

*ARDEX DISTRIBUTION CENTRE
MAMRE ROAD, KEMPS CREEK, NSW
STATE SIGNIFICANT DEVELOPMENT APPLICATION*

DRAWING LIST

DRAWING NO.	DRAWING TITLE
C013362.05-SSDA10	DRAWING LIST & GENERAL NOTES
C013362.05-SSDA20	EROSION AND SEDIMENT CONTROL PLAN
C013362.05-SSDA25	EROSION AND SEDIMENT CONTROL DETAILS
C013362.05-SSDA30	BULK EARTHWORKS PLAN
C013362.05-SSDA31	CUT/FILL PLAN
C013362.05-SSDA35	BULK EARTHWORKS SECTIONS
C013362.05-SSDA40	STORMWATER DRAINAGE PLAN
C013362.05-SSDA45	STORMWATER DRAINAGE DETAILS - SHEET 1
C013362.05-SSDA46	STORMWATER DRAINAGE DETAILS - SHEET 2
C013362.05-SSDA50	FINISHED LEVELS PLAN

GENERAL NOTES:

1. 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.
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.

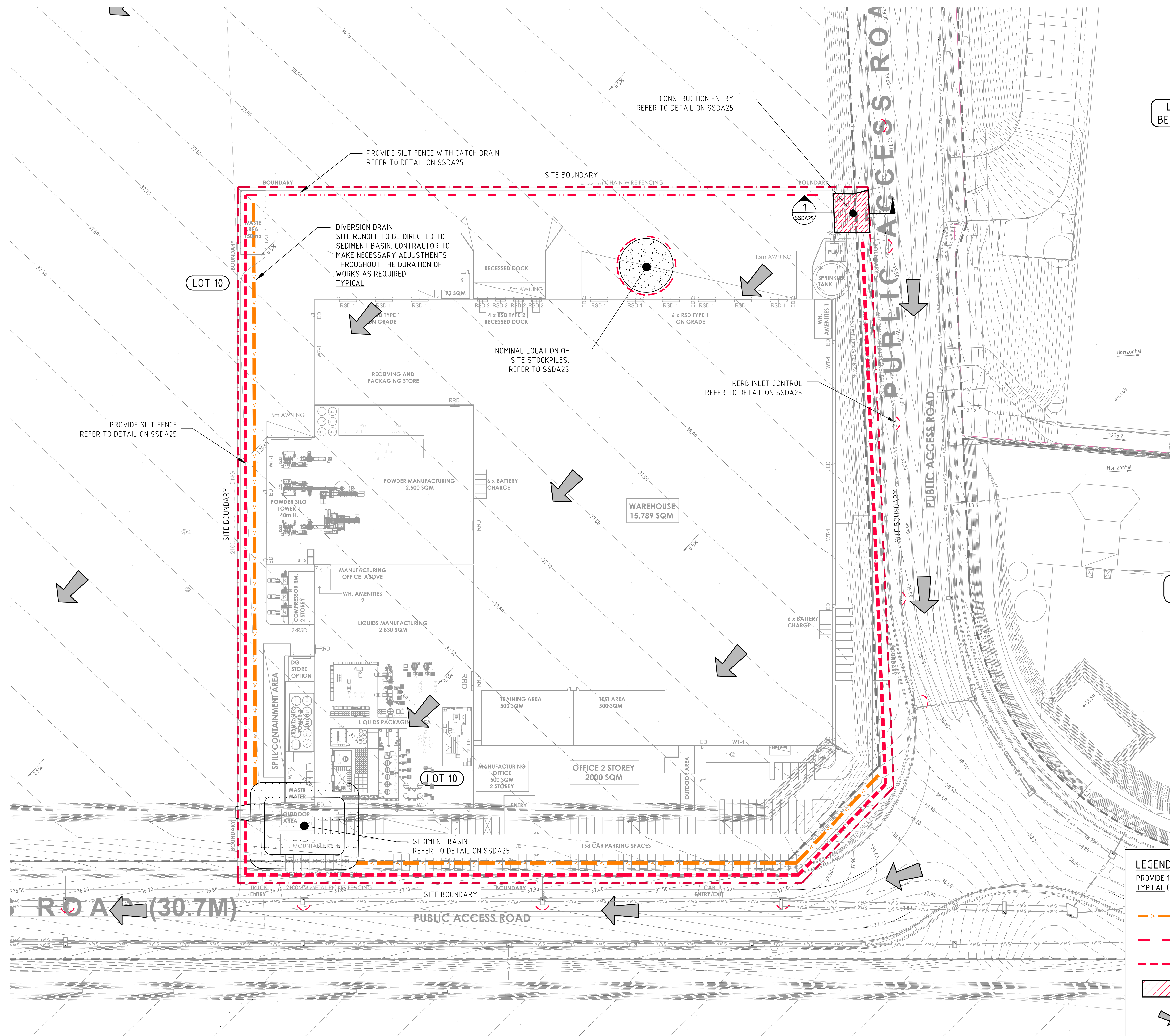
SITE PREPARATION NOTES:

1. ALL EARTHWORKS SHALL BE COMPLETED UNDER LEVEL 1 SUPERVISION GENERALLY IN ACCORDANCE WITH THE GUIDELINES SPECIFIED BY THE GEOTECHNICAL ENGINEER PROVIDED BY PELLIS SULLIVAN MEYNIUK DATED 01/06/2020
2. EXISTING LEVELS ARE BASED ON ESTATE DESIGN INFORMATION PROVIDED BY COSTIN ROE (CONSULTING IDWG NO. C013362 02-EW301 TO EW309)
3. STRIP ANY TOP SOIL OR DELETERIOUS MATERIAL AND DISPOSE OF FROM SITE OR STORE AS DIRECTED.
4. COMPLETE CUT TO FILL EARTHWORKS TO ACHIEVE THE REQUIRED LEVELS AS INDICATED ON THE DRAWINGS WITHIN A TOLERANCE OF +0mm/-10mm THROUGH BUILDING PAVES/PAVEMENTS AND -0mm/-20mm ELSEWHERE.
5. PREPARE STEEP BATTERS TO RECEIVE FILL BY CONSTRUCTING BENCHING TO FACILITATE FILL PLACEMENT AND COMPACTION.
6. ARIE PLACEMENT MATERIAL THAT ARE NOT ON BENCHMARK 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.
7. 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.
8. 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.
9. 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 (AS12895.4) OR HALF TEST METHOD (AS12895.7.1). 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
10. PRIOR TO ANY EARTHWORKS, EROSION CONTROL AS OUTLINED IN THE EROSION AND SEDIMENTATION CONTROL PLAN SHALL BE COMPLETED.
11. EXISTING ROCK, IF ANY, SHALL BE REMOVED BY HEAVY ROCK BREAKING OR RIPPING.
12. MATCH EXISTING LEVELS AT BATTER INTERFACE.
13. CONTRACTOR TO MATCH EXISTING LEVELS AT THE INTERFACE OF EARTHWORKS AND EXISTING SURFACE AT BATTER LOCATIONS OR WHERE NO RETAINING WALLS ARE. ANY DISCREPANCY BETWEEN DESIGN AND EXISTING LEVELS TO BE REFERRED TO THE ENGINEER FOR DISCUSSION AND ADJUSTMENTS TO DESIGN LEVELS.
14. 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 SUFFICIENT DISPOSAL METHOD AS AGREED DURING THE WORKS. REFER ANY CONCERNS TO THE ENGINEER. REFER TO EROSION AND SEDIMENT CONTROL DRAWINGS AND NOTES.



STATE SIGNIFICANT DEVELOPMENT APPLICATION

										ARCHITECT  PACE ARCHITECTS		CLIENT  FRASERS PROPERTY		PROJECT ARDEX DISTRIBUTION CENTRE MAMRE ROAD KEMPS CREEK NSW 2178		 Costin Roe Consulting Pty Ltd. Consulting Engineers <small>CRS 00 00 00</small> Level 1, 8 Windmill Street Main Bay, Sydney NSW 2000 Tel: (02) 9551-7999 Fax: (02) 9541-3721 email: mail@costinroe.com.au		DRAWING TITLE DRAWING LIST & GENERAL NOTES	
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION			17.09.21	C															
PRELIMINARY ONLY			30.07.21	B															
PRELIMINARY ONLY			27.07.21	A															
PREPARED BY	DATE	ISSUED	AMENDMENTS	DATE	ISSUED	AMENDMENTS	DATE	ISSUED	AMENDMENTS	DATE	ISSUED	AMENDMENTS	DATE	ISSUED					
										PRECISION		COMMUNICATION		ACCOUNTABILITY		DRAWING NO. C013362-05-SSDA10		ISSUE	



SEDIMENT BASIN DIMENSIONS:	
CATCHMENT AREA	= 4.4Ha
DISTURBED AREA	= 4.4Ha
REQUIRED BASIN VOLUME	= 1001m ³
BASE DIMENSIONS (L X B)	= 25m x 18m
TOP DIMENSIONS (L X B)	= 34m x 27m
MAX SIDE SLOPE	= 1V:3H
DEPTH	= 1.5m
PROVIDED BASIN VOLUME	= 1005m ³
Q10 WEIR PEAK FLOW	= 1.2m ³ /s

SEDIMENTATION BASIN NOTE:
REFER TO SEDIMENT & EROSION CONTROL NOTES.

FOR SEDIMENT AND EROSION CONTROL DETAILS, REFER TO THE LANDCOM 'BLUE BOOK' AND EXTRACTS ON DRAWING C013362.05-SSDA25.

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 (35mm) IN THE PENRITH CATCHMENT AREA.

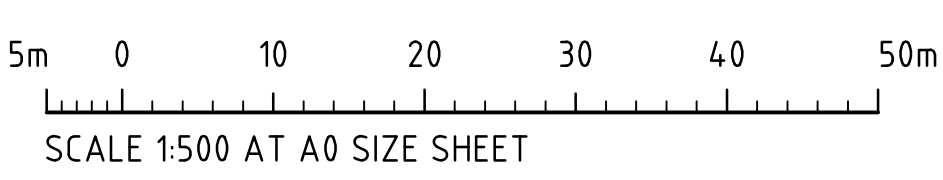
NOTES:
1. ASSUME TYPE D SOIL (CLAY/SILTY CLAY)
2. ASSUME GROUP D SOIL (HIGH PLASTICITY AND SHRINK/SWELL PROPERTIES)

- 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.
- SILT FENCES AND SILT FENCE RETURNS SHALL BE ERECTED CONVEX TO THE CONTOUR TO POND WATER.
 - HAY BALE BARRIERS AND GEOTEXTILE 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.
 - 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.
 - CLEAR WATER IS TO BE DIVERTED AWAY FROM DISTURBED GROUND AND INTO THE DRAINAGE SYSTEM.
 - THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND PROVIDING ON GOING ADJUSTMENT TO EROSION CONTROL MEASURES AS REQUIRED DURING CONSTRUCTION.
 - 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.
 - ALL FINAL EROSION PREVENTION MEASURES INCLUDING THE ESTABLISHMENT OF GRASSING ARE TO BE MAINTAINED UNTIL THE END OF THE DEFECTS LIABILITY PERIOD.
 - ALL EARTHWORKS AREAS SHALL BE ROLLED ON A REGULAR BASIS TO SEAL THE EARTHWORKS.
 - 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.
 - ALL CUT AND FILL SLOPES ARE TO BE SEEDED AND HYDROMULCHED WITHIN 10 DAYS OF COMPLETION OF FORMATION.
 - 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.
 - ALL TOPSOIL STOCKPILES ARE TO BE SUITABLY COVERED TO THE SATISFACTION OF THE SITE MANAGER TO PREVENT WIND AND WATER EROSION.
 - 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.
 - 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.
 - 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.
 - 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.
 - 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.

LEGEND:
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
- DENOTES ESTATE DRAINAGE LINES
- ESTATE KIP, KERB INLET PIT

EROSION AND SEDIMENT CONTROL PLAN
SCALE 1:500



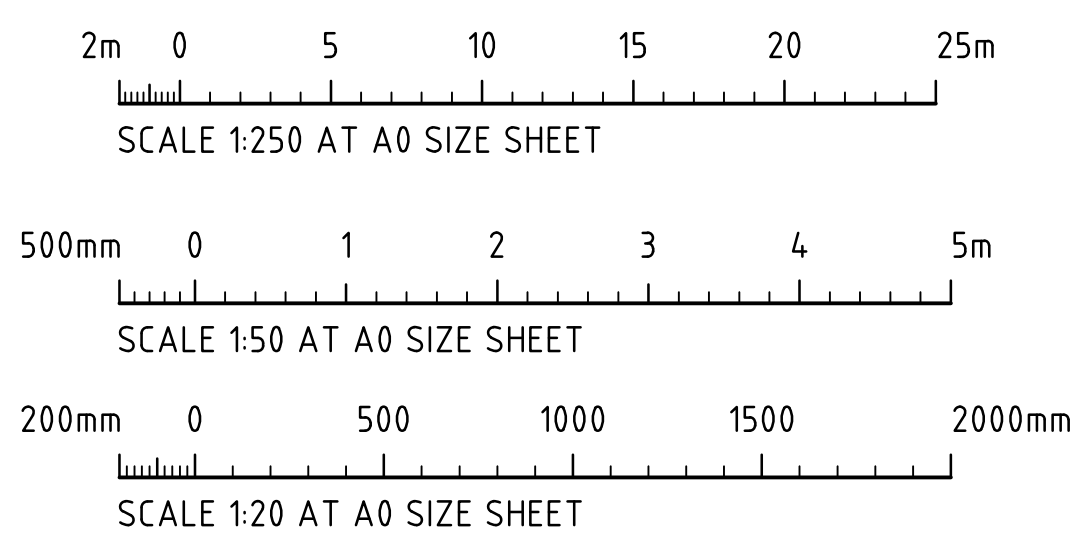
STATE SIGNIFICANT DEVELOPMENT APPLICATION

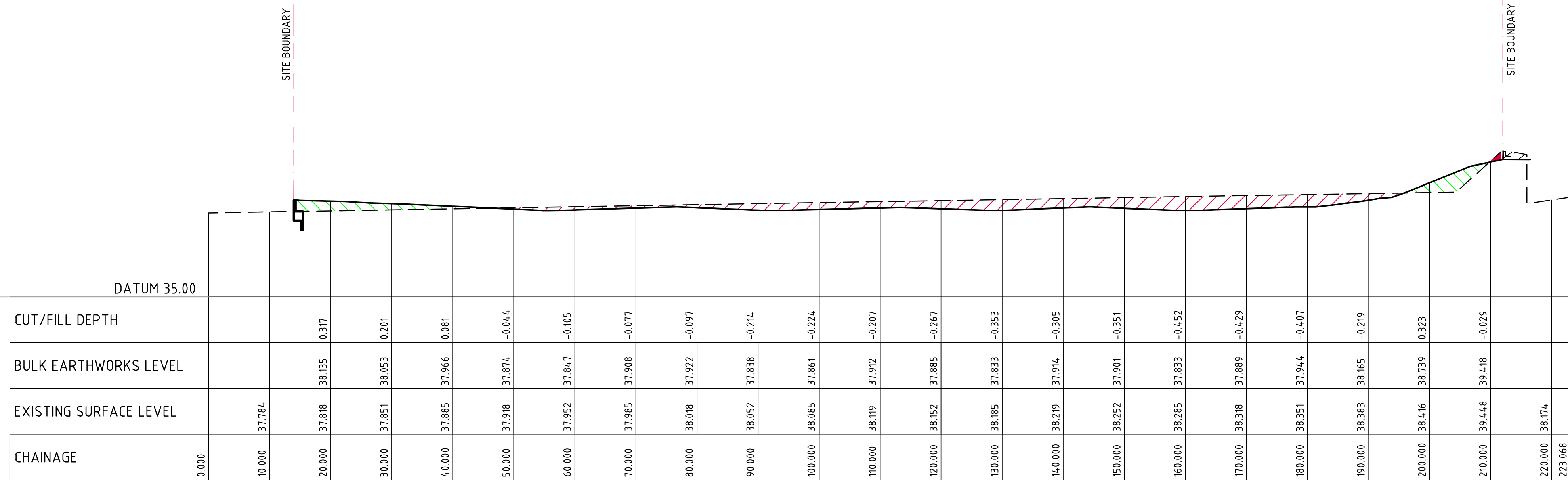


- ### STOCKPILE NOTES
1. PLACE ALL STOCKPILES IN LOCATIONS MORE THAN 5m FROM EXISTING VEGETATION, ROADS & HAZARD AREAS.
 2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT ELONGATED MOUNDS. SIDE SLOPE TO BE 1 V : 2 H MAX.
 3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2m IN HEIGHT.
 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.

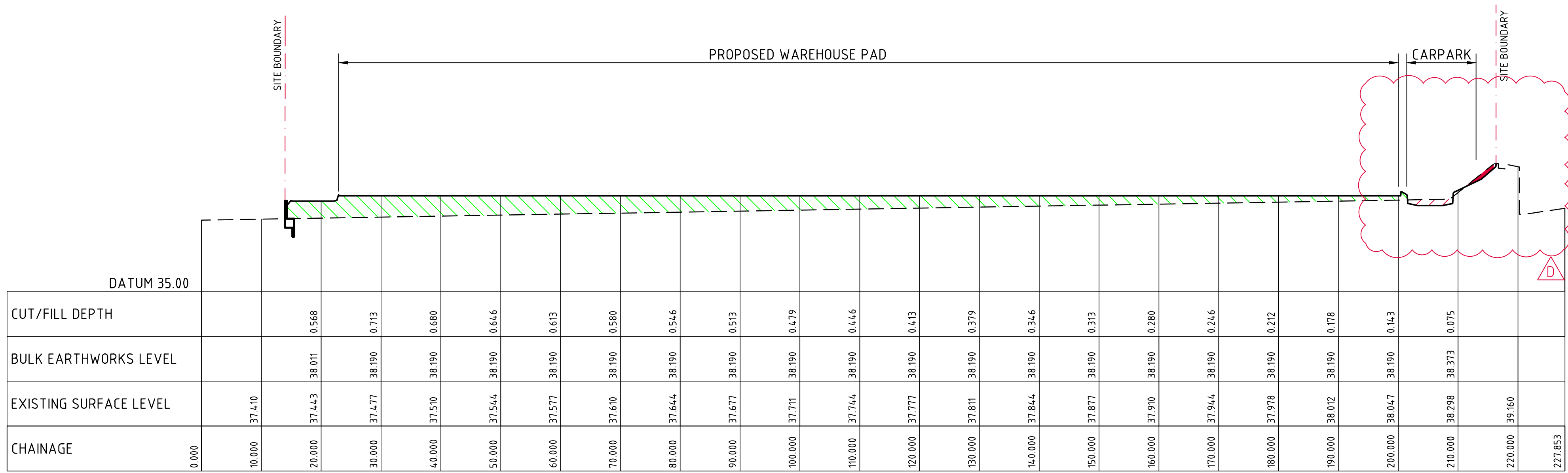


SPILLWAY SCHEDULE					
CATCHMENT (Ha)	FLOW (m ³ /s)	WIDTH (m)	FLOW DEPTH (m)	ROCK SIZE (mm)	BUND HEIGHT ABOVE SPILLWAY (m)
1	0.3	2	0.20	200	0.70
2	0.6	4	0.20	200	0.70
5	1.4	5	0.30	200	0.80
10	2.8	8	0.35	200	0.85
20	5.5	14	0.40	250	0.90
40	11.0	20	0.50	250	1.00

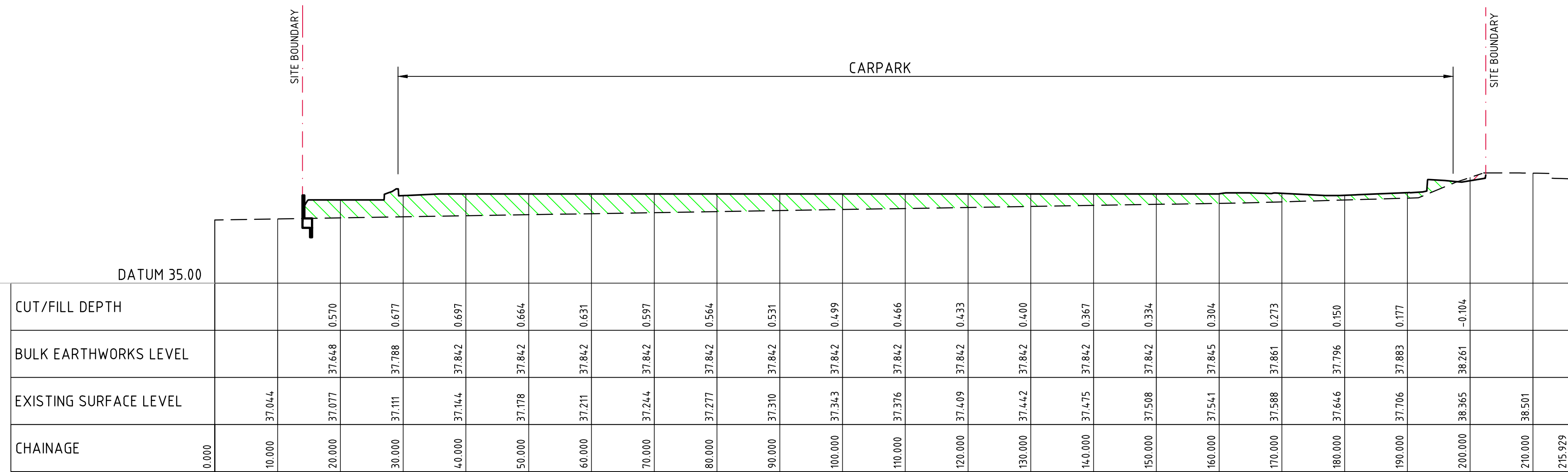




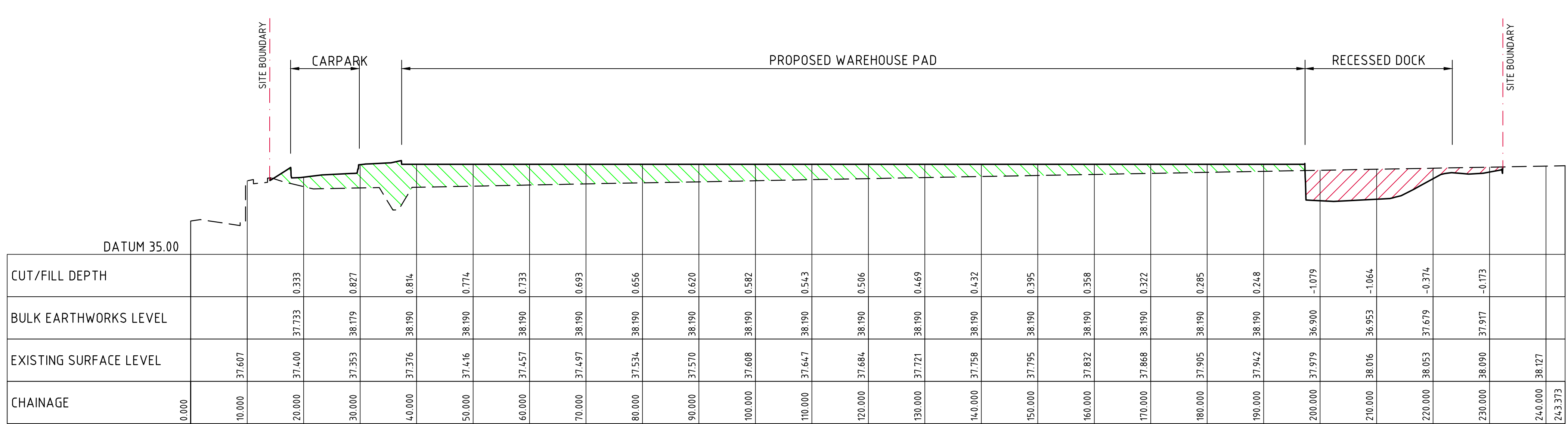
SECTION 1
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



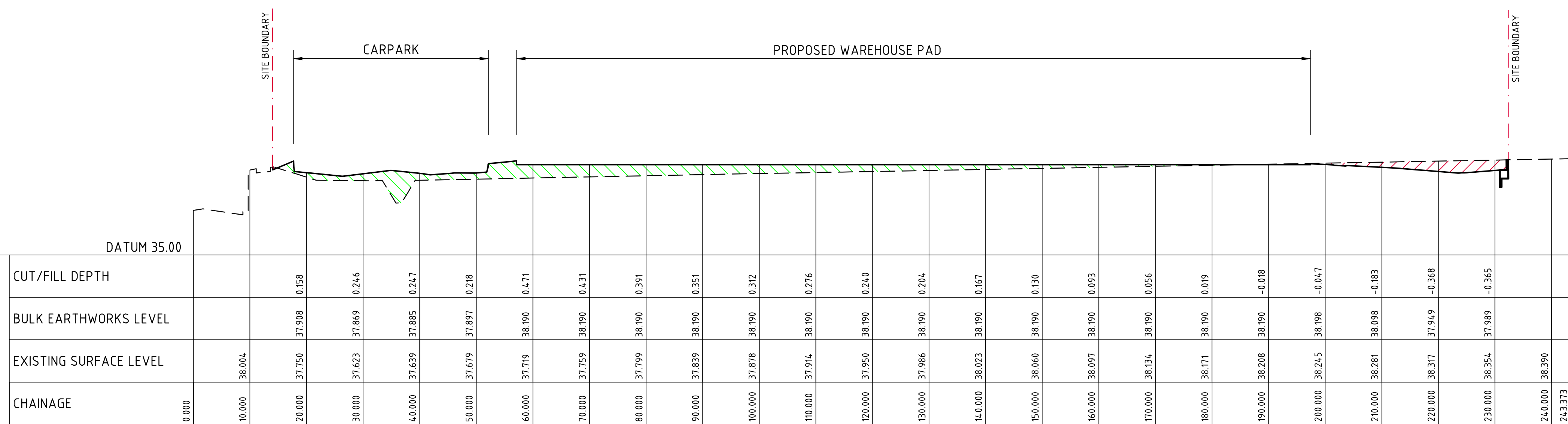
SECTION 2
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



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

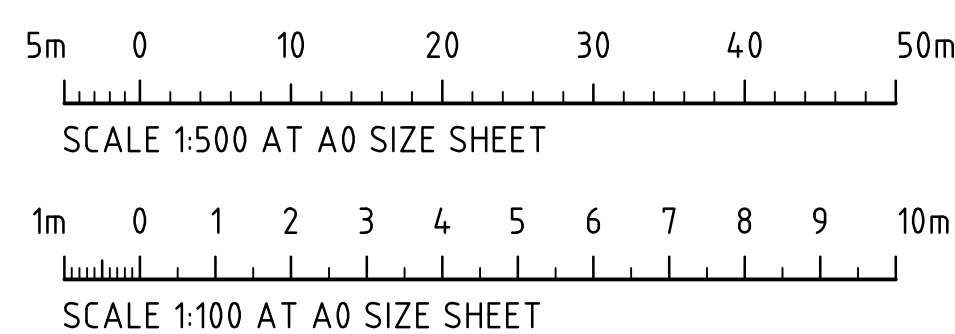


SECTION 4
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



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

- LEGEND:**
- DENOTES BULK EARTHWORKS PROFILE
 - - - DENOTES EXISTING PROFILE
 - DENOTES AREA IN CUT
 - DENOTES AREA IN FILL



STATE SIGNIFICANT DEVELOPMENT APPLICATION

ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	25.02.22	D
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	17.05.21	C
PRELIMINARY ONLY	30.07.21	B
PRELIMINARY ONLY	27.07.21	A
AMENDMENTS	DATE	ISSUE

AMENDMENTS	DATE	ISSUE
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AMENDMENTS	DATE	ISSUE
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ARCHITECT	
PACE ARCHITECTS	

CLIENT	
FRASERS PROPERTY	

PROJECT	ARDEX DISTRIBUTION CENTRE
	MAMRE ROAD
	KEMPS CREEK NSW 2178

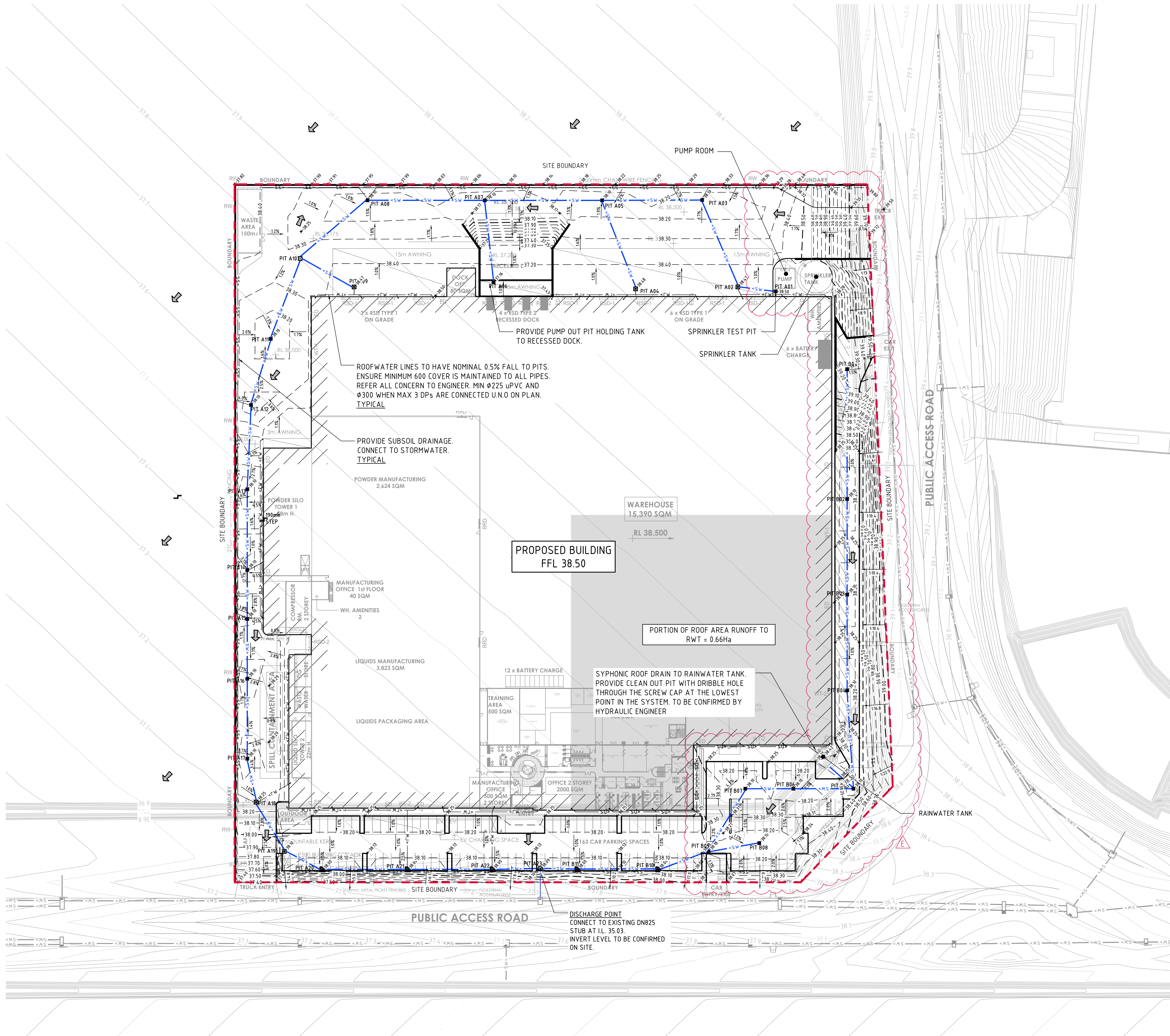
CONSULTANT	
COSTIN ROE CONSULTING	

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DRAWING TITLE	
Costin Roe Consulting	

PRECISION COMMUNICATION ACCOUNTABILITY	
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DRAWING No.	C013362.05-SSDA35	ISSUE	D
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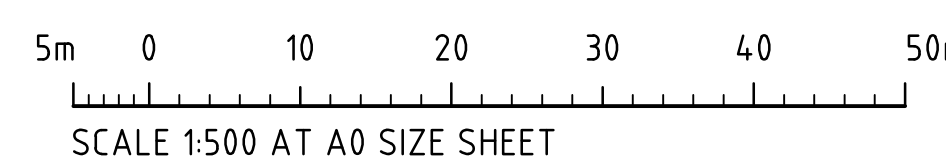
LEGEND:
LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON ESTATE DESIGN INFORMATION PROVIDED BY COSTIN ROE CONSULTING (DWG No. C013362.02-EW301 TO EW309).

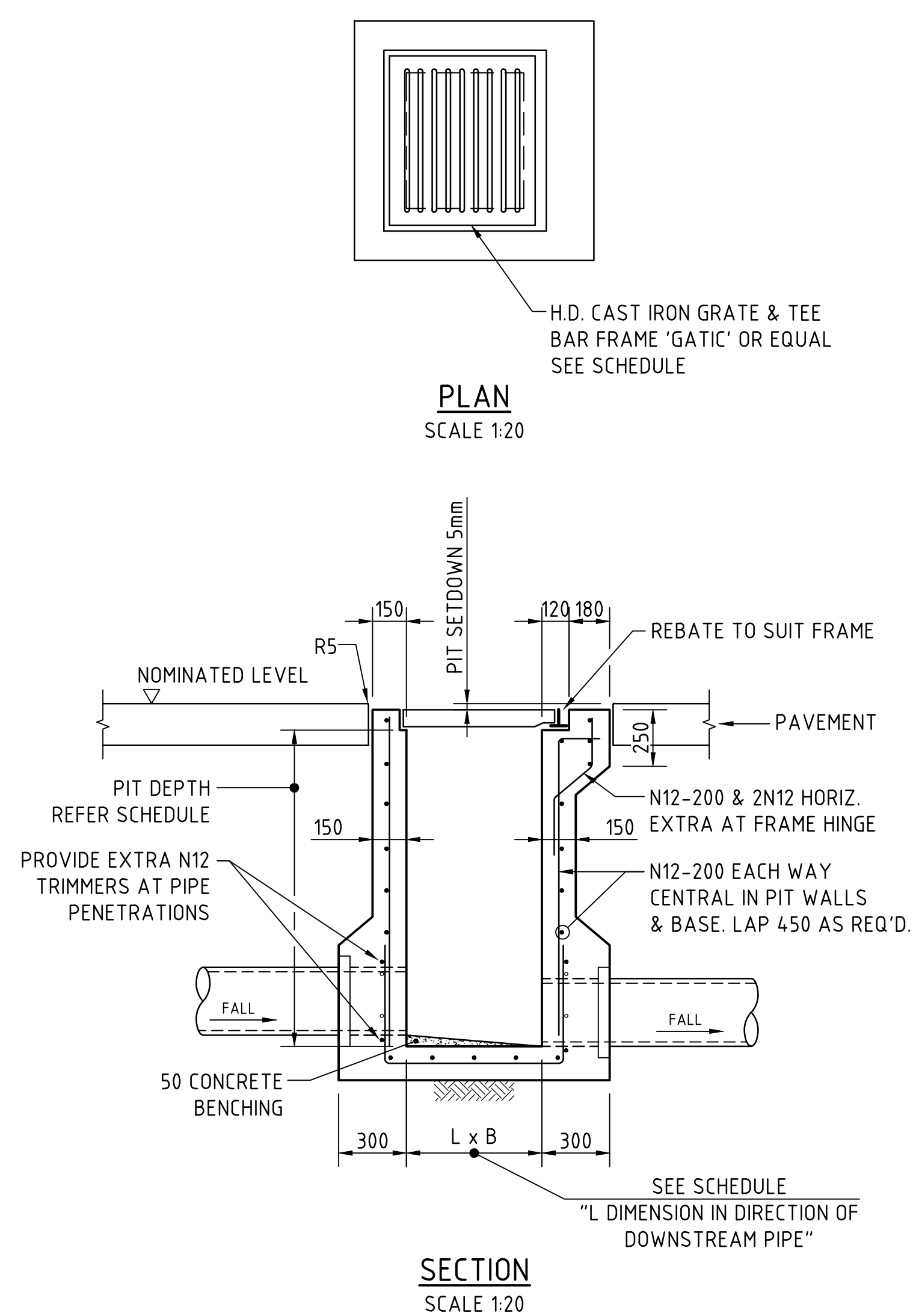
- [Symbol] - SGGP, SINGLE GRATED GULLY PIT
- [Symbol] - SJP, SEALED JUNCTION PIT
- [Symbol] - GD, GRATED DRAIN (300W x 225D UNO)
- [Symbol] - PROPOSED DRAINAGE LINE
- [Symbol] - DENOTES ESTATE DRAINAGE LINES
- [Symbol] - ROOFWATER DOWNPIPE (INDICATIVE)
- [Symbol] - ROOFWATER LINE
- [Symbol] - SUBSOIL LINE
- [Symbol] - SYPHONIC LINE
- [Symbol] - STORMWATER SWALE
- [Symbol] - OVERLAND FLOW DIRECTION
- [Symbol] - FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- [Symbol] - FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS

- STORMWATER DRAINAGE NOTES:**
- ALL STORMWATER WORKS TO BE COMPLETED IN ACCORDANCE WITH AUSTRALIAN STANDARD AS3500.3:2018 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 C013362.05-C50.
 - 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'c=25 MPa. PRECAST PITS MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
 - IN ADDITION TO ITEM 6 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.
 - 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 D 'HEAVY DUTY', THOSE LOCATED IN NON-TRAFFICABLE AREAS SHALL BE CLASS B 'MEDIUM DUTY' U.N.O.
 - 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.

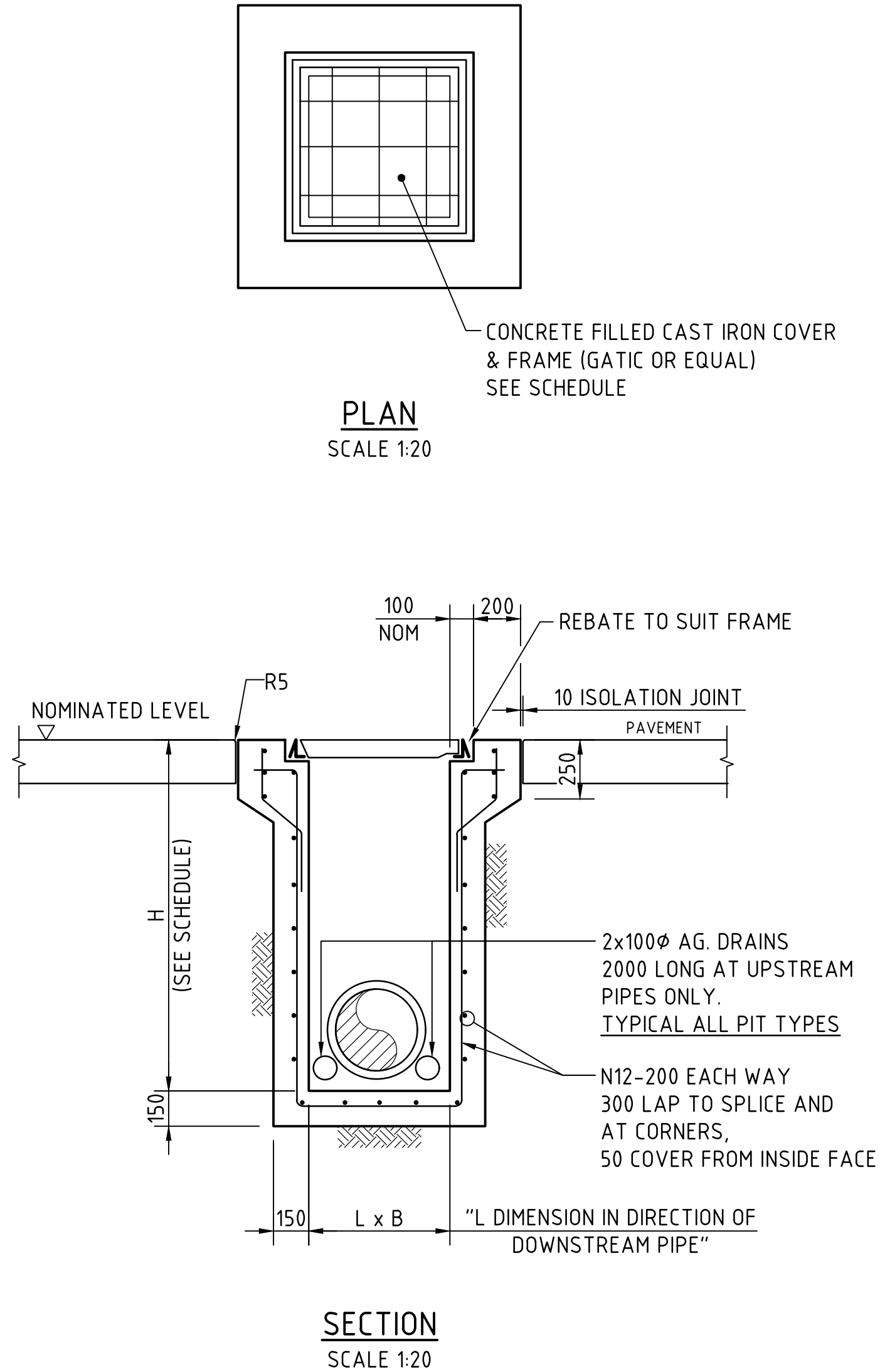
STORMWATER DRAINAGE PLAN
SCALE 1:500



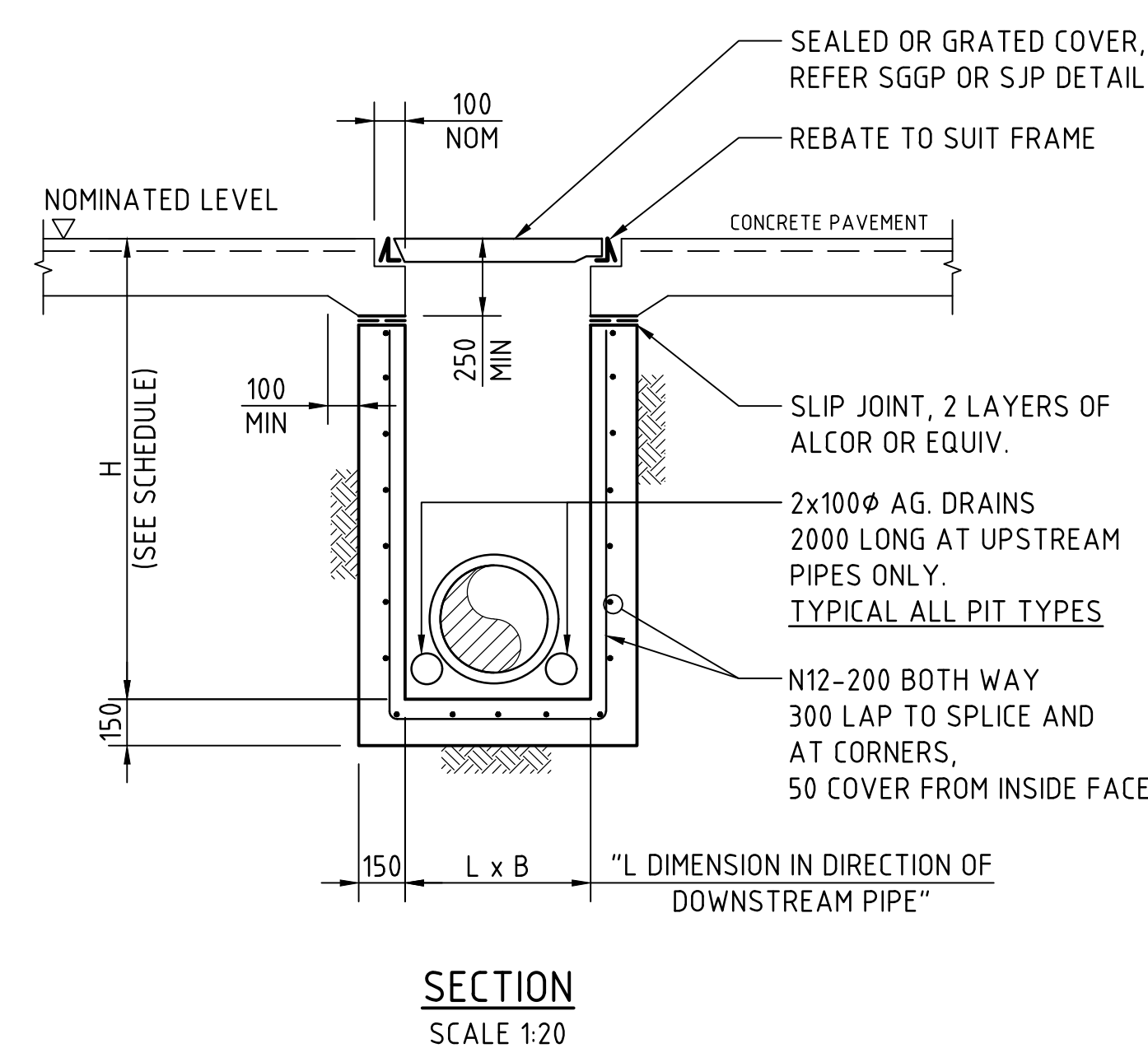
STATE SIGNIFICANT DEVELOPMENT APPLICATION



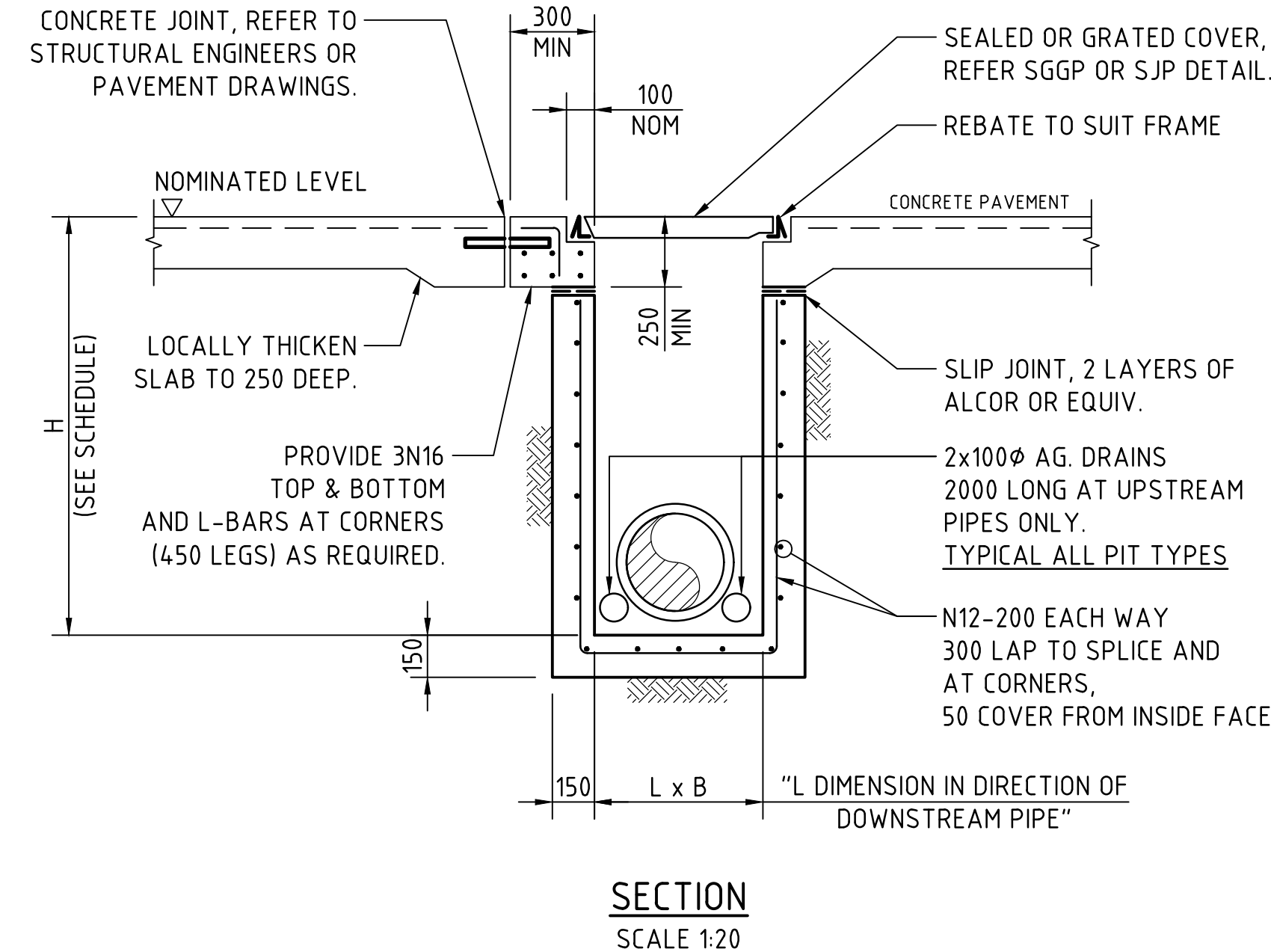
SINGLE GRATED GULLY PIT - SGGP



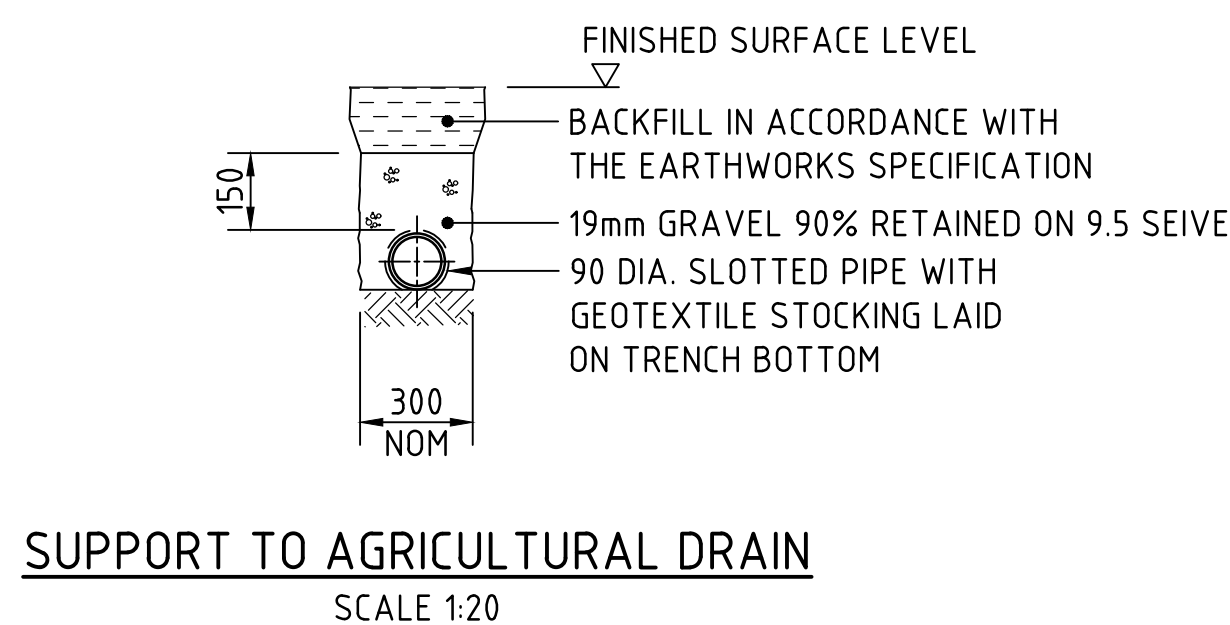
SEALED PIT - SP



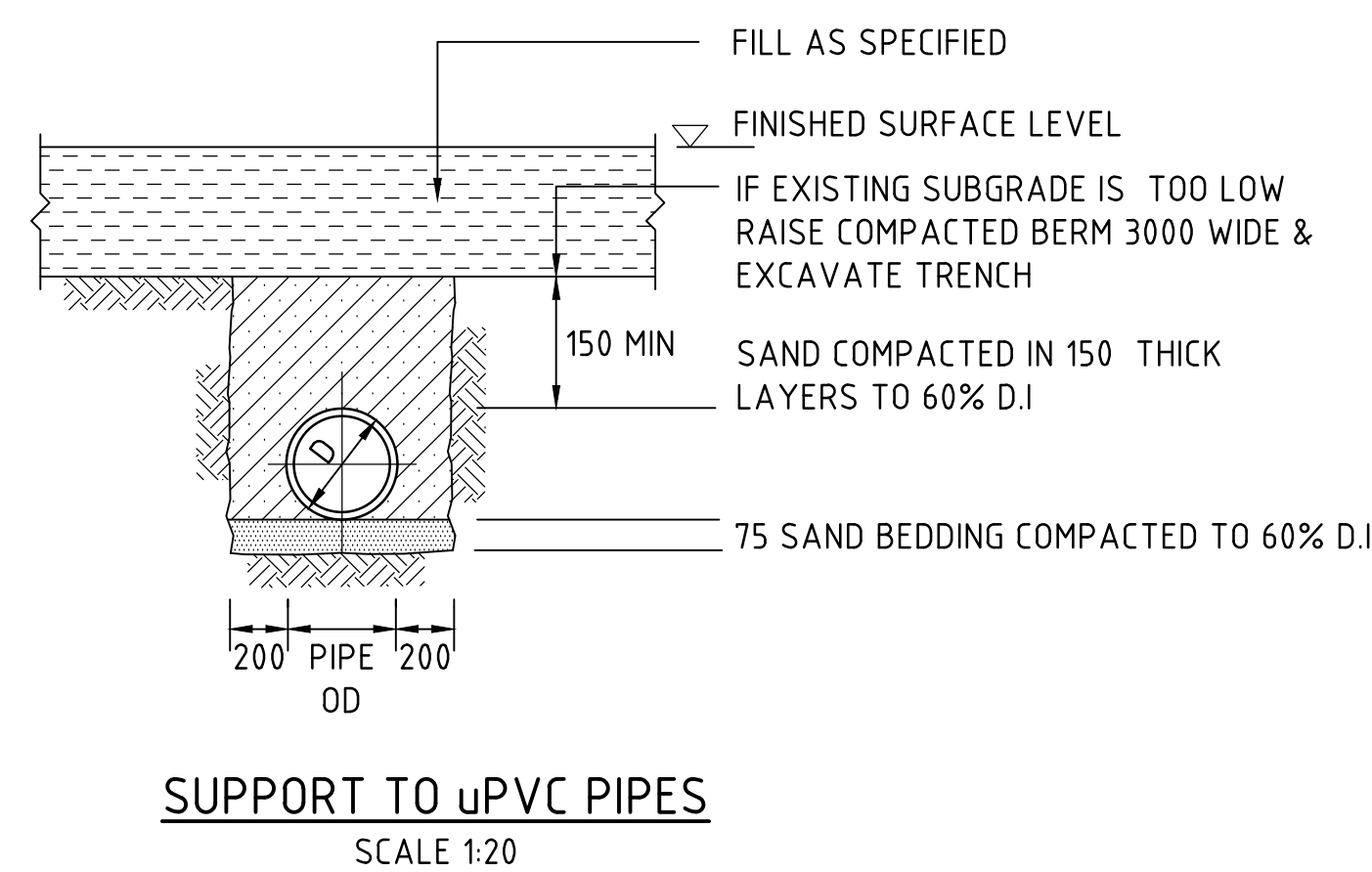
**SJP/CIS & SGGP/CIS (CAST IN SLAB) PIT DETAIL
GRATE/COVER SUPPORT
CAST-INTO PAVEMENT SLAB
(ADOPT IN CONCRETE PAVEMENTS FOR SGGP's & SJP's, WHERE JOINTS ARE NOT LOCATED WITHIN PROXIMITY OF THE GRATE)**



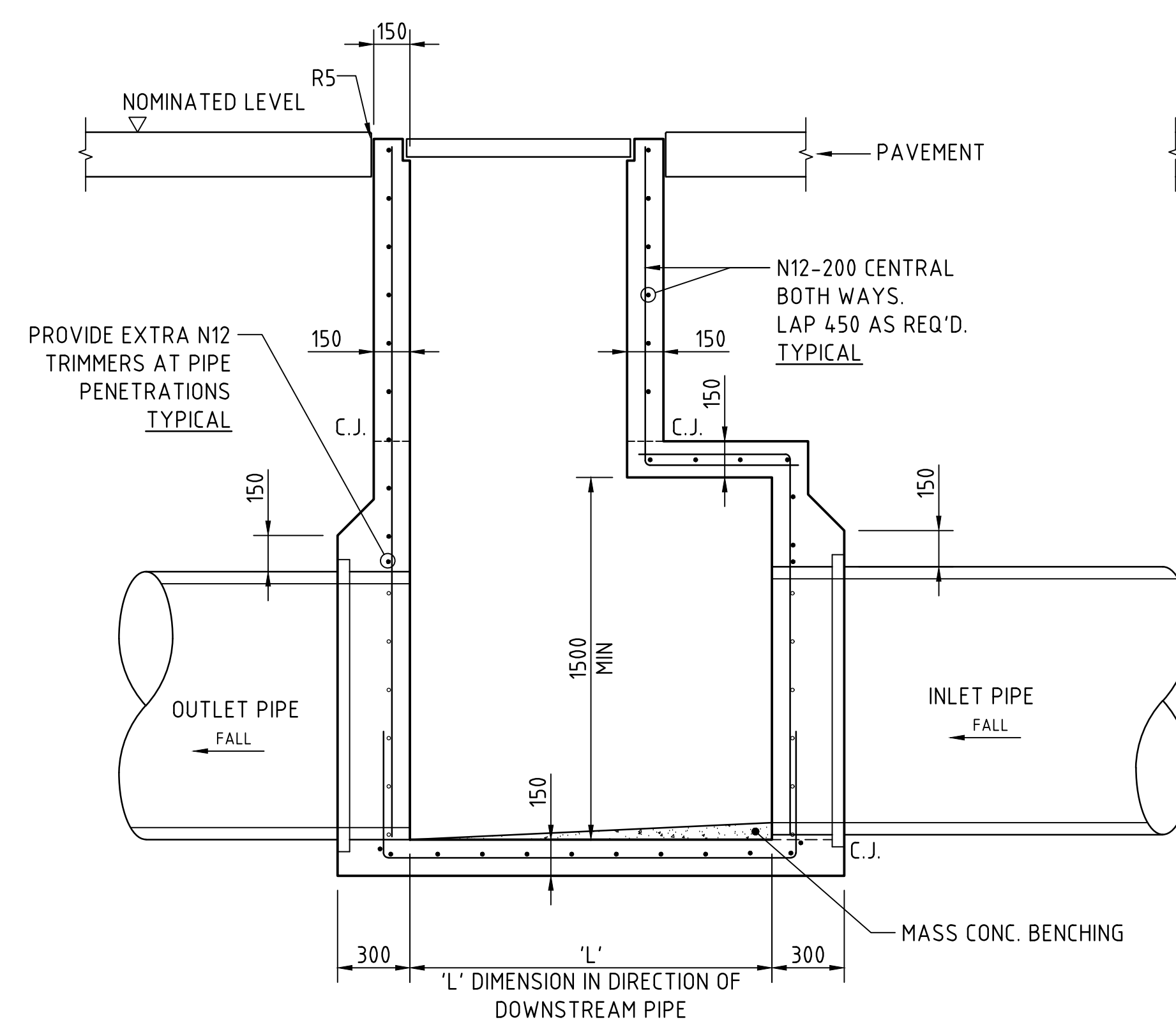
**SJP/CIS & SGGP/CIS (CAST IN SLAB) PIT DETAIL
GRATE/COVER SUPPORT
CAST-INTO PAVEMENT SLAB
(ADOPT IN CONCRETE PAVEMENT FOR SGGP's & SJP's, WHERE PITS ARE LOCATED IN THE CORNER OF SLAB PANELS OR ADJACENT TO SLAB PANEL JOINTS)**



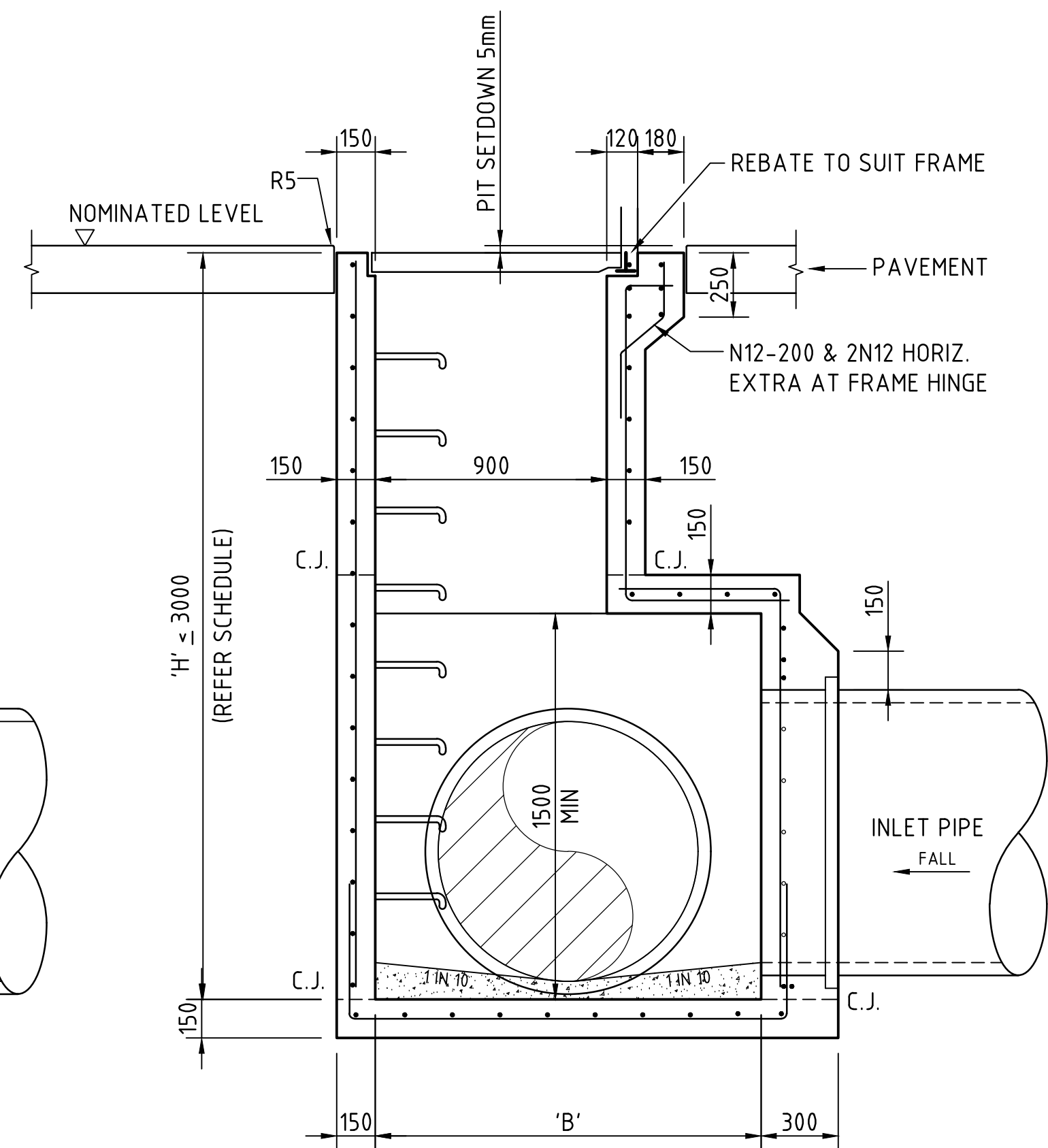
SUPPORT TO AGRICULTURAL DRAIN



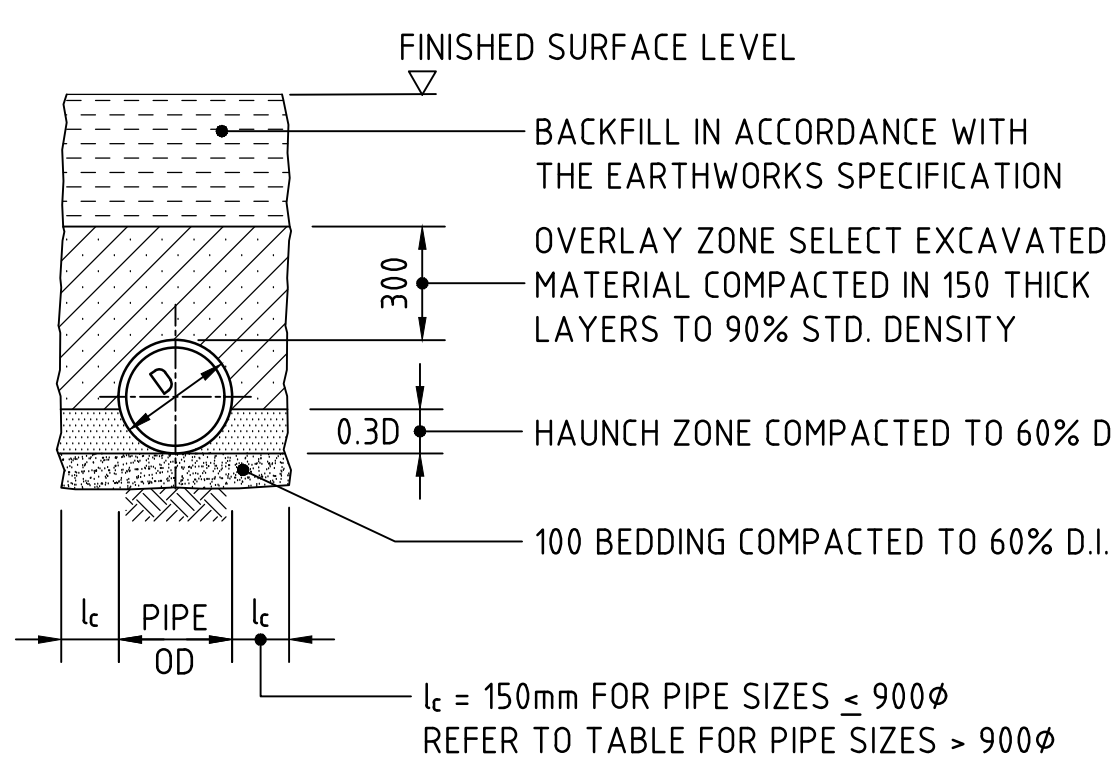
SUPPORT TO uPVC PIPES



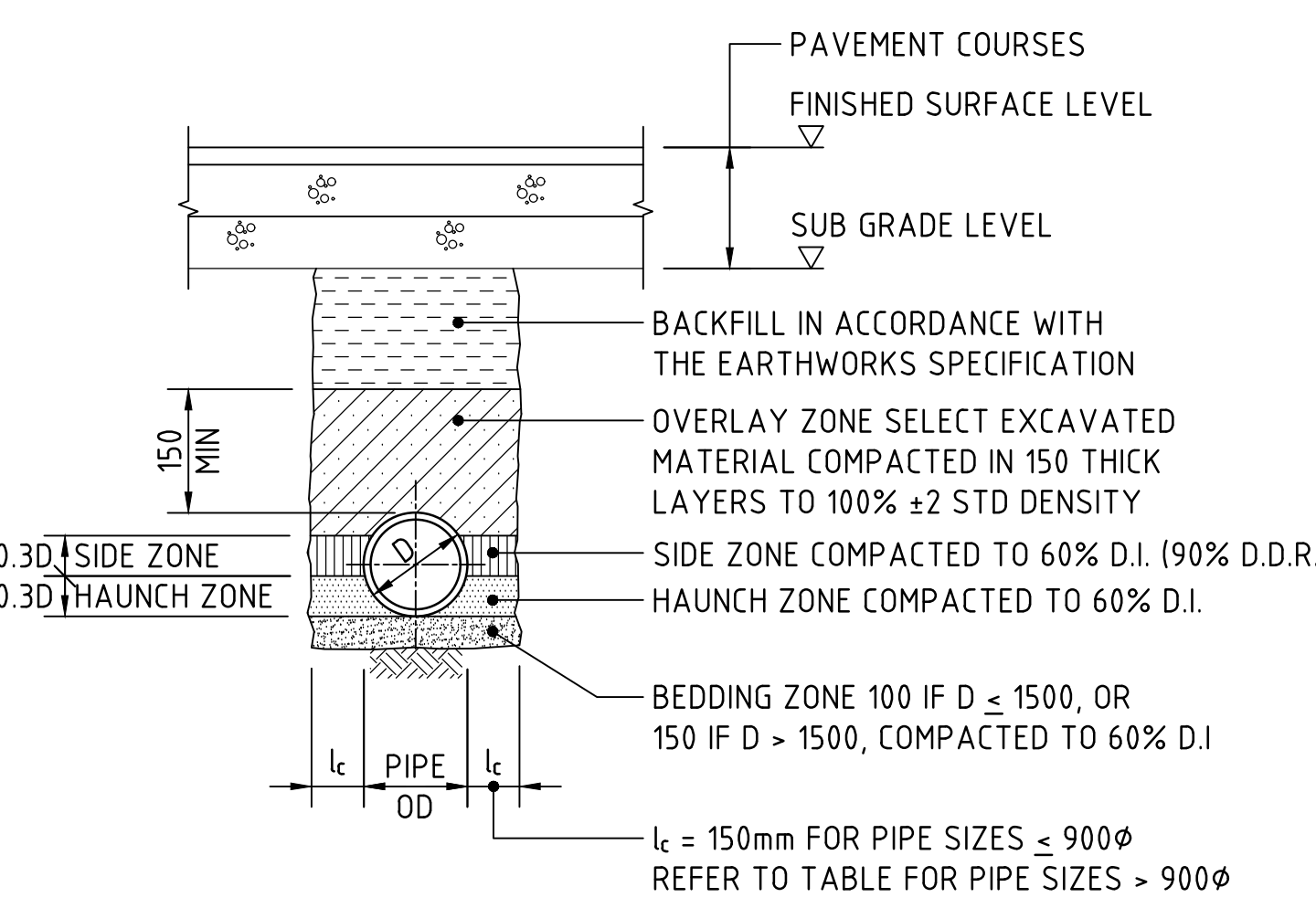
LONG SECTION



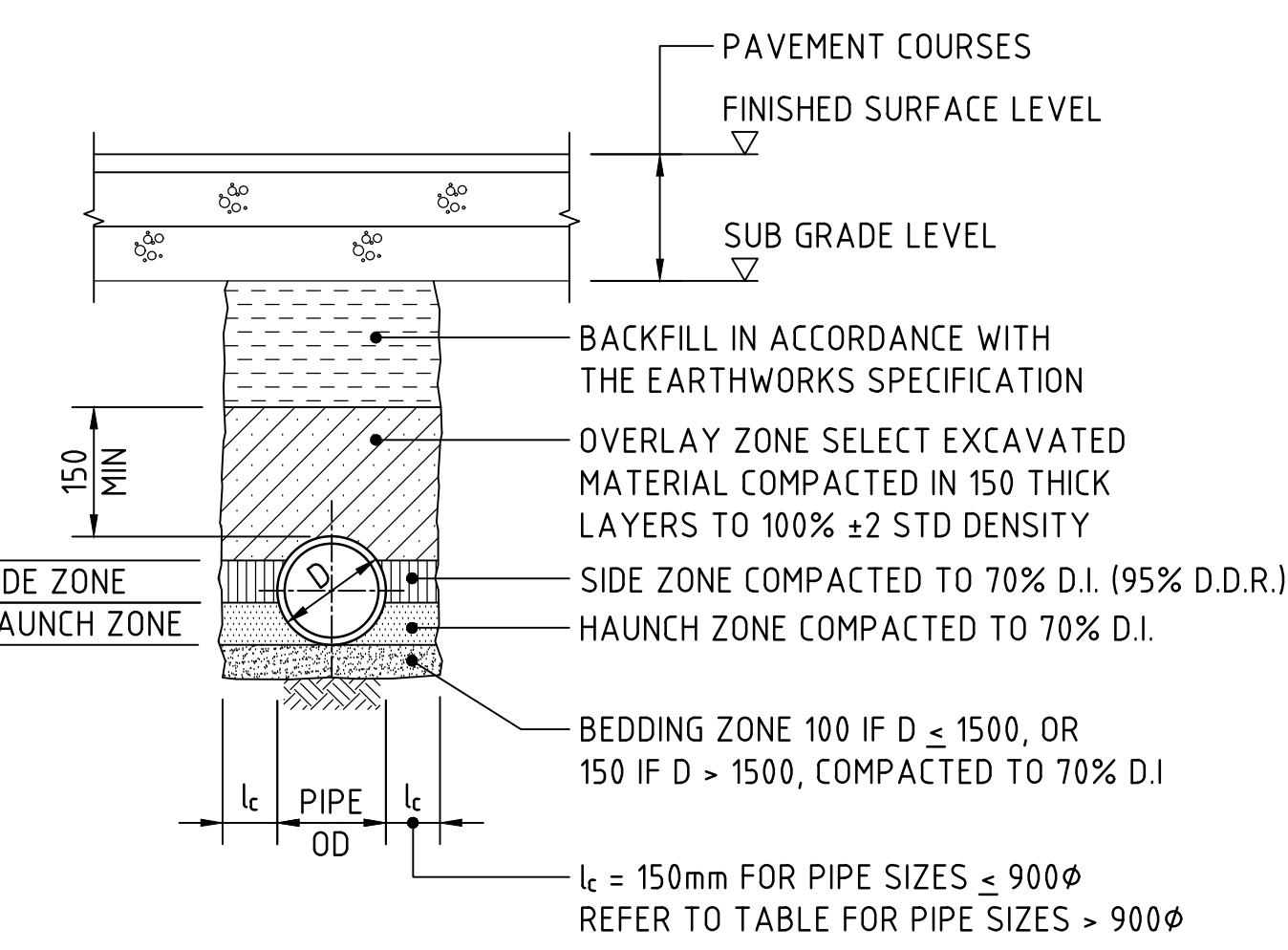
CROSS SECTION



TYPE H1 SUPPORT TO CONCRETE PIPES AT LANDSCAPED AREAS



TYPE HS2 SUPPORT TO CONCRETE PIPES UNDER PAVEMENT



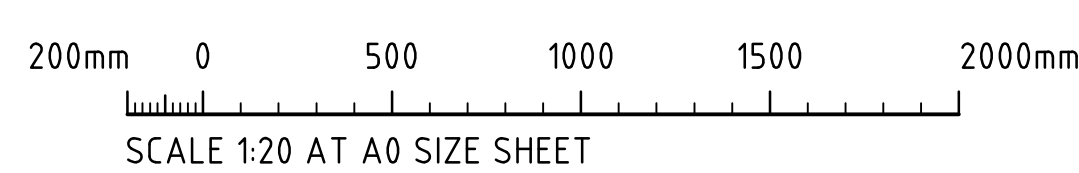
TYPE HS3 SUPPORT TO CONCRETE PIPES UNDER PAVEMENT

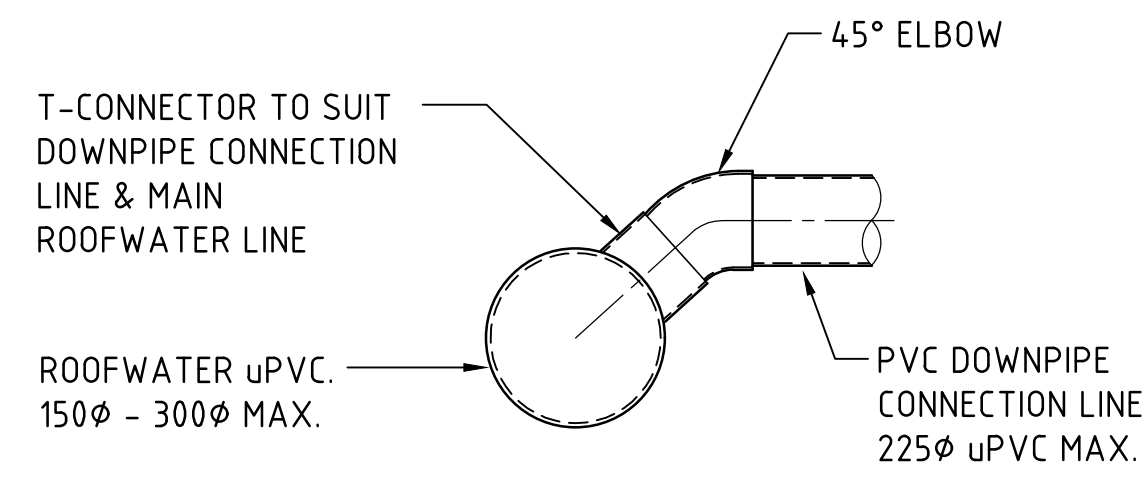
BEDDING & HAUNCH MATERIAL GRADING	
SIEVE SIZE (mm)	WEIGHT PASSING (%)
19.0	100
2.36	100 TO 50
0.60	90 TO 50
0.30	60 TO 10
0.15	25 TO 0
0.075	10 TO 0

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

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	

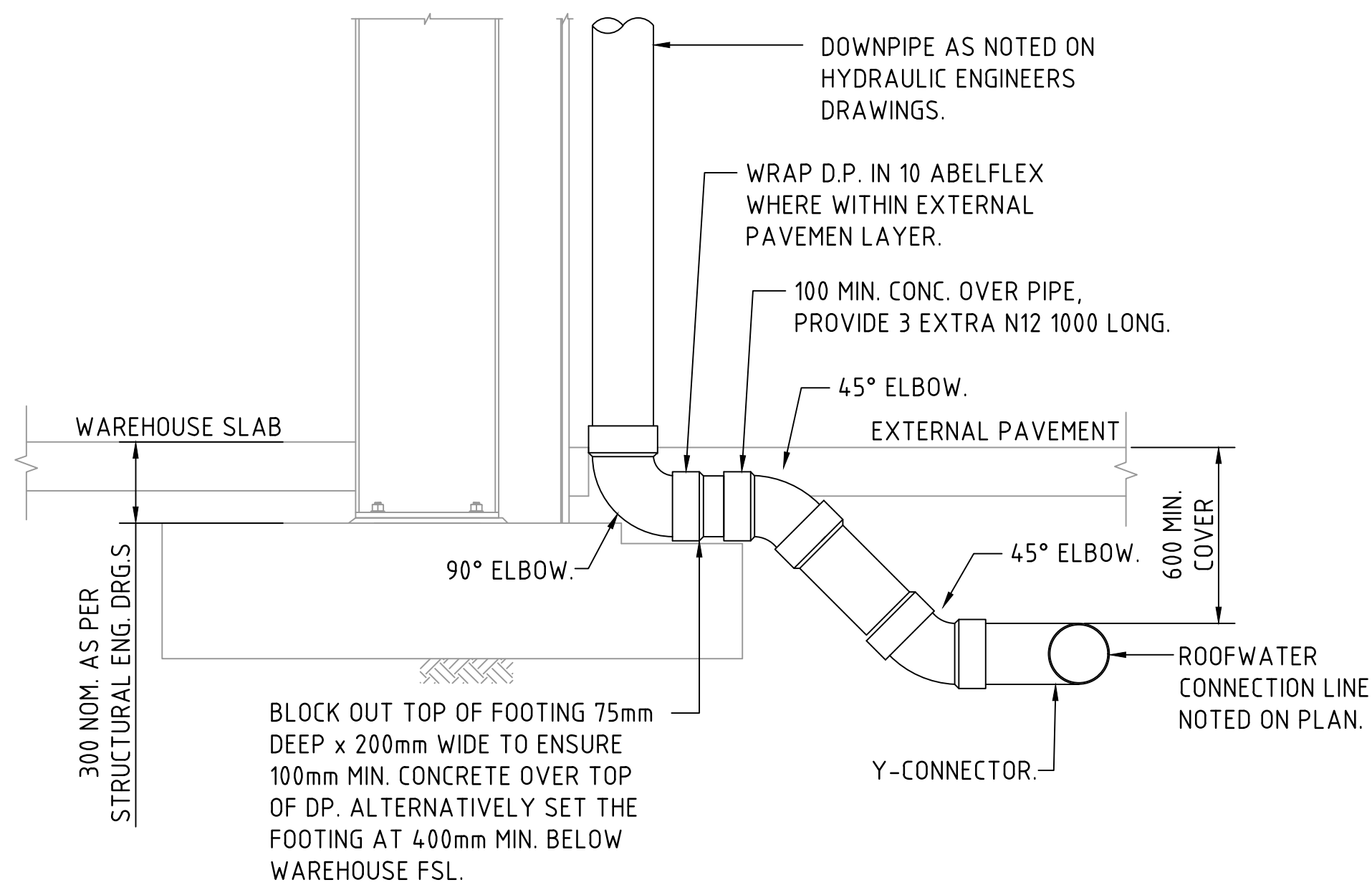
STATE SIGNIFICANT DEVELOPMENT APPLICATION



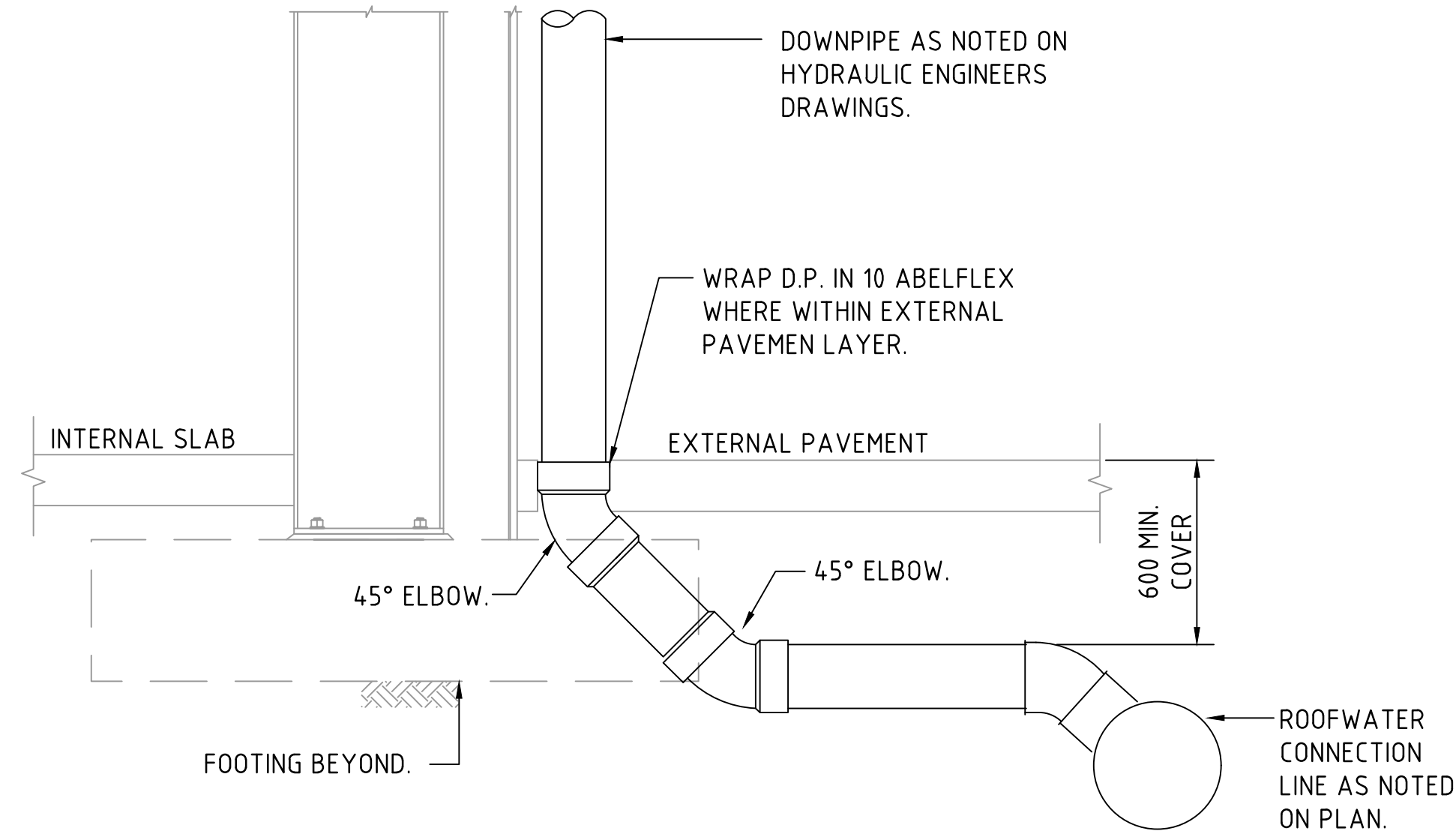


DOWN PIPE CONNECTION TO uPVC PIPE
SCALE 1:20

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 PROTUDE BEYOND THE INNER SURFACE OF THE STORMWATER PIPE.

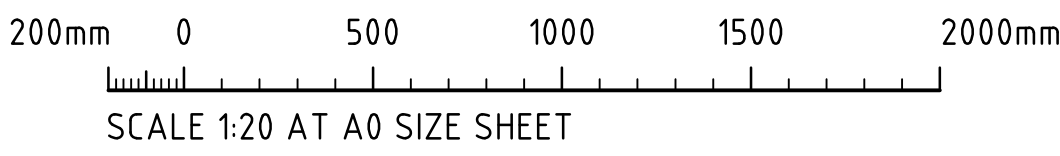


DOWNPIPE TURN-UP DETAIL A
(AT FOOTING LOCATION)
SCALE 1:20



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

STATE SIGNIFICANT DEVELOPMENT APPLICATION



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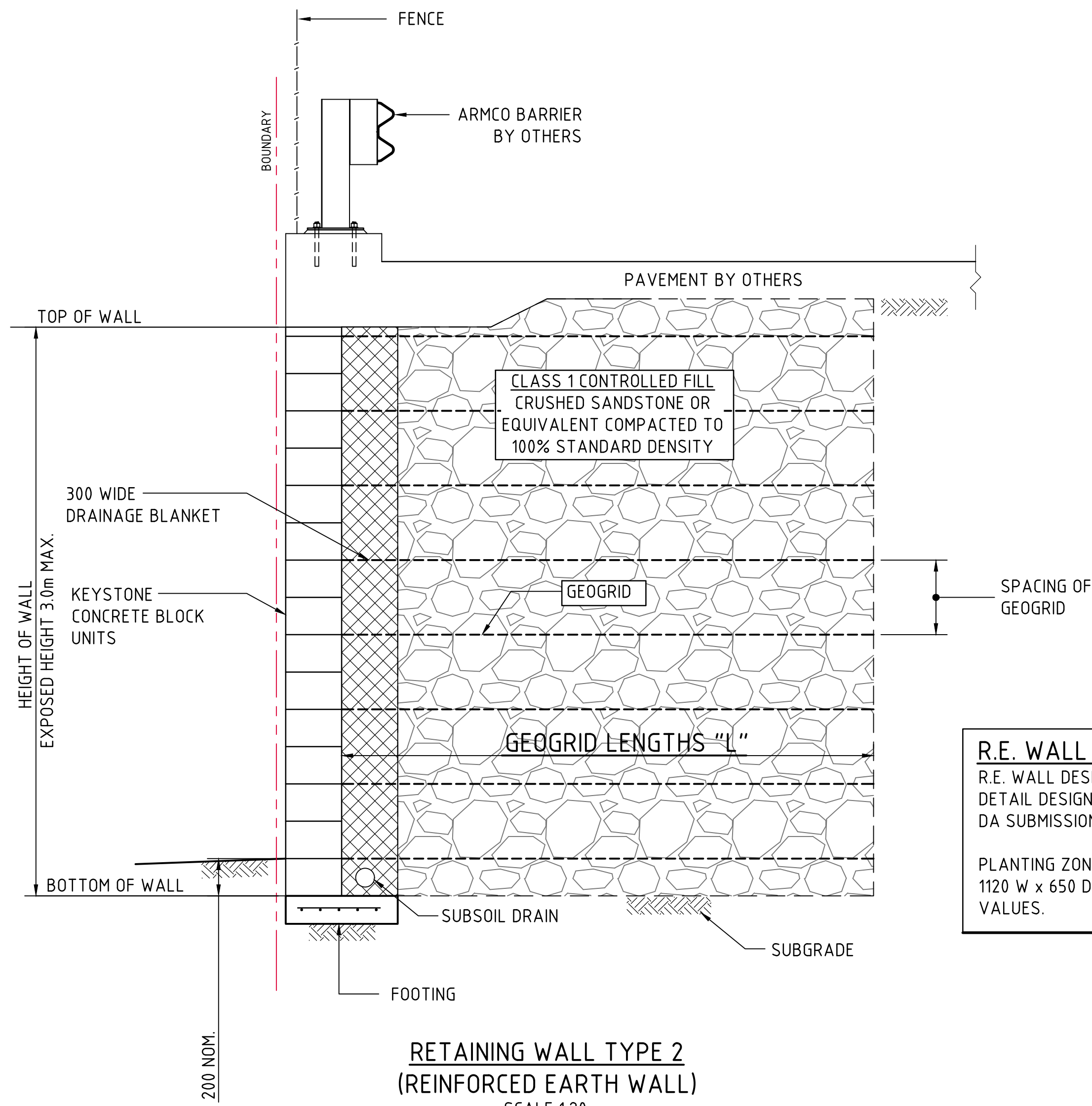
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- FINISHED LEVELS PLAN NOTES:

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

[illegible]



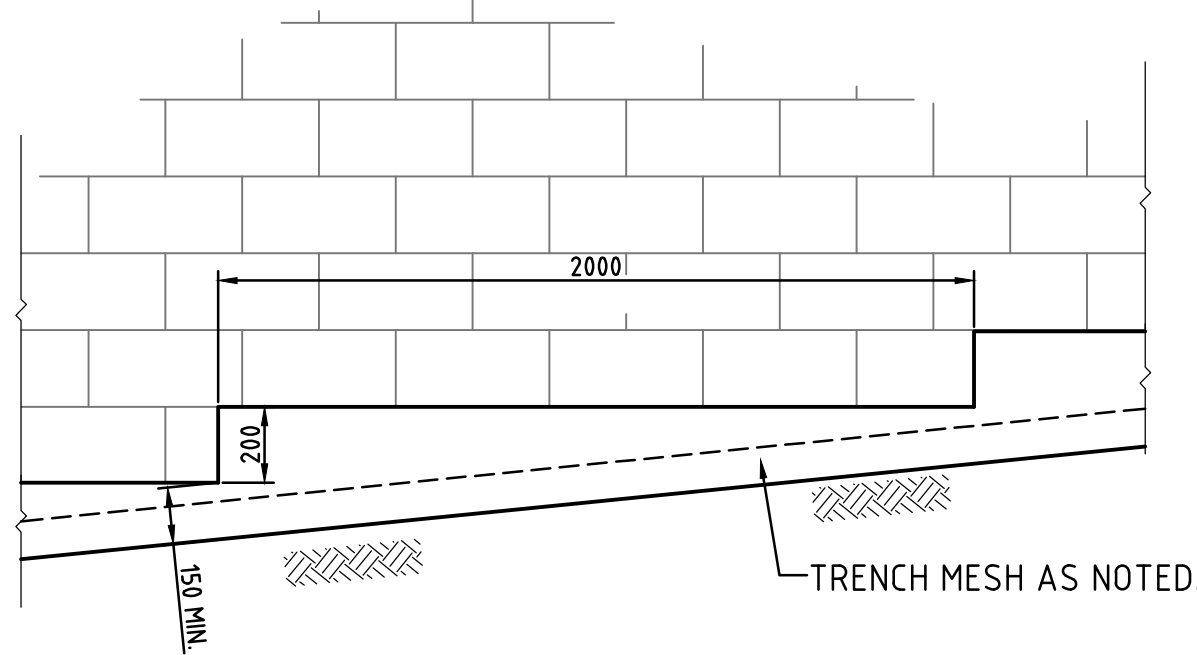
R.E. WALL NOTE:
R.E. WALL DESIGN SHOWN NOMINALLY ONLY.
DETAIL DESIGN CALCS. TO BE UNDERTAKEN BY D&C WALL DESIGNER FOLLOWING DA SUBMISSION STAGE.

PLANTING ZONE ALLOWS FOR MATURE TREE WITH MAXIMUM ROOTBALL 1120 W x 650 D. ENGINEER IS TO BE ADVISED IF PLANTING DIFFERS FROM THESE VALUES.

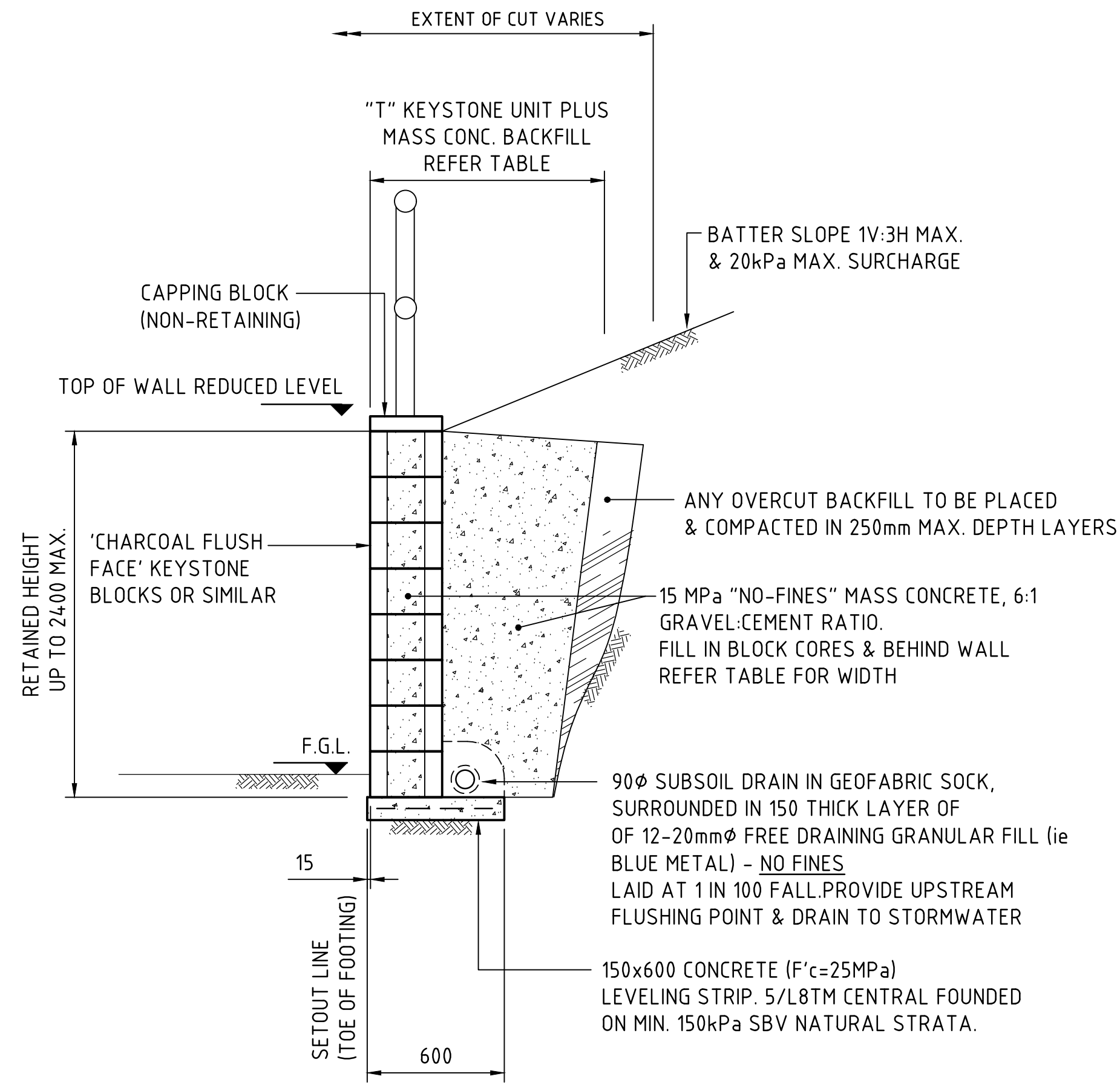
RETAINING WALL TYPE 2
(REINFORCED EARTH WALL)
SCALE 1:20

REINFORCED EARTH RETAINING WALL
STRUCTURAL DESIGN TO UCBC DETAILS.

NOTE:
INDICATIVE REINFORCEMENT LENGTHS
SHOWN. DESIGN TO BE CONFIRMED /
PROVIDED BY D+C CONTRACTOR.



REINFORCED EARTH WALL TYPICAL LEVELLING STRIP STEP DETAIL
SCALE 1:20



'NO-FINES' MASS CONCRETE KEYSTONE RETAINING WALL
(1000 TO 2400 MAXIMUM RETAINED HEIGHT)
SCALE 1:20

TYPICAL FOR THE FOLLOWING:
RETAINING WALL 1 & 4

'NO FINES' KEYSTONE WALL DETAILS

KEYSTONE WALL SPECIFICATIONS :	
RETAINED HEIGHT (mm)	OVERALL THICKNESS "T" (mm)
UP TO 1200	TO D&C CONTRACTOR
1200 TO 1600	TO D&C CONTRACTOR
1600 TO 2000	TO D&C CONTRACTOR
2000 TO 2400	TO D&C CONTRACTOR
2400 TO 2500	TO D&C CONTRACTOR

NOTE:
INDICATIVE REINFORCEMENT LENGTHS
SHOWN. DESIGN TO BE CONFIRMED /
PROVIDED BY D+C CONTRACTOR.

NOTE:
ALL BLOCK CORES TO BE FULLY GROUTED.
NOTES SHOWN ARE TYPICAL FOR ALL WALLS.
ALL BASE KEYS TO BE POURED AGAINST
UNDISTURBED NATURAL GROUND.

KEYSTONE RETAINING WALL NOT BE
USED IN TIERED CONFIGURATION.

CONCRETE QUALITY					
ELEMENT	SUMP	AGGREGATE (MAX. SIZE)	CEMENT TYPE	AD MIXTURE	F'c (MPa)
CORE FILL	230	10	GP	NL	20
SHOT CRETE	230	10	SL	NL	32

FOR DEVELOPMENT APPLICATION

200mm 0 500 1000 1500 2000mm
SCALE 1:20 AT A0 SIZE SHEET