

23 Dawn Crescent, Westville
Durban, 3629
Tel: +27(0)31 262 3171
Fax: +27(0)86 559 9797
Mobile: 082-875 3710
Email: Urvassi@enaq.co.za

**PROPOSED CONSTRUCTION OF GUMEDE BRIDGE,
UMDONI LOCAL MUNICIPALITY**

**BACKGROUND INFORMATION DOCUMENT (BID)
BASIC ASSESSMENT (BA)**

***For review by: Relevant Authorities and Interested and Affected
Parties (IAP's)***

APRIL 2021

COMPILED FOR: VUBA IMAGINEERS, on behalf of Umdoni Local Municipality

***Compiled by: Urvassi Hurburun Pr.Sci.Nat Reg EAP: 2019/1754
EnAq Consulting cc***

1. PURPOSE OF THE BACKGROUND INFORMATION DOCUMENT (BID)

The general purpose of the Background Information Document (BID) is as follows:

- ◆ *The BID serves to inform relevant authorities and Interested and Affected Parties (I&APs) of the PROPOSED CONSTRUCTION OF GUMEDE BRIDGE, UMDONI LOCAL MUNICIPALITY.*
- ◆ *Provide a brief background to the project; and*
- ◆ *To explain the aim, objectives and key activities of the BASIC ASSESSMENT (BA) to be undertaken.*
- ◆ *To give an opportunity to IAP's to voice comments and suggestions so that relevant issues can be taken into consideration during the environmental assessment process*

2. INTRODUCTION AND TERMS OF REFERENCE

PROJECT APPLICANT/CONTACT PERSON: Umdoni Local Municipality: Mr Sandile Xulu
Postal address: Private Box 19 Scottburgh, 4180
Tel: 039 976 1202 **Fax:** 039 9762194
Cellular: +**Email:** sandilex@umdoni.gov.za

To comply with South Africa's environmental legislation, EnAq Consulting cc was appointed by Vuba Imagineers cc, herein referred to as the client, to carry out a BASIC ASSESSMENT for the above-cited project. The project involved entails re-construction of existing storm damaged bridge and approaches to accommodate light to medium weight traffic across Gumede River. The main aim of this Background Information Document (BID) would be to identify any limitations that the environment may impose on the project and the project on the receiving bio-physical and socio-economic environment. The project should ultimately be acceptable and sustainable from a biophysical, social, cultural, technical, sustainable and financial point of view.

The project is situated within Ugu District Municipality under the administration of Umdoni Municipality in Scottburgh. The project site can be accessed by proceeding from Scottburgh take Dududu road and head north west for about 7.5km and taking the right turn onto a gravel road for about 1.6km to arrive at the bridge. The respective site co-ordinates are as follows: 30°14'00.59"S; 30°43'59.66"E. The site falls within sparsely built up communal lands.

The Umdoni Local Municipality is located within Ugu District Municipality about 50km from the city of Durban and 65km from Port Shepstone along the South Coast. Umdoni Municipality is strategically located along major route N2, R612 and R102. It serves as the gateway of Ugu District Municipality from the North. The Umdoni Local Municipality is a Category B (which refers to a local municipality that shares municipal executive and legislative authority in its area with a Category C municipality within whose area it falls in i.e. Ugu District Municipality). It is the smallest of four municipalities in the district, accounting for just under a quarter of its geographical area.

3. SCOPE OF WORK

Gumede Bridge Project will entail:

- Demolishing of existing collapsed portal culvert bridge and construction of a new portal culvert bridge that measures approximately 7.12m long and 6.1m wide.
- Construction Bridge approaches with a total length of about 240m and width matching a standard 5m wide road with gravel wearing course finish.
- Adequate storm water management system and earth retaining structures in the form of gabions are to be provided as necessary. Specialist support services such as topographical survey also form part of the works.

Based upon the design developed, the works can be summarized as follows:

- The bridge to measure 6.1m wide x 7.12m long x 1.8m high.
- To comprise: 2no. x 6.1m long x 1.8m high x 1.8m wide portals + 1no. x 6.1m long x 1.8m high x 2.4m wide portals, 200mm thick deck slab and 200mm thick base slab on micro piles, Gabion wing walls, 200mm thick approach slabs and 300mm high x 1m long guide block.
- 5m wide x 0.24km long approach road finished by 150mm layer of Gravel wearing course on at least 150mm layer of G7 selected subgrade/fill material.
- Associated storm water management by means of side drains, mitre drains and culverts.
- Fill protection and slope stability mechanisms by use of gabions baskets.

Earthwork volumes:

Road	Cut Available For Fill (m³)	Excess Cut (m³)	Fill Shortfall (m³)	Top Soil to be Removed (m³)
Gumede Approaches	202	-	60	276

Material quantities required:

Element	Unit	Quantity
Blinding	m ³	4
Raft foundation	m ³	10
1800 x 1800 Class 75 S Portals	no.	10
2400 x 1800 Class 75 S Portals	no.	5
Top Slab	m ³	10
Wearing Aprons	m ³	28
Gabion Wing Walls	m ³	56
Reinforcement	Tonnes	6
Ø300 mm Piles	m	42

Alternatives:

Location: No alternative location could be considered at this stage for the following reasons:

- *The construction of the new bridge has to occur at the location where the existing portal culvert bridge was damaged and then collapsed.*

Design/layout: The bridge design (portal culvert bridge)

- *A portal culvert bridge at river bed level supported on a pile raft foundation and finished with a reinforced concrete top slab has been evaluated and adopted for this design. It was found to be structurally and economically viable for this particular site.*

The scope of work will be agreed upon and finalized upon completion of data gathering, assessments and evaluations, and specialist studies, during the final design stage.

4. LOCATION / CORRIDOR & ALIGNMENT: (Refer Appendix B)

The project is situated within Ugu District Municipality under the administration of Umdoni Municipality in Scottburgh. The project site can be accessed by proceeding from Scottburgh take Dududu road and head north west for about 7.5km and taking the right turn onto a gravel road for about 1.6km to arrive at the bridge.

The respective site co-ordinates are as follows: 30°14'00.59"S; 30°43'59.66"E.

The catchments identified are given in TABLE 1:

TABLE 1: PROJECT LOCALITY

<i>Local Municipality</i>	<i>Ward</i>	<i>Catchments</i>	<i>Co-ordinates (approximate centre of project areas)</i>	
<i>Umdoni Local Municipality (KZN212)</i>	<i>14</i>	<i>Mvoti-Mzimkhukulu water management area. Amhlongwa Catchment</i>	<i><u>Longitude</u> 30°43'59.66"E</i>	<i><u>Latitude</u> 30°14'00.59"S</i>

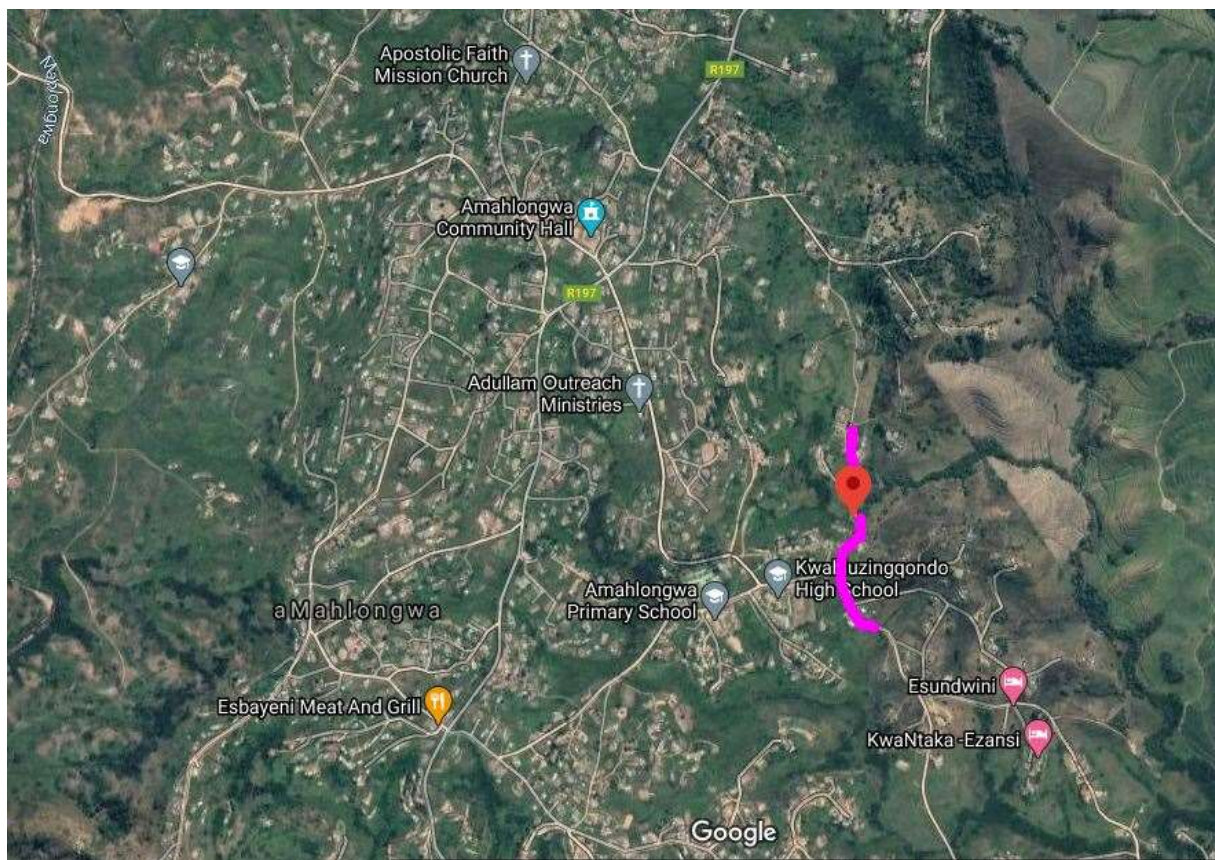


Figure 1: locality map

5. BASELINE STUDY:

ASPECT	PRESENT CONDITION DESCRIPTION
GEOGRAPHIC LOCATION	<ul style="list-style-type: none"> • The project site is located within Ugu District Municipality under the administration of Umdoni Municipality in Scottburgh. • The project site can be accessed by proceeding from Scottburgh take Dududu road and head north west for about 7.5km and taking the right turn onto a gravel road for about 1.6km to arrive at the bridge. • The respective site co-ordinates are as follows: 30°14'00.59" S ; 30°43'59.66" E • The Umdoni Local Municipality is located within Ugu District Municipality about 50km from the city of Durban and 65km from Port Shepstone along the South Coast.
VEGETATION	<ul style="list-style-type: none"> • Umdoni Municipality falls under the Maputaland-Pondoland-Albany Hotspot Region an area described by Conservation International as "Biodiversity Hotspot". The hotspot's vegetation is comprised mainly of forests, thickets, bush-veld and grasslands. • Within the terrestrial environment, two broad biomes are represented in the Umdoni Local Municipality, namely the Indian Ocean Coastal Belt and Forest. • The vegetation types found within Umdoni Municipality are as follows: <ul style="list-style-type: none"> ○ KwaZulu-Natal Coastal Belt: 23301.1ha (97.86% of Municipality) ○ Northern Coastal Forest: 196ha (0.82% of Municipality) ○ Subtropical Coastal Lagoons: 79ha (0.33% of Municipality) ○ Subtropical Seashore Vegetation: 224.6ha (0.94% of Municipality) • According to the KZN Terrestrial Systematic Conservation Plan 2011, 4591ha (19.3%) of the municipality remains natural, while 19100.5ha (80.2%) of the municipality has been transformed. • The significant areas of natural vegetation are the Coastal Strip, river valleys and their tributaries. • Indian Ocean Coastal Belt is the only biome type found within the Municipality. • The dominant vegetation type within the municipality is KwaZulu-Natal Coastal Belt. • There are two critically endangered ecosystems covering 4587.3ha (19.3%) of the municipality, namely: <ul style="list-style-type: none"> ○ Interior South Coast Grasslands (3175.1ha) ○ Southern Coastal Grasslands (1412.2ha) • There are no endangered ecosystems within Umdoni Municipality. However, there is one vulnerable

	<p><i>ecosystem namely KwaZulu-Natal Coastal Belt covering 0.2ha.</i></p> <ul style="list-style-type: none"> • <i>Within the biomes, there are 12 vegetation types found within the Municipality.</i> • <i>The predominant vegetation type is Income Sandy Grassland, which covers 48.61% of the municipality.</i> • <i>It is important to note that most vegetation has been disturbed due to random fires, forest clearing, trampling, overgrazing, agriculture (sugar cane) and township development.</i>
<p>SOILS/GEOLOGY</p>	<ul style="list-style-type: none"> • <i>There are various types of geology (which influences soil production) as well as risk types (hazards) in the Ugu District Municipality.</i> • <i>The geology types are:</i> <ul style="list-style-type: none"> ○ <i>Tilite</i> ○ <i>Mudstone</i> ○ <i>Shale</i> ○ <i>Dolerite</i> ○ <i>Gneiss</i> ○ <i>Arenite</i> ○ <i>Berea Formation</i> • <i>Geological risks in Ugu District Municipality include:</i> <ul style="list-style-type: none"> ○ <i>Collapsible soils</i> ○ <i>Heavy/shrinking soils</i> ○ <i>Landslide risks</i> ○ <i>Unstable slopes</i> • <i>Most likely parent geological material along the coast include:</i> <ul style="list-style-type: none"> ○ <i>Dwyka Series occurring South of the Mkomazi River, inland from the Mtwalume River to the Ifafa River, South of the Mzimkulu River and North of the Mtentweni River.</i> ○ <i>Slight-moderate erosion occurs</i> • <i>Alluvial Deposits:</i> <ul style="list-style-type: none"> ○ <i>Along estuaries and river flood plains, highly productive soils ranging from Sandy through Loamy to Clay deposits, rich and humus, prone to extensive development pressure for cultivation activity.</i> • <i>Sands:</i> <ul style="list-style-type: none"> ○ <i>Overlaying the bluff beds are Berea red sands representing the old dunes- north of Sezela, South of Mpambanyani and south of Umkomaas rivers.</i> ○ <i>Sands colour generally range typically from white to gray, red or brown to yellow depending on the oxidation state of the iron containing minerals coating the quarts grains.</i> ○ <i>These are typically poor for cultivation as they are subject to erosion if disturbed through inappropriate development.</i> • <i>Dolerite:</i> <ul style="list-style-type: none"> ○ <i>Along the uMzumbe Coast and in the vicinity</i>

	<p>of the Damba River.</p> <ul style="list-style-type: none"> ○ Soils usually non-structured clay formations with loam. ○ High agricultural potential. ○ Sections of structured upland clays become water logged. ○ Extensive deposits of Gneiss (Granite) along the entire coast with cretaceous marine sediment deposits. ○ Small quantities of gold, asbestos, limestone, kaolinite, bauxite, graphite, copper and nickel occur on the coast.
<p>LANDSCAPE</p>	<ul style="list-style-type: none"> ● The Umdoni Local Municipality is divided into three major land use zones, that is, commercial agriculture dominated by sugar cane fields, the traditional authority areas located to the North of the Municipal area and the Coastal urban nodes forming part of the ribbon development stretching from Amanzimtoti down the South Coast. ● The land cover in rural areas of Umdoni comprises predominantly of sugar cane, bananas and commercial forestry. ● The majority of the remaining area is under formal urban development. ● There are limited areas of indigenous vegetation interspersed in the commercial crop lands. ● The majority of the rural areas of Umdoni Municipality appear to be under sugar cane production. ● There are relatively small areas of commercial forestry or plantation, particularly in the south of the Municipality. ● Banana production also occupies a relatively small area of the municipality.
<p>WATERCOURSES/WETLAND ENVIRONMENTS/HYDROLOGY</p>	<ul style="list-style-type: none"> ● Umdoni falls with the mvoti-mzimkhulu water management area. ● This catchment is further subdivided into the following 5 catchment areas which are located within the municipality: <ul style="list-style-type: none"> ○ Ifafa and Mvuzi ○ Mpambanyoni ○ Mtwalume ○ Mzimayi, Umzinto, Mkumbane, Sezela and Mdesingane and ○ Amahlongwa ● There are approximately 5 major rivers that traverse the municipality namely: <ul style="list-style-type: none"> ○ Amahlongwa river ○ Ifafa river ○ Mpambanyoni river ○ Mtwalume river ○ Umzinto river

	<ul style="list-style-type: none"> • <i>The municipality also consists of numerous dams and wetlands.</i> • <i>There are 225 wetlands covering 210.6ha (0.9%) of the municipality.</i>
--	--

6. TRIGGERED ENVIRONMENTAL ACTIVITIES

The triggered activities in terms of sections 24(2) and 24D of the National Environmental Management Act 1998 (Act 107 of 1998), and the EIA Regulations, 2014, as amended on April 2017, Government Notice No R326, are as follows:

TABLE 2: LISTED ACTIVITIES

Legislation	Listed Activity Reference	Description as per Regulation	Relevance/Applicability to this Project
Listing Notice 1 of 2014 (GNR 327)	12	The development of- (ii) infrastructure or structures with a physical footprint of 100 square meters or more; Where such development occurs- (a) Within a watercourse	<ul style="list-style-type: none"> - <i>Construction Bridge approaches with a total length of 240m.</i> - <i>There is an existing stream crossing where the existing Gumede Bridge is located.</i> - <i>Therefore, a system of concrete portal culverts shall be used to construct a new low level bridge at the river crossing. (Mahlongwa River passes through here)</i>
Listing Notice 1 of 2014 (GNR 327)	19	The infilling or depositing of any material of more than <u>10</u> cubic meters into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than <u>10</u> cubic meters from- (i) a watercourse	<ul style="list-style-type: none"> - <i>There is a stream where the existing Gumede Bridge is located. (Mahlongwa River passes through here).</i> - <i>Approximately 25m3 will be excavated</i>
Listing Notice 3 of 2014 (GNR 324)	14	The development of- (iii) bridges exceeding 10 square meters in size; (xii) infrastructure or structures with a physical footprint of 10 square meters or more; Where such development occurs- (a) within a watercourse	<ul style="list-style-type: none"> - <i>the area is a classified as a CBA area. Bridge will exceed 10m2, and will occur within the watercourse</i>

7. OTHER APPLICABLE LEGISLATION:

TABLE 3: ADDITIONAL APPLICABLE LEGISLATION

Legislation	Applicable (Y/N)	Relevance/Applicability to this Project (DESCRIPTION/WHY)
National Water Act (Act No 36 of 1998)	Y	<p>National Water Act, 1998 (Act 36 of 1998), section 21 Activity (c): Impeding or diverting the flow of water in a watercourse.</p> <p><i>(The construction of the bridge shall involve temporary diversion of a watercourse as such a water use authorization will be required in terms of National Water Act (NWA) (Act No 36 of 1998)</i></p> <p>21 Activity (i): Altering the bed, banks, course or characteristics of a watercourse.</p> <p><i>(The construction of the bridge will entail impacts and alterations to the bed, banks of the watercourse)</i></p>
AMAFA		<i>This will be verified on SAHRIS</i>
NEMA – Protected Areas Act (No. 57 of 2003)		<i>WILL BE VERIFIED AS PER ECOLOGY REPORT</i>
NEMA – Waste Act – No 59 of 2008	N	N/A
NEMA – Integrated Coastal Management (No 24 of 2008)	N	N/A
Forest Laws Amendment Act – No 35 of 2005	N	N/A
NEMA – Biodiversity Act – No 10 of 2004		<i>WILL BE VERIFIED AS PER ECOLOGY REPORT</i>
NEMA – Air Quality Act – No 39 of 2004	N	N/A
Environment Conservation Amendment Act – No 50 of 2003	N	N/A
Mineral and Petroleum Resources Development Act (No. 28 of 2002)	N	N/A
Conservation of Agricultural Resources Act, 1983 (Act No 43 of 1983)	N	N/A
By-Laws		

8. PROJECT MOTIVATION:

During the site visit, it was observed that there is an existing portal culvert bridge structure that has been damaged and collapsed due to floods at Gumede River crossing. The stream is currently impassable by vehicular traffic and the villagers are currently using alternative routes to access their homes. It is therefore proposed to construct a new bridge to enable easy access to the either side of the stream in all weather conditions.

The objectives of the project are:

- *To address public safety concerns in the village, the Umdoni Municipality intends to construct an appropriate river crossing in the form of a bridge.*
- *To construct a new bridge to enable easy, safe, adequate access to the either side of the stream in all weather conditions.*
- *To choose and design a bridge structure that underpins the factors of durability, safety, economy, constructability and aesthetics.*
- *To accommodate light-medium traffic across Gumede River.*

9. BENEFITS:

- *To provide a new bridge to enable easy, safe, adequate access to the either side of the stream in all weather conditions.*
- *To create temporary employment during the construction of the works.
Community participation and governance in the provision of the improved infrastructure*
- *Progressive developments of this nature serve to address social responsibilities, generating societal pride that is derived from the enhancement of the lives of communities from the roots upward*
- *There will be a significant requirement for unskilled labor from the community.*
- *It is a requirement in the contract documents that maximum use be made of local labor and sub-contractors.*
- *It will also be a requirement that more experienced and established contractors train and mentor labor and emerging subcontractors, during implementation.*
- *This project supports the employment of women.*

10. APPROACH TO THE ENVIRONMENTAL ASSESSMENT:

Phase 1: Phase 1: This phase will comprise of the following: Environmental issues, concerns, development constraints, and possible development alternatives will be identified using professional judgment, project information, experience of similar projects, a review of available literature, site visits and consultation with authorities and the public. A detailed description of impacts, assessment of alternatives, details of the public participation process and the draft environmental management plan (EMP) will be included as part of the Basic assessment.

Specialist studies will be commissioned, and these include Ecological and Riparian, Geotechnical, Engineering report.

The Draft BAR will be made available for authority review and public viewing.

Phase 2: Drafting of the final BAR and the EMPR, and submission to Department of Economic Development, Tourism & Environmental Affairs (EDTEA) for review.

11. ANTICIPATED ENVIRONMENTAL ASPECTS:

ACTIVITY	OUTPUTS	PREDICTED RISK (QUALITATIVE)-based on online screening tool
CONSTRUCTION PHASE	<ul style="list-style-type: none"> ❖ Geotechnical considerations ❖ Surface/groundwater ❖ Biodiversity ❖ Waste production ❖ Safety and security ❖ Access/haulage routes ❖ Visual ❖ Erosion ❖ Dust, noise ❖ Aesthetics 	<ul style="list-style-type: none"> ➤ Low-medium ➤ Medium-high ➤ High ➤ Low ➤ Low ➤ Low ➤ Low ➤ Low-medium ➤ Low-medium ➤ low
OPERATIONAL PHASE	<ul style="list-style-type: none"> ❖ Site restoration and rehabilitation ❖ Alien vegetation ❖ Fire control 	<ul style="list-style-type: none"> ➤ Low-medium ➤ Medium ➤ low

All of these issues will be assigned mitigation measures within the EMPR which will be prepared as part of the report to be submitted to relevant authorities, registered IAP's and EDTEA. Please refer **Appendix A** for "INVITATION TO COMMENT" sheet.

APPENDIX A:

YOUR INVITATION TO COMMENT

The need for public input and involvement is of critical importance and all interested persons and/or relevant authorities are invited to comment on the proposed development and on the information presented here. You can do this by sending your comments in writing to the address shown below. All comments received will be addressed and incorporated in the Basic Assessment report that will be made available for public review. Following this, the final report will be submitted to EDTEA for its consideration.

Contact Name and Address for Comments:

Name: Urvassi Hurburun Pr. Sci.Nat, Reg EAP
Address: 23 Dawn Crescent, Westville,
Durban, 3629
Tel: (031) 262 3171, Fax: (086) 559 9797
e-mail: urvassi@enaq.co.za

Please ensure that all comments have been sent to us by the **05 MAY 2021**

Title:	First name:	Surname:	Initials:
Organisation:	Designation:		
Address:			
Postal Code:			
Tel No:		Cell No:	
Fax No:		E-mail:	

COMMENTS:

- The following issues must be addressed in the BAR, EMPR and specialist reports for the proposed development

.....

.....

.....

.....

.....

.....

.....

.....

- Please add the following persons to your list of interested and affected parties:

Name:	Organisation:
Telephone:	
Address:	
Name:	Organisation:
Telephone:	
Address:	

- Any other comments/issues of concern/suggestions:

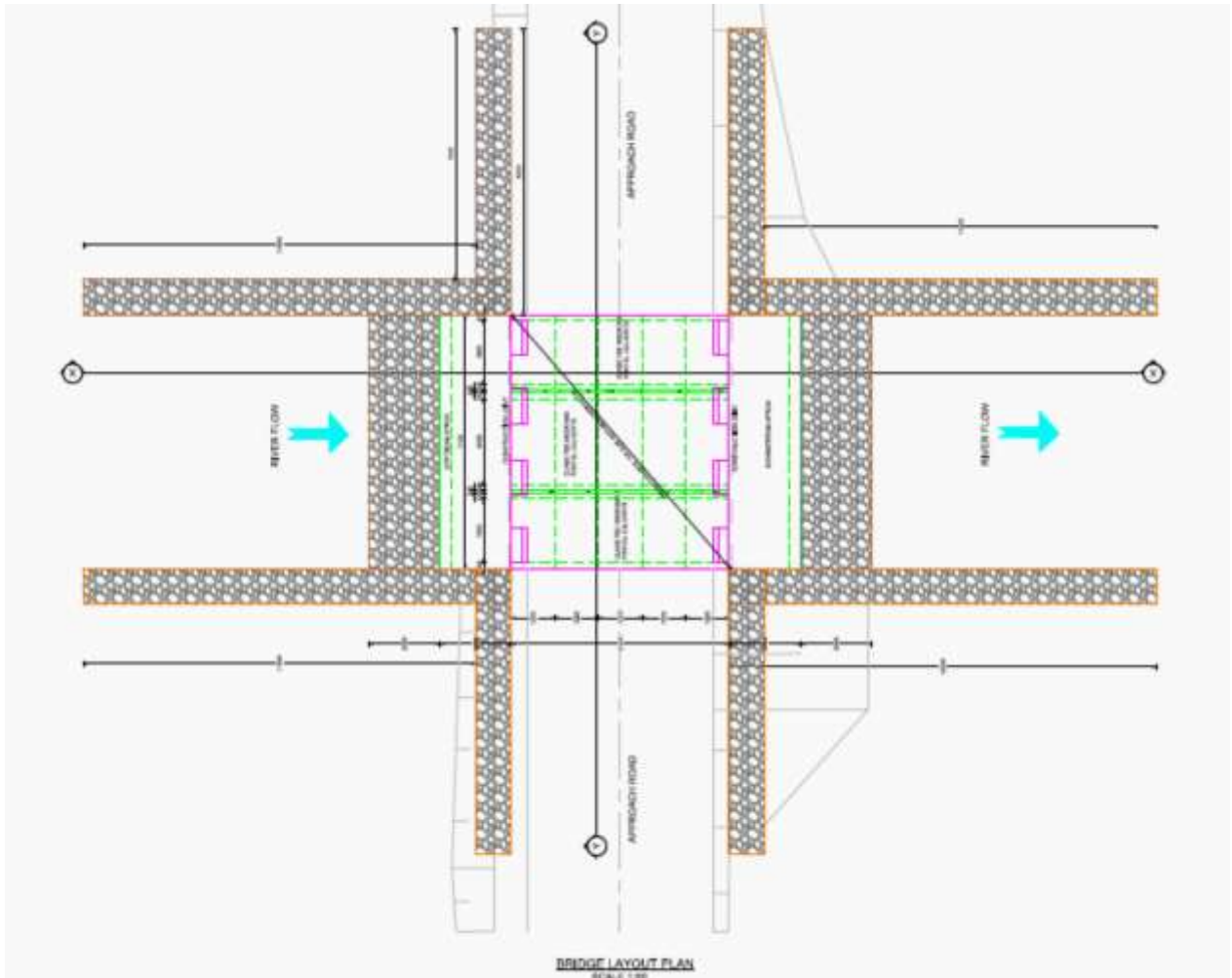
.....

.....

.....

Thank you for your participation!

APPENDIX B: DRAFT LAYOUT



APPENDIX C: SITE IMAGES



Existing bridge in vertical collapse



Condition of existing bridge-approaches