



PERSIMMON HOMES

LAND AT BOULTON MOOR

SPORTS PAVILION

CONCEPTUAL DRAINAGE STRATEGY

SEPTEMBER 2019

FW1876_D_001 V1

REVISION HISTORY

Revision	Reason for Issue	Author	Checker	Approved	Date
v1	First Issue	CB	BM	JD	16.09.2019

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1.0 INTRODUCTION

1.1 BRIEF

1.1.1 Farrow Walsh have been commissioned by the applicant, to undertake the Drainage Strategy in support of the planning application for the proposed development at the land at Boulton Moor. The purpose of this document is to report on the Conceptual Drainage Strategy for the proposed development and provide recommendations as to the use of SuDS within the development.

1.1.2 This report has been prepared using the following guidance documentation:

- National Planning Policy Guidance (NPPG)
- Ciria C753 – The SUDs Manual
- Adapting to Climate Change: Advice for Flood and Coastal Erosion Risk Management Authorities (EA - February 2016)

2.0 SITE DETAILS

2.1 SITE LOCATION

- 2.1.1 The development is situated off A6, Boulton Moor, Derby.
- 2.1.2 The site location is bound to the North by a heavily vegetated land. The East of the site is bound by the B5010. The South is bound by agricultural fields. The West is bound by the A6 Derby Spur.
- 2.1.3 Please refer to Appendix A, which shows a visual representation as to the site's location and boundary.

2.2 SITE DEVELOPMENT

- 2.2.1 The development currently comprises of greenfield land and has an area of 105,685m² (10.569ha) which is 100% permeable.

2.3 GEOLOGICAL SUMMARY

- 2.3.1 A Ground Investigation has been undertaken. The ground investigation shows that the site is underlain by River Terrace Deposits and Mercia Mudstone.
- 2.3.2 Please refer to Appendix C, which shows a visual representation as to the site's levels.

2.4 EXISTING DRAINAGE

2.4.1 The proposed development area is not anticipated to contain surface and foul water drains. Further investigation, via a CCTV survey, is required to confirm the location and condition of any drains present on the site. Where possible the existing outfall connections into the adjacent sewers are to be re-used to minimise any works within the highway.

2.4.2 The existing surface water is anticipated to drain into the existing watercourses; located around the site boundary. These are anticipated to drain at an un-restricted rate.

2.4.3 Further investigation is required by means of a CCTV to establish the size, invert levels and condition for all drainage within the site and connecting into the adjacent watercourses.

2.4.4 The greenfield runoff rates for the site area have been calculated using the HR Wallingford Method and can be found within Appendix E.**Error! Reference source not found.**

- $Q_{BAR,GR} = 27.19 \text{ l/s}$
- $Q_{1,GR} = 22.57 \text{ l/s}$
- $Q_{30,GR} = 54.38 \text{ l/s}$
- $Q_{100,GR} = 69.88 \text{ l/s}$

3.0 PROPOSED SURFACE WATER DRAINAGE DESIGN STRATEGY

3.1 SURFACE WATER DRAINAGE DESIGN

- 3.1.1 Surface Water runoff from the proposed development should mimic, as far as possible, the surface flows from an undeveloped greenfield site.
- 3.1.2 Greenfield runoff rates for an undeveloped site have been calculated in accordance with current guidance and calculations can be found within Appendix E and are discussed in section 2.4.5.
- 3.1.3 There are watercourses located around the site. Connection's to the watercourse's is deemed practicable due to the distance and existing landscape features.
- 3.1.4 Based on the above points surface water disposal by means of treatment and detention prior to controlled release into the watercourse is deemed the most appropriate solution.
- 3.1.5 The development area is 10.569ha and it is proposed that 4% of the development will be impermeable and require collecting and attenuating prior to discharge. For the purposes of this report the impermeable area of the proposed site has been taken as 0.390ha based on the current site layout available.
- 3.1.6 It is currently proposed that the drains within the site will remain under private ownership.
- 3.1.7 Surface water drainage will be provided in a new below ground gravity drains constructed within the car park mirroring the existing runoff arrangement with surplus flows being attenuated using both voided stone tanks below permeable paving and swales. The proposed surface water runoff rate for the development area of 0.390 hectares is:

- $Q_{100+40\%cc} = 5.0$ l/s to Public surface water sewer (up to a 6-hour storm event)

Storm Event	Existing (l/s)	Proposed Peak (l/s)	Reduction
Q1	22.57	5.0	78%
Q30	54.38	5.0	91%
Q100+40%cc	69.88	5.0	93%

Table 1 Peak Discharge Comparison

- 3.1.8 This rate represents a reduction of 78% when compared to the existing arrangement. This rate is subject to confirmation by the LLFA (via Ordinary Watercourse Consent).
- 3.1.9 By controlling the discharge rate from the site for a 1in100 year + 40% storm event to 5.0 l/s the site is offering a betterment to the downstream network by utilizing on site flood storage at an earlier stage in the overall river catchment potentially reducing flooding downstream.

3.1.10 The discharge proposals offer a 93% reduction in surface water runoff for a 1 in 100 + 40% climate change year storm event.

3.1.11 National Planning Policy Guidance requires that climate change incorporated within the surface water drainage design in accordance with The Environment Agency's 'Adapting to Climate Change: Advice for Flood and Coastal Erosion Risk Management Authorities' February 2016 when assessing flood risk for a development.

3.1.12 The design life of the development is beyond 2070, therefore in accordance with the Environment Agency guidance the development should make allowances for an increase in extreme rainfall intensity of an additional 40% when compared to the 1961-1990 baseline.

3.1.13 The drawings & schedules of the as-built site drainage system are to be made available to the building occupier to enable drainage maintenance and future works to be undertaken.

3.1.14 Building Regulations 2010 Part H guidance for disposal of surface water is as follows:

- A soakaway or infiltration system, or where not reasonably practical;
- A surface water ditch or watercourse, or where not reasonably practical;
- A below ground sewer

3.1.15 All sewers and drainage are to be constructed in accordance with all relevant industry standards, including but not limited to:

- Building Regulations Approved Document Part H 2010
- Sewers For Adoption 6th Edition

3.1.16 The drawings & schedules of the as-built site drainage system are to be made available to the building occupier to enable drainage maintenance and future works to be undertaken.

3.1.17 Please refer to Appendix B.

3.2 ATTENUATION PROPOSALS

- 3.2.1 To achieve the reduction in discharge rate the development will provide swales to attenuate runoff with the discharge via a control chamber into the watercourse's around the site. Discharge is subject to agreement with the LLFA.
- 3.2.2 With reference to CIRIA 753 and the surface water treatment process, the provision of private permeable paving with filter drains below will receive runoff from roofs. Trapped gullies will aid in the removal of sediment, hydrocarbons and heavy metals prior to discharge into the storm network. Water butts are to be provided to the pavilion and offer low level reductions in peak flow runoff volumes and rates. Surface water retained by these units will be used for non-potable uses such as watering. All surface run off is to drain into the provided onsite attenuation as shown in Appendix B.
- 3.2.3 Concrete block permeable pavements are very effective at removing pollutants from surface water runoff. The pollutants either remain on the surface of the blocks or are flushed into the underlying construction layers where many of the pollutants are filtered, trapped and treated insitu (see Figure 1 below) by biodegradation.

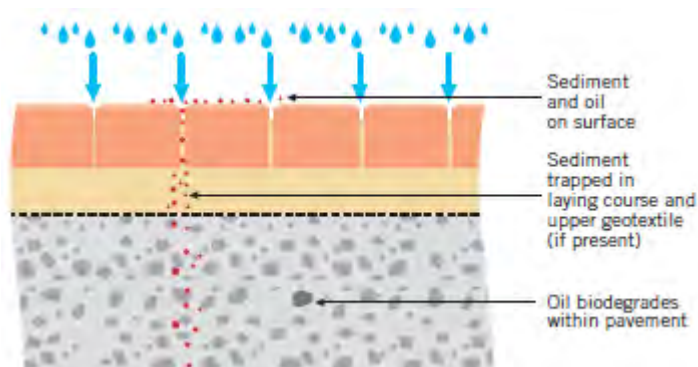


Figure 1 Typical Permeable Paving Detail

- 3.2.4 The first 5mm of rainfall shall be retained on the site through the process of wetting of materials along with the filling of the 400mm sump within the outfall control chamber.
- 3.2.5 Preliminary calculations have been undertaken to calculate the volumes of storage required for the road and pavilion discharging into the surface water system and summarised below.
- 3.2.6 In accordance with current Environmental Agency Guidance, the attenuation volume for a site should be calculated based on a 1 in 100 year + climate change allowance.

Storm Event (Years)	Storage Volume (m3)
1 in 1	12.830
1 in 2	16.139
1 in 30	39.105
1 in 100	57.520
1 in 100 +cc	80.528

Table 2 Attenuation Requirements for Swale 1

Storm Event (Years)	Storage Volume (m3)
1 in 1	1.102
1 in 2	1.490
1 in 30	4.477
1 in 100	7.071
1 in 100 +cc	9.899

Table 3 Attenuation Requirements for Swale 2

Storm Event (Years)	Storage Volume (m3)
1 in 1	6.040
1 in 2	7.702
1 in 30	19.449
1 in 100	29.061
1 in 100 +cc	40.685

Table 4 Attenuation Requirements for Swale 3

3.2.7 Please refer to Appendix F.

4.0 FOUL WATER DRAINAGE STRATEGY

4.1 FOUL WATER DRAINAGE DESIGN

- 4.1.1 It is proposed that foul drainage will be conveyed from the pavilion by below ground private gravity drains and the foul treatment tank prior to connection into the swale within the site. The final discharge location is subject to confirmation of the existing outfall locations. All foul drainage will be vented in accordance Building Regulations Part H.

5.0 DRAINAGE MAINTENANCE

5.1 DRAINAGE MAINTENANCE SCHEDULE

- 5.1.1 Please refer to Appendix G.

6.0 CONCLUSIONS & RECOMMENDATIONS

6.1 CONCLUSIONS

- 6.1.1 The proposed surface water drainage system can be summarised as follows.
- 6.1.2 Surface water runoff from the development to discharge at a maximum rate of 5.0l/s into the public storm sewer for a 1 in 100 year + 40%CC, 6 hour storm event in accordance with Non-statutory technical standards for sustainable drainage systems.
- 6.1.3 The development provides a minimum 78% betterment in comparison to the existing runoff arrangement.
- 6.1.4 Use of rainwater harvesting for non-potable use resulting in low levels of reduction in peak runoff.
- 6.1.5 Exceedance flows will flow away from the proposed building and be directed into the swales and permeable parking areas.

APPENDICES

APPENDIX A – ARCHITECTS SITE LAYOUT



The scaling of this drawing cannot be assured

Revision		Date	Drn	Ckd
A	Updated area schedule to include Existing Wildlife Area and Public Open Space	04.06.19	WL	MB
B	Updated Area Schedule	04.07.19	MB	MY

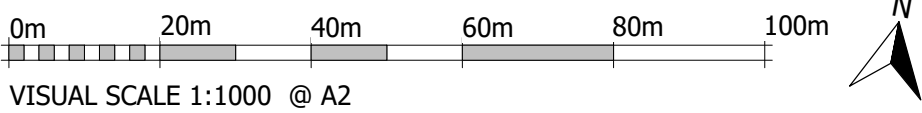
FOR PLANNING

Project
Boulton Moor Sports Pavilion

Drawing Title
The Triangle Site Plan

Date	Scale	Drawn by	Check by
15/05/19	As indicated @ A2	WL	MB
Project No	Drawing No	Revision	
29404	A-P10-002	B	

Area Schedule		
Item	Area (m²)	Area (Ha)
Allotments	12,100	1.21
Playing Fields	38,400	3.84
Sports Pavilion	376	0.037
Informal Public Open Space	38,200	3.82
Restricted Access Nature Conservation Area	15,700	1.57
Total Site (Red Line)	105,685	10.56



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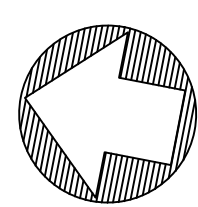
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APPENDIX B – DRAINAGE STRATEGY



General Notes

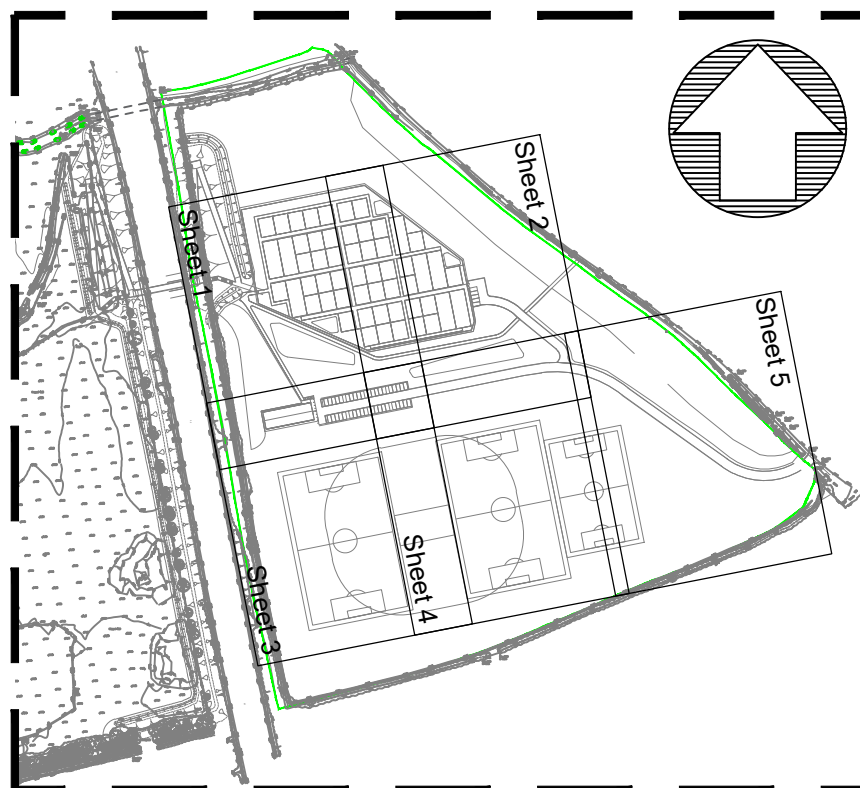
- DO NOT SCALE.
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- Sketch proposals are for illustrative purposes only and as such are subject to detailed site investigation including ground conditions / contaminants, drainage, design and planning / density negotiations.
- All dimensions are in millimetres unless otherwise stated.
- The Farrow Walsh Consulting Designers Risk Assessments for this project must be reviewed PRIOR to the commencement of any works on site.

NOTES

- Information shown is for For Approval only.
- This drawing to be read in conjunction with all other relevant Engineers and Architect's details.
- All work is to be carried out in accordance with the current British Standards, codes of practice and building regulations.
- The exact position, level, size and use of existing sewers to be confirmed on site. Any discrepancies to be reported to the engineer prior to commencement of works.
- All uncovered and shallow pipework to be protected against construction traffic as part of the contractors temporary works requirements.
- Proposed drainage passing through new foundations to be sleeved with cast-in oversized pipework.
- Exact location line and level of existing stubs to existing manholes in the road to be confirmed on site prior to construction.
- Cover levels shown are approximate only, subject to the Architect's external works and landscaping scheme.
- See Architect's details for all setting out dimensions to buildings and boundaries etc.
- All connections to road gullies and channels shall be 150mm nominal bore pipework. Connections to RWP's to be 100mm nominal bore pipework subject to confirmation of RWP sizes and/or design flow. No pipe work to be downsized in the direction of flow.
- Connections to foul terminal fittings to be 100mm nominal bore pipework subject to confirmation of above ground pipe diameters and/or design flow. No pipe work to be downsized in the direction of flow.
- All un-noted pipework to be 100mm dia. Unless subject to the notes above.
- All pipework to be U-PVC type in accordance with WIS 4-35-01 unless otherwise noted.
- All pipes connecting to adopted manholes up to and including 300mm dia. to be Wavin Ultrarb or similar approved.
- All pipes connecting to adopted manholes greater than 300mm dia. to be Concrete.
- All pipes under buildings without suspended floors shall have Class S bedding.
- All pipework entering and exiting manholes to be connected with pipe soffits level.
- Pre-formed channels to be used at all manholes.
- High strength concrete benching to be steel trowelled to a dense smooth face neatly shaped and finished to all branch connections and laid in accordance with the specification.

LEGEND

- Site Ownership Boundary
- 450mm dia. IC Max Depth 3.0m
- 600mm dia. Catchpit
- Foul Water Treatment
- Storm Water Drain
- Land Drain
- Foul Water Drain
- Collector drain - Ø150mm perforated plastic pipe
- Voided Stone below Permeable Block Paving
- Mole Drains (to specialist specification)
- Swale (0.9m x 0.1m x 0.9m)



Sheet Plan

Scale NTS

A1	Issued for Approval.	CB	BM	JD	16.09.19
Rev	Description of updates	Drawn	Checked	App'd	Date

Revision Schedule



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FOR APPROVAL

Client:
Persimmon Homes

Project:
Boulton Moor Sports Pavilion

Title:
Drainage Strategy
Sheet 1 of 5

Drawn: CB
Checked: BM
Approved: JD
Date: September 2019

Scale:
1:250 @ A1

Drawing No.
FW1876-D-400-01

Revision:

A1

Site Details
105,685m ² / 10.569ha : Development area
0m ² / 0.000ha : Existing impermeable area
3,895m ² / 0.390ha : Proposed impermeable area
22.57 l/s : Existing Q1 storm discharge rate
54.38 l/s : Existing Q30 storm discharge rate
69.88 l/s : Existing Q100 storm discharge rate
5.00 l/s : Proposed Q100+40% climate change storm discharge rate to Ordinary Watercourse
Development impermeable areas to be drained into the storm drain via Swales with minimum SUDs treatment to Ciria753, via gravity sewers.

Minimum pipe cover to soffits to be as per The Building Regulations 2010 Part H for thermoplastic pipes:
• 0.6m in pedestrian or landscaped areas
• 0.9m in vehicle accessible areas
Any pipes with cover to soffit less than those stated above are to have a Class Z concrete pipe bed & surround

Internal foul drain pipe minimum gradients:
• 1:80 from SVP & WC to IC
• 1:40 from Basin & Sink to IC
Refer to Architect's/M&E drawings for pipe sizes and setting-out information.

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Storm Event	Existing Greenfield Discharge Rate	Proposed Max. Discharge Rate
1 in 1 year	22.57 l/s	5.00 l/s
1 in 30 year	54.38 l/s	5.00 l/s
1 in 100+40%CC	69.88 l/s	5.00 l/s

All drainage to be constructed in accordance with Sewers for Adoption 6th Edition and Building Regulations Part H.

A CCTV survey of the as-built drainage is to be undertaken by the Contractor and provided to the Engineer for final approval

NOTES

1 **Proposed Connection**
New connection into Watercourse subject to Ordinary Watercourse consent by the LLFA.

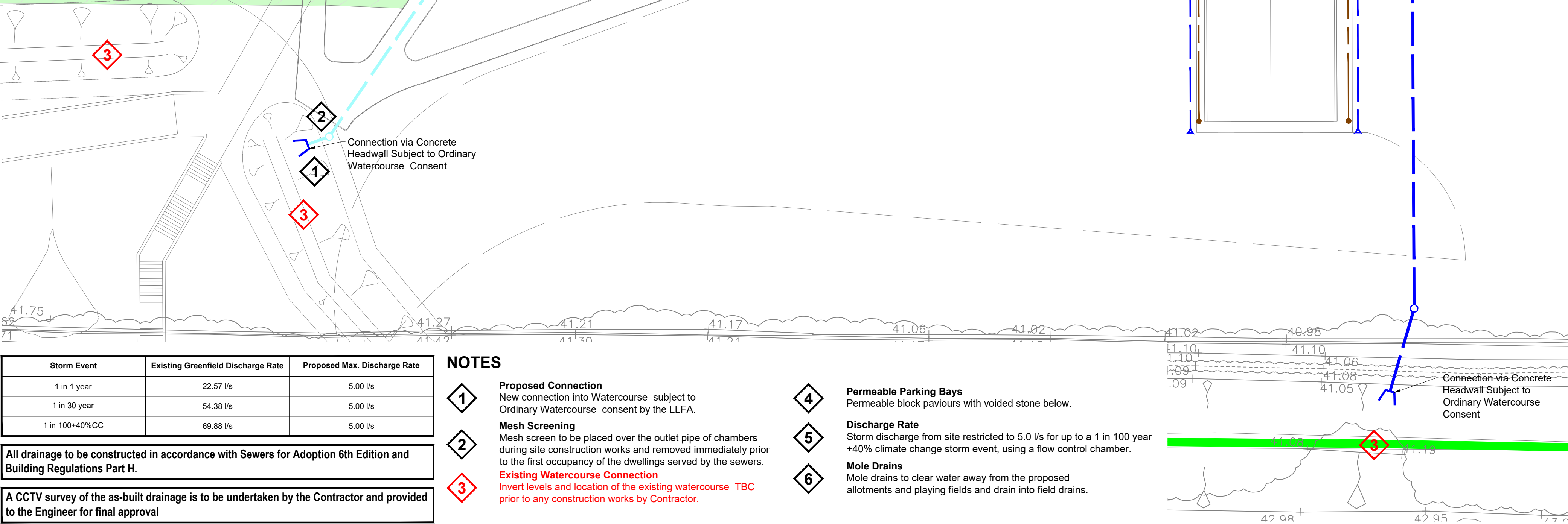
2 **Mesh Screening**
Mesh screen to be placed over the outlet pipe of chambers during site construction works and removed immediately prior to the first occupancy of the dwellings served by the sewers.

3 **Existing Watercourse Connection**
Invert levels and location of the existing watercourse TBC prior to any construction works by Contractor.

4 **Permeable Parking Bays**
Permeable block pavours with voided stone below.

5 **Discharge Rate**
Storm discharge from site restricted to 5.0 l/s for up to a 1 in 100 year +40% climate change storm event, using a flow control chamber.

6 **Mole Drains**
Mole drains to clear water away from the proposed allotments and playing fields and drain into field drains.



Site Details

105,685m² / 10.569ha : Development area

0m² / 0.000ha : Existing impermeable area

3,895m² / 0.390ha : Proposed impermeable area

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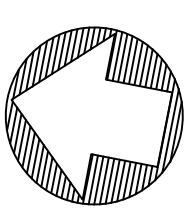
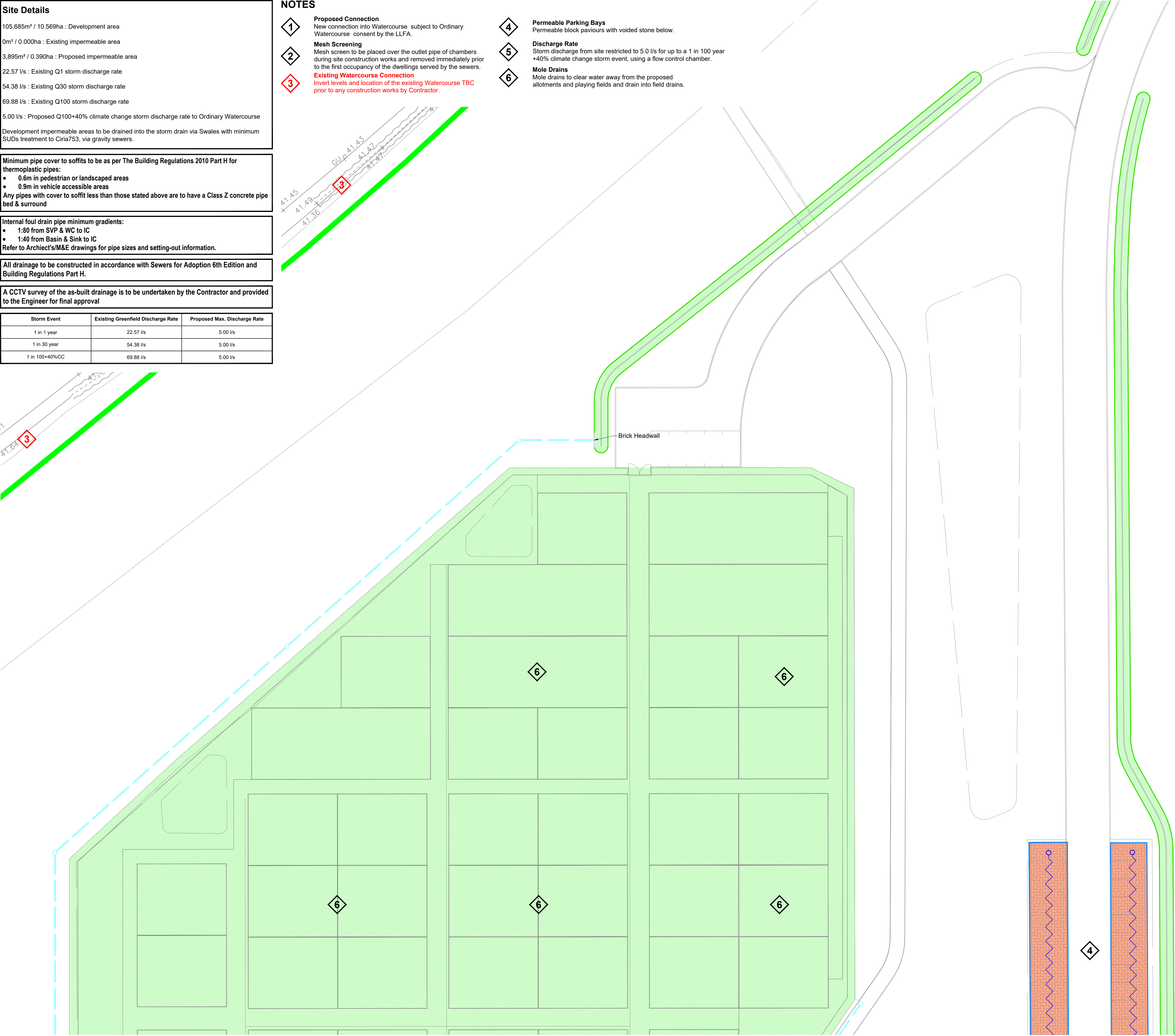
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5.

All uncovered and shallow pipework to be protected against construction traffic as part of the contractors temporary works requirements.
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Proposed drainage passing through new foundations to be sleeved with cast-in oversized pipework.
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Sheet Plan
Scale NTS

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Rev	Description of updates	Drawn	Checked	Appd	Date

Revision Schedule

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CONSULTING

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Title:

Drainage Strategy
Sheet 2 of 5

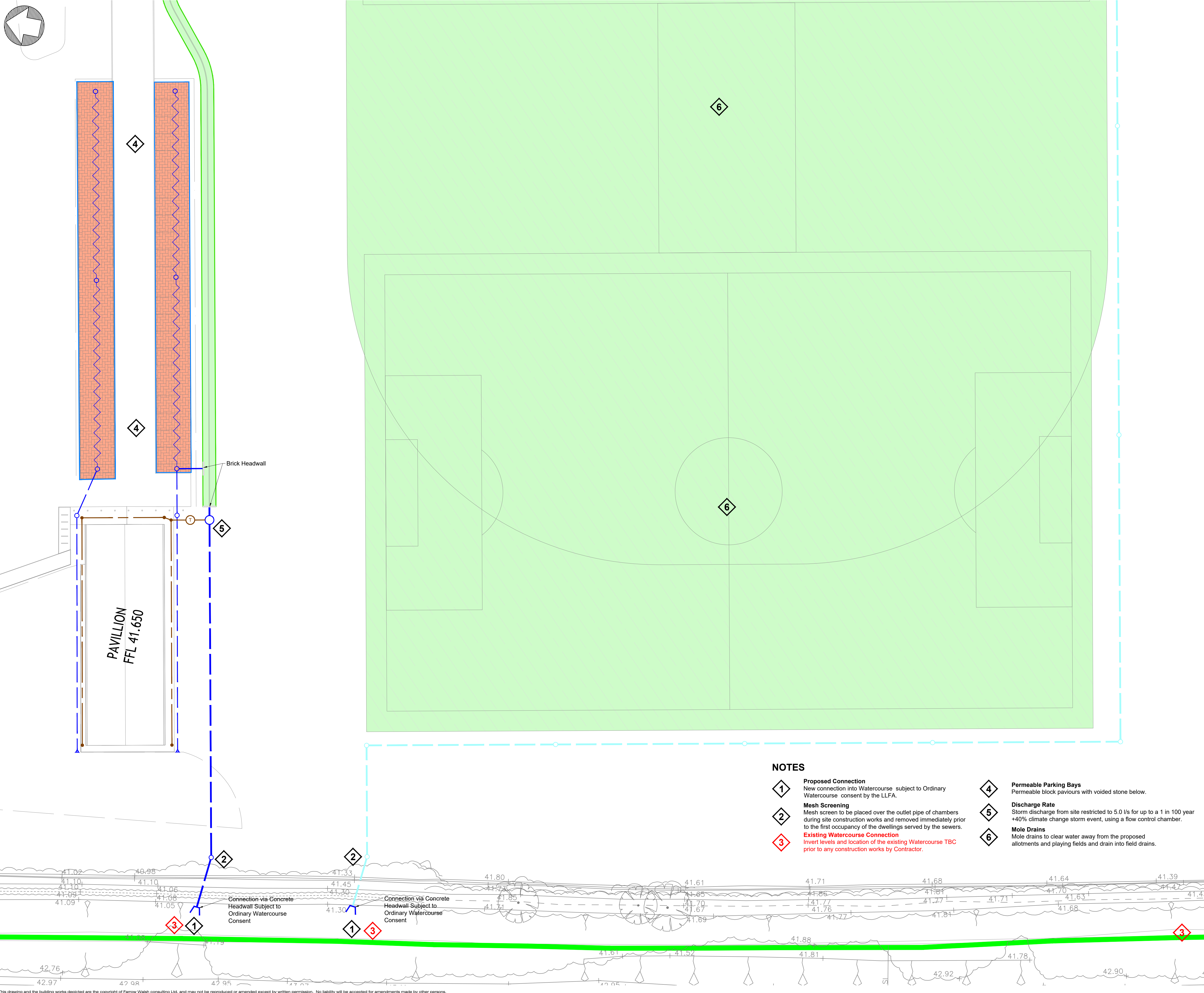
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Drawing No.

FW1876-D-400-02

Revision:

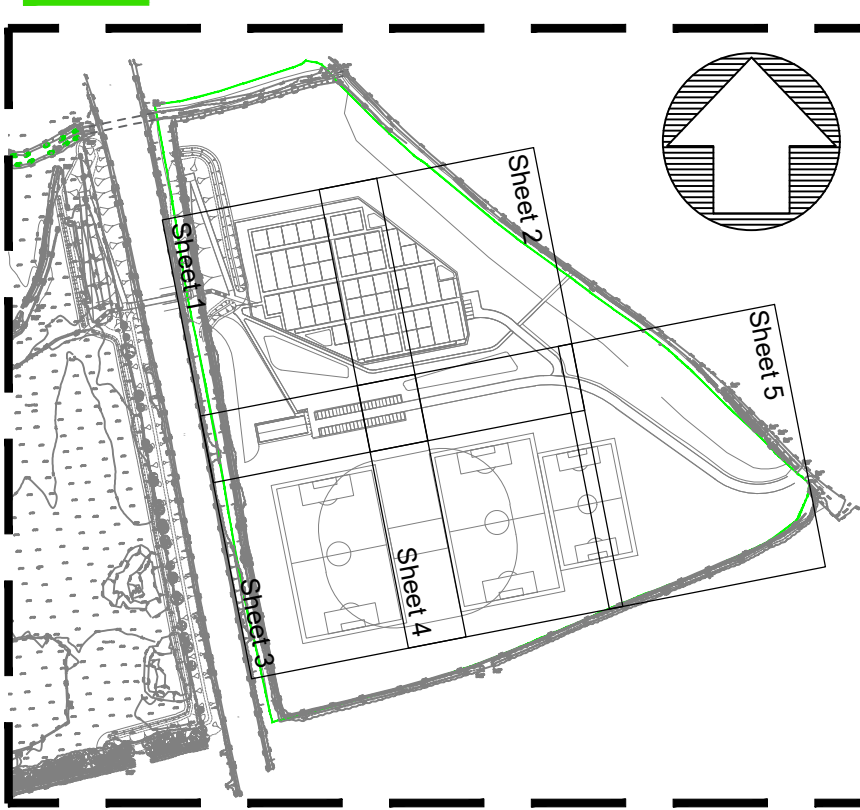
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 8. Cover levels shown are approximate only, subject to the Architect's external works and landscaping scheme.
 9. See Architect's details for all setting out dimensions to buildings and boundaries etc
 10. All connections to road gullies and channels shall be 150mm nominal bore pipework. Connections to RWP's to be 100mm nominal bore pipework subject to confirmation of RWP sizes and/or design flow. No pipe work to be downsized in the direction of flow.
 11. Connections to foul terminal fittings to be 100mm nominal bore pipework subject to confirmation of above ground pipe diameters and/or design flow. No pipe work to be downsized in the direction of flow.
 12. All un-noted pipework to be 100mm dia. Unless subject to the notes above.
 13. All pipework to be U-PVC type in accordance with WIS 4-35-01 unless otherwise noted.
 14. All pipes connecting to adopted manholes up to and including 300mm dia. to be Wavin Ultrarib or similar approved.
 15. All pipes connecting to adopted manholes greater than 300mm dia. to be Concrete.
 16. All pipes under buildings without suspended floors shall have Class S bedding.
 17. All pipework entering and exiting manholes to be connected with pipe soffits level.
 18. Pre-formed channels to be used at all manholes.
 19. High strength concrete benching to be steel trowelled to a dense smooth face neatly shaped and finished to all branch connections and laid in accordance with the specification.

- LEGEND
- Site Ownership Boundary
 - 450mm dia. IC Max Depth 3.0m
 - 600mm dia. Catchpit
 - Foul Water Pump
 - Storm Water Drain
 - Land Drain
 - Foul Water Drain
 - Collector drain - Ø150mm perforated plastic pipe
 - Voided Stone below Permeable Block Paving
 - Mole Drains (to specialist specification)
 - Swale (0.9m x 0.1m x 0.9m)



Sheet Plan
Scale NTS

A1	Issued for Approval.	CB	BM	JD	16.09.19
Rev	Description of updates	Drawn	Checked	App'd	Date
Revision Schedule					

62 Highcross Street, Leicester LE1 4NN
321 Bradford Street, Birmingham B5 6ET
0330 100 0363
www.farrowwalsh.com

FOR APPROVAL

Client:
Persimmon Homes

Project:
Boulton Moor Sports Pavilion

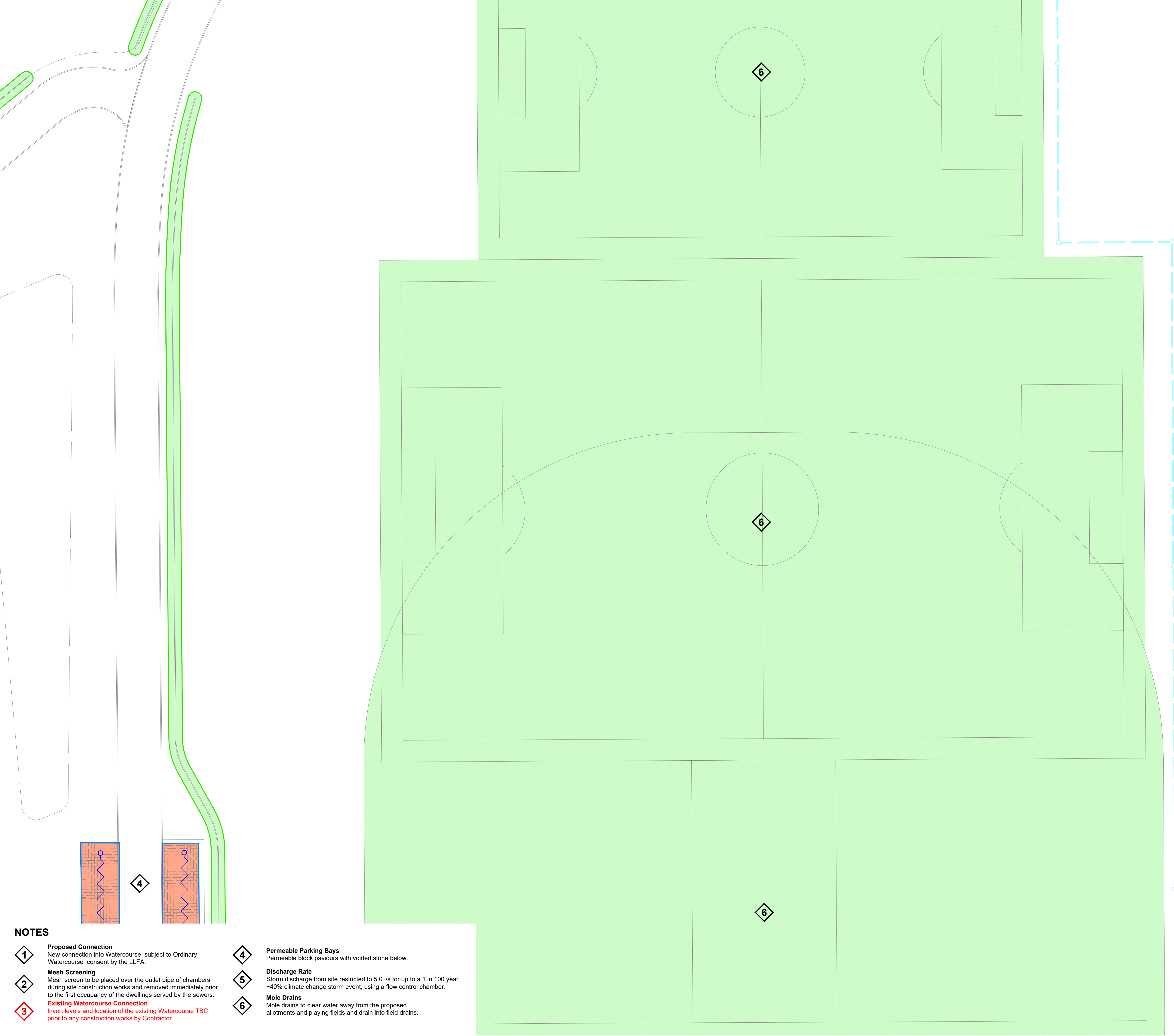
Title:
Drainage Strategy
Sheet 3 of 5

Drawn: CB
Checked: BM
Approved: JD
Date: September 2019

Scale:
1:250 @ A1

Drawing No.
FW1876-D-400-03

Revision:
A1



- 1

Proposed Connection
New connection into Watercourse subject to Ordinary Watercourse consent by the LLFA.
- 2

Mesh Screening
Mesh screen to be placed over the outlet pipe of chambers during site construction works and removed immediately prior to the first occupancy of the dwellings served by the sewers.
- 3

Existing Watercourse Connection
Invert levels and location of the existing Watercourse TBC prior to any construction works by Contractor.
- 4

Permeable Parking Bays
Permeable block pavours with voided stone below.
- 5

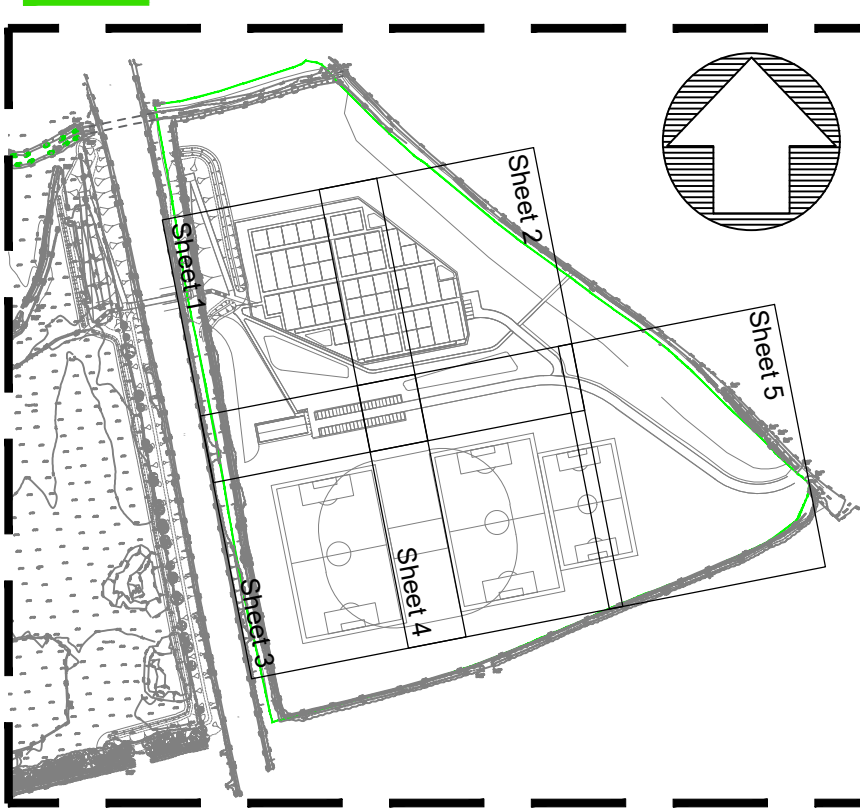
Discharge Rate
Storm discharge from site restricted to 5.0 l/s for up to a 1 in 100 year +40% climate change storm event, using a flow control chamber.
- 6

Mole Drains
Mole drains to clear water away from the proposed allotments and playing fields and drain into field drains.

- General Notes
- DO NOT SCALE.
 - This drawing is to be read in conjunction with all other relevant drawings and details.
 - Should there be any conflict between the details indicated on this drawing and those on other drawings the Engineer should be informed PRIOR to construction on site.
 - Until technical approval has been obtained from the relevant Authority, it should be understood that all drawings issued are Preliminary and NOT for construction. Should the Contractor commence site work prior to such approval being given it is entirely at their own risk.
 - Sketch proposals are for illustrative purposes only and as such are subject to detailed site investigation including ground conditions / contaminants, drainage, design and planning / density negotiations.
 - All dimensions are in millimetres unless otherwise stated.
 - The Farrow Walsh Consulting Designers Risk Assessments for this project must be reviewed PRIOR to the commencement of any works on site.

- NOTES
- Information shown is for For Approval only.
 - This drawing to be read in conjunction with all other relevant Engineers and Architect's details.
 - All work is to be carried out in accordance with the current British Standards, codes of practice and building regulations.
 - The exact position, level, size and use of existing sewers to be confirmed on site. Any discrepancies to be reported to the engineer prior to commencement of works.
 - All uncovered and shallow pipework to be protected against construction traffic as part of the contractors temporary works requirements.
 - Proposed drainage passing through new foundations to be sleeved with cast-in oversized pipework.
 - Exact location line and level of existing stubs to existing manholes in the road to be confirmed on site prior to construction.
 - Cover levels shown are approximate only, subject to the Architect's external works and landscaping scheme.
 - See Architect's details for all setting out dimensions to buildings and boundaries etc
 - All connections to road gullies and channels shall be 150mm nominal bore pipework. Connections to RWPs to be 100mm nominal bore pipework subject to confirmation of RWP sizes and/or design flow. No pipe work to be downsized in the direction of flow.
 - Connections to foul terminal fittings to be 100mm nominal bore pipework subject to confirmation of above ground pipe diameters and/or design flow. No pipe work to be downsized in the direction of flow.
 - All un-noted pipework to be 100mm dia. Unless subject to the notes above.
 - All pipework to be U-PVC type in accordance with WIS 4-35-01 unless otherwise noted.
 - All pipes connecting to adopted manholes up to and including 300mm dia. to be Wavin Ultrarb or similar approved.
 - All pipes connecting to adopted manholes greater than 300mm dia. to be Concrete.
 - All pipes under buildings without suspended floors shall have Class S bedding.
 - All pipework entering and exiting manholes to be connected with pipe soffits level.
 - Pre-formed channels to be used at all manholes.
 - High strength concrete benching to be steel trowelled to a dense smooth face neatly shaped and finished to all branch connections and laid in accordance with the specification.

- LEGEND
- Site Ownership Boundary
 - 450mm dia. IC Max Depth 3.0m
 - 600mm dia. Catchpit
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 - Storm Water Drain
 - Land Drain
 - Foul Water Drain
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 - Voided Stone below Permeable Block Paving
 - Mole Drains (to specialist specification)
 - Swale (0.9m x 0.1m x 0.9m)



Sheet Plan

Scale NTS

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Rev	Description of updates	Drawn	Checked	App'd	Date
Revision Schedule					

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321 Bradford Street, Birmingham B5 6ET
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FOR APPROVAL

Client:
Persimmon Homes

Project:
Boulton Moor Sports Pavilion

Title:
Drainage Strategy
Sheet 4 of 5

Drawn: CB
Checked: BM
Approved: JD
Date: September 2019

Scale:
1:250 @ A1

Drawing No.
FW1876-D-400-04

Revision:
A1

Site Details

105,685m² / 10.569ha : Development area

0m² / 0.000ha : Existing impermeable area

3,895m² / 0.390ha : Proposed impermeable area

22.57 l/s : Existing Q1 storm discharge rate

54.38 l/s : Existing Q30 storm discharge rate

69.88 l/s : Existing Q100 storm discharge rate

5.00 l/s : Proposed Q100+40% climate change storm discharge rate to Ordinary Watercourse

Development impermeable areas to be drained into the storm drain via Swales with minimum SUDs treatment to Ciria753, via gravity sewers.

Minimum pipe cover to soffits to be as per The Building Regulations 2010 Part H for thermoplastic pipes:

- 0.6m in pedestrian or landscaped areas
- 0.9m in vehicle accessible areas

Any pipes with cover to soffit less than those stated above are to have a Class Z concrete pipe bed & surround

Internal foul drain pipe minimum gradients:

- 1:80 from SVP & WC to IC
- 1:40 from Basin & Sink to IC

Refer to Architect's/M&E drawings for pipe sizes and setting-out information.

All drainage to be constructed in accordance with Sewers for Adoption 6th Edition and Building Regulations Part H.

A CCTV survey of the as-built drainage is to be undertaken by the Contractor and provided to the Engineer for final approval

Storm Event	Existing Greenfield Discharge Rate	Proposed Max. Discharge Rate
1 in 1 year	22.57 l/s	5.00 l/s
1 in 30 year	54.38 l/s	5.00 l/s
1 in 100+40%CC	69.88 l/s	5.00 l/s

NOTES

- 1

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New connection into Watercourse subject to Ordinary Watercourse consent by the LLFA.
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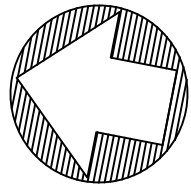
Existing Watercourse Connection
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Permeable Parking Bays
Permeable block pavours with voided stone below.
- 5

Discharge Rate
Storm discharge from site restricted to 5.0 l/s for up to a 1 in 100 year +40% climate change storm event, using a flow control chamber.
- 6

Mole Drains
Mole drains to clear water away from the proposed allotments and playing fields and drain into field drains.



General Notes

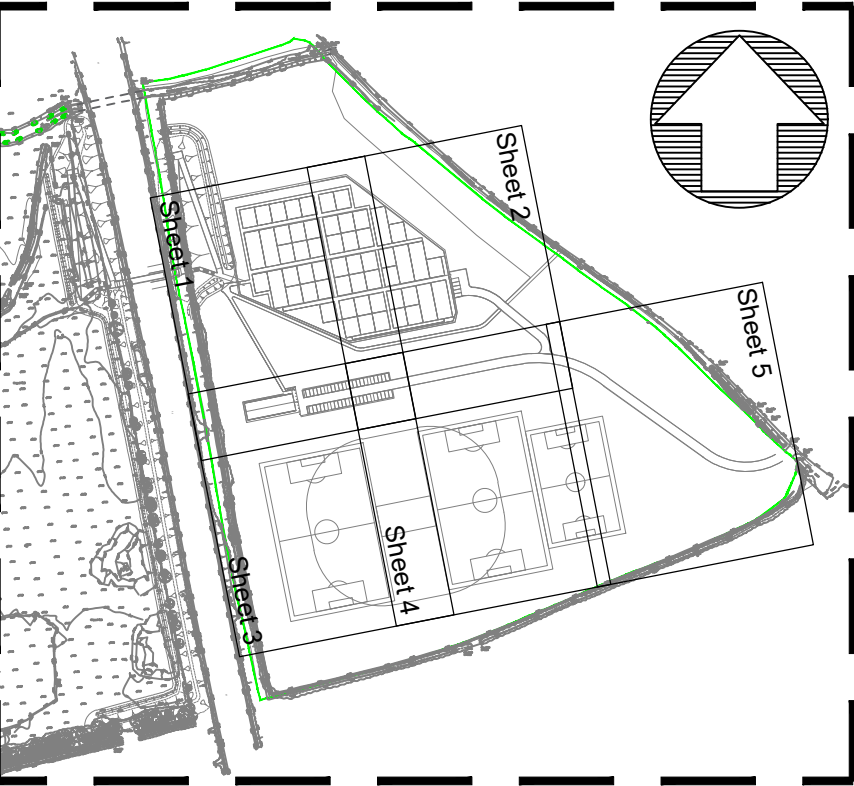
- DO NOT SCALE.
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- All dimensions are in millimetres unless otherwise stated.
- The Farrow Walsh Consulting Designers Risk Assessments for this project must be reviewed PRIOR to the commencement of any works on site.

NOTES

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LEGEND

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- 600mm dia. Catchpit
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- Collector drain - Ø150mm perforated plastic pipe
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- Swale (0.9m x 0.1m x 0.9m)



Sheet Plan
Scale NTS

A1	Issued for Approval.	CB	BM	JD	16.09.19
Rev	Description of updates	Drawn	Checked	Appd	Date

Revision Schedule

farrow
walsh

CONSULTING

62 Highcross Street, Leicester LE1 4NN
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0330 100 0363
www.farrowwalsh.com

FOR APPROVAL

Client:

Persimmon Homes

Project:

Boulton Moor Sports Pavilion

Title:

Drainage Strategy
Sheet 5 of 5

Drawn: CB	Checked: BM	Approved: JD	Date: September 2019	Scale: 1:250 @ A1
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Drawing No.

FW1876-D-400-05

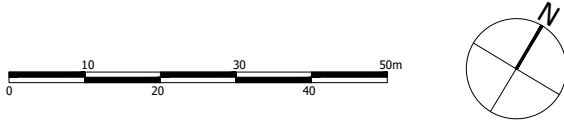
Revision:

A1

APPENDIX C – TOPOGRAPHICAL SURVEY



Note : Survey based on information provided by others. Survey provider unknown, therefore this drawing is for illustrative purposes only.



Project
Boulton Moor Sports Pavilion

Drawing Title
The Triangle Site Survey

Date 08/07/19	Scale 1:1000 @A1	Drawn by AW	Check by MB
Project No 29404	Drawing No A-P10-003	Revision -	



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APPENDIX D – WATER AUTHORITY DOCUMENTS

APPENDIX E – EXISTING GREENFIELD RUN-OFF RATES

Calculated by:

Site name:

Site location:

Site coordinates

Latitude:

Longitude:

This is an estimation of the green eld runoff rate limits that are needed to meet normal best practice criteria in line with Environment Agency guidance "Preliminary rainfall runoff management for developments", W5-074/A/TR1/1 rev. E (2012) and the SuDS Manual, C753 (Ciria, 2015). This information on green eld runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Reference:

Date:

Methodology

IH124

Site characteristics

Total site area (ha)	10.569
----------------------	--------

Methodology

Qbar estimation method	Calculate from SPR and SAAR
SPR estimation method	Calculate from SOIL type

	Default	Edited
SOIL type	3	3
HOST class	---	---
SPR/SPRHOST	0.37	0.37

Hydrological characteristics

	Default	Edited
SAAR (mm)	637	637
Hydrological region	4	4
Growth curve factor: 1 year	0.83	0.83
Growth curve factor: 30 year	2	2
Growth curve factor: 100 year	2.57	2.57

Notes:

(1) Is $Q_{BAR} < 2.0$ l/s/ha?

(2) Ar ow rates < 5.0 l/s?

(3) Is $SPR/SPRHOST \leq 0.3$?

Green eld runoff rates

	Default	Edited
Qbar (l/s)	27.19	27.19
1 in 1 year (l/s)	22.57	22.57
1 in 30 years (l/s)	54.38	54.38
1 in 100 years (l/s)	69.88	69.88

APPENDIX F – PROPOSED SURFACE WATER ATTENUATION CALCULATIONS

ATTENUATION CALCULATIONS FOR SWALE 1

GLOBAL VARIABLES

Location	= Boulton Moor, Derby
SAAR	= 650 mm/yr
WRAP	= 3
M5-60	= 18.79 mm
r Ratio	= 0.40
Soil index	= 0.4

INPUT DATA

Contributing area	= 0.2078 ha
Allowable discharge	= 5 lps
Maximum possible storm duration	= 1440 min
Storm duration time step	= 1 min
Storm return period	= 100 years

CALCULATED DATA

Time to max. storage	= 76 mins
Rainfall at max. storage	= 32.1 mm/hr
Storage volume	= 57.520 m ³

ADJUSTMENTS TO RESULT FOR CLIMATE CHANGE

Volume + 10% for normal discharge (W5-074)	: Storage volume = 63.271 m ³
Volume + 20% for discharge into river flows (DEFRA)	: Storage volume = 69.023 m ³
Volume + 30% for EA residential requirements	: Storage volume = 74.775 m ³
Volume + 40% for other residential requirements	: Storage volume = 80.528 m ³

OUTPUT DATA

Time	Rainfall	Inflow	Outflow	Balance
Intensity				
mins	mm/hr	m ³	m ³	m ³

1.0	226.05	7.438	0.300	7.138
2.0	200.24	13.177	0.600	12.577
3.0	180.77	17.843	0.900	16.943
4.0	165.46	21.776	1.200	20.576
5.0	153.05	25.178	1.500	23.678
6.0	142.74	28.178	1.800	26.378
7.0	134.02	30.865	2.100	28.765
8.0	126.52	33.302	2.400	30.902
9.0	120.00	35.534	2.700	32.834
10.0	114.27	37.596	3.000	34.596
11.0	108.91	39.415	3.300	36.115
12.0	104.07	41.091	3.600	37.491
13.0	99.72	42.651	3.900	38.751
14.0	95.76	44.110	4.200	39.910
15.0	92.15	45.480	4.500	40.980
16.0	88.85	46.771	4.800	41.971
17.0	85.80	47.993	5.100	42.893
18.0	82.99	49.152	5.400	43.752
19.0	80.39	50.254	5.700	44.554
20.0	77.97	51.305	6.000	45.305
21.0	75.71	52.310	6.300	46.010
22.0	73.60	53.272	6.600	46.672
23.0	71.62	54.195	6.900	47.295
24.0	69.76	55.082	7.200	47.882
25.0	68.00	55.936	7.500	48.436

26.0	66.35	56.759	7.800	48.959
27.0	64.79	57.554	8.100	49.454
28.0	63.31	58.323	8.400	49.923
29.0	61.90	59.066	8.700	50.366
30.0	60.57	59.787	9.000	50.787
31.0	59.30	60.485	9.300	51.185
32.0	58.09	61.164	9.600	51.564
33.0	56.94	61.823	9.900	51.923
34.0	55.84	62.464	10.200	52.264
35.0	54.78	63.088	10.500	52.588
36.0	53.78	63.696	10.800	52.896
37.0	52.81	64.288	11.100	53.188
38.0	51.88	64.866	11.400	53.466
39.0	50.99	65.430	11.700	53.730
40.0	50.14	65.981	12.000	53.981
41.0	49.31	66.520	12.300	54.220
42.0	48.52	67.046	12.600	54.446
43.0	47.75	67.561	12.900	54.661
44.0	47.02	68.065	13.200	54.865
45.0	46.31	68.559	13.500	55.059
46.0	45.62	69.043	13.800	55.243
47.0	44.95	69.517	14.100	55.417
48.0	44.31	69.982	14.400	55.582
49.0	43.69	70.438	14.700	55.738
50.0	43.09	70.885	15.000	55.885
51.0	42.51	71.325	15.300	56.025
52.0	41.94	71.756	15.600	56.156
53.0	41.39	72.180	15.900	56.280
54.0	40.86	72.597	16.200	56.397
55.0	40.34	73.006	16.500	56.506

56.0	39.84	73.409	16.800	56.609
57.0	39.35	73.805	17.100	56.705
58.0	38.88	74.195	17.400	56.795
59.0	38.42	74.579	17.700	56.879
60.0	37.97	74.956	18.000	56.956
61.0	37.53	75.328	18.300	57.028
62.0	37.11	75.695	18.600	57.095
63.0	36.69	76.056	18.900	57.156
64.0	36.29	76.411	19.200	57.211
65.0	35.89	76.762	19.500	57.262
66.0	35.51	77.107	19.800	57.307
67.0	35.13	77.448	20.100	57.348
68.0	34.77	77.784	20.400	57.384
69.0	34.41	78.116	20.700	57.416
70.0	34.06	78.443	21.000	57.443
71.0	33.72	78.766	21.300	57.466
72.0	33.38	79.085	21.600	57.485
73.0	33.06	79.399	21.900	57.499
74.0	32.74	79.710	22.200	57.510
75.0	32.43	80.017	22.500	57.517
76.0	32.12	80.320	22.800	57.520 Maximum
77.0	31.82	80.619	23.100	57.519
78.0	31.53	80.914	23.400	57.514
79.0	31.24	81.207	23.700	57.507
80.0	30.96	81.495	24.000	57.495
81.0	30.69	81.781	24.300	57.481
82.0	30.42	82.063	24.600	57.463
83.0	30.15	82.342	24.900	57.442
84.0	29.89	82.618	25.200	57.418
85.0	29.64	82.891	25.500	57.391

86.0	29.39	83.161	25.800	57.361
87.0	29.15	83.428	26.100	57.328
88.0	28.91	83.692	26.400	57.292
89.0	28.67	83.953	26.700	57.253
90.0	28.44	84.211	27.000	57.211
91.0	28.21	84.467	27.300	57.167
92.0	27.99	84.721	27.600	57.121
93.0	27.77	84.971	27.900	57.071
94.0	27.55	85.220	28.200	57.020
95.0	27.34	85.465	28.500	56.965
96.0	27.14	85.709	28.800	56.909
97.0	26.93	85.950	29.100	56.850
98.0	26.73	86.188	29.400	56.788
99.0	26.53	86.425	29.700	56.725
100.0	26.34	86.659	30.000	56.659
101.0	26.15	86.891	30.300	56.591
102.0	25.96	87.120	30.600	56.520
103.0	25.77	87.348	30.900	56.448
104.0	25.59	87.574	31.200	56.374
105.0	25.41	87.797	31.500	56.297
106.0	25.24	88.019	31.800	56.219
107.0	25.06	88.238	32.100	56.138
108.0	24.89	88.456	32.400	56.056
109.0	24.73	88.672	32.700	55.972
110.0	24.56	88.886	33.000	55.886
111.0	24.40	89.098	33.300	55.798
112.0	24.24	89.308	33.600	55.708
113.0	24.08	89.517	33.900	55.617
114.0	23.92	89.723	34.200	55.523
115.0	23.77	89.928	34.500	55.428

116.0	23.62	90.132	34.800	55.332
117.0	23.47	90.333	35.100	55.233
118.0	23.32	90.534	35.400	55.134
119.0	23.17	90.732	35.700	55.032
120.0	23.03	90.929	36.000	54.929
121.0	22.89	91.124	36.300	54.824
122.0	22.75	91.318	36.600	54.718
123.0	22.61	91.510	36.900	54.610
124.0	22.48	91.701	37.200	54.501
125.0	22.34	91.890	37.500	54.390
126.0	22.21	92.078	37.800	54.278
127.0	22.08	92.265	38.100	54.165
128.0	21.95	92.450	38.400	54.050
129.0	21.83	92.634	38.700	53.934
130.0	21.70	92.816	39.000	53.816
131.0	21.58	92.997	39.300	53.697
132.0	21.45	93.177	39.600	53.577
133.0	21.33	93.355	39.900	53.455
134.0	21.21	93.532	40.200	53.332
135.0	21.10	93.708	40.500	53.208
136.0	20.98	93.883	40.800	53.083
137.0	20.87	94.056	41.100	52.956
138.0	20.75	94.228	41.400	52.828
139.0	20.64	94.399	41.700	52.699
140.0	20.53	94.569	42.000	52.569
141.0	20.42	94.737	42.300	52.437
142.0	20.31	94.905	42.600	52.305
143.0	20.21	95.071	42.900	52.171
144.0	20.10	95.236	43.200	52.036
145.0	20.00	95.400	43.500	51.900

146.0	19.89	95.563	43.800	51.763
147.0	19.79	95.725	44.100	51.625
148.0	19.69	95.886	44.400	51.486
149.0	19.59	96.046	44.700	51.346
150.0	19.49	96.205	45.000	51.205
151.0	19.40	96.362	45.300	51.062
152.0	19.30	96.519	45.600	50.919
153.0	19.20	96.675	45.900	50.775
154.0	19.11	96.829	46.200	50.629
155.0	19.02	96.983	46.500	50.483
156.0	18.93	97.136	46.800	50.336
157.0	18.83	97.288	47.100	50.188
158.0	18.74	97.439	47.400	50.039
159.0	18.65	97.589	47.700	49.889
160.0	18.57	97.738	48.000	49.738
161.0	18.48	97.886	48.300	49.586
162.0	18.39	98.033	48.600	49.433
163.0	18.31	98.179	48.900	49.279
164.0	18.22	98.325	49.200	49.125
165.0	18.14	98.469	49.500	48.969
166.0	18.06	98.613	49.800	48.813
167.0	17.97	98.756	50.100	48.656
168.0	17.89	98.898	50.400	48.498
169.0	17.81	99.039	50.700	48.339
170.0	17.73	99.180	51.000	48.180
171.0	17.65	99.319	51.300	48.019
172.0	17.57	99.458	51.600	47.858
173.0	17.50	99.596	51.900	47.696
174.0	17.42	99.733	52.200	47.533
175.0	17.35	99.870	52.500	47.370

176.0	17.27	100.005	52.800	47.205
177.0	17.20	100.140	53.100	47.040
178.0	17.12	100.274	53.400	46.874
179.0	17.05	100.408	53.700	46.708
180.0	16.98	100.540	54.000	46.540
181.0	16.90	100.672	54.300	46.372
182.0	16.83	100.803	54.600	46.203
183.0	16.76	100.934	54.900	46.034
184.0	16.69	101.064	55.200	45.864
185.0	16.62	101.193	55.500	45.693
186.0	16.56	101.321	55.800	45.521
187.0	16.49	101.449	56.100	45.349
188.0	16.42	101.576	56.400	45.176
189.0	16.35	101.702	56.700	45.002
190.0	16.29	101.828	57.000	44.828
191.0	16.22	101.953	57.300	44.653
192.0	16.16	102.077	57.600	44.477
193.0	16.09	102.201	57.900	44.301
194.0	16.03	102.324	58.200	44.124
195.0	15.97	102.446	58.500	43.946
196.0	15.91	102.568	58.800	43.768
197.0	15.84	102.689	59.100	43.589
198.0	15.78	102.810	59.400	43.410
199.0	15.72	102.930	59.700	43.230
200.0	15.66	103.049	60.000	43.049
201.0	15.60	103.168	60.300	42.868
202.0	15.54	103.286	60.600	42.686
203.0	15.48	103.403	60.900	42.503
204.0	15.42	103.520	61.200	42.320
205.0	15.37	103.637	61.500	42.137

206.0	15.31	103.753	61.800	41.953
207.0	15.25	103.868	62.100	41.768
208.0	15.19	103.983	62.400	41.583
209.0	15.14	104.097	62.700	41.397
210.0	15.08	104.210	63.000	41.210
211.0	15.03	104.323	63.300	41.023
212.0	14.97	104.436	63.600	40.836
213.0	14.92	104.548	63.900	40.648
214.0	14.86	104.659	64.200	40.459
215.0	14.81	104.770	64.500	40.270
216.0	14.76	104.880	64.800	40.080
217.0	14.71	104.990	65.100	39.890
218.0	14.65	105.099	65.400	39.699
219.0	14.60	105.208	65.700	39.508
220.0	14.55	105.317	66.000	39.317
221.0	14.50	105.424	66.300	39.124
222.0	14.45	105.532	66.600	38.932
223.0	14.40	105.638	66.900	38.738
224.0	14.35	105.745	67.200	38.545
225.0	14.30	105.851	67.500	38.351
226.0	14.25	105.956	67.800	38.156
227.0	14.20	106.061	68.100	37.961
228.0	14.15	106.165	68.400	37.765
229.0	14.10	106.269	68.700	37.569
230.0	14.06	106.372	69.000	37.372
231.0	14.01	106.475	69.300	37.175
232.0	13.96	106.578	69.600	36.978
233.0	13.92	106.680	69.900	36.780
234.0	13.87	106.782	70.200	36.582
235.0	13.82	106.883	70.500	36.383

236.0	13.78	106.984	70.800	36.184
237.0	13.73	107.084	71.100	35.984
238.0	13.69	107.184	71.400	35.784
239.0	13.64	107.283	71.700	35.583
240.0	13.60	107.382	72.000	35.382
241.0	13.55	107.481	72.300	35.181
242.0	13.51	107.579	72.600	34.979
243.0	13.47	107.676	72.900	34.776
244.0	13.42	107.774	73.200	34.574
245.0	13.38	107.871	73.500	34.371
246.0	13.34	107.967	73.800	34.167
247.0	13.30	108.063	74.100	33.963
248.0	13.26	108.159	74.400	33.759
249.0	13.21	108.254	74.700	33.554
250.0	13.17	108.349	75.000	33.349
251.0	13.13	108.443	75.300	33.143
252.0	13.09	108.537	75.600	32.937
253.0	13.05	108.631	75.900	32.731
254.0	13.01	108.724	76.200	32.524
255.0	12.97	108.817	76.500	32.317
256.0	12.93	108.910	76.800	32.110
257.0	12.89	109.002	77.100	31.902
258.0	12.85	109.093	77.400	31.693
259.0	12.81	109.185	77.700	31.485
260.0	12.77	109.276	78.000	31.276
261.0	12.74	109.366	78.300	31.066
262.0	12.70	109.457	78.600	30.857
263.0	12.66	109.547	78.900	30.647
264.0	12.62	109.636	79.200	30.436
265.0	12.58	109.725	79.500	30.225

266.0	12.55	109.814	79.800	30.014
267.0	12.51	109.903	80.100	29.803
268.0	12.47	109.991	80.400	29.591
269.0	12.44	110.079	80.700	29.379
270.0	12.40	110.166	81.000	29.166
271.0	12.37	110.253	81.300	28.953
272.0	12.33	110.340	81.600	28.740
273.0	12.29	110.426	81.900	28.526
274.0	12.26	110.512	82.200	28.312
275.0	12.22	110.598	82.500	28.098
276.0	12.19	110.683	82.800	27.883
277.0	12.15	110.768	83.100	27.668
278.0	12.12	110.853	83.400	27.453
279.0	12.09	110.938	83.700	27.238
280.0	12.05	111.022	84.000	27.022
281.0	12.02	111.105	84.300	26.805
282.0	11.98	111.189	84.600	26.589
283.0	11.95	111.272	84.900	26.372
284.0	11.92	111.355	85.200	26.155
285.0	11.88	111.437	85.500	25.937
286.0	11.85	111.520	85.800	25.720
287.0	11.82	111.601	86.100	25.501
288.0	11.79	111.683	86.400	25.283
289.0	11.75	111.764	86.700	25.064
290.0	11.72	111.845	87.000	24.845
291.0	11.69	111.926	87.300	24.626
292.0	11.66	112.006	87.600	24.406
293.0	11.63	112.086	87.900	24.186
294.0	11.60	112.166	88.200	23.966
295.0	11.56	112.246	88.500	23.746

296.0	11.53	112.325	88.800	23.525
297.0	11.50	112.404	89.100	23.304
298.0	11.47	112.482	89.400	23.082
299.0	11.44	112.561	89.700	22.861
300.0	11.41	112.639	90.000	22.639
301.0	11.38	112.716	90.300	22.416
302.0	11.35	112.794	90.600	22.194
303.0	11.32	112.871	90.900	21.971
304.0	11.29	112.948	91.200	21.748
305.0	11.26	113.025	91.500	21.525
306.0	11.23	113.101	91.800	21.301
307.0	11.20	113.177	92.100	21.077
308.0	11.18	113.253	92.400	20.853
309.0	11.15	113.329	92.700	20.629
310.0	11.12	113.404	93.000	20.404
311.0	11.09	113.479	93.300	20.179
312.0	11.06	113.554	93.600	19.954
313.0	11.03	113.628	93.900	19.728
314.0	11.01	113.702	94.200	19.502
315.0	10.98	113.776	94.500	19.276
316.0	10.95	113.850	94.800	19.050
317.0	10.92	113.924	95.100	18.824
318.0	10.90	113.997	95.400	18.597
319.0	10.87	114.070	95.700	18.370
320.0	10.84	114.142	96.000	18.142
321.0	10.81	114.215	96.300	17.915
322.0	10.79	114.287	96.600	17.687
323.0	10.76	114.359	96.900	17.459
324.0	10.73	114.431	97.200	17.231
325.0	10.71	114.502	97.500	17.002

326.0	10.68	114.573	97.800	16.773
327.0	10.66	114.644	98.100	16.544
328.0	10.63	114.715	98.400	16.315
329.0	10.60	114.786	98.700	16.086
330.0	10.58	114.856	99.000	15.856
331.0	10.55	114.926	99.300	15.626
332.0	10.53	114.996	99.600	15.396
333.0	10.50	115.065	99.900	15.165
334.0	10.48	115.135	100.200	14.935
335.0	10.45	115.204	100.500	14.704
336.0	10.43	115.273	100.800	14.473
337.0	10.40	115.341	101.100	14.241
338.0	10.38	115.410	101.400	14.010
339.0	10.35	115.478	101.700	13.778
340.0	10.33	115.546	102.000	13.546
341.0	10.30	115.613	102.300	13.313
342.0	10.28	115.681	102.600	13.081
343.0	10.26	115.748	102.900	12.848
344.0	10.23	115.815	103.200	12.615
345.0	10.21	115.882	103.500	12.382
346.0	10.19	115.949	103.800	12.149
347.0	10.16	116.015	104.100	11.915
348.0	10.14	116.081	104.400	11.681
349.0	10.12	116.147	104.700	11.447
350.0	10.09	116.213	105.000	11.213
351.0	10.07	116.279	105.300	10.979
352.0	10.05	116.344	105.600	10.744
353.0	10.02	116.409	105.900	10.509
354.0	10.00	116.474	106.200	10.274
355.0	9.98	116.539	106.500	10.039

356.0	9.96	116.603	106.800	9.803
357.0	9.93	116.668	107.100	9.568
358.0	9.91	116.787	107.400	9.387
359.0	9.89	116.857	107.700	9.157
360.0	9.87	116.926	108.000	8.926
361.0	9.85	116.996	108.300	8.696
362.0	9.83	117.066	108.600	8.466
363.0	9.81	117.135	108.900	8.235
364.0	9.79	117.204	109.200	8.004
365.0	9.77	117.273	109.500	7.773
366.0	9.74	117.342	109.800	7.542
367.0	9.72	117.410	110.100	7.310
368.0	9.70	117.479	110.400	7.079
369.0	9.68	117.547	110.700	6.847
370.0	9.66	117.615	111.000	6.615
371.0	9.64	117.683	111.300	6.383
372.0	9.62	117.751	111.600	6.151
373.0	9.60	117.819	111.900	5.919
374.0	9.58	117.886	112.200	5.686
375.0	9.56	117.954	112.500	5.454
376.0	9.54	118.021	112.800	5.221
377.0	9.52	118.088	113.100	4.988
378.0	9.50	118.155	113.400	4.755
379.0	9.48	118.222	113.700	4.522
380.0	9.46	118.289	114.000	4.289
381.0	9.44	118.355	114.300	4.055
382.0	9.42	118.421	114.600	3.821
383.0	9.40	118.488	114.900	3.588
384.0	9.38	118.554	115.200	3.354
385.0	9.36	118.620	115.500	3.120

386.0	9.35	118.685	115.800	2.885
387.0	9.33	118.751	116.100	2.651
388.0	9.31	118.816	116.400	2.416
389.0	9.29	118.882	116.700	2.182
390.0	9.27	118.947	117.000	1.947
391.0	9.25	119.012	117.300	1.712
392.0	9.23	119.077	117.600	1.477
393.0	9.21	119.142	117.900	1.242
394.0	9.20	119.206	118.200	1.006
395.0	9.18	119.271	118.500	0.771
396.0	9.16	119.335	118.800	0.535
397.0	9.14	119.399	119.100	0.299
398.0	9.12	119.463	119.400	0.063
399.0	9.10	119.527	119.700	0.000
400.0	9.09	119.591	120.000	0.000
401.0	9.07	119.655	120.300	0.000
402.0	9.05	119.718	120.600	0.000
403.0	9.03	119.782	120.900	0.000
404.0	9.02	119.845	121.200	0.000
405.0	9.00	119.908	121.500	0.000
406.0	8.98	119.971	121.800	0.000
407.0	8.96	120.034	122.100	0.000
408.0	8.95	120.097	122.400	0.000
409.0	8.93	120.159	122.700	0.000
410.0	8.91	120.222	123.000	0.000
411.0	8.90	120.284	123.300	0.000
412.0	8.88	120.346	123.600	0.000
413.0	8.86	120.408	123.900	0.000
414.0	8.84	120.470	124.200	0.000
415.0	8.83	120.532	124.500	0.000

416.0	8.81	120.594	124.800	0.000
417.0	8.79	120.655	125.100	0.000
418.0	8.78	120.717	125.400	0.000
419.0	8.76	120.778	125.700	0.000
420.0	8.74	120.839	126.000	0.000
421.0	8.73	120.900	126.300	0.000
422.0	8.71	120.961	126.600	0.000
423.0	8.70	121.022	126.900	0.000
424.0	8.68	121.083	127.200	0.000
425.0	8.66	121.143	127.500	0.000
426.0	8.65	121.204	127.800	0.000
427.0	8.63	121.264	128.100	0.000
428.0	8.62	121.324	128.400	0.000
429.0	8.60	121.384	128.700	0.000
430.0	8.58	121.444	129.000	0.000
431.0	8.57	121.504	129.300	0.000
432.0	8.55	121.564	129.600	0.000
433.0	8.54	121.624	129.900	0.000
434.0	8.52	121.683	130.200	0.000
435.0	8.51	121.743	130.500	0.000
436.0	8.49	121.802	130.800	0.000
437.0	8.48	121.861	131.100	0.000
438.0	8.46	121.920	131.400	0.000
439.0	8.45	121.979	131.700	0.000
440.0	8.43	122.038	132.000	0.000
441.0	8.41	122.097	132.300	0.000
442.0	8.40	122.155	132.600	0.000
443.0	8.38	122.214	132.900	0.000
444.0	8.37	122.272	133.200	0.000
445.0	8.36	122.330	133.500	0.000

446.0	8.34	122.388	133.800	0.000
447.0	8.33	122.446	134.100	0.000
448.0	8.31	122.504	134.400	0.000
449.0	8.30	122.562	134.700	0.000
450.0	8.28	122.620	135.000	0.000
451.0	8.27	122.677	135.300	0.000
452.0	8.25	122.735	135.600	0.000
453.0	8.24	122.792	135.900	0.000
454.0	8.22	122.850	136.200	0.000
455.0	8.21	122.907	136.500	0.000
456.0	8.20	122.964	136.800	0.000
457.0	8.18	123.021	137.100	0.000
458.0	8.17	123.078	137.400	0.000
459.0	8.15	123.134	137.700	0.000
460.0	8.14	123.191	138.000	0.000
461.0	8.13	123.248	138.300	0.000
462.0	8.11	123.304	138.600	0.000
463.0	8.10	123.360	138.900	0.000
464.0	8.08	123.416	139.200	0.000
465.0	8.07	123.473	139.500	0.000
466.0	8.06	123.529	139.800	0.000
467.0	8.04	123.585	140.100	0.000
468.0	8.03	123.640	140.400	0.000
469.0	8.02	123.696	140.700	0.000
470.0	8.00	123.752	141.000	0.000
471.0	7.99	123.807	141.300	0.000
472.0	7.98	123.863	141.600	0.000
473.0	7.96	123.918	141.900	0.000
474.0	7.95	123.973	142.200	0.000
475.0	7.94	124.028	142.500	0.000

476.0	7.92	124.083	142.800	0.000
477.0	7.91	124.138	143.100	0.000
478.0	7.90	124.193	143.400	0.000
479.0	7.88	124.248	143.700	0.000
480.0	7.87	124.302	144.000	0.000
481.0	7.86	124.357	144.300	0.000
482.0	7.85	124.411	144.600	0.000
483.0	7.83	124.466	144.900	0.000
484.0	7.82	124.520	145.200	0.000
485.0	7.81	124.574	145.500	0.000
486.0	7.79	124.628	145.800	0.000
487.0	7.78	124.682	146.100	0.000
488.0	7.77	124.736	146.400	0.000
489.0	7.76	124.790	146.700	0.000
490.0	7.74	124.843	147.000	0.000
491.0	7.73	124.897	147.300	0.000
492.0	7.72	124.950	147.600	0.000
493.0	7.71	125.004	147.900	0.000
494.0	7.69	125.057	148.200	0.000
495.0	7.68	125.110	148.500	0.000
496.0	7.67	125.163	148.800	0.000
497.0	7.66	125.216	149.100	0.000
498.0	7.65	125.269	149.400	0.000
499.0	7.63	125.322	149.700	0.000
500.0	7.62	125.375	150.000	0.000
501.0	7.61	125.428	150.300	0.000
502.0	7.60	125.480	150.600	0.000
503.0	7.59	125.533	150.900	0.000
504.0	7.57	125.585	151.200	0.000
505.0	7.56	125.637	151.500	0.000

506.0	7.55	125.690	151.800	0.000
507.0	7.54	125.742	152.100	0.000
508.0	7.53	125.794	152.400	0.000
509.0	7.51	125.846	152.700	0.000
510.0	7.50	125.898	153.000	0.000
511.0	7.49	125.949	153.300	0.000
512.0	7.48	126.001	153.600	0.000
513.0	7.47	126.053	153.900	0.000
514.0	7.46	126.104	154.200	0.000
515.0	7.45	126.156	154.500	0.000
516.0	7.43	126.207	154.800	0.000
517.0	7.42	126.258	155.100	0.000
518.0	7.41	126.310	155.400	0.000
519.0	7.40	126.361	155.700	0.000
520.0	7.39	126.412	156.000	0.000
521.0	7.38	126.463	156.300	0.000
522.0	7.37	126.514	156.600	0.000
523.0	7.36	126.564	156.900	0.000
524.0	7.34	126.615	157.200	0.000
525.0	7.33	126.666	157.500	0.000
526.0	7.32	126.716	157.800	0.000
527.0	7.31	126.767	158.100	0.000
528.0	7.30	126.817	158.400	0.000
529.0	7.29	126.867	158.700	0.000
530.0	7.28	126.918	159.000	0.000
531.0	7.27	126.968	159.300	0.000
532.0	7.26	127.018	159.600	0.000
533.0	7.25	127.068	159.900	0.000
534.0	7.24	127.118	160.200	0.000
535.0	7.22	127.167	160.500	0.000

536.0	7.21	127.217	160.800	0.000
537.0	7.20	127.267	161.100	0.000
538.0	7.19	127.316	161.400	0.000
539.0	7.18	127.366	161.700	0.000
540.0	7.17	127.415	162.000	0.000
541.0	7.16	127.465	162.300	0.000
542.0	7.15	127.514	162.600	0.000
543.0	7.14	127.563	162.900	0.000
544.0	7.13	127.612	163.200	0.000
545.0	7.12	127.661	163.500	0.000
546.0	7.11	127.710	163.800	0.000
547.0	7.10	127.759	164.100	0.000
548.0	7.09	127.808	164.400	0.000
549.0	7.08	127.857	164.700	0.000
550.0	7.07	127.905	165.000	0.000
551.0	7.06	127.954	165.300	0.000
552.0	7.05	128.002	165.600	0.000
553.0	7.04	128.051	165.900	0.000
554.0	7.03	128.099	166.200	0.000
555.0	7.02	128.147	166.500	0.000
556.0	7.01	128.196	166.800	0.000
557.0	7.00	128.244	167.100	0.000
558.0	6.99	128.292	167.400	0.000
559.0	6.98	128.340	167.700	0.000
560.0	6.97	128.388	168.000	0.000
561.0	6.96	128.436	168.300	0.000
562.0	6.95	128.483	168.600	0.000
563.0	6.94	128.531	168.900	0.000
564.0	6.93	128.579	169.200	0.000
565.0	6.92	128.626	169.500	0.000

566.0	6.91	128.674	169.800	0.000
567.0	6.90	128.721	170.100	0.000
568.0	6.89	128.768	170.400	0.000
569.0	6.88	128.816	170.700	0.000
570.0	6.87	128.863	171.000	0.000
571.0	6.86	128.910	171.300	0.000
572.0	6.85	128.957	171.600	0.000
573.0	6.84	129.004	171.900	0.000
574.0	6.83	129.051	172.200	0.000
575.0	6.82	129.098	172.500	0.000
576.0	6.81	129.145	172.800	0.000
577.0	6.81	129.191	173.100	0.000
578.0	6.80	129.238	173.400	0.000
579.0	6.79	129.285	173.700	0.000
580.0	6.78	129.331	174.000	0.000
581.0	6.77	129.377	174.300	0.000
582.0	6.76	129.424	174.600	0.000
583.0	6.75	129.470	174.900	0.000
584.0	6.74	129.516	175.200	0.000
585.0	6.73	129.563	175.500	0.000
586.0	6.72	129.609	175.800	0.000
587.0	6.71	129.655	176.100	0.000
588.0	6.70	129.701	176.400	0.000
589.0	6.70	129.747	176.700	0.000
590.0	6.69	129.792	177.000	0.000
591.0	6.68	129.838	177.300	0.000
592.0	6.67	129.884	177.600	0.000
593.0	6.66	129.930	177.900	0.000
594.0	6.65	129.975	178.200	0.000
595.0	6.64	130.021	178.500	0.000

596.0	6.63	130.066	178.800	0.000
597.0	6.62	130.111	179.100	0.000
598.0	6.62	130.157	179.400	0.000
599.0	6.61	130.202	179.700	0.000
600.0	6.60	130.247	180.000	0.000
601.0	6.59	130.292	180.300	0.000
602.0	6.58	130.337	180.600	0.000
603.0	6.57	130.382	180.900	0.000
604.0	6.56	130.427	181.200	0.000
605.0	6.55	130.472	181.500	0.000
606.0	6.55	130.517	181.800	0.000
607.0	6.54	130.562	182.100	0.000
608.0	6.53	130.606	182.400	0.000
609.0	6.52	130.651	182.700	0.000
610.0	6.51	130.696	183.000	0.000
611.0	6.50	130.740	183.300	0.000
612.0	6.50	130.785	183.600	0.000
613.0	6.49	130.829	183.900	0.000
614.0	6.48	130.873	184.200	0.000
615.0	6.47	130.917	184.500	0.000
616.0	6.46	130.962	184.800	0.000
617.0	6.45	131.006	185.100	0.000
618.0	6.45	131.050	185.400	0.000
619.0	6.44	131.094	185.700	0.000
620.0	6.43	131.138	186.000	0.000
621.0	6.42	131.182	186.300	0.000
622.0	6.41	131.225	186.600	0.000
623.0	6.40	131.269	186.900	0.000
624.0	6.40	131.313	187.200	0.000
625.0	6.39	131.357	187.500	0.000

626.0	6.38	131.400	187.800	0.000
627.0	6.37	131.444	188.100	0.000
628.0	6.36	131.487	188.400	0.000
629.0	6.36	131.531	188.700	0.000
630.0	6.35	131.574	189.000	0.000
631.0	6.34	131.617	189.300	0.000
632.0	6.33	131.661	189.600	0.000
633.0	6.32	131.704	189.900	0.000
634.0	6.32	131.747	190.200	0.000
635.0	6.31	131.790	190.500	0.000
636.0	6.30	131.833	190.800	0.000
637.0	6.29	131.876	191.100	0.000
638.0	6.28	131.919	191.400	0.000
639.0	6.28	131.962	191.700	0.000
640.0	6.27	132.004	192.000	0.000
641.0	6.26	132.047	192.300	0.000
642.0	6.25	132.090	192.600	0.000
643.0	6.25	132.132	192.900	0.000
644.0	6.24	132.175	193.200	0.000
645.0	6.23	132.217	193.500	0.000
646.0	6.22	132.260	193.800	0.000
647.0	6.22	132.302	194.100	0.000
648.0	6.21	132.345	194.400	0.000
649.0	6.20	132.387	194.700	0.000
650.0	6.19	132.429	195.000	0.000
651.0	6.18	132.471	195.300	0.000
652.0	6.18	132.513	195.600	0.000
653.0	6.17	132.555	195.900	0.000
654.0	6.16	132.597	196.200	0.000
655.0	6.15	132.639	196.500	0.000

656.0	6.15	132.681	196.800	0.000
657.0	6.14	132.723	197.100	0.000
658.0	6.13	132.765	197.400	0.000
659.0	6.13	132.807	197.700	0.000
660.0	6.12	132.848	198.000	0.000
661.0	6.11	132.890	198.300	0.000
662.0	6.10	132.931	198.600	0.000
663.0	6.10	132.973	198.900	0.000
664.0	6.09	133.014	199.200	0.000
665.0	6.08	133.056	199.500	0.000
666.0	6.07	133.097	199.800	0.000
667.0	6.07	133.138	200.100	0.000
668.0	6.06	133.180	200.400	0.000
669.0	6.05	133.221	200.700	0.000
670.0	6.05	133.262	201.000	0.000
671.0	6.04	133.303	201.300	0.000
672.0	6.03	133.344	201.600	0.000
673.0	6.02	133.385	201.900	0.000
674.0	6.02	133.426	202.200	0.000
675.0	6.01	133.467	202.500	0.000
676.0	6.00	133.508	202.800	0.000
677.0	6.00	133.549	203.100	0.000
678.0	5.99	133.589	203.400	0.000
679.0	5.98	133.630	203.700	0.000
680.0	5.97	133.671	204.000	0.000
681.0	5.97	133.711	204.300	0.000
682.0	5.96	133.752	204.600	0.000
683.0	5.95	133.792	204.900	0.000
684.0	5.95	133.833	205.200	0.000
685.0	5.94	133.873	205.500	0.000

686.0	5.93	133.913	205.800	0.000
687.0	5.93	133.954	206.100	0.000
688.0	5.92	133.994	206.400	0.000
689.0	5.91	134.034	206.700	0.000
690.0	5.91	134.074	207.000	0.000
691.0	5.90	134.114	207.300	0.000
692.0	5.89	134.154	207.600	0.000
693.0	5.89	134.194	207.900	0.000
694.0	5.88	134.234	208.200	0.000
695.0	5.87	134.274	208.500	0.000
696.0	5.87	134.314	208.800	0.000
697.0	5.86	134.354	209.100	0.000
698.0	5.85	134.393	209.400	0.000
699.0	5.85	134.433	209.700	0.000
700.0	5.84	134.473	210.000	0.000
701.0	5.83	134.512	210.300	0.000
702.0	5.83	134.552	210.600	0.000
703.0	5.82	134.591	210.900	0.000
704.0	5.81	134.631	211.200	0.000
705.0	5.81	134.670	211.500	0.000
706.0	5.80	134.710	211.800	0.000
707.0	5.79	134.749	212.100	0.000
708.0	5.79	134.788	212.400	0.000
709.0	5.78	134.827	212.700	0.000
710.0	5.77	134.867	213.000	0.000
711.0	5.77	134.906	213.300	0.000
712.0	5.76	134.945	213.600	0.000
713.0	5.75	134.984	213.900	0.000
714.0	5.75	135.023	214.200	0.000
715.0	5.74	135.062	214.500	0.000

716.0	5.73	135.101	214.800	0.000
717.0	5.73	135.139	215.100	0.000
718.0	5.72	135.178	215.400	0.000
719.0	5.72	135.217	215.700	0.000
720.0	5.71	135.256	216.000	0.000
721.0	5.70	135.294	216.300	0.000
722.0	5.70	135.333	216.600	0.000
723.0	5.69	135.372	216.900	0.000
724.0	5.68	135.410	217.200	0.000
725.0	5.68	135.449	217.500	0.000
726.0	5.67	135.487	217.800	0.000
727.0	5.67	135.525	218.100	0.000
728.0	5.66	135.564	218.400	0.000
729.0	5.65	135.602	218.700	0.000
730.0	5.65	135.640	219.000	0.000
731.0	5.64	135.678	219.300	0.000
732.0	5.64	135.717	219.600	0.000
733.0	5.63	135.755	219.900	0.000
734.0	5.62	135.793	220.200	0.000
735.0	5.62	135.831	220.500	0.000
736.0	5.61	135.869	220.800	0.000
737.0	5.60	135.907	221.100	0.000
738.0	5.60	135.945	221.400	0.000
739.0	5.59	135.983	221.700	0.000
740.0	5.59	136.020	222.000	0.000
741.0	5.58	136.058	222.300	0.000
742.0	5.57	136.096	222.600	0.000
743.0	5.57	136.134	222.900	0.000
744.0	5.56	136.171	223.200	0.000
745.0	5.56	136.209	223.500	0.000

746.0	5.55	136.246	223.800	0.000
747.0	5.55	136.284	224.100	0.000
748.0	5.54	136.321	224.400	0.000
749.0	5.53	136.359	224.700	0.000
750.0	5.53	136.396	225.000	0.000
751.0	5.52	136.434	225.300	0.000
752.0	5.52	136.471	225.600	0.000
753.0	5.51	136.508	225.900	0.000
754.0	5.50	136.545	226.200	0.000
755.0	5.50	136.582	226.500	0.000
756.0	5.49	136.620	226.800	0.000
757.0	5.49	136.657	227.100	0.000
758.0	5.48	136.694	227.400	0.000
759.0	5.48	136.731	227.700	0.000
760.0	5.47	136.768	228.000	0.000
761.0	5.46	136.805	228.300	0.000
762.0	5.46	136.842	228.600	0.000
763.0	5.45	136.878	228.900	0.000
764.0	5.45	136.915	229.200	0.000
765.0	5.44	136.952	229.500	0.000
766.0	5.44	136.989	229.800	0.000
767.0	5.43	137.025	230.100	0.000
768.0	5.42	137.062	230.400	0.000
769.0	5.42	137.099	230.700	0.000
770.0	5.41	137.135	231.000	0.000
771.0	5.41	137.172	231.300	0.000
772.0	5.40	137.208	231.600	0.000
773.0	5.40	137.245	231.900	0.000
774.0	5.39	137.281	232.200	0.000
775.0	5.39	137.317	232.500	0.000

776.0	5.38	137.354	232.800	0.000
777.0	5.37	137.390	233.100	0.000
778.0	5.37	137.426	233.400	0.000
779.0	5.36	137.462	233.700	0.000
780.0	5.36	137.499	234.000	0.000
781.0	5.35	137.535	234.300	0.000
782.0	5.35	137.571	234.600	0.000
783.0	5.34	137.607	234.900	0.000
784.0	5.34	137.643	235.200	0.000
785.0	5.33	137.679	235.500	0.000
786.0	5.33	137.715	235.800	0.000
787.0	5.32	137.751	236.100	0.000
788.0	5.31	137.786	236.400	0.000
789.0	5.31	137.822	236.700	0.000
790.0	5.30	137.858	237.000	0.000
791.0	5.30	137.894	237.300	0.000
792.0	5.29	137.929	237.600	0.000
793.0	5.29	137.965	237.900	0.000
794.0	5.28	138.001	238.200	0.000
795.0	5.28	138.036	238.500	0.000
796.0	5.27	138.072	238.800	0.000
797.0	5.27	138.107	239.100	0.000
798.0	5.26	138.143	239.400	0.000
799.0	5.26	138.178	239.700	0.000
800.0	5.25	138.214	240.000	0.000
801.0	5.25	138.249	240.300	0.000
802.0	5.24	138.284	240.600	0.000
803.0	5.24	138.320	240.900	0.000
804.0	5.23	138.355	241.200	0.000
805.0	5.23	138.390	241.500	0.000

806.0	5.22	138.425	241.800	0.000
807.0	5.21	138.460	242.100	0.000
808.0	5.21	138.496	242.400	0.000
809.0	5.20	138.531	242.700	0.000
810.0	5.20	138.566	243.000	0.000
811.0	5.19	138.601	243.300	0.000
812.0	5.19	138.636	243.600	0.000
813.0	5.18	138.670	243.900	0.000
814.0	5.18	138.705	244.200	0.000
815.0	5.17	138.740	244.500	0.000
816.0	5.17	138.775	244.800	0.000
817.0	5.16	138.810	245.100	0.000
818.0	5.16	138.844	245.400	0.000
819.0	5.15	138.879	245.700	0.000
820.0	5.15	138.914	246.000	0.000
821.0	5.14	138.948	246.300	0.000
822.0	5.14	138.983	246.600	0.000
823.0	5.13	139.018	246.900	0.000
824.0	5.13	139.052	247.200	0.000
825.0	5.12	139.087	247.500	0.000
826.0	5.12	139.121	247.800	0.000
827.0	5.11	139.155	248.100	0.000
828.0	5.11	139.190	248.400	0.000
829.0	5.10	139.224	248.700	0.000
830.0	5.10	139.258	249.000	0.000
831.0	5.09	139.293	249.300	0.000
832.0	5.09	139.327	249.600	0.000
833.0	5.08	139.361	249.900	0.000
834.0	5.08	139.395	250.200	0.000
835.0	5.08	139.429	250.500	0.000

836.0	5.07	139.464	250.800	0.000
837.0	5.07	139.498	251.100	0.000
838.0	5.06	139.532	251.400	0.000
839.0	5.06	139.566	251.700	0.000
840.0	5.05	139.600	252.000	0.000
841.0	5.05	139.633	252.300	0.000
842.0	5.04	139.667	252.600	0.000
843.0	5.04	139.701	252.900	0.000
844.0	5.03	139.735	253.200	0.000
845.0	5.03	139.769	253.500	0.000
846.0	5.02	139.803	253.800	0.000
847.0	5.02	139.836	254.100	0.000
848.0	5.01	139.870	254.400	0.000
849.0	5.01	139.904	254.700	0.000
850.0	5.00	139.937	255.000	0.000
851.0	5.00	139.971	255.300	0.000
852.0	4.99	140.004	255.600	0.000
853.0	4.99	140.038	255.900	0.000
854.0	4.99	140.071	256.200	0.000
855.0	4.98	140.105	256.500	0.000
856.0	4.98	140.138	256.800	0.000
857.0	4.97	140.172	257.100	0.000
858.0	4.97	140.205	257.400	0.000
859.0	4.96	140.238	257.700	0.000
860.0	4.96	140.272	258.000	0.000
861.0	4.95	140.305	258.300	0.000
862.0	4.95	140.338	258.600	0.000
863.0	4.94	140.371	258.900	0.000
864.0	4.94	140.404	259.200	0.000
865.0	4.93	140.437	259.500	0.000

866.0	4.93	140.471	259.800	0.000
867.0	4.93	140.504	260.100	0.000
868.0	4.92	140.537	260.400	0.000
869.0	4.92	140.570	260.700	0.000
870.0	4.91	140.603	261.000	0.000
871.0	4.91	140.636	261.300	0.000
872.0	4.90	140.668	261.600	0.000
873.0	4.90	140.701	261.900	0.000
874.0	4.89	140.734	262.200	0.000
875.0	4.89	140.767	262.500	0.000
876.0	4.89	140.800	262.800	0.000
877.0	4.88	140.832	263.100	0.000
878.0	4.88	140.865	263.400	0.000
879.0	4.87	140.898	263.700	0.000
880.0	4.87	140.930	264.000	0.000
881.0	4.86	140.963	264.300	0.000
882.0	4.86	140.996	264.600	0.000
883.0	4.85	141.028	264.900	0.000
884.0	4.85	141.061	265.200	0.000
885.0	4.85	141.093	265.500	0.000
886.0	4.84	141.126	265.800	0.000
887.0	4.84	141.158	266.100	0.000
888.0	4.83	141.190	266.400	0.000
889.0	4.83	141.223	266.700	0.000
890.0	4.82	141.255	267.000	0.000
891.0	4.82	141.287	267.300	0.000
892.0	4.82	141.320	267.600	0.000
893.0	4.81	141.352	267.900	0.000
894.0	4.81	141.384	268.200	0.000
895.0	4.80	141.416	268.500	0.000

896.0	4.80	141.448	268.800	0.000
897.0	4.79	141.481	269.100	0.000
898.0	4.79	141.513	269.400	0.000
899.0	4.79	141.545	269.700	0.000
900.0	4.78	141.577	270.000	0.000
901.0	4.78	141.609	270.300	0.000
902.0	4.77	141.641	270.600	0.000
903.0	4.77	141.673	270.900	0.000
904.0	4.76	141.705	271.200	0.000
905.0	4.76	141.736	271.500	0.000
906.0	4.76	141.768	271.800	0.000
907.0	4.75	141.800	272.100	0.000
908.0	4.75	141.832	272.400	0.000
909.0	4.74	141.864	272.700	0.000
910.0	4.74	141.895	273.000	0.000
911.0	4.74	141.927	273.300	0.000
912.0	4.73	141.959	273.600	0.000
913.0	4.73	141.990	273.900	0.000
914.0	4.72	142.022	274.200	0.000
915.0	4.72	142.053	274.500	0.000
916.0	4.71	142.085	274.800	0.000
917.0	4.71	142.117	275.100	0.000
918.0	4.71	142.148	275.400	0.000
919.0	4.70	142.180	275.700	0.000
920.0	4.70	142.211	276.000	0.000
921.0	4.69	142.242	276.300	0.000
922.0	4.69	142.274	276.600	0.000
923.0	4.69	142.305	276.900	0.000
924.0	4.68	142.336	277.200	0.000
925.0	4.68	142.368	277.500	0.000

926.0	4.67	142.399	277.800	0.000
927.0	4.67	142.430	278.100	0.000
928.0	4.67	142.461	278.400	0.000
929.0	4.66	142.493	278.700	0.000
930.0	4.66	142.524	279.000	0.000
931.0	4.65	142.555	279.300	0.000
932.0	4.65	142.586	279.600	0.000
933.0	4.65	142.617	279.900	0.000
934.0	4.64	142.648	280.200	0.000
935.0	4.64	142.679	280.500	0.000
936.0	4.63	142.710	280.800	0.000
937.0	4.63	142.741	281.100	0.000
938.0	4.63	142.772	281.400	0.000
939.0	4.62	142.803	281.700	0.000
940.0	4.62	142.834	282.000	0.000
941.0	4.61	142.864	282.300	0.000
942.0	4.61	142.895	282.600	0.000
943.0	4.61	142.926	282.900	0.000
944.0	4.60	142.957	283.200	0.000
945.0	4.60	142.987	283.500	0.000
946.0	4.59	143.018	283.800	0.000
947.0	4.59	143.049	284.100	0.000
948.0	4.59	143.079	284.400	0.000
949.0	4.58	143.110	284.700	0.000
950.0	4.58	143.141	285.000	0.000
951.0	4.58	143.171	285.300	0.000
952.0	4.57	143.202	285.600	0.000
953.0	4.57	143.232	285.900	0.000
954.0	4.56	143.263	286.200	0.000
955.0	4.56	143.293	286.500	0.000

956.0	4.56	143.324	286.800	0.000
957.0	4.55	143.354	287.100	0.000
958.0	4.55	143.384	287.400	0.000
959.0	4.55	143.415	287.700	0.000
960.0	4.54	143.445	288.000	0.000
961.0	4.54	143.475	288.300	0.000
962.0	4.53	143.506	288.600	0.000
963.0	4.53	143.536	288.900	0.000
964.0	4.53	143.566	289.200	0.000
965.0	4.52	143.596	289.500	0.000
966.0	4.52	143.626	289.800	0.000
967.0	4.52	143.656	290.100	0.000
968.0	4.51	143.687	290.400	0.000
969.0	4.51	143.717	290.700	0.000
970.0	4.50	143.747	291.000	0.000
971.0	4.50	143.777	291.300	0.000
972.0	4.50	143.807	291.600	0.000
973.0	4.49	143.837	291.900	0.000
974.0	4.49	143.867	292.200	0.000
975.0	4.49	143.897	292.500	0.000
976.0	4.48	143.926	292.800	0.000
977.0	4.48	143.956	293.100	0.000
978.0	4.47	143.986	293.400	0.000
979.0	4.47	144.016	293.700	0.000
980.0	4.47	144.046	294.000	0.000
981.0	4.46	144.075	294.300	0.000
982.0	4.46	144.105	294.600	0.000
983.0	4.46	144.135	294.900	0.000
984.0	4.45	144.165	295.200	0.000
985.0	4.45	144.194	295.500	0.000

986.0	4.45	144.224	295.800	0.000
987.0	4.44	144.254	296.100	0.000
988.0	4.44	144.283	296.400	0.000
989.0	4.43	144.313	296.700	0.000
990.0	4.43	144.342	297.000	0.000
991.0	4.43	144.372	297.300	0.000
992.0	4.42	144.401	297.600	0.000
993.0	4.42	144.431	297.900	0.000
994.0	4.42	144.460	298.200	0.000
995.0	4.41	144.489	298.500	0.000
996.0	4.41	144.519	298.800	0.000
997.0	4.41	144.548	299.100	0.000
998.0	4.40	144.578	299.400	0.000
999.0	4.40	144.607	299.700	0.000
1000.0	4.40	144.636	300.000	0.000
1001.0	4.39	144.665	300.300	0.000
1002.0	4.39	144.695	300.600	0.000
1003.0	4.39	144.724	300.900	0.000
1004.0	4.38	144.753	301.200	0.000
1005.0	4.38	144.782	301.500	0.000
1006.0	4.38	144.811	301.800	0.000
1007.0	4.37	144.840	302.100	0.000
1008.0	4.37	144.869	302.400	0.000
1009.0	4.36	144.899	302.700	0.000
1010.0	4.36	144.928	303.000	0.000
1011.0	4.36	144.957	303.300	0.000
1012.0	4.35	144.986	303.600	0.000
1013.0	4.35	145.015	303.900	0.000
1014.0	4.35	145.043	304.200	0.000
1015.0	4.34	145.072	304.500	0.000

1016.0	4.34	145.101	304.800	0.000
1017.0	4.34	145.130	305.100	0.000
1018.0	4.33	145.159	305.400	0.000
1019.0	4.33	145.188	305.700	0.000
1020.0	4.33	145.217	306.000	0.000
1021.0	4.32	145.245	306.300	0.000
1022.0	4.32	145.274	306.600	0.000
1023.0	4.32	145.303	306.900	0.000
1024.0	4.31	145.332	307.200	0.000
1025.0	4.31	145.360	307.500	0.000
1026.0	4.31	145.389	307.800	0.000
1027.0	4.30	145.417	308.100	0.000
1028.0	4.30	145.446	308.400	0.000
1029.0	4.30	145.475	308.700	0.000
1030.0	4.29	145.503	309.000	0.000
1031.0	4.29	145.532	309.300	0.000
1032.0	4.29	145.560	309.600	0.000
1033.0	4.28	145.589	309.900	0.000
1034.0	4.28	145.617	310.200	0.000
1035.0	4.28	145.646	310.500	0.000
1036.0	4.27	145.674	310.800	0.000
1037.0	4.27	145.702	311.100	0.000
1038.0	4.27	145.731	311.400	0.000
1039.0	4.26	145.759	311.700	0.000
1040.0	4.26	145.787	312.000	0.000
1041.0	4.26	145.816	312.300	0.000
1042.0	4.25	145.844	312.600	0.000
1043.0	4.25	145.872	312.900	0.000
1044.0	4.25	145.901	313.200	0.000
1045.0	4.24	145.929	313.500	0.000

1046.0	4.24	145.957	313.800	0.000
1047.0	4.24	145.985	314.100	0.000
1048.0	4.23	146.013	314.400	0.000
1049.0	4.23	146.041	314.700	0.000
1050.0	4.23	146.069	315.000	0.000
1051.0	4.22	146.097	315.300	0.000
1052.0	4.22	146.126	315.600	0.000
1053.0	4.22	146.154	315.900	0.000
1054.0	4.22	146.182	316.200	0.000
1055.0	4.21	146.210	316.500	0.000
1056.0	4.21	146.237	316.800	0.000
1057.0	4.21	146.265	317.100	0.000
1058.0	4.20	146.293	317.400	0.000
1059.0	4.20	146.321	317.700	0.000
1060.0	4.20	146.349	318.000	0.000
1061.0	4.19	146.377	318.300	0.000
1062.0	4.19	146.405	318.600	0.000
1063.0	4.19	146.433	318.900	0.000
1064.0	4.18	146.460	319.200	0.000
1065.0	4.18	146.488	319.500	0.000
1066.0	4.18	146.516	319.800	0.000
1067.0	4.17	146.544	320.100	0.000
1068.0	4.17	146.571	320.400	0.000
1069.0	4.17	146.599	320.700	0.000
1070.0	4.16	146.627	321.000	0.000
1071.0	4.16	146.654	321.300	0.000
1072.0	4.16	146.682	321.600	0.000
1073.0	4.16	146.709	321.900	0.000
1074.0	4.15	146.737	322.200	0.000
1075.0	4.15	146.764	322.500	0.000

1076.0	4.15	146.792	322.800	0.000
1077.0	4.14	146.819	323.100	0.000
1078.0	4.14	146.847	323.400	0.000
1079.0	4.14	146.874	323.700	0.000
1080.0	4.13	146.902	324.000	0.000
1081.0	4.13	146.929	324.300	0.000
1082.0	4.13	146.957	324.600	0.000
1083.0	4.12	146.984	324.900	0.000
1084.0	4.12	147.011	325.200	0.000
1085.0	4.12	147.039	325.500	0.000
1086.0	4.12	147.066	325.800	0.000
1087.0	4.11	147.093	326.100	0.000
1088.0	4.11	147.120	326.400	0.000
1089.0	4.11	147.148	326.700	0.000
1090.0	4.10	147.175	327.000	0.000
1091.0	4.10	147.202	327.300	0.000
1092.0	4.10	147.229	327.600	0.000
1093.0	4.09	147.256	327.900	0.000
1094.0	4.09	147.283	328.200	0.000
1095.0	4.09	147.311	328.500	0.000
1096.0	4.09	147.338	328.800	0.000
1097.0	4.08	147.365	329.100	0.000
1098.0	4.08	147.392	329.400	0.000
1099.0	4.08	147.419	329.700	0.000
1100.0	4.07	147.446	330.000	0.000
1101.0	4.07	147.473	330.300	0.000
1102.0	4.07	147.500	330.600	0.000
1103.0	4.07	147.527	330.900	0.000
1104.0	4.06	147.554	331.200	0.000
1105.0	4.06	147.580	331.500	0.000

1106.0	4.06	147.607	331.800	0.000
1107.0	4.05	147.634	332.100	0.000
1108.0	4.05	147.661	332.400	0.000
1109.0	4.05	147.688	332.700	0.000
1110.0	4.04	147.715	333.000	0.000
1111.0	4.04	147.741	333.300	0.000
1112.0	4.04	147.768	333.600	0.000
1113.0	4.04	147.795	333.900	0.000
1114.0	4.03	147.822	334.200	0.000
1115.0	4.03	147.848	334.500	0.000
1116.0	4.03	147.875	334.800	0.000
1117.0	4.02	147.902	335.100	0.000
1118.0	4.02	147.928	335.400	0.000
1119.0	4.02	147.955	335.700	0.000
1120.0	4.02	147.981	336.000	0.000
1121.0	4.01	148.008	336.300	0.000
1122.0	4.01	148.035	336.600	0.000
1123.0	4.01	148.061	336.900	0.000
1124.0	4.00	148.088	337.200	0.000
1125.0	4.00	148.114	337.500	0.000
1126.0	4.00	148.141	337.800	0.000
1127.0	4.00	148.167	338.100	0.000
1128.0	3.99	148.193	338.400	0.000
1129.0	3.99	148.220	338.700	0.000
1130.0	3.99	148.246	339.000	0.000
1131.0	3.98	148.273	339.300	0.000
1132.0	3.98	148.299	339.600	0.000
1133.0	3.98	148.325	339.900	0.000
1134.0	3.98	148.352	340.200	0.000
1135.0	3.97	148.378	340.500	0.000

1136.0	3.97	148.404	340.800	0.000
1137.0	3.97	148.430	341.100	0.000
1138.0	3.96	148.457	341.400	0.000
1139.0	3.96	148.483	341.700	0.000
1140.0	3.96	148.509	342.000	0.000
1141.0	3.96	148.535	342.300	0.000
1142.0	3.95	148.561	342.600	0.000
1143.0	3.95	148.588	342.900	0.000
1144.0	3.95	148.614	343.200	0.000
1145.0	3.95	148.640	343.500	0.000
1146.0	3.94	148.666	343.800	0.000
1147.0	3.94	148.692	344.100	0.000
1148.0	3.94	148.718	344.400	0.000
1149.0	3.93	148.744	344.700	0.000
1150.0	3.93	148.770	345.000	0.000
1151.0	3.93	148.796	345.300	0.000
1152.0	3.93	148.822	345.600	0.000
1153.0	3.92	148.848	345.900	0.000
1154.0	3.92	148.874	346.200	0.000
1155.0	3.92	148.900	346.500	0.000
1156.0	3.92	148.926	346.800	0.000
1157.0	3.91	148.951	347.100	0.000
1158.0	3.91	148.977	347.400	0.000
1159.0	3.91	149.003	347.700	0.000
1160.0	3.90	149.029	348.000	0.000
1161.0	3.90	149.055	348.300	0.000
1162.0	3.90	149.080	348.600	0.000
1163.0	3.90	149.106	348.900	0.000
1164.0	3.89	149.132	349.200	0.000
1165.0	3.89	149.158	349.500	0.000

1166.0	3.89	149.183	349.800	0.000
1167.0	3.89	149.209	350.100	0.000
1168.0	3.88	149.235	350.400	0.000
1169.0	3.88	149.260	350.700	0.000
1170.0	3.88	149.286	351.000	0.000
1171.0	3.88	149.312	351.300	0.000
1172.0	3.87	149.337	351.600	0.000
1173.0	3.87	149.363	351.900	0.000
1174.0	3.87	149.388	352.200	0.000
1175.0	3.86	149.414	352.500	0.000
1176.0	3.86	149.439	352.800	0.000
1177.0	3.86	149.465	353.100	0.000
1178.0	3.86	149.490	353.400	0.000
1179.0	3.85	149.516	353.700	0.000
1180.0	3.85	149.541	354.000	0.000
1181.0	3.85	149.567	354.300	0.000
1182.0	3.85	149.592	354.600	0.000
1183.0	3.84	149.617	354.900	0.000
1184.0	3.84	149.643	355.200	0.000
1185.0	3.84	149.668	355.500	0.000
1186.0	3.84	149.693	355.800	0.000
1187.0	3.83	149.719	356.100	0.000
1188.0	3.83	149.744	356.400	0.000
1189.0	3.83	149.769	356.700	0.000
1190.0	3.83	149.795	357.000	0.000
1191.0	3.82	149.820	357.300	0.000
1192.0	3.82	149.845	357.600	0.000
1193.0	3.82	149.870	357.900	0.000
1194.0	3.82	149.895	358.200	0.000
1195.0	3.81	149.921	358.500	0.000

1196.0	3.81	149.946	358.800	0.000
1197.0	3.81	149.971	359.100	0.000
1198.0	3.81	149.996	359.400	0.000
1199.0	3.80	150.021	359.700	0.000
1200.0	3.80	150.046	360.000	0.000
1201.0	3.80	150.071	360.300	0.000
1202.0	3.80	150.096	360.600	0.000
1203.0	3.79	150.121	360.900	0.000
1204.0	3.79	150.146	361.200	0.000
1205.0	3.79	150.171	361.500	0.000
1206.0	3.79	150.196	361.800	0.000
1207.0	3.78	150.221	362.100	0.000
1208.0	3.78	150.246	362.400	0.000
1209.0	3.78	150.271	362.700	0.000
1210.0	3.78	150.296	363.000	0.000
1211.0	3.77	150.321	363.300	0.000
1212.0	3.77	150.346	363.600	0.000
1213.0	3.77	150.370	363.900	0.000
1214.0	3.77	150.395	364.200	0.000
1215.0	3.76	150.420	364.500	0.000
1216.0	3.76	150.445	364.800	0.000
1217.0	3.76	150.470	365.100	0.000
1218.0	3.76	150.494	365.400	0.000
1219.0	3.75	150.519	365.700	0.000
1220.0	3.75	150.544	366.000	0.000
1221.0	3.75	150.569	366.300	0.000
1222.0	3.75	150.593	366.600	0.000
1223.0	3.74	150.618	366.900	0.000
1224.0	3.74	150.643	367.200	0.000
1225.0	3.74	150.667	367.500	0.000

1226.0	3.74	150.692	367.800	0.000
1227.0	3.73	150.717	368.100	0.000
1228.0	3.73	150.741	368.400	0.000
1229.0	3.73	150.766	368.700	0.000
1230.0	3.73	150.790	369.000	0.000
1231.0	3.72	150.815	369.300	0.000
1232.0	3.72	150.839	369.600	0.000
1233.0	3.72	150.864	369.900	0.000
1234.0	3.72	150.888	370.200	0.000
1235.0	3.71	150.913	370.500	0.000
1236.0	3.71	150.937	370.800	0.000
1237.0	3.71	150.962	371.100	0.000
1238.0	3.71	150.986	371.400	0.000
1239.0	3.70	151.010	371.700	0.000
1240.0	3.70	151.035	372.000	0.000
1241.0	3.70	151.059	372.300	0.000
1242.0	3.70	151.084	372.600	0.000
1243.0	3.69	151.108	372.900	0.000
1244.0	3.69	151.132	373.200	0.000
1245.0	3.69	151.157	373.500	0.000
1246.0	3.69	151.181	373.800	0.000
1247.0	3.69	151.205	374.100	0.000
1248.0	3.68	151.229	374.400	0.000
1249.0	3.68	151.254	374.700	0.000
1250.0	3.68	151.278	375.000	0.000
1251.0	3.68	151.302	375.300	0.000
1252.0	3.67	151.326	375.600	0.000
1253.0	3.67	151.350	375.900	0.000
1254.0	3.67	151.374	376.200	0.000
1255.0	3.67	151.399	376.500	0.000

1256.0	3.66	151.423	376.800	0.000
1257.0	3.66	151.447	377.100	0.000
1258.0	3.66	151.471	377.400	0.000
1259.0	3.66	151.495	377.700	0.000
1260.0	3.65	151.519	378.000	0.000
1261.0	3.65	151.543	378.300	0.000
1262.0	3.65	151.567	378.600	0.000
1263.0	3.65	151.591	378.900	0.000
1264.0	3.65	151.615	379.200	0.000
1265.0	3.64	151.639	379.500	0.000
1266.0	3.64	151.663	379.800	0.000
1267.0	3.64	151.687	380.100	0.000
1268.0	3.64	151.711	380.400	0.000
1269.0	3.63	151.735	380.700	0.000
1270.0	3.63	151.759	381.000	0.000
1271.0	3.63	151.783	381.300	0.000
1272.0	3.63	151.806	381.600	0.000
1273.0	3.63	151.830	381.900	0.000
1274.0	3.62	151.854	382.200	0.000
1275.0	3.62	151.878	382.500	0.000
1276.0	3.62	151.902	382.800	0.000
1277.0	3.62	151.926	383.100	0.000
1278.0	3.61	151.949	383.400	0.000
1279.0	3.61	151.973	383.700	0.000
1280.0	3.61	151.997	384.000	0.000
1281.0	3.61	152.020	384.300	0.000
1282.0	3.60	152.044	384.600	0.000
1283.0	3.60	152.068	384.900	0.000
1284.0	3.60	152.092	385.200	0.000
1285.0	3.60	152.115	385.500	0.000

1286.0	3.60	152.139	385.800	0.000
1287.0	3.59	152.162	386.100	0.000
1288.0	3.59	152.186	386.400	0.000
1289.0	3.59	152.210	386.700	0.000
1290.0	3.59	152.233	387.000	0.000
1291.0	3.58	152.257	387.300	0.000
1292.0	3.58	152.280	387.600	0.000
1293.0	3.58	152.304	387.900	0.000
1294.0	3.58	152.327	388.200	0.000
1295.0	3.58	152.351	388.500	0.000
1296.0	3.57	152.374	388.800	0.000
1297.0	3.57	152.398	389.100	0.000
1298.0	3.57	152.421	389.400	0.000
1299.0	3.57	152.445	389.700	0.000
1300.0	3.56	152.468	390.000	0.000
1301.0	3.56	152.492	390.300	0.000
1302.0	3.56	152.515	390.600	0.000
1303.0	3.56	152.538	390.900	0.000
1304.0	3.56	152.562	391.200	0.000
1305.0	3.55	152.585	391.500	0.000
1306.0	3.55	152.608	391.800	0.000
1307.0	3.55	152.632	392.100	0.000
1308.0	3.55	152.655	392.400	0.000
1309.0	3.55	152.678	392.700	0.000
1310.0	3.54	152.702	393.000	0.000
1311.0	3.54	152.725	393.300	0.000
1312.0	3.54	152.748	393.600	0.000
1313.0	3.54	152.771	393.900	0.000
1314.0	3.53	152.795	394.200	0.000
1315.0	3.53	152.818	394.500	0.000

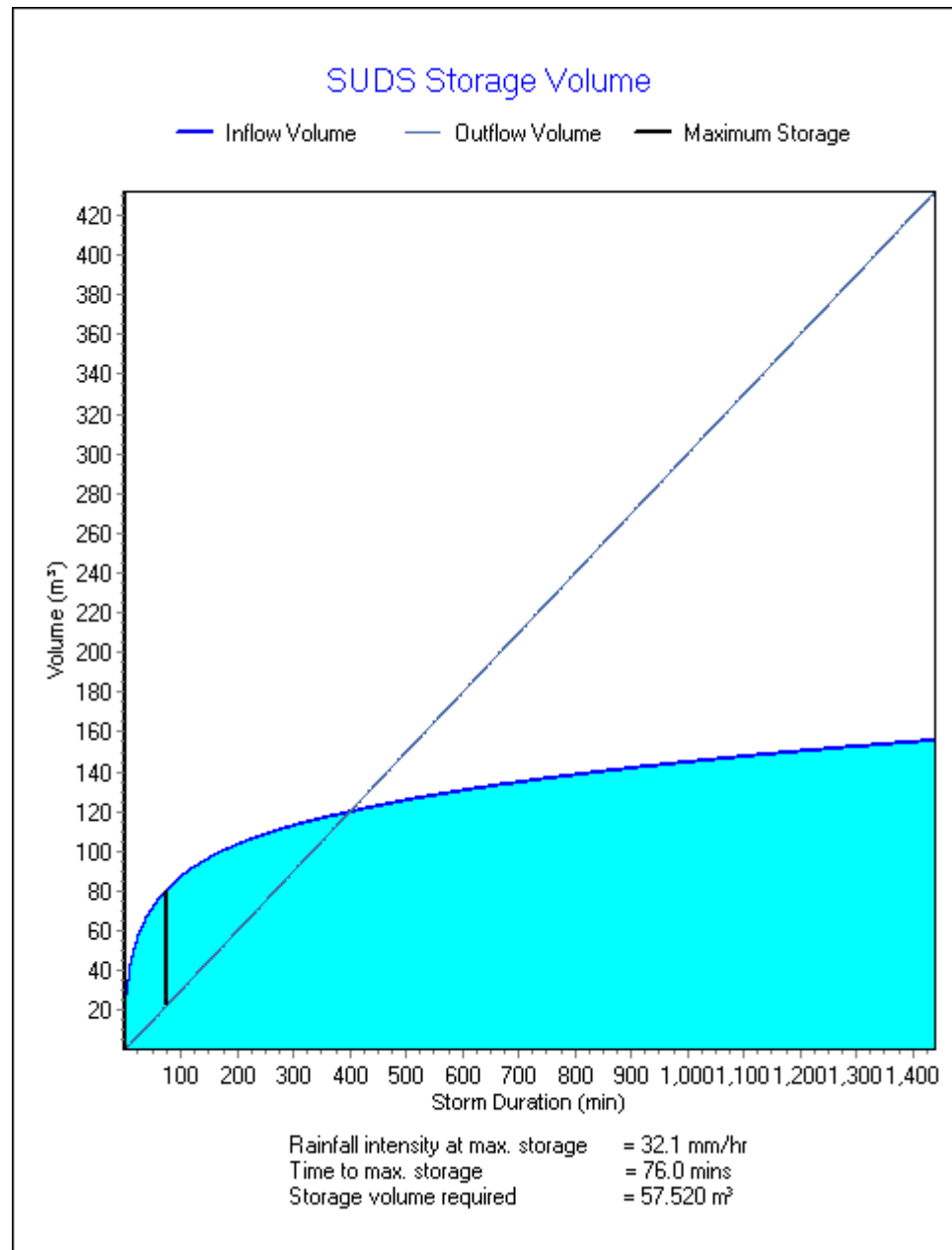
1316.0	3.53	152.841	394.800	0.000
1317.0	3.53	152.864	395.100	0.000
1318.0	3.53	152.887	395.400	0.000
1319.0	3.52	152.910	395.700	0.000
1320.0	3.52	152.933	396.000	0.000
1321.0	3.52	152.957	396.300	0.000
1322.0	3.52	152.980	396.600	0.000
1323.0	3.51	153.003	396.900	0.000
1324.0	3.51	153.026	397.200	0.000
1325.0	3.51	153.049	397.500	0.000
1326.0	3.51	153.072	397.800	0.000
1327.0	3.51	153.095	398.100	0.000
1328.0	3.50	153.118	398.400	0.000
1329.0	3.50	153.141	398.700	0.000
1330.0	3.50	153.164	399.000	0.000
1331.0	3.50	153.187	399.300	0.000
1332.0	3.50	153.210	399.600	0.000
1333.0	3.49	153.233	399.900	0.000
1334.0	3.49	153.256	400.200	0.000
1335.0	3.49	153.279	400.500	0.000
1336.0	3.49	153.301	400.800	0.000
1337.0	3.49	153.324	401.100	0.000
1338.0	3.48	153.347	401.400	0.000
1339.0	3.48	153.370	401.700	0.000
1340.0	3.48	153.393	402.000	0.000
1341.0	3.48	153.416	402.300	0.000
1342.0	3.48	153.438	402.600	0.000
1343.0	3.47	153.461	402.900	0.000
1344.0	3.47	153.484	403.200	0.000
1345.0	3.47	153.507	403.500	0.000

1346.0	3.47	153.529	403.800	0.000
1347.0	3.46	153.552	404.100	0.000
1348.0	3.46	153.575	404.400	0.000
1349.0	3.46	153.598	404.700	0.000
1350.0	3.46	153.620	405.000	0.000
1351.0	3.46	153.643	405.300	0.000
1352.0	3.45	153.666	405.600	0.000
1353.0	3.45	153.688	405.900	0.000
1354.0	3.45	153.711	406.200	0.000
1355.0	3.45	153.733	406.500	0.000
1356.0	3.45	153.756	406.800	0.000
1357.0	3.44	153.779	407.100	0.000
1358.0	3.44	153.801	407.400	0.000
1359.0	3.44	153.824	407.700	0.000
1360.0	3.44	153.846	408.000	0.000
1361.0	3.44	153.869	408.300	0.000
1362.0	3.43	153.891	408.600	0.000
1363.0	3.43	153.914	408.900	0.000
1364.0	3.43	153.936	409.200	0.000
1365.0	3.43	153.959	409.500	0.000
1366.0	3.43	153.981	409.800	0.000
1367.0	3.42	154.004	410.100	0.000
1368.0	3.42	154.026	410.400	0.000
1369.0	3.42	154.049	410.700	0.000
1370.0	3.42	154.071	411.000	0.000
1371.0	3.42	154.093	411.300	0.000
1372.0	3.41	154.116	411.600	0.000
1373.0	3.41	154.138	411.900	0.000
1374.0	3.41	154.160	412.200	0.000
1375.0	3.41	154.183	412.500	0.000

1376.0	3.41	154.205	412.800	0.000
1377.0	3.40	154.227	413.100	0.000
1378.0	3.40	154.250	413.400	0.000
1379.0	3.40	154.272	413.700	0.000
1380.0	3.40	154.294	414.000	0.000
1381.0	3.40	154.316	414.300	0.000
1382.0	3.39	154.339	414.600	0.000
1383.0	3.39	154.361	414.900	0.000
1384.0	3.39	154.383	415.200	0.000
1385.0	3.39	154.405	415.500	0.000
1386.0	3.39	154.427	415.800	0.000
1387.0	3.38	154.450	416.100	0.000
1388.0	3.38	154.472	416.400	0.000
1389.0	3.38	154.494	416.700	0.000
1390.0	3.38	154.516	417.000	0.000
1391.0	3.38	154.538	417.300	0.000
1392.0	3.37	154.560	417.600	0.000
1393.0	3.37	154.582	417.900	0.000
1394.0	3.37	154.604	418.200	0.000
1395.0	3.37	154.626	418.500	0.000
1396.0	3.37	154.649	418.800	0.000
1397.0	3.37	154.671	419.100	0.000
1398.0	3.36	154.693	419.400	0.000
1399.0	3.36	154.715	419.700	0.000
1400.0	3.36	154.737	420.000	0.000
1401.0	3.36	154.759	420.300	0.000
1402.0	3.36	154.781	420.600	0.000
1403.0	3.35	154.802	420.900	0.000
1404.0	3.35	154.824	421.200	0.000
1405.0	3.35	154.846	421.500	0.000

1406.0	3.35	154.868	421.800	0.000
1407.0	3.35	154.890	422.100	0.000
1408.0	3.34	154.912	422.400	0.000
1409.0	3.34	154.934	422.700	0.000
1410.0	3.34	154.956	423.000	0.000
1411.0	3.34	154.978	423.300	0.000
1412.0	3.34	154.999	423.600	0.000
1413.0	3.33	155.021	423.900	0.000
1414.0	3.33	155.043	424.200	0.000
1415.0	3.33	155.065	424.500	0.000
1416.0	3.33	155.087	424.800	0.000
1417.0	3.33	155.108	425.100	0.000
1418.0	3.33	155.130	425.400	0.000
1419.0	3.32	155.152	425.700	0.000
1420.0	3.32	155.174	426.000	0.000
1421.0	3.32	155.195	426.300	0.000
1422.0	3.32	155.217	426.600	0.000
1423.0	3.32	155.239	426.900	0.000
1424.0	3.31	155.260	427.200	0.000
1425.0	3.31	155.282	427.500	0.000
1426.0	3.31	155.304	427.800	0.000
1427.0	3.31	155.325	428.100	0.000
1428.0	3.31	155.347	428.400	0.000
1429.0	3.30	155.369	428.700	0.000
1430.0	3.30	155.390	429.000	0.000
1431.0	3.30	155.412	429.300	0.000
1432.0	3.30	155.433	429.600	0.000
1433.0	3.30	155.455	429.900	0.000
1434.0	3.30	155.476	430.200	0.000
1435.0	3.29	155.498	430.500	0.000

1436.0	3.29	155.519	430.800	0.000
1437.0	3.29	155.541	431.100	0.000
1438.0	3.29	155.562	431.400	0.000
1439.0	3.29	155.584	431.700	0.000
1440.0	3.28	155.605	432.000	0.000



ATTENUATION CALCULATIONS FOR SWALE 2

GLOBAL VARIABLES

Location	= Boulton Moor, Derby
SAAR	= 650 mm/yr
WRAP	= 3
M5-60	= 18.79 mm
r Ratio	= 0.40
Soil index	= 0.4

INPUT DATA

Contributing area	= .0527 ha
Allowable discharge	= 5 lps
Maximum possible storm duration	= 1440 min
Storm duration time step	= 1 min
Storm return period	= 100 years

CALCULATED DATA

Time to max. storage	= 17 mins
Rainfall at max. storage	= 85.8 mm/hr
Storage volume	= 7.071 m ³

ADJUSTMENTS TO RESULT FOR CLIMATE CHANGE

Volume + 10% for normal discharge (W5-074)	: Storage volume = 7.779 m ³
Volume + 20% for discharge into river flows (DEFRA)	: Storage volume = 8.486 m ³
Volume + 30% for EA residential requirements	: Storage volume = 9.193 m ³
Volume + 40% for other residential requirements	: Storage volume = 9.899 m ³

OUTPUT DATA

Time	Rainfall	Inflow	Outflow	Balance
Intensity				
mins	mm/hr	m ³	m ³	m ³

1.0	226.05	1.886	0.300	1.586
2.0	200.24	3.342	0.600	2.742
3.0	180.77	4.525	0.900	3.625
4.0	165.46	5.523	1.200	4.323
5.0	153.05	6.385	1.500	4.885
6.0	142.74	7.146	1.800	5.346
7.0	134.02	7.828	2.100	5.728
8.0	126.52	8.446	2.400	6.046
9.0	120.00	9.012	2.700	6.312
10.0	114.27	9.535	3.000	6.535
11.0	108.91	9.996	3.300	6.696
12.0	104.07	10.421	3.600	6.821
13.0	99.72	10.817	3.900	6.917
14.0	95.76	11.187	4.200	6.987
15.0	92.15	11.534	4.500	7.034
16.0	88.85	11.862	4.800	7.062
17.0	85.80	12.171	5.100	7.071 Maximum
18.0	82.99	12.465	5.400	7.065
19.0	80.39	12.745	5.700	7.045
20.0	77.97	13.011	6.000	7.011
21.0	75.71	13.266	6.300	6.966
22.0	73.60	13.510	6.600	6.910
23.0	71.62	13.744	6.900	6.844
24.0	69.76	13.969	7.200	6.769
25.0	68.00	14.186	7.500	6.686

26.0	66.35	14.395	7.800	6.595
27.0	64.79	14.596	8.100	6.496
28.0	63.31	14.791	8.400	6.391
29.0	61.90	14.980	8.700	6.280
30.0	60.57	15.162	9.000	6.162
31.0	59.30	15.340	9.300	6.040
32.0	58.09	15.512	9.600	5.912
33.0	56.94	15.679	9.900	5.779
34.0	55.84	15.841	10.200	5.641
35.0	54.78	16.000	10.500	5.500
36.0	53.78	16.154	10.800	5.354
37.0	52.81	16.304	11.100	5.204
38.0	51.88	16.451	11.400	5.051
39.0	50.99	16.594	11.700	4.894
40.0	50.14	16.733	12.000	4.733
41.0	49.31	16.870	12.300	4.570
42.0	48.52	17.004	12.600	4.404
43.0	47.75	17.134	12.900	4.234
44.0	47.02	17.262	13.200	4.062
45.0	46.31	17.387	13.500	3.887
46.0	45.62	17.510	13.800	3.710
47.0	44.95	17.630	14.100	3.530
48.0	44.31	17.748	14.400	3.348
49.0	43.69	17.864	14.700	3.164
50.0	43.09	17.977	15.000	2.977
51.0	42.51	18.089	15.300	2.789
52.0	41.94	18.198	15.600	2.598
53.0	41.39	18.306	15.900	2.406
54.0	40.86	18.411	16.200	2.211
55.0	40.34	18.515	16.500	2.015

56.0	39.84	18.617	16.800	1.817
57.0	39.35	18.718	17.100	1.618
58.0	38.88	18.817	17.400	1.417
59.0	38.42	18.914	17.700	1.214
60.0	37.97	19.010	18.000	1.010
61.0	37.53	19.104	18.300	0.804
62.0	37.11	19.197	18.600	0.597
63.0	36.69	19.288	18.900	0.388
64.0	36.29	19.379	19.200	0.179
65.0	35.89	19.468	19.500	0.000
66.0	35.51	19.555	19.800	0.000
67.0	35.13	19.642	20.100	0.000
68.0	34.77	19.727	20.400	0.000
69.0	34.41	19.811	20.700	0.000
70.0	34.06	19.894	21.000	0.000
71.0	33.72	19.976	21.300	0.000
72.0	33.38	20.057	21.600	0.000
73.0	33.06	20.136	21.900	0.000
74.0	32.74	20.215	22.200	0.000
75.0	32.43	20.293	22.500	0.000
76.0	32.12	20.370	22.800	0.000
77.0	31.82	20.446	23.100	0.000
78.0	31.53	20.521	23.400	0.000
79.0	31.24	20.595	23.700	0.000
80.0	30.96	20.668	24.000	0.000
81.0	30.69	20.740	24.300	0.000
82.0	30.42	20.812	24.600	0.000
83.0	30.15	20.883	24.900	0.000
84.0	29.89	20.953	25.200	0.000
85.0	29.64	21.022	25.500	0.000

86.0	29.39	21.090	25.800	0.000
87.0	29.15	21.158	26.100	0.000
88.0	28.91	21.225	26.400	0.000
89.0	28.67	21.291	26.700	0.000
90.0	28.44	21.357	27.000	0.000
91.0	28.21	21.422	27.300	0.000
92.0	27.99	21.486	27.600	0.000
93.0	27.77	21.550	27.900	0.000
94.0	27.55	21.612	28.200	0.000
95.0	27.34	21.675	28.500	0.000
96.0	27.14	21.736	28.800	0.000
97.0	26.93	21.798	29.100	0.000
98.0	26.73	21.858	29.400	0.000
99.0	26.53	21.918	29.700	0.000
100.0	26.34	21.977	30.000	0.000
101.0	26.15	22.036	30.300	0.000
102.0	25.96	22.095	30.600	0.000
103.0	25.77	22.152	30.900	0.000
104.0	25.59	22.209	31.200	0.000
105.0	25.41	22.266	31.500	0.000
106.0	25.24	22.322	31.800	0.000
107.0	25.06	22.378	32.100	0.000
108.0	24.89	22.433	32.400	0.000
109.0	24.73	22.488	32.700	0.000
110.0	24.56	22.542	33.000	0.000
111.0	24.40	22.596	33.300	0.000
112.0	24.24	22.649	33.600	0.000
113.0	24.08	22.702	33.900	0.000
114.0	23.92	22.755	34.200	0.000
115.0	23.77	22.807	34.500	0.000

116.0	23.62	22.858	34.800	0.000
117.0	23.47	22.909	35.100	0.000
118.0	23.32	22.960	35.400	0.000
119.0	23.17	23.010	35.700	0.000
120.0	23.03	23.060	36.000	0.000
121.0	22.89	23.110	36.300	0.000
122.0	22.75	23.159	36.600	0.000
123.0	22.61	23.208	36.900	0.000
124.0	22.48	23.256	37.200	0.000
125.0	22.34	23.304	37.500	0.000
126.0	22.21	23.352	37.800	0.000
127.0	22.08	23.399	38.100	0.000
128.0	21.95	23.446	38.400	0.000
129.0	21.83	23.493	38.700	0.000
130.0	21.70	23.539	39.000	0.000
131.0	21.58	23.585	39.300	0.000
132.0	21.45	23.630	39.600	0.000
133.0	21.33	23.676	39.900	0.000
134.0	21.21	23.721	40.200	0.000
135.0	21.10	23.765	40.500	0.000
136.0	20.98	23.809	40.800	0.000
137.0	20.87	23.853	41.100	0.000
138.0	20.75	23.897	41.400	0.000
139.0	20.64	23.940	41.700	0.000
140.0	20.53	23.983	42.000	0.000
141.0	20.42	24.026	42.300	0.000
142.0	20.31	24.069	42.600	0.000
143.0	20.21	24.111	42.900	0.000
144.0	20.10	24.153	43.200	0.000
145.0	20.00	24.194	43.500	0.000

146.0	19.89	24.236	43.800	0.000
147.0	19.79	24.277	44.100	0.000
148.0	19.69	24.318	44.400	0.000
149.0	19.59	24.358	44.700	0.000
150.0	19.49	24.398	45.000	0.000
151.0	19.40	24.438	45.300	0.000
152.0	19.30	24.478	45.600	0.000
153.0	19.20	24.518	45.900	0.000
154.0	19.11	24.557	46.200	0.000
155.0	19.02	24.596	46.500	0.000
156.0	18.93	24.635	46.800	0.000
157.0	18.83	24.673	47.100	0.000
158.0	18.74	24.711	47.400	0.000
159.0	18.65	24.749	47.700	0.000
160.0	18.57	24.787	48.000	0.000
161.0	18.48	24.825	48.300	0.000
162.0	18.39	24.862	48.600	0.000
163.0	18.31	24.899	48.900	0.000
164.0	18.22	24.936	49.200	0.000
165.0	18.14	24.973	49.500	0.000
166.0	18.06	25.009	49.800	0.000
167.0	17.97	25.045	50.100	0.000
168.0	17.89	25.081	50.400	0.000
169.0	17.81	25.117	50.700	0.000
170.0	17.73	25.153	51.000	0.000
171.0	17.65	25.188	51.300	0.000
172.0	17.57	25.223	51.600	0.000
173.0	17.50	25.258	51.900	0.000
174.0	17.42	25.293	52.200	0.000
175.0	17.35	25.328	52.500	0.000

176.0	17.27	25.362	52.800	0.000
177.0	17.20	25.396	53.100	0.000
178.0	17.12	25.430	53.400	0.000
179.0	17.05	25.464	53.700	0.000
180.0	16.98	25.498	54.000	0.000
181.0	16.90	25.531	54.300	0.000
182.0	16.83	25.565	54.600	0.000
183.0	16.76	25.598	54.900	0.000
184.0	16.69	25.631	55.200	0.000
185.0	16.62	25.663	55.500	0.000
186.0	16.56	25.696	55.800	0.000
187.0	16.49	25.728	56.100	0.000
188.0	16.42	25.761	56.400	0.000
189.0	16.35	25.793	56.700	0.000
190.0	16.29	25.824	57.000	0.000
191.0	16.22	25.856	57.300	0.000
192.0	16.16	25.888	57.600	0.000
193.0	16.09	25.919	57.900	0.000
194.0	16.03	25.950	58.200	0.000
195.0	15.97	25.981	58.500	0.000
196.0	15.91	26.012	58.800	0.000
197.0	15.84	26.043	59.100	0.000
198.0	15.78	26.073	59.400	0.000
199.0	15.72	26.104	59.700	0.000
200.0	15.66	26.134	60.000	0.000
201.0	15.60	26.164	60.300	0.000
202.0	15.54	26.194	60.600	0.000
203.0	15.48	26.224	60.900	0.000
204.0	15.42	26.254	61.200	0.000
205.0	15.37	26.283	61.500	0.000

206.0	15.31	26.313	61.800	0.000
207.0	15.25	26.342	62.100	0.000
208.0	15.19	26.371	62.400	0.000
209.0	15.14	26.400	62.700	0.000
210.0	15.08	26.429	63.000	0.000
211.0	15.03	26.457	63.300	0.000
212.0	14.97	26.486	63.600	0.000
213.0	14.92	26.514	63.900	0.000
214.0	14.86	26.543	64.200	0.000
215.0	14.81	26.571	64.500	0.000
216.0	14.76	26.599	64.800	0.000
217.0	14.71	26.626	65.100	0.000
218.0	14.65	26.654	65.400	0.000
219.0	14.60	26.682	65.700	0.000
220.0	14.55	26.709	66.000	0.000
221.0	14.50	26.737	66.300	0.000
222.0	14.45	26.764	66.600	0.000
223.0	14.40	26.791	66.900	0.000
224.0	14.35	26.818	67.200	0.000
225.0	14.30	26.845	67.500	0.000
226.0	14.25	26.871	67.800	0.000
227.0	14.20	26.898	68.100	0.000
228.0	14.15	26.924	68.400	0.000
229.0	14.10	26.951	68.700	0.000
230.0	14.06	26.977	69.000	0.000
231.0	14.01	27.003	69.300	0.000
232.0	13.96	27.029	69.600	0.000
233.0	13.92	27.055	69.900	0.000
234.0	13.87	27.081	70.200	0.000
235.0	13.82	27.106	70.500	0.000

236.0	13.78	27.132	70.800	0.000
237.0	13.73	27.157	71.100	0.000
238.0	13.69	27.183	71.400	0.000
239.0	13.64	27.208	71.700	0.000
240.0	13.60	27.233	72.000	0.000
241.0	13.55	27.258	72.300	0.000
242.0	13.51	27.283	72.600	0.000
243.0	13.47	27.308	72.900	0.000
244.0	13.42	27.332	73.200	0.000
245.0	13.38	27.357	73.500	0.000
246.0	13.34	27.381	73.800	0.000
247.0	13.30	27.406	74.100	0.000
248.0	13.26	27.430	74.400	0.000
249.0	13.21	27.454	74.700	0.000
250.0	13.17	27.478	75.000	0.000
251.0	13.13	27.502	75.300	0.000
252.0	13.09	27.526	75.600	0.000
253.0	13.05	27.550	75.900	0.000
254.0	13.01	27.573	76.200	0.000
255.0	12.97	27.597	76.500	0.000
256.0	12.93	27.620	76.800	0.000
257.0	12.89	27.644	77.100	0.000
258.0	12.85	27.667	77.400	0.000
259.0	12.81	27.690	77.700	0.000
260.0	12.77	27.713	78.000	0.000
261.0	12.74	27.736	78.300	0.000
262.0	12.70	27.759	78.600	0.000
263.0	12.66	27.782	78.900	0.000
264.0	12.62	27.805	79.200	0.000
265.0	12.58	27.827	79.500	0.000

266.0	12.55	27.850	79.800	0.000
267.0	12.51	27.872	80.100	0.000
268.0	12.47	27.895	80.400	0.000
269.0	12.44	27.917	80.700	0.000
270.0	12.40	27.939	81.000	0.000
271.0	12.37	27.961	81.300	0.000
272.0	12.33	27.983	81.600	0.000
273.0	12.29	28.005	81.900	0.000
274.0	12.26	28.027	82.200	0.000
275.0	12.22	28.049	82.500	0.000
276.0	12.19	28.070	82.800	0.000
277.0	12.15	28.092	83.100	0.000
278.0	12.12	28.113	83.400	0.000
279.0	12.09	28.135	83.700	0.000
280.0	12.05	28.156	84.000	0.000
281.0	12.02	28.177	84.300	0.000
282.0	11.98	28.199	84.600	0.000
283.0	11.95	28.220	84.900	0.000
284.0	11.92	28.241	85.200	0.000
285.0	11.88	28.262	85.500	0.000
286.0	11.85	28.282	85.800	0.000
287.0	11.82	28.303	86.100	0.000
288.0	11.79	28.324	86.400	0.000
289.0	11.75	28.344	86.700	0.000
290.0	11.72	28.365	87.000	0.000
291.0	11.69	28.385	87.300	0.000
292.0	11.66	28.406	87.600	0.000
293.0	11.63	28.426	87.900	0.000
294.0	11.60	28.446	88.200	0.000
295.0	11.56	28.467	88.500	0.000

296.0	11.53	28.487	88.800	0.000
297.0	11.50	28.507	89.100	0.000
298.0	11.47	28.527	89.400	0.000
299.0	11.44	28.546	89.700	0.000
300.0	11.41	28.566	90.000	0.000
301.0	11.38	28.586	90.300	0.000
302.0	11.35	28.606	90.600	0.000
303.0	11.32	28.625	90.900	0.000
304.0	11.29	28.645	91.200	0.000
305.0	11.26	28.664	91.500	0.000
306.0	11.23	28.683	91.800	0.000
307.0	11.20	28.703	92.100	0.000
308.0	11.18	28.722	92.400	0.000
309.0	11.15	28.741	92.700	0.000
310.0	11.12	28.760	93.000	0.000
311.0	11.09	28.779	93.300	0.000
312.0	11.06	28.798	93.600	0.000
313.0	11.03	28.817	93.900	0.000
314.0	11.01	28.836	94.200	0.000
315.0	10.98	28.855	94.500	0.000
316.0	10.95	28.873	94.800	0.000
317.0	10.92	28.892	95.100	0.000
318.0	10.90	28.911	95.400	0.000
319.0	10.87	28.929	95.700	0.000
320.0	10.84	28.948	96.000	0.000
321.0	10.81	28.966	96.300	0.000
322.0	10.79	28.984	96.600	0.000
323.0	10.76	29.003	96.900	0.000
324.0	10.73	29.021	97.200	0.000
325.0	10.71	29.039	97.500	0.000

326.0	10.68	29.057	97.800	0.000
327.0	10.66	29.075	98.100	0.000
328.0	10.63	29.093	98.400	0.000
329.0	10.60	29.111	98.700	0.000
330.0	10.58	29.129	99.000	0.000
331.0	10.55	29.146	99.300	0.000
332.0	10.53	29.164	99.600	0.000
333.0	10.50	29.182	99.900	0.000
334.0	10.48	29.199	100.200	0.000
335.0	10.45	29.217	100.500	0.000
336.0	10.43	29.234	100.800	0.000
337.0	10.40	29.252	101.100	0.000
338.0	10.38	29.269	101.400	0.000
339.0	10.35	29.286	101.700	0.000
340.0	10.33	29.303	102.000	0.000
341.0	10.30	29.321	102.300	0.000
342.0	10.28	29.338	102.600	0.000
343.0	10.26	29.355	102.900	0.000
344.0	10.23	29.372	103.200	0.000
345.0	10.21	29.389	103.500	0.000
346.0	10.19	29.406	103.800	0.000
347.0	10.16	29.423	104.100	0.000
348.0	10.14	29.439	104.400	0.000
349.0	10.12	29.456	104.700	0.000
350.0	10.09	29.473	105.000	0.000
351.0	10.07	29.489	105.300	0.000
352.0	10.05	29.506	105.600	0.000
353.0	10.02	29.522	105.900	0.000
354.0	10.00	29.539	106.200	0.000
355.0	9.98	29.555	106.500	0.000

356.0	9.96	29.572	106.800	0.000
357.0	9.93	29.588	107.100	0.000
358.0	9.91	29.618	107.400	0.000
359.0	9.89	29.636	107.700	0.000
360.0	9.87	29.654	108.000	0.000
361.0	9.85	29.671	108.300	0.000
362.0	9.83	29.689	108.600	0.000
363.0	9.81	29.706	108.900	0.000
364.0	9.79	29.724	109.200	0.000
365.0	9.77	29.741	109.500	0.000
366.0	9.74	29.759	109.800	0.000
367.0	9.72	29.776	110.100	0.000
368.0	9.70	29.794	110.400	0.000
369.0	9.68	29.811	110.700	0.000
370.0	9.66	29.828	111.000	0.000
371.0	9.64	29.846	111.300	0.000
372.0	9.62	29.863	111.600	0.000
373.0	9.60	29.880	111.900	0.000
374.0	9.58	29.897	112.200	0.000
375.0	9.56	29.914	112.500	0.000
376.0	9.54	29.931	112.800	0.000
377.0	9.52	29.948	113.100	0.000
378.0	9.50	29.965	113.400	0.000
379.0	9.48	29.982	113.700	0.000
380.0	9.46	29.999	114.000	0.000
381.0	9.44	30.016	114.300	0.000
382.0	9.42	30.033	114.600	0.000
383.0	9.40	30.050	114.900	0.000
384.0	9.38	30.066	115.200	0.000
385.0	9.36	30.083	115.500	0.000

386.0	9.35	30.100	115.800	0.000
387.0	9.33	30.116	116.100	0.000
388.0	9.31	30.133	116.400	0.000
389.0	9.29	30.150	116.700	0.000
390.0	9.27	30.166	117.000	0.000
391.0	9.25	30.183	117.300	0.000
392.0	9.23	30.199	117.600	0.000
393.0	9.21	30.215	117.900	0.000
394.0	9.20	30.232	118.200	0.000
395.0	9.18	30.248	118.500	0.000
396.0	9.16	30.264	118.800	0.000
397.0	9.14	30.281	119.100	0.000
398.0	9.12	30.297	119.400	0.000
399.0	9.10	30.313	119.700	0.000
400.0	9.09	30.329	120.000	0.000
401.0	9.07	30.346	120.300	0.000
402.0	9.05	30.362	120.600	0.000
403.0	9.03	30.378	120.900	0.000
404.0	9.02	30.394	121.200	0.000
405.0	9.00	30.410	121.500	0.000
406.0	8.98	30.426	121.800	0.000
407.0	8.96	30.442	122.100	0.000
408.0	8.95	30.458	122.400	0.000
409.0	8.93	30.473	122.700	0.000
410.0	8.91	30.489	123.000	0.000
411.0	8.90	30.505	123.300	0.000
412.0	8.88	30.521	123.600	0.000
413.0	8.86	30.537	123.900	0.000
414.0	8.84	30.552	124.200	0.000
415.0	8.83	30.568	124.500	0.000

416.0	8.81	30.584	124.800	0.000
417.0	8.79	30.599	125.100	0.000
418.0	8.78	30.615	125.400	0.000
419.0	8.76	30.630	125.700	0.000
420.0	8.74	30.646	126.000	0.000
421.0	8.73	30.661	126.300	0.000
422.0	8.71	30.677	126.600	0.000
423.0	8.70	30.692	126.900	0.000
424.0	8.68	30.708	127.200	0.000
425.0	8.66	30.723	127.500	0.000
426.0	8.65	30.738	127.800	0.000
427.0	8.63	30.754	128.100	0.000
428.0	8.62	30.769	128.400	0.000
429.0	8.60	30.784	128.700	0.000
430.0	8.58	30.799	129.000	0.000
431.0	8.57	30.815	129.300	0.000
432.0	8.55	30.830	129.600	0.000
433.0	8.54	30.845	129.900	0.000
434.0	8.52	30.860	130.200	0.000
435.0	8.51	30.875	130.500	0.000
436.0	8.49	30.890	130.800	0.000
437.0	8.48	30.905	131.100	0.000
438.0	8.46	30.920	131.400	0.000
439.0	8.45	30.935	131.700	0.000
440.0	8.43	30.950	132.000	0.000
441.0	8.41	30.965	132.300	0.000
442.0	8.40	30.980	132.600	0.000
443.0	8.38	30.994	132.900	0.000
444.0	8.37	31.009	133.200	0.000
445.0	8.36	31.024	133.500	0.000

446.0	8.34	31.039	133.800	0.000
447.0	8.33	31.054	134.100	0.000
448.0	8.31	31.068	134.400	0.000
449.0	8.30	31.083	134.700	0.000
450.0	8.28	31.098	135.000	0.000
451.0	8.27	31.112	135.300	0.000
452.0	8.25	31.127	135.600	0.000
453.0	8.24	31.141	135.900	0.000
454.0	8.22	31.156	136.200	0.000
455.0	8.21	31.170	136.500	0.000
456.0	8.20	31.185	136.800	0.000
457.0	8.18	31.199	137.100	0.000
458.0	8.17	31.214	137.400	0.000
459.0	8.15	31.228	137.700	0.000
460.0	8.14	31.242	138.000	0.000
461.0	8.13	31.257	138.300	0.000
462.0	8.11	31.271	138.600	0.000
463.0	8.10	31.285	138.900	0.000
464.0	8.08	31.300	139.200	0.000
465.0	8.07	31.314	139.500	0.000
466.0	8.06	31.328	139.800	0.000
467.0	8.04	31.342	140.100	0.000
468.0	8.03	31.356	140.400	0.000
469.0	8.02	31.370	140.700	0.000
470.0	8.00	31.385	141.000	0.000
471.0	7.99	31.399	141.300	0.000
472.0	7.98	31.413	141.600	0.000
473.0	7.96	31.427	141.900	0.000
474.0	7.95	31.441	142.200	0.000
475.0	7.94	31.455	142.500	0.000

476.0	7.92	31.469	142.800	0.000
477.0	7.91	31.483	143.100	0.000
478.0	7.90	31.496	143.400	0.000
479.0	7.88	31.510	143.700	0.000
480.0	7.87	31.524	144.000	0.000
481.0	7.86	31.538	144.300	0.000
482.0	7.85	31.552	144.600	0.000
483.0	7.83	31.566	144.900	0.000
484.0	7.82	31.579	145.200	0.000
485.0	7.81	31.593	145.500	0.000
486.0	7.79	31.607	145.800	0.000
487.0	7.78	31.621	146.100	0.000
488.0	7.77	31.634	146.400	0.000
489.0	7.76	31.648	146.700	0.000
490.0	7.74	31.661	147.000	0.000
491.0	7.73	31.675	147.300	0.000
492.0	7.72	31.689	147.600	0.000
493.0	7.71	31.702	147.900	0.000
494.0	7.69	31.716	148.200	0.000
495.0	7.68	31.729	148.500	0.000
496.0	7.67	31.743	148.800	0.000
497.0	7.66	31.756	149.100	0.000
498.0	7.65	31.769	149.400	0.000
499.0	7.63	31.783	149.700	0.000
500.0	7.62	31.796	150.000	0.000
501.0	7.61	31.810	150.300	0.000
502.0	7.60	31.823	150.600	0.000
503.0	7.59	31.836	150.900	0.000
504.0	7.57	31.850	151.200	0.000
505.0	7.56	31.863	151.500	0.000

506.0	7.55	31.876	151.800	0.000
507.0	7.54	31.889	152.100	0.000
508.0	7.53	31.902	152.400	0.000
509.0	7.51	31.916	152.700	0.000
510.0	7.50	31.929	153.000	0.000
511.0	7.49	31.942	153.300	0.000
512.0	7.48	31.955	153.600	0.000
513.0	7.47	31.968	153.900	0.000
514.0	7.46	31.981	154.200	0.000
515.0	7.45	31.994	154.500	0.000
516.0	7.43	32.007	154.800	0.000
517.0	7.42	32.020	155.100	0.000
518.0	7.41	32.033	155.400	0.000
519.0	7.40	32.046	155.700	0.000
520.0	7.39	32.059	156.000	0.000
521.0	7.38	32.072	156.300	0.000
522.0	7.37	32.085	156.600	0.000
523.0	7.36	32.098	156.900	0.000
524.0	7.34	32.111	157.200	0.000
525.0	7.33	32.124	157.500	0.000
526.0	7.32	32.136	157.800	0.000
527.0	7.31	32.149	158.100	0.000
528.0	7.30	32.162	158.400	0.000
529.0	7.29	32.175	158.700	0.000
530.0	7.28	32.187	159.000	0.000
531.0	7.27	32.200	159.300	0.000
532.0	7.26	32.213	159.600	0.000
533.0	7.25	32.226	159.900	0.000
534.0	7.24	32.238	160.200	0.000
535.0	7.22	32.251	160.500	0.000

536.0	7.21	32.263	160.800	0.000
537.0	7.20	32.276	161.100	0.000
538.0	7.19	32.289	161.400	0.000
539.0	7.18	32.301	161.700	0.000
540.0	7.17	32.314	162.000	0.000
541.0	7.16	32.326	162.300	0.000
542.0	7.15	32.339	162.600	0.000
543.0	7.14	32.351	162.900	0.000
544.0	7.13	32.364	163.200	0.000
545.0	7.12	32.376	163.500	0.000
546.0	7.11	32.388	163.800	0.000
547.0	7.10	32.401	164.100	0.000
548.0	7.09	32.413	164.400	0.000
549.0	7.08	32.426	164.700	0.000
550.0	7.07	32.438	165.000	0.000
551.0	7.06	32.450	165.300	0.000
552.0	7.05	32.463	165.600	0.000
553.0	7.04	32.475	165.900	0.000
554.0	7.03	32.487	166.200	0.000
555.0	7.02	32.499	166.500	0.000
556.0	7.01	32.512	166.800	0.000
557.0	7.00	32.524	167.100	0.000
558.0	6.99	32.536	167.400	0.000
559.0	6.98	32.548	167.700	0.000
560.0	6.97	32.560	168.000	0.000
561.0	6.96	32.572	168.300	0.000
562.0	6.95	32.585	168.600	0.000
563.0	6.94	32.597	168.900	0.000
564.0	6.93	32.609	169.200	0.000
565.0	6.92	32.621	169.500	0.000

566.0	6.91	32.633	169.800	0.000
567.0	6.90	32.645	170.100	0.000
568.0	6.89	32.657	170.400	0.000
569.0	6.88	32.669	170.700	0.000
570.0	6.87	32.681	171.000	0.000
571.0	6.86	32.693	171.300	0.000
572.0	6.85	32.705	171.600	0.000
573.0	6.84	32.717	171.900	0.000
574.0	6.83	32.729	172.200	0.000
575.0	6.82	32.740	172.500	0.000
576.0	6.81	32.752	172.800	0.000
577.0	6.81	32.764	173.100	0.000
578.0	6.80	32.776	173.400	0.000
579.0	6.79	32.788	173.700	0.000
580.0	6.78	32.800	174.000	0.000
581.0	6.77	32.811	174.300	0.000
582.0	6.76	32.823	174.600	0.000
583.0	6.75	32.835	174.900	0.000
584.0	6.74	32.847	175.200	0.000
585.0	6.73	32.858	175.500	0.000
586.0	6.72	32.870	175.800	0.000
587.0	6.71	32.882	176.100	0.000
588.0	6.70	32.893	176.400	0.000
589.0	6.70	32.905	176.700	0.000
590.0	6.69	32.917	177.000	0.000
591.0	6.68	32.928	177.300	0.000
592.0	6.67	32.940	177.600	0.000
593.0	6.66	32.951	177.900	0.000
594.0	6.65	32.963	178.200	0.000
595.0	6.64	32.974	178.500	0.000

596.0	6.63	32.986	178.800	0.000
597.0	6.62	32.997	179.100	0.000
598.0	6.62	33.009	179.400	0.000
599.0	6.61	33.020	179.700	0.000
600.0	6.60	33.032	180.000	0.000
601.0	6.59	33.043	180.300	0.000
602.0	6.58	33.055	180.600	0.000
603.0	6.57	33.066	180.900	0.000
604.0	6.56	33.078	181.200	0.000
605.0	6.55	33.089	181.500	0.000
606.0	6.55	33.100	181.800	0.000
607.0	6.54	33.112	182.100	0.000
608.0	6.53	33.123	182.400	0.000
609.0	6.52	33.134	182.700	0.000
610.0	6.51	33.146	183.000	0.000
611.0	6.50	33.157	183.300	0.000
612.0	6.50	33.168	183.600	0.000
613.0	6.49	33.179	183.900	0.000
614.0	6.48	33.191	184.200	0.000
615.0	6.47	33.202	184.500	0.000
616.0	6.46	33.213	184.800	0.000
617.0	6.45	33.224	185.100	0.000
618.0	6.45	33.235	185.400	0.000
619.0	6.44	33.247	185.700	0.000
620.0	6.43	33.258	186.000	0.000
621.0	6.42	33.269	186.300	0.000
622.0	6.41	33.280	186.600	0.000
623.0	6.40	33.291	186.900	0.000
624.0	6.40	33.302	187.200	0.000
625.0	6.39	33.313	187.500	0.000

626.0	6.38	33.324	187.800	0.000
627.0	6.37	33.335	188.100	0.000
628.0	6.36	33.346	188.400	0.000
629.0	6.36	33.357	188.700	0.000
630.0	6.35	33.368	189.000	0.000
631.0	6.34	33.379	189.300	0.000
632.0	6.33	33.390	189.600	0.000
633.0	6.32	33.401	189.900	0.000
634.0	6.32	33.412	190.200	0.000
635.0	6.31	33.423	190.500	0.000
636.0	6.30	33.434	190.800	0.000
637.0	6.29	33.445	191.100	0.000
638.0	6.28	33.456	191.400	0.000
639.0	6.28	33.467	191.700	0.000
640.0	6.27	33.478	192.000	0.000
641.0	6.26	33.488	192.300	0.000
642.0	6.25	33.499	192.600	0.000
643.0	6.25	33.510	192.900	0.000
644.0	6.24	33.521	193.200	0.000
645.0	6.23	33.532	193.500	0.000
646.0	6.22	33.542	193.800	0.000
647.0	6.22	33.553	194.100	0.000
648.0	6.21	33.564	194.400	0.000
649.0	6.20	33.575	194.700	0.000
650.0	6.19	33.585	195.000	0.000
651.0	6.18	33.596	195.300	0.000
652.0	6.18	33.607	195.600	0.000
653.0	6.17	33.617	195.900	0.000
654.0	6.16	33.628	196.200	0.000
655.0	6.15	33.639	196.500	0.000

656.0	6.15	33.649	196.800	0.000
657.0	6.14	33.660	197.100	0.000
658.0	6.13	33.670	197.400	0.000
659.0	6.13	33.681	197.700	0.000
660.0	6.12	33.692	198.000	0.000
661.0	6.11	33.702	198.300	0.000
662.0	6.10	33.713	198.600	0.000
663.0	6.10	33.723	198.900	0.000
664.0	6.09	33.734	199.200	0.000
665.0	6.08	33.744	199.500	0.000
666.0	6.07	33.755	199.800	0.000
667.0	6.07	33.765	200.100	0.000
668.0	6.06	33.776	200.400	0.000
669.0	6.05	33.786	200.700	0.000
670.0	6.05	33.796	201.000	0.000
671.0	6.04	33.807	201.300	0.000
672.0	6.03	33.817	201.600	0.000
673.0	6.02	33.828	201.900	0.000
674.0	6.02	33.838	202.200	0.000
675.0	6.01	33.848	202.500	0.000
676.0	6.00	33.859	202.800	0.000
677.0	6.00	33.869	203.100	0.000
678.0	5.99	33.879	203.400	0.000
679.0	5.98	33.890	203.700	0.000
680.0	5.97	33.900	204.000	0.000
681.0	5.97	33.910	204.300	0.000
682.0	5.96	33.921	204.600	0.000
683.0	5.95	33.931	204.900	0.000
684.0	5.95	33.941	205.200	0.000
685.0	5.94	33.951	205.500	0.000

686.0	5.93	33.962	205.800	0.000
687.0	5.93	33.972	206.100	0.000
688.0	5.92	33.982	206.400	0.000
689.0	5.91	33.992	206.700	0.000
690.0	5.91	34.002	207.000	0.000
691.0	5.90	34.013	207.300	0.000
692.0	5.89	34.023	207.600	0.000
693.0	5.89	34.033	207.900	0.000
694.0	5.88	34.043	208.200	0.000
695.0	5.87	34.053	208.500	0.000
696.0	5.87	34.063	208.800	0.000
697.0	5.86	34.073	209.100	0.000
698.0	5.85	34.083	209.400	0.000
699.0	5.85	34.093	209.700	0.000
700.0	5.84	34.104	210.000	0.000
701.0	5.83	34.114	210.300	0.000
702.0	5.83	34.124	210.600	0.000
703.0	5.82	34.134	210.900	0.000
704.0	5.81	34.144	211.200	0.000
705.0	5.81	34.154	211.500	0.000
706.0	5.80	34.164	211.800	0.000
707.0	5.79	34.174	212.100	0.000
708.0	5.79	34.184	212.400	0.000
709.0	5.78	34.193	212.700	0.000
710.0	5.77	34.203	213.000	0.000
711.0	5.77	34.213	213.300	0.000
712.0	5.76	34.223	213.600	0.000
713.0	5.75	34.233	213.900	0.000
714.0	5.75	34.243	214.200	0.000
715.0	5.74	34.253	214.500	0.000

716.0	5.73	34.263	214.800	0.000
717.0	5.73	34.273	215.100	0.000
718.0	5.72	34.282	215.400	0.000
719.0	5.72	34.292	215.700	0.000
720.0	5.71	34.302	216.000	0.000
721.0	5.70	34.312	216.300	0.000
722.0	5.70	34.322	216.600	0.000
723.0	5.69	34.331	216.900	0.000
724.0	5.68	34.341	217.200	0.000
725.0	5.68	34.351	217.500	0.000
726.0	5.67	34.361	217.800	0.000
727.0	5.67	34.370	218.100	0.000
728.0	5.66	34.380	218.400	0.000
729.0	5.65	34.390	218.700	0.000
730.0	5.65	34.400	219.000	0.000
731.0	5.64	34.409	219.300	0.000
732.0	5.64	34.419	219.600	0.000
733.0	5.63	34.429	219.900	0.000
734.0	5.62	34.438	220.200	0.000
735.0	5.62	34.448	220.500	0.000
736.0	5.61	34.458	220.800	0.000
737.0	5.60	34.467	221.100	0.000
738.0	5.60	34.477	221.400	0.000
739.0	5.59	34.486	221.700	0.000
740.0	5.59	34.496	222.000	0.000
741.0	5.58	34.506	222.300	0.000
742.0	5.57	34.515	222.600	0.000
743.0	5.57	34.525	222.900	0.000
744.0	5.56	34.534	223.200	0.000
745.0	5.56	34.544	223.500	0.000

746.0	5.55	34.553	223.800	0.000
747.0	5.55	34.563	224.100	0.000
748.0	5.54	34.572	224.400	0.000
749.0	5.53	34.582	224.700	0.000
750.0	5.53	34.591	225.000	0.000
751.0	5.52	34.601	225.300	0.000
752.0	5.52	34.610	225.600	0.000
753.0	5.51	34.620	225.900	0.000
754.0	5.50	34.629	226.200	0.000
755.0	5.50	34.639	226.500	0.000
756.0	5.49	34.648	226.800	0.000
757.0	5.49	34.657	227.100	0.000
758.0	5.48	34.667	227.400	0.000
759.0	5.48	34.676	227.700	0.000
760.0	5.47	34.686	228.000	0.000
761.0	5.46	34.695	228.300	0.000
762.0	5.46	34.704	228.600	0.000
763.0	5.45	34.714	228.900	0.000
764.0	5.45	34.723	229.200	0.000
765.0	5.44	34.732	229.500	0.000
766.0	5.44	34.742	229.800	0.000
767.0	5.43	34.751	230.100	0.000
768.0	5.42	34.760	230.400	0.000
769.0	5.42	34.769	230.700	0.000
770.0	5.41	34.779	231.000	0.000
771.0	5.41	34.788	231.300	0.000
772.0	5.40	34.797	231.600	0.000
773.0	5.40	34.807	231.900	0.000
774.0	5.39	34.816	232.200	0.000
775.0	5.39	34.825	232.500	0.000

776.0	5.38	34.834	232.800	0.000
777.0	5.37	34.843	233.100	0.000
778.0	5.37	34.853	233.400	0.000
779.0	5.36	34.862	233.700	0.000
780.0	5.36	34.871	234.000	0.000
781.0	5.35	34.880	234.300	0.000
782.0	5.35	34.889	234.600	0.000
783.0	5.34	34.898	234.900	0.000
784.0	5.34	34.907	235.200	0.000
785.0	5.33	34.917	235.500	0.000
786.0	5.33	34.926	235.800	0.000
787.0	5.32	34.935	236.100	0.000
788.0	5.31	34.944	236.400	0.000
789.0	5.31	34.953	236.700	0.000
790.0	5.30	34.962	237.000	0.000
791.0	5.30	34.971	237.300	0.000
792.0	5.29	34.980	237.600	0.000
793.0	5.29	34.989	237.900	0.000
794.0	5.28	34.998	238.200	0.000
795.0	5.28	35.007	238.500	0.000
796.0	5.27	35.016	238.800	0.000
797.0	5.27	35.025	239.100	0.000
798.0	5.26	35.034	239.400	0.000
799.0	5.26	35.043	239.700	0.000
800.0	5.25	35.052	240.000	0.000
801.0	5.25	35.061	240.300	0.000
802.0	5.24	35.070	240.600	0.000
803.0	5.24	35.079	240.900	0.000
804.0	5.23	35.088	241.200	0.000
805.0	5.23	35.097	241.500	0.000

806.0	5.22	35.106	241.800	0.000
807.0	5.21	35.115	242.100	0.000
808.0	5.21	35.124	242.400	0.000
809.0	5.20	35.133	242.700	0.000
810.0	5.20	35.142	243.000	0.000
811.0	5.19	35.150	243.300	0.000
812.0	5.19	35.159	243.600	0.000
813.0	5.18	35.168	243.900	0.000
814.0	5.18	35.177	244.200	0.000
815.0	5.17	35.186	244.500	0.000
816.0	5.17	35.195	244.800	0.000
817.0	5.16	35.203	245.100	0.000
818.0	5.16	35.212	245.400	0.000
819.0	5.15	35.221	245.700	0.000
820.0	5.15	35.230	246.000	0.000
821.0	5.14	35.239	246.300	0.000
822.0	5.14	35.247	246.600	0.000
823.0	5.13	35.256	246.900	0.000
824.0	5.13	35.265	247.200	0.000
825.0	5.12	35.274	247.500	0.000
826.0	5.12	35.282	247.800	0.000
827.0	5.11	35.291	248.100	0.000
828.0	5.11	35.300	248.400	0.000
829.0	5.10	35.309	248.700	0.000
830.0	5.10	35.317	249.000	0.000
831.0	5.09	35.326	249.300	0.000
832.0	5.09	35.335	249.600	0.000
833.0	5.08	35.343	249.900	0.000
834.0	5.08	35.352	250.200	0.000
835.0	5.08	35.361	250.500	0.000

836.0	5.07	35.369	250.800	0.000
837.0	5.07	35.378	251.100	0.000
838.0	5.06	35.387	251.400	0.000
839.0	5.06	35.395	251.700	0.000
840.0	5.05	35.404	252.000	0.000
841.0	5.05	35.412	252.300	0.000
842.0	5.04	35.421	252.600	0.000
843.0	5.04	35.430	252.900	0.000
844.0	5.03	35.438	253.200	0.000
845.0	5.03	35.447	253.500	0.000
846.0	5.02	35.455	253.800	0.000
847.0	5.02	35.464	254.100	0.000
848.0	5.01	35.472	254.400	0.000
849.0	5.01	35.481	254.700	0.000
850.0	5.00	35.489	255.000	0.000
851.0	5.00	35.498	255.300	0.000
852.0	4.99	35.506	255.600	0.000
853.0	4.99	35.515	255.900	0.000
854.0	4.99	35.523	256.200	0.000
855.0	4.98	35.532	256.500	0.000
856.0	4.98	35.540	256.800	0.000
857.0	4.97	35.549	257.100	0.000
858.0	4.97	35.557	257.400	0.000
859.0	4.96	35.566	257.700	0.000
860.0	4.96	35.574	258.000	0.000
861.0	4.95	35.583	258.300	0.000
862.0	4.95	35.591	258.600	0.000
863.0	4.94	35.599	258.900	0.000
864.0	4.94	35.608	259.200	0.000
865.0	4.93	35.616	259.500	0.000

866.0	4.93	35.625	259.800	0.000
867.0	4.93	35.633	260.100	0.000
868.0	4.92	35.641	260.400	0.000
869.0	4.92	35.650	260.700	0.000
870.0	4.91	35.658	261.000	0.000
871.0	4.91	35.666	261.300	0.000
872.0	4.90	35.675	261.600	0.000
873.0	4.90	35.683	261.900	0.000
874.0	4.89	35.691	262.200	0.000
875.0	4.89	35.700	262.500	0.000
876.0	4.89	35.708	262.800	0.000
877.0	4.88	35.716	263.100	0.000
878.0	4.88	35.725	263.400	0.000
879.0	4.87	35.733	263.700	0.000
880.0	4.87	35.741	264.000	0.000
881.0	4.86	35.750	264.300	0.000
882.0	4.86	35.758	264.600	0.000
883.0	4.85	35.766	264.900	0.000
884.0	4.85	35.774	265.200	0.000
885.0	4.85	35.783	265.500	0.000
886.0	4.84	35.791	265.800	0.000
887.0	4.84	35.799	266.100	0.000
888.0	4.83	35.807	266.400	0.000
889.0	4.83	35.815	266.700	0.000
890.0	4.82	35.824	267.000	0.000
891.0	4.82	35.832	267.300	0.000
892.0	4.82	35.840	267.600	0.000
893.0	4.81	35.848	267.900	0.000
894.0	4.81	35.856	268.200	0.000
895.0	4.80	35.864	268.500	0.000

896.0	4.80	35.873	268.800	0.000
897.0	4.79	35.881	269.100	0.000
898.0	4.79	35.889	269.400	0.000
899.0	4.79	35.897	269.700	0.000
900.0	4.78	35.905	270.000	0.000
901.0	4.78	35.913	270.300	0.000
902.0	4.77	35.921	270.600	0.000
903.0	4.77	35.929	270.900	0.000
904.0	4.76	35.938	271.200	0.000
905.0	4.76	35.946	271.500	0.000
906.0	4.76	35.954	271.800	0.000
907.0	4.75	35.962	272.100	0.000
908.0	4.75	35.970	272.400	0.000
909.0	4.74	35.978	272.700	0.000
910.0	4.74	35.986	273.000	0.000
911.0	4.74	35.994	273.300	0.000
912.0	4.73	36.002	273.600	0.000
913.0	4.73	36.010	273.900	0.000
914.0	4.72	36.018	274.200	0.000
915.0	4.72	36.026	274.500	0.000
916.0	4.71	36.034	274.800	0.000
917.0	4.71	36.042	275.100	0.000
918.0	4.71	36.050	275.400	0.000
919.0	4.70	36.058	275.700	0.000
920.0	4.70	36.066	276.000	0.000
921.0	4.69	36.074	276.300	0.000
922.0	4.69	36.082	276.600	0.000
923.0	4.69	36.090	276.900	0.000
924.0	4.68	36.098	277.200	0.000
925.0	4.68	36.106	277.500	0.000

926.0	4.67	36.114	277.800	0.000
927.0	4.67	36.122	278.100	0.000
928.0	4.67	36.130	278.400	0.000
929.0	4.66	36.137	278.700	0.000
930.0	4.66	36.145	279.000	0.000
931.0	4.65	36.153	279.300	0.000
932.0	4.65	36.161	279.600	0.000
933.0	4.65	36.169	279.900	0.000
934.0	4.64	36.177	280.200	0.000
935.0	4.64	36.185	280.500	0.000
936.0	4.63	36.193	280.800	0.000
937.0	4.63	36.200	281.100	0.000
938.0	4.63	36.208	281.400	0.000
939.0	4.62	36.216	281.700	0.000
940.0	4.62	36.224	282.000	0.000
941.0	4.61	36.232	282.300	0.000
942.0	4.61	36.240	282.600	0.000
943.0	4.61	36.247	282.900	0.000
944.0	4.60	36.255	283.200	0.000
945.0	4.60	36.263	283.500	0.000
946.0	4.59	36.271	283.800	0.000
947.0	4.59	36.278	284.100	0.000
948.0	4.59	36.286	284.400	0.000
949.0	4.58	36.294	284.700	0.000
950.0	4.58	36.302	285.000	0.000
951.0	4.58	36.310	285.300	0.000
952.0	4.57	36.317	285.600	0.000
953.0	4.57	36.325	285.900	0.000
954.0	4.56	36.333	286.200	0.000
955.0	4.56	36.340	286.500	0.000

956.0	4.56	36.348	286.800	0.000
957.0	4.55	36.356	287.100	0.000
958.0	4.55	36.364	287.400	0.000
959.0	4.55	36.371	287.700	0.000
960.0	4.54	36.379	288.000	0.000
961.0	4.54	36.387	288.300	0.000
962.0	4.53	36.394	288.600	0.000
963.0	4.53	36.402	288.900	0.000
964.0	4.53	36.410	289.200	0.000
965.0	4.52	36.417	289.500	0.000
966.0	4.52	36.425	289.800	0.000
967.0	4.52	36.433	290.100	0.000
968.0	4.51	36.440	290.400	0.000
969.0	4.51	36.448	290.700	0.000
970.0	4.50	36.455	291.000	0.000
971.0	4.50	36.463	291.300	0.000
972.0	4.50	36.471	291.600	0.000
973.0	4.49	36.478	291.900	0.000
974.0	4.49	36.486	292.200	0.000
975.0	4.49	36.493	292.500	0.000
976.0	4.48	36.501	292.800	0.000
977.0	4.48	36.509	293.100	0.000
978.0	4.47	36.516	293.400	0.000
979.0	4.47	36.524	293.700	0.000
980.0	4.47	36.531	294.000	0.000
981.0	4.46	36.539	294.300	0.000
982.0	4.46	36.546	294.600	0.000
983.0	4.46	36.554	294.900	0.000
984.0	4.45	36.561	295.200	0.000
985.0	4.45	36.569	295.500	0.000

986.0	4.45	36.577	295.800	0.000
987.0	4.44	36.584	296.100	0.000
988.0	4.44	36.592	296.400	0.000
989.0	4.43	36.599	296.700	0.000
990.0	4.43	36.607	297.000	0.000
991.0	4.43	36.614	297.300	0.000
992.0	4.42	36.621	297.600	0.000
993.0	4.42	36.629	297.900	0.000
994.0	4.42	36.636	298.200	0.000
995.0	4.41	36.644	298.500	0.000
996.0	4.41	36.651	298.800	0.000
997.0	4.41	36.659	299.100	0.000
998.0	4.40	36.666	299.400	0.000
999.0	4.40	36.674	299.700	0.000
1000.0	4.40	36.681	300.000	0.000
1001.0	4.39	36.688	300.300	0.000
1002.0	4.39	36.696	300.600	0.000
1003.0	4.39	36.703	300.900	0.000
1004.0	4.38	36.711	301.200	0.000
1005.0	4.38	36.718	301.500	0.000
1006.0	4.38	36.725	301.800	0.000
1007.0	4.37	36.733	302.100	0.000
1008.0	4.37	36.740	302.400	0.000
1009.0	4.36	36.748	302.700	0.000
1010.0	4.36	36.755	303.000	0.000
1011.0	4.36	36.762	303.300	0.000
1012.0	4.35	36.770	303.600	0.000
1013.0	4.35	36.777	303.900	0.000
1014.0	4.35	36.784	304.200	0.000
1015.0	4.34	36.792	304.500	0.000

1016.0	4.34	36.799	304.800	0.000
1017.0	4.34	36.806	305.100	0.000
1018.0	4.33	36.814	305.400	0.000
1019.0	4.33	36.821	305.700	0.000
1020.0	4.33	36.828	306.000	0.000
1021.0	4.32	36.836	306.300	0.000
1022.0	4.32	36.843	306.600	0.000
1023.0	4.32	36.850	306.900	0.000
1024.0	4.31	36.857	307.200	0.000
1025.0	4.31	36.865	307.500	0.000
1026.0	4.31	36.872	307.800	0.000
1027.0	4.30	36.879	308.100	0.000
1028.0	4.30	36.886	308.400	0.000
1029.0	4.30	36.894	308.700	0.000
1030.0	4.29	36.901	309.000	0.000
1031.0	4.29	36.908	309.300	0.000
1032.0	4.29	36.915	309.600	0.000
1033.0	4.28	36.923	309.900	0.000
1034.0	4.28	36.930	310.200	0.000
1035.0	4.28	36.937	310.500	0.000
1036.0	4.27	36.944	310.800	0.000
1037.0	4.27	36.951	311.100	0.000
1038.0	4.27	36.959	311.400	0.000
1039.0	4.26	36.966	311.700	0.000
1040.0	4.26	36.973	312.000	0.000
1041.0	4.26	36.980	312.300	0.000
1042.0	4.25	36.987	312.600	0.000
1043.0	4.25	36.995	312.900	0.000
1044.0	4.25	37.002	313.200	0.000
1045.0	4.24	37.009	313.500	0.000

1046.0	4.24	37.016	313.800	0.000
1047.0	4.24	37.023	314.100	0.000
1048.0	4.23	37.030	314.400	0.000
1049.0	4.23	37.037	314.700	0.000
1050.0	4.23	37.045	315.000	0.000
1051.0	4.22	37.052	315.300	0.000
1052.0	4.22	37.059	315.600	0.000
1053.0	4.22	37.066	315.900	0.000
1054.0	4.22	37.073	316.200	0.000
1055.0	4.21	37.080	316.500	0.000
1056.0	4.21	37.087	316.800	0.000
1057.0	4.21	37.094	317.100	0.000
1058.0	4.20	37.101	317.400	0.000
1059.0	4.20	37.108	317.700	0.000
1060.0	4.20	37.115	318.000	0.000
1061.0	4.19	37.123	318.300	0.000
1062.0	4.19	37.130	318.600	0.000
1063.0	4.19	37.137	318.900	0.000
1064.0	4.18	37.144	319.200	0.000
1065.0	4.18	37.151	319.500	0.000
1066.0	4.18	37.158	319.800	0.000
1067.0	4.17	37.165	320.100	0.000
1068.0	4.17	37.172	320.400	0.000
1069.0	4.17	37.179	320.700	0.000
1070.0	4.16	37.186	321.000	0.000
1071.0	4.16	37.193	321.300	0.000
1072.0	4.16	37.200	321.600	0.000
1073.0	4.16	37.207	321.900	0.000
1074.0	4.15	37.214	322.200	0.000
1075.0	4.15	37.221	322.500	0.000

1076.0	4.15	37.228	322.800	0.000
1077.0	4.14	37.235	323.100	0.000
1078.0	4.14	37.242	323.400	0.000
1079.0	4.14	37.249	323.700	0.000
1080.0	4.13	37.256	324.000	0.000
1081.0	4.13	37.263	324.300	0.000
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1083.0	4.12	37.276	324.900	0.000
1084.0	4.12	37.283	325.200	0.000
1085.0	4.12	37.290	325.500	0.000
1086.0	4.12	37.297	325.800	0.000
1087.0	4.11	37.304	326.100	0.000
1088.0	4.11	37.311	326.400	0.000
1089.0	4.11	37.318	326.700	0.000
1090.0	4.10	37.325	327.000	0.000
1091.0	4.10	37.332	327.300	0.000
1092.0	4.10	37.339	327.600	0.000
1093.0	4.09	37.346	327.900	0.000
1094.0	4.09	37.352	328.200	0.000
1095.0	4.09	37.359	328.500	0.000
1096.0	4.09	37.366	328.800	0.000
1097.0	4.08	37.373	329.100	0.000
1098.0	4.08	37.380	329.400	0.000
1099.0	4.08	37.387	329.700	0.000
1100.0	4.07	37.394	330.000	0.000
1101.0	4.07	37.400	330.300	0.000
1102.0	4.07	37.407	330.600	0.000
1103.0	4.07	37.414	330.900	0.000
1104.0	4.06	37.421	331.200	0.000
1105.0	4.06	37.428	331.500	0.000

1106.0	4.06	37.435	331.800	0.000
1107.0	4.05	37.441	332.100	0.000
1108.0	4.05	37.448	332.400	0.000
1109.0	4.05	37.455	332.700	0.000
1110.0	4.04	37.462	333.000	0.000
1111.0	4.04	37.469	333.300	0.000
1112.0	4.04	37.475	333.600	0.000
1113.0	4.04	37.482	333.900	0.000
1114.0	4.03	37.489	334.200	0.000
1115.0	4.03	37.496	334.500	0.000
1116.0	4.03	37.502	334.800	0.000
1117.0	4.02	37.509	335.100	0.000
1118.0	4.02	37.516	335.400	0.000
1119.0	4.02	37.523	335.700	0.000
1120.0	4.02	37.529	336.000	0.000
1121.0	4.01	37.536	336.300	0.000
1122.0	4.01	37.543	336.600	0.000
1123.0	4.01	37.550	336.900	0.000
1124.0	4.00	37.556	337.200	0.000
1125.0	4.00	37.563	337.500	0.000
1126.0	4.00	37.570	337.800	0.000
1127.0	4.00	37.577	338.100	0.000
1128.0	3.99	37.583	338.400	0.000
1129.0	3.99	37.590	338.700	0.000
1130.0	3.99	37.597	339.000	0.000
1131.0	3.98	37.603	339.300	0.000
1132.0	3.98	37.610	339.600	0.000
1133.0	3.98	37.617	339.900	0.000
1134.0	3.98	37.623	340.200	0.000
1135.0	3.97	37.630	340.500	0.000

1136.0	3.97	37.637	340.800	0.000
1137.0	3.97	37.643	341.100	0.000
1138.0	3.96	37.650	341.400	0.000
1139.0	3.96	37.657	341.700	0.000
1140.0	3.96	37.663	342.000	0.000
1141.0	3.96	37.670	342.300	0.000
1142.0	3.95	37.677	342.600	0.000
1143.0	3.95	37.683	342.900	0.000
1144.0	3.95	37.690	343.200	0.000
1145.0	3.95	37.696	343.500	0.000
1146.0	3.94	37.703	343.800	0.000
1147.0	3.94	37.710	344.100	0.000
1148.0	3.94	37.716	344.400	0.000
1149.0	3.93	37.723	344.700	0.000
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1152.0	3.93	37.743	345.600	0.000
1153.0	3.92	37.749	345.900	0.000
1154.0	3.92	37.756	346.200	0.000
1155.0	3.92	37.762	346.500	0.000
1156.0	3.92	37.769	346.800	0.000
1157.0	3.91	37.775	347.100	0.000
1158.0	3.91	37.782	347.400	0.000
1159.0	3.91	37.789	347.700	0.000
1160.0	3.90	37.795	348.000	0.000
1161.0	3.90	37.802	348.300	0.000
1162.0	3.90	37.808	348.600	0.000
1163.0	3.90	37.815	348.900	0.000
1164.0	3.89	37.821	349.200	0.000
1165.0	3.89	37.828	349.500	0.000

1166.0	3.89	37.834	349.800	0.000
1167.0	3.89	37.841	350.100	0.000
1168.0	3.88	37.847	350.400	0.000
1169.0	3.88	37.854	350.700	0.000
1170.0	3.88	37.860	351.000	0.000
1171.0	3.88	37.867	351.300	0.000
1172.0	3.87	37.873	351.600	0.000
1173.0	3.87	37.880	351.900	0.000
1174.0	3.87	37.886	352.200	0.000
1175.0	3.86	37.893	352.500	0.000
1176.0	3.86	37.899	352.800	0.000
1177.0	3.86	37.906	353.100	0.000
1178.0	3.86	37.912	353.400	0.000
1179.0	3.85	37.919	353.700	0.000
1180.0	3.85	37.925	354.000	0.000
1181.0	3.85	37.931	354.300	0.000
1182.0	3.85	37.938	354.600	0.000
1183.0	3.84	37.944	354.900	0.000
1184.0	3.84	37.951	355.200	0.000
1185.0	3.84	37.957	355.500	0.000
1186.0	3.84	37.964	355.800	0.000
1187.0	3.83	37.970	356.100	0.000
1188.0	3.83	37.976	356.400	0.000
1189.0	3.83	37.983	356.700	0.000
1190.0	3.83	37.989	357.000	0.000
1191.0	3.82	37.996	357.300	0.000
1192.0	3.82	38.002	357.600	0.000
1193.0	3.82	38.008	357.900	0.000
1194.0	3.82	38.015	358.200	0.000
1195.0	3.81	38.021	358.500	0.000

1196.0	3.81	38.028	358.800	0.000
1197.0	3.81	38.034	359.100	0.000
1198.0	3.81	38.040	359.400	0.000
1199.0	3.80	38.047	359.700	0.000
1200.0	3.80	38.053	360.000	0.000
1201.0	3.80	38.059	360.300	0.000
1202.0	3.80	38.066	360.600	0.000
1203.0	3.79	38.072	360.900	0.000
1204.0	3.79	38.078	361.200	0.000
1205.0	3.79	38.085	361.500	0.000
1206.0	3.79	38.091	361.800	0.000
1207.0	3.78	38.097	362.100	0.000
1208.0	3.78	38.104	362.400	0.000
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1210.0	3.78	38.116	363.000	0.000
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1224.0	3.74	38.204	367.200	0.000
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1226.0	3.74	38.217	367.800	0.000
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1229.0	3.73	38.236	368.700	0.000
1230.0	3.73	38.242	369.000	0.000
1231.0	3.72	38.248	369.300	0.000
1232.0	3.72	38.254	369.600	0.000
1233.0	3.72	38.260	369.900	0.000
1234.0	3.72	38.267	370.200	0.000
1235.0	3.71	38.273	370.500	0.000
1236.0	3.71	38.279	370.800	0.000
1237.0	3.71	38.285	371.100	0.000
1238.0	3.71	38.291	371.400	0.000
1239.0	3.70	38.298	371.700	0.000
1240.0	3.70	38.304	372.000	0.000
1241.0	3.70	38.310	372.300	0.000
1242.0	3.70	38.316	372.600	0.000
1243.0	3.69	38.322	372.900	0.000
1244.0	3.69	38.329	373.200	0.000
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1246.0	3.69	38.341	373.800	0.000
1247.0	3.69	38.347	374.100	0.000
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1249.0	3.68	38.359	374.700	0.000
1250.0	3.68	38.365	375.000	0.000
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1253.0	3.67	38.384	375.900	0.000
1254.0	3.67	38.390	376.200	0.000
1255.0	3.67	38.396	376.500	0.000

1256.0	3.66	38.402	376.800	0.000
1257.0	3.66	38.408	377.100	0.000
1258.0	3.66	38.414	377.400	0.000
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1261.0	3.65	38.433	378.300	0.000
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1264.0	3.65	38.451	379.200	0.000
1265.0	3.64	38.457	379.500	0.000
1266.0	3.64	38.463	379.800	0.000
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1268.0	3.64	38.475	380.400	0.000
1269.0	3.63	38.481	380.700	0.000
1270.0	3.63	38.487	381.000	0.000
1271.0	3.63	38.493	381.300	0.000
1272.0	3.63	38.500	381.600	0.000
1273.0	3.63	38.506	381.900	0.000
1274.0	3.62	38.512	382.200	0.000
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1276.0	3.62	38.524	382.800	0.000
1277.0	3.62	38.530	383.100	0.000
1278.0	3.61	38.536	383.400	0.000
1279.0	3.61	38.542	383.700	0.000
1280.0	3.61	38.548	384.000	0.000
1281.0	3.61	38.554	384.300	0.000
1282.0	3.60	38.560	384.600	0.000
1283.0	3.60	38.566	384.900	0.000
1284.0	3.60	38.572	385.200	0.000
1285.0	3.60	38.578	385.500	0.000

1286.0	3.60	38.584	385.800	0.000
1287.0	3.59	38.590	386.100	0.000
1288.0	3.59	38.596	386.400	0.000
1289.0	3.59	38.602	386.700	0.000
1290.0	3.59	38.608	387.000	0.000
1291.0	3.58	38.614	387.300	0.000
1292.0	3.58	38.620	387.600	0.000
1293.0	3.58	38.626	387.900	0.000
1294.0	3.58	38.632	388.200	0.000
1295.0	3.58	38.638	388.500	0.000
1296.0	3.57	38.644	388.800	0.000
1297.0	3.57	38.650	389.100	0.000
1298.0	3.57	38.655	389.400	0.000
1299.0	3.57	38.661	389.700	0.000
1300.0	3.56	38.667	390.000	0.000
1301.0	3.56	38.673	390.300	0.000
1302.0	3.56	38.679	390.600	0.000
1303.0	3.56	38.685	390.900	0.000
1304.0	3.56	38.691	391.200	0.000
1305.0	3.55	38.697	391.500	0.000
1306.0	3.55	38.703	391.800	0.000
1307.0	3.55	38.709	392.100	0.000
1308.0	3.55	38.715	392.400	0.000
1309.0	3.55	38.721	392.700	0.000
1310.0	3.54	38.727	393.000	0.000
1311.0	3.54	38.732	393.300	0.000
1312.0	3.54	38.738	393.600	0.000
1313.0	3.54	38.744	393.900	0.000
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1315.0	3.53	38.756	394.500	0.000

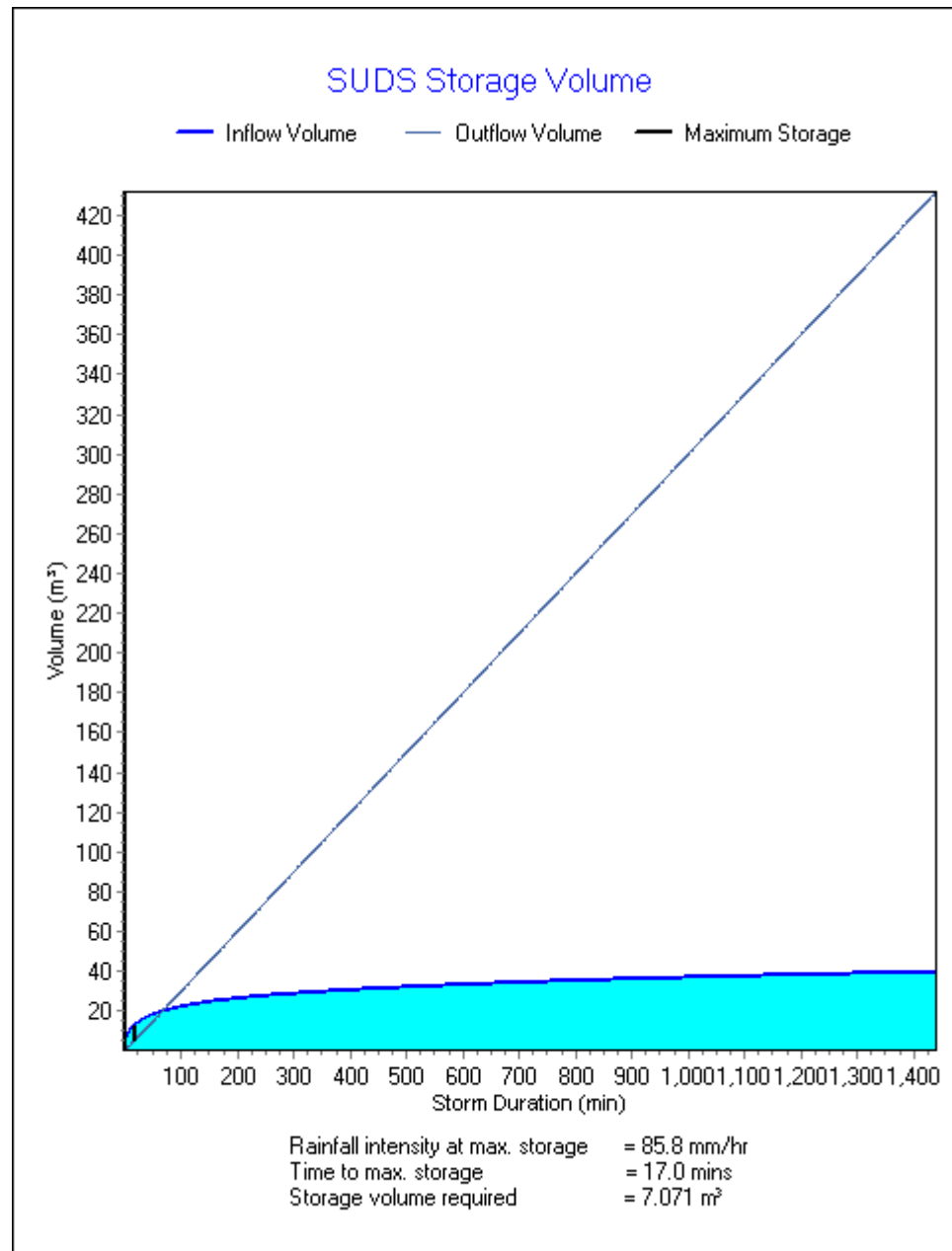
1316.0	3.53	38.762	394.800	0.000
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1319.0	3.52	38.779	395.700	0.000
1320.0	3.52	38.785	396.000	0.000
1321.0	3.52	38.791	396.300	0.000
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1323.0	3.51	38.803	396.900	0.000
1324.0	3.51	38.809	397.200	0.000
1325.0	3.51	38.815	397.500	0.000
1326.0	3.51	38.820	397.800	0.000
1327.0	3.51	38.826	398.100	0.000
1328.0	3.50	38.832	398.400	0.000
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1330.0	3.50	38.844	399.000	0.000
1331.0	3.50	38.850	399.300	0.000
1332.0	3.50	38.855	399.600	0.000
1333.0	3.49	38.861	399.900	0.000
1334.0	3.49	38.867	400.200	0.000
1335.0	3.49	38.873	400.500	0.000
1336.0	3.49	38.879	400.800	0.000
1337.0	3.49	38.884	401.100	0.000
1338.0	3.48	38.890	401.400	0.000
1339.0	3.48	38.896	401.700	0.000
1340.0	3.48	38.902	402.000	0.000
1341.0	3.48	38.908	402.300	0.000
1342.0	3.48	38.913	402.600	0.000
1343.0	3.47	38.919	402.900	0.000
1344.0	3.47	38.925	403.200	0.000
1345.0	3.47	38.931	403.500	0.000

1346.0	3.47	38.936	403.800	0.000
1347.0	3.46	38.942	404.100	0.000
1348.0	3.46	38.948	404.400	0.000
1349.0	3.46	38.954	404.700	0.000
1350.0	3.46	38.960	405.000	0.000
1351.0	3.46	38.965	405.300	0.000
1352.0	3.45	38.971	405.600	0.000
1353.0	3.45	38.977	405.900	0.000
1354.0	3.45	38.982	406.200	0.000
1355.0	3.45	38.988	406.500	0.000
1356.0	3.45	38.994	406.800	0.000
1357.0	3.44	39.000	407.100	0.000
1358.0	3.44	39.005	407.400	0.000
1359.0	3.44	39.011	407.700	0.000
1360.0	3.44	39.017	408.000	0.000
1361.0	3.44	39.023	408.300	0.000
1362.0	3.43	39.028	408.600	0.000
1363.0	3.43	39.034	408.900	0.000
1364.0	3.43	39.040	409.200	0.000
1365.0	3.43	39.045	409.500	0.000
1366.0	3.43	39.051	409.800	0.000
1367.0	3.42	39.057	410.100	0.000
1368.0	3.42	39.062	410.400	0.000
1369.0	3.42	39.068	410.700	0.000
1370.0	3.42	39.074	411.000	0.000
1371.0	3.42	39.079	411.300	0.000
1372.0	3.41	39.085	411.600	0.000
1373.0	3.41	39.091	411.900	0.000
1374.0	3.41	39.097	412.200	0.000
1375.0	3.41	39.102	412.500	0.000

1376.0	3.41	39.108	412.800	0.000
1377.0	3.40	39.113	413.100	0.000
1378.0	3.40	39.119	413.400	0.000
1379.0	3.40	39.125	413.700	0.000
1380.0	3.40	39.130	414.000	0.000
1381.0	3.40	39.136	414.300	0.000
1382.0	3.39	39.142	414.600	0.000
1383.0	3.39	39.147	414.900	0.000
1384.0	3.39	39.153	415.200	0.000
1385.0	3.39	39.159	415.500	0.000
1386.0	3.39	39.164	415.800	0.000
1387.0	3.38	39.170	416.100	0.000
1388.0	3.38	39.175	416.400	0.000
1389.0	3.38	39.181	416.700	0.000
1390.0	3.38	39.187	417.000	0.000
1391.0	3.38	39.192	417.300	0.000
1392.0	3.37	39.198	417.600	0.000
1393.0	3.37	39.204	417.900	0.000
1394.0	3.37	39.209	418.200	0.000
1395.0	3.37	39.215	418.500	0.000
1396.0	3.37	39.220	418.800	0.000
1397.0	3.37	39.226	419.100	0.000
1398.0	3.36	39.231	419.400	0.000
1399.0	3.36	39.237	419.700	0.000
1400.0	3.36	39.243	420.000	0.000
1401.0	3.36	39.248	420.300	0.000
1402.0	3.36	39.254	420.600	0.000
1403.0	3.35	39.259	420.900	0.000
1404.0	3.35	39.265	421.200	0.000
1405.0	3.35	39.270	421.500	0.000

1406.0	3.35	39.276	421.800	0.000
1407.0	3.35	39.282	422.100	0.000
1408.0	3.34	39.287	422.400	0.000
1409.0	3.34	39.293	422.700	0.000
1410.0	3.34	39.298	423.000	0.000
1411.0	3.34	39.304	423.300	0.000
1412.0	3.34	39.309	423.600	0.000
1413.0	3.33	39.315	423.900	0.000
1414.0	3.33	39.320	424.200	0.000
1415.0	3.33	39.326	424.500	0.000
1416.0	3.33	39.331	424.800	0.000
1417.0	3.33	39.337	425.100	0.000
1418.0	3.33	39.342	425.400	0.000
1419.0	3.32	39.348	425.700	0.000
1420.0	3.32	39.353	426.000	0.000
1421.0	3.32	39.359	426.300	0.000
1422.0	3.32	39.364	426.600	0.000
1423.0	3.32	39.370	426.900	0.000
1424.0	3.31	39.375	427.200	0.000
1425.0	3.31	39.381	427.500	0.000
1426.0	3.31	39.386	427.800	0.000
1427.0	3.31	39.392	428.100	0.000
1428.0	3.31	39.397	428.400	0.000
1429.0	3.30	39.403	428.700	0.000
1430.0	3.30	39.408	429.000	0.000
1431.0	3.30	39.414	429.300	0.000
1432.0	3.30	39.419	429.600	0.000
1433.0	3.30	39.425	429.900	0.000
1434.0	3.30	39.430	430.200	0.000
1435.0	3.29	39.436	430.500	0.000

1436.0	3.29	39.441	430.800	0.000
1437.0	3.29	39.447	431.100	0.000
1438.0	3.29	39.452	431.400	0.000
1439.0	3.29	39.458	431.700	0.000
1440.0	3.28	39.463	432.000	0.000



ATTENUATION CALCULATIONS FOR SWALE 3

GLOBAL VARIABLES

Location	= Boulton Moor, Derby
SAAR	= 650 mm/yr
WRAP	= 3
M5-60	= 18.79 mm
r Ratio	= 0.40
Soil index	= 0.4

INPUT DATA

Contributing area	= .1290 ha
Allowable discharge	= 5 lps
Maximum possible storm duration	= 1440 min
Storm duration time step	= 1 min
Storm return period	= 100 years

CALCULATED DATA

Time to max. storage	= 46 mins
Rainfall at max. storage	= 45.6 mm/hr
Storage volume	= 29.061 m ³

ADJUSTMENTS TO RESULT FOR CLIMATE CHANGE

Volume + 10% for normal discharge (W5-074)	: Storage volume = 31.967 m ³
Volume + 20% for discharge into river flows (DEFRA):	Storage volume = 34.873 m ³
Volume + 30% for EA residential requirements	: Storage volume = 37.779 m ³
Volume + 40% for other residential requirements	: Storage volume = 40.685 m ³

OUTPUT DATA

Time	Rainfall	Inflow	Outflow	Balance
Intensity				
mins	mm/hr	m ³	m ³	m ³

1.0	226.05	4.617	0.300	4.317
2.0	200.24	8.180	0.600	7.580
3.0	180.77	11.077	0.900	10.177
4.0	165.46	13.518	1.200	12.318
5.0	153.05	15.630	1.500	14.130
6.0	142.74	17.493	1.800	15.693
7.0	134.02	19.161	2.100	17.061
8.0	126.52	20.674	2.400	18.274
9.0	120.00	22.059	2.700	19.359
10.0	114.27	23.339	3.000	20.339
11.0	108.91	24.468	3.300	21.168
12.0	104.07	25.509	3.600	21.909
13.0	99.72	26.477	3.900	22.577
14.0	95.76	27.383	4.200	23.183
15.0	92.15	28.233	4.500	23.733
16.0	88.85	29.035	4.800	24.235
17.0	85.80	29.793	5.100	24.693
18.0	82.99	30.513	5.400	25.113
19.0	80.39	31.197	5.700	25.497
20.0	77.97	31.850	6.000	25.850
21.0	75.71	32.473	6.300	26.173
22.0	73.60	33.070	6.600	26.470
23.0	71.62	33.644	6.900	26.744
24.0	69.76	34.194	7.200	26.994
25.0	68.00	34.724	7.500	27.224

26.0	66.35	35.236	7.800	27.436
27.0	64.79	35.729	8.100	27.629
28.0	63.31	36.206	8.400	27.806
29.0	61.90	36.668	8.700	27.968
30.0	60.57	37.115	9.000	28.115
31.0	59.30	37.549	9.300	28.249
32.0	58.09	37.970	9.600	28.370
33.0	56.94	38.379	9.900	28.479
34.0	55.84	38.777	10.200	28.577
35.0	54.78	39.164	10.500	28.664
36.0	53.78	39.542	10.800	28.742
37.0	52.81	39.909	11.100	28.809
38.0	51.88	40.268	11.400	28.868
39.0	50.99	40.618	11.700	28.918
40.0	50.14	40.960	12.000	28.960
41.0	49.31	41.295	12.300	28.995
42.0	48.52	41.622	12.600	29.022
43.0	47.75	41.941	12.900	29.041
44.0	47.02	42.254	13.200	29.054
45.0	46.31	42.561	13.500	29.061
46.0	45.62	42.861	13.800	29.061 Maximum
47.0	44.95	43.155	14.100	29.055
48.0	44.31	43.444	14.400	29.044
49.0	43.69	43.727	14.700	29.027
50.0	43.09	44.005	15.000	29.005
51.0	42.51	44.278	15.300	28.978
52.0	41.94	44.545	15.600	28.945
53.0	41.39	44.809	15.900	28.909
54.0	40.86	45.067	16.200	28.867
55.0	40.34	45.322	16.500	28.822

56.0	39.84	45.572	16.800	28.772
57.0	39.35	45.818	17.100	28.718
58.0	38.88	46.060	17.400	28.660
59.0	38.42	46.298	17.700	28.598
60.0	37.97	46.532	18.000	28.532
61.0	37.53	46.763	18.300	28.463
62.0	37.11	46.990	18.600	28.390
63.0	36.69	47.215	18.900	28.315
64.0	36.29	47.435	19.200	28.235
65.0	35.89	47.653	19.500	28.153
66.0	35.51	47.867	19.800	28.067
67.0	35.13	48.079	20.100	27.979
68.0	34.77	48.288	20.400	27.888
69.0	34.41	48.494	20.700	27.794
70.0	34.06	48.697	21.000	27.697
71.0	33.72	48.897	21.300	27.597
72.0	33.38	49.095	21.600	27.495
73.0	33.06	49.290	21.900	27.390
74.0	32.74	49.483	22.200	27.283
75.0	32.43	49.673	22.500	27.173
76.0	32.12	49.861	22.800	27.061
77.0	31.82	50.047	23.100	26.947
78.0	31.53	50.231	23.400	26.831
79.0	31.24	50.412	23.700	26.712
80.0	30.96	50.592	24.000	26.592
81.0	30.69	50.769	24.300	26.469
82.0	30.42	50.944	24.600	26.344
83.0	30.15	51.117	24.900	26.217
84.0	29.89	51.288	25.200	26.088
85.0	29.64	51.458	25.500	25.958

86.0	29.39	51.625	25.800	25.825
87.0	29.15	51.791	26.100	25.691
88.0	28.91	51.955	26.400	25.555
89.0	28.67	52.117	26.700	25.417
90.0	28.44	52.278	27.000	25.278
91.0	28.21	52.436	27.300	25.136
92.0	27.99	52.594	27.600	24.994
93.0	27.77	52.749	27.900	24.849
94.0	27.55	52.903	28.200	24.703
95.0	27.34	53.056	28.500	24.556
96.0	27.14	53.207	28.800	24.407
97.0	26.93	53.357	29.100	24.257
98.0	26.73	53.505	29.400	24.105
99.0	26.53	53.651	29.700	23.951
100.0	26.34	53.797	30.000	23.797
101.0	26.15	53.941	30.300	23.641
102.0	25.96	54.083	30.600	23.483
103.0	25.77	54.225	30.900	23.325
104.0	25.59	54.365	31.200	23.165
105.0	25.41	54.504	31.500	23.004
106.0	25.24	54.641	31.800	22.841
107.0	25.06	54.777	32.100	22.677
108.0	24.89	54.913	32.400	22.513
109.0	24.73	55.046	32.700	22.346
110.0	24.56	55.179	33.000	22.179
111.0	24.40	55.311	33.300	22.011
112.0	24.24	55.441	33.600	21.841
113.0	24.08	55.571	33.900	21.671
114.0	23.92	55.699	34.200	21.499
115.0	23.77	55.827	34.500	21.327

116.0	23.62	55.953	34.800	21.153
117.0	23.47	56.078	35.100	20.978
118.0	23.32	56.202	35.400	20.802
119.0	23.17	56.325	35.700	20.625
120.0	23.03	56.448	36.000	20.448
121.0	22.89	56.569	36.300	20.269
122.0	22.75	56.689	36.600	20.089
123.0	22.61	56.809	36.900	19.909
124.0	22.48	56.927	37.200	19.727
125.0	22.34	57.045	37.500	19.545
126.0	22.21	57.161	37.800	19.361
127.0	22.08	57.277	38.100	19.177
128.0	21.95	57.392	38.400	18.992
129.0	21.83	57.506	38.700	18.806
130.0	21.70	57.619	39.000	18.619
131.0	21.58	57.732	39.300	18.432
132.0	21.45	57.843	39.600	18.243
133.0	21.33	57.954	39.900	18.054
134.0	21.21	58.064	40.200	17.864
135.0	21.10	58.173	40.500	17.673
136.0	20.98	58.281	40.800	17.481
137.0	20.87	58.389	41.100	17.289
138.0	20.75	58.496	41.400	17.096
139.0	20.64	58.602	41.700	16.902
140.0	20.53	58.707	42.000	16.707
141.0	20.42	58.812	42.300	16.512
142.0	20.31	58.916	42.600	16.316
143.0	20.21	59.019	42.900	16.119
144.0	20.10	59.122	43.200	15.922
145.0	20.00	59.223	43.500	15.723

146.0	19.89	59.325	43.800	15.525
147.0	19.79	59.425	44.100	15.325
148.0	19.69	59.525	44.400	15.125
149.0	19.59	59.624	44.700	14.924
150.0	19.49	59.723	45.000	14.723
151.0	19.40	59.821	45.300	14.521
152.0	19.30	59.918	45.600	14.318
153.0	19.20	60.015	45.900	14.115
154.0	19.11	60.111	46.200	13.911
155.0	19.02	60.206	46.500	13.706
156.0	18.93	60.301	46.800	13.501
157.0	18.83	60.395	47.100	13.295
158.0	18.74	60.489	47.400	13.089
159.0	18.65	60.582	47.700	12.882
160.0	18.57	60.674	48.000	12.674
161.0	18.48	60.766	48.300	12.466
162.0	18.39	60.858	48.600	12.258
163.0	18.31	60.949	48.900	12.049
164.0	18.22	61.039	49.200	11.839
165.0	18.14	61.129	49.500	11.629
166.0	18.06	61.218	49.800	11.418
167.0	17.97	61.307	50.100	11.207
168.0	17.89	61.395	50.400	10.995
169.0	17.81	61.482	50.700	10.782
170.0	17.73	61.570	51.000	10.570
171.0	17.65	61.656	51.300	10.356
172.0	17.57	61.742	51.600	10.142
173.0	17.50	61.828	51.900	9.928
174.0	17.42	61.913	52.200	9.713
175.0	17.35	61.998	52.500	9.498

176.0	17.27	62.082	52.800	9.282
177.0	17.20	62.166	53.100	9.066
178.0	17.12	62.249	53.400	8.849
179.0	17.05	62.332	53.700	8.632
180.0	16.98	62.414	54.000	8.414
181.0	16.90	62.496	54.300	8.196
182.0	16.83	62.578	54.600	7.978
183.0	16.76	62.659	54.900	7.759
184.0	16.69	62.739	55.200	7.539
185.0	16.62	62.819	55.500	7.319
186.0	16.56	62.899	55.800	7.099
187.0	16.49	62.978	56.100	6.878
188.0	16.42	63.057	56.400	6.657
189.0	16.35	63.136	56.700	6.436
190.0	16.29	63.214	57.000	6.214
191.0	16.22	63.291	57.300	5.991
192.0	16.16	63.368	57.600	5.768
193.0	16.09	63.445	57.900	5.545
194.0	16.03	63.522	58.200	5.322
195.0	15.97	63.597	58.500	5.097
196.0	15.91	63.673	58.800	4.873
197.0	15.84	63.748	59.100	4.648
198.0	15.78	63.823	59.400	4.423
199.0	15.72	63.898	59.700	4.198
200.0	15.66	63.972	60.000	3.972
201.0	15.60	64.045	60.300	3.745
202.0	15.54	64.119	60.600	3.519
203.0	15.48	64.192	60.900	3.292
204.0	15.42	64.264	61.200	3.064
205.0	15.37	64.337	61.500	2.837

206.0	15.31	64.408	61.800	2.608
207.0	15.25	64.480	62.100	2.380
208.0	15.19	64.551	62.400	2.151
209.0	15.14	64.622	62.700	1.922
210.0	15.08	64.693	63.000	1.693
211.0	15.03	64.763	63.300	1.463
212.0	14.97	64.833	63.600	1.233
213.0	14.92	64.902	63.900	1.002
214.0	14.86	64.971	64.200	0.771
215.0	14.81	65.040	64.500	0.540
216.0	14.76	65.109	64.800	0.309
217.0	14.71	65.177	65.100	0.077
218.0	14.65	65.245	65.400	0.000
219.0	14.60	65.312	65.700	0.000
220.0	14.55	65.379	66.000	0.000
221.0	14.50	65.446	66.300	0.000
222.0	14.45	65.513	66.600	0.000
223.0	14.40	65.579	66.900	0.000
224.0	14.35	65.645	67.200	0.000
225.0	14.30	65.711	67.500	0.000
226.0	14.25	65.776	67.800	0.000
227.0	14.20	65.841	68.100	0.000
228.0	14.15	65.906	68.400	0.000
229.0	14.10	65.971	68.700	0.000
230.0	14.06	66.035	69.000	0.000
231.0	14.01	66.099	69.300	0.000
232.0	13.96	66.162	69.600	0.000
233.0	13.92	66.226	69.900	0.000
234.0	13.87	66.289	70.200	0.000
235.0	13.82	66.352	70.500	0.000

236.0	13.78	66.414	70.800	0.000
237.0	13.73	66.476	71.100	0.000
238.0	13.69	66.538	71.400	0.000
239.0	13.64	66.600	71.700	0.000
240.0	13.60	66.662	72.000	0.000
241.0	13.55	66.723	72.300	0.000
242.0	13.51	66.784	72.600	0.000
243.0	13.47	66.844	72.900	0.000
244.0	13.42	66.905	73.200	0.000
245.0	13.38	66.965	73.500	0.000
246.0	13.34	67.025	73.800	0.000
247.0	13.30	67.084	74.100	0.000
248.0	13.26	67.144	74.400	0.000
249.0	13.21	67.203	74.700	0.000
250.0	13.17	67.262	75.000	0.000
251.0	13.13	67.320	75.300	0.000
252.0	13.09	67.379	75.600	0.000
253.0	13.05	67.437	75.900	0.000
254.0	13.01	67.495	76.200	0.000
255.0	12.97	67.552	76.500	0.000
256.0	12.93	67.610	76.800	0.000
257.0	12.89	67.667	77.100	0.000
258.0	12.85	67.724	77.400	0.000
259.0	12.81	67.781	77.700	0.000
260.0	12.77	67.837	78.000	0.000
261.0	12.74	67.894	78.300	0.000
262.0	12.70	67.950	78.600	0.000
263.0	12.66	68.005	78.900	0.000
264.0	12.62	68.061	79.200	0.000
265.0	12.58	68.116	79.500	0.000

266.0	12.55	68.171	79.800	0.000
267.0	12.51	68.226	80.100	0.000
268.0	12.47	68.281	80.400	0.000
269.0	12.44	68.336	80.700	0.000
270.0	12.40	68.390	81.000	0.000
271.0	12.37	68.444	81.300	0.000
272.0	12.33	68.498	81.600	0.000
273.0	12.29	68.551	81.900	0.000
274.0	12.26	68.605	82.200	0.000
275.0	12.22	68.658	82.500	0.000
276.0	12.19	68.711	82.800	0.000
277.0	12.15	68.764	83.100	0.000
278.0	12.12	68.816	83.400	0.000
279.0	12.09	68.869	83.700	0.000
280.0	12.05	68.921	84.000	0.000
281.0	12.02	68.973	84.300	0.000
282.0	11.98	69.025	84.600	0.000
283.0	11.95	69.077	84.900	0.000
284.0	11.92	69.128	85.200	0.000
285.0	11.88	69.179	85.500	0.000
286.0	11.85	69.230	85.800	0.000
287.0	11.82	69.281	86.100	0.000
288.0	11.79	69.332	86.400	0.000
289.0	11.75	69.382	86.700	0.000
290.0	11.72	69.432	87.000	0.000
291.0	11.69	69.482	87.300	0.000
292.0	11.66	69.532	87.600	0.000
293.0	11.63	69.582	87.900	0.000
294.0	11.60	69.632	88.200	0.000
295.0	11.56	69.681	88.500	0.000

296.0	11.53	69.730	88.800	0.000
297.0	11.50	69.779	89.100	0.000
298.0	11.47	69.828	89.400	0.000
299.0	11.44	69.876	89.700	0.000
300.0	11.41	69.925	90.000	0.000
301.0	11.38	69.973	90.300	0.000
302.0	11.35	70.021	90.600	0.000
303.0	11.32	70.069	90.900	0.000
304.0	11.29	70.117	91.200	0.000
305.0	11.26	70.165	91.500	0.000
306.0	11.23	70.212	91.800	0.000
307.0	11.20	70.259	92.100	0.000
308.0	11.18	70.306	92.400	0.000
309.0	11.15	70.353	92.700	0.000
310.0	11.12	70.400	93.000	0.000
311.0	11.09	70.446	93.300	0.000
312.0	11.06	70.493	93.600	0.000
313.0	11.03	70.539	93.900	0.000
314.0	11.01	70.585	94.200	0.000
315.0	10.98	70.631	94.500	0.000
316.0	10.95	70.677	94.800	0.000
317.0	10.92	70.723	95.100	0.000
318.0	10.90	70.768	95.400	0.000
319.0	10.87	70.813	95.700	0.000
320.0	10.84	70.858	96.000	0.000
321.0	10.81	70.903	96.300	0.000
322.0	10.79	70.948	96.600	0.000
323.0	10.76	70.993	96.900	0.000
324.0	10.73	71.037	97.200	0.000
325.0	10.71	71.082	97.500	0.000

326.0	10.68	71.126	97.800	0.000
327.0	10.66	71.170	98.100	0.000
328.0	10.63	71.214	98.400	0.000
329.0	10.60	71.258	98.700	0.000
330.0	10.58	71.301	99.000	0.000
331.0	10.55	71.345	99.300	0.000
332.0	10.53	71.388	99.600	0.000
333.0	10.50	71.431	99.900	0.000
334.0	10.48	71.474	100.200	0.000
335.0	10.45	71.517	100.500	0.000
336.0	10.43	71.560	100.800	0.000
337.0	10.40	71.603	101.100	0.000
338.0	10.38	71.645	101.400	0.000
339.0	10.35	71.687	101.700	0.000
340.0	10.33	71.730	102.000	0.000
341.0	10.30	71.772	102.300	0.000
342.0	10.28	71.814	102.600	0.000
343.0	10.26	71.855	102.900	0.000
344.0	10.23	71.897	103.200	0.000
345.0	10.21	71.938	103.500	0.000
346.0	10.19	71.980	103.800	0.000
347.0	10.16	72.021	104.100	0.000
348.0	10.14	72.062	104.400	0.000
349.0	10.12	72.103	104.700	0.000
350.0	10.09	72.144	105.000	0.000
351.0	10.07	72.185	105.300	0.000
352.0	10.05	72.225	105.600	0.000
353.0	10.02	72.266	105.900	0.000
354.0	10.00	72.306	106.200	0.000
355.0	9.98	72.346	106.500	0.000

356.0	9.96	72.386	106.800	0.000
357.0	9.93	72.426	107.100	0.000
358.0	9.91	72.500	107.400	0.000
359.0	9.89	72.543	107.700	0.000
360.0	9.87	72.587	108.000	0.000
361.0	9.85	72.630	108.300	0.000
362.0	9.83	72.673	108.600	0.000
363.0	9.81	72.716	108.900	0.000
364.0	9.79	72.759	109.200	0.000
365.0	9.77	72.802	109.500	0.000
366.0	9.74	72.844	109.800	0.000
367.0	9.72	72.887	110.100	0.000
368.0	9.70	72.930	110.400	0.000
369.0	9.68	72.972	110.700	0.000
370.0	9.66	73.014	111.000	0.000
371.0	9.64	73.057	111.300	0.000
372.0	9.62	73.099	111.600	0.000
373.0	9.60	73.141	111.900	0.000
374.0	9.58	73.183	112.200	0.000
375.0	9.56	73.225	112.500	0.000
376.0	9.54	73.266	112.800	0.000
377.0	9.52	73.308	113.100	0.000
378.0	9.50	73.349	113.400	0.000
379.0	9.48	73.391	113.700	0.000
380.0	9.46	73.432	114.000	0.000
381.0	9.44	73.474	114.300	0.000
382.0	9.42	73.515	114.600	0.000
383.0	9.40	73.556	114.900	0.000
384.0	9.38	73.597	115.200	0.000
385.0	9.36	73.638	115.500	0.000

386.0	9.35	73.679	115.800	0.000
387.0	9.33	73.719	116.100	0.000
388.0	9.31	73.760	116.400	0.000
389.0	9.29	73.801	116.700	0.000
390.0	9.27	73.841	117.000	0.000
391.0	9.25	73.881	117.300	0.000
392.0	9.23	73.922	117.600	0.000
393.0	9.21	73.962	117.900	0.000
394.0	9.20	74.002	118.200	0.000
395.0	9.18	74.042	118.500	0.000
396.0	9.16	74.082	118.800	0.000
397.0	9.14	74.122	119.100	0.000
398.0	9.12	74.162	119.400	0.000
399.0	9.10	74.201	119.700	0.000
400.0	9.09	74.241	120.000	0.000
401.0	9.07	74.280	120.300	0.000
402.0	9.05	74.320	120.600	0.000
403.0	9.03	74.359	120.900	0.000
404.0	9.02	74.398	121.200	0.000
405.0	9.00	74.438	121.500	0.000
406.0	8.98	74.477	121.800	0.000
407.0	8.96	74.516	122.100	0.000
408.0	8.95	74.555	122.400	0.000
409.0	8.93	74.594	122.700	0.000
410.0	8.91	74.632	123.000	0.000
411.0	8.90	74.671	123.300	0.000
412.0	8.88	74.710	123.600	0.000
413.0	8.86	74.748	123.900	0.000
414.0	8.84	74.787	124.200	0.000
415.0	8.83	74.825	124.500	0.000

416.0	8.81	74.863	124.800	0.000
417.0	8.79	74.901	125.100	0.000
418.0	8.78	74.940	125.400	0.000
419.0	8.76	74.978	125.700	0.000
420.0	8.74	75.016	126.000	0.000
421.0	8.73	75.054	126.300	0.000
422.0	8.71	75.091	126.600	0.000
423.0	8.70	75.129	126.900	0.000
424.0	8.68	75.167	127.200	0.000
425.0	8.66	75.204	127.500	0.000
426.0	8.65	75.242	127.800	0.000
427.0	8.63	75.279	128.100	0.000
428.0	8.62	75.317	128.400	0.000
429.0	8.60	75.354	128.700	0.000
430.0	8.58	75.391	129.000	0.000
431.0	8.57	75.429	129.300	0.000
432.0	8.55	75.466	129.600	0.000
433.0	8.54	75.503	129.900	0.000
434.0	8.52	75.540	130.200	0.000
435.0	8.51	75.576	130.500	0.000
436.0	8.49	75.613	130.800	0.000
437.0	8.48	75.650	131.100	0.000
438.0	8.46	75.687	131.400	0.000
439.0	8.45	75.723	131.700	0.000
440.0	8.43	75.760	132.000	0.000
441.0	8.41	75.796	132.300	0.000
442.0	8.40	75.833	132.600	0.000
443.0	8.38	75.869	132.900	0.000
444.0	8.37	75.905	133.200	0.000
445.0	8.36	75.941	133.500	0.000

446.0	8.34	75.977	133.800	0.000
447.0	8.33	76.013	134.100	0.000
448.0	8.31	76.049	134.400	0.000
449.0	8.30	76.085	134.700	0.000
450.0	8.28	76.121	135.000	0.000
451.0	8.27	76.157	135.300	0.000
452.0	8.25	76.193	135.600	0.000
453.0	8.24	76.228	135.900	0.000
454.0	8.22	76.264	136.200	0.000
455.0	8.21	76.299	136.500	0.000
456.0	8.20	76.335	136.800	0.000
457.0	8.18	76.370	137.100	0.000
458.0	8.17	76.405	137.400	0.000
459.0	8.15	76.440	137.700	0.000
460.0	8.14	76.476	138.000	0.000
461.0	8.13	76.511	138.300	0.000
462.0	8.11	76.546	138.600	0.000
463.0	8.10	76.581	138.900	0.000
464.0	8.08	76.616	139.200	0.000
465.0	8.07	76.650	139.500	0.000
466.0	8.06	76.685	139.800	0.000
467.0	8.04	76.720	140.100	0.000
468.0	8.03	76.755	140.400	0.000
469.0	8.02	76.789	140.700	0.000
470.0	8.00	76.824	141.000	0.000
471.0	7.99	76.858	141.300	0.000
472.0	7.98	76.893	141.600	0.000
473.0	7.96	76.927	141.900	0.000
474.0	7.95	76.961	142.200	0.000
475.0	7.94	76.995	142.500	0.000

476.0	7.92	77.030	142.800	0.000
477.0	7.91	77.064	143.100	0.000
478.0	7.90	77.098	143.400	0.000
479.0	7.88	77.132	143.700	0.000
480.0	7.87	77.166	144.000	0.000
481.0	7.86	77.199	144.300	0.000
482.0	7.85	77.233	144.600	0.000
483.0	7.83	77.267	144.900	0.000
484.0	7.82	77.301	145.200	0.000
485.0	7.81	77.334	145.500	0.000
486.0	7.79	77.368	145.800	0.000
487.0	7.78	77.401	146.100	0.000
488.0	7.77	77.435	146.400	0.000
489.0	7.76	77.468	146.700	0.000
490.0	7.74	77.501	147.000	0.000
491.0	7.73	77.535	147.300	0.000
492.0	7.72	77.568	147.600	0.000
493.0	7.71	77.601	147.900	0.000
494.0	7.69	77.634	148.200	0.000
495.0	7.68	77.667	148.500	0.000
496.0	7.67	77.700	148.800	0.000
497.0	7.66	77.733	149.100	0.000
498.0	7.65	77.766	149.400	0.000
499.0	7.63	77.799	149.700	0.000
500.0	7.62	77.831	150.000	0.000
501.0	7.61	77.864	150.300	0.000
502.0	7.60	77.897	150.600	0.000
503.0	7.59	77.929	150.900	0.000
504.0	7.57	77.962	151.200	0.000
505.0	7.56	77.994	151.500	0.000

506.0	7.55	78.027	151.800	0.000
507.0	7.54	78.059	152.100	0.000
508.0	7.53	78.091	152.400	0.000
509.0	7.51	78.124	152.700	0.000
510.0	7.50	78.156	153.000	0.000
511.0	7.49	78.188	153.300	0.000
512.0	7.48	78.220	153.600	0.000
513.0	7.47	78.252	153.900	0.000
514.0	7.46	78.284	154.200	0.000
515.0	7.45	78.316	154.500	0.000
516.0	7.43	78.348	154.800	0.000
517.0	7.42	78.380	155.100	0.000
518.0	7.41	78.412	155.400	0.000
519.0	7.40	78.443	155.700	0.000
520.0	7.39	78.475	156.000	0.000
521.0	7.38	78.507	156.300	0.000
522.0	7.37	78.538	156.600	0.000
523.0	7.36	78.570	156.900	0.000
524.0	7.34	78.601	157.200	0.000
525.0	7.33	78.633	157.500	0.000
526.0	7.32	78.664	157.800	0.000
527.0	7.31	78.695	158.100	0.000
528.0	7.30	78.727	158.400	0.000
529.0	7.29	78.758	158.700	0.000
530.0	7.28	78.789	159.000	0.000
531.0	7.27	78.820	159.300	0.000
532.0	7.26	78.851	159.600	0.000
533.0	7.25	78.882	159.900	0.000
534.0	7.24	78.913	160.200	0.000
535.0	7.22	78.944	160.500	0.000

536.0	7.21	78.975	160.800	0.000
537.0	7.20	79.006	161.100	0.000
538.0	7.19	79.037	161.400	0.000
539.0	7.18	79.067	161.700	0.000
540.0	7.17	79.098	162.000	0.000
541.0	7.16	79.129	162.300	0.000
542.0	7.15	79.159	162.600	0.000
543.0	7.14	79.190	162.900	0.000
544.0	7.13	79.220	163.200	0.000
545.0	7.12	79.251	163.500	0.000
546.0	7.11	79.281	163.800	0.000
547.0	7.10	79.311	164.100	0.000
548.0	7.09	79.342	164.400	0.000
549.0	7.08	79.372	164.700	0.000
550.0	7.07	79.402	165.000	0.000
551.0	7.06	79.432	165.300	0.000
552.0	7.05	79.462	165.600	0.000
553.0	7.04	79.493	165.900	0.000
554.0	7.03	79.523	166.200	0.000
555.0	7.02	79.552	166.500	0.000
556.0	7.01	79.582	166.800	0.000
557.0	7.00	79.612	167.100	0.000
558.0	6.99	79.642	167.400	0.000
559.0	6.98	79.672	167.700	0.000
560.0	6.97	79.702	168.000	0.000
561.0	6.96	79.731	168.300	0.000
562.0	6.95	79.761	168.600	0.000
563.0	6.94	79.791	168.900	0.000
564.0	6.93	79.820	169.200	0.000
565.0	6.92	79.850	169.500	0.000

566.0	6.91	79.879	169.800	0.000
567.0	6.90	79.909	170.100	0.000
568.0	6.89	79.938	170.400	0.000
569.0	6.88	79.967	170.700	0.000
570.0	6.87	79.997	171.000	0.000
571.0	6.86	80.026	171.300	0.000
572.0	6.85	80.055	171.600	0.000
573.0	6.84	80.084	171.900	0.000
574.0	6.83	80.113	172.200	0.000
575.0	6.82	80.143	172.500	0.000
576.0	6.81	80.172	172.800	0.000
577.0	6.81	80.201	173.100	0.000
578.0	6.80	80.230	173.400	0.000
579.0	6.79	80.258	173.700	0.000
580.0	6.78	80.287	174.000	0.000
581.0	6.77	80.316	174.300	0.000
582.0	6.76	80.345	174.600	0.000
583.0	6.75	80.374	174.900	0.000
584.0	6.74	80.402	175.200	0.000
585.0	6.73	80.431	175.500	0.000
586.0	6.72	80.460	175.800	0.000
587.0	6.71	80.488	176.100	0.000
588.0	6.70	80.517	176.400	0.000
589.0	6.70	80.545	176.700	0.000
590.0	6.69	80.574	177.000	0.000
591.0	6.68	80.602	177.300	0.000
592.0	6.67	80.631	177.600	0.000
593.0	6.66	80.659	177.900	0.000
594.0	6.65	80.687	178.200	0.000
595.0	6.64	80.715	178.500	0.000

596.0	6.63	80.744	178.800	0.000
597.0	6.62	80.772	179.100	0.000
598.0	6.62	80.800	179.400	0.000
599.0	6.61	80.828	179.700	0.000
600.0	6.60	80.856	180.000	0.000
601.0	6.59	80.884	180.300	0.000
602.0	6.58	80.912	180.600	0.000
603.0	6.57	80.940	180.900	0.000
604.0	6.56	80.968	181.200	0.000
605.0	6.55	80.996	181.500	0.000
606.0	6.55	81.024	181.800	0.000
607.0	6.54	81.051	182.100	0.000
608.0	6.53	81.079	182.400	0.000
609.0	6.52	81.107	182.700	0.000
610.0	6.51	81.134	183.000	0.000
611.0	6.50	81.162	183.300	0.000
612.0	6.50	81.190	183.600	0.000
613.0	6.49	81.217	183.900	0.000
614.0	6.48	81.245	184.200	0.000
615.0	6.47	81.272	184.500	0.000
616.0	6.46	81.300	184.800	0.000
617.0	6.45	81.327	185.100	0.000
618.0	6.45	81.354	185.400	0.000
619.0	6.44	81.382	185.700	0.000
620.0	6.43	81.409	186.000	0.000
621.0	6.42	81.436	186.300	0.000
622.0	6.41	81.463	186.600	0.000
623.0	6.40	81.491	186.900	0.000
624.0	6.40	81.518	187.200	0.000
625.0	6.39	81.545	187.500	0.000

626.0	6.38	81.572	187.800	0.000
627.0	6.37	81.599	188.100	0.000
628.0	6.36	81.626	188.400	0.000
629.0	6.36	81.653	188.700	0.000
630.0	6.35	81.680	189.000	0.000
631.0	6.34	81.707	189.300	0.000
632.0	6.33	81.733	189.600	0.000
633.0	6.32	81.760	189.900	0.000
634.0	6.32	81.787	190.200	0.000
635.0	6.31	81.814	190.500	0.000
636.0	6.30	81.840	190.800	0.000
637.0	6.29	81.867	191.100	0.000
638.0	6.28	81.894	191.400	0.000
639.0	6.28	81.920	191.700	0.000
640.0	6.27	81.947	192.000	0.000
641.0	6.26	81.973	192.300	0.000
642.0	6.25	82.000	192.600	0.000
643.0	6.25	82.026	192.900	0.000
644.0	6.24	82.053	193.200	0.000
645.0	6.23	82.079	193.500	0.000
646.0	6.22	82.105	193.800	0.000
647.0	6.22	82.132	194.100	0.000
648.0	6.21	82.158	194.400	0.000
649.0	6.20	82.184	194.700	0.000
650.0	6.19	82.211	195.000	0.000
651.0	6.18	82.237	195.300	0.000
652.0	6.18	82.263	195.600	0.000
653.0	6.17	82.289	195.900	0.000
654.0	6.16	82.315	196.200	0.000
655.0	6.15	82.341	196.500	0.000

656.0	6.15	82.367	196.800	0.000
657.0	6.14	82.393	197.100	0.000
658.0	6.13	82.419	197.400	0.000
659.0	6.13	82.445	197.700	0.000
660.0	6.12	82.471	198.000	0.000
661.0	6.11	82.497	198.300	0.000
662.0	6.10	82.522	198.600	0.000
663.0	6.10	82.548	198.900	0.000
664.0	6.09	82.574	199.200	0.000
665.0	6.08	82.600	199.500	0.000
666.0	6.07	82.625	199.800	0.000
667.0	6.07	82.651	200.100	0.000
668.0	6.06	82.676	200.400	0.000
669.0	6.05	82.702	200.700	0.000
670.0	6.05	82.728	201.000	0.000
671.0	6.04	82.753	201.300	0.000
672.0	6.03	82.779	201.600	0.000
673.0	6.02	82.804	201.900	0.000
674.0	6.02	82.829	202.200	0.000
675.0	6.01	82.855	202.500	0.000
676.0	6.00	82.880	202.800	0.000
677.0	6.00	82.906	203.100	0.000
678.0	5.99	82.931	203.400	0.000
679.0	5.98	82.956	203.700	0.000
680.0	5.97	82.981	204.000	0.000
681.0	5.97	83.006	204.300	0.000
682.0	5.96	83.032	204.600	0.000
683.0	5.95	83.057	204.900	0.000
684.0	5.95	83.082	205.200	0.000
685.0	5.94	83.107	205.500	0.000

686.0	5.93	83.132	205.800	0.000
687.0	5.93	83.157	206.100	0.000
688.0	5.92	83.182	206.400	0.000
689.0	5.91	83.207	206.700	0.000
690.0	5.91	83.232	207.000	0.000
691.0	5.90	83.257	207.300	0.000
692.0	5.89	83.282	207.600	0.000
693.0	5.89	83.306	207.900	0.000
694.0	5.88	83.331	208.200	0.000
695.0	5.87	83.356	208.500	0.000
696.0	5.87	83.381	208.800	0.000
697.0	5.86	83.405	209.100	0.000
698.0	5.85	83.430	209.400	0.000
699.0	5.85	83.455	209.700	0.000
700.0	5.84	83.479	210.000	0.000
701.0	5.83	83.504	210.300	0.000
702.0	5.83	83.528	210.600	0.000
703.0	5.82	83.553	210.900	0.000
704.0	5.81	83.577	211.200	0.000
705.0	5.81	83.602	211.500	0.000
706.0	5.80	83.626	211.800	0.000
707.0	5.79	83.651	212.100	0.000
708.0	5.79	83.675	212.400	0.000
709.0	5.78	83.699	212.700	0.000
710.0	5.77	83.724	213.000	0.000
711.0	5.77	83.748	213.300	0.000
712.0	5.76	83.772	213.600	0.000
713.0	5.75	83.796	213.900	0.000
714.0	5.75	83.821	214.200	0.000
715.0	5.74	83.845	214.500	0.000

716.0	5.73	83.869	214.800	0.000
717.0	5.73	83.893	215.100	0.000
718.0	5.72	83.917	215.400	0.000
719.0	5.72	83.941	215.700	0.000
720.0	5.71	83.965	216.000	0.000
721.0	5.70	83.989	216.300	0.000
722.0	5.70	84.013	216.600	0.000
723.0	5.69	84.037	216.900	0.000
724.0	5.68	84.061	217.200	0.000
725.0	5.68	84.085	217.500	0.000
726.0	5.67	84.109	217.800	0.000
727.0	5.67	84.133	218.100	0.000
728.0	5.66	84.156	218.400	0.000
729.0	5.65	84.180	218.700	0.000
730.0	5.65	84.204	219.000	0.000
731.0	5.64	84.228	219.300	0.000
732.0	5.64	84.251	219.600	0.000
733.0	5.63	84.275	219.900	0.000
734.0	5.62	84.299	220.200	0.000
735.0	5.62	84.322	220.500	0.000
736.0	5.61	84.346	220.800	0.000
737.0	5.60	84.369	221.100	0.000
738.0	5.60	84.393	221.400	0.000
739.0	5.59	84.417	221.700	0.000
740.0	5.59	84.440	222.000	0.000
741.0	5.58	84.463	222.300	0.000
742.0	5.57	84.487	222.600	0.000
743.0	5.57	84.510	222.900	0.000
744.0	5.56	84.534	223.200	0.000
745.0	5.56	84.557	223.500	0.000

746.0	5.55	84.580	223.800	0.000
747.0	5.55	84.604	224.100	0.000
748.0	5.54	84.627	224.400	0.000
749.0	5.53	84.650	224.700	0.000
750.0	5.53	84.673	225.000	0.000
751.0	5.52	84.696	225.300	0.000
752.0	5.52	84.720	225.600	0.000
753.0	5.51	84.743	225.900	0.000
754.0	5.50	84.766	226.200	0.000
755.0	5.50	84.789	226.500	0.000
756.0	5.49	84.812	226.800	0.000
757.0	5.49	84.835	227.100	0.000
758.0	5.48	84.858	227.400	0.000
759.0	5.48	84.881	227.700	0.000
760.0	5.47	84.904	228.000	0.000
761.0	5.46	84.927	228.300	0.000
762.0	5.46	84.950	228.600	0.000
763.0	5.45	84.973	228.900	0.000
764.0	5.45	84.995	229.200	0.000
765.0	5.44	85.018	229.500	0.000
766.0	5.44	85.041	229.800	0.000
767.0	5.43	85.064	230.100	0.000
768.0	5.42	85.087	230.400	0.000
769.0	5.42	85.109	230.700	0.000
770.0	5.41	85.132	231.000	0.000
771.0	5.41	85.155	231.300	0.000
772.0	5.40	85.177	231.600	0.000
773.0	5.40	85.200	231.900	0.000
774.0	5.39	85.223	232.200	0.000
775.0	5.39	85.245	232.500	0.000

776.0	5.38	85.268	232.800	0.000
777.0	5.37	85.290	233.100	0.000
778.0	5.37	85.313	233.400	0.000
779.0	5.36	85.335	233.700	0.000
780.0	5.36	85.358	234.000	0.000
781.0	5.35	85.380	234.300	0.000
782.0	5.35	85.402	234.600	0.000
783.0	5.34	85.425	234.900	0.000
784.0	5.34	85.447	235.200	0.000
785.0	5.33	85.470	235.500	0.000
786.0	5.33	85.492	235.800	0.000
787.0	5.32	85.514	236.100	0.000
788.0	5.31	85.536	236.400	0.000
789.0	5.31	85.559	236.700	0.000
790.0	5.30	85.581	237.000	0.000
791.0	5.30	85.603	237.300	0.000
792.0	5.29	85.625	237.600	0.000
793.0	5.29	85.647	237.900	0.000
794.0	5.28	85.669	238.200	0.000
795.0	5.28	85.691	238.500	0.000
796.0	5.27	85.714	238.800	0.000
797.0	5.27	85.736	239.100	0.000
798.0	5.26	85.758	239.400	0.000
799.0	5.26	85.780	239.700	0.000
800.0	5.25	85.802	240.000	0.000
801.0	5.25	85.824	240.300	0.000
802.0	5.24	85.845	240.600	0.000
803.0	5.24	85.867	240.900	0.000
804.0	5.23	85.889	241.200	0.000
805.0	5.23	85.911	241.500	0.000

806.0	5.22	85.933	241.800	0.000
807.0	5.21	85.955	242.100	0.000
808.0	5.21	85.977	242.400	0.000
809.0	5.20	85.998	242.700	0.000
810.0	5.20	86.020	243.000	0.000
811.0	5.19	86.042	243.300	0.000
812.0	5.19	86.063	243.600	0.000
813.0	5.18	86.085	243.900	0.000
814.0	5.18	86.107	244.200	0.000
815.0	5.17	86.128	244.500	0.000
816.0	5.17	86.150	244.800	0.000
817.0	5.16	86.172	245.100	0.000
818.0	5.16	86.193	245.400	0.000
819.0	5.15	86.215	245.700	0.000
820.0	5.15	86.236	246.000	0.000
821.0	5.14	86.258	246.300	0.000
822.0	5.14	86.279	246.600	0.000
823.0	5.13	86.301	246.900	0.000
824.0	5.13	86.322	247.200	0.000
825.0	5.12	86.343	247.500	0.000
826.0	5.12	86.365	247.800	0.000
827.0	5.11	86.386	248.100	0.000
828.0	5.11	86.408	248.400	0.000
829.0	5.10	86.429	248.700	0.000
830.0	5.10	86.450	249.000	0.000
831.0	5.09	86.471	249.300	0.000
832.0	5.09	86.493	249.600	0.000
833.0	5.08	86.514	249.900	0.000
834.0	5.08	86.535	250.200	0.000
835.0	5.08	86.556	250.500	0.000

836.0	5.07	86.577	250.800	0.000
837.0	5.07	86.599	251.100	0.000
838.0	5.06	86.620	251.400	0.000
839.0	5.06	86.641	251.700	0.000
840.0	5.05	86.662	252.000	0.000
841.0	5.05	86.683	252.300	0.000
842.0	5.04	86.704	252.600	0.000
843.0	5.04	86.725	252.900	0.000
844.0	5.03	86.746	253.200	0.000
845.0	5.03	86.767	253.500	0.000
846.0	5.02	86.788	253.800	0.000
847.0	5.02	86.809	254.100	0.000
848.0	5.01	86.830	254.400	0.000
849.0	5.01	86.851	254.700	0.000
850.0	5.00	86.872	255.000	0.000
851.0	5.00	86.892	255.300	0.000
852.0	4.99	86.913	255.600	0.000
853.0	4.99	86.934	255.900	0.000
854.0	4.99	86.955	256.200	0.000
855.0	4.98	86.976	256.500	0.000
856.0	4.98	86.996	256.800	0.000
857.0	4.97	87.017	257.100	0.000
858.0	4.97	87.038	257.400	0.000
859.0	4.96	87.058	257.700	0.000
860.0	4.96	87.079	258.000	0.000
861.0	4.95	87.100	258.300	0.000
862.0	4.95	87.120	258.600	0.000
863.0	4.94	87.141	258.900	0.000
864.0	4.94	87.162	259.200	0.000
865.0	4.93	87.182	259.500	0.000

866.0	4.93	87.203	259.800	0.000
867.0	4.93	87.223	260.100	0.000
868.0	4.92	87.244	260.400	0.000
869.0	4.92	87.264	260.700	0.000
870.0	4.91	87.285	261.000	0.000
871.0	4.91	87.305	261.300	0.000
872.0	4.90	87.325	261.600	0.000
873.0	4.90	87.346	261.900	0.000
874.0	4.89	87.366	262.200	0.000
875.0	4.89	87.387	262.500	0.000
876.0	4.89	87.407	262.800	0.000
877.0	4.88	87.427	263.100	0.000
878.0	4.88	87.448	263.400	0.000
879.0	4.87	87.468	263.700	0.000
880.0	4.87	87.488	264.000	0.000
881.0	4.86	87.508	264.300	0.000
882.0	4.86	87.529	264.600	0.000
883.0	4.85	87.549	264.900	0.000
884.0	4.85	87.569	265.200	0.000
885.0	4.85	87.589	265.500	0.000
886.0	4.84	87.609	265.800	0.000
887.0	4.84	87.629	266.100	0.000
888.0	4.83	87.650	266.400	0.000
889.0	4.83	87.670	266.700	0.000
890.0	4.82	87.690	267.000	0.000
891.0	4.82	87.710	267.300	0.000
892.0	4.82	87.730	267.600	0.000
893.0	4.81	87.750	267.900	0.000
894.0	4.81	87.770	268.200	0.000
895.0	4.80	87.790	268.500	0.000

896.0	4.80	87.810	268.800	0.000
897.0	4.79	87.830	269.100	0.000
898.0	4.79	87.850	269.400	0.000
899.0	4.79	87.869	269.700	0.000
900.0	4.78	87.889	270.000	0.000
901.0	4.78	87.909	270.300	0.000
902.0	4.77	87.929	270.600	0.000
903.0	4.77	87.949	270.900	0.000
904.0	4.76	87.969	271.200	0.000
905.0	4.76	87.988	271.500	0.000
906.0	4.76	88.008	271.800	0.000
907.0	4.75	88.028	272.100	0.000
908.0	4.75	88.048	272.400	0.000
909.0	4.74	88.067	272.700	0.000
910.0	4.74	88.087	273.000	0.000
911.0	4.74	88.107	273.300	0.000
912.0	4.73	88.126	273.600	0.000
913.0	4.73	88.146	273.900	0.000
914.0	4.72	88.166	274.200	0.000
915.0	4.72	88.185	274.500	0.000
916.0	4.71	88.205	274.800	0.000
917.0	4.71	88.224	275.100	0.000
918.0	4.71	88.244	275.400	0.000
919.0	4.70	88.264	275.700	0.000
920.0	4.70	88.283	276.000	0.000
921.0	4.69	88.303	276.300	0.000
922.0	4.69	88.322	276.600	0.000
923.0	4.69	88.341	276.900	0.000
924.0	4.68	88.361	277.200	0.000
925.0	4.68	88.380	277.500	0.000

926.0	4.67	88.400	277.800	0.000
927.0	4.67	88.419	278.100	0.000
928.0	4.67	88.438	278.400	0.000
929.0	4.66	88.458	278.700	0.000
930.0	4.66	88.477	279.000	0.000
931.0	4.65	88.496	279.300	0.000
932.0	4.65	88.516	279.600	0.000
933.0	4.65	88.535	279.900	0.000
934.0	4.64	88.554	280.200	0.000
935.0	4.64	88.574	280.500	0.000
936.0	4.63	88.593	280.800	0.000
937.0	4.63	88.612	281.100	0.000
938.0	4.63	88.631	281.400	0.000
939.0	4.62	88.650	281.700	0.000
940.0	4.62	88.670	282.000	0.000
941.0	4.61	88.689	282.300	0.000
942.0	4.61	88.708	282.600	0.000
943.0	4.61	88.727	282.900	0.000
944.0	4.60	88.746	283.200	0.000
945.0	4.60	88.765	283.500	0.000
946.0	4.59	88.784	283.800	0.000
947.0	4.59	88.803	284.100	0.000
948.0	4.59	88.822	284.400	0.000
949.0	4.58	88.841	284.700	0.000
950.0	4.58	88.860	285.000	0.000
951.0	4.58	88.879	285.300	0.000
952.0	4.57	88.898	285.600	0.000
953.0	4.57	88.917	285.900	0.000
954.0	4.56	88.936	286.200	0.000
955.0	4.56	88.955	286.500	0.000

956.0	4.56	88.974	286.800	0.000
957.0	4.55	88.993	287.100	0.000
958.0	4.55	89.011	287.400	0.000
959.0	4.55	89.030	287.700	0.000
960.0	4.54	89.049	288.000	0.000
961.0	4.54	89.068	288.300	0.000
962.0	4.53	89.087	288.600	0.000
963.0	4.53	89.105	288.900	0.000
964.0	4.53	89.124	289.200	0.000
965.0	4.52	89.143	289.500	0.000
966.0	4.52	89.162	289.800	0.000
967.0	4.52	89.180	290.100	0.000
968.0	4.51	89.199	290.400	0.000
969.0	4.51	89.218	290.700	0.000
970.0	4.50	89.236	291.000	0.000
971.0	4.50	89.255	291.300	0.000
972.0	4.50	89.274	291.600	0.000
973.0	4.49	89.292	291.900	0.000
974.0	4.49	89.311	292.200	0.000
975.0	4.49	89.329	292.500	0.000
976.0	4.48	89.348	292.800	0.000
977.0	4.48	89.367	293.100	0.000
978.0	4.47	89.385	293.400	0.000
979.0	4.47	89.404	293.700	0.000
980.0	4.47	89.422	294.000	0.000
981.0	4.46	89.441	294.300	0.000
982.0	4.46	89.459	294.600	0.000
983.0	4.46	89.477	294.900	0.000
984.0	4.45	89.496	295.200	0.000
985.0	4.45	89.514	295.500	0.000

986.0	4.45	89.533	295.800	0.000
987.0	4.44	89.551	296.100	0.000
988.0	4.44	89.569	296.400	0.000
989.0	4.43	89.588	296.700	0.000
990.0	4.43	89.606	297.000	0.000
991.0	4.43	89.624	297.300	0.000
992.0	4.42	89.643	297.600	0.000
993.0	4.42	89.661	297.900	0.000
994.0	4.42	89.679	298.200	0.000
995.0	4.41	89.698	298.500	0.000
996.0	4.41	89.716	298.800	0.000
997.0	4.41	89.734	299.100	0.000
998.0	4.40	89.752	299.400	0.000
999.0	4.40	89.770	299.700	0.000
1000.0	4.40	89.789	300.000	0.000
1001.0	4.39	89.807	300.300	0.000
1002.0	4.39	89.825	300.600	0.000
1003.0	4.39	89.843	300.900	0.000
1004.0	4.38	89.861	301.200	0.000
1005.0	4.38	89.879	301.500	0.000
1006.0	4.38	89.897	301.800	0.000
1007.0	4.37	89.915	302.100	0.000
1008.0	4.37	89.933	302.400	0.000
1009.0	4.36	89.951	302.700	0.000
1010.0	4.36	89.969	303.000	0.000
1011.0	4.36	89.987	303.300	0.000
1012.0	4.35	90.005	303.600	0.000
1013.0	4.35	90.023	303.900	0.000
1014.0	4.35	90.041	304.200	0.000
1015.0	4.34	90.059	304.500	0.000

1016.0	4.34	90.077	304.800	0.000
1017.0	4.34	90.095	305.100	0.000
1018.0	4.33	90.113	305.400	0.000
1019.0	4.33	90.131	305.700	0.000
1020.0	4.33	90.149	306.000	0.000
1021.0	4.32	90.167	306.300	0.000
1022.0	4.32	90.185	306.600	0.000
1023.0	4.32	90.202	306.900	0.000
1024.0	4.31	90.220	307.200	0.000
1025.0	4.31	90.238	307.500	0.000
1026.0	4.31	90.256	307.800	0.000
1027.0	4.30	90.274	308.100	0.000
1028.0	4.30	90.291	308.400	0.000
1029.0	4.30	90.309	308.700	0.000
1030.0	4.29	90.327	309.000	0.000
1031.0	4.29	90.345	309.300	0.000
1032.0	4.29	90.362	309.600	0.000
1033.0	4.28	90.380	309.900	0.000
1034.0	4.28	90.398	310.200	0.000
1035.0	4.28	90.415	310.500	0.000
1036.0	4.27	90.433	310.800	0.000
1037.0	4.27	90.450	311.100	0.000
1038.0	4.27	90.468	311.400	0.000
1039.0	4.26	90.486	311.700	0.000
1040.0	4.26	90.503	312.000	0.000
1041.0	4.26	90.521	312.300	0.000
1042.0	4.25	90.538	312.600	0.000
1043.0	4.25	90.556	312.900	0.000
1044.0	4.25	90.573	313.200	0.000
1045.0	4.24	90.591	313.500	0.000

1046.0	4.24	90.608	313.800	0.000
1047.0	4.24	90.626	314.100	0.000
1048.0	4.23	90.643	314.400	0.000
1049.0	4.23	90.661	314.700	0.000
1050.0	4.23	90.678	315.000	0.000
1051.0	4.22	90.696	315.300	0.000
1052.0	4.22	90.713	315.600	0.000
1053.0	4.22	90.731	315.900	0.000
1054.0	4.22	90.748	316.200	0.000
1055.0	4.21	90.765	316.500	0.000
1056.0	4.21	90.783	316.800	0.000
1057.0	4.21	90.800	317.100	0.000
1058.0	4.20	90.817	317.400	0.000
1059.0	4.20	90.835	317.700	0.000
1060.0	4.20	90.852	318.000	0.000
1061.0	4.19	90.869	318.300	0.000
1062.0	4.19	90.886	318.600	0.000
1063.0	4.19	90.904	318.900	0.000
1064.0	4.18	90.921	319.200	0.000
1065.0	4.18	90.938	319.500	0.000
1066.0	4.18	90.955	319.800	0.000
1067.0	4.17	90.973	320.100	0.000
1068.0	4.17	90.990	320.400	0.000
1069.0	4.17	91.007	320.700	0.000
1070.0	4.16	91.024	321.000	0.000
1071.0	4.16	91.041	321.300	0.000
1072.0	4.16	91.058	321.600	0.000
1073.0	4.16	91.076	321.900	0.000
1074.0	4.15	91.093	322.200	0.000
1075.0	4.15	91.110	322.500	0.000

1076.0	4.15	91.127	322.800	0.000
1077.0	4.14	91.144	323.100	0.000
1078.0	4.14	91.161	323.400	0.000
1079.0	4.14	91.178	323.700	0.000
1080.0	4.13	91.195	324.000	0.000
1081.0	4.13	91.212	324.300	0.000
1082.0	4.13	91.229	324.600	0.000
1083.0	4.12	91.246	324.900	0.000
1084.0	4.12	91.263	325.200	0.000
1085.0	4.12	91.280	325.500	0.000
1086.0	4.12	91.297	325.800	0.000
1087.0	4.11	91.314	326.100	0.000
1088.0	4.11	91.331	326.400	0.000
1089.0	4.11	91.348	326.700	0.000
1090.0	4.10	91.365	327.000	0.000
1091.0	4.10	91.381	327.300	0.000
1092.0	4.10	91.398	327.600	0.000
1093.0	4.09	91.415	327.900	0.000
1094.0	4.09	91.432	328.200	0.000
1095.0	4.09	91.449	328.500	0.000
1096.0	4.09	91.466	328.800	0.000
1097.0	4.08	91.482	329.100	0.000
1098.0	4.08	91.499	329.400	0.000
1099.0	4.08	91.516	329.700	0.000
1100.0	4.07	91.533	330.000	0.000
1101.0	4.07	91.550	330.300	0.000
1102.0	4.07	91.566	330.600	0.000
1103.0	4.07	91.583	330.900	0.000
1104.0	4.06	91.600	331.200	0.000
1105.0	4.06	91.616	331.500	0.000

1106.0	4.06	91.633	331.800	0.000
1107.0	4.05	91.650	332.100	0.000
1108.0	4.05	91.666	332.400	0.000
1109.0	4.05	91.683	332.700	0.000
1110.0	4.04	91.700	333.000	0.000
1111.0	4.04	91.716	333.300	0.000
1112.0	4.04	91.733	333.600	0.000
1113.0	4.04	91.749	333.900	0.000
1114.0	4.03	91.766	334.200	0.000
1115.0	4.03	91.783	334.500	0.000
1116.0	4.03	91.799	334.800	0.000
1117.0	4.02	91.816	335.100	0.000
1118.0	4.02	91.832	335.400	0.000
1119.0	4.02	91.849	335.700	0.000
1120.0	4.02	91.865	336.000	0.000
1121.0	4.01	91.882	336.300	0.000
1122.0	4.01	91.898	336.600	0.000
1123.0	4.01	91.915	336.900	0.000
1124.0	4.00	91.931	337.200	0.000
1125.0	4.00	91.948	337.500	0.000
1126.0	4.00	91.964	337.800	0.000
1127.0	4.00	91.981	338.100	0.000
1128.0	3.99	91.997	338.400	0.000
1129.0	3.99	92.013	338.700	0.000
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1131.0	3.98	92.046	339.300	0.000
1132.0	3.98	92.062	339.600	0.000
1133.0	3.98	92.079	339.900	0.000
1134.0	3.98	92.095	340.200	0.000
1135.0	3.97	92.111	340.500	0.000

1136.0	3.97	92.128	340.800	0.000
1137.0	3.97	92.144	341.100	0.000
1138.0	3.96	92.160	341.400	0.000
1139.0	3.96	92.177	341.700	0.000
1140.0	3.96	92.193	342.000	0.000
1141.0	3.96	92.209	342.300	0.000
1142.0	3.95	92.225	342.600	0.000
1143.0	3.95	92.242	342.900	0.000
1144.0	3.95	92.258	343.200	0.000
1145.0	3.95	92.274	343.500	0.000
1146.0	3.94	92.290	343.800	0.000
1147.0	3.94	92.306	344.100	0.000
1148.0	3.94	92.323	344.400	0.000
1149.0	3.93	92.339	344.700	0.000
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1160.0	3.90	92.516	348.000	0.000
1161.0	3.90	92.532	348.300	0.000
1162.0	3.90	92.548	348.600	0.000
1163.0	3.90	92.564	348.900	0.000
1164.0	3.89	92.580	349.200	0.000
1165.0	3.89	92.595	349.500	0.000

1166.0	3.89	92.611	349.800	0.000
1167.0	3.89	92.627	350.100	0.000
1168.0	3.88	92.643	350.400	0.000
1169.0	3.88	92.659	350.700	0.000
1170.0	3.88	92.675	351.000	0.000
1171.0	3.88	92.691	351.300	0.000
1172.0	3.87	92.707	351.600	0.000
1173.0	3.87	92.723	351.900	0.000
1174.0	3.87	92.739	352.200	0.000
1175.0	3.86	92.754	352.500	0.000
1176.0	3.86	92.770	352.800	0.000
1177.0	3.86	92.786	353.100	0.000
1178.0	3.86	92.802	353.400	0.000
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1181.0	3.85	92.849	354.300	0.000
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1183.0	3.84	92.881	354.900	0.000
1184.0	3.84	92.897	355.200	0.000
1185.0	3.84	92.912	355.500	0.000
1186.0	3.84	92.928	355.800	0.000
1187.0	3.83	92.944	356.100	0.000
1188.0	3.83	92.959	356.400	0.000
1189.0	3.83	92.975	356.700	0.000
1190.0	3.83	92.991	357.000	0.000
1191.0	3.82	93.007	357.300	0.000
1192.0	3.82	93.022	357.600	0.000
1193.0	3.82	93.038	357.900	0.000
1194.0	3.82	93.053	358.200	0.000
1195.0	3.81	93.069	358.500	0.000

1196.0	3.81	93.085	358.800	0.000
1197.0	3.81	93.100	359.100	0.000
1198.0	3.81	93.116	359.400	0.000
1199.0	3.80	93.131	359.700	0.000
1200.0	3.80	93.147	360.000	0.000
1201.0	3.80	93.163	360.300	0.000
1202.0	3.80	93.178	360.600	0.000
1203.0	3.79	93.194	360.900	0.000
1204.0	3.79	93.209	361.200	0.000
1205.0	3.79	93.225	361.500	0.000
1206.0	3.79	93.240	361.800	0.000
1207.0	3.78	93.256	362.100	0.000
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1231.0	3.72	93.624	369.300	0.000
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1235.0	3.71	93.685	370.500	0.000
1236.0	3.71	93.700	370.800	0.000
1237.0	3.71	93.715	371.100	0.000
1238.0	3.71	93.731	371.400	0.000
1239.0	3.70	93.746	371.700	0.000
1240.0	3.70	93.761	372.000	0.000
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1242.0	3.70	93.791	372.600	0.000
1243.0	3.69	93.806	372.900	0.000
1244.0	3.69	93.821	373.200	0.000
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1247.0	3.69	93.866	374.100	0.000
1248.0	3.68	93.882	374.400	0.000
1249.0	3.68	93.897	374.700	0.000
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1253.0	3.67	93.957	375.900	0.000
1254.0	3.67	93.972	376.200	0.000
1255.0	3.67	93.987	376.500	0.000

1256.0	3.66	94.002	376.800	0.000
1257.0	3.66	94.017	377.100	0.000
1258.0	3.66	94.032	377.400	0.000
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1261.0	3.65	94.076	378.300	0.000
1262.0	3.65	94.091	378.600	0.000
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1264.0	3.65	94.121	379.200	0.000
1265.0	3.64	94.136	379.500	0.000
1266.0	3.64	94.151	379.800	0.000
1267.0	3.64	94.166	380.100	0.000
1268.0	3.64	94.180	380.400	0.000
1269.0	3.63	94.195	380.700	0.000
1270.0	3.63	94.210	381.000	0.000
1271.0	3.63	94.225	381.300	0.000
1272.0	3.63	94.240	381.600	0.000
1273.0	3.63	94.255	381.900	0.000
1274.0	3.62	94.269	382.200	0.000
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1276.0	3.62	94.299	382.800	0.000
1277.0	3.62	94.314	383.100	0.000
1278.0	3.61	94.328	383.400	0.000
1279.0	3.61	94.343	383.700	0.000
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1281.0	3.61	94.373	384.300	0.000
1282.0	3.60	94.387	384.600	0.000
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1284.0	3.60	94.417	385.200	0.000
1285.0	3.60	94.431	385.500	0.000

1286.0	3.60	94.446	385.800	0.000
1287.0	3.59	94.461	386.100	0.000
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1289.0	3.59	94.490	386.700	0.000
1290.0	3.59	94.505	387.000	0.000
1291.0	3.58	94.519	387.300	0.000
1292.0	3.58	94.534	387.600	0.000
1293.0	3.58	94.549	387.900	0.000
1294.0	3.58	94.563	388.200	0.000
1295.0	3.58	94.578	388.500	0.000
1296.0	3.57	94.592	388.800	0.000
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1299.0	3.57	94.636	389.700	0.000
1300.0	3.56	94.651	390.000	0.000
1301.0	3.56	94.665	390.300	0.000
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1308.0	3.55	94.767	392.400	0.000
1309.0	3.55	94.781	392.700	0.000
1310.0	3.54	94.796	393.000	0.000
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1312.0	3.54	94.824	393.600	0.000
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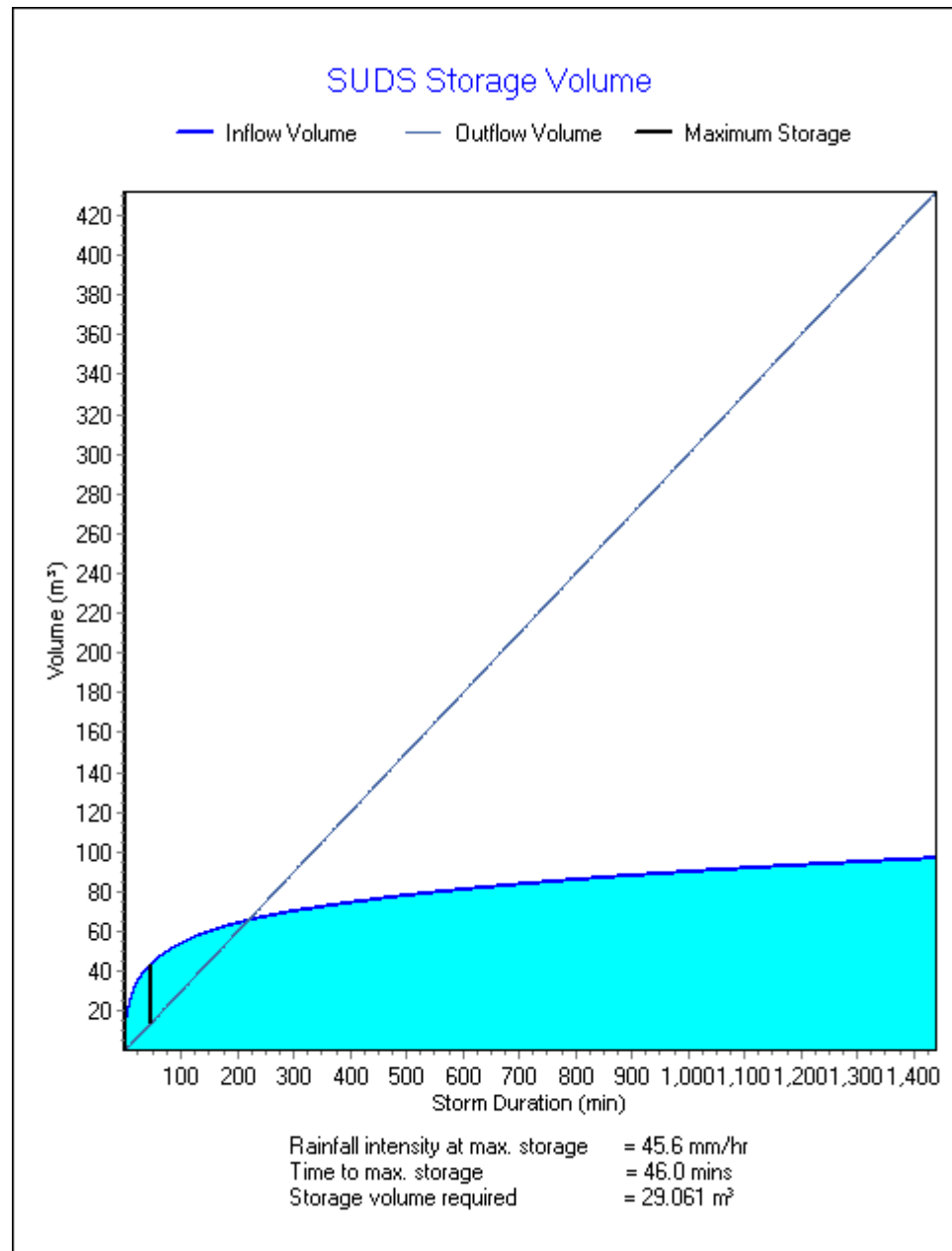
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1320.0	3.52	94.939	396.000	0.000
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1323.0	3.51	94.982	396.900	0.000
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1337.0	3.49	95.182	401.100	0.000
1338.0	3.48	95.196	401.400	0.000
1339.0	3.48	95.210	401.700	0.000
1340.0	3.48	95.225	402.000	0.000
1341.0	3.48	95.239	402.300	0.000
1342.0	3.48	95.253	402.600	0.000
1343.0	3.47	95.267	402.900	0.000
1344.0	3.47	95.281	403.200	0.000
1345.0	3.47	95.295	403.500	0.000

1346.0	3.47	95.309	403.800	0.000
1347.0	3.46	95.324	404.100	0.000
1348.0	3.46	95.338	404.400	0.000
1349.0	3.46	95.352	404.700	0.000
1350.0	3.46	95.366	405.000	0.000
1351.0	3.46	95.380	405.300	0.000
1352.0	3.45	95.394	405.600	0.000
1353.0	3.45	95.408	405.900	0.000
1354.0	3.45	95.422	406.200	0.000
1355.0	3.45	95.436	406.500	0.000
1356.0	3.45	95.450	406.800	0.000
1357.0	3.44	95.464	407.100	0.000
1358.0	3.44	95.478	407.400	0.000
1359.0	3.44	95.492	407.700	0.000
1360.0	3.44	95.506	408.000	0.000
1361.0	3.44	95.520	408.300	0.000
1362.0	3.43	95.534	408.600	0.000
1363.0	3.43	95.548	408.900	0.000
1364.0	3.43	95.562	409.200	0.000
1365.0	3.43	95.576	409.500	0.000
1366.0	3.43	95.590	409.800	0.000
1367.0	3.42	95.604	410.100	0.000
1368.0	3.42	95.618	410.400	0.000
1369.0	3.42	95.632	410.700	0.000
1370.0	3.42	95.646	411.000	0.000
1371.0	3.42	95.659	411.300	0.000
1372.0	3.41	95.673	411.600	0.000
1373.0	3.41	95.687	411.900	0.000
1374.0	3.41	95.701	412.200	0.000
1375.0	3.41	95.715	412.500	0.000

1376.0	3.41	95.729	412.800	0.000
1377.0	3.40	95.743	413.100	0.000
1378.0	3.40	95.757	413.400	0.000
1379.0	3.40	95.770	413.700	0.000
1380.0	3.40	95.784	414.000	0.000
1381.0	3.40	95.798	414.300	0.000
1382.0	3.39	95.812	414.600	0.000
1383.0	3.39	95.826	414.900	0.000
1384.0	3.39	95.839	415.200	0.000
1385.0	3.39	95.853	415.500	0.000
1386.0	3.39	95.867	415.800	0.000
1387.0	3.38	95.881	416.100	0.000
1388.0	3.38	95.894	416.400	0.000
1389.0	3.38	95.908	416.700	0.000
1390.0	3.38	95.922	417.000	0.000
1391.0	3.38	95.936	417.300	0.000
1392.0	3.37	95.949	417.600	0.000
1393.0	3.37	95.963	417.900	0.000
1394.0	3.37	95.977	418.200	0.000
1395.0	3.37	95.990	418.500	0.000
1396.0	3.37	96.004	418.800	0.000
1397.0	3.37	96.018	419.100	0.000
1398.0	3.36	96.031	419.400	0.000
1399.0	3.36	96.045	419.700	0.000
1400.0	3.36	96.059	420.000	0.000
1401.0	3.36	96.072	420.300	0.000
1402.0	3.36	96.086	420.600	0.000
1403.0	3.35	96.100	420.900	0.000
1404.0	3.35	96.113	421.200	0.000
1405.0	3.35	96.127	421.500	0.000

1406.0	3.35	96.141	421.800	0.000
1407.0	3.35	96.154	422.100	0.000
1408.0	3.34	96.168	422.400	0.000
1409.0	3.34	96.181	422.700	0.000
1410.0	3.34	96.195	423.000	0.000
1411.0	3.34	96.208	423.300	0.000
1412.0	3.34	96.222	423.600	0.000
1413.0	3.33	96.236	423.900	0.000
1414.0	3.33	96.249	424.200	0.000
1415.0	3.33	96.263	424.500	0.000
1416.0	3.33	96.276	424.800	0.000
1417.0	3.33	96.290	425.100	0.000
1418.0	3.33	96.303	425.400	0.000
1419.0	3.32	96.317	425.700	0.000
1420.0	3.32	96.330	426.000	0.000
1421.0	3.32	96.344	426.300	0.000
1422.0	3.32	96.357	426.600	0.000
1423.0	3.32	96.371	426.900	0.000
1424.0	3.31	96.384	427.200	0.000
1425.0	3.31	96.397	427.500	0.000
1426.0	3.31	96.411	427.800	0.000
1427.0	3.31	96.424	428.100	0.000
1428.0	3.31	96.438	428.400	0.000
1429.0	3.30	96.451	428.700	0.000
1430.0	3.30	96.465	429.000	0.000
1431.0	3.30	96.478	429.300	0.000
1432.0	3.30	96.491	429.600	0.000
1433.0	3.30	96.505	429.900	0.000
1434.0	3.30	96.518	430.200	0.000
1435.0	3.29	96.531	430.500	0.000

1436.0	3.29	96.545	430.800	0.000
1437.0	3.29	96.558	431.100	0.000
1438.0	3.29	96.572	431.400	0.000
1439.0	3.29	96.585	431.700	0.000
1440.0	3.28	96.598	432.000	0.000



APPENDIX G – DRAINAGE MAINTENANCE SCHEDULE

Drainage Maintenance Schedule

Schedule	Feature	Required Action	Frequency
Regular Maintenance	Rainwater Harvesting	Inspection of the Tank for Debris and Sediment Build-Up, Inlets/ Outlets/ Withdrawal Devices, Overflow Areas, Pumps and Filters.	Annually (and following poor performance)
		Cleaning of Tank, Inlets, Outlets, Gutters, Withdrawal Devices and Roof Drain Filters of Silts and other Debris.	Annually (and following poor performance).
	Green Roofs	Remove Debris and Litter to Prevent Clogging of Inlet Drains and Interference with Plant Growth.	Six Monthly and Annually or as required
		During Establishment (i.e. year one), Replace Dead Plants as required.	Monthly (but usually responsibility of manufacturer)
		Post Establishment, Replace Dead Plants as Required (where >5% of coverage).	Annually (In autumn)
		Remove Fallen Leaves and Debris from Deciduous Plant Foliage.	Six Monthly or as required
		Remove Nuisance and Invasive Vegetation, Including Weeds.	Six Monthly or as required
		Mow Grasses, Prune Shrubs and Manage Other Planting (if appropriate) as Required – Clippings Should be Removed and not Allowed to Accumulate.	Six Monthly or as required
	Infiltration Systems	Remove Litter, Debris and Trash.	Monthly
		Cut Grass – for Landscaped Areas and Access Routes.	Monthly (during growing season) or as required
		Cut Grass – Meadow Grass in and Around Basin.	Half yearly: spring (before nesting season) and autumn
		Manage Other Vegetation and Remove Nuisance Plants.	Monthly at start, then as required
	Filter Strips	Remove Litter and Debris.	Monthly (or as required)
		Cut Grass – To Retain Grass Height Within Specified Design Range.	Monthly (during growing season), or as required
		Manage Other Vegetation and Remove Nuisance Plants.	Monthly (at start, then as required)
	Filter Drains	Remove Litter (inc leaf litter) and Debris from Filter Drain Surface, Access Chambers and Pre-Treatment Devices.	Monthly (or as required)
		Inspect Filter Drain Surface, Inlet/ Outlet Pipework and Control Systems for Blockages, Clogging, Standing Water and Structural Damage.	Monthly

Drainage Maintenance Schedule

		Inspect Pre-Treatment Systems, Inlets and Perforated Pipework for Silt Accumulation, and Establish Appropriate Silt Removal Frequencies.	Six monthly
		Remove Sediment from Pre-Treatment Devices.	Six monthly, or as required
	Swales	Remove Litter and Debris	Monthly, or as required
		Cut Grass – to Retain Grass Height Within Specified Design Range.	Monthly (during growing season), or as required
		Manage Other Vegetation and Remove Nuisance Plants.	Monthly at start, then as required
		Inspect Inlets, Outlets and Overflows for Blockages, and Clear if Required.	Monthly
		Inspect Infiltration Surfaces for Ponding, Compaction, Silt Accumulation, Record Areas Where Water is Ponding for > 48 Hours.	Monthly, or when required
		Inspect Vegetation Coverage.	Monthly for 6 months, quarterly for 2 years, then half yearly
		Inspect Inlets and Facility Surface for Silt Accumulation, Establish Appropriate Silt Removal Frequencies.	Half yearly
	Bioretention	Remove Litter and Surface Debris and Weeds.	Quarterly (or more frequently for tidiness or aesthetic reasons)
		Replace any Plants, to Maintain Planting Density.	As required
		Remove Sediment, Litter and Debris Build-Up from Around Inlets or from Forebays.	Quarterly to biannually
	Trees	Remove Litter and Debris.	Monthly (or as required)
		Manage Other Vegetation and Remove Nuisance Plants.	Monthly (at start, then as required)
		Inspect Inlets and Outlets.	Inspect monthly
	Permeable Pavements	Brushing and Vacuuming (standard cosmetic sweep over whole surface).	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturers recommendations –

Drainage Maintenance Schedule

			pay attention to areas where water runs onto pervious surface from adjacent impermeable areas as this area is most likely to collect the most sediment
	Attenuation Storage Tanks	Inspect and Identify any Areas that are not Operating Correctly. If Required, take Remedial Action.	Monthly for 3 months, then Annually
		Remove Debris from the Catchment Surface (where it may cause risks to performance).	Monthly
		For Systems Where Rainfall Infiltrates into the Tank from Above, Check Surface of Filter for Blockage by Sediment, Algae or Other Matter; Remove and Replace Surface Infiltration Medium as Necessary.	Annually
	Detention Basins	Remove Litter and Debris.	Monthly
		Cut Grass – for Spillways and Access Routes.	Monthly (during growing season), or as required
		Cut Grass – Meadow Grass in and Around Basin.	Half yearly (spring – before nesting season, and autumn)
		Manage Other Vegetation and Remove Nuisance Plants.	Monthly (at start, then as required)
		Inspect Outlets, Inlets and Overflows for Blockages and Clear if Required.	Monthly
		Inspect Banksides, Structures, Pipework etc for Evidence of Physical Damage.	Monthly
		Inspect Inlets and Facility Surface for Silt Accumulation. Establish Appropriate Silt Removal Frequencies.	Monthly (for first year), then annually or as required
		Check any Penstocks and Other Mechanical Devices.	Annually
		Tidy All Dead Growth Before Start of Growing Season.	Annually
		Remove Sediment from Inlets, Outlets and Forebay.	Annually (or as required)
		Manage Wetland Plants in Outlet Pool – Where Provided.	Annually
	Ponds and Wetlands	Remove Litter and Debris.	Monthly (or as required)

Drainage Maintenance Schedule

		Cut the Grass – Public Areas.	Monthly (during growing season)
		Cut the Meadow Grass.	Half yearly (spring, before nesting season, and autumn)
		Inspect Marginal and Bankside Vegetation and Remove Nuisance Plants (for First 3 Years).	Monthly (at start then as required)
		Inspect Inlets, Outlets, Banksides, Structures, Pipework etc for Evidence of Blockage and/ or Physical Damage.	Monthly
		Inspect Water Body for Signs of Poor Water Quality.	Monthly (May – October)
		Inspect Silt Accumulation Rates un any Forebay and in Main Body of the Pond and Establish Appropriate Removal Frequencies; Undertake Contamination Testing Once Some Build-Up Has Occurred, to Inform Management and Disposal Options.	Half yearly
		Check Any Mechanical Devices, e.g. Penstocks.	Half yearly
		Hand Cut Submerged and Emergent Aquatic Plants (at minimum of 1.0m above pond base; include max 25% of pond surface).	Annually
		Remove 25% of Bank Vegetation from Waters Edge to a Minimum of 1m Above Water Level.	Annually
		Tidy All Dead Growth (scrub clearance) Before Start of Growing Season (note: tree maintenance is usually part of overall landscape management contract).	Annually
		Remove Sediment and Planting from one Quadrant of the Main Body of Ponds Without Sediment Forebays.	Every 1 -5 years, or as required
		Remove Sediment from any Forebay.	Annually

Schedule	Feature	Required Action	Frequency
Occasional Maintenance	Rainwater Harvesting	Cleaning and/or replacement of any Filters.	Three monthly (or as required)
	Infiltration Systems	Reseed Areas of Poor Vegetation Growth.	Annually or as required
		Prune and Trim Trees and Remove Cuttings.	As required

Drainage Maintenance Schedule

		Remove Sediment from Pre-Treatment System when 50% Full.	As required
	Filter Strips	Reseed Areas of Poor Vegetation Growth; Alter Plant Types to Better Suit Conditions, if required.	As required or if bare soil is exposed over
	Filter Drains	Remove or Control Tree Roots Where They are Encroaching the Sides of the Filter Drain, Using Recommended Methods (e.g. NJUG, 2007 or BS 3998:2010).	As required
		At Locations with High Pollution Loads, Remove Surface Geotextile and Replace, and Wash or Replace Overlaying Filter Medium.	Five yearly, or as required
		Clear Perforated Pipework of Blockages.	As required
	Bioretention	Infill any Holes or Scour in the Filter Medium, Improve Erosion Protection if Required.	As required
		Repair Minor Accumulations of Silt by Raking Away Surface Mulch, Scarifying Surface of Medium and Replacing Mulch.	As required
	Trees	Check Tree Health and Manage Tree Appropriately.	Annually
		Remove Silt Build-Up from Inlets and Surface and Replace Mulch as Necessary.	Annually, or as required
		Water	As required
	Permeable Pavements	Stabilise and Mow Contributing and Adjacent Areas.	As required
		Removal of Weeds or Management Using Glyphosate Applied Directly into the Weeds by an Application Rather Than Spraying.	As required – once per year on less frequently used pavements
	Detention Basins	Reseed Areas if Poor Vegetation Growth.	As required
		Prune and Trim any Trees and Remove Cuttings.	Every 2 years, or as required
		Remove Sediment from Inlets, Outlets, Forebay and Main Basin when Required.	Every 5 years, or as required (likely to be minimal requirements where effective upstream source control is provided).
	Ponds and Wetlands	Remove Sediment from the Main Body of Big Ponds when Pool Volume is Reduced by 20%.	With effective pre-treatment, this will only be required rarely, e.g. every 25-50 years

Drainage Maintenance Schedule

Schedule	Feature	Required Action	Frequency
Routine Maintenance	Proprietary Treatment System	Remove Litter and Debris and Inspect for Sediment, Oil and Grease Accumulation.	Six Monthly
		Change the Filter Media.	As recommended by manufacturer
		Remove Sediment, Oil, Grease and Floatables.	As necessary – indicated by system inspections or immediately following significant spill

Schedule	Feature	Required Action	Frequency
Remedial Actions	Rainwater Harvesting	Repair of Overflow Erosion Damage or Damage to Tank.	As required
		Pump Repairs.	As required
	Green Roofs	If Erosion Channels are Evident, These Should be Stabilised with Extra Soil Substrate Similar to the Original Material, and Sources of Erosion Damage Should be Identified and Controlled.	As required
		If Drain Inlet Has Settled, Cracked or Moved Investigate and Repair as Appropriate.	As required
	Infiltration Systems	Repair Erosion or other Damage by Reseeding or Re-Turfing.	As required
		Realign the Rip-Rap.	As required
		Repair or Rehabilitate Inlets, Outlets and Overflows.	As required
		Rehabilitate Infiltration Surface using Scarifying and Spiking Techniques if Performance Deteriorates.	As required.
		Relevel Uneven Surfaces and Reinstall Design Levels.	As required
	Proprietary Treatment System	Replace Malfunctioning Parts or Structures.	As required
	Filter Strips	Repair Erosion or Other Damage by Re-Turfing or Re-Seeding.	As required
		Relevels Uneven Surfaces and Reinstall Design Levels.	As required
		Scarify and Spike Topsoil to Improve Infiltration Performance, Break Up Silt	As required

Drainage Maintenance Schedule

		Deposits and Prevent Compaction of the Soil Surface.	
		Remove Build Up of Sediment on Upstream Gravel Trench, Flow Spreader or at Top of Filter Strip.	As required
		Remove and Dispose of Oils or Petrol Residues Using Safe Standard Practices.	As required
	Swales	Repair Erosion or Other Damage by Re-Turfing or Reseeding.	As required
		Relevel Uneven Surfaces and Reinstate Design Levels.	As required
		Scarify and Spike Topsoil Layer to Improve Infiltration Performance, Break Up Silt Deposits and Prevent Compaction of the Soil Surface.	As required
		Remove Build-Up of Sediment on Upstream Gravel Trench, Flow Spreader or at Top of Filter Strip.	As required
		Remove and Dispose of Oils or Petrol Residues Using Safe Standard Practices.	As required
	Bioretention	Remove and Replace Filter Medium and Vegetation Above.	As required but likely to be > 20 years
	Permeable Pavements	Remediate Any Landscaping which, Through Vegetation Maintenance or Soil Slip, has been Raised to within 50mm of the Level of the Paving.	As required
		Remedial Work to any Depressions, Rutting and Cracked or Broken Blocks Considered Detrimental to the Structural Performance or a Hazard to Users, and Replace Lost Jointing Material.	As required
		Rehabilitation of Surface and Upper Substructure by Remedial Sweeping.	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging)
	Attenuation Storage Tanks	Repair/ Rehabilitate Inlets, Outlets, Overflows and Vents.	As required
	Detention Basins	Repair Erosion or Other Damage by Reseeding or Re-Turfing.	As required
		Realignment of Rip-Rap.	As required
		Repair/ Rehabilitation of Inlets, Outlets and Overflows.	As required
		Relevel Uneven Surfaces and Reinstate Design Levels.	As required
		Repair Erosion or Other Damage.	As required

Drainage Maintenance Schedule

	Ponds and Wetlands	Replant, where necessary.	As required
		Aerate Pond When Signs of Eutrophication are Detected.	As required
		Realign Rip-Rap or Repair Other Damage.	As required
		Repair / Rehabilitate Inlets, Outlets and Overflows.	As required

Schedule	Feature	Required Action	Frequency
Regular Inspections	Green Roofs	Inspect all components including soil Substrate, Vegetation, Drains, Irrigation Systems, Membranes and Roof Structure for Proper Operation, Integrity of Waterproofing and Structural Stability.	Annually and after severe storms
		Inspect Soil Substrate for Evidence of Erosion Channels and Identify any Sediment Sources.	Annually and after severe storms
		Inspect Drain Inlets to Ensure Un-Restricted Run-off from the Drainage Layer to the Conveyance or Roof Drain System.	Annually and after severe storms
		Inspect Underside of Roof for Evidence of Leakage.	Annually and after severe storms
	Bioretention	Inspect Infiltration Surfaces for Silting and Ponding, Record De-Watering Time of the Facility and Assess Standing Water Levels in Underdrain (if appropriate) to Determine if Maintenance is Necessary.	Quarterly
		Check Operation of Underdrains by Inspection of Flows After Rain.	Annually
		Assess Plants for Disease Infection, Poor Growth, Invasive Species etc and Replace as Necessary.	Quarterly
		Inspect Inlets and Outlets for Blockages.	Quarterly

Schedule	Feature	Required Action	Frequency
Monitoring	Infiltration Systems	Inspect Inlets, Outlets and Overflows for Blockages and Clear if Required.	Monthly
		Inspect Banksides, Structures, Pipework, etc for Evidence of Physical Damage.	Monthly
		Inspect Inlets and Pre-Treatment Systems for Silt Accumulation; Establish Appropriate Silt Removal Frequencies.	Half Yearly
		Inspect Infiltration Surfaces for Compaction and Ponding.	Monthly

Drainage Maintenance Schedule

	Proprietary Treatment System	Inspect for Evidence of Poor Operation.	Six monthly
	Attenuation Storage Tanks	Survey Inside of Tank for Sediment Build-Up and Remove if Necessary.	Every 5 years or as required
		Inspect/ Check all Inlets, Outlets, Vents and Overflows to Ensure that they are in Good Condition and Operating as Designed.	Annually
	Filter Strips	Inspect Silt Accumulation Rates and Establish Appropriate Removal Frequencies.	Half yearly
	Permeable Pavements	Initial Inspection.	Monthly for three months after installation
		Inspect for Evidence of Poor Operation and/or Weed Growth – if required, take Remedial Action.	Three-monthly, 48 hours after large storms in first six months
		Inspect Silt Accumulation Rates and Establish Appropriate Brushing Frequencies.	Annually
		Monitor Inspection Chambers.	Annually