COMBER CONSULTANTS

ARCHAEOLOGY – HERITAGE – MEDIATION – ARBITRATION
ABORIGINAL – HISTORIC - MARITIME

4 CANBERRA STREET, HURLSTONE PARK, NSW 2193

enquiries@comber.net.au
www.comber.net.au

DR JILLIAN COMBER | DIRECTOR | 0418 788 802
DAVID NUTLEY | ASSOCIATE DIRECTOR | 0408 976 553

V.01.2023

1st September 2023

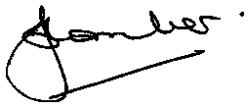
Eurobodalla Regional Hospital Soil Conservation Works REF

Comber Consultants prepared the following reports in respect of the Eurobodalla Hospital Soil Conservation Works:

- Eurobodalla Regional Hospital Soil Conservation Works Aboriginal Cultural Heritage Assessment Report, Version B, dated 13th December 2022. The Aboriginal Archaeological Assessment, Version B, dated 8th December 2022 was attached to the ACHAR at Appendix B.
- Soil Conservation Works Historical Archaeological Assessment, Version B, dated 8th December 2022.
- Soil Conservation Works Statement of Heritage Impact, Version B, dated 8th December 2022.

Since preparation of the above reports the Civil layouts have been updated. Please find attached the updated Civil layouts.

The changes detailed in the updated Civil layouts have not altered the results of the assessment or recommendations contained in the above reports.



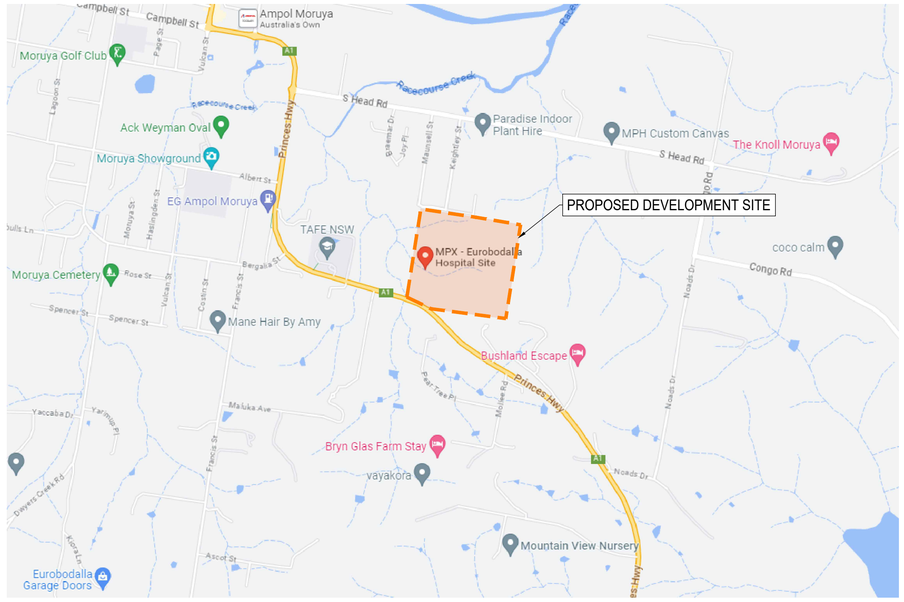
Dr Jillian Comber, B.A., Litt.B., PhD, M.AACAI, M.ICOMOS
Director/Archaeologist

THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT NOTES ON DRAWING C01

13086-01C - SOIL REF CONSERVATION WORKS

EUROBODALLA HOSPITAL

PRINCES HIGHWAY, MORUYA, NSW



LOCALITY PLAN
NTS

DRAWING NO.	DESCRIPTION
ERH-TTW-00-DR-CI-0501	DRAWING REGISTER AND LOCALITY PLAN
ERH-TTW-00-DR-CI-0502	CONSTRUCTION NOTES
ERH-TTW-00-DR-CI-0530	SITE WORKS PLAN
ERH-TTW-00-DR-CI-0540	DETAILS AND SECTIONS SHEET 1
ERH-TTW-00-DR-CI-0541	DETAILS AND SECTIONS SHEET 2

FileName: C0501_COVER PAGE.dwg - USER: jameh - Plot File Created: Aug 17, 2023 - 11:53am

REF SUBMISSION
NOT TO BE USED FOR CONSTRUCTION

Rev	Description	Eng	Draft	Date
A	ISSUE FOR REVIEW	JH	WW	18.08.23

Client: Multiplex

Engineer: TTW Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

Project: EUROBODALLA HOSPITAL

Sheet Subject: SOIL REF DRAWING REGISTER AND LOCALITY PLAN

Scale : A1	Drawn	Authorised
NTS	WW	AH

Job No	Drawing No	Revision
221896	ERH-TTW-00-DR-CI-0501	A

Plot File Created: Aug 17, 2023 - 11:53am

THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT NOTES ON DRAWING C01

GENERAL NOTES

G1 THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ARCHITECTURAL AND OTHER CONSULTANTS DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS OR SKETCHES AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE SUPERINTENDENT BEFORE PROCEEDING WITH WORK.

G2 MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CURRENT SAA CODES, BUILDING REGULATIONS AND THE REQUIREMENTS OF ANY OTHER RELEVANT STATUTORY AUTHORITIES.

G3 THESE DRAWINGS MUST NOT BE SCALED. ALL DIMENSIONS ARE IN METERS. ALL SET OUT DIMENSIONS AND LEVELS, INCLUDING THOSE SHOWN ON THESE DRAWINGS SHALL BE IN ACCORDANCE WITH THE ARCHITECT'S DRAWINGS AND VERIFIED ON SITE.

G4 ALL SETOUT AND DIMENSIONS OF THE STRUCTURE INCLUDING KERBS AND RETAINING WALLS MUST BE TAKEN FROM THE ARCHITECT'S DRAWINGS. SETOUT OF THE STORMWATER PITS BY OTHERS. CONTRACTOR TO CONFIRM SETOUT OF SERVICE TRENCHING INCLUDING SUBSOIL ON SITE.

G5 THE CONTRACTOR SHALL COMPLY WITH ALL REGULATIONS OF AUTHORITIES HAVING JURISDICTON OVER THE WORKS. REFER TO GEOTECHNICAL REPORT BY JK GEOTECHNICS PTY LTD DATED 21st MAY 2021, REF: 33942LTrpt2

G6 ALL DIMENSIONS AND REDUCED LEVELS MUST BE VERIFIED ON SITE BEFORE THE COMMENCEMENT OF ANY WORK.

G7 THE APPROVAL OF A SUBSTITUTION SHALL BE SOUGHT FROM THE SUPERINTENDENT BUT IS NOT AN AUTHORISATION OF A COST VARIATION. THE SUPERINTENDENT MUST APPROVE ANY COST VARIATION INVOLVED BEFORE ANY WORK STARTS.

G8 ALL LEVELS SHOWN ARE TO THE AUSTRALIAN HEIGHT DATUM.

G9 SERVICE INFORMATION SHOWN IS APPROXIMATE ONLY. PRIOR TO COMMENCEMENT OF ANY WORKS, THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND SERVICES AND COMPLY WITH ALL REQUIREMENTS OF THOSE AUTHORITIES.

G10 EXISTING SURFACE CONTOURS, WHERE SHOWN, ARE INTERPOLATED AND MAY NOT BE ACCURATE.

G11 UNLESS NOTED OTHERWISE, ALL VEGETATION SHALL BE STRIPPED TO A MINIMUM DEPTH OF 150mm UNDER ALL PROPOSED PAVEMENT AND BUILDING AREAS.

G12 MAKE SMOOTH CONNECTION WITH ALL EXISTING WORKS.

SITEWORKS NOTES

S1 PRIOR TO THE PLACEMENT OF ANY PAVEMENTS, BUILDINGS OR DRAINS THE EXPOSED SUBGRADE SHALL BE COMPACTED TO A MINIMUM OF 98% STANDARD COMPACTION IN ACCORDANCE WITH TEST 5.1.1 OF A.S. 1289 FOR THE TOP 300mm. ANY SOFT SPOTS SHALL BE REMOVED AND REPLACED WITH GRANULAR FILL TO THE ENGINEERS APPROVAL AND COMPACTED IN ACCORDANCE WITH THE COMPACTION REQUIREMENTS SET OUT BELOW. ON HIGHLY REACTIVE CLAY AREAS SITE EXCAVATED MATERIAL MAY BE USED WITH THE PRIOR AUTHORISATION OF THE ENGINEER

S2 ALL FILL AND PAVEMENT MATERIALS SHALL BE COMPACTED IN ACCORDANCE WITH GEOTECHNICAL REPORT BY JK GEOTECHNICS PTY LTD DATED 21ST MAY 2021, REF: 33942LTrpt2. MOISTURE CONTENT TO BE MAINTAINED AT +/- 2% OMC. MINIMUM COMPACTION REQUIREMENTS ARE DETAILED BELOW FOR (ALL REQUIREMENTS ARE TO VERIFIED BY A SUITABLY QUALIFIED GEOTECHNICAL ENGINEER):

- LANDSCAPED AREAS 98% STD
- FILL UNDER ANY FOOTINGS AND FLOOR SLABS FOR ANY STRUCTURE TO SUBGRADE LEVEL,
  - FINE CRUSHED ROCK 98% STD.
  - SELECTED FILL WITHOUT CONSPICUOUS CLAY CONTENT 98% STD.
- BUILDING BASECOURSE 98% MOD
- FILL UNDER ROAD PAVEMENTS,
  - TO WITHIN 500mm OF FINISHED SUBGRADE LEVEL 98% STD.
  - UP TO FINISHED SUBGRADE LEVEL 98% STD.
- ROAD PAVEMENT MATERIALS,
  - SUB BASE 98% MOD.
  - BASE COURSE 98% MOD.

THE MAXIMUM COMPACTION IS TO BE NO GREAT THAN 4% ON TOP OF THE ABOVE MENTION VALUES.

S3 GRADE EVENLY BETWEEN FINISHED SURFACE SPOT LEVELS. FINISHED SURFACE CONTOURS ARE SHOWN FOR CLARITY. WHERE FINISHED SURFACE LEVELS ARE NOT SHOWN, THE SURFACE SHALL BE GRADED SMOOTHLY SO THAT IT WILL DRAIN AND MATCH ADJACENT SURFACES OR STRUCTURES.

S4 ALL DIMENSIONS GIVEN ARE TO FACE OF KERB, CENTER OF PIPE OR EXTERIOR FACE OF BUILDING UNLESS NOTED OTHERWISE.

S5 ANY STRUCTURES, PAVEMENTS OR SURFACES DAMAGED, DIRTIED OR MADE UNSERVICABLE DUE TO CONSTRUCTION WORK SHALL BE REINSTATED TO THE SATISFACTION OF THE ENGINEER

S6 ANY FILL REQUIRED SHALL BE APPROVED BY THE ENGINEER / GEOTECHNICAL CONSULTANT

S7 CONTRACTOR IS TO ENSURE THAT ALL EXCAVATIONS ARE MAINTAINED IN A DRY CONDITION WITH NO WATER ALLOWED TO REMAIN IN THE EXCAVATIONS.

S8 ALL FINISHES AND COLOURS TO BE IN ACCORDANCE WITH ARCHITECTURAL SPECIFICATIONS.

S9 REFER TO STRUCTURAL DRAWINGS FOR CONCRETE, REINFORCEMENT AND RETAINING WALL DETAILS.

S10 GENERALLY FOR TRENCHING WORKS THE CONTRACTOR MUST.
A) COMPLY WITH THE GENERAL PROVISIONS OF PART 3.1 "MANAGING RISKS TO HEALTH AND SAFETY" OF NSW WORK AND HEALTH AND SAFETY REGULATION 2011

B) COMPLY PART 6.3 DIVISION 3 "EXCAVATION WORK" OF NSW WORK HEALTH AND SAFETY REGULATION NSW 2011

BOUNDARY AND EASEMENT NOTE

The property boundary and easement locations shown on Taylor Thomson Whitting drawing's have been based from information received from : LTS

Taylor Thomson Whitting makes no guarantees that the boundary or easement information shown is correct.
Taylor Thomson Whitting will accept no liabilities for boundary inaccuracies. The contractor/builder is advised to check/confirm all boundaries in relation to all proposed work prior to the commencement of construction. Boundary inaccuracies found are to be reported to the superintendent prior to construction starting.

CONCRETE FINISHING NOTES

1. All exposed concrete pavements are to be broomed finished.
2. All edges of the concrete pavement including keyed and dowelled joints are to be finished with an edging tool.
3. Concrete pavements with grades greater than 10 % shall be heavily broomed finished.
4. Carborundum to be added to all stair treads and ramped crossings U.N.O.

STORMWATER DRAINAGE NOTES

1 Stormwater Design Criteria :
(A) Average exceedance probability -
1% AEP for roof drainage to first external pit
5% AEP for paved and landscaped areas
(B) Rainfall intensities -
Time of concentration: 5 minutes
1% AEP = 252 mm/hr
5% AEP =183.6mm/hr
(C) Rainfall losses -
Impervious areas: IL = 1.5 mm , CL = 0 mm/hr
Pervious areas: IL =21mm , CL = 6.4 mm/hr

2. Pipes 300 dia and larger to be reinforced concrete Class " " approved spigot and socket with rubber ring joints U.N.O.
3. Pipes up to 300 dia may be sewer grade uPVC with solvent welded joints, subject to approval by the engineer
4. Equivalent strength VCP or FRP pipes may be used subject to approval.
5. Precast pits may be used external to the building subject to approval by Engineer
6. Enlargers, connections and junctions to be manufactured fittings where pipes are less than 300 dia.
7. Where subsoil drains pass under floor slabs and vehicular pavements, unslotted uPVC sewer grade pipe is to be used.
8. Grates and covers shall conform with AS 3996-2006, and AS 1428.1 for access requirements.
9. Pipes are to be installed in accordance with AS 3725. All bedding to be type H2 U.N.O.
10. Care is to be taken with invert levels of stormwater lines. Grades shown are not to be reduced without approval.
11. All stormwater pipes to be 150 dia at 1.0% min fall U.N.O.
12. Subsoil drains to be slotted flexible uPVC U.N.O.
13. Adopt invert levels for pipe installation (grades shown are only nominal).

EROSION AND SEDIMENT CONTROL NOTES

1. All work shall be generally carried out in accordance with
(A) Local authority requirements,
(B) EPA - Pollution control manual for urban stormwater,
(C) LANDCOM NSW - Managing Urban Stormwater: Soils and Construction ("Blue Book").
2. Erosion and sediment control drawings and notes are provided for the whole of the works. Should the Contractor stage these works then the design may be required to be modified. Variation to these details may require approval by the relevant authorities.
The erosion and sediment control plan shall be implemented and adapted to meet the varying situations as work on site progresses.
3. Maintain all erosion and sediment control devices to the satisfaction of the superintendent and the local authority.
4. When stormwater pits are constructed prevent site runoff entering the pits unless silt fences are erected around pits.
5. Minimise the area of site being disturbed at any one time.
6. Protect all stockpiles of materials from scour and erosion. Do not stockpile loose material in roadways, near drainage pits or in watercourses.
7. All soil and water control measures are to be put back in place at the end of each working day, and modified to best suit site conditions.
8. Control water from upstream of the site such that it does not enter the disturbed site.
9. All construction vehicles shall enter and exit the site via the temporary construction entry/exit.
10. All vehicles leaving the site shall be cleaned and inspected before leaving.
11. Maintain all stormwater pipes and pits clear of debris and sediment. Inspect stormwater system and clean out after each storm event.
12. Clean out all erosion and sediment control devices after each storm event.

Sequence Of Works

1. Prior to commencement of excavation the following soil management devices must be installed.
1.1. Construct silt fences below the site and across all potential runoff sites.
1.2. Construct temporary construction entry/exit and divert runoff to suitable control systems.
1.3. Construct measures to divert upstream flows into existing stormwater system.
1.4. Construct sedimentation traps/basin including outlet control and overflow.
1.5. Construct turf lined swales.
1.6. Provide sandbag sediment traps upstream of existing pits.
2. Construct geotextile filter pit surround around all proposed pits as they are constructed.
3. On completion of pavement provide sand bag kerb inlet sediment traps around pits.
4. Provide and maintain a strip of turf on both sides of all roads after the construction of kerbs.

WATER QUALITY TESTING REQUIREMENTS

Prior to discharge of site stormwater, groundwater and seepage water
into council's stormwater system, contractors must undertake water quality tests in conjunction with a suitably qualified environment consultant outlining the following:

- Compliance with the criteria of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000)
- If required subject to the environmental consultants advice, provide remedial measures to improve the quality of water that is to be discharged into Councils storm water drainage system.This should include comments from a suitably qualified environmental consultant confirming the suitability of these remedial measures to manage the water discharged from the site into Councils storm water drainage system. Outlining the proposed, ongoing monitoring, contingency plans and validation program that will be in place to continually monitor the quality of water discharged from this site. This should outline the frequency of water quality testing that will be undertaken by a suitably qualified environmental consultant.

SAFETY IN DESIGN

Contractor to refer to Appendix B of the Civil Specification for the Civil Risk and Solutions Register.

EXISTING SERVICES

Contractor to be aware existing services are located within the site. Location of all services to be verified by the Contractor prior to commencing works. Contractor to confirm with relevant authority regarding measures to be taken to ensure services are protected or procedures are in place to demolish and/or relocate.

EXISTING STRUCTURES

Contractor to be aware existing structures may exist within the site. To prevent damage to existing structure(s) and/or personnel, site works to be carried out as far as practicably possible from existing structure(s).

EXISTING TREES

Contractor to be aware existing trees exist within the site which need to be protected. To prevent damage to trees and/or personnel, site works to be carried out as far as practicably possible from existing trees. Advice needs to be sought from Arborist and/or Landscape Architect on measures required to protect trees.

GROUNDWATER

Contractor to be aware ground water levels are close to existing surface level. Temporary de-watering may be required during construction works.

EXCAVATIONS

Deep excavations due to stormwater drainage works is required. Contractor to ensure safe working procedures are in place for works. All excavations to be fenced off and batters adequately supported to approval of Geotechnical Engineer.

GROUND CONDITIONS

Contractor to be aware of the site geotechnical conditions.
Refer to geotechnical report by (JKGeotechnics) for details.

HAZARDOUS MATERIALS

Existing asbestos products & contaminated material may be present on site. Contractor to ensure all hazardous materials are identified prior to commencing works. Safe working practices as per relevant authority to be adopted and appropriate PPE to be used when handling all hazardous materials. Refer to geotechnical/environmental report by (JKGeotechnics) for details.

CONFINED SPACES

Contractor to be aware of potential hazards due to working in confined spaces such as stormwater pits, trenches and/or tanks. Contractor to provide safe working methods and use appropriate PPE when entering confined spaces.

MANUAL HANDLING

Contractor to be aware manual handling may be required during construction. Contractor to take appropriate measures to ensure manual handling procedures and assessments are in place prior to commencing works.

WATER POLLUTION

Contractor to ensure appropriate measures are taken to prevent pollutants from construction works contaminating the surrounding environment.

SITE ACCESS/EGRESS

Contractor to be aware site works occur in close proximity to footpaths and roadways. Contractor to erect appropriate barriers and signage to protect site personnel and public.

VEHICLE MOVEMENT

Contractor to supply and comply with traffic management plan and provide adequate site traffic control including a certified traffic marshall to supervise vehicle movements where necessary.

CIVIL SAFETY IN DESIGN

Taylor Thomson Whitting (NSW) Pty Ltd operates under Safe Work Australia's Code of Conduct for the Safe Design of Structures.

These drawings shall be read in conjunction with the Taylor Thomson Whitting Transfer of Information Letter and Civil Risk and Solutions Register.

Under the Code of Conduct it is the Client's responsibility to provide a copy of the Civil Risk and Solutions Register to the Principal Contractor.

It is the Principal Contractor's responsibility to review the hazards and risks identified during the design process to ensure a safe workplace is maintained for the construction, maintenance and eventual demolition of the civil infrastructure.

SURVEY AND SERVICES INFORMATION

SURVEY

Origin of levels : PM 67885 R.L. 6.96
Datum of levels : A.H.D. AUSTRALIAN HEIGHT DATUM
Coordinate system : MGA
Survey prepared by : LTS
Setout Points : CONTACT THE SURVEYOR

Taylor Thomson Whitting does not guarantee that the survey information shown on these drawings is accurate and will accept no liability for any inaccuracies in the survey information provided to us from any cause whatsoever.

UNDERGROUND SERVICES - WARNING

The locations of underground services shown on Taylor Thomson Whittings drawings have been plotted from diagrams provided by service authorities. This information has been prepared solely for the authorities own use and may not necessarily be updated or accurate.

The position of services as recorded by the authority at the time of installation may not reflect changes in the physical environment subsequent to installation.

Taylor Thomson Whitting does not guarantee that the services information shown on these drawings shows more than the presence or absence of services, and will accept no liability for inaccuracies in the services information shown from any cause whatsoever.

The Contractor must confirm the exact location and extent of services prior to construction and notify any conflict with the drawings immediately to the Engineer/Superintendent.

The contractor is to get approval from the relevant state survey department, to remove/adjust any survey mark. This includes but is not limited to; State Survey Marks (SSM), Permanent Marks (PM), cadastral reference marks or any other survey mark which is to be removed or
adjusted in any way.
Taylor Thomson Whitting plans do not indicate the presence of any survey mark. The contractor is to undertake their own search.

SIGNS AND LINE MARKING NOTES

1. Pavement marking and sign posting to be in accordance with R.M.S. 'Interim Guide to Signs and Markings'.
2. Contractor is to provide guide posts, spaced in accordance with AS1742.2. They are to be located near all head walls and pipe outlets.
3. Raised pavement markers to be in accordance with AS1742.2
4. Where existing pavement marking conflicts with proposed, it is to be removed,
5. Lane widths do not include width of gutter.
6. Line marking plan does not define boundaries.
7. Erect temporary sign 'changed traffic conditions ahead' 120m ahead of new work in both directions.
8. Establish the location of existing utility services and locate new signs clear of these installations.
9. The sloped face of the SF median kerbs which adjoin through lanes, are to be painted white in lieu of an E3 edge line. The reflective pavement markers normally associated with an E3 edge line are to be located on the pavement adjacent to the SF kerb.
10. Bicycle pavement markings and sign posting to be in accordance with Austroads Standards.
11. The design of major directional sign posting to be prepared and assessed by the R.M.S.

SITEWORKS NOTES

1. All basecourse material to comply with RMS specification No 3051 and compacted to minimum 98% modified standard dry density in accordance with AS 1289 5.2.1.
2. All trench backfill material shall be compacted to the same density as the adjacent material.
3. All service trenches under vehicular pavements shall be backfilled with an approved select material and compacted to a minimum 98% standard maximum dry density in accordance with AS 1289 5.1.1

FileName: C0502_NOTES SHEET.dwg - USER: janeh - Plot File Created: Aug 17, 2023 - 11:52am

REF SUBMISSION
NOT TO BE USED FOR CONSTRUCTION

Rev	Description	Eng	Draft	Date
A	ISSUE FOR REVIEW	JH	WW	18.08.23

Client: Multiplex

Engineer: TTW Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

Project: EUROBODALLA HOSPITAL

Sheet Subject: SOIL REF CONSTRUCTION NOTES

Scale : A1: NTS
Drawn: WW
Authorised: AH
Job No: 221896
Drawing No: ERH-TTW-00-DR-CI-0502
Revision: A
Plot File Created: Aug 17, 2023 - 11:52am

THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT NOTES ON DRAWING C01

CONSTRUCT ROCK CHECK DAMS AT 20m MAX. SPACINGS ALONG SWALE INVERT. REMOVE FROM SITE AFTER COMPLETION OF WORKS. TYPICAL

SITE SHEDS AREA 2

ROAD CATCHMENT B
17,900m²
TOTAL BASIN SIZE REQUIRED
= 360m³
APPROX. 0.5m DEEP

150mm THICKNESS DGB20 GRAVEL HARDSTAND

ROAD CATCHMENT A
11,200m²
TOTAL BASIN SIZE REQUIRED
= 230m³
APPROX. 0.5m DEEP

CHAIN LINK FENCE (INSTALLED AT START OF CONSTRUCTION)

STAR PICKET AND BUNTING FLAGGING TO BE INSTALLED DURING CONSTRUCTION. USE SURVEYOR TO SET OUT. DO NOT CROSS LINE INTO UNDISTURBED AREAS.

ROAD CATCHMENT C
2,800m²
TOTAL BASIN SIZE REQUIRED
= 60m³
APPROX. 0.5m DEEP

2
C540

ROAD CATCHMENT E
14,800m²
TOTAL BASIN SIZE REQUIRED
= 300m³
APPROX. 0.5m DEEP

ROAD CATCHMENT D
7,800m²
TOTAL BASIN SIZE REQUIRED
= 152m³
APPROX. 0.5m DEEP

CHAIN LINK FENCE (INSTALLED AT START OF CONSTRUCTION)

1200X450 CONCRETE BOX CULVERT

CONSTRUCT HEADWALL AND CULVERT UNDER ACCESS ROAD WITHIN PROPERTY BOUNDARY

ACCESS POINT AT EXISTING DOUBLE GATE ENTRANCE

SITE SHEDS AREA 1

1200X450 CONCRETE BOX CULVERT

1
C540

CHAIN LINK FENCE (INSTALLED AT START OF CONSTRUCTION)

1200X450 CONCRETE BOX CULVERT

TRUCK RUMBLE GRID

EXISTING FENCE TO REMAIN

EXISTING TELSTRA MARKER (YELLOW POST) LOCATED ON EDGE OF EXISTING GRAVEL

CONSTRUCT ø450 RCP PIPE TO REPLACE SWALE UNDER SITE ENTRANCE (BLUE LINE)

CONSTRUCT BATTER TO DIVERT AND SLOW DOWN FLOWS FROM EXISTING UPSTREAM DISHDRAIN CHANNEL. FLOWS TO DISCHARGE TOWARDS PROPOSED HEADWALL

CONSTRUCT NEW GRAVEL TO ALLOW ACCESS OF HIGHWAY AND OVER DRAINAGE PIPE. PLACE AND COMPACT 300mm DGB20 OVER EXISTING SUBGRADE. EXTEND 40m DOWN ALONG ROAD. GRADE TO ALIGN TO EXISTING ROAD LEVELS

EXISTING GRAVEL AREA (GREEN HATCH) PLACE AND COMPACT 80mm DGB20 OVER EXISTING GRAVEL. GRADE TO ALIGN TO EXISTING ROAD LEVELS

HIGHWAY

LEGEND:

- PROPOSED BOUNDARY
- SWALE DIVERSION CHANNEL
- DISTURBED SITE WORKS AREA
- BIO SEDIMENT BASIN SETTLING AREA
- ROAD WAY/ SITE SHEDS
- 1% AEP FLOOD EXTENT
- PMF FLOOD EXTENT
- SEDIMENT FENCE
- TRUCK RUMBLE STRIPS
- ROCK CHECK DAM
- STRAW BALE SEDIMENT FILTER
- CULVERT HEADWALL OUTLET WITH SCOUR PROTECTION TO ALLOW FOR CLEAN UPSTREAM OVERLAND FLOWS THROUGH SITE WITHOUT CONTAMINATION
- SITE CONTAINMENT FENCE LINE
- EPBC BOUNDARY
- EXISTING FENCE TO REMAIN
- PROPOSED CHAIN LINK FENCE
- OVERLAND FLOWS FROM OFF SITE RUNOFF

SCALE 1:1000 0 10 20 30 40 50 m
AT ORIGINAL SIZE

THIS DRAWING HAS BEEN PREPARED USING COLOUR

SCALE 1:500

REF SUBMISSION
NOT TO BE USED FOR CONSTRUCTION

FileName: C0530_SITE WORKS PLAN.dwg USER: jangh Plot File Created: Aug 17, 2023 - 11:53am

Rev	Description	Eng	Draft	Date
E	RE-ISSUED FOR REVIEW	JH	JH	15.08.23
D	RE-ISSUED FOR REVIEW	JH	JH	15.08.23
C	RE-ISSUED FOR REVIEW	JH	JH	15.08.23
B	RE-ISSUED FOR REVIEW	JH	JH	04.08.23
A	ISSUED FOR REVIEW	JH	JH	21.07.23

Client: Multiplex

Engineer: TTW Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

Project: EUROBODALLA HOSPITAL

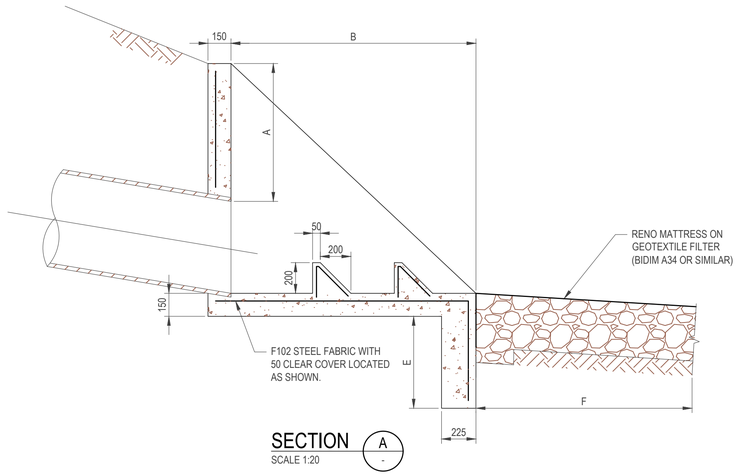
Sheet Subject: SOIL REF
SITE WORKS PLAN

Scale : A1	Drawn	Authorised
1:1000	JH	AH

Job No	Drawing No	Revision
221896	ERH-TTW-00-DR-CI-0530	E

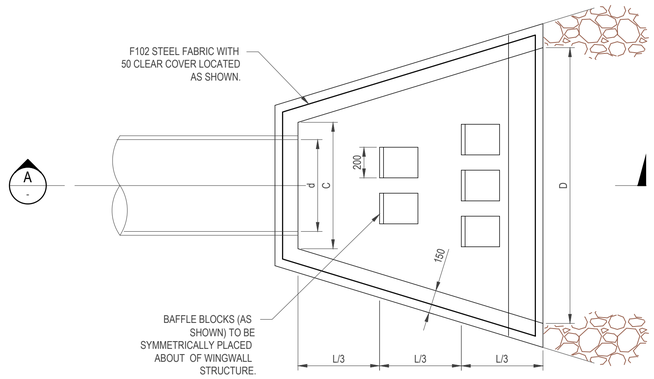
Plot File Created: Aug 17, 2023 - 11:53am

THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT NOTES ON DRAWING C01



SECTION A

SCALE 1:20



PLAN

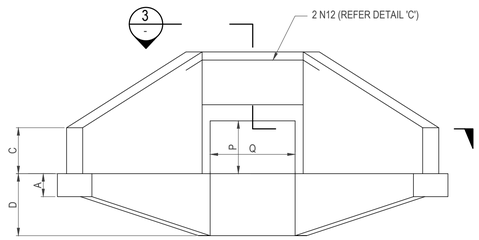
NOM SIZE OUTLET PIPE / DIMENSION	A	B	C	D	E	F
375 TO 525	600	1200	d + 150	d + 900	300	2000
600 TO 825	900	1600	d + 225	d + 1200	600	4000
900 TO 1200 * BOX CULVERTS	1250	2500	d + 300	d + 2500	900	6000

ENERGY DISSIPATER DETAIL

SCALE 1:20

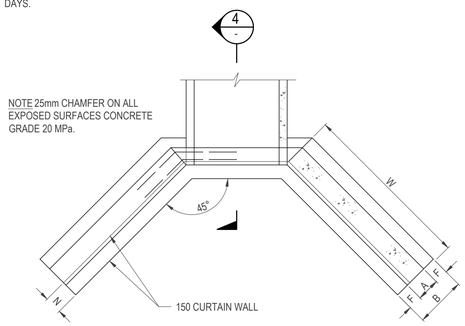
HEADWALL DIMENSIONS

CULVERT SIZE (P) x (Q)	A	B	C	D	E	F	G	H	J	K	N	W	L
1200 x 450	260	700	450	600	150	130	50	160	100	300	200	2300	1760

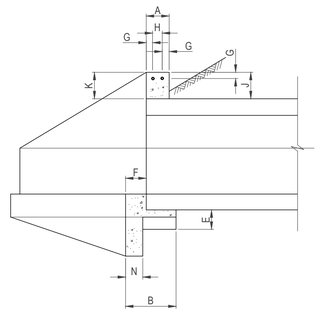


NOTE COMPRESSIVE STRENGTH (Fc) FOR CAST-IN-SITU CONCRETE TO BE A MINIMUM OF 20 MPa AT 28 DAYS.

ELEVATION



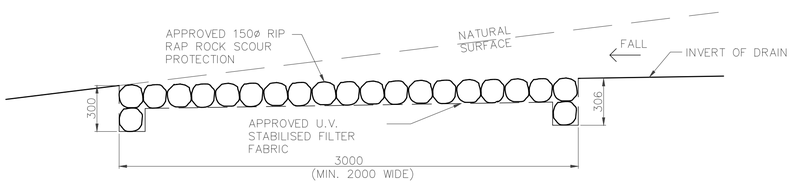
SECTION 3



SECTION 4

TYPICAL HEADWALL DETAIL

SCALE 1:20



SCOUR PROTECTION

SCALE 1:20

SCALE 1:1000 0 10 20 30 40 50 m

AT ORIGINAL SIZE

THIS DRAWING HAS BEEN PREPARED USING COLOUR

REF SUBMISSION

NOT TO BE USED FOR CONSTRUCTION

Rev	Description	Eng	Draft	Date
A	ISSUED FOR REVIEW	JH	JH	18.08.23

Client: Multiplex

Engineer: TTW Structural Civil Traffic Façade

612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

Project: EUROBODALLA HOSPITAL

Sheet Subject: SOIL REF
SITE WORKS TYPICAL DETAILS
SHEET 2

Scale : A1	Drawn	Authorised
AS SHOWN	JH	AH

Job No	Drawing No	Revision
221896	ERH-TTW-00-DR-CI-0541	A

Plot File Created: Aug 17, 2023 - 11:52am

FileName: C0540_TYPICAL DETAILS.dwg - USER: janeth - Plot File Created: Aug 17, 2023 - 11:52am

THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT NOTES ON DRAWING C01

Site area	Site					
	A	B	C	D	E	
Total catchment area (ha)	1.12	1.79	0.28	0.78	1.48	
Disturbed catchment area (ha)	0.84	1.343	0.21	0.585	1.11	

Soil analysis

% sand (faction 0.02 to 2.00 mm	60	60	60	60	60	
% silt (fraction 0.002 to 0.02 mm)	5	5	5	5	5	
% clay (fraction finer than 0.002 mm)	35	35	35	35	35	
Dispersion percentage	50.0	50.0	50.0	50.0	50.0	
% of whole soil dispersible	18.75	18.75	18.75	18.75	18.75	
Soil Texture Group	D	D	D	D	D	

Rainfall data

Design rainfall depth (days)	5	5	5	5	5	
Design rainfall depth (percentile)	85	85	85	85	85	
x-day, y-percentile rainfall event	37.4	37.4	37.4	37.4	37.4	
Rainfall intensity: 2-year, 6-hour storm	10.7	10.7	10.7	10.7	10.7	

RUSLE Factors

Rainfall erosivity (*R*-factor)	2500	2500	2500	2500	2500	
Soil erodibility (*K*-factor)	0.02	0.02	0.02	0.02	0.02	
Slope length (m)	70	70	70	70	70	
Slope gradient (%)	9	6	9	3	5	
Length/gradient (*LS*-factor)	2.22	1.36	2.22	0.61	1.1	
Erosion control practice (*P*-factor)	1.3	1.3	1.3	1.3	1.3	1.3
Ground cover (*C*-factor)	1	1	1	1	1	1

Calculations

Soil loss (t/ha/yr)	144	88	144	40	72	
Soil Loss Class	1	1	1	1	1	
Soil loss (m^3/ha/yr)	111	68	111	31	55	
Sediment basin storage volume, m^3	16	16	4	3	10	

Peak flow calculations, 1

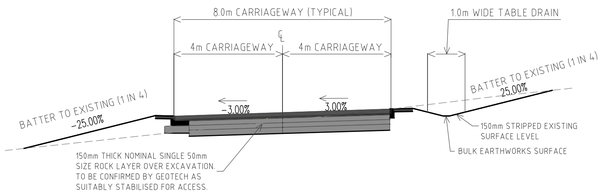
Site	A (ha)	tc (mins)	Rainfall intensity, I, mm/hr						C_{10}
			$1_{yr,tc}$	$5_{yr,tc}$	$10_{yr,tc}$	$20_{yr,tc}$	$50_{yr,tc}$	$100_{yr,tc}$	
A	1.12	8	58.6	98	117	138	168	192	0.9
B	1.79	10	58.6	98	117	138	168	192	0.9
C	0.28	5	58.6	98	117	138	168	192	0.9
D	0.78	7	58.6	98	117	138	168	192	0.9
E	1.48	9	58.6	98	117	138	168	192	0.9

Peak flow calculations, 2

ARI (yrs)	Frequency factor (F_y)	Peak flows						Comment
		A (m^3/s)	B (m^3/s)	C (m^3/s)	D (m^3/s)	5 (m^3/s)	(m3/s)	
1 yr,tc	0.8	0.131	0.210	0.033	0.091	0.174		
5 yr,tc	0.95	0.261	0.417	0.065	0.182	0.345		
10 yr,tc	1	0.328	0.524	0.082	0.228	0.433		
20 yr,tc	1.05	0.406	0.649	0.102	0.283	0.537		
50 yr,tc	1.15	0.541	0.865	0.135	0.377	0.715		
100 yr,tc	1.2	0.646	1.032	0.161	0.450	0.853		

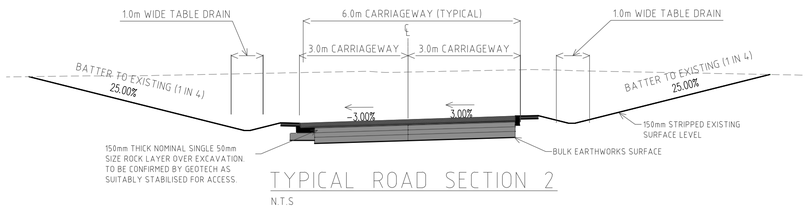
Total Basin Volume

Site	C_v	$R_{x\text{-day, }y\text{-tile}}$	Total catchment area (ha)	Settling zone volume (m^3)	Sediment storage volume (m^3)	Total basin volume (m^3)
A	0.51	37.4	1.12	213.6288	16	229.6288
B	0.51	37.4	1.79	341.4246	16	357.4246
C	0.51	37.4	0.28	53.4072	4	57.4072
D	0.51	37.4	0.78	148.7772	3	151.7772
E	0.51	37.4	1.48	282.2952	10	292.2952



TYPICAL ROAD SECTION 1

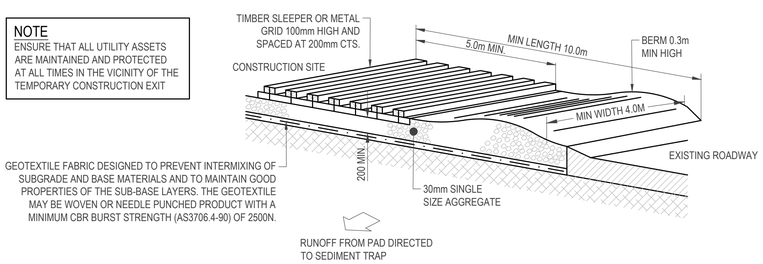
N.T.S



TYPICAL ROAD SECTION 2

N.T.S

NOTE
ENSURE THAT ALL UTILITY ASSETS ARE MAINTAINED AND PROTECTED AT ALL TIMES IN THE VICINITY OF THE TEMPORARY CONSTRUCTION EXIT



CONSTRUCTION NOTES

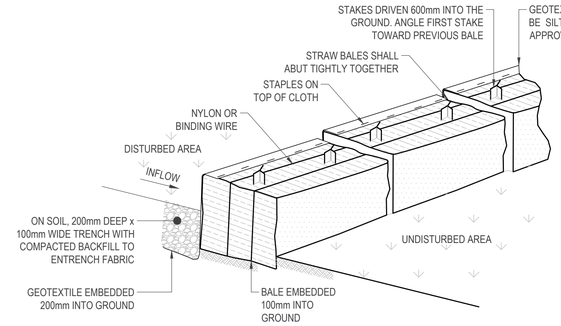
1. STRIP TOPSOIL AND LEVEL SITE.
2. COMPACT SUBGRADE.
3. COVER AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
4. CONSTRUCT 200mm THICK PAD OVER GEOTEXTILE USING 30mm SINGLE SIZE AGGREGATE.
5. CONSTRUCT HUMP IMMEDIATELY WITHIN BOUNDARY TO DIVERT WATER TO A SEDIMENT FENCE OR OTHER SEDIMENT TRAP WHERE THE SEDIMENT IS COLLECTED AND REMOVED.

MAINTENANCE NOTES

THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH PREVENTS TRACKING OR FLOWING OF SEDIMENT OFF THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL GRAVEL AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED OFF THE CONSTRUCTION SITE MUST BE REMOVED IMMEDIATELY.

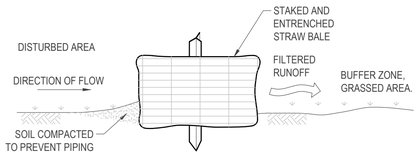
TEMPORARY STABILISED CONSTRUCTION EXIT

N.T.S.



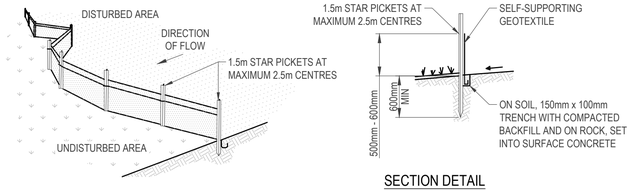
STRAW BALE AND GEOTEXTILE SEDIMENT FILTER

N.T.S.

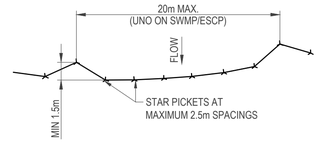


SECTION STRAW BALE BUND

N.T.S.



SECTION DETAIL



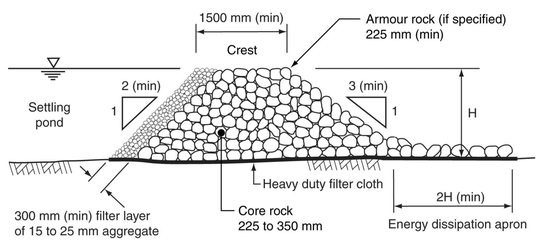
PLAN

CONSTRUCTION NOTES

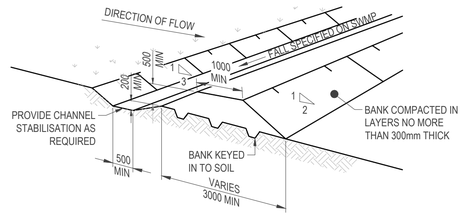
1. CONSTRUCT SEDIMENT FENCE AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE.
2. DRIVE 1.5m LONG STAR PICKETS INTO GROUND, 2.5 METRES APART (MAX). ENSURE STAR PICKETS ARE FITTED WITH SAFETY CAPS.
3. DIG A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
4. BACKFILL TRENCH OVER BASE OF FABRIC.
5. FIX SELF-SUPPORTING GEOTEXTILE TO UPSLOPE SIDE OF POSTS WITH WIRE TIES OR AS RECOMMENDED BY GEOTEXTILE MANUFACTURER.
6. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.

SEDIMENT CONTROL FENCE

N.T.S.



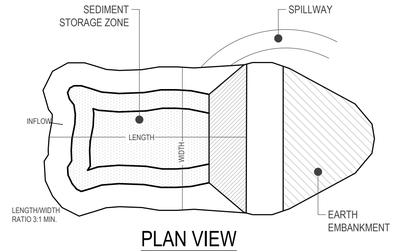
ROCK CHECK DAM



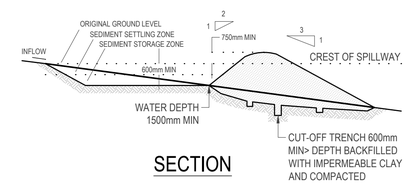
(FOR CATCHMENT GREATER THAN 2ha)

DIVERSION SWALE WITH BANK AND CHANNEL

N.T.S.



PLAN VIEW



SECTION

Construction Notes

1. REMOVE ANY VEGETATION AND TOPSOIL FROM UNDER THE DAM WALL AND FROM WITHIN THE STORAGE AREA.
2. CONSTRUCT A CUT-OFF TRENCH 500 mm DEEP AND 1200 mm WIDE ALONG THE CENTRELINE OF THE EMBANKMENT EXTENDING TO A POINT ON THE GULLY WALL LEVEL WITH THE RISER CREST.
3. MAINTAIN THE TRENCH FREE OF WATER AND RECOMPACT THE MATERIALS WITH EQUIPMENT AS SPECIFIED IN THE SWMP TO 95 PER CENT STANDARD PROCTOR DENSITY.
4. SELECT FILL FOLLOWING THE SWMP THAT IS FREE OF ROOTS, WOOD, ROCK, LARGE STONE OR FOREIGN MATERIAL.
5. PREPARE THE SITE UNDER THE EMBANKMENT BY RIPPING TO AT LEAST 100 mm TO HELP BOND COMPACTED FILL TO THE EXISTING SUBSTRATE.
6. SPREAD THE FILL IN 100 mm TO 150 mm LAYERS AND COMPACT IT AT OPTIMUM MOISTURE CONTENT.
7. CONSTRUCT THE EMERGENCY SPILLWAY.
8. REHABILITATE THE STRUCTURE FOLLOWING THE SWMP.

SEDIMENT BASIN

(APPLIES TO 'TYPE D' AND TYPE F' SOILS ONLY)

SCALE 1:1000 AT ORIGINAL SIZE 0 10 20 30 40 50 m

THIS DRAWING HAS BEEN PREPARED USING COLOUR

REF SUBMISSION

NOT TO BE USED FOR CONSTRUCTION

Rev	Description	Eng	Draft	Date
B	RE-ISSUE FOR REVIEW	JH	JH	18.08.23
A	ISSUED FOR REVIEW	JH	JH	21.07.23

Client: Multiplex

Engineer: TTW Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

Project: EUROBODALLA HOSPITAL

Sheet Subject: SOIL REF
SITE WORKS TYPICAL DETAILS
SHEET 1

Scale : A1	Drawn	Authorised
AS SHOWN	JH	AH

Job No	Drawing No	Revision
221896	ERH-TTW-00-DR-CI-0540	B

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