

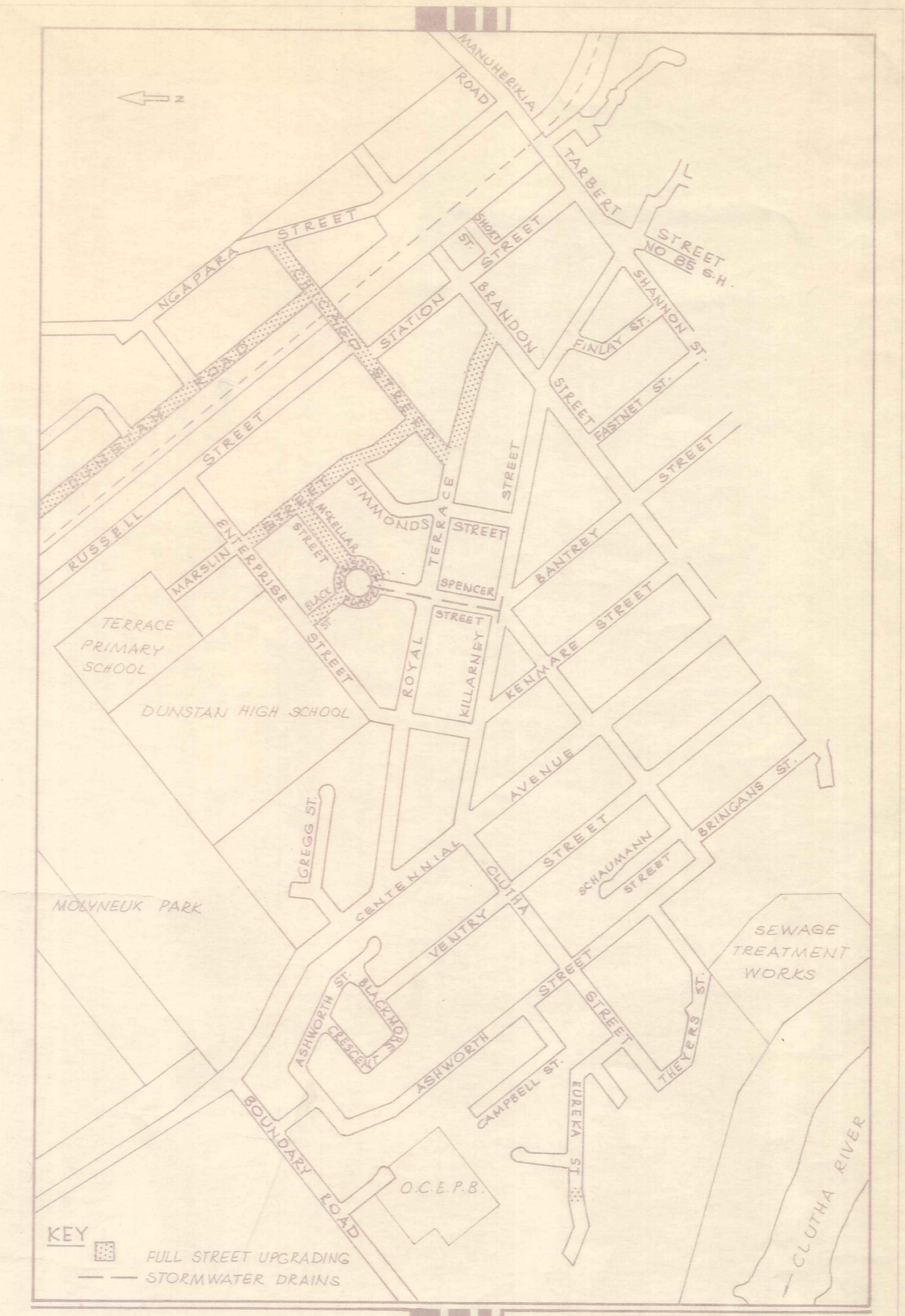
1989 - 1990

DRAFT

STORMWATER UPGRADING 1989 - 90

ALEXANDRA BOROUGH COUNCIL

DRAFT



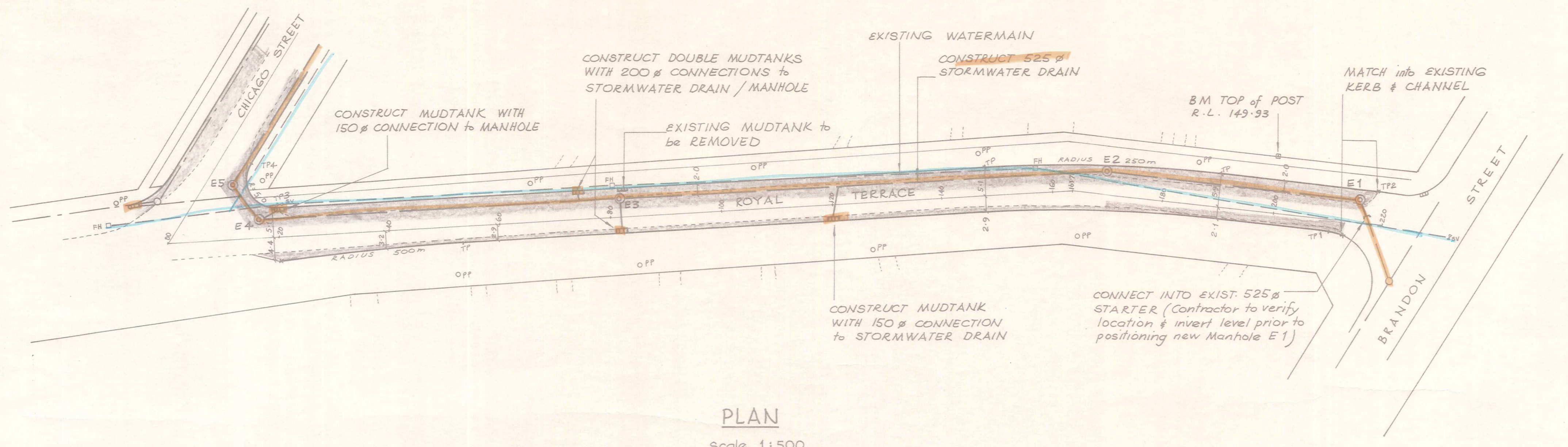
SITE PLAN (NOT TO SCALE)

Duffill Watts & King Ltd
 CONSULTING ENGINEERS
 DUNEDIN INVERCARGILL ALEXANDRA QUEENSTOWN

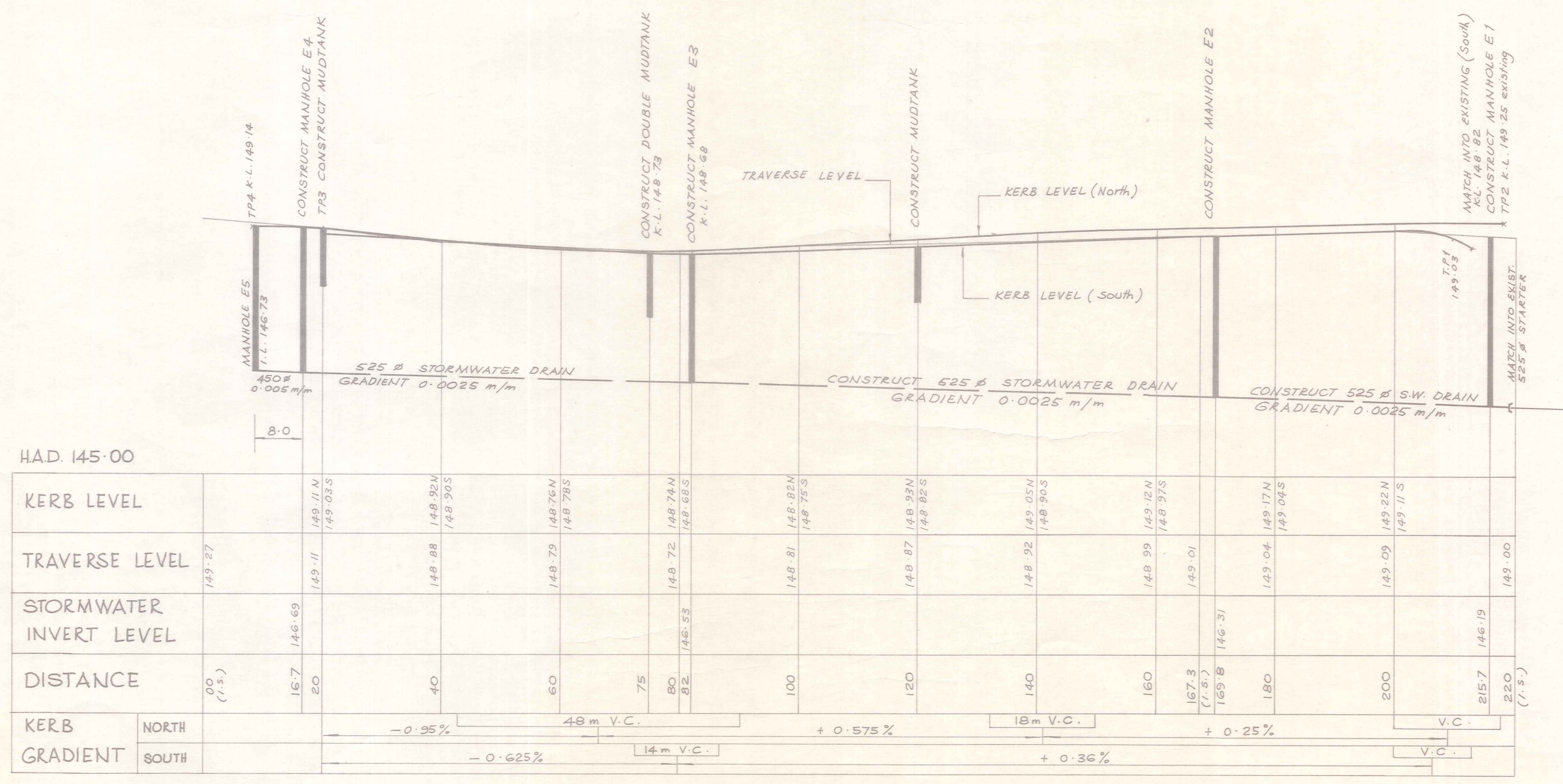
$32 = 160m = 320m$
 $45 = 450m$
 $10 = 50m$
 $32 = 7'$

JOB No. 13669

- NOTES ...
1. Refer to cross sections for extent of new carriageway construction (i.e. widening & shape correcting existing carriageway)
 2. Datum - M.S.L. Dunedin Datum
 3. Refer to Telecom Services drawings for location of underground cables.
 4. Kerb radii 8m unless shown otherwise



PLAN
Scale 1:500



LONGITUDINAL SECTION

Scale Vert. 1:50
Horiz. 1:500

No.	Revisions	Date	Appd.
Designed	N. JELLEY	Date 6/89	Print Date
Traced	M. J. CASSIDY	6/89	
Drawn	N. JELLEY		
Checked			
Appd.			
File	4021/13/3	L.B. SEE FILE	

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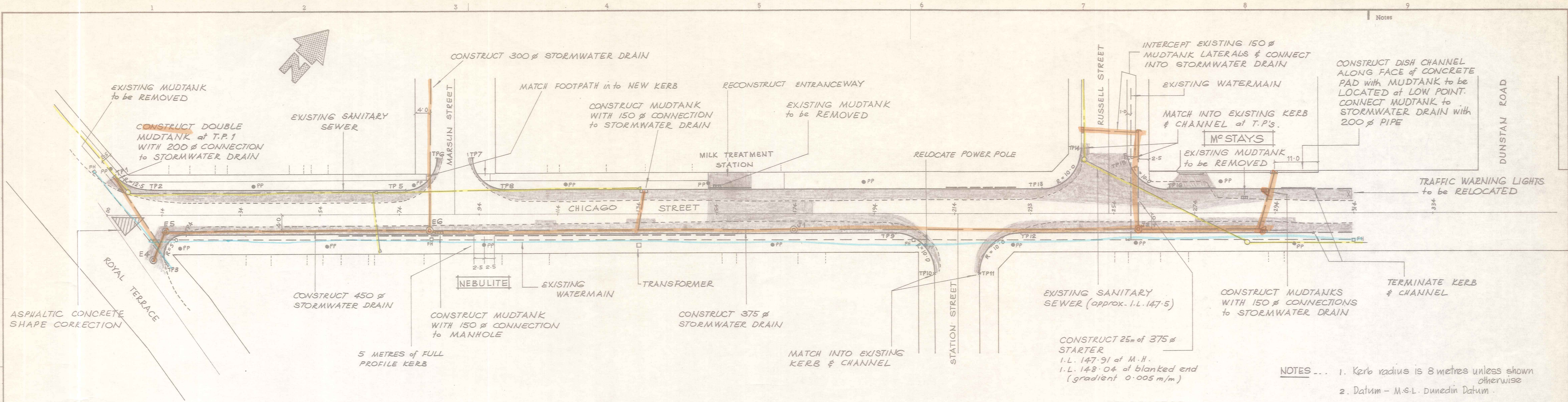
DUFFILL WATTS & KING LTD
Consulting Civil & Structural Engineers
Dunedin Invercargill Alexandra Queenstown

Client
ALEXANDRA BOROUGH COUNCIL

Project
STORMWATER UPGRADING 1989-90

Sheet Title
**ROYAL TERRACE
PLAN & LONGITUDINAL SECTION
Stn. 00 - Stn. 220**

Job No.	Sheet No.	Revision
13669	1	
	of 17	shts



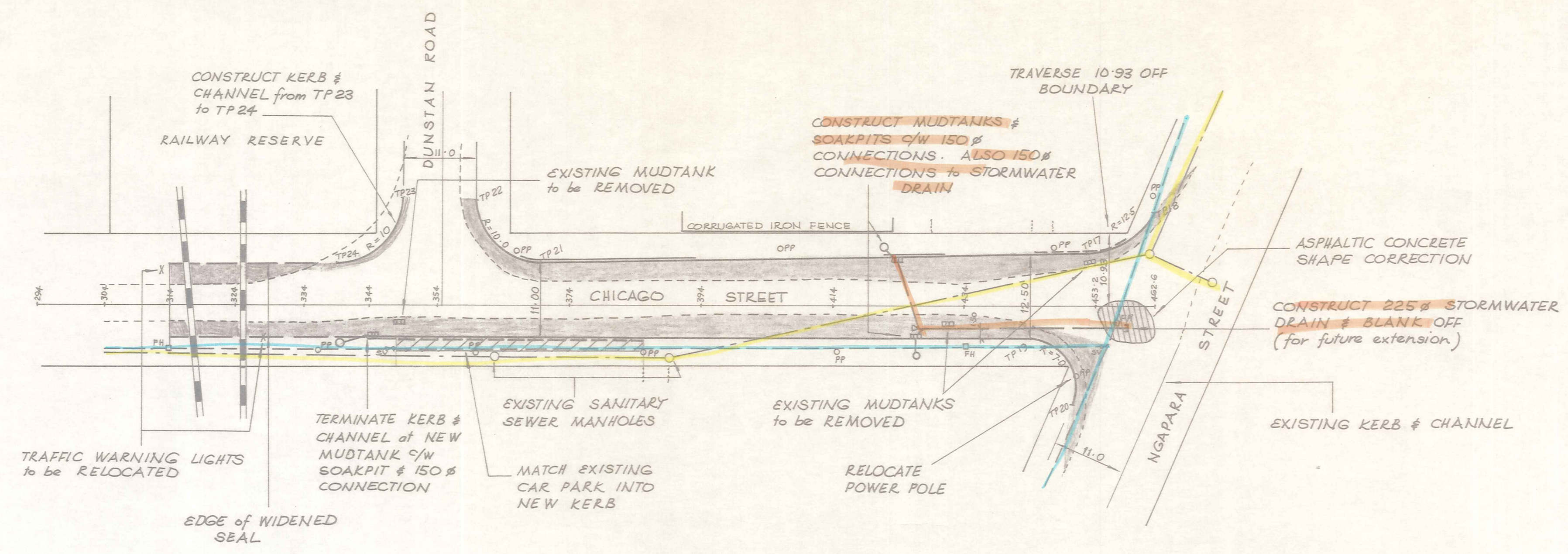
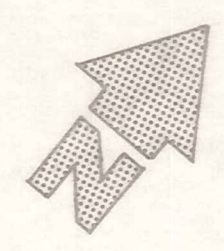
PLAN
Scale 1:500

- NOTES ...
1. Kerb radius is 8 metres unless shown otherwise
 2. Datum - M.S.L. Dunedin Datum.
 3. Refer to cross sections for extent of carriageway widening.
 4. Refer to Telecom. Services drawings for location of underground cables
 5. Reinforced Kerb crossing
 Standard Kerb crossing

KERB LEVEL		TRAVERSE LEVEL		STORMWATER INVERT LEVEL		DISTANCE		KERB GRADIENT	
00	149.27	14	149.18	14	146.73	14			
15.1	149.10N	15.1	149.33	15.1	147.06	15.1			
34	149.22	34	149.40	34	147.50	34			
54	149.30	54	149.46	54	147.79	54			
74	149.38	74	149.49	74	147.91	74			
81.9	149.38	81.9	149.52	81.9	147.91	81.9			
87.9	149.49	87.9	149.54	87.9	147.91	87.9			
94	149.46	94	149.52	94	147.91	94			
114	149.54	114	149.57	114	147.91	114			
134	149.62	134	149.61	134	147.91	134			
154	149.70	154	149.77	154	147.91	154			
174	149.76N	174	149.79	174	147.91	174			
194	149.76S	194	149.83N	194	147.91	194			
214	149.83N	214	149.83	214	147.91	214			
233	149.83N	233	149.83	233	147.91	233			
259.2	149.83	259.2	149.83	259.2	147.91	259.2			
274	149.75	274	149.75	274	147.91	274			
292	149.65N	292	149.71	292	148.52	292			
304	149.62S	304	149.84	304	148.20	304			
314	149.73S	314	150.12	314	148.20	314			

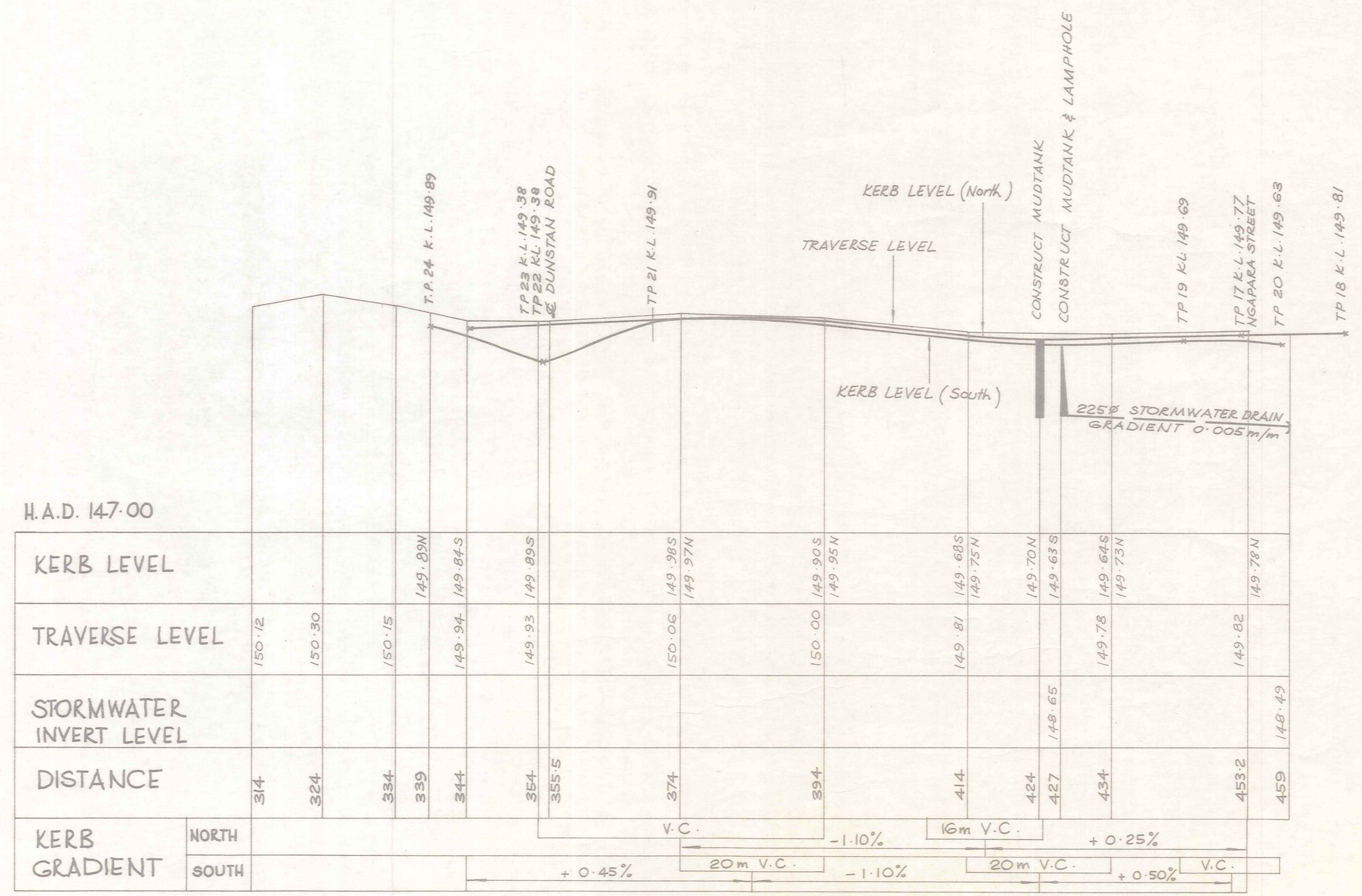
LONGITUDINAL SECTION
Scale Vert. 1:50 Horiz. 1:500

No.	Revisions	Date	Apprtd
1	Designed N. JELLEY	Date 6/89	Print Date
2	Traced M. V. CRASSTON	Date 6/89	
3	Drawn N. JELLEY		
4	Checked		
5	Approved		
File 4021/13/3		L.B. SEE FILE	
DRAFT			
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Client			
ALEXANDRA BOROUGH COUNCIL			
Project			
STORMWATER UPGRADING 1989-90			
Sheet Title			
CHICAGO STREET PLAN & LONGITUDINAL SECTION stn.00 - stn.314			
Job No.	Sheet No.	Revision	
13669	2		
	of 17	sheets	



- NOTE ---
1. Kerb radius 8m unless shown otherwise
 2. Traverse line is not central to road reserve (ie. offset 10.06 from Stn. 5+0 North boundary) (ie. " 10.93 " Stn. 453+2 North boundary)
 3. Refer to cross sections for extent of carriageway widening
 4. Refer to Telecom Services drawings for location of underground cables
 5. Datum - M.S.L. Dunedin Datum
 6. Reinforced Kerb Crossing
 Standard Kerb Crossing
 7. Widening of carriageway between Stations 304m & 339m requires no subbase metal i.e. 80mm basecourse & 1st coat seal only

PLAN
Scale 1:500



LONGITUDINAL SECTION

Scale Horiz. 1:500
Vert. 1:50

No.	Revisions	Date	Appd.

Designed N. JELLEY Date 6/89 Print Date
 Traced M. J. CASBY
 Drawn N. JELLEY 6/89
 Checked **DRAFT**
 Approved
 File 4021/13/3 I.B. SEE FILE

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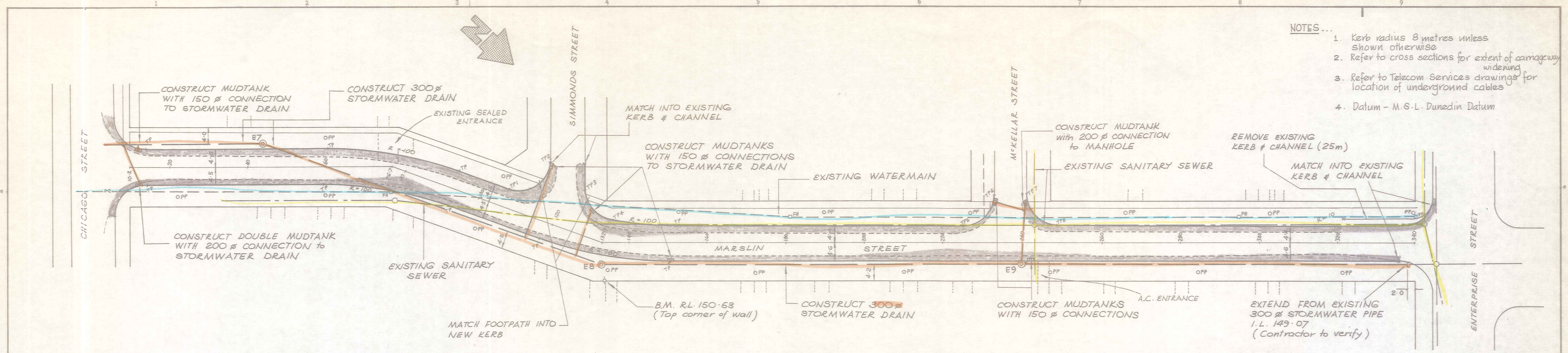
Project
STORMWATER UPGRADING 1989-90

Sheet Title
CHICAGO STREET PLAN & LONGITUDINAL SECTION Stn. 314 - Stn. 459

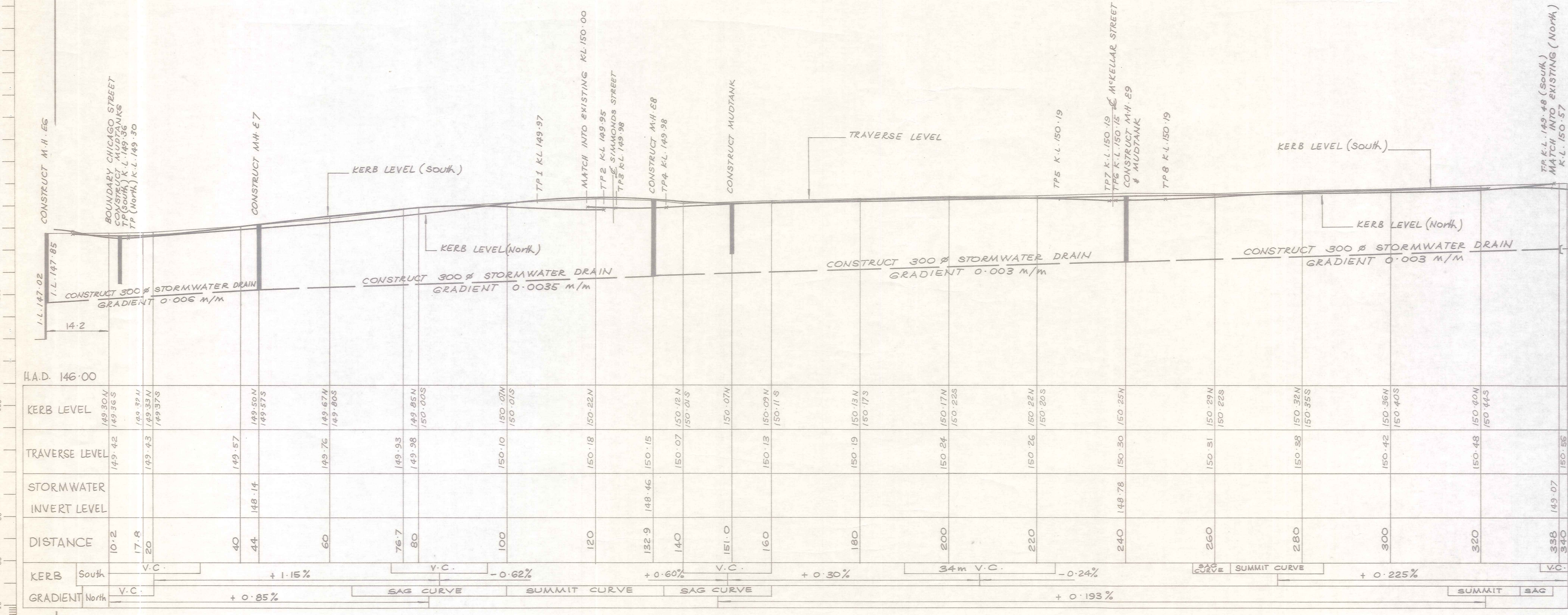
Job No. 13669	Sheet No. 3	Revision of 17 sheets
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ORIGINAL SIZE mm

- NOTES...
1. Kerb radius 8 metres unless shown otherwise
 2. Refer to cross sections for extent of carriageway widening
 3. Refer to Telecom Services drawings for location of underground cables
 4. Datum - M.S.L. Dunedin Datum



PLAN
Scale 1:500



LONGITUDINAL SECTION
Scale Vert. 1:50
Horiz. 1:500

No.	Revisions	Date	Appvd

Designed N. JELLEY Date 5/89 Print Date
 Drawn M. J. CASSTON 6/89
 Checked N. JELLEY 5/89
 Approved **DRAFT**
 File 4021/13/3 L.B. SEE FILE

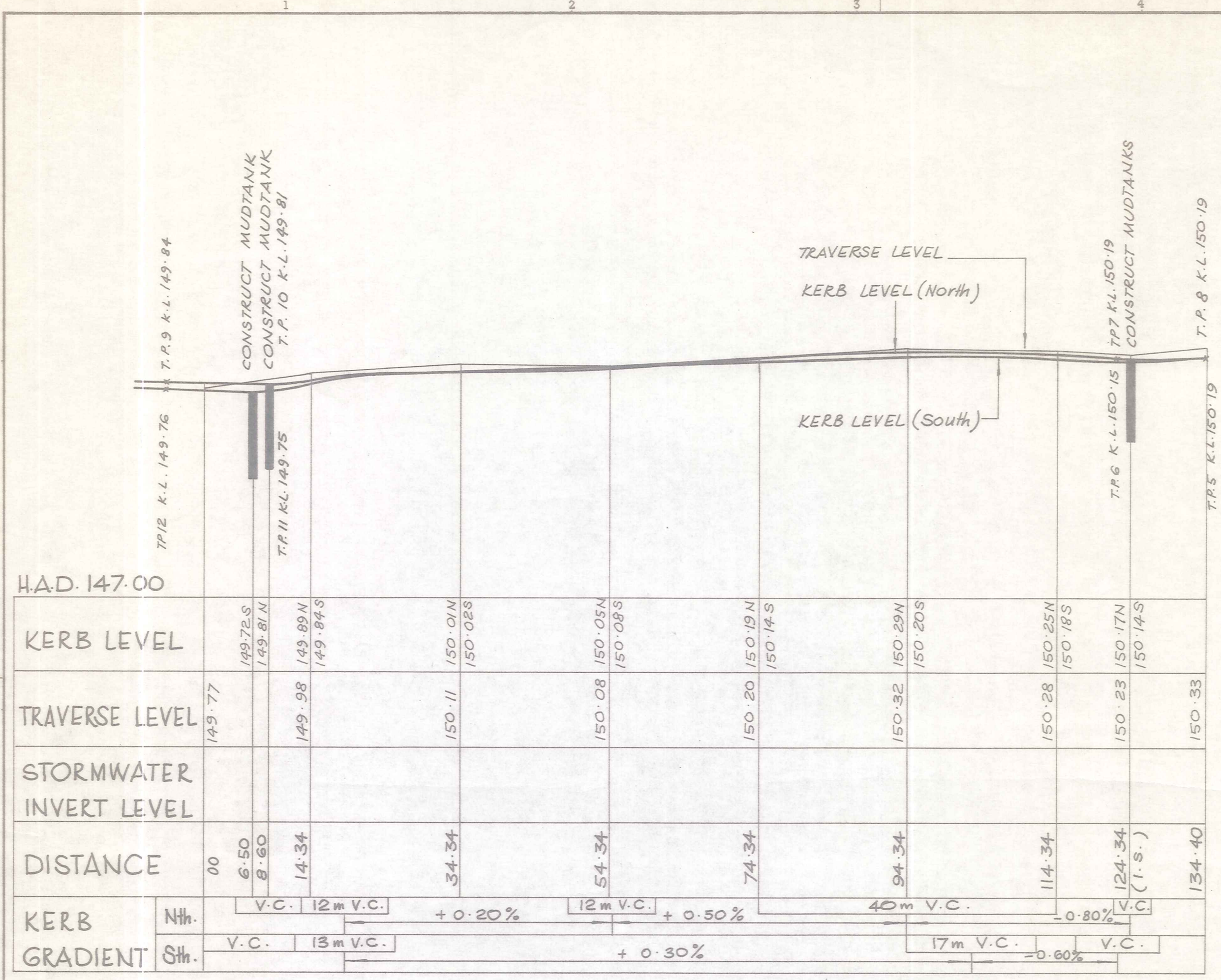
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 Consulting Civil & Structural Engineers
 Dunedin Invercargill Alexandra Queenstown

Client
ALEXANDRA BOROUGH COUNCIL

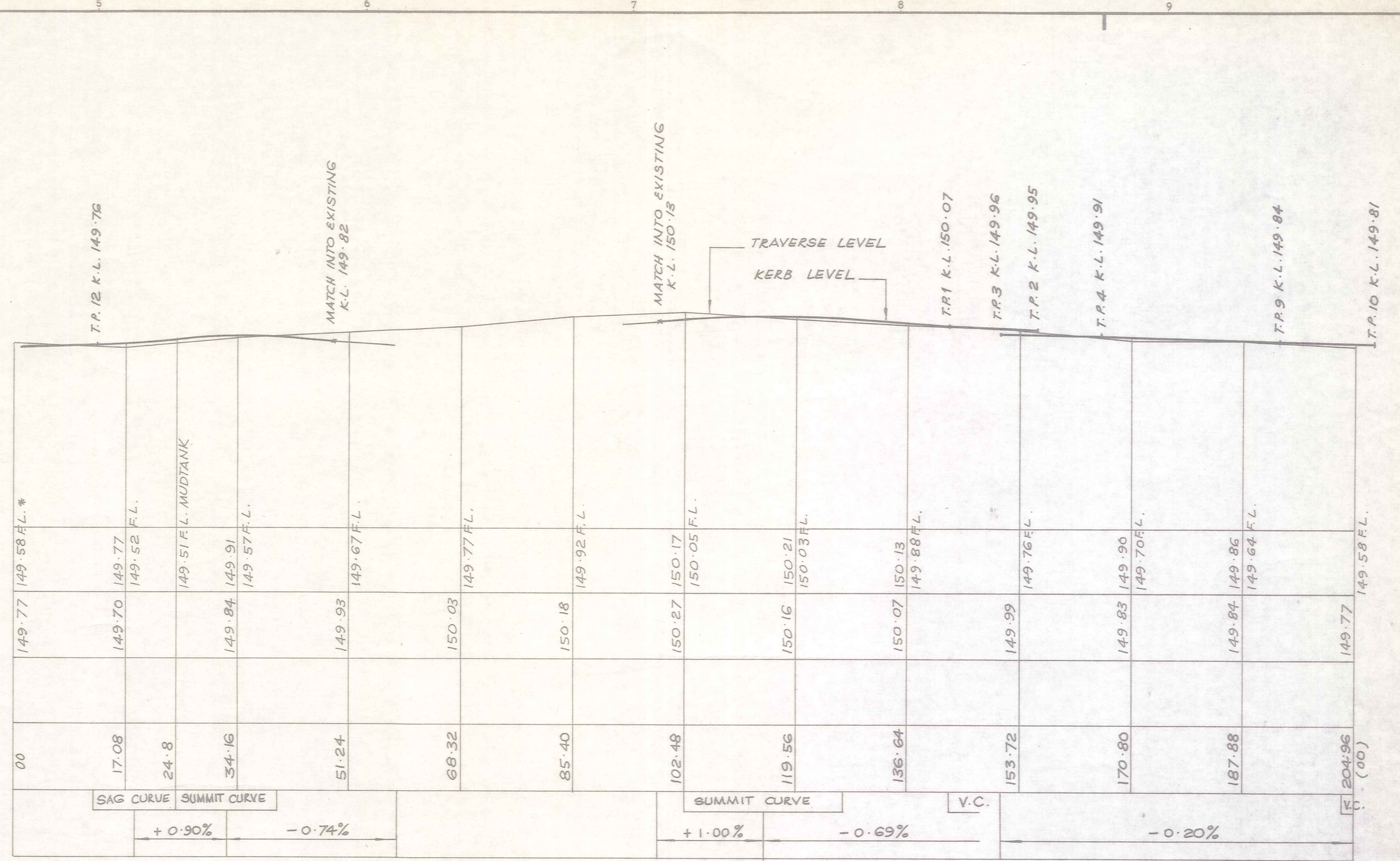
Project
STORMWATER UPGRADING 1989-90

Sheet Title
MARLIN STREET PLAN AND LONGITUDINAL SECTION

Job No.	Sheet No.	Revision
13669	4	of 17 shts

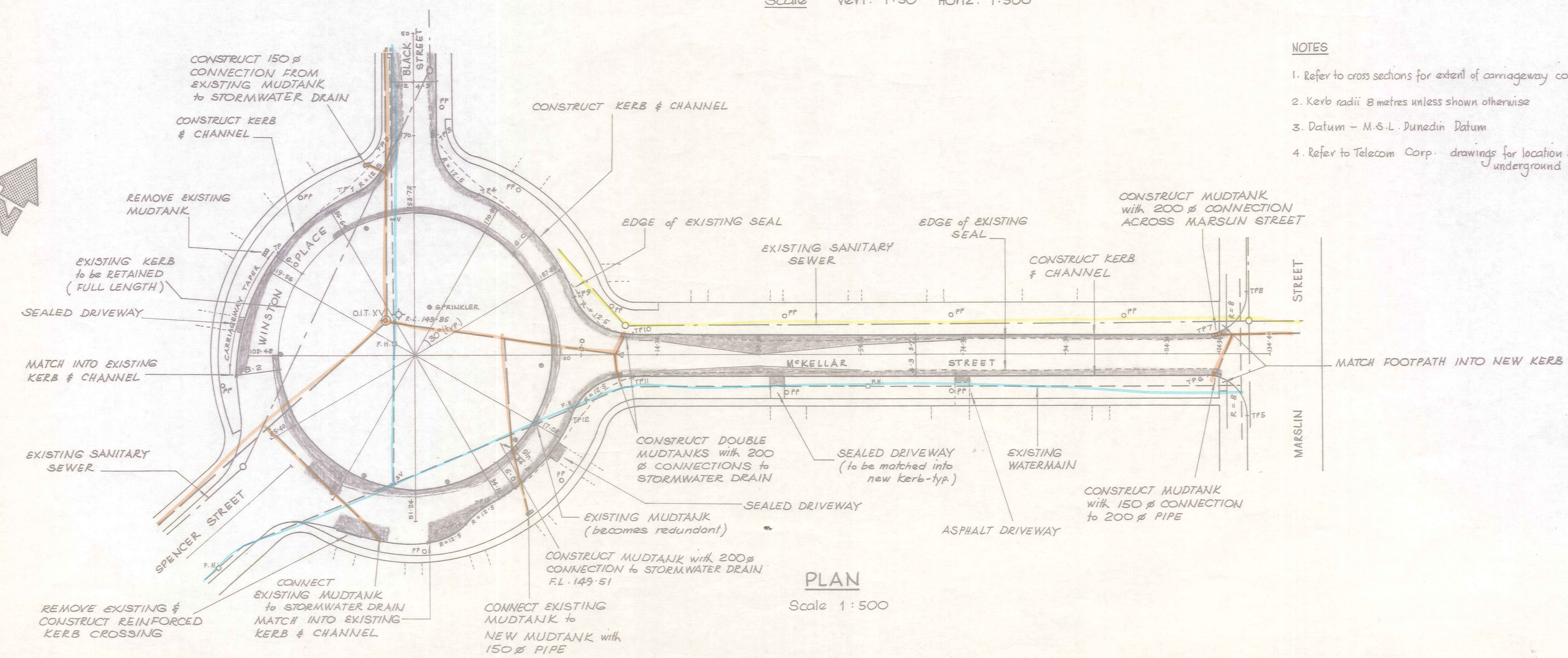


MCKELLAR STREET
LONGITUDINAL SECTION



WINSTON PLACE
LONGITUDINAL SECTION

* FL relates to finished road level at face of kerb around central island (typical)
Scale Vert: 1:50 Horiz: 1:500



PLAN
Scale 1:500

- NOTES
1. Refer to cross sections for extent of carriageway construction
 2. Kerb radii 8 metres unless shown otherwise
 3. Datum - M.S.L. Dunedin Datum
 4. Refer to Telecom Corp. drawings for location of underground cables

No.	Revisions	Date	Appd

Designed N. JELLEY Date 6/89 Print Date
 Drawn M. J. CASSIDY Date 6/89
 Checked N. JELLEY
 Approved
 File 4021/13/3 L.B. SEE FILE

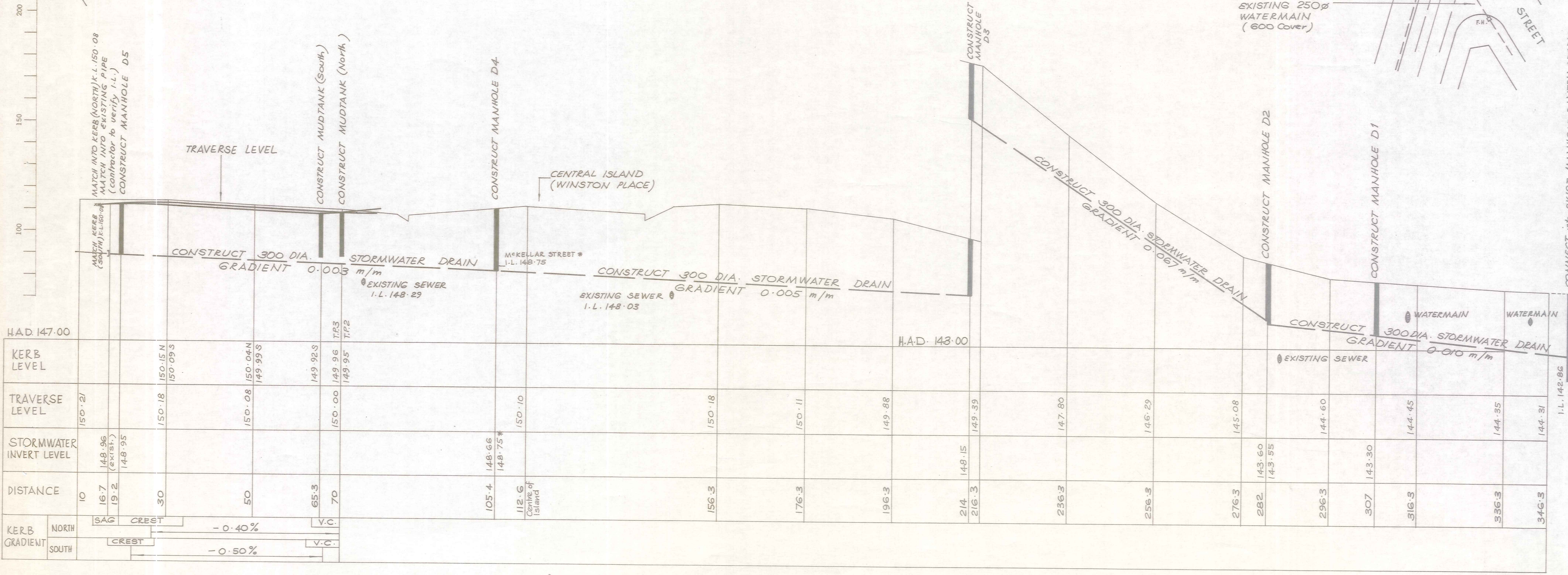
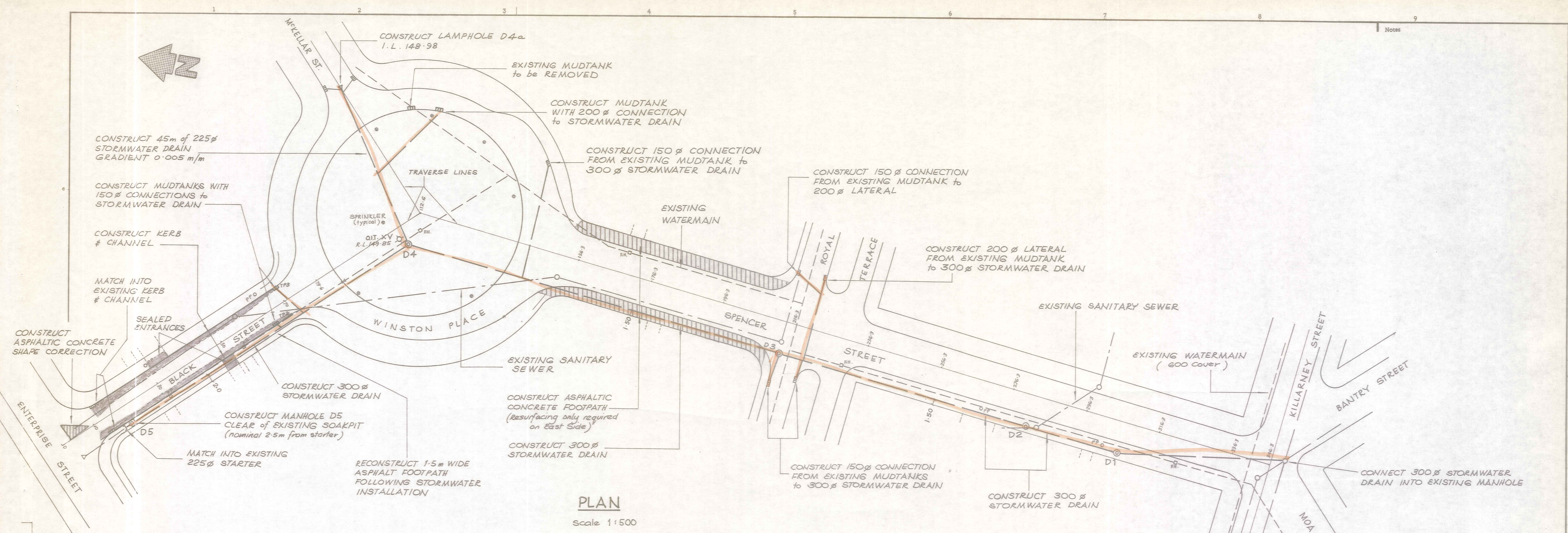
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Client:
ALEXANDRA BOROUGH COUNCIL

Project:
**STORMWATER UPGRADING
 1989-90**

Sheet Title:
**WINSTON PLACE - MCKELLAR ST.
 PLAN & LONGITUDINAL SECTION**

Job No.	Sheet No.	Revision
13669	5	of 17 sheets



LONGITUDINAL SECTION
Scale Vert. 1:50 Horiz. 1:500

CONNECT. into EXIST. MANHOLE BANTRY STREET

No.	Revisions	Date	Appd.

Designed N. J. Jolley Date 6/89 Print Date
 Drawn N. J. Jolley Date 6/89
 Checked
 Approved **DRAFT**
 File 4021/13/3 L.B. SEE FILE

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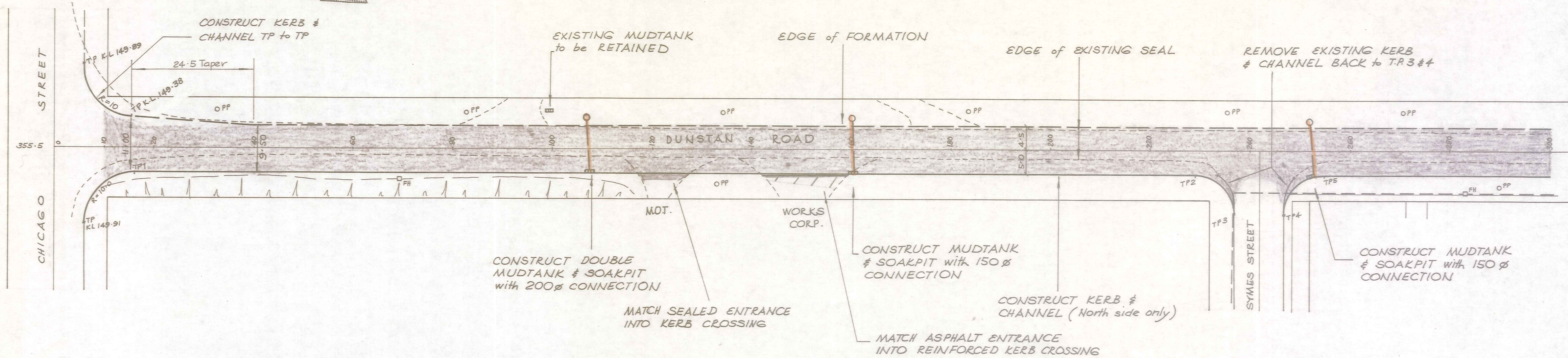
Client: **ALEXANDRA BOROUGH COUNCIL**

Project: **STORMWATER UPGRADING 1989-90**

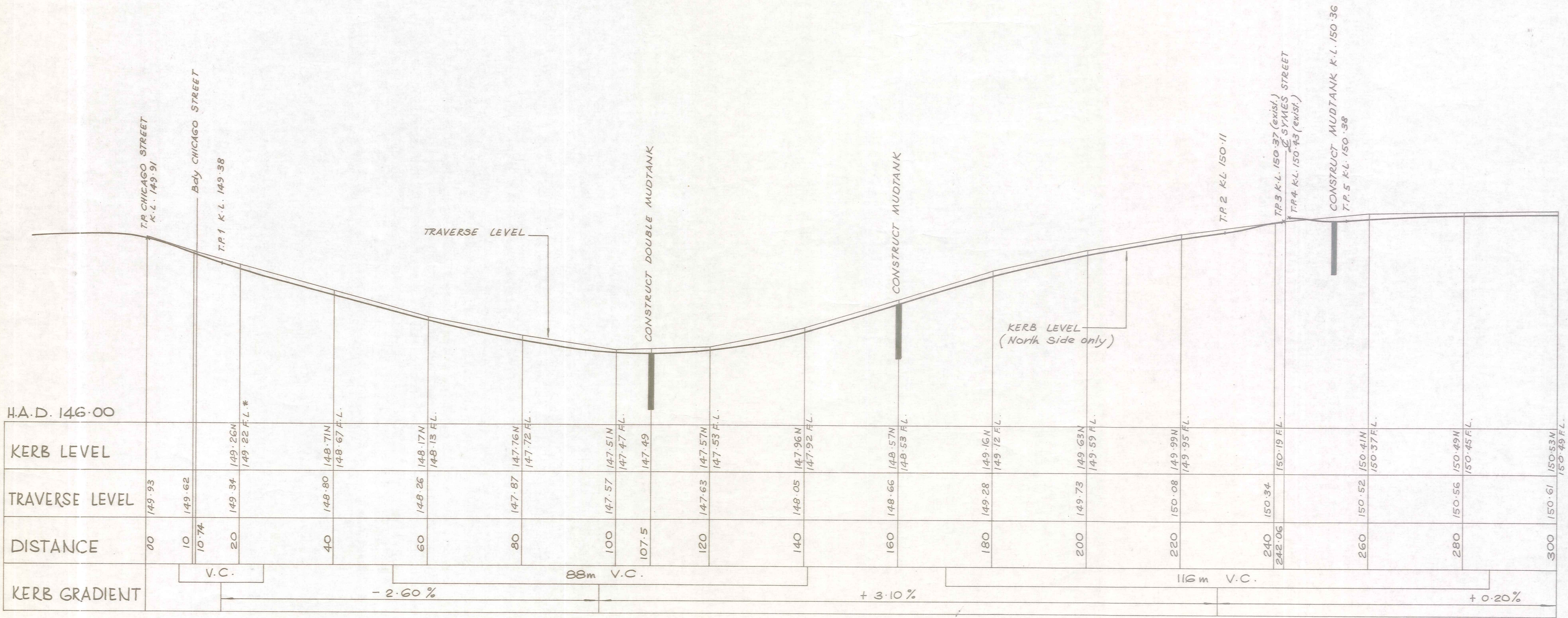
Sheet Title: **BLACK STREET & STORMWATER MAIN BLACK/WINSTON/SPENCER/KILLARNEY**

JOB NO. **13669** SHEET NO. **6** REVISION of 17 sheets

- NOTES .. 1. Refer to cross sections for extent & method of carriageway construction/upgrading
 2. Kerb radii 8 metres unless shown otherwise
 3. Datum - M.S.L. Dunedin Datum
 4. Refer to Telesom. Services Drawings for location of underground cables.



PLAN
Scale 1:500



LONGITUDINAL SECTION
Scale Vert. 1:50
Horiz. 1:500

* Refers to finished level at edge of formation on South side of carriageway (typical)

No.	Revisions	Date	Appvd
1	Designed N. JELLEY	6/89	
2	Checked M. J. CASSIDY	6/89	
3	Drawn N. JELLEY		
4	Checked		
5	Approved		
6	File 4021/13/3		L.B. SEE FILE

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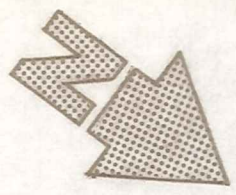
Client
ALEXANDRA BOROUGH COUNCIL

Project
STORMWATER UPGRADING 1989-90

Sheet Title
DUNSTAN ROAD PLAN & LONGITUDINAL SECTION Stn. 00 - Stn. 300

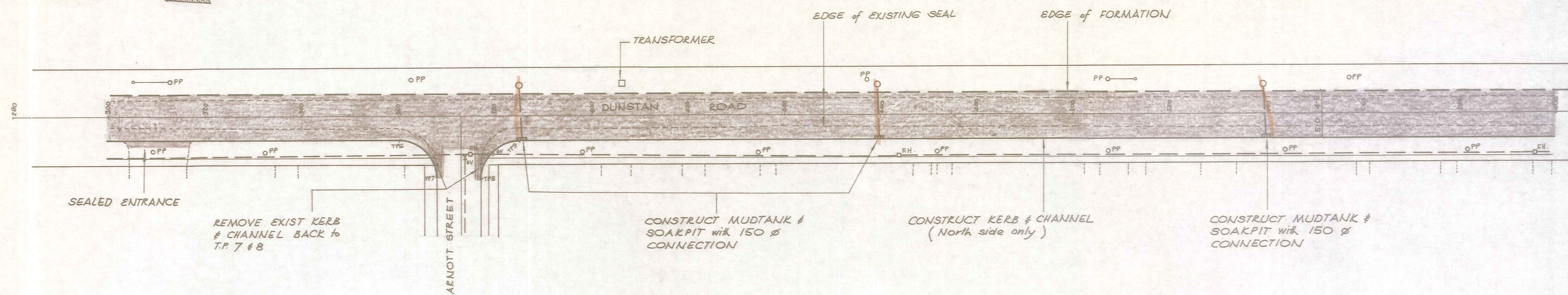
Job No. **13669** Sheet No. **7** of 17
Revision

ORIGINAL SIZE mm



NOTES

1. Refer to cross sections for extent of carriageway widening
2. Datum - M.S.L. Dunedin Datum
3. Kerb Radius is 8 m unless shown otherwise
4. Refer to Telecom Services drawings for location of underground cables



PLAN

Scale 1:500

	300	320	340	360	372.92	380	400	420	440	460	480	500	520	540	560	580	600
H.A.D. 147.00	150.53N	150.57N	150.61N	150.65N	150.70N	150.72N	150.79N	150.83N	150.91N	151.01N	151.14N	151.19N	151.22N	151.31N	151.47N	151.59N	151.72N
KERB LEVEL	150.49F.L.*	150.53F.L.*	150.57F.L.*	150.61F.L.*	150.66F.L.*	150.69F.L.*	150.76F.L.*	150.80F.L.*	150.88F.L.*	150.97F.L.*	151.09F.L.*	151.14F.L.*	151.17F.L.*	151.26F.L.*	151.42F.L.*	151.54F.L.*	151.67F.L.*
TRAVERSE LEVEL	150.61	150.67	150.67	150.65	150.70	150.72	150.79	150.83	150.91	151.01	151.14	151.19	151.22	151.31	151.47	151.59	151.72
DISTANCE	300	320	340	360	372.92	380	400	420	440	460	480	500	520	540	560	580	600
KERB GRADIENT	+ 0.20%			20m V.C.		+ 0.36%						V.C.		+ 0.65%			

* Refers to finished level at edge of formation on south side of carriageway (typical)

LONGITUDINAL SECTION

Scale Vert. 1:50
Horiz. 1:500

No.	Revisions	Date	Appvd

Designed	N. JELLEY	Date	6/89	Print Date	
Traced	M. J. CASSIDY	Date	6/89		
Drawn	N. JELLEY				
Checked	DRAFT				
Approved					
File	4021/13/3	L.B.	SEE FILE		

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STORMWATER UPGRADING
1989-90

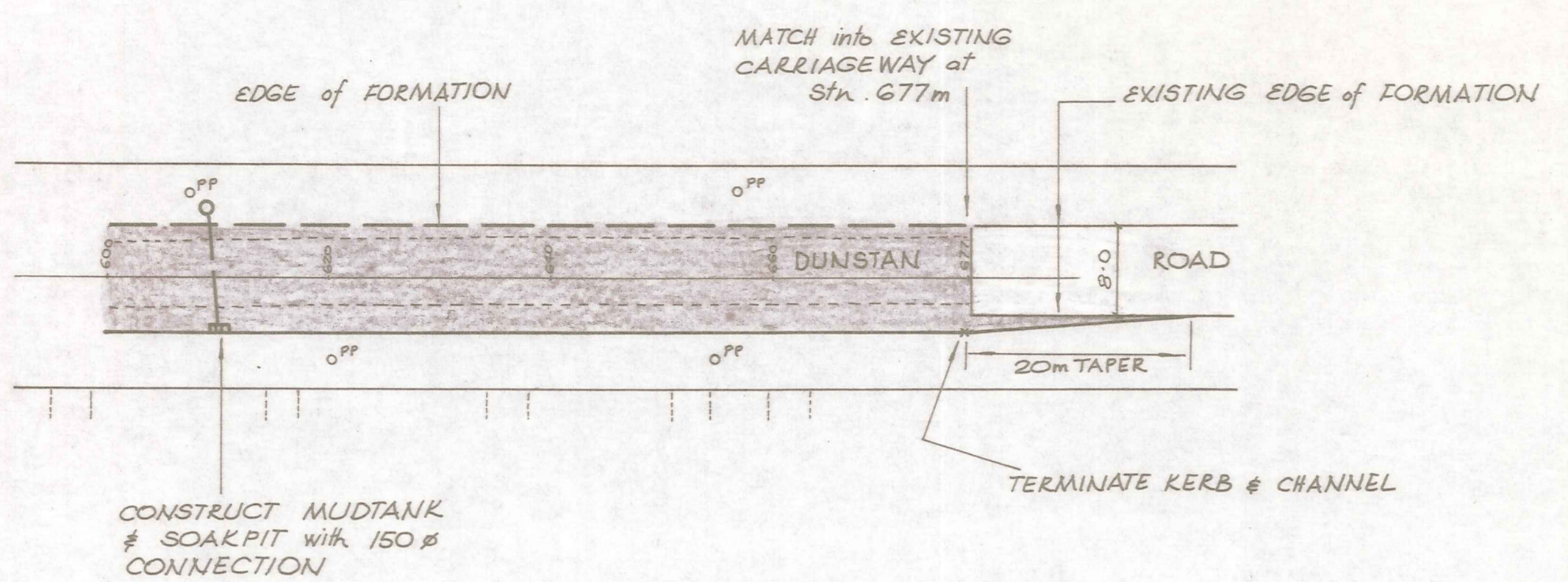
Sheet Title
DUNSTAN ROAD
PLAN & LONGITUDINAL SECTION
Stn. 300 - Stn. 600

Job No.	13669	Sheet No.	8	Revision	
			of 17		

ORIGINAL SIZE mm

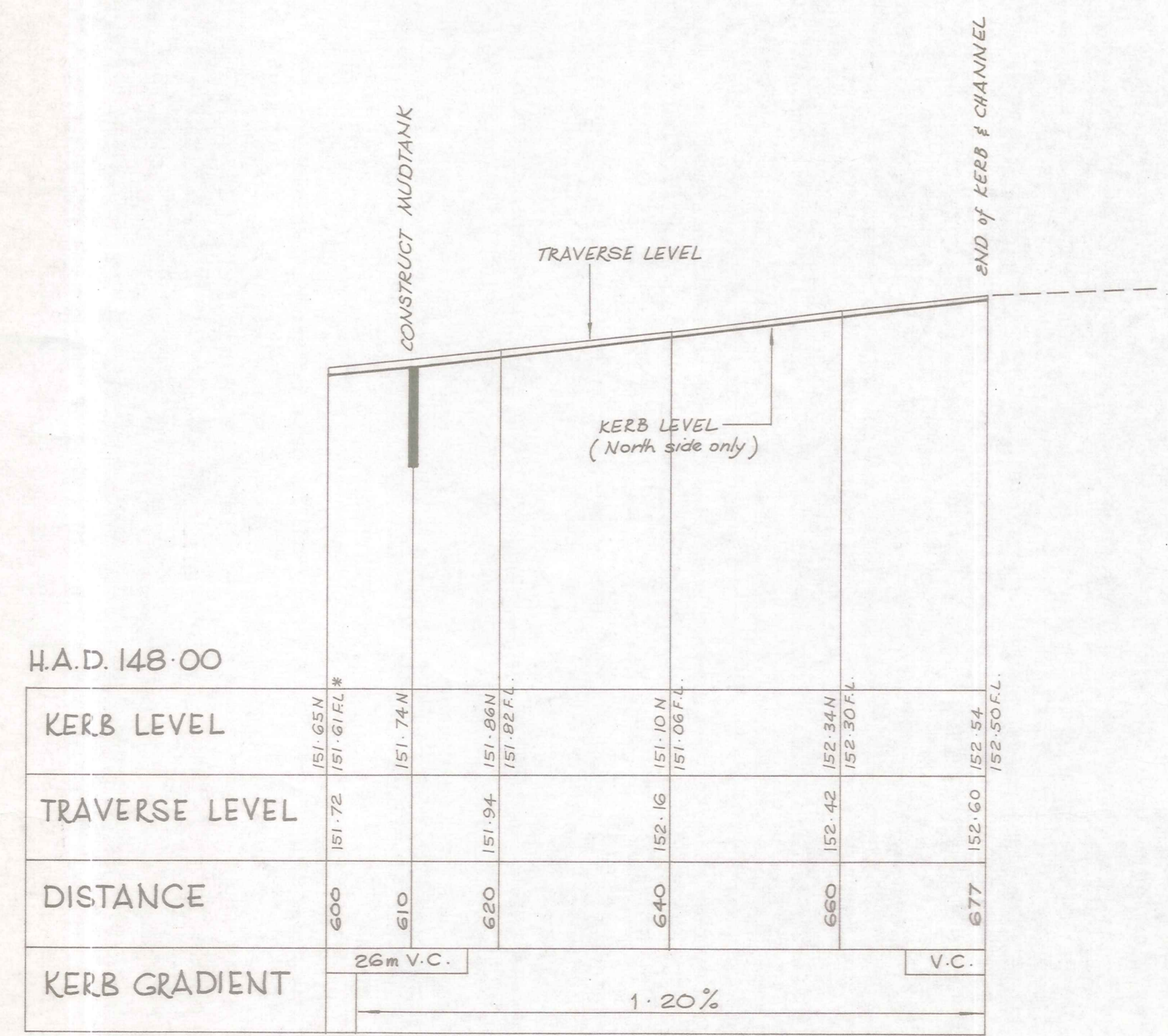
DUNSTAN ROAD

(STATION 600m - 677m)



PLAN
Scale 1:500

ORIGINAL SIZE mm

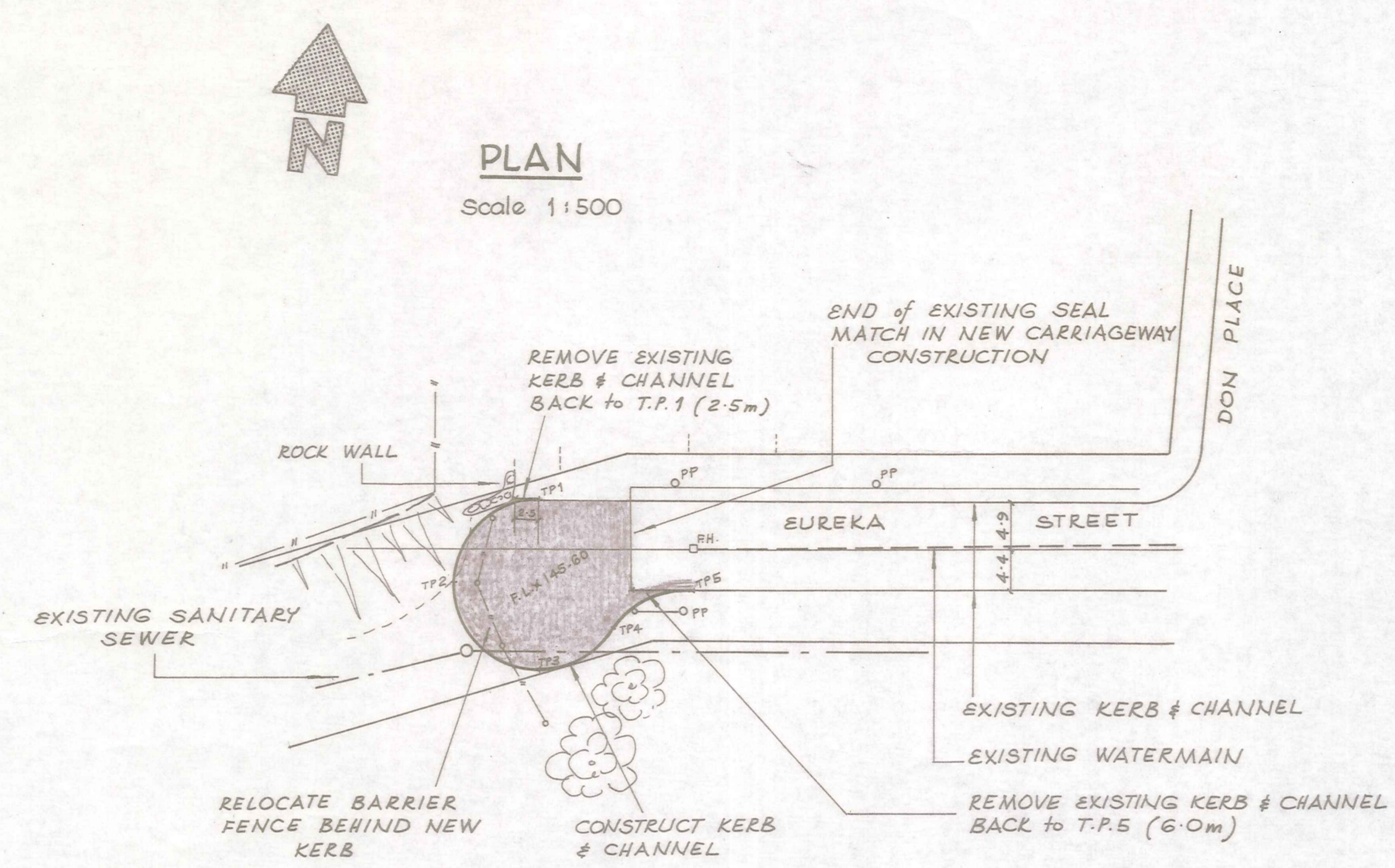


* Refers to finished level at edge of formation on South side of carriageway (typical)

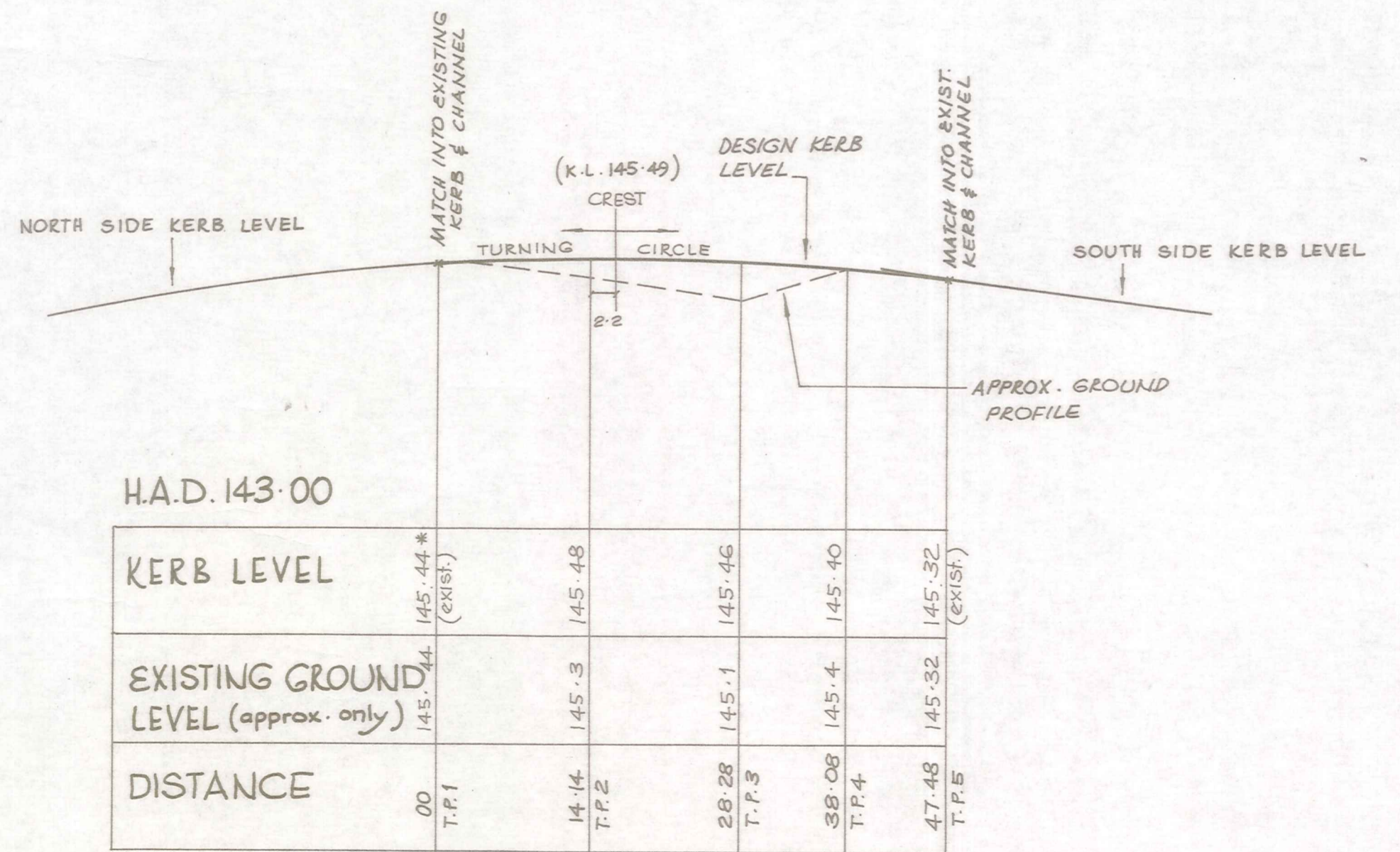
LONGITUDINAL SECTION

Scale Vert. 1:50
Horiz. 1:500

EUREKA STREET CUL DE SAC



PLAN
Scale 1:500



* Actually drop kerb K.L. 145.37

LONGITUDINAL SECTION

Scale Vert. 1:50
Horiz. 1:500

NOTES ----

- All kerb radii on cul de sac head 9.0m
- Excavate carriageway area shown shaded to 260mm below design finished level & construct standard metal covers with 1st coat seal/dry choked surfacing
- Datum - M.S.L. Dunedin Datum
- Refer to Telecom Services drawings for location of underground cables

No.	Revisions	Date	Appvd

Designed N. Jolley Date 6/89 Print Date
 Traced M. J. Cassidy Date 6/89
 Drawn N. Jolley
 Checked
 Approved **DRAFT**
 File 4021/13/3 L.B. SEE FILE

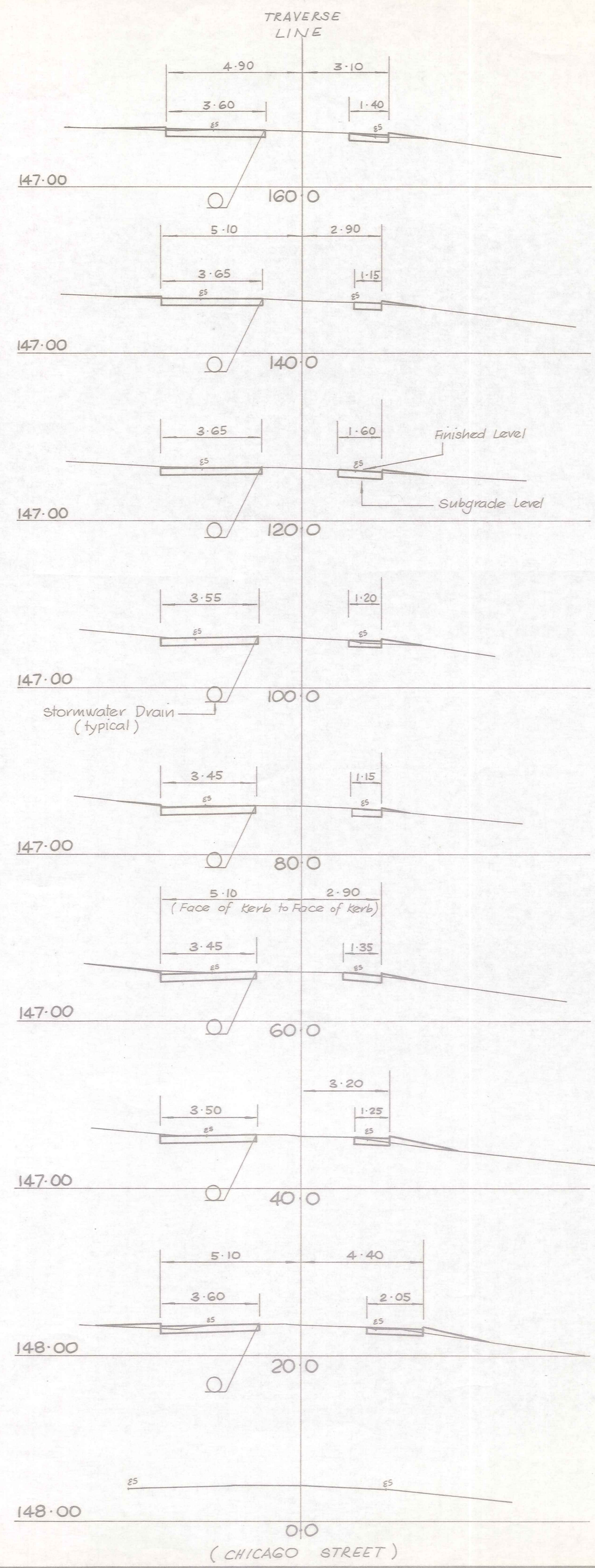
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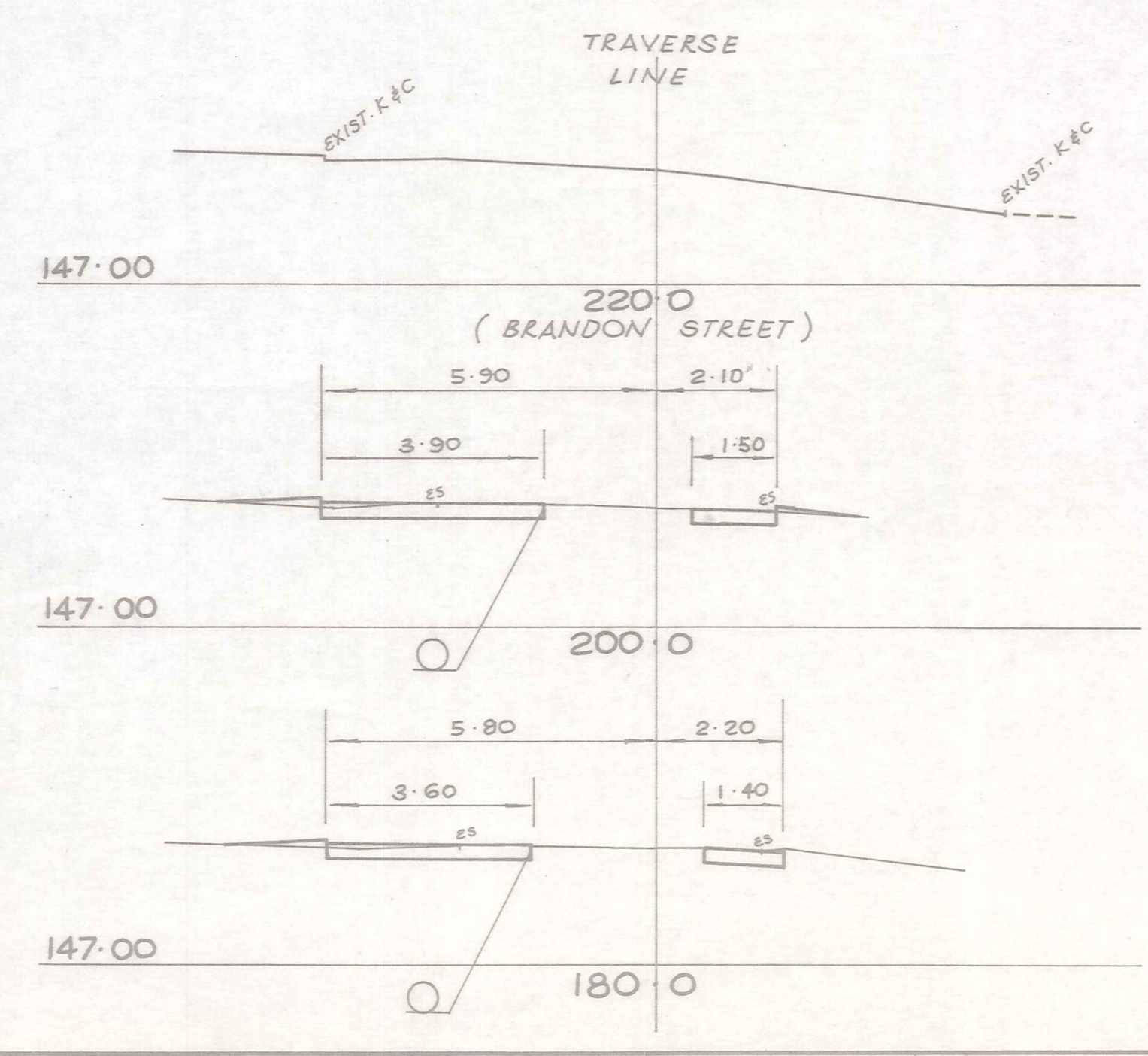
Project
STORMWATER UPGRADING
 1989-90

Sheet Title
 DUNSTAN RD PLAN & LONG SECTION
 EUREKA ST. PLAN & LONG SECTION
 CUL DE SAC

Job No. **13669** Sheet No. **9** Revision
 of 17 sheets



CROSS SECTIONS
Scale 1:100



No.	Revisions	Date	Appvd
Designed	N. JELLEY	Date 6/89	Print Date
Checked	M. J. CASSIDY	6/89	
Approved	N. JELLEY & B. GREGORY		
File	4021/13/3	L.B. SEE FILE	

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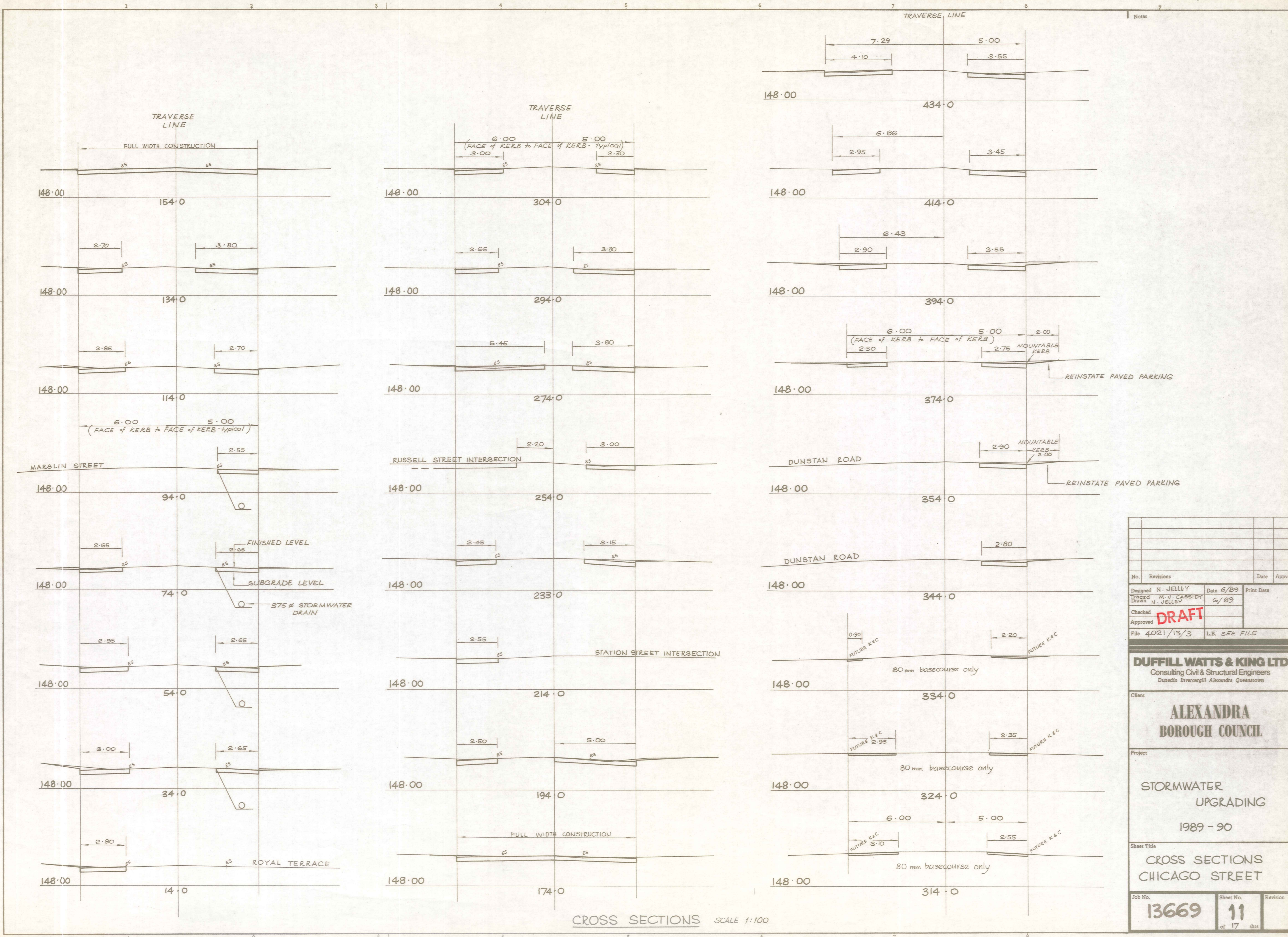
Project
STORMWATER UPGRADING
1989-90

Sheet Title
ROYAL TERRACE CROSS SECTIONS

Job No. 13669	Sheet No. 10 of 17 shts	Revision
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ORIGINAL SIZE mm

ORIGINAL SIZE mm



CROSS SECTIONS SCALE 1:100

Notes

No.	Revisions	Date	Appr'd

Designed N. JELLY Date 6/89 Print Date
 Traced M. J. CASSIDY
 Drawn N. JELLY 6/89
 Checked **DRAFT**
 Approved
 File 4021/13/3 I.B. SEE FILE

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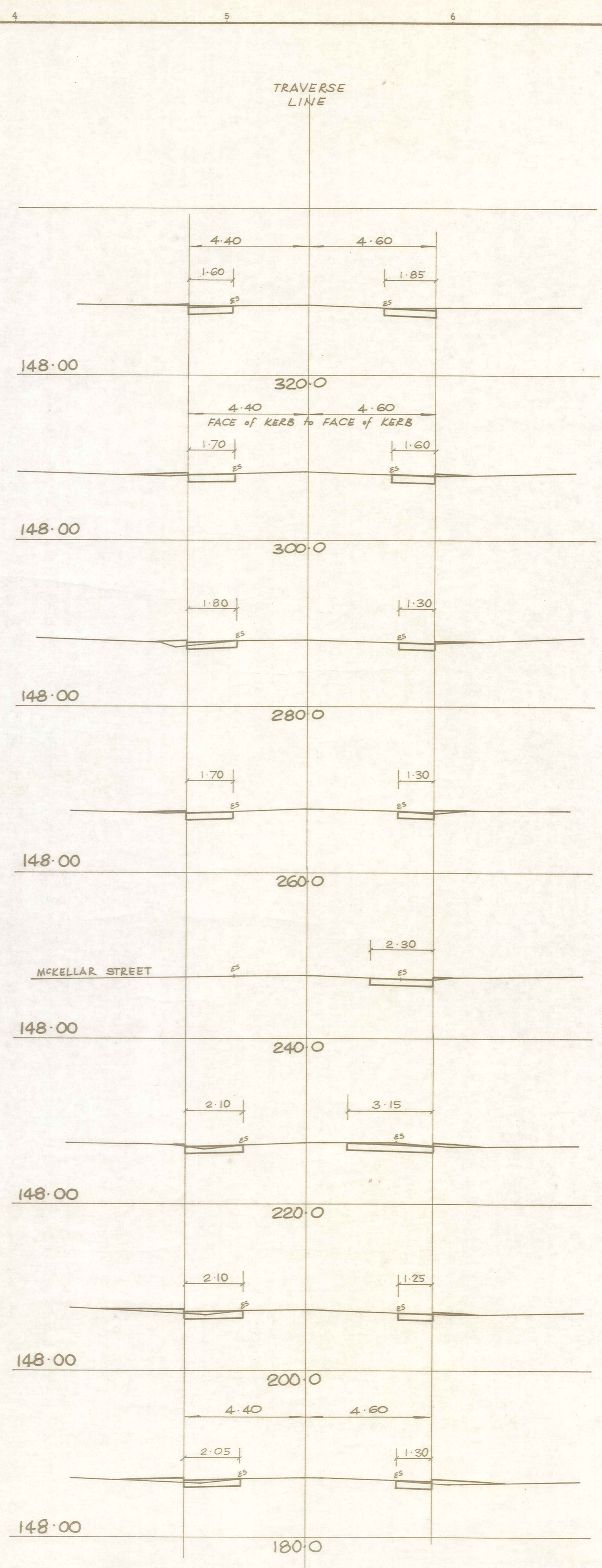
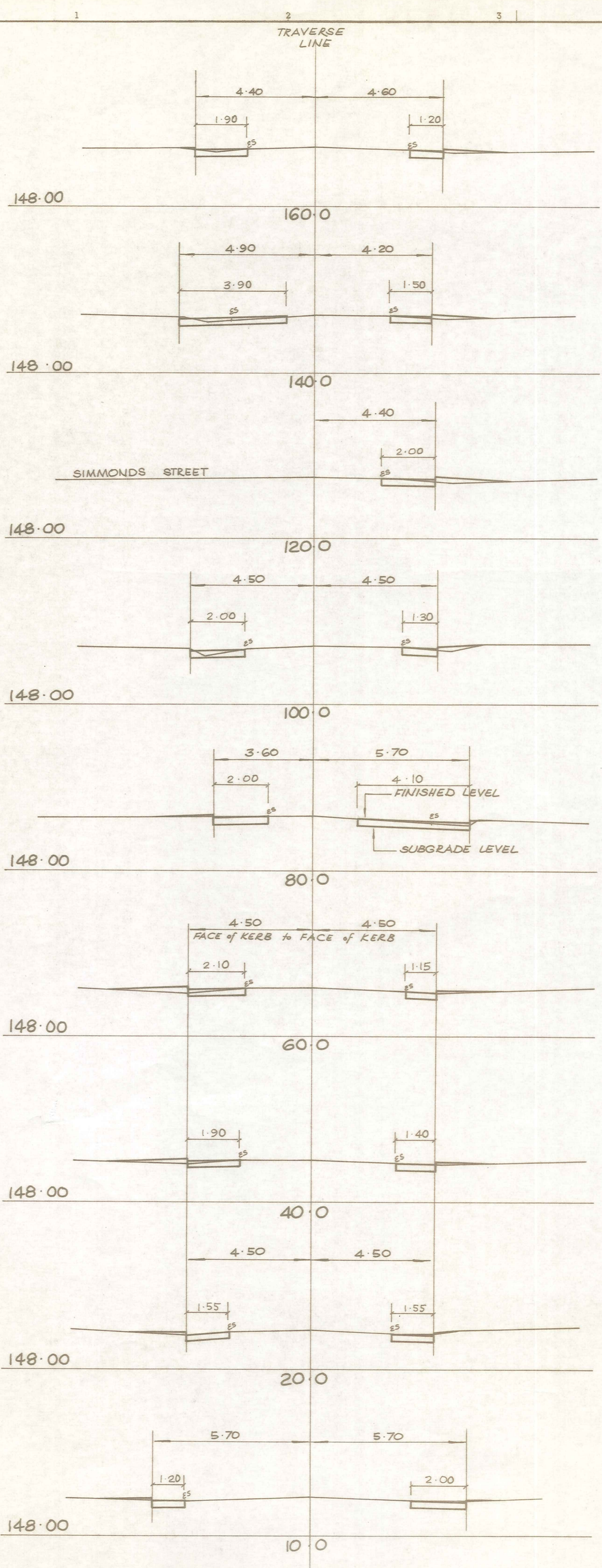
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Project
 STORMWATER UPGRADING
 1989 - 90

Sheet Title
 CROSS SECTIONS
 CHICAGO STREET

Job No. 13669	Sheet No. 11 of 17 sheets	Revision
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ORIGINAL SIZE mm



CROSS SECTIONS
Scale 1:100

Notes

No.	Revisions	Date	Apprd
Designed N-JELLEY		Date 6/89	Print Date
Checked N-JELLEY		6/89	
Approved			
File 4021/13/3		L.B. SEE FILE	

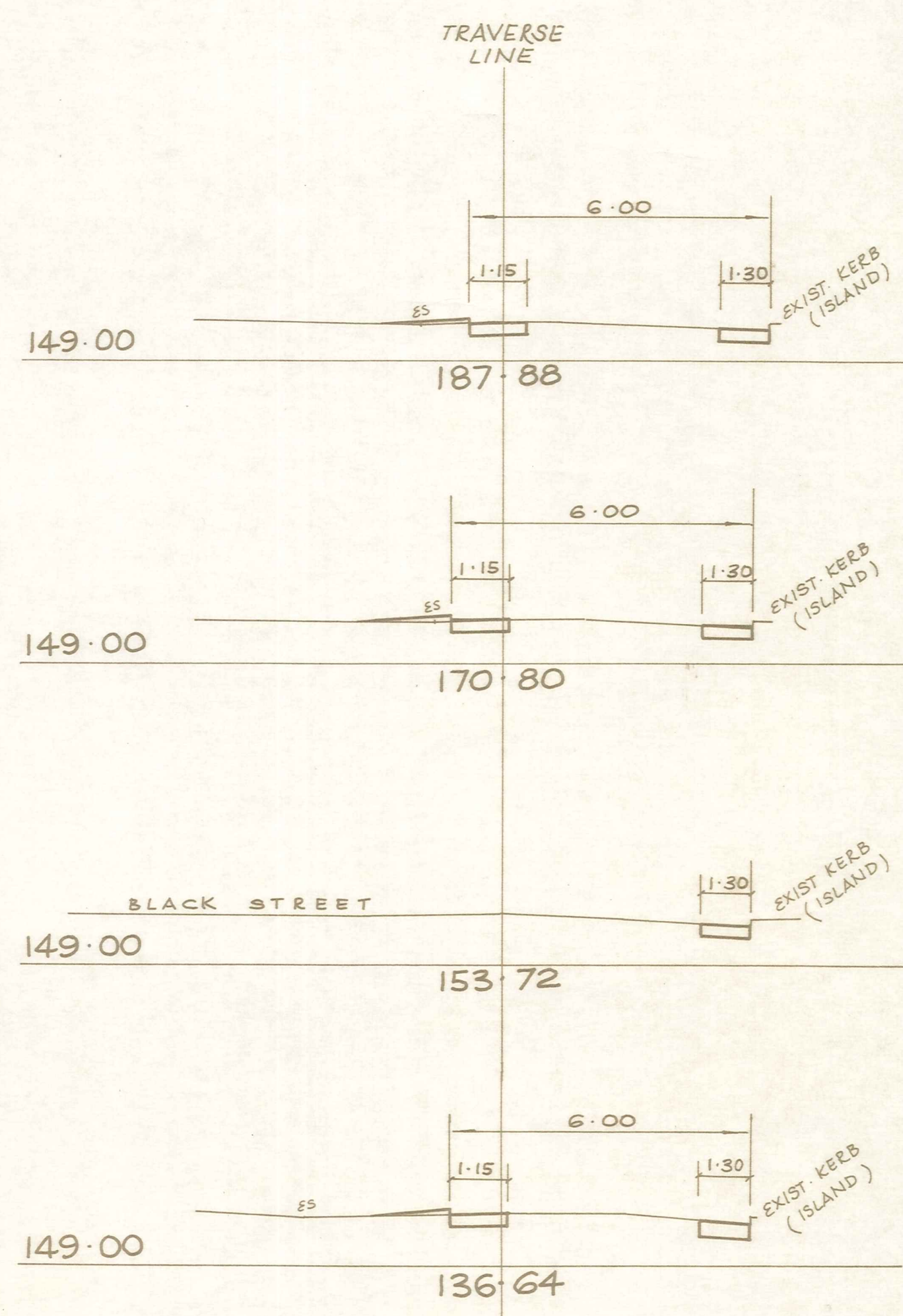
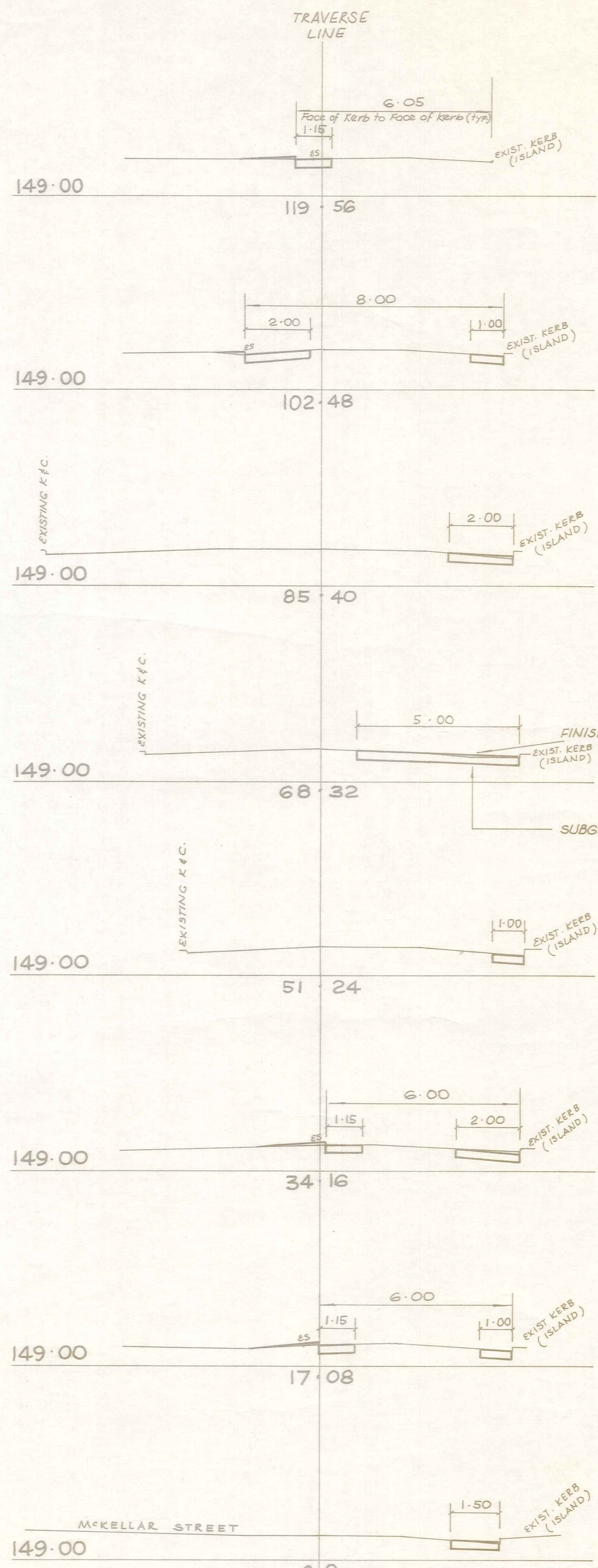
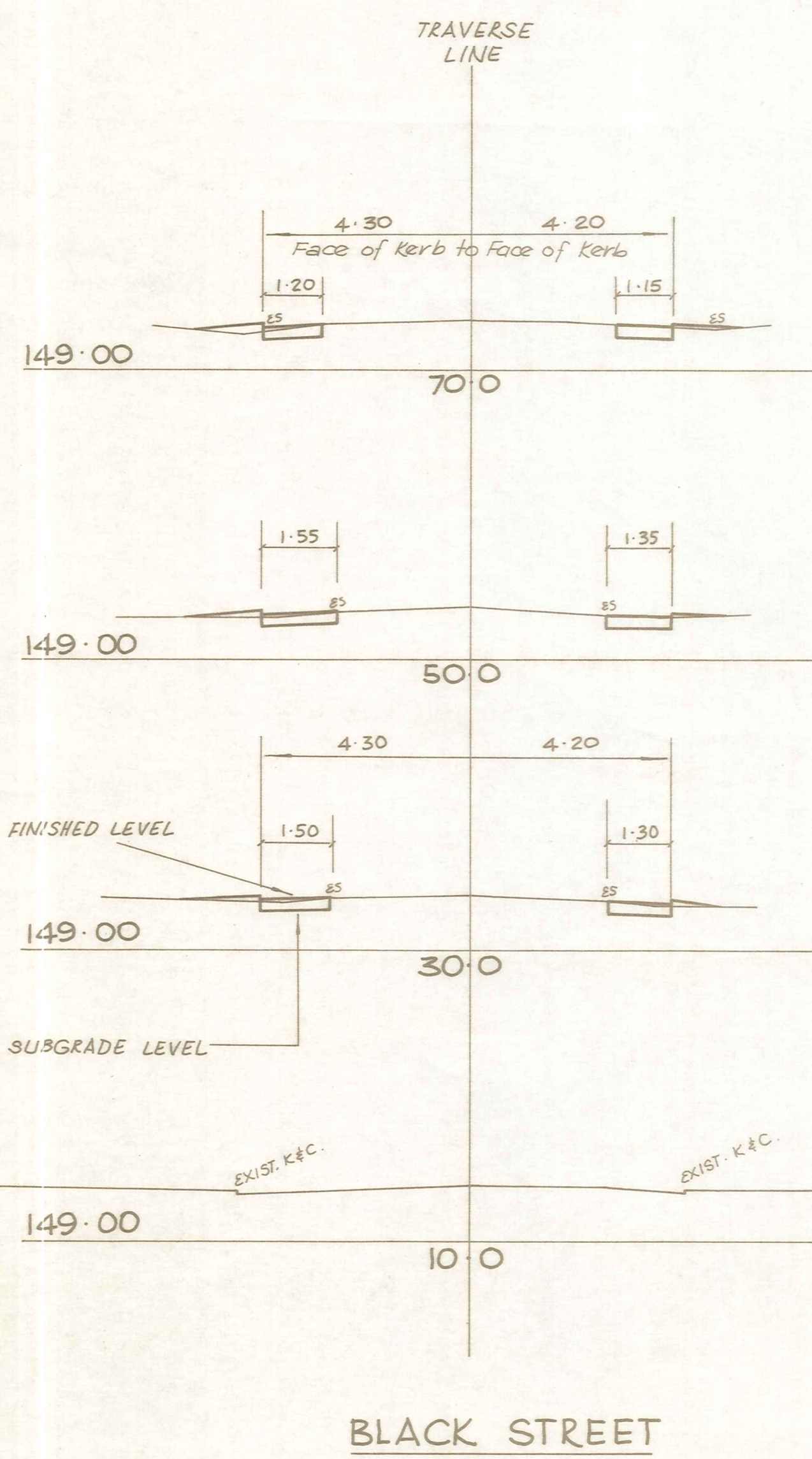
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Project
STORMWATER UPGRADING
1989-90

Sheet Title
CROSS SECTIONS
MARSLIN STREET

Job No.	Sheet No.	Revision
13669	12	
	of 17	shts



BLACK STREET

WINSTON PLACE

CROSS SECTIONS

Scale 1:100

No.	Revisions	Date	Appvd
1	Designed N. Velley	Date 6/89	Print Date
2	Traced M.V. Cassidy	6/89	
3	Drawn B. Gregory		
4	Checked DRAFT		
5	Approved		
File 4021/13/3		I.B. SEE FILE	

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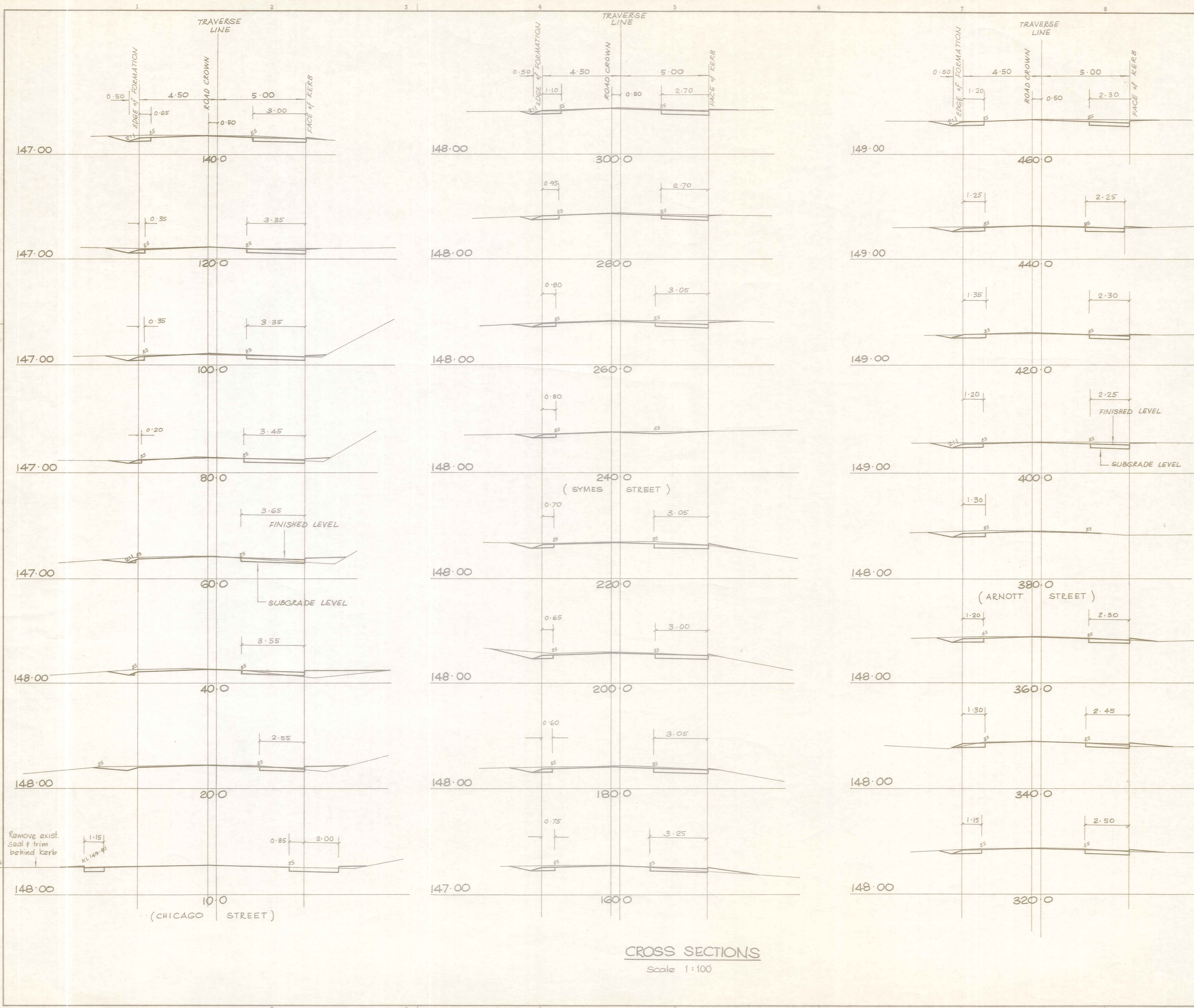
Client
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Project
STORMWATER UPGRADING 1989-90

Sheet Title
CROSS SECTIONS
BLACK STREET Sln 10.0 - Sln 70.0
WINSTON PLACE Sln 0.0 - Sln 187.88

Job No. 13669	Sheet No. 14	Revision of 17 shts
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ORIGINAL SIZE mm



- STATIONS 10 - 500m
- CONSTRUCTION SEQUENCE
1. Excavate flanks (edge of existing seal out to line of extended subgrade) to depth of 250mm below existing seal & at 3% crossfall
 2. Scarify existing sealed carriageway to depth of 200mm & spread scarified material uniformly over full formation width in accordance with design levels & gradients. During the scarifying operation any significant areas of plant mix encountered from previous repairs, shall be excavated & removed from the new pavement
 3. Stabilize the resultant basecourse with 1.5% lime to depth of 200mm as specified
 4. Construct 80mm compacted depth of N.R.B. M/4 AP40 & 1st coat seal

No.	Revisions	Date	Apprd.
Designed	N. JELLEY	Date 6/89	Print Date
Traced	M. J. CASSTIDY	6/89	
Drawn	N. JELLEY		
Checked	DRAFT		
Approved			
File	4021/13/3	L.B.	SEE FILE

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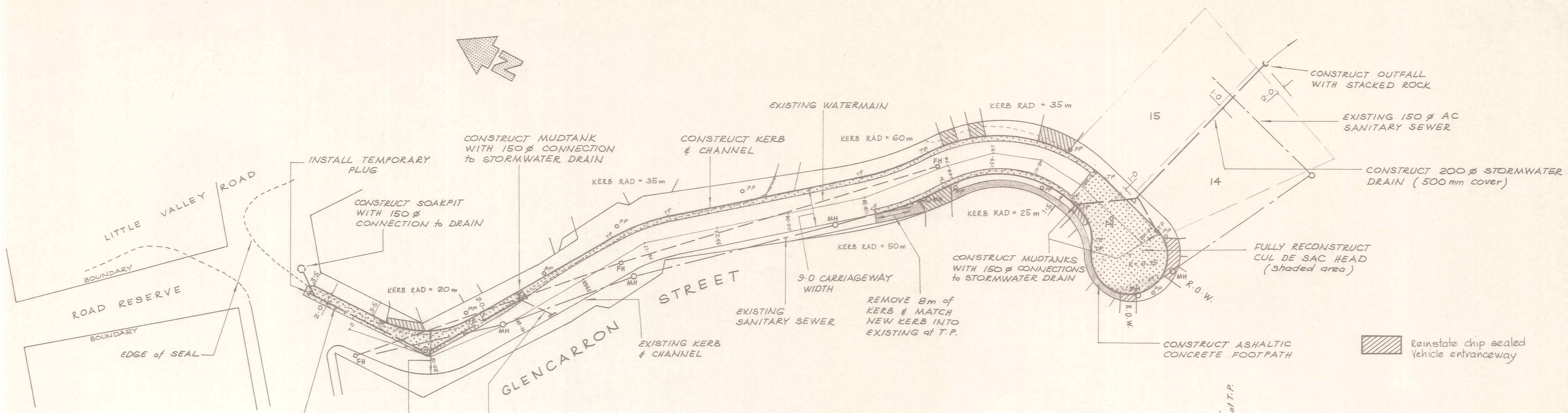
Project
STORMWATER UPGRADE 1989-90

Sheet Title
DUNSTAN ROAD CROSS SECTIONS
 Stn. 10.0 - Stn. 460.0

Job No. **13669** Sheet No. **15** Revision of 17 sheets

CROSS SECTIONS
 Scale 1:100

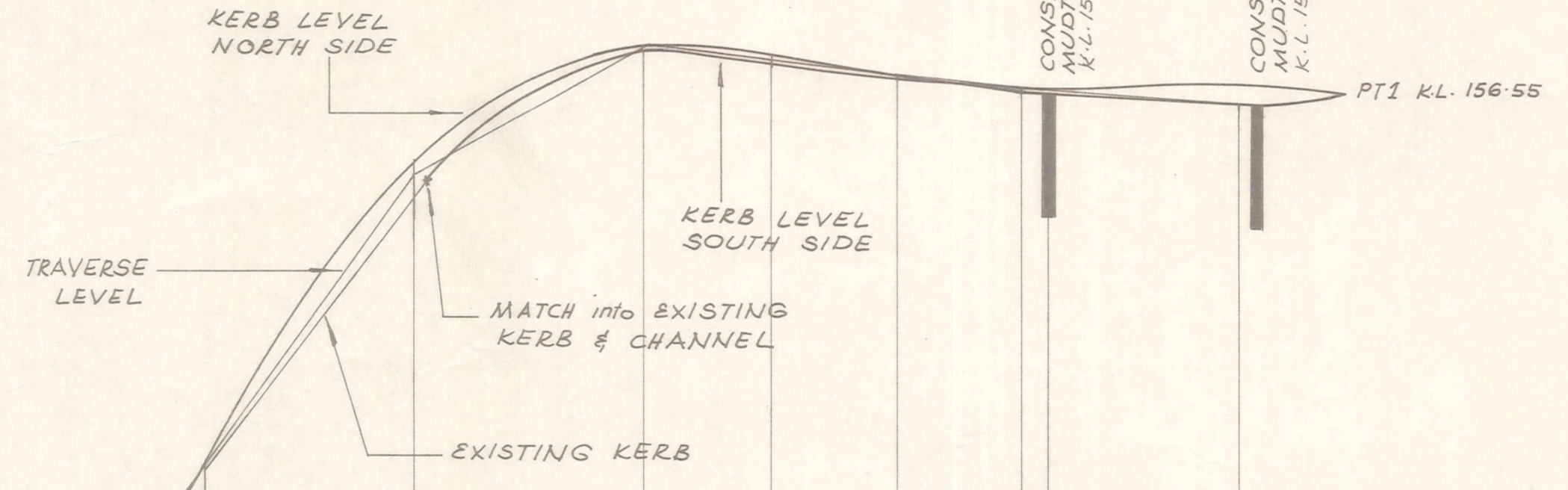
ORIGINAL SIZE mm



PLAN
Scale 1:500

CONSTRUCT 225 Ø STORMWATER DRAIN
10.0 (ie 1.0 extra widening mid curve)

CONNECT EXISTING LATERAL INTO STORMWATER DRAIN (retain connection to exist. soakpit)



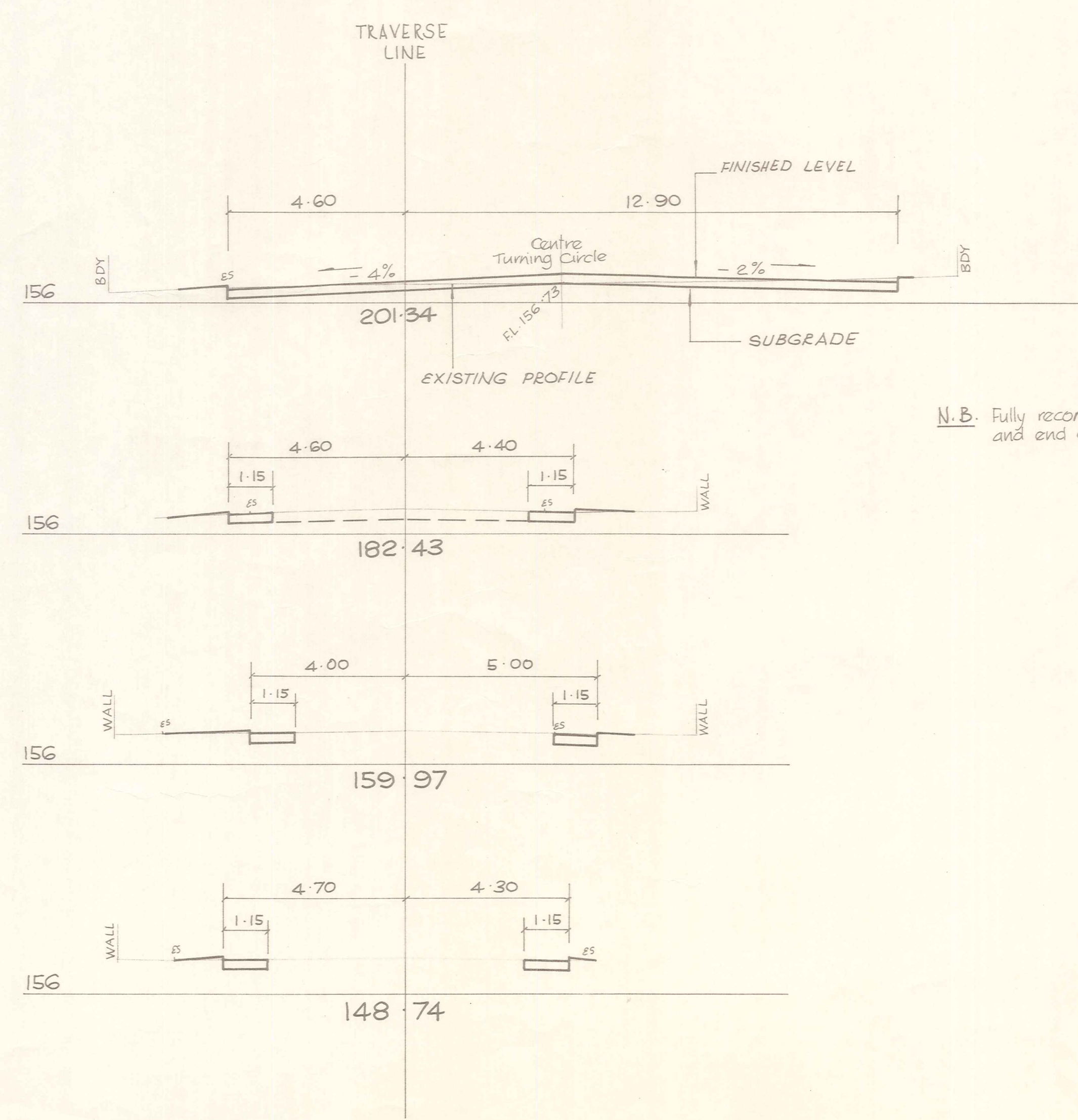
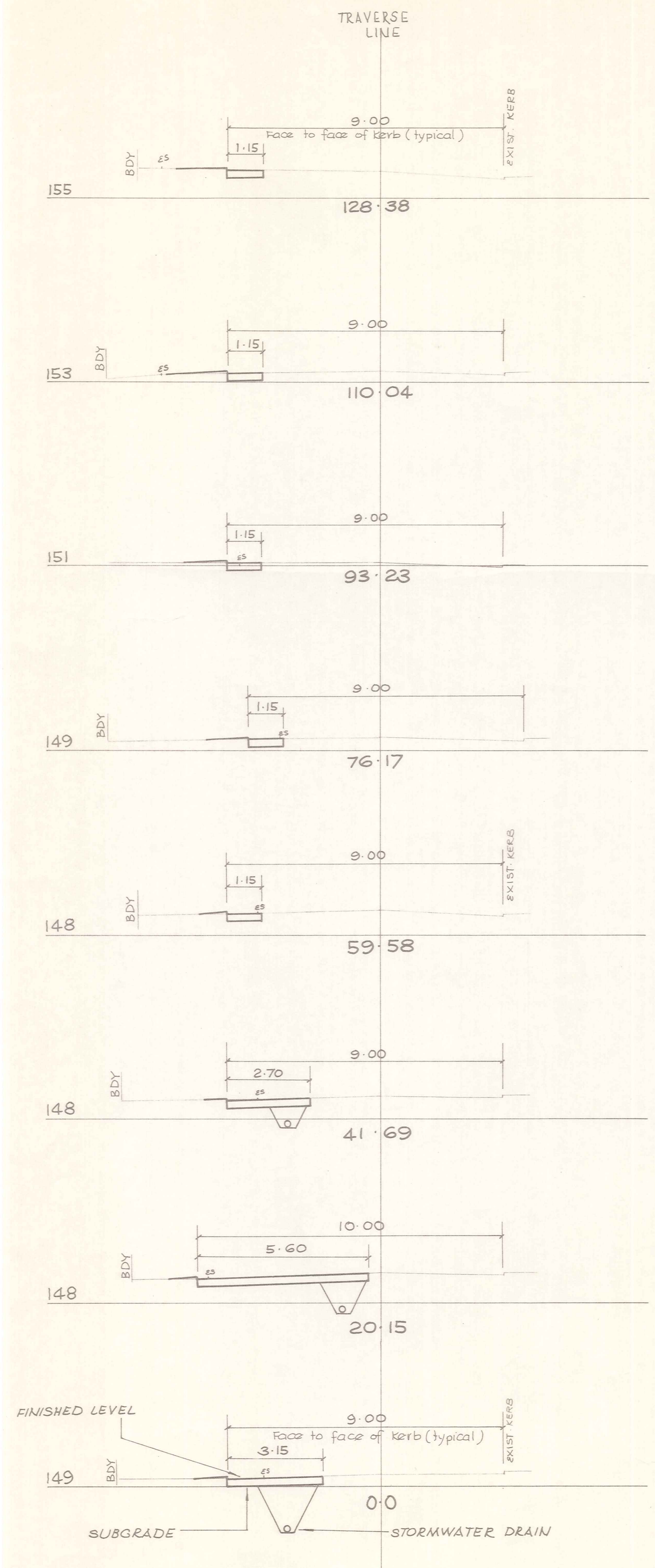
LONGITUDINAL SECTION

Scale Horiz. 1:500 Vert 1:50

	00	19.00	31.53	41.69	45.49	59.58	76.17	93.23	110.04	128.38	148.74	159.97	171.20	182.43	184.43	201.34
KERB LEVEL		149.314	148.761	148.641	148.631	148.731	149.401	151.161	153.331	155.981	156.991	156.891	156.71	156.601	156.615	156.461
TRAVERSE LEVEL		149.37	148.78	148.69	148.76	149.42	151.08	153.33	155.85	156.96	156.85	156.71	156.60	156.615	156.46	156.461
STORMWATER INVERT LEVEL		147.60			147.70											
DISTANCE	00	19.00	31.53	41.69	45.49	59.58	76.17	93.23	110.04	128.38	148.74	159.97	171.20	182.43	184.43	201.34
KERB GRADIENT		0.004														

No.	Revisions	Date	Apprd
Designed	N. JELLEY	Date 9/89	Print Date
Traced	M. J. CASSIDY	9/89	
Drawn	N. JELLEY		
Checked			
Approved			
File	4021/13/3	L.B. SEE FILE	
DUFFILL WATTS & KING LTD Consulting Civil & Structural Engineers Dunedin Invercargill Alexandra Queenstown			
Client	ALEXANDRA BOROUGH COUNCIL		
Project	STORMWATER UPGRADING 1989-90		
Sheet Title	GLENCARRON STREET PLAN & LONGITUDINAL SECTION		
Job No.	13669	Sheet No.	18
		of 20	shts

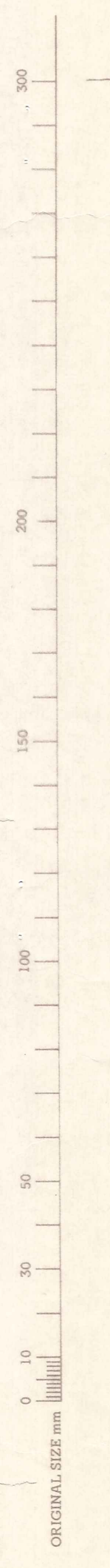
ORIGINAL SIZE mm

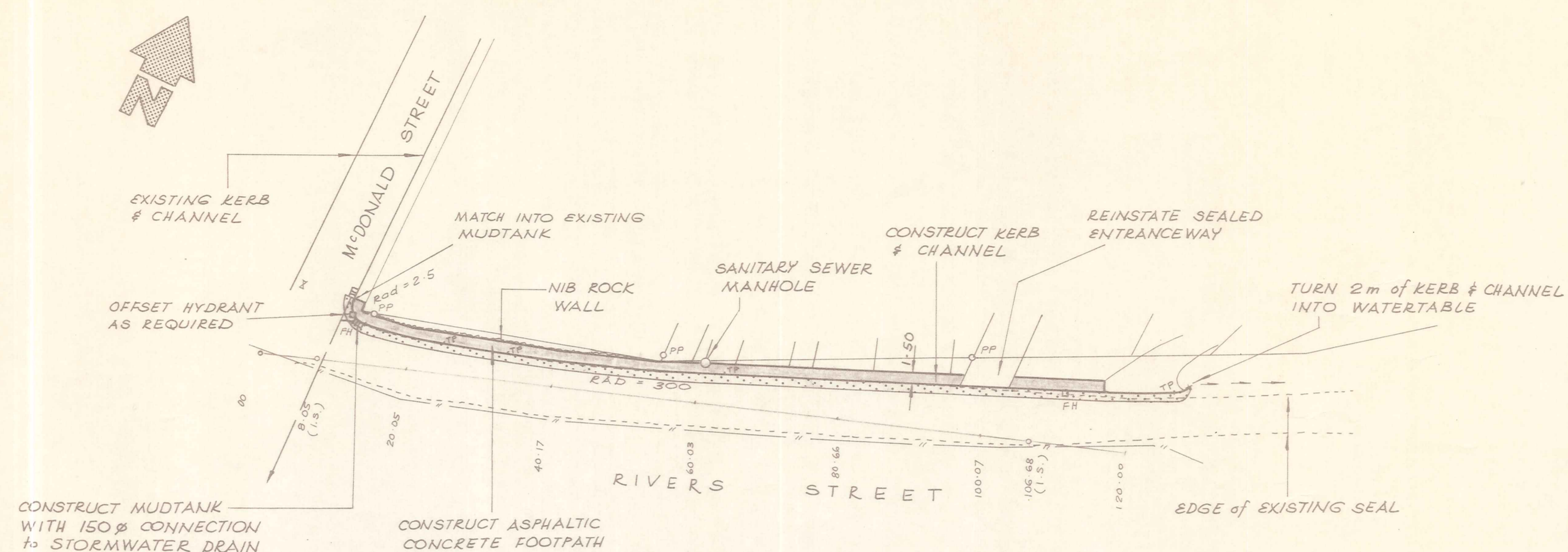


N.B. Fully reconstruct between Station 182.43 and end of cul de sac.

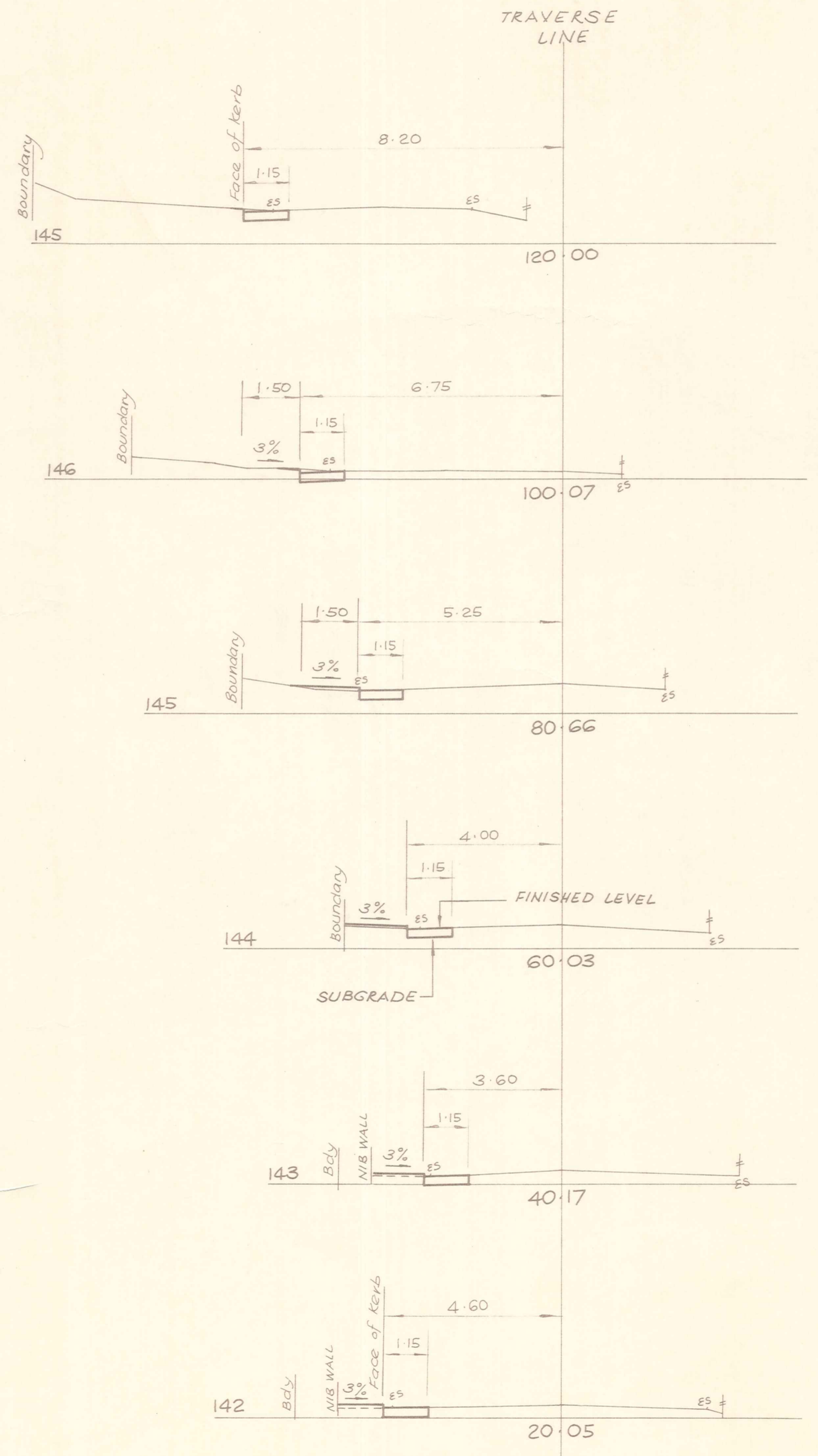
CROSS SECTIONS
Scale 1:100

No.	Revisions	Date	Apprd
Designed N. JELLEY Date 9/89 Print Date Traced M. J. CASSIDY 9/89 Drawn N. JELLEY Checked Approved File 4021/13/3 L.B. SEE FILE			
DUFFILL WATTS & KING LTD Consulting Civil & Structural Engineers Dunedin Invercargill Alexandra Queenstown			
Client ALEXANDRA BOROUGH COUNCIL			
Project STORMWATER UPGRADING 1989-90			
Sheet Title GLENCARRON STREET CROSS SECTIONS			
Job No.	Sheet No.	Revision	
13669	19		
	of 20	sheets	

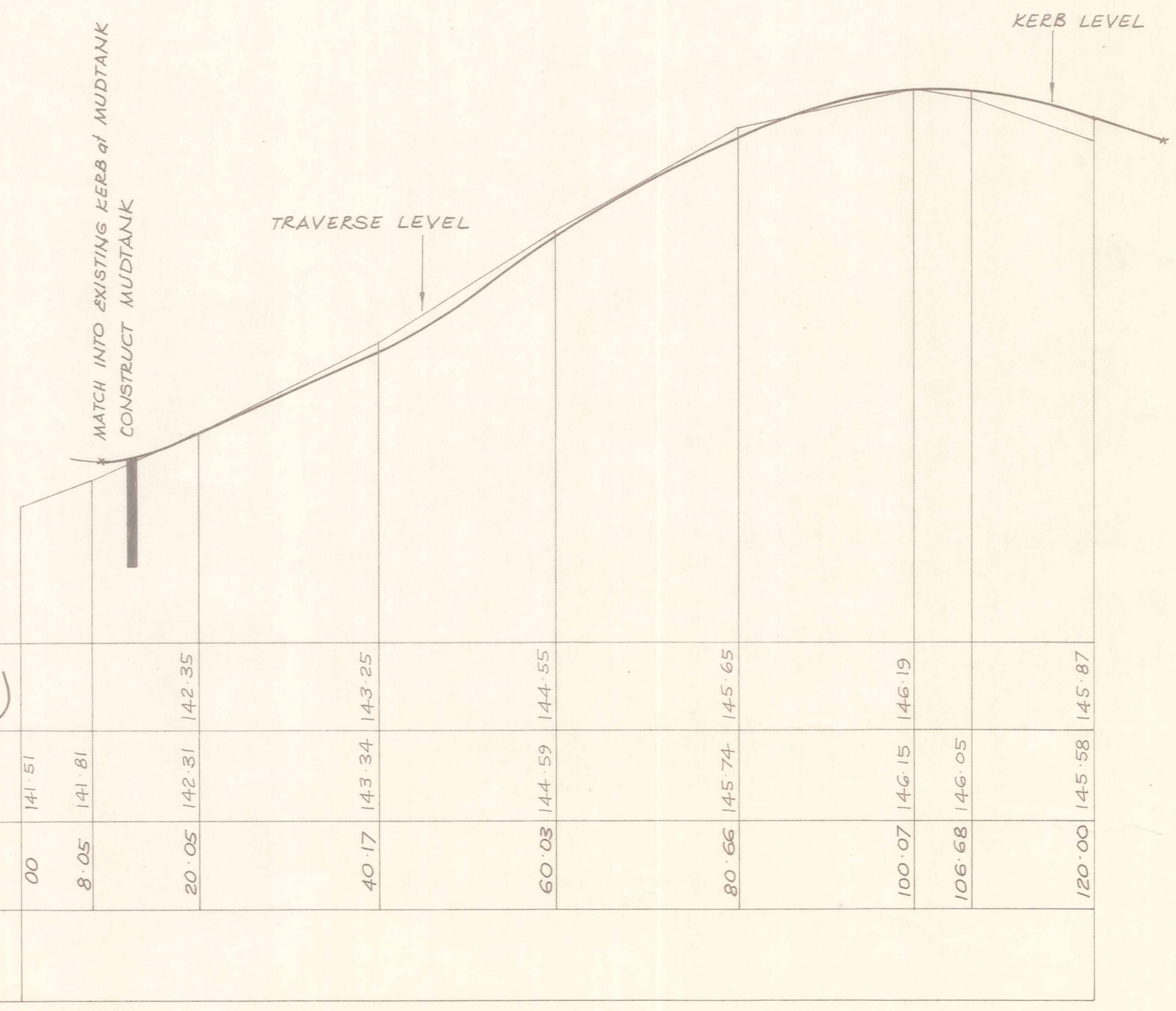




PLAN
Scale 1:500



CROSS SECTIONS
Scale 1:100



LONGITUDINAL SECTION
Scale Horiz 1:500
Vert. 1:50

	00	8.05	20.05	40.17	60.03	80.66	100.07	106.68	120.00
H.A.D. 140.00									
KERB LEVEL (NORTH SIDE)			142.35	143.25	144.55	145.65	146.19	146.05	145.87
TRAVERSE LEVEL	141.51	141.81	142.31	143.34	144.59	145.74	146.15	146.05	145.58
DISTANCE		8.05	20.05	40.17	60.03	80.66	100.07	106.68	120.00
KERB GRADIENT									

No.	Revisions	Date	Apprd
Designed N. JELLEY		Date 9/89	Print Date
Traced M. J. CASSIDY		9/89	
Drawn N. JELLEY			
Checked			
Approved			
File 4021/13/3		L.B. SEE FILE	
DUFFILL WATTS & KING LTD Consulting Civil & Structural Engineers Dunedin Invercargill Alexandra Queenstown			
Client			
ALEXANDRA BOROUGH COUNCIL			
Project			
STORMWATER UPGRADING 1989-90			
Sheet Title			
RIVERS STREET PLAN, LONGITUDINAL SECTION & CROSS SECTIONS			
Job No.	Sheet No.	Revision	
13669	20 of 20 sheets		