This report is as a result of your request at the Special AGM held in March 2001
Any works identified by this report are not the responsibility of the Association

FERRING VILLAGE

EXTRACT ON DRAINAGE ONLY FROM THE ROAD CONDITION SURVEY & DRAINAGE REPORT

Ferring Residents & Owners Association

July/November 2001
Associates Ltd.

HIGHWAY ASSOCIATES
Road Maintenance Consultants
In association with
Gerald Tobias

CONTENTS

Appendices

Plans and appendices referred to are held by the Association members can view via the Executive Committee.

2. INTRODUCTION

2.1 Following an invitation from the Ferring Residents and Owners Association, Consultants Ralph Olesen and Allen Rollings of Highway Associates, developed a series of proposals, with related budget estimates. These proposals and estimates were presented to the Committee of the Association on Wednesday 28th March, and formally accepted by the Association in their letter dated 29th March 2001.

2.2 The brief for Survey and Report is summarised below and is divided into two Phases. Subject to the findings of the Survey and related budget estimates for recommended improvement and maintenance work, it was anticipated that a third Phase would ultimately be authorised to enable contracts to be drawn up and let, through competitive tender procedure.

2.3 Phase III would incorporate any further investigation of drainage systems, development of appropriate specifications for recommended improvement and maintenance work, related contract documentation and supervision.

3. BRIEF FOR SURVEY AND REPORT

3.1 The overall objective of Phases I & II was to determine the existing condition of surfaced carriageways and associated drainage systems. Proposals were to be incorporated for further development and implementation under Phase III of a series of prioritised, rolling programmes. Each proposal for works would include specification, estimate of quantities, appropriate plans and drawings together with the necessary contract documentation.

3.2 Phase I:

- To conduct site investigations, accompanied by level surveys of standing water at previously identified locations, where flooding had occurred, or through which there was significant surface water outfall. The prime objective was to identify areas of perched water table and sections of the existing drainage systems requiring further investigation.

3.3 Phase II:

- To conduct a walk-over road condition survey related to basic inventory, detailing the dimensions and physical characteristics of scheduled roads.
- To undertake a centre line level survey of named roads, including plotting results on OS Plans to facilitate future design of drainage improvements.
- To make a walk-over survey of all identified elements of surface water drainage – gullies, manholes, soakaways, culverts, ditches & ponds.
- To liaise with the District Council, Environment Agency and Public Utilities to determine respective responsibilities and areas of mutual interest.
- To include a contingency item for contractors' services, including selective use of pressure jetting and suction machinery, to facilitate drainage investigation
- To attend liaison meetings with residents, officers and other relevant interests, to report on progress of surveys and to discuss findings to date.
- To prepare and present a Report, incorporating the results of Surveys, together with plans, schedules, photographs, and prioritised recommendations within agreed budgets.

4 INTRODUCTION

At the commencement of the project, various areas of flooding in the village prompted the concern about drainage. Whilst it was realised that the majority of the flooding was localised, a major area of concern was the flooding in Sark Gardens. This flooding was particularly serious and centred on the junction of Jersey Road and Sark Gardens. It was therefore decided to commence the investigation to see if the drainage system, to and from the Little Paddocks, to and from the Warren Pond and to a lesser degree the reported system in Brook Lane, was functioning satisfactorily.

4.1 LITTLE PADDOCKS DRAINAGE SYSTEM.

1 A full investigation of the ditch from the Rife to the Ferringham Lane shops and the pipe system from there to the pond in Little Paddocks was carried out. In addition, the pipe system upstream from the pond was also investigated.

2 The results of this investigation are outlined in **Appendix D/1.** In summary, the results showed that there was adequate fall from the commencement of the ditch at the western end of Ferringham Way to the outfall at the Rife. However, the length of ditch from Ferringham Way to the culvert in Ferringham Lane has become the subject of poor management allowing services, fallen trees, and badly constructed vehicular crossovers to inhibit the flow of water. These obstructions have resulted in a serious silting up of the ditch and increased the risk of blockages occurring. The most concerning aspect is that the culvert under Ferrringham Lane is almost completely full of silt.

3 It was reported that the level of the water in the pond at Little Paddocks had been raised and although there is only superficial evidence of this, the drainage system upstream does appear to have been constructed to discharge at a point lower than the existing water level of the pond. This apparent rise in water level has resulted in the upstream drainage system being flooded and becoming full of silt. It is also noted that this upstream system is in serious need of maintenance.

4 The system presently appears to terminate at an inspection chamber on the north side of Beehive Lane with its junction of Jersey Road and Little Paddocks Way. There does not appear to be any discharge from Beehive Lane into the system but there is a 600 mm diameter pipe heading in a southwesterly direction, which may have, at one time, connected Beehive Lane into the Little Paddock system. This catchpit and pipe system is full of silt and requires jet cleaning before any further investigation can be made.

4.2 SARK GARDENS

1 In an effort to find out where the water in Sark Gardens drains to, levels were taken in the road and in the area of Sea Lane to the east, as old records appear to indicate that a ditch had once discharged in this direction.

2 The investigation revealed that a pipe and ditch system runs from the junction of Sark Gardens and Jersey Road, along the north side of Sark Gardens eastwards. The pipe has been investigated as far as 5m east of the inspection chamber at the end of Sark Gardens, where the pipe appears to have been broken and there is subsidence in the front garden of No.9 Sark Gardens. This drain run, according to records once discharged to the pond in the garden of Elm Lodge at the junction of Tamarisk Way and Sea Lane and there appears to be a number of new bungalows and garages that have been b[illegible] over the drain line. The levels taken along Sark Gardens indicate that this drain was extremely flat and could discharge in either direction. It is noted that the water level in this system was 400mm lower than the pond level in Tamarisk Way but 400mm higher than the pond level in Little Paddocks. It is therefore difficult to assess exactly how the drainage system in Sark Gardens worked originally.

3 Readings were taken on the water levels in the ditch on the east side of Sea Lane which is maintained by the Highway Authority, and this level coincided with the level of the water in the pond in the garden at the corner of Tamarisk Way. This would indicate that the ground water level in Sea Lane is higher than that of Sark Gardens.

4.3 DRAIN RUN IN JERSEY ROAD SOUTH TOWARDS WARREN POND

1 It was hoped that the ditch in Jersey Road running southwards, would eventually discharge into the pond at the Warren, however, the following information reveals t[illegible] if anything, the water would discharge in a northerly direction, towards Sark Gardens.

Invert levels of this drain run on the east side of Jersey Road are approximately 5.3 -5.4 m. AOD. (Above Ordinance Datum)

At the time of the survey, these ditches were dry as expected, as the water level in Sark Gardens was 4.6m. AOD.

The water level in the pond at Warren Road was 4.4 m. AOD, indicating that water would only enter the ditch in Jersey Road when the pond overspilt as the ground level around the pond was 5.4 m. AOD.

In summary the water tables are: -

Sea Lane,	5.0m.AOD
Sark Gardens,	4.6m.AOD
Warren Pond,	4.4m.AOD
Pond level in Little Paddocks	4.2m.AOD

2 In the drains adjacent to the shops in Ferringham Lane, the water level at the time of the survey fell from 3.55m.AOD westwards to approximately 2.7m.AOD at the end of Ferringham Way Lane. This would indicate that the area of Sark Gardens and Sea Lane adjacent to Tamarisk Way has a perched water table, ie water is prevented from flowing through the ground to lower areas.

3 As the water table drops following heavy rainfall, there is obviously some seepage through the ground albeit at a slower rate than elsewhere in the village.

It would be prudent to seek a positive drainage outlet for the Sark Gardens area to prevent future flooding. A solution may be found by connecting the drainage system in Sark Gardens to Little Paddocks pond as the invert levels of the drainage here is slightly higher than the pond level.

4.4 BROOK LANE.

1 It was thought that there was another underground system in Brook Lane that was connected to the caravan site at the end of this road. However, investigations have found that the drainage in this area, including the Closes off the lane, are connected to soakaways and the outfall in the caravan site is fed by a spring coming out of the ground which no doubt is fed by soakaways in the area.

OTHER DRAINAGE POINTS OF INTEREST

4.5 PIPE DRAINAGE SYSTEMS

1 A pipe drainage system was found in Westlands, which appears to discharge into land to the west of the residential area on the east bank on the Rife.

2 A further comprehensive drainage system is to be found in the Ferring Marine area ie southeast corner of the village. A number of roads are connected via a fairly modern pipe and manhole system to a sea outfall which no doubt gives very effective drainage to this area.

3 A short section of pipe was also found in Highdown Way, which discharged into the Rife at its north end, and investigations so far suggest that this pipe is damaged.

4 Other drainage networks were found, such as that in Onslow Drive but these have subsequently been established as being in Adopted Highways and therefore under the control of West Sussex County Council.

4.6 OUTFALLS

1 In addition to the outfall at Marine Drive and that at Brook Lane Caravan Park, also one in the vicinity of Letchworth Close, there appears to be two other private outfalls into the Rife, which are currently under-utilized. The first, behind 12 Oval Way and the second behind 34 West Drive. These present a possibility for future connection to a drainage system, subject of course to agreement on wayleave.

4.7 GULLIES & SOAKAWAYS.

1 The plans in **Appendix D/4** show the positions of all the gullies surveyed and the majority of these are connected to soakaways. The soakaways have also been identified on the plans if it was possible to identify their position. The plans indicate that there are a great variety of gullies and a great variance in the numbers found in the roads across the village. What has become evident in the survey is that a large number of these gullies require maintenance. Action to carry out emergency repairs has already commenced and the next stage of the investigation should in our opinion include the cleaning of the gullies and a jetting out of the pipe-runs connecting to the soakaways.

4.8 AREAS OF FLOODING REPORTED AT ANNUAL GENERAL MEETING

1 Plans were put up at the Annual General Meeting where attendees were invited to mark areas where flooding had occurred in the winter period of intensive rainfall. The Highway Inspectors have also reported areas of flooding and we will investigate these areas along with those already reported. A plan indicating all the areas reported is shown in **Appendix D/2**

4.9 FUTURE DRAINAGE IMPROVEMENTS.

1 **Appendix D/3** contains the first phase of a levels survey, which will assist in the location of new gullies, to determine the feasibility of connection to an existing pipe system, ditch or soakaway.

4.10 DRAINAGE WORKS PROGRAMME

1 **Investigation Works**. Subject to receipt of the report from the investigation into the catch pit at the corner of Sark Gardens and Jersey Road, we recommend that jetting and a television survey be carried out on the pipes leading to and from this catch pit and the catch pit in Beehive Lane adjacent to the pathway into Little Paddocks.

2 **Maintenance/ Investigative Works.** Follow a programme of gully clearing and investigation taken from the Highway Inventory/Condition Survey forms in **Appendix R/1,** and influenced by the areas, which have been reported as prone to flooding.

3 **New Works**. Identify areas requiring additional gullies from reported areas of flooding.

4.11 AUTHORITY TO APPROACH ARUN DISTRICT COUNCIL.

1 It is evident that Arun District Council has assumed responsibility for the ditch running alongside Ferringham Lane on the north side of the road (Plans have been produced confirming this, and are held by the Parish Council).

2 There are a number of obstructions in this ditch and there is considerable silting (see Appendix D/1). A report should be made to the District Council highlighting the shortcomings of this drainage system with a view to getting them to use their powers to improve it.

3 The drainage system upstream of the Little Paddocks pond is in need of considerable improvement. If it can be proven that the area of Beehive Lane did drain into the pond then pressure can also be applied to the District Council to require the owners of Little Paddocks to carry out the necessary improvements.

4 There may be other areas adjacent to the Rife where ditch cleaning is required that could also be within the jurisdiction of the District Council.

4.12 AUTHORITY TO APPROACH THE HIGHWAY AUTHORITY.

There are a number of broken drains on the boundary of the Associations roads and the Highways Authority's roads. A report should be made highlighting the deficiencies at a number of points, especially in Sea Lane.

4.13 CONCLUSION

1 The investigation thus far has identified a number of problems with the drainage but further investigation is required before a comprehensive, budgeted programme can be developed. However, it is recommended that the budget proposals presented above be adopted for drainage works this year.

2 There are considerable maintenance problems to be overcome in the short term, which include cleaning of gullies and jetting clean their connections to the soakaways. The above budget allows for such a programme, with priority being given to the areas of known flooding.

3 The longer-term solution will, in our opinion; rely on the provision of gullies connected to soakaways. There is however, an urgent need to construct an overflow system from Sark Gardens into the outfall to Little Paddocks or even directly into the ditch at Ferringham Lane.

4 The ditch system in Ferringham Lane will need to be improved if it is to cope with this extra water and indeed the existing flow in times of flood.

5 Finally, there is scope to add extra gullies to existing piped systems and the possibility, if agreement can be obtained from landowners, of adding piped systems to the underused outfalls into the Rife.

Drainage Investigations

INDEX

1.0 INTRODUCTION

1.1 Following the initial drainage survey, a large list of unresolved drainage questions remained unanswered and it was agreed by the Ferring Residents and Owners Association Committee members to proceed with a more detailed investigation.

1.2 It was decided to approach the investigation in 3 stages.

a) 2 days with a jetter

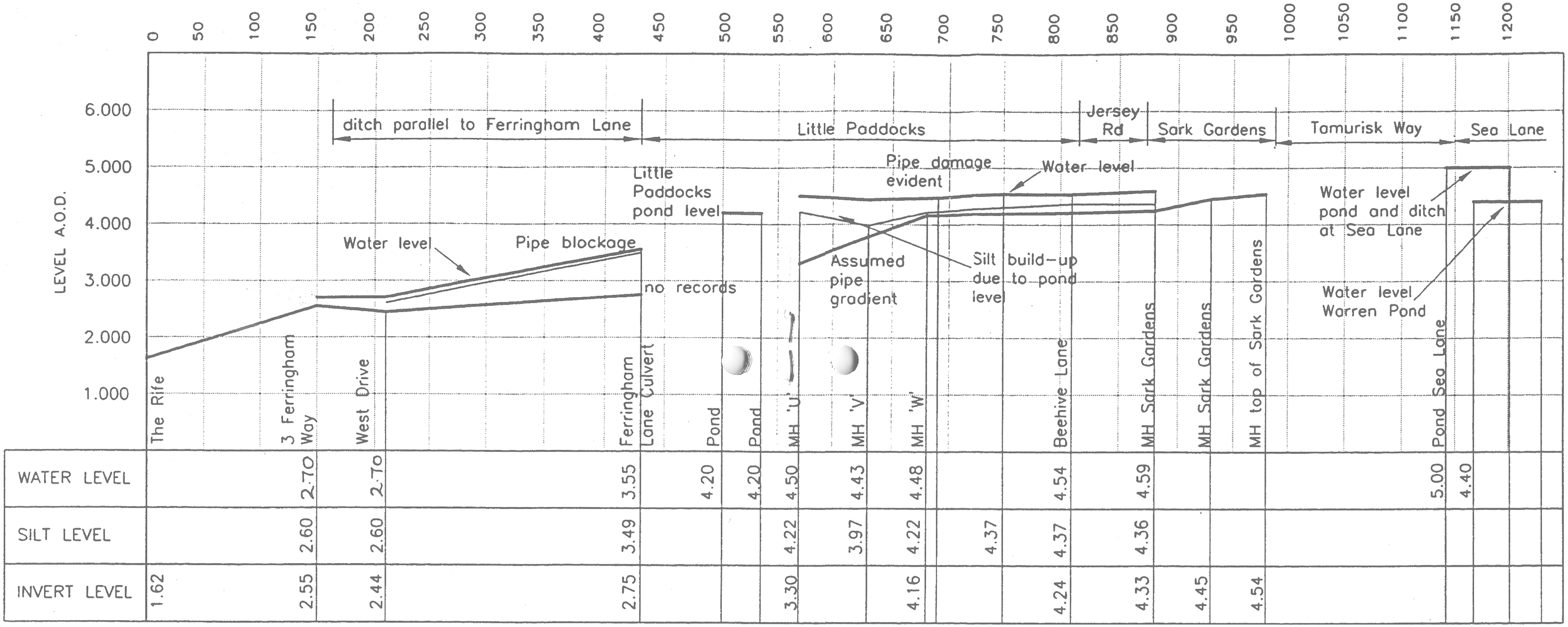
b) 2 further days with a jetter, followed by 1 day with the jetter and a camera crew to try to report on damaged pipes etc.

c) Following discussions with committee members any further jetting and camera work.

It was agreed following the third stage by the committee, that a further day with a jetter and root cutter should be tried in order to establish if the blockages in the various pipe-runs were roots or collapsed pipes. The investigation of the remaining flooding areas would also be carried out. This was designated stage 1.2d.

1.3 The most important area of investigation was in the area of Little Paddocks Way, up Jersey Road and Sark Gardens.

1.4 The above area had the most serious flooding problems and there appeared to be blocked pipes and unknown drainage routes.



DRAINAGE LONG SECTION FROM THE RIFE - FERRINGHAM LANE - SARK GARDENS - SEA LANE

SCALE 1:100 VERTICAL, 1:500 HORIZONTAL

Drawing Number: ACR - 1

Rev

Clients Ref

Project Ref

Base Layout Ref

Cad File Ref

Date: NOV.01

Scale: AS SHOWN

Title: DRAINAGE LONG SECTION

Project: FERRINGHAM LANE DRAINAGE

HIGHWAY ASSOCIATES

Status: REPORT

Client: FERRINGHAM RESIDENTS ASSOCIATION

Rev | Amendments | Date | Dsn | Chk

1.5 The initial investigation strongly suggested that the area in 1.3 above drained through Little Paddocks to a pond and then into a ditch in Ferringham Lane and eventually outfalling in the Rife.

1.6 Two other pipelines required investigation as follows.

1) In Westlands

2) In Highdown Way.

1.7 In addition to these known pipeline problems, a large number of areas of flooding or ponding were reported by inspectors or residents, and these were shown on a plan appended in the main report.

1.8 It was hoped that each of the above locations would be investigated and efforts made to alleviate the flooding.

2.0 SITE WORK (from 1.2(a))

2.1 The first phase of the jetting work was carried out on Thursday & Friday, September 13th & 14th

Jersey Road/Sark Gardens

2.2 During this period of time it was established that a drainage system existed from the catch pit manhole at the junction of Little Paddocks Way, southwards along the eastern side of Jersey Road to connect with the ditch, south of the junction of Somerset Road.

2.3 It was also established that from the catch pit manhole chamber on the north-eastern corner of the junction of Jersey Road and Sark Gardens a pipe and ditch system exists on the north side of Sark Gardens to a point at least 50m east of the catch pit located at the eastern end of Sark Gardens. (See Plan. Appendix A)

2.4 The pipe runs were jetted but it was evident that extensive root intrusion into the pipes had caused the blockages and further work is required to bring the system into a functional condition.

2.5 Although it had been established that the invert levels in the manholes show some general fall toward the Rife, the investigation confirmed that the pipe system had been constructed with extremely flat falls.

2.6 There was however, evidence that at least an overflow outfall was provided using the pipe run through Little Paddocks Way to Little Paddock pond. The long-section in Appendix D shows the relative levels of this connection albeit the information obtained in Little Paddocks is only provisional, as all manholes were full of silt.

2.7 The outfall pipe in the catch pit in Beehive Lane clearly identified that the pipe in Little Paddocks Way was blocked solid with root growth.

2.8 No jetting work or cleansing work was carried out in Little Paddocks as this pipe run was under the control of a separate residents association,

2.9 The catch pit in Beehive Lane is in urgent need of repair and this matter was brought to the attention of committee members.

Highdown Way

2.10 The pipe system in Highdown Way was investigated and found to be completely inoperative due to a collapsed brick culvert.

SITE WORK (from 1.2b)

2.11 This phase of the work was carried out on 19th 20th and 21st September.

Westlands

2.12 The outfall in Westlands appeared to be blocked and an investigation into its whereabouts was carried out, including an attempt to clear it.

Brook Lane

2.13 Flooding in Brook Lane was investigated.

2.14 The area round Mulberry Close had no gullies but a small footway type gully was identified on the opposite side of the road and was cleaned out.

2.15 The flooding point at the end of Brook Lane near its junction with Ferringham Lane was in a channel where no gully existed, however on the north side of Brook Lane there are Highway Authority maintainable drains which should provide a safeguard against flooding of the properties on that side of the road.

Sea Lane Close

2.16 In Sea Lane Close, there is a system of gullies and soak ways and it is evident that the soak away serving the first two gullies in the Close is not functioning correctly.

The jetter was used to try to clear the pipe run to the above soak away but was unable to do so.

2.18 It is evident that there is a large soak away in the garden of No.10 Sea Lane Close but despite an extensive search, this was not found. Additional work is required to locate the soak away in the garden of No.10. A root cutter was thought to be appropriate to assist here but was unable to gain access to the pipes via trap gullies

2.19 A large soak away was however found in the front garden of No.7 Sea Lane Close to which the other gullies in the Close were connected and following extensive efforts to free the cover this was found to be the precast concrete ring type with plenty of spare capacity.

2.20 This has led to the re-recording of the drainage layout in the Close, which was originally provided from developer's drawings.

2.21 Three gullies were cleaned out in this Close.

Park Drive.

2.22 There is only one gully at the top of this drive, it was investigated, cleaned and appeared to be acting as a soak away.

2.23 The flooding reported towards the junction with Sea Lane would appear to be caused by the absence of any gullies at this location.

East Mead

2.24 All gullies cleaned and soak ways jetted.

2.25 Flooding reported at the junction of Sea Lane would appear to be in connection with the Highway Authority's gully at this location.

Sea Lane Gardens

2.26 All gullies cleaned and soak away connections jetted.

2.27 The four areas reported to flood on the north side of Sea Lane Gardens appear to be in areas where there are no gullies.

Beehive Lane/Close

2.28 The gully at Beehive close and the one outside No. 54 Beehive Lane were cleaned and the soak ways jetted.

2.29 Gullies outside No's 25 & 27 Beehive Lane were cleaned and found to have either no soak away connection or a very small outlet.

Tamarisk Way

2.30 Areas of reported flooding appear to have no gullies.

2.31 Gully at the end of Tamarisk Way was cleaned and soak away connection jetted.

Somerset Road

2.32 The gully at junction of Jersey Road and Somerset Road was cleaned and pipe connection to Sark Gardens made operational.

2.33 The gully on the southwest corner reported to have been surfaced over by owner of adjacent property.

Alderney Road

2.34 There is an extensive gully and soak away system serving Alderney Road and its junction with Guernsey Road.

2.35 All gullies cleaned and soak away covers lifted.

St. Holier Road

2.36 All gullies cleaned and soak ways where possible lifted.

Herm Road

2.37 All gullies cleaned and soak ways where possible lifted.

Ferringham Lane (Junction with Ocean Drive)

2.38 It was expected here that the culvert under Ferringham Lane could be jet cleaned and this would help to allow the water to flow into the ditch from Little Paddocks pond.

2.39 The culvert was jetted to approximately halfway across the road where an obstruction was encountered.

2.40 Continuous cleaning of the approximate 300mm diameter culvert from the downstream end, reduced the silt level to approximately 100mm deep. The silt, however, in the ditch, continued to flow back into the culvert making it impossible to complete the cleaning operation completely.

2.41 There is a hole in the verge at the eastern end (upstream) of the culvert and dyed water was placed through the hole but no signs of this dye were evident on the downstream end. This would indicate that the obstruction in the centre of the road might be a manhole taking the water in a different direction.

2.42 Another inspection chamber was uncovered on the east side of Ferringham Lane just south of its junction with Little Paddocks and it is evident that the gullies in the junction area drain to this catch pit.

2.43 The outfall from this catch pit travels in a northwesterly direction across Ferringham Lane to discharge into the ditch at the Pantiles. This 225 pipe is broken 4m from its outfall.(Appendix B)

Additional Site work (1 d)

Henty Road

2.44 Two areas of flooding in this road occurred at: -

1) Eastern End, southern side, with its nearest junction with Jersey Road. The gully and soakaway at this location was cleaned and jetted.
2) Western end on the southern side of the road, the flooding in this location could well have been caused by two gullies having been completely filled with concrete and the jetter was unable to clean one and was only able to partially clean the other.

Chalet Road

2.45 There are two areas of flooding reported in this road. The first of these is to be found halfway between Telgarth Road and Florida Road, where there are no gullies present. There appears to be a long distance uphill at this location without a gully and the gardens do not appear to readily accept the water off the road, thus encouraging ponding to occur.

2.46 The second area is at its junction with Florida Road. There is a gully at this location on the western side of the road but when cleaned and jetted, no water at all would soak away.

2.47 The outlet pipe from the gully was rodded 2 -3m southwards where it came to a stop under Florida Road. This indicates that either the pipe is damaged or the soak away is completely inoperative at this location.

Ocean Drive

2.48 Flooding was reported on both eastern sides at its junction with Telegraph Road. No gullies are located these points.

2.49 Gullies to the north on both sides of the road were cleaned but the soak ways appear to be inoperative.

2.50 Two further areas of flooding were reported at the southern end of Ocean Drive near its junction with South Drive. Neither the one on the east or the west side of the road had gullies at the flooding locations.

South Drive

2.51 Flooding was reported on the north side of South Drive near its junction with The Strand, once again, the cause is the absence of any gullies in the location.

Oval Waye

2.52 One location of flooding was reported on the inside of the northern bend, and the reason is once again a lack of a gully here.

West Drive.

2.53 One area of flooding was reported in West Drive at its junction with Ferringham Lane, and a substandard gully was cleaned at the eastern corner but it is considered that this gully is ineffective against any surface water run-off.

Upper West Drive

2.54 The first area of flooding was reported north of its junction with Ferringham Lane and near the junction of Little Drive. Gullies. In this area the gullys were cleaned and soak ways jetted but the southernmost gully was located beneath a pine tree and it appears that the soak away to this gully has been blocked with pine needles and/or roots.

2.55 The gullies north of this point to its northernmost junction with Foamcourt Waye were cleaned, which included those at its junction with Draycliff Close where flooding was reported.

2.56 There is no gully at the location of reported flooding on the eastern side of this drive opposite its northern junction with Foamcourt Waye.

Foamcourt Waye

2.57 One area of flooding was reported in Foamcourt Waye on the eastern side near the northern bend. All gullies in the Waye were cleaned and jetted however the one just south of the area of flooding has a non operative soak away and the one on the western side of the road is also non operative.

2. There are a considerable number of gullies in this road and those further south work extremely well.

Downveiw Avenue

2.59 One area of flooding was reported at its junction with Cissbury Road, a new gully has been installed in this location, which appears to be working satisfactorily.

Green Park

2.60 Two areas of flooding were reported in this road, however it is not surprising as once again there are no gullies at all in this road.

3.0 CAMERA WORK

3.1 On the final day of the second visit, a camera survey was attempted on the pipework in the Sark Gardens area. Despite further cleaning of the pipes, the success of the camera work was extremely disappointing, as there appears to be either large root intrusion into the pipes or pipe size changes that prevented the camera travelling up the pipes very far. (See enclosed report)

3.2 Camera work was also attempted at the junction of Ferringham Lane and Ocean Drive but once again due to the very high silt content very little success was achieved.(See enclosed report)

4.0 Root Cutting

4.1 On the 17th October an additional day with the jetter enabled the flood investigation work to be completed but also allowed some root cutting work to be attempted based on the report from the camera survey.

4.2 The root cutter attempted to clear the pipes in the three directions from the manhole at the junction of Sark Gardens and Jersey Road, labelled CP1 on the drawing in Appendix A.

4.3 The drain run up Sark Gardens from CP1 to Headwall 1 was successfully cleared of roots, however, the root cutter travelled towards Somerset Road and was prevented from making further progress at the similar point to the camera inspection report page 2.

4.4 When cutting northwards towards CP3 the cutter could only reach an approximate distance of 20m where the cutter broke presumably on a collapsed pipe.

4.5 No further attempts to use the cutter were made as all other pipe blockages were reported by the camera survey to be caused by collapsed pipes. Any attempt to clear these pipes would have caused further damage to the root cutters.

5.0 SUMMARY OF RESULTS

General

5.1 Of the flooding sites investigated, those where a gully was present, it was found that the gullies themselves were either soak ways or were connected to soak ways under the verge.

5.2 The flooding therefore was evidently caused by a silting up of the gully and/or soak away.

5.3 An additional reason for the flooding could possibly be put forward following the investigation at Alderney Road, where there are large purpose built soak ways with good gully connections.

5.4 At the above location, during flooding, the road was subjected to 100mm deep water across the road; this in our opinion must have been caused by a very high water table in that vicinity, flooding out the soakaways. If this occurred throughout the whole of Ferring then no soak away could work and flooding would be inevitable.

5.5 In areas that flooded where no gullies exist at the present time, it is recommended that a soak away type system be installed.

6.0 SPECIFIC AREAS FOR FUTURE WORK.

Sea Lane Close

6.1 The locating of the soak away in the garden of No.10 is paramount with pipe-runs to gullies cleared of roots via the soak away.

Jersey Road/Sark Gardens

6.2 A root cutter has cleared one drain run (CP1 to Head Wall 1 Appendix 1) in Sark Gardens which would enable an additional camera survey to be carried out to locate the specific areas of pipe damage, enabling repairs to be made in this run.

6.3 The catchpit at the junction of Jersey Road, Beehive Lane and Little Paddocks Way requires repair work

6.4 The ditch across the frontage of No's 14C - 14A Sark Gardens requires lowering by an average of 500mm to allow the water to flow in both directions

6.5 The pipe outside No.14 Sark Gardens is broken and approximately 5m of pipe requires to be relaid.

Westlands

6.6 The water outfalls westerly onto fields and this eventually exits via an overflow flap valve.

6.7 The land immediately adjacent to the outfall at the western end of Westlands requires clearing for a short distance to allow the water to flow freely to the lower end of the field.

Highdown Way

6.8 The brick culvert between No. 10 & 16 Highdown Way requires replacing with a new 150mm diameter pipe.

Ferringham Lane, Junction with Ocean Drive

6.9 This is a somewhat difficult area to determine the complete picture of what work is required in order to put the drainage system into working order.

6.10 The following is a suggested course:

1) Repair the 225mm pipe 4m up from its outfall into the ditch at the Pantiles (See Plan Appendix B),

2) Press the District Council to clean the ditch and remove other obstructions along its course including the structural props and struts that have been left in place in a vehicular crossover bridge in Ferringham Way.

3) Carry out further investigations to find out what is the obstruction in the centre of the culvert crossing Ferringham Lane from Little Paddocks. (See Plan Appendix B)

7.0 CONCLUSION

7.1 The additional drainage investigation work has brought about some successes and highlighted a number of serious problems with the drainage system in the area.

7.2 On the positive side it has been established that there was at some time in the past, a continuous drainage route from the Rife via Ferringham Lane, Little Paddocks, Jersey Road, Sark Gardens to Sea Lane. If this route can be re-established and returned to working order it would provide a relief valve for the flooding experienced in Sark Gardens and probably in the Little Paddocks area. (Appendix D)

7.3 All reported areas of flooding contained in the map appendixed to the main report, were visited and various treatments at each site have been described within this report.

7.4 Many of the sites had flooded because there are no gullies present and others where there were gullies, the soak ways have become inoperative.

7.5 It is therefore recommended that additional drainage is installed and a program of cleaning the existing soak ways and/or replacing them be embarked upon.

7.6 Finally the drainage investigation work has incorporated an extensive gully, catch pit and pipe cleaning work in areas of known flooding, this should have an immediate benefit in order to mitigate the severity of the flooding that may be experienced this winter. However it is considered that not all areas of flooding were reported and it is recommended that the remaining gullies and soak ways are cleaned in the near future.