

Appendix H – Retaining Walls and Abutment Plans (Plans, Elevations, Typical Sections) prepared by ALUA



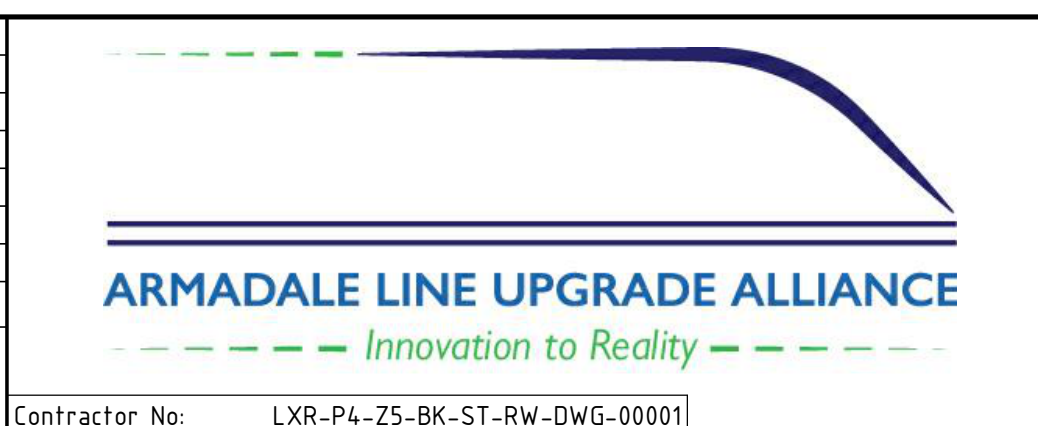
Government of **Western Australia**
Public Transport Authority

VICTORIA PARK TO CANNING LEVEL CROSSING REMOVAL ARMADALE LINE - CIVIL STRUCTURES BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS



REFERENCE DESIGN

REV	DATE	ISSUED FOR REFERENCE DESIGN	MS	GW	AI	BM
A	28.07.23	AMENDMENT	DSN	DRN	CHK	APP
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A1			<small>Contractor No: LXR-P4-Z5-BK-ST-RW-DWG-00001</small>			



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DATE
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REFERENCES

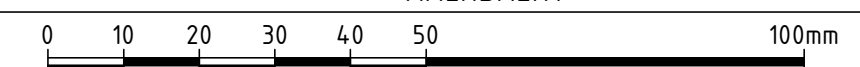
SCALE
DATUM
HORIZONTAL: PCG20
VERTICAL: AHD71


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DRAWN	G.WIN
CHECKED	A.ISAAC
APPROVED	B.MARSHALL
DATE	-

	VICTORIA PARK TO CANNING LEVEL CROSSING REMOVAL
ARMADALE LINE - CIVIL STRUCTURES BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS COVER SHEET	
PTA Drawing No: 04-S-72-10001	Rev: A

DRAWING LIST			
REV	ALUA DRAWING NUMBER	PTA DRAWING NUMBER	TITLE
A	LXR-P4-Z5-BK-ST-RW-DWG-00001	04-S-72-10001	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - COVER SHEET
A	LXR-P4-Z5-BK-ST-RW-DWG-00002	04-S-72-10002	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - INDEX SHEET
A	LXR-P4-Z5-BK-ST-RW-DWG-00003	04-S-72-10003	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - LOCALITY PLAN
A	LXR-P4-Z5-BK-ST-RW-DWG-00007	04-S-72-10007	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - RETAINING WALL PLAN AND ELEVATION - SHEET 1
A	LXR-P4-Z5-BK-ST-RW-DWG-00008	04-S-72-10008	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - RETAINING WALL PLAN AND ELEVATION - SHEET 2
A	LXR-P4-Z5-BK-ST-RW-DWG-00009	04-S-72-10009	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - RETAINING WALL PLAN AND ELEVATION - SHEET 3
A	LXR-P4-Z5-BK-ST-RW-DWG-00010	04-S-72-10010	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - RETAINING WALL PLAN AND ELEVATION - SHEET 4
A	LXR-P4-Z5-BK-ST-RW-DWG-00015	04-S-72-10015	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - ABUTMENT GENERAL ARRANGEMENT - SHEET 1
A	LXR-P4-Z5-BK-ST-RW-DWG-00016	04-S-72-10016	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - ABUTMENT GENERAL ARRANGEMENT - SHEET 2
A	LXR-P4-Z5-BK-ST-RW-DWG-00017	04-S-72-10017	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - GENERAL SECTIONS - SHEET 1
A	LXR-P4-Z5-BK-ST-RW-DWG-00018	04-S-72-10018	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - GENERAL SECTIONS - SHEET 2
A	LXR-P4-Z5-BK-ST-RW-DWG-00019	04-S-72-10019	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - GENERAL SECTIONS - SHEET 3
A	LXR-P4-Z5-BK-ST-RW-DWG-00025	04-S-72-10025	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - RETAINING WALL CONCRETE DETAILS - SHEET 1
A	LXR-P4-Z5-BK-ST-RW-DWG-00026	04-S-72-10026	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - RETAINING WALL CONCRETE DETAILS - SHEET 2
A	LXR-P4-Z5-BK-ST-RW-DWG-00051	04-S-72-10051	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - TYPICAL PILE DETAILS - SHEET 1
A	LXR-P4-Z5-BK-ST-RW-DWG-00053	04-S-72-10053	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - ABUTMENT PILECAP CONCRETE DETAILS - SHEET 1
A	LXR-P4-Z5-BK-ST-RW-DWG-00057	04-S-72-10057	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - ABUTMENT CONCRETE LAYOUT AND DETAILS - SHEET 1
A	LXR-P4-Z5-BK-ST-RW-DWG-00058	04-S-72-10058	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - ABUTMENT CONCRETE LAYOUT AND DETAILS - SHEET 2
A	LXR-P4-Z5-BK-ST-RW-DWG-00059	04-S-72-10059	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - ABUTMENT CONCRETE LAYOUT AND DETAILS - SHEET 3
A	LXR-P4-Z5-BK-ST-RW-DWG-00060	04-S-72-10060	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - ABUTMENT CONCRETE LAYOUT AND DETAILS - SHEET 4
A	LXR-P4-Z5-BK-ST-RW-DWG-00061	04-S-72-10061	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - ABUTMENT CONCRETE LAYOUT AND DETAILS - SHEET 5
A	LXR-P4-Z5-BK-ST-RW-DWG-00062	04-S-72-10062	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - ABUTMENT CONCRETE LAYOUT AND DETAILS - SHEET 6
A	LXR-P4-Z5-BK-ST-RW-DWG-00063	04-S-72-10063	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - ABUTMENT REINFORCEMENT DETAILS - SHEET 1
A	LXR-P4-Z5-BK-ST-RW-DWG-00064	04-S-72-10064	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - ABUTMENT REINFORCEMENT DETAILS - SHEET 2
A	LXR-P4-Z5-BK-ST-RW-DWG-00065	04-S-72-10065	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - ABUTMENT REINFORCEMENT DETAILS - SHEET 3
A	LXR-P4-Z5-BK-ST-RW-DWG-00065	04-S-72-10066	BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS - ABUTMENT REINFORCEMENT DETAILS - SHEET 4

REFERENCE DESIGN	
	VICTORIA PARK TO CANNING LEVEL CROSSING REMOVAL
ARMADALE LINE - CIVIL STRUCTURES BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS INDEX SHEET	
PTA Drawing No: 04-S-72-10002	Rev: A

REV	DATE	ISSUED FOR REFERENCE DESIGN	MS	GW	AI	BM
A	28.07.23					
AMENDMENT			DSN	DRN	CHK	APP
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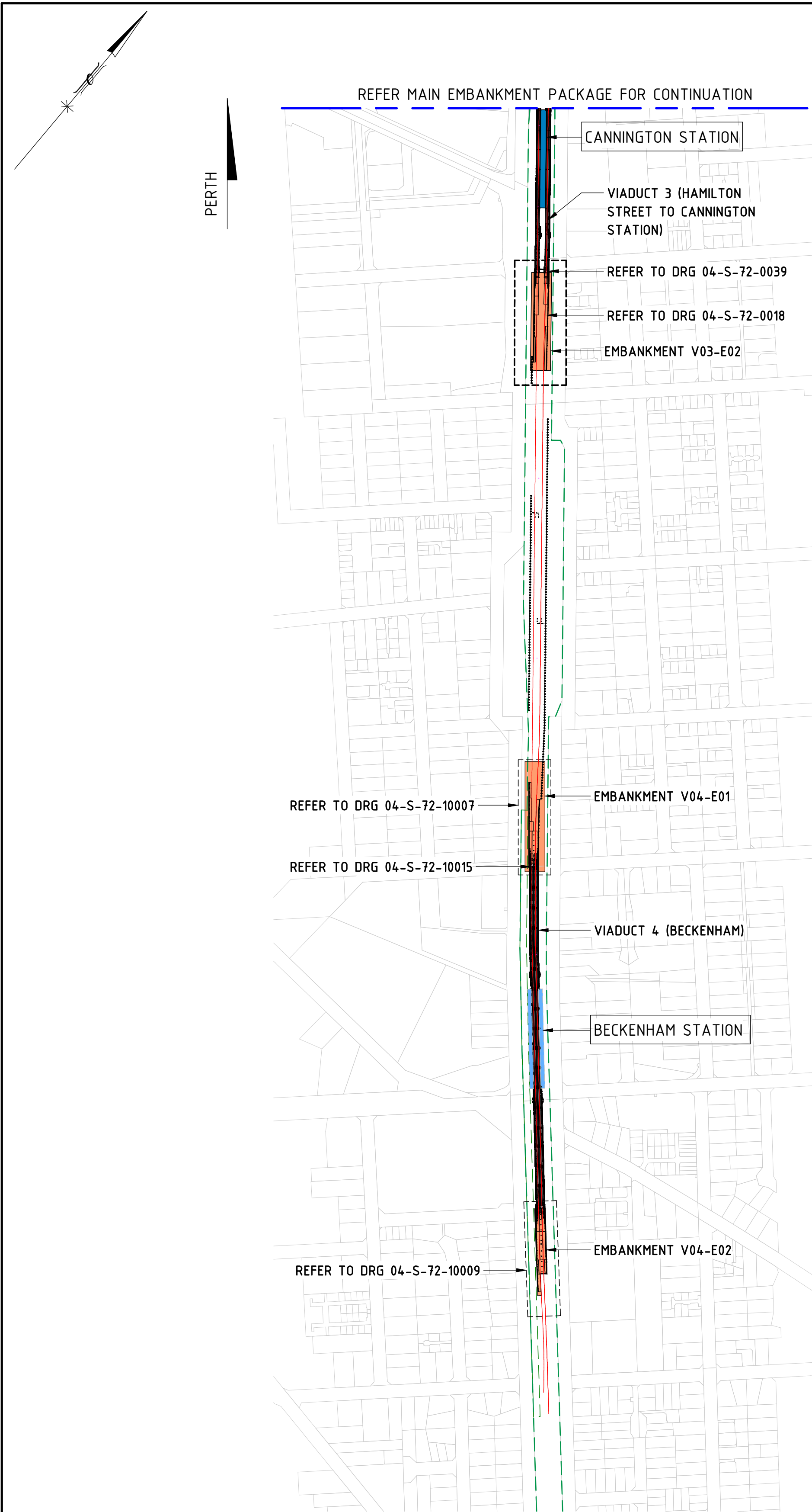
ARMADALE LINE UPGRADE ALLIANCE
Innovation to Reality

VALIDATION
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DATE
DATE APPROVED

REFERENCES

SCALE
DATUM
HORIZONTAL: PCG20
VERTICAL: AHD71

DESIGNED	M.SOUI
DRAWN	G.WIN
CHECKED	A.ISAAC
APPROVED	B.MARSHALL
DATE	-



REFER MAIN EMBANKMENT PACKAGE FOR CONTINUATION

CANNINGTON STATION

VIADUCT 3 (HAMILTON STREET TO CANNINGTON STATION)

REFER TO DRG 04-S-72-0039

REFER TO DRG 04-S-72-0018

EMBANKMENT V03-E02

REFER TO DRG 04-S-72-10007

EMBANKMENT V04-E01

REFER TO DRG 04-S-72-10015

VIADUCT 4 (BECKENHAM)

BECKENHAM STATION

REFER TO DRG 04-S-72-10009

EMBANKMENT V04-E02

PERTH

ARMADALE

LOCALITY PLAN
SCALE 1 : 5000

- LEGEND:**
- VIADUCT / PSP BRIDGE
 - EMBANKMENT
 - STATION
 - RAIL ALIGNMENT
 - RAIL RESERVE BOUNDARY

REFERENCE DESIGN	
	VICTORIA PARK TO CANNING LEVEL CROSSING REMOVAL
ARMADALE LINE - CIVIL STRUCTURES BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS LOCALITY PLAN	
PTA Drawing No: 04-S-72-10003	Rev: A

REV	DATE	ISSUED FOR REFERENCE DESIGN	MS	GW	AI	BM
A	28.07.23	AMENDMENT	DSN	DRN	CHK	APP
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A1		AT ORIGINAL PLOT SIZE				

ARMADALE LINE UPGRADE ALLIANCE
Innovation to Reality

Contractor No: LXR-P4-Z5-BK-ST-RW-DWG-00003

VALIDATION

SIGNATURE

DATE

DATE APPROVED

REFERENCES

SCALE

As indicated

DATUM

HORIZONTAL: PCG20

VERTICAL: AHD71

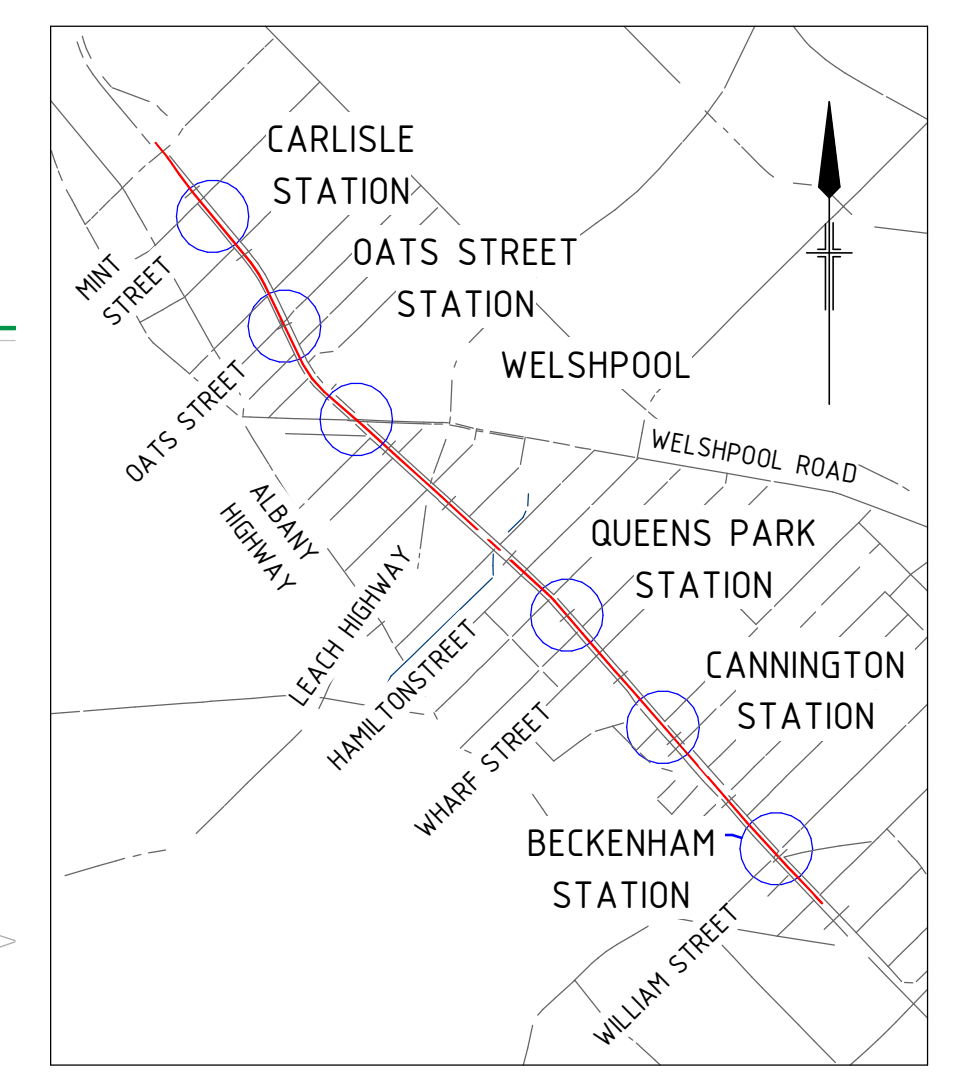
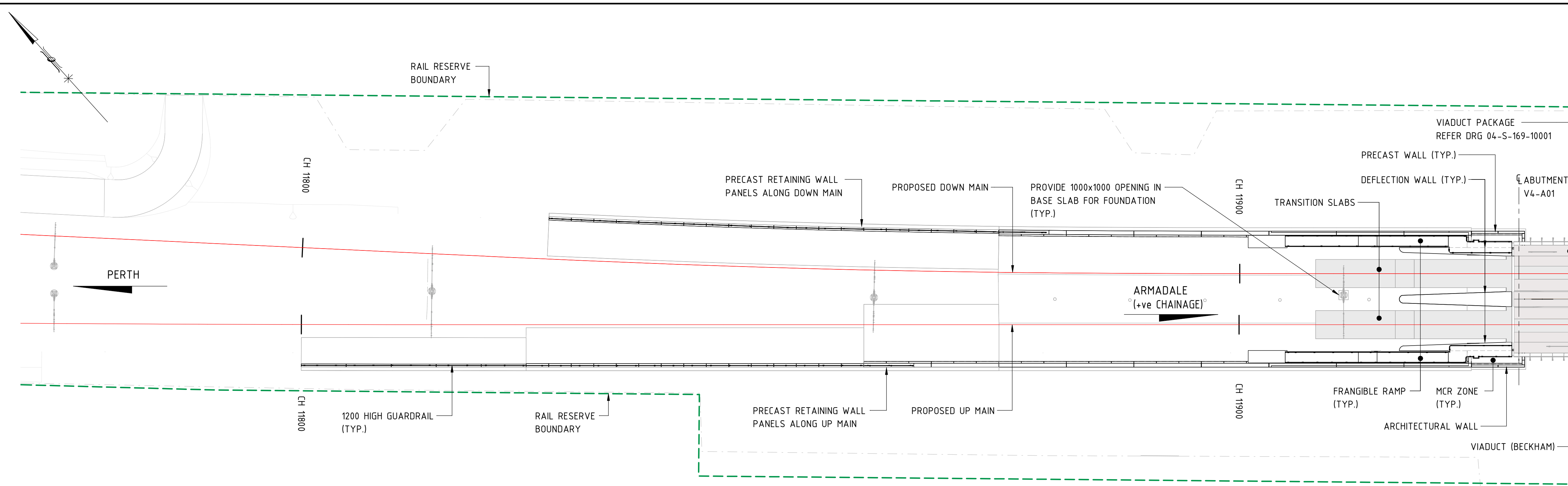
DESIGNED M.SOOI

DRAWN G.WIN

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APPROVED B.MARSHALL

DATE -

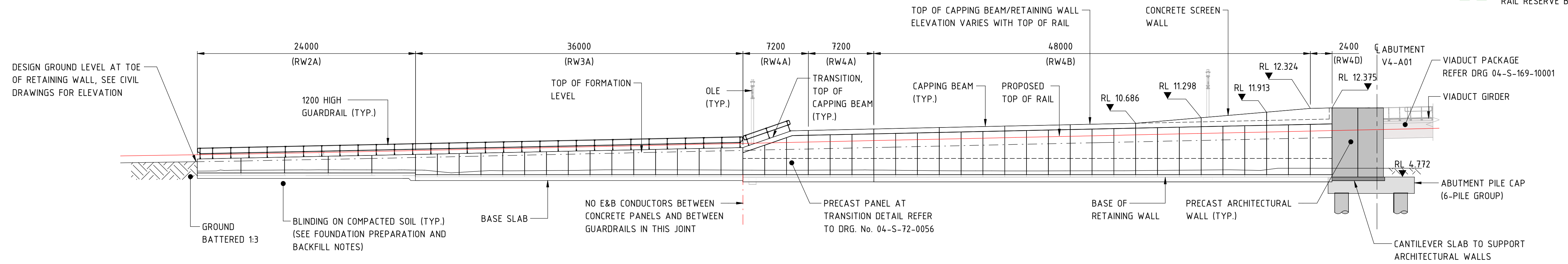


LOCALITY PLAN

- NOTES:**
- NOISE WALL TO BE CONFIRMED
 - ALL GUARDRAILS, STAIRS, SCREEN, TRANSITION SLABS, RETAINING WALL AND ABUTMENT WALLS SHALL BE EARTHED AND BONDED. SEE EARTHING AND BONDING DRAWINGS DRG. No. 04-S-72-0157, 0141 TO 0157 TO FOR DETAILS.

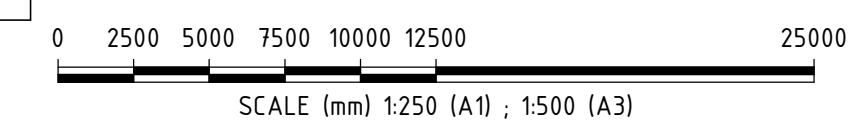
(EMBANKMENT V04-E01) RETAINING WALL PLAN - BECKENHAM
SCALE 1 : 250

- LEGEND:**
- RETAINING WALL
 - VIADUCT / PSP BRIDGE
 - RAIL ALIGNMENT
 - RAIL RESERVE BOUNDARY



CHAINAGE	TOP OF WALL R.L. B	BASE OF WALL R.L. C	PANEL No.	TOP OF CAPPING BEAM R.L. A	CAPPING BEAM No.
CH11800-4.969	6.759	4.759	V4-A01-PW47	8.020	V4-A01-CB9
CH11820-4.969	6.759	4.759	V4-A01-PW46	9.860	V4-A01-CB8
CH11840-4.783	6.759	4.783	V4-A01-PW45	9.901	V4-A01-CB7
CH11860-4.783	6.759	4.783	V4-A01-PW44	10.058	V4-A01-CB6
CH11880-4.783	6.759	4.783	V4-A01-PW43	10.215	V4-A01-CB5
CH11900-4.783	6.759	4.783	V4-A01-PW42	10.372	V4-A01-CB4
CH11920-4.783	6.759	4.783	V4-A01-PW41	10.528	V4-A01-CB3
CH11940-4.783	6.759	4.783	V4-A01-PW40	10.686	V4-A01-CB2
CH11960-4.783	6.759	4.783	V4-A01-PW39	10.842	V4-A01-CB1
CH11980-4.783	6.759	4.783	V4-A01-PW38	10.999	V4-A01-CB0
CH12000-4.783	6.759	4.783	V4-A01-PW37	11.150	V4-A01-CB0
CH12020-4.783	6.759	4.783	V4-A01-PW36	11.300	V4-A01-CB0
CH12040-4.783	6.759	4.783	V4-A01-PW35	11.450	V4-A01-CB0
CH12060-4.783	6.759	4.783	V4-A01-PW34	11.600	V4-A01-CB0
CH12080-4.783	6.759	4.783	V4-A01-PW33	11.750	V4-A01-CB0
CH12100-4.783	6.759	4.783	V4-A01-PW32	11.900	V4-A01-CB0
CH12120-4.783	6.759	4.783	V4-A01-PW31	12.050	V4-A01-CB0
CH12140-4.783	6.759	4.783	V4-A01-PW30	12.200	V4-A01-CB0
CH12160-4.783	6.759	4.783	V4-A01-PW29	12.350	V4-A01-CB0
CH12180-4.783	6.759	4.783	V4-A01-PW28	12.500	V4-A01-CB0
CH12200-4.783	6.759	4.783	V4-A01-PW27	12.650	V4-A01-CB0
CH12220-4.783	6.759	4.783	V4-A01-PW26	12.800	V4-A01-CB0
CH12240-4.783	6.759	4.783	V4-A01-PW25	12.950	V4-A01-CB0
CH12260-4.783	6.759	4.783	V4-A01-PW24	13.100	V4-A01-CB0
CH12280-4.783	6.759	4.783	V4-A01-PW23	13.250	V4-A01-CB0
CH12300-4.783	6.759	4.783	V4-A01-PW22	13.400	V4-A01-CB0
CH12320-4.783	6.759	4.783	V4-A01-PW21	13.550	V4-A01-CB0
CH12340-4.783	6.759	4.783	V4-A01-PW20	13.700	V4-A01-CB0
CH12360-4.783	6.759	4.783	V4-A01-PW19	13.850	V4-A01-CB0
CH12380-4.783	6.759	4.783	V4-A01-PW18	14.000	V4-A01-CB0
CH12400-4.783	6.759	4.783	V4-A01-PW17	14.150	V4-A01-CB0
CH12420-4.783	6.759	4.783	V4-A01-PW16	14.300	V4-A01-CB0
CH12440-4.783	6.759	4.783	V4-A01-PW15	14.450	V4-A01-CB0
CH12460-4.783	6.759	4.783	V4-A01-PW14	14.600	V4-A01-CB0
CH12480-4.783	6.759	4.783	V4-A01-PW13	14.750	V4-A01-CB0
CH12500-4.783	6.759	4.783	V4-A01-PW12	14.900	V4-A01-CB0
CH12520-4.783	6.759	4.783	V4-A01-PW11	15.050	V4-A01-CB0
CH12540-4.783	6.759	4.783	V4-A01-PW10	15.200	V4-A01-CB0
CH12560-4.783	6.759	4.783	V4-A01-PW9	15.350	V4-A01-CB0
CH12580-4.783	6.759	4.783	V4-A01-PW8	15.500	V4-A01-CB0
CH12600-4.783	6.759	4.783	V4-A01-PW7	15.650	V4-A01-CB0
CH12620-4.783	6.759	4.783	V4-A01-PW6	15.800	V4-A01-CB0
CH12640-4.783	6.759	4.783	V4-A01-PW5	15.950	V4-A01-CB0
CH12660-4.783	6.759	4.783	V4-A01-PW4	16.100	V4-A01-CB0
CH12680-4.783	6.759	4.783	V4-A01-PW3	16.250	V4-A01-CB0
CH12700-4.783	6.759	4.783	V4-A01-PW2	16.400	V4-A01-CB0
CH12720-4.783	6.759	4.783	V4-A01-PW1	16.550	V4-A01-CB0
CH12740-4.783	6.759	4.783	V4-A01-AP2	16.700	V4-A01-CB0
CH12760-4.783	6.759	4.783	V4-A01-AP1	16.850	V4-A01-CB0

(EMBANKMENT V04-E01) RETAINING WALL ELEVATION - BECKENHAM (UP MAIN)
SCALE 1 : 50



REFERENCE DESIGN

Government of Western Australia
Public Transport Authority

VICTORIA PARK TO CANNING
LEVEL CROSSING REMOVAL

ARMADALE LINE - CIVIL STRUCTURES
BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS
RETAINING WALL PLAN AND ELEVATION - SHEET 1
PTA Drawing No: **04-S-72-10007** Rev: **A**

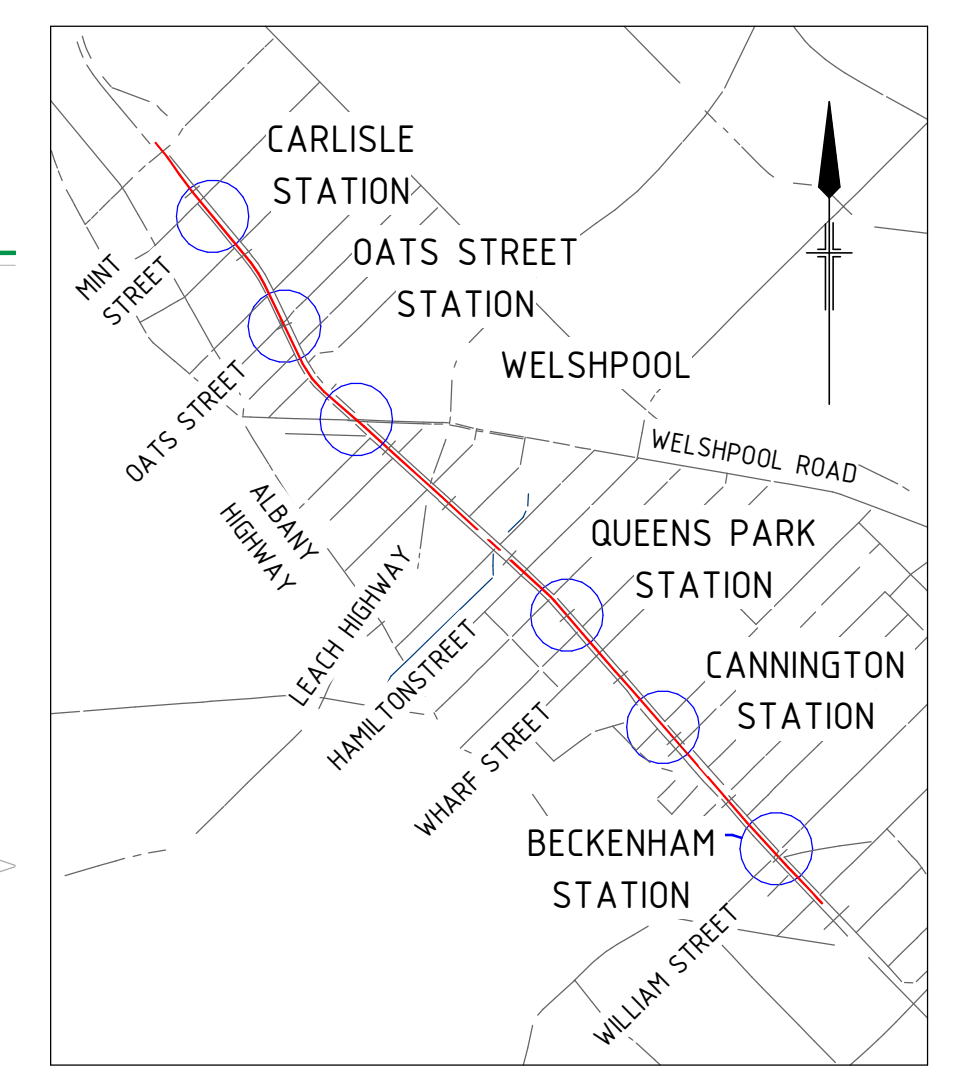
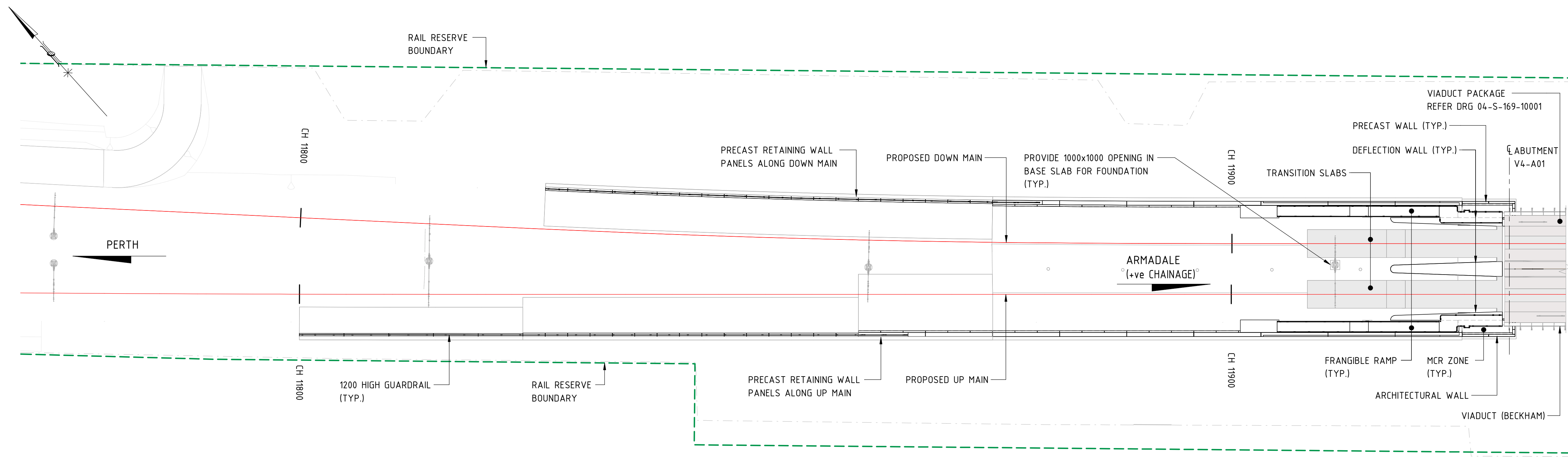
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A	28.07.23	ISSUED FOR REFERENCE DESIGN				
ORIG SIZE	AMENDMENT		DSN	DRN	CHK	APP
A1	AT ORIGINAL PLOT SIZE					

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ARMADALE LINE UPGRADE ALLIANCE
Innovation to Reality

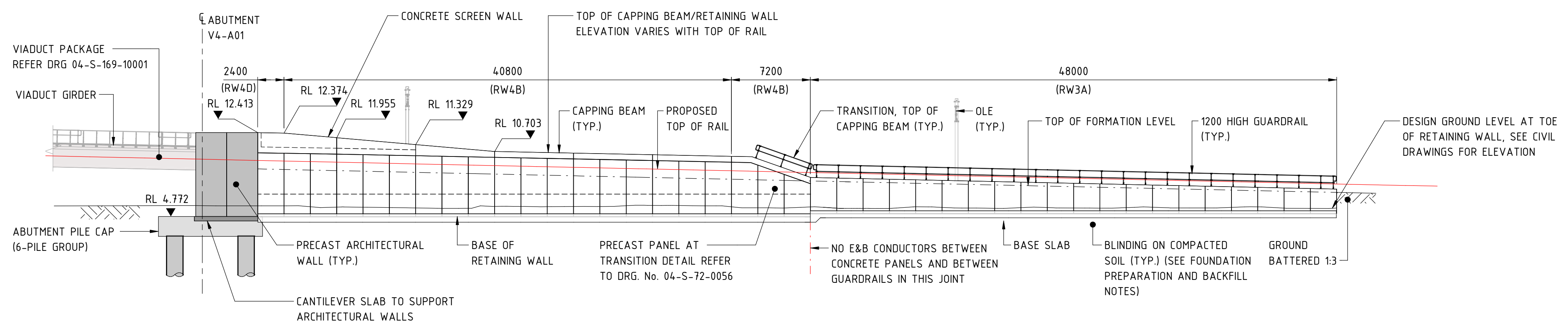
VALIDATION	REFERENCES	SCALE	DESIGNED
SIGNATURE		As indicated	M.SOOI
DATE		DATUM	DRAWN
DATE APPROVED		HORIZONTAL: PCG20	G.WIN
		VERTICAL: AHD71	CHECKED
			A.ISAAC
			APPROVED
			B.MARSHALL
			DATE
			-



LOCALITY PLAN

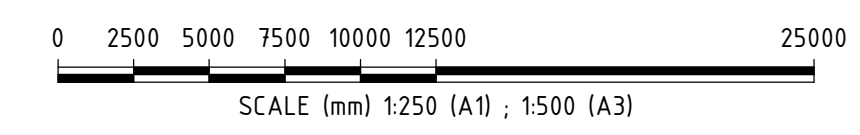
(EMBANKMENT V04-E01) RETAINING WALL PLAN - BECKENHAM
SCALE 1 : 250

- NOTES:**
- NOISE WALL TO BE CONFIRMED
 - ALL GUARDRAILS, STAIRS, SCREEN, TRANSITION SLABS, RETAINING WALL AND ABUTMENT WALLS SHALL BE EARTHED AND BONDED. SEE EARTHING AND BONDING DRAWINGS DRG. No. 04-S-72-0157, 0141 TO 0157 TO FOR DETAILS.
- LEGEND:**
- RETAINING WALL
 - VIADUCT / PSP BRIDGE
 - RAIL ALIGNMENT
 - RAIL RESERVE BOUNDARY



CAPPING BEAM No.	TOP OF CAPPING BEAM R.L. A	PANEL No.	TOP OF WALL R.L. B	BASE OF WALL R.L. C	CHAINAGE
V4-A01-CB10	11.110	V4-A01-AP3	12.414	4.772	CH11920
V4-A01-CB11	10.997	V4-A01-AP4	12.414	4.772	
V4-A01-CB12	10.851	V4-A01-PW48	10.570	4.783	
V4-A01-CB13	10.703	V4-A01-PW49			CH11900
V4-A01-CB14	10.556	V4-A01-PW50			
V4-A01-CB15	10.408	V4-A01-PW51			
V4-A01-CB16	10.261	V4-A01-PW52			CH11880
	10.223	V4-A01-PW53	9.680	4.783	
	8.338	V4-A01-PW54	7.760	5.060	
		V4-A01-PW55			CH11860
		V4-A01-PW56			
		V4-A01-PW57			
		V4-A01-PW58			CH11840
		V4-A01-PW59			
		V4-A01-PW60			
		V4-A01-PW61			
		V4-A01-PW62			
		V4-A01-PW63			
		V4-A01-PW64			
		V4-A01-PW65			
		V4-A01-PW66			
		V4-A01-PW67			
		V4-A01-PW68			
		V4-A01-PW69			
		V4-A01-PW70			
		V4-A01-PW71			
		V4-A01-PW72			
		V4-A01-PW73			
		V4-A01-PW74			
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		V4-A01-PW81			
		V4-A01-PW82			
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		V4-A01-PW84			
		V4-A01-PW85			
		V4-A01-PW86			
		V4-A01-PW87			
		V4-A01-PW88			

(EMBANKMENT V04-E01) RETAINING WALL ELEVATION - BECKENHAM (DOWN MAIN)
SCALE 1 : 50



REFERENCE DESIGN

Government of Western Australia
Public Transport Authority

VICTORIA PARK TO CANNING
LEVEL CROSSING REMOVAL

ARMADALE LINE - CIVIL STRUCTURES
BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS
RETAINING WALL PLAN AND ELEVATION - SHEET 2

PTA Drawing No: **04-S-72-10008** Rev: **A**

REV	DATE	ISSUED FOR REFERENCE DESIGN	MS	GW	AI	BM
A	28.07.23	ISSUED FOR REFERENCE DESIGN				

AMENDMENT

DSN	DRN	CHK	APP

ORIG SIZE: A1

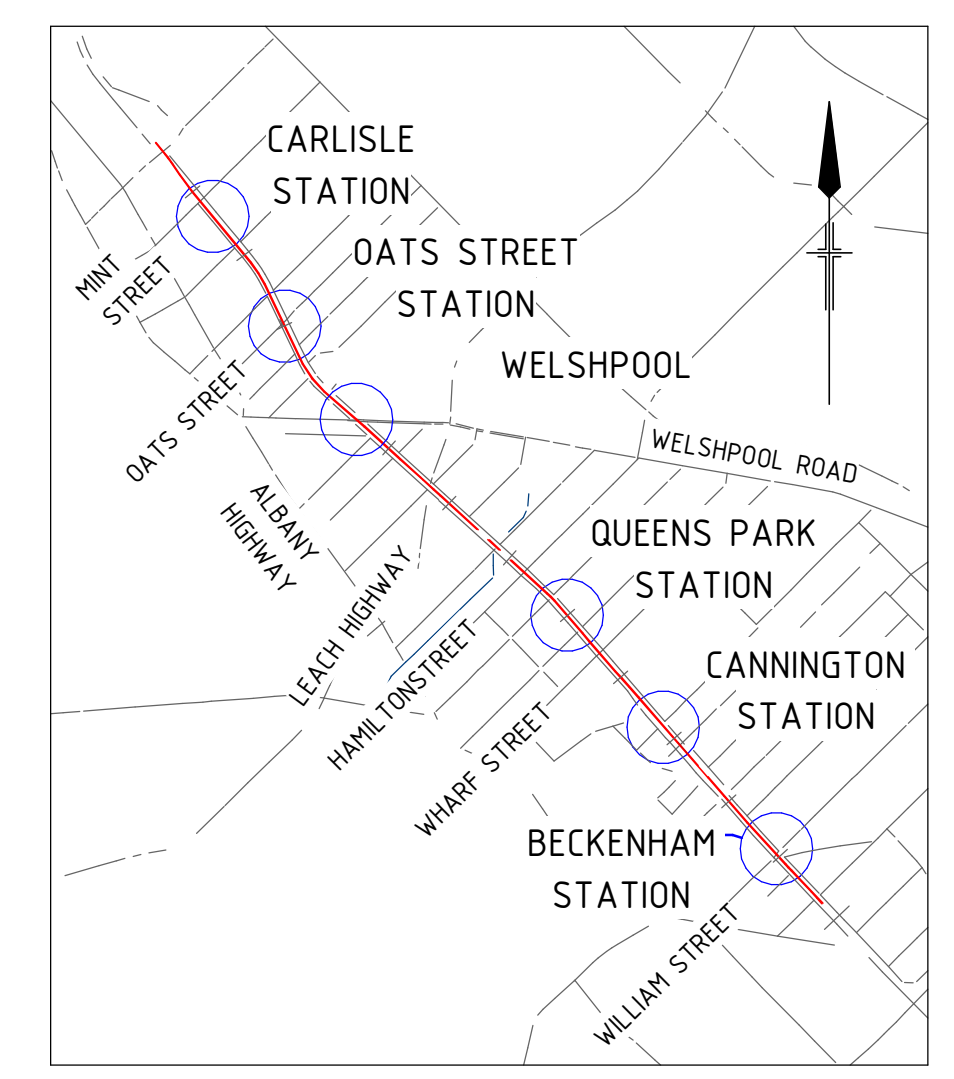
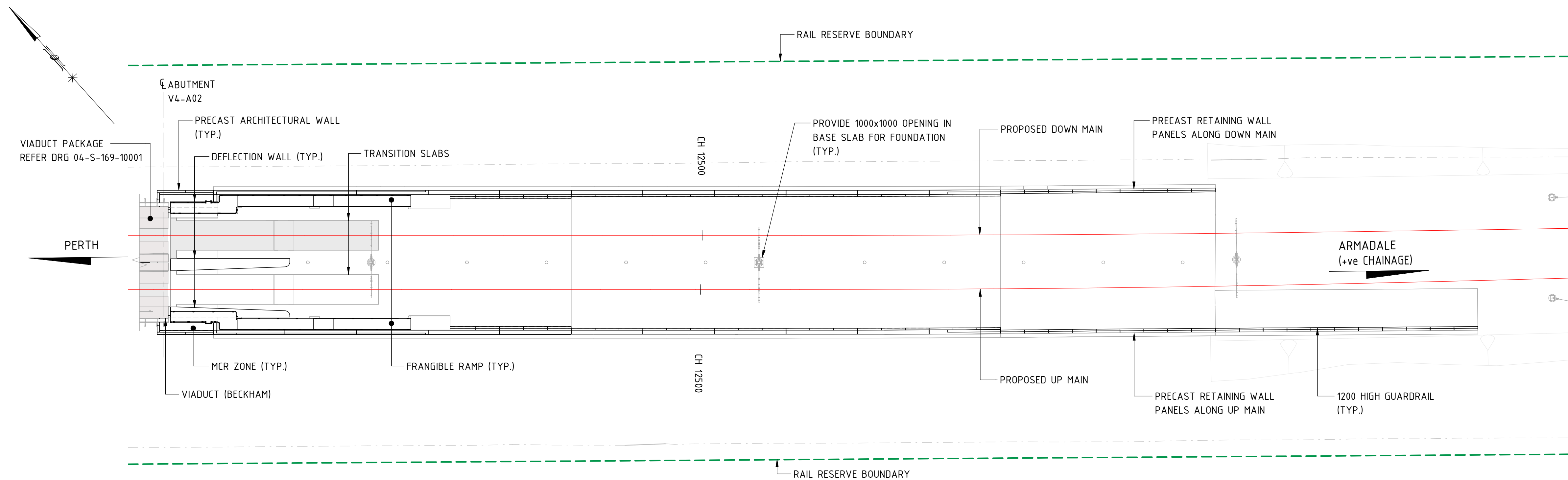
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ARMADALE LINE UPGRADE ALLIANCE
Innovation to Reality

VALIDATION	REFERENCES	SCALE	DESIGNED
SIGNATURE		As indicated	M.SOOI
DATE		DATUM	DRAWN
DATE APPROVED		HORIZONTAL: PCG20	G.WIN
		VERTICAL: AHD71	CHECKED
			A.ISAAC
			APPROVED
			B.MARSHALL
			DATE
			-

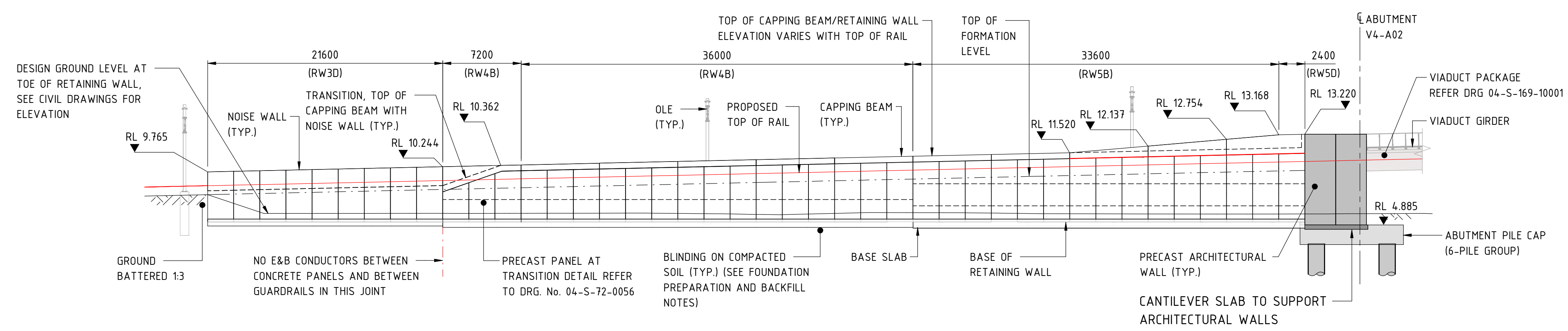


LOCALITY PLAN

- NOTES:**
1. NOISE WALL TO BE CONFIRMED
 2. ALL GUARDRAILS, STAIRS, SCREEN, TRANSITION SLABS, RETAINING WALL AND ABUTMENT WALLS SHALL BE EARTHED AND BONDED. SEE EARTHING AND BONDING DRAWINGS DRG. No. 04-S-72-0157, 0141 TO 0157 TO FOR DETAILS.

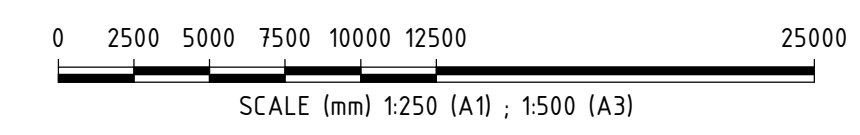
- LEGEND:**
- RETAINING WALL
 - VIADUCT / PSP BRIDGE
 - RAIL ALIGNMENT
 - RAIL RESERVE BOUNDARY

(EMBANKMENT V04-E02) RETAINING WALL PLAN - BECKENHAM
SCALE 1 : 250



CHAINAGE	TOP OF WALL R.L B	BASE OF WALL R.L C	PANEL No.	TOP OF CAPPING BEAM R.L A	CAPPING BEAM No.
CH12540	8.026	5.191	V4-A02-PW95	8.505	V4-A02-CB22
			V4-A02-PW94		
			V4-A02-PW93		
			V4-A02-PW92		
			V4-A02-PW91		
			V4-A02-PW90		
			V4-A02-PW89		
			V4-A02-PW88		
			V4-A02-PW87		
			V4-A02-PW86		
			V4-A02-PW85		
			V4-A02-PW84		
			V4-A02-PW83		
			V4-A02-PW82		
			V4-A02-PW81		
			V4-A02-PW80		
			V4-A02-PW79		
			V4-A02-PW78		
			V4-A02-PW77		
			V4-A02-PW76		
			V4-A02-PW75		
			V4-A02-PW74		
			V4-A02-PW73		
			V4-A02-PW72		
			V4-A02-PW71		
			V4-A02-PW70		
			V4-A02-PW69		
			V4-A02-PW68		
			V4-A02-PW67		
			V4-A02-PW66		
			V4-A02-PW65		
			V4-A02-PW64		
			V4-A02-PW63		
			V4-A02-PW62		
			V4-A02-PW61		
			V4-A02-PW60		
			V4-A02-PW59		
			V4-A02-PW58		
			V4-A02-PW57		
			V4-A02-PW56		
			V4-A02-PW55		
			V4-A02-PW54		
			V4-A02-AP4		
			V4-A02-AP3		

(EMBANKMENT V04-E02) RETAINING WALL ELEVATION - BECKENHAM (DOWN MAIN)
SCALE 1 : 50



REFERENCE DESIGN

Government of Western Australia
Public Transport Authority

VICTORIA PARK TO CANNING
LEVEL CROSSING REMOVAL

ARMADALE LINE - CIVIL STRUCTURES
BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS
RETAINING WALL PLAN AND ELEVATION - SHEET 4
PTA Drawing No: 04-S-72-10010 | Rev: A

REV	DATE	ISSUED FOR REFERENCE DESIGN	MS	GW	AI	BM
A	28.07.23	ISSUED FOR REFERENCE DESIGN				

AMENDMENT

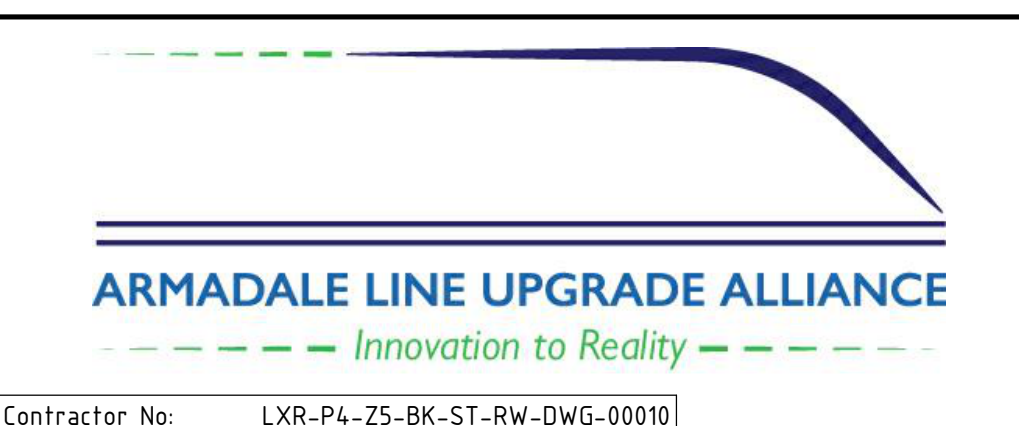
DSN	DRN	CHK	APP

ORIG SIZE: A1

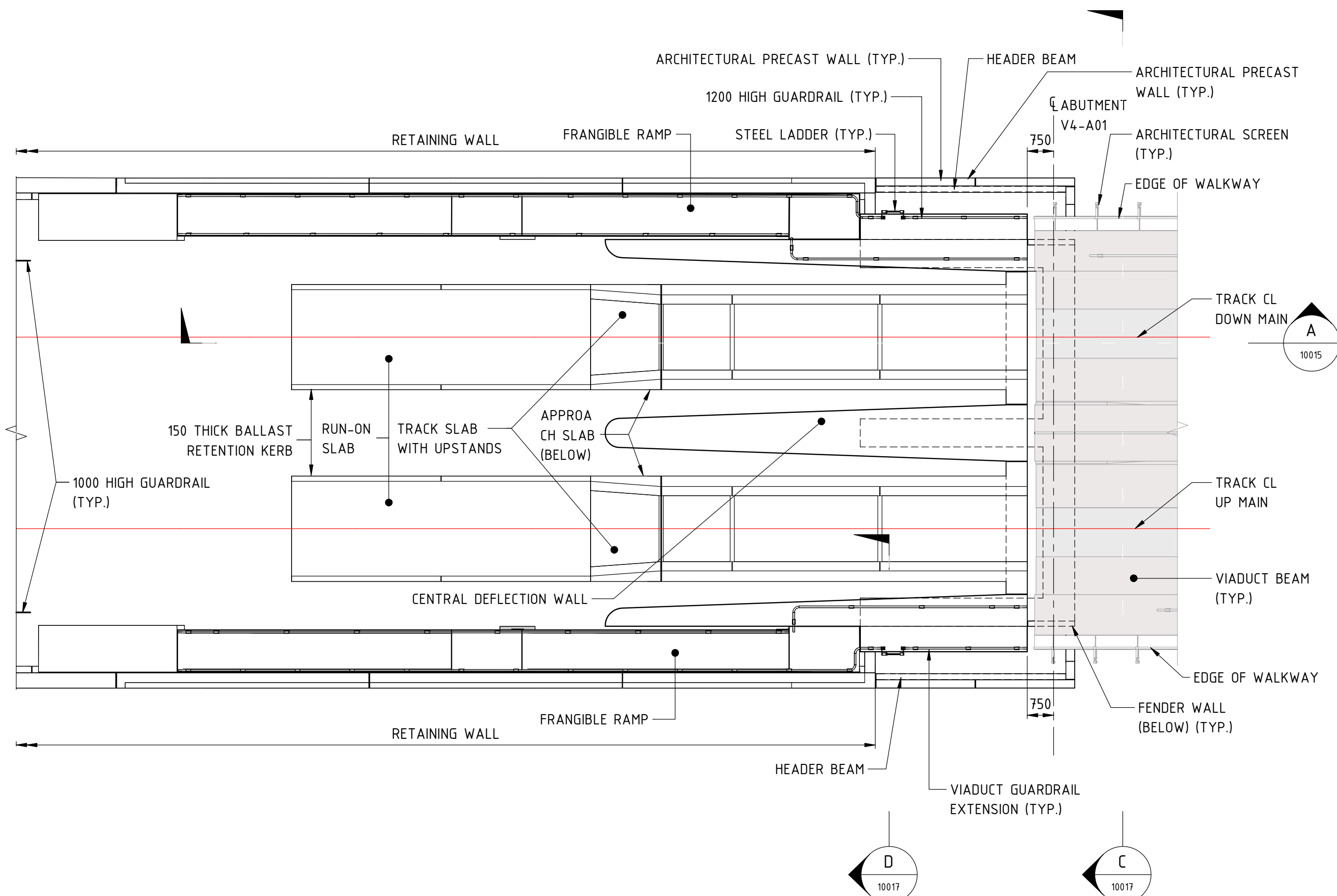
AT ORIGINAL PLOT SIZE

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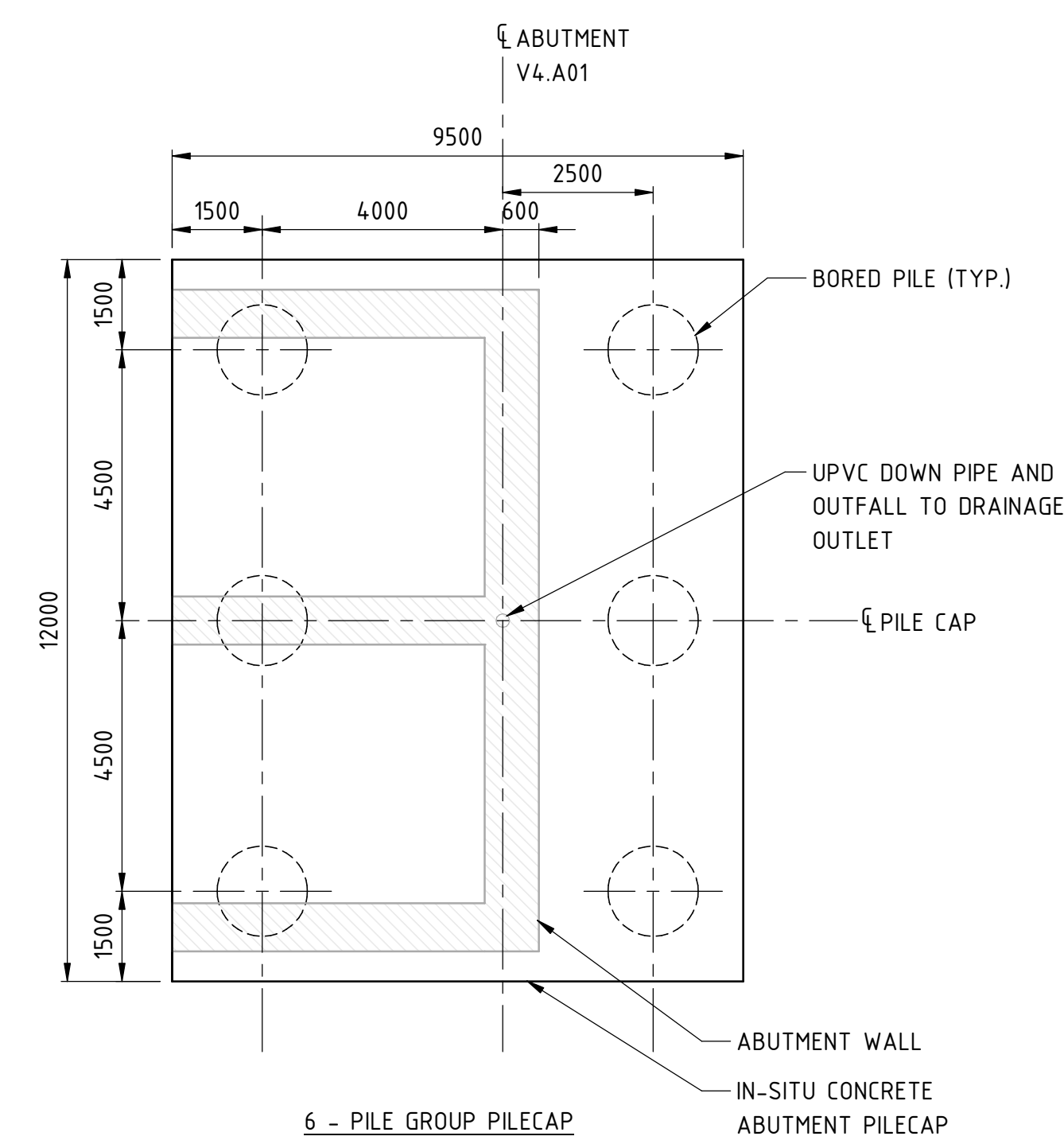
Contractor No: LXR-P4-Z5-BK-ST-RW-DWG-00010



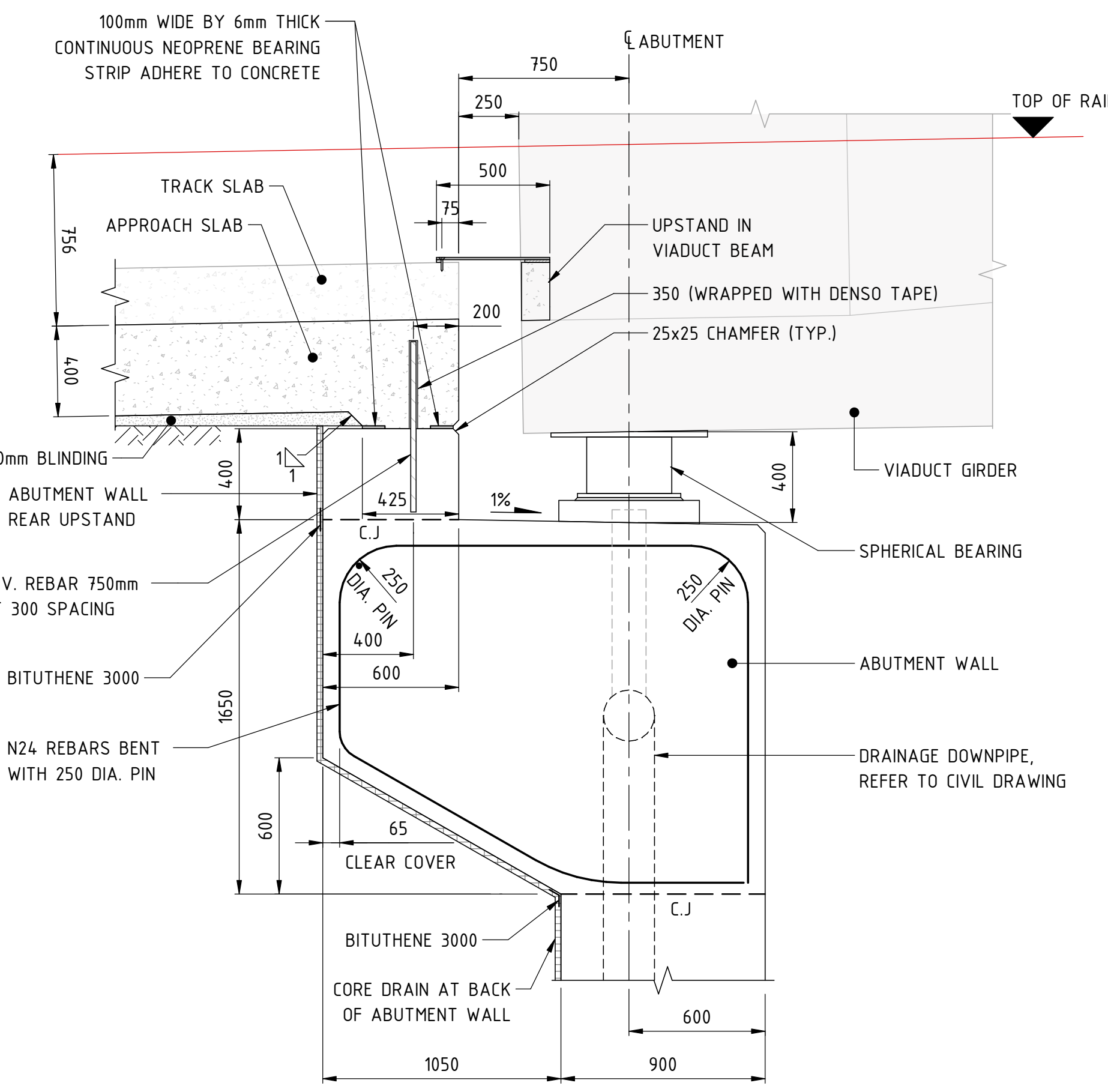
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SIGNATURE		As indicated	M.SOOI
DATE		DATUM	DRAWN
DATE APPROVED		HORIZONTAL: PCG20	G.WIN
		VERTICAL: AHD71	CHECKED
			A.ISAAC
			APPROVED
			B.MARSHALL
			DATE
			-



PLAN (ABUTMENT V4-A01 AS SHOWN)
 SCALE 1 : 100

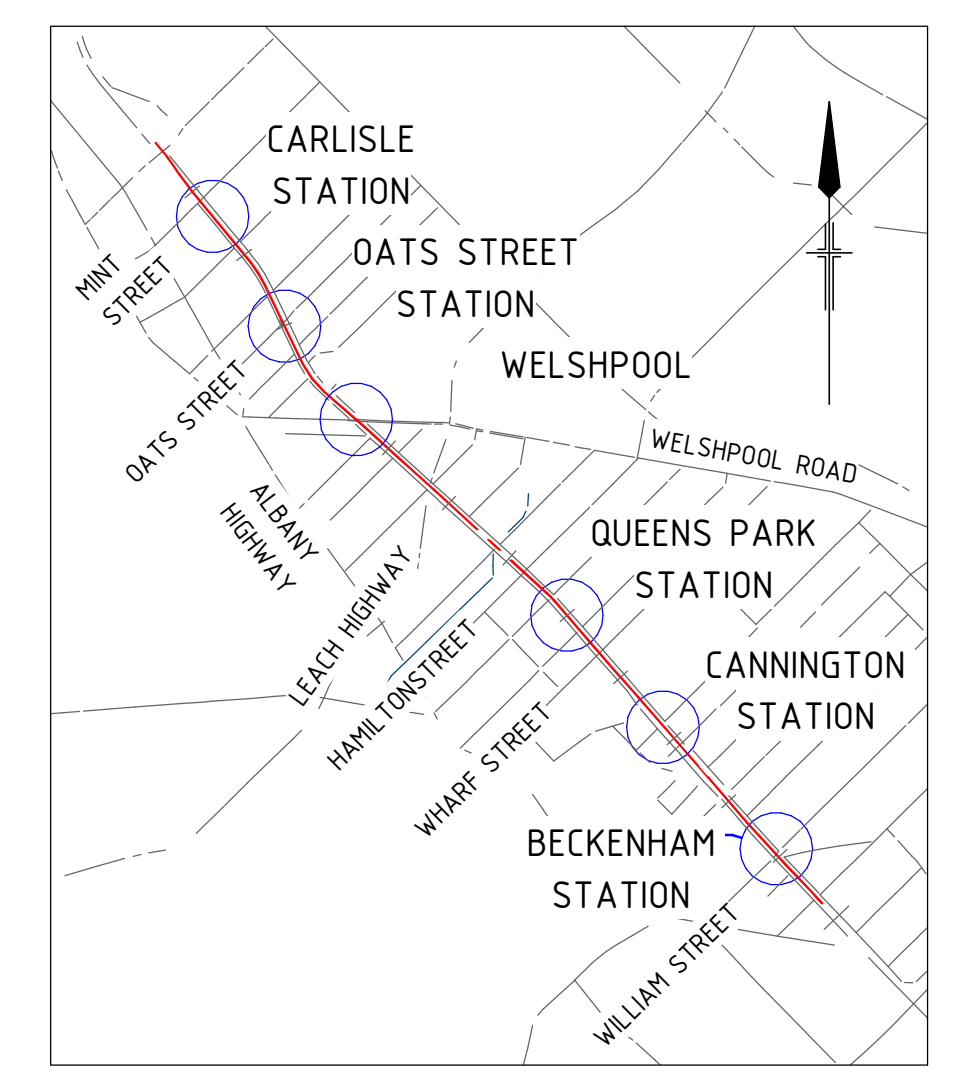


SECTION B
 SCALE 1 : 100



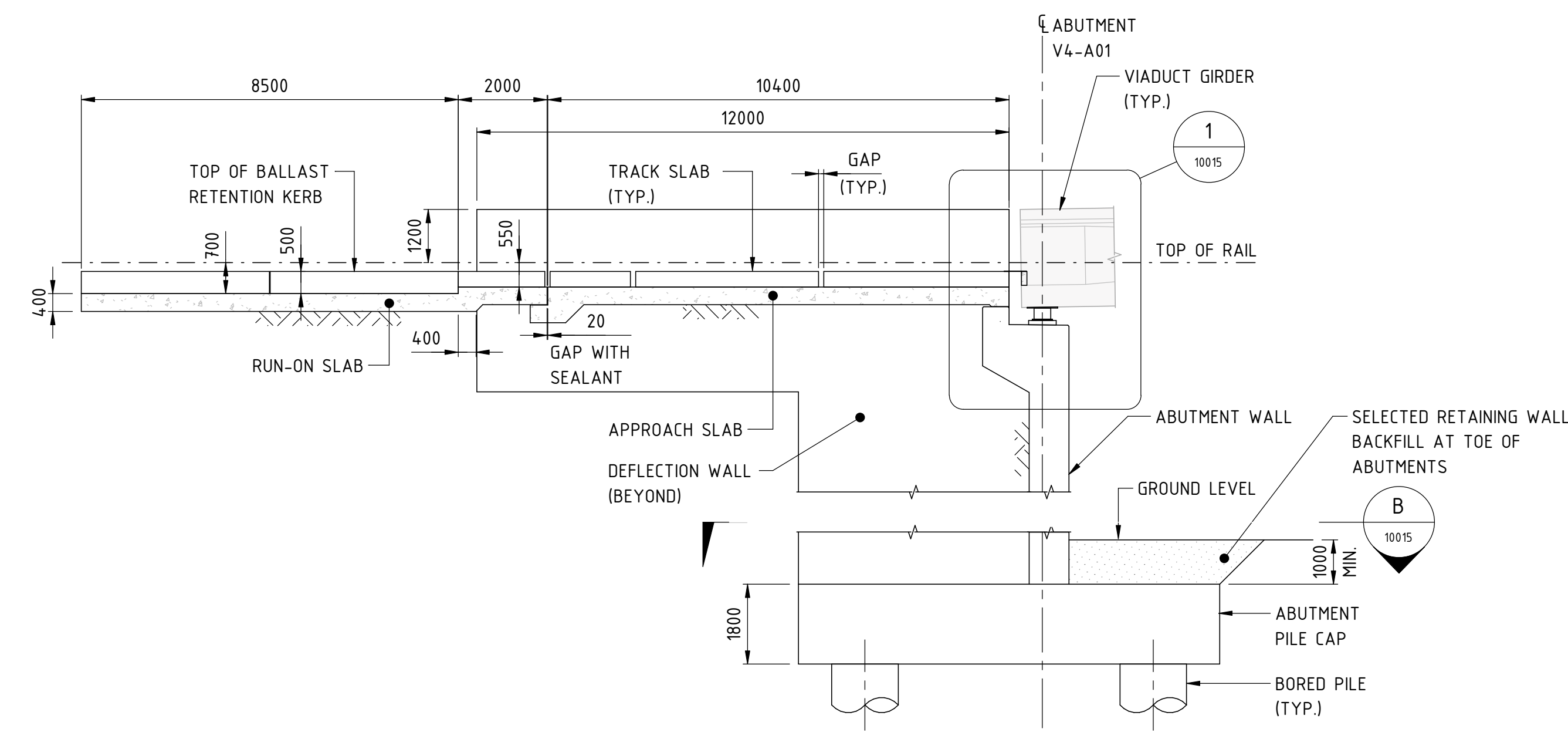
TYPICAL VIADUCT ABUTMENT

DETAIL 1
 SCALE 1 : 20

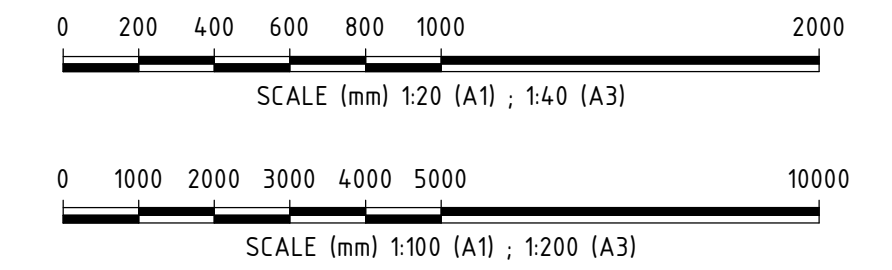


LOCALITY PLAN

- NOTES:**
1. NOISE WALL TO BE CONFIRMED
 2. ALL GUARDRAILS, STAIRS, SCREEN, TRANSITION SLABS, RETAINING WALL AND ABUTMENT WALLS SHALL BE EARTHED AND BONDED. SEE EARTHING AND BONDING DRAWINGS DRG. No. 04-S-72-0157, 0141 TO 0157 TO FOR DETAILS.



SECTION A
 SCALE 1 : 100



REFERENCE DESIGN

Government of Western Australia
 Public Transport Authority

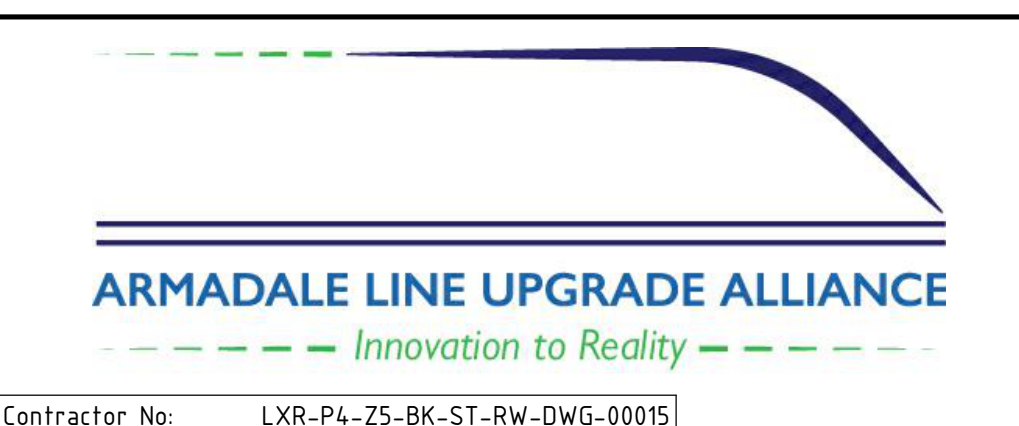
VICTORIA PARK TO CANNING
 LEVEL CROSSING REMOVAL

ARMADALE LINE - CIVIL STRUCTURES
 BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS
 ABUTMENT GENERAL ARRANGEMENT - SHEET 1
 PTA Drawing No: 04-S-72-10015

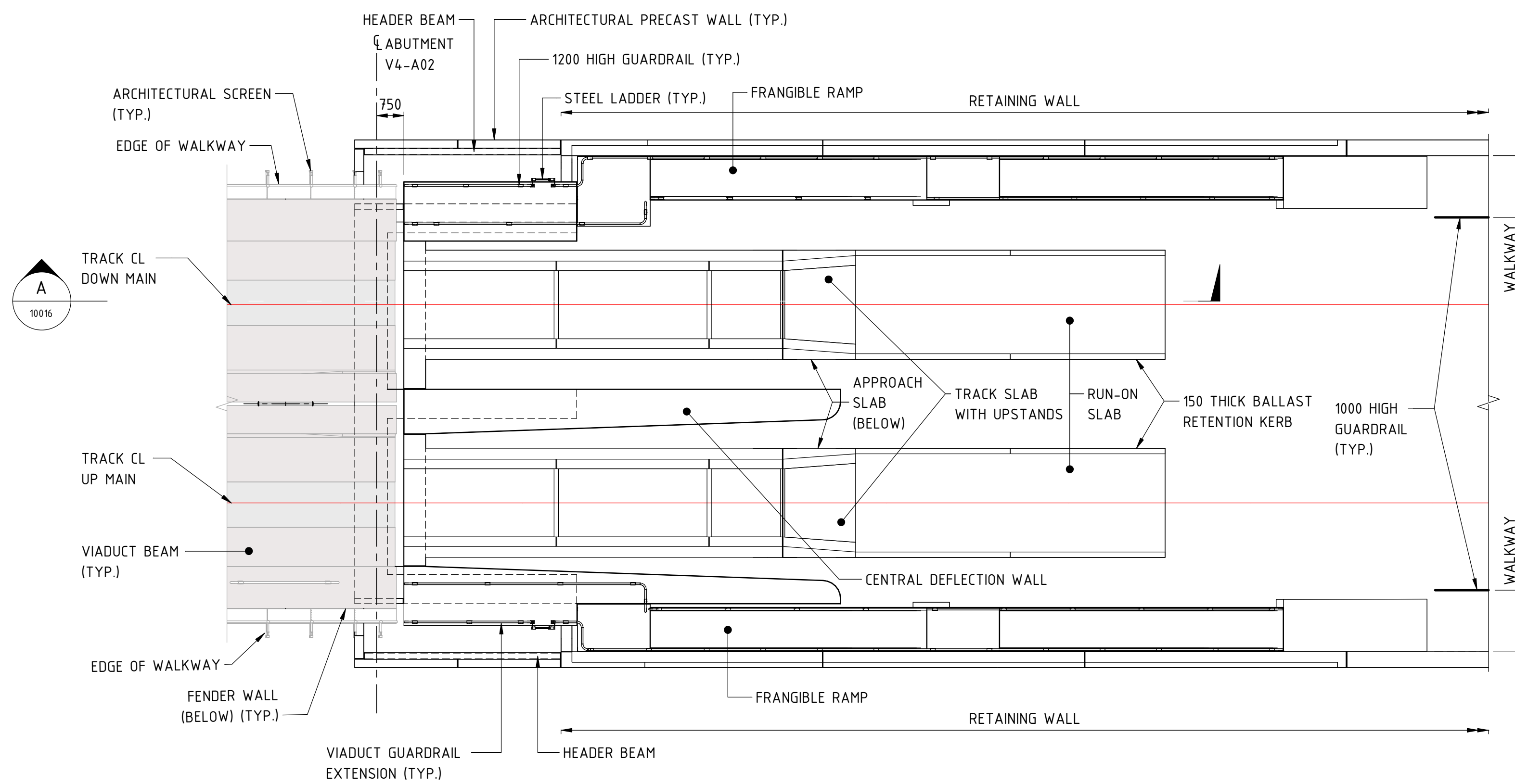
DESIGNED M.SOOI
 DRAWN G.WIN
 CHECKED A.ISAAC
 APPROVED B.MARSHALL
 DATE -

Rev: A

REV	DATE	ISSUED FOR REFERENCE DESIGN	MS	GW	AI	BM
A	28.07.23	ISSUED FOR REFERENCE DESIGN				
AMENDMENT			DSN	DRN	CHK	APP
ORIG SIZE	AT ORIGINAL PLOT SIZE		This document must not be copied without PTA's written permission, and the contents thereof must not be imparted to a third party nor be used for any unauthorised purpose.			
A1			Contractor No: LXR-P4-Z5-BK-ST-RW-DWG-00015			

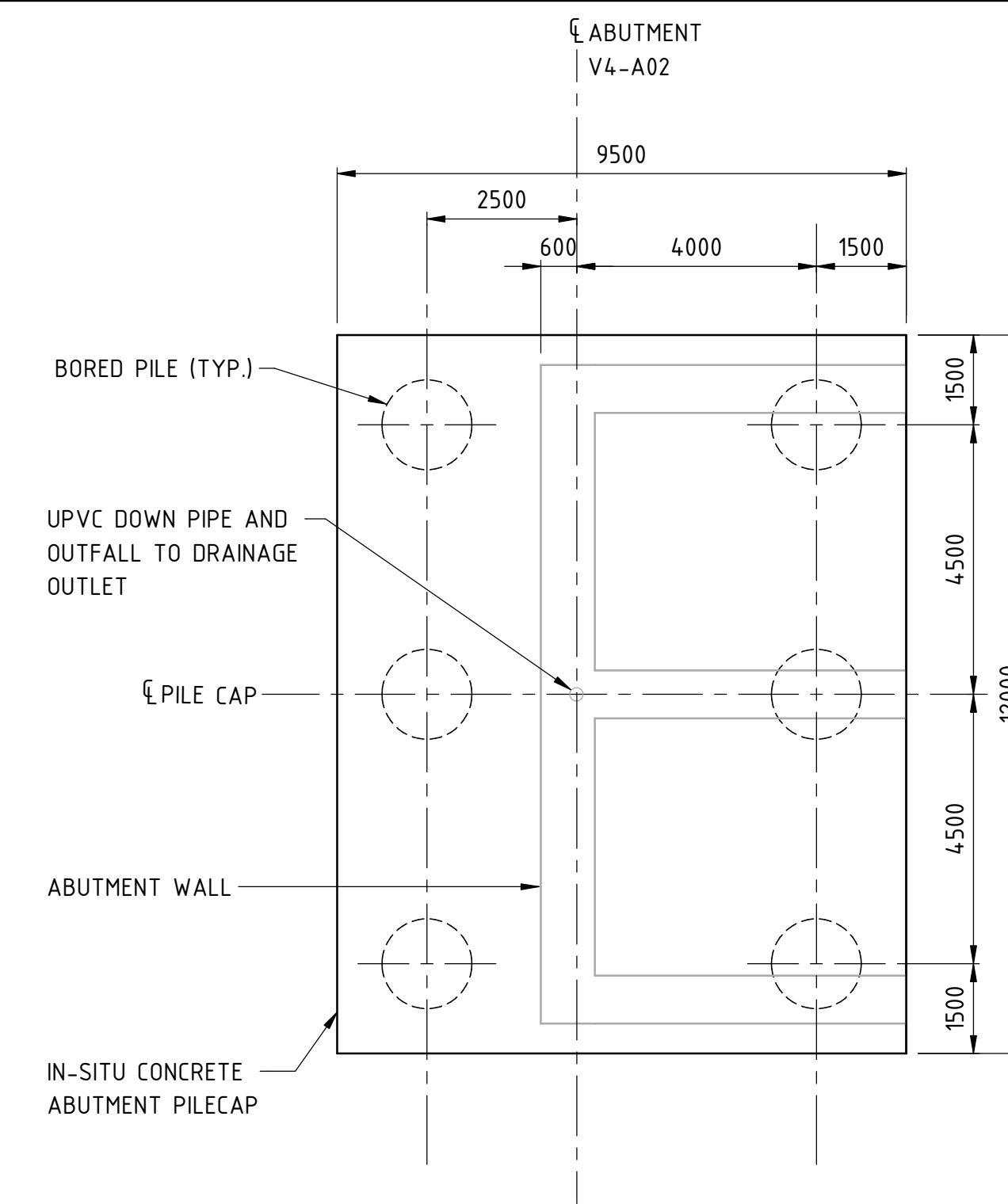


VALIDATION	REFERENCES	SCALE	DESIGNED
SIGNATURE		As indicated	M.SOOI
DATE		DATUM	DRAWN
DATE APPROVED		HORIZONTAL: PCG20 VERTICAL: AHD71	G.WIN
			CHECKED
			A.ISAAC
			APPROVED
			B.MARSHALL
			DATE
			-



PLAN (ABUTMENT V4-A02 AS SHOWN)

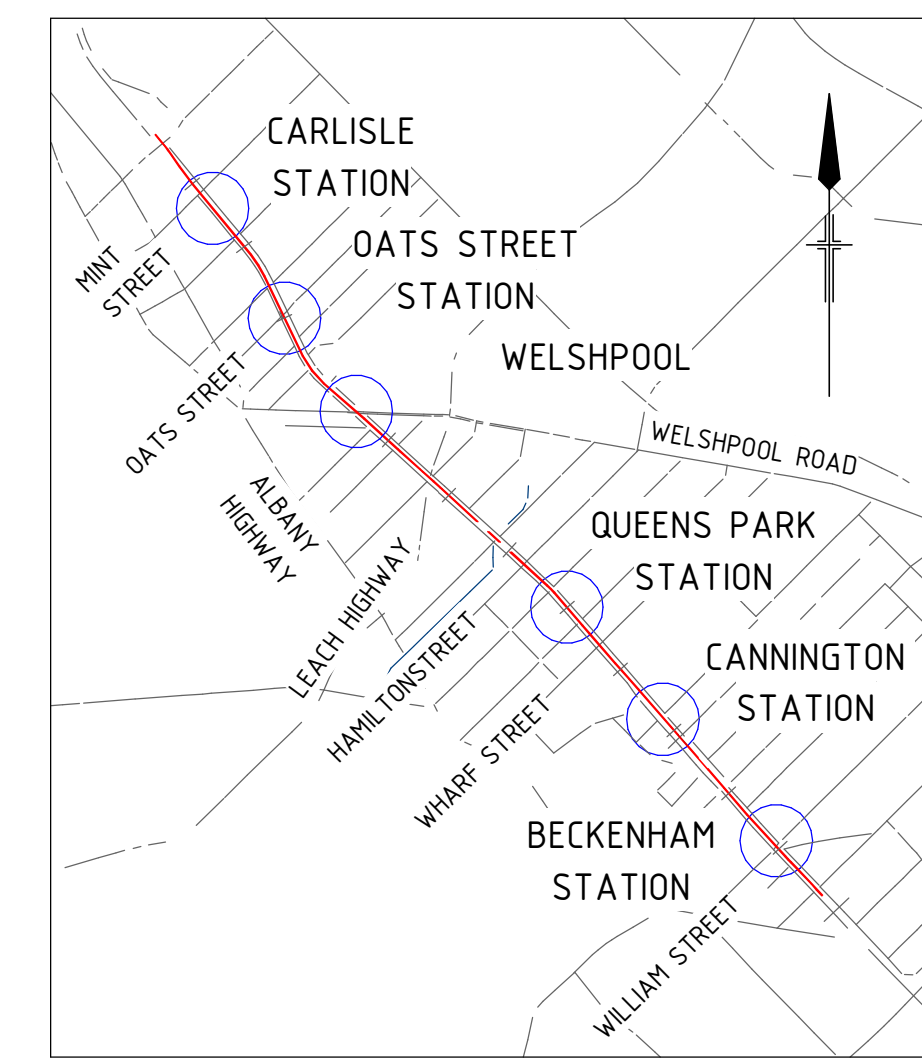
SCALE 1 : 100



6 - PILE GROUP PILECAP

SECTION B

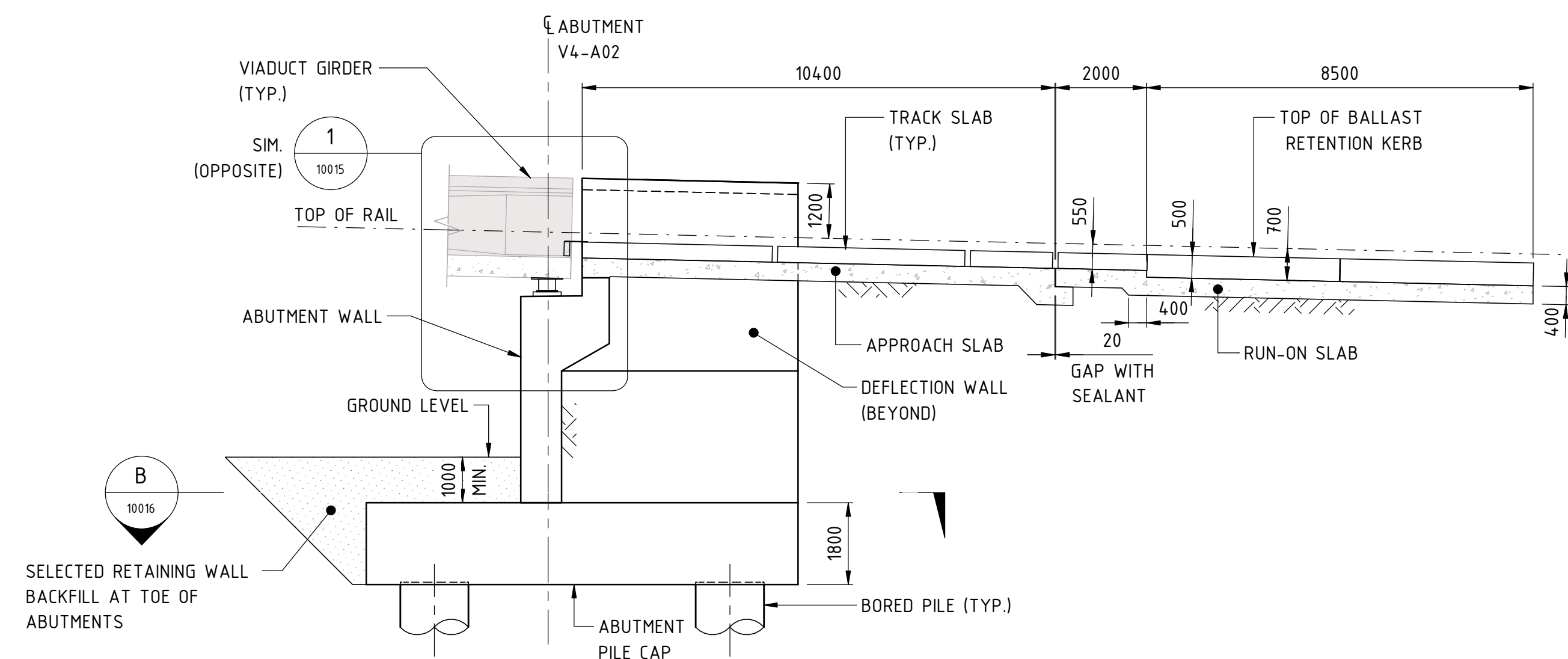
SCALE 1 : 100



LOCALITY PLAN

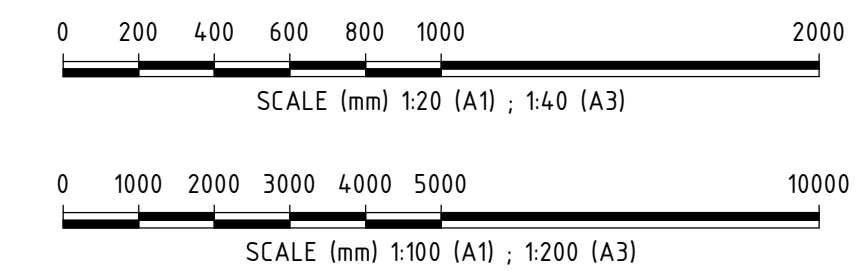
NOTES:

1. NOISE WALL TO BE CONFIRMED
2. ALL GUARDRAILS, STAIRS, SCREEN, TRANSITION SLABS, RETAINING WALL AND ABUTMENT WALLS SHALL BE EARTHED AND BONDED. SEE EARTHING AND BONDING DRAWINGS DRG. No. 04-S-72-0157, 0141 TO 0157 TO FOR DETAILS.



SECTION A

SCALE 1 : 100



REFERENCE DESIGN

REV	DATE	ISSUED FOR REFERENCE DESIGN	MS	GW	AI	BM
A	28.07.23					
ORIG SIZE	AMENDMENT		DSN	DRN	CHK	APP
A1	AT ORIGINAL PLOT SIZE					

ARMADALE LINE UPGRADE ALLIANCE
Innovation to Reality

VALIDATION
SIGNATURE
DATE
DATE APPROVED

REFERENCES
SCALE
As indicated
DATUM
HORIZONTAL: PCG20
VERTICAL: AHD71

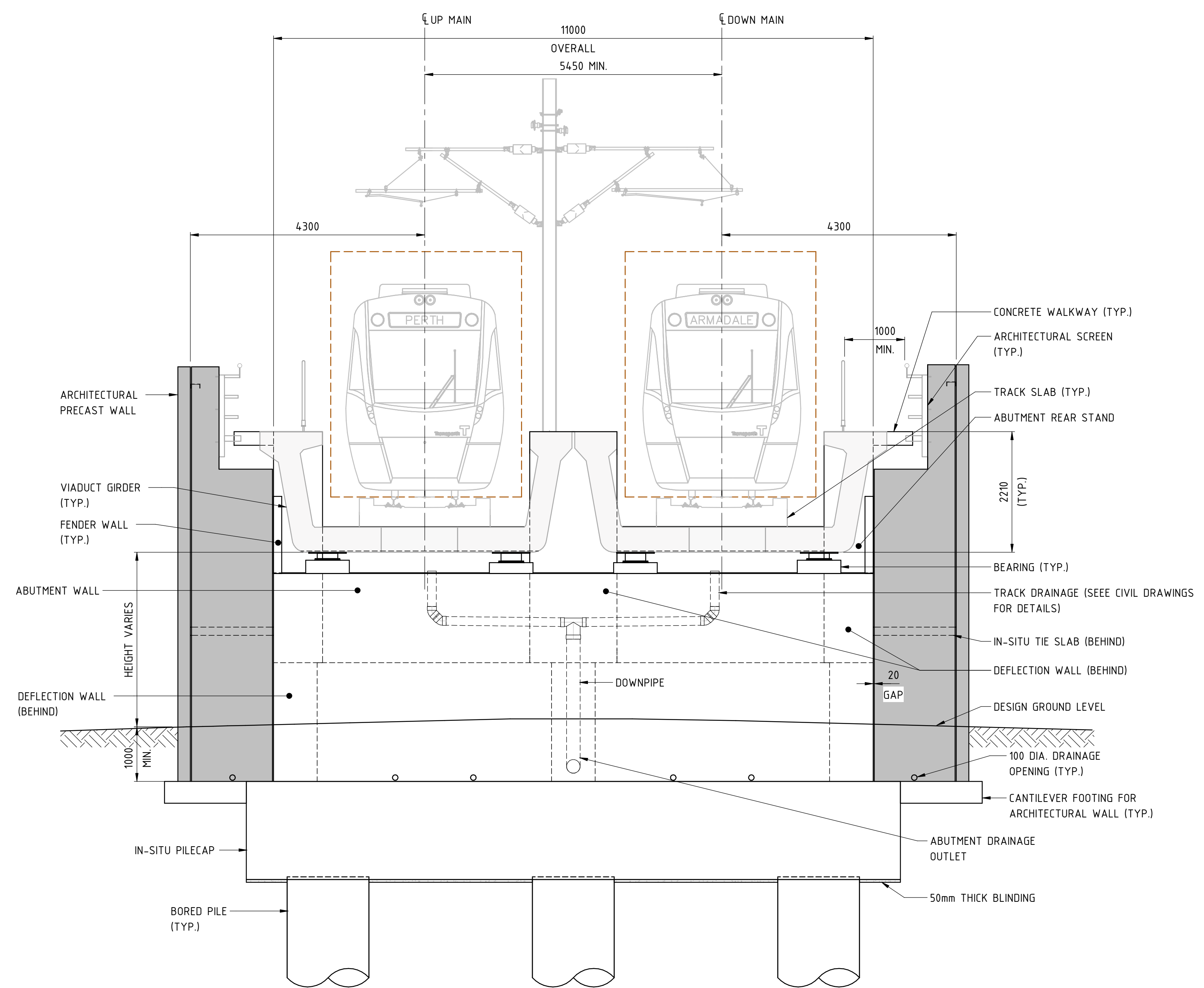
DESIGNED M.SOOI
DRAWN G.WIN
CHECKED A.ISAAC
APPROVED B.MARSHALL
DATE -

VICTORIA PARK TO CANNING
LEVEL CROSSING REMOVAL

ARMADALE LINE - CIVIL STRUCTURES
BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS
ABUTMENT GENERAL ARRANGEMENT - SHEET 2

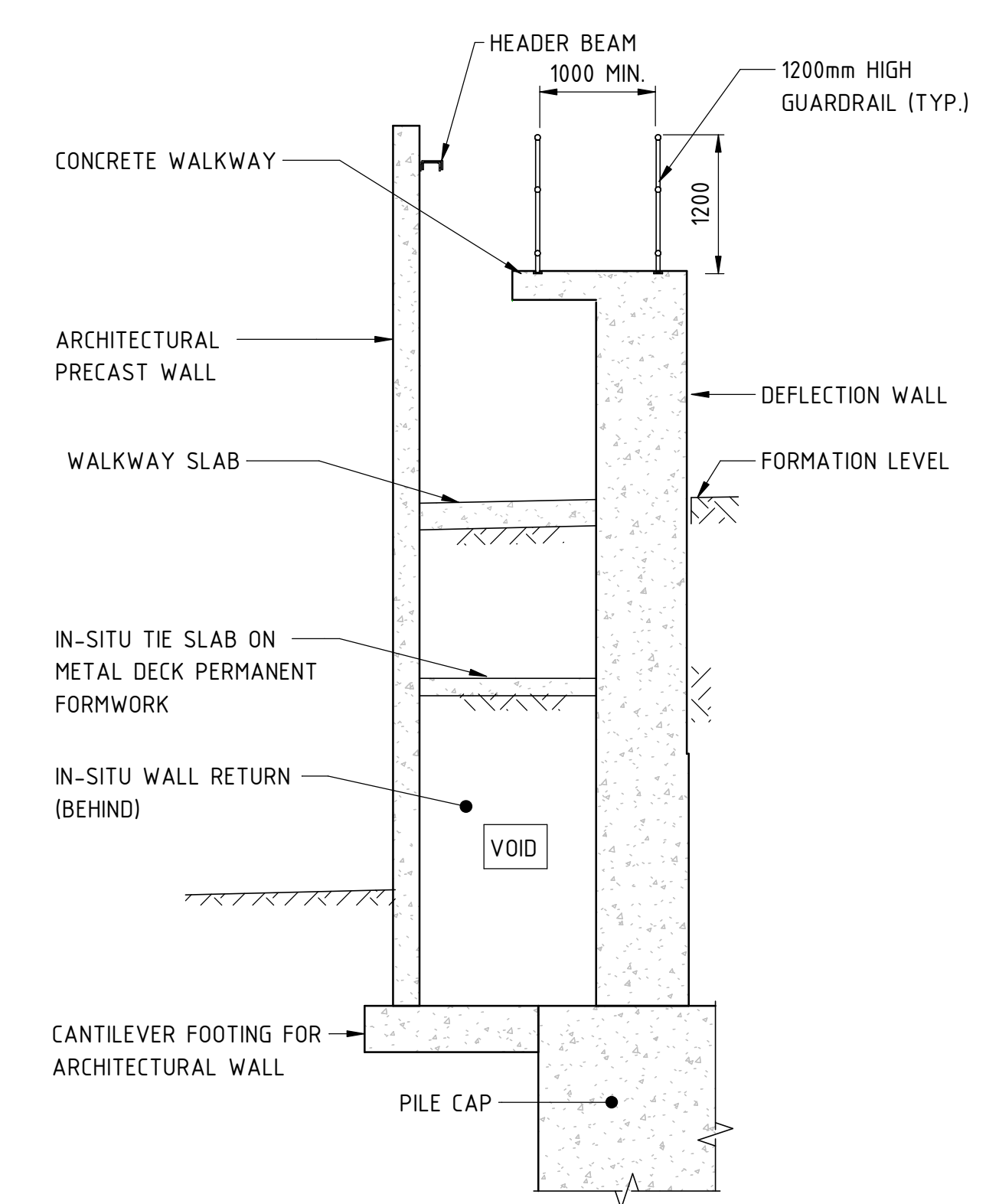
PTA Drawing No: 04-S-72-10016 Rev: A

NOTES:
 ALL GUARDRAILS, STAIRS, SCREEN AND ABUTMENT WALLS SHALL BE EARTHED AND BONDED. SEE EARTHING AND BONDING DRAWING DRG. 04-S-72-0141 TO 144 FOR DETAILS.

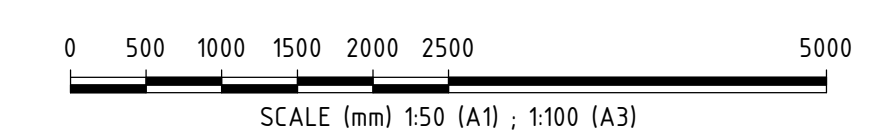


TYPICAL ABUTMENT ELEVATION

SECTION C
 SCALE 1 : 50



SECTION D
 SCALE 1 : 50



REFERENCE DESIGN

	VICTORIA PARK TO CANNING LEVEL CROSSING REMOVAL
ARMADALE LINE - CIVIL STRUCTURES BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS GENERAL SECTIONS - SHEET 1	
PTA Drawing No: 04-S-72-10017	Rev: A

REV	DATE	ISSUED FOR REFERENCE DESIGN	MS	GW	AI	BM
A	28.07.23	AMENDMENT	DSN	DRN	CHK	APP
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AT ORIGINAL PLOT SIZE						

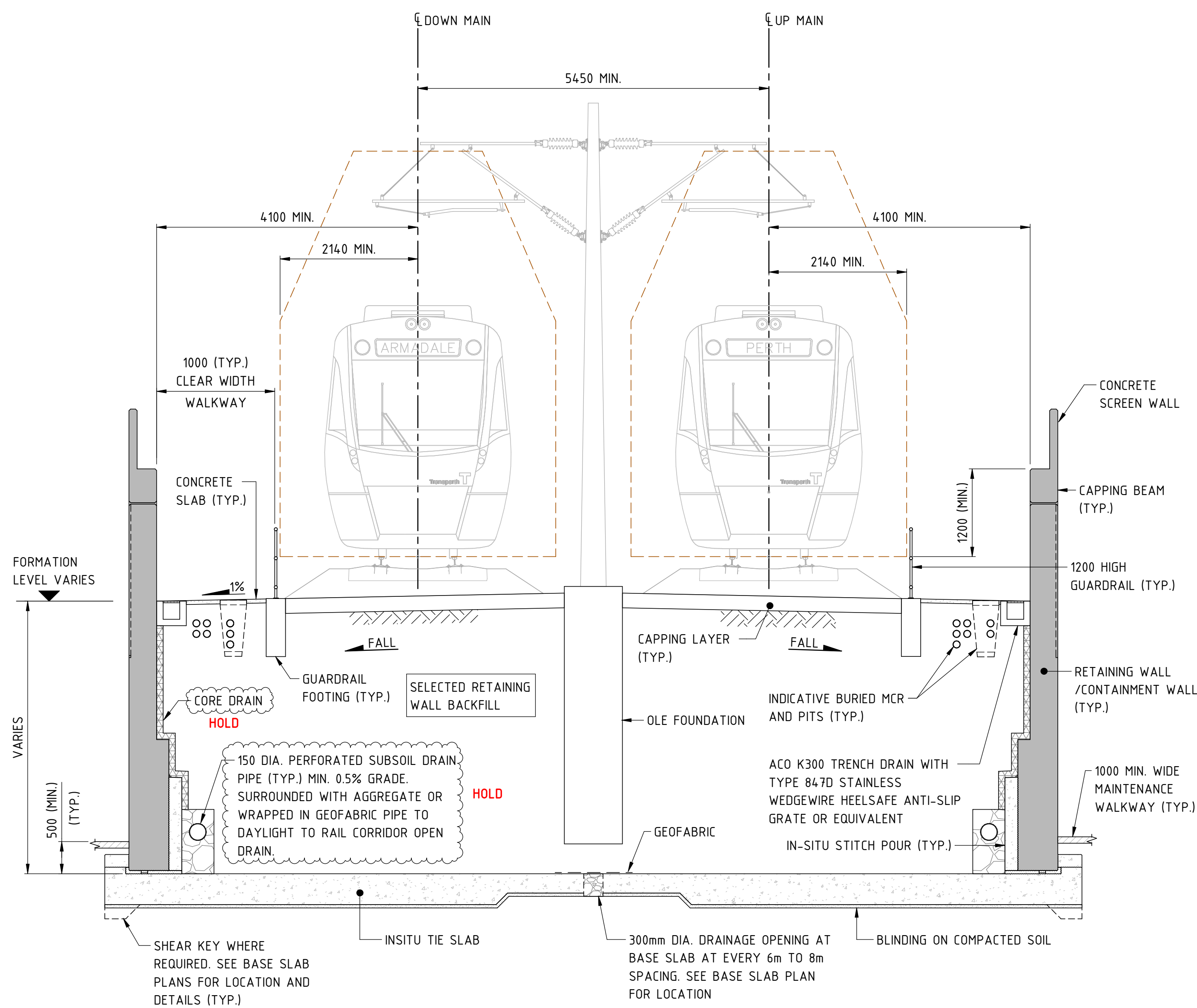
Contractor No: LXR-P4-Z5-BK-ST-RW-DWG-00017

VALIDATION
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 DATE
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REFERENCES
 SCALE
 As indicated
 DATUM
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 VERTICAL: AHD71

DESIGNED M.SOOI
 DRAWN G.WIN
 CHECKED A.ISAAC
 APPROVED B.MARSHALL
 DATE -

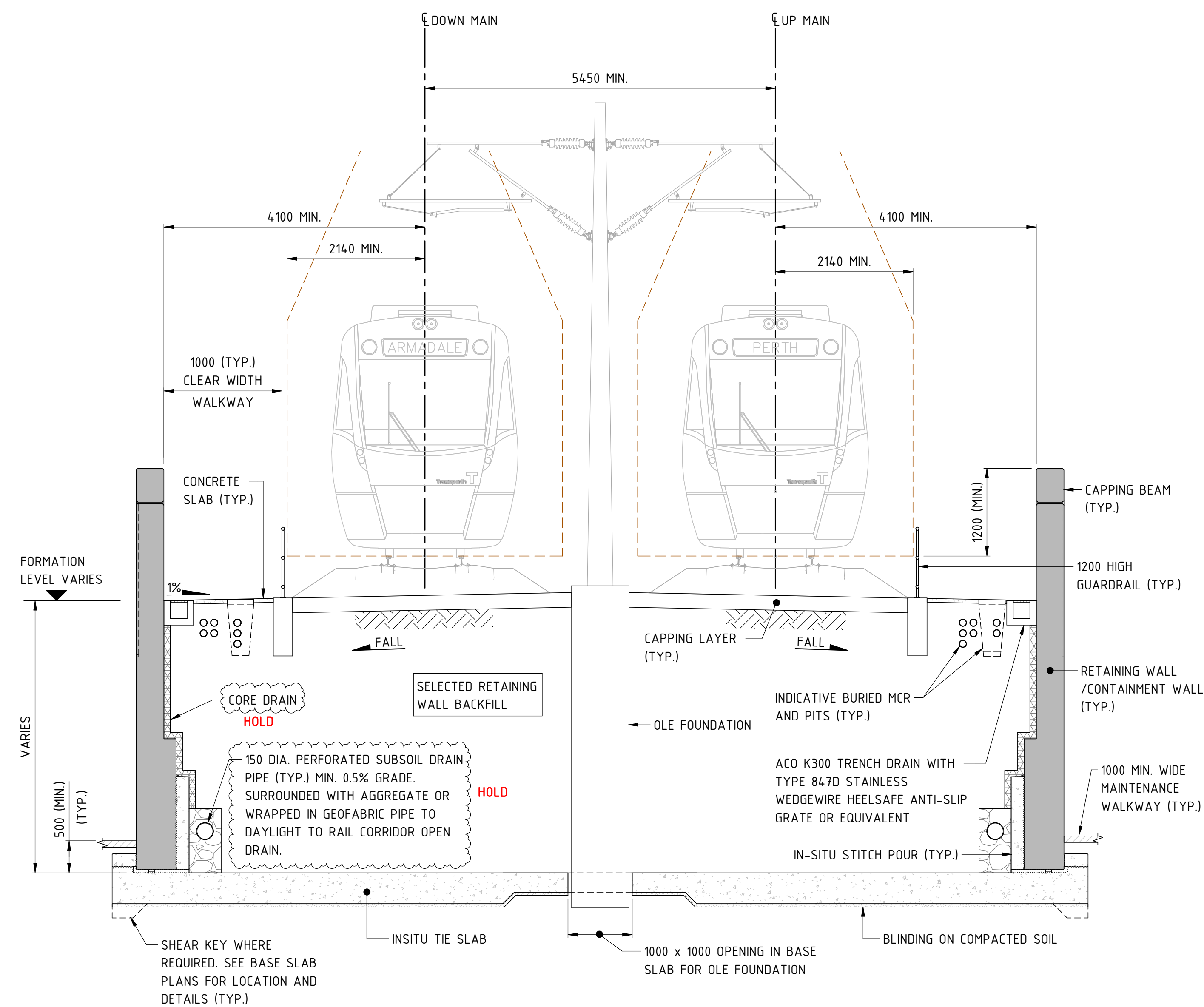
NOTES:
 ALL GUARDRAILS, STAIRS, SCREEN AND ABUTMENT WALLS SHALL BE EARTHED AND BONDED. SEE EARTHING AND BONDING DRAWING DRG. 04-S-72-0141 TO 144 FOR DETAILS.



RETAINING WALL ON TWO WAY CROSS FALL AND CAPPING BEAM WITH WALL

TYPICAL SECTION - STITCHED PRECAST RETAINING WALL
 (RETAINED HEIGHT FROM 3.0m AND MORE)

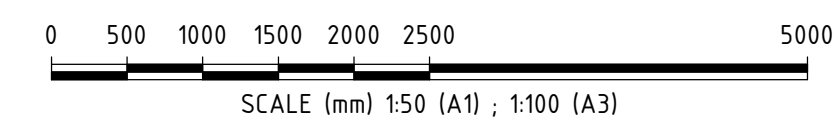
1:50



RETAINING WALL ON TWO WAY CROSS FALL AND CAPPING BEAM

TYPICAL SECTION - STITCHED PRECAST RETAINING WALL
 (RETAINED HEIGHT FROM 3.0m AND MORE)

1:50



REFERENCE DESIGN

REV	DATE	ISSUED FOR REFERENCE DESIGN	MS	GW	AI	BM
A	28.07.23					
AMENDMENT	DSN	DRN	CHK	APP		
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ARMADALE LINE UPGRADE ALLIANCE
 Innovation to Reality

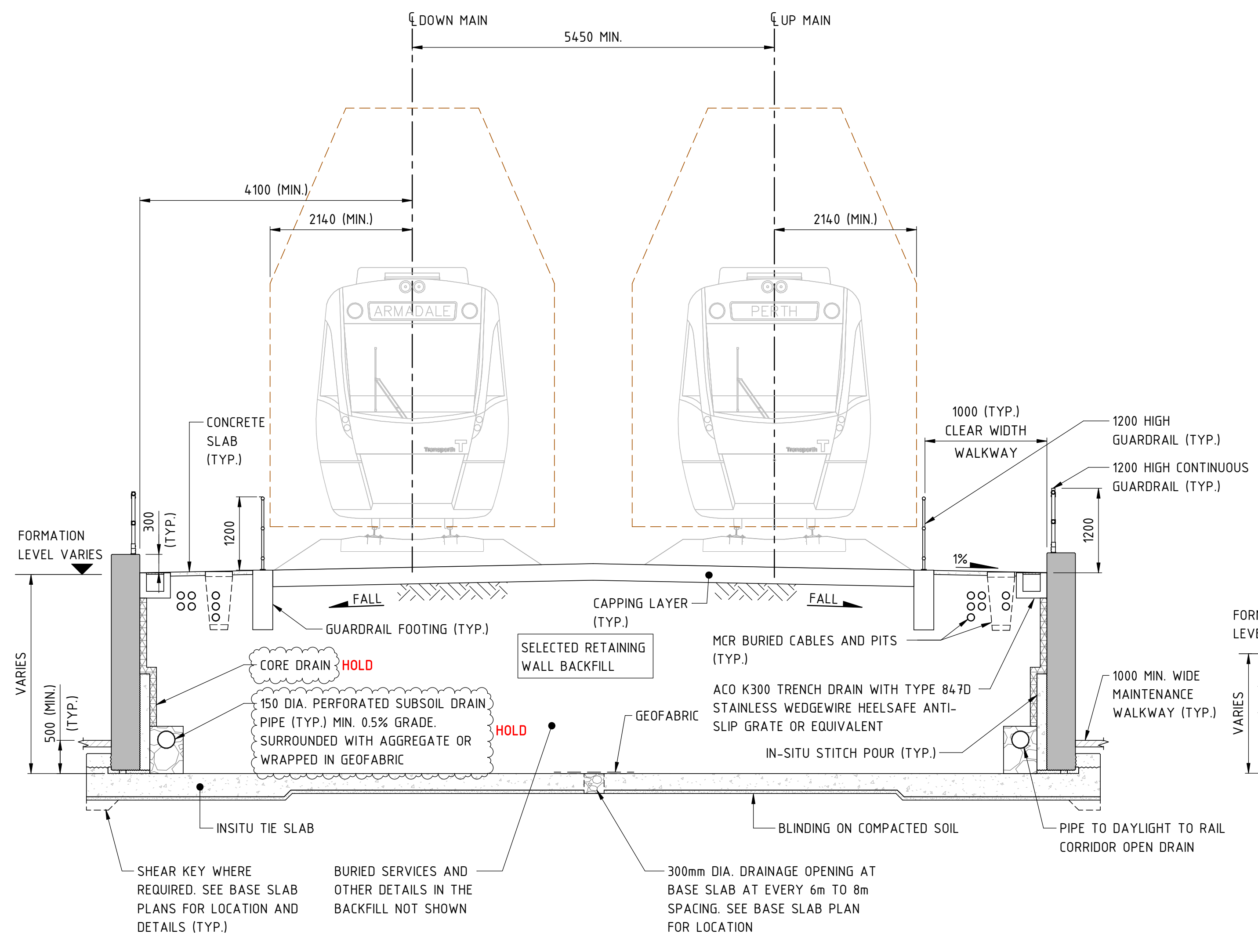
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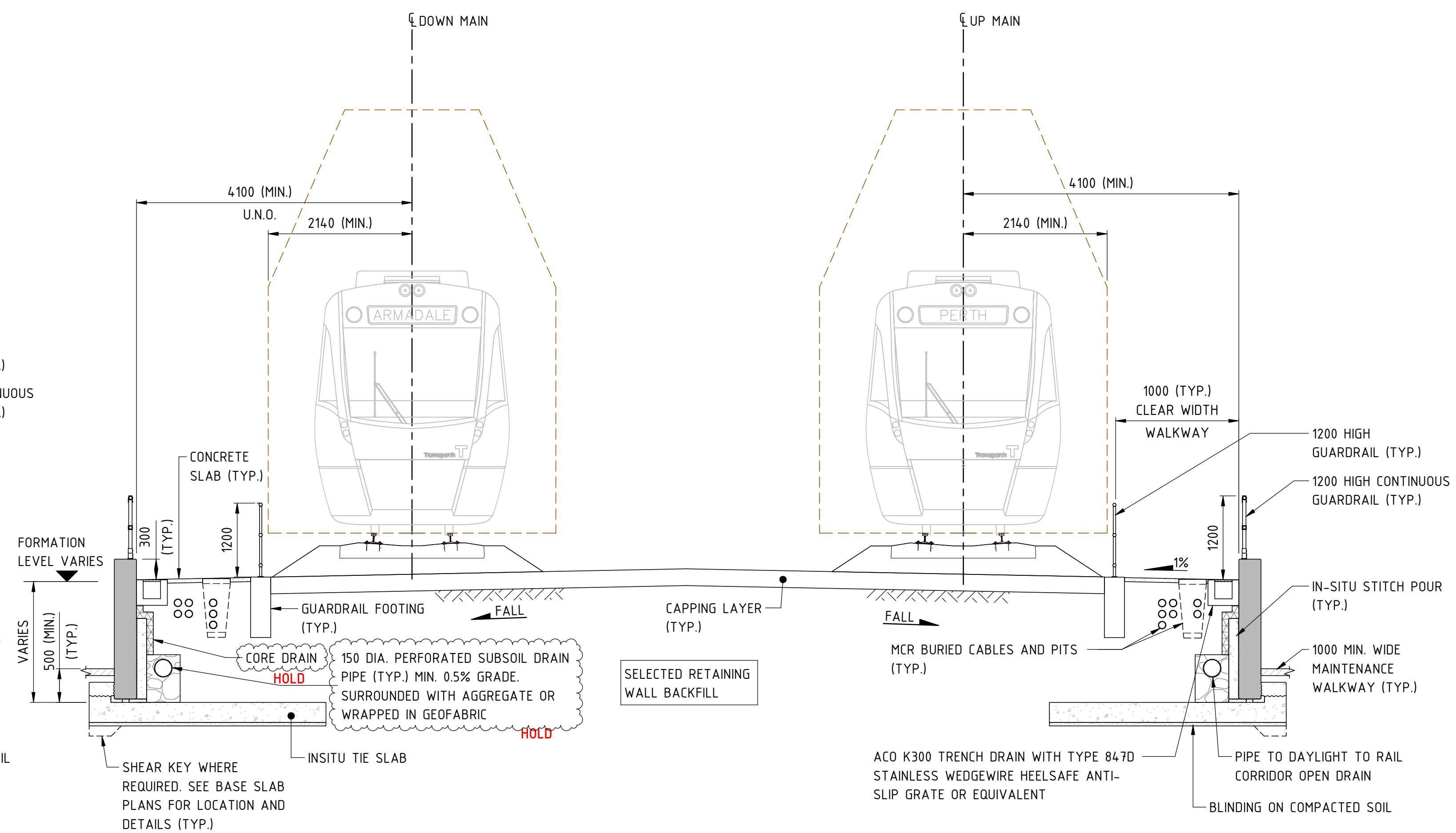
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As indicated	M.SOOI
DATUM	DRAWN
HORIZONTAL: PCG20	G.WIN
VERTICAL: AHD71	CHECKED
	A.ISAAC
	APPROVED
	B.MARSHALL
	DATE
	-

VICTORIA PARK TO CANNING LEVEL CROSSING REMOVAL	
ARMADALE LINE - CIVIL STRUCTURES	
BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS	
GENERAL SECTIONS - SHEET 2	
PTA Drawing No: 04-S-72-10018	Rev: A

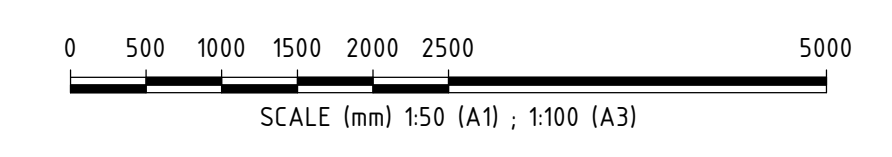
NOTES:
 ALL GUARDRAILS, STAIRS, SCREEN AND ABUTMENT WALLS SHALL BE EARTHED AND BONDED. SEE EARTHING AND BONDING DRAWING DRG. 04-S-72-0141 TO 144 FOR DETAILS.



RETAINING WALL ON TWO WAY CROSS FALL (RETAINED HEIGHT LESS THAN 3.0m)
TYPICAL SECTION - STITCHED PRECAST RETAINING WALL
 (RETAINED HEIGHT LESS THAN 3.0m)
 1:50



RETAINING WALL ON TWO WAY CROSS FALL (RETAINED HEIGHT LESS THAN 3.0m)
TYPICAL SECTION - WITHOUT STITCHED PRECAST RETAINING WALL
 (RETAINED HEIGHT LESS THAN 3.0m)
 1:50



REFERENCE DESIGN

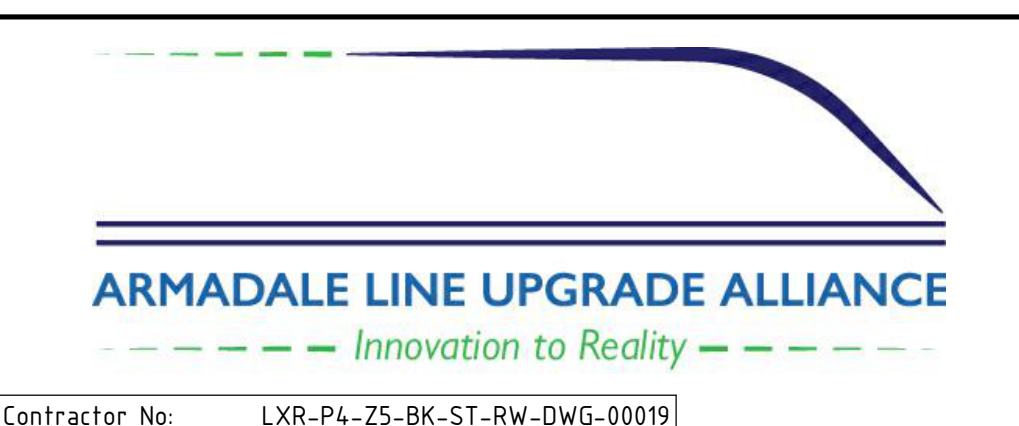
Government of Western Australia
Public Transport Authority

VICTORIA PARK TO CANNING
LEVEL CROSSING REMOVAL

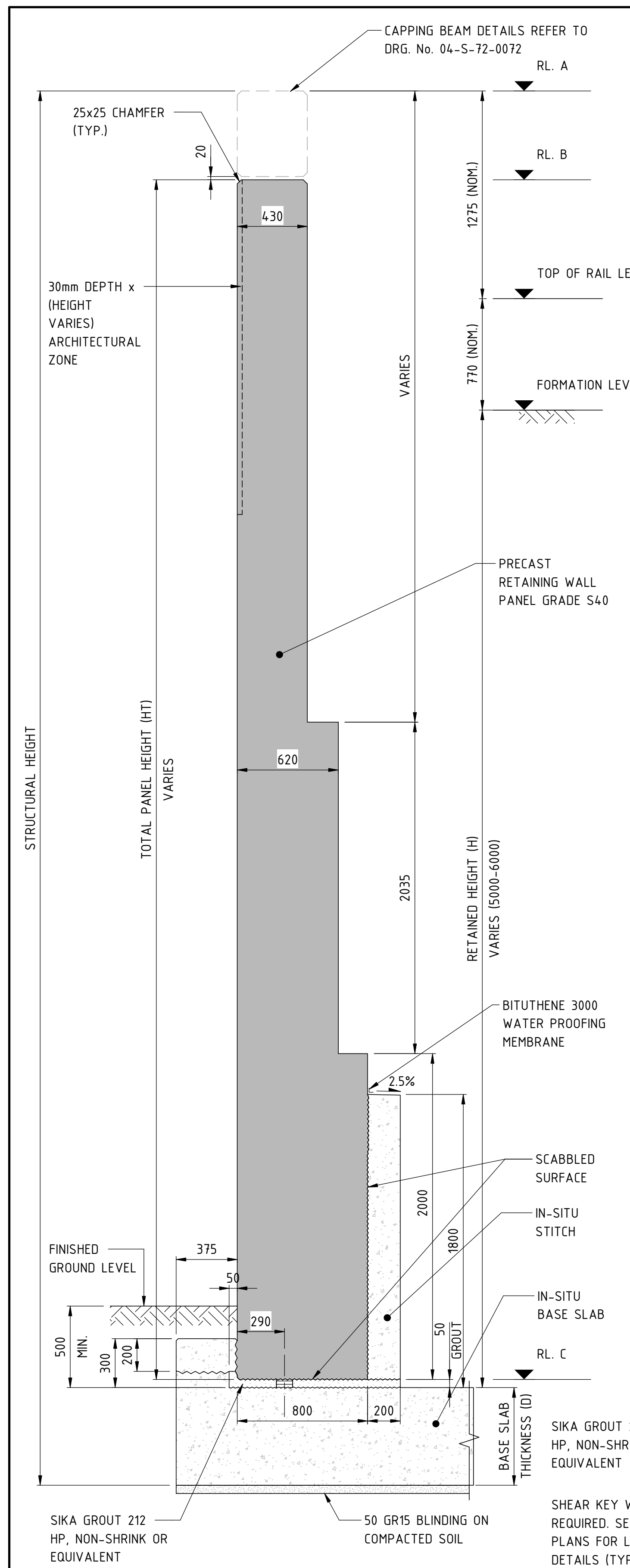
ARMADALE LINE - CIVIL STRUCTURES
BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS
 GENERAL SECTIONS - SHEET 3
 PTA Drawing No: **04-S-72-10019** Rev: **A**

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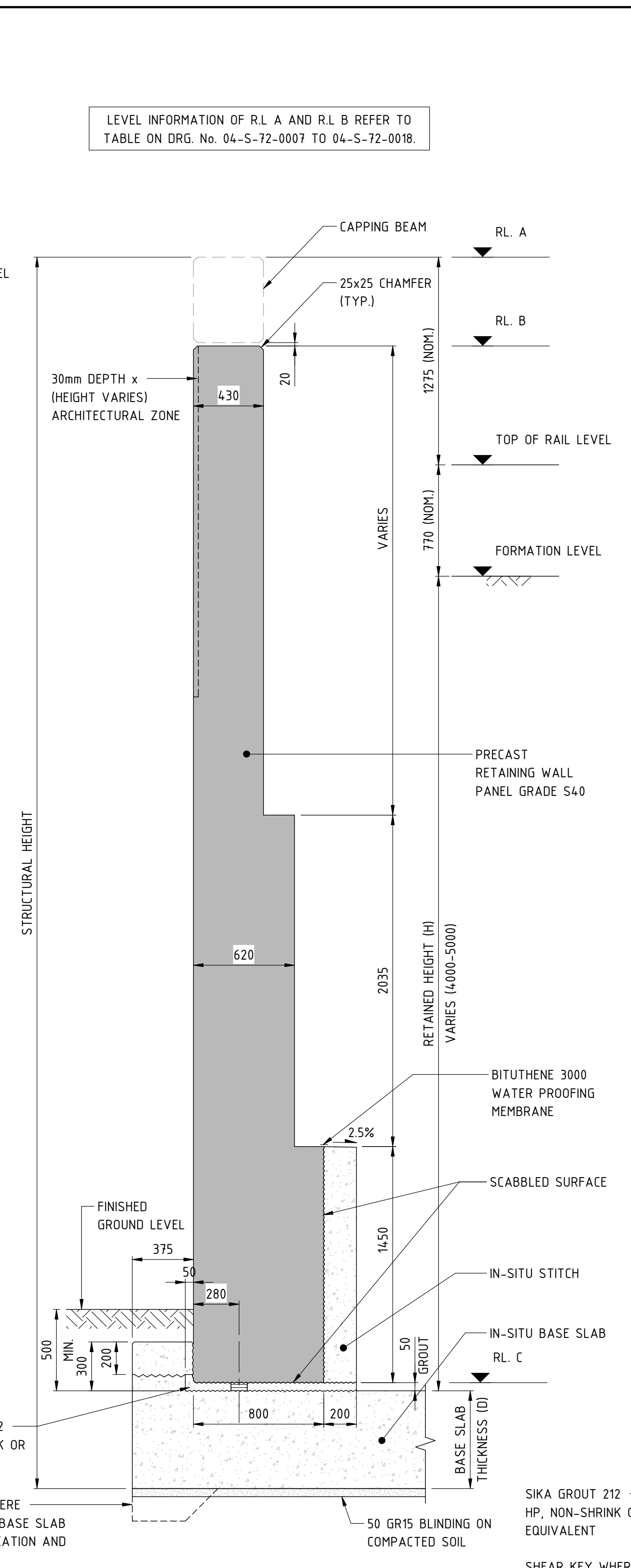
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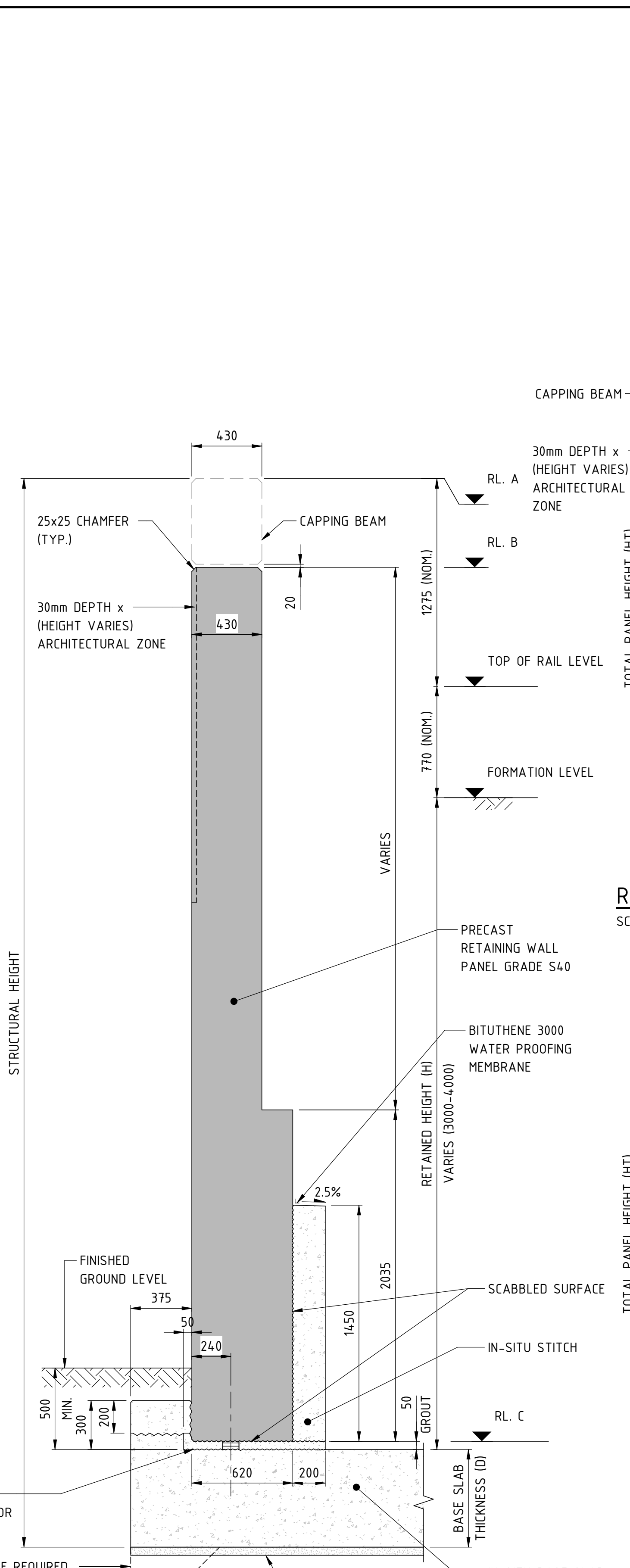
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SIGNATURE		As indicated	M.SOOI
DATE		DATUM	DRAWN
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		VERTICAL: AHD71	CHECKED
			A.ISAAC
			APPROVED
			B.MARSHALL
			DATE
			-



TYPICAL SECTION - PRECAST RETAINING WALL PANEL (RW6A/6B)
SCALE 1 : 20



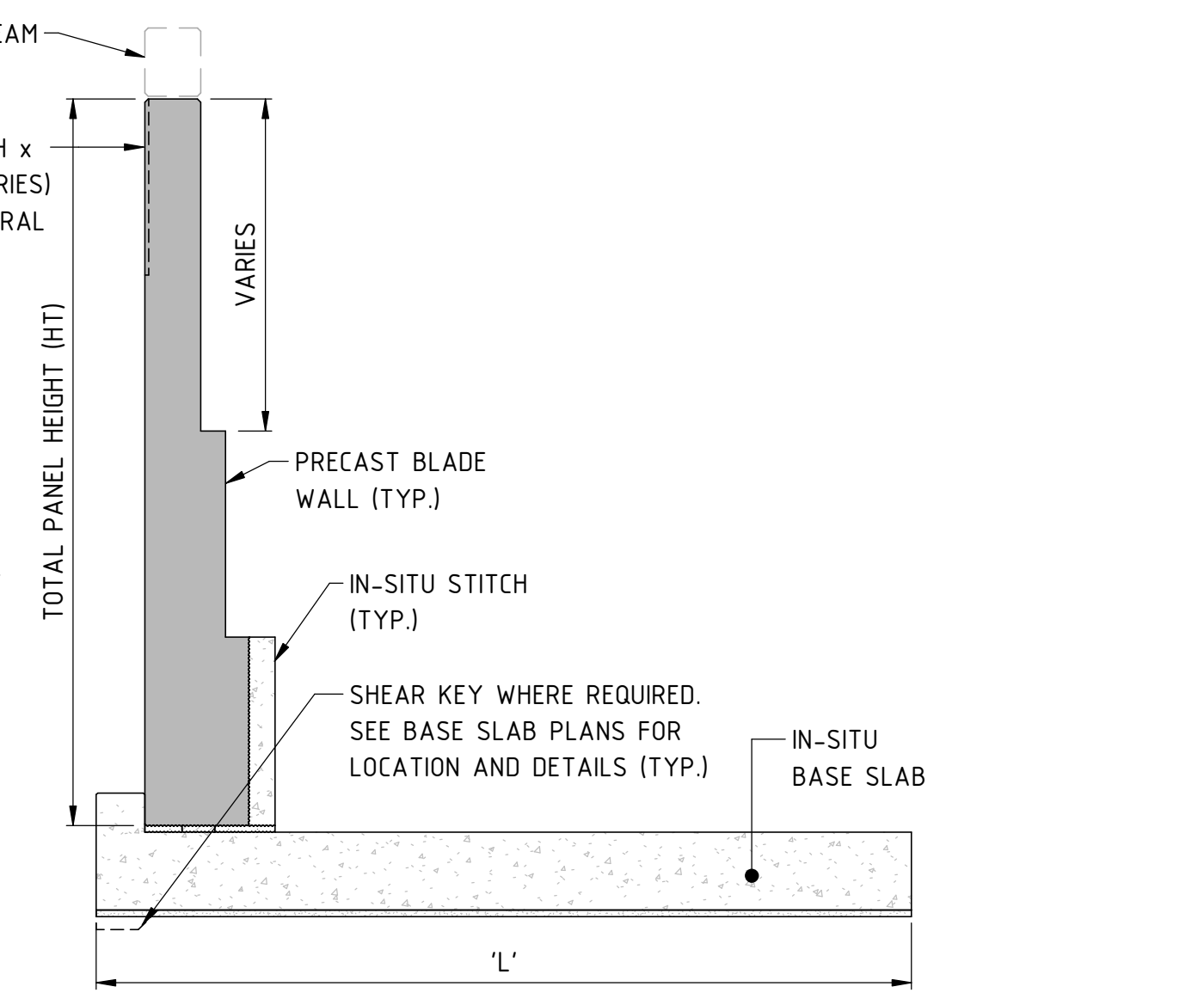
TYPICAL SECTION - PRECAST RETAINING WALL PANEL (RW5A/5B)
SCALE 1 : 20



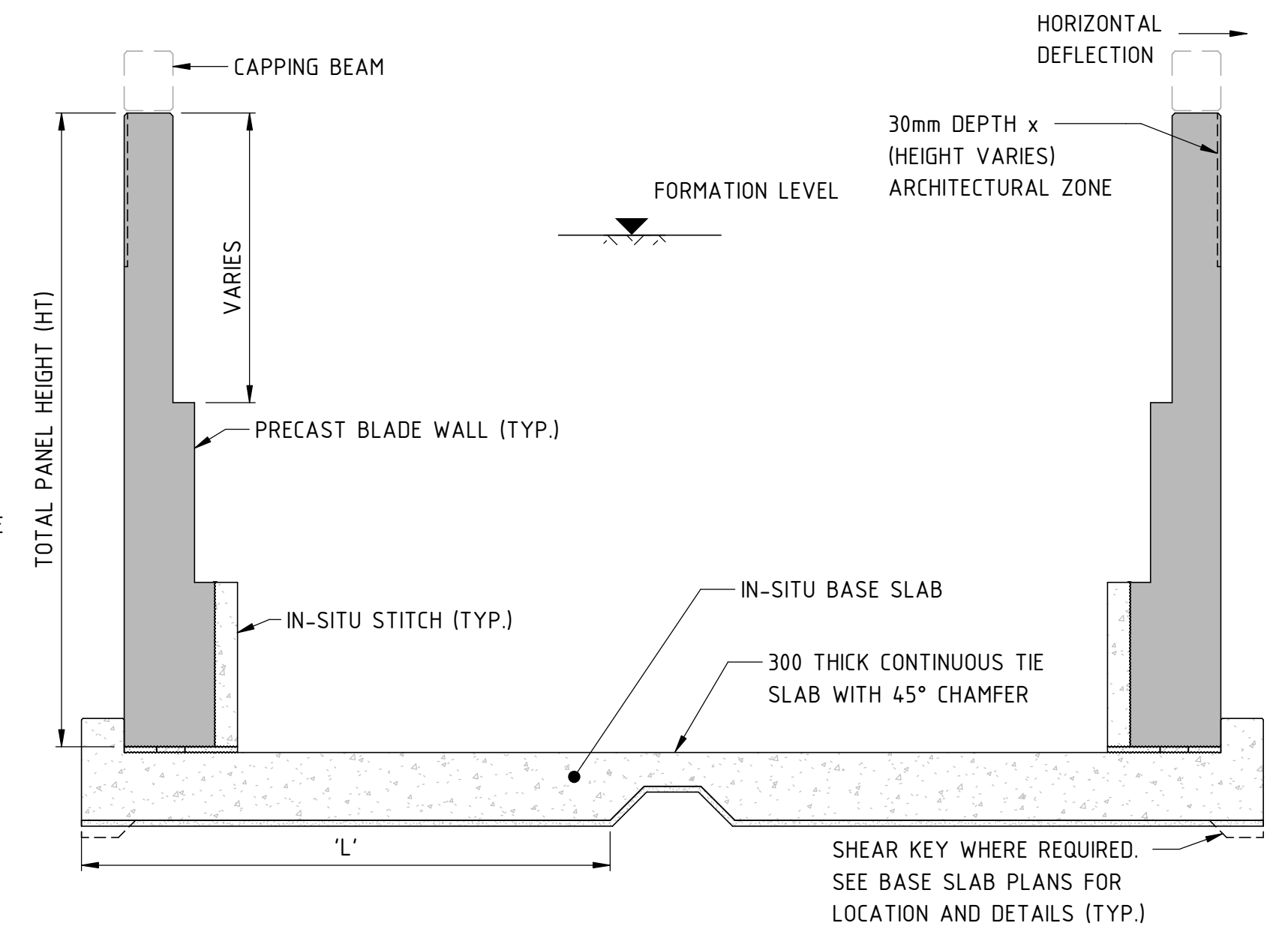
TYPICAL SECTION - PRECAST RETAINING WALL PANEL (RW4A/4B)
SCALE 1 : 20

- NOTES:**
1. ALLOW FOR STABILITY BRACING OF THE RETAINING WALL PRIOR TO BACKFILLING.
 2. SEE PLAN AND ELEVATION DRAWINGS FOR NOISE WALL LOCATIONS.
 3. ONLY WALLS WHERE H>3000mm ARE TO WITHSTAND IMPACT LOAD OF 500kN.
 4. WEIGHT OF PRECAST WALL FOR HANDLING PURPOSES (DOES NOT INCLUDE IN-SITU CONCRETE).
 5. REFER TO RAIL DRAWINGS.
 6. RETAINING WALL INFORMATION WITHOUT ANY WALL TYPE IDENTIFICATION (E.G. RWS) IS APPLICABLE TO ALL WALL TYPE OF THE SAME HEIGHT. (E.G. INFORMATION OF RWS IS APPLICABLE TO RWSA AND RWSB).
 7. WHERE BITUTHENE IS INDICATED, THE CONCRETE FINISH SHALL BE CLASS 2.

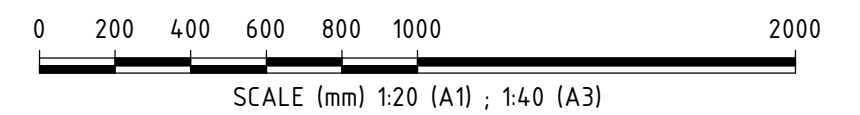
REFER GENERAL ARRANGEMENT PLAN AND ELEVATION FOR LOCATIONS OF RETAINING WALL
* SEE RAIL DRAWINGS FOR HEIGHT BETWEEN FORMATION LEVEL AND TOP OF WALL



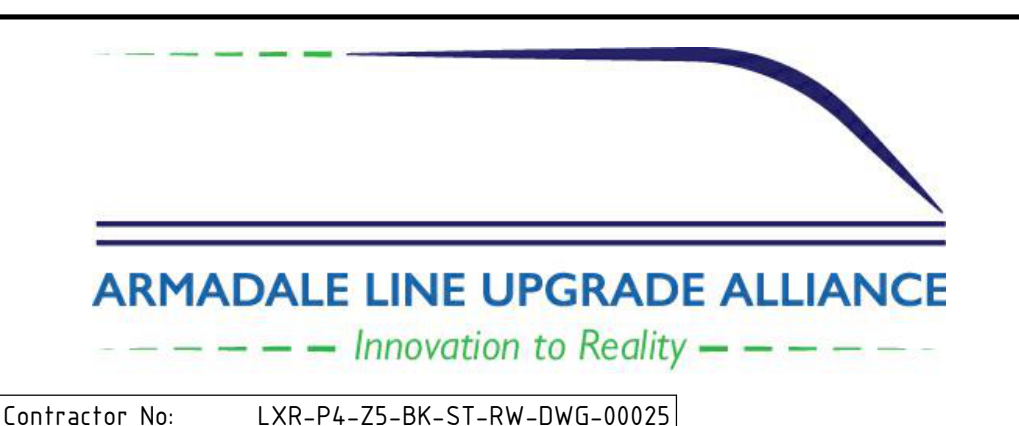
RETAINING WALL USING PRECAST BLADE WALL (TYPE A)
SCALE 1 : 50



RETAINING WALL USING PRECAST BLADE WALL (TYPE B)
SCALE 1 : 50



REV	DATE	ISSUED FOR REFERENCE DESIGN	MS	GW	AI	BM
A	28.07.23					
ORIG SIZE	AMENDMENT		DSN	DRN	CHK	APP
A1	AT ORIGINAL PLOT SIZE					



VALIDATION	REFERENCES	SCALE	DESIGNED
SIGNATURE		As indicated	M.SOOI
DATE		DATUM	DRAWN
DATE APPROVED		HORIZONTAL: PCG20	G.WIN
		VERTICAL: AHD71	CHECKED
			A.ISAAC
			APPROVED
			B.MARSHALL
			DATE
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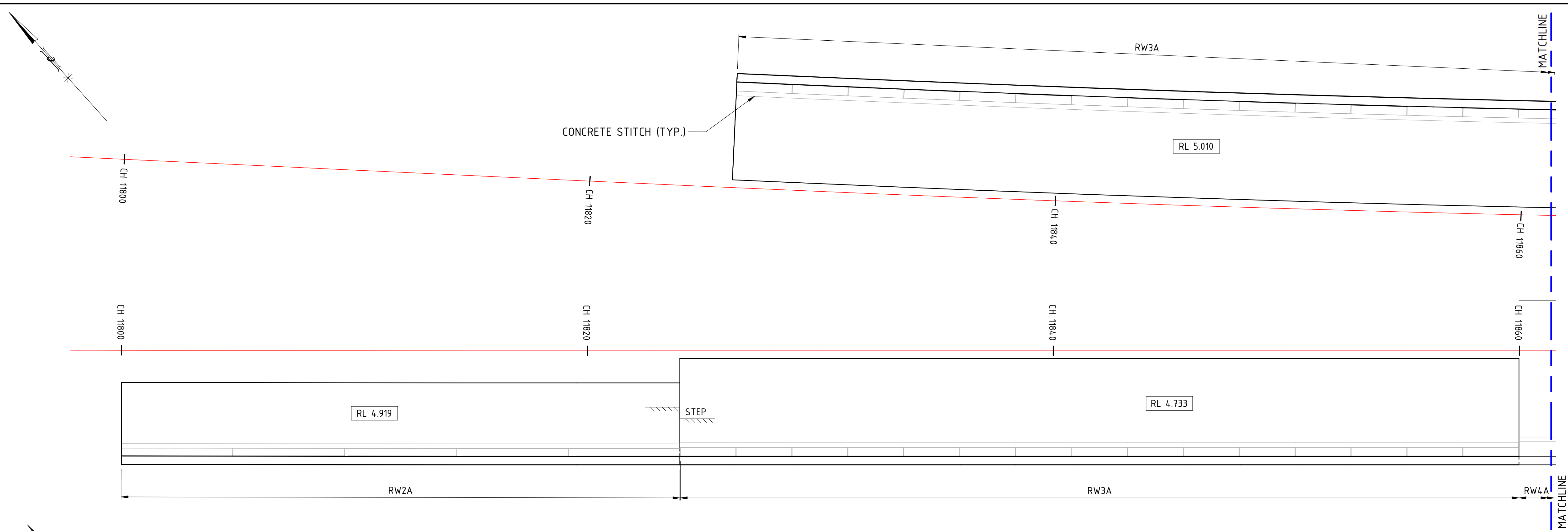
REFERENCE DESIGN

Government of Western Australia
Public Transport Authority

VICTORIA PARK TO CANNING
LEVEL CROSSING REMOVAL

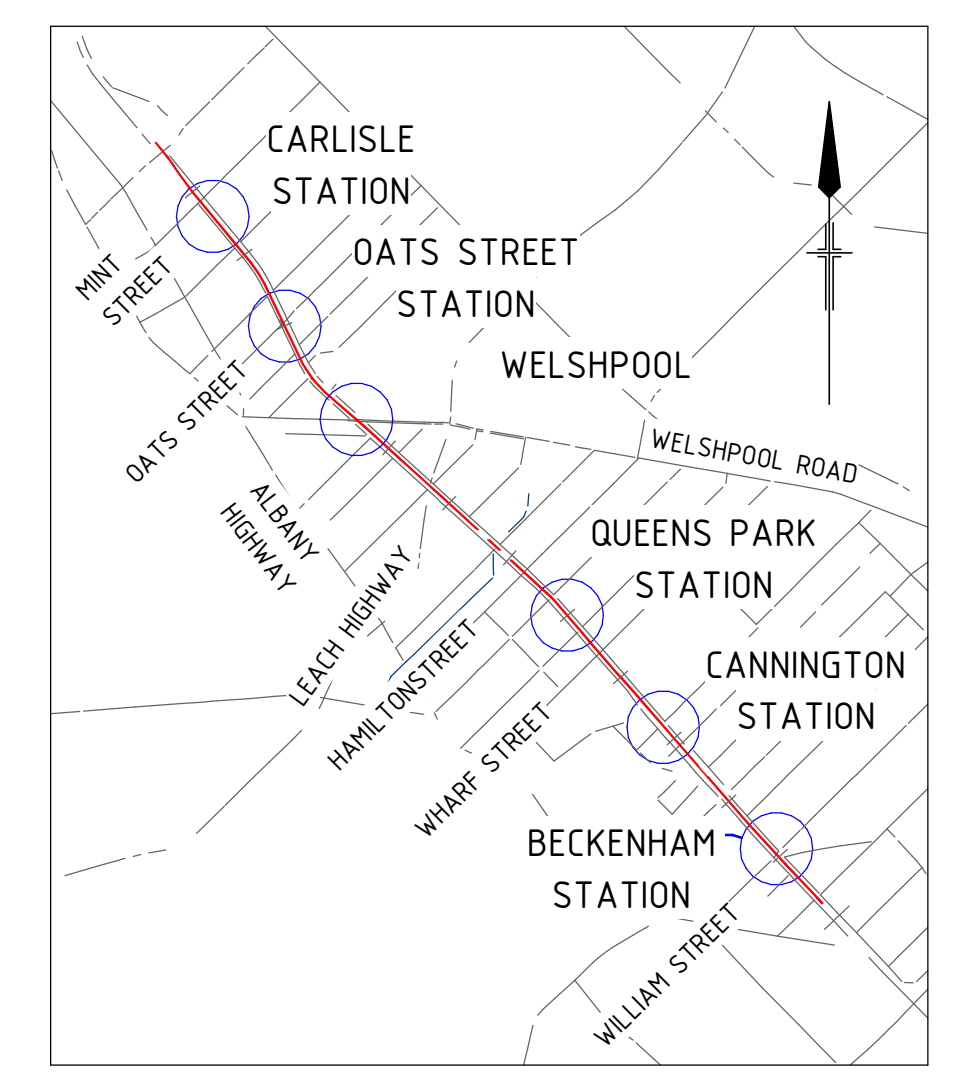
ARMADALE LINE - CIVIL STRUCTURES
BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS
RETAINING WALL CONCRETE DETAILS - SHEET 1

PTA Drawing No: 04-S-72-10025 Rev: A



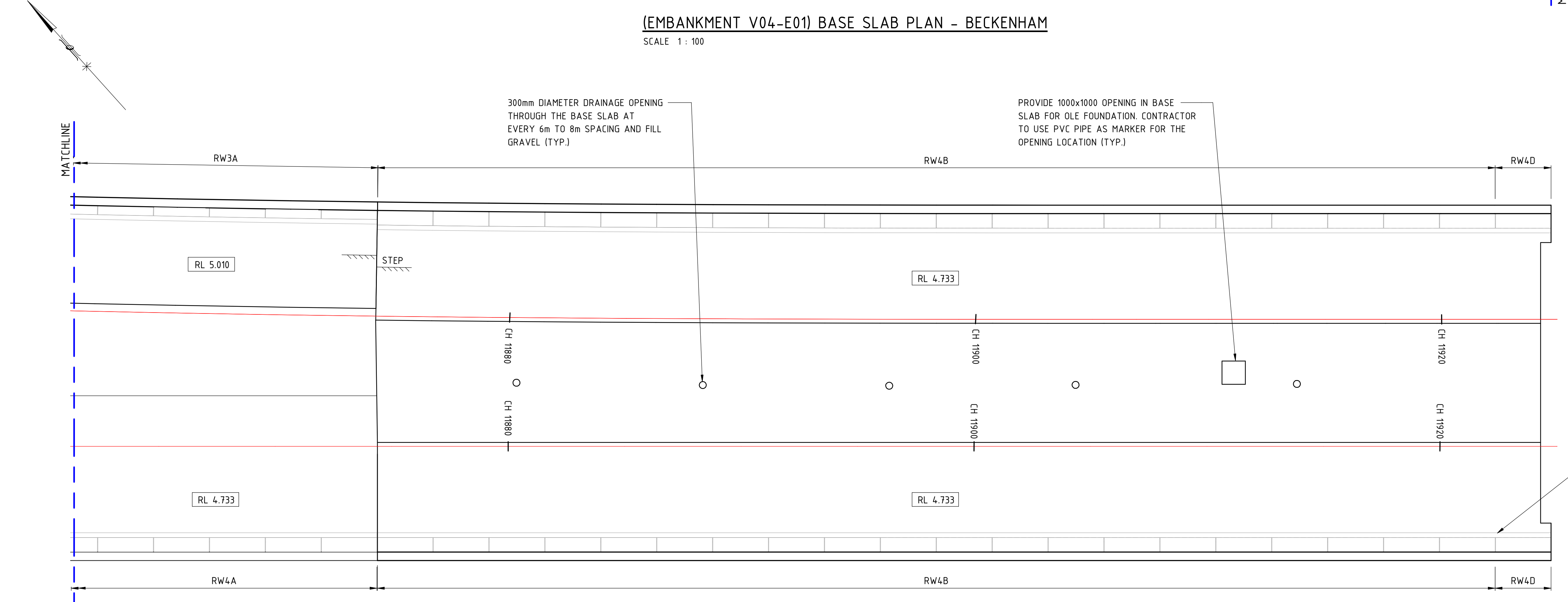
(EMBANKMENT V04-E01) BASE SLAB PLAN - BECKENHAM

SCALE 1 : 100



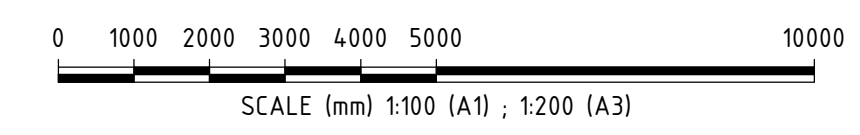
LOCALITY PLAN

LEGEND:
KJ DENOTES KEY JOINT



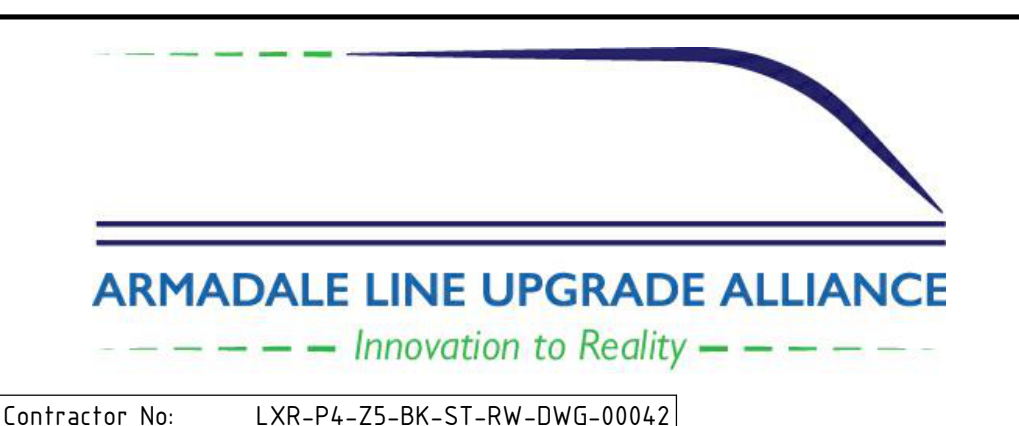
(EMBANKMENT V04-E01) RETAINING WALL PLAN - BECKENHAM

SCALE 1 : 100



REV	DATE	AMENDMENT	MS	GW	AI	BM
A1		AT ORIGINAL PLOT SIZE	MS	GW	AI	BM

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DATE
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SCALE
As indicated
DATUM
HORIZONTAL: PCG20
VERTICAL: AHD71

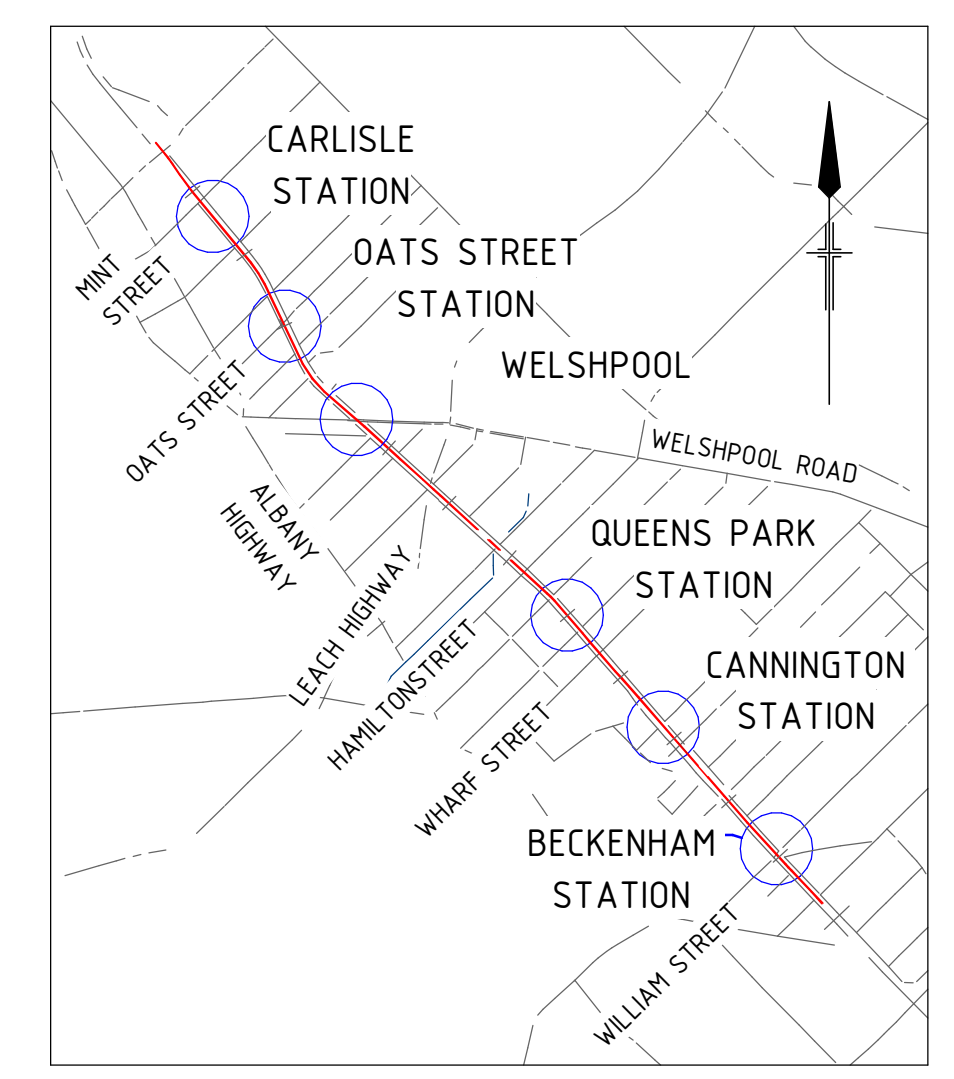
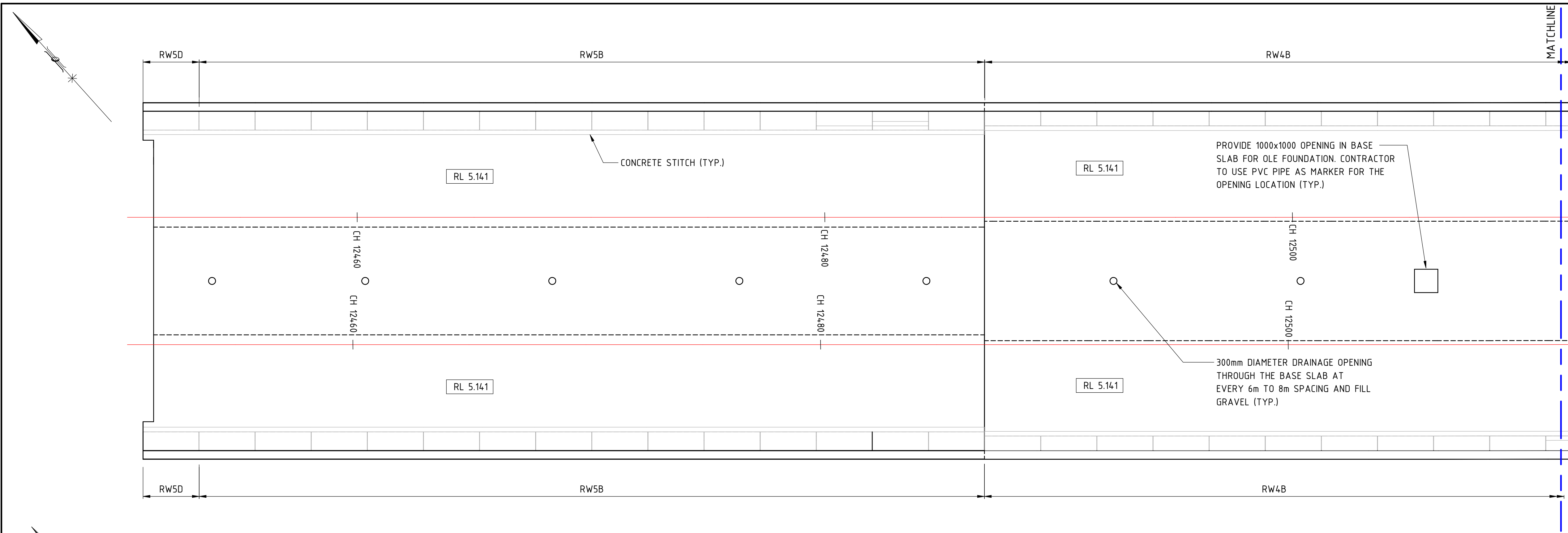
DESIGNED M.SOOI
DRAWN G.WIN
CHECKED A.ISAAC
APPROVED B.MARSHALL
DATE -

REFERENCE DESIGN

Government of Western Australia
Public Transport Authority

VICTORIA PARK TO CANNING
LEVEL CROSSING REMOVAL

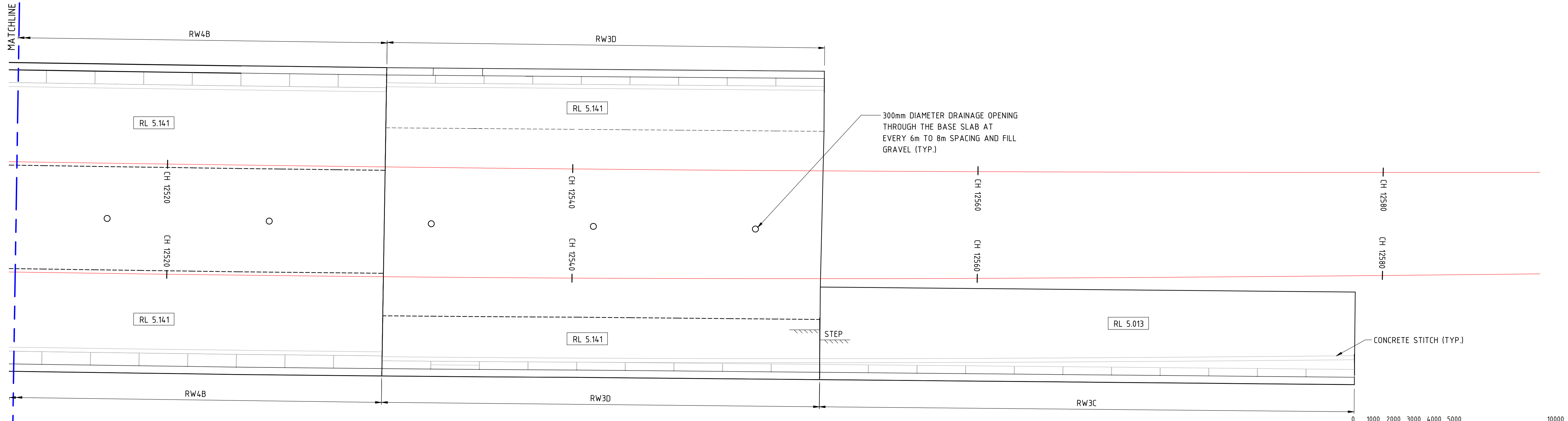
ARMADALE LINE - CIVIL STRUCTURES
BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS
BASE SLAB PLAN - SHEET 1
PTA Drawing No: **04-S-72-10042** Rev:



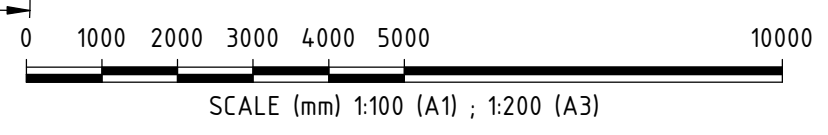
LOCALITY PLAN

LEGEND:
KJ DENOTES KEY JOINT

(EMBANKMENT V04-E02) BASE SLAB PLAN - BECKENHAM
SCALE 1 : 100



(EMBANKMENT V04-E02) BASE SLAB PLAN - BECKENHAM
SCALE 1 : 100



REFERENCE DESIGN	
	VICTORIA PARK TO CANNING LEVEL CROSSING REMOVAL
ARMADALE LINE - CIVIL STRUCTURES BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS BASE SLAB PLAN - SHEET 2	
PTA Drawing No: 04-S-72-10043 Rev:	

REV	DATE	AMENDMENT	MS	GW	AI	BH
A1		AT ORIGINAL PLOT SIZE	DSN	DRN	CHK	APP

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Innovation to Reality

Contractor No: LXR-P4-Z5-BK-ST-RW-DWG-00043

VALIDATION

SIGNATURE

DATE

DATE APPROVED

REFERENCES

SCALE

As indicated

DATUM

HORIZONTAL: PCG20

VERTICAL: AHD71

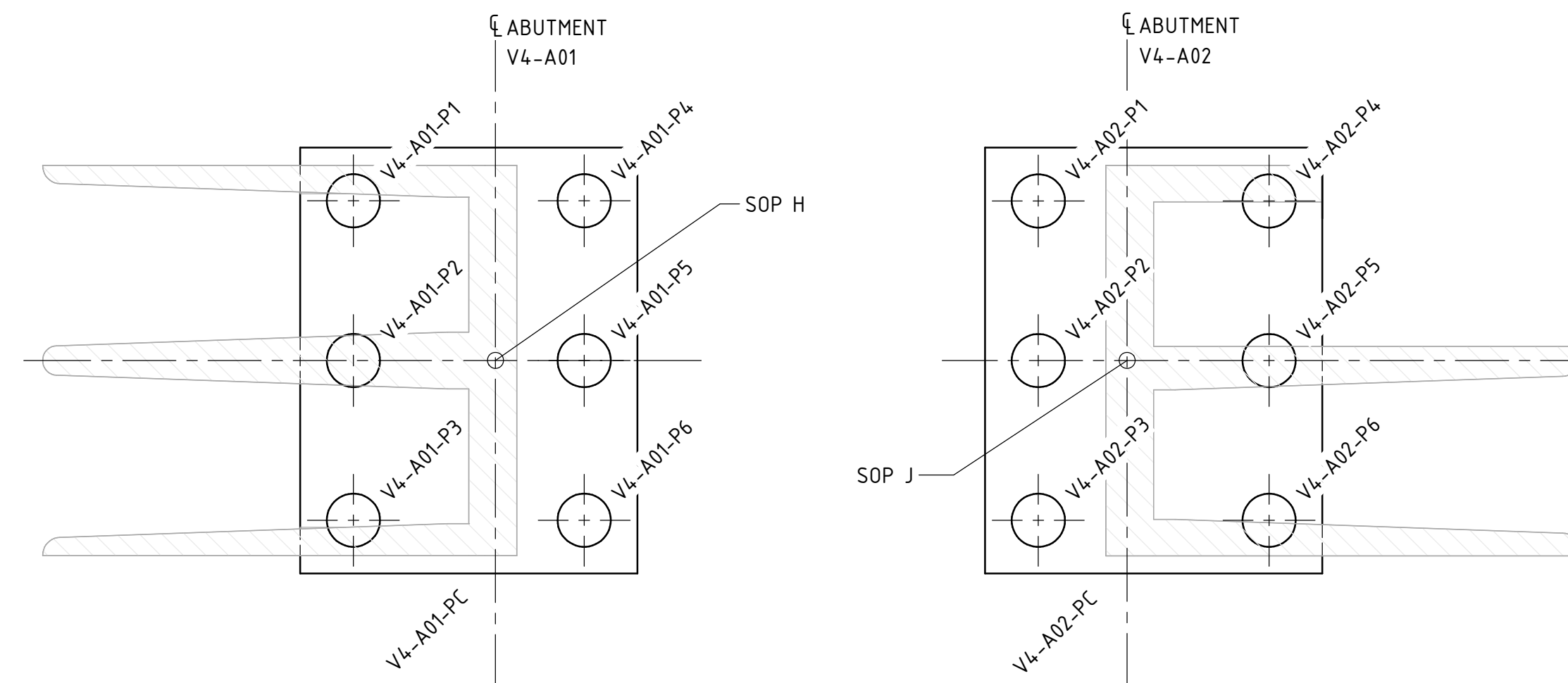
DESIGNED M.SOOI

DRAWN G.WIN

CHECKED A.ISAAC

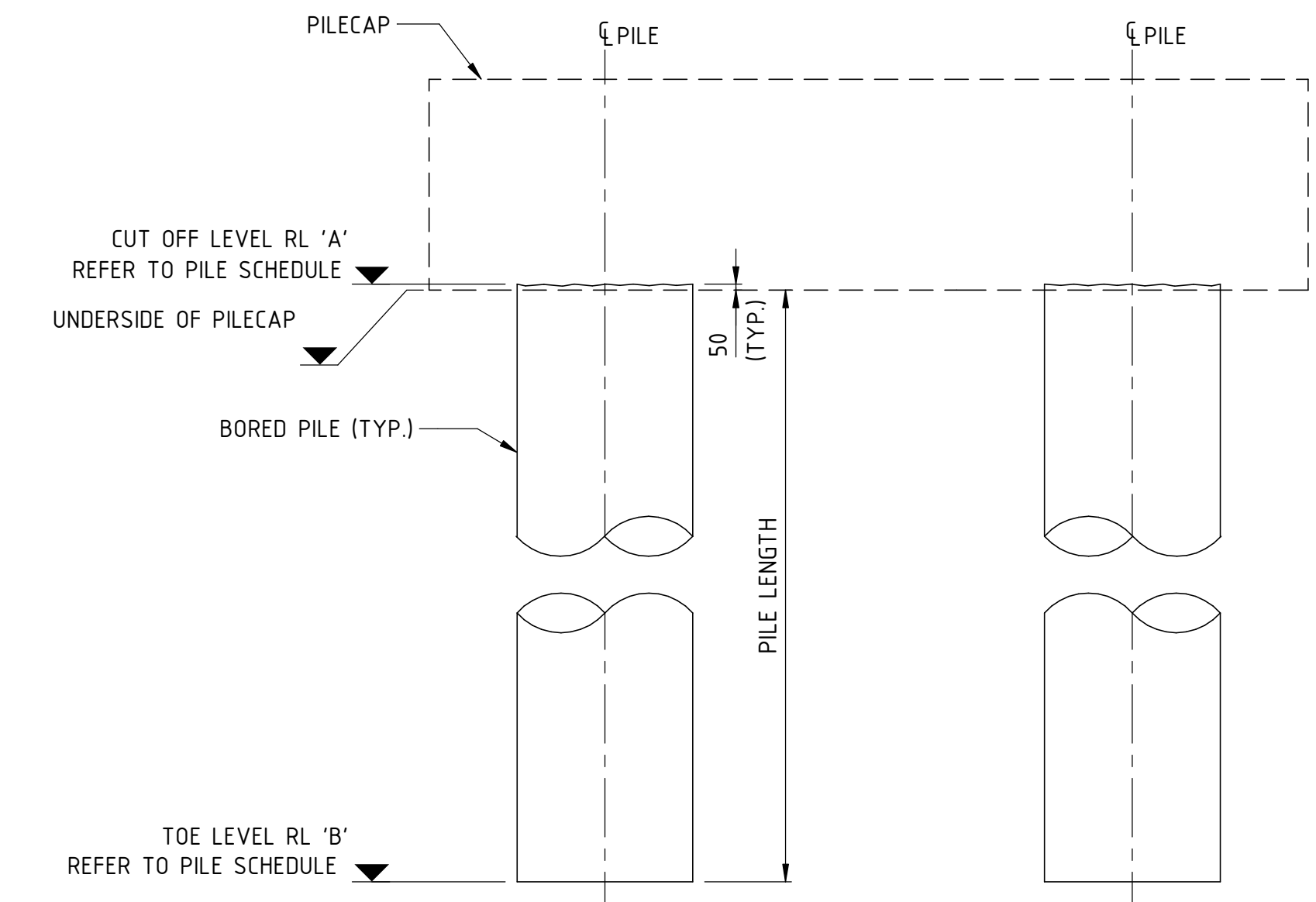
APPROVED B.MARSHALL

DATE -



PILE PLAN
SCALE 1 : 150

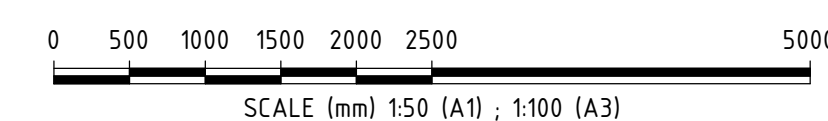
ABUTMENT PILE SCHEDULE								
MARK	PILE DIAMETER (m)	PILE LENGTH (m)	CUT-OFF LEVEL RL 'A'	TOE LEVEL RL 'B'	PILE DESIGN BEARING CAPACITY (kN)	PILE DESIGN TENSION CAPACITY (kN)	ULS AXIAL COMPRESSION (kN)	ULS AXIAL TENSION (kN)
V4-A01-P1	1500	24.0	3.022	-21.028	15423	9071	12500	4000
V4-A01-P2	1500	24.0	3.022	-21.028	15423	9071	12500	4000
V4-A01-P3	1500	24.0	3.022	-21.028	15423	9071	12500	4000
V4-A01-P4	1500	24.0	3.022	-21.028	15423	9071	12500	4000
V4-A01-P5	1500	24.0	3.022	-21.028	15423	9071	12500	4000
V4-A01-P6	1500	24.0	3.022	-21.028	15423	9071	12500	4000
V4-A02-P1	1500	24.0	3.135	-20.915	15739	8888	10500	3000
V4-A02-P2	1500	24.0	3.135	-20.915	15739	8888	10500	3000
V4-A02-P3	1500	24.0	3.135	-20.915	15739	8888	10500	3000
V4-A02-P4	1500	24.0	3.135	-20.915	15739	8888	10500	3000
V4-A02-P5	1500	24.0	3.135	-20.915	15739	8888	10500	3000
V4-A02-P6	1500	24.0	3.135	-20.915	15739	8888	10500	3000



TYPICAL BORED PILE ELEVATION
SCALE 1 : 50

NOTES:

- FOR GENERAL NOTES REFER DRG. No. 04-S-72-0004 TO 0006.
- PILE LENGTH DOES NOT INCLUDE 50mm PILE HEAD PROTRUSION INTO PILECAP.
- FOR THE GEOTECHNICAL INVESTIGATION PLAN AND PROFILE, REFER TO THE GEOTECHNICAL INTERPRETIVE REPORT LXR-PW-Z0-GN-CI-GT-RPT-00025, APPENDIX A.
- THE REQUIRED DESIGN ULTIMATE GEOTECHNICAL STRENGTH (R_d , ug) IS NOT LESS THAN $E_d \phi_g$, IN WHICH ϕ_g IS THE GEOTECHNICAL STRENGTH REDUCTION FACTOR ADOPTED AS 0.74 FOR CFA PILES AND 0.70 FOR BORED PILED IN ACCORDANCE WITH AS2159.3.
- ULS DESIGN ACTIONS ARE GIVEN AT TOP OF PILE.
- PILE TOE LEVELS SHALL NOT BE HIGHER THAN THE LEVELS SHOWN IN THE PILE SCHEDULE TABLE.
- FOR ABUTMENT PILE REINFORCEMENT DETAILS, REFER TO DRG. No. 04-S-72-0092.



REFERENCE DESIGN

REV	DATE	ISSUED FOR REFERENCE DESIGN	MS	GW	AI	BM
A	28.07.23	AMENDMENT	DSN	DRN	CHK	APP
ORIG SIZE A1		AT ORIGINAL PLOT SIZE		<small>This document must not be copied without PTA's written permission, and the contents thereof must not be imparted to a third party nor be used for any unauthorised purpose.</small>		

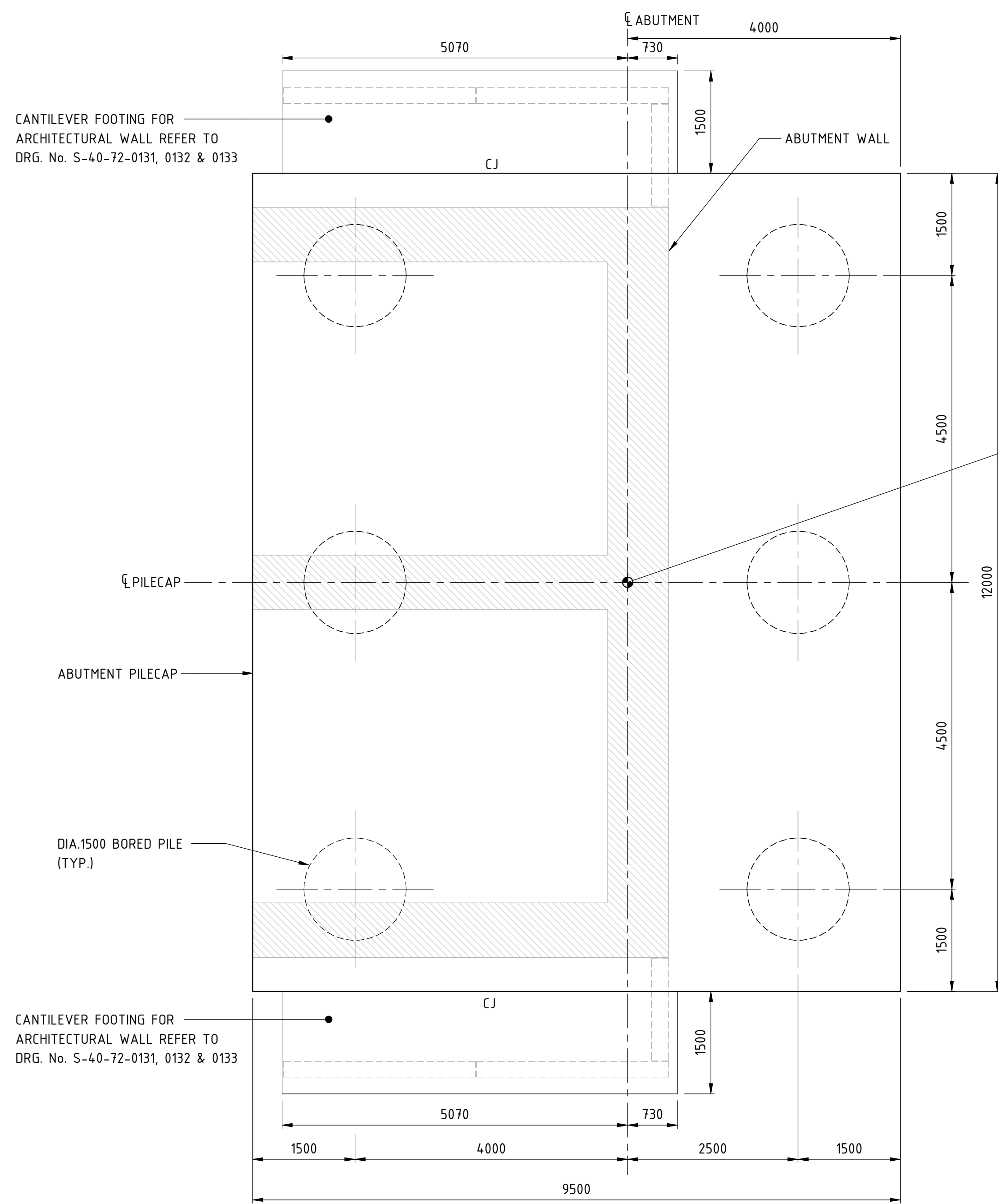
Contractor No: LXR-P4-Z5-BK-ST-RW-DWG-00051

VALIDATION
SIGNATURE
DATE
DATE APPROVED

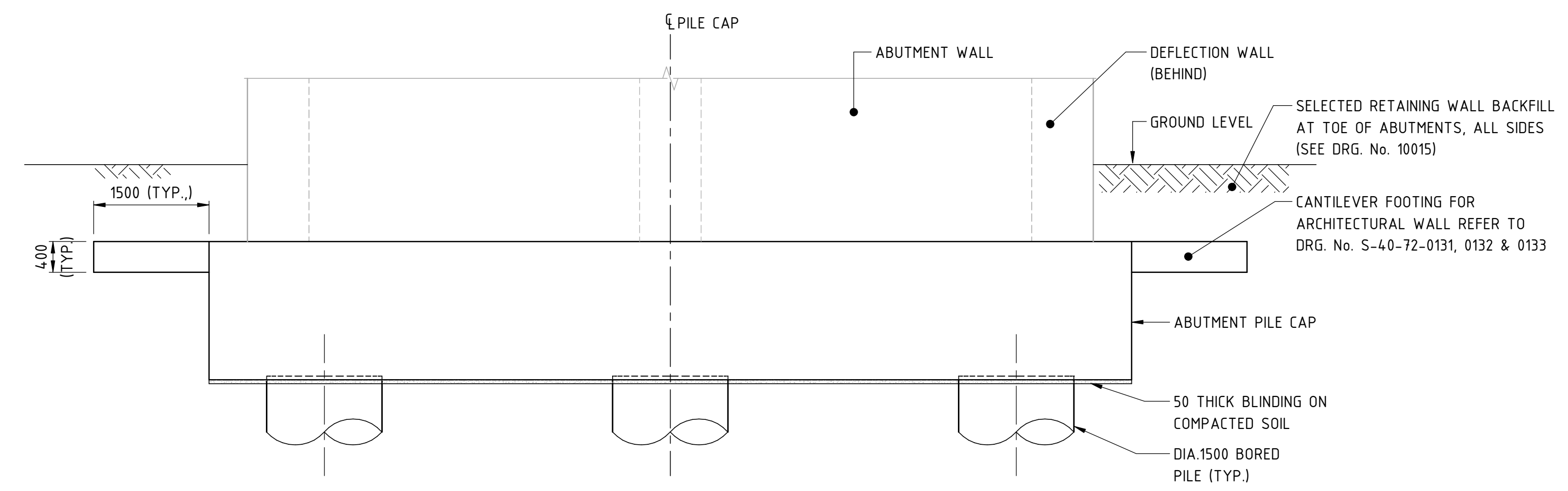
REFERENCES
SCALE
As indicated
DATUM
HORIZONTAL: PCG20
VERTICAL: AHD71

DESIGNED M.SOUI
DRAWN G.WIN
CHECKED A.ISAAC
APPROVED B.MARSHALL
DATE -

VICTORIA PARK TO CANNING LEVEL CROSSING REMOVAL
ARMADALE LINE - CIVIL STRUCTURES
BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS
TYPICAL PILE DETAILS - SHEET 1
PTA Drawing No: 04-S-72-10051
Rev: A

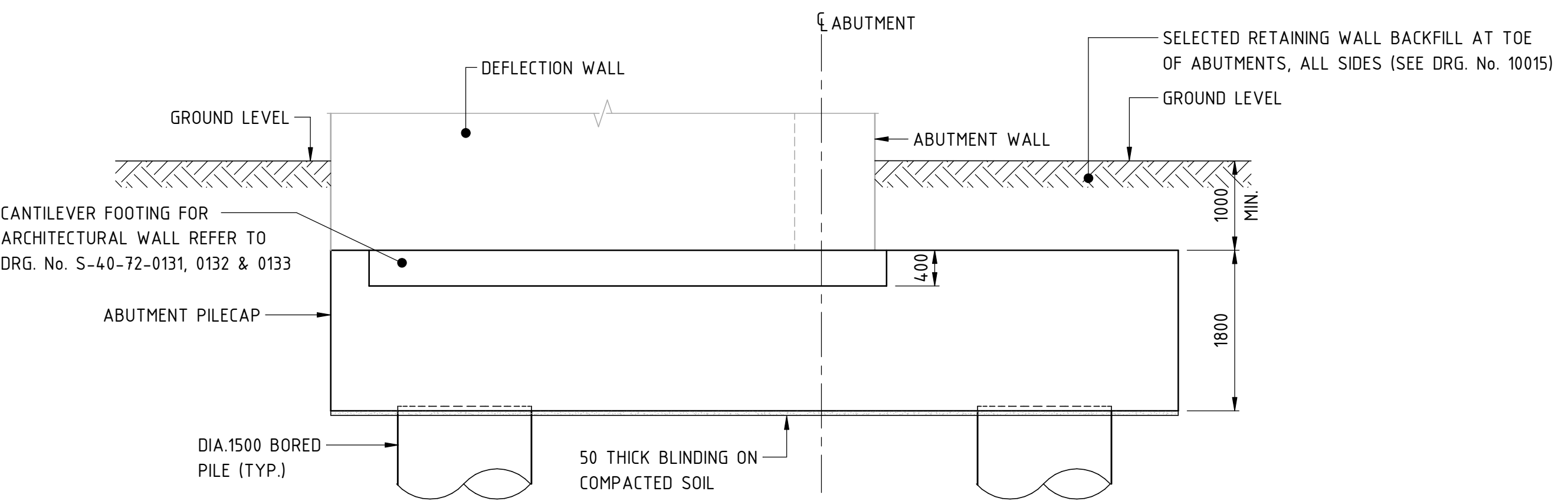


PLAN
(V04.A01 AS DRAWN. V04.A02 OPPOSITE HAND)



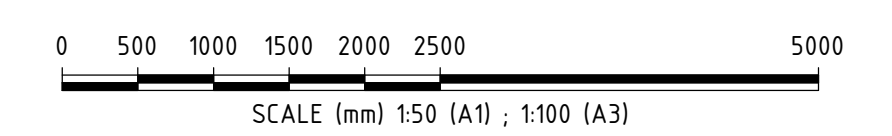
FRONT ELEVATION

- NOTES:**
1. FOR PILECAP REINFORCEMENT DETAILS OF V4-A01 AND V04-A02, REFER TO DRAWINGS NO. 04-S-72-0102.
 2. FOR PILE CONCRETE AND REINFORCEMENT DETAILS, REFER TO DRAWING No. 04-S-72-0092.

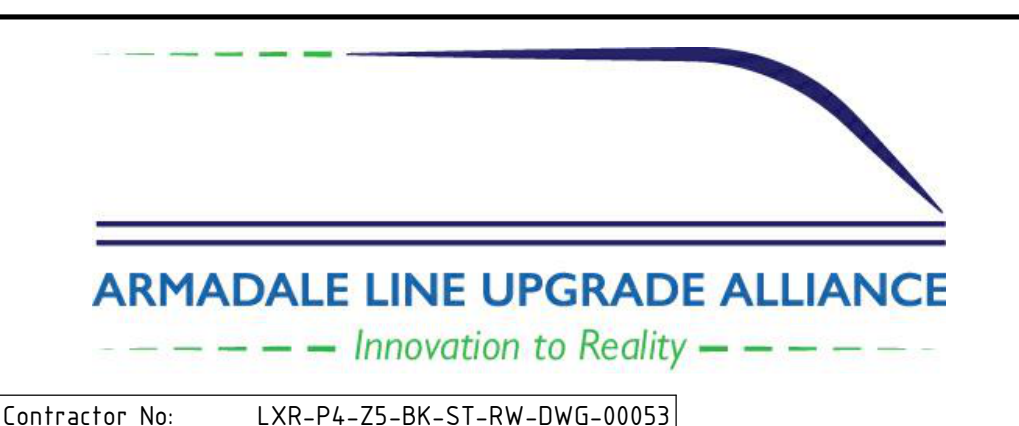


SIDE ELEVATION

PILECAP TYPE 2 (6 PILES GROUP)
SCALE 1 : 50



REV	DATE	ISSUED FOR REFERENCE DESIGN	MS	DW	AI	BH
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AMENDMENT	DSN	DRN	CHK	APP		
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A1	AT ORIGINAL PLOT SIZE		Contractor No: LXR-P4-Z5-BK-ST-RW-DWG-00053			



VALIDATION	REFERENCES	SCALE	DESIGNED
SIGNATURE		1 : 50	M.SOOI
DATE		DATUM	DRAWN
DATE APPROVED		HORIZONTAL: PCG20	G.WIN
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			A.ISAAC
			APPROVED
			B.MARSHALL
			DATE
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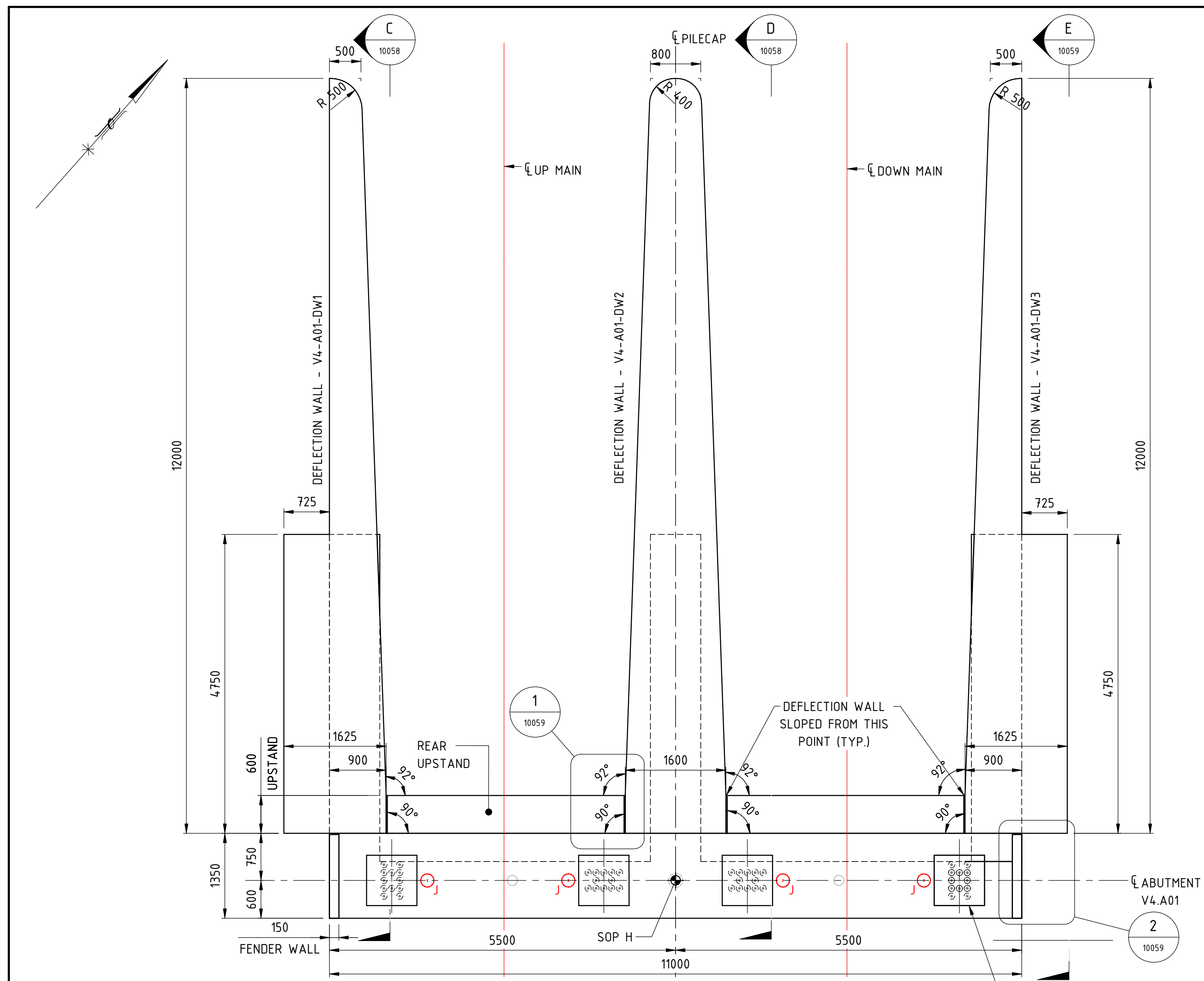
REFERENCE DESIGN

Government of Western Australia
Public Transport Authority

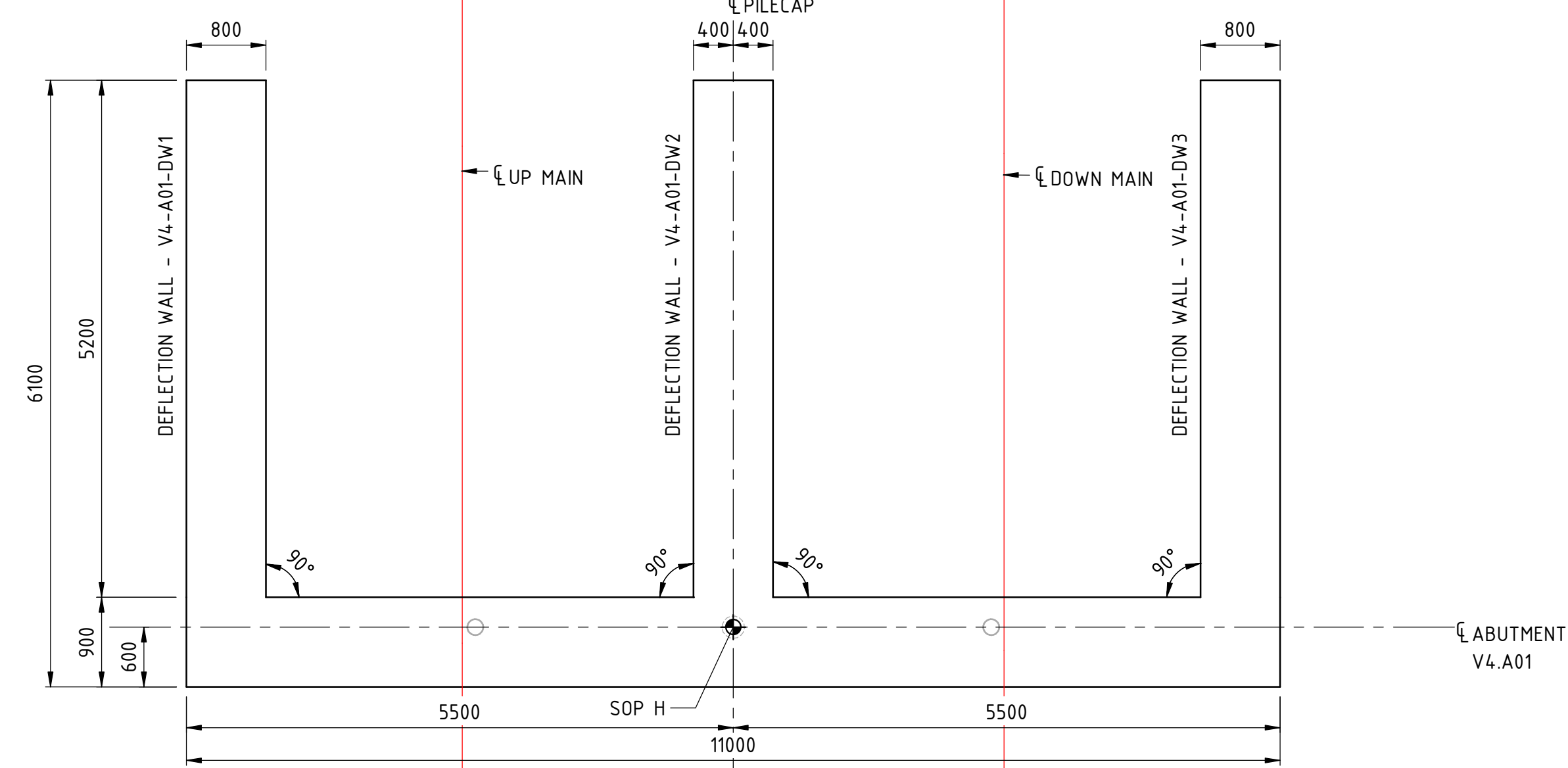
VICTORIA PARK TO CANNING
LEVEL CROSSING REMOVAL

ARMADALE LINE - CIVIL STRUCTURES
BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS
ABUTMENT PILECAP CONCRETE DETAILS - SHEET 1

PTA Drawing No: **04-S-72-10053** Rev: **A**

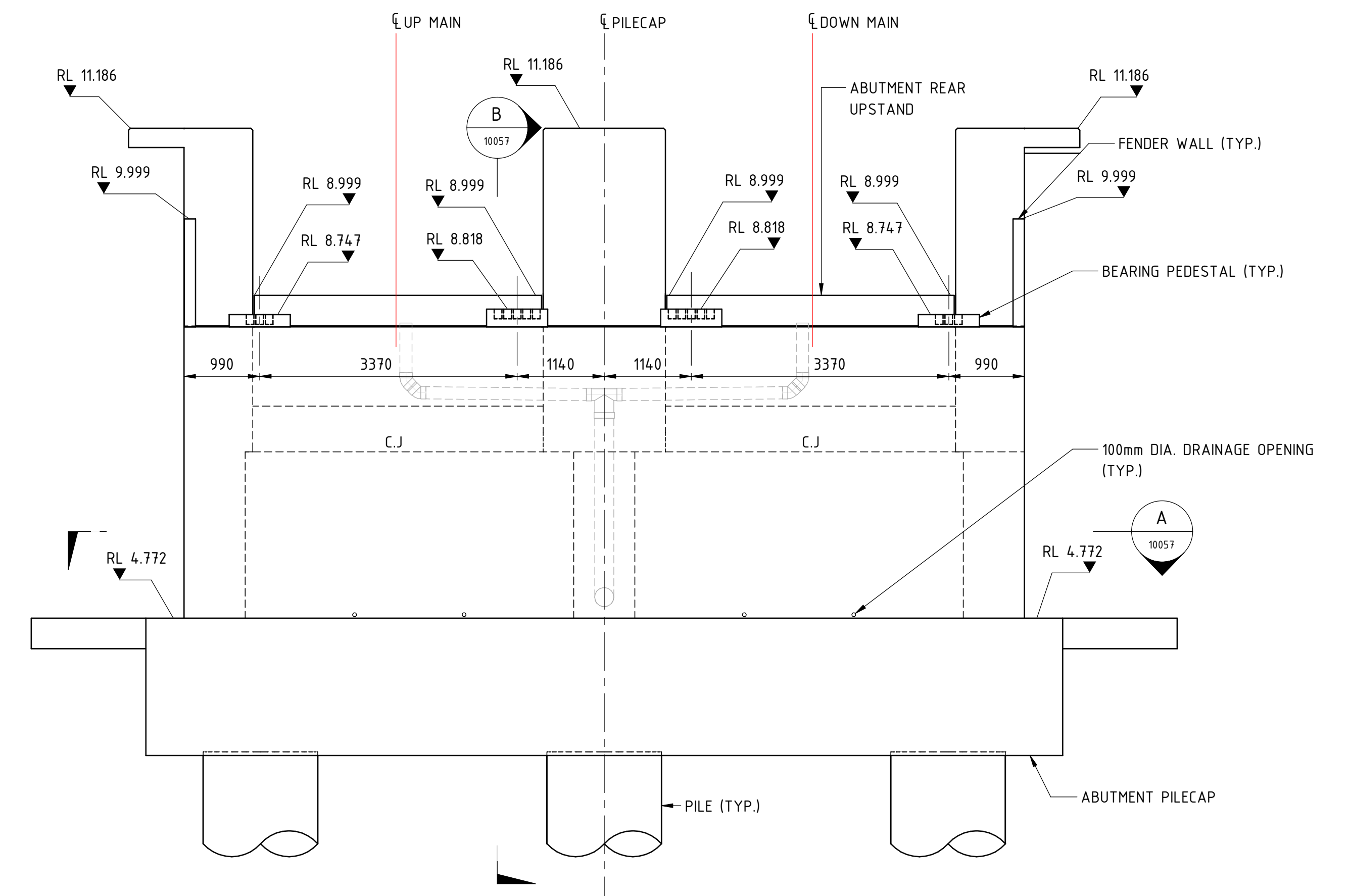


PLAN - ABUTMENT V4.A01
SCALE 1 : 50

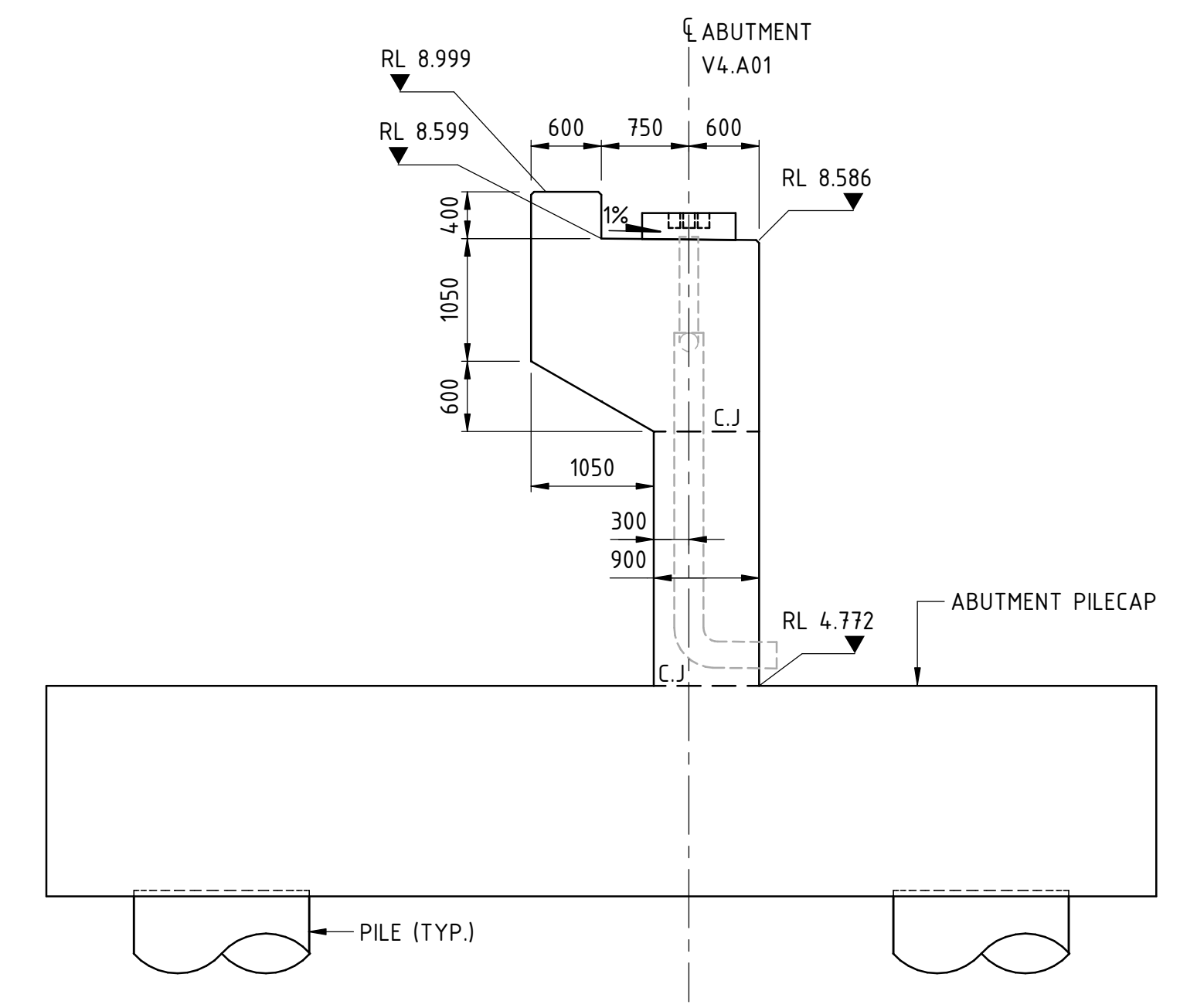


SECTION A
SCALE 1 : 50

ALL ABUTMENT PILECAP SET OUT POINTS (SOP) INFORMATION REFER TO DRG. No. 04-S-169-10056 (VIADUCT PACKAGE).

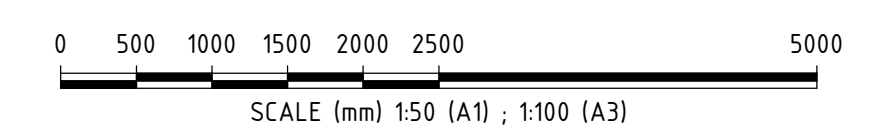


FRONT ELEVATION
SCALE 1 : 50



SECTION B
SCALE 1 : 50

NOTES:
1. 'J' DENOTES JACKING LOCATION FOR FUTURE BEARING REPLACEMENT.



REFERENCE DESIGN

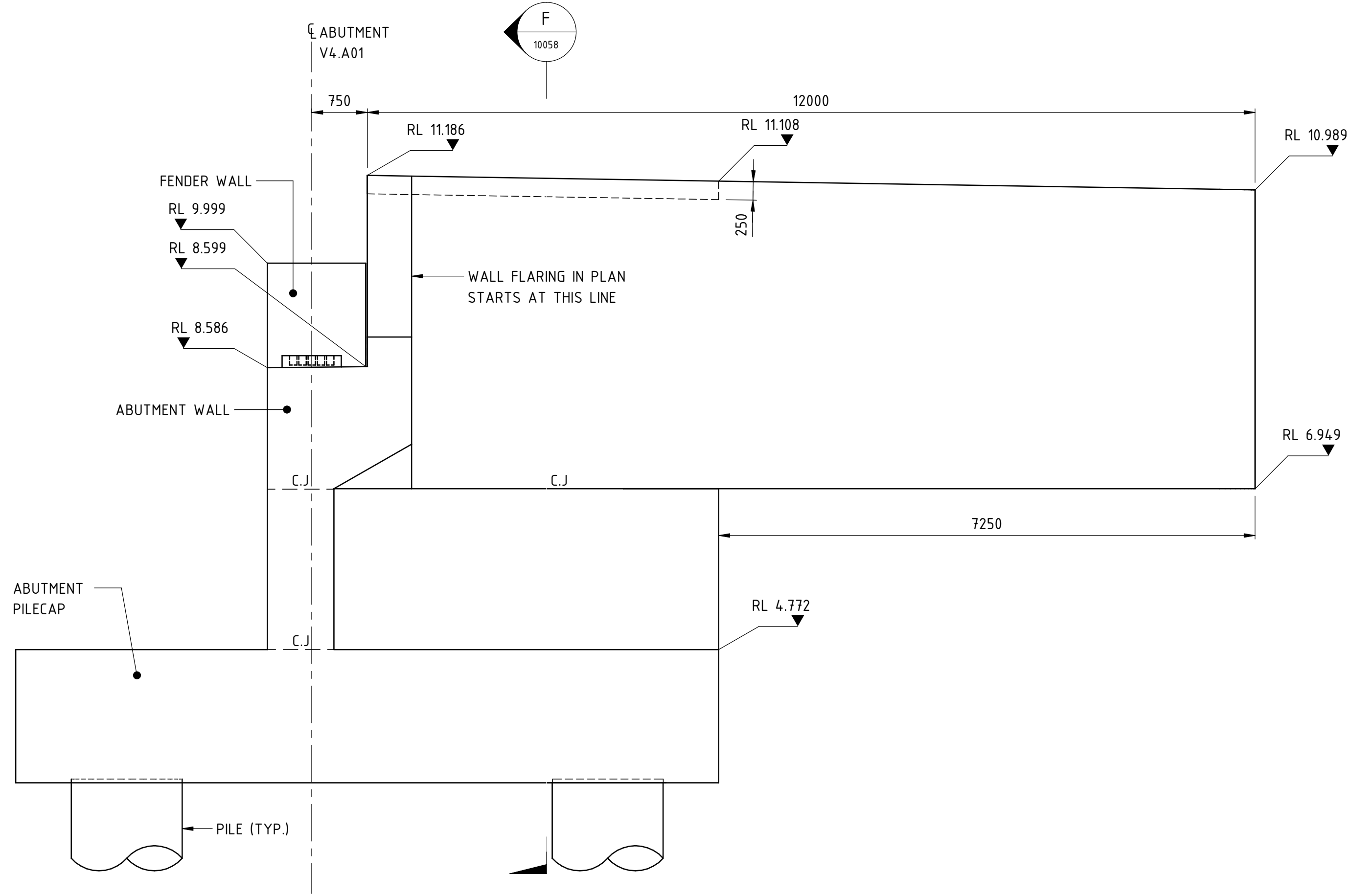
Government of Western Australia
Public Transport Authority

VICTORIA PARK TO CANNING
LEVEL CROSSING REMOVAL

ARMADALE LINE - CIVIL STRUCTURES
BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS
ABUTMENT CONCRETE LAYOUT AND DETAILS - SHEET 1
PTA Drawing No: **04-S-72-10057** Rev: **A**

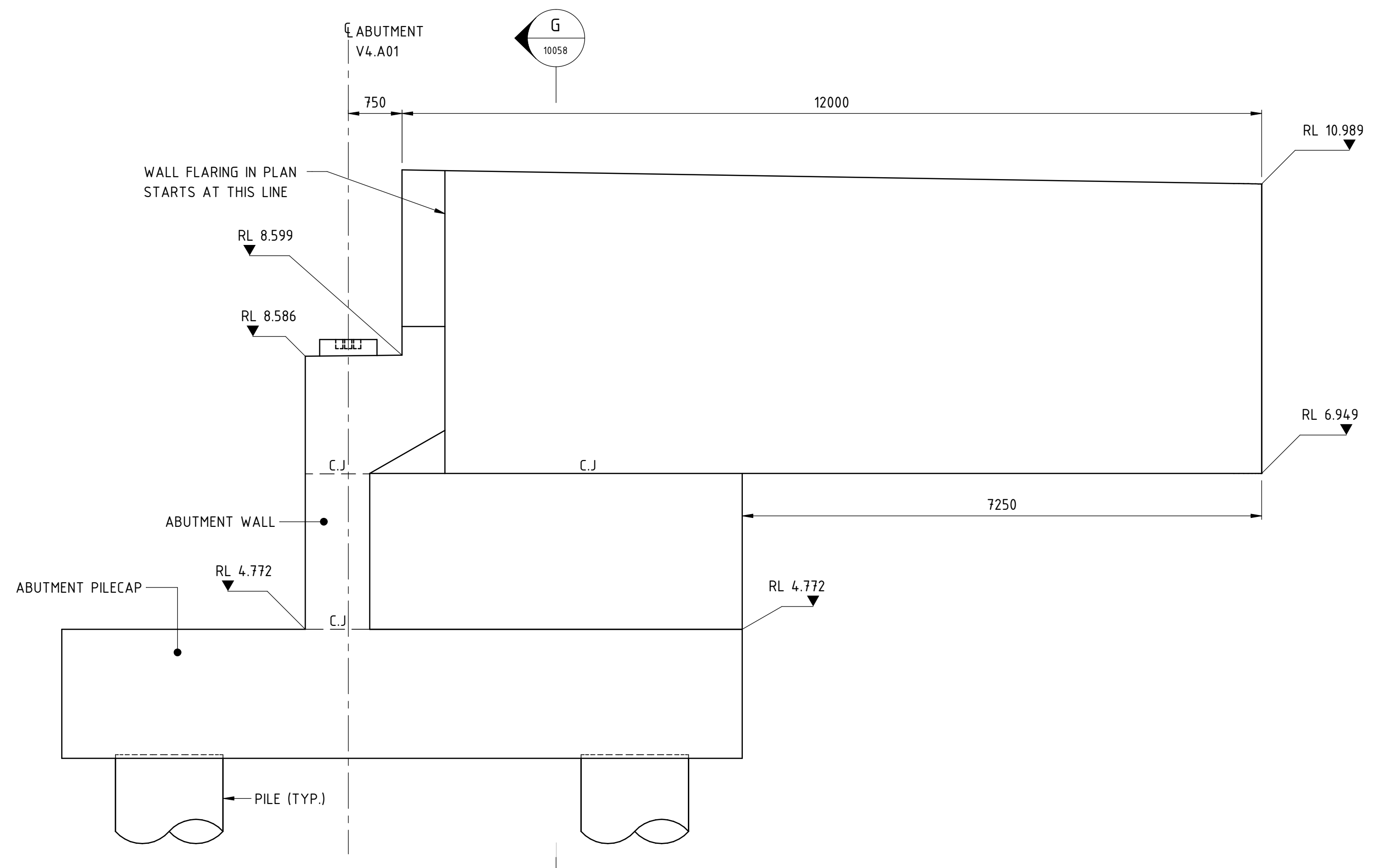
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A1			Contractor No: LXR-P4-Z5-BK-ST-RW-DWG-00057			

VALIDATION	REFERENCES	SCALE	DESIGNED
SIGNATURE		As indicated	M.SOOI
DATE		DATUM	DRAWN
DATE APPROVED		HORIZONTAL: PCG20	G.WIN
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			A.ISAAC
			APPROVED
			B.MARSHALL
			DATE
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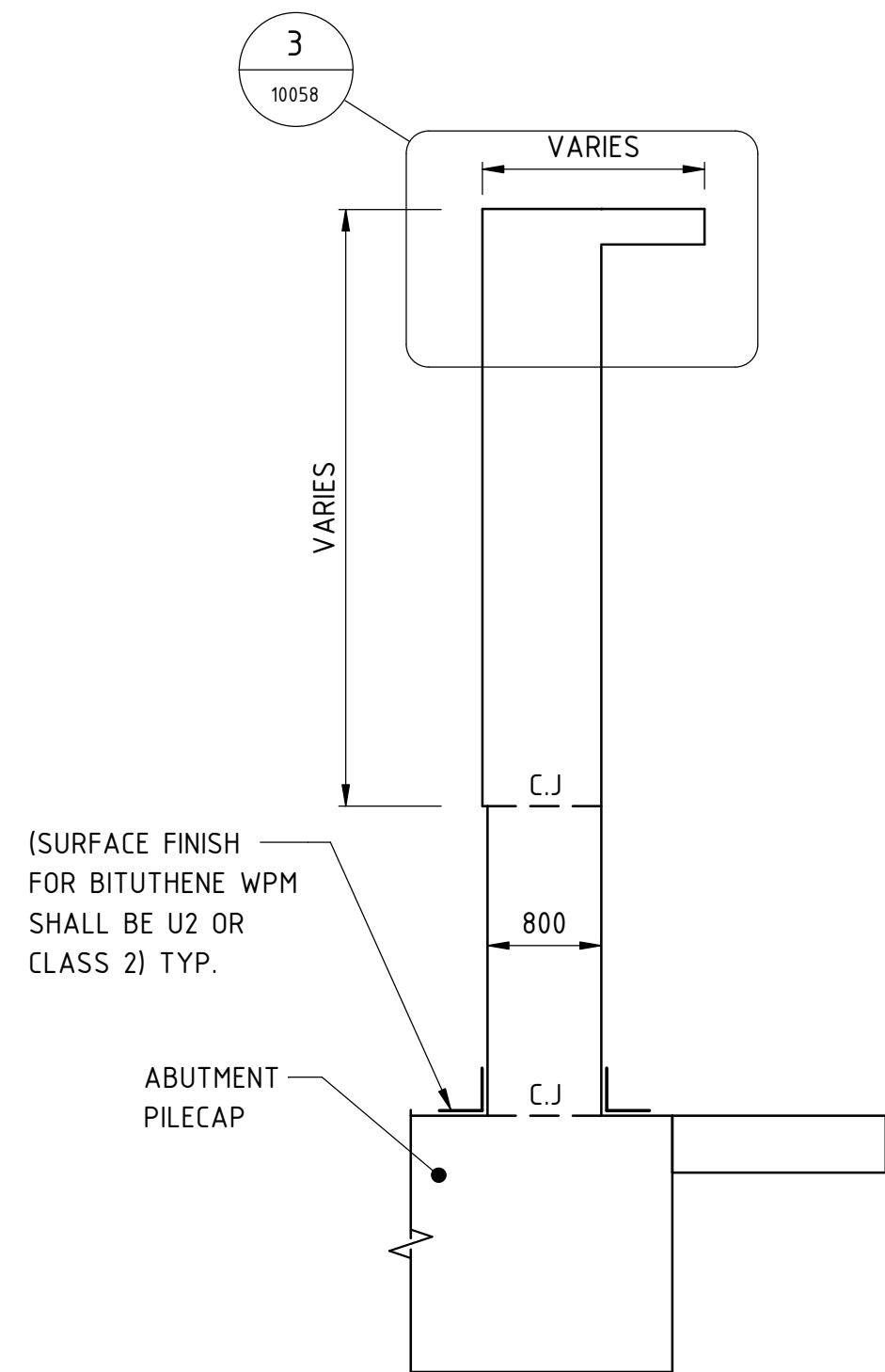
DEFLECTION WALL V4.A01-DW1

ELEVATION C
SCALE 1 : 50

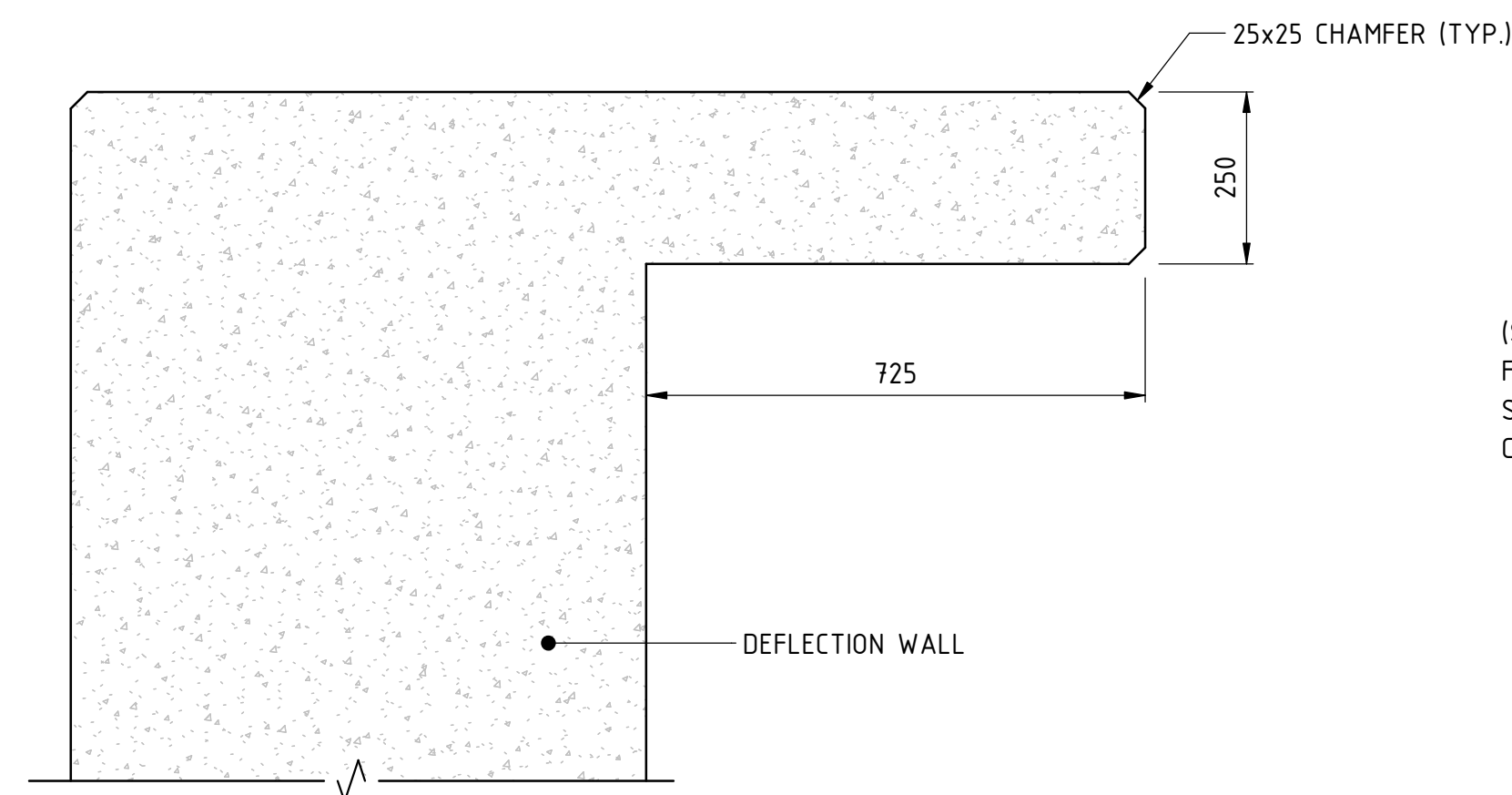


DEFLECTION WALL V4.A01-DW2

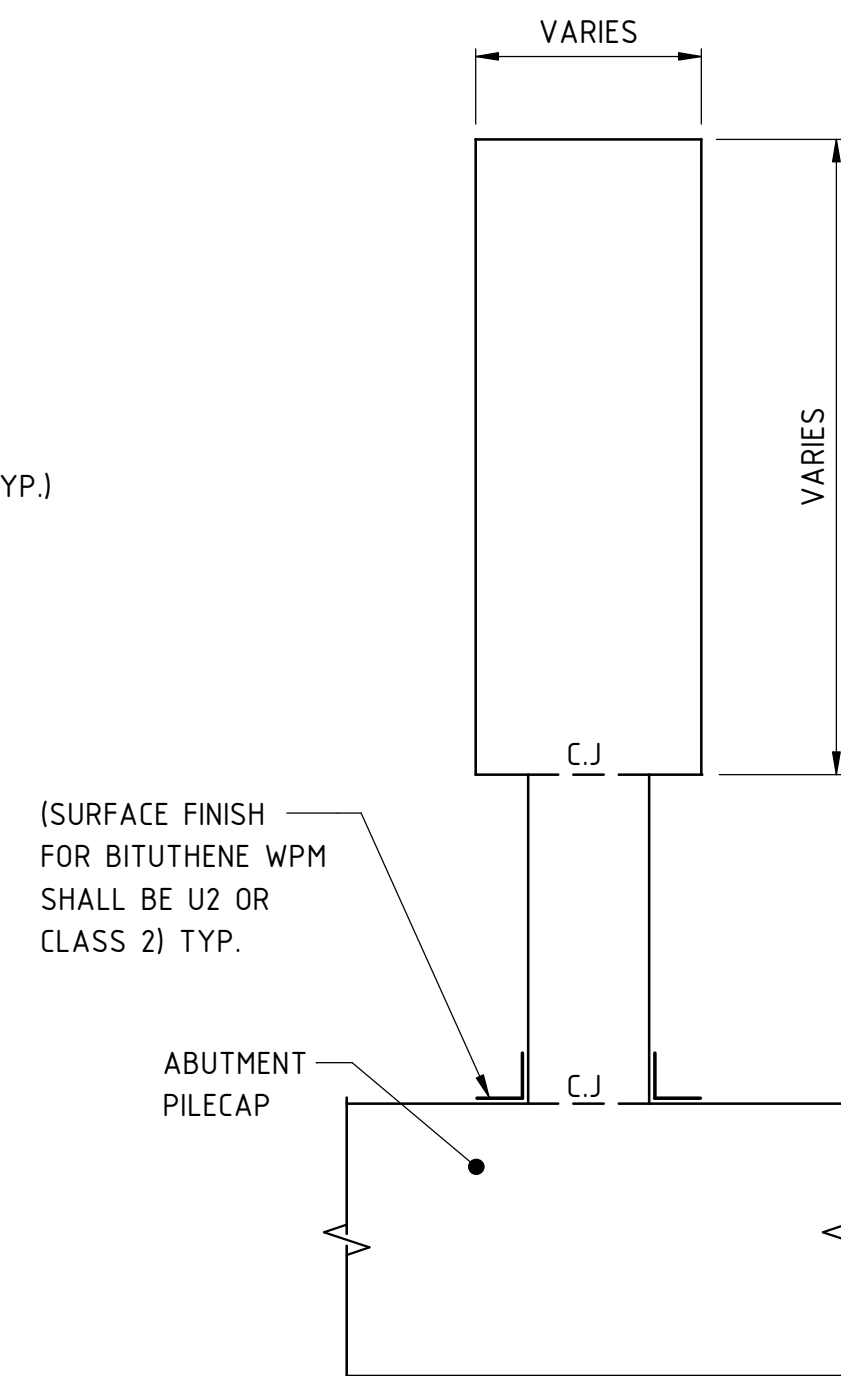
ELEVATION D
SCALE 1 : 50



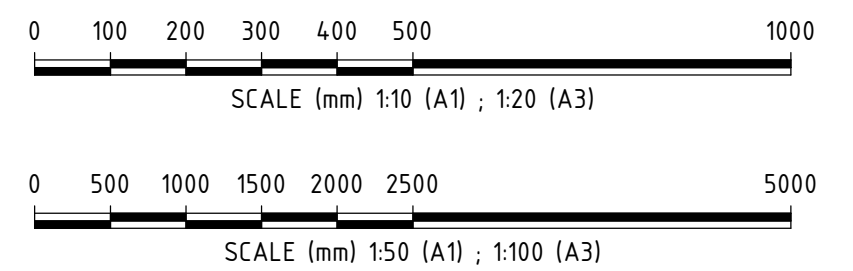
SECTION F
SCALE 1 : 50



DETAIL 3
SCALE 1 : 10



SECTION G
SCALE 1 : 50



REFERENCE DESIGN

Government of Western Australia
Public Transport Authority

VICTORIA PARK TO CANNING
LEVEL CROSSING REMOVAL

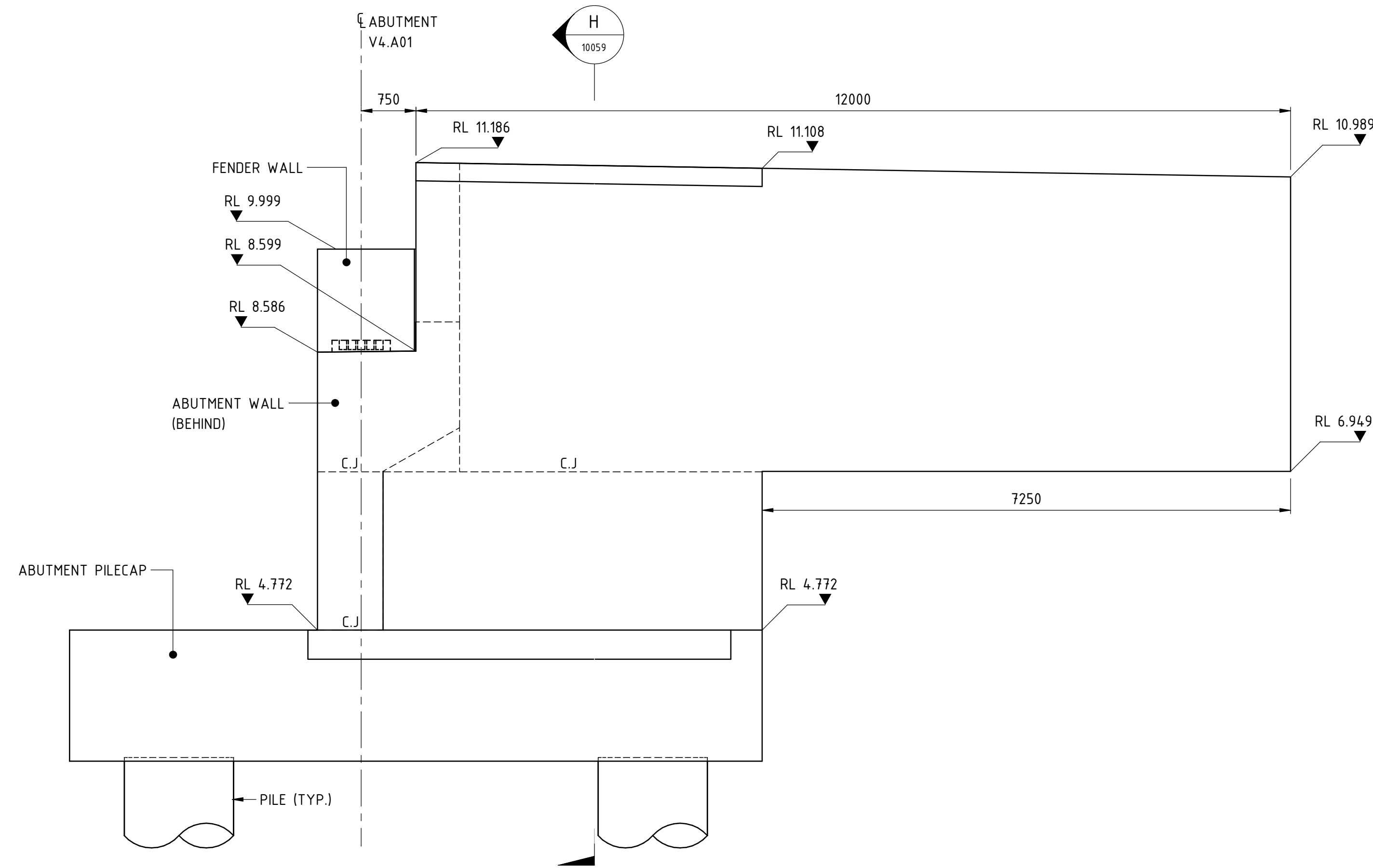
ARMADALE LINE - CIVIL STRUCTURES
BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS
ABUTMENT CONCRETE LAYOUT AND DETAILS - SHEET 2

PTA Drawing No: **04-S-72-10058** Rev: **A**

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AT ORIGINAL PLOT SIZE			<small>This document must not be copied without PTA's written permission, and the contents thereof must not be imparted to a third party nor be used for any unauthorised purpose.</small>			

Contractor No: LXR-P4-Z5-BK-ST-RW-DWG-00058

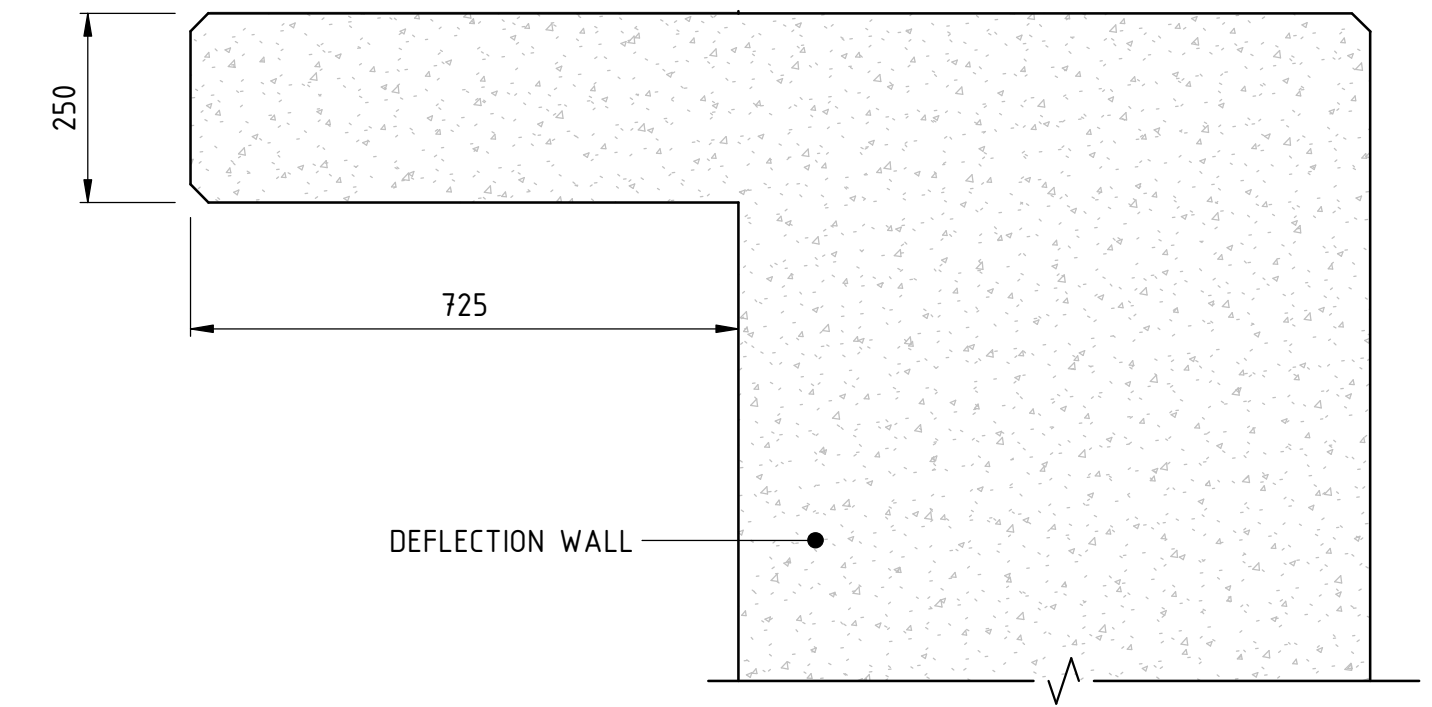
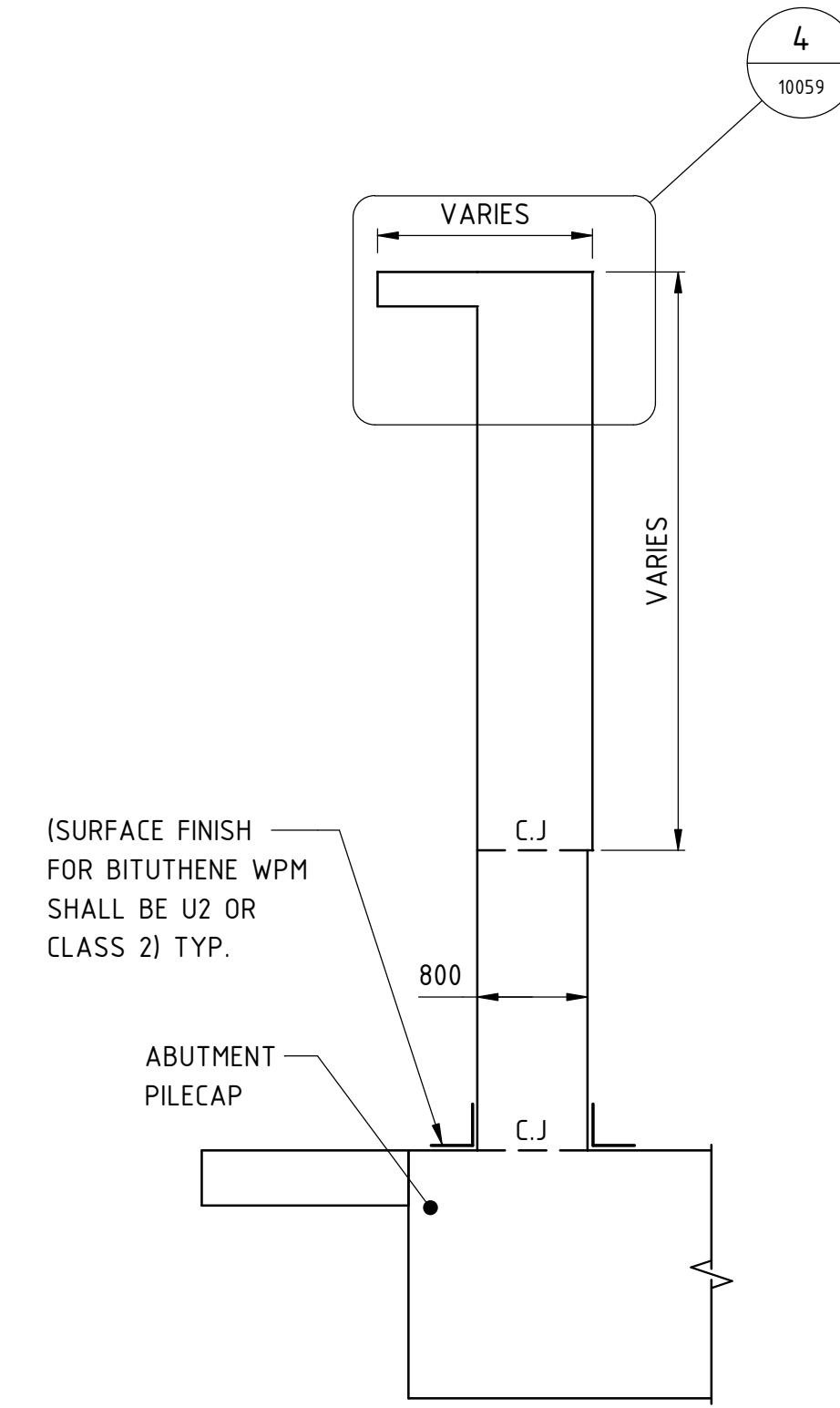
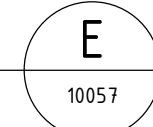
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DATE		DATUM	DRAWN G.WIN
DATE APPROVED		HORIZONTAL: PCG20	CHECKED A.ISAAC
		VERTICAL: AHD71	APPROVED B.MARSHALL
			DATE -



DEFLECTION WALL V4.A01-DW3

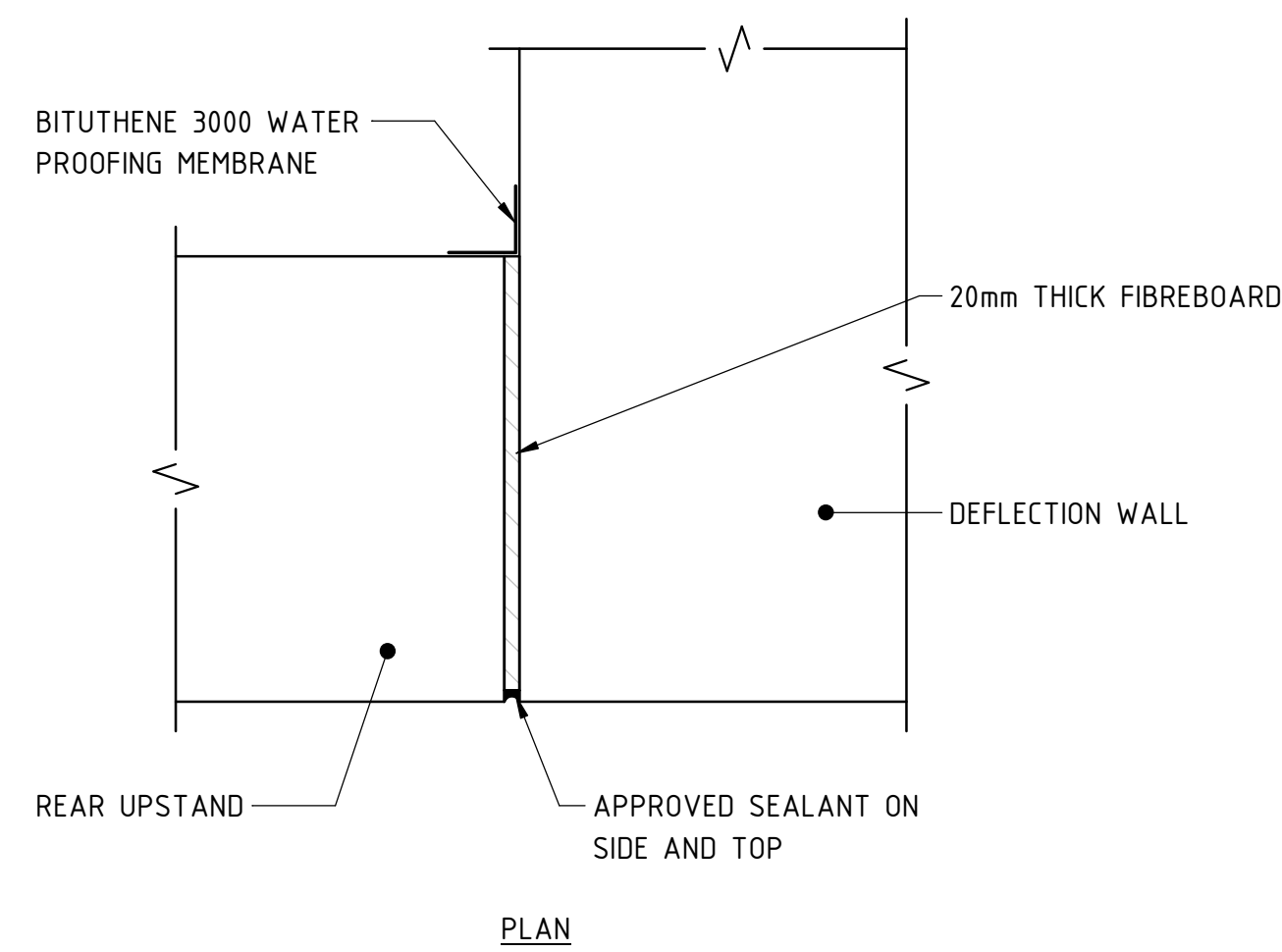
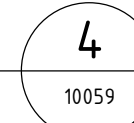
ELEVATION E

SCALE 1 : 50



DETAIL 4

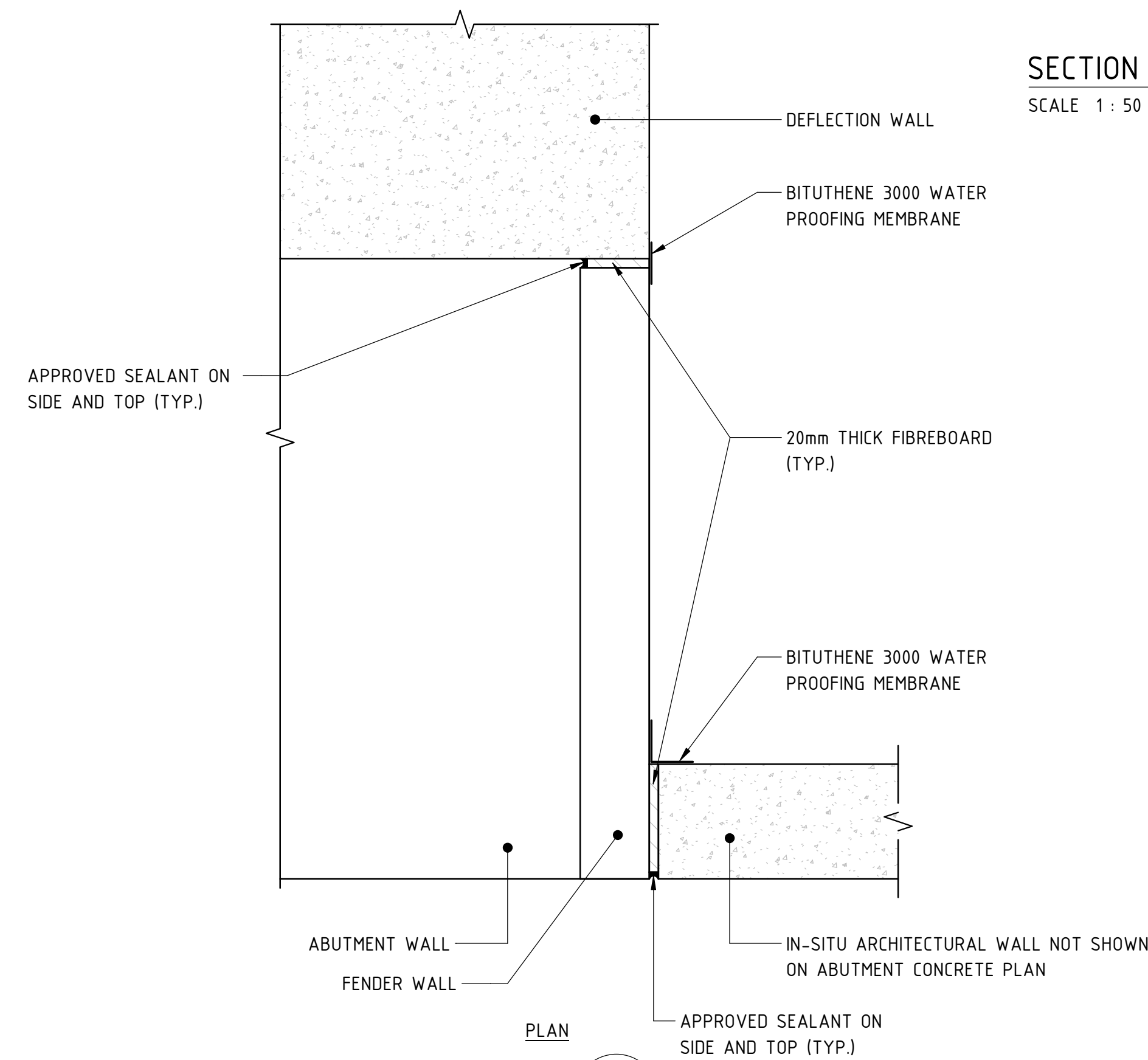
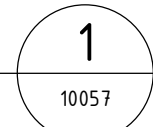
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PLAN

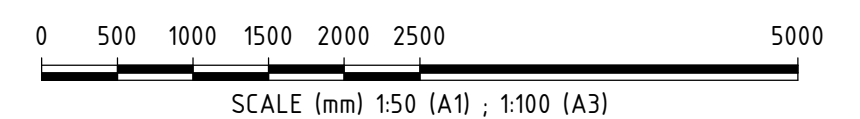
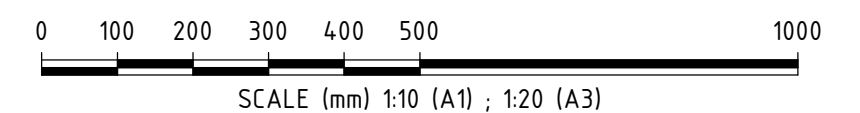
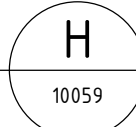
DETAIL 1

SCALE 1 : 10



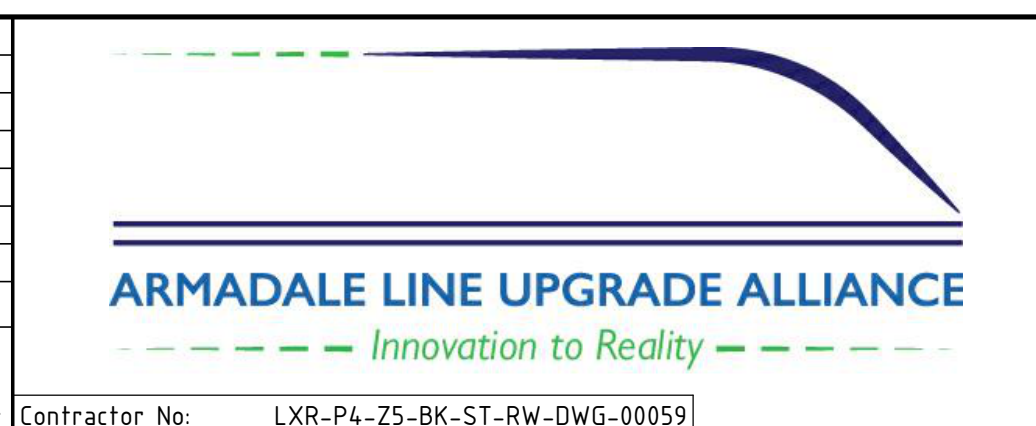
SECTION H

SCALE 1 : 50



REFERENCE DESIGN

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AMENDMENT			DSN	DRN	CHK	APP
ORIG SIZE	AT ORIGINAL PLOT SIZE		This document must not be copied without PTA's written permission, and the contents thereof must not be imparted to a third party nor be used for any unauthorised purpose.			
A1			Contractor No: LXR-P4-Z5-BK-ST-RW-DWG-00059			



VALIDATION
SIGNATURE
DATE
DATE APPROVED

REFERENCES

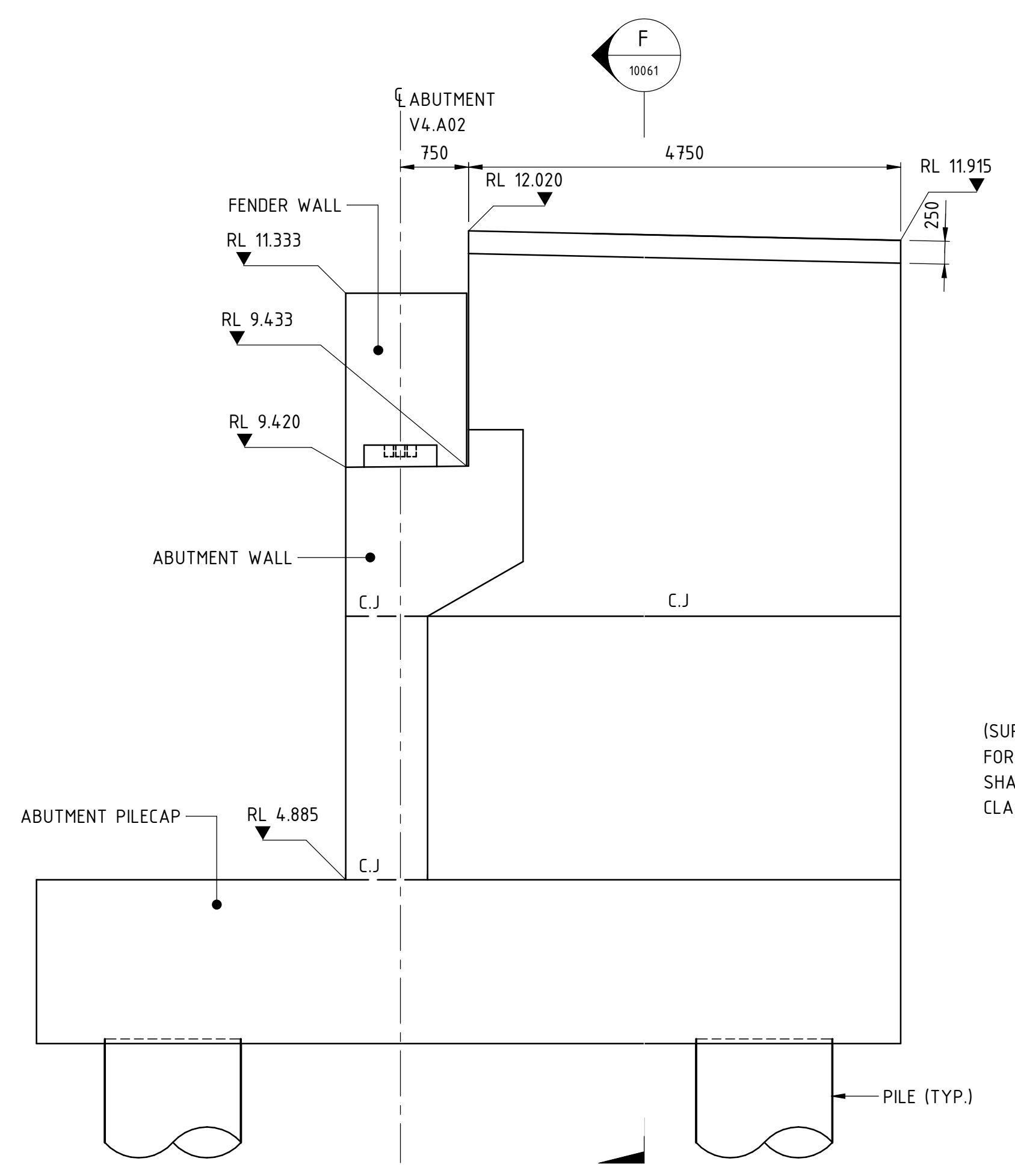
SCALE
As indicated
DATUM
HORIZONTAL: PCG20
VERTICAL: AHD71

DESIGNED M.SOOI
DRAWN G.WIN
CHECKED A.ISAAC
APPROVED B.MARSHALL
DATE -

Government of Western Australia
Public Transport Authority

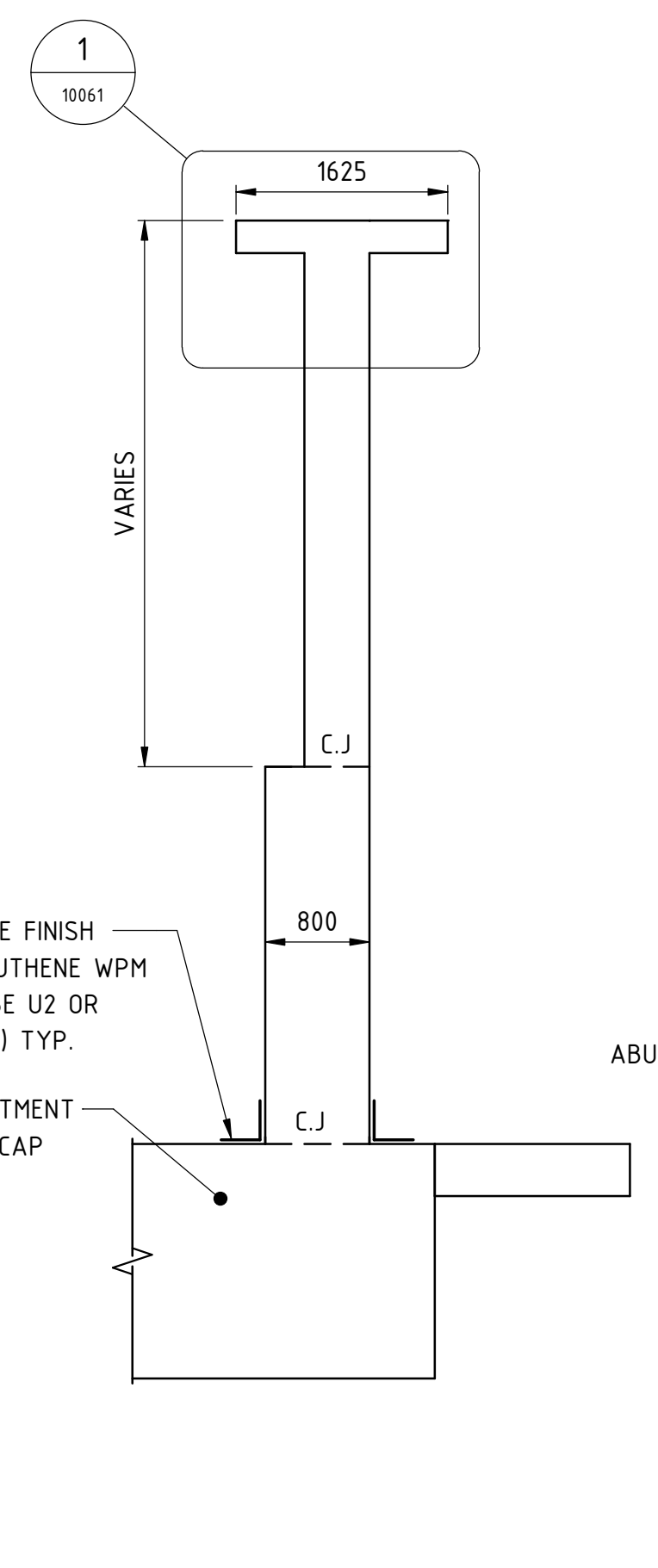
VICTORIA PARK TO CANNING
LEVEL CROSSING REMOVAL

ARMADALE LINE - CIVIL STRUCTURES
BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS
ABUTMENT CONCRETE LAYOUT AND DETAILS - SHEET 3
PTA Drawing No: 04-S-72-10059 Rev: A

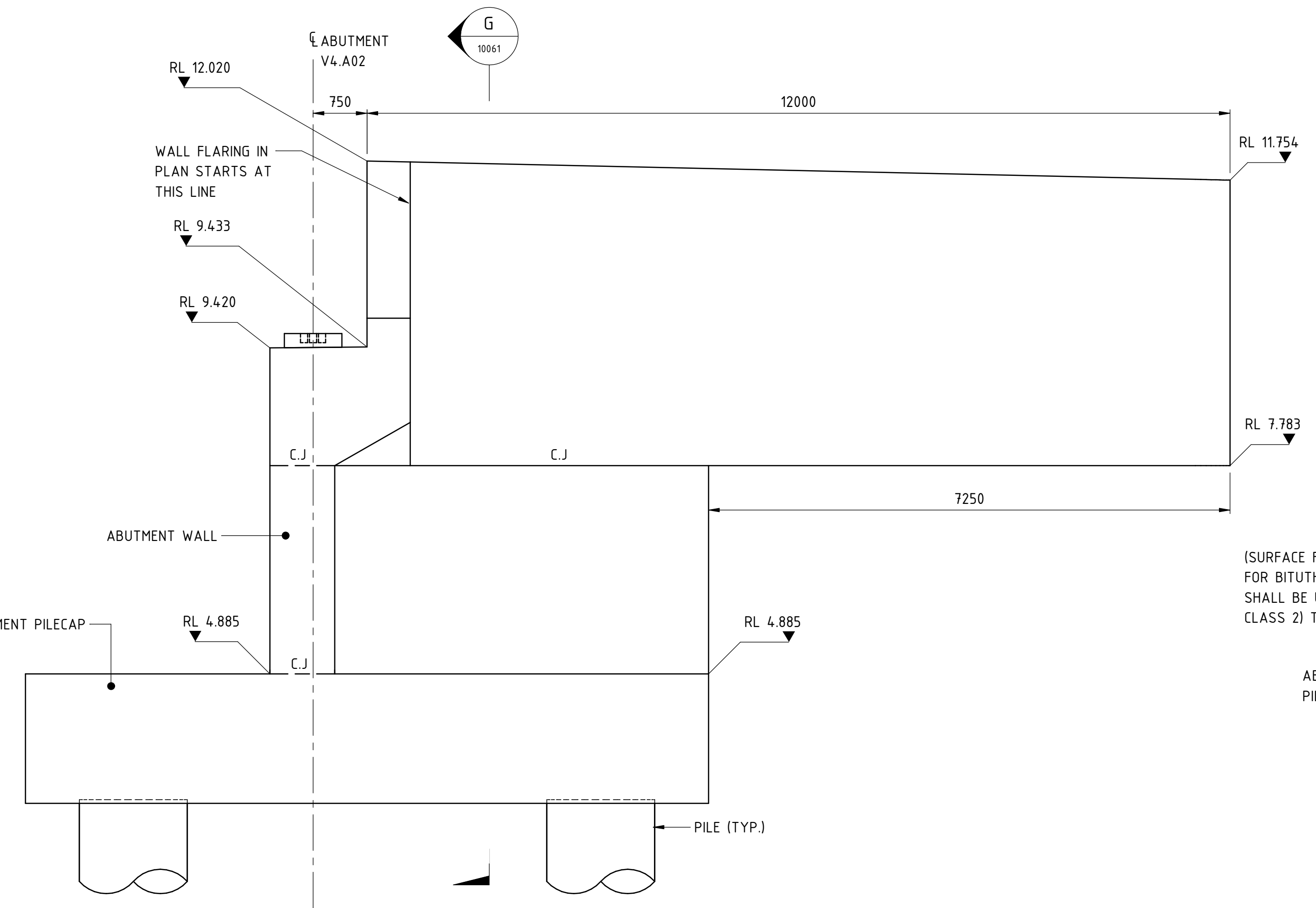


DEFLECTION WALL V4.A02-DW1

ELEVATION C
SCALE 1 : 50

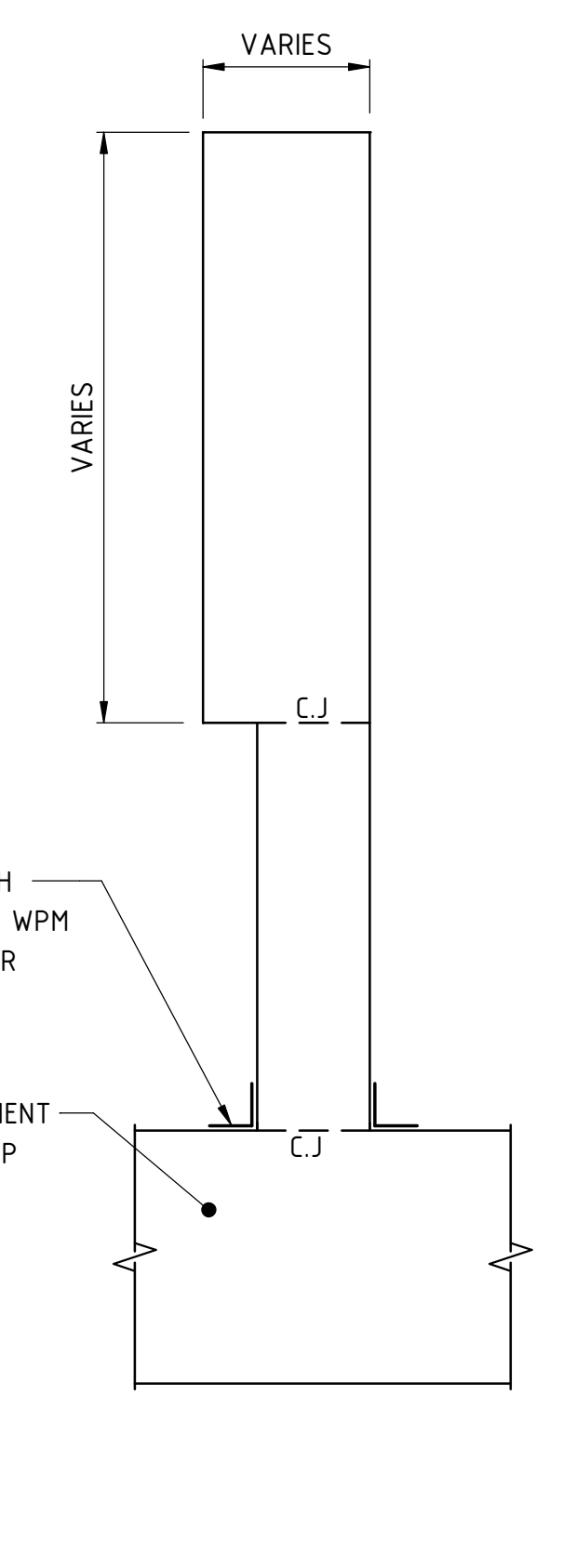


SECTION F
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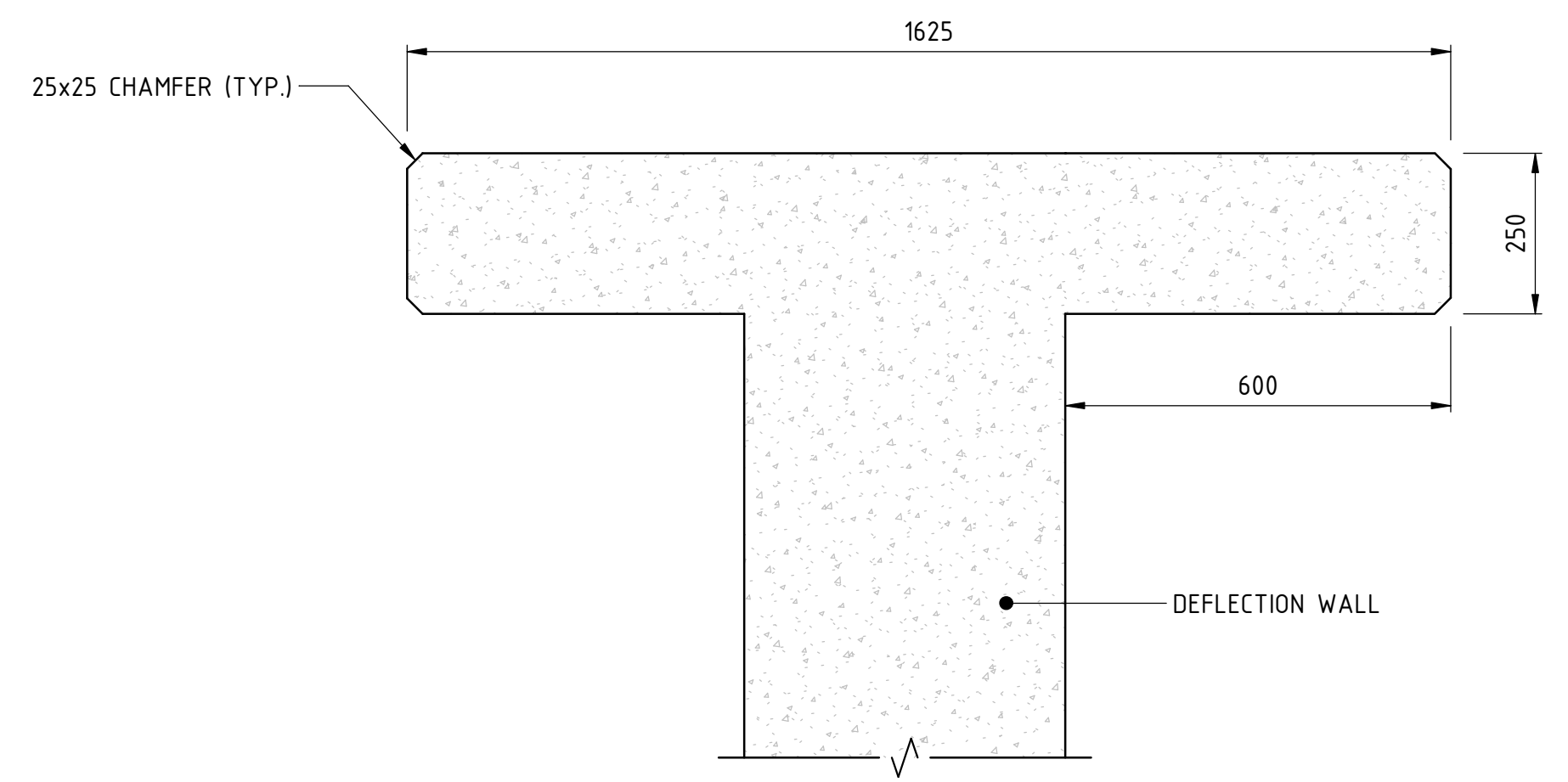


DEFLECTION WALL V4.A02-DW2

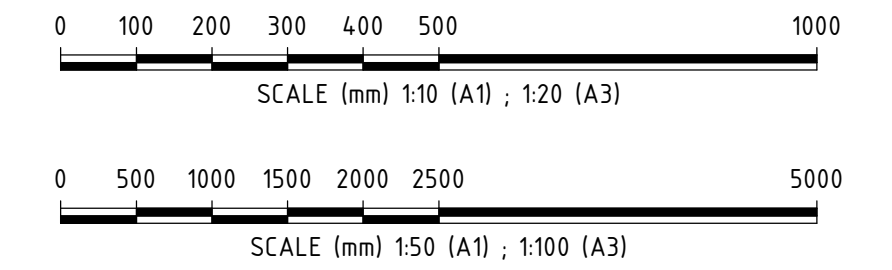
ELEVATION D
SCALE 1 : 50



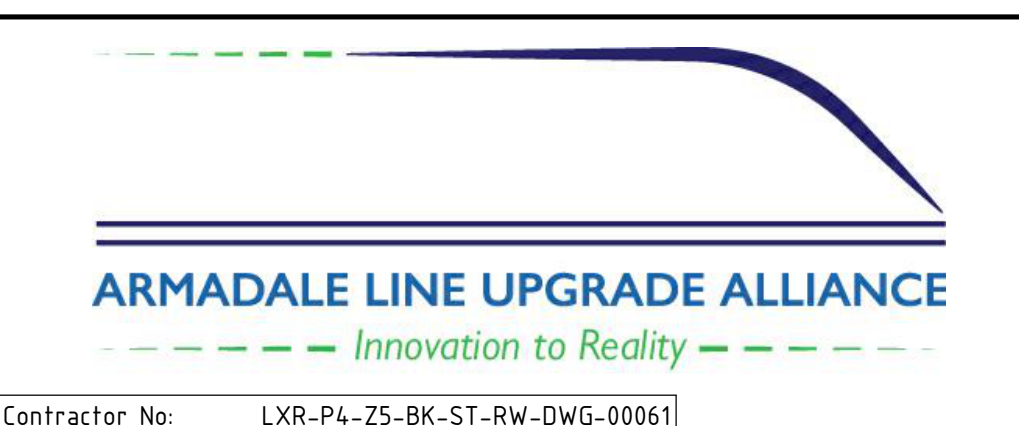
SECTION G
SCALE 1 : 50



DETAIL 1
SCALE 1 : 10



REV	DATE	ISSUED FOR REFERENCE DESIGN	MS	DW	AI	BM
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ORIG SIZE	AMENDMENT		DSN	DRN	CHK	APP
A1	AT ORIGINAL PLOT SIZE					



VALIDATION
SIGNATURE
DATE
DATE APPROVED

REFERENCES
SCALE
As indicated
DATUM
HORIZONTAL: PCG20
VERTICAL: AHD71

DESIGNED M.SOOI
DRAWN G.WIN
CHECKED A.ISAAC
APPROVED B.MARSHALL
DATE -

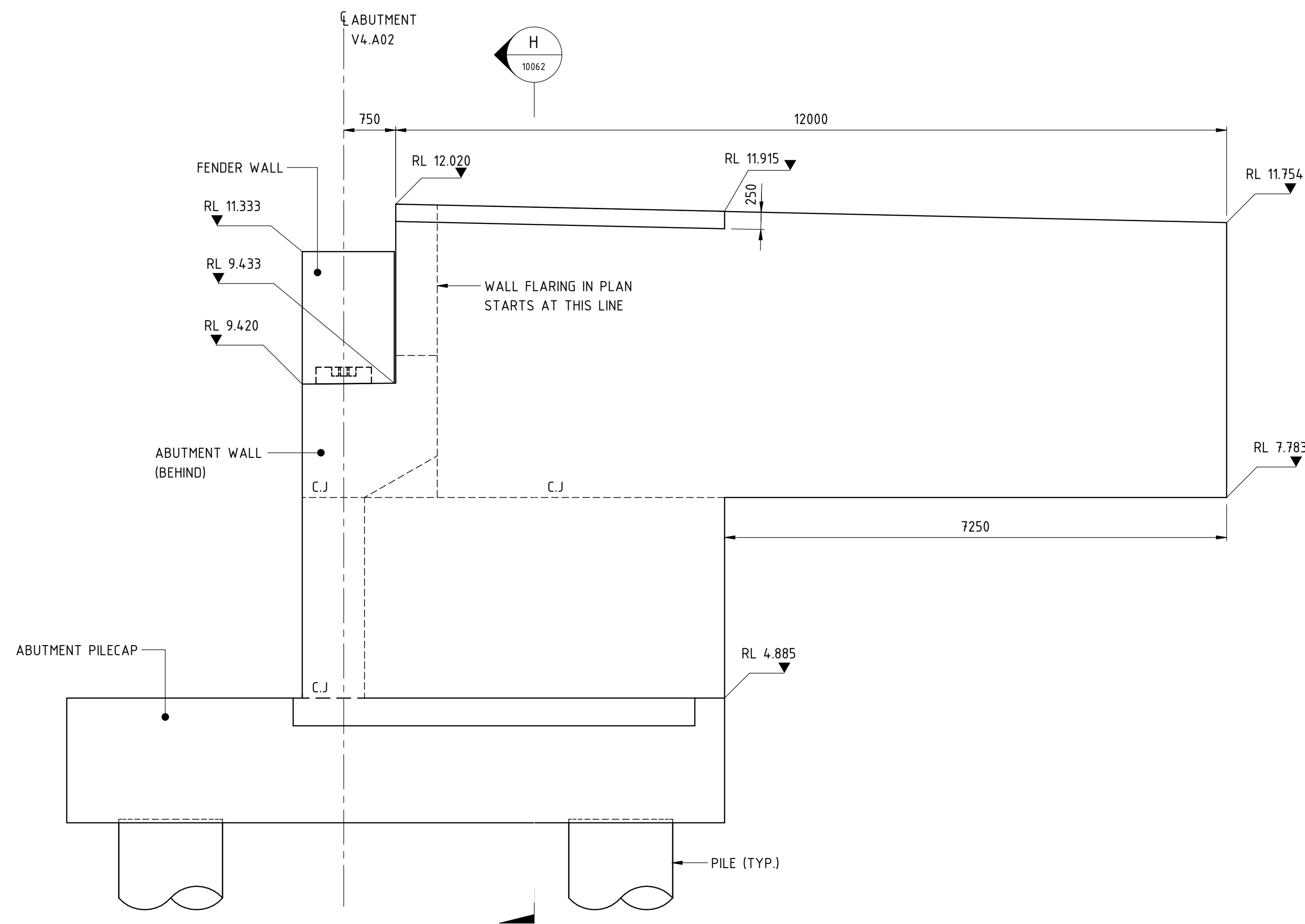
REFERENCE DESIGN

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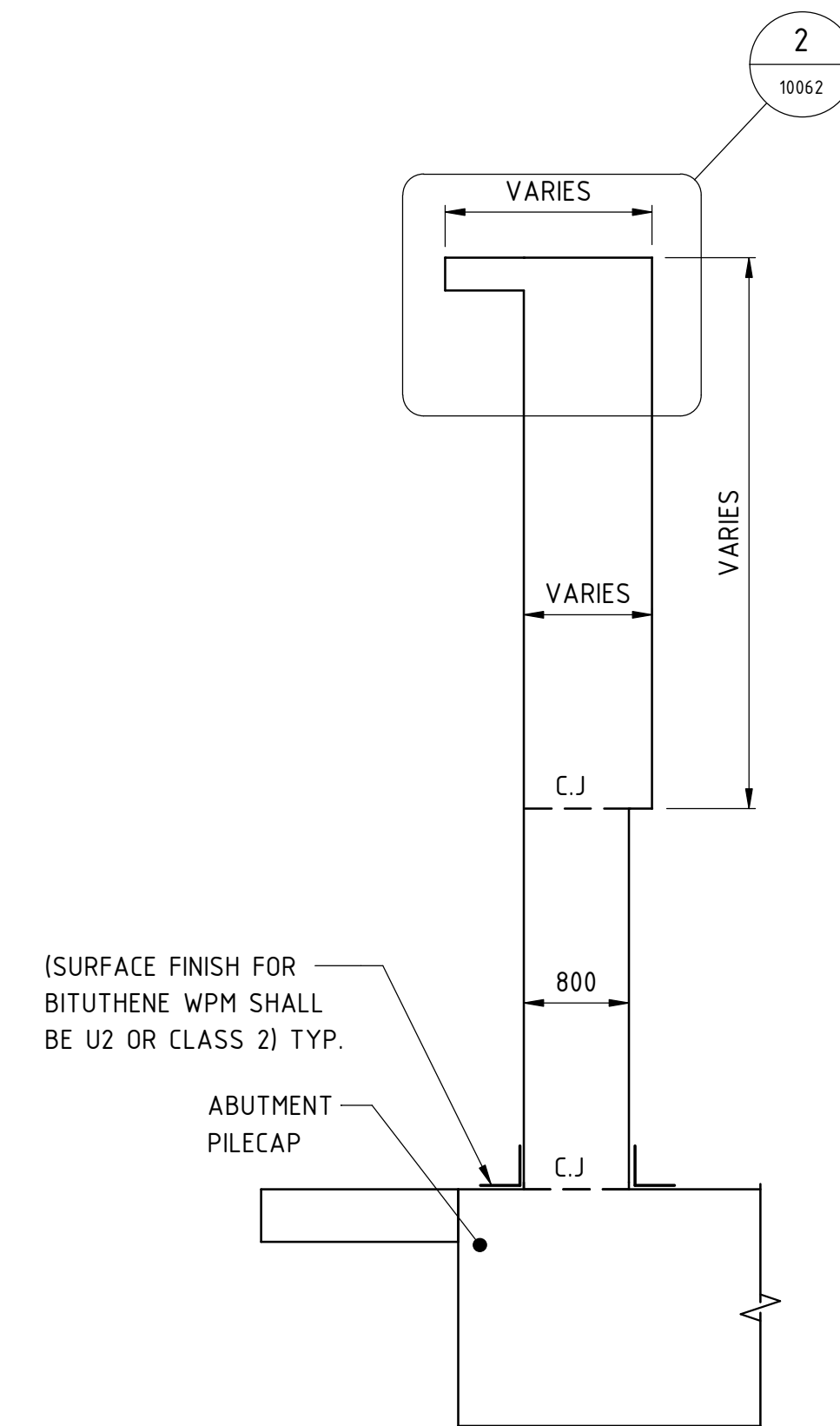
VICTORIA PARK TO CANNING
LEVEL CROSSING REMOVAL

ARMADALE LINE - CIVIL STRUCTURES
BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS
ABUTMENT CONCRETE LAYOUT AND DETAILS - SHEET 5

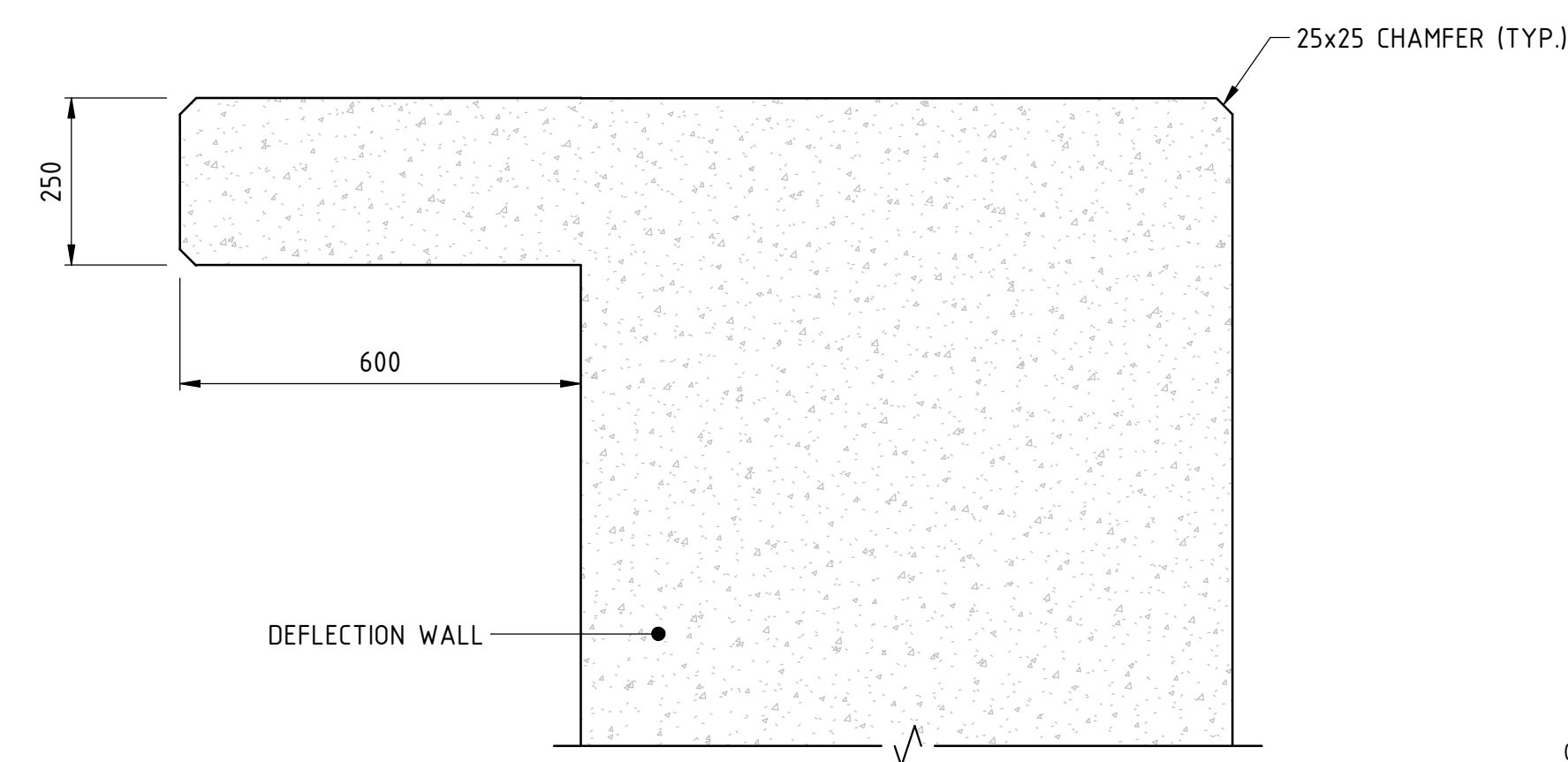
PTA Drawing No: **04-S-72-10061** Rev: **A**



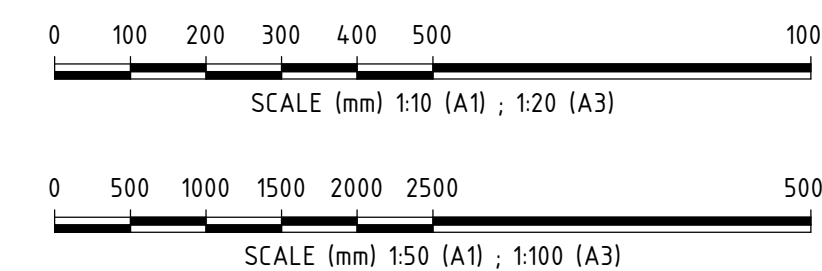
DEFLECTION WALL V4.A02-DW3
ELEVATION E
SCALE 1 : 50



SECTION H
SCALE 1 : 50



DETAIL 2
SCALE 1 : 10



REV	DATE	ISSUED FOR REFERENCE DESIGN	MS	GW	AI	BM
A	28.07.23					
ORIG SIZE		AMENDMENT				
A1		AT ORIGINAL PLOT SIZE				

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Contractor No: LXR-P4-Z5-BK-ST-RW-DWG-00062

VALIDATION
SIGNATURE
DATE
DATE APPROVED

REFERENCES
SCALE
As indicated
DATUM
HORIZONTAL: PCG20
VERTICAL: AHD71

DESIGNED	M.SOOI
DRAWN	G.WIN
CHECKED	A.ISAAC
APPROVED	B.MARSHALL
DATE	-

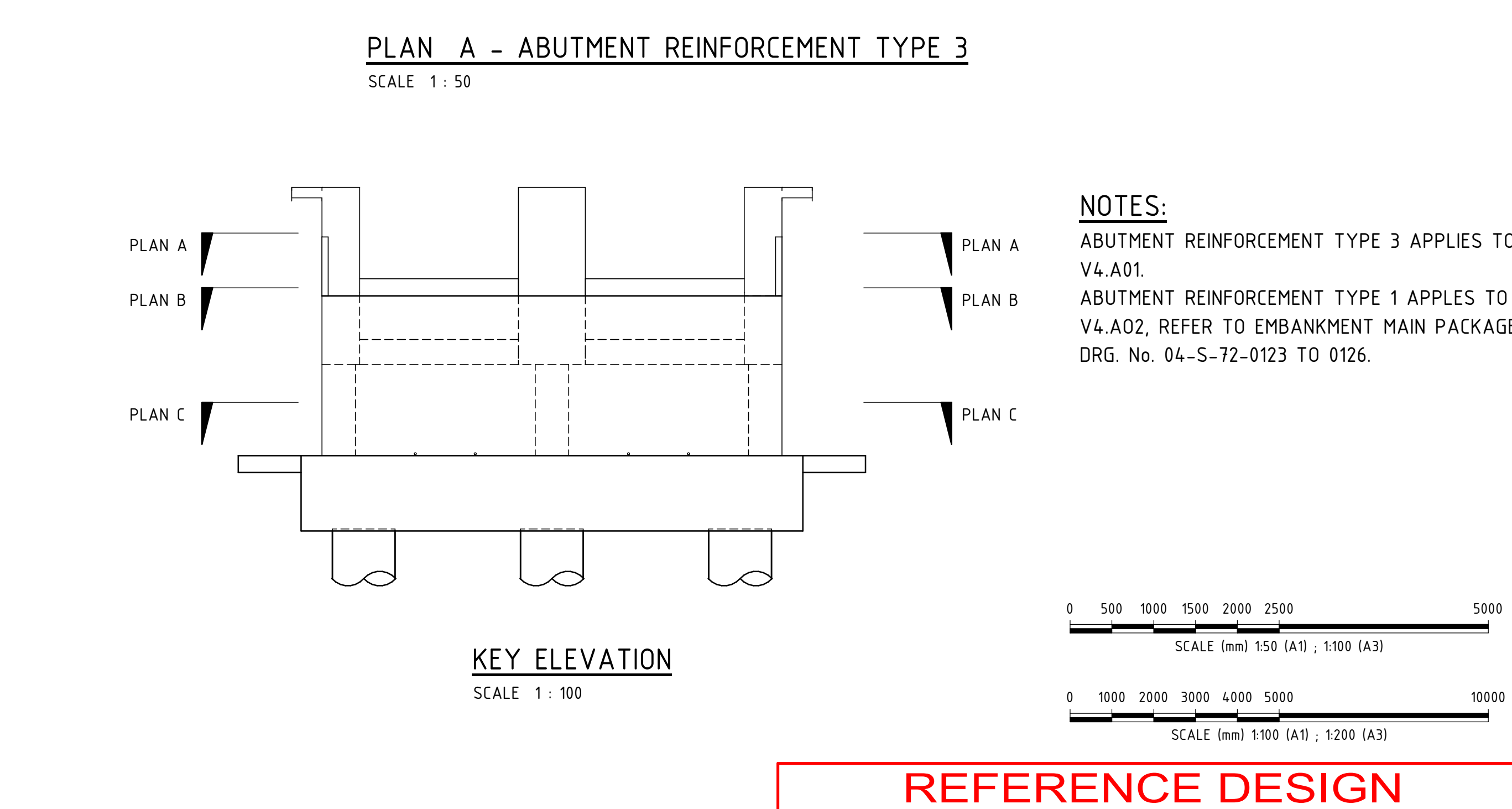
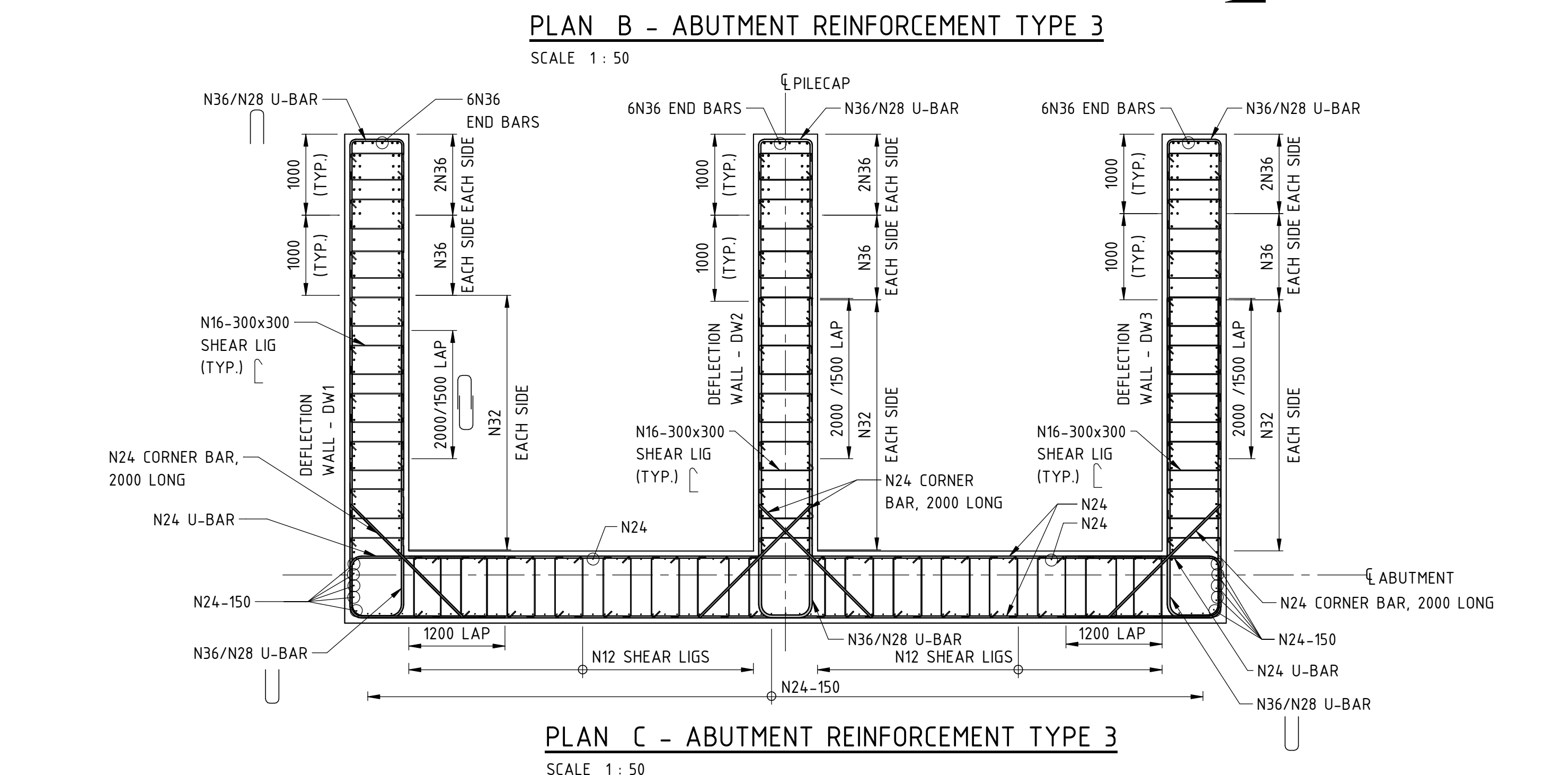
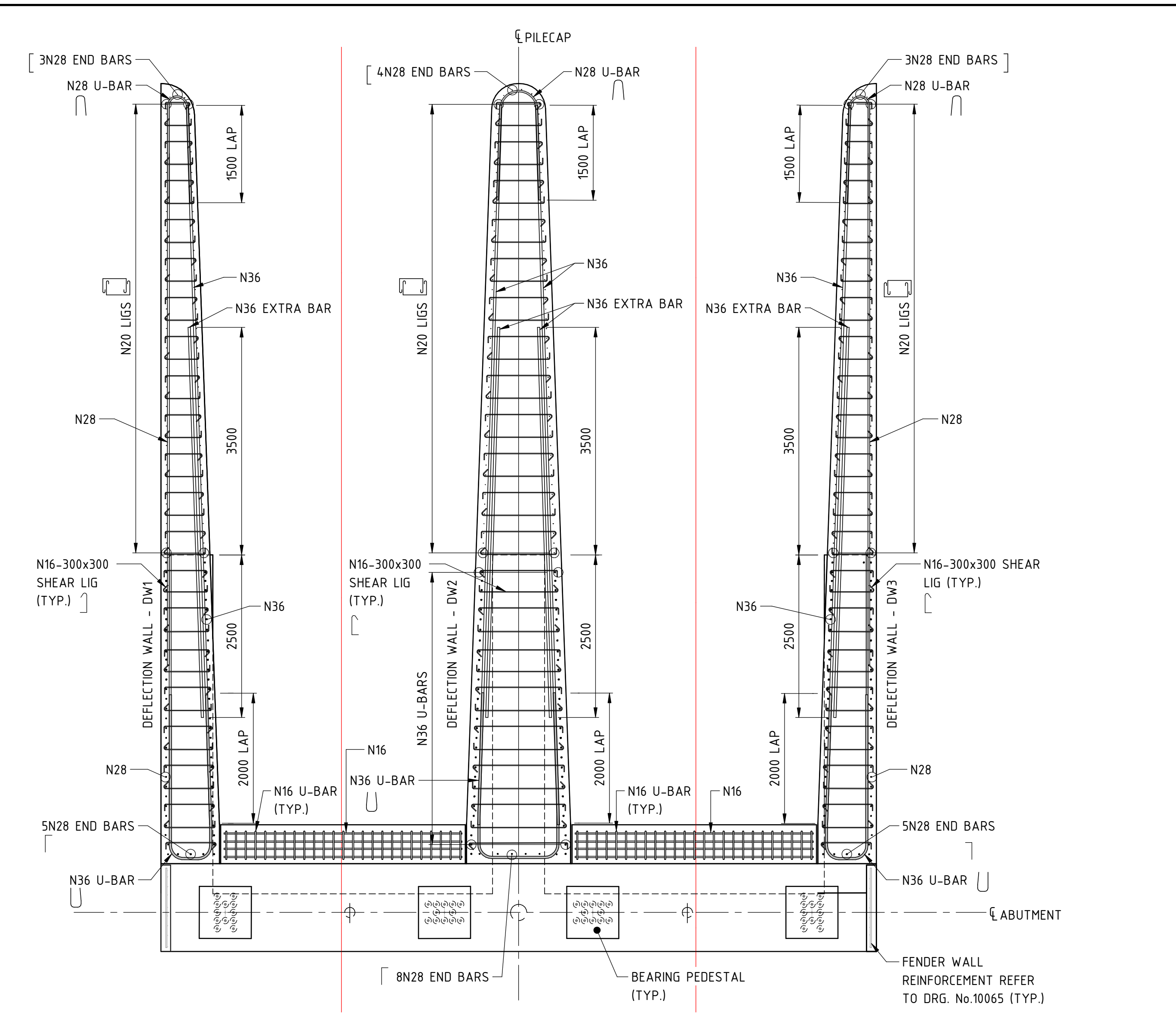
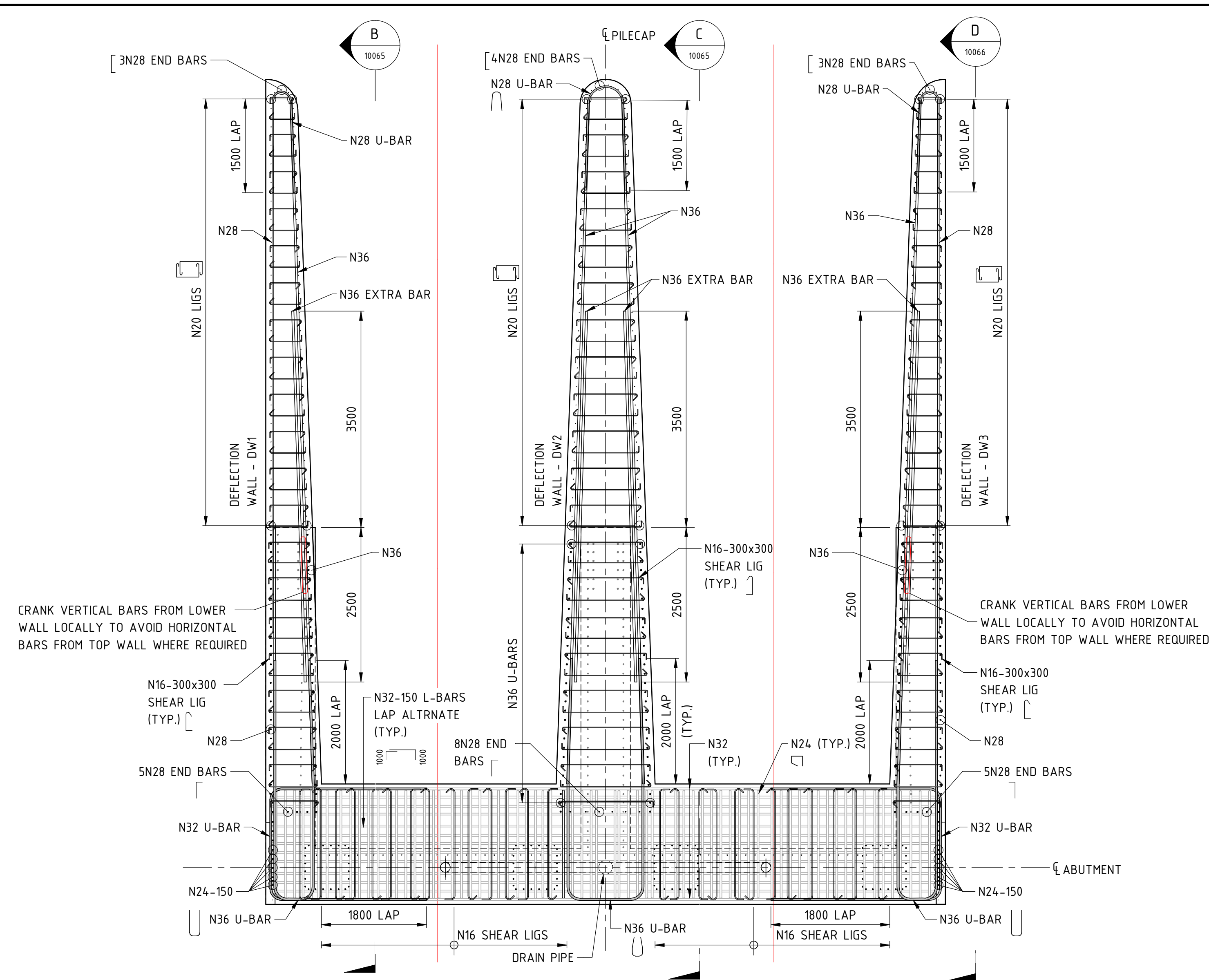
REFERENCE DESIGN

Government of Western Australia
Public Transport Authority

VICTORIA PARK TO CANNING
LEVEL CROSSING REMOVAL

ARMADALE LINE - CIVIL STRUCTURES
BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS
ABUTMENT CONCRETE LAYOUT AND DETAILS - SHEET 6

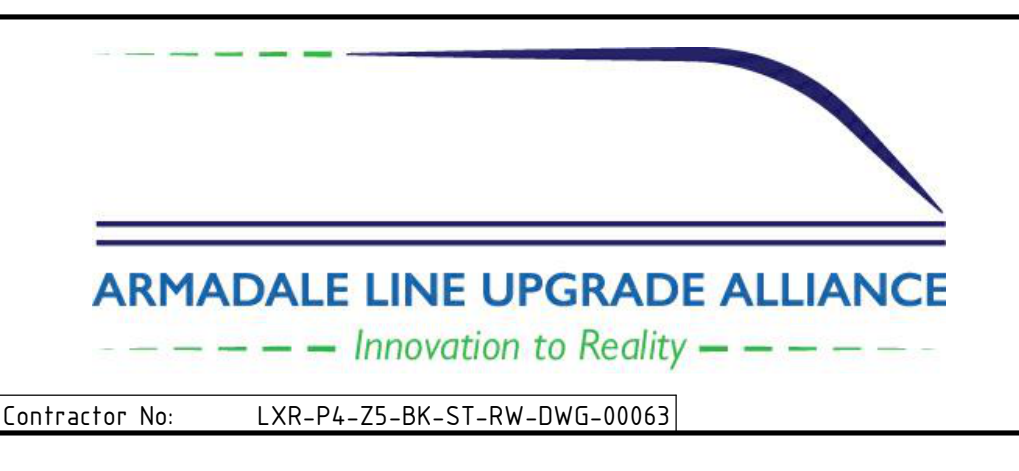
PTA Drawing No: 04-S-72-10062 | Rev: A



NOTES:
 ABUTMENT REINFORCEMENT TYPE 3 APPLIES TO V4.A01.
 ABUTMENT REINFORCEMENT TYPE 1 APPLIES TO V4.A02, REFER TO EMBANKMENT MAIN PACKAGE DRG. No. 04-S-72-0123 TO 0126.

REV	DATE	ISSUED FOR REFERENCE DESIGN	MS	GW	AI	BM
A	28.07.23					
ORIG SIZE	AMENDMENT		DSN	DRN	CHK	APP
A1	AT ORIGINAL PLOT SIZE					

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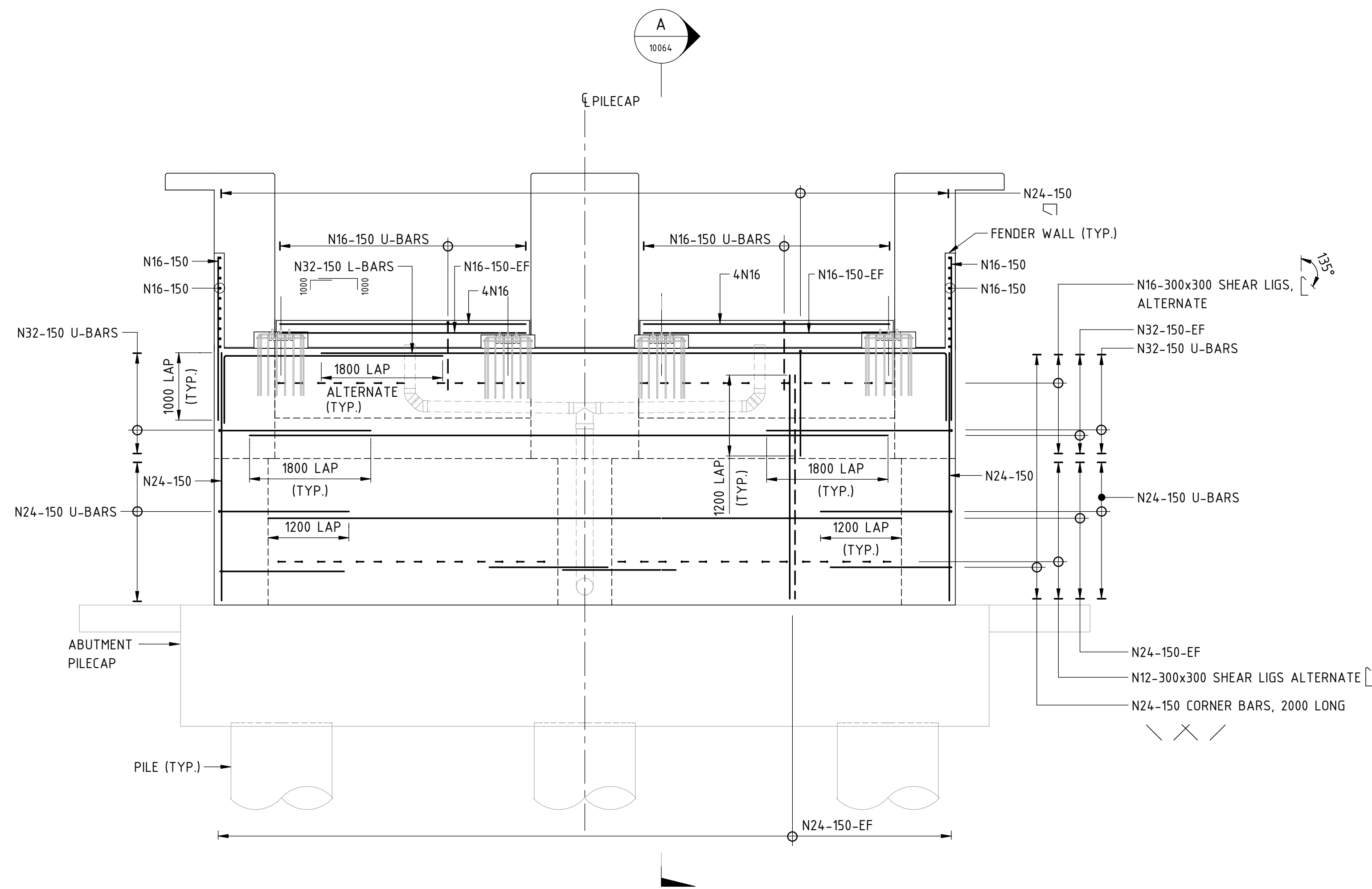
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SIGNATURE		As indicated	M.SOOI
DATE		DATUM	DRAWN
DATE APPROVED		HORIZONTAL: PCG20	G.WIN
		VERTICAL: AHD71	CHECKED
			A.ISAAC
			APPROVED
			B.MARSHALL
			DATE
			-

REFERENCE DESIGN

Government of Western Australia
Public Transport Authority

VICTORIA PARK TO CANNING
LEVEL CROSSING REMOVAL

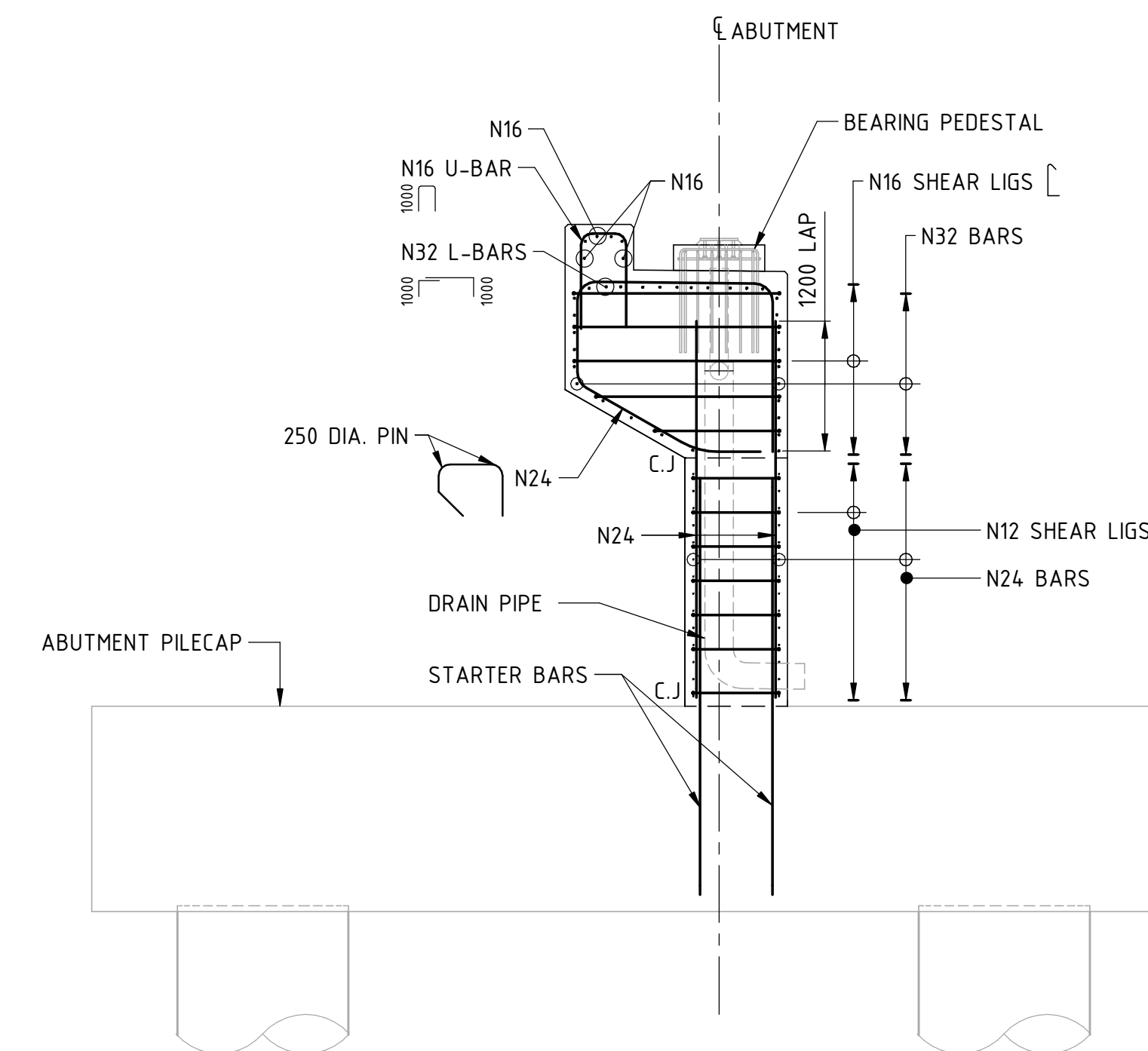
ARMADALE LINE - CIVIL STRUCTURES
BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS
ABUTMENT REINFORCEMENT DETAILS - SHEET 1
PTA Drawing No: 04-S-72-10063 Rev: A



ABUTMENT REINFORCEMENT TYPE 3

FRONT ELEVATION

SCALE 1 : 50



SECTION **A**
SCALE 1 : 50

REV	DATE	ISSUED FOR REFERENCE DESIGN	MS	GW	AI	BM
A	28.07.23	AMENDMENT	DSN	DRN	CHK	APP
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A1						

ARMADALE LINE UPGRADE ALLIANCE
Innovation to Reality

VALIDATION
SIGNATURE
DATE
DATE APPROVED

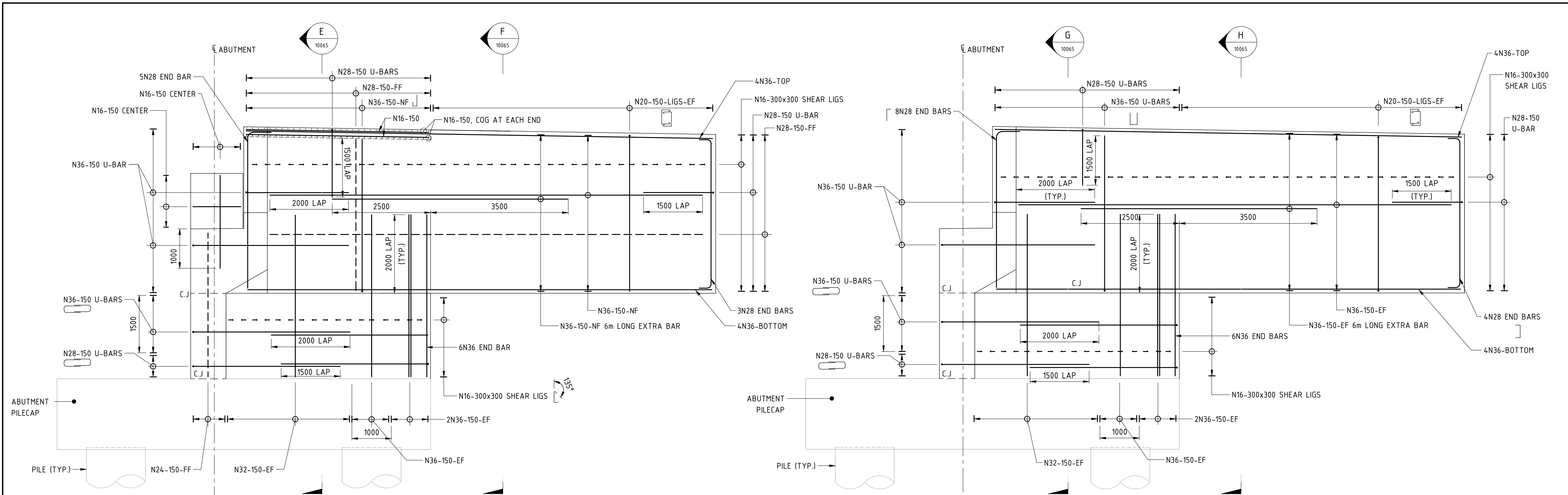
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DESIGNED M.SOOI
DRAWN G.WIN
CHECKED A.ISAAC
APPROVED B.MARSHALL
DATE -

REFERENCE DESIGN

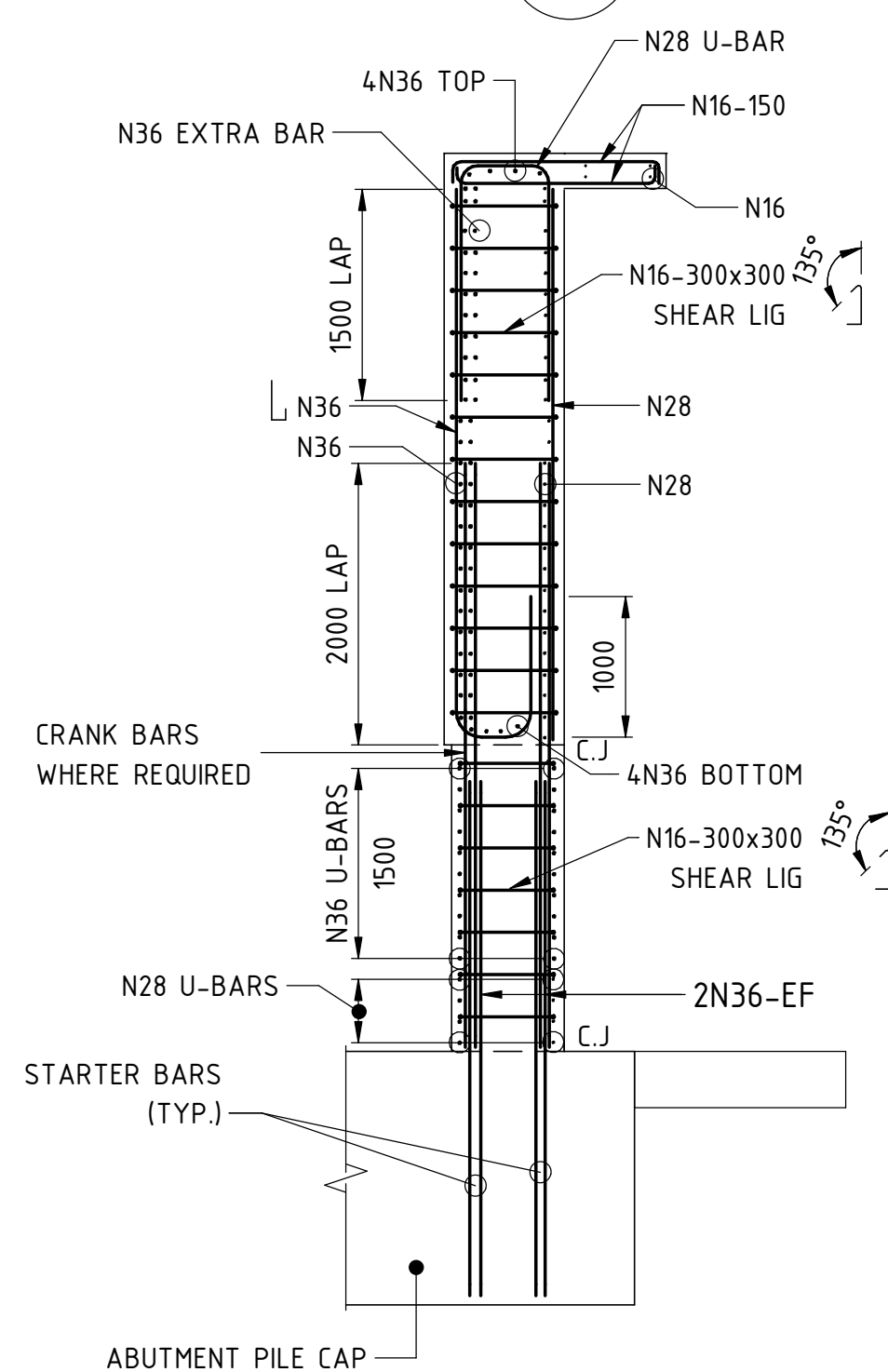
VICTORIA PARK TO CANNING
LEVEL CROSSING REMOVAL
ARMADALE LINE - CIVIL STRUCTURES
BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS
ABUTMENT REINFORCEMENT DETAILS - SHEET 2
 PTA Drawing No: **04-S-72-10064** | Rev: **A**



DEFLECTION WALL DW1

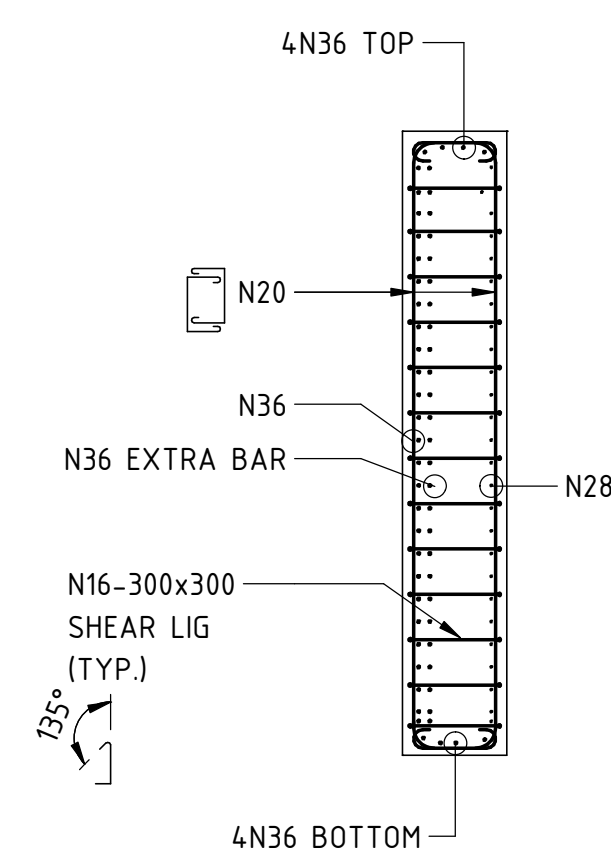
ELEVATION B

SCALE 1 : 50



SECTION E

SCALE 1 : 50



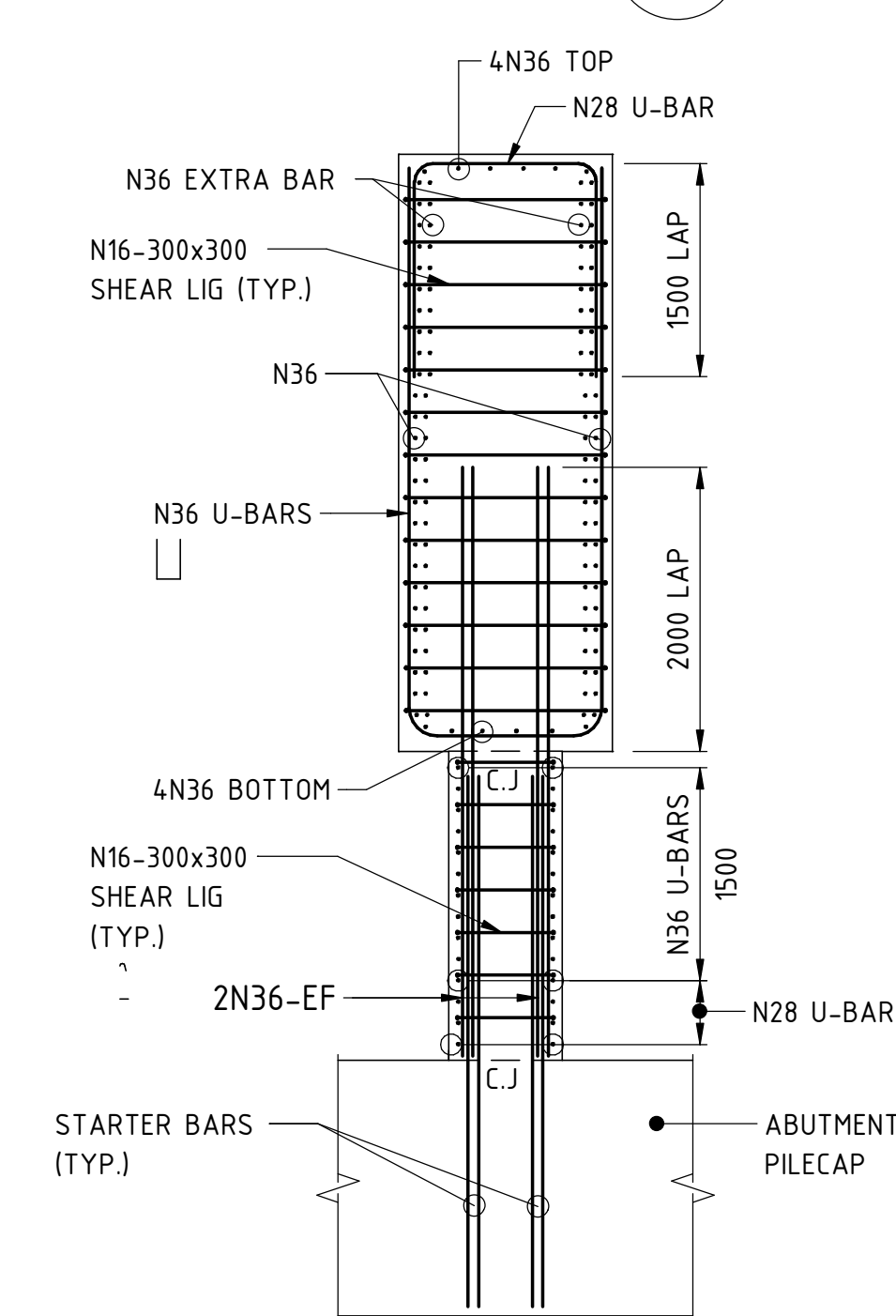
SECTION F

SCALE 1 : 50

DEFLECTION WALL DW2

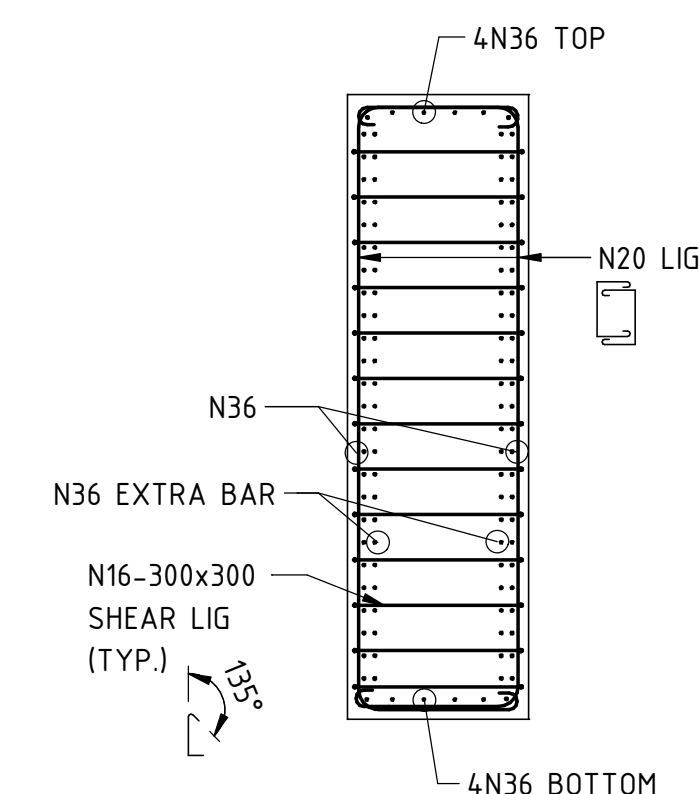
ELEVATION C

SCALE 1 : 50



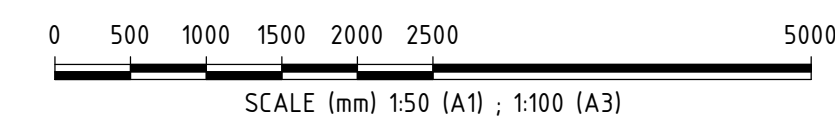
SECTION G

SCALE 1 : 50



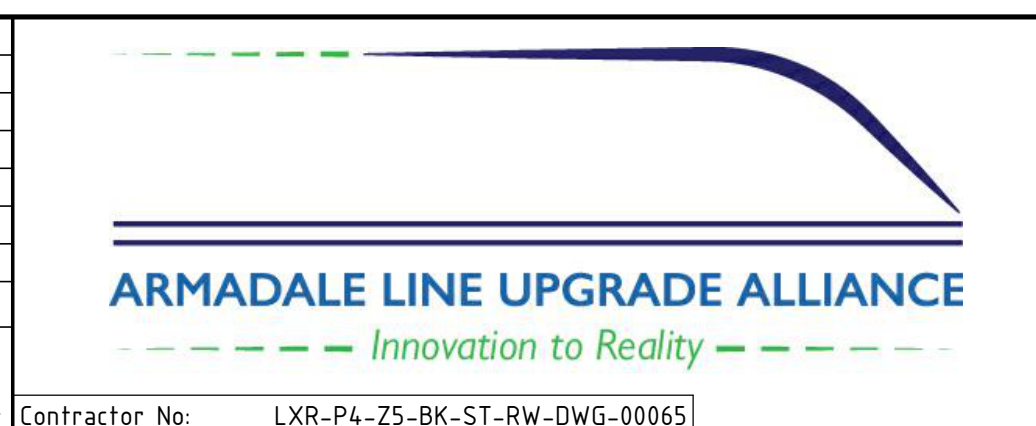
SECTION H

SCALE 1 : 50



REFERENCE DESIGN

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AMENDMENT			DSN	DRN	CHK	APP
ORIG SIZE	AT ORIGINAL PLOT SIZE		This document must not be copied without PTA's written permission, and the contents thereof must not be imparted to a third party nor be used for any unauthorised purpose.			
A1			Contractor No: LXR-P4-Z5-BK-ST-RW-DWG-00065			



VALIDATION
SIGNATURE
DATE
DATE APPROVED

REFERENCES

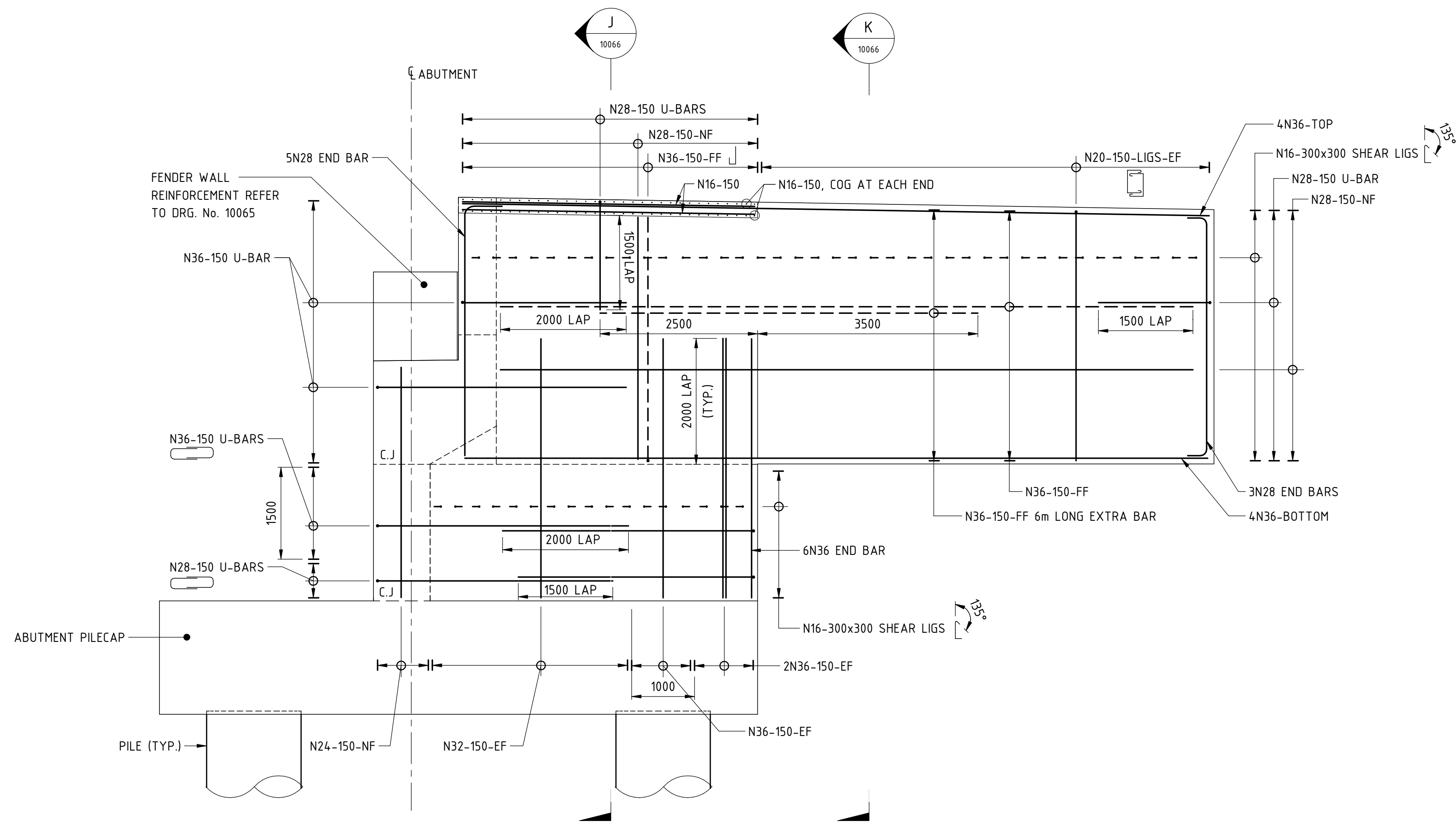
SCALE
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DATUM
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VERTICAL: AHD71

DESIGNED M.SOOI
DRAWN G.WIN
CHECKED A.ISAAC
APPROVED B.MARSHALL
DATE -

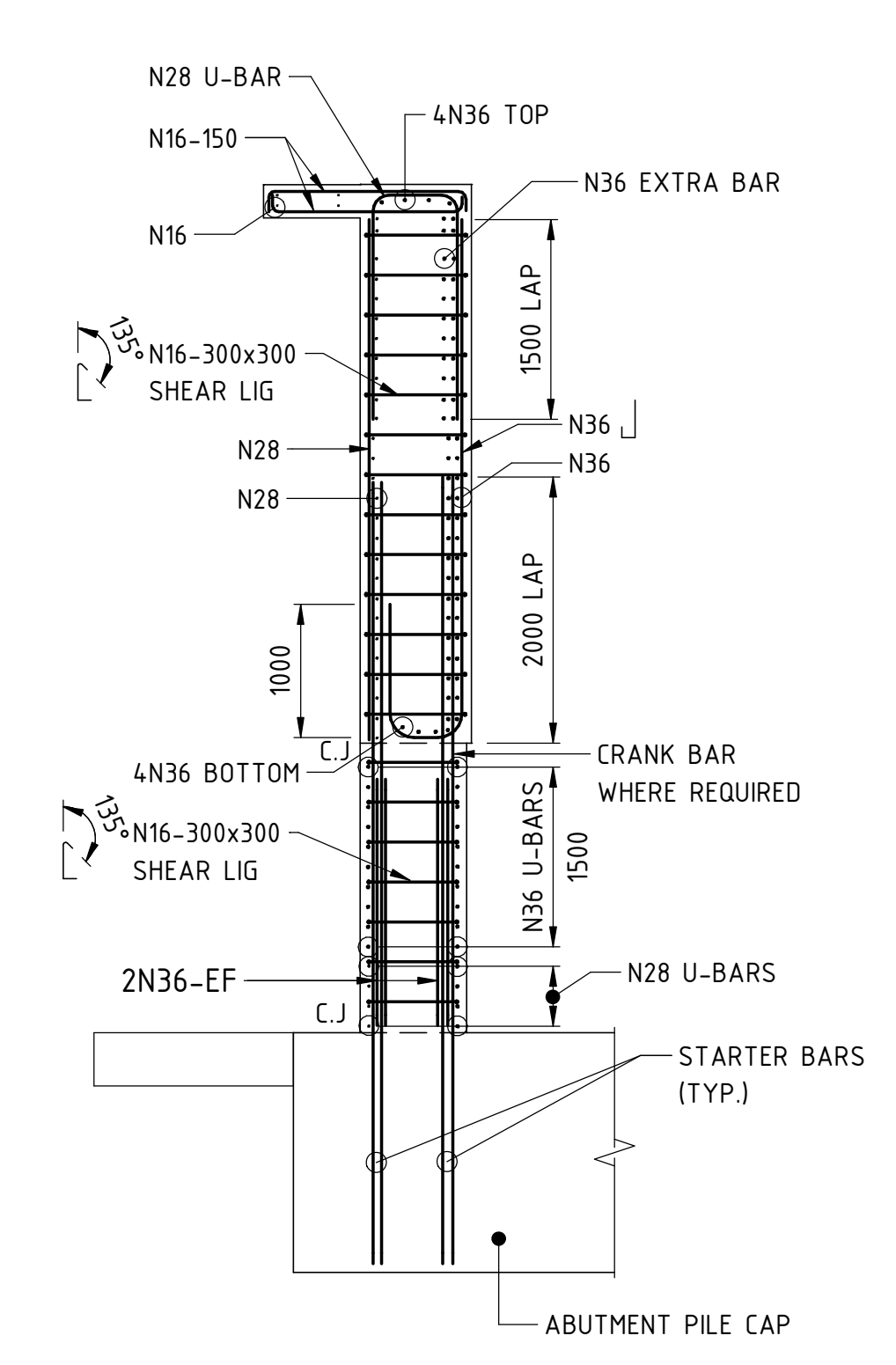
Government of Western Australia
Public Transport Authority

VICTORIA PARK TO CANNING
LEVEL CROSSING REMOVAL

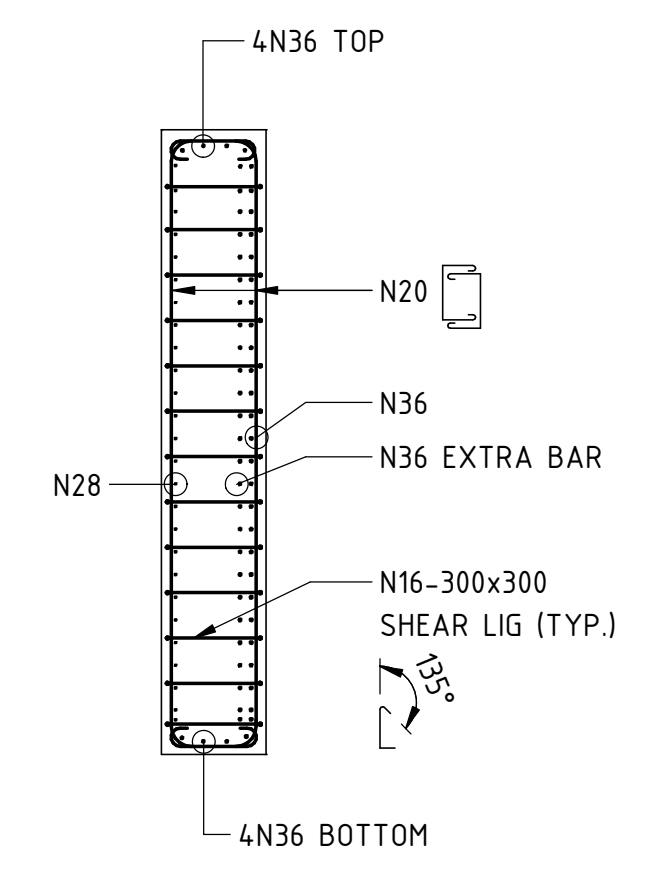
ARMADALE LINE - CIVIL STRUCTURES
BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS
ABUTMENT REINFORCEMENT DETAILS - SHEET 3
PTA Drawing No: 04-S-72-10065 Rev: A



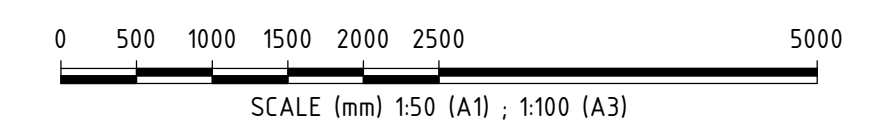
DEFLECTION WALL DW3
ELEVATION D
SCALE 1 : 50



SECTION J
SCALE 1 : 50



SECTION K
SCALE 1 : 50



REFERENCE DESIGN	
	VICTORIA PARK TO CANNING LEVEL CROSSING REMOVAL
ARMADALE LINE - CIVIL STRUCTURES BECKENHAM VIADUCT ABUTMENTS & RETAINING WALLS ABUTMENT REINFORCEMENT DETAILS - SHEET 4	
PTA Drawing No: 04-S-72-10066	Rev: A

REV	DATE	AMENDMENT	MS	DW	AI	BM
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ORIG SIZE	AT ORIGINAL PLOT SIZE		DSN	DRN	CHK	APP
A1						

Contractor No: LXR-P4-Z5-BK-ST-RW-DWG-00065

VALIDATION
SIGNATURE
DATE
DATE APPROVED

REFERENCES

SCALE
1 : 50
DATUM
HORIZONTAL: PCG20
VERTICAL: AHD71

DESIGNED M.SOOI
DRAWN G.WIN
CHECKED A.ISAAC
APPROVED B.MARSHALL
DATE -