Drainage Problems of Sabir Branch Protective drain – New Halfa Irrigation Scheme

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- Historical Background.
- Investigation of the problem.
- Land Survey.
- Hydrological study.
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Introduction

Scheme Area is 450,000 Feddan

Sabir Branch Area is 118,000 Feddan

Canals Length = 1819 Km

Drains Length = 1430 Km

3 Branch

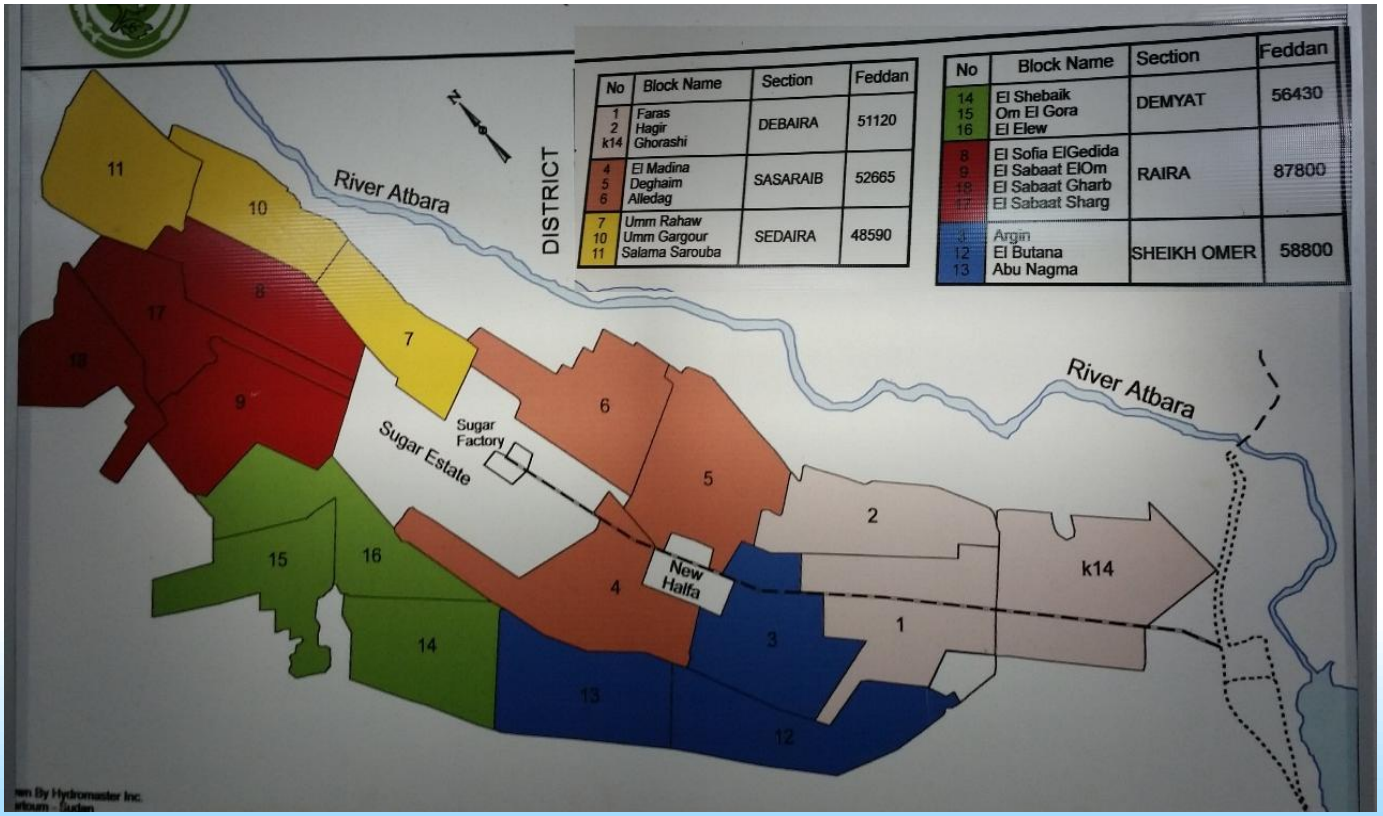
19 Major

128 Minor

229 D.Abu XX

38 Control Point

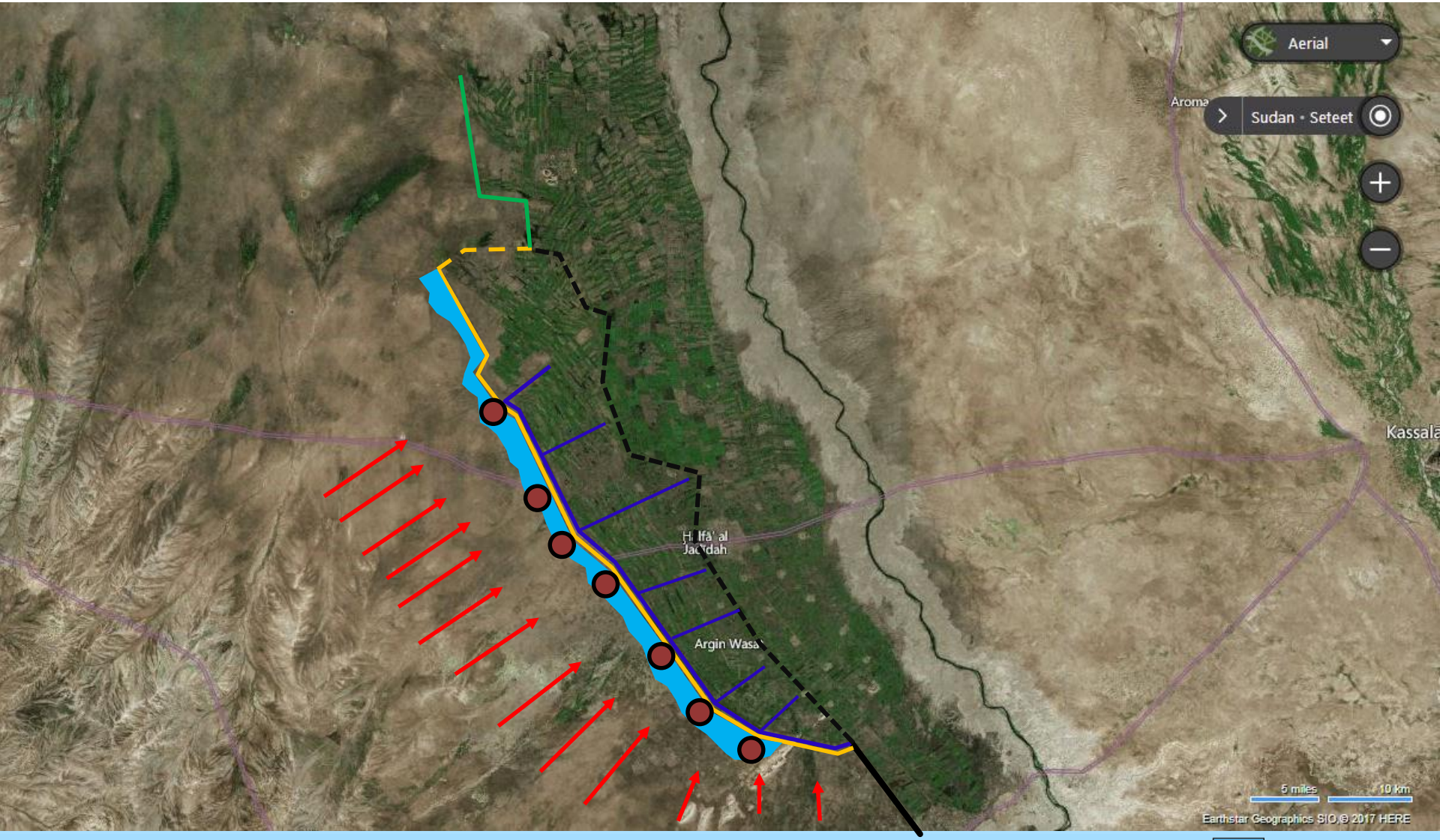
49 Bridge



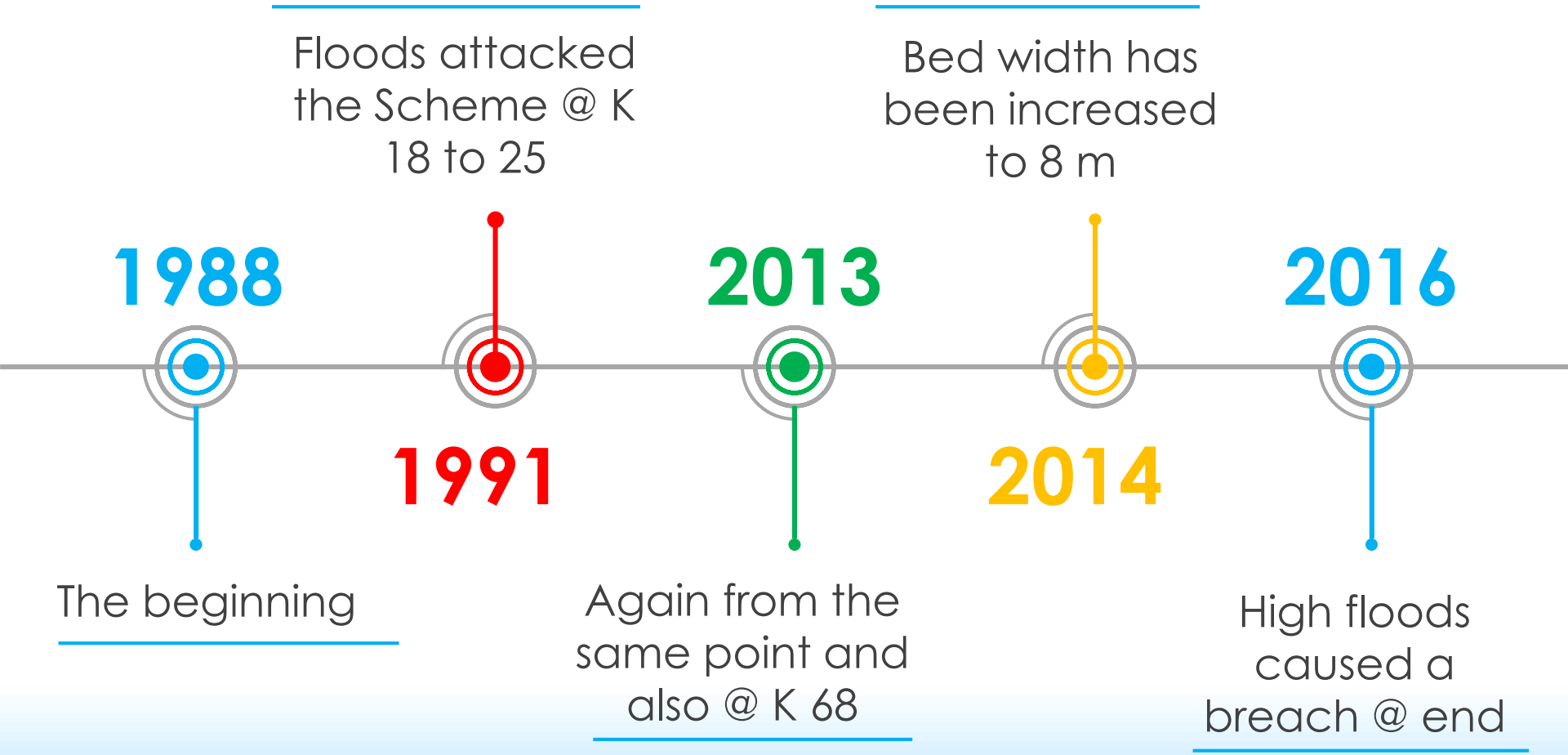
No	Block Name	Section	Feddan
1 2 k14	Faras Hagir Ghorashi	DEBAIRA	51120
4 5 6	El Madina Deghaim Alledag	SASARAIB	52665
7 10 11	Umm Rahaw Umm Gargour Salama Sarouba	SEDAIRA	48590

No	Block Name	Section	Feddan
14 15 16	El Shebaik Om El Gora El Elew	DEMYAT	56430
8 9 18 17	El Sofia ElGedida El Sabaat ElOm El Sabaat Gharb El Sabaat Sharg	RAIRA	87800
12 13	El Butana Abu Nagma	SHEIKH OMER	58800

Historical Background



Historical Background



Investigation of the problem

Bridges Condition

New Halfa

Investigation of the problem

Bridges Condition

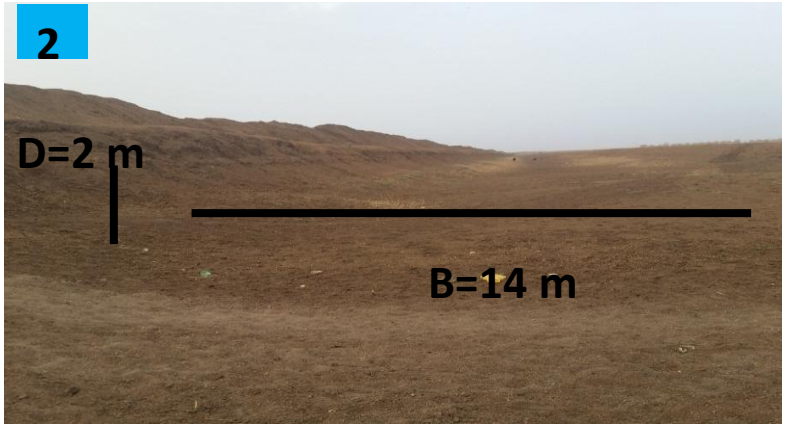
Investigation of the problem

X-Sections

1

قطاع المصرف عند الكيلو 4

2



3

4

نقطة إلتقاء المصرف الواقي مع المنفس

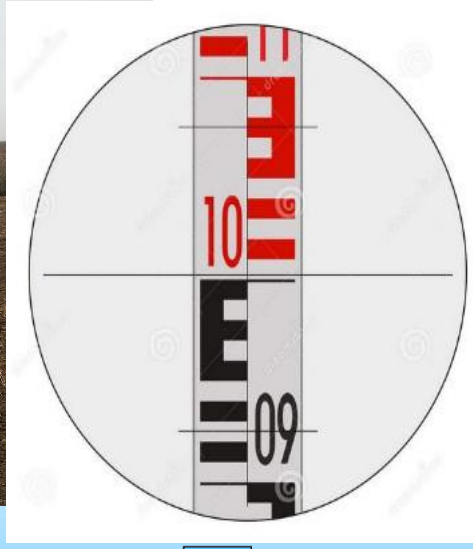
Investigation of the problem

STREAMS

Land Surveying

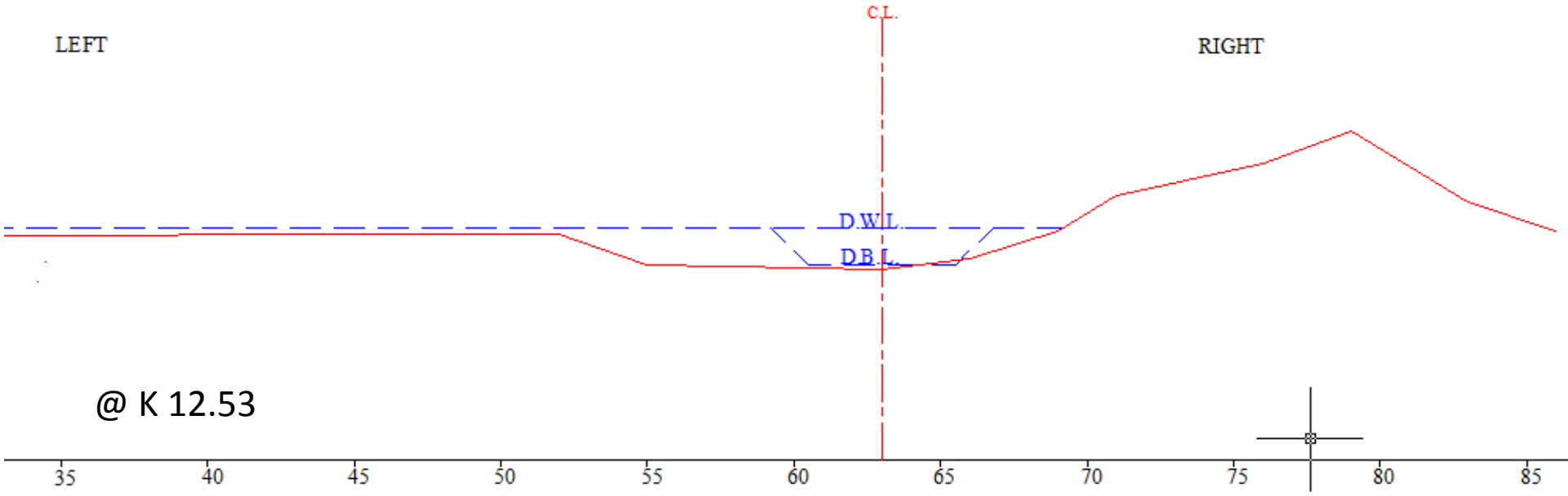
Purpose:

- Plot the L-Section to identify slope.
- Identify any changes in x-sections.
- Embankments condition.
- Identify any changes in the drain layout.
- Human interventions.

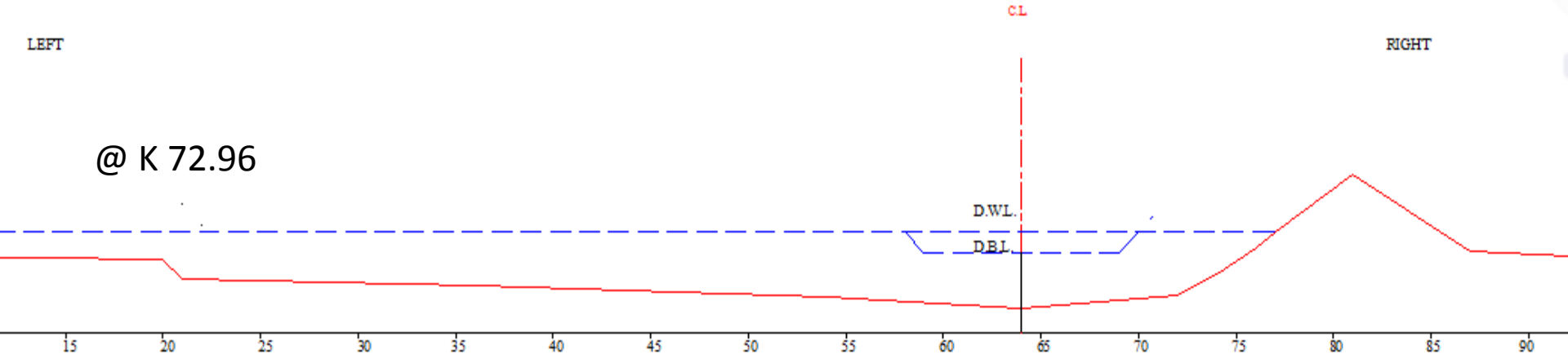


Land Surveying

Land Surveying



@ K 12.53



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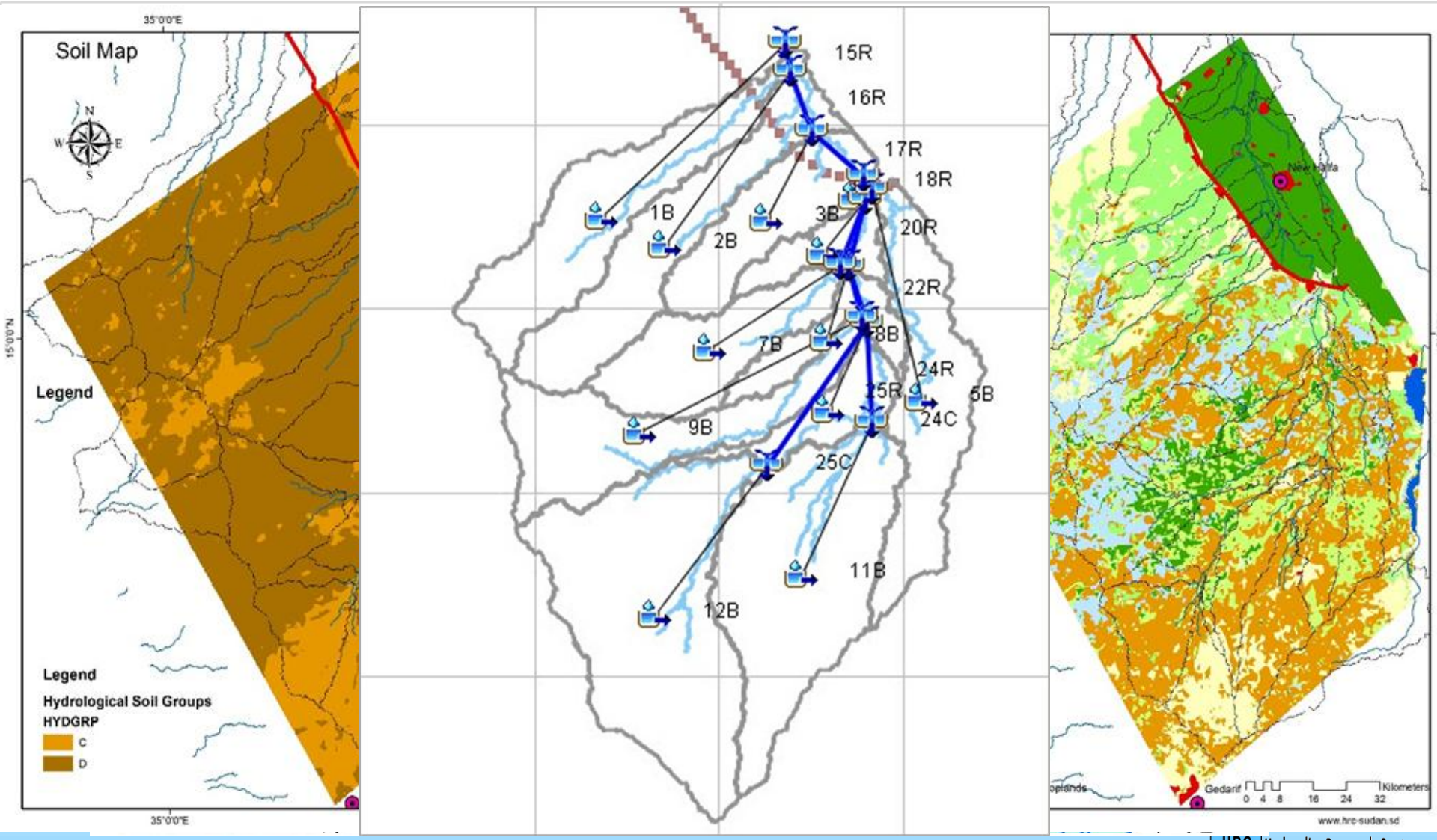
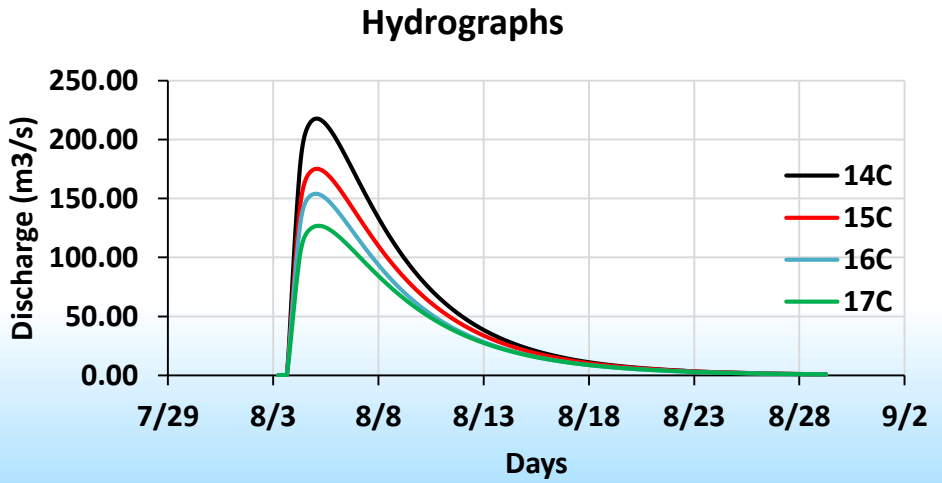
Hydrological Study



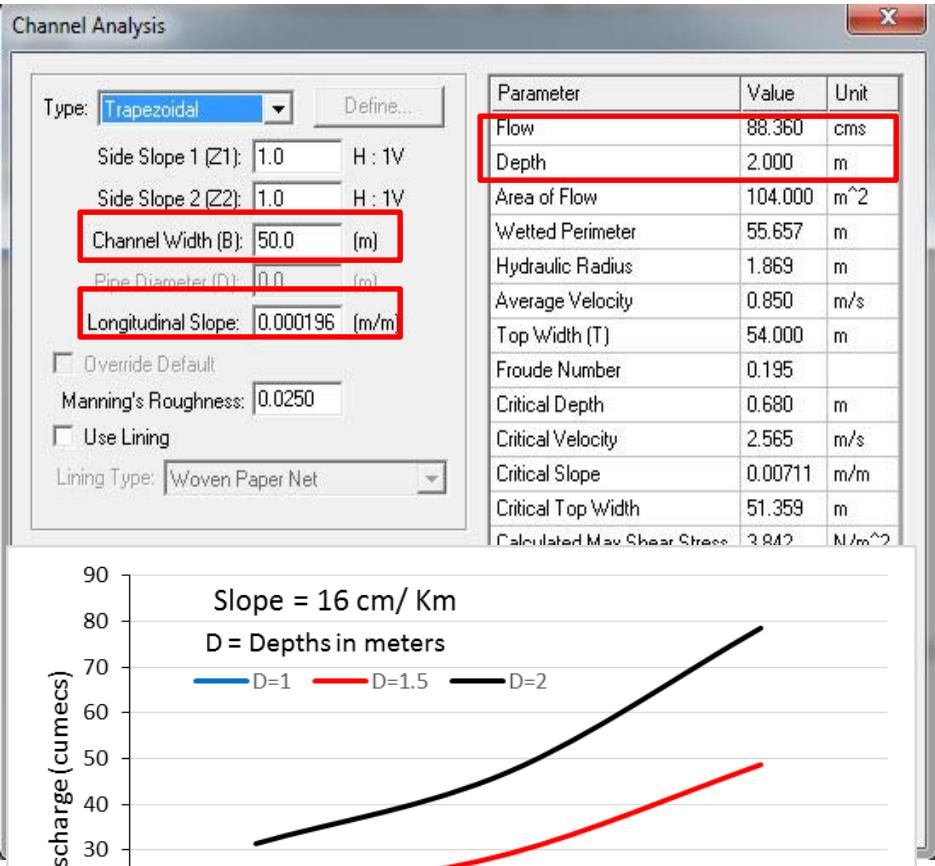
Hydrological Study

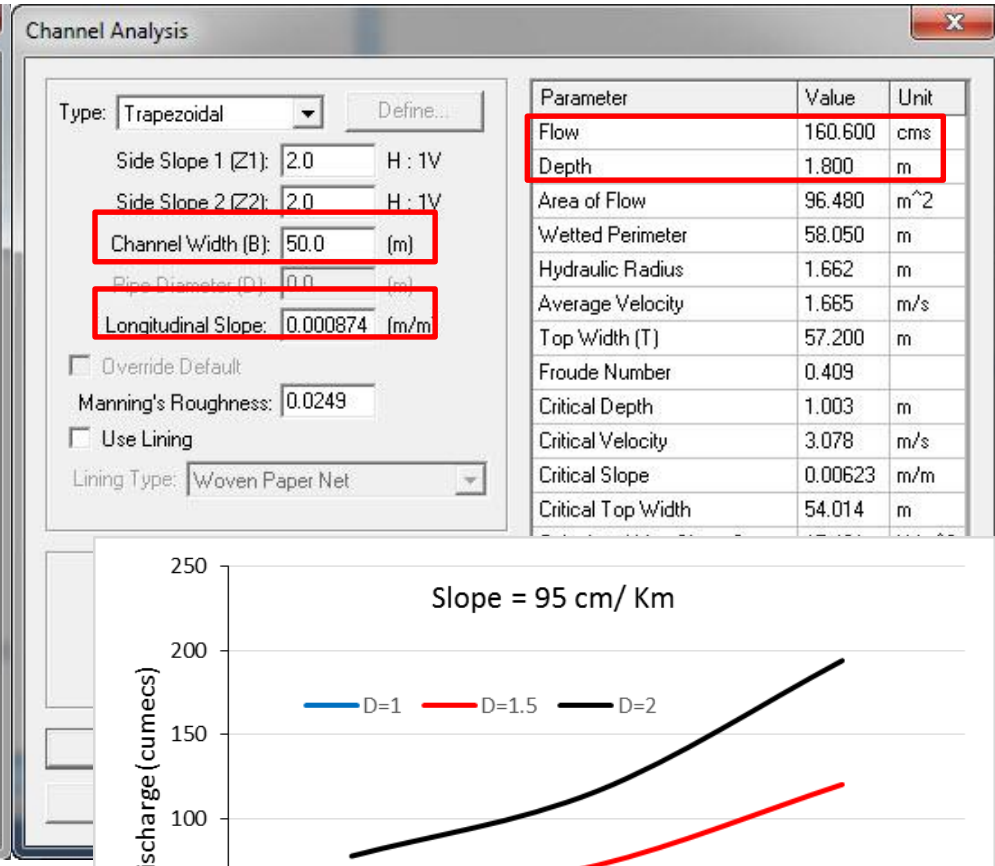
Results:

HEC-HMS Element ID	Drainage Area(Km2)	Peak Discharge (m^3/s)	X-sections
17C	5237	127.0	1 - 8
16C	5710	153.9	8 - 14
15C	6430	175.3	14 - 16
14C	7206	218.0	16 - tail

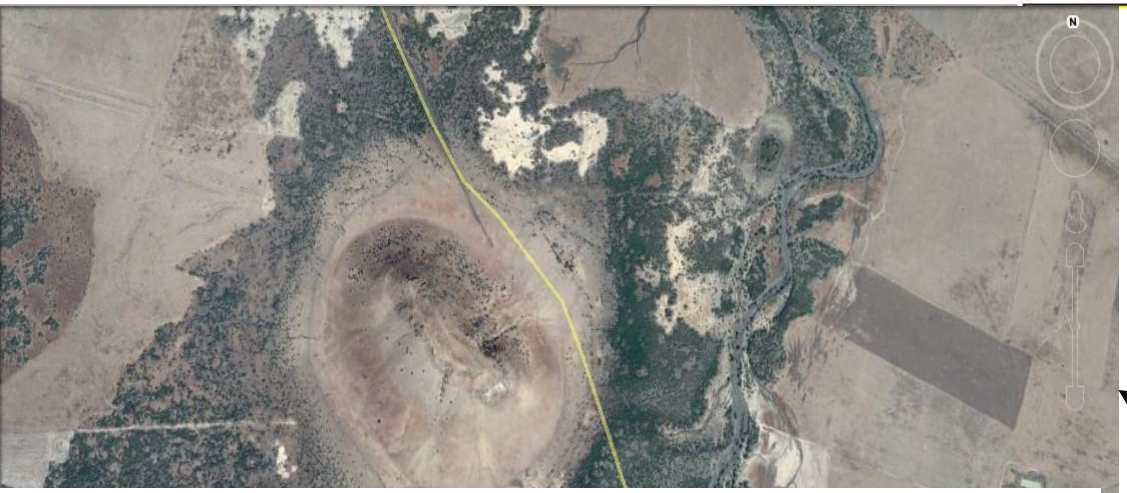


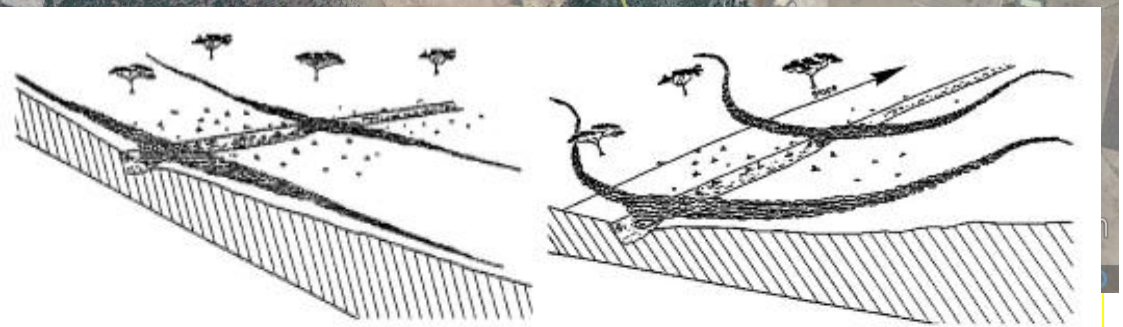
Results & Recommendations

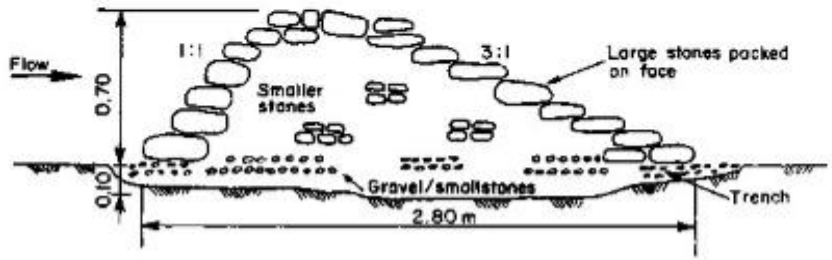


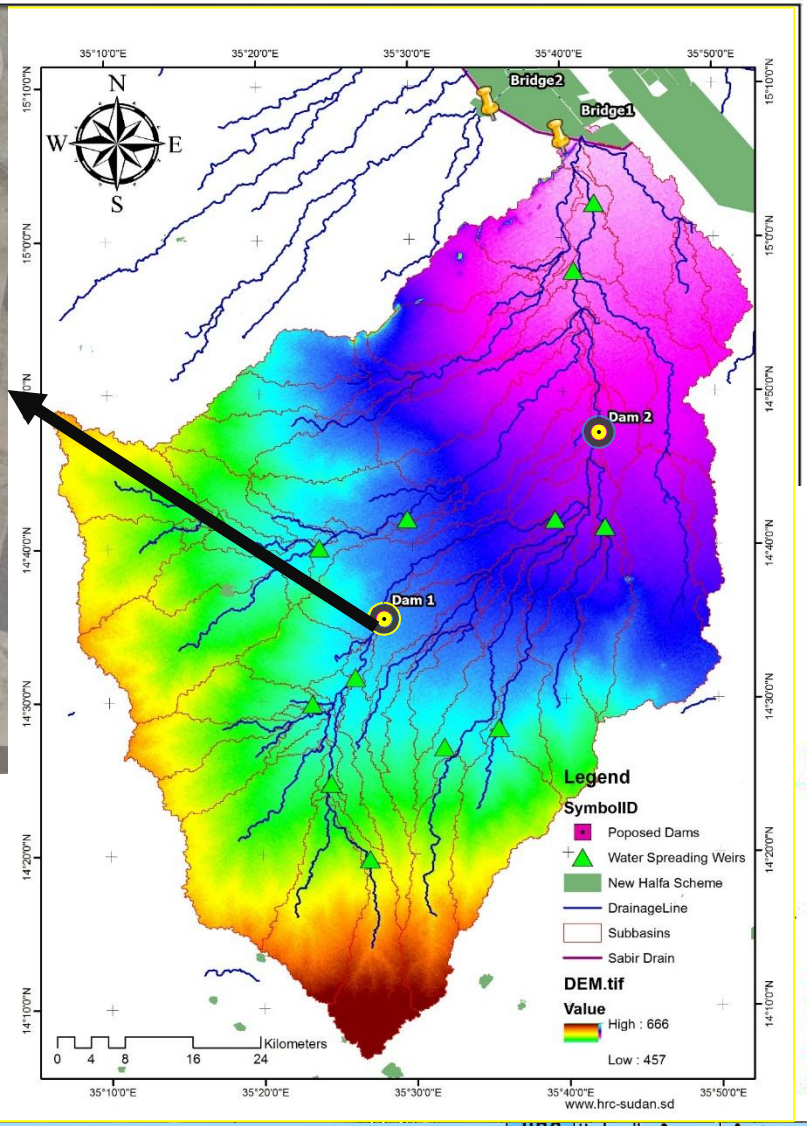


Results & Recommendations









Recommendations

PHASE 1:

- **Box culvert at each bridge to increase discharge area of the bridge.**
- **Maintain pitching at all bridges.**

PHASE 2:

Extend the drain 6 km to the north to divert the water away from the Scheme.

PHASE 3:

Conduct a detailed study for the proposed water harvesting projects in the catchment.

Thanks

Study Team

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