

**CENTRAL OTAGO DISTRICT COUNCIL**

**CONTRACT No. 90/121**

**TARBERT STREET  
REDEVELOPMENT**

**Duffill Watts & King Ltd**

CONSULTING ENGINEERS

DUNEDIN INVERCARGILL ALEXANDRA QUEENSTOWN

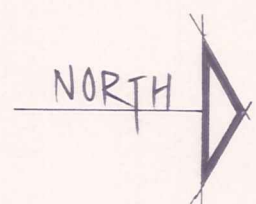
**JOB No. 12757**

KEY

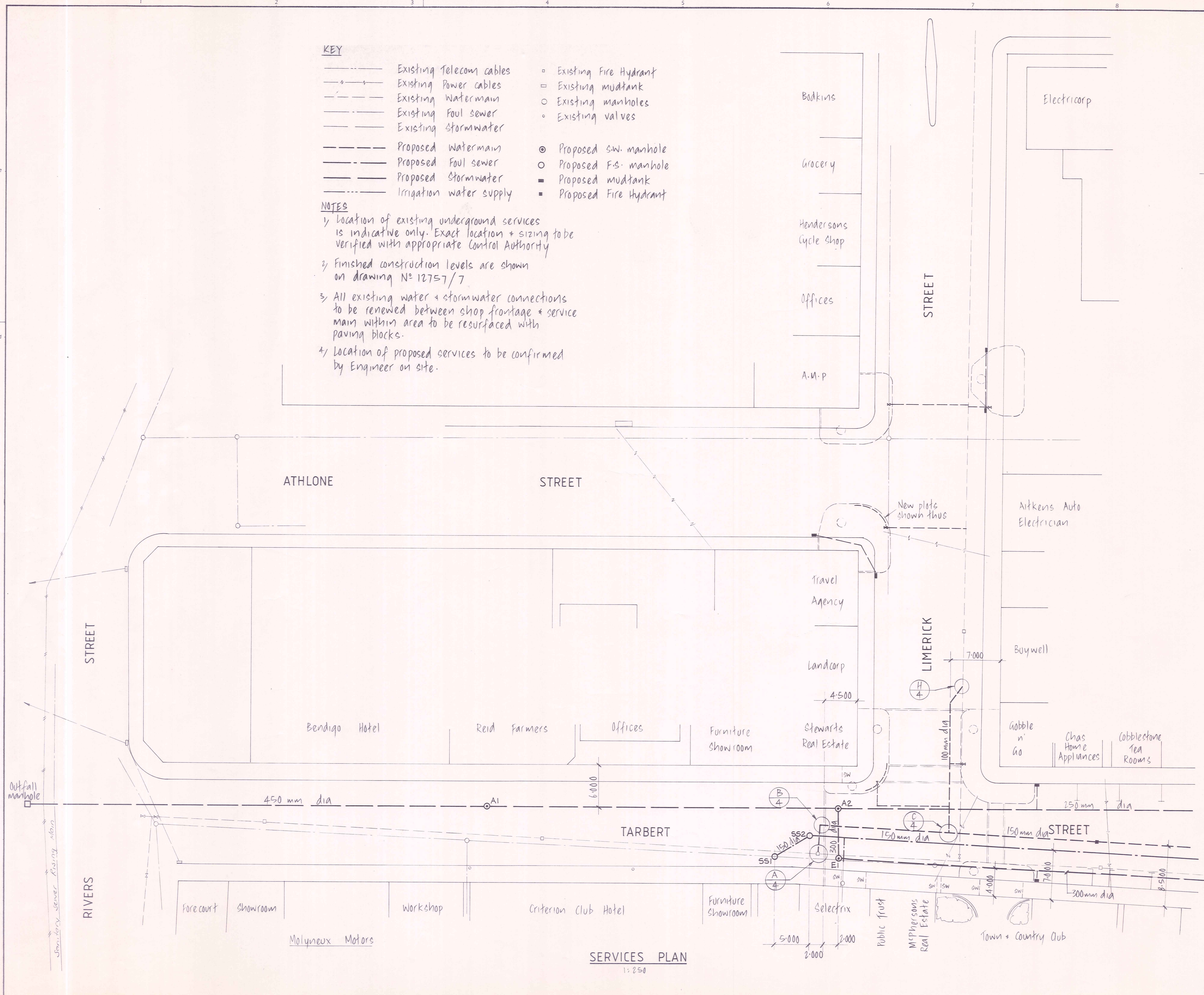
- Existing Telecom cables
- - - Existing Power cables
- - - Existing Watermain
- - - Existing Foul sewer
- - - Existing Stormwater
- - - Proposed Watermain
- - - Proposed Foul sewer
- - - Proposed Stormwater
- - - Irrigation water supply
- Existing Fire Hydrant
- Existing mudtank
- Existing manholes
- Existing valves
- ⊙ Proposed S.W. manhole
- Proposed F.S. manhole
- Proposed mudtank
- Proposed Fire Hydrant

NOTES

- 1) Location of existing underground services is indicative only. Exact location + sizing to be verified with appropriate Control Authority
- 2) Finished construction levels are shown on drawing N° 12757/7
- 3) All existing water + stormwater connections to be renewed between shop frontage + service main within area to be resurfaced with paving blocks.
- 4) Location of proposed services to be confirmed by Engineer on site.



300  
200  
150  
100  
50  
30  
10  
0  
ORIGINAL SIZE mm



SERVICES PLAN  
1:250

No.	Revisions	Date	Appvd
Designed	N Jelley	Date	Print Date
Drawn	JK/NS	Feb '91	15 JUN 2001
Checked	WJ/SJ	6/91	
Approved	[Signature]	6/91	
File	225/17/9	Ref	

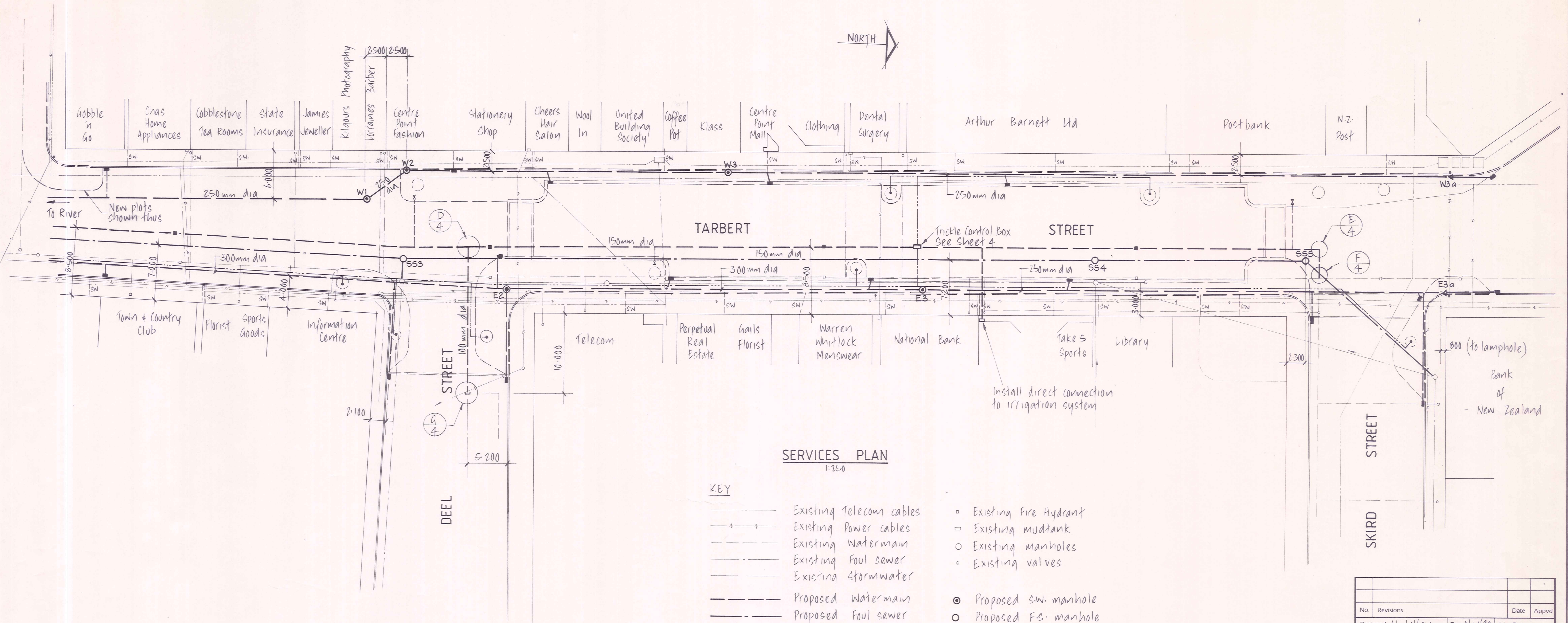
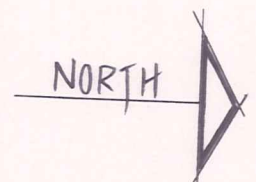
Client  
**CENTRAL OTAGO DISTRICT COUNCIL**

Project  
**CONTRACT N° 90/121  
TARBERT STREET  
REDEVELOPMENT**

Sheet Title  
**LIMERICK ST-TARBERT ST  
EXISTING & PROPOSED  
SERVICES PLAN**

Job No. <b>12757</b>	Sheet No. <b>1</b> of 13 sheets	Revision
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**Duffill Watts & King Ltd**  
CONSULTING ENGINEERS



**SERVICES PLAN**  
1:250

**KEY**

- Existing Telecom cables
- - - Existing Power cables
- Existing Watermain
- Existing Foul sewer
- Existing Stormwater
- - - Proposed Watermain
- - - Proposed Foul sewer
- - - Proposed Stormwater
- - - Irrigation water supply
- Existing Fire Hydrant
- Existing mudtank
- Existing manholes
- Existing valves
- ⊙ Proposed s.w. manhole
- Proposed F.S. manhole
- Proposed mudtank
- Proposed Fire Hydrant

**NOTES**

- 1) Location of existing underground services is indicative only. Exact location + sizing to be verified with appropriate Control Authority
- 2) Finished construction levels are shown on drawing N° 12757/6
- 3) All existing water + stormwater connections to be renewed between shop frontage + service main within area to be resurfaced with paving blocks.
- 4) Location of proposed services to be confirmed by Engineer on site.

No.	Revisions	Date	Appvd
Designed	N. Jelley	Date Nov '90	Print Date
Drawn	NJ/JK	" "	15 JUN 2001
Checked	M. Boyd	6/91	
Approved		6/91	
File	225/17/9	Ref	

Client

**CENTRAL OTAGO DISTRICT COUNCIL**

Project

**CONTRACT N° 90/121**  
**TARBERT STREET**  
**REDEVELOPMENT**

Sheet Title

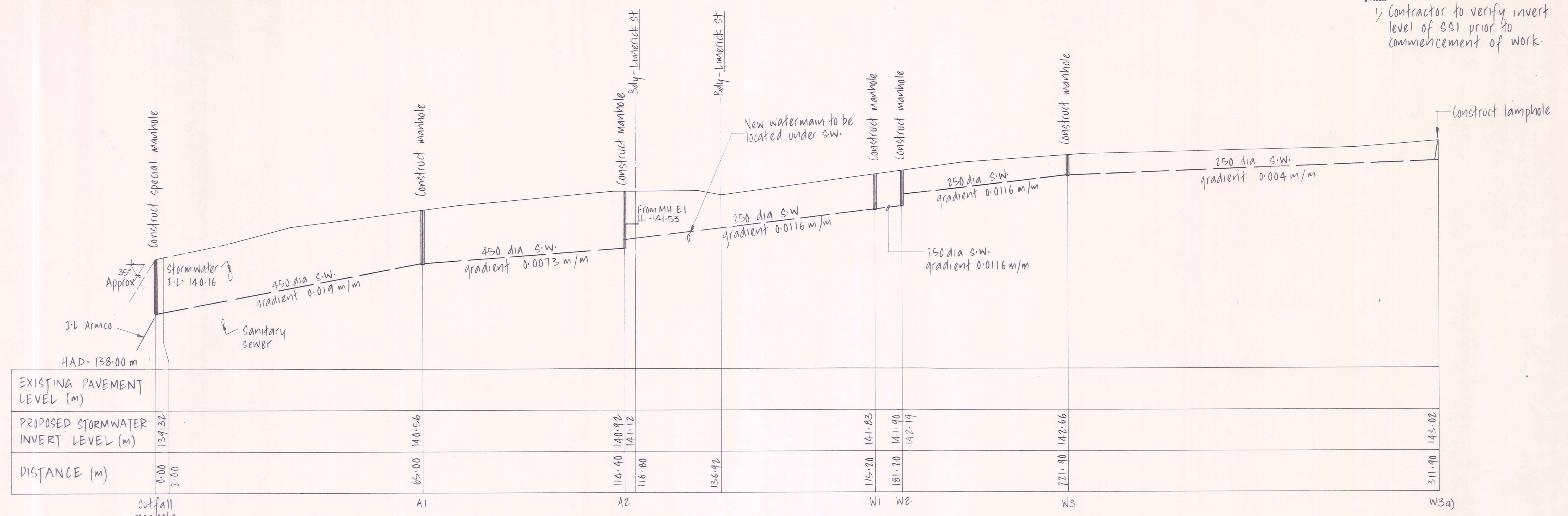
**TARBERT STREET**  
**EXISTING & PROPOSED**  
**SERVICES PLAN**

Job No.	Sheet No.	Revision
<b>12757</b>	<b>2</b>	<b>of 13</b> shts

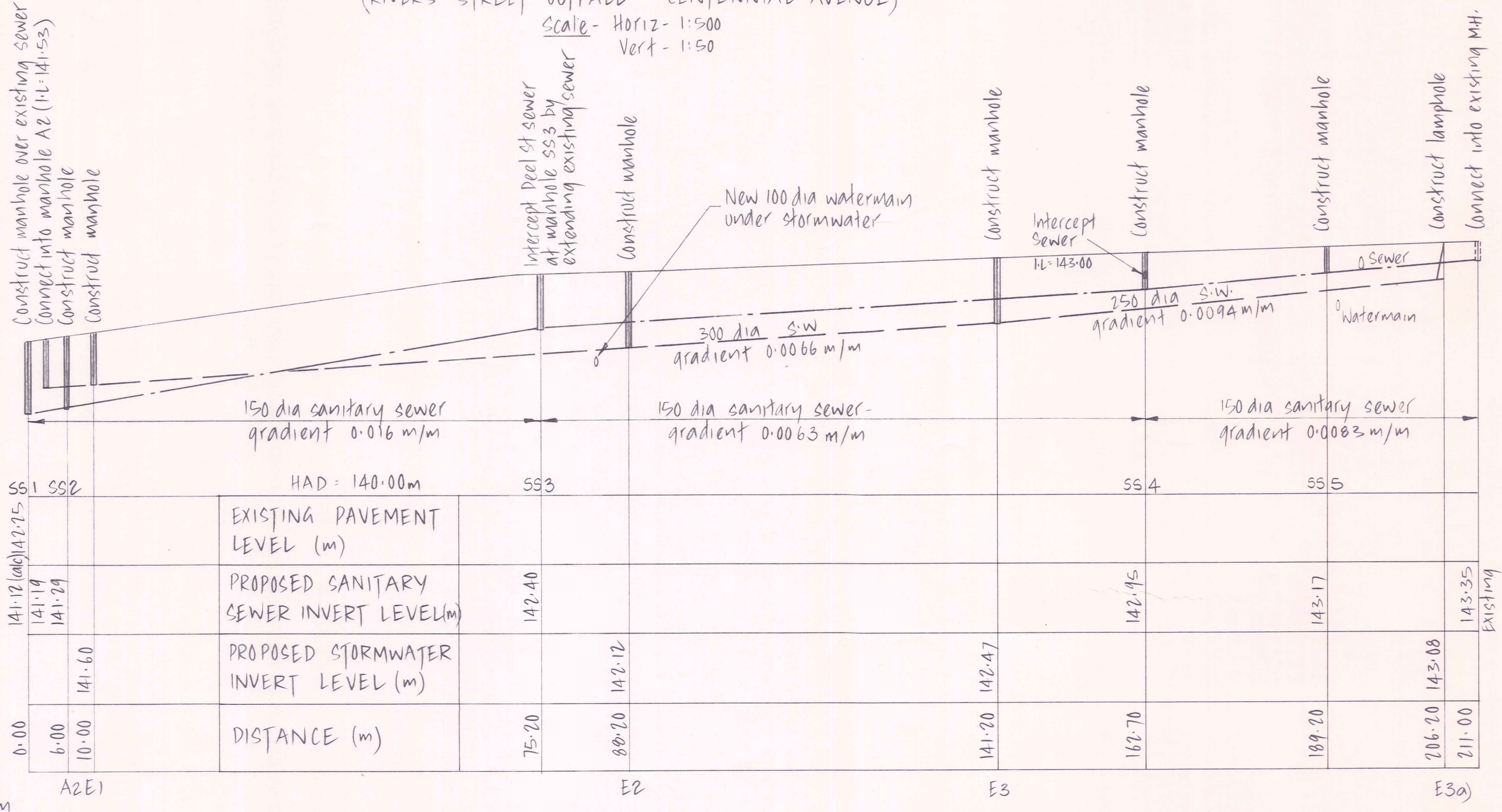
**Duffill Watts & King Ltd**  
CONSULTING ENGINEERS

ORIGINAL SIZE mm

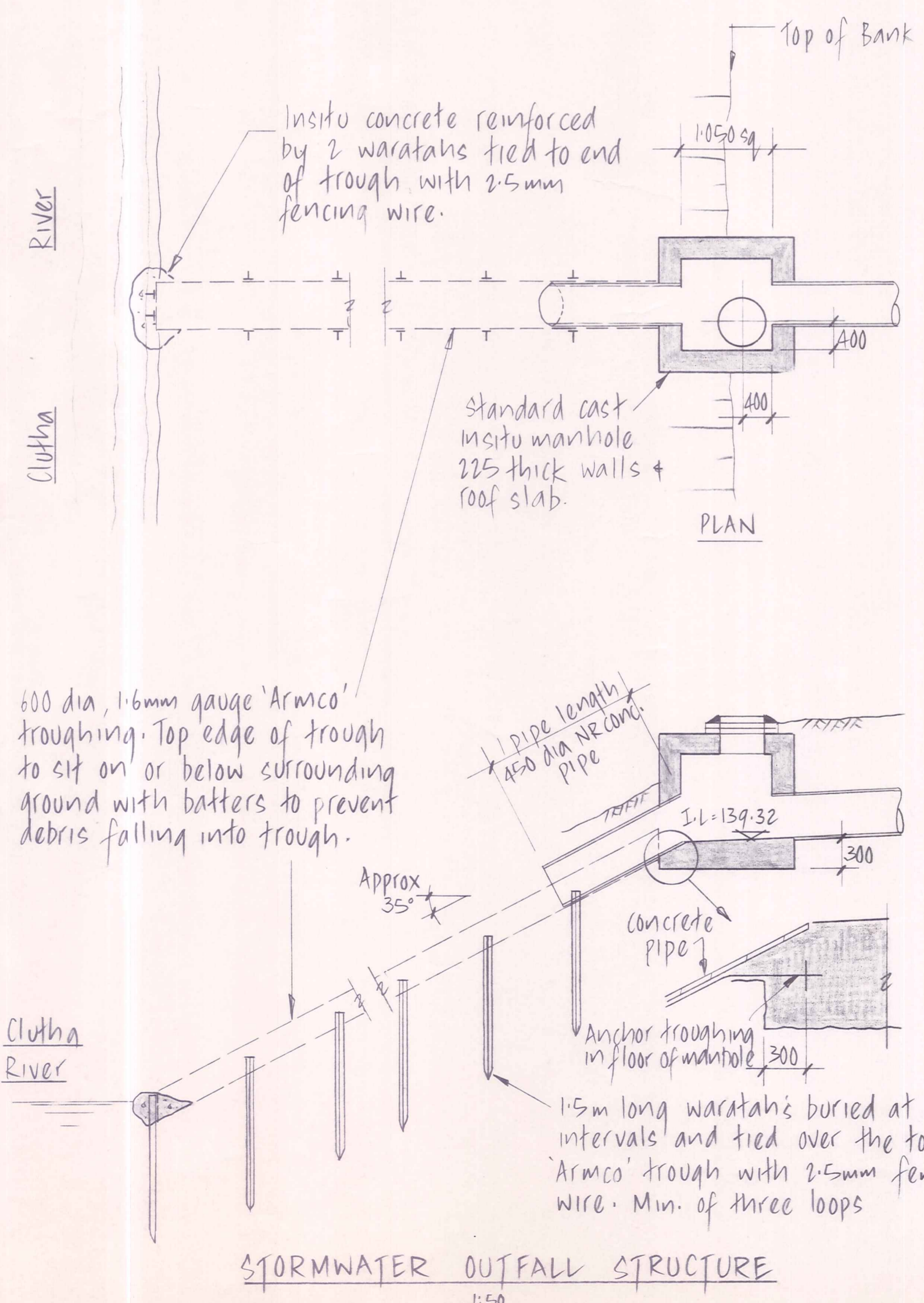
Notes  
 1/ Contractor to verify invert level of SSI prior to commencement of work.



LONGITUDINAL SECTION - WEST SIDE TARBERT STREET  
 (RIVERS STREET OUTFALL - CENTENNIAL AVENUE)  
 Scale - Horiz - 1:500  
 Vert - 1:50



LONGITUDINAL SECTION - EAST SIDE TARBERT STREET  
 (DEEL ST. - SKIRD ST.)  
 Scale - Horiz - 1:500  
 Vert - 1:50



No.	Revisions	Date	Apprv
1	Designed N. J. J. / J. K.	Nov '90	Print Date
2	Checked M. J. / J. K.	Nov '90	15 JUN 2001
3	Approved [Signature]	6/91	
4	File 225/17/9	Ref	

Client  
**CENTRAL OTAGO DISTRICT COUNCIL**

Project  
**CONTRACT N° 90/121**  
**TARBERT STREET**  
**REDEVELOPMENT**

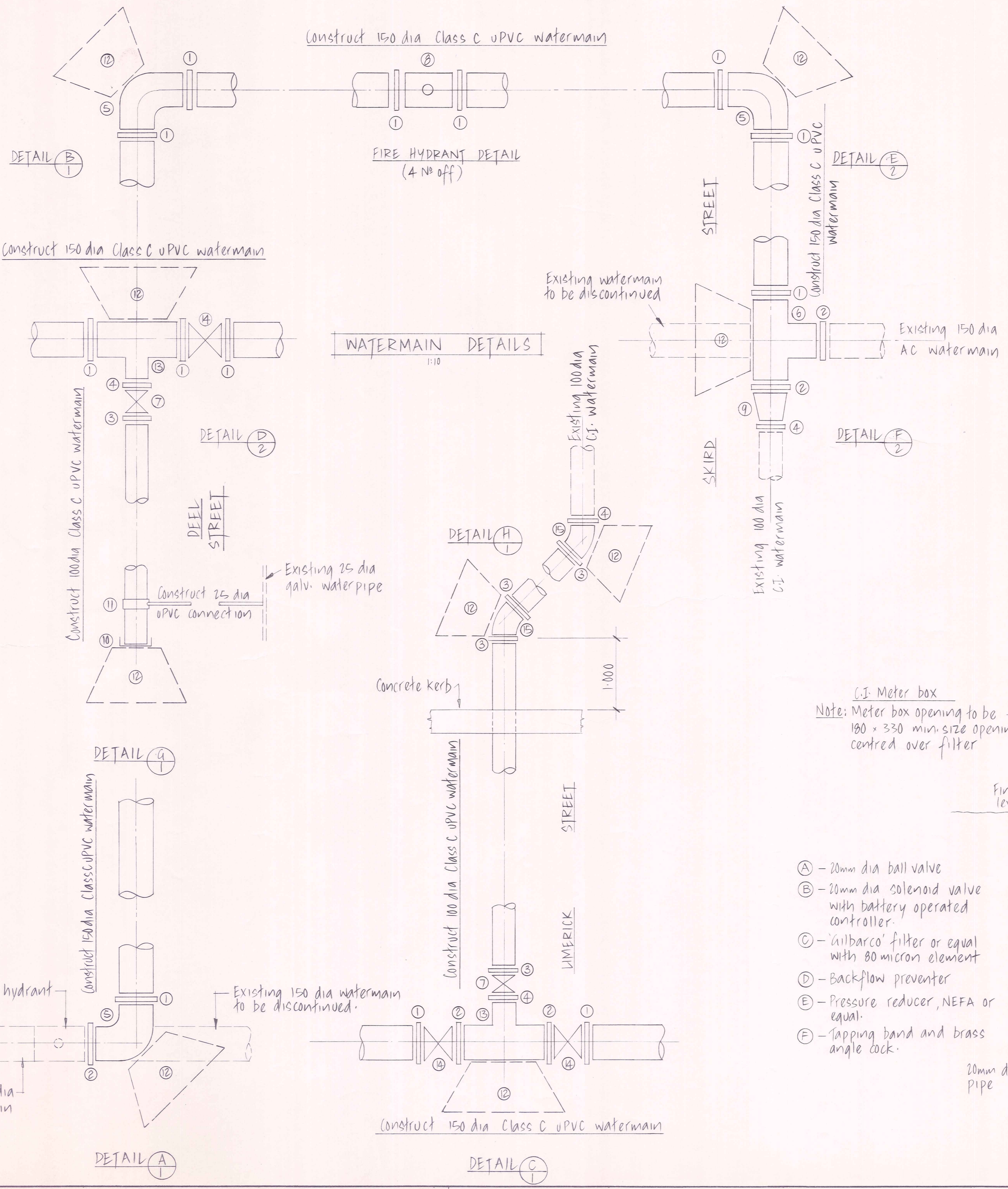
Sheet Title  
**LONGITUDINAL SECTIONS**  
**STORMWATER & SANITARY**  
**SEWERS - TARBERT STREET**

Job No.	Sheet No.	Revision
12757	3	
	of 13	shts

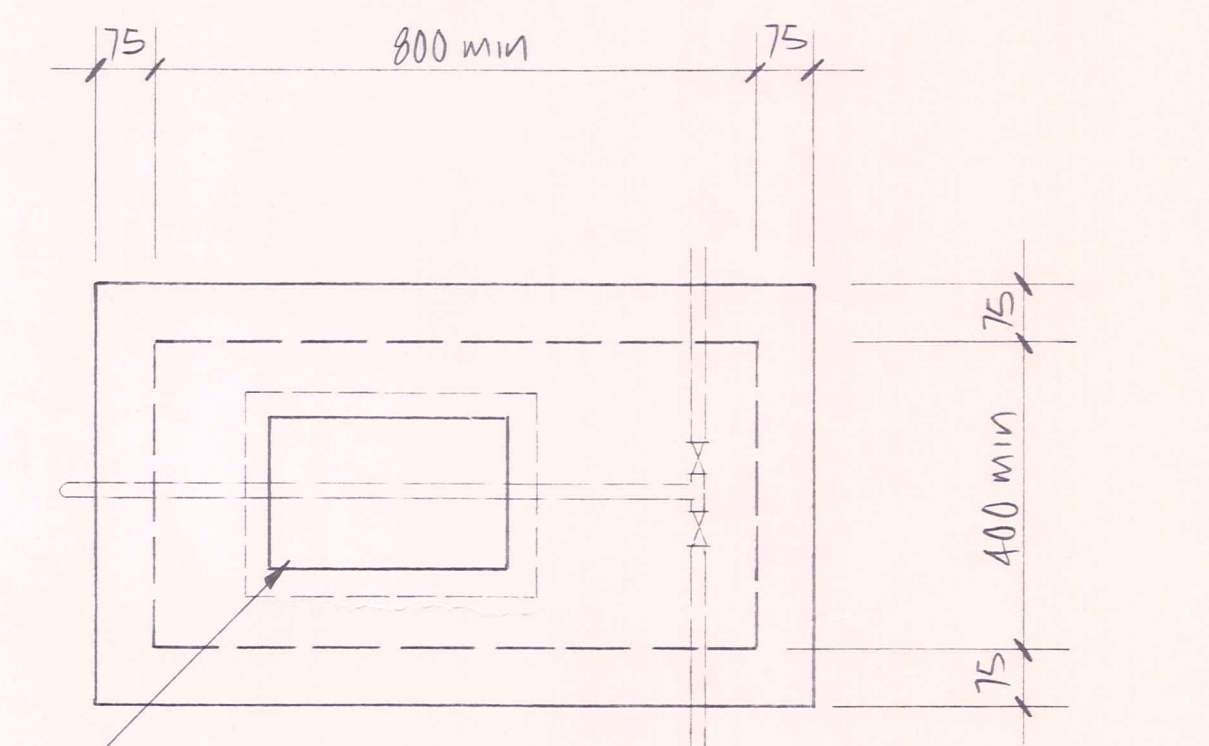
**Duffill Watts & King Ltd**  
 CONSULTING ENGINEERS

ORIGINAL SIZE mm

Notes  
 1. Contractor to verify material type & size of existing watermains prior to ordering of fittings

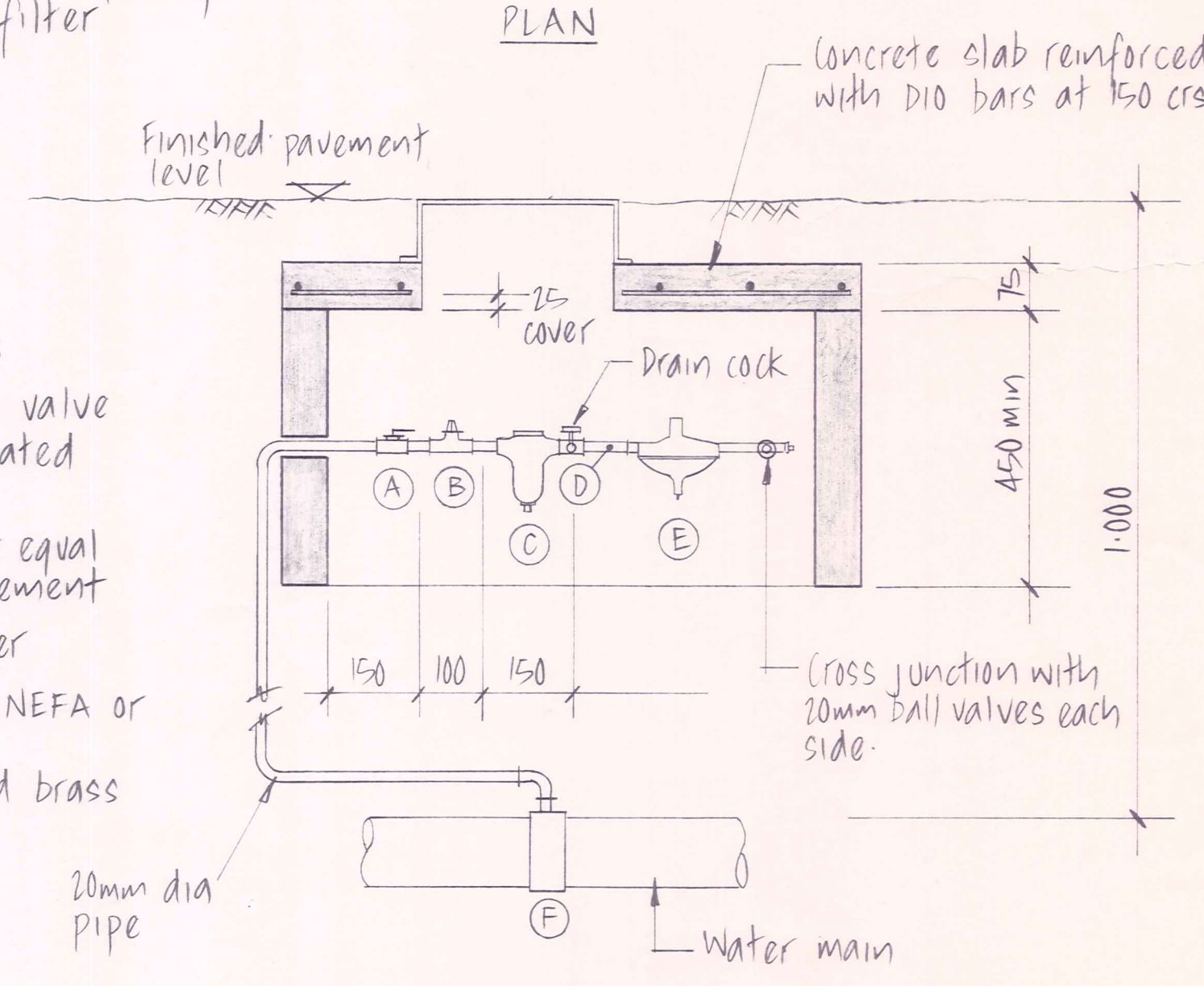


ITEM	DESCRIPTION	No OFF
1	150 dia PVC to C.I. gibault joint	19
2	150 dia A.C. to C.I. gibault joint	5
3	100 dia PVC to C.I. gibault joint	5
4	100 dia C.I. to C.I. gibault joint	4
5	150 dia C.I. P.E. 90° bend	3
6	150 dia C.I. P.E. equal tee	1
7	100 dia P.E. sluice valve	2
8	150 dia hydrant tee, riser & hydrant	4
9	150 to 100 dia C.I. reducer	1
10	100 dia C.I. gibault blank cap	1
11	100 dia tapping band (Tapped 25mm)	1
12	Thrust block (Type A)	9
13	100 dia on 150 dia C.I. unequal tee P.E.	2
14	150 dia P.E. sluice valve	3
15	100 dia P.E. C.I. 45° bend	2



C.I. Meter box  
 Note: Meter box opening to be 180 x 330 mm size opening centred over filter

- (A) - 20mm dia ball valve
- (B) - 20mm dia solenoid valve with battery operated controller.
- (C) - 'Gilbarco' filter or equal with 80 micron element
- (D) - Backflow preventer
- (E) - Pressure reducer, NEFA or equal.
- (F) - Tapping band and brass angle cock.



TRICKLE CONTROL BOX DETAIL  
 1:10

No.	Revisions	Date	Appvd
Designed	N. Jelley	Date Nov '90	Print Date
Drawn	J. Knox	" "	15 JUN 1991
Checked	[Signature]	6-91	
Approved	[Signature]		
File	225/17/9	Ref	

Client  
**CENTRAL OTAGO DISTRICT COUNCIL**

Project  
**CONTRACT 90/121**  
**TARBERT STREET**  
**REDEVELOPMENT**

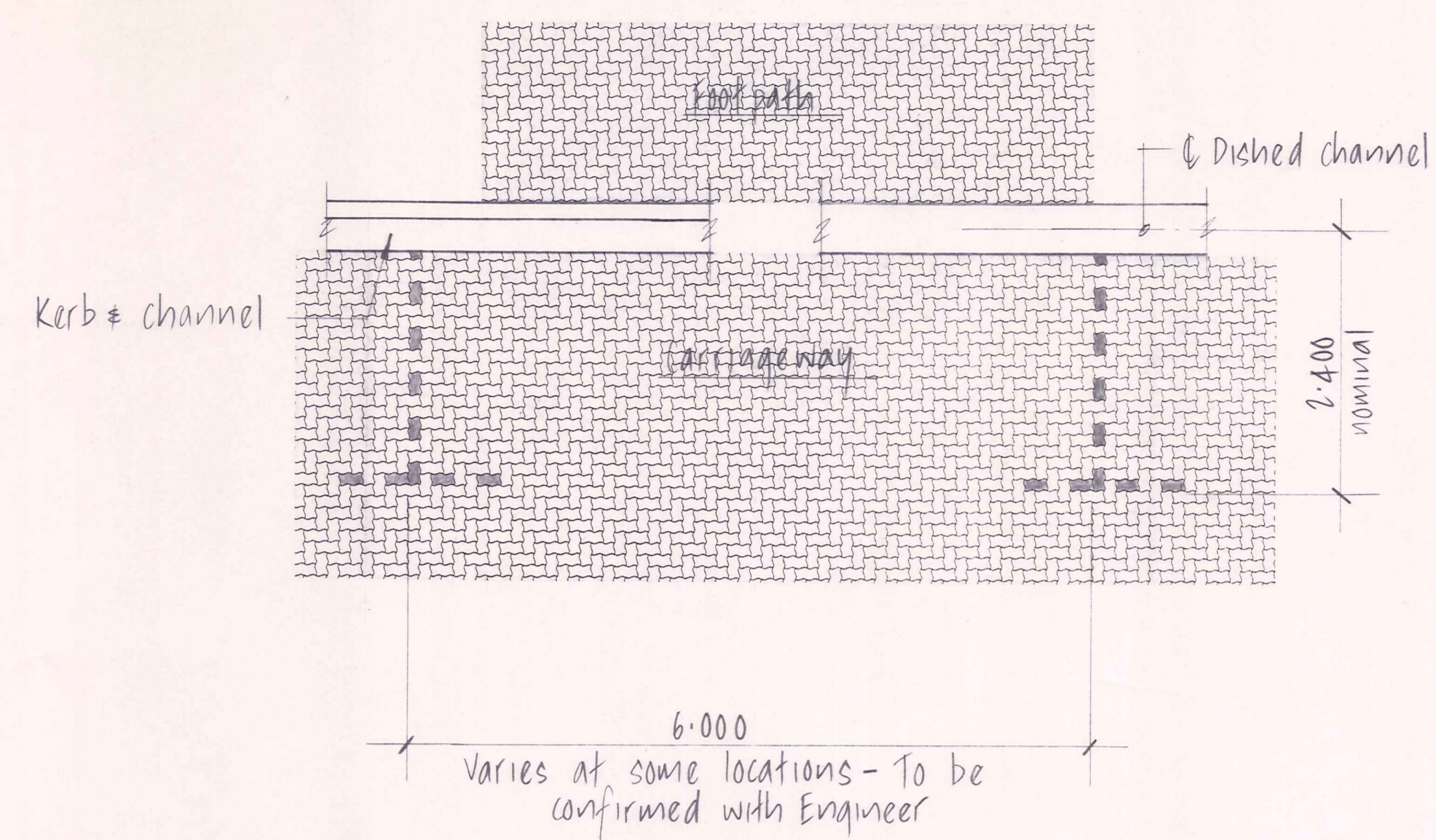
Sheet Title  
**WATERMAIN & TRICKLE IRRIGATION DETAILS**

Job No.	Sheet No.	Revision
12757	4	of 13 shts

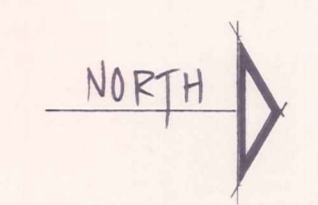
**Duffill Watts & King Ltd**  
 CONSULTING ENGINEERS

ORIGINAL SIZE mm

Notes  
All exposed concrete work within the confines of paving block surfacing shall be colour tinted to match the adjacent paving



CAR PARKING BAYS USING CONTRASTING PAVERS  
1:5.0



- LEGEND**
- 60mm (pedestrian area) and 80mm paving blocks (Dark Brown)
  - Planting
  - 80mm paving blocks (Red)
  - 10mm compacted depth asphaltic concrete re-surfacing
  - Lighting Standard
  - Litter Bin

**NOTE:** All pavers to be 'Firth Stockholm' brand and laid in herringbone pattern parallel to kerb.  
Car park markings to be achieved by use of red (contrasting) pavers.

No.	Revisions	Date	Appvd
Designed	N. Jolley		Print Date
Drawn	NJ / JK	DEC '90	15 JUN 1991
Checked	<i>[Signature]</i>	6/91	
Approved	<i>[Signature]</i>	6/91	
File	225/17/9	Ref	

Client  
**CENTRAL OTAGO DISTRICT COUNCIL**

Project  
**CONTRACT N°90/121  
TARBERT STREET  
REDEVELOPMENT**

Sheet Title  
**LIMERICK STREET  
PROPOSED LAYOUT PLAN**

Job No. <b>12757</b>	Sheet No. <b>5</b> of 13 shts	Revision
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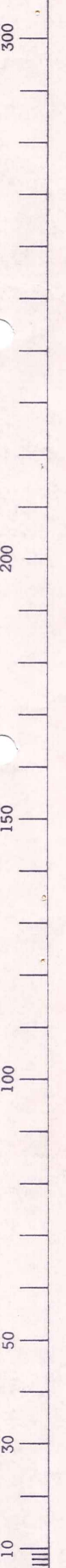
**Duffill Watts & King Ltd**  
CONSULTING ENGINEERS

ARCHITECTS  
**Salmond Anderson Heath**  
TOWN PLANNERS  
Telephone (03) 477 0822 P.O. Box 441, Dunedin Facsimile (03) 474 1323

LAYOUT PLAN  
Scale 1:250

CONTINUED ON SHEET 6

ORIGINAL SIZE mm



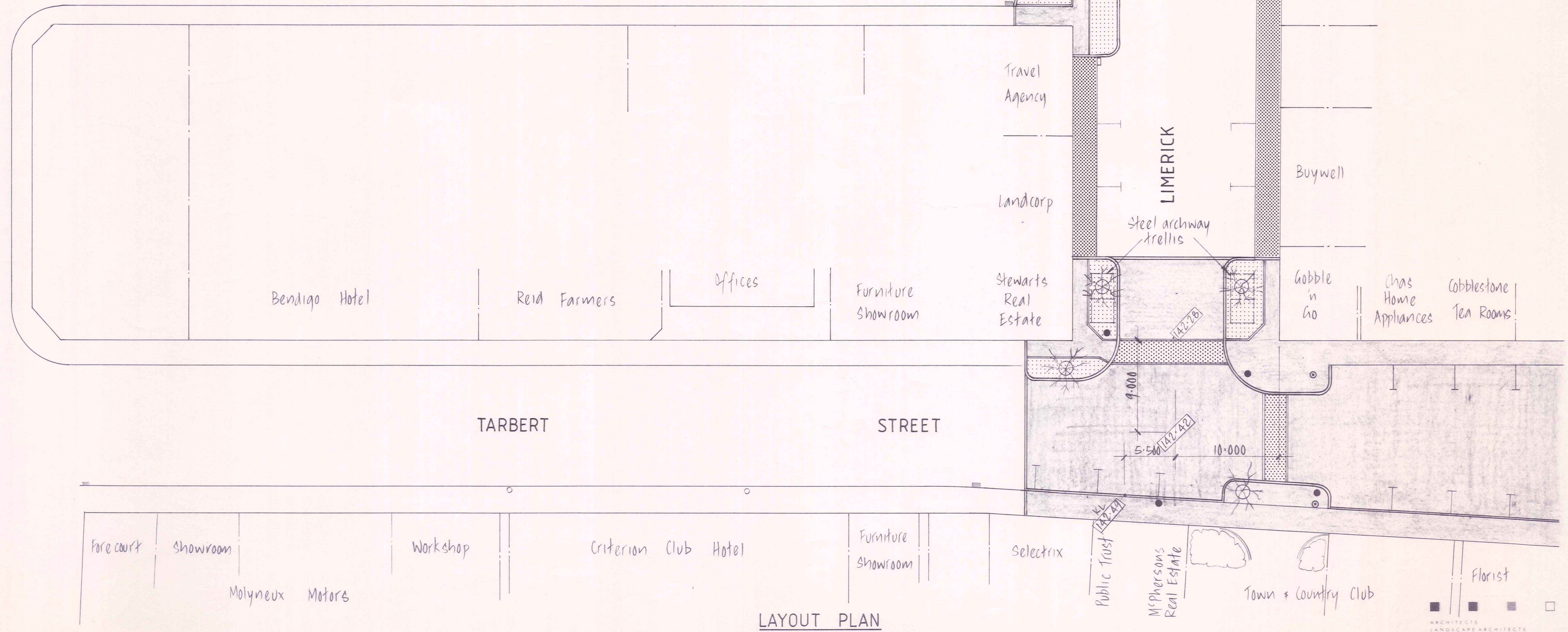
RIVERS STREET

STREET

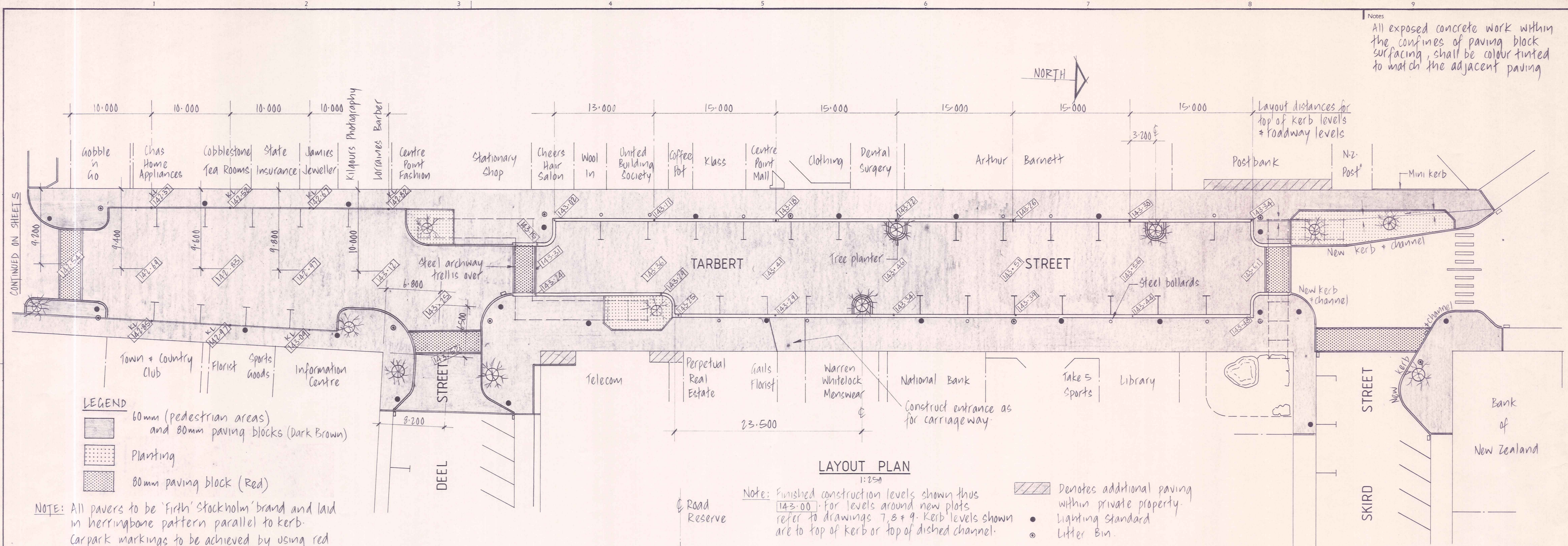
ATHLONE STREET

LIMERICK

TARBERT STREET



Notes  
All exposed concrete work within the confines of paving block surfacing, shall be colour tinted to match the adjacent paving



- LEGEND**
- 60mm (pedestrian areas) and 80mm paving blocks (Dark Brown)
  - Planting
  - 80mm paving block (Red)

NOTE: All pavers to be 'Firth' Stockholm brand and laid in herringbone pattern parallel to kerb. Carpark markings to be achieved by using red (contrasting) pavers

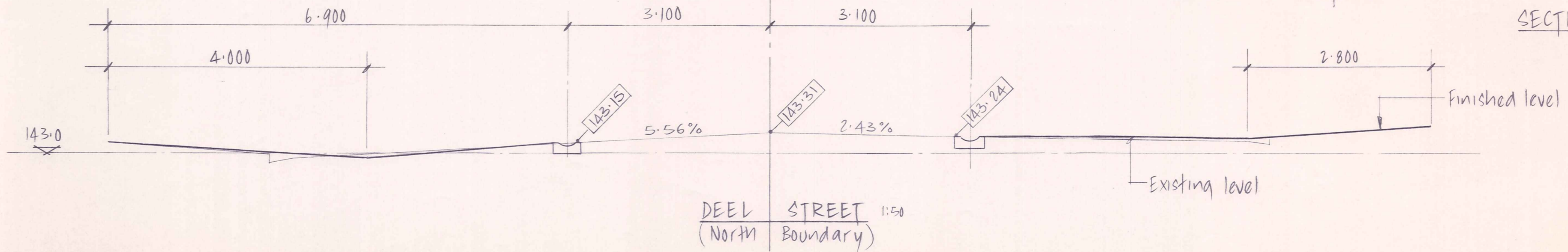
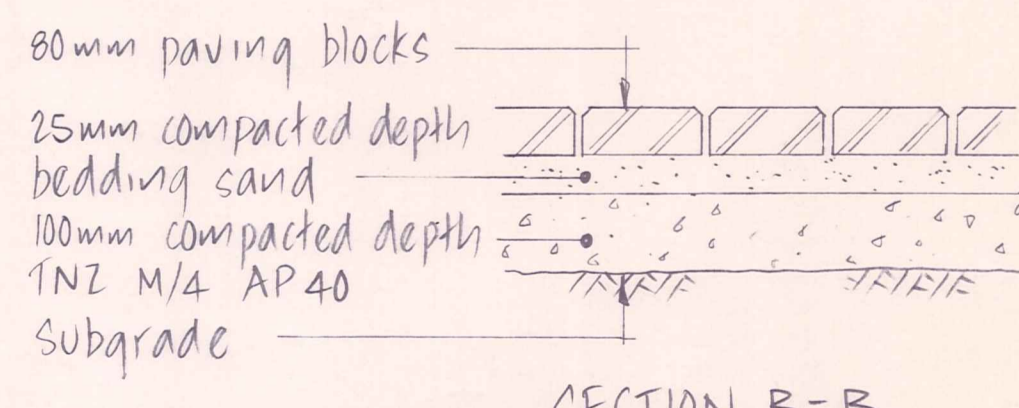
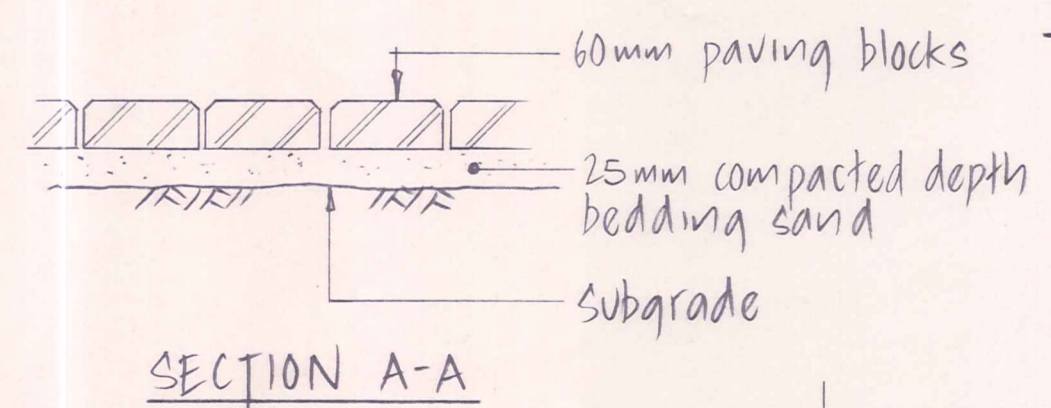
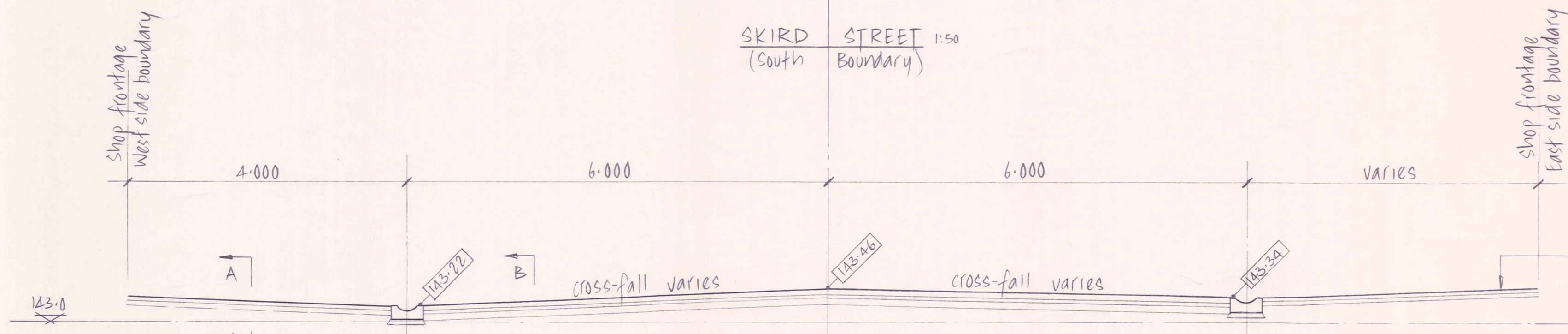
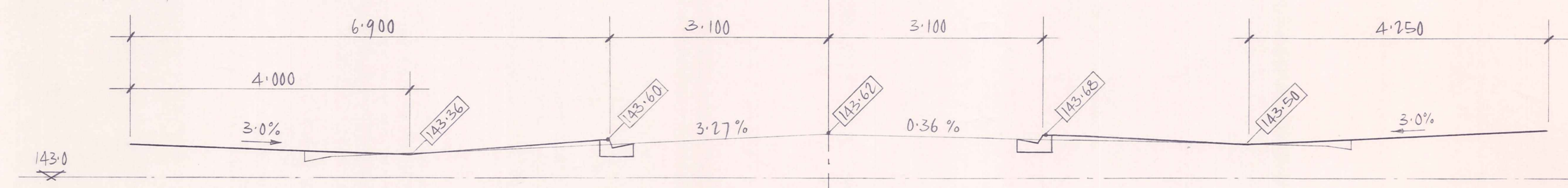
**LAYOUT PLAN**  
1:250

Note: Finished construction levels shown thus  $143.00$ . For levels around new plots refer to drawings 7, 8 + 9. Kerb levels shown are to top of kerb or top of ditched channel.

Denotes additional paving within private property.

Lighting standard

Litter Bin



<b>Sammond Anderson Heath</b> ARCHITECTS LANDSCAPE ARCHITECTS TOWN PLANNERS Telephone 03 471 0402 Fax 03 471 0400 Website 03 471 0200			
No.	Revisions	Date	Appvd
Designed	N. Jelley	Date Nov '90	Print Date
Drawn	NJ/SK	11/11	15 JUN 2003
Checked	WJ/BJ	6/91	
Approved	Bramble	6/91	
File	225/17/9	Ref	

Client  
**CENTRAL OTAGO DISTRICT COUNCIL**

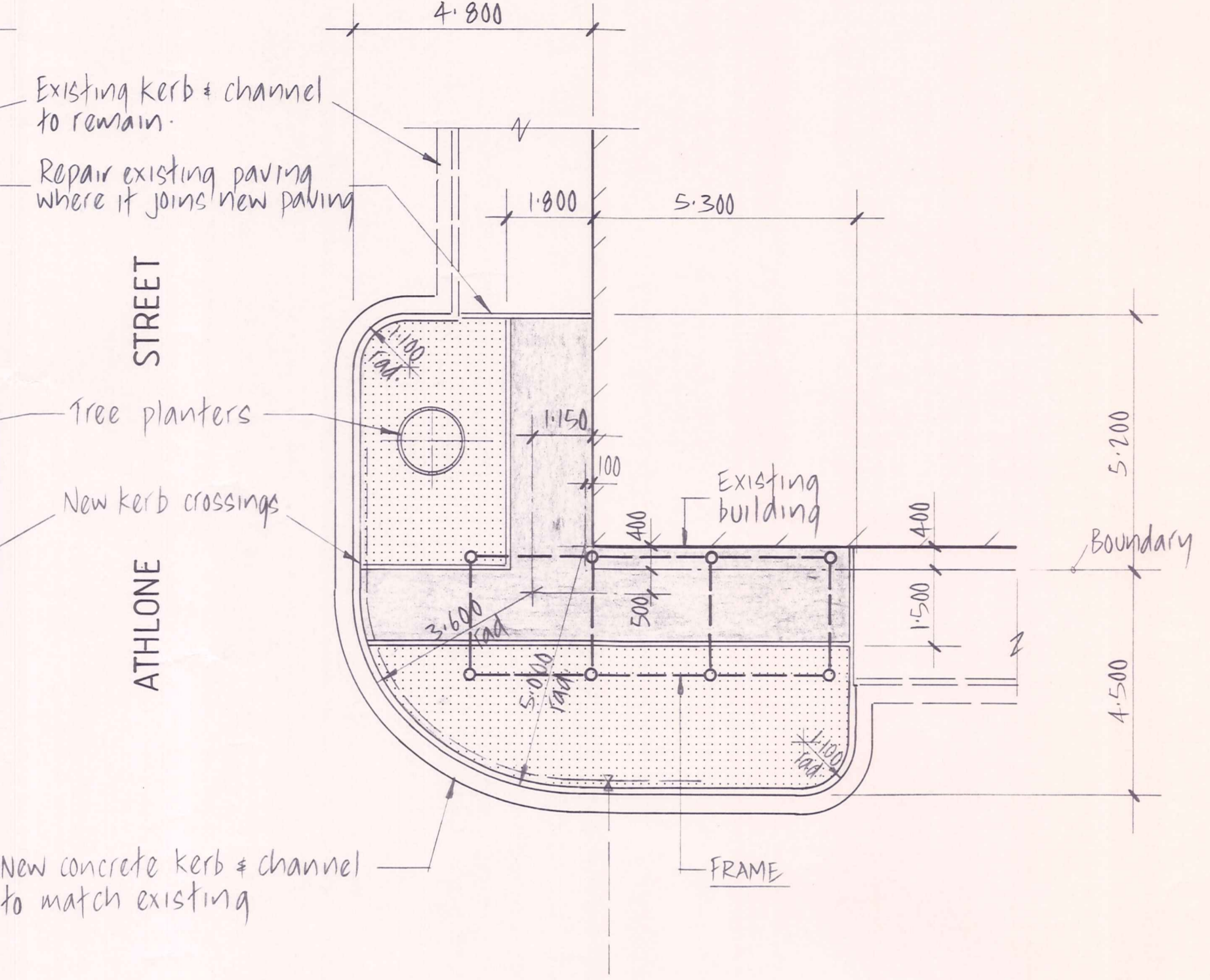
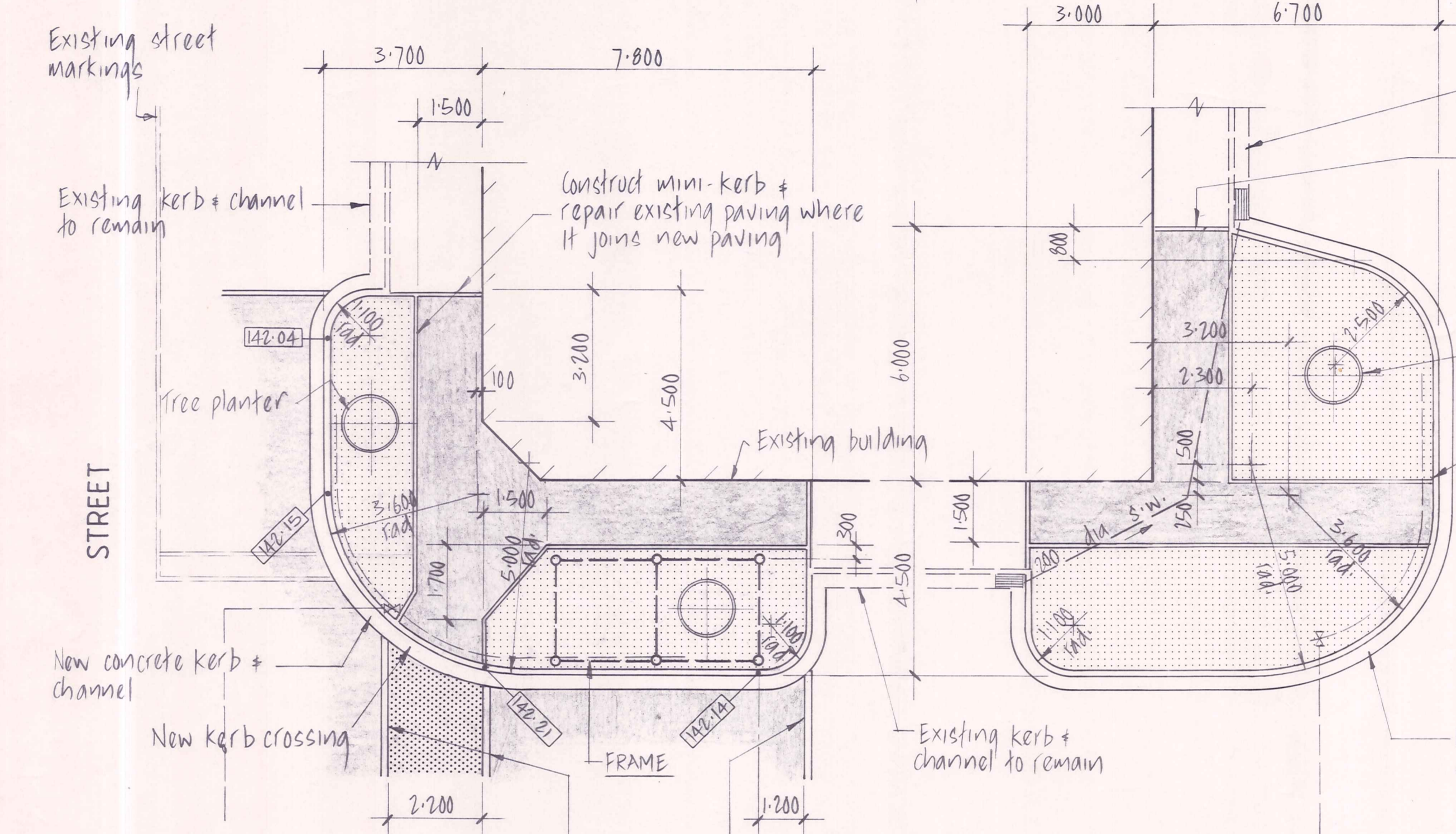
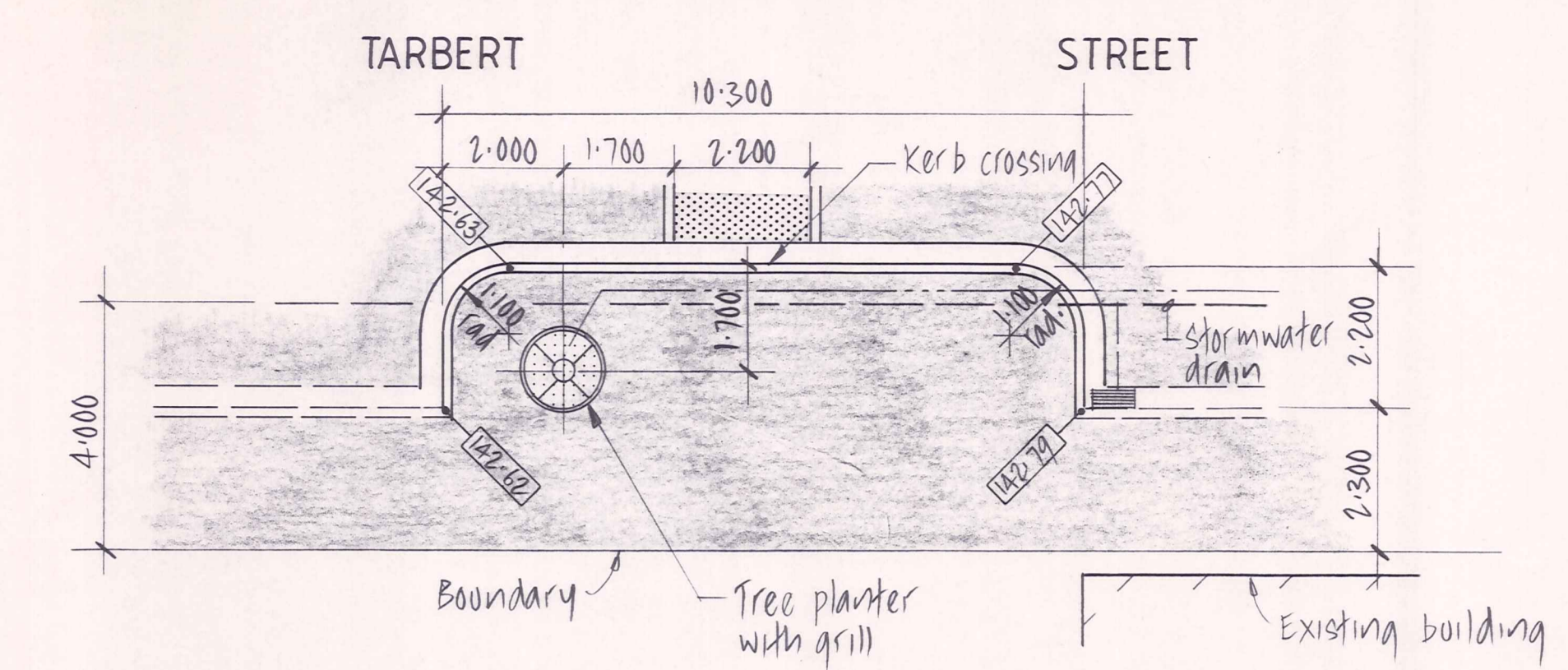
Project  
**CONTRACT N° 90/121**  
**TARBERT STREET**  
**REDEVELOPMENT**

Sheet Title  
**TARBERT STREET**  
**PROPOSED LAYOUT PLAN**  
**& TYPICAL SECTIONS**

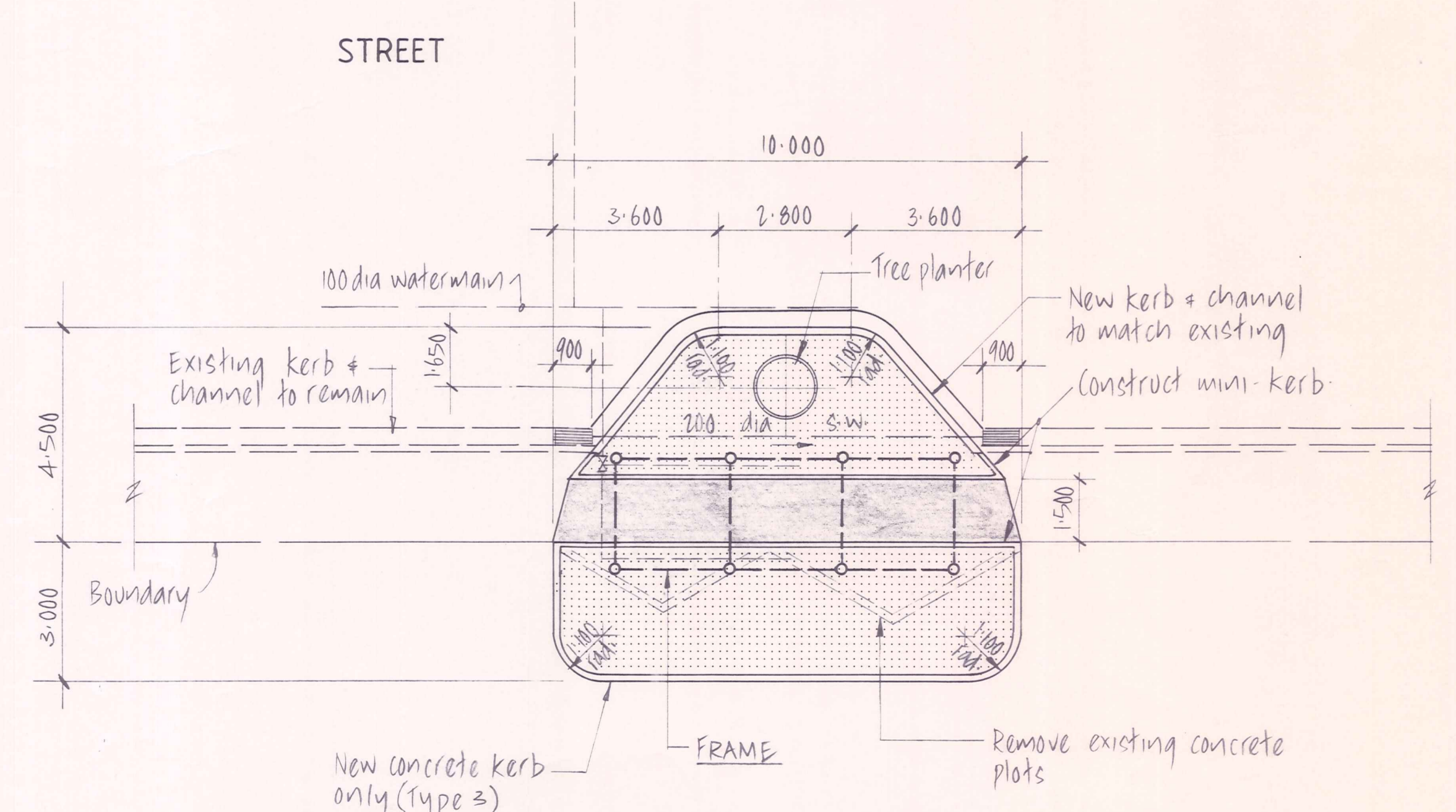
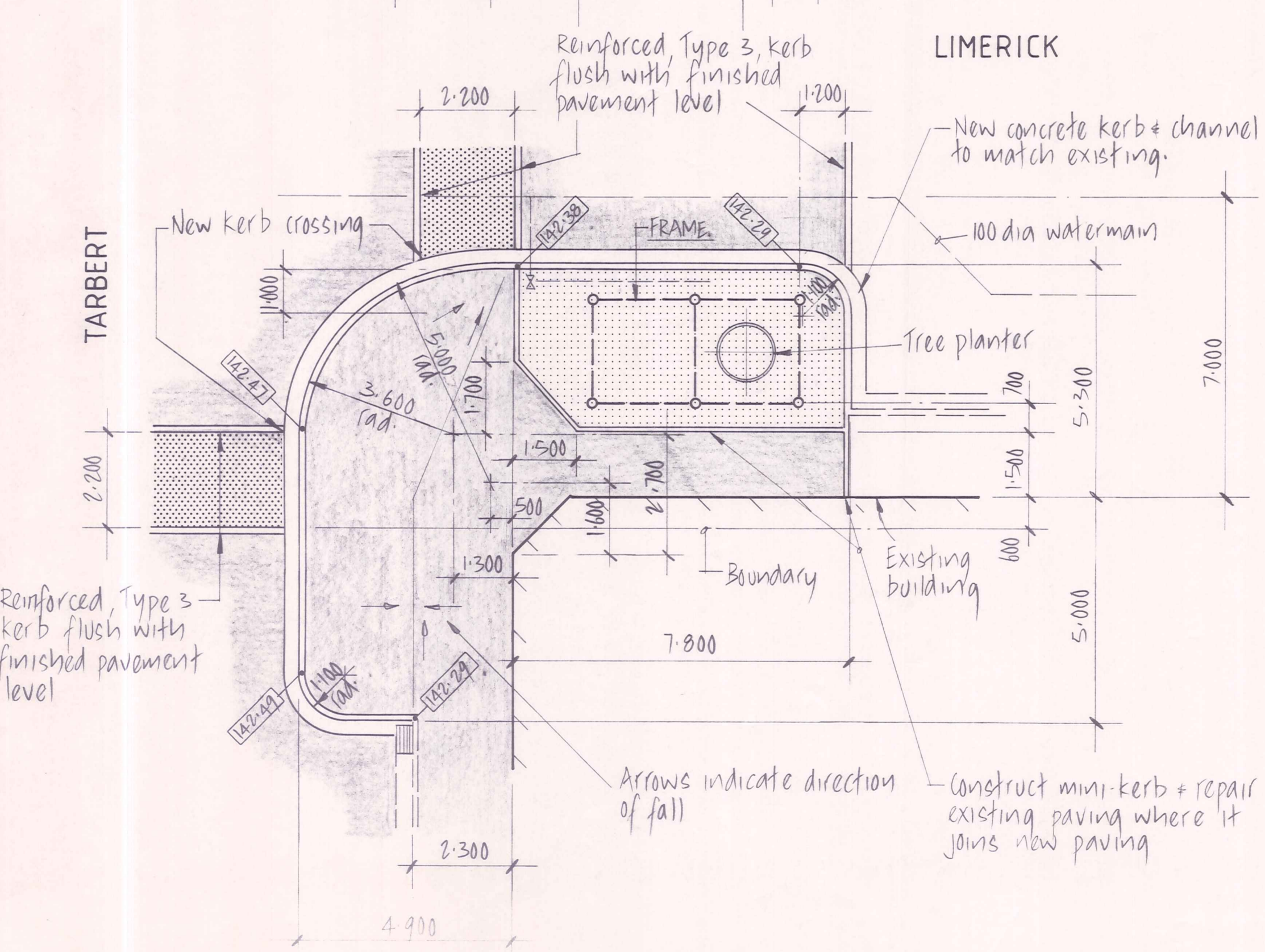
Job No.	Sheet No.	Revision
12757	6	of 13 shts

**Duffill Watts & King Ltd**  
CONSULTING ENGINEERS

Notes  
 1. Levels shown at kerbed plots are to top of kerb.  
 2. Refer to sheet 11 for frame details



- LEGEND**
- 60 mm (pedestrian areas) and 80 mm paving blocks (Dark Brown)
  - 80 mm paving block (Red)
  - Planting
  - 15mm HD-PE irrigation supply + ball valve
  - 20mm LD-PE trickle irrigation supply



<b>Salmond Anderson Heath</b> LANDSCAPE ARCHITECTS PLANNERS			
No.	Revisions	Date	Appvd
Designed	N. Jelley	Date Nov 90	Print Date
Drawn	NJ/JK	" "	" "
Checked	M. Flog	6/91	15 JUN 2001
Approved	Salmond	6/91	
File	225/17/9	Ref	

Client  
**CENTRAL OTAGO DISTRICT COUNCIL**

Project  
**CONTRACT N° 90/121**  
**TARBERT STREET**  
**REDEVELOPMENT**

Sheet Title  
**LIMERICK STREET**  
**STREETSCAPE DETAILS**

Job No.	Sheet No.	Revision
12757	7	of 13 SHS

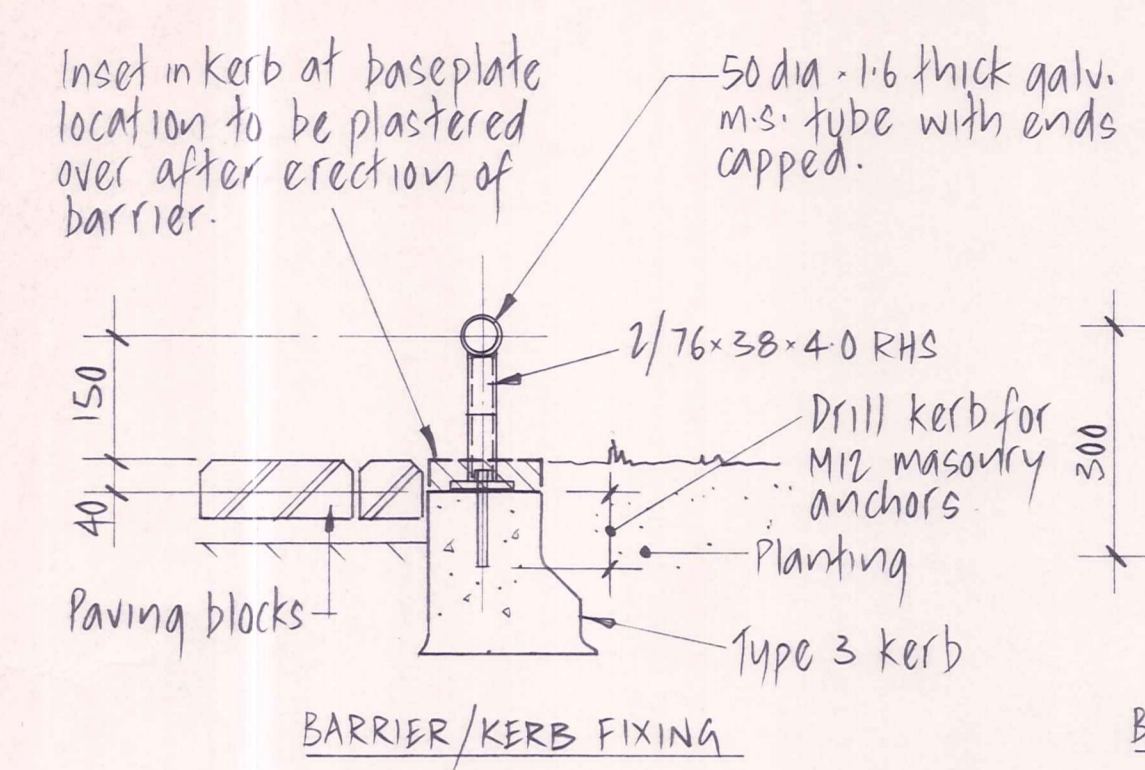
**Duffill Watts & King Ltd**  
 CONSULTING ENGINEERS

ORIGINAL SIZE mm

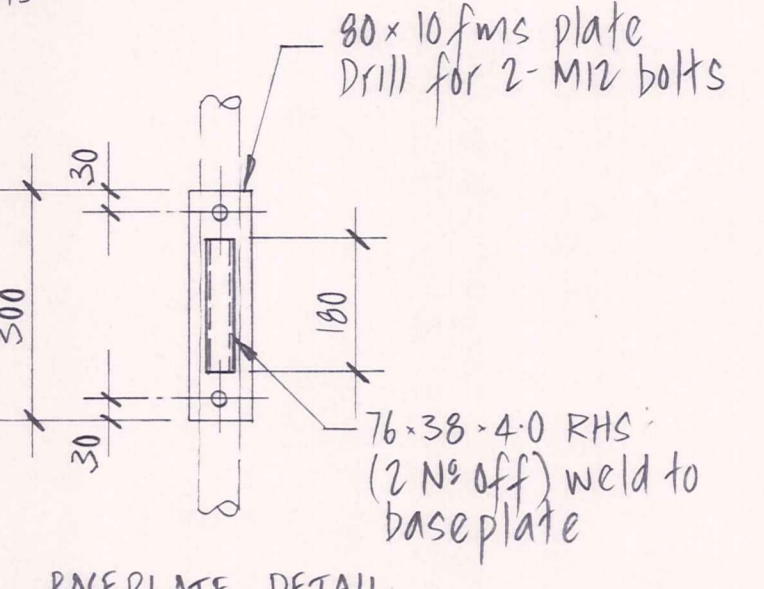


Notes

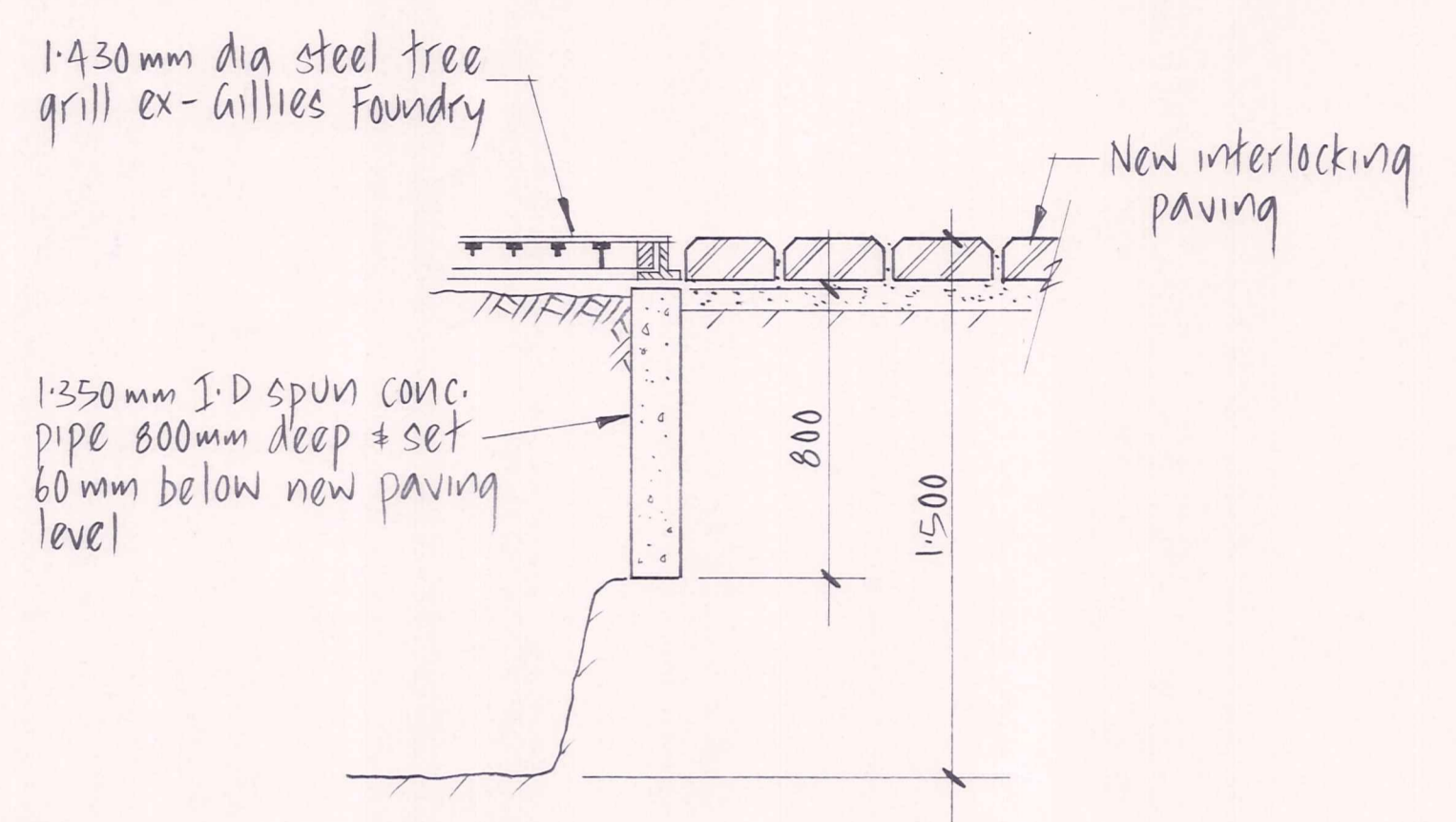
- All steelwork to be hot dipped galvanised after fabrication
- All levels shown on kerbed plots are to top of kerb.
- Arrows denote direction of fall for surface drainage within plots.



BARRIER/KERB FIXING

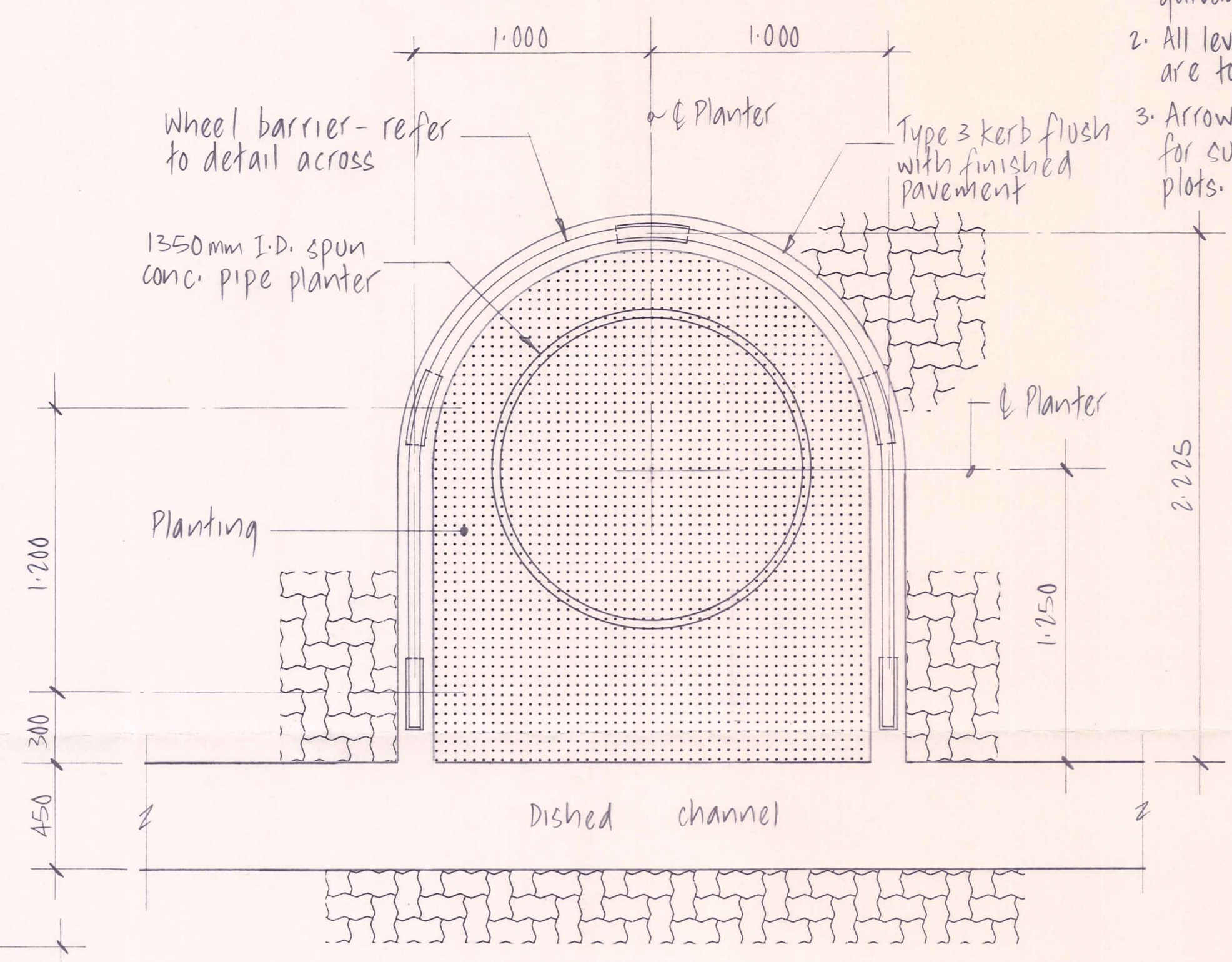


BASEPLATE DETAIL



DETAIL OF TYPICAL TREE PLANTER

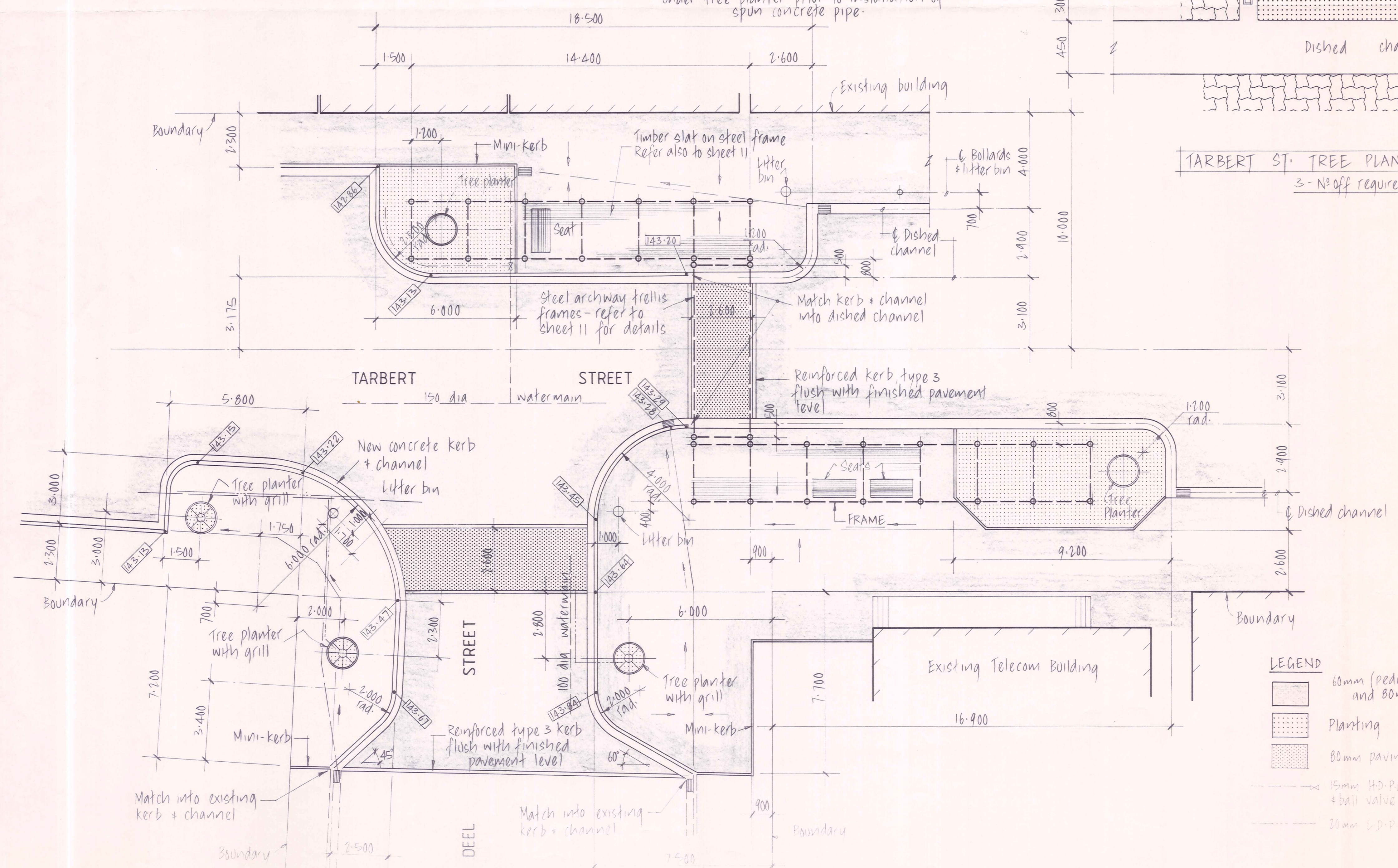
Note: Excavate to a depth of 1.500 metres immediately under tree planter prior to installation of spun concrete pipe.



TARBERT ST. TREE PLANTER DETAIL 1:20  
3 - Nos off required

WHEEL BARRIER DETAILS 1:10

Note: Barrier anchors to be inset within kerb edging + plastered over



LEGEND

- 60mm (pedestrian areas) and 80mm paving blocks (Dark Brown)
- Planting
- 80mm paving block (Red)
- 15mm HD-PE irrigation supply + ball valve
- 30mm LD-PE trickle irrigation supply

Refer to sheet 11 for details of frames

No.	Revisions	Date	Appr'd
Designed	N. Jellay	Date Nov '90	Print Date
Drawn	N.J./S.K.	" " "	15 JUN 2003
Checked	M. Blair	6/91	
Approved	S. Anderson	6/91	
File	225/17/9		Ref

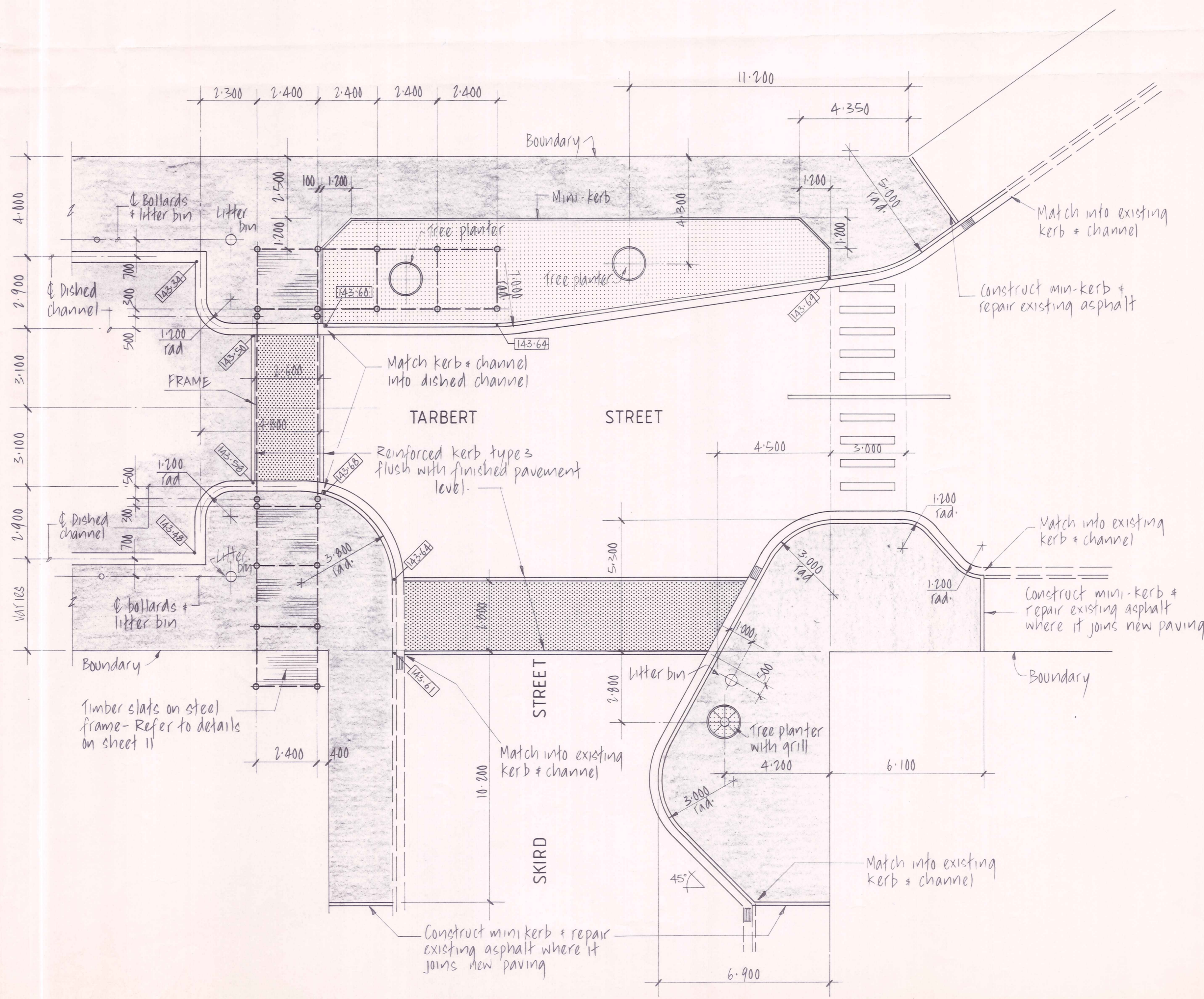
Client	CENTRAL OTAGO DISTRICT COUNCIL
Project	<b>CONTRACT N°90/121</b>
	TARBERT STREET
	REDEVELOPMENT
Sheet Title	TARBERT STREET STREETScape DETAILS

Job No.	Sheet No.	Revision
12757	8	of 15 sheets

**Duffill Watts & King Ltd**  
CONSULTING ENGINEERS

ORIGINAL SIZE mm

Notes  
 Location of pedestrian crossings in kerb & channel to be confirmed by Engineer on site prior to construction.



- LEGEND**
- 60mm (pedestrian areas) and 80mm paving blocks (Dark Brown)
  - Planting
  - 80mm paving block (Red)
  - 15mm H.D.P.E. irrigation supply & ball valve
  - 20mm L.D.P.E. trickle irrigation supply

 ARCHITECTS LANDSCAPE ARCHITECTS TOWN PLANNERS Telephone 03 471 0402 P.O. Box 441 Dunedin Facsimile 03 474 1275			
No.	Revisions	Date	Appvd
Designed	N. Jelley	Date Nov '90	Print Date
Drawn	N.J./J.K.	" "	15 JUN 1991
Checked	W. J. Bot	6/91	
Approved	<i>[Signature]</i>	6/91	
File	225/17/19	Ref	

Client  
  
**CENTRAL OTAGO DISTRICT COUNCIL**

Project  
**CONTRACT N° 90/121**  
**TARBERT STREET**  
**REDEVELOPMENT**

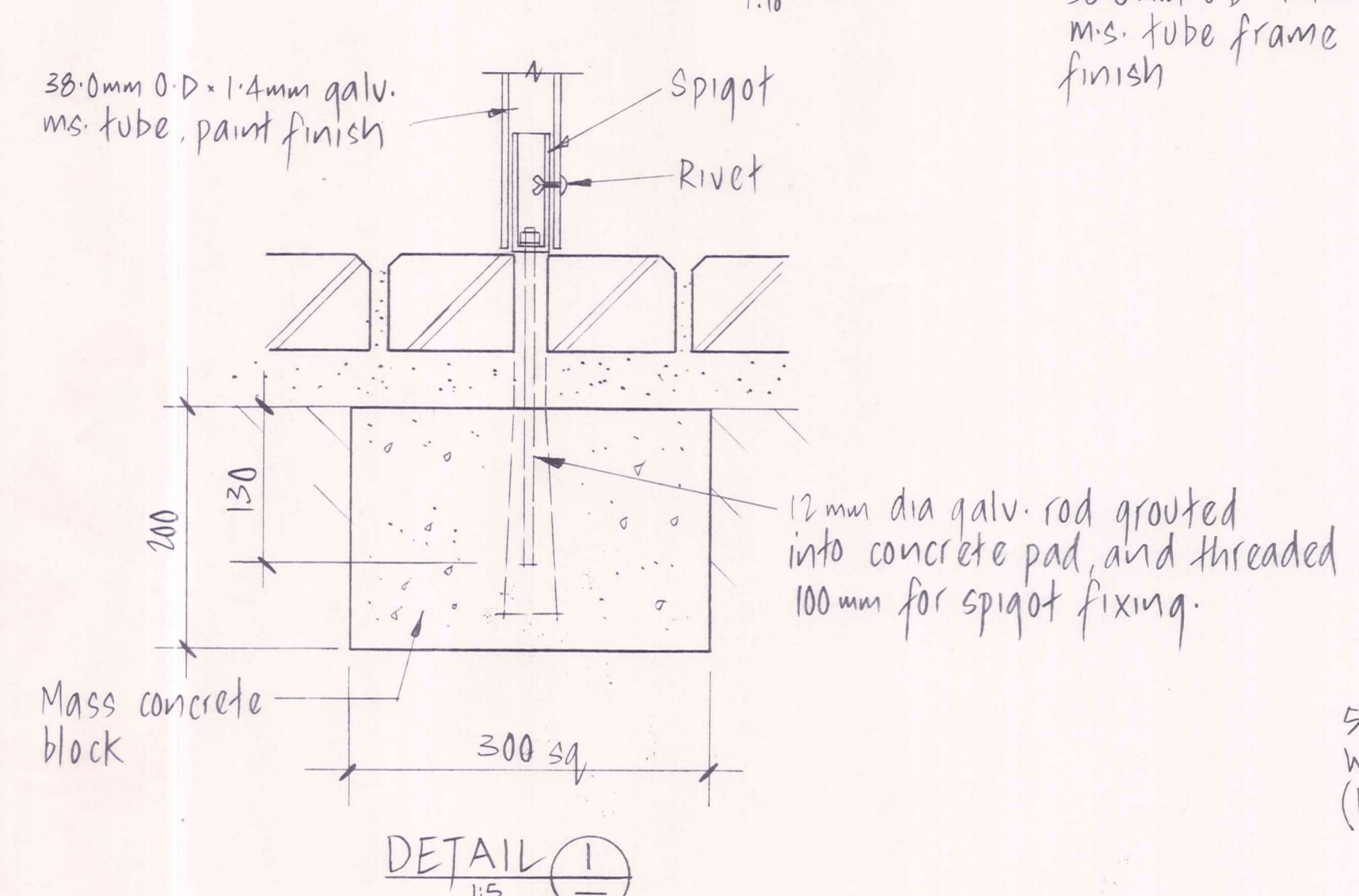
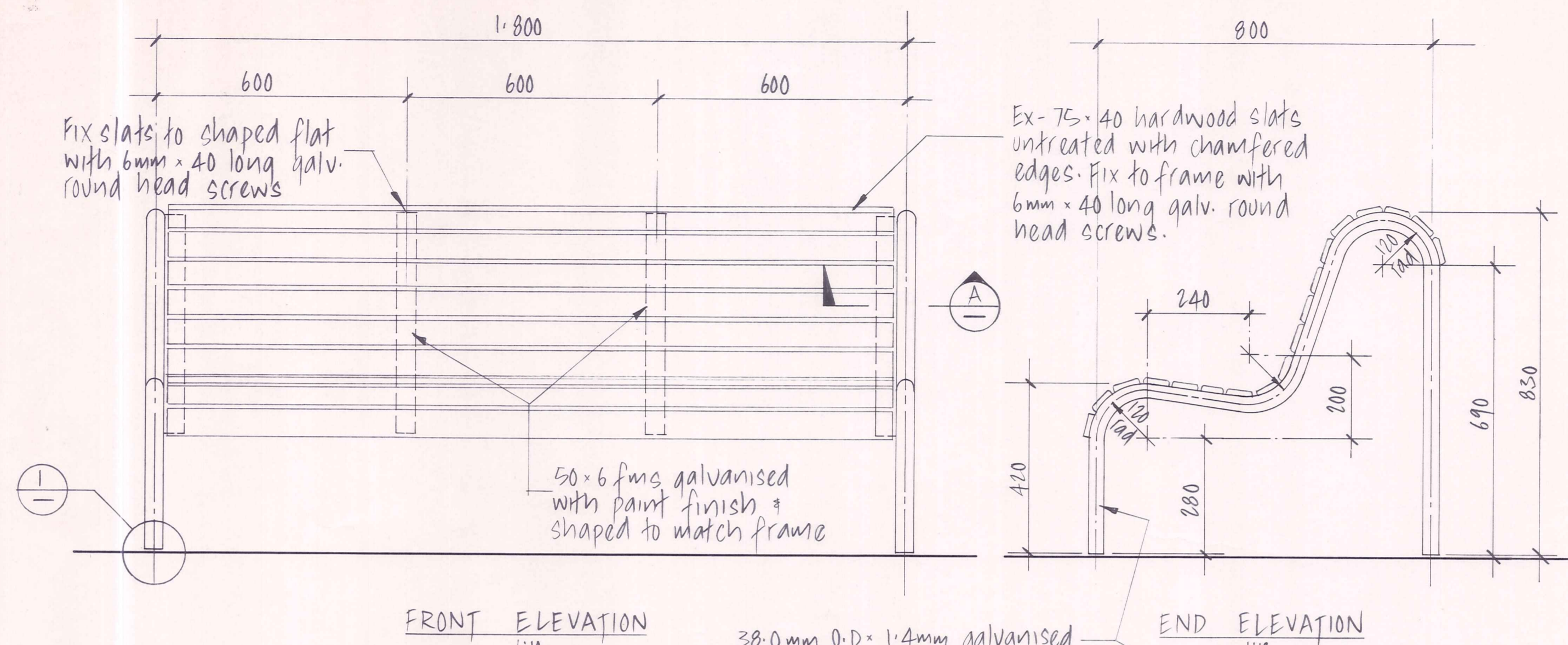
Sheet Title  
**TARBERT STREET**  
**STREETScape DETAILS**

Job No.	Sheet No.	Revision
12757	9	
	of 13	shs

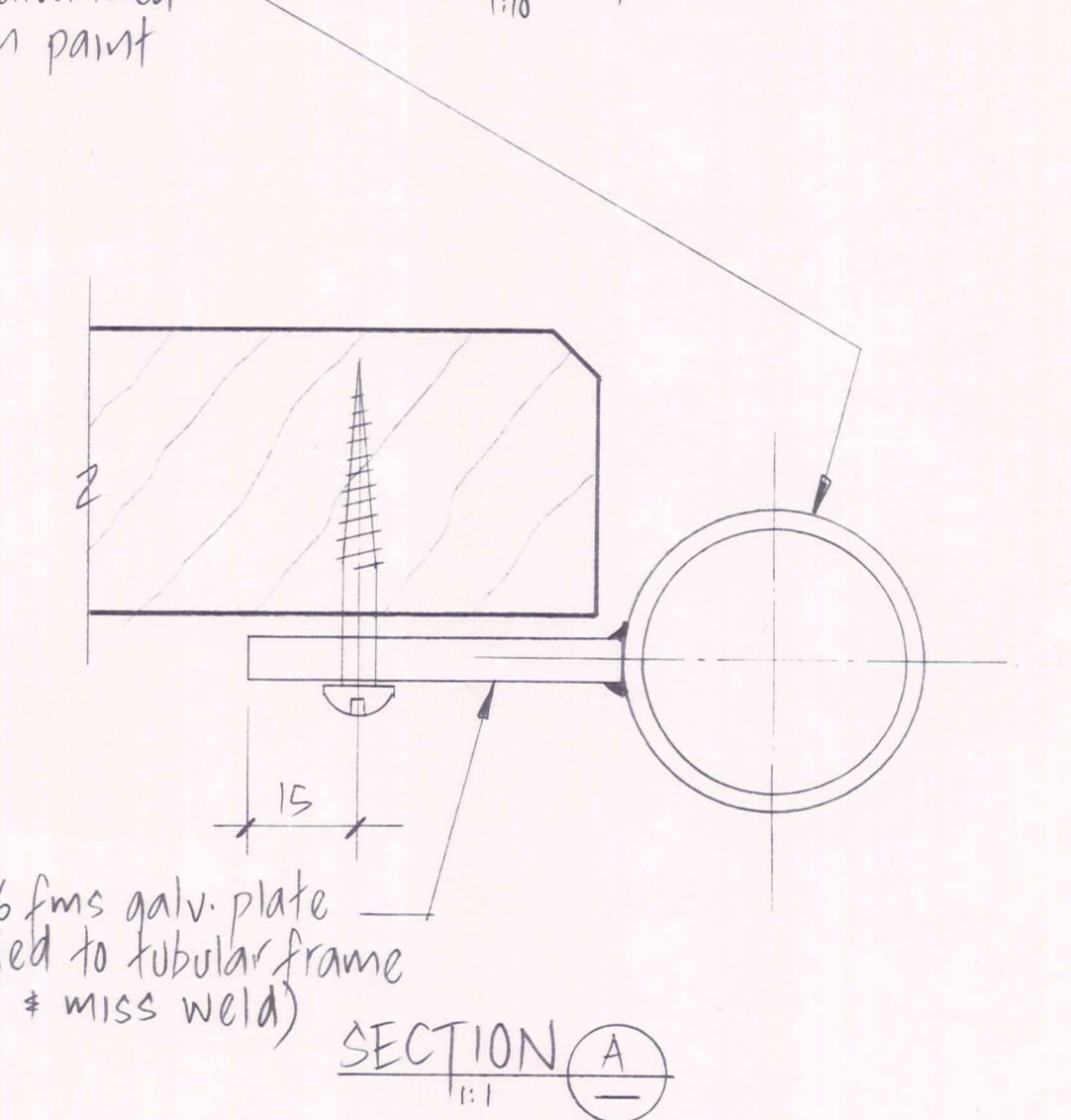
**Duffill Watts & King Ltd**  
 CONSULTING ENGINEERS

SCALE - 1:100

ORIGINAL SIZE mm

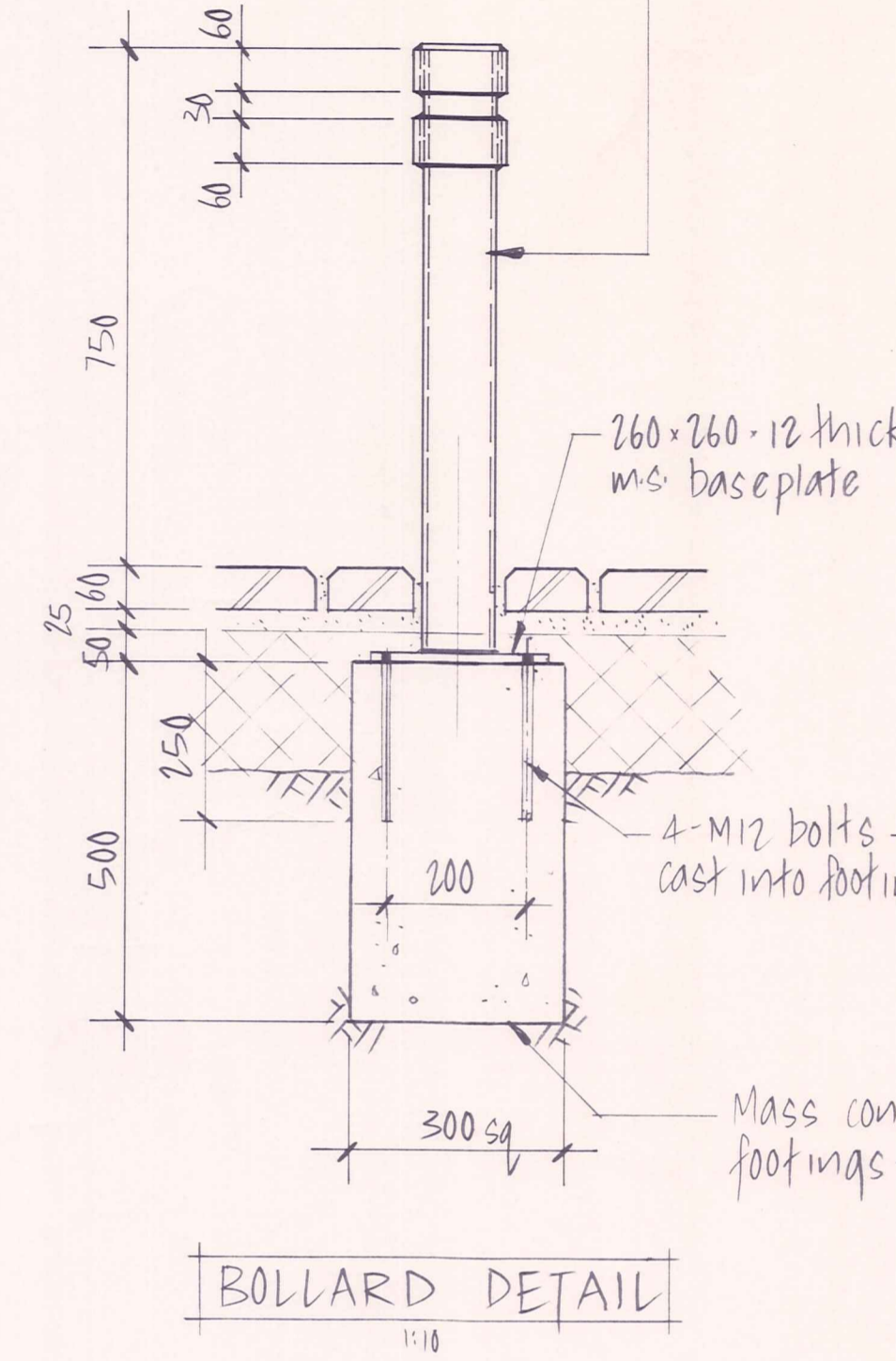


SEAT DETAIL

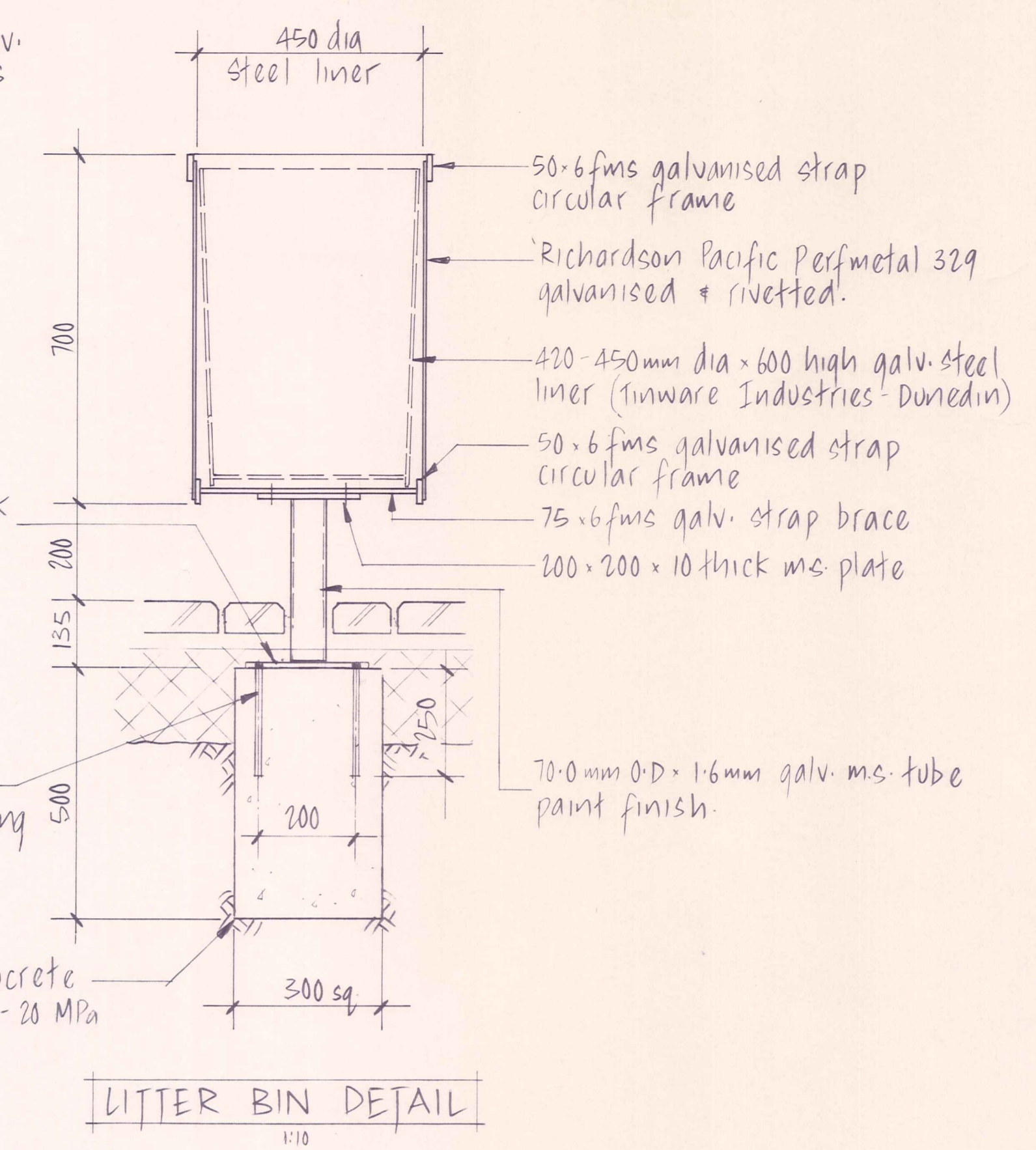


**NOTES:**  
 1 All welds to be 6mm continuous fillet welds unless otherwise noted.  
 2 All steelwork to be hot dipped galvanised after fabrication.

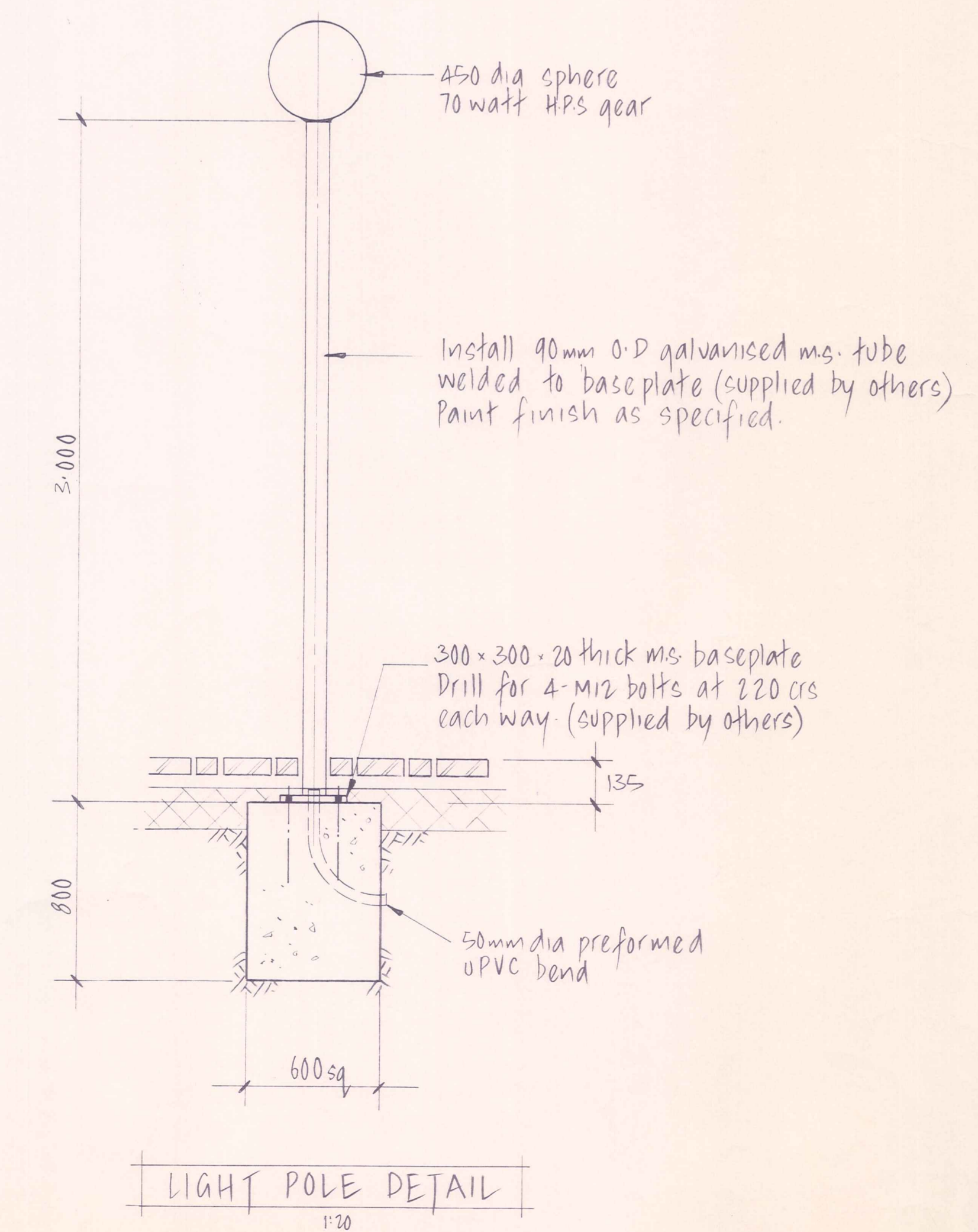
Bollard fabricated from 101.6mm O.D x 3.0mm galv. m.s. tube with 127.0mm O.D x 9.5mm sleeves as shown. Finish with 6mm thick cap plate. Hot dip galvanise after fabrication + paint finish.



BOLLARD DETAIL



LITTER BIN DETAIL



LIGHT POLE DETAIL

ARCHITECTS LANDSCAPE ARCHITECTS TOWN PLANNERS  
**Salmond Anderson Heath**  
 Telephone 03 475 5462 P.O. Box 441 Dunedin Facsimile 03 474 1205

No.	Revisions	Date	Appvd
Designed	SALMOND ANDERSON	Date	Print Date
Drawn	J. KNOX	FEB 91	15 JUN 0001
Checked	M. BOG	6/91	
Approved		6/91	
File	225/17/9	Ref	

Client  
**CENTRAL OTAGO DISTRICT COUNCIL**

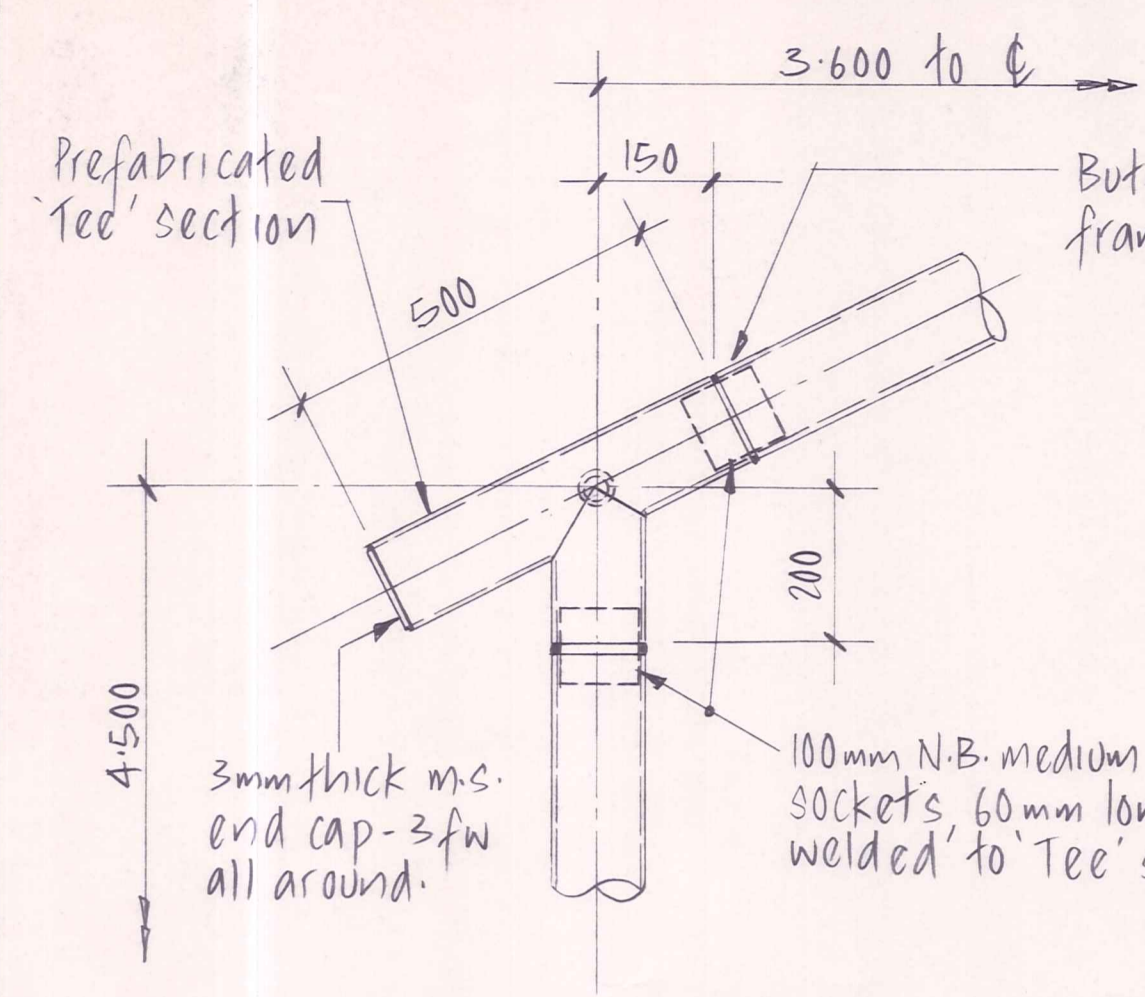
Project  
**CONTRACT N° 90/121**  
**TARBERT STREET**  
**REDEVELOPMENT**

Sheet Title  
**STREET FURNITURE**

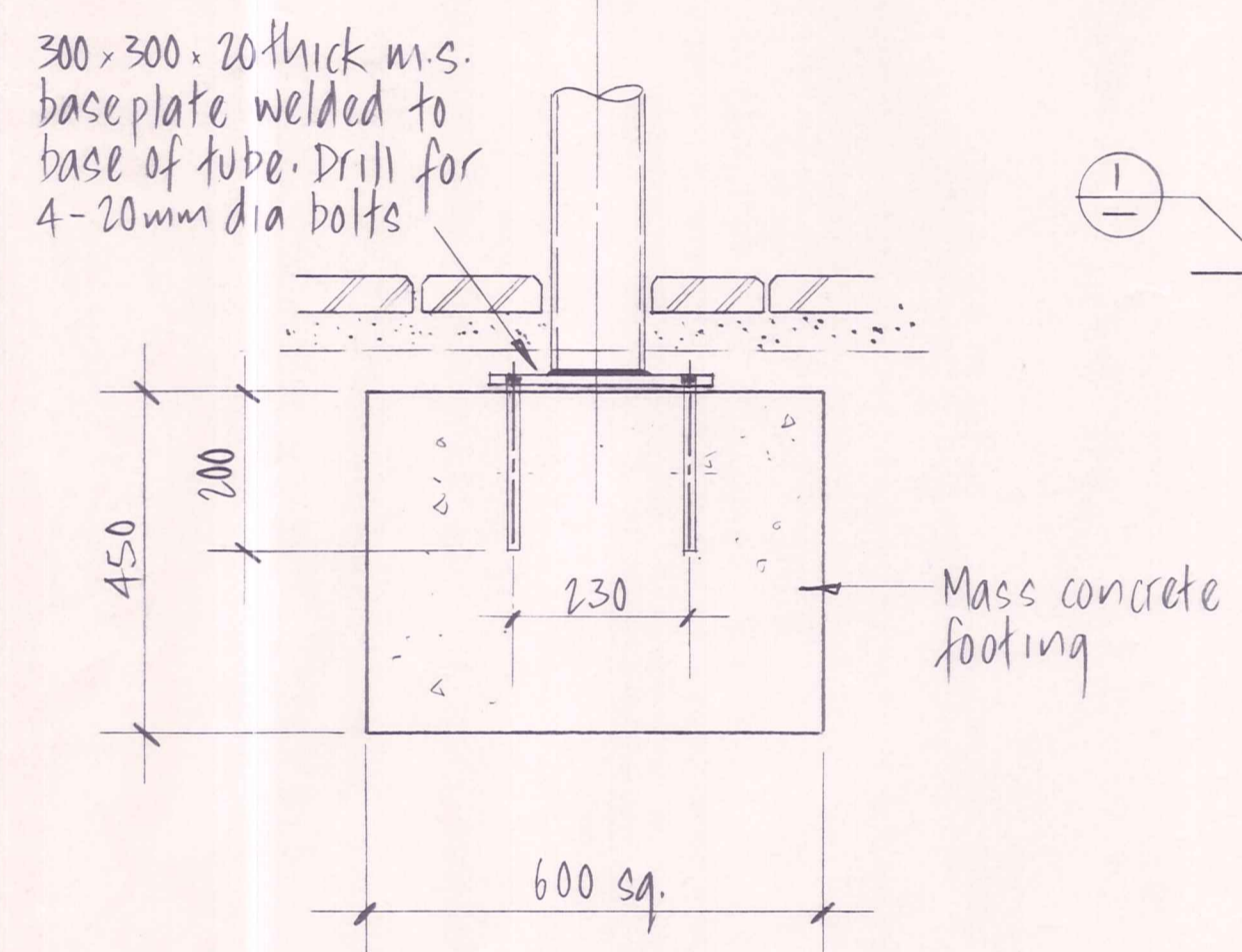
Job No.	Sheet No.	Revision
12757	10	
	of 13	shts

**Duffill Watts & King Ltd**  
 CONSULTING ENGINEERS

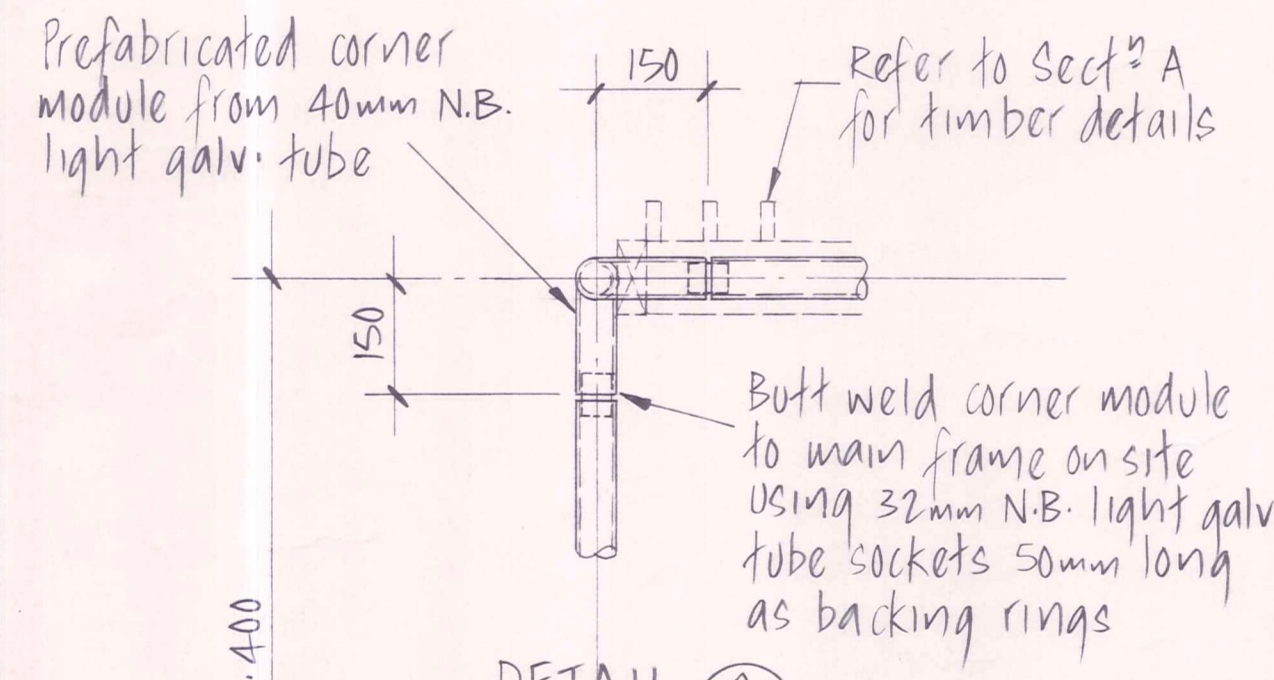
ORIGINAL SIZE mm



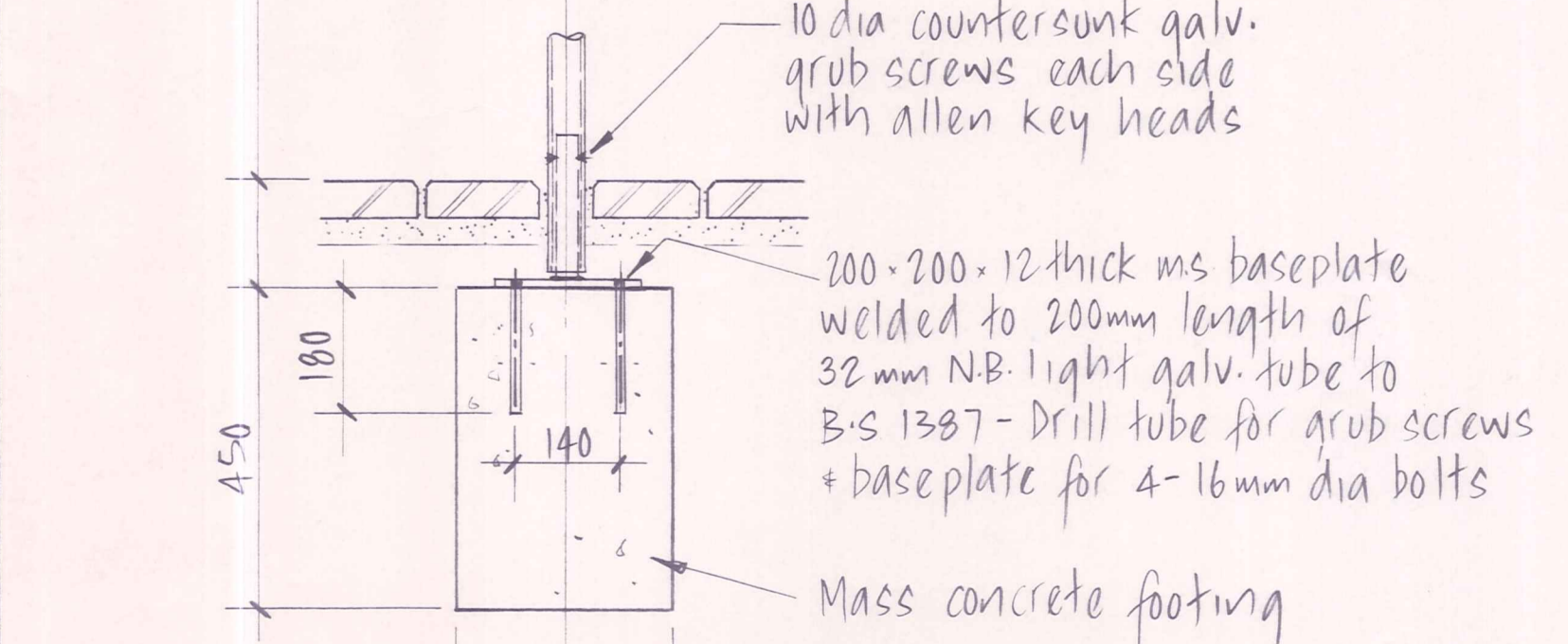
DETAIL 4  
1:10



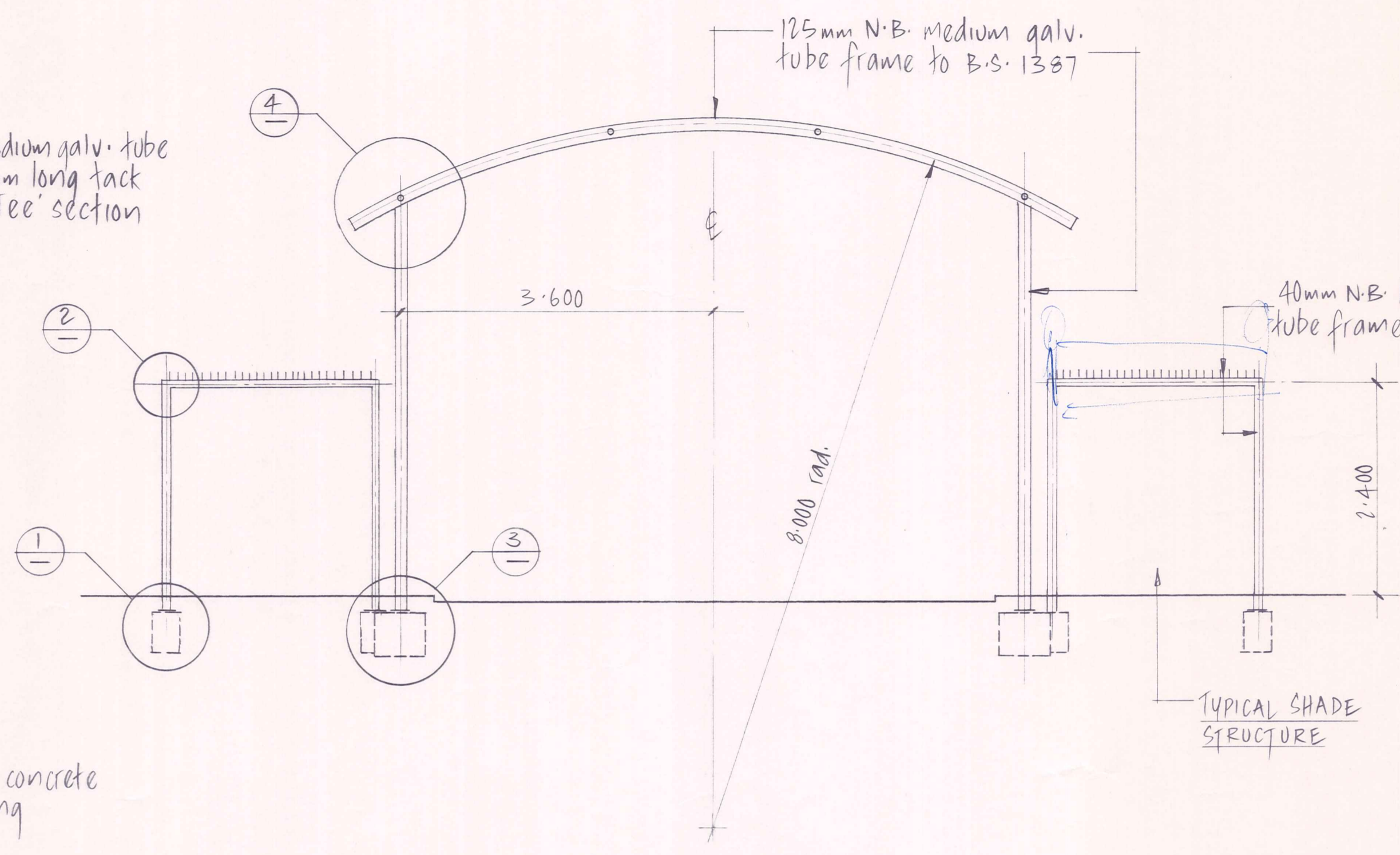
DETAIL 3  
1:10



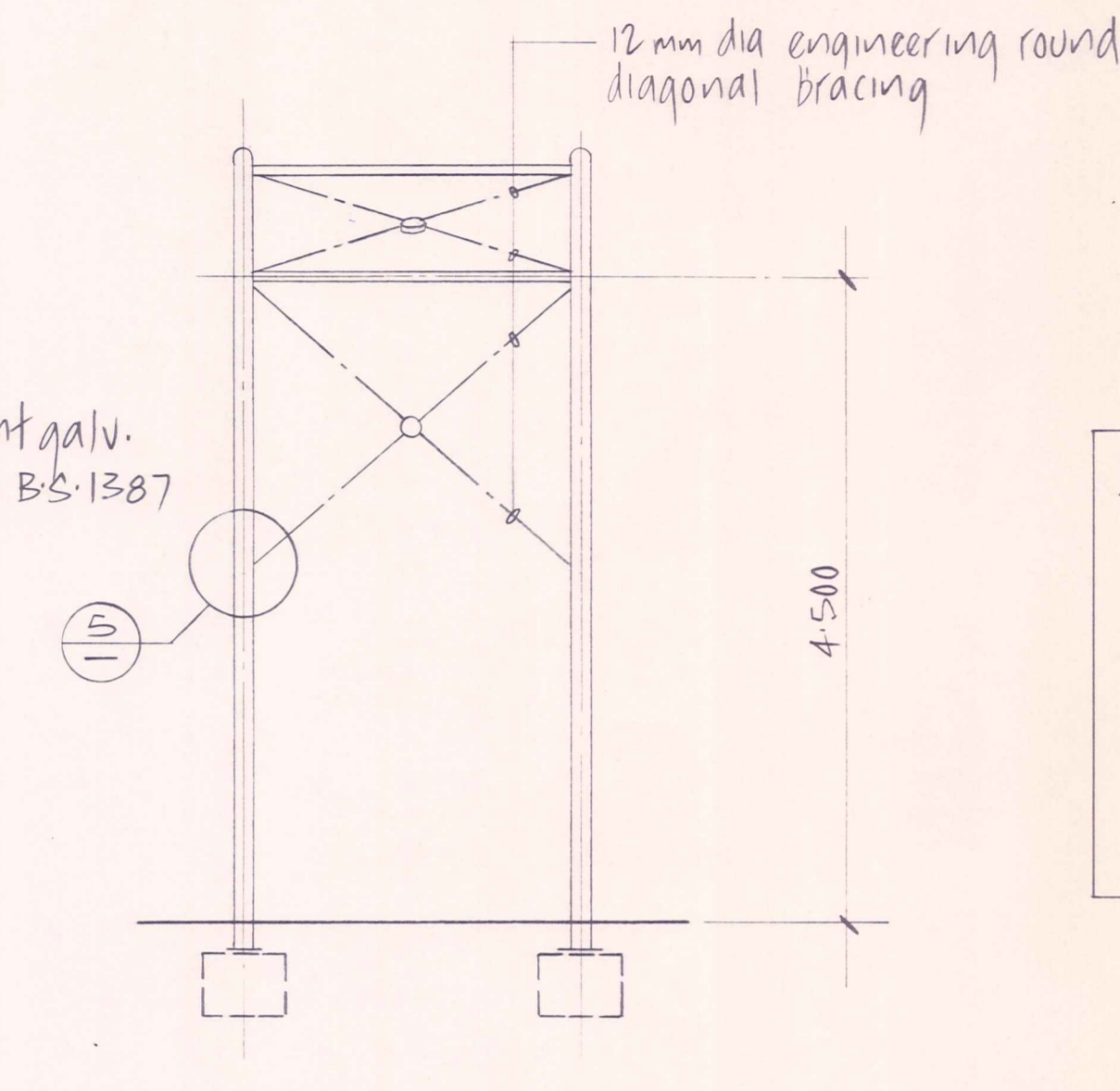
DETAIL 2  
1:10



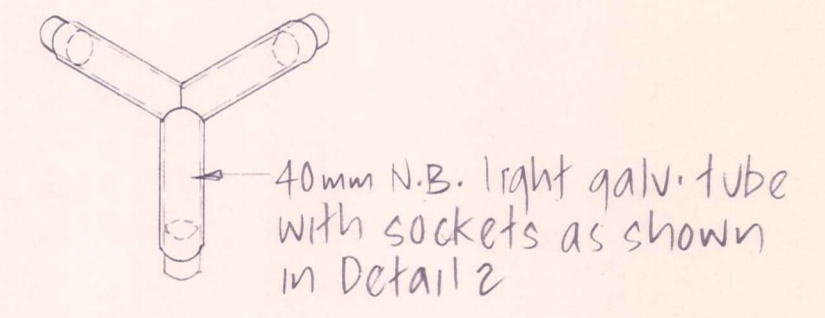
DETAIL 1  
1:10



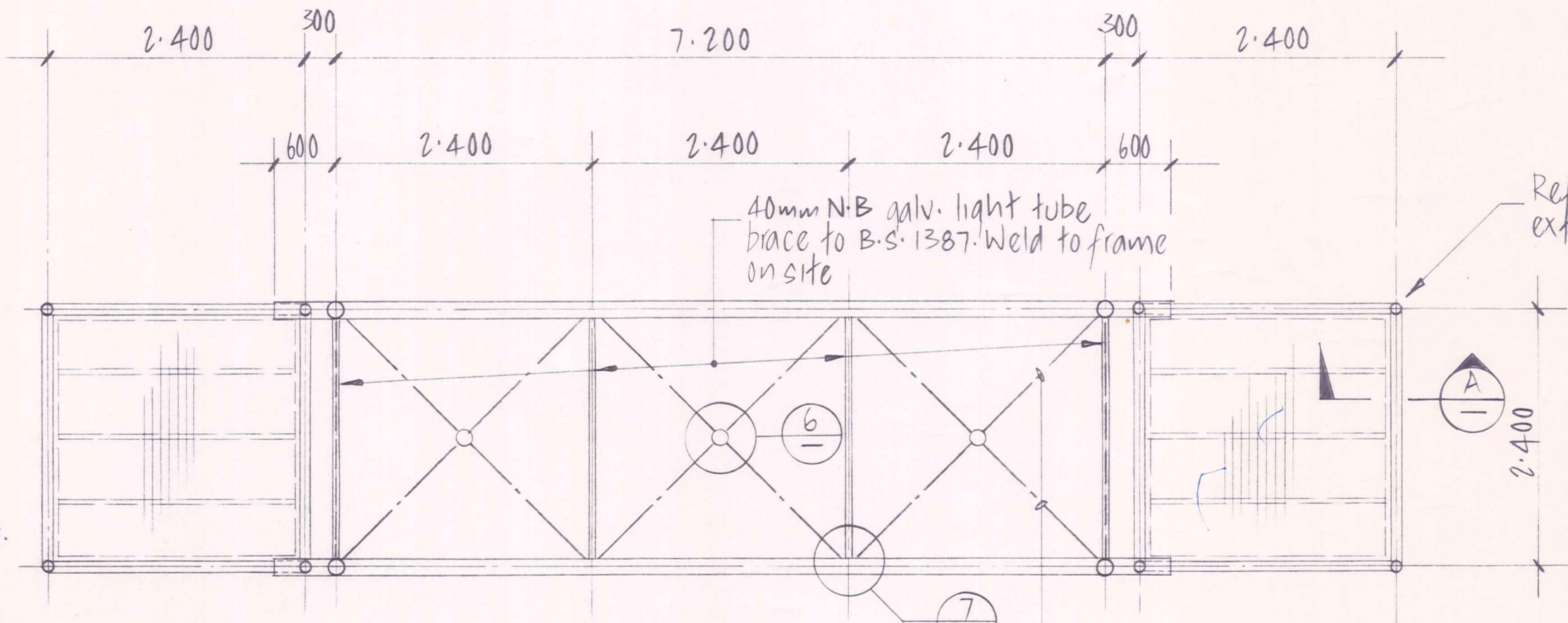
ELEVATION- ARCH FRAME  
1:50



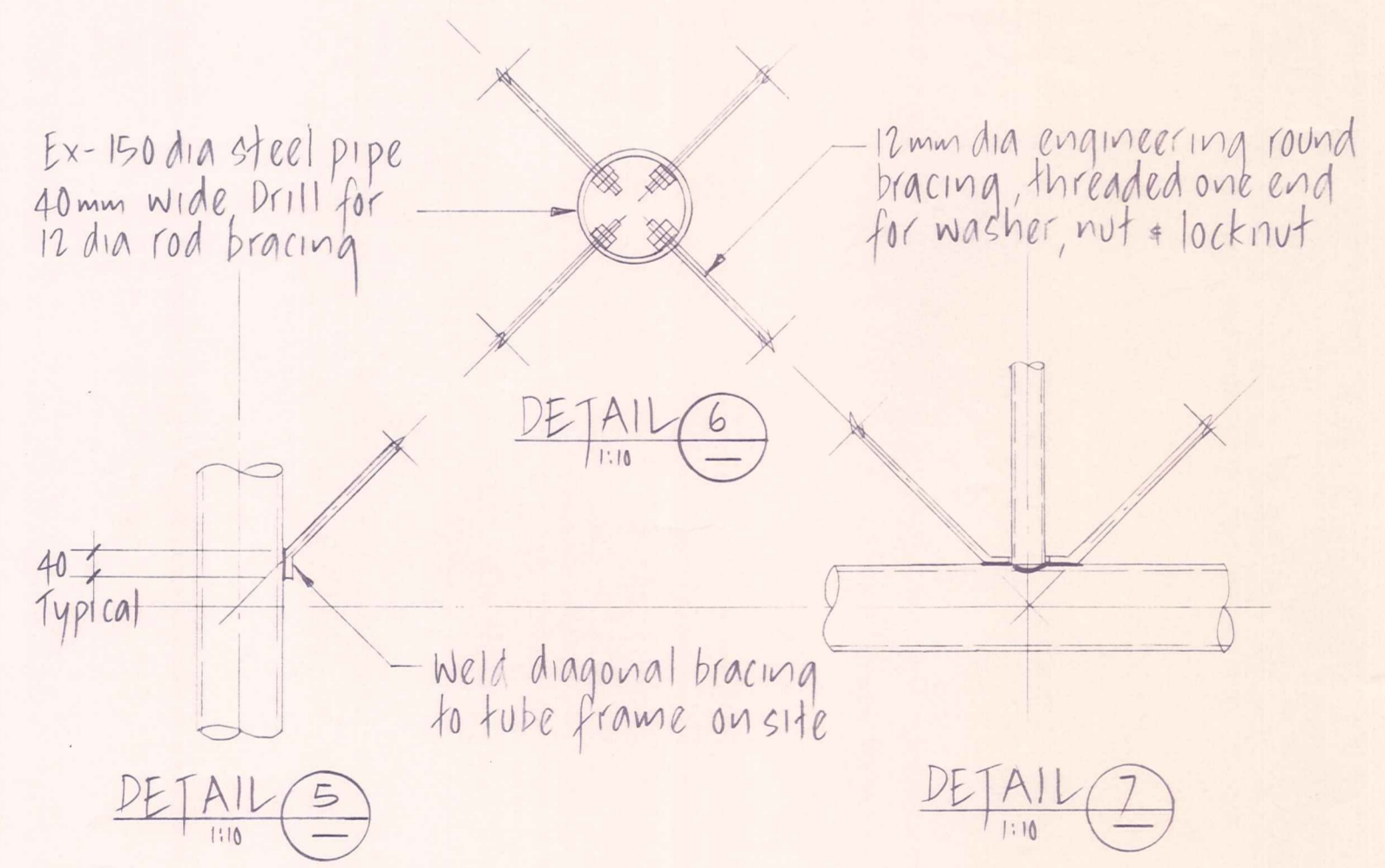
END ELEVATION- ARCH FRAME  
1:50



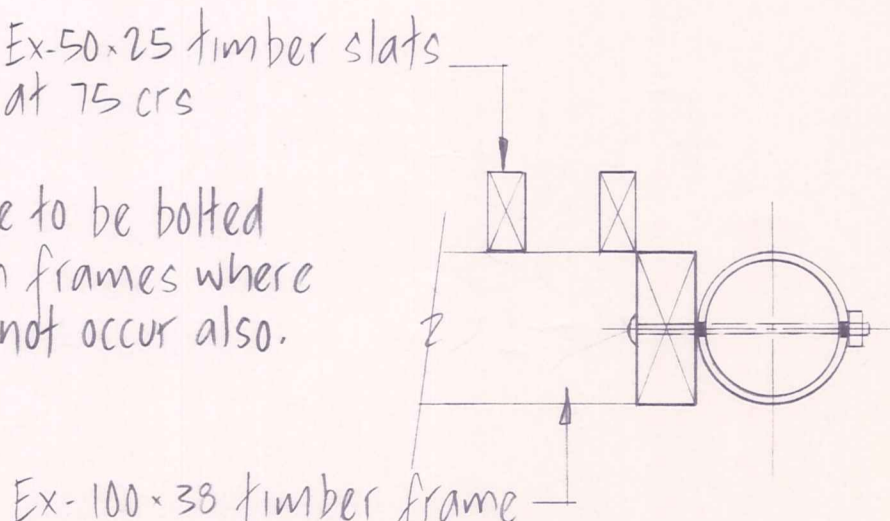
CORNER MODULE DETAIL  
N.T.S. Applies to Shade Structure frames only.



PLAN- ARCH FRAME  
1:50



FRAME BRACING DETAILS



SECTION A  
1:5 Timber frame & slats to be Western Red Cedar

**NOTE**  
 1/ All welds to be 6mm continuous fillet welds unless otherwise noted.  
 2/ All steelwork to be hot dipped galvanised after fabrication. Allow to touch up as required on site after erection.

No.	Revisions	Date	Appvd
Designed	P. E. B.	Date FEB '91	Print Date
Drawn	J. KNOX	" "	" "
Checked	<i>[Signature]</i>	5-91	5 JUN 2001
Approved	<i>[Signature]</i>	6/91	
File	225/17/19	Ref	

Client  
**CENTRAL OTAGO DISTRICT COUNCIL**

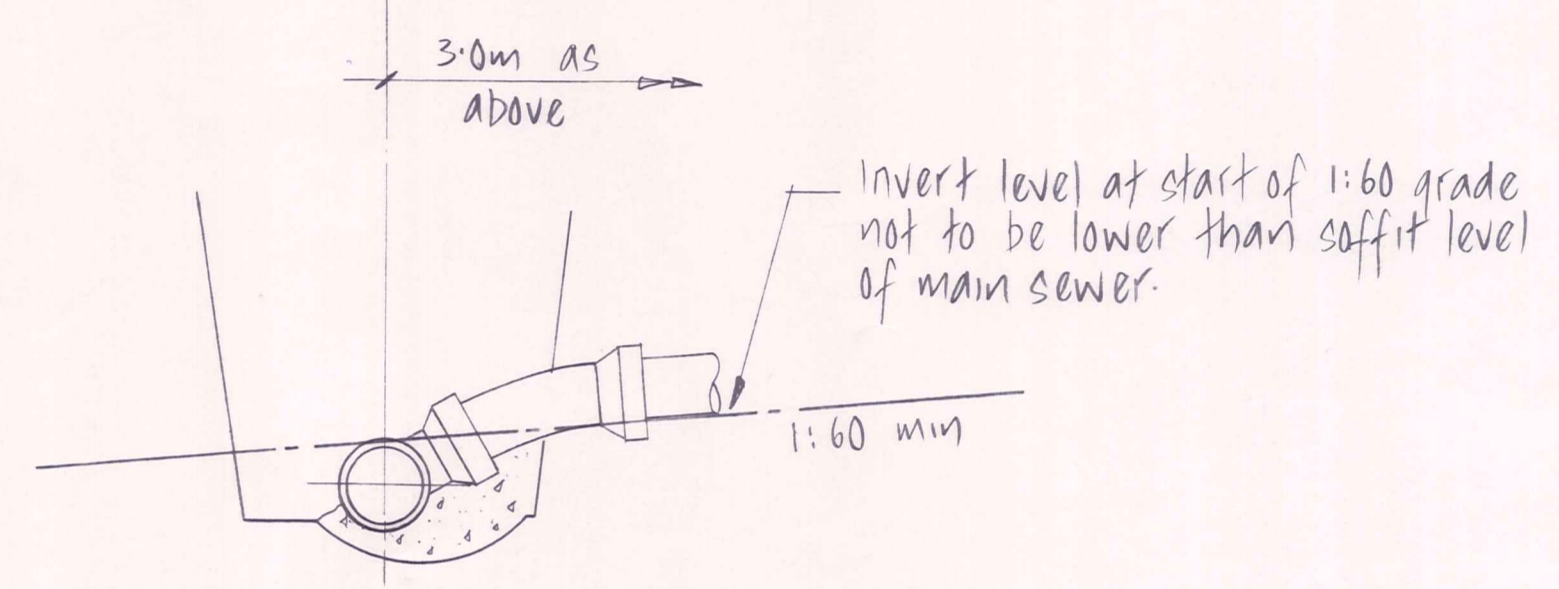
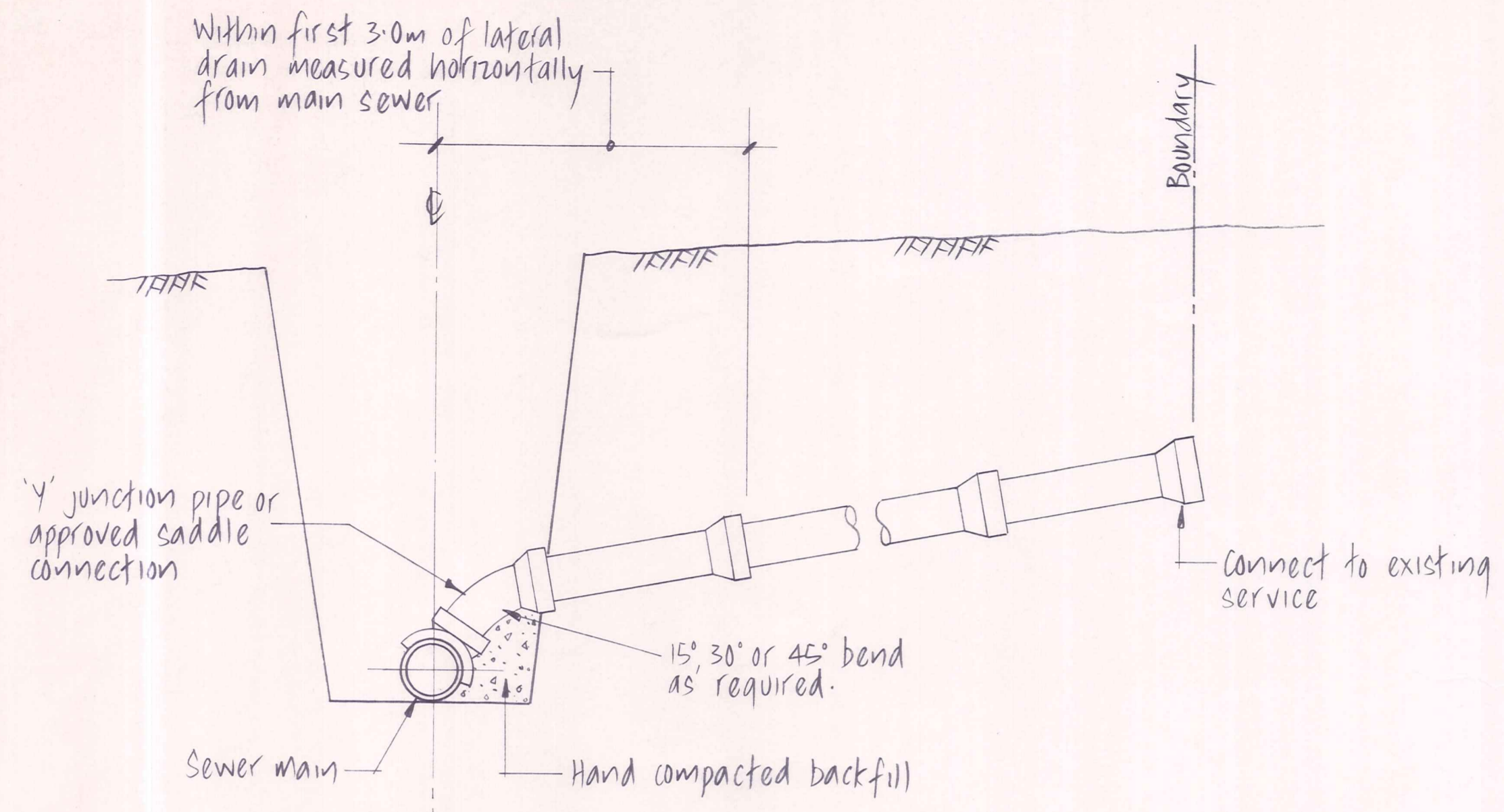
Project  
**CONTRACT N° 90/121**  
**TARBERT STREET**  
**REDEVELOPMENT**

Sheet Title  
**STEEL ARCHWAY & TRELLIS FRAME DETAILS**

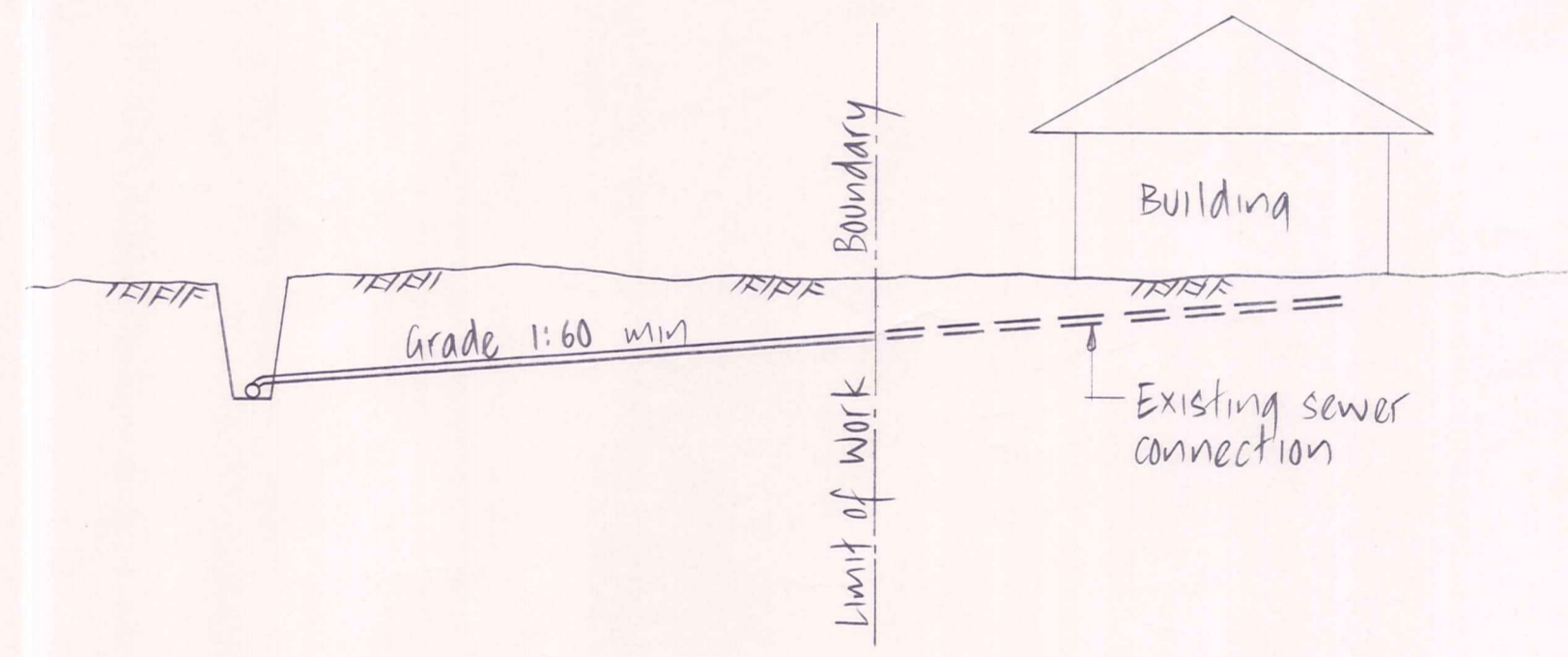
Job No.	Sheet No.	Revision
12757	11	of 13 shts

**Duffill Watts & King Ltd**  
 CONSULTING ENGINEERS

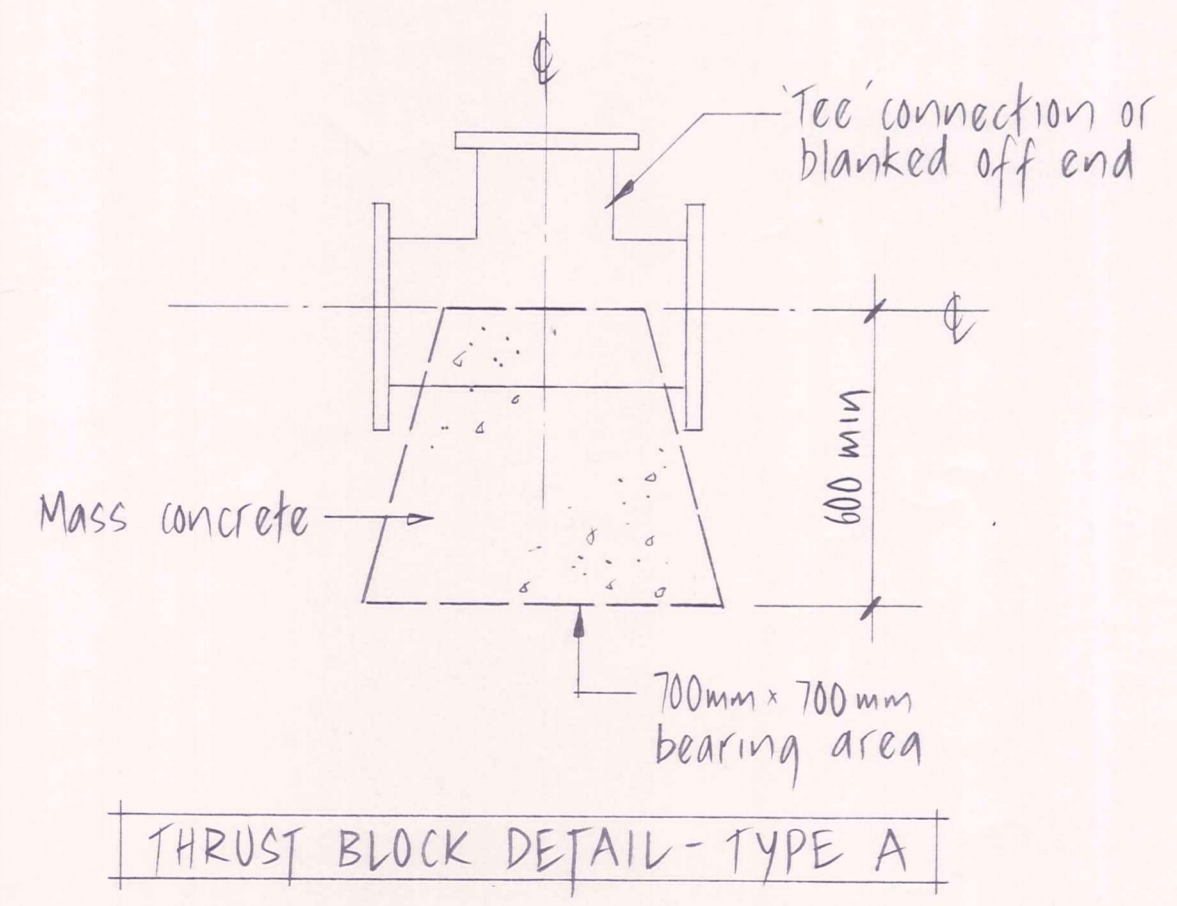
ORIGINAL SIZE mm



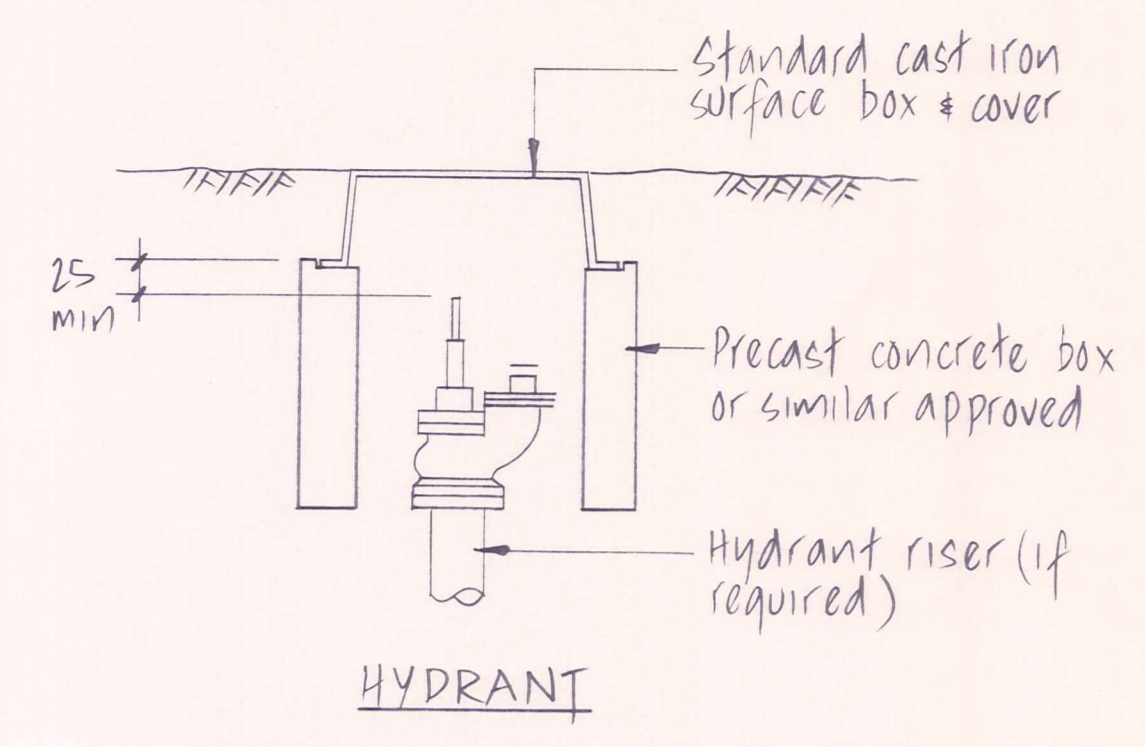
ALTERNATIVE ARRANGEMENT - SHALLOW CONNECTIONS ONLY



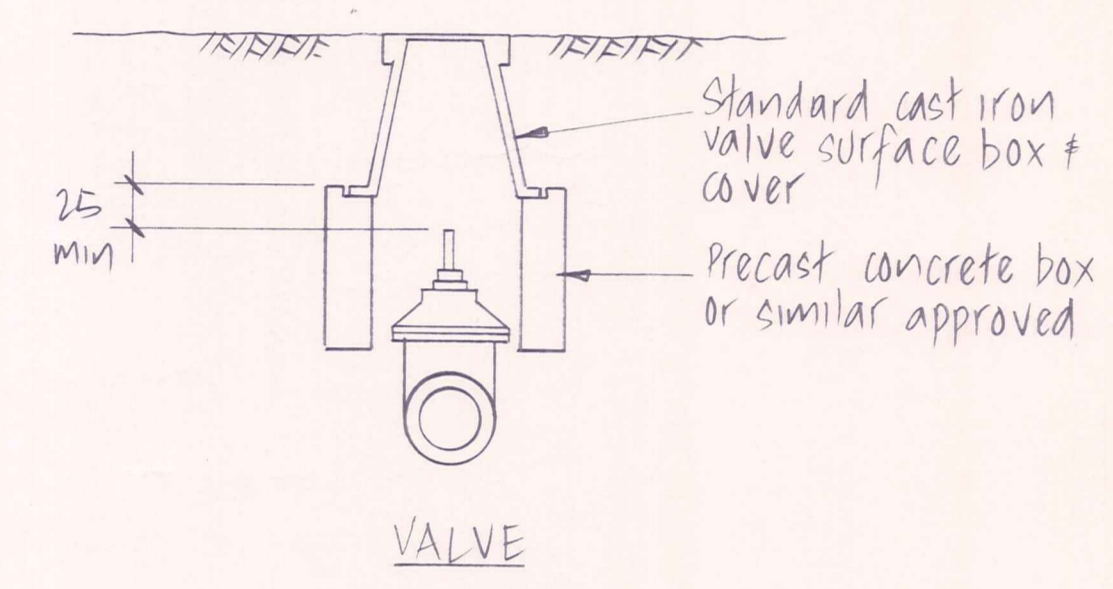
SHALLOW SEWER CONNECTIONS



THRUST BLOCK DETAIL - TYPE A



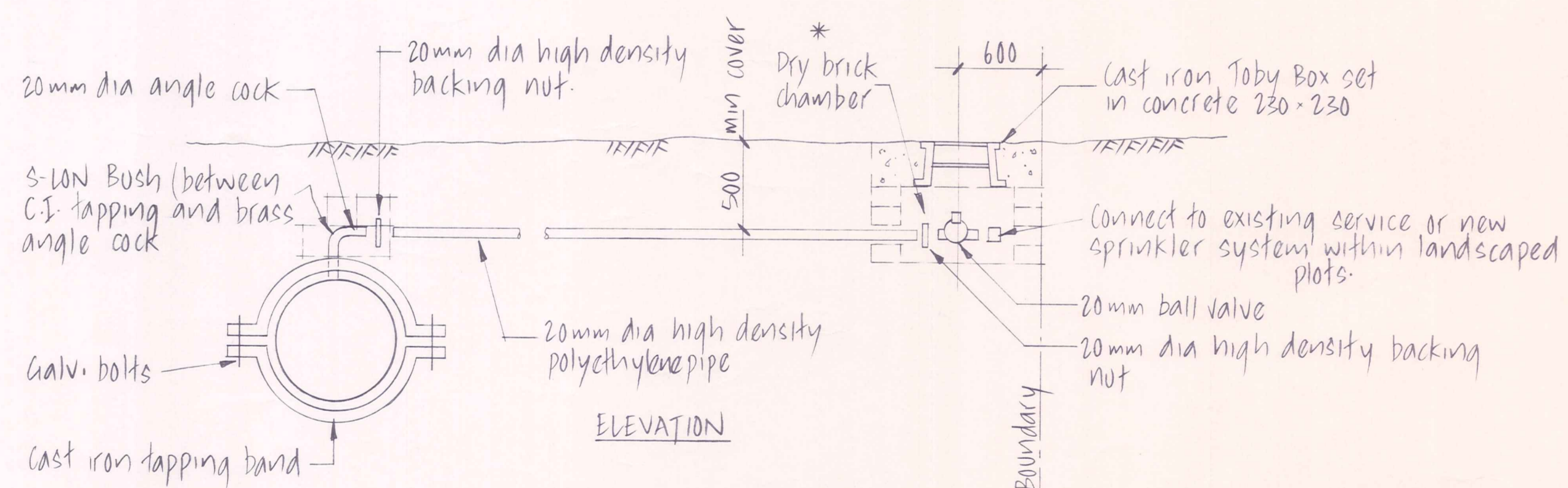
HYDRANT



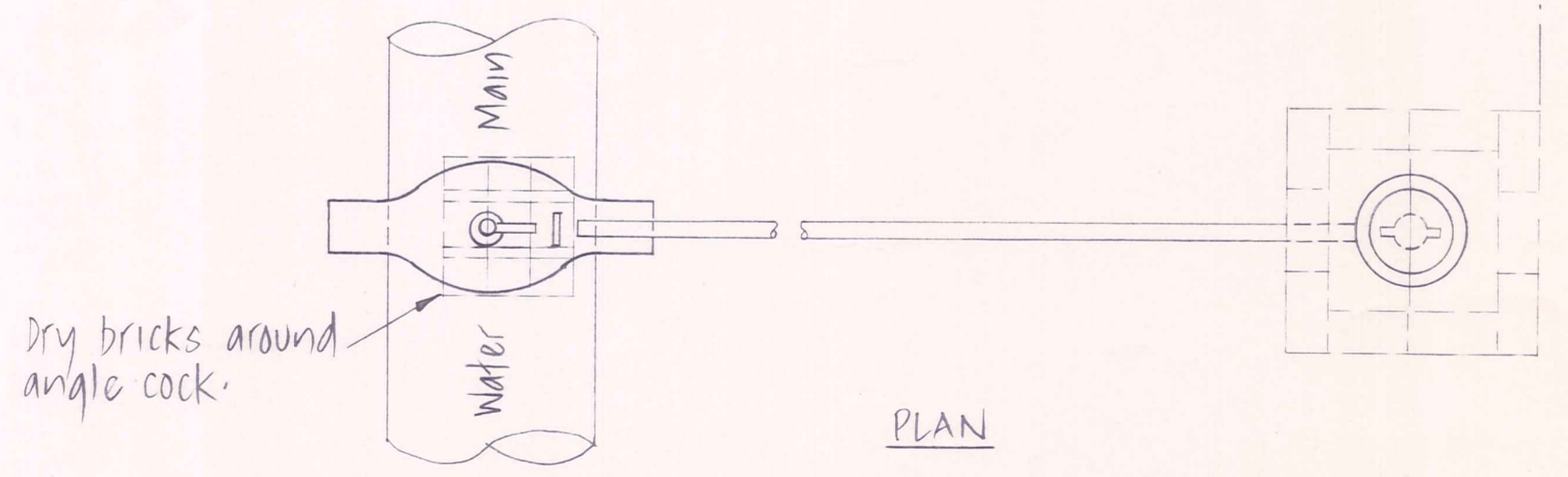
VALVE

STANDARD VALVE & HYDRANT BOXES

\* 200 dia pipe is suitable alternative for chamber.



ELEVATION



PLAN

WATER CONNECTION DETAIL

NOTE: Connections to majority of landscaped plots to be 15mm dia. Those connections requiring 20mm dia are shown on detail drawings.

No.	Revisions	Date	Appvd
Designed	N. Jolley	Date Nov 90	Print Date
Drawn	J. Knox	" "	" "
Checked	M. Boyd	6/91	15 JUN 2001
Approved			
File	225/17/9	Ref	

Client

**CENTRAL OTAGO DISTRICT COUNCIL**

Project

**CONTRACT N°90/121**

**TARBERT STREET**

**REDEVELOPMENT**

Sheet Title

**STANDARD DETAILS**

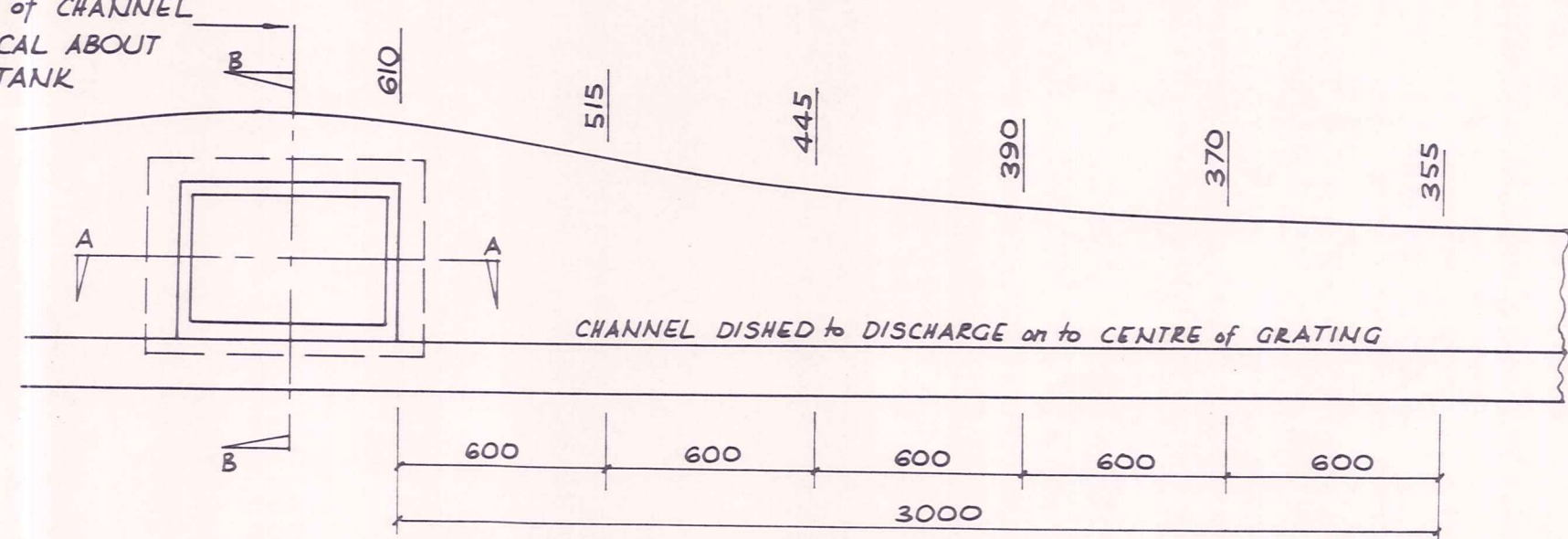
Job No.	Sheet No.	Revision
<b>12757</b>	<b>12</b>	
	of 13	shts

**Duffill Watts & King Ltd**

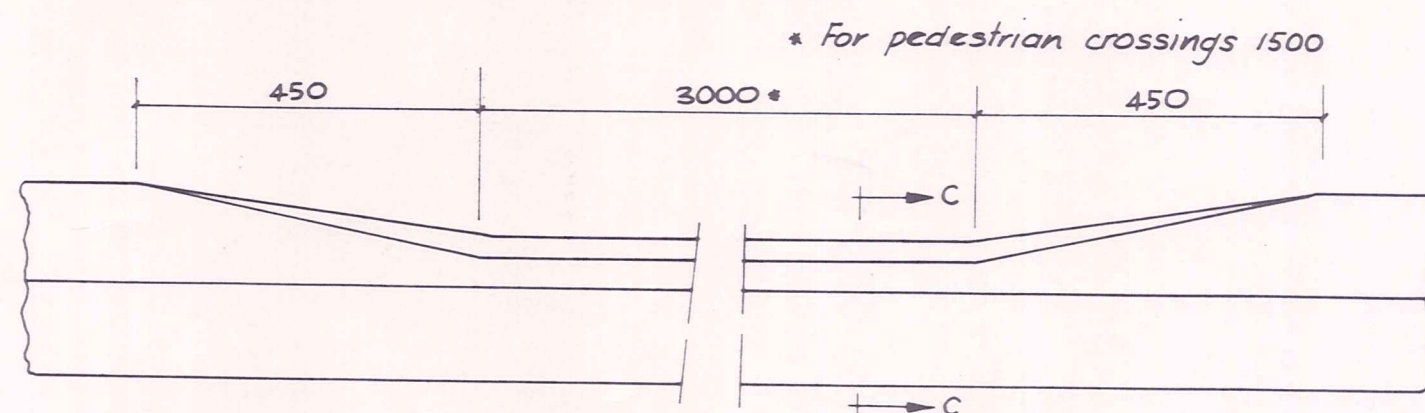
CONSULTING ENGINEERS

ORIGINAL SIZE mm

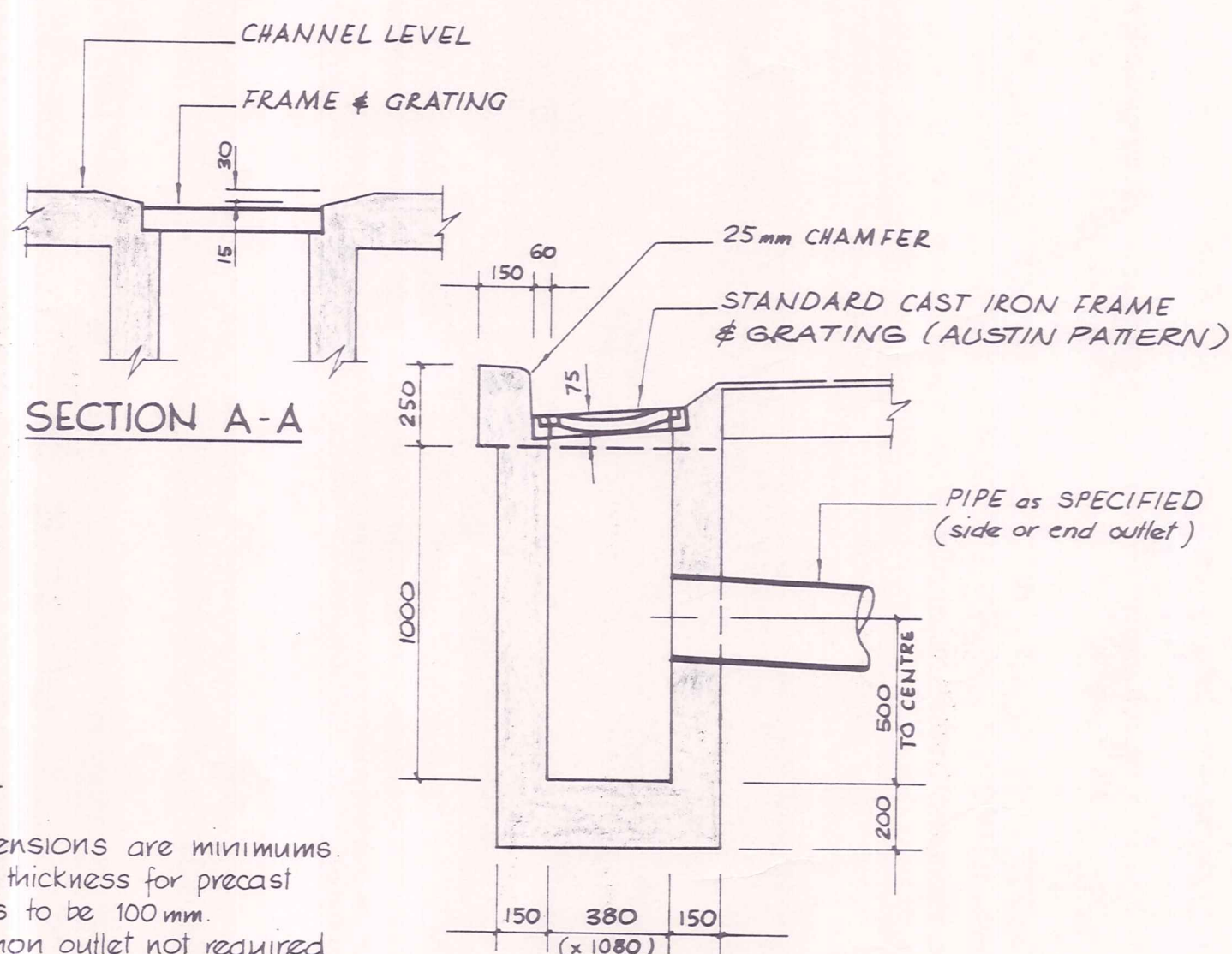
WIDENING of CHANNEL SYMMETRICAL ABOUT  $\bar{C}$  of MUDTANK



PLAN of CHANNEL at MUDTANKS



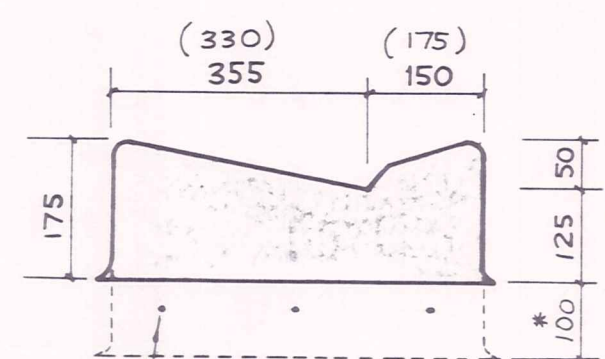
DROP KERB CROSSING



SECTION B-B

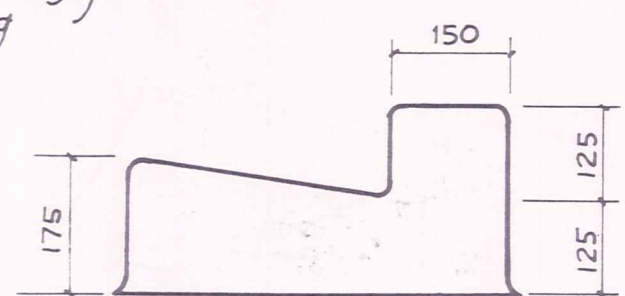
STANDARD MUDTANKS

NOTES -  
Dimensions are minimums  
Wall thickness for precast units to be 100mm.  
Syphon outlet not required

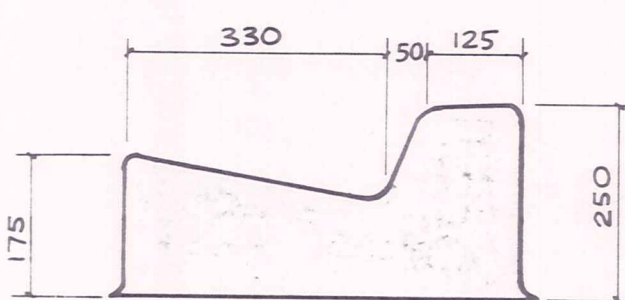


SECTION C-C

3-D12 RODS (x Heavy Duty) crossing



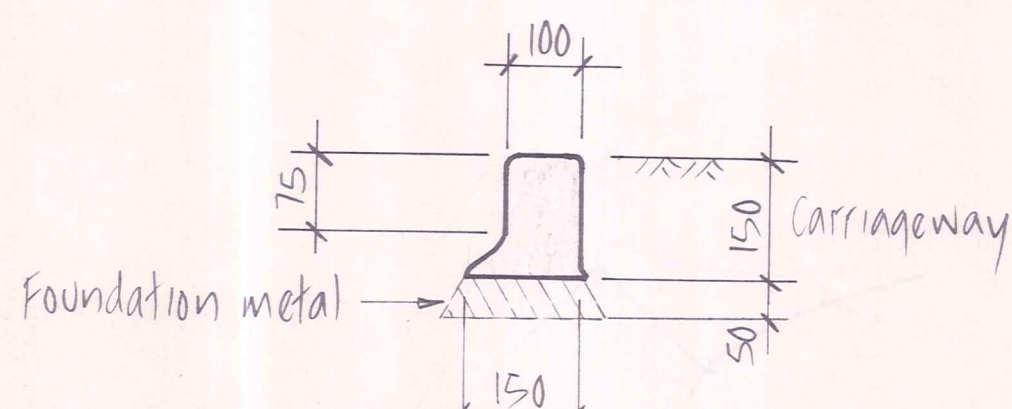
TYPE 1



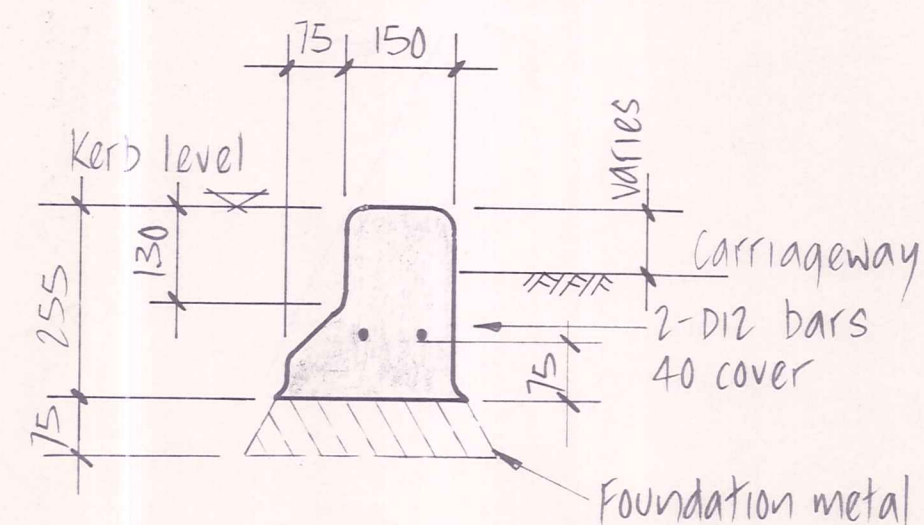
TYPE 2

KERB & CHANNEL DETAILS

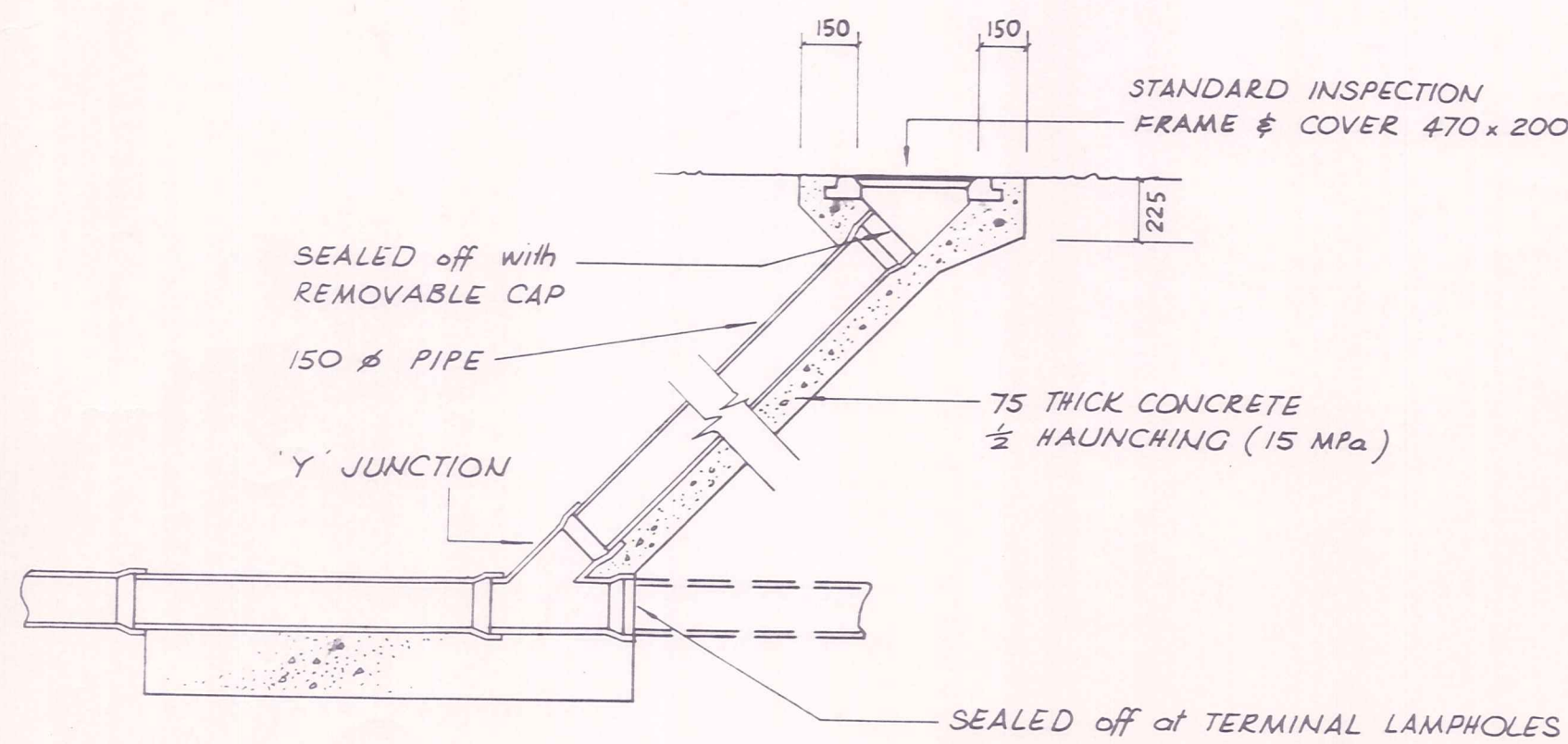
- Concrete strength 20 MPa at 28 days  
- 75mm compacted depth foundation metal



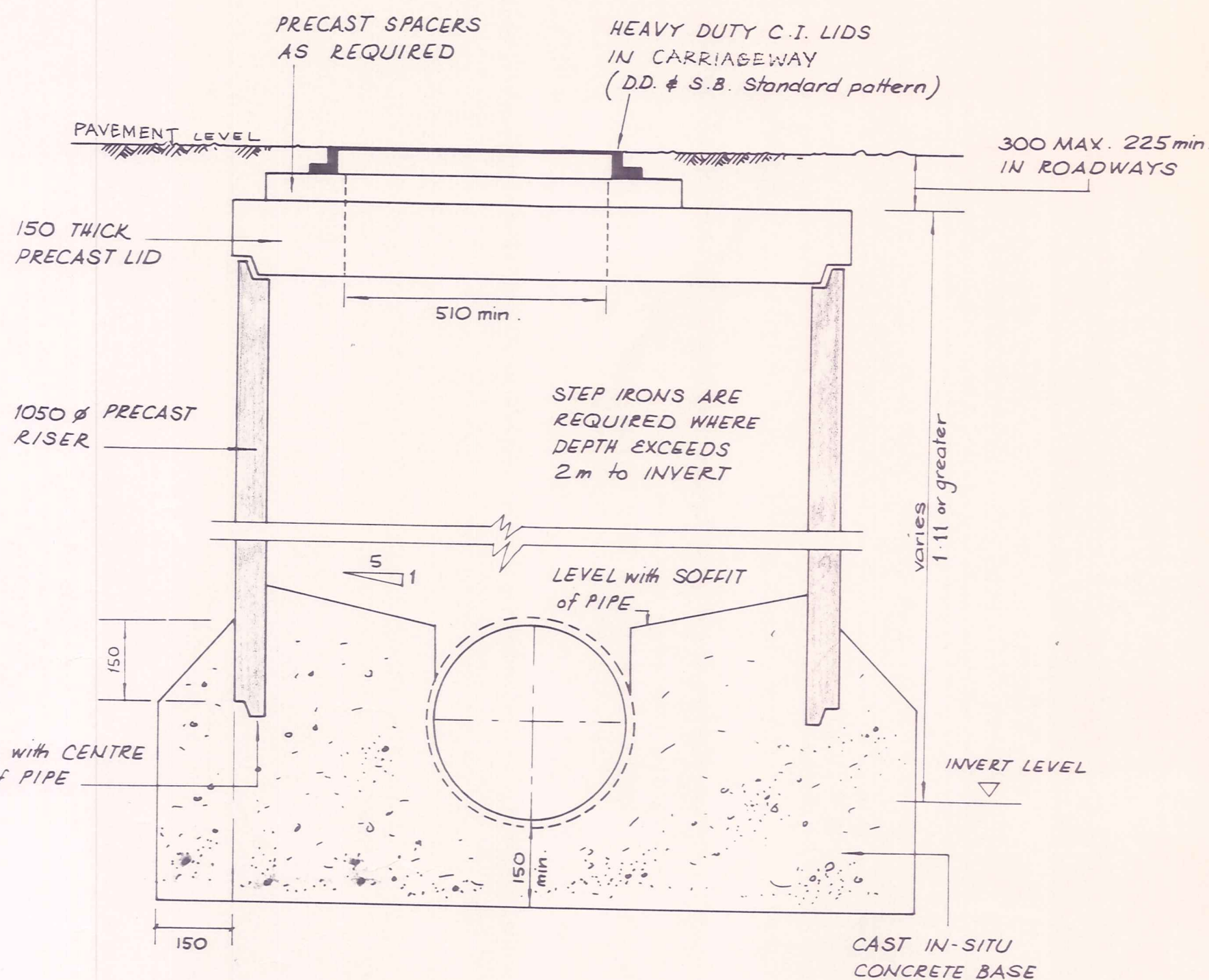
MINI KERB DETAIL 1:10



NO 3 TYPE KERB DETAILS 1:10

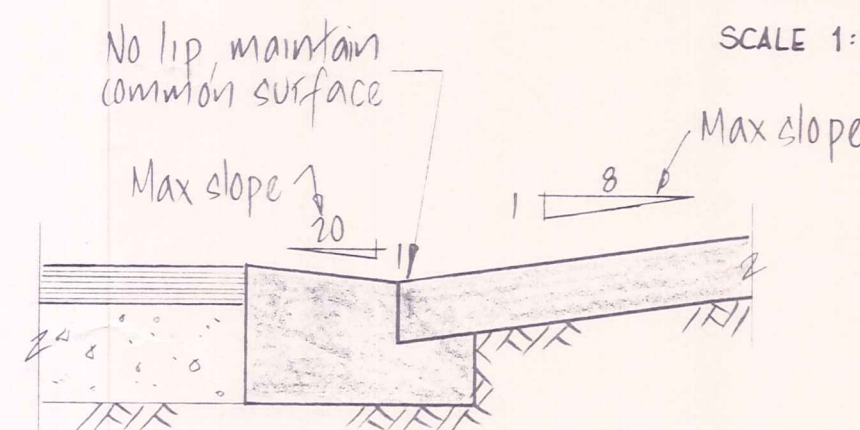


STANDARD LAMPHOLE DETAILS NTS.



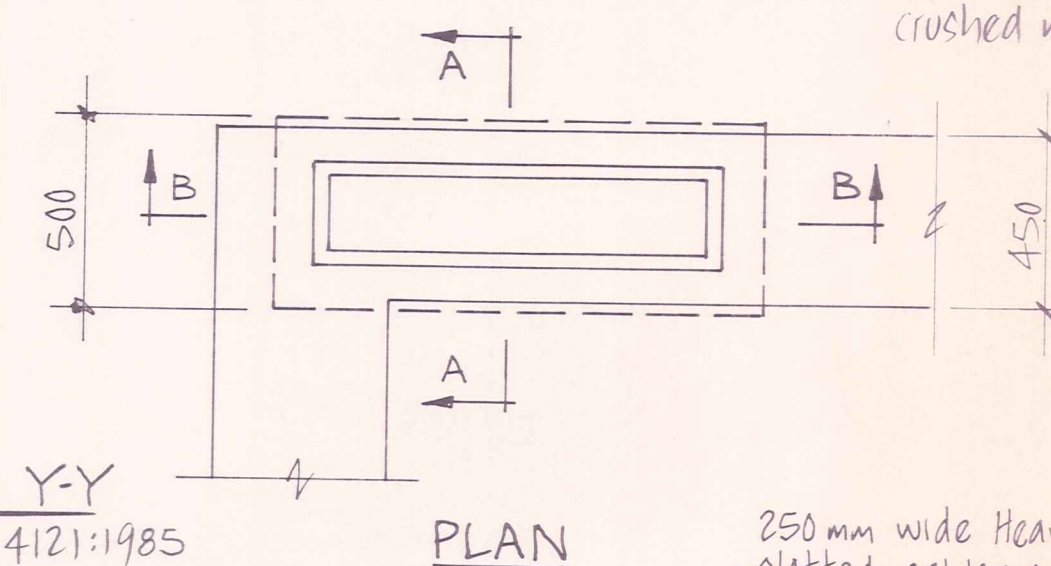
1050  $\phi$  MANHOLE

SCALE 1:10



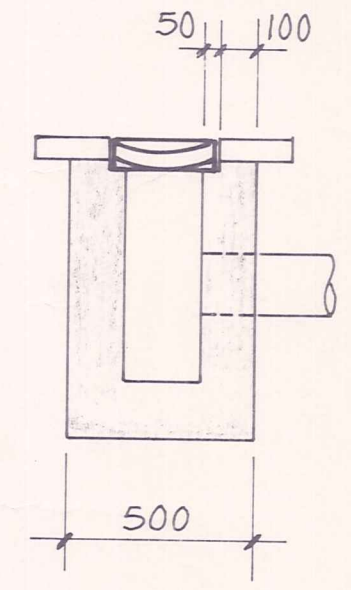
SECTION THRU' RAMP CROSSING Y-Y

Note: Constructed in accordance with NZS 4121:1985

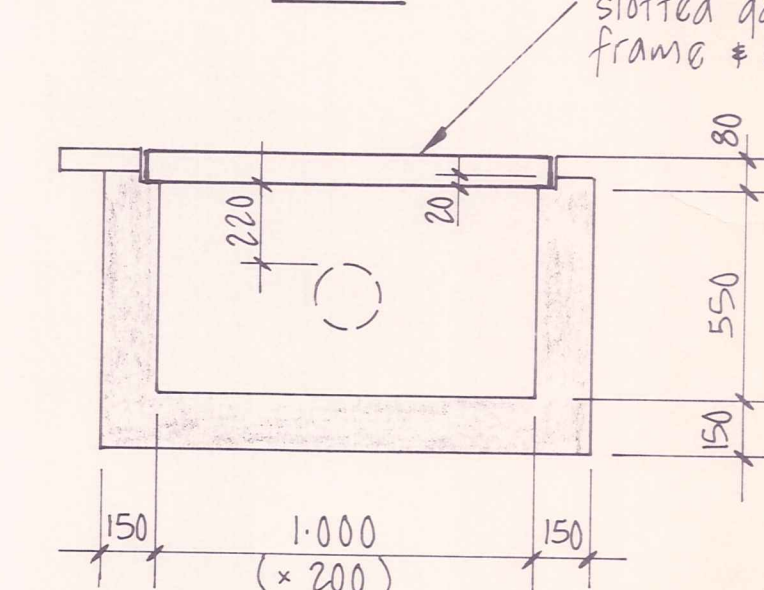


PLAN

250mm wide Heavy Duty slotted galvanised steel frame & grating

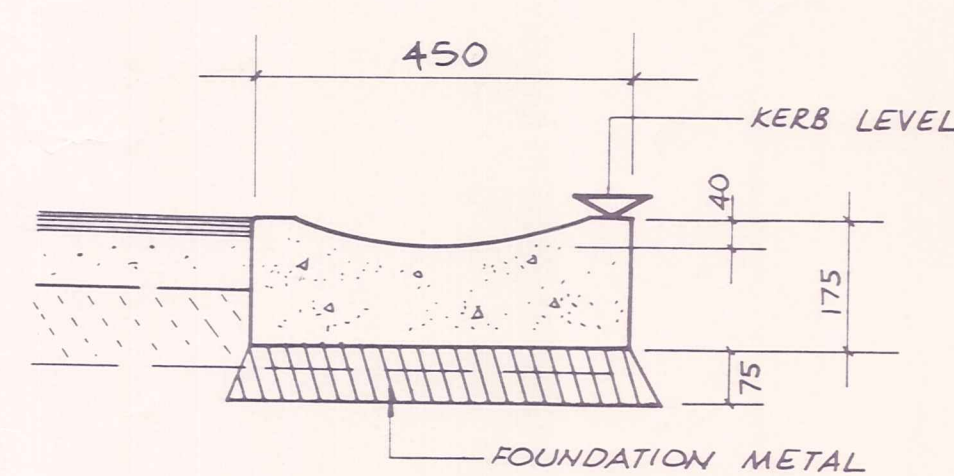


SECTION A-A



SECTION B-B

SPECIAL MUDTANK 1:20

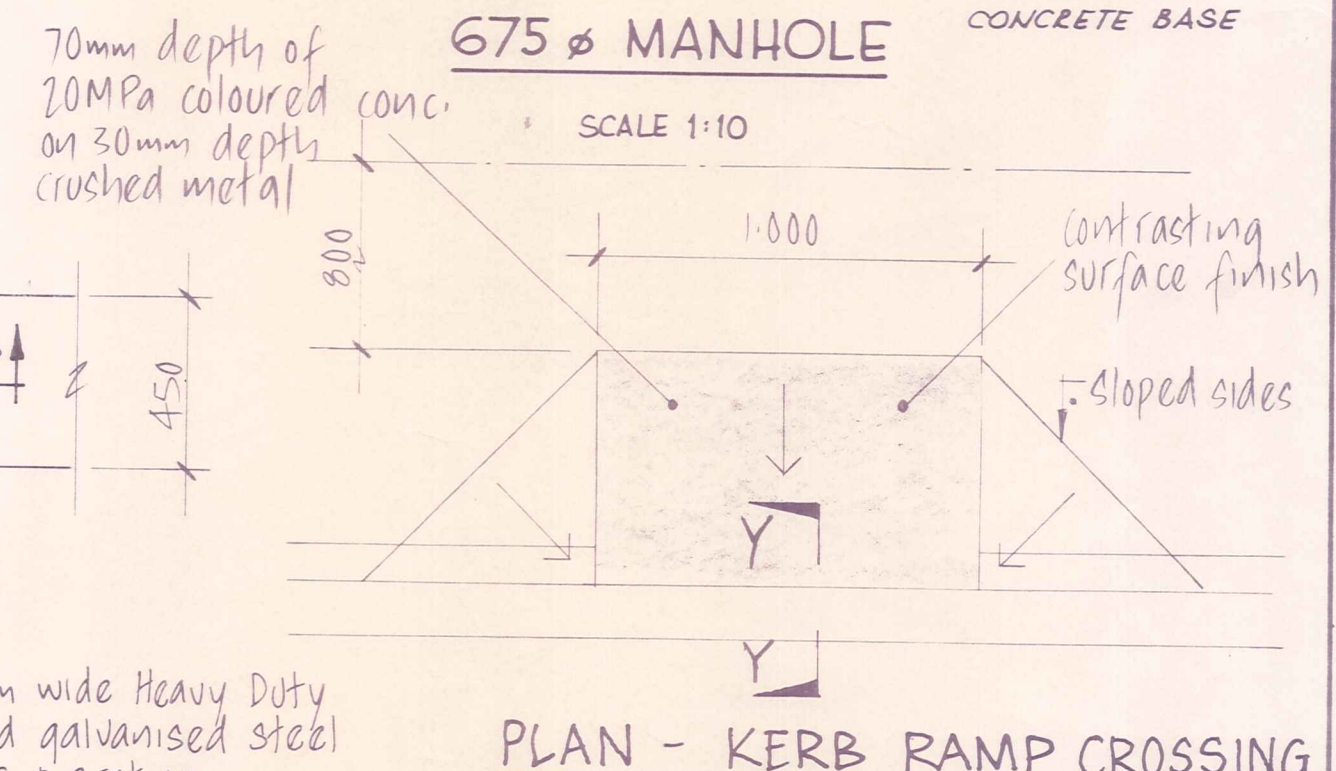


NO 10 CHANNEL (Modified)

MANHOLE NOTES -

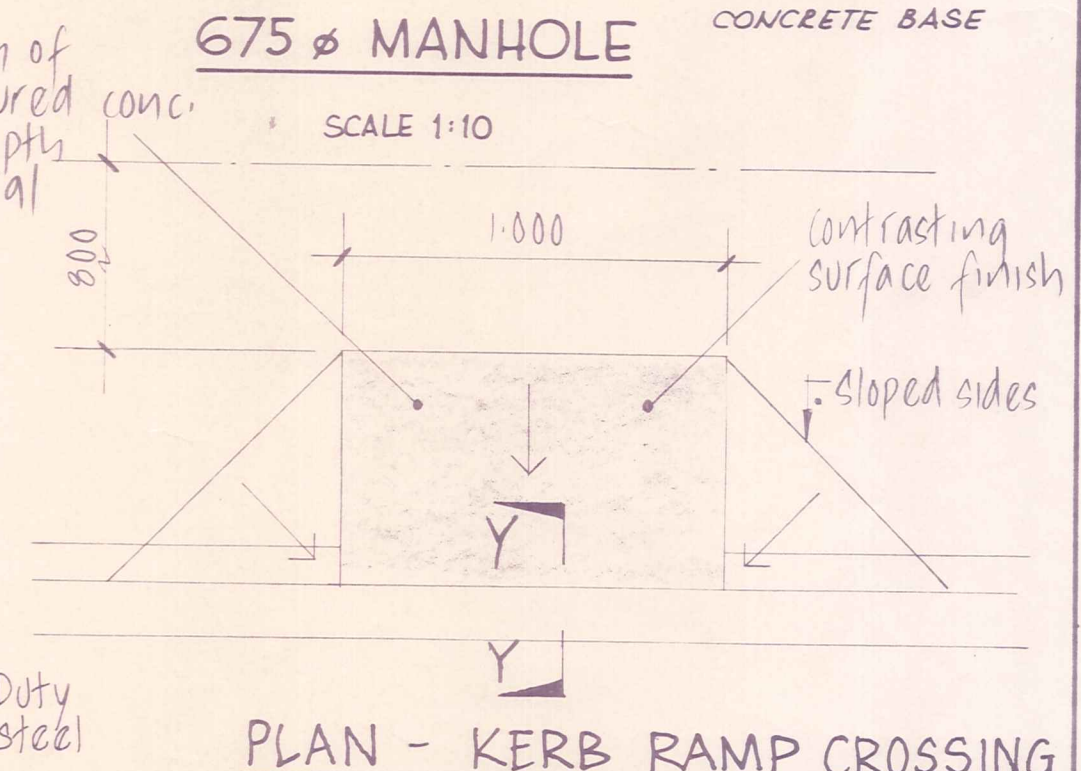
- 2 flexible joints within 1m of walls required on all pipelines entering or leaving manholes
- Concrete strength shall be 20 MPa at 28 days
- All frames & spacers exposed to view shall have plaster surround of 500 radius
- Locate manhole opening over stormwater pipe
- No step irons are required where depth to invert is less than 2m
- 1050  $\phi$  precast manholes shall be used where pipe diameters range between 375mm & 600mm. 675  $\phi$  precast manholes shall be used where pipe diameters are 250mm or 300mm & where depth to invert is less than 1.2m
- Channels from branch lines shall be curved into main line through the manhole to ensure streamlined flow

Notes



675  $\phi$  MANHOLE

SCALE 1:10



PLAN - KERB RAMP CROSSING

No.	Revisions	Date	Appr
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

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

Client  
**CENTRAL OTAGO DISTRICT COUNCIL**

Project  
**CONTRACT No 90/121**  
**TARBERT STREET**  
**REDEVELOPMENT**

Sheet Title  
**STANDARD DETAILS**

Job No.	Sheet No.	Revision
12757	13	
	of 13	shts