

24050-03-001

PROPOSED HOUSING DEVELOPMENT AT
COLLINS AVENUE, DUBLIN

Stage 1 Quality Audit

(Incorporating a DMURS Street Design Audit, and Audits
of Accessibility, Cycling, Walking and Road Safety)

for

Malone O'Regan

May 2024



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DOCUMENT CONTROL SHEET

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1. INTRODUCTION

- 1.1 Roadplan Consulting has been commissioned by Malone O'Regan to carry out a Quality Audit of a proposed development at Collins Avenue, Dublin. This scheme is a part of the NDFA social housing schemes.
- 1.2 The proposed development comprises a large-scale residential development including dedicated car parking spaces, with a singular entrance onto Collins Avenue.
- 1.3 Figure 1.1 below is a layout drawing of the development. Collins Avenue has a speed limit of 50 km/h.



Figure 1.1 – Site Location Map and Site Layout for the development

2. QUALITY AUDIT

- 2.1 Quality Audit is a defined process, independent of, but involving, the design team that, through planning, design, construction and management stages of a project provides a check that high quality places are delivered and maintained by all relevant parties, for the benefit of all end users. Quality Audit is a process, applied to urban roads, traffic management or development schemes, which systematically reviews projects using a series of discrete but linked evaluations and ensures that the broad objectives of place, functionality, maintenance and safety are achieved.
- 2.2 Quality Audit was introduced in the publication Design Manual for Urban Roads and Streets following concerns that in the design of new streets provisions made for motor vehicles frequently led to a poorly designed public realm. In an urban area there is a high level of competing demand from different classes of road users. A well-balanced street will have minimal visual clutter and obstacles; it will use durable materials and most importantly, will encourage a degree of negotiation between road users as they make their way through it.
- 2.3 Quality Audit involves various assessments of the impacts of a street scheme in terms of road safety, visual quality and the use of streets by the community. Access for disabled people, pedestrians, cyclists and drivers of motor vehicles is considered.
- 2.4 In the context of a Quality Audit, road safety assessment is considered to be an appropriate method of examining road safety issues as it incorporates both the hazard identification techniques used in road safety audit and formal risk assessment techniques. This allows the opportunity at an early stage for road safety issues to be considered in a more dynamic way within the design process, and to ensure that safety issues are considered as part of the design rather than after design work is completed.
- 2.5 The Quality Audit Team reports findings with suggestions for future action. It should be noted that, in a Quality Audit, it is not the intention that suggestions would be binding on the design team; they are offered for detailed consideration in the design process.
- 2.6 DMURS states that Quality Audits should consist of the following parts:
- DMURS Street Design Audit
 - Individual Design Audits
 - Quality Audit Report

In the case of this report the individual design audits comprise an RSA, an Accessibility audit, a Walking audit and a Cycle audit.

3. METHODOLOGY

3.1 The Audit Team was as follows:

- George Frisby, Chartered Engineer, MIEI
- Glenn Hingerty, Chartered Engineer MIEI

3.2 Road safety, non-motorised users, visual quality, access for disabled and functionality were considered in the Quality Audit. This exercise focused on issues such as:

- the design rationale as it related to vehicle, cycle and pedestrian movements;
- pedestrian desire lines both to and through the site;
- access requirements for all modes of transport;
- access requirements for disabled people and other vulnerable users;
- any road safety concerns associated with the scheme;
- how the scheme is experienced by those entering it and moving around within the street, including how this affects road user behaviour; and
- any other issues considered relevant to each constituent element of the Quality Audit process.

3.3 The site visit for this quality audit was carried out on 18th March 2024.

The documents provided for the audit were:

Drawing Number	Rev	Drawing Title
SHB4-CAD-DR-MOR-CS-P3-101	0	Proposed Site Layout
SHB4-CAD-DR-MOR-CS-P3-101	1	Site Layout
SHB4-CAD-DR-MOR-CS-P3-102	0	Existing Site Access Layout
SHB4-CAD-DR-MOR-CS-P3-102	1	Proposed Site Access Layout
SHB4-CAD-DR-MOR-CS-P3-103	0	Site Access Layout
SHB4-CAD-DR-MOR-CS-P3-103	1	Site Access Layout
SHB4-CAD-DR-MOR-CS-P3-111	0	Swept Path Analysis Refuse Truck
SHB4-CAD-DR-MOR-CS-P3-111	1.1	Swept Path Analysis Refuse Truck
SHB4-CAD-DR-MOR-CS-P3-112	0	Swept Path Analysis Aerial Platform Special Appliance
SHB4-CAD-DR-MOR-CS-P3-112	1.1	Swept Path Analysis Aerial Platform Special Appliance
SHB4-CAD-DR-MOR-CS-P3-113	0	Proposed Sight Lines
SHB4-CAD-DR-MOR-CS-P3-113	1	Proposed Sight Lines
SHB4-CAD-DR-MOR-CS-P3-130	1	Foul Sewer & Surface Water Drainage Layout
SHB4-CAD-DR-MOR-CS-P3-137	1	Site Development Details – Sheet 1 – Drainage Details
SHB4-CAD-DR-MOR-CS-P3-138	1	Site Development Details – Sheet 2 – Drainage Details
SHB4-CAD-DR-MOR-CS-P3-140	1	Watermain Layout
SHB4-CAD-DR-MOR-CS-P3-150	1	Suds Layout
SHB4-CAD-DR-MOR-CS-P3-151	1	Site Development Details – Suds Drainage Details
SHB4-CAD-DR-MOR-CS-P3-152	1	Attenuation Tank Details
SHB5-CAD-DR-MAL-L-P1-0001		Landscape Plan
SHB5-CAD-SMK-ZZ-SI-DR-E-6000		Development At Collins Avenue, Co. Dublin Illuminance Plot

Report: Operational Waste & Recycling Management Plan At Collins Avenue Whitehall Dublin 9

Copies of these audited drawings & report are contained in Appendix A.

Details of drainage or road lighting are not provided. It is assumed that adequate layouts will be provided for each.

In accordance with DMURS Advice Note No. 4 May 2019 (contained on <https://www.dmurs.ie/supplementary-material>) a Quality Audit should always contain a DMURS Street Design Audit and Other Design Audits (as required). Section 4 of this report contains the Street Design Audit and Section 5 contains the Other Design Audits (Road Safety, Walking, Cycling, Accessibility). The Street Design Audit is in the format provided as a template on the DMURS website.

STREET DESIGN AUDIT

CONNECTIVITY			
Key Issues	Key DMURS Reference	Audit Suggestion	Design Team Response
Strategic routes/major desire lines been identified and are clearly incorporated into the design.	3.1 – Integrated Street Network 3.2.1 – Movement Function 3.3.1 – Street layouts 3.3.4 - Wayfinding	3.2.1 – There is only one entrance to the development, at the Collins Ave vehicular entrance. Pedestrian / cyclist routes are possible to connect the site to Shanowen Square / Hall to the Northwest, Milners's square to the Northeast and Chesterfield Close (green area) to the east to improve overall pedestrian / cyclist permeability.	Provision for future pedestrian / cycle link provided to Shanowen Square / Hall. Link to northeast / east considered and agreed with DCC that it would not be feasible to provide.
Multiple points of access are provided to the site/place, in particular for sustainable modes.	3.3.1 – Street Layouts 3.3.3 – Retrofitting ¹	3.2.1 – There is only one entrance to the development, at the Collins Ave vehicular entrance. Pedestrian / cyclist routes are possible to connect the site to Shanowen Square / Hall to the Northwest, Milners's square to the Northeast and Chesterfield Close (green area) to the east to improve overall pedestrian / cyclist permeability.	Provision for future pedestrian / cycle link provided to Shanowen Square / Hall. Link to northeast / east considered and agreed with DCC that it would not be feasible to provide.
Accessibility throughout the site is maximised for pedestrians and cyclists, ensuring route choice.	3.3.1 – Street Layouts 3.3.2 – Block Sizes 3.4.1 – Vehicle Permeability	No Comment	
Through movements by private vehicles on local streets are discouraged by an	3.2.1 – Movement Function 3.2.2 – Place Context 3.4.1 – Vehicle Permeability	No Comment	

¹ When connecting with existing communities a detailed analysis and extensive community consultation should be carried out to identify the optimal location for connections (refer also to the NTA Permeability in Existing Urban Areas: Best Practice Guide).

CONNECTIVITY			
Key Issues	Key DMURS Reference	Audit Suggestion	Design Team Response
appropriate level of traffic calming measures.			

SELF-REGULATING STREET ENVIRONMENT			
Key Issues	Key DMURS Reference	Audit Suggestion	Design Team Response
A suitable range of design speeds have been applied with regard to context and function.	3.2.1 – Movement Function 3.2.2 – Place Context 4.1.1 – A Balanced Approach to Speed ²	No Comment	
The street environment will facilitate the creation of a traffic calmed environment via the use of 'softer' or passive measures. ³	4.2.1 – Building Height and Street Width 4.2.2 – Street Trees 4.2.3 – Active Street Edges 4.2.4 – Signage and Line Marking 4.2.7 – Planting 4.4.2 – Carriageway Surfaces 4.4.9 – On-Street Parking Advice Note 1 – Transitions and Gateways	4.2.2 – Landscaped areas are proposed in a number of areas within the proposed development. Street Trees appear to be proposed along most streets. Planting creates a sense of place and unique character to each streetscape. Care should be taken to ensure the street trees do not block visibility splays at the proposed junctions and pedestrian crossings. Their location should not create risk for mobility impaired users with regard to falling leaves or surface rooting trees creating tripping hazards.	Tree locations amended to avoid obstructing driver sightlines. Trees specified as clear stem up to a height of 2m.
A suitable range of design standards/ measures have been	4.4.1 – Carriageway Widths 4.4.4 – Forward Visibility 4.4.5 – Visibility Splays	4.4.5 – Visibility Splays at all junctions should be kept clear of all obstructions including vegetation/landscaping. This	Layout amended in response to audit suggestion.

² Refer also to the National Speed Limit Guidelines

³ In retrofit situations a detailed analysis should be carried out to establish what measures exist, what their likely effectiveness is and level of intervention required to achieve the designed design speed.

SELF-REGULATING STREET ENVIRONMENT

Key Issues	Key DMURS Reference	Audit Suggestion	Design Team Response
applied that are consistent with the applied design speeds.	4.4.6 – Alignment and curvature 4.4.7 – Horizontal and Vertical Deflections Advice Note 1 – Transitions and Gateways	includes future maintenance of tree growth in proximity to junction visibility splays.	

PEDESTRIAN AND CYCLING ENVIRONMENT

Key Issues	Key DMURS Reference	Audit Suggestion	Design Team Response
The built environment contributes to the creation of a safe and comfortable pedestrian environment.	4.2.1 – Building Height and Street Width 4.2.3 – Active Street Edges 4.2.5 – Street Furniture 4.4.9 – On-Street parking	No Comment	
Footpaths are continuous and wide enough to cater for the anticipated number of pedestrian movements.	3.2.1 – Movement Function 3.2.2 – Place Context 4.2.5 – Street Furniture 4.3.1 - Footways, Verges and Strips 4.3.2 - Pedestrian Crossings	No Comment	
Cycling facilities will cater for cyclists of all ages and abilities.	3.2.1 – Movement Function 3.2.2 – Place Context 4.3.5 – Cycle facilities	3.2.1 – Cyclists will be expected to mix amongst general vehicular traffic to access the proposed development. There is no proposed tie-in provision for future cycle schemes in the GDA Cycle network strategy.	Provision for future pedestrian / cycle link provided to Shanowen Square / Hall. Link to northeast / east considered and agreed with DCC that it would not be feasible to provide.
The particular needs of visually and mobility impaired users been identified and incorporated in the design.	4.2.5 - Street Furniture 4.3.1 - Footways, Verges and Strips 4.2.5 - Street Furniture 4.3.2 - Pedestrian Crossings 4.3.4 - Pedestrianised and Shared Surfaces	4.3.1 – Footpaths throughout the development may be used by cycles as there is no designated cycleway network.	On-street provision for cyclists considered appropriate given low design speeds.

VISUAL QUALITY			
Key Issues	Key DMURS Reference	Audit Suggestion	Design Team Response
The landscape plan responds to the street hierarchy and the value of the place.	3.2.1 – Movement Function 3.2.2 – Place Context 4.2.2 – Street Trees 4.2.7 – Planting Advice Note 1 – Transitions and Gateways	4.2.2 – Landscaped areas are proposed in a number of areas within the proposed development. Street Trees appear to be proposed along most streets. Planting creates a sense of place and unique character to each streetscape. Care should be taken to ensure the street trees do not block visibility splays at the proposed junctions and pedestrian crossings. Their location should not create risk for mobility impaired users with regard to falling leaves or surface rooting trees creating tripping hazards.	Tree locations amended to avoid obstructing driver sightlines. Trees specified as clear stem up to a height of 2m.
Street furniture is orderly placed.	3.2.1 – Movement Function 3.2.2 – Place Context 4.2.5 - Street Furniture 4.3.1 - Footways, Verges and Strips	No comment	
The use of signage and line marking has been minimised.	3.2.1 – Movement Function. 3.2.2 – Place Context. 4.2.4 - Signage and Line Marking.	No comment	
Materials and finishes used throughout the scheme have been selected from a limited palette and respond to the value of the place?	3.2.1 – Movement Function 3.2.2 – Place Context 4.2.6 – Materials and Finishes 4.2.8 – Historic Contexts 4.3.2 – Pedestrian Crossings 4.4.2 – Carriageway Surfaces Advice Note 2 – Materials and Specifications	No comment	

ADDITIONAL COMMENTS

5. ROAD SAFETY

5.1 Issue

Sightlines at the priority junction in Figure 5.4 appears to be interrupted by a tree. This may increase the likelihood of vehicle collisions due to the reduced sightlines created by this tree.

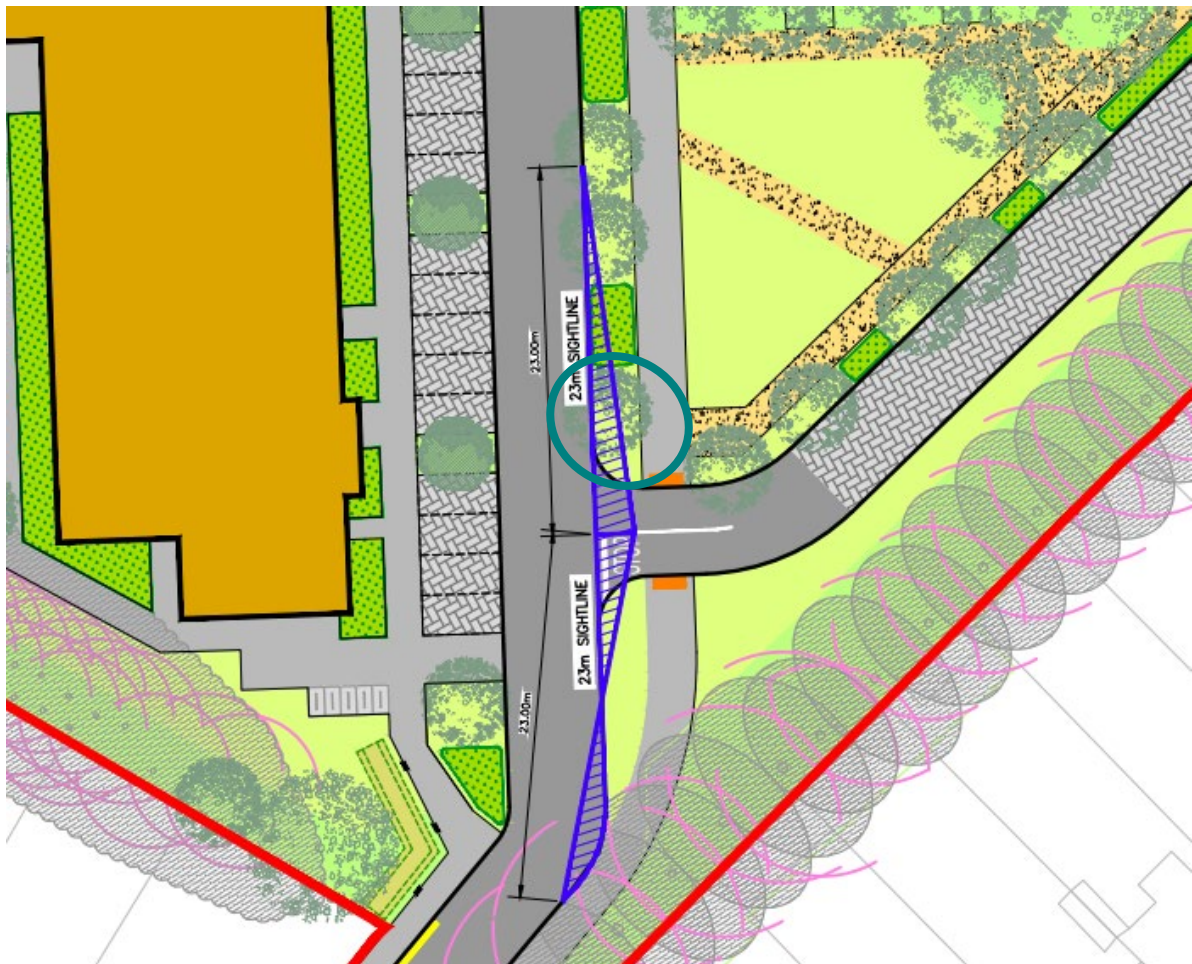


Figure 5.4 – Visibility Splay interrupted by tree

Suggestion

Ensure adequate visibility splays at all junctions from edge of carriageway. Remove trees or any other obstructions from visibility splays.

5.2 Issue

The stopping sight distance (for vehicles approaching from the south) may be obstructed by a proposed tree and parked vehicles (Figure 5.5), which may compromise visibility. This may increase the likelihood of vehicle collisions due to the reduced sightlines. Visibility of pedestrians approaching the priority crossing may also be obscured, potentially causing injuries for users.

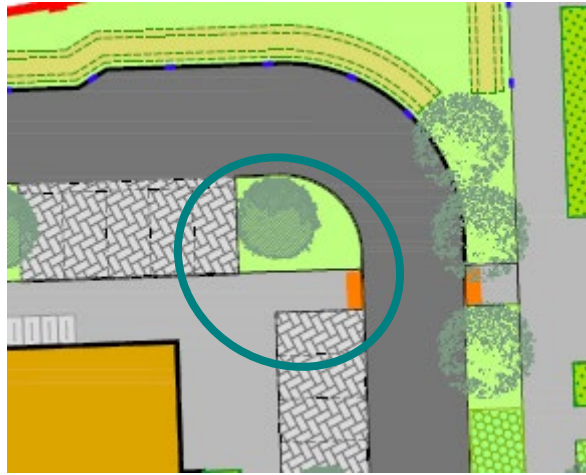


Figure 5.5 – Stopping Sight Distance compromised

Suggestion

Ensure adequate stopping sight distance along all roadways, particularly at corners.

5.3 **Issue**

The sightlines at the turnabout junction in Figure 5.6 may be compromised by the adjacent trees. This may increase the likelihood of collisions at this location, especially for drivers of vehicles turning / reversing and an associated greater risk of blind spots in these manoeuvres. It is not clear where the visibility splay should be or if it is adequate. Incomplete visibility splays can give rise to sudden braking or vehicle collisions.

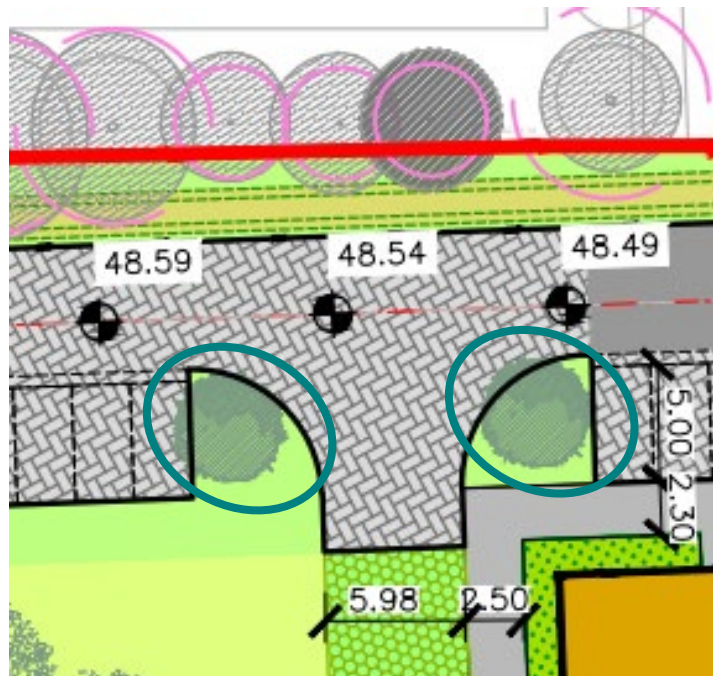


Figure 5.6 – Visibility splay at turnabout junction

Suggestion

Visibility splays should be assessed for this turning area.

5.3 **Issue**

Proposed trees on streets in the development may overhang onto the carriageway, based on drawings provided (Figure 5.10). This may increase the likelihood of vehicles swerving to avoid damage, resulting in collisions with other vehicles or sideswipes of cyclists.



Figure 5.7 – Proposed Trees overhanging onto proposed street network

Suggestion

Ensure trees do not overhang onto carriageway. Maintain trees as required. Review tree planting proposals in conjunction with swept path analyses.

5.4 **Issue**

During the site visit (on a dry day), flowing water was observed from a neighbouring property (Figure 5.15). If this source is continuous, this represents a slipping risk for all users at this location (pedestrians, cyclists, and vehicles) especially in the winter.



Figure 5.8 – Flowing Water

Suggestion

Investigate water source and remove as appropriate. Provide drainage measures.

6. WALKING

6.1 Issue

Inter-visibility between pedestrians and drivers at crossings in the proposed development may be significantly compromised by the proposed tree and parking locations. This may increase the risk of collisions and pedestrian injuries at these locations because of trees and parking including, but not limited to, those circled in Figure 6.1 and Figure 6.2.



Figure 6.1 – Proposed Trees and parking compromising intervisibility of pedestrians and motorist at crossings

Suggestion

Ensure adequate inter-visibility between pedestrians and drivers at priority crossings. Relocate trees and parking as appropriate.

6.2 Issue

A pedestrian desire line (Figure 6.3), to access parking in the northwest corner of the development, is incomplete, forcing pedestrians to walk onto the roadway, at a turnabout location, to access the last parking bays. This may increase the likelihood of pedestrians being struck by moving vehicles or pedestrians walking along the grassed areas and slipping during rainfall.

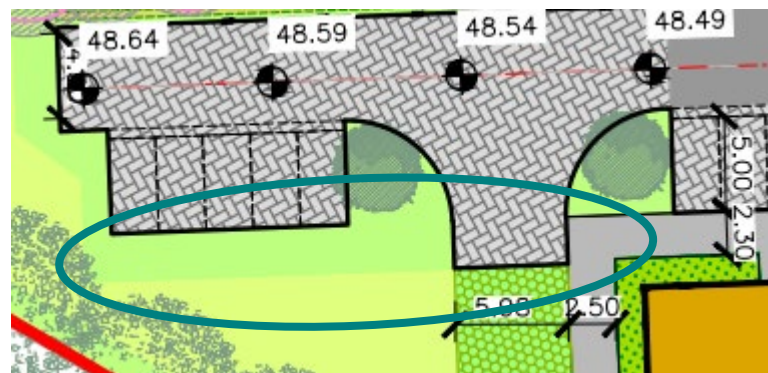


Figure 6.2 – Incomplete pedestrian desire line

Suggestion

Continue the footway at this location in a straight line towards the last parking bay. Recessed the kerb line northward at the turnabout area to keep continuity of footway.

6.3 Issue

The proposed development features many trees. It is unclear what (if any) tripping hazards, due to differentially lifting footways, may be created by these trees if surface rooting species are specified.

Suggestion

Ensure appropriate tree species specification. Consult an arborist as required. Install tree pits as appropriate.

7. CYCLING

7.1 Issue

A proposed stop-go ramped traffic calming system features a cycleway bypass (Figure 7.1). This bypass may be subjected to the build-up of leaves from proposed/nearby trees and silt etc. This may increase the likelihood of slipping/skiddy for cyclists if it is not maintained and a standard road sweeper won't fit behind the traffic island.

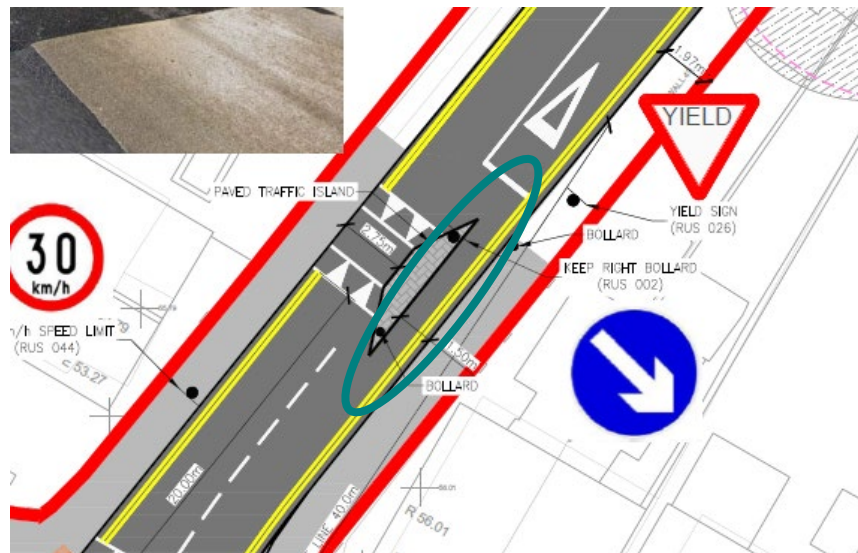


Figure 7.1 – Traffic Calming Island and Stop-Go with Cycleway bypass

Suggestion

Ensure road sweeping maintenance regimes include mini-road sweeper (or equivalent) to maintain this section of road.

7.2 Issue

While there is no proposed cycle infrastructure in the development, the local DMURS type street adopted is intended to be a low-speed environment. It is not clear however how the development will tie into the proposed 'Primary Orbital' Cycle Route (dark red in Figure 7.2) along Collina Avenue, the 'Utility Greenway' Route (green in Figure 7.2) coming from DCU opposite the development entrance, or the 'Feeder' Route (dashed pink line in Figure 7.2) from the laneway (immediately east of the development entrance) connecting to Crestfield Close. A lack of coordination may reduce the effectiveness of these schemes, proposed by Dublin City Council and National Transport Authority, and undermine potential to achieve cyclist desire lines.

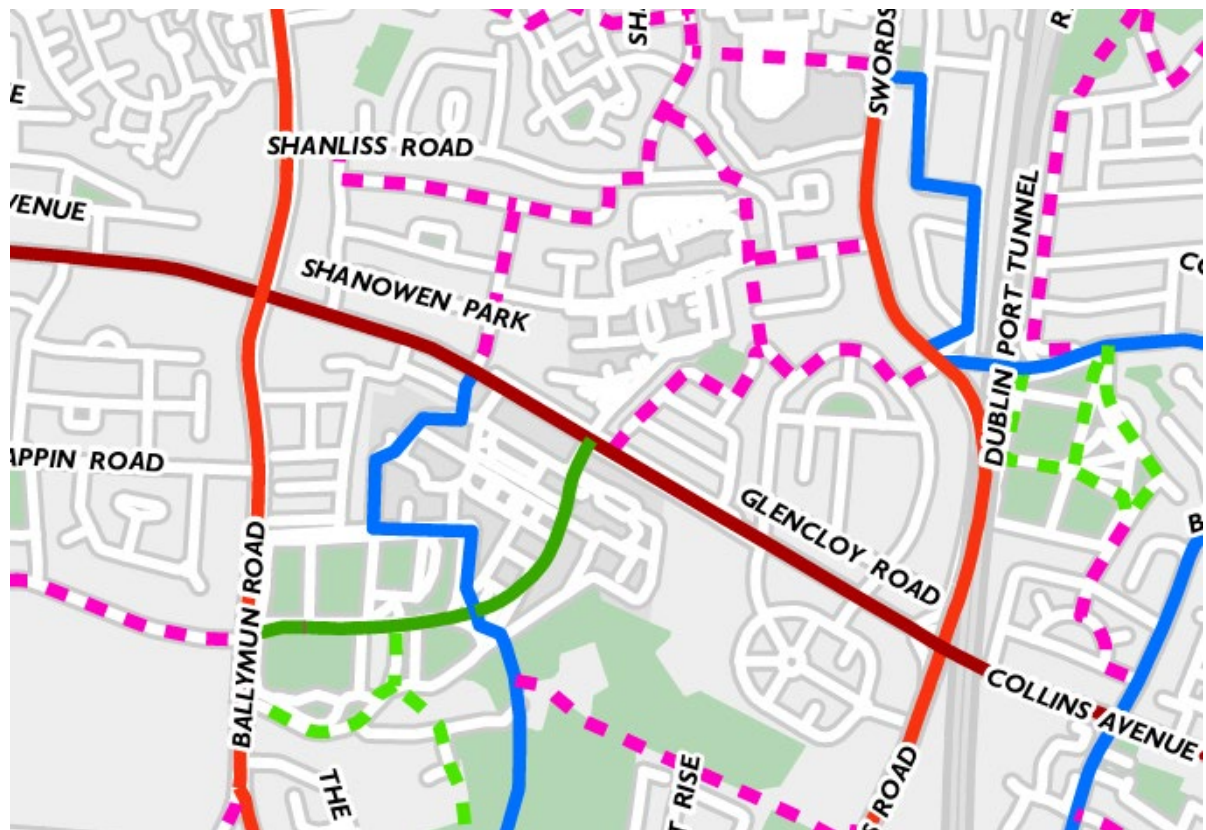


Figure 7.2 – GDA Cycle Network (www.nationaltransport.ie/wp-content/uploads/2023/01/2022-GDA-Cycle-Network.pdf)

Suggestion

Consider wider network impacts of future schemes to support a network of segregated cycleways through the development. Consult with Dublin City Council Active Travel to ensure the development is futureproofed.

8. ACCESSIBILITY

8.1 **Issue**

At the approximate location of the proposed raised crossing (Figure 8.1) there is a vehicular entrance. The proposed location of the associated tactile paving may be damaged by vehicular overrun associated with this driveway due to its location. This may cause tactile pavers to crack with an associated tripping hazard.

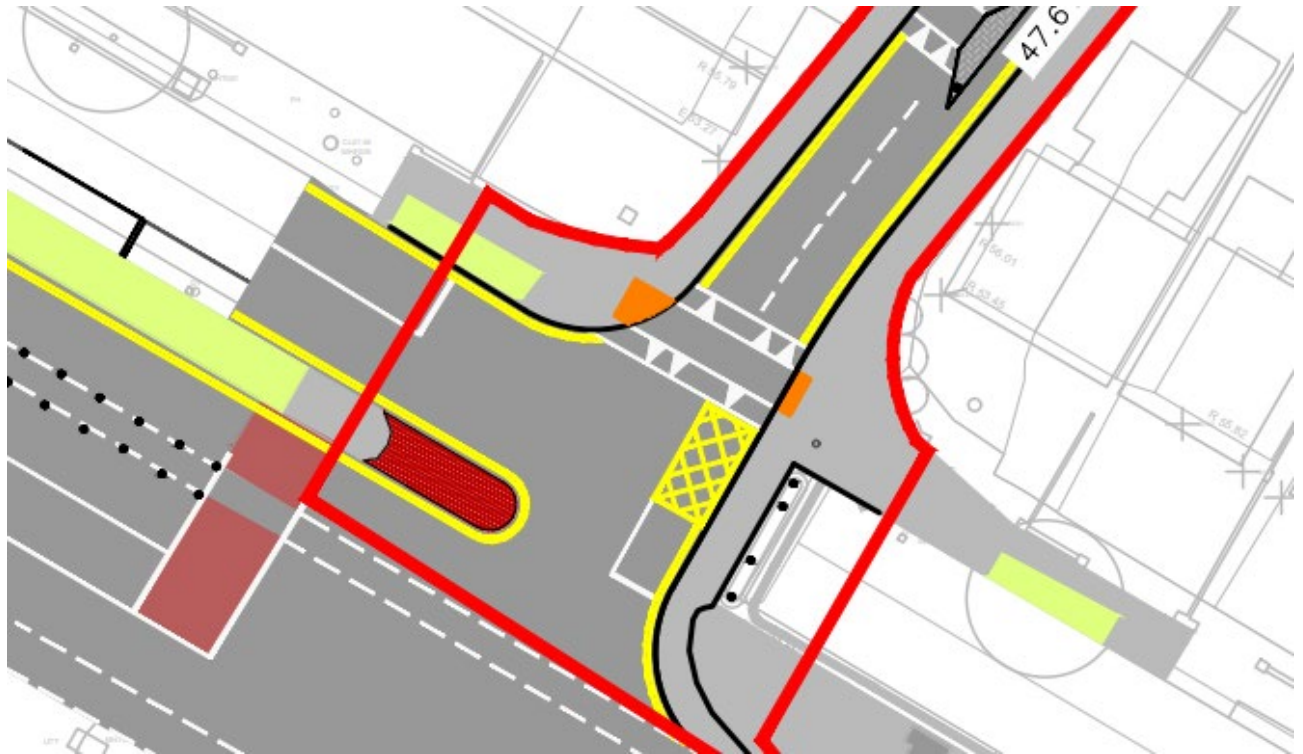


Figure 8.1 – Proposed raised crossing location

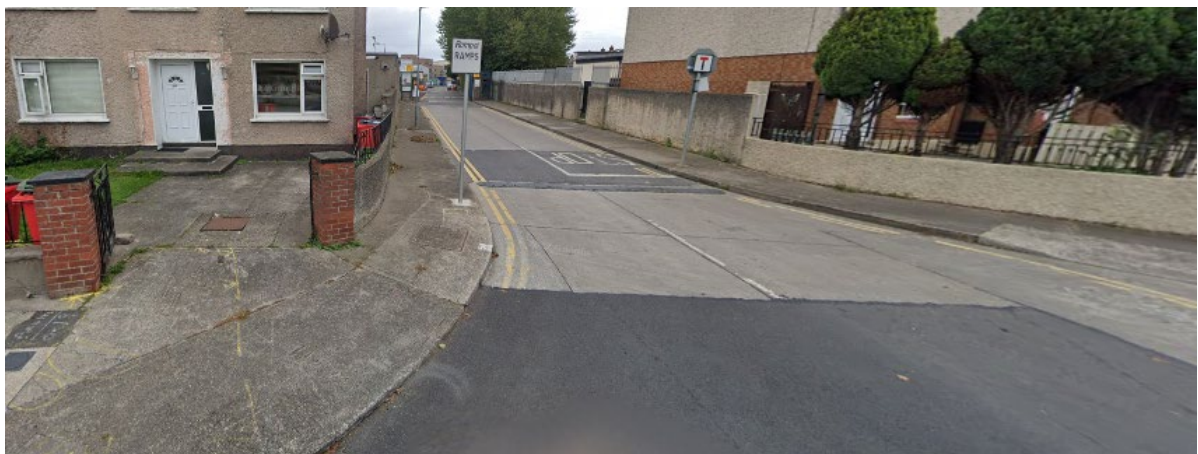


Figure 8.2 – Existing Entrance

Suggestion

Consider relocating this driveway access west on cul-de-sac road parallel to Collins Avenue.

8.2 **Issue**

Due to the location of vehicular parking relative to housing units, it is not clear how electric car users will charge their vehicle without running electrical leads across the footways between parking and housing. This may post a tripping hazard for pedestrians, especially those with a vision impairment.

Suggestion

Ensure ample opportunity for motorists to charge electric vehicles without trailing cables. Provide communal electric car chargers. Rearrange parking as required.

8.3 **Issue**

The T-junction in Figure 8.8 is incomplete for pedestrian movements, and it is not clear how pedestrians, especially with a vision impairment, will follow it and meet the other side.

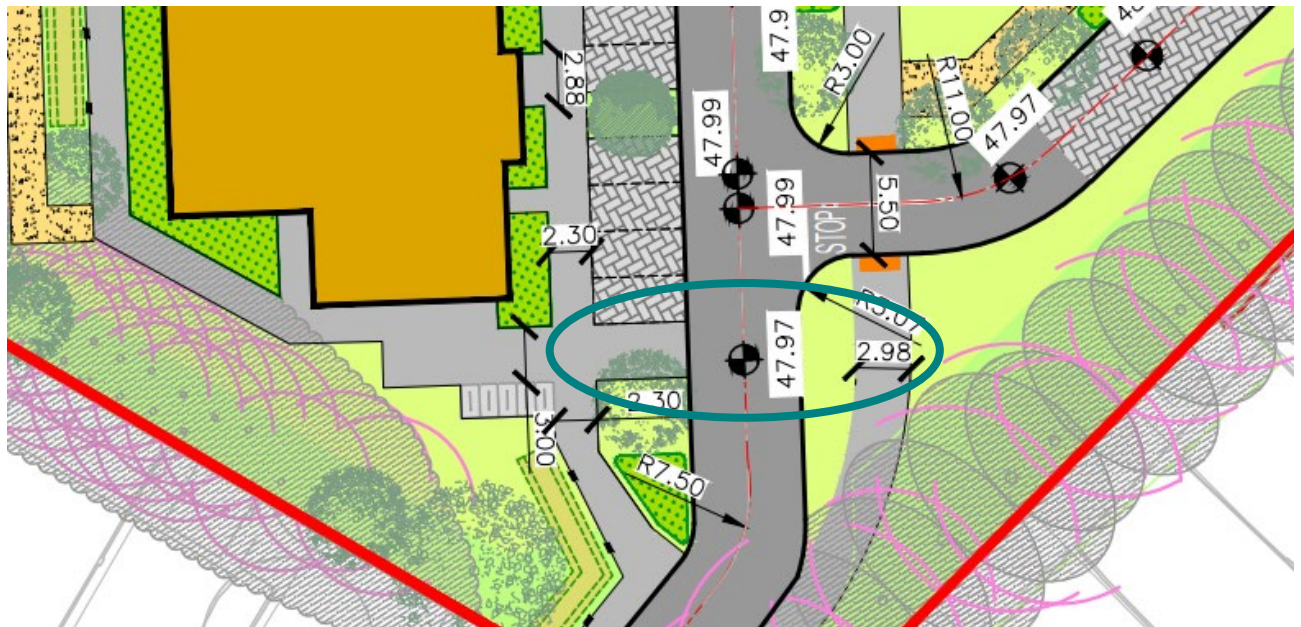


Figure 8.8 – Pedestrian Facilities

Suggestion

Provide suitable pedestrian crossing facilities such as dropped kerbs, tactile paving and footpath links to accommodate pedestrians crossing east west at this location.

9. QUALITY AUDIT FEEDBACK FORM

Scheme: Collins Avenue Development, Dublin

Document Number: 24050-03-001

Date Audit Completed: 1st May 2024

Paragraph No. in Safety Audit Report	To Be Completed By Designer			To Be Completed by Audit Team Leader
	Problem accepted (yes/no)	Recommended measure Accepted (yes/no)	Describe alternative measure(s). Give reasons for not accepting recommended measure. Only complete if recommended measure is not accepted.	Alternative measures or reasons accepted by auditors (yes/no)
5.1	Yes	Yes	-----	-----
5.2	Yes	Yes	-----	-----
5.3	Yes	Yes	-----	-----
5.4	Yes	Yes	-----	-----
6.1	Yes	Yes	-----	-----
6.2	Yes	No	The road area has instead been designed as a shared space to allow for pedestrian movements. Permeable paving will be used to contrast with macadam surfacing used elsewhere and to identify the shared surface.	Yes
6.3	Yes	Yes	-----	-----
7.1	Yes	Yes	-----	-----
7.2	Yes	Yes	-----	-----
8.1	Yes	No	Private driveway is on lands outside of the control of the applicant. The layout of the tactile paving has instead been amended to move it away from the route of cars accessing the private dwelling. The dropped kerb has been positioned to discourage cars from crossing the tactile paving and a flexible bollard introduced to further protect the tactile paving units from vehicle damage.	Yes
8.2	Yes	Yes	-----	-----
8.3	Yes	Yes	-----	-----

Safety Audit

Signed off  on behalf of Design Team

Print NameDouglas Weir.....

Date ..02/05/2024..

Safety Audit Signed off *Glen Merriman* **Employer** 02/05/2024
Print Name **Date**

Safety Audit Signed off *George Frisby* **Audit Team Leader**
Print Name George Frisby **Date** 7/5/24

Please complete and return to: Roadplan Consulting, 7,
Ormonde Road Kilkenny
E-mail: info@roadplan.ie

APPENDIX A – DRAWINGS

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THE CONTRACTOR SHALL CHECK ALL DIMENSIONS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. ALL DISCREPANCIES SHALL BE REPORTED TO THIS OFFICE IN WRITING.

NOTES

BY	DRAWING No. & REFERENCE	DATE
SURVEY	JEG2660 COLLINS_AVE_TOPO_20023_2D	29.09.2023
ARCH	SHB4-CAD-222-M2-COA-06-SITEWORKS	22.03.2024
S. ARCH	SHB4-CAD-DR-MAL-L-PT-0007_REV 0	15.02.2024

LEGEND

-  PROPOSED STREET CENTRELINE
-  PROPOSED ROAD
-  PROPOSED FOOTPATH
-  PROPOSED LANDSCAPING
-  PROPOSED GRASS
-  PROPOSED BUILDING
-  PERMEABLE PAVING
-  REINFORCED GRASS
-  DETENTION BASIN
-  RAINGARDEN
-  SWALE AREA
-  TACTILE PAVING
-  DROPPED KERB AT 5m C/C



REV	DESCRIPTION	DATE	BY	CHK
0	ISSUED FOR INFORMATION	22.03.24	KD	PB

STATUS: **P3 - PLANNING**

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CLIENT: NDFA

JOB NAME: PPP SHB 4 & 5

ORG NAME: PROPOSED SITE LAYOUT

JOB REF	SHEET	SCALE	DATE	BY	ENG	APP	REV.
23006	A1	1:500	SEPT'2023	KD	PB	PB	0

ORG. NO: SHB4-CAD-DR-MOR-CS-P3-101

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NOTES

BY	DRAWING No. & REFERENCE	DATE
SURVEY	JG02660 COLLINS AVE TOPO 29023 20	29.09.2023
ARCH	SHB4-CAD-222-M2-COA-AR-STEWORKS	15.04.2024
LS ARCH	SHB4-CAD-25-MAL-L-F1-0001 REV 0	17.04.2024

LEGEND

- PROPOSED STREET CENTRELINE
- PROPOSED ROAD
- PROPOSED FOOTPATH
- PROPOSED LANDSCAPING
- PROPOSED GRASS
- PROPOSED BUILDING
- PERMEABLE PAVING
- REINFORCED GRASS
- DETENTION BASIN
- RAINGARDEN
- SWALE AREA
- TACTILE PAVING
- DROPPED KERB AT 5m C/C



REV	DESCRIPTION	DATE	BY	CHK
1	SITE LAYOUT REVISED TO SUIT LATEST ARCH LAYOUT AND COMMENTS	18.04.24	KD	DW
0	ISSUED FOR INFORMATION	22.03.24	KD	PB

STATUS: P3 – PLANNING

MOR
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WATERFORD T: +353 51 876 855 E: waterford@mor.ie

CLIENT: DUBLIN CITY COUNCIL

JOB NAME: SOCIAL HOUSING PPP BUNDLE 4 (SHB4)
COLLINS AVENUE

DRG. NAME: SITE LAYOUT

JOB REF	SHEET	SCALE	DATE	BY	ENG	APP	REV.
23006	A1	1:500	SEPT'2023	KD	PB	PB	1

DRG. NO.: SHB4-CAD-DR-MOR-CS-P3-101

DONT FORGET SAFETY

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ALL DIMENSIONS ARE IN mm UNLESS NOTED OTHERWISE. DO NOT SCALE DIMENSIONS.

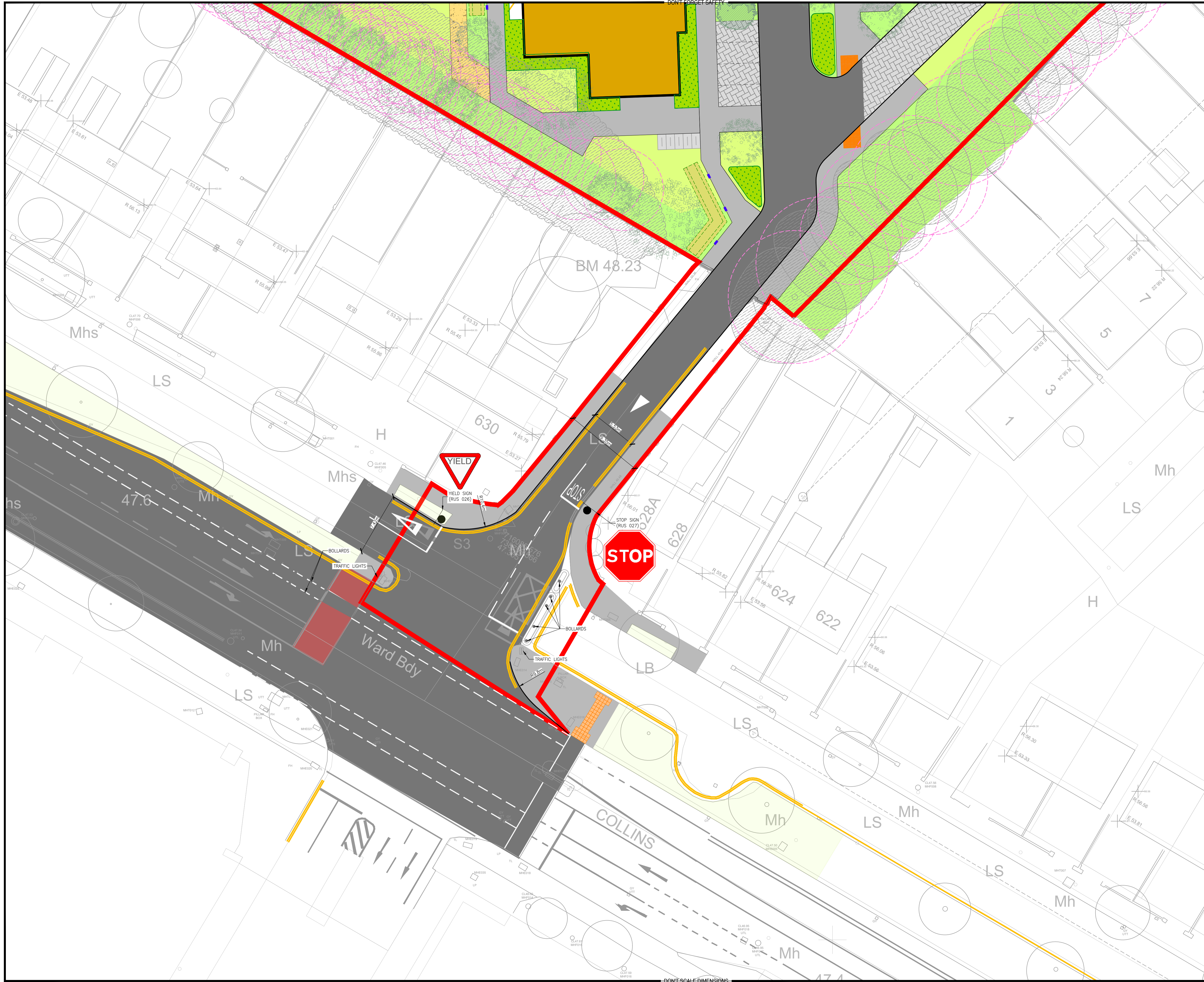
THE CONTRACTOR SHALL CHECK ALL DIMENSIONS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. ALL DISCREPANCIES SHALL BE REPORTED TO THIS OFFICE IN WRITING.

NOTES

BY	DRAWING No. & REFERENCE	DATE
SURVEY	JEG2660 COLLINS AVE TOPO 200923	29.09.2023
ARCH	SHB4-CAD-222-MZ-COA-MC-SITEWORKS	22.03.2024
LS ARCH	SHB4-CAD-DR-MAL-L-PT-0007 REV 0	15.02.2024

LEGEND

- PROPOSED STREET CENTRELINE
- PROPOSED ROAD
- PROPOSED FOOTPATH
- PROPOSED LANDSCAPING
- PROPOSED GRASS
- PROPOSED BUILDING
- PERMEABLE PAVING
- REINFORCED GRASS
- DETENTION BASIN
- RAIHGARDEN
- SWALE AREA
- TACTILE PAVING
- DROPPED KERB at 5m C/C



REV	DESCRIPTION	DATE	BY	CHK
0	ISSUED FOR INFORMATION	22.03.24	KD	PB

STATUS: P3 - PLANNING

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WATERFORD T: +353 51 876 855 E: waterford@mor.ie

CLIENT: NDFA

JOB NAME: PPP SHB 4 & 5

DRG NAME: EXISTING SITE ACCESS LAYOUT

JOB REF	SHEET	SCALE	DATE	BY	ENG	APP	REV.
23006	A1	1:200	FEB'2024	SL	DW	DW	0

DRG NO: SHB4-CAD-DR-MOR-CS-P3-102

DONT SCALE DIMENSIONS

DONT FORGET SAFETY

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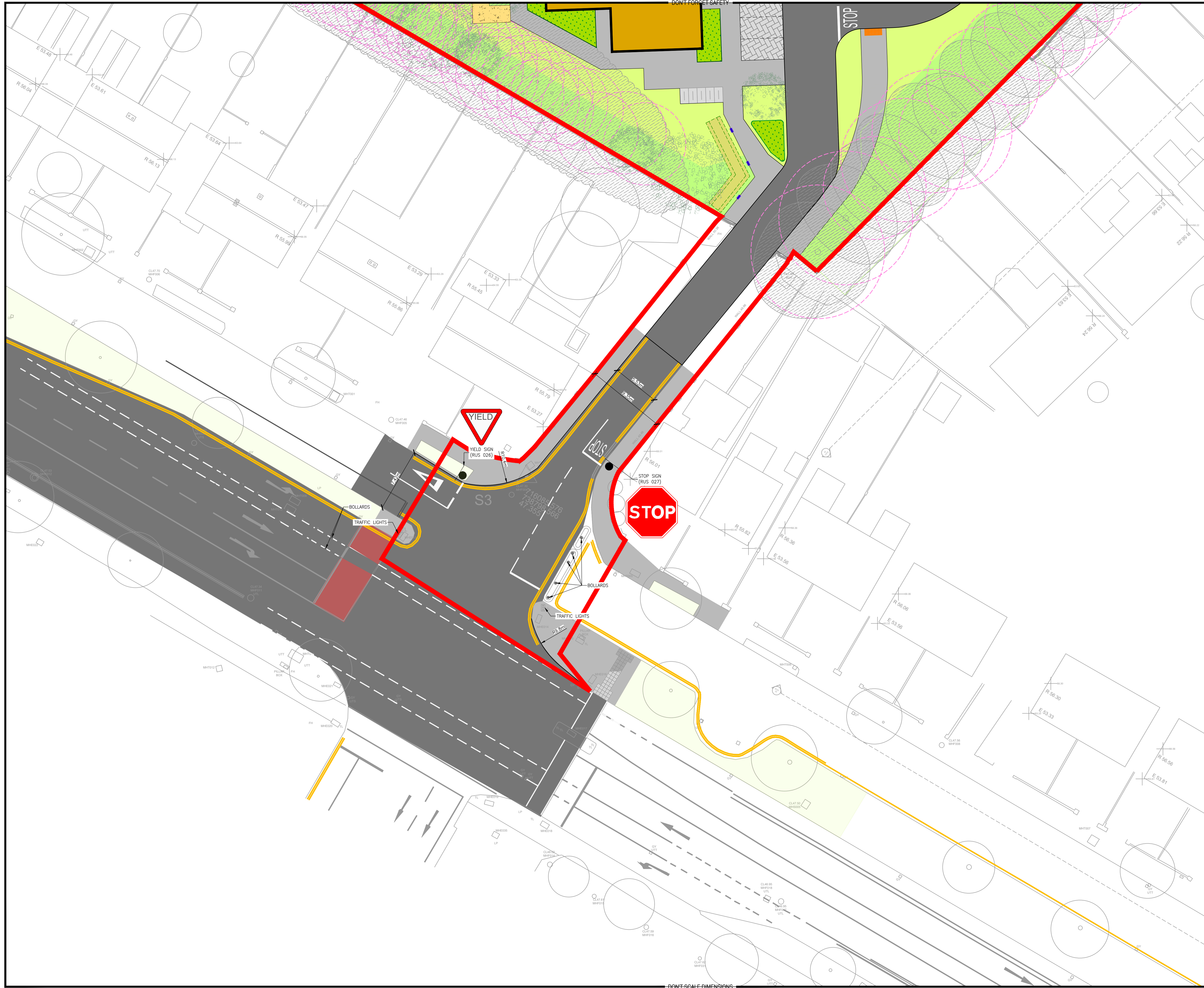
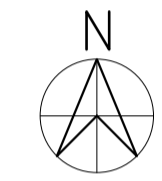
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NOTES

BY	DRAWING No. & REFERENCE	DATE
SURVEY	JG2660 COLLINS AVE TOPO 20023	29.09.2023
ARCH	SHB4-CAD-222-MO-COA-26-SITEWORKS	15.04.2024
LS ARCH	SHB4-CAD-DR-MAL-L-PI-0007 REV 0	17.04.2024

LEGEND

- PROPOSED STREET CENTRELINE
- PROPOSED ROAD
- PROPOSED LANDSCAPING
- PROPOSED GRASS
- PROPOSED BUILDING
- PERMEABLE PAVING
- REINFORCED GRASS
- DETENTION BASIN
- RAINGARDEN
- SWALE AREA
- TACTILE PAVING
- DROPPED KERB AT 5m C/C



REV	DESCRIPTION	DATE	BY	CHK
1	SITE LAYOUT REVISED TO SUIT LATEST ARCH LAYOUT AND COMMENTS	18.04.24	KD	DW
0	ISSUED FOR INFORMATION	22.03.24	KD	PB

STATUS: P3 - PLANNING

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CLIENT: DUBLIN CITY COUNCIL

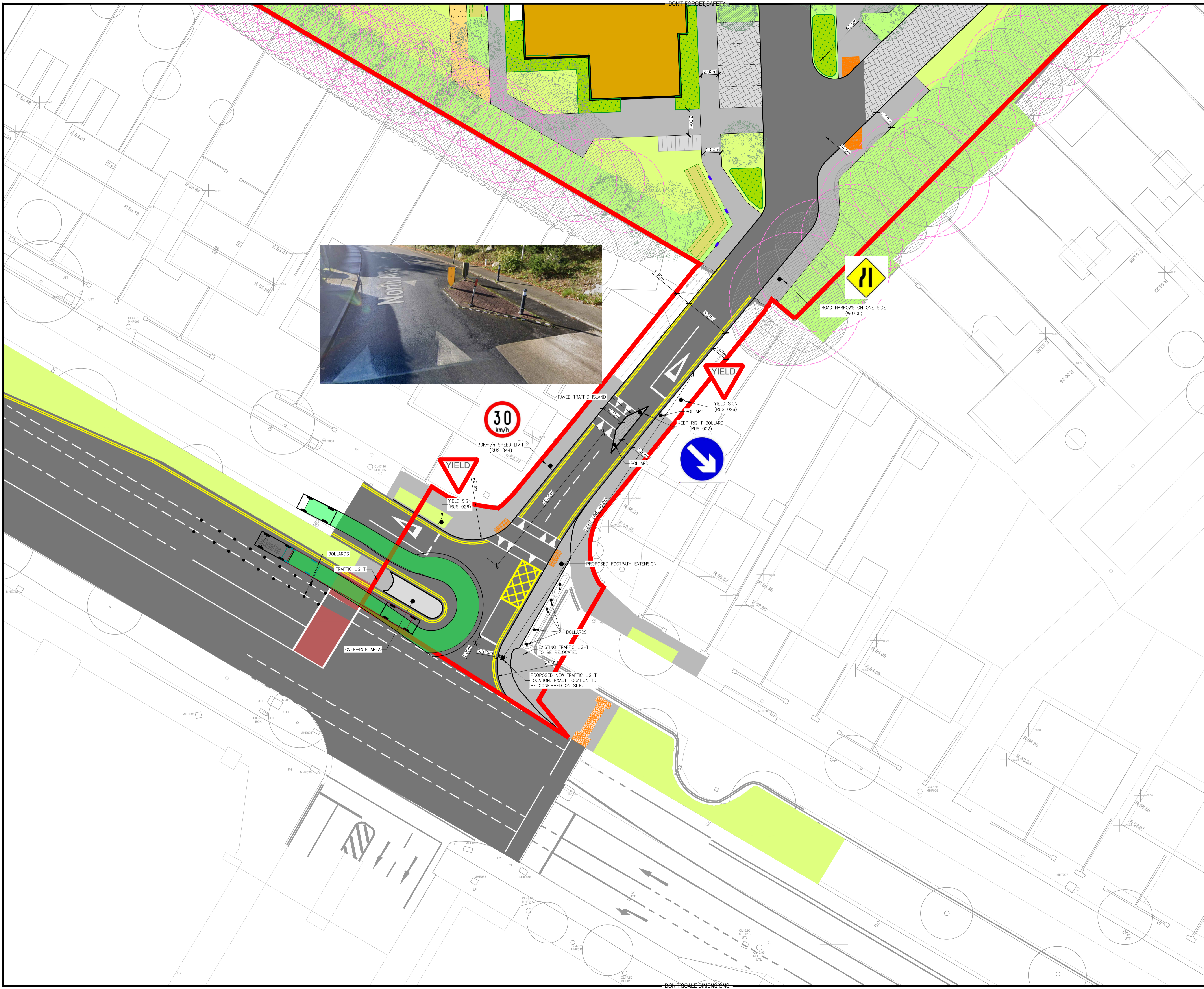
JOB NAME: SOCIAL HOUSING PPP BUNDLE 4 (SHB4) COLLINS AVENUE

DRG. NAME: EXISTING SITE ACCESS LAYOUT

JOB REF	SHEET	SCALE	DATE	BY	ENG	APP	REV.
23006	A1	1:200	FEB'2024	SL	DW	DW	1

DRG. NO.: SHB4-CAD-DR-MOR-CS-P3-102

DONT SCALE DIMENSIONS



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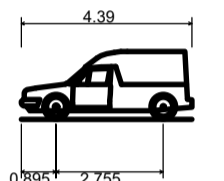
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NOTES

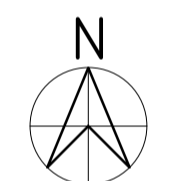
BY	DRAWING No. & REFERENCE	DATE
SURVEY	EC3666 COLLINS AVE TPOD 28923 20	29.03.2024
ARCH	SHB4-CAD-TZZ-M2-50M-40-STEWORKS	22.03.2024
LS ARCH	SHB4-CAD-DR-MAL-L-P1-0001 REV 0	15.02.2024

LEGEND

- PROPOSED ROAD
- PROPOSED FOOTPATH
- PROPOSED LANDSCAPING
- PROPOSED GRASS
- PROPOSED BUILDING
- PERMEABLE PAVING
- REINFORCED GRASS
- DETENTION BASIN
- RAIN GARDEN
- SWALE AREA
- TACTILE PAVING
- DROPPED KERB AT 5m C/C
- PROPOSED SITE BOUNDARY



Car Derived Van
 Overall Length 4.390m
 Overall Width 1.832m
 Overall Body Height 1.746m
 Min Body Ground Clearance 0.221m
 Track Width 1.832m
 Lock-to-lock time 4.00s
 Curb to Curb Turning Radius 5.600m



0	ISSUED FOR INFORMATION	22.03.24	KD	PB
REV	DESCRIPTION	DATE	BY	CHK

STATUS: **P3 - PLANNING**

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 WATERFORD T: +353 51 876 855 E: waterford@mor.ie

CLIENT: **NDFA**

JOB NAME: **PPP SHB 4 & 5**

DRG NAME: **PROPOSED SITE ACCESS LAYOUT**

JOB REF	SHEET	SCALE	DATE	BY	ENG	APP	REV
23006	A1	1:200	FEB'2024	SL	DW	DW	0

DRG NO. **SHB4-CAD-DR-MOR-CS-P3-103**

03/2024 NDFA - Social Housing Bunkers 4 & 5 PPP07 Sites & Design/01 Collins Avenue/07 Design And Drawings/01 Drawings/PL - Planning/SHB4-CAD-DR-MOR-CS-P3-103 Rev 0.dwg

DONT FORGET SAFETY

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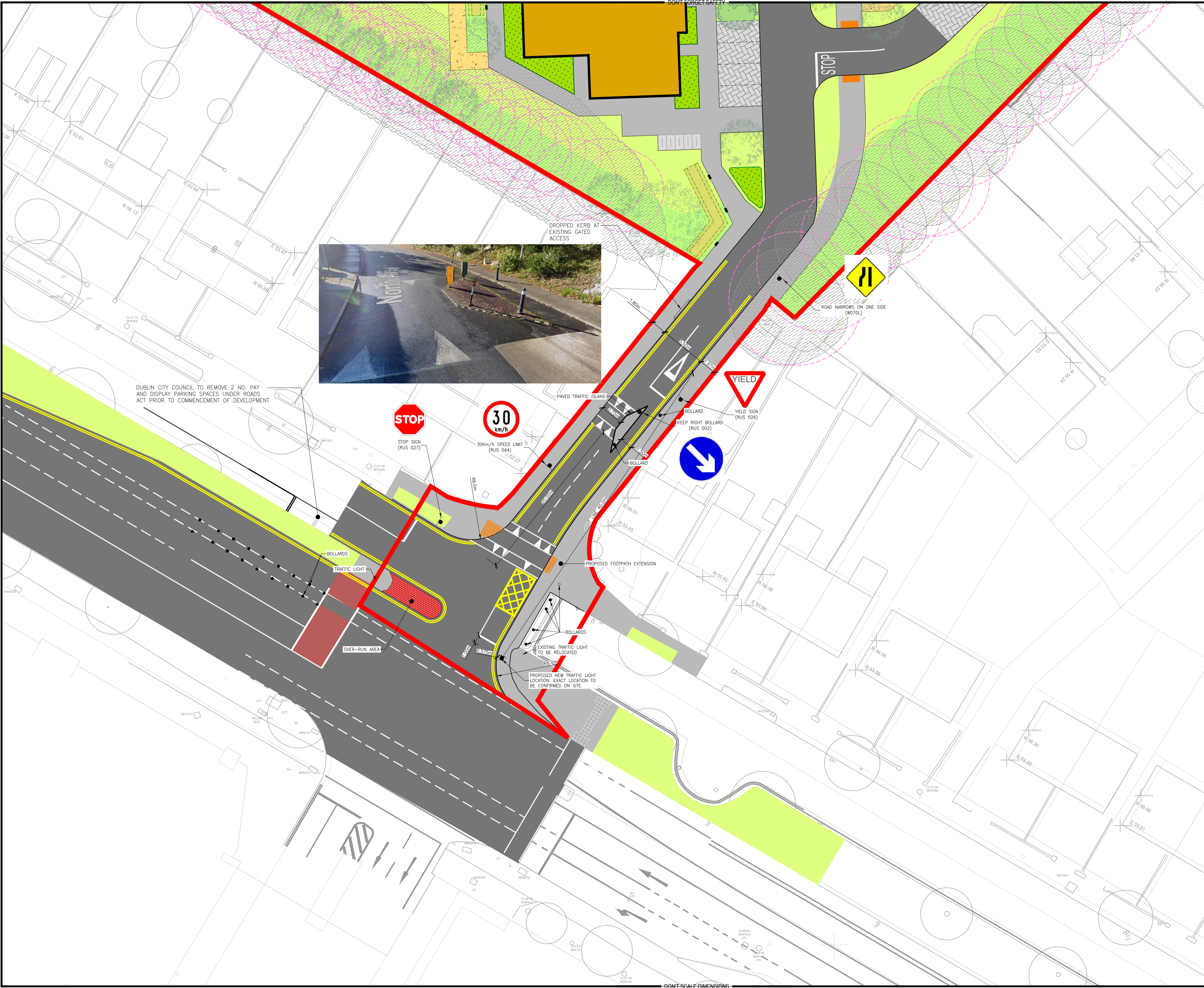
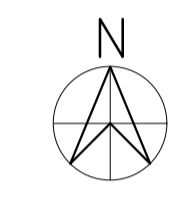
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NOTES

BY	DRAWING No. & REFERENCE	DATE
SURVEY	JE02860 COLLINS_AVE_TPO0_290923_20	29.03.2024
ARCH	SHB4-CAD-122-M2-00A-MR-SITEWORKS	15.04.2024
LP ARCH	SHB4-CAD-122-M2-00A-MR-SITEWORKS	17.04.2024

LEGEND

- PROPOSED ROAD
- PROPOSED FOOTPATH
- PROPOSED LANDSCAPING
- PROPOSED GRASS
- PROPOSED BUILDING
- PERMEABLE PAVING
- REINFORCED GRASS
- DETENTION BASIN
- RAINGARDEN
- SWALE AREA
- TACTILE PAVING
- DROPPED KERB AT 5m C/C
- PROPOSED SITE BOUNDARY



DUBLIN CITY COUNCIL TO REMOVE 2 NO. PAY AND DISPLAY PARKING SPACES UNDER ROADS ACT PRIOR TO COMMENCEMENT OF DEVELOPMENT

DROPPED KERB AT EXISTING GATED ACCESS

ROAD NARROWS ON ONE SIDE (W070L)

PAVED TRAFFIC ISLAND

STOP SIGN (RUS 027)

30km/h SPEED LIMIT (RUS 044)

YIELD SIGN (RUS 026)

KEEP RIGHT BOLLARD (RUS 002)

BOLLARDS

TRAFFIC LIGHT

OVER-RUN AREA

PROPOSED FOOTPATH EXTENSION

EXISTING TRAFFIC LIGHT TO BE RELOCATED

PROPOSED NEW TRAFFIC LIGHT LOCATION. EXACT LOCATION TO BE CONFIRMED ON SITE.

REV	DESCRIPTION	DATE	BY	CHK
1	SITE LAYOUT REVISED TO SUIT LATEST ARCH LAYOUT AND COMMENTS	18.04.24	KD	DW
0	ISSUED FOR INFORMATION	22.03.24	KD	PB

STATUS: P3 - PLANNING

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WATERFORD T: +353 51 876 855 E: waterford@mor.ie

CLIENT: DUBLIN CITY COUNCIL

JOB NAME: SOCIAL HOUSING PPP BUNDLE 4 (SHB4) COLLINS AVENUE

DRG NAME: SITE ACCESS LAYOUT

JOB REF	SHEET	SCALE	DATE	BY	ENG	APP	REV
23006	A1	1:200	FEB'2024	SL	DW	DW	1

DRG NO.: SHB4-CAD-DR-MOR-CS-P3-103

DONT SCALE DIMENSIONS

N:\23006_SHB4_Social Housing Bundle 4 & PPP07/Drawings/01/Drawings/01/Planning/SHB4-CAD-DR-MOR-CS-P3-103 Rev. 1_DWG_2024-04-18.dwg

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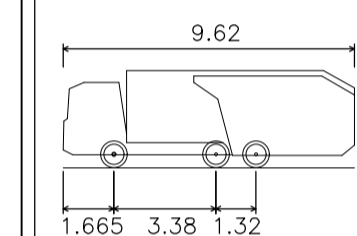
NOTES

BY	DRAWING No. & REFERENCE	DATE
SURVEY	JEG2660 COLLINS AVE TOPO 260923 2D	28.09.2023
ARCH	SHB4-CAD-224-MZ-COA-ME-SITEWORKS	22.03.2024
S. ARCH	SHB4-CAD-DR-MAL-L-PT-0007 REV 0	15.02.2024

VEHICLE SWEEP PATH LEGEND

- SATISFACTORY SATISFACTORY: SWEEP PATH WORKS WITH CURRENT LAYOUT
- FEASIBLE FEASIBLE: SLIGHT DIFFICULTIES BUT SWEEP PATH COULD WORKS WITH MINOR LAYOUT MODIFICATIONS
- NOT ACCEPTABLE NOT ACCEPTABLE: SWEEP PATH NOT POSSIBLE WITH LAYOUT AND SIGNIFICANT ALTERATION REQUIRED
- SOLID HATCH INDICATES FORWARD MOTION OF THE VEHICLE
- LINED HATCH INDICATES REVERSE MOTION OF THE VEHICLE

*N.B. COLOUR OF SOLID/LINED HATCHES IN LEGEND TO MATCH RELEVANT COLOUR OF THE AUTO-TRACK IN THE DRAWING (i.e. IF SWEEP PATH IS A SATISFACTORY GREEN THEN SO WILL HATCHES BE SHOWN AS ABOVE)



PHOENIX 2-18W (WITH ELITE 2 6X2MS CHASSIS)

OVERALL LENGTH	9.620M
OVERALL WIDTH OVERALL	2.530M
BODY HEIGHT	3.211M
MIN BODY GROUND	0.416M
CLEARANCE TRACK WIDTH	2.530M
LOCK-TO-LOCK TIME	4.00S
CURB TO CURB TURNING RADIUS	9.550M



REV	DESCRIPTION	DATE	BY	CHK
0	ISSUED FOR INFORMATION	22.03.24	KD	PB

STATUS: P3 - PLANNING

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CLIENT: NDFA

JOB NAME: PPP SHB 4 & 5

ORG NAME: SWEEP PATH ANALYSIS REFUSE TRUCK

JOB REF	SHEET	SCALE	DATE	BY	ENG	APP	REV.
23006	A1	1:500	JULY'2023	KD	PB	PB	0

ORG. NO: SHB4-CAD-DR-MOR-CS-P3-111

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NOTES

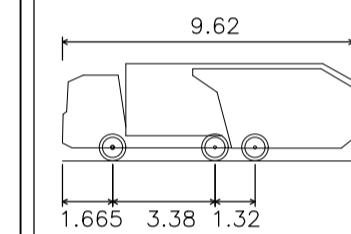
BY	DRAWING No. & REFERENCE	DATE
SURVEY	J62660 COLLINS AVE TOPO 290923 20	29.09.2023
ARCH	SHB4-CAD-22Z-M2-COA-AR-SITEWORKS	15.04.2024
LS ARCH	SHB4-CAD-DR-MAL-L-PT-0001 REV 0	17.04.2024

VEHICLE SWEEP PATH LEGEND

- SATISFACTORY SATISFACTORY: SWEEP PATH WORKS WITH CURRENT LAYOUT
- FEASIBLE FEASIBLE: SLIGHT DIFFICULTIES BUT SWEEP PATH COULD WORKS WITH MINOR LAYOUT MODIFICATIONS
- NOT ACCEPTABLE NOT ACCEPTABLE: SWEEP PATH NOT POSSIBLE WITH LAYOUT AND SIGNIFICANT ALTERATION REQUIRED
- SOLID HATCH INDICATES FORWARD MOTION OF THE VEHICLE
- LINED HATCH INDICATES REVERSE MOTION OF THE VEHICLE

- *N.B.
- COLOUR OF SOLID/LINED HATCHES IN LEGEND TO MATCH RELEVANT COLOUR OF THE AUTO-TRACK IN THE DRAWING (i.e. IF SWEEP PATH IS A SATISFACTORY GREEN THEN SO WILL HATCHES BE SHOWN AS ABOVE)
 - OVERALL GRASS HATCHING SHOWN AS LIGHT GRAY TO AVOID CONFUSION WITH SWEEP PATHS (AS SHOWN BELOW)

GRASS HATCHING



PHOENIX 2-18W (WITH ELITE 2 6X2MS CHASSIS)

OVERALL LENGTH	9.620M
OVERALL WIDTH OVERALL	2.530M
BODY HEIGHT	3.211M
MIN BODY GROUND	0.416M
CLEARANCE TRACK WIDTH	2.530M
LOCK-TO-LOCK TIME	4.02S
CURB TO CURB TURNING RADIUS	9.550M



1.1	SITE LAYOUT REVISED TO SUIT LATEST LANDSCAPE ARCH LAYOUT	18.04.24	KD	DW
1	SITE LAYOUT REVISED TO SUIT LATEST ARCH LAYOUT AND COMMENTS	16.04.24	KD	DW
0	ISSUED FOR INFORMATION	22.03.24	KD	PB
REV	DESCRIPTION	DATE	BY	CHK

STATUS: P3 - PLANNING

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CLIENT: DUBLIN CITY COUNCIL

JOB NAME: SOCIAL HOUSING PPP BUNDLE 4 (SHB4)
COLLINS AVENUE

DRG. NAME: SWEEP PATH ANALYSIS
REFUSE TRUCK

JOB REF	SHEET	SCALE	DATE	BY	ENG	APP	REV.
23006	A1	1:500	JULY 2023	KD	PB	PB	1.1

DRG. NO.: SHB4-CAD-DR-MOR-CS-P3-111

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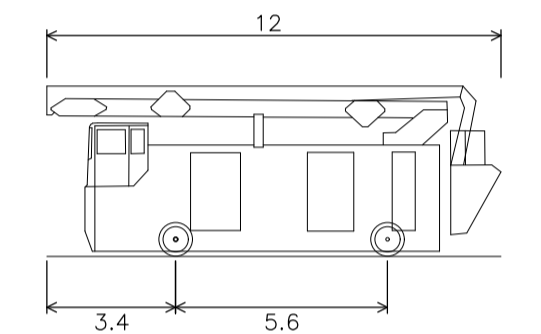
NOTES

BY	DRAWING No. & REFERENCE	DATE
SURVEY	JEG2660 COLLINS AVE TOPO 260923 2D	28.09.2023
ARCH	SHB4-CAD-222-M2-COA-MC-SITEWORKS	22.03.2024
S. ARCH	SHB4-CAD-DR-MAL-L-PT-0007 REV 0	15.02.2024

VEHICLE SWEEP PATH LEGEND

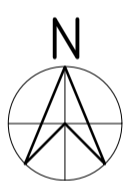
- SATISFACTORY: SATISFACTORY: SWEEP PATH WORKS WITH CURRENT LAYOUT
- FEASIBLE: FEASIBLE: SLIGHT DIFFICULTIES BUT SWEEP PATH COULD WORKS WITH MINOR LAYOUT MODIFICATIONS
- NOT ACCEPTABLE: NOT ACCEPTABLE: SWEEP PATH NOT POSSIBLE WITH LAYOUT AND SIGNIFICANT ALTERATION REQUIRED
- SOLID HATCH INDICATES FORWARD MOTION OF THE VEHICLE
- LINED HATCH INDICATES REVERSE MOTION OF THE VEHICLE

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AERIAL PLATFORM/ TURNTABLE LADDER/ SPECIAL APPLIANCE

OVERALL LENGTH	12.000M
OVERALL WIDTH OVERALL	2.550M
BODY HEIGHT	4.500M
MIN BODY GROUND CLEARANCE	0.130M
TRACK WIDTH	2.550M
LOCK-TO-LOCK TIME	4.005
CURB TO CURB TURNING RADIUS	13.750M



REV	DESCRIPTION	DATE	BY	CHK
0	ISSUED FOR INFORMATION	22.03.24	KD	PB

STATUS: P3 - PLANNING

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WATERFORD T: +353 51 876 855 E: waterford@mor.ie

CLIENT: NDFA

JOB NAME: PPP SHB 4 & 5

ORG NAME: SWEEP PATH ANALYSIS
AERIAL PLATFORM SPECIAL APPLIANCE

JOB REF	SHEET	SCALE	DATE	BY	ENG	APP	REV.
23006	A1	1:500	SEPT'2023	KD	PB	PB	0

ORG NO: SHB4-CAD-DR-MOR-CS-P3-112

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NOTES

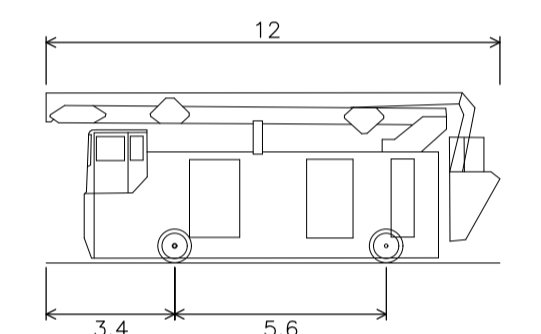
BY	DRAWING No. & REFERENCE	DATE
SURVEY	JG02660 COLLINS AVE TOPO 290923 20	29.09.2023
ARCH	SHB4-CAD-22Z-M2-CDA-AR-SITEWORKS	15.04.2024
LS ARCH	SHB4-CAD-DR-MAL-L-PT-0001 REV 0	17.04.2024

VEHICLE SWEEP PATH LEGEND

- SATISFACTORY SATISFACTORY: SWEEP PATH WORKS WITH CURRENT LAYOUT
- FEASIBLE FEASIBLE: SLIGHT DIFFICULTIES BUT SWEEP PATH COULD WORKS WITH MINOR LAYOUT MODIFICATIONS
- NOT ACCEPTABLE NOT ACCEPTABLE: SWEEP PATH NOT POSSIBLE WITH LAYOUT AND SIGNIFICANT ALTERATION REQUIRED
- SOLID HATCH INDICATES FORWARD MOTION OF THE VEHICLE
- LINED HATCH INDICATES REVERSE MOTION OF THE VEHICLE

- *N.B.
- COLOUR OF SOLID/LINED HATCHES IN LEGEND TO MATCH RELEVANT COLOUR OF THE AUTO-TRACK IN THE DRAWING (i.e. IF SWEEP PATH IS A SATISFACTORY GREEN THEN SO WILL HATCHES BE SHOWN AS ABOVE)
 - OVERALL GRASS HATCHING SHOWN AS LIGHT GRAY TO AVOID CONFUSION WITH SWEEP PATHS (AS SHOWN BELOW)

GRASS HATCHING



AERIAL PLATFORM/ TURNTABLE LADDER/ SPECIAL APPLIANCE

OVERALL LENGTH	12.000M
OVERALL WIDTH OVERALL	2.550M
BODY HEIGHT	4.500M
MIN BODY GROUND CLEARANCE	0.130M
TRACK WIDTH	2.550M
LOCK-TO-LOCK TIME	4.00S
CURB TO CURB TURNING RADIUS	13.750M



1.1	SITE LAYOUT REVISED TO SUIT LATEST LANDSCAPE ARCH LAYOUT	18.04.24	KD	DW
1	SITE LAYOUT REVISED TO SUIT LATEST ARCH LAYOUT AND COMMENTS	16.04.24	KD	DW
0	ISSUED FOR INFORMATION	22.03.24	KD	PB
REV	DESCRIPTION	DATE	BY	CHK

STATUS: P3 – PLANNING

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CLIENT: DUBLIN CITY COUNCIL

JOB NAME: SOCIAL HOUSING PPP BUNDLE 4 (SHB4) COLLINS AVENUE

DRG. NAME: SWEEP PATH ANALYSIS AERIAL PLATFORM SPECIAL APPLIANCE

JOB REF	SHEET	SCALE	DATE	BY	ENG	APP	REV.
23006	A1	1:500	SEPT'2023	KD	PB	PB	1.1

DRG. NO.: SHB4-CAD-DR-MOR-CS-P3-112

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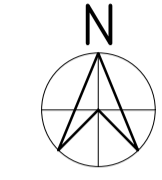
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THE CONTRACTOR SHALL CHECK ALL DIMENSIONS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. ALL DISCREPANCIES SHALL BE REPORTED TO THIS OFFICE IN WRITING.

NOTES

BY	DRAWING No. & REFERENCE	DATE
SURVEY	JEG2660 COLLINS AVE TOPO 260923 2D	29.09.2023
ARCH	SHB4-CAD-222-M2-COA-AP-SITEWORKS	22.03.2024
S. ARCH	SHB4-CAD-DR-MAL-L-PT-0007 REV 0	15.02.2024



REV	DESCRIPTION	DATE	BY	CHK
0	ISSUED FOR INFORMATION	22.03.23	KD	PB

STATUS: P3 – PLANNING

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CLIENT: NDFA

JOB NAME: PPP SHB 4 & 5

ORG NAME: PROPOSED SIGHT LINES

JOB REF	SHEET	SCALE	DATE	BY	ENG	APP	REV.
23006	A1	1:500	JULY'2023	KD	PB	PB	0

ORG NO: SHB4-CAD-DR-MOR-CS-P3-113

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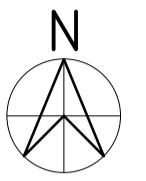
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NOTES

BY	DRAWING No. & REFERENCE	DATE
SURVEY	J62660 COLLINS AVE TOPO 29023 20	29.09.2023
ARCH	SHB4-CAD-222-M2-COA-AR-SITEWORKS	15.04.2024
S. ARCH	SHB4-CAD-DR-MAL-L-PT-0001 REV 0	17.04.2024



1	SITE LAYOUT REVISED TO SUIT LATEST ARCH LAYOUT AND COMMENTS	18.04.24	KD	DW
0	ISSUED FOR INFORMATION	22.03.23	KD	PB
REV	DESCRIPTION	DATE	BY	CHK

STATUS: P3 – PLANNING

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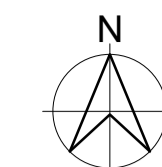
CLIENT: DUBLIN CITY COUNCIL

JOB NAME: SOCIAL HOUSING PPP BUNDLE 4 (SHB4) COLLINS AVENUE

DRG. NAME: SIGHT LINES LAYOUT

JOB REF	SHEET	SCALE	DATE	BY	ENG	APP	REV.
23006	A1	1:500	JULY'2023	KD	PB	PB	1

DRG. NO.: SHB4-CAD-DR-MOR-CS-P3-113



BY	DRAWING No. & REFERENCE	DATE
SURVEY	16/2660 COLLINS AVE TOPO 29923.20	29.09.2023
ARCH	1 SHB4-CAD-DR-MAL-L-P1-001-REV 0	15.04.2024
LS ARCH	SHB4-CAD-DR-MAL-L-P1-001 REV 0	17.04.2024

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NOTES

IRISH WATER APPLICABLE DETAILS (NON-EXHAUSTIVE LIST) WASTE WATER DETAILS - TABLE

STD-WW-01	WASTEWATER SERVICES CONNECTION MAINTENANCE RESPONSIBILITY
STD-WW-03	DRAIN & SERVICE CONNECTION PIPEWORK
STD-WW-04	TYPICAL SEWER/SERVICE PIPE CONNECTION
STD-WW-05	TYPICAL SERVICE LAYOUT INDICATING SEPARATION DISTANCES
STD-WW-05A	WASTEWATER SERVICE CONNECTION VERTICAL SEPARATION DISTANCES
STD-WW-06	RESTRICTIONS ON WASTEWATER INFRASTRUCTURE WORKS ADJACENT TO TREES
STD-WW-06A	RESTRICTIONS ON NEW TREES / SHRUBS PLANTING ADJACENT TO SEWERS
STD-WW-07	TRENCH BACKFILL AND BEDDING
STD-WW-08	CONCRETE BED, HAUNCH AND SURROUND TO WASTEWATER PIPES
STD-WW-10	PRE-CAST CONCRETE MANHOLE WITH CAST IN-SITU BASE
STD-WW-10A	PRE-CAST CONCRETE MANHOLE WITH PRECAST BASE
STD-WW-12	BACKDROP AND CASCADE MANHOLES
STD-WW-36	MARKER POST/PLATES

LEGEND

- PROPOSED FOUL DRAINAGE LINE
- PROPOSED FOUL MANHOLE
- PROPOSED FOUL ARMSTRONG JUNCTION
- EXISTING FOUL DRAINAGE LINE
- EXISTING FOUL MANHOLE
- EXISTING FOUL ARMSTRONG JUNCTION
- EXISTING COMBINED SEWER DRAINAGE LINE
- EXISTING SURFACE DRAINAGE LINE
- EXISTING SURFACE MANHOLE
- EXISTING SURFACE ARMSTRONG JUNCTION
- EXISTING SURFACE ROAD GULLY
- PROPOSED SURFACE DRAINAGE LINE
- PROPOSED SURFACE MANHOLE
- PROPOSED SURFACE ROAD GULLY
- PROPOSED TREE PIT
- PERMEABLE PAVING
- SWALE AREA
- GRATED MANHOLE
- RAIN GARDEN AREA
- PERMEABLE PAVING UNDERDRAIN 150#
- SWALE / RAIN GARDEN UNDERDRAIN 150#
- TREE PIT UNDERDRAIN 150#
- DROPPED KERB AT 5m C/C
- INSPECTION CHAMBER

DRAINAGE NOTES

- ALL FOUL WORKS TO BE IN ACCORDANCE WITH IRISH WATER CODE OF PRACTICE DOCUMENT IW-CDS-5030-03 AND IRISH WATER STANDARD DETAILS IW-CDS-6030-01.
- ALL FOUL WATER DRAINAGE RUNS ARE TO A GRADE OF 1:150 AND PIPE SIZE OF 225# UNLESS OTHERWISE STATED.
- ALL SURFACE WATER DRAINAGE RUNS ARE TO A GRADE OF 1:200 AND PIPE SIZE OF 225# UNLESS OTHERWISE STATED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SETTING OUT JUNCTION BOXES, CHAMBERS, MANHOLES, GULLIES TO ENSURE NO CLASHES WITH SERVICE DUCTS AND PIPES.
- ALL LEVELS ARE IN METRES ABOVE MALIN HEAD DATUM UNLESS OTHERWISE NOTED.
- ALL COVER LEVELS ARE INDICATIVE ONLY.
- ALL DRAINAGE WORK TO BE IN ACCORDANCE WITH IRISH WATER CODE OF PRACTICE FOR WASTE WATER INFRASTRUCTURE AND STANDARD DETAILS.
- MANHOLES, MANHOLES COVERS AND ROAD GULLY GRATINGS TO STANDARD SPECIFICATION.
- ALL PIPE DIAMETERS ARE NOMINAL.
- THE CONTRACTOR MUST SATISFY HIMSELF IN RESPECT TO THE LOCATION OF ALL EXISTING SERVICES.
- ALL FOUL PIPEWORK TO BE UPVC IN ACCORDANCE WITH SECTION 3.13 AND 3.14 OF IRISH WATER CODE OF PRACTICE FOR WASTE WATER INFRASTRUCTURE.
- ALL ROAD GULLY DRAINS ARE 150mm Ø.
- 600mm MAX LENGTH ROCKER PIPES ARE TO BE PROVIDED ON SEWERS WHERE:
 - A PIPE ENTERS A MANHOLE OR PUMPING STATION
 - A PIPE LEAVES A MANHOLE
 - A PIPE ENTERS CONCRETE ENCASMENT
 - A PIPE LEAVES CONCRETE ENCASMENT
 - ANY OTHER LOCATION AS DIRECTED BY THE ENGINEER
- ALL SEWER ROCKER PIPES ARE TO BE FORMED BY CUTTING AND TRIMMING A LENGTH OF SPIGOT & SOCKET PIPE TO FORM A SPIGOT AT THE CUT END, THEREBY FORMING SPIGOT & SOCKET JOINTS AT BOTH ENDS OF THE ROCKER PIPE.
- ALL ROCKER PIPES SHALL BE NO MORE THAN 150mm FROM THEIR ASSOCIATED MANHOLE, PUMPING STATION, CONCRETE ENCASMENT SECTION OR VALVE CHAMBER.
- ALL MANHOLE COVERS LOCATED IN TRAFFICKED AREA ARE TO BE SKID RESISTANT.
- ALL GULLY GRATINGS ARE TO BE MIN. CLASS D400 TO IS EN 124 AND ARE TO BE LOCKABLE.
- WHERE COVER TO PIPE IS LESS THAN 900mm UNDER GRASSED AREAS OR LESS THAN 1200mm UNDER ROADWAYS THE PIPE SHOULD BE SURROUNDED IN CONCRETE.
- EXTERNAL FACE OF PROPOSED MANHOLE CHAMBERS LOCATED AT LEAST 0.5m FROM KERB LINES. EXTERNAL FACE OF SEWERS TO BE LOCATED AT LEAST 1m FROM KERB LINES.
- EXTERNAL FACE OF SEWERS TO BE A MINIMUM OF 3m FROM EXTERNAL FACE OF DEVELOPMENT OR EQUIVALENT DISTANCE TO THE DEPTH OF SEWER BELOW THE FOUNDATION (WHICHEVER IS GREATER).
- NOTE: ALL ATTENUATION ZONES TO BE SEALED TO AVOID ANY POTENTIAL NEGATIVE EFFECTS ON THE SURROUNDING GROUND WATER.
- EXTERNAL FACE OF FOUL MANHOLE CHAMBERS TO BE LOCATED AT LEAST 0.5m FROM KERBLINES. EXTERNAL FACE OF FOUL SEWER PIPEWORK TO BE LOCATED AT LEAST 1.0m FROM KERBLINES.
- ALL WASTEWATER INSPECTION CHAMBERS SHOULD BE IN COMPLIANCE WITH THE IW CODE OF PRACTICE AND STD-WW-02 & 03.
- SEPARATION DISTANCES FROM OTHER SERVICES, BOUNDARY WALLS, TREES, ETC. TO BE IN ACCORDANCE WITH IRISH WATER STANDARD DETAILS STD-WW-05, STD-WW-06, STD-WW-06A.
- ALL MANHOLES IN PEDESTRIAN AREAS TO HAVE NON-SLIP COVERS.

PROPOSED DETENTION BASIN "A"

LEVELS CHECK
 LOWEST ROAD LEVEL = 47.580-0.3m FREEBOARD = 47.280m
 LOWEST FFL = 48.175-0.5m FREEBOARD = 47.675m
 LET THE 1:100 YEAR WATER LEVEL = 47.280m

SIDE SLOPE = 1:3
 TOP OF EMBANKMENT = 47.800
 1:100 YEAR WATER LEVEL = 47.280m
 i.e. 520mm FREEBOARD
 LEVEL AT BASE OF POND = 46.580m

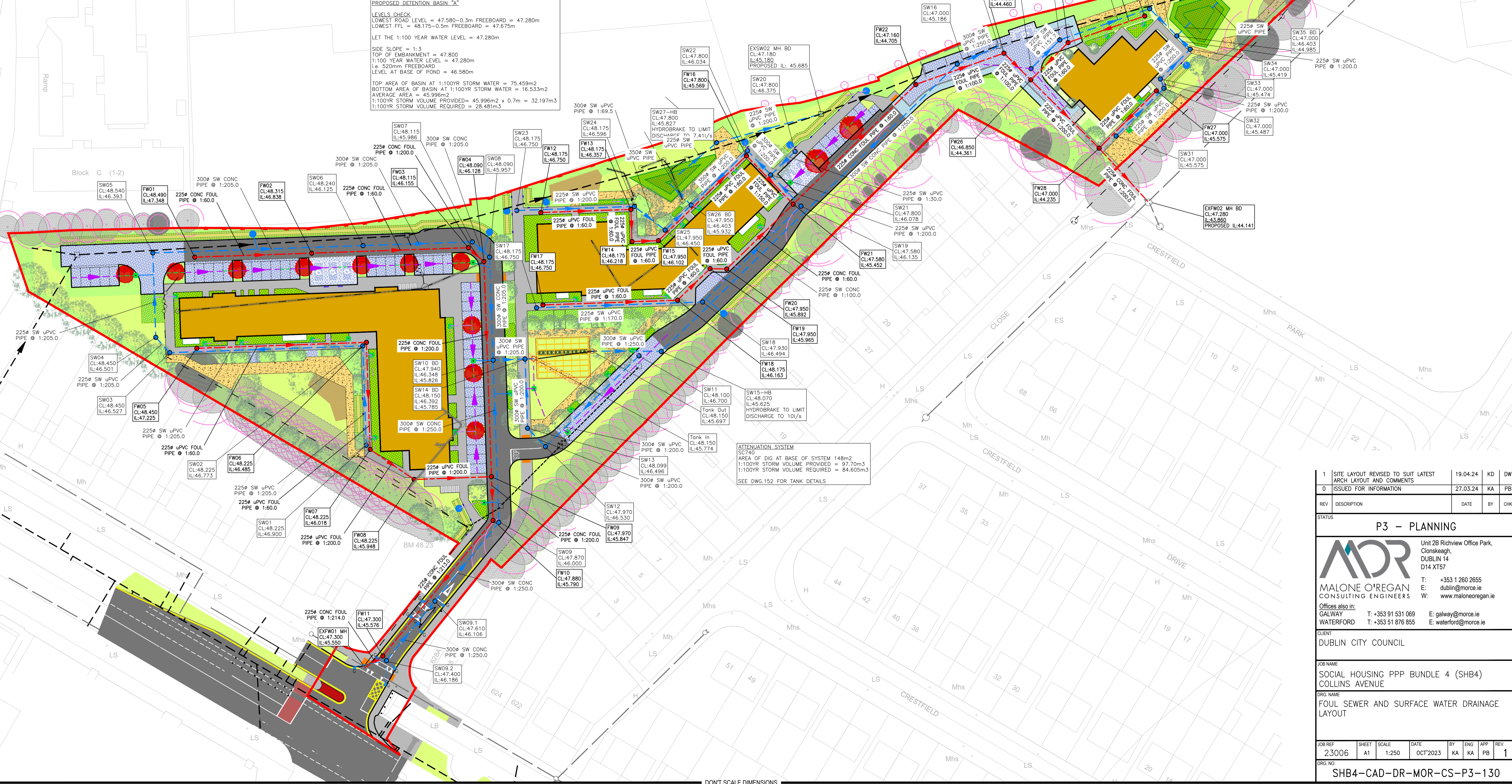
TOP AREA OF BASIN AT 1:100YR STORM WATER = 75.459m²
 BOTTOM AREA OF BASIN AT 1:100YR STORM WATER = 16.533m²
 AVERAGE AREA = 45.996m²
 1:100YR STORM VOLUME PROVIDED = 45.996m² x 0.7m = 32.197m³
 1:100YR STORM VOLUME REQUIRED = 28.481m³

PROPOSED DETENTION BASIN "B"

LEVELS CHECK
 LOWEST ROAD LEVEL = 46.510m-0.3m FREEBOARD = 46.210m
 LOWEST FFL = 47.000m-0.5m FREEBOARD = 46.500m
 LET THE 1:100 YEAR WATER LEVEL = 46.210m

SIDE SLOPE = 1:4
 TOP OF EMBANKMENT = 46.510m
 1:100 YEAR WATER LEVEL = 46.210m
 i.e. 300mm FREEBOARD
 LEVEL AT BASE OF POND = 45.710m

TOP AREA OF BASIN AT 1:100YR STORM WATER = 89.713m²
 BOTTOM AREA OF BASIN AT 1:100YR STORM WATER = 29.740m²
 AVERAGE AREA = 59.727m²
 1:100YR STORM VOLUME PROVIDED = 59.727m² x 0.5m = 29.863m³
 1:100YR STORM VOLUME REQUIRED = 28.100m³



1	SITE LAYOUT REVISED TO SUIT LATEST ARCH LAYOUT AND COMMENTS	19.04.24	KD	DW
0	ISSUED FOR INFORMATION	27.03.24	KA	PB
REV	DESCRIPTION	DATE	BY	CHK

STATUS

P3 - PLANNING

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CLIENT DUBLIN CITY COUNCIL				
JOB NAME SOCIAL HOUSING PPP BUNDLE 4 (SHB4) COLLINS AVENUE				
DRG NAME FOUL SEWER AND SURFACE WATER DRAINAGE LAYOUT				
JOB REF	SHEET	SCALE	DATE	BY
23006	A1	1:250	OCT'2023	KA
ENG	APP	REV.		
KA	PB	1		
DRG NO. SHB4-CAD-DR-MOR-CS-P3-130				

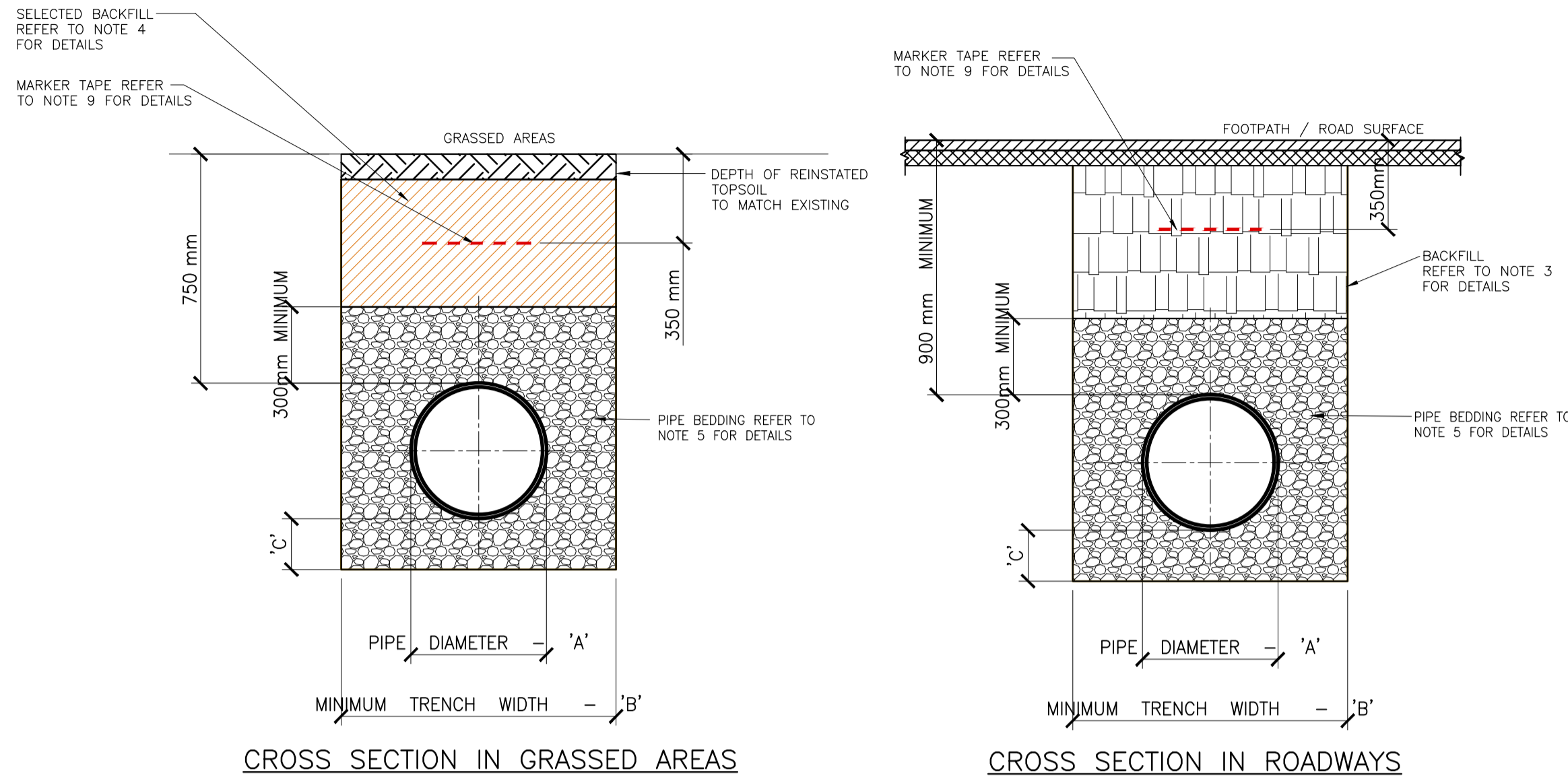
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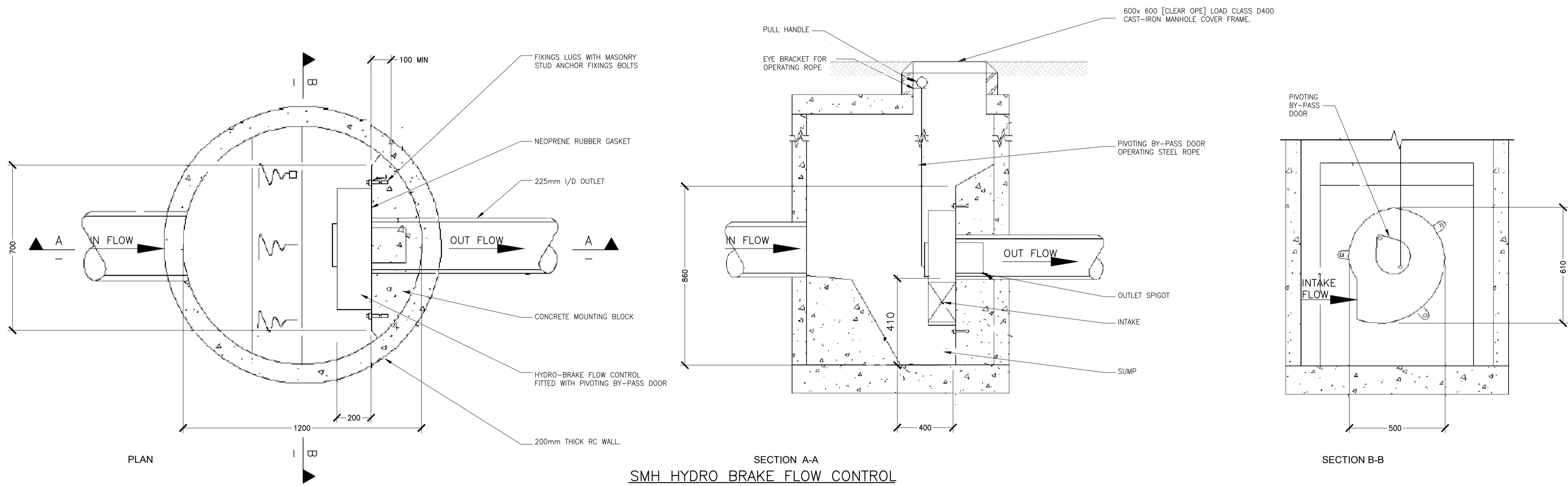
NOTES
LOCAL AUTHORITY / COUNTY COUNCIL GUIDELINES FOR THE DESIGN AND CONSTRUCTION OF HOUSING MANUAL TO TAKE PRECEDENCE WHERE ANY CONFLICT OCCURS. GREATER DUBLIN REGIONAL CODE OF PRACTICE TO TAKE PRECEDENCE WHERE ANY CONFLICT OCCURS.



PIPE DIAMETER 'A' (mm)	TRENCH WIDTH 'B' (mm)
< 80	500
100	500
150	600
200	600
250	750
300	750
350	750
400	900
450	900

PIPE DIAMETER 'A' (mm)	DEPTH OF BEDDING 'C' (mm)
< 200	150
> 250	200

DRAINAGE BEDDING DETAILS



SMH HYDRO BRAKE FLOW CONTROL

- ALL DIMENSIONS IN MILLIMETRES (MM) UNLESS NOTED OTHERWISE.
- THE MINIMUM DEPTH OF COVER FROM THE FINISHED SURFACE TO THE CROWN OF GRAVITY PIPES WITHOUT PROTECTION SHOULD BE AS FOLLOWS:
 - a. DOMESTIC GARDENS AND PATHWAYS WITHOUT ANY POSSIBILITY OF VEHICULAR ACCESS - DEPTH NOT LESS THAN 0.5m. (THIS WOULD NORMALLY RELATE TO DRAINS IN PRIVATE PROPERTY, SHALLOW PIPES OF THIS NATURE ARE UNDESIRABLE AND SHOULD BE INSTALLED IN ACCORDANCE WITH THE CURRENT BUILDING REGULATIONS).
 - b. DOMESTIC DRIVEWAYS, PARKING AREAS AND YARDS WITH HEIGHT RESTRICTIONS TO PREVENT ENTRY BY VEHICLES WITH A GROSS VEHICLE WEIGHT IN EXCESS OF 7.5 TONNES - DEPTH NOT LESS THAN 0.75m.
 - c. DOMESTIC DRIVEWAYS, PARKING AREAS AND NARROW STREETS WITHOUT FOOTWAYS (E.G. MEWS DEVELOPMENTS) WITH LIMITED ACCESS FOR VEHICLES WITH A GROSS VEHICLE WEIGHT IN EXCESS OF 7.5 TONNES - DEPTH NOT LESS THAN 0.9m.
- DEPTHS OF SEWERS IN GATED ESTATES SHALL BE SIMILAR TO THAT OUTLINED ABOVE.
- AGRICULTURAL LAND AND PUBLIC OPEN SPACE - DEPTH NOT LESS THAN 0.9m.
- OTHER HIGHWAYS AND PARKING AREAS WITH UNRESTRICTED ACCESS TO VEHICLES WITH A GROSS VEHICLE WEIGHT IN EXCESS OF 7.5 TONNES - DEPTH NOT LESS THAN 1.2m.
- CLAUSE 804 MATERIAL IN ACCORDANCE WITH THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS IS TO BE USED AS BACKFILL MATERIAL WHERE THE SEWER MAIN IS LOCATED IN ROADS, FOOTPATHS OR WHEN THE NEAREST PART OF THE TRENCH IS WITHIN 1M OF THE PAVED EDGE OF THE ROADWAY. CLAUSE 804 IS TO BE COMPACTED AS PER CLAUSE 802 OF THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS.
- SELECTED EXCAVATED MATERIAL MAY BE USED IN GREEN-FIELD AREAS ABOVE GRANULAR PIPE SURROUND MATERIAL SUBJECT TO THE APPROVAL OF IRISH WATER.
- PIPE BEDDING SHALL COMPLY WITH WIS 4-08-02 AND IGN 4-08-01 GRANULAR MATERIAL SHALL BE 14MM TO 5MM GRADED AGGREGATE OR 10MM SINGLE SIZED AGGREGATE.
- IN SOFT GROUND CONDITIONS (CBR < 5) THE MATERIAL SHOULD BE EXCAVATED AND DISPOSED OF IN ACCORDANCE WITH THE WASTE MANAGEMENT ACT AND CLAUSE 804 MATERIAL IN ACCORDANCE WITH THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS SHALL REPLACE THE EXCAVATED MATERIAL, WRAPPED IN GEO-TEXTILE WRAPPING, ALTERNATIVELY, SPECIAL PIPE SUPPORT ARRANGEMENTS, INCLUDING FILING ETC. MAY BE REQUIRED WHERE THE DEPTH OF SOFT MATERIAL IS EXCESSIVE, SUCH ARRANGEMENTS SHALL BE SUBJECT TO ASSESSMENT BY IRISH WATER BEFORE ADVANCING WITH THE WORK.
- IN GREEN FIELD AREAS, TYPE B BACKFILL (SELECTED EXCAVATED MATERIAL) WILL BE ALLOWED ABOVE THE SIDE HAUNCH GRANULAR MATERIAL IN THE CASE OF RIGID PIPES. A GRANULAR SURROUND OF A MINIMUM DEPTH OF 150MM ABOVE THE CROWN OF THE PIPE IS REQUIRED FOR FLEXIBLE PIPES. AND TYPE B MATERIAL MAY BE USED AS BACKFILL ABOVE THIS. ALL RISING MAINS IN GREENFIELD AREAS SHALL HAVE A MINIMUM COVER OF 300mm OF GRANULAR MATERIAL ABOVE THE EXTERNAL CROWN OF THE PIPE.
- PIPES SHALL NOT BE SUPPORTED ON STONES OR ROCKS, OR ANY HARD OBJECT AT ANY POINT ALONG THE TRENCH. ROCK SHALL BE EXCAVATED TO A DEPTH OF 150mm BELOW THE ACTUAL DEPTH OF THE TRENCH WITH THE VOID FILLED WITH CLAUSE 804 MATERIAL IN ACCORDANCE WITH THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS. THE GRANULAR MATERIAL SHALL BE LAID ABOVE THIS VOID BACKFILL MATERIAL.
- NON DEGRADABLE MARKER TAPE SHOULD BE INSTALLED 350mm FROM THE SURFACE OF THE ROAD. IN THE CASE OF NON METAL PIPE MATERIAL, THE MARKER TAPE SHOULD INCORPORATE A TRACE WIRE WHICH IS LINKED TO FITTINGS AND TERMINATED AT THE WASTE WATER PUMPING STATION AND THE DISCHARGE MANHOLE.
- ALL DRAINAGE WORK TO BE IN ACCORDANCE WITH IRISH WATER CODE OF PRACTICE FOR WASTE WATER INFRASTRUCTURE AND STANDARD DETAILS AND GREATER DUBLIN REGIONAL CODE OF PRACTICE.

REV	DESCRIPTION	DATE	BY	CHK
1	TITLE REVISED AND RE-ISSUED FOR INFORMATION	18.04.24	KD	DW
0	ISSUED FOR INFORMATION	22.03.24	KD	PB

STATUS
P3 - PLANNING

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CLIENT
DUBLIN CITY COUNCIL

JOB NAME
**SOCIAL HOUSING PPP BUNDLE 4 (SHB4)
COLLINS AVENUE**

DRG. NAME
**SITE DEVELOPMENT DETAILS
SHEET 2
DRAINAGE DETAILS**

JOB REF	SHEET	SCALE	DATE	BY	ENG	APP	REV.
23006	A1	SHOWN	MARCH'2024	KD	PB	PB	1

DRG. NO.
SHB4-CAD-DR-MOR-CS-P3-138

IRISH WATER APPLICABLE DETAILS
(NON-EXHAUSTIVE LIST)
WATERMAIN DETAILS - TABLE

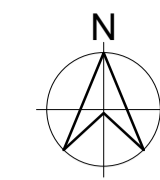
STD-W-04	GENERAL PIPE CONNECTIONS (SHEET 1 OF 7)
STD-W-05	GENERAL PIPE CONNECTIONS (SHEET 2 OF 7)
STD-W-06	GENERAL PIPE CONNECTIONS (SHEET 3 OF 7)
STD-W-07	GENERAL PIPE CONNECTIONS (SHEET 4 OF 7)
STD-W-08	GENERAL PIPE CONNECTIONS (SHEET 5 OF 7)
STD-W-09	GENERAL PIPE CONNECTIONS (SHEET 6 OF 7)
STD-W-10	GENERAL PIPE CONNECTIONS (SHEET 7 OF 7)
STD-W-13	TRENCH BACKFILL & BEDDING & REDUCED COVER TO PROTECTION SLAB DETAIL
STD-W-14	SLUICE VALVE FOR DUCTILE (D.I.) PIPE (<350mm DIA) (SHEET 1 OF 2)
STD-W-15	SLUICE VALVE FOR POLYETHYLENE (P.E.) PIPE (<350mm DIA) (SHEET 2 OF 2)
STD-W-16	ON-LINE HYDRANT FOR DUCTILE IRON (D.I.) PIPES (SHEET 1 OF 4)
STD-W-17	OFF-LINE HYDRANT FOR DUCTILE IRON (D.I.) PIPES (SHEET 2 OF 4)
STD-W-18	ON-LINE HYDRANT FOR POLYETHYLENE (P.E.) PIPES (SHEET 3 OF 4)
STD-W-19	OFF-LINE HYDRANT FOR POLYETHYLENE (P.E.) PIPES (SHEET 4 OF 4)
STD-W-27	MARKER POST/PLATES
STD-W-28	WATER MAIN THRUST & SUPPORT BLOCKS

WATERMAIN LEGEND

	PROPOSED 100mm WATERMAIN LINE
	PROPOSED HYDRANT
	PROPOSED AIR VALVE
	PROPOSED SLUICE VALVE
	PROPOSED WATER METER
	PROPOSED THRUST BLOCK
	EXISTING WATERMAIN LINE
	EXISTING HYDRANT
	EXISTING WATER METER
	INDICATES WATERMANS TO BE REMOVED/DEVERTED
	PERMEABLE PAVING
	SWALE AREA
	RAIN GARDEN AREA

WATERMAIN NOTES

- ALL WORKS TO BE IN ACCORDANCE WITH IRISH WATER CODE OF PRACTICE DOCUMENT IW-CDS-5020-03 AND IRISH WATER STANDARD DETAILS IW-CDS-5020-01.
- ALL WATERMANS (EXCEPT AS NOTED BELOW) TO BE HDPE (PE-100) WITH SDR-17 RATING AND SHALL COMPLY WITH SECTION 3.9 OF IRISH WATER CODE OF PRACTICE.
- CONCRETE ANCHOR BLOCKS AT DEAD ENDS, TEES, BOTH SIDES OF SLUICE VALVES AND AT ALL BENDS OVER 22.5°.
- MIN. COVER TO WATERMAIN TO BE 900MM.
- WATERMANS TO BE PRESSURE TESTED IN ACCORDANCE WITH IRISH WATER CODE OF PRACTICE FOR WATER INFRASTRUCTURE SECTION 4.10.3
- PRIOR TO COMMISSIONING THE WATERMAIN SHALL BE SWABED AND DISINFECTED IN ACCORDANCE WITH IRISH WATER CODE OF PRACTICE FOR WATER INFRASTRUCTURE.
- SEE MANUFACTURER'S DETAILED INSTRUCTIONS PRIOR TO THE INSTALLATION OF WATER METER.
- CHECK THAT FLOW ARROW DIRECTION IS POINTING IN THE SAME DIRECTION AS THE FLOW IN THE WATERMAIN.
- DRAW-WIRES TO BE LEFT IN ALL DUCTS.
- DF SPACER AND S.V. TO BE THE SAME # AS METER.
- SEPARATION DISTANCES FROM EXISTING PLANTING SHALL COMPLY WITH IRISH WATER STANDARD DETAIL STD-W-12.
- CONCRETE THRUST BLOCKS AT DEAD ENDS, TEES, BOTH SIDES OF SLUICE VALVES AND AT ALL BENDS OVER 22.5°. THRUST BLOCKS TO BE PROVIDED IN ACCORDANCE WITH IRISH WATER STANDARD DETAIL STD-W-28 (12-15 BAR TEST PRESSURE)
- NO HYDRANTS OR SLUICE VALVES ARE TO BE LOCATED WITHIN TRAFFICKED AREAS
- SEPARATION DISTANCES FROM OTHER SERVICES, BOUNDARY WALLS, TREES, ETC. TO BE IN ACCORDANCE WITH IRISH WATER STANDARD DETAILS STD-W-11, STD-W-12, STD-W-12A.



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THE CONTRACTOR SHALL CHECK ALL DIMENSIONS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. ALL DISCREPANCIES SHALL BE REPORTED TO THIS OFFICE IN WRITING.

NOTES

BY	DRAWING No. & REFERENCE	DATE
SURVEY	JG02660 COLLINS AVE TOPO 290923 20	29.09.2023
ARCH	SHB4-CAD-22Z-MO-COA-AR-SITEWORKS	15.04.2024
LS ARCH	SHB4-CAD-DR-MAL-L-PI-0001 REV 0	17.04.2024



1	SITE LAYOUT REVISED TO SUIT LATEST ARCH LAYOUT AND COMMENTS	18.04.24	KD	DW
0	ISSUED FOR INFORMATION	22.03.24	KD	PB
REV	DESCRIPTION	DATE	BY	CHK

STATUS: **P3 - PLANNING**

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WATERFORD T: +353 51 876 855 E: waterford@mor.ie

CLIENT: DUBLIN CITY COUNCIL

JOB NAME: SOCIAL HOUSING PPP BUNDLE 4 (SHB4) COLLINS AVENUE

DRG. NAME: WATERMAIN LAYOUT

JOB REF	SHEET	SCALE	DATE	BY	ENG	APP	REV.
23006	A1	1:500	OCT'2023	KD	PB	PB	1

DRG. NO.: SHB4-CAD-DR-MOR-CS-P3-140

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BY	DRAWING No. & REFERENCE	DATE
ARCH	SHB4-CAD-222-M2-COA-AR-SITEWORKS	15.04.2024
LS	SHB5-CAD-DR-MAL-L-P1-0001	17.04.2024
REV		

PROPOSED DETENTION BASIN "B"

LEVELS CHECK
 LOWEST ROAD LEVEL = 46.510m-0.3m FREEBOARD = 46.210m
 LOWEST FFL = 47.000m-0.5m FREEBOARD = 46.500m
 LET THE 1:100 YEAR WATER LEVEL = 46.210m

SIDE SLOPE = 1:4
 TOP OF EMBANKMENT = 46.510m
 1:100 YEAR WATER LEVEL = 46.210m
 I.e. 300mm FREEBOARD
 LEVEL AT BASE OF POND = 45.710m

TOP AREA OF BASIN AT 1:100YR STORM WATER = 69.713m²
 BOTTOM AREA OF BASIN AT 1:100YR STORM WATER = 29.740m²
 AVERAGE AREA = 59.727m²
 1:100YR STORM VOLUME PROVIDED = 59.727m² x 0.5m = 29.863m³
 1:100YR STORM VOLUME REQUIRED = 28.100m³

PROPOSED DETENTION BASIN "A"

LEVELS CHECK
 LOWEST ROAD LEVEL = 47.580-0.3m FREEBOARD = 47.280m
 LOWEST FFL = 48.175-0.5m FREEBOARD = 47.675m
 LET THE 1:100 YEAR WATER LEVEL = 47.280m

SIDE SLOPE = 1:3
 TOP OF EMBANKMENT = 47.800
 1:100 YEAR WATER LEVEL = 47.280m
 I.e. 520mm FREEBOARD
 LEVEL AT BASE OF POND = 46.580m

TOP AREA OF BASIN AT 1:100YR STORM WATER = 75.459m²
 BOTTOM AREA OF BASIN AT 1:100YR STORM WATER = 16.533m²
 AVERAGE AREA = 45.996m²
 1:100YR STORM VOLUME PROVIDED = 45.996m² x 0.7m = 32.197m³
 1:100YR STORM VOLUME REQUIRED = 28.481m³

ATTENUATION SYSTEM SC740

AREA OF DIG AT BASE OF SYSTEM 148m²
 1:100YR STORM VOLUME PROVIDED = 97.70m³
 1:100YR STORM VOLUME REQUIRED = 84.605m³

SEE DWG.152 FOR TANK DETAILS

LEGEND

- EXISTING SURFACE DRAINAGE LINE
- EXISTING SURFACE MANHOLE
- EXSW AJ EXISTING SURFACE ARMSTRONG JUNCTION
- EXISTING SURFACE ROAD GULLY
- PROPOSED SURFACE DRAINAGE LINE
- PROPOSED SURFACE MANHOLE
- PROPOSED SURFACE ROAD GULLY
- PROPOSED TREE PIT
- PERMEABLE PAVING
- SWALE AREA
- GRATED MANHOLE
- RAIN GARDEN AREA
- PERMEABLE PAVING UNDERDRAIN 150#
- SWALE/RAIN GARDEN UNDERDRAIN 150#
- TREE PIT UNDERDRAIN 150#
- DROPPED KERB AT 5m C/C
- INSPECTION CHAMBER
- STANDARD ROOF
- GREEN ROOF OVER BLUE ROOF

DRAINAGE NOTES

REFER TO DWG. 130 FOR DRAINAGE NOTES

1	SITE LAYOUT REVISED TO SUIT LATEST ARCH LAYOUT AND COMMENTS	19.04.24	KD	DW
0	ISSUED FOR INFORMATION	27.03.24	KA	PB
REV	DESCRIPTION	DATE	BY	CHK

P3 - PLANNING

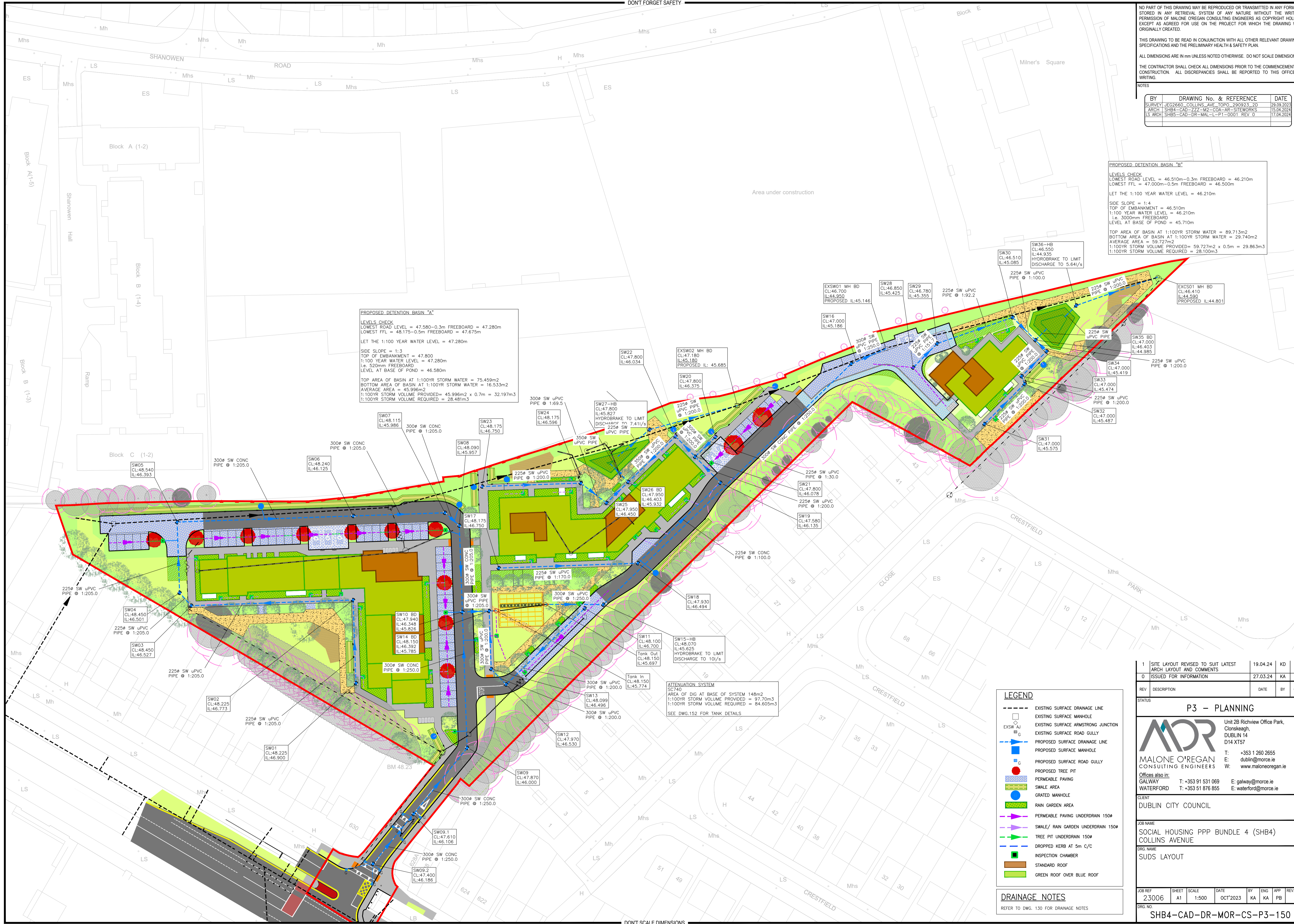
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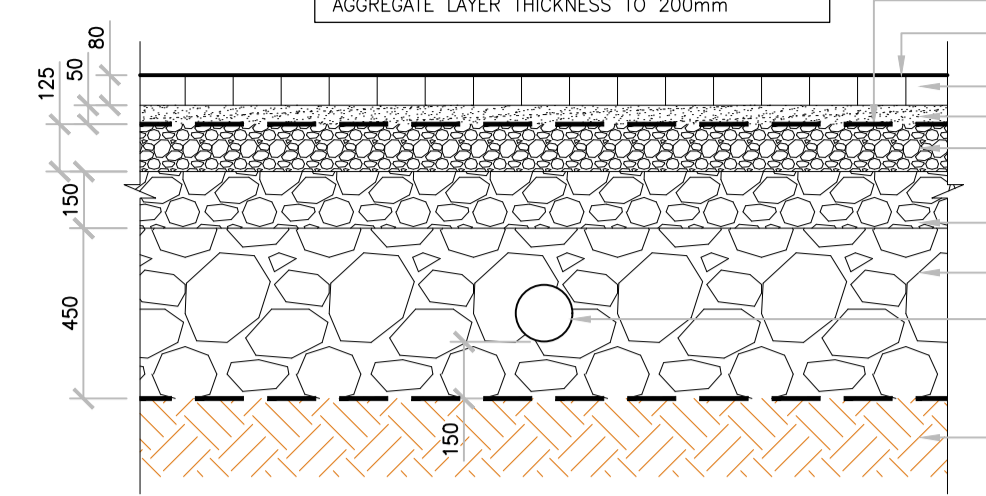
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CLIENT
 DUBLIN CITY COUNCIL

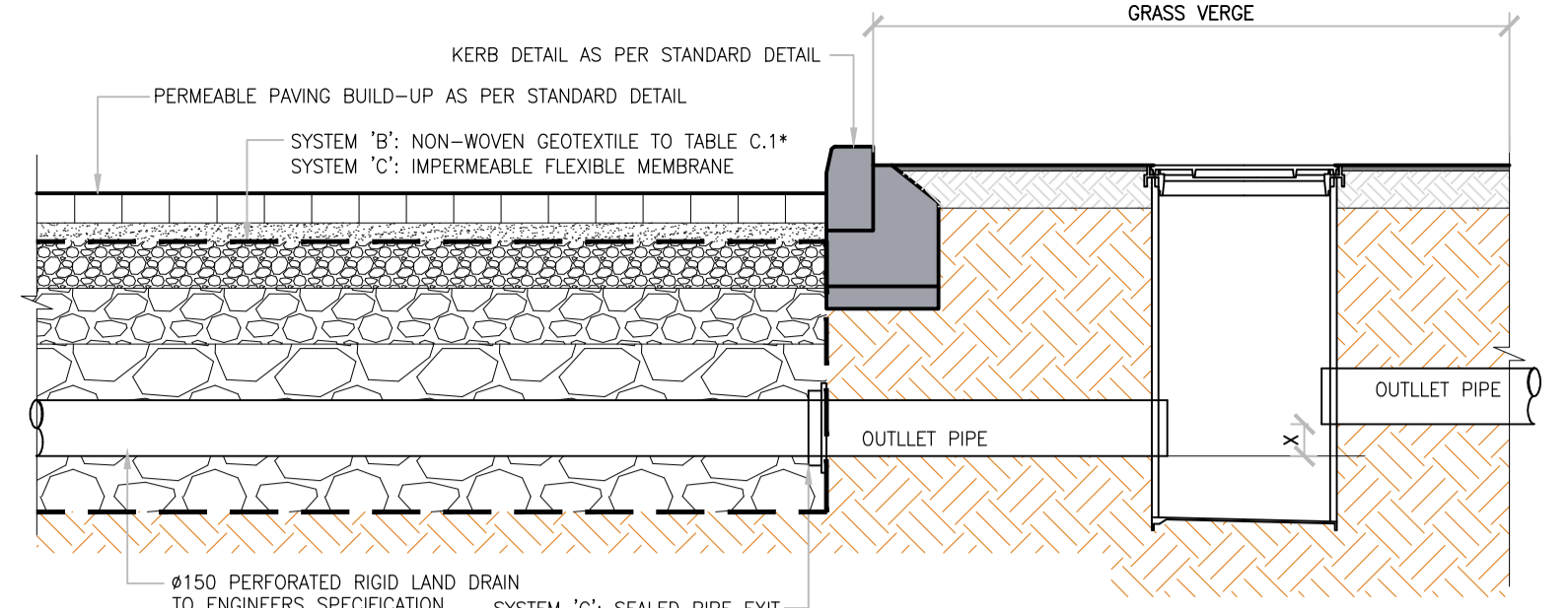
JOB NAME	SOCIAL HOUSING PPP BUNDLE 4 (SHB4) COLLINS AVENUE			
DRG. NAME	SUDS LAYOUT			
JOB REF	SHEET	SCALE	DATE	BY
23006	A1	1:500	OCT'2023	KA
APP	REV			
PB	1			



NOTE
FOR PAVED AREAS SUBJECT TO OCCASIONAL
HDV LOADING (E.G. EDGE OF ROAD PARKING BAYS)
INCREASE THE HYDRAULICALLY BOUND
AGGREGATE LAYER THICKNESS TO 200mm



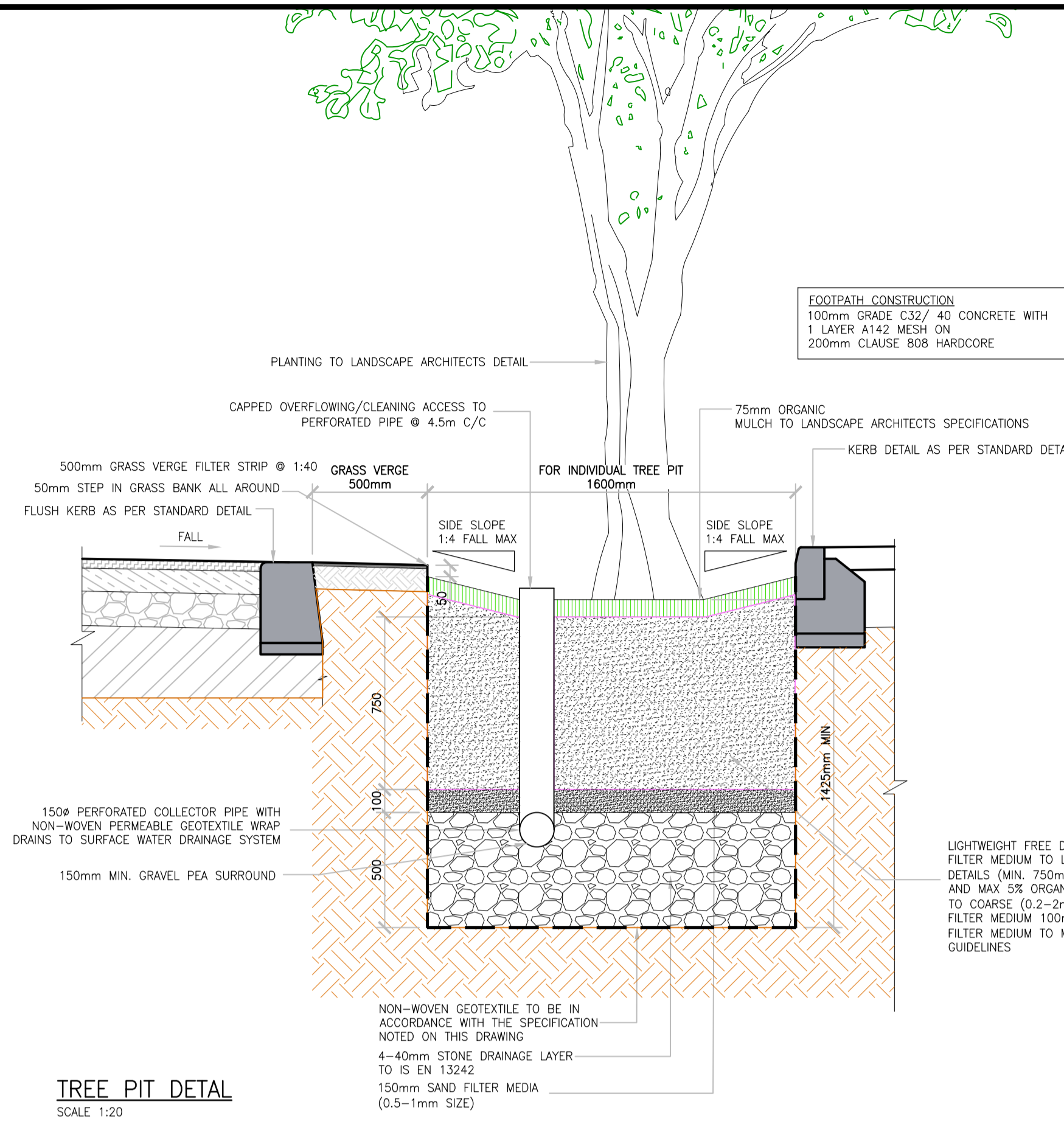
PERMEABLE PAVING TO CAR PARKING BAYS
SCALE 1:20



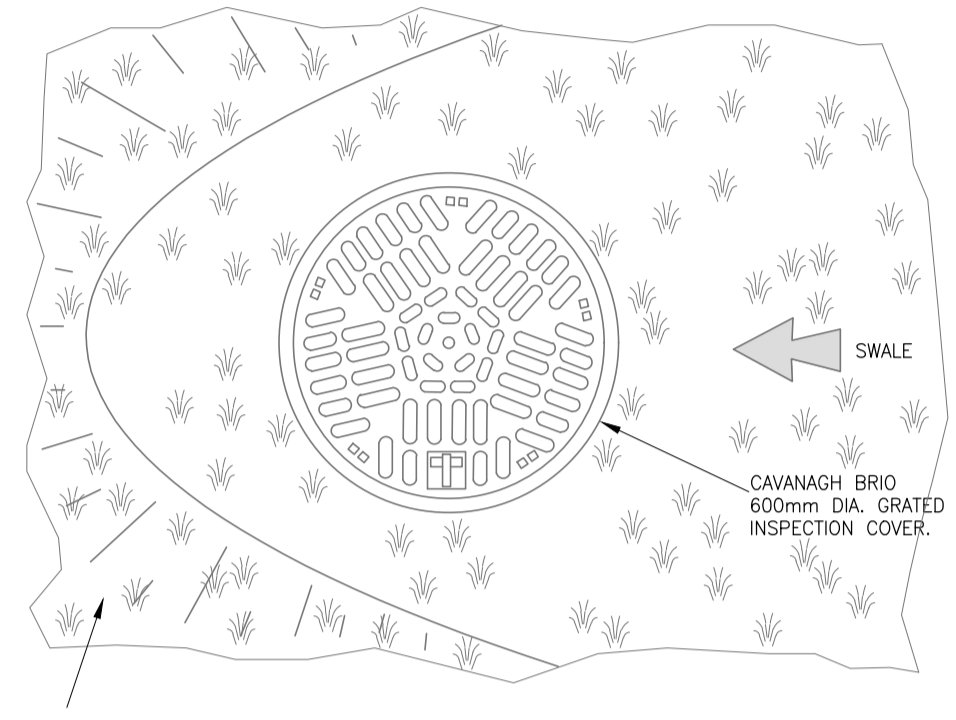
TYPICAL PERMEABLE PAVING OUTLET DETAIL
SCALE 1:20

OUTLET PIPE OFFSET DISTANCE 'X' ABOVE THE INLET TO ACHIEVE INTERCEPTION STORAGE IN THE PAVEMENT BUILDUP = 0.3xA WHERE A = PERMANENT AREA (ALLOWS FOR 30% VOIDS IN THE GRANULAR LAYER)

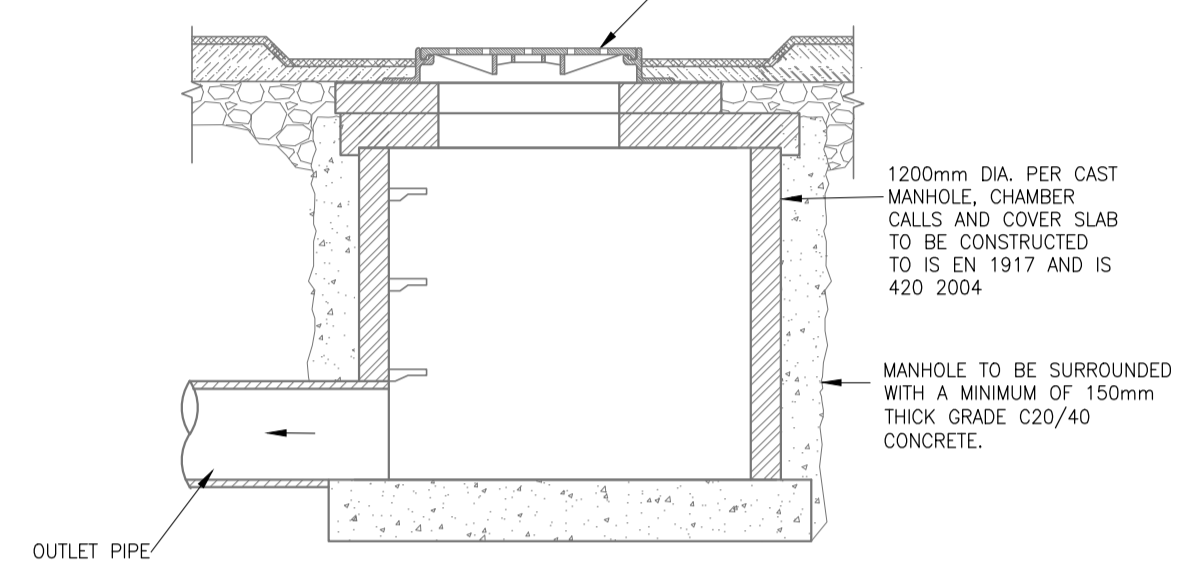
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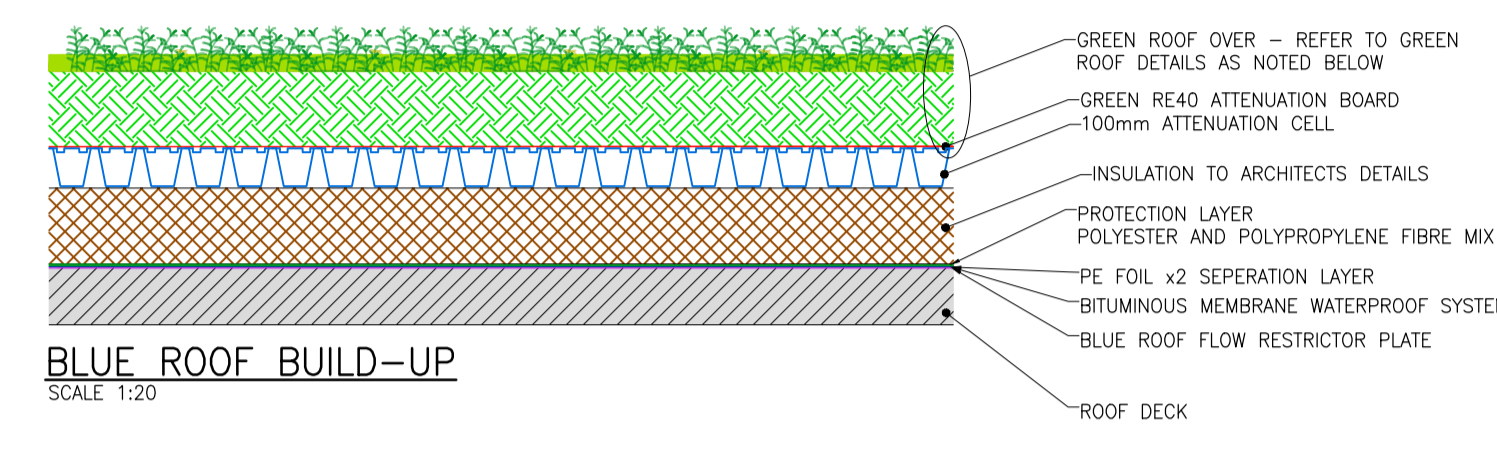
TREE PIT DETAIL
SCALE 1:20



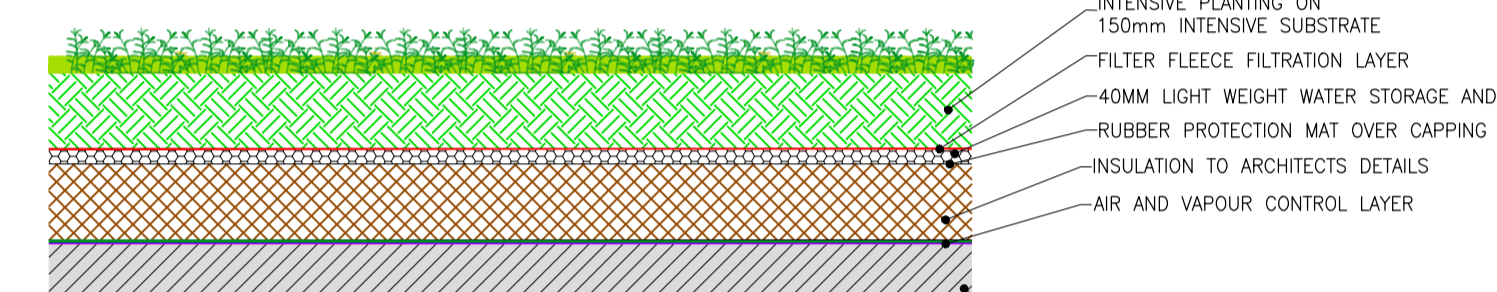
GRATED MANHOLE PLAN DETAIL D.
SCALE: N.T.S.



GRATED MANHOLE INLET CHAMBER - CROSS-SECTION
SCALE: N.T.S.



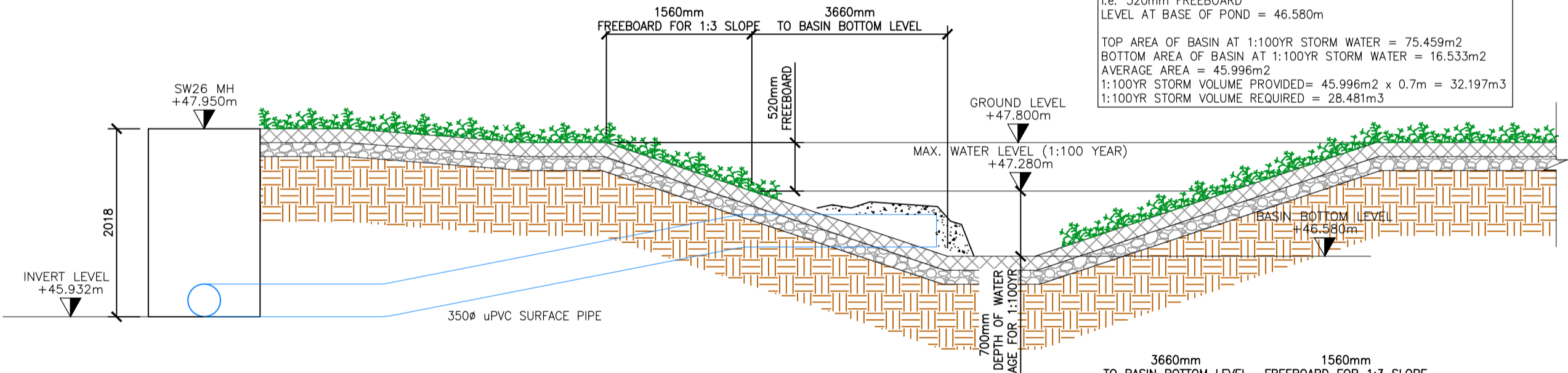
BLUE ROOF BUILD-UP
SCALE 1:20



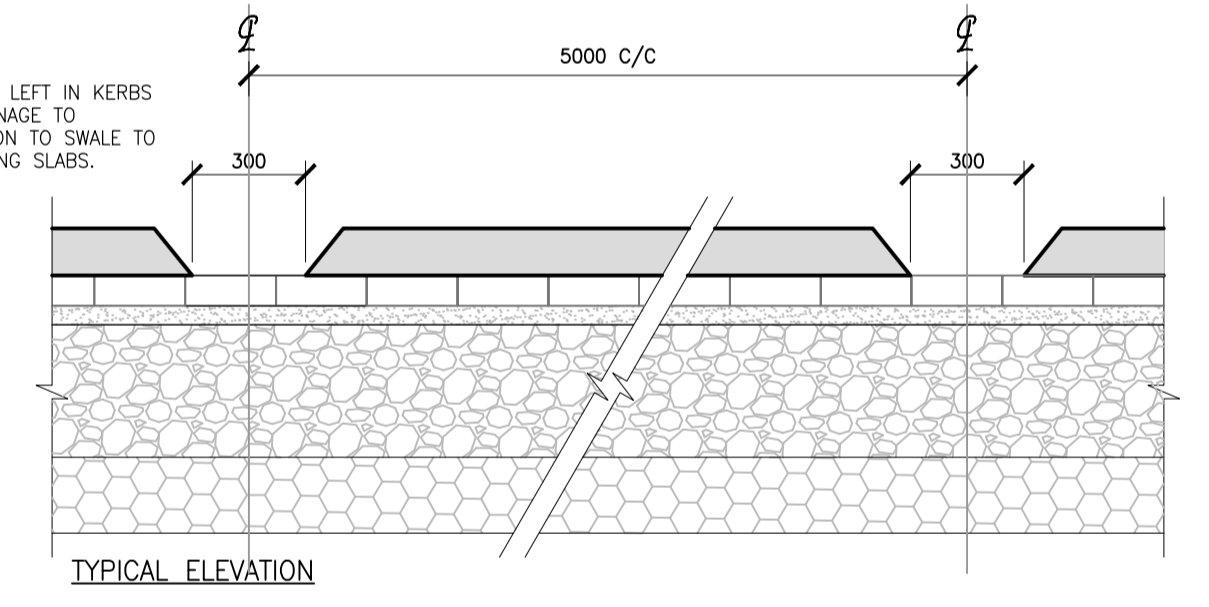
GREEN ROOF BUILD-UP
SCALE 1:20



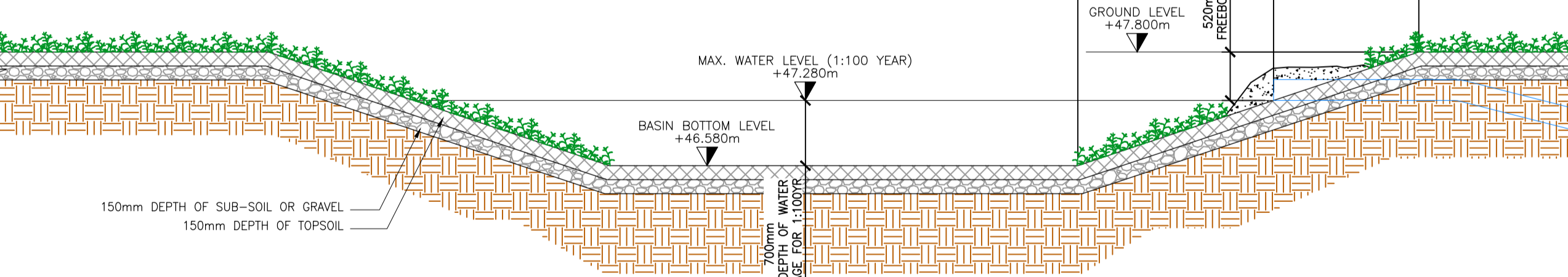
PROPOSED DETENTION BASIN "A"
LEVELS CHECK
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LOWEST FFL = 48.175-0.5m FREEBOARD = 47.675m
LET THE 1:100 YEAR WATER LEVEL = 47.280m
SIDE SLOPE = 1:3
TOP OF EMBANKMENT = 47.800
1:100 YEAR WATER LEVEL = 47.280m
i.e. 500mm FREEBOARD
LEVEL AT BASE OF POND = 46.580m
TOP AREA OF BASIN AT 1:100YR STORM WATER = 75.459m²
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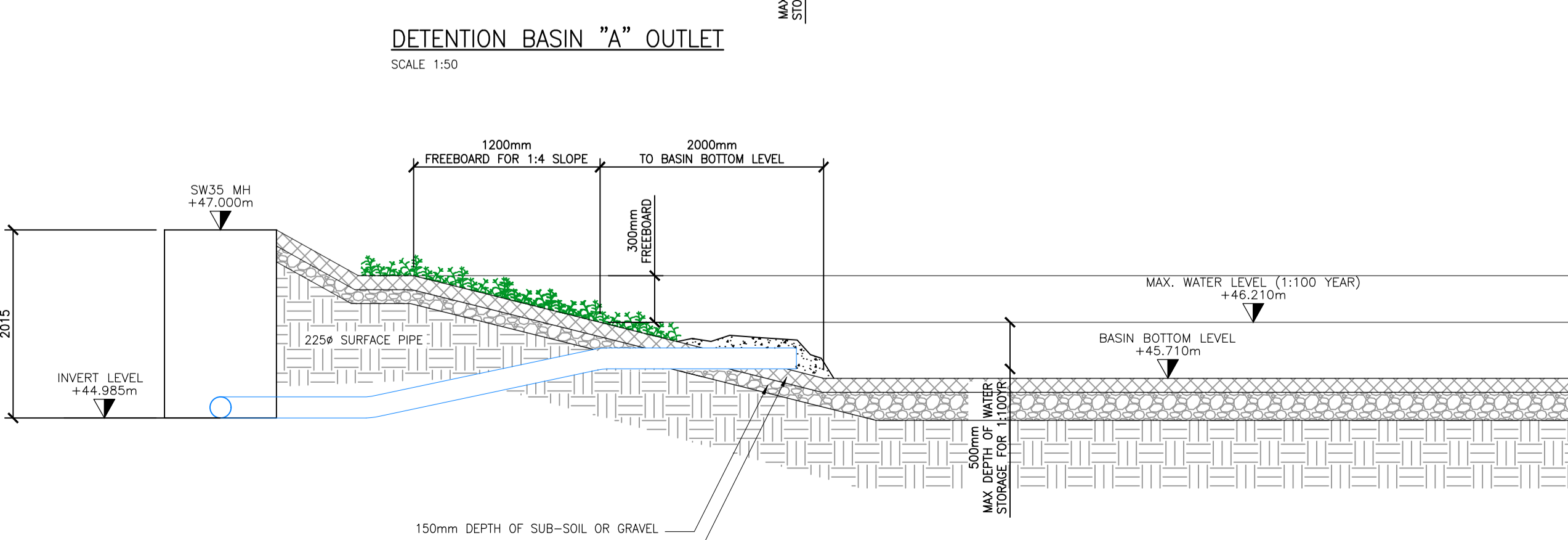
TYPICAL SECTION THROUGH SWALE
TAKING DRAINAGE FROM A HARDSTANDING AREA
SCALE 1:20



TYPICAL ELEVATION



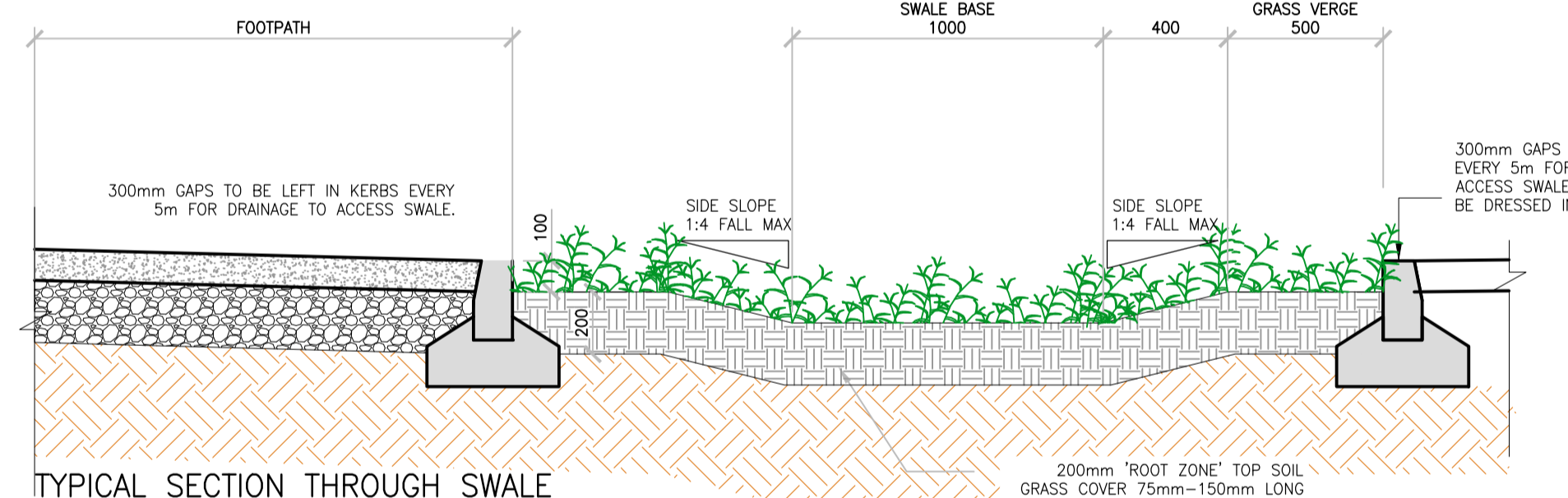
DETENTION BASIN "A" INLET
SCALE 1:50



DETENTION BASIN "A" OUTLET
SCALE 1:50

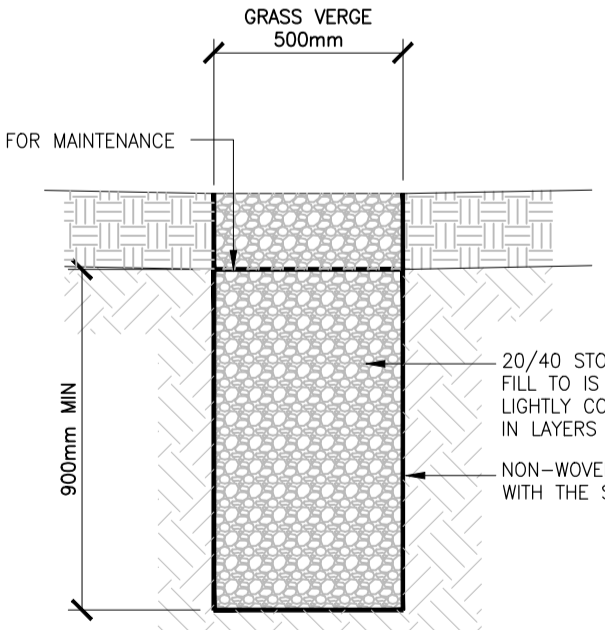


DETENTION BASIN "B" INLET/OUTLET
SCALE 1:50



TYPICAL SECTION THROUGH
RAIN GARDEN/BIORETENTION AREA
SCALE 1:20

PROPOSED DETENTION BASIN "B"
LEVELS CHECK
LOWEST ROAD LEVEL = 46.510m-0.3m FREEBOARD = 46.210m
LOWEST FFL = 47.000m-0.5m FREEBOARD = 46.500m
LET THE 1:100 YEAR WATER LEVEL = 46.210m
SIDE SLOPE = 1:4
TOP OF EMBANKMENT = 46.510m
1:100 YEAR WATER LEVEL = 46.210m
i.e. 300mm FREEBOARD
LEVEL AT BASE OF POND = 45.710m
TOP AREA OF BASIN AT 1:100YR STORM WATER = 89.713m²
BOTTOM AREA OF BASIN AT 1:100YR STORM WATER = 29.740m²
AVERAGE AREA = 59.727m²
1:100YR STORM VOLUME PROVIDED = 59.727m² x 0.5m = 29.863m³
1:100YR STORM VOLUME REQUIRED = 28.100m³



TYPICAL SECTION THROUGH
RAIN GARDEN/BIORETENTION AREA
SCALE 1:20

1	TITLE REVISED AND RE-ISSUED FOR INFORMATION	19.04.24	KA	DW
0	ISSUED FOR INFORMATION	22.03.24	KD	PB
REV	DESCRIPTION	DATE	BY	CHK

STATUS: P3 - PLANNING

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WATERFORD T: +353 51 876 855 E: waterford@moroe.ie

CUSTOMER: DUBLIN CITY COUNCIL

JOB NAME: SOCIAL HOUSING PPP BUNDLE 4 (SHB4)
COLLINS AVENUE
DRG NAME: SITE DEVELOPMENT DETAILS
SUDS DRAINAGE DETAILS

JOB REF	SHEET	SCALE	DATE	BY	ENG	APP	REV.
23006	A1	SHOWN	OCT 2023	KA	PB	PB	1

DRG NO.: SHB4-CAD-DR-MOR-CS-P3-151

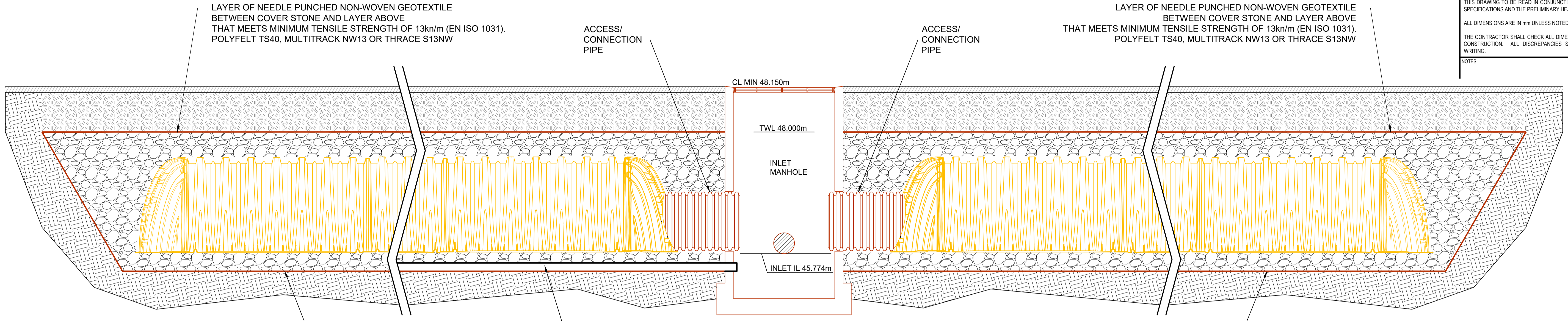
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NOTES

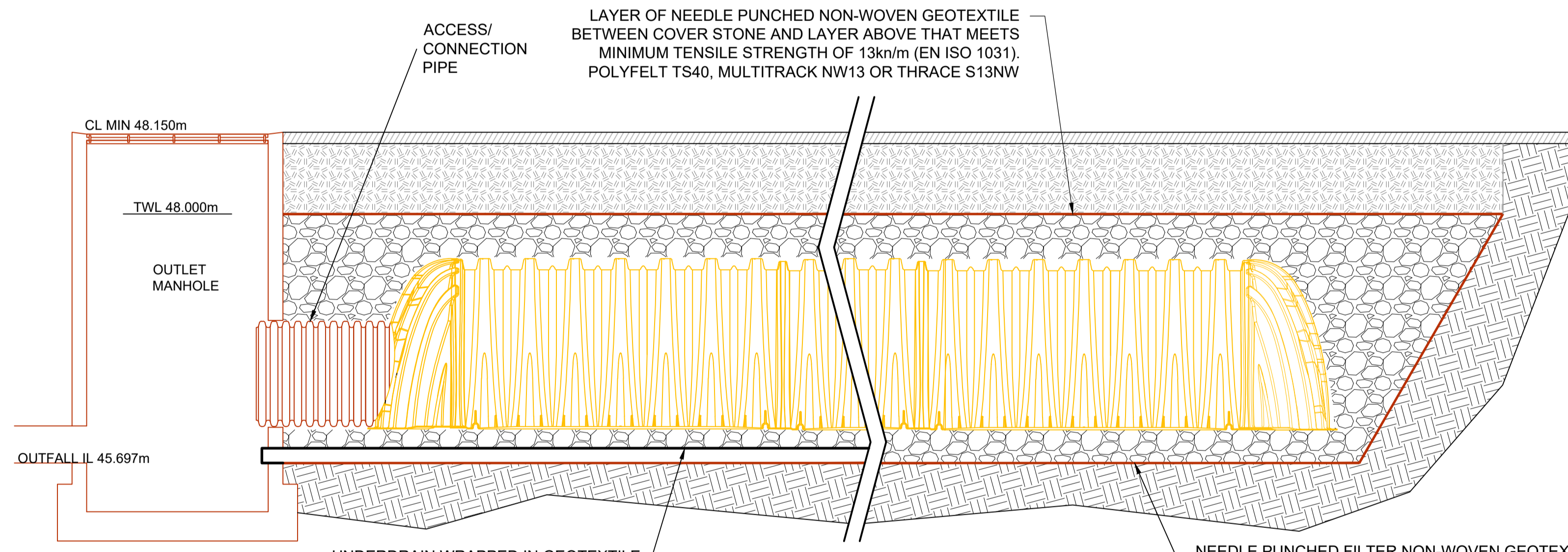


SECTION THRU ATTENUATION TANK - INLET MANHOLE

SCALE 1:25

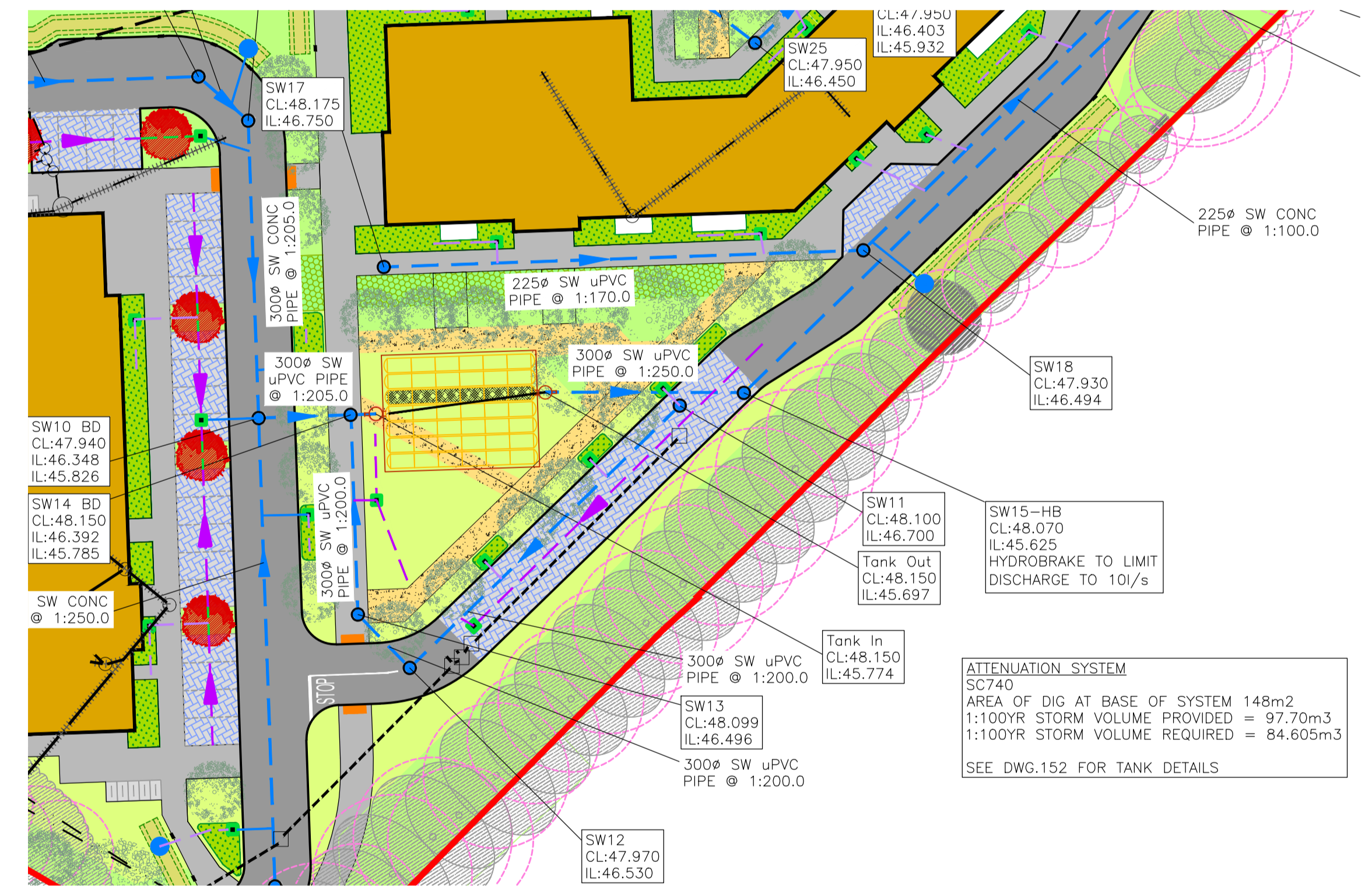
NEEDLE PUNCHED FILTER NON-WOVEN GEOTEXTILE THAT MEETS MINIMUM TENSILE STRENGTH OF 13kn/m (EN ISO 1031) POLYFELT TS40, MULTITRACK NW13 OR THRACE S13NW AROUND BASE AND SIDE OF EXCAVATION

NEEDLE PUNCHED FILTER NON-WOVEN GEOTEXTILE THAT MEETS MINIMUM TENSILE STRENGTH OF 13kn/m (EN ISO 1031) POLYFELT TS40, MULTITRACK NW13 OR THRACE S13NW AROUND BASE AND SIDE OF EXCAVATION



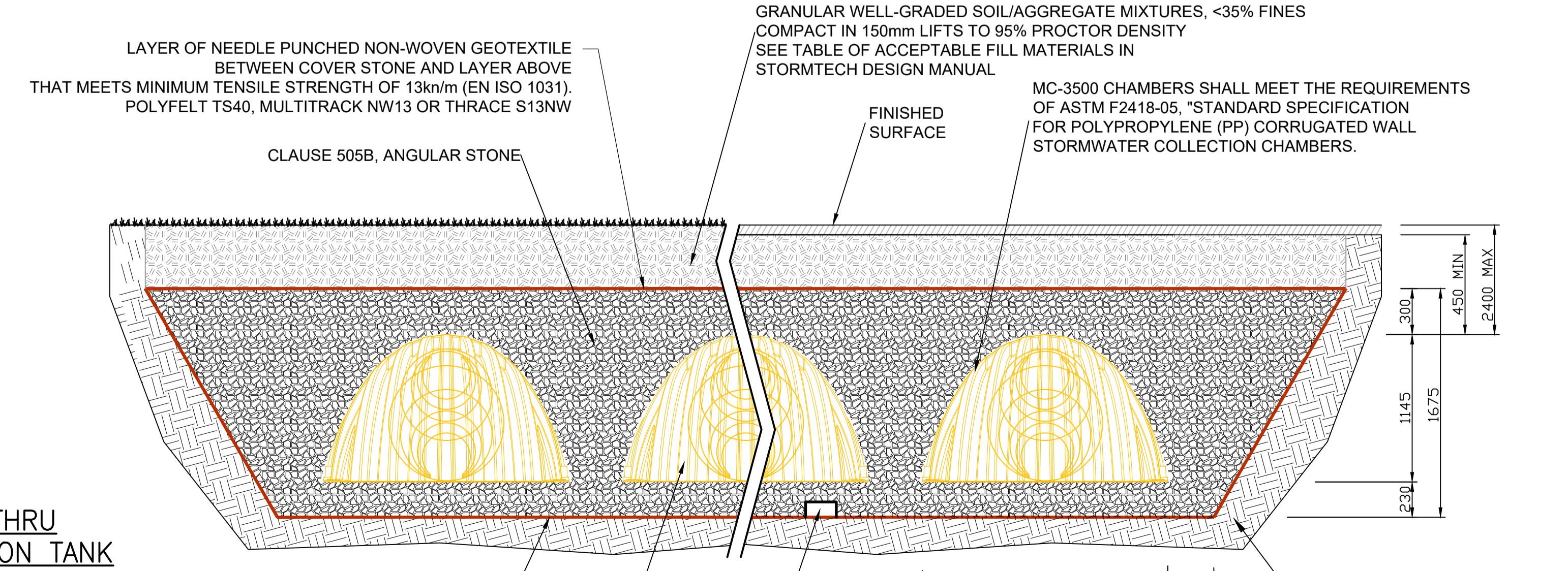
SECTION THRU ATTENUATION TANK - OUTLET MANHOLE

SCALE 1:25



SITE LAYOUT

SCALE N.T.S



SECTION THRU ATTENUATION TANK

SCALE 1:25

THE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE OF THE SUBGRADE SOILS*

1	TITLE REVISED AND RE-ISSUED FOR INFORMATION	18.04.24	KA	DW
0	ISSUED FOR INFORMATION	22.03.24	KD	PB
REV	DESCRIPTION	DATE	BY	CHK

STATUS: P3 - PLANNING

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CLIENT: DUBLIN CITY COUNCIL

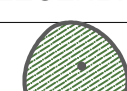
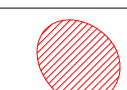

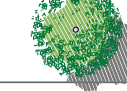
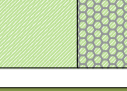

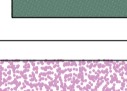

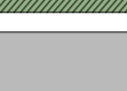
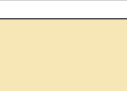








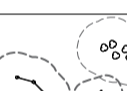
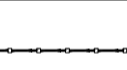


JOB NAME: SOCIAL HOUSING PPP BUNDLE 4 (SHB4) COLLINS AVENUE

DRG NAME: ATTENUATION TANK DETAILS

JOB REF	SHEET	SCALE	DATE	BY	ENG	APP	REV.
23006	A1	SHOWN	NOV/2023	KA	KA	PB	1

DRG NO: SHB4-CAD-DR-MOR-CS-P3-152



- LEGEND:**
-  EXISTING TREES RETAINED
 -  EXISTING TREES REMOVED
 -  EXISTING HEDGEROW to be cut back
 -  PROPOSED TREE PLANTING
 -  MOWN GRASS/REINFORCED GRASS
 -  SHRUB AND GROUND COVER PLANTING MIX
 -  SWALE PLANTING
 -  WILDFLOWER PLANTING MIX 1
On minimum 150mm topsoil
 -  NATIVE WOODLAND SHRUB PLANTING
 -  TARMAC
 -  TARMAC - Buff colour
 -  Permeable PC Block paving
 -  IN SITU CONCRETE FOOTPATH
 -  COMPACTED GRAVEL
 -  RESIN BOUND GRAVEL
 -  PC CONCRETE PAVING WITH NATURAL STONE AGGREGATE TOP SURFACE
 -  SAFETY PLAY SURFACE 'Wetpour' or equivalent
 -  RECYCLED RUBBER MULCH SURFACE
 -  BENCH, TABLES & SCULPTURAL SEATING
Bench seating to include recycled composite timber seating top, back and arm rests
 -  NATURAL PLAY ELEMENTS
logs, stones, mounds
 -  PLAY EQUIPMENT
 -  BOWTOP RAILING
- 1.1m high

REV	DESCRIPTION	DATE

PROJECT TITLE:
Social Housing Bundle 4,
Development at Collins Avenue

CLIENT:
NDA & DCC

DRAWING NAME:
Landscape Plan

DRAWING NUMBER:
SHB5-CAD-DR-MAL-L-P1-0001

JOB NUMBER:
LSOC003

DRAWN BY Tijana Cavara	CHECKED FG	DATE 18.04.2024
STATUS: PLANNING	SCALE: 1:500 @ A1	REVISION 0

NOTES:
All dimensions are in millimeters unless otherwise stated and shall be checked and confirmed by the contractor on site. Any discrepancies shall be immediately reported to the landscape architects. Work to figured dimensions only - Do not scale from drawing. Do Not Scale. Use Figured Dimensions Only. Not for Construction Purposes unless Specifically Marked.

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Block A
Results - Horizontal Illuminance (lux)
Eav= 8.70
Emin= 1.88
Emax= 19.75
Emin/Emax= 0.10
Emin/Eav= 0.22
Emax/Eav= 2.27

Block C
Results - Horizontal Illuminance (lux)
Eav= 7.09
Emin= 1.88
Emax= 18.82
Emin/Emax= 0.10
Emin/Eav= 0.27
Emax/Eav= 2.65

Block C
Results - Horizontal Illuminance (lux)
Eav= 7.24
Emin= 2.14
Emax= 18.34
Emin/Emax= 0.12
Emin/Eav= 0.30
Emax/Eav= 2.53

Luminaire Data
Luminaire A FLEXIA TOP 5304 Deep shape PC 10 LH351C@600mA NW 740 230V
Lamp 10 LH351C@600mA NW 740 230V MF 0.84
Luminaire B AXIA 2.1 5167 Integrated lenses 16 OSLO SQUARE GIANT@760mA
Lamp 16 OSLO SQUARE GIANT@760mA NW 740 230V 00-36-648 MF 0.84
Luminaire C AXIA 2.1 5167 Integrated lenses 8 OSLO SQUARE GIANT@700mA N
Lamp 8 OSLO SQUARE GIANT@700mA NW 740 230V 00-36-648 MF 0.84

- Key
- Luminaire A Column
 - Luminaire B Column
 - Luminaire C Column
 - Beam Aiming Target
 - Photometric Centre

All Dimensions in metres

P01	PRELIMINARY ISSUE FOR REVIEW/COMMENT	DMcD	SF	08.03.2024
REV	DESCRIPTION	DRN	CKD	DATE

ISSUE PRELIMINARY STAGE



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PROJECT TITLE
 NDFA SOCIAL HOUSING BUNDLE 4

DRAWING TITLE
 DEVELOPMENT AT COLLINS AVENUE, CO. DUBLIN
 ILLUMINANCE PLOT

DRAWING REFERENCE	DRN	SCALE
SHB5-CAD-SMK-ZZ-SI-DR-E-6000	DMcD	A1 1:500