Mable
Consulting Engineers

Drainage Design Report

Project:

157 Old Court Road,
Tallaght, Dublin 24

Client:

Robert Bourke Architects

Date of Report:

16th June 2022

Project Ref. No.:

22713

Table of Contents

Document Control

Producer:	Date:	Reviewer:	Date:	Revision Status:	Comment
E.Roche	26/06/2022	B.McGinn	26/06/2022	1st	Issued For Planning
E.Roche	26/06/2022	B.McGinn	26/06/2022	2nd	'RBA' revised to 'The Client'
E.Roche	07/07/2022	B.McGinn	07/07/2022	3rd	Client Name - Typo Amended

1.0 Introduction

1.1 Proposed Development Details

Mable Consulting Engineers have been appointed by the client to prepare a RFI response report to respond to the FI request received from South Dublin County Council on 14 April 2022 for the proposed construction of a new extension to 157 Old Court Road, Tallaght, Dublin 24, Planning reference number: SD22B/0061.

Mable consultants Mr Barry McGinn visited the site to aid in preparing this RFI response report.

This report was created in order to address Item 2, 3, 4 & 5 of the further information request.

The items state:-

2. There are no soil percolation test results, design calculations or dimensions submitted for the proposed soakaway. The applicant is requested to submit a report showing site specific soil percolation test results and design calculations for the proposed soakaway in accordance with BRE Digest 365 – Soakaway Design.
3. The applicant is requested to submit a revised drawing showing plan and cross-sectional views, dimensions, and location of proposed soakaway. Any proposed soakaway shall be located fully within the curtilage of the property and shall be:
   (i) At least 5m from any building, public sewer, road boundary or structure.
   (ii) Generally, not within 3m of the boundary of the adjoining property.
   (iii) Not in such a position that the ground below foundations is likely to be adversely affected.
   (iv) 10m from any sewage treatment percolation area and from any watercourse / floodplain.
   Should a soakaway prove not to be feasible, then the applicant shall submit the following:
   (i) Soil percolation test results demonstrating a soakaway is not feasible
   (ii) A revised surface water layout drainage drawing for the development showing the inclusion of alternative SuDS (Sustainable Drainage Systems) features.
4. The applicant is requested to include Water Butts as part of additional Sustainable Drainage Systems (SuDS) measures for the proposed development.
5. It is unclear where the foul water discharges from the proposed development. The applicant is requested to submit a drawing showing existing and proposed foul water drainage layouts up to and including the point of connection to the public foul water sewer. The drawing shall include the location of all Aj's, manholes, pipe size, material type and direction of flow. The drawing shall clearly show that the foul and surface water systems are discharging to separate pipe networks. Maps of the public watermains and Wastewater drainage networks may be obtained, if available, for required locations in by emailing: datarequests@water.ie.

1.2 Site Location

The site is located at rear of 157 Old Court Road, Tallaght, Dublin 24. The site is outlined in red in figure 1 below:

Figure 1 – Site Location – Site outlined in red

2.0 Existing Drainage

Existing Drainage drawings were attained from South Dublin County Council Drainage Division & Irish Water.
A topographic survey of the existing drainage was undertaken along with a site visit to inspect the existing drainage lines. See Appendix 'A' & 'B' for the Existing drainage maps and topographic survey respectively.

The existing surface water and foul drainage systems outfall to a combined sewer at the rear of 156 Old Court Road which connects to an existing line in Old Court Road.

The location of existing manholes and existing sewer lines are shown in drawing 22713-100.

3.0 Foul Water Drainage Design

The proposed development foul water will discharge into a new manhole on the North-East side of the site which will be piped below the proposed extension to a second new manhole on the existing line constructed in the neighbouring property. The existing line is connected to the public 225mm Dia. foul sewer already present on Old Court Road. See Appendix 'C' for foul water drainage design calculations.

4.0 Surface Water Drainage Design

During the surface water drainage design process, 2 different solutions were assessed:

4.1 Discharge to Soakpit

Due to the poor soakage rate found by performing a soakage test in the area, this solution was found not to be suitable. See Appendix 'D' for soakage test results.

4.2 Discharge to Public Stormwater Sewer

The existing public sewers in the vicinity of the site were reviewed.

There is a separate surface water drainage line located in the footpath to the front of the site. This is suitable for a connection. It is proposed to connect to this drainage line.

The proposed construction of a new separate surface water outfall point will lower the surface water load on the existing combined public sewer.
A small increase in load will be applied to the existing surface water sewer due to the proposed new connection works. SUDS measures will be provided to manage the peak rate of surface water discharge into the surface water sewer.

The design of the attenuation storage capacity is based on Rainfall Data Issued by Met Eireann for the site location and for 30 years and 100 years return period, increased by 20% to consider the future variation caused by climate changes. A discharge rate of 0.41l/s was calculated. See Appendix 'E' for Surface water Qbar calculation sheet, Attenuation Storage Design Spreadsheet and Met Eireann Rainfall Data, Appendix 'F' for flow control device, and Appendix 'G' for Wavin Aquacell technical data sheet.

In addition to this design, Water Butts have been added to the planning drawings.

The final Site layout & Drainage Plan drawing 22713-100 shows the locations of all the mentioned equipment in this report. See Appendix 'H' for Existing Site Layout & Drainage Plan, Proposed Site Layout & Drainage Plan, and Proposed Drainage Details.

End Of Report.

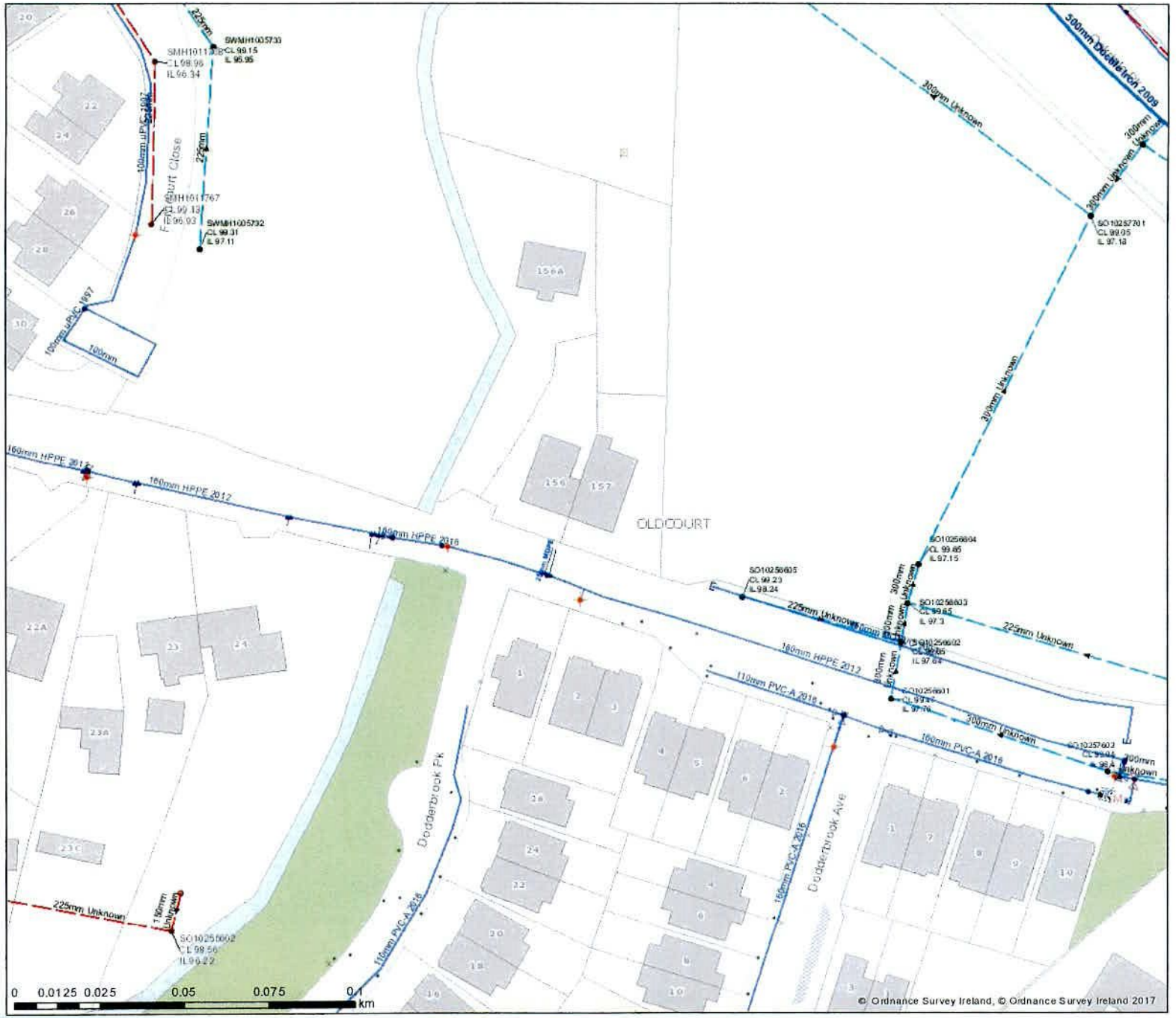
Signed: E. Roche **Date:** 26/06/2022

Eoin Roche
Design Engineer

Appendix A – Topographic Survey

Appendix B – Irish Water Web Map / Existing Drainage Map

Irish Water Web Map



UISCE ÉIREANN · IRISH WATER

Print Date: 10/06/2022

Printed by:Irish Water

Water Distribution Network
- Water Treatment Plant
- Water Pump Station
- Storage Cell/Tower
- Dosing Point
- Meter Station
- Abstraction Point
- Telemetry Kiosk

Reservoir
- Potable
- Raw Water

Water Distribution Mains
- Irish Water
- Private

Trunk Water Mains
- Irish Water
- Private

Water Lateral Lines
- Irish Water
- Non IW
- Water Casings
- Water Abandoned Lines
- Boundary Meter
- Bulk/Check Meter
- Group Scheme
- Source Meter
- Waste Meter
- Unknown Meter , Other Meter
- Non-Return
- PRV
- PSV
- Sluice Line Valve Open/Closed
- Butterfly Line Valve Open/Closed
- Sluice Boundary Valve Open/Closed
- Butterfly Boundary Valve Open/Closed
- Scour Valves
- Single Air Control Valve
- Double Air Control Valve
- Water Stop Valves
- Water Service Connections
- Water Distribution Chambers
- Water Network Junctions
- Pressure Monitoring Point
- Fire Hydrant
- Fire Hydrant/Washout

Water Fittings
- Cap
- Reducer
- Tap
- Other Fittings

Sewer Foul Combined Network
- Waste Water Treatment Plant
- Waste Water Pump station

Sewer Mains Irish Water
- Gravity - Combined
- Gravity - Foul
- Gravity - Unknown
- Pumping - Combined
- Pumping - Foul
- Pumping - Unknown
- Syphon - Combined
- Syphon - Foul
- Overflow

Sewer Mains Private
- Gravity - Combined
- Gravity - Foul
- Gravity - Unknown
- Pumping - Combined
- Pumping - Foul
- Pumping - Unknown
- Syphon - Combined
- Syphon - Foul
- Overflow
- Sewer Lateral Lines
- Sewer Casings

Sewer Manholes
- Standard
- Backdrop
- Cascade
- Catchpit
- Bifurcation
- Hatchbox
- Lamphole
- Hydrobrake
- Other, Unknown

Discharge Type
- Outfall
- Overflow
- Soakaway
- Standard Outlet
- Other, Unknown

Cleanout Type
- Rodding Eye
- Flushing Structure
- Other, Unknown

Sewer Inlets
- Gullpit
- Gully
- Standard
- Other, Unknown

Sewer Fittings
- Vent/Col
- Other, Unknown

Storm Water Network

Surface Water Mains
- Surface Gravity Mains
- Surface Gravity Mains Private
- Surface Water Pressurised Mains
- Surface Water Pressurised Mains Private

Inlet Type
- Gully
- Standard
- Other, Unknown

Storm Manholes
- Standard
- Backdrop
- Cascade
- Catchpit
- Bifurcation
- Hatchbox
- Lamphole
- Hydrobrake
- Other, Unknown
- Storm Culverts
- Storm Clean Outs
- Stormwater Chambers

Discharge Type
- Outfall
- Overflow
- Soakaway
- Other, Unknown

Gas Networks Ireland
- Transmission High Pressure Gasline
- Distribution Medium Pressure Gasline
- Distribution Low Pressure Gasline

ESB Networks

ESB HV Lines
- HV Underground
- HV Overhead
- HV Abandoned

ESB MVLV Lines
- MV Overhead Three Phase
- MV Overhead Single Phase
- LV Overhead Three Phase
- LV Overhead Single Phase
- MV/LV Underground
- Abandoned

Non Service Categories
- Proposed
- Under Construction
- Out of Service
- Decommissioned

Water Non Service Assets
- Water Point Feature
- Water Pipe
- Water Structure

Waste Non Service Assets
- Waste Point Feature
- Sewer
- Waste Structure

Appendix C – Foul Water Drainage Calculations

Project:	157 OLD COURT ROAD, TALLAGHT, D24		
Project No.:	22713	Sheet No.:	1
Member / Location:	FOUL SEWER DESIGN		
Doc. Control:	Calculations By	Reviewed By	Date
Name:	ER		

Mable Consulting Engineers

Ref.	Calculations	Output

Sum of discharge

BS EN 75

	DU (l/s)	No.	ΣDU (l/s)
SHOWER	0.4	1	0.4
KITCHEN SINK	0.5	1	0.5
DISHWASHER	0.5	1	0.5
WC (7.5L)	2.0	2	4.0
WASH BASIN	0.3	2	0.6

TOTAL : 6.0 L/s

WASTE WATER FLOW RATE

$Q_{WW} = K\sqrt{\Sigma DU} = 0.5\sqrt{6.0} = 1.25\ l/s$

K = SHORT TERM LET = 0.5

TECHNICAL GUIDANCE DOCUMENT 'H'

Table 6 Recommended minimum gradients for foul drains

Peak flow (litres/sec)	Pipe size (mm)	Minimum gradient (1 in....)	Number of dwellings served
< 2.5	100	1:60*	1
> 2.5	100	1:100*	Up to 3
	150	1:150†	3 to 8

Notes:
** Minimum of 1 wc*
† Minimum of 5 wcs

$Q_{WW} = 1.25\ l/s < 2.5\ l/s$

∴ USE 100 Ø uPVC @ 1:60

Appendix D – Soakage Test

soakawaytests.ie

- SOAKAWAY TESTS
- SOAKAWAY DESIGN
- DRAINAGE DESIGN
- PERCOLATION TESTS
- SITE CHARACTERISATION TESTS

Declan Kearns & Associates Ltd. t/a
Soakaway Tests
Tullywest
Kildare
Co. Kildare
Ireland

Phone: 01 539 4447
Phone: 045 520642
Mob: 086 2111590
Email: info@soakawaytests.ie
Visit: www.soakawaytests.ie

Factual Report on
Soakaway Test
at

Proposed Development at
157 Oldcourt Road, Dublin 24

Date : 21/05/22

1. INTRODUCTION

It is understood that it will be necessary to dispose of the storm water from the proposed Development at 157 Oldcourt Road, Dublin 24 by means of a soakaway system on site.

An investigation has been carried out to assess the suitability of the sub-soils for this purpose and to determine soakaway requirements.

2. FIELDWORK

One trial pit was excavated (see Appendix 1 for testhole photos) in order to ascertain subsoil conditions and the depth to groundwater. ST1 was excavated to a depth of 1.80m. Groundwater was not encountered after 48 hours.

The soakaway trial pit details are located in Appendix 2.

3. TESTING

To determine the soil infiltration rate, water was poured into the pit and records made of the fall in water level against time. Testing was continued until a constant rate of fall was established.

From the rate of fall in water level and measurement of the average internal surface area of the test pit over the test zone, the soil infiltration rate "f" was calculated.

The field data and calculations are located in Appendix 2.

There was no soakage in the test hole during the test after 3 hours. As the site is not suitable for a soakaway system, an attenuation system should be designed by the project engineers.

Signed :

Declan Kearns
Consultant Civil / Geotechnical Engineer
for and on behalf of
Declan Kearns & Associates Ltd. t/a
Soakaway Tests

Appendix 1

Site Photographs

Figure 1. Testhole ST1

Figure 2. View of Arisings

Figure 3. View of Site

Appendix 2

Field Data Records & Calculations

soakawaytests.ie

Soakaway Design f -value from field tests

Contract: 157 Oldcourt Road, Dublin 24
Test No. ST1
Client Teres Small
Date: 21/05/2022

Summary of Ground Conditions

From	To	Description	Ground water
0.00	0.30	Topsoil	
0.30	0.80	Brown mottled grey sandy gravelly CLAY	
0.80	1.80	Grey mottled brown sandy gravelly CLAY	

Notes: Groundwater was not met during test

Field Data

Depth to Water (m)	Elapsed Time (min)	
1.220	0	
1.220	10	
1.220	42	
1.220	183	No soakage after 3 Hours

Field Test

Depth of Pit (D)	1.80	m
Width of Pit (B)	0.35	m
Length of Pit (L)	1.50	m
Initial depth to Water (25%) =		m
Final depth to water (75%) =		m
Elapsed time (mins)=		
Top of permeable soil		m
Base of permeable soil		m
Base area=	0.525	m2
*Av. side area of permeable stratum over test period=	6.66	m2
Total Exposed area =	7.185	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= #DIV/0! m/min or #DIV/0! m/sec

Appendix E – Surface Water Calculation Sheet & Met Eireann Rainfall Data

INPUT	Calculations By:	ER	
OUTPUT	Checked By:	BMG	

Mable Consulting Engineers

SITE DETAILS

Location: **157 Old Court Road, Old Court, Dublin 24**

Site Area: 0.041 Ha | **410** m2 | **0.00041** km2

ALLOWABLE DISCHARGE FROM SITE

Equation: Q_{bar}: $0.00108 \times AREA^{0.89} \times SAAR^{1.17} \times SOIL^{2.17}$

Q_{bar}:	Mean Annual Peak Flow From Site	(m^3/s)				
AREA:	Area of Site	km^2				
SAAR:	Standard Annual Average Rainfall (Station)	7	**Dublin Airport**	SAAR:	**666.6**	mm
SOIL:	Soil Index	SOIL TYPE: 4		SOIL:	**0.47**	

1	0.1	Very Low	Sandy, Well Drained
2	0.3	Low	Intermediate Soil (Silty)
3	0.37	Moderate	Intermediate Soil (Sandy)
4	0.47	High	Clayey, Poorly Drained
5	0.53	Very High	Steep, Rocky area

Rainfall Intesities
Climate Change % 20%

If site is <50Ha, calculate Q-Bar for 50Ha and linearly interpolate for Site Area

Q_{bar} 50 Ha - STANDARD

Area	Ha/km^2	50	0.5
Q_{bar}	=	0.0456	m^3/s
Q_{bar}	=	45.59	l/s
Q_{bar}	=	0.91	l/s/ha

Q_{bar} 50 Ha - Restricted

Area	Ha/km^2	0.041	0.00041
Q_{bar}	=	0.0004	m^3/s
Q_{bar}	=	**0.41**	l/s
$Q_{bar\ (Allowable)}$	=	2.00	l/s/ha

Qbar Note:
If Qbar is less than 0.4l/s it will be inputted as a lower outflow is not practical & can cause maintence issues and blockages of the outfall pipe.

Qbar Used = 0.41 l/s

Attenuation Design Inputs (Contribution Areas)

Location	Area (m^2)	Area (Ha)		
Roof & Terrace	160	**0.016**	100	% Impervious
Footpath, Access, Road & Carparking	140	**0.014**	90	% Impervious
GreenField	110	**0.011**	15	% Impervious
Total Area	0	**0.041**		% Impervious

30 Year Storm + 20%

Duration (minutes)	Met Ereann Rainfall (mm)	Rainfall (mm) + 20%	Rainfall + 20% (m3/ha)	Proposed Total Outflow (m3)	Proposed Un-Attenuated Outflow Rate (l/s)	Attenuated Outflow (m3)	Storage (m3)	
5	10.6	12.72	127.20	3.85	12.826	0.123	**3.73**	
10	14.7	17.64	176.40	5.34	8.894	0.245	**5.09**	
15	17.3	20.76	207.60	6.28	6.978	0.368	**5.91**	
30	23.3	27.96	279.60	8.46	4.699	0.735	**7.72**	
60	31.4	37.68	376.80	11.40	3.166	1.471	**9.93**	
120	42.4	50.88	508.80	15.39	2.138	2.941	**12.45**	
180	50.4	60.48	604.80	18.30	1.694	4.412	**13.88**	
240	57.1	68.52	685.20	20.73	1.439	5.882	**14.85**	
360	68	81.60	816.00	24.68	1.143	8.823	**15.86**	
540	80.9	97.08	970.80	29.37	0.906	13.235	**16.13**	MAX
720	91.6	109.92	1099.20	33.25	0.770	17.647	**15.60**	
1080	109	130.80	1308.00	39.57	0.611	26.470	**13.10**	
1440	123.3	147.96	1479.60	44.76	0.518	35.293	**9.46**	

100 Year Storm + 20%

Duration	Met Ereann	Rainfall	Rainfall +	Proposed Total	Proposed	Attenuated Outflow	Storage (m3)	
5	14.7	17.64	176.40	5.34	17.787	0.123	**5.21**	
10	20.5	24.60	246.00	7.44	12.403	0.245	**7.20**	
15	24.1	28.92	289.20	8.75	9.720	0.368	**8.38**	
30	32.4	38.88	388.80	11.76	6.534	0.735	**11.03**	
60	43.7	52.44	524.40	15.86	4.406	1.471	**14.39**	
120	58.8	70.56	705.60	21.34	2.965	2.941	**18.40**	
180	70.1	84.12	841.20	25.45	2.356	4.412	**21.03**	
240	79.3	95.16	951.60	28.79	1.999	5.882	**22.90**	
360	94.4	113.28	1132.80	34.27	1.586	8.823	**25.44**	
540	112.4	134.88	1348.80	40.80	1.259	13.235	**27.57**	
720	127.2	152.64	1526.40	46.17	1.069	17.647	**28.53**	MAX
1080	151.4	181.68	1816.80	54.96	0.848	26.470	**28.49**	
1440	171.3	205.56	2055.60	62.18	0.720	35.293	**26.89**	

Appendix F – Flow Control Device

Technical Specification

Control Point	Head (m)	Flow (l/s)
Primary Design	0.600	0.400
Flush-Flo™	0.143	0.343
Kick-Flo®	0.287	0.292
Mean Flow		0.323

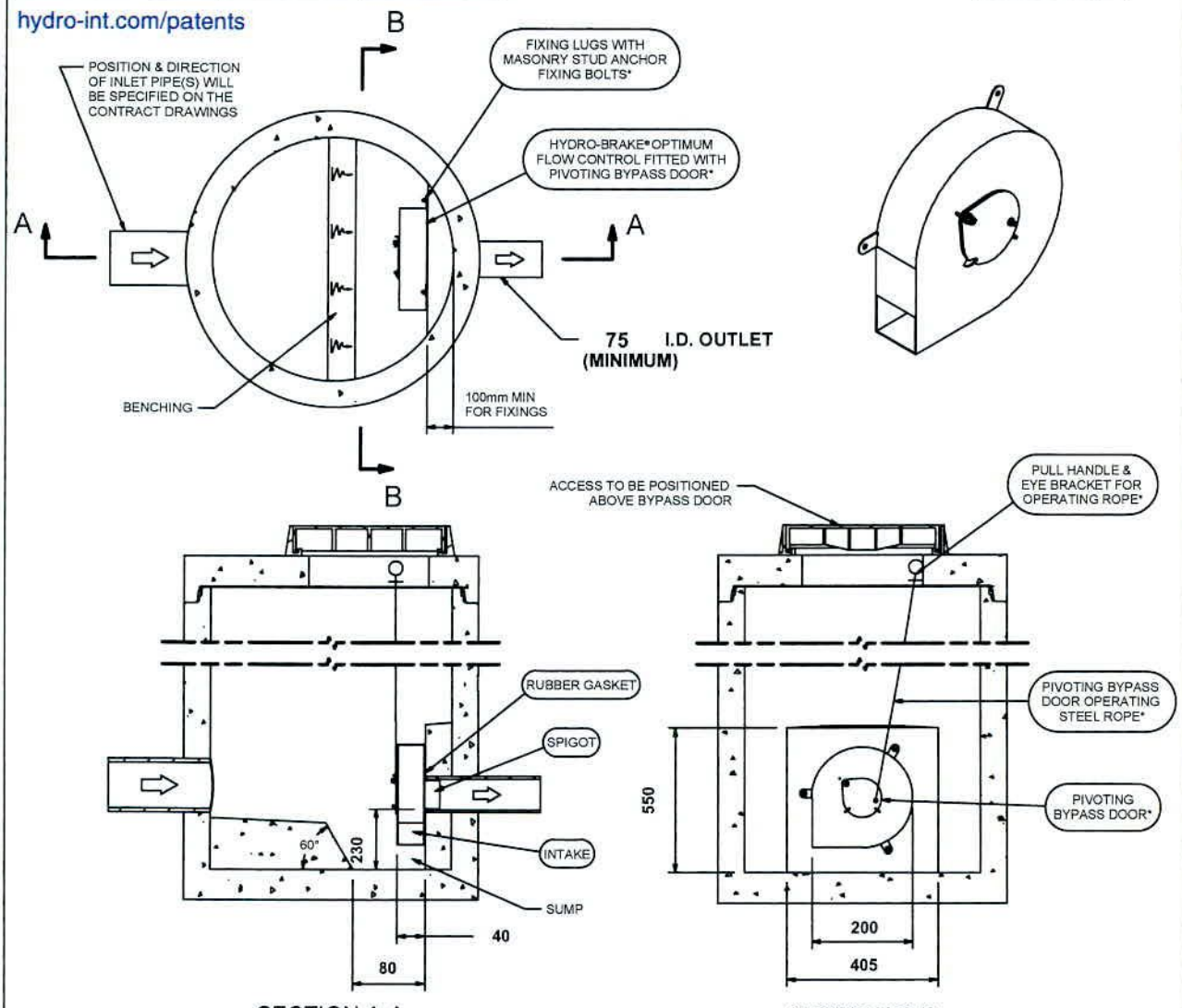
Hydro-Brake® Optimum Flow Control including:

- 3 mm grade 304L stainless steel
- Integral stainless steel pivoting by-pass door allowing clear line of sight through to outlet, c/w stainless steel operating rope
- Beed blasted finish to maximise corrosion resistance
- Stainless steel fixings
- Rubber gasket to seal outlet

BBA APPROVAL INSPECTION TESTING CERTIFICATION
CERTIFICATE 08/4598

WRc Approved
PT/329/0412

hydro-int.com/patents



SECTION A-A

SECTION B-B

IMPORTANT: ⬭ LIMIT OF HYDRO INTERNATIONAL SUPPLY
THE DEVICE WILL BE HANDED TO SUIT SITE CONDITIONS
FOR SITE SPECIFIC DETAILS AND MINIMUM CHAMBER SIZE REFER TO HYDRO INTERNATIONAL
ALL CIVIL AND INSTALLATION WORK BY OTHERS
* WHERE SUPPLIED
HYDRO-BRAKE® FLOW CONTROL & HYDRO-BRAKE® OPTIMUM FLOW CONTROL ARE REGISTERED TRADEMARKS FOR FLOW CONTROLS DESIGNED AND MANUFACTURED EXCLUSIVELY BY HYDRO INTERNATIONAL

THIS DESIGN LAYOUT IS FOR ILLUSTRATIVE PURPOSES ONLY. NOT TO SCALE.

DESIGN ADVICE

The head/flow characteristics of this SHE-0032-4000-0600-4000 Hydro-Brake® Optimum Flow Control are unique. Dynamic hydraulic modelling evaluates the full head/flow characteristic curve.
The use of any other flow control will invalidate any design based on this data and could constitute a flood risk.

Hydro International®

DATE	5/13/2021 9:09 AM
SITE	Dublin
DESIGNER	T B
REF	Prussia Apartment

SHE-0032-4000-0600-4000
Hydro-Brake® Optimum

tbuda@draconsulting.ie

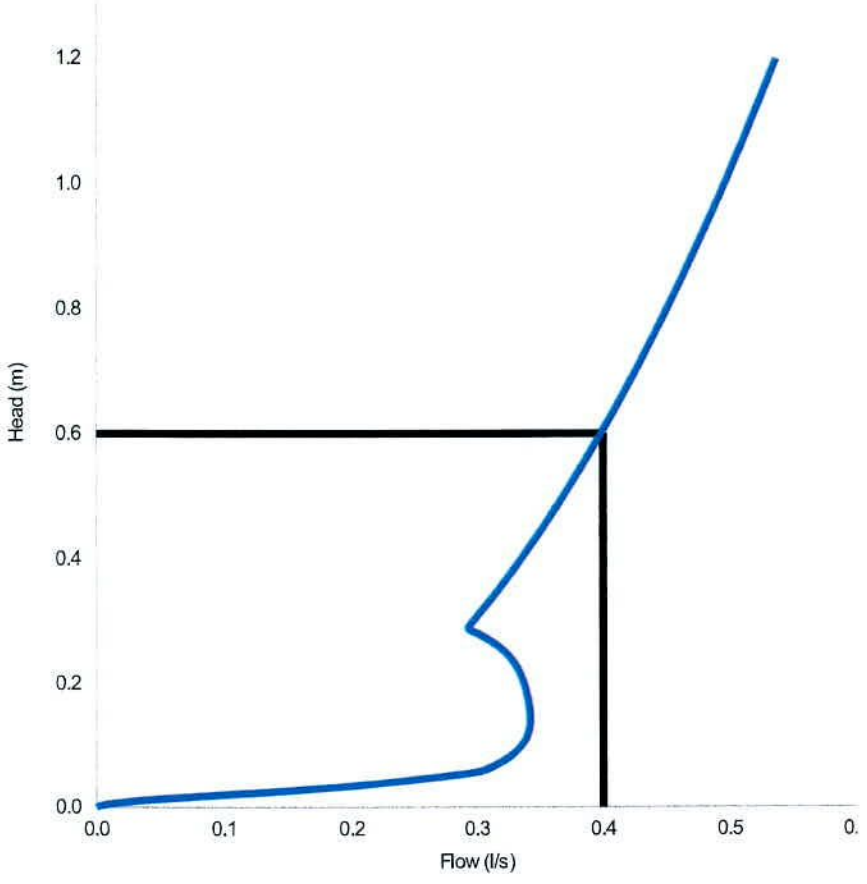
Technical Specification

Control Point	Head (m)	Flow (l/s)
Primary Design	0.600	0.400
Flush-Flo	0.143	0.343
Kick-Flo®	0.287	0.292
Mean Flow		0.323

BBA APPROVAL INSPECTION TESTING CERTIFICATION
CERTIFICATE No 08/4596

WRc APPROVED
PT/329/0412

hydro-int.com/patents



Head (m)	Flow (l/s)
0.000	0.000
0.021	0.105
0.041	0.237
0.062	0.309
0.083	0.327
0.103	0.337
0.124	0.342
0.145	0.342
0.166	0.342
0.186	0.339
0.207	0.336
0.228	0.331
0.248	0.324
0.269	0.310
0.290	0.293
0.310	0.302
0.331	0.310
0.352	0.318
0.372	0.325
0.393	0.333
0.414	0.340
0.434	0.347
0.455	0.354
0.476	0.361
0.497	0.368
0.517	0.374
0.538	0.380
0.559	0.386
0.579	0.393
0.600	0.398

DESIGN ADVICE

The head/flow characteristics of this SHE-0032-4000-0600-4000 Hydro-Brake Optimum® Flow Control are unique. Dynamic hydraulic modelling evaluates the full head/flow characteristic curve.

! **The use of any other flow control will invalidate any design based on this data and could constitute a flood risk.**

Hydro International

DATE	13/05/2021 09:09
Site	Dublin
DESIGNER	T B
Ref	Prussia Apartment

SHE-0032-4000-0600-4000

Hydro-Brake Optimum®

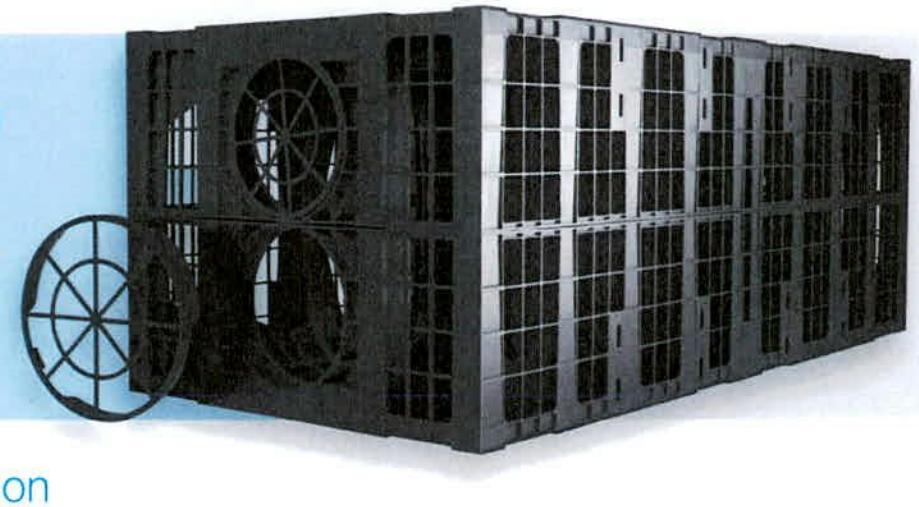
Appendix G – Wavin Aquacell Technical Data Sheet

Product Datasheet

AquaCell Plus-R

Product description

AquaCell Plus-R has been designed primarily for use in applications where inspectability is required, and is suitable for use in all applications from landscaped areas to heavily trafficked areas.



Technical specification

Product code / SAP code	6LB250 / 4064832	**Void ratio**	95%
Colour	Black	**Material**	Recycled PP
Dimensions	1m x 0.5m x 0.4m	**Vertical loading**	70.2 tonnes/m² (702 kN/m²)
Weight	12.7kg	**Lateral loading**	15.1 tonnes/m² (151 kN/m²)
Storage volume	190 litres		

Maximum installation depths

	Maximum depth of installation – to base of units (m)[1]				
Typical soil type	**Soil weight kN/m³**	**Angle of internal friction φ (degrees)[2, 3]**	**Landscaped areas**	**Vehicle mass <9 tonnes[4, 5]**	**Vehicle mass <44 tonnes**
Over consolidated stiff clay	20	24	4.67	4.42	4.17
Silty sandy clay	19	26	5.03	4.78	4.53
Loose sand and gravel	18	30	5.86	5.61	5.36
Medium dense sand and gravel	19	34	6.87	6.62	6.37
Dense sand and gravel	20	38	7.82	7.57	7.30

Minimum cover depths

	Landscaped areas	**Car parks with vehicle mass <3 tonnes[5]**	**Car parks with vehicle mass <9 tonnes**	**Car parks with vehicle mass <12 tonnes**	**Low speed roads with vehicle mass <60 tonnes**
Minimum cover depth (m)	0.30	0.50	0.69	0.81	1.30

1. Without groundwater present below base of units – AquaCell Plus-R may be used where groundwater is present, contact Wavin for technical advice.
2. Loosening of dense sand or softening of clay by water can occur during installation. The designer should allow for any such likely effects when choosing an appropriate value of φ.
3. The design is very sensitive to small changes in the assumed value of φ, therefore, it should be confirmed by a chartered geotechnical engineer. In clay soils, it may be possible to utilise cohesion in some cases.
4. Applicable for car parks or other areas trafficked only by cars or occasional refuse collection trucks or similar vehicles (typically one per week).
5. This category should be used when considering landscaped areas that may be trafficked by ride on mowers.

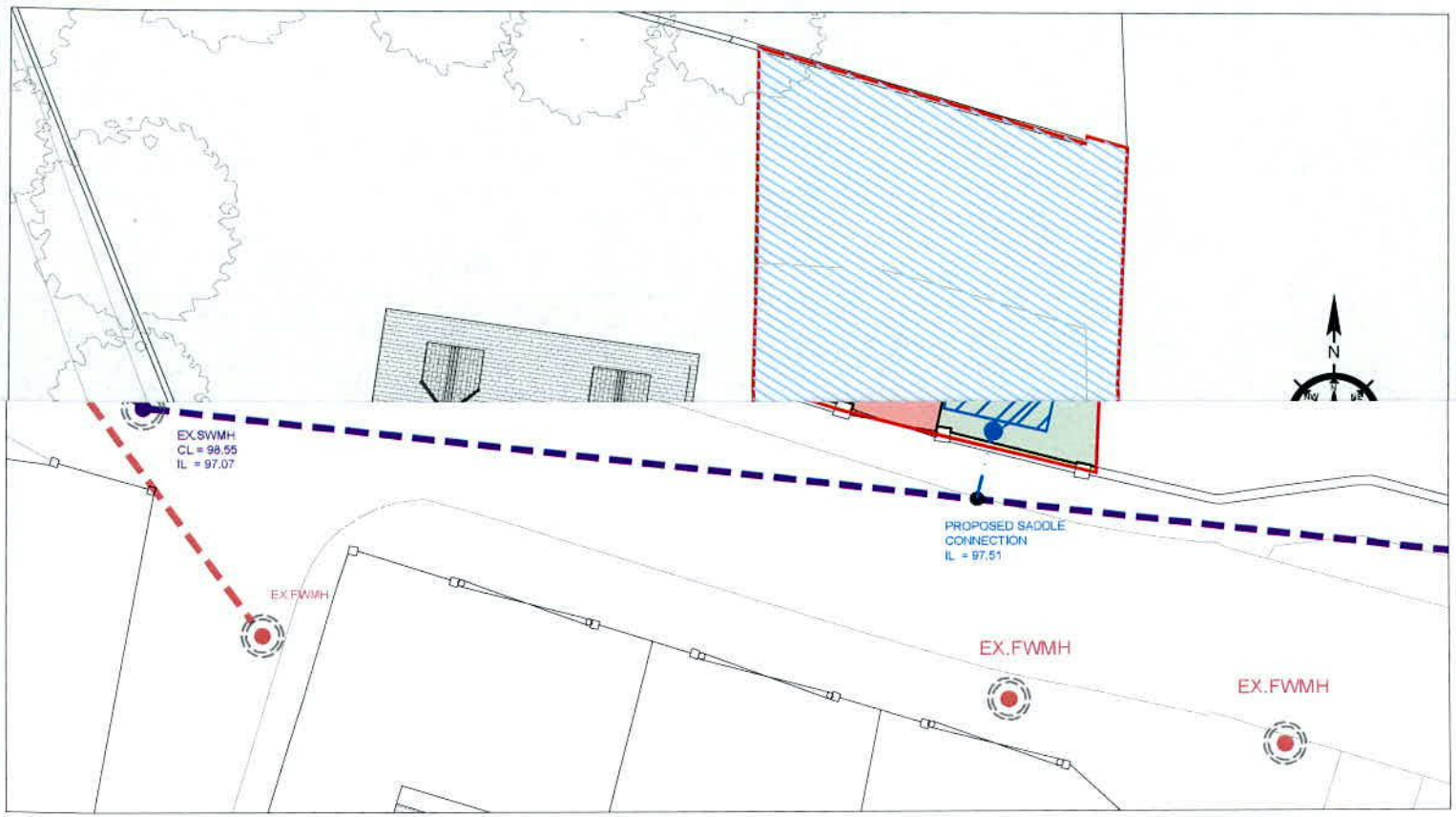
Assumptions made:

- Ground surface is horizontal
- Shear planes or other weaknesses are not present within the structure of the soil

Wavin Ireland Ltd | Balbriggan | Co Dublin | K32 K840
Tel 01 8020200 | **Email** info.ie@wavin.com | **Website** www.wavin.ie

June 2021

Appendix H – Existing Site Layout & Drainage Plan, Proposed Site Layout & Drainage Plan, and Proposed Drainage Details



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS IN METRES UNLESS NOTED OTHERWISE.
2. USE FIGURED DIMENSIONS ONLY. DO NOT SCALE. ALL DIMENSIONS TO BE CHECKED ON SITE AND CONFIRMED PRIOR TO COMMENCING WORKS. ANY ERROR OR DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER / ARCHITECT.
3. DRAWINGS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEER'S, ARCHITECT'S AND SERVICE ENGINEER'S DRAWINGS AND SPECIFICATIONS.
4. ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH PLANNING GRANT CONDITIONS, CURRENT BUILDING REGULATIONS AND GOOD BUILDING PRACTICE.
5. ALL WASTEWATER DRAINAGE DETAILS AND CONSTRUCTION TO BE IN ACCORDANCE WITH IRISH WATER'S STANDARD DETAILS AND CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE (DOCUMENT NO. IW-CDS-5030-01 & IW-CDS-5030-03)
6. ALL WATER INFRASTRUCTURE DETAILS AND CONSTRUCTION TO BE IN ACCORDANCE WITH IRISH WATER'S STANDARD DETAILS AND CODE OF PRACTICE FOR WATER INFRASTRUCTURE (DOCUMENT NO. IW-CDS-5020-01 & IW-CDS-5020-03)

PLANNING

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ARCHITECT: ROBERT BOURKE ARCHITECTS

PROJECT: 157 OLD COURT ROAD

TITLE: PROPOSED SITE LAYOUT AND DRAINAGE PLAN

DATE: 07/07/2022		SCALES: 1 : 250 @ A3	
DESIGNER	ER	DRG. No.	REV.
PRODUCER:	ER	22713-101	P1
VERIFIER:	BMG		
APPROVER:	BMG		

01/101 PROPOSED SITE LAYOUT AND DRAINAGE PLAN
SCALE 1:250

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS IN METRES UNLESS NOTED OTHERWISE.
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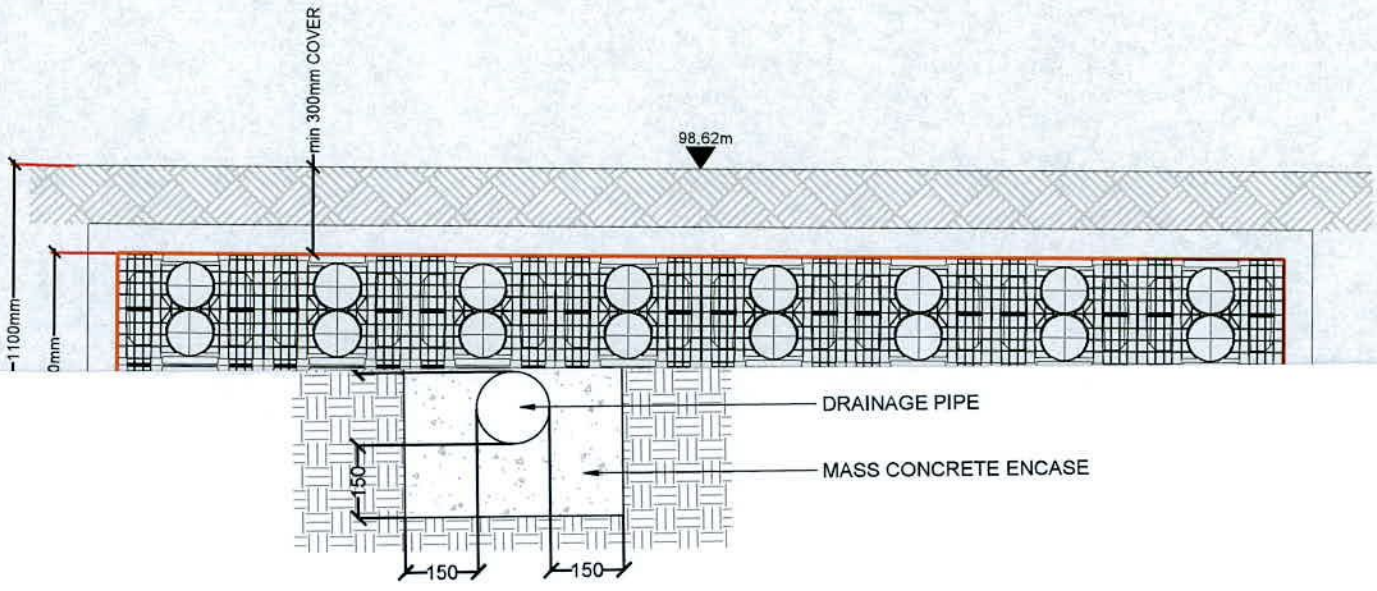

03/102 PIPE UNDER SLAB
SCALE 1:20

PLANNING

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ARCHITECT:	ROBERT BOURKE ARCHITECTS
PROJECT:	157 OLD COURT ROAD
TITLE:	PROPOSED DRAINAGE DETAILS
DATE: 07/07//2022	SCALES: AS SHOWN @ A3
DESIGNER: ER	DRG. No. 22713-102
PRODUCER: ER	REV. P1
VERIFIER: BMG	
APPROVER: BMG