APPENDIX 7

Route Options - Outline Costs
Mott Macdonald

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 1
Over existing aqueduct and West towards Wall Bridge

Item	Description	Qty	Unit	Rate	Total	Section Total
	Preliminaries					
A	Establishment, Maintenance & Reinstatement	26	wks	20,000	520,000	
B	Over pumping	26	wks	5,000	130,000	
C	Traffic management	26	wks	1,000	26,000	
D	Add Method related works (Contaminated land)		wks		0	
E	Add Method related works (Back pumping for locks)		wks		0	676,000
	Page 1				676,000	676,000

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 1
Over existing aqueduct and West towards Wall Bridge

Item	Description	Qty	Unit	Rate	Total	Section Total
	Canal					
	Earthworks					
A	Stanking	1	item	15,000	15,000	
B	Excavation & disposal	3,000	m3	50	150,000	
C	Puddle clay lining, 600mm thick	1,500	m3	30	45,000	
D	Tie in to existing canal	1	item	15,000	15,000	
E	Widening prior to and after existing aqueduct	2	item	15,000	30,000	255,000
	Drainage					
F	Longitudinal drain	250	m	35	8,750	
G	Transverse drain, 100m c/c	60	m	35	2,100	10,850
	Pavement					
H	Towpath to 1 side of canal	250	m	120	30,000	30,000
	Structures					
J	Trench sheet piling, 4m long	2,000	m2	150	300,000	
K	Tie rods	168	nr	40	6,720	
L	Re-opening existing aqueduct	240	m2	750	180,000	
M	Locks	2	nr	450,000	900,000	
N	Sewer crossings	1	nr	30,000	30,000	
P	Rubbing strips	500	m	30	15,000	
Q	Bascule footbridge	1	nr	350,000	350,000	1,781,720
	Page 2				2,077,570	2,077,570

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 1
Over existing aqueduct and West towards Wall Bridge

Item	Description	Qty	Unit	Rate	Total	Section Total
	Basin					
	Earthworks					
A	Excavation & disposal	8,000	m3	50	400,000	
B	Puddle clay lining	2,400	m3	30	72,000	472,000
	Pavement					
C	Towpath around perimeter	260	m	120	31,200	
D	Car park	500	m2	75	37,500	68,700
	Structures					
E	Trench sheet piling, 4m long	1,040	m2	150	156,000	
F	Tie rods	87	nr	40	3,480	
G	Rubbing strips	260	m	30	7,800	
H	Mooring points, basin spines	15	nr	3,000	45,000	
J	Service facilities, 15 boats	1	item	310,000	310,000	522,280
	Landscaping					
G	Increased Landscaping costs	2	acres	10%	309,555	309,555
	Page 3				1,372,535	1,372,535

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 1
Over existing aqueduct and West towards Wall Bridge

Item	Description	Qty	Unit	Rate	Total	Section Total
	Page 1 Total - Preliminaries				676,000	676,000
	Page 2 Total - Canal				2,077,570	2,077,570
	Page 3 Total - Basin				1,372,535	1,372,535
	Risk Allowance 10%	4,126,105		10%	412,611	412,611
	Design Development 10%	4,538,716		10%	453,872	453,872
	Land	2	acre	183,750	367,500	367,500
	Capital Cost-landscaping	3,095,550				
	Page 4				5,360,087	**5,360,087**

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 2
Over existing aqueduct and East towards disused railway

Item	Description	Qty	Unit	Rate	Total	Section Total
	Preliminaries					
A	Establishment, Maintenance & Reinstatement	26	wks	20,000	520,000	
B	Over pumping	26	wks	5,000	130,000	
C	Traffic management	26	wks	1,000	26,000	
D	Add Method related works (Contaminated land)		item		0	676,000
	Page 1				676,000	676,000

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 2
Over existing aqueduct and East towards disused railway

Item	Description	Qty	Unit	Rate	Total	Section Total
	Canal					
	Earthworks					
A	Stanking	1	item	15,000	15,000	
B	Excavation & disposal	2,100	m3	50	105,000	
C	Puddle clay lining, 600mm thick	900	m3	30	27,000	
D	Tie in to existing canal	1	item	15,000	15,000	
E	Widening prior to and after existing aqueduct	2	item	15,000	30,000	192,000
	Pavement					
F	Towpath to 1 side of canal	175	m	120	21,000	21,000
	Structures					
G	Trench sheet piling, 4m long	1,400	m2	150	210,000	
H	Tie rods	118	nr	40	4,720	
J	Re-opening existing aqueduct	240	m2	750	180,000	
K	Sewer crossings	3	nr	75,000	225,000	
L	Rubbing strips	350	m	30	10,500	
M	Bascule footbridge	1	nr	350,000	350,000	980,220
	Page 2				1,193,220	1,193,220

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 2
Over existing aqueduct and East towards disused railway

Item	Description	Qty	Unit	Rate	Total	Section Total
	Basin					
	Earthworks					
A	Excavation & disposal	7,500	m3	50	375,000	
B	Puddle clay lining	2,250	m3	30	67,500	442,500
	Pavement					
C	Towpath around perimeter	250	m	120	30,000	30,000
	Structures					
D	Trench sheet piling, 4m long	1,500	m2	150	225,000	
E	Frodingham sheet piling, 7.5m long	375	m2	200	75,000	
F	Tie rods	83	nr	40	3,320	
G	Rubbing strips	250	m	30	7,500	
H	Mooring points, basin spines	15	nr	3,000	45,000	
J	Service facilities, 15 boats	1	item	310,000	310,000	
K	Capping beam	9	m3	200	1,800	667,620
	Landscaping					
L	Increased Landscaping costs	2	acres	10%	202,524	227,524
M	Car-parking	1	item	25,000	25,000	
	Page 3				1,367,644	1,367,644

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 2
Over existing aqueduct and East towards disused railway

Item	Description	Qty	Unit	Rate	Total	Section Total
	Page 1 Total - Preliminaries				676,000	676,000
	Page 2 Total - Canal				1,193,220	1,193,220
	Page 3 Total - Basin				1,367,644	1,367,644
	Risk Allowance 10%	3,236,864		10%	323,686	323,686
	Design Development 10%	3,560,550		10%	356,055	356,055
	Land	2	acre	183,750	367,500	367,500
	Capital Cost-landscaping	2,025,240				
	Page 4				4,284,105	**4,284,105**

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION VARIANT 2a
Over new aqueduct towards disused railway

Item	Description	Qty	Unit	Rate	Total	Section Total
	Preliminaries					
A	Establishment, Maintenance & Reinstatement	26	wks	20,000	520,000	
B	Over pumping	26	wks	5,000	130,000	
C	Traffic management	26	wks	1,000	26,000	
D	Add Method related works (Contaminated land)		item		0	
E	Add Method related works (Temp crossing of River Churnet)	26	wks	2,500	65,000	741,000
	Page 1				741,000	741,000

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION VARIANT 2a
Over new aqueduct towards disused railway

Item	Description	Qty	Unit	Rate	Total	Section Total
	Canal					
	Earthworks					
A	Stanking	1	item	15,000	15,000	
B	Tie in to existing canal	1	item	15,000	15,000	30,000
	Pavement					
C	Towpath to 1 side of canal	125	m	120	15,000	15,000
	Structures					
D	Aqueduct	550	m2	1,650	907,500	
E	Sewer crossings	1	nr	30,000	30,000	
F	Rubbing strips	250	m	30	7,500	1,045,000
G	Embankment works	1	nr	100,000	100,000	
	Page 2				1,045,000	1,045,000

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION VARIANT 2a
Over new aqueduct towards disused railway

Item	Description	Qty	Unit	Rate	Total	Section Total
	Basin					
	Earthworks					
A	Excavation & disposal	7,500	m3	50	375,000	
B	Puddle clay lining	2,250	m3	30	67,500	442,500
	Pavement					
C	Towpath around perimeter	250	m	120	30,000	30,000
	Structures					
D	Trench sheet piling, 4m long	1,500	m2	150	225,000	
E	Frodingham sheet piling, 7.5m long	375	m2	200	75,000	
F	Tie rods	83	nr	40	3,320	
G	Rubbing strips	250	m	30	7,500	
H	Mooring points, basin spines	15	nr	3,000	45,000	
J	Service facilities, 15 boats	1	item	310,000	310,000	
K	Capping beam	9	m3	200	1,800	667,620
	Landscaping					
L	Increased Landscaping costs	2	acres	10%	245,569	270,569
M	Car-parking	1	item	25,000	25,000	
	Page 3				1,410,689	1,410,689

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION VARIANT 2a
Over new aqueduct towards disused railway

Item	Description	Qty	Unit	Rate	Total	Section Total
	Page 1 Total - Preliminaries				741,000	741,000
	Page 3 Total - Canal				1,045,000	1,045,000
	Page 4 Total - Basin				1,410,689	1,410,689
	Risk Allowance 10%	3,196,689		10%	319,669	319,669
	Design Development 10%	3,516,358		10%	351,636	351,636
	Land	1	acre	183,750	183,750	183,750
	Capital Cost-landscaping	2,455,689				
	Page 4				4,051,744	**4,051,744**

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 3
Enlarge feeder channel to terminus at A53

Item	Description	Qty	Unit	Rate	Total	Section Total
	Preliminaries					
A	Establishment, Maintenance & Reinstatement	30	wks	20,000	600,000	
B	Over pumping	30	wks	5,000	150,000	
C	Traffic management	30	wks	1,000	30,000	
D	Add Method related works (Contaminated land)		item		0	
E	Add Method related works establish haul route	1	Item	5,000	5,000	785,000
	Page 1				785,000	785,000

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 3
Enlarge feeder channel to terminus at A53

Item	Description	Qty	Unit	Rate	Total	Section Total
	Canal					
	Earthworks					
A	Stanking	1	item	15,000	15,000	
B	Excavation & disposal	6,847	m3	50	342,350	
C	Imported fill	1,283	m3	25	32,075	
D	Puddle clay lining, 600mm thick	1,900	m3	30	57,000	
E	Clay lining, 350mm thick	276	m3	30	8,280	
F	Geotextile lining	1,485	m2	8	11,880	
G	Gabions	1,500	m3	95	142,500	
H	Reinforced earth	4,739	m2	8	37,912	
J	Tie in to existing canal	1	item	15,000	15,000	
K	Re-grading	1	item	15,000	15,000	676,997
	Drainage					
L	Fin drain, 2.5-3.0m deep	150	m	50	7,500	
M	Longitudinal drain	225	m	35	7,875	
N	Transverse drain, 100m c/c	178	m	35	6,230	21,605
	Pavement					
P	Towpath to 1 side of canal	375	m	120	45,000	
Q	Access track	1,875	m2	50	93,750	138,750
	Page 2				837,352	837,352

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 3
Enlarge feeder channel to terminus at A53

Item	Description	Qty	Unit	Rate	Total	Section Total
	Canal (Cont'd)					
	Landscaping					
A	Landscaping	11,250	m2		0	0
	Structures					
B	Trench sheet piling, 4m long	1,500	m2	300	450,000	
C	Tie rods	127	nr	40	5,080	
D	Rubbing strips	375	m	30	11,250	
E	Swing bridge	1	nr	350,000	350,000	816,330
	Page 3				816,330	816,330

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 3
Enlarge feeder channel to terminus at A53

Item	Description	Qty	Unit	Rate	Total	Section Total
	Basin					
	Earthworks					
A	Excavation & disposal	9,000	m3	50	450,000	
B	Puddle clay lining	2,700	m3	30	81,000	531,000
	Pavement					
C	Towpath around perimeter	280	m	120	33,600	33,600
	Structures					
D	Trench sheet piling, 4m long	1,120	m2	300	336,000	
E	Tie rods	93	nr	40	3,720	
F	Rubbing strips	280	m	30	8,400	
G	Mooring points, basin spines	15	nr	3,000	45,000	
H	Service facilities, 15 boats	1	item	310,000	310,000	703,120
	Landscaping					
L	Increased Landscaping costs	2	acres	10%	290,140	315,140
M	Car-parking	1	item	25,000	25,000	
	Page 4				1,582,860	1,582,860

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 3
Enlarge feeder channel to terminus at A53

Item	Description	Qty	Unit	Rate	Total	Section Total
	Page 1 Total - Preliminaries				785,000	785,000
	Page 2 Total - Canal				837,352	
	Page 3 Total - Canal				816,330	1,653,682
	Page 4 Total - Basin				1,582,860	1,582,860
	Risk Allowance 10%	4,021,542		10%	402,154	402,154
	Design Development 10%	4,423,696		10%	442,370	442,370
	Land	2	acre	5,250	10,500	10,500
	Capital Cost-landscaping	2,901,402				
	Page 5				4,876,566	**4,876,566**

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 4
Restore original line into town centre

Item	Description	Qty	Unit	Rate	Total	Section Total
	Preliminaries					
A	Establishment, Maintenance & Reinstatement	52	wks	20,000	1,040,000	
B	Over pumping	52	wks	5,000	260,000	
C	Traffic management	52	wks	1,000	52,000	
D	Add Method related works (Contaminated land)		item		0	1,352,000
	Site Clearance					
E	Demolition of Buildings	1	item	202,000	202,000	
F	Disposal of asbestos	1	item	10,000	10,000	212,000
	Page 1				1,564,000	1,564,000

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 4
Restore original line into town centre

Item	Description	Qty	Unit	Rate	Total	Section Total
	Canal					
	Earthworks					
A	Stanking	1	item	15,000	15,000	
B	Excavation & disposal	6,123	m3	50	306,150	
C	Imported fill	2,291	m3	25	57,275	
D	Puddle clay lining, 600mm thick	585	m3	30	17,550	
E	Geotextile lining	1,073	m2	8	8,584	
F	Tie in to existing canal	1	item	15,000	15,000	
G	Widening prior to and after existing aqueduct	2	item	15,000	30,000	449,559
	Drainage					
H	Fin drain, 2.5-3.0m deep	650	m	50	32,500	
J	Longitudinal drain	650	m	35	22,750	
K	Transverse drain, 100m c/c	140	m	35	4,900	60,150
	Pavement					
L	Towpath to 1 side of canal	650	m	120	78,000	78,000
	Page 2				587,709	587,709

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 4
Restore original line into town centre

Item	Description	Qty	Unit	Rate	Total	Section Total
	Canal (Cont'd)					
	Structures					
A	Trench sheet piling, 4m long	1,300	m2	150	195,000	
B	Tie rods	68	nr	40	2,700	
C	Re-opening existing aqueduct	240	m2	750	180,000	
D	Sewer crossings	4	nr	30,000	120,000	
E	Rubbing strips	975	m	30	29,250	
F	Lifting bridge	2	nr	350,000	700,000	
G	Reinforced concrete canal structure	488	m	3,000	1,464,000	
H	Bascule footbridge	1	nr	350,000	350,000	3,040,950
	Page 3				3,040,950	3,040,950

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 4
Restore original line into town centre

Item	Description	Qty	Unit	Rate	Total	Section Total
	Basin (assumed as option 2 basin)					
	Earthworks					
A	Excavation & disposal	7,500	m3	50	375,000	
B	Puddle clay lining	2,250	m3	30	67,500	442,500
	Pavement					
C	Towpath around perimeter	250	m	120	30,000	30,000
	Structures					
D	Frodingham sheet piling, 7.5m long	1,875	m2	200	375,000	
E	Tie rods	83	nr	40	3,320	
F	Rubbing strips	250	m	30	7,500	
G	Mooring points, basin spines	15	nr	3,000	45,000	
H	Service facilities, 15 boats	1	item	310,000	310,000	
j	Capping beam	45	m3	80	3,600	744,420
	Landscaping					
K	Increased Landscaping costs	2	acres	15%	723,837	748,837
L	Car-parking	1	item	25,000	25,000	
	Page 4				1,965,757	1,965,757

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 4
Restore original line into town centre

Item	Description	Qty	Unit	Rate	Total	Section Total
	Page 1 Total - Preliminaries				1,564,000	1,564,000
	Page 2 Total - Canal				587,709	
	Page 3 Total - Canal				3,040,950	3,628,659
	Page 4 Total - Basin				1,965,757	1,965,757
	Risk Allowance 10%	7,158,416		10%	715,842	715,842
	Design Development 10%	7,874,257		10%	787,426	787,426
	Land	2	acre		cost unknown*	0
	Capital Cost-landscaping	4,825,579				
	*Estimated land costs have not been included for option 4. Land is in multiple ownership within Barnfields Industrial Estate and would be subject to further analysis at detailed design stage.					
		Page 5			8,661,683	**8,661,683**

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 5
Widening of the feeder channel near the existing aqueduct

Item	Description	Qty	Unit	Rate	Total	Section Total
	Preliminaries					
A	Establishment, Maintenance & Reinstatement	18	wks	20,000	360,000	
B	Over pumping	18	wks	5,000	90,000	
C	Traffic management	18	wks	1,000	18,000	
D	Add Method related works (Contaminated land)		wks		0	
E	Add Method related works (Construction access)	1	item	5,000	5,000	473,000
	Page 1				473,000	473,000

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 5
Widening of the feeder channel near the existing aqueduct

Item	Description	Qty	Unit	Rate	Total	Section Total
	Canal					
	Earthworks					
A	Stanking	1	item	15,000	15,000	
B	Tie in to existing canal	1	item	15,000	15,000	30,000
	Structures					
C	Re-opening existing aqueduct	240	m2	750	180,000	180,000
	Page 2				210,000	210,000

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 5
Widening of the feeder channel near the existing aqueduct

Item	Description	Qty	Unit	Rate	Total	Section Total
	Basin					
	Earthworks					
A	Excavation & disposal	4,545	m3	75	340,875	
B	Puddle clay lining	1,350	m3	30	40,500	381,375
	Pavement					
C	Towpath around perimeter	330	m	120	39,600	39,600
	Structures					
D	Frodingham sheet piling, 7.5m long	1,320	m2	300	396,000	
E	Rubbing strips	330	m	30	9,900	
F	Mooring points, basin spines	8	nr	3,000	24,000	
G	Capping beam	30	m3	200	5,940	435,840
H	Service facilities, 8 boats	1	item	310,000	310,000	
	Landscaping					
I	Increased Landscaping costs	2	acres	10%	155,757	180,757
J	Car-parking	1	item	25,000	25,000	
	Page 3				1,347,572	1,037,572

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 5
Widening of the feeder channel near the existing aqueduct

Item	Description	Qty	Unit	Rate	Total	Section Total
	Page 1 Total - Preliminaries				473,000	473,000
	Page 2 Total - Canal				210,000	210,000
	Page 3 Total - Basin				1,347,572	1,347,572
	Risk Allowance 10%	2,030,572		10%	203,057	203,057
	Design Development 10%	2,233,629		10%	223,363	223,363
	Land	1	acre	5,250	5,250	5,250
	Capital Cost-landscaping	1,557,572				
	Page 4				2,462,242	**2,462,242**

Summary

Item	Description	Qty	Unit	Rate	Total	Section Total
	Summary					
A	**ROUTE OPTION 1** Over existing aqueduct and West towards Wall Bridge				5,360,087	**5,360,087**
B	**ROUTE OPTION 2** Over existing aqueduct and East towards disused railway				4,284,105	**4,284,105**
C	**ROUTE OPTION VARIANT 2a** Over new aqueduct towards disused railway				4,051,744	**4,051,744**
D	**ROUTE OPTION 3** Enlarge feeder channel to terminus at A53				4,876,566	**4,876,566**
E	**ROUTE OPTION 4** Restore original line into town centre				8,661,683	**8,661,683**
F	**ROUTE OPTION 5** Widening of the feeder channel near the existing aqueduct				2,462,242	**2,462,242**
	Note:					
	Exclusions Items in bill not priced Contaminated land and ground water Back pumping for locks Land costs, route 4 Items not in bill Allowance for: - Aesthetic work in park, route 1 Vole holes Fencing Treatment of soft spots Diversion of existing services Upgrading of vehicle access to existing aqueduct Service facilities, route 5					

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

Summary

Item	Description	Qty	Unit	Rate	Total	Section Total
	Assumptions Land take only measured to canal, basin and car park areas with 5% allowance for licences to other land requirements Size of service facilities assumed to be 30m2 Route 2 - No allowance for slope stabilisation where River Churnet abuts bottom of slope to scrap works Qualifications Quantities and design solutions subject to detailed desk studies and site investigations Basin costs subject to final layout designs					
	Page 2					

FRANKLIN ANDREWS

ESTIMATE SUBMISSION

Job No

212682

Project Title

Caldon Canal Leek Arm

Client

British Waterways

Prepared By

R Inman

Brief Description of Works

Option study for 6 options in total for works to the Caldon Canal in Leek

Special Difficulties of Site

Adjacent services
Adjacent River Churnet
Topography of surrounding land
Current land uses of surrounding land
Established developments, option 4

Basis of Estimate

Measurement of approximate quants and rates from previous projects and price books etc

Current Price - including Summary of Sections

	Works costs	Land costs	
Route 1	4,992,600	367,500	
Route 2	3,916,700	367,500	
Route 2a	3,868,000	183,800	
Route 3	4,866,100	10,500	
Route 4	#VALUE!	#VALUE!	Assessment not made on land costs due to complexities of route. Probably into £+millions
Route 5	2,457,000	5,300	

Level of Estimating

+/- 20%

Exclusions/Qualifications/Assumptions

V.A.T
Professional Fees
Treatment of contaminated land and ground water
Diversion of existing services
Land (Option 4) and Compensation costs
Accommodation Works
Possession Charges
Contingency
Aesthetic work in park (Option 1)
Vole holes
Treatment of soft spots
Back pumping for locks
Upgrading of vehicle access to existing aqueduct

Quantities and design solutions subject to detailed desk studies and site investigations
Basin costs subject to final layouts

Assumed excavation rate will include for disposal of Japanese Knot Weed
Bridge costs as Gloucester and Sharpeness Canal, Fretherne Bridge, Qualter Hall

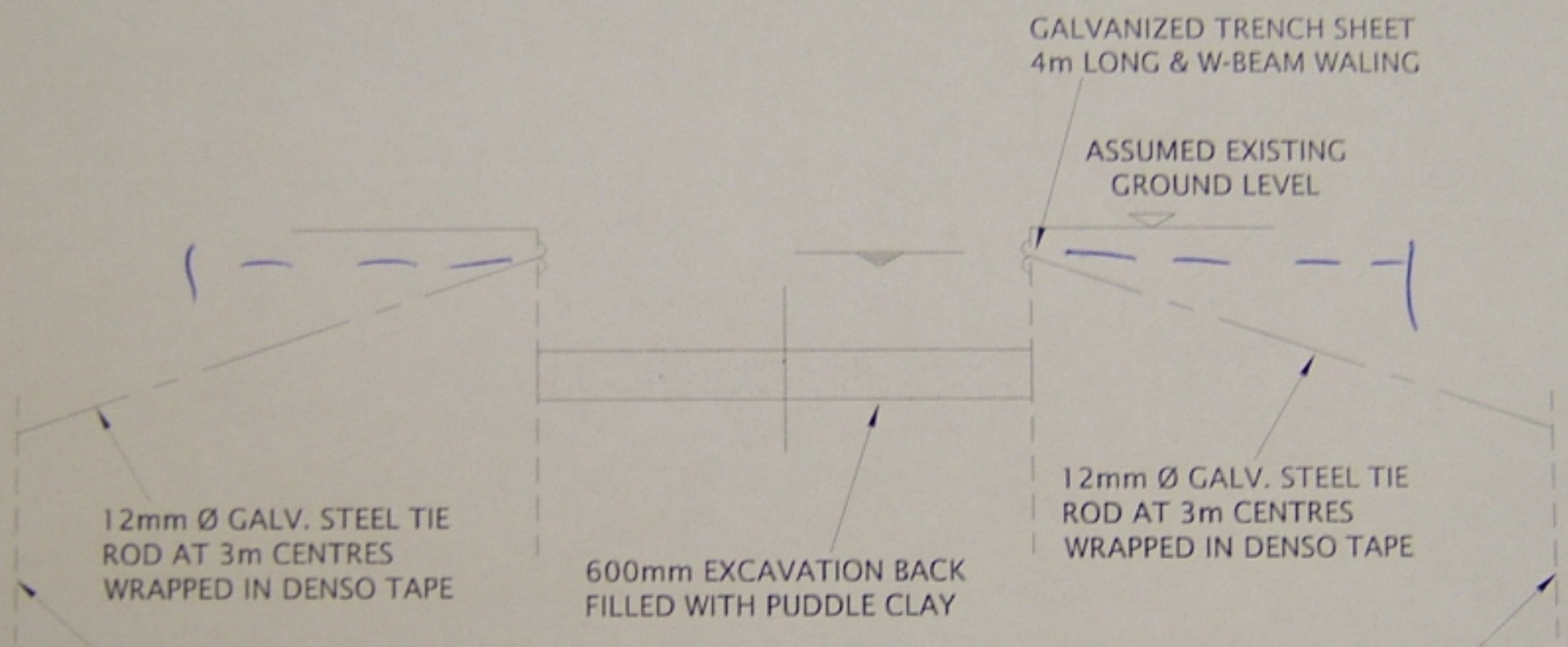
Brief Details of Previous Estimate

N/A

Comments re/Endorsements to Present Estimate

Signed Date

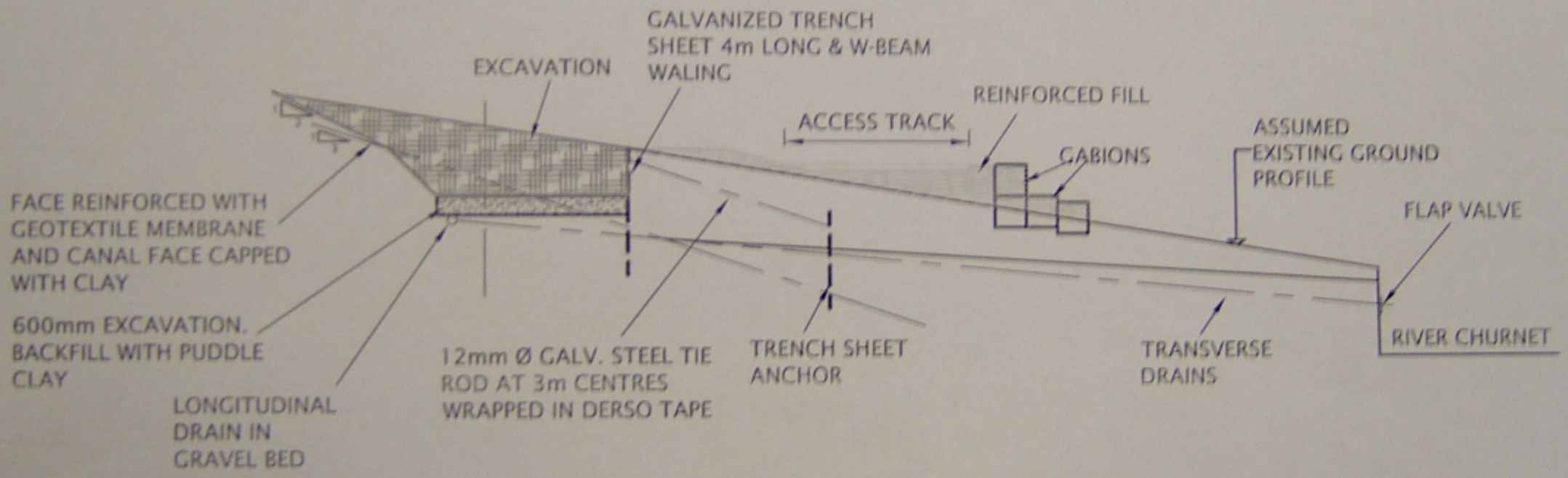
PRELIMINARY



TYPICAL VERTICAL SECTION (ROUTES 1, 2, & 4)

(SCALE 1:100)

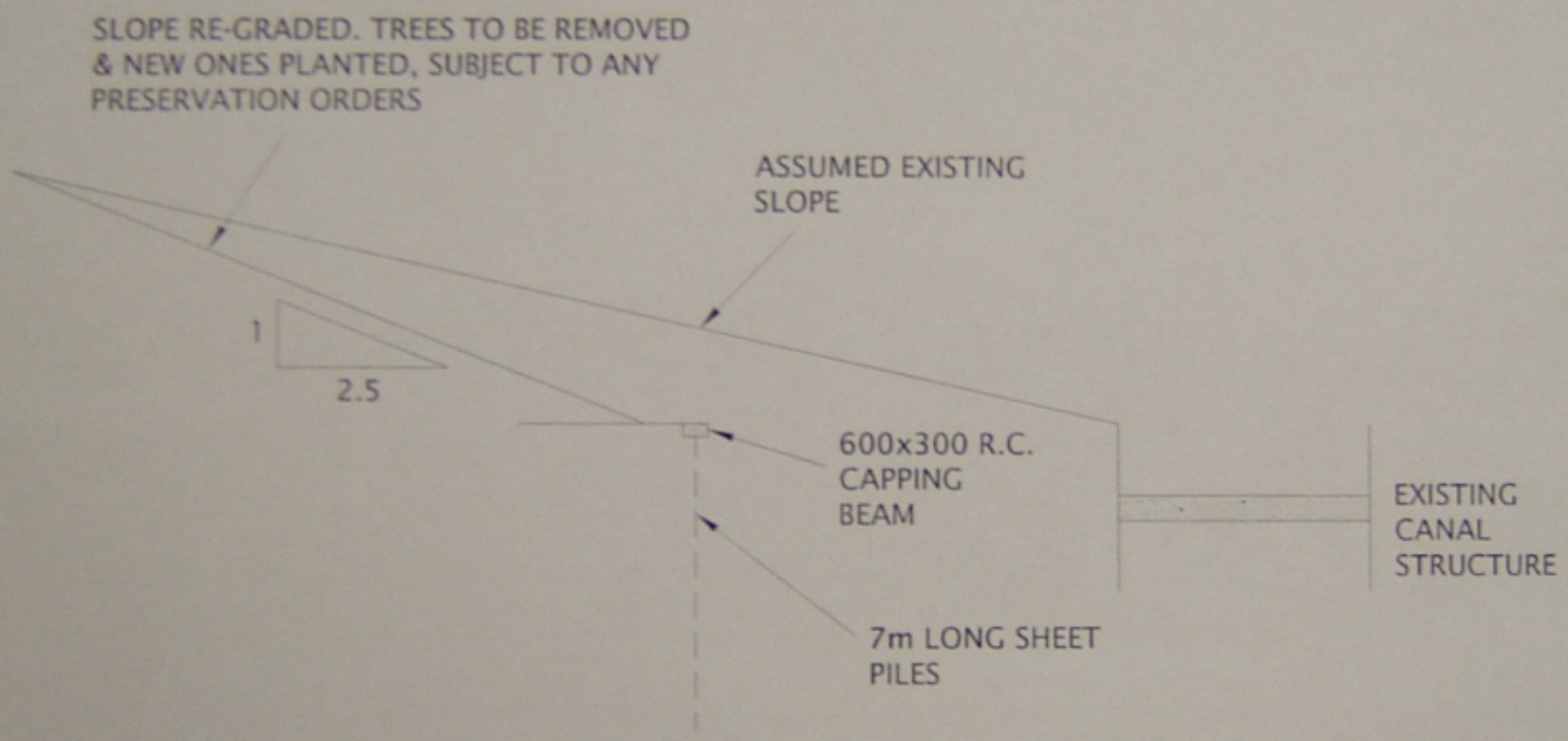
PRELIMINARY



VERTICAL SECTION - SOUTH OF RIVER CHURNET (EXISTING CANAL FEEDER IN PIPE) ROUTE 3

(SCALE 1:200)

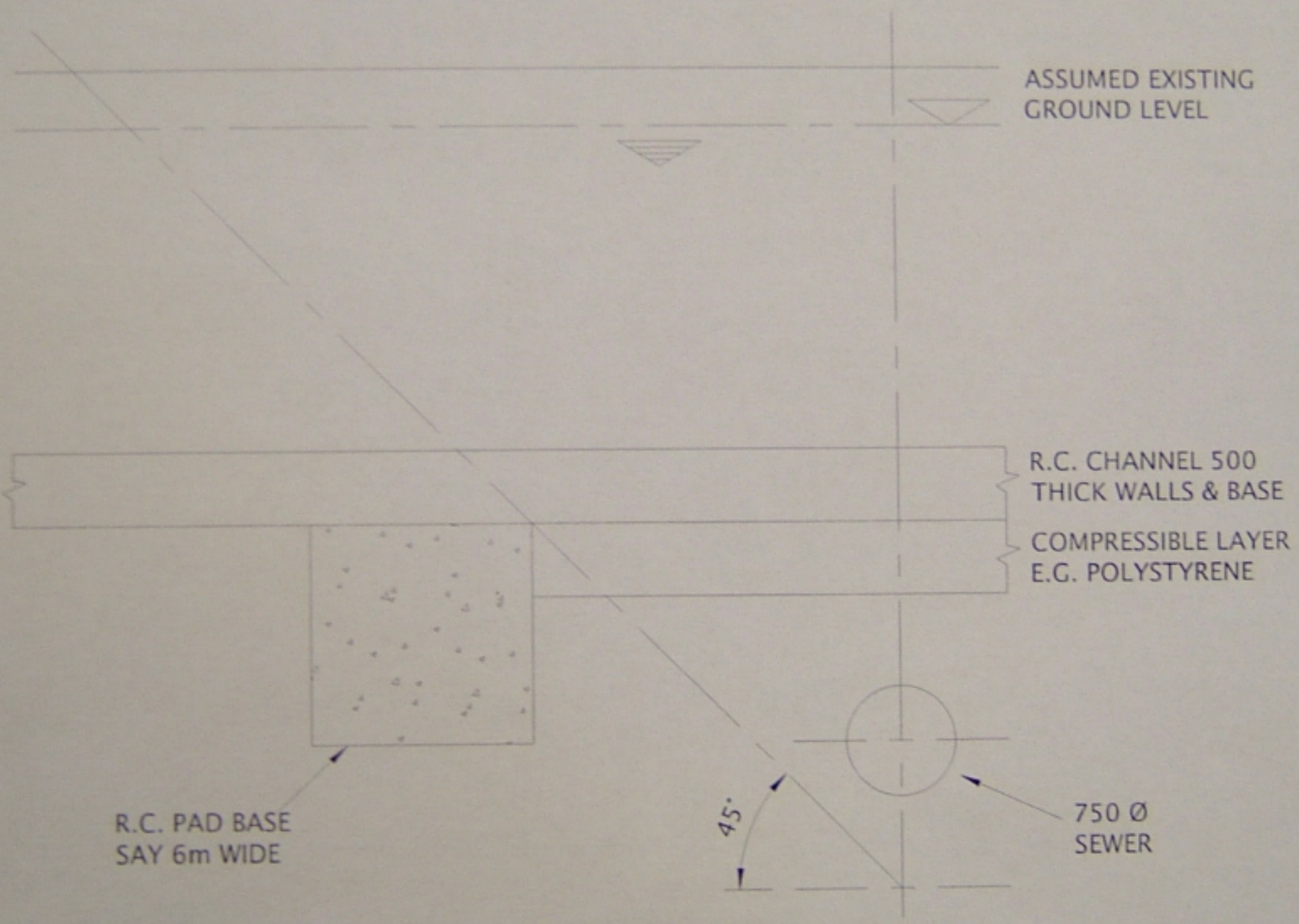
PRELIMINARY



ROUTE 5 - VERTICAL SECTION LOOKING WEST

(SCALE 1:200)

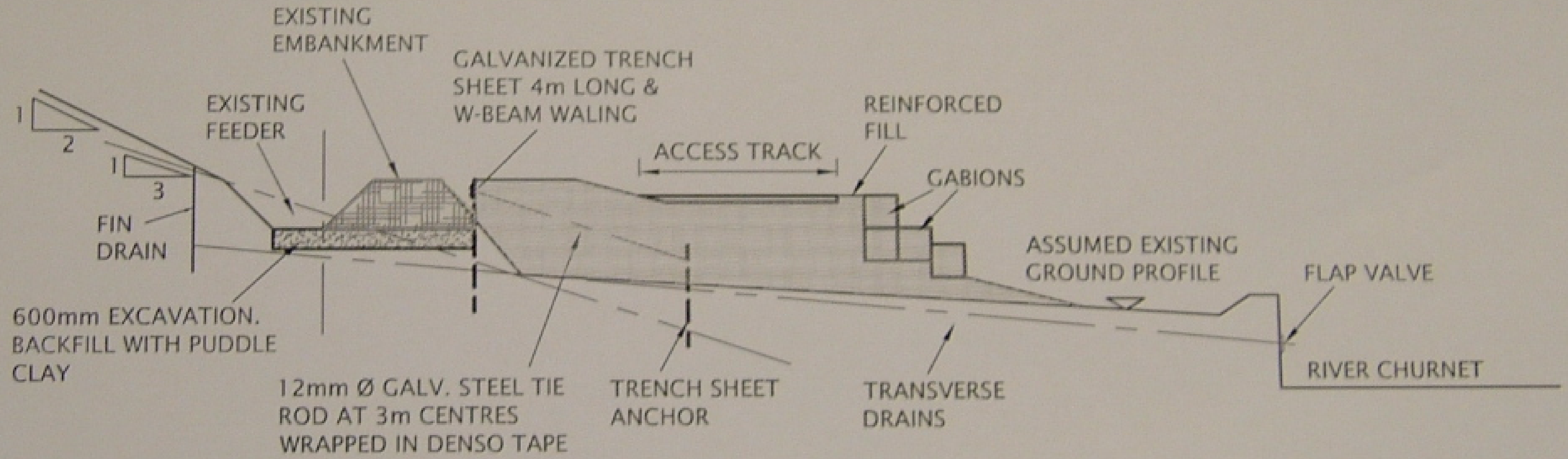
PRELIMINARY



PROPOSED CANAL CROSSING OVER EXISTING SEWER
LONGITUDINAL SECTION ALONG CANAL

(SCALE 1:50)

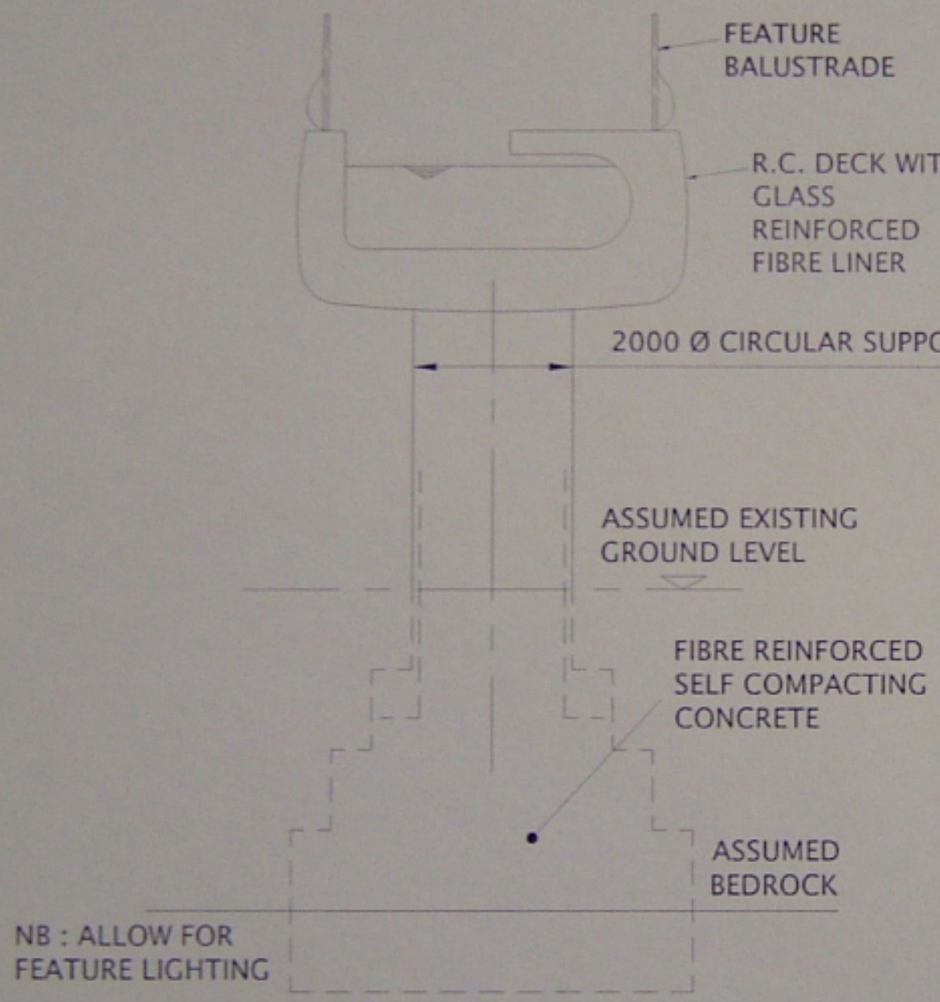
PRELIMINARY



VERTICAL SECTION - SOUTH OF RIVER CHURNET
(EXISTING FEEDER IN OPEN CHANNEL) ROUTE 3

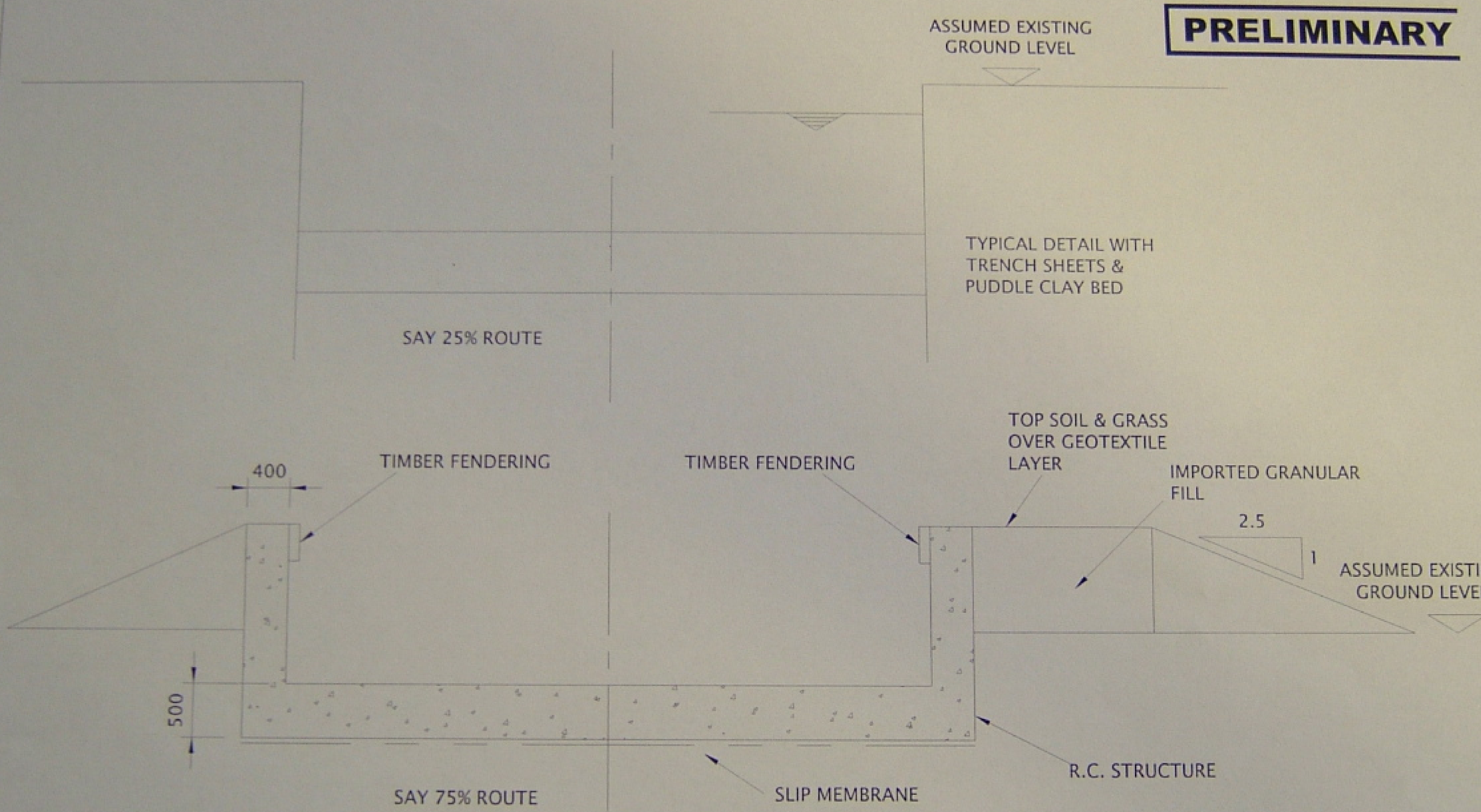
(SCALE 1:200)

PRELIMINARY



ROUTE 2a PROPOSED NEW AQUEDUCT

(SCALE 1:100)



FULL MOVEMENT JOINTS AT SAY 50m CENTRES, FULL CONTRACTION JOINTS AT SAY 15m CENTRES. N.B. LONGITUDINAL & TRANSVERSE DRAINS WILL BE NECESSARY TO DRAIN THE HARD SURFACES EACH SIDE OF THE PROPOSED CANAL

ROUTE 4

(SCALE 1:50)