



TOTAL PERVIOUS AREA	=	425.0m ²	(28%)
TOTAL IMPERVIOUS AREA	=	1068.5m ²	(72%)
TOTAL CATCHMENT AREA	=	1493.5m ²	



TOTAL PERVIOUS AREA	=	663.0m ²	(44%)
TOTAL IMPERVIOUS AREA	=	830.5m ²	(56%)
TOTAL CATCHMENT AREA	=	1493.5m ²	



P2	ISSUE FOR DA		QC	DM	11.01.19												
P1	ISSUE FOR DA		QC	DM	20.12.18												
Rev	Description		Eng	Draft	Date	Rev	Description		Eng	Draft	Date	Rev	Description		Eng	Draft	Date

Scale : A1	Drawn	Authorised
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Job No	Drawing No	Revision
181202	SKC203	P2
Plot File Created: Jan 11, 2019 - 5:35pm		

Appendix C

P1A Car Park and Through Site Link Civil Engineering Drawings

Scale : A1	Drawn	Authorised
NTS	LW	
Job No	Drawing No	Revision
201435	C300	P4
Plot File Created: Dec 17, 2020 - 12:17pm		

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P2	ISSUE FOR DRAFT SSDA	GC	LW	30.11.20
P1	ISSUE FOR DRAFT SSDA	GC	LW	30.10.20

Rev	Description	Eng	Draft	Date	Rev	Description	Eng	Draft	Date	Rev	Description	Eng	Draft	Date
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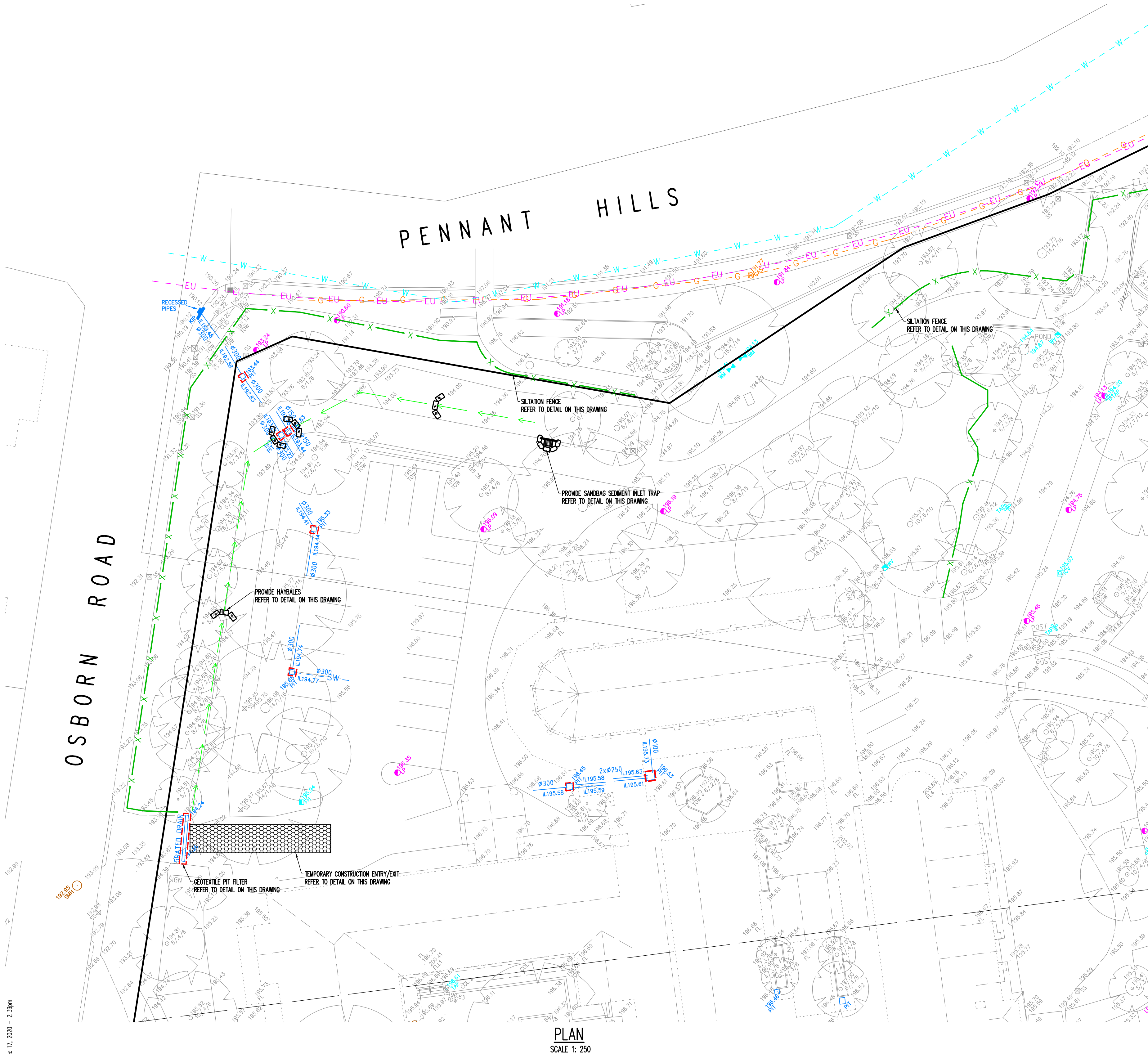
Project
LORETO NORMANHURST
THROUGH SITE LINK AND PA1
CARPARK

Sheet Subject
EROSION & SEDIMENT
CONTROL PLAN SHEET 1
AND DETAILS

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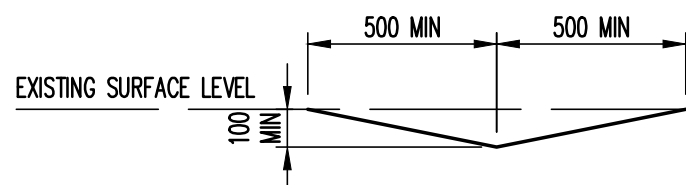
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Job No 201435	Drawing No C305	Revision P3

Plot File Created: Dec 17, 2020 - 2:39pm



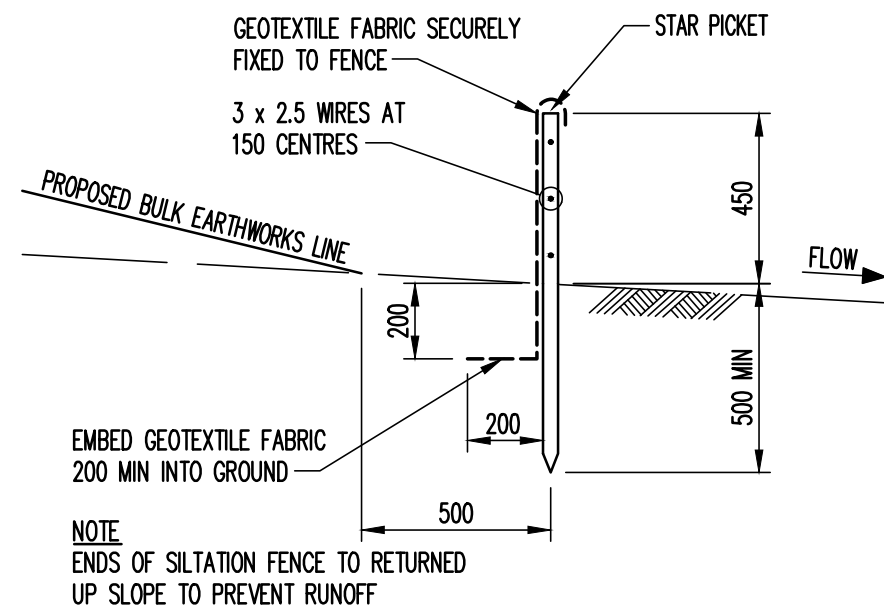
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SCALE 1: 250

TYPICAL SECTION THROUGH CATCH DRAIN



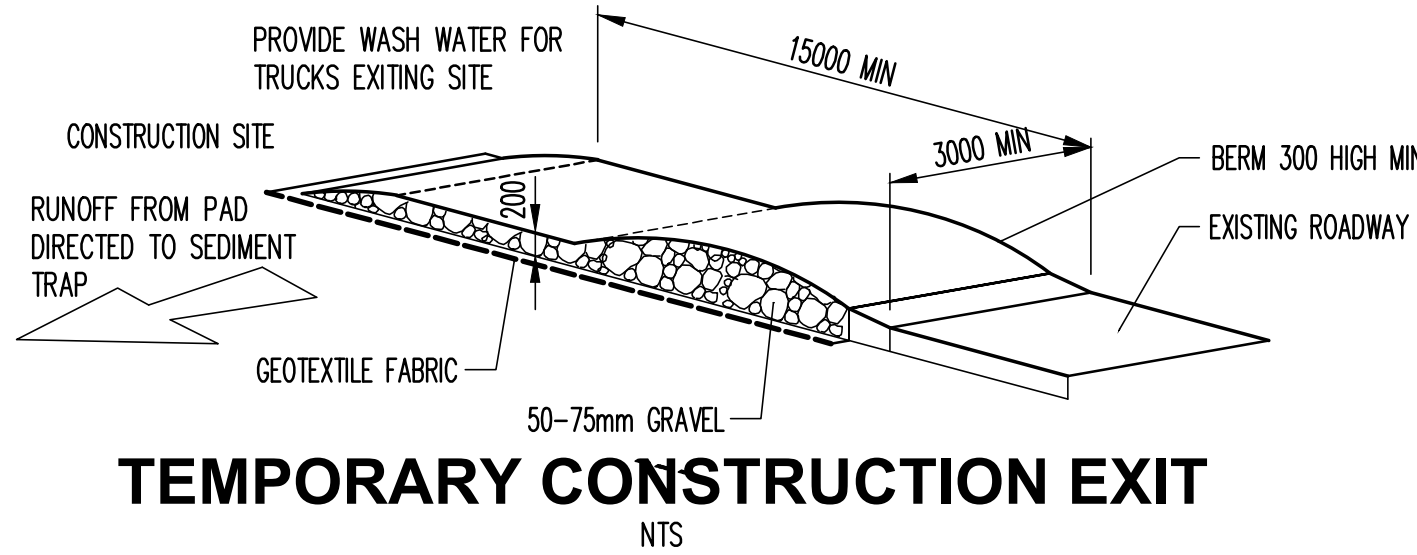
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SILTATION FENCE DETAIL



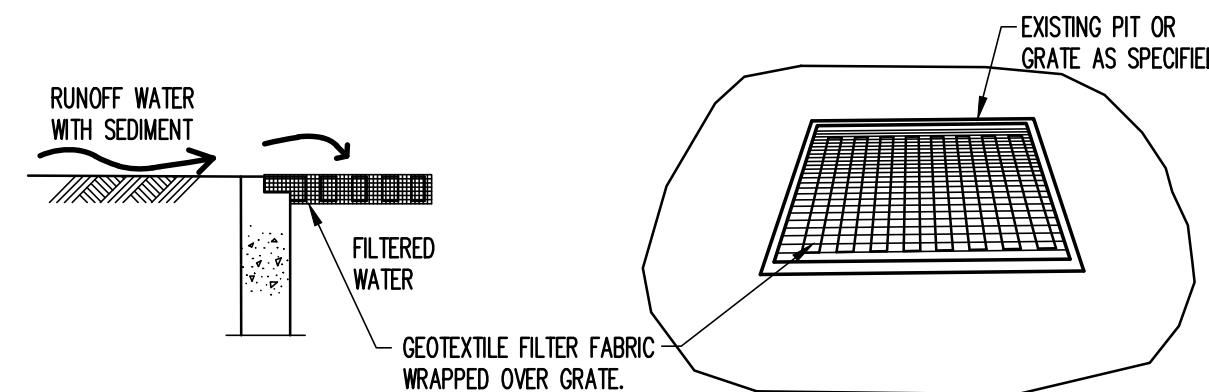
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TEMPORARY CONSTRUCTION EXIT



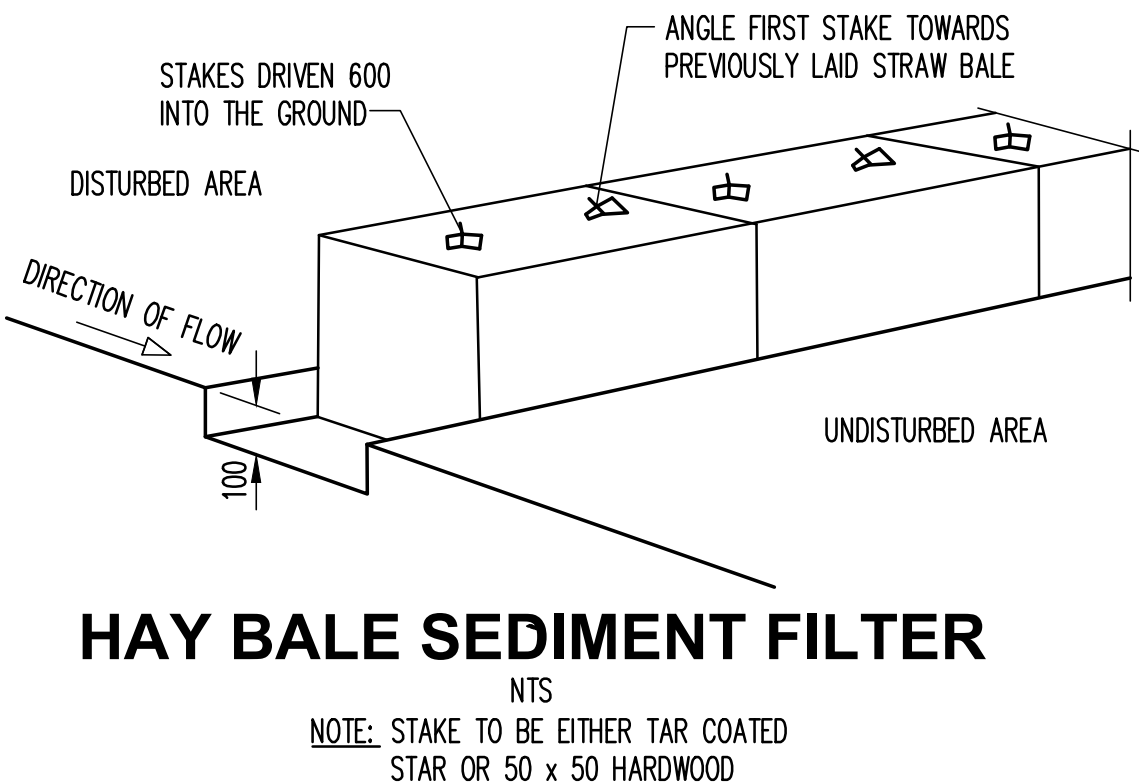
NTS

GEOTEXTILE PIT FILTER



NTS

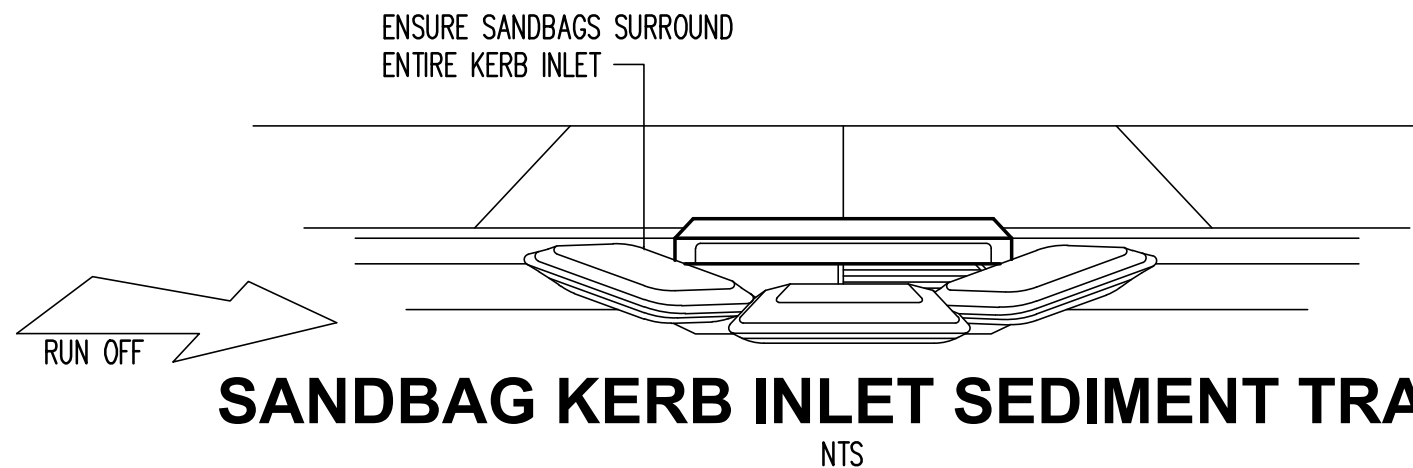
HAY BALE SEDIMENT FILTER



NTS

NOTE: STAKE TO BE EITHER TAR COATED
STAR OR 50 x 50 HARDWOOD

SANDBAG KERB INLET SEDIMENT TRAP



NTS

EROSION AND SEDIMENT CONTROL NOTES

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

Sequence Of Works

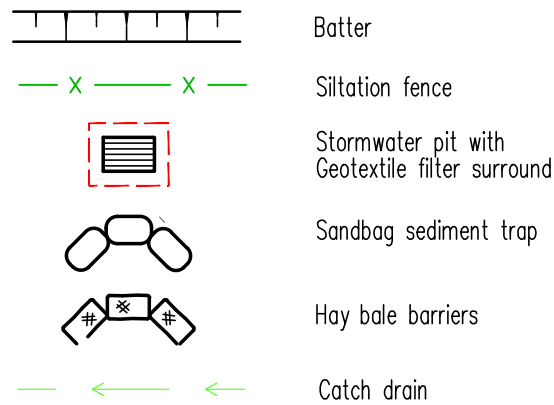
- Prior to commencement of excavation the following soil management devices must be installed.
- Construct silt fences below the site and across all potential runoff sites.
- Construct temporary construction entry/exit and divert runoff to suitable control systems.
- Construct measures to divert upstream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

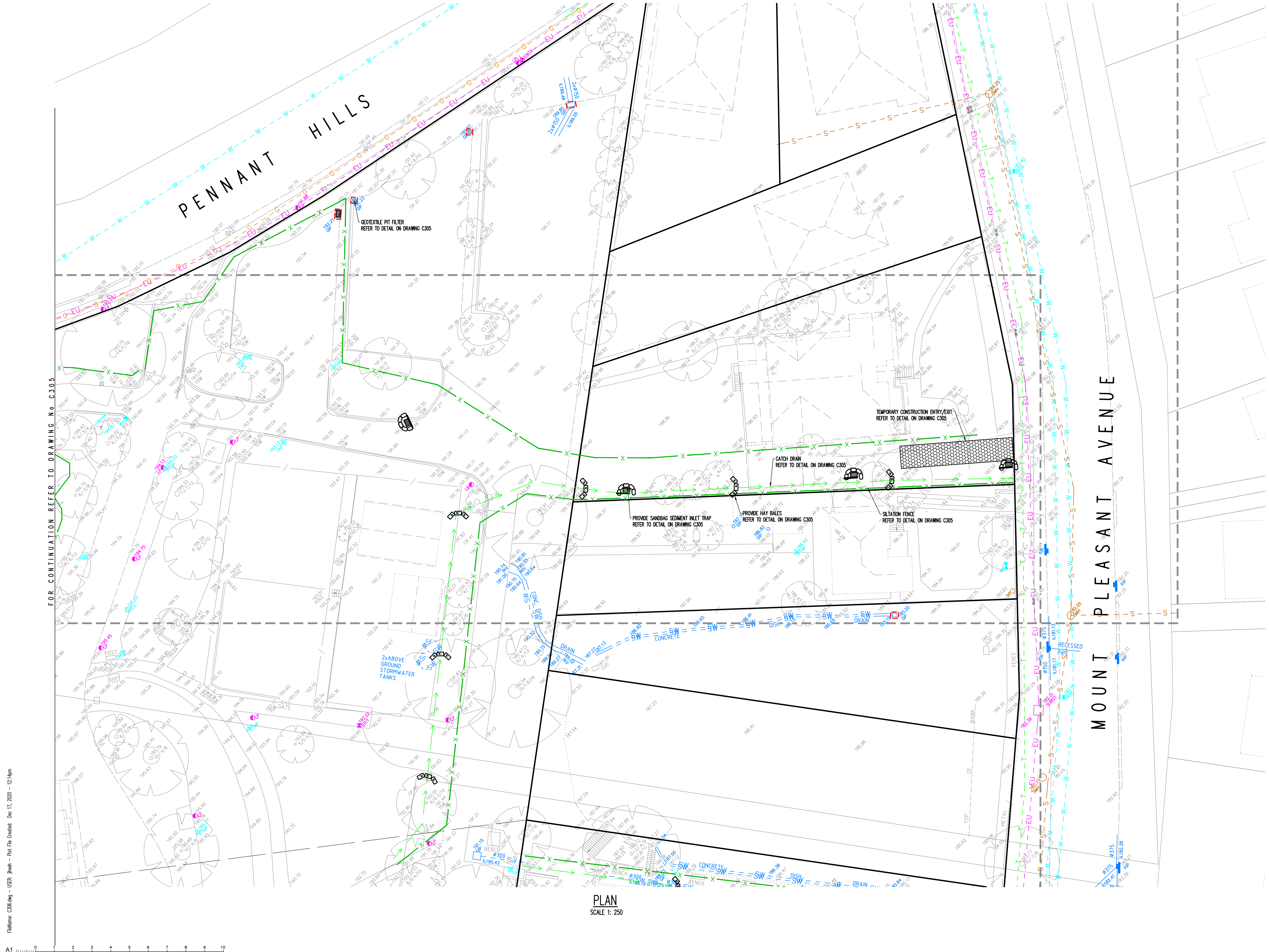
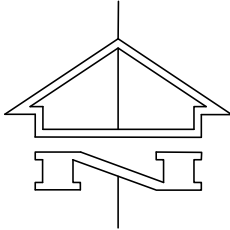
WATER QUALITY TESTING REQUIREMENTS

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

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

EROSION AND SEDIMENT CONTROL LEGEND





EROSION AND SEDIMENT CONTROL LEGEND

- Batter
- Siltation fence
- Stormwater pit with Geotextile filter surround
- Sandbag sediment trap
- Hay bale barriers
- Catch drain

0 2.5 5 7.5 10 12.5 15 17.5 20m

1:250 A1 1:500 A3

Rev	Description	Eng	Draft	Date	Rev	Description	Eng	Draft	Date	Rev	Description	Eng	Draft	Date
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P2	ISSUE FOR DRAFT SSDA	GC	LW	30.11.20										
P1	ISSUE FOR DRAFT SSDA	GC	LW	30.10.20										

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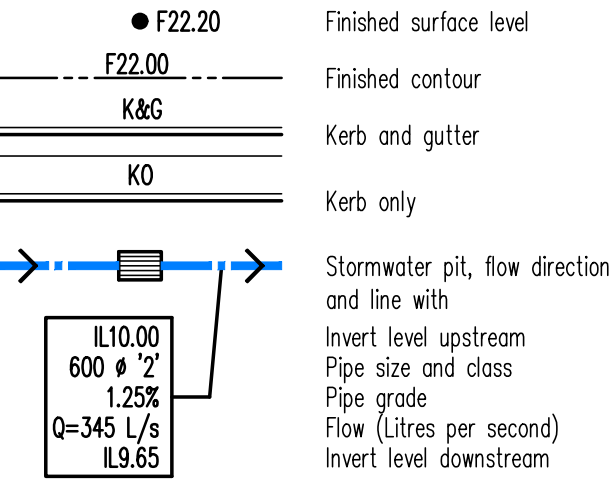
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Project
LORETO NORMANHURST
THROUGH SITE LINK AND PA1
CARPARK

Sheet Subject
EROSION & SEDIMENT
CONTROL PLAN SHEET 2

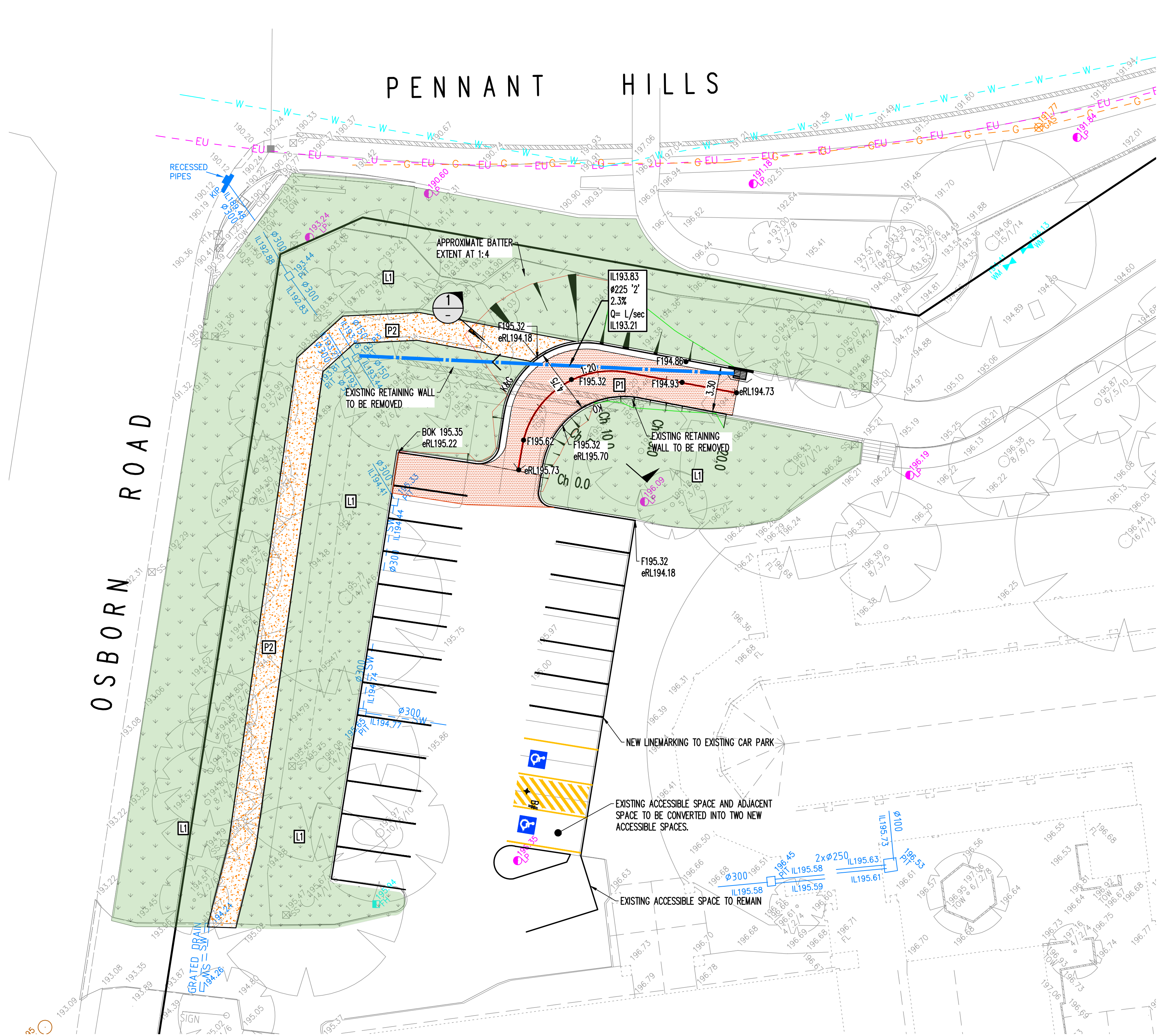
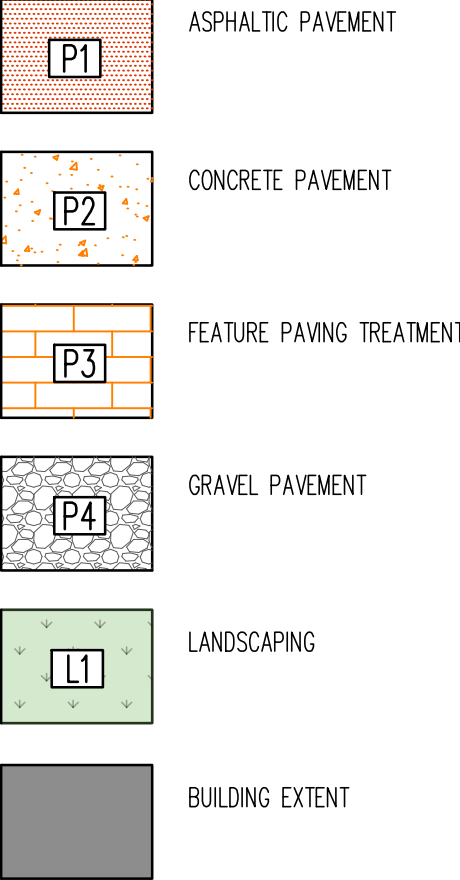
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201435
Drawing No
C306
Revision
P3
Plot File Created: Dec 17, 2020 - 12:14pm

SITeworks LEGEND

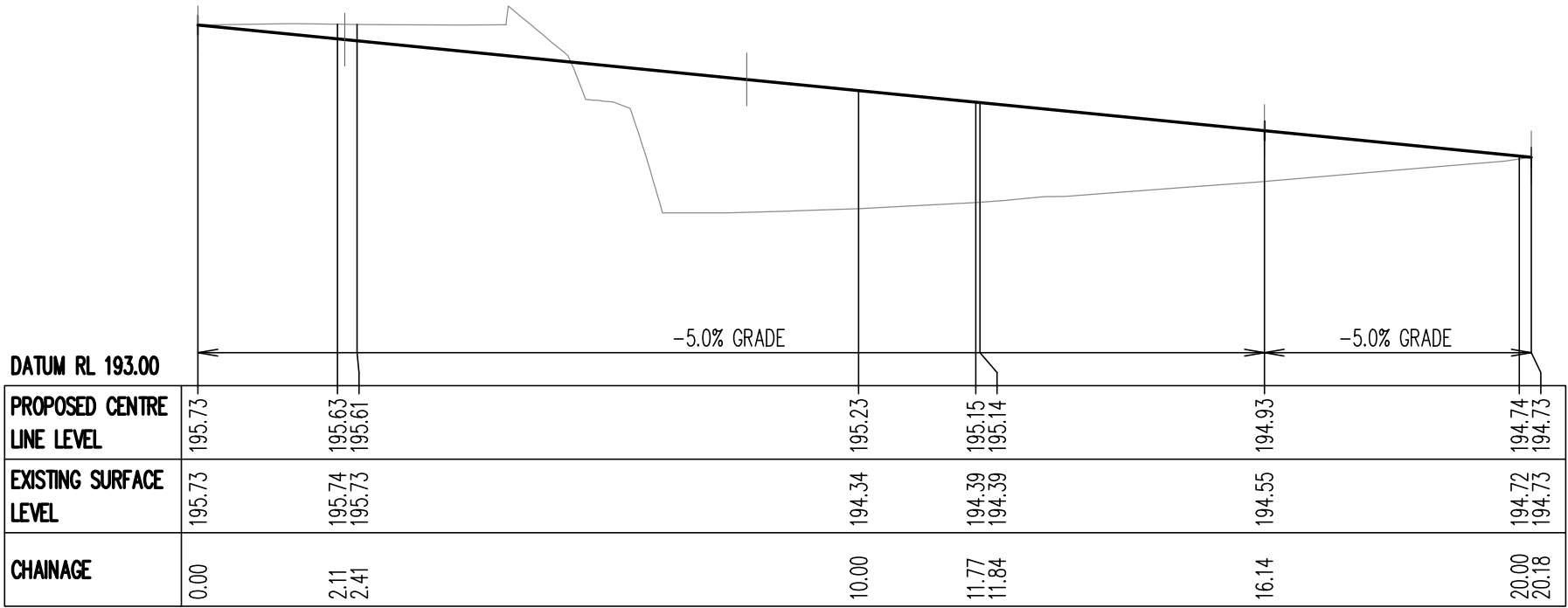


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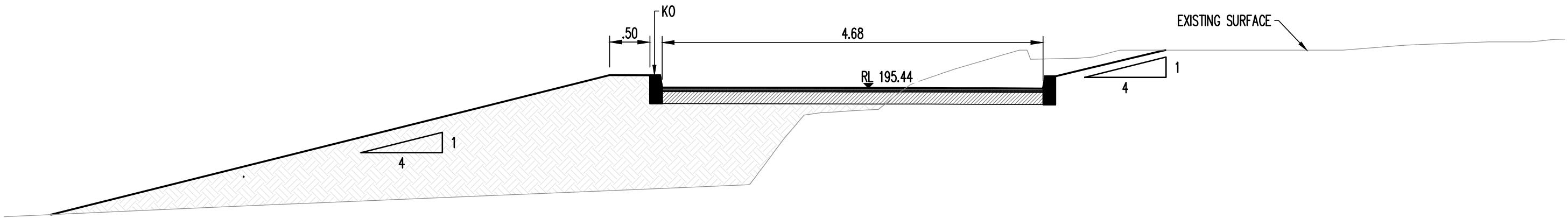
- NOTES
1. Asphaltic concrete shall conform to AS2150 and the specification
2. Pavement based on geotechnical report by JK Geotechnics dated 24 October 2018 (31772Lrpl)



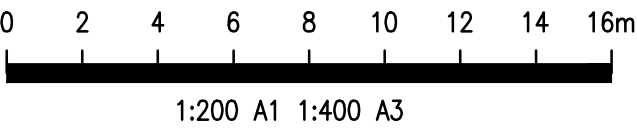
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SCALE 1: 200



A1 LONGITUDINAL SECTION
SCALE 1:100 HORIZONTAL
1:50 VERTICAL

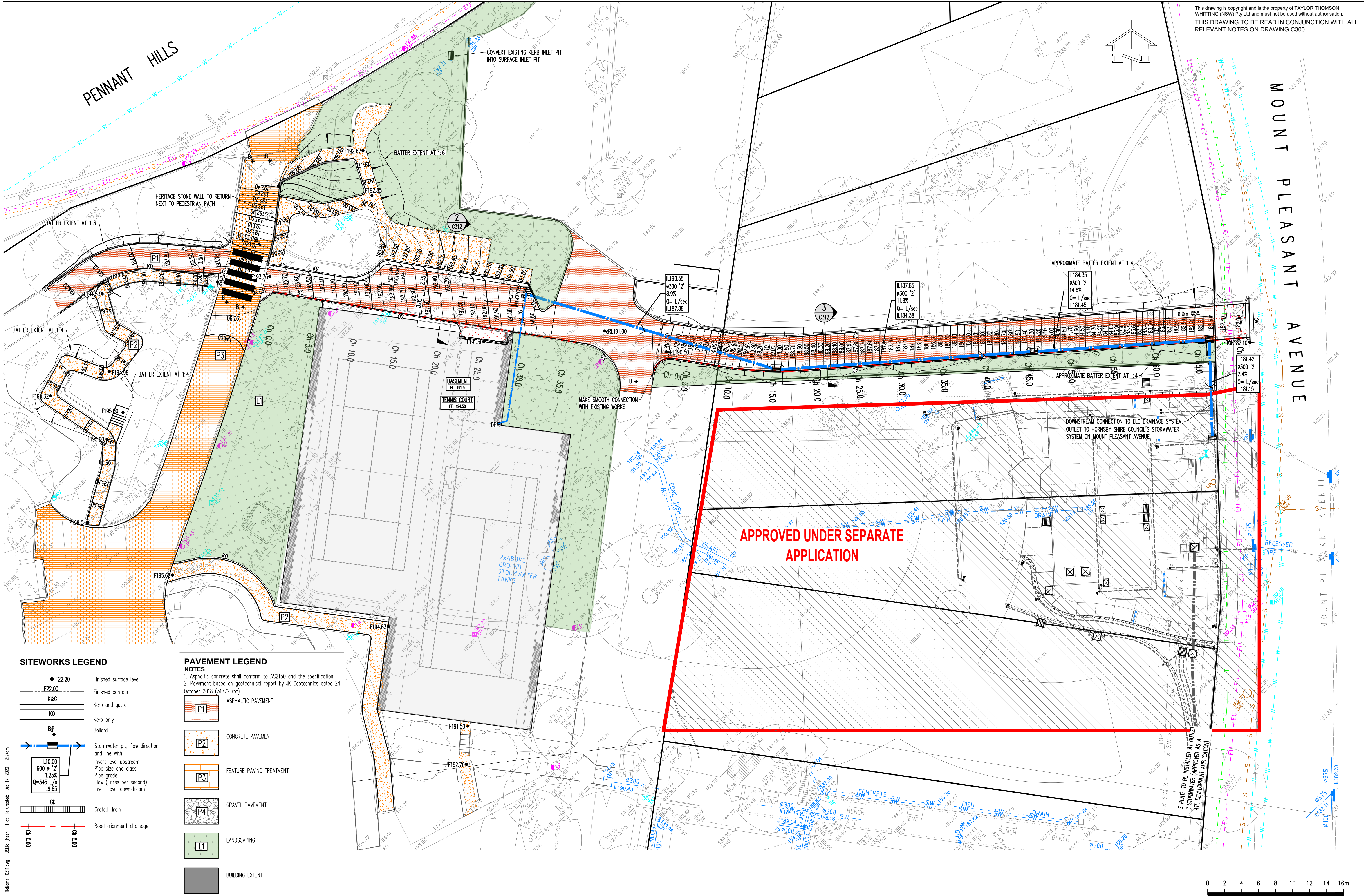


SECTION
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Rev	Description	Eng	Draft	Date

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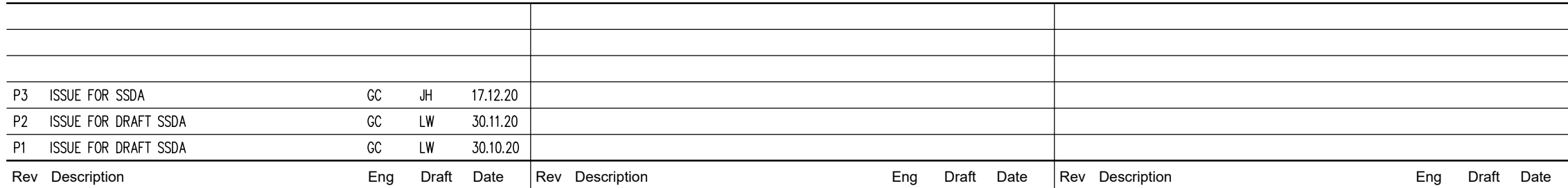
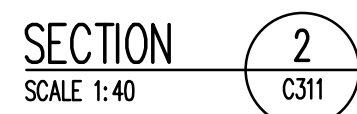
Project
LORETO NORMANHURST THROUGH SITE LINK AND PA1 CARPARK

Sheet Subject
SITWORKS & PAVEMENT PLAN SHEET 2

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Drawn: **JH**
Drawing No: **C311**

Authorised: **SB**
Revision: **P5**



Engineer

TTW **Structural
Civil
Traffic
Façade**

612 9439 7288 | 48 Chandos Street St Leonards NSW 2065

Scale : A1	Drawn	Authorised
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Job No	Drawing No	Revision
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Job No	Drawing No	Revision
201435	C330	P4
Plot File Created: Dec 17, 2020 - 2:26pm		

Appendix D

P3A Car Park Civil Engineering Drawings

LORETO NORMANHURST P3 OSBORN CARPARK

GENERAL NOTES

- Contractor must verify all dimensions and existing levels on site prior to commencement of works. Any discrepancies to be reported to the Engineer
- Strip all topsoil from the construction area. All stripped topsoil shall be disposed of off-site unless directed otherwise.
- Make smooth connection with all existing works.
- Compact subgrade under buildings and pavements to minimum 98% standard maximum dry density in accordance with AS 1289 5.1.1. Compaction under buildings to extend 2m minimum beyond building footprint.
- All work on public property, property which is to become public property, or any work which is to come under the control of the Statutory Authority, the Contractor is to ensure that the drawings used for construction have been approved by all relevant authorities prior to commencement site.
- All work on public property, property which is to become public property, or any work which is to come under the control of the Statutory Authority is to be carried out in accordance with the requirements of the relevant Authority. The Contractor shall obtain these requirements from the Authority. Where the requirements of the Authority are different to the drawings and specifications, the requirements of the Authority shall be applicable.
- For all temporary batters refer to geotechnical recommendations.

REFERENCE DRAWINGS

- These drawings have been based from, and to be read in conjunction with the following Consultants drawings. Any conflict to the drawings must be notified immediately to the Engineer.

Consultant	Dwg Title	Dwg No	Rev	Date
AJ+C	SITE PLAN	DA1000	1	20.11.20
OCULUS	GROUND FLOOR PLAN	L200	1	25.11.20

SURVEY AND SERVICES INFORMATION SURVEY

Origin of levels : SSM46458, RL189.789
Datum of levels : A.H.D. AUSTRALIAN HEIGHT DATUM
Coordinate system : MGA
Survey prepared by : LTS LOCKLEY
Setout Points : CONTACT THE SURVEYOR

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

UNDERGROUND SERVICES - WARNING

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

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

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

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

The contractor is to get approval from the relevant state survey department, to remove/adjust any survey mark. This includes but is not limited to: State Survey Marks (SSM), Permanent Marks (PM), cadastral reference marks or any other survey mark which is to be removed or adjusted in any way.

Taylor Thomson Whitting plans do not indicate the presence of any survey mark. The contractor is to undertake their own search.

BOUNDARY AND EASEMENT LOCATION NOTE

The property boundary and easement locations shown on Taylor Thomson Whitting drawing's have been based from information received from : **No boundary information received.**

Refer architect for boundary information and locations

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

SAFETY IN DESIGN

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

EXISTING SERVICES

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

EXISTING STRUCTURES

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

EXISTING TREES

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

GROUNDWATER

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

EXCAVATIONS

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

GROUND CONDITIONS

Contractor to be aware of the site geotechnical conditions. Refer to geotechnical report by JK Geotechnics ref:31772L2rpt for details.

HAZARDOUS MATERIALS

Existing asbestos products & contaminated material may be present on site. Contractor to ensure all hazardous materials are identified prior to commencing works. Safe working practices as per relevant authority to be adopted and appropriate PPE to be used when handling all hazardous materials. Refer to geotechnical/environmental report by JK Geotechnics ref:31772L2rpt for details.

CONFINED SPACES

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

MANUAL HANDLING

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

WATER POLLUTION

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

SITE ACCESS/EGRESS

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

VEHICLE MOVEMENT

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

SITEWORKS NOTES

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

STORMWATER DRAINAGE NOTES

1 Stormwater Design Criteria :

- Average exceedance probability –
1% AEP for roof drainage to first external pit
5% AEP for paved and landscaped areas
- Rainfall intensities –
Time of concentration: 5 minutes
1% AEP = mm/hr
5% AEP = mm/hr
- Rainfall losses –
Impervious areas: IL = 1.5 mm , CL = 0 mm/hr
Pervious areas: IL = mm , CL = mm/hr

- Pipes 300 dia and larger to be reinforced concrete Class *2* approved spigot and socket with rubber ring joints U.N.O.
- Pipes up to 300 dia may be sewer grade uPVC with solvent welded joints, subject to approval by the engineer
- Equivalent strength VCP or FRP pipes may be used subject to approval by Engineer.
- Enlargers, connections and junctions to be manufactured fittings where pipes are less than 300 dia.
- Where subsoil drains pass under floor slabs and vehicular pavements, unslotted uPVC sewer grade pipe is to be used. Grates and covers shall conform with AS 5396–2006, and AS 1428.1 for access requirements.
- Pipes are to be installed in accordance with AS 3725. All bedding to be type H2 U.N.O.
- Care is to be taken with invert levels of stormwater lines. Grades shown are not to be reduced without approval.
- All stormwater pipes to be 150 dia at 1.0% min fall U.N.O.
- Subsoil drains to be slotted flexible uPVC U.N.O.
- Adapt invert levels for pipe installation (grades shown are only nominal).

RETAINING WALLS

- Drainage shall be provided as shown on the drainage drawings.
- Backfilling shall be carried out after grout or concrete has reached a minimum strength of 0.85 f_c. Backfilling shall be approved granular material compacted in layers not exceeding 200mm to 95% Standard compaction unless noted otherwise.
- Provide waterproofing to back of walls as specified or noted.
- Where retaining walls rely on connecting structural elements for stability, do not backfill against the wall unless it is adequately propped or the elements have been constructed and have sufficient strength to withstand the loads.
- For all temporary batters obtain geotechnical engineers recommendations.

CONCRETE FINISHING NOTES

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

SIGNS AND LINE MARKING NOTES

- Pavement marking and sign posting on public roads shall be in accordance with the requirements of the relevant Road Authority. The contractor shall obtain these requirements from the Road Authority.

- Pavement marking and sign posting to be in accordance with R.T.A. "Interim Guide to Signs and Markings".

- Contractor is to provide guide posts, spaced in accordance with AS1742.2. They are to be located near all head walls and pipe outlets.

- Raised pavement markers to be in accordance with AS1742.2
- Where existing pavement marking conflicts with proposed, it is to be removed.

- Lane widths do not include width of gutter.
- Line marking plan does not define boundaries.

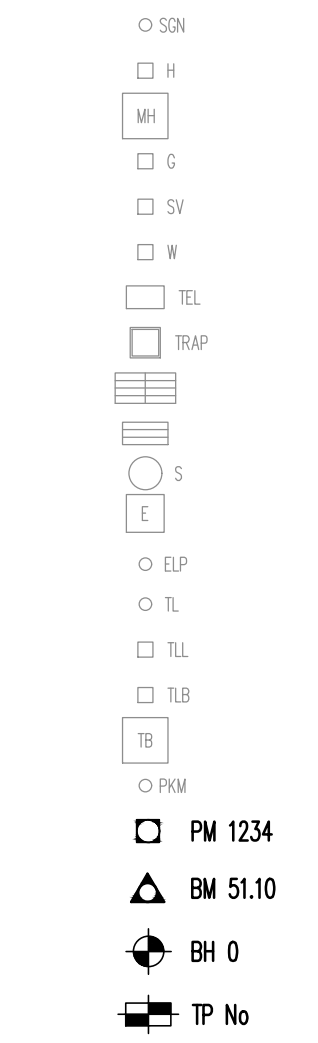
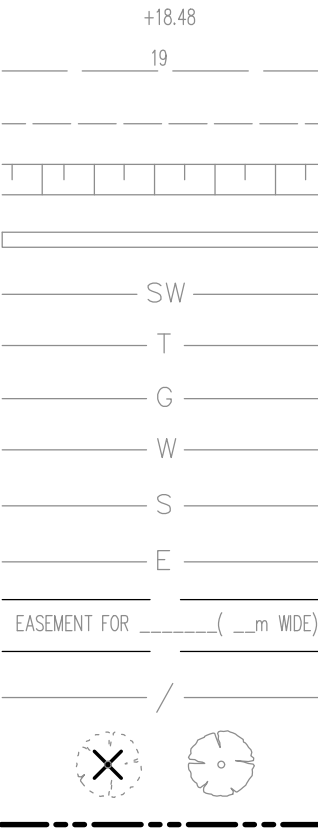
- Erect temporary sign "changed traffic conditions ahead" 120m ahead of new work in both directions.

- Establish the location of existing utility services and locate new signs clear of these installations.

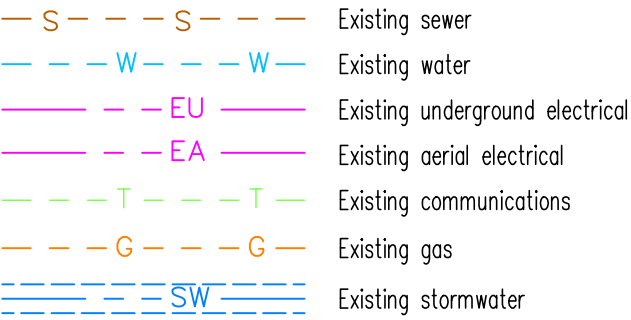
- The sloped face of the SF median kerbs which adjoin through lanes, are to be painted white in lieu of an E3 edge line. The reflective pavement markers normally associated with an E3 edge line are to be located on the pavement adjacent to the SF kerb.

- Bicycle pavement markings and sign posting to be in accordance with Austroads Standards.
- The design of major directional sign posting to be prepared and assessed by the R.T.A.

SURVEY LEGEND



EXISTING SERVICES LEGEND



A1 0 1 2 3 4 5 6 7 8 9 10

Rev	Description	Eng	Draft	Date	Rev	Description	Eng	Draft	Date	Rev	Description	Eng	Draft	Date
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Project	LORETO NORMANHURST P3 OSBORN CARPARK
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Sheet Subject	NOTES AND LEGENDS SHEET
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Job No 201435	Drawing No C400	Revision P3
Plot File Created: Dec 17, 2020 - 3:19pm		