

PROPOSED OPAL SPECIALIST AGED CARE  
WENTWORTH AVE, TOONGABBIE, NSW  
CIVIL ENGINEERING WORKS

**GENERAL NOTES:**

1. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH PARAMARATTA CITY COUNCIL SPECIFICATION. CONTRACTOR TO OBTAIN AND RETAIN A COPY ON SITE DURING THE COURSE OF THE WORKS.
2. ALL NEW WORKS ARE TO MAKE A SMOOTH JUNCTION WITH EXISTING CONDITIONS AND MARRY IN A WORKMANLIKE MANNER.
3. THE CONTRACTOR IS TO VERIFY THE LOCATION OF ALL SERVICES WITH EACH RELEVANT AUTHORITY. ANY DAMAGE TO SERVICES SHALL BE RECTIFIED BY THE CONTRACTOR OR THE RELEVANT AUTHORITY AT THE CONTRACTOR'S EXPENSE. SERVICES SHOWN ON THESE PLANS ARE ONLY THOSE EVIDENT AT THE TIME OF SURVEY OR AS DETERMINED FROM SURVEY DIAGRAMS. HERRI AND THWAS CONSULTING PTY. LTD. CANNOT GUARANTEE THE INFORMATION SHOWN NOR ACCEPT ANY RESPONSIBILITY FOR INACCURACIES OR INCOMPLETE DATA.
4. SERVICES & ACCESS TO THE EXISTING PROPERTIES ARE TO BE MAINTAINED IN WORKING ORDER AT ALL TIMES DURING CONSTRUCTION.
5. ADJUST EXISTING SERVICE COVERS TO SUIT NEW FINISHED LEVELS TO RELEVANT AUTHORITY REQUIREMENTS WHERE NECESSARY.
6. REINSTATE AND STABILISE ALL DISTURBED LANDSCAPED AREAS.
7. MINIMUM GRADE OF SUBSOIL SHALL BE 0.5% (1/20) FALL TO OUTLETS.
8. ALL TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES ARE TO BE CONSTRUCTED, PLACED AND MAINTAINED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS, EROSION AND SEDIMENTATION CONTROL PLAN AND PARAMARATTA CITY COUNCIL REQUIREMENTS WHERE APPLICABLE.
9. CONTRACTOR TO CHECK AND CONFIRM SITE DRAINAGE CONNECTIONS ACROSS THE VERGE PRIOR TO COMMENCEMENT OF SITE DRAINAGE WORKS.
10. PROPERTIES AFFECTED BY THE WORKS ARE TO BE NOTIFIED IN ADVANCE WHERE DISRUPTION TO EXISTING ACCESS IS LIKELY.

## EXISTING SERVICES & FEATURES

- THE CONTRACTOR SHALL ALLOW FOR THE CAPPING OFF, EXCAVATION AND REMOVAL, IF REQUIRED, OF ALL EXISTING SERVICES IN AREAS AFFECTED BY WORKS WITHIN THE CONTRACT AREA/AS SHOWN ON THE DRAWINGS UNLESS DIRECTED OTHERWISE BY THE SUPERINTENDENT.
- THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES SERVICES TO ALL BUILDINGS NOT AFFECTED BY THE WORKS ARE NOT DISRUPTED
- PRIOR TO COMMENCEMENT OF ANY WORKS THE CONTRACTOR SHALL OBTAIN APPROVAL OF HIS PROGRAM FOR THE RELOCATION/CONSTRUCTION OF TEMPORARY SERVICES.
- CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES TO MAINTAIN SUPPLY TO EXISTING BUILDING REMAINING IN OPERATION DURING WORKS TO THE SHAPESHAFTION AND APPROVAL OF THE SUPERINTENDENT. ONCE DIRECTION IS COMPLETE AND COMMISSIONED, THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD TO THE SATISFACTION OF THE SUPERINTENDENT.
- INTERFERENCE TO SUPPLY OF EXISTING SERVICES SHALL BE DONE SO AS NOT TO CAUSE ANY INCONVENIENCE TO THE PRINCIPAL. CONTRACTOR TO OBTAIN APPROVAL FROM THE SUPERINTENDENT FOR TIME OF INTERFERENCE.
- EXISTING SERVICES, BUILDINGS, EXTERNAL STRUCTURES AND TREES SHOWN ON THESE DRAWINGS ARE EXISTING FEATURES PRIOR TO ANY DEMOLITION WORKS.
- EXISTING SERVICES UNLESS SHOWN ON SURVEY PLAN HAVE BEEN PLOTTED FROM SERVICES SEARCH PLANS AND AS SUCH THEIR ACCURACY CANNOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLETE A DIAL BEFORE YOU DIG SEARCH AND TO ESTABLISH THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY.
- ALL BRANCH GAS AND WATER SERVICES UNDER DRIVEWAYS AND BRICK PAVING SHALL BE LOCATED IN 900i PVC SEWER GRADE CONDUITS EXTENDING A MINIMUM OF 500mm BEYOND EDGE OF PAVING.



## LOCALITY SKETCH

NTS

## DRAWING SCHEDULE

DRAWING SCHEDULE	
15896_DA_C000	COVER SHEET - DRAWING SCHEDULE, NOTES AND LOCALITY SKETCH
15896_DA_C100	DETAIL PLAN - STORMWATER AND GRADING
15896_DA_C200	STORMWATER MISCELLANEOUS DETAILS & PIT LID SCHEDULE
15896_DA_C201	OSD SECTION & DETAILS
15896_DA_C250	STORMWATER CATCHMENT PLAN
15896_DA_C500	PAVEMENT PLAN
15896_DA_SE01	SEDIMENT & EROSION CONTROL PLAN
15896_DA_SE02	SEDIMENT & EROSION CONTROL, TYPICAL SECTIONS & DETAILS

[illegible]

FOR DA ONLY

## SURVEY NOTES

THE EXISTING SITE CONDITIONS SHOWN ON THE FOLLOWING DRAWINGS HAVE BEEN INVESTIGATED BY THE SURVEOR SPECIFIED IN THE TITLE BLOCK.

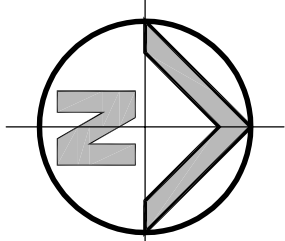
THE INFORMATION IS SHOWN TO PROVIDE A BASIS FOR DESIGN. HENRY AND MYNARS PLY. LTD DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SURVEY/ BASE OR ITS SUITABILITY AS A BASIS FOR CONSTRUCTION DRAWINGS.

BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA, CONTACT HENRY AND MYNARS PLY. LTD. THE FOLLOWING NOTES HAVE BEEN TAKEN DIRECTLY FROM ORIGINAL SURVEY DOCUMENTS

## SITWORKS NOTES

- DATUM: A.H.D.
- ORIGIN OF LEVELS : REFER TO BENCH OR STATE SURVEY MARKS WHERE SHOWN ON PLAN.
- CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING DETAILS ON SITE PRIOR TO THE COMMENCEMENT OF WORK.
- ALL WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS & THE DIRECTIONS OF THE SUPERINTENDENT
- EXISTING SERVICES UNLESS SHOWN ON THE SURVEY PLAN HAVE BEEN PLOTTED FROM SERVICES SEARCH PLANS AND AS SUCH THEIR ACCURACY CANNOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THE LOCATION OF ANY LEVEL OF EXISTING SERVICES IS CORRECT. THE LOCATION OF ANY LEVEL OF EXISTING SERVICES SHALL BE REPORTED TO THE SUPERINTENDENT. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY.
- WHERE NEW WORKS ADJUT EXISTING THE CONTRACTOR SHALL ENSURE THAT SMOOTH EVEN PROFILE, FREE FROM ARIPIP CHANGES IS ACHIEVED.
- THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A REGISTERED SURVEYOR.
- CARE IS TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATIONS IS TO BE UNDERTAKEN OVER TELSTRA OR ELECTRICAL SERVICES. HAND EXCAVATE IN THESE AREAS.
- CONTRACTOR TO OBTAIN AUTHORITY APPROVALS WHERE APPLICABLE.
- MAKE SMOOTH TRANSITION TO EXISTING SURFACES AND MAKE GOOD.
- THESE PLANS SHALL BE READ IN CONJUNCTION WITH APPROVED LANDSCAPE ARCHITECTURAL, STRUCTURAL, HYDRAULIC AND MECHANICAL DRAWINGS AND TO BE CONSIDERED AS PART OF THE CONTRACT. ANY OMISSIONS, AMBIGUITIES OR WRITTEN INSTRUCTIONS THAT MAY BE ISSUED BEARING TO DEVELOPMENT AT THE SITE.
- TRENCHES THROUGH EXISTING ROAD AND CONCRETE PAVEMENTS SHALL BE SAWN CUT TO FULL DEPTH OF CONCRETE AND A MINIMUM OF 50mm IN BITUMINOUS PAVING.
- ALL BRANCH GAS AND WATER SERVICES UNDER DRIVEWAYS AND BRICK PAVING SHALL BE LOCATED TO 600 PIPES SINKER GRADE CONDUITS EXTENDING A MINIMUM OF 500mm BEYOND FACE OF PAVING
- GRADES TO NOMINATED R.L.S AREAS EXHIBING GRADIENT GREATER THAN 5mm DEPTH WILL NOT BE ACCEPTED UNLESS IN A DESIGNATED SAG POINT.
- ALL COVERS AND GRATES ETC TO EXISTING SERVICES WILL BE TO BE ADJUSTED TO SUIT NEW FINISHED SURFACE LEVELS WHERE APPLICABLE.





GIRRAWEE CREEK  
EMBANKMENT

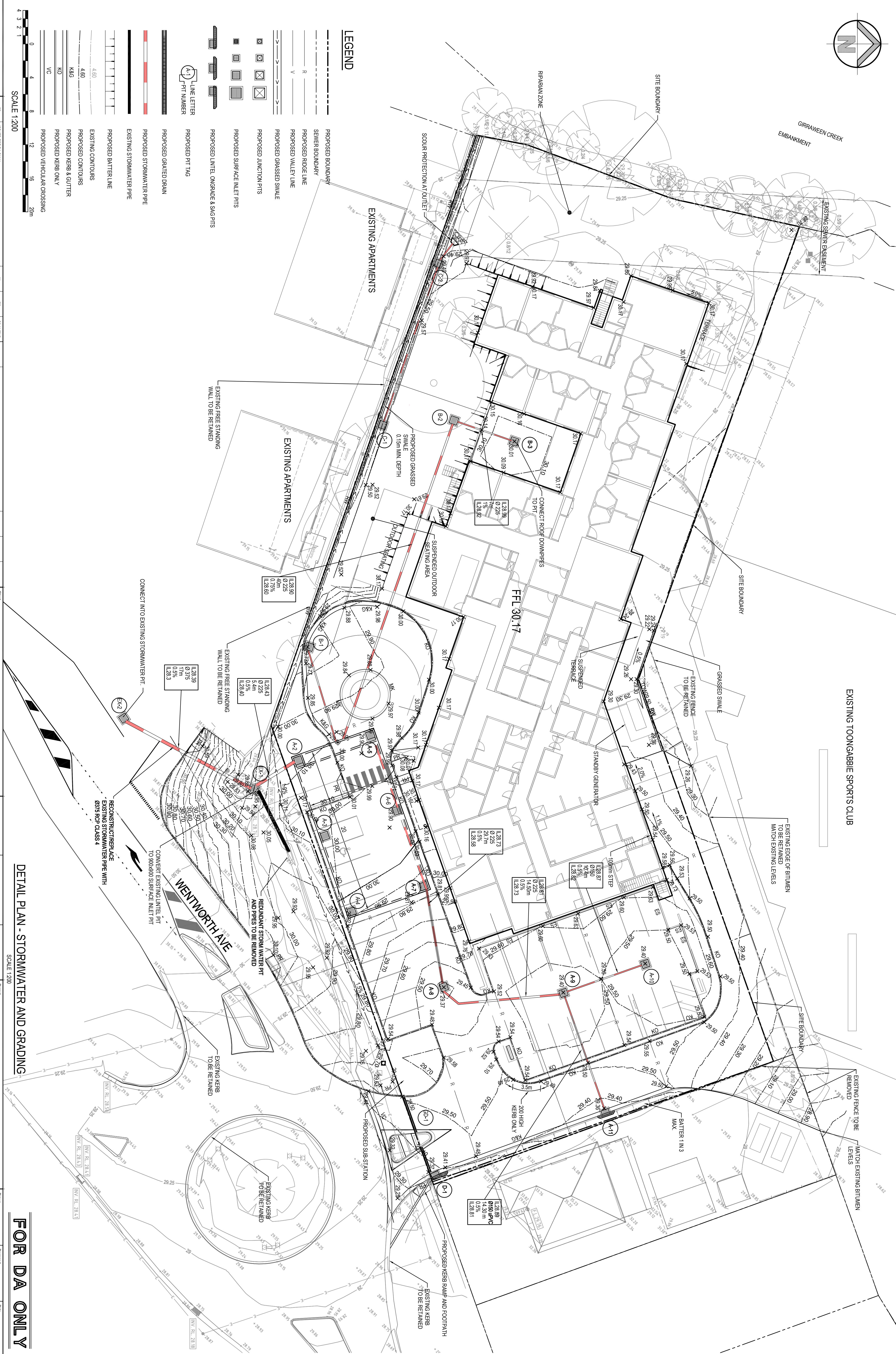
EXISTING TOONGABBIE SPORTS CLUB

EXISTING EDGE OF BITUMEN  
TO BE RETAINED  
MATCH EXISTING LEVELS

EXISTING FENCE TO BE REMOVED

MATCH EXISTING BITUMEN LEVELS

LEVELS



## DETAIL PLAN - STORMWATER AND GRADING

SCALE 1:200

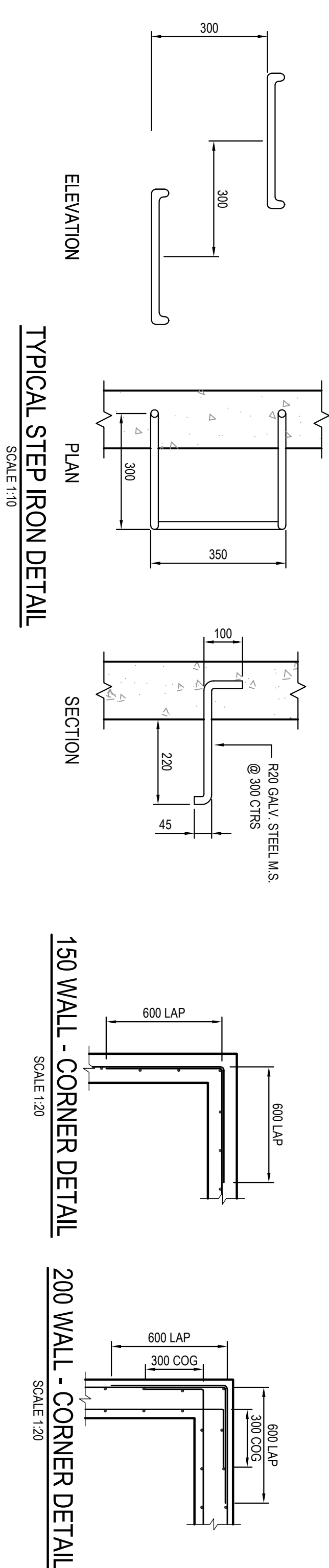
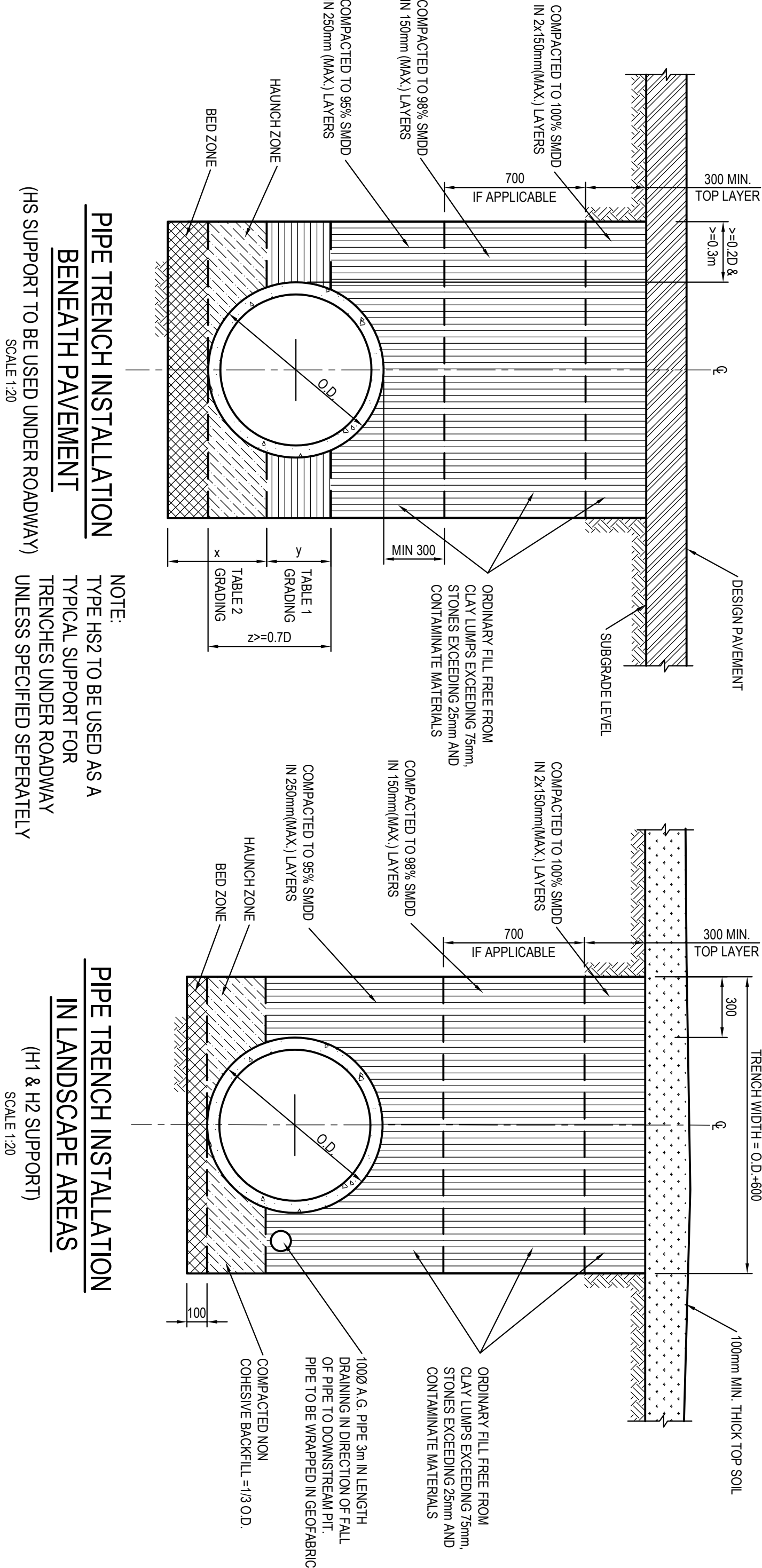
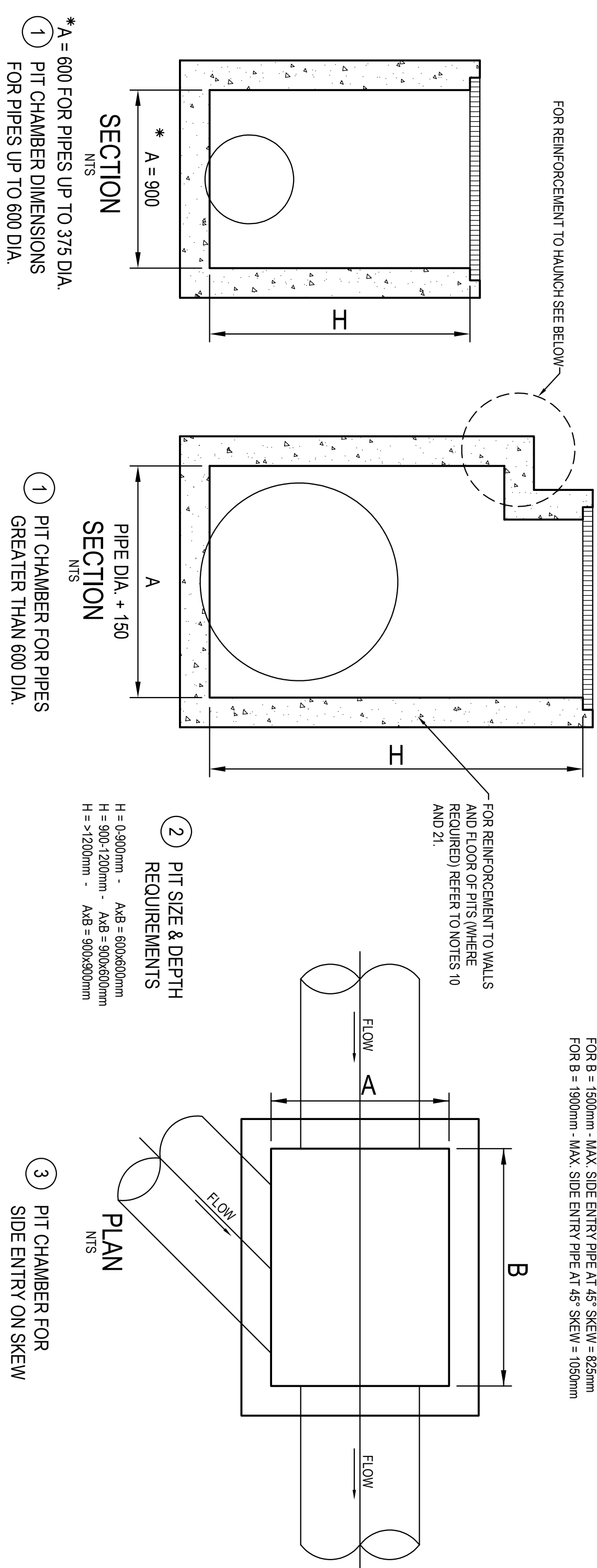
FOR DA ONLY

<b>SURVEY INFORMATION</b> <b>SURVEYED BY RPS AUSTRALIA EAST</b> <b>DATUM AND ORIGIN OF LEVELS: PD09187</b>		07	ISSUED FOR DA ONLY	GP	TC	25.11.2016	<b>Client:</b> <b>OPAL SPECIALIST AGED CARE</b> <b>Architect:</b> <b>CALDER FLOWER ARCHITECTS</b>	
		06	ISSUED FOR DA ONLY	IK	TC	16.11.2016		
		05	ISSUED FOR DA ONLY	MS	TC	26.10.2016		
		04	PRELIMINARY	MS	TC	10.08.2016		
		03	PRELIMINARY	MS	TC	05.06.2016		
		02	PRELIMINARY	MS	TC	15.07.2016		
		01	PRELIMINARY	MS	TC	15.06.2016	<b>Level 15:</b> 15/157-15/158 Avenue Cherrywood NSW 2067 <b>Telephone:</b> +61 2 9417 8337 <b>Facsimile:</b> +61 2 9417 8337 <b>www:</b> www.henryandhymas.com.au <b>info:</b> info@henryandhymas.com.au	
<b>REVISION</b>		<b>AMENDMENT</b>		<b>REVISION</b>		<b>AMENDMENT</b>		
DRAWN		DESIGNED		DATE		DATE		
SHOWN		REVISION		DATE		DATE		
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<b>Project:</b> <b>OPAL SPECIALIST AGED CARE</b> <b>WENTWORTH AVE., TOONAGABIE, NSW</b>								
<b>Title:</b>		<b>Drawing number:</b>		<b>Drawn:</b>		<b>Date:</b>		
DETAIL PLAN - STORMWATER AND GRADING		15B96_DA_C100		L.C.Barta		MAY 2016		
				Checked:		Approved		
				T.C.Bhira		A.Farids		
				Scale:		Revision		
				1:200 @ A1		09		



IT IS THE CONTRACTORS RESPONSIBILITY TO SELECT PIT CHAMBER SIZE WITH REGARDS TO PIPE SIZE, DEPTH TO INVERT AND SKEW ANGLE. REFER SKETCHES BELOW.

- ① SELECT PIT CHAMBER USING THE STEPS BELOW:
- ② SELECT PIT CHAMBER SIZE DEPENDING ON THE PIPE DIAMETERS.
- ③ CHECK PIT CHAMBER SIZE TO SATISFY DEPTH TO INVERT REQUIREMENTS.
- ④ CHECK PIT CHAMBER DIMENSIONS TO SATISFY THE SKEW ANGLE IN THE TABLE



SIEVE SIZE (MM)	WEIGHT PASSING (%)
75.0	100
9.5	100 TO 50
2.36	100 TO 30
0.60	50 TO 15
0.075	25 TO 0

TABLE 2

SIEVE SIZE (MM)	WEIGHT PASSING (%)
19.0	100
2.36	100 TO 50
0.60	90 TO 20
0.30	60 TO 10
0.15	25 TO 0
0.075	10 TO 0

TABLE 3

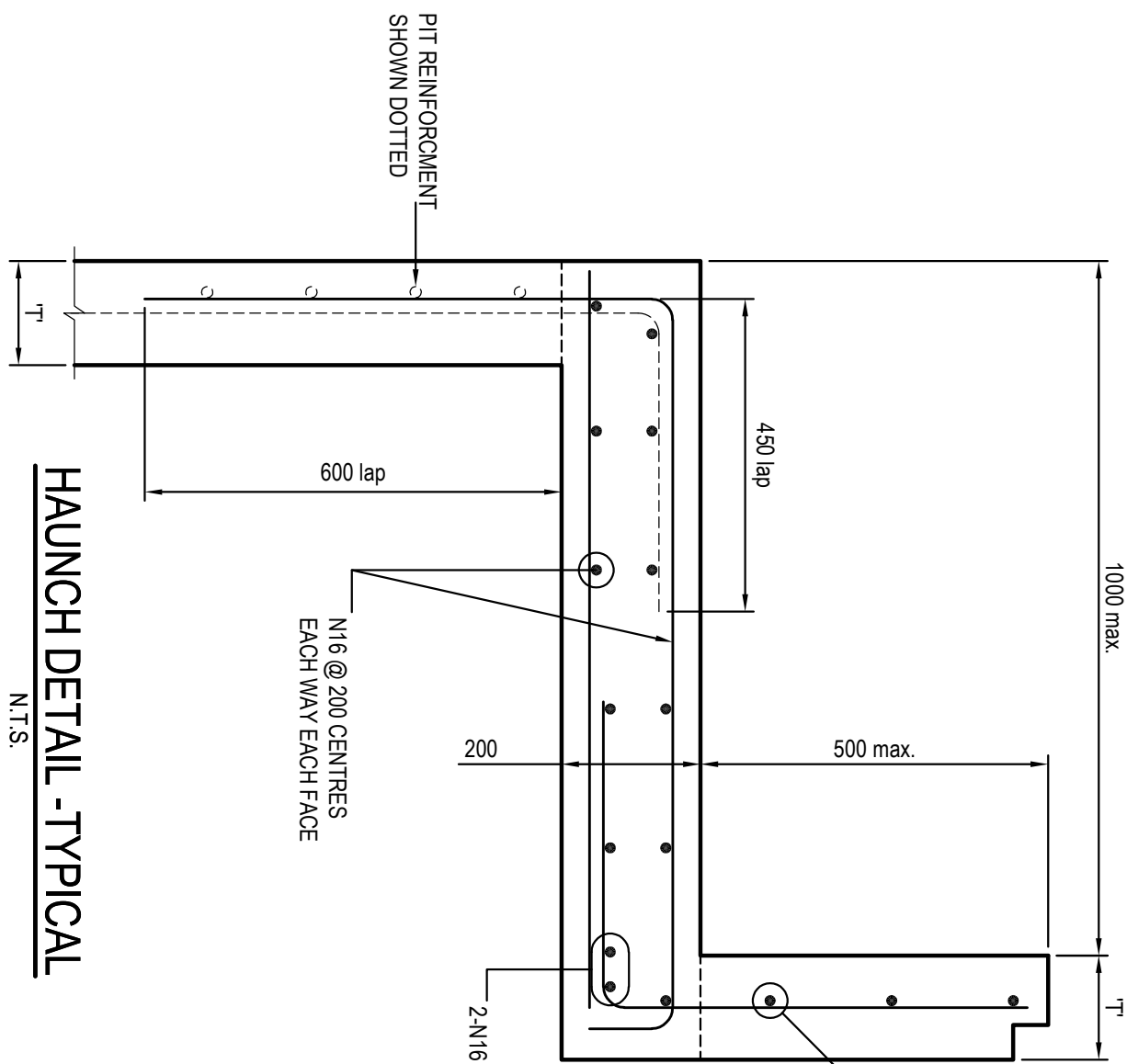
TABLE 3			
SUPPORT TYPE	BED ZONE X	HAUNCH ZONE Y	BED AND HAUNCH ZONES MAX BEDDING FACTOR
HS1		0.10	2.0
HS2	100 IF D<=1500, OR 150 IF D=1800	0.30	2.5
HS3		0.30	4.0

DRAINAGE NOTES:

1. ALL STORMWATER WORK TO COMPLY WITH AS 3500 PART 3.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE MINIMUM COVER OF 600mm ON ALL PIPES.
3. PROTECTION OF PIPES DUE TO LOADS EXCEEDING 77 WHEEL LOAD SHALL BE THE CONTRACTORS RESPONSIBILITY.
4. BENDING TIES SHALL BE TYPE H2 FOR RCP, WHERE NECESSARY THE OVERLAY ZONE SHALL BE REDUCED TO ACCOMMODATE PAVEMENT REQUIREMENTS. REFER TO THIS DRAWING FOR DETAILS.
5. MINIMUM COVER OVER EXISTING PIPES FOR PROTECTION DURING CONSTRUCTION SHALL BE 600mm.
6. NO CONSTRUCTION LOADS SHALL BE APPLIED TO PLASTIC PIPES.
7. FINISHED SURFACE LEVELS SHOWN ON LAYOUT PLANS MUST TAKE PRECEDENCE OVER DESIGN DRAINAGE SURFACE LEVELS.
8. ALL PIPES UP TO AND INCLUDING 300 DIA. SHALL BE SOLVENT OR RUBBER RING JOINTED PVC CLASS 3 PIPE TO AS 260. ALL OTHER PIPES TO BE RCP USING CLASS 2 RUBBER RING JOINTED PIPE. PARODIES RCP PIPE MAY BE USED IN LIEU OF RCP IF DESIRED IN AREA. ALL AHEAD PIPES TO BE PVC CLASS SH.
9. ALL PITS IN NON TRAFFICABLE AREAS TO BE PREPARED FOR POLYESTER CONCRETE POLYCONCRETE WITH LIGHT DUTY CLASS 5 GALV. AND MILD STEEL GRATING AND FRAME.
10. ALL PITS IN TRAFFICABLE AREAS (CLASS 2) LOADING MAY TO HAVE 150mm THICK CONCRETE WALLS AND BASE CAST IN SITU 15-20 MPa. REINFORCED WITH 12/200 BOTH LOADING ARE CENTRALLY PLACED UNO ON SEPARATE DESIGN DRAWINGS IN THIS SET. GALV. AND MILD STEEL GRATING AND FRAME TO SUIT DESIGN LOADING. PRECAST PITS, RECTANGULAR OR CIRCULAR IN SHAPE, MAY BE USED IN LIEU AND SHALL COMPLY WITH RELEVANT AUSTRALIAN STANDARDS.
11. ALL PITS, GRATINGS AND FRAMES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATION AND TO BE IN ACCORDANCE WITH AS3900.3 AND AS3996.
12. PIT CHAMBER DIMENSIONS ARE TO BE SELECTED TO SATISFY THE FOLLOWING:
  - PIT SIZE
  - DEPTH
  - SLOPE
  - INLET
  - OVERFLOW
13. REFER TYPICAL PIT CHAMBER DETAILS BELOW.
14. IF PIT LID SIZE IS SMALLER THAN THE PIT CHAMBER SIZE THEN THE PIT LID IS TO BE CONSTRUCTED ON THE CORNER OF THE PIT CHAMBER WITH THE STEP IRONS DIRECTLY BELOW. ALTERNATIVELY THE PIT LID TO BE USED IS TO BE THE SAME SIZE AS THE PIT CHAMBER.
15. FOR PIPE SIZES GREATER THAN 600mm, PIT FLOOR IS TO BE BENCHED TO FACILITATE FLOW.
16. GALVANISED STEP IRONS SHALL BE PROVIDED AT 300 CTS FOR PITS HAVING A DEPTH EXCEEDING 1200mm.
17. SUBSIDI. DRAINAGE PIPE SHALL BE PROVIDED IN PIPE TRENCHES ADJACENT TO INLET PIPES. (MINIMUM LENGTH 5m)
18. ALL SUBSIDI. PIPES SHALL BE 100mm SLOTTED PVC IN A FILTER SOCK, UNO, WITH AN INSTALLED UPSTREAM OF ALL PITS.
19. ALL PIPEWORK SHALL HAVE MINIMUM DIAMETER 100.
20. MINIMUM GRADE FOR ROOFWATER DRAINAGE LINES SHALL BE 1%.
21. ALL PIPE JUNCTIONS AND TAPER UP TO AND INCLUDING 300 DIA. SHALL BE WA. PURPOSE MADE FITTINGS.
22. ALL ROOF DRAINAGE TO BE INSTALLED IN ACCORDANCE WITH AS3900. PART 3. TESTING TO BE UNDERTAKEN AND REPORTS PROVIDED TO THE SUPERINTENDENT.
23. LOCATION OF THE DIRECT DOWN PIPE CONNECTIONS MAY VARY ON SITE TO SUIT SITE CONDITIONS, WHERE CONNECTION SHOWS ON LONG SECTIONS ARE INDICATIVE ONLY.
24. MINIMUM COVER OF 150mm DEEP TO HAVE WALL AND FLOOR THICKNESS INCREASED TO 200mm. REINFORCED WITH 12/200 CTS CENTRALLY PLACED BOTH WAYS THROUGHOUT UNO ON SEPARATE DESIGN DRAWINGS IN THIS SET. IF DEPTH EXCEEDS 5m CONTACT ENGINEER.
25. SUBSIDI. DRAINAGE LINES FOR LANDSCAPE AREA NOT SHOWN ON THESE DRAWINGS. REFER TO LANDSCAPING PLANS FOR DETAILS.
26. ALL STORMWATER PITS TO HAVE 600mm PVC SLOTTED SUBSIDI. PIPES CONNECTED TO THEM. THESE SUBSIDI. LID EXTENDED 5m UPSTREAM OF THE PIT AT A MINIMUM GRADE.

## PIT LID SCHEDULE

PIT/STRUCTURE NUMBER	DESCRIPTION
B-2 B-3	SURFACE INLET PIT WITH HINGED 900x900 LIGHT DUTY GRATED LID CLASS 'B'
A-9 A-10	SURFACE INLET PIT WITH HINGED 900x900 HEAVY DUTY GRATED LID CLASS 'D'
A-2 A-3 A-4 A-7	HINGED 900x900 HEAVY DUTY GRATED LID CLASS 'D' WITHIN OSD TAKK
B-1	200mm WIDE GRATED DRAIN HEAVY DUTY CLASS 'D'
A-11	SURFACE INLET PIT WITH SAG 1.8m LINTEL, HEAVY DUTY CLASS 'D' IN ACCORDANCE WITH COUNCIL'S STANDARD DRAWINGS WITH STORMWATER90 ENVIROPOD MICRON 200
D-1	SURFACE INLET PIT WITH 1.8m LINTEL, HEAVY DUTY CLASS 'D' IN ACCORDANCE WITH COUNCIL'S STANDARD DRAWINGS
B-1	EXISTING SURFACE INLET PIT WITH LINTEL TO BE RECONSTRUCTED WITH 900x900 GRATED LID HEAVY DUTY CLASS 'D' IN ACCORDANCE WITH COUNCIL'S STANDARD DRAWINGS
B-2	CONNECT TO EXISTING STORMWATER PIT, ENSURE GOOD CONDITION, RECONSTRUCT IF REQUIRED.
C-1 C-2	SURFACE INLET PIT WITH HINGED 900x900 LIGHT DUTY GRATED LID CLASS 'B' WITH STORMWATER90 ENVIROPOD MICRON 200
B-1 A-6	SURFACE INLET PIT WITH HINGED 900x900 HEAVY DUTY GRATED LID CLASS 'D' WITH STORMWATER90 ENVIROPOD MICRON 200
A-5 A-6	HINGED 900x900 HEAVY DUTY GRATED LID CLASS 'D' WITHIN OSD TAKK WITH STORMWATER90 ENVIROPOD MICRON 200

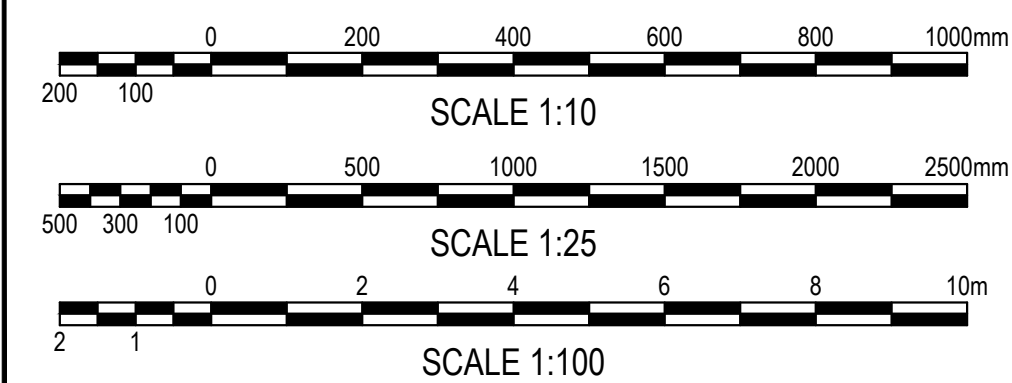
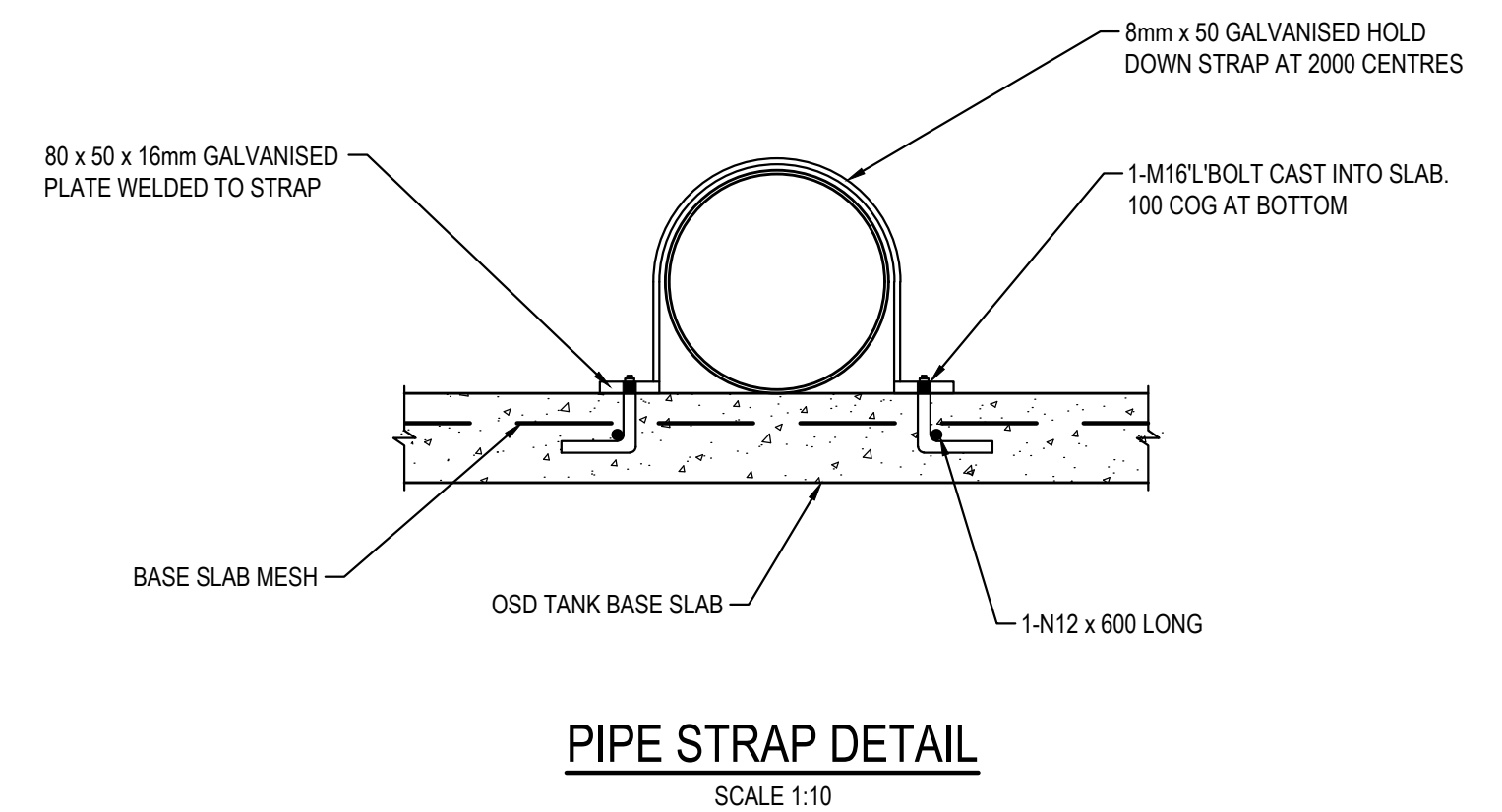
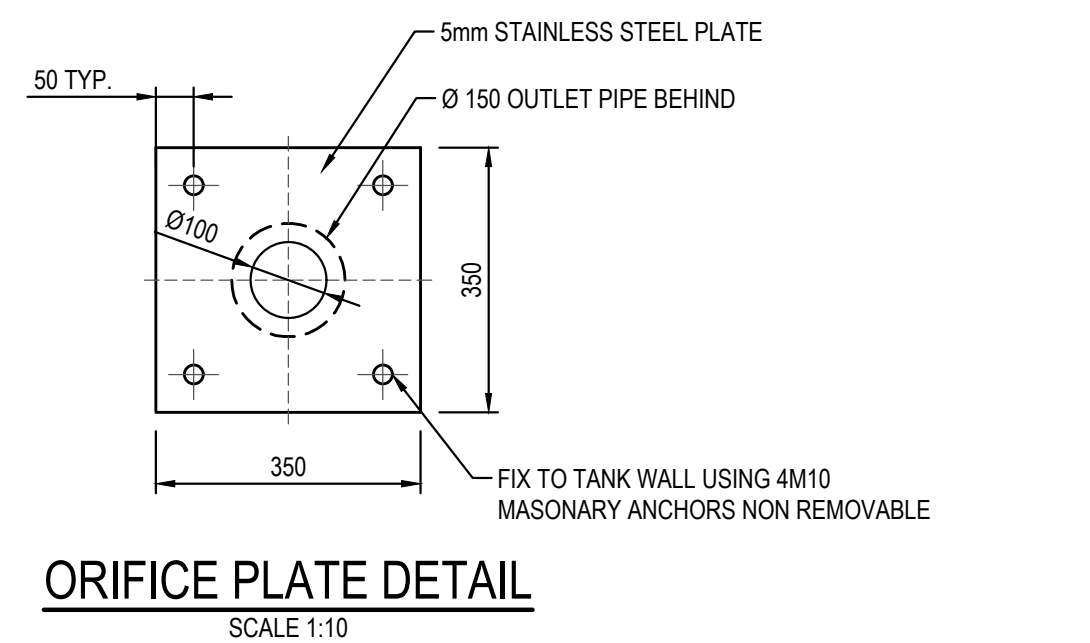
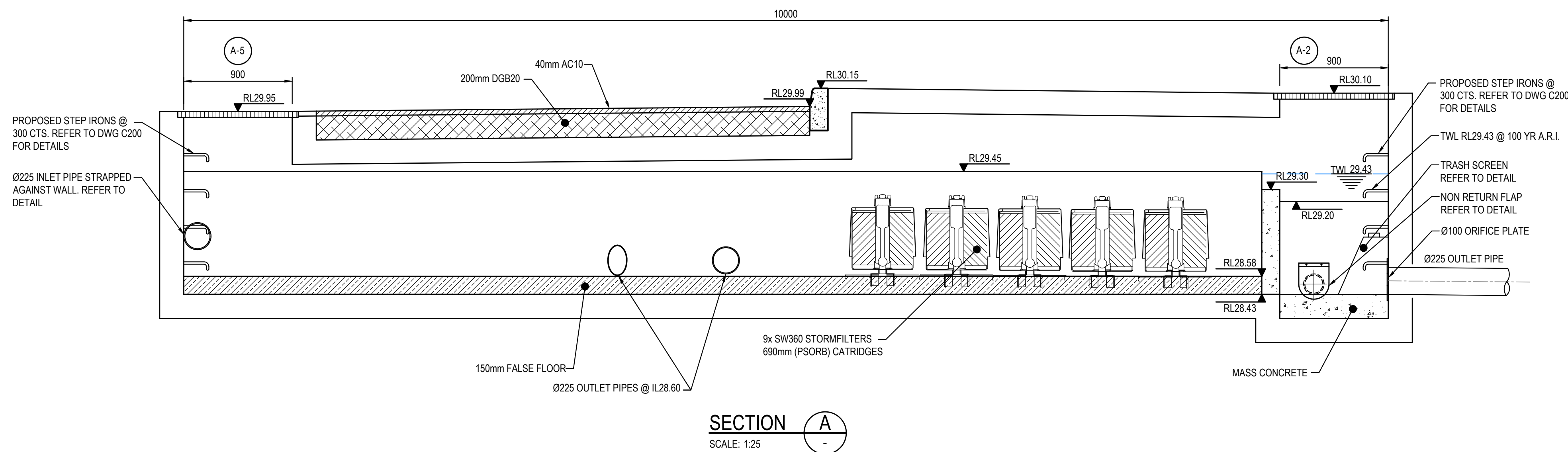
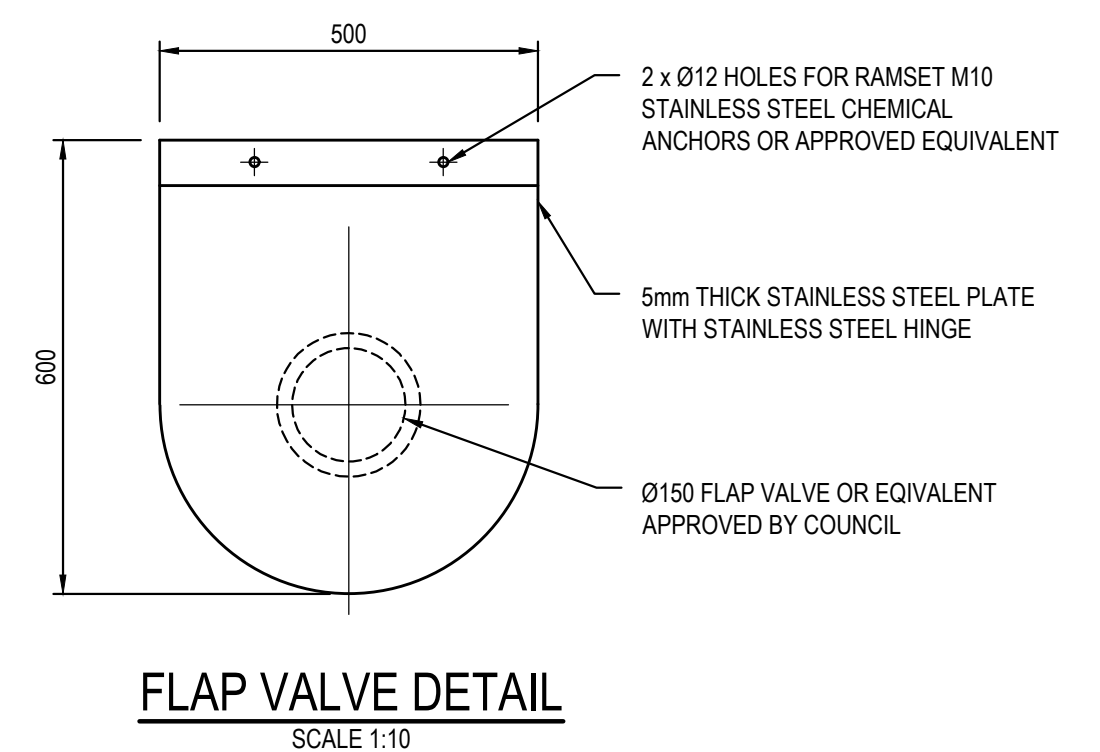
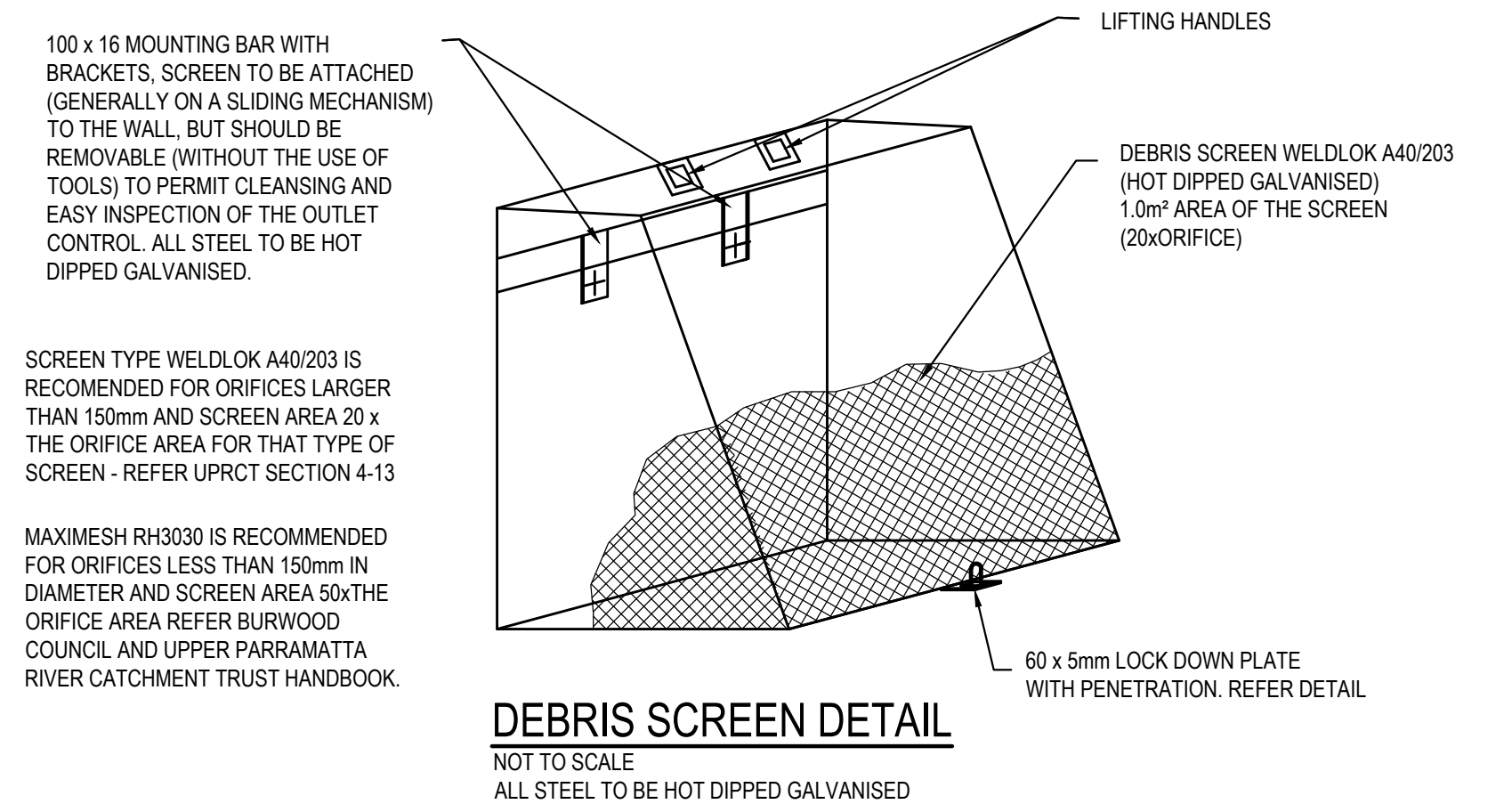
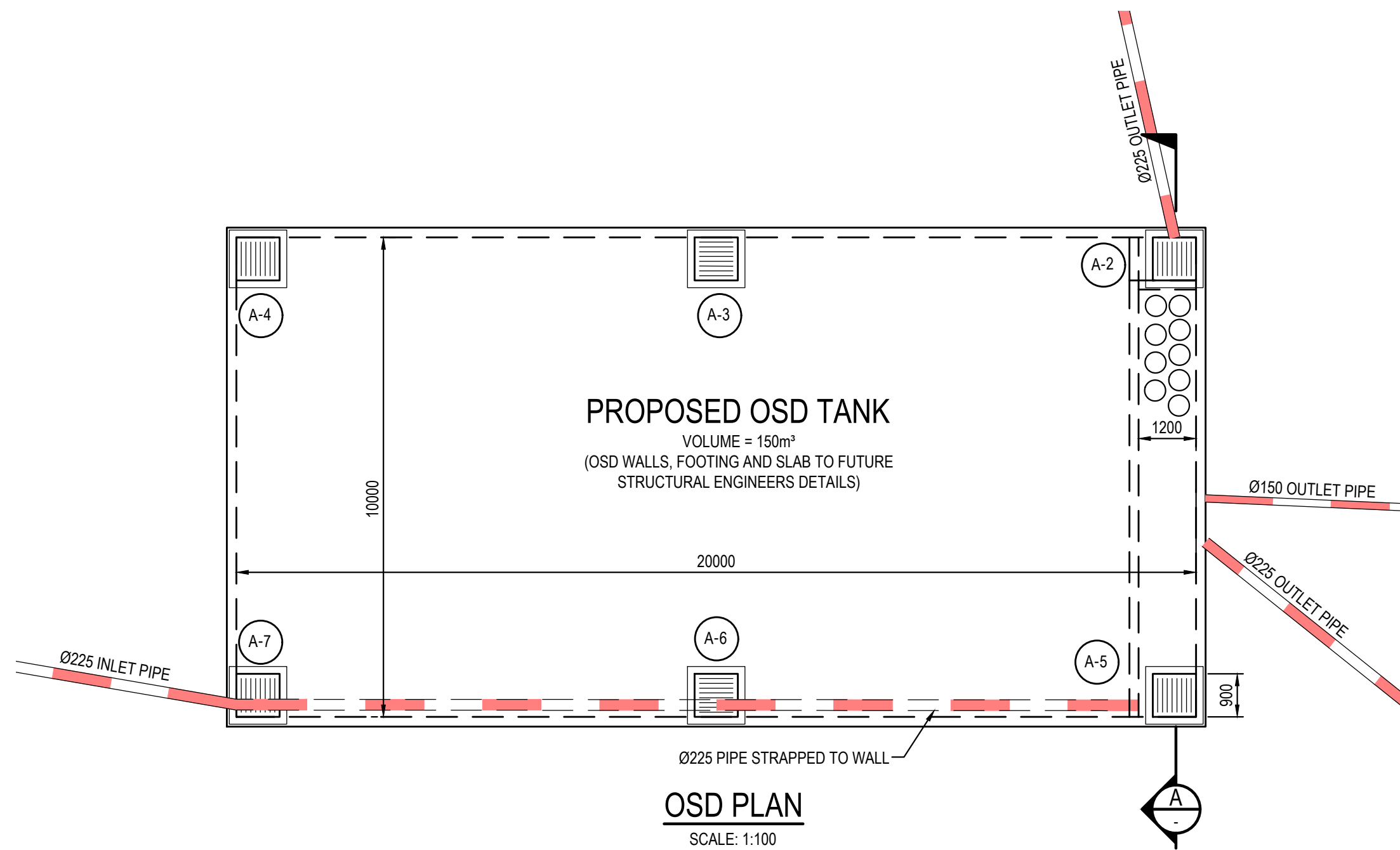


## DETAIL - TYPICAL

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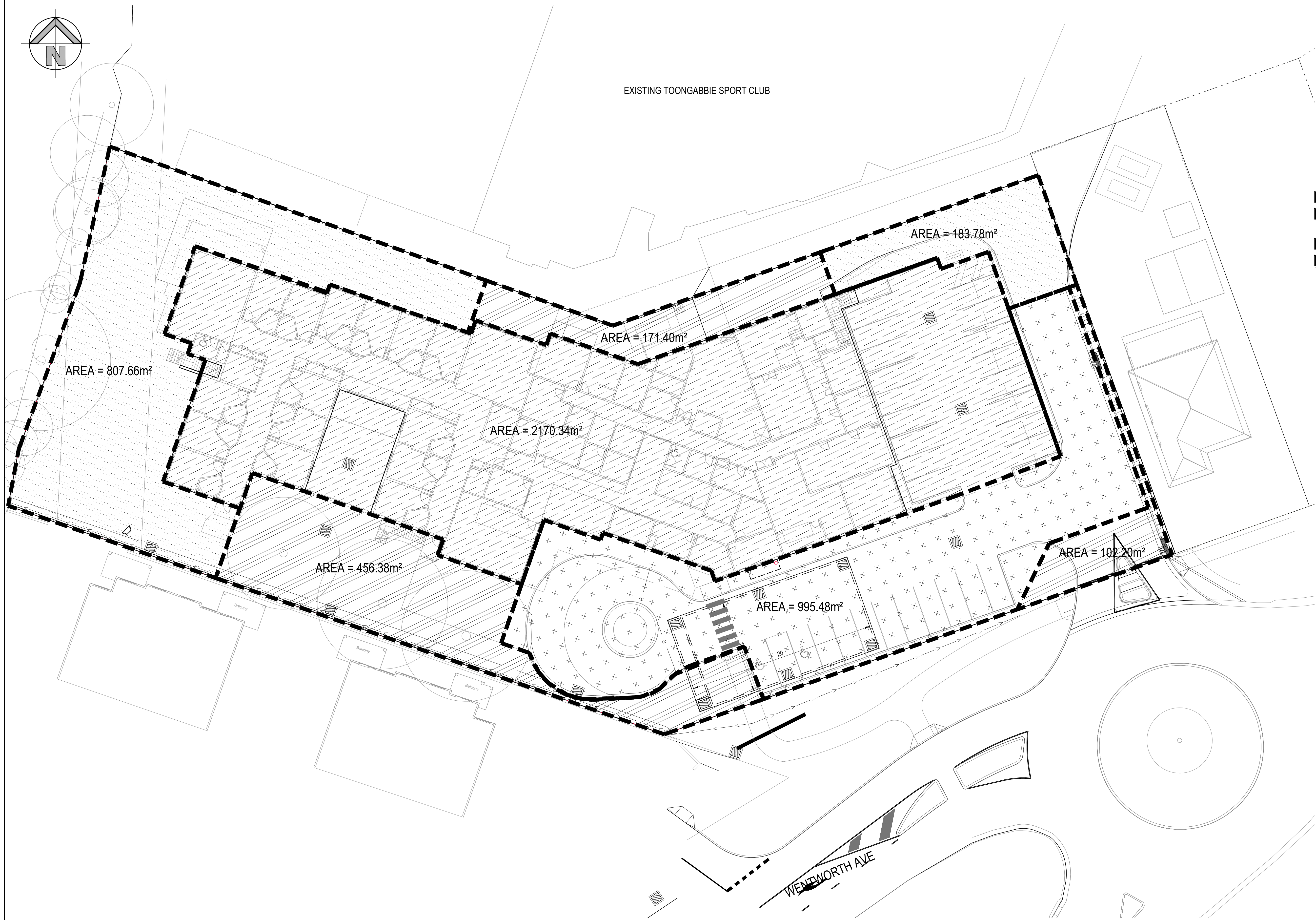
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	05	ISSUED FOR DA ONLY	IK	TC	25.11.2016				15/2016 Level 15 Chadstone NSW 2067	OPAL SPECIALIST AGED CARE
	04	ISSUED FOR DA ONLY	MS	TC	26.10.2016				Architect	OPAL SPECIALIST AGED CARE
	03	PRELIMINARY	MS	TC	05.08.2016				Telephone +61 2 9417 8337	OPAL SPECIALIST AGED CARE
	02	PRELIMINARY	MS	TC	15.07.2016				Facsimile +61 2 9417 8337	OPAL SPECIALIST AGED CARE
DRAWING AND ORIGIN OF LEVELS PRIOR 97	01	PRELIMINARY	MS	TC	29.06.2016				email@hcmhcnr.com.au	OPAL SPECIALIST AGED CARE
		REVISION	REVISION	REVISION					www.hcmhcnr.com.au	OPAL SPECIALIST AGED CARE
CALDER FLOWER ARCHITECTS										
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Project: OPAL SPECIALIST AGED CARE										
L. CARRA										
WENTWORTH AVE., TOONGBARRIE, NSW.										
Drawing number: 15B96_DA_C200										
Revision: 07										





SURVEY INFORMATION										Client		Level 5, 79 Victoria Avenue Chatswood NSW 2067		Telephone +61 2 9417 8400 Facsimile +61 2 9417 8337 Email email@hhconsult.com.au Web www.henryandhymas.com.au		Project		Drawn L.Caha		Designed L.Caha		Date MAY 2016	
SURVEYED BY RPS AUSTRALIA EAST										Architect		CALDER FLOWER ARCHITECTS		This drawing and design remains the property of Henry & Hymas and may not be copied in whole or in part without the prior written approval of Henry & Hymas.		OPAL SPECIALIST AGED CARE WENTWORTH AVE., TOONGABBIE, NSW		Checked T.Chan		Approved A.Francis		Scale AS NOTED @ A1	
DATUM: AHD ORIGIN OF LEVELS: PM29167										Revision		Drawing number		Revision		Title		15B96_DA_C201		OSD PLAN, SECTION & DETAILS		05	
REVISION										AMENDMENT		DRAWN		DESIGNED		DATE		AMENDMENT		DRAWN		DESIGNED	
05										ISSUED FOR DA ONLY		MS		TC		29.06.2016							
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02										ISSUED FOR DA ONLY		IK		TC		26.10.2016							
01										PRELIMINARY		MS		TC		29.06.2016							





The diagram is a site plan with several labeled areas:

- ROOF TO OSD**: A rectangular area with diagonal hatching. AREA= 2170.34m<sup>2</sup>
- LANDSCAPING AREA / EXISTING BYPASS EXCLUDED FROM CALCS**: A rectangular area with a stippled pattern.
- SITE BYPASS**: A rectangular area with diagonal hatching, located below the landscaping area.
- EXTERNAL TO OSD**: A rectangular area with a white background and four small circles at the corners.

AREA = 102.20m<sup>2</sup>

WENTWORTH AVE

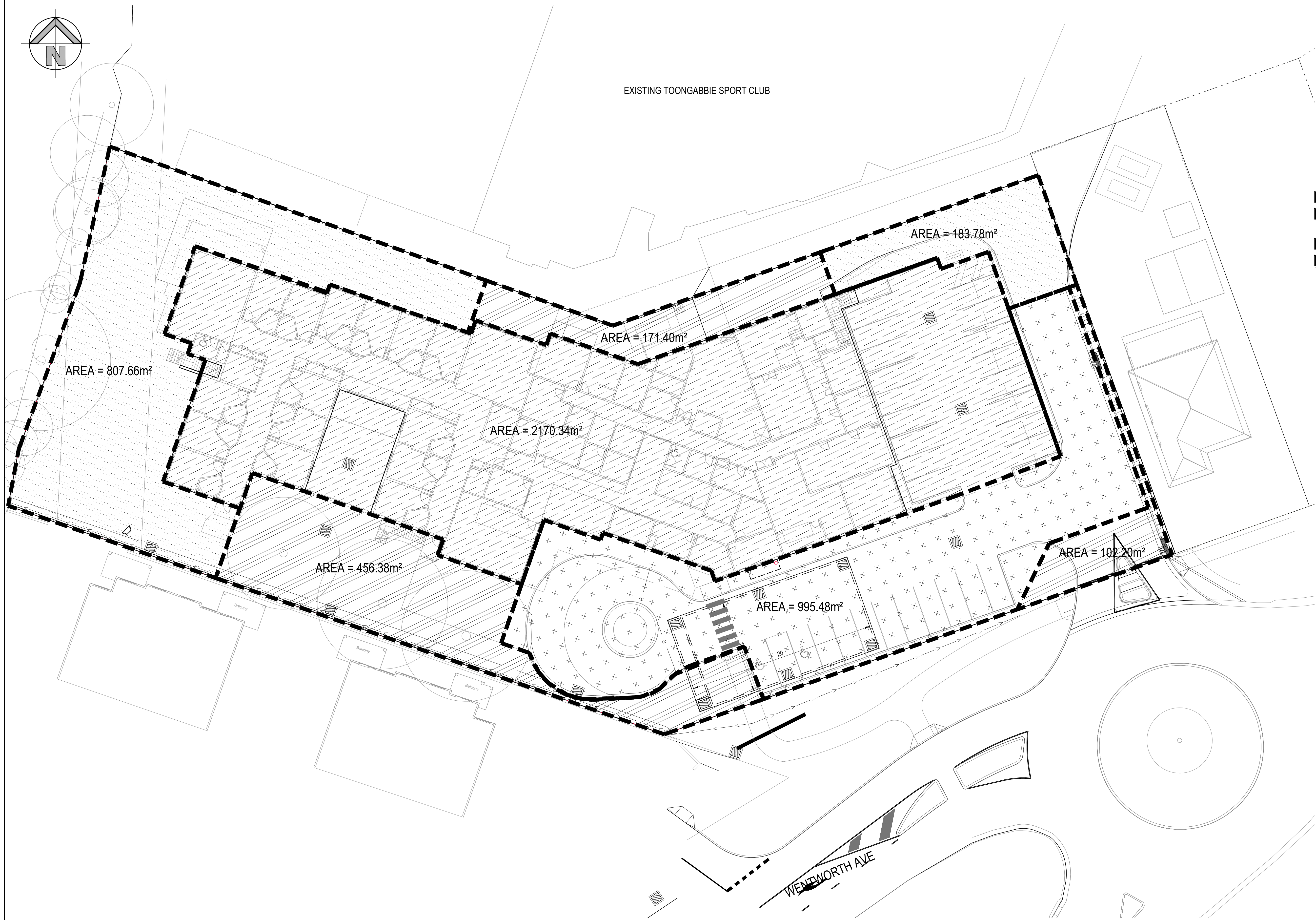
SCALE 1:200



Drawn L.Caha	Designed L.Caha	Date MAY 2016
Checked T.Chan	Approved A.Francis	Scale 1:200 @ A1
Drawing number <b>15B96_DA_C250</b>		Revision <b>06</b>

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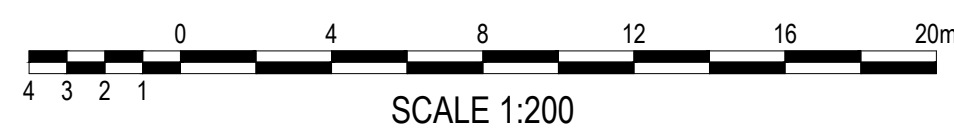
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AREA = 102.20m<sup>2</sup>

WENTWORTH AVE

SCALE 1:200

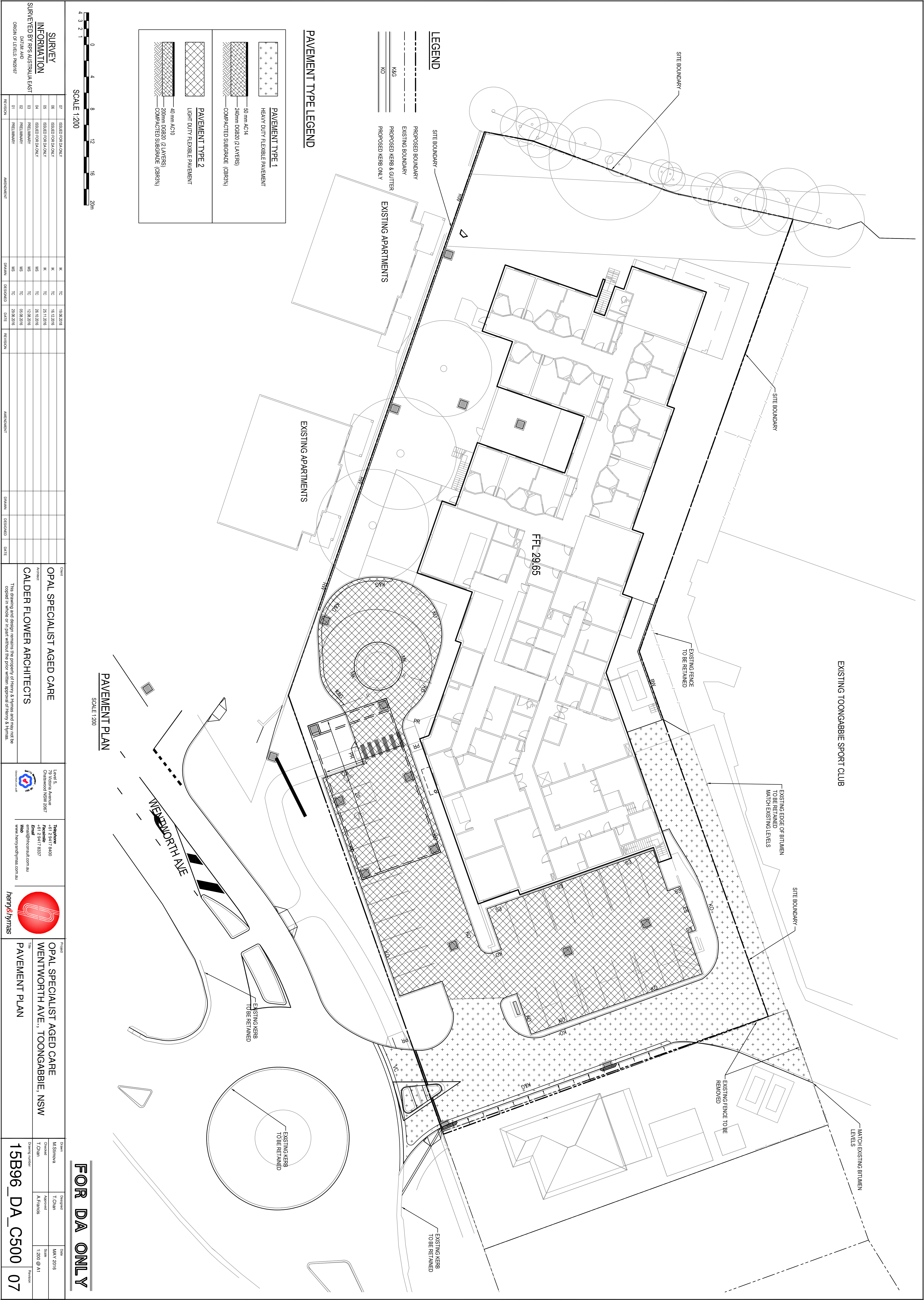


Drawn L.Caha	Designed L.Caha	Date MAY 2016
Checked T.Chan	Approved A.Francis	Scale 1:200 @ A1
Drawing number 15B96 DA C350		Revision 07

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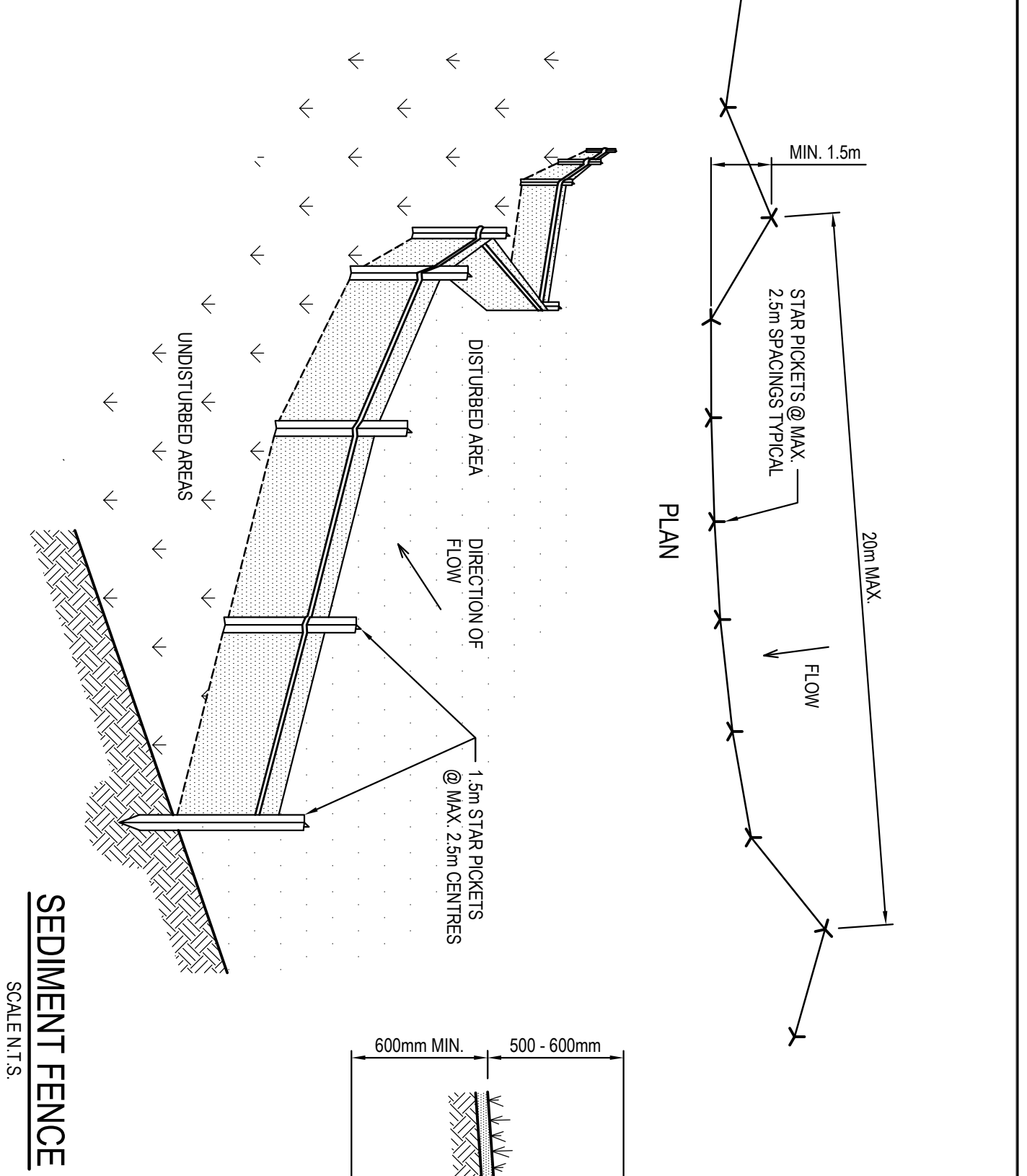


SURVEY INFORMATION				SURVEYED BY RPS AUSTRALIA EAST				DATE: 14/01/2016				ORIGIN OF LEVELS: PAS25187			
07	ISSUED FOR DA ONLY	18/06/2016	MC	TC											
06	ISSUED FOR DA ONLY	16/12/2016	TC												
05	ISSUED FOR DA ONLY	23/11/2016	MC	TC											
04	ISSUED FOR DA ONLY	26/10/2016	TC												
03	PRELIMINARY	12/03/2016	MS												
02	PRELIMINARY	05/03/2016	TC												
01	PRELIMINARY	20/03/2016	MS	TC											
REVISION				AGREEMENT				DRAWN				REVISION			



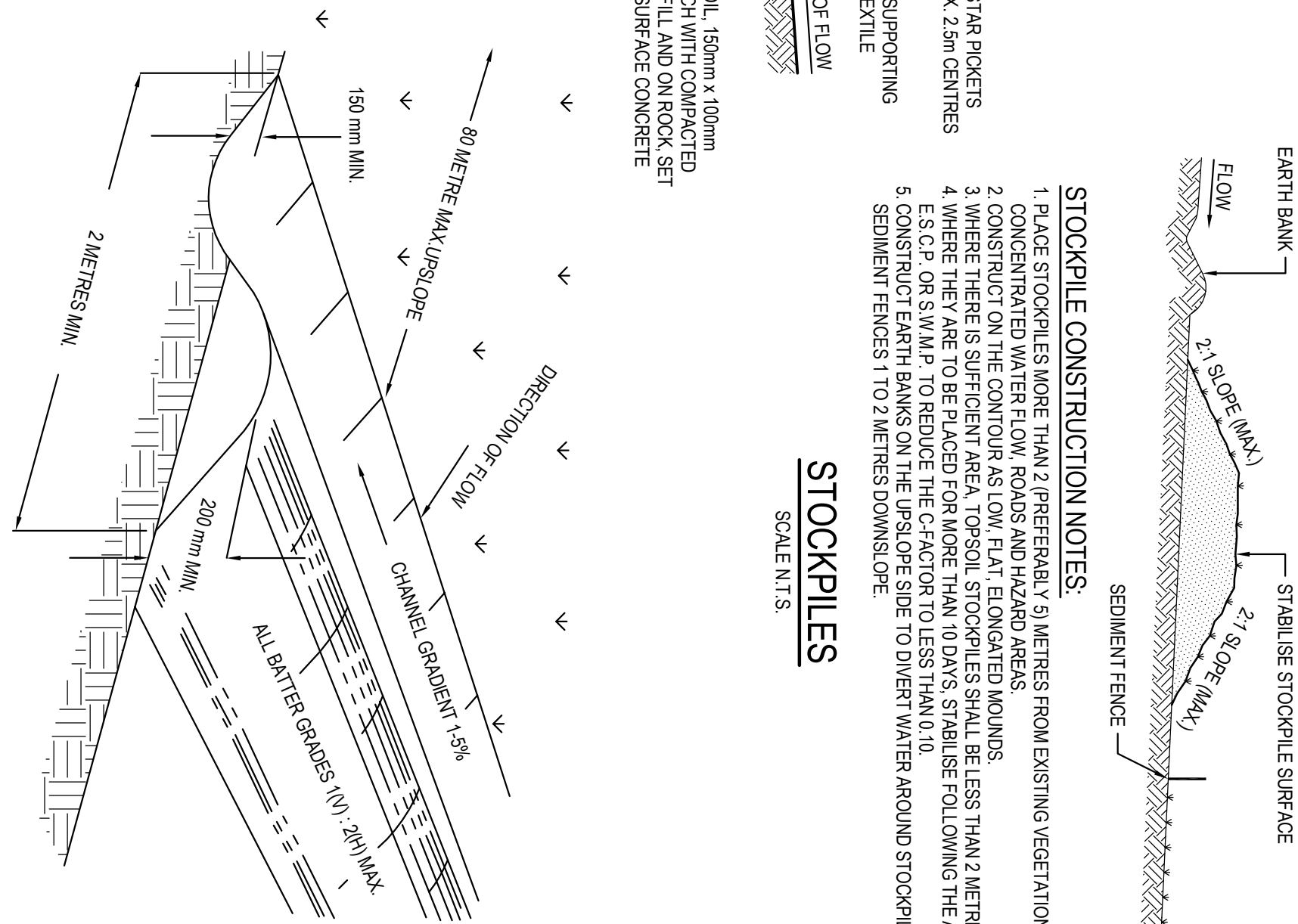






SEDIMENT FENCE  
SCALE N.T.S.

- SEDIMENT FENCE CONSTRUCTION NOTES:**
- CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETIENS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.
  - CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
  - DRIVE 1.5m LONG STAR PICKETS INTO GROUND @ 2.5m INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SHEET PILES.
  - FIX SELF SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
  - JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP & BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

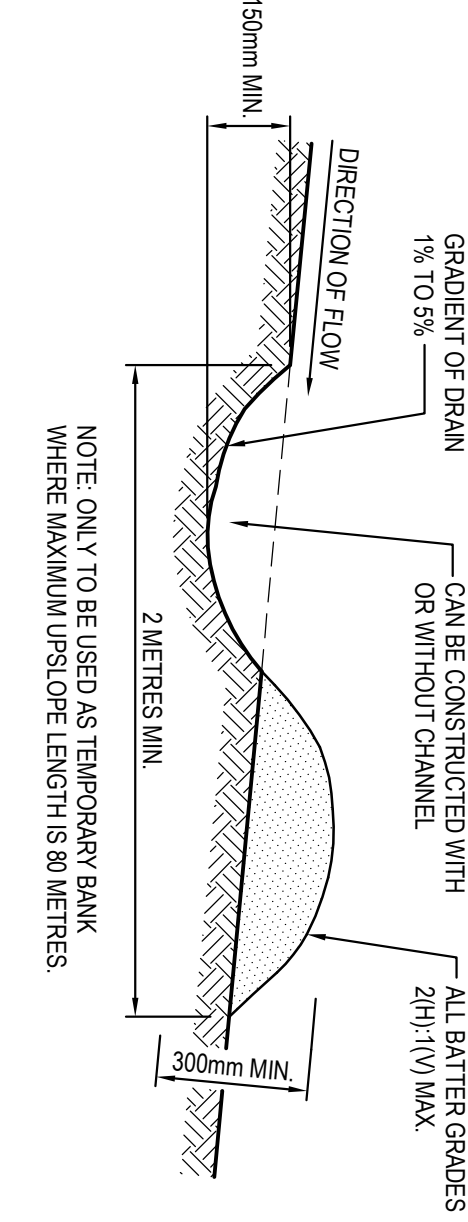


STOCKPILES  
SCALE N.T.S.

- STOCKPILE CONSTRUCTION NOTES:**
- PLACE STOCKPILES MORE THAN 2 (PREFERABLY 5) METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
  - CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
  - WHERE THERE IS SUFFICIENT AREA, TOP-SOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT, ESCP, OR 3 MAMP, TO REDUCE THE CATCHMENT TO LESS THAN 10 L.
  - CONSTRUCT EARTH BANS ON THE UPSLOPE SIDE TO DIVERTE WATER AROUND STOCKPILES AND SEDIMENT FENCES 1 TO 2 METRES DOWNSLOPE.

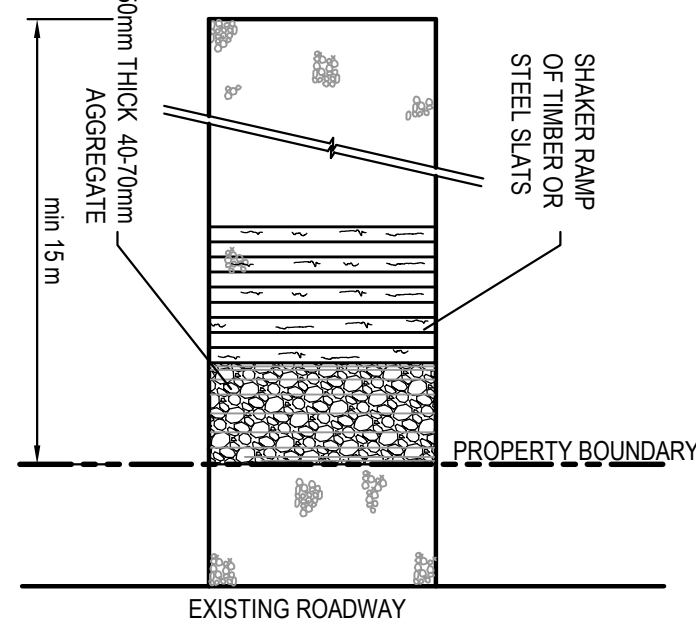
- CATCH DRAIN CONSTRUCTION NOTES:**
- CONSTRUCT ALONG GRADIENT AS SPECIFIED.
  - MAXIMUM SPACING BETWEEN BANKS SHALL BE 80 METRES.
  - DRAINS TO BE OF PARABOLIC OR TRAPEZOIDAL CROSS SECTION NOT V-SHAPED.
  - EARTH BANKS TO BE ADEQUATELY COMPACTED IN ORDER TO PREVENT FAILURE.
  - CONSTRUCTION IS OF A TEMPORARY NATURE AND SHALL BE COMPLETED AT THE END A DAYS WORK OR IMMEDIATELY PRIOR RAIN.
  - ALL OUTLETS FROM DISTURBED LANDS ARE TO FEED INTO SEDIMENT BASIN OR SIMILAR.
  - DISCHARGE RUNOFF COLLECTED FROM UNDISTURBED LANDS ONTO EITHER A STABILISED OR AN UNDISTURBED DISPOSAL ASTE WITHIN THE SAME SUBCATCHMENT AREA FROM WHICH THE WATER ORIGINATED.
  - COMPACT WITH A SUITABLE IMPLEMENT IN SITUATIONS WHERE THEY ARE REQUIRED TO FUNCTION FOR MORE THAN FIVE DAYS.
  - EARTH BANKS TO BE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT WILL IMPEDE NORMAL FLOW.

CATCH DRAINS SD 5-8  
SCALE N.T.S.

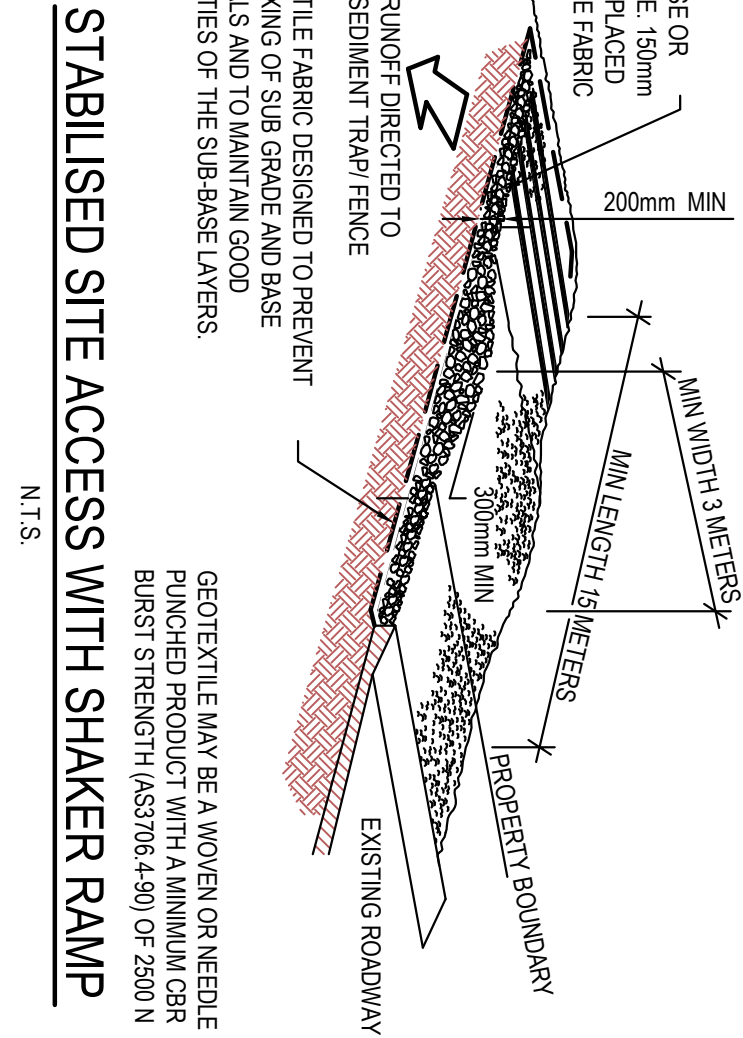


- EARTH BANK CONSTRUCTION NOTES:**
- BUILD WITH GRADIENTS BETWEEN 1% AND 5%.
  - AVOID REMOVING TREES AND SHRUBS IF POSSIBLE. WORK AROUND THEM.
  - ENSURE THE STRUCTURES ARE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT COULD IMPED WATER FLOW.
  - BUILD THE DRAINS WITH CIRCULAR, PARABOLIC OR TRAPEZOIDAL CROSS-SECTIONS, NOT 'V' SHAPED.
  - ENSURE BANKS ARE PROPERLY COMPACTED TO PREVENT FAILURE.
  - COMPLETE PERMANENT OR TEMPORARY STABILISATION WITHIN 10 DAYS OF CONSTRUCTION.

EARTH BANK (LOW FLOW)  
N.T.S.



STABILISED SITE ACCESS WITH SHAKER RAMP  
N.T.S.



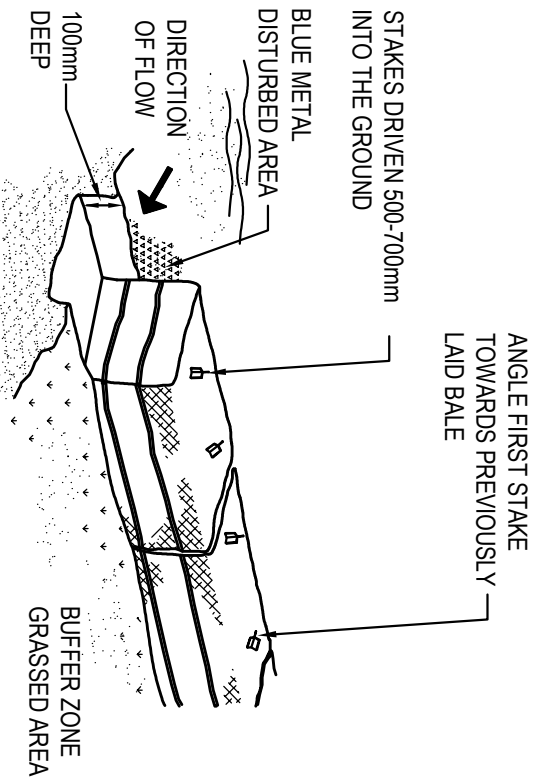
**NOTES:**

- THIS DEVICE IS TO BE LOCATED AT ALL EXITS FROM CONSTRUCTION SITE.
- THIS DEVICE IS TO BE REGULARLY CLEANED OF DEPOSITED MATERIAL, SO AS TO MAINTAIN A 50mm DEEP SPACE BETWEEN PLANKS.
- ANY UNSEALED ROAD BETWEEN THIS DEVICE AND NEAREST ROADWAY IS TO BE TOPPED WITH 100mm THICK 40-70mm SIZE AGGREGATE.
- ALTERNATIVELY, THREE PRECAST CONCRETE CATTLE GRIDS AS MANUFACTURED BY 'HUMES' CONCRETE MAY BE USED 1, 2 & 3 ABOVE ALSO APPLY.

**CONSTRUCTION SEQUENCE**

WORKS SHALL BE UNDERTAKEN IN THE FOLLOWING SEQUENCE:

- INSTALL SEDIMENT FENCING AND CUT DRAINS TO MEET THE REQUIREMENTS OF THE SEDIMENT AND EROSION CONTROL PLAN. WASTE COLLECTION BINS SHALL BE INSTALLED ADJACENT TO SITE OFFICE.
- CONSTRUCT STABILISED SITE ACCESS IN ACCORDANCE WITH CUMBERLAND COUNCIL'S REQUIREMENTS.
- REDIRECT CLEAN WATER AROUND THE CONSTRUCTION SITE.
- INSTALL SEDIMENT CONTROL PROTECTION MEASURES AT ALL NATURAL AND MAN-MADE DRAINAGE STRUCTURES. MAINTAIN UNTIL ALL THE DISTURBED AREAS ARE STABILISED.
- CLEAR AND STRIP THE WORK AREAS, MINIMISE THE DAMAGE TO THE GRASS AND LOW GROUND COVER OF NON-DISTURBED AREAS.
- ANY DISTURBED AREAS, OTHER THAN BUILDING PAD AREAS SHALL IMMEDIATELY BE COVERED WITH SITE TOPSOIL WITHIN 7 DAYS OF CLEARING. BUILDING PAD AREAS SHALL BE COVERED WITH BROWN EMULSION AS SPECIFIED.
- APPLY PERMANENT STABILISATION TO SITE (LANDSCAPING).



HAYBALE BARRIERS  
N.T.S.

**SEDIMENT BASIN SIZING**

- THE SEDIMENT BASIN SHALL BE CONSTRUCTED ON A RATE PER HECTARE BASIS AND HAS BEEN IN ACCORDANCE WITH THE REQUIREMENTS OF THE LANDCOM MANUAL, 'MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION'. FOR SEDIMENTATION TYPE D SOILS, THE DISTURBED AREA WITHIN THIS CATCHMENT AT ANY ONE TIME SHOULD BE LIMITED TO AN AREA FOR WHICH EACH SEDIMENT BASIN CAN HANDLE. EACH BASIN SHALL BE SIZED IN ACCORDANCE WITH THE TABLE BELOW.

SEDIMENT BASIN SIZING TYPE D SOILS		
VOLUMETRIC RUNOFF COEFFICIENT, CV	0.25 (APPENDIX F - TABLE F2)	
75TH PERCENTILE 5 DAY TOTAL RAINFALL DEPTH, R	190 mm	
CATCHMENT AREA, A	1 Ha (UNIT AREA)	
SETTLING ZONE VOLUME (PER HECTARE) 10 CV x R	47.5 m³	
DISTURBED CATCHMENT AREA	1 Ha (UNIT AREA)	
R x L x P C	1108 m³	
SEDIMENT ZONE VOLUME (0.17 x R x L x P C) x 1.3	14.5m³ < 50% SETTLING VOL.	
TOTAL SEDIMENT BASIN VOLUME REQUIRED:	71.25 m³/ha	

- \* (LANDCOM MANAGING URBAN STORMWATER MANUAL REFERENCE)
- THE FOLLOWING DESIGN PARAMETERS HAVE BEEN ASSESSED FOR THE SITE:

CONSTRAINT	VALUE	(SOURCE)*
RAINFALL EROSIVITY (R-FACTOR)	2350	APPENDIX B
LENGTH/SLOPE GRADIENT FACTOR, L/S	0.955	APPENDIX A - TABLE A1
SOIL ERODIBILITY (K-F-FACTOR)	0.038	(TABLE C20 - BLACKTOWN)
EROSION CONTROL PRACTICE FACTOR (P-FACTOR)	1.3 (COMPACTED)	APPENDIX A - TABLE A2
COVER FACTOR (C-FACTOR)	1.0 (DURING EARTHWORKS)	APPENDIX A - FIGURE A5
CALCULATED SOIL LOSS, A (RISLE EQUATION)	110.87 t/ha/yr	A = R x L x P x C
SOIL HYDROLOGICAL GROUP	GROUP C	APPENDIX C, TABLE 20
SEDIMENT TYPE	TYPE D	APPENDIX C, TABLE 4
75TH PERCENTILE 5-DAY RAINFALL EVENT	19.0mm (BLACKTOWN)	TABLE E.3A

\* (LANDCOM MANAGING URBAN STORMWATER MANUAL REFERENCE)

**BASIN MANAGEMENT**

- THE CAPTURED STORMWATER IN THE SETTLING ZONE SHOULD BE DRAINED TO MEET THE MINIMUM STORAGE CAPACITY REQUIRED WITHIN A FIVE (5) DAY PERIOD FOLLOWING RAINFALL, PROVIDED THE ACCEPTABLE WATER QUALITY (NFR) AND TURBIDITY HAVE BEEN ACHIEVED.
- CHEMICAL FOCULOCULANT SUCH AS GYPSUM MAY BE DOSSED TO AID SETTLING WITHIN 24 HOURS OF CONCLUSION OF EACH STORM. THE APPLIED DOSING RATES SHOULD ACHIEVE THE TARGET QUALITY WITHIN 30 TO 72 HOURS OF THE STORM EVENT.
- INSPECT THE SEDIMENT BASINS AFTER EACH RAINFALL EVENT AND/OR WEEKLY. ENSURE THAT ALL SEDIMENT IS REMOVED ONCE THE SEDIMENT STORAGE ZONE IS FULL. PREFER TO PRESS INSTALLED IN BASINS IN ACCORDANCE WITH THE SWMP. ENSURE THAT OUTLET AND EMERGENCY SPILLWAY WORKS ARE MAINTAINED IN A FULLY OPERATIONAL CONDITION AT ALL TIMES.

SOWING SEASON		SEED MIX
AUTUMN/WINTER	OAT5@40kg/ha + JAPANESE WILLET1@10kg/ha	
SPRING/SUMMER	OAT5@20kg/ha + JAPANESE WILLET1@20kg/ha	

NOTE: THESE PLANT SPECIES ARE FOR TEMPORARY REVEGETATION ONLY. THEY WILL ONLY PROVIDE PROTECTION FROM EROSION FOR SIX MONTHS, WHERE THE LOTS ARE TO BE LEFT UNDEVELOPED FOR A LONGER PERIOD. THE CONTRACTOR SHALL SEEK ADVICE FROM THE SITE SUPERINTENDENT AS TO MORE APPROPRIATE REVEGETATION METHODS.

REVEGETATION IN ACCORDANCE WITH THE ABOVE TABLE WILL BE ENHANCED BY ADDING LIME AT A RATE OF 4kg/TONNE OF TOPSOIL AND 7.5kg/TONNE OF SUBSOIL.

- THE LONG TERM GROUND COVER FACTORS FOR THE CONSTRUCTION WORKS IS NOT TO EXCEED THE FOLLOWING LIMITS.

LAND	MAXIMUM C-FACTOR	REMARKS
WATERWAYS AND OTHER AREAS OF CONCENTRATED FLOWS, POST CONSTRUCTION	0.05	APPLIES AFTER TEN WORKING DAYS OF COMPLETION OF FORMATION AND BEFORE CONCENTRATED FLOWS ARE APPLIED. FOOT AND VEHICULAR TRAFFIC IS PROHIBITED IN THIS AREA AND 70% GROUND COVER IS REQUIRED.
STOCKPILES, POST CONSTRUCTION	0.10	APPLIES AFTER TEN WORKING DAYS FROM COMPLETION OF FORMATION. 60% GROUND COVER IS REQUIRED.
ALL LANDS INCLUDING WATERWAYS AND STOCKPILES DURING CONSTRUCTION	0.15	APPLIES AFTER 20 DAYS OF INACTIVITY, EVEN THOUGH WORKS MAY BE INCOMPLETE. 50% GROUND COVER IS REQUIRED.

**FOR DA ONLY**

SURVEY INFORMATION				Client			
SURVEYED BY: RRS AUSTRALIA EAST DRAWN AND CHECKED BY: RRS EAST ORIGIN OF LEVELS: FINISH BT	REVISION	AMENDMENT	DATE	REVISION	AMENDMENT	DATE	
	01	PRELIMINARY	23.06.2015				
	02	FOR DA ONLY	26.10.2015				
	03	FOR DA ONLY	23.11.2015				
	04	FOR DA ONLY	16.12.2015				
PROJECT				OPAL SPECIALIST AGED CARE			
SECTIONS & DETAILS				CALDER FLOWER ARCHITECTS			
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Henry & Hyman				Tel: 03 9417 8600 Fax: 03 9417 8337 Email: info@henryhyman.com.au www.henryhyman.com.au			
Project				OPAL SPECIALIST AGED CARE WENTWORTH AVE, TOONGABIE, NSW 2146			
Drawing number				15B96_DA_SE02			
Revision				04			