

# MINTO LOGISTICS HUB

## 5-9 CULVERSTON ROAD, MINTO, NSW 2566

### STATE SIGNIFICANT DEVELOPMENT APPLICATION

### MODIFICATION TO SSD7500

DRAWING LIST

DRAWING NO.	DRAWING TITLE
C014506.00-SSDA10	DRAWING LIST & GENERAL NOTES
C014506.00-SSDA20	EROSION AND SEDIMENT CONTROL PLAN
C014506.00-SSDA25	EROSION AND SEDIMENT CONTROL DETAILS
C014506.00-SSDA30	BULK EARTHWORKS PLAN
C014506.00-SSDA31	CUT/FILL PLAN
C014506.00-SSDA35	BULK EARTHWORKS SECTIONS - SHEET 1
C014506.00-SSDA36	BULK EARTHWORKS SECTIONS - SHEET 2
C014506.00-SSDA40	STORMWATER DRAINAGE PLAN
C014506.00-SSDA45	STORMWATER DRAINAGE DETAILS - SHEET 1
C014506.00-SSDA46	STORMWATER DRAINAGE DETAILS - SHEET 2
C014506.00-SSDA50	FINISHED LEVELS PLAN
C014506.00-SSDA55	TYPICAL SECTIONS
C014506.00-SSDA65	RETAINING WALL DETAILS

GENERAL NOTES

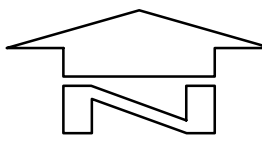
- THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANT'S DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT AND CURRENT STANDARDS AUSTRALIA CODES AND WITH THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITIES EXCEPT WHERE VARIED BY THE PROJECT SPECIFICATION.
- ALL DIMENSIONS SHOWN SHALL BE VERIFIED BY THE BUILDER ON SITE. ENGINEER'S DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS. ENGINEER'S DRAWINGS ISSUED IN ANY ELECTRONIC FORMAT MUST NOT BE USED FOR DIMENSIONAL SETOUT. REFER TO THE ARCHITECT'S DRAWINGS FOR ALL DIMENSIONAL SETOUT INFORMATION.
- DURING CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERSTRESSED. TEMPORARY BRACING SHALL BE PROVIDED BY THE BUILDER TO KEEP THE WORKS AND EXCAVATIONS STABLE AT ALL TIMES.
- UNLESS NOTED OTHERWISE ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES.
- ALL WORKS SHALL BE UNDERTAKEN IN ACCORDANCE WITH ACCEPTABLE SAFETY STANDARDS & APPROPRIATE SAFETY SIGNS SHALL BE INSTALLED AT ALL TIMES DURING THE PROGRESS OF THE JOB.

EXISTING SERVICES

- DURING THE EXECUTION OF WORKS, THE CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF EXISTING SERVICES. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED TO THE EXISTING SERVICES TO THE SATISFACTION OF THE SUPERINTENDENT AND THE RELEVANT SERVICE AUTHORITY, AT NO COST TO THE PRINCIPAL.
- WHERE IT IS NECESSARY TO REMOVE, DIVERT OR CUT INTO ANY EXISTING SERVICE, THE CONTRACTOR SHALL GIVE AT LEAST THREE (3) DAYS NOTICE OF ITS REQUIREMENTS TO THE SUPERINTENDENT, WHO WILL ADVISE WHAT ARRANGEMENTS SHOULD BE MADE FOR THE ALTERATION OF SUCH EXISTING WORKS.
- ALL NEW AND EXHUMED SERVICES THAT CROSS EXISTING AND FUTURE ROADS/PAVEMENTS WITHIN THE SITE SHALL BE BACKFILLED WITH DGB20 MATERIAL TO SUBGRADE LEVEL AND COMPACTED TO 98% STANDARD DENSITY RATIO. SUBJECT TO PRIOR APPROVAL FROM RELEVANT AUTHORITY.
- ON COMPLETION OF SERVICES INSTALLATION, ALL DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL AREAS, GRASSED AREAS AND ROAD PAVEMENTS.
- CARE TO BE TAKEN WHEN EXCAVATING NEAR UTILITY SERVICES. NO MECHANICAL EXCAVATION TO BE UNDERTAKEN OVER SERVICES. LIAISE WITH RELEVANT AUTHORITY.
- THE CONTRACTOR SHALL ALLOW FOR THE CAPPING OFF, EXCAVATION AND REMOVAL IF REQUIRED OF ALL EXISTING SERVICES IN AREAS AFFECTED BY THE WORKS WITHIN THE CONTRACT AREA AS SHOWN ON THE DRAWINGS UNLESS DIRECTED OTHERWISE BY THE SUPERINTENDENT. ALL TO REGULATORY AUTHORITY STANDARDS AND APPROVAL.
- THE CONTRACTOR IS TO MAINTAIN EXISTING STORMWATER DRAINAGE FLOWS THROUGH THE ROADS AT ALL TIMES. MAKE DUE ALLOWANCE FOR ALL SUCH FLOWS AT ALL TIMES.
- PRIOR TO COMMENCEMENT OF ANY WORKS THE CONTRACTOR SHALL OBTAIN THE SUPERINTENDENT'S APPROVAL OF THE PROGRAM FOR THE RELOCATION/CONSTRUCTION OF TEMPORARY SERVICES.
- CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES AS REQUIRED TO MAINTAIN EXISTING SUPPLY TO BUILDINGS REMAINING IN OPERATION DURING WORKS TO THE SATISFACTION AND APPROVAL OF THE SUPERINTENDENT. ONCE DIVERSION IS COMPLETE AND COMMISSIONED THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD TO THE SATISFACTION OF THE SUPERINTENDENT.
- INTERRUPTION TO SUPPLY OF EXISTING SERVICES SHALL BE DONE SO AS NOT TO CAUSE ANY INCONVENIENCE OR DAMAGE TO THE ADJACENT RESIDENCES. CONTRACTOR TO GAIN APPROVAL OF THE SUPERINTENDENT FOR TIME OF INTERRUPTION.
- THE CONTRACTOR SHALL UNDERTAKE A DIAL BEFORE YOU DIG (DBYD 1100) SERVICES SEARCH BEFORE THE COMMENCEMENT OF ANY WORKS.

ELECTRONIC INFORMATION NOTES:

- THE ISSUED DRAWINGS IN HARD COPY OR PDF FORMAT TAKE PRECEDENCE OVER ANY ELECTRONICALLY ISSUED INFORMATION, LAYOUTS OR DESIGN MODELS.
- THE CONTRACTOR'S DIRECT AMENDMENT OR MANIPULATION OF THE DATA OR INFORMATION THAT MIGHT BE CONTAINED WITHIN AN ENGINEER-SUPPLIED DIGITAL TERRAIN MODEL AND ITS SUBSEQUENT USE TO UNDERTAKE THE WORKS WILL BE SOLELY AT THE DISCRETION OF AND THE RISK OF THE CONTRACTOR.
- THE CONTRACTOR IS REQUIRED TO HIGHLIGHT ANY DISCREPANCIES BETWEEN THE DIGITAL TERRAIN MODEL AND INFORMATION PROVIDED IN THE CONTRACT AND/OR DRAWINGS AND IS REQUIRED TO SEEK CLARIFICATION FROM THE SUPERINTENDENT.
- THE ENGINEER WILL NOT BE LIABLE OR RESPONSIBLE FOR THE POSSIBLE ON-GOING NEED TO UPDATE THE DIGITAL TERRAIN MODEL, SHOULD THERE BE ANY AMENDMENTS OR CHANGES TO THE DRAWINGS OR CONTRACT INITIATED BY THE CONTRACTOR.



LOCALITY PLAN  
NTS

FOR APPROVAL

ISSUED FOR APPROVAL			17.02.22	E							ARCHITECT			CLIENT			PROJECT			Costin Roe Consulting Pty Ltd. Consulting Engineers			DRAWING TITLE			
PRELIMINARY ONLY			04.02.22	D							[watch this SPACE design]			Charter Hall			MINTO LOGISTICS HUB			Level 1, 8 Widdell Street Wahia Bay, Sydney NSW 2000 Tel: (02) 8551-7899 Fax: (02) 9541-3721 email: mail@costinroe.com.au			DRAWING LIST & GENERAL NOTES			
PRELIMINARY ONLY			29.09.21	C													5-9 CULVERSTON ROAD									
PRELIMINARY ONLY			17.09.21	B													MINTO NSW 2566									
PRELIMINARY ONLY			03.09.21	A																						
AMENDMENTS			DATE	ISSUE	AMENDMENTS			DATE	ISSUE	AMENDMENTS			DATE	ISSUE	DESIGNED			DATE	CHECKED	SCALE	CHD REF.	PRECISION   COMMUNICATION   ACCOUNTABILITY				
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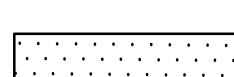

ALL CONTROL WORK INCLUDING DIVERSION BANKS AND CATCH DRAINS, V-DRAINS AND SILT FENCES SHALL BE COMPLETED DIRECTLY FOLLOWING THE COMPLETION OF THE EARTHWORKS.

1. SILT FENCES AND SILT FENCE RETURNS SHALL BE ERECTED CONVEX TO THE CONTOUR TO POND WATER.
2. HAY BALE BARRIERS AND GEOFABRIC FENCES ARE TO BE CONSTRUCTED TO TOE OF BATTER, PRIOR TO COMMENCEMENT OF EARTHWORKS, IMMEDIATELY AFTER CLEARING OF VEGETATION AND BEFORE REMOVAL OF TOP SOIL.
3. ALL TEMPORARY EARTH BERMS, DIVERSION AND SILT DAM EMBANKMENTS ARE TO BE MACHINE COMPACTED, SEEDED AND MULCHED FOR TEMPORARY VEGETATION COVER AS SOON AS THEY HAVE BEEN FORMED.
4. CLEAR WATER IS TO BE DIVERTED AWAY FROM DISTURBED GROUND AND INTO THE DRAINAGE SYSTEM.
5. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND PROVIDING ON GOING ADJUSTMENT TO EROSION CONTROL MEASURES AS REQUIRED DURING CONSTRUCTION.
6. ALL SEDIMENT TRAPPING STRUCTURES AND DEVICES ARE TO BE INSPECTED AFTER STORMS FOR STRUCTURAL DAMAGE OR CLOGGING, TRAPPED MATERIAL IS TO BE REMOVED TO A SAFE, APPROVED LOCATION.

7. ALL FINAL EROSION PREVENTION MEASURES INCLUDING THE ESTABLISHMENT OF GRASSING ARE TO BE MAINTAINED UNTIL THE END OF THE DEFECTS LIABILITY PERIOD.
8. ALL EARTHWORKS AREAS SHALL BE ROLLED ON A REGULAR BASIS TO SEAL THE EARTHWORKS.
9. ALL FILL AREAS ARE TO BE LEFT WITH A BUND AT THE TOP OF THE SLOPE AT THE END OF EACH DAYS EARTHWORKS. THE HEIGHT OF THE BUND SHALL BE A MINIMUM OF 200mm.
10. ALL CUT AND FILL SLOPES ARE TO BE SEEDED AND HYDROMULCHED WITHIN 10 DAYS OF COMPLETION OF FORMATION.
11. AFTER REVEGETATION OF THE SITE IS COMPLETE AND THE SITE IS STABLE IN THE OPINION OF A SUITABLY QUALIFIED PERSON ALL TEMPORARY WORK SUCH AS SILT FENCE, DIVERSION DRAINS ETC SHALL BE REMOVED.
12. ALL TOPSOIL STOCKPILES ARE TO BE SUITABLY COVERED TO THE SATISFACTION OF THE SITE MANAGER TO PREVENT WIND AND WATER EROSION.
13. ANY AREA THAT IS NOT APPROVED BY THE CONTRACT ADMINISTRATOR FOR CLEARING OR DISTURBANCE BY THE CONTRACTOR'S ACTIVITIES SHALL BE CLEARLY MARKED AND SIGN POSTED, FENCED OFF OR OTHERWISE APPROPRIATELY PROTECTED AGAINST ANY SUCH DISTURBANCE.

14. ALL STOCKPILE SITES SHALL BE SITUATED IN AREAS APPROVED FOR SUCH USE BY THE SITE MANAGER. A 6m BUFFER ZONE SHALL EXIST BETWEEN STOCKPILE SITES AND ANY STREAM OR FLOW PATH. ALL STOCKPILE SITES SHALL BE ADEQUATELY PROTECTED FROM EROSION AND CONTAMINATION OF THE SURROUNDING AREA BY USE OF THE MEASURES APPROVED IN THE EROSION AND SEDIMENTATION CONTROL PLAN.
15. ACCESS AND EXIT AREAS SHALL INCLUDE SHAKE-DOWN OR OTHER METHODS APPROVED BY THE SITE MANAGER FOR THE REMOVAL OF SOIL MATERIALS FROM MOTOR VEHICLES.
16. THE CONTRACTOR IS TO ENSURE RUNOFF FROM ALL AREAS WHERE THE NATURAL SURFACE IS DISTURBED BY CONSTRUCTION, INCLUDING ACCESS ROADS, DEPOT AND STOCKPILE SITES, SHALL BE FREE OF POLLUTANTS BEFORE IT IS EITHER DISPERSED TO STABLE AREAS OR DIRECTED TO NATURAL WATERCOURSES.
17. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SLOPES, CROWNS AND DRAINS ON ALL EXCAVATIONS AND EMBANKMENTS TO ENSURE SATISFACTORY DRAINAGE AT ALL TIMES. WATER SHALL NOT BE ALLOWED TO POND ON THE WORKS UNLESS SUCH PONDING IS PART OF AN APPROVED ESCP / SWMP.

PROVIDE 1m RETURNS TO SILT FENCE AT 30m MAX. INTERVALS.  
TYPICAL (N.S.O.P.)

-  - DENOTES DIVERSION DRAIN
-  - DENOTES SILT FENCE WITH CATCH DRAIN
-  - DENOTES SILT FENCE ONLY
-  - DENOTES CONSTRUCTION ENTRY
-  - OVERLAND FLOW DIRECTION
-  - SEDIMENT BASIN (REFER TO PLAN)
-  - KERB INLET CONTROL

REFER TO SEDIMENT & EROSION CONTROL NOTES.

FOR SEDIMENT AND EROSION CONTROL DETAILS, REFER TO THE LANDCOM 'BLUE BOOK'  
AND EXTRACTS ON DRAWING C014506.00-SSDA25.

SEDIMENTATION BASIN SIZING BASED ON RECOMMENDATIONS OF 'SOILS AND CONSTRUCTION, MANAGING URBAN STORMWAER-THE BLUE BOOK'. CAPACITY BASED ON 5-DAY RAINFALL DEPTHS AT 85th PERCENTILE INTENSITY (30.6mm) IN THE CAMPBELLTOWN CATCHMENT AREA.

APPROXIMATE AREA OF DISTURBED SITE = 11.6Ha

SEDIMENTATION BASINS TO COLLECT RUN-OFF IN EXTREME RAINFALL EVENTS. COLLECTED RUN-OFF TO BE ASSESSED BY A QUALIFIED LABORATORY FOR DOUSING RATES OF ALUM OR GYPSUM TO ENSURE COAGULATION OF SEDIMENTS PRIOR TO WATER BEING DISCHARGED TO COUNCIL STORMWATER SYSTEM.

EACH BASIN IS TO HAVE A MARKER PLACED AS PER THE DETAIL TO INDICATE WHEN SEDIMENT IS TO BE REMOVED. REMOVED SEDIMENT IS TO BE CLASSED AND DEWATERED PRIOR TO REMOVAL FROM SITE.

ALLOWANCE TO BE MADE DURING BENCHING OF SITE TO ENSURE RUN-OFF IS DIRECTED TO SEDIMENTATION BASINS.

NOTES:

1. ASSUME TYPE D SOIL (CLAY/SILTY CLAY)
2. ASSUME GROUP D SOIL (HIGH PLASTICITY AND SHRINK/SWELL PROPERTIES)



EROSION AND SEDIMENT CONTROL PLAN  
SCALE 1:500

**FOR APPROVAL**

5m 0 10 20 30 40 50m  
SCALE 1:500 AT A0 SIZE SHEET

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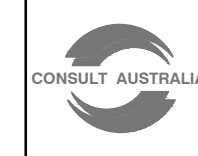
ARCHITECT



CLIENT	
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PROJECT  
MINTO LOGISTICS HUB  
5-9 CULVERSTON ROAD  
MINTO NSW 2566



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Costin Roe Consulting

PRECISION | COMMUNICATION | ACCOUNTABILITY

DRAWING TITLE  
EROSION & SEDIMENT CONTROL  
PLAN

DRAWING No	C014506.00-SSDA20	ISSUE	5
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**NOTE :**  
ADOPT ABOVE DETAILS AROUND ALL PITS WITHIN AREA ENCOMPASSED  
BY SILT FENCE & TO PITS ON THE ROAD ADJACENT TO SITE BOUNDARY.



NOTE: PROVIDE 1m RETURNS AT 30m INTERVALS. TYPICAL

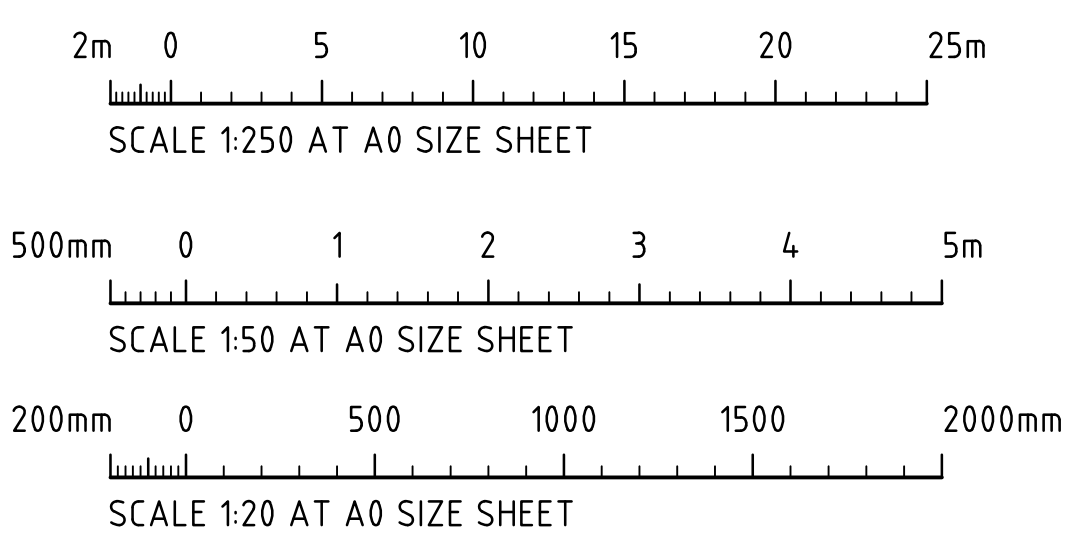


### STOCKPILE NOTES

1. PLACE ALL STOCKPILES IN LOCATIONS MORE THAN 5m FROM EXISTING VEGETATION, ROADS & HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT ELONGATED MOUNDS, SIDE SLOPE TO BE 1 V : 2 H MAX.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE AT LEAST 2m IN HEIGHT.
4. WHERE STOCKPILES ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE USING WOOD CHIP MULCH - 16 TONNE/ha.
5. CONSTRUCT SILT FENCE WITH HATCH DRAIN ON UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES & SILT FENCE ONLY 1 TO 2m DOWNSLOPE AS SHOWN.



CATCHMENT (Ha)	FLOW (m <sup>3</sup> /s)	WIDTH (m)	FLOW DEPTH (m)	ROCK SIZE (mm)	BUND HEIGHT ABOVE SPILLWAY (m)
1	0.3	2	0.20	200	0.70
2	0.6	4	0.20	200	0.70
5	1.4	5	0.30	200	0.80
10	2.8	8	0.35	200	0.85



**FOR APPROVAL**

ISSUED FOR APPROVAL17.02.22E						ARCHITECT			CLIENT			PROJECT			Costin Roe Consulting Pty Ltd.			<div>PRECISION   COMMUNICATION   ACCOUNTABILITY</div> <div>DRAWING No. C014.506.00-SSDA25</div> <div>ISSUE E</div>								
PRELIMINARY ONLY04.02.22D						[watch this SPACE Design]			Charter Hall			MINTO LOGISTICS HUB			Consulting Engineers						DRAWING TITLE					
PRELIMINARY ONLY29.09.21C												5-9 CULVERSTON ROAD			Level 1, 8 Windmill Street						EROSION & SEDIMENT CONTROL					
PRELIMINARY ONLY17.09.21B												MINTO NSW 2566			Walsh Bay, Sydney NSW 2000						DETAILS					
PRELIMINARY ONLY03.09.21A															Tel: (02) 9251-7699 Fax: (02) 9241-3731											
AMENDMENTS			DATE			ISSUE			AMENDMENTS			DATE			ISSUE			AMENDMENTS			DATE			ISSUE		



SITE PREPARATION NOTES:

- ALL EARTHWORKS SHALL BE COMPLETED UNDER LEVEL 1 SUPERVISION GENERALLY IN ACCORDANCE WITH THE GUIDELINES SPECIFIED BY THE GEOTECHNICAL ENGINEER PROVIDED BY GOLDER ASSOCIATES DATED APRIL 2016.
- EXISTING LEVELS ARE BASED ON SURVEY INFORMATION PROVIDED BY CARDNO DATED 03/09/21.
- STRIP ANY TOP SOIL OR DELETERIOUS MATERIAL AND DISPOSE OF FROM SITE OR STORE AS DIRECTED.
- COMPLETE CUT TO FILL EARTHWORKS TO ACHIEVE THE REQUIRED LEVELS AS INDICATED ON THE DRAWINGS WITHIN A TOLERANCE OF +0mm/-10mm THROUGH BUILDING PADS/PAVEMENTS AND +0mm/-20mm ELSEWHERE.
- PREPARE STEEP BATTERS TO RECEIVE FILL BY CONSTRUCTING BENCHING TO FACILITATE FILL PLACEMENT AND COMPACTION.
- AREAS TO RECEIVE FILL (THAT ARE NOT ON BENCHED BATTERS) AND AREAS IN CUT SHALL BE PROOF ROLLED TO IDENTIFY ANY SOFT HEAVING MATERIAL. SOFT MATERIAL SHALL BE BOXED OUT AND REMOVED PRIOR TO FILL PLACEMENT. PROOF ROLLING TO BE INSPECTED BY A GEOTECHNICAL ENGINEER OR THE EARTHWORKS DESIGNER.
- SITE WON FILL SHALL BE COMPACTED IN MAXIMUM 300mm LAYERS AND TO DRY OR HALF DENSITY RATIOS (STANDARD COMPACTION) OF BETWEEN 98% AND 103%. THE PLACEMENT MOISTURE VARIATION OR HALF MOISTURE VARIATION SHALL BE CONTROLLED TO BE BETWEEN 2% DRY AND 2% WET.
- IMPORTED FILL SHALL BE COMPACTED IN MAXIMUM 300mm LAYERS AND TO DRY OR HALF DENSITY RATIOS (STANDARD COMPACTION) OF BETWEEN 98% AND 103%. THE PLACEMENT MOISTURE VARIATION OR HALF MOISTURE VARIATION SHALL BE CONTROLLED TO BE BETWEEN 2% DRY AND 2% WET.
- ALL ENGINEERED FILL PARTICLES SHALL BE ABLE TO BE INCORPORATED WITHIN A SINGLE LAYER. FURTHER, LESS THAN 30% OF PARTICLES SHALL BE RETAINED ON THE 37.5 mm SIEVE. ENGINEERED FILL SHALL BE ABLE TO BE TESTED IN ACCORDANCE WITH THE STANDARD COMPACTION METHOD (AS1289.5.4.1) OR HLF TEST METHOD (AS1289.5.7.1). THESE METHODS REQUIRE LESS THAN 20% RETAINED ON THE 37.5 mm SIEVE. WHERE BETWEEN 20% AND 30% OF PARTICLES ARE RETAINED ON THE 37.5 mm SIEVE THE ABOVE TEST METHODS SHALL STILL BE ADOPTED AND TEST REPORTS ANNOTATED APPROPRIATELY. THESE REQUIREMENTS SHOULD BE MET BY THE MATERIAL AFTER PLACEMENT AND COMPACTION.
- PRIOR TO ANY EARTHWORKS, EROSION CONTROL AS OUTLINED IN THE EROSION AND SEDIMENTATION CONTROL PLAN SHALL BE COMPLETED.
- EXISTING ROCK, IF ANY, SHALL BE REMOVED BY HEAVY ROCK BREAKING OR RIPPING.
- MATCH EXISTING LEVELS AT BATTER INTERFACE.
- CONTRACTOR TO MATCH EXISTING LEVELS AT THE INTERFACE OF EARTHWORKS AND EXISTING SURFACE AT BATTER LOCATIONS OR WHERE NO RETAINING WALLS ARE PRESENT. ANY DISCREPANCY BETWEEN DESIGN AND EXISTING LEVELS TO BE REFERRED TO THE ENGINEER FOR DIRECTION OR ADJUSTMENTS TO DESIGN LEVELS.
- DURING EARTHWORKS THE CONTRACTOR IS TO ENSURE ALL AREAS ARE FREE DRAINING & WILL NOT RETAIN WATER DURING RAINFALL. PROVIDE TEMPORARY MEASURES AS REQUIRED TO ENSURE FREE FLOWING RUNOFF THROUGH MANAGED DRAINAGE PATHS, DIVERSION DRAINS OR OTHER SUITABLE DISPOSAL METHOD AS AGREED DURING THE WORKS. REFER ANY CONCERNS TO THE ENGINEER. REFER TO EROSION AND SEDIMENT CONTROL DRAWINGS AND NOTES.

EARTHWORKS VOLUME ESTIMATE

SITE AREA = 11.6 Ha

CUT	= -5,100m <sup>3</sup>
FILL	= +96,300m <sup>3</sup>
DETAILED EXCAVATION (1,200m <sup>3</sup> /Ha)	= -14,000m <sup>3</sup>
BALANCE	= +77,200m <sup>3</sup> (i.e. IMPORT)

NOTE:  
EARTHWORK VOLUMES ARE APPROXIMATE ONLY. EARTHWORKS QUANTITIES ARE BASED ON A NOMINAL PAVEMENT ALLOWANCE OF 300mm OVER THE WHOLE OF THE WORKS AREA. CONTRACTOR TO ALLOW FOR VARIANCE BASED ON THEIR D-C PAVEMENT DEPTHS AND SPOIL GENERATION.

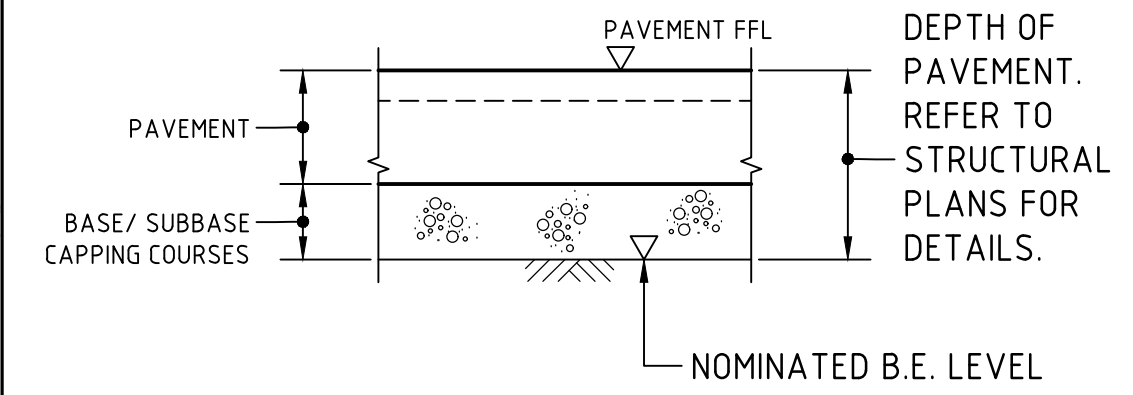
NO ALLOWANCE HAS BEEN MADE FOR DELETERIOUS MATERIAL, EROSION AND SEDIMENT CONTROL, BULKING OR COMPACTION OF FILLED SOILS.

THE EXISTING SURFACE IS BASED ON THE SURVEY INFORMATION PROVIDED BY CARDNO DATED 03/09/21. THIS SURFACE USED IS THE MOST CURRENT AVAILABLE INFORMATION HOWEVER IT MAY NOT ACCURATELY REFLECT ACTUAL GROUND LEVELS OR STOCKPILES ETC ON SITE. IT IS THE CONTRACTORS RESPONSIBILITY TO CONFIRM VOLUMES AND ALLOWANCES FOR EARTHWORKS.

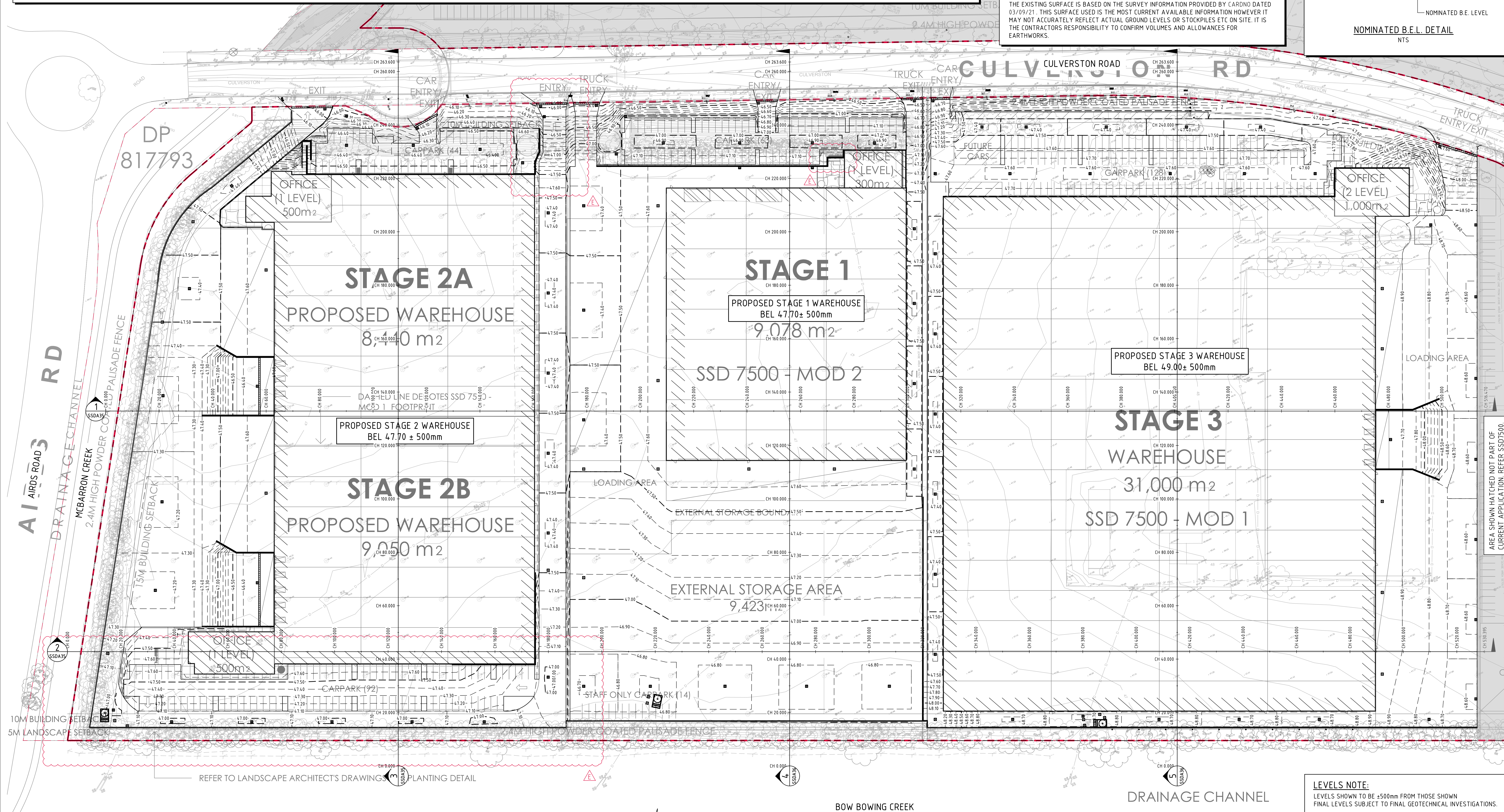
LEGEND:

LEVELS DATUM IS AHD.

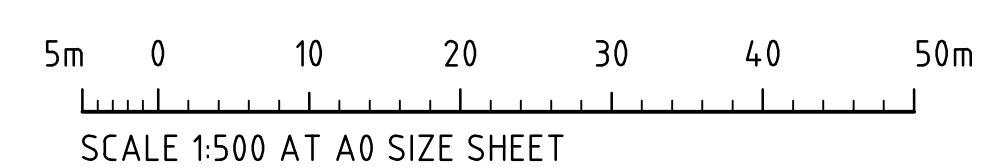
- 48.00 — - EXISTING CONTOUR
- 48.00 — - B.E.L. CONTOUR (MAJOR 0.5m)
- 48.10 — - B.E.L. CONTOUR (MINOR 0.1m)
- 48.00 — - B.E.L. SPOT LEVEL



NOMINATED B.E.L. DETAIL  
NTS

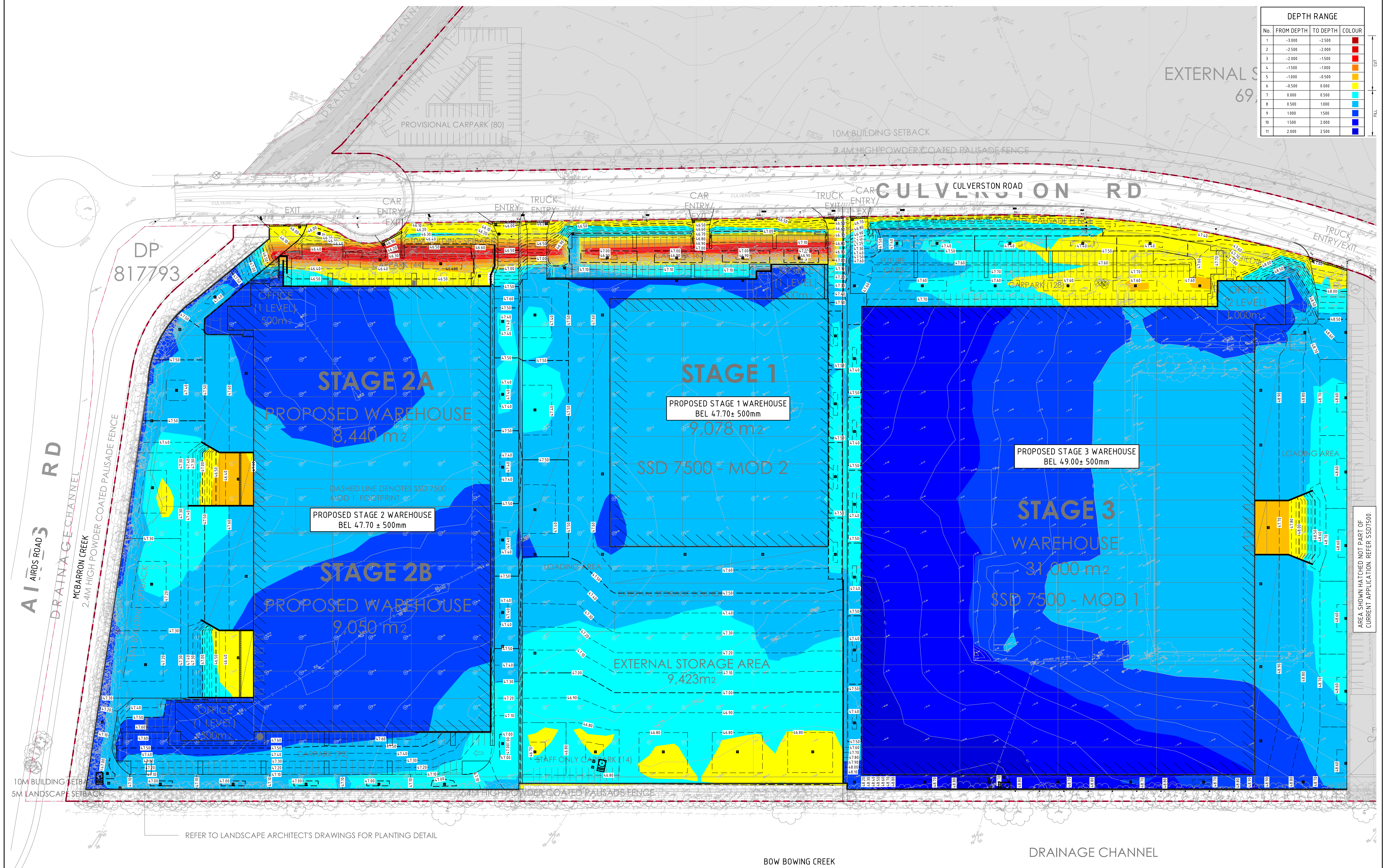


LEVELS NOTE:  
LEVELS SHOWN TO BE ±500mm FROM THOSE SHOWN  
FINAL LEVELS SUBJECT TO FINAL GEOTECHNICAL INVESTIGATIONS.

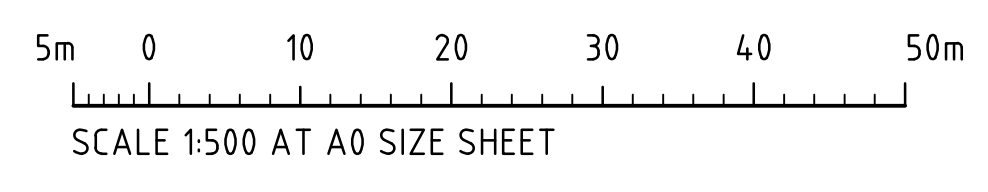




DEPTH RANGE			
No.	FROM DEPTH	TO DEPTH	CLOUR
1	-3.000	-2.500	Red
2	-2.500	-2.000	Red
3	-2.000	-1.500	Red
4	-1.500	-1.000	Orange
5	-1.000	-0.500	Yellow
6	-0.500	0.000	Yellow
7	0.000	0.500	Cyan
8	0.500	1.000	Cyan
9	1.000	1.500	Blue
10	1.500	2.000	Blue
11	2.000	2.500	Blue



CUT/FILL PLAN  
SCALE 1:500



FOR APPROVAL







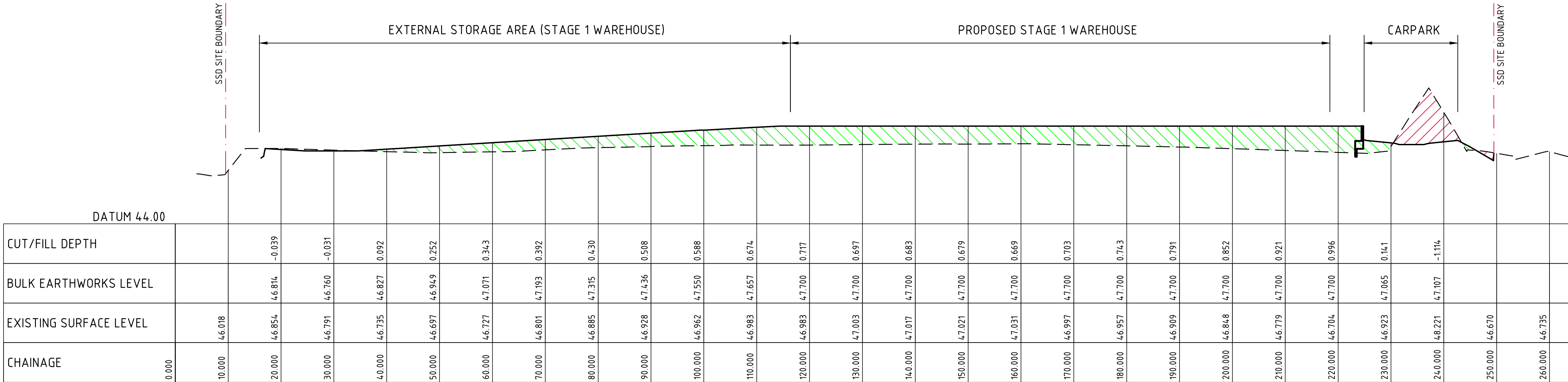
LEGEND:

- DENOTES BULK EARTHWORKS PROFILE

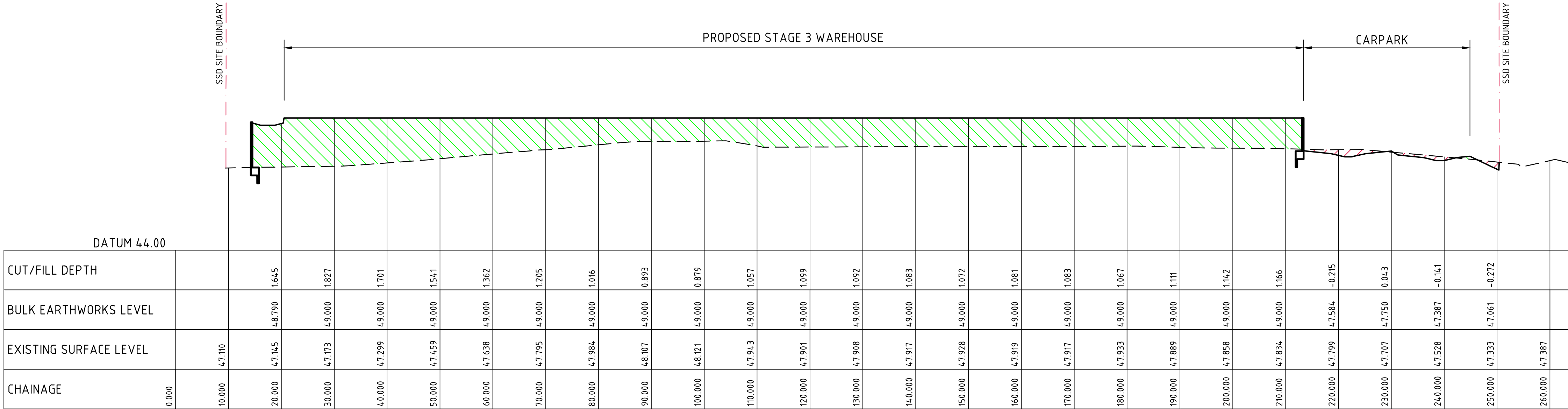
- DENOTES EXISTING PROFILE

- DENOTES AREA IN CUT

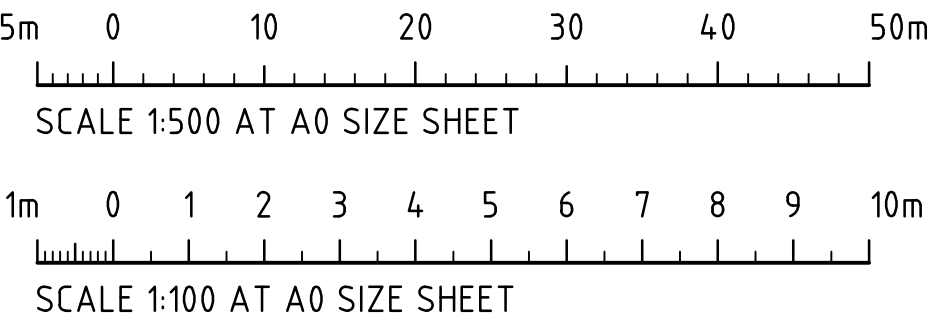
- DENOTES AREA IN FILL



SECTION 4  
HORIZONTAL SCALE 1:500  
VERTICAL SCALE 1:100



SECTION 5  
HORIZONTAL SCALE 1:500  
VERTICAL SCALE 1:100



FOR APPROVAL

ISSUED FOR APPROVAL

17.02.22

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PRELIMINARY ONLY

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AMENDMENTS

DATE

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ARCHITECT

[watch this SPACE design]

CLIENT

Charter Hall

PROJECT

MINTO LOGISTICS HUB  
5-9 CULVERSTON ROAD  
MINTO NSW 2566

CONSULT AUSTRALIA

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Wahah Bay, Sydney NSW 2000

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DESIGNED

DRAWN

DATE

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SIZE

SCALE

CAD REF:

ML

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SEP 21

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AS SHOWN

C014506.00-SSDA36

PRECISION

COMMUNICATION

ACCOUNTABILITY

DRAWING No.

C014506.00-SSDA36

ISSUE

D

DRAWING TITLE

BULK EARTHWORKS SECTIONS - SHEET 2



1. ALL STORMWATER WORKS TO BE COMPLETED IN ACCORDANCE WITH AUSTRALIAN STANDARD AS3500 3/2018 PLUMBING AND DRAINAGE. PART 3: STORMWATER DRAINAGE.
2. THE MINOR (PIPED) SYSTEM HAS BEEN DESIGNED FOR THE 1 IN 20 YEAR ARI STORM EVENT AND THE MAJOR (OVERLAND) SYSTEM HAS BEEN DESIGNED FOR THE 1 IN 100 YEAR ARI STORM EVENT.
3. ALL FINISHED PavEMENT LEVELS SHALL BE AS INDICATED ON FINISHED LEVELS PLANS C04506 01-SSDA50.
4. PIT SIZES SHALL BE AS INDICATED IN THE SCHEDULE WHILE PIPE SIZES AND DETAILS ARE PROVIDED ON PLAN.
5. EXISTING STORMWATER PIT LOCATIONS AND INVERT LEVELS TO BE CONFIRMED BY SURVEY PRIOR TO COMMENCING WORKS ON SITE.
6. ALL STORMWATER PIPES  $\phi 375$  OR GREATER SHALL BE CLASS 2 (WITH H52 SUPPORT) REINFORCED CONCRETE WITH RUBBER RING JOINTS UNLESS NOTED OTHERWISE.
7. ALL PIPES UP TO AND INCLUDING  $\phi 300$  TO BE UPVC GRADE S8B UNO.
8. PIPE CLASS NOMINATED ARE FOR IN-SERVICE LOADING CONDITIONS ONLY. CONTRACTOR IS TO MAKE ANY NECESSARY ADJUSTMENTS REQUIRED FOR CONSTRUCTION CONDITIONS.
9. ALL CONCRETE PITS GREATER THAN 1000mm DEEP SHALL BE REINFORCED USING M12-200 EACH WAY CENTERED IN WALL AND BASE. LAP MINIMUM 300mm WHERE REQUIRED. ALL CONCRETE FOR PITS SHALL BE  $F_{ck}=25$  MPa. PRECAST PITS MAY BE USED WITH THE APPROVAL OF THE ENGINEER.












10. IN ADDITION TO ITEM 6 ABOVE, ALL CONCRETE PITS GREATER THAN 3000mm DEEP SHALL HAVE WALLS AND BASE THICKNESS INCREASED TO 200mm.
11. PIPES SHALL BE LAID AS PER PIPE LAYING DETAILS. PARTICULAR CARE SHALL BE TAKEN TO ENSURE THAT THE PIPE IS FULLY AND EVENLY SUPPORTED. RAM AND PACK FILLING AROUND AND UNDER BACK OF PIPES AND PIPE FAUCETS, WITH NARROW EDGED RAMMERS OR OTHER SUITABLE TAMPING DETAILS.
12. CONCRETE PITS UNDER, OR WITHIN THE ZONE OF INFLUENCE OF PAVED AREAS SHALL BE LAID USING HS2 TYPE SUPPORT, AS A MINIMUM, IN ACCORDANCE WITH AS 3725. AGGREGATE BACKFILL SHALL NOT BE USED FOR PIPE BEDDING AND OR HAUNCH/SIDE SUPPORT.
13. WHERE PIPE LINES ENTER PITS, PROVIDE 2m LENGTH OF STOCKING WRAPPED SLOTTED Ø100 uPVC TO EACH SIDE OF PIPE.
14. ALL SUBSOIL DRAINAGE LINES SHALL BE Ø100 SLOTTED uPVC WITH APPROVED FILTER WRAP LAY IN 300mm WIDE GRANULAR FILTER LINES UNLESS NOTED OTHERWISE. LAY SUBSOIL LINES TO MATCH FALLS OF LAND AND/OR IN 200 MINIMUM. PROVIDE CAPPED CLEANING EYE (RODDING POINT) AT UPSTREAM END OF LINE AND AT 30m MAX. CTS. PROVIDE SUBSOIL LINES TO ALL PAVEMENT / LANDSCAPED INTERFACES, TO REAR OF RETAINING WALLS (AS NOMINATED BY STRUCTURAL ENGINEER) AND AS SHOWN ON PLAN.
15. ALL PIPE GRADES IN 200 MINIMUM UNO.
16. PROVIDE STEP IRONS IN PITS DEEPER THAN 1000mm.

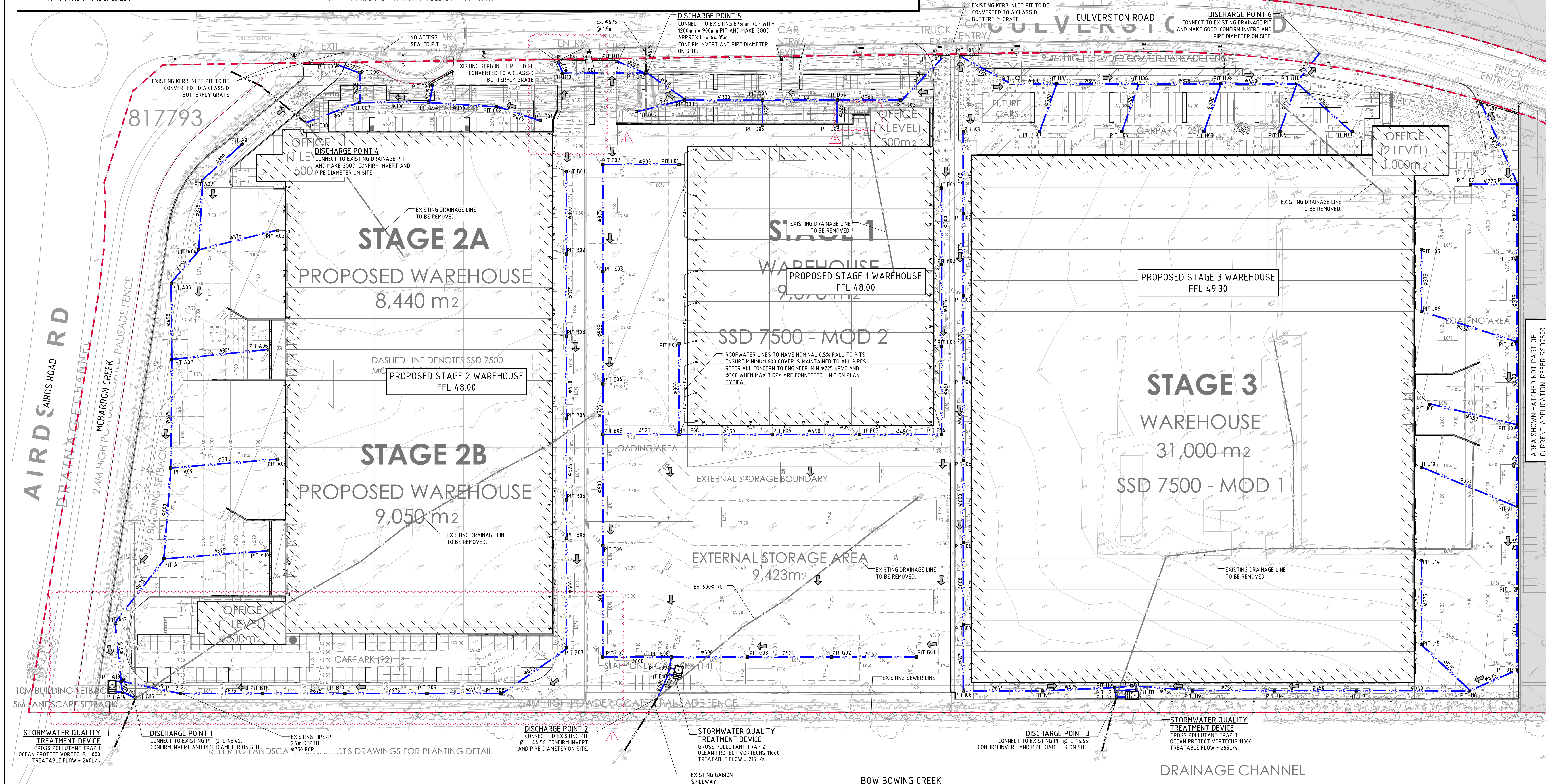
17. MIN. 600 COVER TO PIPE OVERT BENEATH ROADS & MIN. 400 COVER BENEATH LANDSCAPED AND PEDESTRIAN AREAS.
18. PIT COVERS IN TRAFFICABLE PAVEMENT SHALL BE CLASS D "HEAVY DUTY"; THOSE LOCATED IN NON-TRAFFICABLE AREAS SHALL BE CLASS B "MEDIUM DUTY" U.N.O.
19. PROVIDE CLEANING EYES (RODDING POINTS) TO PIPES AT ALL CORNERS AND T-JUNCTIONS WHERE NO PITS ARE PRESENT.
20. DOWN PIPES (DP) TO BE AS PER HYDRAULIC ENGINEERS DETAILS WITH CONNECTOR TO MATCH DP SIZE U.N.O. ON PLAN. PROVIDE CLEANING EYE AT GROUND LEVEL.
21. PIPE LENGTHS NOMINATED ON PLAN OR LONGSECTIONS ARE MEASURED FROM CENTER OF PITS TO THE NEAREST 0.5m AND DO NOT REPRESENT ACTUAL LENGTH. THE CONTRACTOR IS TO ALLOW FOR THIS.
22. WHERE CONNECTION TO EXISTING INGROUND DRAINAGE SYSTEMS, OPEN SWALES, CHANNELS OR ANY OTHER EXISTING SYSTEM, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION AND INVERT ON SITE AT THE BEGINNING OF THE CONSTRUCTION PERIOD. REFER ANY VARIANCE FROM DOCUMENTATION OR SURVEYS TO THE ENGINEER FOR CLARIFICATION.

LEVELS SHOWN TO BE  $\pm 500\text{mm}$  FROM THOSE SHOWN  
FINAL LEVELS SUBJECT TO FINAL GEOTECHNICAL INVESTIGATIONS.

PIT GRATES CLASS:  
CARPARKING - CLASS D  
BUNNINGS HARDSTAND - CLASS E  
SPEC HARDSTAND - CLASS D  
FIRE TRAIL / TRUCK ACCESS - CLASS D  
LANDSCAPE AREAS - CLASS B

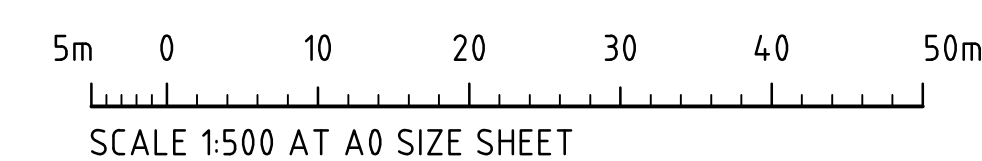
LEVELS DATUM IS AHD.  
EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY CARDNO DATED 03/09/21.

- |   |   |   |   |
|---|---|---|---|
|  | - SGGP, SINGLE GRATED GULLY PIT         |  | - ROOFWATER DOWNPIPE (INDICATIVE)                     |
|  | - SJP, SEALED JUNCTION PIT              |  | - ROOFWATER LINE                                      |
|  | - PROPOSED DRAINAGE LINE                |  | - OVERLAND FLOW DIRECTION                             |
|  | - EXISTING DRAINAGE LINE TO BE REMOVED  |  | - FINISHED PAVEMENT CONTOUR (MAJOR)<br>0.5m INTERVALS |
|  | - EXISTING DRAINAGE LINE TO BE RETAINED |  | - FINISHED PAVEMENT CONTOUR (MINOR)<br>0.1m INTERVALS |
|  | - SITE BOUNDARY                         |   |   |

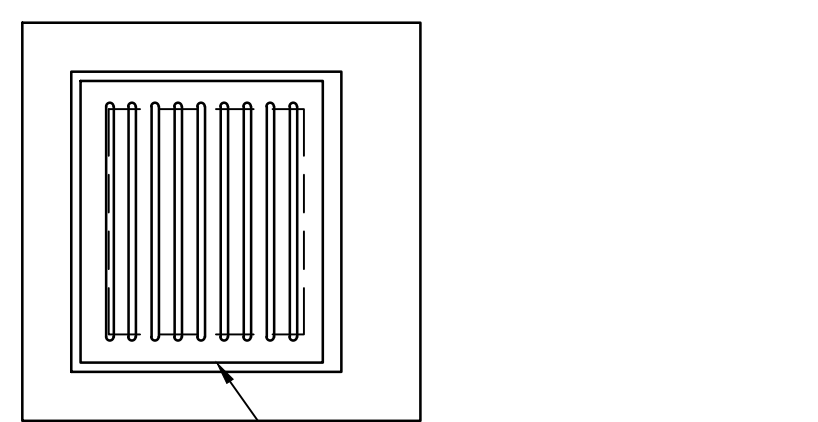


**STORMWATER DRAINAGE PLAN**  
SCALE 1:500

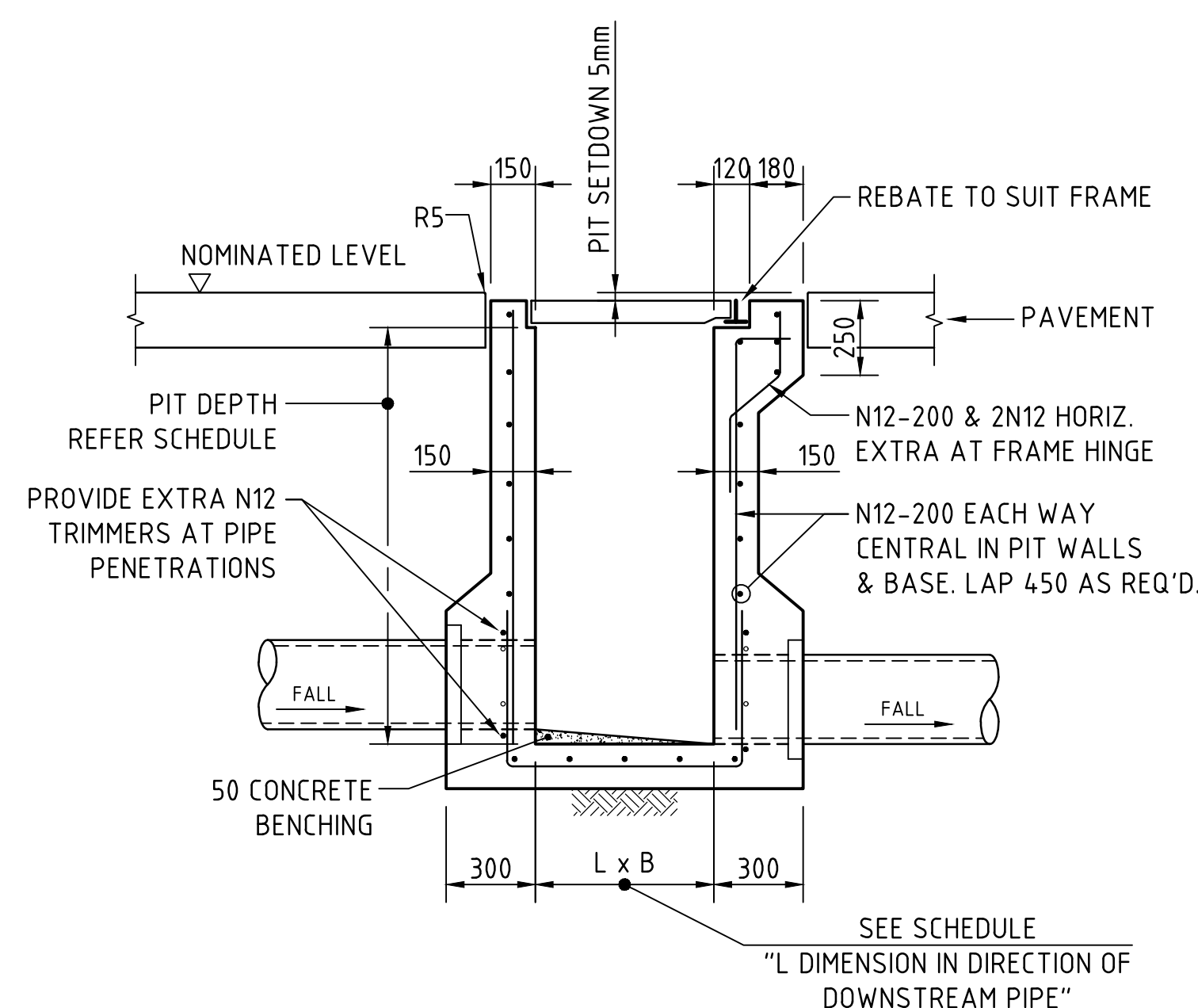
**FOR APPROVAL**

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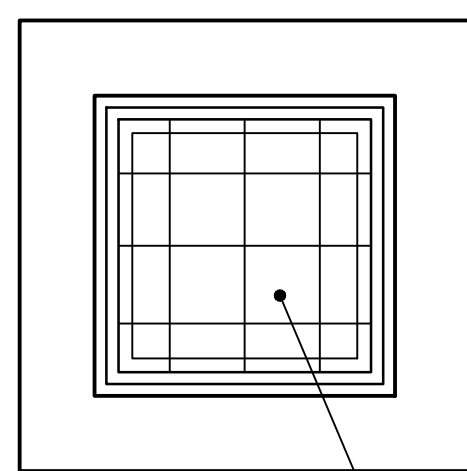


PLAN  
SCALE 1:20

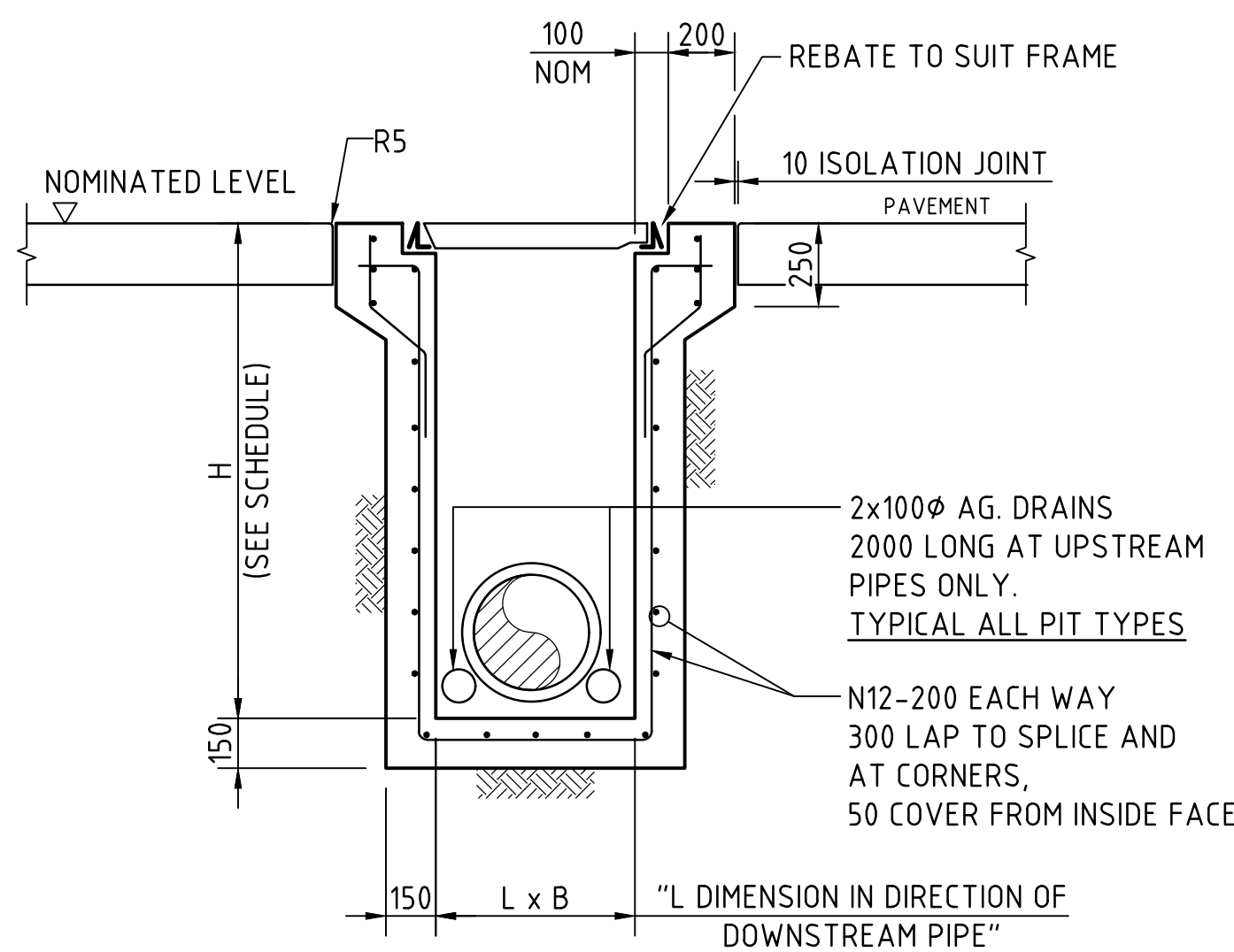


SECTION  
SCALE 1:20

### SINGLE GRATED GULLY PIT - SGGP

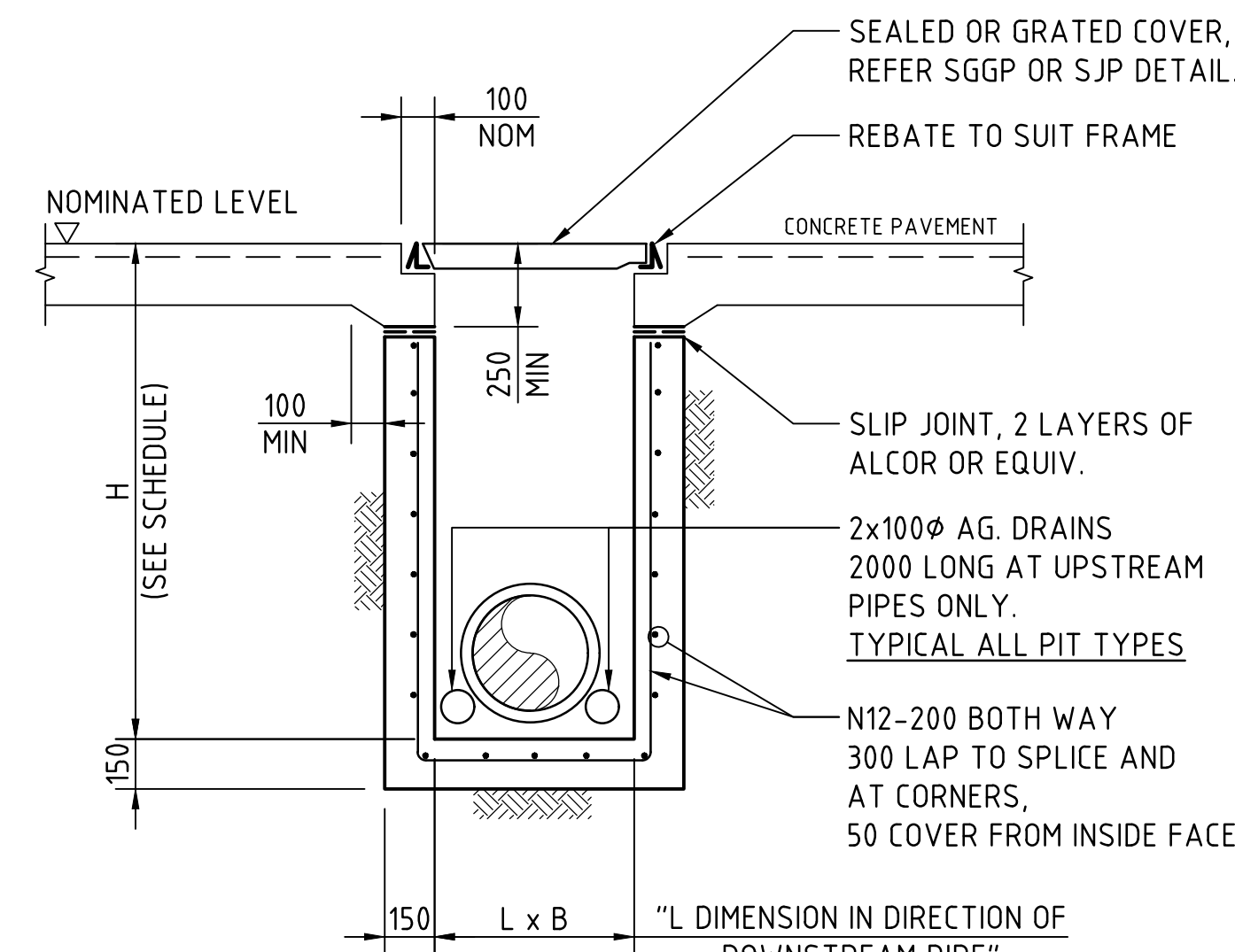


PLAN  
SCALE 1:20



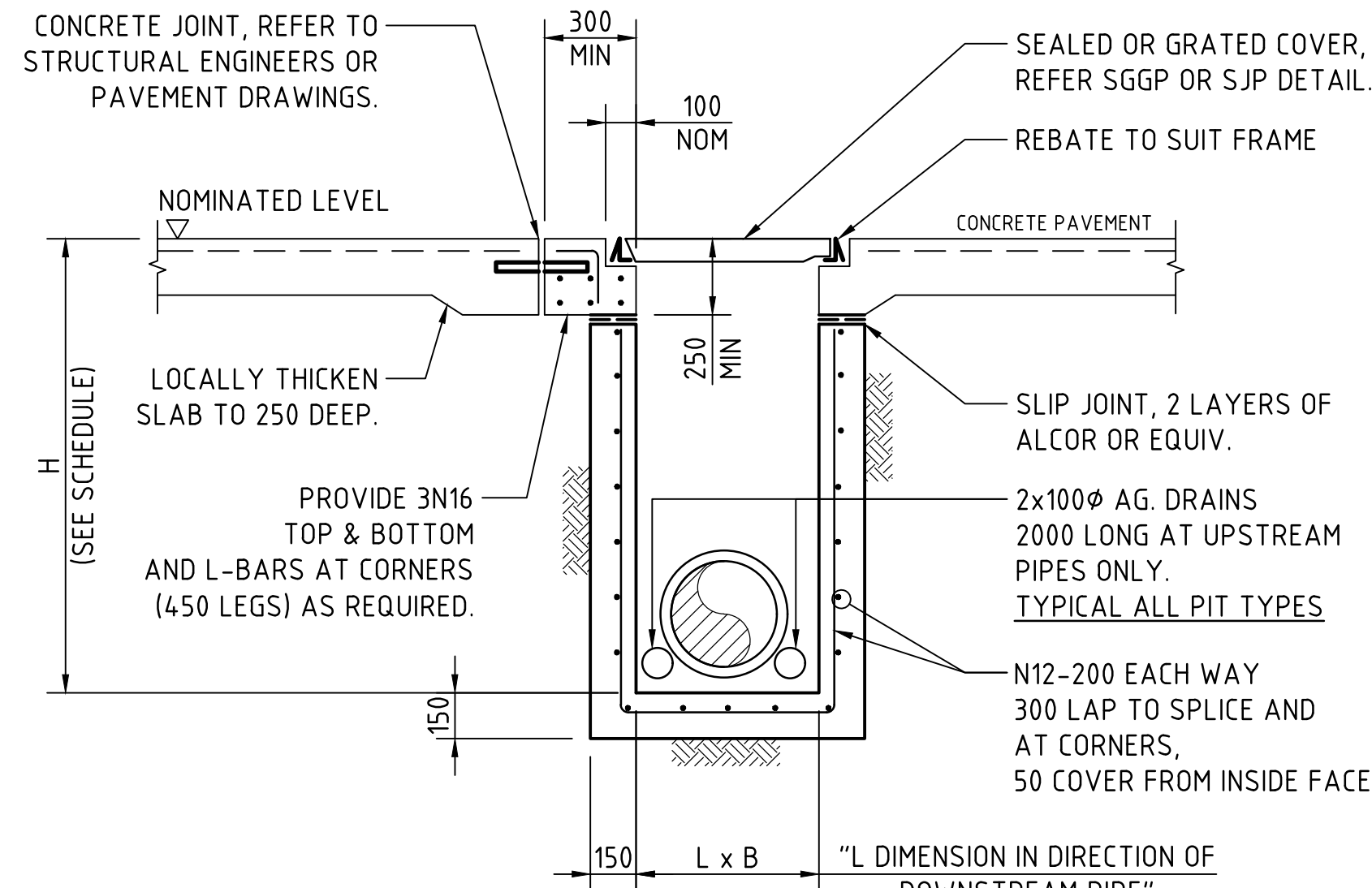
SECTION  
SCALE 1:20

### SEALED PIT - SP



SECTION  
SCALE 1:20

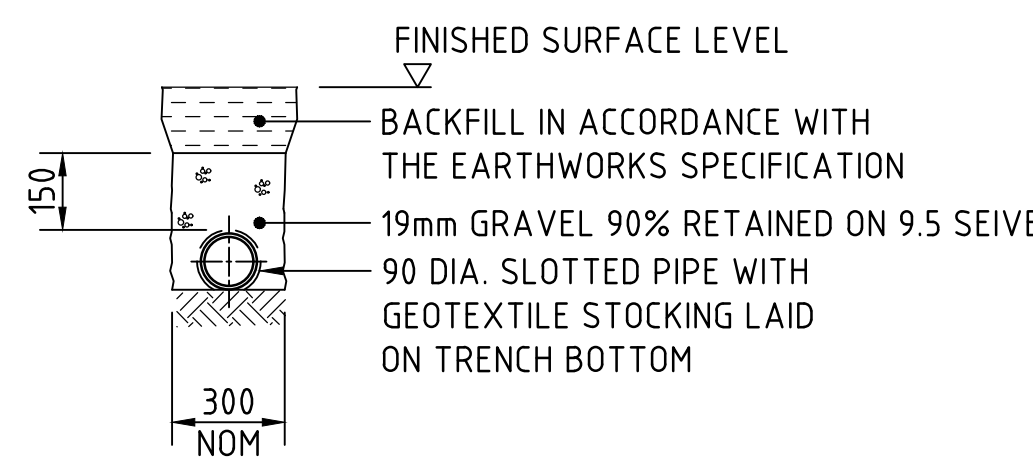
### SJP/CIS & SGGP/CIS (CAST IN SLAB) PIT DETAIL GRATE/COVER SUPPORT CAST-INTO PAVEMENT SLAB (ADOPT IN CONCRETE PAVEMENTS FOR SGGP's & SJP's, WHERE JOINTS ARE NOT LOCATED WITHIN PROXIMITY OF THE GRATE)



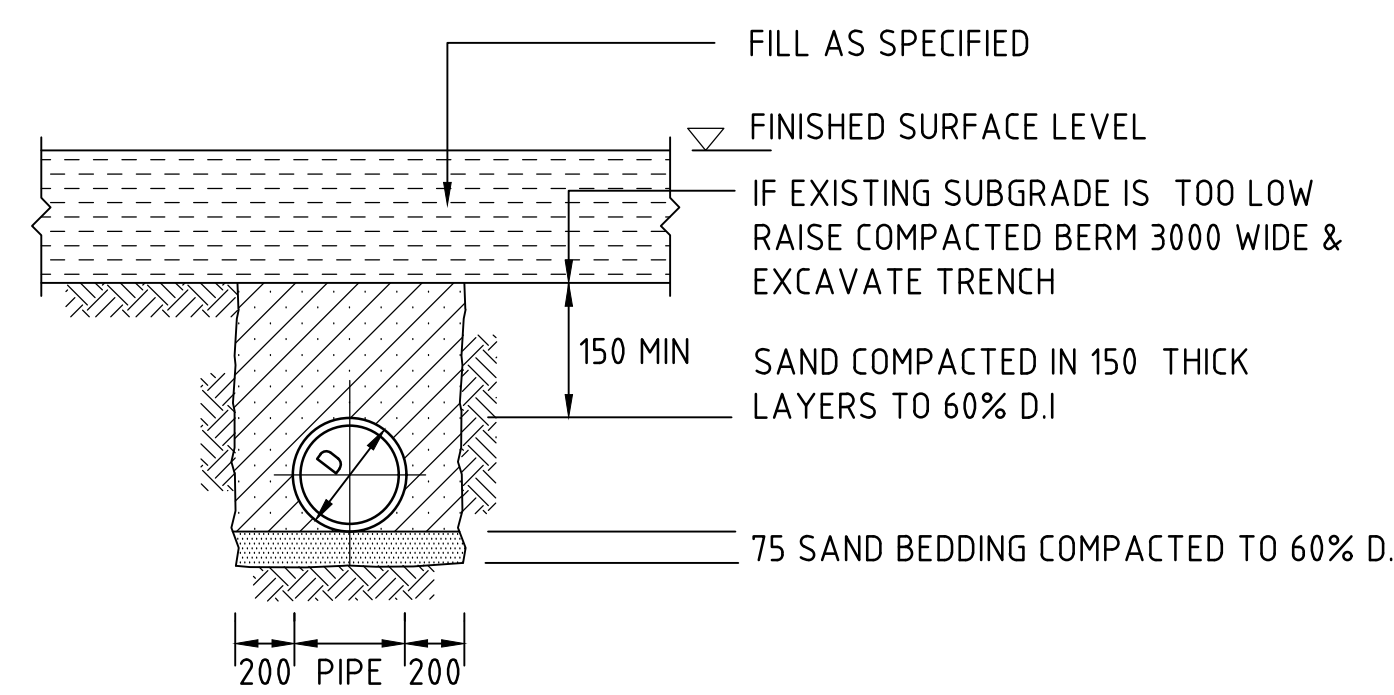
SECTION  
SCALE 1:20

### SJP/CIS & SGGP/CIS (CAST IN SLAB) PIT DETAIL GRATE/COVER SUPPORT CAST-INTO PAVEMENT SLAB (ADOPT IN CONCRETE PAVEMENT FOR SGGP's & SJP's, WHERE PITS ARE LOCATED IN THE CORNER OF SLAB PANELS OR ADJACENT TO SLAB PANEL JOINTS)

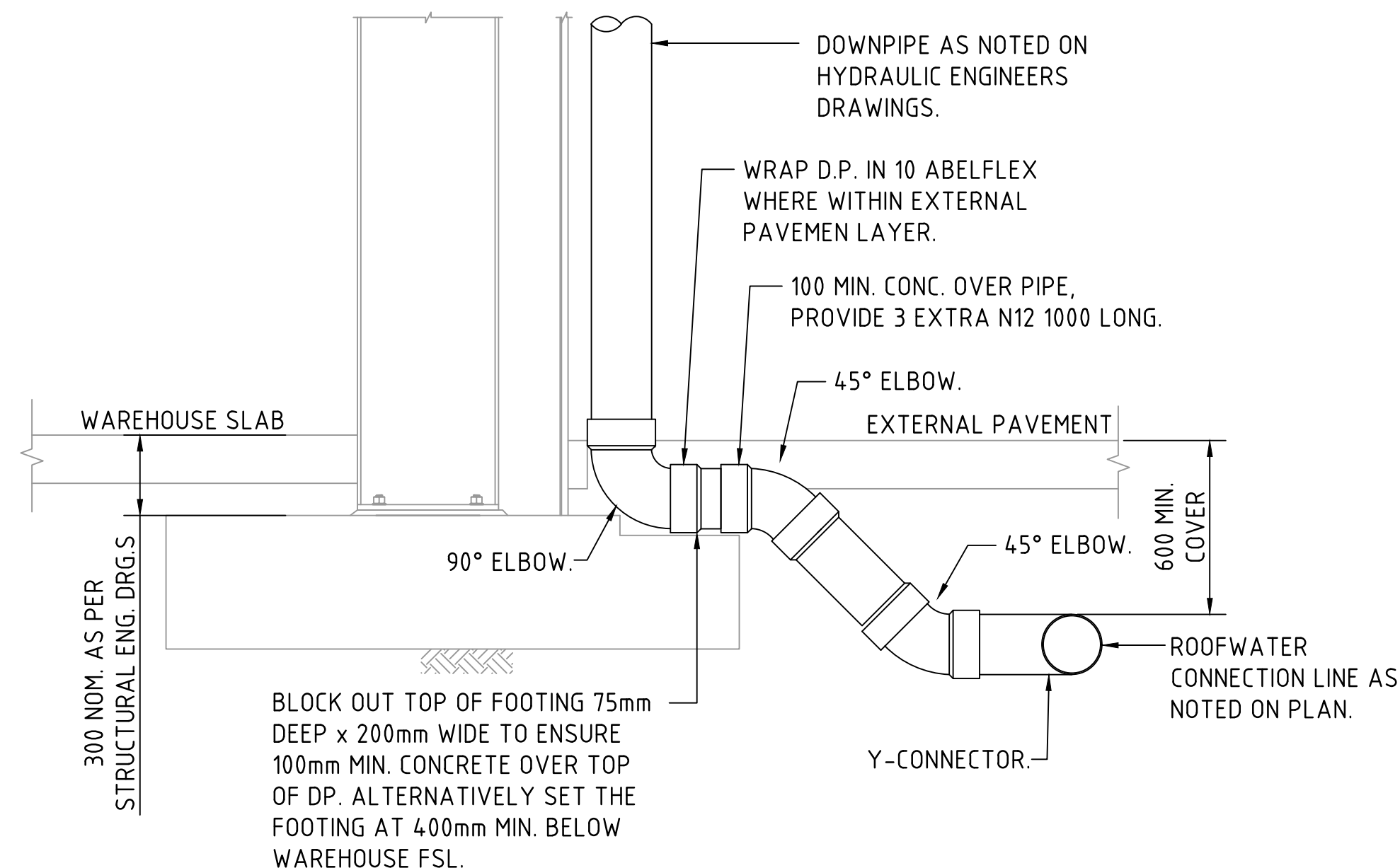
CONCRETE QUALITY					
ELEMENT	SLUMP	AGGREGATE (MAX. SIZE)	CEMENT TYPE	ADMIXTURE	F <sub>ck</sub> (MPa)
PIT	80	20	GP	NL	25



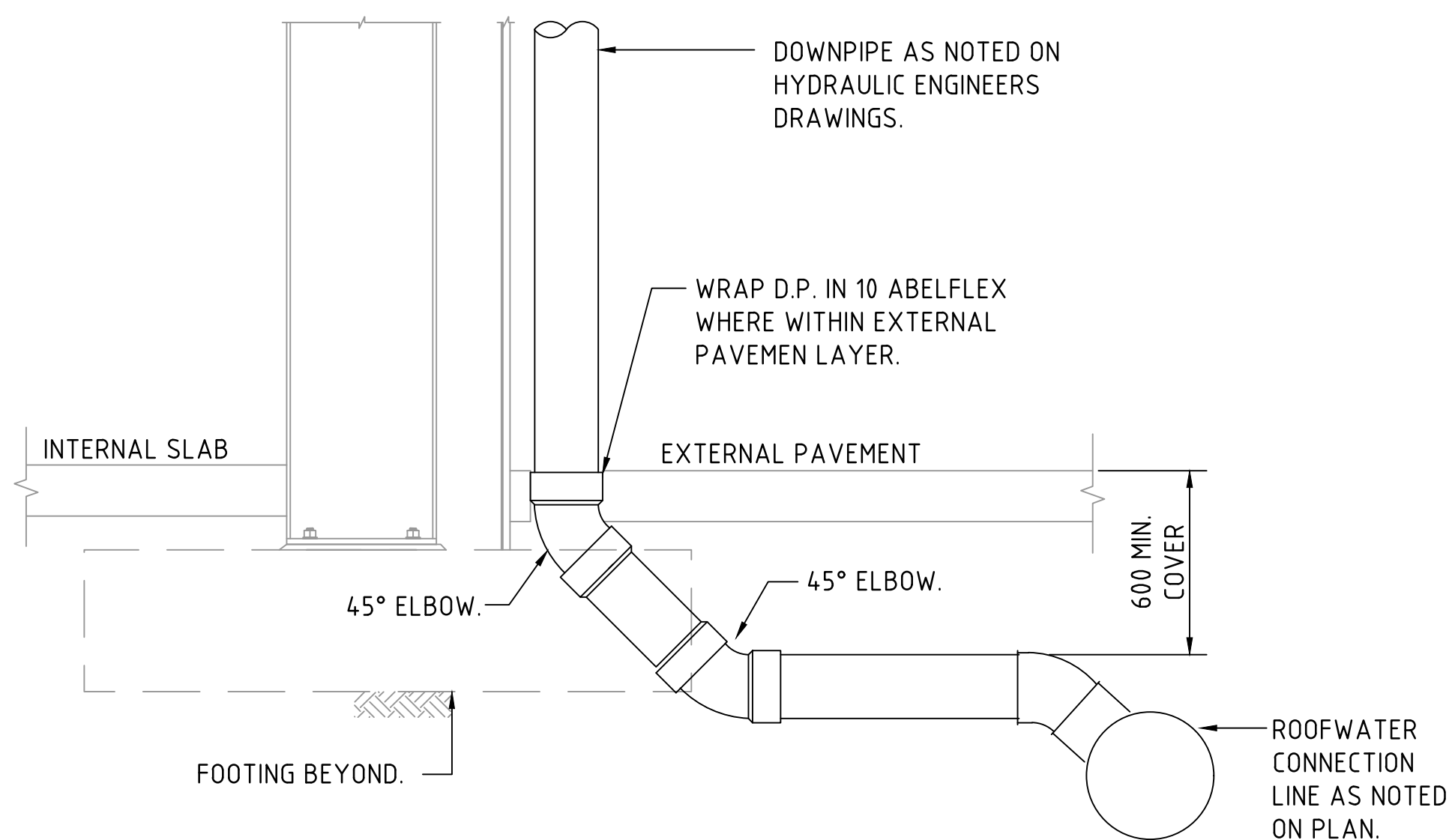
SUPPORT TO AGRICULTURAL DRAIN  
SCALE 1:20



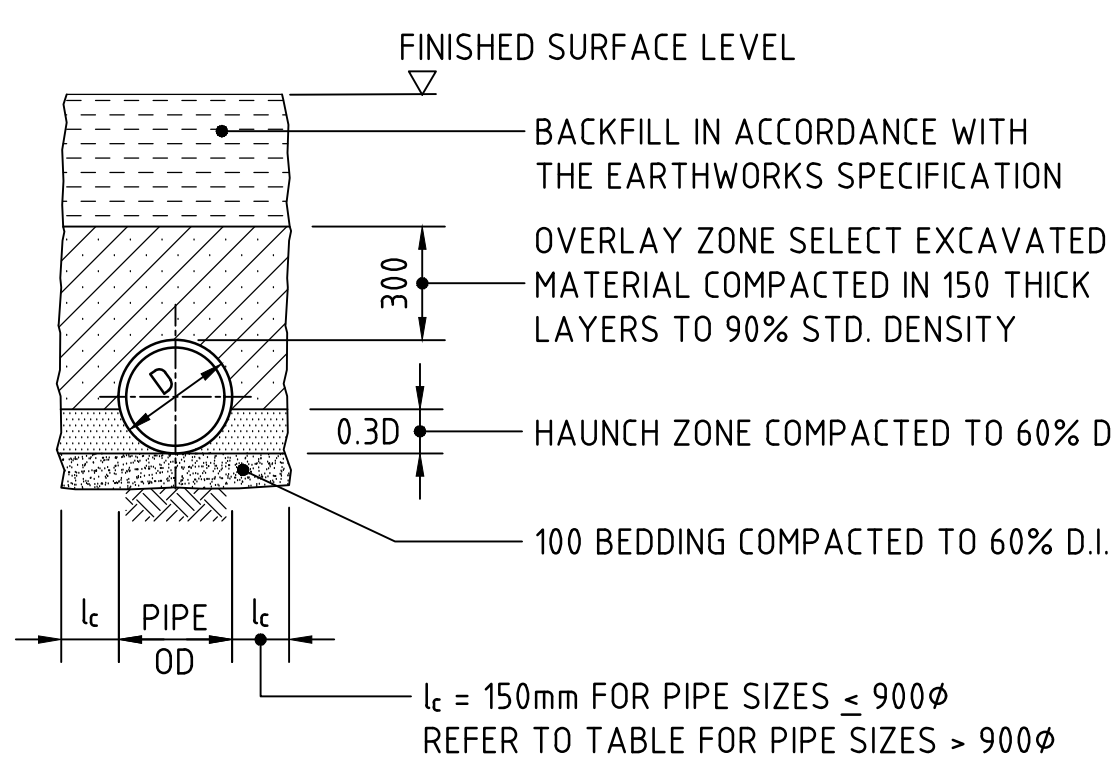
SUPPORT TO uPVC PIPES  
SCALE 1:20



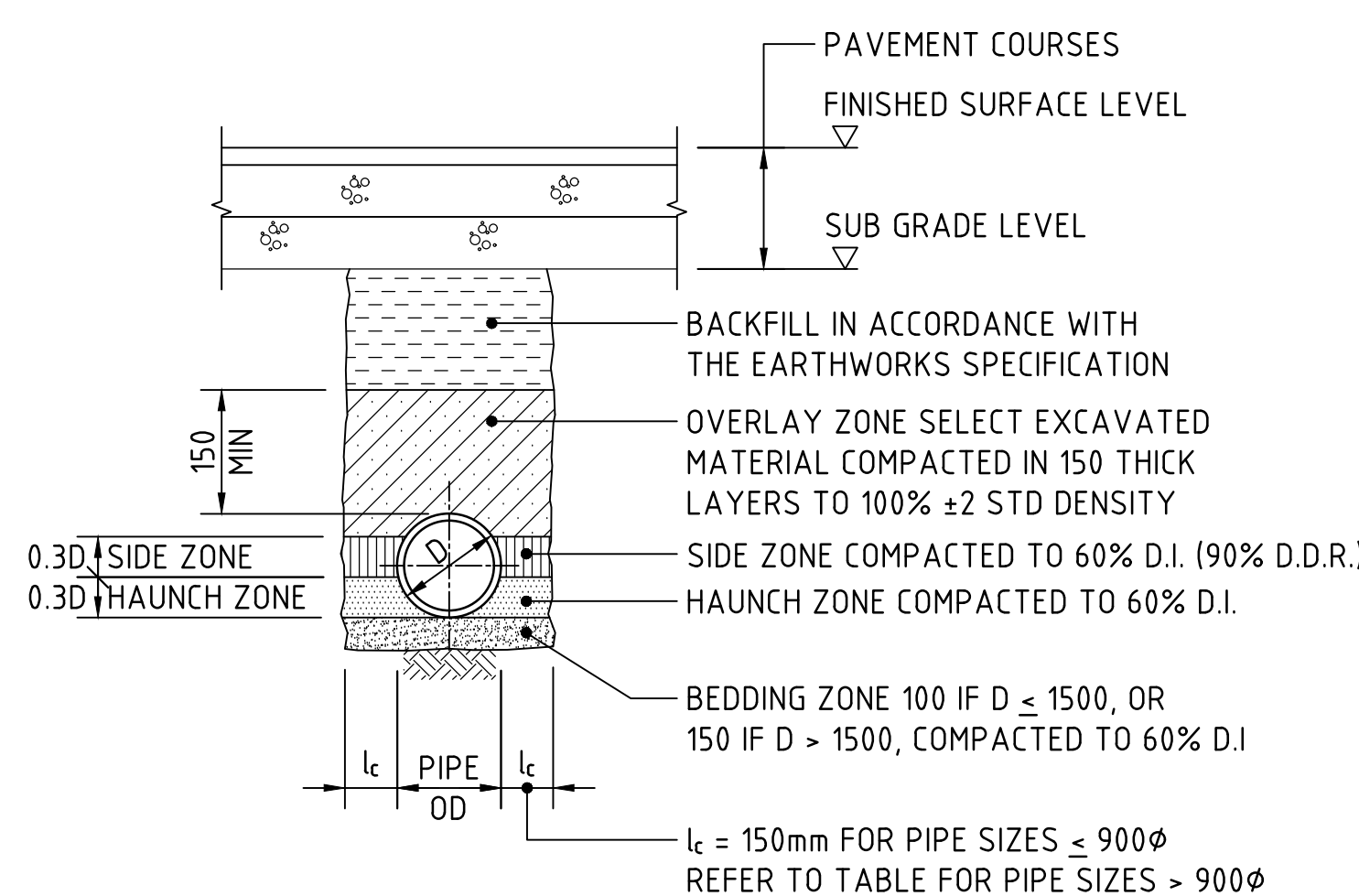
DOWNPIPE TURN-UP DETAIL A  
(AT FOOTING LOCATION)  
SCALE 1:20



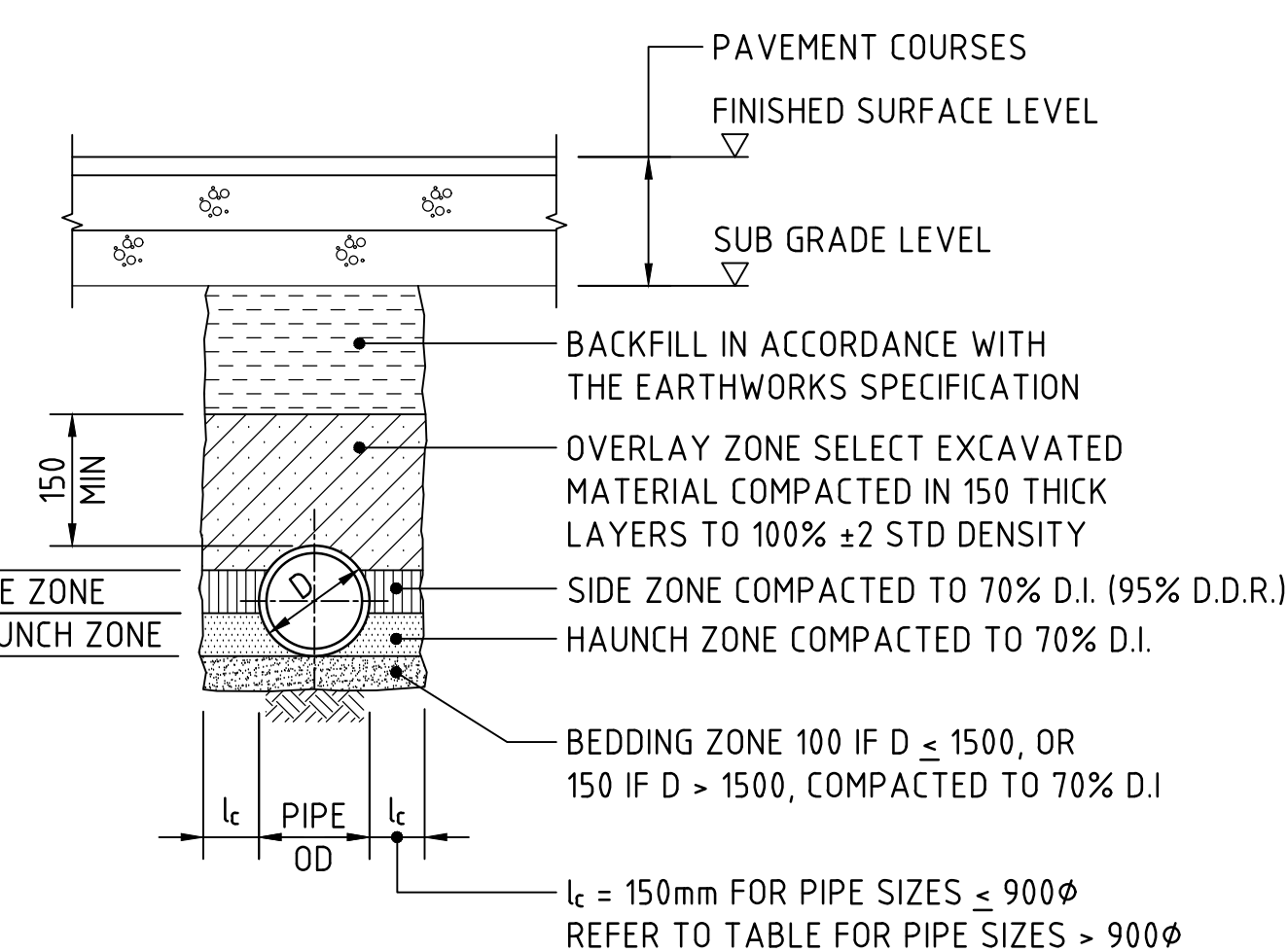
DOWNPIPE TURN-UP DETAIL B  
(CLEAR OF FOOTING)  
SCALE 1:20



TYPE H1 SUPPORT TO CONCRETE PIPES AT LANDSCAPED AREAS  
SCALE 1:20



TYPE HS2 SUPPORT TO CONCRETE PIPES UNDER PAVEMENT  
SCALE 1:20  
D ≤ 1350, MAX FILL = 4.0m  
D > 1350, MAX FILL = 3.0m

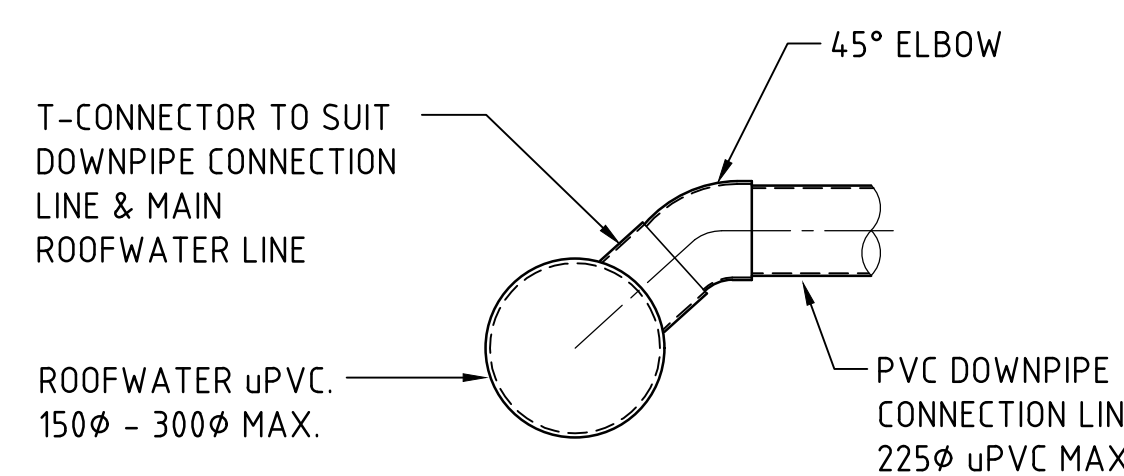


TYPE HS3 SUPPORT TO CONCRETE PIPES UNDER PAVEMENT  
SCALE 1:20  
D ≤ 1050, MAX FILL = 6.0m  
D > 1050, MAX FILL = 4.8m

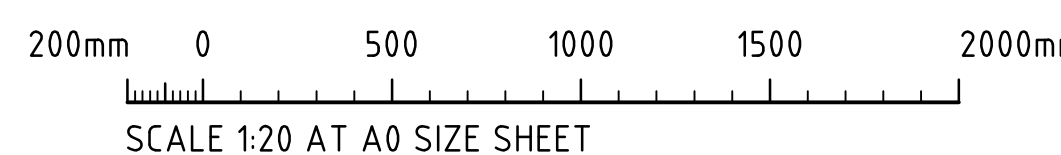
BEDDING & HAUNCH MATERIAL GRADING	
SIEVE SIZE (mm)	WEIGHT PASSING (%)
19.0	100
2.36	100 TO 50
0.60	90 TO 50
0.30	60 TO 10
0.15	25 TO 0
0.075	10 TO 0

SIDE ZONE WIDTH	
PIPE SIZE (mm)	l <sub>c</sub> (mm)
≤ 900	100
1050	175
1200	200
1350	225
1500	250
1650	275
1800	300
ENGINEER TO SPECIFY TRENCH WIDTHS FOR PIPE SIZES GREATER THAN 1800	

SIDE ZONE MATERIAL GRADING	
SIEVE SIZE (mm)	WEIGHT PASSING (%)
19.0	100
9.5	100 TO 50
2.6	100 TO 30
0.60	50 TO 15
0.075	25 TO 0
SELECT FILL MATERIAL IN ACCORDANCE WITH TABLE 1 AS 3725	

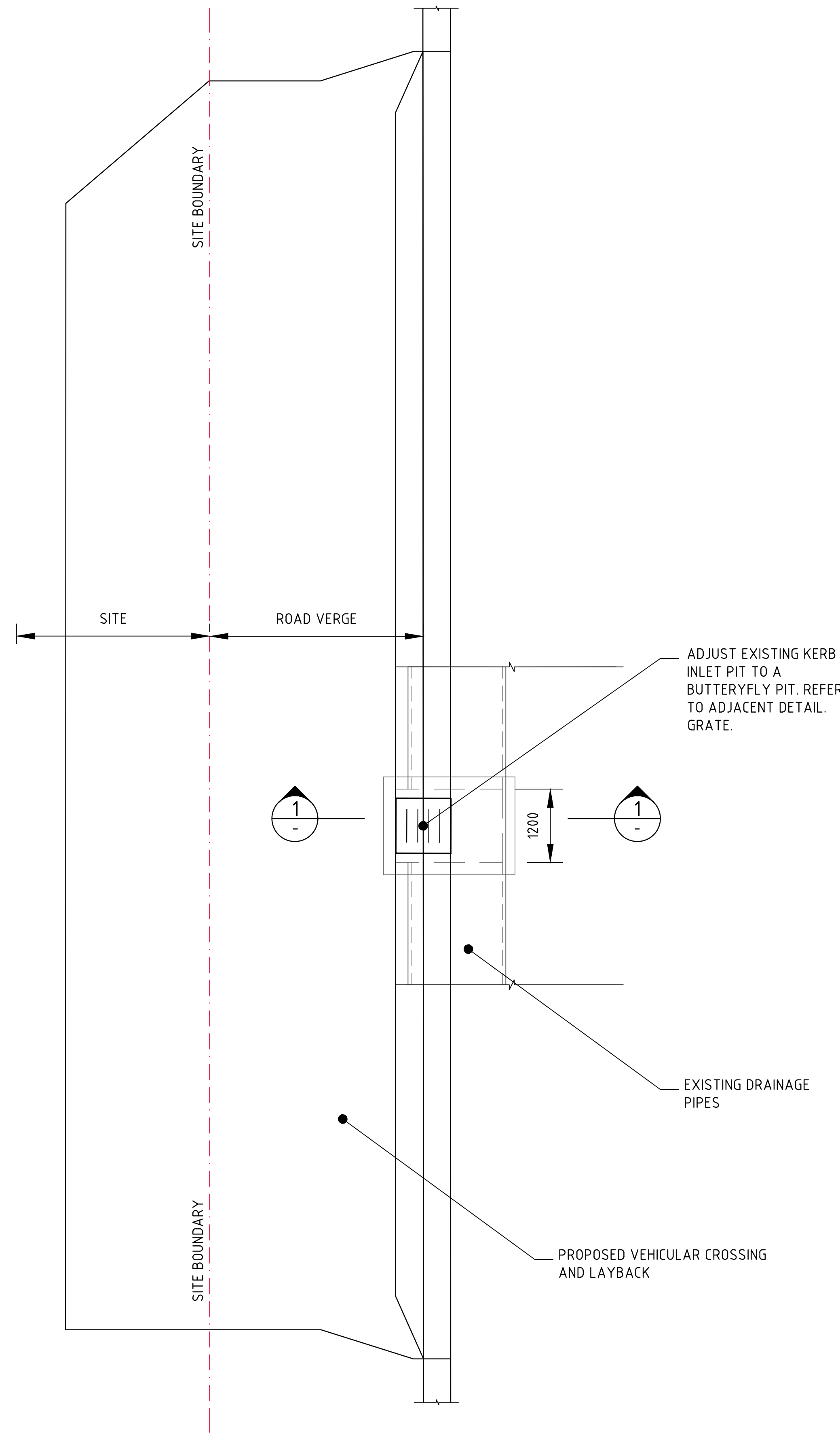


DOWN PIPE CONNECTION TO uPVC PIPE  
SCALE 1:20  
1. PROPRIETARY T-PIECE CONNECTORS SHALL BE USED TO WHERE DIRECT CONNECTIONS ARE REQUIRED TO uPVC PIPES.  
2. ALL JOINTS TO BE SEALED WITH SOLVENT WELDED JOINTS.  
3. THE PVC PIPE SHALL NOT PROTRUDE BEYOND THE INNER SURFACE OF THE STORMWATER PIPE.

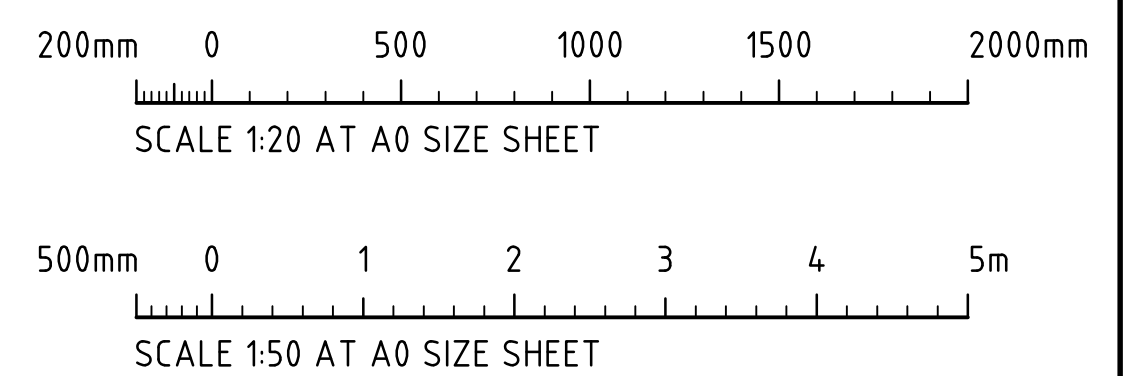
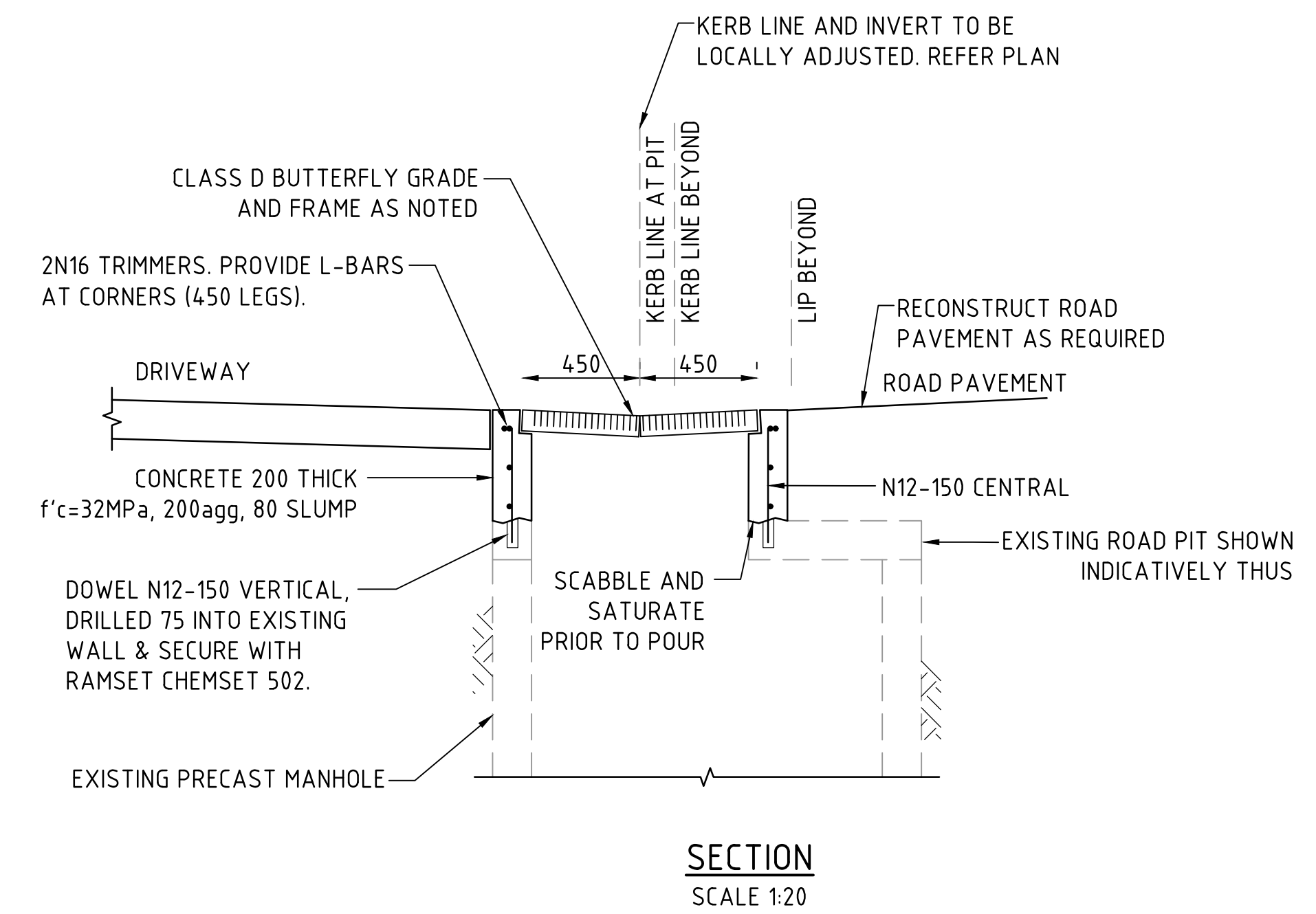
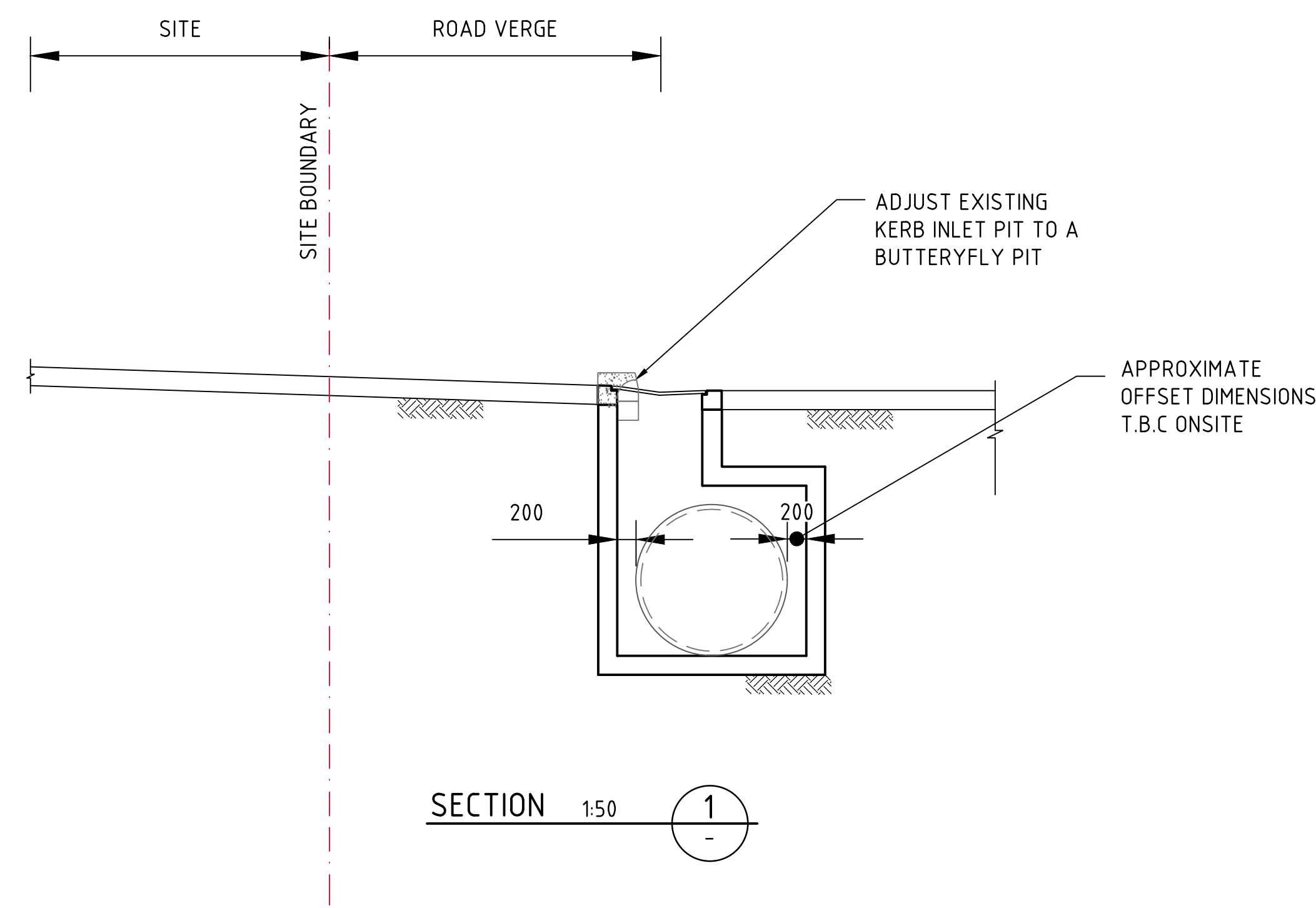


FOR APPROVAL





**NEW BUTTERFLY GRATED PIT**  
SCALE 1:50



**FOR APPROVAL**

									ARCHITECT			<div><div></div><div>[watch this SPACE design]</div></div>			CLIENT			PROJECT			<div><div></div><div>COSTIN ROE CONSULTING</div></div>			Costin Roe Consulting Pty Ltd. Consulting Engineers 434 882 448 Level 1, 8 Windmill Street Walsh Bay, Sydney NSW 2000 Tel: (02) 9251-7699 Fax: (02) 9241-0731 email: mail@costinroe.com.au ©			DRAWING TITLE STORMWATER DRAINAGE DETAILS SHEET 2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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FINISHED LEVELS PLAN NOTES:

- LEVELS DATUM IS AUSTRALIAN HEIGHT DATUM (A.H.D.).
- GRADING REQUIREMENTS TO BE COMPLETED IN ACCORDANCE WITH AUSTRALIAN STANDARD AS2890.1, AS2890.2 AND AS2890.6.
- ALL CONTOUR LINES & SPOT LEVELS INDICATE FINISHED PAVEMENT LEVELS U.N.O. ON PLAN.
- CONTOUR INTERVALS
  - THE MINOR CONTOUR INTERVAL IS 0.1m.
  - THE MAJOR CONTOUR INTERVAL IS 0.5m.
- HARDSTAND GRADING
  - MINIMUM PAVEMENT GRADE IS TO BE 1:100 (1%).
  - GRADING OF ON-GRADE DOCKS TO BE 1:100 (1%) FALL AWAY FROM THE DOCK FACE FOR A LENGTH OF 15m U.N.O.
  - GRADING OF TRUCK CIRCULATION ZONES TO BE MINIMUM AS NOTED ABOVE, 3-4% NOMINAL AND MAX. 5%.
- CAR PARKING AREA GRADES
  - MINIMUM PAVEMENT GRADE IS TO BE 1:100 (1%), DESIRABLE MINIMUM GRADE 1:50 (2%).
  - MAXIMUM PAVEMENT GRADE IS TO BE 1:20 (5%) IN CARPARKING AREAS AND 1:25 (4%) ELSEWHERE.
  - DISABLED ACCESS PARKING ZONES AND SHARED SPACE TO BE MAXIMUM OF 1:33 (3%) IN ASPHALT PAVEMENT AND MAXIMUM OF 1:40 (2.5%) IN CONCRETE PAVEMENT.

- TRUCK RAMP GRADES
  - CARPARK RAMP GRADES TO BE MAX 1:5 WITH 2.5m SMOOTH TRANSITION AT TOP AND BOTTOM U.N.O.
  - MAXIMUM 8-DOUBLE OR 19.0m AV RAMP GRADES ARE TO BE 1:8.3 (12%) U.N.O. ON PLAN
  - PROVIDE MINIMUM 4.0m LONG TRANSITION WHERE CHANGES OF GRADE EXCEED 1:20 (5%) AT A CREST U.N.O.
  - PROVIDE MINIMUM 3.0m LONG TRANSITION WHERE CHANGE OF GRADE EXCEED 1:20 (5%) AT A SAG U.N.O.
  - TRANSITIONS ARE TO PROVIDE A SMOOTH CONTINUOUS CIRCULAR AND TANGENTIAL CHANGE IN GRADE TO ENSURE NO SHARP OR ACUTE CHANGES IN GRADE ARE PRESENT.
- WHERE FIRE BRIGADE ACCESS IS REQUIRED, MAXIMUM RAMP GRADIENTS ARE TO BE 1:6 (16.6%), DESIRABLE RAMP GRADIENTS ARE TO BE 1:8 (12.5%) WITH 7m TRANSITION TOP AND BOTTOM U.N.O. ON PLAN.
- PERMANENT BATTER SLOPES ARE TO HAVE A MAXIMUM GRADE OF 1V:3H U.N.O. BASED ON GEOTECHNICAL ASSESSMENT. PROVIDE MINIMUM 0.5m BERM BETWEEN THE BACK OF KERB OR PAVEMENT EDGES AND THE TOP OR TOE OF A BATTER.

- PERMANENT BATTER SLOPES ARE TO HAVE A MAXIMUM GRADE OF 1V:3H U.N.O. BASED ON GEOTECHNICAL ASSESSMENT. PROVIDE MINIMUM 0.5m BERM BETWEEN THE BACK OF KERB OR PAVEMENT EDGES AND THE TOP OR TOE OF A BATTER.
- ALL BATTER SLOPE WITH GRADES AT OR EXCEEDING 1V:6H ARE TO BE TURFED IMMEDIATELY OR APPROPRIATE EROSION CONTROL IS TO BE PROVIDED TO THE SATISFACTION OF THE ENGINEER.
- ALL FOOTPATHS ARE TO FALL AWAY FROM THE BUILDING AT 2.5% NOMINAL GRADE.
- ALL PAVEMENTS ARE TO BE SET AT 30mm BELOW THE FINISHED FLOOR LEVEL OF THE WAREHOUSE AND OFFICE AREAS U.N.O. ON PLAN. PROVIDE LOCAL FEATHERING AT DOORWAYS OR ROLLER SHUTTERS TO PROVIDE FLUSH FINISH AS REQUIRED.
- WHERE NEW AND EXISTING INTERFACING IS REQUIRED, MATCH EXISTING LEVELS AND PROVIDE SMOOTH INTERFACE BETWEEN NEW AND EXISTING GRADIENTS. REFER ANY CONCERNS TO THE ENGINEER.

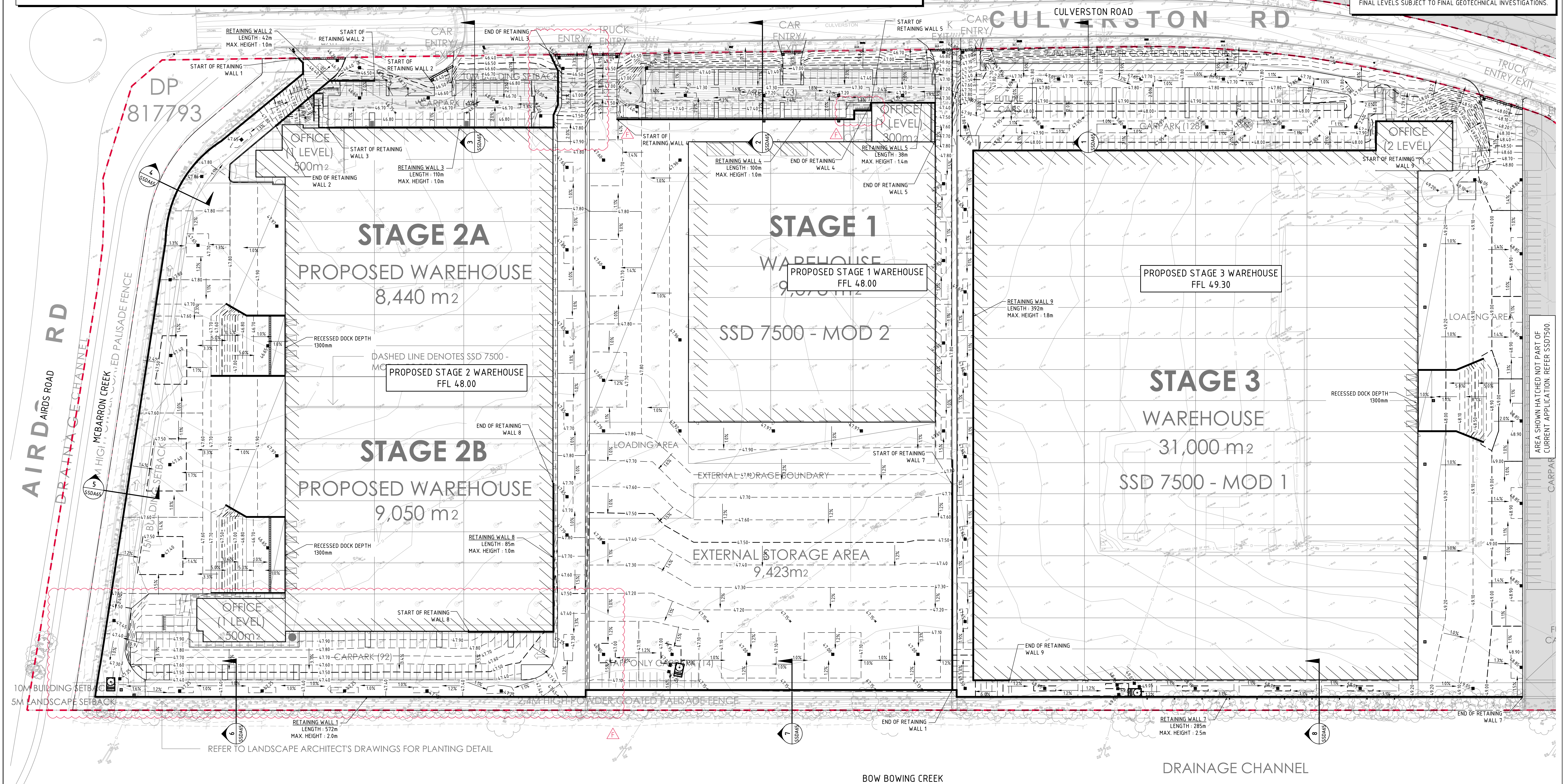
LEGEND:

LEVELS DATUM IS AHD.

- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- GD, GRATED DRAIN (300W x 225D U.N.O)
- FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS
- SITE BOUNDARY
- SITE RETAINING WALL

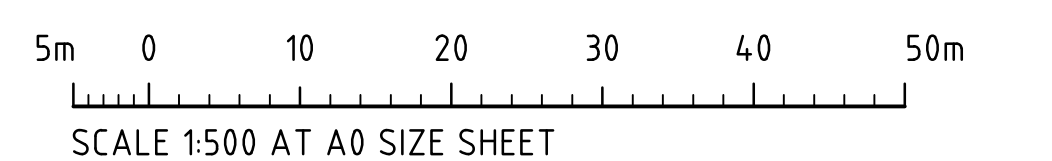
LEVELS NOTE:

LEVELS SHOWN TO BE ±500mm FROM THOSE SHOWN  
FINAL LEVELS SUBJECT TO FINAL GEOTECHNICAL INVESTIGATIONS.



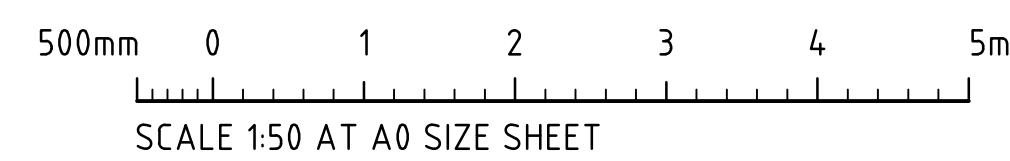
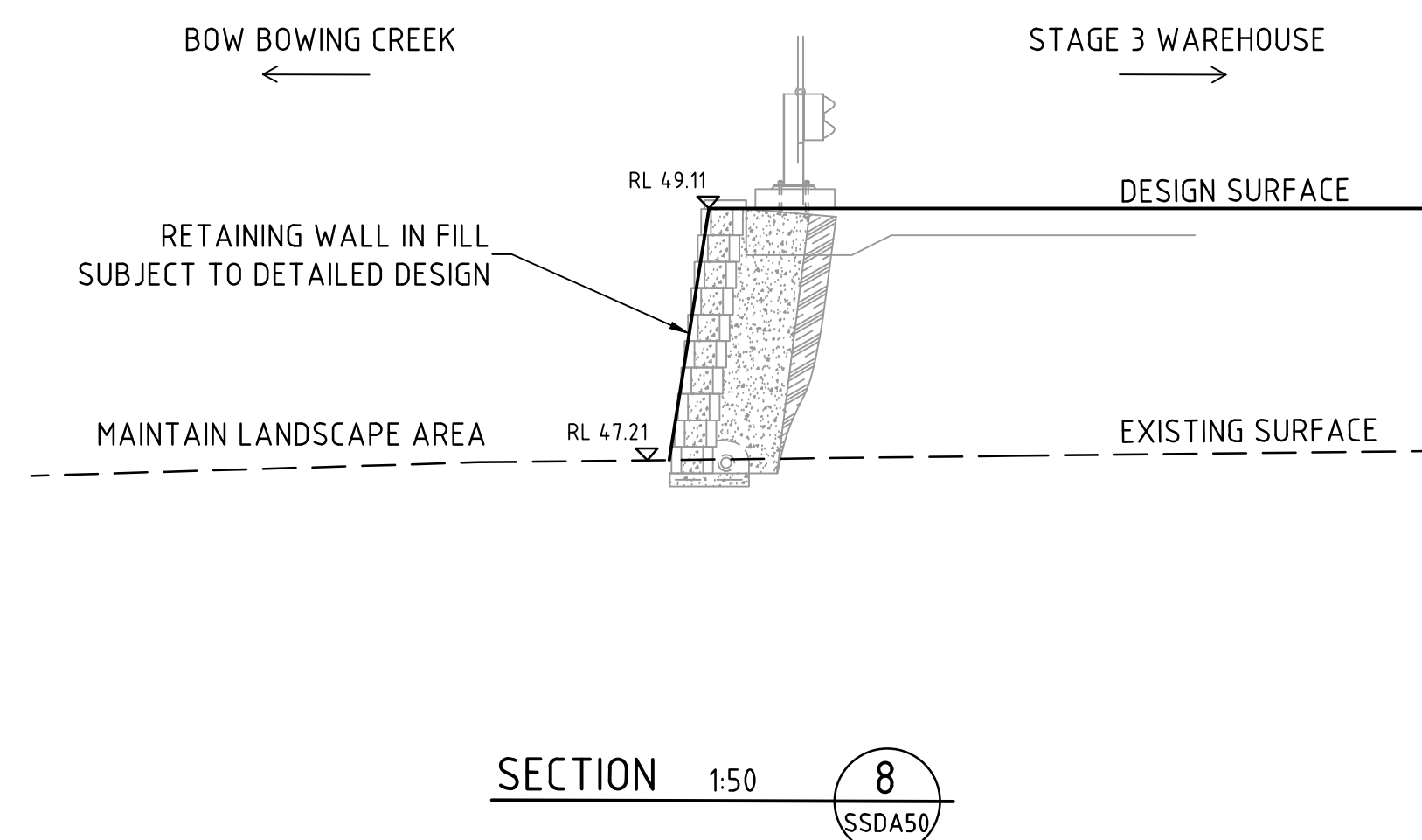
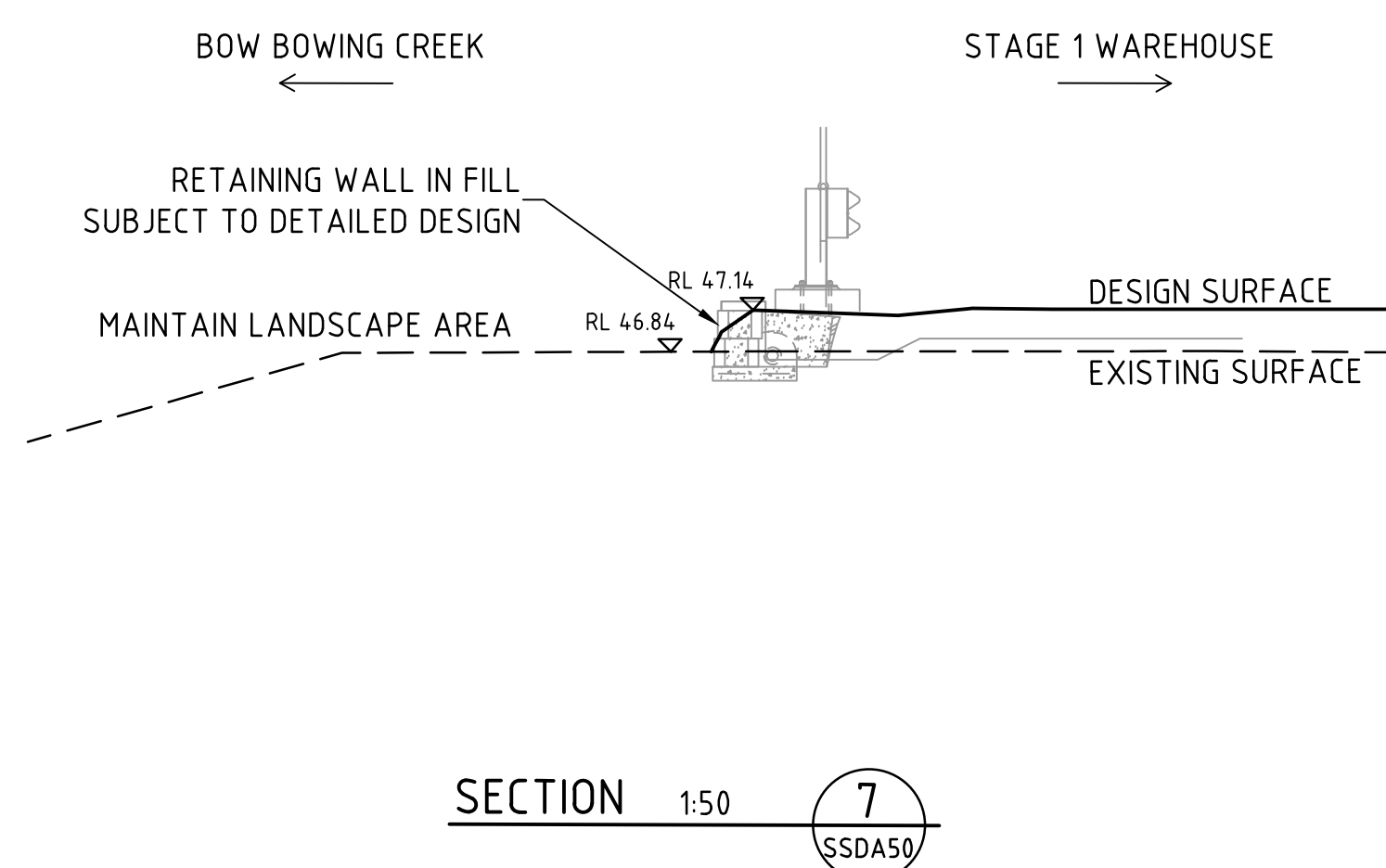
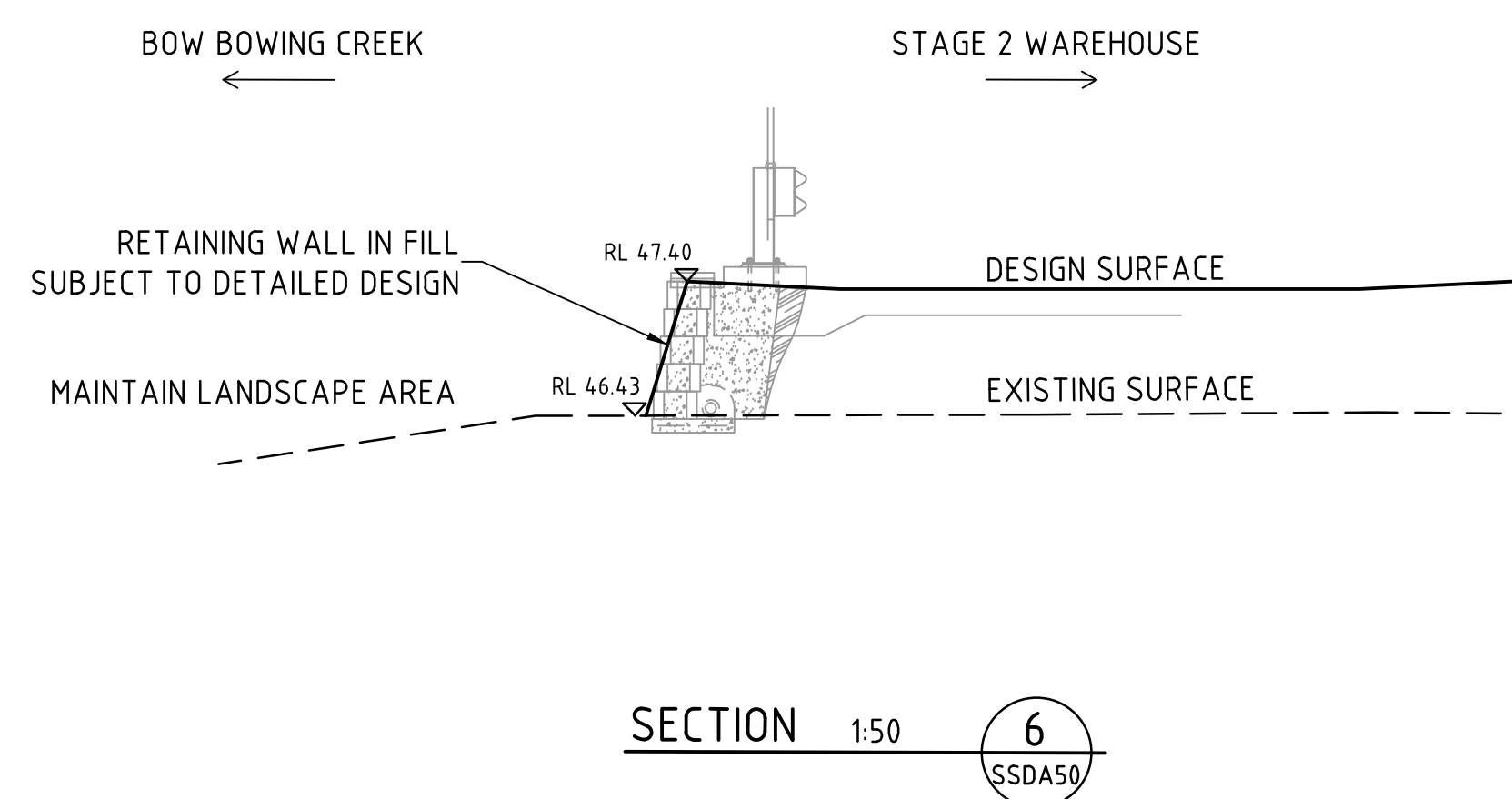
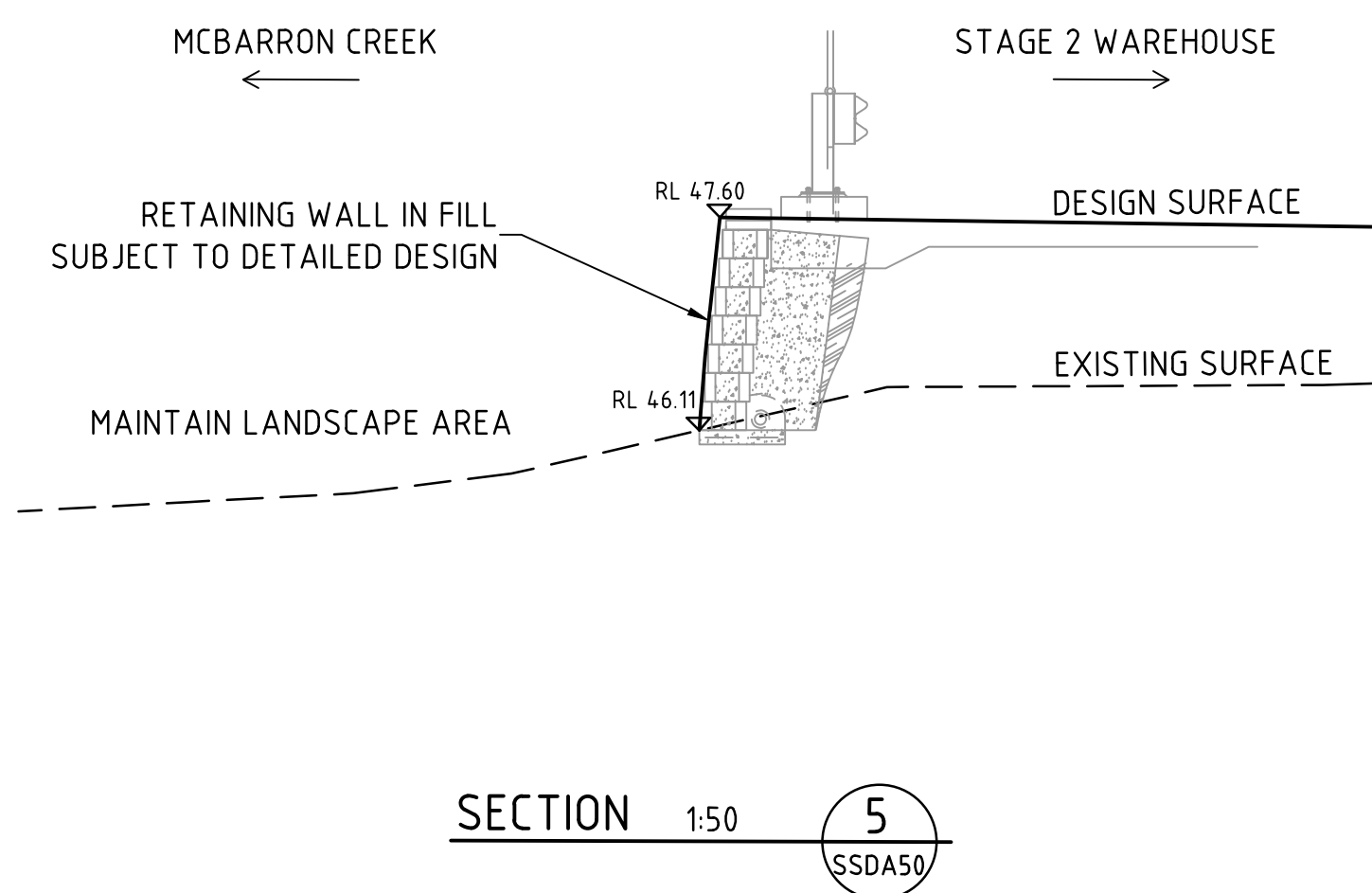
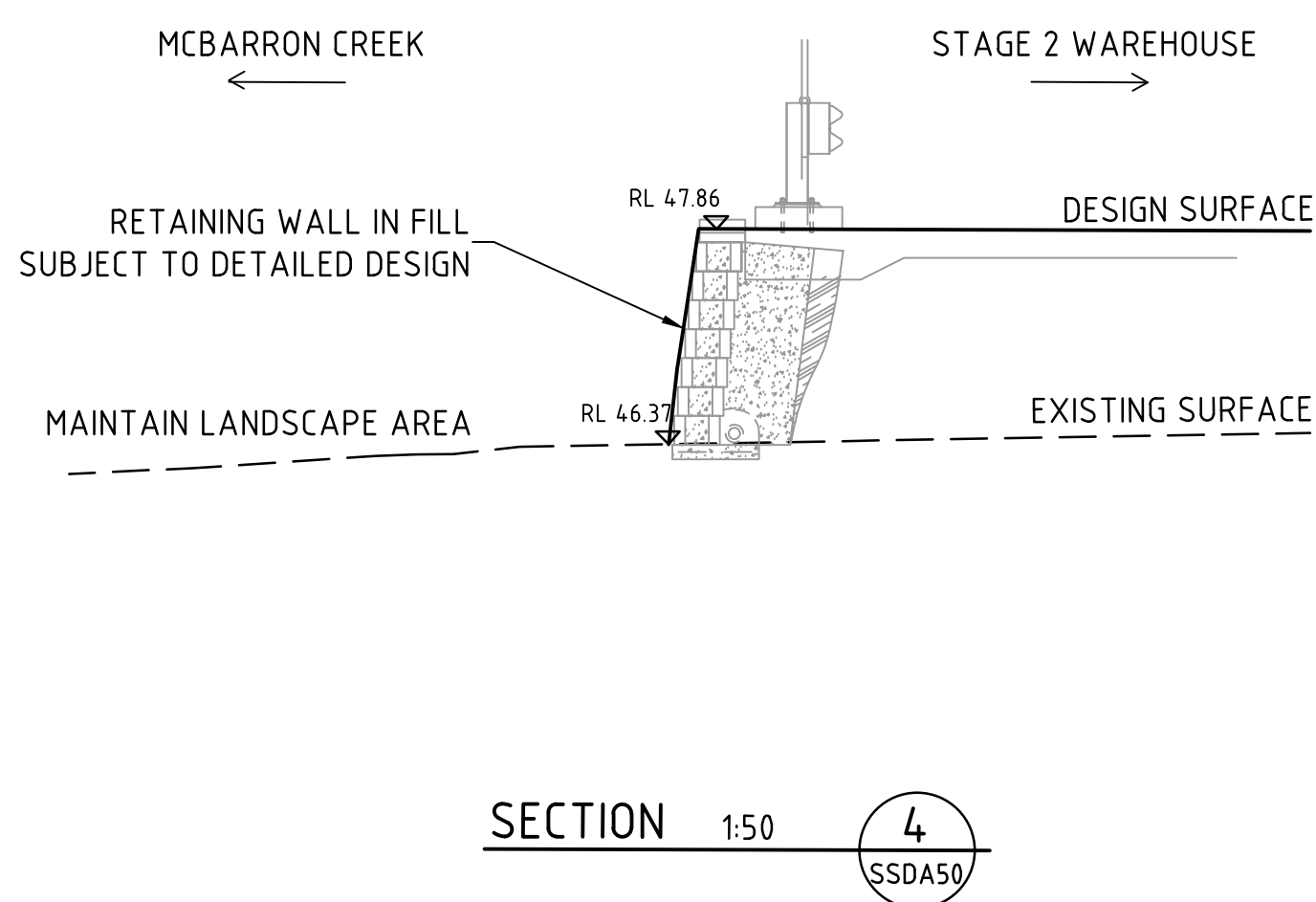
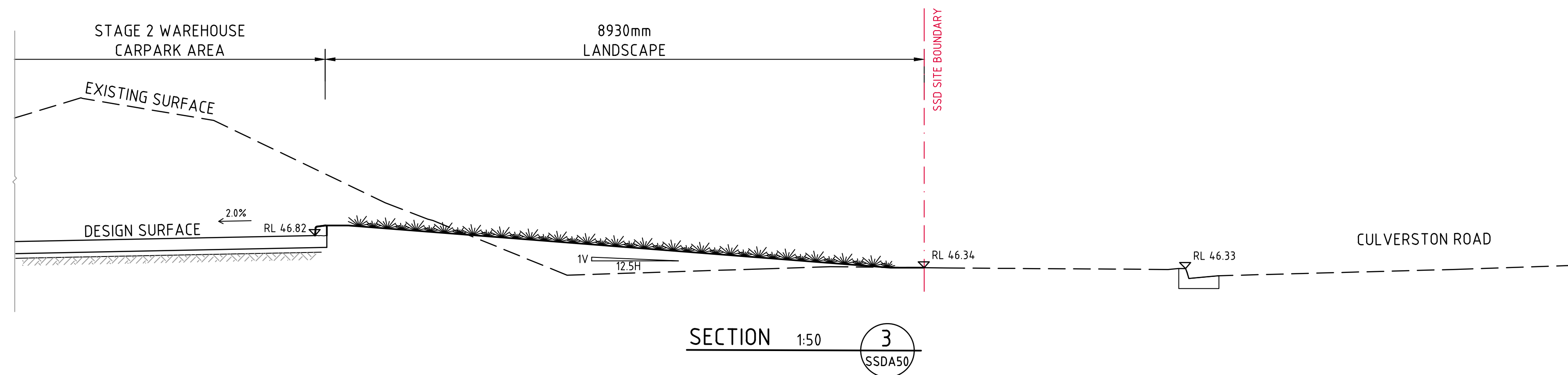
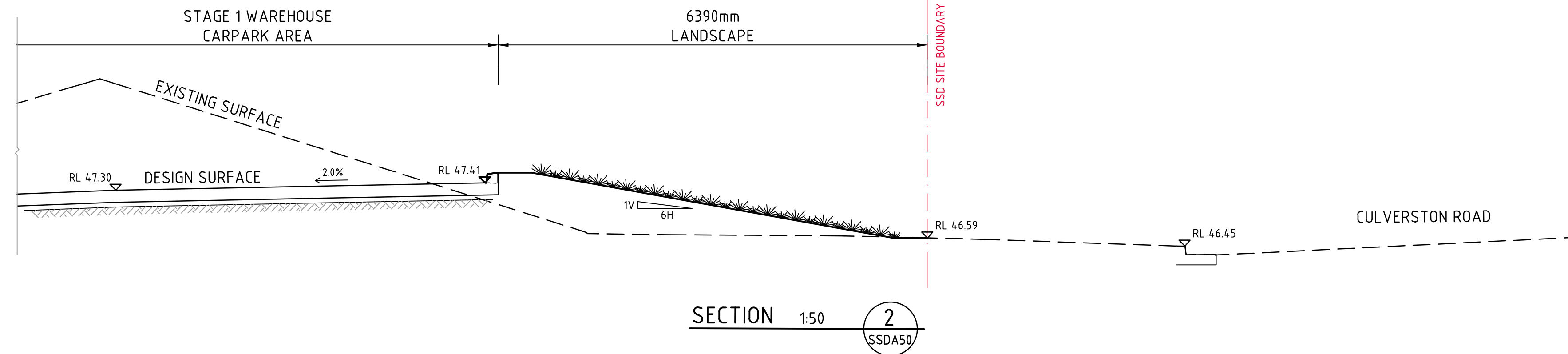
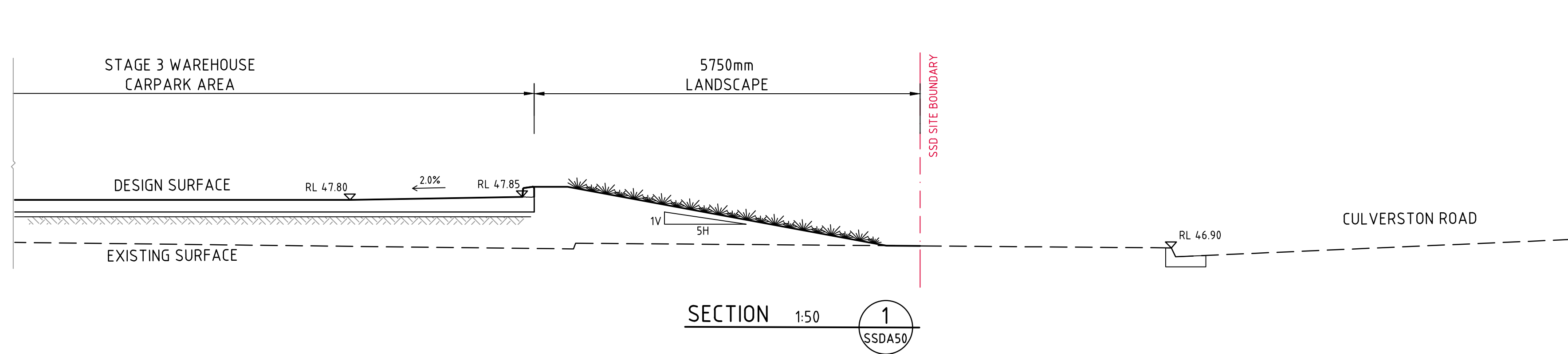
FINISHED LEVELS PLAN  
SCALE 1:500

FOR APPROVAL



ISSUED FOR APPROVAL			ARCHITECT			CLIENT			PROJECT			Costin Roe Consulting Pty Ltd.			DRAWING TITLE		
PRELIMINARY ONLY	17.02.22	F							MINTO LOGISTICS HUB			Consulting Engineers			FINISHED LEVELS PLAN		
PRELIMINARY ONLY	04.02.22	E							5-9 CULVERSTON ROAD			Level 1, 8 Windmill Street					
PRELIMINARY ONLY	10.11.21	D							MINTO NSW 2566			Walsh Bay, Sydney NSW 2000					
PRELIMINARY ONLY	29.09.21	C										Tel: (02) 8251-7699 Fax: (02) 9241-3721					
PRELIMINARY ONLY	17.09.21	B										email: mail@costinroe.com.au					
PRELIMINARY ONLY	03.09.21	A															
AMENDMENTS	DATE	ISSUE	AMENDMENTS	DATE	ISSUE	AMENDMENTS	DATE	ISSUE	DESIGNED	DRAWN	DATE	CHECKED	DATE	SCALE	AS SHOWN	SCALE	AS SHOWN
									ML	ML	SEP 21	MW		A0	AS SHOWN	1:500	AS SHOWN

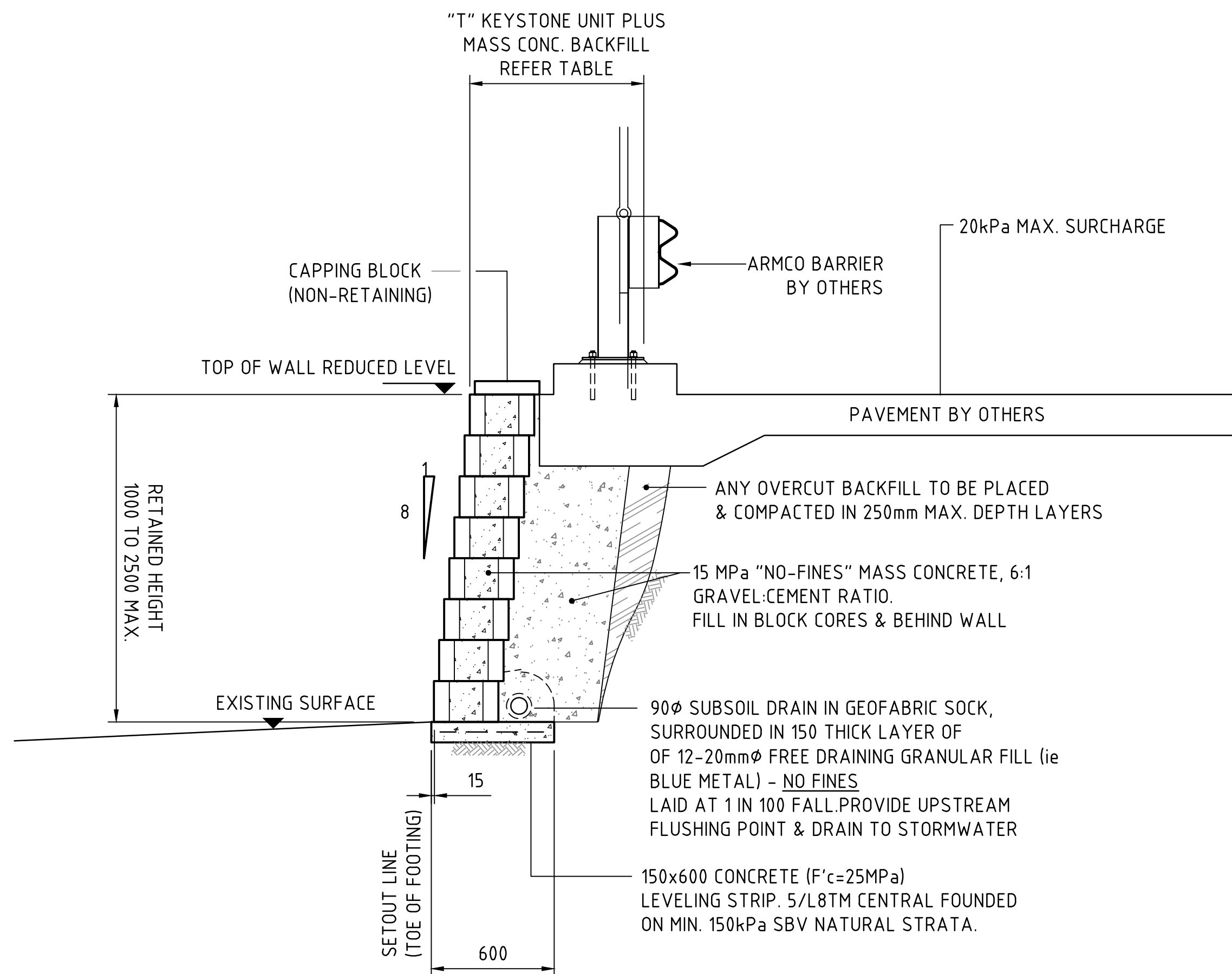




FOR APPROVAL

			ARCHITECT		CLIENT		PROJECT		Costin Roe Consulting Pty Ltd.		DRAWING TITLE	
			[watch this SPACE design]		Charter Hall		MINTO LOGISTICS HUB		Consulting Engineers		TYPICAL SECTIONS	
							5-9 CULVERSTON ROAD		Level 1, 8 Windmill Street			
							MINTO NSW 2566		Wahah Bay, Sydney NSW 2000			
							DESIGNED   DRAWN   DATE   CHECKED   SIZE   SCALE   CAD REF:		Tel: (02) 8251-7889 Fax: (02) 9241-3721		PRECISION   COMMUNICATION   ACCOUNTABILITY	
							ML   ML   SEP 21   MW   A0   AS SHOWN   C014506.00-SSDA55		email: mail@costinroe.com.au		DRAWING No	
											C014506.00-SSDA55	
											ISSUE	
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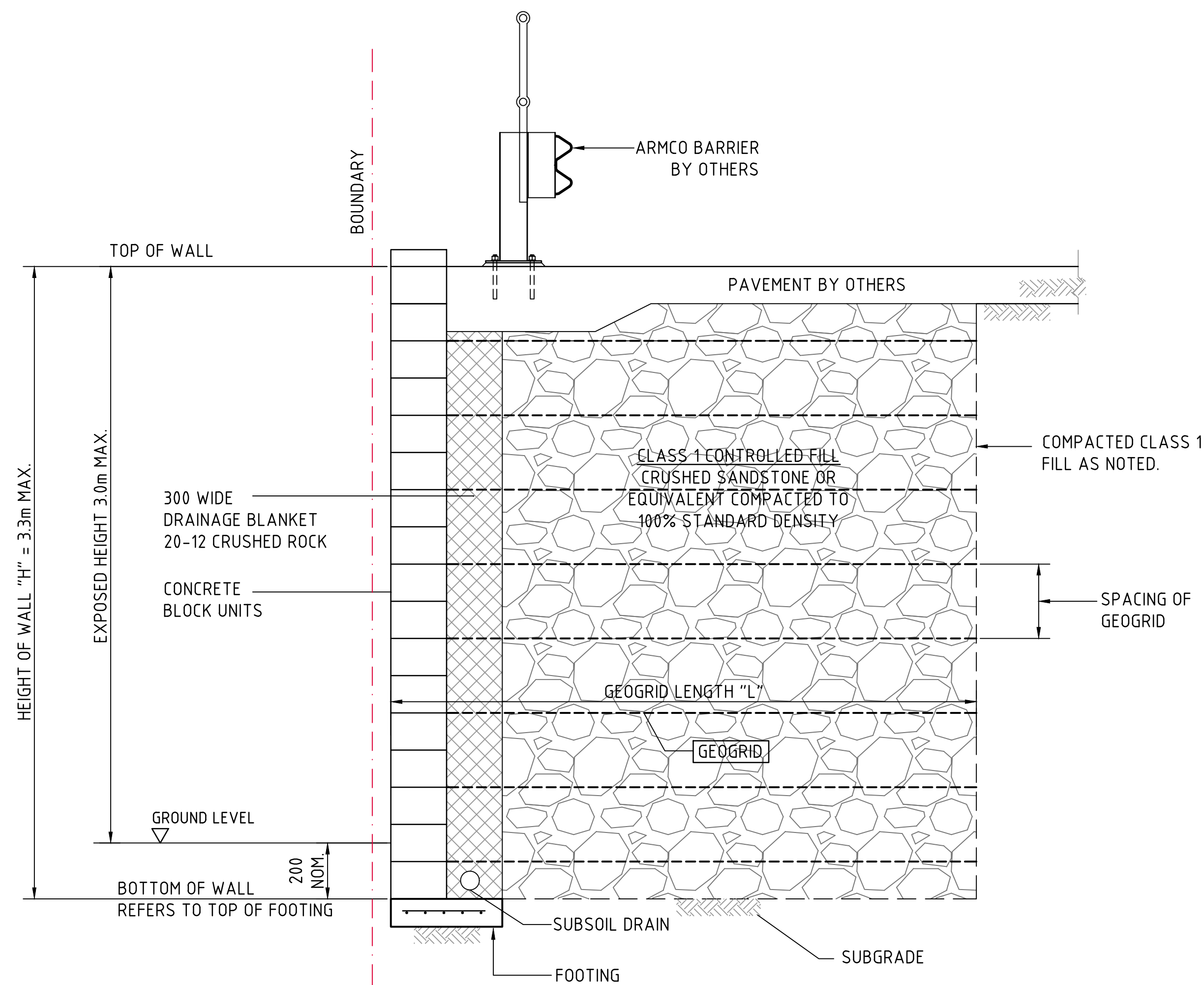


KEYSTONE WALL SPECIFICATIONS :	
RETAINED HEIGHT (mm)	OVERALL THICKNESS "T" (mm)
UP TO 1000	DESIGN TO BE CONFIRMED / PROVIDED BY D-C CONTRACTOR
1000 TO 1200	
1200 TO 1800	
1800 TO 2400	
2400 TO 2500	

TYPICAL THRU' KEYSTONE RETAINING WALL  
(1000 TO 2500 MAXIMUM RETAINED HEIGHT)  
SCALE 1:20

RETAINING WALL NOTES:

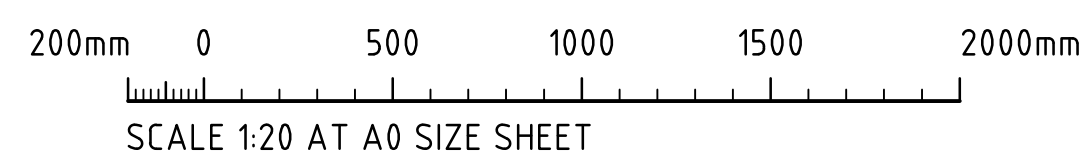
- ALL COMPONENTS AND INSTALLATION SHALL COMPLY WITH AS4678 AND THE STANDARDS REFERRED TO THEREIN.
- MINIMUM BEARING CAPACITY OF FOUNDATION TO BE AS FOLLOWS :
  - H MAX. 2.0m = 100 kPa
  - H MAX. 3.5m = 150 kPa
  - H MAX. 5.0m = 200 kPaBEFORE COMMENCEMENT OF CONSTRUCTION THE FOUNDATION SHALL BE INSPECTED AND VERIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER.
- WHERE MINIMUM BEARING IS NOT ACHIEVABLE OR NOT MEETING DESIGN REQUIREMENT, THE FOUNDATION MATERIAL IS TO BE EXCAVATED AND REPLACED WITH APPROVED MATERIAL PLACED IN ACCORDANCE WITH THE FILLING SPECIFICATION TO A MINIMUM COMPACTION OF 100% SMD AND PLACED WITHIN 2% OF OMC.
- MINIMUM SURCHARGE LOADS TO BE APPLIED AS FOLLOWS U.N.O.
- ON PLAN :
  - LIVE LOAD = 20 kPa
  - DEAD LOAD = 5 kPa
  - CONSTRUCTION TRAFFIC LIVE LOAD = 10 kPa
- MINIMUM WALL EMBEDMENT AT THE TOE OF THE WALL TO BE 300mm MINIMUM UNLESS NOTED OTHERWISE.
- DESIGN LIFE OF STRUCTURE IS TO BE 100 YEARS.
- TIED WALLS ARE TO BE TEMPORARILY PROPPED AT TOP UNTIL SUCH TIME THE TOP OF WALL IS TIED TO THE SLAB AND 28-DAY CONCRETE STRENGTH HAS BEEN ACHIEVED.
- CONSTRUCTION EQUIPMENT WEIGHING MORE THAN 500KG STATIC WEIGHT IS TO BE KEPT BACK 15m FROM THE REAR FACE OF THE WALL FACING UNITS. COMPACTION OF THE SELECT FILL MATERIAL WITHIN THE 15m STRIP ADJACENT TO THE WALL SHALL BE ACHIEVED BY LIGHT MECHANICAL TAMPERS (VIBRATING PLATE, TRENCH COMPACTOR OR SIMILAR) TO GIVE THE SAME DENSITY AS IN THE REMAINDER OF THE SELECT FILL.
- ALL DESIGN AND CONSTRUCT WALL SYSTEM TO BE COMPLETED IN ACCORDANCE WITH THESE NOTES.



REINFORCED EARTH RETAINING WALL  
STRUCTURAL DESIGN TO D-C CONTRACTOR.

CONCRETE BLOCK REINFORCED EARTH WALL DETAIL  
SCALE 1:20

FOR APPROVAL



ISSUED FOR APPROVAL			ARCHITECT			CLIENT			PROJECT			COSTIN ROE CONSULTING PTY LTD.			DRAWING TITLE		
PRELIMINARY ONLY			[watch this SPACE design]			MINTO LOGISTICS HUB			5-9 CULVERSTON ROAD			Consulting Engineers			RETAINING WALL DETAILS		
PRELIMINARY ONLY			[watch this SPACE design]			MINTO NSW 2566			Level 1, 8 Windmill Street			Walsh Bay, Sydney NSW 2000			PRECISION   COMMUNICATION   ACCOUNTABILITY		
AMENDMENTS			[watch this SPACE design]			DESIGNED: [NAME] DATE: [DATE]			CHECKED: [NAME] DATE: [DATE]			T: (02) 9251-7899 Fax: (02) 9241-3721			DRAWING No		
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