SAFE SCHOOLS AFRICA

Version 3, September 2024

FIA FOUNDATION

AFD AGENCE FRANÇAISE DE DÉVELOPPEMENT

AMEND

Contents

FOREWORD

Africa has the world's highest rates of road traffic injury, and these are increasing as the continent develops, urbanizes and mobilizes. However, roads are a cornerstone of development, and so governments across the continent – often supported by development banks, such as the World Bank and the African Development Bank – invest heavily in developing their road networks.

But too often, the most vulnerable road users – child pedestrians – are not adequately considered in the design of new roads. As a result, road 'improvements' often lead to injuries and deaths. But it does not have to be like this.

I have led programs of pedestrian infrastructure improvements around schools since 2015. Together with my team of engineers and community development experts, we have created Safe School Zones around almost 100 schools in ten countries across Africa. Within these, we have provided life-saving infrastructure – such as footpaths, crossing places and traffic calming – benefitting over 100,000 school children and hundreds of thousands of members of local communities.

A peer-reviewed population-based study carried out with the US Centers for Disease Control and Prevention in 2015 and 2016 found that this work reduces the number and severity of road traffic injuries among school children, also averting the financial and emotional burden that families suffer when a child is injured. And by making the roads safer for children, we make them safer for everyone.

Through the Safe Schools Africa partnership, we are continuing this work and increasing its scale and impact by applying our pedestrian infrastructure principles on larger projects financed by governments and development banks. We are saving lives across the continent, keeping children and others safe.

As we go about this work, we remember our great friend Zoleka Mandela, global ambassador for road safety, who sadly passed away in 2023.

AYIKAI POSWAYO
Project Director, Safe Schools Africa

EXECUTIVE SUMMARY

Around 1.2 million people are killed on the world's roads every year and millions more are injured. Road traffic injury (RTI) is the leading cause of death for children and young people between the ages of 5 and 29 years.[1]

Africa has the highest RTI rates in the world, and while other regions have made progress in improving road safety, Africa is the only region of the world where the number of road deaths continues to rise. In Sub-Saharan Africa, over 95% of roads are rated only 1- or 2-star for pedestrians, meaning they fail to offer an acceptable level of safety.[2] Pedestrians and other vulnerable road users – including children – are most at risk.

Billions of US dollars are invested in road development projects in Africa each year. But despite the existence of important safeguards, roads that do not meet the minimum 3-star standard are still being built. The challenge now is to ensure that safeguards are adequately implemented, and that they are applied to all road development projects – not only those financed by development partners, but also those financed by governments themselves.

The Safe Schools Africa partnership provides proven-effective, targeted assistance on roads projects in Africa. In doing so, Safe Schools Africa delivers safe journeys to school for children across the continent while advocating and building capacity for long-term, systemic change in the processes that currently result in roads that kill African children at rates much higher than their peers in wealthy countries.

> The Safe Schools Africa implementation team provided excellent mapping of needs and good technical knowledge about safety. We are adjusting our designs to incorporate Safe Schools Africa's recommendations. The team is professional, very helpful and ready to support us. Congratulations and thank you!
>
> ***Maria de Fatima S R Arthur, Project Implementation Unit Coordinator, World Bank-financed MOVE Project – Mozambique***

[1] *Global status report on road safety 2023*. Geneva: World Health Organization; 2023. License: CC BY-NC-SA 3.0 IGO.

[2] World Bank (2019), *Guide for Road Safety Opportunities and Challenges: Low- and Middle-Income Countries Country Profiles* (Washington, D.C., US: World Bank)

EXECUTIVE SUMMARY

As well as reducing the risk of deaths and injuries, improving safety for pedestrians and other vulnerable road users has environmental, social and health-related benefits. Walking is a solution to multiple transport-related issues.

Delivering safer roads supports climate change mitigation and adaptation, reducing both greenhouse gas emissions and local pollution. In Africa – where up to 78% of people walk to reach essential services every day – the focus must be on the safety, accessibility and comfort of pedestrians in order to prevent modal shift away from walking.[3]

The Safe Schools Africa partnership is currently providing assistance on seven development bank financed roads projects, covering a total of approximately 650 kilometers of roads in five countries, and undertaking demonstration projects in five countries.

Safe Schools Africa is saving lives now – as well improving environments, health and well-being – by changing how roads are designed and built. There is great demand for this work. The only limit to scale is funding.

Watch a video about Safe Schools Africa here.

[3] UNEP and UN-Habitat (2022). *Walking and Cycling in Africa: Evidence and Good Practice to Inspire Action.* Nairobi. https://wedocs.unep.org/20.500.11822/40071

CASE STUDY

Musa Hussein, 14 years old, Dar es Salaam, Tanzania

Musa Hussein was just five years old when he was hit by a truck while he was walking to school. He was rushed to hospital, where his crushed leg was amputated just below the knee.

His mother had to seek help from their wider family and local community to pay for the treatment, which cost well over $1,000 – a huge amount in a country with a per capita GDP of less than $1,200 a year.

Musa missed two years of school as a result of his injuries, pushing him back in class and limiting his future prospects. Now 14 years old, he does his best to help around the house, but struggles to do any more than the most basic chores.

Musa is still affected psychologically by the day he was injured. He is scared of walking alongside the road, especially when a big truck – like the one that hit him – goes past. But he has no choice – he wants to continue with his education, and the only way to school is along a busy road, with no pedestrian footpaths and no traffic calming measures to slow vehicles down. Sometimes he is so frightened when a truck goes past, that he throws himself into the roadside ditch.

WHY ARE DANGEROUS ROADS STILL BEING BUILT?

No government or development bank wants people – above all children – to be injured or killed on the roads they build or finance. Making roads safe is not a controversial proposition. The challenge lies in changing the existing practices that allow high-risk roads to be built.

There are two immediate reasons why dangerous roads are still being designed and built in Africa: a lack of local capacity and the existence of conflicting priorities within roads projects. We will briefly look at each below.

Lack of capacity

Road development projects in Africa are financed either directly by governments or by loans from institutions such as the World Bank and the African Development Bank. The roads projects are typically managed by government roads agencies, which procure consultants and contractors to undertake the design and construction of the roads.

As such, the standard to which projects are implemented is heavily dependent on the capacity of the roads agencies and their consultants and contractors.

Traditionally, the focus of roads engineering courses in African universities has been on providing for vehicles. And in many countries, the focus of roads design manuals is also on vehicles, with little or no guidance for engineers on designing for pedestrians and other vulnerable road users – despite the fact that only a minority of people own their own cars. As a result, many roads engineers do not prioritize the vast majority of road users – those who walk, take public minibusses and motorcycle taxis, and perhaps cycle – in their designs.

In addition to this, at the design phase, many roads engineers in Africa are overstretched and can only focus on the 'high level' task of ensuring workable road alignments within the constraints of land ownership issues, budgets, and the like. They often do not have the capacity to approach road designs with an eye to accommodating specific road users like school children. Similar issues are seen at the construction phase as well.

With little protection of non-motorized users from motorized vehicles, and often ineffective control of vehicle speeds where pedestrians and vehicles interact, pedestrians in particular find themselves at great risk.

Conflicting priorities

The construction of roads facilitates economic development by reducing journey times. It is seen as a sign of future prosperity, making it understandably popular. As such, politicians in Africa, from the local level to the national and regional level, use road improvements to win votes. Often their priority is to enable people and goods to get from A to B in the shortest possible time – at the highest possible speed – even if these roads pass through communities where there are schools and vulnerable road users.

Project managers in both government roads agencies and development banks are constantly performing a balancing act involving politics, timeframes, budgets and safeguards – and are sometimes confronted by conflicting priorities. They can only push to achieve the safeguards as hard as the local politics – and their timeframes and budgets – will allow, for fear of a project failing.

It is for these immediate reasons that while stakeholders at all levels – all the way from the communities where children are being killed and injured to the presidents of countries – want safe infrastructure for children, the ability to deliver on that demand is severely limited.

It is these challenges that Safe Schools Africa is working to address. By providing pro bono assistance to roads projects teams, we provide the capacity to focus on safety, develop the capability of officials and engineers, and change the minds of politicians – all with the aim of creating roads where children can walk safely, also improving their health, well-being and the environment.

Beyond these two issues, a broader challenge is weak land use planning and control. Across Africa, high speed trunk roads are being built through communities, with little consideration for the needs and safety of the local community. And where roads are improved outside existing urban areas, development follows them, with vendors, businesses, residences and eventually whole communities mushrooming in an unplanned way alongside the roads. Strengthening land use planning is key to improving road safety in the long-term.

> Improving road safety and protecting the planet and our health and well-being go hand-in-hand since so many of the solutions to both issues are linked.
>
> *Partnership for Active Travel and Health*

THE SOLUTION

Safe Schools Africa is a partnership that is made up of the philanthropy FIA Foundation (FIAF), the French Development Agency (Agence Française de Développement (AFD)) and the road safety NGO, Amend. Amend is the main implementing partner, while FIAF and AFD provide funding, global advocacy, and other support.

The work of Safe Schools Africa is based on the principles of Amend's award-winning SARSAI program – *School Area Road Safety Assessments and Improvements*.

The SARSAI program was developed by Amend with the support of the FIA Foundation, starting in Tanzania and expanding to ten African countries. The aim was to prove that the concept of improving pedestrian infrastructure around schools to save children's lives could be effective in African countries. The overarching principle of SARSAI is 'people-centered design' – ensuring that in areas with high levels of pedestrian movement, such as around schools, road design prioritizes people over vehicles.

SARSAI involves:

- A standardized assessment of children's journeys and school areas that looks at school routes, the existing behavior of children, drivers and other road users, and road infrastructure;
- Government and community engagement;
- Design of site-specific infrastructure to improve safety;
- Installation of the new infrastructure – which includes measures such as footpaths, speed humps, bollards, signage, school fences, and new school gates – all designed to separate children from traffic and slow vehicle speeds where children and vehicles must interact;
- Community and school road safety education; and
- Monitoring and evaluation.

Countries in Africa where SARSAI has been implemented to date

Ayikai Poswayo, Safe Schools Africa Project Director, accepting the WRI Ross Center Prize for Cities in New York City for Amend's work on SARSAI

THE SOLUTION

A key aim of SARSAI is to separate child pedestrians from vehicles and to reduce speeds where pedestrians and vehicles interact to 30 km/h or less. At above 30 km/h the risk of death or serious injury in case of impact between a vehicle and a pedestrian rises exponentially. For instance, a vehicle-pedestrian collision at 30 km/h has an approximately 10% chance of resulting in the pedestrian's death, while at 50 km/h that figure rises to over 80%.[4]

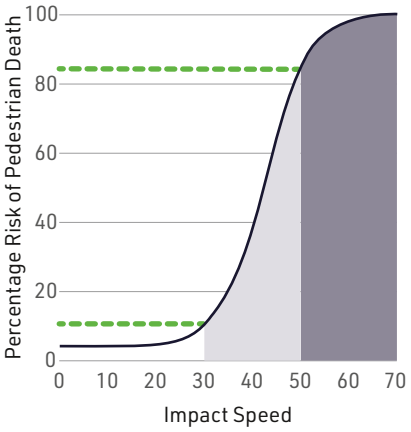
The SARSAI program has won several awards, including the WRI Ross Center Prize for Cities and a Prince Michael International Road Safety Award.

In partnership with the United States Centers for Disease Control and Prevention (CDC), Amend conducted a multi-year population-based impact evaluation of SARSAI. This study found that the program results in an over 26% reduction in injuries among children as well as a reduction in the severity of injuries that do occur.[5] SARSAI is, to our knowledge, the only road safety program of any type to be proven to reduce RTI rates in Africa via such a control study.

Safe Schools Africa is taking the rigorously evaluated, proven-effective principles contained in SARSAI to scale across the continent. Embedding these principles in large-scale projects ensures that thousands of kilometers of roads that would normally be built with inadequate consideration for the safety of vulnerable road users such as children, can be built safely for all.

Safe Schools Africa provides the capacity to save lives on Africa's roads today while building the capability of government roads agencies and their consulting engineers to carry these lifesaving principles forward over the long term.

The relationship between pedestrian safety and the impact speed of vehicles



> Amend's input into the designs of road improvements in Tanzania has helped the World Bank and government roads agencies to ensure that safe road infrastructure is provided in all critical areas for vulnerable road users, especially children.

Eng. Fredrick Manase Nkya, Task Team Leader for Tanzania Strategic Cities Project (TSCP), Co-Task Team Leader on Dar es Salaam Metropolitan Development Project (DMDP)

[4] Tingvall C, Haworth N. *Vision Zero – An ethical approach to safety and mobility.* 6th ITE International Conference Road Safety & Traffic Enforcement: Beyond 2000; Melbourne. 1999

[5] Poswayo A, Kalolo S, Rabonovitz K, et al, *School Area Road Safety Assessment and Improvements (SARSAI) program reduces road traffic injuries among children in Tanzania*, Injury Prevention 2019; 25:414-420

Broadly, Safe Schools Africa's work can be divided into four different areas:

Assistance to roads project teams

Safe Schools Africa works directly with the teams responsible for undertaking roads projects, which are typically made up of government roads agencies and their consultants and contractors, and, in many cases, the technical in-country staff of the development banks financing the projects.

We provide the capacity – which is so often lacking – to focus on the safety of children and other vulnerable road users, ensuring that their needs are understood, the risks they face are mitigated in the designs, and the infrastructure they need is built.

Our assistance involves eleven stages, from project identification through data gathering, and provision of recommendations to support during construction, followed by provision of road safety education and advocacy. These stages are shown in the diagram below.

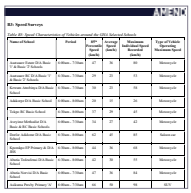
Stage 1
Project Identification & Stakeholder Engagement

Stage 2
Reconnaissance Field Visits, Mapping of Schools & Initial Data Collection

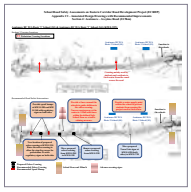
Stage 3
Presentation of Initial Data Summary to Project Teams

Stage 4
Detailed Data Collection at Selected Schools

Stage 5
Data Analysis

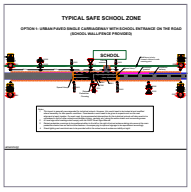


Stage 6
Summary of Findings and Recommendations



Stage 7
Presentation of Findings and Recommendations to Project Team

Stage 8
Project Team Consideration of Recommendations & Incorporation into Designs, if Accepted

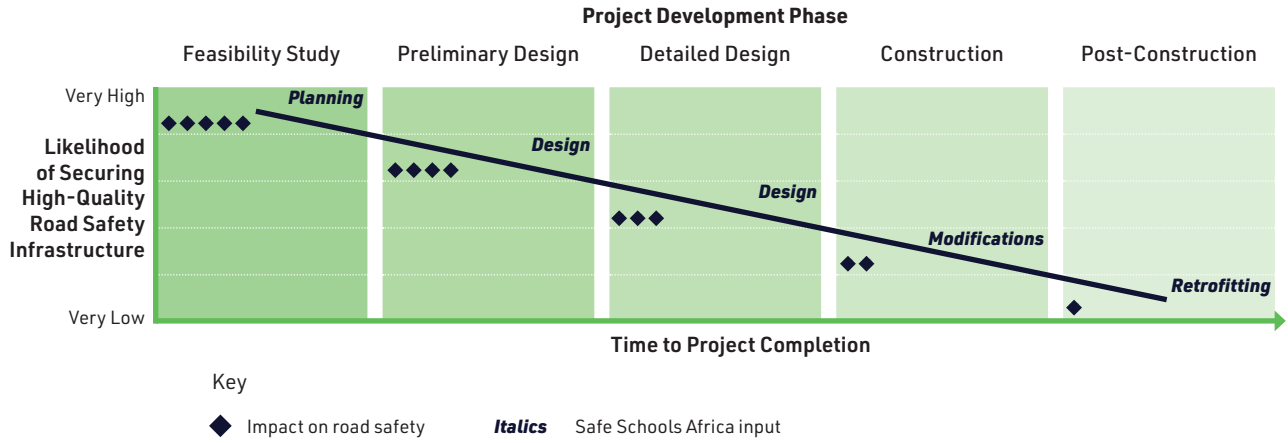


Stage 9
Support and Monitoring during Construction

Stage 10
Construction Complete (Built Results)

Stage 11
Road Safety Education & Advocacy Event (if Applicable)

The earlier in the process road safety can be embedded into a project, the greater the impact will be. The graphic below shows the typical phases of a roads project, the timeframes, likelihood of securing high-quality road safety infrastructure and impact.



A roads project timeline from feasibility to construction can last anywhere from a few years to more than a decade. Safe Schools Africa is able to provide valuable input at any of the phases of a project, from influencing project planning during the feasibility study to providing recommendations on designs or modifications.

Capacity building of roads project teams

To bring about real change, capacity building has to involve far more than one or two workshops with presentations from international experts. The Safe Schools Africa approach to capacity building starts with targeting the hearts and minds of the people we are working with, so they understand that their work can save lives. It then involves hands-on work in the field, meeting with community members and understanding their behavior and needs. And it involves continued support beyond the direct training, allowing people to do the work themselves, but offering a helping hand when needed and requested. The capacity building is provided by engineers and social experts, the majority of whom are African, who have years of experience working across the continent – people who speak the same language as the local project teams.

The objectives of Safe Schools Africa's capacity building and support are:

- To ensure that vulnerable road users are accommodated in the design of the project roads addressed during the training
- To change the approach and increase the capacity of the project team so that they are able to use the people-centered design methodology on future projects

Demonstration projects

Through our demonstration projects, we identify a city's highest risk schools and work with local partners, including city authorities, engineers and contractors to implement SARSAI. We create Safe School Zones – with pedestrian footpaths, traffic calming, safe crossing places and more – around the schools to demonstrate to governments and communities that it is possible to keep child pedestrians safe.

Having installed the new infrastructure, we host 'ribbon-cutting' ceremonies, at which students, parents or teachers talk about the difficulties children face on their journeys to school or injuries they have suffered, and government ministers, city mayors and other officials and stakeholders make commitments to improve road safety. Media coverage of these events raises the profile of the need for an increased focus on vulnerable road users.

Advocacy for improved safety for vulnerable road users

Safe Schools Africa undertakes advocacy at the Africa-wide and global levels. We engage with the development banks that finance road construction and with other stakeholders involved in the roads sector and other related sectors, such as climate and poverty. We write papers and give presentations at international conferences.

Our current focus is a call for increased funding for road safety on projects financed by multilateral development banks.

Safe Schools Africa and the International Road Assessment Programme (iRAP)

Safe Schools Africa complements iRAP's work of assessing high-risk roads and developing Star Ratings, Risk Maps and Safer Roads Investment Plans. iRAP has Star Rated thousands of kilometers of roads in Africa, with 1-star being the least safe and 5-star the safest. After measuring the risk, iRAP produces different scenarios of road improvements which can be simulated to identify cost-effective solutions to improve safety. Safe Schools Africa specializes in assisting roads project teams to develop the detailed designs and providing continued support right through to construction to ensure that the built roads have infrastructure to keep children safe - improving Star Ratings.

SAFE SCHOOLS AFRICA PROJECTS

Safe Schools Africa is currently providing assistance to the roads projects teams on seven projects in five countries, specifically:

Eastern Corridor Road Development Project (ECRDP), Ghana

ECRDP Phase 1 is a US $113 million project financed by the African Development Bank (AfDB) in Ghana. The Safe Schools Africa implementation team has carried out assessments at a number of schools close to the project roads and recommendations have been made for consideration as part of the detailed design phase. The roads project team is currently undertaking a review of the final designs.

Integrated Feeder Road Development Project (IFRDP), Mozambique

This US $185 million World Bank-financed project in Mozambique involves the construction of roads in Zambezia and Nampula provinces, as well as the rehabilitation of a section of the N1/N10 trunk road from Quelimane to Namacurra. The Safe Schools Africa implementation team has carried out detailed assessments at schools in the vicinity of the N1/N10 and has provided recommendations for the safety of school children. A US $2m increase to the project budget to accommodate the recommendations is currently under consideration by the roads project team.

Maputo Metropolitan Area Urban Mobility Project (MOVE), Mozambique

This US $250 million World Bank-financed project involves the construction of a Bus Rapid Transit system in Maputo, with the improvement of some connector roads. The Safe Schools Africa implementation team is providing input at the detailed design phase for some of the connector roads.

> I like the works that were done here. For example, at the zebra crossing, vehicles will now stop and let us cross.

Gabriel Oscar Micaiane from Escola Primária A Luta Continua in Maputo, Mozambique speaking in this video about the SARSAI improvements at his school.

Transport Sector Development Project – National Road (EN1), São Tomé and Príncipe

The Transport Sector Development Project and Coastal Protection Project is a multi-phase project which includes the rehabilitation of National Road 1 between the capital São Tomé and the cities of Guadalupe and Neves. The Safe Schools Africa implementation team has undertaken initial assessments to be able to provide recommendations to inform project preparation for the section between Guadalupe and Neves, financed with US $29m from the World Bank.

Roads to Inclusion and Socioeconomic Opportunities (RISE), Tanzania

RISE is a US $350 million World Bank-financed project with the objective of improving rural road access and providing employment opportunities for populations in rural areas. Building on Amend's people-centered design input at the project development phase, the Safe Schools Africa implementation team undertook assessments and made recommendations for the safety of school children on two roads in Iringa region. The project is currently at the construction phase.

Great North Road (T2) Upgrade, Zambia

This €182 million project, financed by the European Investment Bank involves the upgrading of the Great North Road (T2) between Mpika and Chinsali. Safe Schools Africa's implementation team has carried out assessments in order to make recommendations for pedestrian safety prior to commencement of construction.

Improved Rural Connectivity Project (IRCP), Zambia

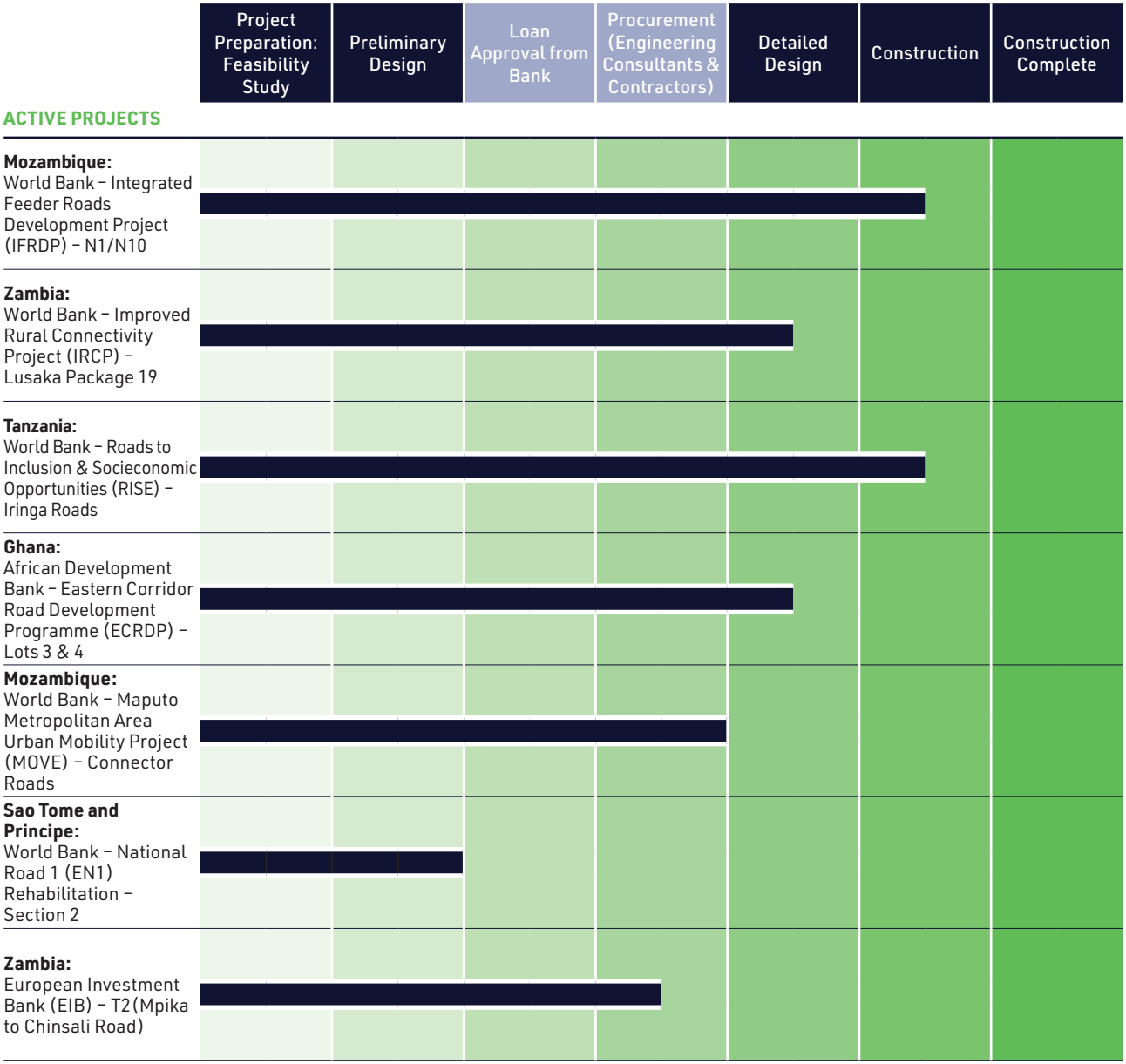
IRCP is a US $200 million World Bank-financed project which has the objective of improving rural road accessibility for communities. The project is improving feeder roads across ten provinces in Zambia. Safe Schools Africa provided input at the preliminary design phase and is continuing to offer support during the detailed design phase.

> Amend has been an excellent partner to the World Bank and the Government of Tanzania supporting the operationalization and enrichment of the People-Centered Design Approach (PCD) which was conceptualized during the preparation of the Roads to Inclusion and Socioeconomic Opportunities Program (RISE).

Ramon Munoz-Raskin, Senior Transport Specialist, Tanzania RISE TTL, World Bank

SAFE SCHOOLS AFRICA PROJECTS

Current Safe Schools Africa projects by project implementation phase

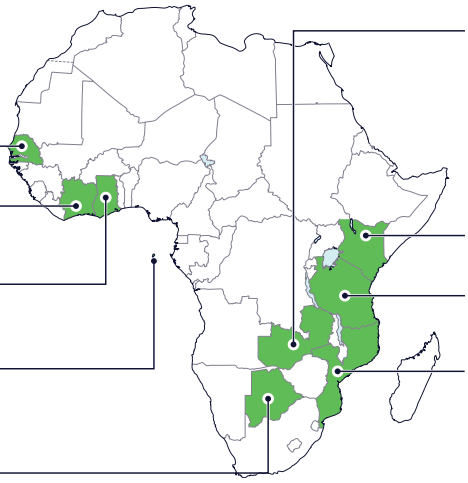


Recent Safe Schools Africa demonstration projects have seen the creation of Safe Schools Zones in Botswana and Mozambique, and projects are ongoing in Côte d'Ivoire, Kenya and Senegal. These take the total number of schools where SARSAI has been implemented to around 100, in ten countries, with previous projects also have been carried out in Ghana, Malawi, Namibia, Tanzania and Zambia.

The recent demonstration project in the city of Bouaké, Côte d'Ivoire, can be seen in this video.

SAFE SCHOOLS AFRICA PROJECTS

Recent and ongoing Safe Schools Africa projects



Senegal
SARSAI demonstrations (Safe School Zones)

Côte d'Ivoire
SARSAI demonstrations (Safe School Zones)

Ghana
Assistance on ECRDP (paved rural roads)

Sao Tomé & Príncipe
Assistance on EN1 (paved trunk road)

Botswana
SARSAI demonstrations (Safe School Zones)

Zambia
Assistance on IRCP (unpaved rural roads)
Assistance on T2 Mpika-Chinsali (paved trunk road)

Kenya
SARSAI demonstrations (Safe School Zones)

Tanzania
Assistance on RISE (paved rural roads)

Mozambique
Assistance on IFRDP (paved trunk road)
Assistance on MOVE (paved urban roads)
SARSAI demonstrations (Safe School Zones)

This document's appendices contain examples of Safe Schools Africa's input on various projects. Appendix 1 contains examples of road infrastructure designs before and after Safe Schools Africa input on the previous World Bank-financed Tanzania Strategic Cities Project (TSCP). Appendix 2 contains photos from various Safe Schools Africa projects before and after installation of the infrastructure. Appendix 3 gives examples of the findings and recommendations of initial investigations on the IRCP project. Appendix 4 contains a typical layout for a school zone on the IRCP project. Appendix 5 provides examples of Safe Schools Africa recommendations on the ECRDP project.

In April 2023, Safe Schools Africa won the International Road Federation's Excellence in Roads African Award for Road Safety.

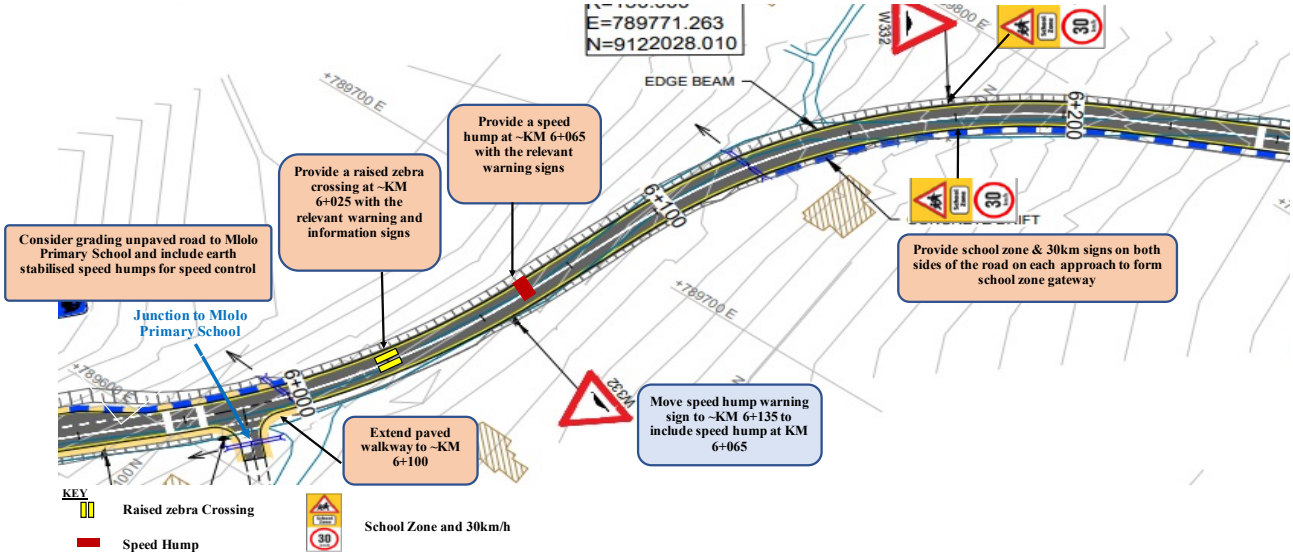
The President of Ghana presenting the IRF African Award to Safe Schools Africa

CASE STUDY

People-Centered Design on the RISE Project in Tanzania

The first time that Amend provided significant support to a roads project team was during the preparation phase of the World Bank-financed RISE project in Tanzania in 2019. Amend helped to develop the project's innovative 'People-Centered Design' methodology, and provided training to the government roads agencies and their consultants and contractors.

Amend's support – delivered through the Safe Schools Africa partnership – has continued through the feasibility, preliminary and detailed design stages of RISE, and now into construction, ensuring that infrastructure designed to keep vulnerable road users safe will actually be built.

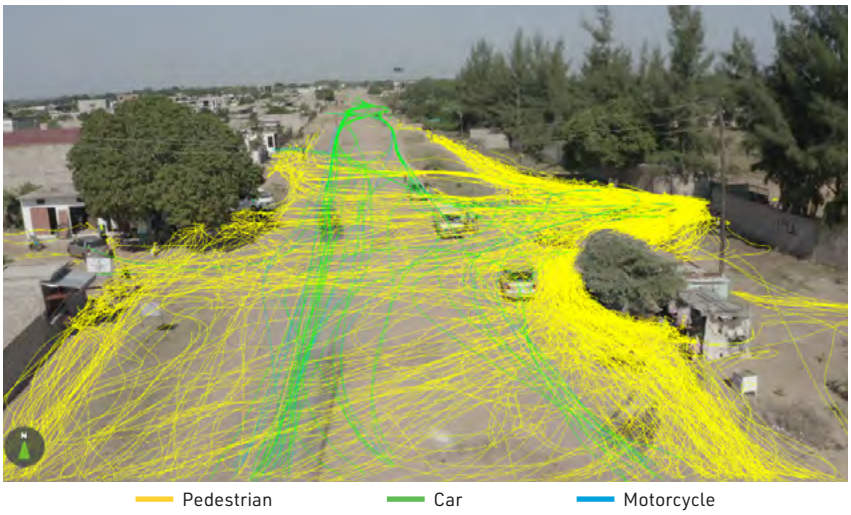


CASE STUDY

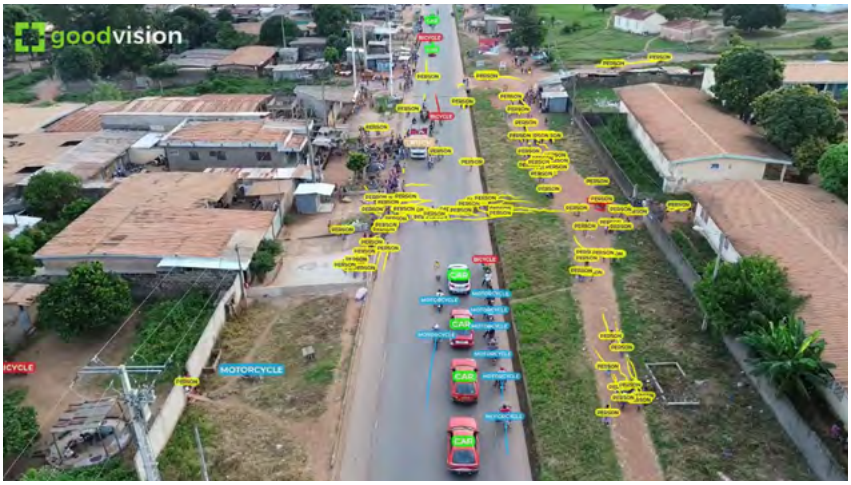
Scaling up through the use of technology

Technology is enabling us to increase the scale, efficiency and accuracy of collecting and analyzing the data that we need to make recommendations for infrastructure improvements. By using drones, we are able to capture a broader picture of children's and other road users' movements, which informs our infrastructure recommendations. And by using specialist software, we are able to produce visual outputs that help to explain to the roads projects teams the road safety risks, with data analyzing vehicle speeds, types, volumes and flows, as well as pedestrian behavior.

The drone control screen



Road user movement trajectory outside a school in Mozambique



Classification of types of road user in Côte d'Ivoire

CONCLUSION

Whenever we knock on the door of a government roads agency or a lending institution in Africa, we find people eager for our help in making roads safe because they realize that business as usual results in needless death and suffering.

Safe Schools Africa presents a unique, focused, time-sensitive opportunity for funding partners to save children's lives on roads that are being built now.

From a funding partner's perspective, Safe Schools Africa is an attractive proposition: the work is highly-focused and proven effective, and 100% of donor funds go directly to program work, which is immediately ready to scale up.

This work is pressing: roads are being financed and built throughout Africa at a rapid pace (the process did not slow down at all during COVID-19), and there is no other entity that is providing support on these projects to make sure that the roads are designed and built with the safety of children in mind.

The demand for the work of Safe Schools Africa is enormous. At any given time there are hundreds of large roads projects underway across the continent, and if these roads are not built safely, with consideration for pedestrians, many more children will be killed and injured.

There is immense opportunity for the incorporation of proven, lifesaving infrastructure measures in roads projects in the near term and at considerable scale and, over the longer term, to change expectations about how roads in Africa are designed and built. Safe Schools Africa's aim is that one day, all roads on the continent will be designed and built safely for all road users as a matter of course, and no one will be able to imagine that it was ever any other way.

> People who walk and cycle are the foundation of resilient and sustainable mobility futures. Their experiences and needs should be ascribed the appropriate value to ensure the benefits are realized.
>
> ***Walking and Cycling in Africa, UN Environment Programme, UN-Habitat and Walk21 Foundation***

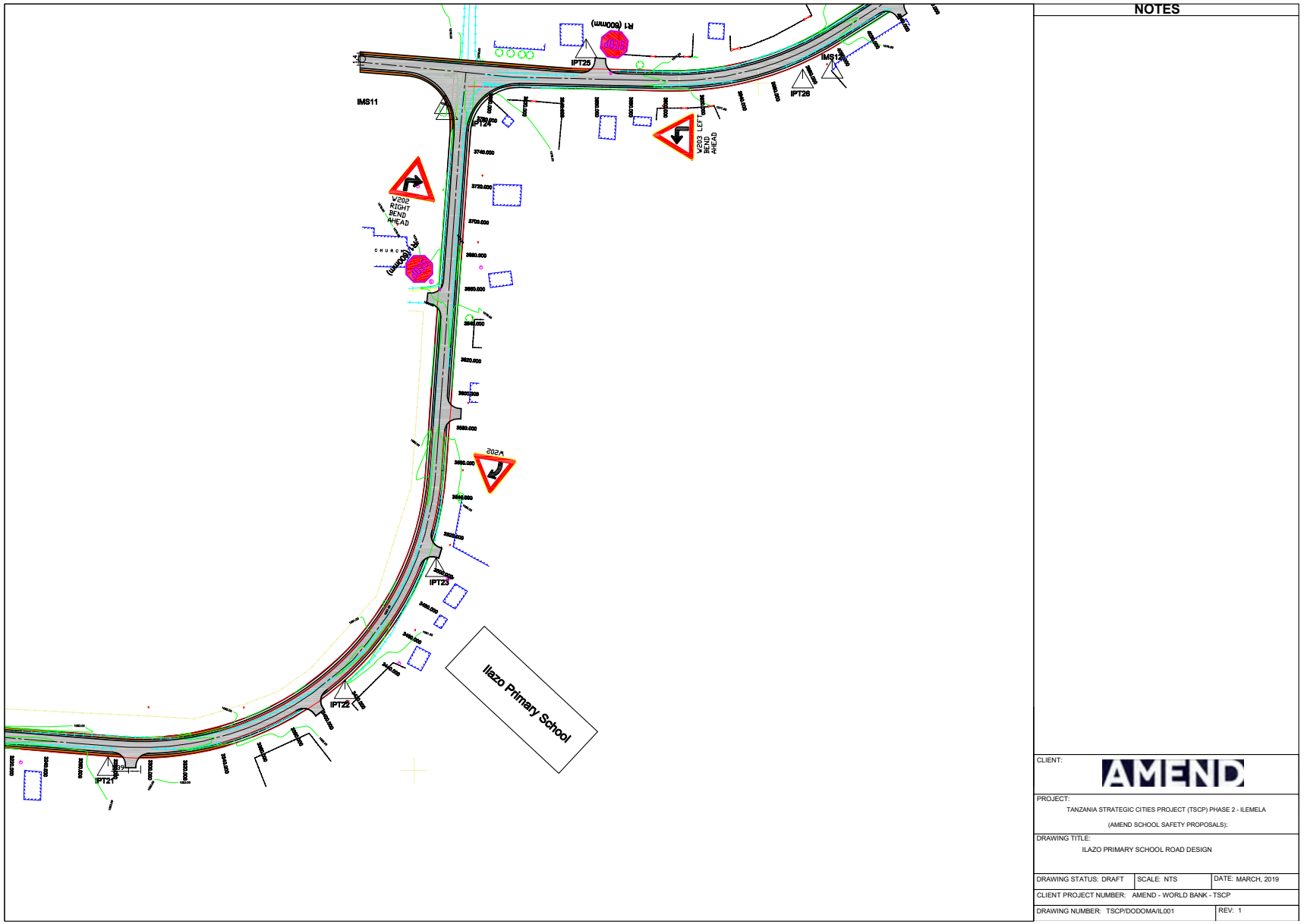
For more information, please contact:

Jeffrey Witte, Executive Director, Amend, jwitte@amend.org
Saul Billingsley, Executive Director, FIA Foundation, s.billingsley@fiafoundation.org

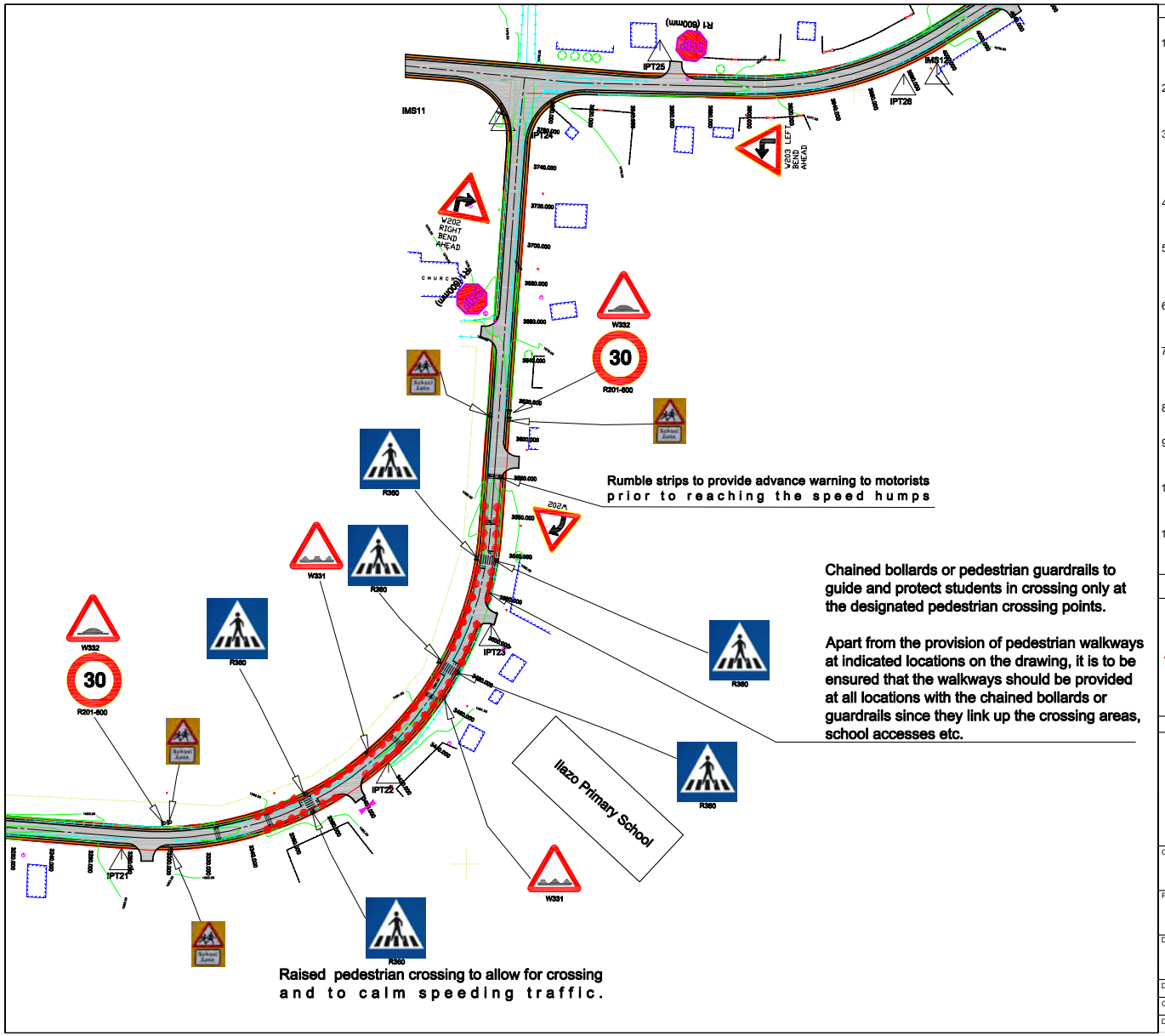
APPENDIX 1

School area infrastructure designs before and after Safe Schools Africa input

SITE 1: BEFORE SAFE SCHOOLS AFRICA INPUT



SITE 1: AFTER SAFE SCHOOLS AFRICA INPUT



NOTES

1. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE JUSTIFICATION AND RECOMMENDATIONS REPORT AS ATTACHED.
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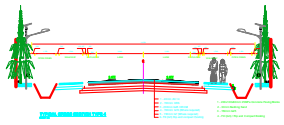
LEGEND

- Proposed raised pedestrian crossing/ hump
- Proposed rumble strips
- Proposed chained bollards or guardrail
- Proposed road signs
- Proposed school zone signs
- School gate

TYPICAL CROSS SECTION



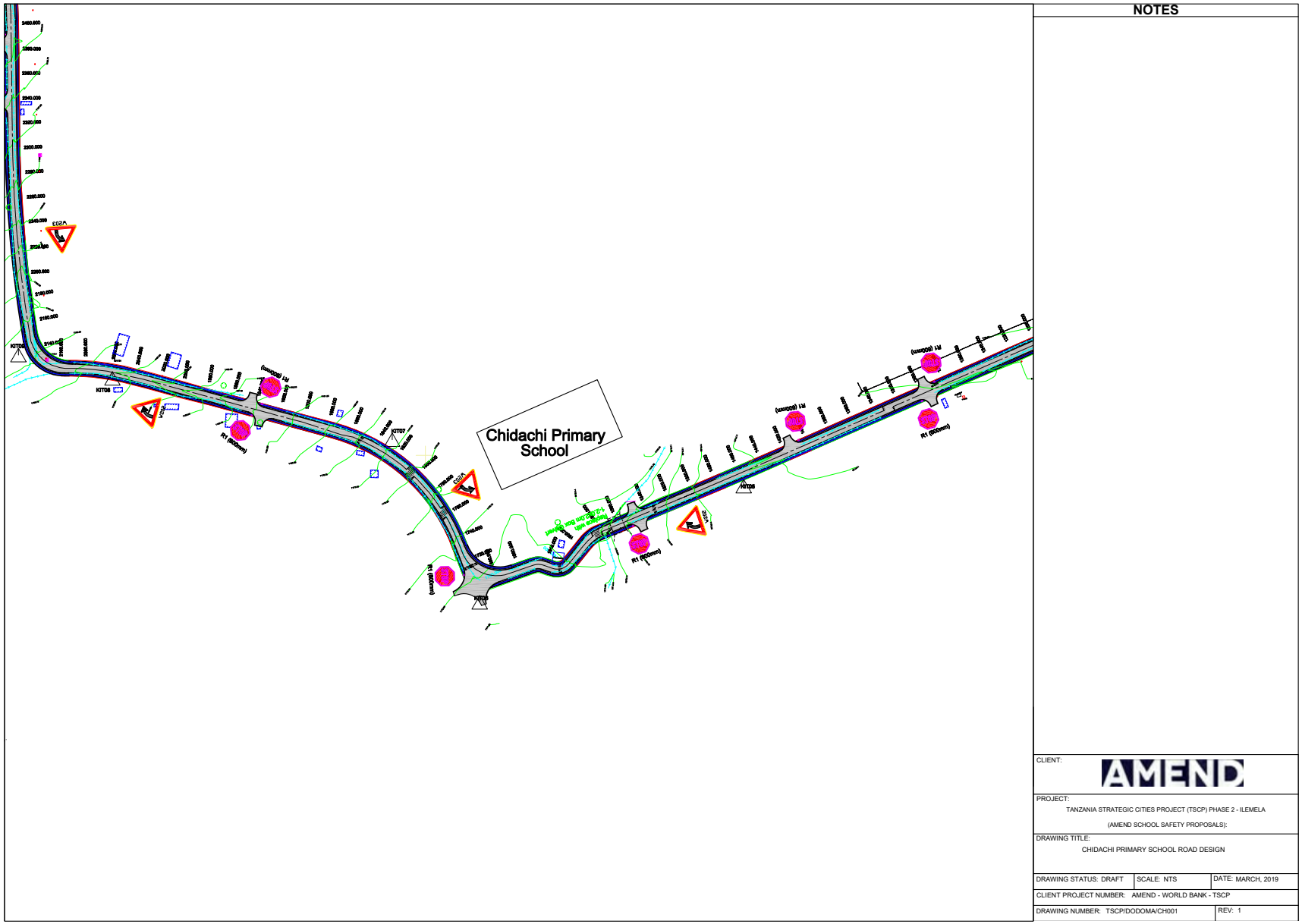
CLIENT: AMEND

PROJECT: TANZANIA STRATEGIC CITIES PROJECT (TSCP) PHASE 2 - ILEMELA
(AMEND SCHOOL SAFETY PROPOSALS):

DRAWING TITLE: ILAZO PRIMARY SCHOOL PROPOSALS

DRAWING STATUS: DRAFT	SCALE: NTS	DATE: MARCH, 2019
CLIENT PROJECT NUMBER: AMEND - WORLD BANK - TSCP		
DRAWING NUMBER: TSCP/DODOMA/IL001		REV: 1

SITE 2: BEFORE SAFE SCHOOLS AFRICA INPUT



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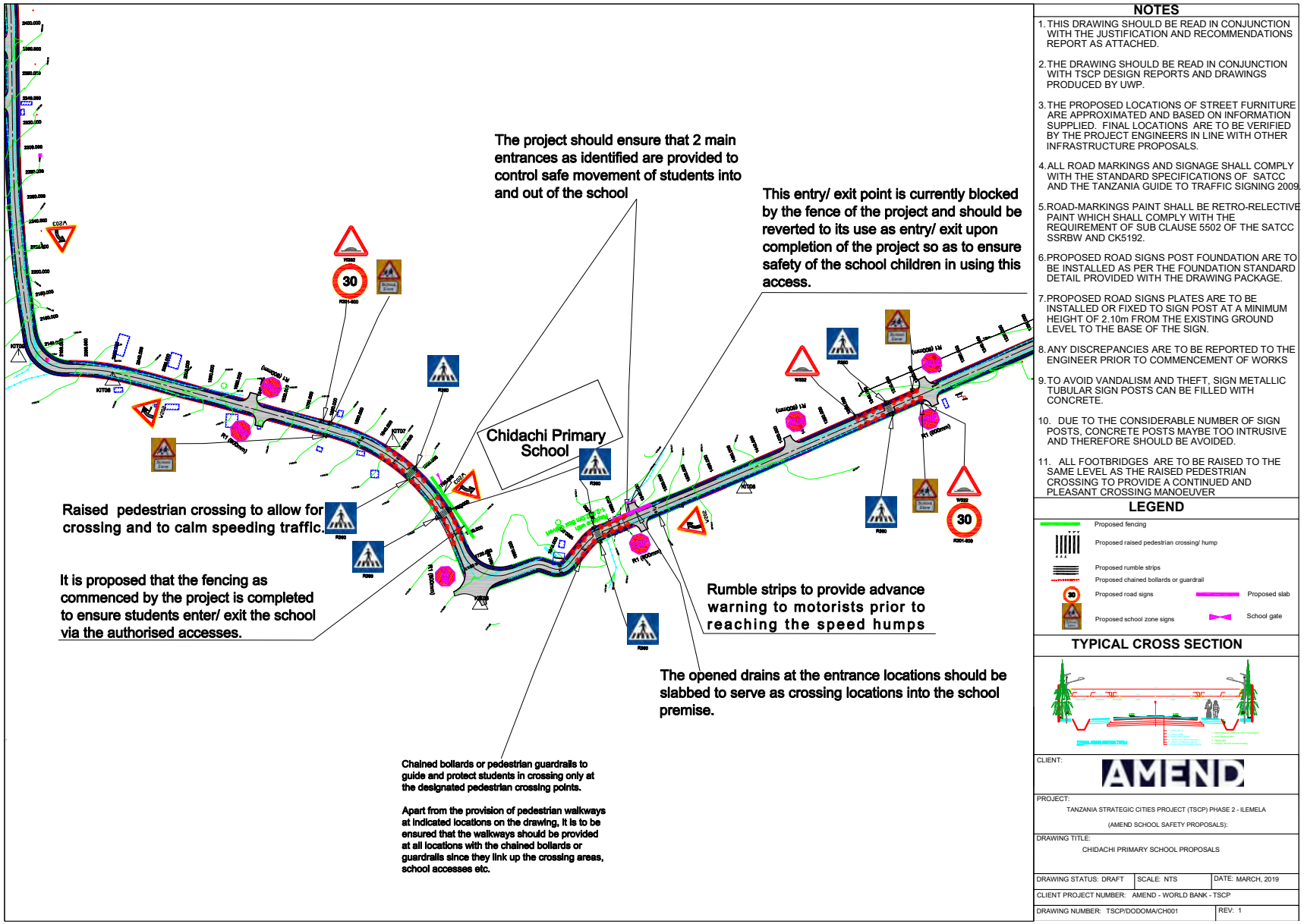

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LEGEND

- Proposed fencing
- Proposed raised pedestrian crossing/ hump
- Proposed rumble strips
- Proposed chained bollards or guardrail
- Proposed road signs
- Proposed slab
- Proposed school zone signs
- School gate

TYPICAL CROSS SECTION

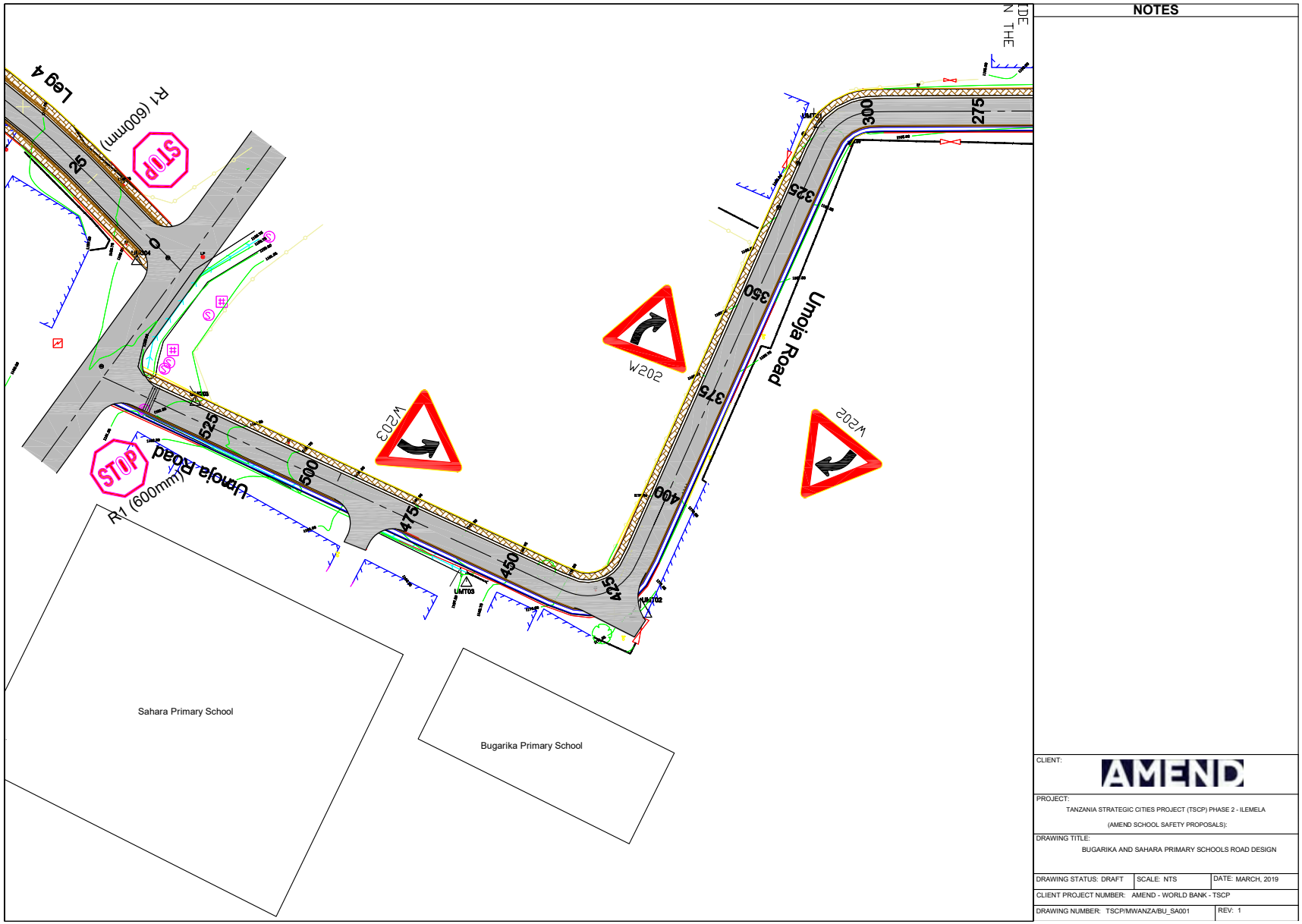
CLIENT: AMEND

PROJECT: TANZANIA STRATEGIC CITIES PROJECT (TSCP) PHASE 2 - ILEMELA
(AMEND SCHOOL SAFETY PROPOSALS):

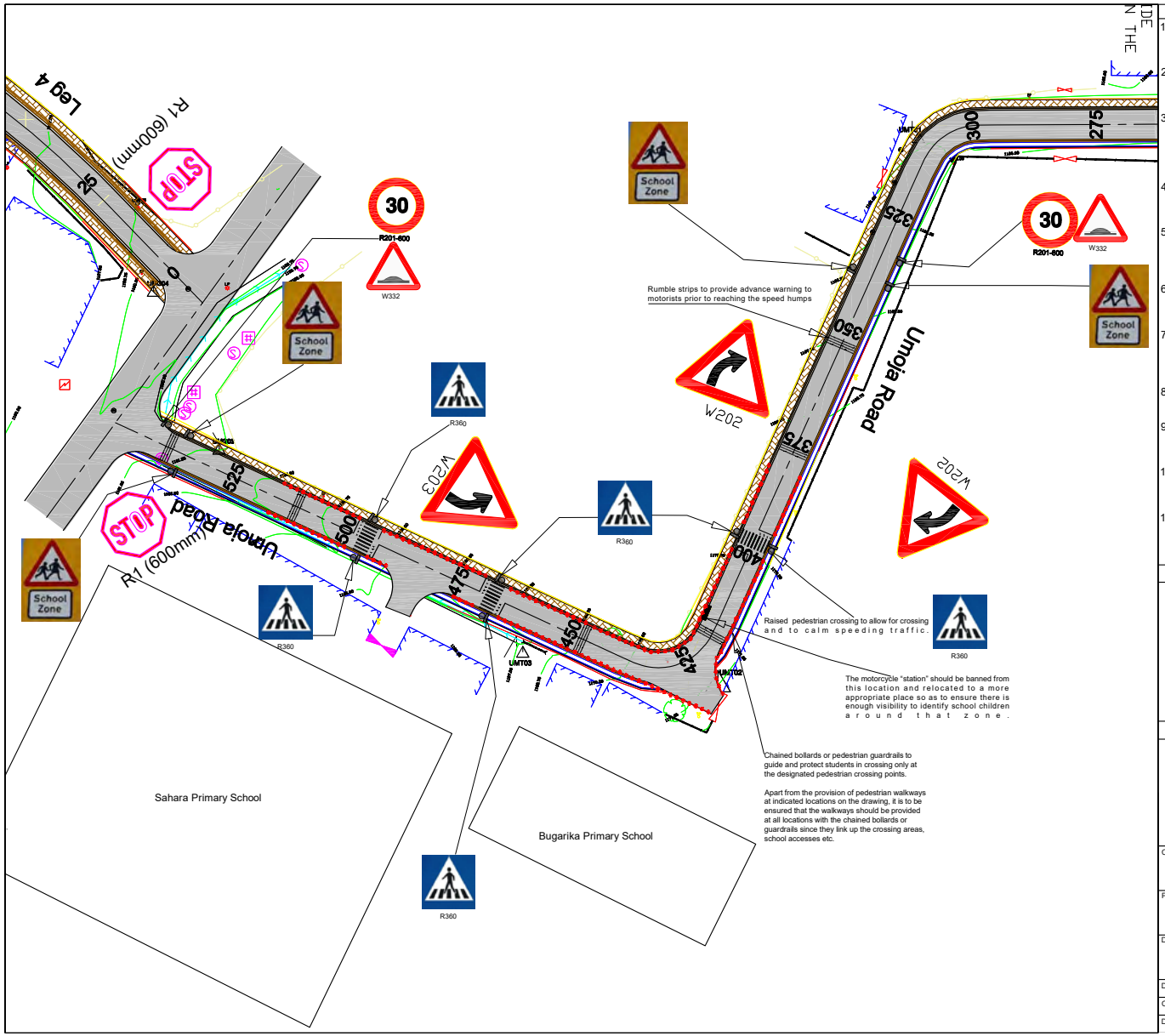
DRAWING TITLE: CHIDACHI PRIMARY SCHOOL PROPOSALS

DRAWING STATUS: DRAFT	SCALE: NTS	DATE: MARCH, 2019
CLIENT PROJECT NUMBER: AMEND - WORLD BANK - TSCP		
DRAWING NUMBER: TSCP/DODOMA/CH001		REV: 1

SITE 3: BEFORE SAFE SCHOOLS AFRICA INPUT



SITE 3: AFTER SAFE SCHOOLS AFRICA INPUT



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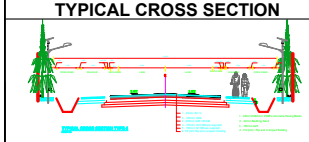
LEGEND

- Proposed raised pedestrian crossing/ hump
- Proposed rumble strips
- Proposed chained bollards or guardrail
- Proposed road signs
- Proposed school zone signs
- School gate

TYPICAL CROSS SECTION



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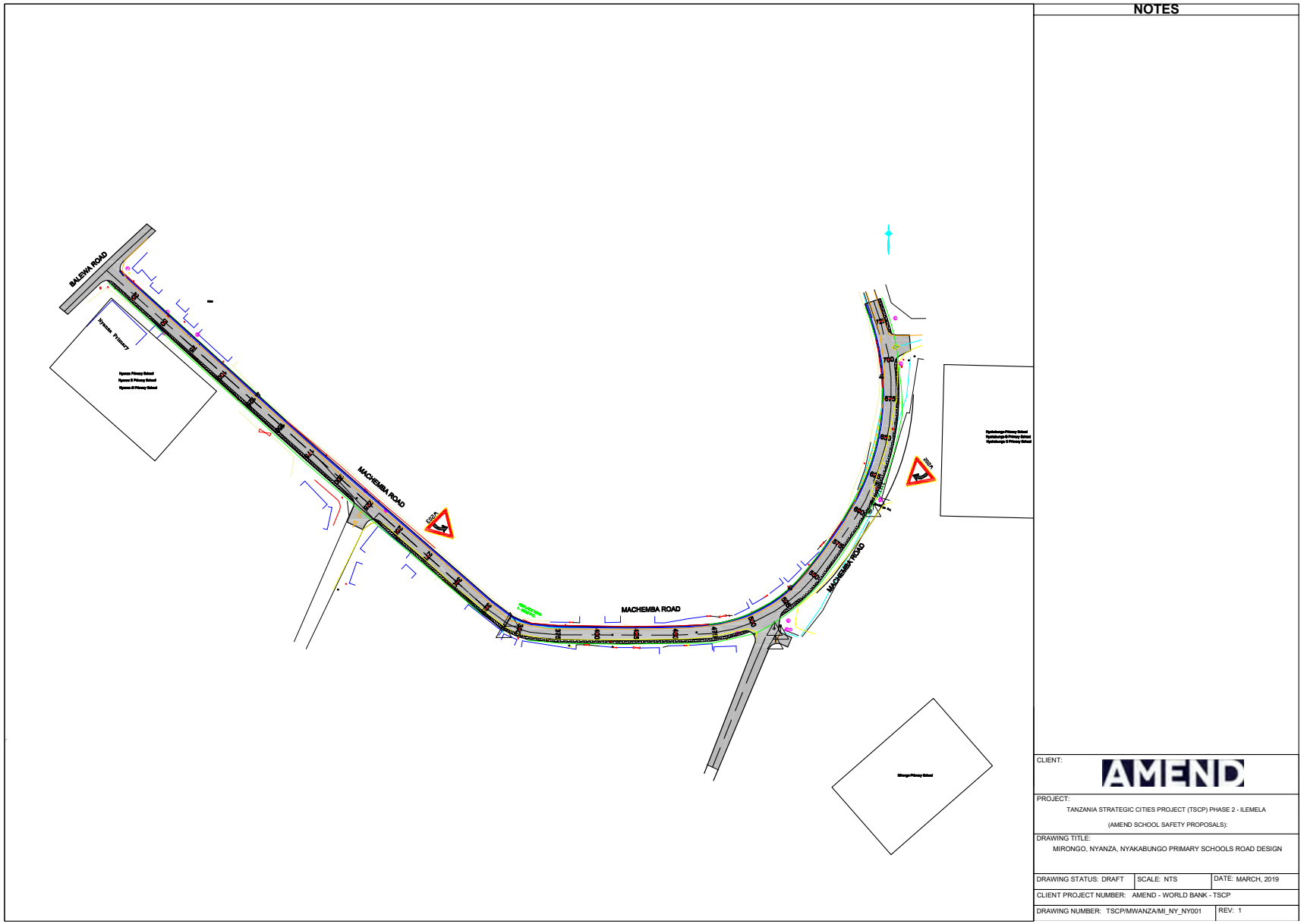
(AMEND SCHOOL SAFETY PROPOSALS):

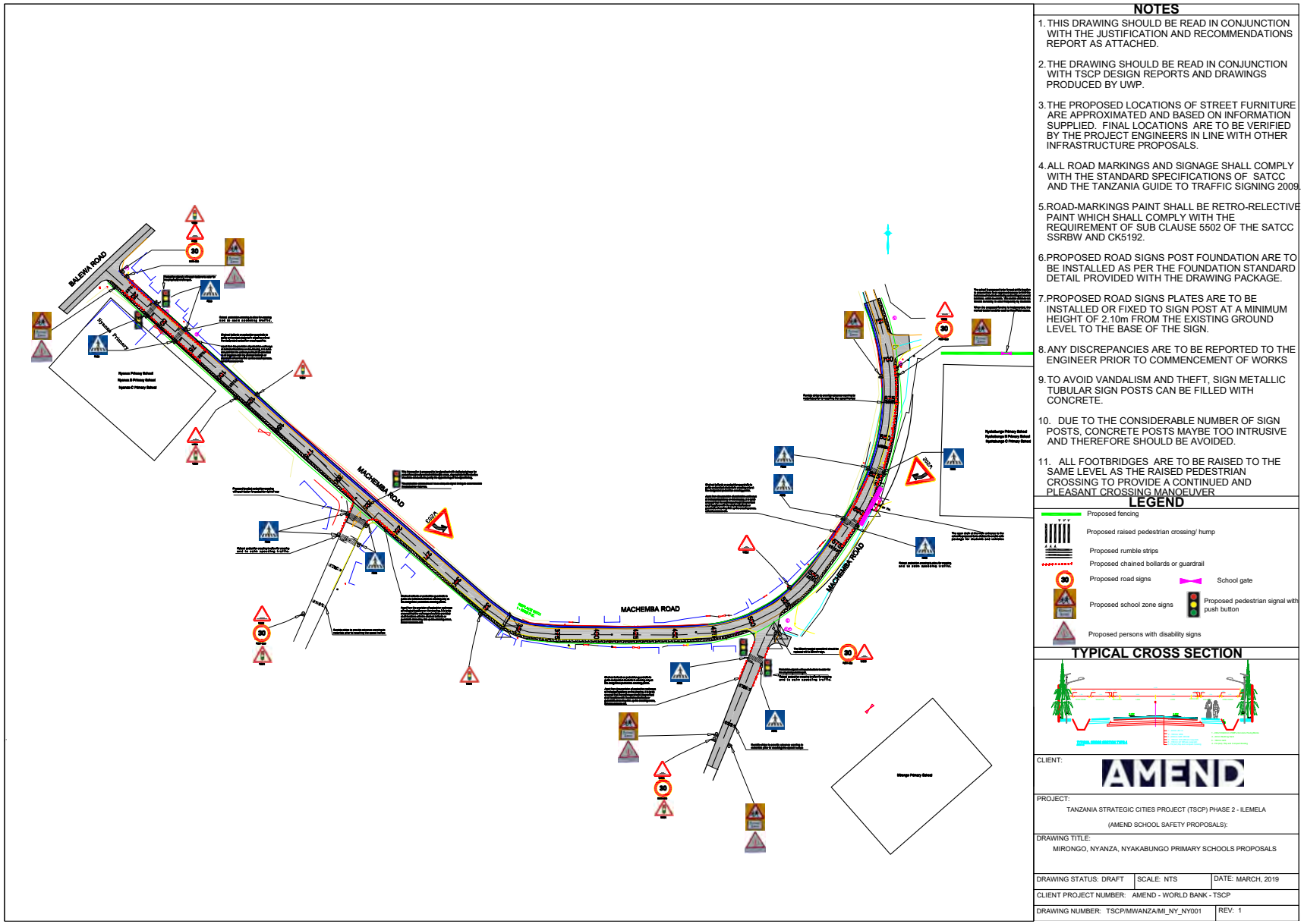
DRAWING TITLE: BUGARIKA AND SAHARA PRIMARY SCHOOLS PROPOSALS

DRAWING STATUS: DRAFT	SCALE: NTS	DATE: MARCH, 2019
CLIENT PROJECT NUMBER: AMEND - WORLD BANK - TSCP		
DRAWING NUMBER: TSCP/MWANZA/BU_SA001		REV: 1

SITE 4: BEFORE SAFE SCHOOLS AFRICA INPUT



SITE 4: AFTER SAFE SCHOOLS AFRICA INPUT



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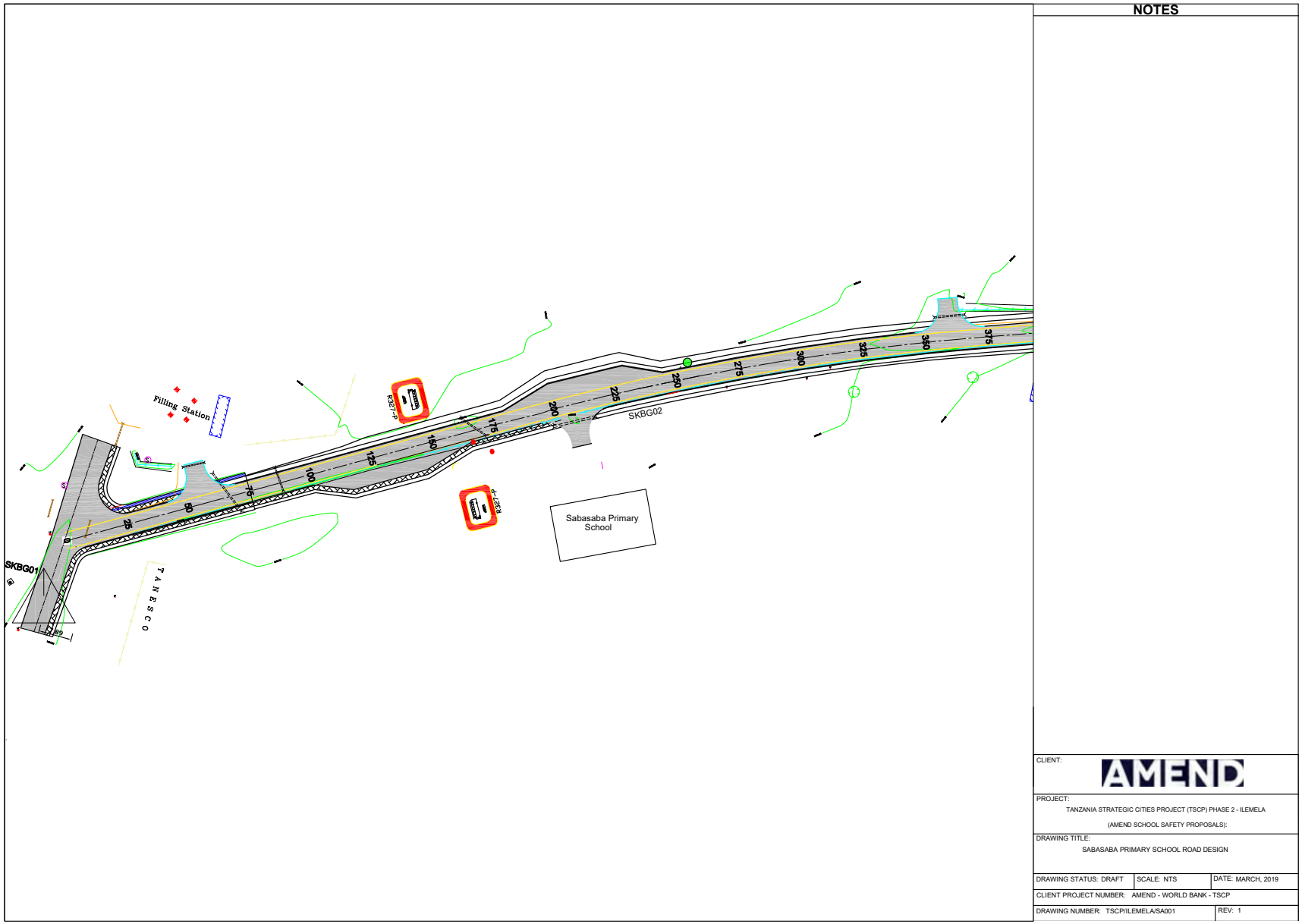

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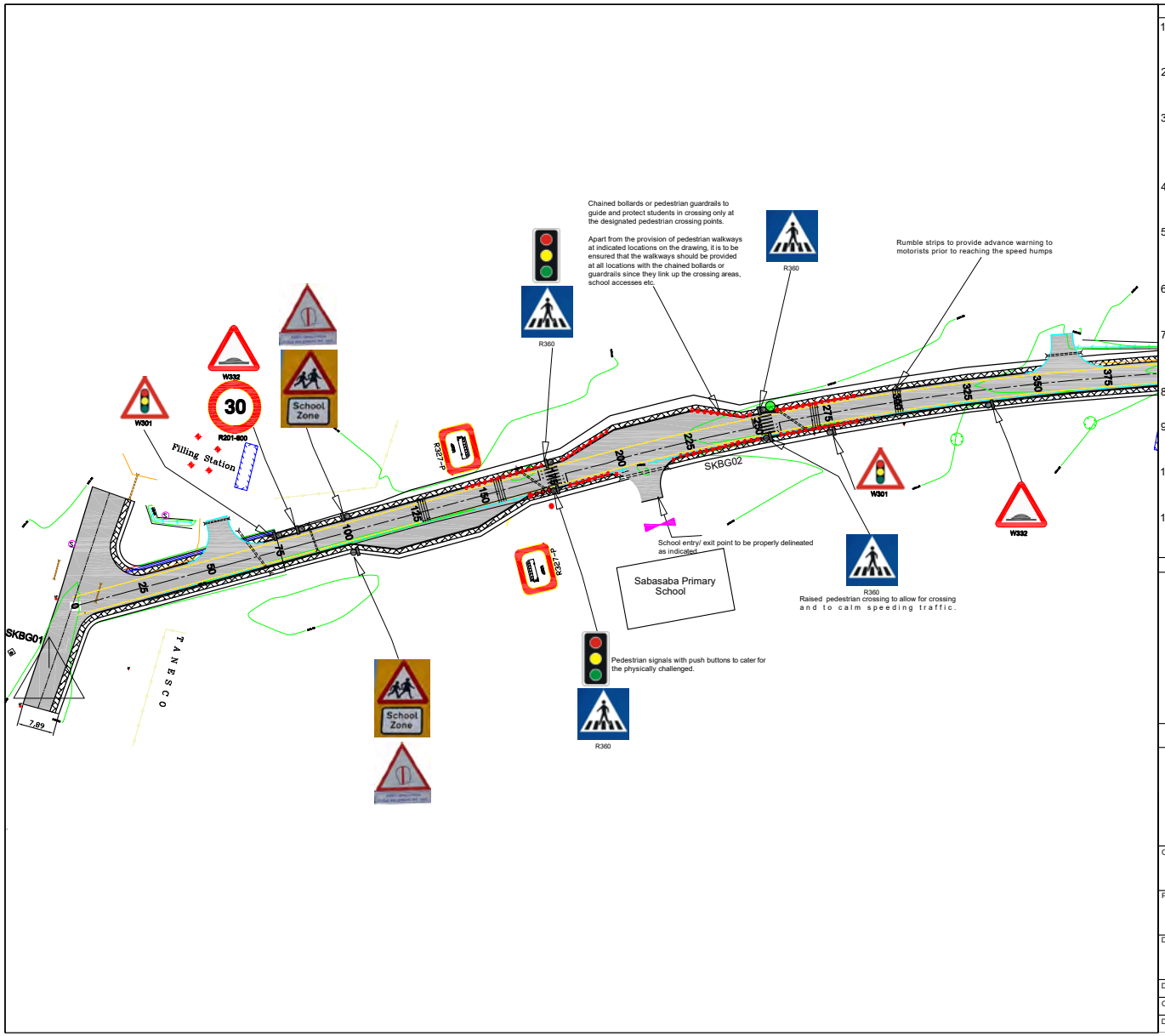

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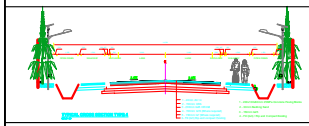
- Proposed rumble strips
- Proposed chained bollards or guardrail
- Proposed road signs
- Proposed school zone signs
- Proposed pedestrian signal with push button
- Proposed persons with disability signs
- School gate

TYPICAL CROSS SECTION



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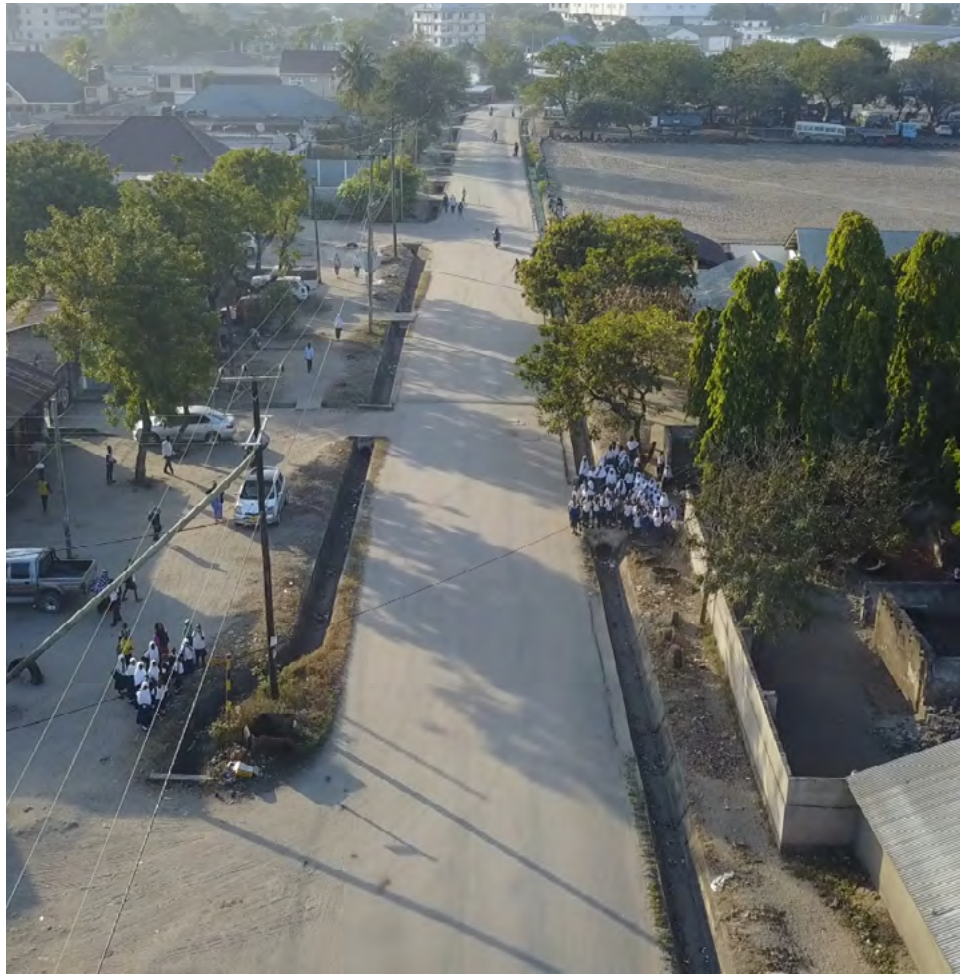
DRAWING NUMBER: TSCP/ILEMELA/SA001		REV: 1

APPENDIX 2

Photos, before and after Safe Schools Africa input

MADENGE PRIMARY SCHOOL, DAR ES SALAAM, TANZANIA

Before Safe Schools Africa Input



After Safe Schools Africa Input

WAILES PRIMARY SCHOOL, DAR ES SALAAM, TANZANIA

Before Safe Schools Africa Input

After Safe Schools Africa Input

JUSTIN KABWE PRIMARY SCHOOL, LUSAKA, ZAMBIA

Before Safe Schools Africa Input

After Safe Schools Africa Input

BOPHIRIMA PRIMARY SCHOOL, GABORONE, BOTSWANA

Before Safe Schools Africa Input

After Safe Schools Africa Input

APPENDIX 3

School initial visit summary sheets – IRCP, Zambia

Roads

U003 [D145 (Chitope) to Banana Farms]

U004 [D145 – Membe]

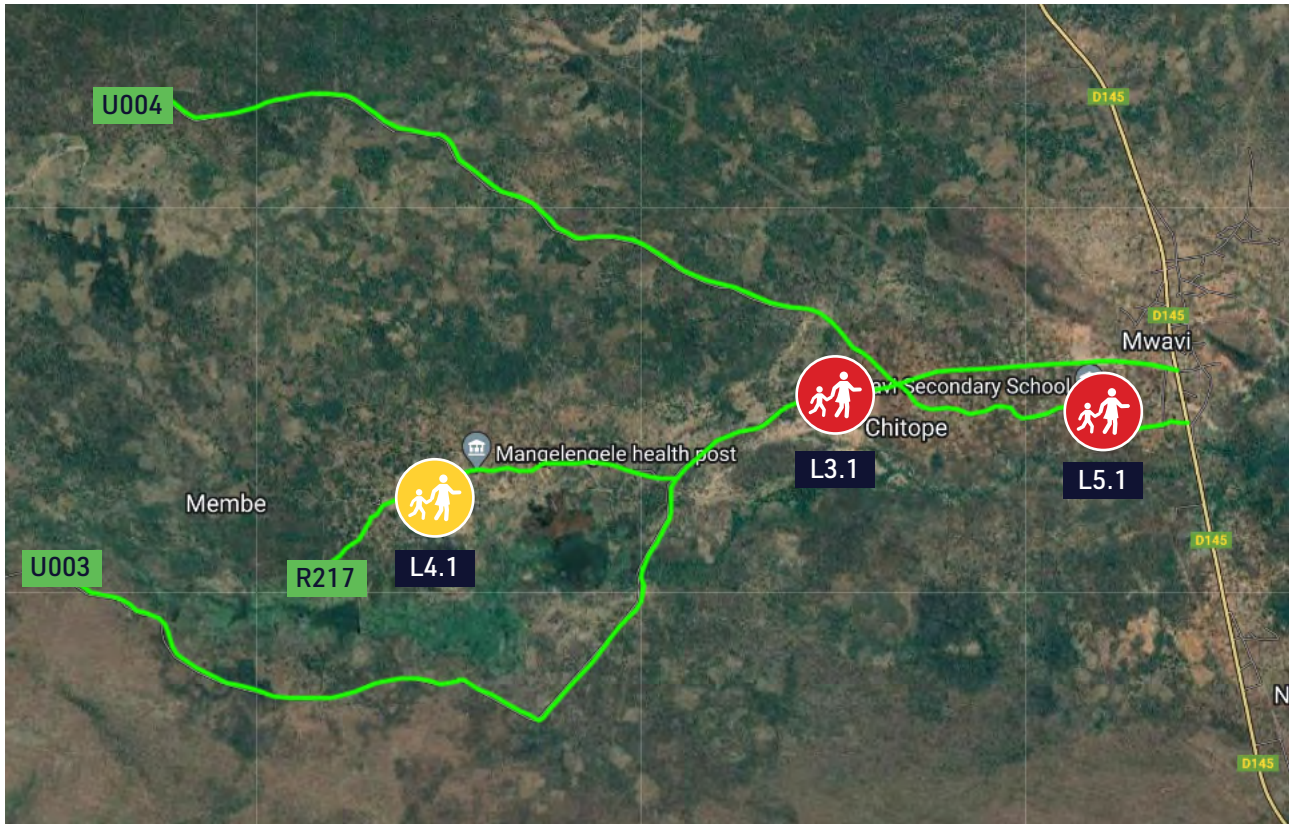
R217 [U3 to Mangelengele]

District

Luangwa

Brief Description:

- **U003**
  The road is an important transportation route for the bananas grown on farms along it. Only the first 8.4Km is recommended for construction in the project due to lack of activity or settlements in the last 4Km.
- **U004**
  Several settlements are found along the road followed by farming blocks. There is little activity after Membe village
- **R217**
  Settlements are found throughout the road and the main economic activity is peasant agriculture.



High road safety risk school (red)

Medium road safety risk school (yellow)

Low road safety risk (blue)

Mwavi Primary School

Map Ref	L3.1
Approx. Distance of School Compound/ Entrance from Project Road	0 – 50 metres
School Fence/ Wall?	No
School Population	1,104
School Grades	Nursery to Grade 9
Modes of Transport to School	Majority walking, a few ride bicycles
Do Students cross project road?	Yes
Main Student Catchment Areas/Where Students Live	Linga, Mwavi, Mwandega, Milinda Ng'ombe, Manyenda, Membe, Ndalakwazi, and Limbani Villages.

Mwavi Primary School (U003 passing close to school to the right)

Road Safety Situation

High Risk School

Project road next to school is relatively busy and speeds are likely to increase once road is complete.

The greatest risk is the tarmac road (D145) which some children cross to get to school. According to the head teacher, a child from this school was unfortunately killed on this road in the previous year.

The school could benefit from a wall/fence to channel children to one main entry/ exit between speed control measures.

Road Safety Recommendations

School Zone Standard Layout Option 1 recommended outside school.

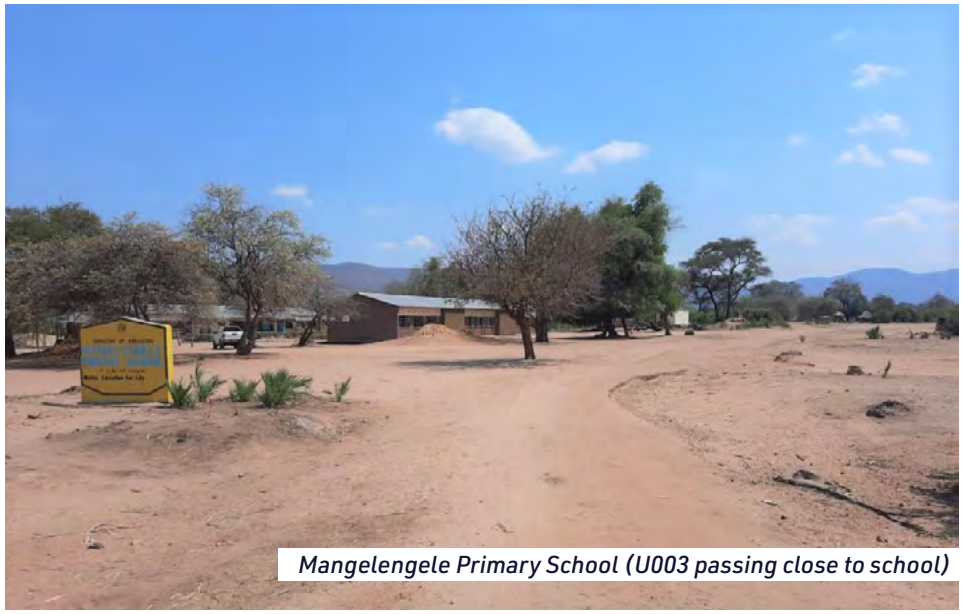
Special attention to be given to road safety measures on D145 (tarmac road where children cross).

These options have been recommended because of the proximity of the school to the road, the high proportion of vehicles and the existing road safety challenges.

High Road Safety Risk School:
Road traffic injury amongst school children currently a challenge and/or high possibility of traffic injuries occurring amongst school population once road is improved if no specific interventions are provided for child safety.

Mangelengele Primary School

Map Ref	L4.1
Approx. Distance of School Compound/ Entrance from Project Road	0 – 10 meters
School Fence/ Wall?	No
School Population	370
School Grades	Nursery to Grade 7
Modes of Transport to School	Walking
Do Students cross project road?	Yes (some) from Mangelengele and Mumembe villages
Main Student Catchment Areas/Where Students Live	Chilimanga, Mangelengele, Mundela, Nakachombwe and Mumembe Villages



Mangelengele Primary School (U003 passing close to school)

Road Safety Situation

Medium Risk School

Road is generally not busy but gets busy during political campaigns and elections

Road Safety Recommendations

School Zone Standard Layout Option 3 recommended outside school.

This option is recommended because this section of the road is not generally very busy.

Medium Road Safety Risk School:
Road traffic injury amongst school children likely to become a challenge once road is improved if no specific interventions are provided for child safety.

Mwavi Secondary School

Map Ref	L5.1
Approx. Distance of School Compound/ Entrance from Project Road	0 metres
School Fence/ Wall?	No
School Population	500
School Grades	Grade 9 to Grade 12
Modes of Transport to School	Walking for day scholars
Do Students cross project road?	Yes
Main Student Catchment Areas/Where Students Live	Chilimanga, Mwavi, Membe, Limbani, Mangelengele and Zalapango Villages.

Mwavi Secondary School (Project Road U004 passes through School)

Road Safety Situation

High Risk School

The project road (U004) passes through the school with classrooms on either side. This will pose a road safety challenge once the road is constructed, if not diverted.. In the past the school tried to block the road because of road safety concerns as well as noise.

Another risk is the tarmac road (D145) where children also cross to get to school.

The school could benefit from a wall/fence to channel children to one main entry/ exit between speed control measures.

Road Safety Recommendations

Road diversion recommended around classrooms and sports field.

If not possible, Standard School Zone Layout Option 1 recommended on project road which runs between classroom blocks.

Special attention to be given to road safety measures on D145 (tarmac road where children cross)

These options have been recommended because of the proximity of the school to the road and the existing road safety challenges.

High Road Safety Risk School:
Road traffic injury amongst school children currently a challenge and/or high possibility of traffic injuries occurring amongst school population once road is improved if no specific interventions are provided for child safety.

APPENDIX 4

Typical layout for a school zone – IRCP, Zambia

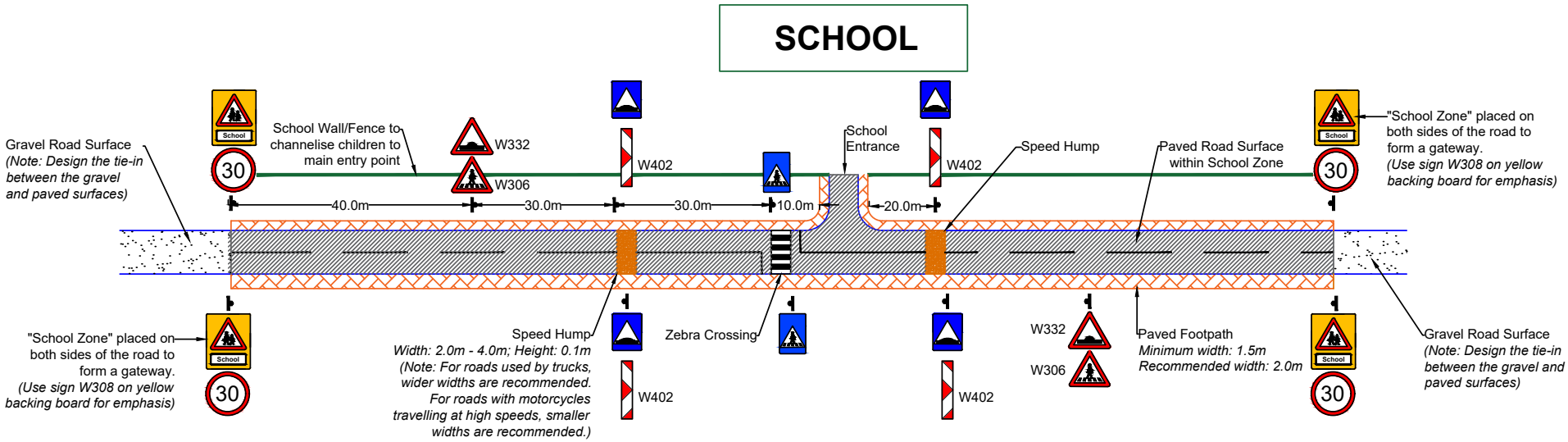
IMPROVED RURAL CONNECTIVITY PROJECT, ZAMBIA

TYPICAL LAYOUT FOR A SCHOOL ZONE

OPTION 1

Paved Road Surface within School Zone

(School Wall Provided)



Note:
This layout is generally recommended for individual schools. However, this would need to be looked at and modified where necessary for site-specific conditions. Consideration would need to be given to aspects such as the road alignment at each location. For each road, the recommended interventions for the individual schools will also need to be considered in light of other schools and facilities (clinics, markets, etc.) along the entire stretch and surrounding areas.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