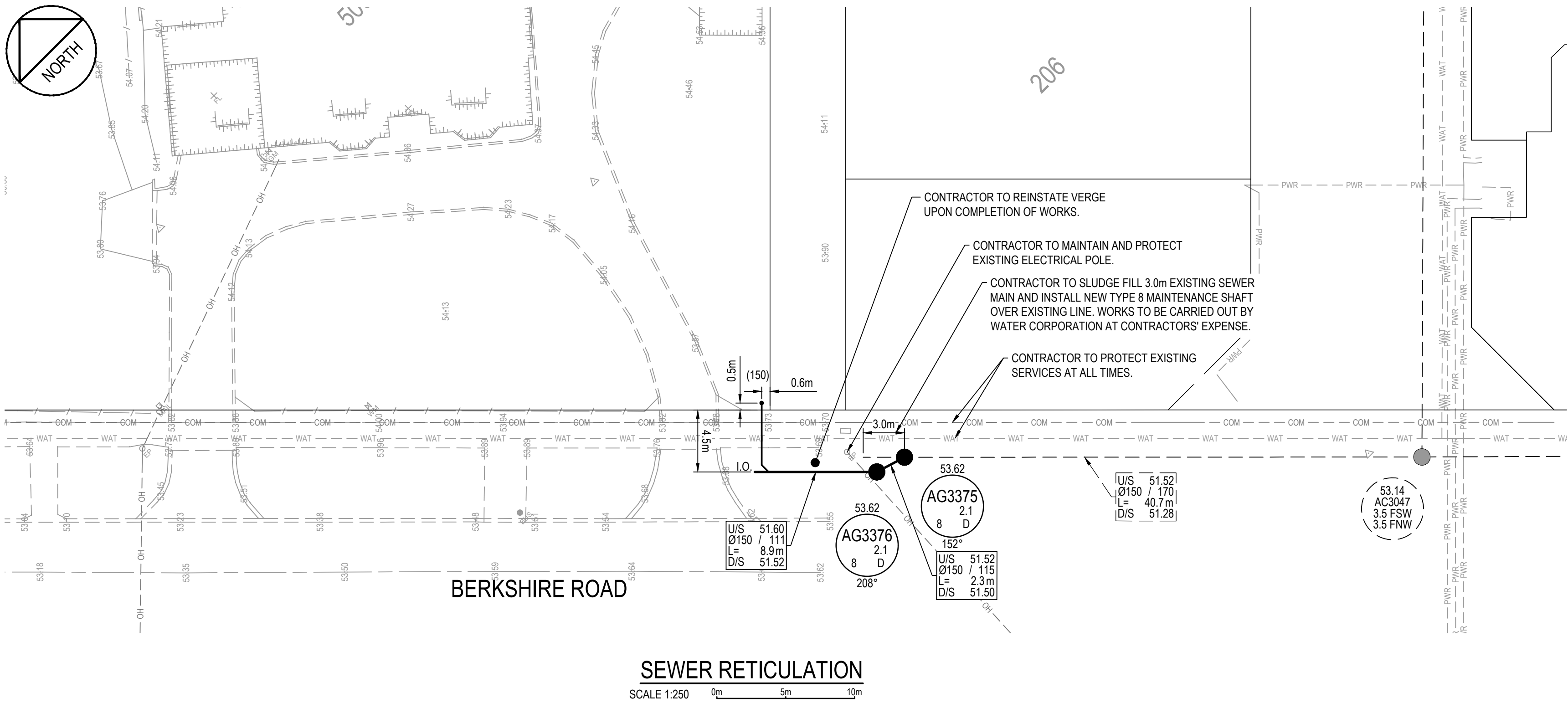


FILE PATH: F:\2025\PROJECTS\25-154 BLACK OAK CHILDCARE FORRESTFIELD\DRAWINGS\DWG\25154-C2-SR-01



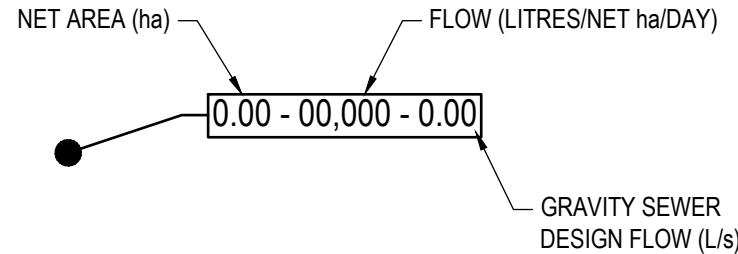
SEWER DESIGN DATA

LOCAL AUTHORITY:	= CITY OF KALAMUNDA
ESTIMATED MAX. G.W.L.	= 23.0
ENTIRE AREA CONSIDERED AS DRY	
No. OF LOTS SERVED	= 1
LOTS PREVIOUSLY SERVED FOR RELEASE THIS STAGE	= 0
LOTS SERVED THIS STAGE FOR FUTURE RELEASE	= 0
LOTS TO BE RELEASED WITHIN THIS STAGE:	= 1
(incl. ✖ excl. ✖)	
No. OF ACCESS CHAMBERS	= 0
No. OF MAINTENANCE SHAFTS	= 2
LENGTH OF SEWERS (m):	
150 DIAMETER	= 11.2m
TOTAL SEWER LENGTH	= 11.2m

SEWER DESIGN FLOWS

STAGE 1 TOTAL NET AREA SEWERED	= 0.38 ha
STAGE 1 TOTAL PEAK FLOW	= 0.06 L/s

NON-RESIDENTIAL



NOTES

- CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVATION OF ALL BENCHMARKS. IF REMOVAL IS REQUIRED 48 HOURS NOTICE MUST BE GIVEN TO THE SITE SUPERINTENDENT.
- ALL HEIGHTS ARE TO AHD AND ALL LEVELS SHALL BE DERIVED FROM ESTABLISHED BENCHMARKS.
- ALL STIPULATED FILL TO BE IN POSITION PRIOR TO CONSTRUCTION OF SEWERS.
- THIS DESIGN HAS BEEN COMPLETED IN ACCORDANCE WITH THE LATEST WATER CORPORATION OF WESTERN AUSTRALIA WASTEWATER DESIGN STANDARD (DSS0).
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST WATER CORPORATION OF WESTERN AUSTRALIA WASTEWATER DESIGN STANDARD (DSS0). SHOULD DISCREPANCIES EXIST BETWEEN THIS DRAWING AND THE WATER CORPORATION DESIGN STANDARD, THE WATER CORPORATION DESIGN STANDARD TAKES PRECEDENCE.
- UNLESS SHOWN OTHERWISE, ACCESS CHAMBERS SHALL BE LOCATED AS FOLLOWS:
 - 4.5m ALIGNMENT IN ROAD RESERVES.
 - 1.0m ALIGNMENT FROM LOT BOUNDARIES
- UNLESS SHOWN OTHERWISE, SEWER PIPE SHALL BE CONSTRUCTED AS FOLLOWS:
 - TRENCHED SEWERS 100mm DIA: PVC CLASS SN6 SOLVENT JOINTED PIPE.
 - TRENCHED SEWERS 150 - 225mm DIA: PVC CLASS SN8 SOLVENT JOINTED PIPE.
 - TRENCHED SEWERS OVER 7m DEEP: PVC CLASS SN16 SOLVENT JOINTED PIPE.
 - BORED SEWERS: PVC CLASS SN16 SOLVENT JOINTED PIPE.
- THE MAXIMUM GRADE OF ANY SEWER SHALL BE 1:5.
- HOUSE CONNECTION JUNCTIONS MUST NOT BE LESS THAN 2.0m APART EXCEPT ON THE END OF I.O. AND I.S. SEWER LINES WHERE THEY SHALL BE 1.0m APART MINIMUM (U.S.O.).
- HOUSE CONNECTIONS SHOULD BE A MAXIMUM OF 7.0m LONG AND BROUGHT TO 0.5m INSIDE THE LOT BOUNDARY.
- ALL PROPERTY CONNECTIONS, REGARDLESS OF GROUND CONDITIONS, SHALL BE BROUGHT UP TO WITHIN 1.0m OF THE FINISHED SURFACE LEVEL.
- WHERE SEWER LOT CONNECTIONS COINCIDE WITH POWER DOME, THE CONTRACTOR SHALL EXTEND SEWER LOT CONNECTION 1.5m INTO LOT.
- WET BEDDING CONDITIONS WILL GENERALLY APPLY IN CLAY OR LOAMY SOILS OR WHEN I.L. IS LESS THAN 0.6m ABOVE G.W.L.
- ALL EXCESS EXCAVATED MATERIAL AND DEMOLISHED MATERIAL SHALL BE DISPOSED OF OFFSITE AT AN APPROVED DISPOSAL FACILITY AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR TO SUPPLY ALL FILL, DO ALL CLEARING AND COMPACT FILL IN TRENCHES IN 300mm LAYERS TO 95% MMD. COMPACTION OF BACKFILL OVER CONCRETE ENCASED SEWERS OR SEWERS IN ROAD RESERVES TO ACHIEVE MINIMUM 8 BLOWS/300mm OF STANDARD PENETROMETER FOR TOTAL EXCAVATION.
- ALL NEW CONNECTIONS TO EXISTING SEWERS SHALL BE CONSTRUCTED BY THE WATER CORPORATION AT THE DEVELOPER'S EXPENSE. THE CONTRACTOR SHALL CONFIRM THE LINE AND LEVELS OF THE EXISTING SEWER MAINS AND NOTIFY THE SUPERINTENDENT PRIOR TO CONSTRUCTION COMMENCING/CONTINUING TO CONFIRM THE PROPOSED CONNECTION.
- 'AS CONSTRUCTED' DRAWINGS ARE TO BE PREPARED BY THE SURVEYOR TO THE REQUIREMENTS OF THE WATER CORPORATION OF WESTERN AUSTRALIA.

LEGEND

- PROPOSED GRAVITY SEWERS AND ASSOCIATED CHAMBER
- I.O.
- INSPECTION OPENING SEWER
- EXISTING GRAVITY SEWERS
- SUB-CATCHMENT AREA BOUNDARY
- 00.00 ► FLOW IN LITRES PER SECOND

ACCESS CHAMBER DESCRIPTIONS:

	GATIC LID	CONCRETE LID	EXISTING CHAMBER
LID LEVEL	7.50	8.00	14.00
CHAMBER NUMBER	AE4000	AE4001	T2222
CHAMBER DEPTH	2.2	2.2	2.0 FSW
LID GLASS	D	D	1.0 FNE
CHAMBER TYPE	D	D	90°/180°
DROP NOTATION	180°		
MAINTENANCE SHAFT			
OUTLET ANGLES			

PIPE NOTATION:

U/S Ø150 / 60 L= 13.4m D/S 11.91	UPSTREAM INVERT LEVEL PIPE DIAMETER / PIPE GRADE LENGTH (CHAMBER CENTRE TO CENTRE) DOWNSTREAM INVERT LEVEL
----------------------------------	---

LENGTH OF SEWER

Ø150 - 11.2m
Ø225 - N/A m
Ø300 - N/A m
Ø375 - N/A m
Ø450 - N/A m
TOTAL LENGTH - 11.2m

ALL NEW CONNECTIONS TO EXISTING SEWERS BY WATER CORPORATION AT DEVELOPER'S EXPENSE.



Zero damage - Zero harm - Zero disruption

NOTE:

NO CONSTRUCTION WORK SHALL BE CARRIED OUT UNTIL A START-UP MEETING HAS BEEN HELD WITH THE WATER CORPORATION AND CONSULTING ENGINEERS REPRESENTATIVE OTHERWISE THE WORK WILL BE DEEMED UNSUITABLE AND THE CONTRACTOR SHALL BE REQUIRED TO REMOVE AND REINSTATE THE WORKS AT THEIR EXPENSE.

THIS PLAN IS ACCEPTED AS COMPLYING WITH OVERALL SCHEME PLANNING. COMPLIANCE WITH THE RELEVANT DESIGN STANDARDS AND MANUALS REMAINS THE RESPONSIBILITY OF THE DESIGN ENGINEER. NO WORKS ARE TO COMMENCE ON SITE UNTIL STARTUP MEETING REQUIREMENTS HAVE BEEN MADE WITH THE RELEVANT ASSET INSPECTOR. REFER TO THE DEVELOPERS' MANUAL FOR CONTACT DETAILS.

for MANAGER, DEVELOPMENT SERVICES DATE

OV12-001-001-01B

FILE No.: 195787263

CLIENT & JOB
WEST PROPERTY GROUP
BLACK OAK CHILDCARE FORRESTFIELD
TITLE
SEWER SITE, DESIGN DATA
AND SEWER RETICULATION PLAN

SHEET SIZE
A1
ORIG No.
25154-C2-SR-01
REVISION
C

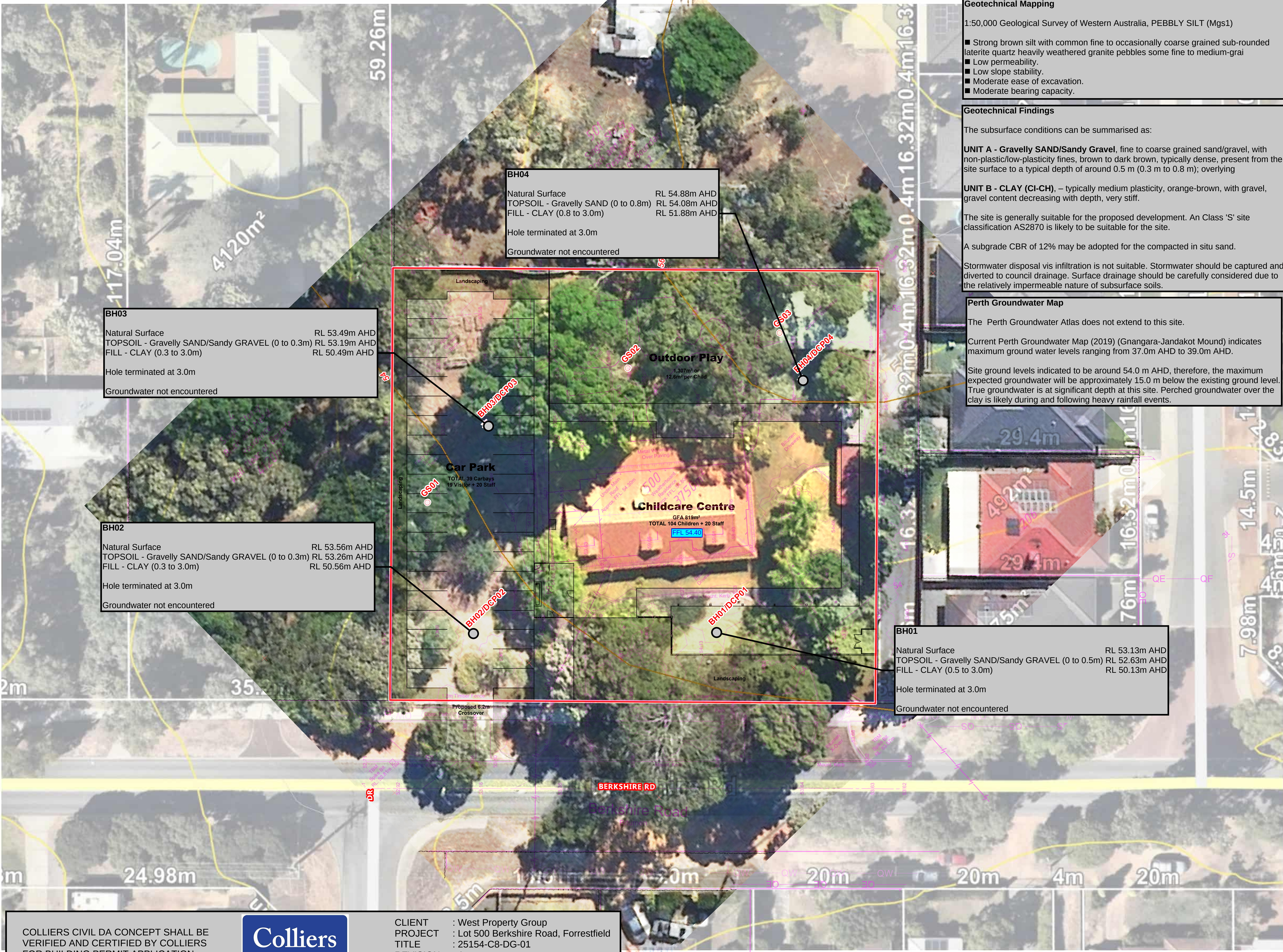
DRAWING STATUS

NOT FOR CONSTRUCTION

DATE	JUNE 2025	GRD	PCG94	DATUM	AHD
DESIGNED	JDP	DRAWN	LL	CHECKED	JDP
W.A.P.C.	N/A	SCALE	U.N.D.	APPROVED	JDP
				AS SHOWN @	



REV	DATE	DESCRIPTION	BY	CHKR	REV	DATE	DESCRIPTION	BY	CHKR
C	10/07/25	ISSUED FOR FINAL APPROVAL	JY	JDP					
B	04/07/25	ISSUED FOR FINAL APPROVAL	JY	JDP					
A	12/06/25	INITIAL ISSUE	LL	JDP					



Geotechnical Mapping

1:50,000 Geological Survey of Western Australia, PEBBLY SILT (Mgs1)

- Strong brown silt with common fine to occasionally coarse grained sub-rounded laterite quartz heavily weathered granite pebbles some fine to medium-grai
- Low permeability.
- Low slope stability.
- Moderate ease of excavation.
- Moderate bearing capacity.

Geotechnical Findings

The subsurface conditions can be summarised as:

UNIT A - Gravelly SAND/Sandy Gravel, fine to coarse grained sand/gravel, with non-plastic/low-plasticity fines, brown to dark brown, typically dense, present from the site surface to a typical depth of around 0.5 m (0.3 m to 0.8 m); overlying

UNIT B - CLAY (CI-CH), – typically medium plasticity, orange-brown, with gravel, gravel content decreasing with depth, very stiff.

The site is generally suitable for the proposed development. An Class 'S' site classification AS2870 is likely to be suitable for the site.

A subgrade CBR of 12% may be adopted for the compacted in situ sand.

Stormwater disposal vis infiltration is not suitable. Stormwater should be captured and diverted to council drainage. Surface drainage should be carefully considered due to the relatively impermeable nature of subsurface soils.

Perth Groundwater Map

The Perth Groundwater Atlas does not extend to this site.

Current Perth Groundwater Map (2019) (Gnangara-Jandakot Mound) indicates maximum ground water levels ranging from 37.0m AHD to 39.0m AHD.

Site ground levels indicated to be around 54.0 m AHD, therefore, the maximum expected groundwater will be approximately 15.0 m below the existing ground level. True groundwater is at significant depth at this site. Perched groundwater over the clay is likely during and following heavy rainfall events.

SITE CRITERIA

1. Site Area	
a. Site Area	3,750m²
2. Landscaping	
a. Required 10% of Site Area	375m²
b. Provided	1,559m² (41.6%)
Soft	421m²
Hard	1980m²
Total	
3. Floor Area (GFA)	
a. Childcare Centre	819m²
b. Bin Store	18m²
Total	837m²
4. Carparking	
i. Cars Required	
a. 1:1 Staff	20 Staff Cars
b. 1:8 Parent	13 Visitors Cars
Total Car required	33 Cars
ii. Cars Provided	39 Cars

CHILD CARE CRITERIA

1. Centre capacity	104 Places
a. Number of places	
2. Landscaping	
a. Required 7m² : 1 child	728m²
b. Provided	1,395m²
Total m² provided per child	13.4m²

Landscaping

A. Soil Landscaping
Defined as vegetative landscaping.

Gross Floor Area - GFA

A. All Floor Areas on the plan are shown as GROSS FLOOR AREA.
Unless otherwise noted as Net Floor Area

B. Definition of Gross Floor Area is defined as:

i. GROSS FLOOR AREA OF TENANCY:
Gross Floor Area of an individual Tenancy is defined as the area contained between the centre line of common tenancy walls and the inside edge of external walls.

ii. GROSS FLOOR AREA OF A BUILDING:
Gross Floor Area of a Building is defined as the total area contained between the outside edge of external walls

Net Floor Area - NFA

A. Net Floor Area of a Tenancy on this plan is defined as the area between external or tenancy dividing walls.

B. This area is inclusive of toilets if the toilets are exclusive to the Tenancy.

SITE DESIGN CHECKLIST

- ☐ 1. SEWER MAINS LOCATION TO BE DETERMINED
- ☐ 2. FIRE MAINS PRESSURE TEST REQUIRED
- ☐ 3. FIRE TANKS OR PUMPS TO BE DETERMINED
- ☐ 4. WESTERN POWER TRANSFORMER LOCATION TO BE DETERMINED
- ☐ 5. CROSSOVER & ACCESS TO STREET TO BE DETERMINED BY LOCAL AUTHORITY
- ☐ 6. FULL FEATURE SITE SURVEY REQUIRED
- ☐ 7. DIAL BEFORE YOU DIG REQUIRED
- ☐ 8. BUSHFIRE ATTACK LEVEL (BAL) TO BE DETERMINED
- ☐ 9. STREET POWER POLES TO BE DETERMINED
- ☐ 10. SITE ZONING & USE TO BE DETERMINED

NOTE: Any of the following items that do not have an 'X' in the provided square require determination.

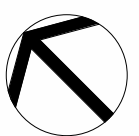
LEGEND

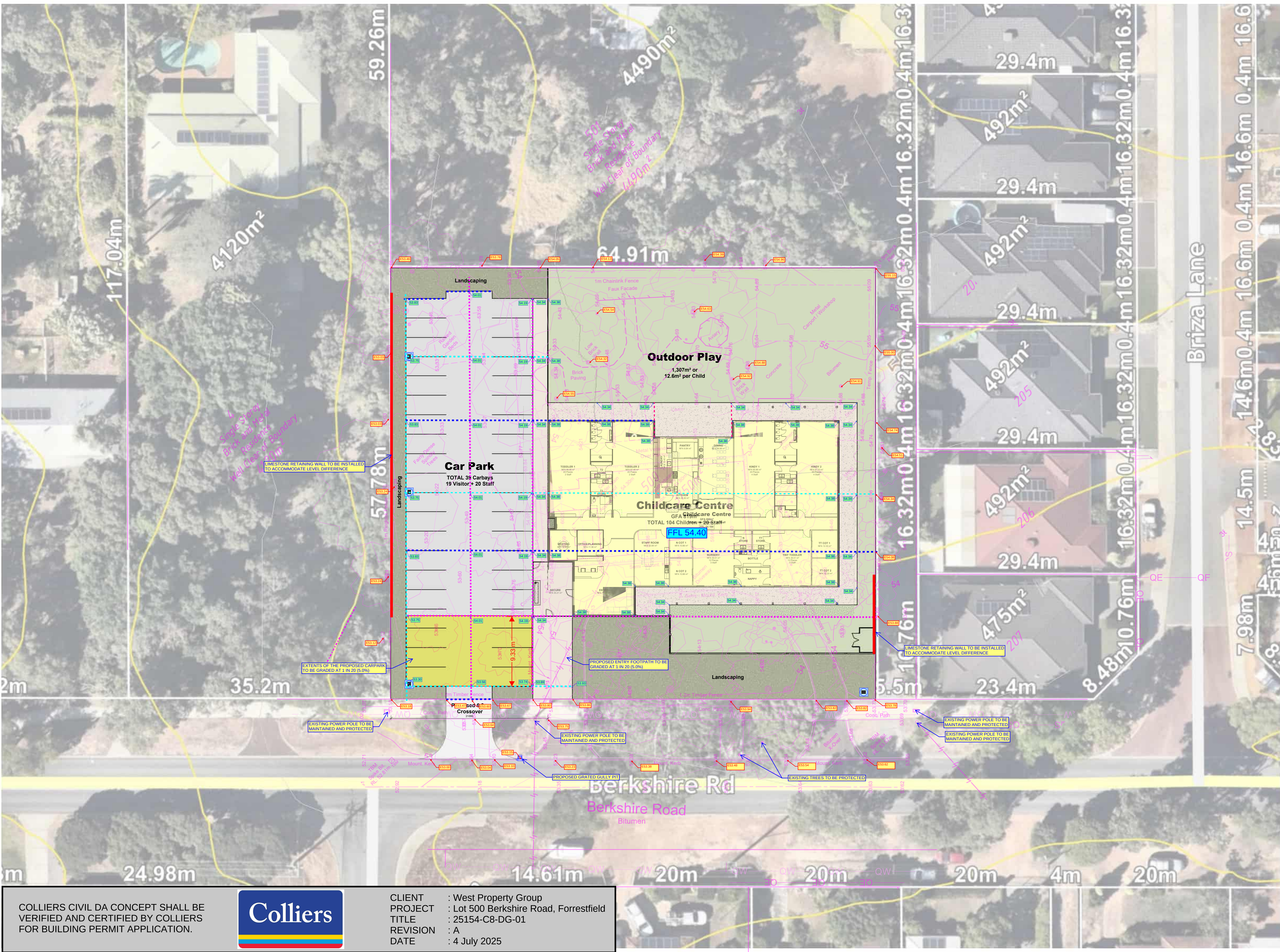
	BUILDING FOOTPRINT - CHILDCARE FACILITY
	OUTDOOR PLAY AREA
	EXTENT OF PAVING
	EXTENT OF LANDSCAPING
	EXTENT OF BITUMEN PAVING

COLLIERS CIVIL DA CONCEPT SHALL BE VERIFIED AND CERTIFIED BY COLLIERS FOR BUILDING PERMIT APPLICATION.

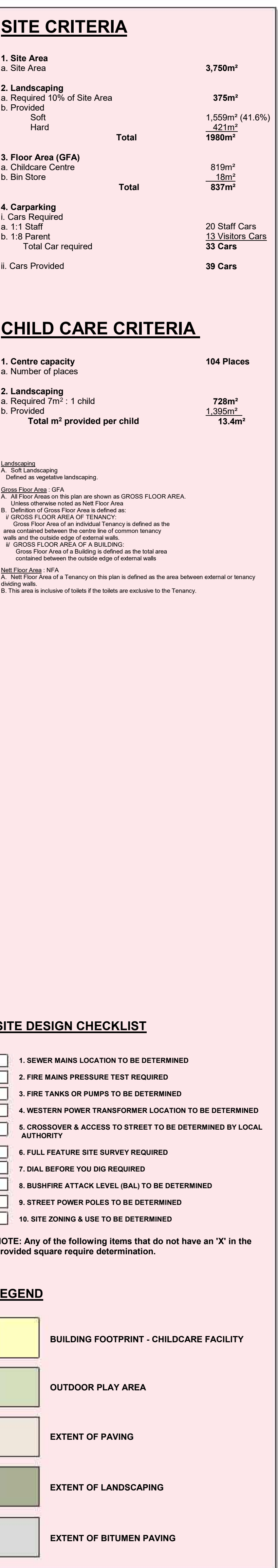


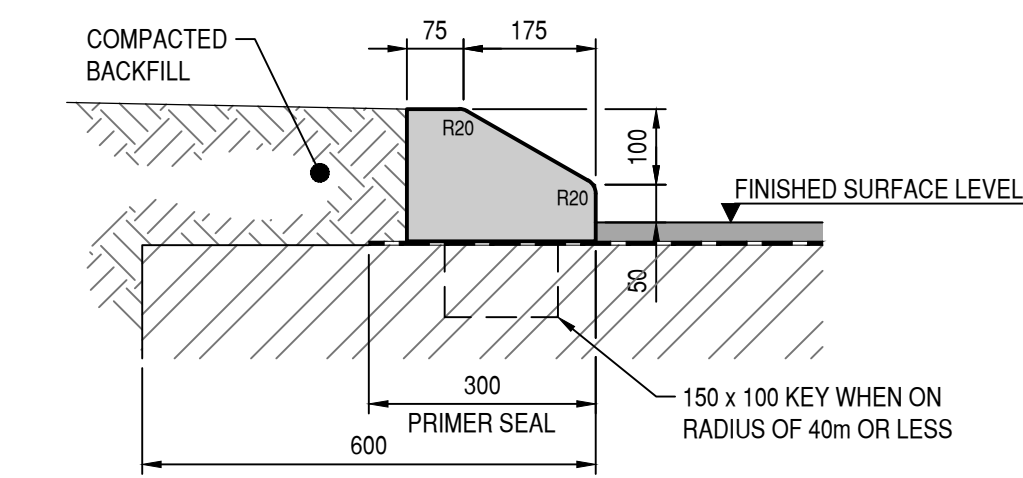
CLIENT : West Property Group
PROJECT : Lot 500 Berkshire Road, Forrestfield
TITLE : 25154-C8-DG-01
REVISION : A
DATE : 4 July 2025





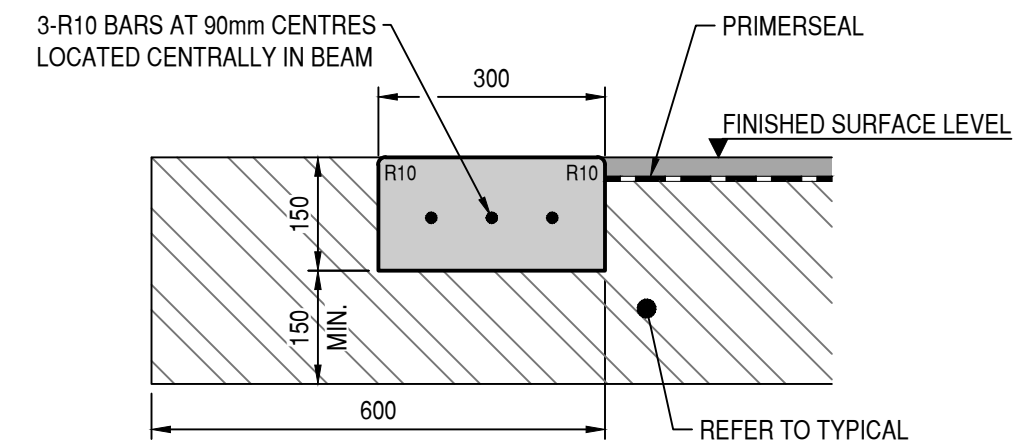
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b. Provided		1,559m ² (41.6%)
Soft		421m ²
Hard		1980m ²
Total		
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a. Childcare Centre		819m ²
b. Bin Store		18m ²
Total		837m ²
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a. 1:1 Staff		20 Staff Cars
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a. Number of places		104 Places
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Net Floor Area - NFA		
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dividing walls.		
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SITE DESIGN CHECKLIST		
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NOTE: Any of the following items that do not have an 'X' in the provided square require determination.		
LEGEND		
	BUILDING FOOTPRINT - CHILDCARE FACILITY	
	OUTDOOR PLAY AREA	
	EXTENT OF PAVING	
	EXTENT OF LANDSCAPING	
	EXTENT OF BITUMEN PAVING	





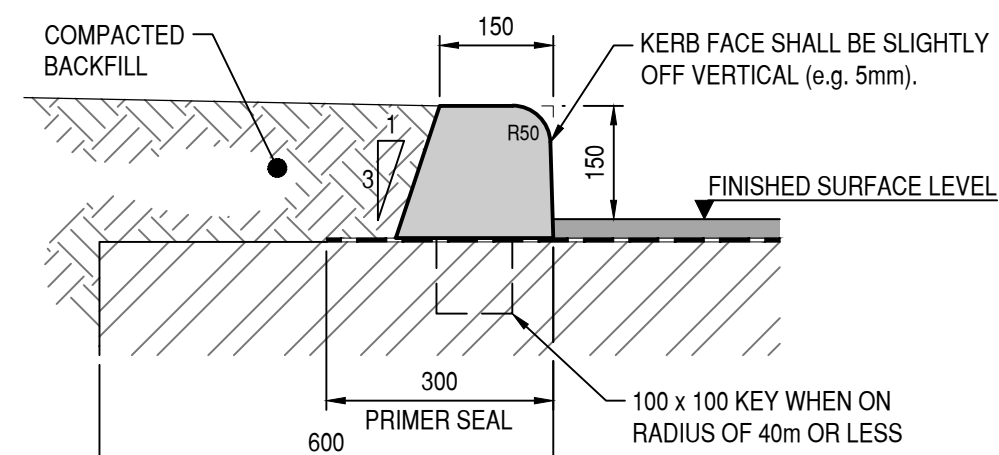
TYPICAL KERB DETAIL - SEMI-MOUNTABLE

SCALE 1:10 0m 200mm 400mm
NOTE: ALL RADII ARE 20mm U.S.O.



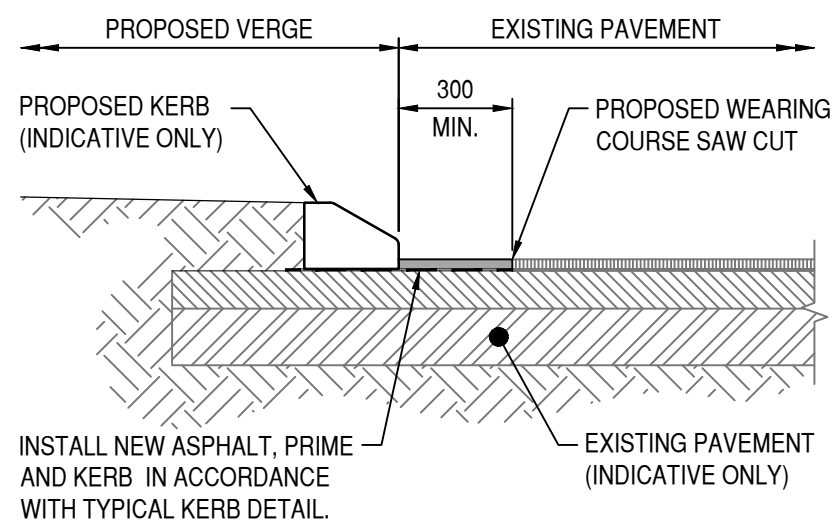
TYPICAL KERB DETAIL - FLUSH BEAM

SCALE 1:10 0m 200mm 400mm
NOTE: ALL RADII ARE 10mm U.S.O.



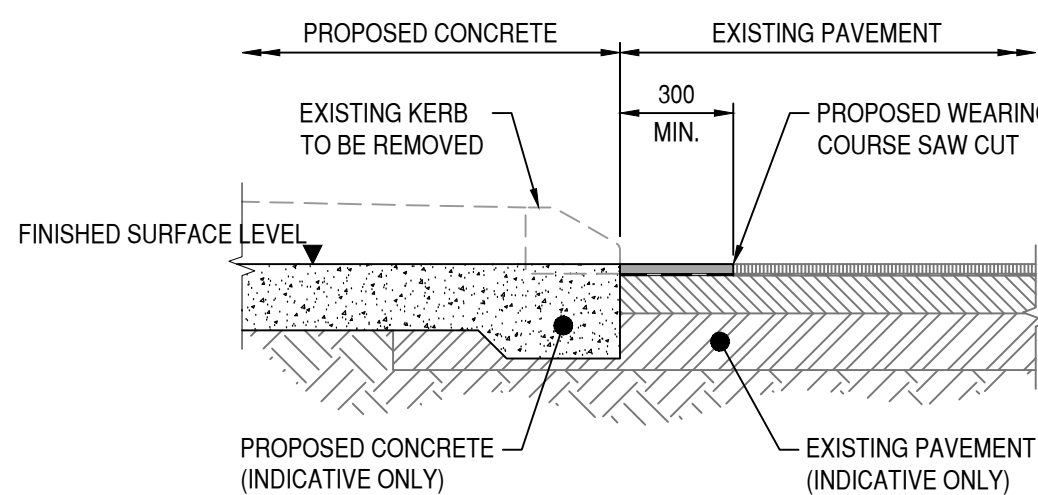
TYPICAL KERB DETAIL - BARRIER

SCALE 1:10 0m 200mm 400mm



NEW KERB INSTALLATION ALONG EXISTING SEALED PAVEMENT

SCALE 1:20 0m 400mm 800mm



NEW CONCRETE CONNECTION TO EXISTING SEALED PAVEMENT

SCALE 1:20 0m 400mm 800mm

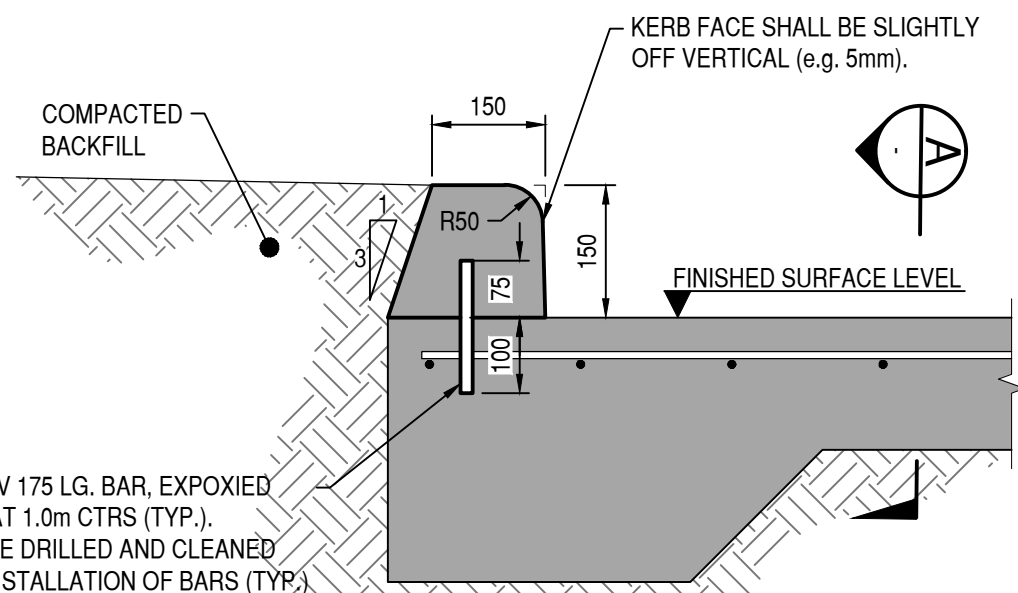
ACCESSIBLE PARKING SPACE NOTES

SPACE IDENTIFICATION
EACH DEDICATED SPACE SHALL BE IDENTIFIED BY MEANS OF A WHITE SYMBOL OF ACCESS IN ACCORDANCE WITH AS1428.1 BETWEEN 800mm AND 1000mm HIGH PLACED ON A BLUE RECTANGLE WITH NO SIDE MORE THAN 1200mm, PLACED AS A PAVEMENT MARKING IN THE CENTRE OF THE SPACE BETWEEN 500mm AND 600mm FROM ITS ENTRY POINT AS ILLUSTRATED.

SPACE DELINEATION
PAVEMENT MARKINGS SPECIFIED IN ITEMS (A) AND (B) OF THIS CLAUSE SHALL BE YELLOW AND SHALL HAVE A SLIP RESISTANT SURFACE. RAISED PAVEMENT MARKERS SHALL NOT BE USED FOR SPACE DELINEATION.

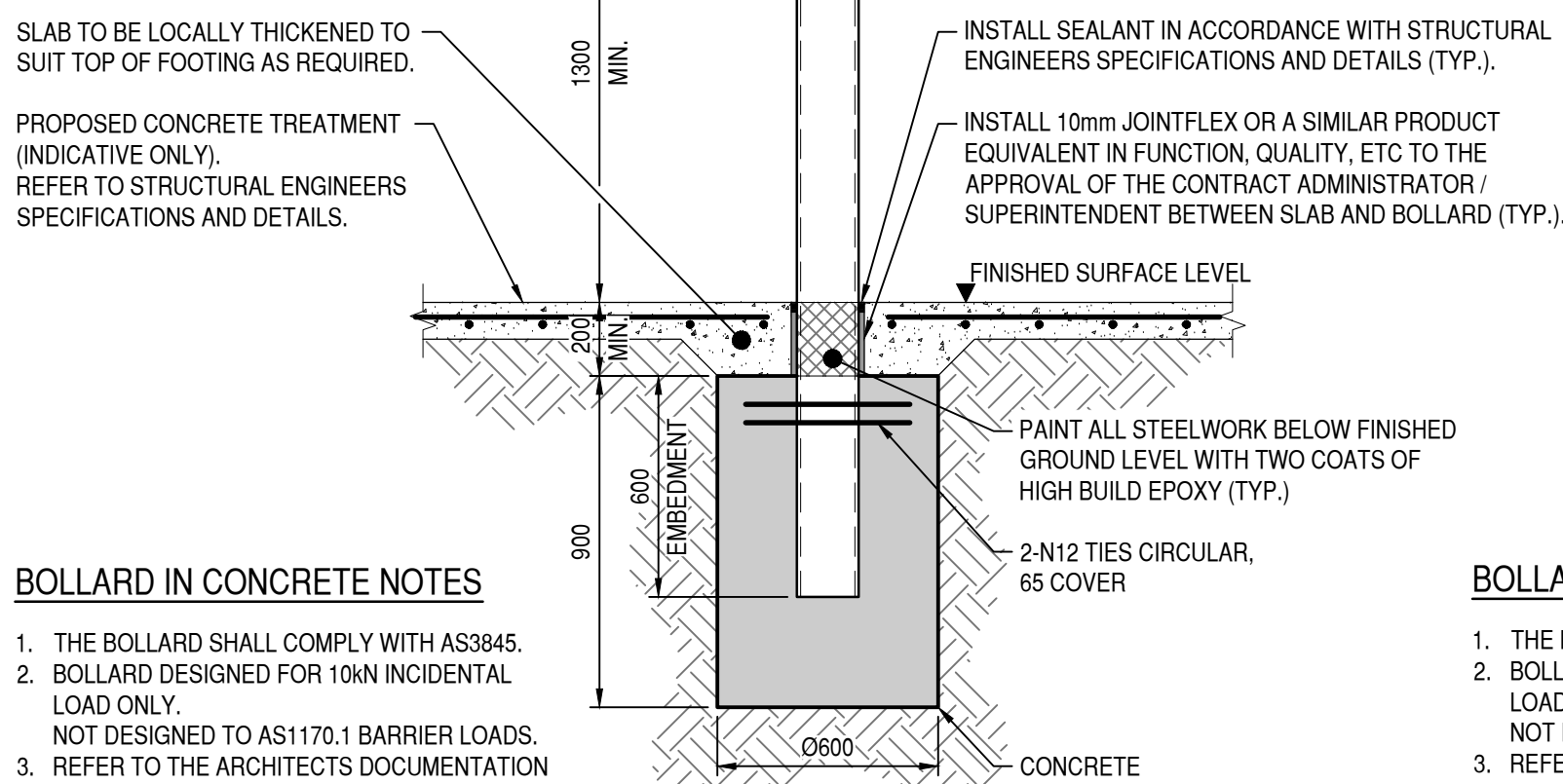
PAVEMENT MARKINGS SHALL BE PROVIDED AS FOLLOWS:

- LINEMARKING:**
 - 1.1. DEDICATED PARKING SPACES SHALL BE OUTLINED WITH UNBROKEN LINES 80 TO 100mm WIDE ON ALL SIDES EXCEPTING ANY SIDE DELINEATED BY A KERB, BARRIER OR WALL.
 - 2.1. SHARED AREAS SHALL BE MARKED AS FOLLOWS:
WALKWAYS WITHIN OR PARTLY WITHIN A SHARED AREA SHALL BE MARKED WITH UNBROKEN LONGITUDINAL LINES ON BOTH SIDES OF THE WALKWAY EXCEPTING ANY SIDE DELINEATED BY A KERB, BARRIER OR WALL.
 - 2.2. OTHER VACANT NON-TRAFFICKED AREAS, WHICH MAY BE INTENTIONALLY OR UNINTENTIONALLY OBSTRUCTED (E.G. BY UNINTENDED PARKINGS), SHALL BE OUTLINED WITH UNBROKEN LINES 80mm TO 100mm WIDE ON ALL SIDES EXCEPTING ANY SIDE DELINEATED BY A KERB, BARRIER OR WALL, AND MARKED WITH DIAGONAL STRIPES 150mm WIDE WITH SPACES 300mm BETWEEN STRIPES, THE STRIPES SHALL BE AT AN ANGLE OF 45° TO THE SIDE OF THE SPACE.
 - 2.3. NO SHARED AREA MARKINGS SHALL BE PLACED IN TRAFFICKED AREAS.
 - 2.4. ALL LINEMARKING MUST BE NON SLIP.
- BOLLARDS:**
 - 3.1. MINIMUM HEIGHT 1300mm.
 - 3.2. RECOMMENDED COLOUR BLUE TO CONTRAST AGAINST YELLOW LINE MARKING.



TYPICAL BARRIER KERB ON CONCRETE DRILLED PIN DETAIL

SCALE 1:10 0m 200mm 400mm

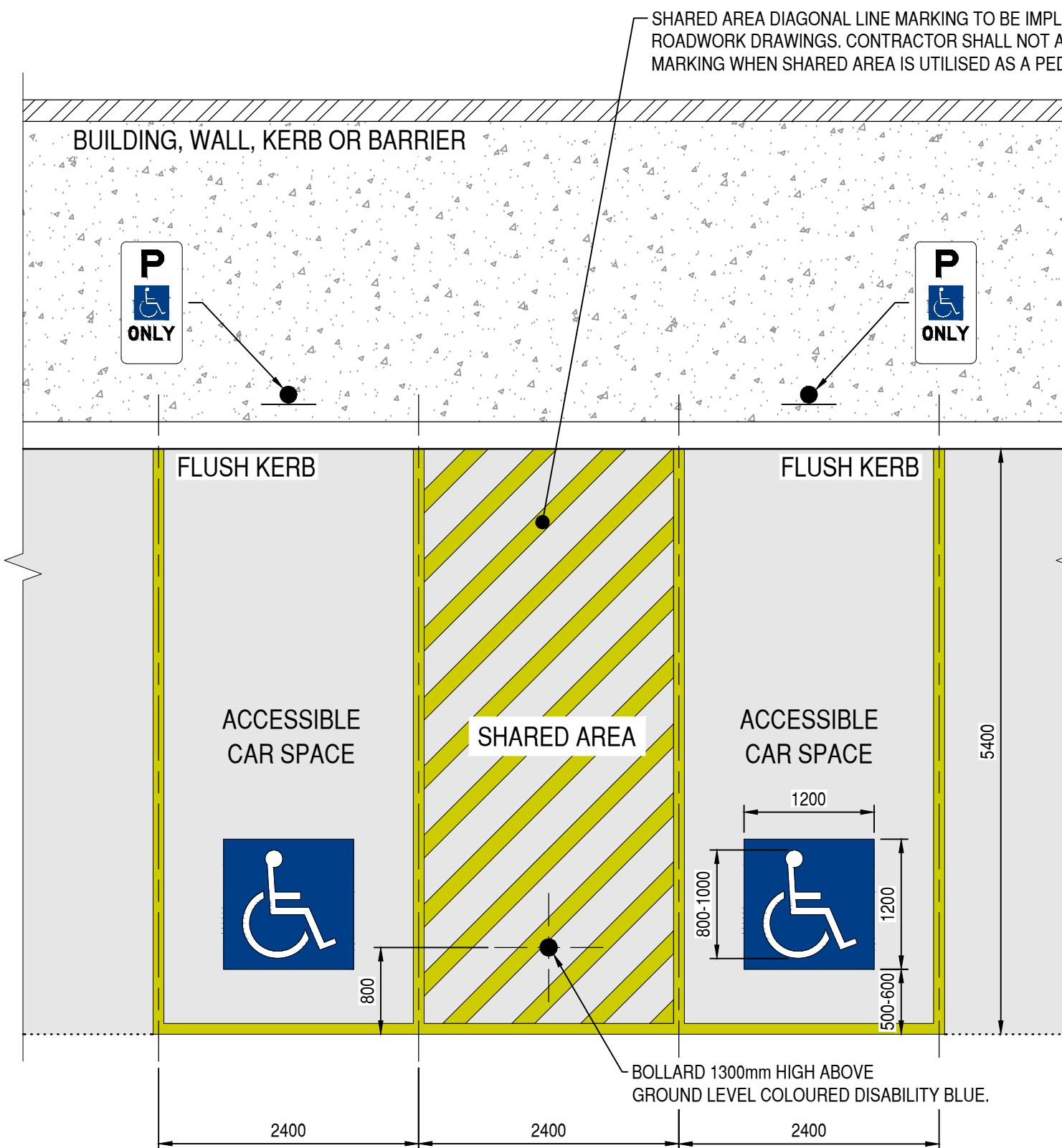


TYPICAL BOLLARD IN CONCRETE PAVEMENT DETAIL

SCALE 1:20 0m 400mm 800mm

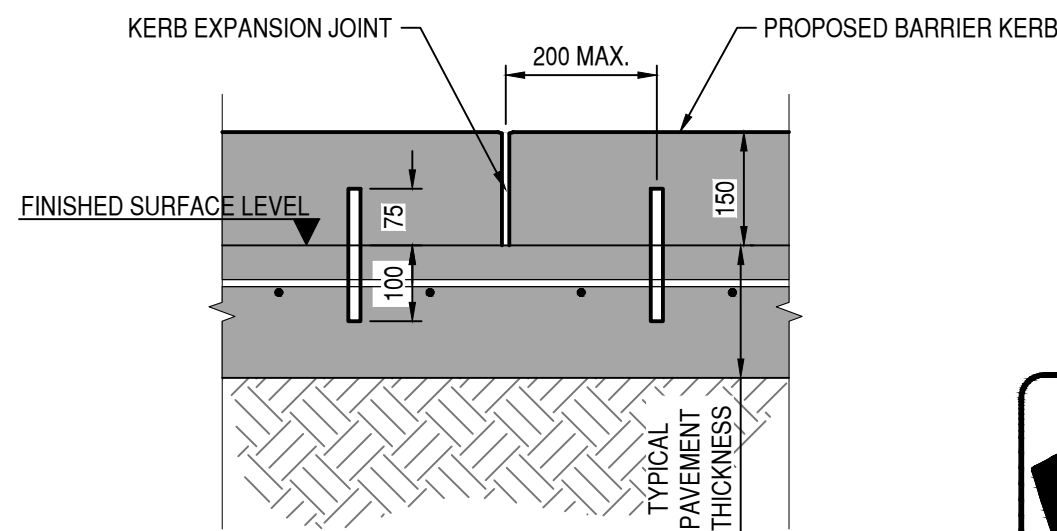
BOLLARD IN CONCRETE NOTES

1. THE BOLLARD SHALL COMPLY WITH AS3845.
2. BOLLARD DESIGNED FOR 10kN INCIDENTAL LOAD ONLY.
3. REFER TO THE ARCHITECTS DOCUMENTATION FOR LOCATIONS AND HEIGHTS.



PERPENDICULAR ACCESSIBLE CAR PARKING SPACES

SCALE 1:50 0m 1m 2m

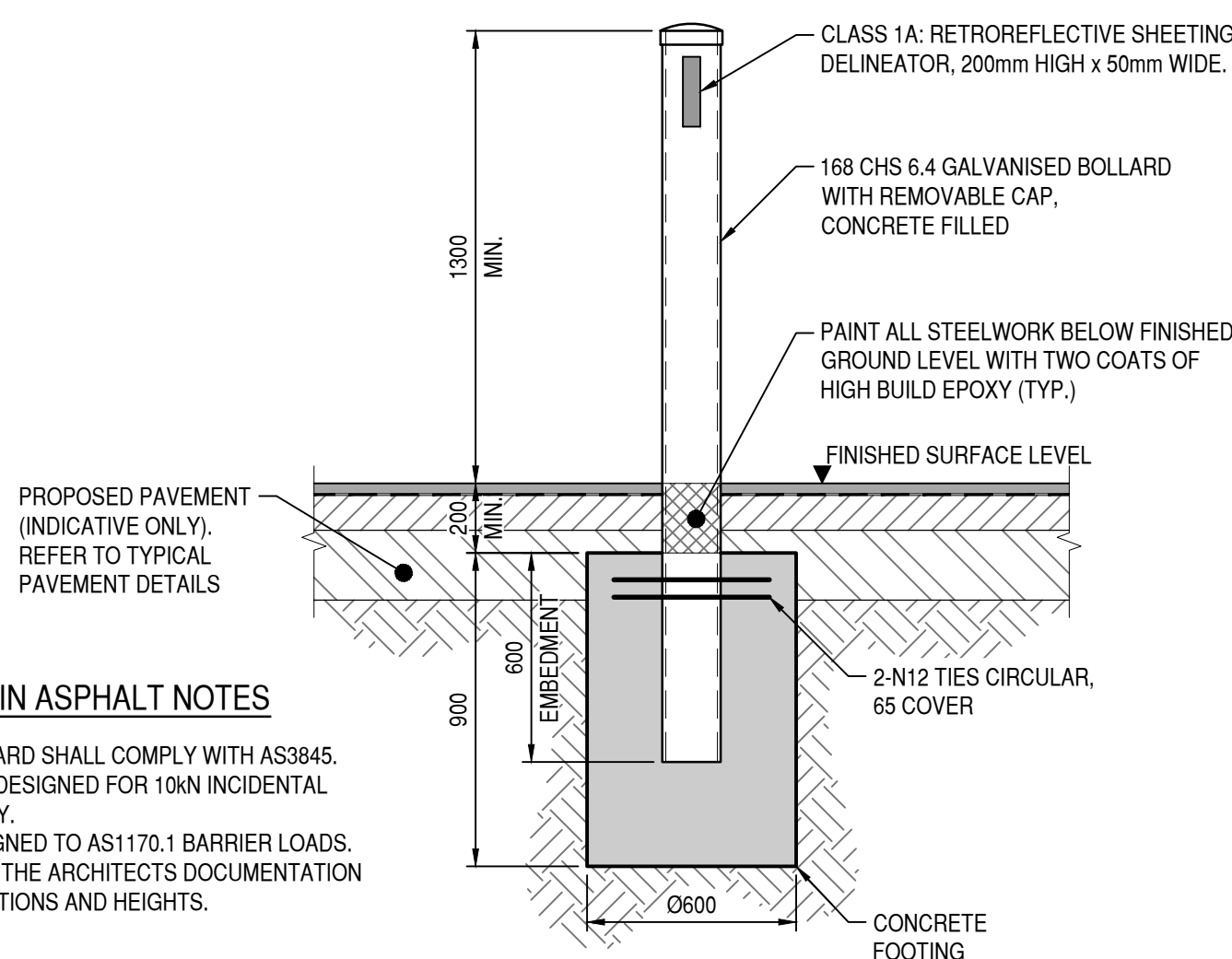


SECTION A
SCALE 1:10 0m 100mm 200mm



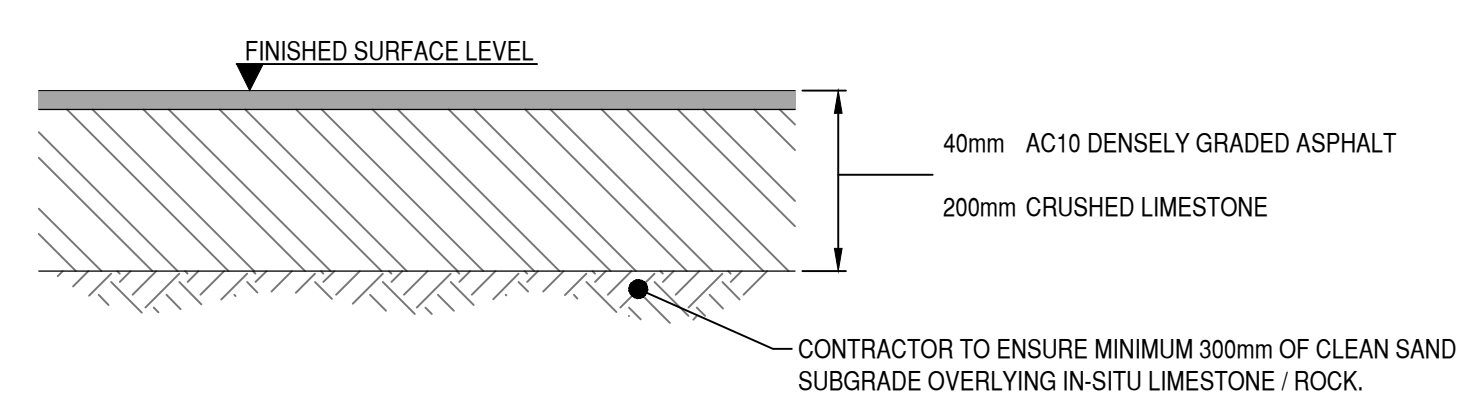
BOLLARD IN ASPHALT NOTES

1. THE BOLLARD SHALL COMPLY WITH AS3845.
2. BOLLARD DESIGNED FOR 10kN INCIDENTAL LOAD ONLY.
3. REFER TO THE ARCHITECTS DOCUMENTATION FOR LOCATIONS AND HEIGHTS.



TYPICAL BOLLARD IN ASPHALT PAVEMENT DETAIL

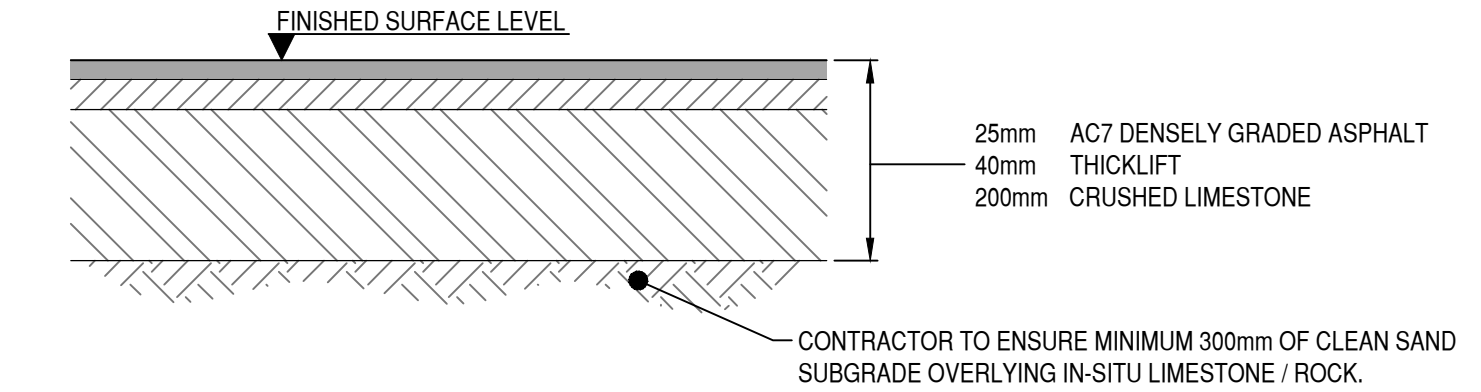
SCALE 1:20 0m 400mm 800mm



TYPICAL CARPARK PAVEMENT DETAIL

SCALE 1:10 0m 200mm 400mm

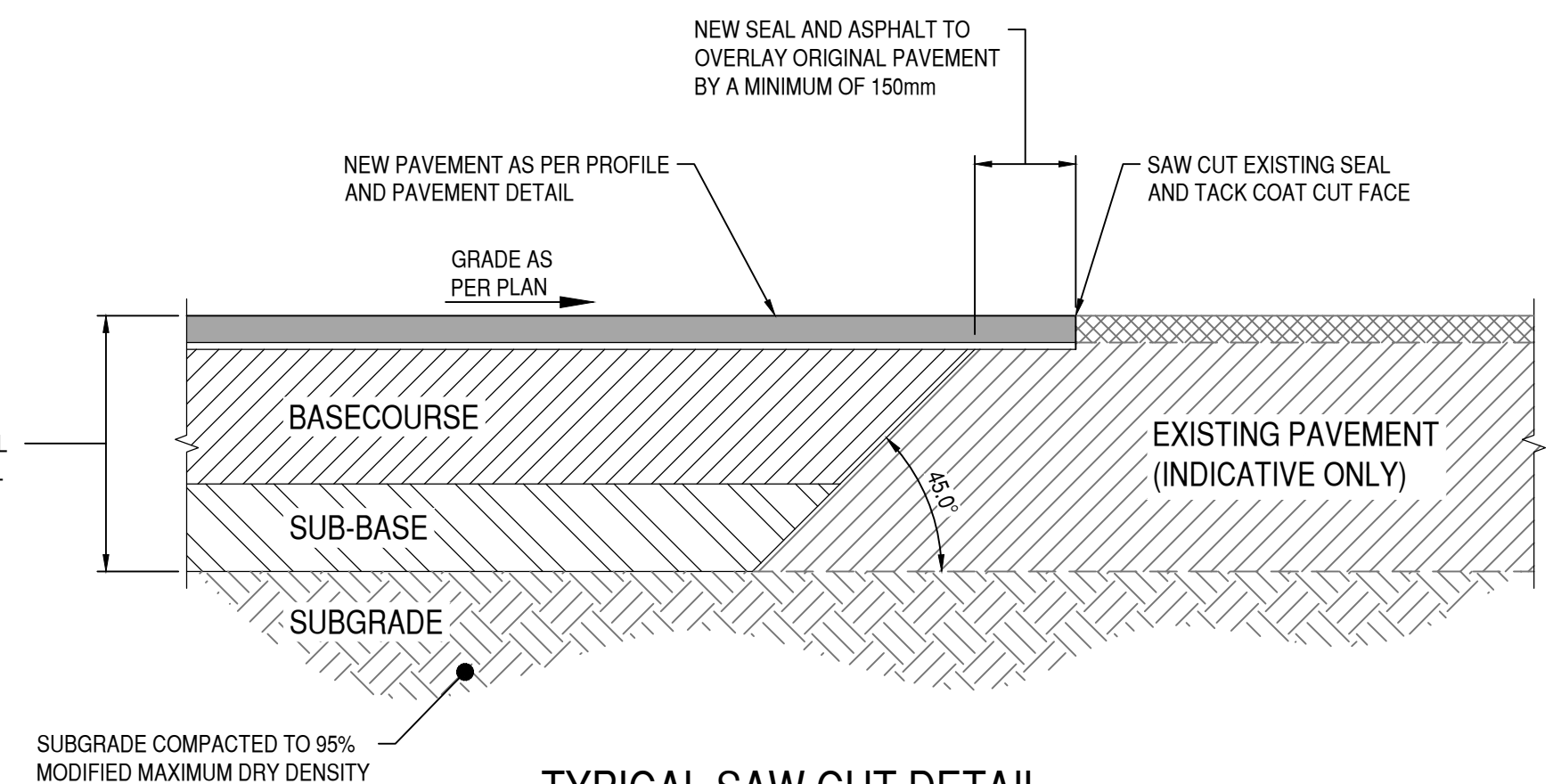
NOTE:
THE CONTRACTOR SHALL CONSTRUCT PAVEMENT IN ACCORDANCE WITH AS2150 AND CIVIL SPECIFICATIONS AND DETAILS



HEAVY DUTY ROAD PAVEMENT DETAIL

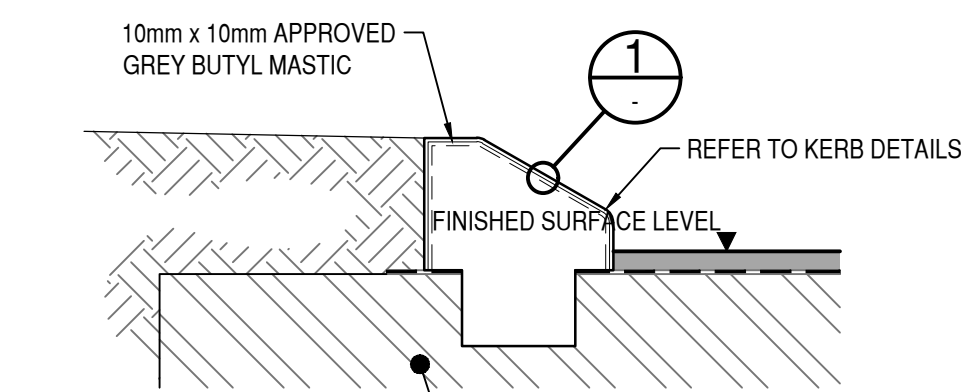
SCALE 1:10 0m 200mm 400mm

NOTE:
THE CONTRACTOR SHALL CONSTRUCT PAVEMENT IN ACCORDANCE WITH AS2150 AND CIVIL SPECIFICATIONS AND DETAILS

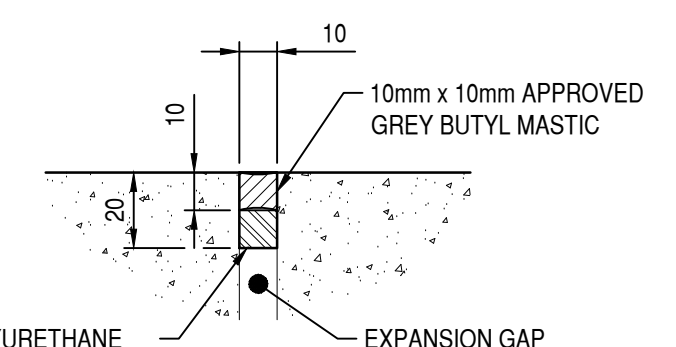


TYPICAL SAW CUT DETAIL

SCALE 1:10 0m 200mm 400mm



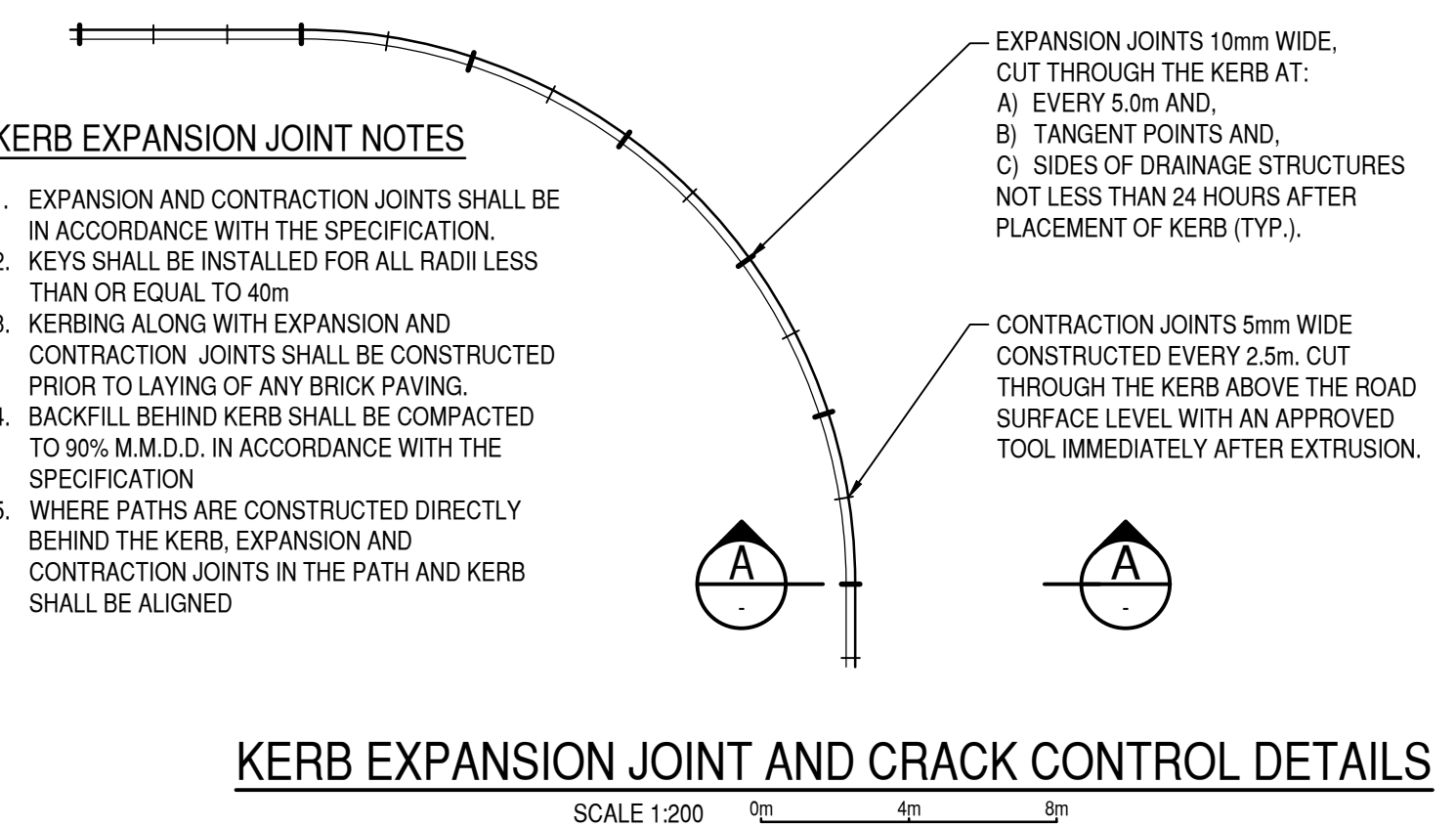
SECTION A
SCALE 1:10 0m 100mm 200mm



DETAIL 1
SCALE 1:2 0m 20mm 40mm

KERB EXPANSION JOINT NOTES

1. EXPANSION AND CONTRACTION JOINTS SHALL BE IN ACCORDANCE WITH THE SPECIFICATION.
2. KEYS SHALL BE INSTALLED FOR ALL RADII LESS THAN OR EQUAL TO 40m
3. KERBING ALONG WITH EXPANSION AND CONTRACTION JOINTS SHALL BE CONSTRUCTED PRIOR TO LAYING OF ANY BRICK PAVING.
4. BACKFILL BEHIND KERB SHALL BE COMPACTED TO 90% M.M.D. IN ACCORDANCE WITH THE SPECIFICATION
5. WHERE PATHS ARE CONSTRUCTED DIRECTLY BEHIND THE KERB, EXPANSION AND CONTRACTION JOINTS IN THE PATH AND KERB SHALL BE ALIGNED



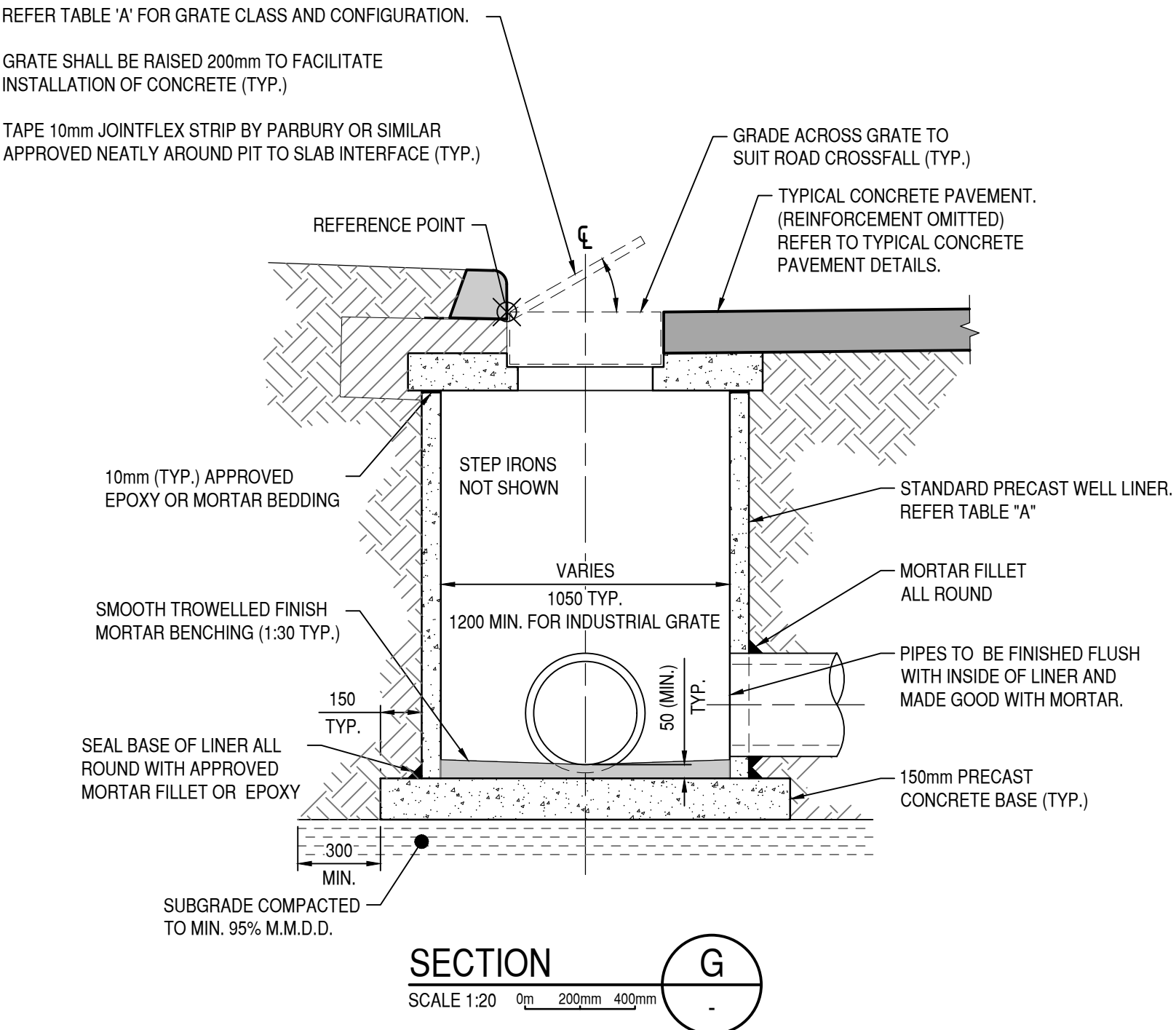
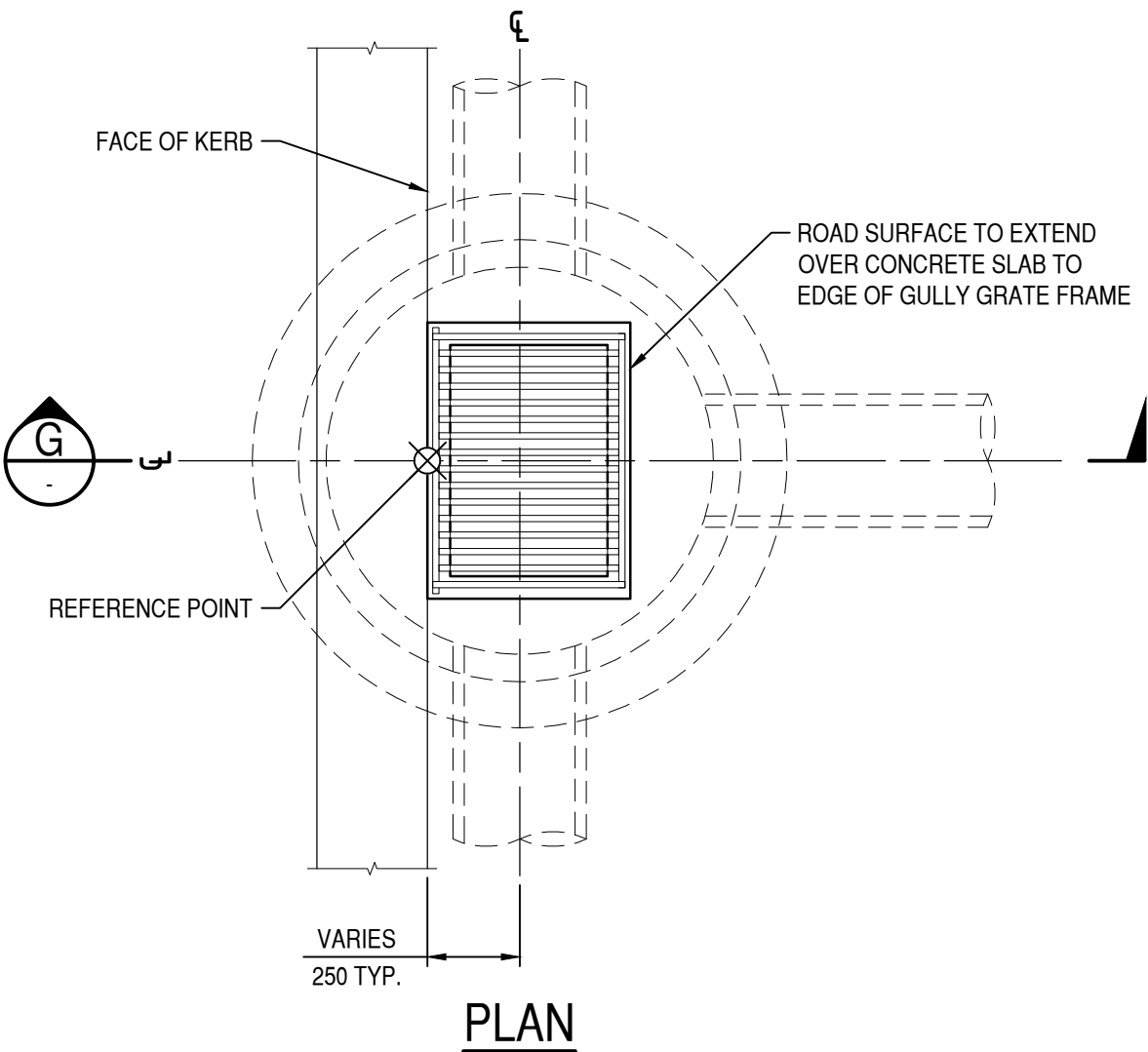
KERB EXPANSION JOINT AND CRACK CONTROL DETAILS

SCALE 1:200 0m 4m 8m

COLLIERS CIVIL DA CONCEPT SHALL BE VERIFIED AND CERTIFIED BY COLLIERS FOR BUILDING PERMIT APPLICATION.



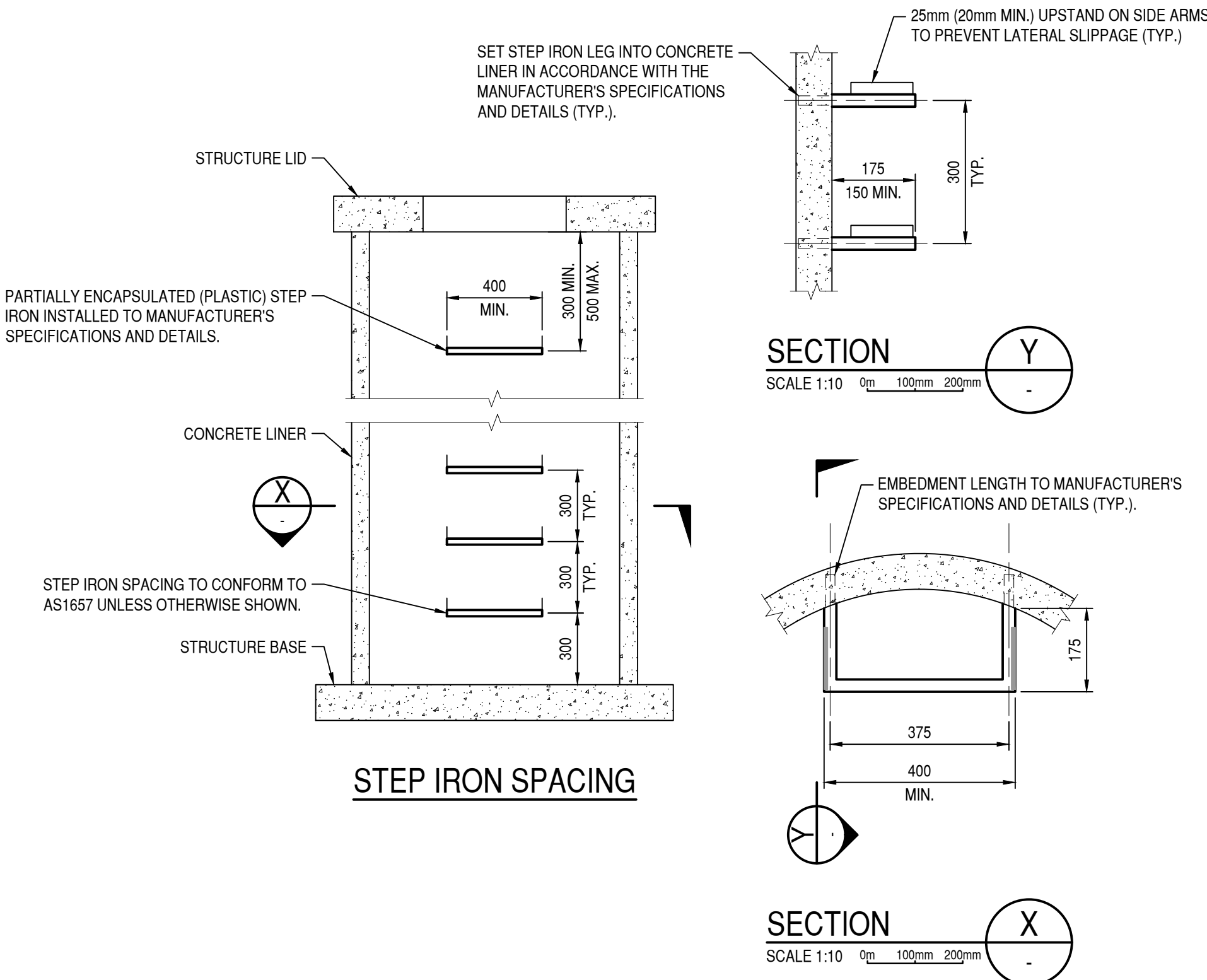
CLIENT : West Property Group
PROJECT : Lot 500 Berkshire Road, Forrestfield
TITLE : 25154-C8-DG-01
REVISION : A
DATE : 4 July 2025



TYPICAL STORMWATER GULLY GRATE PIT (GGB) ON KERB - BENCHED

SCALE 1:20 0m 400mm 800mm

TABLE A DRAINAGE PIT LINER SIZE		
NOM. LINER SIZE (mm)	PIPE SIZE MAX. (mm)	LINER TYPE
Ø1050	Ø450	CONCRETE
Ø1200	Ø600	CONCRETE
Ø1500	Ø750	CONCRETE
Ø1800	Ø900	CONCRETE
Ø2250	Ø1050	CONCRETE
N/A	N/A	CUSTOM
FOR PIPES Ø1200 AND LARGER INSTALL A CUSTOM CHAMBER TO SUIT.		



TYPICAL STORMWATER PIT STEP IRON DETAIL
PARTIALLY ENCAPSULATED FOR CONCRETE STRUCTURE

SCALE 1:20 0m 400mm 800mm

NOTE:
STEP IRONS SHALL CONFORM WITH AS1657 AND
THE CIVIL SPECIFICATIONS AND DETAILS

STORMWATER PIT NOTES

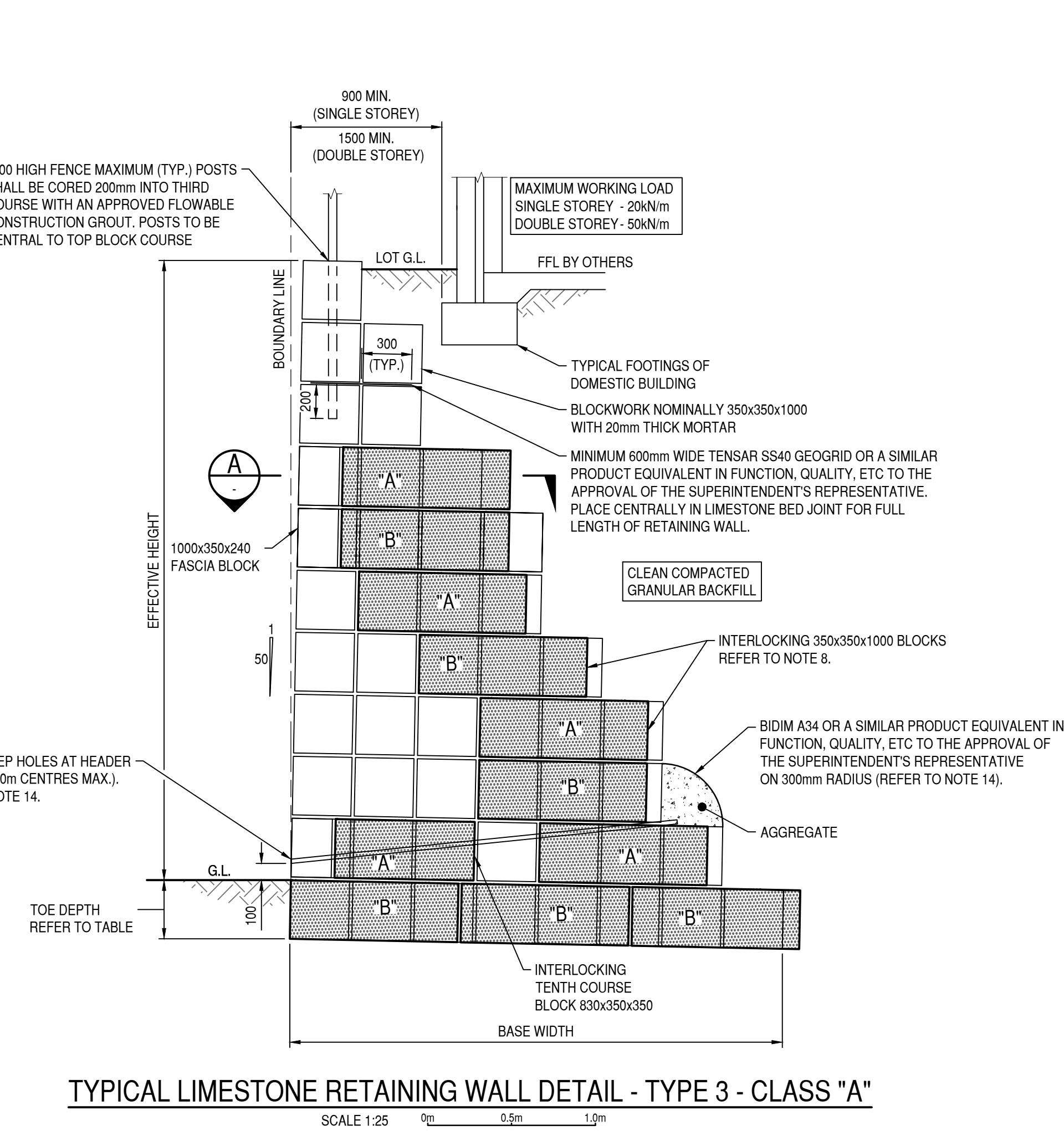
1. ALL IN-SITU CONCRETE SHALL BE CLASS N32 IN ACCORDANCE WITH AS1379.
2. ALL IN-SITU CONCRETE CORNERS SHALL HAVE A 20mm CHAMFER UNLESS OTHERWISE NOTED.
3. CEMENT MORTAR SHALL CONSIST OF ONE PART CEMENT AND THREE PARTS SAND.
4. SL81 REINFORCEMENT SHALL CONFORM WITH HARD DRAWN FABRIC TO AS4671.
5. MINIMUM CLEAR COVER TO REINFORCEMENT SHALL BE 50mm.
6. THE LINER SHALL BE REINFORCED CONCRETE MANUFACTURED TO AS4058.
7. THE MAXIMUM INLET/OUTLET PIPE OUTSIDE DIAMETER SHALL BE LESS THAN 60% OF THE LINER INTERNAL DIAMETER.
8. MINIMUM OF 40% OF LINER SHALL REMAIN IN ANY HORIZONTAL PLANE.
9. MINIMUM INTERNAL LINER SPACE OF 200mm BETWEEN PUNCHED/CUT HOLES.
10. HOLES TO BE CUT/PUNCHED ON ACCORDANCE WITH MANUFACTURER'S SPECIFICATION.
11. THE LINER SHALL HAVE EQUIVALENT PROPERTIES AND REINFORCEMENT OF CLASS 2 R.C.P. EXCEPT THAT THE REINFORCEMENT SHALL BE CIRCULAR.
12. FOR STRUCTURES DEEPER THAN 1000mm, STEP IRONS OR PREFABRICATED GALVANISED STEEL LADDER SHALL BE FITTED. THE LADDER SHALL BE FIXED WITH STAINLESS STEEL MASONARY ANCHORS IN ACCORDANCE WITH AS1657.
13. ORIENTATE STEP IRONS OR LADDER TO ENABLE EASY ACCESS AND TO FACE ONCOMING TRAFFIC.
14. COVERS SHALL BE CLASS 'D' TO AS3996.



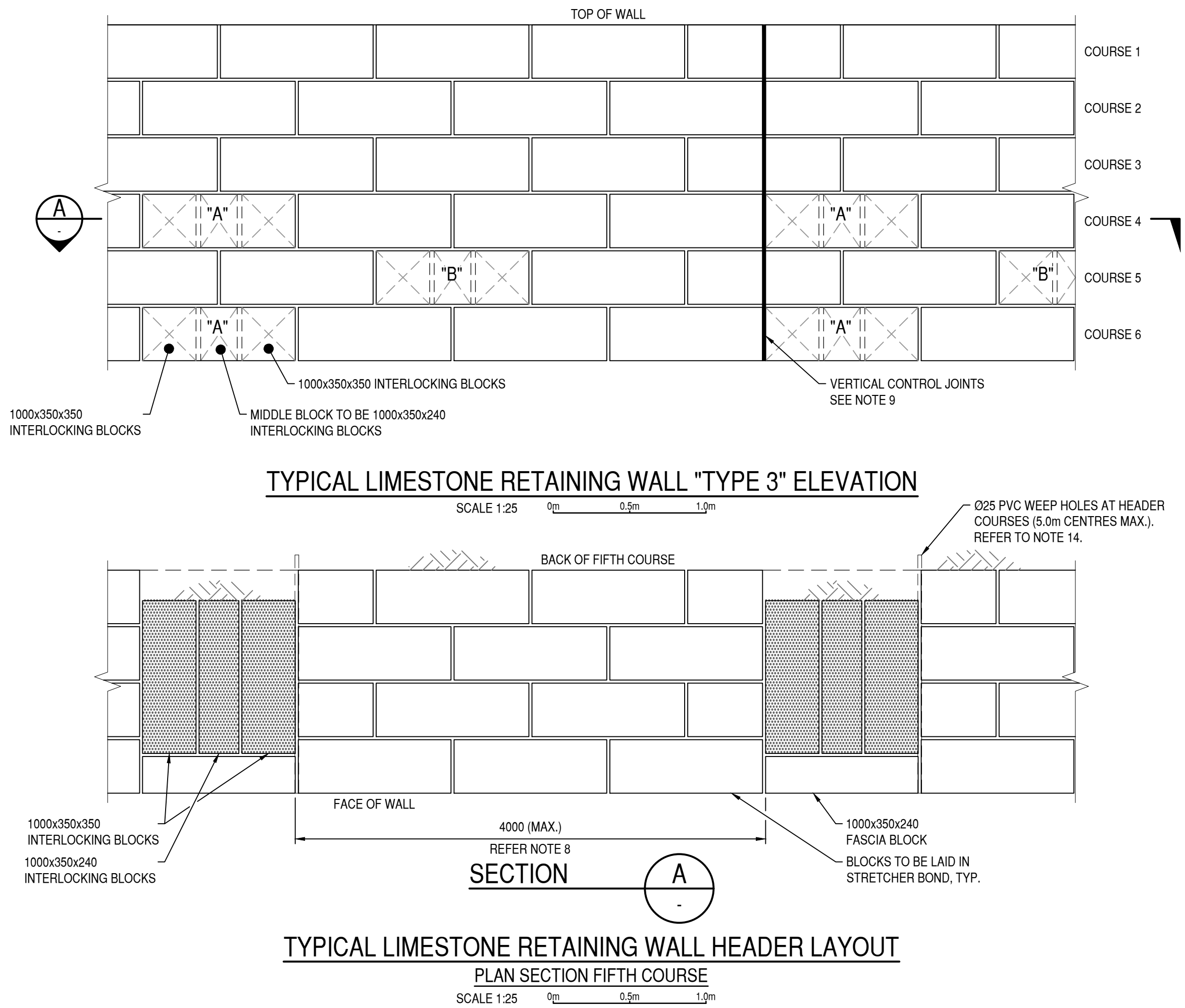
COLLIERS CIVIL DA CONCEPT SHALL BE
VERIFIED AND CERTIFIED BY COLLIERS
FOR BUILDING PERMIT APPLICATION.



CLIENT : West Property Group
PROJECT : Lot 500 Berkshire Road, Forrestfield
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REVISION : A
DATE : 4 July 2025



TYPICAL LIMESTONE RETAINING WALL DETAIL - TYPE 3 - CLASS "A"



TYPICAL LIMESTONE RETAINING WALL "TYPE 3" ELEVATION

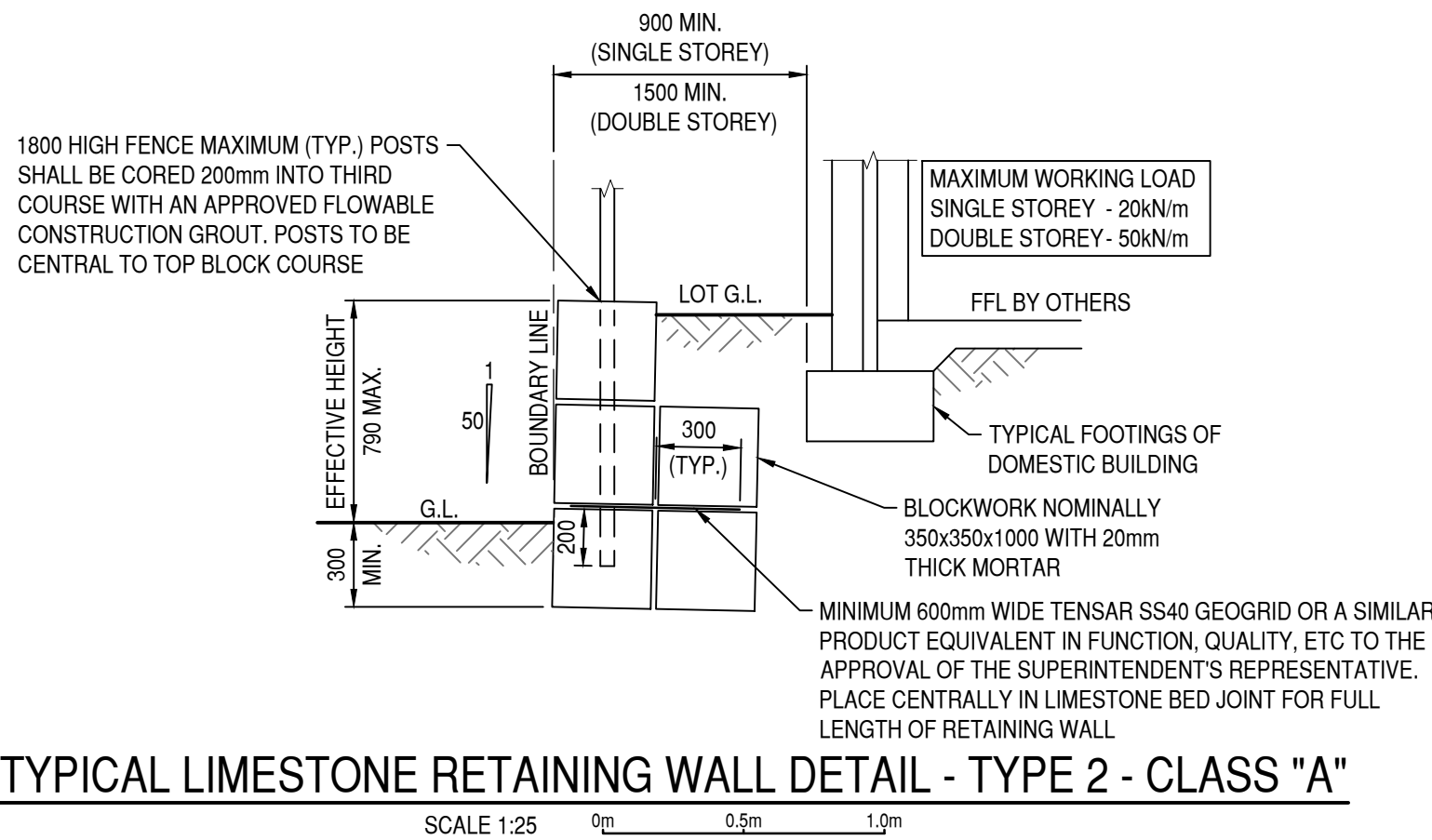
TYPICAL LIMESTONE RETAINING WALL HEADER LAYOUT

LIMESTONE RETAINING WALL AND FENCE NOTES

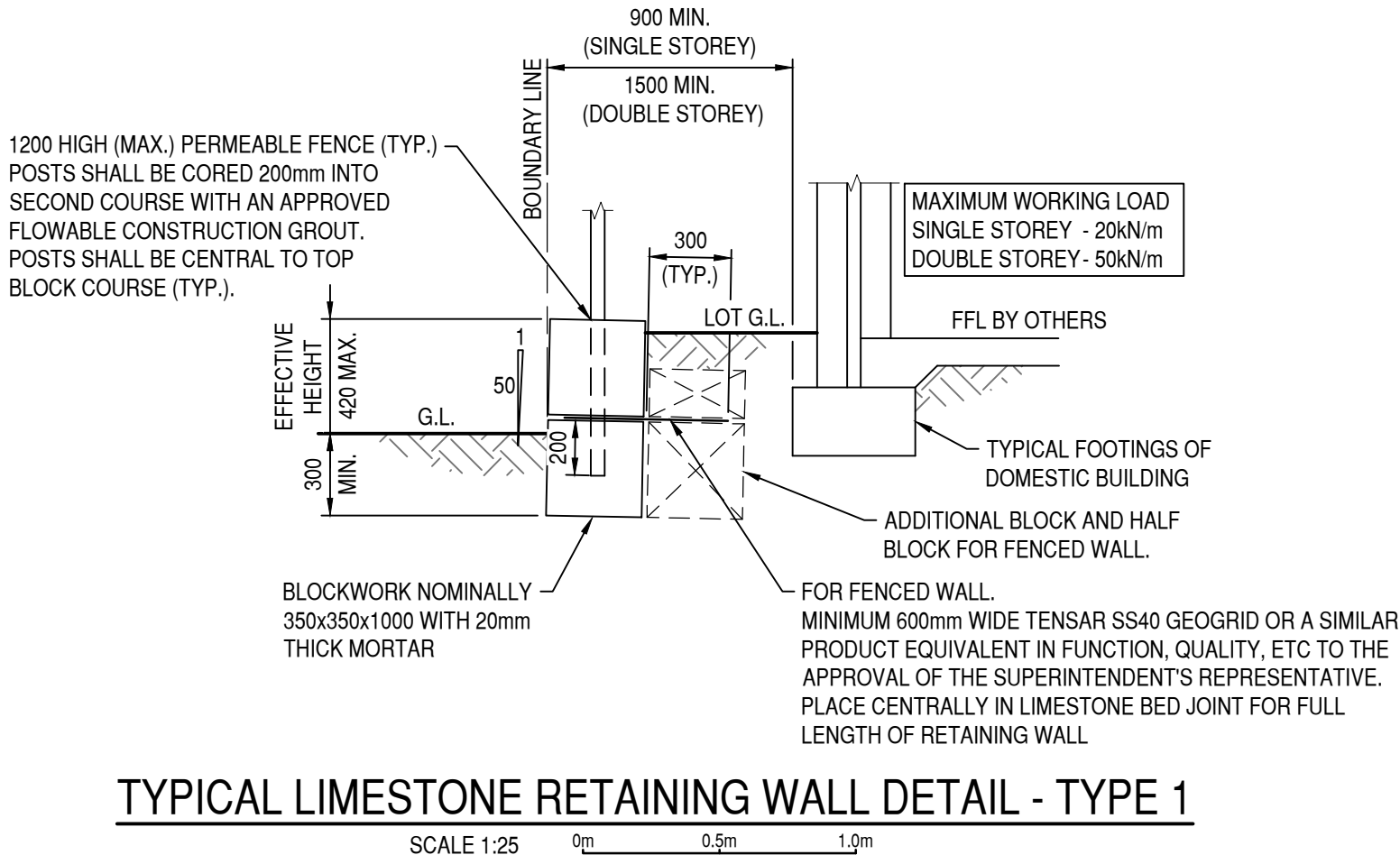
1. COMPACT GROUND UNDER FOOTING TO RESIST 8 BLOWS PER 300mm OF A STANDARD 16mm DIA PENETROMETER OVER A DEPTH OF 600mm
2. LIMESTONE BLOCKS TO BE A MINIMUM DENSITY OF 1500kg/m³ (DRY), RECONSTITUTED LIMESTONE BLOCKS TO BE A MINIMUM DENSITY OF 1800kg/m³ (DRY).
3. MORTAR MIX SHALL COMPRISE 1 PART WHITE CEMENT, 1 PART LIME PUTTY, AND 6 PARTS CLEAN YELLOW SAND OR 1 PART WHITE CEMENT, 0.5 PART LIME PUTTY AND 4.5 PARTS YELLOW SAND IF LESS THAN 1km FROM THE COAST. ALL BLOCK WORK SHALL BE FULLY MORTARED TO ADJACENT BLOCKS.
4. THESE WALLS ARE APPLICABLE FOR CLASS 'A' CONDITIONS ONLY TO AS 2870. ALL OTHER CONDITIONS TO BE REFERRED TO ENGINEER.
5. ALL RETAINING WALLS HAVE BEEN CALCULATED WITH A HORIZONTAL BACKFILL. ANY OTHER CIRCUMSTANCES TO BE ASSESSED INDIVIDUALLY.
6. THE RETAINING WALL HAS BEEN DESIGNED TO SUPPORT A 5kPa SURCHARGE.
7. INTERLOCKING BLOCK COURSING TO BE STAGGERED AS PER TYPICAL DETAIL.
8. WALL TO HAVE INTERLOCKING BLOCKS COMMENCING AT 4th COURSE FROM TOP, PERPENDICULAR TO FACING AT MAXIMUM 4m SPACING TO ACHIEVE INTERLOCK OF STRUCTURE.
9. WALLS SHALL HAVE VERTICAL CONTROL JOINTS AT INTERVALS OF NO MORE THAN 10 METRES FOR TYPE 1 WALLS, 15 METRES FOR TYPE 2 AND 3 WALLS. PREFERABLY LOCATED AT PROPERTY BOUNDARIES. JOINTS REQUIRED ALSO ON CORNERS AS PER ATTACHED DETAIL. JOINTS SHALL BE 20mm WIDE, BE FILLED WITH A 25mm CLOSED CELL FOAM AND SEALED WITH AN APPROVED POLYURETHANE JOINT FILLER.
10. NO BACKFILLING UNTIL 7 DAYS AFTER WALLS HAVE BEEN BUILT. COMPACT USING LIGHT EQUIPMENT TO DISTANCE BACK FROM THE FACE OF WALL EQUAL TO THE EFFECTIVE HEIGHT.
11. FENCE TO BE PROPRIETARY SYSTEM BY OTHERS - WALL DESIGNED FOR WIND REGION A ONLY.
12. FENCE POSTS SHALL BE AT 2400mm MAXIMUM CENTRES.
13. A NON SACRIFICIAL ANTI GRAFFITI COATING IS TO BE APPLIED TO WALLS FACING A ROAD, P.A.W. OR P.O.S.
14. WEEPHOLES TO BE CONSTRUCTED IN WALLS WHERE FOOTINGS ARE IN CLAY, ROCK, CAPSTONE OR LESS THAN 600mm OF SAND AND/OR IN AREAS OF HIGH GROUND WATER (TYP.).

WALL TYPE "3"

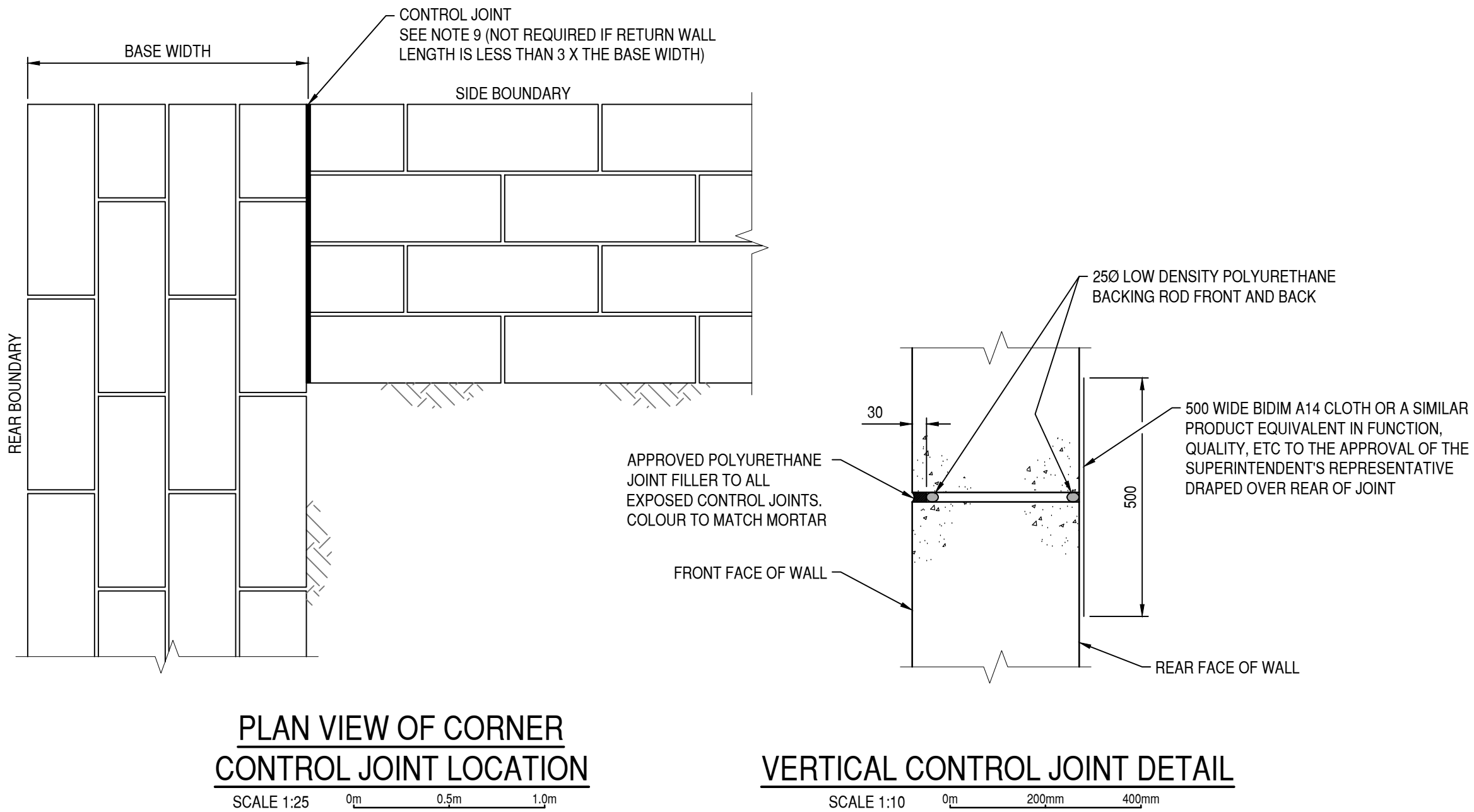
COURSES	TOTAL HEIGHT	EFFECTIVE HEIGHT RANGE	BASE WIDTH	MIN. TOE DEPTH
4	1460	790 - 1110	1090	350
5	1830	1111 - 1480	1460	350
6	2200	1481 - 1850	1460	350
7	2570	1851 - 2170	1830	400
8	2940	2171 - 2540	2200	400
9	3310	2541 - 2810	2200	500
10	3680	2811 - 3180	2570	500
11	4050	3181 - 3550	2940	500



TYPICAL LIMESTONE RETAINING WALL DETAIL - TYPE 2 - CLASS "A"



TYPICAL LIMESTONE RETAINING WALL DETAIL - TYPE 1



PLAN VIEW OF CORNER CONTROL JOINT LOCATION

VERTICAL CONTROL JOINT DETAIL



COLLIERS CIVIL DA CONCEPT SHALL BE VERIFIED AND CERTIFIED BY COLLIERS FOR BUILDING PERMIT APPLICATION.



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