



City of Wanneroo

Quinns Beach Long Term Coastal Management Stage 3

DRAWING LIST

GENERAL

59915802-GN-001
59915802-GN-002

GENERAL NOTES
LOCATION PLAN

COASTAL

59915802-MA-201
59915802-MA-202
59915802-MA-203
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59915802-MA-302
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59915802-MA-304
59915802-MA-401
59915802-MA-402
59915802-MA-403
59915802-MA-404

GROYNE 2 PLAN & LONG SECTION
GROYNE 2 SECTIONS B, C, D
GROYNE 2 SECTIONS E, F, G
GROYNE 2 SECTIONS H, I, J
GROYNE 3 PLAN & LONG SECTION
GROYNE 3 SECTIONS B, C, D
GROYNE 3 SECTIONS E, F, G
GROYNE 3 SECTIONS H
GROYNE 4 PLAN & LONG SECTION
GROYNE 4 SECTIONS B, C, D
GROYNE 4 SECTIONS E, F, G
GROYNE 4 SECTIONS H, I, J

CIVIL

59915802-CI-401
59915802-CI-402
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GROYNE 4 BEACH ACCESS PATH, GENERAL NOTES.
GROYNE 4 BEACH ACCESS PATH, EXISTING SITE AND SURVEY.
GROYNE 4 BEACH ACCESS PATH, GENERAL ARRANGEMENT, PLAN.
GROYNE 4 BEACH ACCESS PATH, SETOUT DETAILS.
GROYNE 4 BEACH ACCESS PATH, LONGITUDINAL PROFILE, TYPICAL DETAILS.
GROYNE 4 BEACH ACCESS PATH, CROSS SECTION CHN 5 - CHN. 60, SHEET 1 OF 2
GROYNE 4 BEACH ACCESS PATH, CROSS SECTION CHN 65 - CHN. 108, SHEET 2 OF 2
GROYNE 4 BEACH ACCESS PATH, RETAINING WALL, DETAILS.

LANDSCAPE

59915802-LA-501
59915802-LA-101
59915802-LA-102

BEACH ACCESS, WATERLAND POINT, SITE PLAN
BEACH ACCESS, GROUYNE 1
BEACH ACCESS, GROUYNE 1, SOUTH

DATE PLOTTED: 23 October 2017 12:06 PM BY: CRAIG BENFIELD

XREFs: bathContoursAHD, Contours_12Apr1016SurveyAN023102014Mullbeam
CAD File: \\AUPERCFS01\Coastal&Ocean\Subs\59915802_QuinnsBeachLongTermDrawings\Build\DWG\59915802-QUINNS BEACH-GROYNE OPTIONS\EXTENSIONS_stage3_v4-RL(Construction).dwg

1. GENERAL

- 1.1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTION AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- 1.2. ALL CRITICAL ARRANGEMENTS AND DIMENSIONS SHOWN SHALL BE VERIFIED BY THE CONTRACTOR ON SITE BEFORE WORK COMMENCES. DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS.
- 1.3. BEFORE UNDERTAKING ANY WORKS, ESTABLISH THE LOCATION OF ALL EXISTING SERVICES AFFECTED BY THE WORKS. ADVISE THE ENGINEER IF THERE ARE ANY UNKNOWN SERVICES THAT CAN POTENTIALLY BE AFFECTED BY THE WORKS.
- 1.4. DURING CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERSTRESSED. TEMPORARY BRACING AND BATTERS SHALL BE PROVIDED BY THE CONTRACTOR TO KEEP THE WORKS AND EXCAVATION STABLE AT ALL TIMES.
- 1.5. THE CONTRACTOR SHALL PROVIDE CERTIFICATES FROM AN APPROVED TESTING LABORATORY CERTIFYING THAT THE MATERIALS USED COMPLY WITH THE RELEVANT SPECIFICATIONS.
- 1.6. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS ON SITE BEFORE THE WORKS COMMENCE.
- 1.7. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
- 1.8. THE CONTRACTOR SHALL VERIFY ALL GROUND LEVELS ON SITE BEFORE THE WORKS COMMENCE

2. CODES AND STANDARDS

- 2.1. FOR ALL CODES AND STANDARDS RELEVANT TO THE WORKS, REFER TO THE SPECIFICATION AND DRAWING NOTES.

3. DATUM & COORDINATE

- 3.1. ALL COORDINATES SHOWN ARE RELATIVE TO GDA94, MGA50
- 3.2. UNLESS NOTED OTHERWISE ALL LEVELS ARE IN METRES RELATIVE TO AUSTRALIAN HEIGHT DATUM (AHD)

4. TIDAL INFORMATION

TIDE DESCRIPTION	LEVEL (m AHD)
HIGHEST ASTRONOMICAL TIDE (H.A.T.)	0.64
MEAN HIGHER HIGH WATER (M.H.H.W.)	0.39
MEAN LOWER HIGH WATER (M.L.H.W.)	0.28
MEAN SEA LEVEL (M.S.L.)	0.05
MEAN HIGHER LOW WATER (M.H.L.W.)	-0.19
MEAN LOWER LOW WATER (M.L.L.W.)	-0.29
LOWEST ASTRONOMICAL TIDE (L.A.T.)	-0.5

5. DESIGN CRITERIA

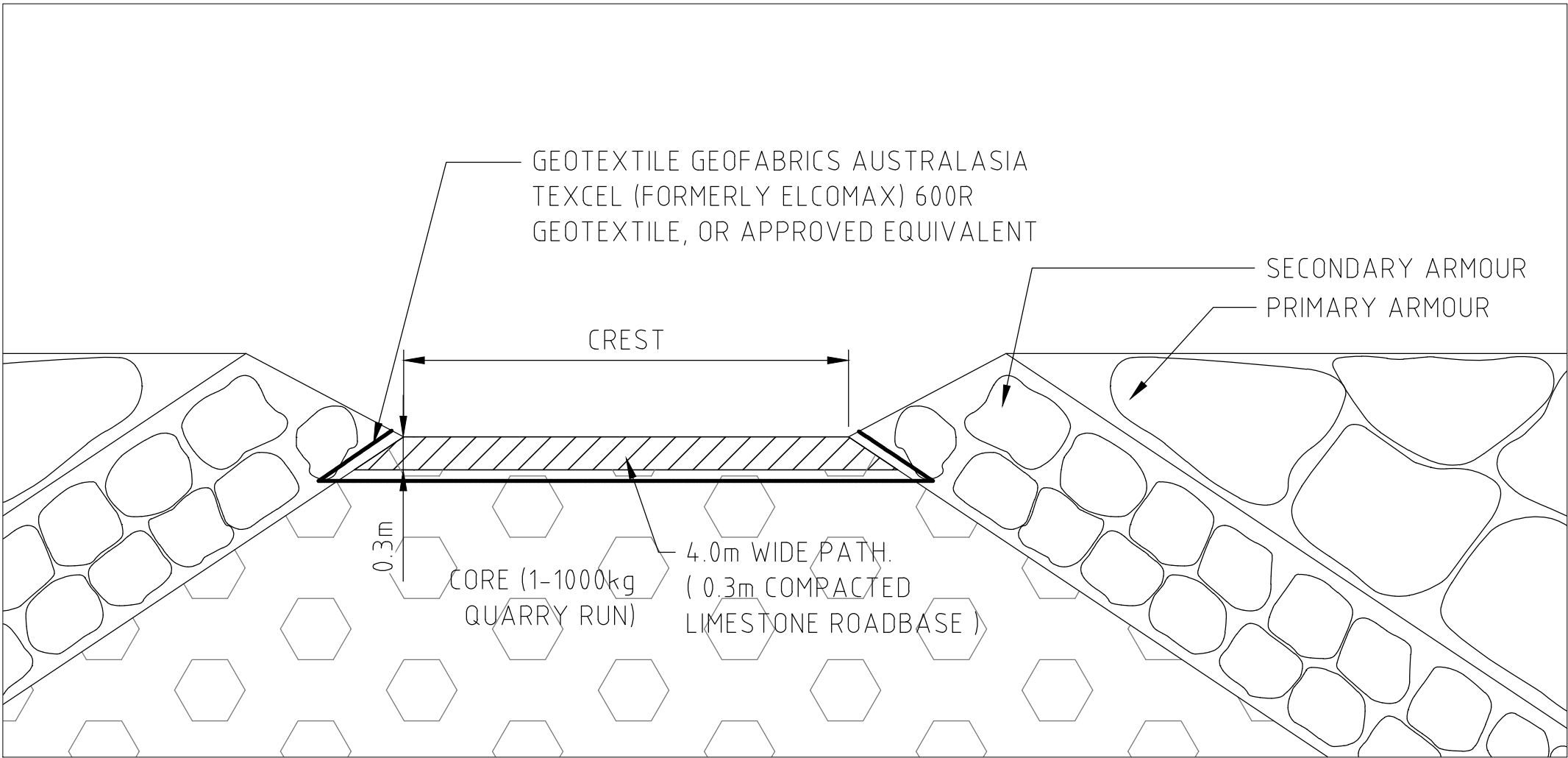
- 5.1. THE DESIGN LIFE SHALL BE 50 YEARS FOR ALL GENERAL STRUCTURES
- 5.2. WAVE LOADS:
THE MAXIMUM SIGNIFICANT WAVE HEIGHT AT THE HEAD OF GROYPE 2 IS 2.31m, AT THE HEAD OF GROYPE 3 IS 2.13m, AND AT THE HEAD OF GROYPE 4 IS 1.98m
- 5.3. SURVEY:
THE DESIGN PRESENTED IS BASED ON TOPOGRAPHIC AND BATHYMETRIC SURVEY DATA AS NOTED ON EACH DRAWING.

6. GROYNES

- 6.1. GROYPE WORKS SHALL COMPLY WITH CIRIA ROCK MANUAL 2007, BS 6349 AND LOCAL REGULATIONS AND SHALL BE IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.
- 6.2. THE AVERAGE SATURATED SURFACE-DRY RELATIVE ROCK DENSITY SHALL BE GREATER THAN 2,000 kg/m3 WITH 90 PERCENT OF THE STONES HAVING A DENSITY OF AT LEAST 2,000 kg/m3 FOR ARMOUR AND UNDERLAYER, AND NOT LESS THAN 2,000 kg/m3 FOR OTHER ROCK GRADES WHEN SAMPLED, TESTED AND REPORTED IN ACCORDANCE WITH CIRIA ROCK MANUAL (2007).
- 6.3. ROCK SHALL BE NATURALLY OCCURRING, DENSE, SOUND MATERIAL QUARRIED FROM AN APPROVED SOURCE. IT SHALL BE FREE FROM WEATHERING, MECHANICAL WEAKNESS AND CHEMICAL DECOMPOSITION. ROCK SHALL ALSO BE FREE FROM DIRT, SOIL, PEAT, LOAM, CLAY OR ANY ORGANIC MATTER AND ALL HOLES DRILLED FOR BLASTING PURPOSES.
- 6.4. ROCK IN ARMOUR AND UNDERLAYERS SHALL NOT CONTAIN MORE THAN 50 PERCENT BY WEIGHT OF STONE WITH A LENGTH TO THICKNESS RATIO GREATER THAN 2.
- 6.5. THE AVERAGE WATER ABSORPTION OF ROCKS SHALL BE NOT MORE THAN 2 PERCENT FOR ARMOUR ROCK AND UNDERLAYER, AND NOT MORE THAN 3 PERCENT FOR OTHER ROCK GRADES.
- 6.6. THE MINIMUM FREQUENCY OF TESTING AND VISUAL INSPECTION REQUIRED FOR EACH GRADE OF ROCK SHALL BE WEEKLY OR EVERY 3,000 TONES. TESTS SHALL INCLUDE SHAPE, GRADATION, DENSITY, WATER ABSORPTION, RESISTANCE TO WEATHERING, INTEGRITY AND COMPRESSIVE STRENGTH.
- 6.7. CORE MATERIAL SHALL BE GRANULAR, NON-COHESIVE, NATURALLY OCCURRING MATERIAL AND SHALL BE FREE FROM ORGANIC AND DELETERIOUS MATTER.
- 6.8. THE CORE MATERIAL SHALL HAVE A COEFFICIENT OF UNIFORMITY (D^{60} DIVIDED BY D^{10}) AND LESS THAN 3.0.
- 6.9. THE MINIMUM FREQUENCY TESTING OF CORE MATERIAL SHALL BE DAILY OR EVERY 1000m³
- 6.10. GROYNES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS DETAILED IN THE DRAWINGS/SPECIFICATIONS.
- 6.11. ARMOUR ROCK SHALL BE INDIVIDUALLY PLACED TO ACHIEVE A DENSE, FULLY INTERLOCKED ARMoured SLOPE SO THAT EACH ROCK IS SECURELY HELD IN PLACE BY ITS NEIGHBORS. A MINIMUM THREE POINT SUPPORT SHALL BE ACHIEVED. ROCKS SHALL BE PLACED WITH THEIR LONG AXES NORMAL TO THE SLOPE.
- 6.12. ALL JUNCTIONS BETWEEN TYPES OF CROSS-SECTION SHALL BE CONSTRUCTED SUCH THAT THERE IS GRADUAL TRANSITION, OVER A LENGTH OF LEAST TWO ARMOUR ROCKS, OR AS OTHERWISE DIRECTED IN THE DRAWINGS, BETWEEN THE PLANES DEFINING THE OUTER SURFACES OF THE PRIMARY ARMOUR.
- 6.13. ROCK ARMOUR PLACING TOLERANCES SHALL BE 0.2 D₅₀ FOR PLACEMENT ABOVE LAT AND 0.4 D₅₀ FOR PLACEMENT BELOW LAT. D₅₀ IS THE NOMINAL STONE DIAMETER FOR THE MEDIAN ARMOUR SIZE.
- 6.14. PLACING TOLERANCE FOR ALL OTHER ROCK APART FROM ROCK ARMOUR SHALL BE 0.1m AND 0.2m FOR PLACEMENT ABOVE AND BELOW CHART DATUM, RESPECTIVELY.
- 6.15. MEASUREMENTS SHALL BE TAKEN AT 10m INTERVALS ALONG THE LENGTH OF STRUCTURE AND AT 1m INTERVALS ACROSS THE MEASUREMENT PROFILE.
- 6.16. THE CONTRACTOR SHALL ASSESS SETTLEMENT OF THE STRUCTURE DURING AND AFTER THE CONSTRUCTION OF THE STRUCTURE AND SHALL MAKE DUE ALLOWANCE FOR THE SAME.
- 6.17. FOR ROCK & CORE MATERIAL GRADING INFORMATION, REFER TO THE SPECIFICATION.
- 6.18. ALL EXISTING GROYPE ARMOUR IS TO BE REMOVED FROM THE EXISTING GROYPE, GRADED AND STOCKPILED AS PER ROCK GRADES IN SPECIFICATION. EXISTING ARMOUR WHICH COMPLIES WITH THE SPECIFICATION SHALL BE RE-USED. EXISTING ARMOUR WHICH DOES NOT COMPLY WITH THE SPECIFICATION IS TO BE DISPOSED OF OFF-SITE BY THE CONTRACTOR.
- 6.19. ALL EXISTING GROYPE CORE MATERIAL IS TO BE LEFT IN PLACE EXCEPT WHERE THE NEW CORE COVER IS LESS THAN 37cm. WHERE COVER OF NEW CORE IS LESS THAN 37cm, CONTRACTOR SHALL REMOVE EXISTING CORE SO THAT COVER OF NEW CORE IS AT LEAST 37cm. REMOVED EXISTING CORE SHALL EITHER BE RE-USED, IF REQUIRED, OR REMOVED AND DISPOSED OF OFF-SITE.
- 6.20. IF HARD SUBSTRATE IS FOUND DURING CONSTRUCTION AT THE STRUCTURE TOE, THE GROYPE SHALL BE CONSTRUCTED DIRECTLY ON TOP OF THE LIMESTONE BEDROCK WITH A TOE TRENCH CUT INTO THE EXISTING BEDROCK TO THE SATISFACTION OF THE SUPERINTENDENT. THE BEDDING LAYER AND GEOTEXTILE MAY NOT BE REQUIRED WHERE THE GROYPE IS CONSTRUCTED DIRECTLY ON LIMESTONE BEDROCK AS DETERMINED BY THE SUPERINTENDENT. NOMINAL TRENCH TOE DETAIL AS SHOWN ADJACENT.

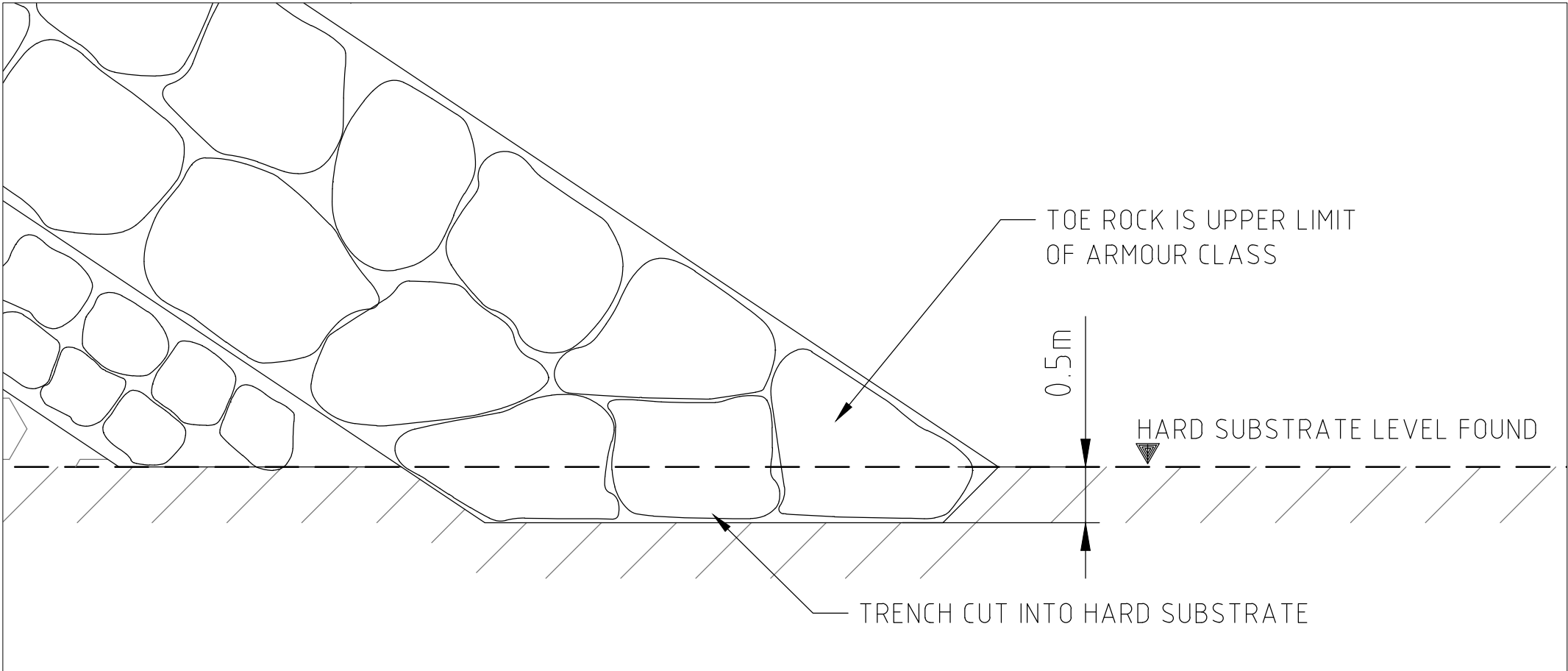
7. GEOTEXTILE

- 7.1. GEOTEXTILE SHALL BE PLACED AS PER SECTION DRAWINGS. REFER 01/200 FOR TYPICAL DETAIL SHOWING PLACEMENT TO GROYPE PATH.
- 7.2. GEOTEXTILE SHALL BE HANDLED AND STORED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
- 7.3. ALL ROCK PLACED ON GEOTEXTILE SHALL BE PLACED CAREFULLY ON TO THE GEOTEXTILE SUCH THAT THE GEOTEXTILE IS NOT DAMAGED.
- 7.4. ADJACENT SHEETS OF GEOTEXTILE FILTER FABRIC SHALL BE OVERLAPPED A MINIMUM OF 1m.
- 7.5. GEOTEXTILE AT TOE IS TO BE WRAPPED AROUND BEDDING LAYER AND UNDERNEATH FIRST TOE ROCK.



TYPICAL DETAIL- GEOTEXTILE TO GROYPE PATH
SCALE 1:50

01
200



ALTERNATIVE TOE DETAIL - TRENCH REQUIRED IF HARD SUBSTRATE FOUND
SCALE 1:50

02
200

0	23/10/2017	ISSUED FOR CONSTRUCTION	CS	CS	CH
A	21/02/2017	ISSUED FOR REPORT	CS	CS	CH
Rev.	Date	Description	Des.	Verif.	Appd.

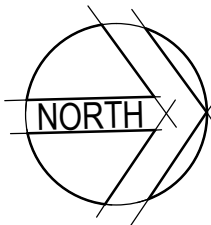
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Drawn RL	Date 20/02/2017	Client City of Wanneroo
Checked CH	Date 20/02/2017	Project Quinns Beach Long Term Stage 3
Designed CS	Date 20/02/2017	Title General Notes Sheet 1 of 1
Verified CS	Date 20/02/2017	
Approved		
CH	20/02/2017	

Status	FOR CONSTRUCTION		
	Scale AS SHOWN	Size A1	
Drawing Number	59915802-GN-001		Revision 0



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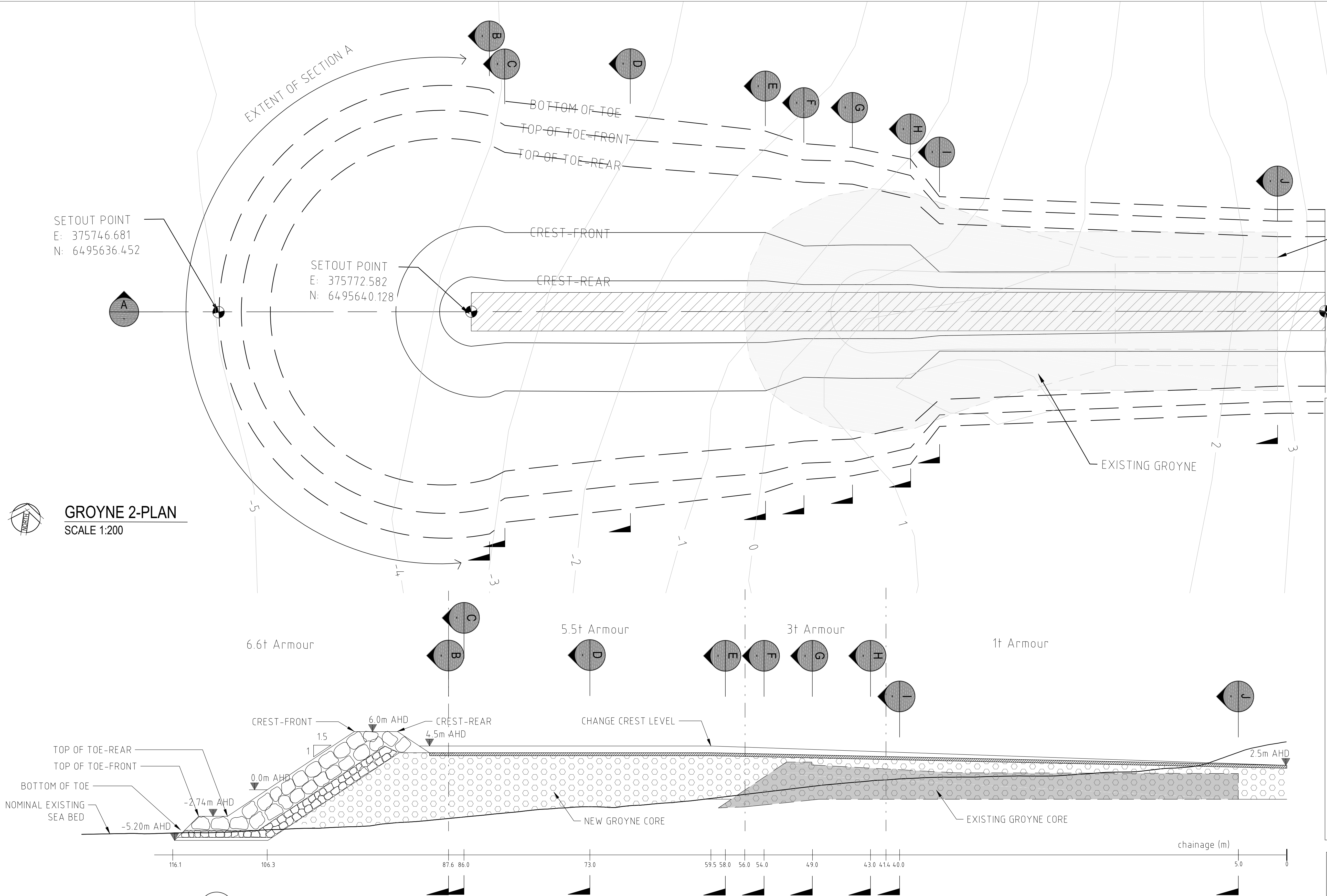
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Checked CH	Date 7/02/2017
Designed RL	Date 7/02/2017
Verified CS	Date 7/02/2017
Approved	
CH	7/02/2017

Client	City of Wanneroo
Project	Quinns Beach Long Term Stage 3
Title	Location Plan

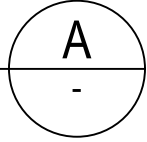
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NOT TO BE USED FOR CONSTRUCTION PURPOSES							
Datum		Scale		Size			
AHD		1:2000				A1	
Drawing Number						Revision	
59915802-GN-002						C	



GROYNE 2-PLAN
SCALE 1:200



SECTION
SCALE 1:200

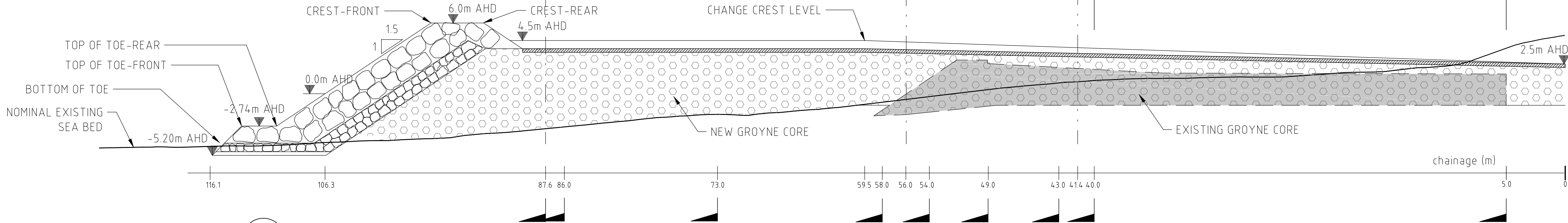


6.6t Armour

5.5t Armour

3t Armour

1t Armour



NOTES

1. ALL MATERIAL TO BE LIMESTONE OF MINIMUM DENSITY 2000KG^m³
2. CORE MATERIAL IS 1-1000kg QUARRY RUN
3. BEDDING LAYER IS D₁₅₀=15cm AND M₅₀=6.5kg
4. WHERE COVER OF NEW CORE OVER EXISTING GROUYNE CORE IS <37cm ON SLOPES, CONTRACTOR SHALL REMOVE EXISTING CORE SO THAT NEW CORE COVER IS AT LEAST 37cm
5. GEOTEXTILE IS TO BE GEOFABRICS AUSTRALASIA TEXCEL (FORMERLY ELCOMAX) 600R GEOTEXTILE, OR APPROVED EQUIVALENT. REFER DETAIL 01/200 FOR PLACEMENT OF GEOTEXTILE TO GROUYNE PATH.
6. PRIMARY ARMOUR CREST AT HEAD OF GROUYNE (6m AHD ELEVATION) CONSISTS OF ONE EXTRA LAYER OF PRIMARY AT CREST RELATIVE TO THAT SHOWN IN SECTION B CROSS-SECTION
7. TRANSITION BETWEEN TOE DETAIL WITH AND WITHOUT GEOTEXTILE IS NOMINATED AS NSL BETWEEN +1m AND +2m AHD ELEVATION. EXACT LOCATION TO BE DECIDED BY SUPERINTENDENT IN CONSULTATION WITH CONTRACTOR BASED ON SITE CONDITIONS AT TIME OF CONSTRUCTION
8. IF HARD SUBSTRATE FOUND DURING CONSTRUCTION, GROUYNE CONSTRUCTION AND TOE DETAIL TO BE AMENDED (SEE NOTE 6.20 ON SHEET GN-001)

NOMINAL EXISTING SEABED LEVEL ON SECTIONS INTERPOLATED FROM DoT HYDROGRAPHIC SURVEY FROM 23/10/2014 AND BEACH PROFILE SURVEYS FROM 12/04/2016

CONTOUR DATA ON PLAN VIEW SOURCED FROM 2016 LIDAR

Rev.	Date	Description	Des.	Verif.	Appd.
0	23.10.2017	ISSUED FOR CONSTRUCTION	CS	CS	CH
F	4.09.2017	REISSUED FOR TENDER	CS	CS	CH
E	16.05.2017	ISSUED FOR TENDER	CS	CS	CH
D	21/02/2017	ISSUED FOR REPORT	CS	CS	CH
C	9/02/2017	COMMUNITY CONSULTATION	CS	CS	CH
B	25/01/2017	DRAFT ISSUE			CH
A	19/01/2017	DRAFT ISSUED FOR COST ESTIMATE			CH

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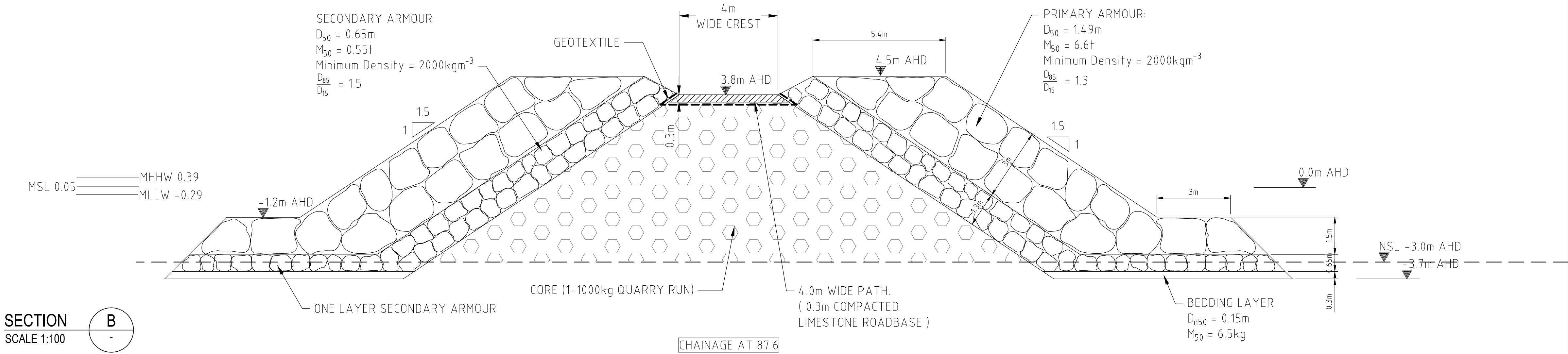
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Drawn RL	Date 19/01/2017
Checked CH	Date 19/01/2017
Designed CS	Date 24/01/2017
Verified CS	Date 24/01/2017
Approved CH	Date 24/01/2017

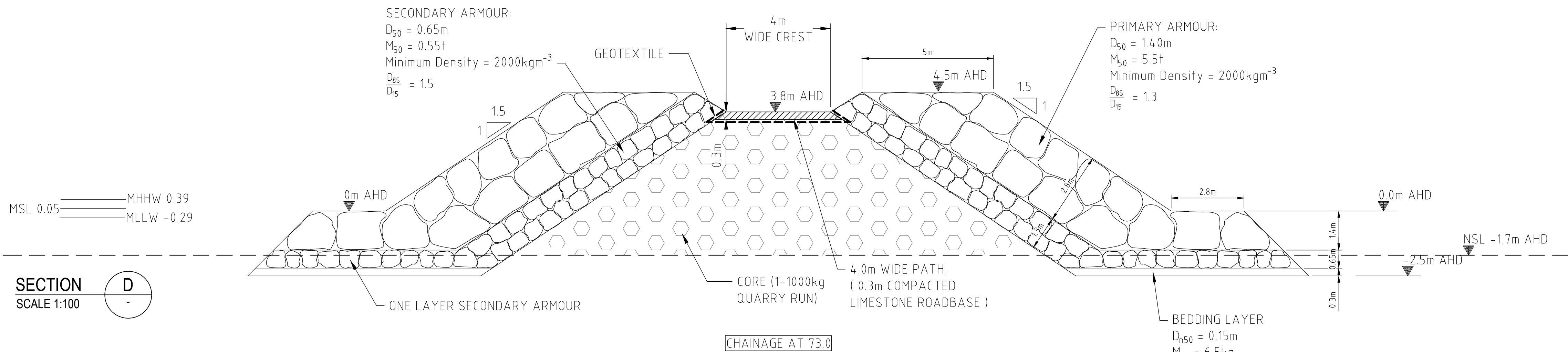
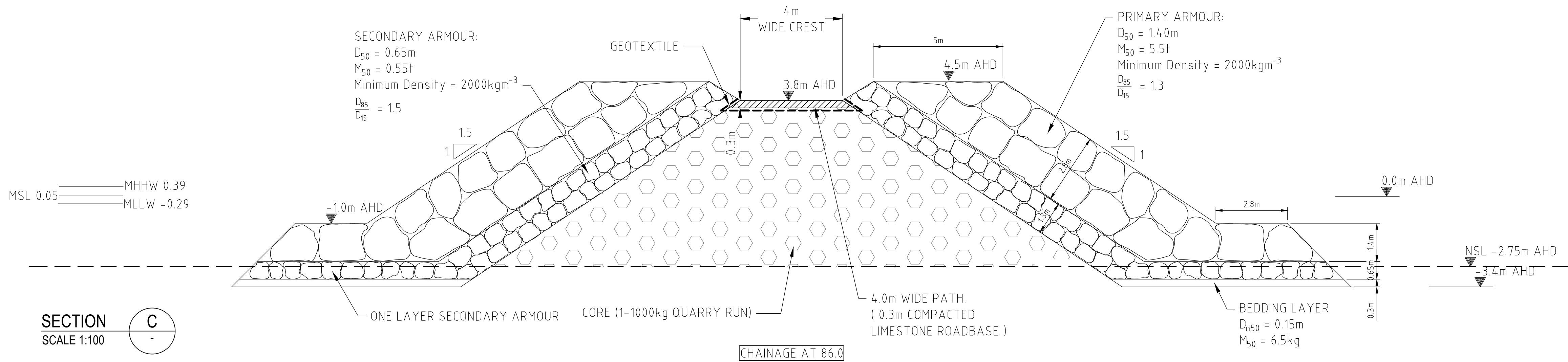
Client City of Wanneroo	Project Quinns Beach Long Term Stage 3
Title Groyne 2 Plan and Long Section	

Status FOR CONSTRUCTION	Datum AHD	Scale 1:200	Size A1
Drawing Number 59915802-MA-201	Revision 0		



- NOTES
1. ALL MATERIAL TO BE LIMESTONE OF MINIMUM DENSITY 2000KGM⁻³
 2. CORE MATERIAL IS 1-1000kg QUARRY RUN
 3. BEDDING LAYER IS D_{n50}=15cm AND M_{s0}=6.5kg
 4. WHERE COVER OF NEW CORE OVER EXISTING GROUYNE CORE IS <37cm ON SLOPES, CONTRACTOR SHALL REMOVE EXISTING CORE SO THAT NEW CORE COVER IS AT LEAST 37cm
 5. GEOTEXTILE IS TO BE GEOFABRICS AUSTRALASIA TEXCEL (FORMERLY ELCOMAX) 600R GEOTEXTILE, OR APPROVED EQUIVALENT. REFER DETAIL 01/200 FOR PLACEMENT OF GEOTEXTILE TO GROUYNE PATH.
 6. PRIMARY ARMOUR CREST AT HEAD OF GROUYNE (6m AHD ELEVATION) CONSISTS OF ONE EXTRA LAYER OF PRIMARY AT CREST RELATIVE TO THAT SHOWN IN SECTION B CROSS-SECTION
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NOMINAL EXISTING SEABED LEVEL ON SECTIONS INTERPOLATED FROM D₀T HYDROGRAPHIC SURVEY FROM 23/10/2014 AND BEACH PROFILE SURVEYS FROM 12/04/2016

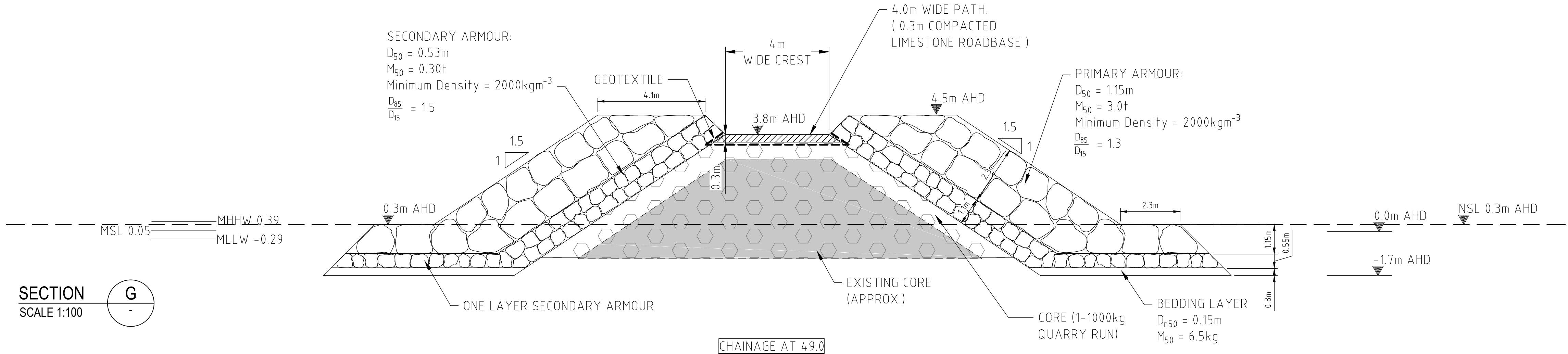
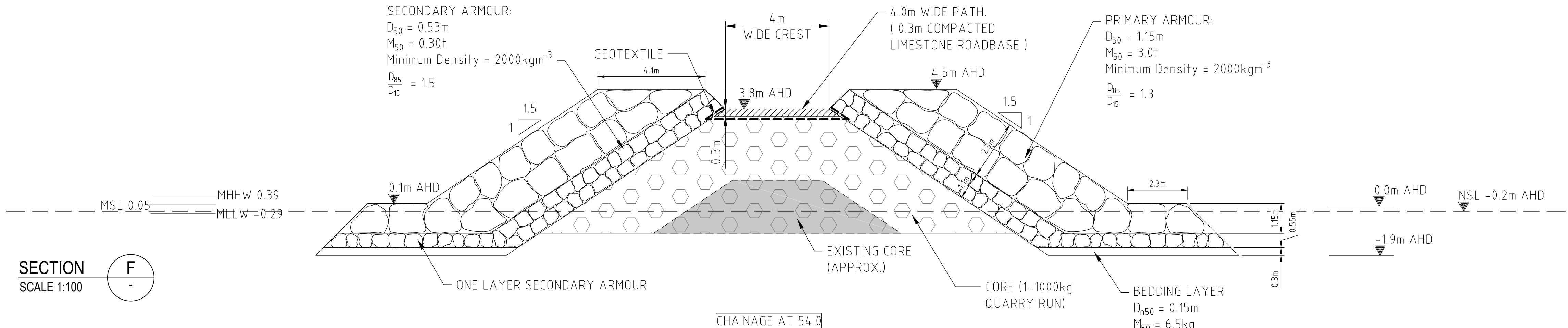
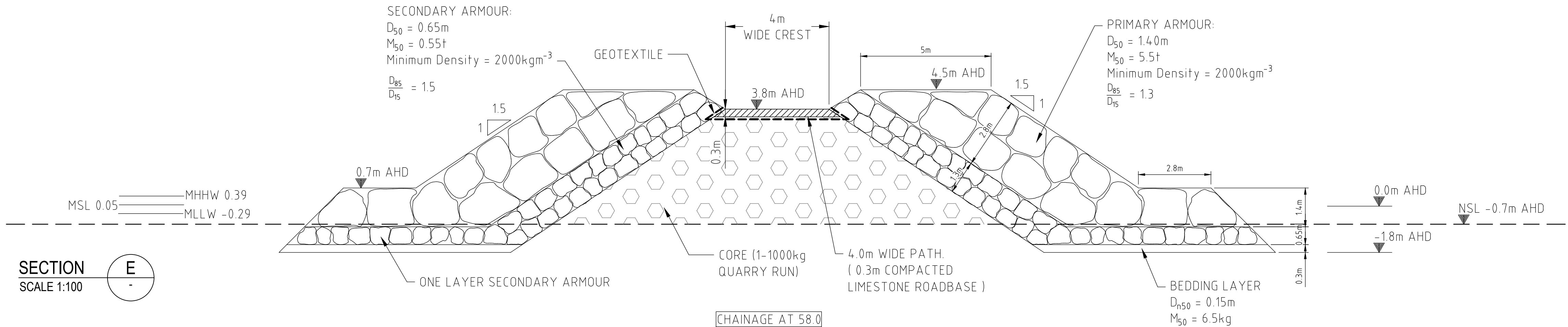


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0	23.10.2017	ISSUED FOR CONSTRUCTION	CS	CS	CH
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Drawn RL	Date 19/01/2017	Client City of Wanneroo
Checked CH	Date 19/01/2017	Project Quinns Beach Long Term Stage 3
Designed CS	Date 24/01/2017	
Verified CS	Date 24/01/2017	Title Groyne 2 Sections B, C, D
Approved CH	Date 24/01/2017	
		Status FOR CONSTRUCTION
Datum AHD		Scale 1:100
Drawing Number 59915802-MA-202		Size A1 Revision 0



NOTES

1. ALL MATERIAL TO BE LIMESTONE OF MINIMUM DENSITY $2000kgm^{-3}$
2. CORE MATERIAL IS 1-1000kg QUARRY RUN
3. BEDDING LAYER IS $D_{n50}=15cm$ AND $M_{50}=6.5kg$
4. WHERE COVER OF NEW CORE OVER EXISTING GROUYNE CORE IS $<37cm$ ON SLOPES, CONTRACTOR SHALL REMOVE EXISTING CORE SO THAT NEW CORE COVER IS AT LEAST 37cm
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8. IF HARD SUBSTRATE FOUND DURING CONSTRUCTION, GROUYNE CONSTRUCTION AND TOE DETAIL TO BE AMENDED (SEE NOTE 6.20 ON SHEET GN-001)

NOMINAL EXISTING SEABED LEVEL ON SECTIONS INTERPOLATED FROM D6T HYDROGRAPHIC SURVEY FROM 23/10/2014 AND BEACH PROFILE SURVEYS FROM 12/04/2016

Rev.	Date	Description	Des.	Verif.	Appd.
0	23.10.2017	ISSUED FOR CONSTRUCTION	CS	CS	CH
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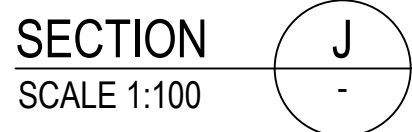
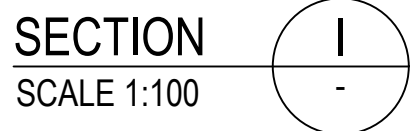
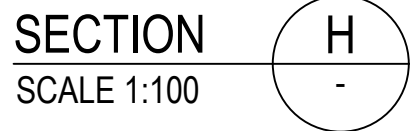


Drawn	RL	Date	19/01/2017
Checked	CH	Date	19/01/2017
Designed	CS	Date	24/01/2017
Verified	CS	Date	24/01/2017
Approved	CH	Date	24/01/2017

Client	City of Wanneroo
Project	Quinns Beach Long Term Stage 3
Title	Groyne 2 Sections E,F,G

Status
FOR CONSTRUCTION

Datum		Scale	Size
AHD		1:100	A1
Drawing Number			Revision
59915802-MA-203			0



- NOMINAL EXISTING SEABED LEVEL ON
SECTIONS INTERPOLATED FROM DōT
HYDROGRAPHIC SURVEY FROM 23/10/2014 AND
BEACH PROFILE SURVEYS FROM 12/04/2016

F	23.10.2017	ISSUED FOR CONSTRUCTION		CS	CS
D	4.09.2017	REISSUED FOR TENDER		CS	CS
E	16.05.2017	ISSUED FOR TENDER		CS	CS
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B	25/01/2017	DRAFT ISSUE			CH
A	19/01/2017	DRAFT ISSUED FOR COST ESTIMATE			CH
Rev.	Date	Description		Des.	Verif.
					App.

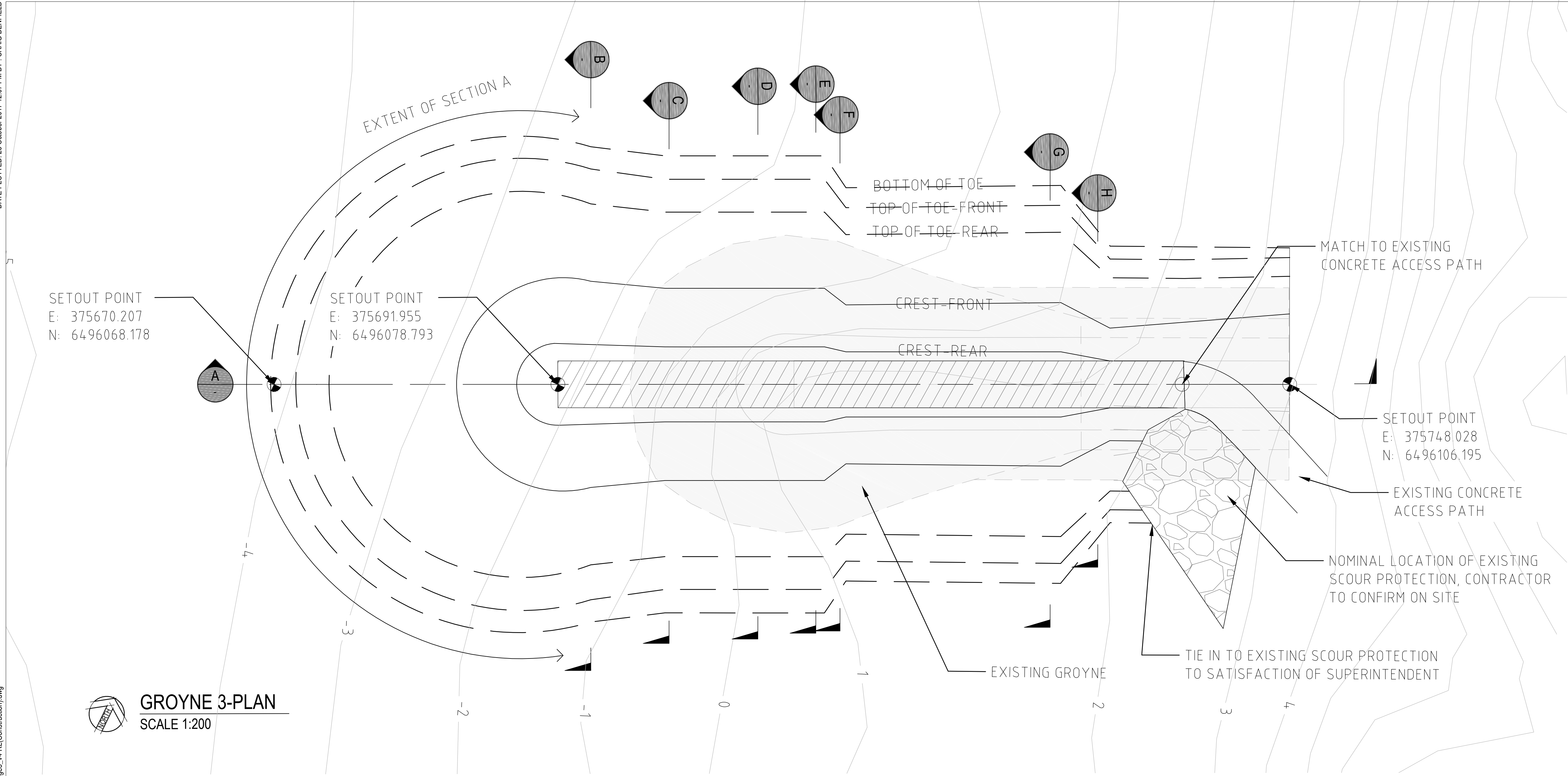
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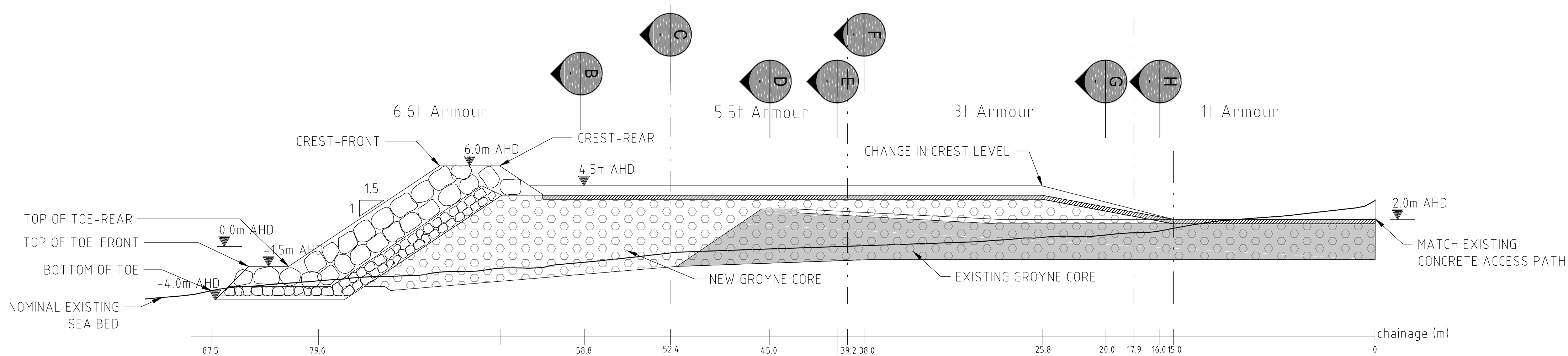
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Checked CH	Date 19/01/2017	Project Quinns Beach Long Term Stage 3	Status FOR CONSTRUCTION			
Designed CS	Date 24/01/2017					
Verified CS	Date 24/01/2017	Title Groyne 2 Sections H,I,J	Datum AHD		Scale 1:100	Size A1
Approved			Drawing Number 59915802-MA-204		Revision 0	
CH	24/01/2017					

DATE PLOTTED: 23 October 2017 12:07 PM BY: CRAIG BENFIELD

XREFs: bathyContoursAHD, Contours_12Apr1016SurveyAN023102014Milibeam
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GROYNE 3-PLAN
SCALE 1:200



SECTION A
SCALE 1:200

NOTES

1. ALL MATERIAL TO BE LIMESTONE OF MINIMUM DENSITY 2000KG^m-³
2. CORE MATERIAL IS 1-1000kg QUARRY RUN
3. BEDDING LAYER IS D₁₅₀=15cm AND M₅₀=6.5kg
4. WHERE COVER OF NEW CORE OVER EXISTING GROUYNE CORE IS <37cm ON SLOPES, CONTRACTOR SHALL REMOVE EXISTING CORE SO THAT NEW CORE COVER IS AT LEAST 37cm
5. GEOTEXTILE IS TO BE GEOFABRICS AUSTRALASIA TEXCEL (FORMERLY ELCOMAX) 600R GEOTEXTILE, OR APPROVED EQUIVALENT. REFER DETAIL 01/200 FOR PLACEMENT OF GEOTEXTILE TO GROUYNE PATH.
6. PRIMARY ARMOUR CREST AT HEAD OF GROUYNE (6m AHD ELEVATION) CONSISTS OF ONE EXTRA LAYER OF PRIMARY AT CREST RELATIVE TO THAT SHOWN IN SECTION B CROSS-SECTION
7. TRANSITION BETWEEN TOE DETAIL WITH AND WITHOUT GEOTEXTILE IS NOMINATED AS NSL BETWEEN +1m AND +2m AHD ELEVATION. EXACT LOCATION TO BE DECIDED BY SUPERINTENDENT IN CONSULTATION WITH CONTRACTOR BASED ON SITE CONDITIONS AT TIME OF CONSTRUCTION
8. IF HARD SUBSTRATE FOUND DURING CONSTRUCTION, GROUYNE CONSTRUCTION AND TOE DETAIL TO BE AMENDED (SEE NOTE 6.20 ON SHEET GN-001)

NOMINAL EXISTING SEABED LEVEL ON SECTIONS INTERPOLATED FROM DoT HYDROGRAPHIC SURVEY FROM 23/10/2014 AND BEACH PROFILE SURVEYS FROM 12/04/2016

CONTOUR DATA ON PLAN VIEW SOURCED FROM 2016 LIDAR

Rev.	Date	Description	Des.	Verif.	Appd.
0	23.10.2017	ISSUED FOR CONSTRUCTION	CS	CS	CH
E	4.09.2017	REISSUED FOR TENDER	CS	CS	CH
D	16.05.2017	ISSUED FOR TENDER	CS	CS	CH
C	21/02/2017	ISSUED FOR REPORT	CS	CS	CH
B	9/02/2017	COMMUNITY CONSULTATION	CS	CS	CH
A	25/01/2017	DRAFT ISSUE	CH		

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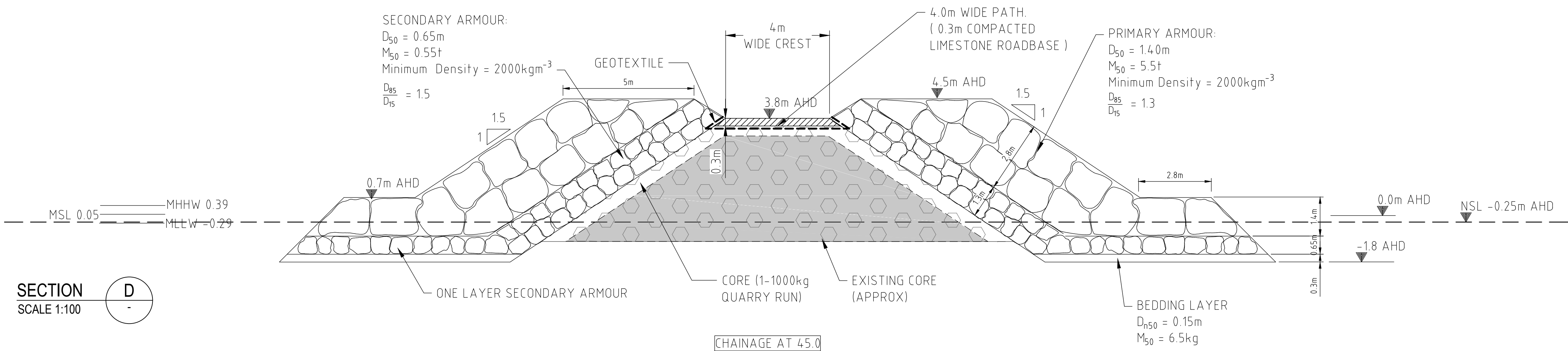
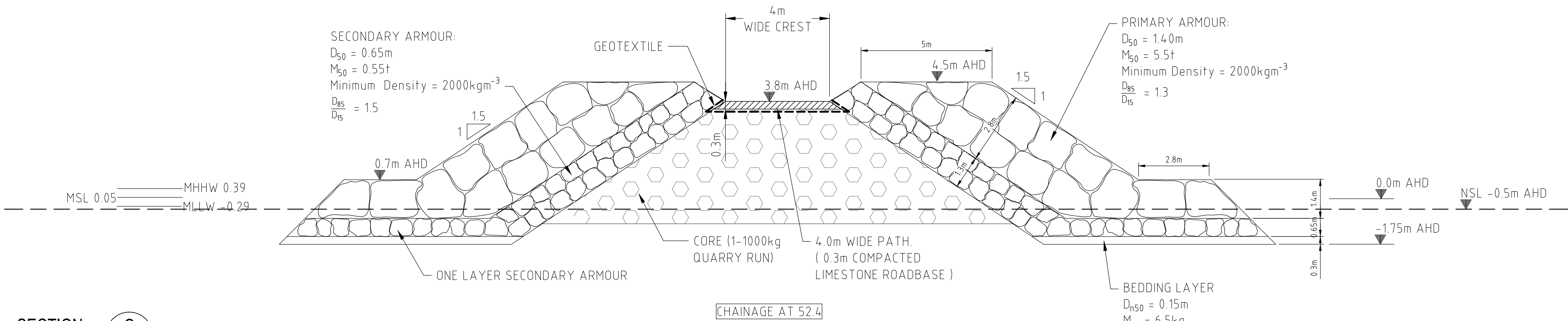
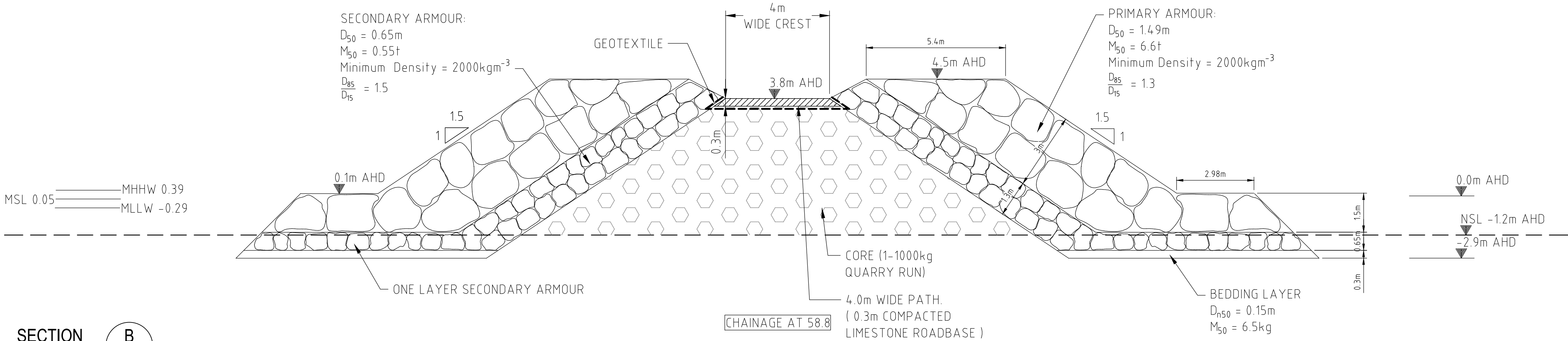


Drawn	RL	Date	24/01/2017
Checked	CH	Date	24/01/2017
Designed	CS	Date	24/01/2017
Verified	CS	Date	24/01/2017
Approved	CH	Date	24/01/2017

Client **City of Wanneroo**
Project **Quinns Beach Long Term Stage 3**
Title **Groyne 3 Plan and Long Section**

Status **FOR CONSTRUCTION**

Datum		Scale	Size
AHD		1:200	A1
Drawing Number			Revision
59915802-MA-301			0



- NOTES
1. ALL MATERIAL TO BE LIMESTONE OF MINIMUM DENSITY 2000KGM⁻³
 2. CORE MATERIAL IS 1-1000kg QUARRY RUN
 3. BEDDING LAYER IS D_{n50}=15cm AND M₅₀=6.5kg
 4. WHERE COVER OF NEW CORE OVER EXISTING GROUYNE CORE IS <37cm ON SLOPES, CONTRACTOR SHALL REMOVE EXISTING CORE SO THAT NEW CORE COVER IS AT LEAST 37cm
 5. GEOTEXTILE IS TO BE GEOFABRICS AUSTRALASIA TEXCEL (FORMERLY ELCOMAX) 600R GEOTEXTILE, OR APPROVED EQUIVALENT. REFER DETAIL 01/200 FOR PLACEMENT OF GEOTEXTILE TO GROUYNE PATH.
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 8. IF HARD SUBSTRATE FOUND DURING CONSTRUCTION, GROUYNE CONSTRUCTION AND TOE DETAIL TO BE AMENDED (SEE NOTE 6.20 ON SHEET GN-001)

NOMINAL EXISTING SEABED LEVEL ON SECTIONS INTERPOLATED FROM D₀T HYDROGRAPHIC SURVEY FROM 23/10/2014 AND BEACH PROFILE SURVEYS FROM 12/04/2016

0	23.10.2017	ISSUED FOR CONSTRUCTION	CS	CS	CH
E	4.09.2017	REISSUED FOR TENDER	CS	CS	CH
D	16.05.2017	ISSUED FOR TENDER	CS	CS	CH
C	21/02/2017	ISSUED FOR REPORT	CS	CS	CH
B	9/02/2017	COMMUNITY CONSULTATION	CS	CS	CH
A	25/01/2017	DRAFT ISSUE	CH		
Rev.	Date	Description	Des.	Verif.	Appd.

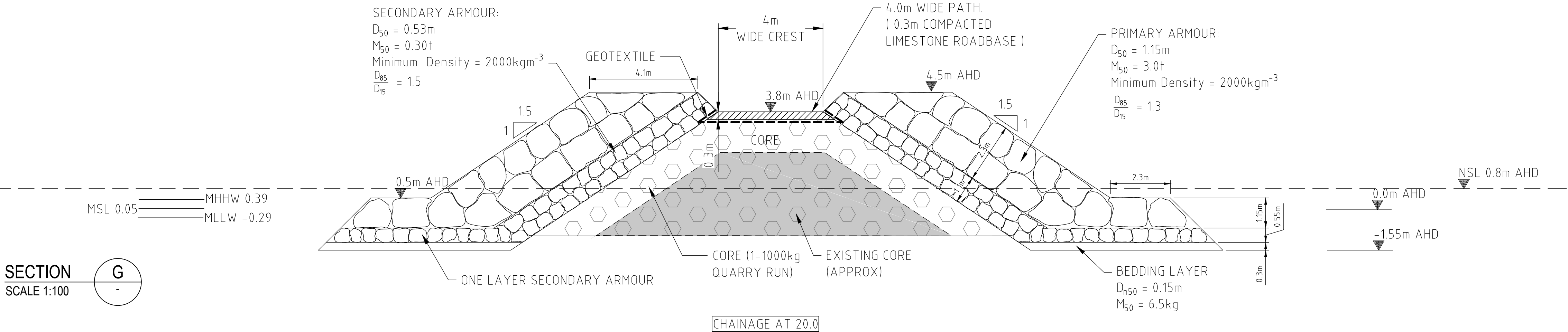
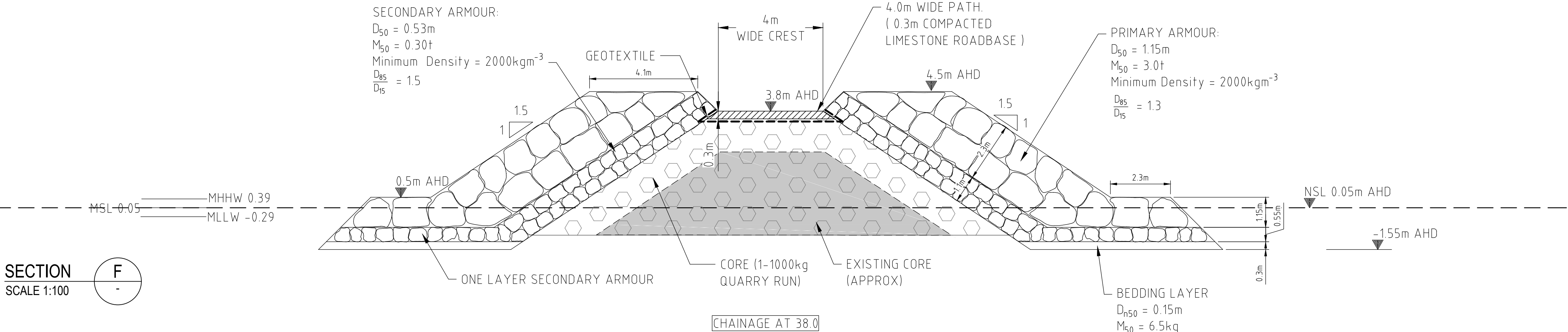
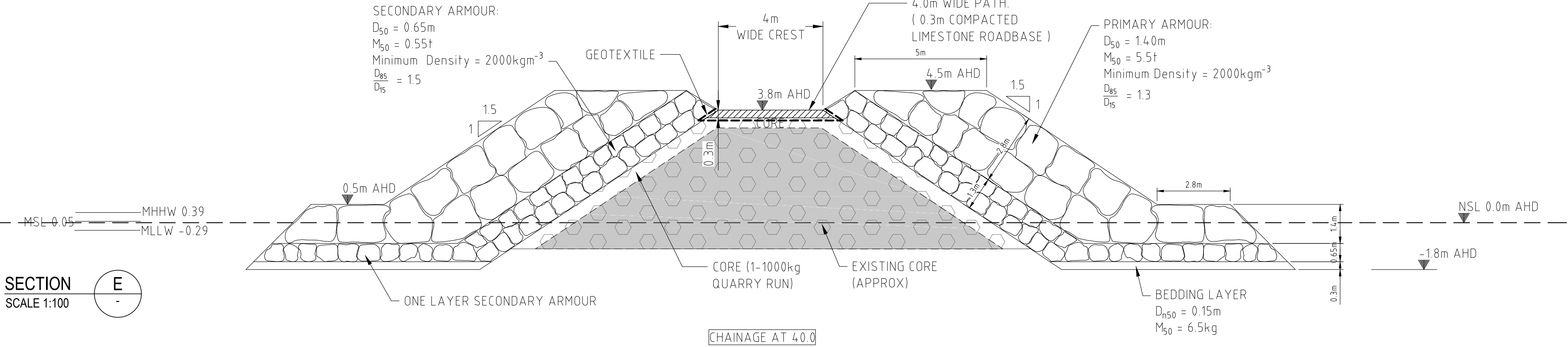
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Drawn	RL	Date	24/01/2017
Checked	CH	Date	24/01/2017
Designed	CS	Date	24/01/2017
Verified	CS	Date	24/01/2017
Approved	CH	Date	24/01/2017

Client	City of Wanneroo
Project	Quinns Beach Long Term Stage 3
Title	Groyne 3 Sections B,C,D

Status				FOR CONSTRUCTION	
Datum		AHD		Scale	
				1:100	
Size					
Drawing Number					
59915802-MA-302					



NOTES

1. ALL MATERIAL TO BE LIMESTONE OF MINIMUM DENSITY 2000KGM^{-3}
2. CORE MATERIAL IS 1-1000kg QUARRY RUN
3. BEDDING LAYER IS $D_{n50}=15\text{cm}$ AND $M_{50}=6.5\text{kg}$
4. WHERE COVER OF NEW CORE OVER EXISTING GROUYNE CORE IS $<37\text{cm}$ ON SLOPES, CONTRACTOR SHALL REMOVE EXISTING CORE SO THAT NEW CORE COVER IS AT LEAST 37cm
5. GEOTEXTILE IS TO BE GEOFABRICS AUSTRALASIA TEXCEL (FORMERLY ELCOMAX) 600R GEOTEXTILE, OR APPROVED EQUIVALENT. REFER DETAIL 01/200 FOR PLACEMENT OF GEOTEXTILE TO GROUYNE PATH.
6. PRIMARY ARMOUR CREST AT HEAD OF GROUYNE (6m AHD ELEVATION) CONSISTS OF ONE EXTRA LAYER OF PRIMARY AT CREST RELATIVE TO THAT SHOWN IN SECTION B CROSS-SECTION
7. TRANSITION BETWEEN TOE DETAIL WITH AND WITHOUT GEOTEXTILE IS NOMINATED AS NSL BETWEEN +1m AND +2m AHD ELEVATION. EXACT LOCATION TO BE DECIDED BY SUPERINTENDENT IN CONSULTATION WITH CONTRACTOR BASED ON SITE CONDITIONS AT TIME OF CONSTRUCTION
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NOMINAL EXISTING SEABED LEVEL ON SECTIONS INTERPOLATED FROM DO T HYDROGRAPHIC SURVEY FROM 23/10/2014 AND BEACH PROFILE SURVEYS FROM 12/04/2016

Rev.	Date	Description	Des.	Verif.	Appd.
0	23.10.2017	ISSUED FOR CONSTRUCTION	CS	CS	CH
E	4.09.2017	REISSUED FOR TENDER	CS	CS	CH
D	16.05.2017	ISSUED FOR TENDER	CS	CS	CH
C	21/02/2017	ISSUED FOR REPORT	CS	CS	CH
B	9/02/2017	COMMUNITY CONSULTATION	CS	CS	CH
A	25/01/2017	DRAFT ISSUE			CH

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Drawn RL	Date 24/01/2017	Client City of Wanneroo
Checked CH	Date 24/01/2017	Project Quinns Beach Long Term Stage 3
Designed CS	Date 24/01/2017	Title Groyne 3 Sections E,F,G
Verified CS	Date 24/01/2017	
Approved CH	Date 24/01/2017	
Status FOR CONSTRUCTION		
Datum AHD	Scale 1:100	Size A1
Drawing Number 59915802-MA-303		Revision 0

0	23.10.2017	ISSUED FOR CONSTRUCTION	CS	CS	CH
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D	16.05.2017	ISSUED FOR TENDER	CS	CS	CH
C	21/02/2017	ISSUED FOR REPORT	CS	CS	CH
B	9/02/2017	COMMUNITY CONSULTATION	CS	CS	CH
A	25/01/2017	DRAFT ISSUE			CH
Rev.	Date	Description	Des.	Verif.	Appd.

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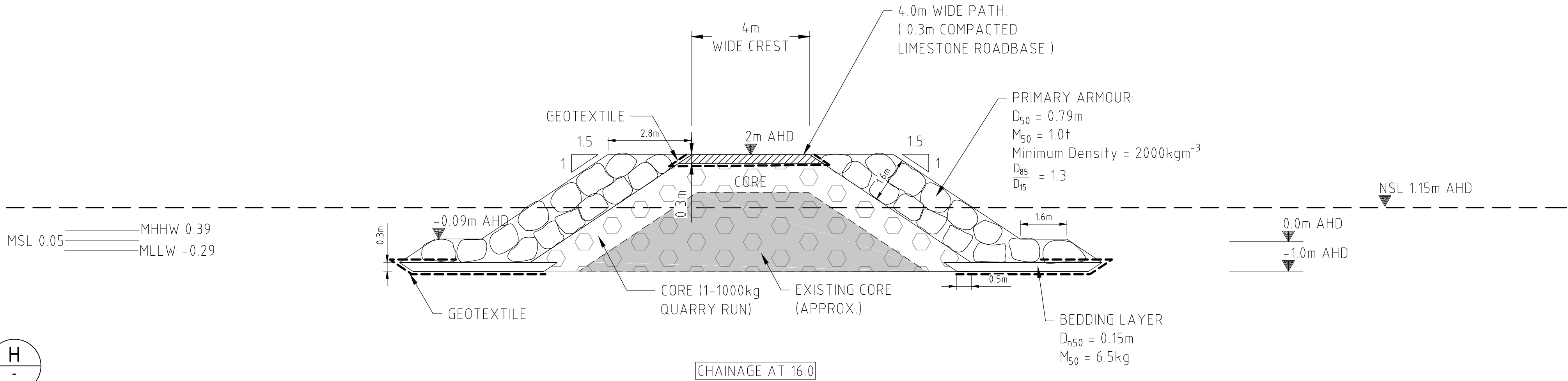
Cardno (WA) Pty Ltd | ABN 77 009 119 000
11 Harvest Terrace
West Perth WA 6005
Tel: 08 9273 3888 Fax: 08 9486 8664
Web: www.cardno.com.au

Drawn	RL	Date	24/01/2017
Checked	CH	Date	24/01/2017
Designed	CS	Date	24/01/2017
Verified	CS	Date	24/01/2017
Approved			
CH		24/01/2017	

Client	City of Wanneroo		
Project	Quinns Beach Long Term Stage 3		
Title	Groyne 3 Sections H		

Status				FOR CONSTRUCTION	
Datum	AHD	Scale	1:100	Size	A1
Drawing Number				Revision	
59915802-MA-304				0	

SECTION H
SCALE 1:100



NOTES

1. ALL MATERIAL TO BE LIMESTONE OF MINIMUM DENSITY 2000KGM⁻³
2. CORE MATERIAL IS 1-1000kg QUARRY RUN
3. BEDDING LAYER IS D_{n50}=15cm AND M₅₀=6.5kg
4. WHERE COVER OF NEW CORE OVER EXISTING GROUYNE CORE IS <37cm ON SLOPES, CONTRACTOR SHALL REMOVE EXISTING CORE SO THAT NEW CORE COVER IS AT LEAST 37cm
5. GEOTEXTILE IS TO BE GEOFABRICS AUSTRALASIA TEXCEL (FORMERLY ELCOMAX) 600R GEOTEXTILE, OR APPROVED EQUIVALENT. REFER DETAIL 01/200 FOR PLACEMENT OF GEOTEXTILE TO GROUYNE PATH.
6. PRIMARY ARMOUR CREST AT HEAD OF GROUYNE (6m AHD ELEVATION) CONSISTS OF ONE EXTRA LAYER OF PRIMARY AT CREST RELATIVE TO THAT SHOWN IN SECTION B CROSS-SECTION
7. TRANSITION BETWEEN TOE DETAIL WITH AND WITHOUT GEOTEXTILE IS NOMINATED AS NSL BETWEEN +1m AND +2m AHD ELEVATION. EXACT LOCATION TO BE DECIDED BY SUPERINTENDENT IN CONSULTATION WITH CONTRACTOR BASED ON SITE CONDITIONS AT TIME OF CONSTRUCTION
8. IF HARD SUBSTRATE FOUND DURING CONSTRUCTION, GROUYNE CONSTRUCTION AND TOE DETAIL TO BE AMENDED (SEE NOTE 6.20 ON SHEET GN-001)

NOMINAL EXISTING SEABED LEVEL ON SECTIONS INTERPOLATED FROM D_oT HYDROGRAPHIC SURVEY FROM 23/10/2014 AND BEACH PROFILE SURVEYS FROM 12/04/2016

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N: 6496612.615

SETOUT POINT
E: 375543.847
N: 6496620.363

SETOUT POINT
E: 375584.948
N: 6496636.5

NEW CONCRETE PATH,
REFER CIVIL DRAWINGS
59915802-CI-401
59915802-CI-402
59915802-CI-403
59915802-CI-404
59915802-CI-405
59915802-CI-406
59915802-CI-407
59915802-CI-408

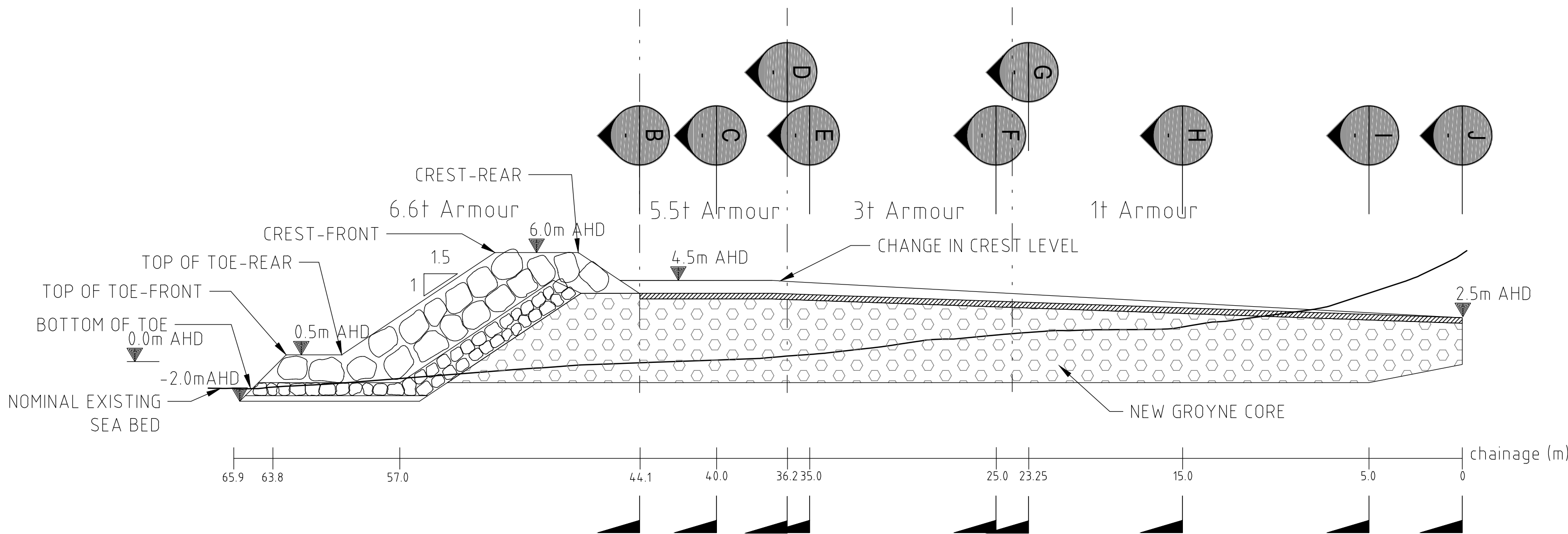
GROYNE 4-PLAN
SCALE 1:200

NOTES

1. ALL MATERIAL TO BE LIMESTONE OF MINIMUM DENSITY 2000KGM⁻³
2. CORE MATERIAL IS 1-1000kg QUARRY RUN
3. BEDDING LAYER IS D₅₀=15cm AND M₅₀=6.5kg
4. WHERE COVER OF NEW CORE OVER EXISTING GROYNE CORE IS <37cm ON SLOPES, CONTRACTOR SHALL REMOVE EXISTING CORE SO THAT NEW CORE COVER IS AT LEAST 37cm
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6. PRIMARY ARMOUR CREST AT HEAD OF GROYNE (6m AHD ELEVATION) CONSISTS OF ONE EXTRA LAYER OF PRIMARY AT CREST RELATIVE TO THAT SHOWN IN SECTION B CROSS-SECTION
7. TRANSITION BETWEEN TOE DETAIL WITH AND WITHOUT GEOTEXTILE IS NOMINATED AS NSL BETWEEN +1m AND +2m AHD ELEVATION. EXACT LOCATION TO BE DECIDED BY SUPERINTENDENT IN CONSULTATION WITH CONTRACTOR BASED ON SITE CONDITIONS AT TIME OF CONSTRUCTION
8. IF HARD SUBSTRATE FOUND DURING CONSTRUCTION, GROYNE CONSTRUCTION AND TOE DETAIL TO BE AMENDED (SEE NOTE 6.20 ON SHEET GN-001)

NOMINAL EXISTING SEABED LEVEL ON SECTIONS INTERPOLATED FROM DoT HYDROGRAPHIC SURVEY FROM 23/10/2014 AND BEACH PROFILE SURVEYS FROM 12/04/2016

CONTOUR DATA ON PLAN VIEW SOURCED FROM DoT AND CoW SURVEYS



SECTION A
SCALE 1:200

Rev.	Date	Description	Des.	Verif.	Appd.
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E	4.09.2017	REISSUED FOR TENDER	CS	CS	CH
D	16.05.2017	ISSUED FOR TENDER	CS	CS	CH
C	21/02/2017	ISSUED FOR REPORT	CS	CS	CH
B	9/02/2017	COMMUNITY CONSULTATION	CS	CS	CH
A	25/01/2017	DRAFT ISSUE	CH		

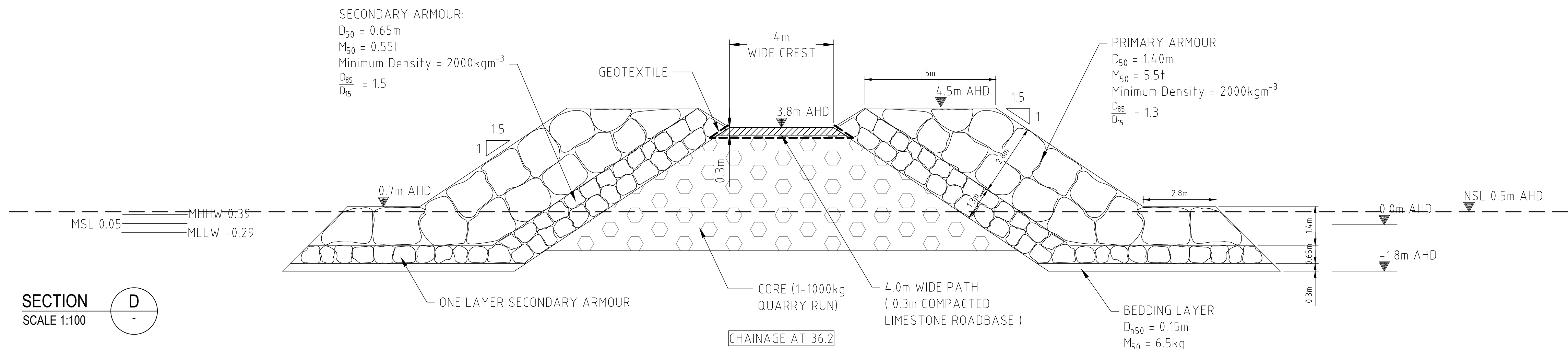
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Tel: 08 9273 3888 Fax: 08 9486 8664
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Drawn RL	Date 24/01/2017
Checked CH	Date 24/01/2017
Designed CS	Date 24/01/2017
Verified CS	Date 24/01/2017
Approved CH	Date 24/01/2017

Client City of Wanneroo	Project Quinns Beach Long Term Stage 3
Title Groyne 4 Plan and Long Section	

Status FOR CONSTRUCTION	Datum AHD	Scale 1:200	Size A1
Drawing Number 59915802-MA-401	Revision 0		



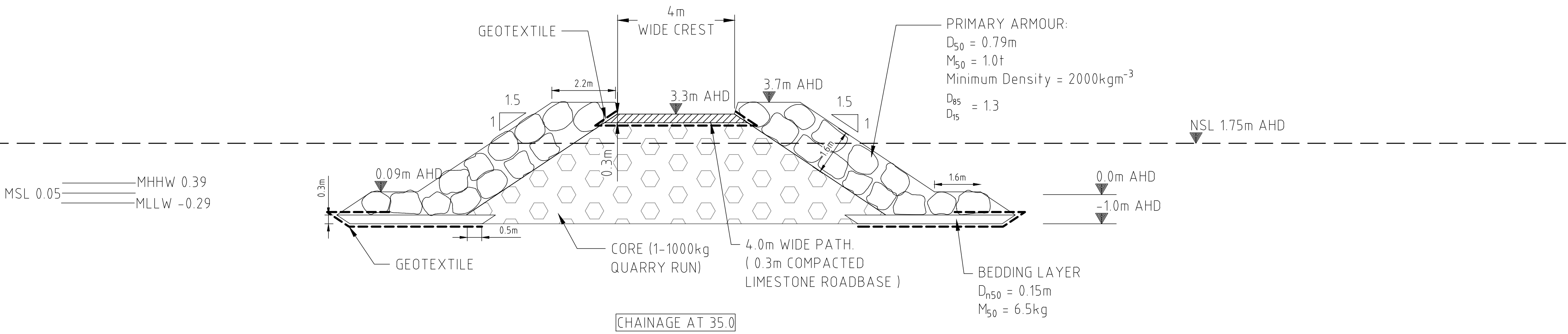
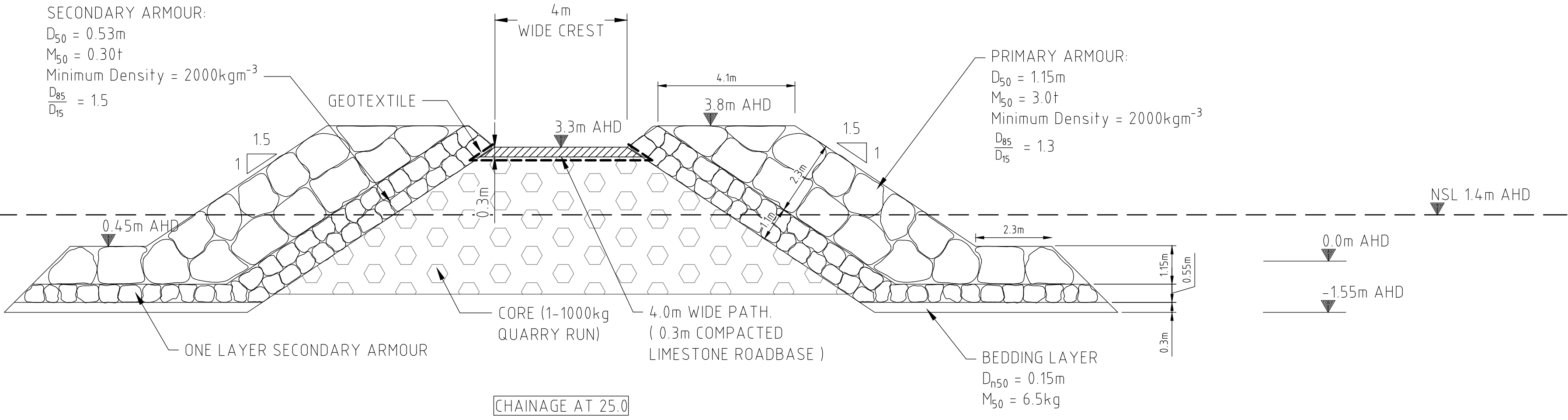
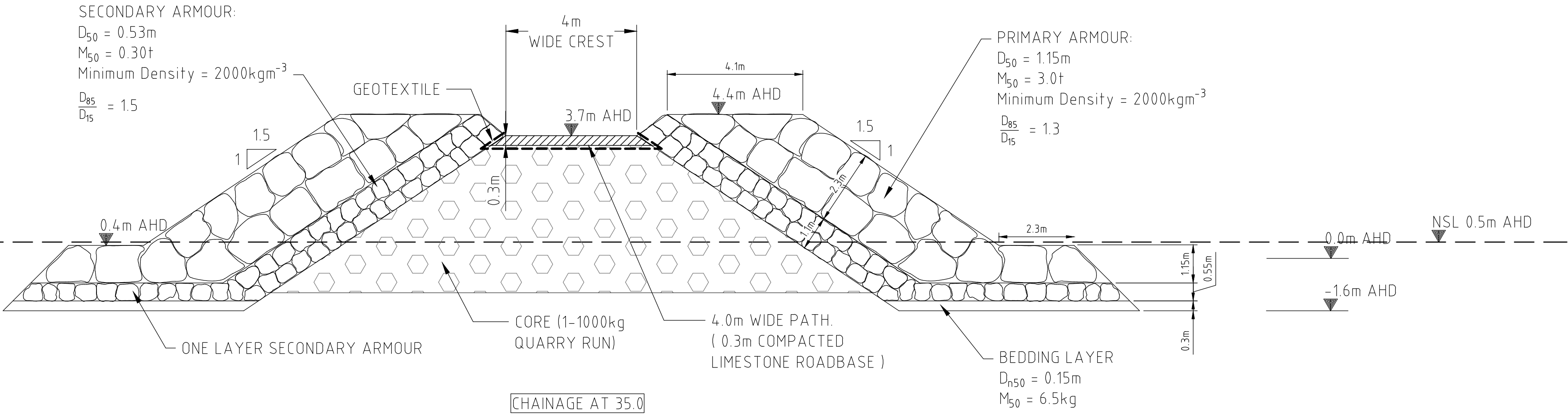
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SECTIONS INTERPOLATED FROM DoT
HYDROGRAPHIC SURVEY FROM 23/10/2014 AND
BEACH PROFILE SURVEYS FROM 12/04/2016

Drawn RL	Date 24/01/2017	Client City of Wanneroo				
Checked GH	Date 24/01/2017	Project Quinns Beach Long Term Stage 3	Status		FOR CONSTRUCTION	
Designed CS	Date 24/01/2017		Datum			
Verified CS	Date 24/01/2017		AHD		Scale 1:100	Size A1
Approved		Title Groyne 4 Sections B,C,D	Drawing Number 59915802-MA-402			Revision 0
CH	24/01/2017					

SECTION E
SCALE 1:100

SECTION F
SCALE 1:100

SECTION G
SCALE 1:100



NOTES

1. ALL MATERIAL TO BE LIMESTONE OF MINIMUM DENSITY 2000KGM⁻³
2. CORE MATERIAL IS 1-1000kg QUARRY RUN
3. BEDDING LAYER IS D_{n50}=15cm AND M₅₀=6.5kg
4. WHERE COVER OF NEW CORE OVER EXISTING GROYPE CORE IS <37cm ON SLOPES, CONTRACTOR SHALL REMOVE EXISTING CORE SO THAT NEW CORE COVER IS AT LEAST 37cm
5. GEOTEXTILE IS TO BE GEOFABRICS AUSTRALASIA TEXCEL (FORMERLY ELCOMAX) 600R GEOTEXTILE, OR APPROVED EQUIVALENT. REFER DETAIL 01/200 FOR PLACEMENT OF GEOTEXTILE TO GROYPE PATH.
6. PRIMARY ARMOUR CREST AT HEAD OF GROYPE (6m AHD ELEVATION) CONSISTS OF ONE EXTRA LAYER OF PRIMARY AT CREST RELATIVE TO THAT SHOWN IN SECTION B CROSS-SECTION
7. TRANSITION BETWEEN TOE DETAIL WITH AND WITHOUT GEOTEXTILE IS NOMINATED AS NSL BETWEEN +1m AND +2m AHD ELEVATION. EXACT LOCATION TO BE DECIDED BY SUPERINTENDENT IN CONSULTATION WITH CONTRACTOR BASED ON SITE CONDITIONS AT TIME OF CONSTRUCTION
8. IF HARD SUBSTRATE FOUND DURING CONSTRUCTION, GROYPE CONSTRUCTION AND TOE DETAIL TO BE AMENDED (SEE NOTE 6.20 ON SHEET GN-001)

NOMINAL EXISTING SEABED LEVEL ON SECTIONS INTERPOLATED FROM D₀T HYDROGRAPHIC SURVEY FROM 23/10/2014 AND BEACH PROFILE SURVEYS FROM 12/04/2016

Rev.	Date	Description	Des.	Verif.	Appd.
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E	4.09.2017	REISSUED FOR TENDER	CS	CS	CH
D	16.05.2017	ISSUED FOR TENDER	CS	CS	CH
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B	9/02/2017	COMMUNITY CONSULTATION	CS	CS	CH
A	25/01/2017	DRAFT ISSUE	CH		

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Drawn RL	Date 24/01/2017	Client City of Wanneroo
Checked CH	Date 24/01/2017	Project Quinns Beach Long Term Stage 3
Designed CS	Date 24/01/2017	Title Groyne 4 Sections E,F,G
Verified CS	Date 24/01/2017	
Approved CH	Date 24/01/2017	
Status FOR CONSTRUCTION		
Datum AHD	Scale 1:100	Size A1
Drawing Number 59915802-MA-403		Revision 0

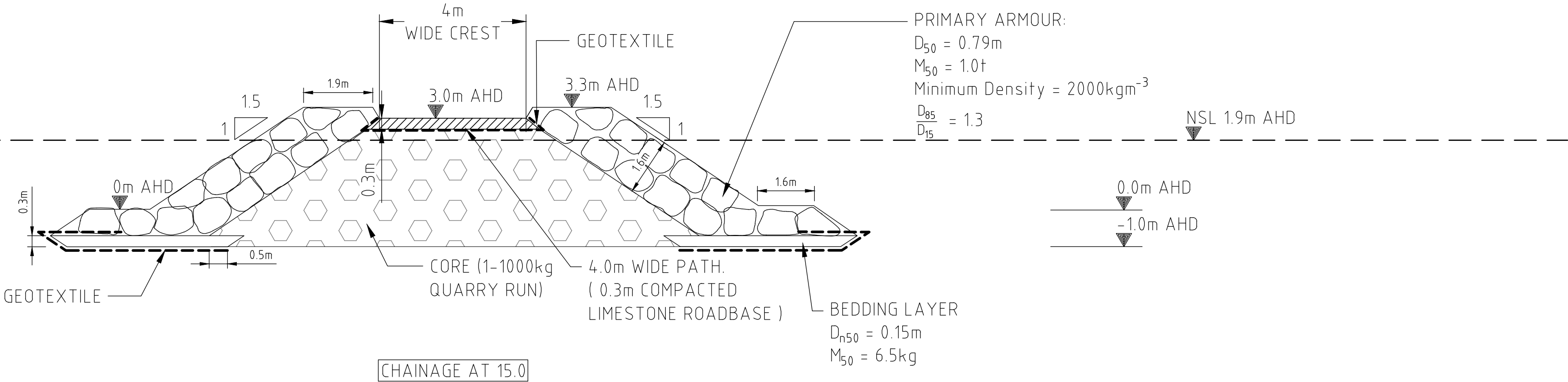
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SECTION
SCALE 1:100

H
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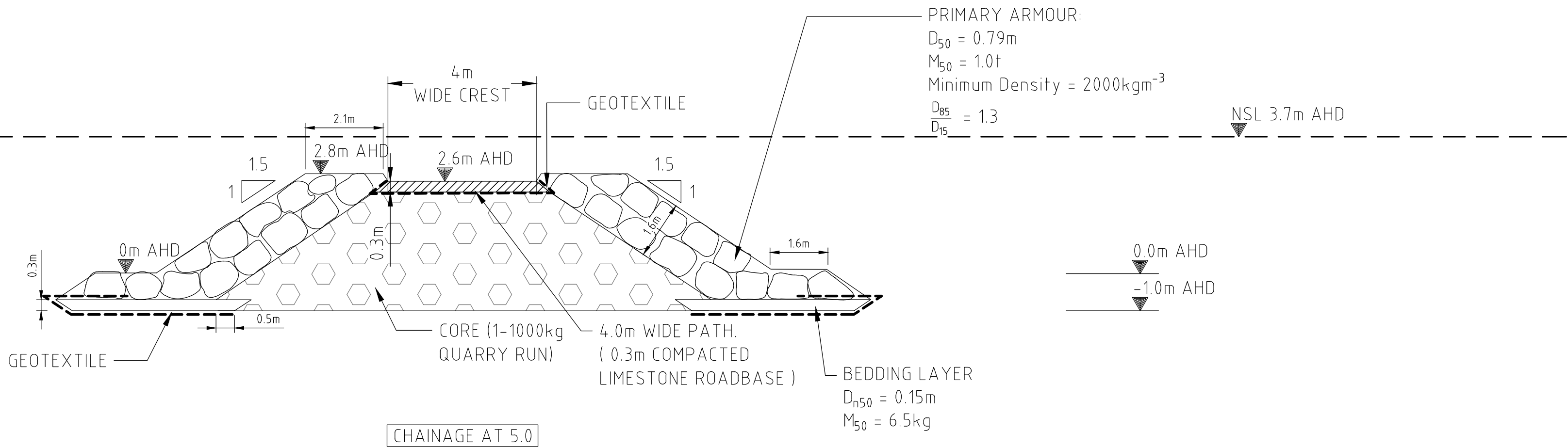
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MLLW -0.29



SECTION
SCALE 1:100

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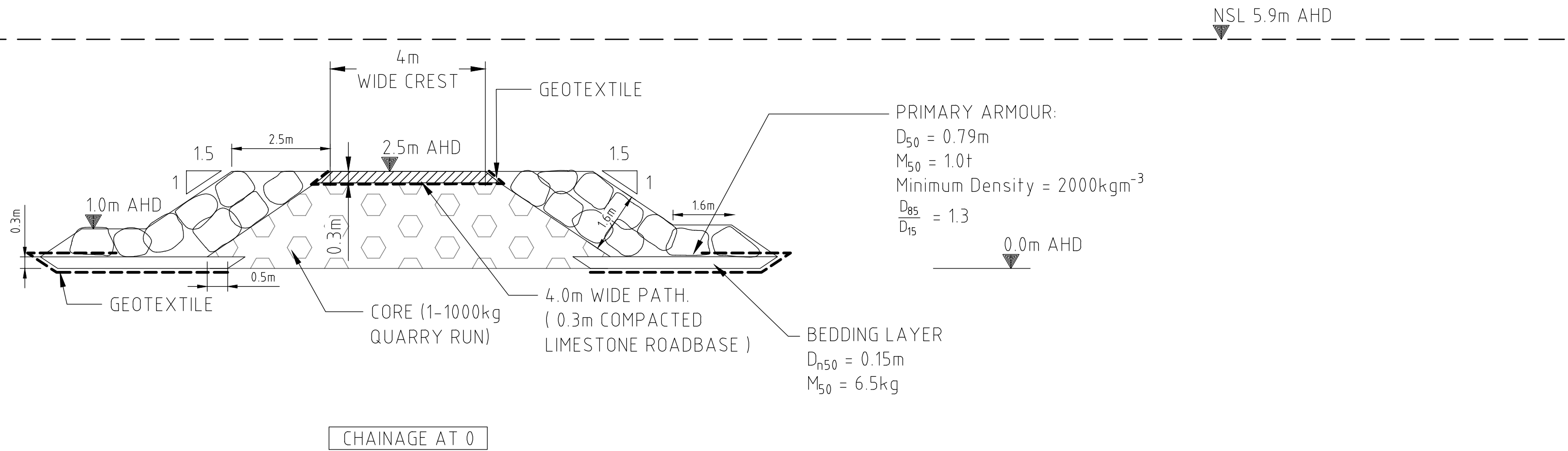
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MHHW 0.39
MLLW -0.29



SECTION
SCALE 1:100

J
-

MSL 0.05
MHHW 0.39
MLLW -0.29



- NOTES
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B	9/02/2017	COMMUNITY CONSULTATION	CS	CS	CH
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Drawn RL	Date 24/01/2017	Client City of Wanneroo
Checked CH	Date 24/01/2017	Project Quinns Beach Long Term Stage 3
Designed CS	Date 24/01/2017	Title Groyne 4 Sections H, I, J
Verified CS	Date 24/01/2017	
Approved CH	Date 24/01/2017	
		Status FOR CONSTRUCTION
Drawing Number 59915802-MA-404		Revision 0

DATE PLOTTED: 25 October, 2017 - 9:36am

REF:s: x_FS_Base; x_Groyne_4
AD FILE: \\aupecrf01\Coastal\Ocean\Jobs\599f5802 QuinnsBeach\LongTerm\Drawings\Civil\CAD\599f5802-[1-401].dwg

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XREF:s:\FS_Base\Conts_Ext_Merged_x_Groyne_4_x_0A_Base
CAD FILE: \\a:\p\c\c\01\Coastal&Ocean\Jobs\59915802_QuinnsBeach\long term\Drawings\Civil\CAD\59915802-CI-402.dwg
DATE PLOTTED: 25 October, 2017 - 9:31am



EXISTING SITE - PLAN

SCALE 1 : 250



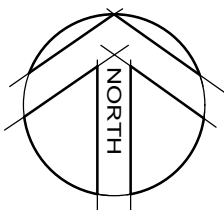
LEGEND :

- CENTRELINE OF PROPOSED ACCESS
- CONTOURS - EXISTING (0.2m INTERVAL)

GENERAL NOTES

- DIMENSIONS ARE IN METRES.
- CONTOURS SHOWN ARE MERGED FROM GROUND SURVEY AND LIDAR POINT DATA, APPROXIMATE ONLY (0.2m INTERVAL).
- REFER TO DRAWING 59915802-CI-403 FOR PROPOSED ACCESS GENERAL ARRANGEMENT.
- REFER TO DRAWING 59915802-CI-404 FOR PROPOSED ACCESS SETOUT DETAILS.
- REFER TO DRAWING 59915802-CI-405 FOR PROPOSED ACCESS LONGITUDINAL PROFILE AND DETAILS.
- REFER TO DRAWING 59915802-CI-406 FOR PROPOSED ACCESS CROSS SECTIONS.

Rev	Date	Description	Drawn	Appr
0	23.10.2017	ISSUED FOR CONSTRUCTION	JPK	CS
F	16.05.2017	ISSUED FOR TENDER	JPK	CS
E	27.04.2017	ISSUED FOR TENDER	JPK	CS
D	21.03.2017	DRAWING No. CHANGED & TRACK RE-ALIGNED, APPROVAL ISSUE	JPK	CS
C	20.02.2017	GROYNE REVISED, ACCESS RE-DESIGNED, ISSUED FOR APPROVAL	JPK	CS
B	02.02.2017	PROPOSED GROUYNE EXTENTS REVISED - ISSUED FOR APPROVAL	JPK	CS
A	24.01.2017	ISSUED FOR CLIENT APPROVAL	JPK	CS



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Drawn	JPK	Date	09.01.2017
Designed	CS	Date	17.01.2017
Checked	CS	Date	17.01.2017
Reviewed	NTT	Date	19.01.2017
Approved	CS	Date	24.01.2017

Client	CITY OF WANNEROO
Project	QUINNS BEACH LONG TERM COASTAL MANAGEMENT QUINNS ROCKS, WA
Title	GROYNE 4 BEACH ACCESS PATH EXISTING SITE AND SURVEY

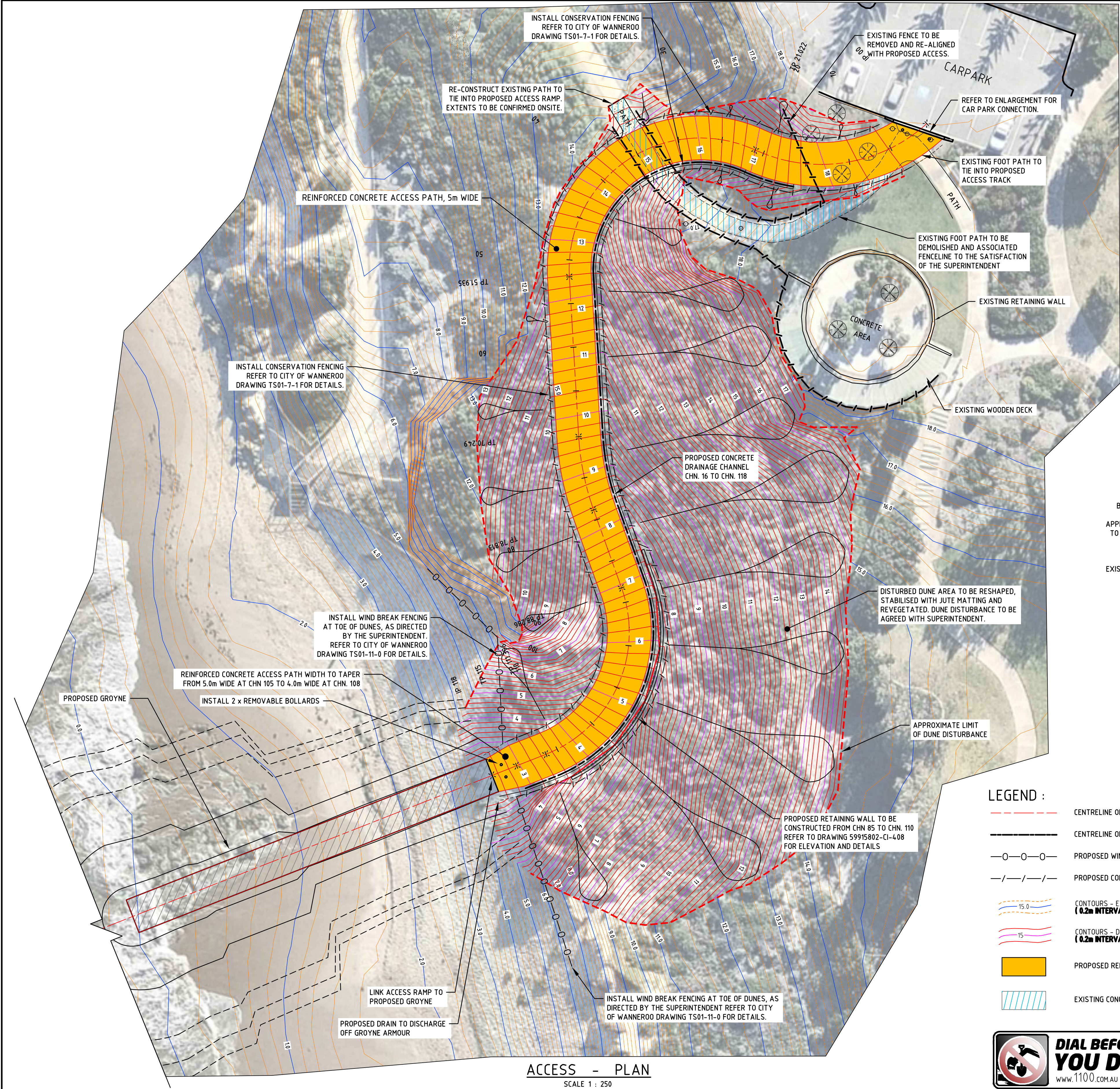
Status	FOR CONSTRUCTION
Date	OCT' 2017
Datum	A.H.D
Scale	AS SHOWN
Size	A1
Drawing Number	59915802-CI-402
Revision	0

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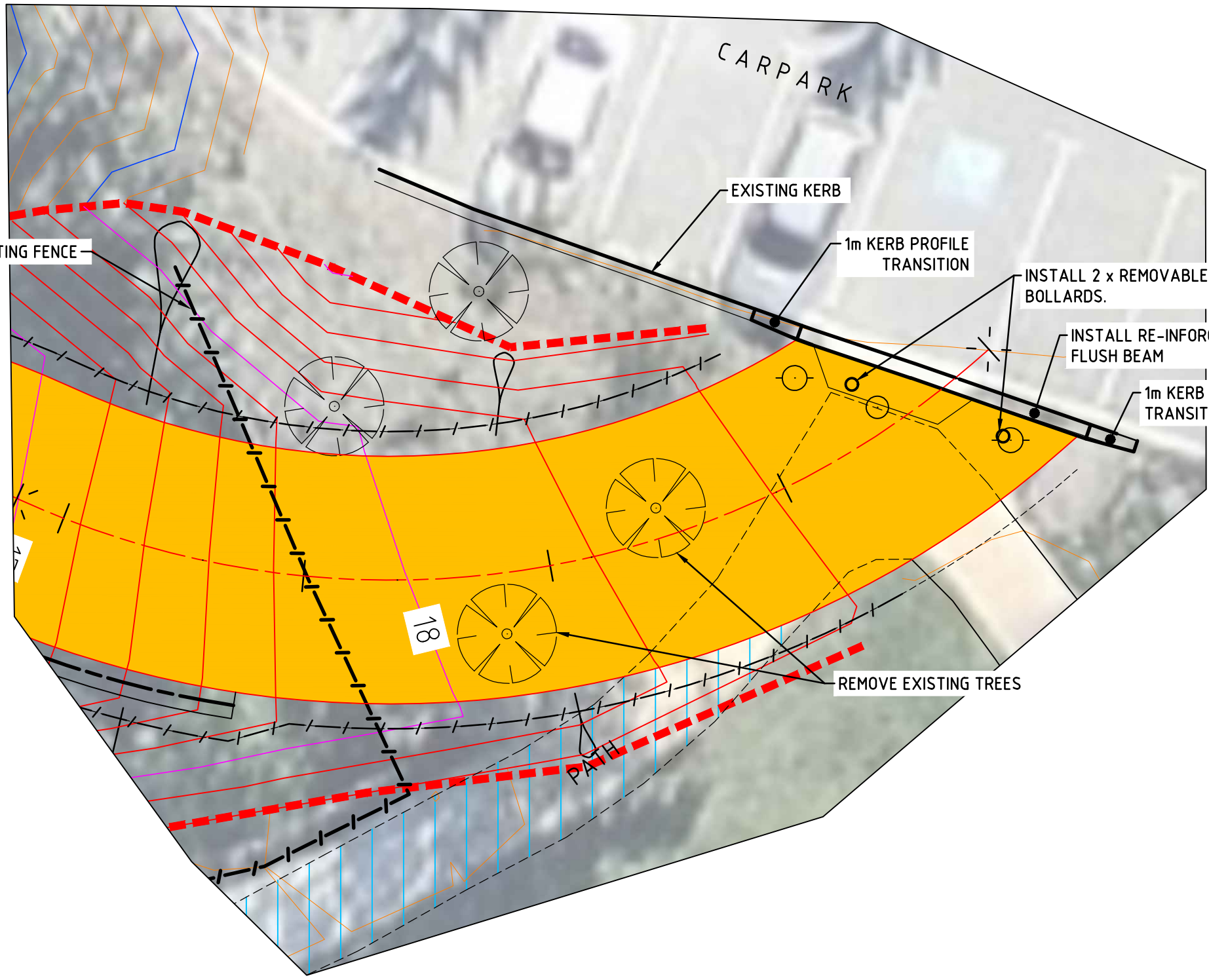
DATE PLOTTED: 25 October, 2017 - 9:31am

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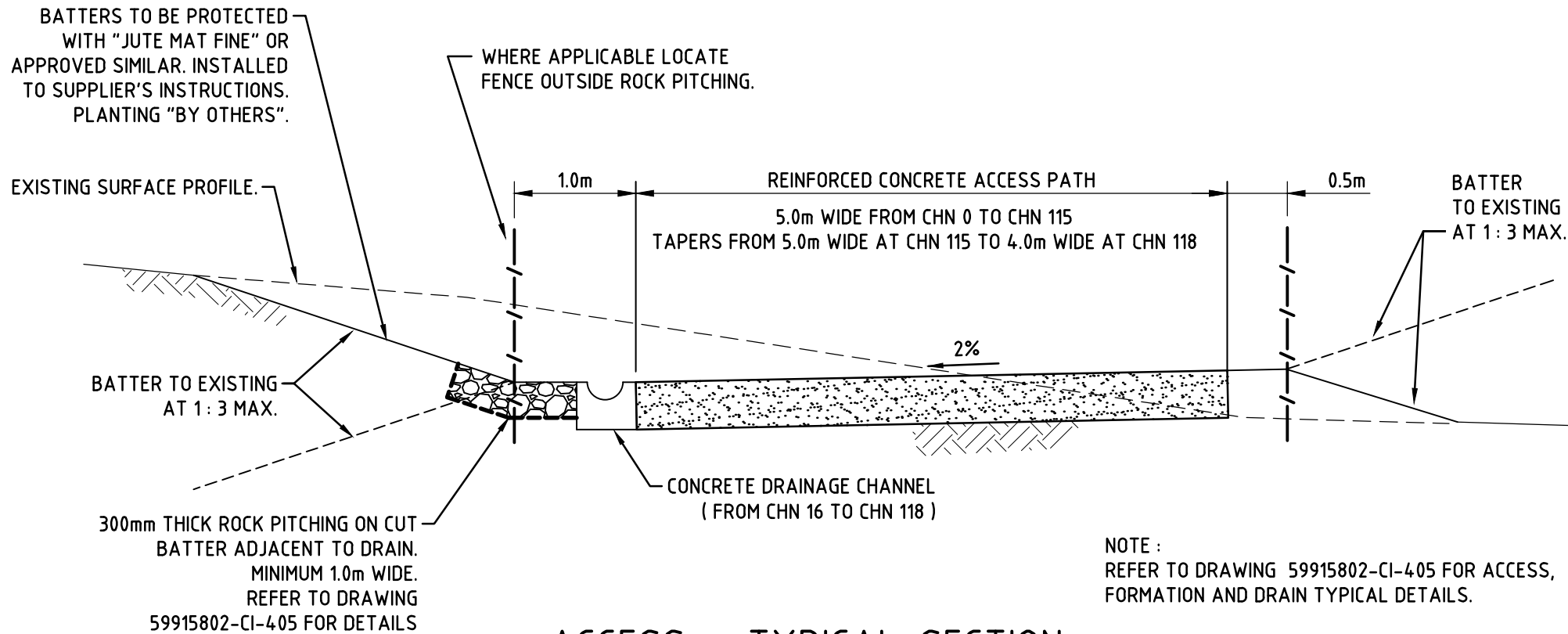


ACCESS - PLAN
SCALE 1 : 250

- LEGEND :
- CENTRELINE OF PROPOSED ACCESS PATH
 - CENTRELINE OF PROPOSED CONCRETE DRAINAGE CHANNEL
 - PROPOSED WIND BREAK FENCE
 - PROPOSED CONSERVATION FENCE
 - CONTOURS - EXISTING (0.2m INTERVAL)
 - CONTOURS - DESIGN (0.2m INTERVAL)
 - PROPOSED REINFORCED CONCRETE ACCESS PATH
 - EXISTING CONCRETE PATH TO BE DEMOLISHED.



ACCESS - CAR PARK
PLAN - ENLARGEMENT
SCALE 1 : 100



ACCESS - TYPICAL SECTION
(LOOKING DOWNHILL)
SCALE 1 : 50

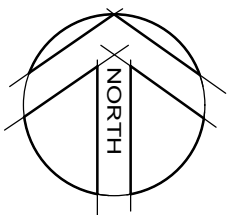
GENERAL NOTES

- DIMENSIONS ARE IN METRES.
- EXISTING CONTOURS ARE MERGED FROM GROUND SURVEY AND LIDAR POINT DATA, APPROXIMATE ONLY (0.2m INTERVAL).
- REFER TO DRAWING 59915802-CI-404 FOR PROPOSED ACCESS SETOUT DETAILS.
- REFER TO DRAWING 59915802-CI-405 FOR PROPOSED ACCESS LONGITUDINAL PROFILE AND DETAILS.
- REFER TO DRAWINGS 59915802-CI-406 & 407 FOR ACCESS CROSS SECTIONS.
- REFER TO DRAWING 59915802-CI-408 FOR RETAINING WALL DETAILS.

SPECIFIC NOTES

- THE CONTRACTOR SHALL PROTECT AND MAINTAIN EXISTING TREES AND VEGETATION AS DIRECTED BY THE SUPERINTENDENT.
- THE CONTRACTOR SHALL COMPLY WITH LOCAL AUTHORITY CONDITIONS IN REGARDS TO SEDIMENT AND EROSION CONTROL, SAND-DRIFT, STABILISATION AND THE REQUIREMENT OF WATER CARTS TO MINIMISE DUST BLOW TO NEIGHBOURING PROPERTIES.
- CONTRACTOR SHALL PROOF COMPACT TO 600mm DEPTH -
i) ALL FILL AREAS PRIOR TO PLACING OF FILL.
ii) ALL CUT AREAS AFTER COMPLETION OF CUT. COMPACTION SHALL BE NOT LESS THAN 95% M.M.D.D. IMPORTED FILL SHALL BE CLEAN GRANULAR MATERIAL, PLACED IN LAYERS NOT EXCEEDING 300mm COMPACTED THICKNESS. CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT PRIOR TO COMMENCING NEXT LAYER.
- THE CONTRACTOR SHALL GIVE NOTICE TO OCCUPIERS OF ANY EXISTING DWELLINGS WITHIN AND AROUND THE PERIMETER OF THE SITE, OF THE IMPENDING WORKS AT LEAST 1 WEEK PRIOR TO STARTING THE WORKS.
- THE CONTRACTOR SHALL MINIMISE OBSTRUCTION TO ADJACENT CAR PARK.
- EXCESS MATERIAL SHALL BE REMOVED FROM SITE AS DIRECTED BY THE SUPERINTENDENT.
- A DIGITAL MODEL OF THE ACCESS TRACK SHALL BE PROVIDED, ON REQUEST FROM THE CONTRACTOR, FOR SETOUT PURPOSES.
- DRAINAGE CHANNEL DESIGNED FOR 5 YEAR A.R.I.
- ACCESS PATH TO ALIGN WITH 2 CAR PARKING BAYS.

0	23.10.2017	ISSUED FOR CONSTRUCTION	JPK	CS
G	16.05.2017	ISSUED FOR TENDER	JPK	CS
F	27.04.2017	ISSUED FOR TENDER	JPK	CS
E	27.03.2017	TRACK RE-ALIGNED	JYY	CS
D	21.03.2017	DRAWING No. CHANGED & TRACK RE-ALIGNED, APPROVAL ISSUE	JPK	CS
C	20.02.2017	GROYNE REVISED, ACCESS RE-DESIGNED, ISSUED FOR APPROVAL	JPK	CS
B	02.02.2017	PROPOSED GROYNE EXTENTS REVISED - ISSUED FOR APPROVAL	JPK	CS
A	24.01.2017	ISSUED FOR CLIENT APPROVAL	JPK	CS
Rev	Date	Description	Drawn	Appr



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Drawn	JPK	Date	09.01.2017
Designed	CS	Date	17.01.2017
Checked	CS	Date	17.01.2017
Reviewed	NTT	Date	19.01.2017
Approved	CS	Date	24.01.2017

Client	CITY OF WANNEROO
Project	QUINNS BEACH LONG TERM COASTAL MANAGEMENT QUINNS ROCKS, WA
Title	GROYNE 4 BEACH ACCESS PATH GENERAL ARRANGEMENT PLAN

Status	FOR CONSTRUCTION
Date	OCT' 2017
Datum	A.H.D
Scale	AS SHOWN
Size	A1
Drawing Number	59915802-CI-403
Revision	0

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CAD FILE: \\naupercr501\Coastal&Ocean\Jobs\59915802_QuinnsBeach\long term\Drawings\Civil\CAD\59915802-CI-404.dwg
DATE PLOTTED: 25 October, 2017 - 9:38am



ACCESS - PLAN
SCALE 1 : 250

CENTRELINE SETOUT POINTS

PNT.	CHN.	EASTING	NORTHING	DESCRIPTION
A	00	375634.630	6496711.012	START - FACE OF PROPOSED FLUSH KERB
01	1.239	375633.684	6496710.212	EJ - BACK OF KERB / ACCESS INTERFACE
02	5.195	375630.334	6496708.123	CJ
03	9.152	375626.608	6496706.814	CJ
04	13.108	375622.687	6496706.350	CJ
05	17.065	375618.759	6496706.752	EJ
06	21.022	375615.013	6496708.000	CJ
07	25.438	375610.789	6496709.234	CJ
08	29.854	375606.389	6496709.190	CJ
09	34.270	375602.191	6496707.871	EJ
10	38.686	375598.557	6496705.391	CJ
11	43.102	375595.799	6496701.963	CJ
12	47.518	375594.154	6496697.881	CJ
13	51.935	375593.764	6496693.498	EJ
14	56.513	375594.032	6496688.928	CJ
15	61.092	375594.299	6496684.357	CJ
16	65.671	375594.567	6496679.786	CJ
17	70.249	375594.835	6496675.215	EJ
18	74.531	375595.389	6496670.973	CJ
19	78.813	375596.540	6496666.853	CJ
20	83.550	375598.138	6496662.393	CJ
21	88.286	375599.735	6496657.934	EJ
22	92.908	375600.604	6496653.413	CJ
23	97.530	375600.061	6496648.842	CJ
24	102.152	375598.157	6496644.650	CJ
25	106.774	375595.072	6496641.234	EJ
26	111.395	375591.095	6496638.914	CJ
27	115.000	375587.741	6496637.596	CJ
28	118.000	375584.948	6496636.500	CJ - END

LEGEND :

	29	CENTRELINE OF PROPOSED ACCESS PATH, SETOUT POINT AND NUMBER
		PROPOSED ACCESS PATH - CONCRETE EDGE
		PROPOSED ACCESS PATH - FORMATION EDGE
		PROPOSED CONTRACTION JOINT (CJ)
		PROPOSED EXPANSION JOINT (EJ)
		PROPOSED WIND BREAK FENCE
		PROPOSED CONSERVATION FENCE
		EXISTING CONCRETE PATH TO BE DEMOLISHED.

GENERAL NOTES

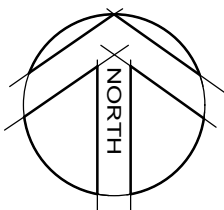
- DIMENSIONS ARE IN METRES.
- REFER TO DRAWING 59915802-CI-403 FOR PROPOSED ACCESS GENERAL ARRANGEMENT AND FINISHED SURFACE CONTOURS.
- REFER TO DRAWING 59915802-CI-405 FOR PROPOSED ACCESS LONGITUDINAL PROFILE AND DETAILS.
- REFER TO DRAWINGS 59915802-CI-406 & 407 FOR CROSS SECTIONS.
- REFER TO DRAWING 59915802-CI-408 FOR RETAINING WALL DETAILS.

SPECIFIC NOTES

- CONCRETE CONTRACTION JOINTS ARE TO BE PLACED AT MAXIMUM 5m INTERVALS. EXPANSION JOINTS TO BE PLACED AT EVERY FOURTH JOINT. REFER TO DRAWING 59915802-CI-405 FOR DETAILS.
- ACCESS GRADE TO BE NO STEEPER THAN 15%.



Rev	Date	Description	Drawn	Appr
0	23.10.2017	ISSUED FOR CONSTRUCTION	JPK	CS
F	16.05.2017	ISSUED FOR TENDER	JPK	CS
E	27.04.2017	ISSUED FOR TENDER	JPK	CS
D	21.03.2017	DRAWING NO. CHANGED & TRACK RE-ALIGNED, APPROVAL ISSUE	JPK	CS
C	20.02.2017	GROUYNE REVISED, ACCESS RE-DESIGNED, ISSUED FOR APPROVAL	JPK	CS
B	02.02.2017	PROPOSED GROUYNE EXTENTS REVISED - ISSUED FOR APPROVAL	JPK	CS
A	24.01.2017	ISSUED FOR CLIENT APPROVAL	JPK	CS



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Drawn	JPK	Date	09.01.2017
Designed	CS	Date	17.01.2017
Checked	CS	Date	17.01.2017
Reviewed	NTT	Date	19.01.2017
Approved	CS	Date	24.01.2017

Client	CITY OF WANNEROO
Project	QUINNS BEACH LONG TERM COASTAL MANAGEMENT QUINNS ROCKS, WA
Title	GROUYNE 4 BEACH ACCESS PATH SETOUT DETAILS

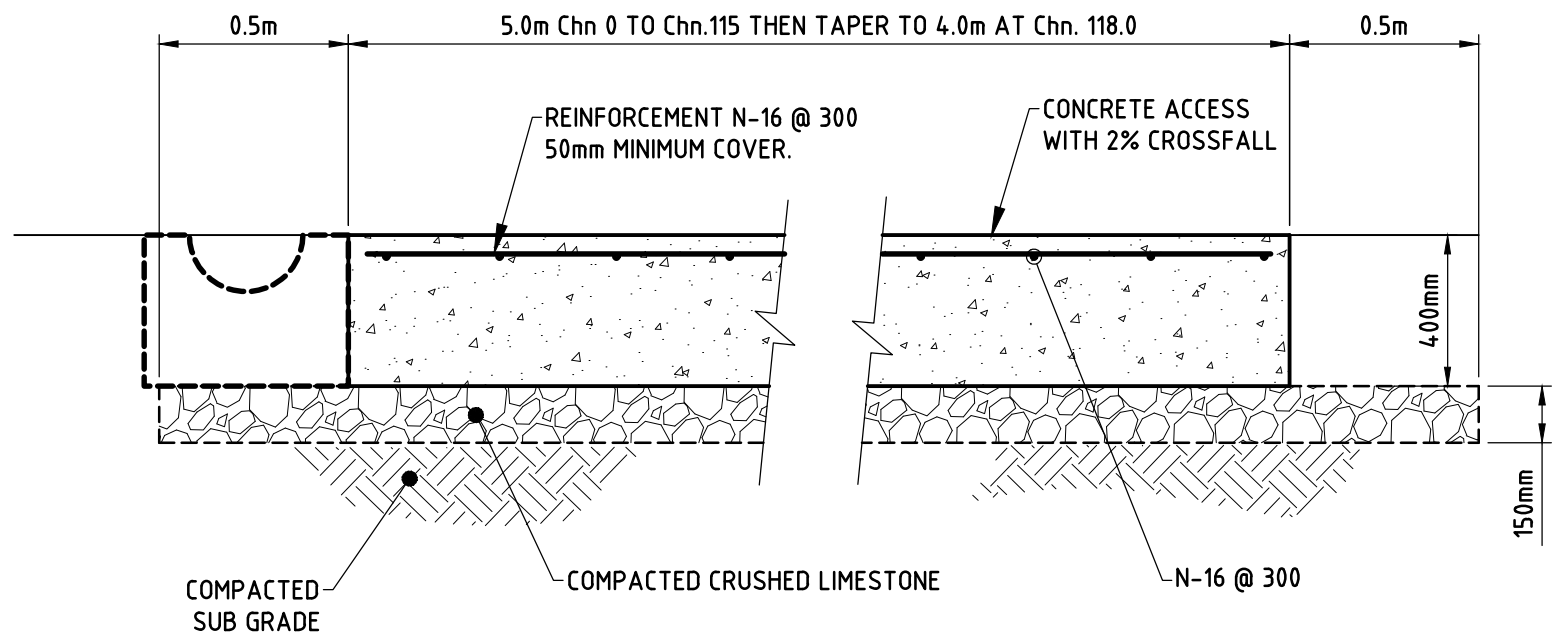
FOR CONSTRUCTION				
Date	OCT' 2017	Datum	A.H.D	Scale
Drawing Number	59915802-CI-404			Size
Revision	0			A1

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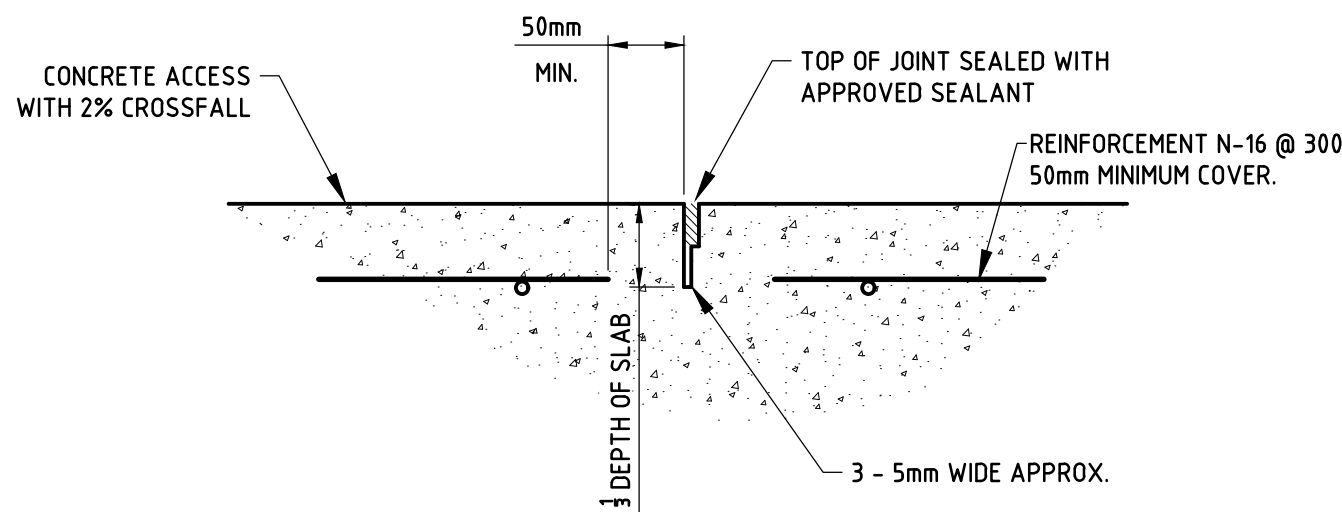
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DATE PLOTTED: 25 October, 2017 - 9:38am

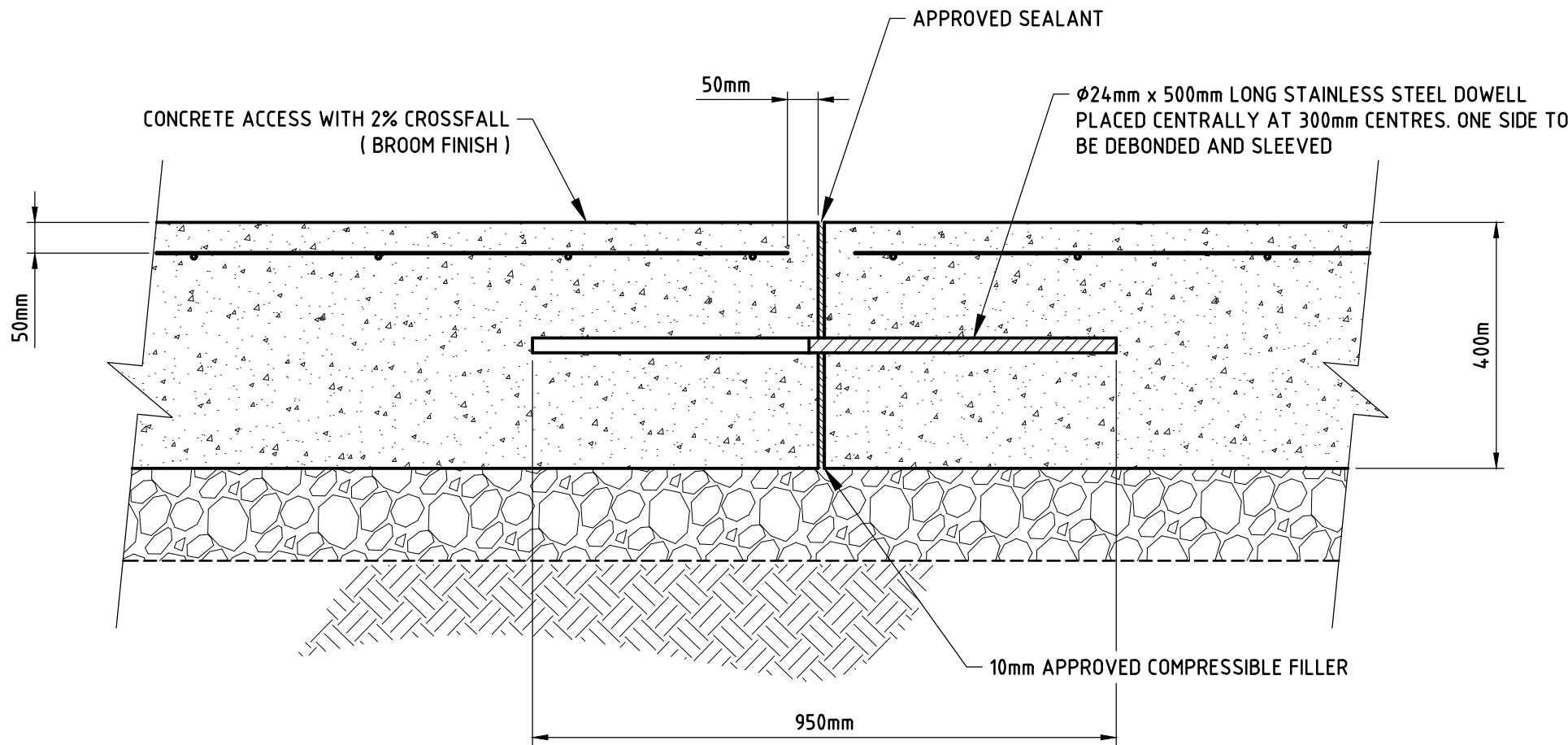
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CONCRETE ACCESS PATH - TYPICAL SECTION
(LOOKING DOWNHILL)
SCALE 1 : 20



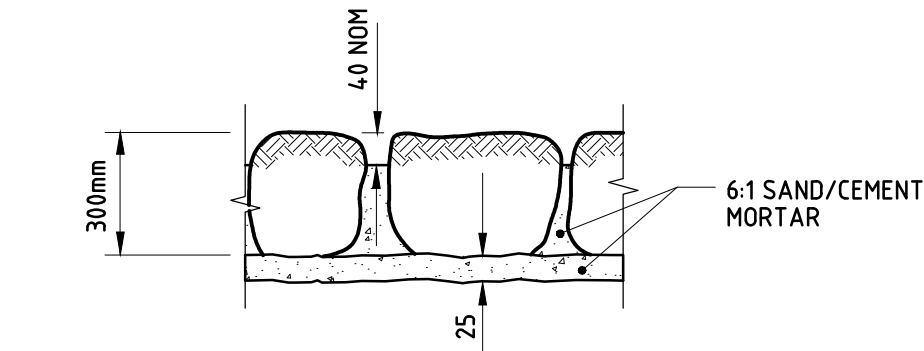
CONCRETE ACCESS PATH - TYPICAL CONTRACTION JOINT
SCALE 1 : 10



CONCRETE ACCESS PATH - TYPICAL EXPANSION JOINT
SCALE 1 : 10

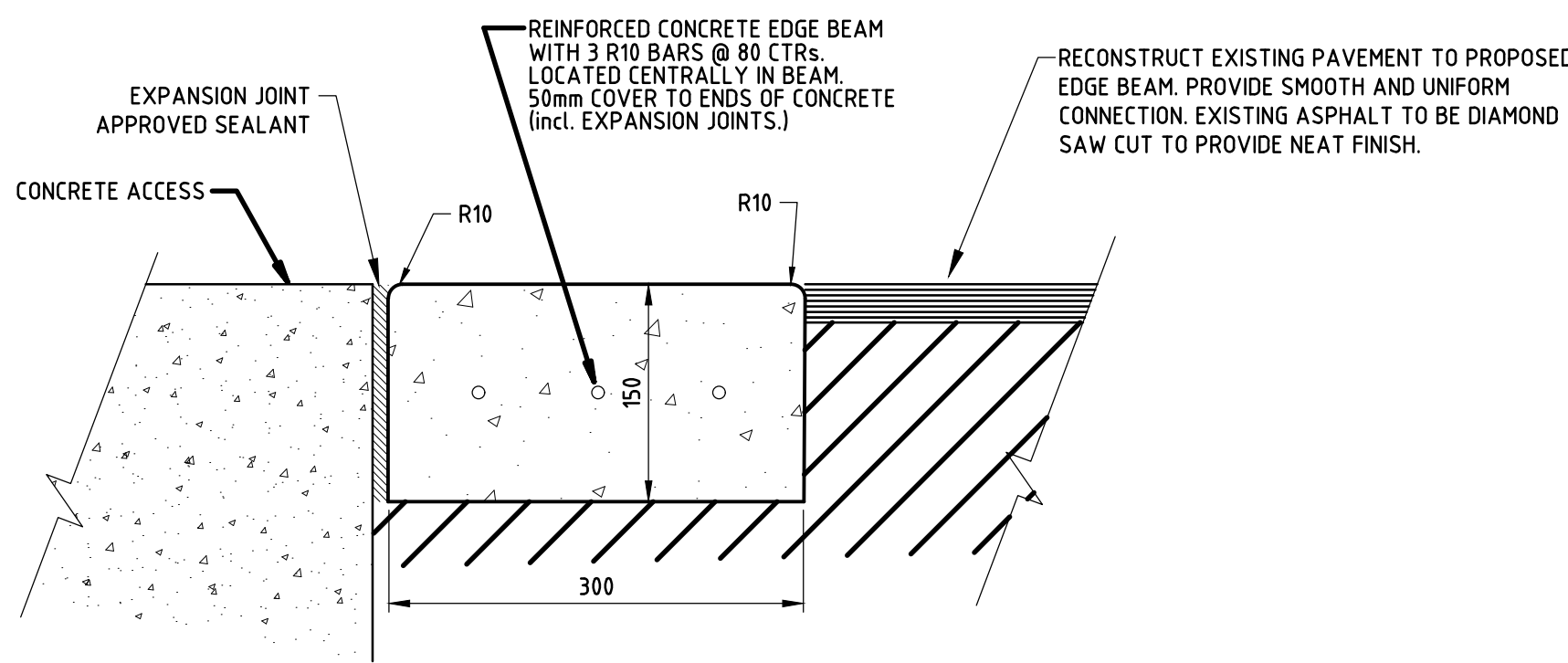
ACCESS PATH SPECIFIC NOTES:

- LOCATION OF CONSTRUCTION JOINTS AND EXPANSION JOINTS ALONG THE ACCESS SHALL BE AS INDICATED ON DRAWING 59915802-CI-404. TYPICALLY CONTRACTION JOINTS ARE AT 5.0m SPACING (MAX.) WITH EXPANSION JOINTS AT EVERY FOURTH JOINT.
- CONCRETE FOR ACCESS SHALL HAVE THE FOLLOWING CHARACTERISTICS:
 - MINIMUM COMPRESSIVE STRENGTH - 50MPa AT 28 DAYS
 - MAXIMUM AGGREGATE SIZE - 20mm
 - MINIMUM SLUMP - 80mm
 - AS PER AS1379 : 2007
- THE CONTRACTOR IS RESPONSIBLE TO ENSURE THE CONCRETE ACCESS IS CONSTRUCTED IN ACCORDANCE WITH THE RELEVANT LOCAL AUTHORITY STANDARDS. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT PRIOR TO WORK COMMENCING/CONTINUING.

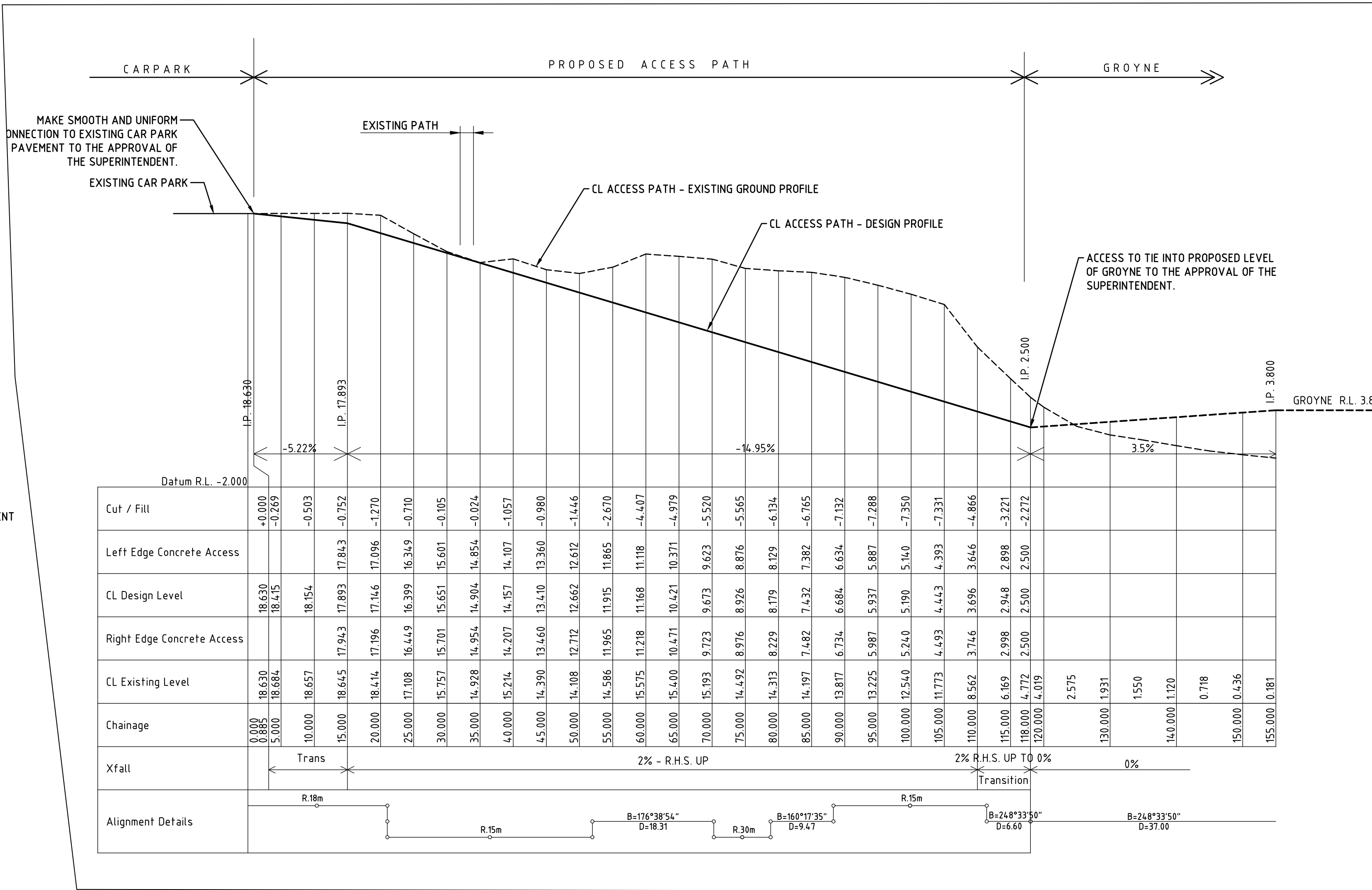


ROCK GRADING	
MIN. DIM. OF INDIVIDUAL ROCK SPALLS (mm)	% OF TOTAL ROCK TYPE "B1"
100-200	25-40

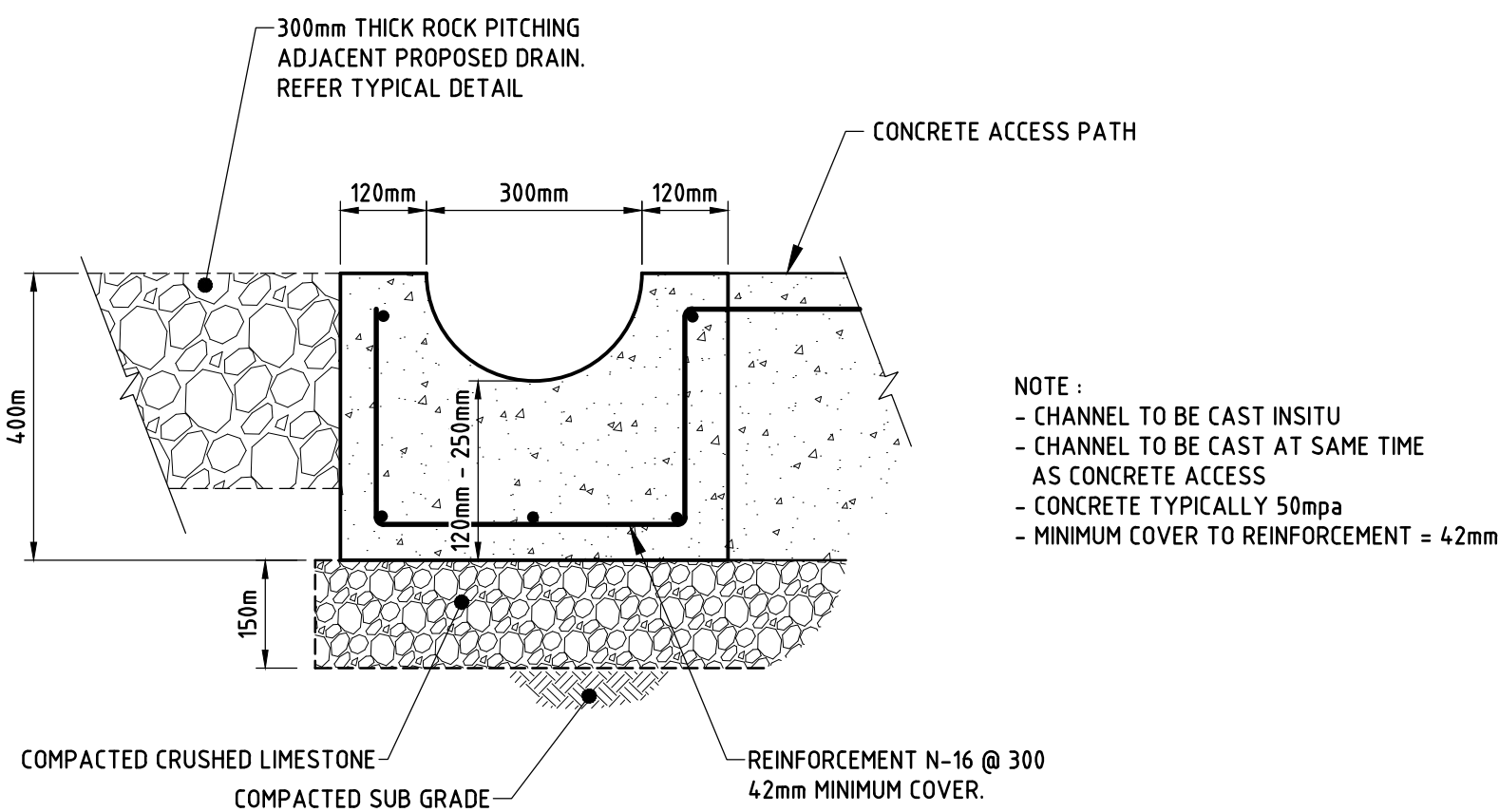
GROUTED ROCK PITCHING - DETAIL
N.T.S



TYPICAL FLUSH EDGE BEAM DETAIL
(EDGE BEAM SHALL BE CAST SEPARATELY TO CONCRETE ACCESS.)
SCALE 1 : 5



ACCESS PATH - LONGITUDINAL PROFILE
HORIZONTAL SCALE 1 : 500 VERTICAL SCALE 1 : 250

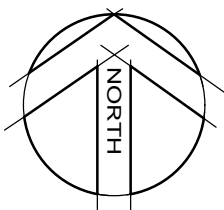


CONCRETE DRAINAGE CHANNEL - TYPICAL SECTION
(LOOKING DOWNHILL)
SCALE 1 : 10

GENERAL NOTES

- REFER TO DRAWING 59915802-CI-403 FOR PROPOSED ACCESS PATH GENERAL ARRANGEMENT.
- REFER TO DRAWING 59915802-CI-404 FOR PROPOSED ACCESS PATH SETOUT DETAILS.

Rev	Date	Description	Drawn	Appr
0	23.10.2017	ISSUED FOR CONSTRUCTION	JKP	CS
F	03.08.2017	MINOR AMENDMENTS TO CONCRETE ACCESS PATH DETAILS	CB	EG
E	16.05.2017	ISSUED FOR TENDER	JKP	CS
D	27.04.2017	ISSUED FOR TENDER	JKP	CS
C	21.03.2017	DRAWING NO. CHANGED & TRACK RE-ALIGNED, APPROVAL ISSUE.	JKP	CS
B	20.02.2017	GROYNE REVISED, ACCESS RE-DESIGNED, ISSUED FOR APPROVAL	JKP	CS
A	24.01.2017	ISSUED FOR CLIENT APPROVAL	JKP	CS



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Drawn	JKP	Date	09.01.2017
Designed	CS	Date	18.01.2017
Checked	CS	Date	18.01.2017
Reviewed	NTT	Date	19.01.2017
Approved	CS	Date	24.01.2017

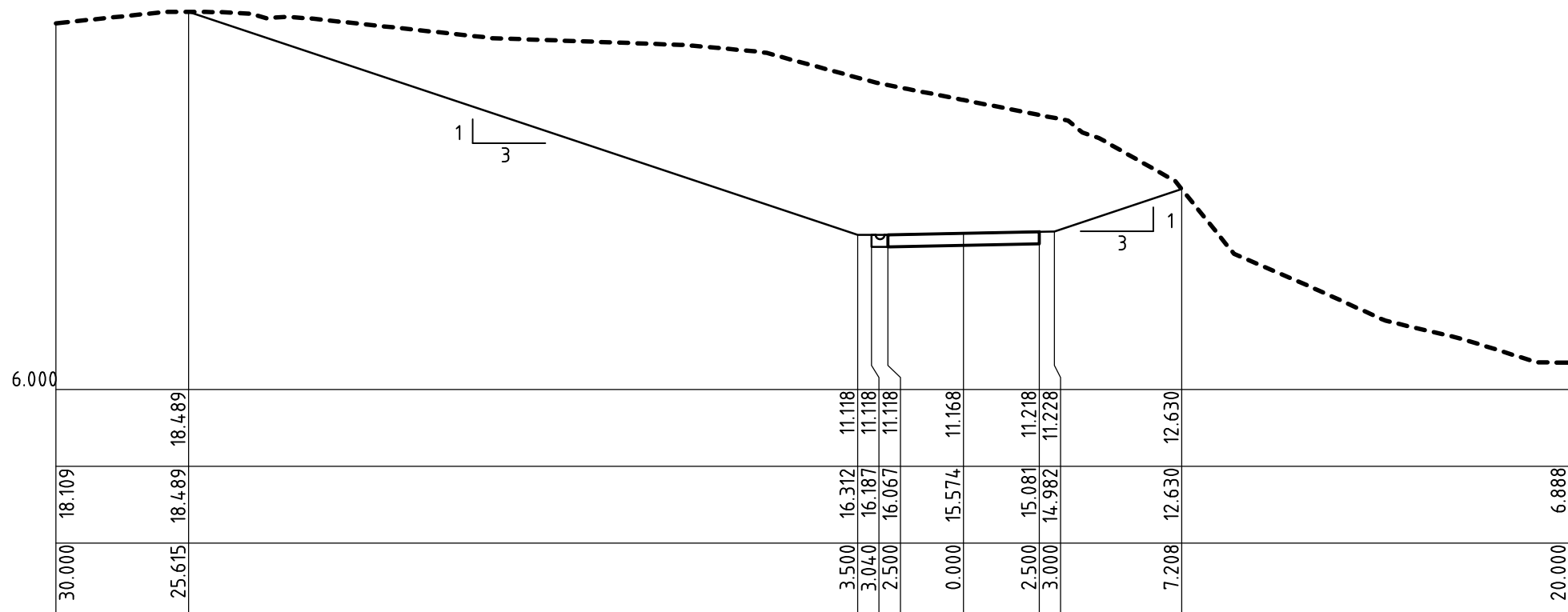
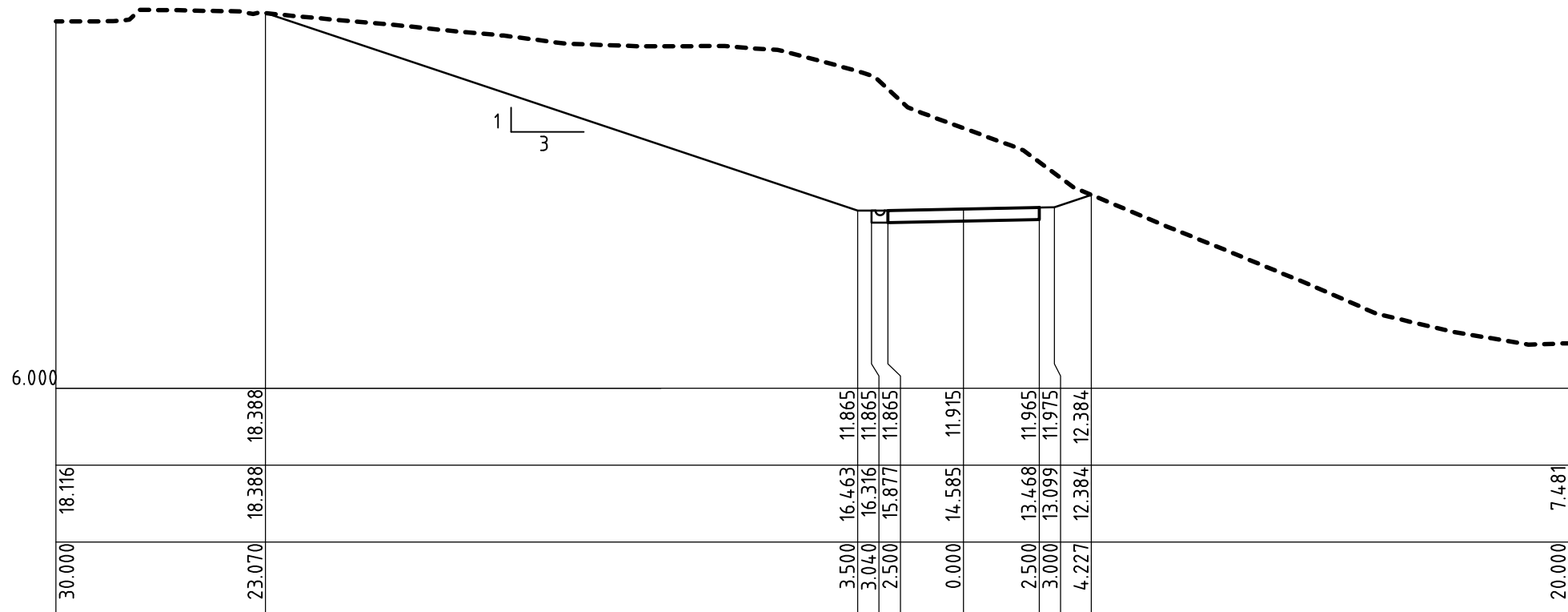
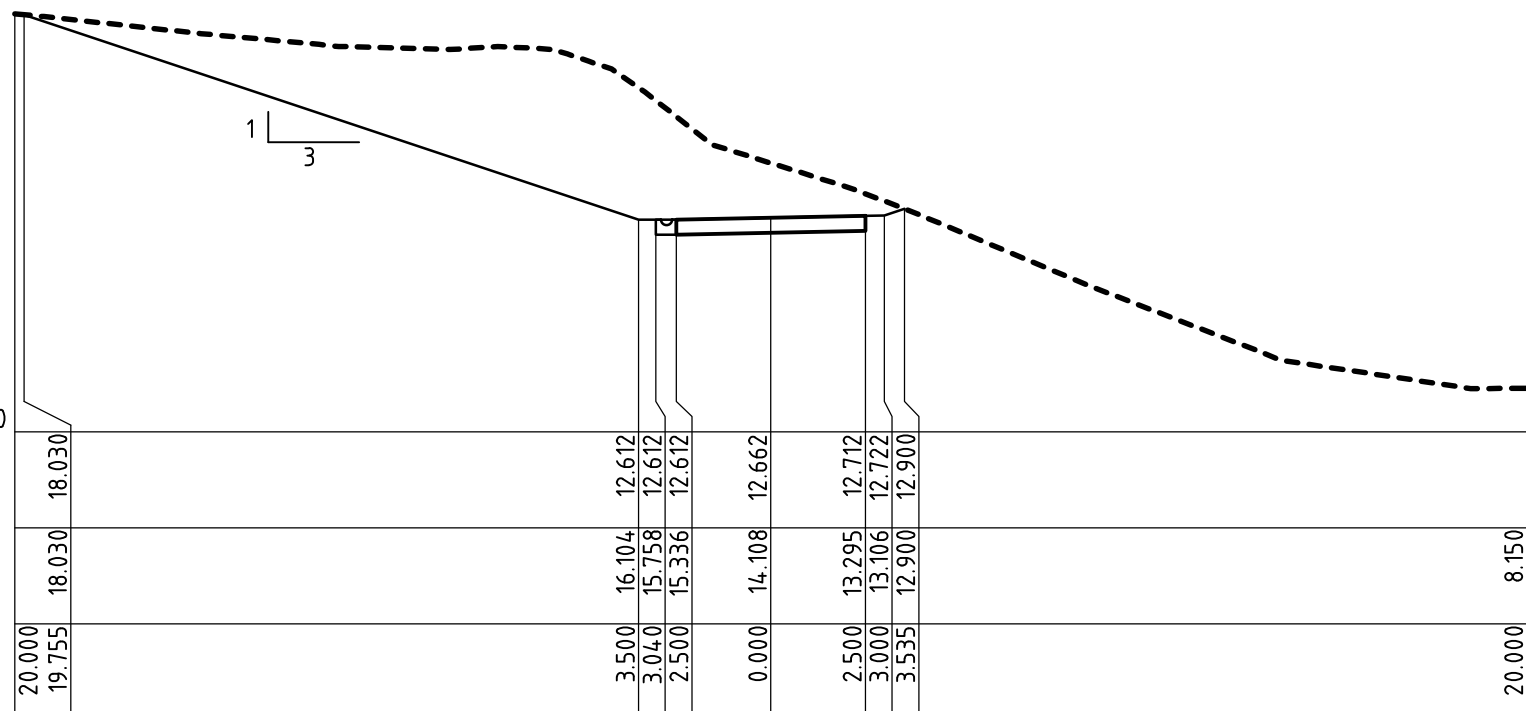
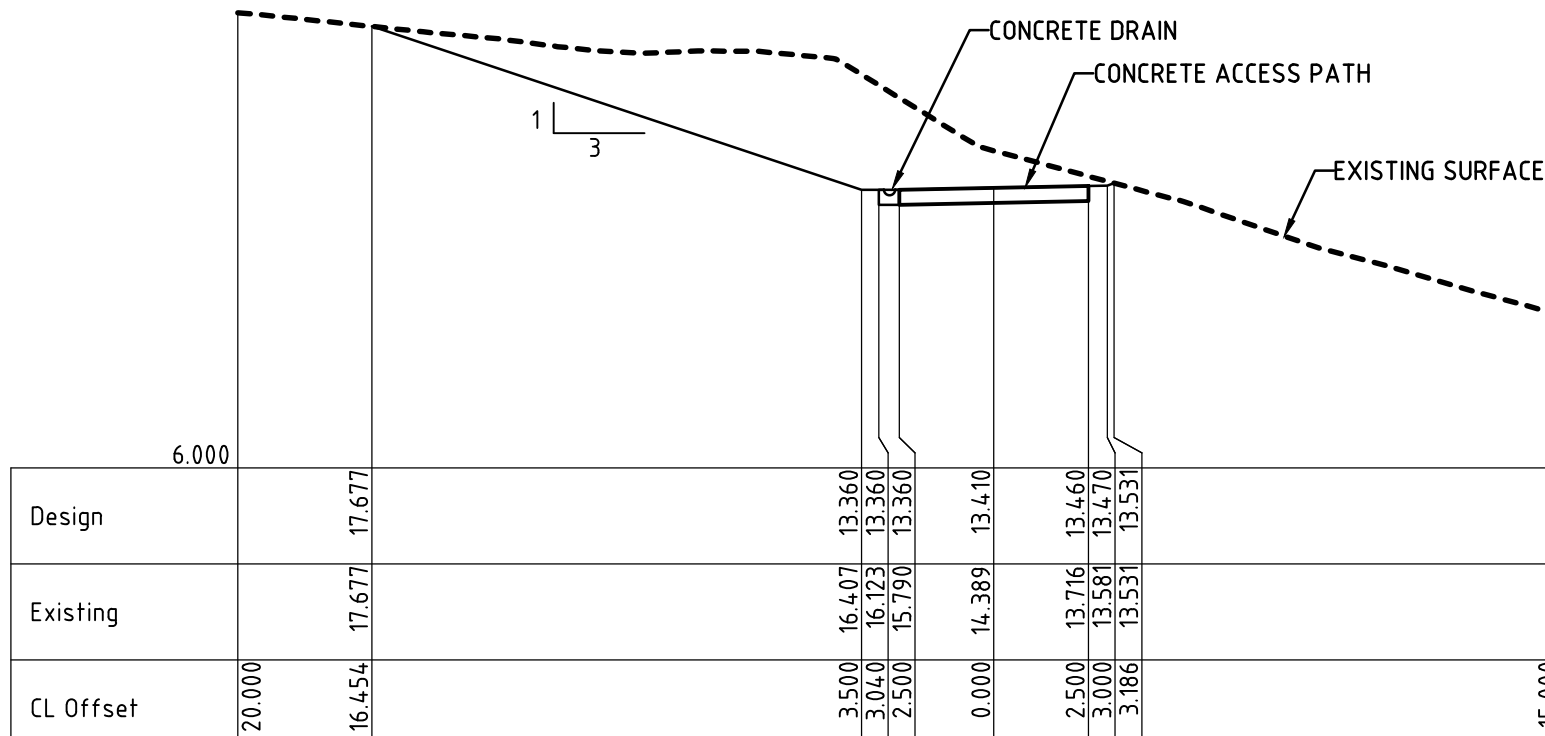
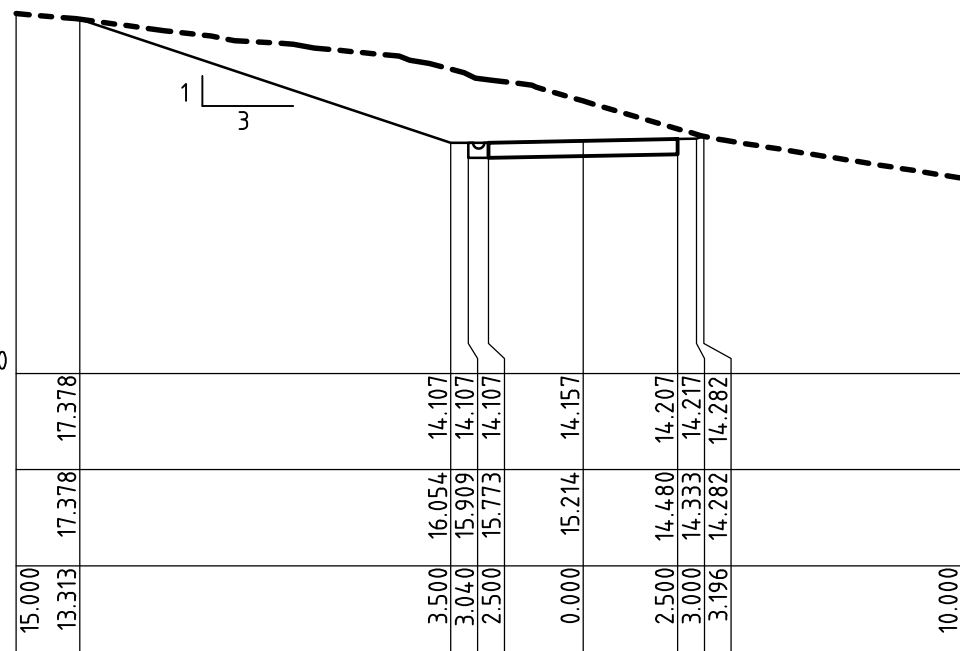
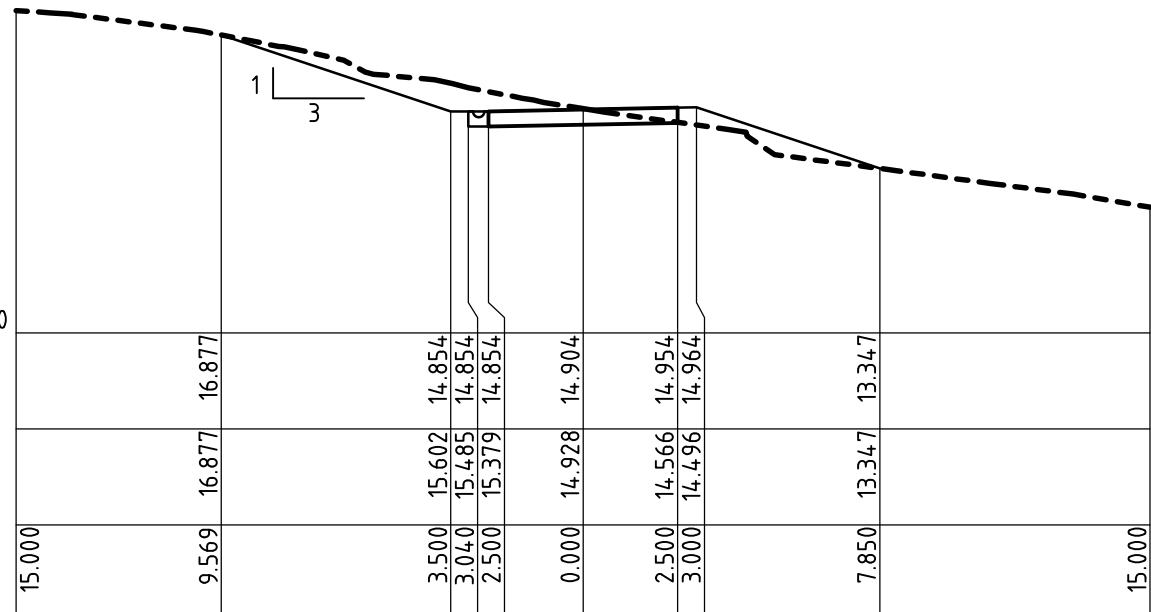
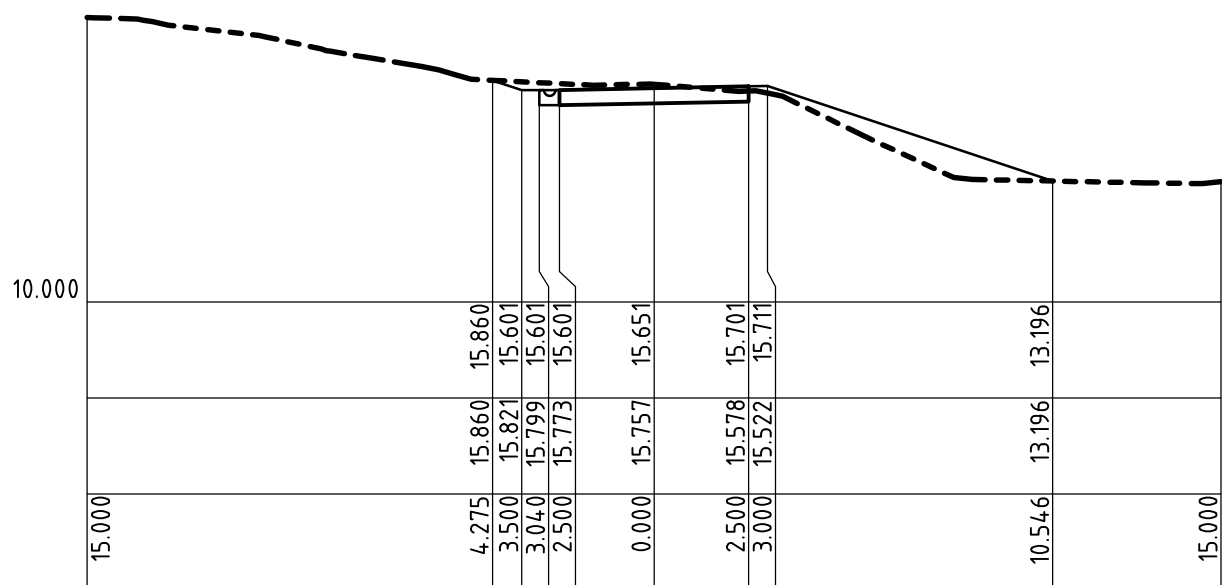
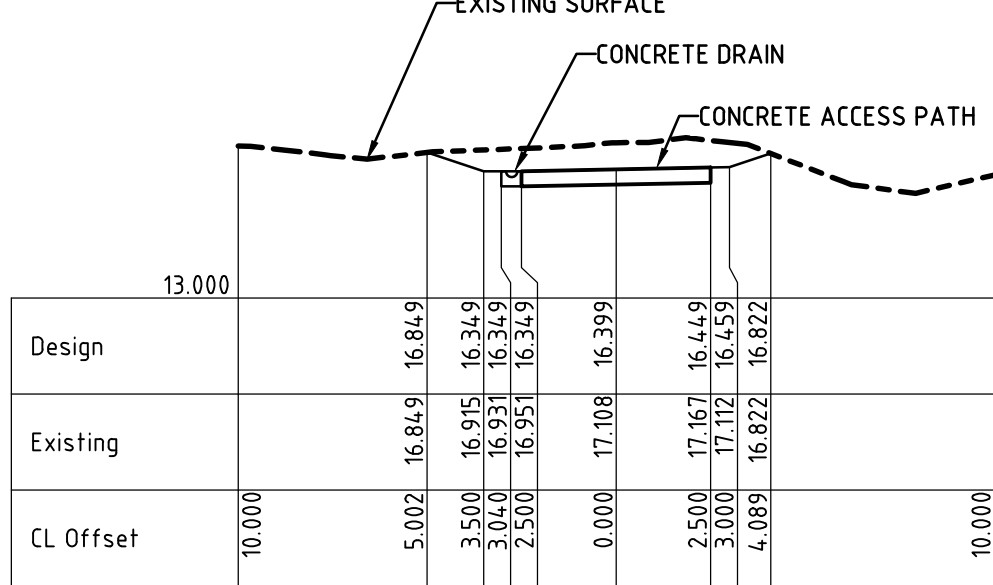
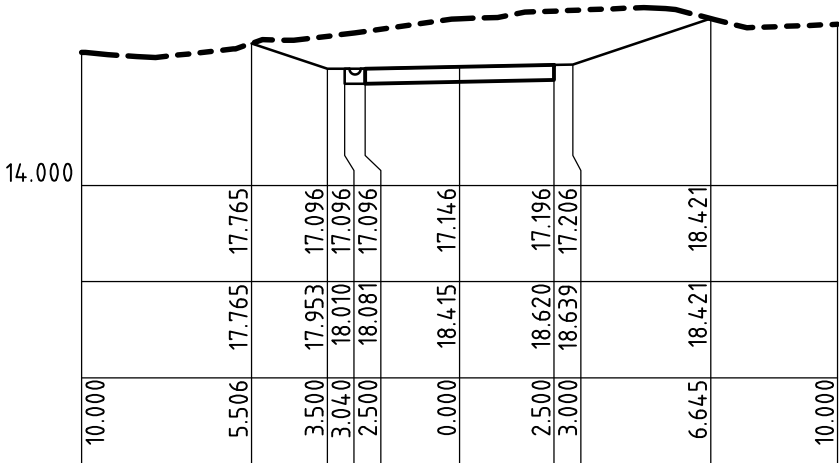
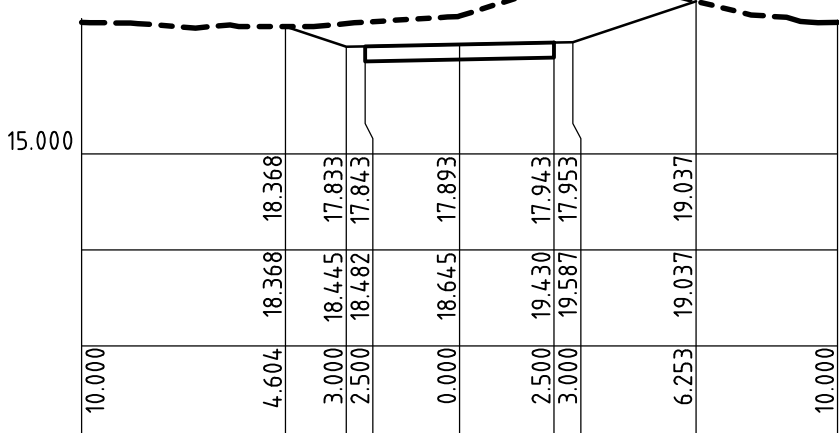
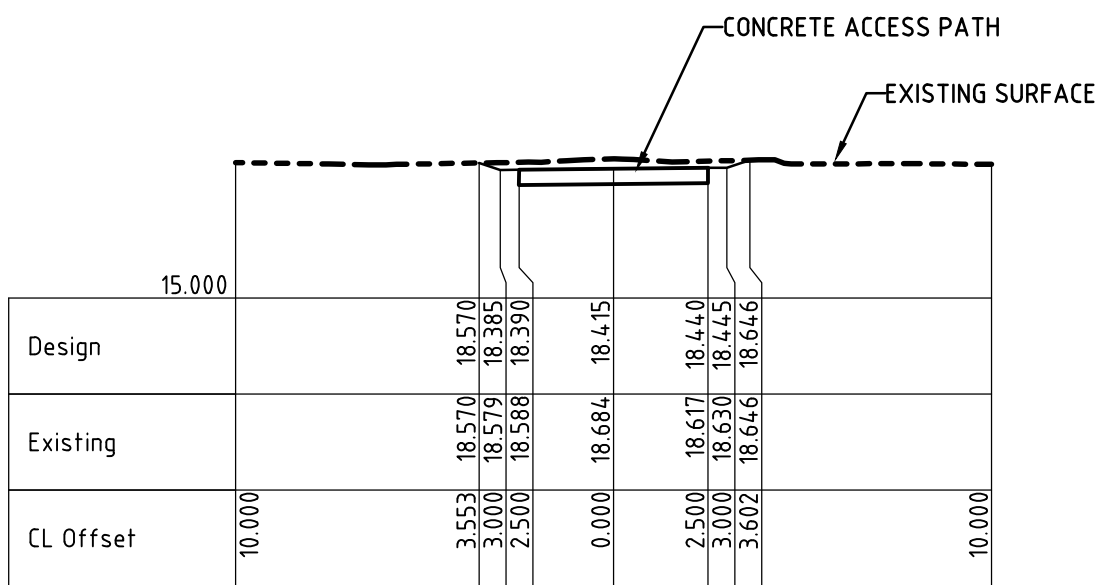
Client	CITY OF WANNEROO
Project	QUINNS BEACH LONG TERM COASTAL MANAGEMENT QUINNS ROCKS, WA
Title	GROYNE 4 BEACH ACCESS PATH LONGITUDINAL PROFILE TYPICAL DETAILS

FOR CONSTRUCTION				Status
Date	OCT '2017	Datum	A.H.D	Scale
AS SHOWN	Size	A1	Revision	0

ON A1 ORIGINAL

XREF:s:_FS_Base
CAD FILE: \\vaupercr01\Coastal&Ocean\Jobs\59915802 - Quinns Beach\long term\Drawings\Civil\CAD\59915802-CI-406.dwg

DATE PLOTTED: 25 October, 2017 - 9:39am



- GENERAL NOTES**
1. DIMENSIONS ARE IN METRES.
 2. CROSS SECTIONS ARE TO BE USED AS A GUIDE.
 3. ALL EARTHWORKS BATTERS ARE GENERALLY 1v : 3h.

Rev	Date	Description	Drawn	Appr
0	23.10.2017	ISSUED FOR CONSTRUCTION	JKP	CS
E	16.05.2017	ISSUED FOR TENDER	JKP	CS
D	27.04.2017	ISSUED FOR TENDER	JKP	CS
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B	20.02.2017	GROYNE REVISED. ACCESS RE-DESIGNED, ISSUED FOR APPROVAL.	JKP	CS
A	24.01.2017	ISSUED FOR CLIENT APPROVAL	JKP	CS

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Drawn	JKP	Date	23.01.2017
Designed	CS	Date	24.01.2017
Checked	CS	Date	24.01.2017
Reviewed	NTT	Date	21.03.2017
Approved	CS	Date	21.03.2017

Client	CITY OF WANNEROO
Project	QUINNS BEACH LONG TERM COASTAL MANAGEMENT QUINNS ROCKS, WA
Title	GROYNE 4 BEACH ACCESS PATH CROSS SECTION - CHN. 5 - CHN. 60 SHEET 1 OF 2

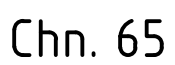
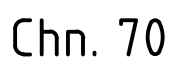
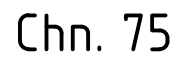
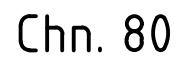
FOR CONSTRUCTION

Date: OCT' 2017 Datum: A.H.D Scale: AS SHOWN Size: A1

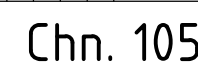
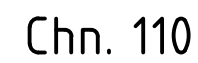
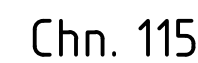
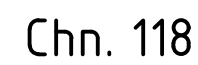
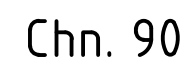
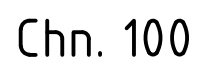
Drawing Number: 59915802-CI-406 Revision: 0

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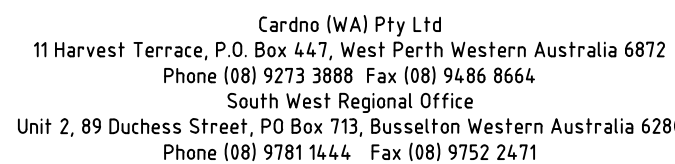


1. DIMENSIONS ARE IN METRES.
2. CROSS SECTIONS ARE TO BE USED AS A GUIDE.
3. ALL EARTHWORKS BATTERS ARE GENERALLY 1v : 3h.
4. THE INDICATED RETAINING WALL AND HEIGHTS ARE SUBJECT TO DETAIL DESIGN. REFER TO CARDNO DRAWING 59915802-CI-408 FOR RETAINING WALL DETAILS.



O	23.10.2017	ISSUED FOR CONSTRUCTION	JPK	CS	
C	16.05.2017	ISSUED FOR TENDER	JPK	CS	
B	27.04.2017	ISSUED FOR TENDER	JPK	CS	
A	21.03.2017	ISSUED FOR CLIENT APPROVAL	JPK	CS	
Rev	Date	Description	Drawn	Appr.	

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Designed	CS	Date	24.01.2017
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Reviewed	NTT	Date	21.03.2017
Approved	CS	Date	21.03.2017

Client	CITY OF WANNEROO
Project	QUINNS BEACH LONG TERM COASTAL MANAGEMENT QUINNS ROCKS, WA
Title	GROYNE 4 BEACH ACCESS PATH CROSS SECTIONS - CHN. 65 TO CHN. SHEET 2 OF 2

Status			
FOR CONSTRUCTION			
Date	Datum	Scale	Size
OCT' 2017	A.H.D	AS SHOWN	A1
Drawing Number			Revision
59915802-CI-407			0

