

✦ PROJECT DETAILS

Project Name:
6090

Designer: DAVID OMONITAN

Date: 12-06-2019

Run No.: 1 Option No.: A

RAINFALL INTENSITY

RETURN PERIOD

R

M5-60 (mm/h)

RAINFALL DATA

Duration	Intensity (mm/h)
5 mins	99.04
10 mins	77.85
15 mins	66.96
30 mins	44.44
1 hour	29.91
2 hours	19.00
4 hours	11.47
6 hours	8.42
10 hours	5.80
24 hours	3.07
48 hours	1.74

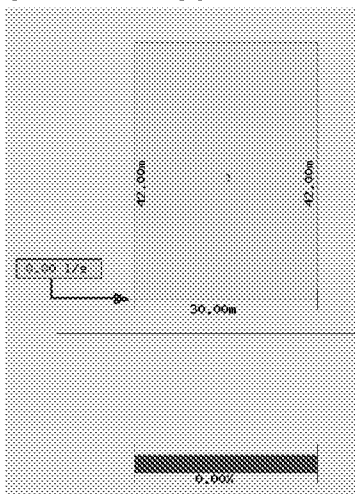
RAINFALL SPECIFIED

ALLOWANCE FOR CLIMATE CHANGE %

DESIGN RAINFALL INTENSITY (mm/h)

0.0275 l/s m²

CHANNEL LAYOUT



ACO Design

Hydraulic Calculation:



✦ PROJECT DETAILS

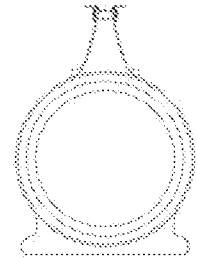
Project Name:
6090

Designer: DAVID OMONITAN

Date: 12-06-2019

✦ INPUT

Channel System: Qmax



	1	2	3	4	5	6	7	8	9	10
System	Qmax 350									
W – Width (mm)	350									
H – Invert (mm)	550									
Length (m)	30.00									

Kinematic Viscosity (m²/s) 1.14x10⁻⁶
Rainfall Intensity (l/s x m) 0.0275 (= 99.04mm/h)

Area Drained (m²) 1260.00
Impermeability 1.00
Channel Length (m) 30.00

✦ RESULTS

Outflow (l/s): 34.699
Max. Velocity (m/s): 0.95
Min. Freeboard (m): 0.129
Percentage Capacity (%): 66.53%
Max. Valid Length (m): 30.00 (Full Length)

Notes:

ACO Technologies plc
ACO Business Park
Hitchin Road, Shefford
Bedfordshire SG17 5TE

ACO Design

Hydraulic Calculation:

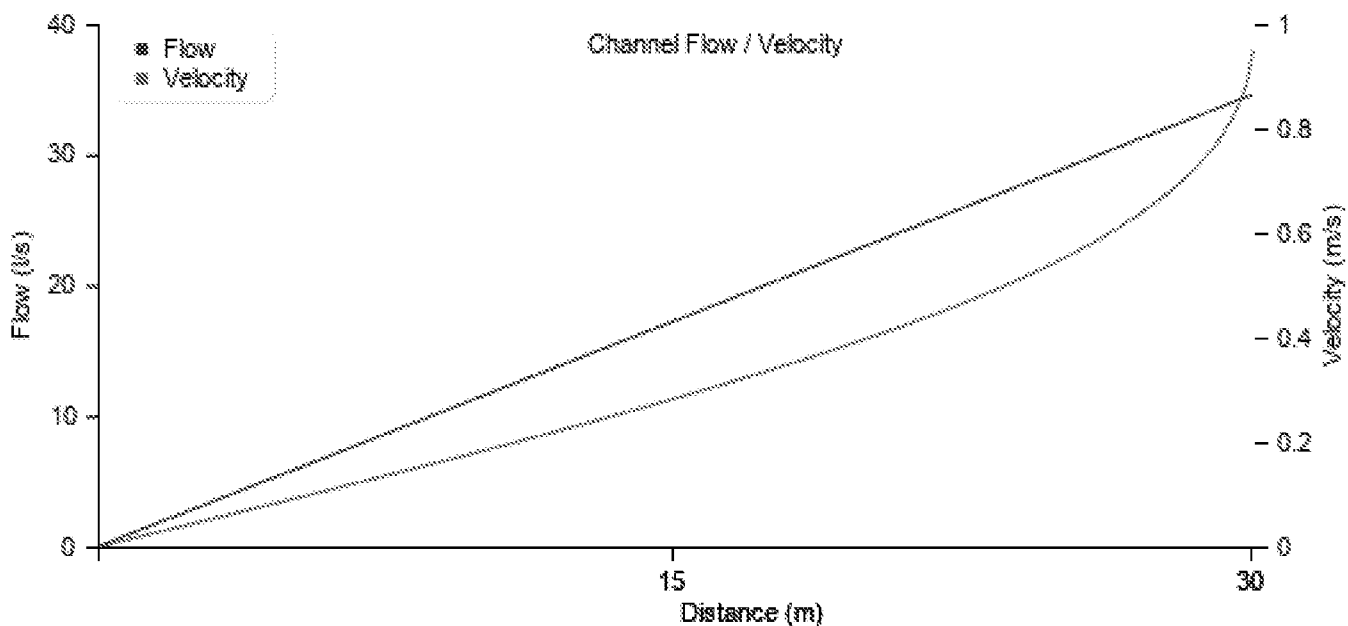
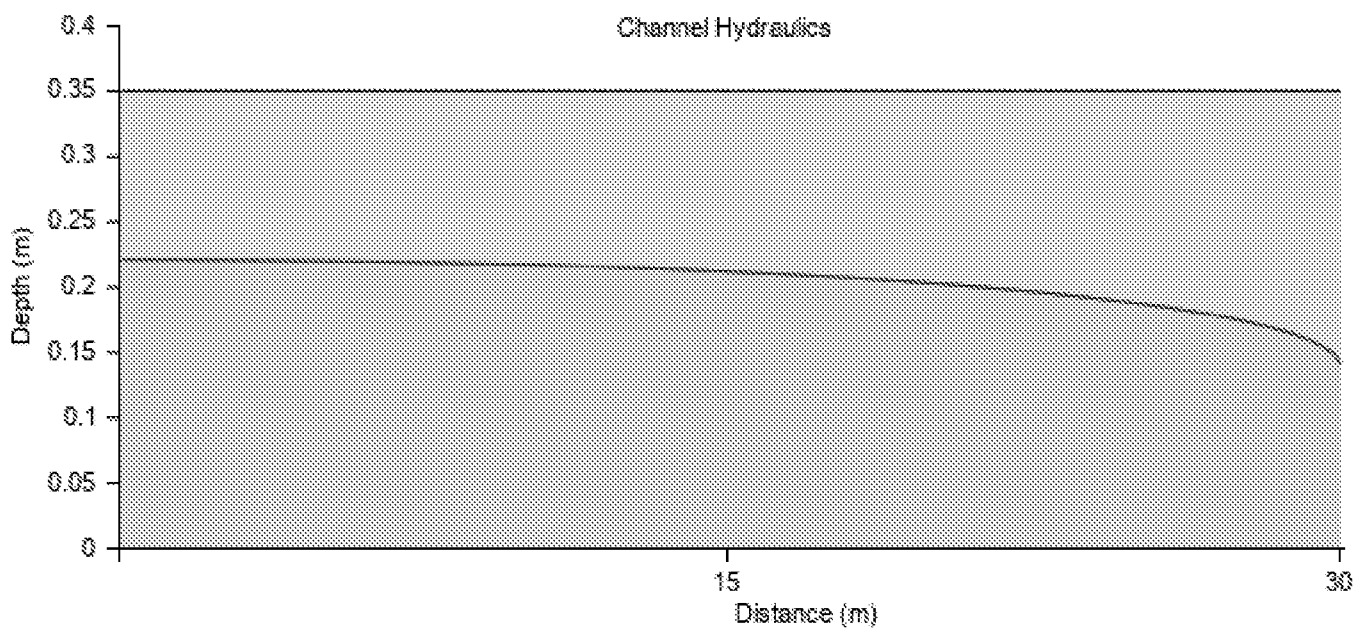


✦ PROJECT DETAILS

Project Name:
6090

Designer: DAVID OMONITAN

Date: 12-06-2019



ACO Technologies plc
ACO Business Park
Hitchin Road, Shefford
Bedfordshire SG17 5TE



✦ PROJECT DETAILS

Project Name:
6090

Designer: DAVID OMONITAN

Date: 12-06-2019

DISCLAIMER

This simplified estimate of storage volume determines the largest volume required using the rainfall intensities for a range of different rainfall durations, for the location and return period specified by the designer. The type of flow control device is not known, so the calculation assumes a constant rate of outfall from the storage volume for the whole duration of the storm. Please contact ACO Design Services for further advice and details of the ACO Q-Brake Vortex Flow Control and the ACO StormBrixx Cellular Storage Tank.

INPUT

CATCHMENT AREA (m²)

MAX PERMITTED
OUTFLOW l/s

RESULT

OUTPUT

R l/s STORAGE VOLUME OF
CURRENT CHANNEL m³

M5-60 mm/h RETURN PERIOD

CLIMATE CHANGE %

DURATION INTENSITY
mm/h REQUIRED
STORAGE
VOLUME (m³)

No Attenuation Calculation Performed.

✦ PROJECT DETAILS

Project Name:
6090

Designer: DAVID OMONITAN

Date: 12-06-2019

Run No.: 2 Option No.: A

RAINFALL INTENSITY

RETURN PERIOD

R

M5-60 (mm/h)

RAINFALL DATA

Duration	Intensity (mm/h)
5 mins	99.04
10 mins	77.85
15 mins	66.96
30 mins	44.44
1 hour	29.91
2 hours	19.00
4 hours	11.47
6 hours	8.42
10 hours	5.80
24 hours	3.07
48 hours	1.74

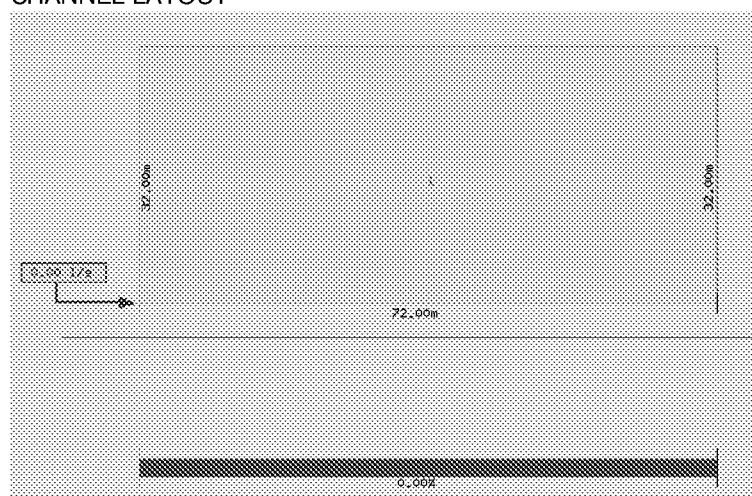
RAINFALL SPECIFIED

ALLOWANCE FOR CLIMATE CHANGE %

DESIGN RAINFALL INTENSITY (mm/h)

0.0275 l/s m²

CHANNEL LAYOUT



ACO Design

Hydraulic Calculation:



✦ PROJECT DETAILS

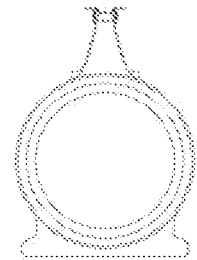
Project Name:
6090

Designer: DAVID OMONITAN

Date: 12-06-2019

✦ INPUT

Channel System: Qmax



	1	2	3	4	5	6	7	8	9	10
System	Qmax 350									
W – Width (mm)	350									
H – Invert (mm)	550									
Length (m)	72.00									

Kinematic Viscosity (m²/s) 1.14x10⁻⁶
Rainfall Intensity (l/s x m) 0.0275 (= 99.04mm/h)

Area Drained (m²) 2304.00
Impermeability 1.00
Channel Length (m) 72.00

✦ RESULTS

Outflow (l/s): 63.449
Max. Velocity (m/s): 1.17
Min. Freeboard (m): 0.022
Percentage Capacity (%): 97.43%
Max. Valid Length (m): 72.00 (Full Length)

Notes:

ACO Technologies plc
ACO Business Park
Hitchin Road, Shefford
Bedfordshire SG17 5TE

ACO Design

Hydraulic Calculation:

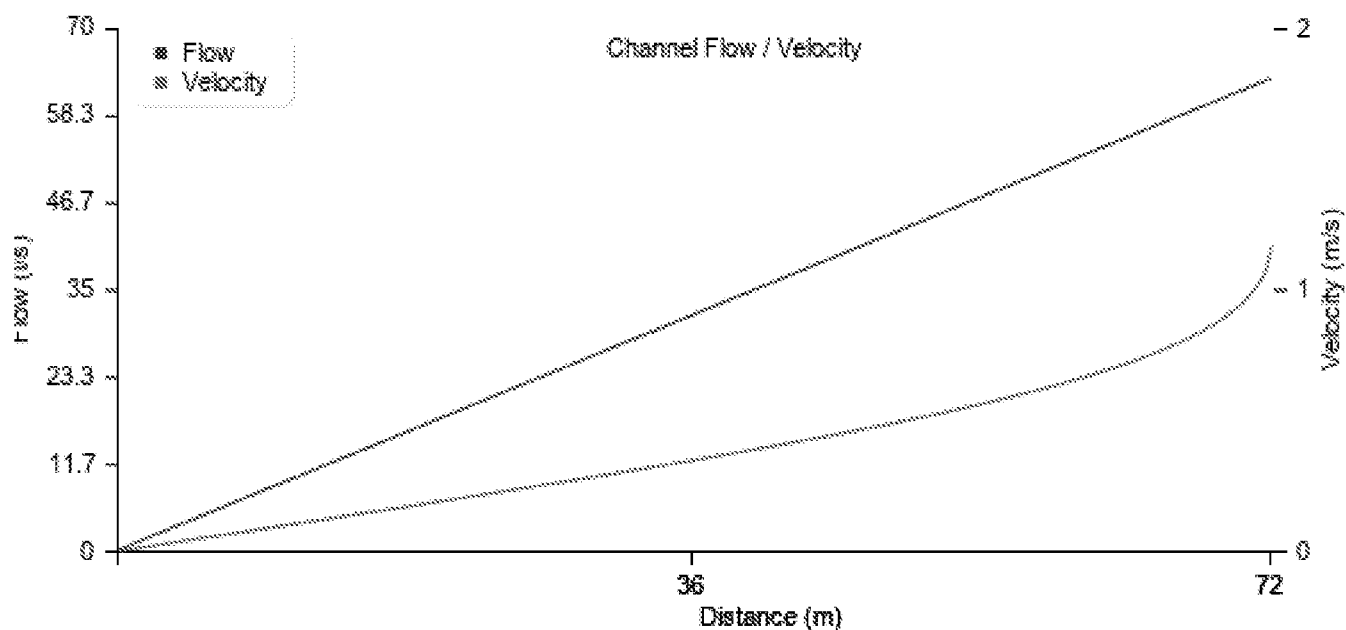
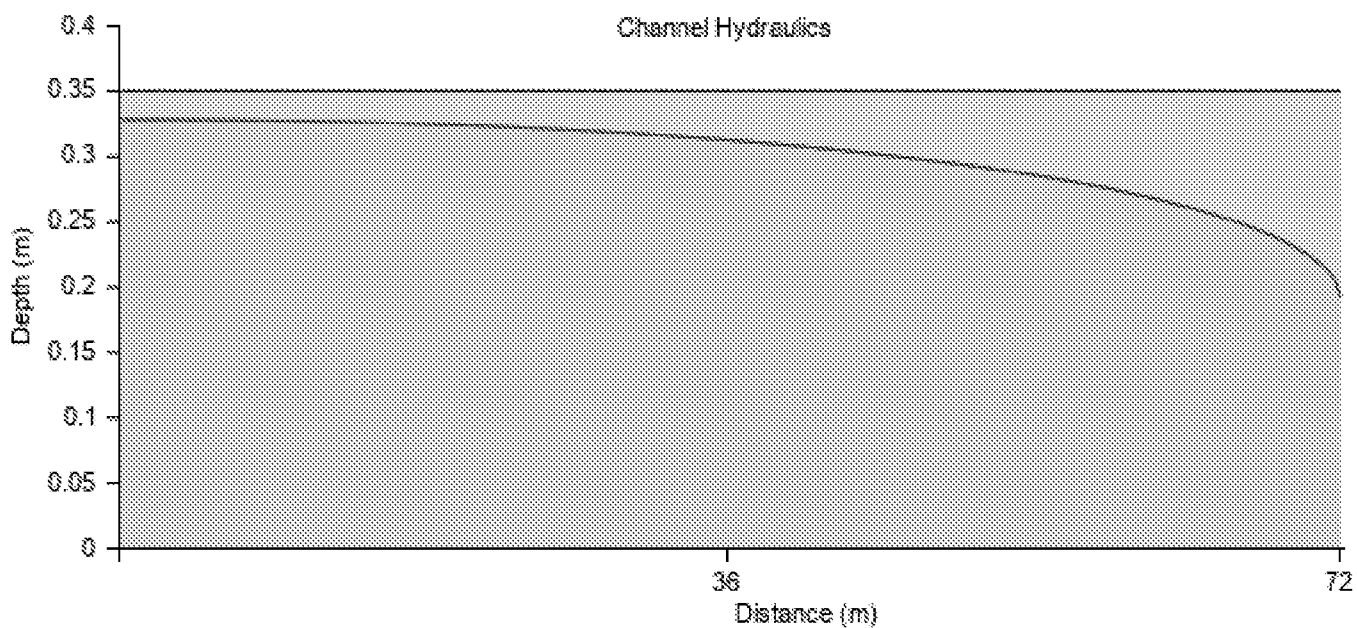


✦ PROJECT DETAILS

Project Name:
6090

Designer: DAVID OMONITAN

Date: 12-06-2019



ACO Technologies plc
ACO Business Park
Hitchin Road, Shefford
Bedfordshire SG17 5TE



✦ PROJECT DETAILS

Project Name:
6090

Designer: DAVID OMONITAN

Date: 12-06-2019

DISCLAIMER

This simplified estimate of storage volume determines the largest volume required using the rainfall intensities for a range of different rainfall durations, for the location and return period specified by the designer. The type of flow control device is not known, so the calculation assumes a constant rate of outfall from the storage volume for the whole duration of the storm. Please contact ACO Design Services for further advice and details of the ACO Q-Brake Vortex Flow Control and the ACO StormBrixx Cellular Storage Tank.

INPUT

CATCHMENT AREA (m²)

MAX PERMITTED
OUTFLOW l/s

RESULT

OUTPUT

R l/s STORAGE VOLUME OF
CURRENT CHANNEL m³

M5-60 mm/h RETURN PERIOD

CLIMATE CHANGE %

DURATION INTENSITY
mm/h REQUIRED
STORAGE
VOLUME (m³)

No Attenuation Calculation Performed.

✦ PROJECT DETAILS

Project Name:
6090

Designer: DAVID OMONITAN

Date: 12-06-2019

Run No.: 1 Option No.: C

RAINFALL INTENSITY

RETURN PERIOD

R

M5-60 (mm/h)

RAINFALL DATA

Duration	Intensity (mm/h)
5 mins	99.04
10 mins	77.85
15 mins	66.96
30 mins	44.44
1 hour	29.91
2 hours	19.00
4 hours	11.47
6 hours	8.42
10 hours	5.80
24 hours	3.07
48 hours	1.74

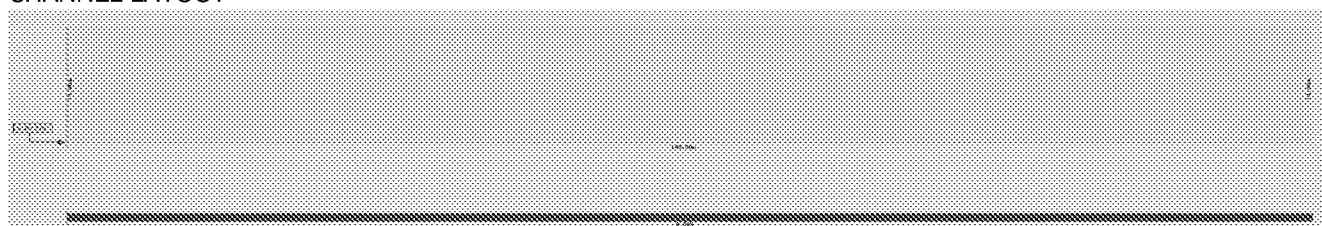
RAINFALL SPECIFIED

ALLOWANCE FOR CLIMATE CHANGE %

DESIGN RAINFALL INTENSITY (mm/h)

0.0275 l/s m²

CHANNEL LAYOUT



ACO Design

Hydraulic Calculation:



✦ PROJECT DETAILS

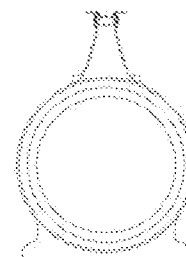
Project Name:
6090

Designer: DAVID OMONITAN

Date: 12-06-2019

✦ INPUT

Channel System: Qmax



	1	2	3	4	5	6	7	8	9	10
System	Qmax 150	Qmax 225	Qmax 350							
W – Width (mm)	150	225	350							
H – Invert (mm)	350	425	550							
Length (m)	1	34	114							

Kinematic Viscosity (m²/s) 1.14x10⁻⁶

Area Drained (m²) 2086.00

Rainfall Intensity (l/s x m) 0.0275 (= 99.04mm/h)

Impermeability 1.00

Channel Length (m) 149.00

✦ RESULTS

Outflow (l/s): 57.445
 Max. Velocity (m/s): 1.13
 Min. Freeboard (m): 0.000
 Percentage Capacity (%): 99.98%
 Max. Valid Length (m): 149.00 (Full Length)

Notes:

ACO Technologies plc
 ACO Business Park
 Hitchin Road, Shefford
 Bedfordshire SG17 5TE

ACO Design

Hydraulic Calculation:

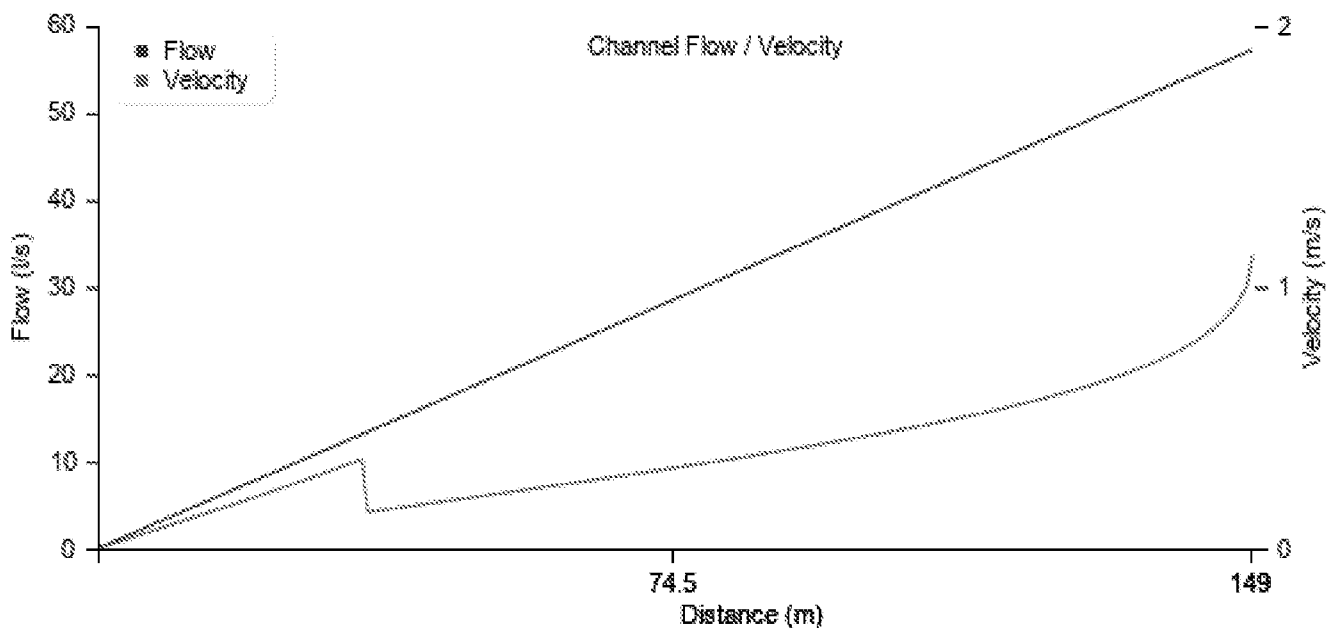
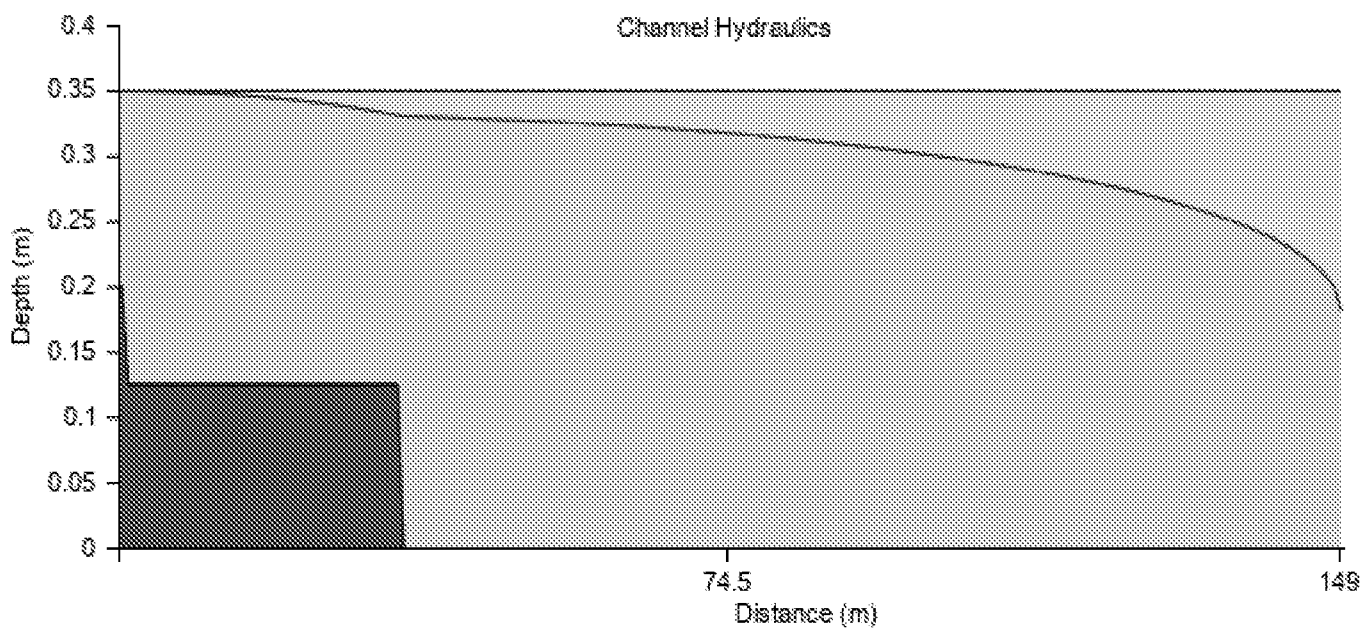


✦ PROJECT DETAILS

Project Name:
6090

Designer: DAVID OMONITAN

Date: 12-06-2019



ACO Technologies plc
ACO Business Park
Hitchin Road, Shefford
Bedfordshire SG17 5TE



✦ PROJECT DETAILS

Project Name:
6090

Designer: DAVID OMONITAN
Date: 12-06-2019

DISCLAIMER

This simplified estimate of storage volume determines the largest volume required using the rainfall intensities for a range of different rainfall durations, for the location and return period specified by the designer. The type of flow control device is not known, so the calculation assumes a constant rate of outfall from the storage volume for the whole duration of the storm. Please contact ACO Design Services for further advice and details of the ACO Q-Brake Vortex Flow Control and the ACO StormBrixx Cellular Storage Tank.

INPUT

CATCHMENT AREA (m²)

MAX PERMITTED
OUTFLOW l/s

RESULT

OUTPUT

R l/s STORAGE VOLUME OF
CURRENT CHANNEL m³

M5-60 mm/h RETURN PERIOD

CLIMATE CHANGE %

DURATION INTENSITY mm/h REQUIRED
STORAGE
VOLUME (m³)

No Attenuation Calculation Performed.

✦ PROJECT DETAILS

Project Name:
6090

Designer: DAVID OMONITAN

Date: 12-06-2019

Run No.: 1 Option No.: B

RAINFALL INTENSITY

RETURN PERIOD

R

M5-60 (mm/h)

RAINFALL DATA

Duration	Intensity (mm/h)
5 mins	99.04
10 mins	77.85
15 mins	66.96
30 mins	44.44
1 hour	29.91
2 hours	19.00
4 hours	11.47
6 hours	8.42
10 hours	5.80
24 hours	3.07
48 hours	1.74

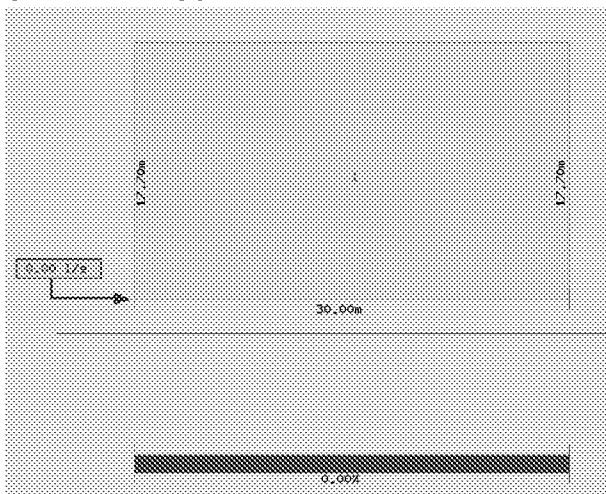
RAINFALL SPECIFIED

ALLOWANCE FOR CLIMATE CHANGE %

DESIGN RAINFALL INTENSITY (mm/h)

0.0275 l/s m²

CHANNEL LAYOUT



ACO Design

Hydraulic Calculation:



✦ PROJECT DETAILS

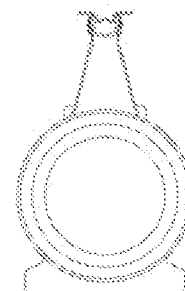
Project Name:
6090

Designer: DAVID OMONITAN

Date: 12-06-2019

✦ INPUT

Channel System: Qmax



	1	2	3	4	5	6	7	8	9	10
System	Qmax 225									
W – Width (mm)	225									
H – Invert (mm)	425									
Length (m)	30.00									

Kinematic Viscosity (m²/s) 1.14x10⁻⁶
 Rainfall Intensity (l/s x m) 0.0275 (= 99.04mm/h)

Area Drained (m²) 531.00
 Impermeability 1.00
 Channel Length (m) 30.00

✦ RESULTS

Outflow (l/s): 14.623
 Max. Velocity (m/s): 0.81
 Min. Freeboard (m): 0.058
 Percentage Capacity (%): 79.55%
 Max. Valid Length (m): 30.00 (Full Length)

Notes:

ACO Technologies plc
 ACO Business Park
 Hitchin Road, Shefford
 Bedfordshire SG17 5TE

ACO Design

Hydraulic Calculation:

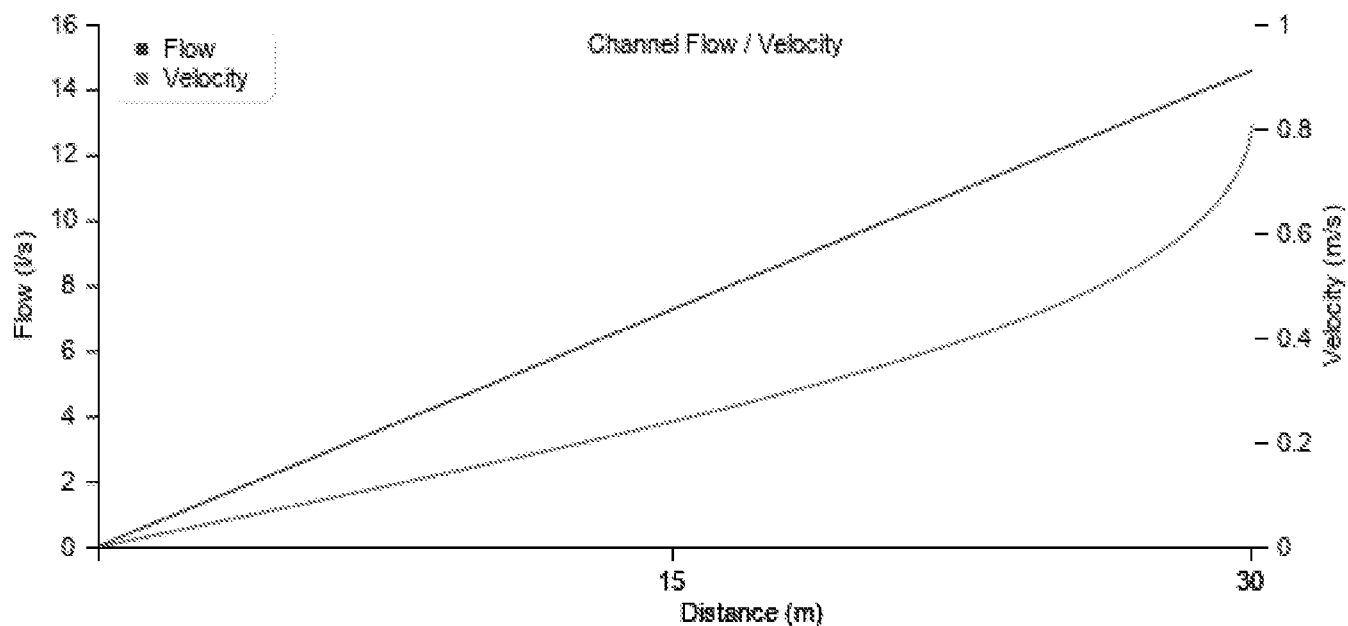
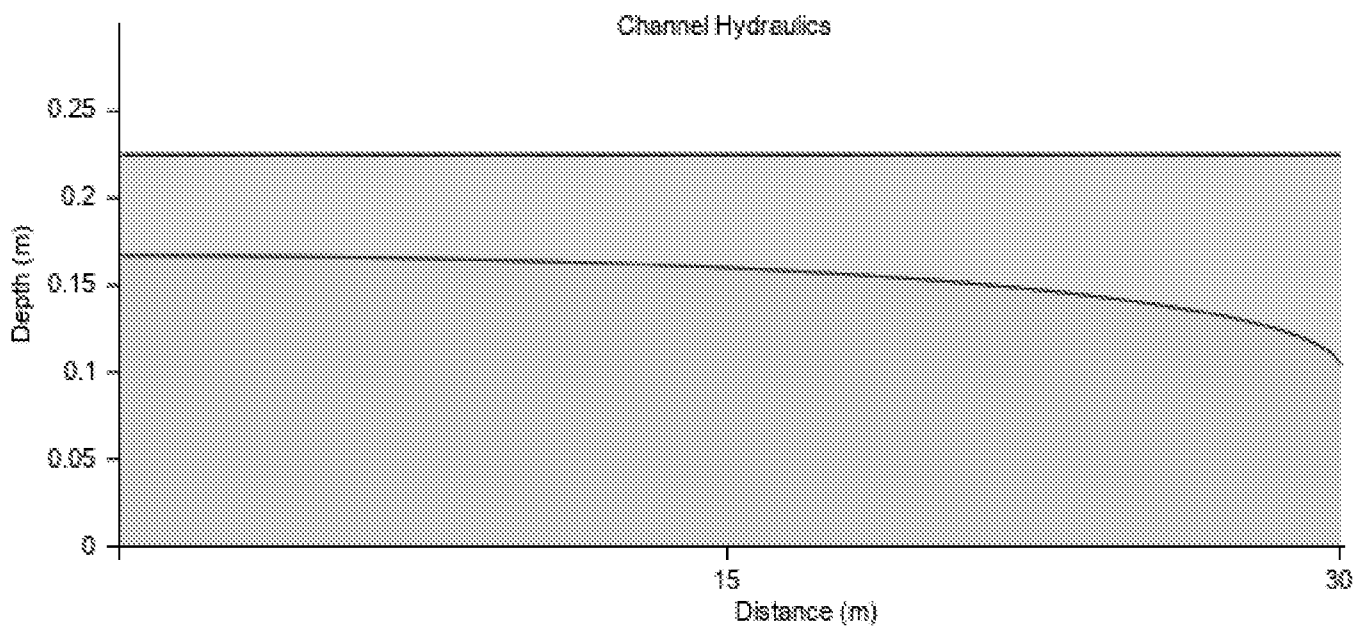


* PROJECT DETAILS

Project Name:
6090

Designer: DAVID OMONITAN

Date: 12-06-2019



ACO Technologies plc
ACO Business Park
Hitchin Road, Shefford
Bedfordshire SG17 5TE



✦ PROJECT DETAILS

Project Name:
6090

Designer: DAVID OMONITAN

Date: 12-06-2019

DISCLAIMER

This simplified estimate of storage volume determines the largest volume required using the rainfall intensities for a range of different rainfall durations, for the location and return period specified by the designer. The type of flow control device is not known, so the calculation assumes a constant rate of outfall from the storage volume for the whole duration of the storm. Please contact ACO Design Services for further advice and details of the ACO Q-Brake Vortex Flow Control and the ACO StormBrixx Cellular Storage Tank.

INPUT

CATCHMENT AREA (m²)

MAX PERMITTED
OUTFLOW l/s

RESULT

OUTPUT

R l/s STORAGE VOLUME OF
CURRENT CHANNEL m³

M5-60 mm/h RETURN PERIOD

CLIMATE CHANGE %

DURATION INTENSITY
mm/h REQUIRED
STORAGE
VOLUME (m³)

No Attenuation Calculation Performed.



✦ PROJECT DETAILS

Project Name:
6090

Designer: DAVID OMONITAN

Date: 12-06-2019

Run No.: 3 Option No.: A

RAINFALL INTENSITY

RETURN PERIOD

R

M5-60 (mm/h)

RAINFALL DATA

Duration	Intensity (mm/h)
5 mins	99.04
10 mins	77.85
15 mins	66.96
30 mins	44.44
1 hour	29.91
2 hours	19.00
4 hours	11.47
6 hours	8.42
10 hours	5.80
24 hours	3.07
48 hours	1.74

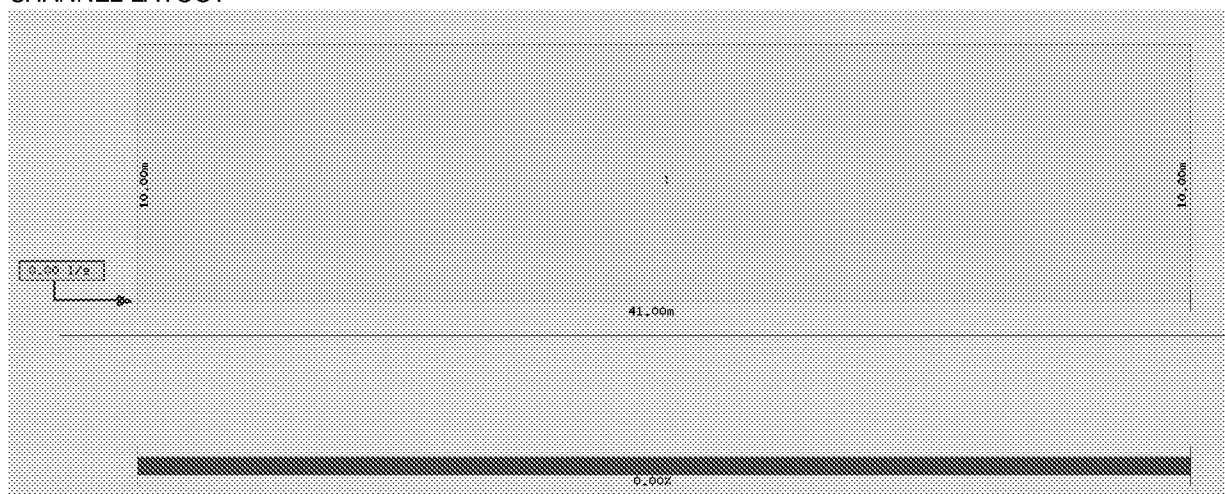
RAINFALL SPECIFIED

ALLOWANCE FOR CLIMATE CHANGE %

DESIGN RAINFALL INTENSITY (mm/h)

0.0275 l/s m²

CHANNEL LAYOUT



ACO Design

Hydraulic Calculation:



✦ PROJECT DETAILS

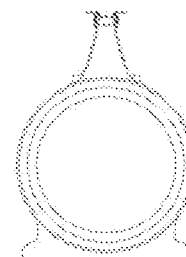
Project Name:
6090

Designer: DAVID OMONITAN

Date: 12-06-2019

✦ INPUT

Channel System: Qmax



	1	2	3	4	5	6	7	8	9	10
System	Qmax 350									
W – Width (mm)	350									
H – Invert (mm)	550									
Length (m)	41.00									

Kinematic Viscosity (m²/s) 1.14x10⁻⁶

Area Drained (m²) 410.00

Rainfall Intensity (l/s x m) 0.0275 (= 99.04mm/h)

Impermeability 1.00

Channel Length (m) 41.00

✦ RESULTS

Outflow (l/s): 11.291

Max. Velocity (m/s): 0.66

Min. Freeboard (m): 0.223

Percentage Capacity (%): 32.63%

Max. Valid Length (m): 41.00 (Full Length)

Notes:

ACO Technologies plc
ACO Business Park
Hitchin Road, Shefford
Bedfordshire SG17 5TE



ACO Design

Hydraulic Calculation:

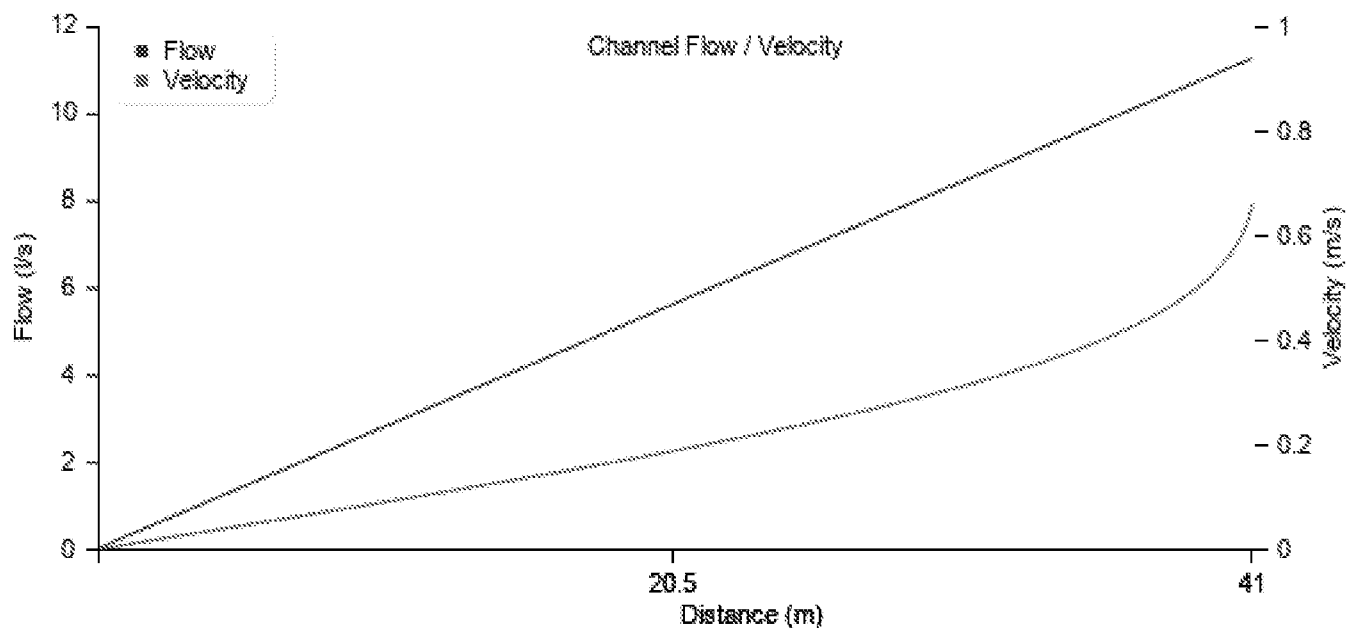
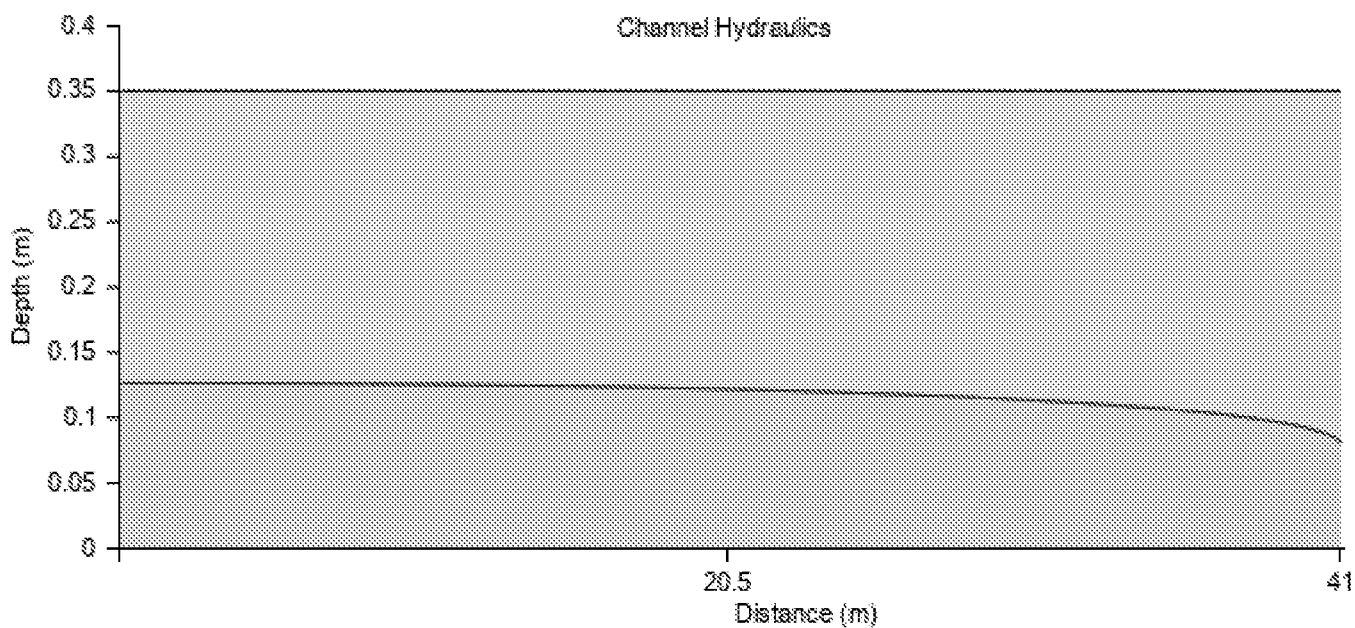


✦ PROJECT DETAILS

Project Name:
6090

Designer: DAVID OMONITAN

Date: 12-06-2019



ACO Technologies plc
ACO Business Park
Hitchin Road, Shefford
Bedfordshire SG17 5TE



✦ PROJECT DETAILS

Project Name:
6090

Designer: DAVID OMONITAN

Date: 12-06-2019

DISCLAIMER

This simplified estimate of storage volume determines the largest volume required using the rainfall intensities for a range of different rainfall durations, for the location and return period specified by the designer. The type of flow control device is not known, so the calculation assumes a constant rate of outfall from the storage volume for the whole duration of the storm. Please contact ACO Design Services for further advice and details of the ACO Q-Brake Vortex Flow Control and the ACO StormBrixx Cellular Storage Tank.

INPUT

CATCHMENT AREA (m²)

MAX PERMITTED
OUTFLOW l/s

RESULT

OUTPUT

R l/s STORAGE VOLUME OF
CURRENT CHANNEL m³

M5-60 mm/h RETURN PERIOD

CLIMATE CHANGE %

DURATION INTENSITY
mm/h REQUIRED
STORAGE
VOLUME (m³)

No Attenuation Calculation Performed.