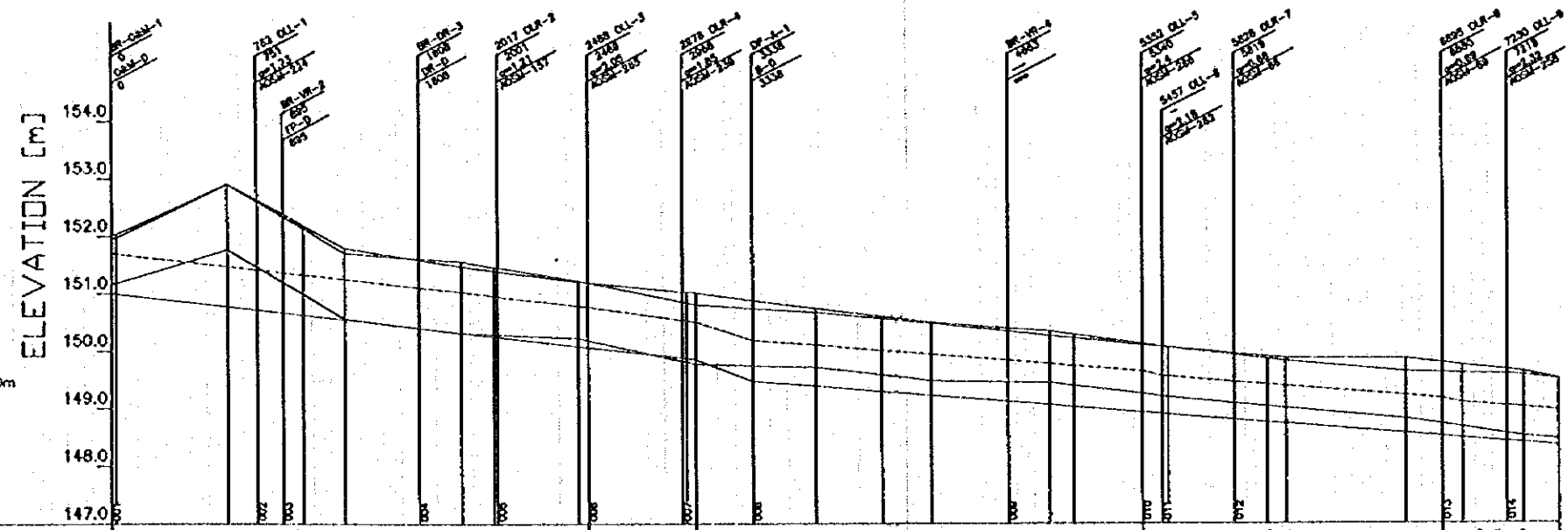
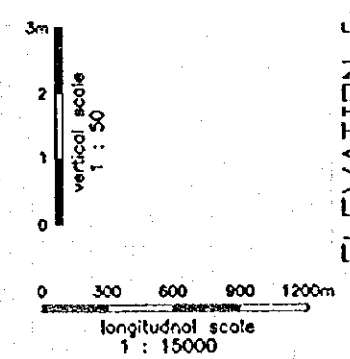
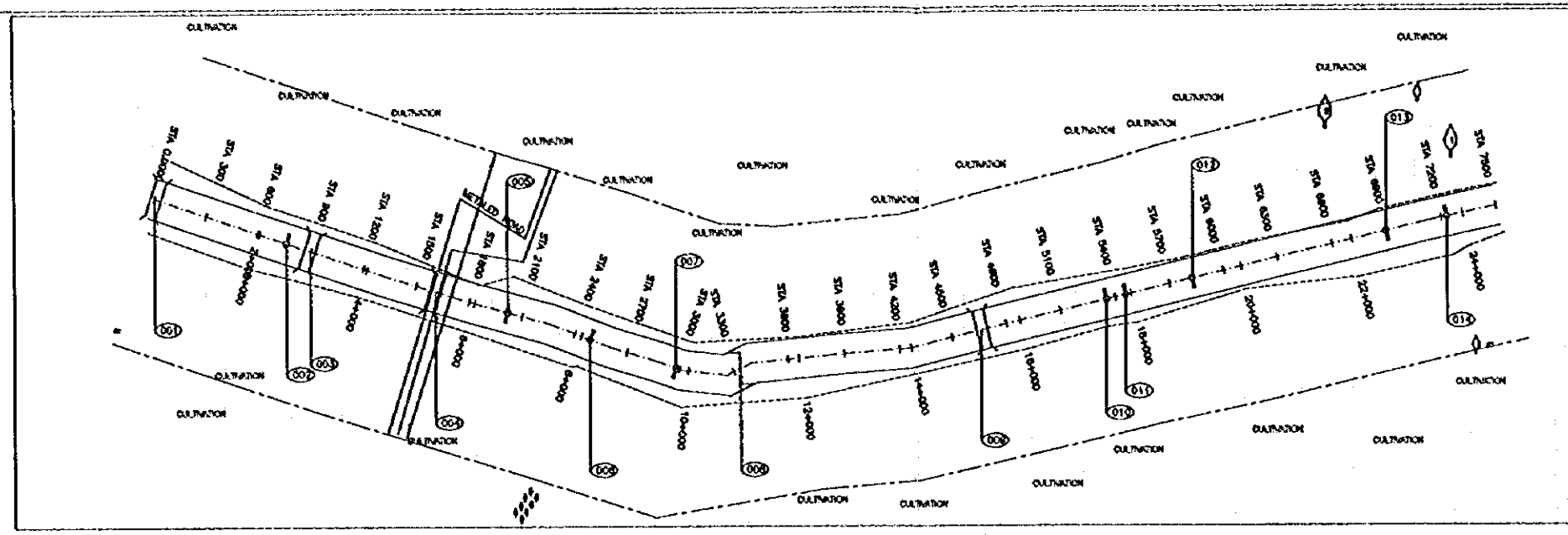
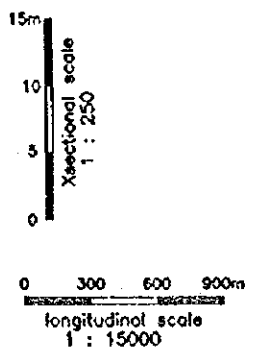
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

PLAN AND PROFILE OF  
CANAL SYSTEM: L C C  
DISTRIBUTARY : PIRMAHAL  
MINOR : MAGNEJA

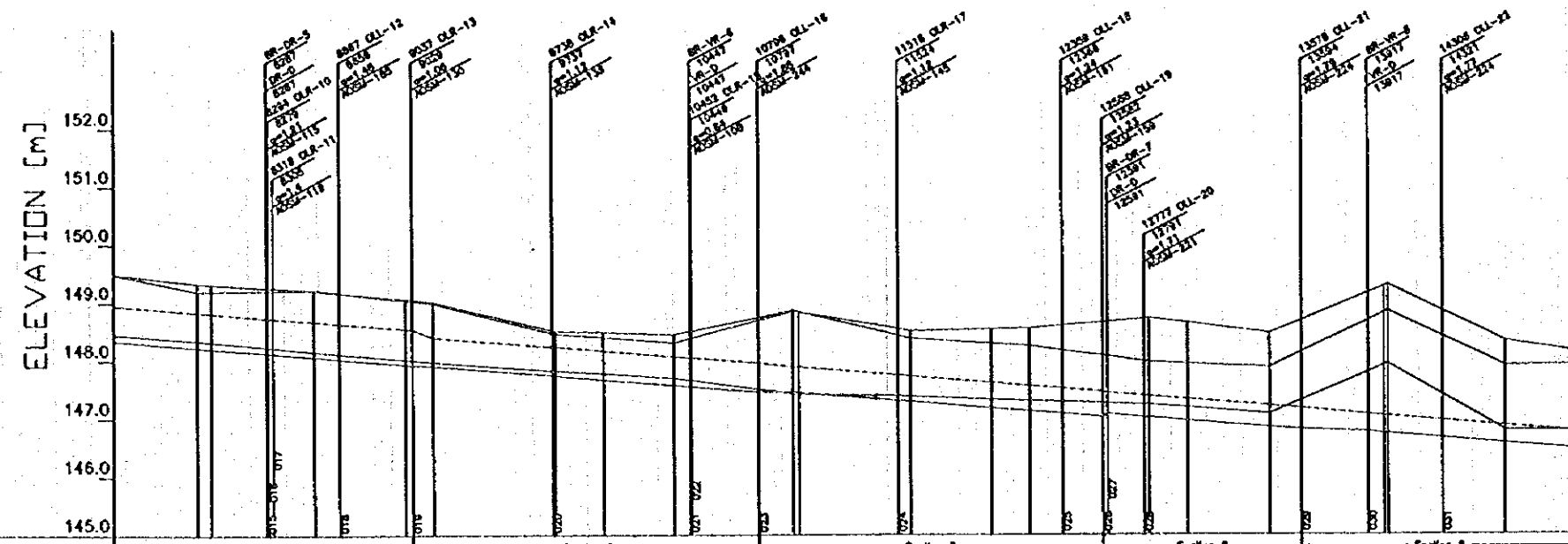
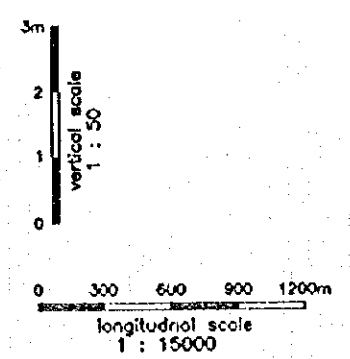
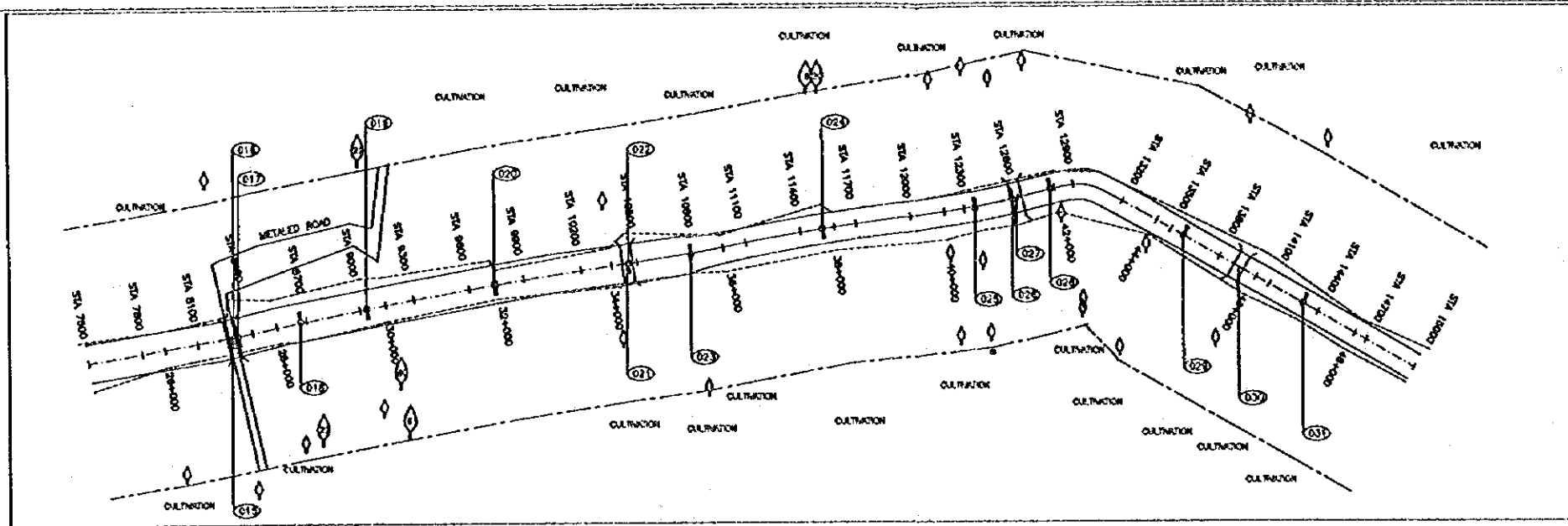
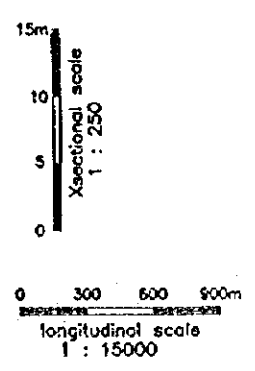
FROM STA 7500 (24+600) TO : 9685 (32+423)

JAPAN INTERNATIONAL COOPERATION AGENCY | LCC-40



EXISTING DATA DESIGN DRAINAGE PROPERTIES

DESIGNED FULL SUPPLY LEVEL	Section 1					Section 2					Section 3					Section 4					Section 5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
	0+000	0+100	0+200	0+300	0+400	0+500	0+600	0+700	0+800	0+900	1+000	1+100	1+200	1+300	1+400	1+500	1+600	1+700	1+800	1+900	2+000	2+100	2+200	2+300	2+400	2+500	2+600	2+700	2+800	2+900	3+000	3+100	3+200	3+300	3+400	3+500	3+600	3+700	3+800	3+900	4+000	4+100	4+200	4+300	4+400	4+500	4+600	4+700	4+800	4+900	5+000	5+100	5+200	5+300	5+400	5+500	5+600	5+700	5+800	5+900	6+000	6+100	6+200	6+300	6+400	6+500	6+600	6+700	6+800	6+900	7+000	7+100	7+200	7+300	7+400	7+500																																																																																																																																																																																																																																																																																																																																																																																																																																			
	153.20	153.15	153.10	153.05	153.00	152.95	152.90	152.85	152.80	152.75	152.70	152.65	152.60	152.55	152.50	152.45	152.40	152.35	152.30	152.25	152.20	152.15	152.10	152.05	152.00	151.95	151.90	151.85	151.80	151.75	151.70	151.65	151.60	151.55	151.50	151.45	151.40	151.35	151.30	151.25	151.20	151.15	151.10	151.05	151.00	150.95	150.90	150.85	150.80	150.75	150.70	150.65	150.60	150.55	150.50	150.45	150.40	150.35	150.30	150.25	150.20	150.15	150.10	150.05	150.00	149.95	149.90	149.85	149.80	149.75	149.70	149.65	149.60	149.55	149.50	149.45	149.40	149.35	149.30	149.25	149.20	149.15	149.10	149.05	149.00	148.95	148.90	148.85	148.80	148.75	148.70	148.65	148.60	148.55	148.50	148.45	148.40	148.35	148.30	148.25	148.20	148.15	148.10	148.05	148.00	147.95	147.90	147.85	147.80	147.75	147.70	147.65	147.60	147.55	147.50	147.45	147.40	147.35	147.30	147.25	147.20	147.15	147.10	147.05	147.00	146.95	146.90	146.85	146.80	146.75	146.70	146.65	146.60	146.55	146.50	146.45	146.40	146.35	146.30	146.25	146.20	146.15	146.10	146.05	146.00	145.95	145.90	145.85	145.80	145.75	145.70	145.65	145.60	145.55	145.50	145.45	145.40	145.35	145.30	145.25	145.20	145.15	145.10	145.05	145.00	144.95	144.90	144.85	144.80	144.75	144.70	144.65	144.60	144.55	144.50	144.45	144.40	144.35	144.30	144.25	144.20	144.15	144.10	144.05	144.00	143.95	143.90	143.85	143.80	143.75	143.70	143.65	143.60	143.55	143.50	143.45	143.40	143.35	143.30	143.25	143.20	143.15	143.10	143.05	143.00	142.95	142.90	142.85	142.80	142.75	142.70	142.65	142.60	142.55	142.50	142.45	142.40	142.35	142.30	142.25	142.20	142.15	142.10	142.05	142.00	141.95	141.90	141.85	141.80	141.75	141.70	141.65	141.60	141.55	141.50	141.45	141.40	141.35	141.30	141.25	141.20	141.15	141.10	141.05	141.00	140.95	140.90	140.85	140.80	140.75	140.70	140.65	140.60	140.55	140.50	140.45	140.40	140.35	140.30	140.25	140.20	140.15	140.10	140.05	140.00	139.95	139.90	139.85	139.80	139.75	139.70	139.65	139.60	139.55	139.50	139.45	139.40	139.35	139.30	139.25	139.20	139.15	139.10	139.05	139.00	138.95	138.90	138.85	138.80	138.75	138.70	138.65	138.60	138.55	138.50	138.45	138.40	138.35	138.30	138.25	138.20	138.15	138.10	138.05	138.00	137.95	137.90	137.85	137.80	137.75	137.70	137.65	137.60	137.55	137.50	137.45	137.40	137.35	137.30	137.25	137.20	137.15	137.10	137.05	137.00	136.95	136.90	136.85	136.80	136.75	136.70	136.65	136.60	136.55	136.50	136.45	136.40	136.35	136.30	136.25	136.20	136.15	136.10	136.05	136.00	135.95	135.90	135.85	135.80	135.75	135.70	135.65	135.60	135.55	135.50	135.45	135.40	135.35	135.30	135.25	135.20	135.15	135.10	135.05	135.00	134.95	134.90	134.85	134.80	134.75	134.70	134.65	134.60	134.55	134.50	134.45	134.40	134.35	134.30	134.25	134.20	134.15	134.10	134.05	134.00	133.95	133.90	133.85	133.80	133.75	133.70	133.65	133.60	133.55	133.50	133.45	133.40	133.35	133.30	133.25	133.20	133.15	133.10	133.05	133.00	132.95	132.90	132.85	132.80	132.75	132.70	132.65	132.60	132.55	132.50	132.45	132.40	132.35	132.30	132.25	132.20	132.15	132.10	132.05	132.00	131.95	131.90	131.85	131.80	131.75	131.70	131.65	131.60	131.55	131.50	131.45	131.40	131.35	131.30	131.25	131.20	131.15	131.10	131.05	131.00	130.95	130.90	130.85	130.80	130.75	130.70	130.65	130.60	130.55	130.50	130.45	130.40	130.35	130.30	130.25	130.20	130.15	130.10	130.05	130.00	129.95	129.90	129.85	129.80	129.75	129.70	129.65	129.60	129.55	129.50	129.45	129.40	129.35	129.30	129.25	129.20	129.15	129.10	129.05	129.00	128.95	128.90	128.85	128.80	128.75	128.70	128.65	128.60	128.55	128.50</



EXISTING DATA DESIGN DATA SECTION PROPERTIES

SECTION	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)
	Q	h	Q	h			Q	h						
Section 5	0	1.0018	0	1.0018	74300	74300	0	1.0018						
Section 6	0	1.0018	0	1.0018	74300	74300	0	1.0018						
Section 7	0	1.0018	0	1.0018	74300	74300	0	1.0018						
Section 8	0	1.0018	0	1.0018	74300	74300	0	1.0018						
Section 9	0	1.0018	0	1.0018	74300	74300	0	1.0018						
Section 10	0	1.0018	0	1.0018	74300	74300	0	1.0018						
Section 11	0	1.0018	0	1.0018	74300	74300	0	1.0018						
Section 12	0	1.0018	0	1.0018	74300	74300	0	1.0018						
Section 13	0	1.0018	0	1.0018	74300	74300	0	1.0018						
Section 14	0	1.0018	0	1.0018	74300	74300	0	1.0018						
Section 15	0	1.0018	0	1.0018	74300	74300	0	1.0018						
Section 16	0	1.0018	0	1.0018	74300	74300	0	1.0018						
Section 17	0	1.0018	0	1.0018	74300	74300	0	1.0018						
Section 18	0	1.0018	0	1.0018	74300	74300	0	1.0018						
Section 19	0	1.0018	0	1.0018	74300	74300	0	1.0018						
Section 20	0	1.0018	0	1.0018	74300	74300	0	1.0018						
Section 21	0	1.0018	0	1.0018	74300	74300	0	1.0018						
Section 22	0	1.0018	0	1.0018	74300	74300	0	1.0018						

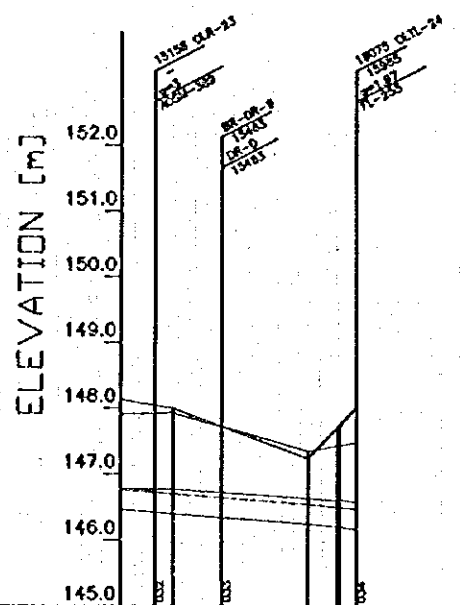
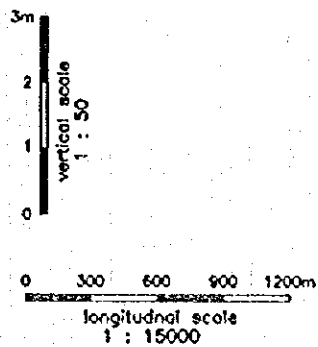
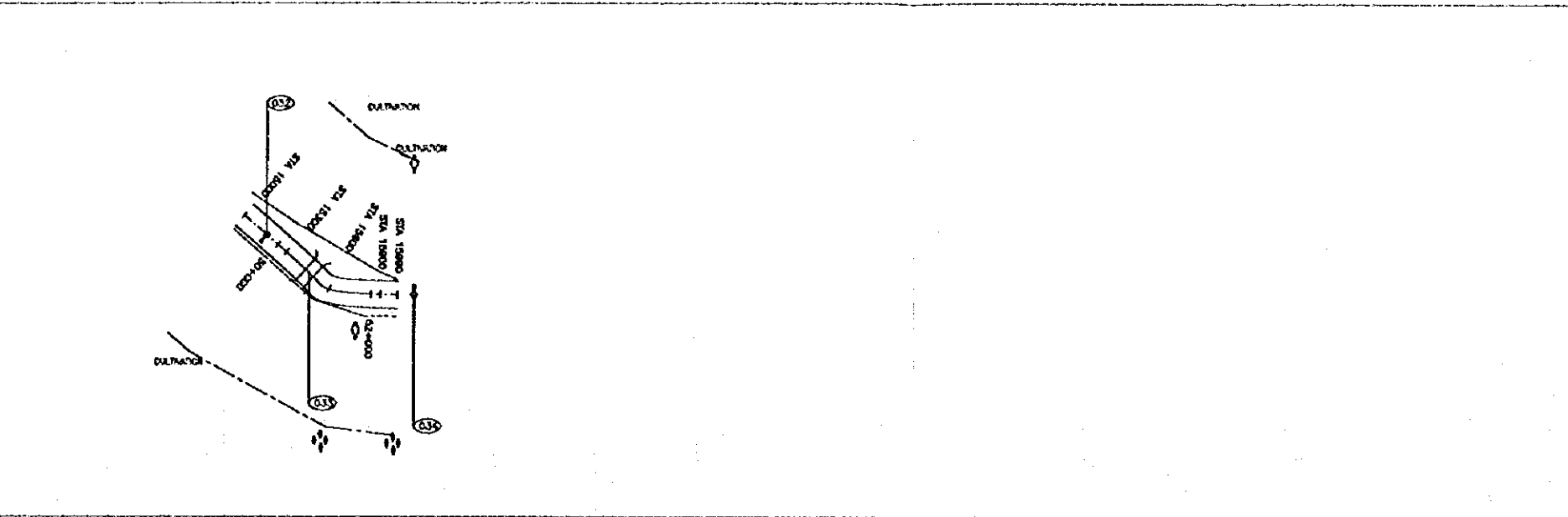
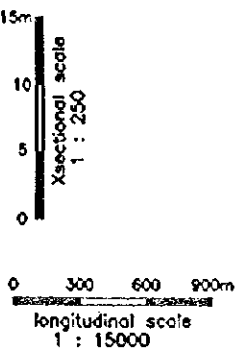
DESCRIPTION	SYMBOLS
WATER COURSE (with R.O. mark)	
REGULATOR	
AQUEDUCT	
BRIDGE (BR)	
ARTERIAL BRIDGE (AR)	
DISTRICT ROAD BRIDGE (DR)	
VILLAGE ROAD BRIDGE (VR)	
FOOT BRIDGE (FB)	
RAILWAY BRIDGE (RB)	
OPERATION & MAINTENANCE (O&M) ROAD BRIDGE	
TUNNEL / CULVERT SECTION	
CROSS DRAINAGE CULVERT	
INVERTED SIFON	
OUTLET LEFT (OLL)	
OUTLET RIGHT (OUR)	
FALL/DROP (OP)	
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, oort-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	y
FREE BOARD	Frb
TAL LEFT	TL
TAL RIGHT	TR
TAL FRONT	TF

REVISION	NO.	DATE	BY	CHKD	DATE	BY	CHKD
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 C C  
DISTRIBUTARY : PIRMAHAL  
MINOR : JUNEJWALA  
FROM STA 7500 (24+600) TO : 15000 (49+200)



EXISTING DATA DESIGN DATA DESIGN PROPERTIES

	Station 15000	Station 15050	Station 15100	Station 15150	Station 15200
DESIGNED FULL SUPPLY LEVEL	147.80	147.80	147.80	147.80	147.80
DESIGNED BED LEVEL	146.50	146.50	146.50	146.50	146.50
DISTANCE (m)	0	50	100	150	200
STATION (m)	15000	15050	15100	15150	15200
LATEST FULL SUPPLY LEVEL	147.80	147.80	147.80	147.80	147.80
N S L RIGHT	147.80	147.80	147.80	147.80	147.80
N S L LEFT	147.80	147.80	147.80	147.80	147.80
BED LEVEL	146.50	146.50	146.50	146.50	146.50
RIGHT OF WAY LEFT (ft)	147.80	147.80	147.80	147.80	147.80
RIGHT OF WAY RIGHT (ft)	147.80	147.80	147.80	147.80	147.80
R.D. (ft)	147.80	147.80	147.80	147.80	147.80

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 (RB)	
OPERATION & MAINTENANCE (O&M) ROAD BRIDGE	
TUNNEL / CULVERT SECTION	
CROSS DRAINAGE CULVERT	
INVERTED SYPHON	
OUTLET LEFT (OLL)	
OUTLET RIGHT (OUR)	
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	
Abut with flow, Water Course, Pond	
Tree, Jungle	
Groves, 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	

RECORD NO.	READ DATE	DESIGN NO./DATE	APPROVED NO./DATE
A			
B			
C			
D			

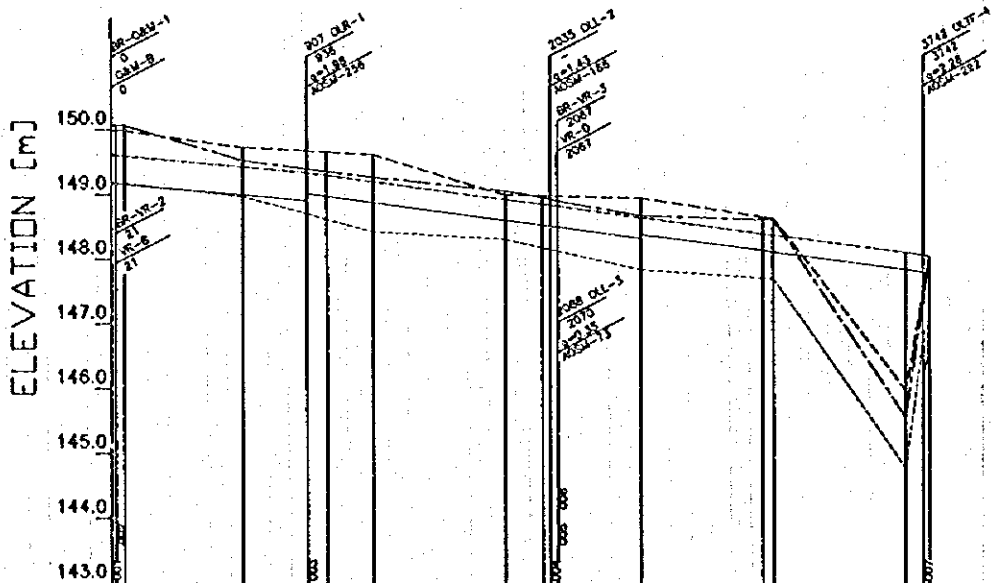
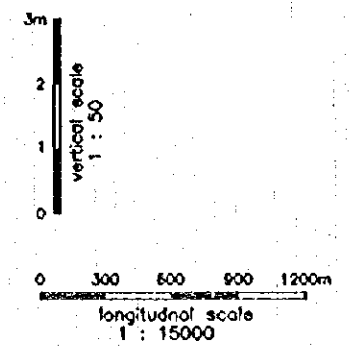
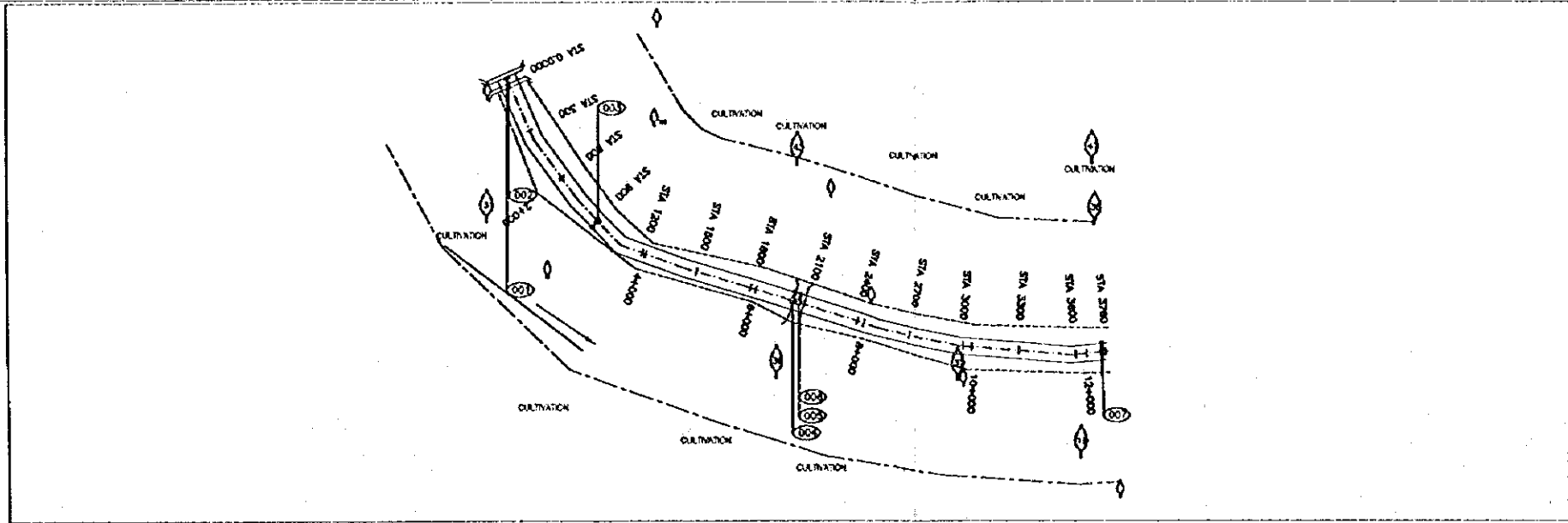
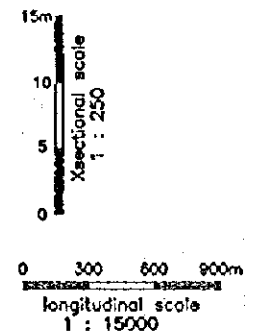
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

PLAN AND PROFILE OF  
CANAL SYSTEM: L C C  
DISTRIBUTARY : PIRMAHAL  
MINOR : JUNEJWALA

FROM STA 15000 (49+200) TO : 15990 (52+450)

JAPAN INTERNATIONAL COOPERATION AGENCY | LCC-43



EXISTING DATA DESIGN DATA SECTION PROPERTIES

	Section 1	Section 2	Section 3
DESIGNED FULL SUPPLY LEVEL	149.0	148.5	148.0
DESIGNED BED LEVEL	143.5	143.0	142.5
DISTANCE (m)	0	100	200
STATION (m)	0+000	0+100	0+200
LATEST FULL SUPPLY LEVEL	148.5	148.0	147.5
N S L RIGHT	148.0	147.5	147.0
N S L LEFT	147.5	147.0	146.5
BED LEVEL	143.5	143.0	142.5
RIGHT OF WAY LEFT (ft)	148.0	147.5	147.0
RIGHT OF WAY RIGHT (ft)	148.0	147.5	147.0
R.O. (ft)	148.0	147.5	147.0

DESCRIPTION	SYMBOLS
WATER COURSE (with R.D. mark)	
REGULATOR	
AQUEDUCT	
BRIDGE (BR)	
ARTERIAL BRIDGE (AB)	
DISTRICT ROAD BRIDGE (DRB)	
VILLAGE ROAD BRIDGE (VRB)	
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 (FP)	
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 y	
FREE BOARD F/B	
TAL LEFT TL	
TAL RIGHT TR	
TAL FRONT TF	

RECORD NO.	REVISION DATE	DESIGN NAME	APPROVED NAME
A			
B			
C			
D			

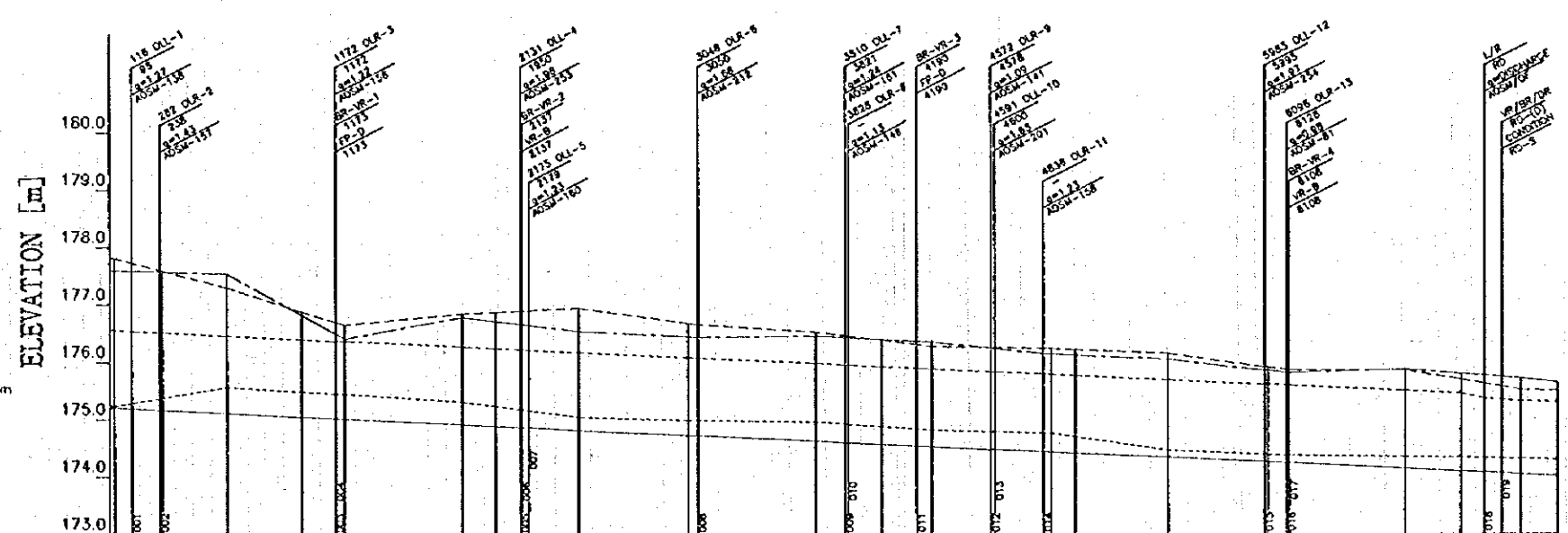
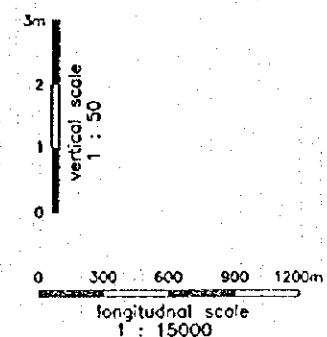
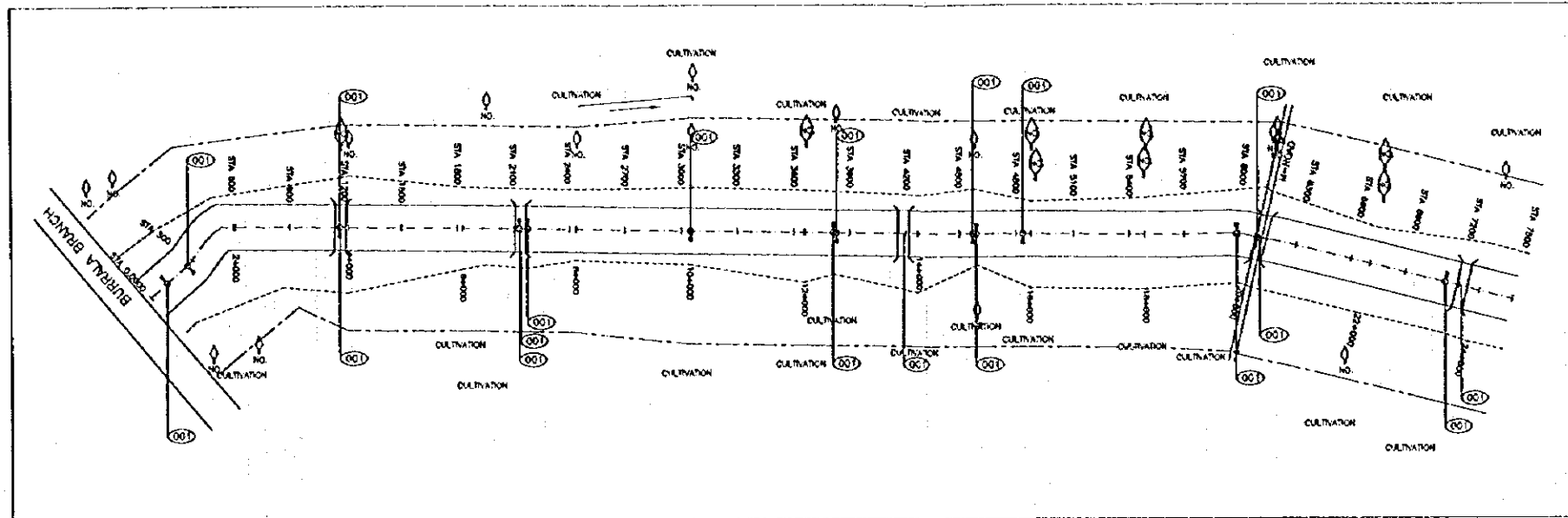
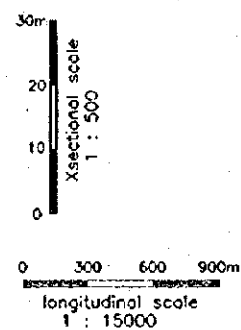
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

PLAN AND PROFILE OF  
CANAL SYSTEM: L C C  
DISTRIBUTARY : PIRMAHAL  
MINOR : JANDWALA

FROM STA 000 (0+000) TO : 3772 (12+372)

JAPAN INTERNATIONAL COOPERATION AGENCY LCC-44



DESIGN DATA SECTION PROPERTIES	Section 1		Section 2	
	Q (m³/s)	CCA (ha)	Q (m³/s)	CCA (ha)
DESIGNED FULL SUPPLY LEVEL	175.25	18800	175.25	18800
DESIGNED BED LEVEL	175.25	18800	175.25	18800
DISTANCE (m)	24	14000	24	14000
STATION (m)	0+00	14000	0+00	14000
LATEST FULL SUPPLY LEVEL	175.25	18800	175.25	18800
N S L RIGHT	175.25	18800	175.25	18800
N S L LEFT	175.25	18800	175.25	18800
BED LEVEL	175.25	18800	175.25	18800
RIGHT OF WAY LEFT (ft)	175.25	18800	175.25	18800
RIGHT OF WAY RIGHT (ft)	175.25	18800	175.25	18800
R.D. (ft)	175.25	18800	175.25	18800

**DESCRIPTION**

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

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

Graves, 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

SECTION NO. MAIN CATEGORY - No.

SURVEY NO.

DISCHARGE (Cumec) CCA (ha)

TYPE

MAIN CATEGORY - MIN. CATEGORY - No.

DESIGN NO.

CANAL COMMAND AREA - SURVEY NO.

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

ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

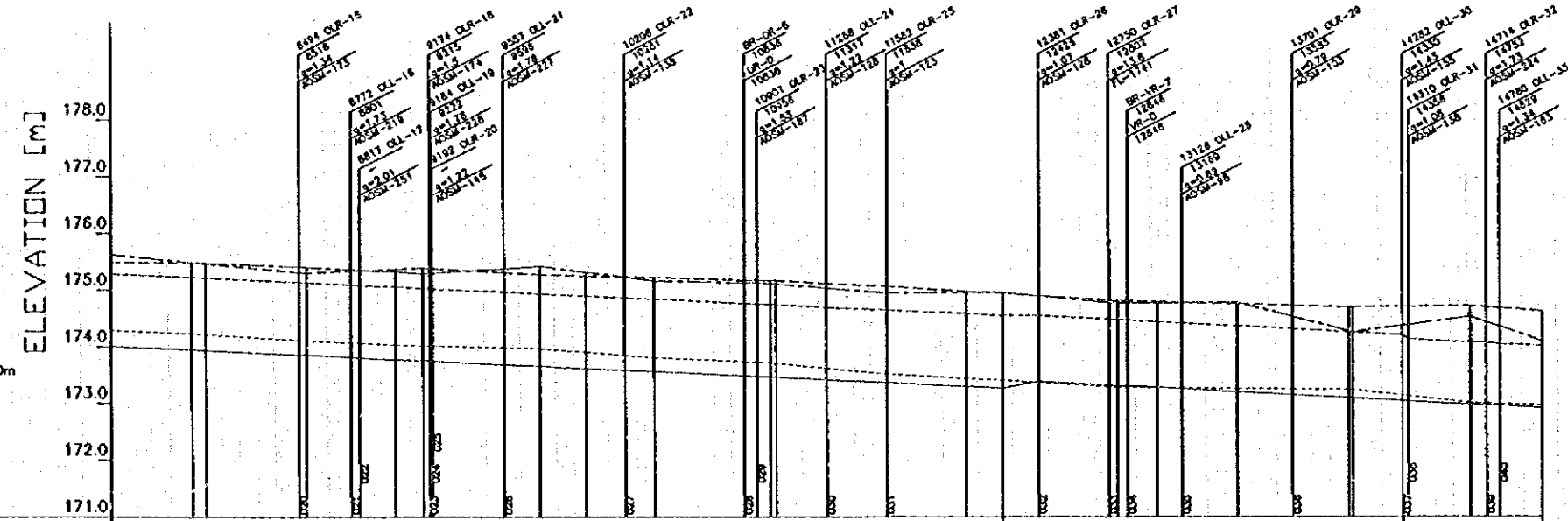
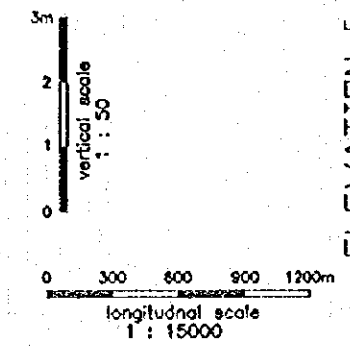
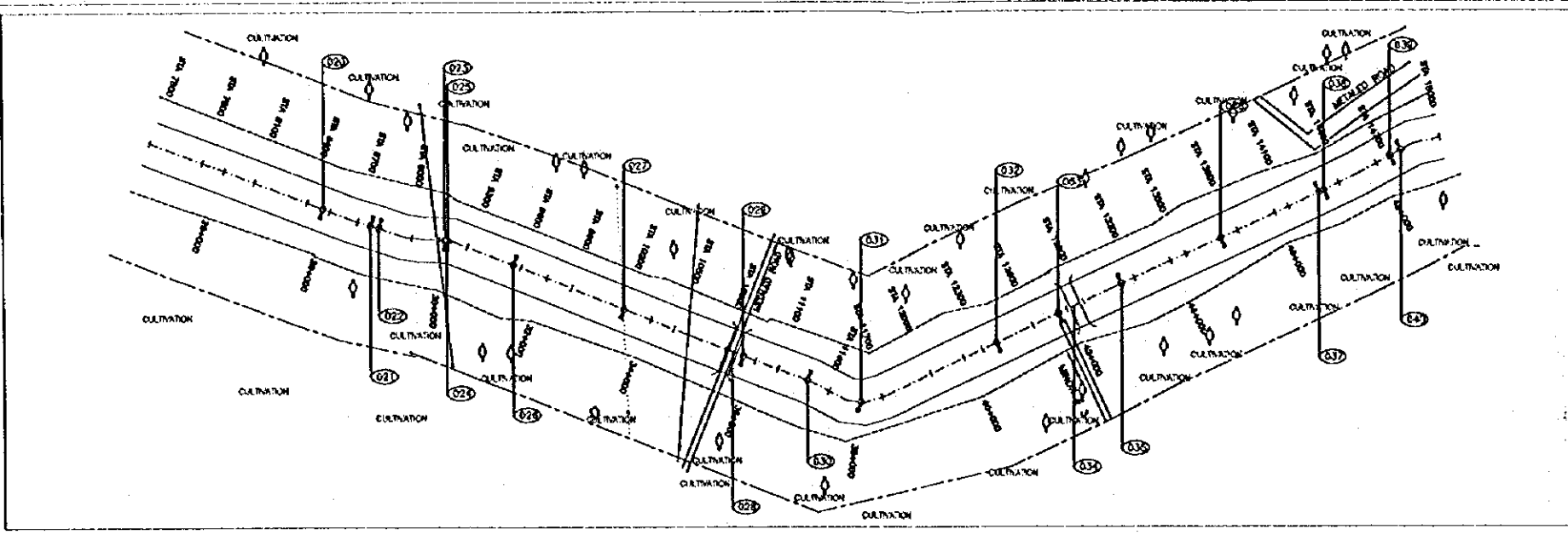
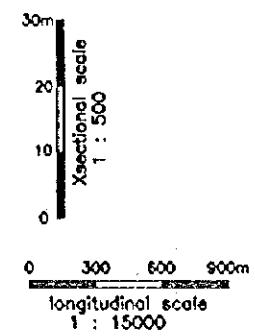
THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

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

FROM STA 000 (0+000) TO: 7500 (24+600)

JAPAN INTERNATIONAL COOPERATION AGENCY LCC-45





EXISTING DATA DESIGN SECTION PROPERTIES	Section 2			Section 3			Section 4		
	0	100	200	0	100	200	0	100	200
DESIGNED FULL SUPPLY LEVEL	175.00	175.00	175.00	175.00	175.00	175.00	175.00	175.00	175.00
DESIGNED BED LEVEL	173.00	173.00	173.00	173.00	173.00	173.00	173.00	173.00	173.00
DISTANCE (m)	7500	7600	7700	7700	7800	7900	7900	8000	8100
STATION (m)	7500	7600	7700	7700	7800	7900	7900	8000	8100
LATEST FULL SUPPLY LEVEL	175.00	175.00	175.00	175.00	175.00	175.00	175.00	175.00	175.00
N S L RIGHT	175.00	175.00	175.00	175.00	175.00	175.00	175.00	175.00	175.00
N S L LEFT	175.00	175.00	175.00	175.00	175.00	175.00	175.00	175.00	175.00
BED LEVEL	173.00	173.00	173.00	173.00	173.00	173.00	173.00	173.00	173.00
RIGHT OF WAY LEFT (ft)	175.00	175.00	175.00	175.00	175.00	175.00	175.00	175.00	175.00
RIGHT OF WAY RIGHT (ft)	175.00	175.00	175.00	175.00	175.00	175.00	175.00	175.00	175.00
R.D. (ft)	175.00	175.00	175.00	175.00	175.00	175.00	175.00	175.00	175.00

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 (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	
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	Frb
TAL LEFT	TL
TAL RIGHT	TR
TAL FRONT	TF

DESIGN NO.	DESIGN DATE	DESIGN SCALE	APPROVED DATE/SIGN
A			
B			
C			
D			

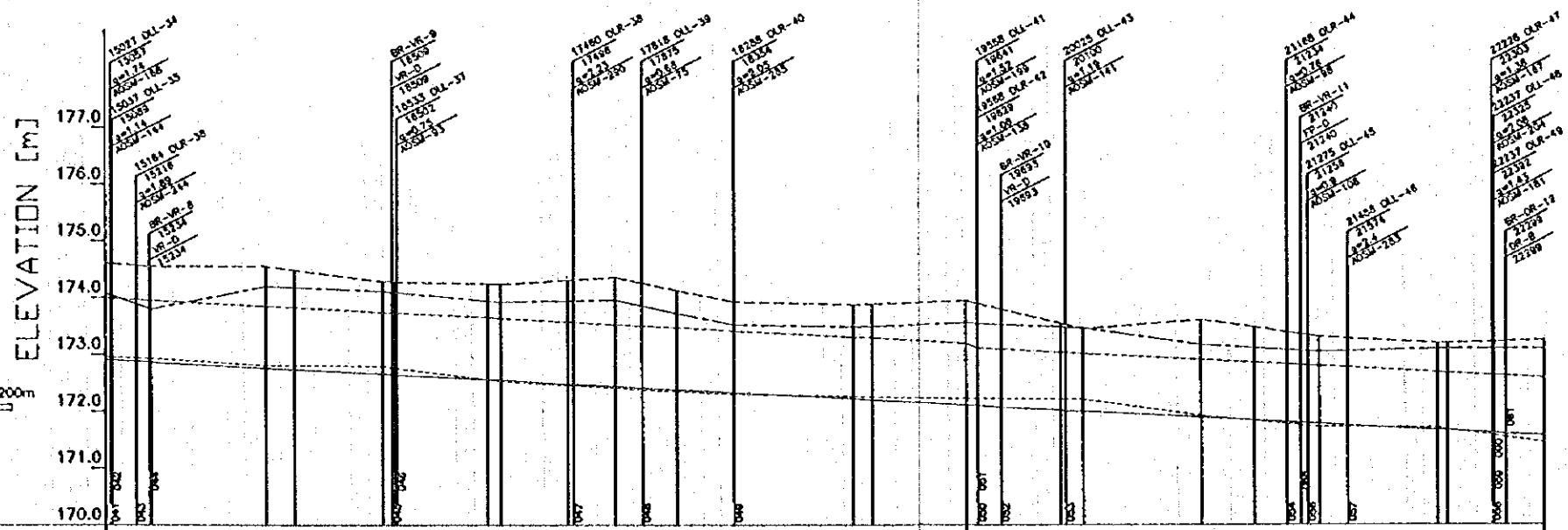
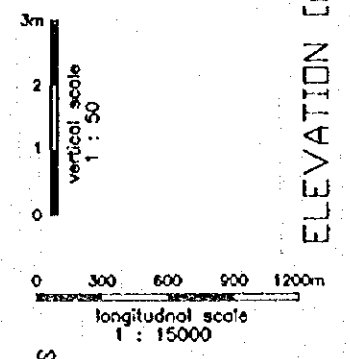
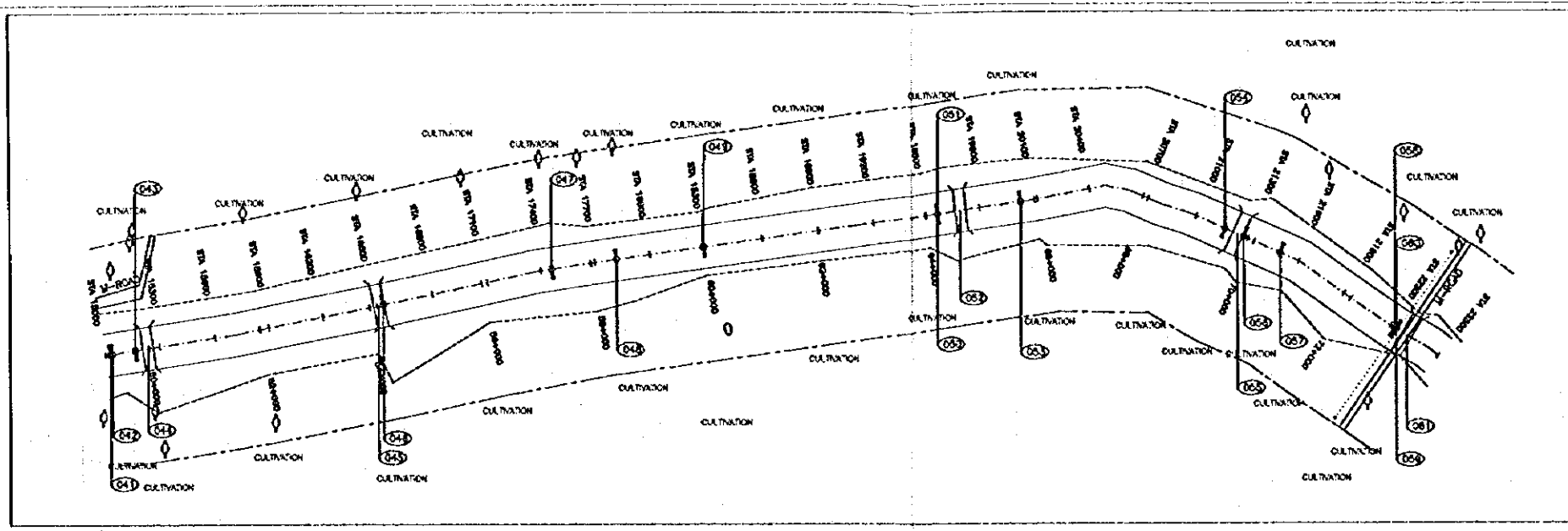
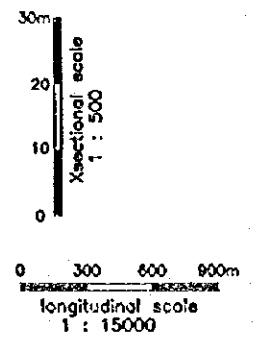
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

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

FROM STA 7500 (24+600) TO : 1500 (49+200)

JAPAN INTERNATIONAL COOPERATION AGENCY | LCC-45



EXISTING DATA DESIGN DATA DESIGN PROPERTIES

	Section 4										Section 5									
	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
DESIGNED FULL SUPPLY LEVEL	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4
DESIGNED BED LEVEL	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4
DISTANCE (m)	0	100	200	300	400	500	600	700	800	900	0	100	200	300	400	500	600	700	800	900
STATION (m)	15000	15100	15200	15300	15400	15500	15600	15700	15800	15900	16000	16100	16200	16300	16400	16500	16600	16700	16800	16900
LATEST FULL SUPPLY LEVEL	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4
N S L RIGHT	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4
N S L LEFT	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4
BED LEVEL	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4
RIGHT OF WAY LEFT (ft)	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4
RIGHT OF WAY RIGHT (ft)	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4
R.D. (ft)	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4

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 (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	
Grass, Grass	
DISCHARGE (cumec) 0	
OUTLET DISCHARGE (cumec) q	
BED WIDTH b	
ROUGHNESS COEFFICIENT n	
VELOCITY V	
CANAL COMMAND AREA CCA	
BED SLOPE e	
SIDE SLOPE z	
WATER DEPTH y	
FREE BOARD Frb	
TAIL LEFT FL	
TAIL RIGHT TR	
TAIL FRONT TF	

DESIGN NO.	ROAD	DESIGN NO.	DESIGN NO.
A			
B			
C			
D			

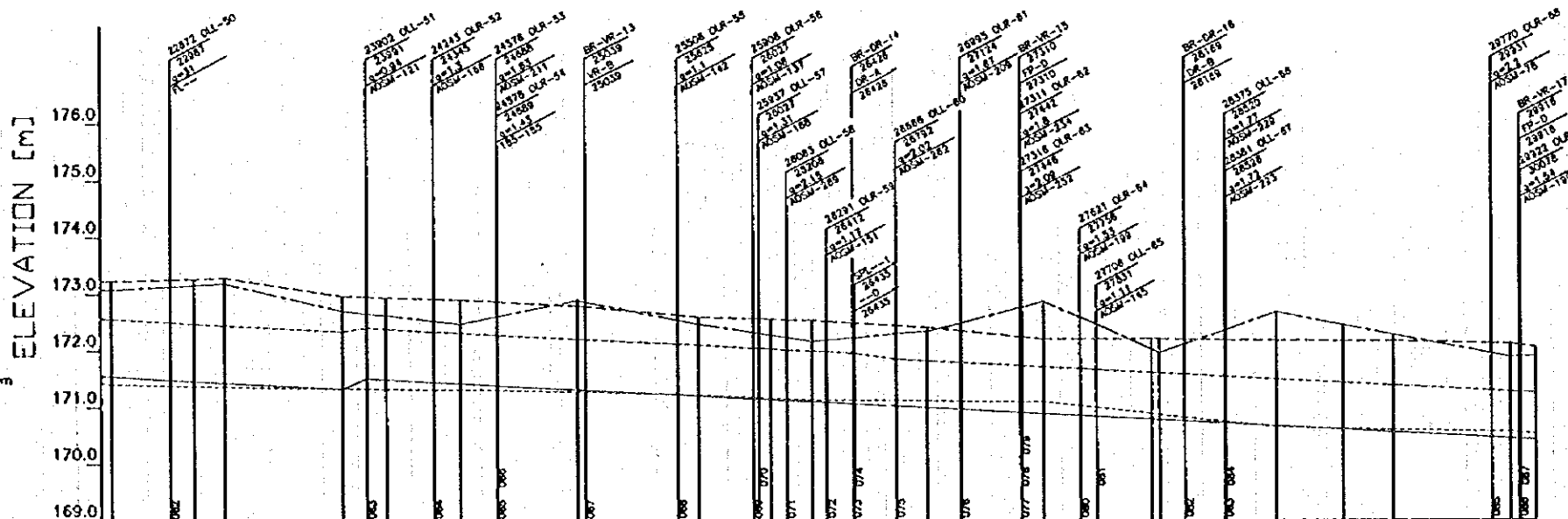
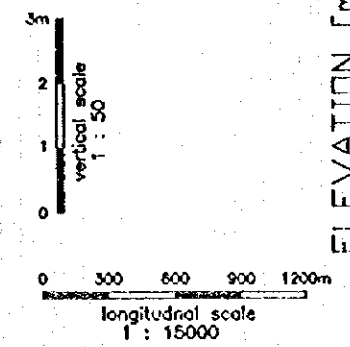
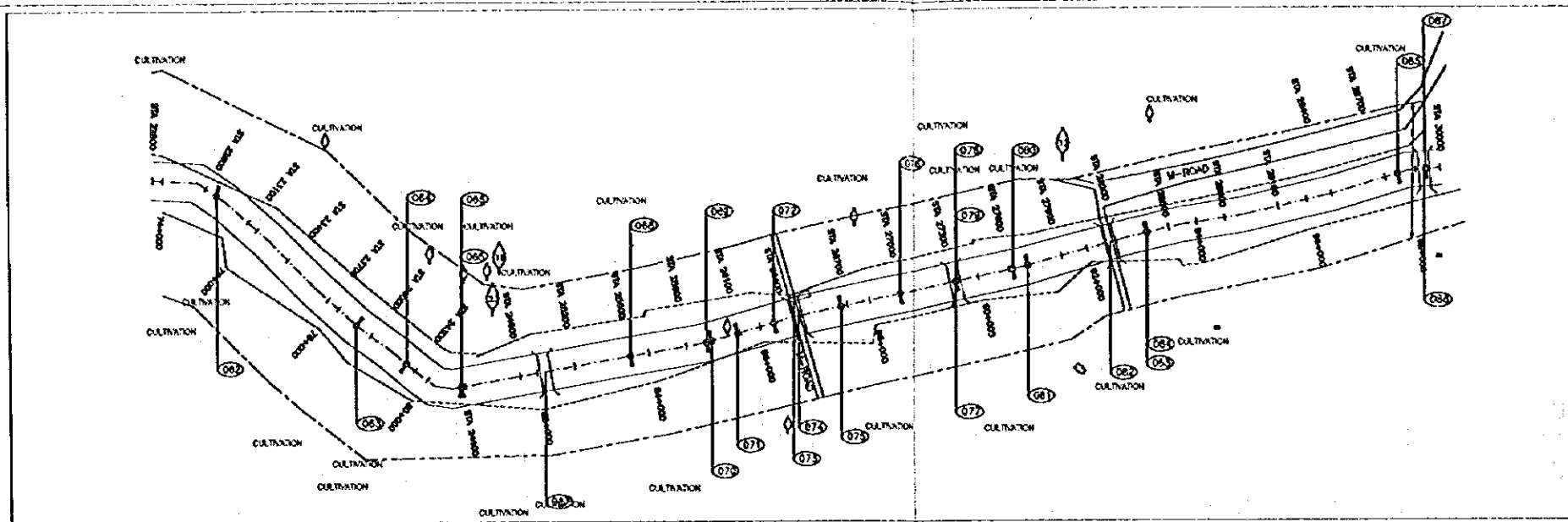
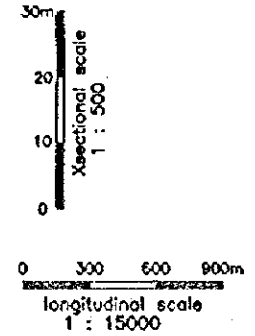
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

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

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

JAPAN INTERNATIONAL COOPERATION AGENCY LCC-47



EXISTING DATA DESIGN PROPERTIES

	Section 5	Section 6	Section 7	Section 8
DESIGNED FULL SUPPLY LEVEL	171.500	171.500	171.500	171.500
DESIGNED BED LEVEL	171.500	171.500	171.500	171.500
DISTANCE (m)	22500-23000	23000-23700	23700-24500	24500-30000
STATION (m)	22500	23000	23700	24500
LATEST FULL SUPPLY LEVEL	171.500	171.500	171.500	171.500
N S L RIGHT	171.500	171.500	171.500	171.500
N S L LEFT	171.500	171.500	171.500	171.500
BED LEVEL	171.500	171.500	171.500	171.500
RIGHT OF WAY LEFT (ft)	171.500	171.500	171.500	171.500
RIGHT OF WAY RIGHT (ft)	171.500	171.500	171.500	171.500
R.D. (ft)	171.500	171.500	171.500	171.500

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 (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	
M S L RIGHT	
M 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, Orise	
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.	REVISED DATE	DESIGNED BY	APPROVED BY
A			
B			
C			
D			

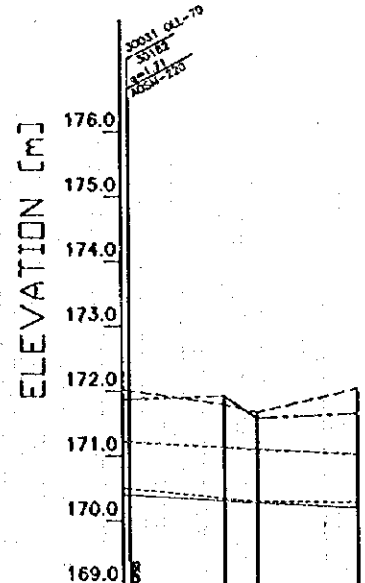
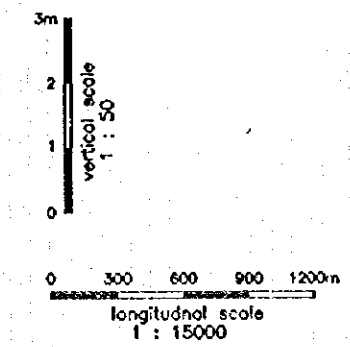
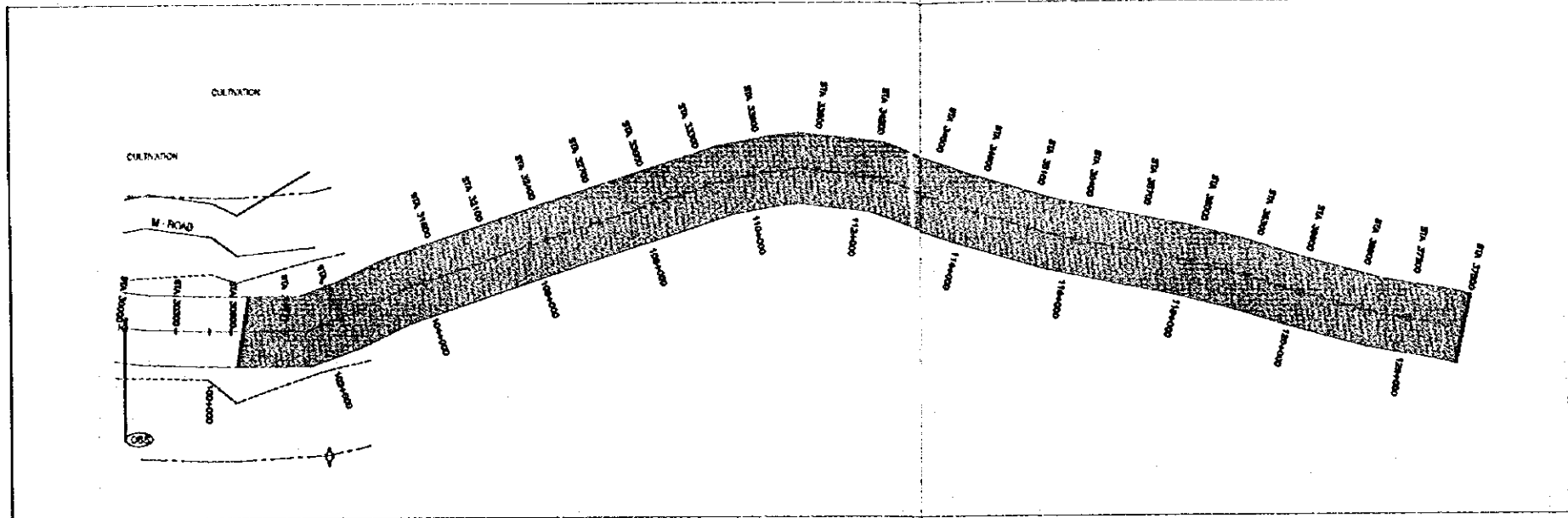
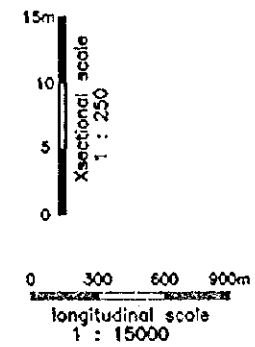
ISLAMIC REPUBLIC OF PAKISTAN  
GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

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

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

JAPAN INTERNATIONAL COOPERATION AGENCY LCC-48



EXISTING DATA DESIGN DATA SECTION PROPERTIES

	Section I	Section II	Section III
DESIGNED FULL SUPPLY LEVEL	175.15	175.15	175.15
DESIGNED BED LEVEL	172.50	172.50	172.50
DISTANCE (m)	0	300	600
STATION (m)	30000	30300	30600
LATEST FULL SUPPLY LEVEL	175.15	175.15	175.15
N S L RIGHT	175.15	175.15	175.15
N S L LEFT	175.15	175.15	175.15
BED LEVEL	172.50	172.50	172.50
RIGHT OF WAY LEFT (ft)	175.15	175.15	175.15
RIGHT OF WAY RIGHT (ft)	175.15	175.15	175.15
R.D. (ft)	175.15	175.15	175.15

Section I  
 Q (m<sup>3</sup>/s) 2.51  
 a 1.0018  
 s 1/5580  
 y (m) 1.12  
 b 1.400  
 V (m/s) 2.69  
 z 1.25  
 Fr b (m) 0.30  
 CCA (ha) 7368

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 (OP)	
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	
Buildg, 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 y	
FREE BOARD Ffb	
TAIL LEFT TL	
TAIL RIGHT TR	
TAIL FRONT TF	

SECTION	REVISED	DRAWN	APPROVED
A			
B			
C			
D			

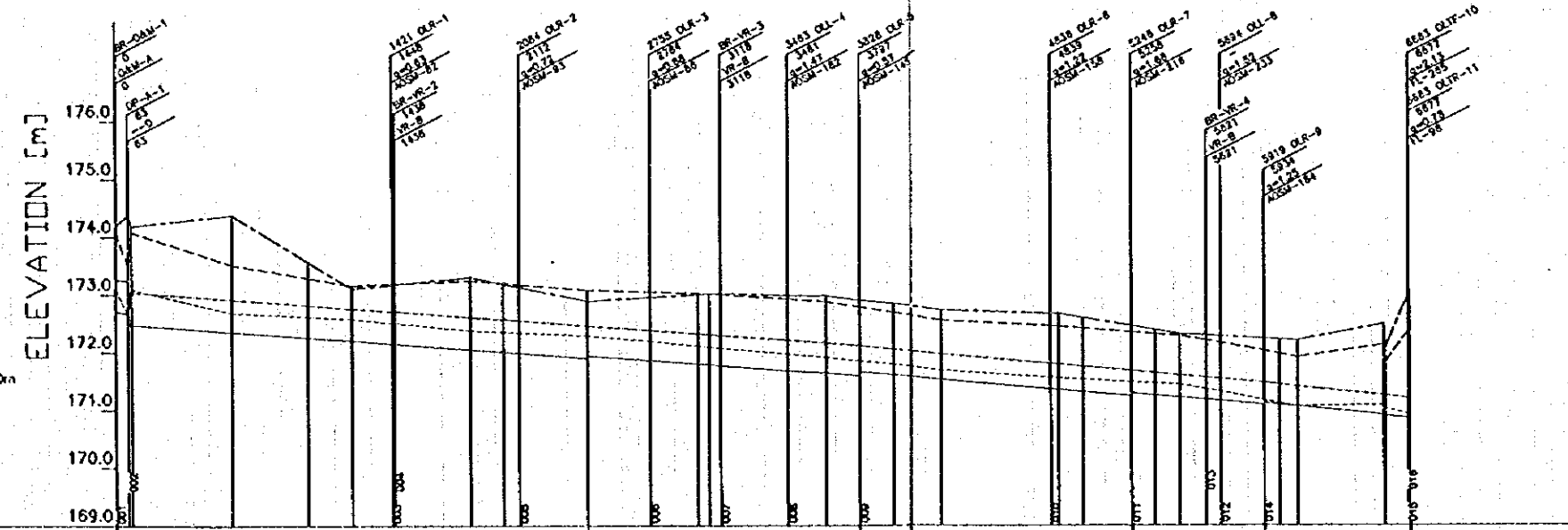
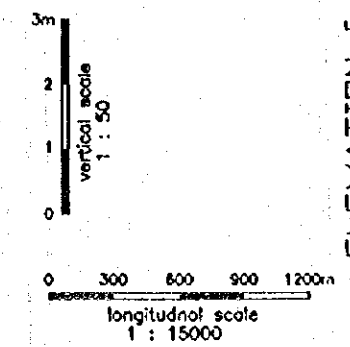
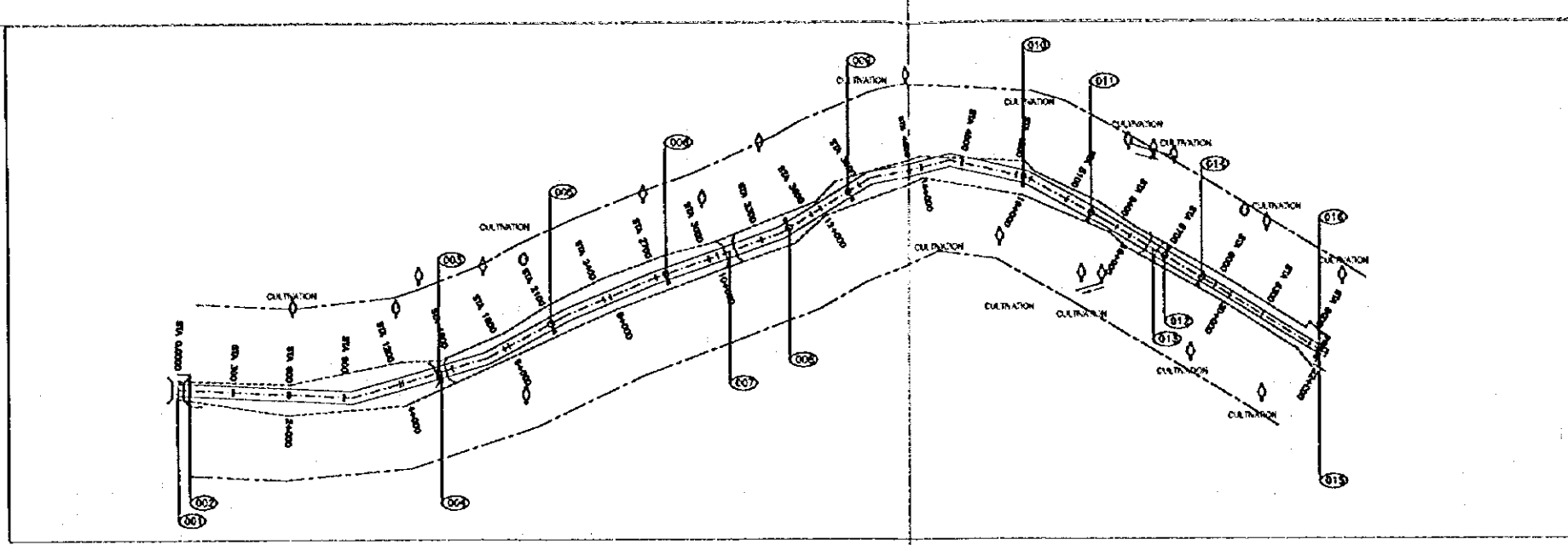
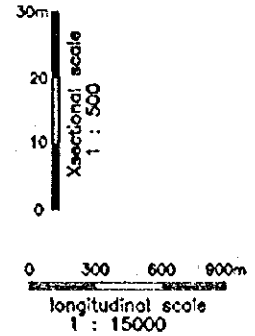
ISLAMIC REPUBLIC OF PAKISTAN  
 GOVERNMENT OF PUNJAB

THE LINING OF DISTRIBUTARIES AND MINORS IN PUNJAB

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

FROM STA 30000 (98+400) TO : 31090 (101+975)

JAPAN INTERNATIONAL COOPERATION AGENCY LCC-49



EXISTING DATA DESIGN DATA

EXISTING DATA	Section 1					Section 2					Section 3					Section 4					Section 5																							
	Q	n	S	y (m)	b	V	z	Frb	CCA	Q	n	S	y (m)	b	V	z	Frb	CCA	Q	n	S	y (m)	b	V	z	Frb	CCA	Q	n	S	y (m)	b	V	z	Frb	CCA	Q	n	S	y (m)	b	V	z	Frb
DESIGNED FULL SUPPLY LEVEL	[Elevation values]																																											
DESIGNED BED LEVEL	[Elevation values]																																											
DISTANCE (m)	[Distance values]																																											
STATION (m)	[Station values]																																											
LATEST FULL SUPPLY LEVEL	[Elevation values]																																											
N S L RIGHT	[Elevation values]																																											
N S L LEFT	[Elevation values]																																											
BED LEVEL	[Elevation values]																																											
RIGHT OF WAY LEFT (ft)	[Elevation values]																																											
RIGHT OF WAY RIGHT (ft)	[Elevation values]																																											
R.D. (ft)	[Elevation values]																																											

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

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 C C  
DISTRIBUTARY : KILLIANWALA  
MINOR : MINOR # 3

FROM STA 000 (0+000) TO : 6673 (21+887)

JAPAN INTERNATIONAL COOPERATION AGENCY LCC-50