

PROPOSED WAREHOUSE

149-155 AIRDS ROAD, MINTO, NSW, 2566

CIVIL DRAWINGS FOR DEVELOPMENT APPLICATION

DRAWING LIST:

DRAWING NO.	DRAWING TITLE
C014521.01-DA 2-10	DRAWING LIST & GENERAL NOTES
C014521.01-DA 2-20	EROSION & SEDIMENT CONTROL PLAN
C014521.01-DA 2-25	EROSION & SEDIMENT CONTROL DETAILS - SHEET 1
C014521.01-DA 2-26	EROSION & SEDIMENT CONTROL DETAILS - SHEET 2
C014521.01-DA 2-30	BULK EARTHWORKS PLAN
C014521.01-DA 2-35	BULK EARTHWORKS SECTIONS
<div>D</div> C014521.01-DA 2-40	STORMWATER DRAINAGE PLAN
C014521.01-DA 2-45	STORMWATER DRAINAGE DETAILS - SHEET 1
C014521.01-DA 2-46	STORMWATER DRAINAGE DETAILS - SHEET 2
C014521.01-DA 2-47	STORMWATER DRAINAGE DETAILS - SHEET 3
C014521.01-DA 2-50	FINISHED LEVELS PLAN
C014521.01-DA 2-51	TYPICAL SECTIONS

GENERAL NOTES:

1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS' 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.
2. 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.
3. 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.
4. 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.
5. UNLESS NOTED OTHERWISE ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES.
6. 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.

ELECTRONIC INFORMATION NOTES:

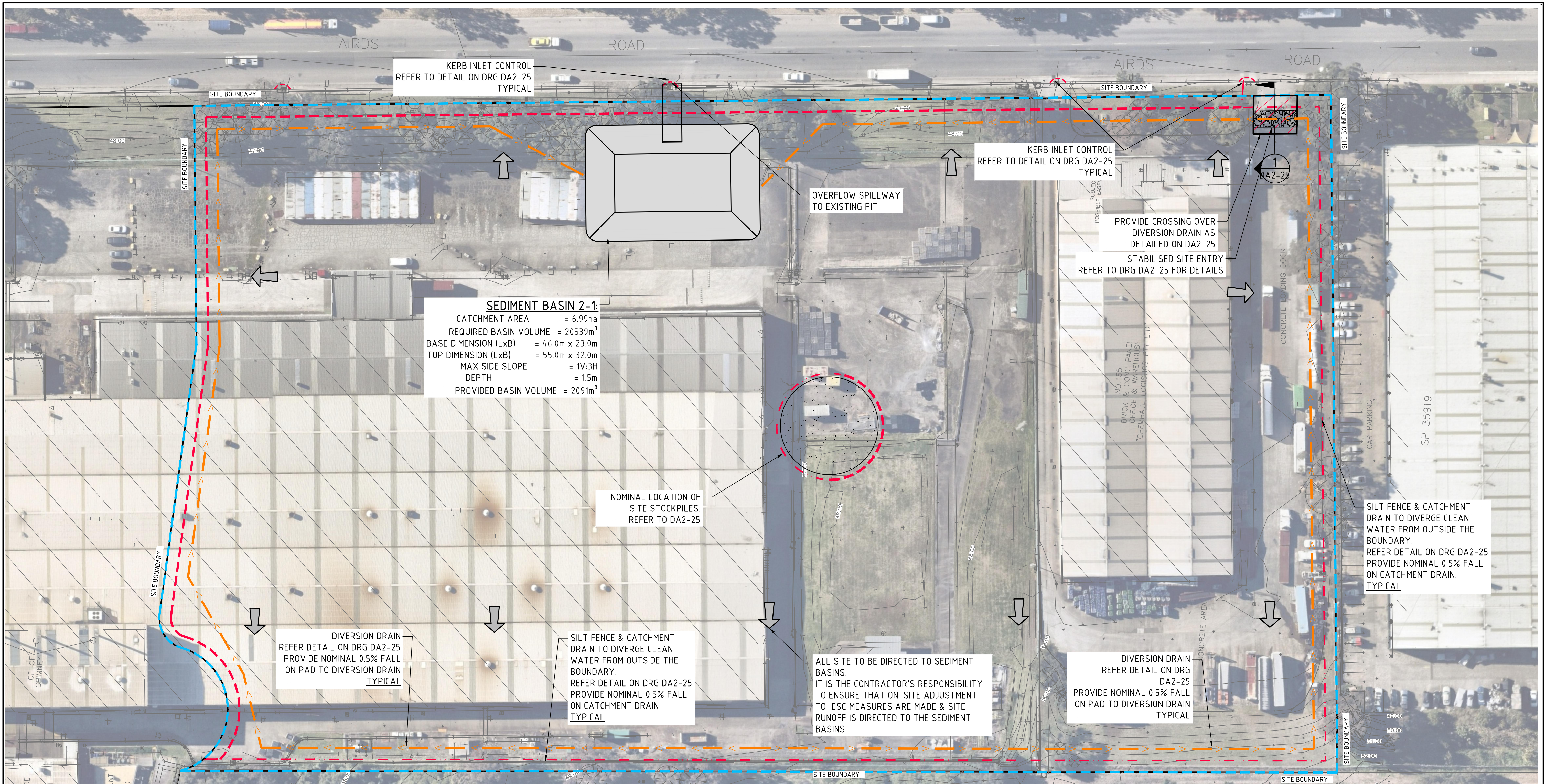
1. THE ISSUED DRAWINGS IN HARD COPY OR PDF FORMAT TAKE PRECEDENCE OVER ANY ELECTRONICALLY ISSUED INFORMATION, LAYOUTS OR DESIGN MODELS.
2. THE CONTRACTOR'S DIRECT AMENDMENT OR MANIPULATION OF THE DATA OR INFORMATION THAT MIGHT BE CONTAINED WITHIN AN ENGINEER-SUPPLIED DIGITAL TERRAIN MODEL AND ITS SUBSEQUENT USE TO UNDERTAKE THE WORKS WILL BE SOLELY AT THE DISCRETION OF AND THE RISK OF THE CONTRACTOR.
3. 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.
4. 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.



 SITE LOCATION PLAN
NTS

FOR DEVELOPMENT APPLICATION

			ARCHITECT		CLIENT		PROJECT							CONSULT AUSTRALIA		Costin Roe Consulting Pty Ltd. ABN 50 003 696 446		CRC COSTIN ROE CONSULTING CIVIL & STRUCTURAL ENGINEERS		DRAWING TITLE DRAWING LIST & GENERAL NOTES										
REVISED AS CLOUDED			16.11.23		D		[watch this SPACE design]		Charter Hall		PROPOSED WAREHOUSE DEVELOPMENT 149-155 AIRDS ROAD, MINTO NSW, 2566																			
ISSUED FOR DEVELOPMENT APPLICATION			02.03.23		C						DESIGNED		DRAWN		DATE		CHECKED		SIZE		SCALE		CAD REF:							
REVISED AS CLOUDED			17.10.22		B						IL		IL		AUG '22		DS		A1		AS SHOWN		C014521.01-DA 2-10							
ISSUED FOR INFORMATION			01.09.22		A																									
AMENDMENTS			DATE		ISSUE																				DRAWING No		C014521.01-DA2-10		ISSUE	
																											D			



LEGEND:

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

- DENOTES DIVERSION DRAIN
- DENOTES CATCHMENT BOUNDARY
- DENOTES SILT FENCE WITH CATCH DRAIN
- DENOTES SILT FENCE ONLY
- DENOTES CONSTRUCTION ENTRY
- DENOTES OVERLAND FLOW PATH

SEDIMENTATION BASIN NOTE:

FOR SEDIMENT & EROSION CONTROL DETAILS REFER TO DRAWING C014506.03-DA2-25.

SEDIMENTATION BASIN SIZING BASED ON RECOMMENDATIONS OF 'SOILS AND CONSTRUCTION, MANAGING URBAN STORMWATER-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 = 2.80Ha

SEDIMENTATION BASINS TO COLLECT RUN-OFF IN EXTREME RAINFALL EVENTS. COLLECTED RUN-OFF TO BE ASSESSED BY A QUALIFIED LABORATORY FOR DOSING 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)
3. $C_v = 0.64$ & LENGTH TO WIDTH RATIO OF 2 (MIN.)

SOIL TYPE TO BE ASSESSED BY A GEOTECHNICAL ENGINEER

EROSION CONTROL NOTES:

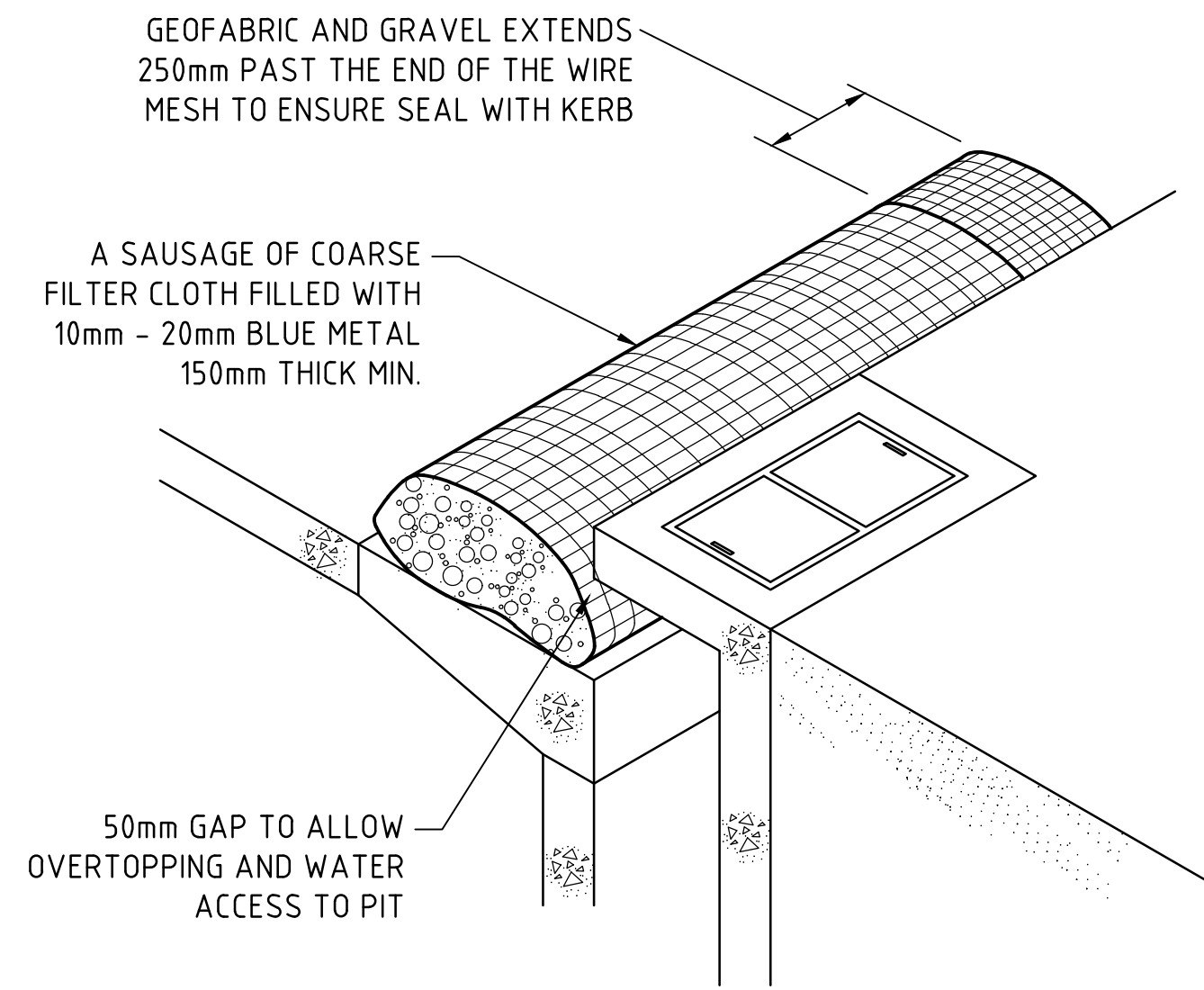
ALL CONTROL WORK INCLUDING DIVERSION BANKS AND CATCH DRAINS, V-DRAINS AND SILT FENCES SHALL BE COMPLETED DIRECTLY FOLLOWING THE COMPLETION OF THE EARTHWORKS.

1. SILT FENCES AND SILT FENCE RETURNS SHALL BE ERECTED CONVEX TO THE CONTOUR TO POND WATER.
2. HAY BALE BARRIERS AND GEOTEXTILE FENCES ARE TO BE CONSTRUCTED TO TOP OF BATTER, PRIOR TO COMMENCEMENT OF EARTHWORKS, IMMEDIATELY AFTER CLEARING OF VEGETATION AND BEFORE REMOVAL OF TOP SOIL.
3. ALL TEMPORARY EARTH BERM, 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 STOCKPILES 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.

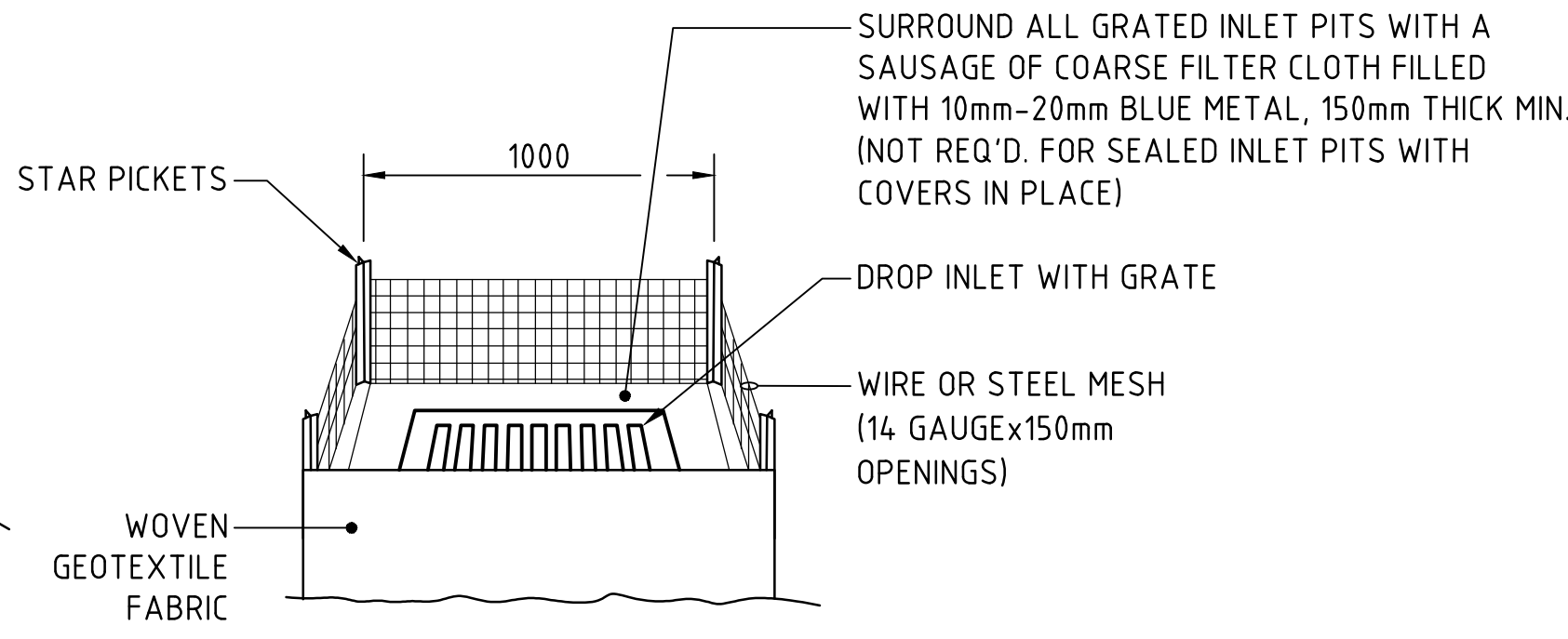
FOR DEVELOPMENT APPLICATION

EROSION & SEDIMENT CONTROL PLAN
SCALE 1:500

5m 0 10 20 30 40 50m
SCALE 1:500 AT A1 SIZE SHEET

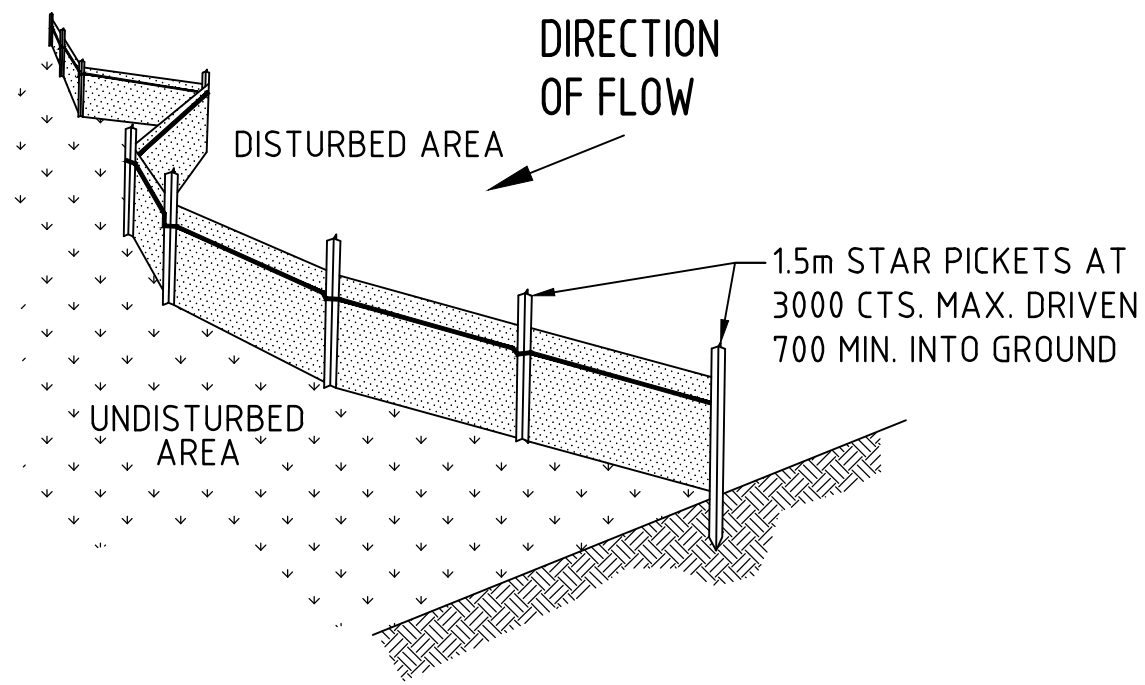


KERB INLET CONTROL
N.T.S



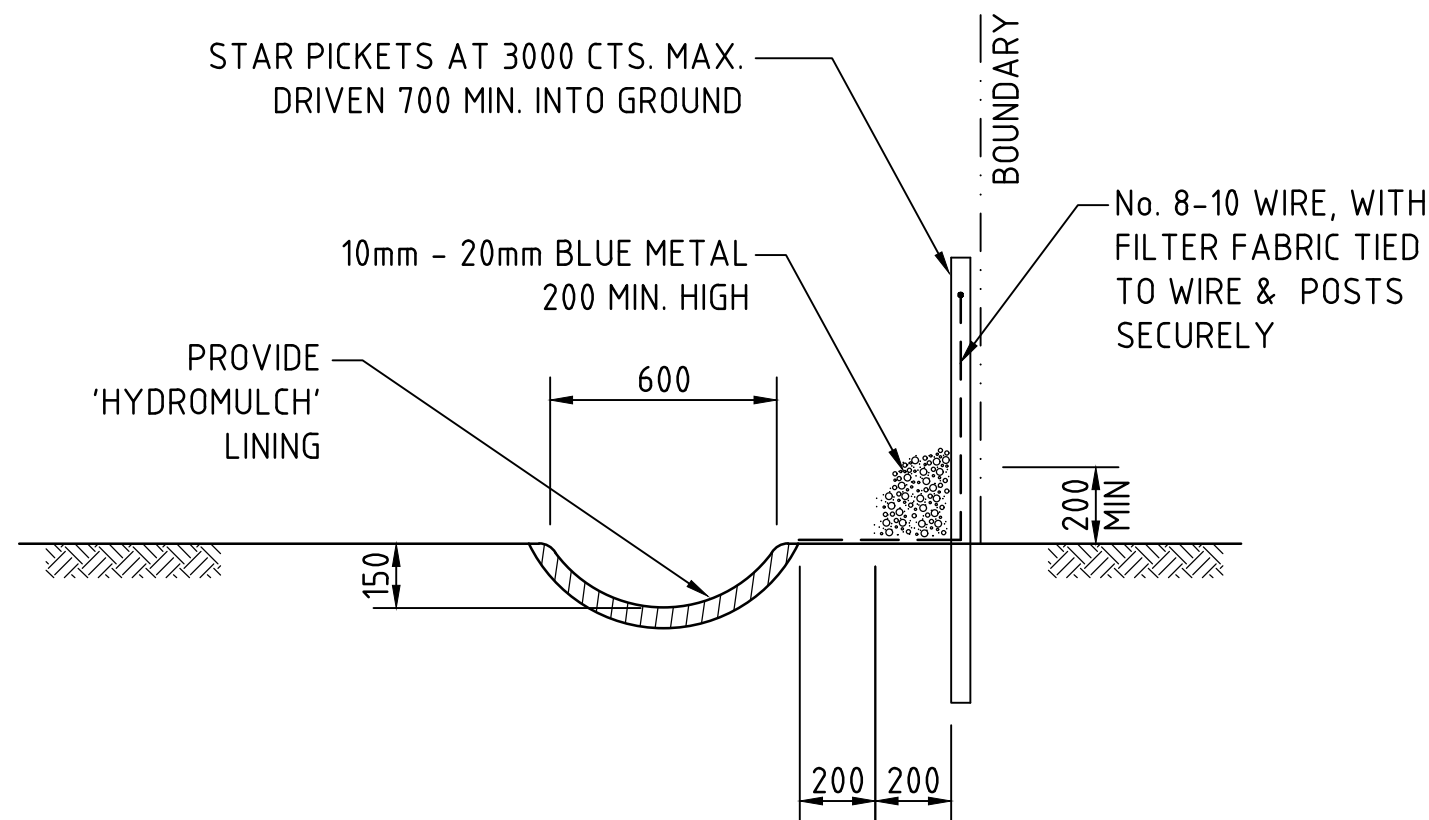
GRADED INLET PIT FILTER DETAIL
N.T.S

NOTE :
ADOPT ABOVE DETAILS AROUND ALL PITS WITHIN AREA ENCOMPASSED
BY SILT FENCE & TO PITS ON THE ROAD ADJACENT TO SITE BOUNDARY.

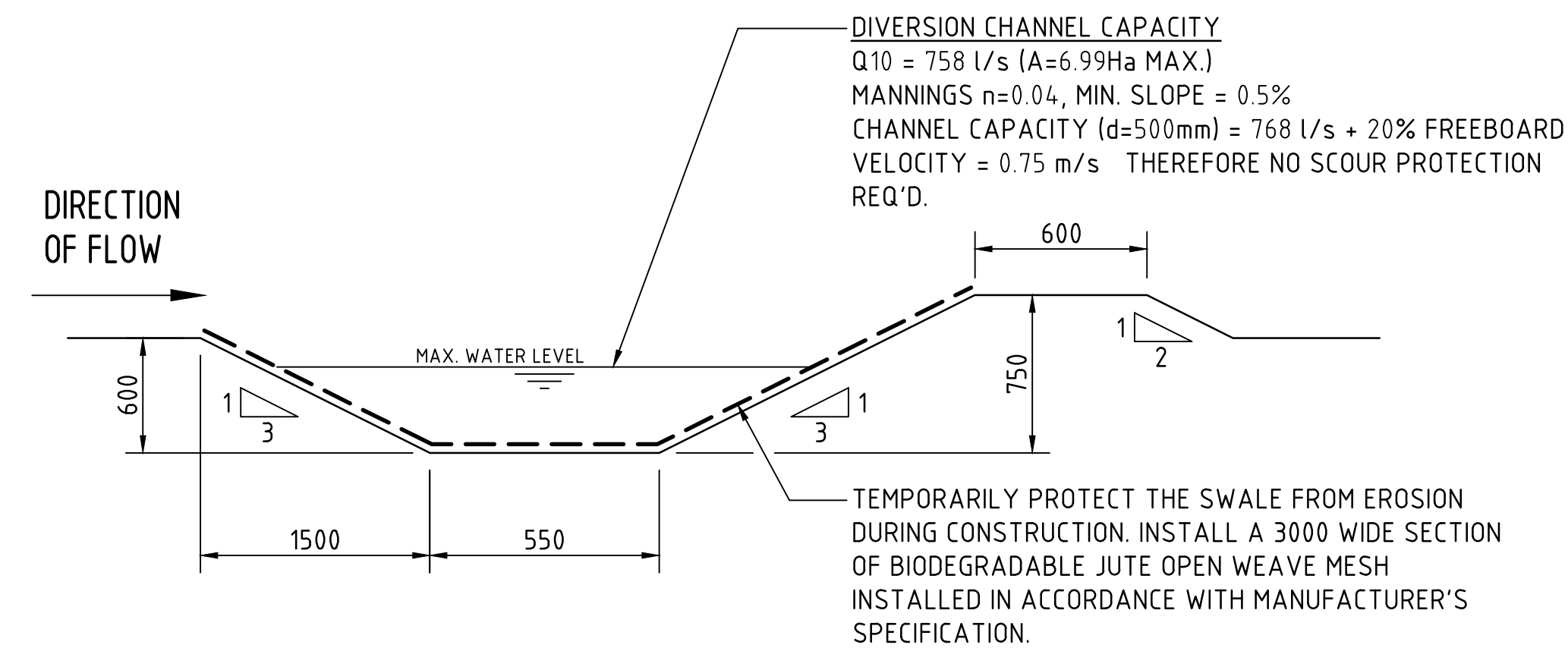


TYPICAL SILT FENCE DETAIL
N.T.S

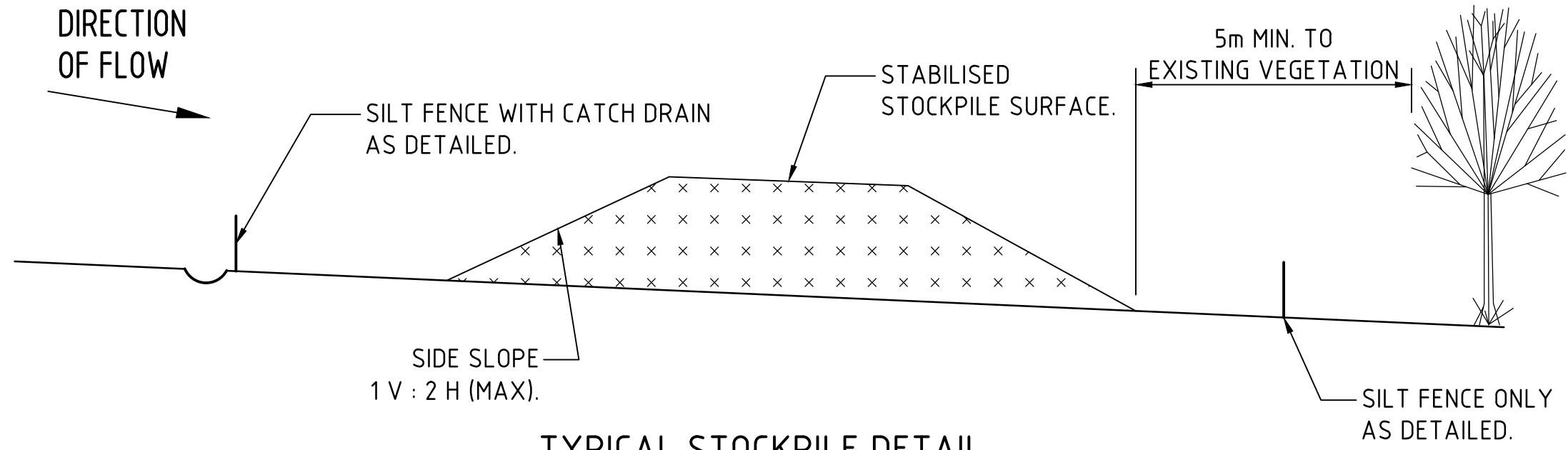
NOTE: PROVIDE 1m RETURNS AT 30m INTERVALS. TYPICAL



TYPICAL OPEN DRAIN & SILT FENCE
SCALE 1:20

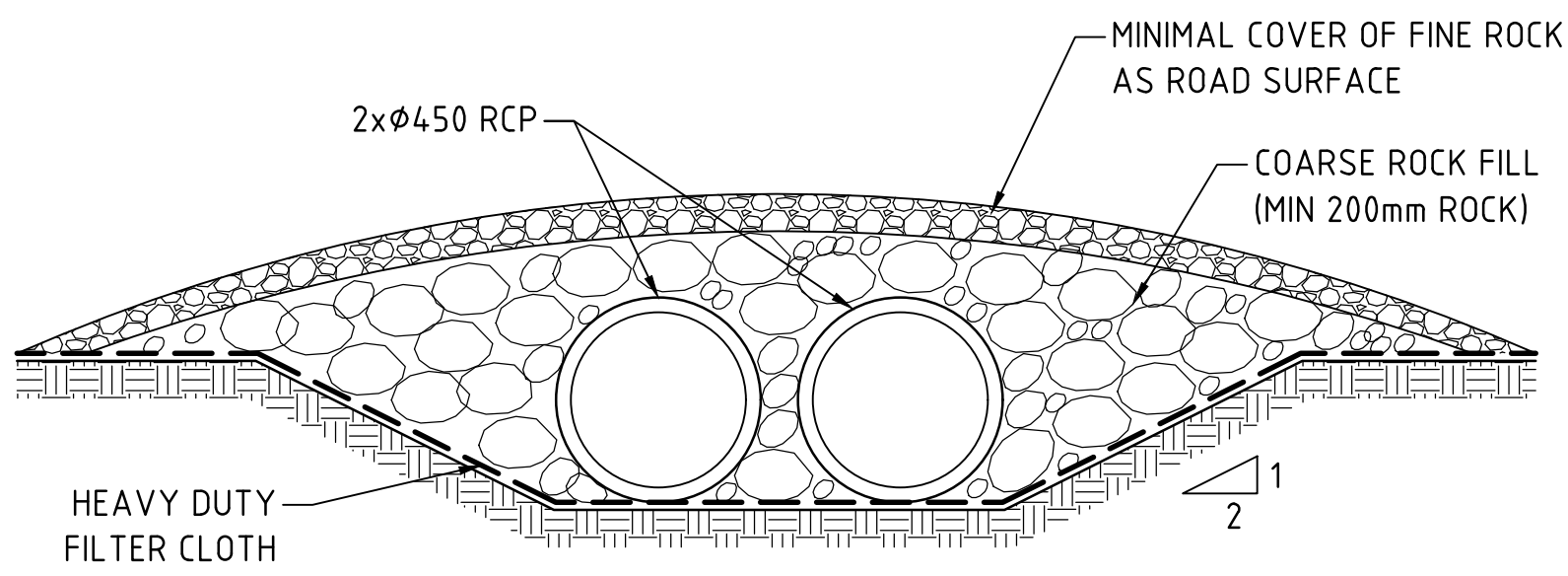


DIVERSION DRAIN SECTION
SCALE 1:20

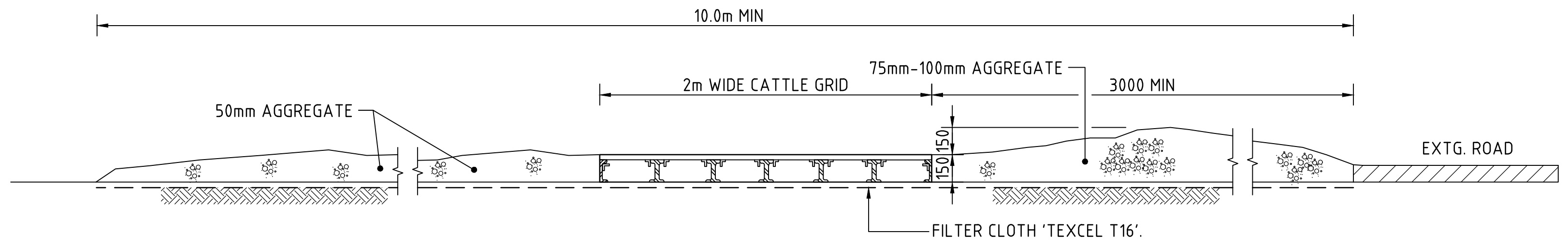


TYPICAL STOCKPILE DETAIL
N.T.S

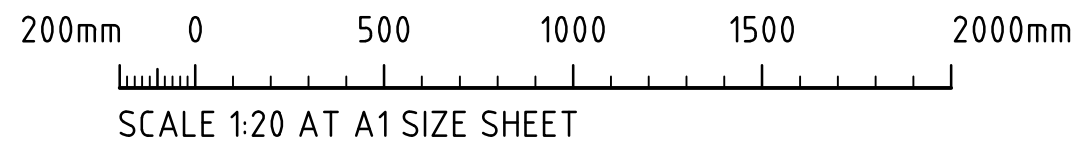
STOCKPILE NOTES
1. PLACE ALL STOCKPILES IN LOCATIONS MORE THAN 5m FROM EXISTING VEGETATION, ROADS & HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT ELONGATED MOUNDS. SIDE SLOPE TO BE 1 V : 2 H MAX.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2m IN HEIGHT.
4. WHERE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



TYPICAL CROSSING OVER DIVERSION CHANNEL
SCALE 1:20



SECTION 1:20 : STABILISED CONSTRUCTION ENTRANCE 'TRUCK SHAKER'



FOR DEVELOPMENT APPLICATION

ISSUED FOR DEVELOPMENT APPLICATION	02.03.23	B
ISSUED FOR INFORMATION	05.09.22	A
AMENDMENTS	DATE	ISSUE

ARCHITECT

[watch this] SPACE design

CLIENT

Charter Hall

PROJECT

PROPOSED WAREHOUSE DEVELOPMENT

149-155 AIRDS ROAD, MINTO

NSW, 2566

DESIGNED	IL	DRAWN	IL	DATE	AUG '22	CHECKED	DS	SIZE	A1	SCALE	AS SHOWN	CAD REF:	C014521.01-DA2-25
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CRC

COSTIN ROE CONSULTING

CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE

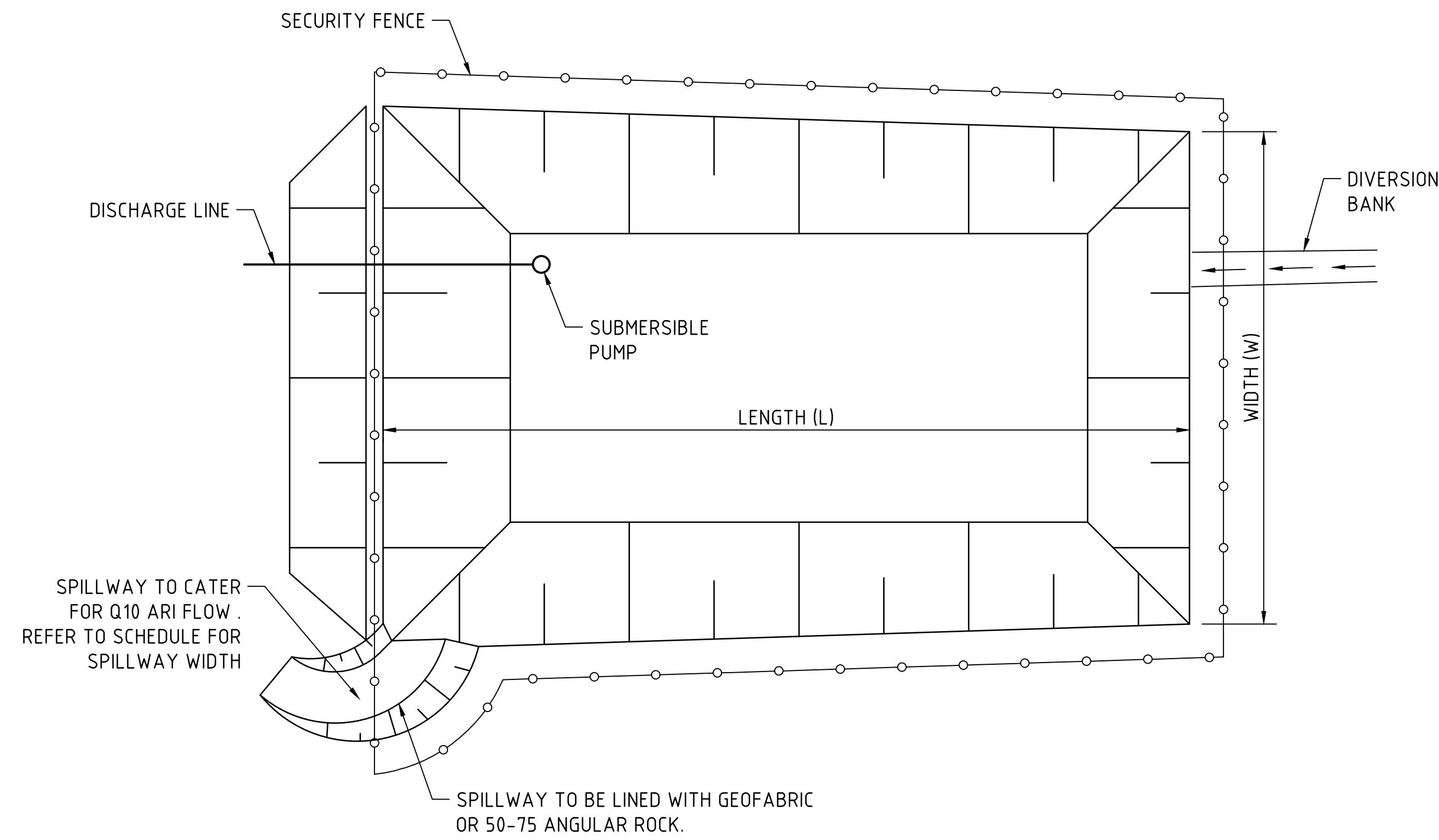
EROSION & SEDIMENT CONTROL DETAILS SHEET 1

DRAWING No

C014521.01-DA 2-25

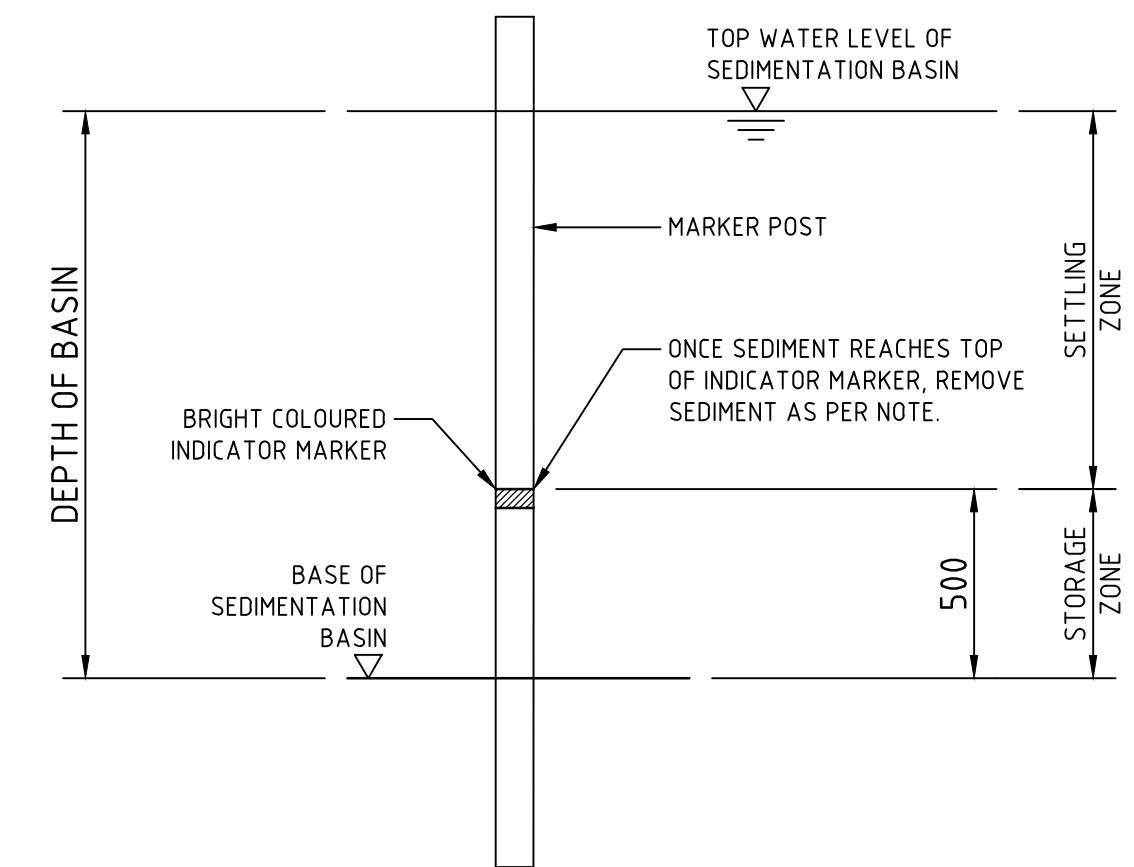
ISSUE

B

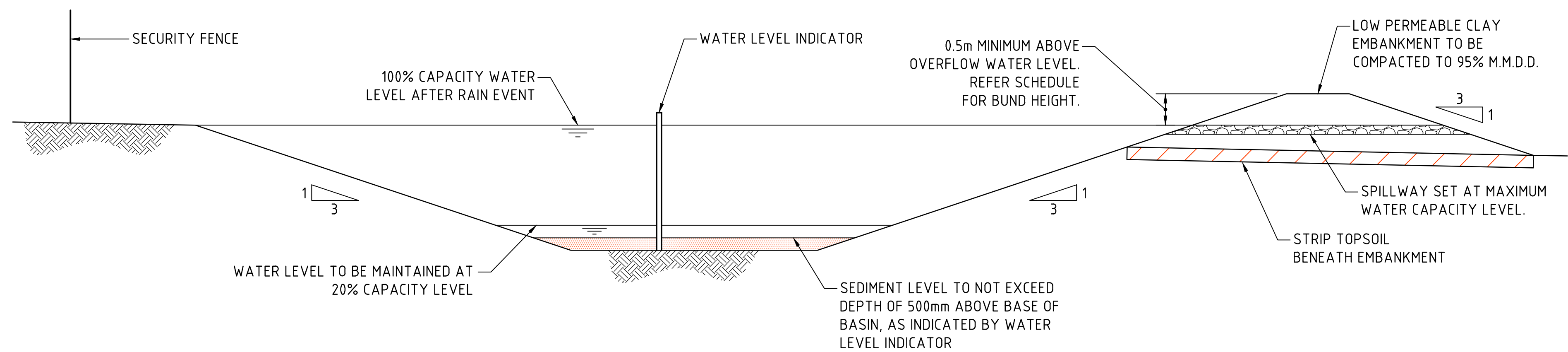


TYPICAL SEDIMENT CONTROL POND PLAN
SCALE 1:250

SPILLWAY SCHEDULE					
CATCHMENT (Ha)	FLOW (m ³ /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



SEDIMENT STORAGE MARKER
SCALE 1:20



TYPICAL SEDIMENT CONTROL BASIN SECTION
SCALE 1:50

2m 0 5 10 15 20 25m
SCALE 1:250 AT A1 SIZE SHEET

500mm 0 1 2 3 4 5m
SCALE 1:50 AT A1 SIZE SHEET

200mm 0 500 1000 1500 2000mm
SCALE 1:20 AT A1 SIZE SHEET

FOR DEVELOPMENT APPLICATION

ISSUED FOR DEVELOPMENT APPLICATION	02.03.23	B
ISSUED FOR INFORMATION	05.09.22	A
AMENDMENTS	DATE	ISSUE

ARCHITECT

[watch this] **SPACE** design

CLIENT

Charter Hall

PROJECT

PROPOSED WAREHOUSE DEVELOPMENT
149-155 AIRDS ROAD, MINTO
NSW, 2566

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
IL	IL	AUG '22	DS	A1	AS SHOWN	C014521.01-DA-2-26

CONSULT AUSTRALIA

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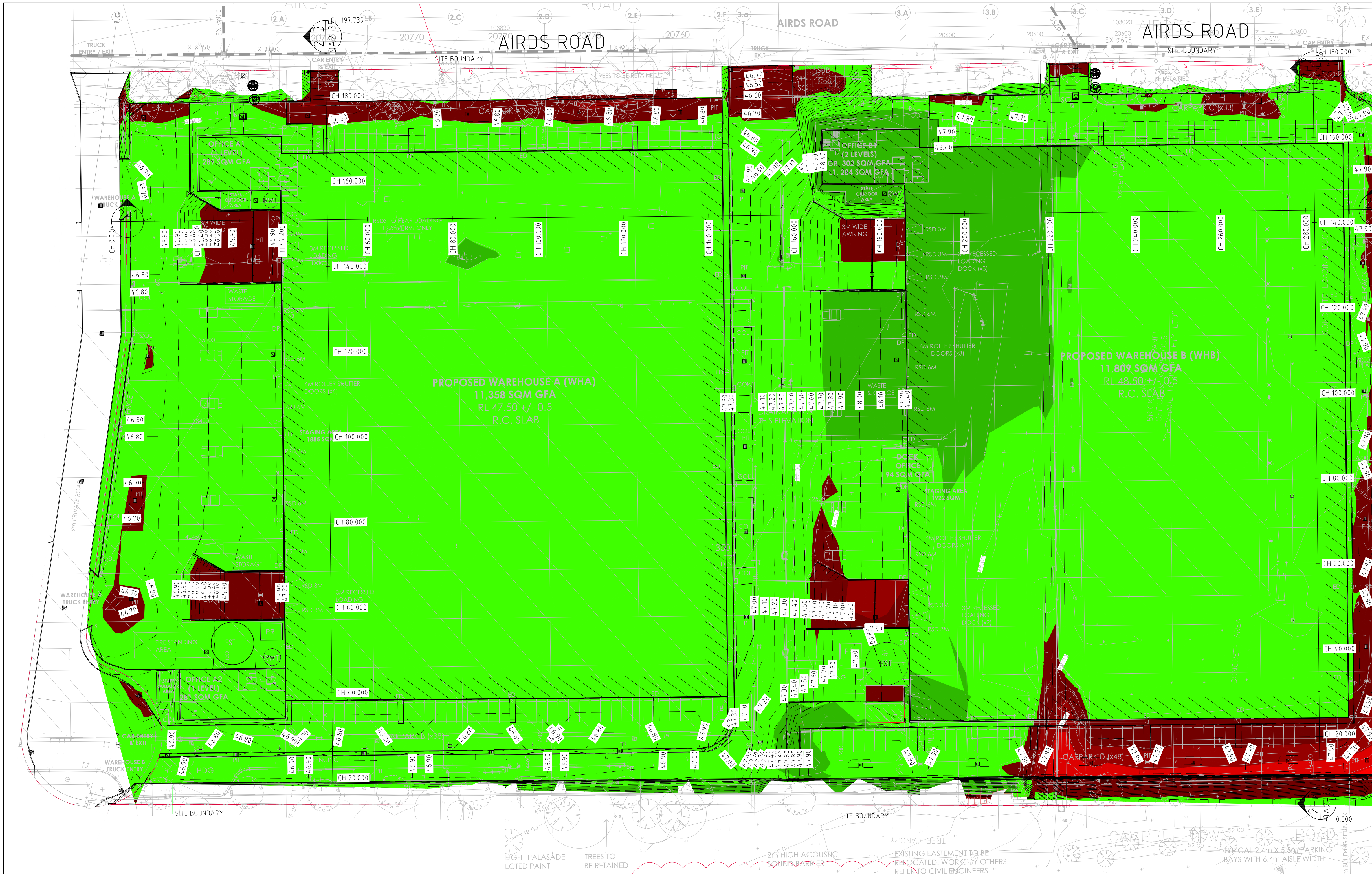
CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE

EROSION & SEDIMENT CONTROL DETAILS
SHEET 2

DRAWING No C014521.01-DA 2-26

ISSUE B



EARTHWORK ESTIMATES

SITE AREA = 5.1 Ha

TOPSOIL STRIP = (-10,200m³) (TO BE EXPORTED/REUSED)
(200mm OVER 5.1Ha)
REFER TO GEOTECHNICAL ADVICE FOR POTENTIAL BLENDING OPTION.
ANY BLENDING OF TOPSOIL IS TO BE REFERRED TO THE ENGINEER FOR APPROVAL PRIOR TO IMPLEMENTING IN THE EARTHWORKS.

CUT = -2,800m³
FILL = +27,950m³

ALLOWANCES
DETAILED EXCAVATION = - 7,650m³
(1,500m³/Ha OVER 5.1HA DEVELOPMENT AREA)

DIFFERENCE = + 17,500m³ (i.e. FILL OVER CUT)

NOTE:
VOLUMES BASED ON 200mm TOPSOIL STRIP OVER THE NOMINATED AREAS. EARTHWORKS VOLUMES ARE APPROXIMATE ONLY.
NO ALLOWANCE HAS BEEN MADE FOR DELETERIOUS MATERIAL, EROSION AND SEDIMENT CONTROL, BULKING OR COMPACTION OF FILLED SOILS, THE REMOVAL OF UNCONTROLLED OR CONTAMINATED MATERIAL OR ANY OTHER UNSPECIFIED EXCAVATION RELATED TO CONSTRUCTION ACTIVITIES. DETAILED EXCAVATION ALLOWANCE IS APPROXIMATE ONLY AND ACCOUNTS FOR STORMWATER/SERVICES TRENCHING AND FOUNDATIONS. THE DETAILED EXCAVATION VOLUMES ARE TO BE CONFIRMED BY THE CONTRACTOR. REFER ANY CONCERNS TO ENGINEER.

- ### GENERAL NOTES:

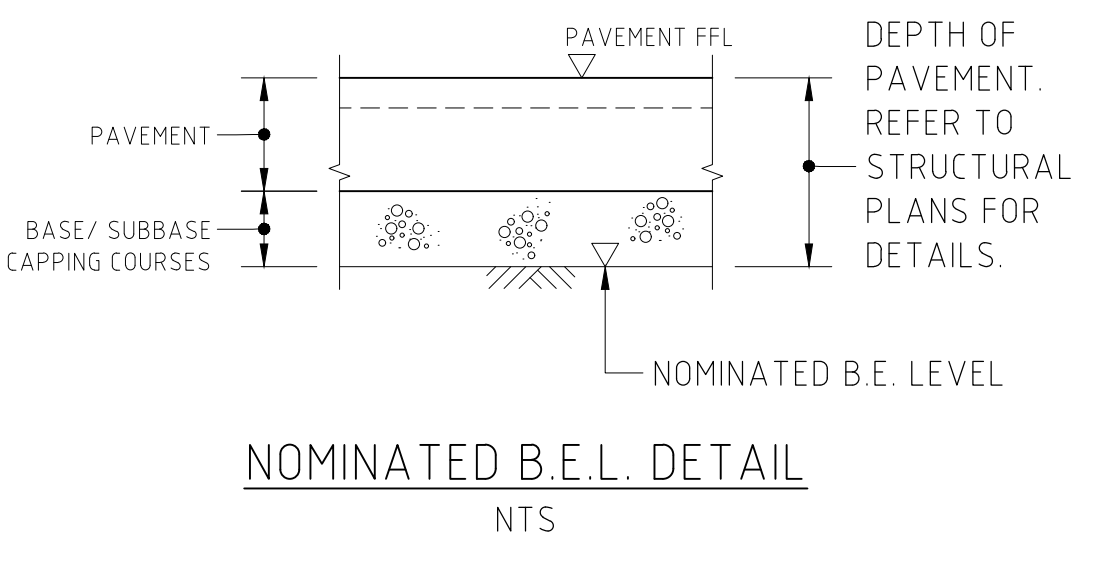
 - THE PROVIDED SURVEY DOES NOT CONTAIN THE INTERNAL FLOOR LEVEL SURFACE FOR THE EXISTING BUILDINGS. THEREFORE, A FLAT INNER SURFACE WAS CREATED BASED ON THE PRESENTED INTERNAL LEVELS. THOSE LEVELS ARE TO BE CONFIRMED BEFORE CONSTRUCTION.

- ### LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY LANDPARTNERS SURVEYORS
REFERENCE: SY075644.000.1.2 DATED 2/12/2022.

 - 50.00 — - EXISTING CONTOUR (0.5m INTERVAL)
 - 50.00 — - B.E.L. CONTOUR (MAJOR 0.5m)
 - 50.10 — - B.E.L. CONTOUR (MINOR 0.1m)
 - + 50.00 - B.E.L. SPOT LEVEL

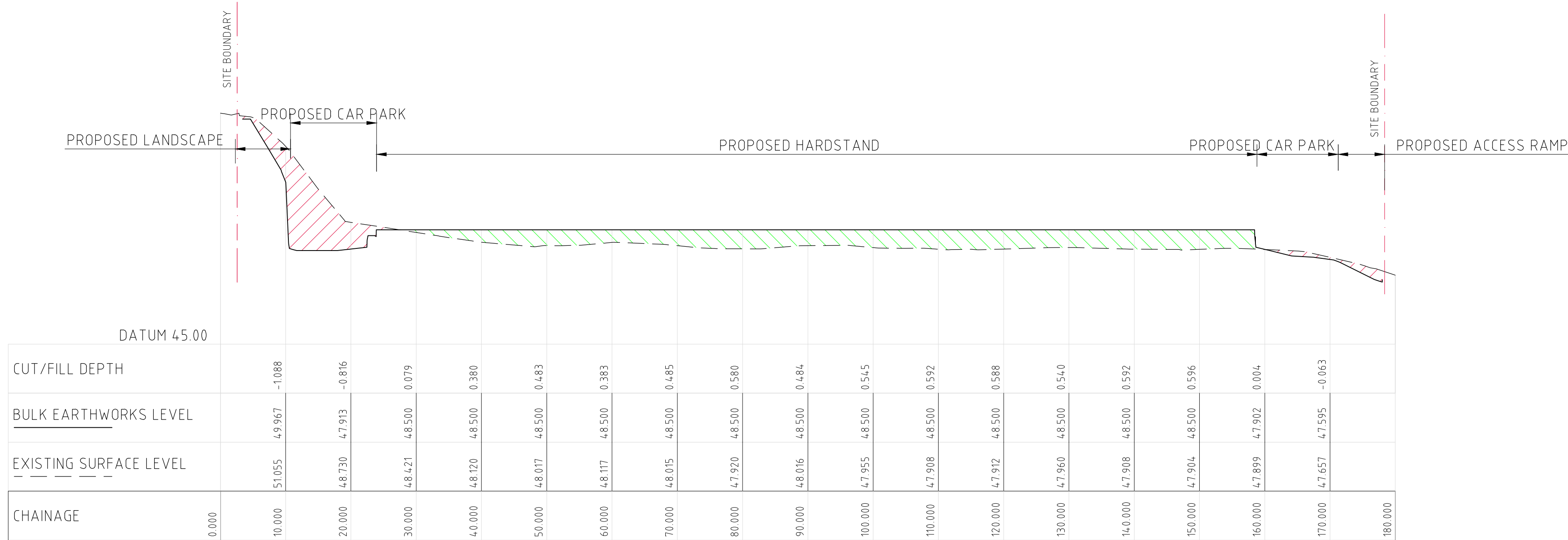


DEPTH RANGE				
No.	FROM DEPTH	TO DEPTH	COLOUR	DEPTH RANGE VOLUME
1	-4.000	-3.000	■	1m ³
2	-3.000	-2.000	■	96m ³
3	-2.000	-1.000	■	4.79m ³
4	-1.000	0.000	■	2051m ³
5	0.000	1.000	■	26673m ³
6	1.000	2.000	■	1176m ³
7	2.000	3.000	■	0m ³

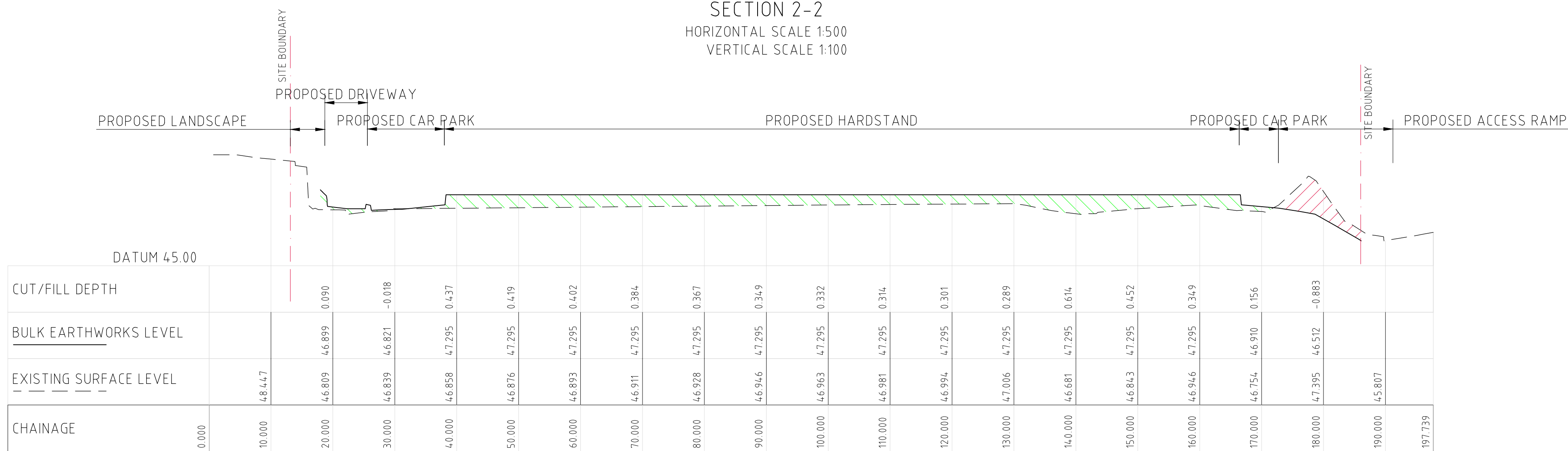
ALLOWANCES FOR STRUCTURE	
	DEPTH OF PAVEMENT
INTERNAL WAREHOUSE	205mm
OFFICE	110mm
EXTERNAL HARDSTAND	280mm
CAR PARK	330mm
LANDSCAPING	100mm
PEDESTRIAN	125mm

BULK EARTHWORKS PLAN
SCALE 1:500

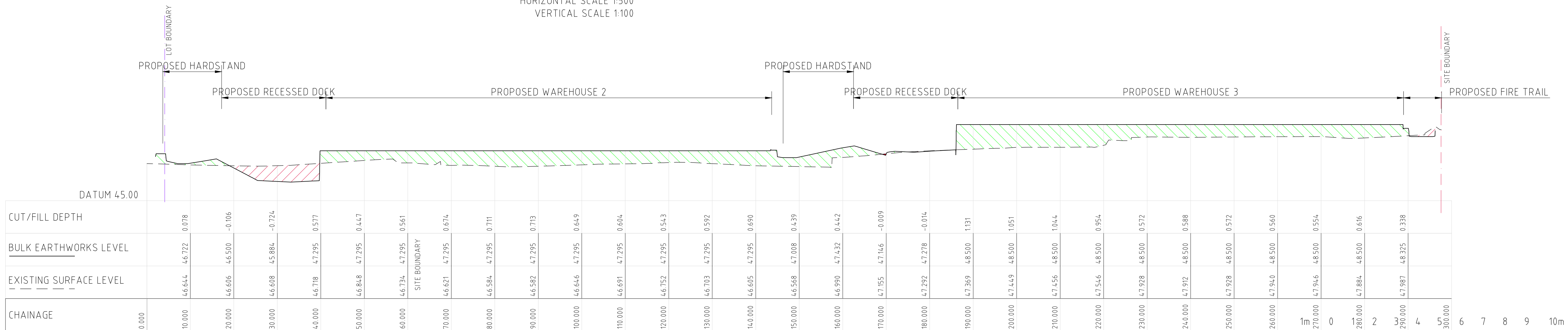
FOR DEVELOPMENT APPLICATION



SECTION 2-2
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



SECTION 2-3
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



SECTION 2-1
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

1m 0 1 2 3 4 5 6 7 8 9 10m
SCALE 1:100 AT A1 SIZE SHEET

5m 0 10 20 30 40 50m
SCALE 1:500 AT A1 SIZE SHEET

FOR DEVELOPMENT APPLICATION

UPDATED TO ARCHITECTURAL LAYOUT	16.11.23	B
ISSUED FOR DEVELOPMENT APPLICATION	03.11.23	A
AMENDMENTS	DATE	ISSUE

ARCHITECT

[watch this] **SPACE** design

CLIENT

Charter Hall

PROJECT

PROPOSED WAREHOUSE DEVELOPMENT
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NSW, 2566

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF.
IL	IL	AUG '22	DS	A1	AS SHOWN	C014521.01-DA2-30

CONSULT AUSTRALIA

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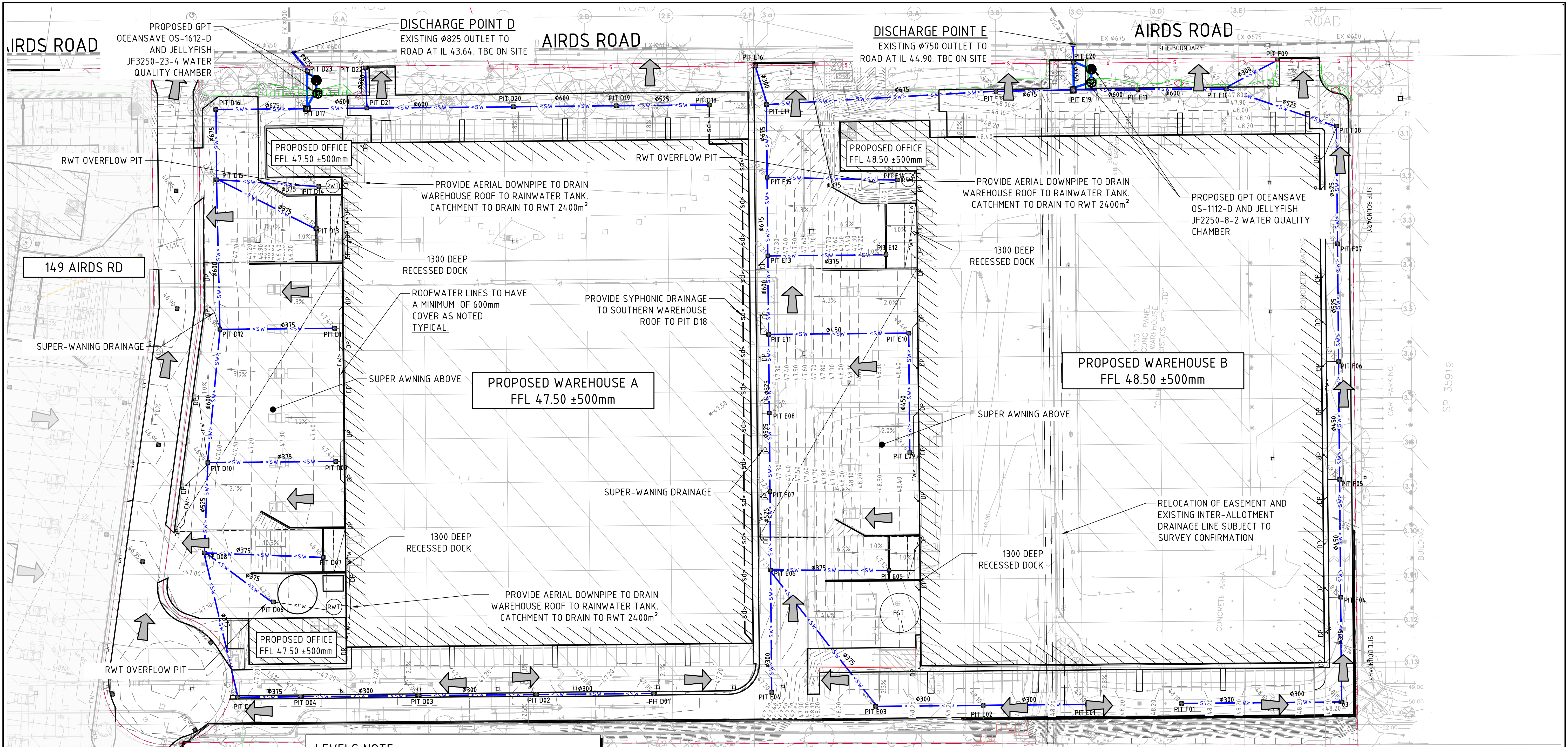
CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE

BULK EARTHWORKS SECTIONS

DRAWING No C014521.01-DA2-35

ISSUE B



LEGEND:

LEVELS DATUM IS AHD.

- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- GD, GRATED DRAIN (300W x 225D UNO)
- PROPOSED DRAINAGE LINE
- PROPOSED PUMP OUT PIT DRAINAGE LINE
- ROOFWATER DOWNPIPE (INDICATIVE)
- ROOFWATER LINE
- OVERLAND FLOW DIRECTION
- FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS

LEVELS NOTE:

LEVELS SHOWN TO BE +V-500mm FROM THOSE SHOWN. FINAL LEVELS SUBJECT TO FINAL GEOTECHNICAL INVESTIGATIONS, ARCHITECTURAL LAYOUT AND ACHIEVING A CUT TO FILL EARTHWORKS BALANCE OVER THE PROPERTY.

STORMWATER DRAINAGE NOTES:

- ALL STORMWATER WORKS TO BE COMPLETED IN ACCORDANCE WITH AUSTRALIAN STANDARD AS3500.3 PLUMBING AND DRAINAGE, PART 3: STORMWATER DRAINAGE.
- 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.
- ALL FINISHED PAVEMENT LEVELS SHALL BE AS INDICATED ON FINISHED LEVELS PLANS DA250.
- PIT SIZES SHALL BE AS INDICATED IN THE SCHEDULE WHILE PIPE SIZES AND DETAILS ARE PROVIDED ON PLAN.
- EXISTING STORMWATER PIT LOCATIONS AND INVERT LEVELS TO BE CONFIRMED BY SURVEY PRIOR TO COMMENCING WORKS ON SITE.
- ALL STORMWATER PIPES Ø375 OR GREATER SHALL BE CLASS 2 (WITH HS2 SUPPORT) REINFORCED CONCRETE WITH RUBBER RING JOINTS UNLESS NOTED OTHERWISE.
- ALL PIPES UP TO AND INCLUDING Ø300 TO BE uPVC GRADE S8 UNO.
- PIPE CLASS NOMINATED ARE FOR IN-SERVICE LOADING CONDITIONS ONLY. CONTRACTOR IS TO MAKE ANY NECESSARY ADJUSTMENTS REQUIRED FOR CONSTRUCTION CONDITIONS.
- ALL CONCRETE PITS GREATER THAN 1000mm DEEP SHALL BE REINFORCED USING N12-200 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.
- IN ADDITION TO ITEM 9 ABOVE, ALL CONCRETE PITS GREATER THAN 3000mm DEEP SHALL HAVE WALLS AND BASE THICKNESS INCREASED TO 200mm.
- 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.
- CONCRETE PIPES 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.
- WHERE PIPE LINES ENTER PITS, PROVIDE 2m LENGTH OF STOCKING WRAPPED SLOTTED Ø100 uPVC TO EACH SIDE OF PIPE.
- ALL SUBSOIL DRAINAGE LINES SHALL BE Ø100 SLOTTED uPVC WITH APPROVED FILTER WRAP LAID IN 300mm WIDE GRANULAR FILTER UNLESS NOTED OTHERWISE. LAY SUBSOIL LINES TO MATCH FALLS OF LAND AND/OR 1 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.
- WHERE SUBSOIL DRAINAGE PASSES UNDER A PAVEMENT OR A SLAB, UNSLOTTED uPVC ARE TO BE PROVIDED UNLESS NOTED OTHERWISE.
- ALL PIPE GRADES 1 IN 200 MINIMUM UNO.
- PROVIDE STEP IRONS IN PITS DEEPER THAN 1000mm.
- MIN. 600 COVER TO PIPE OBVERT BENEATH ROADS & MIN. 400 COVER BENEATH LANDSCAPED AND PEDESTRIAN AREAS.
- PIT COVERS IN TRAFFICABLE PAVEMENT SHALL BE CLASS 3 'HEAVY DUTY', THOSE LOCATED IN NON-TRAFFICABLE AREAS SHALL BE CLASS B 'MEDIUM DUTY' UNO.
- PROVIDE CLEANING EYES (RODDING POINTS) TO PIPES AT ALL CORNERS AND T-JUNCTIONS WHERE NO PITS ARE PRESENT.
- 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.
- 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.
- 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.

FOR DEVELOPMENT APPLICATION

STORMWATER DRAINAGE PLAN

SCALE 1:500

5m 0 10 20 30 40 50m

SCALE 1:500 AT A1 SIZE SHEET

DRAINAGE LAYOUT AND PIT LABELS REVISED	16.11.23	E
REVISED TO UPDATED ARCHITECTURAL LAYOUT	03.11.23	B
ISSUED FOR DEVELOPMENT APPLICATION	02.03.23	C
REVISED AS CLOUDED	17.10.22	B
ISSUED FOR INFORMATION	01.09.22	A
AMENDMENTS	DATE	ISSUE

ARCHITECT



CLIENT



PROJECT

PROPOSED WAREHOUSE DEVELOPMENT
149-155 AIRDS ROAD, MINTO
NSW, 2566

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF.
IL	IL	AUG '22	DS	A1	AS SHOWN	C014521.01-DA2-4.0



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CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE

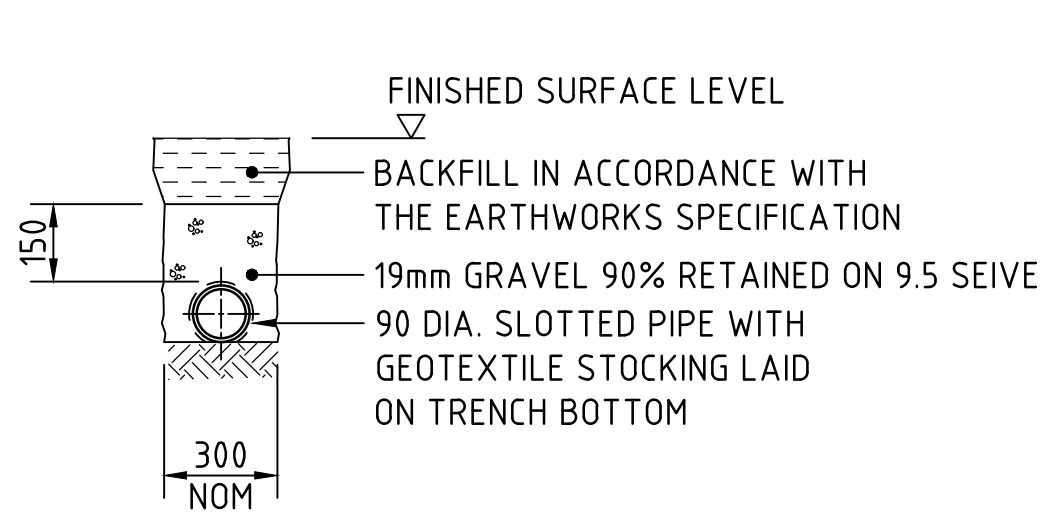
STORMWATER DRAINAGE PLAN

DRAWING No

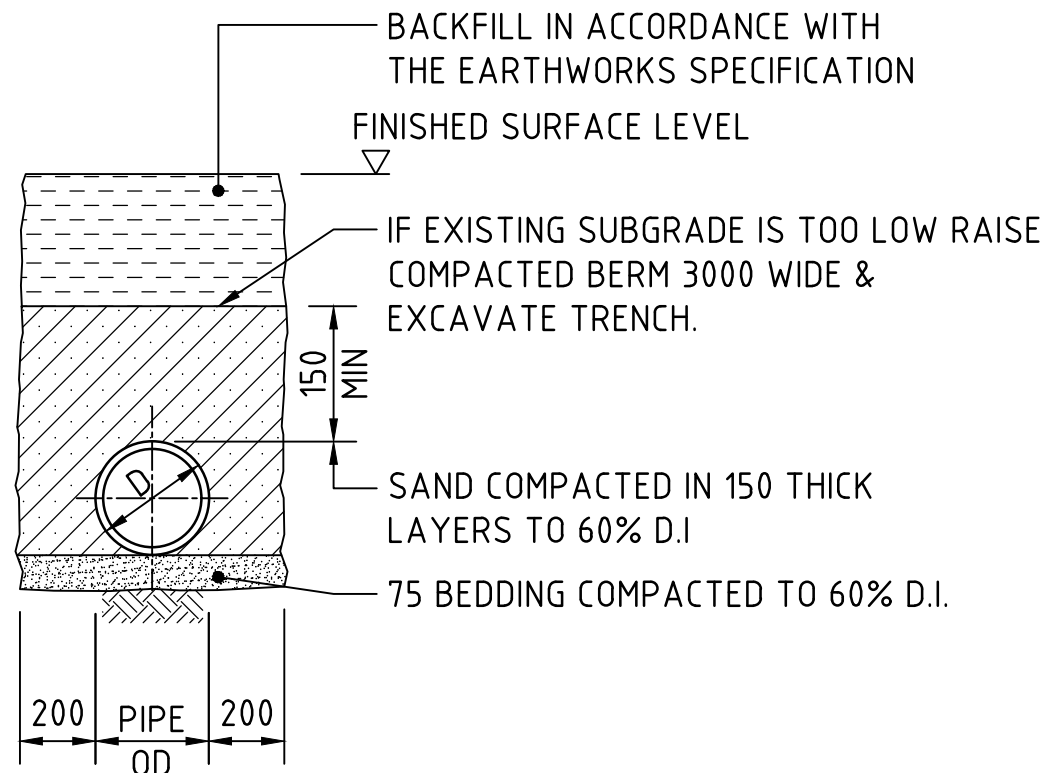
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ISSUE

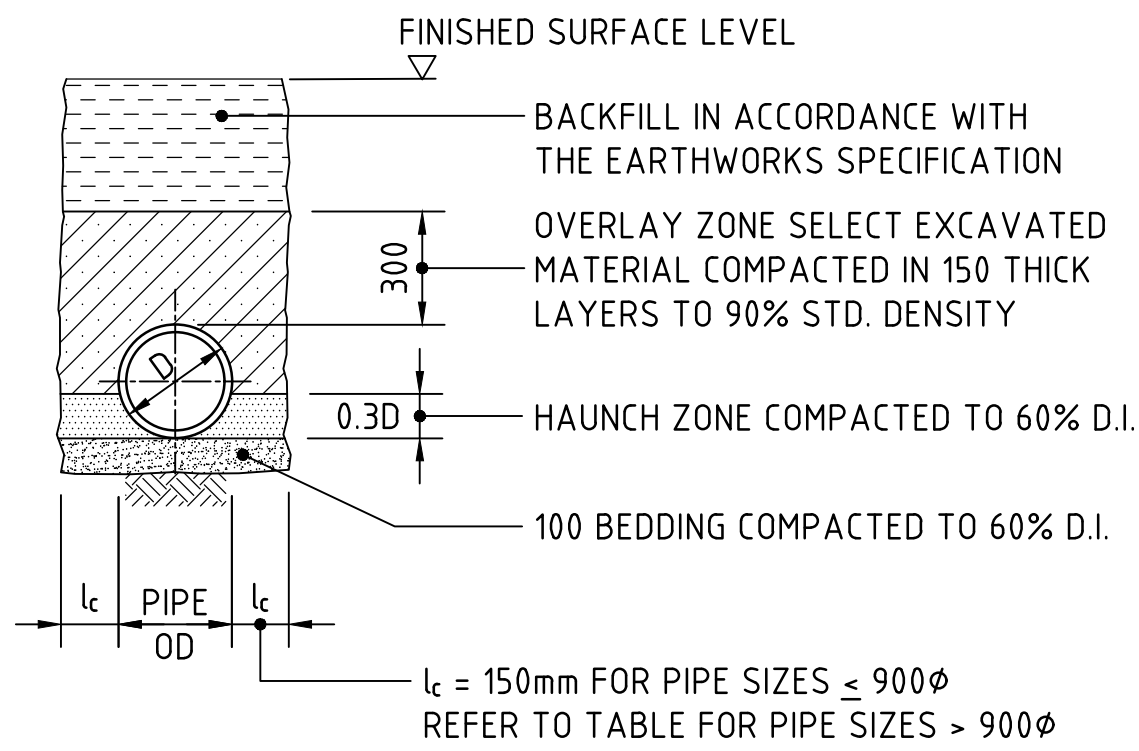
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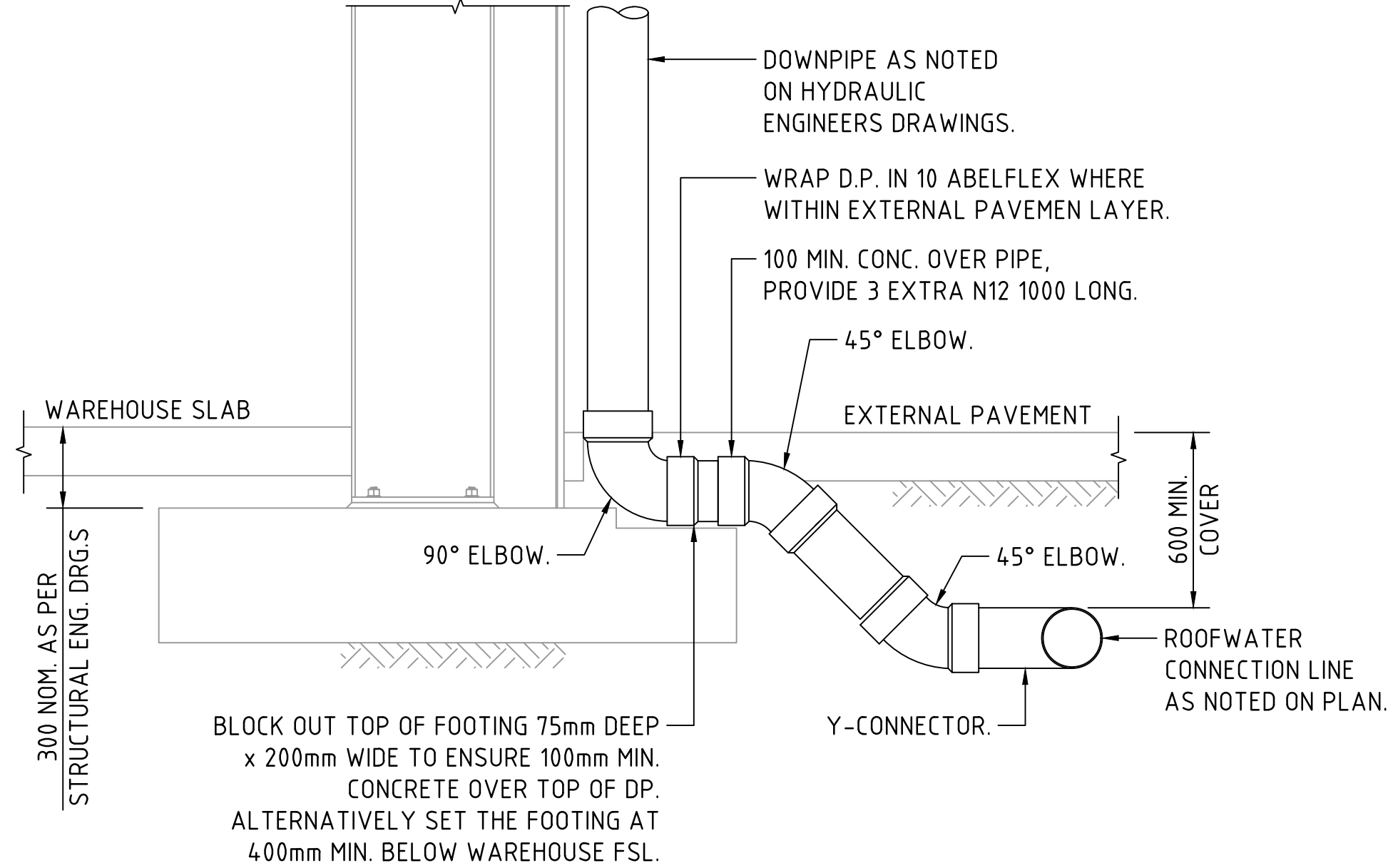
SUPPORT TO AGRICULTURAL DRAIN
SCALE 1:20



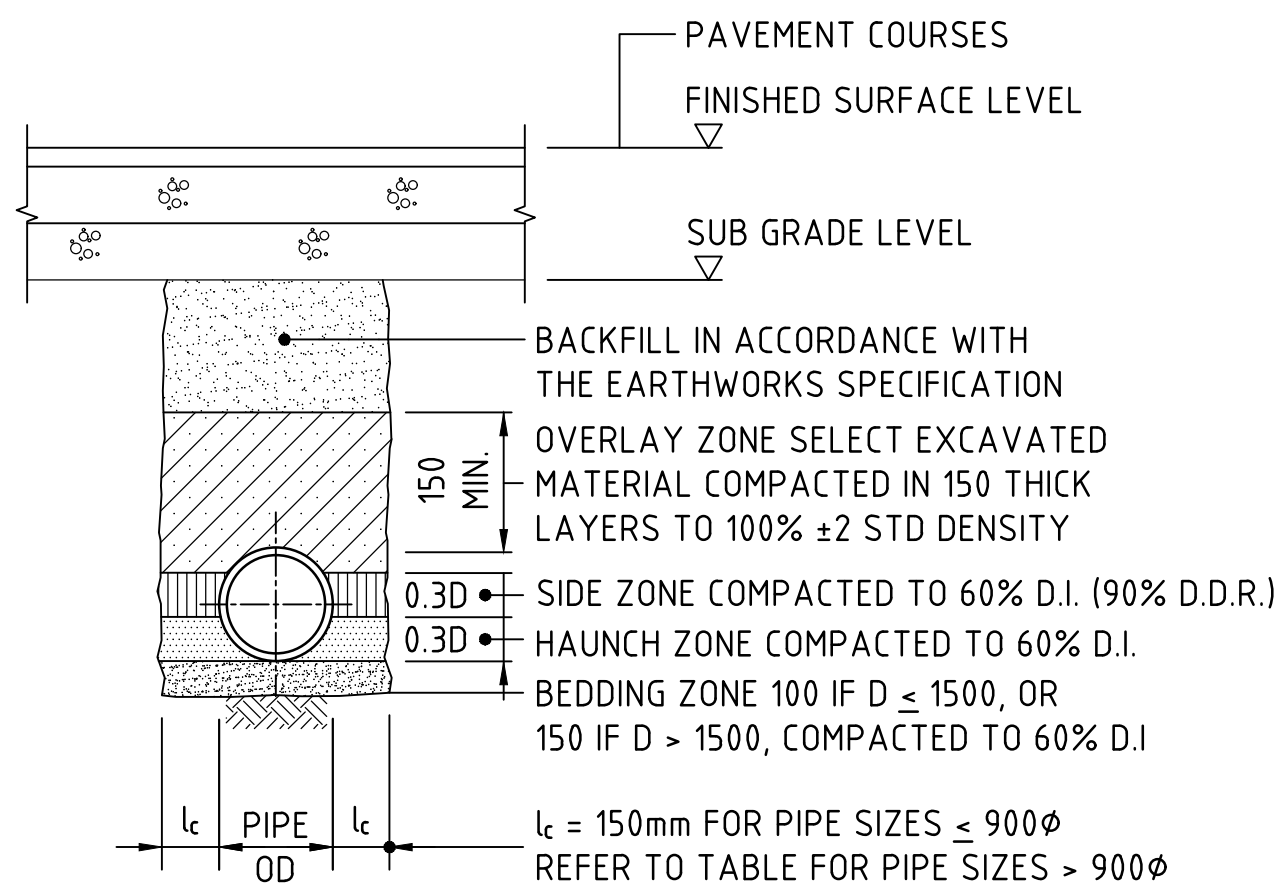
SUPPORT TO uPVC PIPES
SCALE 1:20



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

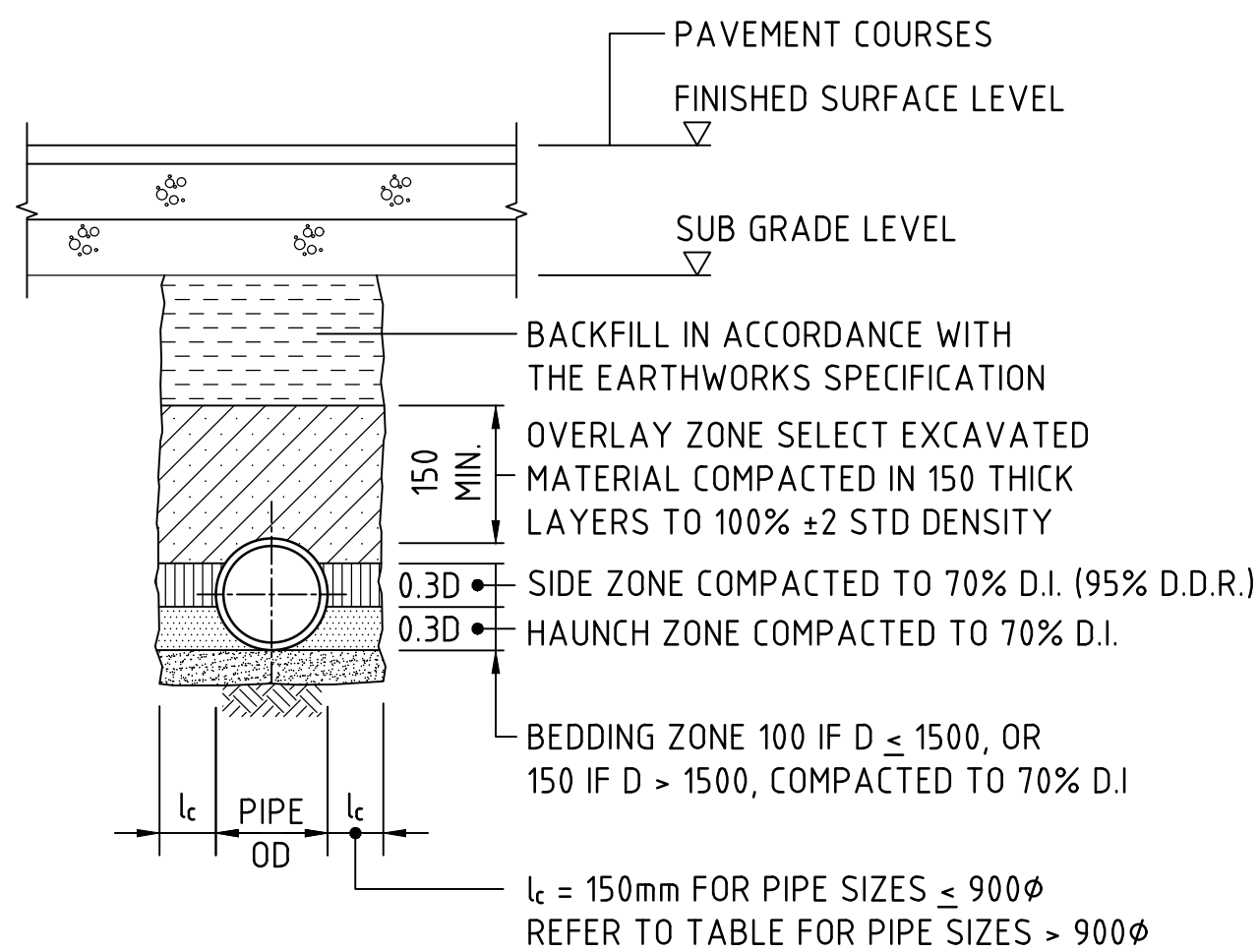


DOWNPIPE TURN-UP DETAIL A
(AT FOOTING LOCATION)
SCALE 1:20



TYPE HS2 SUPPORT TO CONCRETE PIPES UNDER PAVEMENT

SCALE 1:20
D ≤ 1350, MAX FILL = 4.0m
D > 1350, MAX FILL = 3.0m



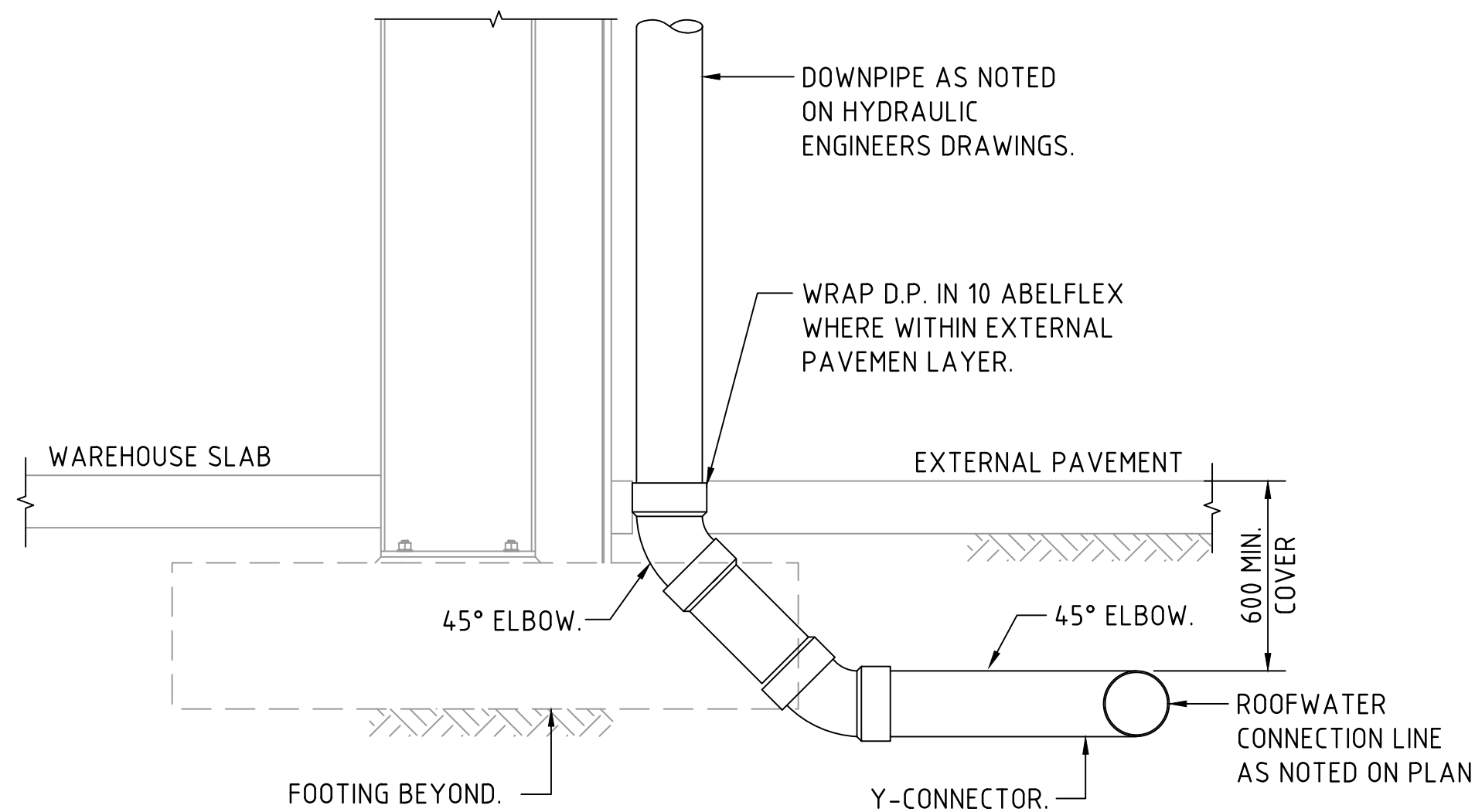
TYPE HS3 SUPPORT TO CONCRETE PIPES UNDER PAVEMENT

SCALE 1:20
D ≤ 1050, MAX FILL = 6.0m
D > 1050, MAX FILL = 4.8m

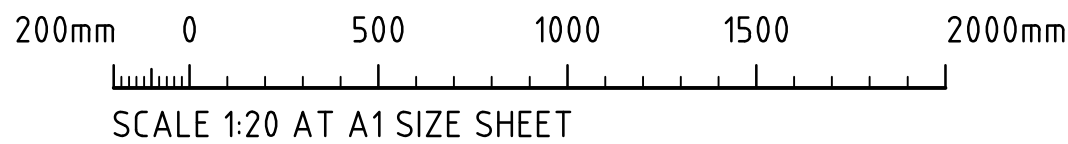
BEDDING & HAUNCH MATERIAL GRADING	
SIEVE SIZE (mm)	WEIGHT PASSING (%)
19.0	100
2.36	100 TO 50
0.60	90 TO 50
0.30	60 TO 10
0.15	25 TO 0
0.075	10 TO 0

SIDE ZONE WIDTH	
PIPE SIZE (mm)	l _c (mm)
≤ 900φ	150
1050φ	175
1200φ	200
1350φ	225
1500φ	250
1650φ	275
1800φ	300
ENGINEER TO SPECIFY TRENCH WIDTHS FOR PIPE SIZES GREATER THAN 1800φ	

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	



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



FOR DEVELOPMENT APPLICATION

ISSUED FOR DEVELOPMENT APPLICATION	02.03.23	B
ISSUED FOR INFORMATION	01.09.22	A
AMENDMENTS	DATE	ISSUE

ARCHITECT

[watch this] **SPACE** design

CLIENT

Charter Hall

PROJECT

PROPOSED WAREHOUSE DEVELOPMENT
149-155 AIRDS ROAD, MINTO
NSW, 2566

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
IL	IL	AUG '22	DS	A1	AS SHOWN	C014521.01-DA2-45

CONSULT AUSTRALIA

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CRC
COSTIN ROE CONSULTING

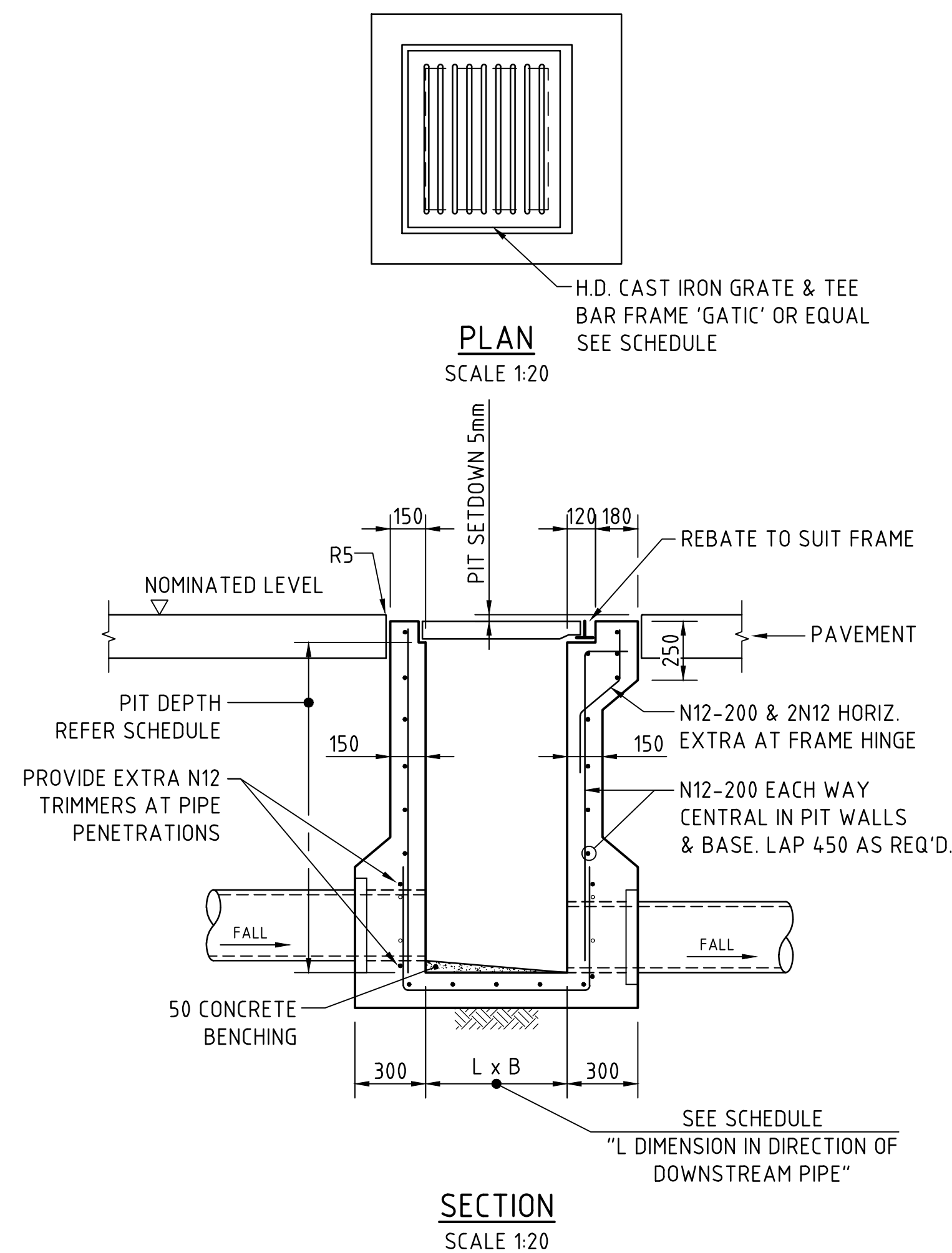
CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE

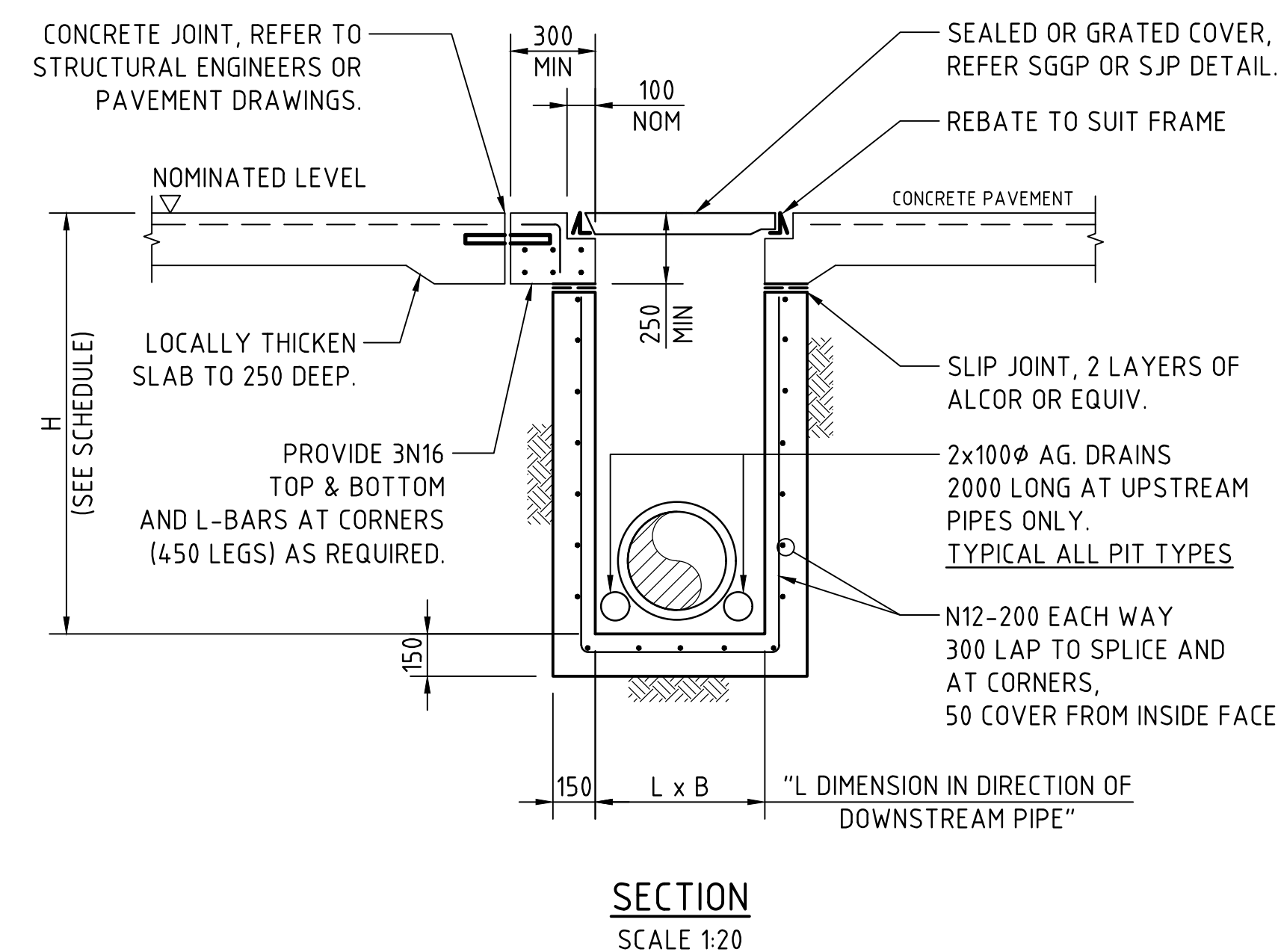
STORMWATER DRAINAGE DETAILS SHEET 1

DRAWING No C014521.01-DA 2-45

ISSUE B

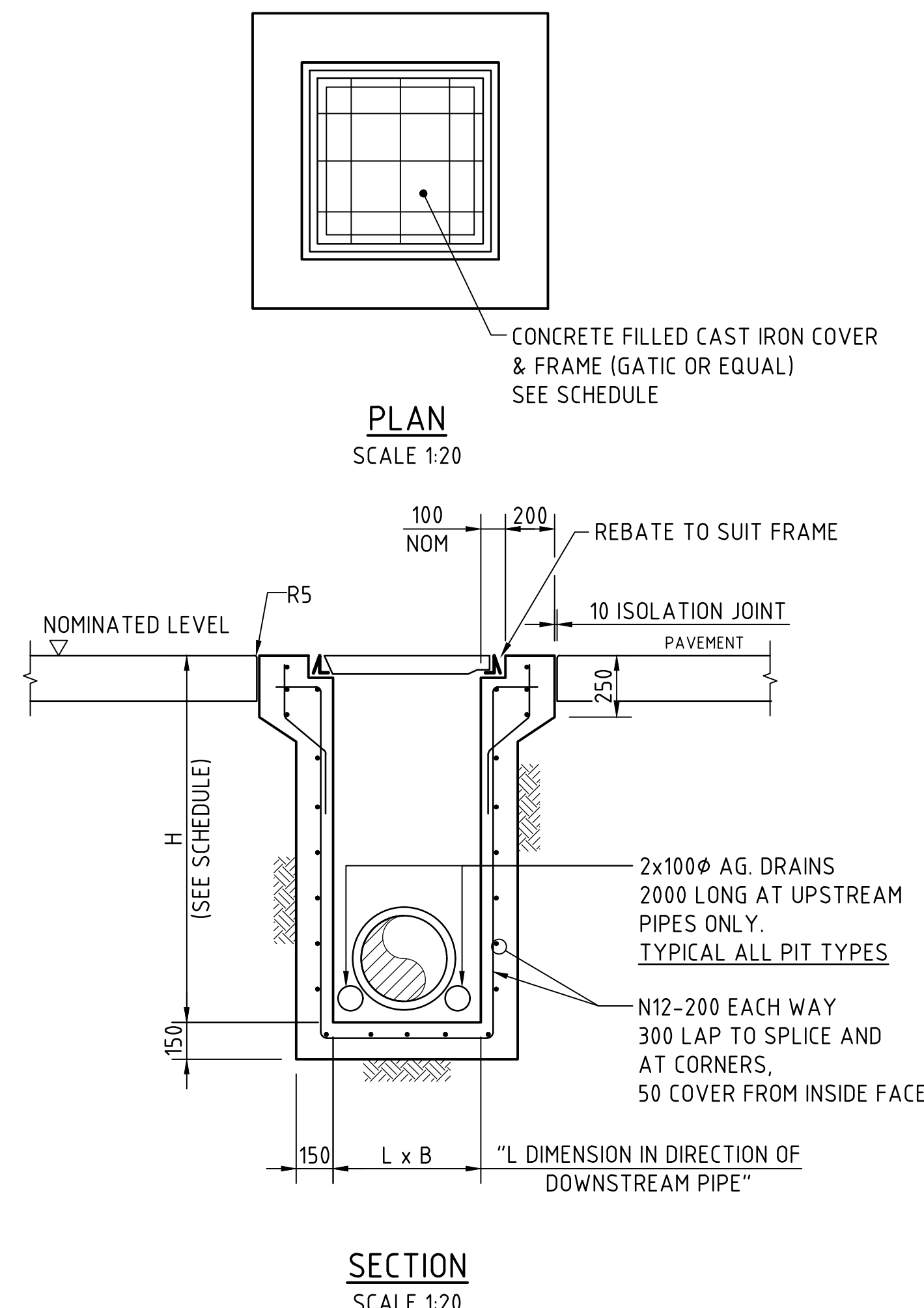


SINGLE GRATED GULLY PIT - SGGP

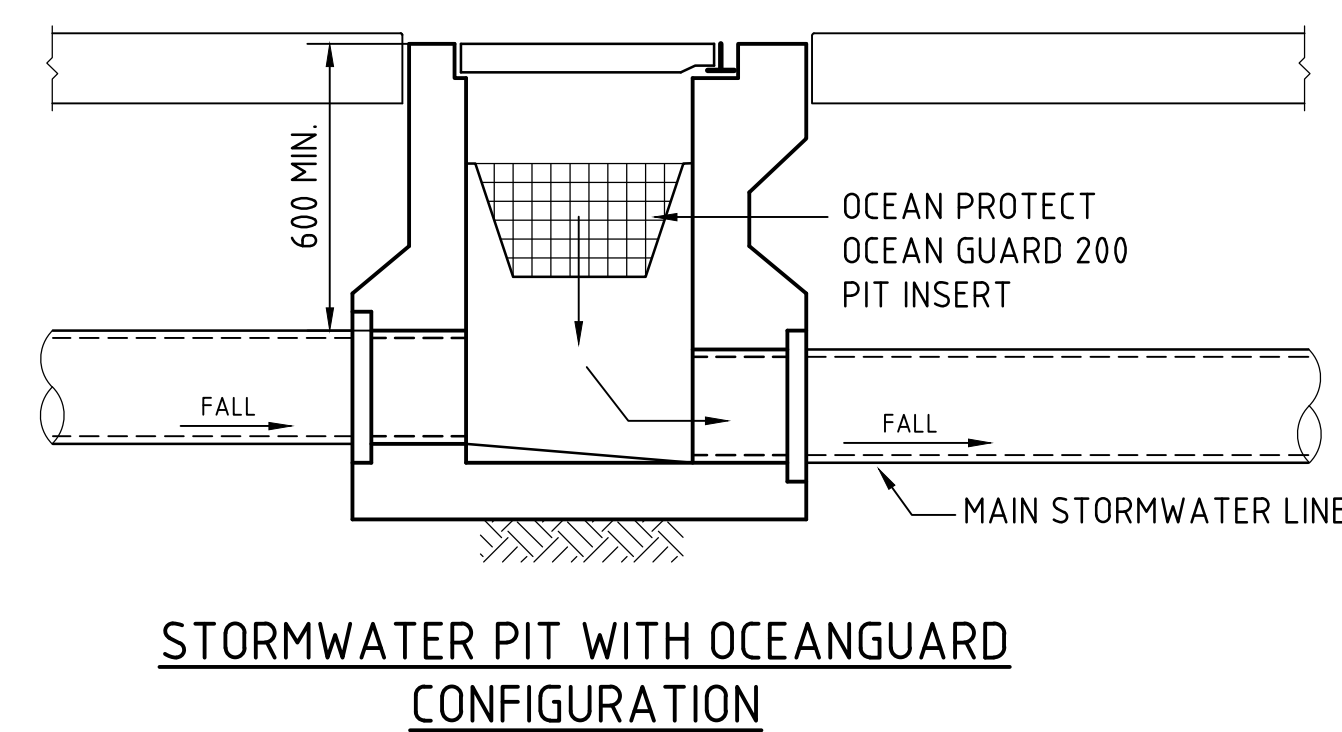


**SJP/CIS & SGGP/CIS (CAST IN SLAB) PIT DETAIL
GRATE/COVER SUPPORT
CAST-INTO PAVEMENT SLAB**

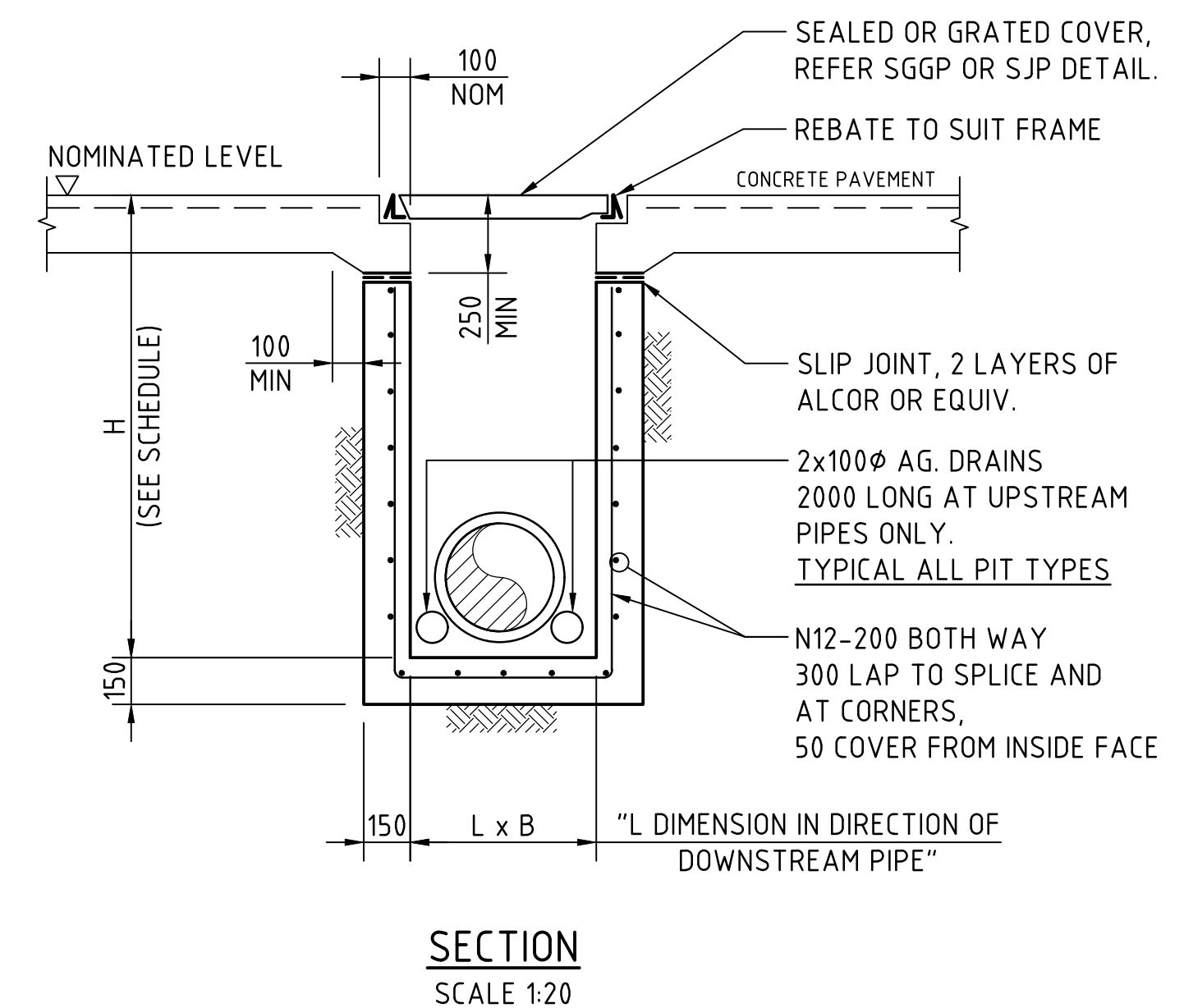
(ADOPT IN CONCRETE PAVEMENT FOR SGGP's & SJP's,
WHERE PITS ARE LOCATED IN THE CORNER OF SLAB
PANELS OR ADJACENT TO SLAB PANEL JOINTS)



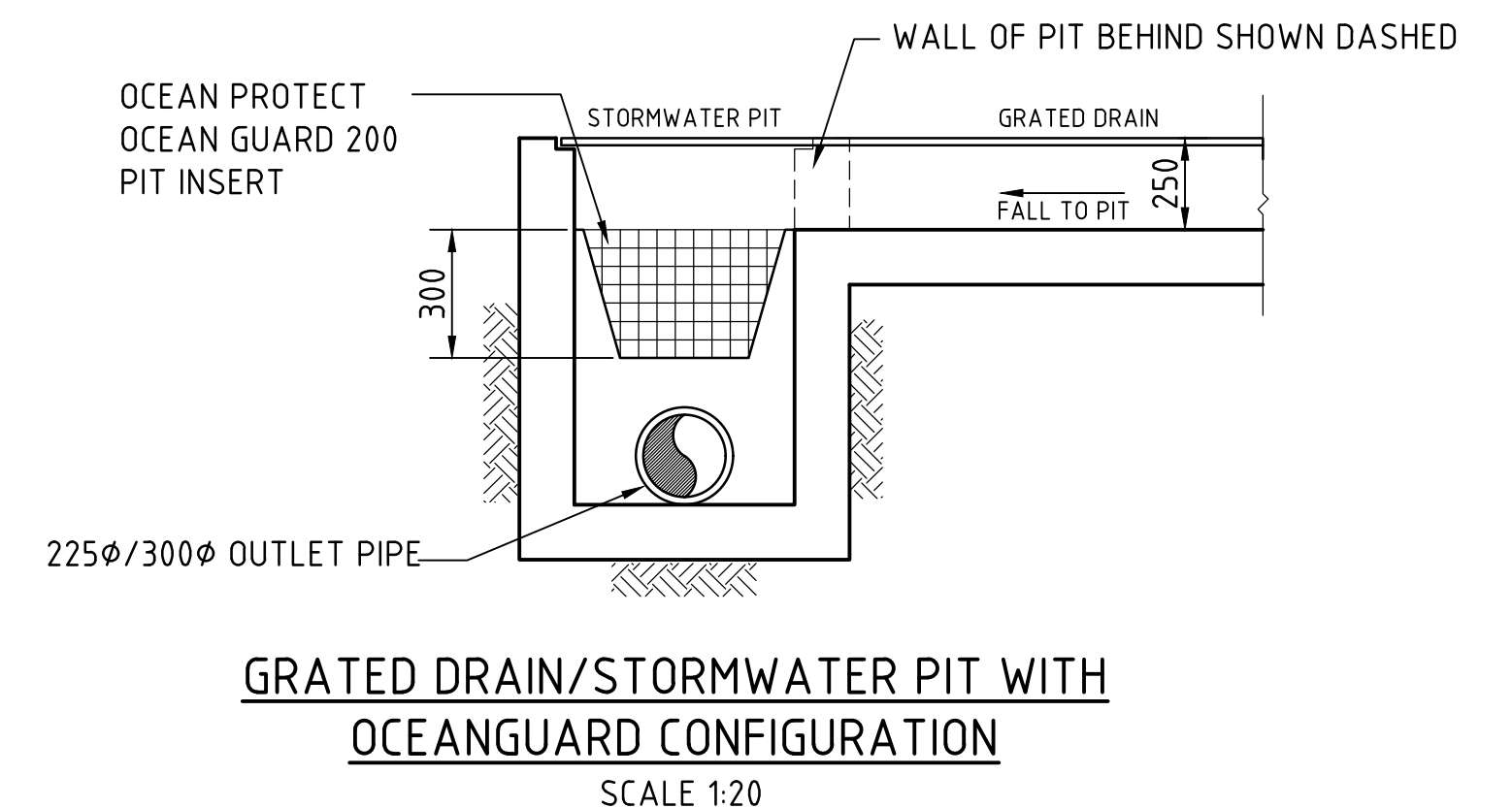
SEALED JUNCTION PIT - SJP



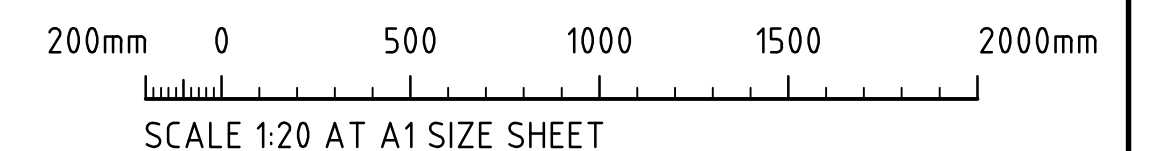
**STORMWATER PIT WITH OCEANGUARD
CONFIGURATION**



**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)



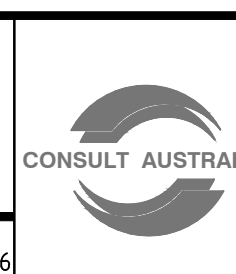
**GRATED DRAIN/STORMWATER PIT WITH
OCEANGUARD CONFIGURATION**
SCALE 1:20



ISSUED FOR DEVELOPMENT APPLICATION	02.03.23	B
ISSUED FOR INFORMATION	01.09.22	A
AMENDMENTS	DATE	ISSUE



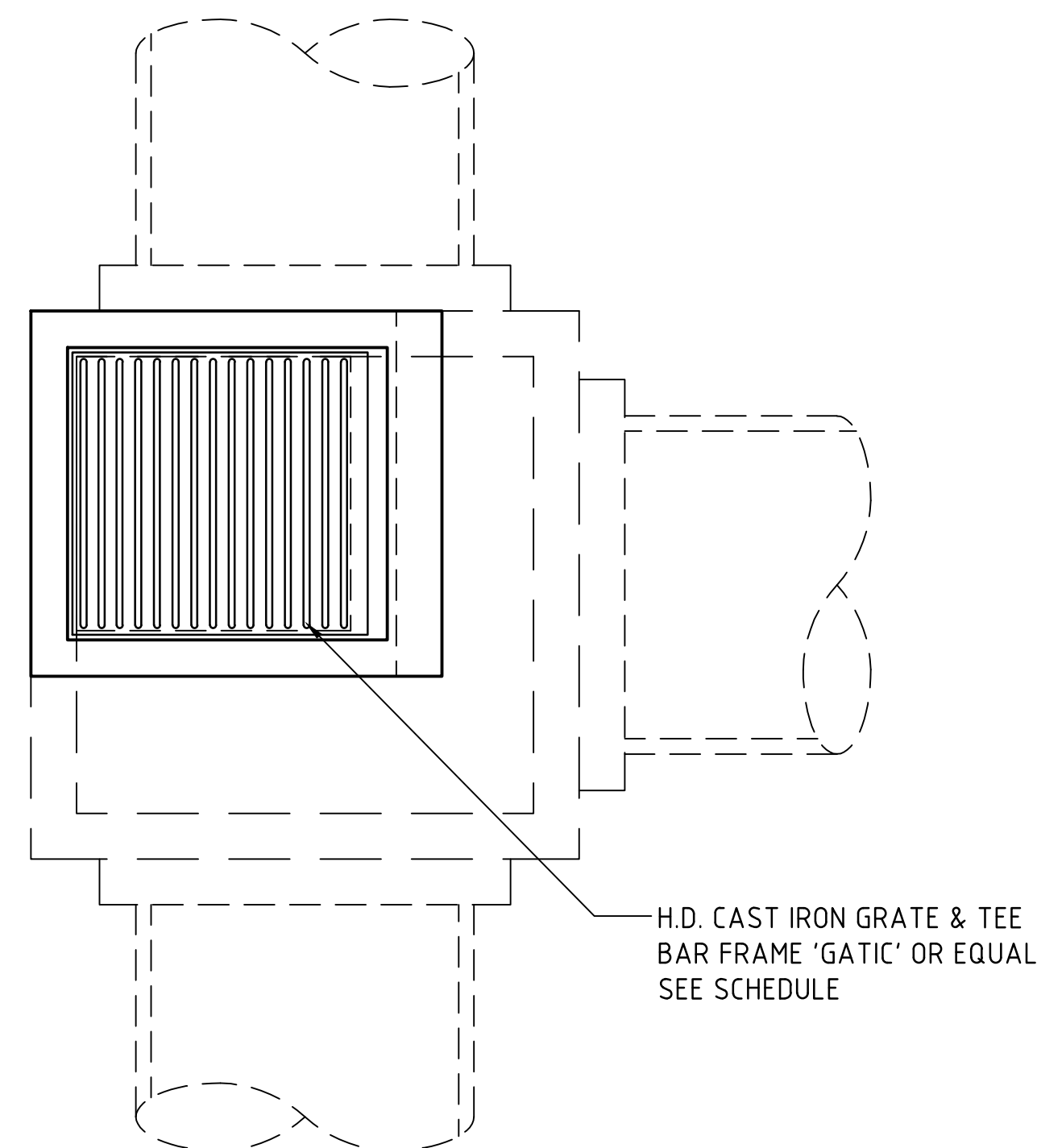
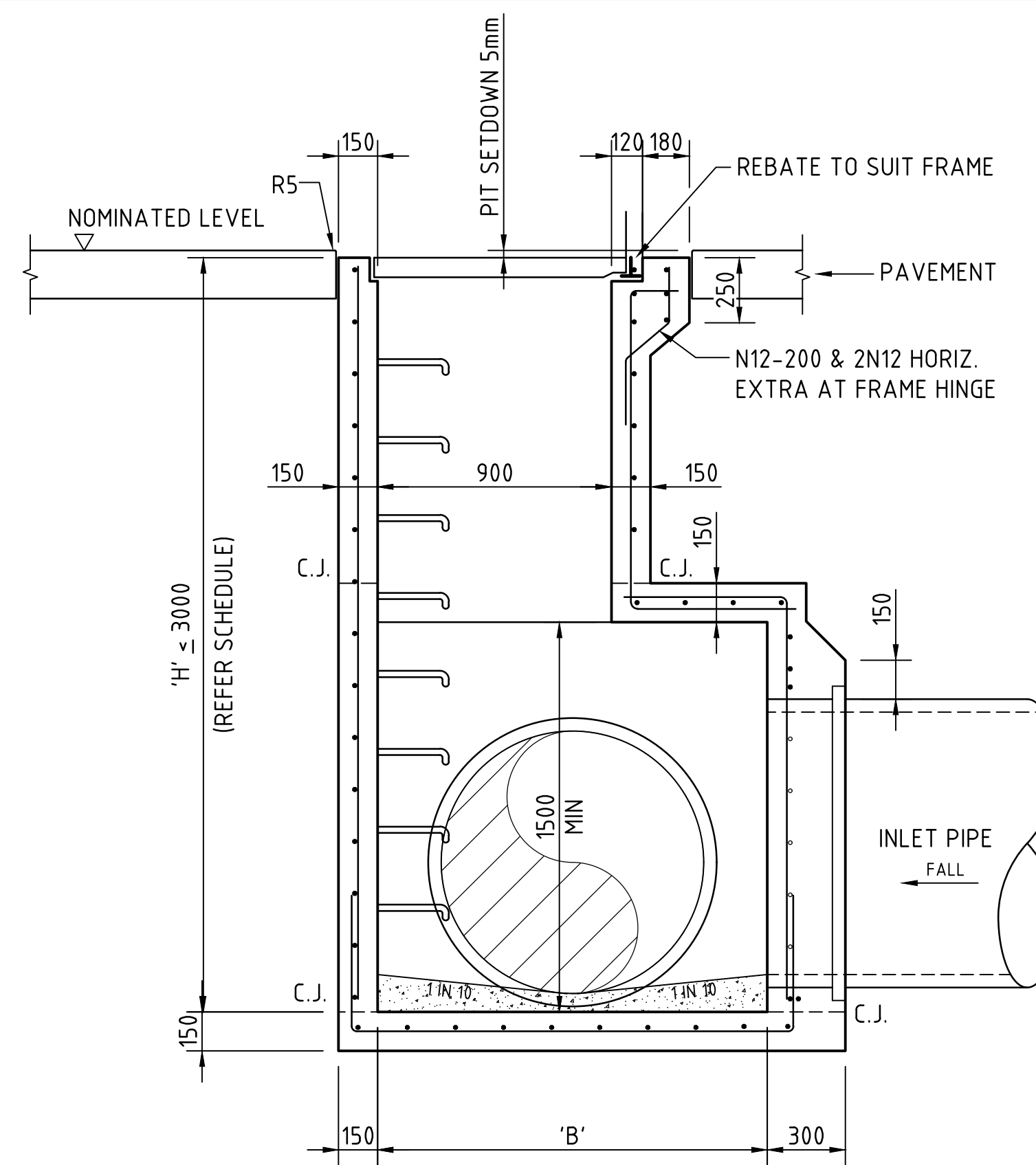
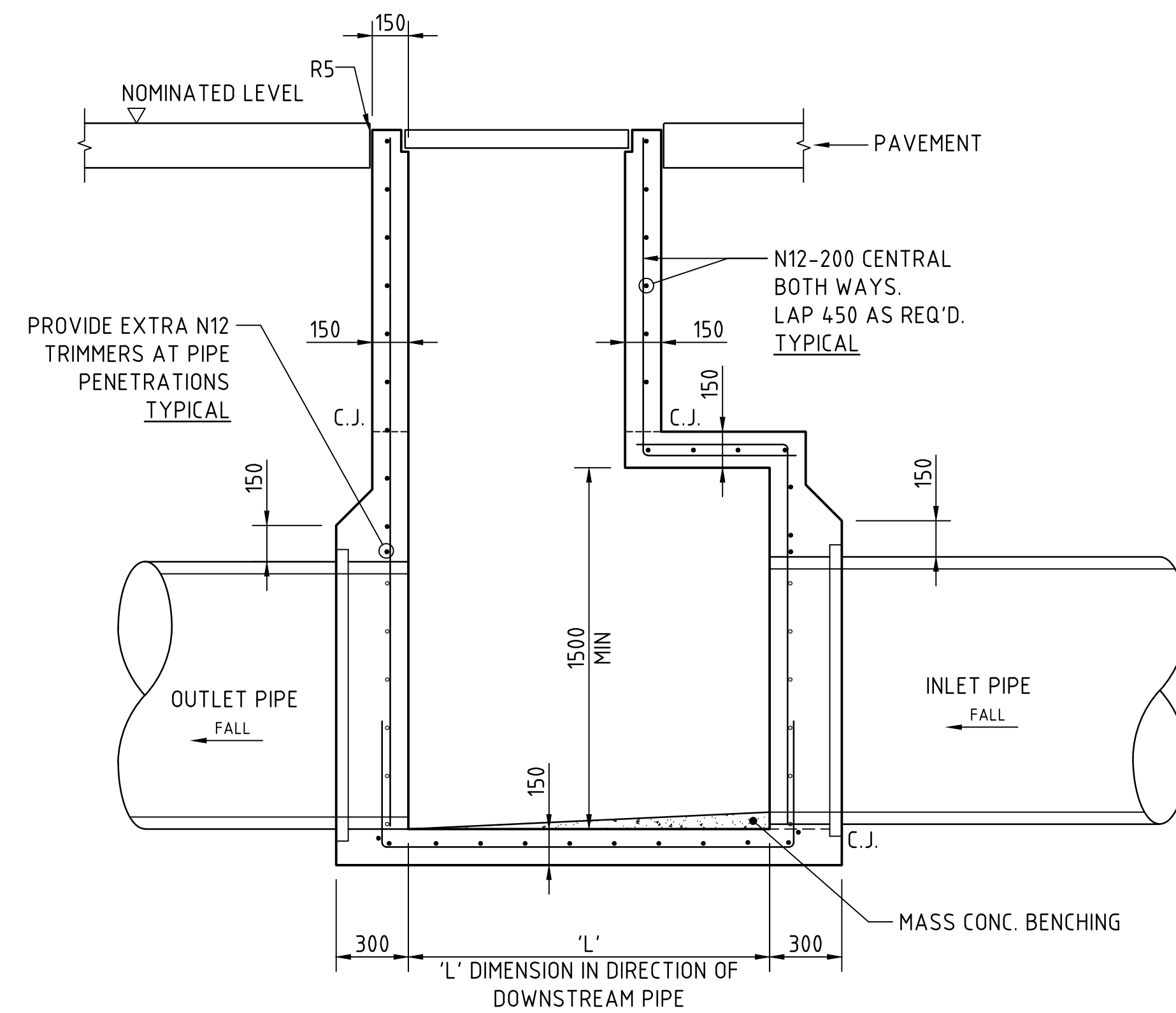
PROJECT	PROPOSED WAREHOUSE DEVELOPMENT
CLIENT	149-155 AIRDS ROAD, MINTO NSW, 2566
DESIGNED	IL
DRAWN	IL
DATE	AUG '22
CHECKED	DS
SIZE	A1
SCALE	AS SHOWN
CAD REF:	C014521.01-DA2-46



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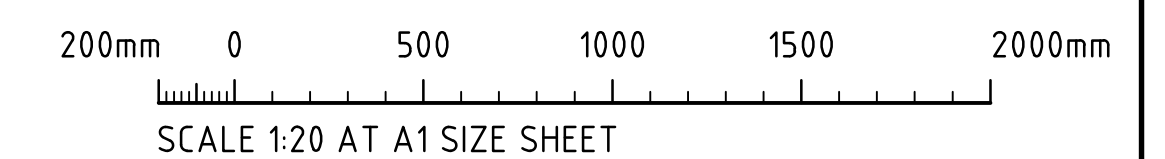
DRAWING TITLE	STORMWATER DRAINAGE DETAILS SHEET 2
DRAWING No	C014521.01-DA 2-46
ISSUE	B



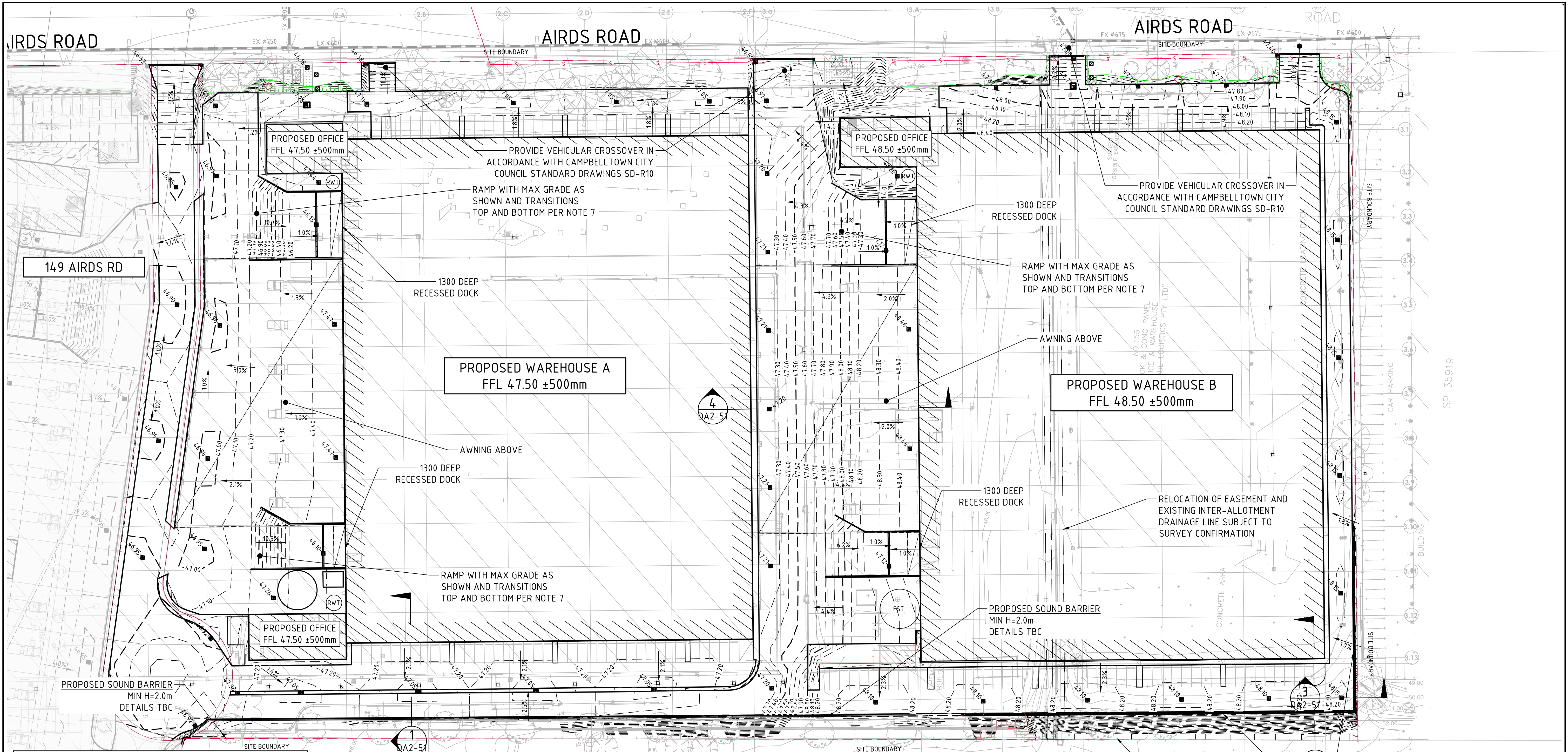
TAPERED SINGLE GRATED GULLY PIT - SGGP

SUBSOIL NOT SHOWN
FOR CLARITY

FOR DEVELOPMENT APPLICATION



			<div>ARCHITECT</div> <div><div><div></div><div>[watch this SPACE design]</div></div></div>			<div>CLIENT</div> <div><div>Charter Hall</div><div></div></div>			<div>PROJECT</div> <div>PROPOSED WAREHOUSE DEVELOPMENT</div> <div>149-155 AIRDS ROAD, MINTO</div> <div>NSW, 2566</div>			<div><div></div><div>CONSULT AUSTRALIA</div></div>			<div><div>Costin Roe Consulting Pty Ltd.</div><div>ABN 50 003 696 446</div><div>PO Box N419 Sydney NSW 1220</div><div>Level 4, 8 Windmill Street, Millers Point NSW 2000</div><div>p: +61 2 9251 7699 f: +61 2 9241 3731</div><div>e: mail@costinroe.com.au w: costinroe.com.au</div></div>			<div><div>CRC</div><div>COSTIN ROE CONSULTING</div><div>CIVIL & STRUCTURAL ENGINEERS</div></div>			<div>DRAWING TITLE</div> <div>STORMWATER DRAINAGE DETAILS</div> <div>SHEET 3</div>		
<div>ISSUED FOR DEVELOPMENT APPLICATION</div> <div>02.03.23</div> <div>B</div>						<div>DESIGNED</div> <div>DRAWN</div> <div>DATE</div> <div>CHECKED</div> <div>SIZE</div> <div>SCALE</div> <div>CAD REF.</div> <div>RS.</div> <div>AL</div> <div>AUG '22</div> <div>AS SHOWN</div> <div>C01452101-DA2-47</div>						<div>DRAWING No</div> <div>C01452101-DA 2-47</div>			<div>ISSUE</div> <div>1</div>								
<div>ISSUED FOR INFORMATION</div> <div>01.09.22</div> <div>A</div>																							
<div>AMENDMENTS</div> <div>DATE</div> <div>ISSUE</div>																							



LEGEND:
LEVELS DATUM IS AHD.

	- SGGP, SINGLE GRATED GULLY PIT
	- SJP, SEALED JUNCTION PIT
	- KIP, KERB INLET PIT
	- GD, GRATED DRAIN (300W x 225D UNO)
	- FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
	- FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS

LEVELS NOTE:
LEVELS SHOWN TO BE +/-500mm FROM THOSE SHOWN. FINAL LEVELS SUBJECT TO FINAL GEOTECHNICAL INVESTIGATIONS, ARCHITECTURAL LAYOUT AND ACHIEVING A CUT TO FILL EARTHWORKS BALANCE OVER THE PROPERTY.

- 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.
 - CARPARK RAMP GRADES TO BE MAX 1:5 WITH 2.5m SMOOTH TRANSITION AT TOP AND BOTTOM U.N.O.
 - TRUCK RAMP GRADES
 - MAXIMUM B-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.
 - 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. 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.

FOR DEVELOPMENT APPLICATION

FINISHED LEVELS PLAN
SCALE 1:500

1V:3H BATTERS TYPICAL

PROPOSED RETAINING WALL WALL IN CUT MAX H=3.4m

5m 0 10 20 30 40 50m
SCALE 1:500 AT A1 SIZE SHEET

REVISED TO UPDATED ARCHITECTURAL LAYOUT	16.11.23	E
REVISED TO UPDATED ARCHITECTURAL LAYOUT	03.11.23	D
ISSUED FOR DEVELOPMENT APPLICATION	02.03.23	C
REVISED AS CLOUDED	17.10.22	B
ISSUED FOR INFORMATION	01.09.22	A
AMENDMENTS	DATE	ISSUE

ARCHITECT



CLIENT



PROJECT
PROPOSED WAREHOUSE DEVELOPMENT
149-155 AIRDS ROAD, MINTO
NSW, 2566

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
IL	IL	AUG '22	DS	A1	AS SHOWN	C014521.01-DA-2-50



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CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE

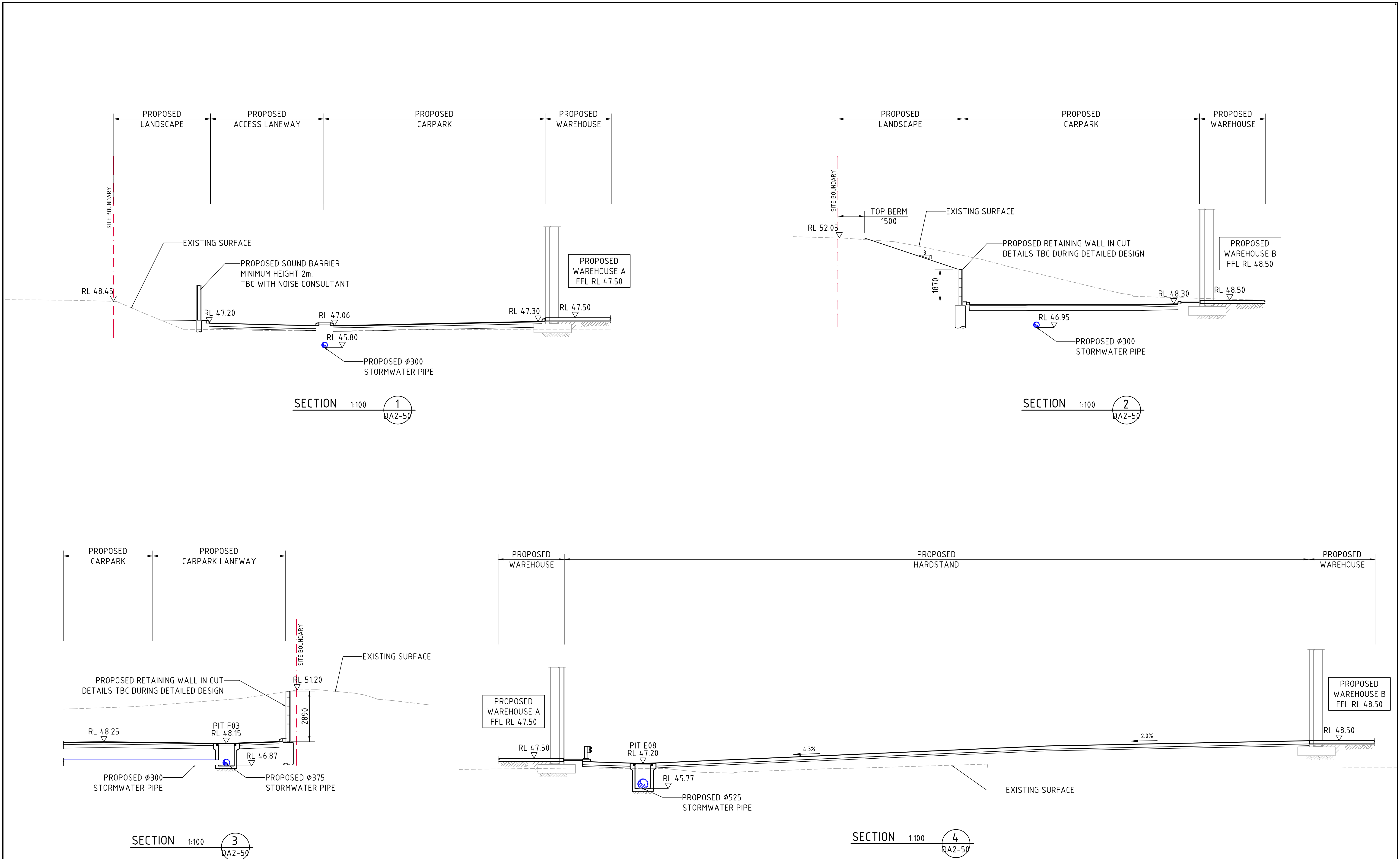
FINISHED LEVELS PLAN

DRAWING No

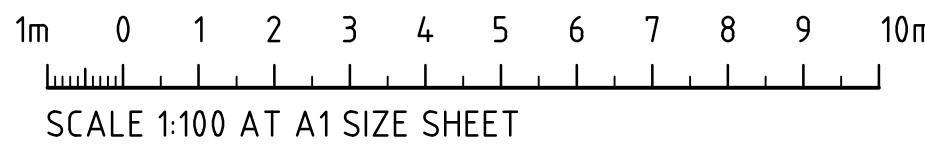
C014521.01-DA2-50

ISSUE

E



FOR DEVELOPMENT APPLICATION



ARCHITECT		CLIENT		PROJECT		COSTIN ROE CONSULTING PTY LTD.		DRAWING TITLE	
[watch this] SPACE design		Charter Hall		PROPOSED WAREHOUSE DEVELOPMENT 149-155 AIRDS ROAD, MINTO NSW, 2566		ABN 50 003 696 446 PO Box N419 Sydney NSW 1220 Level 4, 8 Windmill Street, Millers Point NSW 2000 p: +61 2 9251 7699 f: +61 2 9241 3731 e: mail@costinroe.com.au w: costinroe.com.au		CIVIL & STRUCTURAL ENGINEERS	
ISSUED FOR DEVELOPMENT APPLICATION		16.11.22		A		DRAWING No		C014521.01-DA2-51	
AMENDMENTS		DATE		ISSUE		ISSUE		A	