

Report On Field visit to South West Bicester: Pingle Brook

Project No: 11011546

Participants: Ryan Saul and Md. Mouludul Islam from WSP




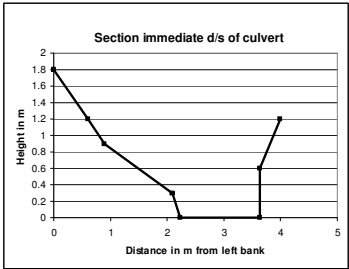
Date: June 23, 2006


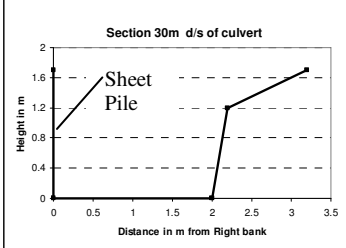

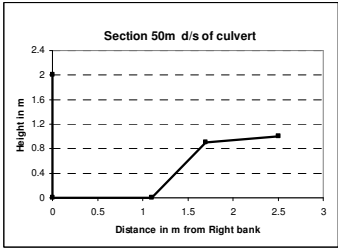



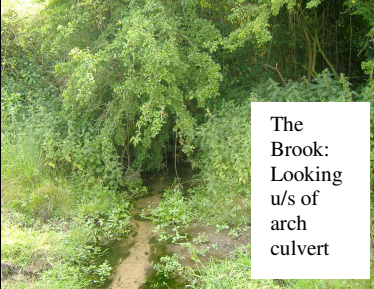

Mode of Transport: Car

Weather: Dry

Travel Itinerary: Departed WSP Basingstoke Office around 9:15 a.m. in the morning and returned back at around 3:30 p.m.

Activities/Observation:

 <p>Brook u/s of culvert (Looking towards d/s)</p>  <p>Brook u/s of culvert (Looking towards u/s)</p>	<p>Brook u/s of Culvert on Oxford Road:</p> <ul style="list-style-type: none"> ○ The Brook flows perpendicular to the culvert entrance before being conveyed under Oxford Road. The Brook is almost entirely covered by trees, bushes and shrubs and not accessible from road or even from the farm. ○ Size of culvert: 1.60m wide, 1.2 m high, IL= 67.275m AOD ○ However, existing vertical opening is now only 0.8m and remaining 0.4 m has been silted . Moreover, the route of the Brook is diverted around the high land on its left hand bank which accounts for it elaborate route. ○ The Brook immediate u/s of the culvert is completely covered by bushes and shrubs and difficult to see its present condition approximately a reach of around 30 m u/s from Oxford road.
 <p>Brook d/s of culvert (Looking u/s)</p>	<p>Brook d/s of Culvert on Oxford Road:</p> <ul style="list-style-type: none"> ○ Brook cross section downstream of the culvert on the Oxford Road is different than u/s. ○ Immediate d/s of the culvert the section is shown. 

 <p>Brook downstream of culvert (Looking d/s)</p>	<p>Immediately d/s of the culvert, the shape of the Brook is trapezoidal. The bottom width varies from 2 – 2.6m. Around 30 m d/s from the culvert, there are sheet piles (not shown in Picture) that are vertically placed. The section at this location is shown:</p>	 <p>Section 30m d/s of culvert</p> <table border="1"> <caption>Data for Section 30m d/s of culvert</caption> <thead> <tr> <th>Distance in m from Right bank</th> <th>Height in m</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td></tr> <tr><td>0.5</td><td>0.8</td></tr> <tr><td>1.0</td><td>1.6</td></tr> <tr><td>1.5</td><td>1.6</td></tr> <tr><td>2.0</td><td>0</td></tr> <tr><td>2.5</td><td>1.2</td></tr> <tr><td>3.0</td><td>1.6</td></tr> <tr><td>3.5</td><td>1.6</td></tr> </tbody> </table>	Distance in m from Right bank	Height in m	0	0	0.5	0.8	1.0	1.6	1.5	1.6	2.0	0	2.5	1.2	3.0	1.6	3.5	1.6
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 <p>The Brook 40m d/s from the culvert; Looking u/s</p>	<p>Approximately 40-45m downstream from the culvert to further downstream there are vertical brick wall along the right bank. The section at this location is shown:</p>	 <p>Section 50m d/s of culvert</p> <table border="1"> <caption>Data for Section 50m d/s of culvert</caption> <thead> <tr> <th>Distance in m from Right bank</th> <th>Height in m</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td></tr> <tr><td>0.5</td><td>0</td></tr> <tr><td>1.0</td><td>0</td></tr> <tr><td>1.5</td><td>0.8</td></tr> <tr><td>2.0</td><td>0.8</td></tr> <tr><td>2.5</td><td>0.8</td></tr> <tr><td>3.0</td><td>0.8</td></tr> </tbody> </table>	Distance in m from Right bank	Height in m	0	0	0.5	0	1.0	0	1.5	0.8	2.0	0.8	2.5	0.8	3.0	0.8		
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 <p>Small culvert around 40 m u/s of Oxford Road culvert to the north east corner of the site, looking u/s</p>	<p>There is a small culvert (2.3 m length, 1.1 m width and 0.5 m high at centre) at the footway to the north east corner of the site. The Brook flows through a very narrow channel which is covered by bushes increasing resistance to flow along the channel up to this arch culvert.</p>	 <p>The Brook: Looking u/s of arch culvert</p>																		
 <p>D/S part of arch culvert, Looking d/s</p>	 <p>The Brook: Looking u/s of arch culvert</p> <p>Downstream of arch culvert the Brooks flood plain is overgrown with bushes and tall grass resulting in significant floodplain resistance. Before entering the Culvert on Oxford Road, at least 30 m of the channel is inside the trees and bushes which was inaccessible in part. The Brook loses its channel shape within this area.</p>																			
	<p>Immediate upstream of the culvert on Middleton Stoney Road, the Brook is lined having trapezoidal shape. The section is 1.2 m deep, bed is 2.0 m and side slope is 1:1.</p> <p>Diameter of culvert is 900mm, soffit is 750 mm above stream bed and parapet is 1.8 m above stream bed.</p>																			

Findings:

- The Brook immediate u/s of the culvert on Oxford Road is not flowing straight to the culvert.
- Before reaching the culvert at Oxford Road, the Brook experiences extra resistance not only from floodplain but also the channel itself as it is not well defined and covered by bushes, weeds and grasses etc.
- Within the site the conveyance capacity of the Brook is significantly reduced compared to its section and reach upstream of the culvert at Middleton Stoney Road.
- Downstream of the culvert on the Oxford Road, there is a significant distance where right bank is protected by sheet piles.

Md. Mouludul Islam