GOSFORD NORTHSIDE PRIVATE HOSPITAL

CIVIL & STORMWATER

SSDA

SOURCE : SIXMAPS

LOCALITY AERIAL

NOT TO SCALE

DRAWING SCHEDULE		
DRAWING No.	DRAWING TITLE	REV
C1.00 Arrangement and Overview Plans		
C1.01	Cover Sheet	1
C1.02	Specification Notes	1
C1.03	Existing Survey	1
C1.04	General Arrangement Plan	1
C2.00 Sediment and Erosion Control		
C2.01	Sediment and Erosion Control Plan	1
C2.02	Sediment and Erosion Control Details Sheet 1	1
C2.03	Sediment and Erosion Control Details Sheet 2	1
C3.00 Earthworks		
C3.01	Bulk Earthworks Plan	1
C3.02	Bulk Earthworks Cut & Fill Plan	1
C4.00 Driveway Plan		
C4.01	Driveway Plan and Longsections	1
C6.00 Stormwater Drainage		
C6.01	Stormwater Layout Plan	1
C6.02	Stormwater Pit Schedule	1
C6.03	Stormwater Catchment Plan	1
C6.04	On-Site Detention (OSD) Tank Plan	1
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C6.06	Stormwater Drainage Details	1
C6.07	Ocean Protect Treatment System Standard Details	1

CLIENT
NSW GOVERNMENT Health Infrastructure

PROJECT MANAGER
DONALD CANT WATTS CORKE

ARCHITECT
HPI

Warren Smith & Partners

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Consulting Engineers
Hydraulic Fire Civil Utilities Infrastructure

GLOBAL COMPLIANCE CERTIFICATION GCC ISO 9001 Certified

Serving the Construction Industry since 1981.

TITLE
COVER SHEET

SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
AS SHOWN	M.T.	M.D.	L.S.	L.S.

JOB No.	DRAWING No.	ISSUE
6422001	C1.01	1

DATE	STATUS
JULY 2020	SSDA

Plot Date

Cad File: I:\DC\11 WSP\LOCAL\drawings\6422001\Drawings\AutoCAD\Civil\Design\Civil 2\DC1.01 Cover Sheet.dwg
Login Name: mtaylor
Plot Date: 31.07.2020@17:34:20
Issue

GENERAL

G1. DESIGN HEREIN HAS BEEN PREPARED BY
WARREN SMITH AND PARTNERS PTY LTD
CONSULTING CIVIL ENGINEERS,
LEVEL 9, 233 CASTLEREAGH ST, SYDNEY NSW 2000.
TEL:- (02) 9299 1312, FAX:- (02) 9290 1295.

G2. THE DRAWINGS HEREIN SHALL BE READ AS REQUIRED IN CONJUNCTION WITH ARCHITECT DRAWINGS BY:
HEALTH PROJECTS INTERNATIONAL
SUITE 1, GROUND FLOOR, 68 ALFRED STREET
MILSONS POINT, NSW, 1565
TEL: (02) 9460 4199

G3. ALL DIMENSIONS IN MILLIMETRES UNO. REDUCED LEVELS AND CHAINAGES ARE IN METRES. DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS.

G4. THE PROPOSED WORKS DETAILED HEREIN SHALL BE CONSTRUCTED TO THE REQUIREMENTS OF COUNCIL GENERALLY AS DETAILED HEREUNDER.

G5. ALL EXISTING SERVICES SHALL BE VERIFIED FOR DEPTH AND HORIZONTAL POSITION BY PHYSICAL MEANS PRIOR TO EXCAVATION. ANY DISCREPANCIES SHALL BE BROUGHT FORTHWITH TO THE PROJECT MANAGER'S ATTENTION.

G6. REFERENCE SHALL BE MADE TO THE CONSTRUCTION MANAGEMENT PLAN FOR ALL SITE WORKS DETAILED HEREIN.

STORMWATER & SUB-SOIL DRAINAGE

MATERIALS:

STW1. PIPES AND FITTINGS FOR STORMWATER DRAINAGE SHALL BE AS FOLLOWS UNO ON THE DRAWINGS:
A. SEWER GRADE uPVC (SN8) WITH SOLVENT WELDED JOINTS FOR BELOW GROUND DRAINAGE UP TO 225mm.
B. REINFORCED CONCRETE WITH RUBBER RINGS, CLASS 3, FOR PIPE DIA'S GREATER THAN 225mm OR WHERE REQUIRED BY AS3500 FOR EXCESSIVE DEPTH.
C. INSTALL IN ACCORDANCE WITH AUSTRALIAN STANDARD AS3500 EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.

STW2. PIPES & FITTINGS FOR SUBSOIL DRAINAGE SHALL BE SLOTTED POLYVINYL CHLORIDE (PVC) WITH SOLVENT WELDED JOINTS, MIN. 150mm DIAMETER.

STW3. IN GROUND DRAINAGE PIPEWORK SERVING DP's SHALL BE MINIMUM 150mm DIA. UNO.

STW4. GRATED DRAINS SHALL BE 150mm NOM.
A. 150mm NOM. WIDTH IN NON TRAFFICABLE AREAS.
B. 225mm NOM. WIDTH IN TRAFFICABLE AREAS.

STW5. STORMWATER PITS ARE AS SHOWN & SPECIFIED ON THE PLANS . PRECAST TYPE ACCEPTABLE WITH STEP IRONS FOR DEPTH GREATER THAN 1200. BENCH ALL PITS MIN. 30mm & FORM SMOOTH TRANSITION FROM INLET TO OUTLET.

STW6. SELECT FILL SHALL BE MATERIAL OBTAINED FROM EXCAVATION OF THE PIPE TRENCH OR IMPORTED WITH A PARTICLE SIZE FOR ROCK NOT GREATER THAN 75mm OR FOR OTHER THAN ROCK NOT GREATER THAN 150mm.

STW7. IMPORTED FILL SHALL BE EITHER, AND GENERALLY CONSIST OF SINGLE SIZED AGGREGATE WITH PARTICLE SIZE NOT GREATER THAN 5mm WRAPPED ALL ROUND WITH GEOTEXTILE FILTER FABRIC OR APPROVED HIGH COMPACTION SAND OR APPROVED CRUSHED ROAD GRAVEL CONFORMING TO RTA FORM 3051 OR SIMILAR.

STW8. STORMWATER PITS AND GRATES TO CONFORM WITH STANDARD COUNCIL REQUIREMENTS, WHERE ON PUBLIC LAND. GRATES TO BE SUPPLIED IN CLASS SHOWN ON THE DRAWINGS.

INSTALLATION REQUIREMENTS:

STW9. PIPES SHALL BE TRUE TO GRADES SHOWN AND ALIGNED SO THAT THE CENTRES OF THE INLET PIPES INTERSECT WITH THE CENTRE OF THE OUTLET PIPE AT THE DOWNSTREAM FACE OF THE PIT.

STW10. MINIMUM GRADES FOR GRAVITY STORMWATER DRAINAGE SHALL CONFORM TO AS3500 PART3 AS FOLLOWS, UNO:
1% FOR 100 AND 150 mm DIA.
0.5% FOR 225 mm DIA
0.5% FOR 300 mm DIA
0.4% FOR 375 mm DIA

STW11. MINIMUM DEPTH OF COVER SHALL BE :-
- 300mm IN PRIVATE PROPERTY (NON VEHICULAR TRAFFIC).
- 450mm IN PUBLIC AREAS.
- 600mm IN VEHICULAR TRAFFICABLE AREAS (FOOTWAY/ROADWAY)

STW12. BED ALL PIPES FIRMLY AND EVENLY ONTO IMPORTED BEDDING FILL MATERIAL.

STW13. LAY AND JOINT ALL PIPES IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS AND
AS 3725-1989 BURIED FLEXIBLE PIPELINES
AS 2566-1998 LOADS ON BURIED FLEXIBLE PIPELINES
AS 1597.2-1996 PRECAST REINFORCED CONCRETE BOX CULVERTS.
AS 3500-1990 NATIONAL PLUMBING & DRAINAGE CODE. PART 2, SANITARY PLUMBING AND SANITARY DRAINAGE. SYDNEY WATER REQUIREMENTS.

STW14. ALLOW TO TEST ALL PIPES AND PITS TO MANUFACTURERS REQUIREMENTS.

CONCRETE WORKS

C1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600, THE STANDARDS ASSOCIATION AUSTRALIA, STANDARDS CITED IN AS3600, THE DRAWINGS AND THE SPECIFICATION.

C2. ALL CONCRETE SHALL BE 80mm NOMINAL SLUMP, 20mm MAXIMUM AGGREGATE WITH NO ADMIXTURES OR FLY ASH, UNLESS OTHERWISE APPROVED. ALL CONCRETE WORK IN CONTACT WITH SEWER TO HAVE TYPE SL PORTLAND CEMENT, OTHERWISE TYPE A CEMENT FOR BRIDGE WORKS, A MAXIMUM 56 DAYS SHRINKAGE OF 600 MICROSTRAIN, A MINIMUM CEMENT CONTENT 350kg/m3 AND MAXIMUM WATER:CEMENT RATIO OF 0.40.

C3. STRENGTH GRADE OF CONCRETE SHALL BE : 25 MPa (KERBS, EDGE STRIPS & CONCRETE ENCASEMENT) AND 32 MPa ELSEWHERE.

C4. CONSTRUCTION JOINTS SHALL BE PROPERLY FORMED AND USED ONLY WHERE SHOWN OR APPROVED. GENERALLY FOR HAND PLACED KERB & GUTTER 6mm THICK APPROVED BITUMINOUS MASTIC JOINTING MATERIAL SHALL BE PROVIDED AT INTERVALS NOT EXCEEDING 6m. FOR MACHINE PLACED KERB & GUTTER 6mm THICK APPROVED BITUMINOUS MASTIC JOINTING MATERIAL SHALL BE PROVIDED AT INTERVALS NOT EXCEEDING 12m & GUILLOTINED DUMMY GROOVED JOINTS, 25mm IN DEPTH, SHALL BE FORMED EVERY 3m OF GUTTER. JOINTS ARE ALSO REQUIRED AT EACH END OF GUTTER CROSSING AND GULLY PITS. JOINTS SHALL BE SET VERTICAL AND SQUARE TO THE KERB.

C5. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND IS NOT NECESSARILY SHOWN IN TRUE PROJECTION.

C6. ELDING OR SPLICES IN REINFORCEMENT SHALL BE USED ONLY IN POSITIONS APPROVED BY THE ENGINEER.

C7. CONCRETE CURING SHALL BE IN ACCORDANCE WITH AS3600. CURING SHALL BE COMMENCED WITHIN TWO HOURS OF FINISHING OPERATIONS AND SHALL BE CONTINUED FOR A MINIMUM OF SEVEN DAYS BY AN APPROVED PROPRIETARY COMPOUND OR BY KEEPING CONTINUOUSLY WET.

C8. FORMWORK SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH AS3610. FORMWORK SHALL NOT BE STRIPPED NOR PROPS REMOVED WITHOUT APPROVAL.

C9. FABRIC LAP DETAILS SHALL BE IN ACCORDANCE WITH FIG.13.2.4 OF AS3600.

C10. HOOKS, LAPS AND BENDS SHALL BE IN ACCORDANCE WITH AS3600 UNO.

C11. ALL CHEMICAL ANCHORS SHALL BE EITHER 'CHEMSET' BY "RAMSET" WITH THE GLASS CAPSULE SYSTEM INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS OR HILTI HVU ADHESIVE ANCHOR WITH FOIL CAPSULE SYSTEM INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS INSTRUCTION.

C12. ALL CHEMICAL ANCHORS SHALL BE HOT DIPPED GALVANIZED AND BE MIN M16 DIA. U.N.O.

GENERAL EARTHWORKS, SITEWORKS & FILLING:

FILLING:

SGE1. THESE CLAUSES SHALL BE READ IN CONJUNCTION WITH THE DOUGLAS PARTNERS GEOTECHNICAL INVESTIGATION REPORT, DATED 14TH MARCH 2019.

SGE2. ANY CONTRADICTIONS BETWEEN THE DESIGN DOCUMENTS AND THE RECOMMENDATIONS CONTAINED IN THE GEOTECH REPORT SHALL BE REPORTED TO WS+P.

SGE3. STRIP ALL TOPSOIL AND UNDERLYING FILL AND STOCKPILE TOPSOIL FOR LATER REUSE FOR LANDSCAPING PURPOSES.

SGE4. NEW FILL REQUIRED TO REINSTATE CUT LEVELS TO PROPOSED BENCHING LEVELS SHALL BE SOURCED FROM OTHER PARTS OF THE EXCAVATION AS SELECT FILL OR IMPORTED FILL AS SPECIFIED BELOW IN SGE 5 AND SGE 6.

SGE5. SELECT FILL SHALL CONSIST OF LOCALLY DERIVED OR CUT NATURAL CLAYS.

SGE6. IMPORTED FILL SHALL CONSIST OF RIPPED SANDSTONE OR SHALE OR SIMILAR MATERIAL WITH MAXIMUM PARTICLE SIZE NOT GREATER THAN 120mm AND A MOISTURE CONTENT WITHIN 2-3% OF STANDARD OPTIMUM.

SGE7. ALL FILL (COHESIVE SOIL) SHALL BE PLACED IN LAYERS OF 200mm MAXIMUM THICKNESS, COMPACTED BY MACHINE ROLLING TO ACHIEVE A DRY DENSITY RATIO OF NOT LESS THAN 98% STANDARD MAXIMUM AT A CORRESPONDING MOISTURE CONTENT WITHIN 2-3% OF STANDARD OPTIMUM.

SGE8. IN AREAS WHERE HIGH IMPACT ROLLING IS USED TEST EACH FINAL LAYER OF NOT GREATER THAN 300mm TO 400mm TO ACHIEVE A DRY DENSITY SGE8. RATIO OF NOT LESS THAN 98% STANDARD MAXIMUM AT A CORRESPONDING MOISTURE CONTENT WITHIN 2-3% OF STANDARD OPTIMUM.

EXCAVATION BATTERS:

SGE9. ALL TEMPORARY BATTERS CUT IN CLAY SUBSTRATE SHALL BE 1 HORIZ : 1 VERT. ALL LONG TERM EXPOSED BATTERS CUT IN CLAY SUBSTRATE SHALL BE 2 HORIZ : 1 VERT. ALL DETENTION BASIN BATTERS IN CLAY SUBSTRATE SHALL BE 3 HORIZ : 1 VERT. ALL DETENTION BASIN BATTERS IN ROCK SUBSTRATE SHALL BE NEAR VERTICAL.

SGE10. GEOTECHNICAL TESTING IS TO BE UNDERTAKEN TO AT LEAST LEVEL 1 CONTROL OF FILL COMPACTION STANDARD, AS DEFINED IN AS. 3738 AS FOLLOWS

- FOR GENERAL FILL OR CUT AREAS OVER THE AREA PROVIDE ONE (1) TEST PER 200mm LAYER, OVER AN AREA NOT GREATER THAN 500 m^2

- FOR GENERAL FILL AREAS IN CONCENTRATED AREAS ADJACENT TO AND BEHIND THE STRUCTURE AND ADJACENT TO AND BEHIND RETAINING WALLS PROVIDE ONE (1) TEST PER 200mm LAYER, OVER AN AREA NOT GREATER THAN 50m^2

SGE11. SUBMIT ALL GEOTECHNICAL TEST RESULTS TO WARREN SMITH & PARTNERS FOR REVIEW PRIOR TO CONTINUATION WITH SUBSEQUENT SECTION OF WORK.

EARTH WORKS FOR SERVICES

E1. EXCAVATE TRENCHES AND STOCKPILE ALL MATERIAL FOR INSPECTION WITH REGARD TO RE-USE FOR TRENCH BACKFILL. REMAINING MATERIAL TO BE REMOVED FROM SITE.

E2. BEDDING MATERIAL SHALL CONSIST OF IMPORTED FILL ONLY. THICKNESS OF BEDDING LAYER SHALL BE 75mm IN O.T.R. AND 200mm IN ROCK.

E3. EMBED ALL PIPES WITH IMPORTED FILL. PROVIDE 200mm SIDE SUPPORT AND 150mm OVERLAY ABOVE PIPE CROWN.

E4. TRENCH FILL ABOVE THE EMBEDMENT ZONE TO THE UNDERSIDE OF THE ROAD PAVEMENT OR FOOTWAY FILL MATERIAL SHALL BE AS FOLLOWS :

UNDER ROADWAY

TRENCH FILL MATERIAL SHALL CONSIST OF IMPORTED FILL AS SPECIFIED HEREIN OF EITHER HIGH GRADE COMPACTION SAND OR APPROVED CRUSHED ROAD GRAVEL CONFORMING TO RTA FORM 3051 OR SIMILAR.

OTHER THAN ROADWAY

TRENCH FILL MATERIAL EXCAVATED SHALL CONSIST OF SELECT FILL AS SPECIFIED HEREIN AND SHALL NOT CONTAIN MORE THAN 20% OF STONES OF SIZE BETWEEN 75mm & 150mm AND NONE LARGER THAN 150mm. PRIOR TO THE USE OF THE EXCAVATED MATERIAL IT SHALL BE INSPECTED AND APPROVED BY THE CONSULTANT.

E5. COMPACT BEDDING, EMBEDMENT AND TRENCH FILL MATERIALS AS FOLLOWS:

EMBEDMENT:-
FOR GRANULAR FILL MATERIAL (NON-COHESIVE SOILS) EG. COARSE AGGREGATE FILL, HIGH GRADE COMPACTION SAND, THE DENSITY INDEX (ID) SHALL BE NOT LESS THAN 70%.

TRENCH FILL:-
FOR GRANULAR MATERIAL (NON-COHESIVE SOILS), THE DENSITY INDEX (ID) SHALL BE NOT LESS THAN 70%.

FOR NON-GRANULAR FILL MATERIAL (COHESIVE SOILS), THE DRY DENSITY RATIO (RD) SHALL BE NOT LESS THAN 95%.

E6. MEASURE OF COMPACTION:-
THE DEGREE OF COMPACTION SHALL BE MEASURED BY ONE OF THE FOLLOWING PARAMETERS :-

GRANULAR FILL (NON-COHESIVE SOILS). THE DENSITY INDEX (ID) DETERMINED IN ACCORDANCE WITH AS 1289.E6.1 BASED ON THE MAXIMUM AND MINIMUM DRY DENSITIES IN ACCORDANCE WITH AS 1289.E5.1 AND THE FIELD DRY DENSITY IN ACCORDANCE WITH AS 1289.5.3.2, AS 1289.E3.5 OR AS 1289.E8.1.

NON-GRANULAR FILL (COHESIVE SOILS). THE DRY DENSITY RATION (RD) DETERMINED IN ACCORDANCE WITH AS 1289.5.4.1 BASED ON THE FIELD DRY DENSITY IN ACCORDANCE WITH AS 1289.5.3.2 AND THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289.5.1.1

E7. GEOTECHNICAL TESTING IS TO BE UNDERTAKEN TO AT LEAST LEVEL 1 CONTROL OF FILL COMPACTION STANDARD, AS DEFINED IN AS. 3738 AS FOLLOWS:

- TEST EACH 300mm LAYER ABOVE PIPE CROWN.
- TEST BASE & SUB-BASE LAYERS WHERE APPLICABLE.
- TESTS SHALL BE REQUIRED AT EACH 50m CENTRES WHERE THE LENGTH OF TRENCH IS WITHIN THE 50m REQUIREMENT.

E8. SUBMIT ALL GEOTECHNICAL TEST RESULTS TO WARREN SMITH & PARTNERS FOR REVIEW PRIOR TO CONTINUATION WITH SUBSEQUENT SECTION OF WORK.

RESTORATION:

RES1. RESTORE ALL TRAFFIC AREAS TO PRE EXISTING CONDITION.

RES2. FOR ALL SURFACES OTHER THAN IN TRAFFIC AREAS RESTORE DISTURBED SURFACES TO PRE-EXISTING CONDITIONS AND COMPACT AS SPECIFIED.

RES3. RESTORE ALL AUTHORITY OWNED AREAS TO COUNCIL STANDARDS

ROAD WORKS, DRIVEWAYS & CARPARKS

R1. ALLOW FOR LEVEL 2 TESTING AND SUB-GRADE CONDITIONS & PAVEMENT THICKNESS TO BE VERIFIED BY GEOTECHNICAL CONSULTANT AFTER INSPECTION OF PRELIMINARY BOXING.

R2. ALLOW FOR ANY SUB-GRADE REPLACEMENT WORK TO BE DETERMINED AS REQUIRED BY GEOTECHNICAL CONSULTANT AT THE TIME OF PAVEMENT CONSTRUCTION.

R3. MINIMUM DRY DENSITY RATIOS (AS 1289 3.4.1-1993) TO BE:

BASE COURSE:	98% MODIFIED
SUB-BASE:	95% MODIFIED
SUB-GRADE:	100% STANDARD
SUB-GRADE REPLACEMENT:	100% STANDARD

R4. PAVEMENT MATERIALS TO COMPLY WITH RMS SPECIFICATION No. 3051 OR SIMILAR AS APPROVED BY GEOTECHNICAL CONSULTANT.

R5. PROVIDE (1) TEST FOR EACH LAYER NOT EXCEEDING 250mm THICK BEING BASECOURSE, SUB-BASE & SUB-GRADE OVER AN AREA NOT GREATER THAN 500m^2

R6. SUBMIT ALL GEOTECHNICAL TEST RESULTS TO WARREN SMITH & PARTNERS FOR REVIEW PRIOR TO CONTINUATION WITH SUBSEQUENT SECTION OF WORK.

APPROVALS

A1. THE AS CONSTRUCTED WORKS SHALL BE INSPECTED BY DESIGN CONSULTANT. MINIMUM 48 HOURS NOTICE SHALL APPLY TO ALL INSPECTIONS.

A2. THE DESIGN PLANS HEREIN ARE SUBJECT TO LOCAL COUNCIL APPROVAL PRIOR TO CONSTRUCTION. OBTAIN EXPRESS (WRITTEN) ADVICE TO PROCEED FROM PROJECT MANAGER PRIOR TO COMMENCEMENT.

A3. SUBMIT WORK-AS-EXECUTED DRAWINGS IN CIVILCAD OR DXF DIGITAL FORMAT AND HARD COPY FORMAT. VERIFY ALL CONSTRUCTION WORKS SHOWN HEREON.

A4. CERTIFY THAT THE AS CONSTRUCTED SYSTEM HAS BEEN BUILT IN ACCORDANCE WITH THE APPROVED PLANS ISSUED FOR CONSTRUCTION.

SERVICES UNDER ROAD SURFACES

S1. ALL OTHER SERVICES INCLUDING BUT NOT LIMITED TO WATER, HYDRANT, GAS, SEWER, ELECTRICAL AND COMMUNICATIONS CONDUITS OR CABLES SHALL BE LAID WITH MINIMUM 600mm U.N.O. COVER BELOW PROPOSED ROAD SURFACE OR APPROVED OTHER MEANS TO PROTECT DURING CONSTRUCTION.

ROAD SIGNS & LINE MARKING

RS1. ALL SIGNS AND LINEMARKING SHALL BE TO ROADS & TRAFFIC AUTHORITY STANDARDS AND SPECIFICATIONS AND AS.1742, MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES

RS2. ALL LINEMARKING SHALL BE AUGMENTED BY RETROREFLECTIVE RAISED PAVEMENT MARKERS (RRPMs) AND ALL SHALL BE TO AS 1742.2 - 1994 AND AS 1742.2 /AMDT 1/1997-10-05

RS3. ALL ROAD SIGNS AND POSTS SHALL BE TO AS 1742.2 - 1994 AND AS 1742.2 /AMDT 1/1997-10-05

PROTECTION OF FLORA - REFER SPECIFICATION

1. ANY TRENCHES WITHIN 3m OF TREES SHALL BE HAND DUG TO AVOID DAMAGE TO TREE ROOTS.

2. IF IT IS CONSIDERED NECESSARY TO PERFORM ANY WORK ON TREES, INCLUDING TRIMMING, LOPPING, ROOT CUTTING, REPAIR AND REMOVAL, APPLICATION IN WRITING SHALL BE MADE BY THE CONTRACTOR TO THE SUPERINTENDENT. ANY WORK PERMITTED TO BE DONE ON TREES TO BE RETAINED SHALL BE PERFORMED IN ACCORDANCE WITH THE ARBORISTS REPORT.

3. MATURE TREES AND SHRUBS ARE TO BE REMOVED IN ACCORDANCE WITH THE ARBORISTS REPORT.

AUTHORITY STANDARDS

LGA 1. THE DRAWINGS HEREIN SHALL BE READ IN CONJUNCTION WITH CENTRAL COAST COUNCIL STANDARDS & SPECIFICATIONS.

TRAFFIC NOTE:

1. A TRAFFIC CONTROL PLAN IS TO BE PREPARED BY AN ACCREDITED RMS 1. TRAFFIC CONTROLLER AND SUBMITTED TO COUNCIL. THIS TRAFFIC PLAN IS TO BE CERTIFIED BY AND IMPLEMENTED TO THE SATISFACTION OF AN ACCREDITED RMS TRAFFIC CONTROLLER

PRIOR TO COMMENCEMENT OF WORK

2. ALL TRAFFIC CONTROL WORKS SHALL ONLY BE CARRIED OUT BY 2. ACCREDITED RMS TRAFFIC CONTROLLERS.

CLOSED CIRCUIT COLOUR TV (CCTV)

CCTV 1. UNDERTAKE A CCTV INSPECTION OF ALL THE COMPLETED DRAINAGE IN ACCORDANCE WITH THE GUIDELINES OF THE AUSTRALIAN CONDUIT CONDITION EVALUATION MANUAL (ACCEM)

CCTV 2. APPLY THE FOLLOWING REQUIREMENTS TO THE CCTV INSPECTION:-
A. USE DATA CAPTURE SOFTWARE APPROVED BY SYDNEY WATER

B. USE CERTIFIED CCTV OPERATORS C. THE CCTV FOOTAGE SHALL BE OF QUALITY TO ALLOW ACCURATE ASSESSMENT OF THE INTERNAL CONDITION OF THE PIPE. FURNISH TO THE DESIGN CONSULTANT:-

CCTV 3. A. VIDEOS IN MPG FORMAT
B. CCTV REPORT AND SURVEY DATA IN PDF FORMAT

PROTECTION OF TREES

T1. WHERE STORMWATER DRAINAGE IS LAID WITHIN THE VICINITY OF TREES / CANOPIES OF TREES, WORK IS TO BE COMPLETED TO THE PROJECT ARBORIST'S REQUIREMENTS AND SPECIFICATIONS.

PRELIMINARY - NOT FOR CONSTRUCTION

DO NOT SCALE FROM DRAWINGS, CHECK & VERIFY ALL DIMENSIONS & LEVELS BEFORE COMMENCEMENT OF ANY WORK.

THIS DRAWING IS NOT TO BE COPIED IN PART OR WHOLE WITHOUT WRITTEN PERMISSION FROM WARREN SMITH AND PARTNERS.

REVISION	AMENDMENT	DATE	REVISION	AMENDMENT	DATE
1	DEVELOPMENT APPLICATION	31/07/20			

CLIENT: NSW GOVERNMENT Health Infrastructure

PROJECT: GOSFORD NORTHSIDE PRIVATE HOSPITAL

PREPARED BY
Warren Smith & Partners
Warren Smith & Partners Pty Ltd
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Hydraulic Fire Civil Utilities Infrastructure
GCC ISO 9001 Certified
SERVING THE CONSTRUCTION INDUSTRY SINCE 1981.

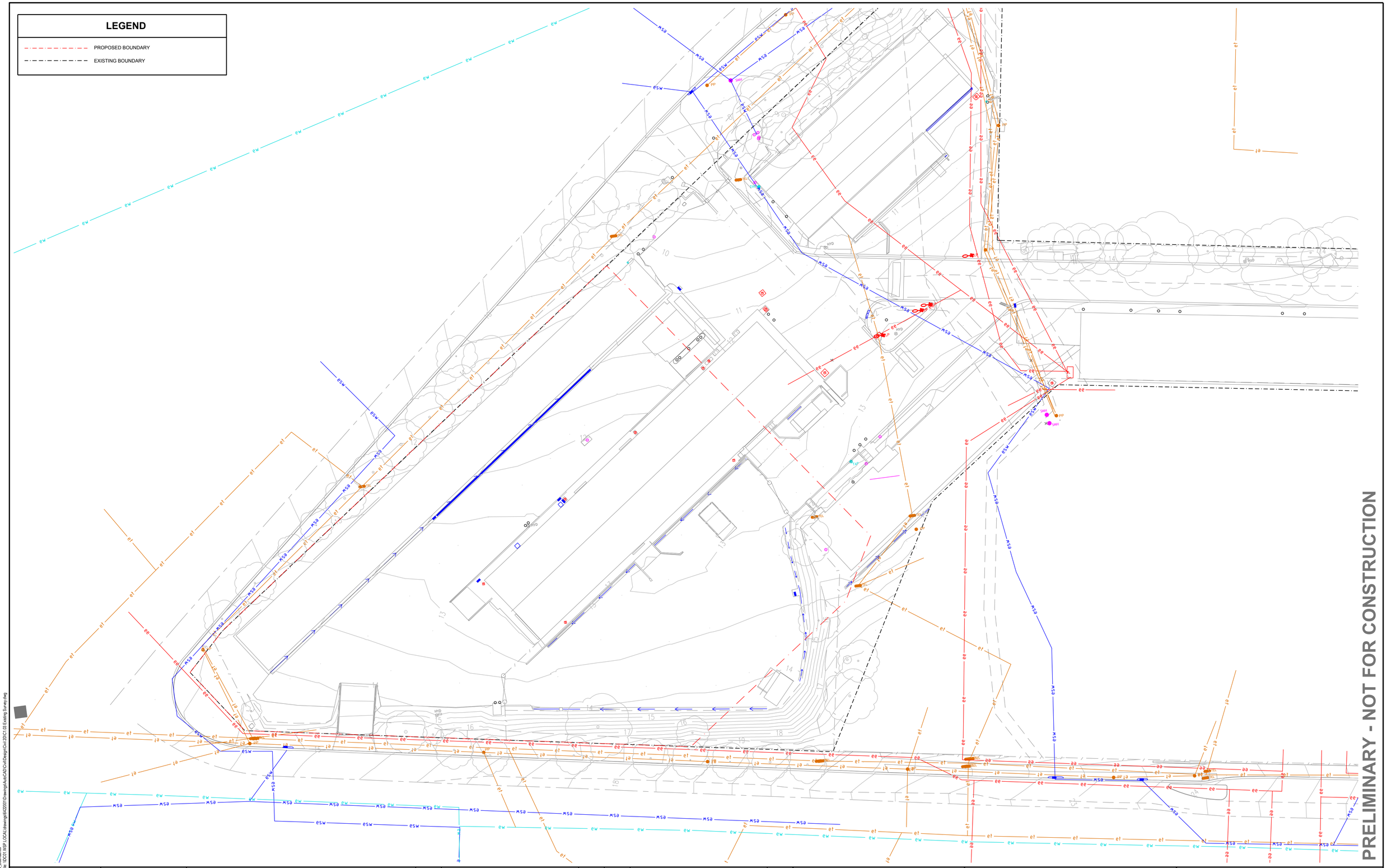
TITLE: **SPECIFICATION NOTES**

SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
AS SHOWN	M.T.	M.D.	--	--

JOB No.	DRAWING No.	ISSUE
6422001	C1.02	1

DATE	STATUS
JULY 2020	SSDA

Xref: X-6422001-TB, A1H
Plot Date: 30.07.2020@20:25:03 Login Name: mtaylor Cad File: T:\6422001\Drawings\AutoCAD\Civil\Design\Civil 20\C1.02 Specification Notes.dwg



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NORTH

5 0 5 10 15 20m
PLAN SCALE 1:400 A1 SHEET

REVISION	AMENDMENT	DATE	REVISION	AMENDMENT	DATE
1	DEVELOPMENT APPLICATION	31/07/20			

CLIENT
NSW GOVERNMENT Health Infrastructure

PROJECT
GOSFORD NORTHSIDE PRIVATE HOSPITAL

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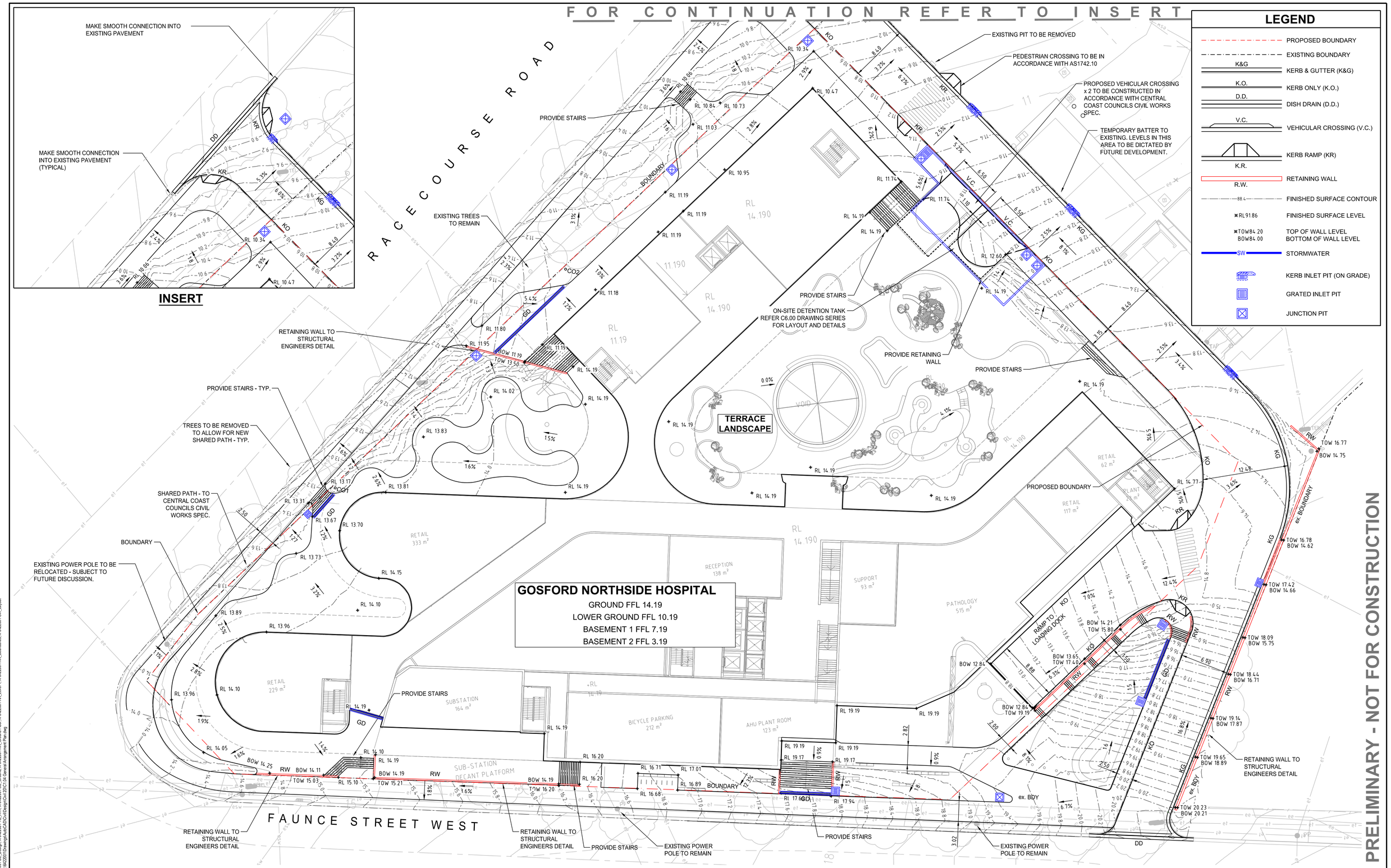
TITLE
EXISTING SURVEY

SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
AS SHOWN	M.T.	M.D.	L.S.	L.S.

JOB No.	DRAWING No.	ISSUE
6422001	C1.03	1

DATE	STATUS
JULY 2020	SSDA

Xrefs: X-6422001-TB, A1H, X-6422001-SIL, Ground, X-6422001-AB, Boundaries
Plot Date: 31.07.2020@16:07:47 Login Name: mtaylor Cad File: \\DC01.WSP.LOCAL\drawings\6422001\Drawings\AutoCAD\Civil\Design\Civil 2D\C1.03 Existing Survey.dwg



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NORTH

5.0 0 2.5 5.0 7.5 10.0m
PLAN SCALE 1:250 A1 SHEET

REVISION	AMENDMENT	DATE	REVISION	AMENDMENT	DATE
1	DEVELOPMENT APPLICATION	31/07/20			

CLIENT
NSW GOVERNMENT Health Infrastructure

PROJECT
GOSFORD NORTHSIDE PRIVATE HOSPITAL

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TITLE
GENERAL ARRANGEMENT PLAN

SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
AS SHOWN	J.W.	J.W.	L.S.	L.S.

JOB No.	DRAWING No.	ISSUE
6422001	C1.04	1

DATE	STATUS
JULY 2020	SSDA

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
SHEET SIZE: A1

Xrefs: X-6422001-AR_Landscape; X-6422001-DE_Contours; X-6422001-DE_Energy; X-6422001-TB_ATH; X-6422001-SU_Ground; X-6422001-AR_Ground Floor; X-6422001-AR_Level 1; X-6422001-AR_Boundaries; X-6422001-SW_Layout
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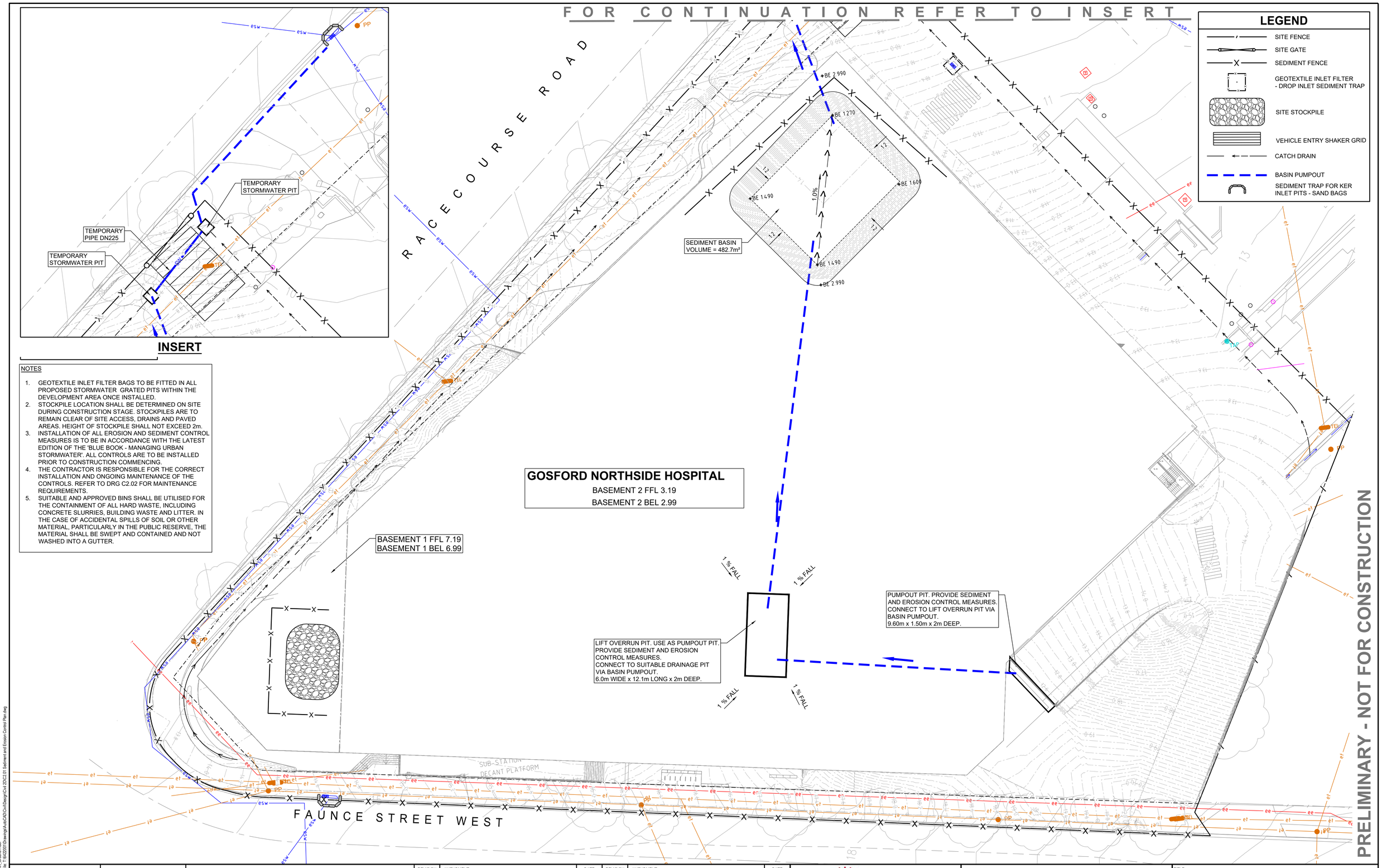

NOTES

1. GEOTEXTILE INLET FILTER BAGS TO BE FITTED IN ALL PROPOSED STORMWATER GRATED PITS WITHIN THE DEVELOPMENT AREA ONCE INSTALLED.
2. STOCKPILE LOCATION SHALL BE DETERMINED ON SITE DURING CONSTRUCTION STAGE. STOCKPILES ARE TO REMAIN CLEAR OF SITE ACCESS, DRAINS AND PAVED AREAS. HEIGHT OF STOCKPILE SHALL NOT EXCEED 2m.
3. INSTALLATION OF ALL EROSION AND SEDIMENT CONTROL MEASURES IS TO BE IN ACCORDANCE WITH THE LATEST EDITION OF THE 'BLUE BOOK - MANAGING URBAN STORMWATER'. ALL CONTROLS ARE TO BE INSTALLED PRIOR TO CONSTRUCTION COMMENCING.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE CORRECT INSTALLATION AND ONGOING MAINTENANCE OF THE CONTROLS. REFER TO DRG C2.02 FOR MAINTENANCE REQUIREMENTS.
5. SUITABLE AND APPROVED BINS SHALL BE UTILISED FOR THE CONTAINMENT OF ALL HARD WASTE, INCLUDING CONCRETE SLURRIES, BUILDING WASTE AND LITTER. IN THE CASE OF ACCIDENTAL SPILLS OF SOIL OR OTHER MATERIAL, PARTICULARLY IN THE PUBLIC RESERVE, THE MATERIAL SHALL BE SWEPT AND CONTAINED AND NOT WASHED INTO A GUTTER.

DO NOT SCALE FROM DRAWINGS, CHECK & VERIFY ALL DIMENSIONS & LEVELS BEFORE COMMENCEMENT OF ANY WORK.

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NORTH

PLAN SCALE 1:400 A1 SHEET

REVISION	AMENDMENT	DATE	REVISION	AMENDMENT	DATE
1	DEVELOPMENT APPLICATION	31/07/20			

CLIENT

NSW GOVERNMENT Health Infrastructure

PROJECT

GOSFORD NORTHSIDE PRIVATE HOSPITAL

PREPARED BY

Warren Smith & Partners

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Consulting Engineers
Hydraulic Fire Civil Utilities Infrastructure

ISO 9001 Certified

SERVING THE CONSTRUCTION INDUSTRY SINCE 1981.

TITLE

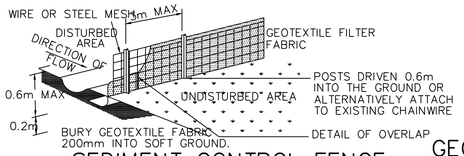
SEDIMENT AND EROSION CONTROL PLAN

SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
AS SHOWN	M.T.	M.D.	L.S.	L.S.

JOB No.	DRAWING No.	ISSUE
6422001	C2.01	1

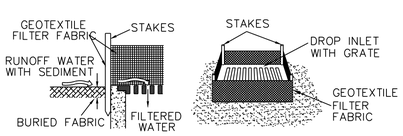
DATE	STATUS
JULY 2020	SSDA

Xrefs: X-6422001-TB, A1H, X-6422001-SU, Ground, X-6422001-HR, Ground Floor
Plot Date: 31.07.2020@15:58:46 Login Name: mdiaz Cad File: T:\6422001\Drawings\AutoCAD\Civil\Design\Civil 2\DC2.01 Sediment and Erosion Control Plan.dwg



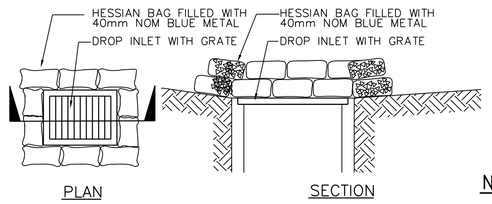
SEDIMENT CONTROL FENCE

NTS



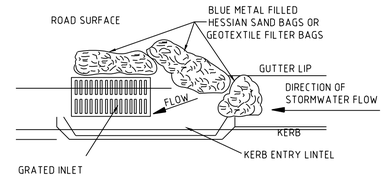
GEOTEXTILE FILTER FABRIC DROP INLET SEDIMENT TRAP

NTS



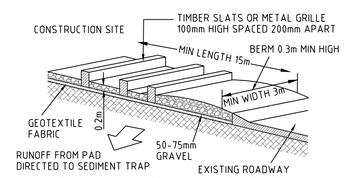
HESSIAN BAG DROP INLET SEDIMENT TRAP

NTS



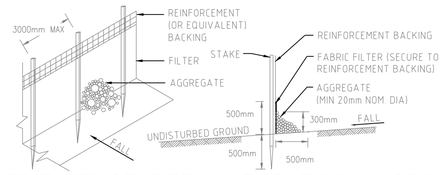
NEW/EXISTING GRATED KERB ENTRY PIT SEDIMENT CONTROL BARRIER

NTS



STABILIZED CONSTRUCTION SITE VEHICLE ENTRY/EXIT

NTS



SEDIMENT FENCE DETAIL FOR ROCKY GROUND

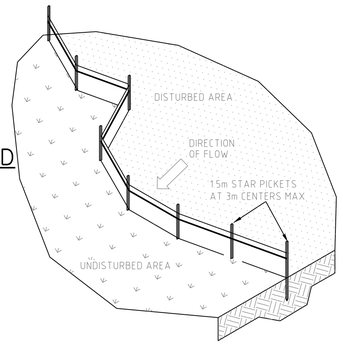
NTS

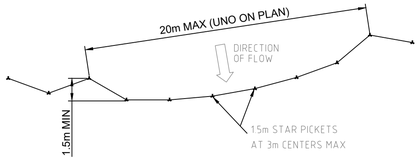
SEDIMENT FENCE NOTES: –

1. CONSTRUCT SEDIMENT FENCE AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE OR AT THE TOE OF A SLOPE.
2. DRIVE 1.5 METRE LONG STAR PICKETS INTO GROUND SUFFICIENT TO PROVIDE RIGID SUPPORT, 3 METERS APART. WHERE THERE IS INSUFFICIENT SOIL DEPTH OVER ROCK, HOLES ARE TO BE DRILLED INTO ROCK TO ACCEPT THE STAR PICKETS.
3. ON SOFT GROUND MATERIALS, DIG A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE
4. FABRIC TO BE ENTRENCHED.
5. BACKFILL TRENCH OVER BASE OF FABRIC & COMPACT.

   FIX SELF–SUPPORTING GEOTEXTILE TO UPSLOPE SIDE OF POSTS WITH WIRE TIES OR AS RECOMMENDED BY THE GEOTEXTILE
6. MANUFACTURER. USE A REINFORCEMENT BACKING WITH NON SELF–SUPPORTING GEOTEXTILE FABRIC.
7. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
8. ON HARD OR ROCKY GROUND, SMOOTH A 500mm WIDE STRIP UPSLOPE OF THE FENCE LINE. TURN THE BOTTOM 500mm OF THE FABRIC UPSLOPE AND ANCHOR IN PLACE WITH SUITABLE AGGREGATE.

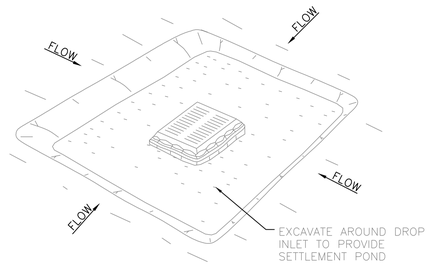
   WHERE A SEDIMENT FENCE IS CONSTRUCTED DOWN SLOPE FROM A DISTURBED BATTER THE FENCE SHOULD BE LOCATED 1.5 TO 2.0 METERS DOWN SLOPE FROM THE TOE OF THE BATTER.





SEDIMENT FENCE LAYOUT PLAN

NTS

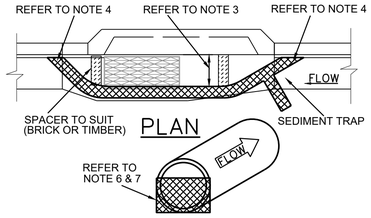


EXCAVATED SEDIMENT TRAP

NTS

EXCAVATED SEDIMENT TRAP NOTES: –

1. REMOVE THE SEDIMENT WHEN IT HAS ACCUMULATED TO HALF THE DESIGN DEPTH OF THE TRAP AND RESTORE THE TRAP TO ITS ORIGINAL DIMENSIONS.
2. PROVIDE 50 cu.m/Ha OF SEDIMENT STORAGE VOLUME.
3. REFER TO THE MAINTENANCE REQUIREMENTS.



GEOTEXTILE FILTER BAGS

NTS

SEDIMENT BARRIER FOR PITS & PIPES, NOTES: –

1. SLEEVES ARE TO BE MADE FROM GEOTEXTILE FABRIC LONGER THEN THE LENGTH OF THE INLET PIT.
2. FILL SLEEVE WITH 5 OR 10mm CLEAN GRAVEL.
3. PLACE THE SLEEVE AT THE OPENING OF THE KERB INLET LEAVING A 100mm GAP TO ACT AS AN EMERGENCY OVERFLOW.
4. SLEEVE MUST BE PLACED AGAINST THE KERB TO PREVENT BYPASS.
5. FIT SLEEVE TO ALL INLETS DOWNSTREAM OF THE WORKS.
6. FOR DRAINAGE WORKS FIT GEOTEXTILE FABRIC OR GEO BAGS TO UPSTREAM FACE OF ALL OPEN PIPES.
7. MAINTAIN AN OPENING AT THE TOP OF THE PIPE OF 1/3
8. OF THE PIPE DIAMETER.
9. THE FILTERS ARE TO BE CLEANED AND MAINTAINED DAILY.

   ALL CARE SHOULD BE TAKEN TO MINIMIZE SEDIMENT REACHING THE STORMWATER SYSTEM BY MINIMIZING EXCAVATION WORKS AND PREVENTING EXCESS WATER FLOW THROUGH WORKS.

SITE ENTRY/EXIT NOTES: –

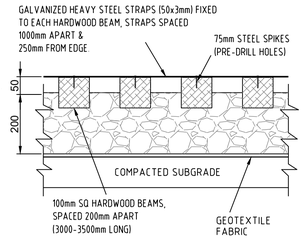
1. ALL VEHICLE ENTRANCES & EXITS TO THE CONSTRUCTION
2. SITE MUST BE STABILIZED TO PREVENT THEM BECOMING A SOURCE OF SEDIMENT, BY PROVIDING A VEHICLE SHAKE AREA. THIS MAY CONSIST OF A TIMBER, CONCRETE OR STEEL SHAKER GRID OR RUBBLE AREA.

   THE VEHICLE EXIT AREA IS TO BE MAINTAINED IN A CLEAN & SERVICEABLE CONDITION DURING THE TOTAL
3. TIME OF USAGE.

   ANY UNSEALED ROAD BETWEEN THE DEVICE AND
4. COUNCILS ROADWAY IS TO BE TOPPED WITH 100mm THICK, 40mm NOMINAL SIZE AGGREGATE.

   PUBLIC ROADS MUST BE KEPT FREE OF DIRT AND MUD.
5. SEDIMENT TRACKED ONTO THE PUBLIC ROADWAY BY VEHICLES LEAVING THE CONSTRUCTION SITE IS TO BE SWEPT UP IMMEDIATELY.

   FENCES SHOULD BE ERECTED TO ENSURE VEHICLES CAN NOT BYPASS THE STABILIZED ACCESS POINTS, UNLESS COMING FROM A STABILIZED AREA.



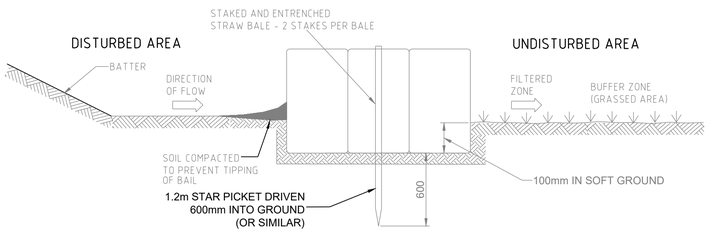
VEHICLE SHAKER GRID

NTS

SITE ENTRY/EXIT CONSTRUCTION NOTES: –

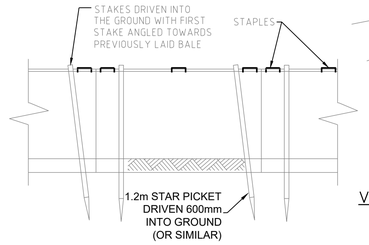
1. STRIP TOP SOIL & LEVEL SITE. PROVIDE CATCH DRAIN AT SIDES TO DIRECT RUNOFF WATER TO SEDIMENT TRAPS.
2. COMPACT SUBGRADE AND REMOVE ANY HIGH POINTS.
3. COVER AREA WITH GEOTEXTILE FABRIC. THIS MAY BE WOVEN OR NEEDLE PUNCHED PRODUCT WITH A MINIMUM CBR BURST STRENGTH (AS3706.4–90) OF 2500 N.
4. CONSTRUCT 200mm THICK RUBBLE PAD OVER GEOTEXTILE USING ROAD BASE OR 30–40mm AGGREGATE. MINIMUM LENGTH 15 METRES OR TO BUILDING ALIGNMENT. MINIMUM WIDTH 3 METRES. CONSTRUCT 300mm HIGH HUMP IMMEDIATELY WITHIN BOUNDARY TO DIVERT WATER TO A SEDIMENT TRAP.
5. WHERE GRIDS ARE USED FIRST CONSTRUCT A 150 THICK PAD OVER GEOTEXTILE FABRIC. LEVEL THIS IN BOTH DIRECTIONS. LOWER GRID ON TO THE PREPARED BASE AND ENSURE THAT NO PART IS SITTING ON ANY HIGH POINTS. BACKFILL THE SPACES
6. BETWEEN THE GRIDS TO WITHIN 50mm OF THE TOP.

   PROVIDE RAMPS AT ENDS AND SIDE OF GRIDS. IF DEPRESSIONS OCCUR IN THE RAMPS DURING USE. ADD ADDITIONAL MATERIAL.



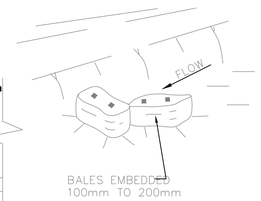
TYPICAL STRAW BALE SECTION

NTS

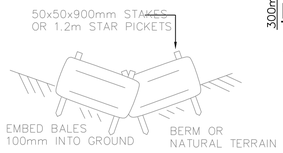


TYPICAL STRAW BALE DETAIL

NTS



VIEW OF CHECK DAM



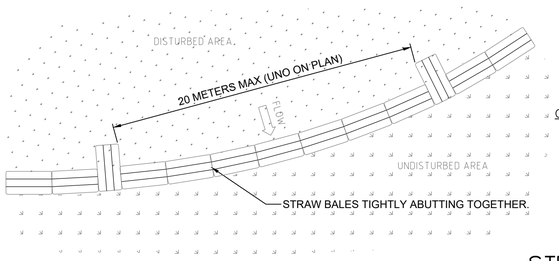
CHECK DAM SECTION

STRAW BALE NOTES: –

1. CONSTRUCT STRAW BALE FILTER AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE OR AT THE TOE OF A SLOPE.
2. PLACE BALES LENGTHWISE IN A ROW WITH ENDS TIGHTLY ABUTTING. USE STRAW TO FILL ANY GAPS BETWEEN BALES. STRAWS TO BE PLACED PARALLEL TO GROUND.
3. MAXIMUM HEIGHT OF FILTER IS ONE BALE.
4. ON SOFT MATERIALS, EMBED EACH BALE IN THE GROUND 75mm TO 100mm AND ANCHOR WITH TWO 1.2 METRE STAR PICKETS. ANGLE THE FIRST STAKE IN EACH BALE TOWARDS THE PREVIOUSLY LAID BAIL. DRIVE STAKES 600mm INTO THE GROUND AND FLUSH WITH THE TOP OF
5. THE BALES.

   WHERE A STRAW BALE FILTER IS CONSTRUCTED DOWN SLOPE FROM A DISTURBED BATTER THE BALES SHOULD BE
6. LOCATED 1.5 TO 2.0 METERS DOWN SLOPE FROM THE TOE OF THE BATTER.

   WHERE REQUIRED WRAP GEOTEXTILE FILTER FABRIC AROUND BALES AND STAPLE IN POSITION.

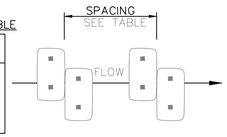


TYPICAL STRAW BALE LAYOUT PLAN

NTS

CHECK DAM SPACING TABLE

LONGITUDINAL GRADE (%)	SPACING (METERS)
0 – 5	40
5 –10	30
10 – 15	20
GREATER THAN 15	10



CHECK DAM PLAN

STRAW BALE CHECK DAM DETAILS

NTS

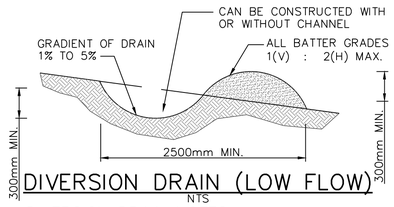
DIVERSION DRAIN NOTES: –

1. CONSTRUCT WITH GRADIENT OF 1 PER CENT TO 5 PER CENT.
2. AVOID REMOVING TREES AND SHRUBS IF POSSIBLE.
3. DRAINS TO BE OF CIRCULAR, PARABOLIC OR TRAPEZOIDAL CROSS SECTION NOT V–SHAPED.
4. EARTH BANKS TO BE ADEQUATELY COMPACTED IN ORDER TO PREVENT FAILURE.
5. PERMANENT OR TEMPORARY STABILIZATION OF THE EARTH BANK TO BE COMPLETED WITHIN 10 DAYS OF
6. CONSTRUCTION.

   ALL OUTLETS FROM DISTURBED LANDS ARE TO FEED
7. INTO A SEDIMENT BASIN OR SIMILAR.

   DISCHARGE RUN OFF COLLECTED FROM UNDISTURBED LANDS ONTO EITHER A STABILIZED OR AN UNDISTURBED
8. DISPOSAL SITE WITHIN THE SAME SUBCATCHMENT AREA FROM WHICH THE WATER ORIGINATED.
9. COMPACT BANK 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.



DIVERSION DRAIN (LOW FLOW)

NTS

MAINTENANCE REQUIREMENTS: –

1. ACCUMULATED SILT & SEDIMENT MUST BE REMOVED AT REGULAR INTERVALS AND AFTER EACH MAJOR STORM.
2. SILT & SEDIMENT MUST BE REMOVED FROM OFF THE SITE OR TO A COUNCIL APPROVED LOCATION WITHIN THE SITE, WHERE IT WILL NOT ERODE.
3. THE SEDIMENT FENCES, BALES & TRAPS SHALL BE REGULARLY INSPECTED, ESPECIALLY AFTER RAIN AND KEPT IN GOOD REPAIR AND FUNCTIONING CONDITION AT ALL TIMES.
4. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT SEDIMENT, EROSION & WATER POLLUTION
5. SHALL BE MINIMIZED.

   THE SEDIMENT TRAPS SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE CONSTRUCTION AREA HAS BEEN PROPERLY STABILIZED.

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NOT TO SCALE

REVISION	AMENDMENT	DATE	REVISION	AMENDMENT	DATE
1	DEVELOPMENT APPLICATION	31/07/20			

CLIENT: NSW GOVERNMENT Health Infrastructure

PROJECT: GOSFORD NORTHSIDE PRIVATE HOSPITAL

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TITLE: **SEDIMENT AND EROSION CONTROL DETAILS SHEET 1**

SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
AS SHOWN	M.T.	M.D.	L.S.	L.S.

JOB No.	DRAWING No.	ISSUE
6422001	C2.02	1

DATE	STATUS
JULY 2020	SSDA

Xref: X:\6422001\TB_A1H
Plot Date: 31.07.2020@15:16:44 Login Name: mdiaz Cad File: T:\6422001\Drawings\AutoCAD\Civil\Design\Civil 2D\C2.02 Sediment and Erosion Control Details.dwg

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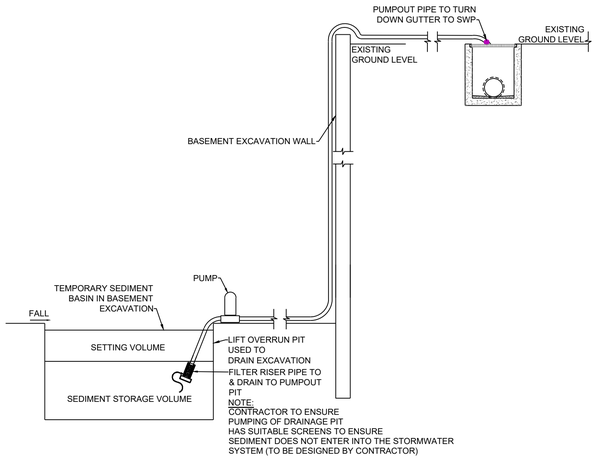

TYPICAL CROSS SECTION OF SEDIMENT BASIN & PUMPOUT

NOT TO SCALE

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REVISION	AMENDMENT	DATE	REVISION	AMENDMENT	DATE
1	DEVELOPMENT APPLICATION	31/07/20			

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TITLE: **SEDIMENT AND EROSION CONTROL DETAILS SHEET 2**

SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
AS SHOWN	M.T.	M.D.	L.S.	L.S.

JOB No.	DRAWING No.	ISSUE
6422001	C2.03	1

DATE	STATUS
JULY 2020	SSDA

Xrefs: X-6422001-TB_A1H
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0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

FOR CONTINUATION REFER TO INSERT

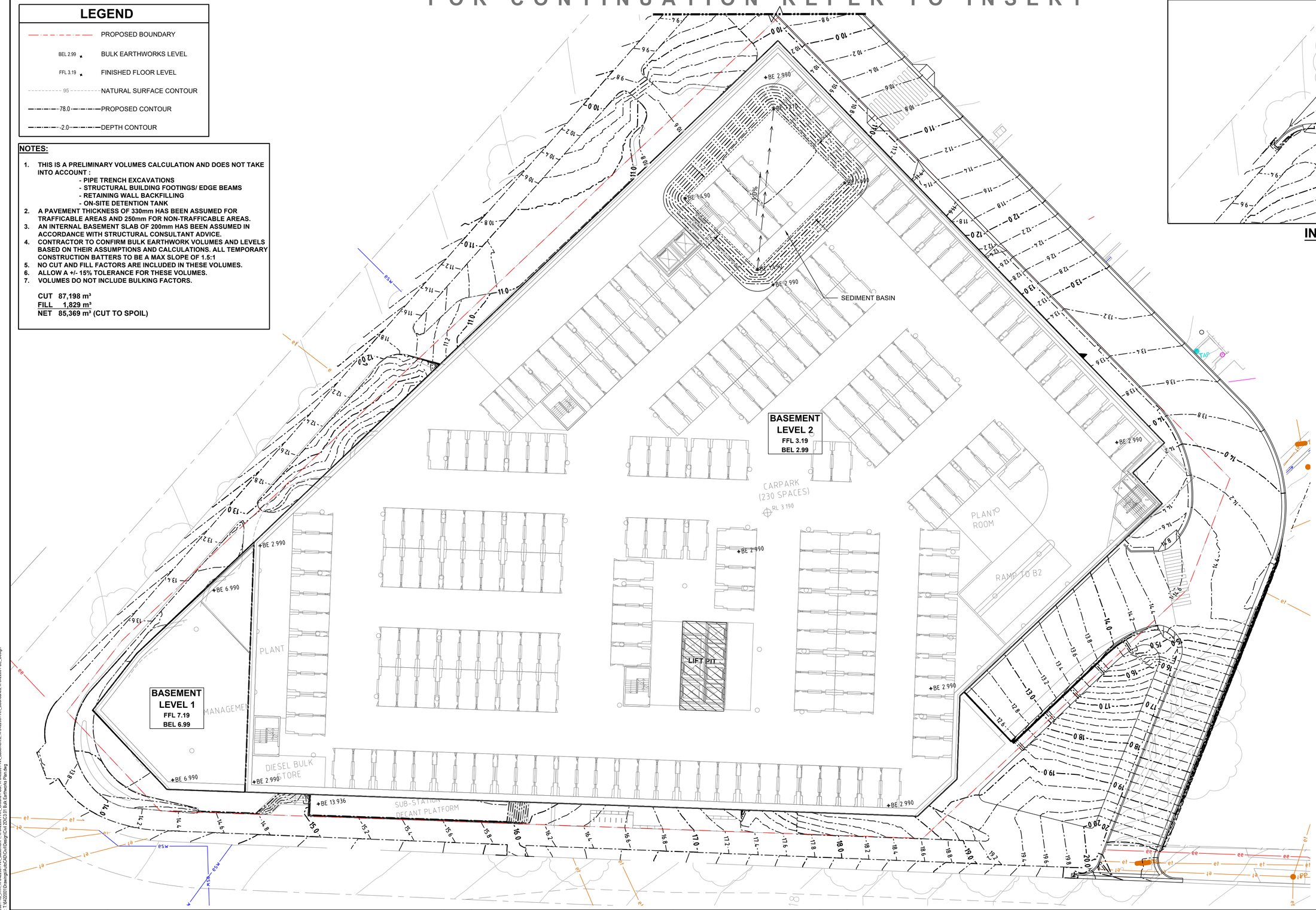
LEGEND

	PROPOSED BOUNDARY
BEL 2.99	BULK EARTHWORKS LEVEL
FFL 3.19	FINISHED FLOOR LEVEL
95	NATURAL SURFACE CONTOUR
78.0	PROPOSED CONTOUR
2.0	DEPTH CONTOUR

NOTES:

1. THIS IS A PRELIMINARY VOLUMES CALCULATION AND DOES NOT TAKE INTO ACCOUNT :
   - PIPE TRENCH EXCAVATIONS
   - STRUCTURAL BUILDING FOOTINGS/ EDGE BEAMS
   - RETAINING WALL BACKFILLING
   - ON-SITE DETENTION TANK
2. A PAVEMENT THICKNESS OF 330mm HAS BEEN ASSUMED FOR TRAFFICABLE AREAS AND 250mm FOR NON-TRAFFICABLE AREAS.
3. AN INTERNAL BASEMENT SLAB OF 200mm HAS BEEN ASSUMED IN ACCORDANCE WITH STRUCTURAL CONSULTANT ADVICE.
4. CONTRACTOR TO CONFIRM BULK EARTHWORK VOLUMES AND LEVELS BASED ON THEIR ASSUMPTIONS AND CALCULATIONS. ALL TEMPORARY CONSTRUCTION BATTERS TO BE A MAX SLOPE OF 1.5:1
5. NO CUT AND FILL FACTORS ARE INCLUDED IN THESE VOLUMES.
6. ALLOW A +/- 15% TOLERANCE FOR THESE VOLUMES.
7. VOLUMES DO NOT INCLUDE BULKING FACTORS.

CUT 87,198 m³
FILL 1,829 m³
NET 85,369 m³ (CUT TO SPOIL)



INSERT

PRELIMINARY - NOT FOR CONSTRUCTION

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NORTH

5.0 0 2.5 5.0 7.5 10.0m
PLAN SCALE 1:250 A1 SHEET

REVISION	AMENDMENT	DATE	REVISION	AMENDMENT	DATE
1	DEVELOPMENT APPLICATION	31/07/20			

CLIENT
NSW GOVERNMENT Health Infrastructure

PROJECT
GOSFORD NORTHSIDE PRIVATE HOSPITAL

PREPARED BY
Warren Smith & Partners

Warren Smith & Partners Pty Ltd
Level 9, 233 Castlereagh Street, Sydney 2000 NSW Australia
02 9299 1312 wsp@warrensmith.com.au
www.warrensmith.com.au ABN 36 300 430 126

Consulting Engineers
Hydraulic Fire Civil Utilities Infrastructure

ISO 9001 Certified

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TITLE
BULK EARTHWORKS PLAN

SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
1:250 @ A1	M.T.	M.D.	L.S.	L.S.

JOB No.	DRAWING No.	ISSUE
6422001	C3.01	1

DATE	STATUS
JULY 2020	SSDA

Xrefs: X-6422001-SU_Ground, X-6422001-CE_BE Contours, X-6422001-TB_A1H, X-6422001-AR_Basement 1, X-6422001-AR_Ground Floor, X-6422001-AR_Basement 2, X-6422001-AR_Boundaries, X-6422001-CE_Design
Plot Date: 31 07 2020@19:02:25 Login Name: msatz Cad File: Y:\6422001\Drawings\AutoCAD\Civil\Design\Civil 22\C3.01 Bulk Earthworks Plan.dwg

FOR CONTINUATION REFER TO INSERT

Levels Table

No.	From Depth	To Depth	Colour	Depth Range Volume
1	-14.792	-8.000		15998.63m³
2	-8.000	-4.000		34380.75m³
3	-4.000	-2.000		17465.11m³
4	-2.000	0.000		19353.71m³
5	0.000	2.000		1264.31m³
6	2.000	5.207		564.33m³

LEGEND

BEL 2.99 — BULK EARTHWORKS LEVEL

FFL 3.19 — FINISHED FLOOR LEVEL

95 — NATURAL SURFACE CONTOUR

78.0 — PROPOSED CONTOUR

-2.0 — DEPTH CONTOUR

NOTES:

1. THIS IS A PRELIMINARY VOLUMES CALCULATION AND DOES NOT TAKE INTO ACCOUNT :
   - PIPE TRENCH EXCAVATIONS
   - STRUCTURAL BUILDING FOOTINGS/ EDGE BEAMS
   - RETAINING WALL BACKFILLING
   - ON-SITE DETENTION TANK
2. A PAVEMENT THICKNESS OF 330mm HAS BEEN ASSUMED FOR TRAFFICABLE AREAS AND 250mm FOR NON-TRAFFICABLE AREAS.
3. AN INTERNAL BASEMENT SLAB OF 200mm HAS BEEN ASSUMED IN ACCORDANCE WITH STRUCTURAL CONSULTANT ADVICE.
4. CONTRACTOR TO CONFIRM BULK EARTHWORK VOLUMES AND LEVELS BASED ON THEIR ASSUMPTIONS AND CALCULATIONS. ALL TEMPORARY CONSTRUCTION BATTERS TO BE A MAX SLOPE OF 1.5:1
5. NO CUT AND FILL FACTORS ARE INCLUDED IN THESE VOLUMES.
6. ALLOW A +/- 15% TOLERANCE FOR THESE VOLUMES.
7. VOLUMES DO NOT INCLUDE BULKING FACTORS.

CUT 87,198 m³
FILL 1,829 m³
NET 85,369 m³ (CUT TO SPOIL)

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NORTH

5.0 0 2.5 5.0 7.5 10.0m
PLAN SCALE 1:250 A1 SHEET

REVISION	AMENDMENT	DATE	REVISION	AMENDMENT	DATE
1	DEVELOPMENT APPLICATION	31/07/20			

CLIENT: NSW GOVERNMENT Health Infrastructure

PROJECT: GOSFORD NORTHSIDE PRIVATE HOSPITAL

PREPARED BY

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Consulting Engineers
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GCC ISO 9001 Certified

SERVING THE CONSTRUCTION INDUSTRY SINCE 1981.

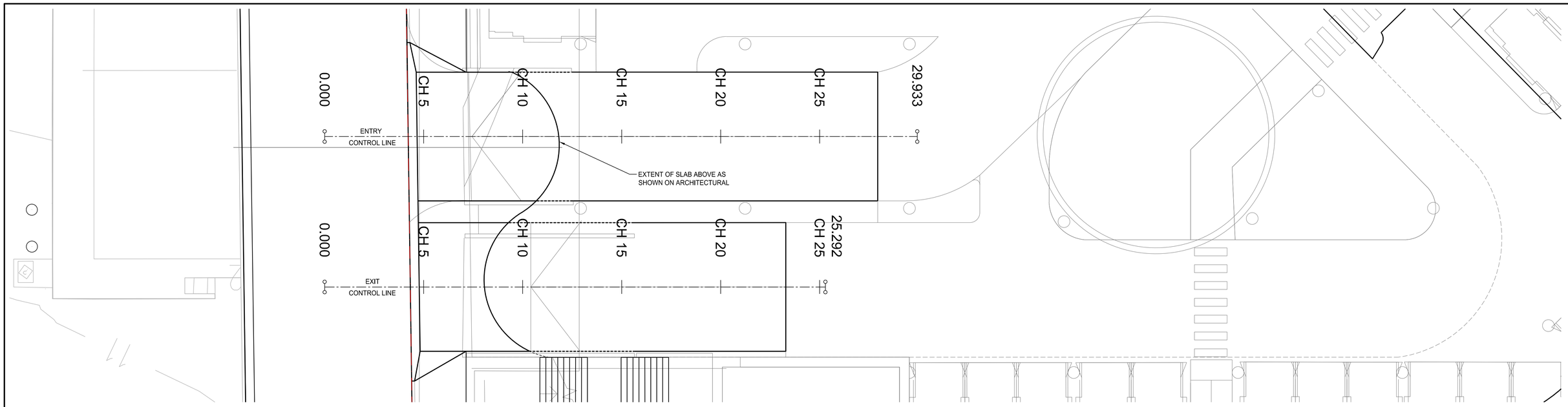
TITLE: **BULK EARTHWORKS CUT & FILL PLAN**

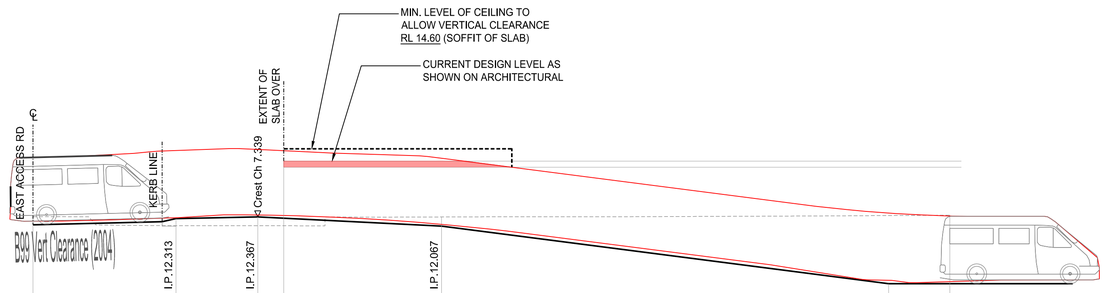
SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
1:250 @ A1	M.T.	M.D.	L.S.	L.S.

JOB No.	DRAWING No.	ISSUE
6422001	C3.02	1

DATE	STATUS
JULY 2020	SSDA

Xrefs: X-6422001-SU_Ground, X-6422001-TB_A1H, X-6422001-DE_BE,Cut &Fill
Plot Date: 31.07.2020@18:56:34 Login Name: mtaylor Cad File: \\cd1\ wsp.local\Drawings\6422001\Drawings\AutoCAD\Civil\Design\Civil 2\C3.02 Bulk Earthworks Cut & Fill Plan.dwg





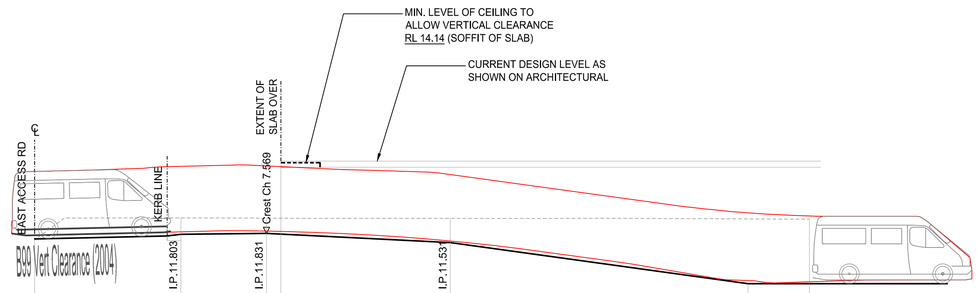
CONTROL LINE GRADE
DATUM R.L. 7

2% -5% -12.859%

DESIGN SURFACE		12.313	12.367	12.067	10.190	
EXISTING SURFACE	12.376	12.083	12.080	12.367		12.423
DEPTHS		0.231	0.287	-0.300		
CHAINAGE	0.000	4.667	7.339	13.339	28.425	29.933

LONGITUDINAL SECTION OF ENTRY

SCALE H1:100
SCALE V1:100



HORIZONTAL CURVE
VERTICAL CURVE
CONTROL LINE GRADE
DATUM R.L. 7

1% -5% -13.791%

DESIGN SURFACE		11.803	11.831	11.531	10.19	
EXISTING SURFACE	11.617	12.335	12.327	12.320		12.293
DEPTHS		-0.532	-0.496	-0.789		
CHAINAGE	0.000	4.774	7.569	13.569	23.292	25.292

LONGITUDINAL SECTION OF EXIT

SCALE H1:100
SCALE V1:100

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NORTH

5.0 0 2.5 5.0 7.5 10.0m
PLAN SCALE 1:250 A1 SHEET

REVISION	AMENDMENT	DATE	REVISION	AMENDMENT	DATE
1	DEVELOPMENT APPLICATION	31/07/20			

CLIENT
NSW GOVERNMENT Health Infrastructure

PROJECT
GOSFORD NORTHSIDE PRIVATE HOSPITAL

PREPARED BY
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TITLE
DRIVEWAY PLAN AND LONGSECTIONS

SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
AS SHOWN	J.W.	J.W.	L.S.	L.S.

JOB No.	DRAWING No.	ISSUE
6422001	C4.01	1

DATE	STATUS
JULY 2020	SSDA

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
SHEET SIZE: A1

Xrefs: X-6422001-AR_Landscape; X-6422001-DE_Contours; X-6422001-DE_Drainp; X-6422001-TB_ATH; X-6422001-SU_Ground; X-6422001-AR_Ground Floor; X-6422001-AR_Level 1; X-6422001-AR_Lower Ground Floor; X-6422001-AR_Boundaries
Plot Date: 31 07 2020@17:36:18 Login Name: jack Cad File: \\SOF1\LOCAL\drawings\6422001\Drawings\AutoCAD\Civil\Design\Civil 2004\C4.01 Driveway Plan & Longsection.dwg

FOR CONTINUATION REFER TO INSERT

CONNECTION TO EXISTING PIT ON RACECOURSE ROAD

INSERT

RACECOURSE ROAD

14.0m LONG GRATED DRAIN WITH CLASS B HEELSAFE GRATE TO BE BOLTED DOWN. INVERT DEPTH 200mm NEUTRAL CHANNEL @ 0.5% GRADE.

4.5m LONG GRATED DRAIN WITH CLASS B HEELSAFE GRATE TO BE BOLTED DOWN. INVERT DEPTH 200mm NEUTRAL CHANNEL @ 0.5% GRADE.

4.95m LONG ACO K200 GRATED TRENCH DRAIN WITH CLASS B HEELSAFE GRATE TO BE BOLTED DOWN. INVERT DEPTH 200mm NEUTRAL CHANNEL @ 0.5% GRADE. STORMWATER CONNECTION TO BE PICKED UP BY INTERNAL HYDRAULICS.

7.50m LONG GRATED DRAIN WITH CLASS B HEELSAFE GRATE TO BE BOLTED DOWN. INVERT DEPTH 200mm NEUTRAL CHANNEL @ 0.5% GRADE.

9.25m LONG GRATED DRAIN WITH CLASS D HEELSAFE GRATE TO BE BOLTED DOWN. INVERT DEPTH 200mm NEUTRAL CHANNEL @ 0.5% GRADE.

GOSFORD NORTHSIDE HOSPITAL

GROUND FFL 14.19
LOWER GROUND FFL 10.19
BASEMENT 1 FFL 7.19
BASEMENT 2 FFL 3.19

TERRACE LANDSCAPE

OSD

OSD TANK 1 DETAILS

TWL:	9.62
AVERAGE BASE IL:	7.26
AREA:	164.2m²
EFFECTIVE DEPTH:	2.36m
EFFECTIVE VOLUME:	387.5m³
LOW LEVEL ORIFICE Ø:	375mm
LOW LEVEL ORIFICE IL:	7.19
HIGH LEVEL ORIFICE Ø:	300mm
HIGH LEVEL ORIFICE IL:	8.29

MENTAL HEALTH OUTPATIENT RL 14.190

VOID TO RETAIL

ENTRY

RETAIL 229 m²

RETAIL 62 m²

RETAIL 117 m²

RECEPTION 138 m²

SUPPORT 93 m²

WAITING

LIFT LOBBY

PLANT ROOM 123 m²

VIE TANK

SUB-STATION DECANT PLATFORM

FAUNCE STREET WEST

LEGEND

	DEVELOPMENT BOUNDARY
Ø450	PIPE DIAMETER AND DIRECTION OF FLOW
SW	STORMWATER PIPE
	900 x 900 GRATED INLET PIT
	900 x 900 JUNCTION PIT
	PIT STRUCTURE NUMBER / STORMWATER LINE NUMBER
GD	GRATED TRENCH DRAIN
KIP	KERB INLET PIT

NOTES:

1. HYDRAULIC DRAINAGE SYSTEM SHALL DISCHARGE STORMWATER INTO THE TREATMENT CHAMBER OF THE OSD SO THAT POLLUTANT REDUCTION TARGETS CAN BE ACHIEVED.
2. OCEAN GUARDS FILTER ARE TO BE INSTALLED IN PITS 1/1, 3/1, 4/1, 5/1, 6/1, 7/1, 1/2, 2/2, 1/3,1/5.

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NORTH

5.0 0 2.5 5.0 7.5 10.0m
PLAN SCALE 1:250 A1 SHEET

REVISION	AMENDMENT	DATE	REVISION	AMENDMENT	DATE
1	DEVELOPMENT APPLICATION	31/07/20			

CLIENT: NSW GOVERNMENT Health Infrastructure

PROJECT: GOSFORD NORTHSIDE PRIVATE HOSPITAL

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GCC ISO 9001 Certified
SERVING THE CONSTRUCTION INDUSTRY SINCE 1981.

TITLE: **STORMWATER LAYOUT PLAN**

SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
AS SHOWN	M.T.	M.D.	L.S.	L.S.

JOB No.	DRAWING No.	ISSUE
6422001	C6.01	1

DATE	STATUS
JULY 2020	SSDA

Xref: X:6422001-AR_Landscape X:6422001-TB_A1H X:6422001-AR_Boundaries X:6422001-DE_Design X:6422001-SW_Layout X:6422001-AR_Ground Floor X:6422001-AR_Level 1 X:6422001-SU_Ground
Plot Date: 31.07.2020@17:02:33 Login Name: mdiaz Cad File: T:\6422001\Drawings\Auto\CAD\CivilDesign\Civil 3D\C6.01 Stormwater Layout Plan.dwg

Name	Surface Elev. (m)	Pit Depth (m)	Pit Size and Type	From	To	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Pipe Type	Dia (mm)	No. Pipes
Pit 1/1	18.14	0.68	900SQ PIT, CLASS B GRATE	Pit 1/1	Pit 2/1	23.00	17.46	17.23	1.00	uPVC (SN8)	225	1
Pit 2/1	19.41	2.21	900SQ PIT, CLASS B COVER	Pit 2/1	Pit 3/1	24.04	17.20	16.96	1.00	uPVC (SN8)	225	1
Pit 3/1	18.02	1.17	900SQ PIT, CLASS B HEELSAFE GRATE	Pit 3/1	Pit 4/1	10.71	16.85	14.42	22.69	RCP (CLASS 3)	300	1
Pit 4/1	15.32	0.93	900SQ PIT, CLASS B HEELSAFE GRATE	Pit 4/1	Pit 5/1	14.62	14.39	13.59	5.47	RCP (CLASS 3)	300	1
Pit 5/1	14.49	0.93	600 x 900 PIT, CLASS D GRATE	Pit 5/1	Pit 6/1	29.71	13.56	12.99	1.92	RCP (CLASS 3)	300	1
Pit 6/1	13.89	0.93	1800 x 900 PIT WITH 450 x 900 CLASS D DOUBLE GRATE WITH 1.8m LINTEL OPENING	Pit 6/1	OSD Tank	30.63	12.96	12.08 dropping to 9.50. Refer to C6.05	2.87	RCP (CLASS 3)	300	1
Pit 1/2	9.90	0.83	1800 x 900 PIT WITH 450 x 900 CLASS D DOUBLE GRATE WITH 1.8m LINTEL OPENING	Pit 1/2	Pit 2/2	18.65	9.07	8.88	1.00	uPVC (SN8)	225	1
Pit 2/2	11.15	2.30	1800 x 900 PIT WITH 450 x 900 CLASS D DOUBLE GRATE WITH 1.8m LINTEL OPENING	Pit 1/2	Pit 3/2	18.65	8.85	8.66	1.00	uPVC (SN8)	225	1
Pit 3/2	12.42	3.79	1800 x 900 PIT WITH 450 x 900 CLASS D DOUBLE GRATE WITH 1.8m LINTEL OPENING	Pit 3/2	OSD Tank	8.31	8.63	8.55	1.00	uPVC (SN8)	225	1
Pit 1/3	13.51	0.67	900SQ PIT, CLASS B GRATE	Pit 1/3	Pit 2/3	33.14	12.84	11.95	2.67	uPVC (SN8)	225	1
Pit 2/3	12.63	0.71	900SQ PIT, CLASS B COVER	Pit 2/3	Pit 3/3	38.36	11.92	10.41	3.94	uPVC (SN8)	225	1
Pit 3/3	11.09	0.71	900SQ PIT, CLASS B COVER	Pit 3/3	Pit 4/3	26.34	10.38	9.55	3.15	uPVC (SN8)	225	1
Pit 4/3	10.23	0.71	900SQ PIT, CLASS B COVER	Pit 4/3	OSD Tank	46.00	9.52	8.20	2.87	uPVC (SN8)	225	1
				OSD	Pit 1/4	34.98	7.19	6.93	0.74	RCP (CLASS 3)	375	1
Pit 1/4	8.87	1.97	900SQ PIT, CLASS B COVER	Pit 1/4	EXISTING PIT	30.45	6.90	6.70	0.66	RCP (CLASS 3)	375	1
Pit 1/5	9.07	0.82	900SQ PIT WITH 450 x 900 CLASS D GRATE WITH 1.2m LINTEL OPENING	Pit 1/5	Pit 1/4	3.21	8.25	7.92	10.28	uPVC (SN8)	225	1

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REVISION	AMENDMENT	DATE	REVISION	AMENDMENT	DATE
1	DEVELOPMENT APPLICATION	31/07/20			

CLIENT: NSW GOVERNMENT Health Infrastructure

PROJECT: GOSFORD NORTHSIDE PRIVATE HOSPITAL

PREPARED BY
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SERVING THE CONSTRUCTION INDUSTRY SINCE 1981.

TITLE: **STORMWATER PIT SCHEDULE**

SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
AS SHOWN	M.T.	M.D.	L.S.	L.S.

JOB No.	DRAWING No.	ISSUE
6422001	C6.02	1

DATE	STATUS
JULY 2020	SSDA

Xrefs: X-6422001-TB_A1H
Plot Date: 31.07.2020@17:02:08 Login Name: mdiaz Cad File: T:\6422001\Drawings\AutoCAD\Civil\Design\Civil 2\C6.02 Stormwater Pit Schedule.dwg

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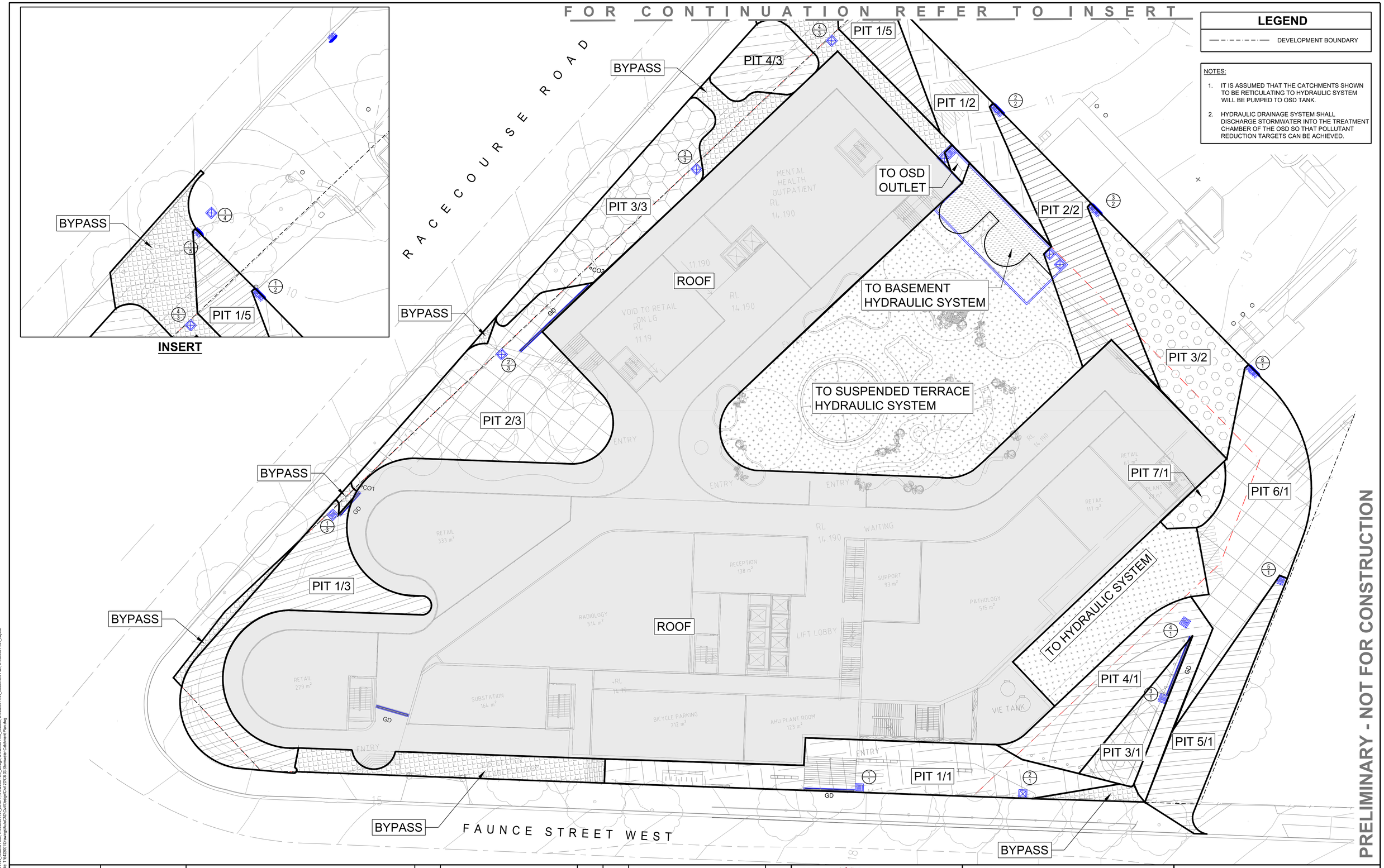

LEGEND

—·—·—·—	DEVELOPMENT BOUNDARY

NOTES:

1. IT IS ASSUMED THAT THE CATCHMENTS SHOWN TO BE RETICULATING TO HYDRAULIC SYSTEM WILL BE PUMPED TO OSD TANK.
2. HYDRAULIC DRAINAGE SYSTEM SHALL DISCHARGE STORMWATER INTO THE TREATMENT CHAMBER OF THE OSD SO THAT POLLUTANT REDUCTION TARGETS CAN BE ACHIEVED.

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NORTH

5.0 0 2.5 5.0 7.5 10.0m
PLAN SCALE 1:250 A1 SHEET

REVISION	AMENDMENT	DATE	REVISION	AMENDMENT	DATE
1	DEVELOPMENT APPLICATION	31/07/20			

CLIENT

NSW GOVERNMENT Health Infrastructure

PROJECT

GOSFORD NORTHSIDE PRIVATE HOSPITAL

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Hydraulic Fire Civil Utilities Infrastructure

SERVING THE CONSTRUCTION INDUSTRY SINCE 1981.

TITLE

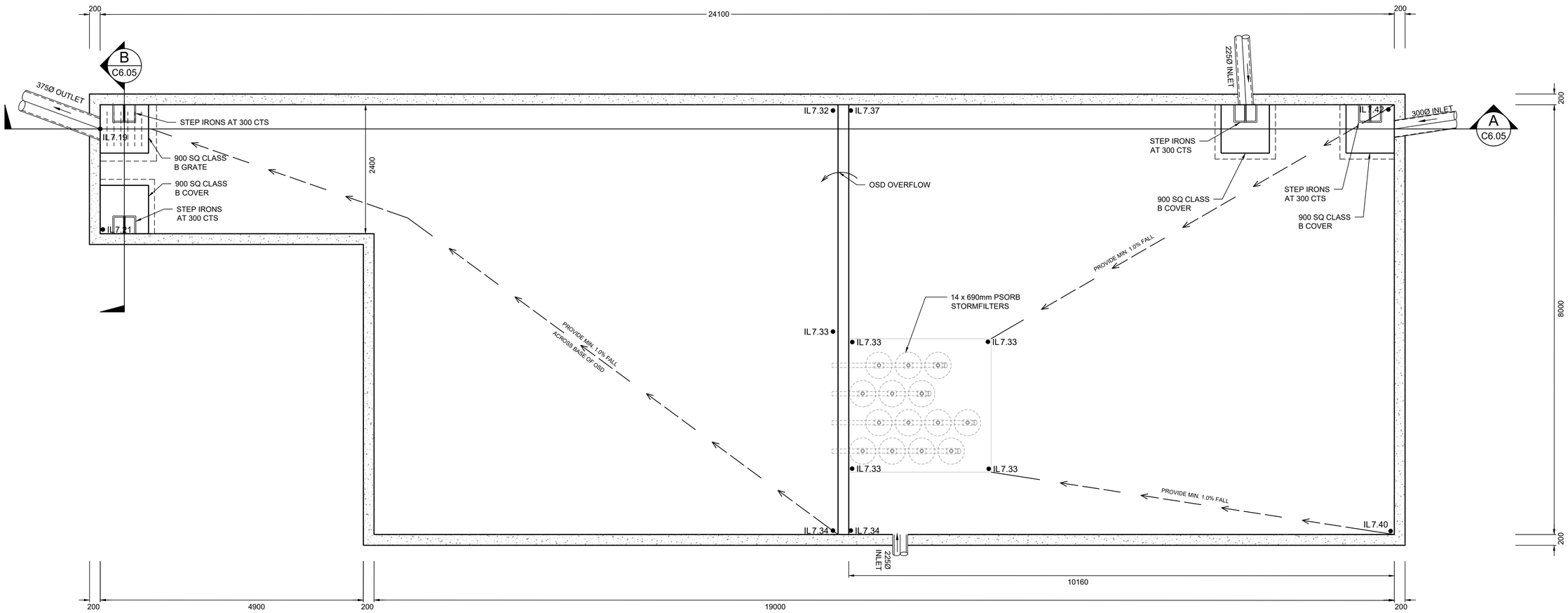
STORMWATER CATCHMENT PLAN

SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
AS SHOWN	M.T.	M.D.	L.S.	L.S.

JOB No.	DRAWING No.	ISSUE
6422001	C6.03	1

DATE	STATUS
JULY 2020	SSDA

Xrefs: X-6422001-TB, A1H, X-6422001-AR, Boundaries, X-6422001-AR_Ground Floor, X-6422001-AR_Level 1, X-6422001-DE_Design, X-6422001-SU_Ground, X-6422001-SW_Catchment Plan, X-6422001-SW_Layout
Plot Date: 31 07 2020@17:07:10 Login Name: mdiaz Cad File: T:\6422001\Drawings\AutoCAD\Civil\Design\Civil 2D\C6.03 Stormwater Catchment Plan.dwg



ON SITE DETENTION TANK

EFFECTIVE VOLUME = 387.5m^3

SCALE: 1:40

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TITLE

ON-SITE DETENTION (OSD) TANK PLAN

SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
AS SHOWN	M.T.	M.Cz.	L.S.	L.S.

JOB No.	DRAWING No.	ISSUE
6422001	C6.04	1

DATE	STATUS
JULY 2020	SSDA

Xrefs: X-6422001-TB, A1H
Plot Date: 31.07.2020@18:39:42 Login Name: mdiaz Cad File: T:\6422001\Drawings\AutoCAD\Civil\Design\Civil 2D\C6.04 OSD Plan.dwg

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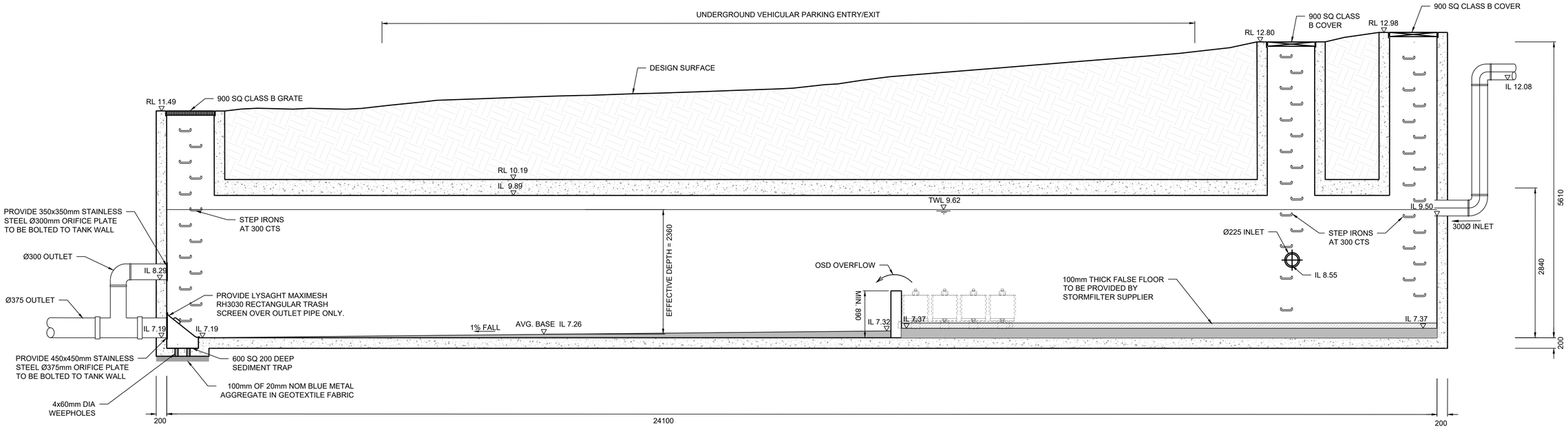
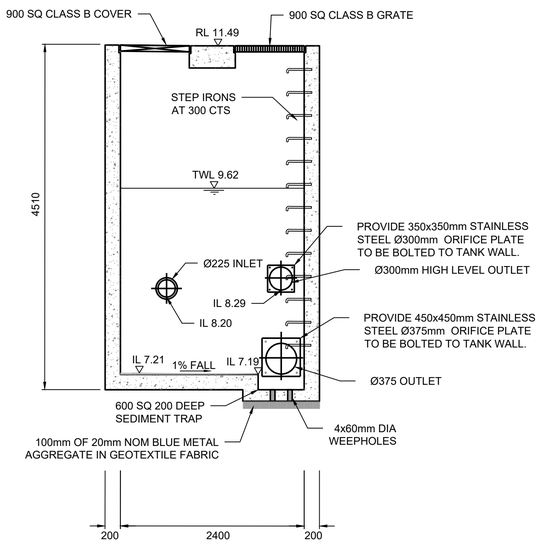


SECTION A
SCALE: 1:40
C6.04



SECTION B
SCALE: 1:40
C6.04

PRELIMINARY - NOT FOR CONSTRUCTION

REVISION	AMENDMENT	DATE	REVISION	AMENDMENT	DATE
1	DEVELOPMENT APPLICATION	31/07/20			

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TITLE
ON-SITE DETENTION (OSD) TANK SECTIONS

SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
AS SHOWN	M.T.	M.Cz.	L.S.	L.S.

JOB No.	DRAWING No.	ISSUE
6422001	C6.05	1

DATE	STATUS
JULY 2020	SSDA

Xrefs: X-6422001-TB_A1H
Plot Date: 31.07.2020@19:43:04 Login Name: mcliaz Cad File: T:\6422001\Drawings\AutoCAD\Civil\Design\Civil 2\C6.04 OSD Plan.dwg

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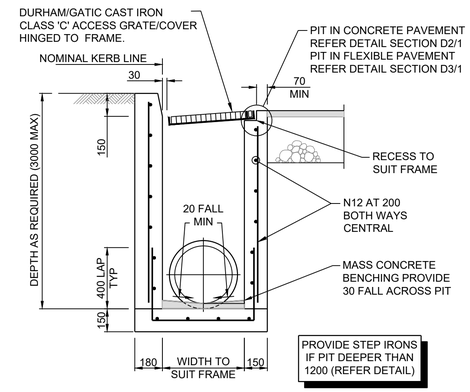


SECTION DETAIL

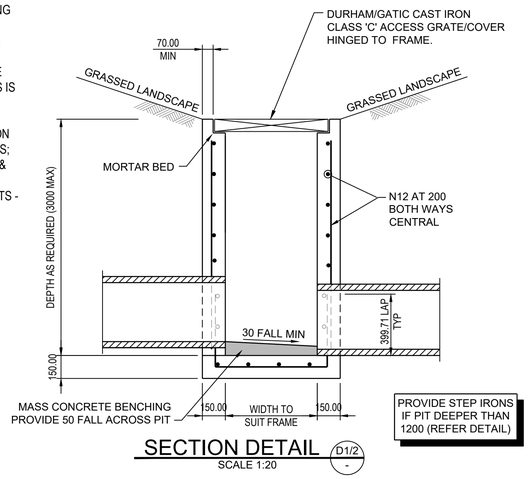
D1/1 -

SCALE 1:20

NOTES:

1. TRENCH WIDTH MAY NEED TO BE INCREASED SUBJECT TO ACHIEVING ADEQUATE COMPACTION.
2. MINIMUM PIPE COVER NOT UNDER ROADS = 450mm UNO.
3. THE CONTRACTOR SHALL ENSURE THAT THE SHORING OF TRENCHES IS INSTALLED AS REQUIRED BY STATUTORY REQUIREMENTS.
4. ENSURE BACKFILLING COMPACTION MEETS THE RELEVANT STANDARDS;

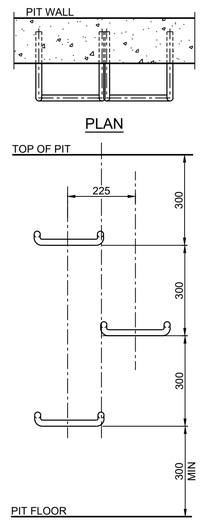
A) TRENCHES UNDER PAVED AREAS & BUILDINGS - 100% SMDD.
B) TRENCHES NOT UNDER PAVEMENTS - 95% SMDD.



SECTION DETAIL

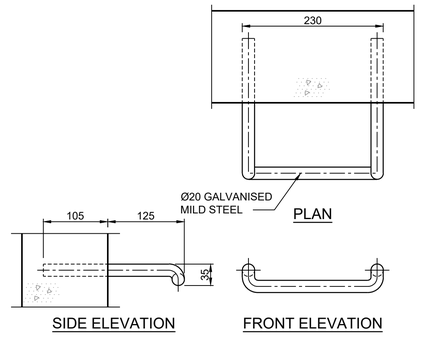
D1/2 -

SCALE 1:20



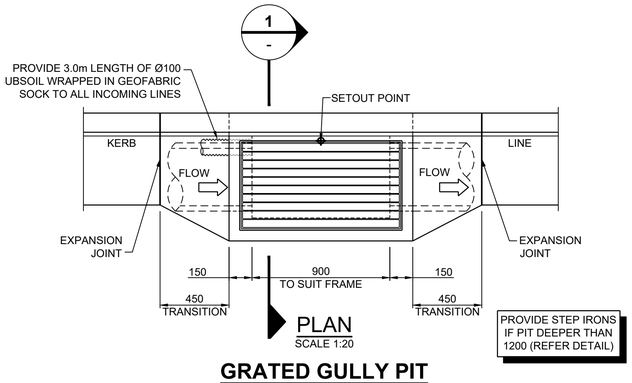
STEP IRON PLACEMENT TO PIT WALL

SCALE NTS



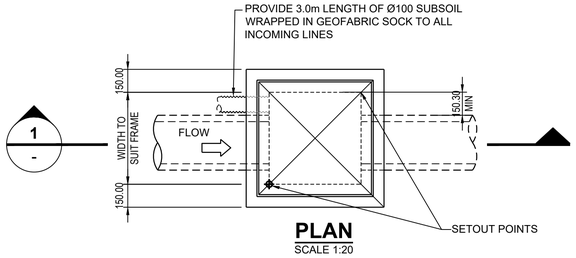
STEP IRON DETAIL

SCALE 1:5



GRATED GULLY PIT

(PIPE SIZES ≤ Ø375)



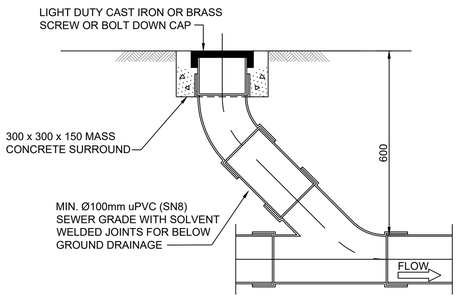
PLAN

SCALE 1:20

600 - 900SQ SURFACE INLET PITS

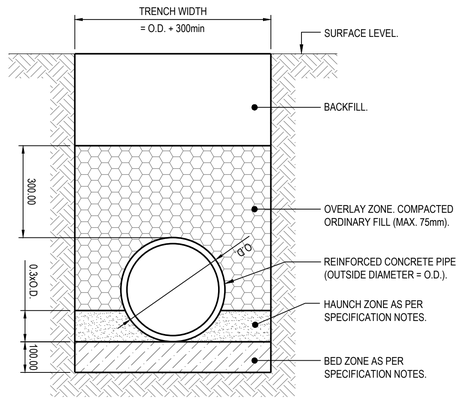
NOTES:

- STORMWATER GRATES LOCATED ADJACENT CONRETE PAVEMENTS SHALL BE CAST IN-SITU WITH THE CONCRETE SLAB IN ACCORDANCE WITH THE GRATE MANUFACTURER'S SPECIFICATIONS.



CLEAROUT (CO)

SCALE 1:10



GENERAL AREAS

TYPICAL PIPE TRENCH

NOT TO SCALE

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200 0 200 400 600 800 1000mm
PLAN SCALE 1:20 A1 SHEET
1000 0 500 1000 1500 2000mm
PLAN SCALE 1:50 A1 SHEET

REVISION	AMENDMENT	DATE	REVISION	AMENDMENT	DATE
1	DEVELOPMENT APPLICATION	31/07/20			

CLIENT: NSW GOVERNMENT Health Infrastructure

PROJECT: GOSFORD NORTHSIDE PRIVATE HOSPITAL

PREPARED BY
Warren Smith & Partners
Warren Smith & Partners Pty Ltd
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Consulting Engineers
Hydraulic Fire Civil Utilities Infrastructure
GCC ISO 9001 Certified
SERVING THE CONSTRUCTION INDUSTRY SINCE 1981.

TITLE: STORMWATER DRAINAGE DETAILS

SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
AS SHOWN	M.T.	M.Cz.	L.S.	L.S.

JOB No.	DRAWING No.	ISSUE
6422001	C6.06	1

DATE	STATUS
JULY 2020	SSDA

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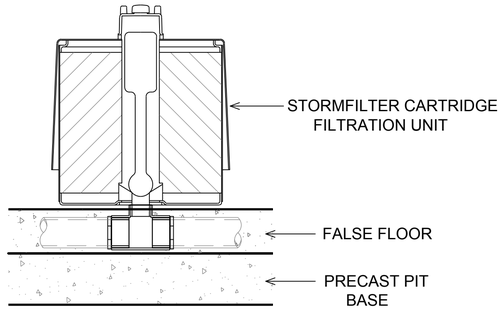
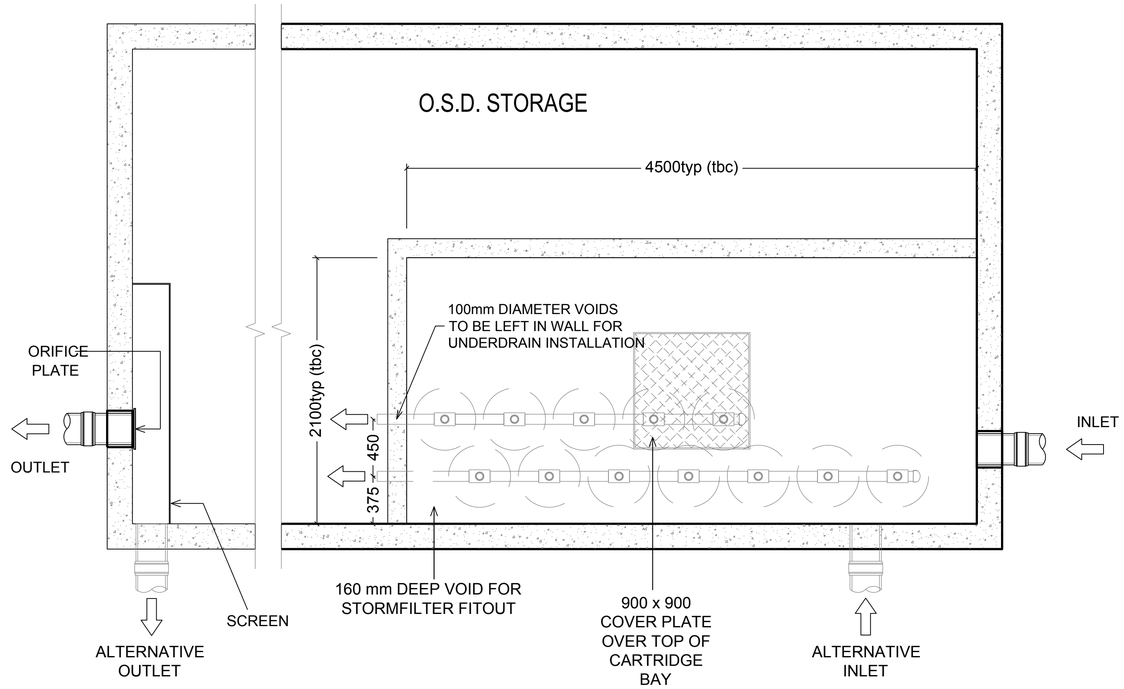
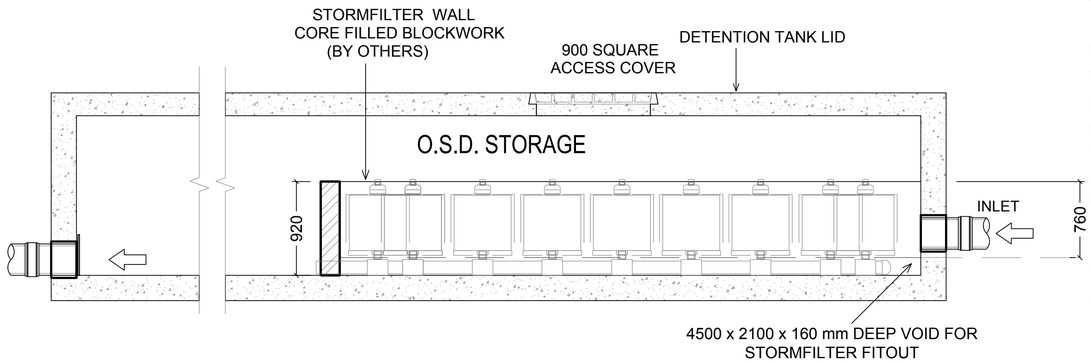


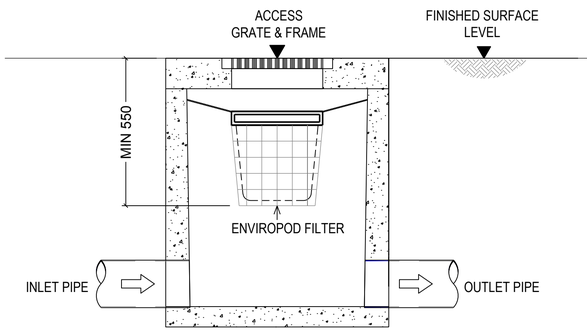
STORMFILTER CARTRIDGE DETAIL



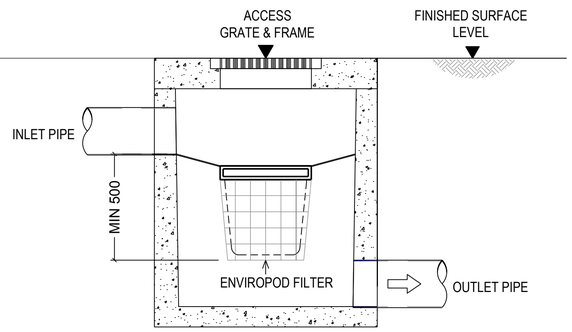
PLAN LAYOUT



SECTION



STANDARD ENVIROPOD CONFIGURATION SECTION



DROP PIPE ENVIROPOD CONFIGURATION SECTION

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REVISION	AMENDMENT	DATE	REVISION	AMENDMENT	DATE
1	DEVELOPMENT APPLICATION	31/07/20			

CLIENT: NSW GOVERNMENT Health Infrastructure

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www.warrensmith.com.au ABN 36 300 430 126
Consulting Engineers
Hydraulic Fire Civil Utilities Infrastructure
GCC ISO 9001 Certified
SERVING THE CONSTRUCTION INDUSTRY SINCE 1981.

TITLE: OCEAN PROTECT TREATMENT SYSTEM STANDARD DETAILS

SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
AS SHOWN	M.T.	M.Cz.	L.S.	L.S.

JOB No.	DRAWING No.	ISSUE
6422001	C6.07	1

DATE	STATUS
JULY 2020	SSDA

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