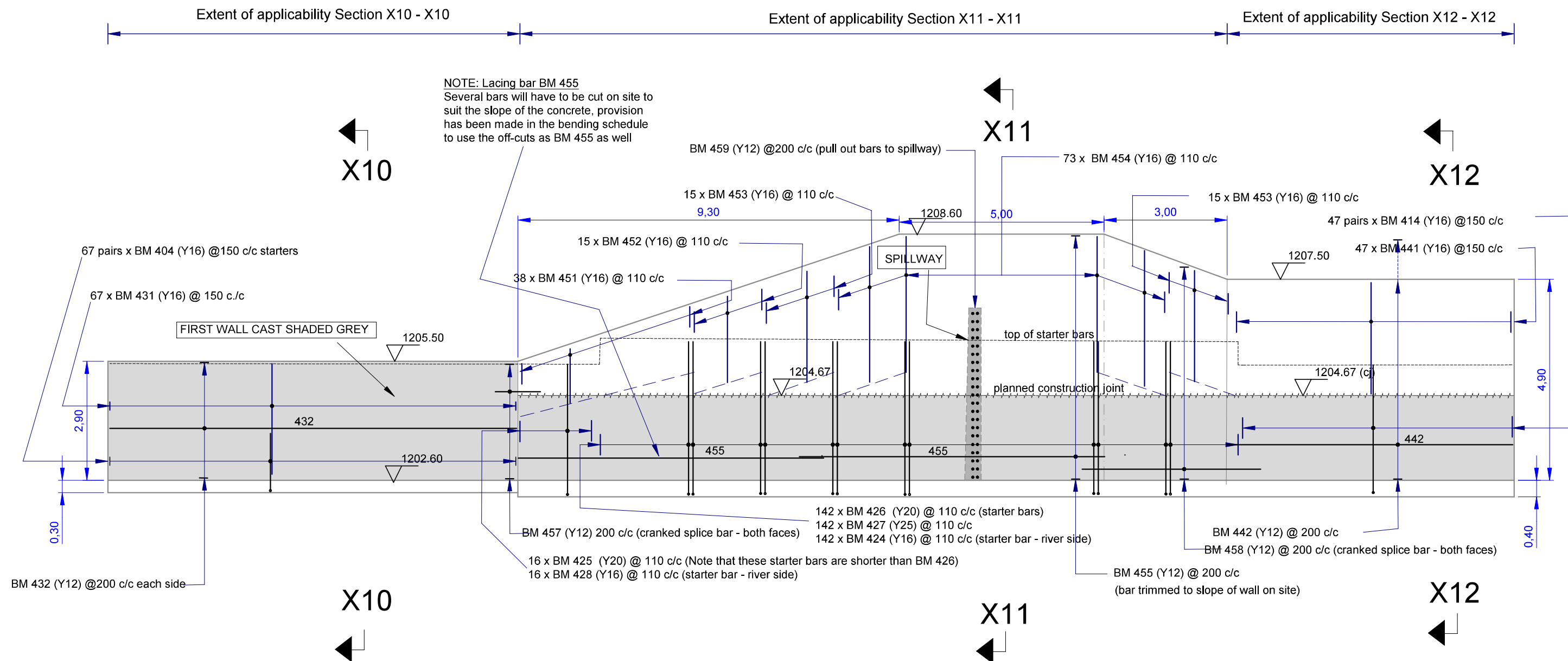
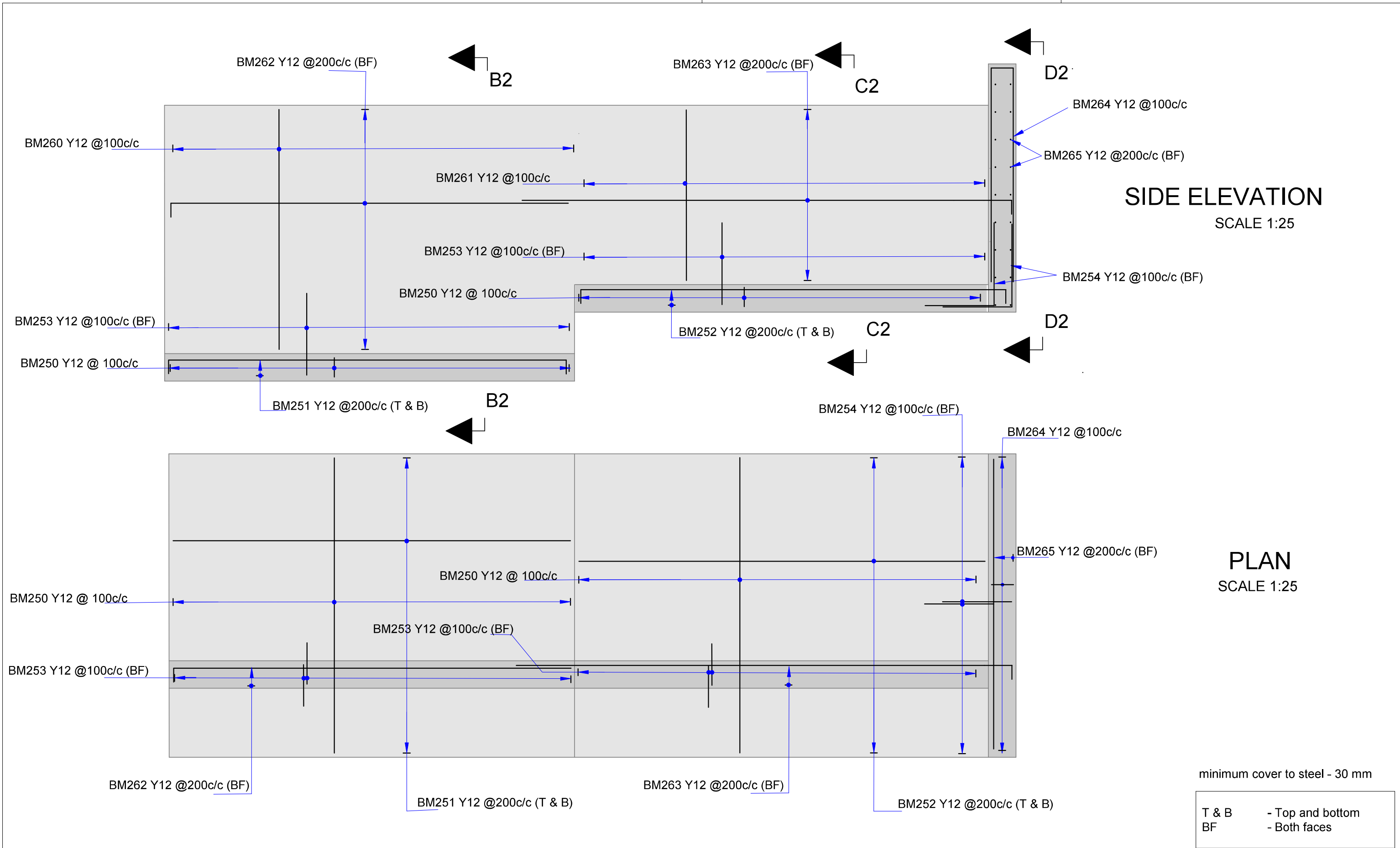
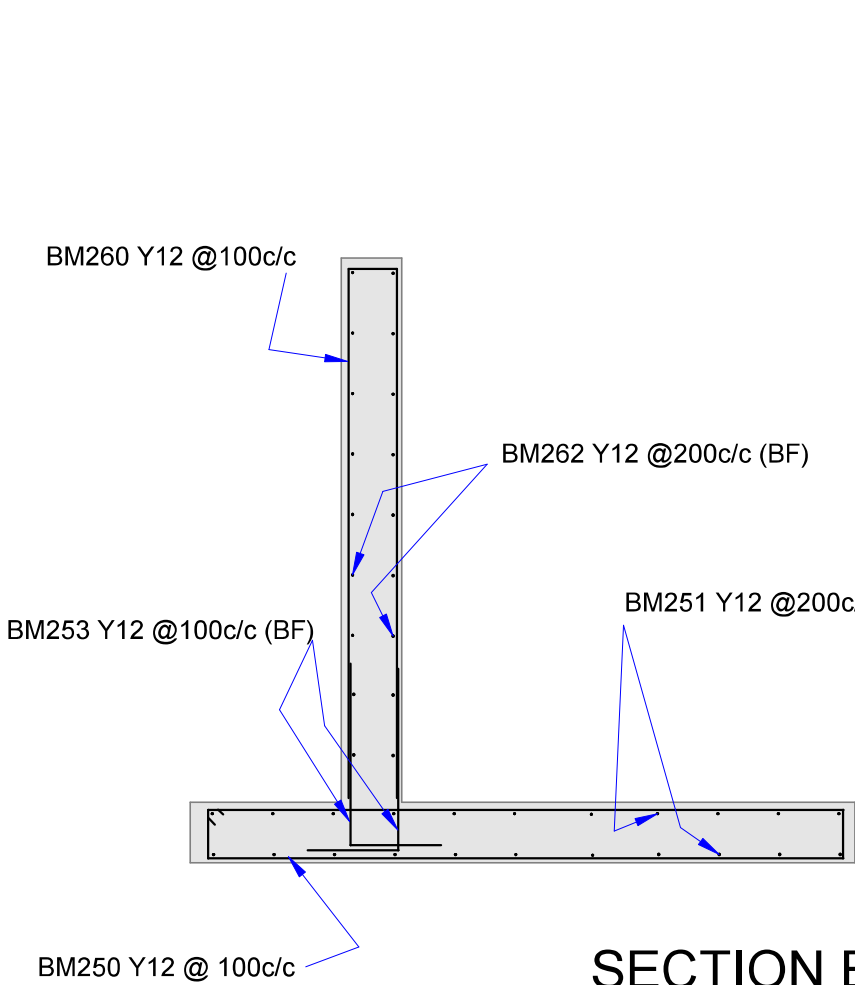


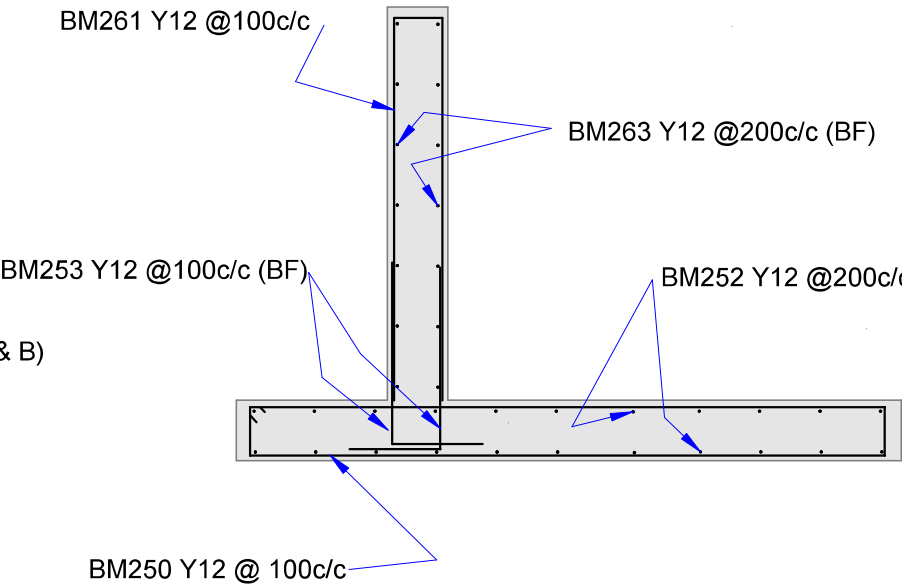


DEVELOPED SIDE VIEW OF SHOULDER - AND TRAINING WALLS
showing wall steel (base excluded)
scale 1:100

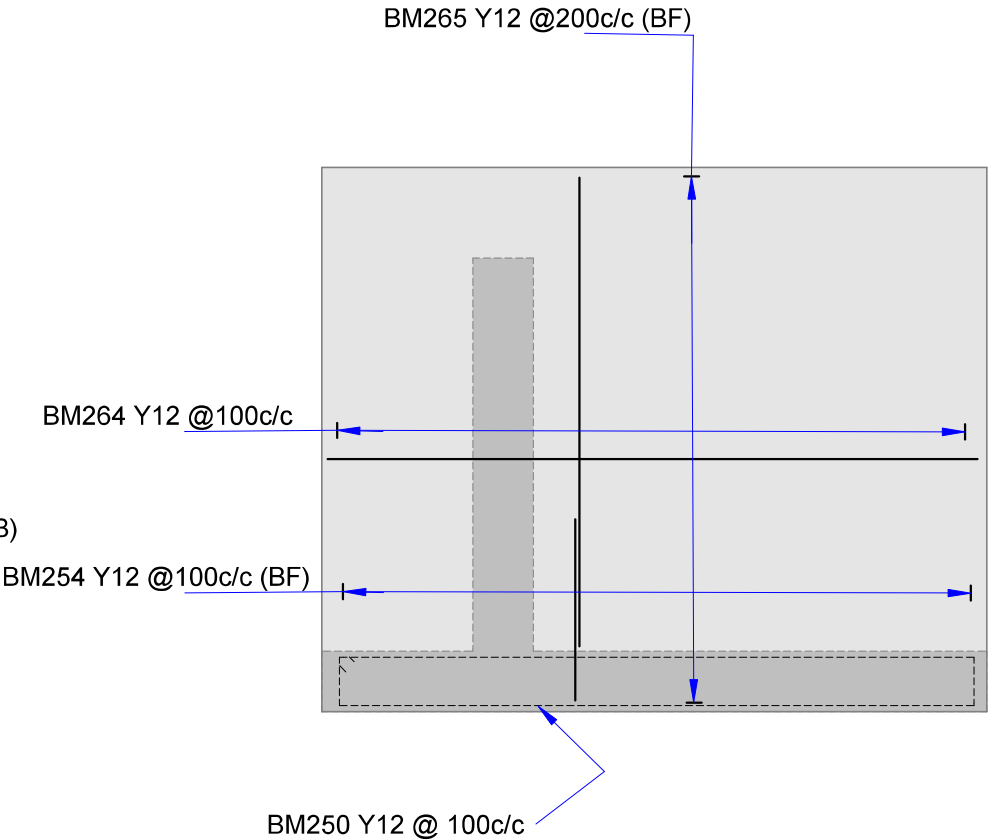




SECTION B2-B2
SCALE 1:25



SECTION C2-C2
SCALE 1:25



SECTION D2-D2
SCALE 1:25

minimum cover to steel - 30 mm

T & B - Top and bottom
BF - Both faces

MEMBER	BM	No.			TOT	CL	SC	A (mm)			MASS			
APRON 1-3														
LowerL2	01	Y20	3	8	24	2650	37	1400		1300	Y	20	157.092	
LowerL1	02	Y20	3	16	48	3150	37	1400		1800	Y	20	373.464	
LowerL1	03	Y20	3	16	48	3650	37	1400		2300	Y	20	432.744	
LowerL1	04	Y20	3	16	48	4150	37	1400		2800	Y	20	492.024	
LowerL1	05	Y20	3	16	48	4650	37	1400		3300	Y	20	551.304	
LowerL1	06	Y20	3	16	48	5150	37	1400		3800	Y	20	610.584	
LowerL1	07	Y20	3	16	48	5650	37	1400		4300	Y	20	669.864	
LowerL1	08	Y20	3	8	24	5950	37	1400		4600	Y	20	352.716	
LowerL2	09	Y20	3	9	27	2250	37	1400		900	Y	20	150.0525	
LowerL1	10	Y20	3	7	21	2450	37	1200		1300	Y	20	127.0815	
LowerL2	11	Y16	3	12	36	270	37	300		5.5	Y	16	15.3576	
LowerL2	12	Y12	3	14	42	5570	37	300		5300	Y	12	207.73872	
LowerL2	13	Y12	3	8	24	7970	37	300		7700	Y	12	169.85664	
LowerL2	14	Y12	3	8	24	5570	37	300		5300	Y	12	118.70784	
LowerL2	15	Y12	3	8	24	3270	37	300		3000	Y	12	69.69024	
LowerL2	16	Y12	3	7	21	7800	20			7800	Y	12	145.4544	
LowerWS	17	Y20	3	56	168	4700	37	2750		2000	Y	20	1950.312	
LowerWS	18	Y25	3	56	168	3600	37	2160		1500	Y	25	2328.48	
LowerWS	19	Y20	3	6	18	3450	37	2300		1200	Y	20	153.387	
LowerWS	20	Y25	3	6	18	3040	37	1900		1200	Y	25	210.672	
LowerWS	21	Y16	3	120	360	3110	37	2750		400	Y	16	1768.968	
UpperL1	32	Y12	3	16	48	2070	37	300		1800	Y	12	88.23168	
UpperL1	33	Y12	3	12	36	2070	37	300		1800	Y	12	66.17376	
UpperL1	34	Y12	3	10	30	2570	37	300		2300	Y	12	68.4648	
UpperL1	35	Y12	3	10	30	3070	37	300		2800	Y	12	81.7848	
UpperL1	36	Y12	3	12	36	3570	37	300		3300	Y	12	114.12576	
UpperL1	37	Y12	3	12	36	4070	37	300		3800	Y	12	130.10976	
UpperL1	38	Y12	3	6	18	4570	37	300		4300	Y	12	73.04688	
UpperL2	42	Y12	3	18	54	5570	37	300		5300	Y	12	267.09264	
UpperL2	43	Y12	3	16	48	7970	37	300		7700	Y	12	339.71328	
UpperL2	44	Y12	3	16	48	5570	37	300		5300	Y	12	237.41568	
UpperL2	45	Y12	3	16	48	3270	37	300		3000	Y	12	139.38048	
UpperL1	46	Y12	3	7	21	7800	20			7800	Y	12	145.4544	
UpperL2	49	Y12	3	6	18	1980	55	300	300	1200	300	Y	12	31.64832
Stool	50	Y12	3	25	75	1520	83	500	270	300	300	Y	12	101.232

MEMBER	BM			TOT	CL	SC	A (mm)							MASS		
SPILLWAY WALLS 1-6																
Vertical	101	Y20	3	125	375	2900	20						2900	Y	20	2686.125
Vertical	102	Y16	3	125	375	2500	20						2500	Y	16	1481.25
Hoop	103	Y16	3	125	375	5150	38	2500	230				2500	Y	16	3051.375
Cnr Lacing	104	Y12	3	22	66	1600	49	800		1090	730	730	800	Y	12	93.7728
Cnr Lacing	105	Y12	3	22	66	1600	49	800		1270	730	730	800	Y	12	93.7728
Cnr splice lacing	106	Y12	6	44	264	1850	62	800	730				1050	Y	12	433.6992
main lacing	107	Y12	6	44	264	8000	20						8000	Y	12	1875.456
Clips	108	R8	6	30	180	550	85	100	330				150	R	8	39.105
Shoulder conn	109	Y12	1	22	22	1850	62	800	730				1050	Y	12	36.1416
Vertical	110	Y20	1	7	7	2900	20						2900	Y	20	50.141
Vertical	111	Y16	1	8	8	2900	20						2900	Y	16	36.656

MEMBER	BM			TOT	CL	SC	A (mm)						MASS				
SPILLWAY WALLS TO APRON 4																	
Hoop	01	Y16	1	125	125	5870	38	3250	230					2470	Y	16	1159.325
Short wall lacing	205	Y12	1	18	18	1600	49	800		1270	730	730		800	Y	12	25.5744
Short wall lacing	206	Y12	1	36	36	1850	62	800	730					1050	Y	12	59.1408
Long wall lacing	207	Y12	2	36	72	8000	20							8000	Y	12	511.488
Stirrups	208	R8	2	30	60	550	85	100	330					150	R	8	13.035
Closure u-bar	209	Y12	1	17	17	1240	38	500	300					500	Y	12	18.71904
Closure stirrup	210	Y12	1	17	17	840	60	300						150	Y	12	12.68064
Vertical bars	211	Y12	1	4	4	3150	20							3150	Y	12	11.1888

END WALL																
Base stirrup	250	Y12	1	60	60	4100	60	1930					140	Y	12	218.448
Base lacing 1	251	Y12	1	22	22	3070	38	100	2930				100	Y	12	59.97552
Base lacing 2	252	Y12	1	22	22	3270	38	100	3130				100	Y	12	63.88272
Wall starter	253	Y12	2	60	120	870	37	300					600	Y	12	92.7072
Headwall starter	254	Y12	1	60	60	870	37	300					600	Y	12	46.3536
Wall 1 u-bar	260	Y12	1	30	30	3560	38	1750	140				1730	Y	12	94.8384
Wall 2 u-bar	261	Y12	1	30	30	2560	38	1250	140				1230	Y	12	68.1984
Wall1 lacing	262	Y12	1	18	18	3000	37	100					2930	Y	12	47.952
Wall 2 lacing	263	Y12	1	18	18	3870	37	300					3600	Y	12	61.85808
Headwall u-bar	264	Y12	1	30	30	3020	38	1550					1530	Y	12	80.4528
Headwall lacing	265	Y12	1	16	16	2270	38	100	2130				100	Y	12	32.25216

MEMBER	BM			TOT	CL	SC	A (mm)						MASS			
SPILLWAY WALLS TO APRON 4																
Hoop	201	Y16	1	125	125	5100	38	2500	230				2450	Y	16	1007.25
Short wall lacing	205	Y12	1	18	18	1600	49	800		1270	730	730	800	Y	12	25.5744
Short wall lacing	206	Y12	1	36	36	1850	62	800	730				1050	Y	12	59.1408
Long wall lacing	207	Y12	2	36	72	8000	20						8000	Y	12	511.488
Stirrups	108	R8	2	30	60	550	85	100	330				150	R	8	13.035

END WALL																
Base stirrup	250	Y12	1	60	60	4100	60	1930					140	Y	12	218.448
Base lacing 1	251	Y12	1	22	22	3070	38	100	2930				100	Y	12	59.97552
Base lacing 2	252	Y12	1	22	22	3070	38	100	3130				100	Y	12	59.97552
Wall starter	253	Y12	2	60	120	870	37	300					600	Y	12	92.7072
Headwall starter	254	Y12	1	60	60	870	37	300					600	Y	12	46.3536
Wall 1 u-bar	260	Y12	1	30	30	3560	38	1750	140				1730	Y	12	94.8384
Wall 2 u-bar	261	Y12	1	30	30	2560	38	1250	140				1230	Y	12	68.1984
Wall1 lacing	262	Y12	1	18	18	3000	37	100					2930	Y	12	47.952
Wall 2 lacing	263	Y12	1	18	18	3870	37	300					3600	Y	12	61.85808
Headwall u-bar	264	Y12	1	30	30	3020	38	1550					1530	Y	12	80.4528
Headwall lacing	265	Y12	1	16	16	2270	38	100	2130				100	Y	12	32.25216

MEMBER	BM	No.		TOT	CL	SC	A (mm)				MASS	
APRON 4												
LowerL1	301	Y20	1	8	8	3000	37	1750	1300	Y	20	59.28
LowerL1	302	Y20	1	16	16	3500	37	1750	1800	Y	20	138.32
LowerL1	303	Y20	1	16	16	4000	37	1750	2300	Y	20	158.08
LowerL1	304	Y20	1	16	16	4500	37	1750	2800	Y	20	177.84
LowerL1	305	Y20	1	16	16	5000	37	1750	3300	Y	20	197.6
LowerL1	306	Y20	1	16	16	5500	37	1750	3800	Y	20	217.36
LowerL1	307	Y20	1	16	16	6000	37	1750	4300	Y	20	237.12
LowerL1	308	Y20	1	8	8	6300	37	1750	4600	Y	20	124.488
LowerWS	309	Y20	1	9	9	2600	37	1750	900	Y	20	57.798
Lower L2	311	Y16	1	12	12	270	37	300	5.5	Y	16	5.1192
Lower L2	312	Y12	1	14	14	5570	37	300	5300	Y	12	69.24624
Lower L2	313	Y12	1	8	8	7970	37	300	7700	Y	12	56.61888
Lower L2	314	Y12	1	8	8	5570	37	300	5300	Y	12	39.56928
Lower L2	315	Y12	1	8	8	3270	37	300	3000	Y	12	23.23008
LowerL1	316	Y12	1	7	7	7800	20		7800	Y	12	48.4848
LowerWS	317	Y20	1	56	56	4700	37	2750	2000	Y	20	650.104
LowerWS	321	Y16	1	120	120	1260	37	900	400	Y	16	238.896
UpperL1	332	Y12	1	16	16	2070	37	300	1800	Y	12	29.41056
UpperL1	333	Y12	1	12	12	2070	37	300	1800	Y	12	22.05792
UpperL1	334	Y12	1	10	10	2570	37	300	2300	Y	12	22.8216
UpperL1	335	Y12	1	10	10	3070	37	300	2800	Y	12	27.2616
UpperL1	336	Y12	1	12	12	3570	37	300	3300	Y	12	38.04192
UpperL1	337	Y12	1	12	12	4070	37	300	3800	Y	12	43.36992
UpperL1	338	Y12	1	6	6	4570	37	300	4300	Y	12	24.34896
UpperL2	342	Y12	1	18	18	5570	37	300	5300	Y	12	89.03088
UpperL2	343	Y12	1	16	16	7970	37	300	7700	Y	12	113.23776
UpperL2	344	Y12	1	16	16	5570	37	300	5300	Y	12	79.13856
UpperL2	345	Y12	1	16	16	3270	37	300	3000	Y	12	46.46016
UpperL1	346	Y12	1	7	7	7800	20		7800	Y	12	48.4848
Stools	350	Y12	1	25	25	1520	83	500 270 300	300	Y	12	33.744

MEMBER										MASS				
BM	No.	TOT	CL	SC	A (mm)									
TRAINING WALL (sect X10-X10)														
Stirrup	401	Y12	1	67	67	5140	60	230	2220		Y	12	305.80944	
Lacing bar (T+B)	402	Y12	1	24	24	9920	20			9920	Y	12	211.41504	
Stool	403	R10	1	10	10	1200	83	500	210	200	180	R	10	7.404
WS (Both sides)	404	Y16	1	134	134	1610	37	500			1145	Y	16	340.8692
Spreader	405	Y16	1	67	67	1960	37	100			1900	Y	16	207.4856
Hoop	431	Y16	1	67	67	5750	38	2800	230		2800	Y	16	608.695
Lacingbar (both sides)	432	Y12	1	30	30	7000	20				7000	Y	12	186.48
Clip	433	R8	1	20	20	470	85	80	330	80	50	R	8	3.713
CUT-OFF WALL (sect X12-X12)														
Stirrup	411	Y12	1	47	47	5540	60	330	2320		Y	12	231.21744	
Lacing bar (T+B)	412	Y12	1	24	24	9920	20	7500			9920	Y	12	211.41504
Stool	413	R10	1	7	7	1360	83	500	290	200	180	R	10	5.87384
WS (Both sides)	414	Y16	1	94	94	3160	37	700			2500	Y	16	469.3232
Spreader	415	Y16	1	47	47	2060	37	100			2000	Y	16	152.9756
Hoop	441	Y16	1	47	47	5650	38	2750	230		2750	Y	16	419.569
Lacingbar (both sides)	442	Y12	1	60	60	7000	20				7000	Y	12	372.96
Clip	443	R8	1	40	40	470	85	80	330	80	50	R	8	7.426
SHOULDER WALL (sect X11-X11)														
Spreader	420	Y20	1	131	131	0	20	2600			Y	20	0	
Stirrup	421	Y12	1	131	131	9560	60	330	4330		Y	12	1112.09568	
Lacing bar (T+B)	422	Y12	1	88	88	7400	20				7400	Y	12	578.2656
Stool	423	R10	1	20	20	1560	83	500	280	300	300	R	10	19.2504
WS-group a	424	Y16	1	142	142	660	37	700			Y	16	148.0776	
WS-group b	425	Y20	1	142	142	4950	37	2000			3000	Y	20	1736.163
WS-group b	426	Y20	1	16	16	6050	37	2000			4100	Y	20	239.096
WS	427	Y25	1	131	131	6140	37	2000			4200	Y	25	3096.709
WS-group a	428	Y16	1	16	16	660	37	700			Y	16	16.6848	
Hoop	451	Y16	1	38	38	2750	38	1300	230		1300	Y	16	165.11
Hoop	452	Y16	1	15	15	4350	38	2100	230		2100	Y	16	103.095
Hoop	453	Y16	1	30	30	5550	38	2700	230		2700	Y	16	263.07
Hoop	454	Y16	1	106	106	6750	38	3300	230		3300	Y	16	1130.49
Lacingbar (both sides)	455	Y12	1	60	60	7400	20				7400	Y	12	394.272
clip	456	R8	1	80	80	470	85	80	330	80	50	R	8	14.852
cranked splice	457	Y12	1	30	30	2400	62	800	330		1600	Y	12	63.936
cranked splice	458	Y12	1	60	60	5300	62	800	570		4500	Y	12	282.384
Pull-out bars	459	Y12	1	21	21	2270	38	1050	230		1050	Y	12	42.33096

HansKingSRS (Pty) Ltd Sustainable River Stabilization	Project : Allemansfontein Murraysburg	Western Cape Government FOR YOU	CASIDRA SOC 	Title BS 5 Shoulder wall
				Scale 1 : 100
				Drawing number SRS 2023/2/033 rev1
				Drawing date 2023 / 11 / 30



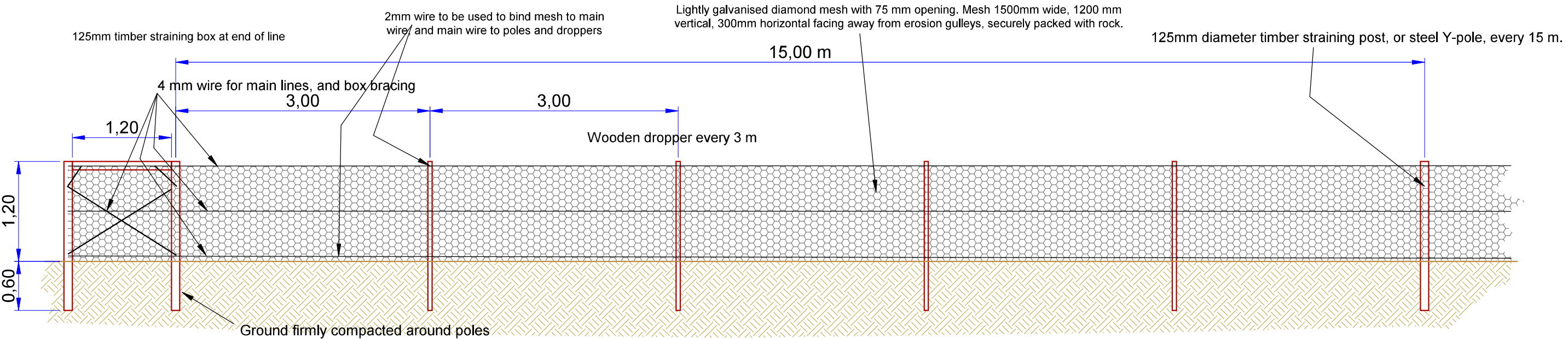


FENCE CORNER COORDINATES

A	-61112.217	3515072.010
B	-61237.952	3514878.741
C	-61461.742	3514995.699
D	-61504.316	3515092.750
E	-61333.508	3515266.822

FENCE LEG LENGTHS

A-B	231 m
B-C	253 m
C-D	106 m
D-E	244 m
E-A	295 m



HansKingSRS (Pty) Ltd
Sustainable River Stabilization

Project : Allemansfontein
Murraysburg



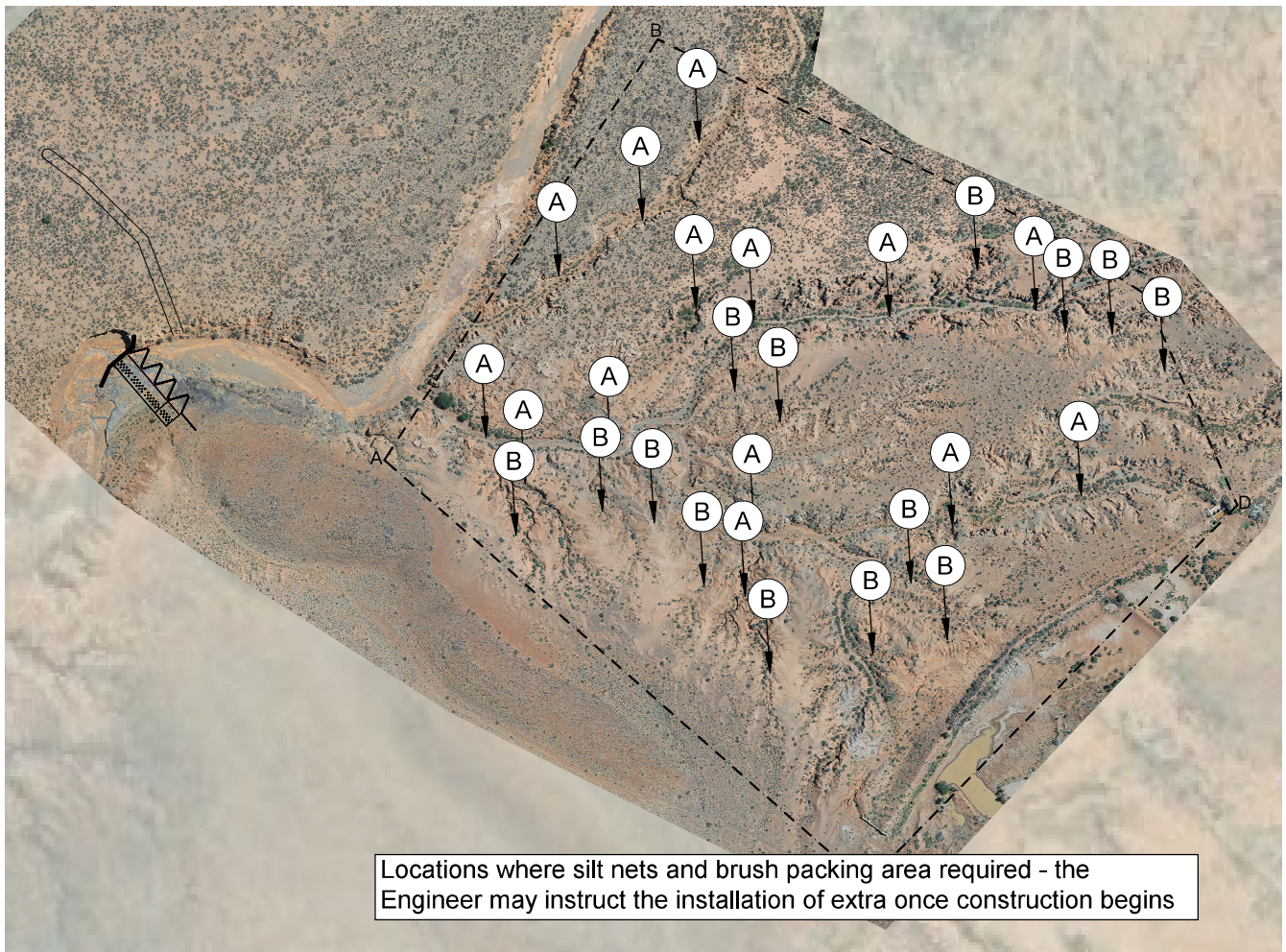
CASIDRA SOC



Title Erosion control fence

Scale 1 :

Drawing number SRS 2023/2/036
Drawing date 2023 / 11 / 30

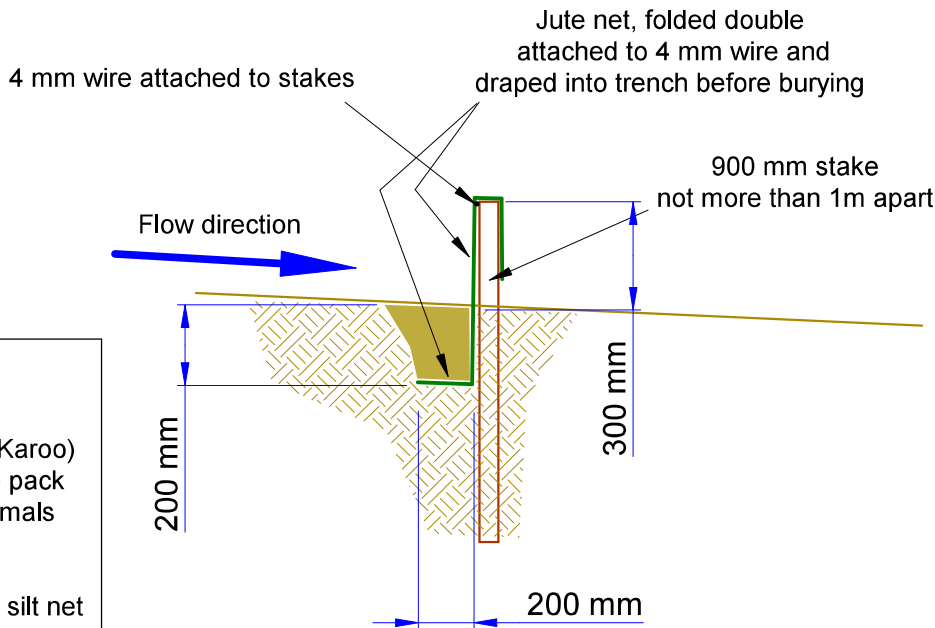


Locations where silt nets and brush packing area required - the Engineer may instruct the installation of extra once construction begins

BRUSH PACKING

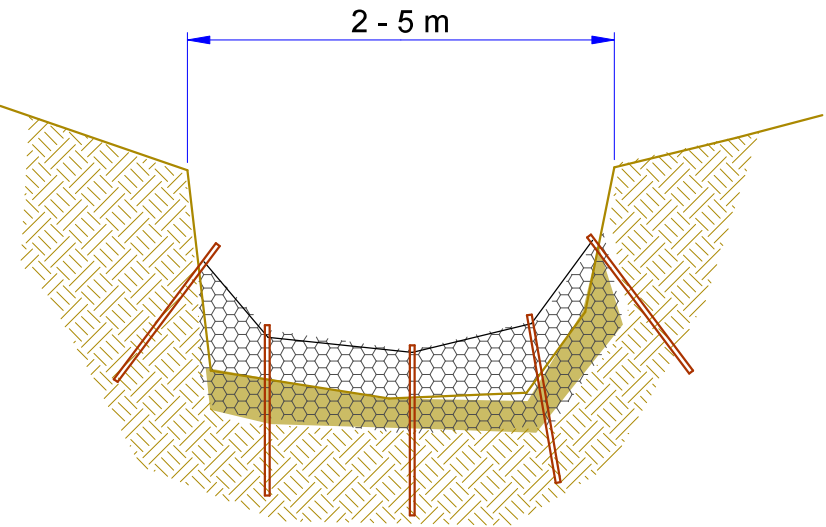
The landowners will identify sources of thornbush (Acacia Karoo) on the farm from which the contractor may cut branches to pack over the silt nets (to shade the young plants and inhibit animals from eating the plants)

The brush packing must cover the ground within 3m of the silt net

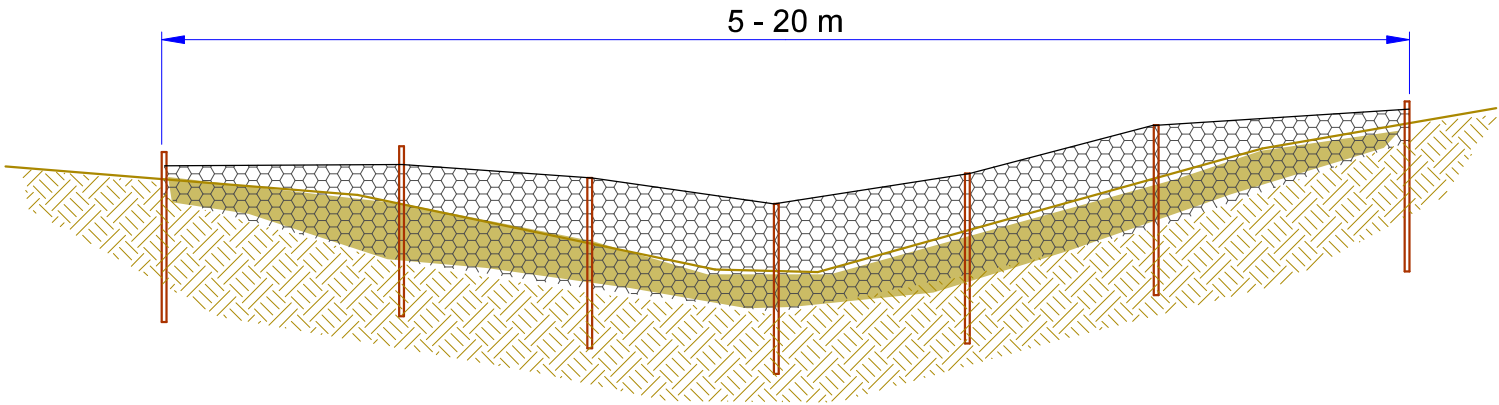


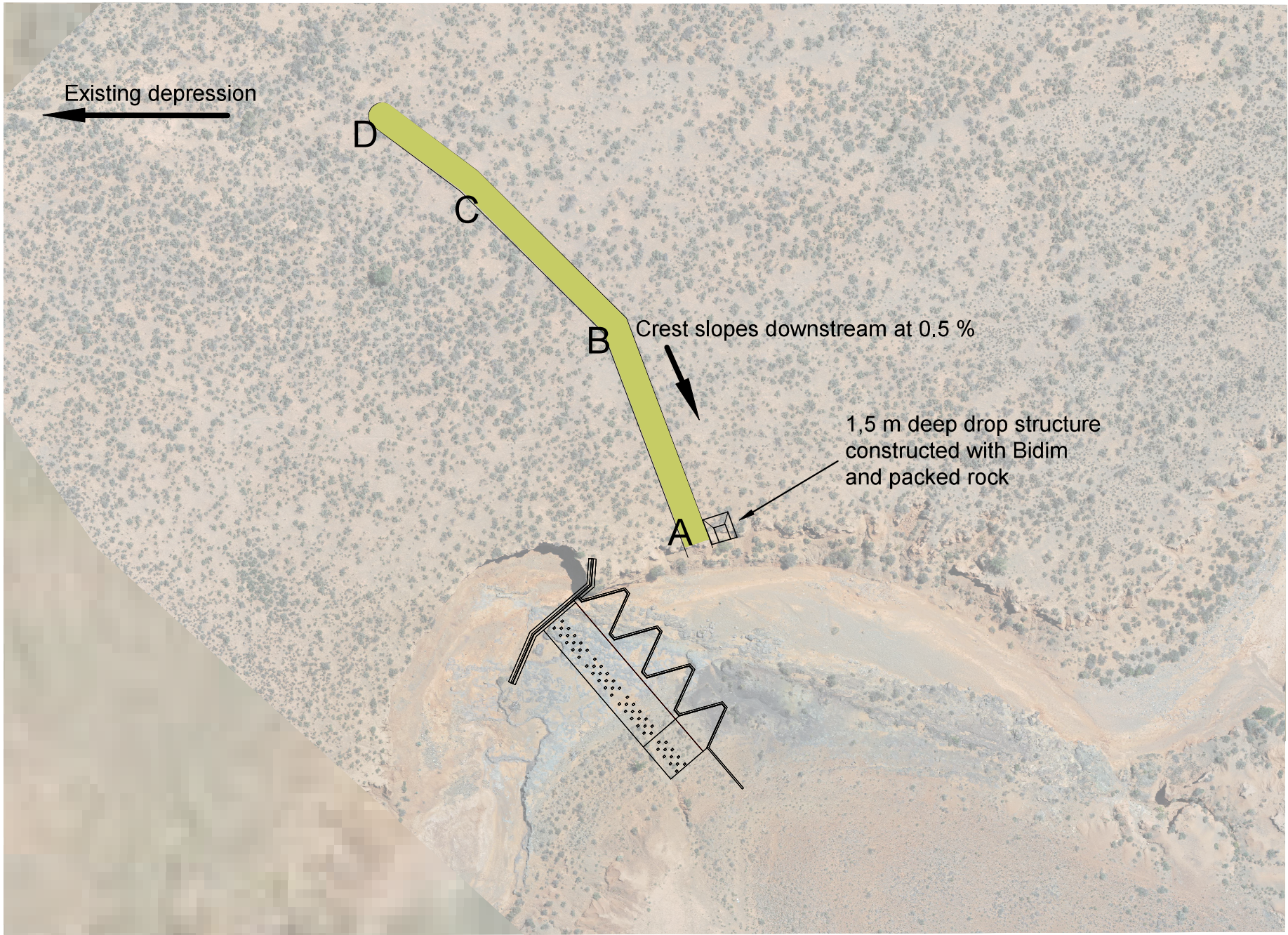
CROSS SECTION THROUGH SILT NET

TYPE A
WELL DEFINED GULLEY



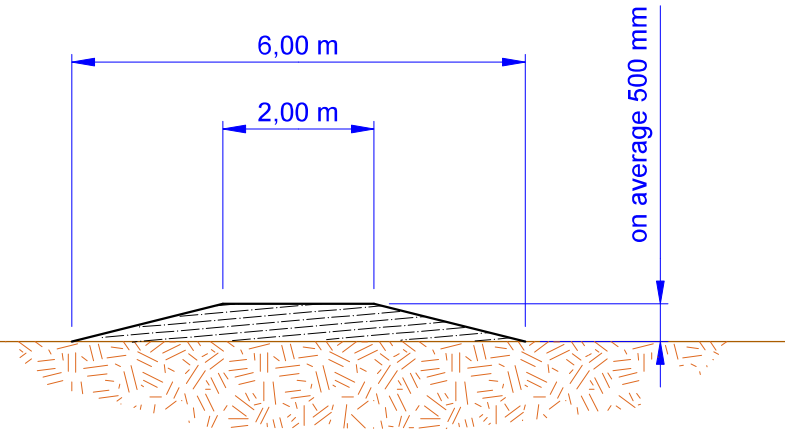
TYPE B
WIDER ERODING DRAINING LINE





EARTH BANK CENTRELINE COORDINATES

A	-61016.847	3515011.654
B	-61001.447	3514970.841
C	-60974.383	3514943.888
D	-60956.909	3514931.160

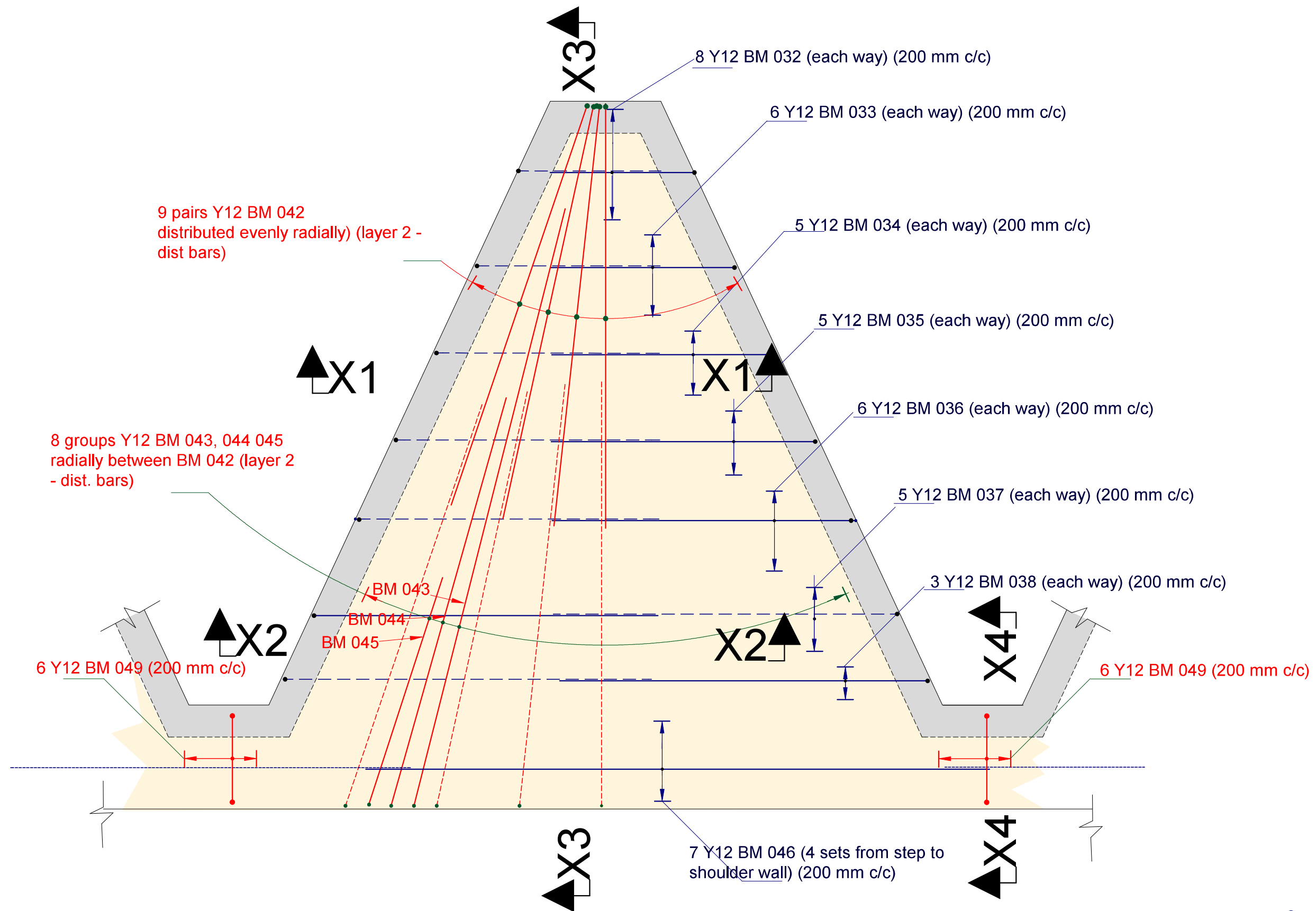


Typical cross section of earth bank

The crest of the earth bank will have a 0,5 % slope from the uphill start to the watercourse

The depth of fill will vary according to the topography

Please note: To prevent undue damage to the vegetation, vehicles transporting soil from the cut area in teh watercourse must only travel within the footprint of teh earth bank.



Cover to all steel 30 mm

HansKingSRS (Pty) Ltd
Sustainable River Stabilization

Project : Allemansfontein
Murraysburg



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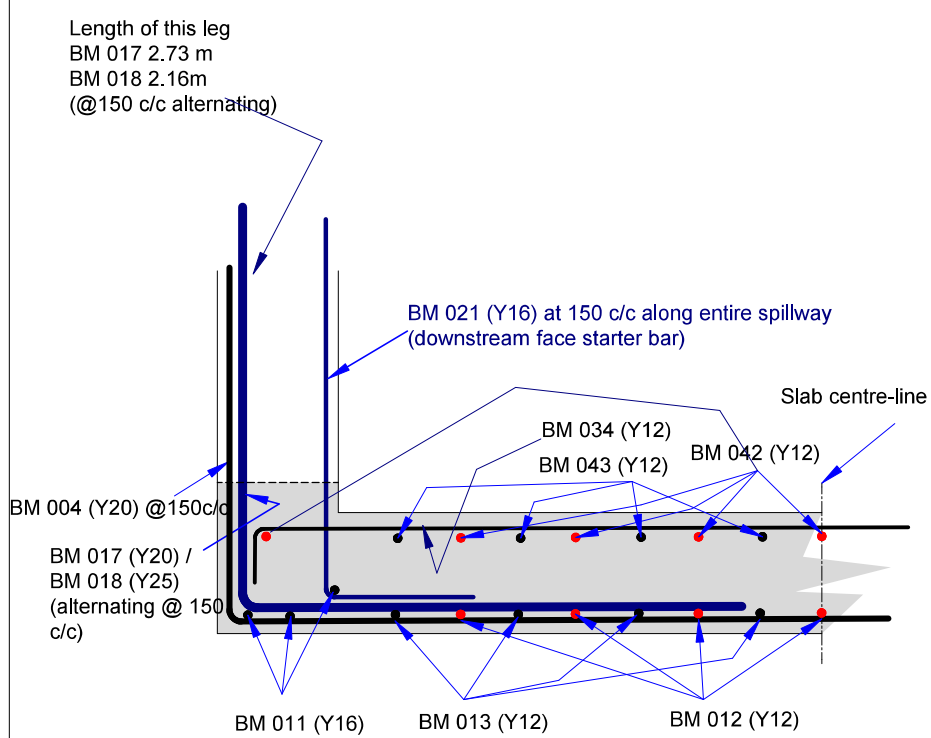


Title Apron 1-3 upper steel

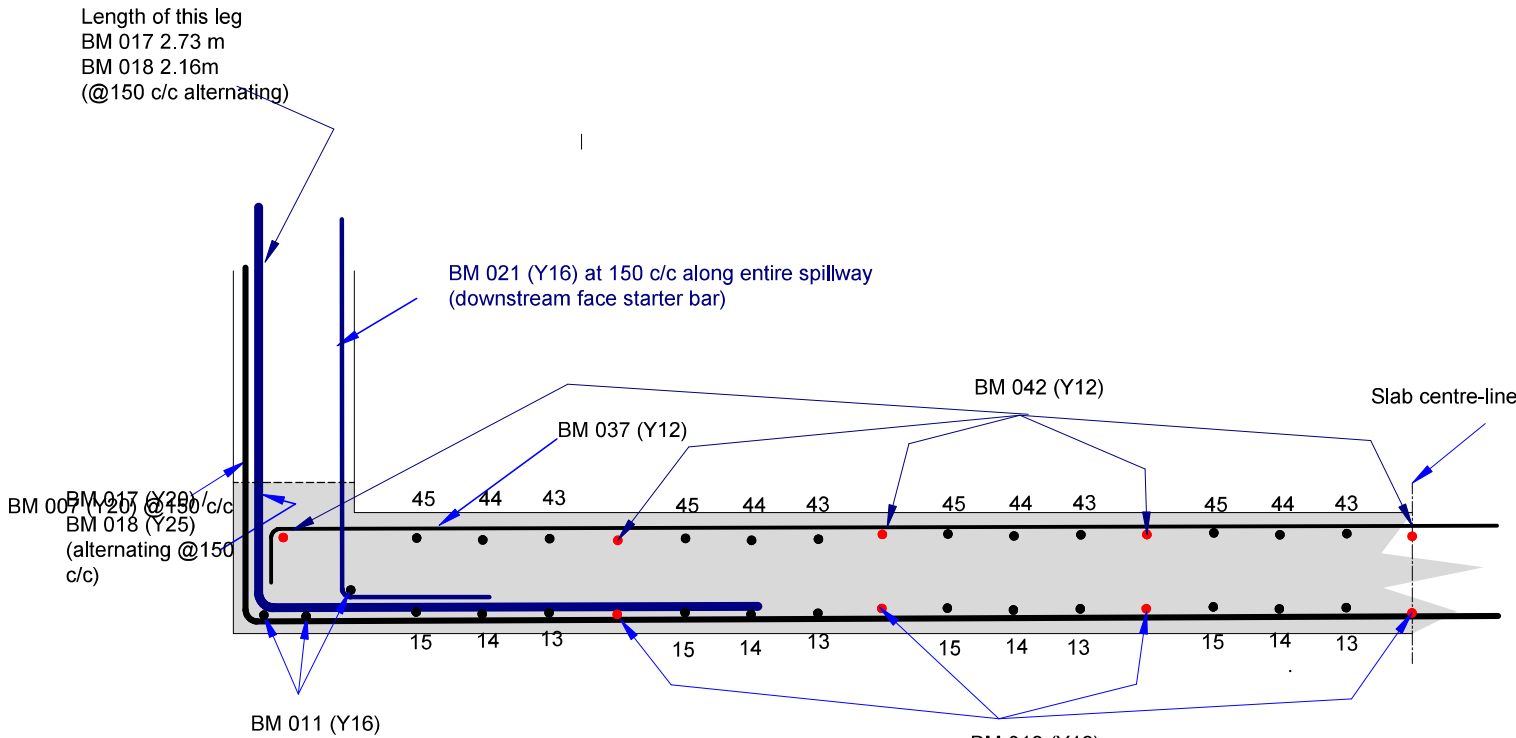
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Drawing number SRS 2023-2-014 rev1

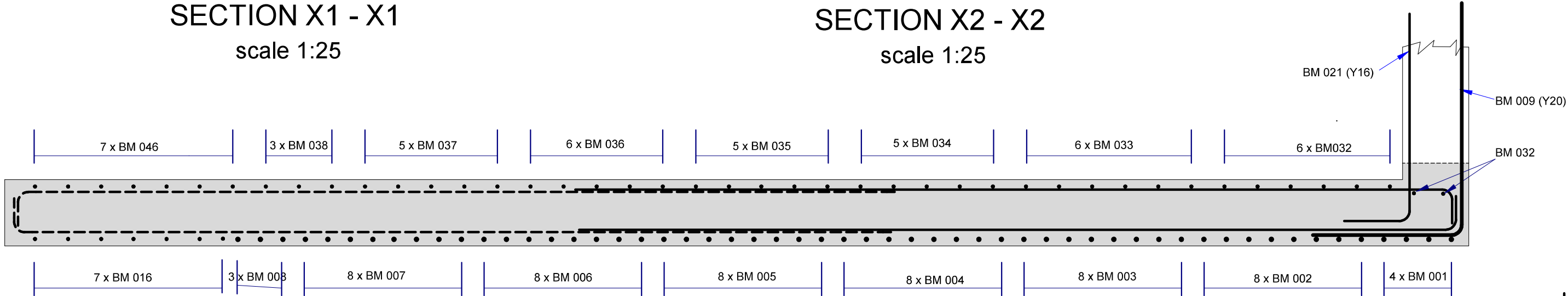
Drawing date 2023 / 10 / 15



SECTION X1 - X1
scale 1:25

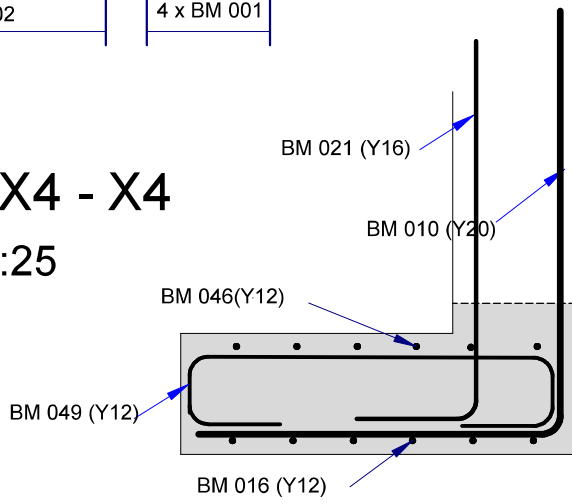


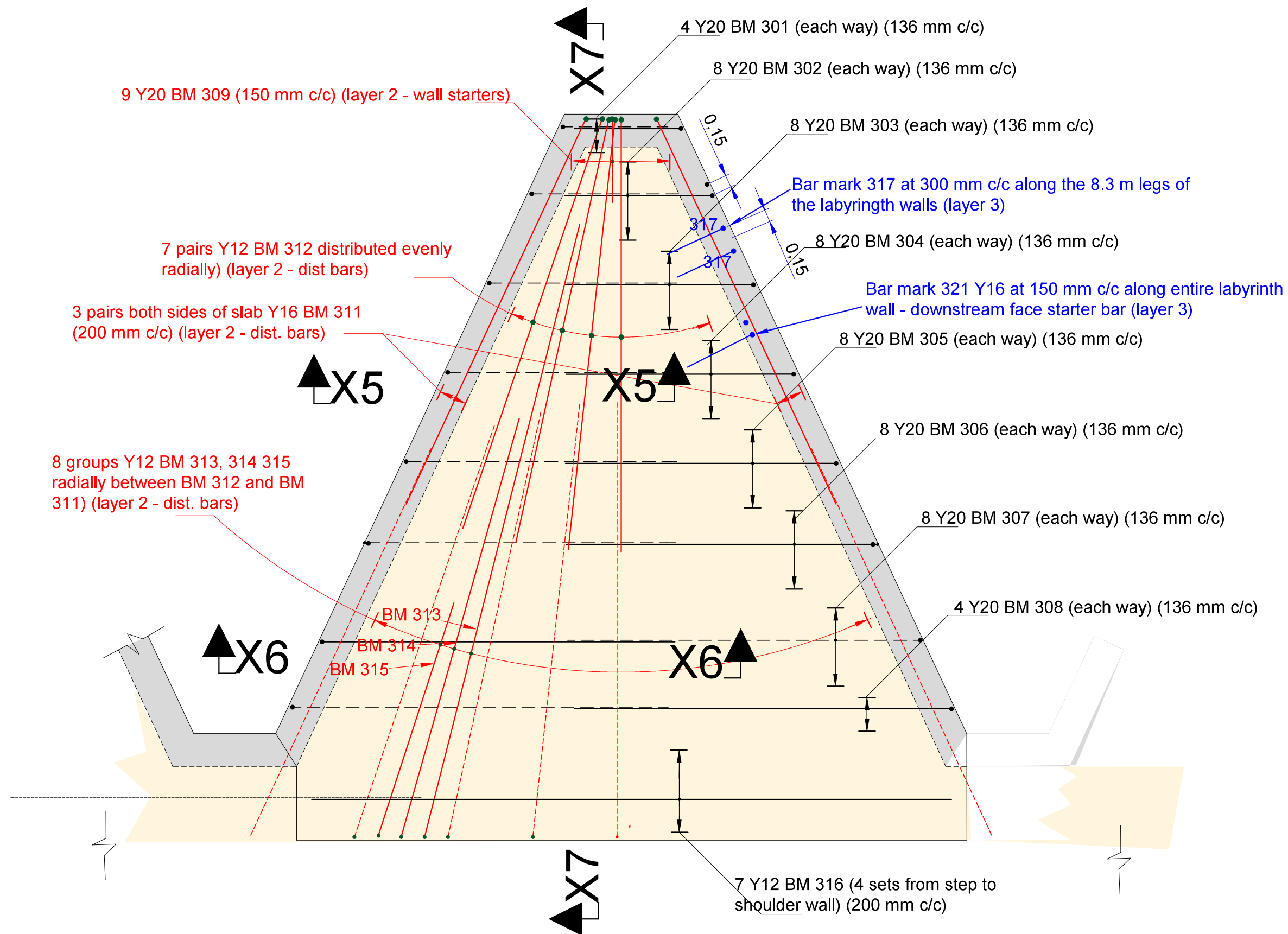
SECTION X2 - X2
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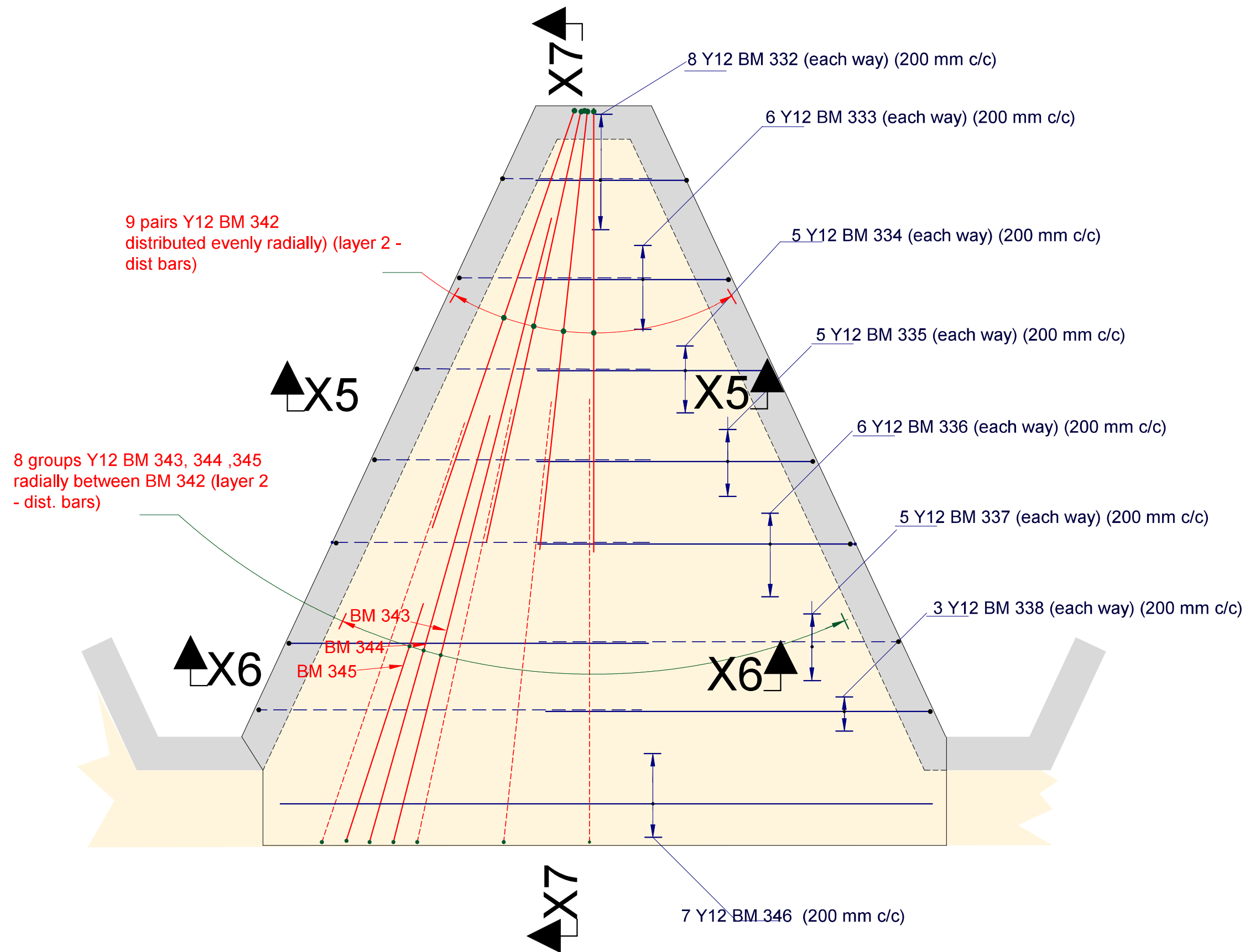
SECTION X3 - X3
scale 1:25

SECTION X4 - X4
scale 1:25





Cover to all steel 30 mm



Cover to all steel 30 mm

HansKingSRS (Pty) Ltd
Sustainable River Stabilization

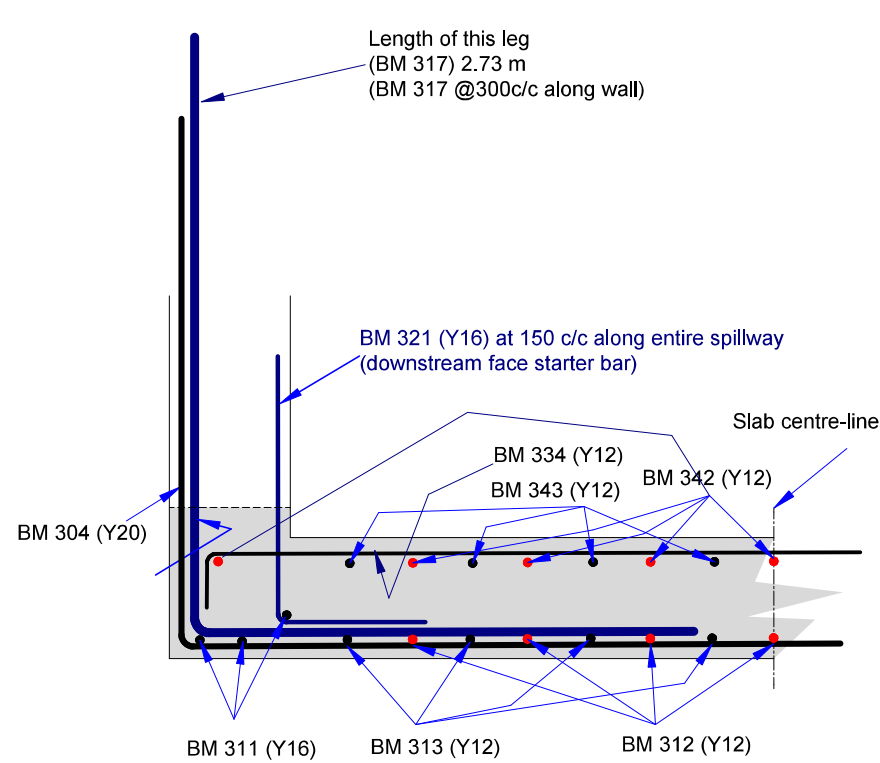
Project : Allemansfontein
Murraysburg



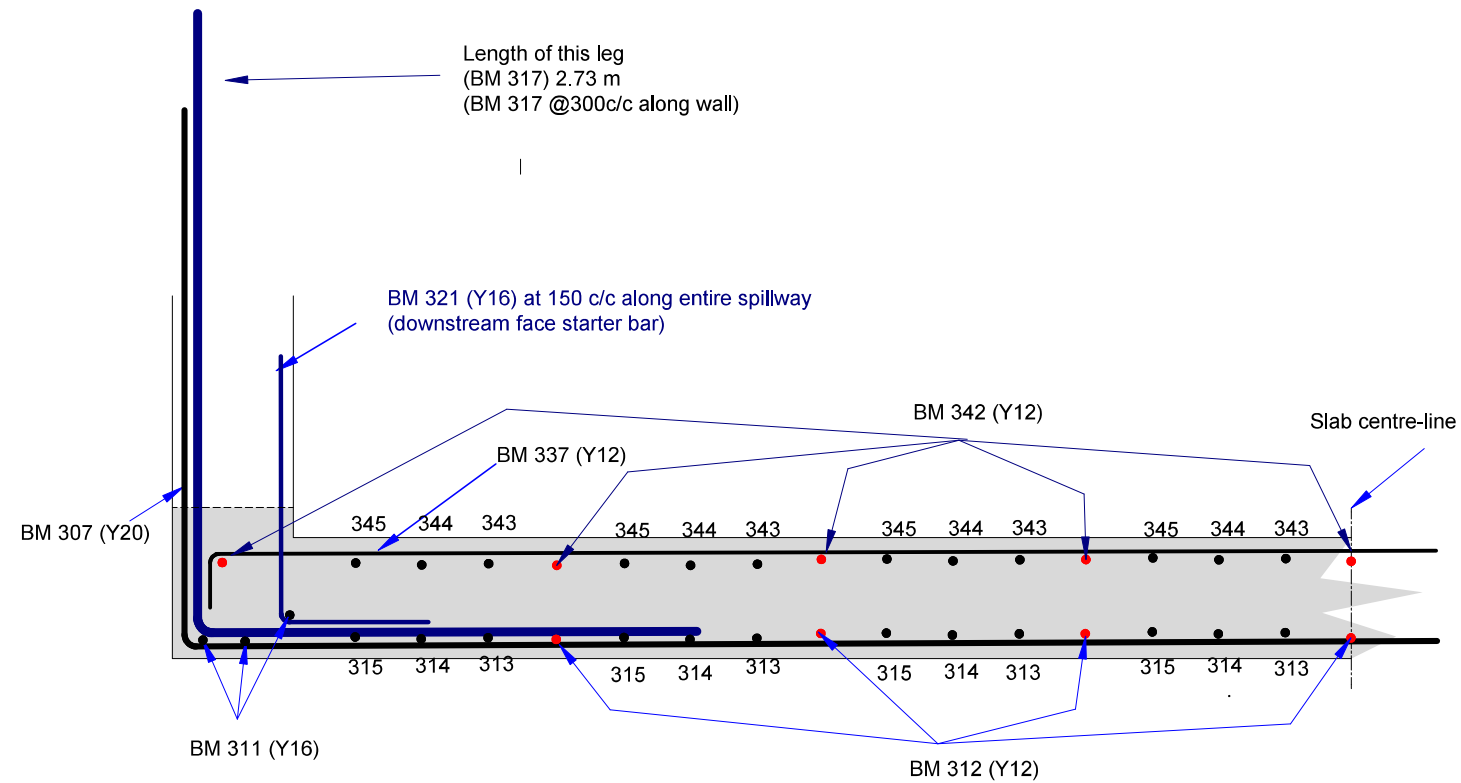
CASIDRA SOC



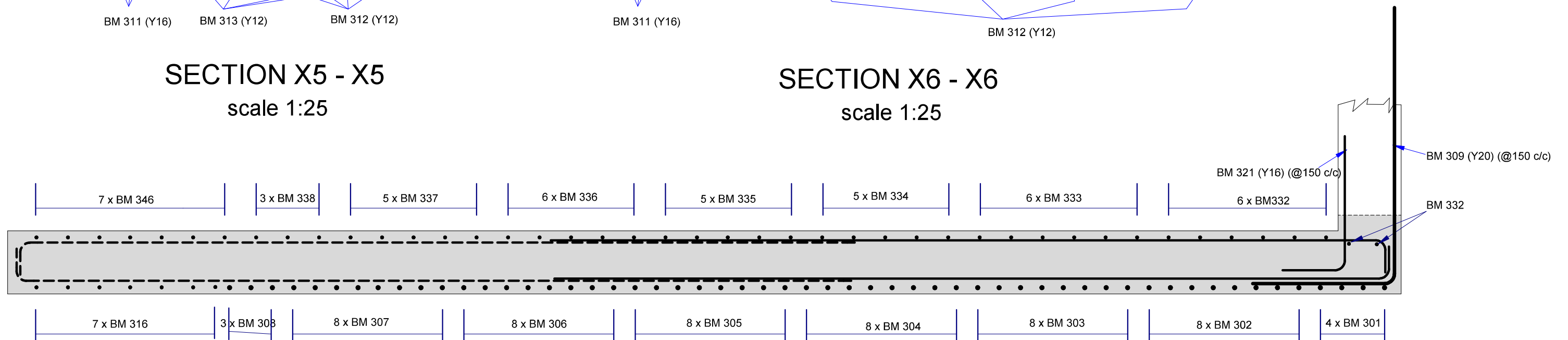
Title	Apron 4 upper steel
Scale	1 : 50
Drawing number	SRS 2023/2/017 rev1
Drawing date	2023 / 11 / 30



SECTION X5 - X5
scale 1:25

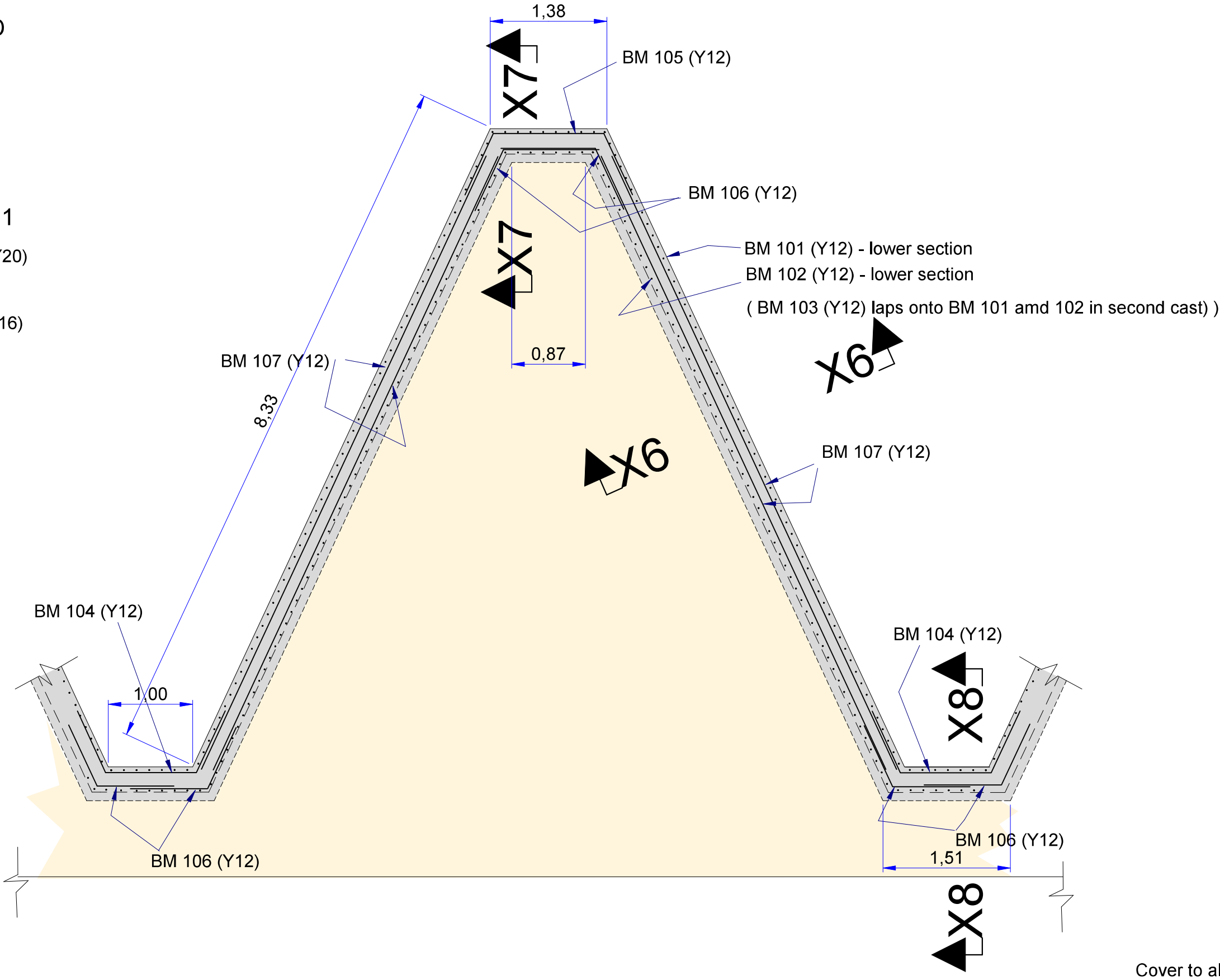
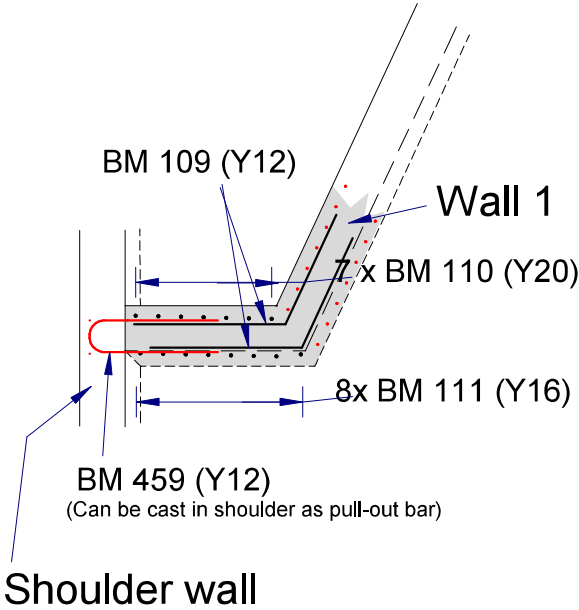


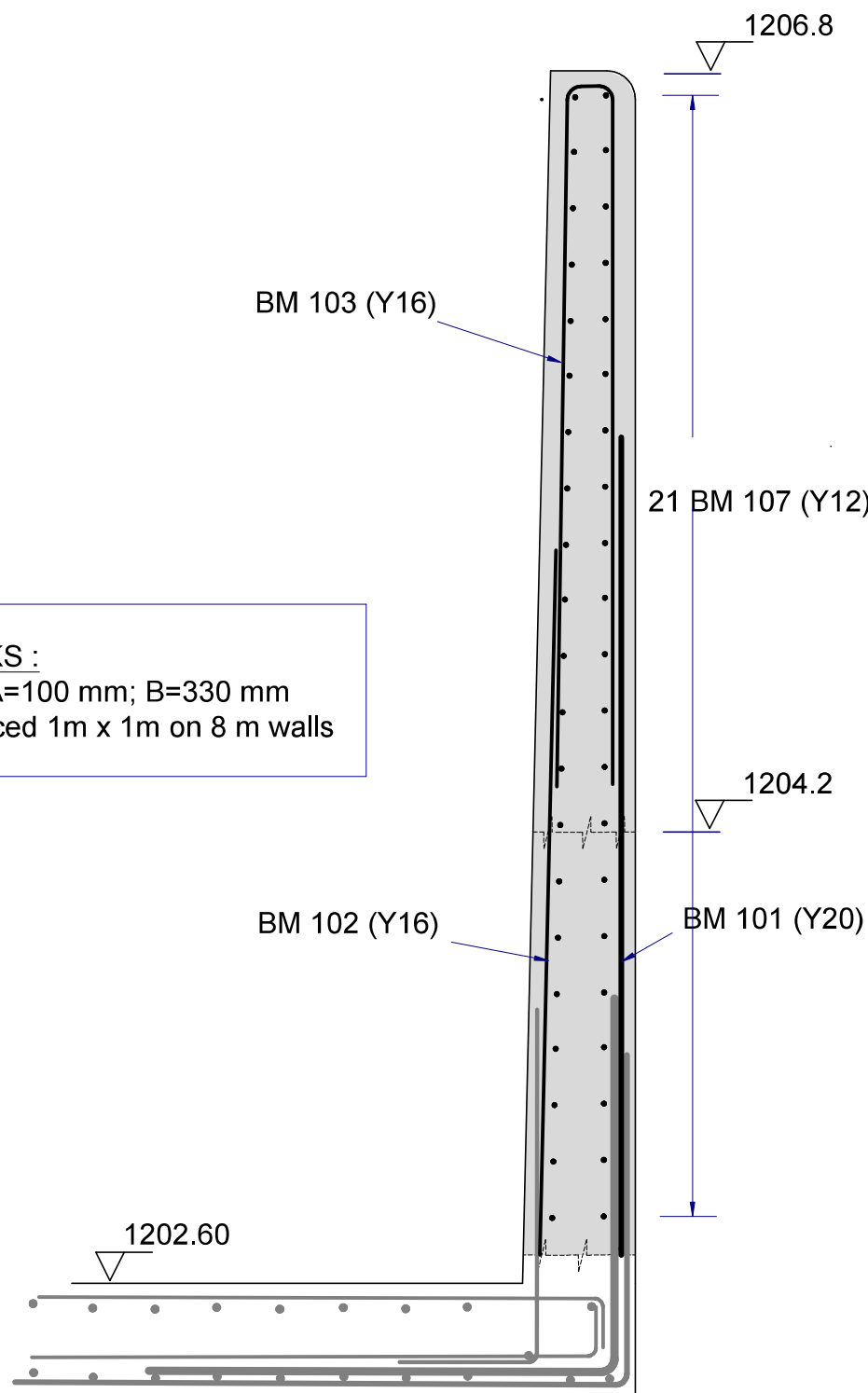
SECTION X6 - X6
scale 1:25



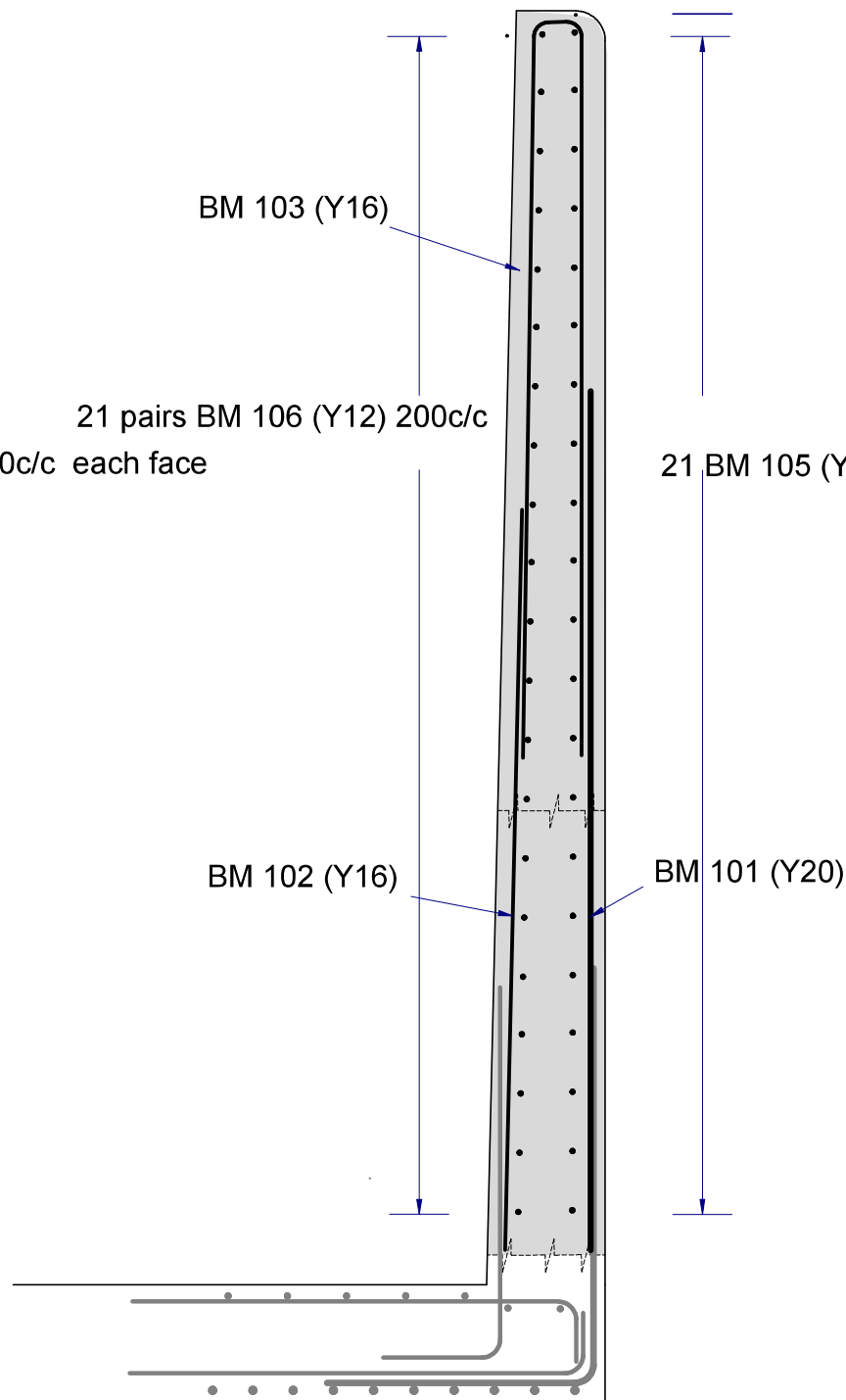
SECTION X7 - X7
scale 1:25

DETAIL OF JOINT
BETWEEN WALL 1 AND
SHOULDER WALL

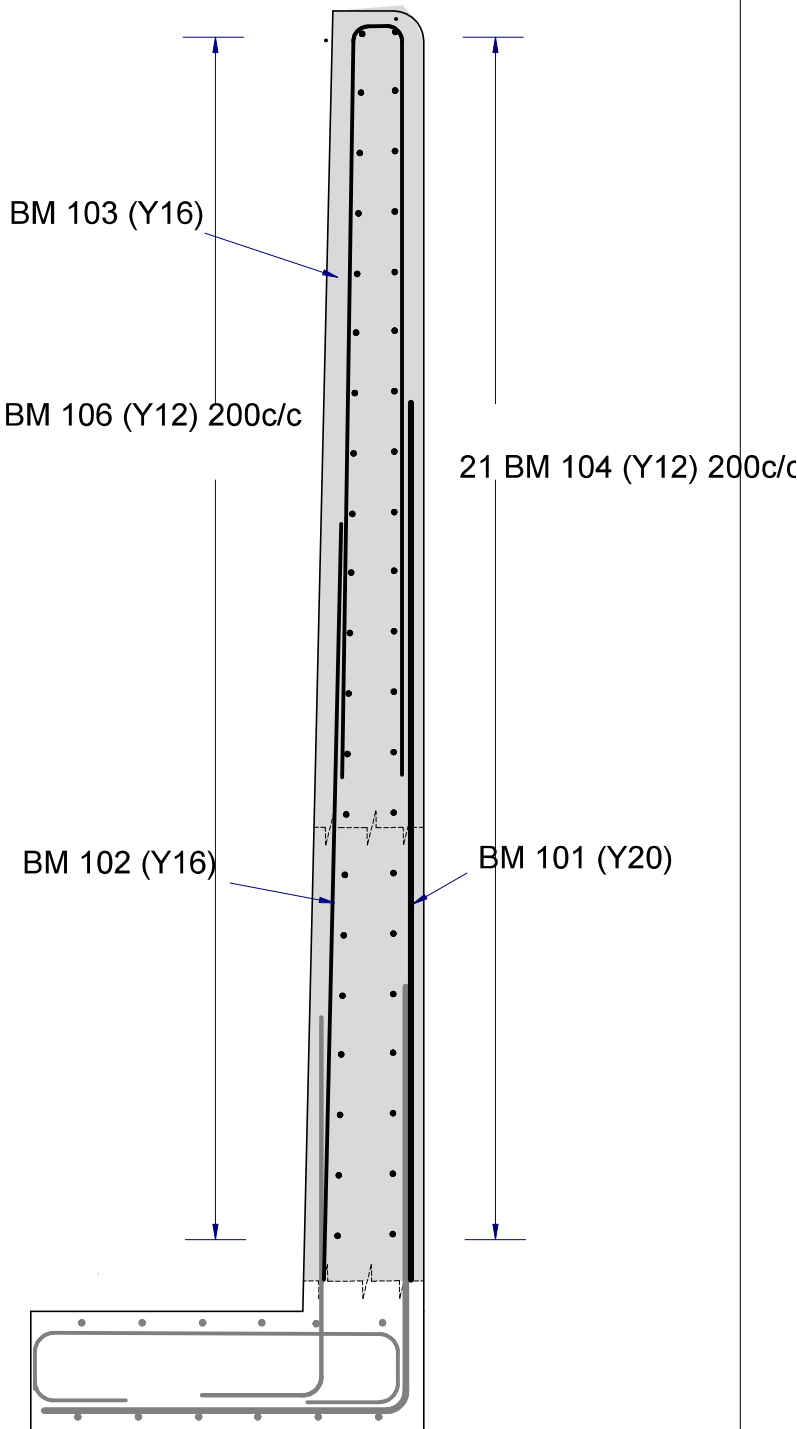




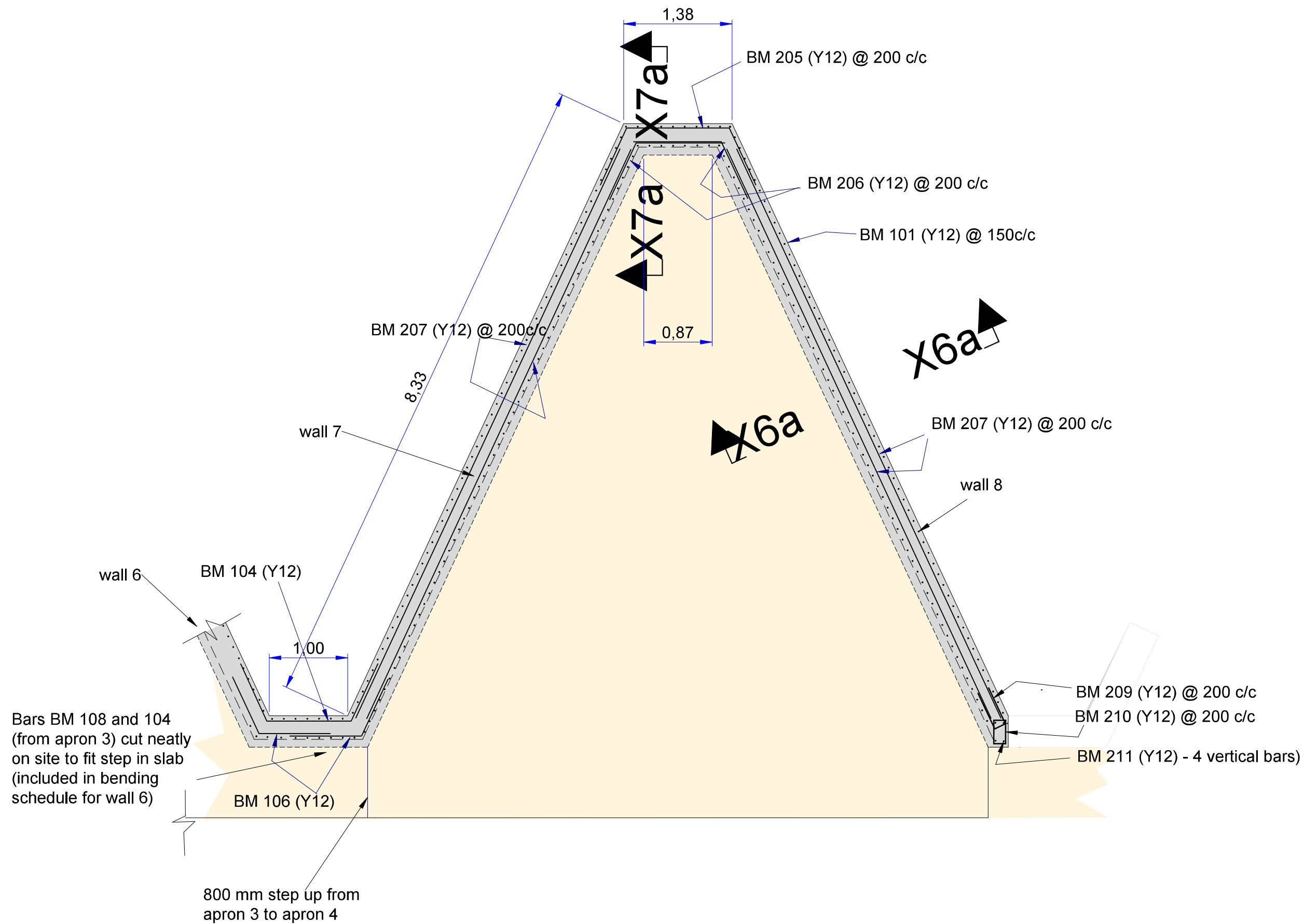
SECTION X6 - X6
scale 1:25



SECTION X7 - X7
scale 1:25

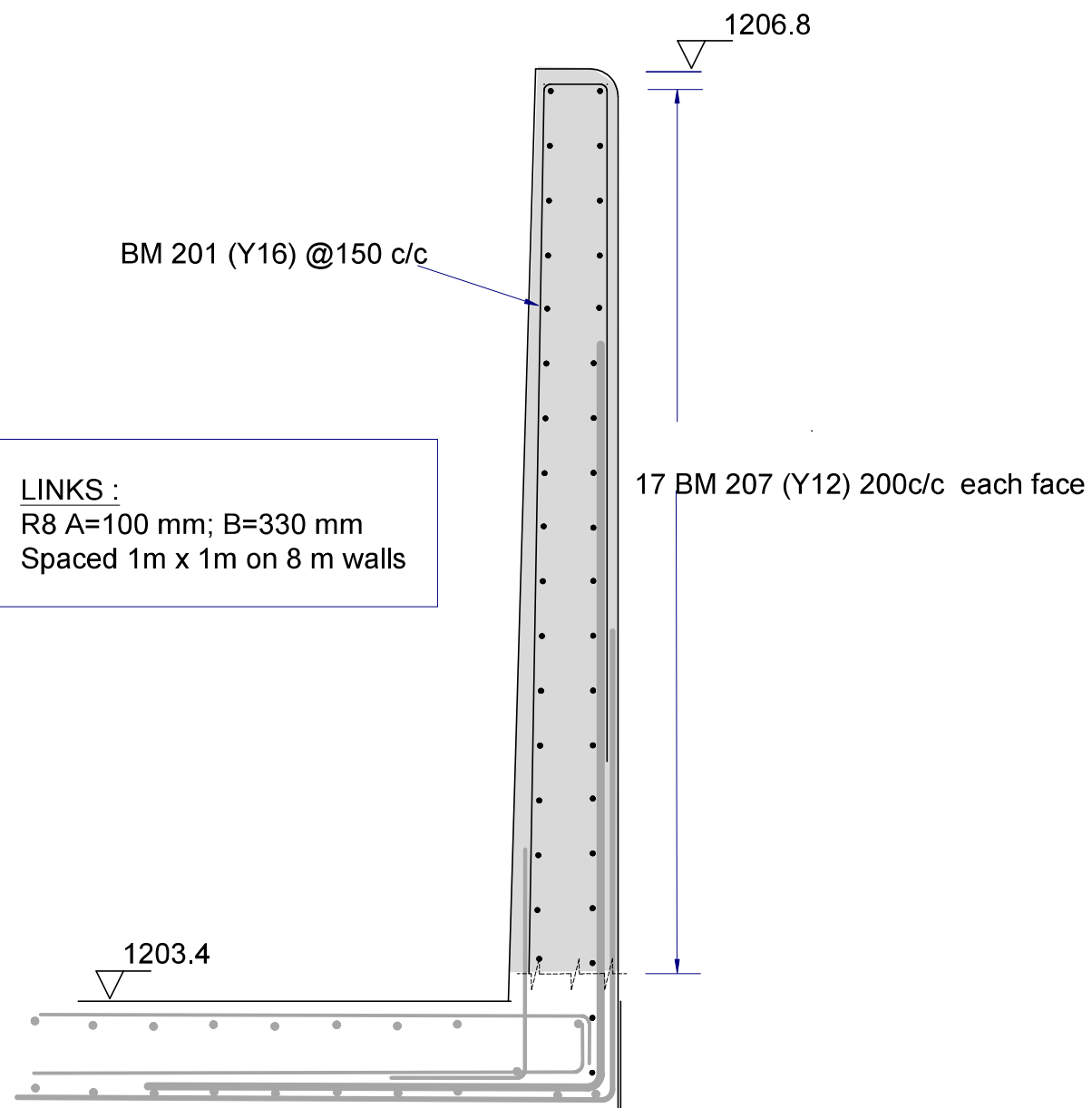


SECTION X8 - X8
scale 1:25

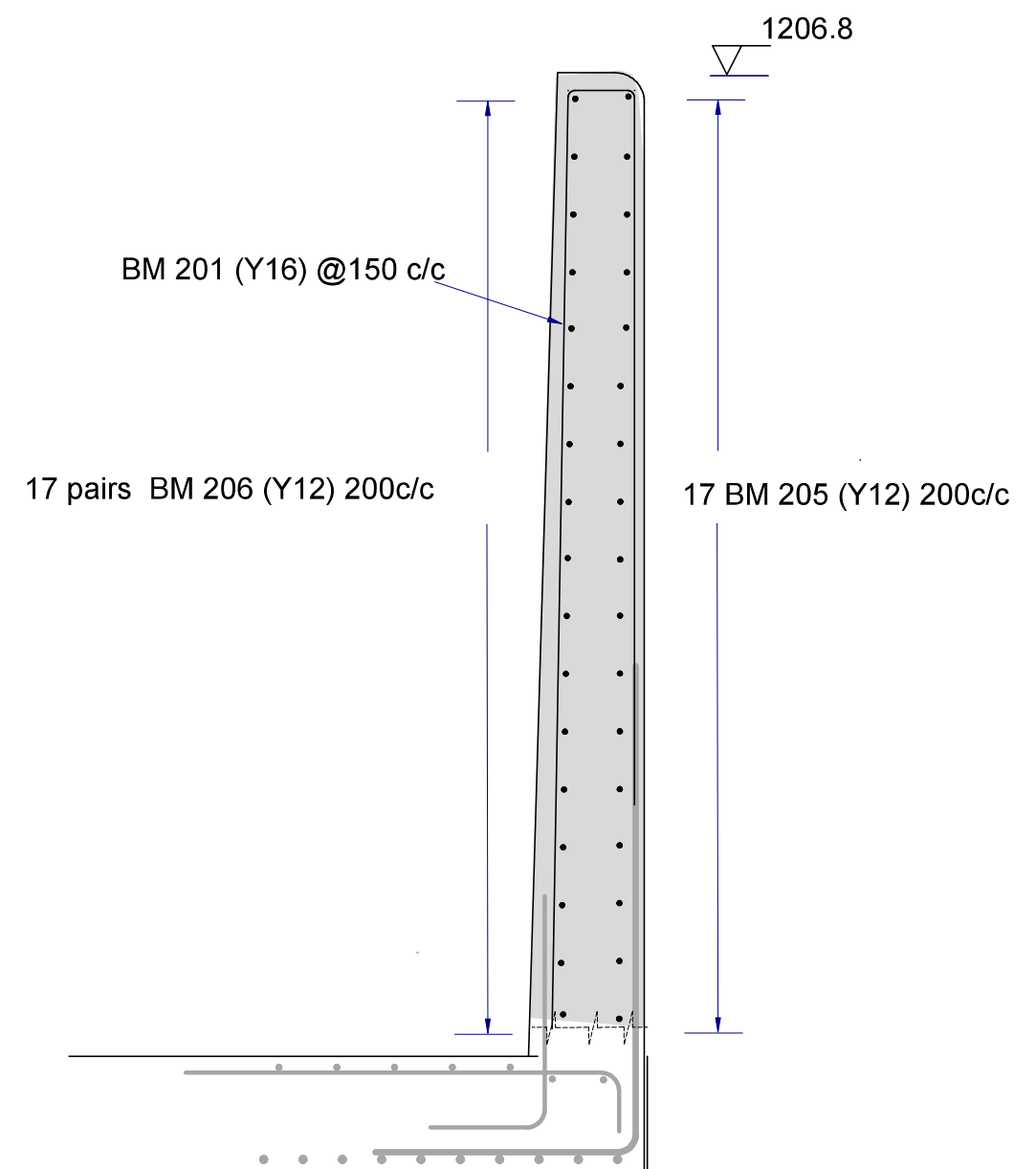


Cover to all steel 30 mm

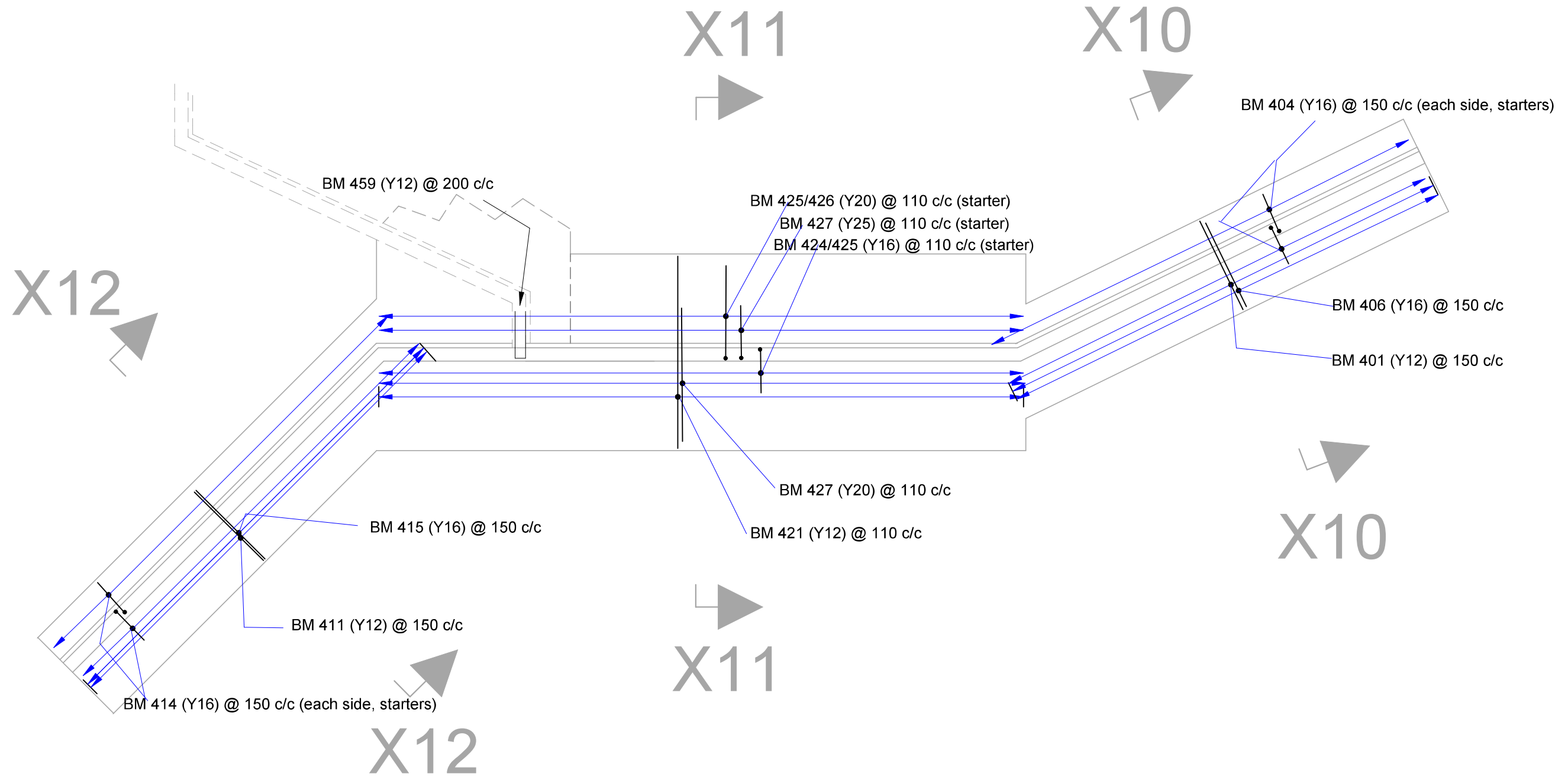
HansKingSRS (Pty) Ltd Sustainable River Stabilization	Project : Allemansfontein Murraysburg	Western Cape Government FOR YOU	CASIDRA SOC 	Title Walls 7-8 plan	
				Scale 1 : 50	
				Drawing number	SRS 2023/2/021 rev1
				Drawing date	2023 / 11 / 30



SECTION X6a - X6a
scale 1:25



SECTION X7a - X7a
scale 1:25



2) Provision has been made with the detailing of reinforcement for a 100 mm high kicker for the walls should it be required.

