



**CCTV SURVEYS**



**HIGH PRESSURE  
JETTING**



# Aworth

## SURVEY CONSULTANTS

**NORFOLK HOUSE  
NORFOLK WAY, UCKFIELD  
EAST SUSSEX, TN22 1EP**  
Telephone: 01825 768319  
Fax: 01825 768310  
[www.aworth.co.uk](http://www.aworth.co.uk)

# CCTV REPORT

|                 |   |
|-----------------|---|
| <b>CLIENT</b>   | CROUDACE STRATEGIC  |
| <b>LOCATION</b> | OFFICERS MEADOW<br>CHELMSFORD ROAD<br>SHENFIELD<br>BRENTWOOD<br>ESSEX |
| <b>DATE</b>     | 23/11/2020  |
| <b>REF</b>      | 071349 - 6109   |
| <b>DVD No</b>   | 001   |

# Drainage Report



Prepared For  
**CROUDACE STRATEGIC  
THE SPIRELLA BUILDING  
BRIDGE ROAD  
LETCHWORTH GARDEN CITY  
SG8 4ET**

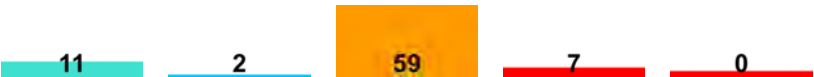
Site  
**OFFICERS MEADOW  
CHELMSFORD ROAD  
SHENFIELD  
ESSEX**



**AWORTH SURVEY CONSULTANTS**  
**Surveyor: Simon Gardiner**

**als@aworth.co.uk**  
**01825 768319**

Total Defects for Project



Total DRB Grades for Project



## 071349 Officers Meadow Chelmsford Road Shenfield - CCTV Survey Report : 23/11/20

Name : AWORD SURVEY CONSULTANTS  
 Contact : ANDREW PULLINGER  
 Location : NORFOLK HOUSE, NORFOLK WAY  
 Town : UCKFIELD  
 Region : EAST SUSSEX  
 Postcode : TN22 1EP  
 Email : als@aworth.co.uk  
 Contact Number : 01825 768319  
 Surveyor : Simon Gardiner  
 Valid Certification No : L1103

### Client Information

Name : CROUDACE STRATEGIC  
 Contact : MICHAEL JENNER  
 Location : THE SPIRELLA BUILDING  
 Town : BRIDGE ROAD  
 Region : LETCHWORTH GARDEN CITY  
 Postcode : SG8 4ET  
 Tel :  
 Mobile :  
 Email :  
 Fax :

### Site Information

Name : OFFICERS MEADOW  
 Contact :  
 Location : CHELMSFORD ROAD  
 Town : SHENFIELD  
 Region : ESSEX  
 Postcode :  
 Tel :  
 Mobile :  
 Email :  
 Fax :

Total Defects for Project



Total DRB Grades for Project



## Overview

|  |         |   |
|--|---------|---|
| <b>Section: 1</b><br><br>From: 4100A<br>To: 6200 | Grade C | DRB Grade: <b>C</b><br>Pipe Size: 225<br>Material: Vitrified Clay (i.e. all clayware)<br>Use: Foul          |
| <b>Section: 2</b><br><br>From: 4100A<br>To: 4100 | Grade B | DRB Grade: <b>B</b><br>Pipe Size: 225<br>Material: Vitrified Clay (i.e. all clayware)<br>Use: Foul          |
| <b>Section: 3</b><br><br>From: 4100<br>To: 4100A | Grade B | DRB Grade: <b>B</b><br>Pipe Size: 225<br>Material: Vitrified Clay (i.e. all clayware)<br>Use: Foul          |
| <b>Section: 4</b><br><br>From: 4100<br>To: 4000A | Grade C | DRB Grade: <b>C</b><br>Pipe Size: 225<br>Material: Vitrified Clay (i.e. all clayware)<br>Use: Foul          |
| <b>Section: 5</b><br><br>From: 4000A<br>To: 4000 | Grade B | DRB Grade: <b>B</b><br>Pipe Size: 225<br>Material: Vitrified Clay (i.e. all clayware)<br>Use: Foul          |
| <b>Section: 6</b><br><br>From: S1<br>To: S2      | Grade B | DRB Grade: <b>B</b><br>Pipe Size: 300<br>Material: Vitrified Clay (i.e. all clayware)<br>Use: Surface Water |
| <b>Section: 7</b><br><br>From: S1<br>To: INLET 1 | Grade B | DRB Grade: <b>B</b><br>Pipe Size: 300<br>Material: Vitrified Clay (i.e. all clayware)<br>Use: Surface Water |
| <b>Section: 8</b><br><br>From: S2<br>To: INLET 2 | Grade B | DRB Grade: <b>B</b><br>Pipe Size: 300<br>Material: Vitrified Clay (i.e. all clayware)<br>Use: Surface Water |

Total Defects for Project



Total DRB Grades for Project



|  |         |  |
|--|---------|--|
| <b>Section: 9</b><br><br><b>From: S3</b><br><b>To: S4</b>        | Grade B | <b>DRB Grade: B</b><br><b>Pipe Size: 750</b><br><b>Material: Concrete</b><br><b>Use: Surface Water</b> |
| <b>Section: 10</b><br><br><b>From: S3</b><br><b>To: S5</b>       | Grade B | <b>DRB Grade: B</b><br><b>Pipe Size: 750</b><br><b>Material: Concrete</b><br><b>Use: Surface Water</b> |
| <b>Section: 11</b><br><br><b>From: S6</b><br><b>To: S5</b>       | Grade A | <b>DRB Grade: A</b><br><b>Pipe Size: 750</b><br><b>Material: Concrete</b><br><b>Use: Surface Water</b> |
| <b>Section: 12</b><br><br><b>From: S6</b><br><b>To: INLET 3</b>  | Grade A | <b>DRB Grade: A</b><br><b>Pipe Size: 900</b><br><b>Material: Concrete</b><br><b>Use: Surface Water</b> |
| <b>Section: 13</b><br><br><b>From: S6</b><br><b>To: OUTLET 1</b> | Grade A | <b>DRB Grade: A</b><br><b>Pipe Size: 900</b><br><b>Material: Concrete</b><br><b>Use: Surface Water</b> |

Total Defects for Project



Total DRB Grades for Project



## Site: CHELMSFORD ROAD, SHENFIELD

## Section 1

|                    |                         |                   |               |                 |            |
|--------------------|-------------------------|-------------------|---------------|-----------------|------------|
| Client:            | Location (Street Name): | City/Town/Village | Cust Job Ref. | Surveyors Name: | Date:      |
| CROUDACE STRATEGIC | CHELMSFORD ROAD         | SHENFIELD         |               | Simon Gardiner  | 23/11/2020 |

|                        |       |                         |      |            |    |             |     |
|------------------------|-------|-------------------------|------|------------|----|-------------|-----|
| Start Node Ref:        | 4100A | Finish Node Ref:        | 6200 | Direction: | U  | Height/Dia: | 225 |
| Start Node Depth:      | 0.00  | Finish Node Depth:      | 0.00 | Use:       | F  | Shape:      | C   |
| Start Node Coordinate: |       | Finish Node Coordinate: |      | Material:  | VC | Cleaned     | N   |

| Drain Type | Lining Type | Lining Mat. | Year Const. | Weather | Flow Cont. | Length | Remarks |
|------------|-------------|-------------|-------------|---------|------------|--------|---------|
| A          |             |             |             | D       | N          | 46.17  |         |

| Position | Code | Description                           | CD | Pic  | Video Ref |        |
|----------|------|---------------------------------------|----|------|-----------|--------|
| 00.00m   | MH   | Start node type, manhole              |    |      |           | 0m     |
| 00.00m   | WL   | Water level 20%                       |    |      | 0:00:00   |        |
| 00.00m   | DEG  | S1 Attached deposits, grease 08-04 5% | S1 |      | 0:00:08   |        |
| 00.00m   | REM  | General remark                        |    |      | 0:05:53   |        |
| 01.00m   | WL   | Water level 30%                       |    |      | 0:00:21   |        |
| 11.60m   | JN   | Junction 02 : 150mm Diameter          |    | 0_4  | 0:00:57   |        |
| 22.10m   | RJ   | Roots at joint                        |    |      | 0:02:26   |        |
| 23.60m   | CC   | Crack, circumferential 08-04          |    |      | 0:02:34   |        |
| 24.70m   | JN   | Junction 02 : 150mm Diameter          |    | 0_7  | 0:02:43   |        |
| 25.00m   | WL   | Water level 20%                       |    |      | 0:02:56   |        |
| 30.40m   | RJ   | Roots at joint                        |    |      | 0:03:09   |        |
| 35.00m   | WL   | Water level 30%                       |    |      | 0:04:29   |        |
| 39.40m   | CC   | Crack, circumferential 08-11          |    |      | 0:04:34   |        |
| 42.20m   | REM  | General remark                        |    | 0_12 | 0:04:51   |        |
| 42.50m   | WL   | Water level 20%                       |    |      | 0:05:09   |        |
| 43.00m   | WL   | Water level 10%                       |    |      | 0:05:11   |        |
| 45.00m   | FL   | S2 Fracture longitudinal 03           | S2 |      | 0:05:21   |        |
| 45.00m   | FL   | S3 Fracture longitudinal 09           | S3 |      | 0:05:21   |        |
| 45.00m   | FL   | S4 Fracture longitudinal 12           | S4 |      | 0:05:21   |        |
| 45.00m   | D    | Deformed drain/sewer 10%              |    | 0_18 | 0:05:21   |        |
| 46.00m   | D    | Deformed drain/sewer 20%              |    | 0_19 | 0:05:29   |        |
| 46.00m   | DEG  | Attached deposits, grease 12 0%       |    |      | 0:05:29   |        |
| 46.17m   | FL   | F4 Fracture longitudinal 12           | F4 |      | 0:05:21   |        |
| 46.17m   | FL   | F3 Fracture longitudinal 09           | F3 |      | 0:05:21   |        |
| 46.17m   | FL   | F2 Fracture longitudinal 03           | F2 |      | 0:05:21   | 46.17m |



Total Defects for section

DRB Grade for Section



| Position | Code | Description                           | CD | Pic | Video Ref |   |
|----------|------|---------------------------------------|----|-----|-----------|---|
| 46.17m   | DEG  | F1 Attached deposits, grease 08-04 5% | F1 |     | 0:00:08   |  |
| 46.17m   | B    | Broken pipe 12-12                     |    |     | 0:05:53   |  |
| 46.17m   | SA   | Survey abandoned                      |    |     |           |  |



Total Defects for section


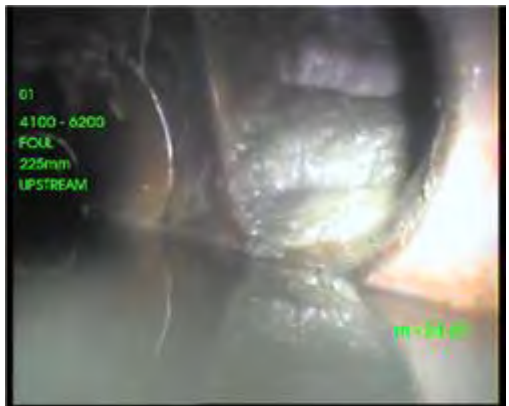
DRB Grade for Section





## Descriptive Report with Remarks and Observation Images

## Section 1


| Pos    | Video Ref | Code   | Description  | Image   |
|--------|-----------|--------|--|---|
| 00.00m |           | MH     | Start node type, manhole 4100A   |   |
| 00.00m | 0:00:00   | WL     | Water level: 20% Height/Diameter   |   |
| 00.00m | 0:00:08   | S1 DEG | Attached deposits, grease 0m - 46.17m from 08 o'clock to 04 o'clock: 5% Cross sectional area loss - Severity 3 |   |
| 00.00m | 0:05:53   | REM    | General remark<br>DVD READS 4100 - 6200 NOT 4100A - 6200   |   |
| 01.00m | 0:00:21   | WL     | Water level: 30% Height/Diameter   |   |
| 11.60m | 0:00:57   | JN     | Junction at 02 o'clock: 150mm Diameter<br>BLANKED OFF  | Image Provided - Ref: 0_4<br>  |
| 22.10m | 0:02:26   | RJ     | Roots at joint - Severity 3<br>FINE ROOTS  |   |
| 23.60m | 0:02:34   | CC     | Crack, circumferential from 08 o'clock to 04 o'clock - Severity 1  |   |
| 24.70m | 0:02:43   | JN     | Junction at 02 o'clock: 150mm Diameter<br>BLANKED OFF  | Image Provided - Ref: 0_7<br> |

Total Defects for section

DRB Grade for Section





| Pos    | Video Ref | Code  | Description   | Image   |
|--------|-----------|-------|---|---|
| 25.00m | 0:02:56   | WL    | Water level: 20% Height/Diameter                                  |   |
| 30.40m | 0:03:09   | RJ    | Roots at joint - Severity 3<br>FINE ROOTS AT JOINT                |   |
| 35.00m | 0:04:29   | WL    | Water level: 30% Height/Diameter                                  |   |
| 39.40m | 0:04:34   | CC    | Crack, circumferential from 08 o'clock to 11 o'clock - Severity 1 |   |
| 42.20m | 0:04:51   | REM   | General remark<br>BURIED MANHOLE 4100B                            | Image Provided - Ref: 0_12<br> |
| 42.50m | 0:05:09   | WL    | Water level: 20% Height/Diameter                                  |   |
| 43.00m | 0:05:11   | WL    | Water level: 10% Height/Diameter                                  |   |
| 45.00m | 0:05:21   | S2 FL | Fracture longitudinal 45m - 46.17m at 03 o'clock - Severity 3     |   |
| 45.00m | 0:05:21   | S3 FL | Fracture longitudinal 45m - 46.17m at 09 o'clock - Severity 3     |   |
| 45.00m | 0:05:21   | S4 FL | Fracture longitudinal 45m - 46.17m at 12 o'clock - Severity 3     |   |

Total Defects for section

DRB Grade for Section



| Pos    | Video Ref | Code   | Description   | Image   |
|--------|-----------|--------|---|---|
| 45.00m | 0:05:21   | D      | Deformed drain/sewer: 10% Height/Diameter - Severity 4  | Image Provided - Ref: 0_18<br>  |
| 46.00m | 0:05:29   | D      | Deformed drain/sewer: 20% Height/Diameter - Severity 4  | Image Provided - Ref: 0_19<br> |
| 46.00m | 0:05:29   | DEG    | Attached deposits, grease at 12 o'clock: 0% Cross sectional area loss - Severity 3                            |   |
| 46.17m | 0:05:21   | F4 FL  | Fracture longitudinal Defect End at 12 o'clock - Severity 3   |   |
| 46.17m | 0:05:21   | F3 FL  | Fracture longitudinal Defect End at 09 o'clock - Severity 3   |   |
| 46.17m | 0:05:21   | F2 FL  | Fracture longitudinal Defect End at 03 o'clock - Severity 3   |   |
| 46.17m | 0:00:08   | F1 DEG | Attached deposits, grease Defect End from 08 o'clock to 04 o'clock: 5% Cross sectional area loss - Severity 3 |   |
| 46.17m | 0:05:53   | B      | Broken pipe from 12 o'clock to 12 o'clock - Severity 4  |   |
| 46.17m |           | SA     | Survey abandoned<br>BROKEN PIPE   |   |

Total Defects for section



DRB Grade for Section



## Site: CHELMSFORD ROAD, SHENFIELD

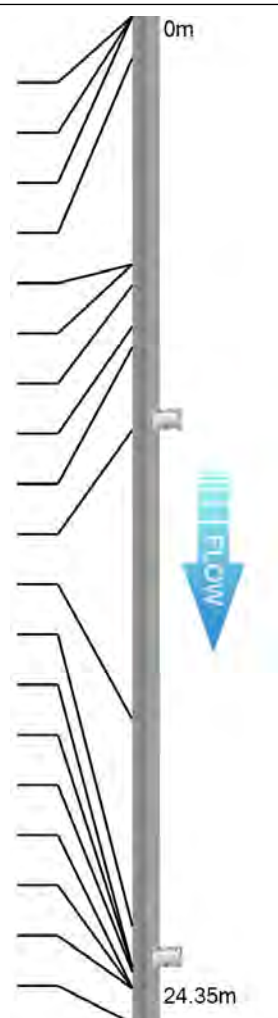
## Section 2

|                    |                         |                   |               |                 |            |
|--------------------|-------------------------|-------------------|---------------|-----------------|------------|
| Client:            | Location (Street Name): | City/Town/Village | Cust Job Ref. | Surveyors Name: | Date:      |
| CROUDACE STRATEGIC | CHELMSFORD ROAD         | SHENFIELD         |               | Simon Gardiner  | 23/11/2020 |

|                        |       |                         |      |            |    |             |     |
|------------------------|-------|-------------------------|------|------------|----|-------------|-----|
| Start Node Ref:        | 4100A | Finish Node Ref:        | 4100 | Direction: | D  | Height/Dia: | 225 |
| Start Node Depth:      | 0.00  | Finish Node Depth:      | 0.00 | Use:       | F  | Shape:      | C   |
| Start Node Coordinate: |       | Finish Node Coordinate: |      | Material:  | VC | Cleaned     | N   |

| Drain Type | Lining Type | Lining Mat. | Year Const. | Weather | Flow Cont. | Length | Remarks |
|------------|-------------|-------------|-------------|---------|------------|--------|---------|
| A          |             |             |             | D       | N          | 24.35  |         |

| Position | Code | Description                               | CD | Pic  | Video Ref |        |
|----------|------|---|----|------|-----------|--------|
| 00.00m   | MH   | Start node type, manhole                  |    |      |           | 0m     |
| 00.00m   | WL   | Water level 10%                           |    |      | 0:00:00   |        |
| 00.00m   | DEG  | S1 Attached deposits, grease 07-05 5%     | S1 | 1_2  | 0:00:00   |        |
| 01.00m   | WL   | Water level 20%                           |    |      | 0:00:25   |        |
| 06.00m   | DEG  | F1 Attached deposits, grease 07-05 5%     | F1 | 1_-2 | 0:00:00   |        |
| 06.00m   | DEG  | Attached deposits, grease 07-05 10%       |    |      | 0:00:49   |        |
| 06.50m   | DEG  | Attached deposits, grease 07-05 20%       |    |      | 0:00:51   |        |
| 07.50m   | DEG  | S2 Attached deposits, grease 07-05 5%     | S2 |      | 0:01:07   |        |
| 08.00m   | WL   | Water level 30%                           |    |      | 0:01:15   |        |
| 10.00m   | JN   | Junction 10 : 150mm Diameter              |    | 1_8  | 0:01:22   |        |
| 17.00m   | RJ   | Roots at joint                            |    |      | 0:02:08   |        |
| 22.00m   | WL   | Water level 20%                           |    |      | 0:02:39   |        |
| 23.00m   | R    | Roots                                     |    | 1_11 | 0:02:49   |        |
| 23.00m   | JN   | Junction 10 : 150mm Diameter              |    |      | 0:02:56   |        |
| 23.10m   | WL   | Water level 10%                           |    |      | 0:03:05   |        |
| 23.50m   | DEG  | F2 Attached deposits, grease 07-05 5%     | F2 |      | 0:01:07   |        |
| 23.50m   | MC   | Material of drain/sewer changes           |    | 1_14 | 0:03:05   |        |
| 23.50m   | DEE  | Attached deposits, encrustation 07-05 30% |    | 1_15 | 0:03:05   |        |
| 24.35m   | SA   | Survey abandoned                          |    |      |           | 24.35m |




Total Defects for section

DRB Grade for Section



## Descriptive Report with Remarks and Observation Images

## Section 2

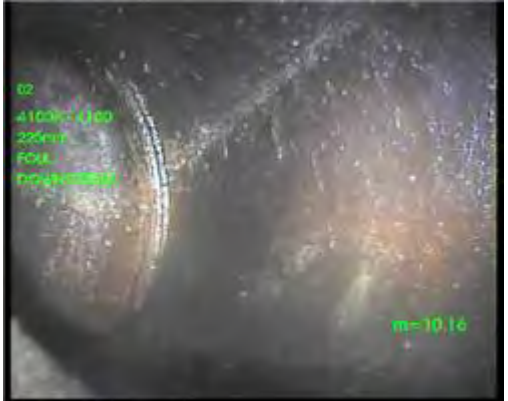

| Pos    | Video Ref | Code   | Description   | Image   |
|--------|-----------|--------|---|---|
| 00.00m |           | MH     | Start node type, manhole 4100A  |   |
| 00.00m | 0:00:00   | WL     | Water level: 10% Height/Diameter  |   |
| 00.00m | 0:00:00   | S1 DEG | Attached deposits, grease 0m - 6m from 07 o'clock to 05 o'clock: 5% Cross sectional area loss - Severity 3      | Image Provided - Ref: 1_2<br> |
| 01.00m | 0:00:25   | WL     | Water level: 20% Height/Diameter  |   |
| 06.00m | 0:00:00   | F1 DEG | Attached deposits, grease Defect End from 07 o'clock to 05 o'clock: 5% Cross sectional area loss - Severity 3   |   |
| 06.00m | 0:00:49   | DEG    | Attached deposits, grease from 07 o'clock to 05 o'clock: 10% Cross sectional area loss - Severity 3             |   |
| 06.50m | 0:00:51   | DEG    | Attached deposits, grease from 07 o'clock to 05 o'clock: 20% Cross sectional area loss - Severity 3             |   |
| 07.50m | 0:01:07   | S2 DEG | Attached deposits, grease 7.5m - 23.5m from 07 o'clock to 05 o'clock: 5% Cross sectional area loss - Severity 3 |   |
| 08.00m | 0:01:15   | WL     | Water level: 30% Height/Diameter  |   |

Total Defects for section



DRB Grade for Section





| Pos    | Video Ref | Code   | Description  | Image   |
|--------|-----------|--------|--|---|
| 10.00m | 0:01:22   | JN     | Junction at 10 o'clock: 150mm Diameter<br>BLANKED OFF  | Image Provided - Ref: 1_8<br>   |
| 17.00m | 0:02:08   | RJ     | Roots at joint - Severity 3<br>FINE ROOTS AT JOINT   |   |
| 22.00m | 0:02:39   | WL     | Water level: 20%<br>Height/Diameter  |   |
| 23.00m | 0:02:49   | R      | Roots - Severity 3<br>MASS ROOTS   | Image Provided - Ref: 1_11<br> |
| 23.00m | 0:02:56   | JN     | Junction at 10 o'clock: 150mm Diameter<br>BLANKED OFF  |   |
| 23.10m | 0:03:05   | WL     | Water level: 10%<br>Height/Diameter  |   |
| 23.50m | 0:01:07   | F2 DEG | Attached deposits, grease<br>Defect End from 07 o'clock to<br>05 o'clock: 5% Cross sectional<br>area loss - Severity 3 |   |

Total Defects for section



DRB Grade for Section



| Pos    | Video Ref | Code | Description   | Image   |
|--------|-----------|------|---|---|
| 23.50m | 0:03:05   | MCCI | Material of pipe changes to Cast Iron   | Image Provided - Ref: 1_14<br>  |
| 23.50m | 0:03:05   | DEE  | Attached deposits, encrustation from 07 o'clock to 05 o'clock: 30% Cross sectional area loss - Severity 3 | Image Provided - Ref: 1_15<br> |
| 24.35m |           | SA   | Survey abandoned<br>UNABLE TO PASS<br>ENCrustATION  |   |

Total Defects for section



DRB Grade for Section



## Site: CHELMSFORD ROAD, SHENFIELD

## Section 3

|                    |                         |                   |               |                 |            |
|--------------------|-------------------------|-------------------|---------------|-----------------|------------|
| Client:            | Location (Street Name): | City/Town/Village | Cust Job Ref. | Surveyors Name: | Date:      |
| CROUDACE STRATEGIC | CHELMSFORD ROAD         | SHENFIELD         |               | Simon Gardiner  | 23/11/2020 |

|                        |      |                         |       |            |    |             |     |
|------------------------|------|-------------------------|-------|------------|----|-------------|-----|
| Start Node Ref:        | 4100 | Finish Node Ref:        | 4100A | Direction: | U  | Height/Dia: | 225 |
| Start Node Depth:      | 0.00 | Finish Node Depth:      | 0.00  | Use:       | F  | Shape:      | C   |
| Start Node Coordinate: |      | Finish Node Coordinate: |       | Material:  | VC | Cleaned     | N   |

| Drain Type | Lining Type | Lining Mat. | Year Const. | Weather | Flow Cont. | Length | Remarks |
|------------|-------------|-------------|-------------|---------|------------|--------|---------|
| A          |             |             |             | D       | N          | 21.5   |         |

| Position | Code | Description                               | CD | Pic  | Video Ref |       |
|----------|------|---|----|------|-----------|-------|
| 00.00m   | MH   | Start node type, manhole                  |    |      |           | 0m    |
| 00.00m   | WL   | Water level 20%                           |    |      | 0:00:00   |       |
| 00.10m   | CC   | Crack, circumferential 07-05              |    |      | 0:00:00   |       |
| 00.10m   | DER  | Settled deposits coarse 20%               |    |      | 0:00:05   |       |
| 00.16m   | FC   | Fracture circumferential 08-04            |    | 2_4  | 0:00:07   |       |
| 00.25m   | FL   | Fracture longitudinal 12                  |    |      | 0:00:08   |       |
| 00.65m   | CC   | Crack, circumferential 08-04              |    |      | 0:00:10   |       |
| 00.90m   | FL   | Fracture longitudinal 12                  |    |      | 0:00:12   |       |
| 01.00m   | WL   | Water level 30%                           |    |      | 0:00:14   |       |
| 01.20m   | FC   | Fracture circumferential 08-11            |    |      | 0:00:16   |       |
| 01.40m   | WL   | Water level 40%                           |    |      | 0:00:31   |       |
| 03.40m   | DEG  | S1 Attached deposits, grease 08-04 5%     | S1 |      | 0:00:54   |       |
| 07.40m   | CCJ  | Crack, circumferential 08-04 at joint     |    |      | 0:01:10   |       |
| 08.40m   | DEG  | Attached deposits, grease 09-11 20%       |    | 2_13 | 0:01:15   |       |
| 10.00m   | DEG  | F1 Attached deposits, grease 08-04 5%     | F1 |      | 0:00:54   |       |
| 10.00m   | DEG  | S2 Attached deposits, grease 08-04 20%    | S2 | 2_14 | 0:01:29   |       |
| 12.00m   | JN   | Junction 02 : 150mm Diameter              |    | 2_15 | 0:01:37   |       |
| 15.00m   | DEG  | F2 Attached deposits, grease 08-04 20%    | F2 | 2_-  | 0:01:29   |       |
| 15.00m   | DEG  | S3 Attached deposits, grease 08-04 5%     | S3 |      | 0:01:56   |       |
| 20.00m   | MC   | Material of drain/sewer changes           |    | 2_17 | 0:02:16   |       |
| 20.00m   | DEE  | Attached deposits, encrustation 07-05 20% |    |      | 0:02:16   |       |
| 21.50m   | DEG  | F3 Attached deposits, grease 08-04 5%     | F3 |      | 0:01:56   |       |
| 21.50m   | SA   | Survey abandoned                          |    |      |           | 21.5m |

DRB Grade for Section

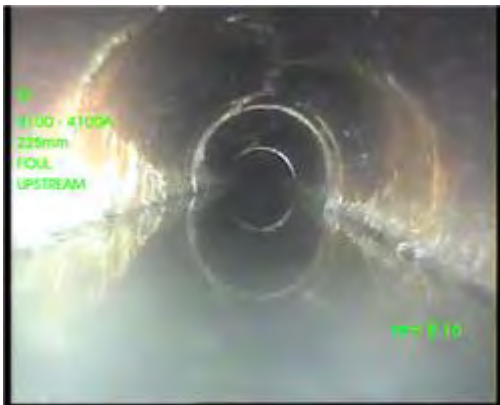
Total Defects for section





## Descriptive Report with Remarks and Observation Images

## Section 3



| Pos    | Video Ref | Code | Description   | Image  |
|--------|-----------|------|---|--|
| 00.00m |           | MH   | Start node type, manhole 4100                                       |  |
| 00.00m | 0:00:00   | WL   | Water level: 20% Height/Diameter                                    |  |
| 00.10m | 0:00:00   | CC   | Crack, circumferential from 07 o'clock to 05 o'clock - Severity 1   |  |
| 00.10m | 0:00:05   | DER  | Settled deposits coarse: 20% Cross sectional area loss - Severity 3 |  |
| 00.16m | 0:00:07   | FC   | Fracture circumferential from 08 o'clock to 04 o'clock - Severity 3 | Image Provided - Ref: 2_4<br> |
| 00.25m | 0:00:08   | FL   | Fracture longitudinal at 12 o'clock - Severity 3                    |  |
| 00.65m | 0:00:10   | CC   | Crack, circumferential from 08 o'clock to 04 o'clock - Severity 1   |  |
| 00.90m | 0:00:12   | FL   | Fracture longitudinal at 12 o'clock - Severity 3                    |  |
| 01.00m | 0:00:14   | WL   | Water level: 30% Height/Diameter                                    |  |
| 01.20m | 0:00:16   | FC   | Fracture circumferential from 08 o'clock to 11 o'clock - Severity 3 |  |
| 01.40m | 0:00:31   | WL   | Water level: 40% Height/Diameter                                    |  |

Total Defects for section



DRB Grade for Section





| Pos    | Video Ref | Code   | Description   | Image  |
|--------|-----------|--------|---|--|
| 03.40m | 0:00:54   | S1 DEG | Attached deposits, grease 3.4m - 10m from 08 o'clock to 04 o'clock: 5% Cross sectional area loss - Severity 3 |  |
| 07.40m | 0:01:10   | CCJ    | Crack, circumferential from 08 o'clock to 04 o'clock at joint - Severity 1                                    |  |
| 08.40m | 0:01:15   | DEG    | Attached deposits, grease from 09 o'clock to 11 o'clock: 20% Cross sectional area loss - Severity 3           | Image Provided - Ref: 2_13<br>  |
| 10.00m | 0:00:54   | F1 DEG | Attached deposits, grease Defect End from 08 o'clock to 04 o'clock: 5% Cross sectional area loss - Severity 3 |  |
| 10.00m | 0:01:29   | S2 DEG | Attached deposits, grease 10m - 15m from 08 o'clock to 04 o'clock: 20% Cross sectional area loss - Severity 3 | Image Provided - Ref: 2_14<br> |

Total Defects for section



DRB Grade for Section



| Pos    | Video Ref | Code   | Description   | Image  |
|--------|-----------|--------|---|--|
| 12.00m | 0:01:37   | JN     | Junction at 02 o'clock: 150mm Diameter<br>BLANKED OFF   | Image Provided - Ref: 2_15<br>   |
| 15.00m | 0:01:29   | F2 DEG | Attached deposits, grease<br>Defect End from 08 o'clock to 04 o'clock: 20% Cross sectional area loss - Severity 3 |  |
| 15.00m | 0:01:56   | S3 DEG | Attached deposits, grease 15m - 21.5m from 08 o'clock to 04 o'clock: 5% Cross sectional area loss - Severity 3    |  |
| 20.00m | 0:02:16   | MCCI   | Material of pipe changes to Cast Iron   | Image Provided - Ref: 2_17<br> |
| 20.00m | 0:02:16   | DEE    | Attached deposits, encrustation from 07 o'clock to 05 o'clock: 20% Cross sectional area loss - Severity 3         |  |
| 21.50m | 0:01:56   | F3 DEG | Attached deposits, grease<br>Defect End from 08 o'clock to 04 o'clock: 5% Cross sectional area loss - Severity 3  |  |
| 21.50m |           | SA     | Survey abandoned<br>UNABLE TO PASS ENCRUSTATION   |  |

Total Defects for section



DRB Grade for Section



## Site: CHELMSFORD ROAD, SHENFIELD

## Section 4

|                    |                         |                   |               |                 |            |
|--------------------|-------------------------|-------------------|---------------|-----------------|------------|
| Client:            | Location (Street Name): | City/Town/Village | Cust Job Ref. | Surveyors Name: | Date:      |
| CROUDACE STRATEGIC | CHELMSFORD ROAD         | SHENFIELD         |               | Simon Gardiner  | 23/11/2020 |

|                        |      |                         |       |            |    |             |     |
|------------------------|------|-------------------------|-------|------------|----|-------------|-----|
| Start Node Ref:        | 4100 | Finish Node Ref:        | 4000A | Direction: | D  | Height/Dia: | 225 |
| Start Node Depth:      | 0.00 | Finish Node Depth:      | 0.00  | Use:       | F  | Shape:      | C   |
| Start Node Coordinate: |      | Finish Node Coordinate: |       | Material:  | VC | Cleaned     | N   |

| Drain Type | Lining Type | Lining Mat. | Year Const. | Weather | Flow Cont. | Length | Remarks |
|------------|-------------|-------------|-------------|---------|------------|--------|---------|
| A          |             |             |             | D       | N          | 91.93  |         |

| Position | Code | Description                            | CD | Pic  | Video Ref |  |
|----------|------|--|----|------|-----------|--|
| 00.00m   | MH   | Start node type, manhole               |    |      |           |  |
| 00.00m   | WL   | Water level 10%                        |    |      | 0:00:00   |  |
| 01.00m   | WL   | Water level 20%                        |    |      | 0:00:10   |  |
| 01.00m   | DEG  | S1 Attached deposits, grease 04-08 10% | S1 |      | 0:00:41   |  |
| 10.00m   | WL   | Water level 10%                        |    |      | 0:01:20   |  |
| 12.50m   | JN   | Junction 10 : 150mm Diameter           |    | 3_5  | 0:01:38   |  |
| 14.90m   | JDM  | Joint displaced medium                 |    |      | 0:02:02   |  |
| 20.00m   | DEG  | F1 Attached deposits, grease 04-08 10% | F1 |      | 0:00:41   |  |
| 20.00m   | WL   | Water level 5%                         |    |      | 0:02:39   |  |
| 20.00m   | DEG  | S2 Attached deposits, grease 07-05 5%  | S2 |      | 0:02:50   |  |
| 23.00m   | WL   | Water level 10%                        |    |      | 0:02:56   |  |
| 23.50m   | WL   | Water level 20%                        |    |      | 0:03:03   |  |
| 25.50m   | JN   | Junction 10 : 150mm Diameter           |    | 3_11 | 0:03:17   |  |
| 33.60m   | CLJ  | Crack, longitudinal 03 at joint        |    |      | 0:04:24   |  |
| 33.60m   | CLJ  | Crack, longitudinal 12 at joint        |    |      | 0:04:24   |  |
| 39.00m   | D    | Deformed drain/sewer 10%               |    |      | 0:05:09   |  |
| 39.00m   | FL   | S3 Fracture longitudinal 12            | S3 |      | 0:05:09   |  |
| 39.00m   | FL   | S4 Fracture longitudinal 09            | S4 |      | 0:05:09   |  |
| 39.50m   | JN   | Junction 10 : 150mm Diameter           |    | 3_17 | 0:05:20   |  |
| 43.00m   | FL   | S5 Fracture longitudinal 03            | S5 |      | 0:05:58   |  |
| 50.00m   | FL   | F3 Fracture longitudinal 12            | F3 |      | 0:05:09   |  |
| 52.70m   | JN   | Junction 10 : 150mm Diameter           |    |      | 0:07:10   |  |
| 55.00m   | FL   | S6 Fracture longitudinal 12            | S6 |      | 0:07:31   |  |
| 58.00m   | FL   | F5 Fracture longitudinal 03            | F5 |      | 0:05:58   |  |
| 58.00m   | FL   | F4 Fracture longitudinal 09            | F4 |      | 0:05:09   |  |



Total Defects for section

DRB Grade for Section



| Position | Code | Description                           | CD   | Pic | Video Ref |  |
|----------|------|---------------------------------------|------|-----|-----------|--|
| 60.00m   | FL   | F6 Fracture longitudinal 12           | F6   |     | 0:07:31   |  |
| 60.50m   | CL   | Crack, longitudinal 03                |      |     | 0:08:09   |  |
| 61.20m   | CC   | Crack, circumferential 08-04          |      |     | 0:08:15   |  |
| 63.40m   | FM   | S7 Fracture multiple 08-04            | S7   |     | 0:08:35   |  |
| 63.40m   | D    | Deformed drain/sewer 10%              |      |     | 0:08:45   |  |
| 65.60m   | JN   | Junction 10 : 150mm Diameter          |      |     | 0:08:56   |  |
| 76.00m   | FM   | F7 Fracture multiple 08-04            | F7   |     | 0:08:35   |  |
| 76.00m   | WL   | Water level 10%                       |      |     | 0:10:13   |  |
| 78.00m   | WL   | Water level 20%                       |      |     | 0:10:21   |  |
| 79.50m   | JN   | Junction 10 : 150mm Diameter          | 3_28 |     | 0:10:40   |  |
| 82.00m   | WL   | Water level 30%                       |      |     | 0:11:13   |  |
| 88.00m   | WL   | Water level 20%                       |      |     | 0:11:32   |  |
| 88.50m   | WL   | Water level 10%                       |      |     | 0:11:33   |  |
| 91.50m   | DEG  | F2 Attached deposits, grease 07-05 5% | F2   |     | 0:02:50   |  |
| 91.50m   | R    | Roots                                 | 3_32 |     | 0:11:44   |  |
| 91.93m   | MHF  | Finish node type, manhole             |      |     |           |  |


Total Defects for section



DRB Grade for Section

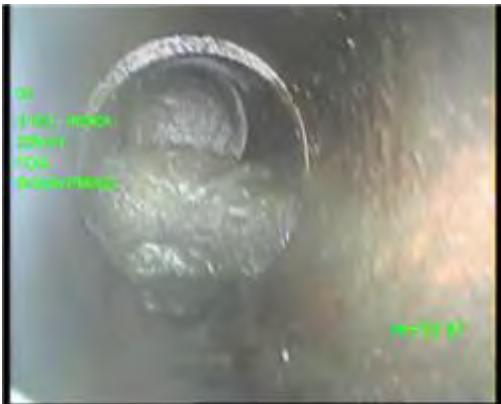
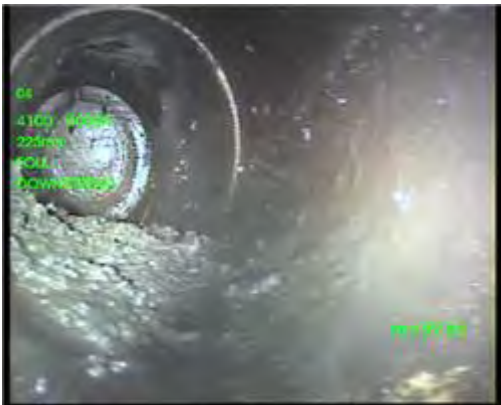


## Section 4

| Pos    | Video Ref | Code   | Description  | Image  |
|--------|-----------|--------|--|--|
| 00.00m |           | MH     | Start node type, manhole 4100  |  |
| 00.00m | 0:00:00   | WL     | Water level: 10% Height/Diameter   |  |
| 01.00m | 0:00:10   | WL     | Water level: 20% Height/Diameter   |  |
| 01.00m | 0:00:41   | S1 DEG | Attached deposits, grease 1m - 20m from 04 o'clock to 08 o'clock: 10% Cross sectional area loss - Severity 3   |  |
| 10.00m | 0:01:20   | WL     | Water level: 10% Height/Diameter   |  |
| 12.50m | 0:01:38   | JN     | Junction at 10 o'clock: 150mm Diameter   | Image Provided - Ref: 3_5<br> |
| 14.90m | 0:02:02   | JDM    | Joint displaced medium - Severity 3  |  |
| 20.00m | 0:00:41   | F1 DEG | Attached deposits, grease Defect End from 04 o'clock to 08 o'clock: 10% Cross sectional area loss - Severity 3 |  |
| 20.00m | 0:02:39   | WL     | Water level: 5% Height/Diameter  |  |
| 20.00m | 0:02:50   | S2 DEG | Attached deposits, grease 20m - 91.5m from 07 o'clock to 05 o'clock: 5% Cross sectional area loss - Severity 3 |  |
| 23.00m | 0:02:56   | WL     | Water level: 10% Height/Diameter   |  |

DRB Grade for Section



| Pos    | Video Ref | Code  | Description   | Image  |
|--------|-----------|-------|---|--|
| 23.50m | 0:03:03   | WL    | Water level: 20% Height/Diameter                            |  |
| 25.50m | 0:03:17   | JN    | Junction at 10 o'clock: 150mm Diameter<br>BLANKED OFF       | Image Provided - Ref: 3_11<br>   |
| 33.60m | 0:04:24   | CLJ   | Crack, longitudinal at 03 o'clock at joint - Severity 1     |  |
| 33.60m | 0:04:24   | CLJ   | Crack, longitudinal at 12 o'clock at joint - Severity 1     |  |
| 39.00m | 0:05:09   | D     | Deformed drain/sewer: 10% Height/Diameter - Severity 4      |  |
| 39.00m | 0:05:09   | S3 FL | Fracture longitudinal 39m - 50m at 12 o'clock - Severity 3  |  |
| 39.00m | 0:05:09   | S4 FL | Fracture longitudinal 39m - 58m at 09 o'clock - Severity 3  |  |
| 39.50m | 0:05:20   | JN    | Junction at 10 o'clock: 150mm Diameter                      | Image Provided - Ref: 3_17<br> |
| 43.00m | 0:05:58   | S5 FL | Fracture longitudinal 43m - 58m at 03 o'clock - Severity 3  |  |
| 50.00m | 0:05:09   | F3 FL | Fracture longitudinal Defect End at 12 o'clock - Severity 3 |  |

Total Defects for section



DRB Grade for Section







| Pos    | Video Ref | Code  | Description  | Image |
|--------|-----------|-------|--|-------|
| 52.70m | 0:07:10   | JN    | Junction at 10 o'clock: 150mm Diameter<br>BLANKED OFF                    |       |
| 55.00m | 0:07:31   | S6 FL | Fracture longitudinal 55m - 60m at 12 o'clock - Severity 3               |       |
| 58.00m | 0:05:58   | F5 FL | Fracture longitudinal Defect End at 03 o'clock - Severity 3              |       |
| 58.00m | 0:05:09   | F4 FL | Fracture longitudinal Defect End at 09 o'clock - Severity 3              |       |
| 60.00m | 0:07:31   | F6 FL | Fracture longitudinal Defect End at 12 o'clock - Severity 3              |       |
| 60.50m | 0:08:09   | CL    | Crack, longitudinal at 03 o'clock - Severity 1                           |       |
| 61.20m | 0:08:15   | CC    | Crack, circumferential from 08 o'clock to 04 o'clock - Severity 1        |       |
| 63.40m | 0:08:35   | S7 FM | Fracture multiple 63.4m - 76m from 08 o'clock to 04 o'clock - Severity 4 |       |
| 63.40m | 0:08:45   | D     | Deformed drain/sewer: 10% Height/Diameter - Severity 4                   |       |
| 65.60m | 0:08:56   | JN    | Junction at 10 o'clock: 150mm Diameter<br>BLANKED OFF                    |       |
| 76.00m | 0:08:35   | F7 FM | Fracture multiple Defect End from 08 o'clock to 04 o'clock - Severity 4  |       |
| 76.00m | 0:10:13   | WL    | Water level: 10% Height/Diameter   |       |
| 78.00m | 0:10:21   | WL    | Water level: 20% Height/Diameter   |       |

Total Defects for section



DRB Grade for Section



| Pos    | Video Ref | Code   | Description  | Image  |
|--------|-----------|--------|--|--|
| 79.50m | 0:10:40   | JN     | Junction at 10 o'clock: 150mm Diameter<br>BLANKED OFF  | Image Provided - Ref: 3_28<br>   |
| 82.00m | 0:11:13   | WL     | Water level: 30% Height/Diameter   |  |
| 88.00m | 0:11:32   | WL     | Water level: 20% Height/Diameter   |  |
| 88.50m | 0:11:33   | WL     | Water level: 10% Height/Diameter   |  |
| 91.50m | 0:02:50   | F2 DEG | Attached deposits, grease<br>Defect End from 07 o'clock to 05 o'clock: 5% Cross sectional area loss - Severity 3 |  |
| 91.50m | 0:11:44   | R      | Roots - Severity 3<br>ROOTS IN MANHOLE   | Image Provided - Ref: 3_32<br> |
| 91.93m |           | MHF    | Finish node type, manhole 4000A  |  |

Total Defects for section

DRB Grade for Section



Site: CHELMSFORD ROAD, SHENFIELD

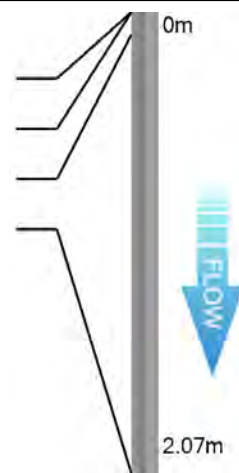
Section 5

|                    |                         |                   |               |                 |            |
|--------------------|-------------------------|-------------------|---------------|-----------------|------------|
| Client:            | Location (Street Name): | City/Town/Village | Cust Job Ref. | Surveyors Name: | Date:      |
| CROUDACE STRATEGIC | CHELMSFORD ROAD         | SHENFIELD         |               | Simon Gardiner  | 23/11/2020 |

|                        |       |                         |      |            |    |             |     |
|------------------------|-------|-------------------------|------|------------|----|-------------|-----|
| Start Node Ref:        | 4000A | Finish Node Ref:        | 4000 | Direction: | D  | Height/Dia: | 225 |
| Start Node Depth:      | 0.00  | Finish Node Depth:      | 0.00 | Use:       | F  | Shape:      | C   |
| Start Node Coordinate: |       | Finish Node Coordinate: |      | Material:  | VC | Cleaned     | N   |

| Drain Type | Lining Type | Lining Mat. | Year Const. | Weather | Flow Cont. | Length | Remarks |
|------------|-------------|-------------|-------------|---------|------------|--------|---------|
| A          |             |             |             | D       | N          | 2.07   |         |

| Position | Code | Description               | CD | Pic | Video Ref |
|----------|------|---------------------------|----|-----|-----------|
| 00.00m   | MH   | Start node type, manhole  |    |     |           |
| 00.00m   | WL   | Water level 10%           |    |     | 0:00:00   |
| 00.10m   | JDM  | Joint displaced medium    |    |     | 0:00:05   |
| 02.07m   | MHF  | Finish node type, manhole |    |     |           |



Total Defects for section

DRB Grade for Section



Descriptive Report with Remarks and Observation Images

Section 5

| Pos    | Video Ref | Code | Description                         | Image |
|--------|-----------|------|-------------------------------------|-------|
| 00.00m |           | MH   | Start node type, manhole 4000A      |       |
| 00.00m | 0:00:00   | WL   | Water level: 10% Height/Diameter    |       |
| 00.10m | 0:00:05   | JDM  | Joint displaced medium - Severity 3 |       |
| 02.07m |           | MHF  | Finish node type, manhole 4000      |       |

Total Defects for section



DRB Grade for Section



## Site: CHELMSFORD ROAD, SHENFIELD

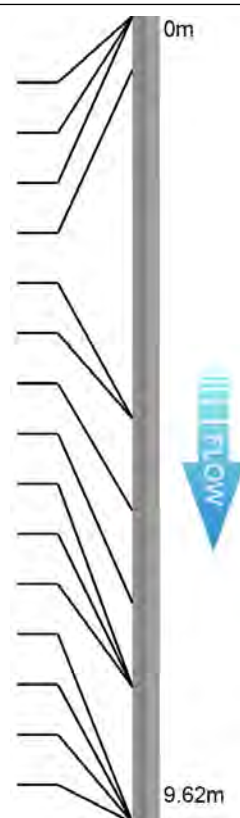
## Section 6

|                    |                         |                   |               |                 |            |
|--------------------|-------------------------|-------------------|---------------|-----------------|------------|
| Client:            | Location (Street Name): | City/Town/Village | Cust Job Ref. | Surveyors Name: | Date:      |
| CROUDACE STRATEGIC | CHELMSFORD ROAD         | SHENFIELD         |               | Simon Gardiner  | 25/11/2020 |

|                        |      |                         |      |            |    |             |     |
|------------------------|------|-------------------------|------|------------|----|-------------|-----|
| Start Node Ref:        | S1   | Finish Node Ref:        | S2   | Direction: | D  | Height/Dia: | 300 |
| Start Node Depth:      | 0.00 | Finish Node Depth:      | 0.00 | Use:       | S  | Shape:      | C   |
| Start Node Coordinate: |      | Finish Node Coordinate: |      | Material:  | VC | Cleaned     | N   |

| Drain Type | Lining Type | Lining Mat. | Year Const. | Weather | Flow Cont. | Length | Remarks |
|------------|-------------|-------------|-------------|---------|------------|--------|---------|
| A          |             |             |             | D       | N          | 9.62   |         |

| Position | Code | Description                           | CD | Pic  | Video Ref |  |
|----------|------|---------------------------------------|----|------|-----------|--|
| 00.00m   | MH   | Start node type, manhole              |    |      |           |  |
| 00.00m   | WL   | Water level 10%                       |    |      | 0:00:00   |  |
| 00.00m   | REM  | S1 General remark                     | S1 |      | 0:00:32   |  |
| 00.64m   | DER  | Settled deposits coarse 10%           |    | 5_2  | 0:00:07   |  |
| 04.80m   | CCJ  | Crack, circumferential 08-12 at joint |    |      | 0:00:32   |  |
| 04.80m   | CL   | Crack, longitudinal 12                |    |      | 0:00:34   |  |
| 05.90m   | DES  | S2 Settled deposits fine 10%          | S2 | 5_6  | 0:00:36   |  |
| 07.00m   | CM   | S3 Cracks, multiple 08-04             | S3 |      | 0:00:44   |  |
| 08.00m   | DES  | F2 Settled deposits fine 10%          | F2 | 5_-6 | 0:00:36   |  |
| 08.00m   | DES  | S4 Settled deposits fine 20%          | S4 |      | 0:00:52   |  |
| 08.00m   | R    | S5 Roots                              | S5 |      | 0:00:57   |  |
| 09.62m   | R    | F5 Roots                              | F5 |      | 0:00:57   |  |
| 09.62m   | DES  | F4 Settled deposits fine 20%          | F4 |      | 0:00:52   |  |
| 09.62m   | CM   | F3 Cracks, multiple 08-04             | F3 |      | 0:00:44   |  |
| 09.62m   | SA   | Survey abandoned                      |    |      |           |  |





Total Defects for section

DRB Grade for Section



## Descriptive Report with Remarks and Observation Images

## Section 6

| Pos    | Video Ref | Code   | Description  | Image   |
|--------|-----------|--------|--|---|
| 00.00m |           | MH     | Start node type, manhole S1  |   |
| 00.00m | 0:00:00   | WL     | Water level: 10% Height/Diameter   |   |
| 00.00m | 0:00:32   | S1 REM | General remark 0m - 0m<br>DRIED DEBRIS AND<br>STAINING ON PIPE<br>SURFACE          |   |
| 00.64m | 0:00:07   | DER    | Settled deposits coarse: 10%<br>Cross sectional area loss -<br>Severity 3          | Image Provided - Ref: 5_2<br>  |
| 04.80m | 0:00:32   | CCJ    | Crack, circumferential from 08<br>o'clock to 12 o'clock at joint -<br>Severity 1   |   |
| 04.80m | 0:00:34   | CL     | Crack, longitudinal at 12<br>o'clock - Severity 1                                  |   |
| 05.90m | 0:00:36   | S2 DES | Settled deposits fine 5.9m -<br>8m: 10% Cross sectional area<br>loss - Severity 3  | Image Provided - Ref: 5_6<br> |
| 07.00m | 0:00:44   | S3 CM  | Cracks, multiple 7m - 9.62m<br>from 08 o'clock to 04 o'clock -<br>Severity 2       |   |
| 08.00m | 0:00:36   | F2 DES | Settled deposits fine Defect<br>End: 10% Cross sectional area<br>loss - Severity 3 |   |

Total Defects for section

DRB Grade for Section



| Pos    | Video Ref | Code   | Description  | Image |
|--------|-----------|--------|--|-------|
| 08.00m | 0:00:52   | S4 DES | Settled deposits fine 8m - 9.62m: 20% Cross sectional area loss - Severity 3 |       |
| 08.00m | 0:00:57   | S5 R   | Roots 8m - 9.62m - Severity 3  |       |
| 09.62m | 0:00:57   | F5 R   | Roots Defect End - Severity 3  |       |
| 09.62m | 0:00:52   | F4 DES | Settled deposits fine Defect End: 20% Cross sectional area loss - Severity 3 |       |
| 09.62m | 0:00:44   | F3 CM  | Cracks, multiple Defect End from 08 o'clock to 04 o'clock - Severity 2       |       |
| 09.62m |           | SA     | Survey abandoned<br>UNABLE TO PASS DEBRIS                                    |       |

Total Defects for section



DRB Grade for Section





Site: CHELMSFORD ROAD, SHENFIELD

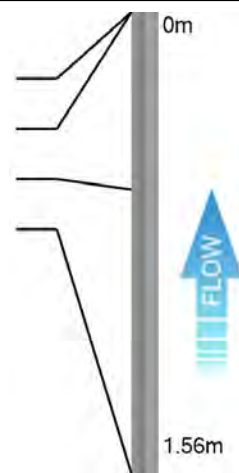
Section 7

|                    |                         |                   |               |                 |            |
|--------------------|-------------------------|-------------------|---------------|-----------------|------------|
| Client:            | Location (Street Name): | City/Town/Village | Cust Job Ref. | Surveyors Name: | Date:      |
| CROUDACE STRATEGIC | CHELMSFORD ROAD         | SHENFIELD         |               | Simon Gardiner  | 25/11/2020 |

|                        |      |                         |         |            |    |             |     |
|------------------------|------|-------------------------|---------|------------|----|-------------|-----|
| Start Node Ref:        | S1   | Finish Node Ref:        | INLET 1 | Direction: | U  | Height/Dia: | 300 |
| Start Node Depth:      | 0.00 | Finish Node Depth:      | 0.00    | Use:       | S  | Shape:      | C   |
| Start Node Coordinate: |      | Finish Node Coordinate: |         | Material:  | VC | Cleaned     | N   |

| Drain Type | Lining Type | Lining Mat. | Year Const. | Weather | Flow Cont. | Length | Remarks |
|------------|-------------|-------------|-------------|---------|------------|--------|---------|
| A          |             |             |             | D       | N          | 1.56   |         |

| Position | Code | Description                                | CD | Pic | Video Ref |
|----------|------|--|----|-----|-----------|
| 00.00m   | MH   | Start node type, manhole                   |    |     |           |
| 00.00m   | WL   | Water level 5%                             |    |     | 0:00:00   |
| 00.60m   | DER  | Settled deposits coarse 20%                |    |     | 0:00:06   |
| 01.56m   | WRF  | Finish node type, major connection without |    |     |           |



Total Defects for section

DRB Grade for Section



**Descriptive Report with Remarks and Observation Images**

**Section 7**

| Pos    | Video Ref | Code | Description   | Image |
|--------|-----------|------|---|-------|
| 00.00m |           | MH   | Start node type, manhole S1   |       |
| 00.00m | 0:00:00   | WL   | Water level: 5% Height/Diameter                                     |       |
| 00.60m | 0:00:06   | DER  | Settled deposits coarse: 20% Cross sectional area loss - Severity 3 |       |
| 01.56m |           | WRF  | Finish node type, major connection without manhole INLET 1          |       |

Total Defects for section



DRB Grade for Section



Site: CHELMSFORD ROAD, SHENFIELD

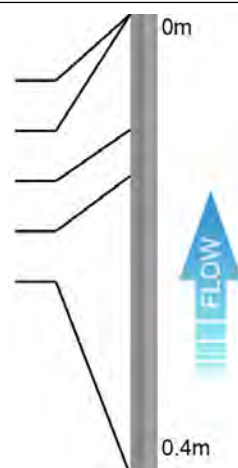
Section 8

|                    |                         |                   |               |                 |            |
|--------------------|-------------------------|-------------------|---------------|-----------------|------------|
| Client:            | Location (Street Name): | City/Town/Village | Cust Job Ref. | Surveyors Name: | Date:      |
| CROUDACE STRATEGIC | CHELMSFORD ROAD         | SHENFIELD         |               | Simon Gardiner  | 25/11/2020 |

|                        |      |                         |         |            |    |             |     |
|------------------------|------|-------------------------|---------|------------|----|-------------|-----|
| Start Node Ref:        | S2   | Finish Node Ref:        | INLET 2 | Direction: | U  | Height/Dia: | 300 |
| Start Node Depth:      | 0.00 | Finish Node Depth:      | 0.00    | Use:       | S  | Shape:      | C   |
| Start Node Coordinate: |      | Finish Node Coordinate: |         | Material:  | VC | Cleaned     | N   |

| Drain Type | Lining Type | Lining Mat. | Year Const. | Weather | Flow Cont. | Length | Remarks |
|------------|-------------|-------------|-------------|---------|------------|--------|---------|
| A          |             |             |             | D       | N          | 0.4    |         |

| Position | Code | Description                        | CD | Pic | Video Ref |  |
|----------|------|------------------------------------|----|-----|-----------|--|
| 00.00m   | MH   | Start node type, manhole           |    |     |           |  |
| 00.00m   | WL   | Water level 50%                    |    | 7_1 | 0:00:00   |  |
| 00.10m   | CUW  | Loss of vision, camera under water |    |     | 0:00:05   |  |
| 00.14m   | DER  | Settled deposits coarse 30%        |    | 7_2 | 0:00:05   |  |
| 00.40m   | SA   | Survey abandoned                   |    |     |           |  |



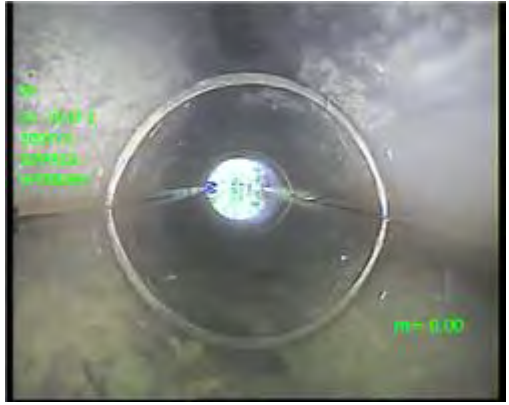

Total Defects for section

DRB Grade for Section



Descriptive Report with Remarks and Observation Images

Section 8

| Pos    | Video Ref | Code | Description   | Image   |
|--------|-----------|------|---|---|
| 00.00m |           | MH   | Start node type, manhole S2   |   |
| 00.00m | 0:00:00   | WL   | Water level: 50% Height/Diameter                                    | Image Provided - Ref: 7_1<br>   |
| 00.10m | 0:00:05   | CUW  | Loss of vision, camera under water                                  |   |
| 00.14m | 0:00:05   | DER  | Settled deposits coarse: 30% Cross sectional area loss - Severity 3 | Image Provided - Ref: 7_2<br> |
| 00.40m |           | SA   | Survey abandoned<br>CAMERA UNDERWATER /<br>UNABLE TO PASS DEBRIS    |   |

Total Defects for section



DRB Grade for Section



## Site: CHELMSFORD ROAD, SHENFIELD

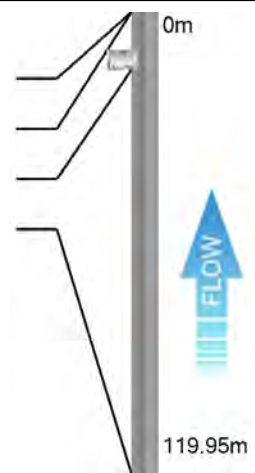
## Section 9

|                    |                         |                   |               |                 |            |
|--------------------|-------------------------|-------------------|---------------|-----------------|------------|
| Client:            | Location (Street Name): | City/Town/Village | Cust Job Ref. | Surveyors Name: | Date:      |
| CROUDACE STRATEGIC | CHELMSFORD ROAD         | SHENFIELD         |               | Simon Gardiner  | 25/11/2020 |

|                        |      |                         |      |            |    |             |     |
|------------------------|------|-------------------------|------|------------|----|-------------|-----|
| Start Node Ref:        | S3   | Finish Node Ref:        | S4   | Direction: | U  | Height/Dia: | 750 |
| Start Node Depth:      | 0.00 | Finish Node Depth:      | 0.00 | Use:       | S  | Shape:      | C   |
| Start Node Coordinate: |      | Finish Node Coordinate: |      | Material:  | CO | Cleaned     | N   |

| Drain Type | Lining Type | Lining Mat. | Year Const. | Weather | Flow Cont. | Length | Remarks |
|------------|-------------|-------------|-------------|---------|------------|--------|---------|
| A          |             |             |             | D       | N          | 119.95 |         |

| Position | Code | Description                                  | CD | Pic | Video Ref |  |
|----------|------|--|----|-----|-----------|--|
| 00.00m   | MH   | Start node type, manhole                     |    |     |           |  |
| 00.00m   | WL   | Water level 5%                               |    |     | 0:00:00   |  |
| 15.00m   | CXI  | Connection intruding 01 10% : 150mm Diameter |    |     | 0:00:48   |  |
| 119.95   | MHF  | Finish node type, manhole                    |    |     |           |  |



Total Defects for section

DRB Grade for Section



## Descriptive Report with Remarks and Observation Images

## Section 9

| Pos     | Video Ref | Code | Description   | Image |
|---------|-----------|------|---|-------|
| 00.00m  |           | MH   | Start node type, manhole S3   |       |
| 00.00m  | 0:00:00   | WL   | Water level: 5% Height/Diameter   |       |
| 15.00m  | 0:00:48   | CXI  | Connection intruding at 01 o'clock: 10% Intrusion : 150mm Diameter - Severity 3 |       |
| 119.95m |           | MHF  | Finish node type, manhole S4  |       |

Total Defects for section



DRB Grade for Section



## Site: CHELMSFORD ROAD, SHENFIELD

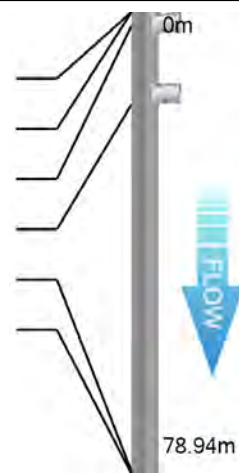
## Section 10

|                    |                         |                   |               |                 |            |
|--------------------|-------------------------|-------------------|---------------|-----------------|------------|
| Client:            | Location (Street Name): | City/Town/Village | Cust Job Ref. | Surveyors Name: | Date:      |
| CROUDACE STRATEGIC | CHELMSFORD ROAD         | SHENFIELD         |               | Simon Gardiner  | 25/11/2020 |

|                        |      |                         |      |            |    |             |     |
|------------------------|------|-------------------------|------|------------|----|-------------|-----|
| Start Node Ref:        | S3   | Finish Node Ref:        | S5   | Direction: | D  | Height/Dia: | 750 |
| Start Node Depth:      | 0.00 | Finish Node Depth:      | 0.00 | Use:       | S  | Shape:      | C   |
| Start Node Coordinate: |      | Finish Node Coordinate: |      | Material:  | CO | Cleaned     | N   |

| Drain Type | Lining Type | Lining Mat. | Year Const. | Weather | Flow Cont. | Length | Remarks |
|------------|-------------|-------------|-------------|---------|------------|--------|---------|
| A          |             |             |             | D       | N          | 78.94  |         |

| Position | Code | Description                                  | CD  | Pic | Video Ref |  |
|----------|------|--|-----|-----|-----------|--|
| 00.00m   | MH   | Start node type, manhole                     |     |     |           |  |
| 00.00m   | WL   | Water level 5%                               |     |     | 0:00:00   |  |
| 02.33m   | CN   | Connection other than junction 11 : 150mm    |     |     | 0:00:13   |  |
| 15.78m   | CXI  | Connection intruding 11 10% : 150mm Diameter | 9_3 |     | 0:00:52   |  |
| 78.54m   | REM  | General remark                               | 9_4 |     | 0:03:48   |  |
| 78.94m   | MHF  | Finish node type, manhole                    |     |     |           |  |



Total Defects for section

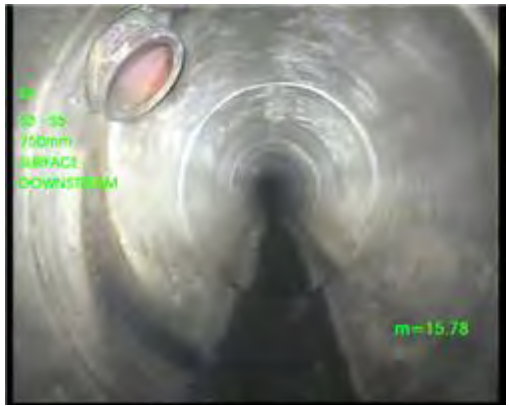

DRB Grade for Section





Descriptive Report with Remarks and Observation Images

Section 10

| Pos    | Video Ref | Code | Description   | Image   |
|--------|-----------|------|---|---|
| 00.00m |           | MH   | Start node type, manhole S3   |   |
| 00.00m | 0:00:00   | WL   | Water level: 5% Height/Diameter   |   |
| 02.33m | 0:00:13   | CN   | Connection other than junction at 11 o'clock: 150mm Diameter                    |   |
| 15.78m | 0:00:52   | CXI  | Connection intruding at 11 o'clock: 10% Intrusion : 150mm Diameter - Severity 3 | <p>Image Provided - Ref: 9_3</p>   |
| 78.54m | 0:03:48   | REM  | General remark DEBRIS IN MANHOLE  | <p>Image Provided - Ref: 9_4</p>  |
| 78.94m |           | MHF  | Finish node type, manhole S5  |   |

Total Defects for section



DRB Grade for Section



## Site: CHELMSFORD ROAD, SHENFIELD

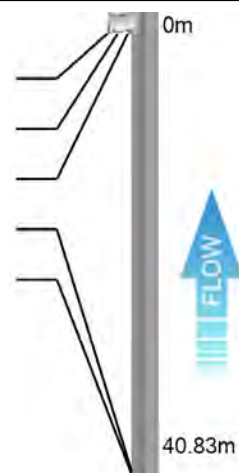
## Section 11

|                    |                         |                   |               |                 |            |
|--------------------|-------------------------|-------------------|---------------|-----------------|------------|
| Client:            | Location (Street Name): | City/Town/Village | Cust Job Ref. | Surveyors Name: | Date:      |
| CROUDACE STRATEGIC | CHELMSFORD ROAD         | SHENFIELD         |               | Simon Gardiner  | 25/11/2020 |

|                        |      |                         |      |            |    |             |     |
|------------------------|------|-------------------------|------|------------|----|-------------|-----|
| Start Node Ref:        | S6   | Finish Node Ref:        | S5   | Direction: | U  | Height/Dia: | 750 |
| Start Node Depth:      | 0.00 | Finish Node Depth:      | 0.00 | Use:       | S  | Shape:      | C   |
| Start Node Coordinate: |      | Finish Node Coordinate: |      | Material:  | CO | Cleaned     | N   |

| Drain Type | Lining Type | Lining Mat. | Year Const. | Weather | Flow Cont. | Length | Remarks |
|------------|-------------|-------------|-------------|---------|------------|--------|---------|
| A          |             |             |             | D       | N          | 40.83  |         |

| Position | Code | Description                               | CD | Pic  | Video Ref |  |
|----------|------|---|----|------|-----------|--|
| 00.00m   | MH   | Start node type, manhole                  |    |      |           |  |
| 00.00m   | WL   | Water level 5%                            |    |      | 0:00:00   |  |
| 01.25m   | CN   | Connection other than junction 01 : 150mm |    |      | 0:00:07   |  |
| 40.57m   | REM  | General remark                            |    | 10_3 | 0:02:03   |  |
| 40.83m   | MHF  | Finish node type, manhole                 |    |      |           |  |



Total Defects for section


DRB Grade for Section

0 0 0 0 0



Descriptive Report with Remarks and Observation Images

Section 11

| Pos    | Video Ref | Code | Description  | Image   |
|--------|-----------|------|--|---|
| 00.00m |           | MH   | Start node type, manhole S6                                  |   |
| 00.00m | 0:00:00   | WL   | Water level: 5% Height/Diameter                              |   |
| 01.25m | 0:00:07   | CN   | Connection other than junction at 01 o'clock: 150mm Diameter |   |
| 40.57m | 0:02:03   | REM  | General remark<br>DEBRIS IN MANHOLE                          | <p>Image Provided - Ref: 10_3</p>  |
| 40.83m |           | MHF  | Finish node type, manhole S5                                 |   |

Total Defects for section



DRB Grade for Section



Site: CHELMSFORD ROAD, SHENFIELD

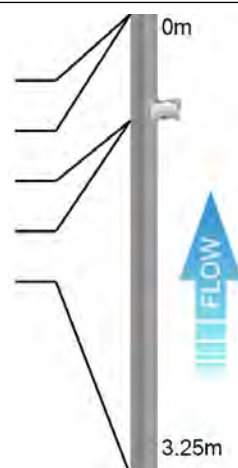
Section 12

|                    |                         |                   |               |                 |            |
|--------------------|-------------------------|-------------------|---------------|-----------------|------------|
| Client:            | Location (Street Name): | City/Town/Village | Cust Job Ref. | Surveyors Name: | Date:      |
| CROUDACE STRATEGIC | CHELMSFORD ROAD         | SHENFIELD         |               | Simon Gardiner  | 25/11/2020 |

|                        |      |                         |         |            |    |             |     |
|------------------------|------|-------------------------|---------|------------|----|-------------|-----|
| Start Node Ref:        | S6   | Finish Node Ref:        | INLET 3 | Direction: | U  | Height/Dia: | 900 |
| Start Node Depth:      | 0.00 | Finish Node Depth:      | 0.00    | Use:       | S  | Shape:      | C   |
| Start Node Coordinate: |      | Finish Node Coordinate: |         | Material:  | CO | Cleaned     | N   |

| Drain Type | Lining Type | Lining Mat. | Year Const. | Weather | Flow Cont. | Length | Remarks |
|------------|-------------|-------------|-------------|---------|------------|--------|---------|
| A          |             |             |             | D       | N          | 3.25   |         |

| Position | Code | Description                                | CD | Pic  | Video Ref |  |
|----------|------|--|----|------|-----------|--|
| 00.00m   | MH   | Start node type, manhole                   |    |      |           |  |
| 00.00m   | WL   | Water level 0%                             |    |      | 0:00:00   |  |
| 00.75m   | CN   | Connection other than junction 09 : 300mm  |    | 11_2 | 0:00:12   |  |
| 00.75m   | REM  | General remark                             |    | 11_3 | 0:00:07   |  |
| 03.25m   | WRF  | Finish node type, major connection without |    | 11_9 |           |  |






Total Defects for section

DRB Grade for Section



Descriptive Report with Remarks and Observation Images

Section 12

| Pos    | Video Ref | Code | Description  | Image   |
|--------|-----------|------|--|---|
| 00.00m |           | MH   | Start node type, manhole S6  |   |
| 00.00m | 0:00:00   | WL   | Water level: 0% Height/Diameter  |   |
| 00.75m | 0:00:12   | CN   | Connection other than junction at 09 o'clock: 300mm Diameter             | Image Provided - Ref: 11_2<br>      |
| 00.75m | 0:00:07   | REM  | General remark OBSTRUCTION AT HIGH LEVEL / POSSIBLE CHAMBER CONSTRUCTION | Image Provided - Ref: 11_3<br>    |
| 03.25m |           | WRF  | Finish node type, major connection without manhole INLET 3               | Image Provided - Ref: 11_9999<br> |

Total Defects for section



DRB Grade for Section



Site: CHELMSFORD ROAD, SHENFIELD

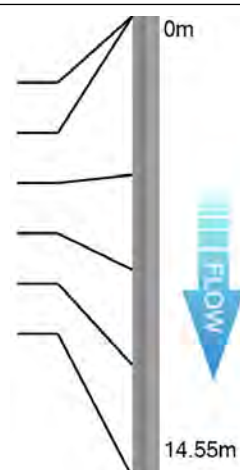
Section 13

|                    |                         |                   |               |                 |            |
|--------------------|-------------------------|-------------------|---------------|-----------------|------------|
| Client:            | Location (Street Name): | City/Town/Village | Cust Job Ref. | Surveyors Name: | Date:      |
| CROUDACE STRATEGIC | CHELMSFORD ROAD         | SHENFIELD         |               | Simon Gardiner  | 25/11/2020 |

|                        |      |                         |          |            |    |             |     |
|------------------------|------|-------------------------|----------|------------|----|-------------|-----|
| Start Node Ref:        | S6   | Finish Node Ref:        | OUTLET 1 | Direction: | D  | Height/Dia: | 900 |
| Start Node Depth:      | 0.00 | Finish Node Depth:      | 0.00     | Use:       | S  | Shape:      | C   |
| Start Node Coordinate: |      | Finish Node Coordinate: |          | Material:  | CO | Cleaned     | N   |

| Drain Type | Lining Type | Lining Mat. | Year Const. | Weather | Flow Cont. | Length | Remarks |
|------------|-------------|-------------|-------------|---------|------------|--------|---------|
| A          |             |             |             | D       | N          | 14.55  |         |

| Position | Code | Description               | CD | Pic  | Video Ref |  |
|----------|------|---------------------------|----|------|-----------|--|
| 00.00m   | MH   | Start node type, manhole  |    |      |           |  |
| 00.00m   | WL   | Water level 5%            |    |      | 0:00:00   |  |
| 05.00m   | WL   | Water level 10%           |    |      | 0:00:17   |  |
| 08.00m   | WL   | Water level 20%           |    | 12_3 | 0:00:26   |  |
| 11.00m   | WL   | Water level 30%           |    | 12_4 | 0:00:34   |  |
| 14.55m   | OFF  | Finish node type, outfall |    |      |           |  |





Total Defects for section

DRB Grade for Section



## Descriptive Report with Remarks and Observation Images

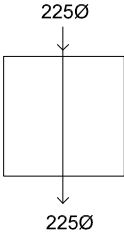
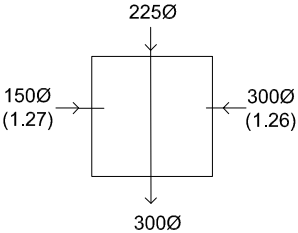
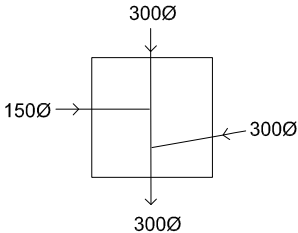
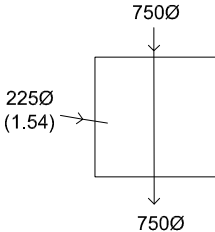
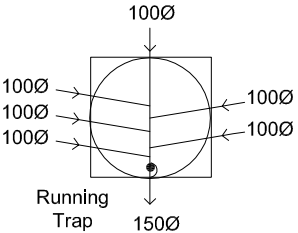
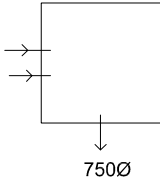
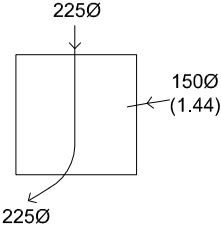
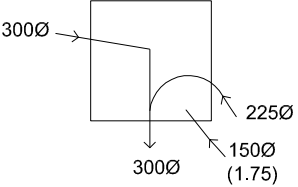
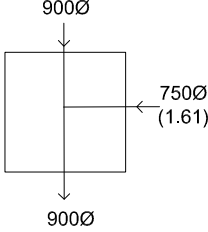
## Section 13

| Pos    | Video Ref | Code | Description                        | Image  |
|--------|-----------|------|------------------------------------|--|
| 00.00m |           | MH   | Start node type, manhole S6        |  |
| 00.00m | 0:00:00   | WL   | Water level: 5% Height/Diameter    |  |
| 05.00m | 0:00:17   | WL   | Water level: 10% Height/Diameter   |  |
| 08.00m | 0:00:26   | WL   | Water level: 20% Height/Diameter   | <p>Image Provided - Ref: 12_3</p>   |
| 11.00m | 0:00:34   | WL   | Water level: 30% Height/Diameter   | <p>Image Provided - Ref: 12_4</p>  |
| 14.55m |           | OFF  | Finish node type, outfall OUTLET 1 |  |

# MANHOLE DETAILS

LOCATION: OFFICERS MEADOW CHELMSFORD ROAD SHENFIELD JOB REF: 071349 - 6109

CLIENT: CROUDACE STRATEGIC DATE: 23/11/2020

|   |   |  |   |
|---|---|--|---|
| MH No. F4100A<br>DEPTH. 1.73<br>COVER. CH<br>CONSTRUCTION. Br<br>REMARKS.   |    | MH No. S1<br>DEPTH. 1.42<br>COVER. RH<br>CONSTRUCTION. Br<br>REMARKS.  |    |
| MH No. F4100B<br>DEPTH.<br>COVER.<br>CONSTRUCTION.<br>REMARKS.  | BURIED  | MH No. S2<br>DEPTH. 1.25<br>COVER. RH<br>CONSTRUCTION. Br<br>REMARKS. FRAME<br>BROKEN AND LOOSE<br>30% SILT AND DEBRIS IN<br>CHANNEL |    |
| MH No. F6200<br>DEPTH.<br>COVER.<br>CONSTRUCTION.<br>REMARKS.   | UNABLE<br>TO LIFT<br>UNDER HOARDING   | MH No. S3<br>DEPTH. 1.50<br>COVER. CH<br>CONSTRUCTION. Br<br>REMARKS.  |   |
| MH No. F4100<br>DEPTH. 1.94<br>COVER. CH<br>CONSTRUCTION. Br<br>REMARKS.  |  | MH No. S4<br>DEPTH. 1.75<br>COVER. CH<br>CONSTRUCTION. Co<br>REMARKS. PIPES NOT<br>VISABLE   |  |
| MH No. F4000A<br>DEPTH. 3.00<br>COVER. Clover H<br>CONSTRUCTION. Br<br>REMARKS.   |  | MH No. S5<br>DEPTH.<br>COVER.<br>CONSTRUCTION.<br>REMARKS.   | BURIED  |
| MH No. F4000<br>DEPTH. 3.03<br>COVER. SH<br>CONSTRUCTION. Br<br>REMARKS.  |  | MH No. S6<br>DEPTH. 1.68<br>COVER. CH<br>CONSTRUCTION. Co<br>REMARKS.  |  |
| <p>KEY: C - Circular<br/>S - Square<br/>T - Triangular</p> <p>L - Light Duty<br/>M - Medium Duty<br/>H - Heavy Duty</p> <p>Co - Concrete<br/>Br - Brick<br/>R - Rectangular</p> |   |  |   |