

LIVERPOOL CIVIC PLACE - PHASE A CIVIL & STORMWATER MAIN WORKS - DEVELOPMENT APPLICATION



LOCALITY AERIAL
NOT TO SCALE

SOURCE : NEARMAP

DRAWING SCHEDULE		
DWG. No.	DRAWING TITLE	REV
C1.00 Arrangement and Overview Plans		
PA-MW-C1.01	Cover Sheet	2
PA-MW-C1.02	Specification Notes	2
PA-MW-C1.03	Existing Survey	1
C2.00 Sediment and Erosion Control		
PA-MW-C2.01	Sediment & Erosion Control Plan	2
PA-MW-C2.02	Sediment and Erosion Control Details	1
C4.00 Siteworks Plans		
PA-MW-C4.01	Siteworks Key Plan	2
PA-MW-C4.02	Siteworks Plan Sheet 1 of 2 - Lower Ground	3
PA-MW-C4.03	Siteworks Plan Sheet 2 of 2 - Upper Ground	3
PA-MW-C4.04	Siteworks Details	2
C5.00 Road Longitudinal and Cross Sections		
PA-MW-C5.01	Access Driveway Longitudinal Section	2
PA-MW-C5.02	Access Driveway Cross Sections	2
C6.00 Stormwater Drainage		
PA-MW-C6.01	Stormwater Layout Plan	2
PA-MW-C6.02	Stormwater Pit Schedule	1
PA-MW-C6.03	Stormwater Catchment Plan	2
PA-MW-C6.04	Stormwater Typical Drainage Details	2
PA-MW-C6.05	WSUD Treatment Devices Typical Details	2

Client: Liverpool City Council
Project Manager: Built.fjmt
Architect: Warren Smith & Partners
Date: 25.09.2020
Rev: 1.0
Title: PA-MW-C1.01 Cover Sheet.dwg

CLIENT



PROJECT MANAGER



ARCHITECT



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



TITLE

COVER SHEET

SCALE	DRAWN	DESIGNED	CHECKED	APPROVED		
AS SHOWN	M.T.	M.Cz	L.S.	M.C.		
JOB No.	DRAWING No.		ISSUE			
6734000	PA-MW-C1.01		2			
DATE	STATUS					
SEPTEMBER 2020	MW - DEVELOPMENT APPLICATION					

Plot Date

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:
FJMT
LEVEL 5/70 KING STREET
SYDNEY, NSW 2000
TEL: (02) 9251 7077
- 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 AS3600 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. 50mm & 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 AS3600 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 2666-1998 LOADS ON BURIED FLEXIBLE PIPELINES AS 1597-2-1996 PRECAST REINFORCED CONCRETE BOX CULVERTS. AS 3600-1990 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 GEOTECHNICAL INVESTIGATION REPORT.
- SGE2.

THE RECOMMENDATIONS CONTAINED IN THE GEOTECH REPORT SHALL OVERRIDE THE CLAUSES PRESENTED HEREIN.
- 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

- SGE6.

CUT NATURAL CLAYS.
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 50m²
- 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 50m²
- 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

- E5.

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

- E6.

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%.

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.E3.1 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 500m²
- 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 DIRECTION FROM THE PROJECT ARBORIST.
3.

MATURE TREES AND SHRUBS ARE TO BE REMOVED IN ACCORDANCE WITH THE DIRECTION FROM THE PROJECT ARBORIST.

AUTHORITY STANDARDS

- LGA 1.

THE DRAWINGS HEREIN SHALL BE READ IN CONJUNCTION WITH LIVERPOOL CITY COUNCIL STANDARDS & SPECIFICATIONS WHICH SHALL OVERRIDE SPECIAL DETAILS SHOWN ON THE DRAWINGS.

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.

REVISION	AMENDMENT	DATE	REVISION	AMENDMENT	DATE
1	ISSUE FOR DEVELOPMENT APPLICATION	11/09/20			
2	EDIT UNDER PROTECTION OF FLORA	25/09/20			

CUSTOMER



PROJECT



PREPARED BY



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



Consulting Engineers
■ Hydraulic ■ Fire ■ Civil ■ Utilities Infrastructure
SERVING THE CONSTRUCTION INDUSTRY SINCE 1981.

TITLE				
SPECIFICATION NOTES				
SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
AS SHOWN	M.T.	M.Cz.	L.S.	M.C.
JOB No.		DRAWING No.	ISSUE	
6734000		PA-MW-C1.02	2	
DATE	STATUS			
SEPTEMBER 2020	MW - DEVELOPMENT APPLICATION			

LEGEND

SITE BOUNDARY

EXISTING SEWER LINE

EXISTING POTABLE WATER

EXISTING ELECTRICITY

EXISTING TELECOMMUNICATIONS LINE

EXISTING GAS MAIN

EXISTING STORMWATER PIPE

NOTES:

1.

LOCATIONS OF ALL UTILITIES AND SERVICES ARE INDICATIVE AND TAKEN FROM DBYD. QUALITY LEVEL 'D' TO BE APPLIED FOR ALL SUB-SURFACE SERVICES & UTILITIES.

2.

CONTRACTOR TO VERIFY ALL UTILITY & SERVICE LOCATIONS.

The main site plan illustrates the layout of existing utilities and the proposed Phase B development. Key features include:

- Streets:** MACQUARIE STREET, PIRIE STREET, SCOTT STREET, and TERMINUS STREET.
- Utilities:** Existing sewer lines (pink), potable water (cyan), electricity (red), telecommunications (orange), gas mains (green), and stormwater pipes (blue) are shown with their respective labels and elevations.
- Assets:** Labeled assets include 'EXISTING DN225 VC SYDNEY WATER SEWER ASSET', 'EXISTING JEMENA 7kPa GAS MAIN', 'EXISTING ENDEAVOUR ENERGY ASSET', 'EXISTING OPTUS ASSETS', 'EXISTING PRIVATE HOUSE SEWER CONNECTIONS', and 'EXISTING PRIVATE STORMWATER CONNECTIONS TO EXISTING COUNCIL STORMWATER NETWORK'.
- Phase B:** A red-shaded area indicating the proposed development zone.
- Other Features:** An 'EXISTING PADMOUNT SUBSTATION' and 'EXISTING PIPE NETWORKS ASSET' are also identified.

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.

NORTH

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

REVISION	AMENDMENT	DATE
1	ISSUE FOR DEVELOPMENT APPLICATION	11/09/20

REVISION	AMENDMENT	DATE

CLIENT

LIVERPOOL CITY COUNCIL

PROJECT

LIVERPOOL CIVIC PLACE

PREPARED BY

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
SERVING THE CONSTRUCTION INDUSTRY SINCE 1981.

TITLE

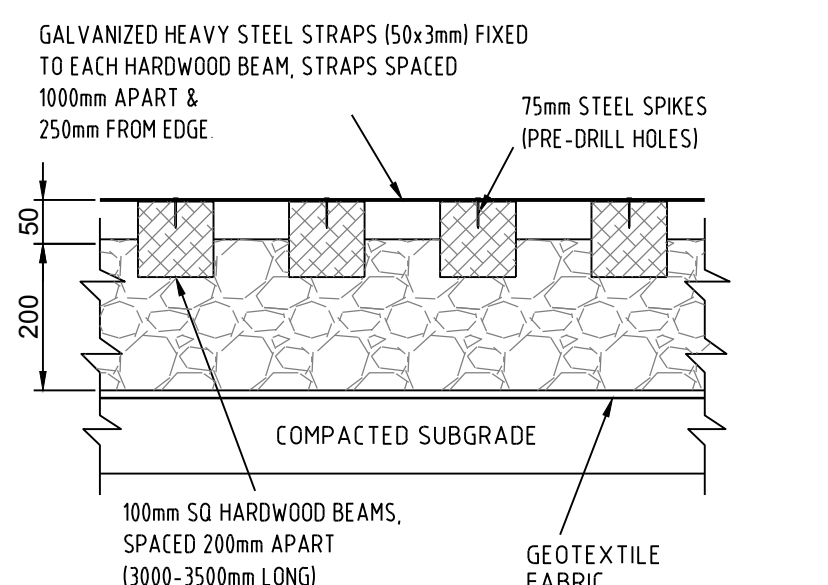
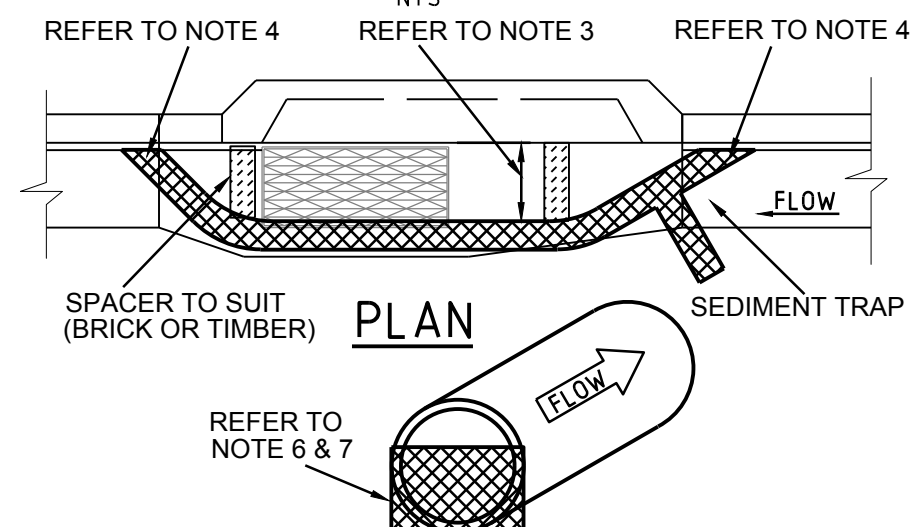
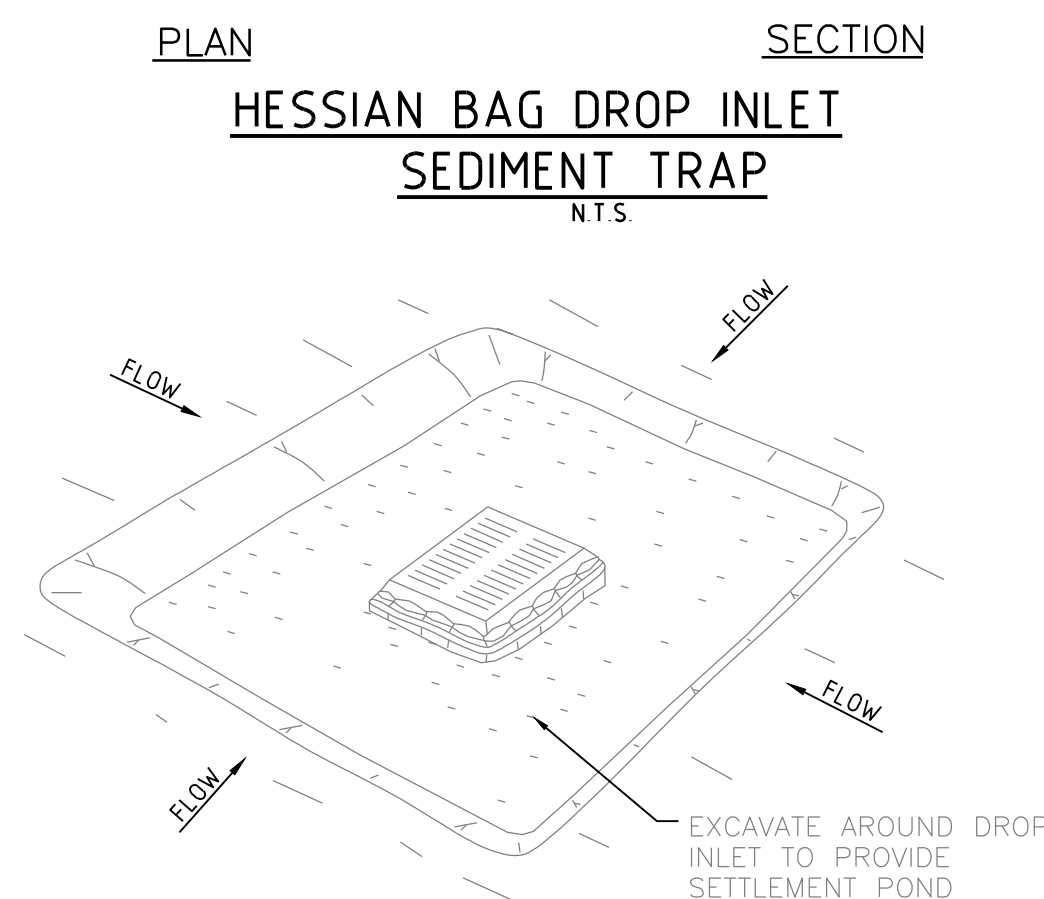
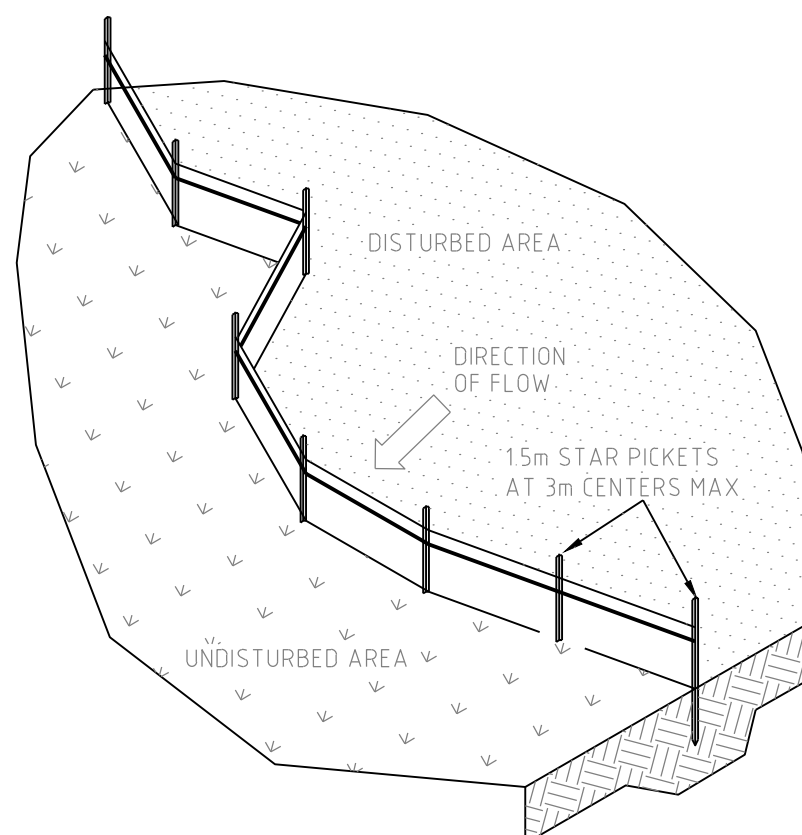
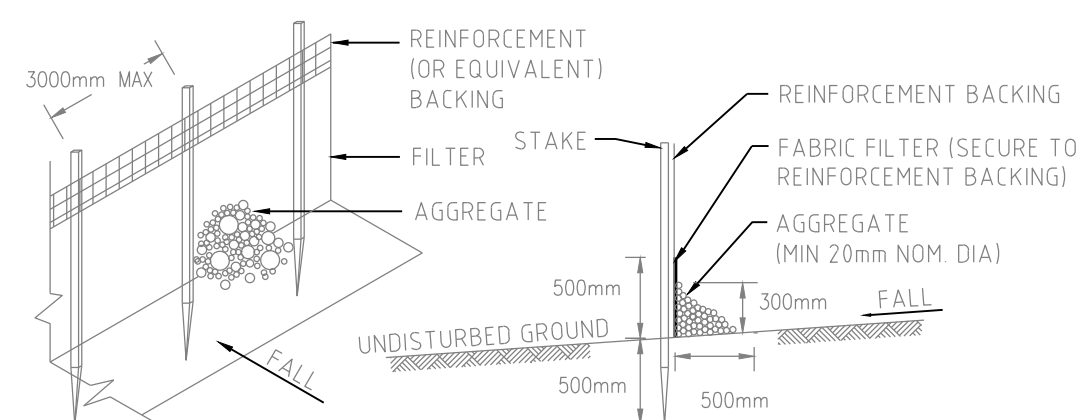
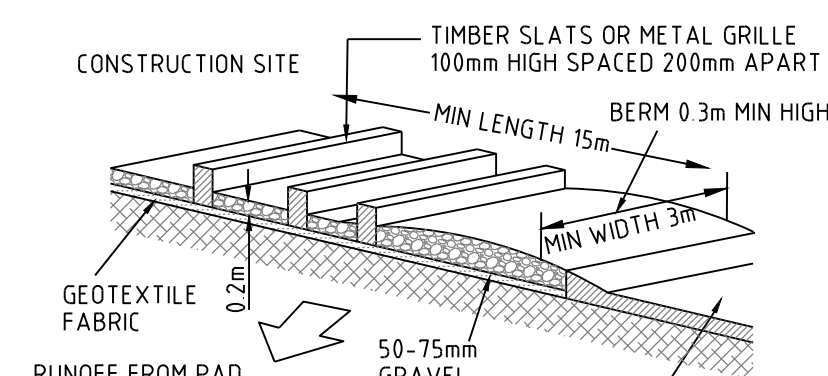
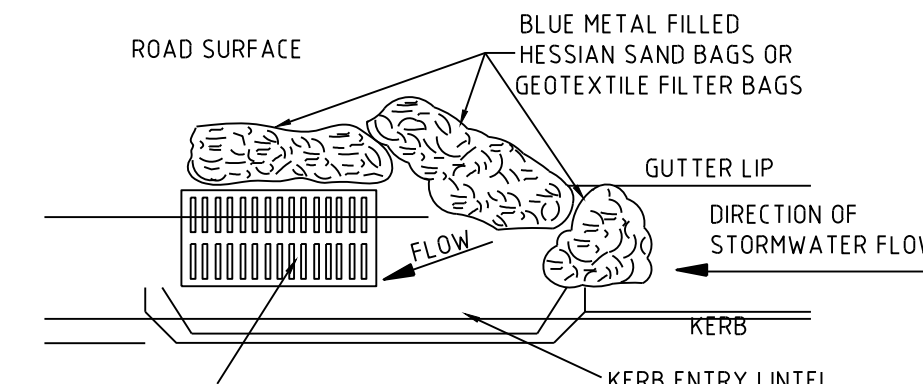
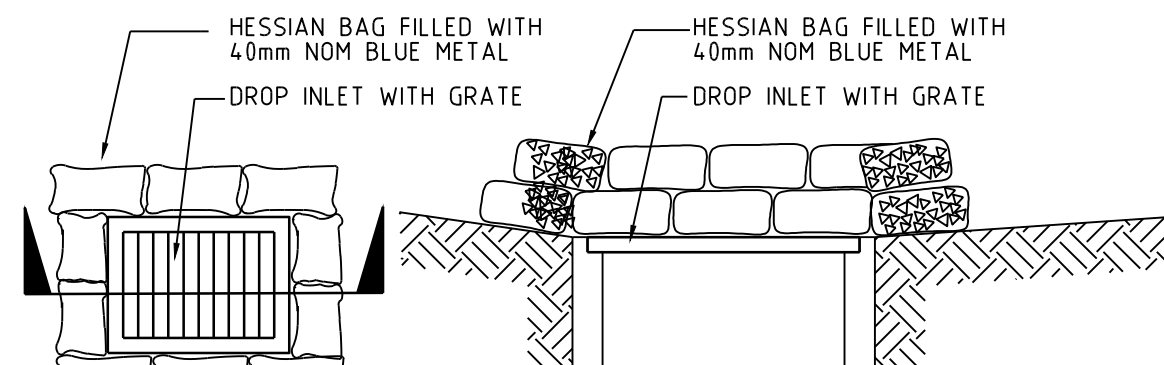
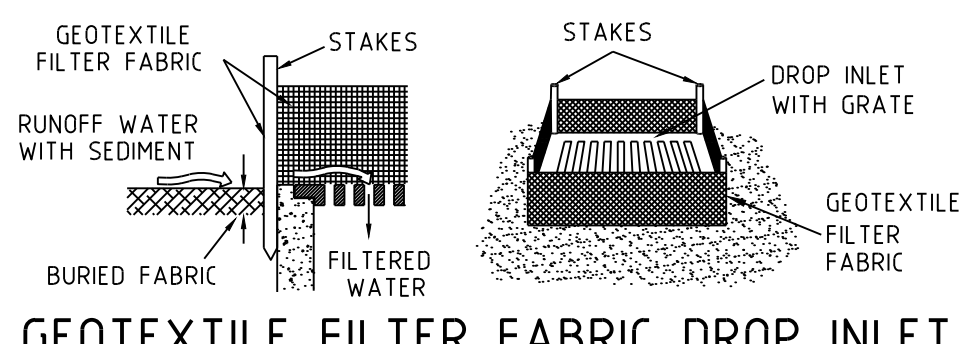
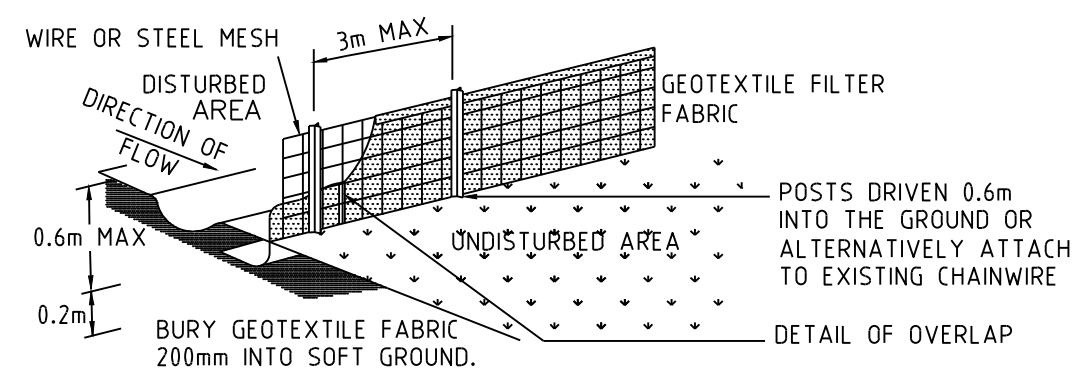
EXISTING SURVEY

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

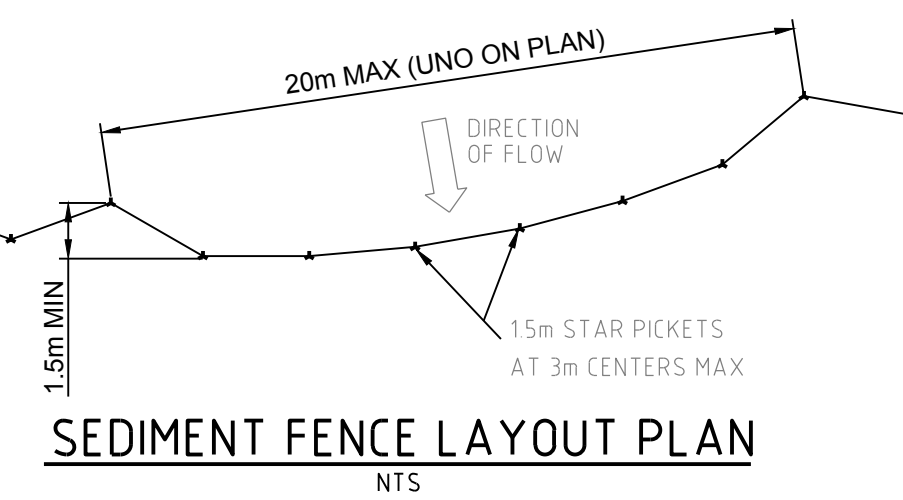
JOB No.	6734000	DRAWING No.	PA-MW-C1.03	ISSUE	1
---------	---------	-------------	-------------	-------	---

DATE	SEPTEMBER 2020	STATUS	MW - DEVELOPMENT APPLICATION
------	----------------	--------	------------------------------

Y:\6734000\PA-MW-C1.03\6734000-SU Existing Assets from DBYD\6734000-SU_Boundary_Plan.dwg
Plot Date: 11/09/2020 15:32:22 Login Name: NG2018 Cad File: 16734000\Drawings\AutoCAD\Civil\Design\Civil_2D\Main\Works\6734000-WS-PC-CS-DA-PA-MW-C1.03 Existing Survey Plan.dwg



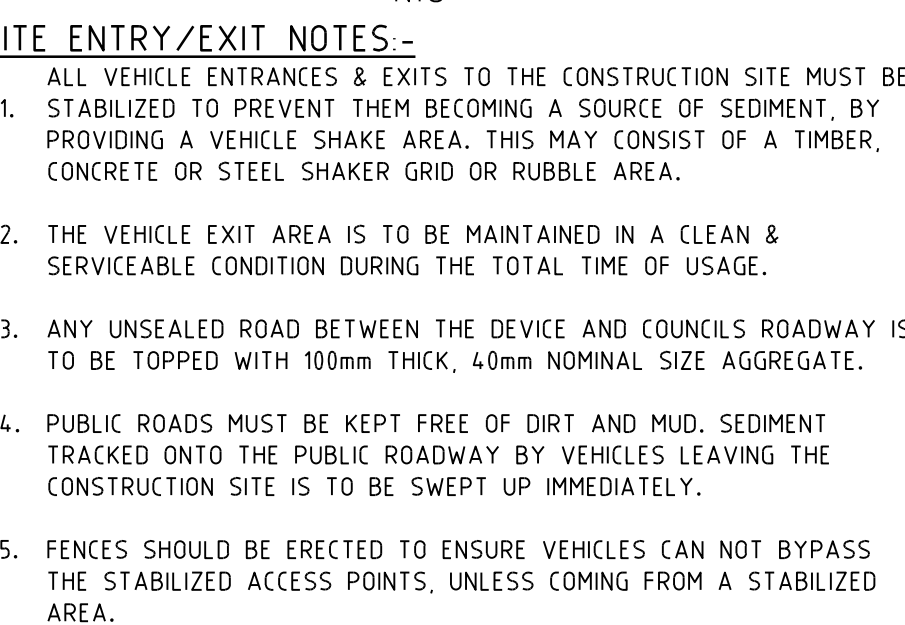
1. CONSTRUCT SEDIMENT FENCE AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE OR AT THE TOE OF A SLOPE.
2. DRIVE 1.5 METRE LONG STAR PICKETS INTO GROUND SUFFICIENT TO PROVIDE RIGID SUPPORT, 3 METERS APART. WHERE THERE IS INSUFFICIENT SOIL DEPTH OVER ROCK, HOLES ARE TO BE DRILLED INTO ROCK 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 FABRIC TO BE ENTRENCHED.
4. BACKFILL TRENCH OVER BASE OF FABRIC & COMPACT.
5. FIX SELF-SUPPORTING GEOTEXTILE TO UPSLOPE SIDE OF POSTS WITH WIRE TIES OR AS RECOMMENDED BY THE GEOTEXTILE MANUFACTURER, USE A REINFORCEMENT BACKING WITH NON SELF-SUPPORTING GEOTEXTILE FABRIC.
6. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
7. 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.
8. 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.



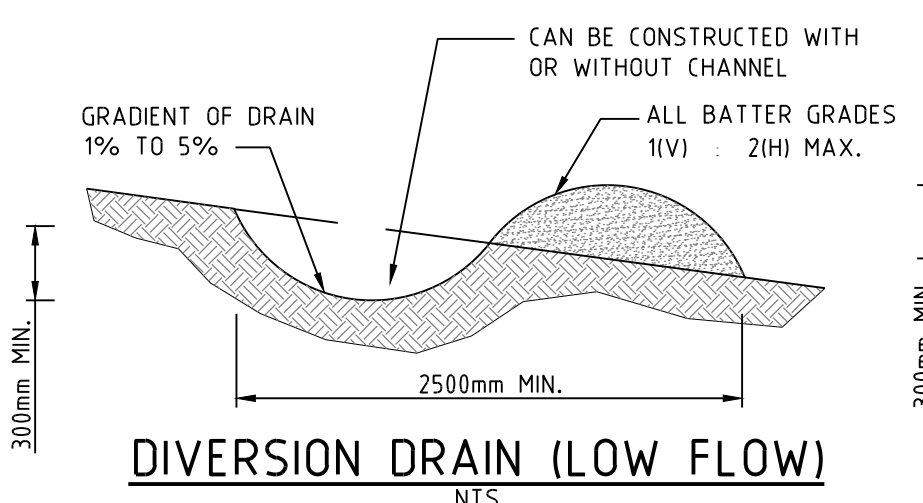
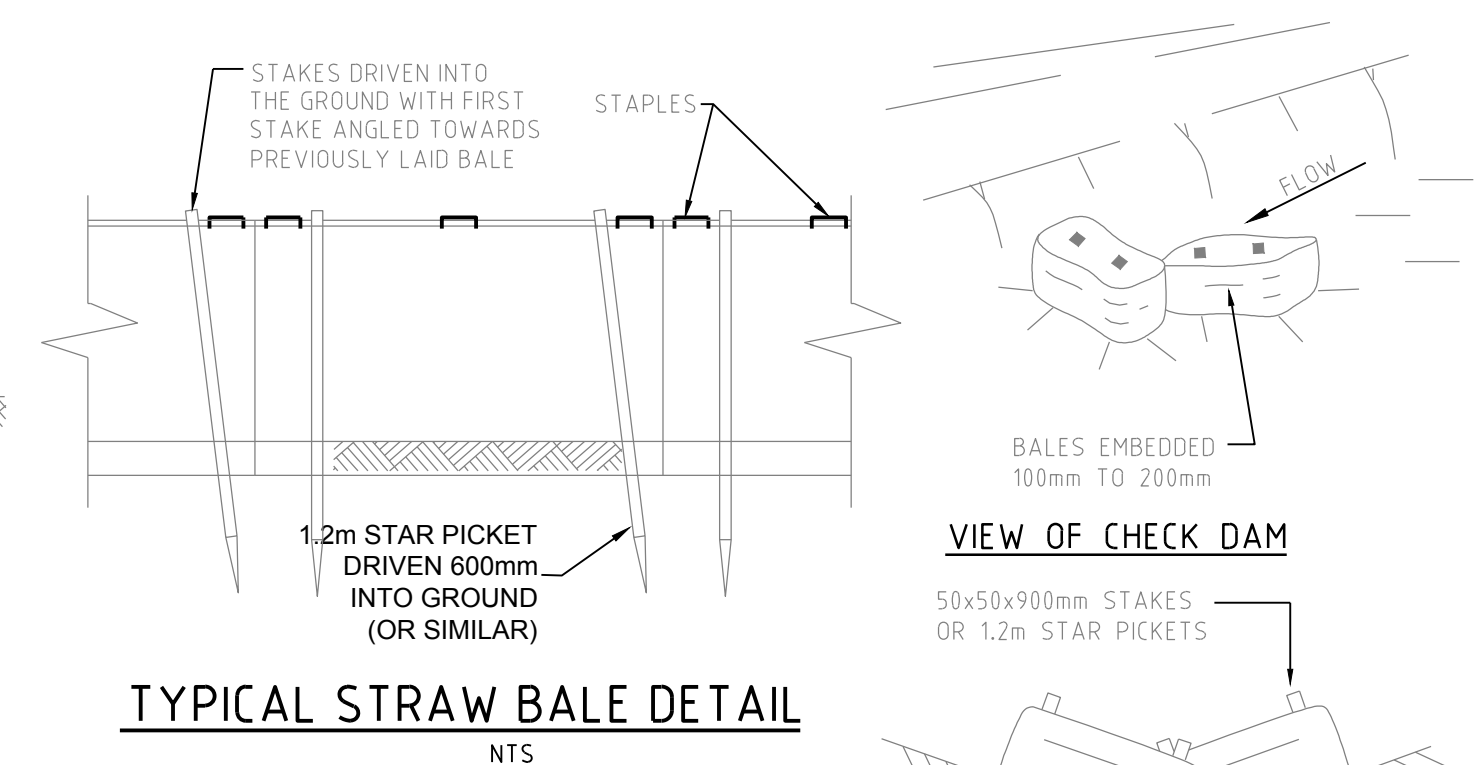
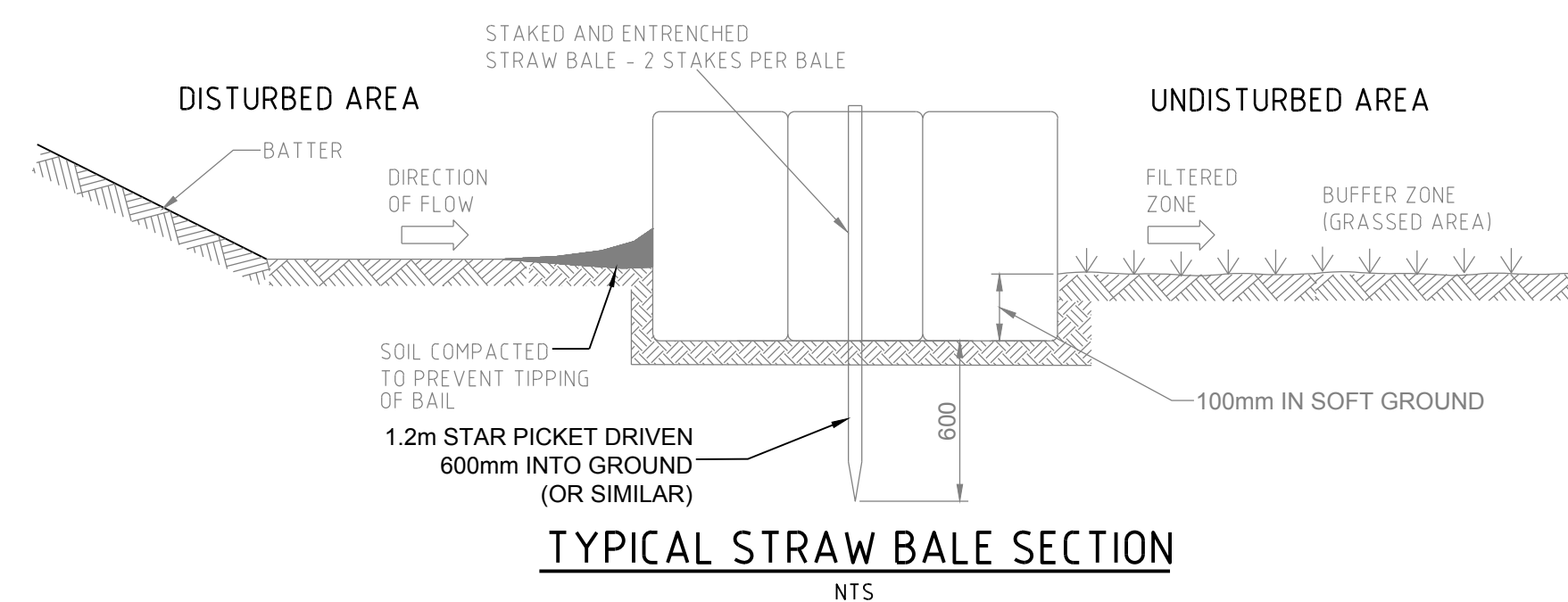
- ### EXCAVATED SEDIMENT TRAP NOTES:-
1. REMOVE THE SEDIMENT WHEN IT HAS ACCUMULATED TO HALF THE DESIGN DEPTH OF THE TRAP AND RESTORE THE TRAP TO ITS ORIGINAL DIMENSIONS.
 2. PROVIDE 50 cu.m/Ha OF SEDIMENT STORAGE VOLUME.
 3. REFER TO THE MAINTENANCE REQUIREMENTS.



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 INLET'S 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 OF THE PIPE DIAMETER.
8. THE FILTERS ARE TO BE CLEANED AND MAINTAINED DAILY.
9. ALL CARE SHOULD BE TAKEN TO MINIMIZE SEDIMENT REACHING THE STORMWATER SYSTEM BY MINIMIZING EXCAVATION WORKS AND PREVENTING EXCESS WATER FLOW THROUGH WORKS.



1. ALL VEHICLE ENTRANCES & EXITS TO THE CONSTRUCTION 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.
2. THE VEHICLE EXIT AREA IS TO BE MAINTAINED IN A CLEAN & SERVICEABLE CONDITION DURING THE TOTAL TIME OF USAGE.
3. ANY UNSEALED ROAD BETWEEN THE VEHICLE AND COUNCILS ROADWAY IS TO BE TOPPED WITH 100mm THICK, 40mm NOMINAL SIZE AGGREGATE.
4. PUBLIC ROADS MUST BE KEPT FREE OF DIRT AND MUD. SEDIMENT TRACKED ONTO THE PUBLIC ROADWAY BY VEHICLES LEAVING THE CONSTRUCTION SITE IS TO BE SWEEP UP IMMEDIATELY.
5. FENCES SHOULD BE ERECTED TO ENSURE VEHICLES CAN NOT BYPASS THE STABILIZED ACCESS POINTS, UNLESS COMING FROM A STABILIZED AREA.

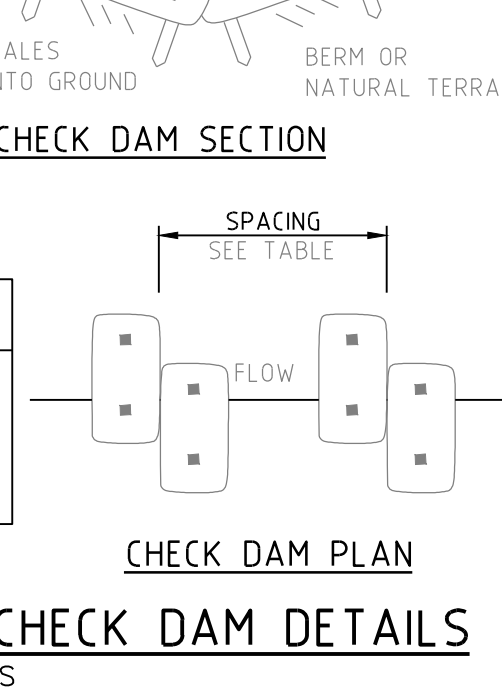
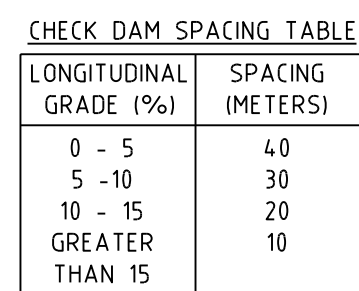
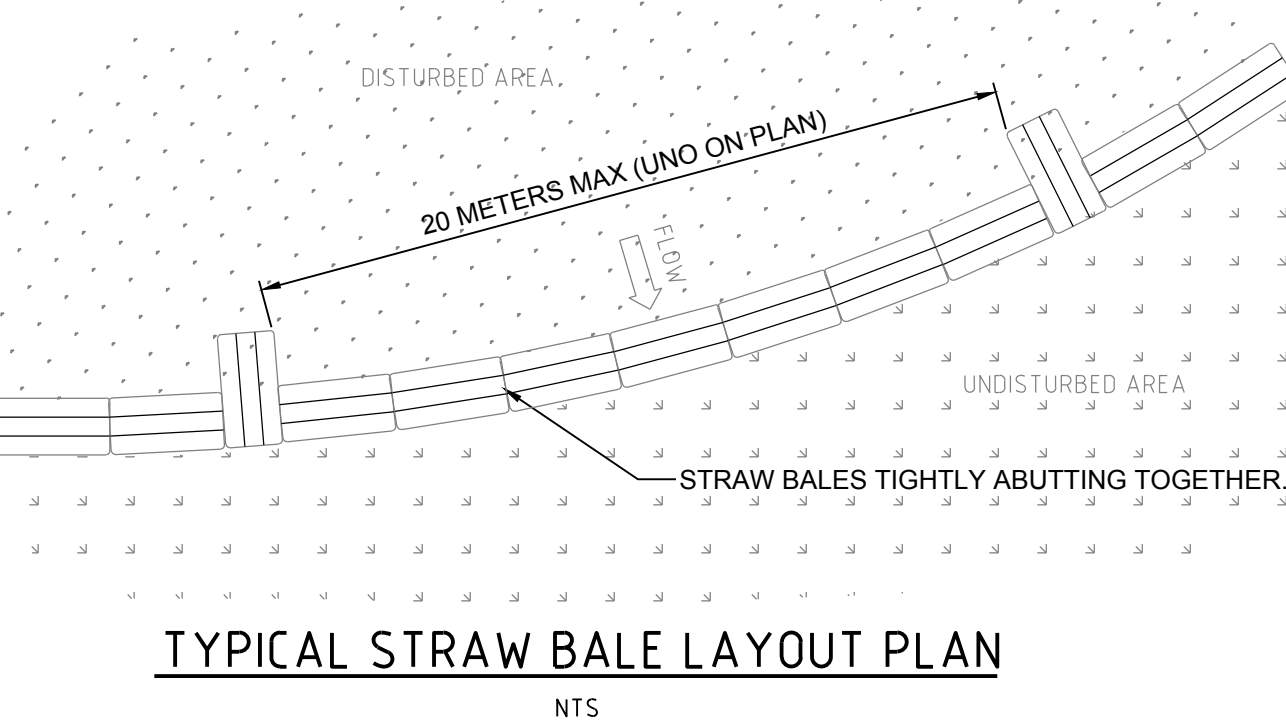


1. STRIP TOP SOIL & LEVEL SITE. PROVIDE CATCH DRAIN AT SIDES TO DIRECT RUNOFF WATER TO SEDIMENT TRAPS.
2. COMPACT SUBGRADE AND REMOVE ANY HIGH POINTS.
3. COVER AREA WITH GEOTEXTILE FABRIC. THIS MAY BE WOVEN OR NEEDLE PUNCHED PRODUCT WITH A MINIMUM CBR BURST STRENGTH (AS3706.4-90) OF 2500 N.
4. CONSTRUCT 200mm THICK RUBBLE PAD OVER GEOTEXTILE USING ROAD BASE OR 30-40mm AGGREGATE. MINIMUM LENGTH IS 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 BETWEEN THE GRIDS TO WITHIN 50mm OF THE TOP.
6. PROVIDE RAMPS AT ENDS AND SIDE OF GRIDS, IF DEPRESSIONS OCCUR IN THE RAMPS DURING USE. ADD ADDITIONAL MATERIAL.



1. CONSTRUCT STRAW BALE FILTER AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE OR AT THE TOE OF A SLOPE.

PLACE BALES LENGTHWISE IN A ROW WITH ENDS TIGHTLY ABUTTING.
2. 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 BALE. DRIVE STAKES 600mm INTO THE GROUND AND FLUSH WITH THE TOP OF THE BALES.
5. WHERE A STRAW BALE FILTER IS CONSTRUCTED DOWN SLOPE FROM A DISTURBED BATTER THE BALES SHOULD BE LOCATED 1.5 TO 2.0 METERS DOWN SLOPE FROM THE TOE OF THE BATTER.
6. WHERE REQUIRED WRAP GEOTEXTILE FILTER FABRIC AROUND BALES AND STAPLE IN POSITION.



- 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 CONSTRUCTION.
 6. ALL OUTLETS FROM DISTURBED LANDS ARE TO FEED INTO A SEDIMENT BASIN OR SIMILAR.
 7. DISCHARGE RUN OFF COLLECTED FROM UNDISTURBED LANDS ONTO EITHER A STABILIZED OR AN UNDISTURBED DISPOSAL SITE WITHIN SAME SUBCATCHMENT AREA FROM WHICH THE WATER ORIGINATED.
 8. COMPACT BANK WITH A SUITABLE IMPLEMENT IN SITUATIONS WHERE THEY ARE REQUIRED TO FUNCTION FOR MORE THAN FIVE DAYS.
 9. EARTH BANKS TO BE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT WILL IMPEDE NORMAL FLOW.

[illegible]

CLIENT	
PROJECT	LIVERPOOL CIVIC PLACE



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** 36 330 430 126



Consulting Engineers

■ Hydraulic ■ Fire ■ Civil ■ Utilities Infrastructure

SERVING THE CONSTRUCTION INDUSTRY SINCE 1981.

TITLE				
SEDIMENT AND EROSION CONTROL DETAILS				
SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
AS SHOWN	M.T.	M.Cz.	L.S.	M.C.
JOB No.		DRAWING No.		ISSUE
6734000		PA-MW-C2.02		1
DATE	STATUS			
SEPTEMBER 2020	MW - DEVELOPMENT APPLICATION			

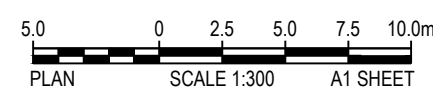
SHEET 2

SCOTT STREET

PIRIE STREET

PRELIMINARY - NOT FOR CONSTRUCTION

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

[illegible]

CLIENT	
PROJECT	LIVERPOOL CIVIC PLACE



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

SERVING THE CONSTRUCTION INDUSTRY SINCE 1981.

TITLE				
SITWORKS KEY PLAN				
SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
AS SHOWN	M.T.	I.O.	L.S.	M.C.
JOB No.	DRAWING No.		ISSUE	
6734000		PA-MW-C4.01		2
DATE	STATUS			
SEPTEMBER 2020	MW - DEVELOPMENT APPLICATION			

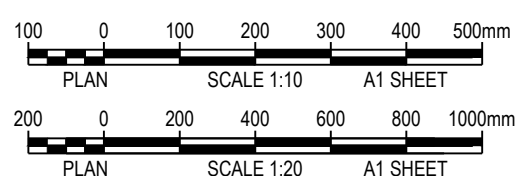
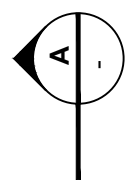


NOTES:

LEVELS ARE INDICATIVE AND SUBJECT TO CHANGE PENDING DETAILED DESIGN DEVELOPMENT.

AMENDMENTS TO THE LANDSCAPE AND PUBLIC DOMAIN TO BE MADE IN ACCORDANCE WITH FUTURE ENDORSED PUBLIC DOMAIN PLAN, AS PER UNDER CONDITIONS 4, 5, 6 AND 13 OF DA-585/2019.

[illegible]



1. ALL CONCRETE TO HAVE A MIN COMPRESSIVE STRENGTH (F_{cc}) OF 25MPa @ 28 DAY
2. DRIVEWAYS ARE TO BE NO CLOSER THAN:
- 6m FROM TANGENT POINT OF CORNER
 - 0.5m FROM STORMWATER LINTELS
 - 0.5m FROM ELECTRICAL TURRETS
 - 0.5m FROM TELSTRA PITS
 - 0.5m FROM ELECTRICAL POLES
- FOR SERVICE PITS TO BE CONTAINED WITHIN DRIVEWAY, WRITTEN APPROVAL FROM THE RELEVANT SERVICE AUTHORITY MUST BE OBTAINED AND SUBMITTED TO COUNCIL WITH THE CROSSING APPLICATION.
3. GAS MARKERS, WATER HYDRANTS AND STOP VALVES CAN REMAIN IN THE NEW DRIVEWAY BUT MUST BE ACCESSIBLE AT ALL TIMES.
4. ALL CROSSFALLS ARE TO BE STRICTLY ADHERED TO.
5. ALL REDUNDANT LAYBACKS TO BE REPLACED WITH KERB & GUTTER AT NO COST TO COUNCIL.
6. WHERE A LAYBACK IS TO BE EXTENDED, CONSTRUCTED OR REMOVED, THE ENTIRE LAYBACK/KERB & GUTTER SECTION AND 300mm WIDE OF ADJACENT ROAD PAVEMENT ARE TO BE SAWCUT AND REMOVED FOR THE FULL LENGTH OF PROPOSED VEHICULAR CROSSING, (THE ROAD PAVEMENT IS TO BE RESTORED TO THE SATISFACTION OF COUNCIL'S CROSSING INSPECTOR. THE FINAL RESTORATION FOR THE DAMAGED PAVEMENT WILL BE CARRIED OUT BY COUNCIL AT THE APPLICANT/OWNERS COST.)
- | 7. DEVELOPMENT TYPE | SLAB THICKNESS | REINFORCEMENT MESH |
|------------------------------------|----------------|----------------------------------|
| RESIDENTIAL | 125mm | SL62 NO MESH REQUIRED IN LAYBACK |
| MEDIUM DENSITY (VILLAS/TOWNHOUSES) | 150mm | SL82 INCLUDING LAYBACK |
| COMMERCIAL | 225mm | SL82 INCLUDING LAYBACK |
8. THE WIDTH OF RESIDENTIAL DRIVEWAYS SHALL BE
- MIN 3.0m AT PROPERTY BOUNDARY
 - MAX 6.0m AT DRIVEWAY
9. ALL STORMWATER RELOCATIONS ARE TO BE 100 UPVC SEWER GRADE PIPE WITH A 'CORDINA' TYPE GALVANISED STEEL OUTLET TO KERB & GUTTER. REFER TO LIVERPOOL CITY COUNCIL STANDARD DRAWING NO D17 FOR STANDARD ROOF WATER OUTLET AND ADOPTER DETAILS. NO OUTLET WILL BE PERMITTED WITHIN THE LAYBACK.
10. WHEN ALL WORKS ARE COMPLETED, THE EDGES OF THE DRIVEWAY CROSSING ARE TO BE BACKFILLED AND COMPACTED WITH SUITABLE SOIL AND TURFED TO MATCH DRIVEWAY LEVELS.
11. ALL EXISTING FOOTPATHS AFFECTED BY THE WORKS ARE TO BE SAWCUT AND REMOVED. THE DRIVEWAY CROSSING IS TO BE CONNECTED TO THE FOOTPATH WITH NO GAPS OR STEP.
12. DRIVEWAY CROSSING MUST BE FENCED OFF UNTIL COMPLETED FOR PUBLIC SAFETY.
13. DAMAGE TO EXISTING FOOTPATHS REQUIRES FULL PANEL REPLACEMENT TO THE NEAREST TRANSVERSE DUMMY JOINT TO MATCH EXISTING GULLY PITS ARE NOT TO BE LOCATED WITHIN PROPOSED DRIVEWAYS.
15. ALL DRIVEWAYS LOCATIONS ARE TO COMPLY WITH CLAUSE 3.2.3 OF AS2890.1-1993 - PARKING FACILITIES.
16. ALL SURFACES MUST BE INSTALLED AND MAINTAINED TO COMPLY WITH AUSTRALIAN STANDARD AS/NZS 4586:1999, AS/NZS 4663:2004, AS/NZS 3661.2:1994.
17. DOWELING OF LAYBACK TO DRIVEWAY WITH GALVANISED N120 DOWELS PLACED 350mm IN FROM EDGES OF CROSSING AND AT 900mm SPACING IS OPTIONAL BUT RECOMMENDED WHERE EXPANSIVE/REACTIVE CLAYS EXIST. COAT ONE HALF OF DOWEL WITH PETROLEUM JELLY IMPREGNATED TAPE TO ENSURE SLIP JOINT. ALL DOWELS TO BE 300mm LONG WITH 150mm PENETRATION INTO EACH SLAB.
18. COMMERCIAL/INDUSTRIAL AND MEDIUM DEVELOPMENT AREAS LAYBACK TO CONSTRUCTED INTEGRAL WITH DRIVEWAY CROSSING.
19. FORMWORK IS TO BE INSPECTED BY COUNCIL PRIOR TO POURING CONCRETE.



1. STANDARD VEHICLE CROSSING PLAN, SECTIONS AND NOTES AS PER LIVERPOOL CITY COUNCIL'S STANDARD DRAWING R25. KERB PROFILES AS PER LIVERPOOL CITY COUNCIL'S STANDARD DRAWINGS R02.

2. DRIVE CROSSING TO HAVE COBBLE FINISH AS PER COUNCIL REQUIREMENTS TBC BY LCC.

[illegible]

**LIVERPOOL
CITY
COUNCIL**

LIVERPOOL
CIVIC PLACE

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

SERVING THE CONSTRUCTION INDUSTRY SINCE 1981.

SITEWORKS DETAILS

SCALE AS SHOWN	DRAWN M.T.	DESIGNED I.O.	CHECKED L.S.	APPROVED M.C.
JOB No. 6734000		DRAWING No. PA-MW-C4.04		ISSUE 2
DATE SEPTEMBER 2020		STATUS MW - DEVELOPMENT APPLICATION		

Y:\6734000\TB_A\H...
C:\Users\Alan.Wong\Documents\6734000\6734000-PA-MW-CS-01 Access Driveway Longitudinal Section.dwg
Log Name: mbylor
Pld Date: 25/09/2020 09:58:17

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	11/09/20			
2	UPDATED BASEPLAN	25/09/20			

CLIENT

PROJECT

LIVERPOOL CIVIC PLACE

PREPARED BY

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

SERVING THE CONSTRUCTION INDUSTRY SINCE 1981.

TITLE

ACCESS DRIVEWAY
LONGITUDINAL SECTION

SCALE
AS SHOWN

DRAWN
M.T.

DESIGNED
I.O.

CHECKED
L.S.

APPROVED
M.C.

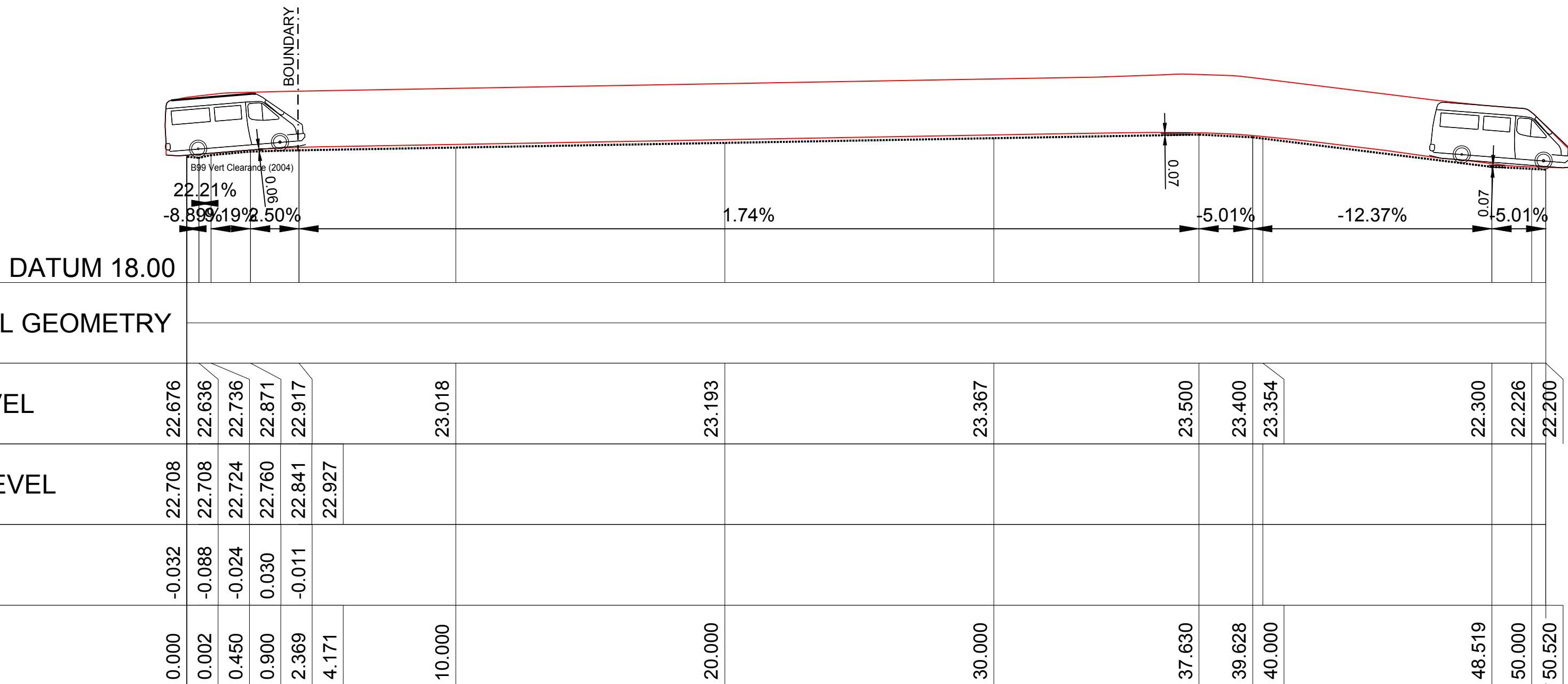
JOB No.
6734000

DRAWING No.
PA-MW-C5.01

ISSUE
2

DATE
SEPTEMBER 2020

STATUS
MW - DEVELOPMENT APPLICATION



5.2
0.95 3.05

B99 Vert Clearance (2004)

Overall Length 5.200m
Overall Width 1.940m
Overall Body Height 2.200m
Min Body Ground Clearance 0.120m
Track Width 1.840m
Lock-to-lock time 4.00s
Curb to Curb Turning Radius 8.000m

PRELIMINARY - NOT FOR CONSTRUCTION

Y:\6734000_TB_A\H Login Name: mbylor Cad File: T:\6734000\Drawings\AutoCAD\Civil\Design\Civil 2D\Phase A\Main Works\6734000-WB-R-CS-DAP-MW-C5-02 Access Driveway Cross Sections.dwg
Plot Date: 25/09/2020@08:43:55
Job: 6734000_TB_A\H

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	11/09/20			
2	UPDATED BASEPLAN	25/09/20			

CLIENT



PROJECT

LIVERPOOL CIVIC PLACE

PREPARED BY



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

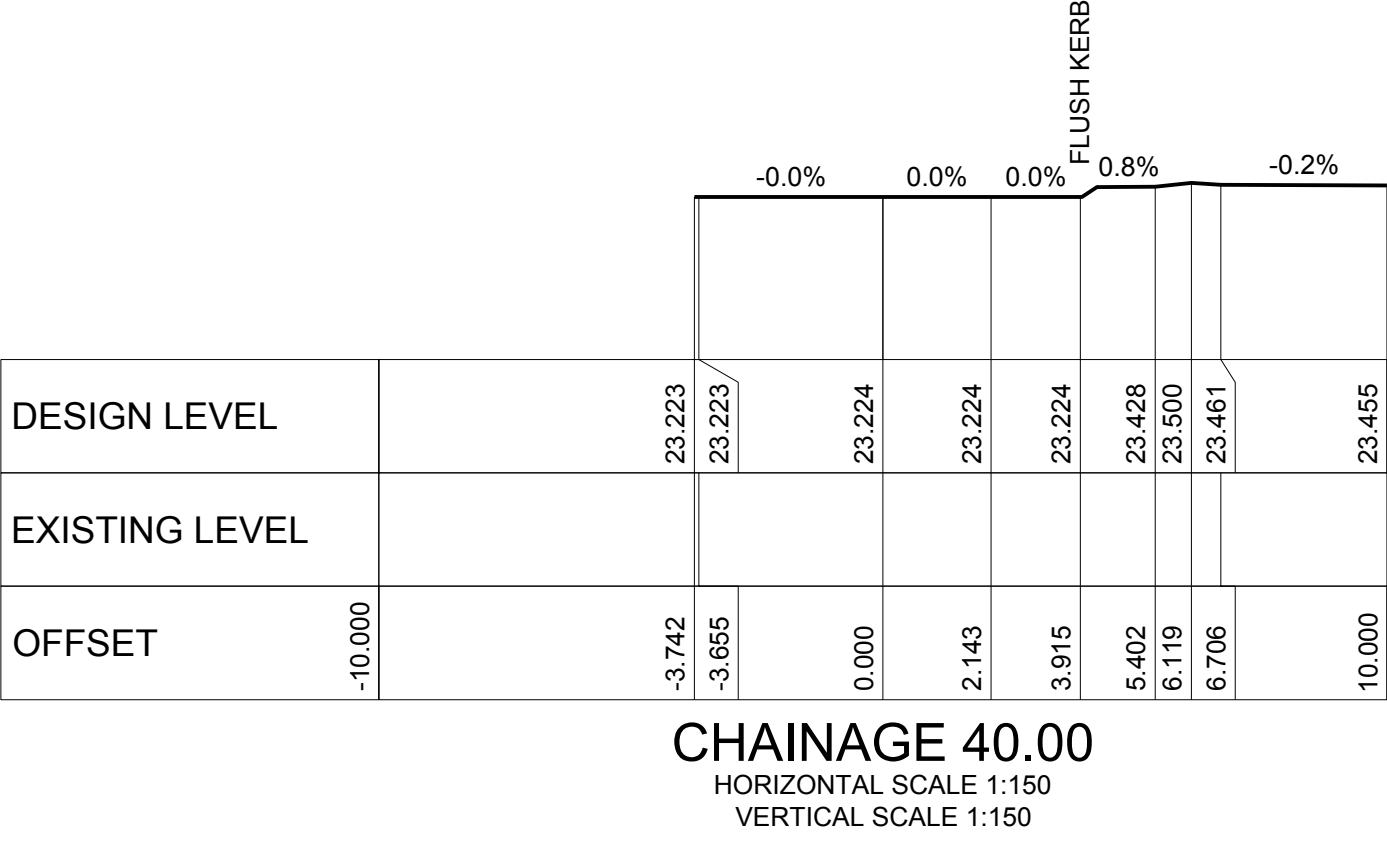
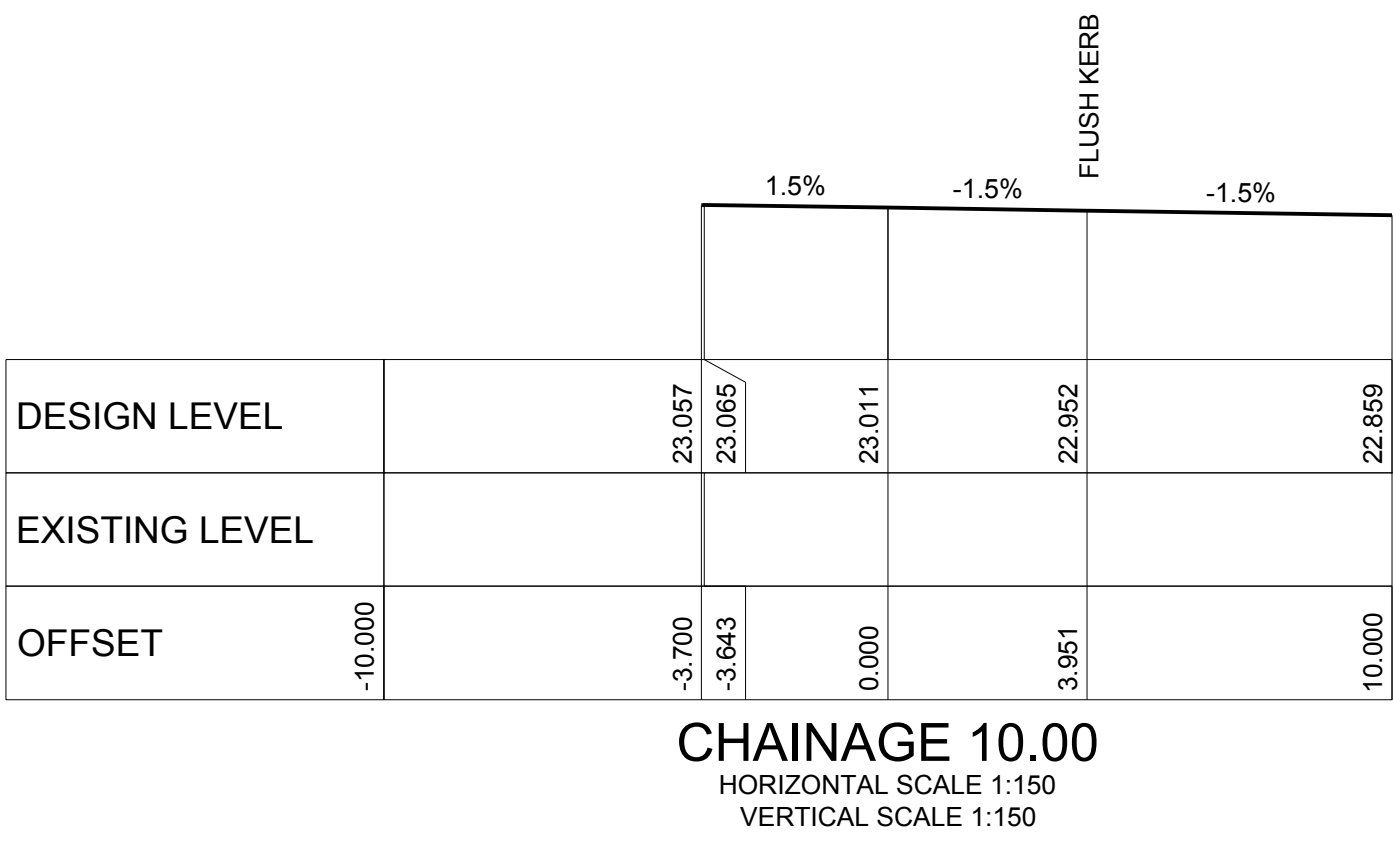
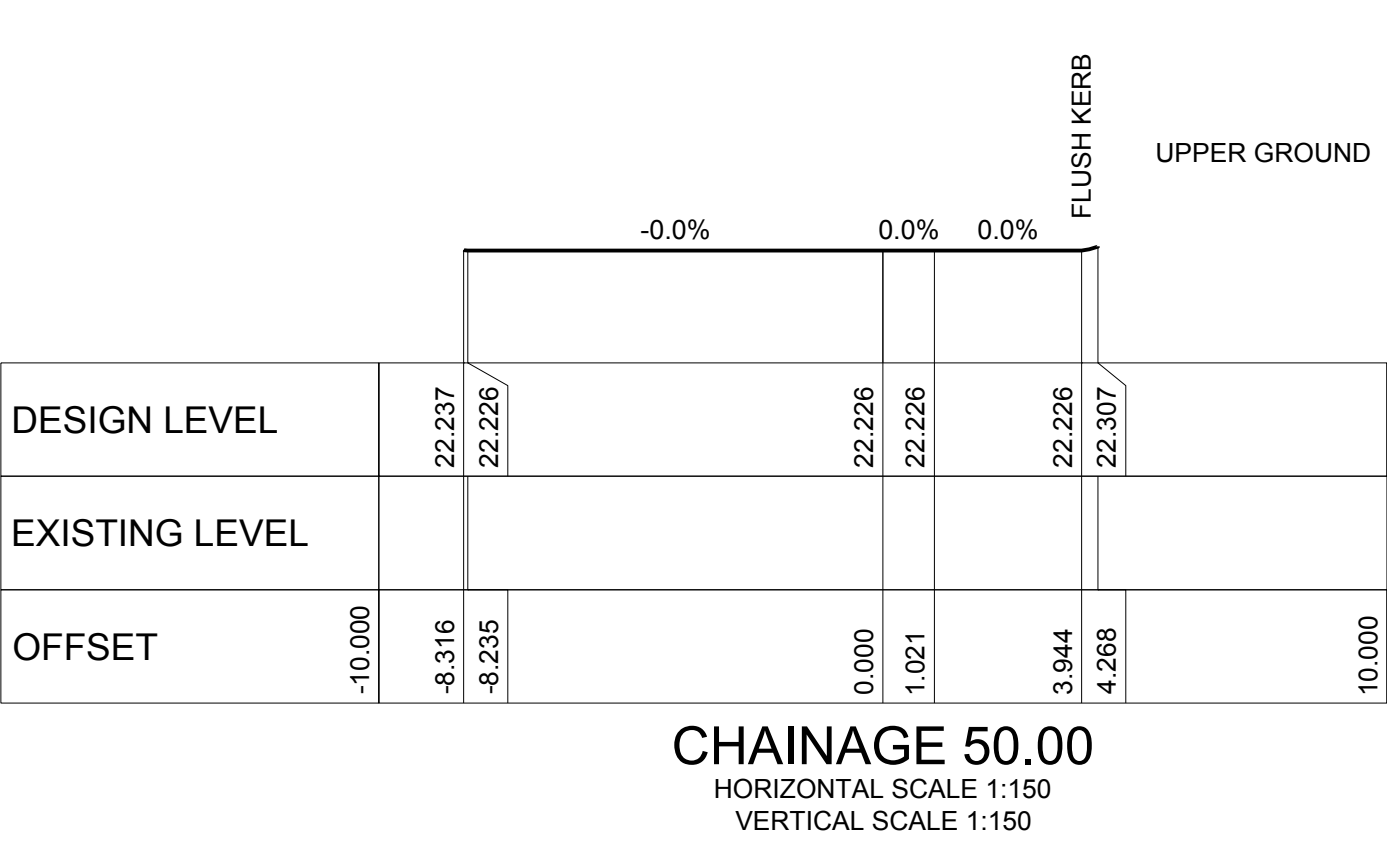
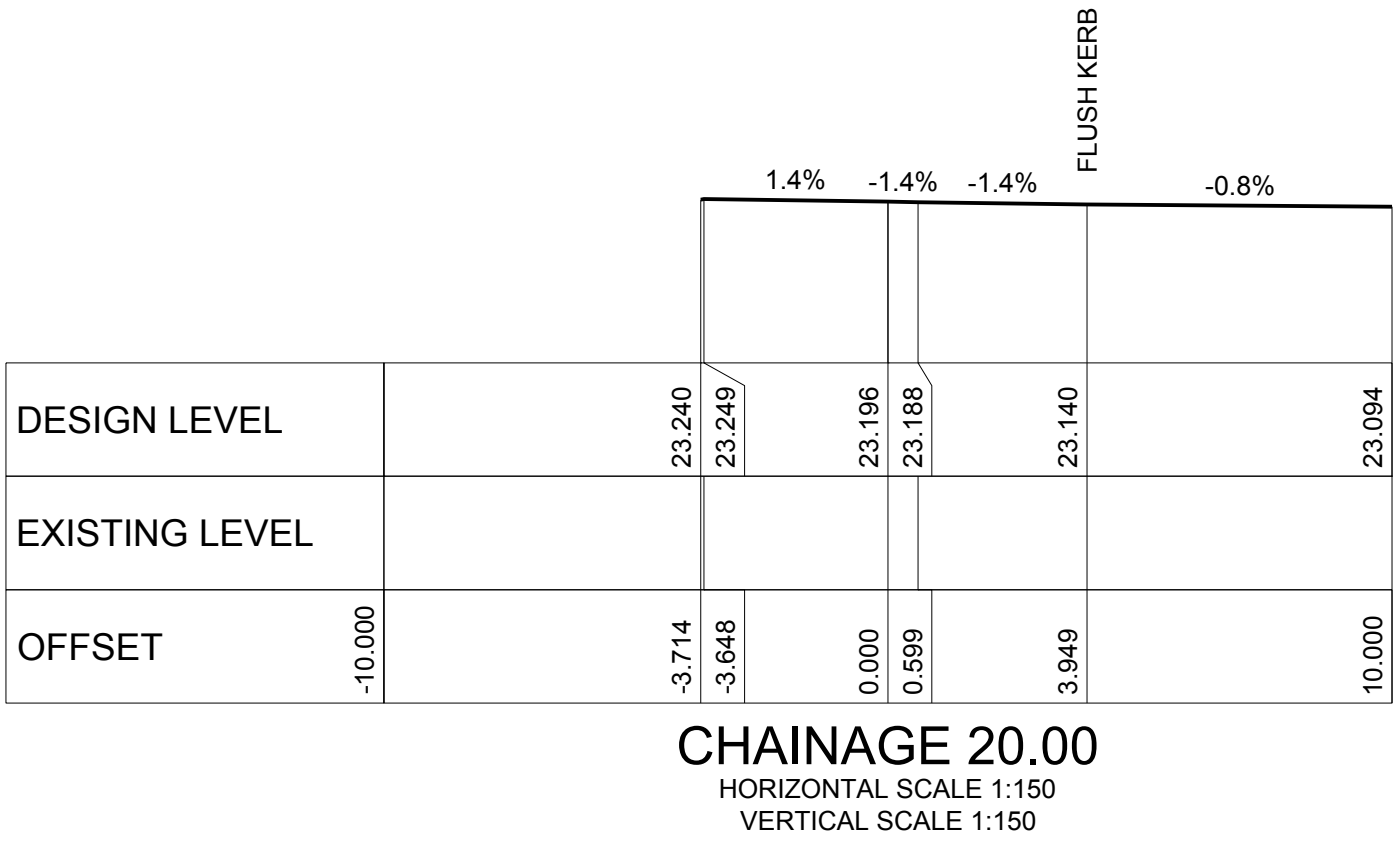
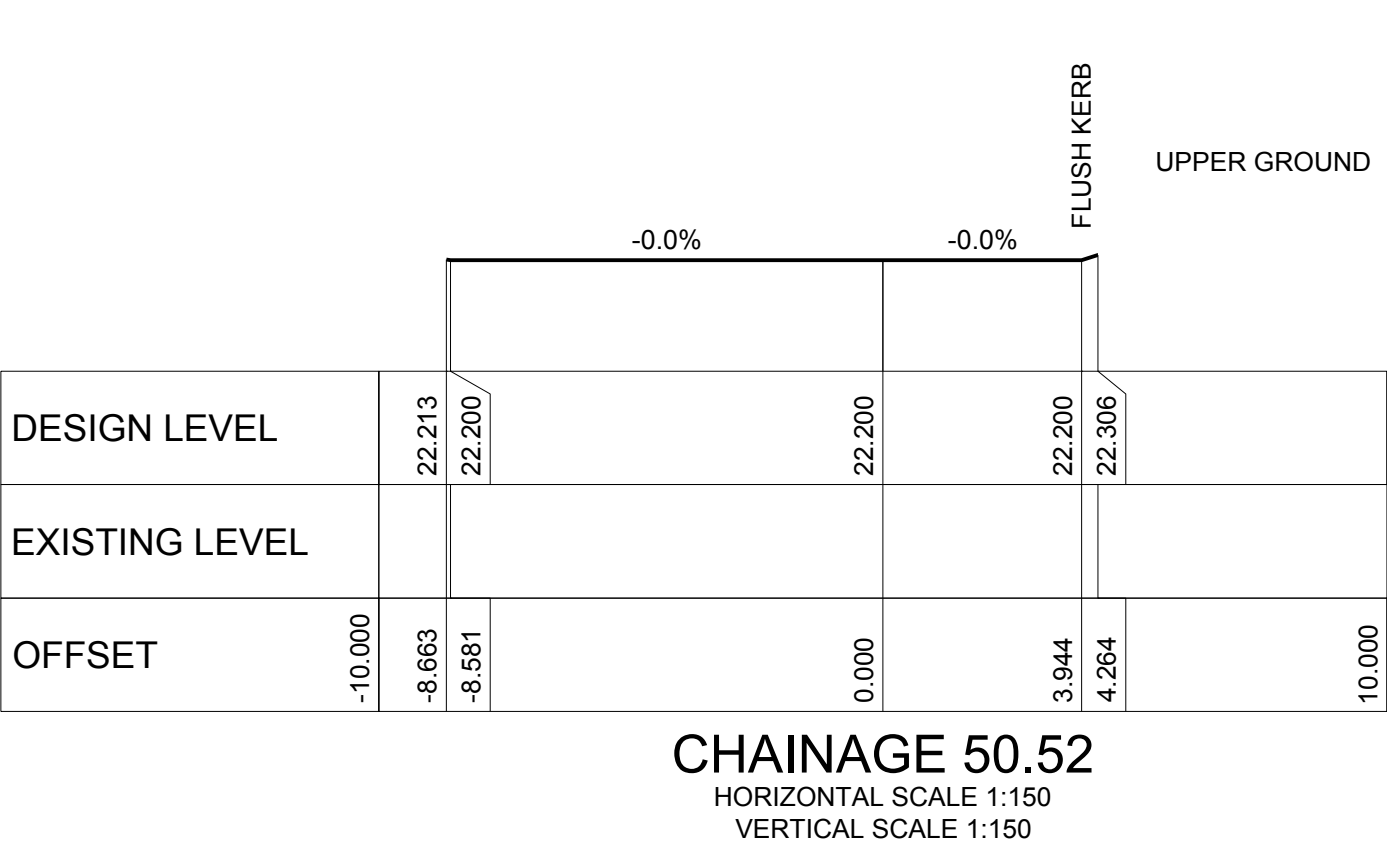
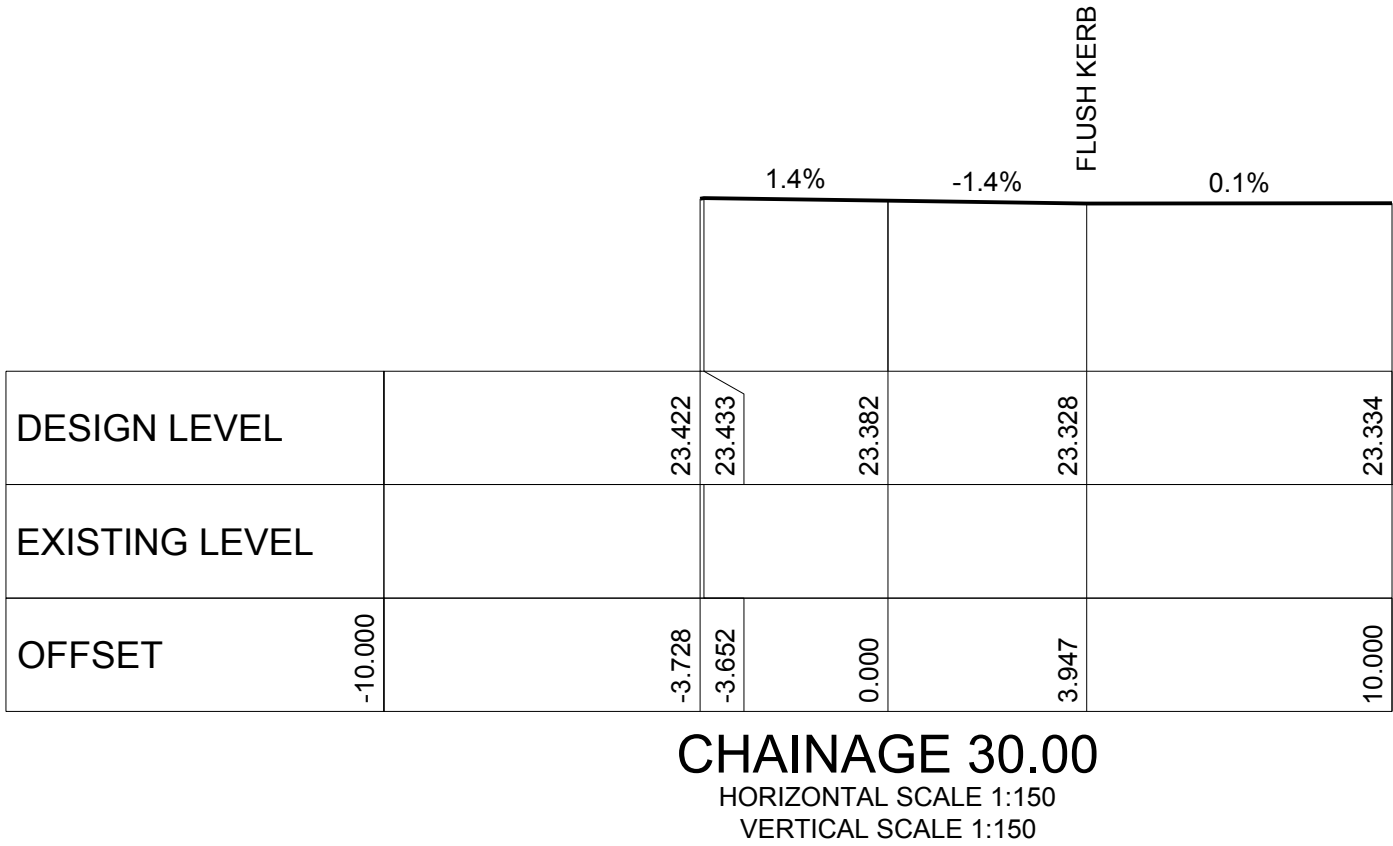


100,000+ Certified

SERVING THE CONSTRUCTION INDUSTRY SINCE 1981.

FILE

ACCESS DRIVEWAY CROSS SECTIONS				
SCALE AS SHOWN	DRAWN M.T.	DESIGNED I.O.	CHECKED L.S.	APPROVED M.C.
JOB No. 6734000		DRAWING No. PA-MW-C5.02	ISSUE 2	
DATE SEPTEMBER 2020	STATUS MW - DEVELOPMENT APPLICATION			



PRELIMINARY - NOT FOR CONSTRUCTION

LEGEND

- DEVELOPMENT BOUNDARY
- GRATED INLET PIT
- PROPOSED PIPE DIAMETER AND DIRECTION OF FLOW
- PROPOSED STORMWATER PIPE
- INDICATIVE OVERLAND FLOW ROUTE
- PIT STRUCTURE NUMBER
- STORMWATER LINE NUMBER
- GRATED TRENCH DRAIN
- RETAINING WALL

NOTES:

LEVELS ARE INDICATIVE AND SUBJECT TO CHANGE PENDING DETAILED DESIGN DEVELOPMENT. AMENDMENTS TO THE LANDSCAPE AND PUBLIC DOMAIN TO BE MADE IN ACCORDANCE WITH FUTURE ENDORSED PUBLIC DOMAIN PLAN, AS PER UNDER CONDITIONS 4, 5, 6 AND 13 OF DA-585/2019.

PROPOSED COMBINATION TREATMENT TANK TO BE FITTED WITH 1 X ENVIROPOD AND 2 x 690mm PSORB STORMFILTERS. SIZE 2200 LONG X 1000 WIDE X 1350 HIGH. EXACT LOCATION TBC DURING DETAILED DESIGN. REFER TO DRAWING C6.04 FOR THE TYPICAL TREATMENT TANK DETAILS.

PROPOSED DEVELOPMENT TO BE DISCHARGED TO THE EXISTING KERB INLET PIT ON SCOTT STREET AT I.L 21.37.

1200SQ PIT WITH CLASS C HEELSAFE ANTI-SLIP GRATE TO BE FITTED WITH 1 x ENVIROPOD BASKET AND 2 x 690mm PSORB STORMFILTERS BY OCEAN PROTECT.

23.78m LONG ACO KLASIK DRAIN K200 TRENCH DRAIN, WITH TYPE 676D IRON INTERCEPT HEELSAFE ANTI-SLIP GRATE. TO HAVE 2 x DN150 OUTLETS IN THESE LOCATIONS PRIOR TO DISCHARGING TO DN300 PIPE LOCATED BELOW THE TRENCH DRAIN, AND RETICULATING TO PIT 1/1. FOR DETAILS OF TRENCH DRAIN REFER TO C6.04.

TRENCH DRAIN TO BE INTEGRATED WITH PAVING FINISHES.

EXISTING COUNCIL KERB INLET PIT TO BE CONVERTED TO A V-GRATE (900 x 900) INLET WITH CLASS E GRATE.

7.46m LONG ACO KLASIK DRAIN K200 TRENCH DRAIN, WITH TYPE 676D IRON INTERCEPT HEELSAFE ANTI-SLIP GRATE. TO HAVE 1 x DN150 OUTLETS IN THESE LOCATIONS PRIOR TO DISCHARGING TO DN300 PIPE LOCATED BELOW THE TRENCH DRAIN, AND RETICULATING TO PIT 1/1. FOR DETAILS OF TRENCH DRAIN REFER TO C6.04.

RAISED PLANTER DETAIL TBC - DRAINAGE TO DISCHARGE TO PIT 2/1

3.19m LONG K200 ACO TRENCH DRAIN WITH CLASS B HEELSAFE ANTI-SLAP GRATE TO CONNECT TO THE INTERNAL HYDRAULIC DRAINAGE

PROPOSED COMBINATION TREATMENT TANK TO BE FITTED WITH 1 X ENVIROPOD AND 4 x 690mm PSORB STORMFILTERS. 2500 LONG X 1300 WIDE X 1350 HIGH. EXACT LOCATION TBC DURING DETAILED DESIGN. REFER TO DRAWING C6.04 FOR THE TYPICAL TREATMENT TANK DETAILS.

2.47m LONG K200 ACO TRENCH DRAIN WITH CLASS B HEELSAFE ANTI-SLAP GRATE TO CONNECT TO THE INTERNAL HYDRAULIC DRAINAGE

12.45m LONG K200 ACO TRENCH DRAIN WITH CLASS D HEELSAFE ANTI-SLAP GRATE TO CONNECT TO THE INTERNAL HYDRAULIC DRAINAGE

PUBLIC CARPARK ENTRY/EXIT RAMP FFL = 25.10

LOADING DOCK FFL = 26.20

TERMINUS STREET POCKET PARK FFL = 27.40

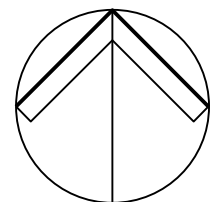
COUNCIL CUSTOMER SERVICE FFL = 27.85

LIBRARY GF RL = 24.50

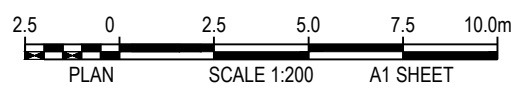
PRELIMINARY - NOT FOR CONSTRUCTION

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.



NORTH



REVISION	AMENDMENT	DATE	REVISION	AMENDMENT	DATE
1	ISSUE FOR DEVELOPMENT APPLICATION	11/09/20			
2	UPDATED BASEPLAN	25/09/20			

LIVERPOOL CITY COUNCIL

LIVERPOOL CIVIC PLACE

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

GCC
100,000+ Certified
SERVING THE CONSTRUCTION INDUSTRY SINCE 1981.

STORMWATER LAYOUT PLAN

SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
AS SHOWN	M.T.	M.Cz.	L.S.	M.C.
JOB No.	DRAWING No.		ISSUE	
6734000		PA-MW-C6.01		2
DATE	STATUS			
SEPTEMBER 2020	NMW - DEVELOPMENT APPLICATION			

Ver: 1/27/2020 TB_AJH
 Plot Date: 18/09/2020@10:37:53
 Log In Name: NGJ2018
 Call File: T:\6734000\Drawings\AutoCAD\Civil\Design\City 2D\Phase Allman Views\6734000-WSP-F-CSDA-PA-MW-C6.03 Stormwater PI Schedule.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 INTERNAL (ID) (mm)	No. PIPES
Pit 1/1	22.85-22.95	0.20m - 0.24m	7.46m LONG LONG ACO KLASSIK DRAIN K200 WITH TYPE 676D IRON INTERCEPT HEELSAFE ANTI-SLIP GRATE	Pit 1/1	CO 1	8.48	22.1	21.97	1.53	HDPE	150	1
CO1	22.72			CO1	CO2	7.53	21.97	21.89	1.06	HDPE	300	1
CO2	22.66			CO2	Pit 2/1	8.00	21.89	21.79	1.25	HDPE	300	1
Pit 2/1	22.54	0.83	1200SQ PIT WITH CLASS B GRATE	Pit 2/1	Pit EX/1	14.15	21.71	21.37	2.40	RCP (Class 3)	375	1
Pit 1/6	22.53-22.85	0.20m - 0.32m	23.78m LONG ACO KLASSIK DRAIN K200 WITH TYPE 676D IRON INTERCEPT HEELSAFE ANTI-SLIP GRATE	Pit 1/6	CO1	1.2	21.99	21.97	1.67	HDPE	150	1
				Pit 1/6	CO2	1.2	21.91	21.89	1.67	HDPE	150	1
Pit 1/2	27.24	0.20m - 0.23m	5.11m LONG ACO TRENCH DRAIN SLOPED CHANNEL WITH CLASS B HEELSAFE ANTI-SLIP GRATE	Pit 1/2	Pit 2/2	1.2	26.95	26.94	0.83	HDPE	150	1
Pit 2/2	27.20	1.25	900SQ PIT WITH CLASS B GRATE	Pit 2/2	CO3	1.7	25.95	25.93	1.18	HDPE	150	1
				CO3	TERMINUS STREET KERB AND GUTTER	12.4	25.93	25.81	0.97	GALVANISED STEEL RHS	200 X 100 X 6	1
Pit 1/3	23.50	0.20m - 0.22m	2.47m LONG K200 ACO TRENCH DRAIN SLOPED CHANNEL WITH CLASS B HEELSAFE ANTI-SLIP GRATE	CONNECTION TO INTERNAL HYDRAULIC DRAINAGE								
Pit 1/4	22.20	0.20m - 0.26m	12.45m LONG K200 ACO TRENCH DRAIN SLOPED CHANNEL WITH CLASS D GRATE	CONNECTION TO INTERNAL HYDRAULIC DRAINAGE								
Pit 1/5	23.43-23.39	0.20m - 0.22m	3.19m LONG K200 ACO TRENCH DRAIN SLOPED CHANNEL WITH CLASS B HEELSAFE ANTI-SLIP GRATE	CONNECTION TO INTERNAL HYDRAULIC DRAINAGE								

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	ISSUE FOR DEVELOPMENT APPLICATION	11/09/20			
2	ISSUE FOR 90% TENDER	14/10/20			



CLIENT

PROJECT

LIVERPOOL CITY COUNCIL

LIVERPOOL CIVIC PLACE

PREPARED BY



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

SERVING THE CONSTRUCTION INDUSTRY SINCE 1981.

TITLE

STORMWATER PIT SCHEDULE

SCALE

AS SHOWN

DRAWN

M.T.

DESIGNED

M.Cz

CHECKED

L.S.

APPROVED

M.C.

JOB No.

6734000

DRAWING No.

PA-MW-C6.02

ISSUE

2

DATE

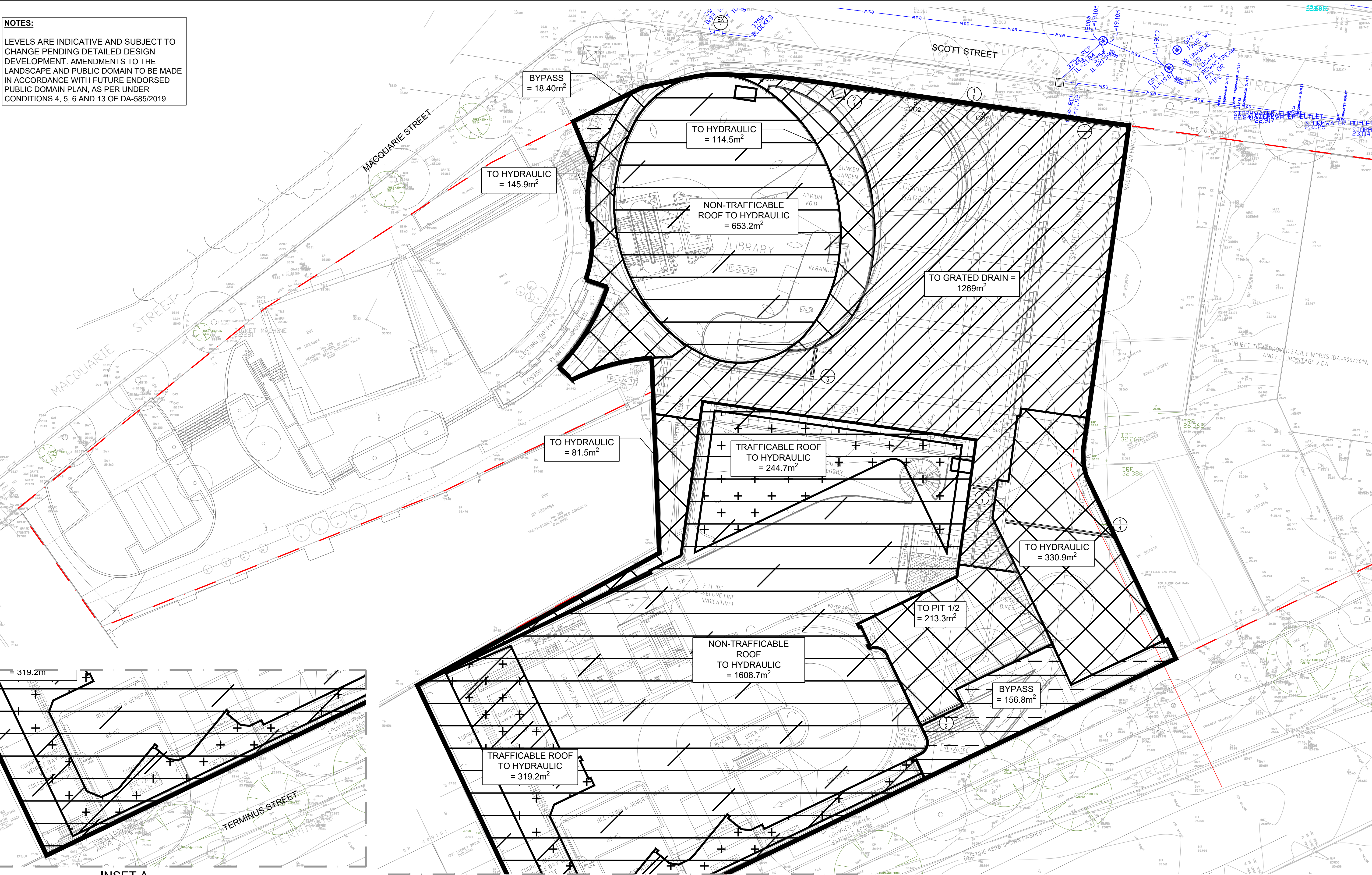
SEPTEMBER 2020

STATUS

MW - ISSUE FOR TENDER

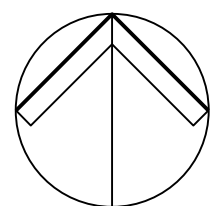
PRELIMINARY - NOT FOR CONSTRUCTION

NOTES:
LEVELS ARE INDICATIVE AND SUBJECT TO CHANGE PENDING DETAILED DESIGN DEVELOPMENT. AMENDMENTS TO THE LANDSCAPE AND PUBLIC DOMAIN TO BE MADE IN ACCORDANCE WITH FUTURE ENDORSED PUBLIC DOMAIN PLAN, AS PER UNDER CONDITIONS 4, 5, 6 AND 13 OF DA-585/2019.



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.



NORTH



REVISION	AMENDMENT	DATE	REVISION	AMENDMENT	DATE
1	ISSUE FOR DEVELOPMENT APPLICATION	11/09/20			
2	UPDATED BASEPLAN	25/09/20			

LIVERPOOL CITY COUNCIL

LIVERPOOL CIVIC PLACE

PREPARED BY

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

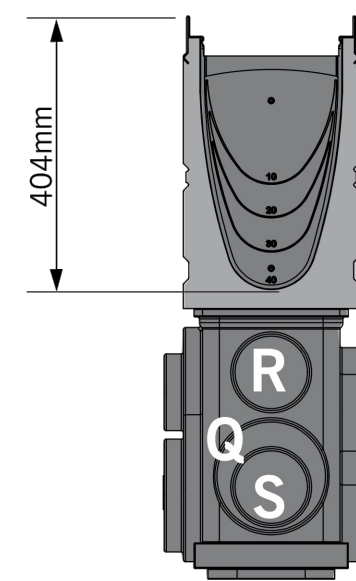
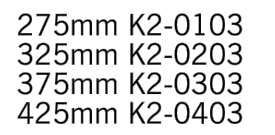
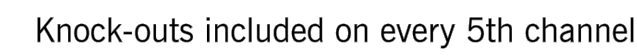
Hydraulic Fire Civil Utilities Infrastructure

GCC
SERVING THE CONSTRUCTION INDUSTRY SINCE 1981.

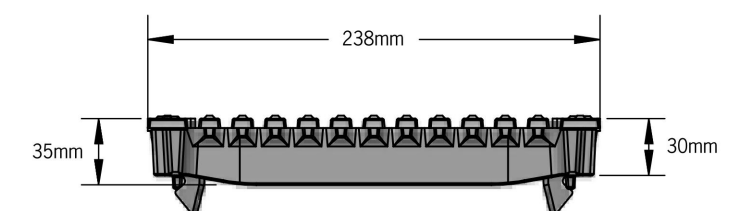
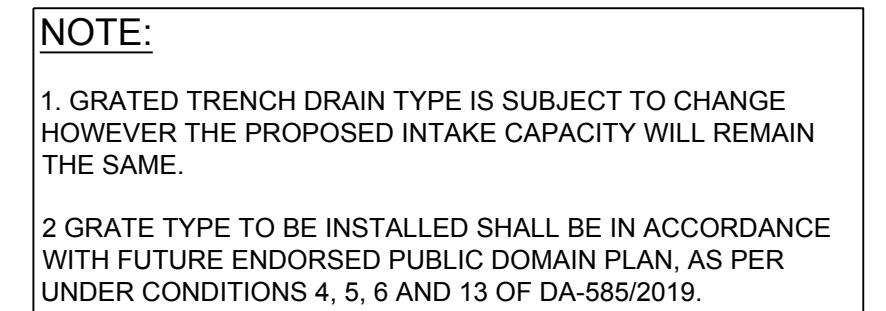
TITLE

STORMWATER CATCHMENT PLAN

SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
AS SHOWN	M.T.	M.Cz.	L.S.	M.C.
JOB No.	DRAWING No.		ISSUE	
6734000	PA-MW-C6.03		2	
DATE	STATUS			
SEPTEMBER 2020	MW - DEVELOPMENT APPLICATION			

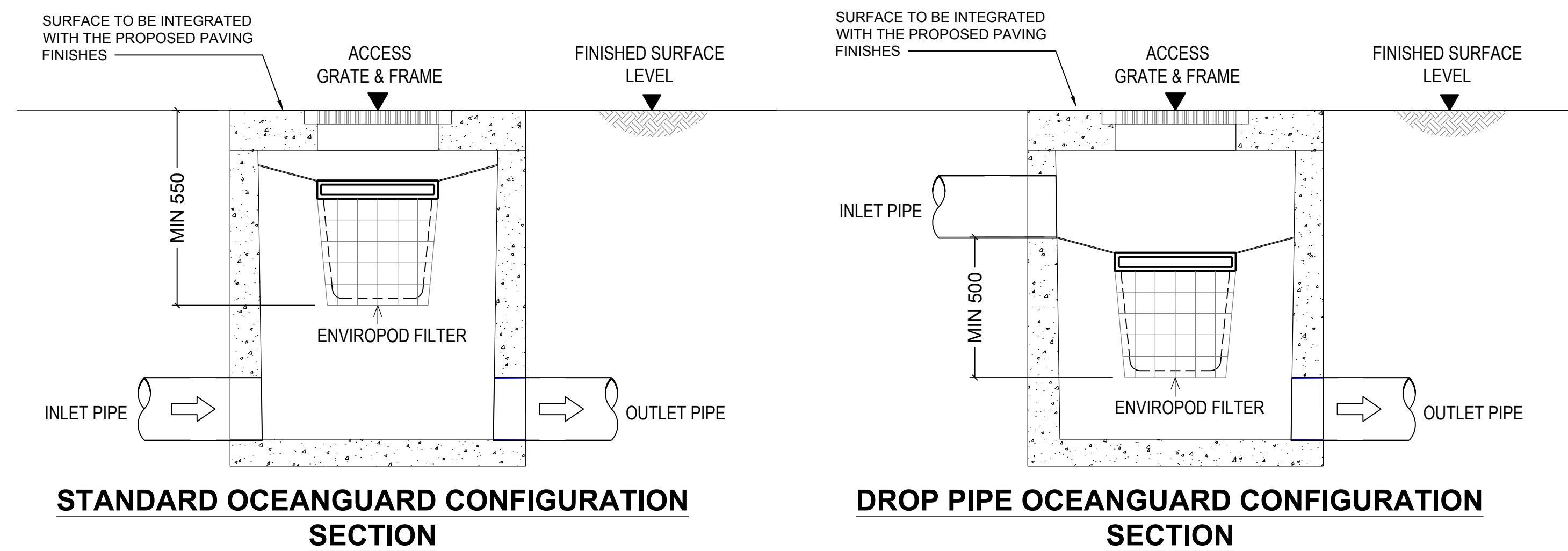
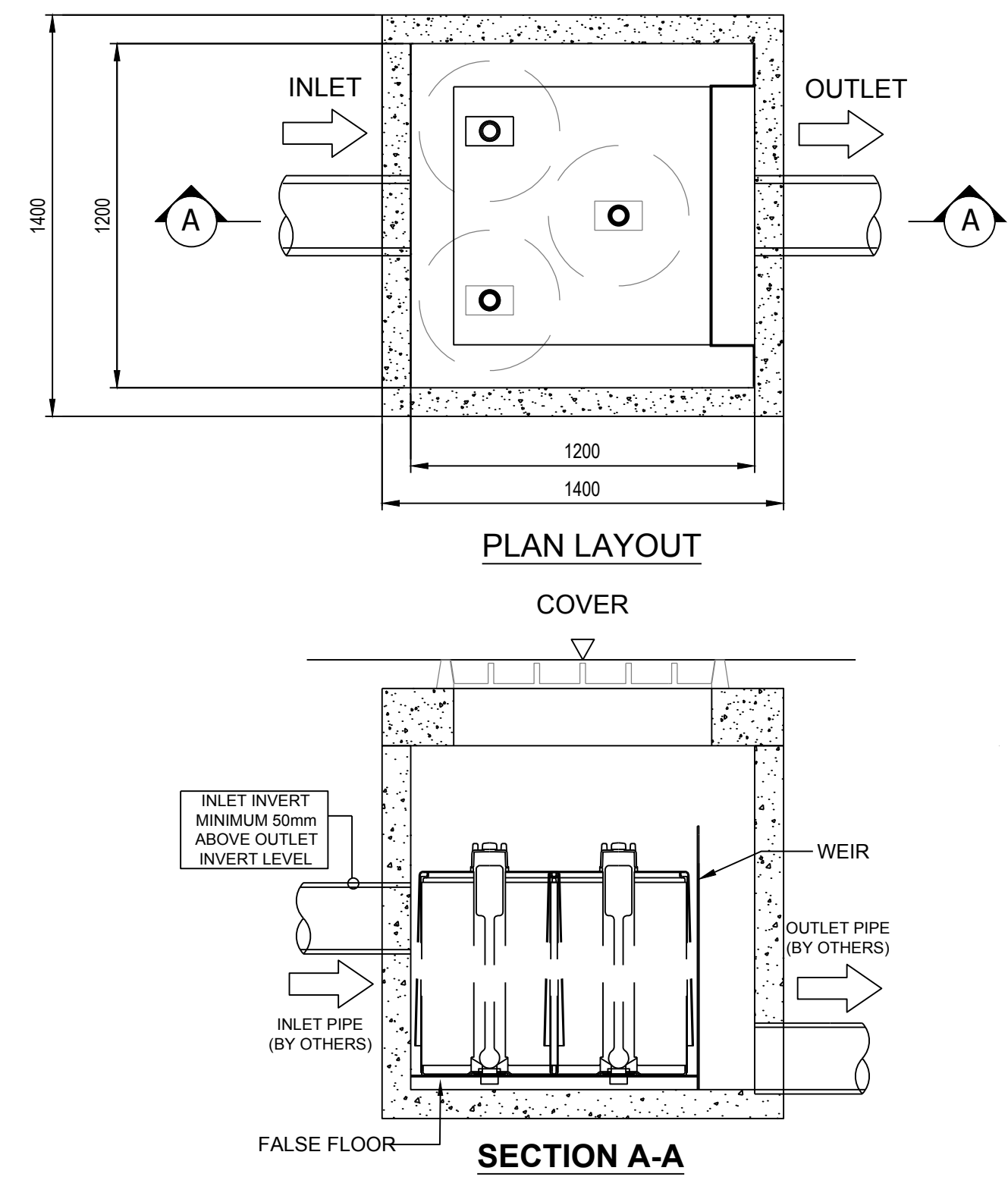
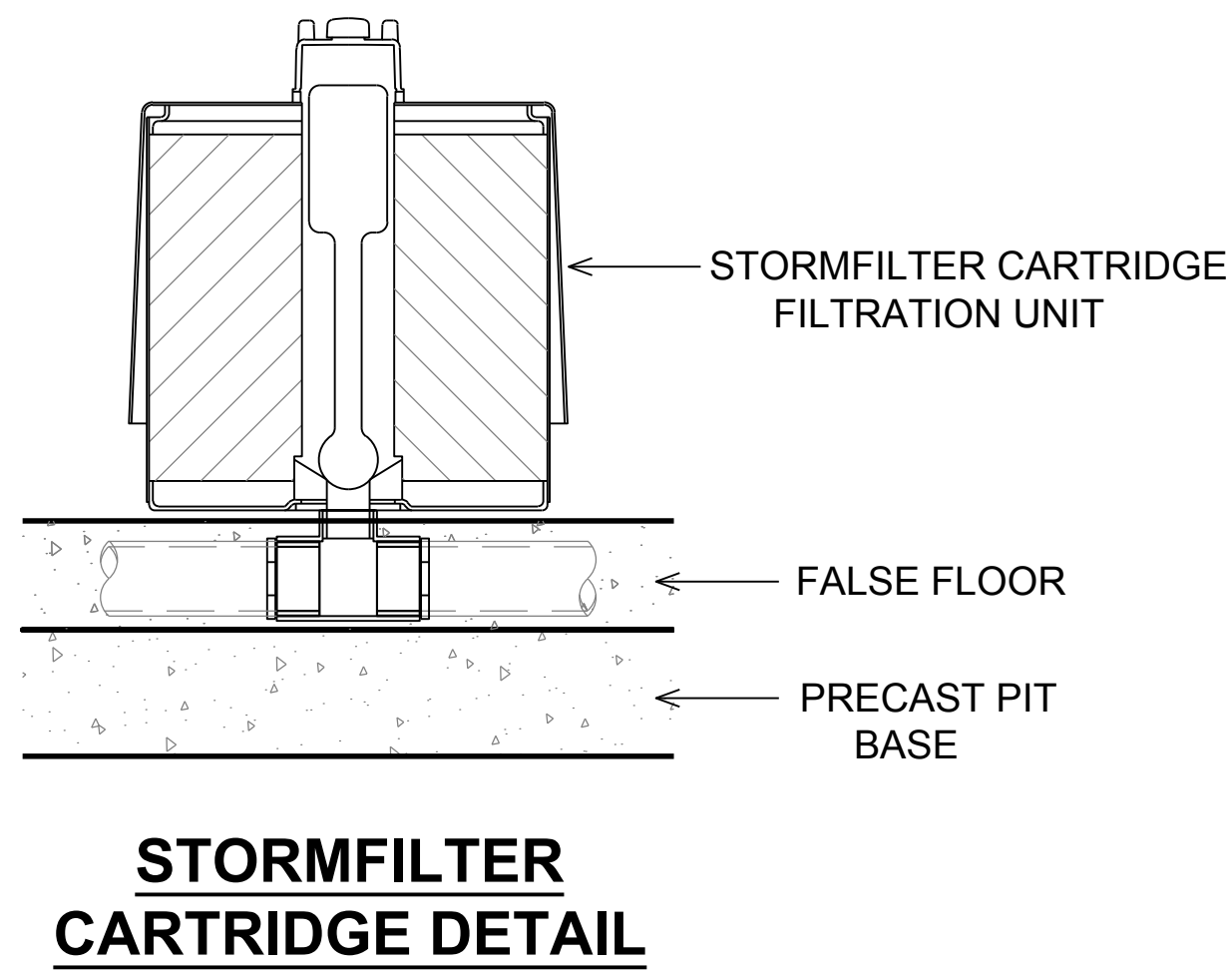


ACO K200 KLASSIK DRAIN DETAILS



TYPE 676D IRON INTERCEPT HEELSAFE
ANTI-SLIP GRATE
NOT TO SCALE

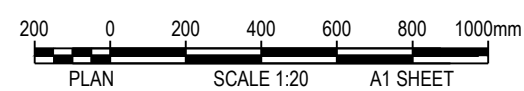
DO NOT SCALE FROM DRAWINGS, CHECK & VERIFY ALL DIMENSIONS & LEVELS BEFORE COMMENCEMENT OF ANY WORK.			REVISION	AMENDMENT	DATE	REVISION	AMENDMENT	DATE	CLIENT LIVERPOOL CITY COUNCIL	PREPARED BY Warren Smith & Partners Warren Smith & Partners Pty Ltd Level 9, 233 Castlereagh Street, Sydney 2000 NSW Australia 02 9299 1312 wsp@warrensmith.com.au www.warrensmith.com.au ABN 36 300 430 126	TITLE STORMWATER TYPICAL DRAINAGE DETAILS					
			1	ISSUE FOR DEVELOPMENT APPLICATION	11/09/20							SCALE AS SHOWN	DRAWN M.T.	DESIGNED M.C.Z.	CHECKED L.S.	APPROVED M.C.
			2	NOTES ADDED	25/09/20							JOB No. 6734000	DRAWING No. PA-MW-C6.04		ISSUE 2	
												DATE SEPTEMBER 2020		STATUS MW - DEVELOPMENT APPLICATION		
THIS DRAWING IS NOT TO BE COPIED IN PART OR WHOLE WITHOUT WRITTEN PERMISSION FROM WARREN SMITH AND PARTNERS.			PROJECT LIVERPOOL CIVIC PLACE						Consulting Engineers ■ Hydraulic ■ Fire ■ Civil ■ Utilities Infrastructure GCC SERVING THE CONSTRUCTION INDUSTRY SINCE 1981.							



Y:\13\456789_TB_A\H
P:\Date: 25/09/2020 09:26:13
C:\File: 1\6734000\Drawings\AutoCAD\Civil\Design\Civil_2D\Phase A\Main\Woma\6734000\WSP-CS-DA-PA-MW-05\WSD Treatment Devices Typical Details.dwg
Log Name: mbylor

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	ISSUE FOR DEVELOPMENT APPLICATION	11/09/20			
2	NOTES ADDED	25/09/20			

CLIENT

**LIVERPOOL
CITY
COUNCIL**

PROJECT

**LIVERPOOL
CIVIC PLACE**

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

GCC
100,000+ Certified

SERVING THE CONSTRUCTION INDUSTRY SINCE 1981.

TITLE

**WSUD TREATMENT DEVICES
TYPICAL DETAILS**

SCALE AS SHOWN	DRAWN M.T.	DESIGNED M.Cz	CHECKED L.S.	APPROVED M.C.
JOB No. 6734000		DRAWING No. PA-MW-C6.05		ISSUE 2
DATE SEPTEMBER 2020		STATUS MW - DEVELOPMENT APPLICATION		

PRELIMINARY - NOT FOR CONSTRUCTION

PROJECT NAME : Liverpool Civic Place Main Works PHASE A
 PROJECT NO.: 6734000
 CLIENT : FMJT Studio
 REVISION: 2
 DATE: 25/09/2020

DISCIPLINE : CIVIL
 ISSUED BY: Laura Shaughnessy



DOCUMENT TRANSMITTAL																
		Day	11	16	25											
		Month	9	9	9											
		Year	20	20	20											
Drawing Number	Drawing Title															
MW-C1.01	Cover Sheet	1		2												
MW-C1.02	Specification Notes	1		2												
MW-C1.03	Existing Survey Plan	1														
MW-C2.01	Sediment and Erosion Control Plan	1		2												
MW-C2.02	Sediment and Erosion Control Details	1														
MW-C4.01	Siteworks Key Plan	1		2												
MW-C4.02	Siteworks Plan - Sheet 1 - Lower Ground	1	2	3												
MW-C4.03	Siteworks Plan - Sheet 1 - Upper Ground	1	2	3												
MW-C4.04	Siteworks Details	1		2												
MW-C5.01	Access Driveway Longitudinal Section	1		2												
MW-C5.02	Access Driveway Cross Sections	1		2												
MW-C6.01	Stormwater Layout Plan	1		2												
MW-C6.02	Stormwater Pit Schedule	1														
MW-C6.03	Stormwater Catchment Plan	1		2												
MW-C6.04	Stormwater Details	1		2												
MW-C6.05	WSUD Treatment Devices Typical Details	1		2												
Distribution																
Built		E	E	E												
Media Type:				H - HAND			E - EMAIL			C - COURIER			D - DROPBOX LINK			A - ACONEX