

Creation of beautiful Highway Traffic Engineering Design

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Abstract: Aiming to create a beautiful road in a variety of shortcomings, it pointed out that does not suit to all aspects of creation requirements, starting from the design concept for the improvement of road construction. Traffic engineering from the perspective put forward a number of issues that need attention.

Create beautiful road applicable to the current situation of social development, in the process, the impact of various factors need to do a comprehensive analysis of. Combined with a specific project, elaborating in terms of creating beautiful highway traffic engineering need to focus on treatment.

Overview

A proposed project is one of the Department of Transportation National Highway upgrade "Five shot six vertical and four horizontal" 15 trunk road, is something important channel in Southwest China.

Completion of the project will greatly enhance the transportation capacity in the region, where the economic development of the region will play an important role. Meanwhile, the project will improve the transportation infrastructure, improve the capacity of the line, there is conducive to travel along the people.

The existing road, built in the late liberation, after several transformation, which, in 2007 to transform the asphalt pavement, after several paragraphs on the road for local transformation. But the main problem remains the same route as follows:

Technical indicators Low: Directions plane index is low, line of sight is not smooth, longitudinal too large, flat vertical combination is not reasonable and other defects, the more prominent passages have K156 + 100 ~ K158 + 200, K158 + 650, K159 + 200 ~ K160 + 000, K161 + 000 ~ K165 + 300, K167 + 800 ~ K179 + 000, K180 + 400 ~ K181 + 500, K182 + 200, K197 + 070, AK183 + 200 ~ AK183 + 800 and other segments.

accident black spots and more: more settlements along, people and vehicles interference, mixed traffic volume, and poultry often broke into the road, coupled with flat intersection where and how much does not meet the requirements, there is a big security risk. Local small radius curve, flat vertical surface linear differential, horizon bad as another accident-prone points.

road conditions are poor tolerance: found in the investigation stage, residents along the road at random stacking bricks, sand, stone, timber, grain and other building materials or crops, taking up demi road, causing the vehicle to slow down, or even traffic accidents.

lack of roadbed width: This section of road also bear the highway connecting line function, roadbed width of 6.5 ~ 7.5m, does not meet the needs of traffic growth.

road conditions in general: the current appearance of the road most of the usage is still good, but

heavy car too much, more serious damage to the pavement, pavement cracks, subsidence, damaged more influence driving comfort, but also have a greater impact on the roads open and traffic safety .

inadequate safety facilities: traffic signs along the guardrail facilities basically sound, traffic marking because the plurality of road re-paving surface has not been re-added after marking, waveform guardrail, concrete piers and cautionary column crash destructive phenomenon, lack of overall protection. This section of the lack of steep slopes, long downhill and flat road horizon poorer sections of the initiative safeguards. Along the seating area, plus a lack of water stations and other service facilities, service concepts and facilities are also yet to be remodeling.

linear differential bridge, load level is low: bridge width 7.5 ~ 8.0m, the old bridge in the construction process in order to adapt to the bridge site to control the size of the bridge, so that two road alignment road mostly good, not smooth plane, longitudinal bigger.

Create a beautiful road, "the Baochang Tong, safety, tree brand, image" as a breakthrough, to create green corridors have geographical and cultural characteristics, improve road quality.

Project Overview

Topography

Area lying to the northwest of the high, middle more gentle, undulating slightly lower southeast slope, the highest point of Shaxi township northwest croissants and Wuchuan County at the junction of mind to dial 1534 meters, the lowest in eastern Wells Township Wang licensing barrel Wujiang export, elevation 307 meters. Wujiang River flows through the eastern part of the county, deeply embedded in the karst mountain original being. Mostly due to the construction line north east or north-east direction, so mountains and rivers are also arranged in a generally north-east. From the southeast to the northwest were Fengxi Mountain, Wujiang River valley, sheep son Ridge Mountains, Horseshoe Valley, in Shaxi mountains, fengle Valley.

The county's landscape can be divided into four large landforms area: low mountains along the Wujiang River valley area, 400 to 600 meters above sea level; Fengxi low Zhongshan trough District, altitude 800 to 1200 m; Sencha low Zhongshan hilly nagorye area, 700 to 900 meters above sea level; Shaxi in Zhongshan, low mountains and mountains, altitude 900 to 1300 m. According to geological tectonic activity, karstification and weathering, will involve major landform national road G326 divided into the following three kinds:

tectonic denudation erosion in low mountain topography

Early erosion formed by tectonic activity and terrain by the dissolution of the formation of water, mainly in the K155 + 350 ~ K183 + 360, K183 + 360 ~ K197 + 120, K197 + 120 ~ K198 + 180, elevation 350 ~ 800m, relative height 100 ~ 450m, mostly hillside slope up to 30 to 40 degrees, local slow, generally 10 to 25 degrees. Large-scale mountain, mountain ridge line is not obvious, mainly composed of limestone, dolomite, dolomitic limestone rocks.

tectonic denudation erosion eluvial low mountain topography (plum Pass - Revival - Sencha)

The sector is mainly low mountain landform formed from weathering and erosion of karst, mainly K198 + 180 to the end of K234 + 795, BK211 + 780 ~ BK216 + 460, the general elevation 650 ~ 750m, flat terrain, is more along the line reclamation of orchards, rice fields, mainly in the plum Pass - Fusing Township - Sencha town area. Lithology mainly dolomite weathered eluvial clay soil composition, thickness greater than 5m.

tectonic denudation erosion trough of low mountains karst topography

This sector is mainly composed of low mountain topography tectonic activity, erosion and karst

weathering comprehensive form, mainly in the AK183 + 340 to AK190 + 580, the general elevation 500 ~ 600m, more gentle terrain, much along the lines being developed into residential district, industrial plant, public facilities area. Lithology mainly dolomite weathered eluvial clay soil composition, thickness greater than 5m.

Meteorology

Area belongs to the subtropical monsoon climate zone, with an average annual temperature of 16.1 °C, the coldest January average 5.2 °C; July the hottest, with an average of 26.2 °C. Winter cold and heat alternating with four distinct seasons, a pleasant climate. With an average annual temperature of 13.1 °C to 17.1 °C, frost-free period of 298 days.

Hydrology

Head belongs to the Yangtze River basin area where the Wujiang River, between the region and the development of a number of mountain streams perennial river, the main river to the north east of Horseshoe River, southwest of six pool river, river water supply for the precipitation and secondary creek, its flow by rain impact, flow poor.

Vegetation

Good project area hydrothermal conditions, vegetation variety, is a typical karst vegetation types. Mainly on the mountain shrub, fern, pine mangrove forest and a few broadleaf trees; flat at rich vegetation types, representing a large plant leaf copy, fir, beech ridge, Phoebe, camphor, cypress, bamboo and so on. Both sides of the road are the main alterations as planting poplar trees. Vegetation along the project is good, the surrounding vegetation in each age fir forest, shrub-based, local distribution of farmland.

Travel Resources

Dejiang is located in the Wuling mountainous hinterland, a long history and numerous cultural landscape, with Nuo opera, Tujia fried dragon, Sui and Tang Fu Yang Old Town and other tourist and cultural resources, enjoy the "China Nuo opera town", "China Tianma village", "Kistler town" reputation.

Overall Design

Fully integrated with the actual situation of the project area, go to the "people-oriented, sustainable development", the basis of the first stage of construction design, the emphasis on safety and environmental protection, the construction of "smooth, safe, comfortable, beautiful" road projects.

The objective of this project is to design, under the premise of limited funds, as much as possible to focus on road accident black spots to reinvent the original State Road reconstruction promoted to second transit country road, refer to the "second five" national road G108 and G205 Experience the transformation demonstration project, give full play, "Chang, Ann, comfortable, beautiful" design philosophy.

From a technical program, it is through improved indicators straightened, widening roadbed, special sections increase lane, towns and drainage of level crossing and other projects around the obstacle, the total elimination of road congestion, increase capacity, highlighting the "smooth"; in accordance with setting standards, the content is complete, consistent style requirements, carding perfect cross security facilities, set up by hedge lane, road traffic safety and geological disaster investigation and remediation, indicators of a balanced portfolio of horizontal and vertical line, cross-regional plane slow access, additional ditch cover, and other dangerous bridge reconstruction, the protection of "security"; take full advantage straightened old and abandoned dump yard, or set the parking break area (emergency strip) in place, add water points, point of sale of local agricultural products,

services , observation deck and conservation materials stacking area and other services and custody facilities, and "Shu"; introduction of landscape design techniques take advantage of locally grown plants suitable to carry out greening and beautifying the highway design, basically artifacts is not exposed, while demonstrating along the natural landscape, folk customs, history, culture and industry culture, combined with industry regulators and government support remediation road domain environment, strengthen the pavement recycled materials use and energy saving design, enhanced "beauty."

traffic safety facilities

traffic signs and markings

The entire road position in the mountains, where the first segment is particularly prominent, there are a lot of sharp bends, steep slopes, grow longitudinal sections through the improvement of safety facilities and guide signs, improve traffic capacity and safety standards.

Increase road capacity, follow people-oriented design concept, design refinement traffic signs and markings, considering the G326 national road network in the role, to ensure systemic signs and markings, continuity, consistency. Meanwhile, local residents along the door habits, many towns and villages along the way, Strengthen the village road signage design, implementation road house, which enhances the level of safety of local residents.

According to "security, economic, environmental, and effective" principle to improve road safety, traffic safety problems in a comprehensive analysis based on reasonably determine technical solutions, the integrated use of technology-based Treatment traffic engineering measures to improve *Traffic Signs*

1, set the principle of traffic signs

(1) Traffic Signs should be continuous, complete, clear, clear

The road in the mountains, winding mountain road, both sides of the towns, villages more traffic signs should be set to continuous, complete, sign can indicate the direction of the route can be highlighted route numbers, important location, driving directions and distance information, to prevent information is not continuous. It should also be clear signs, clear signs on both sides of the road blocking the tall trees, so that the driver is easy to see the sign.

(2) reflect the road network network requirements

Beacon information to be able to reflect the relationship between the road network. Fully embodies the road traffic signs (highway, national, provincial and county roads) at all levels of the route number information and guiding information, good information transfer and information transition between each level of road signs.

(3) flag set style unified, consistent information

Various sections across the board, all types of signs should be unified layout, forming system; logo design styles of each bid should be harmonization between the path of the controllability index marker selected locations consistent, avoid information is inconsistent and discontinuous phenomenon.

(4) humanized requirements

Design embodies the people-oriented design concept, give full consideration to the travel law drivers and driving habits, nearly way, way, long-haul and other highway travelers services; choose the amount of information must be reasonable and reflect the level of demand, to avoid missing information and information overload ; For important information or tips should be repeated several times Soon; flat at the intersection flag is set to follow notice informing the principles recognized, for the more complex intersections, you can set the graphical guide signs.

Setting position (5) flag

Road signs shall not invade gauge road construction, road-side column, attached signage installation height should be between 150 ~ 250cm; cantilever, gantry, overhead signage attached mounting height should be consistent with the road construction clearance clear height requirements, and reserve margin of 20 ~ 50cm; inner edge pillar sign board sign and cantilever gantry sign post from the edge of soil shoulder edge distance should not be less than 25cm.

(6) the visibility of Flag

Before and after the clean-up of non-highway signs highway signs within 500m range, tall trees within the road shoulder passing sight distance should be replaced by planting shrubs, flowers, etc., on the other block line of sight of the trees should be trimmed. Signs, marking, etc. should outline standard reflective material to ensure visibility of signs at night.

Traffic marking

Traffic marking is to guide the driver line of sight, an important means of control driver driving behavior, it can ensure that traffic lane traffic, diversion of traffic traveling direction, strengthening discipline and order the vehicle to promote better organization of transportation. Traffic marking set correctly reasonably effective use of road space, improve traffic driving conditions, increase road capacity, reduce accidents and ensure traffic safety.

Traffic markings shall be designed to correctly guide the traffic, ensure that the vehicle traffic lane, rational and effective use of road space. Traffic marking should be used in conjunction with a traffic sign, its meaning can not contradict each other. Traffic marking materials used should have good durability, slip resistance, ease of construction and economy, during the day and at night should have good visibility.

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