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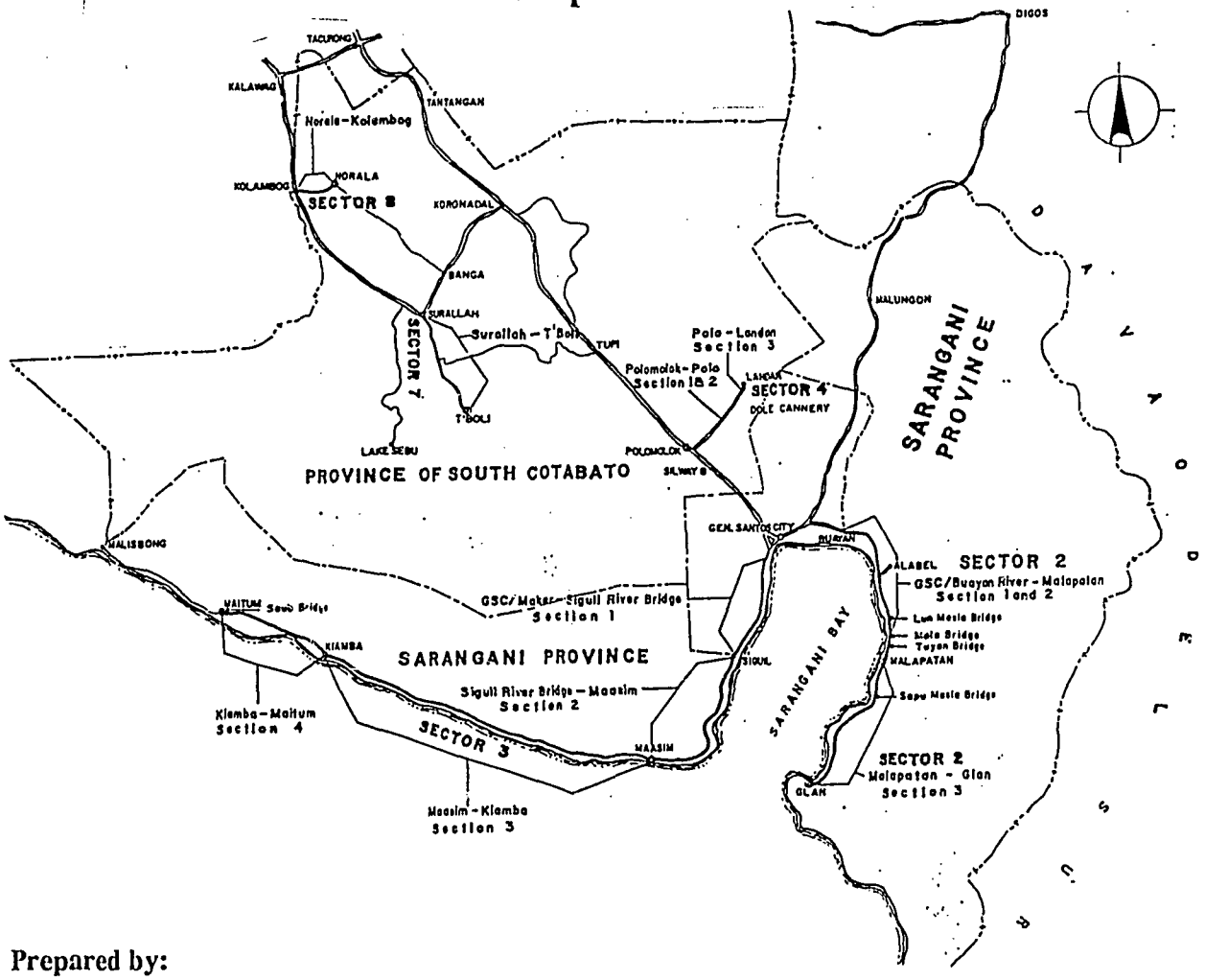
MINDANAO DEVELOPMENT PROGRAM
UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
Manila, Philippines

SOUTH COTABATO HIGHWAYS PROJECT
Rural Infrastructure Fund Project No. 492-0420
FINAL REPORT
29 April 1994



Prepared by:

ENGINEERS REPRESENTATIVE
CONTRACT NO. 492-0000-C00-1028-00
Morrison Maierle/CSSA
910 Helena Avenue
Helena, Montana 59604
U.S.A.

DESIGN CONSTRUCT CONTRACTOR
CONTRACT NO.492-0420-C00-1140-00
MORRISON KNUDSEN CORPORATION
SOUTH COTABATO HIGHWAYS PROJECT
MINDANAO DEVELOPMENT PROGRAM
Unit 7-C, Strata 200 Building
Emerald Avenue, Pasig
Metro Manila, Philippines

GENERAL SANTOS CITY
PROVINCE OF SOUTH COTABATO

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A. PROJECT DESCRIPTION

I. PROJECT SUMMARY

1. General

The Governments of the Republic of the Philippines and the United States of America have undertaken a road rehabilitation and construction program in the provinces of **South Cotabato and Sarangani, Island of Mindanao** as part of the Philippine Assistance Program (PAP). The South Cotabato Road Project is one of the many sector programs which comprise the multi-donor Philippine Assistance Program. The USAID contribution to the Philippine Assistance Program has been focused on development of basic infrastructure including roads, ports and airfields in the area. The Road Project was funded under the USAID Rural Infrastructure Fund Project No. 492-0420.

The South Cotabato/Sarangani Road Project was constructed by Morrison Knudsen Corporation as a Design-Build project under a direct USAID contract. Philippine GeoAnalytics performed material testing and the Quality Control program for the Contractor. Morrison Maierle/CSSA, the USAID Engineers Representative provided Quality Assurance including Construction Plans Design Review, Material Testing and Construction Observation Services for the total project work. MM/CSSA completed this work under a direct USAID contract. A Summary of the Scope of Work is covered in Section B - MM/CSSA Engineering of this report.

The "Notice to Proceed" for the road program was issued July 17, 1991 and the final project work was completed and accepted on February 4, 1994. The program consisted of five (5) road sectors within the Provinces of South Cotabato and Sarangani with a total project length inclusive of existing bridges, PCC pavement and spillways of 179.6 kilometers. A total length of 167.1 kilometers of new high quality paved roads was designed and constructed at a very economical cost and was turned over to the DPWH and the Government of the Republic of the Philippines ahead of schedule. The Road Project included the design and construction of six (6) Reinforced Concrete Deck Girder (RCDG) Bridges totalling 294.8 meters also funded by USAID. An additional RCDG Bridge (Pangi Bridge - 198.5 meters) funded and constructed by the DPWH has been completed as scheduled. Morrison Knudsen Company's final construction cost of $42,702,703 was $393,619 under the contract price of $43,096,322. With the inclusion of the Project Engineering QA Cost of $4,040,533 the final total USAID funded Road Project cost is $46,743,236.

2. Project Location and Costs

The length, description and cost information for each road sector is shown on Page A-2. The sector lengths include only the lengths of the new constructed roadway and bridges. The existing bridges, PCC roadway and spillways are not included in the sector lengths.

The average cost/kilometer of $255,552 for the high quality roadway that was constructed confirms and shows that this was a very economical, well managed and cost effective project.

Figure 1 is a location map showing all the constructed Road Sectors and Bridges.

Roadway

Sector Number	Name/Location	Length In Kilometers		Design/Construction* Cost
2	GSC/Buayan-Malapatan-Glan	43.84		$ 14,031,915
3	GSC/Makar-Kiamba-Maitum	91.16		$ 18,309,588
4	Polomolok-Agro Center-Landan	4.08		$ 1,611,526
7	Surallah - T'Boli	21.56		$ 4,504,026
8	Norala - Kolambog	6.46		$ 1,434,408
	Total Length	**167.10**	Total Cost	**$ 39,891,463**

*Mobilization cost was prorated to sectors by % of sector length to total length.
Economic Price Adjustment and VAT costs were deducted from the sector costs.
Includes improvements made on the existing roads and bridges

Bridges

Sector Number	Name/Location	Length In Meters		Design/Construction** Cost
2	Lun Masla Bridge	140.00[1]		$ 1,284,712
2	Sapu Masla Bridge	15.00[2]		$ 100,488
2	Molo, Tuyan and Lot	59.00		$ 769,005
3	Saub Bridge	80.80		$ 657,035
	Total Length	**294.80**	Total Cost	**$ 2,811,240**
			Total Project Cost	**$ 42,702,703**

**Economic Price Adjustment and VAT costs were deducted from the bridge costs.

3. Specific Sector Cost Information

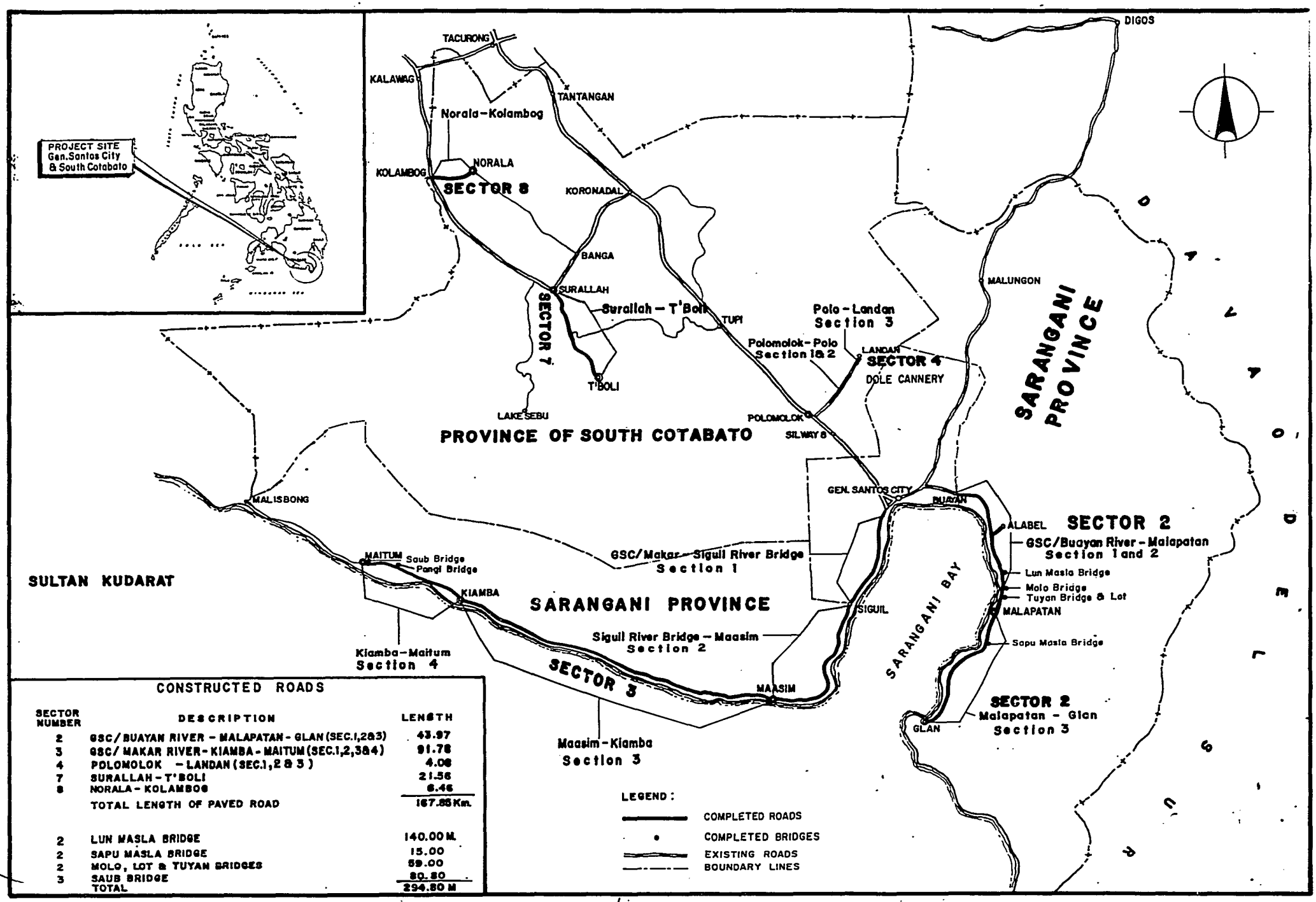
Sector Number	Name/Location	Length In Kilometers	Final Sector Cost with Bridges	Cost Per Kilometer
2	GSC/Buayan-Malapatan-Glan	43.84	$16,186,120[3]	$ 369,209
3	GSC/Makar-Kiamba-Maitum	91.16	$18,966,623[4]	$ 208,059
4	Polomolok-AgroCenter-Landan	4.08	$ 1,611,526[5]	$ 394,982
7	Surallah-T'Boli	21.56	$ 4,504,026[6]	$ 208,907
8	Norala-Kolambog	6.46	$ 1,434,408[7]	$ 222,045
	Roadway Average Cost/Kilometer With Bridges			$ 255,552
	Roadway Average Cost/Kilometer W/O Bridges			$ 238,728
	Cost Comparison Roadway Cost/Kilometer for Rural Infrastructure Fund (RIF) Project (USAID Source)			$ 321,021

Notes:

1. Total length of bridge is 200 meters. Jet grouting of the piers and construction of the bridge railing was done to complete the 3 span (60 meters) constructed by the DPWH as a separate project.
2. Total length of bridge is 60 meters. DPWH had constructed 45 meters as a separate project.
3. Mountainous terrain (50%), increased embankment, drainage structures and rock excavation, 9 kilometers of concrete pavement.
4. Existing minor drainage structures, bridges and roadway bed.
5. Three major drainage structures installed, extensive grouted riprap slope protection and drainage ditches necessary for erosion protection of Lahar soils and total concrete pavement.

6 & 7. Non-mountainous flat terrain requiring only minor drainage structures.

Figure 1



CONSTRUCTED ROADS

SECTOR NUMBER	DESCRIPTION	LENGTH
2	GSC/BUAYAN RIVER - MALAPATAN - GLAN (SEC.1,2&3)	43.97
3	GSC/MAKAR RIVER - KIAMBA - MAITUM (SEC.1,2,3&4)	91.78
4	POLOMOLOK - LANDAN (SEC.1,2 & 3)	4.08
7	SURALLAH - T'BOLI	21.56
8	NORALA - KOLAMBOG	6.46
	TOTAL LENGTH OF PAVED ROAD	167.85 Km.
2	LUN MASLA BRIDGE	140.00 M.
2	SAPU MASLA BRIDGE	15.00
2	MOLO, LOT & TUYAN BRIDGES	59.00
3	SAUB BRIDGE	80.80
	TOTAL	294.80 M

4. Final Report

This Final Report has been prepared to provide adequate information and details covering all phases of the project design and construction. The report has been broken down into the following sections with a brief description and explanation of what is covered in the section.

A. Project Description

I. Project Summary - Background information on project history, involved contractors, work accomplished and cost.

II. As Constructed Project Works - Detailed description of location and type of Construction Work performed for each Road Sector.

III. Work Bid But Not Constructed with Reasons for Deletion - Location and description of roadway sections included in the original work bid, revised roadway lengths and reasons for deletion of work.

B. MKC/SSA Engineering

I. Scope of Work - Description of the contract requirements and work performed.

II. Administrative Data - List of the technical staff and administrative/logistic staff that was required for the project.

III. Design Review - Detailed description of the design review procedures that were used and the review/approval dates.

IV. Construction Inspection - Description of the Quality Assurance procedures and tests that were performed in monitoring the contractors operations.

C. MKC Construction

I. Methods and Time of Construction - Narrative covering all the construction work and operations that were necessary for the roadway project.

II. Contractor and All Subcontractors - Listing of all the contractors that worked on the project and the type of work they performed.

III. Field Modifications - Narrative describing the purpose of Field Clarification Memorandums and how changes in construction items were processed.

IV. Contract Modifications - Description of the Project Contract Modifications.

D. Materials and Test Results

I. General - Narrative describing the various Quality Assurance Laboratory and Field tests performed and a summary of the number of various tests taken.

II. Road Sectors - Narrative covering the various types of tests and reviews performed for each Road Sector and Section covering construction materials and methods/procedures.

E. Construction Items/Tasks

I. Final Quantities - Detailed spreadsheet for each Road Sector covering Final Quantities and Costs for roadway and bridge construction.

II. Justification for Variation in Final Quantities from the Design Quantities - Narrative covering the justification or reasons for variations and/or changes from the plan design quantities.

III. As Constructed Drawings - The As-Constructed original mylar drawings for the project are transmitted to the Manila USAID office.

IV. Final Inspection Report - Narrative covering the final inspections, punchlist items and inspection dates.

F. Summary of Project Costs

I. Engineering - Engineering Fee breakdown

II. Construction - Final Summary of total project cost and Final Summary for each Road Sector.

G. Recommended Maintenance Program

I. Types of Maintenance Recommended - Typical Maintenance Program.

II. Equipment - Typical Equipment

III. Labor - Typical crew

IV. Timing - Typical maintenance periods

V. Maintenance Cost Per Kilometer Per Year - Average estimated maintenance costs

Appendix

Monthly Progress Payment Invoice - Typical
Monthly Activity Report for MM/CSSA and MKC - Typical
Weekly Laboratory Activity Report - Typical
Weekly Design Activity Report - Typical
Weekly Activity Report for MM/CSSA - Typical
Daily Inspector's Report - Typical
Field Clarification Memorandum - Typical
Completion Certificate - Typical
Contract Modification - Typical
Inventory - Lists of Equipment and Furniture
Final Punchlists - Typical
Laboratory and Field Test Results - Typical for the Roadway Project

II. AS CONSTRUCTED PROJECT WORKS

1. ROAD SECTOR 2, SECTIONS 1, 2, & 3
BUAYAN RIVER - MALAPATAN - GLAN
STA. 0 + 000 - STA. 47 + 175

The new constructed road begins at the end of the existing PCC pavement at Buayan River Bridge station 0 + 000 and proceeds southeasterly along the east side of Sarangani Bay towards the towns of Malapatan and Glan ending at station 47 + 175. Final design and construction improvements for this sector consisted of upgrading and reconstruction of 44 kilometers of existing gravel road. The roadway excavation and embankment construction included massive earth excavation and rock blasting through the mountainous sections between Malapatan and Glan in order to widen the road, and improve the horizontal and vertical alignments. Approximately 90,000 cubic meters of aggregate material was produced for subbase, base course asphaltic pavement and concrete pavement requirements.

A total of 8.6 kms of Portland Cement Concrete (PCC) pavement was constructed on the first stretch of the road from sta. 0 + 000 to sta. 9 + 600 as this area is frequently flooded and contained poor soils. The typical PCC pavement section consisted of a structural fill 200 mm thick with a 100 mm subbase course and a 200 mm thick Portland Cement Concrete Pavement. The Bituminous Concrete (BC) pavement section consisted of a 230 mm thick crushed basecourse and A 50 mm thick bituminous concrete surface course. A total of 9.7 kms was constructed from sta. 9 + 600 to sta. 20 + 021. Also 24.8 kilometers was constructed from sta. 20 + 021 to sta. 47 + 175 with a 210 mm thick crushed aggregate basecourse and a 55 mm thick bituminous concrete surface course. The travelled way width for the sector is 6.70 meters. Shoulders ranging from 3.00 to 1.50 meters in width were constructed with embankment select material throughout the road sector.

Two thousand six hundred forty (2,640) lms of new Reinforced Concrete Pipe Culvert (RC) (610, 910, 1220 mm dia.) were installed in Sector 2. Many of the old existing RCPC's were removed and relaid as side drains. The existing Bailey Bridges at Molo and Tuyan were removed and replaced with Reinforced Concrete Deck Girder (RCDG) bridges totalling 51.60 lm. for both bridges. The existing Bailey Bridge at Lot was replaced with a 6.80 x 12.03 x 3.80 meter Reinforced Concrete Box Culvert (RCBC). Seven (7) new smaller RCBC's were also constructed at different locations between sta. 5 + 000 to sta. 35 + 000. The contractor also completed the remaining 15 meter span of the Reinforced Concrete Deck Girder (RCDG) Sapu Masla Bridge and the remaining 140.00 meters span of the Lun Masla Bridge.

Erosion control consisting of grouted riprap and gabion slope protection was installed where necessary. Earth ditches were excavated and grouted riprap lined ditches installed in areas where natural drainage was not possible. Incidental works such as metal and stone masonry guardrail were installed on bridge approaches, high cliffs, and dangerous curves. Road signs, crosswalks and pavement markings were installed to complete the job.

Now, one can travel the 47 kms from Buayan to Glan in less than an hour on a good paved road compared to the more than 3 hours travel it took a year ago while breathing dust all the way. Economic progress is expected to improve in these areas of Sarangani Province due to the improvement of this road.

2. ROAD SECTOR 3, SECTIONS 1, 2, 3 & 4
TAMBLER - MAASIM - KIAMBA - MAITUM
STA. 0 + 000 TO STA. 99 + 992

This road sector consists of four(4) sections as stated above. It begins at the end of the existing PCC pavement southwest of the Makar River in General Santos City at sta. 1 + 947. The road proceeds southerly along Sarangani Bay and westerly along the Celebes Sea for a total of 100 kilometers going through the towns of Maasim, Kiamba and ends at the beginning of the existing PCC pavement in Maitum at sta. 99 + 992.

The design and construction activities that were done, include minor vertical and horizontal changes of the 100 kilometers of existing gravel road. Roadway excavation, road bed widening and embankment construction was done ahead of schedule as these were the main required activities to upgrade the existing road. About 200,000 cubic meters of aggregate was produced for subbase, base course, asphalt and concrete requirements.

A 360 mm thick pavement section was constructed for Section 1 with a 150 mm aggregate subbase course, 130 mm crushed aggregate base course and an 80 mm bituminous concrete surface course. Sections 2 and 3 were constructed with a 240 mm and 250 mm thick crushed aggregate basecourse respectively and a 60 mm thick bituminous concrete surface course for the total length. A 305 mm thick pavement section with a 55 mm thick bituminous course surface concrete and a 250 mm thick crushed aggregate base course was constructed for Section 4. Approximately a half kilometer of 200 mm thick PCC pavement with a 100 mm thick subbase course was constructed in Section 3 from sta. 81 + 661 to sta. 82 + 210 to connect the existing PCC pavements at both ends. A total of 91.8 kms of good paved road has been delivered to the people of Sarangani Province. The travelled way width for the entire sector is 6.70 meters. A combination of embankment select materials and limestone was used for the 1.50 - 2.50 meter shoulders for this sector.

A total of 643 lm of new RCPC extensions (610, 910, 1220 mm dia.) were added to the existing RCPC's for this road sector. A total of 35 existing RCBC's have been improved, with 15 having barrel extensions including new headwalls and wingwalls, and the rest only headwall extensions. The 80.60 meter Saub bridge was also completed to link the towns of Kiamba and Maitum.

Erosion control such as grouted riprap and gabion slope protection was installed where necessary. Earth ditches were excavated and grouted riprap lined ditches installed. Incidental works such as metal and stone masonry guardrails were installed on bridge approaches, high cliffs, and dangerous curves. Road signs, crosswalks and pavement markings were all installed as part of the project work.

Travel time for the 100 kms from Makar to Maitum has now been cut to less than one and a half hours on a good paved road compared to the more than 4 hours travel that was necessary two years ago with the discomfort of the dust and bumps all the way.

3. **ROAD SECTOR 4, SECTIONS 1, 2 & 3**
POLOMOLOK - AGRO CENTER - LANDAN
STA. 01 + 491 - STA. 03 + 543
STA. 04 + 994 - STA. 05 + 348
STA. 13 + 540 - STA. 15 + 269

Section 1 begins from the edge of the existing PCC pavement near the township of Polomolok at sta. 01 + 491 going northerly to Agro Center and connecting to the beginning of the next existing PCC pavement at sta. 3 + 543. Section 2 connects the edge of the existing PCC pavement at the Dole Hospital site and goes for 354 meters ending at the gates of the Dole Packaging plant. Section 3 starts at the existing dirt road on the edge of the Dole pineapple fields at sta. 13 + 540 going northerly and ending at the town of Landan at sta. 15 + 269.

Section 1 and 2 was designed and constructed to match the existing PCC pavement in between the Dole Cannery and Polomolok town. The work done consisted of final design activities and re-construction of the existing gravel road, excavation, embankment and roadway widening. Eight Thousand (8,000) cu.m. of aggregate was produced for the aggregate subbase and PCC pavement.

A total of 2.20 kms of 320 mm thick PCC pavement section was constructed for Sections 1 & 2 consisting of a 100 mm thick aggregate subbase and 220 mm thick PCC. The travelled way for these sections is 6.70 meters. Shoulders ranging from 3.00 to 2.00 meters in width were constructed with selected limestone material. Section 3 was constructed with the same aggregate subbase thickness but the PCC pavement was reduced to 200 mm with a travelled way width of 4.27 meters. Limestone shoulders were built greatly exceeding the design width of 1.85 meters. A total 1.88 kms of PCC pavement was constructed for this section.

Four new reinforced concrete box culverts were designed and constructed for Sector 4 totalling 72.65 lineal meters. New RCPC's (610, 910, 1220 mm dia.) totalling 279 meters were installed for cross-drains, side drains and RCPC extensions.

Erosion control such as grouted riprap and gabion slope protection was installed where necessary. Earth ditches were excavated and grouted riprap lined ditches installed on areas where natural drainage was not possible.

Incidental works such as metal and stone masonry guardrails were installed on bridge approaches, high cliffs, and dangerous curves. Road signs, markers, crosswalks and pavement markings were all installed for traffic safety.

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4. **ROAD SECTOR 7**
SURALLAH - T'BOLI
STA. 0 + 000 - STA. 21 + 581

This sector begins 1.70 kms south of the Municipal Town Hall of Surallah at an intersection with the existing PCC pavement from Surallah to Isulan. The road runs southeasterly from the junction to the Municipality of T'boli. Work activities completed include final design and construction of 21.56 kms new roadway to replace the existing gravel and dirt road. These improvements also included vertical and horizontal changes, roadway excavation, road bed widening and extensive embankment construction. Some 50,000 cubic meters of aggregate was produced for base course and bituminous concrete surface course.

A 290 mm thick pavement section was constructed for this Sector from sta. 0 +000 - sta. 13 + 850 and 250 mm thick pavement from sta. 13 + 850 to 21 + 582. The bituminous concrete surface course for the entire Sector was 50 mm thick. The crushed aggregate base course 240 and 200 mm thick, respectively. The travelled way width for the entire sector is 6.70 meters with the shoulders 2.00 meters in width and constructed with embankment select material.

New RCPC's (610, 910 mm dia.) totalling 761 lineal meters were installed for cross-drains, side drains and RCPC extensions. Erosion control such as grouted riprap, gabion and sandbag slope protection was installed where necessary. Earth ditches were excavated and grouted riprap lined ditches installed on areas where natural drainage was not possible. Incidental works such as road signs, markers , crosswalks and pavement markings were all installed for traffic safety.

The people of T'boli can now deliver their products to nearby towns and cities with ease. This road will help boost the economy of the Municipalities of Surallah and T'boli.

5. **ROAD SECTOR 8**
NORALA - KOLAMBOG
STA. 16 + 300 - STA. 23 + 087

This sector starts at the intersection of Kolambog and the existing PCC pavement from Sto. Nino to Isulan. The road runs easterly towards the Municipality of Norala for a total of 6.75 kms. Design and construction activities included the upgrading and reconstruction of the existing gravel surfaced road. This included widening, horizontal and vertical alignment changes, drainage improvements, common embankment, construction of a 290 mm thick pavement consisting of a 240 mm thick crushed aggregate base course with a 50 mm thick bituminous concrete surface course. Minor repairs were also done on the two existing RCDG bridges.

New RCPC's (610, 910 mm dia.) totalling 523 lineal meters were installed for cross-drains, side drains and RCPC extensions. Erosion control such as grouted riprap, gabion and sandbag slope protection was installed where necessary. Earth ditches were excavated for proper flow of irrigation water for the rice fields on the sides of the road. Incidental works such as road signs, markers, crosswalks and pavement markings were all installed.

III. WORK BID BUT NOT CONSTRUCTED WITH REASONS FOR DELETION

1. ROAD SECTOR 4, AGRO CENTER - LANDAN

Work Bid: - 10.51 KMS
As-Built: - 4.08 KMS

The original work bid (base proposal) consisted of final design and reconstruction of Sections 2 and 3, a 10.51 kms existing dirt and gravel road from Sta. 04 + 993 - Sta. 15 + 503. Proposed improvements were reconstruction of the road bed, shoulder widening, excavation, embankment, installation of drainage pipe and box culverts, paving and construction of soil- aggregate shoulders. Preliminary design by LBII recommended pavement to be Asphaltic Concrete (AC) over crushed aggregate base course and aggregate subbase for the entire road.

Final design and construction was reduced to 4.08 kms of PCC pavement as described in Item No. 3, Section II.A - As Constructed Project Works.

Final design and construction for 8.192 kms in Sections 2 & 3 from Sta. 5 + 348 to Sta. 13 + 540 was deleted but 2.20 kms was added for Section 1 from Sta. 1 + 491 to Sta. 3 + 543.

Reasons for deletion of the 8.192 kilometers proposed design and construction of Road Sector 4.

1. Generally the primary objective of the South Cotabato/Sarangani Road Project was to provide adequate transportation facilities to the selected roadway sectors.

2. One of the important weighted criteria used in the selection process was consideration if the area or sector had any type of existing transportation facilities.

3. The Agro-Center-Landan Section of Sector 4 was deleted based upon the extremely low actual traffic counts. The end of this section of the existing road terminated at Landan, with no reasonable expectation of this road ever being extended beyond Landan.

   The majority of this proposed section of roadway goes across the Dole pineapple plantation through many storm drainage runoff contour channels. In order to preserve these drainage channels, installation of large size pipe or construction of concrete spillways would be extremely costly. Also, as the pineapple fields drainage patterns are constantly being changed, a permanent roadway would be detrimental to Dole's operations.

4. Funds for construction of this deleted section would provide more benefits to those communities and inhabitants that had no transportation facilities.

2. ROAD SECTOR 8, BANGA-NORALA-KOLAMBOG

Work Bid: - 23.087 KMS
As-Built: - 6.46 KMS

The original work bid (base proposal) consisted of final design and reconstruction of 23.087 KMS of existing dirt and gravel road from Banga to Norala to Kolambog from sta. 0 + 000 - sta. 23 + 087. Proposed improvements were reconstruction of road bed, shoulder widening, excavation, embankment, installation of drainage pipe and box culverts, paving and construction of soil-aggregate shoulders. Preliminary design by LBII recommended pavement to be Double Bituminous Surface Treatment (DBST) over crushed aggregate base course and aggregate subbase for the entire road.

Final design and work done was 6.46 kms of hot-mix asphaltic pavement from Norala to Kolambog as described in Item 5, Section for II.A, As Constructed Works.

Reasons for deletion of the 16.30 kms of proposed design and construction for Sector 8.

1. Generally the primary objective of the South Cotabato/Sarangani Road Project was to provide adequate transportation facilities to the selected roadway sectors.

2. One of the important weighted criteria used in the selection process was consideration if the area of sector had any type of existing transportation facilities.

3. The Banga-Norala Section of Sector 8 was deleted as based upon the reasonable conclusion that the National Highway provided an adequate transportation facility for this area. This section from Banga-Norala would be a parallel duplication of roadway as traffic would have to travel approximately the same distance from Banga-Norala-Kolambog as from Banga-Surallah-Kolambog.

4. Funds for construction of this deleted section would provide more benefits to those communities and inhabitants that had no transportation facilities.

B. ENGINEERING

I. SCOPE OF WORK

Morrison Maierle/CSSA (MM/CSSA) was contracted by USAID to provide services to the USAID/Manila, Mindanao Development Program Division as the Resident Engineer's inspection team for the South Cotabato/Sarangani Roads Project. The total cost obligated to MM/CSSA's contract for performance of the services is $4,047,240 plus a fixed fee of $190,309 for a total of $ 4,237,549.

MM/CSSA was assigned to the project location area in General Santos City, South Cotabato, Mindanao. MM/CSSA was required to furnish housing, office space and a soils and materials testing laboratory. The laboratory was to include sufficient field testing equipment for basic soils analysis, concrete sampling and field office equipment to determine concrete strength, soils compaction, and provide asphaltic concrete analysis, bituminous analysis, and water testing for both industrial and potable use.

The Maduramante Building which is conveniently located in General Santos City along the National Highway, was leased as the Project Office. A Soils Laboratory was constructed at the Maduramente Building Compound. These buildings were operated and maintained by MM/CSSA for the duration of the contract.

All approvals for the design of the roads were provided by the USAID Project Manager and/or his delegated representative.

1. Design Checking

MM/CSSA was responsible for insuring that all detailed designs provided by the Design/Build Contractor, Morrison Knudsen Company, (MKC) met or exceeded the GOP-DPWH Standards as described in "Design Guidelines, Criteria and Standards, Vols. I-IV" and reflect sound engineering practice as described in the U.S. Standard Specifications for Construction of Roads and Bridges on Federal Highway Project (FP-89 USDOT).

A brief description of this activity is covered in Section B.III, Design Review of this report.

2. Construction Inspection

Pre-construction material testing was required for all sub-base materials and material from the Contractor's proposed borrow pits. All approved material had to conform to the Standard Specifications as described in FP-89, DPWH Design Criteria and/or as directed by the USAID Project Manager.

All material placed during construction was tested for conformance to applicable standards including the ASTM Standards, Asphalt Institute Standards, American Concrete Institute, DPWH Design Criteria Vols I-VI, AASHTO and as directed by the U.S. Project Manager.

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A thorough description of all the field inspection and survey QA activities performed by MM/CSSA is covered in Section B, IV, Construction Inspection.

3. Progress Payments

MM/CSSA was responsible for checking and verifying all monthly progress payments submitted by the Contractor, Morrison Knudsen Company (MKC) and the preparation of payment vouchers for the USAID Project Manager for certification and approval.

From the beginning of the project, it was agreed by USAID, MKC and MM/CSSA that a preliminary draft of the monthly invoice prepared by MKC would be submitted to MM/CSSA before the 25th day of each billing month. This would represent the actual work accomplished for the month with some reasonable allowances to cover the work done from the 25th to the 30th of the month. The invoice was reviewed and checked by MM/CSSA for the actual completed quantities, approved rates, materials on site, and overall project cost. Joint measurements were also done by MKC and MM/CSSA representatives on some pay items which needed to be field measured prior to payment.

Prior to concurrence of MM/CSSA to MKC's request for payment, MM/CSSA's technical staff coordinated with the field inspectors and the soils laboratory section for verification if the work had been accomplished in accordance with required specifications.

When some of the work that was done didn't conform to the required specifications, MKC was immediately notified and the work was rectified. Some work items that didn't meet the required specifications were generally recommended for disallowance or withheld from payment until the work was corrected and/or changed.

A copy of a monthly progress payment invoice is included in the appendix of this report.

4. Logistics

MM/CSSA provided adequate office space for the Road Project staff, a garage and light equipment repair shop, and a testing laboratory; all with air-conditioning and toilet facilities. All office and laboratory equipment necessary for the performance of the contract was purchased and consequently utilized. A detailed logistics summary is shown in Section B.II, Administrative Data of this report.

5. Mobilization and Contract Duration

The USAID Contracting Officer signed MM/CSSA's contract on December 07, 1990 with a mobilization date to be no later than January 07, 1991.

MM/CSSA began mobilizing their expatriate Field Professional staff first to Manila starting from January 06, 1991 and, then to Gen. Santos City on May 01, 1991. MM/CSSA's local Field Professional staff was mobilized starting from July 1, 1991. All other technical and support staff was hired locally in the General Santos City and South Cotabato area.

At the start of the project two expatriate field engineers, a Chief Highway Engineer and a Materials Engineer was assigned on TDY (temporary duty) to General Santos City. Both engineers provided supplemental training to the MM/CSSA local technical staff, reviewed procedures to be utilized in checking MKC design submittals and made guidelines for a thorough checking of all design submittals and material tests.

A work schedule of personnel requirements and Bill of Materials was provided to the Project Manager's Office for project tracking and scheduling. For a more comprehensive summary and compilation of this report, refer to Section B.III. Design Review.

6. Reports

The following reports were prepared and submitted as required for overall project tracking and monitoring.

a. Preliminary Plan-in-hand Reports (design report and cost estimate)
b. Final Plan-in-hand Reports (design report, cost estimate, construction schedule and expenditure S-curve).
c. Cost Estimate and schedules were submitted with the Final Plans for approval.
   Items a, b, c are briefly described in Section B.III, Design Review of this report.
d. Monthly and Final Construction Reports.

MM/CSSA prepared the following reports for overall project tracking and monitoring which were the basis for preparation of MM/CSSA's monthly report.

1. Daily Inspector's Report
2. Weekly Laboratory Activity Report
3. Weekly Design Activity Report
4. Weekly Activity Report

MKC's Monthly Activity Report was incorporated in MM/CSSA's Monthly Report and submitted to USAID and all other entities on or before the 10th of the following month. A total of 22 copies of the report was sent out to all concerned parties including the DPWH Undersecretary, the Provincial Governor and the Mayor's office. Four copies were submitted to USAID.

Typical reports as listed above are included in the appendix.

II. ADMINISTRATIVE DATA (Personnel, Subcontractor, Equipment)

The staff working for the road project is divided into two groups, the technical and the administrative/logistic support. Table 1 represents the list of man months of the technical staff (expatriate and local) and the subcontractor, Speedie and Associates.

Table 1.
List of Technical Personnel for the Road Project.

Position	Man Months				Actual ManMonths
	First Year	Second Year	Third Year	Fourth Year	
Home Office					
Professional	4.5	5.2	4.5	0.7	14.9
Non-professional	2.4	2.0	1.6	0.4	6.4
Field Staff Professional (Expat)					
Chief of Party	12	12	11.5	1.0	36.5
Chief Construction Engineer	8.8	12	12	2.0	34.8
Chief Design Engineer	8.9	12	4	0	24.9
Highway Design Engineer (TDY)	1.7	1.1	1.0	0	3.8
Speedie & Associates (subcontractor)					
Materials Engineer (TDY)	1.0	1.0	0	0	2
Field Staff Professional (Local)					
Asst. Resident Engineer	6	12	12	2	32
Chief Soils Engineer	5	12	12	2	31
Laboratory Technician	6	12	12	1	31
Laboratory Technician (2)	6	24	24	0	54
Surveyor	5	12	12	2	31
Inspector (Pavement)	0	10	12	2	24
Inspector (Earthwork)	2	12	12	0	26
Inspector (Structure)	0	0	9	2	11
Design Engineer (Structure)	5	12	3	0	20
Design Engineer (Highway)	5	12	12	2	31
Draftsman	6	6	0	0	12
Engineering Aide	5	12	12	1	30
Labor (Survey/Soils) (3)	10	24	24	4	62

Table 2 represents the list of administrative and logistic staff which supports the technical staff by providing administrative, accounting, security and janitorial services.

Table 2.
List of Administrative/Logistic Staff Required to Support the Technical Personnel.

Position	Man Months				Actual ManMonths
	First Year	Second Year	Third Year	Fourth Year	
Manila Administrative Support					
Liaison Engineer	8.7	5.5	5.5	0	19.7
Accountant	12	12	12	2	38
Secretary (2)	24	24	24	2	74
Expediter	11	12	12	0	35
GSC Administrative Support					
Administrative Manager	8	12	12	0	32
Secretary	8	12	12	2	34
Cashier/Secretary	5	12	12	2	31
Mechanic	0	12	12	2	26
Asst. Mechanic	0	2	12	0	14
Clerk	0	12	12	2	26
Janitor/Laborer (5)	16	26	44	4	90
Security (5)	50	60	60	10	180
Drivers (9)	28	83	96	9	216

A. Procurement

The laboratory equipment used for the road project was procured through Speedie and Associates, a subcontractor for the technical support of Morrison Maierle/CSSA. The equipment was shipped to the Philippines where the papers were processed for the government tax exemption and then sent to General Santos City where the project is located. The equipment was procured by Morrison Maierle/CSSA, Inc. for reimbursement by the United States Agency for International Development (USAID).

The equipment needed to furnish the office was procured by Babb and Associates, a subcontractor for administrative and logistic support. Some of the equipment was bought and shipped from Manila with some locally produced.

Figures 2 and 3 represent the MM/CSSA's Table of Organization.

B. Inventory

The equipment provided to the General Santos City office was checked and tagged for easy inventory. The list of equipment is updated every year and a new list is sent to USAID to notify them of any new equipment.

C. Disposal Plan of the Equipment

Morrison Maierle/CSSA, Inc., is doing the final inventory of the equipment. The inventory list together with all the equipment will be turned over to other USAID project offices upon project completion. Some of the equipment will go to the Airport and Wharf Projects and others will be handed over to USAID.

Refer to the Appendix for the complete and final inventory of the equipment.

III. DESIGN REVIEW

A. Project Design Review Procedures

1. General

The design for this project was done by Morrison Knudsen Corporation (MKC) as a Design-Build Project. The Preliminary Design Documents provided to MKC by USAID were prepared by Louis Berger International Inc., basically as a Design Report document. This report included traffic projections, typical sections, plan and profile sheets showing general alignments and approximate grades. In most cases these plans did not have the necessary information and data to be considered adequate for the Preliminary Design (50%) Phase.

Morrison Knudsen Corporation prepared the design plans to what they called the 90% Phase Primarily based upon the LBII Preliminary Design Plans. This was the main start of Morrison-Maierle/CSSA's (MM/CSSA) design review process. In many cases a particular design problem was reviewed with MM/CSSA's design staff both in the field and the office by the MKC design staff to obtain agreement prior to their finalizing the 90% plans. This saved considerable design changes during the 90% plans preparation phase.

2. Review Procedures

The design review procedures that were followed covered submittals, office and field reviews and final approvals. A brief summary of what each different review process involved is as follows:

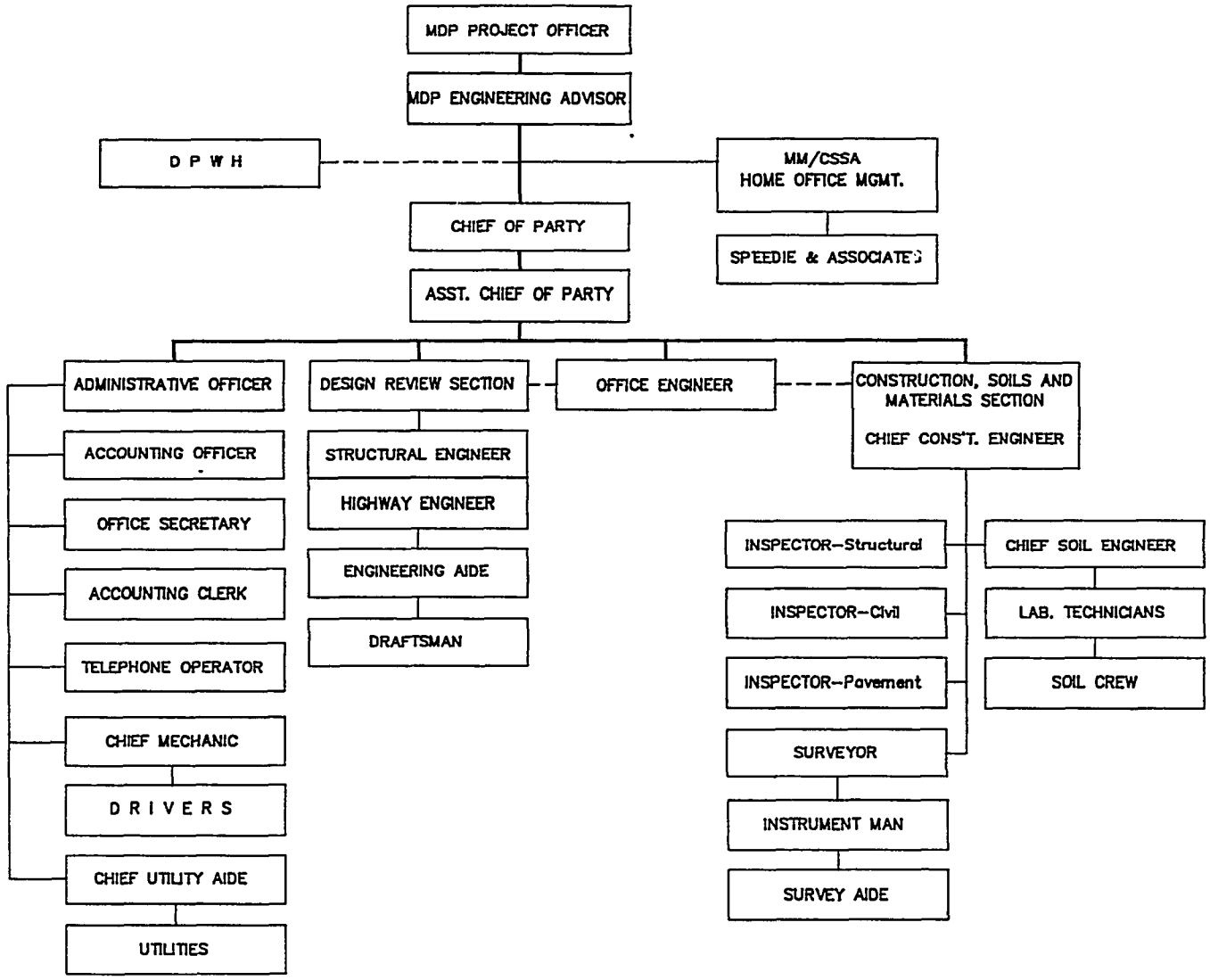
A. 90% Design Documents submitted by MKC to MM/CSSA.

1. These documents consisted of the following:

Figure 2

OFFICE OF THE ENGINEER

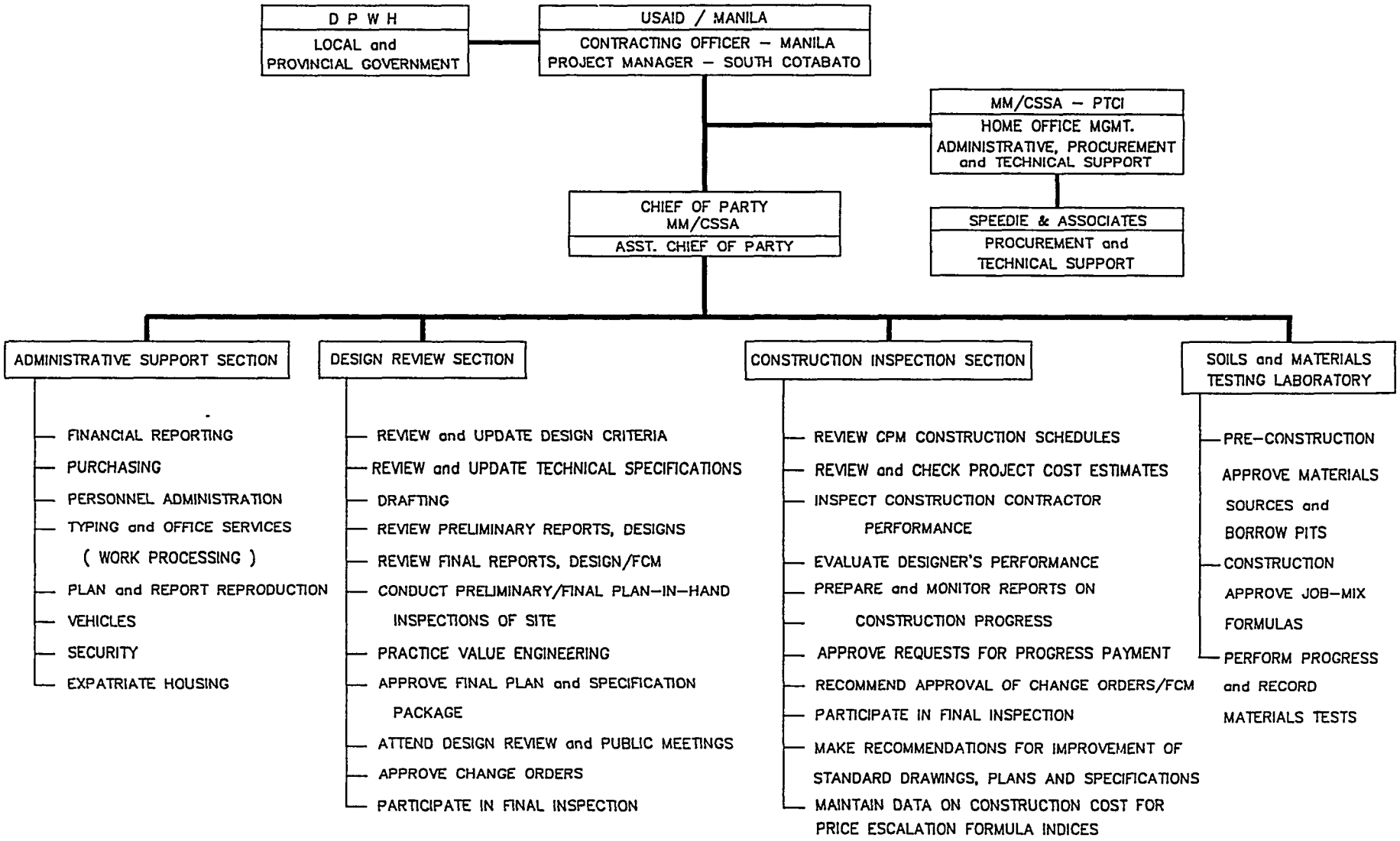
SOUTH COTABATO HIGHWAYS PROJECT



22

Figure 3

PROJECT ORGANIZATION CHART



a) Construction Plans

Plan and profile sheets, typical sections summary of quantities, details for the improvements, schedules for improvements, major structures and standard detail sheets.

b) Design Report

1) Part A - Design Calculations

* Horizontal Design
* Vertical Design
* Superelevation Design
* Drainage Design
* Soils, Materials and Pavement Design
* Structural Design Calculations

2) Part B - Quantity Calculations

* Summary of Quantities
* Part II - Earthworks
* Part III - Pavement
* Part IV - Structures
* Part V - Drainage and Erosion Works
* Part VI - Incidental Works

2. MM/CSSA transmitted sets of the 90% Design Documents to the following Agencies for their review.

a) USAID - Project Manager (GSC) 1 set
b) USAID - OCP (Manila) 2 sets
c) DPWH - Regional Office (Davao) 1 set
d) DPWH - District Office or PEO 1 set
e) MM/CSSA - Office 5 sets

B. 90% Design Review Comments submitted by MM/CSSA to MKC

1. The Engineering Staff reviewed and checked the following:

a) Plans
(1) Horizontal and vertical alignment to check conformance with the design speeds
(2) Typical roadway sections
(3) Drainage Structure Design with reference to cover and length
(4) All detail improvement drawings
(5) Signing, Striping and Pavement Marking

b) Design Report - Part A

(1) Design Calculations
(2) Vertical Design
(3) Superelevation Design
(4) Drainage Design
(5) Soils, Materials and Pavement Design

c) Design Report - Part B

(1) Quantity Summaries
* Earthwork
* Pavement
* Structures

2. The Engineering Staff held field Plan-in-Hand reviews to:

a) Inventory the existing drainage structures/pipes. Pictures were taken of the inlet and outlet and condition of pipe noted.
b) Check on proposed drainage structures/pipes locations.

c) Obtain pipe inlet and outlet elevations.

3. A Design Element Diagram was prepared covering the entire project. This is a design review tool developed by MM/CSSA to correlate the roadway design elements to a simplified graphic method. The Design Elements Diagram graphically shows the following:

(a) Design Speed
(b) Horizontal Curvature (Radius)
(c) Vertical Curvature (K factor)
(d) Structures, Loading/Unloading zones and communities

4. Review comments consisted of the following:

(a) Written comments with design recommendations and revisions
(b) Red-lined set of Plans showing the revisions/changes
(c) Red-lined set of the Design Report with comments/revisions.

C. Field Plan-in-Hand (PIH) Review

1. A field PIH review was scheduled by MKC after the review comments/revisions had been analyzed/reviewed by the MKC Design Staff.
2. The recommended changes/revisions were thoroughly discussed and looked at in the field. Agreement and/or concurrence was reached on the various plan revision/changes.

3. All final changes/revisions were noted and/or marked on a set of plans.
4. Additional PIH's as necessary were scheduled.

D. Office Review Meeting

1. An office review meeting was scheduled by MKC to review the 90% Design Review Phase comments and plan revisions. This meeting was usually held prior to the Field PIH review in order to obtain agreement on revisions/changes that were contained in the 90% Design Review comments. Additional office meetings were held as necessary to resolve any recommended design revision/changes between MM/CSSA and MKC design staffs.

E. 100% Design Documents submitted by MKC to MM/CSSA

1. The final design documents incorporated the design concerns and agreements that were reached and accepted by the MM/CSSA and MKC design staffs.

   a) The Plans were revised/changed to incorporate these design items.
   b) The Design Report incorporated the Part A - Design Calculations and Part B - Quantity calculations changes and revisions.

F. Final Comments and Revisions Submitted by MM/CSSA to MKC

1. The Engineering Staff reviewed and checked the Final 100% Design Documents with reference to the comments, revisions and changes that had been discussed and agreed upon at all the previous office reviews and field PIH's.
2. Any design item that had not been processed or been overlooked and any new additional items were noted and submitted to the MKC Design Staff and final reviews were as necessary to conclude the design portion of the project.

3. Final Plans and Project documents were prepared by MKC. The original mylar documents were signed by the MKC Project Manager and Chief Design Engineer.

G. Final Plans Approved and Signed

1. MKC submitted the signed original mylar final plans to MM/CSSA.
2. The MM/CSSA Chief of Party and the USAID Project Manager signed the original mylar plans which were then transmitted to MKC.
3. MKC submitted the required number of 100% Design Plans and Design Reports to MM/CSSA for transmittal to the various agencies receiving project documents.

a) USAID - Project Manager (GSC) 1 set
b) USAID - OCP (Manila) 2 sets
c) DPWH - Regional Office (Davao) 1 set
d) DPWH - District Office or PEO 1 set
e) MM/CSSA - Office 5 sets

4. The USAID Project Manager sends a Notice of Approval of the Plans and Notice to Proceed with Construction for the project.

III.a PROJECT DESIGN REVIEW DATES

The submittal review and approval dates for the different review previously described is summarized on Table 3.

Table 3
Project Design Review and Approval Dates

Section/ Sector	90% Design Documents Submitted by MKC to MM	90% Design Review Comments Submitted by MM to MKC	Field PIII Review Held	Office Review Meeting Held	100% Design Documents Submitted by MKC to MM	Final Comments & Revisions Submitted by MM to MKC	Final Plans Approved & Signed
Sector 3 Section 1A	9 Sept. 1991 (60%) 11 Oct 1991	24 Oct 1991	23 Oct 1991	31 Oct 1991	8 Nov 1991	10 Nov 1991	14 Nov 1991
Sector 3 Section 1B	8 Nov. 1991	20 Nov 1991	5 Dec 1991	27 Nov 1991	8 Dec 1991	6 Jan 1992	13 Jan 1992
Sector 3 Section 2	13 Dec. 1991	24 Jan 1992	29 Jan 1992	27 Jan 1992	18 Feb 1992	21 Feb 1992	26 Feb 1992
Sector 3 Section 3A	10 Mar. 1992	7 April 1992	9 April 1992	6 May 1992	12 May 1992	20 May 1992	29 May 1992
Sector 3 Section 3B	31 Mar. 1992	8 May 1992	4 June 1992	6 Aug 1992	3 Aug 1992	14 Aug 1992	25 Aug 1992
Sector 2 Section 1&2	30 April 1992	10 June 1992	9 Sept 1992	19 June 1992 6 Aug 1992	14 Oct 1992	27 Oct 1992	7 Dec 1992
Sector 7	30 June 1992	23 July 1992	2 Sept 1992	6 Aug 1992	11 Sept 1992	21 Sept 1992	20 Nov 1992
Sector 8	29 Aug. 1992	14 Sept 1992	27 Nov 1992	17 Aug 1992	14 Oct 1992	4 Dec 1992	7 Dec 1992
Sector 3 Section 4	26 Oct. 1992	13 Nov 1992	10 Nov 1992	17 Nov 1992 3 Dec 1992	24 Nov 1992	1 Dec 1992	7 Dec 1992
Sector 4	17 Dec. 1992	7 Jan 1993	14 Jan 1993	8 Jan 1993	26 Jan 1993	3 Feb 1993	10 Feb 1993
Sector 2 Section 3	16 Dec. 1992 (60%) 26 Feb. 1993	8 Jan 1993 (60%) 1 Mar 1993	19 Mar 1993	4 Mar 1993	1 April 1993	7 April 1993	16 April 1992
Sector 2 Lun Masla Bridge	12 Feb. 1993 1 May 1992	18 Feb 1993	NA	NA	24 Feb 1993	NA	3 Mar 1993
Sector 3 Saub Bridge	02 Mar. 1993 (65%)	22 Mar 1993	NA	NA	NA	3 April 1993	7 April 1993
Sector 2 Molo Bridge	3 Mar 1992	10 Mar 1992	NA	4 Feb 1992 20 April 1992	20 May 1992	15 May 1992	29 May 1992
Sector 2 Tuyan Bridge	3 Mar 1992	10 Mar 1992	NA	4 Feb 1992 20 April 1991	10 May 1992	15 May 1992	29 May 1992

IV. CONSTRUCTION INSPECTION

Under the supervision of the MM/CSSA Chief of Party, a Construction Quality Assurance (QA) Team headed by the MM/CSSA Chief Construction Engineer was assigned and successfully performed the " Quality Assurance" program for the road project.

The MM/CSSA construction quality assurance and inspection team was composed of an eleven (11) man workforce directed by the Chief Construction Engineer. The team includes three (3) inspectors (one each for civil works, pavement and bridge construction), one (1) surveyor/inspector, two (2) survey aides, one (1) Chief Soils Engineer, three (3) soil technicians and one (1) lab aide.

The team performed Quality Assurance for the project in conjunction with the Quality Control Team of MKC, the prime contractor for the road project. The team monitored and tracked the contractor's quality control activities on a daily basis and performed tests as required for quality assurance.

The team inspected and checked the following operations to assure that the work is being performed in accordance with approved plans and specifications.

1. EQUIPMENT

Checked condition and approved of the contractor's calibration of equipment. Checked equipment operations for safety conditions. Indicated in Table 4 is the equipment checked and used in the project.

Table 4

List of Equipment used in the Construction

Asphalt		Aggregate Production		Concrete Plant		Embankment Including Subgrade	
Description	Qty	Description	Qty	Description	Qty	Description	Qty
Asphalt Plant	1	Basic Crusher	1	Concrete Plant	1	Dozer	2
Drum Melter	1	Screening Plant	1	50 KW Gen Set	1	Front End Loader	1
Heat Pumps	2	Loader	4	Ready Mix Trucks	3	Vibratory Roller	2
Hot Oil Heater	1	Motor Grader	2	Water Storage Tank	1	Motor Grader	2
Light Plant	2	Traffic Roller	1	Mixer (2 bag)	2	Water Truck	4
Compressor	1	Dozer	1	Compressor	1	Backhoe/Loader	1
10,000 Gal Storage	2	Jersey Spreader	1	Rebar Bending Machine	1	Plate Compactors	3
5,000 Gal Storage	2	Asphalt Distributor	1	Fork lift	1	Fuel Truck	1
Loader	1	Sand Spreader		Concrete Paving Machine	1	Grease Truck	1
Asphalt Paver	1	Compressor	1	Work Bridge	1	Tire Truck	1
Broom	1	Crane	1	Light Plants	2	Mechanic Truck	2
Forklift	1	Welder	1	Concrete Saw	1	Tractor and Lowboy	1
Steel Wheel Roller	1	Fuel Storage	1	Tar Pot	1	Welding Machine	1
Traffic Roller	1			Crane	1	Flatbed Truck	2
Scales	1			Loader	1	Fuel Storage Tank	1
Plant Piping	1			4" Pumps	2		
Fuel Storage	1			Welder	1		
Transfer Pump	1			Fuel Storage	1		
Paint Striper							
Generator	5						
Welder	1						
Chip Spreader							
Total	28	Total	16	Total	18	Total	24

30

2. EARTHWORK

Earthwork activities include clearing and grubbing, removal of structures and obstructions, unsuitable excavation, structure excavation, common embankment, embankment select material for shoulders and subgrade preparation. MM/CSSA QA inspectors performed daily inspections, verified grades and alignment, performed job control compaction tests for backfill at specified frequencies and verified quantities. All the QA inspectors kept the MM/CSSA Chief Construction Engineer informed on all the construction activities.

a. Roadway Embankment Formation

During embankment construction the QA inspectors checked that the compaction patterns done by the contractor was satisfactory, lifts of fill material are within the recommended range, side slope templates and roadway limits conformed to plan. Routine verification with the QC inspectors that the fill materials compaction satisfies the specification requirement prior to the placing of the next lift is included in their daily activities. The QA inspector coordinates with the QA Chief Soils Engineer regarding the physical properties of the fill materials for proper monitoring.

b. Roadway Excavation

The MM/CSSA inspectors verified the slope stakes indicating the limit of the excavation, coordinated with the QA soils staff as to its physical properties, to find out if it is a suitable material for embankment then monitor the activity of contractor. Cut slopes are checked for conformance with the drawings.

c. Sub-grade Preparation

The QA inspectors check final grading and compaction of sub-grade when completed, and the finished surface for possible soft-spots. The QC inspectors and the contractor's soils crew perform compaction tests using the Troxler Nuclear Moisture-Density Gauge to assure quality. Our QA inspectors spot check the results of the test as the process is going on. Areas that does not meet the required compaction are rectified by additional passes of the roller until it meets the requirement. When the finished sub-grade is ready to receive the base course materials the QC inspectors submits a pre-placement report duly signed by the contractor's QC, construction and survey supervisors. Our QA inspectors signs and receives the pre-placement report to be handed in the MM/CSSA project office for proper distribution of information and documentation.

3. AGGREGATE PRODUCTION

Approved the source, inspected periodically and performed tests as required. (See soils report.)

4. STRUCTURES/BRIDGES, DRAINAGE IMPROVEMENTS AND EROSION CONTROL

MM/CSSA QA inspectors daily monitor the above mentioned construction activities of the contractor. These included RCBC extensions complete with headwalls, installation of RCPC drainage pipes with headwalls and wingwalls, earth and grouted riprap lined ditches, grouted riprap and gabions for erosion control and stone masonry for headwalls and guardrail. The QA Inspectors performs daily inspections with emphasis on compliance to traffic control, protection of adjacent property, adherence to approved schedules, technical specifications, design and quantity of work.

The QA inspectors maintains a daily diary and records all operations, date and weather condition, equipment used and availability in the field including manpower utilized. A short summary of quantities placed were properly recorded on a daily basis by location. Daily discussion on construction safety hazards and corrective measures were carried out. A short narrative discussion of completed or on going work by location to document any newly constructed structure.

A short summary of engineering and/or surveying work completed by the contractor are properly recorded in the daily construction diary. Potential disputes seldom happened during field inspections as our inspectors gave their full extent of cooperation and assistance to the contractor in the field. If the contractor did something improper that is detrimental to the project or does not conform with plans and specification requirement, the QC supervisor of the contractor is informed immediately and proper corrections were made. Proper recording of all events for the day were submitted and filed in the MM Project office for future references.

The structural inspector inspected daily the grades and alignment on all structure construction of the contractor. He checked the rebar placement and formworks before the contractor's scheduled pouring of concrete. He properly checks that contractor's work conform with the plans and specification requirements. The inspector also checks that traffic control is strictly adhered to during pouring operations.

5. PAVEMENT

a. Sub-base/Base Course Construction

The MM/CSSA QA inspectors daily verifies/inspects the sub-grade where the base material is to be laid over and checks that it is well compacted, firm and has no unstable areas. In cases of any uncertainty, the inspector immediately notifies the contractor's QC inspector for possible solution and later make a report to the MM/CSSA Chief Construction Engineer of the matter for appropriate action.

b. Application of Bituminous Prime Coat

The MM/CSSA QA inspectors daily checked and monitored the contractor's quality control activities. The inspector recorded their activities as they perform

their compaction tests on the prepared base course stretch. Close coordination with the MM/CSSA survey team was essential to insure that the base finish grade elevations were within acceptable limits. When everything is in order, the MKC QC inspector submits to the MM/CSSA QA inspector the duly signed pre-placement report for proper documentation. Bituminous primecoat is then applied over the prepared base. Both the MM and MK inspectors determine the rate application in liters/sq. meter, and the temperature of the bituminous mix during the time of application. All data gathered were written on the pre-placement report.

c. AC Pavement Construction

During the batching and laying of the AC hot mix the QA inspectors spot checks the laying temperature of the AC mix, the rolling patterns during breakdown, intermediate and final rolling of the AC mat together with the respective mat temperature of every rolling stage. The inspector performs a yield check once or twice daily for comparison against the theoretical weight in order to determine whether the AC laid is within the estimated quantity. A daily inspection on the asphalt batch plant is done to verify that the temperature is within the recommended range. A daily paving report is prepared and submitted to the Chief Construction Engineer for his information. The report includes all the activities as describe above.

d. Portland Cement Concrete Pavement Construction Inspection

The contractor use a GOMACO GP 2000 slip form paver for construction of PCC pavement, particularly on Section 1 of Road Sector 2 and all of Sector 4. With this method of construction our QA inspectors checked the string line lay-out. From the off-set string, another string is pulled across to check base course finish elevation and determine pavement thickness. A joint checking inspection was usually done with the QC inspectors.

Concrete batching and laying operations are properly monitored by our QA inspectors. The QA inspectors at the paving area spot checks the thickness of newly laid concrete. Location of areas where slumping of edges occur are being noted. Tests performed by the QC soils staff consist of slump test, determination of air content and others. These are being monitored for proper relaying of information to the QA soils staff.

Batching of concrete at the plant is checked/monitored for concrete ingredient weight conformance with approved design mix. Ad-mixture quantity if used is included. All construction data gathered during the day are included in the daily report submitted to the Chief Construction Engineer.

C. MKC CONSTRUCTION

I. BRIEF NARRATIVE ON METHODS AND TIME OF CONSTRUCTION

A. Clearing and Grubbing

The Contractor surveyed the proposed roadway centerline and staked the limits of construction. Wooden stakes indicating the stations, distance from centerline for both left and right side of the proposed roadway were set.

All trees and structures to be removed were marked then dozers cleared off all surface objects, cut through trees, stumps, roots and other protruding obstructions not designated to remain within the established construction limits. These were all hauled and disposed on designated areas approved by the Department of Environment and Natural Resources (DENR). Graders then shape the full width of the existing grade and temporary ditches were constructed to provide rainfall drainage.

Compaction of the existing ground on fill sections follows the clearing and grubbing activity while roadway excavation starts on cut areas. Quality Control (QC) crews perform compaction tests on the existing grades before placing the first lift on embankment areas or sub-grade preparation on cut areas. Clearing and grubbing averaged 1.5 km a day in good weather with 2 dozers, 2 loaders and 5 dumptrucks.

B. Embankment Formation and Roadway Excavation

The filling of suitable materials for embankment was done by lifts between 20 cm and 30 cm thick up to sub-grade level. Fill materials are hauled from roadway excavation or borrow pits then spreading, compacting, watering and shaping follows. Embankment preparation averaging 5000 cu.m/day was obtained in good weather using 15 dumptrucks, 4 roller compactors, 3 dozers, 2 water trucks, 2 graders and one sheepsfoot roller/spreader.

Roadway excavation on common material was done by a dozer (D-7, D-8) averaging 300 cu.m. per unit. Suitable materials are hauled to fill areas for roadway embankment while unsuitable materials are hauled to waste. The contractor utilizes 6 to 10 dozers to perform the roadway excavation work.

Field density tests were performed by the Contractor's QC crew for each embankment lift and on areas excavated to sub-grade level.

Rock excavation was done either with a D-9 ripper or by dynamite blasting. The Contractor's survey team establish the limits of the rock formation to be ripped or blasted. Then request for verification and concurrence from the Engineer's representative were obtained prior to blasting or ripping. Excavated rock was then disposed of from the working area and was either used as fill material or hauled to waste.

C. Sub-grade Preparation

Upon completion of embankment and roadway excavation, the Contractor's survey crew stakes out the finish grade along the edge of roadway limits, indicating the roadway sub-grade finish elevation at centerline. Grade stakes are placed at 25 meters interval along the tangent sections and 12.5 meters along the horizontal curves.

The contractor's construction group then starts the final grading and compaction of the sub-grade. Equipment used for this activity consists of 1 grader, 2 vibratory compactors and 1 water truck which accomplishes 800 meters of sub-grade preparation a day. The water truck sprays water over the sub-grade surface to keep the moisture content at its optimum so the compaction requirements can be attained.

When sub-grade preparation is completed, surveyors check the sub-grade elevation for plan conformance. Joint elevation checking was done by the Contractor and consultant surveyors. The Contractor's Quality Control crew performs the field density tests for specification conformance within the specified location. If everything is satisfactory to all concerned, the roadway sub-grade is then ready to receive the sub-base/base course materials.

D. Sub-base/base Course Construction

Sub-base/base course materials are processed/crushed and stockpiled at the plant site, strategically located along the project road. Thirty (30) units of dumptrucks were used to lay 900 meters of base course material 12 cms thick and 6.70 meters width during a 10 hour working day.

The contractors survey crew completes the placement of grade stakes prior to hauling of base materials. Spreading of the materials was done by a Jersey spreader mounted on a Cat D-6 dozer. Base materials were laid in two lifts with the first lift compacted to the required density before the second lift is laid. The fine grading crew then blue topped the base course surface for final preparation. The base course surface was graded to ± 5 mm of the design grade.

Final compaction followed immediately before the QC and QA surveyors check the prepared base course finish grade elevation for plan conformance. The QC soils crew performed field density tests on the compacted base course for specification conformance.

Request for QA verification and concurrence from the engineer's Representative is obtained prior to application of bituminous prime coat or laying of PCCP.

E. Application of Bituminous Prime Coat

MC-70 was used on this project as the surface prime coat. It was transported to the project site in 200 liter barrels and then loaded into the asphalt distributor during prime coat applications. Prior to the application, the bitumen was heated to a temperature of 150°F and was applied at a rate of between 0.80 liters to 1.20 liters per square meter. An average of 500 lm x 6.7 meter width of roadway was usually applied in a day depending on the base course prepared.

The prime coat was allowed to penetrate into the base course for one hour after application then sand was spread over the top to blot up the remaining wet surfaces. A sand spreader was fitted on the dumptrucks to do this activity.

F. Pavement Construction

1. Asphaltic Concrete Pavement

The contractor used a continuous drum type mixing plant. Proportions of aggregate were timed by the speed of the conveyor. Trial runs were made at every new location of the plant to ensure that the mix conforms with the specifications. The rotary drum drier was diesel fed, to minimize pollution at the plant site. The plant produced between 500 to 600 metric tons of asphalt hot mix a day adequate to pave 1,000 lm to 1,300 lm x 3.35 wide single lane section of the roadway.

The sweeping broom cleans the prime coated base at the start of the day with the paver guide string laid 300 mm off the center line. The Laying of asphaltic mix was usually done with the single lane process starting on the right lane and finishing with the left lane. The paver used on this project was a Cedarrapid paver from USA called "Greyhound" and was equipped with an automatic ski leveling device run by an electronic sensor.

Compaction of the newly laid asphaltic mix was done in three stages as indicated below:

a. Breakdown Rolling

Immediately after the laying of two truck loads of asphaltic mix, breakdown rolling was started. A vibratory tandem roller was used for the compaction of the asphaltic mat. The mat must maintain a temperature of no less than 250 degrees Fahrenheit. The compactor enters on to the newly laid mat static and along the low side and goes out in the vibratory mode. Two passes of the roller was done on every compaction strip. Each lane is divided into three compaction strips, each overlapping the other.

Compaction must always start along the low side and progressing toward the center.

b. Intermediate Rolling

The same type of roller was used in the second stage of compaction. Intermediate compaction was performed when the asphaltic mat temperature has dropped to between 190 and 230 degrees Fahrenheit. The compactor induces two static passes on each compaction strip, starting from the low side and progressing toward the center.

c. Final Rolling

Final compaction was then performed when the mat temperature had dropped to between 140 and 170 degrees Fahrenheit. One pass was made on both the inner and outer strips and two passes along the middle strip.

2. PCC Pavement Construction

Portland Cement Concrete Pavement (PCCP) for this project was constructed by using a Gomaco 2000 Slip Form Paver.

The Contractor's surveyors first established the edge of travelled-way base finish grade elevation. These elevations were off-set 1.5 meters on both sides, where the guide string is aligned perfectly parallel to the roadway center line. Wooden hubs were placed every 12.5 meters along the tangent sections and 5.0 meters along the horizontal curve sections.

Steel rods 16 mm in diameter that held the guide strings were located 300 mm back of the off-set wooden hubs. The strings are then positioned 700 mm directly over the top of the wooden hub for a 200 mm thick pavement and 720 mm for a 220 mm thick pavement. The electronic sensor keeps in contact with the guide string during laying of the concrete mix. The pavement finish surface is made parallel to the guide string in both horizontal and vertical directions.

The concrete aggregates are weighed proportionally according to the approved mix design at the concrete batch plant and is immediately loaded into the transit mixer. The mixing of cement, coarse and fine aggregate and water was done in the mixer. The quality control crew checks the slump of the concrete mix prior to delivery to the jobsite.

The concrete mix slump was strictly controlled at a range between 1.5 and 2.5 inches. Anything greater than a 2.5 inch slump would result in heavy slumping of the pavement edges. Darex was added to the concrete mix as an air entraining agent and Daratard was added when necessary as a concrete retarder.

All the pavement surfaces were tine finished. Burke wax emulsion was used as a curing-compound and was applied over the exposed pavement surface at the time when the concrete starts setting.

An average of 400 cu.m. of concrete mix was produced daily with eight transit mixers to pave 300 lm. to 350 lm x 6.7 meter wide section of roadway.

G. Drainage and Erosion Works

1. Reinforced Concrete Pipe Culverts

RC Pipes were cast by the Sub-contractor at their yard which were usually located along the project site. Three sets of steel forms 1 meter in length for each 1220 mm, 910 mm, 610 mm diameter size were used for casting the RCP's. The pipes were cured using Burke Wax Emulsion curing compound and were allowed to set until the required compressive strength was attained prior to delivery on site.

At each location of the proposed RCP Culverts, the Contractor's surveyors staked the center line of the pipe and the end limits. The invert elevation of the proposed pipe and the depth of excavation were indicated on the grade stakes. Excavation across the existing road was then carried out. An extra width of excavation averaging 700 mm was provided on both approaches as working space for pipe laying, positioning, construction of pipe bedding, collar and compaction of granular fill.

A 200 mm thick granular fill material for bedding was placed and compacted to its maximum density prior to pipe laying. The RCP's were positioned on the bedding by using a backhoe with the tongue and groove joints of the pipes fitted as close to 10 mm. Pipe collars were then constructed around the outer joints of the pipe. The collar was made of concrete mortar having a mixed proportion of one part cement to two parts sand. Concrete mortar was also placed along the inner joints of the pipe. The pipe collars were left to harden for three to five days prior to backfilling.

The inlet and outlet of the RCPC's were constructed following the completion of the pipe laying. Three types of inlet/outlets have been designed for the RCPC's. These are the "Flared, Straight and L Type" headwalls. Flared and L types were constructed with reinforced concrete while Straight headwalls were constructed as concrete or of rubble stone masonry.

Concrete aggregates, water, cement, one bagger mixer were brought to the jobsite for the concrete production. Forms and scaffolding were dismantled/removed a day after the concrete was poured. Curing of the concrete was done using an approved curing compound and the concrete allowed to set for three days prior to the pipe backfilling.

Granular backfilling for the installed RC Pipes was done in 200 mm lifts and properly compacted to the required density. On some locations lean concrete was used for backfill to suit actual field conditions. Portable rammers and vibratory plate compactors were used in the precess. The inlet and outlet channels of the drainage structures were cleared immediately after construction to allow drainage flow.

A team of workers consisting of one lead man and seven crew members could construct a section of RCPC including the inlet/outlet structures in one week.

2. Reinforced Concrete Box Culvert Construction

Reinforced Concrete Box Culverts (RCBC) constructed on this project were cast in place with sub-contractors doing most of the work. The sub-contractors were provided with plans and bar cutting schedules to enable them to fabricate form panels as well as cutting and bending of reinforcing steel on the jobsite .

Structure excavation was performed down to the invert elevation and width limit by a hydraulic excavator. All excavated materials were removed and disposed of in the areas permitted by the DENR. Appropriate space was also provided on both approach of the structure for working areas.

Lean concrete 50 mm thick was poured beneath the bottom slab elevation for base protection during the installation of the reinforcing steel bars for the bottom slab and inlet/outlet apron slab. The lean concrete was allowed to harden for one day prior to installation of the reinforcing steel bars.

Concrete aggregates were loaded on the transit mixers at the batch plant and brought to the jobsite where cement and water were added to complete the concrete mixing. The material technician performed the slump tests to assure the concrete consistency prior to the discharge of the concrete into the forms. Portable concrete vibrators powered by 8 hp gas engine were used in the pouring process to properly consolidate the newly poured concrete at every lift of 500 mm for vertical walls and the full width of the slab.

Braces, scaffolding and forms for the vertical walls were dismantled and removed one to two days after the concrete pouring. Forms and scaffolding of the top slab and beams remained up to seven days and/or until the concrete had gained adequate strength to prevent deflection and other forms of deformation. Curing compounds were applied entirely over the exposed concrete surfaces immediately after the removal of the forms.

Backfilling of the RCBC approach was carried out as soon as the concrete had attained 90% of the design strength. Backfill material was placed in 200 mm thick layers and were compacted to its required density. Completed RCBC's were allowed to set until the concrete design strength was attained prior to opening of traffic on the structure.

One reinforced box culvert was normally completed in a month time with a team of workers consisting of one foreman, five steelmen, seven carpenters, two masons and fifteen unskilled workers.

3. Grouted Riprap Construction

Grouted riprap was commonly used in this project for slope protection of roadway embankments and lined ditches. The stone/rocks used ranged from 15 to 25 kilograms and were sound, durable, tough and dense. The areas to receive grouted riprap were excavated to the required depth, grades and dimensions which were then properly compacted, trimmed and shaped. Grouted riprap slope protection was constructed with cut-off-wall at the toe to protect it from scouring.

The stones were placed by hand, laid with closed joints and firmly bedded into the slopes and against the adjoining stones. Each stone was laid with its longest axis perpendicular to the slope in close contact with each adjacent stone. The spaces between the stones are then filled with cement mortar. The cement mortar mix consisted of one part cement, three parts sand by volume, and sufficient water to produce thick and fluid mortars. Sufficient amount of mortar was used to completely fill all the voids, except the surface of the stones which were left exposed. Grout was placed from the bottom to top of the surface and is swept with a stiff broom. After grouting is completed, the surfaces are cured for a minimum of three days.

The crew assigned to do the work consisted of one leadman, two mason, and seven men unskilled workers who could construct approximately 10 cu.m. of grouted riprap per day.

4. Stone Masonry

Stone masonry was widely used on this project for retaining walls, guardrails and headwalls for culverts. The stones used were clean, hard, durable and have a thickness of not less than 150 mm. Face stones were dressed to provide bed and joint lines that did not vary 20 mm from the true line.

The mortar for the stone masonry was composed of one part cement and two parts of fine aggregates, mixed by volumetric proportion using a one bagger concrete mixer. The mortar ingredients were mixed with sufficient water to make a consistency that can be handled easily and spread with a trowel. Mortar was mixed only in those quantities required for immediate use.

The stone masonry beds were excavated, trimmed and compacted according to the dimensions, grades and locations shown on the approved plan. The masonry bed and stones were cleaned and moistened before being set. Mortar was then spread. The laying of stone was done in a manner that their longest face is horizontal in the full bed of mortar and the joints are flushed with mortar. Care was taken to prevent the bouncing of small stones or stones of the same size during placing.

The stones were handled as to not displace the stones that have already been set. Immediately after laying, and while the mortar was still fresh, all face stone were thoroughly cleaned of mortar stain and kept clean until the work was completed. In hot or dry weather, the stone masonry was kept moist for a period of at least three days after the completion of the work.

The stone masonry retaining walls were provided with weep holes whenever necessary or indicated in the plans. The weep holes were placed at the lowest points where free outlets of water could be obtained and were spaced not more than 2000 mm center to center. The holes were formed using a 75 mm diameter schedule 40 PVC pipe.

A team of workers consisting of one leadman, two masons, one carpenter and ten unskilled workers could construct twelve cu.m. of stone masonry a day.

5. Gabions

Gabions were used as erosion protection for bridge abutments, slope protection of roadway embankments along bridge approaches and reinforced concrete box culverts.

The Contractor furnished material specifications, test result and samples for approval to the Engineer prior to delivery to the site. The stones placed into the gabion basket were sound, hard, durable and did not deteriorate when submerged to water or exposed to severe weather condition. The size of the stones that were used varied between 100 mm and 200 mm.

The gabion units were assembled by binding together all vertical edges with a continuous piece of connecting wire stitched around the vertical edges with a coil every 102 mm. The empty gabion units were set to the line and grade as shown on the plans.

Foundation and bed for the gabion baskets were sealed using filter fabrics with the brand and type approved by the Engineer's Representative. Iron rods were used to stretch the wire baskets and hold alignment. The gabions were then filled with stones carefully placed by hand to assure alignment, avoid bulges and minimize voids. Alternate placing of stones and connections of wires were done until the gabions were filled.

After the gabion was filled, the lids were bent over until it meets the sides and edges. The lids were then secured to the sides, end and diaphragms with the connecting wires stitched around with a coil about every 102 mm.

One leadman, four skilled and ten unskilled workers could construct sixteen cubic meters in one day's work.

H. Incidental Works

1. Guardrail

The reinforced concrete guardrail posts were cast at the sub-contractor's campsite and delivered to the jobsite upon installation. The posts are set vertically in position two meters or as determined alongside the edge of pavement, and are embedded 700 mm into the ground with 800 mm protruding above the roadway shoulder finish elevation. The steel flex beams are then bolted onto the concrete post one after the other. Alignment is checked both vertical and horizontal for plan conformance.

Spaces around the post are then backfilled up to the ground line with an approved material in layers of not more than 100 mm and each layer is moistened and compacted to its maximum density. Guardrail bolts and nuts are welded together. The areas affected by the welding are then given two field coats of an approved fast drying rust-inhibitive paint.

The sub-contractor could install twelve pieces of concrete post and eleven panels of flex beams in one day employing one leadman with three skilled and eight unskilled workers.

2. Road Signs

The road sign foundation consists of class "A" concrete, pre-cast or cast-in-place. The sign posts made of galvanized iron pipe 50 mm in diameter were inserted perpendicular to the concrete foundation while the concrete foundation is still fresh. Posts and foundations were set vertically at a distance 2500 mm to 3000 mm from the edge of the road pavement and were set at a height of 1500 mm from the roadway shoulder finish elevation to the bottom of sign panels.

The road sign panels were installed and held permanently on the G.I. post by bolts. Bolts and nuts were then welded and the areas that were affected in the welding process were coated with paint primer to prevent rusting. The sign panels are manufactured from aluminum sheeting of sufficient thickness conforming to the requirements of the project specification.

Sign direction, marks, numbers and letters were made of reflective sheeting with shapes and colors conforming to the requirement of the plans. The categories of road signs installed in this project were danger warning signs, regulatory signs and informative signs.

The contractor's workers could install twenty pieces of concrete road sign foundation and G.I. posts in one workday having one leadman and four workers.

3. Road Marking

The painting of road markings and traffic strips was performed on the completed road pavement surface. The paint was applied during hot weather or when the weather was favorable for the job. Pavement surfaces were thoroughly cleaned of all kind of dirt and obstructions that would hinder the application of the paint.

Paint used on this project were reflective and non- reflective and placed as the approved plans required. Glass bids were mixed in the paint where the markings were specified as reflective.

Application of paint stripping was performed using a machine specially acquired for this purpose and was mounted on a light truck. Center line guide marks were first established prior to the application of the paint. The paint machine spray pattern could be adjusted automatically as required.

Center line markings and traffic strips were painted at a variable width and at an application rate of 0.33 liters per square meter.

With the paint machine, the contractor could paint ten kilometers of road markings and traffic stripping in a day. Ten workers took care of the wet paint strips and placed cones/rocks to protect the paint while the painting was in progress.

II. CONTRACTOR AND ALL SUBCONTRACTORS

A. Contractor

The main contractor for the Road Projects was Morrison/Knudsen Corporation, an international company serving the environmental, industrial process, power and transportation markets with complete development, design/engineering, construction, operating and financial service. The main office of Morrison Knudsen Corporation is located at Boise, Idaho, USA. The design construct contract for the South Cotabato Highways Project was awarded on 10 July 1991. Design was started in August 1991 and was completed in April 1993. Construction commenced in October 1991 and was completed ahead of schedule in February 1994.

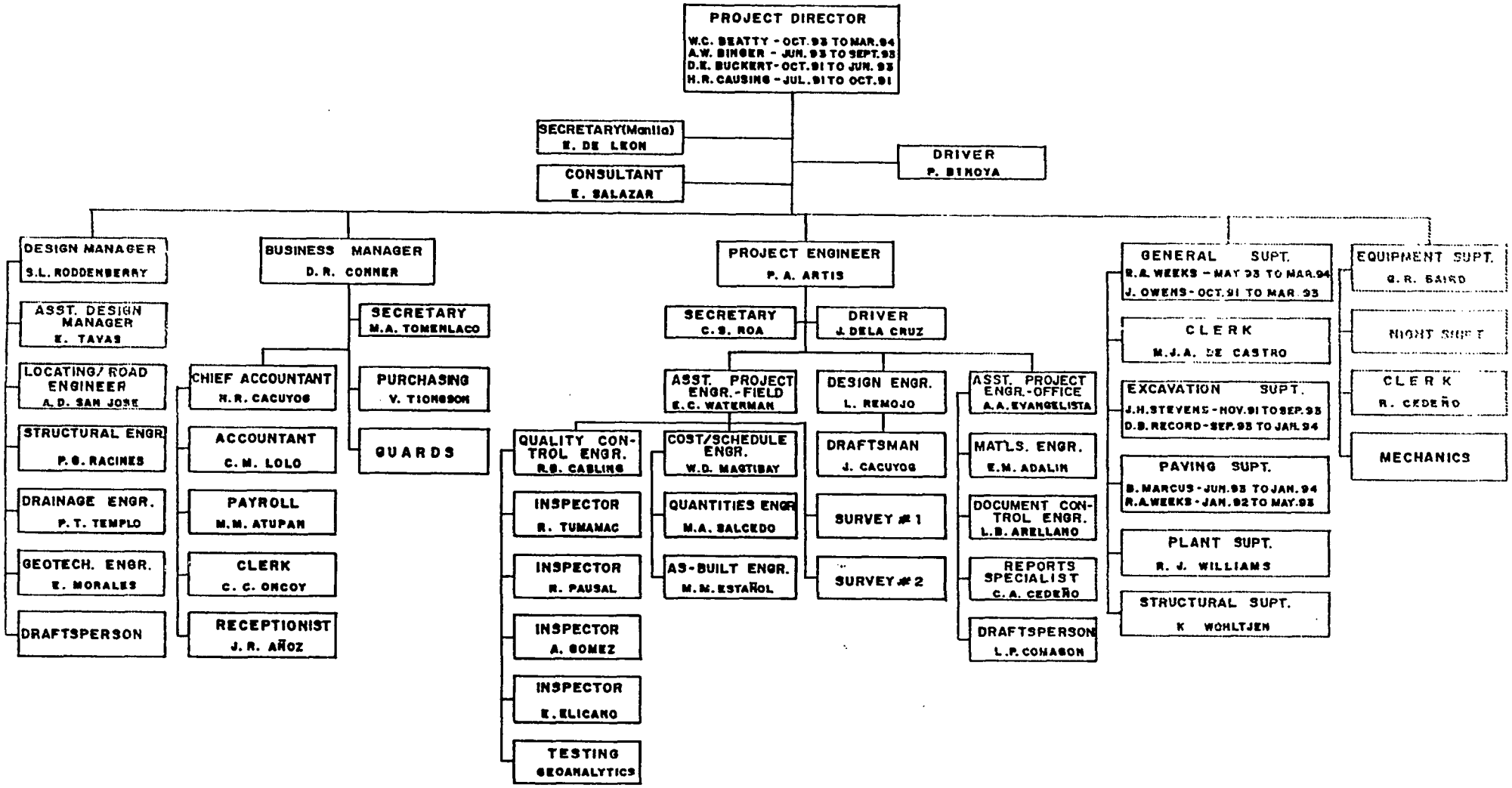
Figure 4 represents the Contractor's table of organization.

B. Subcontractor

Table 5 represents the subcontractors of Morrison Knudsen Corporation with their corresponding duties and schedule of work for the construction of the road project.

Figure 4

MORRISON KNUDSEN CORPORATION
SOUTH COTABATO HIGHWAYS PROJECT
MINDANAO DEVELOPMENT PROGRAM



BEST AVAILABLE DOCUMENT

Table 5
List of Subcontractors

Subcontractor	Scope	Date Awarded	Closing Date
Services			
ALC Industries, Inc.	Provides supervisory, technical services, direct labor, preliminary construction of facilities.	August 1991	February 1994
GeoAnalytics	Independent geotechnical services and Quality Control (Design and Construction investigation).	August 1991	February 1994
Meiscor	Survey technician performing construction survey work.	February 1992	December 1993
Construction			
RIBCO	Concrete, drainage and masonry in Sector 3 and three (3) box culverts and two (2) bridges in Sector 2.	March 1992	April 1993
CHL	PCCP and on (1) bridge in Sector 3, drainage and erosion protection works in Sectors 4, 7 and 8 and two (2) box culverts in Sector 4.	November 1992	February 1994
HEERCO	Drainage and erosion protection works and fabrication in Sectors 2 and 3.	November 1992	February 1994
RCW Enterprises	Drilling and rock blasting works in Sector 2.	February 1993	January 1994
Marbel Builders	Two (2) bridges and one (1) box culvert in Sector 2.	March 1993	November 1993
P.R. Jayme Builders	Three (3) box culverts in Sector 2.	May 1993	December 1993
Compact, Inc.	One (1) bridge in Sector 2.	July 1993	February 1994
Mones Enterprises	Two (2) box culverts in Sector 4.	July 1993	February 1994
Peter Ground Improvement	Jet grouting foundation for Lun Masla Bridge in Sector 2.	July 1993	February 1994
Lamgen	Fabrication of guardrail post and guardrail installation.	September 1993	February 1994

III. FIELD MODIFICATIONS

A. INTRODUCTION

A total of 365 Field Clarification Memorandums (FCM) have been used on the project. FCM's were used for changes in construction to suit actual field conditions which can include a deviation from the original design, additional not included in the original design, work items that are not required due to design construction changes. Also requests from the Contractor, Department of Public Works & Highway (DPWH), and local residents for necessary work items that were not part of the original design.

The process of facilitating FCM's went through three stages before it was finally approved for construction and payment.

1. First it was initiated by MKC's field inspector with proper coordination with the MM/CSSA QA inspector. The request was directed through and processed by MKC's engineering section and after a thorough evaluation the request was then sent to MM/CSSA for approval.

   Other FCM's were initiated by MM/CSSA or a requested by other local government entities. These were processed in the same manner with the request attached to the FCM's.

2. The second stage was the review, evaluation and approval of the FCM by MM/CSSA. If the FCM needs some further clarification or changes, it was then sent back to MKC for rectifications and resubmittal.

   When the FCM was properly approved, MM/CSSA sent a copy to the Contractor for immediate implementation and distributed other copies to the MM/CSSA QA inspectors, soils staff and survey crew to properly monitor the modification work.

3. The final stage was the request by the Contractor for approval of the FCM's as-built quantities. A joint inspection was done by both the MM/CSSA QA and MKC QC inspectors to check specification conformance and make joint measurements if necessary.

   The FCM, having been finally approved and the work accepted by the Engineer's Representative will be included in the monthly interim payment of the contractor.

B. FCM's initiated by the Contractor.

As the contractor or their subcontractor carry out their work, they run into difficulties which arises from actual field conditions that is neither shown or indicated in the plans and specifications. Immediate action and resolution is called for. The Contractor's field inspector coordinates with the consultant's inspector to check and verify the problem and a request is processed.

Indicated below is a general list of work modifications which requires an FCM:

1.0 Horizontal and Vertical alignment:

Modification of horizontal and/or vertical alignment due to the following reasons:

1.1 To reduce the amount of earthwork and/or rock excavations.
1.2 To provide better locations for the proposed RCP, RCBC and other drainage structures.
1.3 To provide the required covering of the cross pipe, RCBC and other drainage structures.
1.4 To produce a better alignment that is safest to motorist and environment.
1.5 To avoid existing structures that would cost more to replace or relocate.

2.0 Pavement and Shoulder:

2.1 Modification of the typical section for asphaltic pavement.

The above typical section consists of an aggregate subbase course, a crushed aggregate base course and a bituminous concrete surface.

The modification was to replace the aggregate sub-base with a lesser thickness of crushed aggregate base course and still maintain the same structural value of the section at a considerably reduced cost.

The above modification refers only to pavement in Sectors 3, 4, 7 & 8.

2.2 Modification of the typical section for Portland Cement Concrete and Asphaltic Pavement in Sector 2 due to the availability of high quality local materials.

The PCCP section was changed by replacing the 200 mm select type embankment to 100 mm crushed aggregate base course. The asphaltic pavement section was also modified by replacing the 230 mm select embankment to 200 mm superior fill and the aggregate subbase changed to crushed aggregate base course.

The above modification provided a structural value equal to or higher than the original design and a considerable economic saving to the project.

2.3 The placing of an asphaltic surface course on the uneven riding surface of concrete bridge deck slabs.

2.4 Deletion of loading and unloading zones due to the problem of additional acquisition of right of way.

3.0 Drainage and Erosion Works:

3.1 Additional new lines and/or increased sizes of RCPC and RCBC were installed to eliminate flooding of the upstream property, overtopping and damaging of the road and to improve the drainage structure capacity.

3.2 The extension, raising and revision of headwalls to protect the embankment from erosion and scouring.

3.3 The request for additional grouted riprap slope protection, stone masonry retaining walls, gabions, grouted riprap ditches and riprap drop outlet chutes to protect the pavement shoulders, embankment and bridge approaches from erosion and scouring.

C. FCM's Initiated by the Engineer and Engineer's Representative

These were FCM's requested by USAID or MM/CSSA to eliminate some work, add or improve some design modification as roads are directly affected by environmental conditions, human factors and economic considerations.

1.0 Modification of the horizontal and vertical alignment were requested for the following reasons:

1.1 To avoid acquisition of additional right-of-way
1.2 To establish the position of the finished road level giving minimum earthworks.
1.3 To minimize or eliminate rock excavation
1.4 To provide the required cover for RCPC's, RCBC's and other drainage structures.
1.5 To produce a better alignment that is safer for the motorist and the environment.
1.6 To avoid existing improvements that would cost more to replace.

2.0 Modification of shoulder widths were done for the following reasons:

2.1 The reduction of shoulder widths from 2.00 meters to 1.50 meters on rock cut sections to minimize rock excavations.

2.2 Widening on horizontal curves were paved uniformly with a 1.50 meter wide asphalt to preserve the shoulders and to ease the construction process.

3.0 Modification of the drainage and erosion works were requested for additional new lines and/or increase in sizes of RCPC's and/or RCBC's due to revised meteorological data.

4.0 Request for changes on Incidental Works were made for the following reasons;

4.1 Deletion of metal guardrail in some sections due to change in width of the pavement shoulders and modification of horizontal and vertical alignment.

Changes from metal to stone masonry guardrail were requested to reduce the construction cost. Provide additional and/or extensions of guardrail sections on cliffs and other structure approaches.

4.2 Additional roadway striping to correct and improve better traffic safety.

4.3 Request for additional and/or relocation of road signs to better fit actual field conditions.

4.4 Request for additional guide posts on cliff sections, bridge approaches, RCP, RCBC, guardrails, spillways and other structures for safety purposes.

4.5 Deletion of grouted riprap side ditches in soft and/or weathered rock, sandy gravel and sandy silt formations as evaluated to be unnecessary and found to be economical to the project.

D. FCM's initiated by the Department of Public Works and Highways (DPWH), Mayor's office, Provincial office, Local residents, or other government agencies.

1.0 Modification of horizontal and/or vertical alignment due to delayed acquisition of right-of-way.

2.0 Modification of pavement and shoulders to serve as a sidewalk, loading and unloading zone, and as requested for additional pavement turnouts or additional road sections.

3.0 Modification of drainage and erosion works to protect the road from water ponding and as requested for school crossings, public markets, churches, halls and other improvements.

4.0 Incidental works due to the request for additional crosswalks in front of schools, churches, public markets, halls and turnouts in highly populated areas, and the request for additional and/or relocation of road signs to suit actual field conditions.

IV. CONTRACT MODIFICATIONS

A. Contract Modification No. 1

This contract modification was done only to improve clarity to some contract items. Included in this modification are the detailed scope of work particularly the maintenance to be performed by Contractor, basis of payment and maximum amount payable for offices, camps and facilities, acquisition regulations and some technical specifications for the Contractor to take into consideration during the period of construction and some particulars in the submission of the monthly progress report. There was no cost involved in this modification. Date approved : August 24, 1991.

B. Contract Modification No. 2

This contract modification provides revisions to the text of the basic contract; provides for payment of $670,579 worth of additional "pay items," with the corresponding decrease in the dollar amount of existing pay items; and incorporates FAR Clause 52.232-27 entitled "Prompt Payment for Construction Contracts (April 1989)." There was no increase in the total contract amount. Date approved : May 14, 1992.

C. Contract Modification No. 3

This contract modification constituted a change for the Contractor to proceed with the addition of and the deletion of certain road construction work provided that the additional road construction can be done without an increase in the contract amount.
Date approved : January 11, 1993.

D. Contract Modification No. 4

The purpose of this contract modification was to adjust the total contract price to: (1) establish prices for the changes in work ordered under Modification No. 3; (2) define the provisional prices that were added by Modification No. 2; (3) make changes in the quantities being delivered hereunder; (4) reflect economic price adjustments that have occurred; (5) increase the amount for contingencies; and (6) modify language pertaining to completion acceptance and other language needing clarification. The changes resulted in an increase of $2,929,084 in the total contract amount, from $40,167,240 to $43,096,324. Date approved : September 24, 1993.

E. Contract Modification No. 5

The purpose of this no-cost modification was to provide clarification on the final verification and payment of quantities actually delivered under the contract.
Date approved : January 11, 1994.

D. MATERIALS AND TEST RESULTS

I. General

The South Cotabato Road Project was a design-construct contract work project of Morrison Knudsen Corporation (MKC). The material testing for the project of MKC, was subcontracted to an independent testing laboratory, Philippine GeoAnalytics, which performed the overall function of the Contractor's Quality Control program, (CQC).

Morrison Maierle/CSSA (MM/CSSA), the Engineer's Representative, acted as the Quality Assurance (QA) to review, evaluate, check and monitor the overall design, testing and construction work phases of the contractor.

MM/CSSA provided the necessary manpower, work logistics and other required support facilities, including a state-of-the-art laboratory, to effectively carry out its functions.

Generally, the overall material requirements provided for the road sector, consisted of laboratory and field testings of various construction materials.

QA and CQC tests on soils and materials are a series of test requirements, referred from DPWH standard specifications for highways, bridges and airports (Vol. II) and other applicable standard specifications. (AASHTO, ASTM, and US Federal Specs).

QA and CQC laboratory tests were performed on each type of material, irrespective of the required frequencies and as necessary. The purpose was to determine and adopt the general viabilities and acceptability of the material source items used in the road construction.

QA and CQC field tests on construction materials were verified for conformity to the aforementioned DPWH standard specifications, on sampling, testing acceptance and construction.

Noted specified field tests were done on materials as follows:

1. Preliminary soil test pits and auger holes materials sampling at approximately 250 m intervals on the existing roadway, 1.5 m depth, with samples taken from every change of soil layer formation for each test pits and augers.

2. One (1) group of three (3) in-situ density tests were carried out for each 500 m^2 of each layer of compacted fills, and per other direction of the engineer, on embankments, subgrades, subbase and base course materials.

3. At least one (1) but not more than three (3) core samples on compacted pavement and two (2) quality tests on asphaltic mixes for each full day of operation of bituminous asphaltic concrete paving.

4. One (1) sample consisting of three (3) concrete cylinder test specimens were taken from each 75m^3 of class of concrete or a fraction thereof placed each day.

5. At least two (2) samples consisting of three (3) flex beam specimens of Portland cement concrete pavement concrete were taken for each day of paving.

SUMMARY OF TESTS PERFORMED

An approximate quantity of field tests undertaken on the Road Sector are as follows:

Material Items/Descriptions	Number of Tests			
	CQC		QA	
Test pits and auger holes	TP's	- 194	TP's	- 26
	AH's	- 135	AH's	- 31
Embankments top of subgrades	Embankment	- ≥1000	Embankment	- 100
Subbase/basecourse	Subgrades	- ≥ 4250	Subgrades	- 425
(compaction tests)	Subbases	- ≥ 650	Subbases	- 65
	Basecourses	- ≥ 6630	Basecourses	- 663
Asphaltic Pavement	AC Field mix	- 386	AC Field Mix	- 67
AC Field Mix & Cores (actual)	AC cores	- 510	AC cores	- 698
(193 paving dates)				
Structural Concrete			Optional cores	- 115
RCPC Casting/RCBC's	Specimens	- ≥1640	Specimens	- 164
& RCPC's on site & PCCP	Specimens - PCCP	- ≥30	Specimens - PCCP	- 30
(No. of concrete specimens)				

Notes:

1. CQC compaction test results quantities on embankments, top of subgrades subbases and base courses are conservative estimates from actual QA figures divided by 10%.

2. CQC embankment compaction tests are based on 1 lift fill test only. Additional quantity of tests are performed on materials lifting, which depend on the lift elevation and profile of the roadway as per DPWH specs Item 104.3.2 - Methods of Construction.

3. CQC structural concrete sampling and testing performed on pipe castings and various RCPC's and RCBC's along the road sector are a conservative estimate from actual QA figures divided by 10%

4. The QA field testing schedules on general material items was specified to at least 10% frequency percentages to that of the CQC material test frequencies.

II. ROAD SECTORS

Road Sector 3
The Makar-Maasim-Kiamba and Maitum Roads

Sections:	**1A**	**Sta. 0 + 000.00 to Sta. 7 + 850.00**
	1B	**Sta. 7 + 850.00 to Sta. 14 + 209.20**
	2	**Sta. 14 + 210.00 to Sta.35 + 703.00**
	3A	**Sta. 35 + 703.00 to Sta. 83 + 561.48**
	4	**Sta. 83 + 577.76 to Sta. 98 + 933.88**

A. Material Sources, Compliance Certificates, Warranties, QA and CQC, Test Results Etc.

1.0 Subsurface soils and materials investigations and road specification and materials items.

1.1 Auger holes and test pits, roadway soil alignment investigations.

Auger borings and test pittings were performed throughout the road alignment at approximately 250 m intervals at staggered locations, left, right and centerline of the roadway. The soils samples from diggings of each variable depth and of every change of formation were laboratory tested for soils classifications soils, maximum dry density, in-place field compactions and individual CBR's. The auger holes and test pits were both excavated to a maximum depth of 1.5 m and the possible presence of subsurface water table observed and recorded.

1.1.1 Results and Evaluations

The first five (5) kilometer stretch of the roadway (Section 1A) was surfaced with loose natural sandy gravel, with no binders. CBR values of these surface materials, to a depth of 1.5 m, ranged from 12.0% to 86.0% at 95% of MDD. Existence of such materials proves a very stable road foundation with predominant soils of A-1-b and A-2-4 classifications. Low CBR soils on certain portions, normally at subsurface depth of 1.0 to 1.5 m were offset by designed construction fills and on-specs embankment materials.

The succeeding roadway section investigated (Section 1B), indicates similar findings of loose sandy gravel surfacing materials of the A-1-a and A-2-4 soils with a minimum CBR of 41.0%. Localized sections were encountered, showing occurrence of A-4 and A-5 silt clay formations with a minimum CBR of 2.3% (Sta. 13 + 725 - Sta. 13 + 800). However, on the plans, these sections fall on an actual field ascending grade at a high elevation, and the possibility of having it under water was remote. Moreover, the section was on fill based on finished design grade.

Continuation of subgrade investigation (Section 2) indicates findings of a very good to excellent subgrade formation; the resulting design standard deviation mean CBR of 25% is greater than that of the stringent subbase requirement. Portions of encountered surfacing materials with some low CBR's (Sta. 15 + 375 - Sta. 15 + 650; Sta. 16 + 625 - 17 + 125; Sta. 23 + 375 - 23 + 875 etc.) were overlain with sufficient thickness of suitable materials, as per design requirements. The rest of the road alignment soils, comprises A-1-a to A-2-4 good materials with the same relatively good CBR's. The designed and observed finished subgrade generally lies on a good mat foundation on both the cut and fill sections together with the compensated weak CBR portions.

The road alignment from Sta. 35 + 703 - Sta. 83 + 561, was divided into Sections 3A and 3B. The gathered soils, from these sections indicated characteristics of a general subgrade rating of good to very good materials (A-1-a to A-2-6). The computed design CBR of 15% was attained using the standard deviation approach. Consequently with this value, the required pavement design values of the base and asphalt material thicknesses were calculated (TRRL road note 29 and AASHTO standard), taking into considerations the structural number, layer coefficients and other design criteria. The roadway involved cut and fill sections and weak subgrades, analyzed through material CBR values. Identified specific locaticns on cut and fill sections at sta. 37 + 620 - 40 + 784, Sta. 47 + 697 - 48 + 305 - Sta. 49 + 875 - 53 + 060, Sta. 55 + 625 - 55 + 833 etc. and weak CBR's at Sta. 43 + 125 - 43 + 375, Sta. 53 + 625 - 55 + 625 etc. were investigated. The first occurrence of a water table was observed on this stretch, approximately 0.6 m reckoned from the ground surface. However, based on the vertical design, these sections are on fill and the water table was prevented from rising to within 0.6 m in the course of construction.

These sections were overlain with good fill materials and in some cases construction pavement thicknesses modified and increased, in the same fashion as weak subgrades are treated.

Generally, the upgrading of roadway materials in the overall construction phase was spontaneously carried out and monitored from time to time to suit to the required standard project requirements.

The additive/alternate section (Section 4) completed the road Sector 3 soil investigations. Observations and lab test results findings of materials gathered, implies the existing alignment was of the same gravel surfaces. These subgrade of predominant granular soils, as presented and discussed before, has relatively high CBR values (A-1-a to A-2-4 soils). This proved again that the proposed alignment was along and resting on stable foundations. Cut and fill sections with the appropriate structural sections, based on design parameters were identified and implemented. The finished roadway grade in general, is on an upgrade fill through out the entire alignment.

Detailed CQC and QA lab material results and a summary were incorporated with the corresponding title descriptions. These reports provide a ready reference and supplement.

1.2 Excavation Materials

Sources of embankment, roadway excavated and quarried/borrowed materials utilized on the entire stretch of the road sector were predominantly taken along the outskirts of the road construction areas in abundant quantities. Materials identification, quarrying, handling and related works, coupled with the required material property tests on both QA and CQC level were undertaken and executed without any grave concerns and impact on materials unsuitability. Throughout the initial and final construction phase of the roadwork materials sources were monitored and tracked down accordingly.

Several identified roadway borrow sources and river run quarries were investigated prior to and during the construction sequence. Proper material tests and various parameters on each quarry-sources were initiated, evaluated and verified, in conformance to the desired specific project specifications.

The common borrow materials were primarily used as approved embankment for the roadway lifts and subgrades and shoulder templates preparations. River run materials (Siguil River Quarry) were used to a greater extent as materials for subbase, base course, bituminous asphaltic concrete and structural and concrete pavements and other similar structures. At one instance, at the later stage of construction the river run materials minus the handpicked oversizes, were utilized on the shoulders. Some verified and suitable surplus roadway excavations were intermittently used as similar embankment/fills, whenever the need for construction procedures permitted.

A set and number of CQC and QA lab materials test results-findings are attached with the corresponding title descriptions, for ready reference and supplement.

1.3 Subbase and Base Course Materials

The primary sources of subbase and base course materials, as discussed before, normally came from river run quarries. A substantial number of rivers; with aggregate materials of unlimited quantity, along the stretch of the roadway were investigated for feasibility, viability and in general, conformance to specified approved standards and project specifications.

Preliminary lab tests on the raw materials, quality hardness and soundness were set-in initially before other end product criteria tests are undertaken. Both QA and CQC lab determined that the identified sources were within the prescribed specification limits for the number of tests parameters required. On hand to supplement the quarry sourcing of these river materials was a location map, procured by the local government highways agency, DPWH specifying the various river's feasibility and materials quantities.

The specified material item (per specs) - crushed aggregates were applied on the construction plans. Again the material testing requirements were initiated on such materials for verifications and conformity. End product stockpiles and in-placed materials on the roadway were monitored and tested accordingly, with reference also on frequency requirements, throughout the construction phase.

Unlimited quantities of aggregate materials, coarse and fines, from Siguil, Kablacan, Kiblis, Tual and Pangi River Quarries were located, quarried and crushed-processed to finished products. The end product being the roadway gravel materials, the aggregates for concrete and bituminous asphaltic mixes and embankments.

A set and quantity of CQC and QA lab material test results - findings are incorporated with the corresponding title descriptions for ready reference and supplement.

1.4 Road Shoulder Materials

Recommended and adopted shoulder materials on some sections of the road sector have specific requirements and comprise distinct specification items.

Section 1A specifically provides as an amendment, for an all top-base course material item on the first 6.8 kilometers. The section towards the end of section 1B, adopted and utilized the applicable local DPWH specs item 104, select borrow. An incident was experienced on these section, where a particular borrow source at Sta. 9 + 000, was a subject of controversy and argumentation. The said quarry based on CQC and QA lab tests was a formation of clayey-silt materials with the material passing the sieve size No. 200 exceeded the required maximum limit. Further QA verification tests were conducted and the Engineer's decision not to use this material for shoulders, required the contractor to scarify and remove the previously placed materials. A replacement of sandy gravel materials from nearby Dupalco River was alternately used instead on the affected shoulders.

Commencing at Section 2, river run soils and aggregates from Siguil River Quarry were used as shoulder material, to Sta. 18 + 000. The in-place materials were analyzed and tested for materials conformance. The question for not meeting materials maximum size requirements was again brought to the contractor's attention (Item 104, oversize requirement of 3" maximum size aggregate) for resolution. A remedial measure was finally adopted and concurred by manually handpicking the oversized material at the site.

A modified trial run shoulder material of lime constituents was recommended from Sta. 18 + 000 to Sta. 24 + 000 for construction. Per the tests conducted, the material met spec Item 104 for A-2-4 suitable soils material. A conforming granular fill material, resembling that of subbase gradations, was placed from at Sta. 24 + 000 to Sta. 29 + 000. Lime material was again introduced and used on the succeeding stations to the entrance of Maasim Town proper.

The contractor used an all crushed base course shoulder material with no cost adjustment, in place of select borrow for the rest of the two sectors from Maasim Town (Sta. 35 + 000) to Kiamba proper (Sta. 83 + 000).

The remaining section from Kiamba Town to Maitum Proper (end of project) utilized Tual River run soils and aggregates in combination with excess/windrowed base course materials for shoulders. In the same manner the river run oversized materials were manually handpicked and disposed off from the finished shoulder pavement.

A set and quantity of related CQC and QA lab material test results are incorporated, with the corresponding title descriptions for ready reference and supplement.

1.5 Bituminous Asphaltic Concrete Materials

Primarily, Bituminous mixtures consists of aggregates, mineral filler in the form of cement, hydrated lime and/or crusher dust and bituminous asphalt cement as components.

Prior to bituminous asphaltic concrete production the contractor submitted a job-mix-formula for the asphaltic mix design which was referenced to the approved specification requirements. The processed mixtures were supported by lab test data along with samples and sources of the asphaltic components. A series of design procedures then followed prior to submittal and approval.

The type of bituminous materials used conformed to the local DPWH standards which was optimally referred and supplemented by the American Asphalt Institute methods and requirements. The type and grade specified (for heavy traffic design criteria) and used on the roadway was an asphalt penetration grade 60 -70 tested in accordance with AASHTO M - 20.

The asphalt cement delivered to the site, was accompanied by a source test certification from the manufacturers. The bulk shipment emanated from foreign based companies (Singapore and Taiwan) with the raw source from the Arabian crude oil variety. Additionally, delivered on-site materials were tested by the contractor's CQC lab through its lab in Manila for further verification on the quality of the asphalt cement.

The other material aggregate requirements, obtained locally, came from river run materials (Siguil River Quarry) quarried and processed to individual screen crushed components of coarse and fine aggregates (to meet the asphaltic cement gradation requirements). In the case of mineral filler (in the early stage of construction - Section 1A and 1B) cement filler was utilized on the proportioned asphaltic mixtures. Similar asphaltic materials on the succeeding sections of the road sector, used river run aggregates and crusher dust as filler (Kibleys River Quarry) and to a certain limit, approved hydrated lime at the preliminary stage. The overall performance and physical properties of these river run materials were laboratory tested and evaluated. Their individual characteristics and findings were verified as to conformance to various project criteria specs requirements.

For the particular Sector 3, where the testing of the materials by both the QA and CQC lab proved substantially satisfactory, the actual design and batching of the bituminous asphaltic concrete was concurred and approved for construction.

A set and number of related QA and CQC lab material test results/findings are incorporated, with the corresponding title descriptions, for ready reference and supplement.

1.6 Structural Concrete

Structural concrete referred to and used on the road project was concrete used for structures rather than concrete pavement. Concrete terminology stated it as a mixture of Portland Cement, fine and coarse aggregates and admixtures (as specified) and water mixed in proportions, approved by the Engineer.

Basically the type of concrete used on the project, was classified according to its specific use (DPWH Standards Class A, B, C and P). An all Class A - Structural Concrete, for all superstructures and heavily reinforced substructures which includes slabs, girders, columns, box culverts, reinforced abutments, retaining walls, reinforced footings, piles and cribbing was used in accordance with the design specifications.

The strength requirement as specified in DPWH Standard Table 405.2 - Composition and Strength of Concrete for Use in Structures was 3000 psi minimum compressive strength of 150x300 mm concrete cylinder specimens tested at 28 days, 9.0 bags - minimum cement content per cubic meter of concrete, maximum water/cement ratio of 0.53kg/kg., the consistency range of 2 - 4 inches in slump and a designated size of coarse aggregate of 1 1/2" to No. 4 sieve.

The concrete components which include the coarse and fine aggregates were laboratory tested and analyzed, for conformance to applicable test standards (AASHTO M 85 and DPWH Item 311.2. and Item 311.2.3 material requirements and related tests), water and admixtures (as specified) similarly complies to Item 311.2.4 and Item 311.27 respectively, which both deals on specs quality and acceptance criteria (& AASHTO M 154 and M 194).

On site materials were tested at the QA and CQC level, with the majority of tests done by the CQC lab. Aggregates used were river run crushed gravel materials (Siguil River Quarry) meeting the required physical chemical properties. The Portland Cement used was tested regularly for quality analysis (AASHTO M 85) at the CQC lab in Manila. Test findings were within substantial conformance and the actual blending and proportion of material components stated in design was approved. A concrete mix ratio of 1:2:3 for the constituents was determined to have the attained strength requirements and was implemented in the course of construction.

QA verifications and tests on aggregate properties, blended and proportioned and the product end ratios were also initiated on actual concrete batches at the site.

The manner of concrete production requirements, from batching, mixing and delivery to site were similarly and closely monitored during the concreting phase, (for compliance to field plans.) A concrete volumetric batching procedure correlated on standard lab and field concrete weight - volume relationships and calibrations was executed and implemented on site.

A set and a quantity of related QA and CQC lab material test results - findings are incorporated in the reports, with the corresponding title descriptions, for ready reference and supplement.

1.7 Portland Cement Concrete Pavement

The item consists of a pavement of Portland Cement concrete with or without reinforcement, constructed on a prepared base material.

As previously addressed, all applicable material requirements for PCCP were initially taken care of. Hydraulic cement which is the main component was verified to conform to applicable test specification standards (AASHTO M 85) prior to preliminary lab designs. The Type I Portland Cement series of tests similar to that of structural concrete was initiated and conducted. On-site construction observations and evaluation of the concrete, which varied and was substandard in nature, due to mishandling and storage was rejected and discarded. Regular field site monitoring by both QA and CQC lab was done specifically and accordingly.

The other typical components of coarse and fine aggregates (Siguil River Quarry Aggregates) had preliminary physical property tests, verified and evaluated for conformance to various specs requirements. The actual PCCP mix design was presented by the contractor and consequently approved for implementation.

The construction monitoring on PCCP was carried on with the proportioning, batch consistency and mixing, delivery to site and strength of yielded concrete verified. The recommended and approved 9.0 bags/cubic meter of concrete cement factor was found to be attaining the required 550 psi flexural strength at 14 days tested by the third-point method or a compressive strength of 3,500 psi at 14 days in accordance with AASHTO T 97, T 177 or 22 respectively.

Volumetric batching of concrete coupled with the required weight batch-volume relationships and calibrations was initiated and implemented on the short PCCP pavement section commencing at the entry to Kiamba town proper.

A quantity and set of CQC and QA lab material test results are incorporated with the corresponding title descriptions, for ready reference and report supplements.

1.8 Reinforcing Steel and Flexible Beam Guardrail

The prescribed and supplied reinforcing steel used in Road Sector 3 construction (primarily for concrete reinforcement) was tested and referred generally to Standard

Specifications for Deformed Billet Steel Bars for Concrete Reinforcement, test and material requirements outlined in AASHTO M 31 (ASTM A615).

The CQC and QA lab performed preliminary tests on these materials as a prerequisite before any concrete structures were constructed.

Material classification and identification for any particular type of reinforcing work was specified in the project design plans. The local suppliers, aware of the project required criteria, submitted transmittals on manufacturer's material certificate of tests indicating the physical and chemical properties of the supplied steel products.

In-house CQC tests on the delivered rebar materials were made on a regular project schedule basis, mainly on various sizes. Criteria and the important physical characteristics were tension, yield, bending and ultimate stresses. The rebar assorted lots and sublots deliveries through QA initiations were continuously tracked down for any spec deviation and substandard characteristic. Separate QA lab verification tests on rebar quality was intermittently initiated at an independent testing lab in Davao City, principally for quality assurance purposes.

Flexible beam guardrail as supplied to the road project was independently tested at the CQC lab in Manila, in order to satisfy the quality requirements and relevant project specs. AASHTO standard M 180 material requirements and applicable local DPWH standard test and construction criteria were used.

The normally galvanized-zinc coating material characteristics and thicknesses of metal beams were checked and monitored for conformance prior and during site installations. The installed beam guardrail generally was of substantial compliance to the applicable project requirements.

A number and set of CQC and QA lab material test results-findings and transmittals are incorporated with the corresponding title descriptions for ready reference and report supplements.

1.9 Reinforced Pipe and Box Culverts and Storm Drains, Guardrail Posts, Grouted Ripraps and Stone Masonry.

The pipe culverts and storm drain structures utilized on the road project for purposes of drainage and slope protection were verified and evaluated for conformance to AASHTO Standard On Reinforced concrete culvert, storm drain and sewer pipe (AASHTO M 170).

Also, the design and steel reinforcement was referred to applicable standard "design practices as prescribed in the DPWH specs".

The concrete strength requirements (per AASHTO) of 4000 psi for a concrete mix design at 28 days test was established to be used for all pipe construction. The required field sampling tests were implemented during casting of the pipe.

The aggregate components (Siguil River Quarry) were verified through previous tests conducted during the structural and PCCP concrete design. They were found to be in compliance to the material quality requirement specifications.

A structural concrete class 'A' concrete was used for the casting of the separate road guardrail posts.

The grouted riprap and stone masonry structures built along the roadway also utilized the same tested river run processed aggregates. The concrete mix for riprap at 1:3 cement-sand ratio and 1:2 for stone masonry and joint mortars was specified during construction. Relevant material testing and monitoring procedures was performed.

A set and number of related CQC and QA lab material results-findings are incorporated, with the correspondent title descriptions for ready reference and supplement.

1.10 Gabions and Geotextiles Fabrics

The gabion/wire mesh basket material furnished for the project was specified and recommended for use in erosion and slope protection for bridge piers and abutments, spillways and river check dams, roadway pavement slope protection and other similar structures that were specifically called for in the road plans.

The supplied gabions and materials were supplemented with the manufacturer's certificate of compliance in accordance with applicable AASHTO/ASTM standard requirements. The need for submittals of documented warranties was adopted as a quality assurance measure to verify the quality of materials and the acceptability/feasibility of such in construction.

Geotextiles fabrics for subsurface drainage, erosion and sediment control, waterproofing and stress relieving membrans and permeable separator of dissimilar materials were supplied and used in a number of roadway drainage activities. The manufacturer's warranty certificate specifying conformance to specifications was also submitted.

Attachments on the manufacturer's certificate warranty of materials were incorporated with the corresponding title descriptions for ready reference and supplement.

1.11 Pavement Marking Paints and Reflective Glass Beads.

Pavement reflective paints which were applied as pavement markings on the roadway were evaluated according to the spec requirements. A material submittal-manufacturer's certification was transmitted implying the quality warranties of the product used. QA review and evaluation on the transmittal with regard to criteria on the chemical composition of paint's solvent, vehicle and pigment and drying characteristics (on actual application) were found to be in substantial conformance to specifications. The traffic paint which was applied on the pavement at the rate of $0.33L/m^2$ dried sufficiently (to be free from cracking-in) in the range of 15 to 30 minutes.

Ballotini for reflective road paint are beads of good quality, optically clear, lead-free glass with not less than 90% reasonably spherical and free from flaws. The beads do not contain more than one percent of sharp angular particles and are free flowing under normal conditions. Grading requirements were also taken into consideration with the mix proportion of the Ballotini to paint being not less than 500 grams/liter of paint.

The paint proposed and supplied on the road sector was procured from a foreign source as the local procurement the paint was not feasible.

A manufacturer's certificate of product warranty was transmitted and concurrence for use was granted to the Contractor.

The manner of applying and monitoring the paint application and glass beads was performed by a machine specially made for the purpose which was capable of producing a uniform coating on the road surface.

Attachments on manufacturer's certificate of warranty of materials are incorporated with the corresponding title description, for ready reference and supplement.

B. Job Mix Designs

1.0 Structural Concrete Design

Preliminary testing to obtain a structural concrete design based on available materials affirms the necessity for a general material test requirement on each concrete component.

The concrete is a mixture of Portland Cement, fine and coarse aggregates, admixtures (when specified) and water mixed in consistent proportions.

The quality and material characteristic of each individual component was initially tested and verified to conform to applicable local and AASHTO standards. A series of sampling and testing of the concrete is specified in a number of standard's tests methods and procedures.

The proportioning, blending and strength of structural concrete designed and used on the road sector was proportioned in accordance with the requirement for each class of concrete as specified in the plans, using the absolute volume method as outlined in the American Concrete Institute (ACI) Standard 211.1.91 "Recommended practice for selecting proportions for normal and heavyweight concrete." The normal class 'A" structural concrete with a minimum cement content of 9 bags/m^3 of concrete, 0.53 maximum cement content ratio, designated 1 1/2" to No. 4 sieve sizes of coarse aggregates, 3/8" to No. 100 sieve for fine aggregates and minimum compressive strength of 3000 psi; based on a 150 x 300 mm concrete cylinder specimen tested at 28 days was implemented.

Similar related works on concrete consistency, batching, mixing and delivery, and various field testings and method of measurement was monitored as the work progressed.

2.0 Portland Cement Concrete Pavement Design

As previously mentioned, the Contractor's design mix for Portland Cement Concrete pavement was also based on the absolute volume method as outlined in the American Concrete Institute (ACI) Standard 211.1.91 "Standard practice for selecting proportions for normal heavyweight and mass concrete."

The similar prerequisite determination of the physical and chemical properties of each material component prior to mix design for concrete, workability, materials durability, strength requirements etc. were verified through lab tests. As the case, Portland Cement, coarse and fine aggregates, mixing water and admixtures are taken into quality considerations.

As the specs called for a procedure on concrete mixture design, taking into account the same strength requirements, water cement ratios, aggregates sizes and properties, the amount of entrained air, slump and water content and admixtures were included in the design submittals. The mixture's proportion and computations using the aforementioned absolute volume method and accompanying preliminary lab specimen results were presented, prior to Engineer's approval.

The aggregate materials testing results coupled with cement tests certification and admixtures literature used in the design mix are attached for ready supplement and reference.

3.0 Bituminous Asphaltic Concrete Design

DPWH Item 307 - Bituminous Plant-mix surface course - included general requirements that are applicable to all type of bituminous plant mix surface courses, irrespective of gradation of aggregate or kind and amount of bituminous material used.

Prior to production, the contractor submitted in writing a job-mix-formula for the proposed mixture, supported by laboratory test data, along with samples and sources of the components, viscosity-temperature relationship and asphalt penetration grade type, etc. to the Engineer for information and approval.

The presented and submitted job-mix-formula contained values for the following parameters:

1. Percentage of aggregate passing each specified sieve size.
2. Percentage of bituminous material to be added.
3. The temperature of the mixture delivered on the road.
4. The kind and percentage of mineral filler to be used.

The established job mix formula conformed also to the following ranges or tolerances:

1.	Passing No. 4 and larger sieves	±7%
2.	Passing No. 8 to No. 100 sieve (inclusive)	±4%
3.	Passing No. 200 sieve	±2%
4.	Bituminous Material	±0.4% and;
5.	Temperature of Mixture	± 10°

Other parameters such as dry compressive strength, stabilities, % air voids, index of retained strength, VMA computations are included in the design. The relative QA tests on evaluating the material components characteristics and various physical properties were executed prior to approval of the design mix.

For the particular sector with the main source of processed aggregates from Siguil and Kiblis River Quarries, the Contractor established and submitted (2) two mix designs. A change in source of materials particularly the aggregates, necessitates a new job-mix-formula, due to material susceptibilities and variations to meet and adopt to the required design criteria specifications.

Local DPWH specs and primarily, the American Asphalt Institute recommended standards - the Marshall method of mix design was used in the asphaltic concrete mix design course of the project.

The proportioning of the mixture with the prime bituminous material, on the basis of total dry aggregate was maintained and set within the required 5.0 to 8.0 mass %. The exact percentage being determined, in accordance with the job-mix formula and other quality control requirements.

A number and set of CQC and QA test results on the actual asphaltic mixtures and relevant lab and field test results data were incorporated in these reports with corresponding title description, for ready reference and supplement.

C. Field Test Results

1.0 Material Compaction Field Tests

The road project criteria for various field material testing in general referred to the applicable provisions and specifications outlined and in accordance with DPWH Standard Specifications, 1988, Volume II, Highways, Bridges and Airports.

The CQC material requirements, construction procedures, the frequency of testing and the corresponding field material item specification as stated in the Standard, were adopted and implemented for use throughout the construction phase of the road project.

Various material items are as follows:

Auger holes/test pittings - the majority of FDT tests taken depended on every soil layer of change formation with the in-place soil compaction recorded, for information.

Excavation material/embankment - lifting tests depending on the height of design fills and methods of construction with reference provisions on DPWH Item 104.3.2 and the required % compaction of 95% per design plans and requirements.

Existing roadway material/subgrade and shoulders compaction tests on the existing and finished subgrade and shoulders at 25.0 m intervals of the road and shoulder templates. The required % compaction of 95% per design plans and specifications.

Subbase and base courses - compaction tests on the finished material pavement at normal roadway 25.0 m intervals. The % compaction of 100% and other compaction modifications were adopted per design plans and requirements.

2.0 Asphaltic Core Sampling and Compaction Determination

QA and CQC stratified random core sampling of the finished asphaltic pavement in accordance to the provisions of DPWH item 307.3.10 - accepting sampling and testing and the Asphalt Institute relevant specifications.

3.0 Concrete Field Sampling

Structural concrete on RCBC's, PCCP concrete and RCPC's (4000 psi) concrete - standard QA and CQC concrete cylinder specimen field sampling on structural concrete as per DPWH item 405.3 - Sampling and Testing of Structural concrete; as well as on RCPC concrete casting requirements. PCCP concrete in accordance to DPWH specs item 311.3.20 acceptance of concrete and in some cases according to approved FCM's submitted.

4.0 RCPC Grouts, Stone Masonry and Grouted Ripraps

The concrete grout as applied on various work items was checked and verified through actual volumetric mixes at site. Mortar for grouted riprap and stone masonry was in the proportions, specified in DPWH Items 504.2.3 and 505.2.2 - mortar, respectively.

5.0 The QA field testing schedules on the general material items mentioned above was specified at least 10 frequency percentage to that of the CQC material test frequencies.

6.0 A general review and evaluation on the field test results of the various material pay items, indicated that field material compaction tests that did not comply to the required compaction requirements and specifications, were either reworked rectified and field retested accordingly throughout the construction phase. No substantial statistical standard deviation was observed on these material items as the acceptance material criteria was set at 100%.

7.0 Sets and series of QA and CQC field test results for these various material field items are incorporated in these reports, with their corresponding title descriptions at a separate materials Appendix 3.3 for ready reference and supplement.

D. Field Clarification Memorandum

A significant quantity of soils and materials field clarification memoranda were incurred and transmitted, during the road construction process.

Notable clarifications and deviations from plans and specifications, based on verified-existing and changed field conditions and road construction industry requirements, were presented for approval and concurrence.

Attachments of a quantity of explanatory material FCM's, were incorporated in these reports at Appendix 3 - 4 for a reference and supplement.

A separate and general discussion of FCM's is included in the section of the road final engineering report.

E. Review, Evaluation and Conclusion of Laboratory and Field Materials Test Results

Subsequently, on the basis of the project contract document plans and applicable material specifications, an in-depth analysis and conclusion on the overall material tests executed and undertaken by both the CQC and QA labs, relevant to the road sector, indicates and signifies substantial conformance to the project and related DPWH specification criteria and to a greater degree in reference to:

1. Material requirements.
2. Sampling, testing and acceptance.
3. Construction requirements.
4. Method of measurement and;
5. Basis of payment.

F. Report Attachments and Directory

1.0 As mentioned on each material item report, a reference and series of QA and CQC test results, detailed and summary tests, material certifications, warranties and justifications, etc. were incorporated in appendices 3-1, 3-2 and 3-3, with the corresponding material item/title descriptions, segregated for on-hand test references, supplements and presentations. An additional appendix on soils and materials FCM's is included in the appendix.

2.0 A compilation of the contractor's CQC laboratory and field test results, transmitted during the road construction progress, are shown in formal transmittal - Aid-QC reports, Daily Quality Control Reports commencing on the start of QC and construction work activities.

"The reports are separately filed in the - "AID-QC Transmittal files, Laboratory and Field Test Results."

The bulk files have been sent to the project home office of MM/CSSA, Helena, Montana, USA for filing and are available if needed for further and additional back-up referrals.

3.0 Similar QA laboratory and field results on file title cover -

"QA Laboratory and Field Soils and Materials Test Results."

These files have also been sent to MM/CSSA's home office in Helena, Montana, USA, for filing and back-up referrals.

Road Sector 2

The GSC - Alabel - Malapatan - Glan Roads

Sections: **1 - Sta. 00 + 982.20 to Sta. 10 + 815.43**
2 - Sta. 10 + 945.45 to Sta. 19 + 714.14
3 - Sta. 20 + 021.59 to Sta. 47 + 175.00

A. Material sources, compliance certificates, warranties QA and CQC test results etc.

1.0 Subsurface soils and materials subgrade investigations, auger holes and test pits, excavation embankments and subgrades, base gravel and roadway shoulder materials. A detailed investigation of the subgrade formation was conducted along the road section. Similar auger holes and test pits were excavated on the roadway, approximately at the normal 250 m interval. The gathered samples were subjected to various laboratory tests on classifications, gradings, atterberg limits, moisture density relations and CBR's. The test results data obtained were used in the design of the pavement structures subgrade strength (design CBR), using the standard deviation approach and other relative design criteria, in relation to rigid and flexible concrete pavement designs.

Based on the general laboratory tests conducted on the existing materials, the subgrade formation in terms of CBR was found to be generally weak for the roadway alignment commencing from Sta. 00 + 982.00 to Sta. 19 + 714.14 (Sections 1 and 2). Although the existing top layer of the alignment was overlain with good soils and gravelly materials at a minimal depth, the underlying portions are predominantly silt-clay of the

A-6 and A-7 group of soils (weak CBR's ranging from 0.64% to 9.6% at 95% MDD). This particular road section was projected to be in need of extensive construction to improve the vertical alignment, widen the existing roadway base and raise the profile grade to get the roadway above the confirmed water flooding in the area.

Due to a relatively weak subgrade strength and the perennial flood problems, a combination of Portland Cement Concrete Pavement (PCCP) and Asphaltic Concrete pavement. (AC) was recommended and constructed on specific road sections. A PCCP was constructed on the low lying sections from Sta. 0 + 982.2 to Sta. 9 + 600. The road from Sta. 9 + 600.00 to Sta. 10 + 815.43, (first approach of Lun Padidu Bridge) was paved with asphalt concrete (AC) pavement. The road (Section 2) from the second approach of Lun Padidu Bridge to Malapatan, Sta. 19 + 714.14 was designed for an AC pavement section with different pavement thickness to match the traffic volume and the design CBR values.

The road from Sta. 20 + 021.59 to Sta. 47 + 175.00 (Section 3) was also designed as an all asphaltic concrete pavement. An initial section of road of 500 meters in length commencing at Sta. 20 + 139 to Sta. 20 + 650 was originally designed for PCCP. This was subsequently changed for economic reasons, to an AC pavement with an increased asphaltic concrete thickness.

Generally, based on the lab studies the rest of the alignment continuously had relatively weak computed design mean CBR values of about 8%. The existing roadway materials consists of the same granular surfacing soils of the A-1-a classification with occasional A2 soil materials.

The overall road vertical alignment was generally on fill with substantial localized sections of mountainous areas with rock excavations that will require roadway cut sections.

The excavation materials utilized on the first and second sections of the road came from mountain quarries with unlimited quantities. Embankment materials utilized on the PCCP and AC sections came from a number of river run and roadway quarries which are predominantly of the A-1-a to A-2-4 soil classifications. The materials were verified through required standard laboratory test procedures to be in conformance to specification requirements. An important factor of measuring the subgrade strength of material in terms of CBR test values (about 35%) was evaluated for feasibility on quarry sourcing, prior and during the course of construction.

Processed material from river run sources (Maribulan, Buayan, Lun Padidu and Lun Masla Rivers) resembling that of subbase and from quarry sources (Sta. 12 + 000 and sta 12 + 325) were utilized as roadway embankment material. This material served as the foundation base for the initial PCCP and the succeeding AC pavement up to the town of Malapatan. The other subgrade and embankment material used on the road section

from Sta. 20 + 021.59 to Sta. 47 + 175, essentially was from road cut sections, mountain quarries and river run sources (Glan river quarry). The material as previously mentioned was laboratory tested in accordance with the approved design requirements for embankment and fill materials. Soil classifications and material CBR's for each sources was checked and verified (based on the design mean CBR value) for the entire alignment of the road sector.

The base materials utilized under the AC pavement came from the Lun Masla River Quarry. The raw materials were processed into crushed aggregate base course prior to usage. The finished materials were verified for viability and approval for use in construction, by a series of standard laboratory tests in reference to standard DPWH and road plans specification requirements.

Material for the roadway's shoulders came from river run sources (Maribulan River) commencing at the start of PCCP and ending at the first approach of Lun Padidu Bridge. A quarry source material was thereafter used on the rest of the road alignment.

Related QA and CQC test results format for the above discussed material are incorporated in these reports for ready reference.

2.0 Bituminous Asphaltic Concrete Materials

The Bituminous Asphaltic Concrete materials used on the road sector met the same preliminary material tests requirements. The primary source of material was the Lun Masla River Quarry, where the coarse and fine aggregates were processed into individual components with the crusher dust used as fillers. The materials were laboratory tested for various physical and other quality tests prior to the actual asphaltic concrete design. Penetration type 60 - 70 asphalt cement which will be used was tested for quality and found to be in accordance with the specifications. The same type of asphalt cement material was used for all the road construction.

Relevant QA and CQC material tests on aggregates and asphalt cement quality was similarly incorporated in these reports for ready supplements and references.

3.0 Portland Cement Concrete Structural and RCPC Concrete Materials

Portland Cement Concrete Pavement was constructed at the beginning of the road sector. Various structural works required the use of structural concrete for the construction of box culverts, bridges and the casting of drainage reinforced concrete pipe.

Predominantly, the material utilized for the different classes of concrete came from river run quarries (Maribulan and Lun Masla Rivers). The material was laboratory tested prior to various mix designs and their physical properties established. Road plans and DPWH specification requirements were referred to, for conformance.

PCCP pavement materials generally used Maribulan River source aggregates, which were crushed and processed into individual concrete components, meeting the standard PCCP concrete mix design. Structural concrete used on box culverts and bridges used the same processed aggregates along with a substantial amount of material from the Lun Masla River Source.

Molo, Tuyan, and Lot Bridges and Lasang, Kabug and Lago Box (culvert construction) used the same aggregate material.

The important laboratory tests for these material are the durability and hardness (abrasion) and the resistance to chemical reaction (soundness) which were evaluated repeatedly prior to approval for construction . These properties are referred to the present industry requirements of the American Portland Cement Association and the American Asphalt Institute Standard.

4.0 Reinforcing Steel, Flexible Beam Guardrail, Gabions and Geotextile Fabrics and Pavement Paint Markings and Glass Beads.

The standard material testing requirements for reinforcing steel, steel pads, beam guardrail, gabions and geotextile fabrics and pavement marking materials were adopted, verified and implemented in accordance with conformity to the project plans and standard DPWH and AASHTO material requirement specifications.

Reinforcing steel/rebar which was primarily used on bridges and box culverts was tested on a regular basis at the site when deliver. Items deviating from the specification requirements were presented for clarification and corresponding resolutions to the contractor.

Other relevant road construction materials, flexible beams, gabions and geotextiles and paint materials tests were supplemented with material quality certificates and monitored during actual site installation. Construction procedures quality and usage of the approved material was also monitored.

Supplemental quality submittals of the above mentioned materials are incorporated in these reports for ready reference.

B. Job Mix Designs

1.0 Structural, Portland Cement Concrete Pavement and RCPC Concrete Design

The standard DPWH specification requirements relative to structural and PCCP concrete mix design was similarly employed on the road sector. The mix design requirements of proportioning, consistency and strength of concrete as specified in DPWH Item 405 - Structural Concrete and DPWH Item 311-PCCP were prepared in accordance with the

requirements of concrete mix design, using the absolute volume method outlined in the American Concrete Institute (ACI) Standard 211.1 "Recommended Practice for Selecting Proportions on Normal and Heavyweight Concrete."

Concrete materials including fine and coarse aggregates, admixtures and water were subjected to various laboratory physical tests for conformance specifically on DPWH specs Item 311.2 material requirements.

The composition and strength of the concrete designed, specified approximately 9.0 bags of cement per cubic meter of concrete based on a 40 kg. per bag of cement. A structural concrete strength of 3000 psi minimum compressive strength of 150 x 300 mm concrete cylinder specimen at 28 days and a flexural strength for PCCP of not less than 550 psi when tested by the third point method (AASHTO T-97) was obtained on the preparation of the design mixes, respectively. Same strength verifications on RCPC pipe casting of 4000 psi minimum, was also adopted.

Site sampling and monitoring of concrete batch mixes were conducted on various structures in the course of the roadway construction.

Relevant quality control submittals for the above mentioned designs are attached in these reports for ready supplement and reference.

2.0 Bituminous Asphaltic Concrete Design

The asphalt concrete mix design for Road Sector 2 utilized aggregates from Lun Masla River Quarry as the source of material. A preliminary job mix formula similarly employed in other road sectors was prepared in accordance to the general items of material requirements and laboratory tests as specified in DPWH Item 307 - Bituminous Plant - Mix surface course - General and the other relevant quality specs items on bituminous material (Asphalt cement penetration grade 60 -70), aggregates and mineral filler.

The proportioning of the asphalt mixture in the design and the procedures that followed referred to the DPWH specification requirements and primarily to the American Asphalt Institute recommended standard of "Marshall Method of Mix Design."

The contractors submittal of the asphalt concrete mix design is attached to these reports for reference.

C. Field Test Results

1.0 Material field compaction tests

A series of on-site field tests was undertaken on the entire alignment of the road sector. The pavement material components such as existing subgrades, embankments, base course and the finished rigid and flexible pavements were subjected to various compaction tests, concrete specimen sampling and testing, A.C pavement stratified core drilling for thickness and degree of compaction determinations. Site A.C. mix properties was also monitored and evaluated in the laboratory.

Structural concrete used for the RCBC's, special class of RCPC concrete and concrete used on bridge construction and other structures were regularl'y monitored during casting and concrete placement.

Applicable criteria based on DPWH spec requirements, particularly on sampling, testing, acceptance and construction was verified in the general course of the road construction. construction.

Attached in these reports are field test results of the various material items specified above for ready reference and supplement.

D. Summary of Tests Performed

The estimated quantity of field tests performed on the road sector is as follows:

Material Items/Description	Number of Tests	
	CQC	QA
Test Pits and Auger Holes	TP's = 49 AH's = 49	TP's = 13 AH's = 10
Embankment/shoulders, top of subgrades, base courses (compaction tests)	Embankment = $\geq$ 4090 Subgrades = $\geq$ 2290 Base courses = $\geq$ 4020	Embankment = 409 Subgrades = 229 Base course = 402
Asphaltic Pavement AC Field Mixes and Cores (actual) (77 Paving Dates)	AC Field Mixes = 151 AC Cores = 276 (21 Optional Cores inc)	AC Field Mix = 24 AC Cores = 245 (27 Optional Cores inc.)
Structural Concrete RCPC, RCBC and Bridges (No. of Cylinder Specimens)	Specimens = $\geq$ 5680	Specimens = 568
PCCP Flex Beam Specimens (33 Paving Dates)	Specimens = 132	Specimens = 99

Notes:

1. QA frequency tests were performed and projected on the basis of at least 10% of required CQC frequency tests.

2. CQC compaction tests on single lift embankment/shoulders, top of subgrades and base courses are conservative estimates to at least the quantity of QA tests divided by 10%. Additional CQC tests were undertaken on embankment lifts, in regard to the roadway raised and finished grade, (reference - DPWH Item 104.3.2 - Methods of Construction)

3. CQC-RCPC, RCBC and Bridges structural concrete cylinder specimens was an estimated quantity based on actual QA figures divided by 10%.

4. CQC - PCCP concrete flex beams specimens were computed on the basis of 4 specimens/paving date and QA specimens = 3 specimens/paving date.

E. Review, Evaluation and Conclusion of Laboratory and Field Materials Tests Results.

A review and evaluation of the quality assurance and quality control measures performed indicates that the road material, quality of work and construction procedures used, substantially conform to the contract documents and applicable road specifications in reference to:

1. Material Requirements
2. Sampling, Testing and Acceptance
3. Construction Requirements
4. Method of Measurement and
5. Basis of Payment

F. Results Attachment and Directory

1.0 Material item reports in reference to the series of Q.A and CQC test results, summary tests, material certifications, warranties etc are incorporated in the appendix with the corresponding material item/title description.

2.0 The compilation of the contractors CQC laboratory and field test result are separately filed for transmittal as "AID-QC Transmittal Files, Laboratory and Field Test Results." These are transmitted to MM/CSSA's Home office in Helena, Montana U.S.A for referrals.

3.0 Similar QA laboratory and field test results on file title cover - "QA Laboratory and Field Soils and Materials Test Results" are also transmitted to the home office, for filling and referrals.

Road Sector 7
The Surallah - T'boli Road
Sta. 0 + 000.00 to Sta. 21 + 581.53

Road Sector 8
The Norala - Kolambog Road
Sta. 16 + 300.00 to Sta. 23 + 087.17

A. Materials sources, compliance certificate, warranties QA and CQC test results etc.

1.0 Subsurface Soils, Auger Holes and Test Pits, Excavation, Embankment and Subgrade, Base Gravel and Shoulder Material.

The existing subgrade formations were investigated by test pittings and auger borings. These holes were taken at 500 m intervals staggered left and right approximately along the path of the vehicles outer wheels. Soil samples taken from every change of layer formation were laboratory tested for soil classification, atterberg limits, moisture density relations and CBR'S.

The subgrade formation investigations revealed that the majority of the soils encountered on the two sectors are gravelly sand, silty sand and sandy silt and fine sand. The AASHTO range of the top existing materials were predominantly of the A-1-b to A-2-4 classifications. The CBR value of these soils ranges from 15.0% to 53.0% which are relatively high in comparison to the projected design mean CBR of 10% done by previous feasibility studies. The need to fill and raise the grade line due to the perennial flooding problem in the area and the drainage requirement necessitated using the existing roadway surface as the subgrade of the roads.

Materials generally used for embankment came from field quarries along the road sector and were predominantly silty sand with gravel and of non plasticity. Embankment material placed in Sector 8 which was sandy silt in nature was scarified and replaced with suitable granular sand material which caused difficulty in attaining field density compaction requirements.

The finished elevated subgrade which met the required construction densities was overlain with processed base materials, coming from Allah River quarry. The material was verified for acceptability through various laboratory tests that were conducted. This material was utilized solely for crushed aggregate base course for the entire road sector alignment. The material could not be used for asphaltic concrete - bituminous mixtures. It was rejected due to the uncertainty and high abrasion wear loss of the Allah River aggregates.

Shoulder material placed on the two Road Sectors adopted DPWH items 104.2 for select borrow material. However a special provision for shoulder construction was adopted. Top soil material for vegetation growth was recommended which reduced the effects of flooding and soil erosion on the constructed road shoulders.

Related QA and CQC laboratory test results for the above mentioned materials are attached to these reports for reference and supplements.

2.0 Reinforced Concrete Pipe Culvert Concrete Materials and Design.

Material used in, production and casting of reinforced concrete pipe culverts for the drainage requirements of the two road sectors essentially came from the surplus concrete material stockpiled at Siguil in Road Sector 3. The processed aggregate material came from the Siguil River Quarry which was in conformance with the previously adopted standard DPWH and related AASHTO (M-170) design and material specification requirements.

3.0 Bituminous Asphaltic Concrete Materials and Design.

The two road Sectors were both designed for asphaltic concrete pavement. The materials used in the asphaltic concrete came from Barrio 6 in Marbel town, about 40 kms. from the asphalt batching plant located at Dahay, Surallah. As previously mentioned, the aggregate materials from the Allah River Quarry had a relatively high abrasion wear (about 50%). The aggregate material from Marbel was recommended as an alternative for the asphaltic concrete as their properties and relevant characteristics satisfied the specification requirements for the bituminous paving mixture.

After reviewing the material qualities, the Contractor decided to use the Dahay Quarry source and instead used the aggregates from Marbel Barrio 6 Quarry for the asphaltic pavement.

Approval was granted for the presented asphaltic concrete mix design. An initial variance in the mix computation of voids in the mineral aggregates (VMA-design criteria) was found and corrected. The A.C. design adopted the mix design criteria requirements (Marshall method) as prescribed by the American Asphalt Institute.

References and QA and CQC relevant material test results, undertaken at the road sectors are attached, in these reports, for supplement.

B. Field Test Result

1.0 The required field tests implemented on the road sectors were essentially the same field test procedures adopted on other sectors. Primarily, compaction tests on existing subgrades, embankment and the base gravel materials were performed through out the road section. Frequency of tests and material characteristic determinations, followed the same standard procedures as specified in the road plans and in the DPWH Standard specifications.

2.0 Bituminous Asphaltic Concrete Tests

The bituminous asphaltic pavement was subjected to the standard field core determination of thickness and the degree of compactions. On site asphaltic

concrete mixes were regularly sampled, laboratory tested and evaluated for conformance to the required and various mix criteria-parameters of the approved design.

C. A Summary on Quantity of field tests on the road sectors, as follows:

Material Item/Description	Quantity of Test	
	CQC	QA
Auger holes/ Test pits	AH's = 43 + 14 = 57 TP's = 43 + 15 = 58	AH's = 4 TP's = 4
Embankment top of subgrade	Embankment=≥ 890	Embankment = 89
Base course (compaction Tests)	Top of Subgrades=≥ 1400 Base courses =≥ 2970	Top of Subgrades=140 Base courses=297
Asphaltic concrete,	A.C mixes = 106	AC mixes = 25
Asphaltic mixes and	A.C. cores = 328	AC cores=196
Core sampling (53 Paving dates)	(Optional cores=135)	(Optional cores=49)
RCPC concrete	No. of specimens=≥130	No. of specimens=13
Concrete specimens and Hammer Test	Hammer test = 900	Hammer Tests = 900

Note: 1. QA frequency tests were performed and projected on the basis of at least 10% of required CQC frequency tests.

2. QA preliminary soil investigation, auger holes and test pittings at road sector 8, involved a minimum of 1 ea. for TP and AH for the entire road alignment. Standard practice, ASTM D 2488-90 Description and Identification of soils (visual-manual procedures) was alternately used in the soils identifications.

3. CQC compaction tests on embankment top of subgrade and base courses were projected and estimated to be the quantity of QA tests divided by 10%. Additional CQC tests was performed on embankment lifts and fill in regard to the roadway raised and finished grade elevation. (DPWH item 104.3.2-methods of construction).

4. CQC RCPC concrete specimens sampling and testing on casting and installations are conservative estimates from the actual Q.A. figures divided by 10%. A 100% required hammer tests on all minor RCPC structures at Road Sector 7 and 8 was performed by both QA and CQC laboratories for concrete strength verifications.

D. Review, Evaluation and Conclusion, Laboratory and Field Materials Test Results.

Road Sectors 7 and 8 as based upon feasibility study was originally designed for bituminous surface treatment pavements. However because of traffic, existing conditions and rainfall, the design was modified and revised in the best interest of the project for an asphaltic concrete pavement.

A general statement can be made that an AC pavement can not be compared to a double surface treatment section. The AC pavement in terms of quality and longevity will perform its intended function for the road design life span.

The QA and QC laboratory and field tests done on the roadway indicates that the road was built in substantial conformance to the contract documents and related specification requirements in reference to:

1. Material Requirements
2. Material Sampling Testing and Acceptance
3. Construction Requirements
4. Method of Measurement and Payment.

E. Results Attachment and Directory

1.0 Related QA and CQC materials test results are shown in this report in appendixes 7/8-1, 7/8-2 and 7/8-3 with corresponding item/title descriptions for supplement and reference.

2.0 A compilation of the QA and CQC results (Laboratory and Field Tests) are shown on:

AID-QC results for Contractors Daily Quality Control Reports
"AID-QC Transmittal Files, Laboratory and Field Test Result and similar file on "QA Laboratory and Field Soils and Materials Test Results" respectively.

3.0 The compilations of reports are sent to MM/CSSA's home office in Helena, Montana U.S.A. for filing and back up referrals.

Road Sector 4
The Polomolok - Landan Road

Sections	**:**	**1-**	**Sta. 01 + 491.36 to Sta. 03 + 543.36**
		2-	**Sta. 04 + 994.87 to Sta. 05 + 348.83**
		3-	**Sta. 13 + 540.00 to Sta. 15 + 269.18**

A. Materials Sources, Compliance Certificate, Warranties, QA and CQC Test Results

1.0 Subsurface Soils Investigations - Auger Holes and Test Pits, Excavations Embankments and Subgrades, Base Courses and Roadway Shoulder Materials.

The investigation of the existing roadway subgrade and subsurface soil formations was carried out through test pits and auger holes, taken approximately at 250 m. staggered intervals. The soil materials were laboratory tested for the normal soil classifications, maximum dry density-moisture content relations and CBR's. Data obtained from these tests, specifically the spread CBR's, were considered in the design of the of the pavement, by adopting the Standard AASTHO "Interim Guide for Design of Pavement Structures", the TRRL Road Note 29 guidelines and the other relevant and applicable pavement design parameters.

A rigid pavement, (PCC pavement) was designed for the road sector. Based on the soil test results, a design mean CBR of about 25% was computed and projected for the road alignment.

The existing subgrade materials which are of predominant A-1 and A-2 soils are implicitly a good foundation base for the designed PCC pavement, with relatively high CBR values ranging from 17.0% to 45.0%.

Essentially the material for embankment that came from a nearby river run quarry along the roadway, exhibited the same soil properties of silty sand and fine sand with gravel. Generally the road grade was raised and embankment placed, with a portion at Sta. 13 + 600 going though a short mountainous stretch which required cutting and widening.

The finished and compacted top of subgrade was overlain with gravel material coming from the Matinao River. The material was crushed and processed into crushed aggregate base course. The material as normally checked was subjected to different laboratory tests in reference to material quality requirements particularly items 202.2 of the DPWH standard specifications.

Due to relatively heavy rainfall in the area the predominant permeable material along the roadway is easily eroded. A limestone material was recommended and used for shoulders throughout the road alignment. The material which came from the mountain quarry on the National Highway has plasticity properties and was cementitious in nature when compacted.

2.0 RCBC and RCPC Drainage Structures, PCC Pavement, Materials and Design

A number of road box culverts on the road sector were constructed in accordance with the road design plans and drainage requirements.

The structural concrete material used for these structures came from road Sector 2 aggregate stockpiles (Maribulan River Source) and from the Matinao River run quarry. The components were blended and proportioned, in accordance with the required and standard procedures for structural concrete mix preparations, using the ACI standard method. These particular concrete mixes are generally projected to the same required strength-criteria of 3000 psi at 28 days test of the concrete specimens taken.

For drainage RCPC's casting, a combination of concrete aggregate materials from the approved Maribulan Quarry, Barrio 6, Marbel and Lun Masla Quarry was utilized. The sequential monitoring of the different structure concrete placements and pipe castings was done. Material sampling and testing of concrete cylinder specimens etc, was systematically done throughout the road construction phase. QA comments and initiations on proper concrete quality control planning was regularly relayed to the contractor for implementation.

The PCCP mix design was prepared on the same basis of the standard absolute volume method of the American Concrete Institute (ACI) Standard 211.1-Recommended Practice for Selecting on Normal and Heavyweight Concrete". The concrete material components used in the preparation of the mix design were all previously approved. These included the processed aggregates from the Matinao river quarry, Portland Cement Type I, chemical AEA and admixtures. The mixing water which came from the Dole Cannery was also tested and used.

Relevant data on the design and the general material tests performed by both QA and CQC Laboratories are attached in these reports for ready references.

B. Field Test Results.

1.0 Materials Field Compaction Tests.

The normal QA and CQC field material testing procedures with reference to conformance to the road plans and the DPWH Standard Specification requirements were adopted and implemented on the Road Sector as follows:

1. Similar specific material items and field compaction tests on existing subgrades, embankments and the crushed aggregates base courses.

2. Concrete specimen sampling on both structural and portland cement concrete pavements.

3. Attached in these reports are Field Test Results and Format of the various material items specified above.

C. Estimated Quantity of Field Tests Undertaken on the Road Sector are as Follows:

Materials Items/Descriptions	Number of Tests	
	CQC	QA
Testpits and Auger Holes	TP's-25 AH's-26	TP's= 2 AH's= 2
Embankments, Top of Subgrades Base courses, Shoulders (Compaction Tests)	Embankments = $\geq$510 Subgrades = $\geq$360 Base Courses = $\geq$290	Embankments = 51 Subgrades = 36 Base Courses = 29

PCCP Concrete and Structural Concrete on RCPC and RCBC (No. of Cylinder Specimens)	Specimens = $\geq$1090	Specimens = 109
PCCP Flexural Beam Specimens	Specimens = $\geq$300	Specimens = 30

Notes: 1. CQC compaction tests on embankments, top of subgrades/shoulders and base course are a conservative estimate from the actual QA figure divided by 10%.

2. CQC embankment compaction tests are based on single lift tests only. An additional tests were performed on material lifting, reference on final grade, DPWH specs, Item 104.3.2-Methods of Construction.

3. CQC Structural Concrete sampling for pipe castings and various RCPC's and RCBC's are a conservative estimate from the actual QA figures divided by 10%.

4. The QA field testing requirements for the general material items was specified to be at least 10% frequency percentages to that of the CQC material test frequency.

D. Review, Evaluation and Conclusion of Laboratory and Field Materials Test Results.

A review and evaluation of the material quality assurance, quality control laboratory and field measures done on the road sector confirms that the road construction substantially conforms to the approved contract document plans and the required specifications.

This was based on conformance to the following criteria:

1. Material requirements
2. Sampling, Testing and Acceptance
3. Construction and method of measurement and
4. Basis of payment and Billing

E. Results Attachment and Directory

1.0 QA and CQC material test results are incorporated in appendixes 4-1, 4-2 and 4-3 with corresponding materials items/title descriptions.

2.0 The bulk of contractor's laboratory and field test results are filed as:

"AID - QC Transmittal files, Laboratory and Field Test Results"

3.0 QA Bulk reports are on separate file cover:
"QA Laboratory and Field Soils and Materials Test Results"

4.0 The above volumetric materials compilation are sent to MM/CSSA's home office in Helena, Montana USA, for filing and referral.

E. CONSTRUCTION ITEMS/TASKS

FINAL QUANTITES AND COSTS Buayan to Malapatan Road Sector 2 Base

Pay Item	Description	Mod 4 Qty	Additional Work/Qty	Final Qty	Unit	Unit Cost($)	Total Cost($) Mod 4	Total Cost($) New Items
030	Contractor Furnished Detailed Road Design	19.04		19.04	KM	8,041.910	153,118	
030	Additional Road Design (FCM 190)		1	1	LS	10,000.000		10,000
030	Additional survey/Subsurf Investigation	1		1	LS	1,824.000	1,824	
031	Contractor Furnished Detailed Bridge Design	59		59	LM	3,546.691	209,255	
100(5)	Clearing and Grubbing	219,000		218,999	M^2	0.150	32,850	
101(1)	Removal of Structures and Obstractions	1		1	LS	100,704.000	100,704	
102(1)	Unsuitable Excavation	14,190		15,603	M^3	2.648	41,317	
103(1)	Structure Excavation	445	5	450	M^3	1.240	558	
103(2)	Bridge Excavation	570		569	M^3	2.570	1,462	
103(6)	Pipe Culvert Excavation	2,125	109	2,234	M^3	1.620	3,619	
104(1)	Embankment	83,700		80,079	M^3	5.178	414,649	
104(1)a	Superior Common Embankment (FCM 190)		23,115	23,115	M^3	6.454		149,184
104(2)	Embankment, Select Material	41,625		37,199	M^3	7.729	287,511	
104(2)a	Minimal Select Finishing (FCM 190)		62,675	62,675	M^2	0.243		15,230
105(1)	Subgrade Preparation	242,785		214,250	M^2	0.301	64,489	
105(1)	Finish Select	216,740			M^3	0.466		
200	Aggreggate Subbase Course	6,300		5,764	M^3	12.884	74,263	
202	Crushed Aggregate Base Course	16,350	154	16,504	M^3	13.857	228,696	
301	Prime Coat, MC−70	69,810	6,641	76,451	M^2	1.195	91,358	
310(1)	Asphalt Concrete, Hot−Laid	8,525	106	8,631	MT	74.739	645,072	
311(3)	PCC Pavement (Machine Laid)	12,235		11,539	M^3	124.426	1,435,752	
400(4)	Precast Concrete Piles Furnished (40x40)	588		588	LM	119.302	70,150	
400(15)	Test Piles, Driven (40x40)	554		554	LM	15.612	8,655	
401	Concrete Bridge Railing	103		103	LM	157.771	16,282	
404	Reinforcing Steel for Bridge	68,810		58,189	KG	1.263	73,493	
405(1)	Structural Concrete Class A	540		391	M^3	468.651	183,069	
405(6)	Lean Concrete	35	63	98	M^3	96.009	9,366	
405(19)	Piles Shoes	16		16	EA	12.602	202	
405(20)	Pile Splice	12		12	EA	126.017	1,512	
407(1)	RCBC, Complete w/ Headwalls	210	144	354	M^3	421.333	149,059	
500(1)	Backfill Material Pipe Culvert	1,320		1,224	M^3	8.450	10,343	
500(1)a	Reinforced Pipe Culvert 610mm Dia.	237	13	250	LM	62.300	15,575	
500(1)b	Reinforced Pipe Culvert 910mm Dia.	644		644	LM	92.061	59,287	
500(1)d	Reinforced Pipe Culvert 1220mm Dia.	30	10	40	LM	106.933	4,277	
500(1)e	Structural Backfill	50		50	M^3	9.658	483	
500(1)f	Remove and Relay RCPC	114		86	LM	71.772	6,172	
500(4)	Structural Conc. for Pipe Headwalls	220	8	228	M^3	275.421	62,818	
500(5)	Reinforcing Steel for Pipe Headwalls	3,445	2,022	5,467	KG	1.222	6,680	
503(3)	Cleaning Culvert Pipe in Place	155		155	LM	1.140	177	
504(5)	Grouted Riprap, Class A	375	77	452	M^3	80.400	36,330	
504(5)a	Grouted Riprap Lined Ditch	390		231	M^3	100.139	23,105	
505	Stone Masonry		4	4	M^3	117.927		425

New Item Not Included in Mod 4

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FINAL QUANTITES AND COSTS GSC/Buayan to Malapatan Road Sector 2 Base

Pay Item	Description	Mod 4 Qty	Additional Work/Qty	Final Qty	Unit	Unit Cost($)	Total Cost($) Mod 4	Total Cost($) New Items
509	Gabions	1,455		990	M^3	105.172	104,081	
509(1)	Filter Fabrics	3880		2,864	M^2	13.797	39,512	
602(4)	Concrete Guide Post		2	2	EA	93.898		188
New	2" GI Pipe Handrails		19	19	LM	22.560		434
New	Kilometr Post:							
	Fab. new and install		12	12	EA	73.770		885
	Reloc, repair repaint		5	5	EA	26.040		130
	Reloc, haul, repair, rep.		2	2	EA	30.380		61
	Relocate and repaint		2	2	EA	19.530		39
603(3)	Metal Guardrail (Metal Beam)	1120		880	LM	59.429	52,304	
603(3)a	Welding of Bolts (Guardrails)	1120		880	LM	1.436	1,264	
605(4)	Sign and Markers	38	15	53	EA	36.800	1,950	
606(2)	Crosswalks		5	5	EA	127.143		636
606(3)	Pavement MArking (Refelctive)	7380	2,875	10,255	LM	0.535	5,486	

Subtotal Mod 4 Items	$4,728,130
Subtotal New Items Not Inc. in Mod 4	$177,211
Total Final Cost (Mod 4 + New Items)	$4,905,341
Original Mod 4 Cost	$5,060,616
Variance	($155,275)

New Item Not Included in Mod 4

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SOUTH COTABATO/SARANGANI PROVINCE ROAD PROJECT

FINAL QUANTITIES AND COSTS Malapatan – Glan Road Sector 2 – Alternate

Pay Item	Description	Mod 4 Qty	Additional Work/Qty	Final Qty	Unit	Unit Cost ($)	Total Cost ($) Mod 4	Total Cost ($) New Item
030a	Add'tl Survey/Subsurf Inves	1		1	LS	8000	8000	
030b	Contractor Furnished Detailed Road Design	25.65		25.65	KM	5500	141,075	
030c	Survey and Geotech	27.15		27.15	KM	4000	108,600	
030d	Bridge Subsurface/Incomplete Road Design	1		1	LS	4500	4,500	
031	Additional Road Design		1	1	LS	8042		8,042
031	Additional Box Culvert Design		1	1	LS	3000		3,000
100(5)	Clearing and Grubbing	332,170		316,890	M^2	0.184	58,308	
101(1)	Removal of Structures and Obstructions	1		1	LS	56825	56,825	
102(1)	Unsuitable Excavation	190	4,773	4,963	M^3	3.22	15,980	
102(3)	Rock Excavation	25,000	6,845	31,845	M^3	21.79865	694,178	
103(1)	Structural Excavation	795		1,201	M^3	1.65	1,982	
103(6)	Pipe Culvert Excavation	2,845	152	2,997	M^3	2.14	6,414	
104(1)	Embankment, Common Borrow	264,490	8,150	272,640	M^3	10.011	2,729,399	
104(2)	Embankment, Select Material	30,360		24,508	M^3	11.563	283,386	
105(1)	Subgrade Preparation Common Materials	312,000		304,428	M^2	0.491	149,474	
200	Aggregate Subbase Course	0			M^3	19.98		
202	Crushed Aggregate Base course	37,780	3,099	40,879	M^3	21.523	879,839	
301	Prime Coat, MC–70	174,764		171,146	M^2	1.189	203,493	
302	Bituminous Tack Coat		589	589	M^2	1.522		896
310	Asphalt Concrete, Hot–Laid	22,360	1,009	23,369	MT	98.491	2,301,636	
311	Portland Cement Concrete Pavement	795		66	M^3	165.096	10,893	
405(6)	Lean Concrete	35		30	M^3	96.009	2,904	
407(1)	RCBC comp with Headwall	425		404	M^3	421.333	170,101	
500(1)	Backfill Material for Pipe Culvert	2,505	222	2,727	M^3	9.57	26,093	
500(1)a	Reinforced Pipe Culvert 610 mm Dia	463		403	LM	80.125	32,290	
500(1)b	Reinforced Pipe Culvert 910 mm Dia	950		924	LM	118.9	109,864	
500(1)d	Reinforced Pipe Culvert 1220 mm Dia	381		370	LM	136.92	50,660	
500(1)e	Structural Backfill	100	381	481	M^3	9.658	4,645	
500(1)f	Remove and Relay RCPC		23	23	LM	71.772		1,651
500(4)	Structural Concrete for Pipe headwalls	375		353	M^3	323.944	114,501	
500(5)	Reinforcing Steel for Pipe Headwalls	6,315	1,562	7,877	KG	1.203	9,476	
503(3)	Stone Masonry	400	22	422	M^3	117.927	49,739	
504(5)	Grouted Riprap, Class A	85	85	170	M^3	80.4	13,681	
504(5)a	Grouted Riprap, Lined Ditch	1,865		20	M^3	100.139	2,005	
509	Gabions	185		106	M^3	103.35	10,976	
509(1)	Filter Fabrics	420	1,804	2,225	M^2	13.797	30,692	
602(4)	Concrete Guideposts	27	14	41	EA	93.898	3,850	
New	2" GI Pipe Handrail		16	16	LM	22.56		356
New	KM Post (Fabricate New and Install)		22	22	EA	73.77		1,623
New	KM Post (Relocate, Haul, repair and repaint)		5	5	EA	30.38		152
603(3)	Metal Guardrails (Metal Beam)	2,488		600	LM	61.635	36,982	
603(3)a	Welding of Bolts – Guardrails	2,488		600	LM	1.436	862	
605(4)	Signs and Markers	133	17	150	EA	347.92	52,188	
606(2)	Crosswalks		5	5	EA	127.143		636
606(3)	Pavement Markings (Reflective)	22,555	5,361	27,916	LM	0.61	17,029	

Subtotal Mod 4 Items	$8,392,519
Subtotal New Items Not Inc. in Mod 4	$16,356
Total Final Cost (Mod 4 + New Items)	$8,408,876
Original Mod 4 Cost	$8,095,041
Variance	$313,835

New Item Not Included in Mod 4

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SOUTH COTABATO/SARANGANI PROVINCE ROAD PROJECT

FINAL QUANTITIES AND COSTS Lun Masla Bridge Sector 2 – Base

Pay Item	Description	Mod 4 Qty	Additional Work/Qty	Final Qty	Unit	Unit Cost ($)	Total Cost ($) Mod 4	Total Cost ($) New Item
031	Contractor Furnished Detailed Bridge Design	1		1	LS	43,100.000	43,100	
103(2)	Bridge Excavation	875		720	M^3	73.404	52,851	
103(5)	Shoring, Cribbing and Rel Work	9		9	EA	4,126.378	37,137	
400(4)	Pre–Cast Concrete Piles (Furnished)	920		920	LM	124.269	114,327	
400(13)	Pre–Concrete Piles (Driven)	797		557	LM	32.896	18,336	
400(19)	Piles Shoes	103		103	EA	12.602	1,298	
400(23)	Piles Extraction @Pier #5	1		1	LS	18,952.000	18,952	
401	Concrete Bridge Railing	360		360	LM	164.723	59,300	
404	Reinforcing Steel for Bridges	194,635	461	195,096	KG	1.343	262,014	
405(1)	Structural Concrete Class A	1,120	6	1,126	M^3	468.651	527,701	
415	Jet Grouting	1		1	LS	184,000	184,000	
417	Structural Epoxy	1		1	LS	1,464.000	1,464	
418	Drilled – in Bars	1		1	LS	739.000	739	
418	Anchor Bolts, Pipe Slvs., Bear. Pads and Filler	1		1	LS	5,451.000	5,451	

Subtotal Mod 4 Items	**$1,326,670**
Subtotal New Items Not Inc. in Mod 4	**$0**
Total Final Cost(Mod 4 + New Items)	**$1,326,670**
Original Mod 4 Cost	**$1,342,513**
Variance	**($15,843)**

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SOUTH COTABATO/SARANGANI PROVINCE ROAD PROJECT

FINAL QUANTITIES AND COSTS Sapu Masla Bridge Road Sector 2 – Base

Pay Item	Description	Mod 4 Qty	Additional Work/Qty	Final Qty	Unit	Unit Cost ($)	Total Cost ($) Mod 4	Total Cost ($) New Item
103(2)	Bridge Excavation	75	21	96	M^3	2.722	261	
102(3)	Rock Excavation	74		55	M^3	44.25	2,443	
401	Concrete Bridge Railing	30		30	LM	164.723	4,942	
404	Reinforcing Steel	20036		19,584	KG	1.343	26,301	
405(1)	Structural Concrete, Class A	151.7		136	M^3	468.651	63,633	
405	Lean Concrete		37	37	M^3	96.009		3,525
504(5)	Grouted Riprap. Class A	50		25	M^3	80.4	2,009	
509	Gabions		8	8	M^3	103.35		833
509(1)	Filter Fabric		32	32	M^2	13.797		445

New Item Not Included in Mod 4

Subtotal Mod 4 Items	**$99,589**
Subtotal New Items Not Inc. in Mod 4	**$4,803**
Total Final Cost (Mod 4 + New Items)	**$104,392**
Original Mod 4 Cost	**$110,443**
Variance	**($6,051)**

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SOUTH COTABATO/SARANGANI PROVINCE ROAD PROJECT

FINAL QUANTITIES AND COSTS — Saub Bridge — Road Sector 3 -Alternate

Pay Item	Description	Mod 4 Qty	Additional Work/Qty	Final Qty	Unit	Unit Cost ($)	Total Cost ($) Mod 4	Total Cost ($) New Item
030	Detailed Bridge Design	1		1	LS	25000	25,000	
100(5)	Clearing and Grubbing	4,615		4,613	M^2	0.184	849	
101(1)	Removal of Structures and Obstructions	9		9	EA	418.334	3,765	
103(1)	Structure Excavation	770		770	M^3	1.628	1,254	
103(2)	Bridge Excavation	245		215	M^3	75.78	16,293	
104(1)	Embankment	8,455		5,645	M^3	5.816	32,831	
104(2)	Embaankment, Select Material	460		459	M^3	11.563	5,307	
105(1)	Subgrade Preparation, Common Material	4,510		4,510	M^2	0.491	2,214	
202	Crushed Aggregate Base Course	655		635	M^3	21.53	13,672	
301	Bit. Prime Coat, MC–70	2,555		2,554	M^2	1.195	3,052	
310(1)	Asphalt Concrete, Hot–Laid	330	2	332	MT	98.491	32,699	
103(5)	Shoring, Cribbing and Others	2		2	EA	4126.38	8,253	
401	Concrete Bridge Railing	160		160	LM	164.723	26,356	
404	Reinforcing Steel	99,410	85	99,495	KG	1.343	133,622	
405(1)	Structural Concrete Class A	640	2	642	M^3	468.651	301,061	
504(5)	Grouted Riprap, Class A	30	14	44	M^3	80.4	3,566	
509	Gabions	372	17	389	M^3	105.172	40,868	
509(1)	Filter Fabric	700	48	748	M^2	13.797	10,319	
603(5)	Metal Guardrail (Metal Beam)	250	32	282	LM	61.64	17,370	
603(3)	Welding of bolts – Guardrails	250	32	282	LM	1.436	405	
605(4)	Signs and Markers	8		2	EA	354	708	
606(3)	Pavement Markings (Reflective)	365		360	LM	0.608	219	

Subtotal Mod 4 Items		**$679,683**
Subtotal New Items Not Inc. in Mod 4		**$0**
Total Final Cost (Mod 4 + New Items)		**$679,683**
Original	**Mod 4 Cost**	**$711,011**
Variance		**(31,328)**

SOUTH COTABATO/SARANGANI PROVINCE ROAD PROJECT

FINAL QUANTITIES

General Santos City/Makar to Kiamba Road Sector 3 – Base

Pay Item	Description	Mod 4 Qty	Additional Work/Item	Final Qty	Unit	Unit Cost ($)	Total Cost ($)
010	Mobilization of Contractor's Equipment	1		1	LS	7233478	7,233,478
030	Contractor Furnished Detailed Road Design	83.48		83	KM	8546.484	713,460
100(5)	Clearing and Grubbing	586,297		586,297	M^2	0.15	87,945
101(1)	Removal of Structures and Obstruction	1		1	LS	52849	52,849
102(1)	Unsuitable Excavation	466		466	M^3	3.22	1,501
103(1)	Structure Excavation	175		176	M^3	1.237	217
103(6)	Pipe Culvert Excavation	469		469	M^3	1.608	754
104(1)	Embankment, Common Borrow	149,962		149,002	M^3	5.178	771,532
104(2)	Embankment, Select Material	87,548		87,548	M^3	8.106	709,664
105(1)	Subgrade Preparation, Common Material	873,856		873,856	M^3	0.301	263,031
200	Aggregate Subbase Course	17,351		17,351	M^2	14.834	257,385
202	Crushed Aggregate Base Course	127,422		127,422	M^3	16.739	2,132,917
301	Prime Coat, MC–70	518,795		518,795	M^3	1.192	618,404
310(1)	Asphalt Concrete, Hot–Laid	78,126		78,125	MT	70.839	5,534,297
311(3)	Portland Cement Concrete Pavement	814		814	M^3	165.096	134,388
405(6)	Lean Concrete	47		47	M^3	96.009	4,488
407(2)	RCBC Complete with Headwalls	160		160	M^3	517.834	82,957
500(1)	Backfill Material, for Pipe Culverts	545		545	M^3	8.449	4,602
500(1)a	RCPC, 610 mm. Dia	180		180	LM	62.28	11,210
500(1)b	RCPC, 910 mm. Dia	147		147	LM	92.057	13,532
500(1)d	RCPC, 1220 mm. Dia	78		78	LM	106.933	8,341
500(4)	Structural Concrete for Pipe Headwalls	199		199	M^3	275.427	54,763
500(5)	Reinforcing Steel for Pipe Headwalls	3,075		3,075	KG	1.223	3,761
503(3)	Cleaning Culvert Pipe in Place	989		898	LM	1.149	1,032
504(5)	Grouted Riprap, Class A	1,038	43	1,081	M^3	80.4	86,912
504(5)a	Grouted Riprap, Lined Ditch	689		689	M^3	100.139	68,996
505	Stone Masonry	293		293	M^3	117.927	34,553
509(1)	Filter Fabrics	1,560		1,560	M^2	13.797	21,523
509	Gabions	778		778	M^3	105.217	81,828
603(3)	Metal Guardrail (Metal Beam)	3,379		3,379	LM	59.433	200,824
603(5)	Welding of Bolts – Guardrails	3,379		3,379	LM	1.436	4,852
605(4)	Signs and Markers	359		359	EA	36.807	13,214
606(2)	Crosswalks	25	6	31	EA	127.143	3,941
606(4)	Pavement Markings (Non–Reflective)	9,863		8,880	LM	0.295	2,620
606(3)	Pavement Markings (Reflective)	50,373	8452	58,825	LM	0.533	31,354
606(5)a	Special Items	1		1	LS	60452	60,452

Total Final Cost	**$19,307,584**
Original Mod 4 Cost	**$19,304,182**
Variance	**$3,402**

Note: Most Mod 4 and final quantities are identical because Road Sector 3 Alternate has been completed and the quantities finalized at the time Mod 4 was in process.

SOUTH COTABATO/SARANGANI PROVINCE ROAD PROJECT

FINAL QUANTITIES AND COSTS Kiamba to Maitum Road Sector 3 – Alternate

Pay Item	Description	Mod 4 Qty	Additional Work/Qty	Final Qty	Unit	Unit Cost ($)	Total Cost ($)
030	Contractor Furnished Detailed Road Design	15.357		15.357	KM	5,205	79,933
030	Survey and Geotech	16		16	KM	2,700	43,200
030	Incomlpete Road Design	1		1	LS	900	900
100(5)	Clearing and Grubbing	147,076		147,076	M^2	0.184	27,062
101(1)	Removal of Structures and Obsstructions	1		1	LS	24,809	24,809
103(1)	Structure Excavation	371		371	M^3	1.628	605
103(6)	Pipe Culvert Excavation	439		439	M^3	2.128	934
104(1)	Embankment, Common Borrow	89,119		87,973	M^3	5.816	511,651
104(2)	Embankent, Select Materials	16,193		16,193	M^3	11.563	187,240
105(1)	Subgrade Preparation, Common Material	179,358		179,358	M^2	0.491	88,065
202	Crushed Aggregate Base Course	26,920		26,920	M^3	21.530	579,588
301	Prime Coat, MC–70	104,407		104,407	M^2	1.192	124,453
310(1)	Asphalt Concrete, Hot Laid	14,301		14,301	MT	93.698	1,339,975
405(6)	Lean Concrete	11		11	M^3	96.009	1,043
407(1)	Box Culvert–New Concrete	69		69	M^3	421.333	29,101
407(2)	Box Culvert–Ext. Concrete	80		80	M^3	452.378	36,059
500(1)	Backfill Material for Pipe Culverts	299		299	M^3	9.551	2,856
500(1)	RCPC, 610 mm. Diameter	148		148	LM	80.115	11,857
500(1)	RCPC, 910 mm. Diameter	39		39	LM	118.894	4,637
500(1)	RCPC, 1220 mm. Diameter	51		51	LM	136.875	6,981
500(1)	Structural Backfill	30		30	M^3	9.658	290
500(4)	Structural Concrete for Pipe Headwalls	76		76	M^3	323.946	24,620
500(5)	Reinforcing Steel for Pipe Headwalls	1,734		1,734	KG	1.201	2,083
503(3)	Cleaing Culvert Pipe in Place	210		210	LM	2.018	424
503(3)	Clean Drainage Sturctures	2		2	EA	17.272	35
503(5)	Clean Inlet and Outlet Channel	1,140		1,140	M	7.136	8,135
504(5)	Gouted Riprap, Class"A"	434		434	M^3	80.400	34,889
505	Stone Masonry	19		19	M^3	117.927	2,225
506	Handlaid Rock Embankment	24		24	M^3	39.333	944
603(3)	Metal Guardrail(Metal Beam)	766		766	LM	61.640	47,211
603(3)	Welding of Bolts–Guardrail	766		766	LM	1.436	1,100
605(4)	Signs and Markers	47		47	EA	346.386	16,280
606(2)	Crosswalks	5		5	EA	127.143	636
606(3)	Pavement Markings (Reflective)	7,742		9,819	LM	0.609	5,980

Total Final Cost	**$3,245,801**
Original Mod 4 Cost	**$3,251,354**
Variance	**($5,553)**

Note: Most Mod 4 and final quantities are identical because Road Sector 3 Base has been completed and the Quantities finalized at the time Mod 4 was in process.

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SOUTH COTABATO/SARANGANI PROVINCE ROAD PROJECT

FINAL QUANTITIES AND COSTS Polomolok to Landan Road Sector 4

Pay Item	Description	Mod 4 Qty	Additional Work/Qty	Final Qty	Unit	Unit Cost ($)	Total Cost ($) Mod 4	Total Cost ($) New Item
030	Detailed Road Design	4.14		4.14	KM	7777	32,158	
030	Subsurf Incomplete Road Design	1		1	LS	30000	30,000	
030	Additional Box Culvert Design	1		1	LS	2300	2,300	
100(5)	Clearing and Grubbing	35,485		35,485	M^2	0.184	6,529	
101(1)	Removal of Structure and Obstructions	1		1	LS	3696	3,696	
102(2)	Surplus Common Excavation	15,162		14,986	M^3	2.394	35,876	
103(1)	Structure Excavation	495	19	514	M^3	1.64	843	
103(6)	Pipe Culvert Excavation	485	171	656	M^3	2.133	1,399	
104(1)	Embankment, Common Borrow	23,865		21,161	M^3	5.816	123,072	
104(2)	Embankment, Select Material	5,995			M^3	11.563		
104(2)a	Limestone Shoulder Material		6,404	6,404	M^3	12.742		81,600
105(1)	Subgrade Preparation, common material	48,060		48,059	M^2	0.491	23,597	
200	Aggregate Subbase Course	2,955		2,429	M^3	20.359	49,452	
311	PCCP (Hand–laid)	0	155	155	M^3	165.095	25,643	
311	PCCP (Machine–Laid)	5,225		4,946	M^3	124.421	615,345	
405(6)	Lean Concrete	45	12	57	M^3	96.009	5,516	
405(5)	Seal Concrete		4	4	M^3	120.807		441
407(1)	RCBC comp with Headwalls	525	10	535	M^3	421.333	225,295	
500(1)	Backfill Materials for Pipe Culverts	295	90	385	M^3	9.6	3,696	
500(1)a	RCPC, 610 mm Dia	129		127	LM	80.115	10,175	
500(1)b	RCPC, 910 mm Dia	113	37	150	LM	118.894	17,834	
500(1)c	RCPC, 1220 mm Dia	0	20	20	LM	137	2,740	
500(4)	Structural Concrete for Pipe Headwalls	50	33	83	M^3	323.933	26,886	
500(5)	Reinforcing Steel for Pipe Headwalls	235	152	387	KG	1.175	455	
504(5)	Grouted Riprap Class A	230	312	542	M^3	80.4	43,537	
504(5)a	Grouted Riprap, Lined Ditch	255	234	489	M^3	100.139	48,976	
505	Stone Masonry	10	78	88	M^3	117.927	10,354	
506	Handlaid Rock Embankment	120		4	M^3	39.333	142	
509	Gabions	0	158	158	M^3	103.56	16,362	
509(1)	Filter Fabrics		1,042	1,042	M^2	13.797		14,374
602(4)	Concrete Guidepost		17	17	EA	93.898		1,596
New	2" GI Pipe Metal Handrail		19	19	LM	22.56		424
603(3)	Metal Guardrail (Metal Beam)	358		194	LM	61.65	11,979	
603(3)a	Welding of Bolts – Guardrail	358		194	LM	1.436	279	
605(4)	Signs and Markers	11	2	13	EA	354	4,602	
606(2)	Crosswalks	2	1	3	EA	127.143	381	
606(3)	Pavement Markings (Reflective)	3,055	1,935	4,990	LM	0.608	3,034	

New Item Not Included in Mod 4

Subtotal Mod 4 Items	$1,382,154
Subtotal New Items Not Inc. in Mod 4	$98,435
Total Final Cost (Mod 4 + New Items)	$1,480,589
Original Mod 4 Cost	$1,401,955
Variance	$78,634

FINAL QUANTITIES AND COSTS Surallah to T'boli Road Sector 7

Pay Item	Description	Mod 4 Qty	Additional Work/Qty	Final Qty	Unit	Unit Cost ($)	Total Cost ($) Mod 4	Total Cost ($) New Item
030	Detailed Road Design	21.58		22	KM	7,889.720	170,055	
030	Additional Road Design	1		1	LS	5,700.000	5,700	
100(5)	Clearing and Grubbing	231,972		230,063	M^2	0.150	34,509	
101(1)	Removal of Structures	1		1	LS	13,672.000	13,672	
102(1)	Unsuitable Excavation	95	67	162	M^3	3.220	523	
103(6)	Pipe Culvert Drain Excavation	1,255		973	M^3	1.607	1,564	
104(1)	Embankment Common Borrow	97,375		94,554	M^3	5.178	489,601	
104(2)	Embankment Select Material	25,395		22,518	M^3	7.729	174,042	
105(1)	Subgrade Preparation, Common Material	261,125	135	261,260	M^2	0.301	78,639	
202	Crushed Aggregate Base Course	35,430	188	35,618	M^3	14.895	530,530	
301	Prime Coat MC–70	152,745	1,196	153,941	M^2	1.195	183,959	
310(1)	Asphalt Concrete Hot–Laid	17,765	329	18,094	MT	98.491	1,782,096	
405(5)	Seal Concrete	10		10	M^3	120.808	1,208	
500(1)	Backfill Materials for Pipe Culverts	840	37	877	M^3	8.452	7,412	
500(1)a	RCPC, 610 mm Dia	464	5	469	LM	62.282	29,210	
500(1)b	RCPC, 910 mm Dia	268	24	292	LM	92.060	26,882	
500(4)	Structural Concrete for Pipe Headwalls	135		135	LM	323.933	43,731	
500(5)	Reinforcing Steel for Pipe Headwalls	1,360	138	1,498	M^3	1.175	1,760	
503(3)	Cleaning Culvert Pipe in Place	25		25	KG	2.033	51	
504(5)	Grouted Riprap, Class "A"	40	96	136	LM	80.400	10,968	
504(5)a	Grouted Riprap, Lined Ditch	300	289	589	M^3	100.130	59,030	
505	Stone Masonry	5	12	17	M^3	117.920	2,052	
506	Handlaid Rock Embankment		108	108	M^3	39.333		4,258
509	Gabions	795		337	M^3	105.210	35,416	
509(1)	Filter Fabrics	2,335		1,417	M^2	13.797	19,543	
509(2)	Sandbags		1,406	1,406	EA	0.973		1,368
603(3)	Metal Guardrail (Metal Beam)	225			LM	59.440		
603(3)	Welding of Bolts – Guardrail	225			LM	1.436		
605(4)	Signs and Markers	62		57	EA	36.820	2,099	
606(2)	Crosswalks		3	3	EA	127.140		381
606(3)	Pavement Markings (Reflective)	8,890	3,735	12,625	LM	0.608	7,676	
609(2.2)	Fertilizer	20		20	KM	350.230	7,005	
New	Shoulder Improvement		1	1	LS	24,757.000		24,757
New	Hand Placed Embank (New)		116	116	M^3	20.820		2,405
New	Outfall Excavation (New)		345	345	M^3	13.750		4,737

Subtotal Mod 4 Items	$3,718,933
Subtotal New Items Not Inc. in Mod 4	$37,906
Total Final Cost (Mod 4 + New Items)	$3,756,839
Original Mod 4 Cost	$3,750,827
Variance	$6,012

New Item Not Included in Mod 4

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SOUTH COTABATO/SARANGANI PROVINCE ROAD PROJECT

FINAL QUANTITIES AND COSTS Norala to Kolambog Road Sector 8

Pay Item	Description	Mod 4 Qty	Additional Work/Qty	Final Qty	Unit	Unit Cost ($)	Total Cost ($) Mod 4	Total Cost ($) New Item
030	Contractor Furnished Detailed Road Design	6.790		7	KM	7,986.827	54,207	
031	Bridges Sub-surface Incomp. Rd. Design	1		1	LS	44,000	44,000	
100(5)	Clearing and Grubbing	73,180		73,178	M^2	0.15	10,977	
101(1)	Removal of Structures and Obstractions	1		1	LS	4,301	4,301	
102(1)	Unsuitable Excavation	2,045		2,045	M^3	3.22	6,585	
103(6)	Pipe Culvert Drain Excavation	815		719	M^3	1.607	1,155	
104(1)	Embankment Common Borrow	25,625		24,653	M^3	5	127,653	
104(2)	Embankment Select Material	8,080		7,417	M^3	11.563	85,763	
105(1)	Subgrade Preparation	78,795		78,791	M^2	0.301	23,716	
202	Crushed Aggregate Base Course	11,435		11,186	M^3	14.896	166,627	
301	Prime Coat MC-70	45,325	255	45,580	M^2	1.195	54,468	
302	Bituminous Tack Coat	165		165	M^2	1.522	251	
310	Asphalt Concrete, Hot-Laid	5,295	39	5,334	MT	98.491	525,351	
414(a)	Repair of Lapuz Bridge	1		1	LS	6,094	6,094	
414(b)	Repair of Norala Bridge	1		1	LS	4,531	4,531	
500(1)	Backfill Material for Pipe Culverts	550	46	596	M^3	8.448	5,035	
500(1)a	Reinforced Pipe Culvert 610mm Dia.	387	22	409	LM	62.287	25,475	
500(1)b	Reinforced Pipe Culvert 910mm Dia.	110	4	114	LM	92.05	10,494	
500(4)	Structural Conc. for Pipe Headwall	105	7	112	M^3	275.44	30,849	
500(5)	Reinforcing Steel for Pipe Headwall	1,245	189	1,434	KG	1.222	1,752	
503(3)	Cleaning Culvert Pipe in Place	35		35	LM	1.155	40	
504(5)	Grouted Riprap, Class "A"	10	28	38	M^3	90.4	3,082	
505	Stone Masonry	5		5	M^3	117.927	590	
509(2)	Sandbags	10,000		4,742	EA	0.973	4,614	
602(4)	Concrete Guide Post		6	6	EA	46.334		278
603(3)	Metal Guardrail (Metal Beam)	91		33	LM	61.640	2,022	
603(3)a	Welding of Bolts Guardrails	91		33	LM	1.436	47	
605(4)	Sign and Markers	22		22	KM	36.8	810	
606(2)	Crosswalks		6	6	EA	127.134		763
606(4)	Pavements Marking (Reflective)	2,155	541	2,696	EA	0.608	1,639	
606(2.2)	Fertilizer	5		5	LM	350.236	1,751	
New	Shoulder Improvement		1	1	LS	2,169		2,169
New	Hand Placed Embankment		32	32	M^3	20.820		666

New Item Not Included in Mod 4

Subtotal Mod 4 Items	$1,203,879
Subtotal New Items Not Inc. in Mod 4	$3,876
Total Final Cost (Mod 4 + New Items)	$1,207,755
Original Mod 4 Cost	$1,218,245
Variance	($10,490)

II. Justification for Variation in Final Quantities from the Design Quantities

A. General

The justification or reasons for variations in final quantities from the plan design quantities can be attributed to the many unknowns and variables that can exist between design and actual construction.

The design plan documents which are based upon field data for design, accepted design standards and engineering judgment are subject to revisions/changes when the actual field conditions are encountered during construction.

Some of the more prevalent and common variables that were found are as follows:

1. Soil conditions different from the Soils Investigations Reports.
2. Right-of-Way problems which required horizontal and/or vertical revisions/changes.
3. Design criteria and parameters requiring modifications to reduce quantities and associated costs.
4. Property owners requesting changes/revisions for personal/business requirements.
5. Aggregate source condition changes which required modification of aggregates.
6. Modification of horizontal and vertical alignments to avoid excessive rock excavation and vertical cliff sections.
7. Interpretation differences of the specifications between the Engineer and the Contractor.

B. Typical Construction Items

As there are too many Bid Items to review in detail the many variations a brief discussion of some of the general construction items is as follows:

1. Clearing and Grubbing - Plan quantities included the total ROW areas. In the process of construction it was agreed that it would be more beneficial to not alter the existing roadside conditions if not required for the roadway improvement.

2. Embankment Select Material for Shoulders - Revision of the typical section by replacing the aggregate subbase course with a thinner section of crushed aggregate base (Total Section Structural Number equal) resulted in a reduction of the overall section thickness. This significantly reduced the quantity of embankment select material for construction of the shoulders.

3. Subgrade Preparation - Plan quantities were estimated using the slope embankment limits on fill areas and limits of excavation on cut areas. This was a misinterpretation of the Standard DPWH Specification as the limits of subgrade preparation has a fixed limit width depending on the travelled way width and shoulders. For this project the travelled way width was 6.7 meters plus a variable shoulder width.

4. Aggregate Subbase Course - The thickness of the Aggregate Subbase Course was deleted and a less thick Section of Crushed Aggregate Base Course was substituted (Total Section Structural Number equal).

5. Crushed Aggregate Base Course - The quantity of Crushed Aggregate Base Course increased significantly as this replaced the Aggregate Subbase Course Section.

6. Bituminous Concrete Hot Laid - Variances occurred due to additional pavement placed on all curve widening and on shoulders where drainage and the design considerations were necessary.

7. Drainage and Erosion Works - Considerable changes in the quantities of drainage structures were necessary due to roadway grade raises and additional drainage areas not anticipated during design but found during construction. Also additional drainage facilities were required in response to requests/demands by individual property owners and communities to alleviate historical and known drainage problems. The amount of grouted riprap drainage ditches and grouted riprap slope erosion protection was increased considerably. This was made very noticeable after the first rainy season that the project experienced. With the type of sandy lahar soils prevalent in the majority of the project sections the only positive way to protect the considerable monetary investment of the roadways was to provide adequate drainage facilities and permanent erosion protection.

8. Incidental Works - This items include metal and stone masonry guardrail, guideposts, signs and markers and pavement markings. These items changed considerably from sector to sector. Considerable amounts of guardrail were deleted when the actual constructed subgrade and shoulders areas exceeded the design- widths and were not necessary for traffic safety. Additional pavement markings were increased where new crosswalks and stripping were necessary for pedestrian and traffic safety.

   The variations of the quantities are shown in the final construction costs schedules.

III. AS CONSTRUCTED DRAWINGS

The original mylar as-constructed drawings prepared by MKC will be transmitted to the Manila USAID Office.

IV. FINAL INSPECTION REPORT

Representatives of USAID, DPWH, MM/CSSA, MKC and subcontractors made up the team to conduct all the inspections. All Final Inspections were carried out thoroughly to the satisfaction of all concerned.

Refer to Appendix G for the turnover procedure indicating the steps taken to insure proper inspection and acceptance of work. Included in Appendix G are the final punchlists for all Sections indicating outstanding work to be done after the the Final Punchlist Inspection was completed and the Substantial Completion Certificate was issued to the contractor. Other items included in the final punchlist are exceptions to the contract and schedule of correctional actions, responsible party and date that corrections were done.

Indicated below are the dates of the Final Punchlist Inspection for each completed Road Sector and Section including the dates when all punchlist items were accomplished.

Location	Final Punchlist Inspection	Rectification to Final Punchlist Completed	Completion, Start of Defect Liability Period & Issuance of Completion Certificate	Acceptance, End of Defect Liability Period & Issuance of Maintenance Certificate
Sector 2, Sections 1&2 Buayan to Malapatan	10/29/93	0/15/94	10/29/93	10/29/93
Sector 2, Section 3 Malapatan to Glan	01/28/94	02/15/94	01/28/94	01/28/95
Sector 3, Section 1 Tambler to Siguil	11/12/92	11/08/93	11/12/92	11/12/93
Sector 3, Section 2 Siguil to Maasim	12/11/92	08/21/93	01/30/93	01/30/94
Sector 3, Section 3A Maasim to Lumoyon	02/16/93	08/21/93	03/31/93	03/31/93
Sector 3, Section 3B Lumoyon to Kiamba	03/30/93	09/20/93	03/31/93	03/31/93
Sector 3, Section 4 Kiamba to Maitum	03/30/93	09/20/93	03/31/93	03/31/93
Sector 4, Sections 1 & 2 Polomolok to AgroCenter	12/23/93	01/18/94	01/18/94	01/18/94
Sector 4, Section 3 Dole Fields to Landan	01/18/94	01/28/94	01/18/94	01/18/94
Sector 7 Surallah to T'boli	07/30/93	12/17/93	12/17/93	12/17/93
Sector 8 Norala to Kolambog	07/30/93	12/17/93	12/17/93	12/17/93
Sector 2 Lun Masla Bridge	01/13/94	01/31/94	04/04/94	04/04/95
Sector 3 Saub Bridge	01/28/94	02/04/94	03/31/93	03/31/93

F. SUMMARY OF PROJECT COSTS

I. ENGINEERING

Item	Budget Amount ($)	Amount Expended ($)	Remaining Amount ($)	% of Budget Expended
SALARIES				
Field Staff Professional	452,759	445,428	7,331	98.38%
Field Office Technical (Local)	243,017	300,839	(57,822)	123.79%
Home Office Professional	99,684	85,187	14,497	85.46%
Home Office Non-Professional	18,775	11,303	7,472	60.20%
Subtotal	814,235	842,757	(28,522)	103.50%
OVERHEAD	630,525	585,174	45,351	92.81%
ALLOWANCES	492,673	391,125	101,548	79.39%
TRAVEL & TRANSPORTATION	169,902	89,610	80,292	52.74%
OTHER DIRECT COSTS	360,446	345,538	14,908	95.86%
EQUIPMENT AND MATERIALS	542,323	538,948	3,375	99.38%
Subtotal	3,010,104	2,793,152	216,952	92.79%
FIXED FEE	225,758	218,707	7,051	96.88%
SUBCONTRACTS				
Speedie & Associates	195,803	143,470	52,333	73.27%
Babb (LaMar) & Associates	805,884	885,204	(79,320)	109.84%
Subtotal	1,001,687	1,028,674	(26,987)	102.69%
Total Cost	**4,237,549**	**4,040,533**	**197,016**	**95.35%**

II. CONSTRUCTION

A. FINAL SUMMARY OF PROJECT COST

Road Sector	Original Contract ($)	Revised Contract Mod 4 ($)	Final Cost (Actual) ($)	Variance From Mod 4 ($)
2	5,124,157	13,155,657	13,314,217	158,560
3	22,913,102	22,555,536	22,553,385	(2,151)
4	2,811,454	1,401,955	1,480,589	78,634
7	2,715,484	3,750,827	3,756,839	6,012
8	3,188,190	1,218,245	1,207,755	(10,490)
BRIDGES				
LUN MASLA	0	1,342,513	1,326,670	(15,843)
SAPU MASLA	0	110,443	104,392	(6,051)
SAUB	0	711,011	679,683	(31,328)
Sub-total (Design and Construction)	36,752,387	44,246,187	44,423,530	177,343
Contingency Amount for Variation in Quantities and/or Change orders	3,414,853	(500,000)	0	(500,000)
Economic Price Adjustment	0	(1,649,865)	(1,662,827)	(12,962)
VAT	0	0	(58,000)	(58,000)
Grand Total	**40,167,240**	**43,096,322**	**42,702,703**	**(393,619)**

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B. FINAL SUMMARY OF COST FOR EACH ROAD SECTOR

1.a ROAD SECTOR 2, Base

	Description	Original Contract ($)	Revised Contract Mod 4 ($)	Final Cost (Actual) ($)	Variance From Mod 4 ($)
a.	General	494,187	364,197	374,197	10,000
b.	Earthworks	735,873	1,105,787	1,111,573	5,786
c.	Pavement	3,111,871	2,550,656	2,475,141	(75,515)
d.	Structures	584,121	528,620	511,788	(16,832)
e.	Drainage	176,004	437,817	369,265	(68,554)
f.	Incidental Works	22,101	73,539	63,377	(10,160)
	Sub-total ($)	**5,124,157**	**5,060,616**	**4,905,341**	**(155,275)**

1.b ROAD SECTOR 2, Alternate

a.	General	0	262,175	273,217	11,042
b.	Earthworks	0	3,448,985	3,995,946	546,961
c.	Pavement	0	3,354,445	3,396,757	42,312
d.	Structures	0	182,427	173,005	(9,422)
e.	Drainage	0	627,524	456,273	(171,251)
f.	Incidental Works	0	219,485	113,678	(105,807)
	Sub-total ($)	**0**	**8,095,041**	**8,408,876**	**313,835**
	Total Sector 2	**5,124,157**	**13,155,657**	**13,314,217**	**158,560**

2.a ROAD SECTOR 3, Base (Sections 1, 2 & 3)

	Description	Original Contract ($)	Revised Contract Mod 4 ($)	Final Cost (Actual) ($)	Variance From Mod 4 ($)
a.	General	7,947,776	7,946,938	7,946,938	0
b.	Earthworks	1,981,515	1,892,463	1,887,493	(4,970)
c.	Pavement	11,871,811	8,677,462	8,677,391	(71)
d.	Structures	453,105	87,365	87,445	80
e.	Drainage	575,656	387,674	391,060	3,386
f.	Incidental Works	83,239	251,828	256,805	4,977
g.	Special Items	0	60,452	60,452	0
	Sub-Total ($)	**22,913,102**	**19,304,182**	**19,307,584**	**3,402**

A substantial amount of $ 3,605,518 was saved from the original contract to warrant the design and construction of Section 4 - Road Sector 3, a 15.35 km stretch from Kiamba to Maitum (alternate) including the construction of Saub Bridge. The cost of Section 4 is $ 3,245,801 while Saub bridge is $ 679,683 for a total of $3,925,484. The additional $ 319,966 was appropriated from the contingency fund of the project as ammended in Modification No 3 and 4.

2.b ROAD SECTOR 3, Alternate (Section 4)

a.	General	0	124,049	124,033	(16)
b.	Earthwork	0	847,030	840,366	(6,664)
c.	Pavement	0	2,044,016	2,044,016	0
d.	Structures	0	66,318	66,203	(115)
e.	Drainage	0	99,994	99,976	(18)
f.	Incidental works	0	69,947	71,207	1,260
	Sub-Total ($)	**0**	**3,251,354**	**3,245,801**	**(5,553)**
	Total Road Sector 3	**22,913,102**	**22,555,536**	**22,553,385**	**(2,152)**

3. **ROAD SECTOR 4, Sections 1, 2 & 3**

	Description	Original Contract ($)	Revised Contract Mod 4 ($)	Final Cost (Actual) ($)	Variance From Mod 4 ($)
a.	General	80,401	64,497	64,458	(39)
b.	Earthwork	514,862	280,086	276,612	(3,474)
c.	Pavement	1,712,473	710,261	690,441	(19,820)
d.	Structures	423,198	225,520	231,252	5,732
e.	Drainage	74,947	93,001	195,531	102,530
f.	Incidental Works	5,573	28,590	22,295	(6,295)
	Total ($)	**2,811,454**	**1,401,955**	**1,480,589**	**78,634**

4. **ROAD SECTOR 7**

	Description	Original Contract ($)	Revised Contract Mod 4 ($)	Final Cost (Actual) ($)	Variance From Mod 4 ($)
a.	General	168,840	175,960	175,755	(205)
b.	Earthwork	579,952	829,570	792,550	(37,020)
c.	Pavement	1,922,317	2,459,953	2,496,585	36,632
d.	Structures	0	0	0	0
e.	Drainage	34,840	256,964	242,889	(14,075)
f.	Incidental Works	9,535	28,380	17,161	(11,219)
g.	Additional Works	0	0	31,899	31,899
	Total ($)	**2,715,484**	**3,750,827**	**3,756,839**	**(6,012)**

		Original Contract ($)	Revised Contract Mod 4($)	Final Cost (Actual) ($)	Variance From Mod 4 ($)
5.	**ROAD SECTOR 8**				
a.	General	184,919	98,231	98,207	(24)
b.	Earthwork	949,894	273,005	260,150	(12,855)
c.	Pavement	1,826,234	746,260	746,697	437
d.	Structures	55,895	10,625	10,625	0
e.	Drainage	165,131	80,486	81,931	1,445
f.	Incidental Works	6,117	9,638	7,310	(2,328)
g.	Additional works	0	0	2,835	2,835
	Total ($)	**3,188,190**	**1,218,245**	**1,207,755**	**(10,490)**
6.	**LUN MASLA BRIDGE**				
a.	Design	0	43,100	43,100	0
b.	Construction	0	1,299,413	1,283,570	(15,843)
	Total ($)	**0**	**1,342,513**	**1,326,670**	**(15,843)**
7.	**SAPU MASLA BRIDGE**				
a.	**Construction**	**0**	**110,443**	**104,392**	**(6,051)**
8.	**SAUB BRIDGE**				
a.	Design	0	25,000	25,000	0
b.	Approaches	0	217,957	185,391	(32,566)
c.	Structures	0	468,054	469,292	1,238
	Total ($)	**0**	**711,011**	**679,683**	**(31,328)**

G. RECOMMENDED MAINTENANCE PROGRAM

I. Types of Maintenance Recommended

a. Maintenance of Shoulders - Replacing of shoulder materials which has deteriorated due to wear or force major, shaping and compacting to its original position.

b. Vegetation Control - Trimming the vegetative growth in such way that it will not hamper the traffic or the line of sight of the driver.

c. Maintenance of Drainage - Repairing or replacing of the broken drainage system of the roads.

d. Maintenance of Pavement - Repairing of the damaged portions of the pavement.

e. Maintenance of Road Signs - Repairing of the damaged road signs and pavement markings.

II. Equipment

Equipment with drivers and operators composing of at least 5 Dumptrucks

1 Pay Loader
1 Road Grader
1 Road Roller
1 Water Truck

III. Labor

A group of at least

1 Foreman
1 Mason
8 Laborers

IV. Timing

The approximate time needed is indicated on the table.

1. Sector 2	GSC to Glan	October - December
2. Sector 3	GSC to Maitum	July - September
3. Sector 4	Polomolok to Landan	May - June
4. Sector 7	Surallah to T'boli	January - February
5. Sector 8	Kolambog to Norala	March - April

V. Maintenance Cost per Kilometer per Year

The cost would differ depending upon the type of soil in the locality.

a. Sector 2 and 3 $ 850 per kilometer.

b. Sector 4 $ 1,120 per kilometer.

c. Sector 7 and 8 $ 1,200 per kilometer.

TYPES RECOMMENDED	EQUIPMENT	LABOR	TIMING	COST/KM/YR
SECTOR 2 SECTOR 3 SHOULDER DRAINAGE MAIN	5 DUMPTRUCKS 1 PAY LOADER 1 GRADER 1 ROAD ROLLER 1 WATER TRUCK	1 FOREMAN 8 LABORERS 1 MASON	JUL-DEC	$ 850
SECTOR 4 -DO-	-DO-	-DO-	MAY-JUN	$ 1,100
SECTOR 7 -DO-	-DO-	-DO-	JAN-FEB	$ 1,200
SECTOR 8 -DO-	-DO-	-DO-	MAR-APR	$ 1,200

APPENDIX

INVENTORY
TRANSFER OF VEHICLES & EQUIPMENT

I. NON–EXPENDABLE PROPERTY

A. MOTOR VEHICLES

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	FORD EXPLORER PTM 257	150	16,037.00	MM/STAFF – GSC
1	FORD EXPLORER PTM 857	152	16,037.00	MM/STAFF – GSC
1	FORD EXPLORER PTM 957	308	16,037.00	MM/STAFF – GSC
1	FORD EXPLORER TAC 937	155	16,037.00	MM/STAFF – GSC
1	FORD EXPLORER TAC 977	151	16,037.00	MM/STAFF – GSC
1	FORD RANGER PICKUP 2X4 PTM 307	157	12,366.00	MM/STAFF – GSC
1	FORD RANGER PICKUP 2X4 PTM 397	158	12,366.00	MM/STAFF – GSC
1	FORD RANGER PICKUP 4X4 PTM 377	160	14,688.00	MM/STAFF – GSC
1	FORD RANGER PICKUP 4X4 PTM 497	159	14,688.00	MM/STAFF – GSC
1	JEEP CHEROKEE PPL 726	161	12,000.00	M. ANCLA – GSC

B. OFFICE FURNITURE/FURNISHINGS

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	AIR CONDITIONER CARRIER	11	658.06	STV STAFF–GSC
1	AIR CONDITIONER CARRIER	08	658.06	DESIGN–STV–GSC
1	AIR CONDITIONER CARRIER	07	658.06	DESIGN–STV–GSC
1	AIR CONDITIONER CARRIER	14	658.06	STV STAFF–GSC
1	AIR CONDITIONER CARRIER	10	658.06	STV STAFF–GSC
1	AIR CONDITIONER CARRIER	06	658.06	DESIGN–STV–GSC
1	AIR CONDITIONER CARRIER	20	717.38	ROOM D2–GSC
1	AIR CONDITIONER CARRIER	18	717.38	ROOM C1–GSC
1	AIR CONDITIONER CARRIER	19	717.38	ROOM D1–GSC
1	AIR CONDITIONER CARRIER	16	717.38	J. GARIN–GSC
1	AIR CONDITIONER CARRIER	24	717.38	ROOM C3–GSC
1	AIR CONDITIONER CARRIER	17	717.38	ROOM 2B–GSC
1	AIR CONDITIONER CARRIER	13	852.27	ACCTG–STV–GSC
1	AIR CONDITIONER CARRIER	12	852.27	STV STAFF–GSC
1	AIR CONDITIONER CARRIER	15	852.27	STV STAFF–GSC
1	AIR CONDITIONER CARRIER	23	875.99	F. SIELBACH–GSC
1	AIR CONDITIONER CARRIER	22	875.99	CONFERENCE ROOM–GSC
1	AIR CONDITIONER CARRIER	21	875.99	J. LORENZO–GSC
1	AIR COND'R KOPPEL FLOOR MOUNTED	27	1,442.68	M. ANCLA–GSC
1	AIR CONDITIONER KOPPEL PACKAGE TYPE	05	2,238.24	DESIGN–STV–GSC
1	AIR CONDITIONER KOPPEL PACKAGE TYPE	03	2,238.24	ADMIN–STV–GSC
1	AIR CONDITIONER KOPPEL PACKAGE TYPE	02	2,238.24	MM–GSC
1	AIR CONDITIONER KOPPEL PACKAGE TYPE	01	2,238.24	RECEPTION MM–GSC
1	AIR CONDITIONER KOPPEL PACKAGE TYPE	04	2,259.50	RECEPTION STV–GSC
1	AIR CONDITIONER KOPPEL PACKAGE TYPE	99	3,158.51	LAB MM–GSC
1	REFRIGERATOR	223	700.00	ADMIN–MM–GSC
1	FAX MACHINE SHARP	647	954.12	JEANY DEL GARIN

BEST AVAILABLE DOCUMENT

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C. LIVING QUARTERS FURNITURE/FURNISHINGS

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	AIR CONDITIONER CARRIER	206	648.55	LWL-COMP-GSC
1	AIR CONDITIONER CARRIER	207	648.55	LWL-COMP-GSC
1	AIR CONDITIONER CARRIER	292	717.38	COMPOUND-GSC
1	AIR CONDITIONER CARRIER	215	717.38	COMPOUND-GSC
1	AIR CONDITIONER CARRIER	209	648.55	CWK-COMP-GSC
1	AIR CONDITIONER CARRIER	211	648.55	CWK-COMP-GSC
1	AIR CONDITIONER CARRIER	208	648.55	LWL-COMP-GSC
1	AIR CONDITIONER CARRIER	212	648.55	FAS-COMP-GSC
1	AIR CONDITIONER CARRIER	213	648.55	FAS-COMP-GSC
1	AIR CONDITIONER CARRIER	214	648.55	FAS-COMP-GSC
1	AIR CONDITIONER CARRIER	210	648.55	CWK-COMP-GSC
1	GENERATOR YANMAR 10KW	222	3,300.00	CWK-COMP-GSC
1	GENERATOR YANMAR 10KW	220	3,300.00	FAS-COMP-GSC
1	GENERATOR YANMAR 10KW	221	3,300.00	LWL-COMP-GSC
1	DINING ROOM SET	230	700.00	LWL-COMP-GSC
1	DINING ROOM SET	231	1,200.00	CWK-COMP-GSC
1	LIVING ROOM SET	232	600.00	LWL-COMP-GSC
1	LIVING ROOM SET	234	600.00	FAS-COMP-GSC
1	LIVING ROOM SET	233	600.00	CWK-COMP-GSC
1	REFRIGERATOR	224	700.00	LWL-COMP-GSC
1	REFRIGERATOR	225	700.00	CWK-COMP-GSC
1	REFRIGERATOR	226	700.00	FAS-COMP-GSC
1	REFRIGERATOR	100	500.00	COMPOUND-GSC
1	STOVE	227	550.00	LWL-COMP-GSC
1	STOVE	228	550.00	CWK-COMP-GSC
1	STOVE	229	550.00	FAS-COMP-GSC

D. OTHER NON-EXPENDABLE PROPERTY

1. COMPUTER AND COMPUTER SOFTWARE

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	ADMATE A-286	293		V. CABRERA-BABB-MNL
1	ALRI COM CPU	47	1,342.50	LWL-MM-GSC
1	ALRI COM CPU	302	1,342.50	P. MIRREN-BABB-MNL
1	ALRI COM CPU	297	1,342.50	I. CORDERO-BABB-MNL
1	ALRI COM CPU	44	1,342.50	F. AQUINO-MM-GSC
1	ALRI COM CPU	37	1,342.50	G. LUGTU-MM-GSC
1	ALRI COM CPU	42	1,342.50	M. FLORMATA-MM-GSC
1	AT 286/20 COMP WITH COLOR MONITOR	59	1,524.24	L. APOSTOL-USAID-GSC
1	ALRI KEYBOARD (PRICE INC. IN CPU)	40	N/A	G. LUGTU-MM-GSC
1	ALRI KEYBOARD (PRICE INC. IN CPU)	26	N/A	L. APOSTOL-USAID-GSC
1	ALRI KEYBOARD (PRICE INC. IN CPU)	46	N/A	F. AQUINO-MM-GSC
1	ALRI KEYBOARD (PRICE INC. IN CPU)	301	N/A	P. MIRREN-BABB-MNL
1	ALRI KEYBOARD (PRICE INC. IN CPU)	49	N/A	L. LARSEN-MM-GSC
1	ALRI KEYBOARD (PRICE INC. IN CPU)	290	N/A	V. CABRERA-BABB-MNL
1	AST SVGA MONITOR (PRICE INC. IN CPU)	289	N/A	V. CABRERA-BABB-MNL

BEST AVAILABLE DOCUMENT

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	AST SVGA MONITOR (PRICE INC. IN CPU)	33	N/A	G. LUGTU-MM-GSC
1	AST SVGA MONITOR (PRICE INC. IN CPU)	34	N/A	M. FLORMATA-MM-GSC
1	AST SVGA MONITOR (PRICE INC. IN CPU)	35	N/A	F. AQUINO-MM-GSC
1	AST SVGA MONITOR (PRICE INC. IN CPU)	303	N/A	P. MIRREN-BABB-MNL
1	AST SVGA MONITOR (PRICE INC. IN CPU)	32	N/A	L. LARSEN-MM-GSC
1	TVM SUPER SYNIC IA COLORED MONITOR	296	1,240.00	I. CORDERO-BABB-MNL
1	EPSON FX 1050 PRINTER	38	673.00	G. LUGTU-MM-GSC
1	EPSON FX 1050 PRINTER	54	673.00	J. LORENZO-MM-GSC
1	EPSON FX 1050 PRINTER	299	627.00	I. CORDERO-BABB-MNL
1	HP LASER JET III PRINTER	39	1,595.00	G. LUGTU-MM-GSC
1	HP LASER JET III PRINTER	304	1,595.00	P. MIRREN-BABB-GSC
1	SUPER PROJECT PLUS	1247	526.50	F. SIELBACH-MM-GSC
1	STAAD-III ISDS STRUCTURAL	249	925.00	J. LORENZO-MM-GSC
1	ROAD CALC, VER. 6, 2ND COPY	291	1,247.50	L. LARSEN-MM-GSC
1	ROAD CALC, VER. 6	186	2,495.00	J. LORENZO-MM-GSC
1	PRIMAVERA PROJECT PLANNER	238	3,600.00	J. LORENZO-MM-GSC

2. SOILS LABORATORY EQUIPMENT

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	AUTO MECH COMPACTOR, SINGLE SPECIMEN	71	2,065.00	V. FERNANDO-LAB-GSC
1	BENCH OVEN RANGE, 350 F	72	786.00	V. FERNANDO-LAB-GSC
1	BENCH OVEN RANGE, 350 F	73	786.00	V. FERNANDO-LAB-GSC
1	BENCH OVEN RANGE, 350 F	74	786.00	V. FERNANDO-LAB-GSC
1	BENKELMAN BEAM APPARATUS, HT350	75	1,458.00	V. FERNANDO-LAB-GSC
1	CBR HYD LOADING PRESS	76	650.00	V. FERNANDO-LAB-GSC
1	DIA BIT CORE BAR'L, 4 1/4" OD,ASPT BND	78	650.00	V. FERNANDO-LAB-GSC
1	DIA BIT CORE BAR'L, 6 1/4" OD,ASPT BND	77	650.00	V. FERNANDO-LAB-GSC
1	DIGITAL COMPRESSION TESTER, CT-6200-2	79	16,200.00	V. FERNANDO-LAB-GSC
1	DIGITAL SCALES PAK SERIES, HS-PAK 150	80	685.00	V. FERNANDO-LAB-GSC
1	ELECTRIC CORE DRILL, TWO SPEED	81	2,800.00	V. FERNANDO-LAB-GSC
1	HUMBOLDT MOIST DENSITY GAUGE, 5001 P122	82	4,700.00	V. FERNANDO-LAB-GSC
1	HUMBOLDT MOIST DENSITY GAUGE, 5001 P122	83	4,700.00	V. FERNANDO-LAB-GSC
1	LOS ANGELES ABRASION MACHINE	84	4,000.00	V. FERNANDO-LAB-GSC
1	MARSHALL TESTING MACHINE	85	2,200.00	V. FERNANDO-LAB-GSC
1	MELTING POT, 26.5 LITER	86	760.00	V. FERNANDO-LAB-GSC
1	PRECISION INDUST'L BALANCE, AD-20K, EP	87	1,835.00	V. FERNANDO-LAB-GSC
1	PRECISION INDUST'L BALANCE, AD-20K, EP	88	1,835.00	V. FERNANDO-LAB-GSC
1	PRESSURE METER, SUPER PUMP	89	659.00	V. FERNANDO-LAB-GSC
1	PRESSURE METER, SUPER PUMP	90	659.00	V. FERNANDO-LAB-GSC
1	SAND EQUI SHAKER	91	1,040.00	V. FERNANDO-LAB-GSC
1	SIEVE SHAKER, 12"	92	530.00	V. FERNANDO-LAB-GSC
1	SIEVE SHAKER, 12"	93	530.00	V. FERNANDO-LAB-GSC
1	SPEEDY MOISTURE TESTER	94	950.00	V. FERNANDO-LAB-GSC
1	SPEEDY MOISTURE TESTER	95	950.00	V. FERNANDO-LAB-GSC
1	VACUUM EXTRACTOR, HM-8 SS	96	941.00	V. FERNANDO-LAB-GSC
1	VACUUM PUMP, H-1764, 5F	97	850.00	V. FERNANDO-LAB-GSC

BEST AVAILABLE DOCUMENT

3. SURVEY EQUIPMENT

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	TOPCON ETL-1 ELECTRONIC THEODOLITE	132	4,900.00	V. AYALA-MM-GSC
1	TOPCON GTS-4 AUTO TOTAL STATION	134	10,714.00	V. AYALA-MM-GSC
1	TOPCON DM-53 TOP MOUNT EDM	133	4,900.00	V. AYALA-MM-GSC
1	TOPCON FC-4 DATA COLLECTOR	162	2,704.00	V. AYALA-MM-GSC

4. MISCELLANEOUS

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	KUBOTA 3.5 KW	121	1,090.91	V. FERNANDO-LAB-GSC
1	YANMAR 10 KW	306	3,181.82	M. ANCLA-USAID-GSC
1	ONAN 80 DGDA 80 KW	69	14,970.00	F. PABELIC-MM-GSC
1	UPS 1.15 KVA	28	1,115.31	M. FLORMATA-MM-GSC
1	UPS 1.15 KVA	30	1,115.31	J. GARIN-MM-GSC
1	UPS 1.15 KVA	237	1,115.31	P. MIRREN-BABB-MNL
1	UPS 1.15 KVA	236	1,115.31	V. CABRERA-BABB-MNL
1	UPS MINUTEMAN 500	300	542.00	I. CORDERO-BABB-MNL
1	UPS 1.15 KVA	29	1,115.31	G. LUGTU-MM-GSC
1	UPS 1.15 KVA	31	1,115.31	J. LORENZO-MM-GSC
1	BIND-O-MATIC 6000	68	916.96	S. PASTRANA-MM-GSC
1	HITACHI CAMCORDER	307	850.00	L. LARSEN-MM-GSC
1	BLUE PRINT MACHINE	66	2,760.98	S. PASTRANA-MM-GSC
1	AUTO HF-SSB TUNER MICOM XL RDO, F2260	179	661.50	F. PABELIC-MM-GSC
1	AUTO HF-SSB TUNER MICOM XL RDO, F2260	175	661.50	F. PABELIC-MM-GSC
1	AUTO HF-SSB TUNER MICOM XL RDO, F2260	180	661.50	F. PABELIC-MM-GSC
1	AUTO HF-SSB TUNER MICOM XL RDO, F2260	174	661.50	F. PABELIC-MM-GSC
1	AUTO HF-SSB TUNER MICOM XL RDO, F2260	177	661.50	F. PABELIC-MM-GSC
1	AUTO HF-SSB TUNER MICOM XL RDO, F2260	178	661.50	F. PABELIC-MM-GSC
1	AUTO HF-SSB TUNER MICOM XL RDO, F2260	176	661.50	F. PABELIC-MM-GSC
1	ICOM RADIO 026 MODEL	184	11,000.00	L. LARSEN-MM-GSC
1	ICOM RADIO 026 MODEL	185	11,000.00	L. LARSEN-MM-GSC
1	ICOM RADIO H16 MODEL	163	18,000.00	L. LARSEN-MM-GSC
1	ICOM RADIO H16 MODEL	315	18,000.00	L. LARSEN-MM-GSC
1	ICOM RADIO 026 MODEL	183	11,000.00	L. LARSEN-MM-GSC
1	ICOM RADIO H16 MODEL	164	18,000.00	L. LARSEN-MM-GSC
1	ICOM RADIO H16 MODEL	181	18,000.00	L. LARSEN-MM-GSC
1	ICOM RADIO 026 MODEL	182	11,000.00	L. LARSEN-MM-GSC
1	MICOM XL	171	5,795.50	F. PABELIC-MM-GSC
1	MICOM XL	167	5,795.50	F. PABELIC-MM-GSC
1	MICOM XL	166	5,795.50	F. PABELIC-MM-GSC
1	MICOM XL	168	5,795.50	F. PABELIC-MM-GSC
1	MICOM XL	169	5,795.50	F. PABELIC-MM-GSC
1	MICOM XL	165	5,795.50	F. PABELIC-MM-GSC
1	MICOM XL	170	5,795.50	F. PABELIC-MM-GSC
1	MOTOROLA MOBILE RADIO (BASE)	172	6,896.10	J. GARIN-MM-GSC
1	MOBILE RDO POW'R SUPPLY (PRICE INC. IN RDO)	173	NA	J. GARIN-MM-GSC
1	PANASONIC TYPEWRITER	656	602.73	ACCOUNTING

BEST AVAILABLE DOCUMENT

II. EXPENDABLE PROPERTY

A. MOTOR VEHICLE SPARE PARTS AND TOOLS

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	AIR COMPRESSOR	1245	418.18	MECHANIC
1	AIR GAUGE	1244	16.00	MECHANIC
1	AIR HOSE 30 FEET (20 FEET LEFT)		6.55	MECHANIC
1	BALL HAMMER PROTO	1378	20.04	MECHANIC
1	BATTERY CHARGER	1243	301.09	MECHANIC
1	BENCH GRINDER	1375	123.64	MECHANIC
1	BOXED WRENCH PROTO 1 SET (INC)	1238	218.18	MECHANIC
1	CROCODILE JACK 1 UNIT 2 1/2 TON	1377	65.45	MECHANIC
1	DRILL BIT (INCOMPLETE)	1241	90.28	MECHANIC
1	FEELER GAUGE PROTO 1 SET	1373	13.27	MECHANIC
1	KINKI HD SPRAY GUN	1372	152.73	MECHANIC
1	OILER 500 G	1240	2.91	MECHANIC
1	OPEN WRENCH PROTO 9 PCS (INCOMPLETE)	1374	136.91	MECHANIC
1	PETERSON VICE GRIP 10WR	1371	11.13	MECHANIC
1	SOCKET WRENCH STANLEY 1 SET	1370	98.40	MECHANIC
1	TABLE VICE	1237	58.55	MECHANIC
1	TOOL BOX	1376	10.04	MECHANIC
1	TORQUE WRENCH PROTO	1242	218.18	MECHANIC
1	WELLER SOLDERING GUN	1239	77.02	MECHANIC
1	WRENCH CRESCENT AC-10	1373	20.65	MECHANIC
1	WRENCH CRESCENT AC-15	1369	48.33	MECHANIC
1	AUTO STAVOR AVR	294	254.55	V. CABRERA-BABB-MNL
24	AIR FILTER		9.95	MECHANIC
32	FUEL FILTER		8.60	MECHANIC
52	OIL FILTER		5.50	MECHANIC
4	STOP TURN BULB		3.47	MECHANIC
4	BACKUP BULB		0.69	MECHANIC
4	DOME BULB		1.55	MECHANIC
1	DEADLAMP BULB		14.90	MECHANIC
1	FUEL PUMP ASSEMBLY		100.98	MECHANIC
1	FUEL PUMP ASSEMBLY		100.98	MECHANIC
10	WIPER BLADE		9.44	MECHANIC
2	BELT TENSIONER		43.24	MECHANIC
2	WIPER ARM		14.16	MECHANIC
1	HYD CLUTCH HOSE		32.50	MECHANIC
2	CLUTCH MSTR CYL		50.87	MECHANIC
1	CLUTCH RELEASE BRG		30.33	MECHANIC
1	CLUTCH DISC		54.66	MECHANIC
1	CLUTCH PLATE		78.84	MECHANIC
2	UPPER HOSE		22.59	MECHANIC
2	LOWER HOSE		15.91	MECHANIC
2	HTR INLET HOSE		9.56	MECHANIC
2	HTR INLET HOSE		8.27	MECHANIC
96	SPARK PLUG		2.59	MECHANIC
30	INJECTOR CLEANER		8.31	MECHANIC

BEST AVAILABLE DOCUMENT

UNIT	ITEM / DESCRIPTION	VALUE ($)	USER/LOCATION
1	DISTRIBUTOR MODE	78.84	MECHANIC
1	DISTRIBUTOR COIL	41.21	MECHANIC
1	PLUG WIRE SET	31.03	MECHANIC
1	WIPER MOTOR	76.71	MECHANIC
6	BRAKE PADS	33.81	MECHANIC
2	REAR BRAKE SHOES	43.96	MECHANIC
2	REAR BRAKE SHOES	43.03	MECHANIC
2	BLOWER MOTOR	67.93	MECHANIC
1	MUFFLER ASSEMBLY	113.79	MECHANIC
1	MUFFLER ASSEMBLY	127.06	MECHANIC
9	GAS CAP	0.00	MECHANIC
1	CLUTCH CYL SLAVE	50.87	MECHANIC
1	DOOR HANDLE	0.00	MECHANIC
1	SLAVE CYL	76.96	MECHANIC
2	SHOCK	80.75	MECHANIC
2	SCHOCK	74.93	MECHANIC
1	COVER ASSEMBLY	27.53	MECHANIC
4	TIRE	427.63	MECHANIC
2	FRONT SHOCK	37.06	MECHANIC
1	REAR SHOCK	37.06	MECHANIC
2	FRONT SHOCK	0.00	MECHANIC
1	FRONT SHOCK	37.06	MECHANIC
1	REAR SHOCK	3.87	MECHANIC
2	FRT INNER RACE	7.57	MECHANIC
2	FRT INNER BRG	4.17	MECHANIC
2	FRT OUTER RACE	6.00	MECHANIC
2	FRT OUTER BRG	7.57	MECHANIC
2	FRT INNER RACE	14.16	MECHANIC
2	FRT INNER BRG	7.57	MECHANIC
2	FRT OUTER RACE	14.57	MECHANIC
6	FRT OUTER BRG	6.78	MECHANIC
4	SPINDLE BEARING	5.16	MECHANIC
4	HUB GREASE SEAL	3.56	MECHANIC
2	REAR WHL BEARING	20.33	MECHANIC
2	REAR GREASE SEAL	2.06	MECHANIC
6	40A FUSER	1.51	MECHANIC
6	60 A FUSE	1.8	MECHANIC
2	30 A FUSE	0.94	MECHANIC
2	15 A FUSE	0.92	MECHANIC
2	10 A FUSE	0.92	MECHANIC
4	20 A FUSE	0.92	MECHANIC
6	4.5 A CIR BREAKER	3.02	MECHANIC
2	6 A CIR BREAKER	5.85	MECHANIC
2	30 A CIR BREAKER	4.91	MECHANIC
2	20 A CIR BREAKER	5.74	MECHANIC
1	TURN SIGNAL FLASH	3.24	MECHANIC
2	EMERGENCY FLASH	3.73	MECHANIC
4	BELT	20.88	MECHANIC

BEST AVAILABLE DOCUMENT

UNIT	ITEM / DESCRIPTION	VALUE ($)	USER/LOCATION
2	THROTTLE SENSO	27.54	MECHANIC
1	REPAIR MANUAL	91	MECHANIC
1	ELECTRICAL MANUAL	24	MECHANIC
1	EMMISIONS MANUAL	76	MECHANIC
1	PARTS MANUAL	40	MECHANIC
1	LH LAMP ASSY	25.95	MECHANIC
1	RH HEAD LAMP	25.1	MECHANIC
1	WHEEL ASSY	77.1	MECHANIC
2	STARTER DRIVE ASSY	25.72	MECHANIC
2	MOUNT	31.65	MECHANIC
3	ARMATURE ASSY	65.28	MECHANIC
30	INJECTOR CLEANER	10.77	MECHANIC
3	STARTER LEVEL ASSY	7.98	MECHANIC
6	BRUSH HOLDER -	14.6	MECHANIC
1	ALTERNATOR ASSY	186.55	MECHANIC
2	MODULE	128.5	MECHANIC
3	STR PLATE	5.68	MECHANIC
2	STR PULLEY	18.09	MECHANIC
2	HUB AND ROTOR	76.44	MECHANIC
2	STR REGULATOR	65.9	MECHANIC

A. OFFICE FURNITURE AND FURNISHINGS

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	CABINET WOOD 4 DRAWERS	604	130.32	FAS-C4-GSC
1	CABINET WOOD 4 DRAWERS	605	130.32	ROOM B2-GSC
1	CABINET WOOD 4 DRAWERS	660	130.32	USAID-C3
1	CABINET WOOD 4 DRAWERS	660	130.32	ROOM C2-GSC
1	CABINET WOOD ADJ SHELVES	658	151.53	USAID-C3
1	CABINET WOOD ADJ SHELVES	659	151.53	USAID-C3
1	CABINET WOOD 4 DRAWERS	608	130.32	CLERICAL AREA
1	CABINET WOOD ADJ SHELVES	607	151.53	WADELL-B2
1	CABINET WOOD ADJ SHELVES	603	151.53	USAID-C2
1	CABINET WOOD ADJ SHELVES	612	151.53	DESIGN-MM-GSC
1	CABINET WOOD ADJ SHELVES	613	151.53	DESIGN-MM-GSC
1	CABINET WOOD ADJ SHELVES	614	151.53	DESIGN-MM-GSC
1	CABINET WOOD ADJ SHELVES	615	151.53	ROOM B1-GSC
1	CABINET WOOD ADJ SHELVES	616	151.53	LWL-C1-GSC
1	CABINET WOOD, ADJ SHELVES	617	151.53	ACCOUNTING-GSC
1	CABINET WOOD, ADJ SHELVES	618	151.53	CLERICAL AREA-GSC
1	CABINET WOOD, ADJ SHELVES	619	151.53	CLERICAL AREA-GSC
1	CABINET WOOD, ADJ SHELVES	620	151.53	CLERICAL AREA-GSC
1	CABINET WOOD, ADJ SHELVES	621	151.53	CLERICAL AREA-GSC
1	CABINET WOOD, ADJ SHELVES	622	151.53	CLERICAL AREA-GSC
1	CABINET WOOD, ADJ SHELVES	623	151.53	CLERICAL AREA-GSC
1	COMPUTER TABLE	626	152.00	CLERICAL AREA
1	COMPUTER TABLE	627	152.00	OPERATOR-B1
1	COMPUTER TABLE	628	152.00	WADELL-B2
1	CONFERENCE TABLE	629	200.00	CONFERENCE ROOM

BEST AVAILABLE DOCUMENT

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	DRAFTING TABLE W/ ACCESSORIES	633	974.73	DESIGN-C6
1	DRAFTING TABLE	634	152.00	OPERATOR-B1
1	DRAFTING TABLE	635	152.00	OPERATOR-B1
1	EXECUTIVE CHAIR	636	178.18	LWL-C1
1	EXECUTIVE CHAIR	637	178.18	OPERATOR-B1
1	EXECUTIVE CHAIR	638	178.18	USAID-C3
1	EXECUTIVE CHAIR	639	178.18	ACCOUNTING
1	EXECUTIVE CHAIR	640	178.18	FAS-C4
1	EXECUTIVE TABLE	641	226.61	WADELL-B2
1	EXECUTIVE TABLE	642	226.61	LWL-C1
1	EXECUTIVE TABLE	643	226.61	USAID-C3
1	EXECUTIVE TABLE	644	226.61	FAS-C4
1	EXECUTIVE TABLE	645	226.61	MM-4TH FLR, D4
1	FAX TABLE	648	152.00	OPERATOR-B1
1	HIGH CHAIR HIGH WITH CASTER	662	134.55	VIRGILIO FERNANDO
1	HIGH CHAIR HIGH WITH CASTER	663	134.55	VIRGILIO FERNANDO
1	HIGH CHAIR HIGH WITH CASTER	664	134.55	VIRGILIO FERNANDO
1	HIGH CHAIR HIGH WITH CASTER	665	134.55	VIRGILIO FERNANDO
1	HIGH CHAIR HIGH WITH CASTER	666	134.55	VIRGILIO FERNANDO
1	PLAN RACK	693	35.84	MM-4TH FLR, D3
1	PLAN RACK	670	35.84	CLERICAL AREA
1	PLAN RACK	671	35.84	CLERICAL AREA
1	PLAN RACK	672	35.84	OPERATOR-B1
1	PLAN RACK	673	35.84	MM-4TH FLR, D3
1	PLAN RACK	674	35.84	DESIGN-C6
1	PLAN RACK	675	35.84	USAID-C2
1	PLAN RACK	676	35.84	USAID-C2
1	PLAN RACK	677	35.84	WADELL-B2
1	PLAN RACK	678	35.84	FRED SIELBACH
1	PLAN RACK	679	35.84	FRED SIELBACH
1	PLAN RACK	680	35.84	FRED SIELBACH
1	ROUND TABLE	681	35.84	CLERICAL AREA
1	SECRETARY CHAIR	719	101.82	ROOM C2
1	SECRETARY CHAIR	759	101.82	OPERATOR-B1
1	SECRETARY CHAIR	760	101.82	OPERATOR-B1
1	SECRETARY CHAIR	686	101.82	ACCOUNTING
1	SECRETARY CHAIR	687	101.82	ACCOUNTING
1	SECRETARY CHAIR	746	101.82	DESIGN-C6
1	SECRETARY CHAIR	747	101.82	DESIGN-C6
1	SECRETARY CHAIR	748	101.82	DESIGN-C6
1	SECRETARY CHAIR	749	101.82	DESIGN-C6
1	SECRETARY CHAIR	698	101.82	VIRGILIO FERNANDO
1	SECRETARY CHAIR	699	101.82	VIRGILIO FERNANDO
1	SECRETARY CHAIR	721	101.82	CLERICAL AREA
1	SECRETARY CHAIR	730	101.82	CLERICAL AREA
1	SECRETARY CHAIR	731	101.82	CLERICAL AREA
1	SECRETARY CHAIR	732	101.82	CLERICAL AREA
1	SECRETARY CHAIR	733	101.82	CLERICAL AREA

BEST AVAILABLE DOCUMENT

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	SECRETARY CHAIR	682	101.82	WADELL-B2
1	SECRETARY TABLE 30 X 60	741	152.20	ROOM C3
1	SECRETARY TABLE 30 X 60	742	152.20	ROOM C3
1	SECRETARY TABLE 30 X 60	743	152.20	ROOM C3
1	SECRETARY TABLE 30 X 60	744	152.20	ROOM C3
1	SECRETARY TABLE 30 X 60	695	152.20	MM-4TH FLR, D3
1	SECRETARY TABLE 30 X 60	696	152.20	MM-4TH FLR, D3
1	SECRETARY TABLE 30 X 60	765	152.20	OPERATOR-B1
1	SECRETARY TABLE 30 X 60	766	152.20	OPERATOR-B1
1	SECRETARY TABLE 30 X 60	767	152.20	OPERATOR-B1
1	SECRETARY TABLE 30 X 60	768	152.20	OPERATOR-B1
1	SECRETARY TABLE 30 X 60	720	152.20	ROOM C2
1	SECRETARY TABLE 30 X 60	719	152.20	ROOM C2
1	SECRETARY TABLE 30 X 60	727	152.20	CLERICAL AREA
1	SECRETARY TABLE 30 X 60	722	152.20	CLERICAL AREA
1	SECRETARY TABLE 30 X 60	723	152.20	CLERICAL AREA
1	SECRETARY TABLE 30 X 60	725	152.20	CLERICAL AREA
1	SECRETARY TABLE 30 X 60	726	152.20	CLERICAL AREA
1	SECRETARY TABLE 30 X 60	728	152.20	CLERICAL AREA
1	SECRETARY TABLE 30 X 60	756	152.20	CLERICAL AREA
1	SECRETARY TABLE 30 X 60	724	152.20	VIRGILIO FERNANDO
1	SECRETARY TABLE 30 X 60	725	152.20	VIRGILIO FERNANDO
1	SECRETARY TABLE 30 X 60	726	152.20	VIRGILIO FERNANDO
1	SECRETARY TABLE 30 X 60	727	152.20	VIRGILIO FERNANDO
1	SECRETARY TABLE 30 X 60	728	152.20	VIRGILIO FERNANDO
1	SECRETARY TABLE 30 X 60	729	152.20	VIRGILIO FERNANDO
1	SECRETARY TABLE 30 X 60	690	152.20	ACCOUNTING
1	STEEL CABINET 2 DRAWER	734	89.09	LWL
1	STEEL CABINET 2 DRAWER	737	89.09	CLERICAL AREA
1	STEEL CABINET 2 DRAWER	738	89.09	CLERICAL AREA
1	STEEL CABINET 2 DRAWER	739	89.09	CLERICAL AREA
1	STEEL CABINET 2 DRAWER	657	127.27	CLERICAL AREA
1	STEEL CABINET 2 DRAWER	753	89.09	CLERICAL AREA
1	STEEL CABINET 2 DRAWER	754	89.09	CLERICAL AREA
1	STEEL CABINET 3 DRAWER	755	103.64	CLERICAL AREA
1	STEEL CABINET 3 DRAWER	750	103.64	DESIGN-C6
1	STEEL CABINET 3 DRAWER	751	103.64	DESIGN-C6
1	STEEL CABINET, 2 DRAWER	688	89.09	ACCOUNTING
1	STEEL CABINET, 2 DRAWER	790	89.09	V. FERNANDO-LAB-GSC
1	STEEL CABINET, 2 DRAWER	791	89.09	V. FERNANDO-LAB-GSC
1	TABLE WITH CASTER	752	160.00	DESIGN-C6
1	TABLE WITH CASTER	724	160.00	CLERICAL AREA
1	TABLE WITH CASTER	694	160.00	MM-4TH FLR, D3
1	TYPEWRITER TABLE	740	57.27	CLERICAL AREA
1	TYPEWRITER TABLE	729	57.27	CLERICAL AREA
1	TYPEWRITER TABLE	689	57.27	ACCOUNTING
1	VISITOR CHAIR	735	149.09	LARRY LARSEN
1	VISITOR CHAIR	736	149.09	LARRY LARSEN

BEST AVAILABLE DOCUMENT

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	VISITOR CHAIR	770	149.09	WADELL-B2
1	VISITOR CHAIR	781	149.09	V. FERNANDO-LAB-GSC
1	VISITOR CHAIR	782	149.09	V. FERNANDO-LAB-GSC
1	VISITOR CHAIR	783	149.09	V. FERNANDO-LAB-GSC
1	VISITOR CHAIR	706	149.09	CLERICAL AREA
1	VISITOR CHAIR	707	149.09	CLERICAL AREA
1	VISITOR CHAIR	708	149.09	CLERICAL AREA
1	VISITOR CHAIR	709	149.09	CLERICAL AREA
1	VISITOR CHAIR	710	149.09	CLERICAL AREA
1	VISITOR CHAIR	711	149.09	CLERICAL AREA
1	VISITOR CHAIR	757	149.09	CLERICAL AREA
1	VISITOR CHAIR	758	149.09	CLERICAL AREA
1	VISITOR CHAIR	717	149.09	USAID-C3
1	VISITOR CHAIR	714	149.09	USAID-C3
1	VISITOR CHAIR	712	149.09	CLERICAL AREA
1	VISITOR CHAIR	713	149.09	CLERICAL AREA
1	VISITOR CHAIR	761	149.09	OPERATOR-B1
1	VISITOR CHAIR	700	149.09	CONFERENCE ROOM
1	VISITOR CHAIR	701	149.09	CONFERENCE ROOM
1	VISITOR CHAIR	702	149.09	CONFERENCE ROOM
1	VISITOR CHAIR	703	149.09	CONFERENCE ROOM
1	VISITOR CHAIR	704	149.09	CONFERENCE ROOM
1	VISITOR CHAIR	705	149.09	CONFERENCE ROOM
1	VISITOR CHAIR	762	149.09	OPERATOR-B1
1	VISITOR CHAIR	763	149.09	OPERATOR-B1
1	VISITOR CHAIR	764	149.09	OPERATOR-B1
1	VISITOR CHAIR	769	149.09	FAS-C4
1	VISITOR CHAIR	697	149.09	MM-4TH FLR, D3
1	VISITOR CHAIR	667	149.09	MM-4TH FLR, D3
1	VISITOR CHAIR	715	149.09	ROOM C2-GSC
1	VISITOR CHAIR	716	149.09	ROOM C2-GSC
1	VISITOR CHAIR	691	149.09	ACCOUNTING
1	VISITOR CHAIR	692	149.09	ACCOUNTING
1	VISITOR CHAIR	601	149.09	ROOM D4-GSC
1	VISITOR CHAIR	602	149.09	ROOM D4-GSC

C. LIVING QUARTER FURNITURE AND FURNISHINGS

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	WASHING MACHINE	216	400.00	LARSEN-CMPD-GSC
1	WASHING MACHINE	217	400.00	KLIMPER-CMPD-GSC
1	WASHING MACHINE	218	400.00	SIELBACH-CMPD-GSC
1	BEDROOM SET	312	400.00	LARSEN-CMPD-GSC
1	BEDROOM SET	313	400.00	KLIMPER-CMPD-GSC
1	BEDROOM SET	314	400.00	SIELBACH-CMPD-GSC
1	CHINAWARE CABINET	235	300.00	KLIMPER-CMPD-GSC
1	CHINAWARE CABINET	311	300.00	SIELBACH-CMPD-GSC
1	FREEZER	219	300.00	KLIMPER-CMPD-GSC
1	ACQUAVAC VACUUM CLEANER	1364	171.76	LARSEN-CMPD-GSC

BEST AVAILABLE DOCUMENT

D. OTHER EXPENDABLE PROPERTY

1. COMPUTERS AND COMPUTER SOFTWARE

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	LOTUS 123R3	1248	300.00	CLERICAL AREA-GSC
1	WORDPERFECT 5.1	1249	300.00	CLERICAL AREA-GSC
1	SUPERCALC	205	300.00	CLERICAL AREA-GSC
1	COMPAQ COMPUTER MONITOR			MANILA
1	IBM PROPRINTER II XL PRINTER	305	320.00	CLERICAL SECTION-GSC
1	IBM PROPRINTER II XL PRINTER	45	320.00	FRITZIE AQUINO-GSC
1	IBM PROPRINTER II XL PRINTER	41	320.00	CLERICAL-GSC
1	IBM PROPRINTER II XL PRINTER	50	320.00	LISA APOSTOL-GSC
1	IBM PROPRINTER II XL PRINTER	48	320.00	M. FLORMATA-GSC
1	IBM PROPRINTER II XL PRINTER	295	320.00	VICKY CABRERA-MANILA
1	CHICONY KEYBOARD	51	150.00	M. FLORMATA-GSC
1	ORTEK TECHNOLOGY KEYBOARD	298	150.00	IMMA CORDERO-MANILA

2. SOIL TESTING EQUIPMENT

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	12 BRASS FR AND MESH 2 1/2"	830	60.00	V. FERNANDO-LAB-GSC
1	12 BRASS FR AND MESH 3 1/2"	827	60.00	V. FERNANDO-LAB-GSC
1	12 BRASS FR AND MESH 3 1/2"	828	60.00	V. FERNANDO-LAB-GSC
1	12 BRASS FR AND MESH 3"	829	60.00	V. FERNANDO-LAB-GSC
1	12 BRASS FR AND MESH 4"	808	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR AND MESH 3/4	793	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR AND MESH 3/4	794	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR AND MESH 3/4	795	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR AND MESH 3/8"	802	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR AND MESH 3/8"	803	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR AND MESH 3/8"	804	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH 1 1/2"	832	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH 1"	799	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH 1"	800	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH 1"	801	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH 1/4"	805	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH 1/4"	806	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH 1/4"	807	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH 2"	831	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH #16	841	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH #16	842	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH #16	843	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH #200	818	75.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH #200	819	75.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH #200	820	75.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH #200	821	75.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH #200	822	75.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH #200	823	75.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH #4	812	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH #4	813	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH #4	814	60.00	V. FERNANDO-LAB-GSC

BEST AVAILABLE DOCUMENT

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	12" BRASS FR & MESH #4	815	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH #4	816	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH #4	817	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH #8	838	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH #8	839	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH #8	840	60.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH #16	841	15.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH #16	842	15.00	V. FERNANDO-LAB-GSC
1	12" BRASS FR & MESH #16	843	15.00	V. FERNANDO-LAB-GSC
1	12" DIAMETER COVER	809	15.40	V. FERNANDO-LAB-GSC
1	12" DIAMETER COVER	810	15.40	V. FERNANDO-LAB-GSC
1	12" DIAMETER COVER	811	15.40	V. FERNANDO-LAB-GSC
1	12"BRASS FR & MESH 1/2"	796	60.00	V. FERNANDO-LAB-GSC
1	12"BRASS FR & MESH 1/2"	797	60.00	V. FERNANDO-LAB-GSC
1	12"BRASS FR & MESH 1/2"	798	60.00	V. FERNANDO-LAB-GSC
1	18" STRAP WRENCH	1215	0.00	V. FERNANDO-LAB-GSC
1	2000ML ERLENMEYER FLASK	929	17.00	V. FERNANDO-LAB-GSC
1	2000ML ERLENMEYER FLASK	930	17.00	V. FERNANDO-LAB-GSC
1	2000ML ERLENMEYER FLASK	931	17.00	V. FERNANDO-LAB-GSC
1	2000ML ERLENMEYER FLASK	932	17.00	V. FERNANDO-LAB-GSC
1	2000ML ERLENMEYER FLASK	934	17.00	V. FERNANDO-LAB-GSC
1	2000ML ERLENMEYER FLASK	935	17.00	V. FERNANDO-LAB-GSC
1	2000ML ERLENMEYER FLASK	936	17.00	V. FERNANDO-LAB-GSC
1	2000ML ERLENMEYER FLASK	937	17.00	V. FERNANDO-LAB-GSC
1	2000ML ERLENMEYER FLASK	938	17.00	V. FERNANDO-LAB-GSC
85	6X12 MOLD (CONSUMABLE)		31.00	V. FERNANDO-LAB-GSC
1	8" SIEVE COVER	858	10.00	V. FERNANDO-LAB-GSC
1	8" SIEVE COVER	859	10.00	V. FERNANDO-LAB-GSC
1	8" SIEVE COVER	860	10.00	V. FERNANDO-LAB-GSC
1	9" EXTENSION ROD	1216	0.00	V. FERNANDO-LAB-GSC
1	ADA-4, WGT-BELOW HOOK FOR AD-12K	988	61.10	V. FERNANDO-LAB-GSC
1	BEAM FORM 6X6X24	989	130.00	V. FERNANDO-LAB-GSC
1	BEAM FORM 6X6X24	990	130.00	V. FERNANDO-LAB-GSC
1	BEAM FORM 6X6X24	991	130.00	V. FERNANDO-LAB-GSC
1	BEAM FORM 6X6X24	992	130.00	V. FERNANDO-LAB-GSC
1	BEAM FORM 6X6X24	993	130.00	V. FERNANDO-LAB-GSC
1	BEAM FORM 6X6X24	994	130.00	V. FERNANDO-LAB-GSC
1	BEAM FORM 6X6X24	995	130.00	V. FERNANDO-LAB-GSC
1	BEAM FORM 6X6X24	996	130.00	V. FERNANDO-LAB-GSC
1	BEAM FORM 6X6X24	997	130.00	V. FERNANDO-LAB-GSC
1	BEAM FORM 6X6X24	998	130.00	V. FERNANDO-LAB-GSC
1	BEAM FORM 6X6X24	999	130.00	V. FERNANDO-LAB-GSC
1	BEAM FORM 6X6X24	1007	130.00	V. FERNANDO-LAB-GSC
1	BOWL 1 1/2 QT	1005	3.00	V. FERNANDO-LAB-GSC
1	BOWL 1 1/2 QT	1006	3.00	V. FERNANDO-LAB-GSC
1	BOWL 1 1/2 QT	1007	3.00	V. FERNANDO-LAB-GSC
1	BOWL 1 1/2 QT	1008	3.00	V. FERNANDO-LAB-GSC
1	BOWL 1 1/2 QT	1009	3.00	V. FERNANDO-LAB-GSC

BEST AVAILABLE DOCUMENT

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	BOWL 1/2 QT	1003	3.00	V. FERNANDO-LAB-GSC
1	BOWL 1/2 QT	1004	3.00	V. FERNANDO-LAB-GSC
1	BOWL 1/2 QT	1011	3.00	V. FERNANDO-LAB-GSC
1	BOWL 1/2 QT	1010	3.00	V. FERNANDO-LAB-GSC
1	CALIBRATION MASS SET	116	231.00	V. FERNANDO-LAB-GSC
1	CALIPER	956	10.00	V. FERNANDO-LAB-GSC
1	CASAGRANDE GROOVING TOOL	1038	17.60	V. FERNANDO-LAB-GSC
1	CASAGRANDE GROOVING TOOL	1037	17.60	V. FERNANDO-LAB-GSC
1	CASAGRANDE GROOVING TOOL	1036	17.60	V. FERNANDO-LAB-GSC
1	CASAGRANDE GROOVING TOOL	1033	17.60	V. FERNANDO-LAB-GSC
1	CASAGRANDE GROOVING TOOL	1034	17.60	V. FERNANDO-LAB-GSC
1	CASAGRANDE GROOVING TOOL	1035	17.60	V. FERNANDO-LAB-GSC
1	CBR MOLD PERF BASE	908	96.00	V. FERNANDO-LAB-GSC
1	CBR MOLD PERF BASE	909	96.00	V. FERNANDO-LAB-GSC
1	CBR MOLD PERF BASE	910	96.00	V. FERNANDO-LAB-GSC
1	CBR MOLD PERF BASE	911	96.00	V. FERNANDO-LAB-GSC
1	CBR MOLD PERF BASE	912	96.00	V. FERNANDO-LAB-GSC
1	CBR MOLD PERF BASE	913	96.00	V. FERNANDO-LAB-GSC
1	CBR MOLD PERF BASE	914	96.00	V. FERNANDO-LAB-GSC
1	CBR MOLD PERF BASE	915	96.00	V. FERNANDO-LAB-GSC
1	CBR MOLD PERF BASE	916	96.00	V. FERNANDO-LAB-GSC
1	CBR SWELL PLATES	1058	62.00	V. FERNANDO-LAB-GSC
1	CBR SWELL PLATES	1059	62.00	V. FERNANDO-LAB-GSC
1	CBR SWELL PLATES	1060	62.00	V. FERNANDO-LAB-GSC
1	CBR SWELL PLATES	1061	62.00	V. FERNANDO-LAB-GSC
1	CBR SWELL PLATES	1062	62.00	V. FERNANDO-LAB-GSC
1	CBR SWELL PLATES	1063	62.00	V. FERNANDO-LAB-GSC
1	CBR SWELL PLATES	1064	62.00	V. FERNANDO-LAB-GSC
1	CBR SWELL PLATES	1065	62.00	V. FERNANDO-LAB-GSC
1	CBR SWELL PLATES	1066	62.00	V. FERNANDO-LAB-GSC
1	CBR SWELL PLATES	1067	62.00	V. FERNANDO-LAB-GSC
1	CBR SWELL PLATES	1068	62.00	V. FERNANDO-LAB-GSC
1	CBR SWELL PLATES	1069	62.00	V. FERNANDO-LAB-GSC
1	CBR SWELL PLATES	1070	62.00	V. FERNANDO-LAB-GSC
1	CEILING FAN	1120	83.64	V. FERNANDO-LAB-GSC
1	CEILING FAN	1119	83.64	V. FERNANDO-LAB-GSC
1	CEILING FAN	1118	83.64	V. FERNANDO-LAB-GSC
1	CENT-O-GRAM BALANCE	105	122.50	V. FERNANDO-LAB-GSC
1	CENT-O-GRAM BALANCE	104	122.50	V. FERNANDO-LAB-GSC
1	CHISEL	1041	17.00	V. FERNANDO-LAB-GSC
1	CHISEL	1042	17.00	V. FERNANDO-LAB-GSC
1	CHISEL	1072	17.00	V. FERNANDO-LAB-GSC
1	CHISEL	1073	17.00	V. FERNANDO-LAB-GSC
1	COMPACT PEDESTAL FOR MAN'L COMPT'R	170	30.00	V. FERNANDO-LAB-GSC
1	COMPATION MOLD HOLDER	1074	30.00	V. FERNANDO-LAB-GSC
1	CONCRETE LAB VIBRATOR	109	485.00	V. FERNANDO-LAB-GSC
1	CONCRETE TEST HAMMER TYPE N	1114	495.00	V. FERNANDO-LAB-GSC
1	CONICAL MOLD AND TAMPER	1113	30.00	V. FERNANDO-LAB-GSC

BEST AVAILABLE DOCUMENT

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	COVER PLATE FOR H-2820	1112	75.00	V. FERNANDO-LAB-GSC
59	CYL CAP (CONSUMABLE)		20.00	V. FERNANDO-LAB-GSC
1	DENSITY CONE APP., 1 GAL	1075	45.00	V. FERNANDO-LAB-GSC
1	DENSITY CONE APP., 1 GAL	1076	45.00	V. FERNANDO-LAB-GSC
1	DENSITY CONE APP., 1 GAL	1077	45.00	V. FERNANDO-LAB-GSC
1	DENSITY CONE APP., 1 GAL	1078	45.00	V. FERNANDO-LAB-GSC
1	DENSITY HAND PICK	1044	15.00	V. FERNANDO-LAB-GSC
1	DENSITY HAND PICK	1045	15.00	V. FERNANDO-LAB-GSC
18	DENSITY SAND 100# ASTM (CONSUMABLE)		34.00	V. FERNANDO-LAB-GSC
1	DIAL FLOWMETER WITH HOLDER	1094	121.00	V. FERNANDO-LAB-GSC
1	DIAL IND FOR H4158 (TRIPOD)	1128	55.00	V. FERNANDO-LAB-GSC
1	DIAL IND FOR H4158 (TRIPOD)	1129	55.00	V. FERNANDO-LAB-GSC
1	DIAL IND FOR H4158 (TRIPOD)	1130	55.00	V. FERNANDO-LAB-GSC
1	DUAL RANGE 50-500F&O-250C	967	21.00	V. FERNANDO-LAB-GSC
1	DUAL RANGE 50-500F&O-250C	968	21.00	V. FERNANDO-LAB-GSC
1	DUAL RANGE 50-500F&O-250C	969	21.00	V. FERNANDO-LAB-GSC
1	DUAL RANGE 50-500F&O-250C	970	21.00	V. FERNANDO-LAB-GSC
1	DUAL RANGE 50-500F&O-250C	971	21.00	V. FERNANDO-LAB-GSC
1	DUAL RANGE 50-500F&O-250C	972	21.00	V. FERNANDO-LAB-GSC
1	DUAL RANGE 50-500F&O-250C	973	21.00	V. FERNANDO-LAB-GSC
1	DUAL RANGE 50-500F&O-250C	974	21.00	V. FERNANDO-LAB-GSC
1	DUAL RANGE 50-500F&O-250C	975	21.00	V. FERNANDO-LAB-GSC
1	DUAL RANGE 50-500F&O-250C	976	21.00	V. FERNANDO-LAB-GSC
1	DUAL RANGE 50-500F&O-250C	977	21.00	V. FERNANDO-LAB-GSC
1	DUAL RANGE 50-500F&O-250C	978	21.00	V. FERNANDO-LAB-GSC
1	DUAL RANGE 50-500F&O-250C	979	21.00	V. FERNANDO-LAB-GSC
1	DUAL RANGE 50-500F&O-250C	980	21.00	V. FERNANDO-LAB-GSC
1	EXPANDED SET FOR 4 1/4" OD BIT	106	395.00	V. FERNANDO-LAB-GSC
1	FIELD DENSITY PLATE	1155	25.00	V. FERNANDO-LAB-GSC
1	FIELD DENSITY PLATE	1156	25.00	V. FERNANDO-LAB-GSC
1	FIELD DENSITY PLATE	1157	25.00	V. FERNANDO-LAB-GSC
1	FIELD DENSITY PLATE	1158	25.00	V. FERNANDO-LAB-GSC
1	GILSON SAMPLE SPLITTER	117	478.00	V. FERNANDO-LAB-GSC
1	GILSON SAMPLE SPLITTER	1197	478.00	V. FERNANDO-LAB-GSC
1	GRADUATED CYLINDER GLASS 100 ML	1202	0.00	V. FERNANDO-LAB-GSC
1	GRADUATED CYLINDER GLASS 25 ML	1203	0.00	V. FERNANDO-LAB-GSC
1	GRADUATED CYLINDER GLASS 25 ML	1214	0.00	V. FERNANDO-LAB-GSC
1	HEAT RESISTANT GLOVE	1079	17.00	V. FERNANDO-LAB-GSC
1	HEAT RESISTANT GLOVE	1080	17.00	V. FERNANDO-LAB-GSC
1	HEAT RESISTANT GLOVE	1081	17.00	V. FERNANDO-LAB-GSC
1	HEAT RESISTANT GLOVE	1082	17.00	V. FERNANDO-LAB-GSC
1	HOT PLATE 1900 240V	901	17.00	V. FERNANDO-LAB-GSC
1	LAB MIXER, 20 QT	98	47.00	V. FERNANDO-LAB-GSC
1	LAB OVEN FORCED AIR 230V-50HZ	102	452.00	V. FERNANDO-LAB-GSC
1	LAB OVEN FORCED AIR 230V-50HZ	103	452.00	V. FERNANDO-LAB-GSC
1	LL SET BX/13509*	899	440.00	V. FERNANDO-LAB-GSC
1	LL SET BX/13509*	900	440.00	V. FERNANDO-LAB-GSC
1	LOWER PLATEN FOR 2" CUBE TEST	1208	0.00	V. FERNANDO-LAB-GSC

BEST AVAILABLE DOCUMENT

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	MALLET	1043	9.00	V. FERNANDO-LAB-GSC
1	MALLET	1049	9.00	V. FERNANDO-LAB-GSC
1	MANUAL SPARE HAMMER 110	1180	152.00	V. FERNANDO-LAB-GSC
1	MANUAL SPARE HAMMER 110	1181	152.00	V. FERNANDO-LAB-GSC
1	COMPACTOR MOLD 100	1179	53.00	V. FERNANDO-LAB-GSC
1	COMPACTOR MOLD 100	1182	53.00	V. FERNANDO-LAB-GSC
1	COMPACTOR MOLD 100	1183	53.00	V. FERNANDO-LAB-GSC
1	COMPACTOR MOLD 100	1184	53.00	V. FERNANDO-LAB-GSC
1	COMPACTOR MOLD 100	1185	53.00	V. FERNANDO-LAB-GSC
1	COMPACTOR MOLD 100	1186	53.00	V. FERNANDO-LAB-GSC
1	COMPACTOR MOLD 100	1187	53.00	V. FERNANDO-LAB-GSC
1	COMPACTOR MOLD 100	1188	53.00	V. FERNANDO-LAB-GSC
1	COMPACTOR MOLD 100	1189	53.00	V. FERNANDO-LAB-GSC
1	COMPACTOR MOLD 100	1190	53.00	V. FERNANDO-LAB-GSC
1	COMPACTOR MOLD 100	1191	53.00	V. FERNANDO-LAB-GSC
1	COMPACTOR MOLD 100	1192	53.00	V. FERNANDO-LAB-GSC
1	COMPACTOR MOLD 100	1193	53.00	V. FERNANDO-LAB-GSC
1	COMPACTOR MOLD 100	902	53.00	V. FERNANDO-LAB-GSC
1	COMPACTOR MOLD 100	903	53.00	V. FERNANDO-LAB-GSC
1	MARSHALL STABILITY BREAKING HEAD	1194	217.00	V. FERNANDO-LAB-GSC
2	MEASURE 1/2 C/F ALUM ASTM		480.00	V. FERNANDO-LAB-GSC
24	MOIST TESTER REAGENT 24/CS		80.00	V. FERNANDO-LAB-GSC
1	MOLD CYL 6X12X1/4" WA DET	1204	90.00	V. FERNANDO-LAB-GSC
1	MOLD EXTRACTOR		40.00	V. FERNANDO-LAB-GSC
1	MOLD MOIST-DENSITY SPLIT	923	95.00	V. FERNANDO-LAB-GSC
1	MOLD MOIST-DENSITY SPLIT	924	95.00	V. FERNANDO-LAB-GSC
1	MOLD MOIST-DENSITY SPLIT	925	95.00	V. FERNANDO-LAB-GSC
1	MOLD MOIST-DENSITY SPLIT	926	95.00	V. FERNANDO-LAB-GSC
1	MOLD MOIST-DENSITY SPLIT	927	95.00	V. FERNANDO-LAB-GSC
1	MOLD MOIST-DENSITY SPLIT	928	95.00	V. FERNANDO-LAB-GSC
1	MOLD MOISTURE DENSITY	917	60.00	V. FERNANDO-LAB-GSC
1	MOLD MOISTURE DENSITY	918	60.00	V. FERNANDO-LAB-GSC
1	MOLD MOISTURE DENSITY	919	60.00	V. FERNANDO-LAB-GSC
1	MOLD MOISTURE DENSITY	920	60.00	V. FERNANDO-LAB-GSC
1	MOLD MOISTURE DENSITY	921	60.00	V. FERNANDO-LAB-GSC
1	MOLD MOISTURE DENSITY	922	60.00	V. FERNANDO-LAB-GSC
1	MORTAR COMPRESSION CUBE MOLD	1253	300.00	V. FERNANDO-LAB-GSC
1	MORTAR COMPRESSION CUBE MOLD	1254	300.00	V. FERNANDO-LAB-GSC
1	MORTAR COMPRESSION CUBE MOLD	1255	300.00	V. FERNANDO-LAB-GSC
1	MORTAR COMPRESSION CUBE MOLD	1256	300.00	V. FERNANDO-LAB-GSC
1	MORTAR COMPRESSION CUBE MOLD	1257	300.00	V. FERNANDO-LAB-GSC
1	MORTAR COMPRESSION CUBE MOLD	1258	300.00	V. FERNANDO-LAB-GSC
1	MORTAR PORCELAIN	1106	20.00	V. FERNANDO-LAB-GSC
1	MORTAR PORCELAIN	1107	20.00	V. FERNANDO-LAB-GSC
1	MORTAR PORCELAIN	1108	20.00	V. FERNANDO-LAB-GSC
1	ORGANIC IMPURITIES TEST SET	1205	130.00	V. FERNANDO-LAB-GSC
1	PAN 24X24X3	1159	40.00	V. FERNANDO-LAB-GSC
1	PAN 24X24X3	1160	40.00	V. FERNANDO-LAB-GSC

BEST AVAILABLE DOCUMENT

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	PAN 24X24X3	1170	40.00	V. FERNANDO-LAB-GSC
1	PAN 24X24X3	1171	40.00	V. FERNANDO-LAB-GSC
1	PAN 24X24X3	1172	40.00	V. FERNANDO-LAB-GSC
1	PAN 24X24X3	1173	40.00	V. FERNANDO-LAB-GSC
1	PAN 24X24X3	1174	40.00	V. FERNANDO-LAB-GSC
1	PAN 24X24X3	1175	40.00	V. FERNANDO-LAB-GSC
1	PAN 24X24X3	1176	40.00	V. FERNANDO-LAB-GSC
1	PAN 24X24X3	1177	40.00	V. FERNANDO-LAB-GSC
1	PAN 24X24X3	1178	40.00	V. FERNANDO-LAB-GSC
1	PESTLE SOIL	1109	6.00	V. FERNANDO-LAB-GSC
1	PESTLE SOIL	1110	6.00	V. FERNANDO-LAB-GSC
1	PESTLE SOIL	1111	6.00	V. FERNANDO-LAB-GSC
1	PLASTIC LIMIT SET	1206	40.00	V. FERNANDO-LAB-GSC
1	PLASTIC LIMIT SET	1207	40.00	V. FERNANDO-LAB-GSC
1	PLATEN AND SPACER SET	1210	0.00	V. FERNANDO-LAB-GSC
1	PORTABLE SLUMP TEST SET	904	128.00	V. FERNANDO-LAB-GSC
1	PORTABLE SLUMP TEST SET	905	128.00	V. FERNANDO-LAB-GSC
1	PORTABLE SLUMP TEST SET	906	128.00	V. FERNANDO-LAB-GSC
1	PORTABLE SLUMP TEST SET	907	128.00	V. FERNANDO-LAB-GSC
1	PORTABLE WATER PRESSURE TANK 4 GAL.	1211	134.00	V. FERNANDO-LAB-GSC
1	RAMMER MOIST DENSITY 18"	1054	55.00	V. FERNANDO-LAB-GSC
1	RAMMER MOIST DENSITY 18"	1055	55.00	V. FERNANDO-LAB-GSC
1	RAMMER MOIST DENSITY 18"	1056	55.00	V. FERNANDO-LAB-GSC
1	RAMMER MOIST DENSITY 18"	1057	55.00	V. FERNANDO-LAB-GSC
1	RAMMER MOIST. DENSITY 12"	1050	47.00	V. FERNANDO-LAB-GSC
1	RAMMER MOIST. DENSITY 12"	1051	47.00	V. FERNANDO-LAB-GSC
1	RAMMER MOIST. DENSITY 12"	1052	47.00	V. FERNANDO-LAB-GSC
1	RAMMER MOIST. DENSITY 12"	1053	47.00	V. FERNANDO-LAB-GSC
36	RECT. ALUMINUM PAN		15.00	V. FERNANDO-LAB-GSC
1	ROUND POINT D-GRIP SHOVEL	1200	22.00	V. FERNANDO-LAB-GSC
1	ROUND POINT D-GRIP SHOVEL	1213	22.00	V. FERNANDO-LAB-GSC
1	SAMPLE CONTAINER #4 MESH	889	52.00	V. FERNANDO-LAB-GSC
1	SAMPLE CONTAINER #4 MESH	890	52.00	V. FERNANDO-LAB-GSC
1	SAMPLE CONTAINER #4 MESH	891	52.00	V. FERNANDO-LAB-GSC
1	SAMPLE CONTAINER #4 MESH	892	52.00	V. FERNANDO-LAB-GSC
1	SAMPLE CONTAINER #4 MESH	893	52.00	V. FERNANDO-LAB-GSC
1	SAMPLE CONTAINER #4 MESH	894	52.00	V. FERNANDO-LAB-GSC
1	SAMPLE CONTAINER #4 MESH	895	52.00	V. FERNANDO-LAB-GSC
1	SAMPLE CONTAINER #4 MESH	896	52.00	V. FERNANDO-LAB-GSC
1	SAMPLE CONTAINER #4 MESH	897	52.00	V. FERNANDO-LAB-GSC
1	SAMPLE CONTAINER #4 MESH	898	52.00	V. FERNANDO-LAB-GSC
1	SAMPLE CONTAINER #8 MESH	887	70.00	V. FERNANDO-LAB-GSC
1	SAMPLE CONTAINER #8 MESH	888	70.00	V. FERNANDO-LAB-GSC
1	SAMPLE EJECTOR	122	400.00	V. FERNANDO-LAB-GSC
1	SAMPLE EJECTOR	123	400.00	V. FERNANDO-LAB-GSC
1	SAMPLE SPLITTER	113	180.00	V. FERNANDO-LAB-GSC
1	SAMPLE SPLITTER	114	180.00	V. FERNANDO-LAB-GSC
1	SAMPLE SPLITTER	115	180.00	V. FERNANDO-LAB-GSC

BEST AVAILABLE DOCUMENT

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	SAND EQUIVALENT TEST SET	1251	325.00	V. FERNANDO-LAB-GSC
1	SCALE, FIELD TEST	110	462.00	V. FERNANDO-LAB-GSC
1	SCALE, FIELD TEST	111	462.00	V. FERNANDO-LAB-GSC
1	SCOOP	1000	6.00	V. FERNANDO-LAB-GSC
1	SCOOP	1001	6.00	V. FERNANDO-LAB-GSC
1	SIEVE PAN 12"X3"	824	34.00	V. FERNANDO-LAB-GSC
1	SIEVE PAN 12"X3"	825	34.00	V. FERNANDO-LAB-GSC
1	SIEVE PAN 12"X3"	826	34.00	V. FERNANDO-LAB-GSC
1	SINGLE SCALE THERM 20 TO 150C	1012	5.50	V. FERNANDO-LAB-GSC
1	SINGLE SCALE THERM 20 TO 150C	1013	5.50	V. FERNANDO-LAB-GSC
1	SINGLE SCALE THERM 20 TO 150C	1014	5.50	V. FERNANDO-LAB-GSC
1	SINGLE SCALE THERM 20 TO 150C	1015	5.50	V. FERNANDO-LAB-GSC
1	SINGLE SCALE THERM 20 TO 150C (BROKEN)	1016	5.50	V. FERNANDO-LAB-GSC
1	SINGLE SCALE THERM 20 TO 150C (BROKEN)	1017	5.50	V. FERNANDO-LAB-GSC
1	SINGLE SCALE THERM 35 TO 50C	981	5.50	V. FERNANDO-LAB-GSC
1	SINGLE SCALE THERM 35 TO 50C	982	5.50	V. FERNANDO-LAB-GSC
1	SINGLE SCALE THERM 35 TO 50C	983	5.50	V. FERNANDO-LAB-GSC
1	SINGLE SCALE THERM 35 TO 50C	984	5.50	V. FERNANDO-LAB-GSC
1	SINGLE SCALE THERM 35 TO 50C	985	5.50	V. FERNANDO-LAB-GSC
1	SINGLE SCALE THERM 35 TO 50C	986	5.50	V. FERNANDO-LAB-GSC
1	SLOTEED SURCHARGE WGHT 5 LB	1217	28.00	V. FERNANDO-LAB-GSC
1	SLOTEED SURCHARGE WGHT 5 LB	1218	28.00	V. FERNANDO-LAB-GSC
1	SLOTEED SURCHARGE WGHT 5 LB	1219	28.00	V. FERNANDO-LAB-GSC
1	SLOTEED SURCHARGE WGHT 5 LB	1220	28.00	V. FERNANDO-LAB-GSC
1	SLOTEED SURCHARGE WGHT 5 LB	1221	28.00	V. FERNANDO-LAB-GSC
1	SLOTEED SURCHARGE WGHT 5 LB	1222	28.00	V. FERNANDO-LAB-GSC
1	SLOTEED SURCHARGE WGHT 5 LB	1223	28.00	V. FERNANDO-LAB-GSC
1	SLOTEED SURCHARGE WGHT 5 LB	1224	28.00	V. FERNANDO-LAB-GSC
1	SLOTEED SURCHARGE WGHT 5 LB	1225	28.00	V. FERNANDO-LAB-GSC
1	SLOTEED SURCHARGE WGHT 5 LB	1226	28.00	V. FERNANDO-LAB-GSC
1	SLOTEED SURCHARGE WGHT 5 LB	1227	28.00	V. FERNANDO-LAB-GSC
1	SLOTEED SURCHARGE WGHT 5 LB	1228	28.00	V. FERNANDO-LAB-GSC
1	SLOTEED SURCHARGE WGHT 5 LB	1229	28.00	V. FERNANDO-LAB-GSC
1	SLOTEED SURCHARGE WGHT 5 LB	1230	28.00	V. FERNANDO-LAB-GSC
1	SLOTEED SURCHARGE WGHT 5 LB	1231	28.00	V. FERNANDO-LAB-GSC
1	SLOTEED SURCHARGE WGHT 5 LB	1232	28.00	V. FERNANDO-LAB-GSC
1	SOILTEST AASHTO GROOVING TOOLS	1039	0.00	V. FERNANDO-LAB-GSC
1	SOILTEST AASHTO GROOVING TOOLS	1040	0.00	V. FERNANDO-LAB-GSC
1	SPACER DISK	987	55.00	V. FERNANDO-LAB-GSC
1	SPOON STAINLESS STEEL 13" (CONSUMABLE)	1083	4.00	V. FERNANDO-LAB-GSC
1	SPOON STAINLESS STEEL 13" (CONSUMABLE)	1084	4.00	V. FERNANDO-LAB-GSC
1	SPOON STAINLESS STEEL 13" (CONSUMABLE)	1085	4.00	V. FERNANDO-LAB-GSC
1	SPOON STAINLESS STEEL 13" (CONSUMABLE)	1086	4.00	V. FERNANDO-LAB-GSC
1	SPOON STAINLESS STEEL 13" (CONSUMABLE)	1087	4.00	V. FERNANDO-LAB-GSC
1	SPOON STAINLESS STEEL 13" (CONSUMABLE)	1088	4.00	V. FERNANDO-LAB-GSC
1	SPOON STAINLESS STEEL 13" (CONSUMABLE)	1089	4.00	V. FERNANDO-LAB-GSC
1	SPOON STAINLESS STEEL 13" (CONSUMABLE)	1090	4.00	V. FERNANDO-LAB-GSC
1	SPOON STAINLESS STEEL 13" (CONSUMABLE)	1091	4.00	V. FERNANDO-LAB-GSC

BEST AVAILABLE DOCUMENT

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	SQ LONG HANDLE SHOVEL	1198	24.00	V. FERNANDO-LAB-GSC
1	SQ LONG HANDLE SHOVEL	1199	24.00	V. FERNANDO-LAB-GSC
1	SQ LONG HANDLE SHOVEL	1212	24.00	V. FERNANDO-LAB-GSC
1	SS SPATULA 10"X 1 1/4 (CONSUMABLE)	1020	7.65	V. FERNANDO-LAB-GSC
1	SS SPATULA 10"X 1 1/4 (CONSUMABLE)	1021	7.65	V. FERNANDO-LAB-GSC
1	SS SPATULA 10"X 1 1/4 (CONSUMABLE)	1025	7.65	V. FERNANDO-LAB-GSC
1	SS SPATULA 10"X 1 1/4 (CONSUMABLE)	1027	7.65	V. FERNANDO-LAB-GSC
1	SS SPATULA 10"X 1 1/4 (CONSUMABLE)	1028	7.65	V. FERNANDO-LAB-GSC
1	SS SPATULA 4"X3/4" (CONSUMABLE)	1022	3.80	V. FERNANDO-LAB-GSC
1	SS SPATULA 4"X3/4" (CONSUMABLE)	1023	3.80	V. FERNANDO-LAB-GSC
1	SS SPATULA 4"X3/4" (CONSUMABLE)	1024	3.80	V. FERNANDO-LAB-GSC
1	SS SPATULA 4"X3/4" (CONSUMABLE)	1026	3.80	V. FERNANDO-LAB-GSC
1	SS SPATULA 4"X3/4" (CONSUMABLE)	1029	3.80	V. FERNANDO-LAB-GSC
1	SS SPATULA 4"X3/4" (CONSUMABLE)	1030	3.80	V. FERNANDO-LAB-GSC
1	STEEL CURING TANK 8 FT.	118	230.00	V. FERNANDO-LAB-GSC
1	STRAIGHT EDGE 12"	1150	12.00	V. FERNANDO-LAB-GSC
1	STRAIGHT EDGE 12"	1151	12.00	V. FERNANDO-LAB-GSC
1	STRAIGHT EDGE 12"	1152	12.00	V. FERNANDO-LAB-GSC
1	STRIPPER FOR H-3041 (6X12)	1103	18.00	V. FERNANDO-LAB-GSC
1	STRIPPER FOR H-3041 (6X12)	1104	18.00	V. FERNANDO-LAB-GSC
1	SURCHARGE WEIGHT W/ HOLE	1142	25.00	V. FERNANDO-LAB-GSC
1	SURCHARGE WEIGHT W/ HOLE	1143	25.00	V. FERNANDO-LAB-GSC
1	SURCHARGE WEIGHT W/ HOLE	1144	25.00	V. FERNANDO-LAB-GSC
1	SURCHARGE WEIGHT W/ HOLE	1145	25.00	V. FERNANDO-LAB-GSC
1	SURCHARGE WEIGHT W/ HOLE	1146	25.00	V. FERNANDO-LAB-GSC
1	SURCHARGE WEIGHT W/ HOLE	1147	25.00	V. FERNANDO-LAB-GSC
1	SURCHARGE WEIGHT W/ HOLE	1148	25.00	V. FERNANDO-LAB-GSC
1	SURCHARGE WEIGHT W/ HOLE	1149	25.00	V. FERNANDO-LAB-GSC
1	SURVEY METER	108	0.00	V. FERNANDO-LAB-GSC
1	TABLE BRUSH	1097	8.00	V. FERNANDO-LAB-GSC
1	TABLE BRUSH	1098	8.00	V. FERNANDO-LAB-GSC
1	TABLE BRUSH	1099	8.00	V. FERNANDO-LAB-GSC
1	TABLE BRUSH	1100	8.00	V. FERNANDO-LAB-GSC
1	TABLE BRUSH	1101	8.00	V. FERNANDO-LAB-GSC
1	TABLE BRUSH	1102	8.00	V. FERNANDO-LAB-GSC
1	TAMPER RUBBER	1124	5.00	V. FERNANDO-LAB-GSC
1	TAMPER RUBBER	1125	5.00	V. FERNANDO-LAB-GSC
1	TAMPER RUBBER	1126	5.00	V. FERNANDO-LAB-GSC
1	TAMPER RUBBER	1127	5.00	V. FERNANDO-LAB-GSC
1	THERM DIAL POCKET 0-150C	957	15.00	V. FERNANDO-LAB-GSC
1	THERM DIAL POCKET 0-150C	958	15.00	V. FERNANDO-LAB-GSC
1	THERM DIAL POCKET 0-150C	959	15.00	V. FERNANDO-LAB-GSC
1	THERM DIAL POCKET 0-150C	960	15.00	V. FERNANDO-LAB-GSC
1	THERM DIAL POCKET 0-150C	961	15.00	V. FERNANDO-LAB-GSC
1	THERM DIAL POCKET 0-150C	962	15.00	V. FERNANDO-LAB-GSC
1	THERM DIAL POCKET 0-150C	963	15.00	V. FERNANDO-LAB-GSC
1	THERM DIAL POCKET 0-150C	964	15.00	V. FERNANDO-LAB-GSC
1	THERMOMETER MAX/MIN	965	60.00	V. FERNANDO-LAB-GSC

BEST AVAILABLE DOCUMENT

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	THERMOMETER MAX/MIN	966	60.00	V. FERNANDO-LAB-GSC
1	TIMER, 230 V 50 HZ	112	113.00	V. FERNANDO-LAB-GSC
1	TRIPOD ATTACH WITH OUT DIAL	1121	35.00	V. FERNANDO-LAB-GSC
1	TRIPOD ATTACH WITH OUT DIAL	1122	35.00	V. FERNANDO-LAB-GSC
1	TRIPOD ATTACH WITH OUT DIAL	1123	35.00	V. FERNANDO-LAB-GSC
1	TROWEL	1019	20.00	V. FERNANDO-LAB-GSC
1	TROWEL	1047	20.00	V. FERNANDO-LAB-GSC
1	TROWEL	1048	20.00	V. FERNANDO-LAB-GSC
100	TUBING, VYNIL (CONSUMABLE)		0.58	V. FERNANDO-LAB-GSC
1	UPPER PLATEN	1209	0.00	V. FERNANDO-LAB-GSC
1	USA STB SEIVE # 20 FH	873	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE 3/4" FH	878	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE 5/16"	877	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE 5/8"	876	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE # 12 FH	854	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE # 60 FH	874	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #10 FH	855	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #10 FH	856	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #10 FH	857	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #100 FH	851	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #100 FH	852	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #100 FH	853	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #16 FH	848	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #16 FH	849	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #16 FH	850	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #200 FH	867	38.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #200 FH	868	38.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #200 FH	869	38.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #200 FH	870	38.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #200 FH	871	38.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #200 FH	872	38.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #30	864	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #30	865	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #30	866	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #4	833	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #4	834	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #4	835	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #40	836	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #40	837	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #40	844	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #5	875	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #50	863	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #50	862	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #50	861	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #8	879	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #8	880	31.00	V. FERNANDO-LAB-GSC
1	USA STD SIEVE #8	881	31.00	V. FERNANDO-LAB-GSC
1	VACUUM EXT GASKET	1116	18.70	V. FERNANDO-LAB-GSC

BEST AVAILABLE DOCUMENT

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	VACUUM EXT GASKET	1117	18.70	V. FERNANDO-LAB-GSC
1	VACUUM PUMP & COMPRESSOR	124	318.00	V. FERNANDO-LAB-GSC
1	VACUUM PUMP & COMPRESSOR	97	318.00	V. FERNANDO-LAB-GSC
1	VERTICAL CYLINDER CAPPER	1071	0.00	V. FERNANDO-LAB-GSC
1	VERTICAL DIAL INDICATOR	1115	0.00	V. FERNANDO-LAB-GSC
1	VOL FLASK 100 ML UNSTOPPER	944	9.00	V. FERNANDO-LAB-GSC
1	VOL FLASK 100 ML UNSTOPPER	945	9.00	V. FERNANDO-LAB-GSC
1	VOL FLASK 100 ML UNSTOPPER	946	9.00	V. FERNANDO-LAB-GSC
1	VOL FLASK 100 ML UNSTOPPER	947	9.00	V. FERNANDO-LAB-GSC
1	VOL FLASK 100 ML UNSTOPPER	948	9.00	V. FERNANDO-LAB-GSC
1	VOL FLASK 100 ML UNSTOPPER	949	9.00	V. FERNANDO-LAB-GSC
1	VOL FLASK 100 ML UNSTOPPER	950	9.00	V. FERNANDO-LAB-GSC
1	VOL FLASK 100 ML UNSTOPPER	951	9.00	V. FERNANDO-LAB-GSC
1	VOL FLASK 100 ML UNSTOPPER	952	9.00	V. FERNANDO-LAB-GSC
1	VOL FLASK 100 ML UNSTOPPER	953	9.00	V. FERNANDO-LAB-GSC
1	VOL FLASK 100 ML UNSTOPPER	954	9.00	V. FERNANDO-LAB-GSC
1	VOL FLASK 100 ML UNSTOPPER	955	9.00	V. FERNANDO-LAB-GSC
1	VOL FLASK 500ML UNSTOPPER	938	11.00	V. FERNANDO-LAB-GSC
1	VOL FLASK 500ML UNSTOPPER	939	11.00	V. FERNANDO-LAB-GSC
1	VOL FLASK 500ML UNSTOPPER	940	11.00	V. FERNANDO-LAB-GSC
1	VOL FLASK 500ML UNSTOPPER	941	11.00	V. FERNANDO-LAB-GSC
1	VOL FLASK 500ML UNSTOPPER	942	11.00	V. FERNANDO-LAB-GSC
1	VOL FLASK 500ML UNSTOPPER	943	11.00	V. FERNANDO-LAB-GSC
1	WASH BOTTLE 8 OZ	1131	2.60	V. FERNANDO-LAB-GSC
1	WASH BOTTLE 8 OZ	1132	2.60	V. FERNANDO-LAB-GSC
1	WASH BOTTLE 8 OZ	1133	2.60	V. FERNANDO-LAB-GSC
1	WASH BOTTLE 8 OZ	1134	2.60	V. FERNANDO-LAB-GSC
1	WASH BOTTLE 8 OZ	1135	2.60	V. FERNANDO-LAB-GSC
1	WASH BOTTLE 8 OZ	1136	2.60	V. FERNANDO-LAB-GSC
1	WASH BOTTLE 8 OZ	1137	2.60	V. FERNANDO-LAB-GSC
1	WASH BOTTLE 8 OZ	1138	2.60	V. FERNANDO-LAB-GSC
1	WASH BOTTLE 8 OZ	1139	2.60	V. FERNANDO-LAB-GSC
1	WASH BOTTLE 8 OZ	1140	2.60	V. FERNANDO-LAB-GSC
1	WASH BOTTLE 8 OZ	1141	2.60	V. FERNANDO-LAB-GSC
1	WASH SIEVE W/ BACKUN 8X8	882	121.00	V. FERNANDO-LAB-GSC
1	WASH SIEVE W/ BACKUN 8X8	883	121.00	V. FERNANDO-LAB-GSC
1	WASH SIEVE W/ BACKUN 8X8	884	121.00	V. FERNANDO-LAB-GSC
1	WASH SIEVE W/ BACKUN 8X8 (DEFECTIVE)	885	121.00	V. FERNANDO-LAB-GSC
1	WASH SIEVE W/ BACKUN 8X8 (DEFECTIVE)	886	121.00	V. FERNANDO-LAB-GSC
1	WATER BATH 18 QT	101	142.00	V. FERNANDO-LAB-GSC
1	WATER IN PETROLEUM APPARATUS	120	320.00	V. FERNANDO-LAB-GSC
1	WGT MEASURE STEEL 1/2 CU FT	127	80.00	V. FERNANDO-LAB-GSC
1	WGT MEASURE STEEL 1/2 CU FT	126	80.00	V. FERNANDO-LAB-GSC
1	WHEELBARROW 6 CU FT.	1154	130.00	V. FERNANDO-LAB-GSC
1	WHEELBARROW 6 CU FT.	1195	130.00	V. FERNANDO-LAB-GSC
1	WHEELBARROW 6 CU FT.	1196	130.00	V. FERNANDO-LAB-GSC
1	WHEELBARROW 6 CU FT.	1200	130.00	V. FERNANDO-LAB-GSC
1	WIRE BASKET SS #6 MESH	1095	60.00	V. FERNANDO-LAB-GSC

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3. SURVEY EQUIPMENT

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	HP48SX CALC W/ SURVEYING CARD		400.00	V. AYALA-SURVEY-GSC
1	LEVEL'G ROD, TELECOP'G FIBERGLASS, 7 M	145	168.00	V. AYALA-SURVEY-GSC
1	LEVELING ROD, DIRECT ELEVATION	143	168.00	V. AYALA-SURVEY-GSC
1	PLANIMETER	1252	509.09	F. SIELBACH-GSC
1	PRISM ASSEMBLY, SINGLE, OMNI OPTICAL	141	128.00	V. AYALA-SURVEY-GSC
1	PRISM ASSEMBLY, TRIPLE OMNI OPTICAL	142	286.00	V. AYALA-SURVEY-GSC
1	PRISM POLE, TELECOPING GRADUATED	1235	95.00	V. AYALA-SURVEY-GSC
1	STEEL CHAIN, 60 METER, W/ REEL	149	123.00	V. AYALA-SURVEY-GSC
1	STEEL TAPE, 5 METER, POWER RETURN	148	18.00	V. AYALA-SURVEY-GSC
1	TOPCON AT-F6 AUTOMATIC	131	408.00	V. AYALA-SURVEY-GSC
1	TOPCON AT-F6 AUTOMATIC	135	408.00	V. AYALA-SURVEY-GSC
1	TRIBACH, OPTICAL-PLUMMET	140	304.00	V. AYALA-SURVEY-GSC
1	TRIPOD WOOD EXTENSION LEG	136	154.00	V. AYALA-SURVEY-GSC
1	TRIPOD WOOD EXTENSION LEG	137	154.00	V. AYALA-SURVEY-GSC
1	TRIPOD WOOD EXTENSION LEG	138	154.00	V. AYALA-SURVEY-GSC
1	TRIPOD WOOD EXTENSION LEG	139	154.00	V. AYALA-SURVEY-GSC

4. MISCELLANEOUS

UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	CALCULATOR	624	245.90	FRITZIE AQUINO
1	CALCULATOR	625	245.90	FRITZIE AQUINO
1	CUTTER	630	58.72	WADELL-B2
1	DICTIONARY WEBSTER	631	51.00	CLERICAL
1	DICTIONARY WEBSTER	632	105.10	ACCOUNTING
1	EXHAUST FAN	646	46.97	OPERATOR-B1
1	FIRE EXTINGUISHER 10 LBS	653	198.16	MM-3RD FLOOR
1	FIRE EXTINGUISHER 10 LBS	652	198.16	WADELL
1	FIRE EXTINGUISHER 10 LBS	649	198.16	ROOF TOP
1	FIRE EXTINGUISHER 10 LBS	650	198.16	LABORATORY
1	FIRE EXTINGUISHER 10 LBS	609	198.16	STV-1ST FLOOR
1	FIRE EXTINGUISHER 10 LBS	610	198.16	STV-1ST FLOOR
1	FIRE EXTINGUISHER 10 LBS	651	198.16	TOOL ROOM
1	FIRE EXTINGUISHER 10 LBS	611	198.16	STV-2ND FLOOR
1	FIRE EXTINGUISHER 10 LBS	661	198.16	LABORATORY
1	FIRE EXTINGUISHER 20 LBS	655	325.82	GENSET ROOM
1	FIRE EXTINGUISHER 20 LBS	654	323.64	LABORATORY
1	PENTAX CAMERA	1264	113.21	RAMON ASUERO
1	PENTAX CAMERA	1263	113.21	ACCOUNTING
1	SCIENTIFIC CALCULATOR	1261	33.00	V. FERNANDO-LAB-GSC
1	SCIENTIFIC CALCULATOR	1262	33.00	V. FERNANDO-LAB-GSC
1	SCIENTIFIC CALCULATOR		33.00	VICENTE AYALA
1	SCIENTIFIC CALCULATOR	745	33.00	JESUS LORENZO
1	SCIENTIFIC CALCULATOR	1259	33.00	VIRGILIO FERNANDO
1	SCIENTIFIC CALCULATOR	683	33.00	ACCOUNTING-GSC
1	SCIENTIFIC CALCULATOR	684	33.00	ACCOUNTING-GSC
1	SCIENTIFIC CALCULATOR	685	33.00	ACCOUNTING-GSC
1	SCIENTIFIC CALCULATOR	1265	33.00	MACLOYN FLORMATA

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UNIT	ITEM / DESCRIPTION	TAG #	VALUE ($)	USER/LOCATION
1	SCIENTIFIC CALCULATOR	1260	33.00	V. FERNANDO-LAB-GSC
1	SONY STEREO RECORDING WALKMAN	771	148.91	MACLOYN FLORMATA
1	SURE SHOT CAMERA	1266	145.00	VIRGILIO FERNANDO
1	THREE HOLE PUNCHER	772	71.55	ACCOUNTING
1	THREE HOLE PUNCHER	773	45.87	CLERICAL
1	VENETIAN BLINDS		2,544.54	ENTIRE BLDG WINDOWS

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Transfer of Property from the South Cotabato Road Project to the Makar Wharf Improvements Project

The following described furniture/office equipment is hereby transferred from the South Cotabato Road Project to the Makar Port Improvements Project on March 18, 1994.

Unit	Description	Unit Price (Pesos)	Actual Amt. (Pesos)	Amount Paid (Pesos)
3	4 Drawer Steel Filing Cabinets	3,100.00	9,300.00	9,300.00
3	Laser III High Back Lt. Gray	5,900.00	17,700.00	
29	Laser III Low Back Lt. Gray	5,600.00	162,400.00	
4	Volvo Visitor Chair Lt. Gray	4,600.00	18,400.00	
11	Clerical Chair Gaslift Lt. Gray	2,000.00	22,000.00	
8	Drafting Chair Gaslift Lt. Gray	2,800.00	22,400.00	242,900.00
2	Coffee Maker Imarflex	2,235.00	4,470.00	4,470.00
2	Sofa-Two Seater	2,400.00	4,800.00	
1	Sofa-Four Seater	4,840.00	4,840.00	
1	Corner Table	860.00	860.00	
2	Coffee Tables	2,000.00	4,000.00	14,500.00
18	Wood Desk Non-Executive	4,480.00	80,647.02	
3	Wood Desks Clerical	4,039.54	12,118.62	102,042.20 vat added
1	5 Drawer Cabinet	4,690.00	4,690.00	4,690.00
2	Magnetic Whyteboard	1,350.00	2,700.00	2,700.00
8	Drafting Table w/ Lamp & Straight Edge	12,250.00	98,000.00	98,000.00
2	Drawing Racks	3,516.60	7,033.20	
1	Wood Cabinet with shelves	2,608.61	2,608.61	10,605.99 vat added
1	Wood Table .90 x .60	2,972.35	2,972.35	
2	Table 1.52 x .60	3,654.22	7,308.44	
1	Wood Table 1.65 x .60	4,092.80	4,092.80	
3	Cabinet w. adj shelves	2,608.61	7,825.83	
8	Wood Cabinet w/ 2 fixed shelves	3,281.92	26,255.36	
1	Lg. Cabinet w/ adj. shelves	3,019.61	3,019.61	
1	Executive Desk	9,097.61	9,097.61	66,629.20 vat added
1	Conference Table	5,434.08	5,434.08	
4	Desk Wood, Non-Executive Type	4,480.39	17,921.56	
2	Desk Wood, Executive Type	9,097.61	18,195.22	
4	Cabinet Wood, 4 adj shelves w/o door	3,780.99	15,123.96	62,342.30 vat added
			Total	PHP 618,179.69

Backup Vouchers covering the described property are attached.

Transferred from the South Cotabato Project
by Morrison Maierle/CSSA, USAID Contractor

Fred A. Sielbach, Chief of Party

Witnessed by:

Macloyn Flormata, Office Engineer

Received by the Makar Port Improvements Project
by STV/Lyons Associates, USAID Contractor

Emilio Batol, Deputy Project Manager

Witnessed by:

Andrado Almalvez, Project Accountant

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Morrison Maierle/CSSA INC
Babb and Associates

BEST AVAILABLE DOCUMENT

South Cotabato Road Project, General Santos, Mindanao, Philippines
Proj. No. 492-1420
United States Agency for International Development

Transfer of Vehicle from the South Cotabato Road Project to the New General Santos City Airport Project

The following described vehicles are hereby transferred from the South Cotabato Road Project to the New General Santos City Airport Project on April 8, 1994.

Type	VIN Number	License Number
Ranger PickUp	1FTCR14X6MPA63004	PTM 397
Ranger PickUp	1FTCR14X6MPA63002	PTM 307
Ranger PickUp	1FTCR14X6MPA63001	PTM 497

The transfer of these vehicles will be for the duration of the project with the final disposition to be made by USAID upon completion of the project.

This transfer will be for operational responsibility and inventory control only. Wadell Engineering Corporation will be responsible for providing the following:

1. Proper maintenance and repair.
2. Insurance coverage as a requirement for vehicle registration.
3. License Plates and associated fees.

Transferred from the South Cotabato Project
by Morrison Maierle/CSSA
USAID Contractor

Fred A. Sielbach, Chief of Party

Received by the New General Santos City Airport
by Wadell Engineering Corporation
USAID Contractor

Fred A. Sielbach, Acting Site Representative

Witnessed by:

Macloyn Flormata, Office Engineer

Witnessed by:

Jesus N. Lorenzo, Civil Engineer

P.O. Box 125, Maduramente Bldg., National Highway, General Santos City, 9500
Tel.: (Piltel) 4929, (PT&T) 4214; Mla. Tel.: (632) 8102601 loc. 3577
Fax: (632) 8186914 loc. 3420; USA Tel.: (415) 904-3577 Fax: (415) 7888683 loc. 3577

Morrison Maierle/CSSA INC
Babb and Associates

BEST AVAILABLE DOCUMENT

South Cotabato Road Project, General Santos, Mindanao, Philippines
Proj. No. 492-1420
United States Agency for International Development

Transfer of Vehicle from the South Cotabato Road Project to the United States Agency for International Development

The following described vehicles are hereby transferred from the South Cotabato Road Project to the United States Agency for International Development on April 11, 1994.

Type	VIN Number	License Number
Explorer	1FMCU34X8MUD26813	PTM 937
Explorer	1FMCU34X8MUD26814	PTM 977
Explorer	1FMCU34X8MUD26812	PTM 957

The transfer of these vehicles will be for the duration of the project with the final disposition to be made by USAID upon completion of the project.

This transfer will be for operational responsibility and inventory control only. The United States Agency for International Development or USAID will be responsible for providing the following:

1. Proper maintenance and repair.
2. Insurance coverage as a requirement for vehicle registration.

Transferred from the South Cotabato Project
by Morrison Maierle/CSSA, USAID Contractor

Fred A. Sielbach, Chief of Party

Received by the United States Agency for
International Development (USAID)

Melchor Ancla, Project Engineer

Witnessed by:

Macloyn Flormata, Office Engineer

Witnessed by:

Gregorio Serisola, Project Engineer

P.O. Box 125, Maduramente Bldg., National Highway, General Santos City, 9500
Tel.: (Piltel) 4929, (PT&T) 4214; Mla. Tel.: (632) 8102601 loc. 3577
Fax: (632) 8186914 loc. 3420; USA Tel.: (415) 904-3577 Fax: (415) 7888683 loc. 3577

Morrison Maierle/CSSA INC
Babb and Associates

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South Cotabato Road Project, General Santos, Mindanao, Philippines
Proj. No. 492-1420
United States Agency for International Development

Transfer of Vehicle from the South Cotabato Road Project to the Makar Wharf Improvements Project

The following described vehicle is hereby transferred from the South Cotabato Road Project to the Makar Port Improvements Project on April 8, 1994.

Type	VIN Number	License Number
Ford Explorer	1FMCU34X8MUD26811	PTM 857

The transfer of this vehicle will be for the duration of the project with the final disposition to be made by USAID upon completion of the project.

This transfer will be for operational responsibility and inventory control only. STV/Lyons will be responsible for providing the following:

1. Proper maintenance and repair.
2. Insurance coverage as a requirement for vehicle registration.
3. License Plates and associated fees.

Transferred from the South Cotabato Project
by Morrison Maierle/CSSA, USAID Contractor

Fred A. Sielbach, Chief of Party

Received by the Makar Port Improvements Project
by STV/Lyons Associates, USAID Contractor

Guillermo Acosta, Chief Civil/Sanitary Engineer

Witnessed by:

Macloyn Flormata, Office Engineer

Witnessed by:

Andrado Almalvez, Project Accountant

Attached are pertinent documents on vehicle registration, insurance

P.O. Box 125, Maduramente Bldg., National Highway, General Santos City, 9500
Tel.: (Piltel) 4929, (PT&T) 4214; Mla. Tel.: (632) 8102601 loc. 3577
Fax: (632) 8186914 loc. 3420; USA Tel.: (415) 904-3577 Fax: (415) 7888683 loc. 3577

CONTRACT MODIFICATION

Mr. Larsen

AGENCY FOR INTERNATIONAL DEVELOPMENT
18th Floor, Ramon Magsaysay Center
1680 Roxas Boulevard, Ermita, Manila
Tel:57.46.56
FAX:521-6797

24 August 91

Mr. Humbert R. Causing
Morrison Knudsen International Group
Unit 7-C, Strata 200 Building
Emerald Avenue, Pasig
Metro Manila, Philippines

GSP/MK-003

Subject: South Cotabato Highways Design Build Project - Mindanao Development. Contract Modification No. 1, Draft.

Dear Mr. Causing:

There are a few items in the contract that require alteration to improve clarity, remove internal inconsistencies, etc., all of which we have discussed with you and various members of the M-K team. At one point, I sent by facsimile a draft for you to examine. I have added a couple of more items to that earlier submission.

The attached three pages are submitted to you for review and comment. To avoid confusion, I suggest that the earlier draft be destroyed.

I would like to get this in to Mr. Heishman before I depart for the USA. Can you get your comments back to me by 3 September? Once we are agreed on the language, I believe it will go through the Contracts Office without delay.

Thank you.

Sincerely,

Michael I. Kingery
Project Manager

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cc: Mr. Leroy Purifoy
Mr. Stan Heishman
Mr. Larry Larsen

SOUTH COTABATO HIGHWAYS PROJECT
MINDANAO DEVELOPMENT PROGRAM

Contract Modification Number 1

SECTION B (Supplies or Services and Prices/Costs)

Add the following paragraph:

VIII. Basis of Payment for Offices, Camps and Facilities

The facilities covered by Pay Item Number 021(a),(b) and (c) may be acquired by construction, and paid for on a lump sum basis. Alternatively, all or part of these facilities may be acquired by lease, and paid for in appropriate installments over the life of the Contract. Remodelling, renovation, and/or completion costs for leased facilities that are required prior to occupancy by the Contractor may be paid for as accrued, with such payments then deducted from the lump sum amount to compute the installment amounts to be later paid. The total amount paid the Contractor for these facilities, how ever acquired, will not exceed the lump sum amount shown in the Contract for the Pay Item.

VII. Maximum Amount Payable

The maximum amount payable under the contract is $40,167,240.00 which is the total cost of the items listed in the Base Proposal, plus an allowance for contingencies. Any variation in estimated quantities or economic price adjustments which might result in an increase in the total cost must be approved either by contract amendment or in writing by the Contracting Officer.

SECTION C (Description/Specification/Work statement)

DETAILED SCOPE OF WORK

g. Maintenance to be Performed by Contractor.

Make first paragraph read:

The Contractor shall maintain, at his cost, all portions of the work during construction. All such work performed shall maintain the road Sector's conformance to specifications.

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SECTION H-1 (Supplemental General Provisions)

Section 107.05 Acquisition Regulations

Add the following subsection:

107.05.1 AID Geographic Codes. All construction materials provided and consumed under this contract shall have their source and origin in those countries listed in AID Geographic Code 000 and 492 (USA and Philippines). All construction equipment shall have their source and origin in those countries in AID Geographic Code 000, 492 or 899 in effect on the date of acquisition. However, the source rule does not apply to construction materials or equipment owned by the Contractor prior to 28 February 1991.

SECTION H-3 (Supplemental Technical Specifications)

ITEM 105 - SUBGRADE PREPARATION

Add the following language to 105.5 Basis of Payment:

Subgrade preparation involving common material that is actually performed, whether in cut or embankment, will be paid for under Payment Item Number 105(1), other provisions of these specifications notwithstanding.

ITEM 307 - BITUMINOUS PLANT - MIX SURFACE COURSE - GENERAL

307.2.6 Proportioning of Mixture

Add the following language to this sub-item:

Substitution of Portland Cement for hydrated lime will be done only if approved in writing by the Enginer.

SECTION H-4 (Additional Technical Specifications)

ITEM 010.0 MOBILIZATION OF CONTRACTORS EQUIPMENT

010.2 Method of Measurement and Basis of Payment

Change the 2d sentence of the 1st paragraph to read:

"Equipment not provided or *already* on the project site ..."

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ITEM 030.0 CONTRACTOR FURNISHED ROAD DESIGN

030.6 Progress Reports

Delete the following language:

During the final investigation and design period, the Contractor shall deliver ten (10) copies of the Monthly Progress Report for the contract to the Engineer within ten (10) days after completion of the month of services covered.

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MAY 21 1992 11:00 am

BEST AVAILABLE DOCUMENT

RECEIVED MAY MKC- 11:

21-05-1992 10:33 FROM 6325216797 TO 0974214 P.0

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE | PAG

2. AMENDMENT/MODIFICATION NO.: Two (2)

3. EFFECTIVE DATE: 07/10/91

4. REQUISITION/PURCHASE REQ. NO.: 492-0420-3-10111 492-0420-2-00204 492-0456-3-19233 492-0456-3-0036

5. PROJECT NO.: 492-042

6. ISSUED BY — CODE

Contract Services Office
USAID/Philippines
RMC Bldg., 1680 Roxas Blvd.
Manila, Philippines

7. ADMINISTERED BY (If other than Item 6) — CODE

Office of Capital Projects (
USAID/Philippines
RMC Bldg., 1680 Roxas Blvd.
Manila, Philippines

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)

MORRISON KNUDSEN CORPORATION
P.O. Box 73, Boise, Idaho 83729

"CONTRACTS COPY"

D:modformat(1):NRuiz:05/06/92

CODE | FACILITY CODE

(V) 9A. AMENDMENT OF SOLICIT

9B. DATED (SEE ITEM 11)

10A. MODIFICATION OF CONT NO.: 492-0420-C-00-1

10B. DATED (SEE ITEM 13): 07/10/91

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, tended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the followin (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each co submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR A MENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and dat

12. ACCOUNTING AND APPROPRIATION DATA (If required)
72-110/11010; 0A109027492KG13 ($14,000,000) 72-111/21010; 0A119123492IG13 ($ 9,841,449)
72-111421010; 0A119123492IG13 ($15,425,791) 72-11/11010; 0A109027492KG13 ($. 900,000)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(V)

A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN T TRACT ORDER NO. IN ITEM 10A.

B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).

C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: 150.4.2

D. OTHER (Specify type of modification and authority)

X Foreign Assistance Act of 1961, as amended, and E.O. 11223

E. IMPORTANT: Contractor ☐ is not, ☒ is required to sign this document and return six copies to the issuing o

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter wh

This modification provides revisions to the text of the basic contract; provides for payment of $670,579 worth of additional "pay items," with the corresponding decrease in the dollar amount of existing pay items; and incorporates FAR Clause 52.232-27 entitled "Prompt Payment for Construction Contracts (April 1989)." There is no increase in total contract amount.

Specific changes follow.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged an and effect.

15A. NAME AND TITLE OF SIGNER (Type or print): Duane E. Buckert, Project Director

16A. NAME AND TITLE OF CONTRACTING OFFICER (Type: S. D. Heishman

15B. CONTRACTOR/OFFEROR: (Signature of person authorized to sign)

15C. DATE SIGNED: 5-13-92

16B. UNITED STATES OF AMERICA BY: (Signature of Contracting Officer)

16C. 5

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1.0 Section B. Supplies or Services and Price/Costs

1.1 Paragraph I. Contract Amount. Sub-paragraph A.

The paragraph is hereby revised as follows:

"A. The total amount of this contract is $40,167,240 which amount is comprised of the following:

Road Sector (Base Proposal)	Total Cost (Design and Construction)
2 (Sections 1 and 2)	$ 5,124,157
3 (Sections 1, 2 and 3)	22,242,523
4 (Section 2)	2,811,454
7	2,715,484
8	3,188.190
Additional Pay Items	670,579
Sub-Total Base Proposal	$ 36,752,387"

1.2. *Add the following:*

"VII. Maximum Amount Payable

The maximum amount payable under the contract is $40,167,240 which is the total cost of the items listed in the Base Proposal, plus an allowance for contingencies. Any variation in estimated quantities or economic price adjustments which might result in an increase in the total cost must be approved either by contract amendment or in writing by the Contracting Officer.

VIII. Basis of Payment for Offices, Camps and Facilities

The facilities covered by Pay Item Number 021 (a), (b) and (c) may be acquired by construction, and paid for on a lump sum basis. Alternatively, all or part of these facilities may be acquired by lease, and paid for in appropriate installments over the life of the Contract.

Remodelling, renovation, and/or completion costs for leased facilities that are required prior to occupancy by the Contractor may be paid for as accrued, with such payments then deducted from the lump sum amount to compute the installment amounts to be later paid.

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The total amount paid the Contractor for th facilities, however acquired, will not exceed the l sum amount shown in the Contract for the Pay Item.

IX. Payment to the Contractor for allowable costs under th contract shall be in accordance with FAR Clause 52.232- entitled "Prompt Payment for Construction Contrac (April 1989)" which is incorporated into this Contract

2.0 Attachment to Section B. Bill of Quantities and Unit Rates for Proposal Schedule No. 1. Base Proposal

2.1. Additional Pay Items

"Attachment 1" to this modification, which lists a number of Provisional Pay Items, is hereby incorporated into the basic contract. These Pay Items will be paid at the given provisional rates, as work described is performed by the Contractor. At the conclusion of the work, the provisional rates will be adjusted upward or downward as agreed to by both parties to this contract. Contractor agrees to maintain complete cost data for each Provisional Pay Item and to share it with AID, to allow agreement to be reached through negotiations at the conclusion of the work. Adjustments to the Total Cost for each Pay Item will be made on the basis of the delivered quantities of each Item, and the final price agreed to for each Pay Item.

2.2. Page 16. Bill of Quantities and Unit Rates Road Sector Number 3, Sections 1, 2 and 3: GSC-Makar-Kiam

This page is hereby modified as it appears in "Attachment 2" to this modification.

2.3. Page 17. Bill of Quantities and Unit Rates. Road Sector Number 3, Sections 1,2 and 3: GSC-Makar-Kiamba

This page is hereby modified as it appears in "Attachment 3" to this modification.

3.0 Section G. Contract Administration Data

Paragraphs "M" and "N" are hereby modified as follows:

"M. Paying Office: Office of Financial Management, USAID/Manila
RMC Bldg., 1680 Roxas Blvd., Manila, Philippines

N. Contractor Remittance : The Contractor will pick up payments at the USAID/Philippines' Office"

4.0 Section H-III. Supplemental Technical Specifications

The following items are modified as shown below.

"ITEM 105- SUBGRADE PREPARATION

Add the following language to 105.5 Basis of Payment:

Subgrade preparation involving common material that is actually performed, whether in cut or embankment, will paid for under Payment Item Number 105(1), other provisions of these specifications notwithstanding.

ITEM 307- BITUMINOUS PLANT - MIX SURFACE COURSE-GENERAL

307.2.6 Proportioning of Mixture

Substitution of Portland Cement for hydrated lime will be done only if approved in writing by the Engineer.

5.0 Section H-IV Additional Technical Specifications

ITEM 010.0 MOBILIZATION OF CONTRACTORS EQUIPMENT

101.2 Method of Measurement and Basis of Payment

Change the 2d sentence of the 1st paragraph to read:

"Equipment not provided or already on the project site."

ITEM 030.0 CONTRACTOR FURNISHED ROAD DESIGN

030.6 Progress Reports

Delete the following language:

"During the final investigation and design period, the Contractor shall deliver ten (10) copies of the Monthly Progress Report for the contract to the Engineer within ten (10) days after completion of the month of the services covered."

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6.0 Section I. Contract Clauses

The full text FAR Clause 52.232.-27 entitled " Prompt Payment for the construction Contracts (April 1989)" is hereby incorporated into the basic contract. The designated billing office for purposes of payment is the office of Financial Management, USAID/Manila.

The text of this FAR Clause appears as "Attachment 4" to this modification.

7.0 Section H-1 (Supplemental General Provisions)

7.1 Section 103.04 Contract and Bond

(c) Re-export Bonding.

Make this sub-paragraph read, in its entirety, as follows:

"Plant and equipment imported to the Philippines by the Contractor for executing the works shall be re-exported upon completion of the works. If required by the Government of the Philippines, a re-export bond with an amount of the duty-paid value of the imported plant and equipment shall be submitted by the Contractor. If required and submitted, the bond will be vacated upon re-export of the plant and equipment. If, at the completion of the works, the Contractor wishes to retain the plant and equipment in the Philippines for execution of other works, Contractor shall be responsible to either pay all applicable duties and taxes to the GOP, or seek waiver of that payment from the GOP."

7.2 Section 107.05 Acquisition Regulations

Add the following subsection:

107.05.1 AID Geographic Codes. All construction equipment shall have their source and origin in those counties in AID Geographic Code 000, 492 or 899 in effect on the date of acquisition. However, the source rule does not apply to equipment owned by the Contractor prior to 28 February 1991

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Contract No. 492-0420-C-00-1140-0
Modification No. 2
Attachment No. 1

SOUTH COTABATO HIGHWAYS PROJECT

MINDANAO DEVELOPMENT PROGRAM

GENERAL SANTOS CITY, SOUTH COTABATO
PHILIPPINES
CONTRACT NO. 492-0420-C-00-1140-00

PROVISIONAL BILL OF QUANTITIES AND UNIT RATES FOR ADDED WORK ITEMS

DPWH ITEM	DESCRIPTION	QTY. EST.	UNIT	UNIT PRICE US $	TOTAL COST US $
102(1)	UNSUITABLE MATERIAL TO WASTE	1000	CU.M.	3.98	3980
102(3)	ROCK EXCAVATION	500	CU.M.	35.00	17500
405(6)	LEAN CONCRETE	200	CU.M.	117.40	23480
504(5)	GROUTED RIPRAP	2000	CU.M.	106.19	212380
508(2)	CONCRETE SLOPE PROTECTION	1000	CU.M.	150.10	150100
602(4)	GUIDE POSTS	75	EACH	46.33	3475
602(5)	RELOCATE KILOMETER POSTS	100	EACH	93.39	9339
504(5)A	GROUTED RIPRAP LINED DITCH	1000	CU.M.	136.91	136911
505	STONE MASONRY	500	CU.M.	115.06	5753
604	FENCING	1	L.S.	55885.00	55885
	TOTAL (U.S. $)				670557

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*** BILL OF QUANTITIES AND UNIT RATES ***

ROAD SECTOR NUMBER 3, SECTIONS 1,2 & 3: GSC/MAKAR – KIAMBA

PAY ITEM NO.	DESCRIPTION OF BID ITEMS	QUANTITY (EST.)	UNIT	UNIT PRICE	TOTAL C
	V. DRAINAGE AND EROSION WORKS				
500(1)	Backfill Material, for Pipe Culverts	3000	CU.M.	8.449	25,34
500(1)a	RCPC, 61 cm. Diameter	500	L.M.	62.280	31,14
500(1)b	RCPC, 91 cm. Diameter	350	L.M.	92.057	32,22
500(1)c	RCPC, 107 cm. Diameter	0	L.M.	NA	NA
500(1)d	RCPC, 122 cm. Diameter	120	L.M.	106.933	12.83
500(4)	Structural Concrete for Pipe Headwalls R-1	~~500~~ 175	CU.M.	275.427	~~115,25~~ 48,20
500(5)	Reinforcing Steel for Pipe Headwalls	2300	KG.	1.223	2,81
503(3)	Cleaning Culvert Pipe in Place	800	L.M.	1.149	91
504(5)	Grouted Riprap	0	CU.M.	NA	NA
508(2)	Concrete Slope Protection	0	CU.M.	NA	NA
509(1)	Gabions R-1	~~2900~~ 100	CU.M.	105.217	~~305,1~~ 10,52
	SUBTOTAL V. DRAINAGE AND EROSION WORKS: ..... $				~~575,65~~ 160,99
	VI. INCIDENTAL WORKS				
602(3)	Metal Guardrail (Metal Beam)	900	L.M.	59.433	53,4
602(5)	Guardrail, Remove & Relocate	100	L.M.	28.780	2,8
605(4)	Signs and Markers	150	EA.	36.947	5,53
608(3)	Pvmt Markings (Reflective)	11000	L.M.	0.553	6,08
608(4)	Pavement Markings (Non-Reflective)	52500	L.M.	0.296	15,54
	SUBTOTAL VI. INCIDENTAL WORKS: ..... $				83,33
	TOTAL AMOUNT BID FOR ROAD SECTOR No. 3, SECTIONS 1,2 & 3 ....U.S.$				[illegible]

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Contract No. 492-0420-C-00-11
Modification No. 2
Attachment No. 2

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BILL OF QUANTITIES AND UNIT RATES

ROAD SECTOR NUMBER 3, SECTIONS 1,2 & 3 : GSC/MAKAR – KIAMBA

PAY ITEM NO.	DESCRIPTION OF BID ITEMS	QUANTITY (EST.)	UNIT	UNIT PRICE	TOTAL COST
	III. PAVEMENT,				
200	Aggregate Subbase Course	45000	CU.M.	14.834	667,523
201	Aggregate Base Course	0	CU.M.	NA	NA
202	Crushed Aggregate Base Course	97500	CU.M.	16,739	1,632,087
300(1)	Gravel Surface Course (Grading A)	118000	CU.M.	16,599	1,958,706
301	Bit. Prime Coat, MC-70	49,000 ~~[illegible]~~	SQ.M.	1.187	58,000.00
304(6)	Double Bit. Surface Treat.	0	SQ.M.	NA	NA
310(1)	Asphalt Concrete, Hot-Laid	70000	M.T.	70.839	4,958,760
311(3)	PCC Pavement	22500	CU.M.	91.572	2,061,551
SUBTOTAL III. PAVEMENT: ..... $					11,871,811
	IV. STRUCTURES				
400(4)	Precast Concrete Piles, Furnished (40x40)	0	L.M.	NA	NA
400(13)	Test Piles, Driven (40x40cm)	0	L.M.	NA	NA
401	Concrete Bridge Railing	0	L.M.	NA	NA
404	Reinforcing Steel	0	KG.	NA	NA
405(1)	Structural Conc., Class A	0	CU.M.	NA	NA
407(1)	Reinforced Conc. Box Culvert, Complete, w/wingwalls	0	CU.M.	NA	NA
407(2)	Reinforced Conc. Box Culvert Extensions, Complete, with Headwalls	315 375	CU.M.	5,000	1,575,000
SUBTOTAL IV. STRUCTURES					

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approval shall be deemed to have occurred on the 7th day after Contractor estimates have been received by the designated billing office.

(ii) The following periods of time will not be included in the determination of an interest penalty:

(A) The period taken to notify the Contractor of defects in invoices submitted to the Government, but this may not exceed 7 days.

(B) The period between the defects notice and resubmission of the corrected invoice by the Contractor.

(iii) Interest penalties will not continue to accrue after the filing of a claim for such penalties under the clause at 52.233-1, Disputes, or for more than 1 year. Interest penalties of less than $1.00 need not be paid.

(iv) Interest penalties are not required on payment delays due to disagreement between the Government and Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained in accordance with the terms of the contract. Claims involving disputes, and any interest that may be payable will be resolved in accordance with the clause at 52.233-1, Disputes.

(6) An interest penalty shall also be paid automatically by the designated payment office, without request from the Contractor, if a discount for prompt payment is taken improperly. The interest penalty will be calculated on the amount of discount taken for the period beginning with the first day after the end of the discount period through the date when the Contractor is paid.

(7) If this contract was awarded on or after October 1, 1989, a penalty amount, calculated in accordance with regulations issued by the Office of Management and Budget, shall be paid in addition to the interest penalty amount if the Contractor—

(i) Is owed an interest penalty;

(ii) Is not paid the interest penalty within 10 days after the date the invoice amount is paid; and

(iii) Makes a written demand, not later than 40 days after the date the invoice amount is paid, that the agency pay such a penalty.

(h) *Contract Financing Payments.*

(1) For purposes of this clause, if applicable, "contract financing payment," means a Government disbursement of monies to a Contractor under a contract clause or other authorization prior to acceptance of supplies or services by the Government, other than progress payments based on estimates of amount and value of work performed. Contract financing payments include advance payments.

(2) If this contract provides for contract financing, requests for payment shall be submitted to the designated billing office as specified in this contract or as directed by the Contracting Officer. Contract financing payments shall be made on the (insert day as prescribed by Agency head; if no after receipt of a proper contract financing reques the designated billing office. In the event that an au other review of a specific financing request is req to ensure compliance with the terms and condition the contract, the designated payment office is not c pelled to make payment by the due date specified. advance payments, loans, or other arrangements th not involve recurrent submissions of contract fina requests, payment shall be made in accordance wit corresponding contract terms or as directed by Contracting Officer. Contract financing payments not be assessed an interest penalty for payment dela

(End of clause)

52.232-27 Prompt Payment for Construction Contracts.

As prescribed in 32.908(b), insert the following clau

(a) As authorized in 32.905(c)(1), the Contrac Officer may modify the date in subdivision (a)(1)(i)(A the clause to specify a period longer than 14 da required to afford the Government a reasonable opport to adequately inspect the work and to determine the quacy of the Contractor's performance under the contra

(b) As authorized in 32.905(c)(5), the Contra Officer may modify the date in subdivision (a)(4)(i) c clause to specify a period longer than 7 days for con tive acceptance or constructive approval if requir afford the Government a reasonable opportunity to in and test the property furnished or evaluate the service formed.

(c) If applicable, as authorized in 32.906(a) and o allowed under agency policies and procedure Contracting Officer may insert in paragraph (b) clause a period shorter than 30 days (but not less days) for making contract financing payments.

PROMPT PAYMENT FOR CONSTRUCTIO CONTRACTS (APR 1989)

Notwithstanding any other payment terms in thi tract, the Government will make invoice paymen contract financing payments under the terms and tions specified in this clause. Payment shall be cons as being made on the day a check is dated or an ele funds transfer is made. Definitions of pertinent ter set forth in 32.902. All days referred to in this cla calendar days, unless otherwise specified. The ter sign vendor" means an incorporated concern not b ated in the United States or an unincorporated c having its principal place of business outside the States.

(a) *Invoice Payments.*

(1) For purposes of this clause, there are types of invoice payments which may occur un contract, as follows:

(i) Progress payments. If requested on an

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"Renegotiation Board Interest Rate," and it is published in the *Federal Register* semiannually on or about January 1 and July 1. The interest penalty shall accrue daily on the invoice payment amount approved by the Government and be compounded in 30-day increments inclusive from the first day after the due date through the payment date. That is, interest accrued at the end of any 30-day period will be added to the approved invoice payment amount and be subject to interest penalties if not paid in the succeeding 30-day period. If the designated billing office failed to notify the Contractor of a defective invoice within the periods prescribed in subparagraph (a)(2) of this clause, then the due date on the corrected invoice will be adjusted by subtracting the number of days taken beyond the prescribed notification of defects period. Any interest penalty owed the Contractor will be based on this adjusted due date. Adjustments will be made by the designated payment office for errors in calculating interest penalties, if requested by the Contractor.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor for payments described in subdivision (a)(1)(ii) of this clause, Government acceptance or approval shall be deemed to have occurred constructively on the 7th day after the Contractor has completed the work or services in accordance with the terms and conditions of the contract. In the event that actual acceptance or approval occurs within the constructive acceptance or approval period, the determination of an interest penalty shall be based on the actual date of acceptance or approval. Constructive acceptance or constructive approval requirements do not apply if there is a disagreement over quantity, quality, or Contractor compliance with a contract provision. These requirements also do not compel Government officials to accept work or services, approve Contractor estimates, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(ii) The following periods of time will not be included in the determination of an interest penalty:

(A) The period taken to notify the Contractor of defects in invoices submitted to the Government, but this may not exceed 7 days.

(B) The period between the defects notice and resubmission of the corrected invoice by the Contractor.

(iii) Interest penalties will not continue to accrue after the filing of a claim for such penalties under the clause at 52.233-1, Disputes, or for more than 1 year. Interest penalties of less than $1.00 need not be paid.

(iv) Interest penalties are not required on payment delays due to disagreement between the Government and Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained in accordance with the terms of the contract. Claims involving disputes, and any interest that may be payable, will be resolved in accordance with the clause at 52.233-1, Disputes.

(5) An interest penalty shall also be paid automatically by the designated payment office, without request from the Contractor, if a discount for prompt payment is taken improperly. The interest penalty will be calculated on the amount of discount taken for the period beginning with the first day after the end of the discount period through the date when the Contractor is paid.

(6) If this contract was awarded on or after October 1, 1989, a penalty amount, calculated in accordance with regulations issued by the Office of Management and Budget, shall be paid in addition to the interest penalty amount if the Contractor—

(i) Is owed an interest penalty;

(ii) Is not paid the interest penalty within 10 days after the date the invoice amount is paid; and

(iii) Makes a written demand, not later than 40 days after the date the invoice amount is paid, that the agency pay such a penalty.

(b) *Contract Financing Payments.*

(1) For purposes of this clause, if applicable, "contract financing payment" means a Government disbursement of monies to a Contractor under a contract clause or other authorization prior to acceptance of supplies or services by the Government, other than progress payments based on estimates of amount and value of work performed. Contract financing payments include advance payments and interim payments under cost-type contracts.

(2) If this contract provides for contract financing, requests for payment shall be submitted to the designated billing office as specified in this contract or as directed by the Contracting Officer. Contract financing payments shall be made on the (insert day as prescribed by Agency head; if not prescribed, insert 30th day) day after receipt of a proper contract financing request by the designated billing office. In the event that an audit or other review of a specific financing request is required to ensure compliance with the terms and conditions of the contract, the designated payment office is not compelled to make payment by the due date specified. For advance payments, loans, or other arrangements that do not involve recurrent submissions of contract financing requests, payment shall be made in accordance with the corresponding contract terms or as directed by the Contracting Officer. Contract financing payments shall not be assessed an interest penalty for payment delays.

(c) The Contractor shall include in each subcontract for property or services (including a material supplier) for the purpose of performing this contract the following:

(1) A payment clause which obligates the Contractor

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in this contract, based on Contracting Officer approval of the estimated amount and value of work or services performed, including payments for reaching milestones in any project:

(A) The due date for making such payments shall be 14 days after receipt of the payment request by the designated billing office. However, if the designated billing office fails to annotate the payment request with the actual date of receipt, the payment due date shall be deemed to be the 14th day after the date the Contractor's payment request is dated, provided a proper payment request is received and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(B) The due date for payment of any amounts retained by the Contracting Officer in accordance with the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts, shall be as specified in the contract or, if not specified, 30 days after approval for release to the Contractor by the Contracting Officer.

(ii) Final payments based on completion and acceptance of all work and presentation of release of all claims against the Government arising by virtue of the contract, and payments for partial deliveries that have been accepted by the Government (e.g., each separate building, public work, or other division of the contract for which the price is stated separately in the contract):

(A) The due date for making such payments shall be either the 30th day after receipt by the designated billing office of a proper invoice from the Contractor, or the 30th day after Government acceptance of the work or services completed by the Contractor, whichever is later. However, if the designated billing office fails to annotate the invoice with the date of actual receipt, the invoice payment due date shall be deemed to be the 30th day after the date the Contractor's invoice is dated, provided a proper invoice is received and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(B) On a final invoice where the payment amount is subject to contract settlement actions (e.g., release of claims), acceptance shall be deemed to have occurred on the effective date of the contract settlement.

(c) An invoice is the Contractor's bill or written request for payment under the contract for work or services performed under the contract. An invoice shall be prepared and submitted to the designated billing office. A proper invoice must include the items listed in subdivisions (a)(2)(i) through (a)(2)(ix) of this clause. If the invoice does not comply with these requi Contractor will be notified of the defect wi after receipt of the invoice at the design office. Untimely notification will be taken in the computation of any interest penalt Contractor in the manner described in su (a)(4) of this clause:

(i) Name and address of the Contractor

(ii) Invoice date.

(iii) Contract number or other autho work or services performed (including or and contract line item number).

(iv) Description of work or services per

(v) Delivery and payment terms (e.g., I ment discount terms),

(vi) Name and address of Contractor whom payment is to be sent (must be th that in the contract or in a proper notice ment).

(vii) Name (where practicable), title, p ber, and mailing address of person to be event of a defective invoice.

(viii) For payments described in su (a)(1)(i) of this clause, substantiation of th requested and certification in accordanc requirements of the clause at 52.232-5, Under Fixed-Price Construction Contracts.

(ix) Any other information or docu required by the contract.

(3) An interest penalty shall be paid au by the designated payment office, without re the Contractor, if payment is not made by th and the conditions listed in subdivision through (a)(3)(iii) of this clause are met, if An interest penalty shall not be paid on contra ed to foreign vendors outside the United State performed outside the United States.

(i) A proper invoice was received by th ed billing office.

(ii) A receiving report or other Governm mentation authorizing payment was prec there was no disagreement over quantit Contractor compliance with any contra condition, or requested progress payment a

(iii) In the case of a final invoice for a of funds due the Contractor for work or se formed, the amount was not subject to fu tract settlement actions between the Gover the Contractor.

(4) The interest penalty shall be at the r lished by the Secretary of the Treasury under of the Contract Disputes Act of 1978 (41 U that is in effect on the day after the due da where the interest penalty is prescribed by stat mental authority. This rate is referred t

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"Renegotiation Board Interest Rate," and it is published in the *Federal Register* semiannually on or about January 1 and July 1. The interest penalty shall accrue daily on the invoice payment amount approved by the Government and be compounded in 30-day increments inclusive from the first day after the due date through the payment date. That is, interest accrued at the end of any 30-day period will be added to the approved invoice payment amount and be subject to interest penalties if not paid in the succeeding 30-day period. If the designated billing office failed to notify the Contractor of a defective invoice within the periods prescribed in subparagraph (a)(2) of this clause, then the due date on the corrected invoice will be adjusted by subtracting the number of days taken beyond the prescribed notification of defects period. Any interest penalty owed the Contractor will be based on this adjusted due date. Adjustments will be made by the designated payment office for errors in calculating interest penalties, if requested by the Contractor.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor for payments described in subdivision (a)(1)(ii) of this clause, Government acceptance or approval shall be deemed to have occurred constructively on the 7th day after the Contractor has completed the work or services in accordance with the terms and conditions of the contract. In the event that actual acceptance or approval occurs within the constructive acceptance or approval period, the determination of an interest penalty shall be based on the actual date of acceptance or approval. Constructive acceptance or constructive approval requirements do not apply if there is a disagreement over quantity, quality, or Contractor compliance with a contract provision. These requirements also do not compel Government officials to accept work or services, approve Contractor estimates, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(ii) The following periods of time will not be included in the determination of an interest penalty:

(A) The period taken to notify the Contractor of defects in invoices submitted to the Government but this may not exceed 7 days.

(B) The period between the defects notice and resubmission of the corrected invoice by the Contractor.

(iii) Interest penalties will not continue to accrue after the filing of a claim for such penalties under the clause at 52.233-1, Disputes, or for more than 1 year. Interest penalties of less than $1.00 need not be paid.

(iv) Interest penalties are not required on payment delays due to disagreement between the Government and Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained in accordance with the terms of the contract. Claims involving disputes, and any interest that may be payable, will be resolved in accordance with the clause at 52.233-1, Disputes.

(5) An interest penalty shall also be paid automatically by the designated payment office, without request from the Contractor, if a discount for prompt payment is taken improperly. The interest penalty will be calculated on the amount of discount taken for the period beginning with the first day after the end of the discount period through the date when the Contractor is paid.

(6) If this contract was awarded on or after October 1, 1989, a penalty amount, calculated in accordance with regulations issued by the Office of Management and Budget, shall be paid in addition to the interest penalty amount if the Contractor—

(i) Is owed an interest penalty;

(ii) Is not paid the interest penalty within 10 days after the date the invoice amount is paid; and

(iii) Makes a written demand, not later than 40 days after the date the invoice amount is paid, that the agency pay such a penalty.

(b) *Contract Financing Payments.*

(1) For purposes of this clause, if applicable, "contract financing payment" means a Government disbursement of monies to a Contractor under a contract clause or other authorization prior to acceptance of supplies or services by the Government, other than progress payments based on estimates of amount and value of work performed. Contract financing payments include advance payments and interim payments under cost-type contracts.

(2) If this contract provides for contract financing, requests for payment shall be submitted to the designated billing office as specified in this contract or as directed by the Contracting Officer. Contract financing payments shall be made on the (insert day as prescribed by Agency head; if not prescribed, insert 30th day) day after receipt of a proper contract financing request by the designated billing office. In the event that an audit or other review of a specific financing request is required to ensure compliance with the terms and conditions of the contract, the designated payment office is not compelled to make payment by the due date specified. For advance payments, loans, or other arrangements that do not involve recurrent submissions of contract financing requests, payment shall be made in accordance with the corresponding contract terms or as directed by the Contracting Officer. Contract financing payments shall not be assessed an interest penalty for payment delays.

(c) The Contractor shall include in each subcontract for property or services (including a material supplier) for the purpose of performing this contract the following:

(1) A payment clause which obligates the Contractor

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to pay the subcontractor for satisfactory performance under its subcontract not later than 7 days from receipt of payment out of such amounts as are paid to the Contractor under this contract.

(2) An interest penalty clause which obligates the Contractor to pay to the subcontractor an interest penalty for each payment not made in accordance with the payment clause—

(i) For the period beginning on the day after the required payment date and ending on the date on which payment of the amount due is made; and

(ii) Computed at the rate of interest established by the Secretary of the Treasury, and published in the *Federal Register*, for interest payments under section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(3) A clause requiring each subcontractor to include a payment clause and an interest penalty clause conforming to the standards set forth in subparagraphs (c)(1) and (c)(2) of this clause in each of its subcontracts, and to require each of its subcontractors to include such clauses in their subcontracts with each lower-tier subcontractor or supplier.

(d) The clauses required by paragraph (c) of this clause shall not be construed to impair the right of Contractor or a subcontractor at any tier to negotiate, and to include in their subcontract, provisions which—

(1) Permit the Contractor or a subcontractor to retain (without cause) a specified percentage of each progress payment otherwise due to a subcontractor for satisfactory performance under the subcontract without incurring any obligation to pay a late payment interest penalty, in accordance with terms and conditions agreed to by the parties to the subcontract, giving such recognition as the parties deem appropriate to the ability of a subcontractor to furnish a performance bond and a payment bond;

(2) Permit the Contractor or subcontractor to make a determination that part or all of the subcontractor's request for payment may be withheld in accordance with the subcontract agreement; and

(3) Permit such withholding without incurring any obligation to pay a late payment penalty if—

(i) A notice conforming to the standards of paragraph (g) of this clause has been previously furnished to the subcontractor; and

(ii) A copy of any notice issued by a Contractor pursuant to subdivision (d)(3)(i) of this clause has been furnished to the Contracting Officer.

(e) If a Contractor, after making a request for payment to the Government but before making a payment to a subcontractor for the subcontractor's performance covered by the payment request, discovers that all or a portion of the payment otherwise due such subcontractor is subject to withholding from the subcontractor in accorden subcontract agreement, then the Contractor shall

(1) Furnish to the subcontractor a notice to the standards of paragraph (g) of this cla as practicable upon ascertaining the cause gi a withholding, but prior to the due date for tor payment;

(2) Furnish to the Contracting Officer, practicable, a copy of the notice furnished to tractor pursuant to subparagraph (e)(1) of this

(3) Reduce the subcontractor's progress p an amount not to exceed the amount speci notice of withholding furnished under sub (e)(1) of this clause;

(4) Pay the subcontractor as soon as practi the correction of the identified subcontract pe deficiency, and—

(i) Make such payment within—

(A) Seven days after correction of fied subcontract performance deficien the funds therefor must be recovered Government because of a reduction und sion (e)(5)(i)) of this clause; or

(B) Seven days after the Contracto such funds from the Government; or

(ii) Incur an obligation to pay a lat interest penalty computed at the rate of int lished by the Secretary of the Treasury, an in the *Federal Register*, for interest payn section 12 of the Contracts Disputes Act U.S.C. 611) in effect at the time the accrues the obligation to pay an interest p

(5) Notify the Contracting Officer upon—

(i) Reduction of the amount of any certified application for payment; or

(ii) Payment to the subcontractor of a amounts of a progress payment, specifyin

(A) The amounts withheld under s (e)(1) of this clause; and

(B) The dates that such withholdin ended; and

(6) Be obligated to pay to the Gov amount equal to interest on the withheld (computed in the manner provided in 3903(c)(1)), from the 8th day after receipt held amounts from the Government until—

(i) The day the identified subcon formance deficiency is corrected; or

(ii) The date that any subsequent reduced under subdivision (e)(5)(i) of this

(f)(1) If a Contractor, after making payment subcontractor, receives from a supplier or subc the first-tier subcontractor (hereafter referred to a tier subcontractor") a written notice in accorden tion 2 of the Act of August 24, 1935 (49 U.S.C.

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Act), asserting a deficiency in such first-tier subcontractor's performance under the contract for which the Contractor may be ultimately liable, and the Contractor determines that all or a portion of future payments otherwise due such first-tier subcontractor is subject to withholding in accordance with the subcontract agreement, then the Contractor may, without incurring an obligation to pay an interest penalty under subparagraph (e)(6) of this clause—

(i) Furnish to the first-tier subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon making such determination; and

(ii) Withhold from the first-tier subcontractor's next available progress payment or payments an [illegible] in the notice of withholding furnished under subdivision (f)(1)(i) of this clause.

(2) As soon as practicable, but not later than 7 days after receipt of satisfactory written notification that the identified subcontract performance deficiency has been corrected, the Contractor shall pay the amount withheld under subdivision (f)(1)(ii) of this clause to such first-tier subcontractor, or shall incur an obligation to pay a late payment interest penalty to such first-tier subcontractor computed at the rate of interest established by the Secretary of the Treasury, and published in the *Federal Register*, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(g) A written notice of any withholding shall be issued to a subcontractor (with a copy to the Contracting Officer of any such notice issued by the Contractor), specifying—

(1) The amount to be withheld;

(2) The specific causes for the withholding under the terms of the subcontract; and

(3) The remedial actions to be taken by the subcontractor in order to receive payment of the amounts withheld.

(h) The Contractor may not request payment from the Government of any amount withheld or retained in accordance with paragraph (d) of this clause until such time as the Contractor has determined and certified to the Contracting Officer that the subcontractor is entitled to the payment of such amount.

(i) A dispute between the Contractor and subcontractor relating to the amount or entitlement of a subcontractor to a payment or a late payment interest penalty under a clause included in the subcontract pursuant to paragraph (c) of this clause does not constitute a dispute to which the United States is a party. The United States may not be interpleaded in any judicial or administrative proceeding involving such a dispute.

(j) Except as provided in paragraph (i) of this clause, this clause shall not limit or impair any contractual, administrative, or judicial remedies otherwise available to the Contractor or a subcontractor in the event of a dispute involving late payment or nonpayment by the Contractor or deficient subcontract performance or nonperformance by a subcontractor.

(k) The Contractor's obligation to pay an interest penalty to a subcontractor pursuant to the clauses included in a subcontract under paragraph (c) of this clause shall not be construed to be an obligation of the United States for such interest penalty. A cost reimbursement claim may not include any amount for reimbursement of such interest penalty.

(End of clause)

52.232-29 Electronic Funds Transfer Payment Methods.

As prescribed in 32.908(d), insert the following clause:

ELECTRONIC FUNDS TRANSFER PAYMENT METHODS (APR 1989)

Payments under this contract will be made by the Government either by check or electronic funds transfer (through the Treasury Fedline Payment System (FEDLINE) or the Automated Clearing House (ACH)), at the option of the Government. After award, but no later than 14 days before an invoice or contract financing request is submitted, the Contractor shall designate a financial institution for receipt of electronic funds transfer payments, and shall submit this designation to the Contracting Officer or other Government official, as directed.

(a) For payment through FEDLINE, the Contractor shall provide the following information:

(1) Name, address, and telegraphic abbreviation of the financial institution receiving payment.

(2) The American Bankers Association 9-digit identifying number for wire transfers of the financial institution receiving payment if the institution has access to the Federal Reserve Communications System.

(3) Payee's account number at the financial institution where funds are to be transferred.

(4) If the financial institution does not have access to the Federal Reserve Communications System, name, address, and telegraphic abbreviation of the correspondent financial institution through which the financial institution receiving payment obtains wire transfer activity. Provide the telegraphic abbreviation and American Bankers Association identifying number for the correspondent institution.

(b) For payment through ACH, the Contractor shall provide the following information:

(1) Routing transit number of the financial institution receiving payment (same as American Bankers Association identifying number used for FEDLINE).

(2) Number of account to which funds are to be deposited.

(3) Type of depositor account ("C" for checking, "S" for savings).

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U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

Ramon Magsaysay Center
1680 Roxas Boulevard
Ermita 1000, Manila
Philippines

USAID

Fax No.: 632 - 521 - 5
Tel. No.: 632 - 521 - 7

INCOMING CORRESPONDENCE	INFO	ACT
PROJ. DIRECTOR		
ASST. D. MGR.		
PROJ. ENGR.	X	
DEPUTY ENGR.	X	
BUS. MGR.	X	
GEN. SUPT.		
SAFETY ENGR.		
Q. A. MGR.		
ASST. PROJ. ENGR.		
CONST. MGR.		
FILE 11-01-01 11D-2	YES	NO
RESPONSE REQUIRED		

January 12, 1993

Mr. Duane Buckert
Morrison Knudsen Corporation
P.O. Box 73
Boise, Idaho 83729

Subject : Contract No. AID 492-0420-C-00-1140-00
Modification No. 3

Dear Mr. Buckert:

Attached is an executed copy of subject modification, duly signed by USAID, for your file.

Sincerely,

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S. D. Heishman
Contracting Officer

Encl: a/s

DEC 06 1993

RECEIVED JAN 30 1993

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AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT	1. CONTRACT ID CODE	PAGE 1 OF PAGES 3

AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ.NO.	5. PROJECT NO. (If applicable)
Three (3)	July 31, 1992	PIO/T 492-0420-3-00204-01	492-0420

6. ISSUED BY CODE	7. ADMINISTERED BY (If other than 6) CODE
Contract Services Office, USAID/Philippines RMC Bldg., 1680 Roxas Boulevard, Manila Phone: 501-426 Fax: 522-4337	Office of Capital Projects, USAID/Philippines RMC Bldg., 1680 Roxas Boulevard, Manila Phone: 521-7116 x 2474 Fax: 521-5235

8. NAME AND ADDRESS OF CONTRACTOR (No. street, country, state and ZIP Code)

MORRISON KNUDSEN CORPORATION
P.O. Box 73, Boise, Idaho 83729

CLEAR: CSO OCP OFM

A:Modformat:DRAFT:CSO:NRuiz:December 16, 1992

CONTRACTOR'S COPY

CODE	FACILITY CODE

9A. AMENDMENT OF SOLICITATION NO.

9B. DATED (SEE ITEM 11)

10A. MODIFICATION OF CONTRACT/ORDER NO. 492-0420-C-00-1140-02

10B. DATED (SEE ITEM 13) July 10, 1991

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of offers. ☐ is extended ☐ is not extended

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:
(a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IF MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as in paying office, appropriation date, etc) SET FORTH IN ITEM 14, PURSUANT TO AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X	D. OTHER (specify type of modification and authority) Foreign Assistance Act of 1961, as amended, and E.O. 11223

E. IMPORTANT: Contractor ☐ is not [XX] is required to sign this document and return six copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

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This modification constitutes a change order for the Contractor to proceed with the addition of and deletion of certain road construction as described in the following pages provided that the additional road construction can be done without an increase in contract amount.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)	
Duane E. Buckert, Project Director		S. D. Heishman	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED 12-23-92	16B. UNITED STATES OF AMERICA BY (Signature of Contracting Officer)	16C. DATE SIGNED 1/11/93

1.0. Background

From discussions between the USAID project office and the Contractor staff, it has been determined that proper rearrangement of work on various sectors will the Contractor to accomplish, within the cost and time frame of the base bid, much of the work on roads that appear in the Additive Alternate Section of the contract (Section B.III.).

2.0. Work to be performed.

AID has determined that it would be in the Government's interest to have the Contractor undertake some of the additive alternate work set forth in Section B.III of the basic contract and is therefore issuing this change order to revise the work to be done as follows:

Sector 2. - Final design and construction of the entire alignment, including certain bridges from the Buayan River to a point on the south end of the Glan poblacion (vicinity of the roadside cemetery).

Sector 3. - Final design and construction of the entire alignment from the beginning of Section 1 in the vicinity of the Makar River to the eastern town limits of Maitum poblacion, including Saub bridge, but excluding replacement of the 200 meter bailey-type bridge at Pangi (Sta. 95+400).

Sector 4. - Final design and construction of concrete paved sections of road as follows:

- o 1.9km. PCC paved roadway from Sta. 01+600 to Sta. 03+500.

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Sector 4. - o 300 meter PCC paved section from Sta. 05+000 to 05+300 (at gateway to freshpack processing facility).

o Approximately 2.0 km. PCC 4-meter pavement, including appropriate drainage structures, from plantation boundary (Sta. 13+575) to the north end of Landan village (approximately Sta. 15+070).

Sector 7. - Final design and construction of the Sector, as specified in the existing contract (No change).

Sector 8. - Final design and construction of the westernmost section only, from Kalombog to Norala municipal town.

3.0. Definitization of work under this change order.

a. The Contractor shall work with the USAID on-site Engineer in preparing a proposal which should contain sufficient details to support the proposed prices. The Contractor's proposal shall consist of a rendition of actual quantities (including the contract prices) of work already delivered in the base bid, as well as projected quantities (and proposed prices) of work necessary to design and construct the works described in this change order.

b. After the Contractor's proposal is received, an equitable adjustment in the contract price will be negotiated and agreed to. Until this happens, the Contractor will be paid for new work at the current unit base bid prices in the contract.

c. After an equitable adjustment is agreed to, this change order shall be definitized through a subsequent amendment to the Contract.

4.0. Contract Amount

This change order is being issued with the understanding that the additional work can be done at no increase in the present contract amount of $40,167,240.

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AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE | PAGE OF 1

2. AMENDMENT/MODIFICATION NO. Four (4)

3. EFFECTIVE DATE Sept. 24, 1993

4. REQUISITION/PURCHASE REQ. NO. PIO/T 492-0430-3-20218

5. PROJECT NO. (If applicable) 492-0420

6. ISSUED BY CODE
Contract Services Office (CSO)
USAID/Philippines
RMC Bldg., 1580 Roxas Blvd.
Manila 1000

7. ADMINISTERED BY (If other than Item 6) CODE
Office of Capital Projects (OCP)
USAID/Philippines

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)

MORRISON KNUDSEN CORPORATION
P.O. Box 73
Boise, Idaho 83729

CSO:ERPura/eact

BEST AVAILABLE DOCUMENT

CODE | FACILITY CODE

(/) 9A. AMENDMENT OF SOLICITATION

9B. DATED (SEE ITEM 11)

10A. MODIFICATION OF CONTRACT NO.
XXX AID 492-0420-C-00-114

10B. DATED (SEE ITEM 13)

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

72-112131037 HES29227492KG13 P921084/E920172 PE#02

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(/) A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).

C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

X FAA of 1961, as amended and E.O. 11223.

D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not, ☒ is required to sign this document and return 6 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

The purpose of this modification is to adjust total contract price to: (1) establish prices for the changes in work ordered under Modification No. 3; (2) definitize the provisional prices that were added by Modification No. 2; (3) make changes in the quantities being delivered hereunder; (4) reflect economic price adjustments that have occurred; (5) increase the amount for contingencies; and (6) modify language pertaining to completion acceptance and other language needing clarification.

The above changes result in an increase of $2,929.084 in the total contract amount from "$40,167,240" to "$43,096,324".

Specific details of this modification are shown on pages 1-7.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)
A. W. B[illegible], Project Director

16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)
Neil C. Edin

15B. CONTRACTOR/OFFEROR
(Signature of person authorized to sign)

15C. DATE SIGNED 24 Sept. 93

16B. UNITED STATES OF AMERICA
BY (Signature of Contracting Officer)

16C. DATE 9/

NSN 7540-01-152-8070
PREVIOUS EDITION UNUSABLE

30-105

STANDARD FORM 30 (Rev. 10-83)
Prescribed by GSA
FAR (48 CFR) 53.243

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1.0 SECTION B - SUPPLIES OR SERVICES AND PRICE/COSTS

1.1 Change Sub-sections I and II to read as follows:

"I. Contract Amount

A. The total amount of this contract is $43,096,324 which amount is comprised of the following:

Road Section	Total Cost*
2	$13,155,657
3	22,555,537
4	1,401,955
7	3,750,827
8	1,218,245
Bridges	2,163,967
Total Cost - Design and Construction	$44,246,189
B. Contingency Amount for Variation in Quantities and/or Change Orders	500,000
C. Economic Price Adjustment	(1,649,865)
D. TOTAL CONTRACT AMOUNT	$43,096,324

E. Individual item quantities, unit prices and costs are detailed in the Bill of Quantities (Attachment to Section B). In the event of any discrepancies, for purposes of payment the total cost of each road sector will be the maximum payable amount unless it is increased by the Contracting Officer.

II. Obligated Funds

The amount of the funds obligated under this contract is $43,096,324, and the Contractor will not be paid any amount in excess of the obligated amount unless authorized by the Contracting Officer."

1.2 Delete sub-section III Additive Alternates in its entirety.

1.3 Change Sub-section VII Maximum Amount Payable to read as follows:
"The maximum amount payable under this contract is $43,096,324 unless approved by the Contract Officer. Unit Costs for Pay Items 102 (3) Surplus Rock Excavation and 104 (1) Embankment are provisional. The total cost of these items will be finalized when final quantities and construction costs are

*Note: All figures rounded to the nearest dollar. Total Cost (Design and Construction) is calculated from sum of price extensions from unit prices.

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verified. Any variation in estimated quantities or economic price adjustments which might result in an increase in the total contract amount must be approved either by contract amendment or in writing by the Contracting Officer."

1.4 The attached bill of quantities and unit rates replace those currently in the Contract.

1.5 Section C DESCRIPTION/SPECIFICATION/WORK STATEMENT is revised as follows:

Item No. 2 - Detailed Scope of Work

g. Maintenance to be Performed by Contractor

Last paragraph changed to read:

"During the one-year Defect Liability Period, the Contractor shall be responsible for all costs associated with repairs to the works that result from defects in the works, or Contractor negligence. See Section H-1, 105.13"

1.6 Section 101 - Definitions and Terms under SECTION H-1 (1ST PART) SUPPLEMENTAL GENERAL PROVISIONS is revised to read as follows:

101.02 Definitions

3) "Completion Certificate"

In the text of this paragraph, change the words "Maintenance Period" to "Defect Liability Period".

11) 'Maintenance Period"

Change the heading of this paragraph from Maintenance Period" to "Defect Liability Period"

and add the following new subparagraph:

26) "Maintenance Certificate" shall mean the certificate issued to the Contractor by the Engineer on the date of satisfactory completion of maintenance and/or repair works required by the Contractor during the Defect Liability Period."

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105.12 Acceptance

Change the penultimate paragraph of this section to read as follows:

"The date fixed in the Completion Certificate shall be the beginning date for the 12 month Defect Liability Period required under the Contract."

105.13 Defect Liability (Maintenance) Period

Delete the word "(Maintenance)" from the above heading, and change this section to read as follows:

"Upon issuance of the Completion Certificate, the Contractor shall furnish USAID a bond or bank guarantee in the amount of 5% of the final construction cost for each road sector to assure that work required during the designated Defect Liability Period will be performed by the Contractor as specified.

The bond or guarantee shall be furnished by the Contractor prior to a request for payment of the final 10% of the construction cost due for each road sector under the Contract.

Upon expiration of the relevant Defect Liability Period, when all repair and maintenance work required, or ordered by the Engineer has been completed, the Engineer shall issue a Maintenance Certificate. The date stated in the certificate shall be the date that the Contractor has discharged all his obligations arising during the period of defect liability.

The bond or guarantee, which shall maintain its full value during the entire Defect Liability Period, shall be vacated and returned to the Contractor on the date that the Maintenance Certificate is issued."

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[illegible] FINAL ISIS
25 JUNE 1993
18-Sep

PAY ITEM	DESCRIPTION	UNIT	SOURCE	2 ALT QTY	2 ALT UNIT COST	2 ALT TOTAL	% OF TOTAL
	Special Items, Section 3 Item	EA					
010	Mobilization of Contractor's Equip	LS					
011	Mob. of Contractor's Key Personnel	LS					
031	Additional Road Design	LS					
031	Additional Box Culvert Design	LS					
031	Detailed Bridge Design	LS					
100(2)	Surface Concrete Excavation	M³					
100(2)	Bridge Excavation	M³					
100(3)	Foundation Fill	M³					
100(4)	Excavation Below Plan	M³					
100(5)	Salvage, Cribbing and Related Work	EA					
100(1)1	Fault Select	M³					
207	Dimension Tack Coat	M²					
300(6)	Double Bituminous Treatment	M²					
311	PCC Pavement, Machine Laid	M²					
400(10)	Precast Concrete Piles, Driven	LM					
400(19)	Pile Splices	EA					
400(20)	Pile Splices	EA					
400(23)	Pile Extensions	LS					
400(4)	Precast Concrete Piles, Furnished	LM					
401	Concrete Bridge Railing	M³					
404	Reinforcing Steel For Bridges	KG					
400(1)	Structural Concrete, Class A	M³					
400(5)	Seal Concrete	M³					
400(3)	RCBC Extension, Complete w/ Headwalls	M³					
414(a)	Repair of Existing Lapez Bridge	LS					
414(b)	Repair of Existing Nabai Bridge	LS					
415	Jet Grouting	LS					
417	Structural Epoxy	LS					
418	Drilled-in Bars	LS					
419	Bent Caps, Sleeves and Fillers	LS					
500(1)d	Reinforced Pipe Culvert, 3000mm Dia.	LM					
500(1)f	Remove AND Relay RCP	LM					
500(3)a	Cross Drainage Structures	EA					
500(5)	Cross Inlet and Outlet Channel	M³					
500	Hand Laid Apron Embankment	M³					
500(2)	Sandcap	EA					
600(2.2)	Fertilizer	KM					
100(5)	Clearing and Grubbing	M²	B	332170	0.374	311171	
102(1)	Unsuitable Excavation	M³	B	190	3.220	612	
103(1)	Structure Excavation	M³	B	775	1.690	1312	
103(6)	Pipe Culvert Drain Excavation	M³	B	2545	2.149	6054	
104(2)	Embankment, Select Materials	M³	B	30360	11.593	351023	
105(1)	Subgrade Preparation, Common Mat	M²	B	315000	0.471	333333	
105(2)	Subgrade Prep. Existing Pavement	M²	B		1.074	0	
200	Aggregate Sub-base	M³	B		35.955	0	
201	Crushed Aggregate Base Course	M³	B	35780	21.233	759339	
300(1)	Gravel Surface Course	M³	B		21.237	0	
301	Bituminous Prime Coat (MC-70)	MT	B	174763	1.177	205759	
310	Bituminous Concrete Hot Laid	MT	B	33300	53.451	1780359	
500(1)	Backfill Material for Pipe Culvert	M³	B	2535	9.570	24255	
500(1)a	Reinforced Pipe Culvert, 610mm Dia.	LM	B	453	82.125	37078	
500(1)b	Reinforced Pipe Culvert, 910mm Dia.	LM	B	550	118.500	111955	
500(1)c	Reinforced Pipe Culvert, 1220mm Dia.	LM	B	331	205.720	68167	
500(4)	Structural Concrete for Pipe Headwalls	M³	B	375	253.914	121479	
500(5)	Reinforcing Steel for Pipe Headwalls	KG	B	6315	1.253	7917	
500(3)	Clearing Culvert Pipe in Place	LM	B		1.215	0	
509	Gabions	M³	B	165	203.333	33520	
600(3)	Metal Guardrail (Metal Posts)	LM	B	2486	61.435	152685	
600(5)	Guardrail Removal and Relocate	LM	B		38.500	0	
600(4)	Signs and Markers	EA	B	133	347.820	46273	
600(7)	Permanent Markings (Reflective)	LM	B	22335	0.610	13625	
600(8)	Permanent Markings (Non-reflective)	LM	B		0.575	0	
						4314557	54.16%
000	Additional Survey/Subsurface Inves	LS	N	1	4000	4000	
000	Detailed Road Design	KM	N	23.61	3500	141035	
000	Survey/Geotech	KM	N	27.13	4000	108500	
001	Bridge Survey/Geotech/Incomp Rd. Design	LS	N	1	4500	4500	
101(1)	Removal of Structures	LS	N	1	30125	30125	
311a	PCC Pavement, Hand Laid	M²	N	795	165.996	131951	
400(6)	Lane Connection	M³	N	35	92.000	3220	
500(1)e	Structural Facing	M²	N	109	9.138	996	
504(5)	Grouted Riprap, Class 'A'	M³	N	65	82.400	5356	
504(5)a	Grouted Riprap, Lined Ditch	M³	N	1965	100.139	196758	
505	Slope Masonry	M³	N	400	117.928	47171	
508(1)	Fence Fabric	M²	N	420	13.797	5795	
510(3)	Manhole	EA	N	3	1600.949	4803	
600(4)	Delineator Guide Post	EA	N	27	93.828	2533	
600(3)a	Welding of Bolts - Guardrails	LM	N	2488	1.456	3623	
600(2)	Crossovers	EA	N		327.143	0	
						711633	8.81%
						0	
* 102(1)(3)	Rock Excavation	M³	O	22000	20.000	440000	
403(1)	RCBC Complete w/ Headwalls	M³	O	425	421.333	179083	
						619083	7.67%
A100(1)	Hydrodemolition	M²	O	284492	8.767	2493844	
						2493844	30.86%
	GRAND TOTAL					8078141	100.00%

* Provisional

BEST AVAILABLE DOCUMENT

SOUTH COTABATO HIGHWAYS PROJECT
PRICING ANALYSIS

16-Sep-93

LOCATION	BID PRICE	NEW ITEM	OTHER SECTOR	QUANTITY VARIATION	TOTAL
2 BASE	3,309,878	139,906	88,480	1,522,352	5,060,616
2 ALT	4,384,337	712,853	679,067	2,318,784	8,095,041
3 BASE	18,886,773	415,909	1,501	0	19,304,183
3 ALT	3,024,095	198,187	29,072	0	3,251,354
4	858,681	123,208	420,066	0	1,401,955
7	1,804,947	61,755	1,884,125	0	3,750,827
8	523,226	72,185	622,834	0	1,218,245
LUN MASLA	0	356,370	986,143	0	1,342,513
SAPU MASLA	0	4,020	106,423	0	110,443
SAUB	0	68,012	642,999	0	711,011
TOTAL	32,791,937	2,152,405	5,460,710	3,841,136	44,246,189
PERCENT OF TOTAL	74.11%	4.86%	12.34%	8.68%	100.0%
11 JUNE	34,728,756	2,981,814	4,946,331	1,522,352	44,179,253
DIFFERENCE	(1,936,819)	(829,409)	514,379	2,318,784	66,936
CONTINGENCY					500,000
GRAND TOTAL					44,746,189
ECONOMIC PRICE ADJUSTMENT					(1,649,865)
ESTIMATED PROJECT COST					43,096,324

B:QUANTITYPRICING1.WK1

BEST AVAILABLE DOCUMENT

SOUTH COTABATO HIGHWAYS PROJECT
SUMMARY OF ESTIMATED COSTS AND QUANTITIES

DESCRIPTION	UNIT	2 BASE QTY	2 BASE UNIT COST	2 BASE TOTAL	2 ALT QTY	2 ALT UNIT COST	2 ALT TOTAL	3 BASE QTY	3 BASE UNIT COST	3 BASE TOTAL	3 ALT QTY	3 ALT UNIT COST	3 ALT TOTAL	4 QTY	4 UNIT COST	4 TOTAL	7 QTY	7 UNIT COST	7 TOTAL	8 QTY	8 UNIT COST	8 TOTAL	LUN MASALA QTY	LUN MASALA UNIT COST	LUN MASALA TOTAL	SAPU MASALA QTY	SAPU MASALA UNIT COST	SAPU MASALA TOTAL	DALIAO QTY	DALIAO UNIT COST	DALIAO TOTAL	GRAND TOTAL
Mobilization of Contractor's Equip	LS								6703467	6703467																						6703467
Mob of Consultant's Personnel	LS								229911	229911																						229411
Detailed Road Design	km	15.04	8841.910	133119	22.53	5500	141075	83.48	8546.484	713460	15.36	5205	79948	4.14	7772	32187	21.58	7489.72	162220	6.78	7946.827	54231										1344290
Survey Update	km	1			27.15	4800	130300				18	2400	43200																			151100
Additional Survey Subsurface Invest	LS	1	1824	1824	1	8000	8000																									9824
Bridges Subsurface Invest & Bridge Design	LS				1	4500	4500				1	9900	9900																			14400
Detailed Bridge Design	LS	38	3245.931	203325										1	30000	30000				1	44000	44000	1	431031	431031				1	25000	25000	277325
Additional Road Design	LS																1	5700	5700													5700
Additional Box Culvert Design	LS													1	2300	2300																2320
Clearing and Grubbing	m2	219330	0.15	32850	222170	0.194	61119	[illegible]	0.150	67545	147016	0.194	27062	22485	0.184	6229	231572	0.15	34795	23180	0.15	10277							4415	0.184	843	282127
Removal of Structures	LS	1	100734	100734	1	56073	56073	1	22943.000	22943	1	24800	24872	1	3595	3595	1	13672	13672	1	4331	4329							9	417.334	37551	280221
Unsuitable Excavation	m3	14193	2.648	37575	193	3.220	512	444	3.220	1531							851		0	2045	3.220	6585										40272
Surplus Common Excavation	m3											2.3341	0	15152	2.3341	35270		2.3341	0													52298
Surplus Rock Excavation	m3				25000	23.000	[illegible]					44.2501	0													14	44.2201	3275				302275
Structure Excavation	m3	445	1.243	553	735	1.650	1312	175	1.237	216	371	1.629	604	485	1.643	912		1.430	0										770	1.628	1254	4743
Bridge Excavation	m3	575	2.573	1465								2.722	0										625	73.404	84223	73	2.7721	204	243	72.770	12248	64444
Shoring, Cribbing and Cofferdams	EA																						9	4125.378	37137				2	4125.378	8253	45330
Foundation Fill	m3		3.656	0								4.549	0		4.547	0																0
Excavation Bridge Fill	m3											2.795	0																			0
Pipe Culvert Drain Excavation	m3	2125	1.523	3443	2945	2.143	6308	452	1.508	754	438	2.128	934	482	2.133	1035	1255	1.607	2017	815	1.607	1313										15530
Embankment	m3	83700	5.179	433326	356423	8.757	3118784	149722	5.178	775033	80119	5.815	316218	23225	5.815	134779	97375	5.178	504208	25625	5.178	132775							6425	5.818	43741	4871073
Embankment Select Material	m3	41529	2.729	221753	3360	11.563	231053	67548	8.156	705964	16193	11.563	187240	5345	11.563	61820	23329	7.725	180278	8400	11.563	93413							462	11.563	5319	1934022
Subgrade Preparation Common Material	m2	242705	0.301	73378	312203	0.481	153192	673056	0.331	223031	179358	0.451	80231	40563	0.471	23337	251125	0.331	76099	70775	0.331	23717							4210	0.431	2214	705454
Subgrade Prep Existing Pavement	m2		0.533	0		1.674	0					1.073	0																			0
Rock Sheet	m2	216743	0.456	101001																												101001
Aggregate Subbase	m3	6500	12.864	81152		13.997	0	17235	14.804	257385		19.951	0	7923	20.323	83161		13.964	0		13.964	0										394715
Crushed Aggregate Base Course	m3	19335	13.957	[illegible]	37780	21.523	813123	127422	16.733	2132917	25623	21.533	378908				25433	14.895	227730	11435	14.895	173336							425	21.333	14102	4444373
Gravel Surface Course	m3		13.951	0		21.227	0		15.519	0		22.947	0		20.999	0		14.927	0		14.905	0										0
Bituminous Prime Coat MC-70	MT	69810	1.195	83423	174725	1.189	207794	318775	1.132	818404	104407	1.127	174453				152745	1.195	182530	45325	1.195	54152							2222	1.195	3253	1273222
Bituminous Tack Coat	MT																			165	1.222	231										251
Double Bit Surface Treatment	m2																	3.331	0		3.331	0										0
Bituminous Concrete Hot Laid	MT	8525	74.739	637153	22330	99.431	2222253	78125	70.833	5534308	14331	93.856	1337573				17751	98.431	1747473	2795	98.431	321310							33	98.431	3255	12017458
Removal of Existing Timber Bridge	LS																			1	8004	8004										8004
Removal of Existing Steel Bridge	LS																			1	4531	4531										4531
PCC Pavement Machine Laid	m2	12225	124.428	1522342					81.572			124.425		5225	124.471	650100																2172452
PCC Pavement Hand Laid	m2				855	153.294	131221	816	152.096	124388					153.005	0																225633
Precast Concrete Piles Furnished	LM	546	113.302	70150								124.293	0										920	124.298	114327							184427
Precast Concrete Piles Driven	LM	554	15.812	8525								22.895	0										737.431	32.995	24311							34880
Pile Shoes	EA	16	12.642	202																			1031	12.592	1298							1500
Pile Splices	EA	12	125.017	1512																												1312
Pile Extraction	LS																						1	1872	1872							1872
Concrete Bridge Railing	m3	103.23	152.771	15752								154.723	0										360	164.723	59300	33	164.723	4342	150	164.723	23356	100840
Reinforcing Steel for Bridges	KG	60010	1.253	76937								1.343	0										164551	1.343	261225	20338	1.343	22238	96418	1.343	129508	506718
Structural Concrete Class A	m3	540	426.251	230072								425.876	0										1123	448.651	524483	11.70	448.651	21064	94	454.531	27337	1144972
Seal Concrete	m3																101	120.807	12081													1208
Lean Concrete	m3	35	95.009	3330	35	95.509	3320	47	95.509	4512	11	95.070	1256	45	95.003	4320																16419
Jet Grouting	LS																						1	184000	184000							184000
Structure Epoxy	LS																						1	1454	1454							1454
Elastomeric Bearings	LS																						1	732	732							731
Bridge Pipes, Sleeves and Risers	LS																						1	5451	5451							5451
RCBC Complete w Headwalls	m3	210	421.333	88480	422	421.333	177067		421.333	0	65	421.333	27387	525	421.333	221200																217818
RCBC Extension Complete w Headwalls	m3							150	517.834	82853	80	422.378	34170								373.250	0										113444
Backfill Material for Pipe Culvert	m3	1250	8.450	11154	2505	9.570	23973	545	8.443	4605	275	9.251	2556	225	9.550	2821	843	8.452	7109	550	8.448	4646										27153
Reinforced Pipe Culvert 610mm Dia	LM	237	60.370	14305	453	92.123	37796	183	60.230	11010	148	92.115	11857	129	90.115	10335	404	60.262	24823	387	60.287	24155										132253
Reinforced Pipe Culvert 910mm Dia	LM	544	72.541	39787	953	118.220	112653	147	92.557	13532	33	118.854	4037	113	118.854	13435	258	92.090	24672	110	92.650	10175										239544
Reinforced Pipe Culvert 1220mm Dia	LM	33	104.833	3238	341	136.229	22167	78	106.833	8341	21	135.875	2939		137.000						106.950	0										70225
Reinforced Pipe Culvert 1520mm Dia	LM																															0
Structural Backfill	m3	30	5.558	420	135	5.558	996				30	5.558	253																			1738
Removal and Reset RCP	LM	114	71.727	8182																												8182
Structural Conc for Pipe Headwalls	m3	220	275.421	60533	375	323.544	121479	195	275.427	54810	76	323.945	24620	20	323.933	15187	133	323.933	43731	105	275.440	28721										393353
Reinforcing Steel for Pipe Headwalls	KG	3445	1.222	4210	6313	1.203	7587	3273	1.223	3251	1734	1.2041	2083	235	1.175	276	13601	1.173	15921	1245	1.222	1521										21045
Cleaning Culvert Pipe in Place	LM	155	1.149	177		1.533	0	898	1.149	1032	210	2.018	424		2.033	0	251	2.031	511	35	1.155	40										1724
Check Drainage Structures	EA										2	17.272	35																			33
Ditch Lining Outlet Channel	m3										1143	7.136	8133																			8133
Grouted Riprap Class "A"	m3	375	80.401	30153	85	80.400	6834	1038	80.400	83453	434	80.400	34894	233	80.400	18727	401	80.400	32161	10	80.400	804				53	80.400	4270	30	80.400	2412	184227
Grouted Riprap Lined Ditch	m3	270	100.133	27054	1853	100.133	185758	583	100.133	58225		100.133		253	100.133	25335	330	100.133	33042	1	100.133											329765
Stone Masonry	m3	1	117.927		400	117.927	47171	293	117.927	34553	19	117.927	2241	10	117.227	1179	5	117.927	590	5	117.927	590										85222
Hand Laid Rock Embankment	m3										24	33.333	800	126	33.333	4200		33.333	0													5654
Gabions	m3	1455	105.172	153029	185	103.290	19120	778	105.217	81859		103.434			105.003	0	795	105.217	83548		105.170	0							335	105.172	35207	393318
Filter Fabrics	m2	3840	13.737	52751	420	13.727	5765	1502	13.737	21223							2335	13.737	32215		13.737	0							700	13.737	9658	122730
Sandbags	EA																			11000	0.373	8732										6732
Manholes	EA				3	1853.348	5410																									5510
Concrete Guide Post	EA				271	53.898	2223																									2223
Metal Guardrail Metal Beams	LM	1120	55.425	61984	2480	61.533	153348	3373	53.433	200224	756	61.540	47219	358	61.600	22071	224.79	53.443	13022	81.44	61.640	5226							253	61.543	15410	274451
Widening of Bars in Guardrails	LM	1120	1.435	1629	2478	1.435	2523	3373	1.436	4852	768	1.435	1101	358	1.435	514	224.79	1.435	323	81.44	1.436	131							253	1.435	363	17441
Guardrail Removal and Reinstall	LM		28.783	0	1	38.200	0		28.783	0	1	38.200	3		38.250	0																0
Signs and Markers	EA	38	34.920	1328	133	347.729	45231	353	34.907	12214	471	345.385	16283	11	354.000	3894	62	33.820	2283	22	34.802	810							1	354.000	28321	85244
Stationing	EA		127.143	0	1	127.143	0	25	127.143	3179	5	127.143	633	2	127.143	254		127.143		1	127.143	0										4453
Pavement Markings Thermoplastic	LM		0.235	0	1	0.3731	0	9953	0.255	2510		0.3731	3					0.2951			0.235	0										2310
Pavement Markings Reflectorized	LM	7343	0.335	2451	222331	0.5101	13755	50373	0.533	26849	7742	0.509	471	3235	0.606	1827	8920	0.606	5425	2153	0.606	1310							335	0.606	227	54723
Fencing	m2																201	352.235	70751	51	352.235	1751										8736
Concrete Posts	EA							1	50452	50452																						6452
GRAND TOTAL				5060015			9035040			19304182			3251328			1401855			3750027			1218745			1342513			110443			711011	44746189

BEST AVAILABLE DOCUMENT

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1 | 2

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
Five (5)	Jan. 11, 1994	492-0420-3-20218	

6. ISSUED BY CODE
Contract Services Office (CSO)
USAID/Philippines
RMC Bldg., 1680 Roxas Blvd.
Manila 1000

7. ADMINISTERED BY (If other than Item 6) CODE
Office of Capital Projects (OCP)
USAID/Philippines

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)

MORRISON KNUDSEN
P.O. Box 73
Boise, Idaho 83729

CSO:ERPura/eact

CODE | FACILITY CODE

(V) 9A. AMENDMENT OF SOLICITATION NO.

9B. DATED (SEE ITEM 11)

XXX 10A. MODIFICATION OF CONTRACT/ORDER NO. AID 492-0420-C-00-1140-00

10B. DATED (SEE ITEM 13)

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

72-112/31037 HES29227492KG13 P921084 E920178

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(V)

A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).

X C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
FAA of 1961, as amended and E.O. 11223.

D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not, XXX is required to sign this document and return 6 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

The purpose of this no-cost modification is to provide clarification on the final verification and payment of quantities actually delivered under the contract.

Specific details are shown on page 2.

BEST AVAILABLE DOCUMENT

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)	
		William E. Reynolds	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
(Signature of person authorized to sign)		BY (Signature of Contracting Officer)	

BACKGROUND

An apparent conflict in wording exists within Modification No. 4 and between Modification Nos. 2 and 4, regarding the maximum payable amount for each road sector. Sub-section VII of Modification No. 4 and prior Modifications to the contract, recognize that quantities and construction costs are not final, and variations are allowed for as long as they do not result in an increase in total contract amount. However, Item E of sub-section I in Modification No. 4 limits payments to the cost of each road sector unless increased by the Contracting Officer.

In order to clarify the conflict, and to bring the contract language in conformance with the spirit and intent of Federal Acquisition Regulations (FAR) with regard to final verification and payment of quantities actually delivered, the contract is modified as follows:

1. On Section B, Supplies and Price/Costs:

   a. Change the second sentence of Item E of Sub-Section I. Contract Amount to read as follows:

      "E. Individual item quantities, unit prices, and costs are detailed in the Bill of Quantities (Attachment to Section B)."

   b. Add the following to Sub-Section IV. Variation in Estimated Quantity:

      "For purposes of assessing any demand for an equitable unit and price adjustment under this contract, the base quantities for any pay item shall be the total quantities for the Contract and shall not be disaggregated by road section.

   c. Add the following to Sub-Section V. Limitations and Descriptions of the Schedule of Quantities:

      "7. The estimated quantities set forth in the Bill of Quantities, as amended in Modification No. 4 represent the Contractor's best estimate of the work at the time the modification was signed. It is recognized that there may be some variation in quantities. Upon completion of work, there will be a final verification of all quantities actually delivered within the prescribed limits of the work. The Contractor shall be paid for accepted quantities, not to exceed the maximum amount payable under this contract."

FIELD CLARIFICATION MEMORANDUM

FCM #	Date Received	Action Taken	Date Returned	Sector	Description
001	12/23/91	Approved	03/27/92	3	Precast RCPC
002	02/03/92	Approved	02/04/92	3	Substitution of stone masonry
003	02/03/92	Approved	02/06/92	3	Rubble masonry retaining wall sta 9+598.3
003A	02/14/92	Approved	02/17/92	3	Rubble masonry retaining wall Sta. 10+425
003B	02/24/92	Approved	02/24/92	3	Rubble masonry retaining wall sta. 9+598
003C	05/04/92	Approved	05/07/92	3	Shoulder improvement sta. 9+590
003E	06/16/92	Approved	06/19/92	3	Drainage improvement sta. 7+570
003F	06/28/92	Approved	07/14/92	3	Drainage improvement sta.9+592
004	02/11/92	Disappr'd	02/17/92	3	Modification of grade sta. 10+425
005	no entry				
006	01/31/92	Disappr'd	02/04/92	3	Density testing requirement for embankment
007	01/31/92	Disappr'd	02/04/92	3	Density test req'rm't for embankment for subgrade level
008	02/05/92	Disappr'd	02/06/92	3	Testing requirement for pipe culvert
008A	02/11/92	Disappr'd	02/19/92	3	Testing requirement for pipe culvert
009	02/16/92	Approved	02/18/92	3	Centerline re-alignment sta. 8+350
010	02/11/92	Approved	02/17/92	3	Removal of unsuitable materials
011	02/21/92	Approved	02/24/92	3	Centerline re-alignment sta. 4+925
012	02/27/92	Approved	03/04/92	3	Revision of design quantities
013	03/10/92	Approved	03/11/92	3	Bituminous prime coat - Item 301
014	03/06/92	Approved	03/11/92	3	Change of finish elevation sta. 8+025
015	03/05/92	Approved	03/11/92	3	Change of finish elevation sta. 12+950
015A	03/11/92	Approved	03/12/92	3	Improvement of existing RCPC sta. 6+395
016	03/12/92	Approved	03/12/92	3	Improvement of existing RCPC sta. 6+447
017	03/11/92	Approved	03/12/92	3	Sub-base thickness measurement sta. 11+859
018	No entry				
019	03/12/92	Approved	03/18/92	3	Extension of RCBC at sta. 9+617.46
019A	03/19/92	Disappr'd	03/18/92	3	Extension of RCBC sta. 9+617.46
019B	06/26/92	Approved	06/30/92	3	Additional one span metal beam guardrail sta. 9+617
020	03/17/92	Approved	03/19/92	3	Determination of maximum density base course material
021	03/19/92	Approved	03/19/92	3	Adjustments of grade sta. 11+675
022	03/24/92	Approved	03/27/92	3	Grouted riprap shoulder protection sta. 6+794
023	No entry				
024	03/27/92	Approved	03/31/92	3	Grade change sta. 7+166.10
025	03/30/92	Approved	03/30/92	3	Compaction of aggregation sub-base
026	03/31/92	Approved	03/31/92	3	RCPC sta. 24+243.63
027	03/31/92	Approved	04/01/92	3	Pipe extension @ sta. 2+153.68
027A	04/08/92	Revised		3	Quantities of RCPC extension @ sta. 2+153.68
027B	04/21/92	Approved	04/22/92	3	Correction of quantities sta. 153.68 RCPC extension
028	04/01/92	Approved	04/03/92	3	Additional driveways and RCPC for section 1A and 1B
028A	05/06/92	Approved	05/12/92	3	Quantities of driveways and RCPC side drain
028B	05/13/92	Approved	05/13/92	3	Corrected quantities of road turn-outs
028C	07/01/92	Approved	07/02/92	3	Elimination of RCPC side drain sta. 2+306
029	04/01/92	Approved	06/03/92	3	Siguil river approach
029B	11/25/91	Approved	01/08/92	3	Cut off ditch on the top of hill sta. 14+115
029C	01/29/93	Approved	03/15/92	3	Revised quantities of cut-off ditch sta 14+115
030	04/01/92	Disappr'd	04/02/92	3	Adjustment of quantities section 1Aand 1B
030A	04/08/92	Disappr'd	04/02/92	3	Adjustment of quantities section 1A and 1B
031	04/02/92	Approved	04/03/92	3	Transfer of load/unload zone sta. 3+150
031A	04/13/92	Disappr'd	04/14/92	3	Elimination of 1-610mm dia. RCPC sta. 3+161
31B	05/16/92	Approved	05/18/92	3	Quantities for drainage improvement RCPC sta. 11+463
032	04/02/92	Approved	04/03/92	3	Accepting sampling testing asphaltic concrete
033	04/03/92	Disappr'd	04/06/92	3	Re-alignment sta. 22+374.55 to sta. 23+150
033A	04/09/92	Approved	04/14/92	3	Investigation on proposed re-alignment sta. 22+374
034	04/06/92	Approved	04/06/92	3	Cost estimate bus/jeepney passenger's shelter
035	04/06/92	No action	04/07/92	3	Revised vertical alignment sta. 18+700
036	04/06/92	Approved	04/06/92	3	Re-alignment sta. 17+650
037	04/07/92	Approved	04/08/92	3	Grouted riprap slope protection sta. 2+415
037A	04/14/92	Approved	04/14/92	3	Correction of quantities sta. 2+415

FCM #	Date Received	Action Taken	Date Returned	Sector	Description
038	04/12/92	Approved	04/23/92	3	Re-alignment sta. 18+535.33
039	04/22/92	Approved	04/22/92	3	Grouted riprap slope protection sta. 6+794
040	04/21/92	Onhold	04/22/92	3	Aggregate surfacing tolerance
042	05/04/92	Approved	05/07/92	3	Design revision from sta. 7+166
043	05/06/92	Approved	05/06/92	3	Add'l steps for pedestrian crossing sta. 12+075
044	05/12/92	Disappr'd	05/15/92	3	Drainage improvement both side sta. 2+896
044A	05/26/92	Disappr'd	05/26/92	3	Drainage improvement both side sta. 2+896
044B	06/02/92	Approved	06/05/92	3	Drainage improvement both side sta. 2+896
044C	06/19/92	Resubmit	06/24/92	3	Concrete slab breaking RCPC line sta. 3+165
044D	07/30/92	Approved	07/30/92	3	RCPC improvement sta. 3+166
044E	08/10/92	Approved	08/11/92	3	RCPC improvement sta. 3+166
045	05/12/92	Approved	05/15/92	3	Reduction of shoulder width sta. 18+450
046	05/06/92	Disappr'd	05/15/92	3	Replacement of grouted riprap sta. 26+000
046A	05/21/92	Approved	05/22/92	3	Replacement of grouted riprap sta. 26+000
048	05/20/92	Approved	05/20/92	3	Improvement of 1-910mm dia. RCPC sta. 49+292
049	05/20/92	Approved	05/26/92	3	Crushed aggregate base course specification
050	05/21/92	Approved	05/27/92	3	Revision of construction paving over existing BC
051	05/22/92	Approved	05/22/92	3	Grade change between sta. 18+700 to 19+100
051A	05/27/92	Approved	05/27/92	3	New 1-910mm dia. X 15.00 M. RCPC sta. 18+862
051B	07/16/92	Approved	07/17/92	3	Riprap apron and chute sta. 18+862
052	05/25/92	Approved	05/26/92	3	Substitution of crushed aggregate base course
052A	05/28/92	Approved	06/01/92	3	Substitution of crushed aggregate base course
053	05/25/92	Approved	05/26/92	3	Joint sampling of Kablacan aggregate base course
054	05/26/92	Disappr'd	05/26/92	3	Casting length for 25 meter pile
055	05/29/92	Approved	06/01/92	3	Grade change sta. 26+050 to sta. 26+200
056	05/29/92	Approved	06/24/92	3	Aggregate subbase materials Item 200 for shoulder
057	06/03/92	Approved	06/03/92	3	Grouted riprap lined ditch
058	06/11/92	Approved	06/18/92	3	MS plate for pile splicing at the Molo Bridge
059	06/09/92	Approved	05/15/92	3	Improvement of stone masonry guardrail sta. 20+847
060	06/22/92	Approved	06/29/92	3	Re-alignment sta. 25+232.49 to sta. 25+366
061	06/22/92	Disappr'd	06/24/92	3	Provision of metal guardrail sta. 42+258
062	06/22/92	Approved	06/22/92	3	Proposed re-alignment sta. 18+645 to 18+716
063	07/01/92	Disappr'd	07/03/92	3	RCPC extension sta. 41+826
064	07/07/92	Disappr'd	07/09/92	3	Riprap guardrail extension sta. 18+351
064A	08/03/92	Approved	08/03/92	3	AC pavement shoulder sta. 18+345
065	09/18/92	Approved	08/18/92	3	Special type of lined ditch sta. 18+449
065A	10/20/92	Approved	10/22/92	3	Md type lined ditch sta. 21+075 to 21+100
066	07/14/92	Approved	07/17/92	3	Changing grouted riprap ditch type sta. 20+700
066A	07/30/92	Approved	07/31/92	3	Ditch design at sta. 20+695 to 20+825
067	07/11/92	Approved	07/22/92	3	Slope protection sta. 4+225
068	07/16/92	Approved	07/16/92	3	Elimination of grouted riprap ditch sta. 19+023
069	07/14/92	Approved	07/21/92	3	Metal guardrail schedule section 1A and 1B
069A	07/12/92	Approved	07/21/92	3	Additional one span of metal guardrail sta. 3+200
069B	07/20/92	Approved	08/03/92	3	Re-installation of guardrail post
069C	07/31/92	Approved	08/03/92	3	Guardrail post schedule sta. 14+187.00
069D	08/14/92	Disappr'd	08/17/92	3	Re-installation of guardrail post @ Dupalco Bridge
069E	08/07/92	Approved	08/28/92	3	Quantities involved in re-setting of guardrail post
069F	09/10/92	Approved	09/10/92	3	Installation of guardrail post along rocky stations
070	07/14/92	Approved	07/15/92	3	Existing riprap protection sta. 14+349 to 14+390
070A	07/14/92	Approved	07/17/92	3	Grouted riprap slope protection sta. 14+390
071	07/16/92	Disappr'd	07/17/92	3	Slope protection sta. 17+973
071A	07/17/92	Approved	07/21/92	3	Riprap slope protection sta. 17+973
072	07/16/92	Approved	07/12/92	3	Grouted riprap guardrail sta.18+351
073	07/17/92	Approved	07/29/92	3	Revised elevation sta. 29+982 to 30+900
074	07/17/92	Approved	07/23/92	3	Revised quantities lined ditch sta. 11+695
074A	08/10/92	Approved	08/12/92	3	Revised quantity of lined ditch sta. 14+000
075	07/21/92	Approved	07/23/92	3	Bituminous Prime Coat
076	07/24/92	Approved	07/29/92	3	Grade change sta. 35+150 to 35+425

FCM #	Date Received	Action Taken	Date Returned	Sector	Description
077	07/28/92	Approved	07/29/92	3	Change of finish grade elevation sta. 29+975
078	07/29/92	Approved	07/29/92	3	Stone masonry retaining wall sta. 2+712
079	07/30/92	Approved	08/03/92	3	Parapet extension at sta. 29+641
080	08/03/92	Approved	08/11/92	3	Concrete pavement at shoulder of RCBC sta. 1+240
081	08/11/92	Disappr'd	08/11/92	3	Additional 2-1220mm dia. X 15.00 m. RCPC sta. 4+788
081A	08/19/92	Disappr'd	07/20/92	3	RCPC improvement sta. 4+788.35
082	08/07/92	Approved	08/11/92	3	Proposed re-alignment sta. 35+228 to 35+283
083	08/07/92	Approved	08/11/92	3	Change of finished grade elevation sta. 35+225
084	08/07/92	Approved	08/11/92	3	Grade change sta. 53+125.00
085	08/07/92	Approved	08/11/92	3	Grade change sta. 46+850 to 47+200
086	08/11/92	Approved	08/18/92	3	Grade change sta. 49+650 to 52+175
086A	09/18/92	Disappr'd	09/22/92	3	Re-alignment sta. 50+800 to 31+450
087	09/11/92	Disappr'd	09/08/92	3	Debris catcher sta. 11+463
087A	11/25/92	Approved	11/27/92	3	Debris catcher sta. 11+463
088	08/28/92	Approved	08/20/92	3	Grade change sta. 43+050 to sta. 43+450
089	08/14/92	Approved	09/08/92	3	Flood control sta. 33+630 to sta. 34+134
090	08/19/92	Approved	08/24/92	3	Change of finish grade elevation sta. 40+979
091	08/25/92	deleted		3	PVC coated gabions
092	09/01/92	Approved	09/03/92	3	Special ditch sta. 54+700 to 55+050
093	09/01/92	Approved	09/03/92	3	Proposed re-alignment sta. 37+995 to 38+579
094	09/11/92	Approved	09/15/92		Grade change sta. 56+350 to 56+575
095	09/10/92	Approved	09/21/92	3	Revised sign, markers and pavement markings
096	09/15/92	Approved	09/18/92	3	Rubble masonry guardrail sta. 25+226
097	09/22/92	Approved	09/24/92	3	Grade change sta. 59+650
097A	10/02/92	Deleted		3	Grade change sta. 60+563
097B	10/06/92	Approved	12/04/92	3	Design revision, grade change sta. 59+650
098	09/25/92	Approved	09/28/92	3	Design revision, drainage and H alignment sta. 63+800
099	09/23/92	Disappr'd	09/24/92	3	Revised quantities grouted riprap sta. 23+021
100	09/24/92	Disappr'd	09/25/92	3	Retain existing apron slab RCBC sta. 58+196
101	09/24/92	Approved	10/05/92	3	Shoulder materials sta. 29+690 to sta. 35+700
102	10/01/92	Approved	10/05/92	3	Driveway laid with limestone fill mater'l sta. 29+690
103	10/08/92	Approved	10/09/92	3	RCPC improvement at sta. 68+369
104	10/01/92	Disappr'd	10/05/92	3	Bridge approach guardrail
105	10/16/92	Approved	12/09/92	3	Grade change from sta. 69+330 to sta. 70+540 and RCBC
106	10/19/92	Approved	10/20/92	3	Signs/markers section 2 sta. 14+200
106A	10/22/92	Approved	10/26/92	3	Revised sign/markers & pavement marking, sta. 14+210
107	10/16/92	Approved	10/20/92	3	Changing the flared headwall at RCPC sta. 72+639
108	10/20/92	Approved	10/22/92	3	Grouted riprap slope protect, 2nd approach of Talok
109	10/20/92	Approved	10/22/92	3	Grouted riprap slope protect at the abutment, Lumasal
110	10/21/92	Approved	10/22/92	3	Re-alignment sta. 71+500 and grade change sta. 71+500
111	10/22/92	Approved	10/26/92	3	Grade change from sta. 61+025 to sta. 61+450.10
112	10/26/92	Approved	03/10/93	3	Straight headwall as a replacement at sta. 60+563
113	10/30/92	Approved	11/16/92	3	Drainage structure improvement at sta. 0+000
114	10/30/92	Approved	10/30/92	3	Additional road signs from sta. 0+000
115	11/04/92	Disappr'd	11/05/92	3	Guide post at sta. 5+519.23
115A	11/16/92	Approved	11/12/92	3	Guide post at sta. 5+519.23 left side
116	11/03/92	Disappr'd	11/03/92	3	Reflectorized paint for guide post from sta. 6+794
116A	11/05/92	Approved	11/10/92	3	Reflectorized paint for four faces of guide post
117	10/29/92	Disappr'd	10/29/92	3	Proposed Reinf'd PCCP w/ grouted riprap shoulder sta. 81+966
117A	11/06/92	Disappr'd	11/16/92	3	Proposed Reinf'd PCCP w/ grouted riprap shoulder sta. 81+966
117B	11/20/92	Approved	11/27/92	3	Proposed PCC Pavement at sta. 81+966 to 82+046
118	11/03/92	Approved	11/03/92	3	Provide Cross Walk at sta. 10+575.00
119	10/29/92	Approved	10/30/92	3	Extension of Yellow Barrier sta. 14+065
120	10/30/92	Disappr'd	11/05/92	3	Kumaba Bridge Erosion Control sta. 48+935
120A	11/19/92	Approved	11/23/92	3	Kumaba Bridge Erosion Control sta. 48+935
120B	02/09/93	Approved	02/11/92	3	Kumaba Bridge Erosion Control RCBC sta. 48+935
120C	03/09/93	Approved	03/10/93	3	Existing concrete under Kumaba Bridge road
121	10/30/92	Approved	11/02/92	3	Grouted riprap slope protection from sta. 4+257.83

FCM	Date Received	Action Taken	Date Returned	Sector	Description
122	11/12/92	Approved	11/20/92	3	Unsuitable excavation between sta. 66+787.80
123	11/13/92	Approved	11/19/92	3	Revised signs & markers and pavement markers sta. 35+703
123A	11/20/92	Approved	11/20/92	3	Revised signs, sta. 35+706 & pavement marking, sta. 35+703
124A	11/25/92	Approved	11/25/92	3	Provide grouted riprap shoulder protection sta. 2+612.5
125	12/02/92	Approved	12/03/92	3	Boulder at bottom of riprap slope protection sta. 9+617
126	12/01/92	Disappr'd	12/09/92	3	Damaged grouted riprap apron, RCPC sta. 10+773
127	12/02/92	Approved	12/09/92	3	Relocate signs and markers sta. 11+700
128	12/04/92	Approved	12/07/92	3	Eliminate grouted riprap lined ditch, sta. 29+073.967
129	01/18/93	Approved	02/20/93	3	AC Pavement Curve Widening, Maasim to Kiamba
129B	11/25/92	Approved	01/08/93	3	Cut-off-ditch on the top of hill, sta. 14+115
130	11/19/92	Approved	11/20/92	3	1220mm dia. RCPC at sta. 71+259.00
131	12/03/92	Approved	12/04/92	3	Shoulder improvement, sta.61+663 to sta. 61+916, RS
132	12/05/92	Approved	12/03/92	3	Final guardrail locations,
132B	02/09/93	Approved	02/19/93	3	Guardrail installation at Lumatil Bridge, 2nd approach
133	01/08/92	Approved	01/18/93	3	Drainage improvement, section 2
133A	03/09/93	Disappr'd	03/10/93	3	Grouted riprap chute at sta. 15+565
133B	03/19/93	Approved	04/05/93	3	Drainage improvement, section 2
134	12/22/92	Approved	03/04/93	3	Additional road signs and pavement markings for sec.2
136	12/21/92	Approved	12/22/92	3	610mm dia. drainage pipe and headwall, sta. 91+034
138	01/08/93	Disappr'd	01/13/93	3	Grade change, sta. 83+577 to sta. 89+275
138A	01/26/93	Approved	01/29/93	3	Grade change, sta. 83+577 to sta. 89+275
138B	02/08/93	Approved	02/09/93	3	Grade change, sta. 83+577 to sta. 89+275
139	01/08/93	Approved	01/15/93	3	Two pieces gabions at existing straight HW sta. 26+046
140	01/08/93	Approved	01/15/93	3	Type "L" Headwall with concrete apron sta. 69+018
141	01/08/93	Approved	01/15/93	3	Extended paved radius at Maasim sta. 36+495
142	01/19/93	Disappr'd	01/27/93	3	Add'l signs, markers and pavement markings at Sec. 3A
142A	01/28/93	Approved	01/29/93	3	Add'l signs, markers & pavement markings at sta. 35+703
143	01/26/93	Approved	02/04/93	3	Drainage improvement, section 3A
143A	03/12/93	Approved	03/17/93	3	Hand laid rock embankment at RCBC sta. 50+081
144	no entry				
145	01/06/93	Approved	01/27/93	3	AC pavement shoulder sta. 83+665 to sta. 83+035
146	01/18/93	Approved	01/20/93	3	Drainage improvement at Kling village
147	01/20/93	Disappr'd	01/26/93	3	Revised signs/markers & pavement markings sta. 59+800
147A	01/20/93	Approved	01/27/93	3	Revised signs/markers and pavement markings sta. 59+800
148	01/22/93	Approved	01/27/93	3	Final guardrail location, section 3B
149	01/28/93	Approved	01/29/93	3	Grade change, sta. 79+100 to sta. 81+050
150	01/26/93	Disappr'd	01/26/93	3	Lean concrete retaining wall, sta. 72+258
150A	01/29/93	Approved	02/04/93	3	Lean concrete retaining wall, sta. 72+259
151	02/02/93	No action	02/04/93	3	Raising of headwall and wingwall sta. 84+890
151A	02/12/93	No action	02/12/93	3	Raising of headwall and wingwall sta. 84+890
152	02/04/93	Disappr'd	02/09/93	3	Revised signs/markers and pavement markings sta. 83+577
152A	02/11/93	Approved	02/12/93	3	Revised signs/markers and pavement markings sta. 83+577
153	02/04/93	Approved	02/09/93	3	Final guardrail location, section 4
154	02/08/93	Approved	02/18/93	3	Cross walk of Kablacan and Dalliao Elementary School
155A	03/03/93	Approved	03/04/93	3	Guide post at Kitagas Spillway sta. 58+913
155	02/18/93	Disappr'd	02/18/93	3	Location of guide post at PCC spillway, sta. 58+913
156	02/18/93	Disappr'd	02/19/93	3	Location of Guide post at PCC spillway, sta. 40+783
156A	03/03/93	Approved	03/09/93	3	Guide post at Kablacan Spillway sta. 40+783
157	03/19/93	Disappr'd	02/19/93	3	Standard Guide Post (Type A)
158A	03/03/93	Approved	03/03/93	3	Revision of Construction Limit/Riprap Slope Protection
159	02/26/93	Approved	03/04/93	3	Guardrail bridge approaches, section 3A
160	02/26/93	Approved	03/04/93	3	Relocation of side drain at sta. 46+160
161	02/26/93	Disappr'd	03/08/93	3	Crushed aggregate base course retained sieve size
162	03/12/93	Approved	03/17/93	3	Debris catcher structure at Lumoyon spillway, sta. 62+879
163	03/12/93	Approved	03/17/93	3	Grouted riprap slope protection sta. 50+081
164	03/09/93	Approved	03/10/93	3	Eliminate side drains, sta. 72+975 both side
165	03/05/93	Approved	03/08/93	7	Straight headwall sta. 2+079.50, left side
166	03/10/93	Approved	03/11/93	7	Additional RCPC line

FCM #	Date Received	Action Taken	Date Returned	Sector	Description
167	03/13/93	Approved	03/17/93	3	Stone masonry wingwall, sta. 83+894.00
168	03/21/93	Disappr'd	03/17/93	3	Excavation for gabions sta. 69+900
169	03/15/93	Approved	03/17/93	3	Improvement of Kansan Br at Abutment B sta. 91+329
169A	03/22/93	Approved	03/25/93	3	Improvement of Kansan Br at Abutment A sta. 91+310
170	03/15/93	Approved	03/17/93	3	RCPC Headwall for 1220mm dia. sta. 97+353.00
171	03/17/93	Approved	03/23/93	7	Grade change from sta. 11+575
172	03/17/93	Approved	03/25/93	3	Increase in length/height of check dam sta. 62+879
173	03/22/93	Approved	03/25/93	2	Revised profile elevation sta. 9+600
174	03/31/93	Approved	04/12/93	7	Road re-alignment sta.16+955
175	03/25/93	Approved	04/05/93	7	Additional side drain sta. 21+400, left side
176	04/01/93	Approved	04/14/93	3	As built quantities sta. 10+773
177	04/21/93	Approved	04/23/93	3	Completed punchlist sta. 4
178	04/29/93	Approved	04/30/93	2	Side drain pipes sta. 9+137.88
179	04/29/93	Approved	04/30/93	2	Add'l joint filler & reinforcing steel of Molo Bridge
180	05/04/93	Approved	05/14/93	2	Approval of source for Concrete Aggregates
181	05/12/93	Approved	05/17/93	2	Tuyan Bridge actual alignment
182	05/14/93	Approved	05/17/93	7	Revised signs and markers and pavement markings
182A	07/01/93	Approved	07/02/93	7	Additional chevron sign at PI-36A
182B	07/22/93	Approved	07/23/93	7	Additional give way sign at sta. 2+360 left side
182C	07/27/93	Approved	07/27/93	7	Additional signs and markers and pavement markings
183	05/14/93	Approved	05/18/93	8	Revised incidental works, sta. 16+300 to sta. 23+087
184	05/20/93	Approved	05/21/93	8	Additional drainage improvement sta. 18+180
185	05/20/93	Approved	05/21/93	8	Additional drainage improvement sta. 18+165.5
185A	07/08/93	Approved	07/12/93	8	Additional drainage improvement sta. 18+165.5
186	05/20/93	Approved	05/21/93	8	Additional drainage improvement sta. 20+937.00
187	05/20/93	Approved	05/21/93	8	Additional drainage improvements, sta. 22+998.8
188	05/24/93	Disappr'd	05/25/93	7	Provide grouted riprap lined ditch w/ RC chute sta. 21+325
188A	06/02/93	Approved	06/21/93	7	Provide grouted riprap lined ditch w/ RC chute sta. 21+325
189	05/27/93	Approved	05/28/93	8	Provide turnouts at the end of the Project, sta. 23+027
190	06/01/93	Approved	06/03/93	2	Pavement section
190A	06/29/93	Approved	06/30/93	2	Crushed aggregate base compaction requirement under PCCP
191	07/08/93	Approved	07/08/93	7	Revised drawing of Gabion ditch, sta. 11+970
193	06/07/93	Approved	06/08/93	2	Proposed improvement of RCPC Covering and Grade change
194	06/01/93	Approved	06/02/93		Acceptance of Concrete
194A	07/08/93	Approved	07/13/93	7/8	Payment on concrete headwall and reinforcing steel
195	06/04/93	Approved	06/04/93	7	Drainage at the Petron Sta. 20+950
195A	07/06/93	Approved	07/07/93	7	Drainage at the Petron Sta. 20+950
195B	08/17/93	Approved	08/17/93	7	Drainage at the Petron Sta. 20+950
196	06/07/93	Approved	06/07/93		Revised Dowel Cap
197	06/09/93	Approved	06/22/93	2	Approval of source for asphalt aggregates, Lun Masla River
198	06/15/93	Approved	06/17/93	2	Placing of Portland Cement Concrete Pavement
199	06/16/93	Approved	06/17/93	2	Construction of Loading/Unloading Zones adjacent to the PCCP
200	06/16/93	Approved	06/17/93	2	Consistency of Portland Cement Concrete Pavement
201	06/16/93	Approved	06/22/93	2	Concrete admixtures
202	06/28/93	Disappr'd	06/30/93	2	1220mm dia. RCPC, sta. 16+059.50
202A	07/06/93	Approved	07/07/93	2	1220mm dia. RCPC, sta. 16+059.50
203	06/28/93	Disappr'd	06/29/93	2	Excavation of unsuitable materials for RCPC
204	06/28/93	Approved	07/14/93	2	Existing Side Drain at sta.11+482, right side
205	07/04/93	Approved	07/12/93	2	Proposed re-alignment Section 3, sta. 34+102
205A	08/02/93	Approved	08/06/93	2	Proposed re-alignment Section 3, sta. 34+102
205B	10/01/93	Approved	10/05/93	2	Additional Mod of Horiz'l and Vert Alignm't, sta. 34+100
206	07/01/93	Approved	07/01/93	4	Change Location of Proposed Polomolok-Landan Road
206a	07/09/93	Approved	07/14/93	4	Change Location at sta. 14+420
206B	08/10/93	Approved	10/11/93	4	RCBC Weir/Check Dam at sta. 14+423.5 section 3
206C	09/23/93	Approved	09/24/93	4	Proposed Relief R.C. Pipe at sta. 14+418.5 Section 3
206D	10/06/93	Approved	10/08/93	4	Change of Vertical Alignment from sta. 14+100
206E	10/18/93	Approved	10/18/93	4	RCBC Gabion Weir/Check Dam at sta. 14+423

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206E	11/04/93	Approved	11/16/93	4	Modification of Vertical Alignment and Drainage
206G	01/05/93	Approved	01/11/93	4	As-built Design of Drainage Improvements
207	07/08/93	Approved	07/09/93	2	PCC Pavement Sta. 20+139.11 to sta. 20+650.00
208	07/12/93	Approved	07/22/93	2	Proposed site soil for BC and approach embankm't at Lasang
208A	07/28/93	Approved	08/04/93	2	Proposed Mod. of Vertical Alignment between sta.24+500
208B	08/26/93	Approved	09/03/93	2	Proposed change of location, 1-3.0 X 3.0 X 17.50 meters
208C	11/16/93	Approved	11/18/93	2	Surcharge Materials at Lasang Box Culvert
208D	11/16/93	Approved	12/07/93	2	Surcharge Materials at Lasang Box Culvert 2
209	07/08/93	Approved	07/14/93	2	Reinforcing steel bar for RCPC headwalls
210	06/12/93	Approved	07/13/93	4	Revised detail of RCBC, sta. 5+279.616
211	07/12/93	Approved	07/15/93	4	Change of Side Drain location, section 1
211A	10/07/93	Approved	10/08/93	4	Change of Side Drain location, sta. 3+081.5 section 1
212	07/09/93	Approved	07/13/93	7	Relocate Stop Sign
213	07/09/93	Approved	07/13/93	7	Additional road marking
214	07/09/93	Approved	07/13/93	7	Spot weld bolts on sign board
215	07/12/93	Approved	07/13/93	7	Additional road markings
216	07/09/93	Approved	07/13/93	7	Additional hand laid boulders at drainage pipe
217	07/14/93	Approved	07/15/93	7	Provide hand laid boulders/gabions at inlet of double pipe
218	07/14/93	Approved	07/16/93	7	Additional Md ditch, Sta. 16+700 to sta. 16+850
219	07/14/93	Disappr'd	07/16/93	7	Gabions slope protection sta. 19+100 to sta. 19+214
219A	07/22/93	Disappr'd	07/22/93	7	Gabion erosion protection sta. 19+100 to sta. 19+214
219B	07/26/93	Approved	07/26/93	7	Gabion erosion protection sta. 19+100 to sta. 19+214
219C	08/10/93	Approved	08/10/93	7	Erosion Protection (Gabions), sta. 19+100 to sta. 19+214
220	07/14/93	Approved	07/15/93	7	Sand bags shoulder protection, sta. 7+725
221	07/14/93	Approved	07/16/93	7	Addit'l side drain pipe at T'boli Evang'l Clinic drive
221A	07/30/93	Approved	08/02/93	7	Addit'l side drain pipe at T'boli Evang'l Clinic drive
222	07/14/93	Approved	08/02/93	7	Ad type ditch along "A" line, sta. 1+350
223	07/14/93	Approved	07/15/93	7	Additional crosswalk sign at school of Lamsugod
224	07/15/93	Approved	07/16/93	2	Headwall at inlet of 910mm dia. RCPC
225	07/16/93	Approved	07/16/93	2	610mm dia. RCPC side drain at sta. 20+371
226	07/20/93	Approved	07/16/93	4	Revised design of RCBC, vertical alignment & ditch
226A	07/30/93	Approved	08/02/93	4	Design of RCBC, vertical alignm't/addit'l cross drain pipe
227	07/20/93	Approved	07/20/93	2	Revised design of Panangalong RCBC
228	07/20/93	Approved	07/20/93	4	Substitute of shear keys 50x100
228A	07/20/93	Approved	08/16/93	2	Revised quantities of Abutment "A" Sapu Masla Bridge
228B	10/11/93	Disappr'd	10/15/93	2	Abutment "A" Scouring Protection at Sapu Masla Bridge
228C	10/12/93	Approved	10/20/93	2	Abutment "A" Scouring Protection at Sapu Masla Bridge
229	07/12/93	Approved	07/29/93	3	Alternate design of Saub Bridge gabion weir/check-dam
229A	12/20/93	Resubmit	12/16/93	3	Alternate design no. 2 of Saub Br. gabion weir/check dam
229B	12/21/93	Approved	12/21/93	3	Alternate design no.2 of Saub Br. gabion weir/check dam
229C	01/17/94	Approved	01/17/94	3	Proposed slope protection at abut. "B" of Saub bridge
229D	01/24/93	Approved	01/25/93	3	Proposed grouted riprap down chute at 1st approach, Saub Br
230	07/22/93	Disappr'd	07/22/93	2	Change location of proposed 1 at sta. 30+862 section 3
230A	08/16/93	Approved	08/18/93	2	Change location of proposed 1 at sta. 30+862 section 3
230B	08/31/93	Approved	09/02/93	2	Proposed change of vertical alignment at Cabug
231	07/22/93	Approved	07/23/93	2	Substitute of the Reinforcement of bridge railing post
232	07/24/93	Approved	07/27/93	2	Straight headwall as replacement to flared headwall
233	07/27/93	Approved	07/27/93	2	substitute of tongue/groove longit'l joint to dummy groove
233A	08/03/93	Approved	08/10/93		Six(6) successive dowelled butt joints
234	07/26/93	Approved	07/27/93	3	Substitute of grade 40 rebars longit'l girder proposed Saub Br
235	07/27/93	Approved	07/28/93	7	Primed shoulder/Road intersections
236	07/27/93	Approved	07/28/93	2	Structural Concrete for headwall (910mm)
237	07/28/93	Approved	08/08/93	2	Proposed side drain pipe at left side, sta. 11+435
238	07/28/93	Approved	08/03/93	2	Proposed side drain pipe at left side, sta. 11+209
239	07/38/93	Disappr'd	08/03/93	2	Proposed side drain pipe at left side, sta. 11+526.93
240	07/30/93	Approved	07/30/93	2	1220mm dia. RCP Culvert, sta. 30+439.00
241	07/30/93	Approved	08/02/93	8	Newly constructed side drain sta. 18+217
242	07/30/93	Approved	08/02/93	2	New constructed 1-610mm dia.x10.00m side drain, sta. 6+357

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243	07/30/93	Approved	08/02/93	8	Slope protection of Norala Bridge, sta. 18+102
244	08/02/93	Disappr'd	08/02/93	7	Additional 1-610mm dia.x4m RCP side drain sta. 1+080
245	08/02/93	Approved	08/03/93	2	Relocation of side drain, sta. 22+625
246	08/11/93	Approved	08/12/93	2	Proposed 1-1220mm dia. X 13.00 meter RCP, sta. 23+783
247	08/04/93	Approved	08/04/93		Substitution of 16mm dia. smooth dowel bars transverse
248	08/06/93	Approved	08/06/93	2	610mm dia. RCPC sta. 14+018
249	08/09/93	Disappr'd	08/10/93	4	Debris catcher and surplus common excavation
249A	08/11/93	Approved	08/11/93	4	Debris catcher left side of RCBC, sta. 13+540
250	08/10/93	Approved	08/10/93	2	Proposed modification of 2-1220mm dia. RCPC
251	08/11/93	Approved	08/11/93	8	Add down chute at Norala bridge
252	08/11/93	Approved	08/11/93	8	Add down chute at Lapuz bridge
253	08/11/93	Approved	08/11/93	8	Additional 1-610mm dia. RCP side drain, sta. 20+600
254	08/11/93	Disappr'd	08/12/93	4	Proposed RCP cross drain, sta. 5+150
254A	08/16/93	Approved	08/17/93	4	Proposed RCP cross drain, sta. 5+166
255	08/11/93	Approved	08/12/93	2	Change straight headwall sta. 15+660
256	08/12/93	Returned	08/16/93	2	Proposed 1-610mm dia.X20.00 RCPC side drain sta. 13+260
256A	09/03/93	Disappr'd	08/07/93	2	Proposed revision of drainage improvement. sta. 13+200
256B	11/16/93	Disappr'd	11/19/93	2	Proposed grouted riprap lined ditch sta. 13+179
256C	11/24/93	Approved	11/26/93	2	Proposed grouted riprap lined ditch sta. 13+179
256D	12/10/93	Disappr'd	12/13/93	2	Proposed grouted riprap lined ditch sta. 13+179
256E	12/16/93	Approved	12/17/93	2	Proposed grouted riprap lined ditch sta. 13+179
256G	02/01/94	Approved	02/01/94	2	Proposed Grouted riprap lined ditch sta. 13+177
257	08/12/93	Approved	08/12/93	2	Proposed modification of flared headwall, sta. 21+274.95
258	08/12/93	Approved	08/16/93	2	Excavation of unsuitable materials, RCP sta. 27+290
259	08/12/93	Approved	08/13/93	2	Strength test requirement for PCCP
260	08/16/93	Approved	08/24/93	2	Additional unsuitable excavation side and outfall ditches
261	09/08/93	Approved	08/08/93	8	Compressive strength test result
262	08/24/93	Approved	08/25/93	2	Proposed relocation of cross drain, sta. 30+354
263	08/26/93	Approved	08/27/93	2	Modification of vertical alignment, sta. 25+900
264	09/03/93	Approved	09/08/93	2	Proposed modification of horizontal and vertical alignment
264A	09/28/93	Approved	09/24/93	2	Additional modification of horizontal alignment Cabug
266	09/03/93	Approved	09/07/93	2	Revised grade sta. 6+550 and sta. 6+762.5
267	09/03/93	Approved	09/07/93	2	Revised grade of Molo and Tuyan Bridge
268	09/02/93	Disappr'd	09/08/93	2	Proposed side drain left side sta. 20+274
269	09/03/93	Approved	09/07/93	2	Excavation of unsuitable materials at Lago RCBC
270	09/02/93	Approved	09/07/93	7	Remove left side wingwall outlet end, sta. 0+278.80
271	09/03/93	Approved	09/07/93	8	Spot weld and paint bolts, Norala Bridge
272	09/06/93	Approved	09/07/93	2	Paved shoulder, sta. 18+985
273	09/08/93	Disappr'd	09/20/93	2	Rock excavation
273A	10/12/93	Disappr'd	09/12/93	2	Isolated rock excavation
275	09/08/93	Approved	09/08/93	2	Revised schedule of incidental works
275A	10/20/93	Approved	10/25/93	2	Revised location of guardrail at Molo Bridge
275B	10/28/93	Approved	10/28/93	2	Additional pedestrian signs, sta. 13+670
276	09/09/93	Approved	09/09/93	2	Proposed stone masonry stairway, sta. 13+920
277	09/17/93	Approved	09/20/93	2	Revised design of gabion and slope protect at Lun Masla
277B	10/22/93	Approved	10/22/93	2	Additional design changes on gabions
278	09/24/93	Approved	09/27/93	2	Proposed reduction of roadway shoulder width
278A	01/21/93	Disappr'd	01/27/93	2	Reduction of roadway shoulder width
279	09/20/93	Approved	09/20/93	2	Guardrail detail along bridge approaches
280	09/29/93	Approved	10/01/93	4	Revised drainage improvement at RCBC sta. 3+383
280A	10/25/93	Approved	10/27/93	4	Revised slope protection at the bank of waterway sta. 3+863
280B	10/07/93	Approved	10/08/93	4	Grouted riprap slope protection along waterway sta. 3+383
281	10/07/93	Approved	10/12/93	2	Modification of horizontal and vertical alignment sta. 32+325
281A	11/08/93	Approved	11/09/93	2	Revised RCPC design at sta. 33+546.5
281B	12/02/93	Resubmit	12/03/93	2	Proposed modification of 1220mm dia. RCPC, sta. 33+548
281C	12/20/93	Approved	12/21/93	2	Proposed modification of RCPC, sta. 33+548
282	09/28/93	Resubmit	10/01/93	4	Proposed slope protection of RCBC, sta. 14+003.04
282B	10/14/93	Approved	10/15/93	4	Additional grouted riprap chute at RCBC sta. 14+003.34

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282C	11/05/93	Approved	11/15/93	4	Proposed modification of grouted riprap sta. 14+003
282D	12/10/93	Approved	12/16/93	4	Modification of grouted riprap RCBC sta. 14+003
282E	01/04/94	Approved	01/05/93	4	Delete proposed pipe extension RCPC side drain sta. 14+039
282F	01/19/93	Approved	01/20/93	4	Raising of lined ditch wall RCPC side drain sta. 14+039
284	09/28/93	Disappr'd	10/05/93	4	Proposed additional/reduction sta. 1+491.36 to 2+800
285	10/11/93	Resubmit	10/13/93	4	Proposed cross drain pipe sta. 13+725 and 13+825
285A	10/19/93	Approved	10/28/93	4	Proposed cross drain pipe sta. 13+725 and 13+825
286	09/29/93	Approved	09/29/93	4	Change of vertical alignment, sta. 15+129.50 to 15+269
287	09/29/93	Approved	09/30/93	4	Sealing of non-structural cracks at RCBC sta. 3+383
287A	10/04/93	Approved	10/05/93	4	Sealing of non-structural cracks at RCBC sta. 3+383
288	10/11/93	Approved	10/12/93	4	Change of vertical alignment sta. 3+165 to 3+350
288A	10/15/93	Disappr'd	10/15/93	4	Proposed shoulder protection sta. 3+200 to 3+275
288B	10/18/93	Approved	10/25/93	4	Proposed shoulder protection sta. 3+200 to 3+275
288C	12/21/93	Approved	12/23/93	4	Proposed shoulder protection sta. 3+200 to 3+275
289	10/13/93	Approved	10/14/93	4	Revised design of lined ditch sta. 14+705
289A	01/08/94	Approved	01/10/94	4	Eliminate proposed grouted riprap & chute sta. 14+705
290	10/08/93	Approved	10/12/93	2	Spot weld on sign boards
291	10/12/93	Approved	10/15/93	2	Proposed stone masonry stair sta. 28+975
291A	10/16/93	Approved	10/18/93	2	Proposed stone masonry stair sta. 28+968
292	10/08/93	Approved	10/12/93	2	Field review of grouted riprap apron slab of RCPC's
292A	12/06/93	Approved	12/09/93	2	Field review of grouted riprap apron slab
292B	12/10/93	Approved	12/13/93	2	Field review of grouted riprap apron slab
293	10/15/93	Approved	10/18/93	2	Additional crosswalk at school of Lun Masla
294	10/18/93	Disappr'd	10/19/93	2	Side drain pipe at right side sta. 10+556.95
295	10/15/93	Approved	10/18/93	2	Modification of remedial works at Lun Masla Bridge
296	10/18/93	Approved	10/25/93	2	Side drain pipe right side sta. 32+872.309
297	10/20/93	Approved	10/22/93	2	Proposed modification of vertical alignment sta. 37+800
299	10/29/93	Approved	11/08/93	2	Modification of horizontal alignment sta. 28+300
299A	11/12/93	Approved	11/16/93	2	Modification alignment sta. 28+300
300	10/25/93	Approved	10/25/93	2	Revised schedule of metal guardrail
300B	12/13/93	Approved	12/17/93	2	Additional metal guardrail Sapu Masla Bridge
301	10/28/93	Disappr'd	11/02/93	2	Proposed modification of drainage improvement sta. 45+300
301B	11/20/93	Approved	11/23/93	2	Proposed modification of vertical alignment sta. 45+289
302	11/04/93	Approved	11/04/93	2	Proposed side drain pipe sta. 28+060
303	10/25/93	Approved	10/26/93	2	Proposed modification of HW sta. 36+975 cross drain
304	10/26/93	Approved	10/27/93	2	Proposed modification of HW sta. 32+991 cross drain pipe
305	10/29/93	Disappr'd	11/04/93	2	Proposed modification of side drain pipe sta. 47+155.08
306	01/04/94	Disappr'd	01/10/94	2	Proposed grouted riprap protection of Calabalol Bridge
306A	01/17/94	Returned	01/17/94	2	Proposed gabion slope protection of Calabalol Bridge
306B	01/20/94	Approved	01/24/94	2	Proposed gabion slope protection of Calabalol Bridge
307	12/06/93	Approved	12/06/93	3	Proposed mod. of existing wingwall/sidewalk of Saub Bridge
308	10/26/93	Approved	10/26/93	4	Substitution of crushed aggregate base for sub-base
309	11/29/93	Disappr'd	11/04/93	2	Proposed modification of side drain sta. 46+752.50
310	11/09/93	Approved	11/09/93	4	Proposed modification of side drain sta. 14+929.17
311	11/08/93	Disappr'd	11/16/93	4	Proposed modification of vertical alignment sta. 13+540
311A	11/17/93	Approved	11/22/93	4	Proposed modification of vertical alignment sta. 13+540
311B	12/01/93	Approved	12/07/93	4	Revised prelim. quant. & edge of pavement elev. sta. 13+540
311C	01/07/94	Approved	01/14/94	4	Revised design of grouted riprap shoulder sta. 13+594.50
312	12/03/93	Approved	12/07/93	4	Revised schedule of incidental works
312B	12/16/93	Approved	12/20/93	4	Change metal guardrail stone masonry guardrail sta. 2+375
312C	12/23/93	Approved	01/18/94	4	Additional one panel of metal guardrail sta. 3+383
312D	01/04/94	Approved	01/06/94	4	Proposed grouted riprap chute sta. 2+375 to 2+425
313	11/08/93	Disappr'd	11/10/93	2	Drainage field review sta. 46+130
313A	11/15/93	Approved	11/17/93	2	Drainage field review sta. 46+130
313B	12/22/93	Approved	12/23/93	2	Side drain pipe sta. 46+273 to sta. 46+284
314	11/10/93	Approved	11/10/93	4	Crushed aggregate base course compaction requirement
315	11/11/93	Approved	11/10/93	2	Backfill/embankment procedure Cabug RCBC sta. 30+868
316	11/10/93	Approved	11/11/93	2	Excavation of unsuitable materials on RCP sta. 41+995.25

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317	11/10/93	Approved	11/11/93	2	Modification of standard manhole RCPC sta. 41+519.98
318	11/10/93	Approved	11/11/93	3	Revised schedule of incidental works at Saub Bridge
319	11/15/93	Approved	11/18/93	2	Revised schedule of metal guardrail at sta. 20+021.59
319A	12/10/93	Approved	12/13/93	2	Change stone masonry guardrail at sta. 28+430
319B	12/23/93	Approved	01/03/94	2	Revised stone masonry guardrail at sta. 28+179
319C	12/23/93	Approved	01/05/94	2	Stone masonry guardrail at both side sta. 30+340
320	11/10/93	Approved	11/11/93	4	Shoulder materials
321	11/17/93	Approved	11/18/93	2	Revised drainage improvement sta. 24+975
322	11/15/93	Disappr'd	11/16/93	2	Proposed modification of cross drain pipe sta. 42+442
323	11/15/93	Approved	11/16/93	4	Proposed side drain pipe sta. 14+753
323A	12/15/93	Approved	12/16/93	4	Proposed side drain pipe sta. 14+753
324	11/15/93	Disappr'd	11/15/93	2	Crushed aggregate base course compaction requirements
325	11/16/93	Approved	11/18/93	2	Delete loading/unloading zone sta. 46+335
326	11/18/93	Approved	11/19/93	2	Asphalt overlay on deck slab, Sapu Masla & Sapu Padido
328	11/18/93	Approved	11/18/93	2	Modification of siphon sta. 42+228.844
328A	12/23/93	Approved	01/03/94	2	Modification of flared headwall sta. 42+228.844
329	11/24/93	Approved	11/26/93	2	Modification of siphon sta. 41+519.98
331	11/24/93	Approved	11/26/93	4	Revised roadway section
332	12/01/93	Approved	12/08/93	2	Revised schedule of metal guardrail sta. 30+575
333	12/01/93	Approved	12/06/93	2	Revised schedule of road sign and pavement markings
334	12/03/93	Approved	12/03/93	2	Proposed grouted riprap lined ditch/chute of Lasang
335	12/02/93	Approved	12/03/93	2	Proposed grouted riprap lined ditch/chute sta. 25+668
336	12/03/93	Approved	12/06/93	2	Shoulder improvement at existing PCCP sta. 44+618.5
337	12/06/93	Approved	12/09/93	4	Additional drainage works
337A	12/23/93	Approved	01/14/94	4	Additional basket of gabion at outlet of RCBC sta. 3+383
338	12/06/93	Approved	12/07/93	2	Eliminate improvement of existing water well at sta.23+575
339	12/09/93	Approved	12/09/93	2	Unsuitable excavation sta. 41+700 to sta. 46+400
340	12/09/93	Approved	12/09/93	2	Revised design of 1-610mmX14m RCPC side drain sta. 20+040
341	12/09/93	Disappr'd	12/10/93	2	Additional 1-610mm diaX5 meter side drain pipe
342	12/10/93	Approved	12/15/93	2	Proposed grouted riprap slope protection of RCBC sta. 24+925
343	12/16/93	Approved	12/17/93	4	Additional road sign and crosswalk sta. 14+950
344	12/16/93	Approved	12/20/93	4	Proposed grouted riprap wall and apron of RCBC at sta. 14+997
345	12/09/93	Approved	01/13/93	2	Additional 10 pieces concrete guide post sta. 25+662
346	01/07/94	Approved	01/07/94	4	Proposed 1-910mm dia. RCP cross drain sta. 3+250
347	12/22/93	Disappr'd	12/23/93	2	Proposed RCPC side drain sta. 43+270
348	12/25/93	Approved	01/03/94	4	Repair of damaged riprap wall of lined ditch sta. 1+730
349	12/22/93	Approved	12/23/93	2	Modification of headwall at left side sta. 47+165
351	01/03/94	Approved	01/05/94	4	Chip off existing stone masonry wall sta. 4+969.50
352	01/04/94	Approved	01/05/94	4	Provide 2" GI pipe handrail grouted riprap sta. 14+003
353	01/10/94	Approved	01/11/94	2	Revised detail of road sign install'n at Lun Masla
354	01/10/94	Approved	01/11/94	2	Eliminate prime coat at sta. 46+129.37
355	01/10/94	Disappr'd	01/24/94	4	Additional works
357	01/14/94	Approved	01/14/94	3	Rough-in airport centerline road
358	01/17/94	Approved	01/17/94	4	Guide post at sta. 15+030
359	01/21/94	Approved	01/24/94	2	Additional work
360	01/20/94	Approved	01/24/94	2	RCPC side drain at sta. 46+810
361	01/26/94	Approved	01/26/94	2	Additional gabion basket at sta. 35+959.50
364	01/27/94	Approved	01/27/94	2	Proposed 1-610mm dia. RCP side drain at sta. 27+820
365	01/31/94	Approved	01/31/94	2	Additional pavement markings

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003G	02-22-93	Approved	02-25-93	3	As-built quantities, sta. 9+617
004A	.03-12-93	Approved	03-10-93	3	As-built quantities, sta. 10+425 to sta. 10+580
009A	03-17-93	Approved	03-17-93	3	As-built quantities, sta. 8 + 350 to sta. 9 + 300
011A	03-02-93	Approved	03-11-93	3	As-built quantities, sta. 4 + 925 to sta. 5 + 250
012B	03-11-93	Approved	03-11-93	3	As-built quantities, section 1A and 1B
016A	03-02-93	Approved	03-10-93	3	As-built quantities, sta. 6 + 440
019D	03-03-93	Approved	03-17-93	3	As-built quantities, sta. 9 + 617.46
022A	03-21-93	Disapproved	10-28-93	3	Grouted riprap constructed, sta. 6 + 794 to 7 + 166
022B	03-03-93	Approved	03-11-93	3	As-built quantities, sta. 6 + 794 to sta. 7 + 166.1
026B	03-03-93	Approved	03-10-93	3	As-built quantities, sta. 24 + 243.63
027C	03-03-93	Approved	03-11-93	3	As-built quantities, sta. 2 + 153.68
028D	03-03-93	Approved	03-11-93	3	As-built quantities, section 1A and 1B
029A	10-24-93	Approved	11-02-93	3	As-built quantities at Siguil River approach, sta. 13+850-14+210
029D	05-14-93	Approved	05-27-93	3	As-built quantities, sta. 14 + 115 to sta. 14 + 210.55
030B	03-22-93	Approved	04-13-93	3	As-built quantities, sta. 1 + 947.57 to sta. 12 + 475
031C	03-03-93	Approved	03-17-93	3	As-built quantities, sta. 11 + 463
033B	03-03-93	Approved	03-10-93	3	As-built quantities, sta. 22 + 440 to sta. 22 + 906.33
037a	03-03-93	Approved	03-11-93	3	As-built quantities, sta. 2 + 415 left side
038A	03-17-93	Approved	03-03-93	3	As-built quantities, sta. 18 + 535 to sta. 18 + 714
043A	03-17-93	Approved	03-22-93	3	As-built quantities, sta. 10 + 031 to sta. 12 + 075
044F	02-24-93	Approved	02-24-93	3	As-built quantities, sta. 2 + 896 to sta. 3 + 200
046B	02-22-93	Approved	03-23-93	3	As-built quantities, sta. 26 + 000 to sta. 26 + 124.22
048A	03-17-93	Approved	03-22-93	3	As-built quantities, sta. 49 + 292
051C	03-17-93	Approved	04-12-93	3	As-built quantities, sta. 18 + 100 to sta. 19 + 100
052B	09-04-93	Approved	02-11-93	3	As-built quantities, sta. 16 + 500 to sta. 82 + 931
055A	03-17-93	Approved	03-22-93	3	As-built quantities, sta. 26 + 050 to 26 + 200 to 27 + 485
056A	08-16-93	Approved	08-19-93	3	Aggregate sub-base materials (item 200) for shoulder
059A	03-15-93	Approved	03-17-93	3	As-built quantities, sta. 20 + 874
064B	10-21-93	Approved	10-26-93	3	Stone masonry guardrail ext., sta.18 + 351 and sta. 18 + 415
064C	02-23-93	Approved	03-10-93	3	As-built quantities, sta. 18 + 377 to 18 + 420
065B	03-12-93	Approved	03-15-93	3	As-built quantities, sta. 18 + 825.00
066B	03-10-93	Approved	03-15-93	3	As-built quantities, metal guardrail section 1 and 2
069H	07-17-93	Approved	03-23-93	3	As-built quantities, sta. 14 + 390 and sta. 14 + 441
070B	10-02-93	Approved	03-15-93	3	As-built quantities, sta. 14 + 441
071B	10-02-93	Approved	10-20-93	3	As-built quantities of grouted riprap slope protection, sta. 17+973
071C	03-12-93	Approved	03-17-93	3	As-built quantities, sta. 17 + 973 to sta. 17 + 990.7
072A	03-17-93	Approved	03-22-93	3	As-built quantities, sta. 20 + 847 to sta. 20 + 927
074B	03-22-93	Approved	04-01-93	3	As-built quantities, sta. 11 + 925 to 14 + 210.5
077A	08-16-93	Approved	08-16-93	3	Change grrade elevation sta. 31 + 025
078A	03-22-93	Approved	03-23-93	3	As-built quantities, sta. 2 + 712.55
079A	03-22-93	Approved	03-23-93	3	As-built quantities, sta. 29 + 641
080A	03-24-93	Approved	04-01-93	3	As-built quantities, sta. 2 + 240 to 4 + 936.50
081B	03-30-93	Approved	04-05-93	3	As-built quantities, sta. 4 + 788.356
084A	04-05-93	Approved	04-05-93	3	As-built quantities, sta. 53 + 125 to sta. 53 + 450
085A	03-30-93	Approved	04-05-93	3	As-built quantities, sta. 46 + 850 to sta. 47 + 200
086B	10-18-93	Approved	10-09-93	3	As-built quantities, sta. 11 + 463
086C	03-29-93	Approved	04-05-93	3	As-built quantities, sta. 49 + 650 to sta. 52 + 175
087B	03-29-93	Approved	04-05-93	3	As-built quantities, sta. 43 + 463
088A	03-30-93	Approved	04-13-93	3	As-built quantities, sta. 43 + 050 to sta. 43 + 450
089A	08-09-93	Disapproved	08-10-93	3	Flood control at sta. 33 + 630 to sta. 34 + 234
092A	03-31-93	Approved	04-12-93	3	As-built quantities, sta. 54 + 700 to sta. 55 + 050
094A	03-30-93	Approved	04-07-93	3	As-built quantities, sta. 56 + 350 to sta. 56 + 575
095A	03-30-93	Approved	05-05-93	3	As-built quamtities, Section 1
096A	01-21-93	Disapproved	10-22-93	3	As-built quantities of rubble masonry guardrail
096B	04-05-93	Approved	04-05-93	3	As-built quantities, sta. 25 + 213.6 to sta. 25 + 319.40
097C	02-08-93	Approved	12-11-93	3	Revised quantities, sta. 59 + 625 to sta. 61 + 075
097D	03-30-93	Approved	04-07-93	3	As-built quantities, sta. 63 + 800 to sta. 64 + 300

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98A	04-01-93	Approved	04-13-93	3	As-built quantities sta. 63 + 800 to sta. 64 + 300
100A	10-21-93	Approved	04-26-93	3	As-built quantities, RCBC extension
100B	04-02-93	Approved	04-05-93	3	As-built quantities, sta. 58 + 196
103A	04-02-93	Approved	04-12-93	3	As-built quantities, sta. 68 + 364.95
105A	04-02-93	Approved	04-13-93	3	As-built Quantities, sta. 69 + 330 to sta. 70 + 540
106A	04-02-93	Approved	04-05-93	3	As-built Quantities, sta. 14 + 210.55 to sta. 14 + 703
107A	04-02-93	Approved	04-12-93	3	As-built quantities, sta. 72 + 639.40
108A	02-26-93	Approved	03-10-93	3	As-built quantities, Talok and Maglangit bridge
109A	02-26-93	Approved	03-10-93	3	As-built quantities, Lumasal Bridge
110A	04-02-93	Approved	04-13-93	3	As-built quantities, sta. 70 + 500 to sta. 71 + 775
111A	03-07-93	Approved	04-13-93	3	As-built quantities, sta. 61 + 450
113A	02-26-93	Approved	03-10-93	3	As-built quantities, sta. 0 + 000 to sta. 14 + 210.55
114A	04-12-93	Approved	04-05-93	3	As-built quantities, section 1
115B	04-02-93	Approved	04-05-93	3	As-built quantities, sta. 5 + 513
116B	04-05-93	Approved	04-14-93	3	As-built quantities, sta. 6 + 794 to sta. 7 + 166
117C	04-05-93	Approved	04-22-93	3	As-built quantities, sta. 81 + 966 to sta. 82 + 046
118A	04-21-93	Approved	04-23-03	3	As-built quantities, sta. 10 + 575
119A	04-05-93	Approved	04-22-93	3	As-built quantities, sta. 14 + 065 to sta. 14 + 225
120D	04-05-93	Approved	04-22-93	3	As-built quantities, Kumaba bridge
121A	02-04-93	Approved	02-24-93	3	As-built quantities, sta. 4 + 257.83 to sta. 4 + 282 left side
122A	04-05-93	Approved	04-14-93	3	As-built quantities, sta. 66 + 787.5
123B	04-21-93	Approved	04-23-93	3	As-built quantities, section 3A
124B	02-24-93	Approved	02-24 93	3	As-built quantities, sta. 2 + 612
125A	04-05-93	Approved	04-22-93	3	As-built quantities, sta. 9 + 617
126A	04-05-93	Approved	04-14-93	3	As-built quantities, sta. 9 + 617
129A	01-26-93	Approved	01-27-93	3	As-built quantities of AC Pavement Curve widening Maasim-Kiamba
129B	01-28-93	Approved	01-28-93	3	As-built quantities of AC Pavement Curve widening Maasim-Kiamba
129C	05-13-93	Approved	05-20-93	3	As-built quantities, Maasim to Kiamba (Section 3A &3B)
130A	04-05-93	Approved	04-14-93	3	As-built quantities, sta. 71 + 259
131A	04-05-93	Approved	04-14-93	3	As-built quantities, sta. 61 + 883 to sta. 61 + 916
132A	02-09-93	Approved	02-12-93	3	As-built quantities of guardrail RCBC sta. 38 + 244
133B	02-09-93	Approved	02-12-93	3	As-built quantities drainage imrpovement, Section 2
134A	04-05-93	Approved	04-22-93	3	As-built quantities, Section 2
138A	01-26-93	Approved	01-29-93	3	Grade change, sta. 83 + 577.76 to sta. 89 + 275
138B	02-08-93	Approved	02-11-93	3	Grade change, sta. 83 + 577.76 to sta. 89 + 275.00
138C	04-05-93	Approved	04-14-93	3	As-built quantities, sta. 83 + 577 to sta. 89 + 275
140A	02-24-93	Approved	02-24-93	3	Asbuilt quantities, sta. 69 + 018 left side
141A	04-05-93	Approved	04-05-93	3	As-built quantities, sta. 36 + 495 (Maasim)
142B	04-05-93	Approved	04-22-93	3	As-built quantities, Section 3A (35 + 703 to 61 + 765)
143B	05-06-93	Approved	05-06-93	3	As-built quantities, Section 3A (35 + 703 to 61 + 765)
145A	04-05-93	Approved	04-14-93	3	As-built quantities, sta. 82 + 665 to sta. 83 + 035
147B	04-22-93	Approved	04-23-93	3	As-built quantities, Section 3B
148A	04-23-93	Approved	05-06-93	3	As-built quantities, Section 3B
149A	09-09-93	Approved	09-13-93	3	Change of finish grade elevation from sta. 29+975 to sta. 31+025
150B	03-02-93	Approved	03-15-93	3	As-built quantities, sta. 72 + 259 to sta. 72 + 346.93
152B	04-29-93	Approved	05-20-93	3	As-built quantities, Section 4
153A	04-29-93	Approved	05-06-93	3	As-built quantities, Section 4
154A	04-29-93	Approved	05-06-93	3	As-built quantities, sta. 42 + 015 and sta. 44 + 410
155B	04-29-93	Approved	09-09-93	3	As-built quantities, sta. 58+913 to sta. 59+103 (Katagas Spillway
158A	08-09-93	Approved	09-09-93	3	Revision of riprap slope protection at Kansan Bridge
163A	05-20-93	Approved	05-20-93	3	As-built quantities, sta. 50 + 081
165A	08-09-93	Disapproved	08-10-93	7	Revision of construction limit/riprap slope protection at Kansan
166A	05-14-93	Approved	05-16-93	7	As-built quantities, sta. 20 + 475 and 20 + 752
172A	05-14-93	Approved	05-20-93	3	As-built quantities, sta.62 + 879
174A	07-20-93	Approved	07-23-93	7	Road alignment, sta. 16 + 955 to sta. 17 +200
182D	08-10-93	Approved	08-10-93	7	Revised signs, marker sta. 0 + 000 and sta. 21 + 581
183A	08-08-93	Approved	08-09-93	8	Revised signs, markers and pavement markings
184	08-08-93	Approved	08-09-93	8	Additional drainage improvement, sta. 18 + 180

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186A	07-20-93	Approved	07-21-93	8	Additional drainage improvement, sta. 18 + 180
187A	08-10-93	Approved	08-10-93	8	Grouted riprap wall, sta. 22 + 988.80 to sta. 22 + 998.8
188A	07-20-93	Approved	07-21-93	7	Additional drainage and erosion Works
189A	08-09-93	Approved	07-21-93	8	Turnouts (Loading and Unloading Zone)at the end of the project
193A	09-29-93	Approved	10-06-93	2	Proposed improvement on RCPC Covering and grade Change
195B	07-20-93	Approved	07-21-93	7	Drainage at petron gas station, sta. 20 + 950
199A	01-18-93	Approved	01-31-93	2	Loading and unloading zone adjacent to the PCC Pavement
205C	01-19-93	Approved	01-18-93	2	Road re-alignment at Lago-Alternate (34 + 100 to 35+700)
206F	02-18-94	Approved	02-15-94	2	Modification of design at Lasang box culvert
206H	01-19-93	Approved	01-31-93	4	Modified design of RCBC and drainage Structures
207A	01-21-94	Approved	01-27-94	2	PCC Pavement (20 + 139 to 20 + 650) Alternate
208E	12-13-93	Approved	12-13-93	2	Modification of design at Lasang Box Culvert
208F	02-17-93	Approved	02-24-93	2	Modification of drainage at Lasang at Culvert
209A	10-24-93	Approved	10-31-93	2	Additional reinforcing steel for pipe headwall
211B	08-20-93	Approved	01-24-93	4	Change of side drain location
213A	08-09-93	Approved	08-11-93	7	Additional road markings(stop bar), sta. 0 + 000
215A	08-09-93	Approved	08-11-93	7	Add'l road marking (double yellow barrier lines), sta. 0 + 000
216A	08-09-93	Approved	08-10-93	7	Additional hand laid rock embankment on drainage outlet
217A	08-09-93	Approved	08-10-93	7	Hand laid rock embankment/gabion at inlet of double barrel pipe
218A	08-10-93	Approved	08-10-93	7	Additional MD ditch, sta. 16 + 850
220A	08-09-93	Approved	08-10-93	7	Sand bags at Sector
223A	08-09-93	Approved	08-10-93	7	Additional Crosswalk and Pedestrian Signs
224A	08-09-93	Approved	08-10-93	2	Headwall at inlet of 910mm dia. RCPC, sta. 19 + 626.3
225A	01-24-94	Approved	01-26-94	2	RCBC, 610mm dia drain, sta. 20 + 571 left side
226B	02-11-93	Approved	02-15-94	4	Revised design of RCBC Approach (sta. 5 + 279)
226C	01-19-94	Approved	01-19-94	4	Revised and Modification of cross drain (sta. 5 + 330)
228	01-24-94	Approved	01-26-94	2	Sapu Masla Bridge
330D	01-20-94	Approved	01-24-94	2	Revised design at RCBC Cabug
232A	01-24-94	Approved	01-26-94	2	Modofication of Headwall, 910mm dia. drainage line
236	07-28-93	Approved	07-28-93	2	Reinforcement concrete for headwall (910mm)
237A	09-29-93	Approved	10-05-93	2	Side drain pipe, sta. 11 + 435
238A	09-29-93	Approved	10-05-93	2	Side drain pipe, sta. 11 + 209
241A	09-29-93	Approved	10-05-93	8	Side drain pipe, sta. 18 + 217
242A	09-29-93	Approved	10-06-93	2	side Drain pipe, sta. 6 + 357
243A	09-29-93	approved	10-05-93	8	Slope protection Norala bridge, sta. 18 + 102.75
245A	01-24-93	Approved	01-26-93	2	Relocation of side drain
248A	09-29-93	Approved	10-06-93	2	610mm dia.RCPC at sta. 14 + 018
251A	09-29-93	Approved	10-05-93	8	Down chute at Norala Bridge
252A	09-29-93	Approved	10-05-93	8	Down chute at Lapuz Bridge
253A	09-29-93	Approved	10-05-93	8	1-610mm dia. side drain
254B	01-18-94	Approved	01-19-94	4	Additional 2-610mm dia. cross drain pipe
255A	09-29-93	Approved	10-06-93	2	Change straight headwall to flared headwall
256F	01-20-93	Approved	01-31-93	2	Grouted riprap lined ditch, sta. 13 + 217
258A	02-22-94	Approved	02-24-94	2	Unsuitable excavation on RCPC Trenches
263A	01-18-94	Approved	01-19-94	2	Modofication of vertical Alignment
274A	12-13-93	Approved	12-14-93	2	Lined ditch, sta. 21 + 400 to Sta. 21 + 525
276A	02-15-94	Approved	02-22-93	2	Stone masonry and stairway
277B	02-15-94	Disappr'd	02-15-94	2	Drainage and slope protection at Lun Masla Bridge
280C	01-18-94	Approved	01-31-94	4	Drainage structures and slope protection (3 + 383)
281D	01-18-94	Approved	01-24-94	2	Mod. of vertical and horizontal alignment, sta.32+ 325-34+100
282D	02-25-94	Approved	01-31-94	4	Drainage slope protection
283A	12-13-94	Approved	01-31-94	2	Stilling basin, sta. 22 + 304
285B	01-18-94	Approved	01-20-94	4	Additional 910mm dia, Cross Drains
286A	01-18-94	Approved	01-19-94	4	Change of vertical alignment, sta. 15 + 129.50
288D	01-18-94	Approved	01-19-94	4	Shoulder protection, sta. 3 + 200 to sta. 3 + 275
291B	02-15-94	Approved	02-22-94	2	Stone masonry stairway alternate
292B	02-22-94	Approved	02-24-94	2	Grouted riprap, apron slab
295A	12-13-94	Approved	12-14-93	2	Remedial works on existing pier, Lun Masla Bridge

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297A	12-13-93	Approved	12-14-93	2	Modification of vertical alignment, sta. 37+800 to sta. 38 + 025
300C	01-20-94	Approved	01-24-94	2	Revised schedule of Metal guardrail
301C	02-09-94	Approved	02-10-93	2	Side drain pipe, sta. 28 + 060
304A	01-24-94	Approved	01-24-94	2	Raising forward wingwall RCPC cross drain, sta. 32 + 991
306D	02-22-94	Approved	02-28-94	4	Slope protection at Calabalol bridge
310A	01-18-94	Approved	01-19-94	4	Modification of cross drain, sta. 14 + 929
311D	02-15-94	Approved	02-28-94	4	Drainage and slope protection vertical alignment
312E	01-11-94	Approved	01-18-94	4	Metal guardrail of RCBC, sta. 14 + 003.04
312F	01-20-94	Approved	02-02-94	4	Schedule of incidental works
316A	02-20-94	Approved	02-02-94	4	Unsuitable excavation for RCPC
319C	02-24-94	Approved	02-24-94	2	Metal and stone masonry guardrial
320A	02-15-94	Approved	02-22-94	4	Limestone shoulder material
325A	01-18-94	Approved	01-19-94	2	Delete loading and unloading zone at sta. 46 + 335
326A	01-18-94	Approved	01-19-94	2	Asphalt overlay on bridge deck, Sapu Masla and Sapu Padidu Bridge
328B	11-26-93	Approved	11-26-93	3	Pavement markings
301C	02-04-94	Approved	02-09-94	2	Modification of vertical alignment sta. 45 + 289
306D	02-17-94	Approved	02-22-94	2	Slope protection at Calabalol bridge
311D	02-11-94	Approved	02-15-94	4	Drainage and slope protection vervised
316A	02-14-94	Approved	02-22-94	2	Unsuitable excavation for RCBC (41 + 995 and 42 + 165)
319C	02-14-94	Approved	02-24-94	2	Metal and stone masonry guardrail (20 + 190 to 019 + 228)
333A	11-20-94	Approved	01-31-94	2	Schedule of incidental works
334A	01-20-94	Approved	01-24-94	2	Grouted riprap lined ditch, Lasang RCBC
335A	01-20-94	Approved	01-31-94	2	Grouted riprap lined ditch, sta. 25 + 697
336A	01-18-94	Approved	01-19-94	2	Grouted riprap lined ditch, sta. 25 + 697
339A	01-18-94	Approved	01-19-94	4	Shoulder improvement along existing PCCP
342A	01-20-94	Approved	01-24-94	2	Unsuitable excavation at sta. 41 + 700 to sta. 46 + 400
343A	01-20-94	Approved	01-24-94	4	Additional road signs and crosswalk, sta. 14 + 950 to sta. 15+175
346A	01-18-94	Approved	01-24-94	4	Additional 1-910mm dia. cross drain, sta. 3 + 250
354A	01-18-94	Approved	01-19-94	2	Un-primed section at Glan (46 + 129 to 47 + 175) and Lun Masla
345A	02-18-94	Approved	02-25-94	2	Concrete guide posts (20 + 019 to 47 + 175)
346B	02-03-94	Approved	02-08-94	4	As-built location and details of RCPC cross drain sta. 3 + 249.80
346C	02-14-94	Approved	02-15-94	4	Grouted riprap, lined ditch (3 + 250)
356	01-13-94	Disappr'd	01-20-94	2	Shoulder riprap, lined ditch at Glan
358A	02-18-94	Approved	02-22-94	4	Concrete guide posts
361A	02-11-94	Approved	02-15-94	2	Grouted riprap, lined ditch at Glan
362A	02-15-94	Approved	02-15-94	2	Additional gabion basket (35 + 959)
363	01-26-94	Approved	01-26-94	2	Kilometer post and 2" dia pipe handrail
313C	03-11-94	Approved	03-28-94	2	Side Drain at Glan Sta. 46+336

COMPLETION CERTIFICATE

C. CERTIFICATES

MINDANAO DEVELOPMENT PROGRAM
USAID
Maduramente Building, National Highway, P.O. Box 125 General Santos City
South Cotabato Tel: 4929, 4270, 810-2401, loc.3574

Mr. Duane E. Buckert
Morrison Knudsen Corporation
Project Director
South Cotabato Highways Project
Mindanao Development Program
Unit 10 & 12, ECA Building
National Highway
General Santos City, S. Cotabato

31 March 92
Ref. no. GSP/MK 0040

File: Sector 2, 4, 7, 8

Subj: Notice to Proceed - Sectors 2, 4, 7 and 8

Dear Mr. Buckert:

As you are well aware, the 1st Modification to the contract for the design and construction of the South Cotabato Highways has been executed. The base bid kilometrage of the contract is therefore fully funded. This is to give you a Notice to Proceed with work on the following Sectors:

Sector 2 - Buayan River to Malapatan
Sector 4 - Polomolok to Landan
Sector 7 - Surallah to T'Boli
Sector 8 - Kalombog - Norala - Banga

We have separate letters following which give further guidance on Sector 4 and Sector 2.

Sincerely,

Michael T. Kingery
Project Manager

cc: Mr. Leroy Purifoy
Mr. Stan Heishman

0331_150.4

BEST AVAILABLE DOCUMENT

Finly 16:15
MAR 31 1992
↑ Rem 18:20
18:4

MINDANAO DEVELOPMENT PROGRAM
Maduramente Building, National Highway
South Cotabato
General Santos City
Tel: 4929, 4270

Mr. Duane E. Buckert
Project Director
Morrison Knudsen Corporation
South Cotabato Highways Project
Mindanao Development Program
Unit 10 & 12, ECA Building
National Highway
General Santos City, S. Cotabato

10 February 1993
GSP/MK0097

Subject: Mindanao Development Program, South Cotabato Highways Project, Approval of Final Design Document for Road Sector 4, Sections 1, 2 and 3

Dear Mr. Buckert:

We are returning to you the final Mylar drawings for Road Sector 4, Sections 1, 2 and 3 duly signed and approved. Approval is being issued for the 100% road design for this sector with the following exception and condition:

- Final location and/or quantities of loading/unloading zones, guardrail, road signs and pavement markings will be determined by joint field review meetings held at the appropriate times.

This letter serves as Notification to Commence Construction on Sector 4.

Sincerely,

Michael I. Kingery
Project Manager

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cc: Leroy Purifoy

0210_104.5

R.E'd by L.P. Remolo
2/10/93

185

MINDANAO DEVELOPMENT PROGRAM
Maduramente Building, National Highway
South Cotabato
General Santos City
Tel: 4929, 4270

Mr. Duane E. Buckert
Project Director
Morrison Knudsen Corporation
South Cotabato Highways Project
Mindanao Development Program
Unit 10 & 12, ECA Building
National Highway
General Santos City, S. Cotabato

07 December 1992
GSP/MK0088

Subject: Mindanao Development Program, South Cotabato Highways Project, Approval of Final Design Document for Road Section 1 & 2, Sector 2

Dear Mr. Buckert:

We are returning to you the final Mylar drawings for Road Section 1 & 2, Sector 2 duly signed and approved. Approval is being issued for the 100% road design for Road Section 1& 2, Sector 2 with the following exception and condition:

- Final location and/or quantities of loading/unloading zones, guardrail, road signs and pavement markings will be determined by joint field review meetings held at the appropriate times.

This letter serves as Notification to Commence Construction on Section 1 & 2, Sector 2.

Sincerely,

Michael I. Kingery
Project Manager

1207-102.5

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DEC 08 199

186

MINDANAO DEVELOPMENT PROGRAM
Maduramente Building, National Highway
South Cotabato
General Santos City
Tel: 4929, 4270

Mr. Duane E. Buckert
Project Director
Morrison Knudsen Corporation
South Cotabato Highways Project
Mindanao Development Program
Unit 10 & 12, ECA Building
National Highway
General Santos City, S. Cotabato

18 November 1992
GSP/MK0082

Subject: Mindanao Development Program, South Cotabato Highways Project, Approval of Final Design Document for Road Sector 7

Dear Mr. Buckert:

We are returning to you the final Mylar drawings for Road Sector 7 duly signed and approved. Approval is being issued for the 100% road design for Road Sector 7 with the following exception and condition:

- Final location and/or quantities of loading/unloading zones, guardrail, road signs and pavement markings will be determined by joint field review meetings held at the appropriate times.

This letter serves as Notification to Commence Construction on Sector 7.

Sincerely,

Michael I. Kingery
Project Manager

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NOV 20 1992

187

MINDANAO DEVELOPMENT PROGRAM
Maduramente Building, National Highway
South Cotabato

General Santos City
Tel: 4929, 4270

Mr. Duane E. Buckert
Morrison Knudsen Corporation
Project Director
Unit 10 & 12, ECA Building
National Highway
General Santos City, S. Cotabato

April 16, 1993
GSP-MK 117

Subject: South Cotabato Highways Project, Mindanao Development Program, Approval of Final Design Document for Section 3, Road Sector 2, Malapatan - Glan.

Dear Mr. Buckert:

We are returning to you the final Mylar drawings for Section 3 of Road Sector 2, Malapatan - Glan, duly signed and approved.

This letter also serves as Notification to Commence Construction on the said road section.

Sincerely,

M. Kingery

Michael I. Kingery
Project Manager

by LWL

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APR 19 1993

188

MINDANAO DEVELOPMENT PROGRAM
Maduramente Building, National Highway, P.O. Box 125
South Cotabato
General Santos City
Tel: 4929, 4270, 810-2601, loc.3574

Mr. Duane E. Buckert
Project Director
Morrison Knudsen Corporation
South Cotabato Highways Project
Mindanao Development Program
Unit 10 & 12, ECA Building
National Highway
General Santos City, S. Cotabato

25 August 1992
GSP/MK0063

Subject: Mindanao Development Program; South Cotabato Highways Project, Approval of Final Design Document for Section 3B, Road Sector 3

Dear Mr. Buckert:

We are issuing approval for the 100% road design for Section 3B of Road Sector 3 with the following exception and condition:

That the concept and design details for preventing the existing spillways from plugging up with floating debris should be further studied. When all parties are in agreement as to the best solution then the final design and details will be approved.

This letter serves as Notification to Commence Construction on Section 3B of Sector 3.

Sincerely yours,

Michael I. Kingery
Project Manager

FILE

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cc: Leroy Purifoy

AUG 26 1992

RECEIVED AUG 26 1992

189

MINDANAO DEVELOPMENT PROGRAM
Maduramente Building, National Highway
South Cotabato
General Santos City
Tel: 4929, 4270

Mr. Duane E. Buckert
Project Director
Morrison Knudsen Corporation
South Cotabato Highways Project
Mindanao Development Program
Unit 10 & 12, ECA Building
National Highway
General Santos City, S. Cotabato

07 December 1992
GSP/MK0090

Subject: Mindanao Development Program, South Cotabato Highways Project, Approval of Final Design Document for Road Sector 8

Dear Mr. Buckert:

We are returning to you the final Mylar drawings for Road Sector 8 duly signed and approved. Approval is being issued for the 100% road design for Road Sector 8 with the following exception and condition:

- Final location and/or quantities of loading/unloading zones, guardrail, road signs and pavement markings will be determined by joint field review meetings held at the appropriate times.

This letter serves as Notification to Commence Construction on Sector 8.

Sincerely,

Michael I. Kingery
Project Manager

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DEC 08

190

MINDANAO DEVELOPMENT PROGRAM
Maduramente Building, National Highway
South Cotabato

General Santos City
Tel: 4929, 4270

Mr. Duane E. Buckert
Project Director
Morrison Knudsen Corporation
South Cotabato Highways Project
Mindanao Development Program
Unit 10 & 12, ECA Building
National Highway
General Santos City, S. Cotabato

07 December 1992
GSP/MK0089

Subject: Mindanao Development Program, South Cotabato Highways Project, Approval of Final Design Document for Road Section 4, Sector 3

Dear Mr. Buckert:

We are returning to you the final Mylar drawings for Road Section 4, Sector 3 duly signed and approved. Approval is being issued for the 100% road design for Road Section 4, Sector 3 with the following exception and condition:

- Final location and/or quantities of loading/unloading zones, guardrail, road signs and pavement markings will be determined by joint field review meetings held at the appropriate times.

This letter serves as Notification to Commence Construction on Section 4, Sector 3.

Sincerely,

Michael I. Kingery
Project Manager

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DEC 08 1992

191

Mr. Larsen
File

MINDANAO DEVELOPMENT PROGRAM
United States Agency for International Development
Maduramente Building, National Highway, P.O. Box 125 General Santos City
South Cotabato GSC: 4929 Mnla: 8102610, 3421 USA: (415) 904-3421, 3422, 3420

Mr. Duane E. Buckert
Project Director
Morrison Knudsen Corporation
South Cotabato Highways Project
Mindanao Development Program
Unit 10 & 12, ECA Building
National Highway
General Santos City, S. Cotabato

10 November 1992
GSP/MK0073

Subject: South Cotabato Highways Project, Mindanao Development Program - Notice to Proceed with Construction Operations in Sector 3 Between Kiamba, and Maitum.

Dear Mr. Buckert:

This is in reference to your 28 October 1992 letter MK/GSP-0207 on this subject.

The plan-in-hand joint review of Section 4, Sector 3 was done today, which will result in the 100% design finalization in a matter of days from now.

You are advised to proceed with drainage and earthwork on this Section, as requested.

Sincerely,

Michael J. Kingery
Project Manager

cc: Mr. Larsen

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NOV 09 199

192

MINDANAO DEVELOPMENT PROGRAM
Maduramente Building, National Highway
South Cotabato
General Santos City
Tel: 4929, 4270

Mr. Duane E. Buckert
Project Director
Morrison Knudsen Corporation
South Cotabato Highways Project
Mindanao Development Program
Unit 10 & 12, ECA Building
National Highway
General Santos City, S. Cotabato

03 March 1993
GSP/MK0101

Subject: Mindanao Development Program, South Cotabato Highways Project, Approval of Final Design Document for Lun Masla Bridge, Road Sector 2

Dear Mr. Buckert:

We are returning to you the final Mylar drawings for Lun Masla Bridge, Road Sector 2 duly signed and approved.

This letter serves as Notification to Commence Construction on Lun Masla Bridge.

Sincerely,

Michael I. Kingery
Project Manager

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0302_102.5

MAY 03 1993

193

MINDANAO DEVELOPMENT PROGRAM
United States Agency for International Development
Maduramente Building, National Highway, P.O. Box 125 Fax: 521-6797, 521-5235
General Santos City GSC: 4929 Mnla: 8102610, 3421 USA: (415) 904-3421, 3422, 3420

Mr. Duane E. Buckert
Project Director
Morrison Knudsen Corporation
South Cotabato Highways Project
Mindanao Development Program
Unit 10 & 12, ECA Building
National Highway, General Santos City

29 January 1993
GSP/MK0095

Subject: South Cotabato Highways Project, Mindanao Development Program - Sector 2, Sapu Masla Bridge Completion - Notice to Proceed with Construction.

Dear Mr. Buckert:

The attached DPWH plans for the Sapu Masla bridge are forwarded for your use in constructing the remaining unbuilt 1st 15-meter span and abutment. The original plans are dated April 1990. There has been a design revision (date indistinct) that changes the 1st abutment from a pile supported structure to one using a spread footing. Please verify that the bottom of the footing (elevation 91.103 on the plans) as shown is adequate and totally on undisturbed solid rock. Also consider the use of a reinforced concrete retaining wall in lieu of the grouted riprap slope protection on the 1st abutment.

You are hereby instructed to proceed with the delivery of such construction services as are necessary for completion of the work. Payment for the work will be taken from contingent sums in the Contract; the cost amount of the Contract is not increased by this Notice to Proceed.

As to liability for the work, it is understood that the engineering design has been done by others, and that Morrison Knudsen Construction Company is not liable for any design defects that may exist. However, should any such defects be discovered or suspected by MKC, please notify us immediately so that we may resolve them as early as possible.

Thank you very much.

Sincerely,

Michael I. Kingery
Project Manager

cc: Mr. Leroy Purifoy, Chief Engineer and Chief, Mindanao Development Division
Engr. Wilfredo Valencia, Director, DPWH-XI

0129_102.9

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Jw 3:00 pm
FEB 01 1993

194

USAID

MINDANAO DEVELOPMENT PROGRAM
Maduramente Building, National Highway, P.O. Box 125 General Santos City
South Cotabato Tel: 4929, 4270, 810-2601, loc.3574

Mr. Duane E. Buckert
Project Director
Morrison Knudsen Corporation
South Cotabato Highways Project
Mindanao Development Program
Unit 10 & 12, ECA Building, National Highway
General Santos City, South Cotabato

29 May 92
GSP/MK0048

DRAFT

Subj: Approval of Final Structural Design Document for Sector 2

Dear Mr. Buckert:

We are issuing approval for the 100% Structural Design for RCBC - Sta. 5+065; RCBC - Sta. 6+657; RCBC - Sta. 8+965; Molo Bridge - Sta. 14+674; and Tuyan Bridge - Sta. 15+923, and Plan Sheet No. D-15B, Lot Bridge Culvert, Slope Protection Details with the following exceptions and conditions:

1. Plan Changes and Revisions - Make revisions and clarifications as shown on the attached red-lined print.

   a) Gabions Plan View to be more clearly shown
   b) Some Typical Section not drawn correctly
   c) Show Centerline Stationing of roadway by multiple of 10.0 m
   d) Provide additional details on gabion layout cross sections particularly on points where the section changes in dimension.

2. Quantity Estimate - Check the quantities and calculations.

3. Additional ROW - Request for additional ROW should be formally requested through me. This has been the accepted procedure in the past.

This letter will also serve as Notification to Commence Construction on the above mentioned drawings.

Sincerely yours,

BEST AVAILABLE DOCUMENT

Michael I. Kingery
Project Manager

Reviewed by:
JRC
FAS

cc: Mr. Leroy Purifoy

195

JUN 01 1992

MINDANAO DEVELOPMENT PROGRAM
Maduramente Building, National Highway, P.O. Box 125 General Santos City
South Cotabato Tel: 4929, 4270, 810-2601, loc.3574

FILE

Mr. Duane E. Buckert
Project Director
Morrison Knudsen Corporation
South Cotabato Highways Project
Mindanao Development Program
Unit 10 & 12, ECA Building, National Highway
General Santos City, South Cotabato

29 May 92
GSP/MK0048

Subj: Approval of Final Structural Design Document for Sector 2

Dear Mr. Buckert:

We are issuing approval for the 100% Structural Design for RCBC - Sta. 5+065; RCBC - Sta. 6+657; RCBC - Sta. 8+965; Molo Bridge - Sta. 14+674; and Tuyan Bridge - Sta. 15+923, and Plan Sheet No. D-15B, Lot Bridge Culvert, Slope Protection Details with the following exceptions and conditions:

1. Plan Changes and Revisions - Make revisions and clarifications as shown on the attached red-lined print.

   (a) Gabions Plan View to be more clearly shown
   (b) Some Typical Section not drawn correctly.
   (c) Indicate Centerline Stationing of roadway by multiple of 10.0 m
   (d) Provide additional details on gabion layout cross sections particularly on points where the section changes in dimension.

2. Quantity Estimate - Check the quantities and calculations.

3. Additional ROW - Request for additional ROW should be formally requested through me. This has been the accepted procedure in the past.

This letter will also serve as Notification to Commence Construction on the above mentioned drawings.

Sincerely yours,

Michael I. Kingery
Project Manager

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RECEIVED
JUN 01 1992

cc: Mr. Leroy Purifoy

JUN 01 1992
8:00

196

Mr. Larson

MINDANAO DEVELOPMENT PROGRAM
Maduramente Building, National Highway, P.O. Box 125 General Santos City
South Cotabato Tel: 4929, 4270, 810-2601, loc.3421

Mr. Duane E. Buckert
Project Director
Morrison Knudsen Corporation
South Cotabato Highways Project
Mindanao Development Program
Unit 10 & 12, ECA Building
National Highway
General Santos City, S. Cotabato

17 November 1992
GSP/MK0079

Subject: Mindanao Development Program, South Cotabato Highways Project - Completion Certificate for Section 1A and 1B Sector 3 (Station 0+000 to 14+210.55).

Dear Mr. Buckert:

The subject section of roadway is in continuous use by the travelling public and having been jointly inspected by AID, DPWH and MKC, is considered substantially complete. Pursuant to Section H-I, paragraph 105.12 of the Contract, this communication constitutes the Certificate of Completion for the subject works.

The Defect Liability Period for the Section is hereby established as beginning on November 12, 1992, and ending 12 months after that date. In accordance with the contract, you are entitled to a refund of sums retained from the payments for the substantially completed works, and you may so request such a refund. As called for in the Contract H-I, par. 105.13, please furnish AID either a 5% bond, or a copy of the statement of your bonding company which binds it, under the terms of its Performance Bond, to cover MKC's defect liability in the amount of at least 5% of the value of these works.

Your attention is invited to the Final Punchlist (R1), dated 17 November 1992, which lists the remaining items to be completed prior to Final Acceptance.

Please accept our congratulations and thanks for a fine design/build job on these works.

Sincerely yours,

Michael I. Fingery
Project Manager

BEST AVAILABLE DOCUMENT

cc: Mr. Leroy Purifoy, OCP
Mr. Robert Barnes, OCP
Dir. Wilfredo Valencia, DPWH-XI
DEO Tito Valdez, GSC

Attach: Final Punchlist (R1) (10)

1117_103.4

NOV 17 1992

197

MINDANAO DEVELOPMENT PROGRAM
Maduramente Building, National Highway
South Cotabato
General Santos Cit
Tel: 4929, 427

Mr. Duane E. Buckert
Project Director
Morrison Knudsen Corporation
South Cotabato Highways Project
Mindanao Development Program
Unit 10 & 12, ECA Building
National Highway
General Santos City, S. Cotabato

07 April 1993
GSP/MK0113

Subject: Mindanao Development Program, South Cotabato Highways Project, Approval of Final Design Document for Saub Bridge, Road Sector 3

Dear Mr. Buckert:

We are returning to you the final Mylar drawings for Saub Bridge duly signed and approved.

This letter serves as Notification to Commence Construction on said bridge.

Sincerely,

Michael I. Kingery
Project Manager

BEST AVAILABLE DOCUMENT

cc: Mr. Purifoy
Mr. Barnes

0407_103.8

RECEIVED APR 15 1993

198

MINDANAO DEVELOPMENT PROGRAM
United States Agency for International Development
Maduramente Building, National Highway, P.O. Box 125 Fax: 521-6797, 521-5235
General Santos City. GSC: 4929 Mnla: 8102610, 3421 USA: (415) 904-3421, 3422, 3420

Mr. Duane E. Buckert
Project Director
Morrison Knudsen Corporation
South Cotabato Highways Project
Mindanao Development Program
Unit 10 & 12, ECA Building
National Highway, General Santos City

29 January 1993
GSP/MK0094

Subject: Mindanao Development Program, South Cotabato Highways Project - Completion Certificate for Section 2 of Sector 3 (Station 14+210.55 to 35+703.00).

Dear Mr. Buckert:

The subject section of roadway is in continuous use by the travelling public and having been jointly inspected by AID, DPWH and MKC, is considered substantially complete. Pursuant to Section H-I, paragraph 105.12 of the Contract, this communication constitutes the Certificate of Completion for the subject works.

The Defect Liability Period for the Section is hereby established as beginning on 30 January 1993, and ending 12 months after that date. In accordance with the contract, you are entitled to a refund of sums retained from the payments for the substantially completed works. In this connection, please recall that under the Contract Section H-I, par. 105.13, MKC must maintain a bond in the amount of at least 5% of the construction cost of Section 2A & 2B to cover MKC's liability for design and construction defects during the one year period.

Your attention is invited to the Final Punchlist dated 23 January 1993, attached, which lists the items remaining as of that date. The

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AID 10:25 am
FEB 01 1993

199

SOUTH COIMBATORE HIGHWAYS PROJECT
MORRISON KNUDSEN CORPORATION

FINAL PUNCHLIST (R1)

SECTOR 3 – STA. 0+003.00 TO STA. 14+210.55

REC'D. NO.	ITEM NO.	LOCATION SECT./STA.		DESCRIPTION	INSP.	RESP.	DATE IN	DATE OUT	OUT BY	COMMENTS
477	605(3)	3		ESTASLISH PERMANENT BENCHMARK EVERY 500 + MSTERS.	FMM22	MK	10/05/92			New Sample approved signs to be replaced
454	605(4)	3		SECT. 1A & 1B NON – PASSING ZONE ROAD SIGNS – RED CAR	ECW	MK	10/03/92			SEE FCM NO. 119
547	605(3)	3		WIDTH OF CENTERLINE MARKER PAINT SHOULD BE 100 MM. EXTEND "NO PASSING" ZONE AT STA 14 + 225	FDPWH29	MK	11/12/92			
549	402	3		SECTION 1A & 1B SHELTER AT TURNOUTS	MM–CK	MK	11/13/92			
555	NONE	3		REMOVE OVER SIZE STONE AND BOULDERS AND SWEEP ROAD	FMM21	MK	10/05/92			
476	606(3)	3		RESTORE ALL MISPLACED KILOMETER MARKERS.	FMM23	RIB	10/03/92			See FCM 114
478	605(4)	3	0.050	PROVIDE R4–1(60)B AT RIGHT SIDE	FMM24	RIB	10/03/92			See FCM 114
479	605(4)	3	0.175	PROVIDEW2–9B(R) AT RIGHT SIDE.	FMM25	RIB	10/03/92			See FCM 114
480	605(4)	3	0.250	PROVIDE W6–1B AT RIGHT SIDE	FMM26	RIB	10/03/92			See FCM 114
481	605(4)	3	0.375	PROVIDE W6–1B AT LEFT SIDE	FMM27	RIB	10/03/92			See FCM 114
482	605(4)	3	0.450	PROVIDE W2–9B(L) AT LEFT SIDE	FMM28	RIB	10/03/92			See FCM 114
483	605(4)	3	0.500	PROVIDE W6–1B AT RIGHT SIDE	FMM29	RIB	10/03/92			See FCM 114
484	605(4)	3	1.125	PROVIDE W6–1B AT LEFT SIDE	FMM30	RIB	10/03/92			SEE FCM NO 114
485	605(4)	3	1.250	PROVIDE W6–2B AT RIGHT SIDE	FMM31	RIB	10/03/92			SEE FCM NO 114
486	605(4)	3	1.300	PROVIDE W1–3B(R) AT RIGHT SIDE.	FMM32	RIB	10/03/92			SEE FCM NO 114
487	605(4)	3	1.350	PROVIDE R3–16A AT RIGHT SIDE	FMM34	RIB	10/03/92			SEE FCM NO 114
489	605(4)	3	2.150	PROVIDE R4–16A AT LEFT SIDE.	MM–CK	MK	11/13/92			SEE FCM NO 113
524	500(1)b	3	2.153	WINGWALLS AT THE RT/S TO BE RAISED BY 80 cm	MM–CK	MK	11/13/92			SEE FCM NO 113
526	500(1)b	3	2.415	RAISE HEADWALL AND WINGWALLS AT RT/S BY 1.00 m	FDPWH10	RIB	10/03/92			SEE FCM NO 113
528	500(1)b	3	2.539	HEADWALL AND WINGWALL SHOULD BE EXTENDED LT/S	MM–CK	MK	11/13/92			SEE FCM NO. 124
551	104(2)	3	2.626	REPAIR SHOULDER THEN SECTION OF THIS ROAD TO BE DESIGNED AS A SPILLWAY. (25 TO 50 m SPAN)	MM–CK	MK	11/13/92			SEE FCM NO. 078
552	500(1)b	3	2.712	EXTEND HEADWALL ON THE LT/S	ECW	MK	11/12/92			
36	500(1)b	3	3.195	BACKFLL WINGWALL AND HEADWALL	FMM37	RIB	10/08/92			SEE FCM NO 114
492	605(4)	3	4.900	PROVIDE W6–1B AT RIGHT SIDE	FMM38	RIB	10/03/92			SEE FCM NO 114
493	605(4)	3	5.300	PROVIDE W6–1B AT LEFT SIDE	ECW	RIB	10/05/92			SEE FCM NO 115
445	602(4)	3	5.513	INSTALL 4 PCS. GUIDE POST. LEFT–SIDE	FMM41	RIB	10/03/92			INSTALL R4 – 1 (80) -
495	605(4)	3	6.188	ACTUAL INSTALLATION IS W1–4B(R) DOES NOT CONFORM TO THE ACTUAL FIELD CONDITION AT LEFT SIDE	FMM39	RIB	10/05/92			SEE FCM NO 114
494	605(4)	3	6.350	PROVIDE W1–3B(R) AT RIGHT SIDE.	FDPWH14	RIB	10/05/92			SEE FCM NO 113
532	500(1)b	3	6.657	HEADWALL AND WINGWALL SHOULD BE EXTENDED	FMM42	RIB	10/03/92			SEE FCM NO 114
497	605(4)	3	6.700	PROVIDE W1–3B(L) AT LEFT SIDE	FMM63	MK	10/08/92			SEE FCM NO. 116
518	602(4)	3	6.794	REFLECTORIZED PAINT FOR GUIDE POST FROM STA 6+794 TO 7+166	FMM48	RIB	10/03/92			TO BE RELOCATED
503	605(4)	3	8.200	TRANSFER R4–1(80)B TO STA 7 + 400 AT RIGHT SIDE.	FMM60	RIB	10/03/92			SEE FCM NO 114
515	605(4)	3	8.250	PROVIDE W5–10B AT RIGHT SIDE	FMM49	RIB	10/03/92			SEE FCM NO 114
504	605(4)	3	9.225	PROVIDE W2–9B(R) AT RIGHT SIDE.	FMM61	RIB	10/03/92			SEE FCM NO 114
516	605(4)	3	9.350	PROVIDE W5–10B AT LEFT SIDE.	FMM50	RIB	10/03/92			SEE FCM NO 114
505	605(4)	3	9.550	PROVIDE W2–9B(L) AT LEFT SIDE	MM–CK	MK	11/13/92			SEE FCM NO 113. AND FCM NO. 125
534	407(2)	3	9.617	HEADWALL AND WINGWALL SHOULD BE EXTENDED; ADD BOULDERS / RIPRAP AT APRON OUTLET	FDPWH18	RIB	10/03/92			SEE FCM NO 113
535	500(1)a	3	10.091	HEADWALL AND WINGWALL SHOULD BE EXTENDED	MM–CK	MK	11/13/92			SEE FCM 118
475	605(3)	3	10.575	CROSS WALK AT STA. 10+575 (IN FRONT OF STAIRWAY).	FDPWH20	RIB	10/03/92			SEE FCM NO 113
538	500(1)a	3	10.691	HEADWALL AND WINGWALL SHOULD BE EXTENDED	MM–CK	MK	11/13/92			SEE FCM NO. 126
554	504(5)	3	10.773	RESTORE GROUTED RIPRAP APRON AT LT/S	FDPWH22	RIB	10/05/92			SEE FCM NO 113
540	500(1)b	3	10.773	HEADWALL AND WINGWALL SHOULD BE EXTENDED	MM–CK	MK	11/13/92			SEE FCM NO 113
542	500(1)b	3	10.881	RAISE HEADWALL AND EXTEND PARAPET BY 3.5 m LEFT FORWARD AND 3.5 m LEFT BACKWARD	FDPWH26	RIB	10/05/92			SEE FCM NO 113
544	500(1)a	3	11.233	HEADWALL AND WINGWALL SHOULD BE EXTENDED	MM–CK	MK	11/13/92			SEE FCM NO. 124
553	NONE	3	11.525	WATER OVERTOPPING THE ROAD. SPILLWAY TO BE DESIGNED (25 TO 50 m SPAN)	FMM55	RIB	10/03/92			SEE FCM NO 127
510	605(4)	3	11.570	CHANGE R4–1(60)B AND MOVE TO STA 11 + 630 (W1–5B–L) AT RT–SIDE. CHECK STATION.	ECW	MK	11/12/92			
453	500(1)b	3	11.695	CLEAN GROUTED RIPRAP DITCH RT/S	FDPWH28	RIB	10/05/92			SEE FCM NO. 113
536	500(1)a	3	12.575	HEADWALL AND WINGWALL SHOULD BE EXTENDED	FMM58	RIB	10/08/92			SEE FCM NO. 114
513	605(4)	3	13.000	PROVIDE R3–16A AT RIGHT SIDE	FMM59	RIB	10/05/92			SEE FCM NO. 114
14	605(4)	3	13.750	PROVIDE R3–16A AT LEFT SIDE						

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unfinished items remaining on the list as of today are to be completed prior to close of business, 5 February 1993.

May I take this opportunity to request that MKC ensure that clean up work associated with the remedial works done under the punch list is expeditiously completed? This would include sandblasting the unsightly bench mark 'graffiti' off of the headwalls along the way.

Please accept our congratulations and thanks for a fine design/build job on these works.

Sincerely yours,

Michael I. Kingery
Project Manager

cc: Mr. Leroy Purifoy, Chief, Mindanao Dev. Division, OCP
Mr. Robert Barnes, MDP Project Officer, OCP
The Hon. Gov. Priscilla L. Chiongbian, Sarangani Province
Eng. Wilfredo Valencia, Director, DPWH Region XI, Davao
Eng. Vicente Joqueno, DPWH District Engineer, Alabel District

Attach: Final Punchlist

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0129_103.4

SOUTH COTABATO HIGHWAYS PROJECT
MORRISON KNUDSEN CORPORATION

BEST AVAILABLE DOCUMENT

FINAL PUNCHLIST

INSPECTION DATE: 12/11/92

SECTOR 3 — SECTION 2 — STA. 14.210 — STA. 35.703

FILENAME: 2.0

23-Jan-93

STA. NO.	ITEM NO.	LOCATION SECT./STA.	DESCRIPTION	INSP.	RESP.	DATE IN	DATE OUT	OUT BY	COMMENTS
[illegible]	[illegible]	3	14.216 SPRAY GLASS BEADS IMMEDIATELY AFTER PAINTING	[illegible]	MK-DV	[illegible]	[illegible]	MK-DV	BEADS INSTALLED (ACM 11.1.93) OK
[illegible]	[illegible]	3	14.216 RECOMPACT SIGN BASES	OLEOV	MK-DV	[illegible]	[illegible]	MK-DV	
[illegible]	[illegible]	3	14.216 ESTABLISH PERMANENT BENCHMARK AT EVERY 500 METERS.	[illegible]	MK-DV	[illegible]		[illegible]	
[illegible]	[illegible]	3	14.216 ALL BOLTS ON GUARDRAIL POST TO BE SPOT WELDED.	[illegible]	MK-DV	[illegible]		[illegible]	
[illegible]	[illegible]	3	14.216 ROAD MARKINGS TO HAVE A WIDTH OF 100 MM	[illegible]	MK-DV	[illegible]		[illegible]	
[illegible]	[illegible]	3	14.216 RESTORE ALL MISPLACED KILOMETER POST -	[illegible]	MK-DV	[illegible]		[illegible]	
[illegible]	[illegible]	3	14.216 PLACE BOULDERS AT THE END OF APRON EXTS AND CLEAN	OLEOV	MK-JS	[illegible]	[illegible]	MK-JS	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	14.216 RECONSTRUCT THE OUTFALL, PLACE WINGWALL PER DETAIL PLAN	OLEOV	MEER	[illegible]		[illegible]	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	14.217 PROVIDE 4 PCS. HAZARD MARKERS - 2 EACH DIRECTION AT LEFT SIDE.	[illegible]	MK-DV	[illegible]		[illegible]	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	14.754 RAISE HEADWALL BY 0.30 m ON RIGHT SIDE AND TRIM SHOULDER MATERIALS AT LEFT SIDE.	OLEOV	MEER	[illegible]	[illegible]	MK-JS	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	17.017 RAISE HEADWALL BY 0.20 m. AT RIGHT SIDE.	OLEOV	MEER	[illegible]	[illegible]	DAR	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	17.000 EXCAVATE FILET CHANNEL	OLEOV	MK	[illegible]	[illegible]	MK-JS	
[illegible]	[illegible]	3	17.712 INSTALL 2 PCS. GUIDE POST, LTS	OLEOV	MK-DV	[illegible]	[illegible]	MK-DV	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	17.000 ADJUST VERT. ALIGNMENT OF GUARDRAIL	OLEOV	MK	[illegible]	[illegible]	MK-JCA	COMPLETED
[illegible]	[illegible]	3	17.173 PROVIDE 2 PCS. HAZARD MARKERS - 1 EACH DIRECTION AT LEFT SIDE	[illegible]	MK-DV	[illegible]		[illegible]	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	17.193 IMPROVE DITCH DRAINAGE AND CONSTRUCT BERM.	OLEOV	MK-DV	[illegible]	[illegible]	MK-JS	COMPLETE
[illegible]	[illegible]	3	17.193 EXTEND 2 PANELS GUARDRAIL AT LEFT SIDE.	OLEOV	MK	[illegible]	[illegible]	MK-DV	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	18.000 13.000-13.114 CONSTRUCT GROUTED RIPRAP DITCH AT RIGHT SIDE.	OLEOV	MEER	[illegible]		[illegible]	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	18.216 CONTINUE LINED DITCH FROM STA. 13.200.00 - 13.140.00. BACKFILL AND COMPACT VOID TO LEVEL WITH DITCH BOTTOM.	[illegible]	MEER	[illegible]	[illegible]	MK-PA	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	18.216 EXTEND 2 PANELS OF GUARDRAIL AT LEFT SIDE AND FLARED OUTWARD.	OLEOV	MK-DV	[illegible]	[illegible]	MK-DV	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	18.216 PROVIDE 4 PCS. HAZARD MARKERS - 2 EACH DIRECTION AT LEFT SIDE	[illegible]	MK-DV	[illegible]		[illegible]	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	18.216 PROVIDE 4 PCS. HAZARD MARKERS - 2 EACH DIRECTION AT LEFT SIDE	[illegible]	MK-DV	[illegible]		[illegible]	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	20.000 PROVIDE V-TYPE RIPRAP DITCH AT EXCEED RIPRAP, RIGHT SIDE.	[illegible]	MEER	[illegible]		[illegible]	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	20.000 PLACE BOULDERS AT THE END OF APRON OF OUTLET	OLEOV	MK-JS	[illegible]	[illegible]	MK-JS	
[illegible]	[illegible]	3	20.000 GRADE WASTE PILE AT FILET.	OLEOV	MK-JS	[illegible]		[illegible]	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	20.000 EXTEND WINGWALL BY 0.00 m - 0.30 m AT LEFT SIDE AND TRIM SHOULDER MATERIALS AT RIGHT SIDE.	OLEOV	MEER	[illegible]		[illegible]	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	20.000 PROVIDE CROSSWALK INFRONT OF SCHOOL GATE. CORRECT LOCATIONS WILL BE DETERMINED IN THE SITE.	[illegible]	MK-DV	[illegible]	[illegible]	MK-DV	TO BE COVERED BY/ON 1/3
[illegible]		3	20.000 GRADE WASTE PILES BEHIND THE WALL AT STA. 20.000	OLEOV	MK-JS	[illegible]	[illegible]	MK-JS	
[illegible]	[illegible]	3	20.000 PROVIDE 4 PCS. HAZARD MARKERS - 2 EACH DIRECTION AND REMOVE EXISTING.	[illegible]	MK-DV	[illegible]		[illegible]	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	20.000 RAISE HEADWALL BY 0.20 m AND WINGWALL BY 0.35 m. AT RIGHT SIDE.	[illegible]	MEER	[illegible]	[illegible]	DAR	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	20.000 GABIONS NOT DONE.	[illegible]	MEER	[illegible]		[illegible]	
[illegible]	[illegible]	3	20.000 PROVIDE CROSSWALK INFRONT OF SCHOOL GATE. CORRECT LOCATIONS WILL BE DETERMINED IN THE SITE.	[illegible]	MK-DV	[illegible]	[illegible]	MK-DV	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	20.000 PROVIDE 4 PCS. HAZARD MARKERS (T4-3) - 2 EACH DIRECTION AT LEFT SIDE.	[illegible]	MK-DV	[illegible]		[illegible]	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	20.000 PROVIDE 4 PCS. HAZARD MARKERS (T4-3) - 2 EACH DIRECTION AT RIGHT SIDE	[illegible]	MK-DV	[illegible]		[illegible]	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	20.000 RAISE HEADWALL AND WINGWALL BY 0.10 m AT LEFT SIDE AND WINGWALL BY 0.60 m AT RIGHT SIDE.	OLEOV	MEER	[illegible]	[illegible]	DAR	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	20.000 WHITE CENTERLINE - 4 GABIONS NEEDS TO BE RECTIFIED.	[illegible]	MK-DV	[illegible]	[illegible]	MK-DV	
[illegible]	[illegible]	3	20.000 REPAIR FUEL SPILL ON AC PAVEMENT AT STA. 20.000, LEFT SIDE	OLEOV	MK-DV	[illegible]	[illegible]	MK-DV	
[illegible]	[illegible]	3	20.000 RAISE HEADWALL BY 0.20 m AT LEFT SIDE AND REPAIR DAMAGED HEADWALL	OLEOV	MEER	[illegible]	[illegible]	DAR	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	20.000 CLEAN AND DRESS DITCH, RTS	OLEOV	MK-JS	[illegible]	[illegible]	MK-JS	COMPLETE
[illegible]	[illegible]	3	20.000 DRESS END SLOPE.	OLEOV	MK-JS	[illegible]	[illegible]	MK-JS	
[illegible]	[illegible]	3	20.000 CORRECT YELLOW BARRIER LINE (10.00 METERS)	OLEOV	MK-DV	[illegible]	[illegible]	MK-DV	
[illegible]	[illegible]	3	20.000 PROVIDE CROSSWALK INFRONT OF SCHOOL GATE. CORRECT LOCATIONS WILL BE DETERMINED IN THE SITE.	[illegible]	MK-DV	[illegible]	[illegible]	MK-DV	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	20.000 PLACE BOULDERS AT OUTLET END.	[illegible]	MK-JS	[illegible]	[illegible]	MK-JS	TO BE COVERED BY/ON 1/3
[illegible]	[illegible]	3	20.000 FLOOD CONTROL AT STA. 20.000 - 24.121 NOT DONE	[illegible]	MK-DV	[illegible]	[illegible]	MK-DV	SEE FOR NO. [illegible]
[illegible]	[illegible]	3	20.000 PROVIDE CROSSWALK INFRONT OF SCHOOL GATE. CORRECT LOCATIONS WILL BE DETERMINED IN THE SITE.						

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U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

Ramon Magsaysay Center
1680 Roxas Boulevard
Ermita 1000, Manila
Philippines

USAID

Fax No.: 632-521-5241
Tel. No.: 632-521-7116

RELEASE OF CLAIMS

Contract No. AID-492-0420-C-00-1140-00

In accordance with Contract Clause 52.232-5, Payment Under Fixed Price Construction Contracts, I hereby release and discharge all claims arising under or out of the subject contract except the following claims in stated amounts which are specifically reserved herein:

MORRISON KNUDSEN CORPORATION

BY: _____

TITLE: _____

DATE: _____

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

Ramon Magsaysay Center
1680 Roxas Boulevard
Ermita 1000, Manila
Philippines

Fax No.: 632-521-5241
Tel. No.: 632-521-7116

JAN 26 1994

Mr. William C. Beatty
Project Director
Morrison Knudsen Corporation
P.O. Box 221
General Santos City

Subject: South Cotabato/Sarangani Highways
Contract No. 492-0420-C-00-1140-03
Completion Certificate for Road Sector 4
Sta 1+491 to 5+349 and Sta. 13+540 to Sta. 15+269

Dear Mr. Beatty:

The subject sections of roadway are in continuous use by the travelling public and having been jointly inspected by AID, MM/CSSA, PEO and MKC, are considered substantially complete. Pursuant to Section H-1, Paragraph 105.12 of the contract, this communication constitutes the Certificate of Completion for Road Sector 4.

The Defect Liability Period for this section is hereby established as beginning on 18 January 1994, and ending 12 months after that date. You have furnished USAID a bond which binds MKC's defect liability in the amount of at least 5% of the value of these works.

Your attention is invited to the Final Punchlist, dated 18 January 1994, which lists the remaining items to be completed prior to Final Acceptance. Also enclosed for your signature is a claim release form. Please sign and return to us.

Please accept our congratulations and thanks for a fine design/build job on these works.

Sincerely,

John C. Starnes, P.E.
Chief Engineer
Office of Capital Projects

Enclosure: As stated

cc: Director Jesus Camayo, DPWH-X1
Provincial Engr. R. Lachica, So. Cotabato

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MINDANAO DEVELOPMENT PROGRAM
Maduramente Building, National Highway
South Cotabato
General Santos City
Tel: 4929, 4270

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January 10, 1994

Mr. William C. Beatty
Project Director
Morrison Knudsen Corporation

Subject : Section 1A and 1B Sector 3
Maintenance Certificate

Dear Mr. Beatty:

Pursuant to your request, MK/GSP 395 dated November 29, 1993, USAID is issuing the final Maintenance Certificate for the above captioned roadway. We have inspected the section of road and all punchlist items have been completed, we have your final quantities and your release of claims certificate and all is in order.

We want to congratulate MKC and your personnel for a job well done.

Yours truly,

Alejandro Sundermann
Engineering Advisor
Mindanao Development Project

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JAN 14 1994

205

Ramon Magsaysay Center
1680 Roxas Boulevard
Ermita 1000, Manila
Philippines

USAID

Fax No.: 632-52
Tel. No.: 632-52

155.

DEC 1 1993

Mr. William C. Beatty
Project Director
Morrison Knudsen Corporation
P.O. Box 221
General Santos City

Subject: Mindanao Development Project
Project No. 492-0456
Completion Certificate for Sections 1 and 2-Sector 2
(Sta. 0 + 000 to Station 20 + 022)
GSC/Buayan River-Malapatan

Dear Mr. Beatty:

The subject sections of roadway are in continuous use by the travelling public and having been jointly inspected by AID, MM/CSSA, DPWH and MKC, and are considered substantially complete. Pursuant to Section H-1, paragraph 105.12 of the Contract, this communication constitutes the Certificate of Completion for the subject works.

The Defect Liability Period for the Section is hereby established as beginning on 29 October 1993, and ending 12 months after that date. You have furnished USAID a bond which binds MKC's defect liability in the amount of at least 5% of the value of these works.

Your attention is invited to the Final Punchlist, dated 17 November 1993, which lists the remaining items to be completed prior to Final Acceptance. Also enclosed for your signature is a claim release form. Please sign and return to our office.

Please accept our congratulations and thanks for a fine design/build job on these works.

Sincerely,

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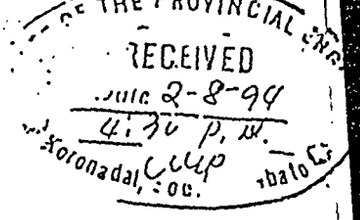
John C. Starnes, P.E.
Chief
Infrastructure Support Division
Office of Capital Projects

cc: Director Jesus Camayo, DPWH-XI
District Engineer, Alabel

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

Ramon Magsaysay Center
1680 Roxas Boulevard
Ermita 1000, Manila
Philippines

Fax No.: 632-521-5241
Tel. No.: 632-521-7116



FEB 0 3 1994

Mr. William C. Beatty
Project Director
Morrison Knudsen Corporation
P.O. Box 221
General Santos City

Subject: South Cotabato/Sarangani Highways
Contract No. 492-0420-C-00-1140-03
Completion Certificate for
(1) Road Sector 7 (Surallah-T'Boli)
(2) Road Sector 8 (Norala-Kolambog)

Dear Mr. Beatty:

The Road Sectors 7 and 8 are in continuous use by the travelling public, have been jointly inspected by AID, MM/CSSA, PEO and MKC, and are considered substantially complete. Pursuant to Section H-1, Paragraph 105.12 of the Contract, this communication constitutes the Certificate of Completion for Sector 7 and Sector 8.

The Defect Liability Period for these sectors is hereby established as beginning on 17 December 1993, and ending 365 days after that date. You have furnished USAID a bond that binds MKC's defect liability in the amount of at least 5% of the value of these works.

Your attention is invited to the Final Punchlist, dated 10 December 1993, listing those items remaining to be completed prior to Final Acceptance. Also enclosed for your signature is a claim release form. Please sign and return to us.

Please accept our congratulations and thanks for a fine design/build job on these works.

Sincerely,

John C. Starnes, P.E.
Chief Engineer
Office of Capital Projects

Enclosure: As stated

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cc: Engr. Rolando Lachica
Provincial Engineer
South Cotabato

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

Ramon Magsaysay Center
1680 Roxas Boulevard
Ermita 1000, Manila
Philippines

Fax No.: 632-521-5
Tel. No.: 632-521-7

THE PROVINC
FEB 0 3 1994
RECEIVED
Date 2-8-
4:10 P.M.
Koronadal, South

Engr. Rolando Lachica
Provincial Engineer
Provincial Engineer's Office
Koronadal, South Cotabato

Subject: Mindanao Development Project (MDP)
Project No. 492-0456
South Cotabato Roads - Sectors 4, 7 & 8

Dear Engr. Lachica:

As we complete the construction of various sectors of road on the project, and issue Completion Certificates to the Contractor, we hereby transfer responsibility of maintenance from the Contractor to the Provincial Engineer's Office. The Contractor is no longer responsible for maintenance of the road although the Contractor remains liable for design and construction defects for the one year period following the date of final inspection of the road sectors. To date, Sectors 4, 7 and 8 have been issued Completion Certificates. The Defect Liability Period for Sector 4 ends on 18 January 1995, while that for Sectors 7 and 8 end on 17 December 1994.

USAID has expended some $6.4 million to construct these facilities. In order for the public to enjoy safe use of the roadway during the full design life, the employment of an effective maintenance program cannot be expressed strongly enough. If a concerted program is undertaken in a timely manner, any problem areas can be repaired without major expense. Delays or neglect will probably result in extensive damage, expensive repair costs and disruption to the movement of people and goods which are, of course, undesirable. A maintenance program will also eliminate problems and questions which might arise concerning obligations covered by the defect liaibility clause in the contract.

Should you wish to discuss this matter further, we are available at your convenience.

Sincerely,

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John C. Starnes, P.E.
Chief Engineer
Office of Capital Projects

cc: Hon. Hilario de Pedro
Governor, South Cotabato

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U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

Ramon Magsaysay Center
1680 Roxas Boulevard
Ermita 1000, Manila
Philippines

USAID

Fax No.: 632-521-5241
Tel. No.: 632-521-7116

APR 04 1994

Mr. William C. Beatty
Project Director
Morrison Knudsen Corporation
Unit 10 & 12, ECA Building
National Highway
General Santos City, South Cotabato

Subject: Mindanao Development Project
Project No. 492-0456
South Cotabato Highways Project
Sector 3, Section 2 Maintenance Certificate

Reference: Beatty-Starnes letter dated 30 January 1994

Dear Mr. Beatty:

Pursuant to your request, MK/GSP413 dated 30 January 1994, USAID is issuing the final Maintenance Certificate for the above captioned roadway. We have inspected the section of road and all punchlist items have been completed. We have your final quantities and your release of claims certificate and all is in order.

We want to congratulate MKC and your personnel for a job well done.

Sincerely,

John C. Starnes, P.E.
Chief Engineer
Office of Capital Projects

cc: Fred Sielbach, Chief of Party, MM/CSSA/
Dimas Soguilon, DPWH District Engineer, Sarangani Province

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rec'd gmly 7:40 am
APR 07 1994

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U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

Ramon Magsaysay Center
1680 Roxas Boulevard
Ermita 1000, Manila
Philippines

USAID

Fax No.: 632-521-524
Tel. No.: 632-521-711

APR 04 1994

Mr. William C. Beatty
Project Director
Morrison Knudsen Corporation
Unit 10 & 12, ECA Building
National Highway
General Santos City, South Cotabato

Subject: Mindanao Development Project
Project No. 492-0456
South Cotabato Highways Project
Maintenance Certificate for Sector 3,
Sections 3 and 4

Reference: Beatty-Starnes letter dated 3 March 1994

Dear Mr. Beatty:

Pursuant to your request, MK/GSP-434 dated 3 March 1994, USAID is issuing the final Maintenance Certificate for the above captioned roadway. We have inspected the section of road and all punchlist items have been completed. We have your final quantities and your release of claims certificate and all is in order.

We want to congratulate MKC and your personnel for a job well done.

Sincerely,

John C. Starnes, P.E.
Chief Engineer
Office of Capital Projects

cc: Fred Sielbach, Chief of Party, MM/CSSA
Engr. Dimas Soguilon, DPWH District Engineer
Sarangani Province

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7:40 am
APR 07 1994

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MORRISON KNUDSEN CORPORATION
SOUTH COTABATO HIGHWAYS PROJECT
MINDANAO DEVELOPMENT PROGRAM

UNIT 10 & 12, ECA BUILDING
NATIONAL HIGHWAY
GENERAL SANTOS CITY
SOUTH COTABATO
P.O. BOX 221

MK/GSP-0443

April 18, 1994

Mr. Alejandro Sundermann
Project Manager, MDP
Morrison Maierle / CSSA
Babb and Associates
Maduramente Building
General Santos City

Subject: USAID CONTRACT NO: 492-0420-C-00-1140-00
South Cotabato Highways Project
Mindanao Development Program
- Certification For Vendors and Subcontractors -

Dear Sir:

This letter will serve as our Certification that all material suppliers, owners of rented equipment and Subcontractors, with the exception of ALC Industries, Inc. have been paid in full.

If any additional information is required please contact us immediately.

Very truly yours,

W. C. Beatty

WILLIAM C. BEATTY
Project Director

File: 11.1.2

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Rec'd: Lui
APR 19 1994
S-N for
211

FINAL PUNCHLISTS

TURN OVER PROCEDURE

The procedure for turning over the completed sections of roadway is divided into two phases; one for construction and one for acceptance. The construction phase emphasizes the construction and installation of works as determined by the drawings and specifications; while the acceptance phase focuses on the satisfaction of contractural requirements of substantial completion.

When the work on a section of road has been completed the Contractor's (Morrison-Knudsen) Quality Control Engineer will request a formal inspection of the work and invite the Engineer (USAID), the Engineers representative (Morrison Maierle) and DPWH to participate. The scope of this inspection may be limited to portions of a section of roadway to be accepted at a later date. It is intended, during this inspection to establish the punchlist which will be used for the final acceptance of the works. With the exception of defective workmanship, items not on this punchlist will not be considered for acceptance of the works.

When the work from the completion inspection punchlist has been substantially completed the Contractor's Quality Control Engineer will request a pre-final inspection and invite the Engineer, the Engineer's respresentative, and DPWH to participate. The purpose of this inspection is to verify that work on items on the punchlist from the completion inspection were performed and that the work is substantially complete and beneficially occupied by the public. Items remaining on this punchlist will be completed prior to final acceptance.

Once beneficial Occupancy is acknowledged, the Contractor will request a Completion Certificate. When this Certificate is issued by the Engineer, the one year defect-liability period commences. After the one year period has expired and the items of the final punchlist have been completed the Engineer will issue a maintenance certificate acknowledging final acceptance of the work.

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TURNOVER PROCEDURE

ACTIVITY	FUNCTION	CONTRACTOR (MORRISON KNUDSEN)	ENGINEER'S REPRESENTATIVE (MORRISON MAIERLE)	ENGINEER (USAID)
PHASE I: CONSTRUCTION Construction –	Installation of the works per drawings and specifications	Superintendent & craft construct works Quality Control Inspectors verify installation in compliance with specs	Inspectors observe and substantiate compliance with specs	
Completion Inspection	The work shall be inspected for quality of work and completeness. A Punchlist of deficient/ incomplete items will be issued.	Q.C. Engineer—schedules the inspection and issues the completion Punchlist	Participate in inspection	The Engineer and DPWH will participate in the inspection
Completion Punchlist	Deficient items are corrected and incomplete work is completed	Superintendents complete work Q.C. verifies work is completed	Inspectors observe completion and correction of work	
PHASE II: ACCEPTANCE Prefinal Inspection	When the completion Punchlist is reduced and the work substantially conforms to the drawing and specifications the works shall be inspected to verify the substantial completion.	Q.C. Engineer schedules the inspection	Participate in inspection	The Engineer and DPWH will participate in the inspection.
Beneficial Occupancy	Upon verification of substantial completion the completion certificate will be issued.	Request certificate	Recommend	The Engineer will issue Completion Certificate.
Final Acceptance	Final acceptance of the work after completion of the final Punchlist and one year defect liability period	Superintendents—complete Punchlist Request Final Acceptance	Recommend	The Engineer will issue the Maintenance (Final Completion) Certificate.

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MORRISON KNUDSEN CORPORATION

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FINAL PUNCHLIST

SECTOR 2 (SECTION 1 & 2) : INSPECTION DATE : 29 OCTOBER 1993

03:45:05 PM
29-Oct-93

REC'D. NO.	LOCATION SECT.	LOCATION STA.	DESCRIPTION	INSP.	RESP.	DATE IN	SUP'T. DATE	SUP'T. INIT.	M.K. Q.C. DATE	M.K. Q.C. INIT.	COMMENTS
2498	2	LOT BR.	EXCAVATE INLET CHANNEL	MM/MK	MK-BW	10/29/93					
2496	2	LOT BR.	GUARDRAIL 9TH & 10TH POST BOLTS ARE MISSING AT RT SIDE	MM/MK	LGS	10/22/93	10/29/93	MK-KW			
2497	2	LOT BR.	GUARDRAIL 12TH POST BOLT MISSING AT LT SIDE OF 2ND APP.	MM/MK	LGS	10/22/93					
2492	2	MOLO BR.	GUARDRAIL 1ST, 2ND, 3RD POST BOLT MISSING AT RT SIDE OF FIRST APP.	MM/MK	LGS	10/22/93					
2493	2	MOLO BR.	GUARDRAIL 3RD AND 4TH POST BOLT MISSING AT RT SIDE OF 2ND APP.	MM/MK	LGS	10/22/93					
2129	2	TUYAN BR.	REMOVE EXCESS GRAVEL MATLS. COVER GROUTED RIPRAP W/ EXCAVATED MATL. DRESS AREA TOTAL	MM/MK	MK	09/20/93	10/25/93	MK-DR			
2494	2	TUYAN BR.	SOME GUARDRAIL BOLTS ARE MISSING AT FIRST AND SECOND APP. AT BOTH SIDES	MM/MK	LGS	10/22/93					
2464	2	0.000	GUARDRAIL BOLTS NOT SPOT WELD	MM	LGS	10/21/93	10/27/93	MK-BW			SPECIFIED BOLTS TO BE INSTALLED FIRST
2479	2	0.000	PROVIDE OUTFALL DITCHES	MM/MK	DPWH	10/22/93					NEEDS EXCAVATION TO DRAIN AT SARI MAIN CANAL U/S
2400	2	0.000	INSTALL MISSING KM POST	MM/MK	MK-BW	10/22/93					SCHEDULE OF KM POST FROM DPWH
2463	2	5.063	GUARDRAIL 3RD POST 1 PC. SPLICE BOLT MISSING RUSTING FLEX BEAM	MM	LGS	10/21/93					
2466	2	5.063	GUARDRAIL 6TH POST 1 PC. BOLT MISSING AT LT SIDE	MM/MK	LGS	10/22/93					
2489	2	8.525	STA. 8 + 525 – STA. 8 + 875 REPAIR CRACKS ON CONC. WIDENING .SEAL CRACKS W/ AC	USAID	MK-DR	10/29/93					
2434	2	8.600	STA. 8 + 600 – STA. 8 + 700 LT SIDE DITCH WATER PONDING. GRADE DITCH TO DRAIN	RA/RT	MK-DR	10/19/93	10/25/93	MK-DR			ABSENCE OF PROPER OUTFALL @ STA. 8 + 428 & 8 + 700
2459	2	8.964	APP. SLAB FOR RCDC FAILED CONC. STRENGHT TEST	MM	MK-BW	10/21/93					CORE STRENGHT TEST ON GOING
2466	2	9.100	STA. 9 + 100 TO STA. 9 + 500 GRADE DITCH WATER PONDING U/S	MM	MK-BW	10/21/93	10/27/93	MK-BW			
2487	2	9.236	REPAIR EMBANKMENT AT Hw	MM/MK	MK-BW	10/29/93					
2483	2	11.000	REGRADE END SLOPE 2X0 APP OF LUN PADIOU	MM/MK	MK-BW	10/22/93					
2446	2	11.200	NO OUTFALL AT END OF SPECIAL LINE DITCH	MK-TO	MM	10/21/93					FCM REQUIRED NOT IN PLAN
2469	2	11.200	ERODED SHOULDER LT SIDE	MM	MK-BW	10/21/93					
2435	2	11.400	STA. 11 + 400 – STA. 11 + 500 RT SIDE DITCH WATER PONDING. PROVIDE OUTFALL	RA/RT	MK-DR	10/19/93					
2472	2	11.850	LT SIDE INSTALL SIGN BOARD	MM	MK-BW	10/21/93					FCM REQ'D.
2508	2	12.725	STA. 12 + 725 – STA. 12 + 850 GABION WORKS INCOMPLETE	MM/MK	HCERCO	10/02/93					ON GOING
2174	2	12.732	CONNECT AC PVMT TO 1ST APP. BRIDGE L BRIDGE L/L	RA/RT	MK-DR	09/30/93					AFTER COMPLETION OF BRIDGE CONST.
2175	2	12.749	CONNECT AC PVMT TO 1ST APP. BRIDGE L BRIDGE R/L	RA/RT	MK-DR	09/30/93					AFTER COMPLETION OF BRIDGE CONST.
2209	2	12.910	U/S REVERSE CURVE W1-40(L)	RA/RT	MK-DR	09/30/93					SPECIAL POST FOR BRIDGE INSTALLATION REQ'D.
2473	2	13.000	GUARDRAIL FOR 1ST AND 2ND APP. LUN MASLA BR. NOT INSTALLED	MM	LGS	10/21/93					AFTER COMPLETION OF BRIDGE CONST.
2210	2	13.055	R/S REVERSE CURVE W1-40(L)	RA/RT	MK-DR	09/30/93					SPECIAL POST FOR BRIDGE INSTALLATION REQ'D.
2224	2	13.100	STA. 13 + 100 – STA. 13 + 300 SHAPE DITCHES L/S PER PLAN, IT'S TOO SHALLOW	RA/EA	MK-DR	10/01/93					
2222	2	13.175	STA. 13 + 175 – STA. 13 + 225 DRESS EMBANKMENT SLOPE	RA/EA	MK-DR	10/01/93					
2221	2	13.177	LT SIDE SHOULDER ERODED WIDTH LESS THAN 2.00m	RA/EA	MK-DR	10/01/93					
2508	2	13.177	SCOURED SHOULDER AT INLET	MM/MK	MK	10/02/93	10/15/93	MK-DR			
2475	2	13.230	CONSTRUCT TYPE M4 DITCH TO STA. 13 + 650 LT SIDE	MM	MK-BW	10/21/93					FCM REQ'D.
2474	2	13.515	R/S DITCH OUTFALL HEAVILY ERODED	MM	MK-BW	10/21/93					REMOVE BERM USE MATLS. ON SHOULDER SLOPE
2226	2	13.550	STA. 13 + 550 – STA. 13 + 575 SHAPE DITCH TO CONFORM TO PLAN U/S	RA/EA	MK-DR	10/01/93					
[illegible]	2	[illegible]	PROVIDE ROAD SIGN W8-10 (PEDESTRIAN) AT RT SIDE	MM/MK	MK-DR	10/22/93					FCM REQ'D.
2491	2	13.970	PROVIDE ROAD SIGN W8-10 (PEDESTRIAN) AT LT SIDE	MM/MK	MK-DR	10/22/93					FCM REQ'D.
2503	2	13.975	INLET/OUTLET FULLY COVERED W/ EMBANKMENT MATLS.	MM/MK	MK	10/02/93	10/15/93	MK-DR			Hw COVERED (NOT CLEARED)
2502	2	14.018	INLET/OUTLET FULLY COVERED W/ EMBANKMENT MATLS.	MM/MK	MK	10/02/93	10/15/93	MK-DR			Hw COVERED (NOT CLEARED)
2462	2	14.458	STA. 14 + 458.40 TO STA. 14 + 463.40 THIN AC PVMT SECTION	MM	MK-BW	10/21/93					TO BE DETERMINED IF OVERLAY IS REQ'D.
2502	2	16.577	INLET AND OUTLET FULLY COVERED W/ EMBANKMENT MATLS.	MM/MK	MK	10/02/93	10/18/93	MK-DR			BOTH Hw COVERED
2461	2	16.850	STA. 16 + 850.00 TO STA. 16 + 860.00 THIN AC PVMT SECTION	MM	MK-BW	10/21/93					TO BE DETERMINED IF OVERLAY IS REQ'D.
2208	2	19.450	R/S PEDESTRIAN W8-10	RA/RT	MK-DR	09/30/93					

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MORRISON KNUDSEN CORPORATION

FINAL PUNCHLIST

SECTOR 2

SECTION 1 & 2 INSPECTION DATE : 29 OCTOBER 1993
SECTION 3 STA. 20 + 000 – 28 +000 INSPECTION DATE : 17 DECEMBER 1993
SECTION 3 STA. 28 + 000 – 47 + 175 INSPECTION DATE : 28 JANUARY 1994

03:13:42 PM
28-Jan-94

REC'D. NO.	LOCATION SECT.	LOCATION STA.	DESCRIPTION	INSP.	RESP.	DATE IN	SUPT. DATE	SUPT. INIT.	M. K. O. C. DATE	M. K. O. C. INIT.	COMMENTS
2709	2	LUN MASLA	SMOOTHEN THE EXTERIOR SURFACE OF ALL GIRDER BOTTOMS	MM/MK	COMP.	01/04/94					
3044	2	LUN MASLA	UNDERSIZED ROCK PCS. WERE USED AT GABIONS UNDER THE BRIDGE, 2ND APP.	MM/MK	HEERCO	01/10/94					
2473	2	13.000	ALL GUARDRAIL BOLTS CLEAN OF RUST AND REPAINT/REINSTALL PROPER BOLTS	MM	LGS	01/20/94					
3051	2	13.200	PROVIDE RIPRAP SLOPE PROTECTION	MM/MK	MK	01/20/94					FCM # 250G
3052	2	27.620	INSTALL SIDEDRAIN PIPE W/ OUT Hw INFRONT OF SAPU PADIDU	MM/MK	MK	01/20/94					FCM # 364
2951	2	28.000	STA. 28.000 TO 47.000 REHABILITATE ALL MISPLACED KM POST	MM/MK	MK	01/10/94					
2772	2	28.179	STA. 28.179 TO 28.352 R/S FILL W/ MORTAR THE VOIDS AT THE BACK OF STONE MASONRY GUARDRAIL	MM/MK	HEERCO	01/06/94					
2773	2	28.179	STA. 28.179 TO 28.352 R/S SHAPE SCUPPERS TO PROPER GRADE	MM/MK	HEERCO	01/06/94					
2775	2	28.179	STA. 28.179 TO 28.352 R/S REMOVE EXCESS MORTAR AT BASE OF STONE MASONRY GUARDRAIL (FRONT)	MM/MK	HEERCO	01/06/94					
2783	2	28.600	REMOVE BULLDOZER OUT OF SITE	MM/MK	MK	01/06/94					
2801	2	30.340	STA. 30.340 TO 30.575 R/S COMPLETE STONE MASONRY GUARDRAIL THEN CLEAN UP AREA	MM/MK	HEERCO	01/06/94					
3037	2	30.340	STA. 30.340 TO 30.575 CLEAN AREA OF EXCESS MATERIALS	MM/MK	HEERCO	01/10/94					
3038	2	30.340	STA. 30.340 TO 30.575 CHIP OFF OR BUILD UP SCUPPER BOT. TO APRT. ELEV. TO ALLOW FLOW OF WATER B/S	MM/MK	HEERCO	01/10/94					
3039	2	30.340	STA. 30.340 TO 30.575 RETOUCH SURFACES OF GUARDRAIL PANELS WHERE NECESSARY B/S	MM/MK	HEERCO	01/10/94					
3033	2	30.828	STA. 30.828 TO 30.900 CHIP OFF OR BUILD UP SCUPPER BOT. TO APRT. ELEV. TO ALLOW FLOW OF WATER B/S	MM/MK	HEERCO	01/10/94					
3034	2	30.828	STA. 30.828 TO 30.900 CLEAN AREA OF EXCESS MATERIALS	MM/MK	HEERCO	01/10/94					
3036	2	30.828	STA. 30.828 TO 30.900 RETOUCH SURFACES OF GUARDRAIL PANELS WHERE NECESSARY B/S	MM/MK	HEERCO	01/10/94					
3041	2	31.580	STA. 31.580 TO 31.825 CHIP OFF OR BUILD UP SCUPPER BOT. TO APRT. ELEV. TO ALLOW FLOW OF WATER B/S	MM/MK	HEERCO	01/10/94					
3042	2	31.580	STA. 31.580 TO 31.825 CLEAN AREA OF EXCESS MATERIALS B/S	MM/MK	HEERCO	01/10/94					
3043	2	31.580	STA. 31.580 TO 31.825 RETOUCH SURFACES OF GUARDRAIL PANELS WHERE NECESSARY RT SIDE	MM/MK	HEERCO	01/10/94					
3047	2	31.903	STA. 31.903 TO 34.075 RS GUARDRAIL END PIECES NOT INSTALLED	RP/TG	LGS	01/27/94	01/24/94	LGS–RP			
2839	2	33.225	R/S SHLD WIDTH LESS THAN 1.5m/PROVIDE STONE MASONRY RETAINING WALL AT LT SIDE	MM/MK	MONES	01/06/94					CONSTRUCT. WALL PER FCM 359
2892	2	35.960	R/S SHLD WIDTH LESS THAN REQ'D. / REMOVE DIRT FROM SHOULDER / ADD GABION BASKETS	MM/MK	MK	01/06/94	01/20/94	MK–DR			FCM # 361
3049	2	36.150	PROVIDE DRAINAGE AT SLOPE OF EMBANKMENT RT SIDE	MM/MK	MK	01/20/94					
3047	2	43.519	CONSTRUCT SLOPE PROTECTION 2ND APP. CALABALOL BRIDGE	MM/MK	MONES	01/20/94					FCM # 306
3050	2	44.291	PROVIDE STRIPPING INTERSECTING ROAD/PROVIDE STOP SIGN	MM/MK	MK	01/20/94					FCM # 305

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SOUTH COTABATO HIGHWAYS PROJECT

MORRISON KNUDSEN CORPORATION

FINAL PUNCHLIST

SECTOR 3 – STA. 0+000.00 TO STA. 14+210.55

12–Nov

REC'D. NO.	ITEM NO.	LOCATION SECT.	LOCATION STA.	DESCRIPTION	INSP.	RESP.	DATE IN	DATE OUT	OUT BY	COMMENTS
					ECW	MK	10/08/92			New Sample approved signs to be replaced
454	605(4)	3		SECT. 1A & 1B NON – PASSING ZONE ROAD SIGNS – RED CAR	ECW	MK	10/08/92	10/12/92	MK–PA	See detailed listing.
455	605(4)	3		SECT. 1A & 1B INVESTIGATE ADDITIONAL NEEDED ROAD WARNING SIGNS	FMM16	MK	10/08/92			
471	606(3)	3		REPAIR PAINT SPLATTERS, CROOKED MARKINGS, AND INSTALL GLASS BEADS ON PCCP.	FMM17	MK	10/08/92	10/29/92	MK–EW	Same as 471
472	606(3)	3		MARKINGS SHOULD INCLUDE GLASS BEADS ON CONCRETE PAVEMENTS FROM STA. 0+000 TO Sta. 14+200	FMM18	MK	10/08/92	10/29/92	MK–EW	Same as 471
473	605(3)	3		PAINTING SHOULD NOT BE SPLATTERED. REPAINT CROOKED MARKINGS STRIPES.	FMM21	MK	10/08/92			
476	600(3)	3		RESTORE ALL MISPLACED KILOMETER MARKERS.	FMM22	MK	10/08/92			
477	605(3)	3		ESTABLISH PERMANENT BENCHMARK EVERY 500 + METERS.	FDPWH29	MK	10/08/92			
547	605(3)	3		WIDTH OF CENTERLINE MARKER PAINT SHOULD BE 4.0 INCHES.	FDPWH30	MK	10/08/92	10/28/92	MK–BW	Normal raked joint. No action taken
548	310	3		ASPHALT SEGGREGATION NOTICED AT THE CENTERLINE OF THE ROAD SECTION.	FMM02	MK	10/08/92	10/25/92	MK–JS	
457	500(1)b	3	0.030	CLEAN EXISTING CHANNEL	FMM23	RIB	10/08/92			See FCM 114
478	605(4)	3	0.050	PROVIDE R4–1(60)B AT RIGHT SIDE	FMM24	RIB	10/08/92			See FCM 114
479	605(4)	3	0.175	PROVIDEW2–9B(R) AT RIGHT SIDE.	FMM25	RIB	10/08/92			See FCM 114
480	605(4)	3	0.250	PROVIDE W6–1B AT RIGHT SIDE	ECW	MK	10/08/92	10/25/92	MK–JS	
92	500(1)b	3	0.359	CLEANING OF CHANNEL	FMM26	RIB	10/08/92			See FCM 114
481	605(4)	3	0.375	PROVIDE W6–1B AT LEFT SIDE	FMM27	RIB	10/08/92			See FCM 114
482	605(4)	3	0.450	PROVIDE W2–9B(L) AT LEFT SIDE	FMM28	RIB	10/08/92			See FCM 114
483	605(4)	3	0.500	PROVIDE W6–1B AT RIGHT SIDE	ECW	MK	10/08/92	10/25/92	MK–JS	
93	500(1)a	3	0.678	CLEANING OF CHANNEL	ECW	MK	10/08/92	10/25/92	MK–JS	
94	500(1)b	3	0.903	CLEANING OF CHANNEL	FMM29	RIB	10/08/92			See FCM 114
484	605(4)	3	1.125	PROVIDE W6–1B AT LEFT SIDE	RIB	RIB	10/06/92	10/27/92	DWR	
345	603(3)	3	1.240	5th POST R/S, LOOSE BOLT ON FLEX–BEAM	ECW	RIB	10/08/92	10/27/92	DWR	
437	603(3)	3	1.240	REPLASTERING OF GUARD POST DEFECT AND GUARD RAIL BEAM WASHERS NOT COATED	FMM30	RIB	10/08/92			SEE FCM NO 114
485	605(4)	3	1.250	PROVIDE W6–2B AT RIGHT SIDE	FMM31	RIB	10/08/92			SEE FCM NO 114
486	605(4)	3	1.300	PROVIDE W1–3B(R) AT RIGHT SIDE.	FMM32	RIB	10/08/92			SEE FCM NO 114
487	605(4)	3	1.350	PROVIDE R3–16A AT RIGHT SIDE	FDPWH01	RIB	10/08/92	10/28/92	DWR	NO ACTION TAKEN
519	407(2)	3	1.775	HAIRLINE CRACKS NOTICED ON THE RT–SIDE OF CONC. SHOULDER, AND SCALING LT–SIDE OF CONC. SHOULDER.	FDPWH02	RIB	10/08/92	10/28/92	DWR	NO ACTION TAKEN
520	407(2)	3	1.775	NO WEAKENED PLANE JOINT ON BOTH SIDES OF THE CONCRETE SHOULDER. HONEY COMB ALSO NOTICED.	FMM03	MK	10/08/92	10/14/92	MK–JS	
458	407(2)	3	1.900	REMOVE EXISTING MATERIALS AT THE TOP OF GROUTED RIPRAP SLOPE PROTECTION	RIB	RIB	10/06/92	10/27/92	DWR	
346	603(3)	3	1.935	3rd POST R/S, LOOSE BOLT ON FLEX–BEAM	RIB	RIB	10/06/92	10/27/92	DWR	
347	603(3)	3	1.935	7th POST R/S, LOOSE BOLT ON FLEX–BEAM	RIB	RIB	10/06/92	10/27/92	DWR	
348	603(3)	3	1.935	4th POST L/S, LOOSE BOLT ON FLEX–BEAM-	RP	MK	05/19/92	10/12/92	ECW	Complete from Sta. 1.947–14.200, completed 10 Oct. 1992
95	605(3)	3	1.947	1.947 – 28.700 PVMT MARKINGS (REF); WORK NOT YET INSTALLED	RP	RIB	05/19/92	10/29/92	ECW	SEE DETAILED LISTING
96	605(4)	3	1.947	1.947 – 28.700 ROAD SIGNS AND MARKERS, WORK NOT YET INSTALLED	FDPWH03	RIB	10/08/92	10/29/92	DWR	NO ACTION TAKEN
521	407(2)	3	1.947	THERE WAS NO WEAKENED PLANE JOINT ON CONCRETE SHOULDER.	FDPWH04	RIB	10/02/92	10/27/92	DWR	Nails and wire removed – plastering to follow
522	407(2)	3	1.947	NAILS AND TIE WIRE EXPOSED ON BOTH SIDES OF THE CONC. SHOULDER. HONEY COMB ALSO NOTICED.	MM,MK,RIB	RIB	09/03/92	10/05/92	DWR	
289	605(4)	3	1.975	ACTUAL STA. 1.987 (as per plan STA. 1.975) ACTUAL INST. W1–1B(L) (AS PER PLAN W1–3B(L))	FMM33	RIB	10/08/92	10/28/92	DWR	
488	605(4)	3	2.035	CHANGE R4–1(60)B to R4–1(50)B (school ahead) AT LEFT SIDE	FMM34	RIB	10/08/92			SEE FCM NO 114
489	605(4)	3	2.150	PROVIDE R4–16A AT LEFT SIDE.	ECW	MK	10/08/92	10/09/92	MK–JHS	
32	500(1)b	3	2.153	INLET AND OUTLET NEEDS CLEANING	FMM04	MK	10/08/92	10/09/92	MK–JHS	
459	500(1)b	3	2.153	ERODED SHOULDERS AT BOTH SIDES.	FDPWH05	RIB	10/08/92	10/26/92	MK–PA	SAME AS 524
523	500(1)b	3	2.153	TOP OF HEADWALLS ARE BELOW THE ELEVATION OF THE SHOULDER.	FDPWH06	RIB	10/08/92			SEE FCM NO 113
524	500(1)b	3	2.153	HEADWALL AND WINGWALL SHOULD BE EXTENDED	MM–LL	DPWH	10/08/92	10/12/92	MK–PA	Not in MK scope of work.
438	500(1)b	3	2.415	REMOVE SCREEN BLOCKADE ON EXTENDED RCPC INSIDE STA. MONICA COMP (DPWH RESP)	FMM05	MK/RIB	10/08/92	10/25/92	MK–JHS	Shoulder complete
460	500(1)b	3	2.415	DAMAGED WINGWALL AT LT–SIDE. ERODED SHOULDERS AT BOTH SIDES.	FDPWH07	MK	10/08/92	10/28/92	MK–PA	SAME AS 526
525	500(1)b	3	2.415	TOP OF HEADWALLS ARE BELOW THE ELEVATION OF THE SHOULDER.	FDPWH08	RIB	10/08/92			SEE FCM NO 113
526	500(1)b	3	2.415	HEADWALL AND WINGWALL SHOULD BE EXTENDED	ECW	MK	10/08/92	10/09/92	MK–JHS	
439	104(2)	3	2.539	ERODED SHOULDER, LEFT–SIDE	FMM06	MK	10/08/92	10/20/92	MK–JHS	
461	500(1)b	3	2.539	CLEAN EXISTING CHANNEL. ERODED SHOULDER AT LEFT SIDE.	FDPWH09	RIB	10/08/92	10/20/92	MK–PA	SAME AS 528
527	500(1)b	3	2.539	TOP OF HEADWALLS ARE BELOW THE ELEVATION OF THE SHOULDER.	FDPWH10	RIB	10/08/92			SEE FCM NO 113
528	500(1)b	3	2.539	HEADWALL AND WINGWALL SHOULD BE EXTENDED	ECW	MK	10/08/92	10/09/92	MK–JHS	
440	104(2)	3	2.713	ERODED SHOULDER, LEFT–SIDE	FMM07	MK	10/08/92	10/20/92	MK–JHS	
462	500(1)b	3	2.713	ERODED SHOULDERS AT BOTH SIDES.	FMM08	MK	10/08/92	10/09/92	MK–JHS	
463	500(1)b	3	2.595	CLEAN EXISTING CHANNEL. ERODED SHOULDER AT BOTH SIDES.						

NOV 12 1992

BEST AVAILABLE DOCUMENT

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MORRISON KNUDSEN CORPORATION

FINAL PUNCHLIST

SECTOR 3 – STA. 0+000.00 TO STA. 14+210.55

12-Nov-92

REC'D. NO.	ITEM NO.	LOCATION SECT./STA.	DESCRIPTION	INSP.	RESP.	DATE IN	DATE OUT	OUT BY	COMMENTS
489	605(4)	3	3.015 ACTUAL INST. W1-5B(R) AS PER PLAN W1-5B(L)	RIB	RIB	10/05/92	10/27/92	DWR	
490	605(4)	3	3.015 ACTUAL INSTALLATION IS W1-5B (I) DOES NOT CONFORM TO THE PLAN/ACTUAL FIELD CONDITION AT LEFT SIDE	FMM35	RIB	10/05/92	10/27/92	DWR	Removed
36	500(1)b	3	3.195 INLET AND OUTLET NEEDS CLEANING	ECW	MK	10/08/92	10/09/92	MK-JHS	
441	104(2)	3	3.195 ERODED SHOULDER	ECW	MK	10/08/92	10/09/92	MK-JHS	
464	500(1)a	3	3.195 CLEAN EXISTING CHANNEL	FMM39	MK	10/05/92	10/20/92	MK-EW	Same as item 35
529	500(1)a	3	3.195 SILTED RCPC NOTICED.	FDPWH11	RIB	10/02/92	10/29/92	DWR	MK work
350	603(3)	3	3.318 1st APP. TAMBLER BRIDGE 5th POST L/S. LOOSE BOLT ON FLEX BEAM	RIB	RIB	10/06/92	10/27/92	DWR	
351	603(3)	3	3.318 1st APP. TAMBLER BRIDGE 6th POST L/S. LOOSE BOLT ON FLEX BEAM	RIB	RIB	10/06/92	10/27/92	DWR	
352	603(3)	3	3.318 1st APP. TAMBLER BRIDGE 12th POST R/S. LOOSE BOLT ON FLEX BEAM	RIB	RIB	10/06/92	10/27/92	DWR	
353	603(3)	3	3.318 1st APP. TAMBLER BRIDGE 9th POST L/S. LOOSE BOLT ON FLEX BEAM	RIB	RIB	10/06/92	10/27/92	DWR	
354	603(3)	3	3.318 1st APP. TAMBLER BRIDGE 10th POST L/S. LOOSE BOLT ON FLEX BEAM	RIB	RIB	10/06/92	10/27/92	DWR	
355	603(3)	3	3.318 1st APP. TAMBLER BRIDGE 12th POST L/S. LOOSE BOLT ON FLEX BEAM	RIB	RIB	10/06/92	10/27/92	DWR	
356	603(3)	3	3.318 1st APP. TAMBLER BRIDGE 13th POST R/S. LOOSE BOLT ON FLEX BEAM	RIB	RIB	10/06/92	10/27/92	DWR	
357	603(3)	3	3.318 1st APP. TAMBLER BRIDGE 15th POST L/S. LOOSE BOLT ON FLEX BEAM	RIB	RIB	10/06/92	10/27/92	DWR	
358	603(3)	3	3.318 1st APP. TAMBLER BRIDGE 16th POST L/S. LOOSE BOLT ON FLEX BEAM	RIB	RIB	10/06/92	10/27/92	DWR	
359	603(3)	3	3.318 1st APP. TAMBLER BRIDGE 21st POST L/S. LOOSE BOLT ON FLEX BEAM	RIB	RIB	10/06/92	10/27/92	DWR	
360	603(3)	3	3.318 1st APP. TAMBLER BRIDGE 23rd POST R/S. LOOSE BOLT ON FLEX BEAM	RIB	RIB	10/06/92	10/27/92	DWR	
361	603(3)	3	3.318 1st APP. TAMBLER BRIDGE 24th POST L/S. LOOSE BOLT ON FLEX BEAM	RIB	RIB	10/06/92	10/27/92	DWR	
362	603(3)	3	3.318 1st APP. TAMBLER BRIDGE 27th POST R/S. LOOSE BOLT ON FLEX BEAM	RIB	RIB	10/06/92	10/27/92	DWR	
363	603(3)	3	3.318 1st APP. TAMBLER BRIDGE 28th POST R/S. LOOSE BOLT ON FLEX BEAM	RIB	RIB	10/06/92	10/27/92	DWR	
364	603(3)	3	3.318 1st APP. TAMBLER BRIDGE 30th POST R/S. LOOSE BOLT ON FLEX BEAM	RIB	RIB	10/06/92	11/05/92	RIB-JGG	
365	603(3)	3	3.318 1st APP. TAMBLER BRIDGE 31st POST R/S. RE-BACKFILL AROUND	RIB	RIB	10/06/92	10/27/92	DWR	
366	603(3)	3	3.318 1st APP. TAMBLER BRIDGE 33rd POST L/S. RE-BACKFILL AROUND	RIB	RIB	10/06/92	10/27/92	DWR	
367	603(3)	3	3.370 2nd APP. TAMBLER BRIDGE 4th POST R/S. LOOSE BOLT ON FLEX BEAM	RIB	RIB	10/06/92	10/27/92	DWR	
368	603(3)	3	3.370 2nd APP. TAMBLER BRIDGE 7th POST R/S. LOOSE BOLT ON FLEX BEAM	RIB	RIB	10/06/92	10/27/92	DWR	
369	603(3)	3	3.370 2nd APP. TAMBLER BRIDGE 3rd POST R/S. RE-BACKFILL AROUND	RIB	RIB	10/06/92	10/27/92	DWR	
370	603(3)	3	3.370 2nd APP. TAMBLER BRIDGE 4th POST R/S. RE-BACKFILL AROUND	RIB	RIB	10/06/92	10/27/92	DWR	
371	603(3)	3	3.370 2nd APP. TAMBLER BRIDGE 5th POST R/S. RE-BACKFILL AROUND	RIB	RIB	10/06/92	10/27/92	DWR	
372	603(3)	3	3.370 2nd APP. TAMBLER BRIDGE 6th POST R/S. RE-BACKFILL AROUND	RIB	RIB	10/06/92	10/27/92	DWR	
373	603(3)	3	3.370 2nd APP. TAMBLER BRIDGE 7th POST R/S. RE-BACKFILL AROUND	RIB	RIB	10/06/92	10/27/92	DWR	
374	603(3)	3	3.370 2nd APP. TAMBLER BRIDGE 3rd POST L/S. RE-BACKFILL AROUND	RIB	RIB	10/06/92	10/27/92	DWR	
375	603(3)	3	3.370 2nd APP. TAMBLER BRIDGE 4th POST L/S. RE-BACKFILL AROUND	RIB	RIB	10/06/92	10/27/92	DWR	
376	603(3)	3	3.370 2nd APP. TAMBLER BRIDGE 7th POST L/S. RE-BACKFILL AROUND	MM,MK,RIB	RIB	09/03/92	10/27/92	DWR	
298	605(4)	3	3.630 ACTUAL INST. W1-5B(R) (AS PER PLAN W1-5B(L))	RIB	RIB	10/06/92	10/28/92	DWR	
385	605(4)	3	3.630 W1-5B(L) DOES NOT CONFORM TO ACT. RD. CONDITION (INST. IS CORRECT TO FIELD) W1-5B(R)	LL	DPWH	10/08/92	10/14/92	MK-JHS	
442	500	3	3.907 CLEAN RCPC CHANNEL	ECW	MK	10/08/92	10/14/92	MK-JHS	
443	500	3	3.933 CLEAN RCPC CHANNEL	ECW	MK	10/08/92	10/14/92	MK-JHS	
37	407(2)	3	4.270 INLET AND OUTLET NEEDS CLEANING	RIB	RIB	10/06/92	10/27/92	DWR	
377	606(3)	3	4.270 1st POST (R/S). LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/06/92	10/27/92	DWR	
378	606(3)	3	4.270 4th POST (R/S). LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/06/92	10/28/92	DWR	
379	606(3)	3	4.270 2nd POST (L/S). LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/06/92	10/27/92	DWR	
380	606(3)	3	4.270 4th POST (L/S). LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/06/92	10/27/92	DWR	
381	606(3)	3	4.270 5th POST (L/S). LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/06/92	10/27/92	DWR	
382	606(3)	3	4.270 7th POST (L/S). LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/06/92	10/27/92	DWR	
383	606(3)	3	4.270 8th POST (L/S). LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/06/92	10/27/92	DWR	
384	606(3)	3	4.270 2nd POST (R/S). LOOSE BOLT ON FLEX-BEAM	ECW	RIB	10/08/92	10/28/92	DWR	
444	603(3)	3	4.270 BEAM WASHERS NOT COATED	FMM36	RIB	10/02/92	10/27/92	DWR	Removed panel
491	605(4)	3	4.615 R4-1(80)B NOT NECESSARY – APPROACHING CELEBES CANNING AND AGROTEX AT RIGHT SIDE	FMM62	MK	10/05/92	10/28/92	MK-BW	
517	310	3	4.725 ASPHALT PAVEMENT PATCH/BUMPY	ECW	MK	10/08/92	10/14/92	MK-JHS	
40	500(1)b	3	4.895 INLET AND OUTLET NEEDS CLEANING	FMM10	MK	10/05/92	10/20/92	MK-EW	Same as Item 40
465	500(1)b	3	4.895 CLEAN EXISTING CHANNEL	FMM37	RIB	10/05/92			SEE FCM NO 114
492	605(4)	3	4.900 PROVIDE W6-1B AT RIGHT SIDE	ECW	MK	10/08/92	10/14/92	MK-JHS	
41	500(1)b	3	5.123 CLEAN RCPC RIGHT-SIDE						

BEST AVAILABLE DOCUMENT

SOUTH COTABATO HIGHWAYS PROJECT

MORRISON KNUDSEN CORPORATION

FINAL PUNCHLIST

SECTOR 3 – STA. 0+000.00 TO STA. 14+210.55

12-Nov-92

REC'D. NO.	ITEM NO.	LOCATION SECT.	LOCATION STA.	DESCRIPTION	INSP.	RESP.	DATE IN	DATE OUT	OUT BY	COMMENTS
466	500(1)b	3	5.139	DAMAGED PLASTER AT LEFT SIDE WINGWALL	FMM11	MK/RIB	10/03/92	10/20/92	DWR	Left side DPWH work
42	500(1)b	3	5.193	CLEAN RCPC RIGHT-SIDE	ECW	MK	10/08/92	10/14/92	MK-JHS	
493	605(4)	3	5.300	PROVIDE W5-1B AT LEFT SIDE	FMM38	RIB	10/08/92			SEE FCM NO 114
445	603(4)	3	5.513	INSTALL 4 PCS. GUIDE POST, LEFT-SIDE	ECW	RIB	10/05/92			SEE FCM NO 115
467	500(1)a	3	5.513	PROVIDE GUARDRAIL OR GUIDE JUST AT LEFT SIDE FOR TRAFFIC SAFETY.	FMM12	RIB	10/03/92	10/20/92	MK-EW	SAME AS ITEM 445
446	500	3	5.773	REPLASTERING OF WINGWALL LEFT-SIDE	ECW	RIB	10/03/92	11/04/92	DWR	Completed
386	603(3)	3	5.939	3rd POST R/S LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/06/92	11/05/92	RIB-JGG	Completed
387	603(3)	3	5.939	5th POST L/S BOLT MISSING ON BEAM	RIB	RIB	10/05/92	11/05/92	RIB-JGG	Completed
388	603(3)	3	5.939	7th POST L/S LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/06/92	10/30/92	DWR	Completed
495	605(4)	3	6.185	NOT NECESSARY – APPROACHING CELEBES CANNING AND AGROTEX AT LT-SIDE DIST. BET. W1-4B(R) IS 11.70 M ONLY.	FMM40	RIB	10/08/92	10/27/92	DWR	Removed panel
253	606(4)	3	6.185	ADDITIONAL ROAD SIGN, W1 – 4B (R)	MM,MK	RIB	09/03/92	11/02/92	DWR	Completed
----	605(4)	3	6.185	W1 – 4B (R) INCORRECT STATION	RIB	RIB	10/05/92	11/04/92	RIB-JGG	
496	605(4)	3	6.185	ACTUAL INSTALLATION IS W1-4B(R) DOES NOT CONFORM TO THE ACTUAL FIELD CONDITION AT LEFT SIDE	FMM41	RIB	10/05/92		DWR	What do you want in it's place?
494	605(4)	3	6.350	PROVIDE W1-3B(R) AT RIGHT SIDE.	FMM39	RIB	10/08/92			SEE FCM NO 114
468	500(1)a	3	6.440	CLEAN EXISTING CHANNEL	FMM13	MK	10/05/92	10/14/92	MK-JHS	
530	500(1)a	3	6.440	SILTED RCPC NOTICED.	FDPWH12	MK	10/08/92			
498	605(4)	3	6.625	IMPROVE THE LETTERINGS 'FLOOD' AT RIGHT SIDE (W5-7B).	FMM43	MK	10/08/92	10/29/92	ECW	NO ACTION TAKEN
447	503(3)	3	6.657	CLEAN RCPC CHANNEL, RIGHT-SIDE	ECW	MK	10/08/92	11/04/92	DWR	Completed
448	500	3	6.657	REPLASTERING OF WINGWALL AND HEADWALL (Blocked with silt – L/S) (3/4 blocked R/S)	FMM14	MK	10/05/92	10/20/92	MK-EW	Same as Item 447
469	500(1)b	3	6.657	CLEAN EXISTING CHANNEL	FDPWH13	RIB	10/08/92			SEE FCM NO 113
531	500(1)b	3	6.657	TOP OF HEADWALLS ARE BELOW THE ELEVATION OF THE SHOULDER.	FDPWH14	RIB	10/08/92			SEE FCM NO 114
532	500(1)b	3	6.657	HEADWALL AND WINGWALL SHOULD BE EXTENDED	FMM42	RIB	10/08/92			SEE FCM NO 114
499	605(4)	3	6.799	PROVIDE W1-3B(L) AT LEFT SIDE	FMM44	RIB	10/08/92	10/27/92	DWR	NO ACTION TAKEN
518	602(4)	3	6.794	REFLECTORIZED PAINT FOR OBSTRUCTION AHEAD AT LEFT SIDE (W1-3B(L)).	FMM63	MK	10/08/92			SEE FCM NO. 116
390	606(4)	3	7.290	W1-5B(R) DOES NOT CONFORM TO ACT. RD. CONDITION / W1-4B(R) INST. IS CORRECT [illegible]	FMM47	RIB	10/06/92	10/27/92	DWR	Sign replaced – tree trimming is DPWH
502	605(4)	3	7.290	ACTUAL INSTALLATION IS W1-4B(R) DOES NOT CONFORM TO THE ACTUAL FLD CON. AT LT-SIDE. POOR SIGHT DIST.	FMM45	MK	10/08/92	10/27/92	DWR	NO ACTION TAKEN
500	605(4)	3	7.340	IMPROVED THE LETTERINGS 'FLOOD', POOR SIGHT DISTANCE -- OBSTRUCTION AHEAD AT LEFT SIDE	FMM46	MK	10/05/92	10/29/92	ECW	NO ACTION TAKEN
501	605(4)	3	7.390	PROVIDE W5-7B AT RIGHT SIDE.	FMM48	RIB	10/08/92			SEE FCM NO 114
449	503(3)	3	7.430	CLEAN RCPC CHANNEL, RIGHT-SIDE	ECW	MK	10/08/92	10/15/92	MK-JHS	
450	500(1)a	3	7.430	REPLASTERING OF HEADWALL right side	ECW	MK	10/08/92	11/04/92	DWR	Completed
503	605(4)	3	8.200	TRANSFER R4-1(60)B TO STA. 7 + 400 AT RIGHT SIDE.	FMM49	RIB	10/08/92			SEE FCM NO 114
391	603(3)	3	8.286	1st APP. DUPALCO BRIDGE 2nd POST R/S LOOSE BOLT ON BEAM	RIB	RIB	10/06/92	11/05/92	RIB-JGG	
392	603(3)	3	8.286	1st APP. DUPALCO BRIDGE 3rd POST L/S LOOSE BOLT ON BEAM	RIB	RIB	10/06/92	11/05/92	RIB-JGG	
393	603(3)	3	8.347	2nd APP. DUPALCO BRIDGE 5th POST L/S LOOSE BOLT ON BEAM	RIB	RIB	10/06/92	10/30/92	DWR	Completed
394	606(4)	3	8.640	W1-5B(R) INST. IS CORRECT TO FLD. CONDITION. W1-5B(L) DOES NOT CONFORM TO ACT. FLD. CONDITION	RIB	RIB	10/06/92	10/28/92	DWR	
78	500(1)b	3	8.781	CLEAN RCPC CHANNEL, LEFT-SIDE	ECW	MK	10/08/92	10/15/92	MK-JHS	
515	605(4)	3	8.850	PROVIDE W5-10B AT RIGHT SIDE.	FMM60	RIB	10/05/92			SEE FCM NO 114
456	603(3)	3	8.950	REPLACE ALL FLEX BEAM WASHERS WITH APPROVED ZINC COATED TEST. PROVIDE AT RIGHT SIDE	FMM61	RIB	10/08/92	11/05/92	RIB-JGG	
50	500(1)b	3	9.212	CLEAN RCPC CHANNEL, RIGHT-SIDE	ECW	MK	10/08/92	10/15/92	MK-JHS	
504	605(4)	3	9.225	PROVIDE W2-9B(R) AT RIGHT SIDE.	FMM49	RIB	10/08/92			SEE FCM NO 114
516	605(4)	3	9.350	PROVIDE W5-10B AT LEFT SIDE.	FMM61	RIB	10/08/92			SEE FCM NO 114
505	605(4)	3	9.550	PROVIDE W2-9B(L) AT LEFT SIDE	FMM50	RIB	10/08/92			SEE FCM NO 114
395	603(3)	3	9.617	1st POST R/S LOOSE BOLT ON FLEX BEAM	RIB	RIB	10/06/92	11/05/92	RIB-JGG	
396	603(3)	3	9.617	6th POST R/S LOOSE BOLT ON FLEX BEAM	RIB	RIB	10/06/92	11/05/92	RIB-JGG	
397	603(3)	3	9.617	6th POST R/S REMOVE EXCESS BOLTS	RIB	RIB	10/06/92	11/05/92	RIB-JGG	
451	407(2)	3	9.617	ADDITIONAL MORTAR PLASTERING AT THE BACK OF THE RETAINING WALL	ECW	MK	10/08/92	11/04/92	DWR	Completed
533	407(2)	3	9.617	TOP OF HEADWALLS ARE BELOW THE ELEVATION OF THE SHOULDER.	FDPWH15	RIB	10/05/92	10/29/92	ECW	SAME AS 534
534	407(2)	3	9.617	HEADWALL AND WINGWALL SHOULD BE EXTENDED	FDPWH16	RIB	10/05/92			SEE FCM NO 113
398	603(3)	3	9.740	W1-5B(L) INST. DOES NOT CONFORM TO EXTNG RD CONDITION; W1-5B(R) AS PER PLAN DOES NOT CONFORM TO EXTNG	RIB	RIB	10/05/92	10/28/92	DWR	
319	606(4)	3	10.035	ACTUAL INST. W1-4B(L), (AS PER PLAN W1-5B(R))	MM,MK,RIB	RIB	09/03/92	10/28/92	DWR	
399	606(4)	3	[illegible]	AS PER PLAN W1-5B(R) DOES NOT CONFORM TO RD CONDITION; ACT. INST. IS W1-5B(L) DOES CONFORM TO RD CON	RIB	RIB	10/06/92	10/28/92	DWR	
508	[illegible]	3	10.035	ACTUAL INSTALLATION IS W1-4B(R) – THE ACTUAL FIELD CONDITION IS REVERSE CURVE AT RT-SIDE	FMM51	RIB	10/05/92	10/28/92	DWR	

BEST AVAILABLE DOCUMENT

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SOUTH COTABATO HIGHWAYS PROJECT
MORRISON KNUDSEN CORPORATION

FINAL PUNCHLIST

SECTOR 3 — STA. 0+000.00 TO STA. 14+210.55

12-Nov-92

REC'D. NO.	ITEM NO.	LOCATION SECT.	LOCATION STA.	DESCRIPTION	INSP.	RESP.	DATE IN	DATE OUT	OUT BY	COMMENTS
535	500(1)a	3	10.091	TOP OF HEADWALLS ARE BELOW THE ELEVATION OF THE SHOULDER.	FDPWH17	MK	10/08/92	10/28/92	MK-PA	SAME AS 533
536	500(1)a	3	10.091	HEADWALL AND WINGWALL SHOULD BE EXTENDED	FDPWH18	RIB	10/08/92			SEE FCM NO 113
400	603(3)	3	10.362	1st APP. LONDON BR., 1st POST R/S. LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/06/92	11/05/92	RIB-JGG	
401	603(3)	3	10.362	1st APP. LONDON BR., 3rd POST R/S. LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/06/92	11/05/92	RIB-JGG	
402	603(3)	3	10.362	1st APP. LONDON BR., 4th POST R/S. LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/06/92	11/05/92	RIB-JGG	
403	603(3)	3	10.362	1st APP. LONDON BR., 3rd POST L/S. LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/05/92	11/05/92	RIB-JGG	
404	603(3)	3	10.362	1st APP. LONDON BR., 5th POST L/S. LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/06/92	11/05/92	RIB-JGG	
405	603(3)	3	10.362	1st APP. LONDON BR., 6th POST L/S. LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/06/92	11/05/92	RIB-JGG	
406	603(3)	3	10.362	1st APP. LONDON BR., 9th POST L/S. LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/09/92	11/05/92	RIB-JGG	
407	603(3)	3	10.362	1st APP. LONDON BR., 10th POST R/S. LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/06/92	11/05/92	RIB-JGG	
408	603(3)	3	10.362	1st APP. LONDON BR., 11th POST L/S. LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/05/92	11/05/92	RIB-JGG	
409	603(3)	3	10.362	1st APP. LONDON BR., 12th POST R/S. LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/05/92	11/05/92	RIB-JGG	
410	603(3)	3	10.362	1st APP. LONDON BR., 14th POST L/S. LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/05/92	11/05/92	RIB-JGG	
411	603(3)	3	10.362	1st APP. LONDON BR., 13th POST R/S. LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/06/92	11/05/92	RIB-JGG	
412	603(3)	3	10.362	1st APP. LONDON BR., 16th POST L/S. LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/06/92	11/05/92	RIB-JGG	
413	603(3)	3	10.362	1st APP. LONDON BR., 14th POST R/S. LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/06/92	11/05/92	RIB-JGG	
414	603(3)	3	10.362	1st APP. LONDON BR., 15th POST R/S. LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/06/92	11/05/92	RIB-JGG	
415	603(3)	3	10.422	2nd APP. LONDON BR., 2nd POST L/S. LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/06/92	11/05/92	RIB-JGG	
416	603(3)	3	10.422	2nd APP. LONDON BR., 2nd POST R/S. LOOSE BOLT ON FLEX-BEAM	FMM52	RIB	10/08/92			SEE FCM NO 114
507	605(4)	3	10.450	PROVIDE W6-1B AT RIGHT SIDE	RIB	RIB	10/06/92	11/05/92	RIB-JGG	
417	605(4)	3	10.570	PEDESTRIAN SIGN IN WRONG LOCATION	RIB	RIB	10/06/92	10/26/92	DWR	
418	605(4)	3	10.570	ACT. INST. W6-2B AS PER PLAN SHOULD BE W6-1B	FMM20	MK	10/08/92			SEE FCM 118
475	605(3)	3	10.575	CROSS WALK AT STA. 10+575 (IN FRONT OF STAIRWAY).	ECW	MK	10/03/92	10/16/92	MK-JHS	
84	500(1)a	3	10.691	CLEAN RCPC CHANNEL, RIGHT-SIDE	FDPWH19	RIB	10/08/92	10/20/92	MK-PA	SAME AS 533
537	500(1)a	3	10.691	TOP OF HEADWALLS ARE BELOW THE ELEVATION OF THE SHOULDER.	FDPWH20	RIB	10/08/92			SEE FCM NO 113
538	500(1)a	3	10.691	HEADWALL AND WINGWALL SHOULD BE EXTENDED	MM,MK,RIB	RIB	09/03/92	10/28/92	DWR	
321	605(4)	3	10.710	ACTUAL INST. W1-5B(L). (AS PER PLAN W1-5B(R))	RIB	RIB	10/06/92	10/28/92	DWR	
419	605(4)	3	10.710	AS PER PLAN W1-5B(R) DO NOT CONFORM TO RD CONDITION; ACT. INST. W1-5B(L) DOES CONFORM TO RD CONDITION	FMM53	RIB	10/08/92	10/28/92	DWR	
508	605(4)	3	10.710	ACTUAL INSTALLATION IS W1-5B(R) -- THE ACTUAL FIELD CONDITION IS REVERSE CURVE AT LT-SIDE.	ECW	MK	10/08/92	10/16/92	MK-JHS	
85	500(1)b	3	10.773	LIGHT CLEANING OF RCPC CHANNEL	FDPWH21	RIB	10/08/92	10/20/92	DWR	SAME AS 540
539	500(1)b	3	10.773	TOP OF HEADWALLS ARE BELOW THE ELEVATION OF THE SHOULDER.	FDPWH22	RIB	10/08/92			SEE FCM NO 113
540	500(1)b	3	10.773	HEADWALL AND WINGWALL SHOULD BE EXTENDED	ECW	MK	10/08/92	10/16/92	MK-JHS	
86	500(1)b	3	10.881	LIGHT CLEANING OF RCPC CHANNEL	FDPWH23	RIB	10/08/92	10/20/92	DWR	SAME AS 542
541	500(1)b	3	10.881	TOP OF HEADWALLS ARE BELOW THE ELEVATION OF THE SHOULDER.	FDPWH24	RIB	10/08/92			SEE FCM NO 113
542	500(1)b	3	10.881	HEADWALL AND WINGWALL SHOULD BE EXTENDED	FMM54	RIB	10/08/92			SEE FCM NO 114
509	605(4)	3	11.010	LIGHT CLEANING OF RCPC CHANNEL	ECW	MK	10/03/92	10/16/92	MK-JHS	
87	500(1)a	3	11.233	TOP OF HEADWALLS ARE BELOW THE ELEVATION OF THE SHOULDER.	FDPWH25	RIB	10/08/92	10/20/92	MK-PA	SAME AS 544
544	500(1)a	3	11.233	HEADWALL AND WINGWALL SHOULD BE EXTENDED	FDPWH26	RIB	10/08/92			SEE FCM NO 113
452	500(1)d	3	11.463	REMOVE ALL DIRT AND CLEAN INLET SURROUNDING	ECW	MK	10/08/92	10/16/92	MK-JHS	
470	500(1)d	3	11.463	REMOVE TIE WIRE AT HEADWALL EXTENSION ON LT-SIDE. HONEY COMB ON HEADWALL	FMM15	MK	10/08/92	11/05/92	DWR	Completed
420	603(3)	3	11.471	2nd POST L/S. LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/06/92	11/05/92	RIB-JGG	
421	603(3)	3	11.471	4th POST R/S. LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/05/92	11/05/92	RIB-JGG	
422	603(3)	3	11.471	5th POST R/S. LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/06/92	11/05/92	RIB-JGG	
423	603(3)	3	11.471	6th POST R/S. LOOSE BOLT ON FLEX-BEAM	RIB	RIB	10/06/92	11/05/92	RIB-JGG	
424	603(3)	3	11.471	6th POST R/S. MISSING WASHER FOR POST BOLT	RIB	RIB	10/06/92	11/05/92	RIB-JGG	
425	603(3)	3	11.471	4th POST L/S. MISSING BOLT ON BEAM	RIB	RIB	10/06/92	10/30/92	DWR	Completed
510	605(4)	3	11.570	CHANGE R4-1(60)B AND MOVE TO STA. 11 + 630 (W1-5B-L) AT RT-SIDE. CHECK STATION.	FMM55	RIB	10/05/92			
426	605(4)	3	11.630	SIGN INST. IN WRONG STATION	RIB	RIB	10/05/92	11/05/92	RIB-JGG	
511	605(4)	3	11.630	CHANGE W1-5B(L) AND MOVE TO STA. 11 + 570 (R4-1(60)B) AT RT-SIDE. CHECK STATION.	FMM56	RIB	10/03/92	11/05/92	DWR	Completed
427	605(4)	3	11.675	SIGN INST. IN WRONG STATION	RIB	RIB	10/06/92	11/05/92	RIB-JGG	
428	605(4)	3	11.630	SIGN INST. IN WRONG STATION	RIB	RIB	10/05/92	11/05/92	RIB-JGG	
453	500(1)b	3	11.695	REMOVE TIE WIRES AND PLASTER HONEY COMB, LEFTSIDE AND CLEAN GROUTED RIPRAP DITCH LINE RS FR THIS STA	ECW	RIB	10/03/92	10/16/92	MK-JHS	

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SOUTH COTABATO HIGHWAYS PROJECT
MORRISON KNUDSEN CORPORATION

FILENAME : B:\378FPL.WK1

FINAL PUNCHLIST OPEN ITEMS

07:43:01 AM
08-Nov-93

REC'D. NO.	LOCATION SECT./STA		DESCRIPTION	INSP.	RESP.	DATE IN	SUPT. DATE	SUPT. INIT.	M. K. DATE	Q. C. INIT.	COMMENTS
SECTOR 3 SECTION 1 TAMBLER TO SIGUIL (STN 0 + 000 TO STN 14 + 200) FINAL INSPECTION DATE : OCT. 8, 1992 — ALL ITEMS COMPLETED											
1417	3	0.000	REPAIR STRIPING WITH GLASS BEADED PAINT	MK-PA	MK-BW	03/17/93	11/03/93	MK-BW	11/03/93	BCW	COMPLETED
SECTOR 3 SECTION 2 SIGUIL TO MAASIM (STN 14 + 200 TO STN 35 + 703) FINAL INSPECTION DATE : DEC. 11, 1992 — ALL ITEMS COMPLETED											
SECTOR 3 SECTION 3A MAASIM TO LOMUYON (STN 35 + 703 TO STN 61 + 765) FINAL INSPECTION DATE : FEB. 16, 1993 — ALL ITEMS COMPLETED											
SECTOR 3 SECTION 3B & 4 LOMUYON TO MAITUM (STN 61 + 765 TO STN 98 + 934) FINAL INSPECTION DATE : MAR. 30, 1993 — ALL ITEMS COMPLETED											
SECTOR 7 (STN 0 + 000 TO STN 21 + 581.53) FINAL INSPECTION DATE : JULY 30, 1993											
2113	7	0.000	SPOT WELD AND PAINT BOLTS FOR SIGN BOARDS	MK,MM	MK	07/30/93	08/03/93	MK-DR			FCM REQD.
SECTOR 8 (STN 0 + 000 TO STN 23 + 207.17) FINAL INSPECTION DATE : JULY 30, 1993											
2073	8	10.250	WATER PONDING BETWEEN SIDE DRAINS STATION 18+217 TO 18+274	MK,MM	MK	07/26/93	08/03/93	MK-DR			COMPLETED
2009	8	20.510	CRACKED PAVEMENT, SECOND APPROACH OF LAPUZ BRIDGE	MK,MM	MK-DR	07/26/93					

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MORRISON KNUDSEN CORPORATION

FINAL PUNCHLIST

INSPECTION DATE : 12/11/92.

SECTOR 3 – SECTION 2 – STA. 14.210 – STA. 35.703

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HECTO NO.	ITEM NO.	LOCATION SECTOR		DESCRIPTION	INSP.	RESP.	DATE IN	DATE OUT	OUT BY	COMMENTS
832	605(4)	3		RECOMPACT SIGN BASES	CK.EW	MK-BW	12/11/92	12/16/92	MK-BW	
837	605(4)	3		ALL BOLTS ON GUARDRAIL POST TO BE SPOT WELDED.	MM	MK-BW	12/14/92			
505	506(3)	3	14.210	SPRAY GLASS BEADS IMMEDIATELY AFTER PAINTING	FMM127	MK-BW	12/03/92			BEADS INSTALLED FROM 15+000 ON.
654	506(3)	3	14.210	ESTABLISH PERMANENT BENCHMARK AT EVERY 500 METERS.	FMM068	MK-BW	12/03/92			
653	506(3)	3	14.210	RESTORE ALL MISPLACED KILOMETER POST	FMM067	MK-PA	12/03/92			
553	506(3)	3	14.210	ROAD MARKINGS TO HAVE A WIDTH OF 100 MM	FMM125	MK-BW	12/03/92			
583	505	3	15.424	PLACE BOULDERS AT THE END OF APRON LT/S AND CLEAN	CK.ECW	MK-JS	12/01/92			TO BE COVERED BY FCM 133
584	506(4)	3	15.565	RECONSTRUCT THE OUTFALL PLACE WINGWALL PER DETAIL PLAN	CK.ECW	HEER	12/01/92			TO BE COVERED BY FCM 133
627	605(4)	3	15.667	PROVIDE 4 PCS. HAZARD MARKERS – 2 EACH DIRECTION AT LEFT SIDE.	FMM064	MK-BW	12/03/92			TO BE COVERED BY FCM 134
586	500(1)b	3	16.754	RAISE HEADWALL BY 0.30 m ON RIGHT SIDE AND TRIM SHOULDER MATERIALS AT LEFT SIDE.	CK.ECW	HEER	12/01/92			TO BE COVERED BY FCM 133
587	500(1)b	3	17.037	RAISE HEADWALL BY 0.20 m. AT RIGHT SIDE.	CK.ECW	HEER	12/01/92			TO BE COVERED BY FCM 133
589	104(1)	3	17.500	EXCAVATE INLET CHANNEL.	CK.ECW	MK	12/01/92	12/15/92	MK-JS	
590	503(4)	3	17.712	INSTALL 2 PCS. GUIDE POST.LT/S	CK.ECW	MK-BW	12/01/92			TO BE COVERED BY FCM 134
591	503(3)	3	17.800	ADJUST VERT. AUGNMENT OF GUARDRAIL	CK.ECW	RJB	12/01/92			
629	505(4)	3	17.870	PROVIDE 2 PCS. HAZARD MARKERS – 1 EACH DIRECTION AT LEFT SIDE	FMM065	MK-BW	12/03/92			TO BE COVERED BY FCM 134
592	502(3)	3	17.983	IMPROVE DITCH DRAINAGE AND CONSTRUCT BERM. EXTEND 2 PANELS OF GUARDRAIL. LT/S	CK.ECW	MK-RJB	12/01/92			TO BE COVERED BY FCM 133
593	504(5)a	3	18.000	18.050 – 18.146 CONSTRUCT Md TYPE DITCH AT LEFT SIDE.	CK.ECW	HEER	12/01/92			TO BE COVERED BY FCM 133
500	NONE	3	19.398	CONTINUE UNED DITCH FROM STA. 18.398.00 – 18.149.00. BACKFILL AND COMPACT VOID TO LEVEL WITH DITCH BOTTOM.	FMM093	HEER	12/03/92			TO BE COVERED BY FCM 133
595	502(3)	3	18.600	EXTEND 2 PANELS OF GUARDRAIL AT LEFT SIDE AND FLARED OUTWARD.	CK.ECW	MK-BW	12/01/92			TO BE COVERED BY FCM 134
630	505(4)	3	18.685	PROVIDE 4 PCS. HAZARD MARKERS – 2 EACH DIRECTION AT LEFT SIDE	FMM067	MK-BW	12/03/92			TO BE COVERED BY FCM 134
631	505(4)	3	19.031	PROVIDE 4 PCS. HAZARD MARKERS – 2 EACH DIRECTION AT LEFT SIDE	FMM068	MK-BW	12/03/92			TO BE COVERED BY FCM 134
596	504(5)	3	21.005	PROVIDE V –TYPE RIPRAP CHUTE AT ERODED RIPRAP. RIGHT SIDE.	FMM098	HEER	12/03/92			TO BE COVERED BY FCM 133
598	505	3	22.440	PLACE BOULDERS AT THE END OF APRON IN OUTLET	CK.ECW	MK-JS	12/01/92	12/16/92	MK-JS	TO BE COVERED BY FCM 133
599	407(2)	3	23.030	GRADE WASTE PILE AT INLET.	CK.ECW	MK-JS	12/01/92	12/06/92	MK-JS	
600	500(1)b	3	23.257	EXTEND WINGWALL BY 0.80m – 0.30m AT LEFT SIDE AND TRIM SHOULDER MATERIALS AT RIGHT SIDE.	CK.ECW	HEER	12/01/92			TO BE COVERED BY FCM 133
648	506(2)	3	24.000	PROVIDE CROSSWALK INFRONT OF SCHOOL GATE. CORRECT LOCATIONS WILL BE DETERMINED IN THE SITE.	FMM005	MK-BW	12/03/92			TO BE COVERED BY FCM 134
633		3	25.300	GRADE WASTE PILES BEHIND THE WALL AT STA. 25.300	CK.EW	MK-JS	12/11/92			
637	605(4)	3	25.310	PROVIDE 4 PCS. HAZARD MARKERS – 2 EACH DIRECTION AND REMOVE EXISTING.	FMM074	MK-BW	12/03/92			TO BE COVERED BY FCM 134
565	500(1)a	3	25.744	RAISE HEADWALL BY 0.20 m AND WINGWALL BY 0.35 m. AT RIGHT SIDE.	FMM117	HEER	12/03/92			TO BE COVERED BY FCM 133
671	509	3	26.000	GABIONS NOT DONE.	FMM103	HEER	12/03/92			
549	506(3)	3	28.250	PROVIDE CROSSWALK INFRONT OF SCHOOL GATE. CORRECT LOCATIONS WILL BE DETERMINED IN THE SITE.	FMM065	MK-BW	12/03/92			TO BE COVERED BY FCM 134
539	505(4)	3	29.136	PROVIDE 4 PCS. HAZARD MARKERS (T4–3) – 2 EACH DIRECTION AT LEFT SIDE.	FMM076	MK-BW	12/03/92			TO BE COVERED BY FCM 134
540	505(4)	3	29.336	PROVIDE 4 PCS. HAZARD MARKERS (T4–3) – 2 EACH DIRECTION AT RIGHT SIDE	FMM077	MK-BW	12/03/92			TO BE COVERED BY FCM 134
604	500(1)b	3	29.641	RAISE HEADWALL AND WINGWALL BY 0.40 m AT LEFT SIDE AND WINGWALL BY 0.50 m AT RIGHT SIDE.	CK.ECW	HEER	12/01/92			TO BE COVERED BY FCM 133
636	502(3)	3	29.675	WHITE CENTERLINE – 4 DASHES NEEDS TO BE RECTIFIED.	MM	MK-BW	12/14/92			
634	310	3	30.600	REPAIR FUEL SPILL ON AC PAVEMENT AT STA. 30.600. LEFT SIDE.	CK.EW	MK-BW	12/11/92			
607	500(1)a	3	32.234	RAISE HEADWALL BY 0.20 m AT LEFT SIDE AND REPAIR DAMAGED HEADWALL.	CK.ECW	HEER	12/01/92			TO BE COVERED BY FCM 133
509	104(1)	3	32.431	CLEAN AND DRESS DITCH.RT/S	CK.ECW	MK-JS	12/01/92			ON PROGRESS
509	104(2)	3	32.706	DRESS END SLOPE .	CK.ECW	MK-JS	12/01/92	12/15/92	MK-JS	
635	503(3)	3	32.775	CORRECT YELLOW BARRIER LINE (50.00 METERS).	CK.ECW	MK-BW	12/14/92			
550	506(3)	3	33.275	PROVIDE CROSSWALK INFRONT OF SCHOOL GATE. CORRECT LOCATIONS WILL BE DETERMINED IN THE SITE.	FMM065	MK-BW	12/03/92			TO BE COVERED BY FCM 134
590	407(1)	3	33.335	PLACE BOULDERS AT OUTLET END.	FMM122	MK-JS	12/03/92	12/16/92	MK-JS	TO BE COVERED BY FCM 133
572	NONE	3	33.630	FLOOD CONTROL AT STA. 33.630 – 34.134 NOT DONE	FMM104	MK-JS	12/03/92	12/15/92	MK-JS	SEE FCM NO.089
557	506(3)	3	35.707	PROVIDE CROSSWALK INFRONT OF SCHOOL GATE. CORRECT LOCATIONS WILL BE DETERMINED IN THE SITE.	MM.MK	MK-BW	12/16/92			TO BE COVERED BY FCM 134

SOUTH COTABATO HIGHWAYS PROJECT
MORRISON KNUDSEN CORPORATION

FINAL PUNCHLIST

INSPECTION DATE : 02 / 16 /93

SECTION 3 – SECTION 3A STATION 35+703.00 – STATION 61+765.00

09:42:15
22-Feb

RECD NO.	LOCATION SECT.	LOCATION STA.	DESCRIPTION	INSP.	RESP.	DATE IN	SUPT. DATE	SUPT. INIT.	O. C. DATE	O. C. INIT.	COMMENTS
1231	3	58.381	RESHAPE SHOULDER AT LEFT SIDE.	MM,MK	MK-JS	02/16/93					
1232	3	58.155	ELIMINATE PONDING AT RIGHT SIDE BETWEEN CULVERTS.	MM,MK	MK-JS	02/16/93					TO BE COVERED BY FCM.
1233	3	58.725	CLEAN GRAVEL FROM DITCH, RIGHT SIDE.	MM,MK	MK-JS	02/16/93					
728	3	59.003	RCBC – CLEAN BARREL AND EXCAVATE BOTH CHANNEL.	MM,MK	MK-JS	12/10/92					
1218	3	59.225	59.225 – 59.275 YELLOW LINE TOO WIDE.	MM,MK	MK-BW	02/16/93					
1219	3	59.754	59.754 – 59.800 YELLOW LINE TOO WIDE.	MM,MK	MK-BW	02/16/93					
633	3	59.944	UNREMOVED SIDE FORM OF WINGWALL AT LEFT SIDE.	MM,MK	RIBCO	12/10/92					
731	3	59.944	RAISE WINGWALL AND HEADWALL BY 0.40 m AT RIGHT SIDE.	MM,MK	HEER	12/10/92					
732	3	59.944	RAISE WINGWALL BY 0.30 m AT LEFT SIDE.	MM,MK	HEER	12/10/92					
634	3	60.215	TRIM SHOULDER AFTER 2.0 m, LEFT SIDE.	MM,MK	MK-JS	01/13/93					
1220	3	60.450	60.450 – 60.600 YELLOW LINE TOO WIDE.	MM,MK	MK-BW	02/16/93					
636	3	60.489	ERODED SHOULDER PROTECTION AT HW EDGE. SHAPE/GRADE SHOULDER.	MM,MK	MK-JS	12/03/92					
1217	3	60.880	R4-1(60)B AS PER SCHEDULE	MM,MK	MK-BW	02/16/93					
638	3	61.137	CLEAN INLET AND OUTLET.	MM,MK	MK-JS	12/03/92					
1120	3	61.300	W1-4B(L) SIGN REQUIRES COMPACTION.	MM,MK	MK-BW	02/10/93					
1123	3	61.630	R4-1(70)B SIGN NOT YET INSTALLED.	MM,MK	MK-BW	02/10/93					

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SOUTH COTABATO HIGHWAY PROJECT
MORRISON KNUDSEN CORPORATION

FINAL PUNCHLIST

INSPECTION DATE : 02/18/93
SECTOR 3 – SECTION 3A STATION 35+703.00 – STATION 61+705.00

09:42:15 AM
22-Feb-93

REC'D NO.	LOCATION SECT.	LOCATION STA.	DESCRIPTION	INSP.	RESP.	DATE IN	SUPT. DATE	SUPT. INIT.	Q.C. DATE	Q.C. INIT.	COMMENTS
1148	3	50.404	METAL GUARDRAIL – RUSTY WASHER ON BOLTS AT 4TH POST, LT–SDE.	MM,MK	MK–BW	02/10/93					
1084	3	50.555	W1–4B(L) SIGN REQUIRES COMPACTION	MM,MK	MK–BW	02/10/93					
1208	3	50.555	W1–4B(L) PROVDE RUST PROOFING ON WELDED JOINT NEAR BASE OF G.I. POST.	MM,MK	MK–BW	02/18/93					
1150	3	50.674	METAL GUARDRAIL – RUSTY WASHER AT 1ST AND 5TH POST, LT–SDE.	MM,MK	MK–BW	02/10/93					
1209	3	50.674	GUARDRAIL – CHANGE RUSTY WASHERS ON BOTH LEFT AND RIGHT OF APPROVED QUALITY (RUST RESISTANCE).	MM,MK	MK–BW	02/18/93					
788	3	50.973	(P1 – 135) PROVDE HAZARD MARKERS – CHEVRON (T4–3) AT LEFT SDE.	MM,MK	MK–BW	12/10/92					
1210	3	50.973	(T4–3) 2 SIGNS MISSING (NOT YET INSTALLED).	MM,MK	MK–BW	02/18/93					
1155	3	50.992	METAL GUARDRAIL – RUSTY WASHER AT 7TH POST, LT–SDE.	MM,MK	MK–BW	02/10/93					
1211	3	50.992	GUARDRAIL – REPLACE RUSTY WASHERS OF APPROVED QUALITY (RUST RESISTANCE) AT LEFT SIDE.	MM,MK	MK–BW	02/18/93					
1212	3	51.450	G.I. POST LOOSE AT BASE.	MM,MK	MK–BW	02/18/93					
1156	3	51.567	METAL GUARDRAIL – RUSTY WASHERS AT 1ST AND 5TH POST, RT–SDE.	MM,MK	MK–BW	02/10/93					
1213	3	51.567	GUARDRAIL – REPLACE RUSTY WASHERS OF APPROVED QUALITY (RUST RESISTANCE) AT LEFT AND RIGHT.	MM,MK	MK–BW	02/18/93					
705	3	52.184	RESHAPE SHOULDER. EXCAVATE INLET CHANNEL ,CLEAN PIPE AND INLET.	MM,MK	MK–JS	12/10/92					
1089	3	52.555	R3–16A SIGN REQUIRES COMPACTION.	MM,MK	MK–BW	02/10/93					
791	3	52.620	W1–3B(R) POST SHOULD EMBEDDED PROPERLY AT RIGHT SIDE. RECOMPACT SIGN BASE.	MM,MK	MK–BW	12/10/92					
706	3	52.728	RESHAPE SHOULDER.	MM,MK	MK–JS	12/10/92					
707	3	52.728	RCPC 910 mm – CLEAN OUTLET. TRIM SHOULDER AND REMOVE EXCESS MATERIALS AT LEFT SIDE.	MM,MK	MK–JS	12/10/92					
1227	3	52.897	CLEAN WASTE	MM,MK	HEER	02/18/93					
1228	3	52.897	GRADE SHOULDER AT WINGWALL OUTLET.	MM,MK	MK–JS	02/18/93					
1214	3	53.010	G.I. POST LOOSE AT BASE.	MM,MK	MK–BW	02/18/93					
794	3	53.105	W1–3B(L) POST SHOULD EMBEDDED PROPERLY AT LEFT SIDE. RECOMPACT SIGN BASE.	MM,MK	MK–BW	12/10/92					
795	3	53.165	R4–1(60)B TO BE RELOCATED NEAR THE SAME PLACE. LOCATION WAS PLACED ON THE SIDE SLOPE OF HIGH EMBANKMENT. LT	MM,MK	MK–BW	12/10/92					
1094	3	53.165	R4–1(60)B SIGN REQUIRES COMPACTION.	MM,MK	MK–BW	02/10/93					
1215	3	53.165	R4–1(60)B PROVDE RUST PROOFING ON WELDED JOINT NEAR BASE OF G.I. POST.	MM,MK	MK–BW	02/18/93					
709	3	53.338	RAISE HEADWALL BY 0.33 m BOTH SDES.	MM,MK	HEER	12/10/92					
710	3	53.338	RCPC 910 mm – CLEAN INLET.	MM,MK	MK–JS	12/10/92					
797	3	53.445	W1–3B(R) POOR SIGHT DISTANCE. COVERED WITH PLANTS. RELOCATE NEAR 2ND APP OF THE BRIDGE AT LEFT SIDE.	MM,MK	MK–BW	12/10/92					
1095	3	53.445	W1–3B(R) SIGN REQUIRES COMPACTION.	MM,MK	MK–BW	02/10/93					
1165	3	53.451	METAL GUARDRAIL – 9TH POST REQUIRES COMPACTION AT 2ND APP. OF LUMASAL BRIDGE. LT–SDE.	MM,MK	MK–BW	02/10/93					
808	3	53.740	W6–2B PROVDE AT RIGHT SIDE.	MM,MK	MK–BW	12/10/92					
809	3	54.105	W6–2B PROVDE AT LEFT SIDE.	MM,MK	MK–BW	12/10/92					
1170	3	55.635	METAL GUARDRAIL – 33RD POST REQUIRES COMPACTION AT 2ND APP. OF TALOK BRIDGE. LT–SDE.	MM,MK	MK–BW	02/10/93					
1172	3	55.635	METAL GUARDRAIL – ACTUAL POST INSTALLED 17 PCS. AS PER PLAN 16 PCS.,1ST APP. OF TALOK BRIDGE,RT–SDE.	MM,MK	MK–BW	02/10/93					
1216	3	55.635	GUARDRAIL – 4TH PANEL FLEX BEAM RUSTY, RIGHT SIDE.	MM,MK	MK–BW	02/18/93					
1229	3	55.901	GRADE AND SLOPE SHOULDER AT LEFT SIDE.	MM,MK	MK–JS	02/18/93					
1230	3	56.331	GRADE DITCH.	MM,MK	HEER	02/18/93					

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MORRISON KNUDSEN CORPORATION

FINAL PUNCHLIST

BEST AVAILABLE DOCUMENT

INSPECTION DATE : 30 MARCH 1993

SECTOR 3 – SECTION 4 STATION 63 + 577 – STATION 100

04:46:12 PM
30-Mar-93

REC'D. NO.	LOCATION SECT.	LOCATION STA	DESCRIPTION	INSP.	RESP.	DATE IN	SUPT. DATE	SUPT. INIT.	Q. C. DATE	Q. C. INIT.	COMMENTS
1427	3	83.577	83.577 – 100 GRADE ALL SHOULDER TO THE BACK OF ALL RCPC AND RCBC.	MM,MK	MK-BW	3/19/93	03/24/93	MK-BW	03/24/93	MK-RP	
1440	3	83.577	83.577 – 100 R/O SIGN NOT ACCOMPLISH FOR SECTION 4	MM,MK	MK-BW	03/09/93	03/23/93	MK-BW	03/23/93	MK-RP	
1446	3	83.577	83.577 – 100 REMOVE EXCESS EMBANKMENT MATLS W/IN CONST. LIMIT WHEREVER NECESSARY	MM,MK	MK-BW	03/03/93	03/30/93	MK-EW	03/30/93	MK-EW	
1442	3	83.577	83.577 – 100 SDE DRAIN FOR SECTION 4 NOT ACCOMPLISH	MM,MK	HER-DR	03/09/93	03/23/93	HER-DR	03/23/93	MK-RP	
1452	3	83.577	REPAIR & RESTORE STRIPING WHERE NESCESSARY	MM,MK	MK-BW	03/17/93	03/23/93	MK-BW	03/23/93	MK-RP	
1450	3	83.577	83.577 – 100 RESTORE ALL DISPLACED KILOMETER POST	MM,MK	MK-BW	03/09/93					
1441	3	83.577	83.577 – 100 GROUTED RIPRAP WORKS NOT ACCOMPLISH	MM,MK	HER-DR	03/09/93	03/30/93	MK-EW	03/30/93	MK-EW	
1449	3	83.577	83.577 – 100 METAL GUARDRAIL FOR SECTION 4 INSTALLATION NOT COMPLETE	MM,MK	MK-BW	03/09/93	03/24/93	MK-BW	03/30/93	MK-EW	
1423	3	83.577	83.577 – 100 ALL SDE DRAIN PIPES MUST HAVE JOINT INTERIOR GROUT	MM,MK	HER-DR	3/19/93	03/23/93	MK-BW	03/23/93	MK-RP	
1435	3	83.577	83.577 – 83.637 LT SIDE SHAPE SIDE DITCH TO CONFORM STANDARD	MM,MK	MK-BW	03/09/93	03/24/93	MK-BW	03/30/93	MK-EW	
1421	3	83.637	RAISE 0.60m HW AND WW AT INLET, RAISE 0.30m HW AND WW AT OUTLET. CLEAN INLET AND OUTLET.	MM,MK	HER-DR	3/19/93	03/23/93	HER-DR	03/23/93	MK-RP	
1422	3	83.644	CONNECT BOTH HW W/ GROUTED RIPRAP RT SDE; CLEAN AND GRADE OUTLET	MM,MK	HER-DR	3/19/93	03/23/93	HER-DR	03/23/93	MK-RP	
1424	3	83.900	GRADE AND SLOPE AT LOADING AND UNLOADING ZONE	MM,MK	MK-BW	3/19/93	03/24/93	MK-BW	03/24/93	MK-RP	
1453	3	84.000	84.000 – 84.450 YELLOW LINE, STRAIGHTEN MISALIGN YELLOW STRIPE	MM,MK	MK-BW	03/17/93	03/23/93	MK-BW	03/23/93	MK-RP	
1452	3	84.270	LT SIDE GUARDRAIL FLEX BEAM DO NOT FIT PROPERLY ON 2ND AND 3RD POST	MM,MK	MK-BW	03/17/93	03/23/93	MK-BW	03/23/93	MK-RP	
1454	3	84.330	LT & RT GUARDRAIL, SEVERAL FLEX BEAM DO NOT FIT WITH CONCRETE POST	MM,MK	MK-BW	03/17/93	03/23/93	MK-BW	03/23/93	MK-RP	
1425	3	84.594	REGRADE SHOULDER SLOPE AT RT AND LT SDE	MM,MK	MK-BW	3/19/93	03/23/93	MK-BW	03/23/93	MK-RP	
1455	3	85.675	RT SIDE ROAD SIGN, G.I. PIPE LOOSE AT BASE AND NOT PLUMB	MM,MK	MK-BW	03/17/93	03/24/93	MK-BW	03/24/93	MK-RP	
1456	3	86.052	RT SIDE GUARDRAIL FLEX BEAM DO NOT FIT PROPERLY ON CONCRETE POST	MM,MK	MK-BW	03/17/93	03/23/93	MK-BW	03/23/93	MK-RP	
1457	3	86.095	LT AND RT GUARDRAIL SEVERAL FLEX BEAM DO NOT FIT ON CONCRETE POST	MM,MK	MK-BW	03/17/93	03/23/93	MK-BW	03/23/93	MK-RP	
1437	3	86.226	RCPC REPAIR PORTION OF EXISTING GROUTED RIPRAP WHARP AT RT SIDE	MM,MK	HER-DR	03/09/93	03/23/93	HER-DR	03/23/93	MK-RP	
1458	3	87.500	ROAD SIGN G.I. STEM NOT PLUMB	MM,MK	MK-BW	03/17/93	03/23/93	MK-BW	03/23/93	MK-RP	
1451	3	87.711	RCBC CLEAN INLET AND OUTLET OF SHOULDER MATLS	MM,MK	MK-BW	03/03/93	03/24/93	MK-BW	03/24/93	MK-RP	
1459	3	87.711	LT SIDE GUARDRAIL – 5TH AND 6TH POST FLEX BEAM DO NOT FIT PROPERLY	MM,MK	MK-BW	03/17/93	03/23/93	MK-BW	03/23/93	MK-RP	
1425	3	87.725	REGRADE SHOULDER SLOPE AT BOTH SIDES	MM,MK	MK-BW	3/19/93	03/24/93	MK-BW	03/24/93	MK-RP	
1460	3	87.895	RT SIDE ROAD SIGN, SIGN BOARD YELLOW BACKGROUND DAMAGE	MM,MK	MK-BW	03/17/93					
1425	3	87.973	COMPLETE CONTRACT WORK	MM,MK	MK-BW	3/19/93	03/25/93	MK-BW	03/30/93	MK-EW	
1461	3	88.058	LT SIDE GUARDRAIL, FLEX BEAM DO NOT FIT PROPERLY ON 2ND AND 3RD POST	MM,MK	MK-BW	03/17/93	03/23/93	MK-BW	03/23/93	MK-RP	
1462	3	88.091	LT SIDE FLEX BEAM DO NOT FIT PROPERLY ON 5TH AND 6TH POST, FLEX BEAM SPLICE BOTH NOT INSTALLED	MM,MK	MK-BW	03/17/93	03/23/93	MK-BW	03/23/93	MK-RP	
1007	3	88.901	RAISE WW BY 0.20 m BOTH SDES.	MM,MK	HER-DR	01/14/93					CLEAN AND REGRADE SHOULDER.
1420	3	88.901	REPAIR PORTION OF EXISTING GROUTED RIPRAP WHARP AT OUTLET	MM,MK	HER-DR	3/19/93	03/23/93	HER-DR	03/23/93	MK-RP	
1008	3	89.107	REPAIR DAMAGED WW AND APRON AT RIGHT SDE.	MM,MK	MK-BW	01/14/93	03/30/93	MK-EW	03/30/93	MK-EW	CLEAN INLET AND OUTLET.

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SOUTH COTABATO HIGHWAYS PROJECT
MORRISON KNUDSEN CORPORATION

FILENAME : B:\FIN4

BEST AVAILABLE DOCUMENT

FINAL PUNCHLIST

INSPECTION DATE : 30 MARCH 1993
SECTOR 3 – SECTION 4 STATION 83 + 577 – STATION 100

04:46:12 PM
30-Mar-93

REC'D. NO.	LOCATION SECT.	LOCATION STA	DESCRIPTION	INSP.	RESP.	DATE IN	SUPT. DATE	SUPT. INIT.	Q. C. DATE	Q. C. INIT.	COMMENTS
1494	3	89.100	SMOOTH OFF/FINISH REPAIR WORK TO WW	MK-RP	HER-DR	03/30/93					
1463	3	89.305	RT SIDE ROAD SIGN G.I. STEM NOT PLUMB	MM,MK	MK-BW	03/17/93	03/25/93	MK-BW	03/25/93	MK-RP	
1464	3	89.450	RT SIDE ROAD SIGN BASE NEED ADEQUATE ANCHORAGE TO GROUND AND COMPACTION	MM,MK	MK-BW	03/17/93	03/25/93	MK-BW	03/25/93	MK-RP	
1465	3	89.600	RT SIDE ROAD SIGN G.I. STEM NOT PLUMB	MM,MK	MK-BW	03/17/93	03/25/93	MK-BW	03/25/93	MK-RP	
1466	3	89.645	RT SIDE ROAD SIGN BASE NEED ADEQUATE ANCHORAGE TO GROUND AND COMPACTION	MM,MK	MK-BW	03/17/93	03/25/93	MK-BW	03/25/93	MK-RP	
1467	3	90.150	LT SIDE ROAD SIGN, G.I. STEM NOT PLUMB	MM,MK	MK-BW	03/17/93	03/25/93	MK-BW	03/25/93	MK-RP	
1435	3	90.764	REPAIR DAMAGE PORTION OF EXISTING GROUTED RIPRAP WHARP AT OUTLET	MM,MK	HER-DR	03/09/93	03/23/93	HER-DR	03/23/93	MK-RP	
1495	3	91.330	CLEAN CONC. SPATTER FROM FLEX BEAM KANZAN BRIDGE	MK-RP	MK-BW	03/30/93					
1496	3	91.330	REPAIR FINISH TO GUARDRAIL POST KANZAN BRIDGE	MK-RP	MK-BW	03/30/93					
1468	3	91.500	LT AND RT ROAD SIGN REQUIRE MORE COMPACTION	MM,MK	MK-BW	03/17/93	03/25/93	MK-BW	03/25/93	MK-RP	
1469	3	91.750	LT SIDE ROAD SIGN BOARD NOT INSTALL	MM,MK	MK-BW	03/17/93	03/23/93	MK-BW	03/23/93	MK-RP	
1470	3	91.800	LT SIDE ROAD SIGN BASE NEED MORE COMPACTION	MM,MK	MK-BW	03/17/93	03/25/93	MK-BW	03/25/93	MK-RP	
1430	3	91.935	91.935 – 91.955 REGRADE SHOULDER SLOPE	MM,MK	MK-BW	3/19/93	03/25/93	MK-BW	03/25/93	MK-RP	
1471	3	92.200	RT SIDE ROAD SIGN BASE REQUIRE MORE COMPACTION	MM,MK	MK-BW	03/17/93	03/25/93	MK-BW	03/25/93	MK-RP	
1472	3	92.550	LT SIDE ROAD SIGN BASE REQUIRE MORE COMPACTION	MM,MK	MK-BW	03/17/93	03/25/93	MK-BW	03/25/93	MK-RP	
1431	3	93.430	93.430 – 93.525 REGRADE SHOULDER SLOPE	MM,MK	MK-BW	3/19/93					
1433	3	94.050	94.050 – 94.150 REGRADE SHOULDER SLOPE	MM,MK	MK-BW	3/19/93	03/25/93	MK-BW	03/30/93	MK-EW	
1432	3	94.096	RAISE HW BY 0.40m FULL LENGHT UP TO EDGE OF WW	MM,MK	HER-DR	3/19/93	03/25/93	HER-DR	03/30/93	MK-EW	
1473	3	94.200	RT SIDE ROAD SIGN BASE REQUIRE MORE COMPACTION	MM,MK	MK-BW	03/17/93	03/23/93	MK-BW	03/23/93	MK-RP	
1474	3	94.300	LT AND RT ROAD SIGN BASE REQUIRE MORE COMPACTION	MM,MK	MK-BW	03/17/93	03/23/93	MK-BW	03/23/93	MK-RP	
1475	3	94.650	ROAD SIGN NOT INSTALL	MM,MK	MK-BW	03/17/93	03/23/93	MK-BW	03/23/93	MK-RP	
1476	3	94.600	ROAD SIGN NOT INSTALL	MM,MK	MK-BW	03/17/93	03/23/93	MK-BW	03/23/93	MK-RP	
1477	3	95.030	SIGN BOARD NOT INSTALL	MM,MK	MK-BW	03/17/93	03/23/93	MK-BW	03/23/93	MK-RP	
1439	3	95.256	RCBC IMPROVED JOINT BETWEEN NEW AND OLD CONC. ON WW AND HW AT INLET AND OUTLET	MM,MK	HER-DR	03/09/93	03/25/93	HER-DR	03/30/93	MK-EW	
1478	3	95.650	95.650 – 95.900 ROAD SIGN BASE REQUIRE MORE COMPACTION	MM,MK	MK-BW	03/17/93	03/23/93	MK-BW	03/23/93	MK-RP	
1479	3	95.800	ROAD SIGN BOARD NOT INSTALLED	MM,MK	MK-BW	03/17/93	03/23/93	MK-BW	03/23/93	MK-RP	
1443	3	96.233	RCBC PLASTER AND IMPROVE JOINT OF EXISTING AND NEW CONC. ON WW AND HW LT SDE	MM,MK	HER-DR	03/09/93	03/25/93	HER-DR	03/30/93	MK-EW	
1480	3	96.862	LT SIDE GUARDRAIL, SEVERAL FLEX BEAM INSTALLED DO NOT FIT PROPERLY TO THE CONC. POST	MM,MK	MK-BW	03/17/93	03/23/93	MK-BW	03/23/93	MK-RP	
1436		96.922	REGROUT INSIDE PIPES, HW TO BE REPLASTERED, LT SIDE	MM,MK	HER-DR	3/19/93	03/25/93	HER-DR	03/30/93	MK-EW	
1434	3	96.922	CLEAN AND GRADE SLOPE AT OUTLET		MK-E	19/93	3	MK-	25/93		

MORRISON KNUDSEN CORPORATION

FILENAME : B:\FIN4

FINAL PUNCHLIST

INSPECTION DATE : 30 MARCH 1993

SECTOR 3 - SECTION 4 STATION 83 + 577 - STATION 100

04:46:12 PM
30-Mar 93

REC'D. NO.	LOCATION SECT./STA		DESCRIPTION	INSP.	RESP.	DATE IN	SUPT. DATE	SUPT. INIT.	Q. C. DATE	Q. C. INIT.	COMMENTS
1431	3	97.200	RO/O SIGN BOARD NOT INSTALLED	MM,MK	MK-GW	03/17/93	03/23/93	MK-BW	03/23/93	MK-RP	
1444	3	97.353	RCPC INLET AND OUTLET H/W NOT ACCOMPLISH AND DEBRI CATCHER AT RT SIDE	MM,MK	HER-DR	03/03/93					
1445	3	99.630	99.630 - 99.734 LT AND RT SHOULDER WIDTH LESS THAN 2.00m WIDENED FOR CONFORMANCE	MM,MK	MK-GW	03/03/93	03/25/93	MK-GW			
1282	3	99.824	AC PAVEMENT CRACKS CAUSED BY EMBANKMENT SUB, RIGHT SIDE	MM,MK	MK-RW	02/22/93	03/25/93	MK-RW			

THESE TWO ITEMS WILL BE ADDED TO THE CONSTRUCTION PUNCHLIST FOR SAUB BRIDGE

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MORRISON KNUDSEN CORPORATION

FINAL PUNCHLIST OPEN ITEMS

08:15:48 AM
20-Sep-93

REC'D. NO.	LOCATION SECT./STA		DESCRIPTION	INSP.	RESP.	DATE IN	SUPT. DATE	SUPT. INIT.	M.K. Q.C. DATE	M.K. Q.C. INIT.	COMMENTS
SECTOR 3 SECTION 1 TAMBLER TO SIGUIL (STN 0 + 000 TO STN 14 + 200) FINAL INSPECTION DATE : OCT. 8, 1992											
1417	3	0.000	REPAIR STRIPING WITH GLASS BEADED PAINT	MK-PA	MK-BW	03/17/93					END OF PROJECT
SECTOR 3 SECTION 2 SIGUIL TO MAASIM (STN 14 + 200 TO STN 35 + 703) FINAL INSPECTION DATE : DEC. 11, 1992 – ALL ITEMS COMPLETED											
SECTOR 3 SECTION 3A MAASIM TO LOMUYON (STN 35 + 703 TO STN 61 + 765) FINAL INSPECTION DATE : FEB. 16, 1993 – ALL ITEMS COMPLETED											
SECTOR 3 SECTION 3B & 4 LOMUYON TO MAITUM (STN 61 + 765 TO STN 98 + 934) FINAL INSPECTION DATE : MAR. 30, 1993 – ALL ITEMS COMPLETED											

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SOUTH COTABATO HIGHWAYS PROJECT
MORRISON KNUDSEN CORPORATION

FILENAME : B:\375FPL.WK1

FINAL PUNCHLIST OPEN ITEMS

REC'D. NO.	LOCATION SECT./STA.	DESCRIPTION	INSP.	RESP.	DATE IN	SUPT. DATE	SUPT. INIT.	M. K. Q. C. DATE	M. K. Q. C. INIT.	COMMENTS
		SECTOR 3 SECTION 1 TANGLEB TO SIGUL (STN 0 + 000 TO STN 14 + 200) FINAL INSPECTION DATE : OCT 6, 1992 - ALL ITEMS COMPLETED								
		SECTOR 3 SECTION 2 SIGUL TO MAASIM (STN 14 + 200 TO STN 35 + 765) FINAL INSPECTION DATE : DEC 11, 1992 - ALL ITEMS COMPLETED								
		SECTOR 3 SECTION 3A MAASIM TO LOMUYON (STN 35 + 765 TO STN 61 + 765) FINAL INSPECTION DATE : FEB 10, 1993 - ALL ITEMS COMPLETED								
		SECTOR 3 SECTION 3B LOMUYON TO MAITUM (STN 61 + 765 TO STN 68 + 034) FINAL INSPECTION DATE : MAR 30, 1993 - ALL ITEMS COMPLETED								
		SECTOR 7 (STN 0 + 000 TO STN 21 + 551.63) FINAL INSPECTION DATE : JULY 30, 1993 - ALL ITEMS COMPLETED								
		SECTOR 8 (STN 0 + 000 TO STN 29 + 267.17) FINAL INSPECTION DATE : JULY 30, 1993 - ALL ITEMS COMPLETED								
2073	A	[illegible] WATER PONDING BETWEEN [illegible]	MK MR	MK	07/03/93	08/03/93	MK DR	10/07/93	EC	CUTTING REQD.
2080	A	[illegible]	MK MR	MK MR	07/03/93	12/17/93	MK LR	12/17/93	PA	INSP. UNDER TO REQD

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FILENAME : B:\7CIP30JY

SOUTH COTABATO HIGHWAYS PROJECT
MORRISON KNUDSEN CORPORATION

FINAL PUNCHLIST OPEN ITEMS

INSPECTION DATE : JULY 30,1993
SECTOR 7 – STA. 0 + 000 – STA. 21 + 581.53.

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31-Jul-93

REC'D. NO.	LOCATION SECT.	LOCATION STA	DESCRIPTION	INSP.	RESP	DATE IN	SUPT. DATE	SUPT. INIT.	M. K. Q. C. DATE	M. K. Q. C. INIT.	COMMENTS
2113	7	0.000	SPOT WELD AND PAINT BOLTS FOR SIGN BOARDS	MK,MM	MK	07/30/93					FCM REQD.
2109	7	0.278	REMOVE LT SIDE WW FROM OUTLET END	MK,MM	MK	07/30/93					FCM REQD.
2110	7	1.050	ADD 4m ~ 610 SIDEDRAIN	MK,MM	MK	07/30/93					FCM REQD.
2107	7	2.400	PROVIDE YIELD SIGN BOARD	MK,MM	MK	07/30/93					FCM REQD.
2108	7	2.600	PROVIDE YIELD SIGN BOARD	MK,MM	MK	07/30/93					FCM REQD.
1939	7	10.900	SIGN MARKS R4-1(808) RT SIDE	MK-RT	MK-DR	07/03/93					NOT YET INSTALL
1808	7	11.802	RT SIDE PAVED SHLD. SLOPE DID NOT CONFORM THE PLAN REQUIREMENTS	RT/RA	MK-DR	06/16/93					TO BE DISCUSS
1809	7	11.830	RT SIDE PAVED SHLD. SLOPE DID NOT CONFORM THE PLAN REQUIREMENTS	RT/RA	MK-DR	06/16/93					TO BE DISCUSS

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SOUTH COTABATO HIGHWAYS PROJECT

MORRISON KNUDSEN CORPORATION

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FINAL PUNCHLIST

SECTOR 4

SECTIONS 1 AND 2 INSPECTION DATE : DEC.23,1993

SECTIONS 3 INSPECTION DATE : JAN.16,1994

05:08:39 AM
18-Jan-94

REC'D. NO.	LOCATION SECT./STA.		DESCRIPTION	INSP.	RESP.	DATE IN	SUPT. DATE	SUPT. INIT.	M. K. O. C. DATE	M. K. O. C. INIT.	COMMENTS
3004	4	3.250	COMPLETE WORK ON FCM NO 346	MK/MM	MK	01/18/94					
3003	4	4.325	CLEAN DITCH/GRADE SLOPES AT PIPE HEADWALLS TO BOX CULVERT	MK/MM	MK	01/18/94					
2639	4	13.540	STA. 13.540 – 15.269 COMPLETE PAVEMENT MARKINGS	RA/RT	MK-BM	12/13/93					
2990	4	13.615	REMOVE DEBRIS FROM RT-SIDE	MK/MM	MK	01/13/94	01/14/94	MK-BM			

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SOUTH C ABATO HIGHWAYS PROJECT
MORRISON KNUDSEN CORPORATION

FINAL PUNCHLIST
SECTOR 4

SECTIONS 1 AND 2 INSPECTION DATE : DEC.23,1993
SECTIONS 3 INSPECTION DATE : JAN.18,1994

03:15:27 PM
28-Jan-94

RECD. NO.	LOCATION SECT.	LOCATION STA.	DESCRIPTION	INSP.	RESP.	DATE IN	SUPT. DATE	SUPT. INIT.	M. K. O. C. DATE	M. K. O. C. INIT.	COMMENTS
3004	4	3.250	COMPLETE WORK ON FCM NO 348	MK/MM	MK	01/10/94	01/24/94	EL	01/24/94	EW	
3003	4	4.325	CLEAN DITCH/GRADE SLOPES AT PIPE HEADWALLS TO BOX CULVERT	MK/MM	MK	01/10/94	01/27/94	MK-BW	01/27/94	EW	
2639	4	13.540	STA. 13.540 – 15.269 COMPLETE PAVEMENT MARKINGS	RA/RT	MK-BM	12/13/93	01/24/94	MK-BW	01/24/94	EW	
2990	4	13.615	REMOVE DEBRIS FROM RT-SIDE	MK/MM	MK	01/13/94	01/14/94	MK-BM	01/27/94	EW	

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SOUTH COTABATO HIGHWAYS PROJECT
MORRISON KNUDSEN CORPORATION

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FINAL PUNCHLIST

SECTOR 4

SECTIONS 1 AND 2 INSPECTION DATE : DEC.20,1993

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RECD. NO.	LOCATION SECT.	LOCATION STA.	DESCRIPTION	INSP.	RESP.	DATE IN	SUP'T. DATE	SUP'T. INIT.	M. K. O. C. DATE	M. K. O. C. INIT.	COMMENTS
2704	4	0.000	BOLTS ON ROAD SIGNS SHOULD BE SPOT WELDED	MM/MK	MK-BM	12/16/93	12/16/93	MK-BM	12/18/93	RT	
2719	4	0.000	RESHAPE/TRIM AND COMPACT SIDE SLOPE AT LT SIDE	MM/MK	MK-BM	12/16/93	01/05/93	MK-BM	12/22/93	TG	
2720	4	0.000	PUT LIMESTONE AT DITCH HOLE AND SCOURED BACK SLOPE	MM/MK	MK-BM	12/16/93	12/22/93	MK-LR	12/22/93	TG	
2742	4	0.000	DRESS ALL INLET AREA OF CROSSDRAIN	NB/TG	MK-BM	12/20/93	01/06/93	MK-BM	01/05/93	RT	
2749	4	0.000	REMOVE OVERSIZED FROM RT SIDE SHOULDER	MM/MK	MK-BM	12/23/93					
2750	4	1.400	STA. 1.450 – 1.525 GRADE AREA AT DROP INLET	MM/MK	CHL	12/23/93	01/06/93	MK-BM	01/05/93	RT	
2735	4	1.460	FILL IN DITCH W/ LIMESTONE AT LT SIDE (10 METERS)	MK-LR	MK-BM	12/17/93	12/22/93	MK-LR	12/20/93	TG	
2740	4	1.460	SHAPE FILL MATERIALS	NB/TG	MK-BM	12/20/93	01/06/93	MK-BM	01/06/93	RT	
2612	4	1.646	CLEAN INLET/OUTLET EXISTING RCPC	RT/NB	MK-BM	12/09/93	01/06/93	MK-BM	01/06/93	RT	SEE FCM 337
2610	4	1.656	SIDE DRAIN HALF MORTAR INSIDE LT SIDE	RT/NB	CHL	12/09/93	12/17/93	CHL-RD	12/22/93	TG	
2703	4	1.656	GRADE CLEAN INLET SIDE DRAIN	MM/MK	MK-BM	12/23/93	01/06/93	MK-BM	01/06/93	RT	
2707	4	1.700	PROVIDE GABION CHECKDAM @ LT SIDE	MM/MK	CHL	12/16/93	12/22/93	MK-LR	12/23/93	ECW	SEE FCM 337 – ON GOING
2741	4	1.760	REPAIR HEAVILY SCOURED SHOULDER AT DAMAGE EXISTING RIPRAP RT SIDE	NB/TG	MK-BM	12/20/93	12/22/93	MK-LR	12/23/93	ECW	ON GOING
2761	4	1.766	REPAIR SHOULDER RT SIDE	MM/MK	MK-BM	12/23/93	01/06/93	MK-BM	01/05/93	RT	
2762	4	1.766	REMOVE HUMP FROM SHOULDER RT SIDE	MM/MK	MK-BM	12/23/93	01/06/93	MK-BM	01/06/93	RT	
2617	4	1.910	SIDE DRAIN SILTED, LT SIDE	RT/NB	MK-BM	12/09/93	01/05/93	MK-BM	12/22/93	TG	
2498	4	2.135	STA. 2 + 135 – STA. 2 + 173 NO TINE FINISH	MK-RT	MK-BM	11/13/93	12/22/93	MK-LR	12/22/93	PA	NO ACTION TAKEN
2619	4	2.150	SIX PIECES OF INSTALLED RCPC NOT CONFORMED W/ THE PLAN	MM-NB	CHL	07/07/93	12/17/93	CHL-RD	12/23/93	ECW	
2623	4	2.150	SIDE DRAIN SILTED, LT SIDE	RT/NB	MK-BM	12/09/93	01/04/93	MK-LR	12/18/93	RT	
2624	4	2.150	HALF MORTAR INSIDE, SIDE DRAIN, LT SIDE	RT/NB	CHL	12/09/93	01/04/93	MK-LR	12/18/93	RT	
2736	4	2.200	FILL IN DITCH W/ LIMESTONE ROCK AT LT SIDE (CHECKDAM)	MK-LR	MK-BM	12/17/93	12/20/93	MK-BM	12/20/93	TG	
2760	4	2.230	ADD LIMESTONE AT TO LT SIDE DRIVE	MM/MK	MK-BM	12/23/93	01/06/93	MK-BM	01/06/93	RT	
2743	4	2.240	NOT FILLED W/ LIMESTONE	NB/TG	MK-BM	12/20/93	01/05/93	MK-BM	01/05/93	RT	
2758	4	2.240	ADD FINES TO ROCK POCKET ON LT SIDE SHOULDER	MM/MK	MK-BM	12/23/93	01/06/93	MK-BM	01/06/93	RT	
2759	4	2.240	GRADE AREA AT DROP INLET	MM/MK	MK-BM	12/23/93	01/06/93	MK-BM	01/06/93	RT	
2751	4	2.400	CLEAN BEHIND MASONRY WALL AND DEBRIS FROM DITCH	MM/MK	CHL	12/23/93					
2752	4	2.400	ADD GROUTED RIPRAP CHUTE FROM SCUPPERS TO DITCH	MM/MK	CHL	12/23/93	01/06/93	CHL-RD	-		ON GOING
2738	4	2.410	FILL IN DITCH W/ LIMESTONE AT LT SIDE (5 METERS)	MK-LR	MK-BM	12/17/93	12/22/93	MK-BM	12/22/93	TG	
2628	4	2.412	RCPC SILTED	RT/NB	MK-BM	12/09/93	01/04/93	MK-LR	12/18/93	RT	
2714	4	2.412	PROVIDE STONE MASONRY GUARDRAIL AT RT SIDE	MM/MK	CHL	12/16/93	12/17/93	CHL-RD	01/06/93	RT	SEE FCM 3128 ON GOING 2.370 – 2.420
2737	4	2.510	FILL IN DITCH W/ LIMESTONE AT (15 METERS)	MK-LR	MK-BM	12/17/93	12/21/93	MK-LR	01/06/93	RT	
2716	4	2.546	PROVIDE GABION CHECKDAM @ RT SIDE	MM/MK	CHL	12/16/93	12/21/93	MK-LR	01/06/93	RT	SEE FCM 337

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MORRISON KNUDSEN CORPORATION

FINAL PUNCHLIST OPEN ITEMS

INSPECTION DATE : 30 JULY 1993
SECTOR 8 – STA. 0 + 000.00 – STA. 23 + 207.17

09:11:17 AM
31-Jul-93

REC'D. NO.	LOCATION SECT.	LOCATION STA.	DESCRIPTION	INSP.	RESP.	DATE IN	SUPT. DATE	SUPT. INIT.	M.K. DATE	Q.C. INIT.	COMMENTS
2100	8	0.000	SPOT WELD AND PAINT BOLTS FOR SIGN BOARDS	MK,MM	MK-DR	07/30/93					FCM REQ'D.
2111	8	0.000	24" CROSSDRAINS – MORTAR FULL JOINT INSIDE	MK,MM	CHL	07/30/93					
2112	8	0.000	24" SIDEDRAINS – MORTAR FULL JOINT INSIDE	MK,MM	CHL	07/30/93					
1824	8	16.801	36" DIA. RCPC MORTAR @ INSIDE PIPE HALF DIA. ONLY	MK,MM	CHL	07/26/93					
2101	8	18.050	WATER PONDING ON RT SIDE CANAL (OUTFALL NEEDED)	P.E.O.	P.E.O.	07/26/93					
1851	8	18.100	36"DIA RCP MORTAR INSIDE JT HALF DIA ONLY	MK,MM	CHL	07/26/93					
2079	8	18.100	ADD RIPRAP SLOPE PROTECTION FROM CROSS DRAIN OUTLET TO NORAL BRIDGE	MK,MM	MK	07/26/93					FCM REQUIRED
2080	8	18.100	PERFORM DRAINAGE DESIGN REVIEW FOR NORAL MARKET AREA.	MK,MM	MK-DR	07/26/93					FCM REQUIRED
2077	8	18.124	ADD DOWN CHUTE LEFT SIDE FIRST APPROACH OF NORALA BRIDGE	MK,MM	MK	07/26/93					FCM REQUIRED
2072	8	18.126	TACK WELD BOLTS AT NORALA BRIDGE	MK,MM	MK-DR	07/26/93					FCM REQUIRED
2076	8	18.132	ADD DOWN CHUTE RIGHT SIDE SECOND APPROACH OF NORALA BRIDGE	MK,MM	MK	07/26/93					FCM REQUIRED
2074	8	18.180	LOWER INVERT AND SIDEWALLS OF CATCH BASIN TO IMPROVE DRAINAGE	MK,MM	CHL	07/26/93					FCM REQUIRED
2073	8	18.230	WATER PONDING BETWEEN SIDE DRAINS STATION 18+217 TO 18+274	MK,MM	MK	07/26/93					COMPLETED
1873	8	19.078	IRRIG PIPE HW @ LT SIDE DAMAGED BY EQUIPT.	MK,MM	CHL	06/10/93					
1873	8	19.078	IRRIG PIPE HW @ LT SIDE DAMAGED BY EQUIPT.	MK,MM	CHL	06/24/93					
1874	8	19.078	END PIPE @ INLET DAMAGED BY EQUIPT.	MK,MM	CHL	06/24/93					
1875	8	19.476	FULL OF WATER NOT INSPECTED INSIDE	MK,MM	CHL	06/24/93					
1877	8	19.835	NOT INSPECTED DUE TO WATER	MK,MM	CHL	06/24/93					
1878	8	20.321	24" DIA. RCP CUT-OFF WALL @ INLET ALMOST EXPOSED. NOT INSPECTED DUE TO WATER.	MK,MM	CHL	06/24/93					
2070	8	20.481	ADD DRAINAGE CHUTE AT BOTH SIDES FIRST APPROACH OF LAPUZ BRIDGE	MK,MM	MK	07/26/93					FCM REQ'D.
2069	8	20.510	CRACKED PAVEMENT, SECOND APPROACH OF LAPUZ BRIDGE	MK,MM	MK-DR	07/26/93					FCM REQUIRED
2068	8	20.600	ADD 4M – 610 mm SIDE DRAIN WITH STRAIGHT HEADWALLS	MK,MM	MK	07/26/93					
1894	8	20.9-2	24" DIA. RCP NOT INSPECTED INSIDE DUE TO WATER. EXCAVATE OUTLET.	MK,MM	CHL	06/24/93					
1899	8	21.037	RCP 24" DIA. NOT INSPECTED DUE TO WATER	MK,MM	CHL	06/24/93					
1901	8	21.941	NOT INSPECTED DUE TO WATER	MK,MM	CHL	06/24/93					

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SOUTH COTABATO HIGHWAYS PROJECT
MORRISON KNUDSEN CORPORATION

FILENAME : B:FINJB

FINAL PUNCHLIST

INSPECTION DATE : 03 / 30 / 93
SECTOR 3 – SECTION 3B STATION 61 + 765.00 – STATION 83 + 577.76

BEST AVAILABLE DOCUMENT

05:14:44 PM
30-Mar-93

RECD. NO.	LOCATION SECT.	LOCATION STA.	DESCRIPTION	INSP.	RESP.	DATE IN	SUPT. DATE	SUPT. INIT.	O.C. DATE	O.C. INIT.	COMMENTS
1267	3	70.600	70.600-72.180 CENTERLINE L1 = 2.60 m, L2 = 4.60 m.	MM,MK	MK-BW	02/22/93	03/30/93	MK-PA	03/30/93	MK-EW	SEE LETTER MK/GSP-0267
1345	3	70.600	ROAD SIGN WELDED JOINT ON TUBULAR STEM NEED RUST PROOF COATING.	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	
1346	3	71.155	ROAD SIGN TUBULAR STEM NOT PLUMB.	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	
1347	3	71.275	ROAD SIGN CONCRETE PEDESTAL NEED ADECUATE ANCHORAGE TO GROUND AND COMPACTION.	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	
1268	3	71.375	72.250-72.094 REPAIR/REPAINT WHITE DASHED LINE WITH TIRE MARK.	MM,MK	MK-BW	02/22/93	03/05/93	MK-BW	03/10/93	MK-RP	
1348	3	71.820	CHANGE W1-5B(R) TO W1-3B(R) TO MATCH ROAD CURVE.	MM,MK	MK-BW	03/05/93	03/17/93	MK-BW	03/17/93	MK-RP	
1349	3	71.965	1ST AND 2ND APPROACH NUTS AND BOLTS NOT WELD.	MM,MK	MK-BW	03/05/93	03/15/93	MK-BW	03/16/93	MK-RP	
1269	3	72.180	72.180-72.700 CENTERLINE L1 = 2.70 m, L2 = 4.70 m.	MM,MK	MK-BW	02/22/93	03/30/93	MK-PA	03/30/93	MK-EW	SEE LETTER MK/GSP-0267
1350	3	72.180	ROAD SIGN TUBULAR STEM NOT PLUMB AT RIGHT SDE.	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	
1351	3	72.223	1ST APP. AT DATU DANI BRIDGE 2ND POST FLEX BEAM DO NOT FIT PROPERLY ON CONC. POST, BOLT AND NUT NOT	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	NUT NOT WELDED.
1499	3	72.250	ADD GABIONS TO 2ND APP. RT-SIDE DATU DANI BRIDGE.	MK-RP	HER-DR	03/30/93					FCM REQUIRED
1500	3	72.250	CLEAN UP/GRADE AREA AT GABION WORKS DATU DANI.	MK-RP	HER-DR	03/30/93					
1270	3	72.259	72.250-72.094 REPAIR/REPAINT WHITE DASHED LINE WITH TIRE MARK.	MM,MK	MK-BW	02/22/93	03/05/93	MK-BW	03/10/93	MK-RP	
1352	3	72.259	2ND APP. AT DATU DANI BRIDGE FLEX BEAM DO NOT FIT PROPERLY ON CONC. POST BOLTS AND NUT NOT WELD AT	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	NUT NOT WELDED.
1353	3	72.259	IMPROVE LONGITUDINAL ALIGNMENT OF GUARDRAIL.	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	
1415	3	72.259	TIE IN MASONRY WALL TO CONCRETE BRIDGE RAILING AT LEFT SIDE OF DATU DANI BRIDGE.	MM	HEER	03/08/93	03/25/93	HER-DR	03/30/93	MK-EW	
1287	3	72.304	DRESS SLOPE BEHIND MASONRY WALL.	MM,MK	HEER	03/05/93	03/23/93	HER-DR	03/23/93	MK-RP	TO BE COVERED BY FCM.
1355	3	72.304	RCBC – CLEAN OUTLET CHANNEL WHICH RESULTED FROM EMBANKMENT CONSTRUCTION.	MM,MK	MK-BW	03/05/93	03/22/93	MK-BW	03/22/93	MK-RP	
1356	3	72.594	RCPC – CLEAN OUTLET APRON OF EMBANKMENT MATERIALS.	MM,MK	MK-BW	03/05/93	03/19/93	MK-BW	03/19/93	MK-RP	
1357	3	72.815	ROAD SIGN TUBULAR STEM NOT PLUMB AT LEFT SDE.	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	
1289	3	73.906	REPAIR WINGWALL, INLET END.	MM,MK	HEER	03/05/93	03/23/93	HER-DR	03/23/93	MK-RP	
1359	3	73.906	EXISTING WARPED BROKEN CRACK NEED REPAIR AT RIGHT SIDE.	MM,MK	HEER	03/05/93	03/14/93	HER-DR	03/20/93	MK-RP	
1360	3	75.400	CHANGE W1-5B(R) TO W1-3B(L) TO MATCH ROAD CURVE AT RIGHT SDE.	MM,MK	MK-BW	03/05/93	03/17/93	MK-BW	03/18/93	MK-RP	
1361	3	75.759	RCPC – INLET PARTLY SILTED.	MM,MK	MK-BW	03/05/93	03/19/93	MK-BW	03/19/93	MK-RP	
1362	3	75.965	ROAD SIGN TUBULAR STEM NOT PLUMB. CHANGE W1-5B TO W1-3B TO MATCH ROAD CURVE.	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	SIGN NOT CHANGED.
1363	3	76.045	ROAD SIGN TUBULAR STEM NOT PLUMB AT LEFT SDE.	MM,MK	MK-BW	03/05/93	03/07/93	MK-BW	03/10/93	MK-RP	
1443	3	76.137	HAZARD MARKER T4-3 NOT INSTALL 3-B	MM,MK	MK-BW	03/09/93	03/22/93	MK-BW	03/22/93	MK-RP	
1290	3	76.532	REPAIR CONCRETE WORK, INLET HEADWALL.	MM,MK	MK-BW	03/05/93	03/22/93	MK-BW	03/22/93	MK-RP	
1291	3	76.532	CLEAR RCP.	MM,MK	MK-BW	03/05/93	03/22/93	MK-BW	03/22/93	MK-RP	
1361	3	76.532	RCPC – WINGWALL AT INLET NOT PROPERLY PLASTERED.	MM,MK	RISCO	03/05/93	03/06/93	RIB-MF	03/20/93	MK-RP	
1364		76.532	INLET APRON SILTED.	MM,MK	MK-BW	03/05/93	03/22/93	MK-BW	03/22/93	MK-RP	

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SOUTH COTABATO HIGHWAYS PROJECT
MORRISON KNUDSEN CORPORATION

FILENAME: DAFIN3D

BEST AVAILABLE DOCUMENT

FINAL PUNCHLIST

INSPECTION DATE : 03 / 30 / 93

SECTOR 3 - SECTION 3B STATION 61 + 765.00 - STATION 83 + 577.76

05:14:44 PM
30-Mar-93

REC'D. NO.	LOCATION SECT./STA.		DESCRIPTION	INSP.	RESP.	DATE IN	SUPT. DATE	SUPT. INIT.	Q.C. DATE	Q.C. INIT.	COMMENTS
1365	3	76.550	ROAD SIGN CONCRETE PEDESTAL REQUIRES MORE COMPACTION.	MM,MK	MK-BW	03/05/93	03/00/93	MK-BW	03/10/93	MK-RP	
1275	3	77.000	77.000-81.155 CENTERLINE L1 = 2.80 m.	MM,MK	MK-BW	02/22/93	03/30/93	MK-PA	03/30/93	MK-EW	SEE LETTER MK/GSP-0267
1366	3	77.335	CHANGE W1-5B(L) TO W1-3B(L) TO MATCH ROAD CURVE.	MM,MK	MK-BW	03/05/93	03/17/93	MK-BW	03/18/93	MK-RP	
1367	3	77.419	3RD POST FLEX BEAM DO NOT FIT PROPERLY TO POST AT RIGHT SIDE.	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	
1368	3	77.419	4TH POST FLEX BEAM DO NOT FIT PROPERLY TO POST AT LEFT SIDE. ALL BOLTS AND NUTS NOT WELD.	MM,MK	MK-BW	03/05/93	03/00/93	MK-BW	03/10/93	MK-RP	NUTS NOT WELDED.
1273	3	77.450	REPAIR COMPLETELY. YELLOW LINE OVER TAMBILIL BRIDGE.	MM,MK	MK-BW	02/22/93	03/05/93	MK-BW	03/10/93	MK-RP	
1369	3	77.515	2ND AND 5TH POST FLEX BEAM DO NOT FIT PROPERLY ON CONCRETE POST AT LEFT SIDE. ALL BOLTS AND NUTS N	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	NUTS NOT WELDED.
1271	3	77.550	77.550-78.029 REPAIR/REPAINT YELLOW LINE WITH TIRE MARK AND ASPHALT CONTAMINATED.	MM,MK	MK-BW	02/22/93	03/05/93	MK-BW	03/10/93	MK-RP	
1272	3	77.550	77.550-78.029 LEFT AND RIGHT HAVE NOTICEABLE MISALIGNMENT OF YELLOW LINE STRAIGTHEN WHEREVER NECE	MM,MK	MK-BW	02/22/93	03/05/93	MK-BW	03/10/93	MK-RP	
1447	3	77.647	HAZARD MARKER T4-3 NOT INSTALL 3-B	MM,MK	MK-BW	03/00/93	03/22/93	MK-BW	03/22/93	MK-RP	
1370	3	77.935	CHANGE W1-5B TO W1-3B AT LEFT SIDE.	MM,MK	MK-BW	03/05/93	03/17/93	MK-BW	03/18/93	MK-RP	
1371	3	77.994	2ND, 3RD, 4TH AND 5TH POST FLEX BEAM DO NOT PROPERLY FIT ON CONC. POST AT RIGHT SDE.	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	
1372	3	77.994	3RD AND 4TH POST FLEX BEAM DO NOT FIT PROPERLY ON CONCRETE POST AT LEFT SIDE. ALL BOLTS AND NUT NO	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	NUTS NOT WELDED.
1373	3	78.031	ALL BOLTS AND NUT NOT WELD AT BOTH SIDES.	MM,MK	MK-BW	03/05/93	03/15/93	MK-BW	03/16/93	MK-RP	
1374	3	78.785	ROAD SIGN TUBULAR STEM NOT PLUMB AT RIGHT SDE.	MM,MK	MK-BW	03/05/93	03/03/93	MK-BW	03/10/93	MK-RP	
1375	3	78.910	CHANGE W1-5B TO W1-3B TO MATCH ROAD CURVE. HEIGHT LESS THAN MINIMUM REQUIRED.	MM,MK	MK-BW	03/05/93	03/00/93	MK-BW	03/10/93	MK-RP	SIGN NOT CHANGED.
1376	3	79.078	4TH AND 5TH POST FLEX BEAM DO NOT FIT PROPERLY ON CONCRETE POST. ALL BOLTS AND NUTS NOT WELD.	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	NUTS NOT WELDED.
1377	3	79.600	CHANGW W1-5B TO W1-3B AT LEFT SIDE.	MM,MK	MK-BW	03/05/93	03/17/93	MK-BW	03/18/93	MX-RP	
1378	3	80.375	RCPC - PIPE HALF SILTED.	MM,MK	MK-BW	03/05/93	03/22/93	MK-BW	03/22/93	MK-RP	
1379	3	80.588	RCPC - INLET AND OUTLET SILTED.	MM,MK	MK-BW	03/05/93	03/22/93	MK-BW	03/22/93	MK-RP	
1292	3	80.766	COMPLETE CONSTRUCT WORK.	MM,MK	MK-BW	03/05/93	03/22/93	MK-BW	03/22/93	MK-RP	
1380	3	80.766	INLET AND OUTLET SILTED WITH SHOULDER MATERILAS.	MM,MK	MK-BW	03/05/93	03/22/93	MK-BW	03/22/93	MK-RP	
1381	3	80.900	ROAD SIGN TUBULAR STEM NOT PLUMB AT RIGHT SDE.	MM,MK	MK-BW	03/05/93	03/00/93	MK-BW	03/10/93	MK-RP	
1293	3	81.100	REMOVE DAMAGED SIDE DRAIN.	MM,MK	MK-BW	03/05/93	03/23/93	MK-BW	03/23/93	MK-RP	
1294	3	81.100	GRADE AREA ON LEFT SDE.	MM,MK	MK-BW	03/05/93	03/22/93	MK-BW	03/23/93	MK-RP	
1274	3	81.155	81.155 - 83.577 PAVEMENT MARKING ON EXISTING AND NEW PCCP NOT ACCOMPLISHED.	MM,MK	MK-BW	02/22/93	03/13/93	MK-BW	03/15/93	MK-RP	
1382	3	81.200	ROAD SIGN TUBULAR STEM NOT PLUMB AT LEFT SDE.	MM,MK	MK-BW	03/05/93	03/00/93	MK-BW	03/10/93	MK-RP	
1383	3	81.480	CHANGE W1-5B TO W1-3B TO MATCH ROAD CURVE. HEIGHT LESS THAN MINIMUM REQUIRED. G.I. POST LOOSE AT	MM,MK	MK-BW	03/05/93	03/00/93	MK-BW	03/10/93	MK-RP	SIGN NOT CHANGED.
972	3	81.595	REPAIR DAMAGED WARPED WINGWALL AT LEFT SIDE.	MM,MK	HEER	01/14/93	02/25/93	HER-DR	03/20/93	MK-RP	TO BE COVERED BY FCM.
1066	3	81.674	PORTLAND CEMENT CONCRETE PAVEMENT @ WEAKENED PLAIN JOINT @ 81+674 RIGHT LANE HUMP 10MM	MM,MK	CHL	01/15/93					WHEN GRINDER ARRIVES.
1067	3	81.683	PORTLAND CEMENT CONCRETE PAVEMENT @ WEAKENED PLAIN JOINT @ 81+683 RIGHT LANE HUMP 10MM	MM,MK	CHL	01/15/93					WHEN GRINDER ARRIVES.

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SOUTH COTABATO HIGHWAYS PROJECT
MORRISON KNUDSEN CORPORATION

FILENAME : DAFIN3B

FINAL PUNCHLIST

INSPECTION DATE : 03 / 30 / 93

SECTOR 3 – SECTION 3B STATION 61 + 765.00 – STATION 83 + 577.76

BEST AVAILABLE DOCUMENT

05:22:55 PM
30-Mar-93

RECD. NO.	LOCATION SECT.	LOCATION STA.	DESCRIPTION	INSP.	RESP.	DATE IN	SUPT. DATE	SUPT. INIT.	O.C. DATE	O.C. INIT.	COMMENTS
1273	3	61.765	ALL CROSSWALK PER SCHEDULE NOT YET ACCOMPLISH AT SECTION 3B.	MM,MK	MK-BW	03/05/93	03/13/93	MK-BW	03/15/93	MK-RP	
1410	3	61.765	ESTABLISH PERMANENT BENCHMARK AT EVERY 500 METERS.	MM,MK	MK-EW	03/08/93	03/30/93	MK-EW	03/30/93	MK-EW	
1411	3	61.765	ALL BOLTS ON GUARDRAIL POST TO BE SPOT WELDED.	MM,MK	MK-BW	03/08/93	03/15/93	MK-BW	03/15/93	MK-RP	
1412	3	61.765	RESTORE ALL MISPLACED KILOMETER POST.	MM,MK	MK-EW	03/08/93					IN PROGRESS.
1413	3	61.765	RECOMPACT SIGN BASES.	MM,MK	MK-BW	03/08/93	03/15/93	MK-BW	03/15/93	MK-RP	
1354	3	61.787	2ND POST FLEX BEAM DO NOT FIT PROPERLY ON CONCRETE POST.	MM,MK	MK-BW	03/05/93	03/11/93	MK-BW	03/11/93	MK-RP	
1299	3	61.790	LEFT SIDE GUARDRAIL BOLT NOT WELD.	MM,MK	MK-BW	03/05/93	03/15/93	MK-BW	03/16/93	MK-RP	
1312	3	61.800	GABIONS WORKS FOR SECTION 3B NOT COMPLETE.	MM,MK	HEER	03/05/93	03/23/93	HER-DR	03/30/93	MK-EW	
1313	3	61.800	SIDE DRAIN STRUCTURES FOR SECTION 3B NOT COMPLETE.	MM,MK	HEER	03/05/93	03/23/93	HER-DR	03/23/93	MK-RP	
1300	3	62.000	CHANGE FROM W1-5B(R) TO W1-3B(R) TO MATCH ROAD CURVE AT RIGHT SDE.	MM,MK	MK-BW	03/05/93	03/17/93	MK-BW	03/18/93	MK-RP	
1301	3	62.075	CHANGE FROM W1-5B(R) TO W1-3B(R) TO MATCH ROAD CURVE AT LEFT SIDE.	MM,MK	MK-BW	03/05/93	03/17/93	MK-BW	03/18/93	MK-RP	
1265	3	62.261	REMOVE CONCRETE SLOBBER FROM WINGWALL EXTENSION INLET END.	MM,MK	MK-BW	03/05/93	03/18/93	MK-BW	03/18/93	MK-RP	
1358	3	62.350	CLEAN/REMOVE AC MIX SPILLAGE OVER THE AC PAVEMENT.	MM,MK	MK-BW	03/05/93	03/05/93	MK-BW	03/10/93	MK-RP	
1302	3	62.450	CHANGE FROM W1-5B(R) TO W1-3B(R) TO MATCH ROAD CURVE AT LEFT SIDE.	MM,MK	MK-BW	03/05/93	03/17/93	MK-BW	03/18/93	MK-RP	
1303	3	62.510	ROAD SIGN TUBULAR STEM NOT VERTICALLY PLUMB.	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/11/93	MK-RP	
1395	3	62.600	LINED DITCH PER SCHEDULE UN-ACCOMPLISH FOR SECTION 3B.	MM,MK	HEER	03/05/93	03/30/93	MK-EW	03/30/93	MK-EW	
926	3	62.679	CONSTRUCT GABION MATTRESS AT DOWNSTREAM SDE. REFER TO DRAWING NO. D-33	MM,MK	HEER	01/14/93	03/05/93	HER-DR	03/20/93	MK-RP	
927	3	62.679	PROVIDE DEBRIS CATCHER AT RIGHT SIDE. REFER TO DRAWING NO. D-33	MM,MK	HEER	01/14/93	03/11/93	HER-DR	03/20/93	MK-RP	
1497	3	62.680	REPAIR WEIR AT LOMUYON SPILLWAY	MK-RP	HER-DR	03/20/93					CONSULT DESIGN
1304	3	64.065	LEFT AND RIGHT GUARDRAIL POST UNPLASTERED, BOLT AND NUT NOT WELD.	MM,MK	MK-BW	03/05/93	03/16/93	MK-BW	03/16/93	MK-RP	
1305	3	64.065	3RD POST AT RIGHT SDE FLEX BEAM DO NOT FIT PROPERLY ON CONCRETE POST.	MM,MK	MK-BW	03/05/93	03/10/93	MK-BW	03/11/93	MK-RP	
1306	3	64.300	ROAD SIGN TUBULAR STEM WELDED JOINT NEED RUST PROOFING COATING.	MM,MK	MK-BW	03/05/93	03/03/93	MK-BW	03/11/93	MK-RP	
1307	3	65.065	GUARDRAIL NUT AND BOLTS NOT WELD.	MM,MK	MK-BW	03/05/93	03/15/93	MK-BW	03/16/93	MK-RP	
1308	3	65.065	2 PANELS FLEX BEAM DO NOT FIT PROPERLY ON CONCRETE POST AT LEFT SDE MILL DEFFECT.	MM,MK	MK-BW	03/05/93	03/10/93	MK-BW	03/11/93	MK-RP	
1309	3	65.450	RIGHT SIDE ROAD SIGN TUBULAR STEM WELDED JOINTS NEED RUST PROOF COATING.	MM,MK	MK-BW	03/05/93	03/03/93	MK-BW	03/10/93	MK-RP	
1310	3	65.870	GUARDRAIL ON BRIDGE APPROACH NUT AND BOLT NOT WELD.	MM,MK	MK-BW	03/05/93	03/15/93	MK-BW	03/16/93	MK-RP	
[illegible]	[illegible]	[illegible]	[illegible] FLEX BEAM DO NOT FIT PROPERLY ON CONCRETE POST, MILL DEFFECT.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
1314	3	66.200	LEFT ROAD SIGN TUBULAR STEM NOT PLUMB AND WELDED JOINT NEED RUST PROOF COATING.	MM,MK	MK-BW	03/05/93	03/03/93	MK-BW	03/10/93	MK-RP	
1315	3	66.400	RIGHT ROAD SIGN TUBULAR STEM WELDED JOINT NEED RUST PROOF COATING.	MM,MK	MK-BW	03/05/93	03/03/93	MK-BW	03/10/93	MK-RP	
1223	3	66.600	66.600-67.200 REPAIR/REPAINT YELLOW AND WHITE LINE WITH TIRE MARK.	MM,MK	MK-BW	03/22/93	03/03/93	MK-BW	03/10/93	MK-RP	
1316	3	67.023	LEFT GUARDRAIL FLEX BEAM NOT PROPERLY SET AT FIRST POST (LOOSE)	MM,MK	MK-BW	03/05/93	03/03/93	MK-BW	03/10/93	MK-RP	
1317	3	67.028	SEVERAL FLEX BEAM DO NOT PROPERLY FIT ON POST AT RIGHT SIDE, MILL DEFFECT.	MM,MK	MK-BW	03/05/93	03/03/93	MK-BW	03/10/93	MK-RP	
1318	3	67.050	RIGHT ROAD SIGN WELDED JOINT ON TUBULAR STEM NEED RUST PROOF COATING.	MM,MK	MK-BW	03/05/93	03/03/93	MK-BW	03/10/93	MK-RP	

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FILENAME : B:FIN3B

SOUTH COTABATO HIGHWAYS PROJECT
MORRISON KNUDSEN CORPORATION

BEST AVAILABLE DOCUMENT

FINAL PUNCHLIST

INSPECTION DATE : 03 / 30 / 93

SECTOR 3 - SECTION 3B STATION 61 + 700.00 - STATION 82 + 677.70

05:14:44 PM
30-Mar-93

RECD. NO.	LOCATION SECT.	LOCATION STA.	DESCRIPTION	INSP.	RESP.	DATE IN	SUPT. DATE	SUPT. INIT.	Q.C. DATE	Q.C. INIT.	COMMENTS
1319	3	67.150	LEFT ROAD SIGN WELDED JOINT ON TUBULAR STEM NEED RUST PROOF COATING.	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	
1320	3	67.150	CHANGE W1-5B(R) TO W1-3B(R) TO MATCH ROAD CURVE AT LEFT SDE.	MM,MK	MK-BW	03/05/93	03/17/93	MK-BW	03/18/93	MK-RP	
1321	3	67.170	CHANGE W1-5B(R) TO W1-3B(L). CONCRETE PEDESTAL REQUIRE ADEQUATE COMPACTION.	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	POST ALREADY COMPACTED
1264	3	67.200	67.200-67.700 REPAIR/REPAINT YELLOW AND WHITE LINE WITH TIRE MARK.	MM,MK	MK-BW	02/22/93	03/05/93	MK-BW	03/10/93	MK-RP	
1323	3	67.200	67.200 - 67.700 SAND BLAST YELLOW LINE WHICH ARE OUT OF ALIGNMENT.	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	
1322	3	67.250	LEFT ROAD SIGN WELDED JOINT ON TUBULAR STEM NEED RUST PROOF COATING.	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	
1324	3	67.367	LEFT AND RIGHT GUARDRAIL BOLT AND NUT NOT WELD.	MM,MK	MK-BW	03/05/93	03/15/93	MK-BW	03/16/93	MK-RP	
1325	3	67.367	2 PANELS FLEX BEAM AT LEFT AND RIGHT DO NOT FIT PROPERLY ON CONCRETE POST.	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	
1326	3	67.780	CHANGE W1-5B(R) TO W1-3B(R) TO MATCH ROAD CURVE.	MM,MK	MK-BW	03/05/93	03/17/93	MK-BW	03/18/93	MK-RP	
1327	3	67.780	WELDED JOINT ON TUBULAR STEM NEED RUST PROOF COATING.	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	
1328	3	67.880	LT RD SIGN WELDED JT ON TUBULAR STEM NEED RUST PROOF COATING, BLANK OFF BACK OF SIGN BO.	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	
1329	3	68.069	LEFT GUARDRAIL POST NEED ADEQUATE COMPACTION, BOLTS AND NUTS NOT WELD.	MM,MK	MK-BW	03/05/93	03/16/93	MK-BW	03/16/93	MK-RP	
1330	3	68.550	BLANK OFF BACK OF SIGN BOARD.	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	
1265	3	68.800	68.800-68.950 MALIGANG BRIDGE REPAIR YELLOW LINE ACCORDINGLY.	MM,MK	MK-BW	02/22/93	03/05/93	MK-BW	03/09/93	MK-RP	
1331	3	68.872	GUARDRAIL BRIDGE APPROACH 1ST AND 2ND BOLT AND NUT NOT WELD.	MM,MK	MK-BW	03/05/93	03/15/93	MK-BW	03/16/93	MK-RP	
1332	3	68.920	1ST APPROACH NUT AND BOLT NOT WELD AT BOTH SIDES.	MM,MK	MK-BW	03/05/93	03/15/93	MK-BW	03/16/93	MK-RP	
1333	3	68.920	2ND APP. NUT AND BOLT NOT WELD. FLEX BEAM ON RT- SIDE DO NOT FIT PROPERLY ON CONC. POST. MILL DEFFE	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	FLEX BEAM CHANGED.
1200	3	69.018	INCREASE SIZE OF "V" NOTCH TO MATCH DITCH.	MK	RIBCO	02/15/93	03/04/93	RIB-MP	03/20/93	MK-EW	NOT YET DONE
1201	3	69.018	REMOVE REBAR FROM BASE	MK	RIBCO	02/15/93	03/04/93	RIB-MP	03/20/93	MK-RP	
1334	3	69.300	ROAD SIGN WELDED JOINT ON TUBULAR STEM NEED RUST PROOF COATING.	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	
1335	3	69.455	BLANK OFF BACK OF SIGN BOARD.	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	
1336	3	69.500	ROAD SIGN WELDED JOINT ON TUBULAR STEM NEED RUST PROOF COATING.	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	
1337	3	69.550	3RD POST LONG BOLTS AND NUT MISSING AT LEFT SDE.	MM,MK	MK-BW	03/05/93	03/15/93	MK-BW	03/16/93	MK-RP	
1338	3	69.550	BOLT AND NUT NOT WELD AT BOTH SIDES.	MM,MK	MK-BW	03/05/93	03/15/93	MK-BW	03/16/93	MK-RP	
1339	3	69.550	2ND POST HEAD BROKEN, NEED PLASTERING AT LEFT SIDE.	MM,MK	MK-BW	03/05/93	03/15/93	MK-BW	03/16/93	MK-RP	
1205	3	69.700	69.700-70.400 REPAIR/REPAINT YELLOW AND WHITE LINE WITH TIRE MARK ACCORDINGLY.	MM,MK	MK-BW	02/22/93	03/05/93	MK-BW	03/10/93	MK-RP	
1340	3	69.725	CHANGE W1-5B(R) TO W1-3B(R) TO MATCH ROAD CURVE AT RIGHT SDE.	MM,MK	MK-BW	03/05/93	03/17/93	MK-BW	03/18/93	MK-RP	
1498	3	69.750	RAISE GRADE/REWORK DRAINAGE AT PRAWN FARM DR.	MK-RP	MK-BW	03/30/93					FCM REQUIRED
1341	3	69.896	FLEX BEAM DO NOT FIT PROPERLY ON 3RD CONCRETE POST, MILL DEFFECT AT RIGHT SIDE.	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	
1342	3	69.896	NUT AND BOLT NOT WELD AT BOTH SIDES.	MM,MK	MK-BW	03/05/93	03/15/93	MK-BW	03/16/93	MK-RP	
1414	3	69.896	WINGWALL FOOTING TO BE REPAIRED AT LEFT SDE.	MM.	HEER	03/08/93	03/25/93	HEER	03/30/93	MK-EW	
1343	3	70.360	ROAD SIGNS WELDED JOINT ON TUBULAR STEM NEED RUST PROOF COATING AT LEFT SIDE.	MM,MK	MK-BW	03/05/93	03/09/93	MK-BW	03/10/93	MK-RP	
1344		70.460	CHANGE W1-5B(L) TO W1-3B(L) TO MATCH ROAD CURVE AT LEFT SIDE.	MM,MK	MK-BW	03/05/93	03/17/93	MK-BW	03/18/93	MK-RP	

SOUTH COTABATO HIGHWAYS PROJECT
MORRISON KNUDSEN CORPORATION

FILENAME : B:\3FP2:AT.WK1

FINAL PUNCHLIST OPEN ITEMS

07:40:44 AM
21-Aug-9

REC'D. NO.	LOCATION SECT.	LOCATION STA	DESCRIPTION	INSP.	RESP.	DATE IN	SUPT. DATE	SUPT. INIT.	M. K. Q. C. DATE	M. K. Q. C. INIT.	COMMENTS
			SECTOR 3 SECTION 1 TAMBLER TO SIGUIL (STN 0 + 000 TO STN 14 + 200) FINAL INSPECTION DATE : OCT. 8, 1992								
1417	3	0.000	REPAIR STRIPING WITH GLASS BEADED PAINT	MK-PA	MK-BW	03/17/93					END OF PROJECT
1502	3	0.000	REMOVE NON-SPEC PAINT FROM GUARD RAIL	MM-CK	MK-BW	03/31/93					
			SECTOR 3 SECTION 2 SIGUIL TO MAASIM (STN 14 + 200 TO STN 35 + 703) FINAL INSPECTION DATE : DEC. 11, 1992 – ALL ITEMS COMPLETED								
			SECTOR 3 SECTION 3A MAASIM TO LOMUYON (STN 35 + 703 TO STN 61 + 765) FINAL INSPECTION DATE : FEB. 16, 1993 – ALL ITEMS COMPLETED								
			SECTOR 3 SECTION 3B & 4 LOMUYON TO MAITUM (STN 61 + 765 TO STN 98 + 934) FINAL INSPECTION DATE : MAR. 30, 1993								
1497	3	62.880	REPAIR WER AT LOMUYON SPILLWAY	MK-RP	HER-DR	03/30/93					PLACE BOULDERS TO RECHANNEL WATERWAY
1066	3	81.674	PORTLAND CEMENT CONCRETE PAVEMENT @ WEAKENED PLAIN JOINT @ 81+674 RIGHT LANE HUMP 10MM	MM,MK	CHL	01/15/93	07/29/93	MK-BW			WHEN GRINDER ARRIVES.
1067	3	81.683	PORTLAND CEMENT CONCRETE PAVEMENT @ WEAKENED PLAIN JOINT @ 81+683 RIGHT LANE HUMP 15MM	MM,MK	CHL	01/15/93	07/29/93	MK-BW			WHEN GRINDER ARRIVES.
1068	3	81.644	PORTLAND CEMENT CONCRETE PAVEMENT @ WEAKENED PLAIN JOINT @ 81+644 RIGHT LANE HUMP 10MM	MM,MK	CHL	01/15/93	07/29/93	MK-BW			WHEN GRINDER ARRIVES.
1069	3	81.653	PORTLAND CEMENT CONCRETE PAVEMENT @ WEAKENED PLAIN JOINT @ 81+653 LEFT LANE HUMP 12MM	MM,MK	CHL	01/15/93	07/29/93	MK-BW			WHEN GRINDER ARRIVES.
1070	3	81.943	PORTLAND CEMENT CONCRETE PAVEMENT @ WEAKENED PLAIN JOINT @ 81+943.5 LEFT LANE HUMP 15MM	MM,MK	CHL	01/15/93	07/29/93	MK-BW			WHEN GRINDER ARRIVES.
1071	3	81.961	PORTLAND CEMENT CONCRETE PAVEMENT @ WEAKENED PLAIN JOINT @ 81+961.5 RIGHT LANE HUMP 20MM	MM,MK	CHL	01/15/93	07/29/93	MK-BW			WHEN GRINDER ARRIVES.
1072	3	82.019	PORTLAND CEMENT CONCRETE PAVEMENT @ WEAKENED PLAIN JOINT @ 82+019.5 RIGHT LANE HUMP 15MM	MM,MK	CHL	01/15/93	07/29/93	MK-BW			WHEN GRINDER ARRIVES.
1073	3	82.230	PORTLAND CEMENT CONCRETE PAVEMENT @ WEAKENED PLAIN JOINT @ 82+230 RIGHT LANE HUMP 15MM	MM,MK	CHL	01/15/93	07/29/93	MK-BW			WHEN GRINDER ARRIVES.

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MORRISON KNUDSEN CORPORATION

FINAL PUNCHLIST

INSPECTION DATE : 02 / 16 /93

SECTION 3 – SECTION 3A STATION 35+703.00 – STATION 61+765.00

00:47:18 A
22-Feb-

RECT. NO.	LOCATION SECT.	LOCATION STA.	DESCRIPTION	INSP.	RESP.	DATE IN	SUPT. DATE	SUPT. INIT.	Q.C. DATE	Q.C. INIT.	COMMENTS
691	3	35.703	ALL ALIGNMENT SERIES (W1 SERIES) ON WARNING SIGNS CAN BE EASILY REMOVE FROM THE METAL SHEET.	MM,MK	MK-BW	12/14/92					
1221	3	36.495	GRADE/CLEAN UP NEW PCCP	MM,MK	CHL	02/16/93					
1026	3	37.545	R3-16A SIGN REQUIRES COMPACTION	MM,MK	MK-BW	02/10/93					
1202	3	37.693	1 POST NEED RUST PROTECTION ON WELDED JOINT.	MM,MK	MK-BW	02/16/93					
1203	3	38.060	2 POST NEED RUST PROTECTION ON WELDED JOINT.	MM,MK	MK-BW	02/16/93					
913	3	38.244	ONE POST AT LEFT SIDE NOT PLUMB.	MM	MK-BW	01/06/93					
752	3	39.160	W5-1B RELOCATE TO STA.(+) 39+230, LEFT SIDE. SIGNS SHALL NOT BE PLACED ON SIDE SLOPE OF HIGH EMBANKMENT.	MM,MK	MK-BW	12/10/92					
1204	3	39.450	3RD POST AT LEFT SIDE NUT MISSING.	MM,MK	MK-BW	02/16/93					
1222	3	39.450	POST LOOSE. GRADE AROUND POST.	MM,MK	MK-BW	02/16/93					
1223	3	39.512	GRADE SHOULDER AT TRENCH AND COMPACT.	MM,MK	HEER	02/16/93					
681	3	40.625	W5-7B POOR LETTERING THE WORD "FLOOD". CANNOT BE READ 100 m. AWAY. RIGHT SIDE.	MM,MK	MK-BW	12/14/92					
692	3	40.785	GUIDE POST NOT YET INSTALLED ACCORDING TO PLAN.	MM,MK	MK-BW	12/10/92					
761	3	41.140	W5-7B POST SHOULD EMBEDDED PROPERLY AT LEFT SIDE. POOR LETTERING THE WORD "FLOOD".	MM,MK	MK-BW	12/10/92					
1205	3	42.000	YELLOW LINE SPLATTED REWORK ACCORDINGLY.	MM,MK	MK-BW	02/16/93					
1224	3	42.050	SAND BLAST YELLOW LINE AT CROSSWALK	MM,MK	MK-BW	02/16/93					
912	3	42.515	PROVDE R3-16A AT RIGHT SIDE	MM,MK	MK-BW	12/29/92					
1206	3	42.775	42.775 – 42.800 SAND BLAST/ERASE EXCESS WIDTH OF YELLOW LINE RESULTED FROM REPAIR OF ALIGNMENT. RT-SIDE.	MM,MK	MK-BW	02/16/93					
688	3	42.960	(PI – 122) PROVDE YELLOW BARRIER LINE. (42+750 – 43+000 RIGHT SIDE) AND (42+960 – 43+210 LEFT SIDE)	MM,MK	MK-BW	12/14/92					
1207	3	43.060	43.060 – 43.210 EXTENSION OF YELLOW LINE NOT ACCOMPLISH, LEFT SIDE.	MM,MK	MK-BW	02/16/93					
913	3	43.445	PROVDE R3-16A AT LEFT SIDE.	MM,MK	MK-BW	12/29/92					
688	3	46.459	RCPC 910 mm – CLEAN OUTLET CHANNEL AND PIPE.	MM,MK	MK-JS	12/10/92					
1225	3	46.459	CLEAN WASTE FROM FCM WORK	MM,MK	HEER	02/16/93					
689	3	46.636	RCBC – CLEAN INLET AND OUTLET	MM,MK	MK-JS	12/10/92					
1131	3	46.636	METAL GUARDRAIL – SHOULDER MATERIALS OVERFILLED OR HEIGHT OF RAIL WRONG.	MM,MK	MK-BW	02/10/93					
778	3	47.050	W1-3B(R) POOR SIGHT DISTANCE. OBSTRUCTION AHEAD AT LEFT SIDE. POST SHOULD EMBEDDED PROPERLY.	MM,MK	MK-BW	12/10/92					
690	3	47.150	RCBC – CLEAN EXISTING BARREL	MM,MK	MK-JS	12/10/92					
1134	3	47.671	METAL GUARDRAIL – FIRST APPROACH 2ND POST AROUND BOLT NOT PLASTERED	MM,MK	MK-BW	02/10/93					
1226	3	48.160	REMOVE AND REPLACE SIDE DRAIN.	MM,MK	MK	02/16/93					TO BE COVERED BY FCM.
695	3	48.773	RESHAPE SHOULDER.	MM,MK	MK-JS	12/10/92					
783	3	48.910	R3-16A TO BE RELOCATED NEAR THE SAME PLACE. LOCATION WAS PLACED IN THE SIDE SLOPE OF HIGH EMBANKMENT. RT-SI	MM,MK	MK-BW	12/10/92					
764	3	49.020	W1-3B(L) POST SHOULD EMBEDDED PROPERLY AT LEFT SIDE. RECOMPACT SIGN BASE.	MM,MK	MK-BW	12/10/92					
1080	3	49.020	W1-3B(L) G.L POST LOOSE	MM,MK	MK-BW	02/10/93					
700	3	50.081	ADD GROUTED RPRAP SLOPE PROTECTION AT LEFT SIDE. BOTH SIDES OF BOX.	MM,MK	HEER	12/10/92					
1145	3	50.081	METAL GUARDRAIL – 11TH POST REQUIRES COMPACTION.	MM,MK	MK-BW	02/10/93					
702	3	50.300	CLEAN WASTE FROM FCM WORK.	MM,MK	HEER	02/21/93					
1147	3	50.404	METAL GUARDRAIL – RUSTY WASHER ON BOLTS AT 3RD POST. RT-SIDE.	MM,MK	MK-BW	02/10/93					

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DAILY INSPECTOR'S REPORT

DAILY CONSTRUCTION DIARY

Morrison Maierle/CSSA

Project Name: SOUTH COTABATO ROAD Project No 4920420 Page 1 of

By: (RPR) RMA Chk: (Proj Engr) Date: 042393

WEATHER

A. Temperature

Previous Overnight: 23°C
7:00a.m. to Noon: 25-32°C
Noon to 6:00p.m.: 22-23°C

Condition

Previous Overnight: FAIR
7:00a.m. to Noon: SUNNY
Noon to 6:00p.m.: SUNNY

Weather delay day requested: Yes ____ No ____
Weather delay day granted: Yes ____ No ____
If not, why: ____

B. Effect on Construction: WORKABLE

CONTRACTOR OPERATION

Name of Contractor: NDKC Shift Time: 7:00AM - 4:00PM
Work Location/Station: SECTOR 2, 7 and 8
Contract Time: Day ____ of ____ (Calendar/Work) Days Day of Week: FRIDAY

A. Construction Activity

General Contractor:

DETAIL CONSTRUCTION ACTIVITY FOR SECTOR 2, 7 and 8 SEE AT LAST PAGE

Subcontractor(s) :

B. Manpower

(No.Men/Manhours)	Supt:	Foreman	Operators	Skill.Labor	Unskill.Labor	Other	Other
Crew #1	/	/	/	/	/	/	/
	/	/	/	/	/	/	/
Crew #2	/	/	/	/	/	/	/
	/	/	/	/	/	/	/
Subcontr #1	/	/	/	/	/	/	/
	/	/	/	/	/	/	/
Subcontr #2	/	/	/	/	/	/	/
	/	/	/	/	/	/	/

Comments: SAME AS REPORTED PREVIOUSLY

C. Equipment: Utility Contract or Surface Contract (circle one): (circle equipment that is applicable)

Utility Contract:

Type/Oper/Idle /Hrs./Hrs.	Primary Backhoe	Support Backhoe	Compactors	Trucks	Front End Loader	Pumps	____	____	____

Surface Contract:

Type/Oper/Idle /Hrs./Hrs.	Scrapers	Dozers	Compactors	Trucks	Front End Loader	Grader	Paver	____	____
Crew #1	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /
	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /
Crew #2	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /
	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /
Subcontr #1	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /
	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /
Subcontr #2	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /
	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /

Comments: SAME AS REPORTED PREVIOUSLY

Breakdowns:

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ENGINEERING ACTIVITIES

A. Construction Staking

Activity #1: 21+000 - 20+000 BC BLUETOP Crew: MK
Activity #2: 13+000 - 14+000 BC BLUETOP Crew: MK
Activity #3: Crew:
Activity #4: Crew:

B. Construction Testing

Activity #1: FDT 2ND LIFT BC FINAL Location: 21+000 - 21+581
Activity #2: Location:
Activity #3: Location:
Activity #4: Location:

C. Soil Description

Station/Location	Silt	Clay	Sand	Loam	Gravel	Cobble	Rock	Other Comments

D. Groundwater

Station/Location	Present	Not Present	Depth to GW	Dewatering	Other Comments

E. Traffic Control

Station/Location	Per Plan	Not per Plan	Time Corrected	Other Comments

F. Delays

Station/Location	Time Start	Time End	Reasons For Delay

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G. General Construction Observations

Station/Location	Time	Observation
SECTOR 7		COMPACTION TEST ON BASE COURSE PASSED PER MK/GEO TEST AND RECORD. PRIME WILL PROCEED.
SECTOR 8		LAYING OF 2ND LIFT BASE COURSE PROCEEDED STARTING FROM 23+087 GOING DOWN. FDT COMPLETE BY MK/GEO AND RESULT SATISFACTORY ACCORDING ~~BY~~ TO BY THE ~~MK~~ MK INSPECTOR
SECTOR 2		SUB-CON. (ABOUT) (TO) START ON DRAINAGE STRUCTURE 14+336 AND ALSO ON GROUTED RIP-RAP, GABION @ 1ST ~~ABO~~ APPROACH OF MOLO BRIDGE.

Morrison Maierle/CSSA

H. Interactions with Contractor

Items Discussed	Time	Verbal	Written	Phone	Initiated By	Received By
MK INSPECTOR INFORM THAT FDT ON BC PASSED WITH A CONTROL OF 129.1 PCF	0/4/81	-	2/4000	S-7		

I. Interactions with Owner/Public/Proj.Engineer

Items Discussed	Time	Verbal	Written	Phone	Initiated By	Received By

J. Other Comments: (Visitors/Punchlist/Photography/Revisions/Delays/Etc.)

1.
2.
3.
4.

K. Attachments

Item	Attached	Item	Attached
1. Special Meetings		6. Photography	
2. Accidents		7.	
3. Force Acct. Work		8.	
4. Test Results		9.	
5. Equipment Inspection		10.	

RAMON M. ASUERO / INSPECTOR / 042393

Signature (MM/CSSA Representative) Title Date

Contractor Review

I have reviewed this construction diary consisting of ____ pages on the date so indicated and I agree with the information and interpretations contained therein, except as otherwise noted in writing as follows:

Signature (Contractor's Representative) / Date

BEST AVAILABLE DOCUMENT

BEST AVAILABLE DOCUMENT

DAILY CONSTRUCTION DIARY

Attachment _____

Project Name: SOUTH COTABATO ROAD Project No. 970420 Page ___ of ___

By: (RPR) RMA Chk: (Proj Engr) _____ Date 042393

SECTOR 2

PIPE INSTALLATION ACCOMPLISH FOR SIDE DRAIN AT STA 8+450 RIGHT (RELOCATED), 9+060 RIGHT (RELOCATED), 9+237.06 B/C (RELOCATED). EXCAVATED PIPES WERE USED: 6 PCS, 4 PCS, 6 PCS, 6 PCS RESPECTIVELY.

AT STA 10+556 EXISTING LINE OF 610 RCPC SIDE DRAIN WAS PROVIDED WITH HEADWALL.

CLEANING AND GRUBBING GOING ON ALONG STA 13+700 AND 14+625. TWO UNIT OF GRADER ASSIGN TO THE JOB.

FROM TUYAN BRIDGE 2ND APPROACH TO 16+100 EXISTING GROUND IS BEING CLEANING AND GRUBBING ON PROGRESS. COCO TRUNK AND OTHER VEGETATIVE MATERIAL ARE STOCKPILE AND LOADED OFF THE WORKING AREAS. ONE WEEK COMPACTOR ROLLING THE ORIGINAL GROUND. MK INSPECTOR WILL CONDUCT TEST AS SOON AS PREPARATION IS COMPLETE. FILLING FOR EMBANKMENT FORMATION TODAY.

SUB-CONTRACTOR HEENCO ~~[illegible]~~ START TO EXCAVATE THE ~~THE~~ EXISTING RCPC DRAINAGE STRUCTURE AT STA 14+738 ~~AND~~ TO REMOVE AND REPLACE.

SECTOR 1

PRELIMINARY GRADING AND COMPACTION OF BASE COURSE ON PROGRESS BETWEEN STA 14+500 AND 13+800.

A GROUP OF SCHWEY CREW PLACING BLUE TOP AND CONTINUE ALONG STA 13+ AND STA 14.

HAULING, DUMPING, GRADING AND COMPACTION OF SHOULDERING MATERIALS ON PROGRESS BETWEEN STA 17+900 - 18+700

DRESSING AND COMPACTION OF SHOULDER BETWEEN STA 18+700 AND 19+300. WORK OBSERVE TO BE GOOD.

FINAL GRADING AND COMPACTION OF BASE COURSE GOING ON BETWEEN STA 21+000 - 20+700

LOAD/UNLOAD ~~ZONE~~ BASE COURSE COMPACTION and grading accomplish @ 21+100 L/S, 21+160 R/S.

FINAL GRADING, BLUETOPPING AND COMPACTION ACCOMPLISHED @ STA 21+581 - 21+000. TURN OUT @ 21+329 R, 21+539 R LEADING TO T'BOLI MUNICIPAL ROAD. PRIME COAT IS SCHEDULE AFTER LUNCH.

ACCOMPANY AND MK INSPECTOR AND THEIR RECORD TEST PASSED ON 2ND LIFT 21+550 - 21+045.

(MORE AT THE BACK)

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SECTOR 8

HAULING, LAYING AND PARTIAL COMPACTION OF 2ND LIFT BASE COURSE START TODAY FROM STA 23+087 TOWARDS STA ~~24+~~ 21+800. LAYING WIDTH IS ABOUT 4 METER PER STRIP.

COMPACTION AND WATERING OF LAID 1ST LIFT BASE COURSE GOING ON BETWEEN STA 20+485 AND 18+40. ONE WATER TRUCK and ONE COMPACTOR CONTINUOUSLY DO THE JOB.

LAYING 1ST LIFT BASE ACCOMPLISHED BETWEEN STA 18+025-17+535 FULL WIDTH

SUB-GRADE PREPARATION ON PROGRESS STARTING FROM 13+276 TO 16+300 (START OF PROJECT). SOFT SPOT FOUND WERE BEING FIX BY SCARIFYING AND COMPACTION AND AT THE VICINTY OF STA 16+900 CRUSHED BASE MATERIALS WERE FILLED ON UNSTABLE AREAS.

PRIME COAT

APPLICATION OF BITUMINOUS PRIME COAT MC-70 ACCOMPLISH BETWEEN STA 21+581 - 21+000, ROAD TURN OUT TO CONNECT TO EXISTING PCCP @ STA 21+539 and 21+389, LOAD/UNLOAD ZONE @ 21+100 L/S and 21+165 R/S.

I WAS NOT ABLE TO GET THE RATE OF APPLICATION TO MY INSPECTOR since I was not around @ the time of application I called have it ~~by~~ tommorrow

ONE HOUR HAD PASSED WHEN SAND BLOTTERING WAS SPREAD OVER ON the right side and Application of prime coat proceeded at the left side.

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DAILY CONSTRUCTION DIARY

Morrison Maierle / CSSA

Project Name: South Catabato Development Project Project No. 1427-06-01-91 Page 1 of 3

By: (RPR) NCB Chk: (Proj Engr) CWK Date: 17 Aug, 93

WEATHER

A. Temperature

Previous Overnight: ____

7:00a.m.to Noon: 37°C

Noon to 6:00p.m.: 36°C

Condition

Previous Overnight: ____

7:00a.m.to Noon: cloudy

Noon to 6:00p.m.: Rain at ~~SECTOR~~ 4

Weather delay day requested: Yes____ No____

Weather delay day granted: Yes____ No____

B. Effect on Construction: ____

CONTRACTOR OPERATION

Name of Contractor: MKC Shift Time: 7:00 - 4:00

Work Location/Station: SECTOR - 2, 4

Contract Time: Day ____ of ____ (Calendar/Work) Days Day of Week: TUESDAY

A. Construction Activity

General Contractor:

at the back page

Subcontractor(s) :

B. Manpower

(No.Men/Manhours)	Supt.	Foreman	Operators	Skill.Labor	Unskill.Labor	Other	Other
SECTION-2 Crew #1	/	4 / 32	/	16 / 128	16 / 384	/	/
	/	/	/	/	/	/	/
Crew #2	/	/	/	/	/	/	/
	/	/	/	/	/	/	/
Subcontr #1	/	/	/	/	/	/	/
SECTION-4	/	1 / 8	/	4 / 32	14 / 112	/	/
Subcontr #2	/	/	/	/	/	/	/
	/	/	/	/	/	/	/

Comments:

C. Equipment: Utility Contract or Surface Contract (circle one): (circle equipment that is applicable)

Utility Contract:

Type/Oper/Idle /Hrs./Hrs.	Primary Backhoe	Support Backhoe	Compactors	Trucks	Front End Loader	Pumps	____	____	____

Surface Contract:

Type/Oper/Idle /Hrs./Hrs.	Scrapers	Dozers	Compactors (Plate)	Trucks	Front End Loader	~~Grader~~ one bagger / mixer	Paver	Concrete vibrator	____
Crew #1	/ /	/ /	3 / 8	/ / 8	/ /	/ / 8	/ /	/ / 8	/ /
	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /
Crew #2	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /
	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /
Subcontr #1	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /
	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /
Subcontr #2	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /
	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /

Comments:

Breakdowns: Two backhoes of Heerco was under repair

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ENGINEERING ACTIVITIES

A. Construction Staking

Activity #1: _____ Crew: _____
Activity #2: _____ Crew: _____
Activity #3: _____ Crew: _____
Activity #4: _____ Crew: _____

B. Construction Testing

Activity #1: FDT (Backfilling) sector-2 Location: 29+930 R/S.
Activity #2: _____ Location: _____
Activity #3: _____ Location: _____
Activity #4: _____ Location: _____

C. Soil Description

Station/Location	Silt	Clay	Sand	Loam	Gravel	Cobble	Rock	Other Comments

D. Groundwater

Station/Location	Present	Not Present	Depth to GW	Dewatering	Other Comments

E. Traffic Control

Station/Location	Per Plan	Not per Plan	Time Corrected	Other Comments

F. Delays

Station/Location	Time Start	Time End	Reasons For Delay

G. General Construction Observations

Station/Location	Time	Observation
		I observed that the activities on
		minor structures was again slowed
		down due to all their backhoe's was
		breakdown out of order.

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Morrison/CSSA
Maierle

H. Interactions with Contractor

Items Discussed	Time	Verbal	Written	Phone	Initiated By	Received By

I. Interactions with Owner/Public/Proj.Engineer

Items Discussed	Time	Verbal	Written	Phone	Initiated By	Received By

J. Other Comments: (Visitors/Punchlist/Photography/Revisions/Delays/Etc.)

1. _____
2. _____
3. _____
4. _____

K. Attachments

Item	Attached	Item	Attached
1. Special Meetings		6. Photography	
2. Accidents		7.	
3. Force Acct. Work		8.	
4. Test Results		9.	
5. Equipment Inspection		10.	

Norberto C. Bonjoc, Inspector, 17 Aug. '93

Signature (MM/CSSA Representative) Title Date

Contractor Review

I have reviewed this construction diary consisting of ____ pages on the date so indicated and I agree with the information and interpretations contained therein, except as otherwise noted in writing as follows:

_____

Signature (Contractor's Representative) Date

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DAILY QUANTITY LOG

Bid Item	Bid Quantity	Description	Today's Quantity	Comments
		SECTION-V		
		(1) yesterday's casting at Panangalan casting site,		
		910 mm ϕ RCPC	8 pcs	Geo-Analytic
		610 mm ϕ RCPC	4 pcs	takes sets of
				cylinder sample
		(2) 29+375 right end		
		concrete	1.55 m^3	Geo-Analytic
		RCPC	4 1.06 kg	take sets of
				cylinder sample

DAILY PHOTO LOG

Roll #	Photo #	Picture Description	Taken By	Comments

c:\ws5\forms/const4.rpt

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DAILY CONSTRUCTION DIARY

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Attachment _____

Project Name: South Catabito Development Project Project No. 1427-06-01-91 Page 3 of 3

By: (SPR) NCB Chk: (Proj Engr) CWK Date: 17 Aug. 93

SECTOR - 7

(1) Backfilling and compaction at the newly constructed headwalls at both end of RCPC side drain of right side of STA 6+357

(2) Continue their casting ~~activities~~ of RCPC at Panang-gaton casting site

(3) Excavation work at right end headwall of STA 22+304

(4) Backfilling and compaction work at the newly installed RCPC at right lane of STA 29+930

(5) Form stripping on the newly poured headwall at right end of STA 29+325

(6) Excavation still on progress at the proposed R.C. BOX culvert of STA 34+178

(7) Poured yesterday afternoon the wingwall/headwall of right end of STA 29+325

SECTOR - 6

(1) Continue their piling of boulders for the grouted riprap lined ditch ~~at~~ right side of STA 3+450 - STA 3+475

Note:

(1) Bernie and Jess informed me this morning ~~that~~ the result of the testing conducted by the Geo-Analytic Manila, that the yield point and tensile strength of delivered 10 mmØ Reinforced steel bars ~~that~~ failed to meet specification requirement. I immediately informed subcontractor's representative regarding this matter and told Bernie and Jess, if that is the case all casted RCPC at Panangaton casting site will be rejected for the RSB used was within that delivery.

(2) The subcontractor of R.C. box culvert station 34+178 talked to me this morning regarding the unsuitable material at the above mentioned station. I told them that your excavation was not yet on the required elevation. If found to be really unsuitable then don't hesitate to removed the said material for we are also after of the firmness of the foundation.

at the back please

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(3) Talked to the CQC of Heerco to hold, R.C. pipe culvert casted last August 02, 0:, 1993 for it failed to meet specification requirement in compressive strength on 7 day's break.

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DAILY CONSTRUCTION DIARY
Attachment _____

Project Name: SOUTH COTABATO ROADS PROJ. Project No. _____ Page 1 of 1
By: (SPR) JNL Chk: (Proj Engr) _____ Date: 29 DEC. 93

LUN MASLA BRIDGE

PERFORMED PRELIMINARY INSPECTION TO DRAW A CONSTRUCTION PUNCHLIST FOR THE BRIDGE EXCLUDING THE JET GROUTING WORK AT PIER NO. 2 & 3. THE FOLLOWING ITEMS WERE IDENTIFIED FOR INCLUSION ON THE CONSTRUCTION PUNCHLIST WHICH NEEDS TO BE DONE PRIOR TO ACCEPTANCE:

1. RETOUCH AND SMOOTHEN BRIDGE RAILINGS AT SPECIFIC SECTIONS ALREADY MARKED.
2. REMOVE GRAFFITTI AT WINGWALL PARAPET WALL LEFT SIDE 2nd APPROACH.
3. REMOVE AND REPLACE INSTALLED ASPHALT JOINT FILLER.
4. CLEAR BRIDGE SITE OF ALL EXCESS CONSTRUCTION MATERIALS, DEBRIS, R.C. PILES AND OTHER INSTALLATIONS.
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8. REMOVE DRIP GROOVE FORMS (MOULDINGS) AT SPAN 3 & 4.
9. RETOUCH MINUTE HONEY COMBS WITH CEMENT GROUT.
10. GRIND THE SURFACE AROUND THE GIRDER CONSTRUCTION JOINT.
11. REMOVE HARDENED CEMENT SLURRY BELOW THE SLAB LEVEL.
12. FIX THE CONSTRUCTION JOINT UNDERNEATH THE DECK SLAB AT SPAN NO. 8

COMPACT CONSTRUCTION WILL BE INITIATING CORRECTION WORK STARTING TODAY AND WILL CONTINUE WORKING ON THESE UNTIL JANUARY 4, 1994 WHICH WILL BE THE SCHEDULE FOR THE CONSTRUCTION INSPECTION.

JET GROUTING ACTIVITY CONTINUE AT PIER NO. 3 WITH PGII NOW WORKING ON THE FULL DEPTH FROM ELEV. -20m TO ELEV. -12m.

SAUB BRIDGE

SUBCONTRACTOR CONTINUE TO ASSEMBLE THE GABION BASKETS FOR THE CHECK DAM. CHL ENGINEER ARE DOING PRELIMINARY LAYOUT OF THE CHECK DAM.

A CREW CONTINUE TO FABRICATE THE RAILING POST AND BEAM FORMS. RAILING REBARS ARE BEING INSTALLED AT LEFT SIDE FROM SPAN NO. 1 TO 3.

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WEEKLY LABORATORY ACTIVITY REPORT

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Morrison Maierle/CSSA INC
Babb and Associates

South Cotabato Road Project, General Santos, Mindanao, Philippines
Proj. No. 492-1420
United States Agency for International Development

MEMORANDUM

To : Mr. Larry W. Larsen/Mr. Charles W. Klimper

From : Mr. Virgilio S. Fernando

Date : 27 June 1993 Our Ref. No. Memo37.93

Subject : **Laboratory Activity Report for the Period June 14 to 19, 1993**

A. Lab works on soils, CABC materials, common borrow, select embankments, aggregates and asphaltic concrete.

1.0 **Road Sector 7**

1.1 Base course preparations - blue toppings, % compaction at site determined. QA stratifiedly checks, for conformance to field requirements.

1.2 Roadway shoulders and toe slopes were intermittently eroded whenever there is occurrence of rain-run-off water. A priming with bituminous coat on prone areas is being initiated to possibly resolve the matter.

Fertilizers seedings adopted before continue to erode and washed away whenever a strong rain run off water affects the areas.

1.3 Asphaltic prime activities ends on 09 June and the base prime ready for asphalt paving. Sand asphalt blotting continue on portions of sag and depressions on the primed roadway.

1.4 Asphaltic concrete paving commenced further to Sta. 7 + 978 to 7 + 046 LS (roadway) to Sta. 4 + 009 to 3 + 012 LS on 19 June 1993. Applied AC mix temperature were within specs tolerance and compacted (design theoretical value) yields per length/volume of roadway mixes was computed and monitored by MM/MK inspectors.

1.5 QA asphaltic concrete sampling on 19 June paving (AC-17-7). QA tests conducted implies within considered conformance to asphalt and DPWH specifications.

1.6 Reference on AC coring, % compaction tests and core thicknesses from period 14 to 16 June to wit:

1.6.1 QA average % compaction - 97.02%

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P.O. Box 125, Maduramente Bldg., National Highway, General Santos City, 9500
Tel.: (Piltel) 4929, (PT&T) 4214; Mla. Tel.: (632) 8102601 loc. 3577
Fax: (632) 8186914 loc. 3420; USA Tel.: (415) 904-3577 Fax: (415) 7888683 loc. 3577

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average core thickness - 55.00 mm

1.6.2 CQC average % compaction - 97.43%
average core thickness - 56.33 mm

1.7 A number of thin cores (45 mm and less) were QA cored and a limit established for overlay and punch list inclusion.

1.7.1 QA Sta. 11 + 796, 08 m RS - 45 mm core thickness

cores @ Sta. 11 + 760 - 47 mm
Sta. 11 + 770 - 43 mm
Sta. 11 + 780 - 41 mm
Sta. 11 + 785 - 44 mm
Sta. 11 + 790 - 41 mm
Sta. 11 + 800 - 45 mm
Sta. 11 + 805 - 46 mm

*Limit - Sta. 11 + 810 to Sta. 11 + 750

1.7.2 QA Sta. 13 + 002 1.7 m RS - 45 mm core thickness

cores @ Sta. 13 + 005 - 43 mm
Sta. 13 + 012 - 46 mm
Sta. 13 + 002 - 50 mm

*No limit established in lieu of a suspected hump on the reference stratified core.

1.8 Stratified field compaction tests carried on:

1.8.1 Sta. 2 + 300 to Sta. 1 + 000 - roadway base course, final lift - passed specs (Ref. MM 93 - 485 NGT)

1.8.2 Sta. 1 + 000 to Sta. 0 + 000 - Roadway base course, Final Lift - Passed specs (Ref. MM 93 - 486 NGT)

1.9 CQC lab functions at Surallah (Sector 7 and 8) involves base courses, shoulder materials from Sta. 6 + 000 and Sta. 11 + 150 (Sector 7) and back of Norala Municipal Hall (Sector 8), bituminous asphalt paving and other sampling and testing undertaken.

1.10 The asphalt batching plant is in similar production of bituminous asphaltic concrete.

2.0 Road Sector

2.1 In-place common borrow materials from Sta. 20 + 725 RS (E-24-2) from Sta 20 + 600 RS (E-25-2) and from Sta. 20 + 490 RS (E-26-2) - OMC/MDD determinations.

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2.2 Molo crusher plant stockpile, base course (leveling course) (BC-2-2) from Lun Masla Quarry - complete tests, as per specs.

2.3 Common borrow source materials from Sta. 21 + 400 (E-27-2) soils classifications and grading.

2.4 Proctor values (E-24,25 and 26-2) were determined for field compaction verifications, Ref. Sta. 20 + 450 - 20 + 600 embankments - varying depths. QA tests conforms to specifications.

2.5 Base course from Molo crusher plant (source, Lun Masla Quarry) in compliance to DPWH specs items 202.2.1 C.A. grading " A" requirements and , CBR of 124% at maximum dry density. The abrasion of said aggregates was tested beforehand to be less than 30% with the soundness tests waived as per construction documents and tests conducted (potential alkali reactivity and soil sulfate content) on said materials. (REF. FCM No. 197, June 9, 1993).

2.6 Common borrow materials from Sta. 21 + 400 (E-27-2) (QUARRY) was QA tested to be of A-2-7 soil classification soil trade for embankments - filling (corraline limestone with sand and clay).

2.7 An FCM submitted by contractor (FCM No. 200) regrading consistency of portland cement pavement was concurred by MM/CSSA, allowing from 1 1/2" to 3" slump maximum . However if there were sagging and deformation effects on the pavement (after the slip form paver) the approval will be rescinded immediately.

2.8 The concrete batch plant at Alabel was calibrated with MM Lab/Site inspectors crew witnessing, a discrepancy on the I-Beam adjacent to the weigh-silos affects the weighing procedures. A corrective measure to cut and lower down said beams was immediately done, thereafter the calibration was found to be in conformance as per actual weight of materials and take weights placed on the weigh-silos. Weighing procedures is on manual push bottom sequences.

2.9 Inspection of "rock" - gravel/ cobbles with silt and clay cementations at Sapu MAsla Bridge leads to revised design of the concrete foundation and footing of abutment "A" of said bridge.

Cores were taken from site to determine density hardness of said materials. However based on DPWH design plant which requires a spread footing foundations based on test piles that may be embedded at 2 1/2 m. refusal, the construction was pushed through adopting said design plan with an increase in elevation of footing structures.

An engineering conservative judgement on the massive stratification of hard layer covers the said abutment "A" footing structure.

2.10 FCM submittal No. 201 by contractor, concrete admixtures by Grace and Co. was concurred for use in PCCP and structural concrete constructions. However final acceptance will be based on manufacturer's certificate of compliance to applicable ASTM standards and feasible results of concrete in general to where the additives were used.

2.11 Upon inspection of Pananggalong Box Culvert at Sta. 21 + 663, specifically deformed rebars used, a basis was reached that the rebars were substandard in bending requirements (rebars

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snapped on at field condition on bending).

For verification, samples were taken on the 16 mm Ø rebars for immediate tests at University of Mindanao Department of Civil Engineering lab, due to impact on construction schedules.

Test findings indicates failures on the bending stress requirements.

Segregation and rejection of said 'lot of rebars' was initiated by to the contractor.

2.12 Roadway select embankments placements in progress at Sta. 7 + 350 - Sta. 8 + 125 on 15 June and ahead at Sta. 9 + 000 - 9 + 600 on 19 June - said conformed - materials came from Maribulan River Quarry.

2.13 RCPC casting at AGB yard commences, (for RCPC requirements of Malapatan to Glan drainage structures) concreting works on drainage structures on finished RCPC along the roadway is similarly in progress.

Concrete breaks for 7 days (RCPC's) compressive strength for 08 June casting complies to specification requirement. QA routine concrete sampling carried on 15, 16 and 18 June, pouring of concrete approach slabs of Lot BC.

2.14 QA stratified field compaction tests carried on:

2.14.1 Sta. 20 + 450 to Sta. 20 + 600 - roadways and shoulders widening, embankments - passed specs (Ref. MM 93 - 489 NGT)

2.14.2 Sta. 8 + 075 to Sta. 9 + 075 - existing ground (subgrade) roadway - passed specs (Ref. MM 93 - 490 NGT)

Some localized portions at Sta. 8 + 650 to Sta. 8 + 700 were water saturated (due to rain) and spongy in nature and rectifications was suggested to contractor, prior to select embankment placements.

2.14.3 Lot RCBC, abutment 'B' (2nd approach) embankments - passed specs, retests of MM 93 - 473 and 474 NGT's. (Ref. MM 93 - 491 NGT)

2.14.4 Sta. 0 + 982 to Sta. 2 + 500 - roadway - select embankments - passed specs (Ref. MM 93 - 492 NGT)

2.14.5 Optional tests for lengths Sta. 0 + 982 to Sta. 3 + 550 - localized stations at 1 + 016 - 1 + 075 and Sta. 2 + 200 - 2 + 225 were failed compactions due to saturated with water (Ref. MM 93 - 493 NGT). Similar rectifications was relayed to CQC site inspectors prior to levelling course placements.

Retests will be done accordingly.

2.15 CQC lab functions at Alabel (Sector 2) - involves continuing soils, subgrades, embankments select from Sta. 12 + 200 borrow sources from Maribulan River, Sta. 16 + 475 quarry and

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activities on PCCP concrete design trial mixes, concreting on drainage structures, box culverts at Lot, Pananggalong Kabog and Sapu Masla Bridge.

2.16 The crusher plant at Molo is in full production of CABC materials and asphaltic concrte aggregates.

2.17 Concrete batch plant at Alabel as now erected for structural concrete productions.

3.0 Road Sector 8

3.1 Fine grading and blue topping activities on the roadway base course materials commenced and rectification of eroded shoulders - in progress compaction tests will be done.

3.2 Compactions tests stratifiedly taken on:

3.2.1 Sta. 16 + 300 to Sta. 16 + 700 - roadway base course, 1st and final lift - passed specs. (Ref. MM 93 - 487 NGT)

3.2.2 Sta. 16 + 700 to Sta. 17 + 276 - roadway base course, 1st and final lift - passed specs (Ref. MM 93 - 488 NGT)

3.2.3 Sta. 17 + 536 to Sta. 18 + 124 - roadway base course, 1st and final lift, retest of MM 93 - 429 NGT, 1st lift) - all passed specs (Ref. MM 93 - 494 NGT)

3.2.4 Sta. 16 + 700 to Sta. 17 + 276 and Sta. 17 + 536 to Sta. 18 + 124 - optional tests - passed specs with the exception of 1 test at Sta. 17 + 251, retest will be done accordingly after rectifications. (Ref. MM 93 - 495 NGT)

4.0 GSC International Airport

4.1 Casting of soil cement mixtures molds commenced on 26 June for 5% and additional 6% cement content for conglomerate of 6 soil classifications.

Sample preparations and proctor determinations were done beforehand on 11, 15, 16, 17, 18 and 19 June 1993, respectively.

A compressive strength and wetting and drying tests procedures will be undertaken.

B. MM/CSSA lab continuing activities regarding materials testing-checking-finalization of test results, review of CQC Daily Quality Control Reports, soils review and evaluation of reports, memorandums and other pertinent lab procedures for supervisory perusal..

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WEEKLY DESIGN ACTIVITY REPORT

Morrison Maierle/CSSA INC
Babb and Associates

South Cotabato Road Project, General Santos, Mindanao, Philippines
Proj. No. 492-1420
United States Agency for International Development

MEMORANDUM

To : File - Suggested Reply to MKC

From : Mr. Fred A. Sielbach

Date : 29 July 1992 Ref.No. : MM113.92

FILE

Subject : **Flood Drainage Assessment for Section 1A and 1B, Sector 3**

The alternatives and recommendations for the four areas covered in MKC's 10 July 1992 letter have been field reviewed (27 July 1992) and discussed. Our response and comments are as follows:

1. Rehabilitation of Tambler Bridge

The recommended Alternative No. 2 would be a satisfactory solution which should be undertaken by the DPWH and not by USAID. At the field review it was decided that the placement of large size rock riprap to help prevent additional scouring and erosion would be an emergency stop gap measure and not the final solution. Please provide details and a material quantity and cost estimate.

2. Flood Control at Station 4+788

MKC's Section 1A Drainage Design Report recommended that for watershed No. 2 no additional pipe was required for this watershed. Subsequent review and recalculation of the 10 year Q discharge by MKC now requires the installation of additional pipes to provide the necessary capacity.

The installation of 2-1220 pipes as recommended in Alternative No. 2 should mitigate the overtopping of the roadway section in this area. The removal and replacement of the new pavement should not be considered a payment item as these pipes should have been installed before paving this section of roadway.

Please provide final plans and a cost estimate for this work. Check the quantities for Items 500 (4) and 500 (5), that is in your original cost estimate.

3. Flood Control at Station 11+463

The recommended Alternative No.3, Debris Catcher, should help alleviate the problem of debris plugging the three pipes that are in this area.

Please provide final plans and a cost estimate for this work.

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Fax: (632) 8186914 loc. 3420; USA Tel.: (415) 904-3577 Fax: (415) 7888683 loc. 3577

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4. Abutment Protection of Dupalco Bridge

The recommended Alternative No. 2 would be a satisfactory solution which again should be undertaken by the DPWH and not by USAID. Similar to the Tambler Bridge it was decided that the placement of large size rock riprap to help prevent additional scouring and erosion would be an emergency stop gap measure and not the final solution.

Please provide necessary details and a material quantity and cost estimate.

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WEEKLY ACTIVITY REPORT FOR MM/CSSA

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Morrison Maierle/CSSA INC
Babb and Associates

South Cotabato Road Project, General Santos, Mindanao, Philippines
Proj. No. 492-1420
United States Agency for International Development

MEMORANDUM

To : Mr. John Morrison, Jr.

From : Mr. Larry Larsen Larry

Date : August 02, 1993

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Subject : **South Cotabato Roads Weekly Report for the Period July 26 - August 1, 1993**

1.0 Personnel Movements and Miscellaneous activities

1.1 Mr. Larsen spent the week on project activities. On the other hand, Mr. Klimper spent the first three days of the week on project activities and eventually left GSC on July 29 for a two weeks vacation in the US. He was still able to join the Completion Punchlist Inspection for Sector 8 which was conducted on July 26.

Mr. Wetstein arrived in GSC from Manila on Saturday, July 31. He is scheduled to stay in the MM/CSSA Project Office for 5 days and will leave for Manila on August 05 and subsequently for the States on Sunday, August 08.

1.2 On July 26, our QA staff submitted a summary report to Mr. Klimper on MKC's submittal for their concrete test results taken from their drainage improvement activities for Road Sector 8. It was gathered from the report that the majority of their reports do not show any reference to concrete activity and the others show samples being taken by people other than Geoanalytics.

On July 27, Mr. Klimper initiated a recommendation to the MDP Project Manager to withhold payment on some work performed on the above mentioned Sector until such time that the problem is resolved. In the letter, Mr. Klimper reiterated that we do not accept samples being taken by the subcontractor as representative of work being performed by him. These samples or tests cannot be used for quality control of the work but only as reference for them and MKC's information.

In addition, other concrete work on drainage pipes needs submittal clarification as MM/CSSA do not have any information for them. Because of the lack of qualified testing support information, MM/CSSA would recommend setting up a joint inspection of these concrete work in Sector 8 with both QC and QA involved, using the "Swiss Hammer" for random testing to determine if the structures are in reasonable conformance to the required specifications.

The recommendation was endorsed by Mr. Larsen and was duly approved by the MDP Project Manager and sent to MKC. Consequently, on July 30 MKC agreed with the recommendation and have made arrangements with MM/CSSA QA staff to conduct the tests.

P.O. Box 125, Maduramente Bldg., National Highway, General Santos City, 9500
Tel.: (Piltel) 4929, (PT&T) 4214; Mla. Tel.: (632) 8102601 loc. 3577
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1.3 Likewise, a report was also submitted by our QA staff to Mr. Klimper regarding their findings on the joint sampling done with MKC on asphalt paving for Sector 8. Their findings indicate that the asphalt laid in some areas for this sector did not comply with their design mix. A recommendation to withhold payment on these items of work was submitted to the MDP Project Manager. Attached is a copy.

1.4 Bert and Ramon, our QA inspectors for drainage and pavement works conducted a pre-final punchlist inspection on July 29 for Road Sectors 7 and 8 in preparation for the Final Punchlist inspection for both sectors scheduled for July 30. Both inspectors submitted their punchlist inspection list to Mr. Larsen as Mr. Klimper is on leave.

The Final Punchlist Inspection for Road Sectors 7 and 8 were conducted by MM/CSSA, MKC, USAID and the Provincial Engineer of Koronadal on the said scheduled date. Larry and Mac represented MM/CSSA.

Sector 7 was inspected first before proceeding to Sector 8. Both sectors are substantially complete except for some minor items which came about due to the heavy rain that occurred the previous night and the drainage improvement at the market of Norala as being requested by the Provincial Engineer. Attached is a copy of MKC's request for " Substantial Completion Certificate" for both sectors.

1.5 On July 30 MKC submitted their as built transmittal schedule which is as follows:

Location	Transmittal date
Sector 3 Base	06 August 1993
Sector 3 alternate	20 August 1993
Sector 7	15 September 1993
Sector 8	30 September 1993
Sector 4	30 October 1993
Sector 2 Base	30 October 1993
Sector 2 Alternate	15 January 1994
Bridges	30 January 1994

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Mr. Larsen sent a letter to MKC regarding the matter and acceded with the schedule except for Sector 2 alternate and Bridges. He stated that all the sets of as built drawings are needed by November 30, 1993, at the latest. The construction schedule may slip but the as-builts can be completed as soon as the subgrade preparation is completed.

Attached is a copy of MKC's construction schedule for the road project highlighting the actual accomplishments to date.

1.6 MKC submitted their 24th monthly invoice for the period July 1 - 31. MM/CSSA technical staff, inspectors, lab and survey crew checked and evaluated the submittal.

Attached are copies of letters from MKC requesting reconsideration of payment for the embankment select shoulder material at Sector 8 and for the subgrade preparation for Road Sector 2 alternate where payment was withheld due to non-conformance to specifications.

1.7 MM/CSSA design staff are checking various FCM's for design revisions on Sectors 2, 4, 7 and 8. Most of the FCM's in Sectors 7 and 8 came out from Completion Punchlist Inspection, 21 FCM's were submitted during the period, 19 were approved and two were not.

2.0 Construction Activities

MM/CSSA QA staff continue to monitor MKC construction activities for the week.

2.1 Road Sector 2
Sections 1, 2 & 3 - Malapatan-Glan

2.1.1 MKC is still constructing the detour road from sta. 9 + 600 down to an existing road around Alabel to divert traffic from sta. 0 + 900 to sta. 9 + 600 in preparation for the laying of the PCCP. No definite schedule yet for laying of PCCP. It is already 5 weeks behind schedule as of this date.

In Section 3 alternate, common, unsuitable and rock excavation activities carried on simultaneously with embankment between sta. 23 + 500 to sta. 26 + 000. Clearing and grubbing progressed to sta. 30 + 050.

2.1.2 Drainage improvement, erosion control, slope protection and casting of RC pipes continue for Section 3, alternate. Construction activities on Lun Masla and Sapu Masla bridges is going on as per schedule. The box culvert at Panangalong, sta. 21 + 633 is now 95% complete while activities on the box culvert at Cabug sta. 30 + 865 has been temporarily suspended until good weather prevails. Excavation is now going on for the box culvert at Lasang, sta. 24 + 916.

2.2 Road Sector 4, Sections 1, 2 & 3
Polomolok- Landan

Construction activities on the four(4) box culverts for this sector are being done by MKC's subcontractors and are having minor setbacks due to the intermittent rains. Nevertheless, they were able to progress painstakingly in between bad weather respite.

* Installation of rebars for bottom slab of the RCBC at sta. 3 + 383 has been completed and pouring of concrete is scheduled to be done on Monday, August 02.

* Concrete for wingwalls and apron slab for the RCBC at sta. 5 + 279 has been poured and backfilling is now going on. The grouted riprap apron at outlet side of the box culvert is being done.

* For the RCBC at sta. 14 + 003, concrete for the bottom slab and 2/3 of the barrel walls have been cast.

* Installation of rebars for the bottom slab continued for the box culvert at sta. 14 + 423 and pouring of concrete will be scheduled sometime next week.

All drainage activities for this sector is three weeks behind schedule.

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2.3 Road Sector 7, Surallah - T'boli
Road Sector 8, Norala - Kolambog

Road Sectors 7 and 8 are substantially complete as the final punchlist inspection was requested and performed on July 30 with the proper authorities. Some minor FCM work are being done as listed in the Final Punchlist.

3.0 Geotechnical Activities

MM/CSSA soil staff evaluated the MKC submittal on the cylinder samples erroneously written as Sector 7. They checked into all the daily quality control report submitted by MKC on the said pouring dates indicated in their report and found that most of the reports do not coincide with the data on the submittals. They submitted a summary report to Mr. Klimper for proper action.

MM/CSSA soil staff have evaluated their tests results on their asphalt core sampling on Sector 8 and found that on some specific areas the asphalt content did not meet the approved design mix. A joint sampling was made with Geoanalytics but they came with the same results. A report will likewise submitted to Chuck for proper action.

MM/CSSA soil staff worked on Saturday and Sunday doing the joint testing of the concrete headwalls and wingwalls on Sectors 7 and 8 using the "swiss hammer" to determine if the structures are in reasonable conformance to the required specifications.

4.0 MM/CSSA's survey crew continued doing spot checks on MKC's survey activities for the construction activities in Sector's 2 and 4. They are making sure that the finish levels are at the approved design elevations. They are also closely coordinating with MKC inspectors and surveyors on determining the locations and limits of rock excavation in road Sector 2, additive.

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MINDANAO DEVELOPMENT PROGRAM
Maduramente Building, National Highway
South Cotabato

General Santos City
Tel: 4929, 4270

Mr. Alan Binger
Project Director
Morrison Knudsen Corporation
Unit 10 & 12, ECA Building
National Highway
General Santos City, Sarangani

July 27, 1993
GSP-MK0138

Subject: South Cotabato Highways Project, Mindanao Development Program, % Asphaltic Content - Sector 8

Dear Mr. Binger:

Please find attached herewith the joint sampling report done by MM/CSSA and MKC lab for the asphalt laid on certain sections in Sector 8 which are self explanatory.

This joint sampling shows the placement of non-specification asphalt paving material and we are withholding 10% payment until this situation is resolved. As in this case, your recommended asphalt design mix which has been concurred by MM/CSSA was to use a 6.62% asphalt content. But in actual placement for some areas, your design mix wasn't complied with.

The total asphalt laid on July 06 and July 09 are 270.563 and 412.603 metric tons, respectively for a total of 683.166 MT. We will be withholding payment on 68.00 MT. Please furnish us your recommendations for correcting this situation.

If there is a problem, don't hesitate to call on us and we can discuss the matter.

Sincerely,

Michael I. Kingery
Project Manager

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JUL 28 1993

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AMERICO / INC.
Babb and Associates
South Cotabato Road Project, General Santos, Mindanao, Philippines
Proj. No. 492-1420
United States Agency for International Development

MEMORANDUM

To : Mr. Charles W. Klimper

From : Mr. Virgilio S. Fernando

Date : 26 July 1993 Our Ref. No. Memo 40.93

Subject : % Asphaltic Content, Bituminous Paving Mixtures
Road Sector 8

1.0 As a reference aftermath of QA asphaltic concrete sampling taken on 12 July 1993 with a yield result of 5.801% asphalt content, an in-place joint mixes' asphalt content determination between QA and CQC lab was conducted.

2.0 Below are the results obtained from said multi lab verification tests vs. specs requirement of 6.62% ± 0.4 design mix.

Date Paved	Sample I.D.	Sample No.	% Asphalt	Area Paved
06 July 1993	AC-5-8	S-1	6.256%	Sta. 19 + 322 to Sta. 20 + 050 LS
		S-2	6.104%	-do-
		Ave.	6.180%	
09 July 1993	AC-6-8	S-1	5.665%	Sta. 20 + 785 to Sta. 21 + 875 LS
		S-2	6.007%	-do-
		Ave.	5.836%	

3.0 The asphalt content percentage pay item adjustment on said paving dates, therefore:

3.1 Sta. 19 + 322 to Sta. 20 + 050, LS (728.0 m) = 6.180%
Decreased by 0.640%

3.2 Sta. 20 + 785 to Sta. 21 + 875, LS (1090.0 m) = 5.836%
Decreased by 6.170%

3.3 Sta. 21 + 875 to Sta. 23 + 087, LS (1212.0 m) and
Sta. 23 + 078 to Sta. 23 + 087, RS (9.0 m) = 6.210%
(QA and CQC lab results average) No change in %

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MORRISON-KNUDSEN CORPORATION
SOUTH COTABATO HIGHWAYS PROJECT
MINDANAO DEVELOPMENT PROGRAM

UNIT 10 & 12 ECA BUILDING
NATIONAL HIGHWAY
GENERAL SANTOS CITY
SOUTH COTABATO
P.O. BOX 221

MK/GSP-0353

July 30, 1993

Mr. Michael I. Kingery
MDP Project Manager, USAID
c/o Morrison Maierle / CSSA
Babb and Associates
11/F, Ramon Magsaysay Center
1680 Roxas Boulevard
Manila

Subject: USAID CONTRACT NO: 492-0420-C-00-1140-00
South Cotabato Highways Project
Mindanao Development Program
-Substantial Completion of Road Sectors 7 and 8-

Dear Mr. Kingery:

Pursuant to Section H-1 clause 105.12 - Acceptance, we are advising you that the above referenced section of roadway is substantially complete as of 30 July 1993 and is in continuous use by public traffic, and are requesting that a completion certificate issued for this section.

As you are aware, pursuant to Section H-1 clause 105.13, the Defect Liability (Maintenance) Period also commences at this date. We have already furnished USAID with the Maintenance Guarantee (bond) required by this section; reference, our letters MK/GSP-0173 dated 3 September 1992 and MK/GSP-0186 dated 21 September 1992.

Also attached for your information, is the list of outstanding items for this section as verified by the Engineer's Representative and our Quality Control. The items on this list will be completed prior to the request for the Maintenance Certificate. We would like to note that Morrison-Knudsen will continue to maintain the roadway in those areas where the work on the original contract drawings and FCM's approved prior to the above date has not been performed. These particular maintenance liabilities will cease when the work is performed.

Very truly yours,

ALAN W. BINGER
Project Director

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Attachments:

File 11.1.2

Rec'd 1:40 pm
AUG 02 1993

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SOUTH COTABATO HIGHWAYS PROJECT
MORRISON KNUDSEN CORPORATION

FINAL PUNCHLIST OPEN ITEMS

INSPECTION DATE : 30 JULY 1993
SECTOR : 8 – STA. 0 + 000.00 – STA. 23 + 207.17

09:11:17 AM
31-Jul-93

REC'D. NO.	LOCATION SECT.	LOCATION STA.	DESCRIPTION	INSP.	RESP.	DATE IN	SUPT. DATE	SUPT. INIT.	M.K. Q.C. DATE	M.K. Q.C. INIT.	COMMENTS
2106	8	0.000	SPOT WELD AND PAINT BOLTS FOR SIGN BOARDS	MK,MM	MK-DR	07/30/93					FCM REQ'D.
2111	8	0.000	24" CROSSDRAINS – MORTAR FULL JOINT INSIDE	MK,MM	CHL	07/30/93					
2112	8	0.000	24" SIDEDRAINS – MORTAR FULL JOINT INSIDE	MK,MM	CHL	07/30/93					
1424	8	16.801	36" DIA. RCPC MORTAR @ INSIDE PIPE HALF DIA. ONLY	MK,MM	CHL	07/26/93					
2101	8	18.056	WATER PONDING ON RT SIDE CANAL (OUTFALL NEEDED)	P.E.O.	P.E.O.	07/29/93					
1651	8	18.100	36"DIA RCP MORTAR INSIDE JT HALF DIA ONLY	MK,MM	CHL	07/26/93					
2079	8	18.100	ADD RIPRAP SLOPE PROTECTION FROM CROSS DRAIN OUTLET TO NORAL BRIDGE	MK,MM	MK	07/26/93					FCM REQUIRED
2080	8	18.100	PERFORM DRAINAGE DESIGN REVIEW FOR NORAL MARKET AREA.	MK,MM	MK-DR	07/26/93					FCM REQUIRED
2077	8	18.124	ADD DOWN CHUTE LEFT SIDE FIRST APPROACH OF NORALA BRIDGE	MK,MM	MK	07/26/93					FCM REQUIRED
2072	8	18.126	TACK WELD BOLTS AT NORALA BRIDGE	MK,MM	MK-DR	07/26/93					FCM REQUIRED
2078	8	18.132	ADD DOWN CHUTE RIGHT SIDE SECOND APPROACH OF NORALA BRIDGE	MK,MM	MK	07/26/93					FCM REQUIRED
2074	8	18.180	LOWER INVERT AND SIDEWALLS OF CATCH BASIN TO IMPROVE DRAINAGE	MK,MM	CHL	07/26/93					FCM REQUIRED
2073	8	18.250	WATER PONDING BETWEEN SIDE DRAINS STATION 18+217 TO 18+274	MK,MM	MK	07/26/93					COMPLETED
1803	8	19.078	IRRIG. PIPE HW @ LT SIDE DAMAGED BY EQUIPT.	MK,MM	CHL	06/18/93					
1873	8	19.078	IRRIG. PIPE HW @ LT SIDE DAMAGED BY EQUIPT.	MK,MM	CHL	06/24/93					
1874	8	19.078	END PIPE @ INLET DAMAGED BY EQUIPT.	MK,MM	CHL	06/24/93					
1875	8	19.473	FULL OF WATER NOT INSPECTED INSIDE	MK,MM	CHL	06/24/93					
1877	8	19.835	NOT INSPECTED DUE TO WATER	MK,MM	CHL	06/24/93					
1876	8	20.321	24" DIA. RCP CUT-OFF WALL @ INLET ALMOST EXPOSED; NOT INSPECTED DUE TO WATER	MK,MM	CHL	06/24/93					
2070	8	20.481	ADD DRAINAGE CHUTE AT BOTH SIDES FIRST APPROACH OF LAPUZ BRIDGE	MK,MM	MK	07/26/93					FCM REQUIRED
2069	8	20.510	CRACKED PAVEMENT, SECOND APPROACH OF LAPUZ BRIDGE	MK,MM	MK-DR	07/26/93					FCM REQ'D.
2068	8	20.600	ADD 4M – 610 mm SIDE DRAIN WITH STRAIGHT HEADWALLS	MK,MM	MK	07/26/93					FCM REQUIRED
1894	8	20.992	24" DIA. RCP NOT INSPECTED INSIDE DUE TO WATER. EXCAVATE OUTLET.	MK,MM	CHL	06/24/93					
1899	8	21.937	RCP 24" DIA. NOT INSPECTED DUE TO WATER	MK,MM	CHL	06/24/93					
1901	8	21.941	NOT INSPECTED DUE TO WATER	MK,MM	CHL	06/24/93					

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COSTABATO HIGHWAYS PROJECT
MORRISON KNUDSEN CORPORATION

FILENAME : B:\7CIP30.JY

FINAL PUNCHLIST OPEN ITEMS

INSPECTION DATE : JULY 30,1993
SECTOR 7 – STA. 0 + 000 – STA. 21 + 581.53

09:13:20 AM
31-Jul-93

REC'D. NO.	LOCATION SECT./STA		DESCRIPTION	INSP.	RESP.	DATE IN	SUPT. DATE	SUPT. INIT.	M. K. Q. C. DATE	M. K. Q. C. INIT.	COMMENTS
2113	7	0.000	SPOT WELD AND PAINT BOLTS FOR SIGN BOARDS	MK,MM	MK	07/30/93					FCM REQ'D.
2109	7	0.278	REMOVE LT SIDE WW FROM OUTLET END	MK,MM	MK	07/30/93					FCM REQ'D.
2110	7	1.080	ADD 4m – 610 SIDEDRAIN	MK,MM	MK	07/30/93					FCM REQ'D.
2107	7	2.400	PROVIDE YIELD SIGN BOARD	MK,MM	MK	07/30/93					FCM REQ'D.
2108	7	2.600	PROVIDE YIELD SIGN BOARD	MK,MM	MK	07/30/93					FCM REQ'D.
1939	7	10.900	SIGN MARKS R4-1(80)B RT SIDE	MK,MM	MK	07/30/93					FCM REQ'D.
1808	7	11.802	RT SIDE PAVED SHLD. SLOPE DID NOT CONFORM THE PLAN REQUIREMENTS	MK-RT	MK-DR	07/03/93					NOT YET INSTALL
1809	7	11.850	RT SIDE PAVED SHLD. SLOPE DID NOT CONFORM THE PLAN REQUIREMENTS	RT/RA	MK-DR	06/15/93					TO BE DISCUSS
				RT/RA	MK-DR	06/15/93					TO BE DISCUSS

BEST AVAILABLE DOCUMENT

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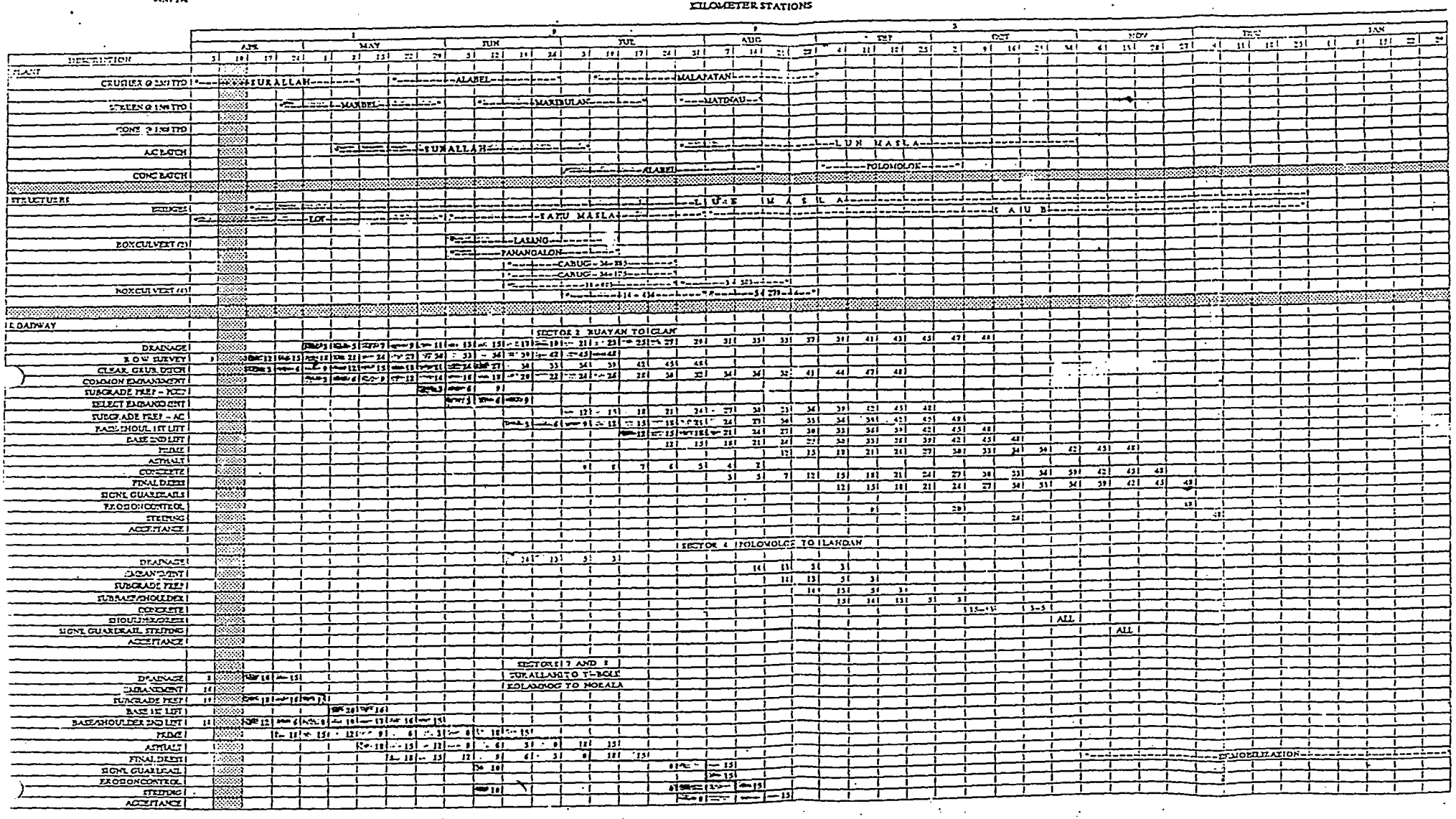
SOUTH COTABATO ROADS PROJECT
PROJECT SCHEDULE – MAY 1993
KILOMETER STATIONS



ACTUAL

BEST AVAILABLE DOCUMENT

MORRISON KNUDSEN CORPORATION
SOUTH COTABATO HIGHWAYS PROJECT
MINDANAO DEVELOPMENT PROGRAM

UNIT 10 & 12, ECA BUILDING
NATIONAL HIGHWAY
GENERAL SANTOS CITY
SOUTH COTABATO
P.O. BOX 221

MK/GSP-0350

July 29, 1993

Mr. Michael I. Kingery
MDP Project Manager, USAID
c/o Morrison Maierle / CSSA
11/F, Ramon Magsaysay Center
1680 Roxas Boulevard
Manila

Subject : USAID CONTRACT NO: 492-0420-C-00-1140-00
South Cotabato Highways Project
Mindanao Development Program
- Shoulder Material Road Sector 8 -

Reference: June 1993 Progress Billing Deduction

Dear Mr. Kingery:

Upon receipt of the final approved June Billing, we instructed our Quality Control group to perform a random sampling of the materials installed in the shoulders at Road Sector 8. As you are aware, these shoulders were the subject of considerable discussion after the occurrences in Road Sector 7 and finalizing the scope of work for the remainder of the project. In addition the use of various other types of material was discussed with your representatives and installed.

From the attached summary sheet and supporting documentation, we feel that the shoulders are in reasonable close conformance to the specifications and should be paid as such. Of the two tests that failed to meet the specifications one was 1% and the other 3% over the maximum allowable percent passing the No. 200 sieve.

We would like you to reconsider your decision and pay for these materials at the agreed contract rate.

Yours very truly,

Paul Atkins
for/ ALAN W. BINGER
Project Director

cc : Larry Larsen w/ attachments

File: 11.1.2
11.1.3

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dyn 12:00PM
JUL 30 1993

278

E. LARSEN

MORRISON KNUDSEN CORPORATION
SOUTH COTABATO HIGHWAYS PROJECT
MINDANAO DEVELOPMENT PROGRAM

UNIT 10 & 12, ECA BUILDING
NATIONAL HIGHWAY
GENERAL SANTOS CITY
SOUTH COTABATO
P.O. BOX 221

MK/GSP-0349

July 29, 1993

Mr. Michael I. Kingery
MDP Project Manager, USAID
c/o Morrison Maierle / CSSA
11/F, Ramon Magsaysay Center
1680 Roxas Boulevard
Manila

Subject : USAID CONTRACT NO: 492-0420-C-00-1140-00
South Cotabato Highways Project
Mindanao Development Program
- Sector 2 Alternate - Materials for Subgrade -

Reference: Your Letter Serial No. GSP/MK-054 dated 08 July 1992
Your Letter Serial No. GSP/MK-057 dated 21 July 1992
Our Letter Serial No. MK/GSP-145 dated 09 July 1993
Design Report Sector 2 Alternate Pages 261 to 267
Sketch No. SK-MK/GSP-0349-1

Dear Mr. Kingery:

The subject of soil materials required in the top 150mm (6 inches) of common embankment has once again come up as a matter of concern. We would like to clarify the issue, and would appreciate your direction on how to proceed with the roadway construction in Sector 2 Alternate, Malapatan to Glan.

Attached for your reference is the Pavement Design Report for the Flexible Pavement in Sector 2 Alternate and a sketch showing the approved flexible pavement section, and an alternate section showing a flexible pavement with a layer of "subgrade material" between the embankment and the crushed aggregate base.

In order to simplify the differences in the two designs, we would like to present the differences in the construction methodology required for each item.

In the Typical Roadway Section Type III the following earthwork operations occur through subgrade preparation in order to install the crushed aggregate base.

1. Construction Limit Survey
2. Clearing and Grubbing
3. Survey Cut and Fill for Embankment
4. Locate Quarry for Embankment Material

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dyn 2:00pm
JUL 30 1993

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5. Conduct an Occular Inspection for Unsuitable Material and remove with the concurrence of the Engineer
6. Cut and Fill Embankment to Design Elevation and Verify Density
7. Survey Embankment for Top of Subgrade
8. Cut/Fill Subgrade as required and verify density to receive Crushed Aggregate Base

In the Typical Roadway Section Type III-A, the following earthwork operations would be required through subgrade operation.

1. Construction Limit Survey
2. Clearing and Grubbing
3. Survey Cut and Fill for Embankment
4. Locate Quarry for Embankment
5. Conduct an Occular Inspection for Unsuitable Materials and remove with the concurrence of the Engineer
6. Cut and Fill Embankment to Design Grade and Verify Density
7. Survey Embankment for Design Elevation
8. Cut/Fill Embankment as required and verify density to receive Subgrade Materials
9. Survey for Subgrade Materials
10. Locate Quarry and test for classification and Suitability for Subgrade Materials
11. Install Subgrade Materials and verify density
12. Survey Materials for Top of Subgrade
13. Cut/Fill Subgrade as required and verify density to receive Crushed Aggregate Base

As can be seen from the above there is a considerably greater effort involved with the Type III-A section. In addition to the added construction steps the chances of locating suitable quarries in the nearby areas is remote and increased trucking would be an added impact. Also the schedule would be affected as resources scheduled to be assigned elsewhere, would be tied up with the additional activities.

In other areas of the project, where weak subgrade was encountered, the design specifically detailed the type of material at the top of subgrade. This was the case in Sector 2 base where the design section had a 220mm thick select material requirement under the subbase and crushed aggregate base. In the opinion of the designers and reviewers the extra cost associated with this high quality material was necessary to produce a durable product.

However in Sector 2 Alternate, the designer did not feel the extra expense was necessary, provided that good material is installed. In the attached section for Flexible Pavement Design Report for Sector 2 Alternate, the design CBR for Subgrade materials is 8% (ref. page 265).

Also, section 5.0 Construction Requirements states the following:

"It would be necessary for the subgrade be recompacted to Type AA Compaction Level. Fill Materials to new subgrade formation level should

BEST AVAILABLE DOCUMENT

essentially be the same as the existing gravel surface course along the alignment. The base course should be compacted to Type AAA compaction. Several areas underlain by weak layers have been identified. (underline added)

The resulting structural section for the Roadway is expected to result in a durable road section. However, localized soft layers should be removed or replaced by good materials to result in CBR value equal to or greater than the design CBR Value assumed for this section. (underline added)

Adequate Roadway Drainage should be provided to prevent accelerated degradation of the Roadway."

We agree with the designer and recommend that the Flexible Pavement Section Type III be utilized in this area. However, should you feel that the Type III-A Flexible Pavement Section is more appropriate, we will advise you of the added costs and impacts to the project schedule and proceed with its installation.

We are waiting your direction and are available to discuss this issue at your convenience.

Yours very truly,

Paul Harris
for/ ALAN W. BINGER
Project Director

cc: Larry Larsen w/ attachments

File: 11.1.2
11.1.3

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MONTHLY PROGRESS PAYMENT

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MORRISON KNUDSEN CORPORATION
SOUTH COTABATO HIGHWAYS PROJECT
MINDANAO DEVELOPMENT PROGRAM

UNIT 10 & 12, ECA BUILDING
NATIONAL HIGHWAY
GENERAL SANTOS CITY
SOUTH COTABATO
P.O. BOX 221

MK/GSP-0401

December 20, 1993

Mr. John C. Starnes, P.E.
Chief, Infrastructure Support Division
Office of Capital Projects
United States Agency for International Development
18/F, Ramon Magsaysay Center
1680 Roxas Boulevard
Manila

Subject: USAID CONTRACT NO: 492-0420-C-00-1140-00
South Cotabato Highways Project
Mindanao Development Program
- Progress Billing No. 29 for the Period Ending 31 December 1993 -

Dear Sir:

Transmitted herewith is Progress Billing No. 29 for the Period Ending 31 December 1993 in the amount of $2,228,426.00. We are also enclosing a summary of current estimated contract costs.

We request that a check please be issued payable to:

MORRISON KNUDSEN CORPORATION.

Very truly yours,

W. C. Beatty

WILLIAM C. BEATTY
Project Director

BEST AVAILABLE DOCUMENT

File: 11.1.2
15-20

Rec'd 1/40
DEC 21 1993

283

Standard Form 1034
September 1954
4 Treasury FRM 2000
Revised

PUBLIC VOUCHER FOR PURCHASES AND SERVICES OTHER THAN PERSONAL

VOUCHER NO.

DEPARTMENT, BUREAU, OR ESTABLISHMENT AND LOCATION: USAID/MANILA

DATE VOUCHER PREPARED: 20 December 1993

SCHEDULE NO.

CONTRACT NUMBER AND DATE: AID-492-0420-C-00-1140-00

PAID BY

REQUISITION NUMBER AND DATE

PAYEE'S NAME AND ADDRESS:
MORRISON KNUDSEN CORPORATION
MORRISON KNUDSEN PLAZA
P.O BOX 73
BOISE, IDAHAO 83729
U.S.A.

DATE INVOICE RECEIVED

DISCOUNT TERMS

PAYEE'S ACCOUNT NUMBER

SHIPPED FROM | TO | WEIGHT | GOVERNMENT B/L NUMBER

NUMBER AND DATE OF ORDER	DATE OF DELIVERY OR SERVICE	ARTICLES OR SERVICES (Enter description, item number of contract or Federal supply schedule, and other information deemed necessary)	QUANTITY	UNIT PRICE COST	UNIT PRICE PER	AMOUNT (1)
		DESIGN-CONSTRUCT ROAD PROJECT:				
		MOBILIZATION				$ 7,233,478
		TOTAL WORK IN PLACE				35,885,329
		STORED MATERIALS				36,470
		TOTAL DUE				43,155,277
		LESS: ECONOMIC PRICE ADJUSTMENT				(1,598,962)
		PAID TO DATE				(39,327,889)
		AMOUNT DUE THIS ESTIMATE				2,228,426
		LESS : DISALLOWANCES (SEE ATTACHED SHEET)				(222,091)
		NET DUE THIS ESTIMATE				$ 2,006,335

(Use continuation sheet(s) if necessary) (Payee must NOT use the space below) TOTAL

PAYMENT:
- [ ] COMPLETE
- [ ] PARTIAL
- [ ] FINAL
- [ ] PROGRESS
- [ ] ADVANCE

APPROVED FOR = $

EXCHANGE RATE = $1.00

DIFFERENCES

BY[2] JOHN C. STARNES

TITLE Chief, Infrastructure Support Division

Amount verified; correct for

(Signature or initials)

Pursuant to authority vested in me, I certify that this voucher is correct and proper for payment.

(Date) (Authorized Certifying Officer)[2] (Title)

ACCOUNTING CLASSIFICATION

CHECK NUMBER	ON TREASURER OF THE UNITED STATES	CHECK NUMBER	ON (Name of bank)
CASH $	DATE	PAYEE[3]	

[1] When stated in foreign currency, insert name of currency.
[2] If the ability to certify and authority to approve are combined in one person, one signature only is necessary; otherwise the approving officer will sign in the space provided, over his official title.
[3] When a voucher is receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary", or "Treasurer", as the case may be.

PER

TITLE

284

Project No.: _____ Project Name: SOUTH COTABATO ROADS PROJECT

Grant/Contract No.: AID-492-0420-C-00-1140-00 Invoice/Billing Date: 31 DEC 93

Payee: MORRISON KNUDSEN CORPORATION Amount Approved: $ 2,006,335.00

Administrative Approval of Voucher

I have reviewed the voucher and: (Please mark the one that is applicable)

_____ related invoice(s) and supporting documentation for an AID-Direct Contract, Grant, Borrower/Grantee (B/G) Contract under AID Direct Payment, or Cooperative Agreements.

_____ reimbursement request and supporting documents from a B/G for Project Services Performed and/or Goods Delivered.

_____ reimbursement request and inspection reports from a B/G for Projects implemented under Fixed Amount Reimbursement (FAR) procedures.

_____ related invoice(s), the contractor's certificate (AID Form 1440), or other required documentation, and the B/G's certificate of performance for B/G service contracts financed under AID-Direct Letter of Commitment procedures.

Based on this documentation, and my personal knowledge of the project, I see no reason to withhold payment. Therefore, the voucher is administratively approved for payment subject to the financial review and certification by the paying office.

Project Officers Checklist for Administrative Approval of Vouchers
(Please check as many as are applicable)

_____ I have personally observed project implementation and made _____ field trip(s) to the project site(s) in the last three months.

_____ I have discussed project implementation and visited the main office of the implementing agency(ies) _____ time(s) in the last three months.

_____ I met and discussed contractor level of performance and/or commodities delivered with my counterpart(s) _____ time(s) in the last three months.

_____ I have sufficient information to enable me to provide an administrative approval and visited the project site(s) as part of my Project Officer responsibilities.

_____ None of the above. My administrative approval is based on the following: (Please be concise, i.e., two or three sentences.) _____

_____

_____

BEST AVAILABLE DOCUMENT

JOHN C. STARNES
Chief, Infrastructure Support Div.
Project Officer

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OMB No. 24-R0058
Expiration 07 31 90

CONTRACTOR'S CERTIFICATE AND AGREEMENT WITH THE AGENCY FOR INTERNATIONAL DEVELOPMENT
CONTRACTOR'S INVOICE-AND-CONTRACT ABSTRACT

I. INVOICE AND CONTRACT INFORMATION

1. Contractor's Name and Address	2a. A.I.D. Number	3. Contract is for:
MORRISON KNUDSEN CORPORATION MORRISON KNUDSEN PLAZA P.O. BOX 73 BOISE, IDAHO, U.S.A. 83729	2b. Contract No. AID-492-0420-C-00-1140-00	a. ☐ Professional Services b. ☐ Construction Services c. ☐ Equipment/Materials

4. Contract Date	5. Total Contract Amt.	6. Total Value Previously Received or Claimed	7. Invoice Date	8. Invoice Amount
10 JULY 1991	$ 43,096,324	$ 2,228,426	20 December 1993	$ 2,006,335

II. CONTRACTOR INFORMATION

9. Contractor's Type of Business			10. Estimated Value of Subcontracts (If answer in 9. is "No")
a. Small Business	☐ Yes	☐ No	a. From Small Businesses _____ %
b. Socially and Economically Disadvantaged Enterprise	☐ Yes	☐ No	b. From Socially and Economically Disadvantaged Enterprises _____ %
c. Woman-Owned Business	☐ Yes	☐ No	c. From Woman-Owned Businesses _____ %

III. INFORMATION AS TO COMMISSIONS, CREDITS AND ALLOWANCES

11. Names of Recipient(s)	12. Address(es)	13. Amount(s) Paid or to be Paid

14. Additional Information or Explanation of Entries

BEST AVAILABLE DOCUMENT

CONTRACTOR'S CERTIFICATE AND AGREEMENT WITH THE AGENCY FOR INTERNATIONAL DEVELOPMENT

e contractor hereby acknowledges that the sum indicated on the companying invoice as claimed to be due and owing under the ms of the contract identified above (hereafter referred to as id contract") is to be paid, in whole or in part, out of funds de available by the United States under the Foreign Assistance t of 1961, as amended. In consideration of the receipt of such n, the contractor agrees with and certifies to A.I.D. as follows:

The undersigned is the contractor indicated in the above Ince-and-Contract Abstract, is entitled under said contract to the ment of the sum claimed, and is executing this Certificate and reement for the purpose of obtaining such payment from funds de available by the United States as described above.

The contractor will, upon the request of A.I.D., promptly ke appropriate refund to A.I.D., plus interest [at the rate eslished in accordance with the Internal Revenue Code, 26 S.C. 6621 (b)] from the time of payment to the contractor, in event of

(a) its nonperformance, in whole or in part, under said con-t, or

(b) any breach by it of any of its undertakings in this Certificate and Agreement, or

(c) any false certification or representation made by it in this Certificate and Agreement or in the above Invoice and Contract Abstract.

3. To the best of its information and belief, any commodity or service supplied under said contract meets the source, origin, componentry, and nationality requirements specified in the contract and/or letter of commitment.

4. The amount shown in Block 8 above is net of all credits, allowances and discounts granted and payments made by the contractor or its agent to or for the account of the purchaser. The contractor will promptly pay to A.I.D. (Office of Financial Management, A.I.D., Washington, D. C. 20523) any adjustment refunds, credits or allowances which hereafter become payable to or for the account of the purchaser arising out of the terms of said contract or the customs of the trade plus interest [at the rate established in accordance with the Internal Revenue Code, 26 U.S.C. 6621 (b)] from the time of payment to the contractor.

[Continued On Reverse Side]

OTES: (a) Any amendments of, or additions to, the printed provisions of this Contract's Certificate and Agreement e improper and will not be considered a part hereof. (b) False statements herein are punishable by United States v. (c) The word "copy" must be written after signature on all signed copies other than the original.

5. The contractor or its agent has not compensated any person to obtain said contract except to the extent, if any, indicated in :tion III of the Invoice-and-Contract Abstract.

6. The contractor or its agent has not made and will not make any payment to or for the benefit of the purchaser, the purchaser's agent, or the Borrower/Grantee in the nature of a kickback.

7. Any commission paid or to be paid by the contractor to its agent in connection with the transaction for which payment is being requested under said contract is shown in Section III of the Invoice-and-Contract Abstract and does not exceed the lesser of 1) the amount customarily paid by the contractor in connection with similar transactions or 2) the amount customary in the trade.

8. Neither contractor nor its agent has given or received and will not give or receive any payment or benefit whatever in connection with any transaction or series of transactions which are covered by said contract other than those payments or benefits permitted under this agreement.

9. The contractor certifies that it has not been informed of its ineligibility to act as a contractor or otherwise participate in A.I.D.-financed transactions.

10. The contractor will for a period of not less than three (3) years after the date of final payment maintain all business records and other documents which bear on its compliance with any of the undertakings and certifications herein and will, at any time requested by A.I.D., promptly furnish to A.I.D. such additional information as A.I.D. may request relating to such compliances.

11. The contractor has filled in all applicable portions of the In-·oice-and-Contract Abstract and certifies to the correctness of the ɔrmation shown therein.

PERSONAL CERTIFICATE BY NATURAL PERSON SIGNING THIS CERTIFICATE AND AGREEMENT

The natural person who signs this Certificate and Agreement hereby certifies either that he/she is the contractor or that he/she has actual authority to sign on behalf of the contractor and to bind the contractor with regard to all certifications and agreements contained in this Certificate and Agreement. He/She further certifies, if he/she is not personally the contractor, that either he/she is an employee of the contractor or he/she has a written power of attorney to sign for, and bind the contractor. He/She acknowledges that he/she is signing and submitting this Certificate and Agreement for the purpose of receiving payment from A.I.D. funds and that A.I.D. in making funds available for such payment will rely upon the truth and accuracy of this Personal Certification as well as of all other representations in the Certificate and Agreement.

The Contractor's Certificate and Agreement and the Personal Certification herein shall be governed by and construed in accordance with the laws of the United States of America.

Date (Name of Contractor)

W.C. Beatty
(Signature and Title)

Place executed (City, County, State, Country)

Paperwork Reduction Act Notice. Collection of the inforr tion requested by this form is authorized by Section 621 of the F eign Assistance Act of 1961, as amended (22 U.S.C. 2381). T information furnished herein will be utilized to verify complia with statutory requirements and A.I.D. policies, as a basis recourse in event of a determination of noncompliance, and a means of monitoring small business, economically and soci disadvantaged enterprise and women-owned business partici tion in A.I.D. programs. This information may be disclosed o side A.I.D. to (i) Congress and other Federal agencies and eign governments for management, statistical, and other offi functions; (ii) a court of appropriate jurisdiction and appropr U.S. Government and foreign government agencies involved litigation concerning the transaction referenced herein; and (an appropriate law enforcement agency if there is indication o violation of law involving this transaction. The submission of information requested is voluntary, but failure to provide this formation may preclude payment or reimbursement for the co modities furnished or services rendered.

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PERIODIC COST ESTIMATE

Sponsor's Name and Address: U.S. Agency for International Development
Magsaysay Center, Roxas Boulevard, Manila

USAID No.
492-420-C00-1140-00

Official Name and Location of Project:
USAID/Philippine Rural Infrastructure Fund – South Cotabato

Estimate No.:
TWENTY NINE (29)

Contractor's Name and Address:
Morrison Knudsen Corporation
P.O. Box 73
Boise, Idaho 83729

Period Ending:
31 DECEMBER 1993

Date Prepared:
21 DECEMBER 1993

Description of Work: Rural Roads – Base and Alternate Bid

Sector #2 GSC/Malapatan
Sector #2Alt Malapatan/Glan
Sector #4 Polomolok/Landan
Sector #3 GSC/Kiamba
Sector #3Alt Kiamba/Maitum
Sector #7 Surallah/T'boli
Sector #8 Banga/Kolambog

Percent Complete
96.34%

New Contract Amount:
$43,096,324

A. Work to Start:	B: Work Started:	C. Completion Due:	D: Estimate to Complete	Contract Time:
12 October 1991	23 October 1991	18 June 1994	15 January 1994	3 years

TOTAL OF PERIODIC COST ESTIMATE:

MOBILIZATION		$7,233,478
CONTRACT WORK IN PLACE	$35,885,329	
DEDUCTIONS:		
(1) RETENTION	$0	
(2) DEFECTS LIABILITY	0	
WORK IN PLACE (NET)		$35,885,329
STORED MATERIALS (NET)		$36,470
TOTAL DUE		$43,155,277
LESS: ECONOMIC PRICE ADJUSTMENT		($1,598,962)
PAID TO DATE		($39,327,889)
AMOUNT DUE THIS ESTIMATE		$2,228,426

CERTIFICATION OF CONTRACTOR – I HEREBY CERTIFY that I submitted a Request for Payment for the pay period covered in this Progress Estimate and that there are no claims for extra work, delays, omitted items, or of any nature whatsoever pending against the Owner or Engineer not set forth herein unless expressly stated otherwise in this Progress Estimate. I further certify that the work performed and the materials supplied to date, as shown this Progress Estimate, represent the actual value of accomplishment under the terms of the Contract, that the work performed and the materials supplied are in accordance with the plans and specifications, that the quantities were properly determined and are correct, and that there has been full compliance with all labor provisions included in the Contract identified above.

DATE: 31 DECEMBER 1993 NAME OF CONTRACTOR: MORRISON KNUDSEN CORPORATION

TITLE: PROJECT DIRECTOR

SIGNATURE: W. C. Beatty

CONCURRENCE AND CERTIFICATION OF SPONSOR'S ENGINEER – I have examined this Periodic Cost Estimate and concur in the certification of the contractor and certify that the materials used and the construction accomplishment meet the requirements of the plans and specifications as evidenced by the certified inspection reports included in the project records.

DATE: 31 DECEMBER 1993 SIGNATURE: SPONSOR'S ENGINEER

Larry L. Larsen

C:\BILL\BILL#29.WK1

DISALLOWANCE FOR INVOICE NO. 29
FOR THE PERIOD DECEMBER 1 - 31, 1993

I. ROAD SECTOR 2, ALTERNATE
MALAPATAN - GLAN

A. ITEM 030 A - ADDITIONAL ROAD DESIGN AT STA. 34 + 100, DISALLOW 50% OF THE PROPOSED DESIGN COST OF $ 10,000.00 UNTIL APPROVED ----------$ 5,000.00

B. ITEM 102(2) - ROCK EXCAVATION

ROCK EXCAVATION QUANTIFIED BY MKC USING A 1:2 SLOPE CUT----------14,996 CU.M.

ACTUAL ROCK EXCAVATION IS 1:10 SLOPE CUT -QTY ----------12,395 CU.M.

DIFFERENCE 2,601 CU.M.

DISALLOWED ------2,601 CU.M. X $20/CUM. = $ 52,020.00

II. ROAD SECTOR 7 & 8, CONTRACT AMOUNT

ROAD SECTOR	MOD 4 CONTRACT AMOUNT	ACTUAL/INCLUDING ADDITIONAL WORKS	ESTIMATED EXCESS
7	$ 3,750,827.00	$3,852,145.00	$101,318.00
8	$ 1,218,245.00	$1,248,369.00	$ 30,124.00

EXCESS AMOUNT WILL BE PAID UPON APPROVAL BY THE USAID CONTRACTING OFFICER AS PER CLAUSE NO.1.1 ITEM E, PAGE 2 OF MOD NO.4

III. MAINTENANCE OF DETOUR ROAD (ITEM 103(2) - BRIDGE EXCAVATION

A.LUN MASLA BRIDGE (750-677) CU.M. X 73.404 --- $ 5,359.00

B.SAUB BRIDGE (210-147) CU.M. X 75.78 ---- $ 4,774.00

IV. BALANCE OF RETENTION----------$ 23,496.00

TOTAL RETENTION WILL BE RELEASED WHEN ALL AS-BUILT DRAWINGS AND FINAL DOCUMENTS FOR THE PROJECT IS SUBMITTED.

TOTAL DISALLOWANCE---------- $222,091.00

Larry L. Larsen

BEST AVAILABLE DOCUMENT

SOUTH COTABATO HIGHWAYS PROJECT
BILLING SUMMARY

PERIOD ENDING 31 DEC 1993

1) MOBILIZATION			$7,233,478
2) PERIODIC PAYMENTS	DESIGN	CONSTRUCTION	TOTAL
2.1) COMPLETED WORK:			
SAUB BRIDGE	25,000	0	25,000
LUN MASLA BRIDGE	43,100	0	43,100
SAPU MASLA BRIDGE	0	104,392	104,392
SECTOR 2 BASE	374,197	4,505,674	4,879,871
SECTOR 2 ALTERNATE	275,175	0	275,175
SECTOR 3 BASE	713,460	11,360,646	12,074,106
SECTOR 3 ALTERNATE	124,033	3,122,038	3,246,071
SECTOR 4	64,458	0	64,458
SECTOR 7	175,755	3,676,390	3,852,145
SECTOR 8	98,207	1,150,162	1,248,369
SUB-TOTAL ITEM 2.1	1,893,385	23,919,302	25,812,687
2.2) WORK IN PROGRESS:			
SAUB BRIDGE	0	553,718	553,718
LUN MASLA BRIDGE	0	1,241,647	1,241,647
SECTOR 2 ALTERNATE	0	6,962,105	6,962,105
SECTOR 4	0	1,315,172	1,315,172
SUB-TOTAL		10,072,642	10,072,642
TOTAL PERIODIC PAYMENTS (2.1 + 2.2)			$35,885,329
3) MATERIALS ON HAND (NET)			36,470
TOTAL DUE TO DATE (1 + 2 + 3)			43,155,277
LESS: ECONOMIC PRICE ADJUSTMENT TO DATE			(1,598,962)
LESS: PAID TO DATE			(39,327,889)
TOTAL AMOUNT DUE THIS BILLING			$2,228,426

BEST AVAILABLE DOCUMENT

CONTRACTOR'S REPRESENTATIVE: Paul A Harris

ENGINEER'S REPRESENTATIVE: Larry G. Larsen

C:\BILL\BILLSUM.WK1

SUMMARY OF CURRENT ESTIMATED CONTRACT COSTS

SOUTH COTABATO ROADS PROJECT

AS OF 31 DEC 93

11:20 AM

LOCATION	APPROVED BUDGET (MOD 4) (1)	CURRENT ANTICIPATED BUDGET (2)	DIFF ANTICIPATED VS. APPROVED (2-1)	EARNED AS OF 31 DEC 93 (3)	DIFF APPROVED VS. EARNED (1-3)	DIFF ANTICIPATED VS. EARNED (2-3)
SECTOR 2BASE	5,060,616	4,879,871	(180,745)	4,879,871	180,745	0
SECTOR 2ALT	8,095,042	7,857,982	(237,060)	7,237,280	857,762	620,702
SECTOR 3BASE	19,304,183	19,307,584	3,401	19,307,584	(3,401)	0
SECTOR 3ALT	3,251,354	3,246,071	(5,283)	3,246,071	5,283	0
SECTOR 4	1,401,955	1,493,436	91,481	1,315,172	86,783	178,264
SECTOR 7	3,750,827	3,852,145	101,318	3,852,145	(101,318)	0
SECTOR 8	1,218,245	1,248,369	30,124	1,248,369	(30,124)	0
LUN MASLA	1,342,513	1,339,923	(2,590)	1,284,747	57,766	55,176
SAPU MASLA	110,443	104,392	(6,051)	104,392	6,051	0
SAUB	711,011	683,700	(27,311)	578,718	132,293	104,982
SUB-TOTAL	44,246,189	44,013,473	(232,716)	43,054,349	1,191,840	959,124
* FCMs IN PROCESS	0	45,609	45,609	0	0	45,609
CONTINGENCIES	500,000	687,107	187,107	0	500,000	687,107
EPA	(1,649,865)	(1,649,865)	0	(1,598,962)	(50,903)	(50,903)
TOTAL	$43,096,324	$43,096,324	$0	$41,455,387	$1,640,937	$1,640,937

* THROUGH FCM #342

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20-Dec

10:51 AM

SUMMARY
ECONOMIC PRICE ADJUSTMENT
AS OF 31 DEC 1993

A. CEMENT	AS OF LAST MONTH	TO DATE	THIS MONTH
Base Bid Price	$96.50 /mt	$96.50 /mt	
Actual Cost	$84.23 /mt	$84.23 /mt	
Economic Unit Price	($12.27)/mt	($12.27)/mt	
Quantity	289,702 bags	304,802 bags	
	11,588 tons	12,192 tons	
Total Economic Price Adjustment	($142,185)	($149,596)	($7,411)
B. STEEL			
Base Bid Price	$0.575 /mt	$0.575 /mt	
Actual Cost	$0.470 /mt	$0.470 /mt	
Economic Unit Price	($0.105)/mt	($0.105)/mt	
Quantity	1,039,478 kg	1,042,392 kg	
Total Economic Price Adjustment	($109,145)	($109,451)	($306)
C. ASPHALT			
Base Bid Price	$445.00 /mt	$445.00	
Actual Cost	$271.19 /mt	$271.19	
Economic Unit Price	($173.81)/mt	($173.81)	
Quantity	141,800 mt	141,800 mt	
@ 6%	7,706 mt	8,508 mt	
Total Economic Price Adjustment	($1,339,380)	($1,478,775)	($139,395)
D. DIESEL FUEL			
Base Bid Price	$0.25 /liter	$0.25 /liter	
Actual Cost	$0.27 /liter	$0.27 /liter	
Variance	$0.02 /liter	$0.02 /liter	
Quantity to date	7,603,564 liter	7,754,684 liter	
Total Economic Price Adjustment	$152,071	$155,094	$3,023
E. GASOLINE			
Base Bid Price	$0.46 /liter	$0.46 /liter	
Actual Cost	$0.40 /liter	$0.40 /liter	
Variance	($0.06)/liter	($0.06)/liter	
Quantity to date	203,359 liter	270,572 liter	
Total Economic Price Adjustment	($12,202)	($16,234)	($4,032)
TOTAL ESTIMATED ECONOMIC PRICE ADJUSTMENT	($1,450,841)	($1,598,962)	($148,121)

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SOUTH COTABATO HIGHWAYS PROJECT
BILLING SUMMARY

20-Dec-93 10:49

BILL NO	CUT-OFF DATE	WORK IN PLACE AMOUNT	WORK IN PLACE RETENTION	STORED MATERIALS AMOUNT	STORED MATERIALS RETENTION	NET BILLED	USAID PAYMENT	VARIANCE	CUMULATI
01	31 Aug 91	126,038.00	(12,603.80)	0.00	0.00	113,434.20	113,434.20	0.00	0
02	30 Sep	130,493.00	(13,049.30)	0.00	0.00	117,443.70	94,356.00	(23,087.70)	(23,087
03	31 Oct	125,741.00	(12,574.10)	2,604.69	(260.47)	115,511.12	103,959.92	(11,551.20)	(34,638
04	30 Nov	6,505,535.23	(650,553.52)	(2,604.69)	260.47	5,852,637.49	5,267,373.74	(585,263.75)	(619,902
05	31 Dec	113,671.77	(11,367.18)	0.00	0.00	102,304.59	655,934.32	553,629.73	(66,272
06	31 Jan 92	316,769.00	(31,676.90)	116,965.00	(11,696.50)	390,360.60	402,057.10	11,696.50	(54,576
07	29 Feb	209,772.00	(20,977.20)	400,447.00	(40,044.70)	549,197.10	618,075.10	68,878.00	14,301
08	31 Mar	1,297,036.00	(129,703.60)	543,201.00	51,741.20	1,762,274.60	1,762,274.00	(0.60)	14,300
09	30 Apr	797,816.00	(79,781.60)	33,897.00	0.00	751,931.40	751,932.00	0.60	14,301
10	31 May	1,008,039.00	(100,803.90)	357,190.00	0.00	1,264,425.10	1,264,425.00	(0.10)	14,301
11	30 Jun	1,148,986.00	(114,898.60)	(40,468.00)	0.00	993,619.40	993,619.00	(0.40)	14,301
12	31 Jul	1,048,750.00	(104,875.00)	(6,267.00)	0.00	937,608.00	895,654.00	(41,954.00)	(27,652
	Reimbursement of previous disallowances						27,534.29	27,534.29	(118
13	31 Aug	1,061,676.00	(106,167.60)	(161,760.00)	0.00	793,748.40	793,749.00	0.60	(118
	Underpayment by USAID						118.24	118.24	0.
14	30 Sep	1,588,992.00	671,488.00	39,410.00	0.00	2,299,890.00	2,296,399.52	(3,490.48)	(3,490.
15	31 Oct	2,009,949.00	4,363.00	(551,537.00)	0.00	1,462,775.00	1,463,822.05	1,047.05	(2,443.
16	30 Nov	2,008,870.00	(190,612.00)	16,706.00	0.00	1,834,964.00	1,837,931.00	2,967.00	523.
17	31 Dec	1,270,850.00	328,843.00	(93,046.00)	0.00	1,506,647.00	1,506,647.00	0.00	523.
18	31 Jan 93	1,365,712.00	0.00	(75,055.00)	0.00	1,290,657.00	1,281,872.00	(8,785.00)	(8,261.
19	28 Feb	1,424,662.00	308,463.00	(67,433.00)	0.00	1,665,692.00	1,674,477.00	8,785.00	523.
20	31 Mar	680,254.00	238,756.00	232,808.00	0.00	1,151,828.00	1,056,499.00	(95,329.00)	(94,805.
21	30 Apr	1,346,136.00	4,235.00	(154,720.00)	0.00	1,195,651.00	1,042,408.00	(153,243.00)	(248,048.
22	31 May	969,220.00	0.00	(6,514.00)	0.00	962,706.00	1,067,819.00	105,113.00	(142,935.
	Less: Disallow	(142,935.22)				(142,935.22)		142,935.22	(0.
23	30 Jun	2,681,540.00	0.00	(206,077.00)	0.00	2,475,463.00	1,486,976.00	(988,487.00)	(988,487.
	Less: EPA	(1,092,871.00)				(1,092,871.00)		1,092,871.00	104,384.
	Plus: Disallow	142,935.22				142,935.22		(142,935.22)	(38,551.
	Less: Disallow	(38,551.22)				(38,551.22)		38,551.22	(0.
24	31 Jul	1,938,992.00	0.00	291,836.00	0.00	2,230,828.00	2,216,301.00	(14,527.00)	(14,527.
	Less: EPA	(4,696.00)				(4,696.00)		4,696.00	(9,831.
	Plus: Disallow	38,551.22				38,551.22		(38,551.22)	(48,382.
	Less: Disallow	(48,382.22)				(48,382.22)		48,382.22	0.
25	31 Aug	2,496,297.00	0.00	258,640.00		2,754,937.00	2,643,427.00	(111,510.00)	(111,510.
	Less: EPA	(73,897.00)				(73,897.00)		73,897.00	(37,613.
	Plus: Disallow	48,382.22				48,382.22		(48,382.22)	(85,995.
	Less: Disallow	(85,995.22)				(85,995.22)		85,995.22	0.
	Reconciling Entry :	1.78	0.30	(1.00)		1.08	0.30	(0.78)	(0.
26	30 Sep	1,836,504.00	0.00	(355,336.00)		1,481,168.00	1,488,136.00	6,968.00	6,967.
	Less: EPA	(45,422.00)				(45,422.00)		45,422.00	52,389.
	Plus: Disallow	85,995.22				85,995.22		(85,995.22)	(33,606.
	Less: Disallow	(33,606.00)				(33,606.00)		33,606.00	0.
27	31 Oct	1,858,186.00	0.00	9,312.00		1,867,498.00	1,839,966.00	(27,532.00)	(27,532.
	Less: EPA	(47,982.00)				(47,982.00)		47,982.00	20,450.
	Plus: Disallow	33,606.00				33,606.00		(33,606.00)	(13,156.
	Less: Disallow	(13,156.00)				(13,156.00)		13,156.00	0.
27	30 Nov	3,146,008.00	23,496.00	(228,270.00)		2,941,234.00	2,680,712.00	(260,522.00)	(260,522.
	Less: EPA	(185,973.00)				(185,973.00)		185,973.00	(74,549.
	Plus: Disallow	13,156.00				13,156.00		(13,156.00)	(87,705.
	TOTAL	39,061,665.78	0.00	353,928.00	0.00	39,415,593.78	39,327,888.78	(87,705.00)	

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SUMMARY OF STORED MATERIALS

FOR MONTHLY PROGRESS BILLING NO. 29

PERIOD ENDING 31 DECEMBER 1993

20-Dec

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STORED MATERIALS (CURRENT INVENTORIES)	AMOUNT PREVIOUS ($)	AMOUNT TO DATE ($)	THIS MONTH (+/−) ($)
1. Guidepost/Guardrailpost	2,928	0	(2,928)
2. Reinforcing Steel	16,583	0	(16,583)
3. Filter Fabrics	2,734	0	(2,734)
4. Road Signs	13,722	4,765	(8,957)
5. PVC Gabion Mesh	5,116	0	(5,116)
6. Guardrails	7,229	0	(7,229)
7. Aggregates	72,902	0	(72,902)
8. Cement	54,130	0	(54,130)
9. Asphalt, 60/70	208,087	38,141	(169,946)
10. Prime Coat (MC−70)	32,955	0	(32,955)
TOTAL	416,386	42,906	(373,480)
AMOUNT @ 85%	353,928	36,470	(317,458)

CONTRACTOR'S REPRESENTATIVE: Paul A Aero

ENGINEER'S REPRESENTATIVE: Larry G. Larsen

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STORED MATERIALS

FOR MONTHLY PROGRESS BILLING NO. 29

MONTH ENDING 31 DECEMBER 1993

DESCRIPTION	UNIT	QTY	U/C ($)		AMOUNT ($)
1. Guidepost/Guardrailpost	ea	0	16		
2. Reinforcing Steel:					
For Saub Bridge (Slab, sidewalk and diaphragm):					
· 16mm x 12.0m	ea	0	8.86	0.00	
12mm x 12.0m	ea	0	5.07	0.00	
10mm x 10.5m	ea	0	2.81	0.00	
	SUB TOTAL ITEM 2			0.00	
	LESS VAT			0.00	
	TOTAL ITEM 2				0
3. Filter Fabrics	sq.m.	0	6.51		0
4. Road Signs	ea	50	95.29		4,765
5. PVC Gabion Mesh					
–80 x 100, wire core dia 2.7					
No. 2 x 1 x 1.0	ea	0	37.50	0.00	
No. 2 x 1 x 0.3	ea	0	26.00	0.00	
	TOTAL ITEM 8				0
6. Guardrails					
–Standard Flex Beam, Ga. #12	ea	0	18.87	0.00	
– End Section	ea	0	32.08	0.00	
	TOTAL ITEM 9				0
7. Crushed Aggregate	m^3	0	6.232		0
8. Cement	mt	0	89.62		0
9. Asphalt, 60/70 Penetration	mt	147	259.46		38,141
10. Prime Coat, MC–70	mt	0	397.05		0
TOTAL MATERIALS ON HAND (US $)					42,906
AMOUNT PAYABLE @ 85%					$36,470

CONTRACTOR'S REPRESENTATIVE:	ENGINEER'S REPRESENTATIVE:

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MONTHLY PROGRESS BILLING NO. 29
PERIOD ENDING 31 DECEMBER 1993
SAUB BRIDGE AND APPROACHES, SECTOR 3ALT
(Sta. 99 + 525 to 99 + 992)

	DESCRIPTION	CONTRACT AMOUNT (US $)	COMP WORK TO DATE (US $)	WORK IN PROGRESS PREVIOUS (US $)	WORK IN PROGRESS THIS PERIOD (US $)	WORK IN PROGRESS TO DATE (US $)
I.	GENERAL	25,000	25,000			
II.	EARTHWORK	81,078	0	57,409	4,774	62183
III.	PAVEMENT	49,810	0	48,599	0	48,599
VI.	STRUCTURES	469,292	0	208,281	234,655	442,936
V.	DRAINAGE AND EROSION WORKS	37,166	0	0	0	0
VI.	INCIDENTAL WORKS	21,354	0	0	0	0
	TOTAL FOR SAUB BRIDGE (U.S. Dollars)	683,700	25,000	314,289	239,429	553,718

Prepared by:

MORRISON KNUDSEN CORP.

Recommended by:

Larry G. Larsen

MORRISON MAIERLE

Reviewed by:

Paul A Arts

MORRISON KNUDSEN CORP.

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PAY ITEM No.	DESCRIPTION	UNIT	EST'D QTY	UNIT COST (US $)	TOTAL AMOUNT (US $)	PREVIOUS AMOUNT QTY	PREVIOUS AMOUNT (US $)	TO DATE AMOUNT QTY	TO DATE AMOUNT (US $)	THIS AMOUNT QTY
	IV. STRUCTURES									
103(5)	Shoring, Cribbing and Others	EA	2	4126.38	8253	1	4126	2	8253	
401	Concrete Bridge Railing	LM	160	164.723	26356	0	0	0	0	
404	Reinforcing Steel	KG	99495	1.343	133622	49996	67145	99495	133622	49499
405(1)	Structural Conc., Class A	M^3	642.40	468.651	301061	292.35	137010	642.40	301051	350
	SUB–TOTAL IV. STRUCTURES				469292		208281		442936	
	V. DRAIN & EROS WORKS									
504(5)	Grouted Riprap, Class A	M^3	30	80.400	2412					
509	Gabions	M^3	260	105.172	27345	0	0	0	0	0
509(1)	Filter Fabrics	M^2	537	13.797	7409	0	0	0	0	0
	SUB–TOTAL V. DRAIN & EROS WORKS				37166		0		0	
	VI. INCIDENTAL WORKS									
603(5)	Metal Guardrail (Metal Beam)	LM	323.85	61.640	19962					
603(3)	Welding of bolts – Guardrails	LM	323.85	1.436	465					
605(4)	Signs and Markers	EA	2	354.00	708					
606(3)	Pvm't. Markings (Reflective)	LM	360	0.608	219					
	SUB–TOTAL VI. INCIDENTAL WORKS				21354		0		0	

CONTRACTOR'S REPRESENTATIVE:

ENGINEER'S REPRESENTATIVE:

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PAY ITEM NO	DESCRIPTION	UNIT	EST'D QTY	UNIT COST (US $)	TOTAL AMOUNT (US $)	PREVIOUS AMOUNT QTY	PREVIOUS AMOUNT (US $)	TO DATE AMOUNT QTY	TO DATE AMOUNT (US $)	THIS PERIOD AMOUNT QTY	THIS PERIOD AMOUNT (US $)
	I. GENERAL										
031	Detailed Bridge Design	LS	1	25000	25000	1	25000	1	25000	0	0
	SUB–TOTAL I. GENERAL				25000		25000		25000		0
	II. EARTHWORK										
100(5)	Clearing and Grubbing	M^2	4613	0.184	849	3462	637	3462	637	0	0
101(1)	Removal of Structures and Obstructions	EA	9	418.334	3765	9	3765	9	3765	0	0
103(1)	Structure Excavation	M^3	770	1.628	1254	21	34	21	34	0	0
103(2)	Bridge Excavation	M^3	245	75.780	18566	147	11140	210	15914	63	4774
104(1)	Embankment	M^3	8448	5.816	49134	6254	36370	6254	36370	0	0
104(2)	Embankment, Select Material	M^3	458	11.563	5296	331	3824	331	3824	0	0
[illegible]5(1)	Subgrade Preparation, Common Material	M^2	4509	0.491	2214	3339	1639	3339	1639	0	0
	SUB–TOTAL II. EARTHWORK				81078		57409		62183		4774
									(18,895)		
	Bank 1 works										
	III. PAVEMENT										
202	Crushed Aggregate Base Course	M^3	653	21.530	14059	635	13672	635	13672	0	0
301	Bit. Prime Coat, MC–70	M^2	2554	1.195	3052	1865	2228	1865	2228	0	0
310(1)	Asphalt Concrete, Hot–Laid	MT	332	98.491	32699	332	32699	332	32699	0	0
	SUB–TOTAL III. PAVEMENT				49810		48599		48599		0
									(1,211)		

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20/06

CONTRACTOR'S REPRESENTATIVE:

ENGINEER'S REPRESENTATIVE:

PAY ITEM NO	DESCRIPTION	UNIT	EST'D QTY	UNIT COST (US $)	TOTAL AMOUNT (US $)	PREVIOUS AMOUNT QTY	PREVIOUS AMOUNT (US $)	TO DATE AMOUNT QTY	TO DATE AMOUNT (US $)	THIS PERI AMOUN QTY	(US
	I. GENERAL ITEMS										
031	Contractor Furnished Detailed Bridge Design	LS	1	43100	43100	1	43100	1	43100	0	
	SUB-TOTAL I. GENERAL ITEMS			.....	43100		43100		43100		
	II. STRUCTURES										
103(2)	Bridge Excavation	M^3	875	73.404	64229	602	44189	750	55053	148	10
103(5)	Shoring, Cribbing and Rel Work	EA	9	4126.38	37137	9	37137	9	37137	0	
400(4)	Pre-cast Conc Piles (Furnished)	LM	920	124.269	114327	920	114327	920	114327	0	
400(13)	Pre-cast Conc Piles (Driven)	LM	557.4	32.896	18336	557.4	18336	557.4	18336	0	
400(19)	Pile Shoes	EA	103	12.602	1298	103	1298	103	1298	0	
[illegible](23)	Pile Extraction @ Pier #5	LS	1	18952	18952	1	18952	1	18952	0	
401	Concrete Bridge Railing	LM	360	164.72	59300	120	19767	360	59300	240	395
404	Reinforcing Steel for Bridges	KG	195096	1.343	262014	173115	232493	195096	262014	21981	295
405(1)	Structural Conc., Class A	M^3	1130	468.651	529576	960	449905	1130	529576	170	796
415	Jet Grouting	LS	1	184000	184000	0.25	46000	0.75	138000	0.5	920
417	Structural Epoxy	LS	1	1464	1464	1	1464	1	1464	0	
418	Drilled-in Bars	LS	1	739	739	1	739	1	739	0	
418	Anchor Bolts, Pipe Sleeves, Bearing Pads and Filler	LS	1	5451	5451	1	5451	1	5451	0	
	SUB-TOTAL II. STRUCTURES			.....	1296823		990058		1241647		2515

RACTOR'S REPRESENTATIVE:

ENGINEER'S REPRESENTATIVE:

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MONTHLY PROGRESS BILLING NO. 29
PERIOD ENDING 31 DECEMBER 1993
LUN MASLA BRIDGE (STA. 12+859 TO 13+060)
SECTOR 2

20-Dec
10:58 AM

	DESCRIPTION	CONTRACT AMOUNT (US $)	COMP WORK TO DATE (US $)	WORK IN PROGRESS PREVIOUS (US $)	WORK IN PROGRESS THIS PERIOD (US $)	WORK IN PROGRESS TO DATE (US $)
A.	GENERAL ITEMS	43,100	43,100	0	0	0
D.	STRUCTURES	1,296,823	0	990,058	251,589	1,241,647
	TOTAL FOR LUN MASLA BRIDGE (U.S. DOLLAR)	1,339,923	43,100	990,058	251,589	1,241,647

Prepared by:

MORRISON KNUDSEN CORP.

Recommended by:

Larry L. Larsen

MORRISON MAIERLE

Reviewed by:

Paul A Akers

MORRISON KNUDSEN CORP.

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MONTHLY PROGRESS BILLING NO. 29
PERIOD ENDING 31 DECEMBER 1993
SAPU MASLA BRIDGE, SECTOR 2ALT
STA. 26 + 349 TO 26 + 410

AY ITEM NO	DESCRIPTION	UNIT	EST'D QTY	UNIT COST (US $)	TOTAL AMOUNT (US $)	PREVIOUS AMOUNT QTY	PREVIOUS AMOUNT (US $)	TO DATE AMOUNT QTY	TO DATE AMOUNT (US $)	THIS PERIO AMOUNT QTY	THIS PERIO AMOUNT (U
103(2)	Bridge Excavation	M^3	96	2.722	261	96	261	96	261	0	
102(3)	Rock Excavation	M^3	55.20	44.25	2443	55	2434	55.20	2443	0.20	
401	Concrete Bridge Railing	LM	30	164.723	4942	30	4942	30	4942	0	
404	Reinforcing Steel	KG	19583.99	1.343	26301	19583.99	26301	19583.99	26301	0.00	
405(1)	Structural Conc., Class A	M^3	135.78	468.651	63633	135.78	63633	135.78	63633	0.00	
405	Lean Concrete	M^3	36.72	96.009	3525	36.72	3525	36.72	3525	0.00	
504(5)	Grouted Riprap, Class "A"	M^3	24.99	80.400	2009	12.5	1005	24.99	2009	12.49	
509	Gabions	M^3	8.064	103.35	833	4.03	417	8.064	833	4.03	
509(1)	Filter Fabrics	M^2	32.288	13.797	445	16.2	224	32.288	445	16.09	

TOTAL FOR SAPU MASLA BRIDGE
(U.S. DOLLAR) 104392 102742 104392 1

Prepared by:

MORRISON KNUDSEN CORP.

Recommended by:

Larry L. Larsen

MORRISON MAIERLE

Reviewed by:

Paul A Artx

MORRISON KNUDSEN CORP.

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MONTHLY PROGRESS BILLING NO. 29
PERIOD ENDING 31 DECEMBER 1993
ROAD SECTOR NUMBER 2, SECTIONS 1 & 2 : GSC/BUAYAN RIVER TO MALAPATAN ROAD

20-Dec
10:36 AM

	DESCRIPTION	CONTRACT AMOUNT (US $)	COMP WORK TO DATE (US $)	WORK IN PROGRESS PREVIOUS (US $)	WORK IN PROGRESS THIS PERIOD (US $)	WORK IN PROGRESS TO DATE (US $)
I.	GENERAL ITEMS	374,197	374,197	0	0	0
II.	EARTHWORKS	1,110,791	0	1,110,577	214	1,110,791
III.	PAVEMENT	2,460,078	0	2,460,078	0	2,460,078
IV.	STRUCTURES	511,788	0	511,788	0	511,788
V.	DRAINAGE AND EROSION WORKS	361,189	0	323,079	38,110	361,189
VI.	INCIDENTAL WORKS	61,828	0	43,754	18,074	61,828
	TOTAL FOR SECTOR 2 (U.S. Dollars)	4,879,871	374,197	4,449,276	56,398	4,505,674

Prepared by:

MORRISON KNUDSEN CORP.

Recommended by:

Larry K. Larsen

MORRISON MAIERLE

Reviewed by:

Paul A Arcti

MORRISON KNUDSEN CORP.

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302

PAY ITEM NO.	DESCRIPTION	UNIT	EST'D QTY	UNIT COST (US $)	TOTAL AMOUNT (US $)	PREVIOUS AMOUNT QTY	PREVIOUS AMOUNT (US $)	TO DATE AMOUNT QTY	TO DATE AMOUNT (US $)	THIS PERIOD AMOUNT QTY	THIS PERIOD AMOUNT (US
	I. GENERAL ITEMS										
030	Additional Road Design	LS	1	10000	10000	1	10000	1	10000	0	
030	Contractor Furnished Detailed Road Design	KM	19.04	8041.910	153118	19.04	153118	19.04	153118	0	
030	Additional Survey	LS	1	1824	1824	1	1824	1	1824	0	
031	Contractor Furnished Detailed Bridge Design	LM	59	3546.691	209255	59	209255	59	209255	0	
	SUB-TOTAL ITEM I. GENERAL ITEMS				374197		374197		374197		
	II. EARTHWORK										
100(5)	Clearing and Grubbing	M^2	218999	0.150	32850	218999	32850	218999	32850	0	
101(1)	Removal of Structures and Obstructions	LS	1	100704	100704	1	100704	1	100704	0	
102(1)	Unsuitable Excavation	M^3	15603	2.648	41317	15603	41317	15603	41317	0	
(1)	Structure Excavation	M^3	450	1.240	558	450	558	450	558	0	
103(2)	Bridge Excavation	M^3	569	2.570	1462	569	1462	569	1462	0	
103(6)	Pipe Culvert Excavation	M^3	2234	1.620	3619	2102	3405	2234	3619	132	2
104(1)	Embankment	M^3	79928	5.178	413867	79928	413867	79928	413867	0	
104(1)a	FCM #190 (Superior Common Embankment)	M^3	23115	6.454	149184	23115	149184	23115	149184	0	
104(2)	Embankment, Sel. Material	M^3	37199	7.729	287511	37199	287511	37199	287511	0	
104(2)a	FCM #190 (Minimal Select Finishing)	M^2	62675	0.243	15230	62675	15230	62675	15230	0	
105(1)	Subgrade Preparation, Common Material	M^2	214250	0.301	64489	214250	64489	214250	64489	0	
	SUB-TOTAL ITEM II. EARTHWORK				1110791		1110577		1110791		2

CONTRACTOR'S REPRESENTATIVE:

ENGINEER'S REPRESENTATIVE:

BEST AVAILABLE DOCUMENT

PAY ITEM NO	DESCRIPTION	UNIT	EST'D QTY	UNIT COST (US $)	TOTAL AMOUNT (US $)	PREVIOUS AMOUNT QTY	PREVIOUS AMOUNT (US $)	TO DATE AMOUNT QTY	TO DATE AMOUNT (US $)	THIS PERIOD AMOUNT QTY	THIS PERIOD AMOUNT (US $)
	III. PAVEMENT										
200	Aggregate Subbase Course	M^3	5764	12.884	74263	5764	74263	5764	74263	0	0
202	Crushed Aggregate Base Course	M^3	16504	13.857	228696	16504	228696	16504	228696	0	0
301	Bit. Prime Coat, MC-70	M^2	77917	1.195	93111	77917	93111	77917	93111	0	0
310(1)	Asphalt Concrete, Hot-Laid	MT	8406	74.739	628256	8406	628256	8406	628256	0	0
311(3)	PCC Pavement	M^3	11539	124.426	1435752	11539	1435752	11539	1435752	0	0
SUB-TOTAL ITEM III. PAVEMENT					2460078		2460078		2460078		0
	IV. STRUCTURES										
400(4)	Precast Concrete Piles, Furnished (40 x 40)	LM	588	119.302	70150	588	70150	588	70150	0	0
400(13)	PRECAST CONC. PILE Test Piles, Driven (40 x 40)	LM	554.4	15.612	8655	554.4	8655	554.4	8655	0	0
401	Concrete Bridge Railing	LM	103.2	157.771	16282	103.2	16282	103.2	16282	0	0
404	Reinforcing Steel for Bridge	KG	58189.08	1.263	73493	58189.08	73493	58189.08	73493	0	0
405(1)	Structural Conc., Class A	M^3	390.63	468.651	183069	390.63	183069	390.63	183069	0	0
405(19)	Pile Shoes	EA	16	12.602	202	16	202	16	202	0	0
405(20)	Pile Splice	EA	12	126.017	1512	12	1512	12	1512	0	0
405(6)	Lean Concrete	M^3	97.55	96.009	9366	97.55	9366	97.55	9366	0	0
407(1)	Reinf. Conc. Box Culverts Complete, with Headwalls	M^3	353.78	421.333	149059	353.78	149059	353.78	149059	0	0
SUB-TOTAL ITEM IV. STRUCTURES					511788		511788		511788		0

CONTRACTOR'S REPRESENTATIVE: ENGINEER'S REPRESENTATIVE:

BEST AVAILABLE DOCUMENT

PAY ITEM NO.	DESCRIPTION	UNIT	EST'D QTY	UNIT COST (US $)	TOTAL AMOUNT (US $)	PREVIOUS AMOUNT QTY	PREVIOUS AMOUNT (US $)	TO DATE AMOUNT QTY	TO DATE AMOUNT (US $)	THIS PERIOD AMOUNT QTY	THIS PERIOD AMOUNT (US
	V. DRAIN & EROS WORKS										
500(1)	Backfill Mat. for Pipe Culverts	M^3	1224	8.450	10343	1224	10343	1224	10343	0	
500(1)a	RCPC, 61 cm. Diameter	LM	250	62.300	15575	258	16073	250	15575	-8	-
500(1)b	RCPC, 91 cm. Diameter	LM	644	92.061	59287	644	59287	644	59287	0	
500(1)d	RCPC, 122 cm. Diameter	LM	40	106.933	4277	30	3208	40	4277	10	
500(1)e	Structural Backfill	M^3	50	9.658	483	50	483	50	483	0	
500(1)f	Remove and Relay RCPC	LM	76	71.7715	5455	68	4880	76	5455	8	
500(4)	Struc. Conc. for Pipe H'walls	M^3	228	275.421	62796	217	59766	228	62796	11	3
500(5)	Reinf. Steel for Pipe H'walls	KG	5128	1.222	6266	5403	6602	5128	6266	-275	-
503(3)	Clean Culvert Pipe in Place	LM	155	1.140	177	155	177	155	177	0	
504(5)	Grouted Riprap, Class A	M^3	401.13	80.400	32251	374.62	30119	401.13	32251	26.51	2
504(5)a	Grouted Riprap, Lined Ditch	M^3	225.74	100.139	22605	207.33	20762	225.74	22605	18.41	1
505	Stone Masonry	M^3	6.36	117.927	750	6.36	750	6.36	750	0.00	
	Gabions	M^3	969.63	105.172	101978	748.23	78693	969.63	101978	221.40	232
509(1)	Filter Fabrics	M^2	2822.79	13.797	38946	2314.67	31936	2822.79	38946	508.12	70
	SUB-TOTAL ITEM V. DRAIN & EROS WORKS				361189		323079		361189		381
	VI. INCIDENTAL WORKS										
602(4)	Concrete Guide Post	EA	2	93.898	188	0	0	2	188	2	
603(3)	Metal Guardrail (Metal Beam)	LM	880.11	59.429	52304	586.25	34840	880.11	52304	294	174
603(3)a	Welding of Bolts - Guardrail	LM	880.11	1.436	1264	586.25	842	880.11	1264	294	4
605(4)	Signs and Markers	EA	53	36.800	1950	53	1950	53	1950	0	
606(2)	Crosswalks	EA	5	127.143	636	5	636	5	636	0	
606(3)	Pvm't. Markings (Reflective)	LM	10255	0.535	5486	10255	5486	10255	5486	0	
	SUB-TOTAL ITEM VI. INCIDENTAL WORKS				61828		43754		61828		180

CONTRACTOR'S REPRESENTATIVE:

ENGINEER'S REPRESENTATIVE:

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MONTHLY PROGRESS BILLING NO. 29

PERIOD ENDING 31 DECEMBER 1993

ROAD SECTOR NUMBER 2ALT, SECTION 3 : MALAPATAN TO GLAN ROAD

20-Dec

11:18 AM

	DESCRIPTION	CONTRACT AMOUNT (US $)	COMP. WORK TO DATE (US $)	WORK IN PROGRESS PREVIOUS (US $)	WORK IN PROGRESS THIS PERIOD (US $)	WORK IN PROGRESS TO DATE (US $)
I.	GENERAL ITEMS	275,175	275,175	0	0	0
II.	EARTHWORK	3,459,411	0	3,065,403	170,983	3,236,386
III.	PAVEMENT	3,353,510	0	1,654,577	1,452,617	3,107,194
IV.	STRUCTURES	173,005	0	173,005	0	173,005
V.	DRAINAGE AND EROSION WORKS	493,494	0	361,973	8,861	370,834
VI.	INCIDENTAL WORKS	103,387	0	3,288	71,398	74,686
TOTAL FOR SECTOR 2ALT (U.S. Dollars)		7,857,982	275,175	5,258,246	1,703,859	6,962,105

Prepared by:

MORRISON KNUDSEN CORP.

Recommended by:

Larry K. Larsen

MORRISON MAIERLE

Reviewed by:

Paul A. Ferris

MORRISON KNUDSEN CORP.

BEST AVAILABLE DOCUMENT

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PAY ITEM NO	DESCRIPTION	UNIT	EST'D QTY	UNIT COST (US $)	TOTAL AMOUNT (US $)	PREVIOUS AMOUNT QTY	PREVIOUS AMOUNT (US $)	TO DATE AMOUNT QTY	TO DATE AMOUNT (US $)	THIS PERIO AMOUNT QTY	THIS PERIO AMOUNT (US
	I. GENERAL ITEMS										
030	Contractor Furnished Detailed Road Design	KM	25.65	5500	141075	25.65	141075	25.65	141075	0	
030a	Additional Road Design	LS	1	10000	10000	1	10000	1	10000	0	
030b	Additional Box Culvert Design	LS	1	3000	3000	1	3000	1	3000	0	
030c	Survey and Geotech	KM	27.15	4000	108600	27.15	108600	27.15	108600	0	
030d	Additional Subsurface Invest.	LS	1	8000	8000	1	8000	1	8000	0	
030e	Bridges Subsurface	KM	1	4500	4500	1	4500	1	4500	0	
	SUB-TOTAL I. GENERAL ITEMS				275175		275175		275175		
	II. EARTHWORK										
100(5)	Clearing and Grubbing	M^2	322231	0.184	59291	321994	59247	322231	59291	237	
(1)	Removal of Structures and Obstructions	LS	1	56825	56825	0.90	51143	0.90	51143	0.00	
102(1)	Unsuitable Excavation	M^3	4058.3	3.220	13068	3057.3	9845	4058.3	13068	1001.00	3
102(2)	Rock Excavation	M^3	25000	20.000	500000	12723	254460	14996	299920	2273	45
103(1)	Structure Excavation	M^3	1201.32	1.650	1982	1201.3	1982	1201.32	1982	0.00	
103(6)	Pipe Culvert Excavation	M^3	2997	2.140	6414	2926	6262	2997	6414	71	
104(1)	Embankment	M^3	272331	8.767	2387526	269697	2364434	272331	2387526	2634	23
104(2)	Embankment, Select Material	M^3	24633	11.563	284831	17178	198629	23140	267568	5962	68
105(1)	Subgrade Preparation, Common Material	M^2	304428	0.491	149474	243180	119401	304428	149474	61248	30
	SUB-TOTAL II. EARTHWORK				3459411		3065403		3236386		170

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TRACTOR'S REPRESENTATIVE:	ENGINEER'S REPRESENTATIVE:

307

PAY ITEM NO	DESCRIPTION	UNIT	EST'D QTY	UNIT COST (US $)	TOTAL AMOUNT (US $)	PREVIOUS AMOUNT QTY	PREVIOUS AMOUNT (US $)	TO DATE AMOUNT QTY	TO DATE AMOUNT (US $)	THIS PERIOD AMOUNT QTY	THIS PERIOD AMOUNT (US $)
	III. PAVEMENT										
200	Aggregate Subbase Course	M^3	21.19	19.98	423	0	0	0	0	0	0
202	Crushed Agg Base Course	M^3	40847	21.523	879150	28195	606841	40847	879150	12652	272309
301	Bit. Prime Coat, MC-70	M^2	178154	1.189	211825	90356	107433	178154	211825	87798	104392
302	Bituminous Tack Coat	M^2	589	1.522	896	589	896	589	896	0	0
310(1)	Asphalt Concrete, Hot-Laid	MT	22911	98.491	2256527	9538	939407	20462	2015323	10924	1075916
311(3)	PCC Pavement	M^3	28.40	165.096	4689	0	0		0	0	0
SUB-TOTAL III. PAVEMENT					3353510		1654577		3107194		1452617
	IV. STRUCTURES										
405(6)	Lean Concrete	M^3	30.25	96.009	2904	30.25	2904	30.25	2904	0.00	0
407(1)	Reinforced Conc. Box Culverts Complete, with Headwalls	M^3	403.72	421.333	170101	403.72	170101	403.72	170101	0.00	0
SUB-TOTAL IV. STRUCTURES					173005		173005		173005		0

BEST AVAILABLE DOCUMENT

RACTOR'S REPRESENTATIVE:	ENGINEER'S REPRESENTATIVE:

PAY ITEM NO	DESCRIPTION	UNIT	EST'D QTY	UNIT COST (US $)	TOTAL AMOUNT (US $)	PREVIOUS AMOUNT QTY	PREVIOUS AMOUNT (US $)	TO DATE AMOUNT QTY	TO DATE AMOUNT (US $)	THIS PERIO AMOUNT QTY	THIS PERIO AMOUNT (US
	V. DRAINE & EROS WORKS										
500(1)	Backfill Material, for Pipe Culverts	M^3	2467	9.570	23609	2401	22973	2467	23609	66	
500(1)a	RCPC, 61 cm. Diameter	LM	393	80.125	31489	401	32130	393	31489	−8	
500(1)b	RCPC, 91 cm. Diameter	LM	912	118.900	108437	896	106534	912	108437	16	
500(1)d	RCPC, 122 cm. Diameter	LM	360	136.920	49291	363	49702	360	49291	−3	
500(1)e	Structural Backfill	M^3	173	9.658	1671	33	319	173	1671	140	
500(1)f	Remove and Relay RCPC	LM	8	71.772	574	0	0	8	574	8	
500(4)	Structural Concrete for Pipe Headwalls	M^3	332	323.944	107549	353	114352	332	107549	−21	−6
500(5)	Reinforcing Steel for Pipe Headwalls	KG	7334	1.203	8823	7278	8755	7334	8823	56	
503(3)	Stone Masonry	M^3	761	117.927	89715	6.36	750	75.21	8869	68.85	8
504(5)	Grouted Riprap, Class A	M^3	94.92	80.400	7632	0	0	56.39	4534	56	4
504(5)a	Grouted Riprap, Lined Ditch	M^3	337.85	100.139	33832	0	0	7.25	726	7	
50[illegible]	Gabions	M^3	0	103.350	0	0	0	0.00	0	0	
509(1)	Filter Fabrics	M^2	1831	13.797	25262	1917.33	26453	1831	25262	−86.33	−1
510(3)	Manholes	EA	3	1869.9	5610	0	0	0	0	0	
	SUB−TOTAL V. DRAINAGE AND EROSION WORKS				493494		361973		370834		88
	VI. INCIDENTAL WORKS										
602(4)	Guidepost	EA	27	93.898	2535	0	0	0	0	0	
603(3)	Metal Guardrail (Metal Beam)	LM	491.49	61.635	30293	53.34	3288	491.49	30293	438.15	270
603(3)a	Welding of Bolts − Guardrails	LM	491.49	1.436	706	0	0	491.49	706	491.49	7
605(4)	Signs and Markers	EA	150	347.92	52188	0	0	100	34792	100	347
606(2)	Crosswalks	EA	5	127.143	636	0	0	3	381	3	3
606(3)	Pvm't. Markings (Reflective)	LM	27916	0.610	17029	0	0	13958	8514	13958	85
	SUB−TOTAL VI. INCIDENTAL WORKS				103387		3288		74686		713

CONTRACTOR'S REPRESENTATIVE:

ENGINEER'S REPRESENTATIVE:

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MONTHLY PROGRESS BILLING NO. 29
PERIOD ENDING 31 DECEMBER 1993
ROAD SECTOR NO. 3, SECTIONS 1, 2 & 3 : GSC/MAKAR TO KIAMBA

20-Dec
10:39 AM

NO.	DESCRIPTION	CURRENT CONTRACT AMOUNT (US $)	COMPLETED WORK TO DATE (US $)
I.	GENERAL ITEMS		
	–MOBILIZATION	7,233,478	7,233,478
	–DESIGN	713,460	713,460
II.	EARTHWORK	1,887,493	1,887,493
III.	PAVEMENT	8,677,391	8,677,391
IV.	STRUCTURES	87,445	87,445
V.	DRAINAGE AND EROSION WORKS	391,060	391,060
VI.	INCIDENTAL WORKS	256,805	256,805
VII.	SPECIAL ITEMS	60,452	60,452
	TAL FOR SECTOR 3 (U.S. DOLLARS)	19,307,584	19,307,584

Prepared by:

NOTE: SAME AS PREVIOUS BILLING

MORRISON KNUDSEN CORP.

Reviewed by:

Paul A Arms

MORRISON KNUDSEN CORP.

Recommended by:

Larry L. Larsen

MORRISON MAIERLE

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MONTHLY PROGRESS BILLING NO.29

PERIOD ENDING 31 DECEMBER 1993

ROAD SECTOR NUMBER 3 (ALT), SECTION 4 : KIAMBA TO MAITUM

	DESCRIPTION	CURRENT CONTRACT AMOUNT (US $)	COMPLETED WORK TO DATE (US $)
I.	GENERAL	124,033	124,03
II.	EARTHWORK	840,366	840,36
III.	PAVEMENT	2,044,016	2,044,01
IV.	STRUCTURES	66,203	66,20
V.	DRAINAGE AND EROSION WORKS	99,976	99,97
VI.	INCIDENTAL WORKS	71,477	71,47
	TOTAL FOR SECTOR 3ALT (US DOLLAR)	3,246,071	3,246,07

Prepared by:

NOTE : SAME AS PREVIOUS

MORRISON KNUDSEN CORP.

Reviewed by:

Paul Adkins

MORRISON KNUDSEN CORP.

Recommended by:

Larry K. Larsen

MORRISON MAIERLE

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MONTHLY PROGRESS BILLING NO. 29

PERIOD ENDING 31 DECEMBER 1993

ROAD SECTOR NUMBER 4 : POLOMOLOK TO LANDAN ROAD

20-Dec

10:42 AM

ITEM NO.	DESCRIPTION	CONTRACT AMOUNT (US $)	COMPLETED WORK (US $)	WORK IN PROGRESS PREVIOUS (US $)	WORK IN PROGRESS THIS PERIOD (US $)	WORK IN PROGRESS TO DATE (US $)
I.	GENERAL ITEMS	64,458	64,458	64,458	0	
II.	EARTHWORK	253,688		234,285	19,403	253,688
III.	PAVEMENT	689,458		501,684	187,774	689,458
IV.	STRUCTURES	231,449		230,022	835	230,857
V.	DRAINAGE AND EROSION WORKS	231,310		97,334	36,145	133,479
VI.	INCIDENTAL WORKS	23,073		0	7,690	7,690
	TOTAL FOR SECTOR 4 (U.S. Dollars)	1,493,436		1,127,783	251,847	1,315,172

Prepared by:

MORRISON KNUDSEN CORP.

Recommended by:

MORISSON MAIERLE

Reviewed by:

MORRISON KNUDSEN CORP.

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C:\BILL\SEC#4SUM.WK1

PAY ITEM NO	DESCRIPTION	UNIT	EST'D QTY	UNIT COST (US $)	TOTAL AMOUNT (US $)	PREVIOUS AMOUNT QTY	PREVIOUS AMOUNT (US $)	TO DATE AMOUNT QTY	TO DATE AMOUNT (US $)	THIS PER AMOUN QTY	(US
	I. GENERAL ITEMS										
030	Contractor Furnished Detailed Road Design	KM	4.135	7777	32158	4.135	32158	4.135	32158	0	
030	Incomplete Road Design	LS	1	30000	30000	1	30000	1	30000	0	
030	Additional Box Culvert Design	LS	1	2300	2300	1	2300	1	2300	0	
SUB-TOTAL I. GENERAL ITEMS			.....		64458		64458		64458		
	II. EARTHWORK										
100(5)	Clearing and Grubbing	M^2	35485	0.184	6529	35485	6529	35485	6529	0	
101(1)	Removal of Structures and Obstructions	LS	1	3696	3696	1	3696	1	3696	0	
102(2)	Surplus Common Excavation	M^3	15405	2.394	36880	15405	36880	15405	36880	0	
103(1)	Structure Excavation	M^3	514	1.640	843	514	843	514	843	0	
103(6)	Pipe Culvert Excavation	M^3	625	2.133	1333	698	1489	625	1333	-73	-
104(1)	Embankment	M^3	19607	5.816	114034	19457	113162	19607	114034	150	8
104(2)	Embankment, Select Material	M^3	5775	11.563	66776	4169	48206	5775	66776	1606	185
105(1)	Subgrade Preparation, Common Material	M^2	48059	0.491	23597	47820	23480	48059	23597	239	
SUB-TOTAL II. EARTHWORK			.....		253688		234285		253688		194

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TRACTOR'S REPRESENTATIVE:	CONTRACTOR'S REPRESENTATIVE:

313

PAY ITEM NO	DESCRIPTION	UNIT	EST'D QTY	UNIT COST (US $)	TOTAL AMOUNT (US $)	PREVIOUS AMOUNT QTY	PREVIOUS AMOUNT (US $)	TO DATE AMOUNT QTY	TO DATE AMOUNT (US $)	THIS PERIOD AMOUNT QTY	THIS PERIOD AMOUNT (US $)
	III. PAVEMENT										
200	Aggregate Subbase Course	M^3	2691	20.359	54786	2971	60487	2691	54786	−280	−5701
311(3)	PCC Pavement (Hand Laid)	M^3		165.095	0	0	0		0	0	0
311(3)	PCC Pavement (Machine Laid)	M^3	5101	124.421	634672	3546	441197	5101	634672	1555	193475
SUB–TOTAL III. PAVEMENT					689458		501684		689458		187774
	IV. STRUCTURES										
(6)	Lean Concrete	M^3	53.34	96.009	5121	49.23	4727	53.34	5121	4	394
405(5)	Seal Concrete	M^3	8.55	120.807	1033	0	0	3.65	441	3.65	441
407(1)	Reinforced Concrete Box Culvert Complete with Headwalls	M^3	534.72	421.333	225295	534.72	225295	534.72	225295	0	0
SUB–TOTAL IV. STRUCTURES					231449		230022		230857		835

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TRACTOR'S REPRESENTATIVE:	ENGINEER'S REPRESENTATIVE:

PAY ITEM NO	DESCRIPTION	UNIT	EST'D QTY	UNIT COST (US $)	TOTAL AMOUNT (US $)	PREVIOUS AMOUNT QTY	PREVIOUS AMOUNT (US $)	TO DATE AMOUNT QTY	TO DATE AMOUNT (US $)	THIS PERI AMO QTY	(US
	V. DRAINAGE/EROSION WORKS										
500(1)	Backfill Material, for Pipe Culverts	M^3	371	9.600	3562	419	4022	371	3562	−48	
500(1)a	RCPC, 61 cm. Diameter	LM	129	80.115	10335	178	14260	129	10335	−49	
500(1)b	RCPC, 91 cm. Diameter	LM	130	118.894	15456	136	16170	130	15456	−6	
500(1)c	RCPC, 122 cm. Diameter	LM	20	137.000	2740	20	2740	20	2740	0	
500(4)	Structural Concrete for Pipe Headwalls	M^3	78	323.933	25267	77	24943	78	25267	1	
500(5)	Reinforcing Steel for Pipe Headwalls	KG	352	1.175	414	712	837	352	414	−360	
504(5)	Grouted Riprap, Class A	M^3	343.54	80.400	27621	267.75	21527	334.77	26916	67.02	5
504(5)a	Grouted Riprap, Lined Ditch	M^3	1131.86	100.139	113343	128.17	12835	209.08	20937	80.91	8
505	Stone Masonry	M^3	59.56	117.927	7024	0	0	59.56	7024	60	7
506	Handlaid Rock Embankment	M^3	123.60	39.333	4862	0	0	3.60	142	4	
5[illegible]	Gabions	M^3	155.60	103.56	16114	0	0	155.60	16114	156	16
509(1)	Filter Fabrics	M^2	331.40	13.797	4572	0	0	331.40	4572	331	4
	SUB–TOTAL V. DRAINAGE AND EROS WORKS				231310		97334		133479		361
	VI. INCIDENTAL WORKS										
603(3)	Metal Guardrail (Metal Beam)	LM	243.84	61.650	15033	0	0	0.00	0	0	
603(3)a	Welding of Bolts – Guardrails	LM	243.84	1.436	350	0	0	0	0	0	
605(4)	Signs and Markers	EA	13	354.000	4602	0	0	13	4602	13	46
606(2)	Crosswalks	EA	1	127.143	127	0	0	1	127	1	1
606(3)	Pvm't. Markings (Reflective)	LM	4869.87	0.608	2961	0	0	4869.87	2961	4870	29
	SUB–TOTAL VI. INCIDENTAL WORKS				23073		0		7690		76

CONTRACTOR'S REPRESENTATIVE:

ENGINEER'S REPRESENTATIVE:

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MONTHLY PROGRESS BILLING NO. 29
PERIOD ENDING 31 DECEMBER 1993
ROAD SECTOR NUMBER 7 – SURALLAH TO T'BOLI

20-Dec
10:43 AM

NO	DESCRIPTION	CURRENT CONTRACT AMOUNT (US $)	COMPLETED WORK TO DATE (US $)
I.	GENERAL ITEMS	175,755	175,755
II.	EARTHWORK	792,550	792,550
III.	PAVEMENT	2,496,585	2,496,585
IV.	STRUCTURES	0	0
V.	DRAINAGE AND EROSION WORKS	228,773	228,773
VI.	INCIDENTAL WORKS	17,161	17,161
VII.	ADDITONAL WORKS	141,321	141,321
TOTAL FOR SECTOR 7 (U.S. Dollars)		3,852,145	3,852,145

Prepared by:

MORRISON KNUDSEN CORP.

Reviewed by:

Paul A Arts

MORRISON KNUDSEN CORP.

Recommended by:

Larry K. Larsen

MORRISON MAIERLE

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C:\BILL\SEC#7SUM.WK1

PAY ITEM NO	DESCRIPTION	UNIT	EST'D QTY	UNIT COST (US $)	TOTAL AMOUNT (US $)	PREVIOUS AMOUNT QTY	PREVIOUS AMOUNT (US $)	TO DATE AMOUNT QTY	TO DATE AMOUNT (US $)	THIS PERI AMOUNT QTY	THIS PERI AMOUNT (U
	VI. INCIDENTAL WORKS										
605(4)	Signs and Markers	EA	57	36.820	2099	57	2099	57	2099	0	
606(2)	Crosswalks	EA	3	127.14	381	3	381	3	381	0	
606(3)	Pvm't. Markings (Reflective)	LM	12625	0.608	7676	12625	7676	12625	7676	0	
609(2.2)	Fertilizer	KM	20	350.23	7005	20	7005	20	7005	0	
SUBTOTAL VI. INCIDENTAL WORKS					17161		17161		17161		

PAY ITEM NO	DESCRIPTION	UNIT	EST'D QTY	UNIT COST (US $)	TOTAL AMOUNT (US $)	PREVIOUS AMOUNT QTY	PREVIOUS AMOUNT (US $)	TO DATE AMOUNT QTY	TO DATE AMOUNT (US $)	THIS PERIO AMOUNT QTY	THIS PERIO AMOUNT (US
	VII. ADDITIONAL WORKS										
	Add'tl Drainage & Maintenance	LS	1	141321	141321	0.60	84793	1.00	141321	0.40	56
SUBTOTAL VII. ADDITIONAL WORKS					141321		84793		141321		565

CONTRACTOR'S REPRESENTATIVE:	ENGINEER'S REPRESENTATIVE:

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MONTHLY PROGRESS BILLING NO. 29

PERIOD ENDING 31 DECEMBER 1993

20-Dec

ROAD SECTOR NUMBER 8 – NORALA TO KOLAMBOG

10:48 AM

ITEM NO	DESCRIPTION	CURRENT CONTRACT AMOUNT (US $)	COMPLETED WORK TO DATE (US $)
I.	GENERAL ITEMS	98,207	98,207
II.	EARTHWORK	260,150	260,150
III.	PAVEMENT	746,697	746,697
IV.	STRUCTURES	10,625	10,625
V.	DRAINAGE AND EROSION WORKS	81,578	81,578
VI.	INCIDENTAL WORKS	7,310	7,310
VII.	ADDITIONAL WORKS	43,802	43,802
TOTAL FOR SECTOR 8 (U.S. Dollars)		1,248,369	1,248,369

Prepared by:

MORRISON KNUDSEN CORP.

Reviewed by:

Paul A Akers

MORRISON KNUDSEN CORP.

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Recommended by:

Larry K. Larsen

MORRISON MAIERLE

C:\BILL\SEC#8SUM.WK1

PAY ITEM NO	DESCRIPTION	UNIT	EST'D QTY	UNIT COST (US $)	TOTAL AMOUNT (US $)	PREVIOUS AMOUNT QTY	PREVIOUS AMOUNT (US $)	TO DATE AMOUNT QTY	TO DATE AMOUNT (US $)	THIS PERIO AMOUNT QTY	THIS PERIO AMOUNT (US
	VII. ADDITIONAL WORKS										
	Add'tl Drainage and Maintenance	LS	1	43802	43802	0	0	1	43802	1	43
	SUB–TOTAL VII. ADDITIONAL WORKS				43802		0		43802		43

CONTRACTOR'S REPRESENTATIVE:	ENGINEER'S REPRESENTATIVE:

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MONTHLY PROGRESS REPORT
FOR MM/CSSA & MKC

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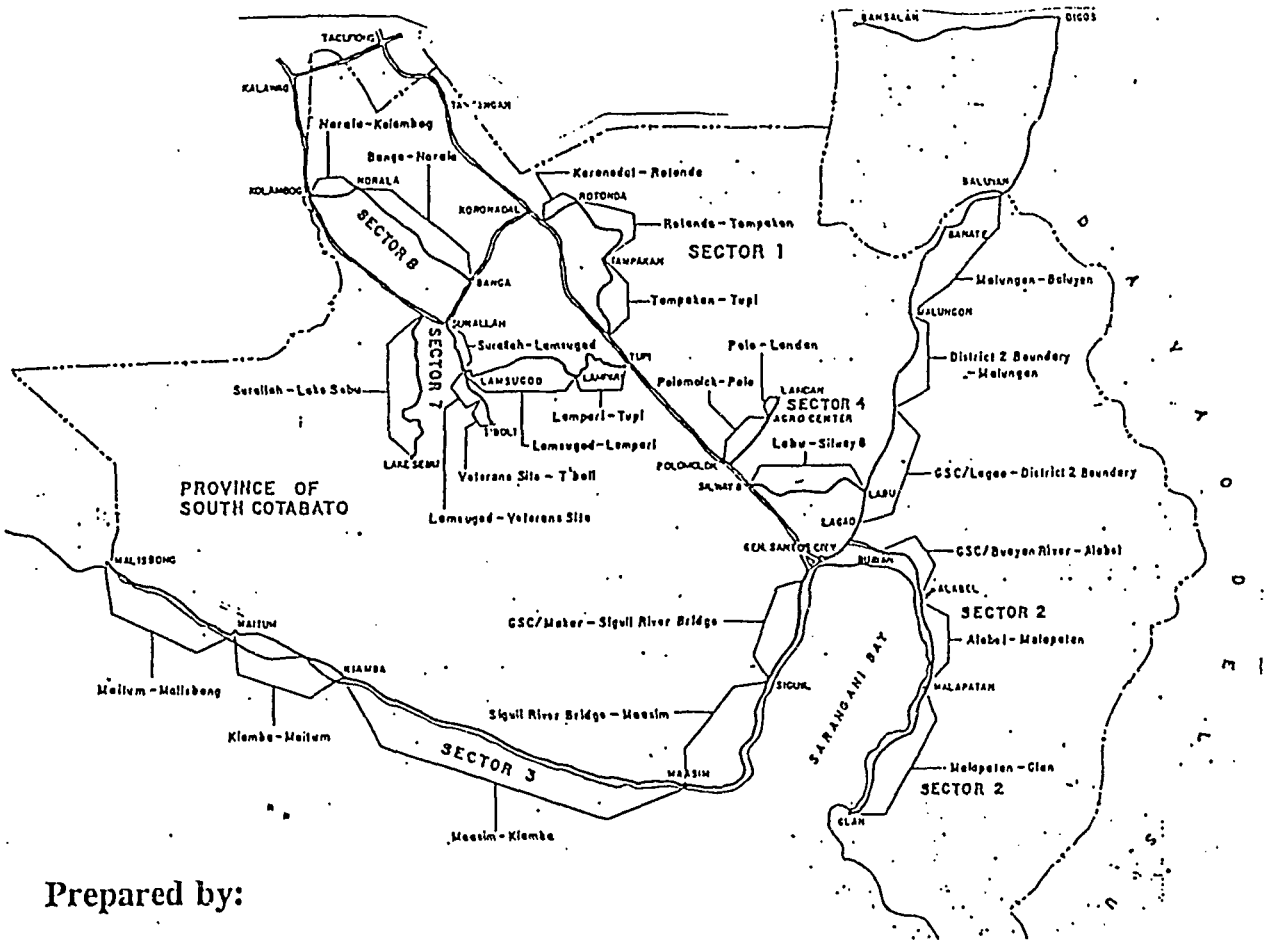
United States Agency for International Development
Manila, Philippines

MONTHLY ACTIVITY REPORT:

SOUTH COTABATO HIGHWAYS PROJECT

PROJECT REPORT NO. 27
MONTH OF MARCH



Prepared by:

ENGINEERS REPRESENTATIVE
CONTRACT NO. 492-0000-C00-1028-00

Morrison Maierle/CSSA
910 Helena Avenue
Helena, Montana 59604
U.S.A.

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0DESIGN CONSTRUCT CONTRACTOR
CONTRACT NO.492-0420-C00-1140-00

MORRISON KNUDSEN CORPORATION
SOUTH COTABATO HIGHWAYS PROJECT
MINDANAO DEVELOPMENT PROGRAM
Unit 7-C, Strata 200 Building
Emerald Avenue, Pasig
Metro Manila, Philippines

GENERAL SANTOS CITY
PROVINCE OF SOUTH COTABATO

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I. EXECUTIVE SUMMARY

The Governments of the Republic of the Philippines and the United States of America have undertaken a road rehabilitation and construction program in the province of South Cotabato, Island of Mindanao as part of the Philippine Assistance Program (PAP).

The South Cotabato Road Project No. 492-0420 is one of the many sector programs which comprise the multi-donor Philippine Assistance Program. The USAID contribution to the Program has been focused on development of basic infrastructure including roads, ports, airfields, etc. in the South Cotabato province. This Road project is the first of the subprograms to be implemented under the USAID umbrella.

I.1 PROJECT DESCRIPTION AND SCOPE OF WORK

The on going road program which consist of five (5) road sectors (Base Proposal) within South Cotabato have an aggregate sum of 133.925 kilometers of approved road design which is currently being constructed.

Approved design and construction consists of horizontal and vertical alignment changes, embankment widening, placement of bituminous pavement, and placement of PCC pavement in some selected portions of the road where traffic is dense and asphalt pavement is not feasible.

The terminal points for each road sector (and section) with approved design lengths, included in the Base Proposal are as follows:

Sector Number	Name/Location	Approved Design Length - Km
2	GSC/Buayan River- Malapatan (Section 1,2)	20.012
3	GSC/Makar River - Kiamba (Section 1,2,3)	83.480
4	Agro Center - Landan (Section 2)	2.092
7	Surallah - T'Boli	21.554
8	Noralla - Kolambog	6.787
	Total Length	133.925

Provision is made for additional four (4) road sectors (Additive Alternates) in the same geographic area which will be designed and constructed if funding becomes available.

Due to substantial savings in the on going design and construction of the Base bid, the following road sectors in the additive alternates are now being designed and constructed. The terminal points for each road sector (and sections) with approved and proposed design lengths, included in the Additive Alternatives are as follows;

Sector Number	Name/Location	Approximate Length - Km
2	Malapatan - Glan (Section 3)	28.00
3	Kiamba - Maitum (Section 4)	15.357
4	Polomolok - Agro Center (Section 1)	2.052
	Total Length	45.409

Indicated in Figure 1 is a map showing all the Road Sectors and their current status.

Indicated below are the additional bridges for the road project which are not part of the original contract but is necessary to link the roads being constructed. An agreement has been finalized between USAID and DPWH to include these bridges.

Name	Sector Location	Span Meters	Funding
Lun Maşla Bridge	Sector 2	200.80	USAID
Sapu Masla Bridge	Sector 2	62.00	USAID
Saub Bridge	Sector 3	80.60	USAID
Pangi Bridge	Sector 3	198.49	DPWH

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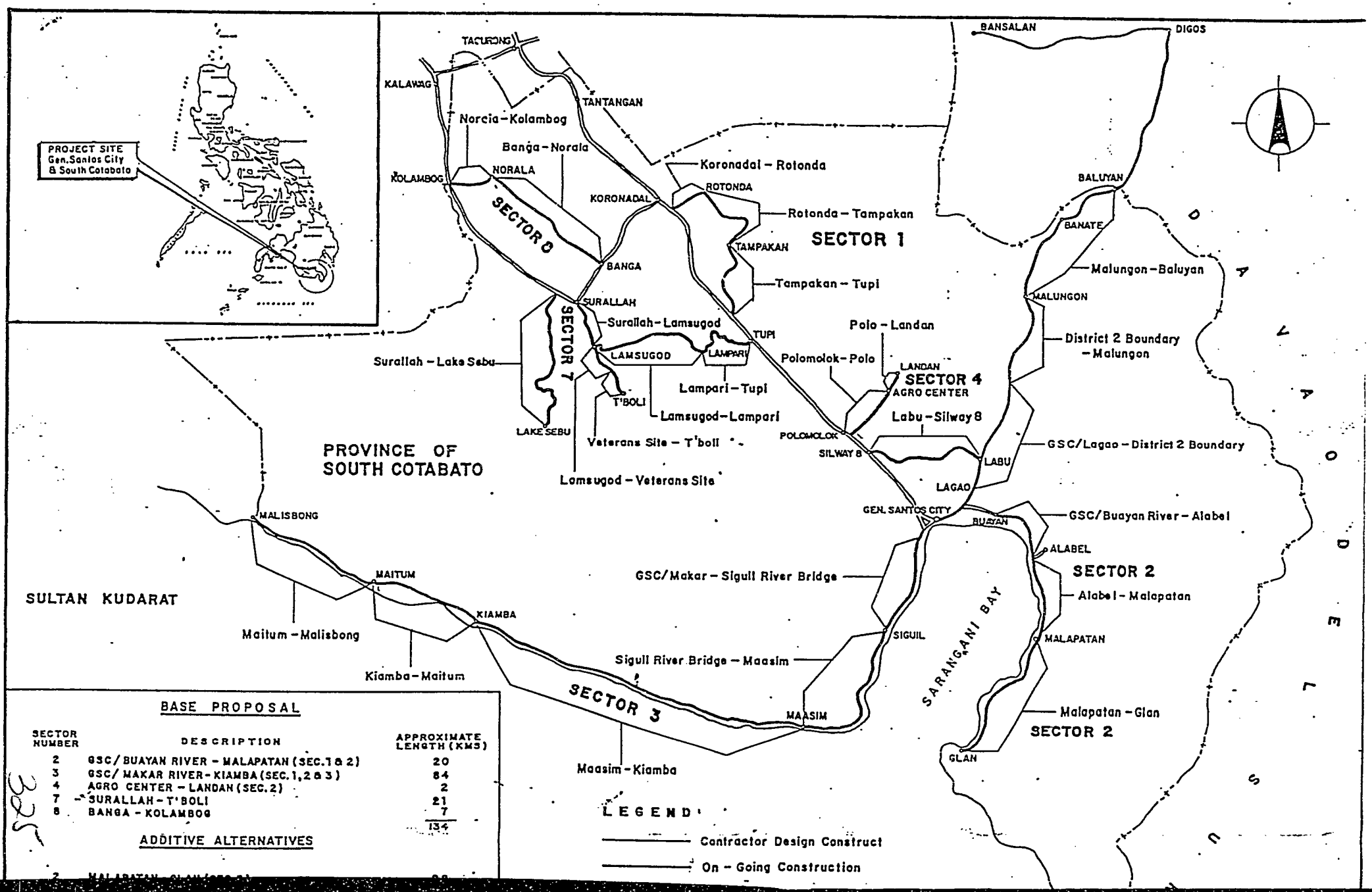
Figure 1



BASE PROPOSAL

SECTOR NUMBER	DESCRIPTION	APPROXIMATE LENGTH (KMS)
2	GSC/BUAYAN RIVER – MALAPATAN (SEC. 1 & 2)	20
3	GSC/MAKAR RIVER – KIAMBA (SEC. 1, 2 & 3)	84
4	AGRO CENTER – LANDAN (SEC. 2)	2
7	SURALLAH – T'BOLI	21
8	BANGA – KOLAMBOG	7
		134

ADDITIVE ALTERNATIVES

2 MALAPATAN – GLAN (SEC. 2) [illegible]

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I.2 PROJECT OVERVIEW

The design-construct (turnkey) contractor, Morrison Knudsen Corporation have effectively produced the final design, engineering drawings and is successfully producing a good quality road that will last.

MKC's contract period is estimated at three years with an option of one year extension, but at the rate they are going, they will be completing the project earlier as expected. They are now scheduling to complete the whole project by November, 1993.

Supervisory services which is under the direct control of a USAID Project Manager (Engineer) assisted by an independent consulting firm (Engineer's Representative) Morrison Maierle/CSSA who is providing technical support to the Engineer for the review of contract plans and supervision of construction are likewise being very effective in their capacity. This road project has achieved most of it's goal at this stage of the program.

The Department of Public Works and Highways (DPWH) and the South Cotabato Provincial Highway Department are likewise contributing to the program by providing Liaison Officers in General Santos City to assist in the acquisition of right-of-ways, construction of structures beyond the limits of ROW and other matters.

I.3 PROJECT GOALS

1. Promote rapid construction start up.

2. Shortening the overall time required to complete necessary work by implementing final design and construction on concurrent basis.

3. Shortening the time of construction by availing of modern construction technology and equipment sufficient to meet the desired schedules.

4. Allowing the completed roads to be opened for public use for public service at the earliest practicable date.

5. Contributing to effective use, management and coordination of Philippine based companies as subcontractors.

6. Minimizing overall project costs needed to produce completed highways conforming to specified requirements.

7. Promoting implementation of superior quality assurance practices as necessary to achieve the highest quality of completed work.

II SUMMARY OF ACTIVITIES

This report for March 1993 is the 27th Monthly Progress report of MM/CSSA, the Engineer's Representative. Significant activities during the period include the following:

1. Preparation, finalization and distribution of the Monthly Progress Report for March and the 20th Monthly Progress Payment for MKC.

2. Monitoring MKC's construction activities on Road Sectors 2, 3, 7 and 8.

3. Review, checking and evaluation of the final design submittals for Road Sectors 2 and 4; the final design for the Lun Masla Bridge in Road Sector 2 and the preliminary design for the Saub Bridge in Sector 3.

   Held coordination meetings with MKC design staff on comments, recommendations and decision items on the above mentioned design submittals.

4. Made plan-in-hand reviews on all road Sectors where there are proposed ROW problems.

   Held meetings with DPWH representatives on Road Right of Way acquisition and other matters relevant to the project.

5. Doing all Quality Assurance (QA) functions for the project. Conducts coordination meetings with the construction supervisors of MKC to insure proper Quality Control (QC) on all works in the project.

6. Participated in the execution of punchlist items during construction, the completion punchlist after a joint inspection with concerned parties and the final punchlist inspection.

7. Made actual joint measurements with the contractor on all their work accomplished including all Field Clarification Memos (FCM) for final quantity approval.

III. PROJECT PROBLEM AREAS AND RESOLUTION

III.1 MKC started clearing and grubbing in Road Sector 2, Malapatan-Glan on March 29, 1993. DPWH liaison officers have been reminded that there are still pending ROW acquisitions in this road sector from Malapatan to Glan.

The construction for Road Sector 2 is scheduled to be completed before the end of November, 1993 including the Lun Masla bridge.

III.2 A joint meeting was held by USAID, MM/CSSA, MKC and DPWH on 02 March 1993 to examine the work on Sector 7 and in particular to confer on the erosion problem. It was noted in that session that the necessity for outfall ditches was especially evident due to the amount of water passing through the area and down the road.

DPWH was asked to help obtain construction easement and/or rights-of-way that would allow us to work on outfalls necessary to get rid of the water. DPWH reports that this has already been done, and that design work on cross drains is already in progress to allow construction to proceed. So far, the party believes that there is no need for structures other than the cross drains.

USAID mentioned to MKC that their letter GSP/MK-098 was an expression of our perception of the need to promote vegetative growth on the slopes as early as possible in order to minimize erosion during and after construction.

During the joint meeting referred to above, use of fertilizer to achieve this was discussed. Everyone believes that this idea is good, and agreed to try it. The use of locally available biodegradable materials such as corn stalks, cogon grass, or nipa for ditch blocks to assist in erosion control until the slopes stabilize was discussed.

By separate correspondence the Provincial Engineer, South Cotabato was requested to deal with the outfall ditches suggested as indicated below:

1. To improve the existing outfalls and install additional drainage as require;

2. The outfall ditches noted on the plans to be " installed by others" at stations 4 + 550, 5 + 850, 7 + 725 and 21 + 320 be constructed as soon as possible.

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IV. END OF THE MONTH STAFFING

A listing of key personnel engaged in project activities during the month is indicated in the following table and a copy of the organizational chart for this project is also enclosed.

Agency for International Development (AID)

Name	Position	Nationality	Date Started	Date Terminated
Robert F. Barnes	Project Officer	U S	n/a	——
Michael I. Kingery	Project Manager	U S	n/a	——

Engineers Representative

Morrison-Maierle/CSSA, Inc. (MM/CSSA)

Larry W. Larsen	Chief of Party	U S	23 Apr. '91	——
Charles W. Klimper	Construction Engineer	U S	08 Jan. '92	——
Fred A. Sielbach	Design Engineer	U S	08 Jan. '92	——
Peter B. Mirren	Subcontractor/Logistics	U K	Prior 1 Jan. '91	——
John Morrison, Jr.	Home Office Backup	U S	Prior 1 Jan. '91	——
Dave Wadsworth	Home Office Backup	U S	Prior 1 Jan. '91	——
Macloyn Flonnata	Office Engineer	PHL	01 Jul. '91	——
Virgilio Fernando	Chief Soils Engineer	PHL	26 Aug. '91	——
Jesus Lorenzo	Structural Engineer	PHL	05 Aug. '91	——
Vicente Malunay	Highway Engineer	PHL	19 Aug. '91	——
Wayammino Lugtu	Laboratory Tech.	PHL	01 Jul. '91	——
Ruel Balingcongan	Laboratory Tech.	PHL	01 Oct. '91	——
Ruben Dixon	Laboratory Tech.	PHL	15 Oct. '91	——
Vicente Ayala	Surveyor	PHL	22 Aug. '91	——
Norberto Bonjoc	Inspector	PHL	16 Nov. '91	——
Ramon Asuero	Inspector	PHL	10 Feb. '92	——
Marvin Ramirez	Instrumentman	PHL	01 Dec. '91	——

FELIPE PEDRICO II

Department of Public Works & Highways (DPWH)

Tito M. Valdez	OIC, District Engineer, Gen. Santos City	PHL	——
Dimas Soguilon	District Engineer, Sarangani Prov.	PHL	——
Emilio P. de Peralta	Liaison Officer		——
Amulfo Flores	Asst. Liaison Officer		——
Benjamin Arciaga	Asst. Liaison Officer		——
Isagani Javier	Asst. Liaison Officer		——

South Cotabato Provincial Highway Department (SCPHD)

Rolando V. Lachica	Provincial Engineer, Koronadal	PHL	——

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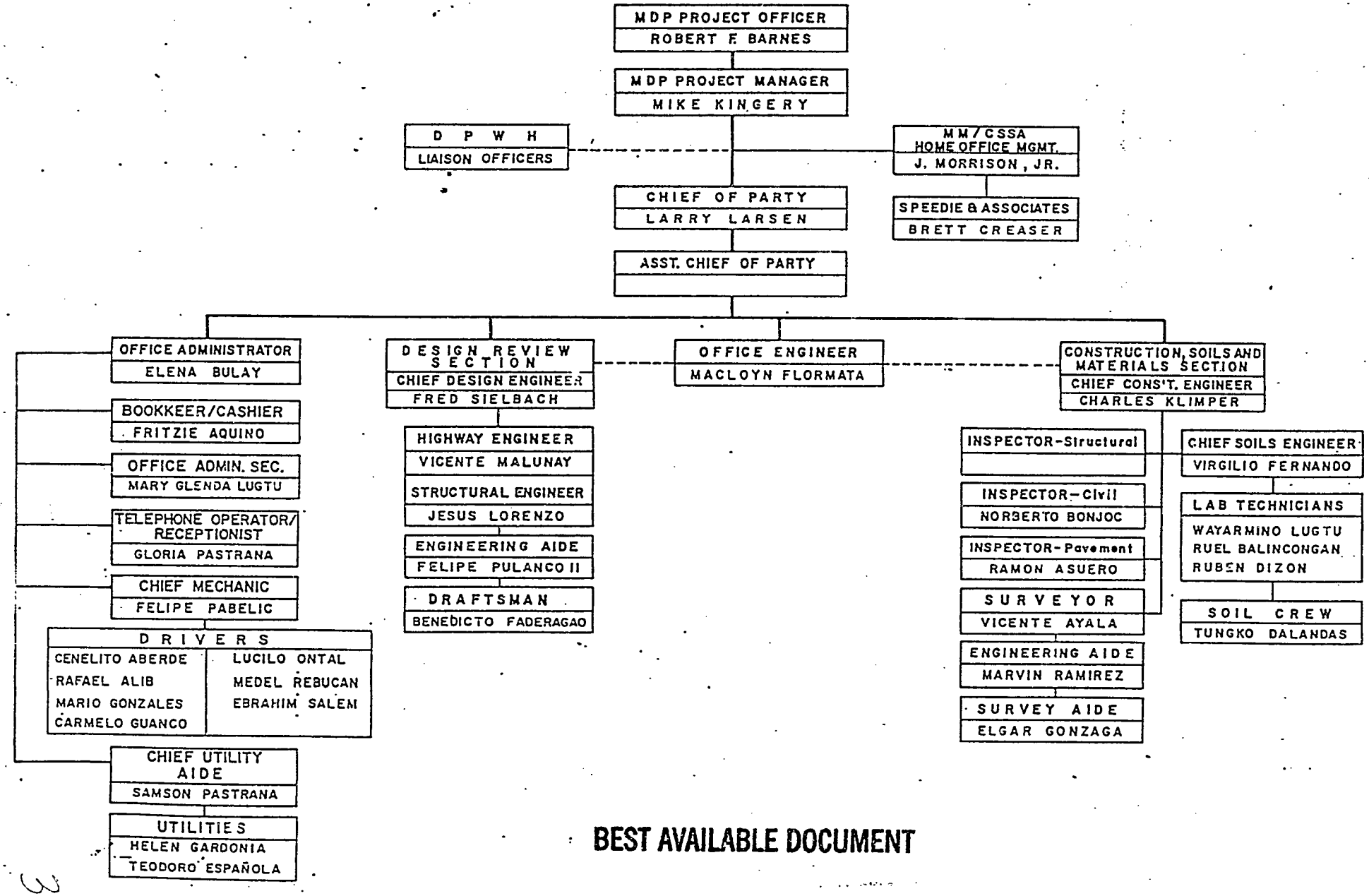
OFFICE OF THE ENGINEER
SOUTH COTABATO HIGHWAYS PROJECT



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V. MONTHLY PROJECT ACTIVITIES AND PROGRESS

V.1 Design Activities

Project Design Status

The following list shows the design status of the different sectors with respect to meetings, submittal and review/approval dates as of March 31, 1993.

Section/ Sector	90% Design Documents Submitted by MKC to MM	90% Design Review Comments Submitted by MM to MKC	Field PIII Review Held	Office Review Meeting Held	100% Design Documents Submitted by MKC to MM	Final Comments and Revisions Submitted by MM to MKC	Final Plans Approved and Signed
Section 3B Sector 3	31 March 1992	8 May 1992	04 June 1992	06 Aug. 1992	03 Aug. 1992	14 Aug. 1992	25 Aug. 1992
Section 1 & 2 Sector 2	30 April 1992	10 June 1992	09 Sept. 1992	19 June 1992 06 Aug. 1992	14 Oct. 1992	27 Oct. 1992	07 Dec. 1992
Sector 7	30 June 1992	23 July 1992	02 Sept. 1992	06 Aug. 1992	11 Sept. 1992	21 Sept. 92	20 Nov. 1992
Sector 8	29 Aug 1992	14 Sept. 1992	27 Nov. 1992	17 Aug. 1992	14 Oct. 1992	4 Dec. 1992	07 Dec. 1992
Sector 3 Section 4	26 Oct 1992	13 Nov. 1992	10 Nov. 1992	17 Nov 1992 3 Dec 1992	24 Nov. 1992	1 Dec. 1992	07 Dec. 1992
Sector 4	17 Dec. 1992	7 Jan. 1993	14 Jan. 1993	8 Jan. 1993	26 Jan. 1993	03 Feb. 1993	10 Feb. 1993
Section 3 Sector 2	16 Dec. 1992 (60%) 26 Feb. 1993 90%	8 Jan. 1993 (60%)					
Lun Masla Bridge Sector 2	12 Feb. 1993	18 Feb. 1993			24 Feb. 1993		03 Mar. 1993
Saub Bridge Sector 3	02 Mar. 1993 (65%)	22 March 1993					

V.1.1 MM/CSSA design team reviewed the 90% design plans for Section 3 of Road Sector 2, Malapatan-Glan (alternate bid) submitted on March 01, 1993 by MKC. A preliminary 90% plan review comments for the said section was submitted to MKC on March 4 and the 90 % design plans were reverted to MKC with red lined corrections.

MKC resubmitted their 90% design plans on April 1, 1993. MM/CSSA design staff are currently reviewing the submittal.

V.1.2 Final 100% Plans for the Lun Masla Bridge were approved and signed by USAID on March 3, 1992. The original drawings were transmitted to MKC along with an approval letter and Notification to Commence Construction.

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V.1.3 MM/CSSA design staff completed their review on the 100% design submittal of MKC for Sector 4, Polomolok- Landan and returned MKC one set of plans with red lined notations on some changes needed on the revised design of the box culverts.

V.1.4 MM/CSSA design engineers reviewed the 65% design for Saub Bridge submitted by MKC on March 02, 1993 and sent their design review comments on the said submittal on March 16 together with the design plans having red lined corrections. The design review comments reverted to MKC include the following comments:

Construction Detour/Signing

For traffic safety and protection of the traveling public during the construction period for this structure provide plans, specifications and details for the following:

1. Safer less hazardous connections of the existing detour road approaches to the new paved roadway.

2. Proper barricades and signing at the detour connections to the new roadway and at both ends of the structure.

3. Advance warning signing for the detour.

4. One-way signs for the Bailey Bridge.

5. Proper maintenance of the detour roads during the bridge construction.

On March 01, 1993 MKC sent a letter to the MDP Project Manager concerning the scope of design services necessary to complete the design of the partially completed Saub Bridge sub and superstructure. MKC mentioned that the services includes the requirement that they investigate the seismic stability of the substructure work done under an earlier DPWH project.

In MKC's Geotechnical Report, based on data obtained from DPWH design plans and pile driving data, it shows that the remaining bridge work can be built on the existing piling at the abutments and pier locations.

MKC would like to verify whether Project Management desires additional investigation by MKC or others be made on abutment work or should they proceed with design plans on the basis of connecting to the existing as-built abutment structures, on the assumption this substructure work was built in accordance with DPWH design plans.

On March 03, 1993 the MDP Project Manager sent a response to MKC regarding the above mentioned subject matter and have decided that it is unnecessary to conduct additional investigation, and to proceed with the design on the basis of connecting to the existing as-built abutment structures.

Incidentally, proceeding in this manner leaves the liability for design and construction of the abutments with DPWH and the construction contractor.

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V.2 Construction Activities

On March 23, 1993 MKC transmitted to MM/CSSA a preliminary draft of their revised construction schedule for the whole project outlined as indicated below;

Road Sector	Scheduled start	Scheduled Completion
Sector 2		
Buayan to Glan	1st week, April 1993	2nd week, Nov. 1993
Lun Masla Bridge	2nd week, April 1993	4th week, Nov. 1993
Sapu Masla Bridge	1st week, June 1993	4th week, July 1993
Sector 3		
Tambler to Maitum	100% completed	March 31, 1993
Saub Bridge	1st week Aug. 1993	4th week, Nov. 1993
Sector 4		
Polomolok to Landan	3rd week April 1993	2nd week, Oct. 1993
Sector 7		
Surallah to T'boli	1st week Dec. 1992 (actual start)	2nd week, Aug. 1993
Sector 8		
Kolambog to Norala	4th week, Feb. 1992 (actual start)	2nd week, Aug. 1993

MKC is scheduling to complete the whole road project by November 30, 1993 including additional alternate roads and additional bridges. Previous revised schedule completion for the whole project was May 1994, cut short by 6 months.

MM/CSSA QA staff continued checking, inspecting and monitoring the construction activities of MKC on all the sectors to see to it that their QC follow contractual specifications set by DPWH.

V.2.1 Road Sector 2, Malapatan-Glan	Qty this Period	Last location
* Casting of Concrete Piles for Lun Masla Bridge	920 lm.(100% complete)	Sta. 13 + 000
* Concrete for Bridges	58 cu.m.	Molo & Tuyan
* Construction survey	21000 lm.	sta. 16 + 000

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V.2.1.1 MKC's subcontractor for piles on Lun Masla Bridge completed their casting activities.

V.2.1.2 MKC completed setting up their aggregate crushing plant at the east bank of Lun Masla Bridge site. MKC initiated crushing and stockpiling crushed aggregate material on the last week of March.

V.2.1.3 MKC initiated clearing and grubbing activities at the 1st approach of Lun Masla Bridge going towards the existing road intersection at the detour road at the Lun Masla barrio. MKC commenced earthwork activities along the alignment of the road by cutting an access road through the existing hill 50 meters away from the 2nd approach of the Lun Masla Bridge. This area will have to be reconstructed to qualify for roadway section embankment quantities.

V.2.1.4 MKC's subcontractor casted concrete on wingwalls of the 2nd approach of Tuyan bridge. Construction activities for this bridge is expected to be completed by the 3rd week of April, 1993.

V.2.1.5 MKC's subcontractor have detoured the existing road around the Lot Box Culvert. The existing Bailey bridge has already been removed and traffic has to ford the existing waterway. Excavation for the structure have been completed and excavation for the waterway channeling is going-on.

V.2.2 Road Sector 3, Sections 1, 2, 3 & 4
GSC/Makar - Maitum

	Qty this period	Last location
* Gabions	100% complete	72 + 256
* Grouted Riprap	100% complete	91 + 427
* Metal Guardrails	100% complete	96 + 940
* Pavement Markings & Signpost Installation	100% complete	98 + 933

MKC completed all construction activities on these sections of Road Sector 3 including rectification of punchlist items and cleaning up operations. MM/CSSA and MKC inspectors made a joint inspection for Sections 1, 2, 3 and 4 of Road Sector 3 on March 25 to check the deficiencies on the final and pre-final punchlist for each section.

V.2.3 Road Sector 7
Surallah - T'boli

Embankment activities is now completed in this sector. Laying of crushed aggregate have been initiated on the first week March and is scheduled to be completed before the end of April, 1993. Drainage improvement works are 90% complete and is expected to be completed by the 3rd week of April. MM/CSSA's survey crew continued doing spot checks on MKC's survey activities for the construction phase. They are making sure that all embankment, subgrade, subbase and base course preparations are at the approved design elevations.

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Sector 7	Qty this Period	Last location
* 104(1) Embankment	1000 cu.m.	12 + 087
* 202 Crushed Agg Base Course	8562 cu.m.	16 + 100
* Concrete for Headwalls, Wingwalls	30 cu.m.	16 + 200

V.2.3.1 On 02 March, 1993 representatives from USAID, DPWH, MM/CSSA and MKC met in sector 7 to determine the best course of action to be taken regarding the drainage. All parties agreed that the inlets and outlets be kept clear after construction and that the outfalls be cleared as much as possible. The following action will be instituted;

Side ditches

* After shaping the front and back slopes will generally be left alone to enhance vegetative growth. Only minimal cleaning will be done in order to protect the new growth.

* In several areas vegetative (corn stalks, coconut leaves, etc.) check dams will be installed.

* Fertilizer will be spread on the slopes and ditch areas to accelerate growth and turf development to further protect the ditches.

Station 12±

* This area will be redesigned in an effort to reduce the gabion work and not compromise the roadway. The redesign will include a realignment, grade changes and drainage modifications to channel water from the roadway.

Station 21±

* Due to severe washing, additional cross drain pipe will be installed and DPWH will obtain right of way and construct additional outfalls.

MKC will continue to monitor this section and will advise MM/CSSA of any further recommendations.

V.2.4 Road Sector 8
Noralla- Kolambog

	Qty this period	Last location
Clearing & grubbing	100% complete	16 + 300 to 23+ 087
Embankment	15000 cu.m.	18 + 700 to 23 + 087

Embankment materials placed in this sector will be under observation and further testing is required before it can be accepted. Drainage improvement activities is also underway.

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V.3 Geotechnical Activities

V.3.1 MM/CSSA soil staff have conducted QA inspection on the source of aggregate material on the Dahay/Allah River Quarry. Initial test on the material crushed indicate failure on abrasion. These material have been taken on the upper part of the river. Materials already crushed will be evaluated for possible incorporation into the project.

Material source for crushed aggregate taken from the lower part were tested and passed. Material source for Sector 7 will now be taken from the lower part of the river or MKC will have to find additional acceptable sources.

A joint testing for crushed aggregate material-in-place was done by MM/CSSA and MKC soil staff on Sector 7. Both registered failure in abrasion and results were sent to MKC and MM/CSSA superiors for perusal. MKC said they will be submitting a proposal on remedial steps they will do to rectify the matter.

V.3.2 MM/CSSA and MKC geotechnical staff made a joint investigation of the materials at the Dahay Quarry Site/Allah River Aggregate Source for asphaltic concrete to be used in Sectors 7 and 8. The investigation yield unfavorable results and a project materials meeting was held on March 29 at the MDP Project Office with USAID, MM/CSSA and MKC to resolve the issue.

Everyone in the meeting agreed that a final decision on the materials usage for asphaltic concrete will be subject to comments of the Engineer's Geotechnical Technical Consultant (Speedie & Associates) through their Chief Materials Engineer, Mr. Brett Creaser.

All QA and CQC test results, evaluations and pertinent information was faxed to Speedie & Associates in Phoenix, Arizona and on March 30 a reply from Mr. Creaser was received. Mr. Creaser states that the material in question is either unacceptable or too marginal in the critical properties to permit approval.

Accordingly, the MDP Project Manager sent a letter to MKC on March 31, 1993 informing them that it was decided not to use the Dahay quarry as a source for asphaltic concrete. MKC was requested to adjust their schedule and work items to reflect this decision.

MKC was also requested to submit to USAID a revised time schedule and any estimated additional cost they may feel necessary to complete with the construction of the roadways (Sectors 7 & 8) as per the approved final design.

V.3.3 Both MM/CSSA soil staff and MKC QC continue to monitor and observe the embankment material placed in Sector 8 and will make recommendations as to whether the material in-place will be acceptable to DPWH specifications.

V.3.4 A recommendation to overlay with a minimum of 38 mm of compacted AC pavement material was issued to MKC to rectify the thin lift sections of asphalt laid in Section 4 of Sector 3. MM/CSSA soil staff established the thin lift sections which they furnished MKC. Consequently, MKC did all the overlay needed in this section as they have to finish all asphalt activities in this sector before moving to sector 7.

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Close observation will be effected in this area during the defect liability period to monitor the results. All asphalt activities in Sector 3 up to Section 4 (Kiamba- Maitum) have been completed on March 15, 1993. The asphalt Plant was mobilized to Sector 7 on the last week of March, 1993.

VI. Project Management and Administration Activities

Indicated below are significant items, events and decisions made by Project Management that are beneficial to the project;

VI.1 Design Modification of Double Box Culvert at Sector 4, Polomolok- Landan

Project Management have been in consultation with the engineering authorities at Dole Philippines plantation, Polomolok who have expressed considerable concern about maintenance of flood flows through two drainage structures on Sector 4 alignment. After considerable MKC, USAID and MM/CSSA engineering deliberation, it was decided to eliminate the dividing wall in the two culverts and create a bridge type culvert with a 3 meter high by 6 meter wide waterway opening. On March 03, 1993 MKC was requested to proceed with the re-design of the two box culverts as such.

VI.2 Sequence of Operations, Sector 7 (Surallah - T'boli)

On March 02, 1993 representatives from USAID, DPWH, MM/CSSA and MKC met in Sector 7 to review and discuss ways to improve the drainage condition in that area.

Project Management strongly urge MKC to review their paving sequence and start all major operations from T'boli end at sta. 21 + 581 instead of starting from sta. 0 + 000 at Surallah. This would allow drainage items to be reviewed for a longer period time before accepting Sector 7 and the critical drainage areas will be time tested before the pavement is completed.

Having time to properly evaluate the drainage through this area will be extremely beneficial to all concerned.

VI.3

The MDP Project Manager sent approval to MKC on the use of the Dahay and Matinao quarry sites for base course material, respectively for Sectors 7, 8 and 4, after getting a recommendation from the MM/CSSA Chief construction Engineer and the Chief Materials Engineer.

Approval to the two material sources for use as described to the understanding that the following will apply:

- Additional testing procedures to assure the aggregate remains within the AASHTO T96 specification as per your correspondence, and;
- The Dahay quarry site product will be limited at this time to use as Base Course material only.

It is understood that the QC and QA staffs of both MM/CSSA and MKC will be following the test results closely so that assurance that the product of the subject quarries will remain within specification.

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VI.4 On March 30, 1993 USAID, MKC, MM/CSSA and DPWH made a final punchlist inspection on the above sections and verified that all items listed in the punchlist were satisfactorily done. Subsequently, MKC requested for a substantial completion for Sections 3A, 3B and 4 on the same date.

VI.5 On March 31, the MDP Project Manager issued Substantial Certificate of Completion for Sections 3A, 3B and 4 of Road Sector 3, Lumoyon to Maitum, sta. 59 + 800 to sta. 98 + 934. The defect liability period for these sections will end on March 31, 1994. Sections 1 and 2 have been issued certificates of completion on 12 November 1992 and 30 January 1993 respectively.

This signifies substantial completion of the entire Sector 3, from Makar to Maitum, except for the two major bridge works (Pangi and Saub) which remain in process. Project Management suggested to MKC that the next punch list issuance reflect a consolidated presentation of the remaining open items.

Project Management accorded MKC appreciation for a fine job on Road Sector 3 and congratulations for completing this work substantially ahead of schedule.

VII. PROGRESS SUMMARY

ROAD SECTOR	KMS	Notice to Commence Construction	Completion Start of Defect Liability Period	% Progress to date
SECTOR 2				
Section 1 & 2	20.01	12/07/92	on-going	12.95 %
Section 3 (Alternate Bid)	28.00	Final Design In Process	-	-
Bridge Structures	59.00 mts	05/29/92	on-going	86.95 %
SECTOR 3				
Section 1A & 1B	14.19	10/23/91	11/12/92	100 %
Section 2	21.47	02/26/92	01/30/93	100 %
Section 3A	24.08	05/29/92	03/31/93	100 %
Section 3B	23.74	08/25/92	03/31/93	100 %
Section 4 (Alternate Bid)	15.35	12/07/92	03/31/93	100 %
SECTOR 4				
Sections 1, 2 & 3	4.14	02/10/93	on-going	5 %
SECTOR 7	21.55	11/18/92	on-going	44.10 %
SECTOR 8	6.78	12/07/92	on-going	5.48 %
ADDITIONAL BRIDGES	Length Meters			
SECTOR 2				
LUN MASLA BRIDGE	200.80	03/03/93	on-going	15.58%
SAPU MASLA BRIDGE	62.80	Final Design In Process	-	-
SECTOR 3				
SAUB BRIDGE	80.60	Final Design In Process	-	-
PANGI BRIDGE	198.49	Notice of Public Bidding in Process	-	-

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VII.1 To date a total of 151.334 kilometers of Contractor's furnished detailed road design has been approved and are currently being constructed. These are for Road Sectors 2, 3, 4, 7, 8 (Base Bid) with a total aggregate sum of 133.925 kms, Section 4 of Road Sector 3 and Section 1 of Road Sector 4 (Additive alternate) with 17.409 kms.

VII.2 Evaluation for the design of the last road section of the project is in the concluding phase and this is for Road Sector 2, Section 3 Malapatan - Glan (Additive alternate) with a total length of 28 kms. Approval for the design is expected to be issued to MKC before the end of April, 1993.

VII.3 To date a total of 98.06 kms of asphalt pavement have been completed which are all for Road Sector 3 from Sta. 1 + 947 to Sta. 99 + 993, General Santos - Tambler to Maitum. Pavement activities for Road Sector 3 General Santos - Tambler to Maitum was scheduled to be completed by the 4th week of April 1993. MKC achieved their goal two months ahead of schedule as pavement activities were completed on February 27, 1993 making it a significant event for this Road Project.

VII.4 Completion Certificates have been issued to Sections 1A, 1B, and 2 of Road Sector 3 previously while the same was issued to Sections 3A, 3B and 4 on March 31, 1993. This is a milestone for this project as acceptance for the whole of Sector 3 was originally scheduled for May, 1993.

VII.5 The design of bridge structures and box culverts on road Sector 2 has also been approved and is currently being constructed. To date a total of 51.30 lm of bridge structure have been constructed in this sector which are 18.80 lm Molo bridge and 32.80 lm for Tuyan bridge. The lot box culvert is now being constructed.

The 100 % design submittal of the Lun Mala Bridge has been approved and casting of piles are underway. The 90% design submittal for Saub Bridge is now being evaluated.

VII.6 Construction Activities in Road Sector 7, Surallah - T'boli is well underway with embankment activities completed and aggregate base course laying is scheduled to be completed before the end of April, 1993. All construction activities in Sector 7 is re-scheduled to be completed before August, 1993.

VII.7 Clearing and grubbing activities in Road Sector 8, Norala to Kolambog has been completed and embankment activities will start within the middle of March. Activities for this sector is also three months ahead of schedule.

VII.8 Construction activities for Road Sector 2, Buayan Malapatan has been initiated. Clearing and grubbing is well underway. MKC's crusher plant have been installed at the Lun Masla site and crushing as well as stockpiling of aggregates is going-on.

VII.9 Road right of ways are being cleared by DPWH in Road Sector 2, Buayan to Malapatan to eliminate future problems.

VII.10 Field clarification memos are being utilized for all changes that occur in actual construction to suit existing field conditions. MM/CSSA QA staff are verifying all FCM prior to deciding an approval.

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VIII.1 % Accomplishment of MKC for each Road Sector as of March 31, 1993;

1.ROAD SECTOR 2	ITEM DESCRIPTION		% ACCOM.	% expenditure
	A.	General Items	100.00 %	74.91 %
	B.	Earthwork	8.22 %	8.22 %
	C.	Structures	86.95 %	39.86 %
2. ROAD SECTOR 3				
	A.	General items	100.00 %	99.99 %
	B.	Earthworks	100.00 %	96.53 %
	C.	Pavement	100.00 %	72.66 %
	D.	Structures	100.00 %	19.52 %
	E.	Drainage	100.00 %	73.36 %
	F.	Incidental Works	100.00 %	286.26 %
3. ROAD SECTOR 4				
	A.	General Items	100.00 %	26,68 %
4. ROAD SECTOR 7				
	A.	General Items	100.00 %	100.72 %
	B.	Earthwork	100.00 %	114.57 %
	C.	Pavement	15.82 %	15.82 %
	D.	Structures	0	0
	E.	Drainage	90.00 %	168.56 %
5. ROAD SECTOR 8				
	A.	General Items	100.00 %	52.67 %
	B.	Earthworks	8.14 %	8.14 %
6. SECTION 4, ROAD SECTOR 3 (Additive Alternate, Provisional Cost)				
	A.	General Items	100.00 %	100.00 %
	B.	Earthworks	100.00 %	98.12 %
	C.	Structures	100.00 %	68.40 %
	D.	Drainage	100.00 %	192.16 %
	E.	Incidental works	100.00 %	92.97 %
7. ADDITIONAL WORK				
	7.1	Lun Masla Bridge Design	100.00 %	92.22 %
	7.2	-ditto- Construction	11.97 %	11.97 %
	7.3	Alt. Bridge Investigation	100.00 %	100.00 %
	7.4	Survey and Geotech		
		Polomolok-Agri Center	100.00 %	100.00 %
		Malapatan-Glan	100.00 %	100.00 %
	7.5	Box Culverts, Sector 2	100.00 %	100.00 %
	7.6	Datu Dani Bridge Approach Repair	100.00 %	100.00 %

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IX. FINANCIAL SUMMARIES

Total Expenditure for each Road Sector as of March 31, 1993

1.	Road Sector 2	12.95 %
2.	Road Sector 3	83.95 %
3.	Road Sector 4	0.96 %
4.	Road Sector 7	44.10 %
5.	Road Sector 8	5.48 %
6.	Road Sector 3 (Additive, Provisional Cost) Section 4	103.29 %
	Total Expenditure to date	62.20 %

MKC submitted their 20th Monthly Progress Payment request for the period March 01 - 31, 1993 and have been thoroughly checked by MM/CSSA technical staff. The request has been evaluated and approval for payment was recommended to the MDP Project and was transmitted to the USAID office in Manila for disbursement. Disbursements under the Cotabato Road Project are summarized as follows:

Disbursements to Morrison Knudsen Corp.

BILLING NUMBER	DATE	AMOUNT BILLED	BILLED TO-DATE	CONTRACT AMOUNT	AMOUNT REMAINING
(For Billing No. 1 to 17, refer to previous report)					
18	01/31/93	1,290,657.00	22,714,379.00	40,167,240	17,452,861.00
19	02/28/93	1,357,229.00	24,071,608.00	40,167,240	16,095,632.00
20	03/31/93	913,072.00	24,984,680.00	40,167,240	15,182,560.00

Disbursements to Morrison-Maierle/CSSA

BILLING NUMBER	DATE	AMOUNT BILLED	BILLED TO-DATE	CONTRACT AMOUNT	AMOUNT REMAINING
(For Billing No. 1 to 23, refer to previous report)					
24 (1)	10/31/92	137,680.30	2,485,289.68	4,237,549	1,652,259.71
25 (1)	11/30/92	173,970.08	2,659,259.74	4,237,549	1,578,289.26
26 (1)	12/31/92	117,021.10	2,776,280.86	4,237,549	1,461,268.14
27 (1)	01/31/92	57,958.24	2,834,239.10	4,237,549	1,403,309.90
28 (1)	02/28/92	83,259.64	2,917,498.74	4,237,549	1,320,050.26

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EXECUTIVE SUMMARY

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PROJECT DESCRIPTION

PROJECT NAME	: SOUTH COTABATO HIGHWAYS PROJECT MINDANAO DEVELOPMENT PROGRAM
CLIENT	: UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
LOCATION	: GENERAL SANTOS CITY, SOUTH COTABATO, MINDANAO, PHILIPPINES
CONTRACT DATE	: 10 JULY 1991
NOTICE TO PROCEED	: 17 JULY 1991
CONTRACT DURATION	: 3 YEARS
CONTRACT TYPE	: DESIGN-CONSTRUCT (TURNKEY)

MAJOR WORK ITEMS

DESCRIPTION	APPROX. QTY.
I. DESIGN:	
A. FURNISHING DETAILED ROAD DESIGN	179 KM
B. FURNISHING DETAILED BRIDGE DESIGN	339 LM
II. CONSTRUCTION:	
A. CLEARING AND GRUBBING	1,480,000 SM
B. EMBANKMENT	830,000 CM
C. SUBGRADE PREPARATION	2,300,000 SM
D. SUBBASE AND BASE COURSE	324,000 CM
E. PORTLAND CEMENT CONCRETE PAVEMENT	17,000 CM
F. ASPHALT CEMENT PAVING	145,000 MT
G. REINFORCED CONCRETE PIPE CULVERTS	3,100 LM
H. BRIDGES	259 LM

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JOB DESCRIPTION

The Governments of the Republic of the Philippines and the United States of America have agreed to use Philippine Assistance Program (PAP) funds provided by the United States to undertake a road construction program in South Cotabato, Mindanao, Philippines.

In order to initiate and proceed with construction as rapidly as possible and place the completed roads in service, the two governments decided to award the contract to MORRISON KNUDSEN CORPORATION on a design-construct (turnkey) basis.

The work consists of performing final design level field investigations, preparation of final design plans for and the construction of five road projects as follows:

SECTOR	LOCATION	APPROX. LENGTH
Sector 2	General Santos City to Glan	47 KM
Sector 3	General Santos City to Maitum	100 KM
Sector 4	Polomolok to Landan	4 KM
Sector 7	Surallah to T'boli	21 KM
Sector 8	Norala to Kolambog	7 KM

The approximate aggregate length of the project is 179 kilometers. Feasibility studies and preliminary designs have been completed on these road sectors. Construction work includes horizontal and vertical alignment changes, embankment, widening, drainage structures, bridges and paving.

NARRATIVE

The contract was executed on 10 July 1991. Notice to proceed was issued on 17 July 1991. Ground breaking ceremony was held on 11 October 1991 at the beginning of Sector 3. Of the current authorized 179 kms, 136 kms of construction is on-going with 100 kms fully accepted.

FACILITIES. The crusher plant at Dahay in Sector 7 continues to function operationally. The screening plant with a cone crusher was transferred to Lun Masla in Sector 2 and is operational. The asphalt plant is being moved to Sector 7. Temporary facilities at Kiblis (Km 62, Sector 3) and km 3 at Sector 7 continue to support operations.

DESIGN. USAID had issued on 24 July 1992 notice to proceed with the following current authorized work:

LOCATION (SECTOR-DESCRIPTION)	BASE BID	CURRENTLY APPROVED
2 - Buayan - Malapatan	20 km	20 km
2 - Malapatan - Glan (Alternate)		27 km
3 - Makar - Kiamba	84 km	84 km
3 - Kiamba - Maitum (Alternate)		16 km
4 - Agrocenter - Landan	10 km	2 km
4 - Polomolok - Agrocenter (Alt.)		2 km
7 - Surallah - T'boli	21 km	21 km
8 - Banga - Norala - Kolambog	23 km	7 km
Total Roadway	158 km	179 km
Bridges	94 lm	339 lm

To date, final road design for all authorized sectors have been fully approved except alternate sector 2 (Malapatan - Glan) which was resubmitted for review and approval. Of the five authorized bridges; Tuyan, Molo and Lot, all of sector 2 were fully approved the previous months, Lun Masla of sector 2 was fully approved this month, while Saub (Sector 3) design was submitted this month for review and approval.

CONSTRUCTION. Roadway construction of Sector 3 (Makar - Maitum, 100 Kms) has been substantially completed with 100 kms fully accepted, with the construction of Saub bridge remaining. In sector 7, with clearing and grubbing completed the previous months, embankment was substantially completed with base works and drainage/erosion protection works both on-going. In sector 8, with clearing and grubbing completed last month, embankment is nearing completion, subgrade preparation was started, while drainage works is on-going. ROW survey of sector 4 was completed. In sector 2, while three box culverts and Molo bridge were completed the previous months, Tuyan bridge construction is still on-going, Lun Masla pile casting completed, RCPC fabrication is on-going, clearing and grubbing for the roadway and Lot bridge construction was started.

SIGNIFICANT EVENTS

10 JULY 1991	:	CONTRACT AWARD
17 JULY 1991	:	NOTICE TO PROCEED
29 JULY 1991	:	KICK-OFF CONFERENCE
19 AUGUST 1991	:	DESIGN SURVEY STARTED
24 AUGUST 1991	:	SOIL INVESTIGATION STARTED
30 AUGUST 1991	:	FIELD OFFICE CONSTRUCTION COMPLETED
09 SEPTEMBER 1991	:	FIRST DESIGN SUBMITTAL (1ST 7.85 KM)
28 SEPTEMBER 1991	:	MAIN OFFICE CONSTRUCTION COMPLETED
11 OCTOBER 1991	:	GROUND BREAKING CEREMONY AT SECTOR 3
23 OCTOBER 1991	:	NOTICE TO COMMENCE WORK ON DRAINAGE IMPROVEMENT FOR THE FIRST 7 KILOMETERS
13 NOVEMBER 1991	:	FINAL DESIGN APPROVAL OF FIRST 7.85 KILOMETERS OF SECTOR 3
19 NOVEMBER 1991	:	NOTICE TO COMMENCE WORK ON SELECTED DRAINAGE LINES, SECOND 7 KILOMETERS AT SECTOR 3
25 NOVEMBER 1991	:	ARRIVAL OF PLANT AND EQUIPMENT FROM USA
29 DECEMBER 1991	:	CRUSHING OPERATION STARTED AT THE SIGUEL SITE IN SECTOR 3
14 JANUARY 1992	:	FINAL DESIGN APPROVAL OF SECOND 7 KILOMETERS OF SECTOR 3
18 FEBRUARY 1992	:	BASE COURSE INSTALLATION STARTED ON THE FIRST 14 KM OF SECTOR 3
12 MARCH 1992	:	ASPHALT PAVING STARTED ON THE FIRST 14 KM OF OF SECTOR 3
15 MARCH 1992	:	TRANSFER OF CRUSHER TO NEXT SET-UP AT KABLA-CAN (KM 42)
26 MARCH 1992	:	THE CONTRACT WAS FULLY FUNDED WITH USAID OB-LIGATING THE ADDITION $ 16 MILLION
31 MARCH 1992	:	NOTICE TO PROCEED WITH CONSTRUCTION OF SEC-TORS 2,4, 7, AND 8 WAS ISSUED.
13 MAY 1992	:	COMPLETION OF ASPHALT PAVING SECTIONS 1A & 1B (14 KM) OF SECTOR 3.
20 MAY 1992	:	FIRST POURING OF CONCRETE AT TUYAN BRIDGE OF SECTOR 2.
20 MAY 1992	:	FINAL DESIGN APPROVAL OF THREE BRIDGES AND THREE MAJOR BOX CULVERTS OF SECTOR 2.
25 MAY 1992	:	TRANSFER OF CRUSHER PLANT TO NEXT SET-UP AT KIBLIS (KM 62), SECTOR 3
28 MAY 1992	:	NOTICE TO PROCEED WITH DESIGN REVIEW FOR THE LUN MASLA BRIDGE, SECTOR 2
24 JULY 1992	:	NOTICE TO PROCEED FOR COMPLETE FINAL DESIGN OF ADDITIVE ALTERNATE BID OF SECTOR 2, 3, 4 AND DIRECTIONAL ORDER FOR SECTOR 8
15 AUGUST 1992	:	COMPLETION OF ASPHALT PAVING FROM TAMBLER TO MAASIM (35 KM) IN SECTOR 3
25 AUGUST 1992	:	100% DESIGN APPROVED FOR BASE BID SECTOR 3
22 SEPTEMBER 1992	:	FIRST EXECUTIVE REVIEW OF THE PROJECT
08 OCTOBER 1992	:	FINAL INSPECTION 1st 14 KILOMETERS SECTOR 3
12 NOVEMBER 1992	:	COMPLETION CERTIFICATE ISSUE FOR 1st 14 KMS, SECTOR 3
18 NOVEMBER 1992	:	NOTICE TO PROCEED CONSTRUCTION OF SECTOR 7

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SIGNIFICANT EVENTS

28 NOVEMBER 1992	:	FORMAL COMPLETION CEREMONY HEADED BY FIDEL V. RAMOS, PRESIDENT REPUBLIC OF THE PHILIPPINES AND RICHARD SOLOMON, AMBASSADOR OF THE UNITED STATES, FOR 1st 14 KMS OF SECTOR 3
20 DECEMBER 1992	:	FINAL INSPECTION AND REQUEST FOR ACCEPTANCE OF NEXT 20 KMS (SIGUEL TO MAASIM) SECTOR 3
23 DECEMBER 1992	:	COMPLETION OF ASPHALT PAVING OF WHOLE BASE SECTOR 3 (84 KMS)
29 JANUARY 1993	:	COMPLETION CERTIFICATE ISSUED FOR SIGUIL TO MAASIM ROADWAY IN SECTOR 3
20 FEBRUARY 1993	:	COMPLETION OF ASPHALT PAVING OF BASE AND ALTERNATE SECTOR 3 (MAKAR-MAITUM, 100 KMS)
23 FEBRUARY 1993	:	FINAL INSPECTION AND REQUEST FOR ACCEPTANCE OF NEXT 27 KMS (MAASIM TO LUMOYON) SECTOR 3
31 MARCH 1993	:	FINAL ACCEPTANCE FOR THE REMAINDER OF ROAD SECTOR 3 (MAASIM TO MAITUM).

DESIGN REPORT

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NARRATIVE

DESIGN SURVEY DATA. Started on 19 August 1991, this phase of design work was completed the previous months.

SOIL INVESTIGATION. Started on 24 August 1991, all roadway geotechnical and bridge subsurface investigations were completed the previous months.

FINAL DESIGN. To date, with alternate sector 2 resubmitted and the only sector remaining to be approved, final roadway design is 85% complete of the currently authorized 179 kms. Of the five authorized bridges; Tuyan, Molo, Lot and Lun Masla, all of sector 2 were fully approved with Saub (sector 3) remaining, representing 77% completion of bridge designing works.

Tabulation of road design progress for the month ending 31 March 1993:

B:\PROGDES\WK1 LOCATION SECTOR - DESCRIPTION	CURRENTLY AUTHORIZED KM	SURVEY KM/%	SOIL INVESTIGATION KM/%	DRAINAGE INVESTIGATION KM/%	FINAL PLAN SUBMISSION KM/%	FINAL PLAN APPROVAL KM/%
2 - BUAYAN - MALAPATAN	20	20/100	20/100	20/100	20/100	20/100
2 - MALAPATAN - GLAN	27	27/100	27/96	27/100	20/100	0/0
3 - MAKAR - KIAMBA	84	84/100	84/100	84/100	84/100	84/100
3 - KIAMBA - MAITUM	16	16/100	16/100	16/100	16/100	16/100
4 - AGROCENTER - LANDAN	2	2/100	2/100	2/100	2/100	2/100
4 - POLOMOLOK - AGROCENTER	2	2/100	2/100	2/100	2/100	2/100
7 - SURALLAH - T'BOLI	21	21/100	21/100	21/100	21/100	21/100
8 - NORALA - KOLAMBOG	7	7/100	7/100	7/100	7/100	7/100
TOTAL	179	179/100	179/100	179/100	179/100	152/85

Tabulation of bridge design progress for the month ending 31 March 1993:

LOCATION DESCRIPTION	LENGTH LM	GEOTECH LM/%	SUBMITTAL LM/%	APPROVAL LM/%
2 - LUN MASLA	200	200/100	200/100	200/100
2 - TUYAN	33	33/100	33/100	33/100
2 - MOLO	19	19/100	19/100	19/100
2 - LOT	7	7/100	7/100	7/100
3 - SAUB	80	80/100	80/100	0/0
TOTAL	339	339/100	339/100	259/77

BEST AVAILABLE DOCUMENT

CONSTRUCTION REPORT

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NARRATIVE

SECTOR 2 (BUAYAN TO GLAN) 47 KMS

Plant: Screening plant with cone crusher is operational with 10,500 M.T. produced to date.

Earthwork: Clearing and grubbing was started.

Drainage: Three box culverts completed the previous months. RCPC fabrication is on-going.

Bridge : Molo bridge was serviceable the previous months. Tuyan bridge construction is on-going with sidewalk, bridge railing and approaches remaining. Lot bridge construction was started.

SECTOR 3 (MAKAR TO MAITUM) 100 KMS

Plant: Crusher plant was trnsferred to sector 7, screening plant to sector 2 and asphalt plant is being demobilized to sector 7.

Earthwork: Completed.

Pavement: Completed.

Drainage: Completed with items on final punchlist.

Incidental: Completed with items on final punchlist.

Saub Bridge: Approaches completed but no activity yet on the bridge proper.

SECTOR 4 (POLOMOLOK TO LANDAN) 4 KMS

ROW: Completed.

SECTOR 7 (SURALLAH TO T'BOLI) 21 KMS

Plant: Crusher plant production on-going with 120,000 M.T. produced to date. Fabrication of RCPC complete.

Earthwork: Clearing and grubbing and embankment were completed.

Pavement: 19 kms of base course works was completed and on-going.

Drainage: Cross-drains was completed while side drainage and erosion protection works are on-going.

Incidental: No activity.

SECTOR 8 (NORALA TO KOLAMBOG) 7 KMS

Earthwork: Clearing and grubbing was completed. Embankment is nearing completion.

Drainage: Drainage works is on-going with 5 lines completed. Fabrication of RCPC is nearing completion.

Tabulation of construction progress for the month ending March 31, 1993:

SECTOR	2		3		4		7		8		TOTAL ROAD		TOTAL BRIDGES			TOTAL PROJ.	
KM	48 km		100 km		4 km		21 km		7 km		179 KM		339 LM				
% Completion	Wtd. %	% Comp.	Wtd. %	% Comp.	Wtd. %	% Comp.	Wtd. %	% Comp.	Wtd. %	% Comp.	Wtd. %	% Comp.	BRIDGES	Wtd. %	% Comp.	Wtd. % Total	% Comp.
EARTHWORK	10.91	2.00	8.23	100.00	0.70	0.00	2.89	72.00	0.33	33.29	33.49	45.78	MOLO	0.41	100.00	33.90	11.16
PAVEMENT	18.66	0.00	32.18	100.00	1.74	0.00	6.36	14.97	1.94	0.00	60.88	54.27	TUYAN	0.78	66.60	61.66	33.56
STRUCTURAL	1.61	13.00	0.43	100.00	0.43	0.00	0.01	0.00	0.00	0.00	2.52	27.50	LOT	0.28	0.00	2.80	0.69
DRAINAGE	1.43	0.00	1.69	100.00	0.15	0.00	1.00	18.39	0.32	0.00	4.52	41.45	LUN MASLA	3.72	5.42	8.24	2.07
INCIDENTAL	0.48	0.00	1.08	89.00	0.06	0.00	0.07	0.00	0.02	0.00	1.70	56.03	SAUB	1.70	0.00	3.40	0.93
% Completion by sector	33.11	1.20	43.64	99.31	3.10	0.00	10.32	31.16	2.93	8.25	93.11	30.82		6.89	16.40	100.00	48.44
													Total % Completion of Project			100.00	48.44

BEST AVAILABLE DOCUMENT

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SCHEDULE REPORT

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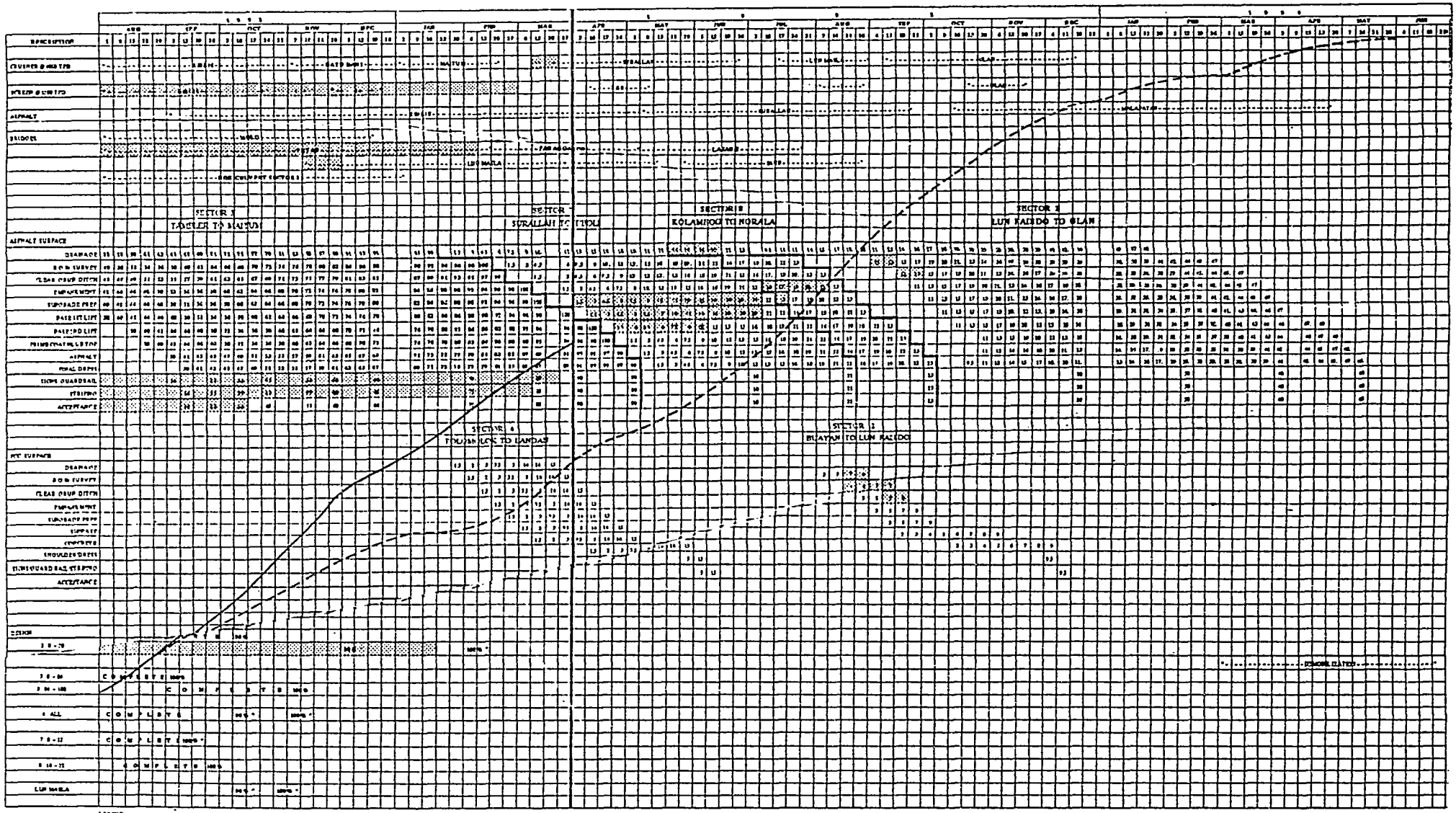
SOUTH COTABATO ROADS PROJECT
PROJECT SCHEDULE – AUGUST 1992
KILOMETER STATIONS



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SOUTH COTABATO HIGHWAYS PROJECT
MINDANAO DEVELOPMENT PROJECT
TWS (03/22/93 - 04/18/93)

THREE WEEKS SCHEDULE

ITEM		AS OF MARCH 1993 SCH	AS OF MARCH 1993 ACT	LAST WEEK 22	23	24	25	26	27	28	29	30	31	1	2	3	THREE WEEKS SCHEDULE 4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
SECTOR 2	STATION									S							S				H	H	H	S							S
										S							S				H	H	H	S							S
CLEAR / GRUB	12 – 13	0	13							S							S				H	H	H	S							S
	12 – 05									S							S				H	H	H	S							S
LOT BRIDGE		N/A	N/A							S							S				H	H	H	S							S
										S							S				H	H	H	S							S
TUYAN BRIDGE		N/A	N/A							S							S				H	H	H	S							S
										S							S				H	H	H	S							S
										S							S				H	H	H	S							S
										S							S				H	H	H	S							S
SECTOR 3										S							S				H	H	H	S							S
										S							S				H	H	H	S							S
INCIDENTAL / DRAINAGE		N/A	N/A							S							S				H	H	H	S							S
FINAL INSP / ACCEPTANCE		90.0	62.0							S							S				H	H	H	S							S
										S							S				H	H	H	S							S
										S							S				H	H	H	S							S
SECTOR 4										S							S				H	H	H	S							S
										S							S				H	H	H	S							S
ROW	13 – 15	15.0	15.0							S							S				H	H	H	S							S
										S							S				H	H	H	S							S
										S							S				H	H	H	S							S
SECTOR 7										S							S				H	H	H	S							S
										S							S				H	H	H	S							S
										S							S				H	H	H	S							S
FIRST BASE	15 – 18	0.0	18.0							S							S				H	H	H	S							S
	18 – 21									S							S				H	H	H	S							S
SECOND BASE	06 – 08	0.0	8.0							S							S				H	H	H	S							S
	08 – 15									S							S				H	H	H	S							S
DRAINAGE/EROSION	19 – 21	11.0	20.0							S							S				H	H	H	S							S
	20 – 21									S							S				H	H	H	S							S
										S							S				H	H	H	S							S
SECTOR 8										S							S				H	H	H	S							S
										S							S				H	H	H	S							S
EMBANKMENT	3 KM	0.0	3 KM							S							S				H	H	H	S							S
	4 KM									S							S				H	H	H	S							S
SUBGRADE PREP.	4 KM									S							S				H	H	H	S							S
DRAINAGE	16 – 17	0.0	17.0							S							S				H	H	H	S							S
	17 – 22									S							S				H	H	H	S							S
										S							S				H	H	H	S							S
										S							S				H	H	H	S							S

BEST AVAILABLE DOCUMENT

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QUALITY CONTROL REPORT

NARRATIVE

ORGANIZATION. The quality control team under the supervision of the quality control engineer, made up of inspectors assigned to specific work and augmented the previous months with additional inspectors and an independent subcontractor performing tests and laboratory works, all continue to perform the function of document and submittal control, adequate and timely inspections, testing, reporting and recording.

DESIGN MIX. Surveillance of the design mix was maintained to ensure continuing compliance with contract documents.

FACILITIES. The team has been provided with complete, efficient, modern, regularly maintained and calibrated equipments and apparatus, and adequate transport.

Tests.

Description of Work	Test Description	Extent of Work To Date
A. Roadway Earthwork	8198 tests - FDT	Emb/Subgrade- 128 kms.
	8375 tests - FDT	Subbase/base- 119 kms.
	2010 tests - MDD/AT/GRAD	Roadway - 128 kms.
B. Concrete & Structures	117 sets - Comp/SL 4000psi	RCP - 414 cum.
	2 set - Comp/SL 3500psi	PCCP - 682 cum.
	283 sets - Comp/SL 3000psi	Structures -1212 cum.
	25 sets - Comp/SL 2000psi	Cradles - 12 cum.
	5 sets - Comp/SL 1400psi	Lean Conc. - 16 cum.
C. Asphalt Paving	351 sets - Extr/Gradation	Asphalt Mix - 100 kms.
	494 sets - Spgr/Stab/Flow	Asphalt Pave- 100 kms.
	294 sets - Thickness/Comp	Asphalt Pave- 100 kms.
	3 sets - Index/Strength	Asphalt Mix - 100 kms.
D. Quarry Sources	67 sets - Abrasion/Sound Others	Location - 37 site
E. Materials	33 sets - Misc. tests	Rebar/Cem./Filler/Etc.

Test results exceeded minimum requirements.

REPORTING MONITORING AND COORDINATION. Prompt submission to USAID of inspectors' report, pre-placement report, laboratory and test results, punch list, and other reports had been maintained for proper controls and documentation. Regular coordination meetings had been held since start of project to ensure mutual understanding on the requirements of the project.

SOURCES OF AGGREGATES. Samples have been taken and test results submitted on various prospective and on-going quarry.

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ADMINISTRATIVE REPORT

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NARRATIVE

Manpower count as of 28 February 1993:

I. Construction Project Management

A. Expatriate	:	9
B. Local (Subcontractor)		
a) ALC :		
1) Engineering and Administration	:	31
2) Craft	:	267
b) Geoanalytics (CQC)	:	12
c) RIBCO (Concrete, Masonry, Drainage)	:	82
d) HEERCO (Drainage and Erosion Protection)	:	115
e) CHL (Portland Cement Concrete Pavement and Drainage and Erosion Protection)	:	51
f) MEISCOR (Survey Technicians)	:	3
g) MARBEL BUILDERS (Lot Bridge Construction)	:	9

II. DESIGN

A. Expatriate	:	1
B. Local (Subcontractor)		
ALC :		
- Survey	:	0
- Design	:	13
GEOANALYTICS :	:	0

III. TOTAL

A. EXPATRIATE	:	10
B. LOCAL	:	583
TOTAL	:	593

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FINANCIAL REPORT

CONTRACT FINANCIAL STATUS REPORT
AS OF MARCH 31, 1993

MONTH	TOTAL CONTRACT AMOUNT ($)	BILLED THIS PERIOD ($)	BILLED TO DATE ($)	BALANCE ($)
AUGUST 1991	40,167,240	126,038	126,038	40,041,202
SEPTEMBER 1991	40,167,240	130,493	256,531	39,910,709
OCTOBER 1991	40,167,240	125,741	382,272	39,784,968
NOVEMBER 1991	40,167,240	6,505,536	6,887,808	33,279,432
DECEMBER 1991	40,167,240	113,672	7,001,480	33,165,760
JANUARY 1992	40,167,240	433,733	7,435,213	32,732,027
FEBRUARY 1992	40,167,240	610,219	8,045,432	32,121,808
MARCH 1992	40,167,240	1,840,237	9,885,669	30,281,571
APRIL 1992	40,167,240	831,713	10,717,382	29,449,858
MAY 1992	40,167,240	1,365,229	12,082,611	28,084,629
JUNE 1992	40,167,240	1,108,518	13,191,129	26,976,111
JULY 1992	40,167,240	1,042,483	14,233,612	25,933,628
AUGUST 1992	40,167,240	899,916	15,133,528	25,033,712
SEPTEMBER 1992	40,167,240	1,628,402	16,761,930	23,405,310
OCTOBER 1992	40,167,240	1,458,412	18,220,342	21,946,898
NOVEMBER 1992	40,167,240	2,025,576	20,245,918	19,921,322
DECEMBER 1992	40,167,240	1,177,804	21,423,722	18,743,518
JANUARY 1993	40,167,240	1,290,657	22,714,379	17,452,861
FEBRUARY 1993	40,167,240	1,357,229	24,071,608	16,095,632
MARCH 1993	40,167,240	913,072	24,984,680	15,182,560

B:FINSTAT.WK1

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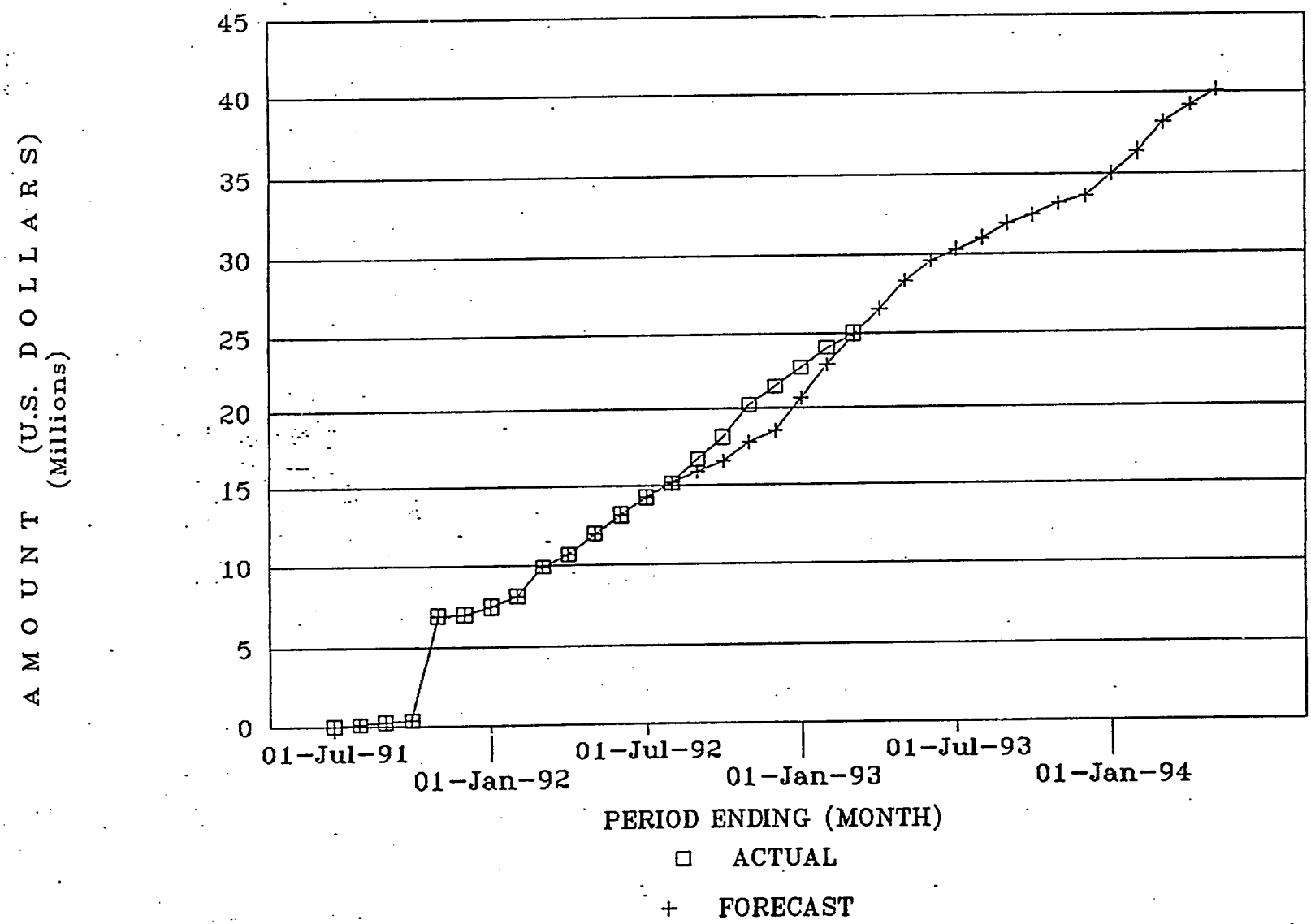
SOUTH COTABATO HIGHWAYS PROJECT

REVENUE SCHEDULE



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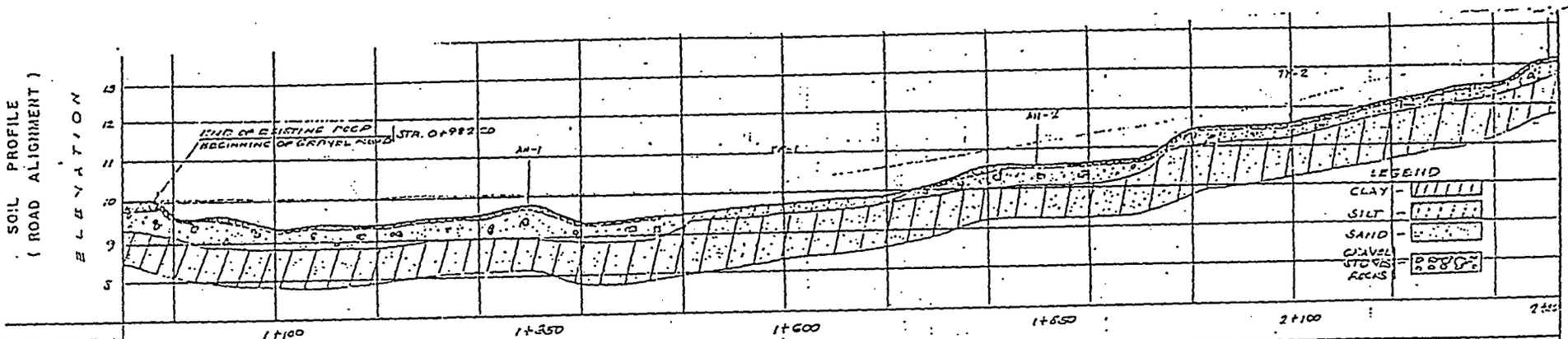
LABORATORY AND FIELD TEST RESULTS

Sector 2
Materials Tests



E NO. / STATION																									
LOCATION STATION	SAMPLE NO.	DEPTH (m)	SOIL DESCRIPTION	AASTHO CLASSIFICATION	GROUP INDEX	WATER CONTENT (%)	ATTERBERG LIMITS % LL	PL	PI	FOT (%) COMPACTION	CBR % 10 BLOWS	30 BLOWS	65 BLOWS	95% OF MDD	% SWELL AT 65 BLOWS	MOISTURE-DENSITY RELATION OMC %	MDD (g/cc)	SIEVE ANALYSIS % PASSING 1-1/2"	1"	3/4"	3/8"	#4	#10	#40	#200	REMARKS
AH-1																									
1+350		0-0.04	GRAVEL SURFACE															80	75	72	62	52	41	23	5	
0.11 RT	S-1	0.04-0.61	LIGHT GRAY SANDY GRAVEL	A-1-a	0	3.4	16	13	3											100	98	95	93	90	75	WITH FINE GRAVEL
	S-2	1.11-1.50	DARK BROWN SANDY CLAY	A-7-5	13	19.4	41	24	17																	
TP-1																									WITH GRAVEL NO SAMPLE
1+600		0-0.08	TOP SOIL : SANDY SILT																						
0.11 LF.	S-1	0.08-1.50	DARK BROWN SANDY CLAY	A-6	2	11.70	26	15	11	82	1.0	2.2	3.6	1.8	5.4	14.0	1.773		89	86	84	82	81	75	50	WITH GRAVEL
AH-2																									
1+850		0-0.04	GRAVEL SURFACE															92	78	70	59	49	41	28	10	
11 LF	S-1	0.04-0.13	LIGHT GRAY SANDY GRAVEL	A-1-a	0	2.6	18	14	4												100	98	97	93	68	WITH FINE GRAVEL HARD
	S-2	0.13-1.50	DARK BROWN SANDY CLAY	A-7-5	15	21.4	45	22	23																	
TP-2																									
2+100		0-0.04	GRAVEL SURFACE																						NO SAMPLE
0.11 RT.		0.04-0.10	LIGHT GRAY SILTY SAND WITH GRAVEL																						
	S-1	0.10-1.50	DARK BROWN SANDY CLAY	A-6	8	12.5	32	18	14	82	0.64	2.10	3.50	1.50	5.70	16.50	1.66		96	94	92	90	91	58	69	WITH GRAVEL
AH-3																									
2+950		0-0.04	GRAVEL SURFACE															86	77	73	60	51	43	30	13	
11 RT	S-1	0.04-0.90	BROWN SILTY SANDY GRAVEL	A-1-a	0	4.1	21	14	7												100	99	99	96	80	WITH FINE TO COARSE SAND HARD
	S-2	1.20-1.50	LIGHT BROWN SANDY CLAY	A-7-5	25	21.5	53	23	30																	

MORRISON KNUDSEN CORPORATION

ALC

W. D. MICANDE
SOILS & MATERIALS ENGINEER

E. BUCKERT
PROJECT MANAGER

ENGINEER'S REPRESENTATIVE
MORRISON-MAIERLE / CSSA
CONCURRED

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
APPROVED

SOUTH COTABATO HIGHWAYS PROJECT
MINDANAO DEVELOPMENT PROGRAM
SECTOR 2 GEN. SANTOS - MALAPATAN ROAD
STA: 1+000 - STA. 2+400
SOIL PROFILE AND SUMMARY OF TEST RESULTS

SHEET NO.
A-1

Morrison Maierle/CSSA
Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

Moisture Content Determination
ASSHTO Designation: T265

Road Sector	2	Date	
Section	GSC - MALAPATAN	Station	3+352
Test Pit No.		Auger Hole No. AB-1-2	Bore Hole No.
Sampled By	RBD / WPL	Date Sampled	11-28-91
Tested By	RPB	Date Tested	11-29-91
Checked By	VSF		

Type of Test	NATURAL MOISTURE CONTENT					
Sample Number	1	2	3	4	5	6
Depth, m	0.04-1.50					
Type of Soil	A-7-5					
Wt. of wet soil + can, g	700.5					
Wt. of dry soil + can, g	580.6					
Moisture Loss, g	119.9					
Wt. of can, g	29.1					
Wt. of dry soil, g	551.5					
Moisture content, %	21.74					

REMARKS:

1.95 m. from centerline
Right Side

MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 11-30-91 mm 91-048
SIGN:

Morrison Maierle/CSSA
Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

MECHANICAL ANALYSIS

ROAD SECTOR 2				DATE
SPECIFICATION	PURPOSE OF MATERIAL		SAMPLED BY & DATE RBD / NPL 11-28-91	
SAMPLED AT (stockpile, batch plant, etc) STA 3+352 AB-1-2 S-1 0.04-1.50 m			SOURCE, (river, quarry)	

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
671.4	551.5	257.8	21.74		

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM PERCENT RETAINED
2-1/2"	63.5						
2"	52.8						
1-1/2"	38.1						
1"	25.4						
3/4"	19.1						
1/2"	12.7						
3/8"	9.52						
No. 4	4.75	–	–	100	100		–
No. 8	2.38						
No. 10	2.00	2.5	0.45	99.55	100		–
No. 12	1.65						
No. 16	1.19						
No. 20	0.84						
No. 30	0.59						
No. 40	0.42	62.7	11.37	88.18	88		12
No. 50	0.297						
No. 60	0.260						
No. 80	0.177						
No. 100	0.049	110.8	20.09	68.09	68		32
No. 200	0.074	67.4	12.22	55.87	56		44
PAN		14.4					
WASH		293.7					
TOTAL							

NM/CSSA MATERIAL TESTING LABORATORY

FINENESS MODULUS: _____
TESTED BY RPB DATE 12-3-91
CHECKED BY _____ DATE _____
ENTERED BY _____ DATE _____

UNIT WEIGHT, PCF 30-91 MM 91-09
DRY LOOSE: _____
DRY RODDED _____

BEST AVAILABLE DOCUMENT

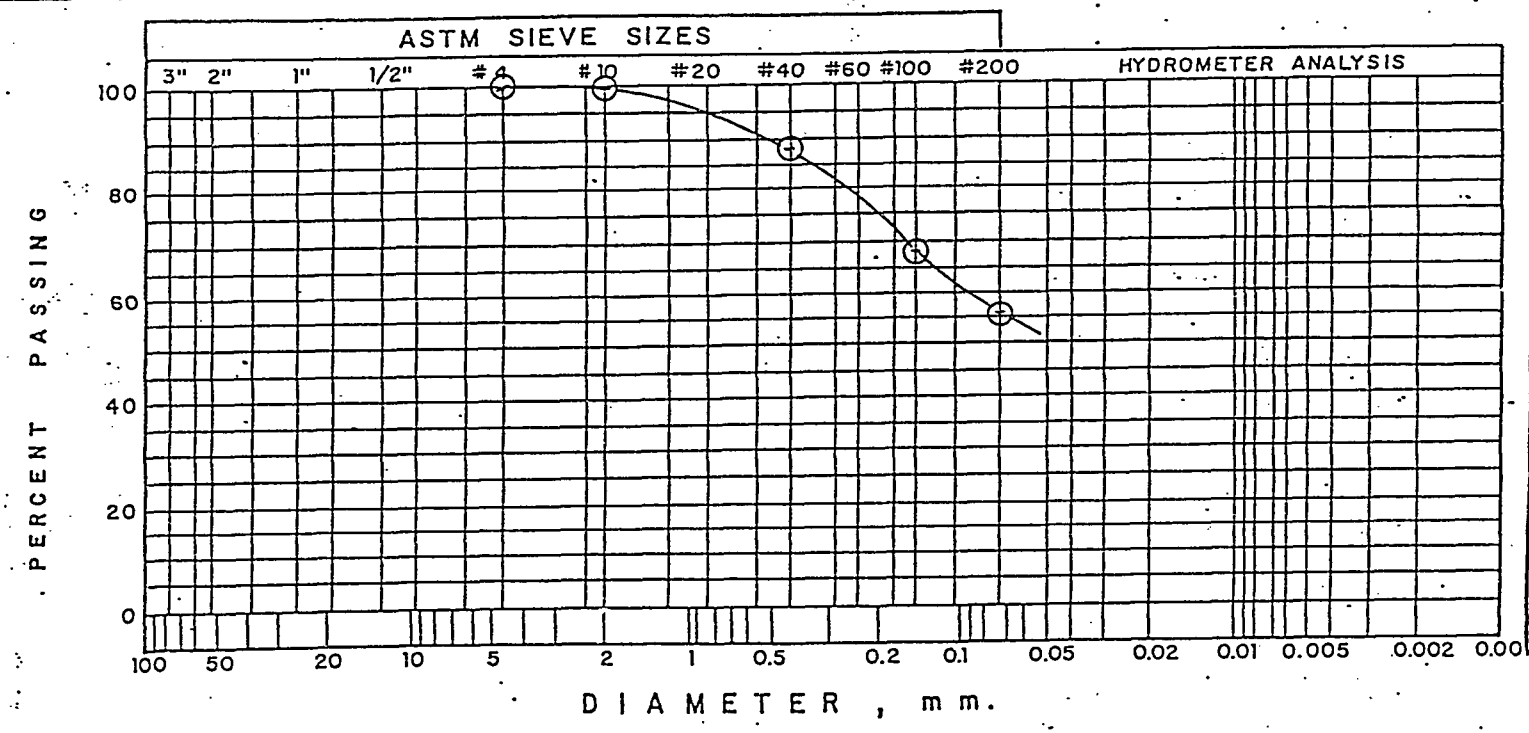
MORRISON MAIERLE/CSSA

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

GRAIN SIZE DISTRIBUTION CURVES

BEST AVAILABLE DOCUMENT

PROJECT: So. COTABATO ROADS	SECTOR: 2	SECTION: GSC- MALAPATAN
	STATION: 3 + 352	KIND OF MATERIALS:
SOURCE:	PLOTTED BY: WPL	DATE: 12-9-91



MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 12-10-91 mn 91-048
SIGN:

STATION	TP. NO.	SAMPLE NUMBER	DEPTH	CURVE NUMBER	NMC	LL	PL	PI	CLASS	GI	DESCRIPTION
52	AB-1-2	S-1	0.04-1.50		21.74	80	50	30	A-7-5	10	Sandy clay with silt, grayish brown

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MORRISON MAIERLE/CSSA

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

Liquid and Plastic Limit Tests
AASHTO Designation: T89 and T90

PROJECT: So. Cotabato Roads REGION:

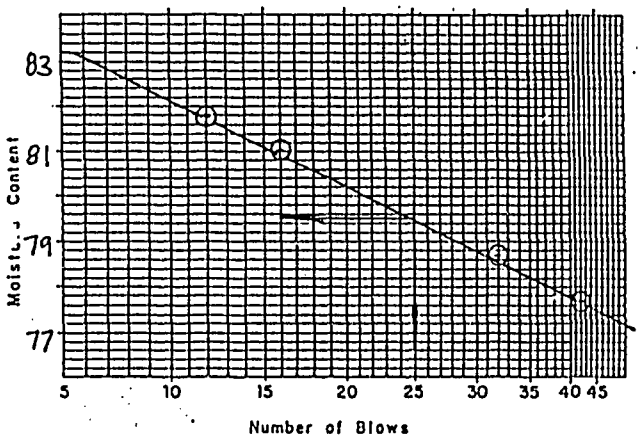
SECTION: GSC – Malapatan STATION: 2+352 RT 1.95 m. fr. CL SOURCE: AB-1-2 S-1

SAMPLED BY: RBD/WPL (Name / Designation) DATE SAMPLED: 11-28-91

TESTED BY: RPB (Name / Designation) DATE TESTED: 11-29-91

SUPERVISED/CHECKED BY: VSF (Name / Designation)

TYPE OF TEST	LIQUID LIMIT				PLASTIC LIMIT	
TRIAL NO.	1	2	3	4	1	2
CAN NO.	C-5	C-2	C-46	C-59	C-53	C-69
WT. OF CAN & WET SOIL (G.)	33.90	33.10	32.71	32.68	33.20	30.96
WT. OF CAN & DRY SOIL (G.)	28.72	28.08	27.88	27.93	29.83	27.85
WT. OF WATER (G.)	5.18	5.02	4.83	4.75	3.37	3.11
WT. OF CAN	22.05	21.70	21.92	22.12	23.01	21.67
WT. OF DRY SOIL (G.)	6.67	6.38	5.96	5.81	6.82	6.18
WATER CONTENT (%)	77.66	78.68	81.04	81.76	49.41	50.32
NUMBER OF BLOWS	42	32	16	12	Ave =	49.86



SIEVE SIZE	% PASSING
NO. 10	100
NO. 40	88
NO. 200	56

LIQUID LIMIT 80
PLASTIC LIMIT 50
PLASTICITY INDEX 30
GROUP INDEX 10
SOIL CLASSIFICATION A-7-5

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 11-30-91 MM 91-048
SIGN:

REMARKS/RECOMMENDATIONS:

BEST AVAILABLE DOCUMENT

Morrison Maierle/CSSA
Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

Moisture Content Determination
ASSHTO Designation: T265

Road Sector	2	Date	
Section	GSC - MALAPATAN	Station	2+101
Test Pit No.	TP-2-2 Auger Hole No.	Bore Hole No.	
Sampled By	RBD / WPL	Date Sampled	11-28-91
Tested By	WPL	Date Tested	12-3-91
Checked By	VSF		

Type of Test	NATURAL MOISTURE CONTENT					
Sample Number	1	2	3	4	5	6
Depth, m	0.1-1.50					
Type of Soil	A-7-6					
Wt. of wet soil + can, g	835.0					
Wt. of dry soil + can, g	766.4					
Moisture Loss, g	68.6					
Wt. of can, g	27.8					
Wt. of dry soil, g	738.6					
Moisture content, %	9.29					

REMARKS:

2.40 m. from centerline
Right side

BEST AVAILABLE DOCUMENT

MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 11-29-92 · MM 91-047
SIGN:

Morrison Maierle/CSSA
Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

MECHANICAL ANALYSIS

ROAD SECTOR 2.			DATE
SPECIFICATION	PURPOSE OF MATERIAL	SAMPLED BY & DATE RBD/WPL 11-28-91	
SAMPLED AT (stockpile, batch plant, etc) STA 2+101 TP-2-2 S-1 0.10-1.50 m		SOURCE, (river, quarry)	

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
807.2	738.6	254.1	9.29		

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM PERCENT RETAINED
2-1/2"	63.5						
2"	52.8						
1-1/2"	38.1						
1"	25.4						
3/4"	19.1	–	–	100.	100		–
1/2"	12.7	11.0	1.49	98.51	99		1
3/8"	9.52	–	–	98.51	99		1
No. 4	4.75	4.2	0.57	97.94	98		2
No. 8	2.38						
No. 10	2.00	7.9	1.07	96.87	97		3
No. 12	1.65						
No. 16	1.19						
No. 20	0.84	12.2	1.65	95.22	95		5
No. 30	0.59						
No. 40	0.42	18.3	2.48	92.74	93		7
No. 50	0.297						
No. 60	0.260	28.6	3.87	88.87	89		11
No. 80	0.177						
No. 100	0.019	53.4	7.23	81.64	82.		18
No. 200	0.074	93.4	12.65	69.00	69		31
PAN		25.1					
WASH		484.5					
TOTAL		738.6					

FINENESS MODULUS: _____
TESTED BY WPL DATE 12-9-91
CHECKED BY _____ DATE _____
ENTERED BY _____ DATE _____

UNIT WEIGHT PCF:
DRY LOOSE _____
DRY ROD _____

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 11-29-91 mm 91-047
SIGN:

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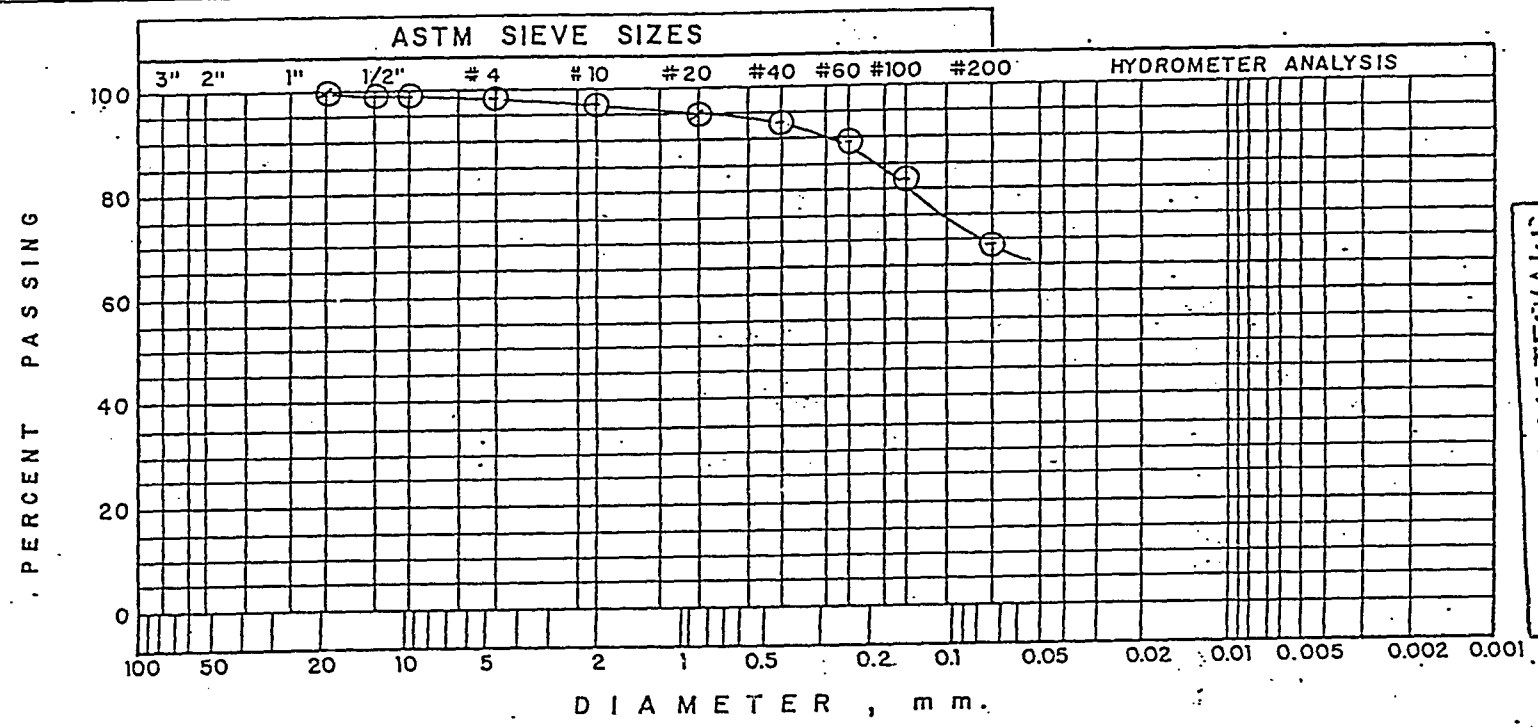
MORRISON MAIERLE/CSSA

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

BEST AVAILABLE DOCUMENT

GRAIN SIZE DISTRIBUTION CURVES

PROJECT: So. COTABATO ROADS	SECTOR: 2	SECTION: GSC - MALAPATAN
	STATION: 2 + 101	KIND OF MATERIALS:
SOURCE:	PLOTTED BY: WPL	DATE: 12-11-91



MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 12-12-92 · MM91-042
SIGN:

STATION	TP. NO.	SAMPLE NUMBER	DEPTH	CURVE NUMBER	NMC	LL	PL	PI	CLASS	GI	DESCRIPTION
2+101	TP-2-2	S-1	0.1-1.50		9.29						

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MORRISON MAIERLE/CSSA

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

Liquid and Plastic Limit Tests
AASHTO Designation: T89 and T90

PROJECT: So. Cotabato Roads REGION:

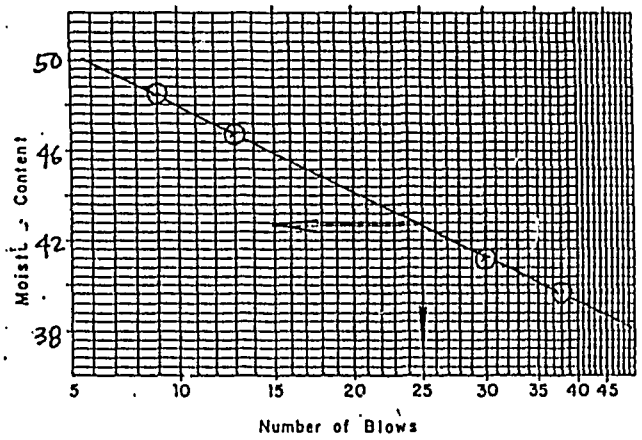
SECTION: GSC-MALAPATAN STATION: 2+101 RT 2.40 m. from CL SOURCE: TP-2-2 S-1

SAMPLED BY: RBD/WPL (Name / Designation) DATE SAMPLED: 11-28-91

TESTED BY: RBD (Name / Designation) DATE TESTED: 12-6-91

SUPERVISED/CHECKED BY: VSF (Name / Designation)

TYPE OF TEST	LIQUID LIMIT				PLASTIC LIMIT	
TRIAL NO.	1	2	3	4	1	2
CAN NO.	C-46	C-30	C-38	C-19	C-60	C-40
WT. OF CAN & WET SOIL (G.)	36.03	35.57	37.08	37.24	40.46	39.59
WT. OF CAN & DRY SOIL (G.)	32.04	31.54	32.20	32.16	36.69	36.03
WT. OF WATER (G.)	3.99	4.03	4.88	5.08	3.77	3.56
WT. OF CAN	21.98	21.76	21.77	21.68	21.78	21.93
WT. OF DRY SOIL (G.)	10.06	9.78	10.43	10.48	14.91	14.10
WATER CONTENT (%)	39.66	41.21	46.79	48.47	25.29	25.25
NUMBER OF BLOWS	38	30	13	9	Ave = 25.27	



SIEVE SIZE	% PASSING
NO. 10	97
NO. 40	93
NO. 200	69

LIQUID LIMIT 43
PLASTIC LIMIT 25
PLASTICITY INDEX 18
GROUP INDEX 12
SOIL CLASSIFICATION A-7-6

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 12-12-92 mm91-047
SIGN:

REMARKS/RECOMMENDATIONS:

BEST AVAILABLE DOCUMENT

MORRISON MAIERLE/CSSA

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

Moisture Density Relation of Soil
AASHTO Designation: T 99 and T 180

PROJECT: So. Cotabato Roads ISLAND:

REGION: XI SECTION: GSC - MALAPATAN STATION: 2+101 TP-2-2 S-1

SAMPLED BY: RBD/WPL (Name/Designation) DATE SAMPLED: 11-28-91

TESTED BY: WPL (Name/Designation) DATE TESTED: 12-3-91

SUPERVISED/CHECKED BY: VSF (Name/Designation)

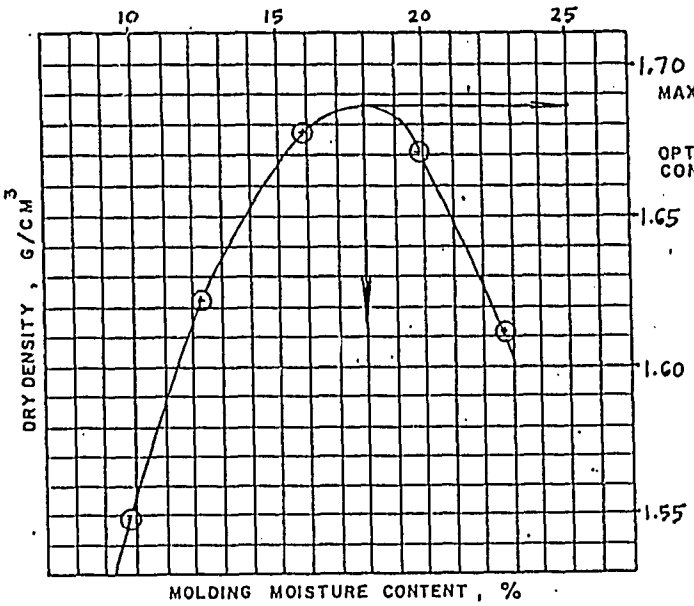
TEST NO. : METHOD A VOLUME OF MOLD: 929.37 CU. CM.

WEIGHT OF MOLD : 4294.8 G. BLOWS/LAYER: 25 WT. OF HAMMER 4.54 KG

NUMBER OF LAYER : 5

COMPACTIVE EFFORT: ! m.Kg/m³

TRIAL NO.	MOLD + WET SOIL(G)	WET SOIL(G)	WET UNIT WEIGHT (G/CC)	MOISTURE CONTENT DETERMINATION							DRY UNIT WEIGHT (G/CC)
				WET SOIL + CAN(G)	DRY SOIL + CAN(G)	MOIS-TURE (G)	CAN NUMBER	WEIGHT OF CAN (G)	DRY SOIL (G) (G)	MOIS-TURE CONTENT	
1	5875.9	1581.1	1.701	608.5	559.9	48.6	B-21	65.3	494.6	9.83	1.549
2	5989.5	1694.7	1.823	622.2	556.5	65.7	A-4	24.6	531.9	12.35	1.623
3	6102.0	1807.2	1.945	619.6	538.1	81.5	A-17	25.8	512.3	15.91	1.678
4	6157.6	1862.8	2.009	660.3	554.5	105.8	A-30	23.9	530.6	19.94	1.671
5	6133.5	1838.7	1.978	722.6	593.7	128.9	A-5	26.7	567.0	22.73	1.612



MAXIMUM DRY DENSITY 1.687 G/CC

OPTIMUM MOISTURE CONTENT % 18.0

MM/CSSA MATERIALE TESTING LABORATORY
DATE: 12.6.91 mm 91.047
SIGN:

REMARKS / RECOMMENDATIONS:

BEST AVAILABLE DOCUMENT

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Morrison Maierle/CSSA
Materials Testing Laboratory

Field Density Test
AASHTO Designation: T191

Road Sector : 2
Section : ESC - MALAPATAN
Sampled by : RBD / WPL
Tested by : RBD / WPL
Supervised by: VSF

Date :
Station : 2+101
Date Sampled: 11-28-91
Date Tested : 11-28-91

Field Density No.				
Stage of Work	0.1 - 1.50m			
Sta. of test hole/ref from centerline	2.40 m Rt. CL			
Sta. represented/left and or right lane	RIGHT Side			
Layer No. and Thickness	1st LAYER			
Soil Classification: _____ Lab. No. _____				
Moisture-Density Relation: T99 D/T-180 D, MDD: _____ g/cc, OMC: _____ %				
WATER CONTENT DETERMINATION				
Can No.	27.8			
Wt of Can and Wet Soil, g	835.0			
Wt of Can and Dry Soil, g	766.4			
Wt of Water, g	68.6			
Wt of Dry Soil, g	738.6			
Water Content, %	9.29			
DENSITY DETERMINATION				
Density of Sand Container No.	H-2			
Wt of Soil from Hole and Container, g	3310			
Wt of Soil, Container, g	14			
Wt of Soil from Hole, g	3296			
Wt of Sand and Container before Test, g	6195			
Wt of Sand and Container after Test, g	1780			
Wt of Sand in Hole and Cone, g	4415			
Calibrated Wt of Sand in Cone, g	1521			
Wt of Sand that filled the Hole, g	2894			
Unit Wt of Density Sand, g/cc	1.350			
Volume of Test Hole, cc	2143.70			
Wet Density of Soil from Hole, g/cc	1.538			
Dry Density of Soil from Hole, g/cc	1.407			
Percent Compaction	83.39			
MDD, g/cc	1.687			
OMC, %	18.0			

REMARKS AND RECOMMENDATIONS:

MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 12-6-91 : MM91-047
SIGN: _____

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PHILIPPINE
GEOANALYTICS
CIVIL ENGINEERING LABORATORY

No. 21 Scout de Guia near
corner Scout Reyes, Quezon City
Tel. Nos. : 97-27-12 & 98-21-62
Easy Call # 869-1111 Code # 23638
Cellular Phone No. : 301-3524

GRADATION MECHANICAL ANALYSIS

DATE:

PROJECT SEC. 2
ALIBEL - MAUSOLEUM ROAD SOUTH COT. HIGHWAYS

DATE OF REPORT 28 MAY 93

SPECIFICATION –

PURPOSE OF MATERIAL –

SAMPLED BY AND DATE CEF/KAY

SAMPLE LOCATION (Stockpile, bag, truck, etc.)
IN-PLACE EXISTING GRND MAT'L S. - STA. 17+350 RS

SOURCE (River, quarry, etc.)
ROADWAY

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
–	4321		–	–	1 1/2

NO.	SIEVE SIZE	SIEVE OPENING, (MM)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM. PERCENT RETAINED
1	2-1/2"	63.5						
2.	2"	52.8						
3.	1-1/2"	38.1	0	0	100	100		
4.	1"	25.4	305.5	7.07	92.93	93		
5.	3/4"	19.1	384.7	8.95	83.98	84		
6.	1/2"	12.7						
	3/8"	9.52	448.1	10.37	73.61	74		
8.	No. 4	4.75	425.6	9.85	63.76	64		
9.	No. 8	2.38						
10.	No. 10	2.00	430.4	9.96	53.80	54		
11.	No. 12	1.65						
12.	No. 16	1.19						
13.	No. 20	0.84						
14.	No. 30	.59						
15.	No. 40	.42	780.4	18.06	35.74	36		
16.	No. 50	.297						
17.	No. 60	.260						
18.	No. 80	.177						
19.	No. 100	.149						
20.	No. 200	.074	961.9	22.26	13.48	13		
	PAN							
	WASH							
	TOTAL							

FINENESS MODULUS: –

F. M. = $\frac{\Sigma \text{ \% cum. Ret. of Sieve \# (19, 16, 14, 12, 9, 8, 7, 5 \& 3)}}{100}$

TED BY: LZB

CHECKED BY: C.C. ENGR. MAT'LS. ENGR.

UNIT WEIGHT, g/cc: –

DRY LOOSE –

DRY RODDED –

DATE 27 MAY 93

DATE 28 MAY 93

Logbook Entry NO.

BEST AVAILABLE DOCUMENT

Morrison Maierle/CSSA
Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

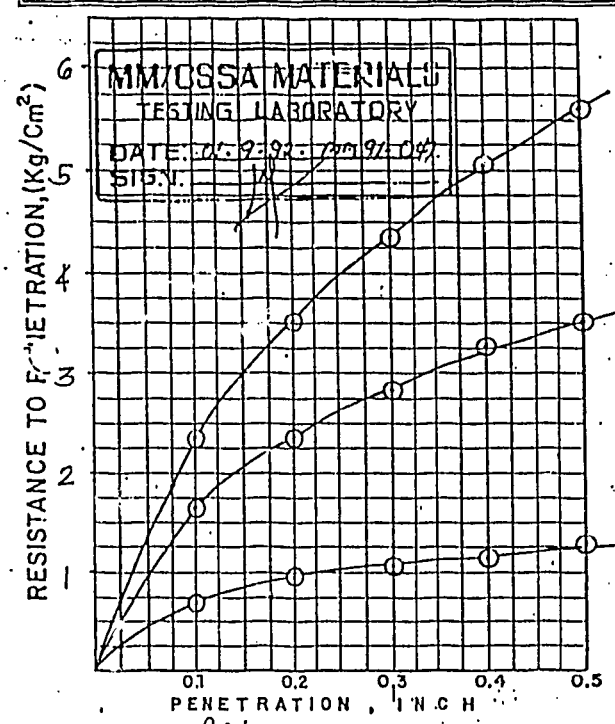
Summary of CBR Test

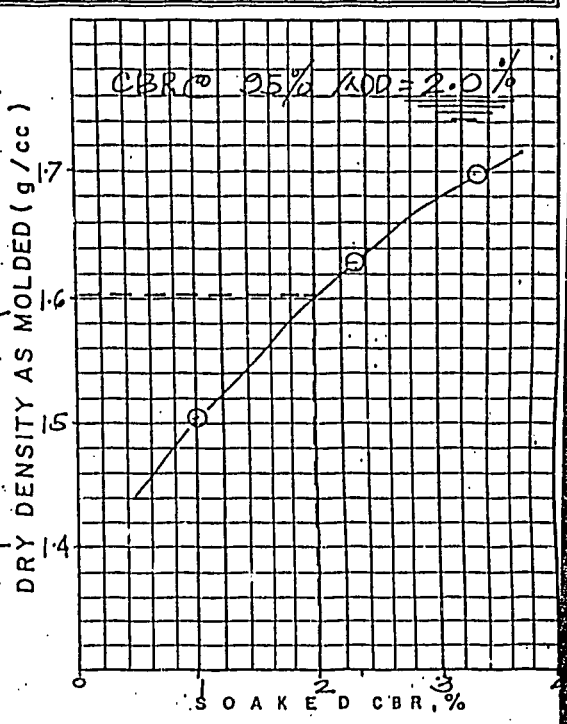
Road Sector: SECTOR-2 Section: _____ Station: STA. 2+101
Kind of Material: CLAY WITH SAND & TRACES OF FINE GRAVEL Source: TP-2-2 S-1

MDD 1.687 g/cc OMC 18.0 %

Blows	10	30	65
Dry density as molded, g/cc	1.504	1.628	1.698
Moisture content before soaking, %	17.99	18.08	17.93
Moisture content after 4 days, %	29.60	24.93	22.50
Swell, %	10.060	8.816	7.528

PENETRATION, INCH		0.025	0.050	0.075	0.100	0.200	0.300	0.400	0.500
Resistance to Penetration (actual)	@ 10	0.23	0.47	0.59	0.70	0.94	1.05	1.17	1.29
Resistance to Penetration (actual)	@ 30	0.59	0.94	1.29	1.64	2.34	2.81	3.28	3.51
Resistance to Penetration (actual)	@ 65	0.70	1.29	1.87	2.34	3.51	4.33	5.04	5.62
Resistance to Penetration (corrected)	@ 10				–	–			
Resistance to Penetration (corrected)	@ 30				–	–			
Resistance to Penetration (corrected)	@ 65				–	–			
STANDARD					70.3	105.5			
CBR as molded	@ 10				1.00	0.89			
CBR as molded	@ 30				2.33	2.21			
CBR as molded	@ 65				3.33	3.33			





TESTED BY: RUEL P. BATINGCONGAN	CHECKED BY: WAYAR P. LUGTU	NOTED BY: VIRGILIO S. FERNANDO
DATE: 12 DECEMBER '92	DATE: 09 JANUARY '92	DATE: 09 JANUARY '92

BEST AVAILABLE DOCUMENT

PHILIPPINE
GEOANALYTICS

CIVIL ENGINEERING LABORATORY
Soils, Materials and Foundation Engineers, Laboratory Testing Services, Computer Applications

ATTERBERG LIMITS DETERMINATION

Project SEC. 2 ~~TUBEL~~ - MALAPATAN ROAD Job No. IN-PLACE - EXISTING GRND. MAT'LS.

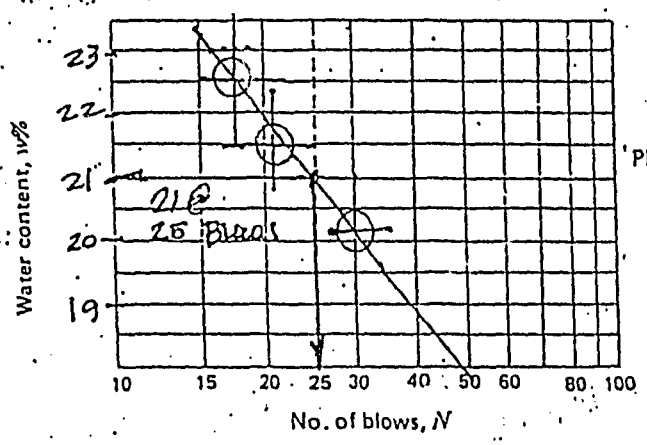
Location of Project SOUTH COTABATO Boring No. ROADWAY Sample No. STA. 17+350

Description of Soil

Depth of Sample — Tested By AVZ Date 27 MAY '93

Liquid Limit Determination ASTM D-423

Can no.	AD-09	AD-17	AD-07			
Wt. of wet soil + can	34.04	35.75	36.12			
Wt. of dry soil + can	30.06	31.33	31.37			
Wt. of can	10.35	10.73	10.27			
Wt. of dry soil	19.71	20.54	21.10			
Wt. of moisture	3.98	4.42	4.75			
Water content, w%	20.19	21.52	22.51			
No. of blows, N	30	21	18			



Flow index F_l =

Liquid limit = 21

Plastic limit = 16

Plasticity index I = 5

Single Point Formula $LL = w_n (N/25)^{0.12}$

Plastic Limit Determination

Can no.	AD-06	AD-15		
Wt. of wet soil + can	28.15	27.64		
Wt. of dry soil + can	25.66	25.19		
Wt. of can	10.33	10.31		
Wt. of dry soil	15.33	14.88		
Wt. of moisture	2.49	2.45		
Water content, $w\% = w_p$	16.24	16.47		

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COMPACTION TEST

Project SEC. 2 ALABEL - MALAPATAN ROAD. Job No. INPLACE EXISTING GRND. PATTS.

Location of Project SOUTH COTABATO Boring No. ROADWAY Sample No. STA. 17 + 350 R/S

Description of Soil LIGHT BROWN SILTY SAND w/ GRAVEL + A-1-6C.

Test Performed By LZB / AT Date of Test 27 MAY '93

Blows/Layer 56 No. of Layers 5 Wt. of Hammer 10 lb

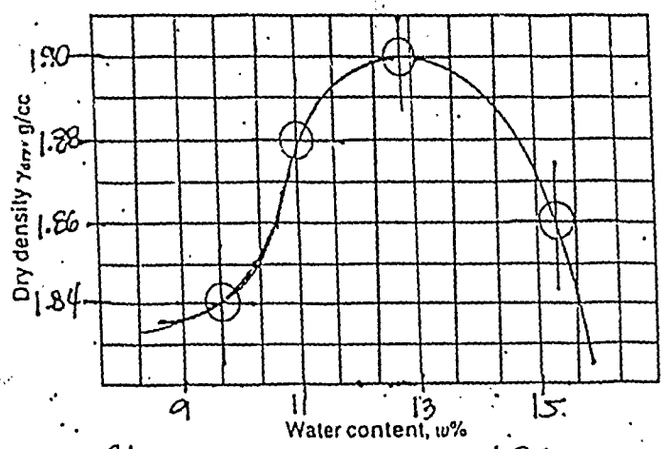
Mold dimensions: Diam. _____ in. Ht. _____ in. Vol. 2114.32 cu.cm.

Water Content Determination

Sample no.	1	2	3	4	5	6
Moisture can no.	MK-19	MK-13	G-27	D-2		
Wt. of can + wet soil	547.3	590.1	622.4	642.1		
Wt. of can + dry soil	501.2	534.0	555.2	561.0		
Wt. of water	46.1	56.1	67.2	81.1		
Wt. of can	26.1	23.8	30.5	30.8		
Wt. of dry soil	475.1	510.2	524.7	530.2		
Water content, w%	9.70	11.0	12.81	15.30		

Density Determination

Assumed water content	–	–	–	–		
Water content, w%	9.70	11.0	12.81	15.30		
Wt. of soil + mold	9141	9289	9395	9395		
Wt. of mold	4870	4870	4870	4870		
Wt. of soil in mold	4271	4419	4525	4525		
Wet density, g/cc	2.02	2.09	2.14	2.14		
Dry density γ, g/cc	1.84	1.88	1.90	1.86		



PHILIPPINE GEOANALYTICS LABORATORY GEL. SANTOS ROAD JCB NO. 6171/65

Optimum moisture = 12.84 % Maximum dry density = 1.90 g/cc
118.6 PCF

PHILIPPINE GEOANALYTICS

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SOIL TEST
(ROAD ALIGNMENT)

PHILIPPINE GEOTECHNICAL INC. JOB NO. 0452 KOL. SANTOS ROAD PROJECT

SECTOR - 2 SUBBASE AND SELECT BORROW SOURCE MATERIALS

HOLE NO. / STATION LOCATION STATION	SAMPLE NO.	DEPTH (m)	SOIL DESCRIPTION	AASHTO CLASSIFICATION	GROUP INDEX	WATER CONTENT (%)	ATTERBERG LIMITS % LL	PL	PI	FDT (%) COMPACTION	CBR % 10 BLOWS	30 BLOWS	65 BLOWS	95% OF MDD	% SWELL AT 65 BLOWS	MOISTURE-DENSITY RELATION OMC %	MDD (g/cc)	SIEVE ANALYSIS % PASSING 1-1/2"	1"	3/4"	3/8"	#4	#10	#40	#200	REMARKS
DIAVLAN RIVER																										
BASE AND SELECT MATLS	S-1	0-0.5	BROWNISH GRAY SANDY GRAVEL	A-1-a	0	–	NON-PLASTIC			–	24	37	69	48.0	0	9.8	2.05	99	77	–	46	41	37	21	3	ABRASION – 31.4 SOUNDNESS – 6.8
																		93	72	–	40	34	29	16	3	
	S-2	0-0.5	BROWNISH GRAY SANDY GRAVEL	A-1-a	0	–	NON-PLASTIC																			
MATIBULAN RIVER																										
	S-1	0-0.5	BROWNISH GRAY SANDY GRAVEL	A-1-a	0	–	NON-PLASTIC			–	37	46	65	39.0	0	6.30	2.10	94	80	–	46	39	30	15	4	ABRASION – 25.1 SOUNDNESS – 3.4
																		97	79	–	48	40	31	18	5	
	S-2	0-0.5	BROWNISH GRAY SANDY GRAVEL	A-1-a	0	–	NON-PLASTIC																			
LIU PADIDO																										
	S-1	0-0.5	BROWNISH GRAY SANDY GRAVEL	A-1-a	0	–	NON-PLASTIC			–	58	89	140	92.0	0	8.50	2.11	88	79	69	57	41	25	18	5	ABRASION – 24.0 SOUNDNESS – [illegible]
LIU MAGLA																										
	S-1	0-0.50	BROWNISH GRAY SANDY GRAVEL	A-1-a	0		NON-PLASTIC			–	35	79	103	72.0	0	7.8	2.09	97	77	–	48	36	26	12	4	ABRASION – 24.2 SOUNDNESS – 4.7
	S-2	0-0.50	BROWNISH GRAY SANDY GRAVEL	A-1-a	0		NON-PLASTIC			–																
SELECT MATLS. TA. 12+000	S-1	0-0.5	BROWNISH GRAY SANDY GRAVEL	A-1-a	0		NON-PLASTIC			–	43	78	129	72.0	0	8.0	2.02	88	79	69	57	41	25	18	5	
TA. 12+325	S-1	0-0.5	BROWNISH GRAY SANDY GRAVEL	A-1-a	0		NON-PLASTIC			–	33	76	102	60.0	0	11.2	1.95	94	85	80	70	61	50	23	8	

MORRISON KNUDSEN | C.C. FARLIM SOILS & MATERIALS ENGINEER | ENGINEER'S REPRESENTATIVE MORRISON-MAIERLE / CSSA | UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT | SOUTH COTABATO HIGHWAYS PROJECT MINDANAO DEVELOPMENT PROGRAM | SHEET NO.

BEST AVAILABLE DOCUMENT

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SOIL PROFILE
(ROAD ALIGNMENT)

BEST AVAILABLE DOCUMENT

PHILIPPINE GEOTECHNICAL SERVICES
PG
JCB
NO. 0452
GEOL SANTOS — ENG PROJECT

HOLE NO. / STATION: SECDR-2 COMMON BORROW QUARRY MATERIAL

LOCATION STATION	SAMPLE NO.	DEPTH (m)	SOIL DESCRIPTION	AASHTO CLASSIFICATION	GROUP INDEX	WATER CONTENT (%)	ATTERBERG LIMITS % LL	PL	PI	FDT (%) COMPACTION	CR % 10 BLOWS	30-55 BLOWS	95% OF MDD	% SWELL AT 95 BLOWS	MOISTURE-DENSITY RELATION OMC %	MDD (g/cm³)	SIEVE ANALYSIS % PASSING 1-1/2"	1"	3/4"	3/8"	#4	#10	#40	#200	REMARKS
Km - 7+000	S-1	–	BROWN SANDY CLAY W/ FINE GRAVEL	A-6	4	–	39	27	12		2.4	4.7	6.4	5.7	3.04	14.0	1.757	100	99	98	96	96	95	73	57	
	S-2	–	BROWN SANDY CLAY	A-6	5	–	40	28	12							12.70	1.67				100	98	94	91	56	
Km - 9+000																									
	C-1	–	LIGHT BROWN SILTY SANDY LIMESTONE GRAVEL	A-2-4	0	–	22	15	7									100	89	84	72	60	45	30	15	
	C-2	–	DIRTY WHITE SANDY LIMESTONE GRAVEL	A-2-4	0	–	31	24	7		23	45	74	46	1.3	11.2	1.955	79	78	74	67	59	50	37	25	
Km - 15+850																									
	S-1	–	GRAYISH BROWN SANDY GRAVEL	A-1-b	0	–	28	23	5		41	62	77	68	0	8.2	1.945	100	87	75	60	49	41	33	20	
Km - 17+200	S-1	–	YELLOWISH BROWN SILTY SAND W/ FINE GRAVEL	A-2-4	0	–	29	24	5						2.0	15.0	1.64			100	96	93	89	82	31	

MORRISON KNUDSEN CORPORATION
ALC

C.C. FARUH
SOILS & MATERIALS ENGINEER
R.B. CELING
MK COC ENGR

ENGINEER'S REPRESENTATIVE
MORRISON-MAIERLE/CSSA
CONCURRED

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

SOUTH COTABATO HIGHWAYS PROJECT
MINDANAO DEVELOPMENT PROGRAM

SHEET NO

BEST AVAILABLE DOCUMENT

3 of 4

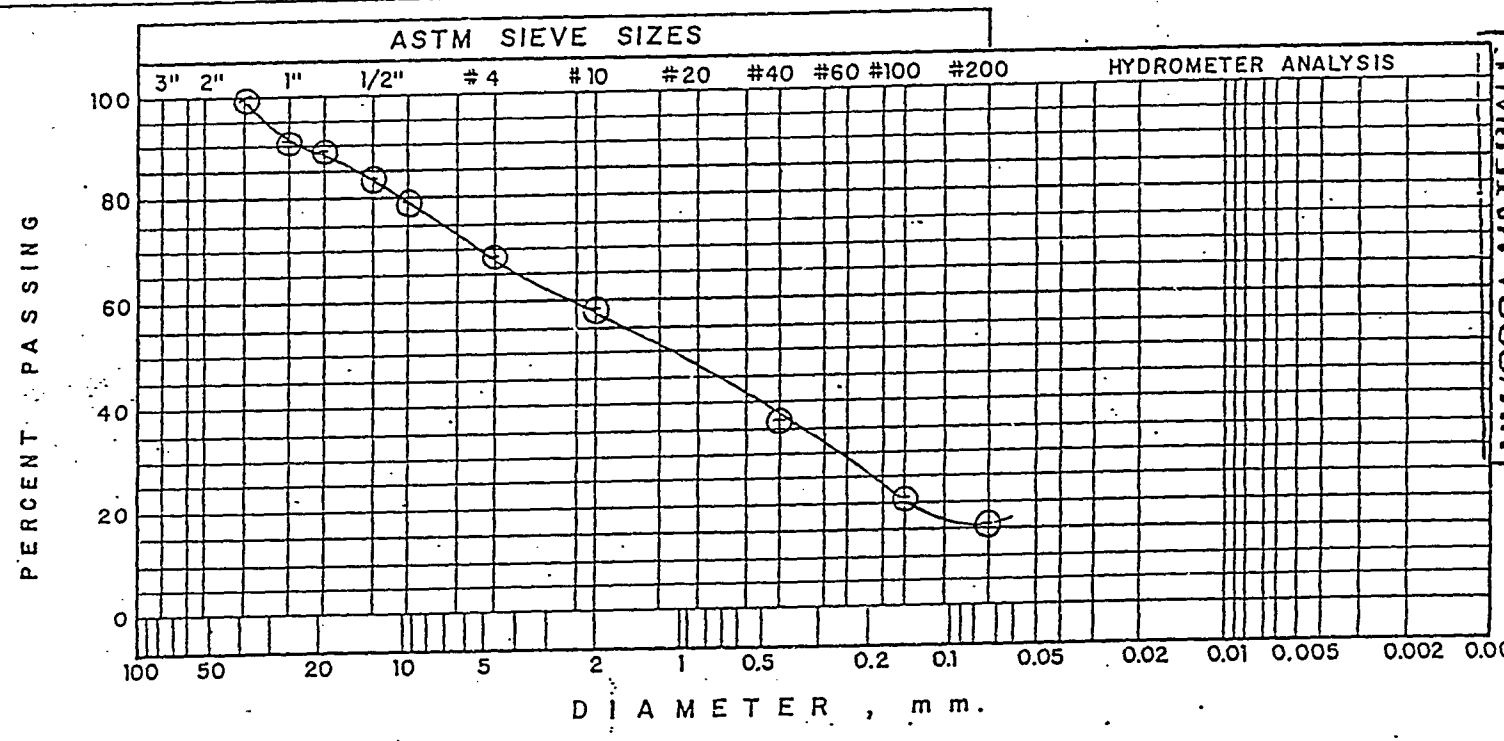
MORRISON MAIERLE/CSSA

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

BEST AVAILABLE DOCUMENT

GRAIN SIZE DISTRIBUTION CURVES

PROJECT:	SECTOR:	SECTION:
	STATION:	KIND OF MATERIALS:
SOURCE:	PLOTTED BY:	DATE:



MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 7-18-93, pm 93-204
SIGN.

STATION	TP. NO.	SAMPLE NUMBER	DEPTH	CURVE NUMBER	NMC	LL	PL	PI	CLASS	GI	DESCRIPTION
17+729	E-35-2				13.84	28	22	6	A-1-b	0	Sand and gravel with little amount of silt, w/ slight plasticity, brown

35

Morrison Knudsen/CSSA
Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

E-35-2

MECHANICAL ANALYSIS

ROAD SECTOR 2			DATE
SPECIFICATION	PURPOSE OF MATERIAL: SUPERIOR FILL	SAMPLED BY & DATE: RBD/RPB 7-8-93	
SAMPLED AT (stockpile, batch plant, etc): STA 17+729 RS (IN-PLACE)		SOURCE, (river, quarry): STA 13+150 QUARRY	

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
3653.6	3209.5	2755.6	13.84		

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 7-18-93 MM93-204
SIGN.

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM. PERCENT RETAINED
2-1/2"	63.5						
2"	52.8						
1-1/2"	38.1	0	0	100	100		0
1"	25.4	277.6	8.65	91.35	91		9
3/4"	19.1	63.7	1.98	89.37	89		11
1/2"	12.7	218.3	6.80	82.57	83		17
3/8"	9.52	114.1	3.56	79.01	79		21
No. 4	4.75	341.4	10.64	68.37	68		32
No. 8	2.38						
No. 10	2.00	332.1	10.35	58.02	58		42
No. 12	1.65						
No. 16	1.19						
No. 20	0.84						
No. 30	0.59						
No. 40	0.42	660.9	20.59	37.43	37		63
No. 50	0.297						
No. 60	0.260						
No. 80	0.177						
No. 100	0.149	520.4	16.21	21.22	21		79
No. 200	0.074	168.7	5.26	15.96	16		84
PAN		58.4					
WASH		453.9					
TOTAL							

FINENESS MODULUS:
TESTED BY RPB DATE 7-10-93
CHECKED BY DATE
ENTERED BY DATE

UNIT WEIGHT, PCF:
DRY LOOSE
DRY RODDED

BEST AVAILABLE DOCUMENT

MORRISON MAIERLE/CSSA

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

Moisture Density Relation of Soil
AASHTO Designation: T 99 and T 180

E-35-2

(IN-PLACE)

PROJECT: _____ ISLAND: _____

ROAD SECTOR: 2 SECTION: 2 STATION: 17+729 RS

KIND OF MATERIALS: BROWN SAND & GRAVEL W/ LITTLE AMNT OF SILTS SOURCE: 13+150 QUARRY

SAMPLED BY: TLD/RBD DATE SAMPLED: 7-8-93

TESTED BY: TLD DATE TESTED: 7-9-93

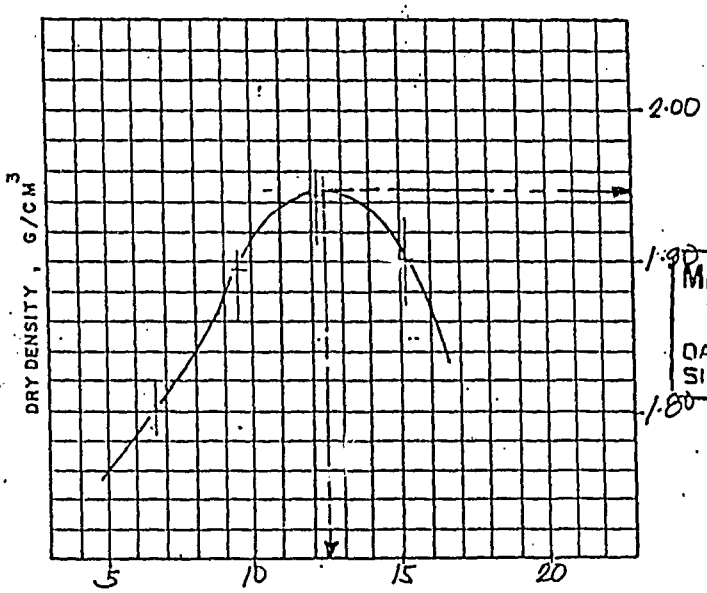
METHOD : C VOLUME OF MOLD: 936.28 CU. CM.

WEIGHT OF MOLD : 4279.3 G. #2 BLOWS/LAYER: 25 WT. OF HAMMER 4535 G.

NUMBER OF LAYER : 5

COMPACTIVE EFFORT: _____ m.Kg/m³

TRIAL NO.	MOLD + WET SOIL(G)	WET SOIL(G)	WET UNIT WEIGHT (G/CC)	MOISTURE CONTENT DETERMINATION							DRY UNIT WEIGHT (G/CC)
				WET SOIL + CAN(G)	DRY SOIL + CAN(G)	MOISTURE (G)	CAN NUMBER	WEIGHT OF CAN (G)	DRY SOIL(G) (G)	MOISTURE CONTENT	
1	6076.0	1796.7	1.919	458.8	432.1	26.7	A-28	28.4	403.7	6.61	1.800
2	6222.3	1943.0	2.075	415.7	389.1	34.6	A-19	25.4	363.7	9.51	1.895
3	6320.2	2040.9	2.180	444.2	399.1	45.1	A-5	27.4	371.7	12.13	1.944
4	6319.0	2039.7	2.189	426.9	373.5	53.4	A-39	21.1	352.4	15.15	1.901
5											



MAXIMUM DRY DENSITY 1.947 G/CC
121.5 PCF

OPTIMUM MOISTURE CONTENT % 12.4 %

MW/CSSA MATERIALS
TESTING LABORATORY
DATE: 7-18-93 MM 90-204
SIGN.

REMARKS / RECOMMENDATIONS: _____

BEST AVAILABLE DOCUMENT

MM/CSSA
Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

E-63-

MECHANICAL ANALYSIS

ROAD SECTOR 2					DATE
SPECIFICATION	PURPOSE OF MATERIAL EMBANKMENT FILL			SAMPLED BY & DATE RBD 10-28-93	
SAMPLED AT (stockpile, batch plant, etc) STA 37 + 860 RS (IN-PLACE)				SOURCE, (river, quarry) GLAN RIVER	
WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED	MAX. SIZE (INCH)
ORIGINAL 15196.4	OVEN DRY 14209.0	WASHED OVEN DRY 14104.5	6.95		

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM. PERCENT RETAINED
2-1/2"	63.5	0	0	100	100		0
2"	52.8	788.0	5.55	94.45	94		6
1-1/2"	38.1	1316.0	9.26	85.19	85		15
1"	25.4	1868.2	13.15	72.04	72		28
3/4"	19.1	1165.1	8.20	63.84	64		36
1/2"	12.7	1414.9	9.96	53.88	54		46
3/8"	9.51	820.6	5.78	48.10	48		52
No. 4	4.75	1676.3	11.80	36.30	36		64
No. 8	2.38						
No. 10	200	1134.7	7.99	28.31	28		72
No. 12	165						
No. 16	1.19						
No. 20	0.84						
No. 30	0.59						
No. 40	0.42	2304.7	16.22	12.09	12		88
No. 50	0.297						
No. 60	0.260						
No. 80	0.177						
No. 100	0.049	1285.0	9.04	3.05	3		97
No. 200	0.074	249.8	1.76	1.29	1		99
PAN		81.2					
WASH		104.5					
TOTAL							

FINENESS MODULUS: _____
TESTED BY RPB DATE 11-2-93
CHECKED BY _____ DATE _____
ENTERED BY _____ DATE _____

MM/CSSA MATERIALS TESTING LABORATORY
UNIT WEIGHT: MU 93-254
DATE: 11-05-93
DRY-LOOSE
SIDRY-RODDED

BEST AVAILABLE DOCUMENT

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MORRISON MAIERLE/CSSA

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

Moisture Density Relation of Soil
AASHTO Designation: T 99 and T 180

E-63-2

PROJECT: SOUTH COTABATO ROADS PROJECT ISLAND: _____

ROAD SECTOR: 2 SECTION: 3 STATION: 37+860 RS (IN-PLACE)

KIND OF MATERIALS: EMBANKMENT MTL SOURCE: GUN RIVER

SAMPLED BY: RRD/RB DATE SAMPLED: 102890

TESTED BY: RB/TD DATE TESTED: 102990

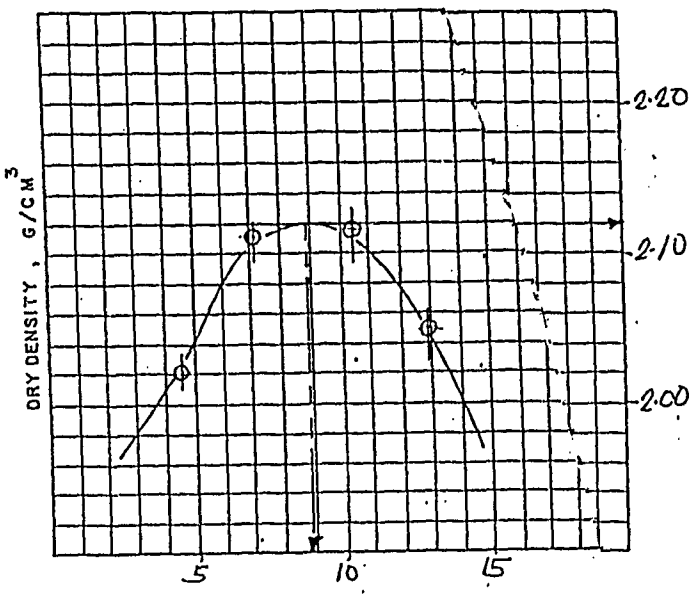
METHOD : D , VOLUME OF MOLD: 2181.67 CU. CM.

WEIGHT OF MOLD : 6762.4 G. #3 BLOWS/LAYER: 56 WT. OF HAMMER 4535 G

NUMBER OF LAYER : 5

COMPACTIVE EFFORT: _____ m.Kg/m³

TRIAL NO.	MOLD + WET SOIL(G)	WET SOIL(G)	WET UNIT WEIGHT (G/CC)	MOISTURE CONTENT DETERMINATION							DRY UNIT WEIGHT (G/CC)
				WET SOIL + CAN(G)	DRY SOIL + CAN(G)	MOIS-TURE (G)	CAN NUMBER	WEIGHT OF CAN (G)	DRY SOIL (G) (G)	MOIS-TURE CONTENT	
1	11262.6	4500.2	2.111	914.3	877.7	36.6	B-21	65.4	812.3	4.51	2.020
2	11584.9	4822.5	2.262	1028.2	964.3	63.9	B-9	74.2	890.1	7.18	2.110
3	11741.2	4978.8	2.336	1301.6	1185.8	115.8	B-8	71.2	1114.6	10.39	2.116
4	11695.8	4933.4	2.314	1032.5	922.4	110.1	B-14	72.1	850.3	12.95	2.049
5											



MAXIMUM DRY DENSITY 2.120 G/CC
132.3 PCF

OPTIMUM MOISTURE CONTENT % 8.9%

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 1-05-93 MM 93-254
SIGN: _____

REMARKS / RECOMMENDATIONS: _____

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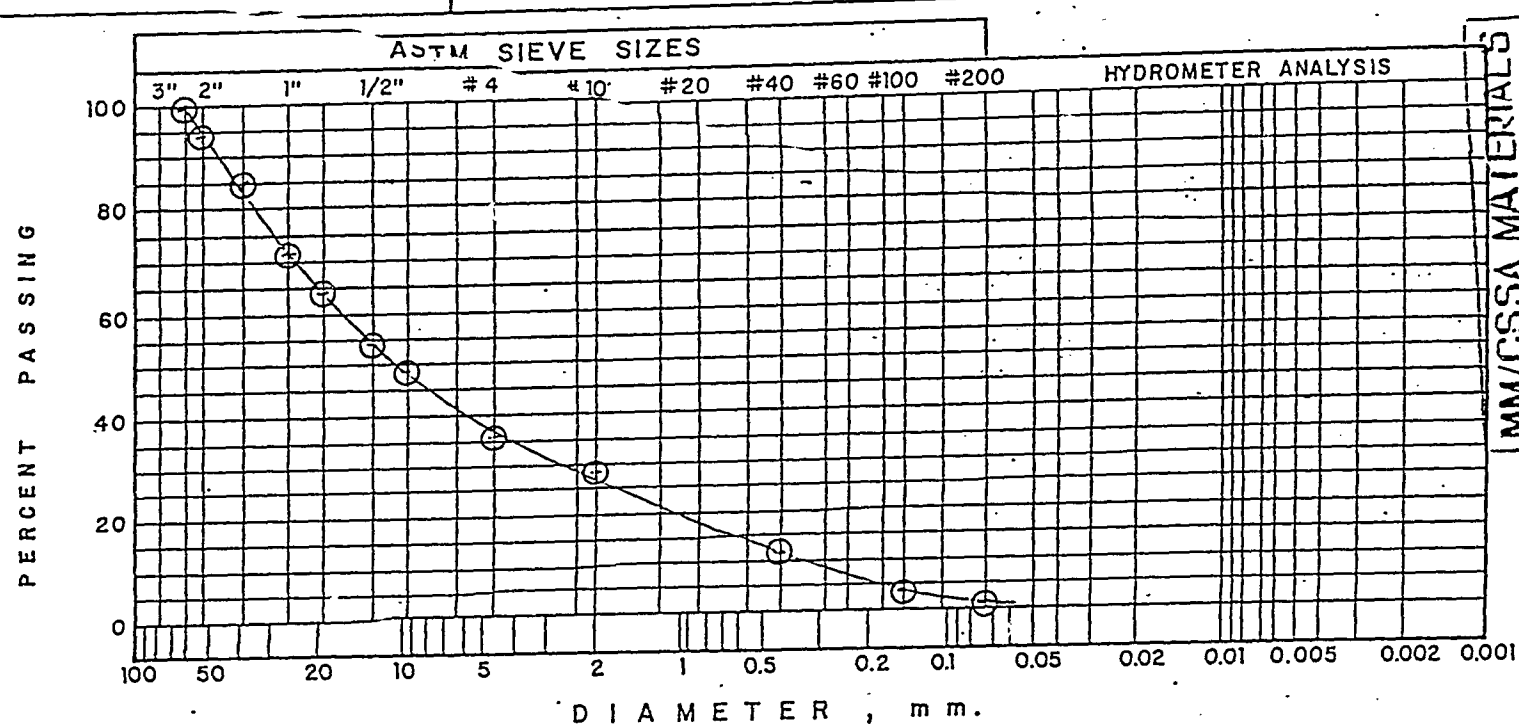
MORRISON MAIERLE/CSSA

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

GRAIN SIZE DISTRIBUTION CURVES

PROJECT: South Cotabato Roads	SECTOR: 2	SECTION:
	STATION: 37+860 RS	KIND OF MATERIALS: ~~EMBANKMENT~~ FILL
SOURCE:	PLOTTED BY: WPL	DATE: 11-5-93



MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 11-05-93 MM93-254
SIGN.

STATION	TP. NO.	SAMPLE NUMBER	DEPTH	CURVE NUMBER	NMC	LL	PL	PI	CLASS	GI	DESCRIPTION
37+860	E-63-2				6.95	-	-	NP	A-1-a	0	Gravel with sand, gray

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Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

E-41-21

MECHANICAL ANALYSIS

ROAD SECTOR 2			DATE
SPECIFICATION	PURPOSE OF MATERIAL EMBANKMENT	SAMPLED BY & DATE RBD/VSF 7-23-93	
SAMPLED AT (stockpile, batch plant, etc) BORROW SOURCE STA 24+325 LS 150 ft. off road		SOURCE, (river, quarry) STA 24+325 LS	

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED.	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
6996.8	6635.7	5613.6	5.442		

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM PERCENT RETAINED
2-1/2"	63.5						
2"	52.8	0	0	100	100		0
1-1/2"	38.1	255.4	3.85	96.15	96		4
1"	25.4	333.1	5.02	91.13	91		9
3/4"	19.1	276.8	4.17	86.96	87		13
1/2"	12.7	268.4	4.04	82.92	83		17
3/8"	9.52	155.7	2.35	80.57	81		19
No. 4	4.75	295.2	4.45	76.12	76		24
No. 8	2.38						
No 10	2.00	58.1	6.27	69.85	70		30
No. 12	1.65						
No. 16	1.19						
No. 20	0.84						
No. 30	0.59						
No. 40	0.42	175.5	18.94	50.91	51		49
No. 50	0.297						
No. 60	0.260						
No. 80	0.177						
No. 100	0.019	197.7	21.34	29.57	30		70
No. 200	0.074	104.3	11.26	18.31	18		82
PAN		26.9					
WASH		142.7					
TOTAL							

FINENESS MODULUS:
TESTED BY RPB DATE 7-26-93
CHECKLD BY DATE
ENTERED BY DATE

MM/CSSA MATERIALS TESTING LABORATORY
UNIT WEIGHT TEST: MM93-214
DRY LOOSE
DRY RODDED

BEST AVAILABLE DOCUMENT

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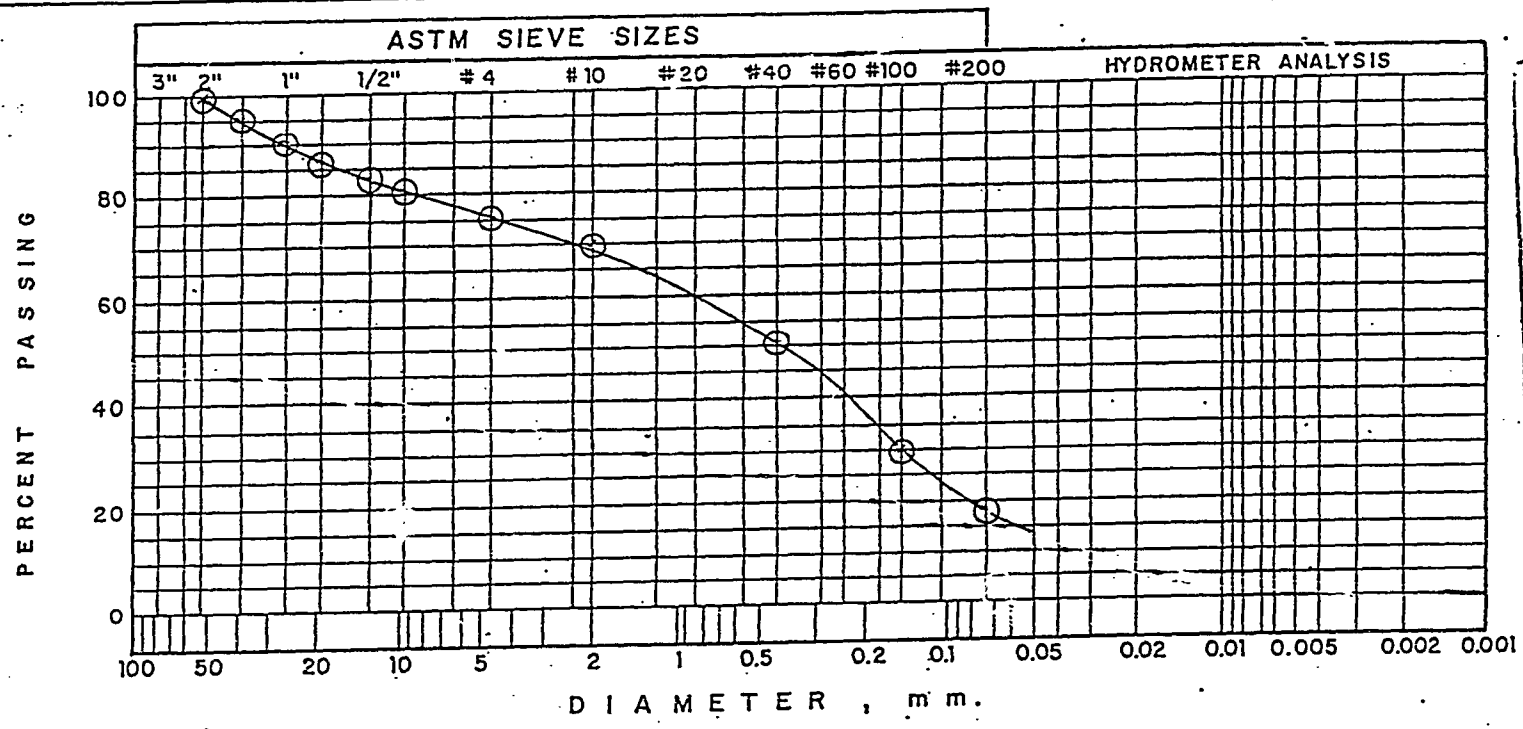
MORRISON MAIERLE/CSSA

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

GRAIN SIZE DISTRIBUTION CURVES

PROJECT: South Cotabato Roads	SECTOR: 2	SECTION: 3
	STATION: 24+325 LS	KIND OF MATERIALS:
SOURCE: 24+325 LS	PLOTTED BY: wpl	DATE: 7-29-93



MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 7-29-93, mm 96-214
SIGN.

STATION	TP. NO.	SAMPLE NUMBER	DEPTH	CURVE NUMBER	NMC	LL	PL	PI	CLASS	GI	DESCRIPTION
24+325	E-4-2				5.44	25	24	1	A-2-4	0.	Sand with gravel and little amount of silt, light brown

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MORRISON MAIERLE/CSSA

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

Moisture Density Relation of Soil
AASHTO Designation: T 99 and T180

E-41-2 1

PROJECT: SOUTH COTABATO ROADS PROJECT ISLAND:

ROAD SECTOR: 2 SECTION: STATION: 24+325 LS

KIND OF MATERIALS: A-2-4 (0) SOURCE: PURRAY J

SAMPLED BY: RPB/RBD DATE SAMPLED: 7-23-93

TESTED BY: TLD/RPB DATE TESTED: 7-24-93

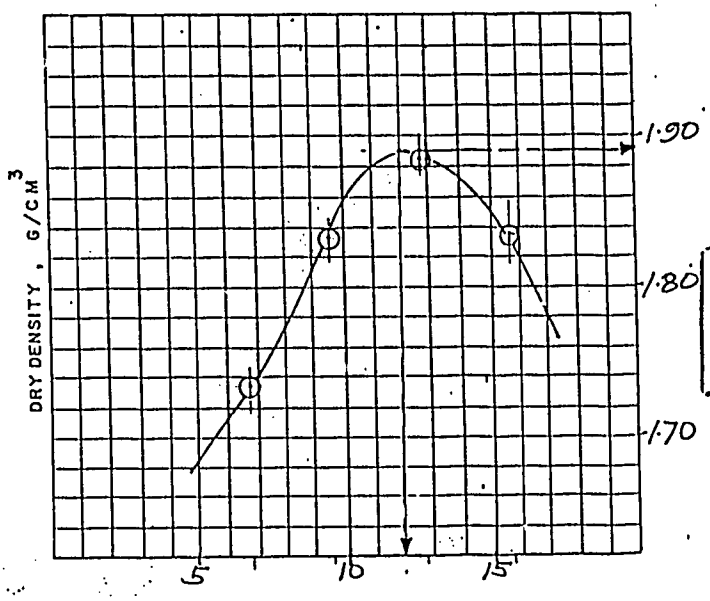
METHOD : D VOLUME OF MOLD: 2113.88 CU. CM.

WEIGHT OF MOLD : 7009.4 #2 G. BLOWS/LAYER: 56 WT. OF HAMMER 4535 G.

NUMBER OF LAYER : 5

COMPACTIVE EFFORT: m.Kg/m³

TRIAL NO.	MOLD + WET SOIL(G)	WET SOIL(G)	WET UNIT WEIGHT (G/CC)	MOISTURE CONTENT DETERMINATION							DRY UNIT WEIGHT (G/CC)
				WET SOIL + CAN(G)	DRY SOIL + CAN(G)	MOIS-TURE (G)	CAN NUMBER	WEIGHT OF CAN (G)	DRY SOIL (G) (G)	MOIS-TURE CONTENT	
1	10925.8	3915.9	1.852	670.8	630.4	40.4	A-33	28.3	602.1	6.71	1.736
2	11257.0	4247.6	2.009	695.2	686.8	58.4	A-25	25.7	611.1	9.56	1.834
3	11204.3	4194.9	2.126	680.4	606.4	74.0	A-12	27.0	579.4	12.77	1.885
4	11496.7	4487.3	2.113	735.9	639.3	96.6	A-39	21.0	618.3	15.62	1.826
5.											



MAXIMUM DRY DENSITY 1.890 G/CC
117.9 PCF

OPTIMUM MOISTURE CONTENT % 12.0 %

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 7-29-93 MM 93-214
SIGN.

REMARKS / RECOMMENDATIONS:

BEST AVAILABLE DOCUMENT

PHILIPPINE
GEOANALYTICS
CIVIL ENGINEERING LABORATORY

PHILIPPINE ROAD PROJECT GEN. SANTOS
JOB NO. 0469/93

No. 21 Scout de Guia near corner Scout Reyes, Quezon City
Tel. Nos. : 97-27-12 & 98-21-62
Easy Call # 869-1111 Code # 23638
Cellular Phone No. : 301-3524

GRADATION MECHANICAL ANALYSIS

DATE:

PROJECT SEC. 2
ALABEL - MALAPATAN ROAD SOUTH CO. HI-WAYS S#1 AM

DATE OF REPORT 27 MAY '93

SPECIFICATION —

PURPOSE OF MATERIAL CRUSHED AGGREGATE BASE COURSE

SAMPLED BY AND DATE CCF/RY 26 MAY '93

SAMPLED AT (Stockpile, batch plant, place, etc.) MK. CRUSHER PLANTS. STOCKFILE @ ALABEL.

SOURCE (River quarry, pit) MARIBULAN QUARRY.

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
—	13235		—	—	1"

NO.	SIEVE SIZE	SIEVE OPENING, (MM)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM. PERCENT RETAINED
1	2-1/2"	63.5					CRUSHED	
2.	2"	52.8					BASE COURSE	
3.	1-1/2"	38.1					GRADING "B"	
4.	1"	25.4	0	0	100	100	100	
5.	3/4"	19.1	998	7.54	92.46	92		
6.	1/2"	12.7	2406	18.18	74.28	74	60-90	
7.	3/8"	9.52	1648	12.45	61.83	62		
8.	No. 4	4.75	2570	19.42	42.41	42	35-65	
9.	No. 8	2.38						
10.	No. 10	2.00	1836	13.87	28.54	29		
11.	No. 12	1.65						
12.	No. 16	1.19						
13.	No. 20	0.84						
14.	No. 30	.59						
15.	No. 40	.42	2242	16.94	11.60	12	10-30	
16.	No. 50	.297						
17.	No. 60	.260						
18.	No. 80	.177						
19.	No. 100	.149						
20.	No. 200	.074	864	6.53	5.07	5	5-15	
	PAN							
	WASH							
	TOTAL							

CONFORMS

FINENESS MODULUS: —

F. M. = Σ % cum. Ret. of Sieve # (19, 16, 14, 12, 9, 8, 7, 5 & 3) / 100

UNIT WEIGHT, g/cc: —

DRY LOOSE —

DRY RODDED —

TESTED BY: LZB / RY

DATE 26 MAY '93

CHECKED BY: CC. FATUM / GR. MAT'LS. ENGR.

DATE 27 MAY '93

∴ FRACTURED FACES = 63.30%

CONFORMS

Logbook Entry NO.	

BEST AVAILABLE DOCUMENT

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PHILIPPINE
GEOANALYTICS
CIVIL ENGINEERING LABORATORY

No. 21 Scout de Guia near corner Scout Reyes, Quezon City
Tel. Nos.: 97-27-12 & 98-21-62
Easy Call # 899-1111 Code # 23638
Cellular Phone No.: 301-3524

PHILIPPINE GEOANALYTICS PG SOUTH CONTRACTO. HIGHWAYS PROJ.

JOB 116.0590

GRADATION MECHANICAL ANALYSIS

DATE:

PROJECT: SECTOR 2 NAGEL-MALAPATAN-GLAN ROAD		DATE OF REPORT: 21 OCTOBER 1993
SPECIFICATION:	PURPOSE OF MATERIAL: CRUSHED AGGREGATE BASE COURSE	SAMPLED BY AND DATE: E.C. WATERMAN / 19 OCT. 1993 (AM)
SAMPLED AT (Stockpile, batch plant, place, etc.): MK CRUSHER PLANT @ GLAN		SOURCE (River, quarry, etc.): GLAN RIVER

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
	14870				1½"

NO.	SIEVE SIZE	SIEVE OPENING, (MM)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM. PERCENT RETAINED
1	2-1/2"	63.5					GRADING 'A'	
2.	2"	52.8						
3.	1-1/2"	38.1	0	0	100	100	100	CONFORMS
4.	1"	25.4	1619	10.89	89.11	89		
5.	3/4"	19.1	2109	14.18	74.93	75	60-85	CONFORMS
6.	1/2"	12.7						
7.	3/8"	9.52	2094	14.08	60.85	61		
8.	No. 4	4.75	1307	8.79	52.06	52	30-55	CONFORMS
9.	No. 8	2.38						
10.	No. 10	2.00	2153	14.48	37.58	38		
11.	No. 12	1.65						
12.	No. 16	1.19						
13.	No. 20	0.84						
14.	No. 30	.59						
15.	No. 40	.42	2410	16.14	21.44	21	8-25	CONFORMS
16.	No. 50	.297						
17.	No. 60	.260						
18.	No. 80	.177						
19.	No. 100	.149						
20.	No. 200	.074	2002	13.46	7.98	8	2-14	CONFORMS
	PAN							
	WASH							
	TOTAL		14870					

FINENESS MODULUS: -

F. M. = $\frac{\Sigma \text{ \% cum. Ret. of Sieve \# (19, 16, 14, 12, 9, 8, 7, 5 \& 3)}}{100}$

UNIT WEIGHT, g/cc: -

DRY LOOSE -

DRY RODDED -

TESTED BY: O.M. SOCIANO / MAT'L. ENGR.

DATE 20 OCTOBER 1993

CHECKED BY: C.C. TAROUM / JR. MAT'L. ENGR.

DATE 21 OCTOBER 1993

Logbook Entry NO.

BEST AVAILABLE DOCUMENT

395

Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

BC-7-2

MECHANICAL ANALYSIS

ROAD SECTOR 2			DATE
SPECIFICATION	PURPOSE OF MATERIAL CABC	SAMPLED BY & DATE RBD/RPB 12-2-93	
SAMPLED AT (stockpile, batch plant, etc) STA 34+900 RS (IN-PLACE)		SOURCE, (river, quarry) GLAN RIVER	

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
16743.3	15940.7	15577.4	5.03		

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM PERCENT RETAINED
2-1/2"	63.5						
2"	52.8						
1-1/2"	38.1	0	0	100	100	100	
1"	25.4	2218.9	13.92	86.08	86		
3/4"	19.1	2048.4	12.85	73.23	73	60-85	
1/2"	12.7	2002.2	12.56	60.67	61		
3/8"	9.52	870.4	5.46	55.21	55		
No. 4	4.75	1348.6	8.46	46.75	47	30-55	
No. 8	2.38						
No. 10	2.00	1584.5	9.94	36.81	37		
No. 12	1.65						
No. 16	1.19						
No. 20	0.84						
No. 30	0.59						
No. 40	0.42	3704.6	23.24	13.57	14	8-25	
No. 50	0.297						
No. 60	0.260						
No. 80	0.177						
No. 100	0.019	1402.8	8.80	4.77	5		
No. 200	0.074	189.7	1.19	3.58	4	2-14	
PAN		207.3					
WASH		363.3					
TOTAL							

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 8-24-98, MM 98-261
SIGN:

FINENESS MODULUS:
TESTED BY RPB DATE 12-6-93
CHECKED BY DATE
ENTERED BY DATE

UNIT WEIGHT PCF:
DRY LOOSE
DRY RODDED

BEST AVAILABLE DOCUMENT

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Morrison Maierle/CSSA
Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

BC-2-2

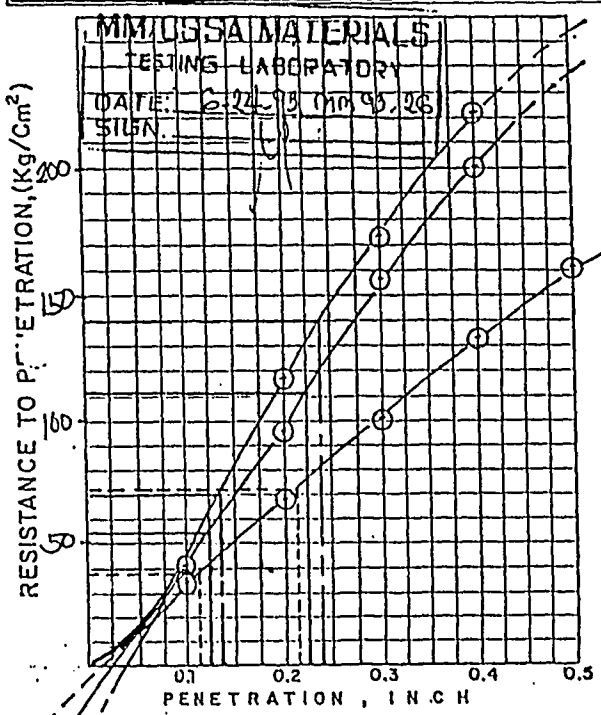
Summary of CBR Test

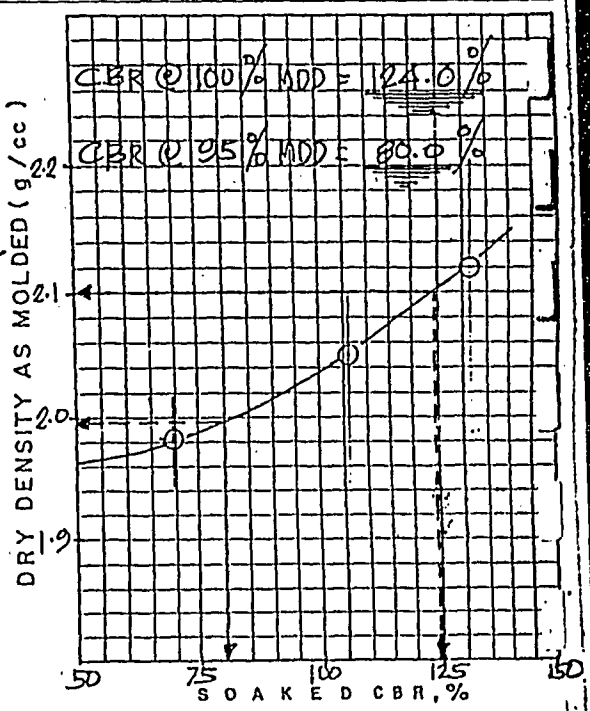
Road Sector 2 Section _____ Station
Kind of Material CABC Source LUN-MASLA

MDD 2.10 g/cc OMC 9.0% %

Blows	10	30	65
Dry density as molded, g/cc	1.982	2.050	2.120
Moisture content before soaking, %	9.03	9.06	9.02
Moisture content after 4 days, %	10.36	9.89	9.48
Swell, %	0	0	0

PENETRATION, INCH		0.025	0.050	0.075	0.100	0.200	0.300	0.400	0.500
Resistance to Penetration (actual)	@ 10	5.27	14.06	23.43	33.98	67.95	100.17	133.52	161.00
Resistance to Penetration (actual)	@ 30	5.27	16.40	23.43	37.49	96.07	156.99	201.51	–
Resistance to Penetration (actual)	@ 65	7.03	16.40	28.12	41.01	117.16	173.39	222.60	–
Resistance to Penetration (corrected)	@ 10				37.0	73.0			
Resistance to Penetration (corrected)	@ 30				55.0	112.0			
Resistance to Penetration (corrected)	@ 65				70.0	140.0			
STANDARD					70.3	105.5			
CBR as molded	@ 10				52.69	69.19			
CBR as molded	@ 30				78.24	106.16			
CBR as molded	@ 65				99.57	132.70			





TESTED BY: RPB	CHECKED BY: WPL	NOTED BY: VSF
DATE: 6-19-93	DATE: 6-24-93	DATE: 6-24-93

BEST AVAILABLE DOCUMENT

MAKPISON MANCIR/CSSA
Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

BC-2-2

MECHANICAL ANALYSIS

ROAD SECTOR 2					DATE
SPECIFICATION	PURPOSE OF MATERIAL CABC		SAMPLED BY & DATE RBD 6-16-93		
SAMPLED AT (stockpile, batch plant, etc) CRUSHER PLANT @ MOLO			SOURCE, (river, quarry) LUN MASLA		
WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED	MAX. SIZE (INCH)
ORIGINAL 11871.4	OVEN DRY 11136.0	WASHED OVEN DRY 10823.8	6.60		

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	C'T PERCENT RETAINED
2-1/2"	63.5						
2"	52.8				GRADING 'A'		
1-1/2"	38.1	0	0	100	100	100	0
1"	25.4	1111.5	9.98	90.02	90		10
3/4"	19.1	1724.1	16.02	74.00	74	60-85	26
1/2"	12.7	2090.7	18.77	55.23	55		45
3/8"	9.52	898.0	8.06	47.17	47		53
No. 4	4.75	1351.1	12.13	35.04	35	30-55	65
No. 8	2.38						
No. 10	2.00	943.9	8.48	26.56	27		73
No. 12	1.65						
No. 16	1.19						
No. 20	0.84						
No. 30	0.59						
No. 40	0.42	1552.8	13.94	12.62	13	8-25	87
No. 50	0.297						
No. 60	0.260						
No. 80	0.177						
No. 100	0.049	850.8	7.64	4.98	5		95
No. 200	0.074	240.9	2.16	2.82	3	2-14	97
PAN		312.2					
WASH							
TOTAL							

FINENESS MODULUS: _____
TESTED BY _____ DATE 6-18-93
CHECKED BY _____ DATE _____
ENTERED BY _____ DATE _____

MM/CSSA MATERIALS TESTING LABORATORY
UNIT WEIGHT PER ASTM 93-26
DRY LOOSE _____
DRY RODDED _____
DATE 6-24-93
SIGN

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PHILIPPINE
GEOANALYTICS
CIVIL ENGINEERING LABORATORY

No. 21 Scout de Gula near
corner Scout Reyes, Quezon City
Tel. Nos.: 97-27-12 & 98-21-62
Easy Call # 869-1111 Code # 23638
Cellular Phone No.: 301-3524

PHILIPPINE GEOANALYTICS PG SOUTH COTABATO, HIGHWAYS DIST.
JOB NO. 910

GRADATION MECHANICAL ANALYSIS

DATE:

PROJECT: SECTOR 2 ALADEL-MALAPATAN-QUIN ROAD		DATE OF REPORT: 08 OCT. 1993
SPECIFICATION	PURPOSE OF MATERIAL: IN-PLACE SELECT SHOULDER MAT'L.	SAMPLED BY AND DATE: CCF 06 OCT. 1993
SAMPLED AT (Stockpile, batch plant, place, etc.): IN-PLACE SHOULDER MAT'L @ STA. 1+130.5 LS SH1		SOURCE (River, quarry, etc.): IN-PLACE MAT'L.

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY 3114.0	WASHED OVEN DRY			

NO.	SIEVE SIZE	SIEVE OPENING, (MM)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM. PERCENT RETAINED
1	2-1/2"	63.5						
2.	2"	52.8	0	0	100	100		
3.	1-1/2"	38.1	406.5	13.05	86.95	87		
4.	1"	25.4	381.4	12.25	74.70	75		
5.	3/4"	19.1	141.5	4.54	70.16	70		
6.	1/2"	12.7						
7.	3/8"	9.52	357.3	11.47	58.69	59		
8.	No. 4	4.75	262.0	8.41	50.28	50		
9.	No. 8	2.38						
10.	No. 10	2.00	259.4	8.33	41.95	42		
11.	No. 12	1.65						
12.	No. 16	1.19						
13.	No. 20	0.84						
14.	No. 30	.59						
15.	No. 40	.42	559.1	17.95	24.00	24		
16.	No. 50	.297						
17.	No. 60	.260						
18.	No. 80	.177						
19.	No. 100	.149						
20.	No. 200	.074	593.4	19.06	4.94	5		
	PAN							
	WASH							
	TOTAL		3114.0					

FINENESS MODULUS: —

F. M. = $\frac{\sum \text{\% cum. Ret. of Sieve \# (19, 16, 14, 12, 9, 8, 7, 5 \& 3)}}{100}$

UNIT WEIGHT, g/cc: —

DRY LOOSE —

DRY RODDED —

TESTED BY: G G MALATE

DATE 08 OCT. 1993

CHECKED BY: C.C. FARIÑA / JR. MAT'LS. ENGR.

DATE 08 OCT. 1993

Logbook Entry NO.

BEST AVAILABLE DOCUMENT

Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

E-13-2
S-1

MECHANICAL ANALYSIS

ROAD SECTOR 2				DATE
SPECIFICATION	PURPOSE OF MATERIAL SELECT EMBANKMENT		SAMPLED BY & DATE RBD/USF 5-18-93	
SAMPLED AT (stockpile, batch plant, etc) SOURCE 12+325 RS			SOURCE, (river, quarry) 12+325 RS	

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
7143.1	6766.6	6417.1	5.56		

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 107H DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM PERCENT RETAINED
2-1/2"	63.5	0	0	100	100		0
2"	52.8	537.0	7.94	92.06	92		8
1-1/2"	38.1	545.7	8.06	84.00	84		16
1"	25.4	396.4	5.86	78.14	78		22
3/4"	19.1	257.8	3.81	74.33	74		26
1/2"	12.7	400.3	5.92	68.41	68		32
3/8"	9.52	257.5	3.81	64.60	65		35
No. 4	4.75	553.6	8.18	56.42	56		44
No. 8	2.38						
No. 10	2.00	607.8	8.98	47.44	47		53
No. 12	1.65						
No. 16	1.19						
No. 20	0.84						
No. 30	0.59						
No. 40	0.42	1257.7	18.59	28.85	29		71
No. 50	0.297						
No. 60	0.260						
No. 80	0.177						
No. 100	0.019	1078.9	15.94	12.91	13		87
No. 200	0.074	313.5	4.63	8.28	8		92
PAN		210.9					
WASH		349.5					
TOTAL							

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 6-1-93, MM 93-175

FINENESS MODULUS:
TESTED BY RPB DATE 5-21-93
CHECKED BY DATE
ENTERED BY DATE

UNIT WEIGHT, PCF:
DRY-LOOSE
SPUN RODDED

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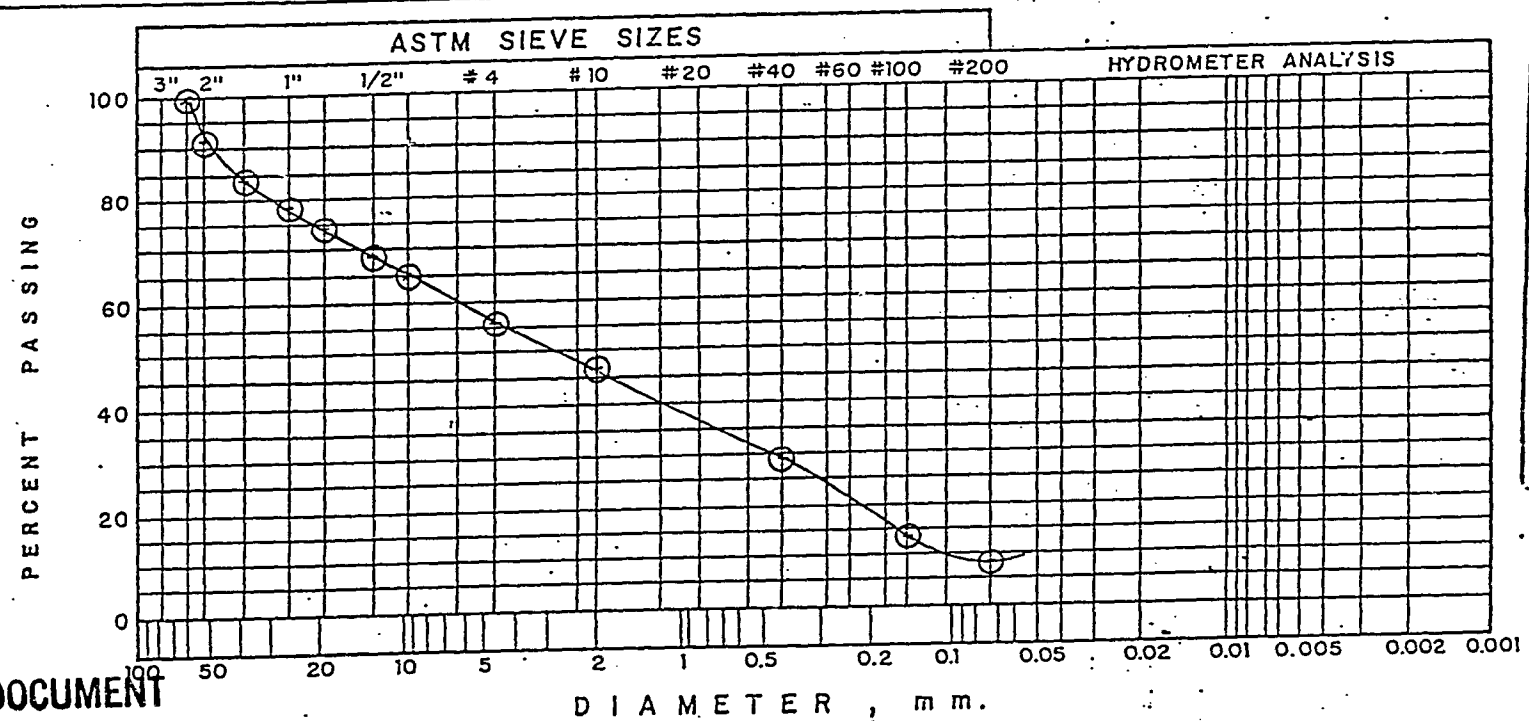
400

MORRISON MAIERLE/CSSA

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

GRAIN SIZE DISTRIBUTION CURVES

PROJECT: South Cotabato Roads	SECTOR: 2	SECTION:
	STATION: 12+325	KIND OF MATERIALS:
SOURCE: 12+325 RS	PLOTTED BY: UPL	DATE: 6-1-93



MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 6-1-93, MM 98-175
SIGN.

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STATION	TP. NO.	SAMPLE NUMBER	DEPTH	CURVE NUMBER	NMC	LL	PL	PI	CLASS	GI	DESCRIPTION
12+325	E-132	S-1			5.56	–	–	NP	A-1-a	0	Sandy gravel with traces of silt, light brown

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PHILIPPINE
GEOANALYTICS
CIVIL ENGINEERING LABORATORY

No. 21 Scout de Guia near
corner Scout Reyes, Quezon City
Tel. Nos. : 97-27-12 & 98-21-62
Easy Call # 869-1111 Code # 23638
Cellular Phone No. : 301-3524

TO MORRISON KNUDSEN CORPORATION

DATE 06 JULY 1993

PROJECT SECTOR 2 ALABEL-MALAPATAN ROAD

SAMPLE SOURCE MARIBULAN RIVER DATE SAMPLED

SAMPLE DESIGNATION

REPORT OF TESTS ON COARSE AGGREGATES FOR CONCRETE (ASTM C - 33)

AVERAGE GRADING "C" TABLE 311.2

A. SIEVE ANALYSIS	SAMPLE	SPEC.
Sieve Size 2"	–	95-100
1-1/2"	100	–
1"	58	35-70
3/4"	–	–
1/2"	21	10-30
3/8"	–	–
No. 4	2	0-5
No. 8		
No. 16		
No. 30		
No. 50		
No. 100		
B. Materials Finer than No. 200 Sieve	–	1 max.
C. Abrasion Loss (ASTM C - 131)	21	40 max
D. Soundness Test (ASTM C - 88)	3.88	12 max
E. Clay Lumps & Friable Particles (ASTM C-142)	–	
F. Specific Gravity (ASTM C 127)		
Bulk Sp. Gravity (Dry)	2.549	
Bulk Sp. Gravity (SSD)	2.608	
Apparent Sp. Gravity	2.709	
Absorption, %	2.309	
G. Unit Weights (ASTM C - 29)		
Dry Loose Unit Weight, g/cc	1.489	
Dry Rodded Unit Weight, g/cc	1.629	

PHILIPPINE GEOANALYTICS • SOUTH COTABATO HIGHWAYS PROJECT • JOB NO. 0504

TESTED BY :

REPORTED BY : C.C. FARLITO / SR. MAT'L. ENGR.

REMARKS : BLENDING OF 1½" and 3/4" - 30% / 70%

From sample submitted to Laboratory by client.

From field sample obtained independently by Philippine Geoanalytics

LOG BOOK ENTRY NO.

BEST AVAILABLE DOCUMENT

402

PROJECT	:	Sec. 2 Alabel-Malapatan Roads, South Cotabato Hi-ways
LOCATION	:	General Santos City, South Cotabato
CLIENT	:	Morrison Knudsen Corp.
SAMPLE	:	Coarse Aggregates
TYPE OF ANALYSIS	:	Potential Reactivity of Aggregates (Chemical Method)
REFERENCE	:	ASTM C289
DATE	:	May 11, 1993

CERTIFICATION

This is to certify that the above samples as received have been tested at our Central Laboratory as covered by Laboratory Report No. PG-93-707, in accordance with the above reference.

Hereunder is the summary of said tests.

Sample Identification	Test Results	
	Sc (mmoles/li.)	Rc (mmoles/li.)
1. Buayan Source	8	30
2. Lun Masla Source	9	20
3. Maribulan Source	5	40
4. Lum Padido Source	4	30

FROM:
COMPUTER PRINTOUT ☑
MANUAL COMPUTATION ☐
BY: [illegible]
QUALITY ASSURANCE CHKD. BY: _____
DATE: 5-11-93

Certified by:

EMILIO M. MORALES, MSCE
CIVIL ENGINEER
PRC REG. NO. 11298

PG MAIN

PHILIPPINE GEOANALYTICS

BEST AVAILABLE DOCUMENT

403

PROJECT	:	South Cotabato Highways
LOCATION	:	Gen. Santos City
CLIENT	:	Morrison Knudsen Corp.
SAMPLE	:	Water
SOURCE	:	MKC Batching Plant's Water Well at Sector 2
DESIRED TEST	:	Chemical Analysis
REFERENCE	:	Hach Handbook/DREL/5.
DATE	:	June 15, 1993

CERTIFICATION

This is to certify that the above sample as received had been tested at our Central Laboratory as covered by Laboratory Report No. PG-93-1036, in accordance with the above reference.

The results of tests are as summarized below:

Requirements	Specification	Test Results
1. Appearance	clear	satisfactory
2. Color	colorless	colorless
3. Odor	odorless	satisfactory
4. pH	4.5-8.5	7.2
5. Sulfate, mg/l.	-	35
6. Chloride, mg./l.	-	2

This Laboratory responsible for test only

Certified by:

EMILIO M. MORALES, M.
CIVIL ENGINEER
PRC REG. NO. 11236

PG MAIN

FROM:
COMPUTER PRINTOUT ☑
MANUAL COMPUTATION ☐
BY:
QUALITY ASSURANCE
DATE:

BEST AVAILABLE DOCUMENT

PHILIPPINE GEOANALYTICS

404

	:	General Santos, South Cotabato City
CLIENT	:	Morrison Knudsen Corp.
SAMPLE	:	Portland Cement, Type I
BRAND	:	Union Davao
REFERENCE	:	ASTM C150, Type I
DATE	:	June 22, 1993

CERTIFICATION

This is to certify that Physical and Chemical Analysis of the above sample as received had been tested at Cement Central Laboratory of the Philippine Cement Manufacturers Corporation, as covered by Laboratory Reference No. C-8612-0593, in accordance with the above reference:

The results of tests are as summarized below:

Requirements	ASTM C150, Type I	Test Results
I. Physical Analysis:		
1. Blaine Air Permeability Test		
Specific Surface, m^2/kg.	280 min.	285
2. Autoclave Expansion, %	0.80 max.	0.19
3. Compressive Strength, psi		
3 days	1800 min.	2540
7 days	2800 min.	3860
28 days	4000 min.	4310
4. Time of Setting Gillmore:		
Initial, minutes	60 min.	80
Final set, minutes	600 max.	210
II. Chemical Analysis:		
1. Silicon dioxide (SiO_2),%		20.2
2. Aluminum Oxide (Al_2O_3),%	-	6.2
3. Ferric Oxide (Fe_2O_3),%	-	3.2
4. Magnesium Oxide (MgO),%	6.0 max.	2.6
5. Sulfur Trioxide (SO_3),%	3.5 max.	1.6
6. Loss on Ignition,%	3.0 max.	0.80
7. Insoluble Residue, %	0.75 max.	0.19
8. Tricalcium Silicate (C_3S),%	-	57
9. Dicalcium Silicate (C_2S),	-	15
10. Tricalcium Aluminate (C_3A),%	-	11
11. Tetracalcium Alumino Ferrite (C_4AF),%	-	10
12. Calcium Oxide (CaO),%	-	64.3

Certified by:

EMILIO M. MORALES, ME
CIVIL ENGINEER
PRC REG. NO.

PHILIPPINE GEOANALYTICS

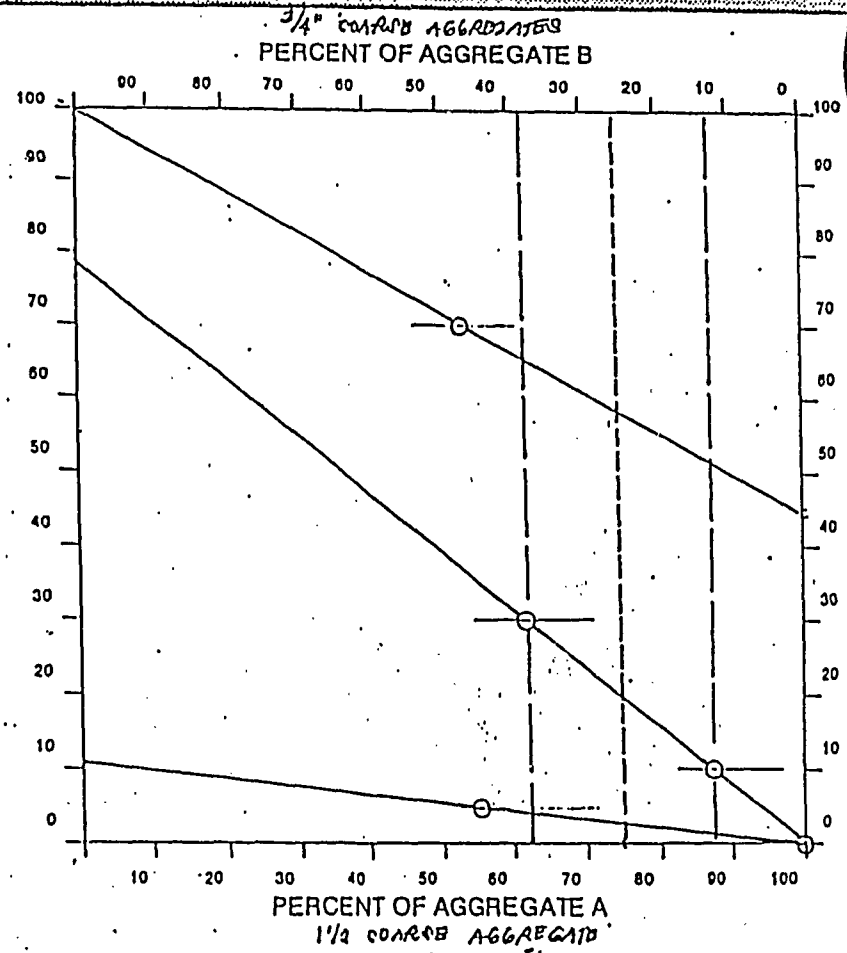
BEST AVAILABLE DOCUMENT

405

GEOANALYTICS

PROPORTIONING DETERMINATIONS
Combining Two Aggregates

PHILIPPINE GEOANALYTICS
SOUTH COTABATO, HIGHWAYS PROJECT
JOB NO. 0575



DATE SAMPLED: 09 AUGUST 1993

SOURCE: MARIBULAN

IDEAL COMBINATION A = 75 %
B = 25 %

	SIEVE	2 1/2"	2"	1"	1/2"	No. 4
	Spec.	100	95–100	35–70	10–30	0–5
1 1/2" Agg	Aggr. A	100	100	44	0	0
3/4" Agg	Aggr. B	100	100	100	79	11

SIEVE	2 1/2"	2"	1"	1/2"	No. 4
75 x A	75	75	33	0	0
25 x B	25	25	25	19.75	2.75
Total	100	100	58	19.75	2.75
Spec.	100	95–100	35–70	10–30	0–5

PREPARED BY: E. S. GARCIA, LAB. ENGR.

CHECKED BY: C. C. FAGUIN, SR. MAT'LS. ENGR.

NOTED BY: R. P. CABLING, MK COORD ENGR.

BEST AVAILABLE DOCUMENT

GEOANALYTICS

CIVIL ENGINEERING LABORATORY

Scout de Guia near
corner Scout Reyes, Quezon City
Tel. No.: 97-27-12 & 98-21-62
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Cellular Phone No.: 301-3524

PHILIPPINE GEOANALYTICS · SOUTH COTABATO HIGHWAYS PROJECT · JOB NO. 0531

GRADATION MECHANICAL ANALYSIS

DATE:

PROJECT: SOUTH COTABATO HIGHWAYS
SECTOR 2 ALABEL - MALAPATAN - GIAN ROAD

DATE OF REPORT: 11 AUGUST 1993

SPECIFICATION:

PURPOSE OF MATERIAL: ASPHALTIC AGGREGATES

SAMPLED BY AND DATE: GGM / RY 09 AUGUST '93

SAMPLED AT (Stockpile, batch plant, place, etc.): MK CRUSHER PLANT @ KOLO

SOURCE (River, quarry, etc.): LUN MASIA RIVER

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
–	2119		–	–	1/2

NO.	SIEVE SIZE	SIEVE OPENING, (MM)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM. PERCENT RETAINED
1	2-1/2"	63.5						
2.	2"	52.8						
3.	1-1/2"	38.1						
4.	1"	25.4						
5.	3/4"	19.1						
6.	1/2"	12.7	0	0	100.	100		
7.	3/8"	9.52	167.0	7.88	92.12	92		
	No. 4	4.75	635.5	29.99	62.13	62		
9.	No. 8	2.38	352.6	16.64	45.49	45		
10.	No. 10	2.00						
11.	No. 12	1.65						
12.	No. 16	1.19	257.5	12.15	33.34	33		
13.	No. 20	0.84						
14.	No. 30	.59	209.1	9.87	23.47	24		
15.	No. 40	.42						
16.	No. 50	.297	192.2	9.07	14.40	14		
17.	No. 60	.260						
18.	No. 80	.177						
19.	No. 100	.149						
20.	No. 200	.074	154.0	7.27	7.13	7		
	PAN							
	WASH							
	TOTAL		2119.0					

FINENESS MODULUS: –

F. M. = $\frac{\sum \text{\% cum. Ret. of Sieve \# (19, 16, 13, 12, 9, 8, 7, 5 \& 3)}}{100}$

UNIT WEIGHT, g/cc: –

DRY LOOSE –

DRY RODDED –

TESTED BY: G. G. MALATE

DATE 09 AUGUST 1993

CHECKED BY: C. C. FARIAS / SR. MAT'LS. ENGR.

DATE 10 AUGUST 1993

Logbook Entry NO.	

BEST AVAILABLE DOCUMENT

PHILIPPINE
GEOANALYTICS
CIVIL ENGINEERING LABORATORY

21 Scout de Guia near
corner Scout Reyes, Quezon City
Tel. nos.: 97-27-12 & 98-21-62
Eastwood Cell # 869-1111 Code # 23630
Cellular Phone No.: 301-3524

PHILIPPINE GEOANALYTICS SOUTH COTABATO HIGHWAYS PROJECT

JOB NO. 0535

GRADATION MECHANICAL ANALYSIS

DATE:

PROJECT SOUTH COTABATO HIGHWAYS SECTOR 2 MAMEL – MALAPATAN – GLAN ROAD	DATE OF REPORT 11 AUGUST 1993
SPECIFICATION / PURPOSE OF MATERIAL ASPHALTIC AGGREGATES	SAMPLED BY AND DATE GGM / RY 09 AUGUST 1993
SAMPLED AT (Stockpile, batch plant, place, etc.) MR CRUSHER PLANT @ MOLO	SOURCE (River, quarry, etc.) LUN MASIA RIVER

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
–	5868		–	–	3/4"

NO.	SIEVE SIZE	SIEVE OPENING, (MM)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM. PERCENT RETAINED
1	2-1/2"	63.5						
2.	2"	52.8						
3.	1-1/2"	38.1						
4.	1"	25.4						
5.	3/4"	19.1	0	0	100	100		
6.	1/2"	12.7	2994.4	51.03	48.97	49		
7.	3/8"	9.52	2155.3	36.73	12.24	12		
8.	No. 4	4.75	282.3	4.81	7.43	7		
9.	No. 8	2.38	11.7	0.20	7.23	7		
10.	No. 10	2.00						
11.	No. 12	1.65						
12.	No. 16	1.19	8.8	0.15	7.08	7		
13.	No. 20	0.84						
14.	No. 30	.59	17.0	0.29	6.79	7		
15.	No. 40	.42						
16.	No. 50	.297	61.6	1.05	5.74	6		
17.	No. 60	.260						
18.	No. 80	.177						
19.	No. 100	.149						
20.	No. 200	.074	127.9	2.18	3.56	4		
	PAN							
	WASH							
	TOTAL		5868					

FINENESS MODULUS: –

F. M. = $\frac{\Sigma \text{ \% cum. Ret. of Sieve \# (19, 16, 14, 12, 9, 8, 7, 5 \& 3)}}{100}$

UNIT WEIGHT, g/cc: –

DRY LOOSE –

DRY RODDED –

TESTED BY: G.G. MALATE

DATE 09 AUGUST 1993

CHECKED BY: C.C. FIRUM / SR. MATLS. ENGR.

DATE 10 AUGUST 1993

Logbook Entry NO.	

BEST AVAILABLE DOCUMENT

PHILIPPINE ROCK PRODUCTS, INC.

650 SHAW BOULEVARD, MANDALUYONG, METRO MANILA, PHILIPPINES

05 October 1993

LABORATORY TEST REPORT

Project : South Cotabato Highways
Location : south cotabato
Sample I.D. : Asphalt Cement 60/70
Source : Kaohsiung, Taiwan
Test Desired : Penetration Test @ 25°C, 100g,5 secs.

TEST DATA

SAMPLE	RESULT
1	89
2	65
3	62
4	63
5	64
6	69
7	67
8	61
9	63
10	63
11	66
AVE.	66.5

Tested by :

A.A. CAPOTE
LAB.TECH

Certified by :

A.G.S. LOMIBAO
QUALITY CONTROL SUPERVISOR

Witnessed by :

OFELIA M. GONGNIT
PHIL.GEO-ANALYTICS

DATE ISSUED :

10/6

NOTED BY:

C.C. PAKUM
SR. MAT'LS. ENGR.

R.A. CARLING
MGR QAC ENGR.

DESIGN • MATERIALS • CONSTRUCTION

Telephones: 30-11-11 to 19
Telex No. 2227330
Cable Address: "Philrock" Manila
FAX: 632-7222535

A SUBSIDIARY OF
HOUSE OF INVESTMENTS, INC.

BEST AVAILABLE DOCUMENT

MAXIMSON MAMERTO/CSSA
Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

A-19-2

MECHANICAL ANALYSIS

ROAD SECTOR 2			DATE
SPECIFICATION	PURPOSE OF MATERIAL FA FOR ASPHALT MIX	SAMPLED BY & DATE RBD/RPB 7-16-93	
SAMPLED AT (stockpile, batch plant, etc) STOCKPILE @ MOLO		SOURCE, (river, quarry) LUN MASLA	

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN-DRY			
1290.4	1205.4	-	7.05		3/8

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM PERCENT RETAINED
2-1/2"	63.5						
2"	52.8						
1-1/2"	38.1						
1"	25.4						
3/4"	19.1						
1/2"	12.7						
3/8"	9.52	0	0	100	100		0
No. 4	4.75	101.5	8.42	91.58	92		8
No. 8	2.38	320.7	26.61	64.97	65		35
No. 10	2.00						
No. 12	1.65						
No. 16	1.19	292.4	24.26	40.71	41		59
No. 20	0.84						
No. 30	0.59	243.6	20.21	20.50	20		80
No. 40	0.42						
No. 50	0.297	126.0	10.45	10.05	10		90
No. 60	0.260						
No. 80	0.177						
No. 100	0.019	61.9	5.14	4.01	5		95
No. 200	0.074	30.0	2.49	2.42	2		98
PAN		29.3					
WASH							
TOTAL							

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 7-20-93 mm 93-210
SIGN.

FINENESS MODULUS:
TESTED BY RPB DATE 7-16-93
CHECKED BY DATE
ENTERED BY DATE

UNIT WEIGHT, PCF:
DRY LOOSE
DRY RODDED

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Morrison Maierle/CSSA
Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

A-18-2

MECHANICAL ANALYSIS

ROAD SECTOR				DATE
2				
SPECIFICATION	PURPOSE OF MATERIAL		SAMPLED BY & DATE	
	3/4 CA FOR ASPHALT		RBD / RPB 7-16-93	
SAMPLED AT (stockpile, batch plant, etc)			SOURCE, (river, quarry)	
STOCKPILE @ MOLO				

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
8339.3	8071.9		3.313		3/4

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM PERCENT RETAINED
2-1/2"	63.5						
2"	52.8						
1-1/2"	38.1						
1"	25.4						
3/4"	19.1	0	0	100	100		0
1/2"	12.7	2453.1	30.39	69.61	70		30
3/8"	9.52	2810.2	34.81	34.80	35		65
No. 4	4.75	1925.8	23.86	10.94	11		89
No. 8	2.38	187.4	2.32	8.62	9		91
No. 10	2.00						
No. 12	1.65						
No. 16	1.19	49.0	0.61	8.01	8		92
No. 20	0.84						
No. 30	0.59	74.5	0.92	7.09	7		93
No. 40	0.42						
No. 50	0.297	146.2	1.81	5.28	5		95
No. 60	0.260						
No. 80	0.177						
No. 100	0.019	160.3	1.99	3.29	3		97
No. 200	0.074	104.0	1.29	2.00	2		98
PAN		161.4					
WASH							
TOTAL							

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 7-20-93 MM 93-209
SIGN.

FINENESS MODULUS: _____
TESTED BY _____ DATE _____
CHECKED BY _____ DATE _____
ENTERED BY _____ DATE _____

UNIT WEIGHT, PCF:
DRY LOOSE _____
DRY RODDED _____

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Morrison Malerle/CSSA

Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

Specific Gravity and Absorption of Fine and Coarse Aggregates
AASHTO Designation: T84 and T85

←A-18-2

Road Sector	2	Date	
Section:		Station	MOLO STOCKPI
Kind of Material:	3/4 CA FOR ASPHALT	Source	LUN MASC
Sampled by:	RBD / VSF	Date Sampled:	7-16-93
Tested by:	RPB	Date Tested:	7-18-93
Supervised by:	VSF		

COARSE AGGREGATE (Wire Basket Method)				AVERA
1.	Wt of SSD Sample + basket in air, g	4465.4	4446.0	
2.	Wt of Basket in air, g	1317.5	1317.5	
3.	Wt of SSD Sample in air, g (1)-(2)	3147.9	3128.5	
4.	Wt of Sample + Basket in water, g	3067.3	3056.1	
5.	Wt of Basket in water, g	1146.6	1146.6	
6.	Wt of Sample in water, g (4-5)	1920.7	1909.5	
7.	Wt of oven-dry sample, g	3057.0	3040.4	
8.	Bulk Specific Gravity (DRY) (7)/(3)-(6)	2.491	2.494	2.49
9.	Bulk Specific Gravity (SSD) (3)/(3)-(6)	2.565	2.566	2.56
10.	Apparent Specific Gravity 7/(7)-(6)	2.690	2.688	2.68
11.	Absorption, % (3-7)/(7) x 100	2.974	2.898	2.93

FINE AGGREGATE (Pycnometer Method)				
1.	Wt of SSD sample, g	500.0		
2.	Wt of pycnometer filled with water, g	681.3		
3.	Wt of pycnometer + sample + water, g	973.3		
4.	Wt of oven-dry sample, g	480.9		
5.	Bulk Specific Gravity (DRY) 4/(2)+(1)-(3)	2.312		
6.	Bulk Specific Gravity (SSD) 1/(2)+(1)-(3)	2.404		
7.	Apparent Specific Gravity 4/(2)+(4)-(3)	2.546		
8.	Absorption, % (1)-(4)/4 x 100	3.972		

Remarks: Retained No. 4 : 89%
Passing No. 4 : 11%

MM/CSSA MATERIA
TESTING LABORATO
DATE: 7-20-93, ma93-
SIGN.

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Morrison Maierle/CSSA

Materials Testing Laboratory

SOUTH COTABATO ROAD PROJECT

Resistance to Abrasion of Small Coarse Aggregate by Use of the Los Angeles Machine

AASHTO Designation: T96

A-18-2

Road Sector: 2

Section:

Kind of Material: 3/4" AGGREGATES, CHRUSHED

Sampled by: RBD/ RPB

Tested by: TLD

Supervised by: RPB

Date:

Station: MOLO STOCKPILE

Source: LUN MASLA

Date Sampled: 7-16-93

Date Tested: 7-19-93

GRADING OF TEST SAMPLES								
Sieve Size				Mass of Indicated Sizes, grams Grading				Actual Mass, grams
Passing		Retained		A	B	C	D	B
mm 37.50	inch 1½"	mm 25.0	inch 1"	1250±25				
25.00	1"	19.0	3/4"	1250±25				
19.00	3/4"	12.5	1/2"	1250±10	2500±10			2503.7
12.50	1/2"	9.5	3/8"	1250±10	2500±10			2505.0
9.50	3/8"	6.3	1/4"			2500±10		
6.30	1/4"	4.75	No. 4			2500±10		
4.75	No. 4	2.36	No. 8				5000±10	
TOTAL				5000±10	5000±10	5000±10	5000±10	5008.7

Grading	Number of Spheres	Mass of Charge, grams	Actual Mass, grams
A	12	5000±25	
B	11	4584±25	
C	8	3330±25	
D	6	2500±15	

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 7-20-93, MM93-209
SIGN.

Weight of Sample Before Test, A: 5008.7 grams

Weight of Sample After Test (Retained on No. 12 Sieve), B: 3644.8 grams

Abrasion Loss (Percentage of Wear) = $\frac{A-B}{A} \times 100 = 0.2723 \times 100 = 27\ \%$

Spec's Max. Loss : _____ %

Remarks:

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SPECIFIC GRAVITY AND ABSORPTION
OF FINE AND COARSE AGGREGATES
(LUN MASLA)

and A-18
A-19

3/4" COARSE AGGREGATE

$$Gsb\ (DRY) = \frac{1}{\frac{89}{100(2.492)} + \frac{11}{100(2.812)}} = \underline{\underline{2.471}}$$

$$Gsb\ (SSD) = \frac{1}{\frac{89}{(100)(2.566)} + \frac{11}{(100)(2.404)}} = \underline{\underline{2.547}}$$

$$Gsb\ (APPARENT) = \frac{1}{\frac{89}{(100)(2.689)} + \frac{11}{(100)(2.546)}} = \underline{\underline{2.672}}$$

$$\%\ ABSORPTION = (0.89)(2.996) + (0.11)(3.972) = \underline{\underline{3.050}}\ \%$$

F.A.

$$Gsb\ (DRY) = \frac{1}{\frac{8}{(100)(2.485)} + \frac{92}{(100)(2.424)}} = \underline{\underline{2.429}}$$

$$Gsb\ (SSD) = \frac{1}{\frac{8}{(100)(2.565)} + \frac{92}{(100)(2.524)}} = \underline{\underline{2.527}}$$

$$Gsb\ (APPARENT) = \frac{1}{\frac{8}{(100)(2.700)} + \frac{92}{(100)(2.698)}} = \underline{\underline{2.694}}$$

$$\%\ ABSORPTION = (.08)(3.198) + (0.92)(4.12) = \underline{\underline{4.04}}\ \%$$

MM/CSSA MATE
TESTING LABOPAT
DATE: 7-20-93, mm 9
SIGN.

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Sector 2
Field Tests

PHILIPPINE
GEOANALYTICS

BEST AVAILABLE DOCUMENT

PHILIPPINE GEOANALYTICS
JOB ORD. 0571
SOUTH COTABATO. HIGHWAYS PROJECT

No. 21 Scout de Guia near
Corner Scout Rayal, Quezon City
Tel. Nos.: 97-27-12/93-21-62
Cel # 0919-1111 cbcs # 0922
Fax Phone Nos.: 921-3274

SECTOR 2 · KLABEL-MAMAPATAN-GUAN ROAD

NUCLEAR DENSITY TESTING FORM

MOISTURE STANDARD (MS) = 615

DENSITY STANDARD (DS) = 2664

DATE : 16 OCTOBER 1993

USING TROXLER SR# 20357

Test No.	Station	Depth Tested In	Lift No.	Wet Density PCF	Dry Density PCF	% Moisture	Lab. Stand Proctor, PCF	Optimum Moisture Content (Lab)	Required % Compaction	% Compaction
				ROADWAY EMBANKMENT FILL						
15	34+100	6"	3rd LAYER	113.4	102.8	10.3	105.5 / KM. 34+000		95	97.4 LS
16	-do-	"	"	112.3	102.3	9.8	"		"	97.0 RS
17	34+150	"	"	114.0	103.1	10.6	"		"	97.7 "
18	-do-	"	"	112.9	102.5	10.1	"		"	97.2 RS
				— NOTHING FOLLOWS —						
				RCPC CROSS DRAIN BEDDING						
19	43+803	4"	PIPE	131.3	120.1	9.3	124.8 / GUAN RIVER		95	96.3 RS
20	46+277	"	BEDDING	120.2	119.6	8.9	"		"	95.1 RS
				— NOTHING FOLLOWS —						

PASSED

PASSED

TESTED BY : S.Y. JORDAN / MAT'L. TECH.

DATE TESTED : 15 OCT. 1993

R. PAUSAL
MK COC REP.

CHECKED & NOTED BY : C.C. FARUM / JR. MAT'L. ENGR.

: R.B. CABLING / MK COC ENGR.

416

PHILIPPINE
GEOANALYTICS

SECTOR 2 ALABEL - MALAPATAN - GLAN ROAD

NUCLEAR DENSITY TESTING FORM

PHILIPPINE GEOANALYTICS SOUTH COTABATO HIGHWAYS PROJECT JOB ORD. 0512

MOISTURE STANDARD (MS) = 615

DENSITY STANDARD (DS) = 2664

DATE: 16 OCTOBER 1993

USING TROXLER SR # 20357

Test No.	Station	Depth Tested In	Lift No.	Wet Density PCF	Dry Density PCF	% Moisture	Lab. Stand Proctor, PCF	Optimum Moisture Content (Lab)	Required % Compaction	% Compaction	
				ROADWAY EXISTING GROUND							
				STATION COVERED: STA. 38+025 – STA. 38+512							
01	38+025	6"	EXISTING	139.9	129.2	8.3	131.0 / EXPLORATION		95	98.6	C
02	38+062	"	GROUND	139.8	127.6	9.6	"		"	97.4	LS
03	38+100	"	"	140.4	128.7	9.1	"		"	98.2	C
04	38+137	"	"	139.3	127.3	9.4	"		"	97.2	RS
05	38+175	"	"	140.5	129.4	8.6	"		"	98.8	C
06	38+212	"	"	139.9	128.1	9.2	"		"	97.1	W
07	38+250	"	"	140.2	129.3	8.4	"		"	98.7	C
08	38+287	"	"	139.0	127.6	8.9	"		"	97.4	RS
09	38+325	"	"	140.6	128.8	9.2	"		"	98.3	C
10	38+362	"	"	140.2	129.0	8.7	"		"	98.5	LS
11	38+400	"	"	119.2	109.0	9.4	111.7 / EXPLORATION		"	97.6	C
12	38+437	"	"	119.4	108.8	9.7	"		"	97.4	RS
13	38+475	"	"	118.9	109.3	8.8	"		"	97.8	C
14	38+512	"	"	119.1	109.1	9.2	"		"	97.6	LS
				— NOTHING FOLLOWS —							

RESULT: PASSED

TESTED BY: S.Y. JORDAN / MAT'LS. TECH. R. PAUAL MS COORD.

DATE TESTED: 15 OCT. 1993

CHECKED & NOTED BY: C.O. HARVIN / JR. MAT'LS. ENGR.

R.B. CAELLUG / MS COORD. ENGR.

SHEET 1 OF 2

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PHILIPPINE
GEOANALYTICS

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SECTOR 2 (GLABEL - MAL. - GLAN RD.)

NUCLEAR DENSITY TESTING FORM

BASE COURSE FINAL LIFT ON AC PAVEMENT : TOT START @ STA. 13+350 & ENDS @ STA. 13+725

MOISTURE STANDARD (MS) = 640

DENSITY STANDARD (DS) = 2811

DATE : AUGUST 20, 1993

TROXLER SERIAL NO. 20356

Test No.	Station	Depth Tested In	Lift No.	Wet Density PCF	Dry Density PCF	% Moisture	Lab. Stand Proctor, PCF	Optimum Moisture Content (Lab)	Required % Compaction	% Compaction
01	13+250 ℄	4"	B. COURSE	145.1	134.6	7.8	134.4	9.0	100.0	100.1
02	- Lt		FINAL LIFT	146.1	134.8	8.4				100.3
03	13+425 ℄			146.3	134.7	8.6				100.2
04	- Rt			146.8	134.9	8.8				100.4
05	13+500 ℄			145.2	134.4	8.0				100.0
06	- Lt			145.7	134.4	8.4				100.0
07	13+575 ℄			145.1	134.5	7.9				100.1
08	- Rt			142.8	128.0	6.4				102.7
09	13+650 ℄			145.5	134.6	8.1				100.1
10	- Lt			146.2	135.0	8.3				100.5
11	13+725 ℄	-do-	-do-	147.7	135.3	9.2	-do-	-do-	-do-	100.7
				LOADING & UNLOADING ZONE						
12	13+725 Lt	4"	B. COURSE	146.5	134.7	9.0	134.4	9.0	100.0	100.2
13	-do- Rt	-do-	FIN. LIFT	147.5	134.8	9.4	-do-	-do-	-do-	100.3
				NOTHING FOLLOWS						

TESTED BY : [illegible]

DATE TESTED : AUG. 12, 1993

CHECKED & NOTED BY : [illegible]

: [illegible]

PHILIPPINE
GEOANALYTICS

BEST AVAILABLE DOCUMENT

PHILIPPINE GEOANALYTICS GEN. SANTOS ROAD PROJECT JCB No. 0496

No. 21 Scout de Guia near corner Scout Reyes, Quezon City
Tel. Nos.: 97-27-12 / 98-21-02
Easy Call # 663-1111 code # 23533
Cellular Phone No.: 301-3524

SECTOR 2 ALABEL - MALAPATAN ROAD

NUCLEAR DENSITY TESTING FORM

MOISTURE STANDARD (MS) = 514.9

DENSITY STANDARD (DS) = 3377

DATE : 25 JUNE 1993

USING HUMBOLDT

Test No.	Station	Depth Tested In	Lift No.	Wet Density PCF	Dry Density PCF	% Moisture	Lab. Stand Proctor, PCF	Optimum Moisture Content (Lab)	Required % Compaction	% Compaction	
				STATION COVERED : STA. 5+525 - STA. 5+975							
				ROADWAY SELECT EMBANKMENT MATERIALS							
1	5+525	8	SELECT	141.1	131.6	7.248	136.0/AVE FOD IN-PLACE		95	96.74 RS	PASSED
2	5+562	"	MATERIAL	141.0	131.9	6.915	"		"	96.97 CL	
3	5+600	"	"	139.6	130.5	6.970	"		"	95.96 LS	
4	5+637	"	"	140.0	130.7	7.150	"		"	96.07 CL	
5	5+675	"	"	140.9	131.8	6.963	"		"	96.89 RS	
6	5+712	"	"	141.1	132.1	6.843	"		"	97.11 CL	
7	5+750	"	"	138.5	129.7	6.755	"		"	95.39 LS	
8	5+787	"	"	138.6	130.6	6.112	"		"	96.04 CL	PASSED
9	5+825	"	"	141.1	132.1	6.785	"		"	97.16 RS	
10	5+862	"	"	140.1	130.9	7.033	"		"	96.25 CL	
11	5+900	"	"	139.3	130.4	6.843	"		"	95.87 LS	
12	5+937	"	"	140.4	131.3	6.950	"		"	96.53 CL	
13	5+975	"	"	141.1	131.7	7.150	"		"	96.83 RS	
				— NOTHING FOLLOWS —							

TESTED BY : A.Y. ZAGUIRRE / MAT'LS TECH.

DATE TESTED : 24 JUNE 1993

CHECKED & NOTED BY : C.C. PARUM / SR. MAT'LS. ENGR.

SHT. 1 OF 2

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Morrison Maierle/CSSA
Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

Compaction Test
Using Density Gauge

Road Sector: SECTOR - 3
Section: 3B
Tested by: RBD/WPL/RPB
Checked by: VOF

Date: 11/24/92
Station:
Date Tested: 11/18/92

Type of Material: SUBGRADE
Model: 5001P
Standard Counts (DS): 3319
Standard Counts (MS): 516.1

Source: HUMBOLDT
Serial Number: 1950

	ROADWAY				
Location/Station	75+093.2 3.8M OFFSET fr. LS	75+412.0 6.8M OFFSET fr. LS	75+716.1 5.4M OFFSET fr. LS	75+912.7 4.9M OFFSET fr. LS	
Lab-no.	96-331	96-332	96-333	96-334	27467
Depth tested (in.)	6	6	6	6	
Lift	—	—	—	—	
Thickness	—	—	—	—	
Counts DC	2081	1660	1691	1710	
Counts MC	190.8	140.2	120.7	138.7	
Count average					
Wet density (WD)	132.0	143.4	142.1	139.3	
% Moisture	13.10	9.433	7.922	9.012	
Dry Density (DD)	116.7	131.0	131.7	127.8	
Proctor Density	121.3	137.0	137.0	133.5	
Optimum Moisture	—	—	—	—	
% Compaction	96.21	95.62	96.13	95.73	
Required	95	95	95	95	
Remarks	PASSED	PASSED	PASSED	PASSED	

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 11-25-92/MM-92-274
SIGN.

AREA COVERED: STA 75+000 - 76+000

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Morrison Maierle/CSF
Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

Compaction Test
Using Density Gauge

Road Sector: SECTOR - 3
Section: 3A
Tested by: PHIL GEOANALYTICS
Checked by:
MONITORED BY MM REP. RBD/VCF

Date: 10/06/92
Station:
Date Tested: 10/01/92

Type of Material: EMBANKMENT
Model:
Standard Counts (DS): 2746
Standard Counts (MS): 613

Source: TROXLER
Serial Number:

Location/Station	ROADWAY & SHOULDER 59+950 RS	60+025 RS			
Lab no.	EF -054	EF -055	MM/GSSA MATERIALS TESTING LABORATORY DATE: 10-06-92/MM-92-201NGT SIGN.		
Depth tested (in.)	6	6			
Lift	4TH	4TH			
Thickness					
Counts DC					
Counts MC					
Count average					
Wet density (WD)	149.7	140.8			
% Moisture	9.1	12.8			
Dry Density (DD)	137.2	124.8			
Proctor Density	136.4	136.4			
Optimum Moisture					
% Compaction	100.6	99.5			
Required	95	95			
Remarks	PASSED	PASSED			

AREA COVERED : 59+950 – 60+050

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Morrison Maierle/CSSA
Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

Compaction Test
Using Density Gauge

Road Sector: SECTOR-3
Section: MAKAR - MAASIM
Tested by: RBD
Checked by: VSF

Date: 07/02/92
Station:
Date Tested: 07/01/92

Type of Material: BASE COURSE
Model: 5001P
Standard Counts (DS): 2335
Standard Counts (MS): 538.2

Source: HUMBOLDT
Serial Number: 052

Location/Station	ROADWAY 22+880.0 3.6m fr. OUTER EDGE LS	ROADWAY 22+961.7 3.3 m fr. OUTER EDGE LS	ROADWAY 23+174.7 0.8 m fr. OUTER EDGE LS		
Lab no.	BC-122	BC-123	BC-124		
Depth tested (in.)	4	4	4		
Lift	FINAL LIFT	FINAL LIFT	FINAL LIFT		
Thickness					
Counts DC	2240	2336	2335		
Counts MC	117.5	119.5	134.8		
Count average					
Wet density (WD)	145.0	142.8	144.6		
% Moisture	6.669	6.914	8.291		
Dry Density (DD)	135.9	133.5	133.5		
Proctor Density	133.2	133.2	133.2		
Optimum Moisture					
% Compaction	102.02	100.22	100.22		
Required	100	100	100		
Remarks	PASSED	PASSED	PASSED		

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 07-02-92/MM-92-100NGT
SIGN:

STATION COVERED FR. STA. 22+650 - 23+425

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GEOANALYTICS

PROJECT: [illegible] DATE OF PAVING: 19 AUGUST 1993

SAMPLE: [illegible] DATE: 20 AUGUST 1993

SUMMARY OF TEST RESULTS BITUMINOUS PAVING MIXTURES

NAME OF TEST	TEST RESULTS		SPECIFICATION (Job Mix Formula)	RELIABILITY TOLERANCE
1. SIEVE ANALYSIS	HOT BIN	EXTRACTION		
1"				
3/4"		100	100	
1/2"		86	89	±7
3/8"		69	69	±7
#4		45	46	±7
#8		33	33	±4
#16		23	21	±4
#30		16	18	±4
#50		10	12	±4
#100				
#200		5	5	±2
2. ASPHALT CONTENT, % TOTAL MIX		6.02		6.1 ± 0.4
3. % VOIDS FILLED WITH ASPHALT		75.87		75-85
4. % AIR VOIDS		4.28		3-5
5. AVERAGE STABILITY, LBS		2093		1800 min
6. FLOW, 1 over 100"		12.67		8-14
7. BULK SPECIFIC GRAVITY		2.258		
8. MAX. THEORETICAL SP. GRAVITY		2.359		

Tested by: [illegible] Checked by: [illegible]

Noted By: [illegible]

CONFORMS

LOG BOOK ENTRY NO

PHILIPPINE GEOANALYTICS SOUTH COTABATO HIGHWAYS PROJECT JOB NO. 0044

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PROJECT : SECTOR-2 MALAPATAN - GLAN RD. SOUTH COTABATO HIGHWAYS PROJECT

CLIENT : MICC (RIBCO)

REPORT NO.	39 A-

CONCRETE GRADE	3000	PSI	20,7	MPa
AGGREGATE SIZE (in.)	1½	CEMENT TYPE	I	

REMARKS/NOTES: SLUMP : 3"

COMPRESSIVE STRENGTH OF CONCRETE CYLINDERS ASTM C-39

	TEST CYLINDER DESIGNATION	WT. KG.	DIA.	Length	DATE SAMPLED	AGE	COMPRESSIVE STRENGTH LOAD (LB)	COMPRESSIVE STRENGTH STRENGTH (PSI)	FRACTURE TYPE	THEORETICAL 28 DAYS STRENGTH
1	MOLO BRIDGE	13.01	6"	12"	31 OCT. '92	28	123 200	4 358	C	4000
2	SIDEWALK LEFTSIDE	12.90	6"	12"	31 OCT. '92	28	126 280	4 467	C	4000
3						AVE.:		4 412		4000
4					NOTHING	FOLLOWS				
5										
6										
7					CHECKED BY:			NOTED BY:		
8					C.C. FARUM			R.B. CABLING		
9					SR. MAT'S. ENGR.			MK C&C ENGR.		
10										
11										
12										
13										

LABORATORY : ☐ MAIN ☑ SITE

LOCATION : LUMLUYON, BAMBA

TESTED BY: AVZ DATE: 28 NOV. '92

WITNESSED BY: C.C.F / PGA R.B.C. / MKC

☑ SAMPLES PREPARED BY LABORATORY

☐ SAMPLES PREPARED BY OTHERS

FRACTURE TYPE

- C - CONICAL
- S - SHEAR
- CS - CONE & SHEAR
- CP - CONE & SPLIT
- CL - COLUMNAR

PHILIPPINE GEOANALYTICS CIVIL ENGINEERING LABORATORY

Conversion
1 KN = 101.97 Kg.
1 MPa = 145 PSI
1 Kg. = 2.2 lbs.
Area 6" Cyl. = 28.27 in² = 182.415 cm²

PHILIPPINE GEOANALYTICS GEN. SANTOS CITY PHILIPPINES
LOG BOOK ENTRY NO. 8322
DATED

MORRISON MAIERLE/CSSA
Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

Summary of Test Results
Bituminous Paving Mixtures

Road Sector 2 Date
Section 3 Station

Contractor MKC Load No. 17
Asphalt Producer MKC
Sample ID AC-24-2

Name of Test	Test Results		Job Mix Formula	Specification/Tolerance
	Hot Bin	Extraction		
1. Sieve Analysis				
1"				
3/4"		100	100	
1/2"		87	89	±7
3/8"		75	69	±7
#4		47	46	±7
#8		36	33	±4
#16		25	24	±4
#30		19	18	±4
#50		11	12	±4
#100		6		
#200		4	5	±2
2. Asphalt content, % total mix		6.329	6.10	±0.4
3. % Voids filled with asphalt		72.996	79	75-85
4. % Air voids		3.517	3.5	3-5
5. Voids in mineral aggregates, %		13.014	14.9	14 min.
6. Average stability, lbs		3014	2450	1800 min.
7. Flow, 1/100"		12	12.6	8-14
8. Bulk specific gravity		2.277		
9. Max theoretical specific gravity		2.360		

NAME: [illegible] MATERIALS TESTING LABORATORY
DATE: 1-19-94
SIGN.

Date Paved: 1-11-94

Area Paved: 46 + 129.37 – 46 + 975 (RIGHT SIDE)

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425

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PROJECT : SOUTH COTABATO HIGHWAYS SECTOR 2 ALABEL MALAPATAN ROAD

CLIENT : MKC / HEERCO

REPORT NO.	39 A-

CONCRETE GRADE	3000	PSI	20.7	MPa
AGGREGATE SIZE (in.)	1 1/2	CEMENT TYPE	1	

REMARKS/NOTES: SLUMP : 3"

COMPRESSIVE STRENGTH OF CONCRETE CYLINDERS ASTM C-39

	TEST CYLINDER DESIGNATION	WT.	DIA.	Length	DATE SAMPLED	AGE	COMPRESSIVE STRENGTH LOAD (LB)	COMPRESSIVE STRENGTH STRENGTH (PSI)	FRACTURE TYPE	THEORETICAL ~~28~~ 7 DAYS STRENGTH
1	STA. 6+999 R/S	—	6"	12"	12 JUNE 1993	7	90200	3191 PSI	CS	2130 PSI
2	APRON SLAB & OUT-OFF WALL				— NOTHING	FOLLOWS —		PASSED		@ 7 days
3	STA. 7+950 R/S									
4	HEADWALL & WINGWALL									
5	STA. 8+210 R/S									
6	HEADWALL & WING WALL				CHECKED & NOTED BY					
7	STA. 8+699 R/S						C.C. FARUCH			
8	HEADWALL & WING WALL						J.A. MATIAS ENGR.			
9										
10										
11										
12										
13										

LABORATORY : ☐ MAIN ☑ SITE

LOCATION : ALABEL

TESTED BY: A.V.L. DATE: 19 JUNE '93

WITNESSED BY: CCF / PCA.

☐ SAMPLES PREPARED BY LABORATORY

☐ SAMPLES PREPARED BY OTHERS

FRACTURE TYPE

- C - CONICAL
- S - SHEAR
- CS - CONE & SHEAR
- CP - CONE & SPLIT
- CL - COLUMNAR

PHILIPPINE GEOANALYTICS CIVIL ENGINEERING LABORATORY

Conversion
1 KN = 101.97 kg
1 GPa = 145 PSI
1 kg = 2.2 lbs
Auto C-Cyl = 28.27 in² = 182.415 cm²

PHILIPPINE GEOANALYTICS CIVIL ENGINEERING LABORATORY

LOG BOOK ENTRY NO. 309 SERIES NO. 0791

DATED: ROAD PROJECT

Morrison Maierle/CSSA
Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

Compressive Strength of Cylindrical
Concrete Specimens
AASHTO Designation: T22

Road Sector:	SECTOR-2	Date	06/02/93
Section:	ALABEL- MALAPATAN	Station	
Tested by:	RPB/WPL	Date Tested:	05/29/93
Sampled by:	RBD/VSF	Noted by:	VSF

Design Strength:	3000 PSI 28 Days	Cement Factor:	9.0 BAGS/m3
Type of Cement:	T-UNION DAVAO	Measured Slump:	4"
Mix Number:		Air Content:	%
Truck Number:		Weather:	FAIR
Ticket Number:		Air Temperature:	
Time out of Plant:	AM PM	Mix Temperature:	
Time arrived on site:	AM PM	Batch Size:	4.0m3 MINIMUM
Time of sampling:	AM PM	Number of Samples:	3-CYLINDERS
Time in mixer:	min		

* Water added on site: _____ Gal * BT- Before Test _____ AT-After Test _____

Test Cylinder Designation	Date Cast	Sample Dia. in.	Sample Height in.	Age Test Days	Weight lbs	Fracture Type	Total Load lbs	Compressive Strength PSI	Theoretical Strength
BC-15B	05-01-93	6	12	28	29.10	CS	13820	4700	3000
BC-15C	05-01-93	6	12	28	28.93	S	12722.55	4500	3000
				γW= 147.8 PCF				4600	3000
NOTHING FOLLOWS									

MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 06-02-93/JUN-93-QDC
SIGN.

PASSED

Area of Placement: STA 17+874 – 17+881.3 (LOT RCBC)

Structure: RCBC – TOP SLAB & 1/3 HT. OF BARREL WALLS (TOP)

Remarks: AGG. SOURCE: BUAYAN RIVER (AGR)
MIX PROPORTION 1:2:3

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TRN	
REPORT NO.	

PROJECT : SECTOR 2 ALABEL-MALAPATAN-GLAN ROAD

CLIENT : MKC

SPEC RQMT.	550	PSI	3.79	MPa
AGGREGATE SIZE (in.)	1 1/2"	CEMENT TYPE	I	

REMARKS/NOTES

SLUMP: 2"

FLEXURAL STRENGTH OF CONCRETE BEAM ASTM C-78
(THIRD POINT LOADING)

	TEST BEAM DESIGNATION	DEPTH D	WIDTH B	SPAN Length L	DATE SAMPLED	AGE	FLEXURAL STRENGTH LOAD (LB)	FLEXURAL STRENGTH MOR (PSI)	REMARKS
1	PCCP SAMPLE 01	6"	6"	18"	31 AUGUST 1993	14	6500	542	
2	TAKEN @	6"	6"	18"	31 AUGUST 1993	14	7000	583	
3	STA. 5+450					AVE		563	
4					NOTHING	FOLLOWS		PASSED	
5									
6									
7								NOTED BY:	
8					CHECKED BY				
9						C.C. FAPUM		R.B. CABUNG	
10						SR. MAT'LS ENGR.		MK QAC ENGR	
11									
12									
13									

LABORATORY : ☐ MAIN ☑ SITE

LOCATION: ALABEL

TESTED BY: ESG DATE: 14 SEPT. '93

WITNESSED BY: CCF

MOR = MODULUS OF RUPTURE

$MOR = \frac{PL}{BD^2}$ Sec. 7.1

$MOR = \frac{3Pa}{BD^2}$ Sec. 7.2

☑ SAMPLES PREPARED BY LABORATORY

☐ SAMPLES PREPARED BY OTHERS

CHECKED & NOTED BY:

PHILIPPINE GEOANALYTICS
CIVIL ENGINEERING LABORATORY

Conversion
1 Kn = 101.97 Kg
1 MPa = 145 PSI
1 Kg = 2.2 lbs
Area 6" Cyl. = 28.27 in² = 182.415 cm²

PHILIPPINE GEOANALYTICS • SOUTH LUZON • BATU. MUNTINLUPA
LOG BOOK ENTRY NO.
JOB 0565
DATED:

424

Morrison Maierle/CSSA

Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

Flexural Strength of Concrete
(Using Simple Beam with Third-Point Loading)
AASHTO Designation: T97

Road Sector: SECTOR-2
Section: ALABEL - MALAPATAN
Tested by: RPB/RBD
Sampled by: RBD/RPB
Date: 12/23/93
Station:
Date Tested: 9/14/93
Noted by: YSF

Design Strength: 550 PSI 14 Days
Type of Cement: I-UNION DAVAO
Mix Number:
Truck Number:
Ticket Number:
Time out of Plant: AM PM
Time arrived at site: AM PM
Time of sampling: AM PM
Time in mixer min

Cement Factor: 9.0 b/m3
Measured Slump: 2 1/4"
Air Content: 6.0 %
Weather: FAIR
Air Temperature:
Mix Temperature:
Batch Size: 4.0 M3 MAX
Number of Samples: 1-SET

* Water added on site: Gal * BT- Before Test AT-After Test

Test Beam Desination	Date Cast	Sample Depth in.	Sample Width in.	Span Length in.	Age Test Days	Flexural Strength lbs	Modulus of Rupture PSI	Theoretical Strength
PC - 3A	8-31-93	6"	6"	18"	14	7630	636	550
PC - 3B	8-31-93	6"	6"	18"	14	7000	583	550
						AVE =	610	550

NOTHING FOLLOWS

PASSED

MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 12-23-93 / MM-93-031F
SIGN.

Area of Placement: STA. 5+483 - 5+100 (FULL WIDTH)
Structure: PCCP

Remarks: SAMPLES WERE TAKEN FR. STA. 5+400 RS

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Sector 2
Mix Designs

CEMENT CONCRETE MIX DESIGN

The Portland Cement Concrete Paving Mix Design is base on the absolute volume method as outlined in the American Concrete Institute (ACI) Standard 211.1-91 "Standard Practice for Selecting Proportions For Normal, Heavyweight, and Mass Concrete".

OK. IN ACCORDANCE WITH ITEM 311.2.11 DPWH, PROPORTIONING, CONSISTENCY AND STRENGTH OF CONCRETE.

I. PROCEDURE

1.1 Choice of Slump

In accordance with FCM No. 200, the desired slump is 3 in. maximum.

1.2 Choice of Maximum Size of Aggregate

The locally available source, from the Maribulan River has been tested and complies with the project specifications. Grading "C" from the DPWH Specification has been selected for use and is being furnished in two separate sizes from No. 4 to 3/4 in. and from 3/4 in. to 1 1/2 in. Average blending calculations indicate a 70% - 1 1/2 in to 30% - 3/4 in. optimum grading with 1 in. nominal maximum aggregate size.

1.3 Estimate of Mixing Water

The appropriate amount of mixing water to produce 3" max slump in non-air-entrained concrete with 1 in. aggregate is found from table 6.3.3 to be 300 lbs./yd^3. Estimated entrapped air is shown as 1.5 percent.

1.4 Selection of Water-Cement Ratio

In accordance with DPWH Standard Specification, Part E, Item 311.2.11. The cement content will be 9 bags/M^3 based on 40 kg. per bag of cement. As indicated in No. 3 above, the mixing water is 300 lbs/yd^3. Therefore:

$$W/C = 300\text{lbs}/605.5 \text{ lbs.} = .50$$

1.5 Calculation of Cement Content

From information derived in step 4 above the cement is found to be

$$9 \text{ bags/m}^3 = 360\text{kg/m}^3 = 606 \text{ lbs./yd}^3.$$

1.6 Estimation of Coarse Aggregate

The quantity of coarse aggregate is estimated from table 6.3.6 (ACI 211.1). For a fine aggregate having a fineness modules of 2.8 and a 1 in. nominal maximum size of coarse aggregate, the table indicates that 0.67 ft.^{3} of coarse aggregate on a dry-rodded basis, may be used

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MORRISON KNUDSEN CORPORATION

ALC

Date: 16 JUNE 1993

DESIGN SUBMITTAL FOR PORTLAND CEMENT CONCRETE

PROJECT : SECTOR 2 ALABEL-MALAPATAN ROAD

CONCRETE CLASS-A
TRIAL MIX-01
9 BAG/m3

DESIGN CRITERIA

Strength	3000 PSI	
Min. Cement Content	360	Kg/CM
Max. Nominal Agg. Size	37.5	mm
Max. Water-Cement Ratio	0.48	
Slump Range	50-100	mm
Cement Type	OPC-1	
Method of Placement	CHUTE/TREMIE	

PROPORTIONS OF MIX

	Kg/CM
Cement	360
Water	173
Coarse Agg.	1136
Sand	665
Admixture	ml/Kg Cement

PHILIPPINE GEOANALYTICAL SOUTH COTABATO HIGHWAYS DIST. JOB NO. 0512

CURRENT TEST RESULTS

Mean Compressive Strength

28-day	3245 PSI
7-day	2210 PSI
3-day	—
Standard deviation	—
Slump	75 mm
Air Content	1.2 %

SOURCE OF MATERIALS

Cement	UNION CEMENT, DAVAO
Water	POTABLE WATER, ALABEL
Coarse Agg.	LUN MASLA RIVER
Sand	LUN MASLA RIVER
Admixture	—

Combined Aggregate Gradation

Sieve Size	75 mm	38.1 mm	19 mm	9.5 mm	4.75 mm	2.36 mm	1.18 mm	0.60 mm	0.30 mm	0.15 mm	7 micr
% Passing by washing	—	100	66	43	39	33	25	17	7	2	1.5

Abrasion Loss 26 % Clay and Friable Particles 0.77 %

AMBIENT TEMP : 88 °F
CONCRETE TEMP : 89 °F
YIELD : 146.08 PCF

Prepared by: C.C. PARUM
SR. INGLS/MAT'LS. EN

PHILIPPINE GEOANALYTICAL

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Total solid volume of ingredients except fine aggregate	$=19.90\ ft^3$
Solid volume of fine aggregate required	$=27-19.90=7.11\ ft^3$
Required weight of dry aggregate	$=7.11(2.578)(62.4)=1143$ lbs.

Batch weights per yd^3 of concrete calculated on the bases are compared as follows:

	Based on Estimated Concrete Weight, lb.	Based on Absolute Volume of Ingredients, lb.
Water, Net mixing	300	300
Cement	606	606
Coarse Aggregate, dry	1840	1840
Fine Aggregate, dry	1264	1143

* Proportions calculated by any method must always be considered subject to revision on the basis of experience with trial batches.

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in each ft.^{3} of concrete. For each yd^3, therefore, the coarse aggregate will be:

$$(27)\ (0.67) = 18.09\ \text{Ft.}^3.$$

Since it weighs 101.7 lbs./ft^3 the dry weight of coarse aggregate is 1840 lbs.

1.7 Estimation of Fine Aggregate Content

The required fine aggregate may be determined on the basis of either weight or absolute volume as shown:

A: Weight Basis.

From table 6.3.7.1 the weight of a yd^3 of non-air-entrained concrete made with aggregates having a nominal maximum size of 1 in. is estimated to be 4010 lbs. Weights already known are:

Water, net mixing	300 lbs
Cement	606 lbs.
Coarse Aggregate	1840 lbs.
Total	2746 lbs.

The weight of fine aggregate, therefore, is estimated to be:

$$4010\text{-}2746 = 1264\ \text{lbs.}$$

B: Absolute Volume Basis.

With the quantities of cement, water and coarse aggregate established, and the approximate entrapped air content taken from table 6.3.3 the fine aggregate content can be calculated as follows:

Volume of water	=	300/62.4	= 4.81 ft^3
Solid Volume of Cement	=	606/3.15 (62.4)	= 3.08 ft^3
Solid Volume of 1 1/2" Coarse Aggregate at 70% of total	=	1288/2.549(62.4)	= 8.10 ft^3
Solid Volume of 3/4" Coarse Aggregate at 30% of total	=	552/2.528(62.4)	= 3.50 ft^3
Volume of entrapped air	=	.015 x 27	= 0.405 ft^3

BEST AVAILABLE DOCUMENT

PHILIPPINE GEOANALYTICS	COMPUTER PRINTOUT ☐ DETAILS PREPARED ☐	SHEET
PROJECT: SOUTH COTABATO HIGHWAYS	JOB NO:	CROSS REFERENCE:
SUBJECT: SECTOR 2 ALABEL-MALAPATAN-GLAN ROAD	TESTED BY:	CHECKED BY:
BITUMINOUS HOT-MIX SURFACE COURSE	DATE TESTED:	DATE FINISHED:

PHILIPPINE GEOANALYTICS JOB NO. 0531 SOUTH COTABATO HIGHWAYS

	TOLERANCE
BITUMINOUS MATERIALS (ASPHALT CEMENT)	± 0.4 %
TEMPERATURE OF HOT-MIX	± 30 °F
MAXIMUM TEMPERATURE	320 °F
MINIMUM TEMPERATURE PRIOR TO DUMPING INTO THE SPREADER	225 °F

IV. ASPHALTIC CONCRETE HOT-MIX BATCH WEIGHTS

@ % VOIDS 3-5 = 4.0 % AC @ 6.10 %

TOTAL MASS PER BATCH - 1000 KGS.

ASPHALT CEMENT (6.10 % x 1000) - 61 KGS.

AGGREGATES :

40 % OF 939.0 (3/4" CA)	-	375.60	37.56
55 % OF 939.0 (1/2" FA)	-	516.45	51.64
5 % OF 939.0 (FMF)	-	46.95	4.70
ASPHALT CEMENT	-	61.00	6.10
TOTAL	-	1000.0 KGS/BATCH	100 %

1 KN = 101.321 kgf
1 KPa = 20.885 psf
1 MPa = 145 PSI

BEST AVAILABLE DOCUMENT

GEOANALYTICS

PROJECT: SOUTH COTABATO HIGHWAYS	COMPUTER PRINTOUT ☐ DETAILS PREPARED ☐	SHEET ____ OF ____
SUBJECT: SECTOR 2 MABEL-MALAPATAN-GLAN ROAD	JOB NO:	CROSS REFERENCE:
BITUMINOUS HOT-MIX SURFACE COURSE	TESTED BY:	CHECKED BY:
	DATE TESTED:	DATE FINISHED:

PHILIPPINE GEOANALYTICS
JOB NO. 0537
SOUTH COTABATO HIGHWAYS

V SUMMARY OF TEST RESULTS
(MARSHALL METHOD)

	DESIGN CRITERIA	SPECIFICATIO
a) UNIT WEIGHT, PCF	141.3	–
b) STABILITY, LBS.	2450	1800 MI
c) AIR VOIDS (TOTAL MIX), %	3.5	3-5
d) VOIDS FILLED w/ BITUMEN, %	79.0	75-85
e) FLOW, mm	12.6	8-14
f) ASPHALT CONTENT, % (OPTIMUM)	6.10	5.70-6

PREPARED BY: E.S. GARCIA, LAB./MAT'LS. ENGR.

CHECKED BY: C.C. FARUM, SR. MAT'LS. ENGR.

NOTED BY: R.B. CAB, MR CGC

1 kN = 101.971 kgf
1 kPa = 20.885 PSF
1 MPa = 145 PSI

BEST AVAILABLE DOCUMENT

ARCHER KNUDSEN CORPORATION

ALC

Date: 03 JULY 1993

DESIGN SUBMITTAL FOR PORTLAND CEMENT CONCRETE

TM-01 PCCP

PROJECT: SECTOR 2 ALABEL-MALAPATAN ROAD

@ 9 bag /m³

DESIGN CRITERIA

Strength	550 PSI
Min. Cement Content	360 Kg/CM
Max. Nominal Agg. Size	38 mm
Max. Water-Cement Ratio	0.50
Slump Range	25-75 mm
Cement Type	OPC-1
Method of Placement	CHUTE/TREMIE

PROPORTIONS OF MIX

		Kg / CM
Cement		360
Water		178
Coarse Agg.	1½"	766
	¾"	328
Sand (DRY)		680
Admixture		– ml / Kg Cement

PHILIPPINE GEOANALYTICS & TEST LABS. SOUTH COTABATO HIGHWAYS DIST. PG 108 0509

CURRENT TEST RESULTS

Mean FLEXURAL Strength	
14 - day	IN-PROGRESS
7 - day	517 PSI
3 - day	
Standard deviation	–
Slump	75 mm
Air Content	1.4 %

NOTE: SPECS FOR 14 DAYS 550 PSI

ITEM 311.2.11 DPWH SPECS.

SOURCE OF MATERIALS

Cement	UNION CEMENT, DAVAO
Water	POTABLE WATER, ALABEL
Coarse Agg.	MARIBULAN RIVER, ALABEL
Sand	MARIBULAN RIVER ALABEL
Admixture	–

Combined Aggregate Gradation

Sieve Size	75 mm	38.1 mm	19 mm	9.5 mm	4.75 mm	2.36 mm	1.18 mm	0.60 mm	0.30 mm	0.15 mm	75 micron
% Passing by washing	–	100	61	46	40	33	24	17	7	1	0.3

Abrasion Loss 21 %

Clay and Friable Particles – %

AMBIENT TEMP: 86 °F

CONCRETE TEMP: 85 °F

YIELD: 145.6 PCF

Prepared by: C.C. [illegible]

SR. SOILS/MATLS. ENGR.

PHILIPPINE GEOANALYTICS

BEST AVAILABLE DOCUMENT

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PHILIPPINE GEOANALYTICS

PROJECT: SOUTH COTABATO HIGHWAYS	COMPUTER PRINTOUT ☐ DETAILS PREPARED ☐	SHEET ____ OF ____
SUBJECT: SECTOR 2 ALABEL-MALAPATAN-GLAN ROAD	JOB NO:	CROSS REFERENCE.
BITUMINOUS HOT-MIX SURFACE COURSE	TESTED BY:	CHECKED BY:
	DATE TESTED:	DATE FINISHED:

JOB MIX FORMULA FOR BITUMINOUS HOT-MIX SURFACE COURSE

I. SOURCES OF MATERIALS:

3/4" MAXIMUM SIZE CRUSHED AGGREGATES - LUN MASLA

1/2" MAXIMUM SIZE CRUSHED AGGREGATES - LUN MASLA

ASPHALT CEMENT / PENETRATION GRADE 60/70 - TAIWAN

II. AGGREGATES BLENDING PROPORTION

3/4" COARSE AGGREGATES - 40 %

1/2" FINE AGGREGATES - 55 %

MINERAL FILLER - 5 %

III. JOB MIX FORMULA, SPECIFICATIONS and TOLERANCES:

SIEVE SIZE NO.	J.M.F.	SPEC'S GRADING "C"	SPEC'S GRADING "F"	TOLERANCE
1"	–	–	–	–
3/4"	100	95-100	100	–
1/2"	89	68-86	–	±7
3/8"	69	56-78	–	±7
#4	46	38-60	45-65	±7
#8	33	27-47	33-58	±4
#16	24	18-37	–	±4
#30	18	13-28	–	±4
#50	12	9-20	10-20	±4
#200	5	4-8	3-8	±2

1 KN = 101.971 Kgf
1 KPa = 20.885 PSF
1 MPa = 145 PSI

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Sector 3
Field Tests

BEST AVAILABLE DOCUMENT

BEST AVAILABLE DOCUMENT

PHILIPPINE
GEOANALYTICS
NUCLEAR DENSITY TESTING FORM

TRN NO.

MOISTURE STANDARD (MS) = 613

DENSITY STANDARD (DS) = 2754

USING TROXLER W/SER # 20357

JOB NO. 0198

DATE: 10 July '92

Station	Depth Tested In	Lift No.	Wet Density PCF	Dry Density PCF	% Moisture	Lab. Stand Proctor, PCF	Optimum Moisture Content (Lab)	% Compaction	Remarks
				- EMBANKMENT -					
			FDT ON RIGHT SIDE LANE 1ST LAYER SUBJECT						
				FOR THE SECOND LAYER FILL					
37+850	6	1ST LAYER EMBANKMENT	118.6	110.3	7.5	114.8	LIME MAT'LS IN PLACE	96.1	@ 1m FR. e/p @ RS
37+887			117.5	111.2	5.7		-do-	96.9	@ RS LINE OF ROADWAY
37+925			121.3	113.5	7.1		-do-	98.7	1.5 m FR. ℄ @ RS
37+962			110.9	104.6	6.1		-do-	91.1/NEEDS RETEST	@ RS LINE OF ROADWAY
38+000	-do-	-do-	114.4	107.6	6.4	-do-	-do-	93.7/NEEDS RETEST	@ RS LINE OF ROADWAY
				NOTHING FOLLOWS					

TESTED BY: A.V. ZAGUIRRE

CHECKED & NOTED BY: C.C. [illegible] JR. MATLS. ENGR.

DATE TESTED: 10 July '92

ROGER TUMAMAC
MC CRC

LOG BOOK ENTRY NO.

PHILIPPINE GEOANALYTICS

BEST AVAILABLE DOCUMENT

PHILIPPINE GEOANALYTICS — GEN. SANTOS ROAD PROJECT — JOB NO. 0314

NUCLEAR DENSITY TESTING FORM

SUB-GRADE LEVEL: FDT STARTS @ STA. 76+025 & ENDS @ STA. 77+375

MOISTURE STANDARD (MS) = 621

DENSITY STANDARD (DS) = 2759

DATE : NOVEMBER 18, 1992

USING TROXLER W/ CONTROL # 20357

Test No.	Station	Depth Tested In	Lift No.	Wet Density PCF	Dry Density PCF	% Moisture	Lab. Stand Proctor, PCF	Optimum Moisture Content (Lab)	Required % Compaction	% Compaction
1	76+025 ℄	6"	SUB-GRADE	138.7	130.1	6.6	133.5		95.0	97.4
2	76+062 LS		LEVEL	139.4	130.2	7.1				97.5
3	76+100 ℄			138.6	129.7	6.9	-do-			97.2
4	76+137 RS			130.3	119.7	9.8	121.3			97.8
5	76+175 ℄			130.7	118.7	10.1				97.8
6	76+212 LS			131.1	119.3	9.9				98.4
7	76+250 ℄			131.8	118.4	11.3				97.6
8	76+287 RS			134.9	120.0	12.4	-do-			99.9
9	76+325 ℄			140.0	130.1	7.6	134.5			96.7
10	76+362 LS			139.4	130.6	6.7	-do-			97.1
11	76+400 ℄			114.9	96.2	19.4	98.0			98.2
12	76+437 RS			128.5	113.7	14.0	116.2			97.0
13	76+475 ℄			142.0	131.4	8.1	134.5			97.7
14	76+512 LS			139.3	130.9	6.4				97.3
15	76+550 ℄			138.0	130.4	5.8				97.0
16	76+587 RS			140.0	131.3	6.6				97.6
17	76+625 ℄			139.9	131.1	6.7				97.5
18	76+662 LS	-do-	-do-	139.4	131.0	6.4	-do-		-do-	97.4

TESTED BY : O.B. GAROA

DATE TESTED : NOV. 17, 1992

R.O. TUMAMAC
HK C&C REP.

CHECKED & NOTED BY : C.C. FORTIN / SR. MAT'LS. ENGR.

Z.B. CABLING / HK C&C ENGR.

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MORRISON MAIERLE/CSSA

Materials Testing Laboratory
Compaction Test
Using Density Gauge

Road Sector: SECTOR - 3
Section: 4
Tested by: RBD / V&F
Checked by: V&F

Date: 01/18/93
Station:
Date Tested: 01/13/93

Type of Material: SUBGRADE
Model: 5001P
Standard Counts (DS): 3412
Standard Counts (MS): 516.1

Source: HUMBOLDT
Serial Number: 1952

Location/Station OFFSET fr. LS	ROAD 92+394.7 6.6M	ROAD 92+626.0 4.1M	DRIVEWAY 92+976.0 5.5	DRIVEWAY 93+222.4 6.3M		
Lab No.	SG-386	SG-387	SG-388	SG-389		
Depth tested (in)	6	6	6	6		
Lift						
Thickness						
Counts DC	1604	1615	1595	1620		
Counts MC	112.4	110.9	111.9	111.2		
Count Average						
Wet Density (WD)	145.1	143.9	147.0	142.7		
% Moisture	6.684	6.448	6.549	6.540		
Dry Density (DD)	136.0	135.2	138.0	133.9		
Proctor Density	139.9	139.9	139.9	139.9		
Optimum Moisture						
% Compaction	97.21	96.64	98.64	95.71		
Required	95	95	95	95		
Remarks	PASSED	PASSED	PASSED	PASSED		

MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 01-18-93 / MM-93-322NGT
SIGN: [illegible]

Area Covered: STA. 92+200 - 94+000
SUBGRADE

BEST AVAILABLE DOCUMENT

PHILIPPINE
GEOANALYTICS

BEST AVAILABLE DOCUMENT

PHILIPPINE GEOANALYTICS
No. 21 Scout de Guia near Former Scout Rizal, Quezon City
Unit Phone: 97-27-12 / 68-21-02
Easy Call # 0G-Prin code # 23536
Cellular Phone No.: 301-2524
JOB NO.
GEN. SANTOS ROAD PROJECT

NUCLEAR DENSITY TESTING FORM

EXISTING GROUND SUBJECT FOR FILL : EDT STARTS @ STA. 81+825 &
ENDS @ STA. 81+975;
STARTS @ STA. 82+075 &
ENDS @ STA. 82+150

MOISTURE STANDARD (MS) = 619

DENSITY STANDARD (DS) = 2770

DATE: OCTOBER 28, 1992

USING TROXLER W/ SERIAL # 20357

Test No.	Station	Depth Tested, In	Lift No.	Wet Density PCF	Dry Density PCF	% Moisture	Lab. Stand Proctor, PCF	Optimum Moisture Content (Lab)	Required % Compaction	% Compaction
1	81+825 ℄	6"	EXISTING	140.4	133.3	5.3	135.4	5.2	95.0	98.4
2	81+862 LS		GROUND	139.3	133.7	4.2				98.7
3	81+800 ℄			139.2	133.0	4.7				98.2
4	81+937 RS			139.4	132.6	5.1				97.9
5	81+075 ℄			130.9	134.1	4.3				99.0
6	82+075 ℄			140.2	132.0	6.2				97.5
7	82+112 RS			139.3	133.4	4.4				98.5
8	82+150 ℄	-do-	-do-	141.4	134.7	5.0	-do-	-do-	-do-	99.5
				NOTHING FOLLOWS						

TESTED BY : C.B. Garcia

DATE TESTED : Oct. 27, 1992

R. O. TUMAMAC
MK CQC REP.

CHECKED & NOTED BY : C.C. FARIAS / SR. MAT'LS. ENGR.
R.B. CABLING / MK. CQC ENGR.

Sheet 1 of 4

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Morrison Maierle/CSSA
Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

Compaction Test
Using Density Gauge

Road Sector: SECTOR-3 | Date: 09/21/92
Section: 3A | Station:
Tested by: RBD | Date Tested: 09/14/92
Checked by: VSF

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 09-21-92 / MM-92-1R1NGT
SIGN.

Type of Material: SUBGRADE / EMBANKMENT | Source: HUMBOLDT
Model: 5001P | Serial Number: 950
Standard Counts (DS): 3431
Standard Counts (MS): 510.0

OPTIONAL

Location/Station	ROADWAY 49+213.4 5.0m OFFSET fr. LS	ROADWAY 49+318.9 6.0 m OFFSET fr. LS	ROADWAY 49+655.9 1.1 m OFFSET fr. LS	SHOULDER 49+674.0 RS	SHOULDER 49+668 RS
Lab no.	SG-235	SG-236	SG-237	EF-052	EF-053
Depth tested (in.)	6	6	6	8	8
Lift	—	—	—	BELOW SUBGRADE LEVEL	
Thickness	—	—	—		
Counts DC	1465	1580	1886	1358	1258
Counts MC	126.3	136.3	114.3		
Count average	—	—	—	—	
Wet density (WD)	150.3	147.0	139.3	136.7	139.6
% Moisture	7.596	8.580	7.236	7.879	8.304
Dry Density (DD)	139.7	135.4	129.9	126.7	128.8
Proctor Density	139.2	139.2	128.7	128.7	128.7
Optimum Moisture			9.2	9.2	9.2
% Compaction	100.4	97.27	100.9	98.45	100.1
Required	95	95	95	95	95
Remarks	PASSED	PASSED	PASSED	PASSED	PASSED

AREA COVERED: STA. 48+975.0 - STA 49+700

BEST AVAILABLE DOCUMENT

MORRISON MAIERLE/CSSA

Materials Testing Laboratory
Compaction Test
Using Density Gauge

Road Sector: SECTOR - 3
Section: 4
Tested by: RPB/WPL
Checked by: VSF

Date: 01/18/93
Station:
Date Tested: 01/09/93

Type of Material: EXISTING GROUND
Model: 5001P
Standard Counts (DS): 3416
Standard Counts (MS): 509.8

Source: HUMBOLDT
Serial Number: 950

Location/Station OFFSET Ar. LS	ROADWAY 97+700 1.2m	97+975 3.35m	98+425 1.7m	98+775 4.7m		
Lab No.	SG-382	SG-383	SG-384	SG-385		
Depth tested (in)	6	6	6	6		
Lift	FINAL				MM/CSSA MATERIALS TESTING LABORATORY	DATE: 01-21-93 SIGN.
Thickness						
Counts DC	1628	1603	1548	1628		
Counts MC	132.8	139.5	101.8	104.0		
Count Average						
Wet Density (WD)	145.5	143.7	147.8	145.6		
% Moisture	8.394	9.063	5.834	6.102		
Dry Density (DD)	134.2	131.8	139.7	137.3		
Proctor Density	139.9	138.3	139.9	139.9		
Optimum Moisture						
% Compaction	95.93	95.29	99.86	98.14		
Required	95	95	95	95		
Remarks	PASSED	PASSED	PASSED	PASSED		

Area Covered: STA 97 + 400 - 98 + 800
EXISTING GROUND

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Morrison Maierle/CS...

Materials Testing Laboratory

SOUTH COTABATO ROAD PROJECT

Compaction Test
Using Density Gauge

Road Sector: SECTOR - 3
Section: MAKAR - MAASIM
Tested by: RBD/RPB/VOF
Checked by: VOF

Date: 04-28-92
Station:
Date Tested: 04-27-92

Type of Material: SUBBASE
Model: 5001P
Standard Counts (DS): 3337
Standard Counts (MS): 518.5

Source:
Serial Number: 952

Location/Station	ROADWAY 14+902.8 1.1 fr. OUTER EDGE LS	ROADWAY 15+025.3 6.0 m fr. OUTER EDGE LS	ROADWAY 15+841.2 1.60 m fr. OUTER EDGE LS		
Lab no.	SB - 099	SB - 100	SB - 101		
Depth tested (in.)	6	6	6		
Lift	—	—	—		
Thickness	—	—	—		
Counts DC	1627	1689	1779		
Counts MC	89.31	85.75	83.25		
Count average	—	—	—		
Wet density (WD)	144.6	143.0	140.7		
% Moisture	4.853	4.637	4.522		
Dry Density (DD)	137.9	136.7	134.7		
Proctor Density	135.4	135.4	135.4		
Optimum Moisture	—	—	—		
% Compaction	101.8	100.9	100.0		
Required	100	100	100		
Remarks	PASSED	PASSED	PASSED		

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 04-26-92/MM-92-054NGT
SIGN:

STATION COVERED Fr. STA 14+351.02 - 16+150

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PHILIPPINE
GEOANALYTICS
NUCLEAR DENSITY TESTING FORM

TRN NO.

PHILIPPINE GEOANALYTICS CEN. SANTO ROAD PROJECT JOB NO. 0157

MOISTURE STANDARD (MS) = 605

DENSITY STANDARD (DS) = 2788

USING TROXLER W/SER # 70357

DATE: 23 May '92

Station	Depth Tested In	Lift No.	Wet Density PCF	Dry Density PCF	% Moisture	Lab. Stand Proctor, PCF	Optimum Moisture Content (Lab)	% Compaction	Remarks
		–		FDT ON SUBBASE					
–	6	–	139.2	134.3	3.6	135.4	–	99.2	@ LS
20+350		–	149.0	141.7	5.2		–	104.6	@ ℄
–		–	142.1	136.6	4.1		–	100.9	@ RS
20+425		–	140.8	135.0	4.3		–	100.0	@ ℄
–		–	140.2	135.0	4.5		–	99.5	@ LS
20+500		–	142.1	135.5	4.8		–	100.1	@ ℄
–		–	141.9	135.9	4.4		–	100.4	@ RS
20+575		–	143.3	137.5	4.2		–	101.6	@ ℄
–		–	140.6	136.1	3.4		–	100.5	@ LS
20+650	–do–	–	143.1	137.2	4.3	–do–	–	101.4	@ ℄
				– NOTHING	FOLLOWS –				

TESTED BY: A.V. ZAGUIRRE

DATE TESTED: 23 May '92

ROGER TUMAMAC
ME CQC REP.

CHECKED & NOTED BY: C.O. [illegible] / SR. MAT'LS ENGR.

(3)

LOG BOOK ENTRY NO.

447

MORRISON MAIERLE/CSSA

Materials Testing Laboratory
Compaction Test
Using Density Gauge

Road Sector: SECTOR - 3
Section: 4
Tested by: RBD
Checked by: VSF

Date: 02/01/93
Station:
Date Tested: 01/26/93

Type of Material: BASECOURSE FINAL LIFT
Model: 5001P
Standard Counts (DS): 3409
Standard Counts (MS): 519.3

Source: HUMBOLDT
Serial Number: 952

ROADWAY

Location/Station	92+733.3	92+892.6	93+255.9	93+401.7
OFFSET Fr. LS	4.8m	5.0m	4.0m	2.2m
Lab No.	BC-619	BC-620	BC-621	BC-622
Depth tested (in)	4	4	4	4
Lift	F	I	N	A	L
Thickness				
Counts DC	2172	2159	2157	2160
Counts MC	115.0	115.4	116.7	121.0
Count Average				
Wet Density (WD)	146.3	147.1	147.9	147.0
% Moisture	6.725	6.789	6.824	7.214
Dry Density (DD)	137.1	137.7	138.5	137.1
Proctor Density	137.3	137.3	137.3	137.3
Optimum Moisture				
% Compaction	99.85	100.3	100.9	99.86
Required	100	100	100	100
Remarks	PASSED	PASSED	PASSED	PASSED

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 02-03-93/MM-93-350NGT
SIGN: [illegible]

Area Covered: STA. 92 + 475 - 93 + 575

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PHILIPPINE
GEOANALYTICS

BEST AVAILABLE DOCUMENT

PHILIPPINE GEOANALYTICS
JOB NO. 0321
GEN. SANTOS ROAD PROJECT

No. 21 Scout de Guzman
Comm. Scout Reyes, Quezon City
Tel Nos.: 97-27-12 / 53-21-62
E-Mail # 665-1111 code # 23533
Cellular Phone No.: 301-3524

NUCLEAR DENSITY TESTING FORM

MOISTURE STANDARD (MS) = 645

DENSITY STANDARD (DS) = 2860

DATE : 28 NOVEMBER 1992

USING TROXLER SR # 20356

Test No.	Station	Depth Tested In	Lift No.	Wet Density PCF	Dry Density PCF	% Moisture	Lab. Stand Proctor, PCF	Optimum Moisture Content (Lab)	Required % Compaction	% Compaction	
				STATION COVERED		STA. 73+537 – STA. 73+987					
1	73+537	4	BASECOURSE	148.1	141.2	4.9	139.9	7.0	100	100.9	RS
2	73+575	"	FINAL LIFT	148.9	140.4	6.0	"	"	"	100.3	C
3	73+612	"	"	149.5	141.4	5.7	"	"	"	101.1	LS
4	73+650	"	"	148.7	140.6	5.8	"	"	"	100.5	C
5	73+687	"	"	151.7	141.7	7.0	"	"	"	101.3	RS
6	73+725	"	"	147.7	140.0	5.5	"	"	"	100.1	C
7	73+762	"	"	150.3	140.3	7.1	"	"	"	100.3	LS
8	73+800	"	"	149.6	140.4	6.6	"	"	"	100.3	C
9	73+837	"	"	150.2	140.4	7.0	"	"	"	100.4	RS
10	73+875	"	"	148.2	139.9	6.0	"	"	"	100.0	C
11	73+912	"	"	148.2	140.3	5.6	"	"	"	100.3	LS
12	73+950	"	"	148.6	140.9	5.5	"	"	"	100.7	C
13	73+987	"	"	149.9	140.4	6.8	"	"	"	100.3	RS
				—	NOTHING	FOLLOWS	—				

TESTED BY : S.Y. JORDAN / MAT'L TECH. ROMY PAUSAL MK CQC REP.

DATE TESTED : 27 NOVEMBER 1992

CHECKED & NOTED BY : C.C. FLORIM / SR. MAT'L. ENGR.

: R.B. CABLING / MR. CQC ENGR.

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BEST AVAILABLE DOCUMENT

PHILIPPINE
GEOANALYTICS

PHIL. GEOANALYTICS SOUTH COTABATO HIGHWAYS PROJECT NO. 6396

FDT ON SHOULDER START AT STA. 90+725 L.S
AND END AT STA. 93+200 LS

NUCLEAR DENSITY TESTING FORM

SECTION 3 KIAMBA - MAITUM ROAD

MOISTURE STANDARD (MS) = 540

DENSITY STANDARD (DS) = 3291

DATE: FEB. 27, 1993

HUMBOLDT W/ SERIAL #952

Test No.	Station	Depth Tested In	Lift No.	Wet Density PCF	Dry Density PCF	% Moisture	Lab. Stand Proctor, PCF	Optimum Moisture Content (Lab)	Required % Compaction	% Compaction	
1	90+725	4"	SHLD'R	141.2	130.8	7.9	137.3	—	95	95.5	LS
2	—		FINAL	140.5	130.7	7.5		—		85.2	LS
3	90+800		LIFT	141.9	132.7	6.9		—		96.6	LS
4	—			141.7	132.1	7.3		—		96.1	LS
5	90+875			141.4	132.1	6.9		—		96.3	LS
6	—			140.6	130.9	7.4		—		95.3	LS
7	90+950			142.9	133.3	7.2		—		97.1	LS
8	—			142.2	133.2	6.7		—		97.0	LS
9	91+025			1435	133.0	7.8		—		96.8	LS
10	—			141.7	131.0	8.1		—		85.4	LS
11	91+100			141.3	131.7	7.3		—		85.9	LS
12	—			142.8	132.9	7.4		—		96.8	LS
13	91+175			141.4	131.8	7.3		—		95.9	LS
14	—			141.9	132.3	7.3		—		96.3	LS
15	91+250			142.2	132.1	7.6		—		96.2	LS
16	—			142.6	132.5	7.6		—		96.5	LS
	91+325		KANSAN BRIDGE DECK SLAB								
	—										

TESTED BY: A.C. SAGO / MAT'LS TECH.

DATE TESTED: 022693

R. PAUSAL
MK. ENG. REP.

CHECKED & NOTED BY: C.C. PARLIN / SR. MAT'LS ENG'R

1.8

MORRISON MAIERLE/CSSA

Materials Testing Laboratory
Compaction Test
Using Density Gauge

Road Sector: SECTOR - 3
Section: 4
Tested by: RBD / VSF
Checked by: VSF

Date 02/01/03
Station.
Date Tested 01/28/03

Type of Material BASECOURSE 1ST LIFT
Model 5001P
Standard Counts (DS) 3418
Standard Counts (MS) 516.3

Source HUMBOLDT
Serial Number 952

R O A D W A Y

Location/Station	98+072.7	98+616.8	98+711.6			
OFFSET fr. LS	2.0 m	0.5 m	6.7 m			
Lab No.	BC-637	BC-638	BC-639			
Depth tested (in)	4	4	4			
Lift	1ST	1ST	1ST			
Thickness						
Counts DC	2156	2152	2152			
Counts MC	121.3	122.4	130.4			
Count Average						
Wet Density (WD)	147.2	148.5	148.5			
% Moisture	7.944	7.375	7.924			
Dry Density (DD)	137.3	138.3	137.6			
Proctor Density	137.3	137.3	137.3			
Optimum Moisture						
% Compaction	100.0	100.7	100.2			
Required	100	100	100			
Remarks	PASSED	PASSED	PASSED			

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 02-01-03 / MM-93-356NGT
SIGN.

Area Covered: STA. 98+000 - 98+933.8

BEST AVAILABLE DOCUMENT

PHILIPPINE
GEOANALYTICS

TRN	

SAMPLE # 1 A.M.

PROJECT: MAPAP - MAASIM - KIAMPA ROAD

DATE OF PAVING: 7-3-92

SAMPLE: BITUMINOUS HOT MIX SURFACE COURSE

DATE: 7-3-92

STA. COORDINATES: STA. 4+985 L.S - STA. 23+165 L.S

SUMMARY OF TEST RESULTS - BITUMINOUS PAVING MIXTURES

NAME OF TEST	TEST RESULTS		SPECIFICATION (Job Mix Formula)	REMARKS TOLERANCE
1. SIEVE ANALYSIS	HOT BIN	EXTRACTION		
1"				
3/4"		101	100	
1/2"		88	86	±7
3/8"		77	73	±7
#4		56	52	±7
#8		44	41	±4
#16		35	37	±4
#30		24	27	±4
#50		13	18	±4
#100				
#200		3	5	±2
2. ASPHALT CONTENT, % TOTAL MIX		5.52	5.61	±0.4
3. % VOIDS FILLED WITH ASPHALT		78.7	76.2	75-85
4. % AIR VOIDS		3.44	4.0	3-5
5. AVERAGE STABILITY, LBS		2885	2720	1800 MIN.
6. FLOW, 1 over 100"		11.67	12.2	8-14
7. BULK SPECIFIC GRAVITY		2.326	—	—
8. MAX. THEORETICAL SP. GRAVITY		2.409	—	—

PHILIPPINE GEOANALYTICS • R.A. SANTOS ROAD PROJECT • JOB NO. 0193

Tested by: M.B. Paso / MAT'LS ENGR.

Checked by: C.C. Tapay / SR. MATL ENGR.

NOTED BY: R.D. Upling. M/C QAC REP.

LOG BOOK ENTRY NO.	

FORM AP-3700

BEST AVAILABLE DOCUMENT

Morrison Maierle/CSSA

Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

Summary of Test Results
Bituminous Paving Mixtures

Road Sector: 3
Section: 2
Date:
Station: 15+058 – 15+094

Contractor: MKC
Aphalt Producer: MKC
Sample ID: AC-16-3
Source of Agg : Siguil

NAME OF TEST	TEST RESULTS		SPECIFICATION (Job Mix Formula)	REMARKS TOLERANCE
1. Sieve Analysis	Hot Bin	Extraction		
1"				
3/4"		100	100	±7
1/2"		89	86	±7
3/8"		79	73	±7
#4		61	52	±7
#8		48	44	±4
#16		38	37	±4
#30		26	27	±4
#50		14	18	±4
#100		6		
#200		3	5	±4
2. Asphalt content, % total mix		5.188	5.61	±0.4
3. % Voids filled with asphalt		68.084	76.2	
4. % Air voids		5.012	4	3-5
5. Average stability, lbs		3425	2720	1800 min.
6. Flow, 1/100"		13	12	8-14
7. Bulk specific gravity		2.312		
8. Max theoretical sp. gravity		2.434		

MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 6-5-92

Remarks: DATE OF PAVING : 6-3-92
AREA PAVED : STA 14+800 – 16+226 LS

BEST AVAILABLE DOCUMENT

Morrison Maierle/CSSA
Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

DETERMINATION OF THICKNESS AND DEGREE OF PAVEMENT COMPACTION OF BITUMINOUS AGGREGATE MIXTURES

AASHTO Designation: T275-89

Road Sector	3	Date	
Section	4	Station	
Tested by	RPB	Date Tested	2-27-93
Sampled by	RBD / VSF	Date Sampled	2-26-93
Checked by	VSF		

MM/CSSA MATERIALS
~~TESTING LABORATORY~~
DATE: 2 MAR 1993
SIGN.

Contractor	MKC	
Asphalt Producer	MKC	
Mix number		Sample No.

1.	Core Sample I.D.	16	18	21		Ave.
2.	Thickness, mm.	59	58	70		62
3.	Core Location	83+623 LS	83+876 LS	84+165 LS		
	Distance from left or right edge, m	0.3	2.5	2.4		
4.	Wt. of Sample in Air, g	1156.0	1132.6	1386.0		
5.	Wt. of Sample in Air coated with paraffin, g	1164.1	1143.4	1400.9		
6.	Wt of Sample in Water coated with paraffin, g	670.9	655.8	812.8		
7.	Specific Gravity of paraffin	0.896	0.896	0.896		
8.	Bulk Specific Gravity (4)/[(5)-(6)]-[(5)-(4)/(7)]	2.388	2.382	2.425		2.398
9.	Standard Specimen Bulk Specific Gravity, (LAB)	2.406	2.406	2.406		
10.	Degree of Compaction, (8)/(9)x100, %	99.25	99.00	100.79		99.68

Remarks: STRATIFIED RANDOM SAMPLING
STD BULK S.G. value was taken from CQC lab reports

Date Paved: 2-19-93
Area Paved: 83+577 - 84+170 (LEFT SIDE)
84+165 - 84+278 (RIGHT SIDE)

BEST AVAILABLE DOCUMENT

PHILIPPINE
GEOANALYTICS

DETERMINATION OF THICKNESS AND DEGREE OF PAVEMENT COMPACTION OF BITUMINOUS AGGREGATE MIXTURES (ASTM DESIGNATION D1188-83)

PHIL. GEOANALYTICS SOUTH COTABATO HIGHWAYS PG NO. 0343

PROJECT: SOUTH COTABATO HIGHWAYS

SEC-3 KIAMBA - MAITUM ROAD

DATE OF PAVING: JAN. 18, 1993 DATE OF CORING: JAN. 20, 1993

1. CORE SAMPLE I.D.	C-1	C-2	C-3		Ave.
2. Thickness, (mm)	68	62	61		64
3. Core Location (STATION) STRATIFIED	88+429.6 LEFT SIDE	88+735.4 LEFT SIDE	88+939.1/2 LEFT SIDE		
4. Wt. of Sample in Air, gr.	1228.1	1122.1	1097.6		
5. Wt. of Sample in Air coated with paraffin	1245.4	1138.2	1114.5		
6. Wt. of Sample in Water coated with paraffin	697.0	689.1	623.9		
7. Specific Gravity of paraffin	0.87	0.87	0.87		
8. Bulk Specific Gravity of Sample $= \frac{(4)}{[(5)-(6)]-[\frac{(5)-(4)}{(7)}]}$	145.0	145.7	145.4		145.4
9. Standard Specimen Bulk Specific Gravity, (Lab)	151.0	151.0	151.0		151.0
10. Degree of Compaction $= \frac{(8)}{(9)} \times 100, \%$	96.03	96.49	96.29		96.3

TESTED BY: M.C. RAYO / MAT'LS ENGR. Date JAN. 21, 1993

CHECKED & NOTED BY: C.C. FARUIA / SR. MAT'LS. ENGR. Date JAN. 21, 1993

R.B. CABLING / MK CQC ENGR.

BEST AVAILABLE DOCUMENT

BEST AVAILABLE DOCUMENT

PROJECT : MAK-KHAMRA-MATTUM ROADS SECTION 3, 20-CGT. HIGHWAYS

CLIENT : NKC/ HEPCO

REPORT NO.	39 A-

CONCRETE GRADE	4000	PSI	27.6	MPa
AGGREGATE SIZE (in.)	3/4"	CEMENT TYPE	1	

REMARKS/NOTES

SLUMP: 2"

COMPRESSIVE STRENGTH OF CONCRETE CYLINDERS ASTM C-39

	TEST CYLINDER DESIGNATION	WT.	DIA.	Length	DATE SAMPLED	AGE	COMPRESSIVE STRENGTH LOAD (LB)	COMPRESSIVE STRENGTH STRENGTH (PSI)	FRACTURE TYPE	THEORETICAL 28 DAYS STRENGTH
1	RC PIPE CULVERT	148	6"	12"	23/4/93	28	129800	459	C	
2	3 PCS 48"Ø				NOTHING FOLLOWS					
3	LOCATED @ CH 23/600									
4										
5										
6										
7										
8										
9										
10										
11										
12					CHECKED BY				NOTED/EXP.	
13					L.C. FARUK				RECEIVED	
					SR MATLC ENGR				NKC QC LAB	

LABORATORY : ☐ MAIN ☑ SITE

LOCATION : LUNGOI, KIERAN

TESTED BY: [illegible] DATE: 20-4-93

WITNESSED BY: CLE

☑ SAMPLES PREPARED BY LABORATORY

☐ SAMPLES PREPARED BY OTHERS

FRACTURE TYPE

- C - CONICAL
- S - SHEAR
- CS - CONE & SHEAR
- CP - CONE & SPLIT
- [illegible] - CONCAVE

LOG BOOK ENTRY NO.

DATE

GEOANALYTICS

CIVIL ENGINEERING LABORATORY

BEST AVAILABLE DOCUMENT

PROJECT : GC/MAK-MAASIM-KUNGA ROADS SECTOR-3, SOUTH COTABATO HIGHWAYS

CLIENT : MORRISON KNUDSEN CORP

REPORT NO.	39 A-

CONCRETE GRADE	4000	PSI	27.6	MPa
AGGREGATE SIZE (in.)	3/4"	CEMENT TYPE	1	

REMARKS/NOTES: SLUMP: 3"

COMPRESSIVE STRENGTH OF CONCRETE CYLINDERS ASTM C-39

	TEST CYLINDER DESIGNATION	WT.	DIA.	Length	DATE SAMPLED	AGE	COMPRESSIVE STRENGTH LOAD (LB)	COMPRESSIVE STRENGTH STRENGTH (psi)	FRACTURE TYPE	THEORETICAL 28 DAYS STRENGTH
1	R.C. PIPE & GR. POST	148	6"	12"	08 JUN 92	28	123640	4369	S	4369
2	SIGUIL FABRICATION	147	6	12	—do—	28	125840	4447	S	4447
3						AVE:		4408		4408
4					NOTHING FOLLOWS					
5										
6										
7										
8										
9					CHECKED BY:				ATTED BY:	
10					C.C. FORUM				RB DOBLING	
11					SR MATLS ENGR				CMK CSC ENGR	
12										
13										

LABORATORY : ☐ MAIN ☑ SITE

LOCATION : SIGUIL MAASIM

TESTED BY: DATE: 01 JUL 92

WITNESSED BY: C.C. FORUM

☑ SAMPLES PREPARED BY LABORATORY

☐ SAMPLES PREPARED BY OTHERS

FRACTURE TYPE

- ☒ C - CONICAL
- ☒ S - SHEAR
- ☒ CS - CONE & SHEAR
- ☒ CP - CONE & SPLIT
- ☒ CL - COLUMNAR

PHILIPPINE GEOANALYTICS REGISTERED LOG BOOK ENTRY NO. 0190 DATED:

PHILIPPINE GEOANALYTICS
CIVIL ENGINEERING LABORATORY

Conversion
1 KN = 101.97 Kg
1 MPa = 145 PSI
1 Kg = 2.2 lbs
Area 6" Cyl. = 28.27 in² = 182.415 cm²

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Morrison Maierle/CSSA
Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

Compressive Strength of Cylindrical
Concrete Specimens
AASHTO Designation: T22

Road Sector: SECTOR-3
Section:
Tested by: RPB
Sampled by: RBD

Date: 20 APRIL 92
Station:
Date Tested: 20 APRIL 92
Noted by: VSF

Design Strength: 4000 PSI 32 Days
Type of Cement: UNION DAVAO / TYPE-1
Mix Number:
Truck Number:
Ticket Number:
Time out of Plant: AM PM
Time arrived on site: AM PM
Time of sampling: AM PM
Time in mixer: min

Cement Factor: 11.0 b/m3
Measured Slump: 2 in
Air Content: %
Weather: FAIR
Air Temperature:
Mix Temperature:
Batch Size:
Number of Samples: 3 SAMPLES

* Water added on site: Gal * BT- Before Test AT-After Test

Test Cylinder Designation	Date Cast	Sample Dia. in.	Sample Height in.	Age Test Days	Weight lbs	Fracture Type	Total Load lbs	Compressive Strength PSI	Theoretical Strength
RCP-05B	03-19-92	6"	12"	32	29.51	CS	137400	4860	4350
RCP-05C	03-19-92	6"	12"	32	29.04	CS	136200	4820	4350
						AVERAGE =		4840	
	←		NOTHING FOLLOWS = 149.1PCF						→

MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 04-27-92 / MM-92-021C
SIGN:

PASSED

Area of Placement: SIGUIL CASTING SITE

Structure: RCPC – 1PC – 48"φ, 4PCS – 36"φ, 4PCS – 24"φ

Remarks:

BEST AVAILABLE DOCUMENT

Morrison Maierle/CSSA
Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

Compressive Strength of Cylindrical
Concrete Specimens
AASHTO Designation: T22

Road Sector: SECTOR - 3
Section: 4
Tested by: RBD / VSF
Sampled by: RBD

Date: 02/26/93
Station:
Date Tested: 02/25/93
Noted by: VSF

Design Strength: 4000 PSI 28 Days
Type of Cement: T-UNION DAVAO
Mix Number:
Truck Number:
Ticket Number:
Time out of Plant: AM PM
Time arrived on site: AM PM
Time of sampling: AM PM
Time in mixer: min

Cement Factor: 9.0 BAGS/m3
Measured Slump: 3
Air Content:
Weather: FAIR
Air Temperature:
Mix Temperature:
Batch Size: ONE - BAGG
Number of Samples: 3-CYLINDE

* Water added on site: Gal * BT- Before Test AT-After Test

Test Cylinder Designation	Date: Cast	Sample Dia. in.	Sample Height in.	Age Test Days	Weight lbs	Fracture Type	Total Load lbs	Compressive Strength PSI	Theo Str
RCP - 11B	01-28-93	6	12	28	28.60	CP	135130	4780	400
- 11C	do	do	do	do	28.57	CS	135413	4790	400
					γw= 145.7 PCF		AVE:	4785	40
NOTHING FOLLOWS									

MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 02-26-93 / MM-93-068C
SIGN.

PASSED

Area of Placement: SECTION - 4 OF SECTOR - 3

Structure: 3pcs - 24" ϕ

Remarks: CASTED @ KIAMBA CASTING YARD

BEST AVAILABLE DOCUMENT

Morrison Maierle/CSSA
Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

Compressive Strength of Cylindrical
Concrete Specimens
AASHTO Designation: T22

Road Sector: SECTOR-3
Date: 01/13/93
Section:
Station:
Tested by: RPB
Date Tested: 01/13/93
Sampled by: RRD
Noted by: VSF

Design Strength: 3000 PSI 28 Days
Cement Factor: 9.0 BAGS/m³
Type of Cement: I-UNION DAVAO
Measured Slump: 2" in
Mix Number:
Air Content: %
Truck Number:
Weather: FAIR
Ticket Number:
Air Temperature:
Time out of Plant: AM PM
Mix Temperature:
Time arrived on site: AM PM
Batch Size: 2-BAGGER TYPE
Time of sampling: AM PM
Number of Samples: 3-CYLINDERS
Time in mixer: min

* Water added on site: Gal * BT- Before Test AT-After Test

Test Cylinder Designation	Date Cast	Sample Dia. in.	Sample Height in.	Age Test Days	Weight lbs	Fracture Type	Total Load lbs	Compressive Strength PSI	Theoretical Strength
BC-13B	12-16-92	6	12	28	29.15	S	84245	2980	3000
BC-13C	12-16-92	6	12	28	30.08	S	85065	3010	3000
				YW = 150.9PCF			AVE:	2995	3000
			NOTHING FOLLOWS					≈ 3,000	

MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 01-19-93/MM-92-064C
SIGN.

PASSED

Area of Placement: STA. 87+705 LEFT SIDE (HALF PORTION)

Structure: RCBC - SIDEWALLS

Remarks: MIX PROPORTION BY PART 1:2:3

BEST AVAILABLE DOCUMENT

PROJECT : NAK-NAASIM-KIAMBA-MATILIM RDS ~~SECTOR~~ - 3, SO. COT. HIGHWAYS

BEST AVAILABLE DOCUMENT

CLIENT : MKC/HEERCO

REPORT NO. 39 A-

CONCRETE GRADE	3000	PSI	20.7	MPa
AGGREGATE SIZE (in.)	3/4"	CEMENT TYPE	I	

REMARKS/NOTES

SLUMP: 3"

COMPRESSIVE STRENGTH OF CONCRETE CYLINDERS ASTM C-39

	TEST CYLINDER DESIGNATION	WT. PCF	DIA.	Length	DATE SAMPLED	AGE	COMPRESSIVE STRENGTH LOAD (LB)	COMPRESSIVE STRENGTH STRENGTH (PSI)	FRACTURE TYPE	THEORETICAL 28 DAYS STRENGTH
1	STA 87+705 ½ RCBC	148	6"	12"	18 DEC 92	28	129800	4587	C	
2	TOPSLAB & HEADWALL	148	6	12	-do-	28	132440	4680	C	
3						AVE:		4634		
4					NOTHING FOLLOWS					
5										
6										
7										
8										
9										
10					CHECKED BY:			NOTED BY:		
11					C.C. FARUM			R B BELING		
12					SR WATTS ENGR			MKC ENGR		
13										

LABORATORY : ☐ MAIN ☑ SITE

LOCATION : LUMBOAN KIAMBA

TESTED BY: [signature] DATE: 5/6/93

WITNESSED BY: [signature]

☑ SAMPLES PREPARED BY LABORATORY

☐ SAMPLES PREPARED BY OTHERS

FRACTURE TYPE

- C - CONICAL
- S - SHEAR
- CS - CONE & SHEAR
- CP - CONE & SPLIT

PHILIPPINE GEOANALYTICS
CIVIL ENGINEERING LABORATORY

Conversion
1 KN = 101.97 Kg
1 MPa = 145 PSI
1 Kg = 2.2 lbs.

PHIL. GEOANALYTICS SOUTH COTABATO
LOG BOOK ENTRY NO. 0354

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Morrison Maierle/CSSA

Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

Flexural Strength of Concrete
(Using Simple Beam with Third-Point Loading)
AASHTO Designation: T97

Road Sector: SECTOR - 3
Section: 3B
Tested by: WPL / RBD
Sampled by: RBD / VSF

Date: 12/16/92
Station:
Date Tested: 12/01/93
Noted by: VSF

Design Strength: 550 PSI 14 Days
Type of Cement: I - UNION DAVAO
Mix Number:
Truck Number:
Ticket Number:
Time out of Plant: ____ AM ____ PM
Time arrived on site: ____ AM ____ PM
Time of sampling: ____ AM ____ PM
Time in mixer: ____ min

Cement Factor: 9.0 BAGS/M³
Measured Slump: 1 1/2 in
Air Content: ____ %
Weather: FAIR
Air Temperature:
Mix Temperature:
Batch Size: 4.0 M³ MINIMUM
Number of Samples: 3 - CONC. BEAMS

* Water added on site: ____ Gal * BT- Before Test ____ AT-After Test ____

Test Beam Designation	Date Cast	Sample Depth in.	Sample Width in.	Span Length in.	Age Test Days	Flexural Strength lbs	Modulus of Rupture PSI	Theoretical Strength
PC - 01B	11-17-92	6	6	24	14	7995	666	550
PC - 01C	11-17-92	6	6	24	14	7984	665	550
						AVE =	666 PSI	550
NOTHING FOLLOWS								

PASSED

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 12-16-92 / MM-92-001F
SIGN.

Area of Placement: STA 81+661.77 - 81+762.27 LEFT LANE
Structure: PCCP

Remarks: MIXING + TRANSPORTING CONC. USING TRANSIT MIXER

BEST AVAILABLE DOCUMENT

BEST AVAILABLE DOCUMENT

PROJ. : MAK-MAASIM-KIAMBA-MATUM RDS SECTOR-3, SO. COT. HIGHWAYS

CLIENT : MKC/LUMAYAG

TRN	
REPORT NO.	

SPEC RQMT.	550	PSI	3.8	MPa
AGGREGATE SIZE (in.)	1 1/2"	CEMENT TYPE	1	

REMARKS/NOTES: SLUMP: 2 1/2"

FLEXURAL STRENGTH OF CONCRETE BEAM ASTM C-78
(THIRD POINT LOADING)

	TEST BEAM DESIGNATION	DEPTH D	WIDTH B	SPAN Length L	DATE SAMPLED	AGE	FLEXURAL STRENGTH LOAD (LB)	FLEXURAL STRENGTH MOR (PSI)	REMARKS
1	P.C. PAVEMENT	6"	6"	18"	16 DEC 92	14	6700	558	
2	LIPENLING	6	6	18	—do—	14	6600	550	
3	STA 36+420 L/S					28E		554	
4	MAASIM TOWN PROPER				NOTHING FOLLOWS				
5									
6									
7									
8									
9									
10					CHECKED BY:			NOTED:	
11					EL. FARLIN			FOR: RECORDING	
12					GR. MATSUKER			MKC/CEIER	
13									

LABORATORY : ☐ MAIN ☑ SITE

LOCATION: LUMOCLI, KIAMBA

TESTED BY: [signature] DATE: 30 DEC 92

WITNESSED BY: [signature]

☑ SAMPLES PREPARED BY LABORATORY

☐ SAMPLES PREPARED BY OTHERS

MOR = MODULUS OF RUPTURE.

$MOR = \frac{PL}{BD^2}$ Sec. 7.1

$MOR = \frac{3Pa}{BD^2}$ Sec. 7.2

PHILIPPINE GEOANALYTICS

Conversion: 1 KN = 101.97 Kg; 1 MPa = 145 PSI

LOG BOOK ENTRY NO. 15

DATED: 0-27

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Morrison Maierle/CSS.

Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

Compressive Strength of Cylindrical
Concrete Specimens.
AASHTO Designation: T22

Road Sector: 3
Section:
Tested by: RPB / WPL
Sampled by: RPB / RBD
Date:
Station:
Date Tested: 1-11-94
Noted by: VSF

Design Strength: 3000 PSI 28 Days
Type of Cement: I - UNION DAVAO
Mix Number: LOAD No. 12
Truck Number:
Ticket Number:
Time out of Plant: AM PM
Time arrived on site: AM PM
Time of sampling: AM PM
Time in mixer: min

Cement Factor:
Measured Slump: 5 in
Air Content:
Weather:
Air Temperature:
Mix Temperature:
Batch Size:
Number of Samples: 6

* Water added on site: Gal * BT- Before Test AT-After Test

Test Cylinder Designation	Date Cast	Sample Dia. in.	Sample Height in.	Age Test Days	Weight lbs	Fracture Type	Total Load lbs	Compressive Strength PSI	Theoretical Strength
SUB-11B	12-14-93	6	12	28	29.28	S	109680	3879	3000
11C	12-14-93	6	12	28	28.86	S	108310	3831	3000
					γ_w = 148.1 pcf				
								AVE = 3855	
NOTHING FOLLOWS									

MM/CSSA MATERIALS
TESTING LABORATORY
DATE 1/11/94 MM-93-226
SIGN

PASSED

Area of Placement: SAUB BRIDGE SH 1

Structure: GIRDER / DIAPHRAGM SPAN No. 4 & 6 m of SPAN No. 3

Remarks:

orrison Maierle/CSSA
Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

Compressive Strength of Cylindrical
Concrete Specimens
AASHTO Designation: T22

Road Sector	SECTOR - 3	Date	07/06/92
Section:	MAKAR - MAASIM	Station	
Tested by:	RPB	Date Tested:	07/04/92
Sampled by:	RBD	Noted by:	VSF

Design Strength:	3000 PSI 28 Days	Cement Factor:	9.0 b/m³
Type of Cement:	I - UNION DAVAO	Measured Slump:	3
Mix Number:		Air Content:	
Truck Number:		Weather:	FAIR
Ticket Number:		Air Temperature:	
Time out of Plant:	AM PM	Mix Temperature:	
Time arrived on site:	AM PM	Batch Size:	
Time of sampling:	AM PM	Number of Samples:	3 - CYLINDERS
Time in mixer:	min		

* Water added on site: _____ Gal * BT- Before Test _____ AT-After Test _____

Test Cylinder Designation	Date Cast	Sample Dia. in.	Sample Height in.	Age Test Days	Weight lbs	Fracture Type	Total Load lbs	Compressive Strength PSI	Theoretical Strength
HW- 18B	06-06-92	6	12	28	28.87	CS	103751	3670	3000
-18C	06-06-92	6	12	28	28.89	CP	104280	3690	3000
				AVE. γ_w = 147.1 PCF			AVE:	3680	3000
NOTHING FOLLOWS									

MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 07-06-92/MM-92-031C
SIGN: [illegible]

PASSED

Area of Placement: STA. 42+241 RS

Structure: HEADWALL, WINGWALL, APRON SLAB, CUT-OF WAL

Remarks:

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Sector 4
Materials Tests

CEMENT CONCRETE MIX DESIGN

The Portland Cement Concrete Paving Mix Design is based on the absolute volume method as outlined in the American Concrete Institute (ACI) Standard 211.1-91 "Standard Practice for Selecting Proportions For Normal, Heavyweight, and Mass Concrete".

I. PROCEDURE

1.1 Choice of Slump

In accordance with FCM No. 200, the desired slump is 75 MM maximum.

1.2 Choice of Maximum Size of Aggregate

The locally available source, from the Matinao River has been tested and complies with the project specifications. * Grading "C" from the DPWH Specification has been selected for use and is being furnished in two separate sizes from No. 4 to 3/4 in. and from 3/4 in. to 1 1/2 in. Average blending calculations indicate a 70% - 1 1/2 in to 30% - 3/4 in. optimum grading with 1 in. nominal maximum aggregate size.

1.3 Estimate of Mixing Water

Based on our previous experience from PCCP production in Sector 2, with the addition of approved chemical additives the estimated mixing water to produce 3" slump is 144 kg/m^3. Estimated entrained air is 5.0%.

1.4 Selection of Water-Cement Ratio

In accordance with DPWH Standard Specification, Part E, Item 311.2.11. The cement content will be 9 bags/m^3 based on 40 kg. per bag of cement. As indicated in No. 3 above, the mixing water is 144 kg/m^3. Therefore:

$$W/C = 144 \text{ kg}/360 \text{ kg} = .40$$

1.5 Calculation of Cement Content

From information derived in step 4 above the cement is found to be

$$9 \text{ bags/m}^3 = 360 \text{kg/m}^3$$

1.6 Estimation of Coarse Aggregate

The quantity of coarse aggregate is estimated from table A1.5.3.6 (ACI 211.1). For a fine aggregate having a fineness modules of 2.4 and a 1 in. nominal maximum size of coarse aggregate, the table indicates that 0.71 m^3 of coarse aggregate on a dry-rodded basis, may be used in each cubic meter of concrete.

*The mass percent of wear for coarse aggregates from Matinao River has in some cases exceeded the DPWH Specified Maximum of 40%. However, when blended at 80% Matinao - 20% Maribulan the percent wear is in conformance. See attached abrasion test.

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The coarse aggregate has a dry rodded mass of 1507 kg/m^3. The required dry mass is, therefore, (0.71) (1507) = 1070 kg.

1.7 Estimation of Fine Aggregate Content

The required fine aggregate may be determined on the basis of either weight or absolute volume as shown:

A: Weight Basis

From table A1.5.3.7.1 the mass of a m^3 of air-entrained concrete made with aggregates having a nominal maximum size of 25 mm is estimated to be 2290 kg. Masses already known are:

Water, (net mixing)	144 kg
Cement	360 kg
Coarse Aggregate	1070 kg
Total	1574 kg

The mass of fine aggregate, therefore, is estimated to be:

2290-1574 = 716 kg

B: Absolute Volume Basis.

With the quantities of cement, water and coarse aggregate established the fine aggregate content can be calculated as follows:

Volume of water	=	144/1000	= .144 m^3
Solid Volume of Cement	=	360/3.15(1000)	= .114 m^3
Solid Volume of Coarse Aggregate	=	1070/2.52(1000)	= .425 M^3
Volume of Entrained air	=	0.05 x 1.000	=0.050 m^3
Total Solid Volume of Ingredients except fine aggregates	=	.733 m^3	
Solid volume of fine aggregate required	=	1-.733 = .267	
Required weight of dry fine aggregate	=	0.267(2.60)(1000)	= 694 kg.

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Batch masses per m^3 of concrete calculated on the bases are compared as follows:

	Based on Estimated Concrete Weight, kg.	Based on Absolute Volume of Ingredients, kg.
Water, Net Mixing	144	144
Cement	360	360
Coarse Aggregate, dry	1070	1070
Fine Aggregate, dry	716	694

* Proportions calculated by any method must always be considered subject to revision on the basis of experience with trial batches.

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b:ecwmix

PHILIPPINE
GEOANALYTICS

PHILIPPINE GEOANALYTICS • SOUTH COTABATO HIGHWAYS PROJECT • PG JOB NO. 0603

Resistance to Abrasion of Small Coarse Aggregate by
Use of the Los Angeles Machine
AASHTO Designation: T96

Road Sector: SEC. 4 POLOMOLOK - LANDAN RD.
Section:
Kind of Material: BLENDED AGGREGATES - 80% MATINAO & 20% MARIBULAN (1½" MAX.)
Sampled by: C.C. FARUM
Tested by: A. ZAGUIRRE
Supervised by: -

Date: 28 OCT. '93
Station:
Source: MATINAO & MARIBULAN MIXED
Date Sampled: 26 OCT. '93
Date Tested: 27 OCT. '93

80% MATINAO - 20% MARIBULAN BLEND

GRADING OF TEST SAMPLES

Sieve Size				Mass of Indicated Sizes, grams Grading				Actual Mass, grams
Passing		Retained		A	B	C	D	
mm 37.50	inch 1½"	mm 25.0	inch 1"	1250±25				1250
25.00	1"	19.0	3/4"	1250±25				1250
19.00	3/4"	12.5	1/2"	1250±10	2500±10			1250
12.50	1/2"	9.5	3/8"	1250±10	2500±10			1250
9.50	3/8"	6.3	1/4"			2500±10		
6.30	1/4"	4.75	No. 4			2500±10		
4.75	No. 4	2.36	No. 8				5000±10	
TOTAL				5000±10	5000±10	5000±10	5000±10	5000 g.

Grading	Number of Spheres	Mass of Charge, grams	Actual Mass, grams
A	12	5000±25	5006 grams
B	11	4584±25	
C	8	3330±25	
D	6	2500±15	

Weight of Sample Before Test, A: 5000 grams
Weight of Sample After Test (Retained on No. 12 Sieve), B: 3060 grams

Abrasion Loss (Percentage of Wear) = $\frac{A-B}{A} \times 100$ = 38.80 %

Spec's Max. Loss. = 40 %

CONFORMS

Remarks: PASSED

TESTED & REPORTED BY
A. ZAGUIRRE/MAT'LS. TECH.
CHECKED BY:
C.C. FARUM/SR. MAT'LS. ENGR.
NOTED BY:
R.B. CABLING/MK CRC ENGR.

BEST AVAILABLE DOCUMENT

PHILIPPINE
GEOANALYTICS
CIVIL ENGINEERING LABORATORY

No. 21 Scout de Guia near
corner Scout Reyes, Quezon City
Tel. Nos. : 97-27-12 & 98-21-62
Easy Call # 869-1111 Code # 2363
Cellular Phone No. : 301-3524

TO MORRISON KNUDSEN CORPORATION

DATE 22 OCTOBER 1993

PROJECT SECTOR 4 POLOMOLOK - LANDAN ROAD

SAMPLE SOURCE MATINAO RIVER DATE SAMPLED

SAMPLE DESIGNATION COMBINED AGGREGATE (1½"-70% & ¾"-30%)

REPORT OF TESTS ON COARSE AGGREGATES FOR CONCRETE
(ASTM C - 33)

A. SIEVE ANALYSIS	AVERAGE SAMPLE	TABLE 311.2 GRADING "C" SPEC.
Sieve Size 2"	100	95-100
1-1/2"	99.1	-
1"	51.5	35-70
3/4"	-	-
1/2"	22.7	10-30
3/8"	-	-
No. 4	2.6	0-5
No. 8		
No. 16		
No. 30		
No. 50		
No. 100		
B. Materials Finer than No. 200 Sieve	-	1 max
C. Abrasion Loss (ASTM C - 131)		40 max
D. Soundness Test (ASTM C - 88)		12 max
E. Clay Lumps & Friable Particles (ASTM C- 142)	-	
F. Specific Gravity (ASTM C 127)		
Bulk Sp. Gravity (Dry)	2.448	
Bulk Sp. Gravity (SSD)	2.517	
Apparent Sp. Gravity	2.643	
Absorption, %	3.116	
G. Unit Weights (ASTM C - 29)		
Dry Loose Unit Weight, g/cc	1.415	
Dry Rodded Unit Weight, g/cc	1.531	

TESTED BY : E.M. JOCILLO

REPORTED BY : C.C. PALUD / VR. MATLS. ENGR.

REMARKS : BLENDING COMBINATION 1½"-70% & ¾"-30%

PHILIPPINE GEOA... COTABATO

LOG BOOK ENTRY NO. JOB NO. 0602

From sample submitted to Laboratory by client.

From field sample obtained independently by Philippine Geoanalytics

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GEOANALYTICS
CIVIL ENGINEERING LABORATORY
SOUTH COTABATO ROAD PROJECT

BEST AVAILABLE DOCUMENT

E-1-4

Resistance to Abrasion of Small Coarse Aggregate by
Use of the Los Angeles Machine
AASHTO Designation: T96

SAMPLE - 1

d Sector	SECTOR 4 POLOMOLOK - LANDAN ROAD	Date	
tion:		Station	
d of Material:		Source	MATINAD RIVER UPSTREAM
npled by:	MK / MM / GED	Date Sampled:	10 MARCH '93
ted by:	RFE / GED / RPB / MM	Date Tested:	11 MARCH '93
ervised by:	VSF / CCF		

GRADING OF TEST SAMPLES

Sieve Size				Mass of Indicated Sizes, grams Grading				Actual Mass, grams
Passing		Retained		A	B	C	D	A
mm	inch	mm	inch					
7.50	1½"	25.0	1"	1250±25				1251.8
5.00	1"	19.0	3/4"	1250±25				1252.7
9.00	3/4"	12.5	1/2"	1250±10	2500±10			1253.3
2.50	1/2"	9.5	3/8"	1250±10	2500±10			1251.6
9.50	3/8"	6.3	1/4"			2500±10		
6.30	1/4"	4.75	No. 4			2500±10		
4.75	No. 4	2.36	No. 8				5000±10	
TOTAL				5000±10	5000±10	5000±10	5000±10	5009.4

Grading	Number of Spheres	Mass of Charge, grams	Actual Mass, grams
A	12	5000±25	
B	11	4584±25	
C	8	3330±25	
D	6	2500±15	

PHIL. GEOANALYTICS SOUTH COTABATO HIGHWAY PROJECT
PG
PHO. 0907

-ight of Sample Before Test, A: 5009.4 grams
ight of Sample After Test (Retained on No. 12 Sieve), B: 3282.8 grams

asion Loss (Percentage of Wear) = $\frac{A-B}{A} \times 100 = 0.3447 \times 100 = 34.47\%$

Spec's Max. Loss : _____ % CONFORMS

arks: 2.5 KMS OF WINDING ROAD FROM THE NATIONAL HIGHWAY

CHECKED BY: C.O. FRANCO
SR. MATERIALS ENGR.

NOTED BY:

472

PHILIPPINE
GEOANALYTICS
CIVIL ENGINEERING LABORATORY

No. 21 Scout de Guia near
corner Scout Reyes, Quezon City
Tel. Nos. : 97-27-12 & 98-21-62
Easy Call # 869-1111 Code # 23638
Cellular Phone No. : 301-3524

TO MORRISON KNUDSEN CORPORATION

DATE 06 JULY 1993

PROJECT SECTOR 4 ALADEL- MALAPATAN ROAD

SAMPLE SOURCE MARIBULAN RIVER DATE SAMPLED

REPORT OF TESTS ON FINE AGGREGATES FOR CONCRETE (ASTM C - 33)

A. SIEVE ANALYSIS	AVERAGE SAMPLE	DPWH - TABLE 311.1 SPEC.
Sieve Size 3/8	—	100
No. 4	100	95 - 100
No. 8	85	-
No. 16	63	45 - 80
No. 30	43	-
No. 50	19	5 - 30
NO. 100	3	0 - 10
B. Materials Finer than No. 200 Sieve	0.5	3 max
C. Fineness Modulus	2.8	
D. Soundness Tests (ASTM C-88)	9.03	10 max.
E. Sp. Gravity & Absorption (ASTM C-128)		
Bulk Sp. Gravity (Dry)	2.578	
Bulk Sp. Gravity (SSD)	2.650	
Apparent Sp. Gravity	2.778	
Absorption, %	2.790	
F. Sand Equivalent	—	
G. Unit Weights (ASTM C-29)		
Dry Loose Unit Weight, g/cc	1.62	
Dry Rodded Unit Weight, g/cc	1.732	
I. Organic Impurities (ASTM C-40)	NO ORGANIC IMPURITIES CONTENT	

PHILIPPINE GEOANALYTICS SOUTH COTABATO HIGHWAYS PROJECT JOB NO. 0504

TESTED BY : R.F. ESCAMAN / MAT'LS. ENGR.

REPORTED BY : C.C. MARUM / SR. MAT'LS. ENGR.

REMARKS :

( ) From sample submitted to Laboratory by client.

(✓) From field sample obtained independently by Philippine Geoanalytics

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LOG BOOK ENTRY NO.

473

MORRISON KNUDSEN CORPORATION
SOUTH COTABATO HIGHWAYS PROJECT
MINDANAO DEVELOPMENT PROGRAM

UNIT 10 & 12, ECA BUILDING
NATIONAL HIGHWAY
GENERAL SANTOS CITY
SOUTH COTABATO
P.O. BOX 221

March 10, 1994

MK/GSP-0428

Mr. Alejandro Sundermann
MDP Project Manager, USAID
Morrison Maierle / CSSA
Babb and Associates
Maduramente Building
General Santos City

Subject: USAID CONTRACT NO: 492-0420-C-00-1140-00
South Cotabato Highways Project
Mindanao Development Program
-Monthly Progress Report No. 31
Month of February 1994 -

Dear Sir:

Pursuant to Clause C-2-F-4 of our Contract, "Description of Construction Services to be Performed", we are herewith transmitting, the Monthly Progress Report for February, 1994.

Yours very truly,

W. C. Beatty

WILLIAM C. BEATTY
Project Director

File: 11.1.2

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Rec'd Lany Liaroff
MAR 1 0 1994

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PROJECT: SOUTH COTABATO HIGHWAYS
SECTION 4 POLO MOLOR – LANDAN ROAD

MATERIAL : # 4 FINE AGGREGATES (FOR PCCP)
SOURCE : MARIBULAN RIVER (SECTOR 2)

PHILIPPINE GEOANALYTICS
JOB NO. 0602
SOUTH COTABATO HIGHWAYS PROJECT

AVERAGE GRADATION FROM DAILY PRODUCTION

	DATE SAMPLED	07-08	07-09	07-10	07-13	07-19	07-21	07-28	07-30	07-31	08-02	08-04	08-05		
SIEVE SIZE														AVERAGE	SPEC'S
#4		100	100	100	100	100	100	100	98	100	100	100	100	99.8	95-100
#8		87	88	88	89	91	87	79	82	90	89	80	84	86.2	
#16		65	71	69	68	65	69	56	58	74	65	53	59	64.3	45-80
#30		44	53	48	45	42	43	40	39	56	42	32	38	43.5	
#50		16	25	20	21	19	21	22	18	31	17	11	15	19.7	5-30
#100		3	4	4	5	6	3	4	5	8	2	2	3	4.1	0-10
#200		1.27	1.71	1.37	1.84	2	1	0.5	1	0.51	0.2	0.1	0.3	1.0	3 MAX

CONFORMS

PREPARED BY:
E. S. GARCIA / LAB. ENGR.

CHECKED BY:
C. C. ATHUR / JR. MAT'LS. ENGR.

NOTED BY:
A. A. CABING / MR CQC ENGR.

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Sector 4
Mix Designs

GRACE

CONSTRUCTION PRODUCTS

DAREX AEA

AIR ENTRAINING ADMIXTURE FOR CONCRETE

ASTM C 260

DAREX CONCRETE ADMIXTURES

DESCRIPTION:

DAREX AEA is an aqueous solution of highly purified and modified salts of a sulfonated hydrocarbon. It contains a catalyst which promotes more rapid and complete hydration of portland cement. DAREX AEA is specifically formulated for use as an air entraining admixture for concrete and is manufactured under rigid control which insures uniform, predictable performance.

PHYSICAL FORM:

DAREX AEA is a brown liquid, of low viscosity, which flows as freely as water. It has a specific gravity of 1.03 and one litre of the admixture weighs 1.03 kgs. DAREX AEA is completely mixable with water, but is supplied ready to use and does not require premixing with water or corrosive chemicals.

USES:

DAREX AEA is used in ready-mix, block, and concrete products plants. It is also used as a gauge water addition on the job at batching plants, job-site mixers, highway pavers ... wherever concrete is mixed.

Because DAREX AEA plasticizes or "fattens" the mix, it is particularly effective with slag, light-weight, or manufactured aggregates which tend to produce harsh concrete. It also makes possible the use of natural sand deficient in fines.

AIR ENTRAINING ACTION:

Entrainment of air is accomplished by the development of a semimicroscopic bubble system — introduced into the mix by agitation and stabilized and entrained by DAREX AEA — in the mortar phase of the concrete.

Workability is Improved. Millions of tiny air bubbles entrained with DAREX AEA act as flexible ball bearings, lubricating and plasticizing the concrete mix. This permits a substantial reduction in mixing water with no loss in slump. Placeability is actually improved. Bleeding, green shrinkage and segregation are minimized.

Durability is Increased. DAREX AEA concrete is extremely durable, particularly when subjected to freezing and thawing in the presence of water and saline solution. It has demonstrated a remarkable ability to resist the action of frost and deicing salts, as well as sulfate, sea and alkaline waters.

CATALYTIC ACTION:

DAREX AEA contains a catalyst which promotes more rapid and thorough hydration and so makes available more of the inherent strength of portland cement. This results in greater strengths in lean mixes and minimum strength losses in rich mixes.

COMPATIBILITY WITH OTHER ADMIXTURES:

DAREX AEA is compatible with all known water-reducing retarders, particularly with WRDA and DARATARD, manufactured by W. R. Grace. Combining the separate effects of air entrainment with dispersion will reduce the water requirement of concrete up to 15% — producing proportional increases in strength and outstanding improvement in durability. DAREX AEA is also compatible with mixes containing calcium chloride. Each admixture should be added separately to the mix.

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PROJECT	:	South Cotabato Highways
LOCATION	:	General Santos City
SAMPLE	:	Portland Cement, Type I
BRAND	:	Union, OPC-1
SAMPLE	:	Davao
DATE SAMPLED	:	04 September 1993
SAMPLED AT	:	Alabel-MK Batch Plant
SAMPLED BY	:	D. Cuison
REFERENCE	:	ASTM C150, Type I
DATE	:	October 20, 1993

CERTIFICATION

This is to certify that Physical and Chemical Analysis of the above sample as received had been tested at Cement Central Laboratory of the Philippine Cement Manufacturers Corporation, as covered by Laboratory Reference No. C-9098-0993, in accordance with the above reference.

The results of tests are as summarized below:

Requirements	ASTM C150, Type I	Test Results
I. Physical Analysis:		
1. Blaine Air Permeability Test		
Specific Surface, m^2/kg.	280 min.	327
2. Autoclave Expansion, %	0.80 max.	0.05
3. Compressive Strength, psi		
3 days	1800 min.	2500
7 days	2800 min.	3540
28 days	4000 min.	4880
4. Time of Setting, Gillmore:		
Initial set, minutes	60 min.	134
Final set, minutes	600 max.	264
II. Chemical Analysis:		
1. Silicon dioxide (SiO_2),%	-	21.6
2. Aluminum Oxide (Al_2O_3),%	-	7.0
3. Ferric Oxide (Fe_2O_3),%	-	3.0
4. Magnesium Oxide (MgO),%	6.0 max.	2.6
5. Sulfur Trioxide (SO_3),%	3.5 max.	2.2
6. Loss on Ignition,%	3.0 max.	1.1
7. Insoluble Residue, %	0.75 max.	0.20
8. Tricalcium Silicate (C_3S),%	-	27
9. Dicalcium Silicate (C_2S), %	-	42
10. Tricalcium Aluminate (C_3A),%	-	14
11. Tetracalcium Alumino Ferrite (C_4AF),%	-	9
12. Calcium Oxide (CaO),%	-	61.0

NOTED BY:

C.C. PARAN
SR. MAT'L ENGR.

R. B. CABLING
MK COC ENGR.

Certified by:

EMILIO A. MORALES, MSCE
PHILIPPINE CIVIL ENGINEER

GEOANALYTICS

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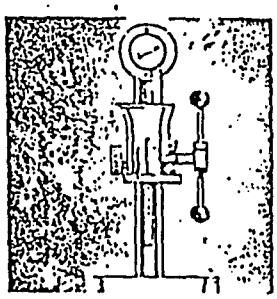
GRACE DARATARD 17

CONCRETE ADMIXTURES

RETARDING TYPE WATER REDUCING PLASTICISING ADMIXTURE FOR CONCRETE

Product Information



SPECIFICATION TYPE

Complies to the requirements of:—

- BS 5075, part 1 : 1982
- ASTM C-494 Types B & D
- AS 1478 & 1479 Types Re & WRRe
- JIS A 6204 Retarder Type

DESCRIPTION

DARATARD 17 is a high performance liquid admixture, formulated from selected high purity lignosulphonates and modified polymers manufactured under carefully controlled conditions to produce a highly consistent product, which ensures uniform predictable performance. DARATARD 17 does not contain chlorides as an intentional component, and it is non-corrosive.

PROPERTIES

Physical appearance	Dark Brown Liquid
Specific Gravity (20°C)	1.245 (±0.01)
Total solids content	49–51%
Air entrainment effect	increase of max. 1%
Chloride ion content by mass of admixture:	< 1%
Chloride ion content by mass of cement	<0.002%

ACTION

DARATARD 17 is adsorbed onto the surface of the C_3A (C-lite) and C_3S (A-lite) in cement, (C_3A responsible for early setting effects, whilst C_3S responsible for early strength gain), effectively sheathing these compounds chemically, and dispersing them, slowing down the needle-like crystal formation responsible for early setting / stiffening effects in hydrating cementitious systems. This effectively extends the period of workability / plasticity of the concrete, slows down the setting time, and modifies the hydration reaction to produce optimum crystal growth and size, resulting in a smaller/denser crystalline structure, with fewer pores giving higher strengths reduced permeability, and greater durability.

BENEFITS

- Increased workability and longer placing time, even at elevated temperatures.
- Mixes more responsive to vibration, ensuring better compaction achieved.
- Controlled predictable retardation of setting time.
- Improves cohesion of mix - lessening segregation and bleed water effects.
- Denser, less permeable, more durable concrete.
- Reduces rate of heat evolution, spreading heat of hydration over longer period reducing thermal cracking effects.
- Improved compressive, flexural, and tensile strengths of concrete at all ages.
- Cold joints can be avoided.
- Effective over a wide range of cement contents and mix designs (including PFA and Blast Furnace Slag blended mixes).

TYPICAL APPLICATIONS

DARATARD 17 can be used in virtually all wet mix concrete applications to economic advantage, such as:

- Pumped concrete - to offset problems due to breakdown delays.
- Ready mixed concrete for long hauls/hot weather concreting.
- Slipform concrete to give controlled, predictable set time.
- Large pours, to reduce thermal cracking effects, and avoid cold joints.
- High strength, high cement content, low W/C mixes - to ensure practical, placeable, compactable, durable concrete is produced.
- Precast and prestressed concretes.

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Morrison Maierle/CSSA

Materials Testing Laboratory

SOUTH COTABATO ROAD PROJECT

A-2-4

Report of Test on Coarse Aggregates for Concrete

Road Sector: 4
Section:
Kind of Material: 3/4 CA
Sampled by: RBD
Tested by: RPB/TLD
Supervised by: VSF

Date:
Station:
Source: MATINAO
Date Sampled: 10-13-9
Date Tested:

A. SIEVE ANALYSIS	SAMPLE	SPEC.
Sieve Size 2"		
1-1/2"		
1"	100	
3/4"	99	
1/2"	65	
3/8	36	
No. 4	6	
No. 8	2	
No. 16		
No. 30		
No. 50		
No. 100		
B. Materials Finer than No. 200 Sieve	0.41	
C. Abrasion Loss (AASHTO T96)	39	
D. Soundness Test (AASHTO T104)	6.54	
E. Clay Lumps & Friable Particles (AASHTO T112)	0.57	
F. Specific Gravity (AASHTO T85)		
Bulk Sp. Gravity (DRY)	2.439	
Bulk Sp. Gravity (SSD)	2.526	
Apparent Sp. Gravity	2.670	
Absorption, %	3.551	
G. Unit Weight (AASHTO T19)		
Dry Loose Unit Weight, lbs/cu. ft	81.62	
Dry Rodded Unit Weight, lbs/cu. ft	93.94	

Remarks:

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 10-22-93 MM93-249
SIGN:

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4/80

Sector 7 and 8
Materials Tests

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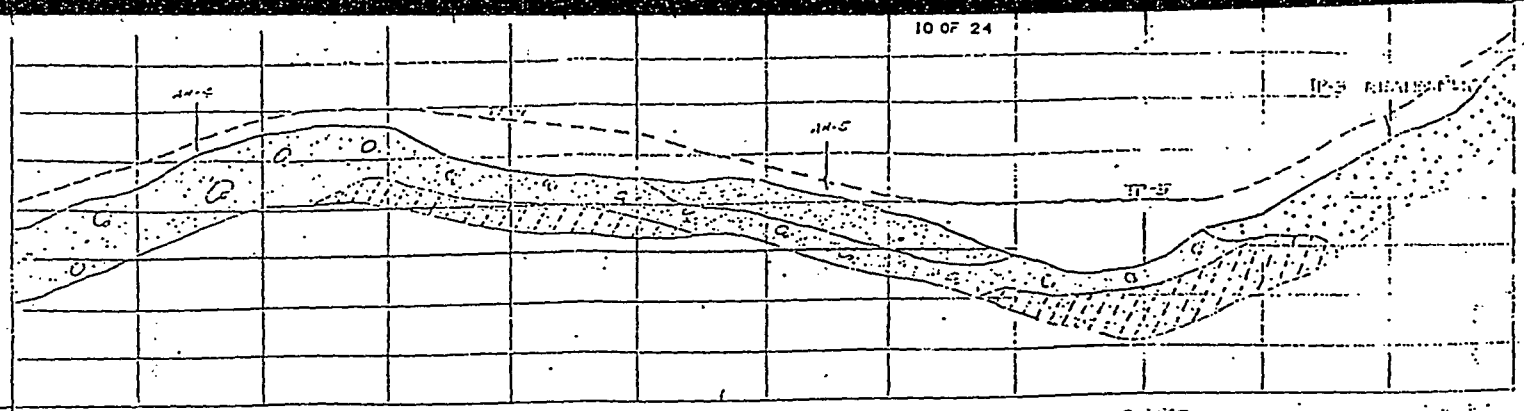
SOIL PROFILE
(ROAD ALIGNMENT)



HOLE NO. / STATION	1 + 750	2 + 000	2 + 250	2 + 500

LOCATION STATION	SAMPLE NO.	DEPTH (m)	SOIL DESCRIPTION	AASTHO CLASSIFICATION	GROUP INDEX	WATER CONTENT (%)	ATTERBERG LIMITS % LL	PL	PI	FOT (%) COMPACTION	CBR % 10 BLOWS	30 BLOWS	65 BLOWS	95% OF MDD	% SWELL AT 65 BLOWS	MOISTURE-DENSITY RELATION OMC %	MDD (g/cc)	SIEVE ANALYSIS % PASSING 1-1/2"	1"	3/4"	3/8"	#4	#10	#40	#200	REMARKS
AH-4																										
STA. 1 + 750	S-1	0-0.62	LIGHT GRAY SAND WITH GRAVEL	A-1-b	0	4.9	NON-PLASTIC											82	82	82	81	80	73	44	9	
0.50 m RT.	S-2	0.62-1.50	GRAY SAND WITH GRAVEL	A-1-b	0	3.5	NON-PLASTIC												100	97	90	82	72	26	2	
TP-4																										
STA. 2 + 000	S-1	0-0.82	GRAY SAND WITH GRAVEL	A-1-b	0	6.0	14	12	2	97	30	54	82	34	0	7.0	2.11	84	81	84	71	57	62	43	10	
1.50 m (LT	S-2	0.82-1.50	LIGHT GRAY SILTY SAND	A-2-4	0	10.8	22	15	7	70	9	27	38	29.5	0	9.8	1.92			100	99	98	95	59	33	[illegible] GRAVEL
AH-5																										
STA. 2 + 250	S-1	0-0.70	DARK BROWN FINE SAND	A-1-b	0	8.5	13	11	2		1										100	99	94	39	12	
1.50 m LT	S-2	0.70-1.50	LIGHT GRAY SAND WITH GRAVEL	A-2-4	0	18.4	15	13	2									92	92	91	82	59	30	58	13	
TP-5																										
STA. 2 + 500	S-1	0-0.40	GRAY SAND WITH GRAVEL	A-1-b	0	6.0	15	12	3	14	10	30	59	10.0	0	9.70	1.98	100	93	91	87	57	31	59	10	
1.90 m RT	S-2	0.40-1.50	LIGHT GRAY SILTY SAND	A-2-4	0	14.9	25	18	7	71	5	50	63	53.0	0	12.0	1.86	93	93	93	90	88	55	39	20	[illegible] GRAVEL
TP-3 REALIGNMENT																										
STA. 2 + 700	S-1	0-0.30	DARK GRAY COARSE SAND	A-1-b	0	—	26	17	5		10	31	46	30.0		12.25	1.94		100	97	96	94	53	11	14	WITH FINE GRAVEL
CENTERLINE	S-2	0.30-1.50	LIGHT BROWN COARSE SAND	A-1-b	0	—	NON-PLASTIC				20	40	50	35.50	0	10.00	1.945		100	95	95	57	57	10	3	WITH FINE GRAVEL

MORRISON KNUDSEN CORPORATION

ALC

W. O. NICANOR
SOILS & MATERIALS ENGINEER

D. L. BUCKERT
PROJECT MANAGER

ENGINEER'S REPRESENTATIVE
MORRISON-MAIERLE / CSSA
CONCURRED

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
APPROVED

SOUTH COTABATO HIGHWAYS PROJECT
MINDANAO DEVELOPMENT PROGRAM
SECTOR 7 SURALLAH - TUPAL ROAD
STA. 1 + 750 - STA. 2 + 500
SOIL PROFILE AND SUMMARY OF TEST RESULTS

SHEET NO.
A-2

BEST AVAILABLE DOCUMENT

Morrison Maierle/CSSA
Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

Moisture Content Determination
ASSHTO Designation: T265

Road Sector: 7
Date:
Section: SURAHAH - T'BOLI
Station:
Test Pit No.:
Auger Hole No.: AB-1-7
Bore Hole No.:
Sampled By: RBD
Date Sampled: 8-5-92
Tested By: RPB
Date Tested: 9-16-92
Checked By: VSF

Type of Test	NATURAL MOISTURE CONTENT					
Sample Number	1	2	3	4	5	6
Depth, m	0-0.82	0.82-1.50				
Type of Soil	A-1-b	A-2-4				
Wt. of wet soil, g	14207.4	13036.7				
Wt. of dry soil, g	13502.6	11936.2				
Moisture Loss, g	704.8	1100.5				
Wt. of can, g						
Wt. of dry soil, g						
Moisture content, %	5.22	9.22				

MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 9-23-92. mn 92-078A
SIGN.

REMARKS:
Left side
1.80 m. from centerline

BEST AVAILABLE DOCUMENT

Morrison Maierle/CSSA

Materials Testing Laboratory

BEST AVAILABLE DOCUMENT

Mindanao Development Program
South Cotabato Road Project

MECHANICAL ANALYSIS

ROAD SECTOR 7			DATE
SPECIFICATION	PURPOSE OF MATERIAL	SAMPLED BY & DATE RBD 8-5-92	
SAMPLED AT (stockpile, batch plant, etc) AB-1-7 S-1 STA 2+000 LS 1.80 m. fr. C.L.		SOURCE, (river, quarry) 0 - 0.82 m.	

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
14207.4	13502.6	12473.2	5.22		

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM PERCENT RETAINED
2-1/2"	63.5						
2"	52.8	0	0	100	100		0
1-1/2"	38.1	1886.3	13.97	86.03	86		14
1"	25.4	392.9	2.91	83.12	83		17
3/4"	19.1	290.3	2.15	80.97	81		19
1/2"	12.7	453.7	3.36	77.61	78		22
3/8"	9.52	875.0	6.48	71.13	71		29
No. 4	4.75	799.4	5.92	65.21	65		35
No. 8	2.38						
No. 10	2.00	564.4	4.18	61.03	61		39
No. 12	1.65						
No. 16	1.19						
No. 20	0.84						
No. 30	0.59						
No. 40	0.42	2691.1	19.93	41.10	41		59
No. 50	0.297						
No. 60	0.260						
No. 80	0.177						
No. 100	0.049						
No. 200	0.074	4018.4	29.76	11.34	11		89
PAN		501.7					
WASH		1029.4					
TOTAL							

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 9-23-92, mn 92-078A
SIGN.

FINENESS MODULUS: _____
TESTED BY RPB DATE 9-17-92
CHECKED BY _____ DATE _____
ENTERED BY _____ DATE _____

UNIT WEIGHT, PCF:
DRY LOOSE _____
DRY RODDED _____

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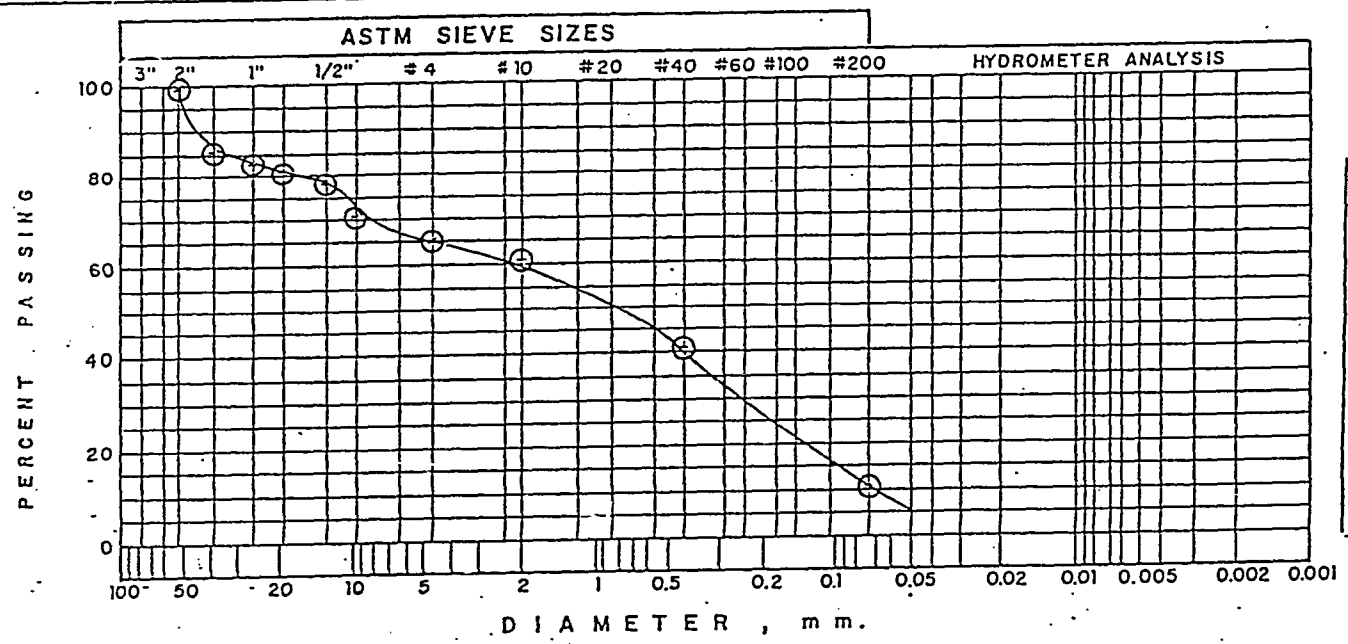
MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

GRAIN SIZE DISTRIBUTION CURVES

PROJECT: South Cotabato Roads	SECTOR: 7	SECTION:
	STATION: 2+000 LS	KIND OF MATERIALS:
SOURCE:	PLOTTED BY: WPL	DATE: 9-22-92



MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 9-23-92 mn 92-078A
SIGN.

STATION	TP. NO.	SAMPLE NUMBER	DEPTH	CURVE NUMBER	NMC	LL	PL	PI	CLASS	GI	DESCRIPTION
2+000	AB-1-7	S-1	0-0.82		5.22	–	–	–	A-1-b	0	Gravelly sand with little amount of silt, light gray

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Morrison Maierle/CSSA
Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

MECHANICAL ANALYSIS

ROAD SECTOR 7			DATE
SPECIFICATION	PURPOSE OF MATERIAL		SAMPLED BY & DATE RBD 8-5-92
SAMPLED AT (stockpile, batch plant, etc) AB-1-7 S-2 STA 2+000 LS 1.80 m. from C.L.			SOURCE, (river, quarry) 0.82 – 1.50 m.

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
13036.7	11936.2	9021.5	9.22		

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 107H DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM PERCENT RETAINED
2-1/2"	63.5						
2"	52.8						
1-1/2"	38.1						
1"	25.4	0	0	100	100		0
3/4"	19.1	94.3	0.79	99.21	99		1
1/2"	12.7	161.1	1.35	97.86	98		2
3/8"	9.52	48.9	0.41	97.45	97		3
No. 4	4.75	69.2	0.58	96.87	97		3
No. 8	2.38						
No. 10	2.00	196.9	1.65	95.22	95		5
No. 12	1.65						
No. 16	1.19						
No. 20	0.84						
No. 30	0.59						
No. 40	0.42	3343.3	28.01	67.21	67		33
No. 50	0.297						
No. 60	0.[illegible]0						
No. 80	0.177						
No. 100	0.049						
No. 200	0.074	4305.4	36.07	31.14	31		69
PAN		802.4					
WASH		2914.7					
TOTAL							

MM/CSSA MATERIAL S
TESTING LABORATORY
DATE: 9-23-92 mn 92-078 A

FINENESS MODULUS: _____
TESTED BY RPB DATE 9-17-92
CHECKED BY _____ DATE _____
ENTERED BY _____ DATE _____

UNIT WEIGHT, PCF:
DRY LOOSE _____
DRY RODDED _____

BEST AVAILABLE DOCUMENT

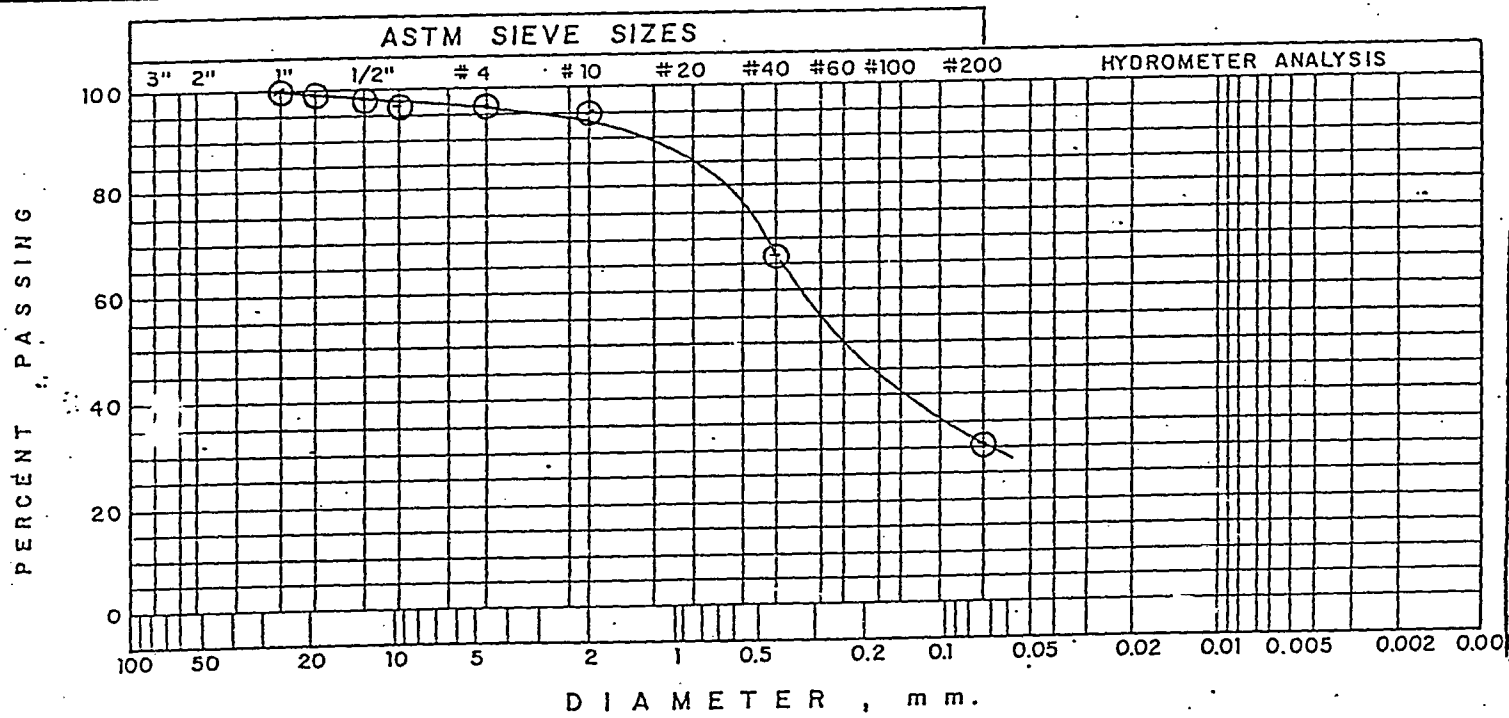
MORRISON MAIERLE/CSSA

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

BEST AVAILABLE DOCUMENT

GRAIN SIZE DISTRIBUTION CURVES

PROJECT: South Cotabato Roads	SECTOR: 7	SECTION:
	STATION: 2+000	KIND OF MATERIALS:
SOURCE:	PLOTTED BY: WPL	DATE: 9-22-69



MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 9-28-92 mn 92-078 A
SIGN.

STATION	TP. NO.	SAMPLE NUMBER	DEPTH	CURVE NUMBER	NMC	LL	PL	PI	CLASS	GI	DESCRIPTION
2+000	AB-1-7	S-2	0.85-1.50		9.22	22	16	6	A-2-4	0	Sand with silt and traces of medium to fine gravel, light gray

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Morrison Maierle/CSSA
Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

Moisture Content Determination
ASSHTO Designation: T265

Road Sector: 7
Date:
Section: SURALLAH - T'BOLI
Station: 20+500
Test Pit No.: TP-4-T
Auger Hole No.:
Bore Hole No.:
Sampled By: RBD
Date Sampled: 8-5-92
Tested By: RPB
Date Tested: 8-10-92
Checked By: VSF

Type of Test	NATURAL MOISTURE CONTENT					
Sample Number	1	2	3	4	5	6
Depth, m	0-0.35	0.35-1.50				
Type of Soil	A-1-b	A-2-4				
Wt. of wet soil, g	9811.8	4936.6				
Wt. of dry soil, g	8971.2	4491.3				
Moisture Loss, g	840.6	445.3				
Wt. of can, g						
Wt. of dry soil, g						
Moisture content, %	9.37	9.91				

REMARKS:
2.70 m. from centerline
Right side

MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 8-25-92. mm92-078
SIGN.

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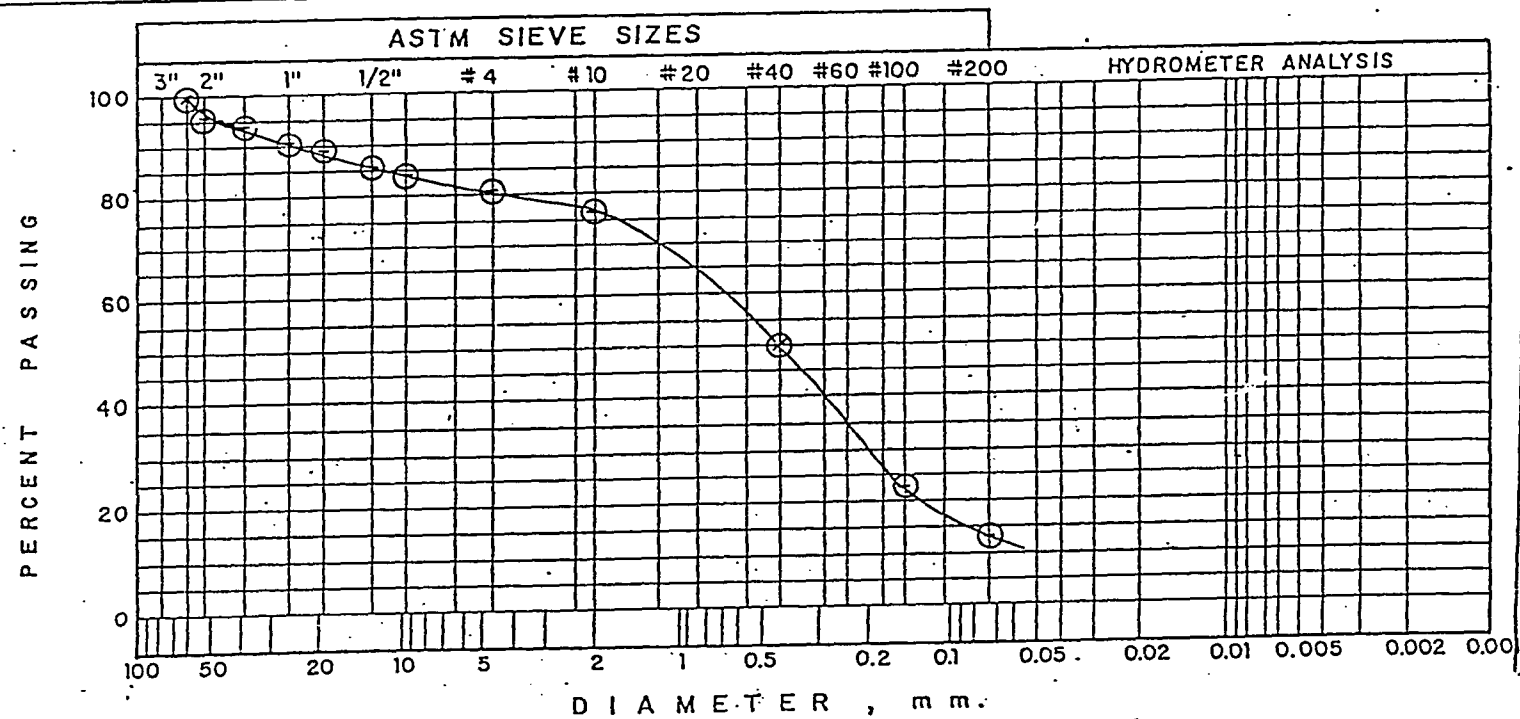
MORRISON-MAILRLE/CSSA

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

BEST AVAILABLE DOCUMENT

GRAIN SIZE DISTRIBUTION CURVES

PROJECT: South Cotabato Roads	SECTOR: 7	SECTION:
	STATION: 20+500 RS	KIND OF MATERIALS:
SOURCE:	PLOTTED BY: WPL	DATE: 8-24-92



MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 8-25-92, mm 92-078
SIGN.

STATION	TP. NO.	SAMPLE NUMBER	DEPTH	CURVE NUMBER	NMC	LL	PL	PI	CLASS	GI	DESCRIPTION
20+500	TP-4-7	S-1	0-0.35		9.37	–	–	NP	A-1-b	0	Sand with gravel and little amount of silt, gray

Morrison Maierle/CSSA
Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

MECHANICAL ANALYSIS

ROAD SECTOR 7			DATE
SPECIFICATION	PURPOSE OF MATERIAL	SAMPLED BY & DATE RBD 8/5/92	
SAMPLED AT (stockpile, batch plant, etc) STA 20+500 RS TP-4-7 S-1		SOURCE, (river, quarry) 0-0.35 m	

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
9811.8	8971.2	7771.5	9.37		3 1/2

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM PERCENT RETAINED
2-1/2"	63.5	0	0	100	100		0
2"	52.8	396.1	4.42	95.58	96		4
1-1/2"	38.1	103.1	1.15	94.43	94		6
1"	25.4	336.6	3.75	90.68	91		9
3/4"	19.1	136.4	1.52	89.16	89		11
1/2"	12.7	315.3	3.51	85.65	86		14
3/8"	9.52	106.3	1.18	84.47	84		16
No. 4	4.75	283.1	3.16	81.31	81		19
No. 8	2.38						
No. 10	2.00	412.6	4.60	76.71	77		23
No. 12	1.65						
No. 16	1.19						
No. 20	0.84						
No. 30	0.59						
No. 40	0.42	2405.6	26.81	49.90	50		50
No. 50	0.297						
No. 60	0.260						
No. 80	0.177						
No. 100	0.049	2438.2	27.18	22.72	23		77
No. 200	0.074	838.2	9.34	13.38	13		87
PAN		287.1					
WASH		912.6					
TOTAL		8971.2					

MM/CSSA MATERIALS TESTING LABORATORY

FINENESS MODULUS:
TESTED BY RPB DATE 8-11-92
CHECKED BY DATE
ENTERED BY DATE

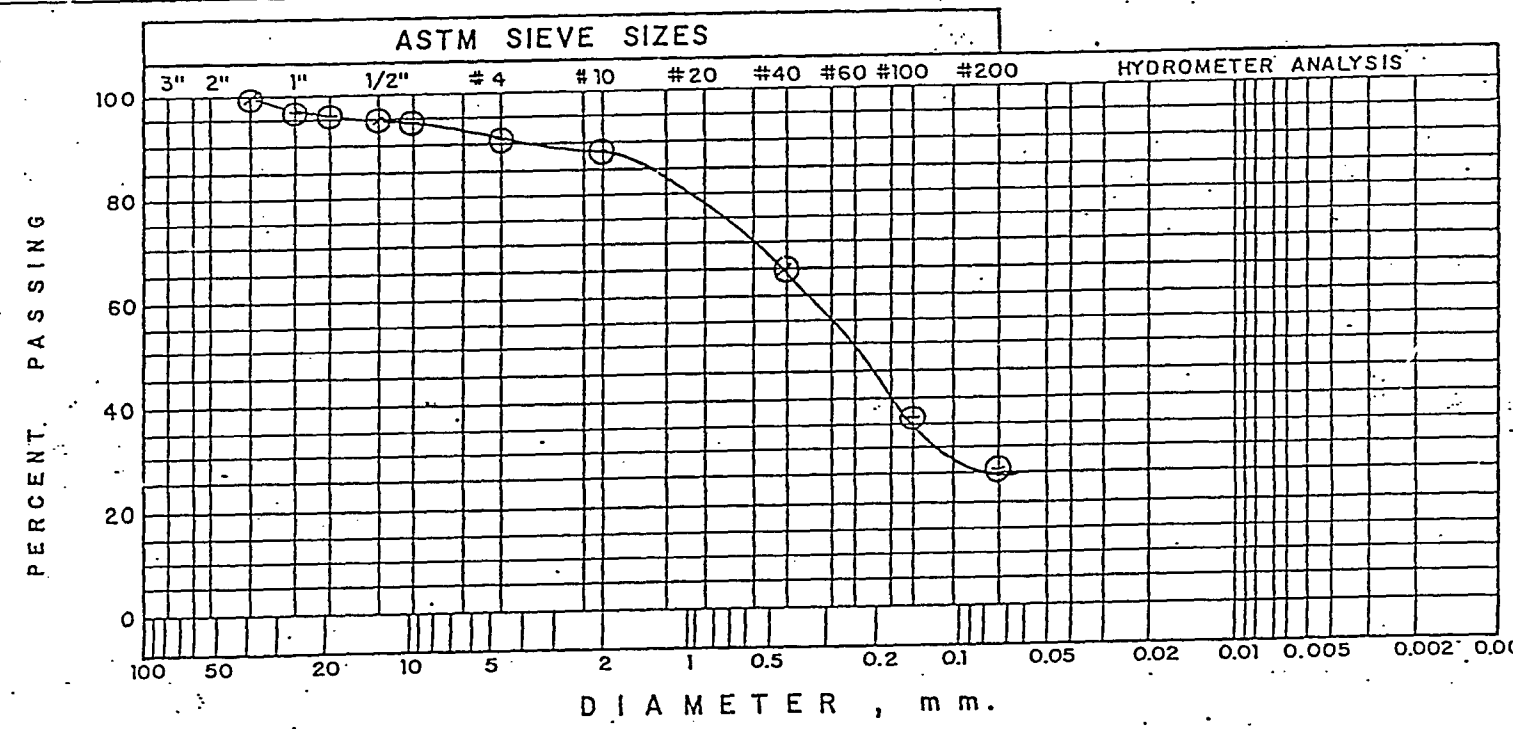
UNIT WEIGHT, PCF:
DRY LOOSE
DRY RODDED

MORRISON-MAIERLE/CSSA

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

GRAIN SIZE DISTRIBUTION CURVES

PROJECT: SOUTH COTABATO ROADS	SECTOR: 7	SECTION:
	STATION: 20+500 RS	KIND OF MATERIALS:
SOURCE:	PLOTTED BY: WPL	DATE: 8-24-92



MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 8-25-92, mm 92-072
S.I.S.V.

STATION	TP. NO.	SAMPLE NUMBER	DEPTH	CURVE NUMBER	NMC	LL	PL	PI	CLASS	GI	DESCRIPTION
20+500	TP-47	S-2	0.35-1.50		9.91	–	–	NP	A-2-4	0	Sand with silt and little amount of gravel and limestone, light brown

Morrison Maierle/CSSA
Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

MECHANICAL ANALYSIS

ROAD SECTOR 7			DATE
SPECIFICATION	PURPOSE OF MATERIAL		SAMPLED BY & DATE RBD 8/5/92
SAMPLED AT (stockpile, batch plant, etc) STA 20+500 RS TP-4-7 S-2			SOURCE, (river, quarry) 0.35 – 1.50 m.

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
4936.6	4491.3	3512.9	9.91		

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM PERCENT RETAINED
2-1/2"	63.5						
2"	52.8						
1-1/2"	38.1	0	0	100	100		0
1"	25.4	122.9	2.74	97.26	97		3
3/4"	19.1	52.6	1.17	96.09	96		4
1/2"	12.7	54.9	1.22	94.87	95		5
3/8"	9.52	49.3	1.10	93.77	94		6
No. 4	4.75	112.8	2.51	91.26	91		9
No. 8	2.38						
No. 10	2.00	141.0	3.14	88.12	88		12
No. 12	1.65						
No. 16	1.19						
No. 20	0.84						
No. 30	0.59						
No. 40	0.42	1024.2	22.80	65.32	65		35
No. 50	0.297						
No. 60	0.260						
No. 80	0.177						
No. 100	0.049	1284.9	28.61	36.71	37		63
No. 200	0.074	494.4	11.01	25.70	26		74
PAN		175.9	3.92				
WASH		978.4	21.78				
TOTAL		4491.3					

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 8-25-92
SIGN.

FINENESS MODULUS:
TESTED BY RPB DATE 8-11-92
CHECKED BY DATE
ENTERED BY DATE

UNIT WEIGHT, PCF:
DRY LOOSE
DRY RODDED

BEST AVAILABLE DOCUMENT

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Morrison Maierle/CSSA
Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

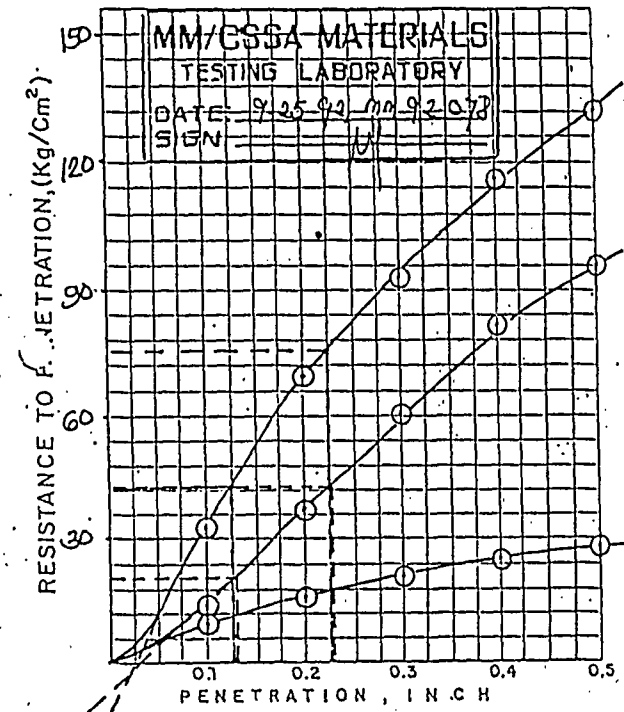
Summary of CBR Test

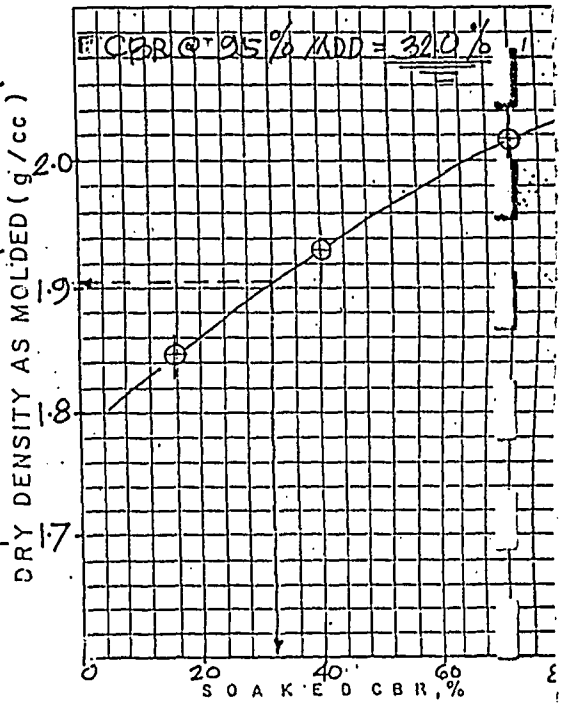
Road Sector 7 Section _____ Station _____
Kind of Material _____ Source TP-47, S-2

MDD 2.006 g/cc OMC 10.7 %

Blows.	10	30	65
Dry density as molded, g/cc	1.848	1.931	2.018
Moisture content before soaking, %	10.81	10.79	10.96
Moisture content after 4 days, %	13.31	12.51	11.79
Swell, %	0.64	0	0

PENETRATION, INCH		0.025	0.050	0.075	0.100	0.200	0.300	0.400	0.[illegible]
Resistance to Penetration (actual)	@ 10	2.3	4.7	7.0	9.4	16.4	21.1	25.2	28.7
Resistance to Penetration (actual)	@ 30	2.3	4.7	9.4	14.1	37.5	60.9	82.0	9[illegible]1
Resistance to Penetration (actual)	@ 65	4.7	12.9	22.3	32.8	69.7	93.1	116.0	132.4
Resistance to Penetration (corrected)	@ 10				–	–			
Resistance to Penetration (corrected)	@ 30				21.0	48.0			
Resistance to Penetration (corrected)	@ 65				48.0	75.5			
STANDARD					70.3	105.5			
CBR as molded	@ 10				13.37	15.55			
CBR as molded	@ 30				29.87	40.76			
CBR as molded	@ 65				61.17	71.56			





TESTED BY: RPB	CHECKED BY: WPL	NOTED BY: VSF
DATE: 16 SEPT-92	DATE: 25 SEPT-92	DATE: 25 SEPT-92

BEST AVAILABLE DOCUMENT

Morrison Materie/CSSA
Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

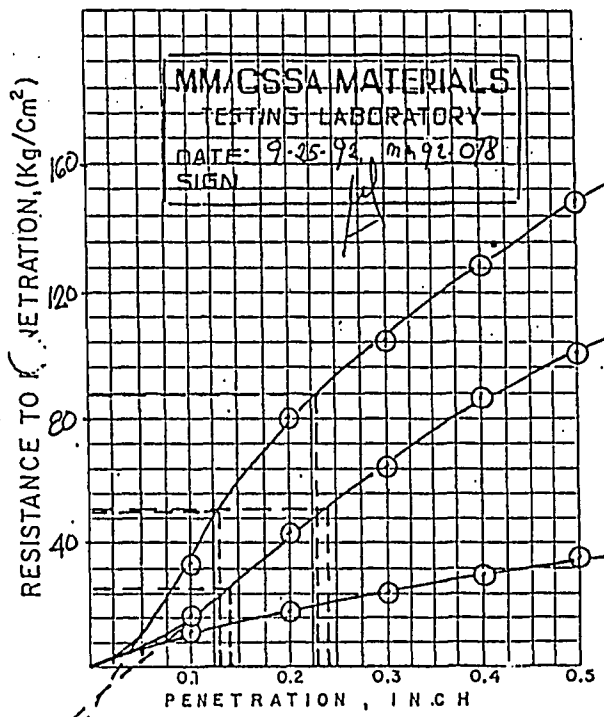
Summary of CBR Test

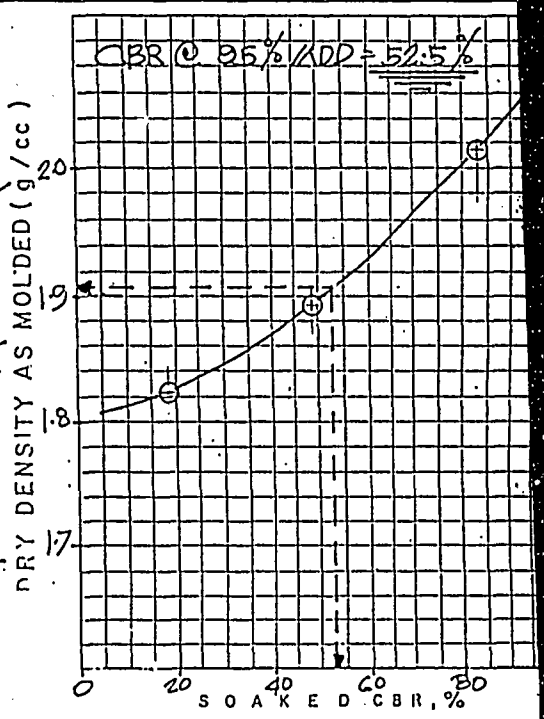
Road Sector 7 Section _____ Station _____
Kind of Material A-1-b (0) Source TP-4-7, S-1

MDD 2.009 g/cc OMC 10.5 %

Blows	10	30	65
Dry density as molded, g/cc	1.823	1.892	2.015
Moisture content before soaking, %	10.59	10.52	10.55
Moisture content after 4 days, %	13.14	12.48	11.60
Swell, %	0	0	0

PENETRATION, INCH		0.025	0.050	0.075	0.100	0.200	0.300	0.400	0.50
Resistance to Penetration (actual)	@ 10	2.3	5.3	8.2	11.7	18.7	24.6	30.5	35
Resistance to Penetration (actual)	@ 30	2.3	5.9	10.5	16.4	43.3	65.6	87.3	100.
Resistance to Penetration (actual)	@ 65	3.5	11.7	22.3	34.0	80.3	104.9	129.5	148
esistance to Penetration (corrected)	@ 10				-	-			
Resistance to Penetration (corrected)	@ 30				26.0	51.0			
Resistance to Penetration (corrected)	@ 65				50.0	87.5			
STANDARD					70.3	105.5			
CBR as molded	@ 10				16.64	17.73			
CBR as molded	@ 30				36.98	48.34			
CBR as molded	@ 65				71.12	82.94			





TESTED BY: RPB	CHECKED BY: WPL	NOTED BY: VSF
DATE: 16 SEPT. 92	DATE: 25 SEPT. 92	DATE: 25 SEPT. 92

BEST AVAILABLE DOCUMENT

SOIL PROFILE
(ROAD ALIGNMENT)

SELECTED COMMON BORROW MATERIALS

HOLE NO. / STATION

LOCATION STATION	SAMPLE NO.	DEPTH (m)	SOIL DESCRIPTION	AASHTO CLASSIFICATION	GROUP INDEX	WATER CONTENT (%)	ATTERBERG LIMITS % LL	PL	PI	PCT (%) COMPACTION	CBR % 10 BLOWS	30 BLOWS	65 BLOWS	95% OF MDD	% SWELL AT 65 BLOWS	MOISTURE-DENSITY RELATION OMC %	MDD (g/cc)	SIEVE ANALYSIS % PASSING 1-1/2"	1"	3/4"	3/8"	#4	#10	#40	#200	
PROPOSED SELECTED																										
BORROW MATERIALS			SECTOR 7, SURALLAH - TIBOLI ROAD																							
QUARRY																										
				A-1-b																						
STA. 1+225	S-1	0-0.5	GRAYISH BROWN SILTY SAND	A-2-4	0	-	NON-PLASTIC			-	14	22	40	23.0	0	12.45	1.85	91	91	82	78	76	71	37	7	WITH SOME COARSE GR
RS																										
				A-1-b																						
STA. 6+625	S-1	0-0.5	GRAYISH BROWN SILTY SAND	A-2-4	0	-	NON-PLASTIC			-	20	36	43	32.5	0	12.80	1.90	100	97	87	81	78	67	25	2	WITH FINE COARSE GR
LS																										
				A-1-b																						
STA. 11+100	S-1	0-0.5	GRAYISH BROWN SILTY SAND	A-2-4	0	-	NON-PLASTIC			-	10	29	51	29.0	0	10.50	1.97	100	92	92	88	86	82	50	5	WITH GR.
RS																										
				A-1-b																						
STA. 12+775	S-1	0-0.5	GRAYISH BROWN SILTY SAND	A-2-4	0	-	NON-PLASTIC			-	14	32	40	32	0	13.72	1.86	91	90	82	76	74	70	35	8	WITH FINES
			SECTOR 8, NORALA - KULAMBOG ROAD																							
				A-1-b																						
NORALA ELEM. SCHOOL	S-1	0-0.5	BROWNISH GRAY SILTY SAND	A-2-4	0	-	NON-PLASTIC			-	19	29	53	34	0	12.60	1.93	100	97	81	79	65	17	3		WITH FINE
				A-1-b																						
KUMADAOG FARM -	S-1	0-0.5	BROWNISH GRAY SILTY SAND	A-2-4	0	-	NON-PLASTIC			-	13	29	39	34	0	12.22	1.87	100	95	95	91	88	79	23	1	WITH FINE
ALLAH RIVER																										

MORRISON KNUDSEN CORPORATION
ALC

C.C. FARUM / PGA
SOILS & MATERIALS ENGINEER
R. D. CABONG / MKC
QUALITY CONTROL ENGR.

ENGINEER'S REPRESENTATIVE
MORRISON-MAIERLE / CSSA
CONCURRED

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
APPROVED

SOUTH COTABATO HIGHWAYS PROJECT
MINDANAO DEVELOPMENT PROGRAM

BEST AVAILABLE DOCUMENT

495

PHILIPPINE
GEOANALYTICS

CIVIL ENGINEERING LABORATORY
Soils, Materials and Foundation Engineers, Laboratory
Testing Services, Computer Applications

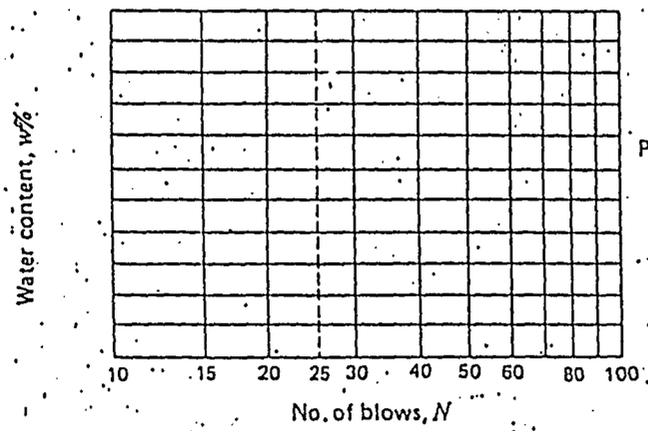
ATTERBERG LIMITS DETERMINATION

Project: SOUTH COTABATO HIGHWAYS Job No.: EXISTING ROADWAY PATH
Location of Project: SEC-7 SURALLAH-TIPOLI ROAD Boring No.: STA. 10+500 RS Sample No.:
Description of Soil: Brownish sand w/ Fine Gravel & R-
Depth of Sample: Tested By: A.V. ZAGUIRRE Date: 14 JAN. 1993

Liquid Limit Determination ASTM D-423

Can no.						
Wt. of wet soil + can						
Wt. of dry soil + can						
Wt. of can						
Wt. of dry soil						
Wt. of moisture						
Water content, w%						
No. of blows, N						

NON-PLASTIC



Flow index F_i = _____
Liquid limit = _____
Plastic limit = _____
Plasticity index I = _____

Single Point Formula $LL = W_n (N/25)^{0.12}$

Plastic Limit Determination

Can no.			
Wt. of wet soil + can			
Wt. of dry soil + can			
Wt. of can			
Wt. of dry soil			
Wt. of moisture			
Water content, $w\% = w_p$			

PHIL. GEOANALYTICS SOUTH COTABATO HIGHWAYS PROJECT NO.

3-b

BEST AVAILABLE DOCUMENT

496

Morrison Maierle/CSSA
Materials Testing Laboratory

BEST AVAILABLE DOCUMENT

Mindanao Development Program
South Cotabato Road Project

E-9-7

MECHANICAL ANALYSIS

ROAD SECTOR 7			DATE
SPECIFICATION	PURPOSE OF MATERIAL EMBANKMENT	SAMPLED BY & DATE RPB/RBD/VST 2/4/93	
SAMPLED AT (stockpile, batch plant, etc) STA 20+325 RS		SOURCE, (river, quarry) BORROW SOURCE	

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
1381.3	1262.8	1192.5	9.38		

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM PERCENT RETAINED
2-1/2"	63.5						
2"	52.8						
1-1/2"	38.1						
1"	25.4						
3/4"	19.1	0	0	100	100		0
1/2"	12.7	13.8	1.09	98.91	99		1
3/8"	9.52	14.2	1.12	97.79	98		2
No. 4	4.75	52.0	4.12	93.67	94		6
No. 8	2.38						
No. 10	2.00	174.6	13.83	79.84	80		20
No. 12	1.65						
No. 16	1.19						
No. 20	0.84						
No. 30	0.59						
No. 40	0.42	576.7	45.67	34.17	34		66
No. 50	0.297						
No. 60	0.260						
No. 80	0.177						
No. 100	0.049	267.1	21.15	13.02	13		87
No. 200	0.074	70.7	5.60	7.42	7		93
PAN		23.4					
WASH		70.3					
TOTAL							

MM/CSSA MATERIALS
TESTING LABORATORY
2-11-93 mm 95-098
UNIT WEIGHT, PCF:
SURNLOOSE
DRY-RODDED

FINENESS MODULUS:
TESTED BY RPB DATE 2-8-93
CHECKED BY DATE
ENTERED BY DATE

497

PHILIPPINE
GEOANALYTICS
CIVIL ENGINEERING LABORATORY

No. 21 Scout de Guia near
Corner Scout Reyes, Quezon City
Tel. Nos.: 97-27-12 & 98-21-62
Easy Call # 869-1111 Code # 23638
Cellular Phone No.: 301-3524

PHIL. GEOANALYTICS SOUTH COTABATO HIGHWAYS PROJECT
QC NO. 0451

GRADATION MECHANICAL ANALYSIS

DATE:

PROJECT: SOUTH COTABATO HIGHWAYS
SECTOR 7 SURALLAH – TIBOLI ROAD

DATE OF REPORT: 06 MAY 1993

SPECIFICATION:

PURPOSE OF MATERIAL: CRUSHED AGGREGATE BASE COURSE

SAMPLED BY AND DATE: MAB 03 MAY 1993

SAMPLED AT (Stockpile, batch plant, place, etc.): MR CRUSHER PLANT

SOURCE (River, quarry, etc.): DAIRAY RIVER

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
	12875				1 1/2

NO.	SIEVE SIZE	SIEVE OPENING, (MM)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM. PERCENT RETAINED
1	2-1/2"	63.5						
2.	2"	52.8						
3.	1-1/2"	38.1	0	100	100	100	100	
4.	1"	25.4	1459	11.33	88.67	89		
5.	3/4"	19.1	3120	24.23	64.44	64	60-85	
6.	1/2"	12.7						
7.	3/8"	9.52	1745	13.55	50.89	51		
8.	No. 4	4.75	1477	11.47	39.42	39	30-55	
9.	No. 8	2.38						
10.	No. 10	2.00	455	3.77	35.65	36		
11.	No. 12	1.65						
12.	No. 16	1.19						
13.	No. 20	0.84						
14.	No. 30	.59						
15.	No. 40	.42	2119	16.46	19.19	19	8-25	
16.	No. 50	.297						
17.	No. 60	.260						
18.	No. 80	.177						
19.	No. 100	.149						
20.	No. 200	.074	1795	13.94	5.25	5	2-14	
	PAN							
	WASH							
	TOTAL		12875					

FINENESS MODULUS: –

CONFORMS.

UNIT WEIGHT, g/cc: –

DRY LOOSE –

DRY RODDED –

F. M. = $\frac{\sum \text{\% cum. Ret. of Sieve \# (19, 16, 14, 12, 9, 8, 7, 5 \& 3)}}{100}$

TESTED BY: G.G. MALATE / MAT'LS. TECH.

DATE 04 MAY 1993

CHECKED BY: C.C. FARUM / SR. MAT'LS. ENGR.

DATE 05 MAY 1993

Logbook Entry NO.	

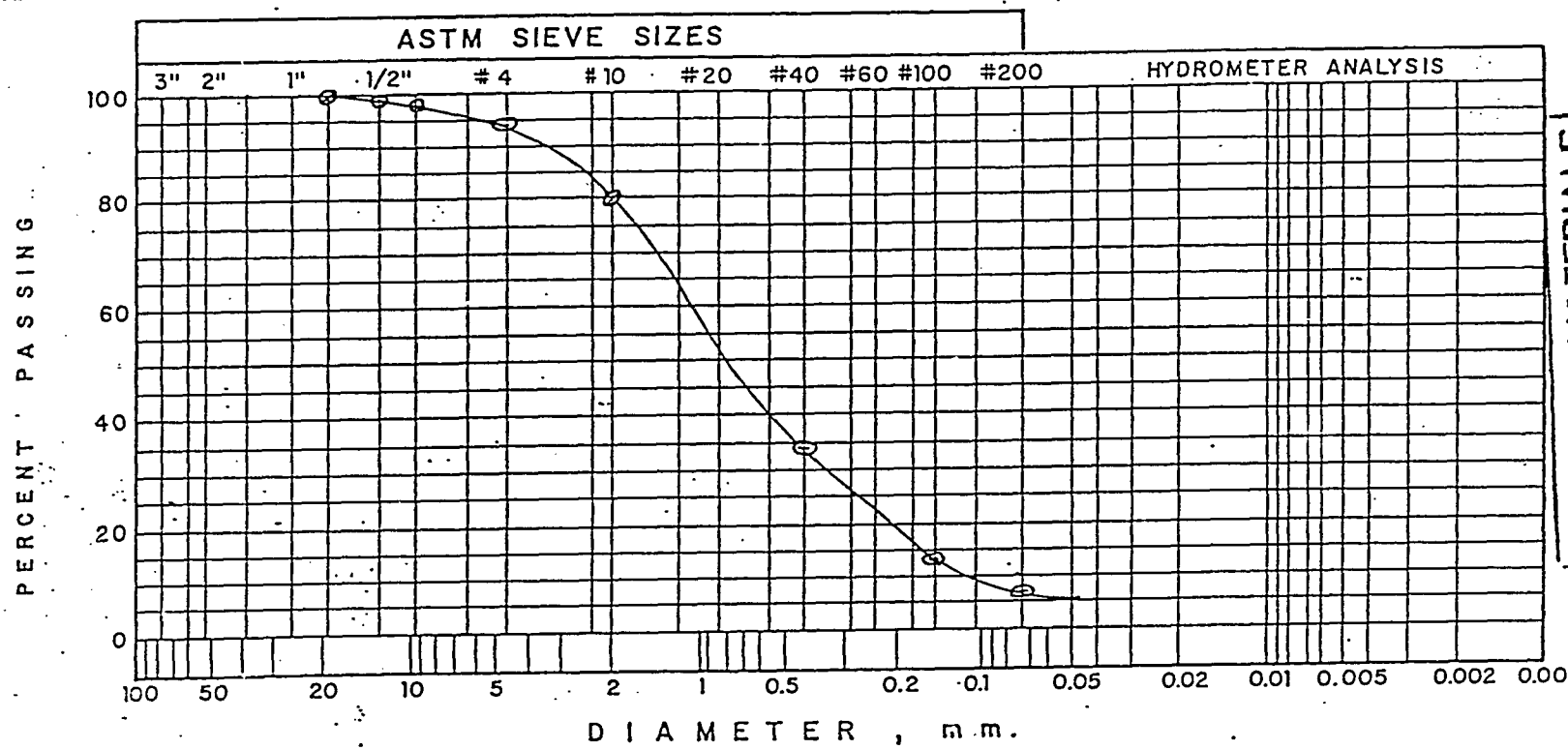
BEST AVAILABLE DOCUMENT

498

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

GRAIN SIZE DISTRIBUTION CURVES

PROJECT: South Cotabato Roads	SECTOR:	SECTION:
	STATION: 20+325 RS	KIND OF MATERIALS:
SOURCE:	PLOTTED BY: WPL	DATE: 2-11-93



MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 2-11-93, mn 93-094
SIGN.

BEST AVAILABLE DOCUMENT

STATION	TP. NO.	SAMPLE NUMBER	DEPTH	CURVE NUMBER	NMC	LL	PL	PI	CLASS	GI	DESCRIPTION
20+325	E-9-7				9.38	–	–	NP	A-1-b	0	Sand w/ little amount of sandstone gravel and traces of silt, gray

474

PHILIPPINE
GEOANALYTICS
CIVIL ENGINEERING LABORATORY

No. 21 Scout de Guia near
Corner Scout Reyes, Quezon City
Tel. Nos.: 97-27-12 & 98-21-62
Easy Call # 869-1111 Code # 23
Cellular Phone No.: 301-3524

PHIL. GEOANALYTICS SOUTH COTABATO HIGHWAYS PROJECT PG NO. 0424

GRADATION MECHANICAL ANALYSIS

DATE:

PROJECT: SOUTH COTABATO HIGHWAYS SECTION 7 SURALLAH – T'BOLI ROAD		DATE OF REPORT: APRIL 1993
SPECIFICATION	PURPOSE OF MATERIAL: IN-PLACE BASE COURSE MATLS (2nd LIFT)	SAMPLED BY AND DATE: AVZ/MAB 31 MARCH 1993
SAMPLED AT (Stockpile, batch plant, place, etc.): STA. 01+034.67 R.2	S#1	SOURCE (River, quarry, etc.): DALIAG SOURCE

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
	14598				1 1/2

NO.	SIEVE SIZE	SIEVE OPENING, (MM)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM PERCE RETAIN
1	2-1/2"	63.5						
2.	2"	52.8						
3.	1-1/2"	38.1	0	0	100	100	100	
4.	1"	25.4	1507	10.32	89.68	90		
5.	3/4"	19.1	2197	15.05	74.63	75	60-85	
6.	1/2"	12.7	1783	12.25	62.38	62		
7.	3/8"	9.52	728	4.99	57.39	57		
8.	No. 4	4.75	1308	8.96	48.43	48	30-55	
9.	No. 8	2.38						
10.	No. 10	2.00	1178	8.07	40.36	40		
11.	No. 12	1.65						
12.	No. 16	1.19						
13.	No. 20	0.84						
14.	No. 30	.59						
15.	No. 40	.42	3141	21.54	18.82	19	8-25	
16.	No. 50	.297						
17.	No. 60	.260						
18.	No. 80	.177						
19.	No. 100	.149						
20.	No. 200	.074	2060	14.11	4.71	5	2-14	
	PAN							
	WASH							
	TOTAL		14598					

FINENESS MODULUS: _____ CONFORMS

UNIT WEIGHT, g/cc: –

DRY LOOSE –

DRY RODDED –

F. M. = Σ % cum. Ret. of Sieve # (19, 16, 14, 12, 9, 8, 7, 5 & 3) / 100

TESTED BY: A.V. ZAGUIRRE / MAT'LS. TECH.

DATE 01 APRIL 1993

CHECKED BY: C.C. FARIÑA / SR. MAT'LS. ENGR.

DATE

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500

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PHILIPPINE
GEOANALYTICS
CIVIL ENGINEERING LABORATORY

No. 21 Scout de Guia near
corner Scout Reyes, Quezon City
Tel. Nos.: 97-27-12 & 98-21-62
Fax: Call # 869-1111 Code # 23638
Mobile Phone No.: 301-3524

PHIL. GEOANALYTICS SOUTH COTABATO HIGHWAYS PROJECT
PG No. 0449

GRADATION MECHANICAL ANALYSIS

DATE:

PROJECT: SOUTH COTABATO HIGHWAYS SECTOR 7 SURALLAH-TOOL ROAD		DATE OF REPORT: 24 APRIL 1993
SPECIFICATION	PURPOSE OF MATERIAL: SELECTED BORROW MATERIAL	SAMPLED BY AND DATE: MAJ GCM 24 APRIL 1993
SAMPLED AT (Stockpile, batch plant, place, etc.): IN-PLACE STOCKPILE MAT'L @ STA. 16+575 LS		SOURCE (River, quarry, etc.): STA. 15+775

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY 3886	WASHED OVEN DRY			

NO.	SIEVE SIZE	SIEVE OPENING, (MM)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM. PERCENT RETAINED
1	2-1/2"	63.5						
2.	2"	52.8	0	0	100	100		
3.	1-1/2"	38.1	165.5	4.26	95.74	96		
4.	1"	25.4	0	0	95.74	96		
5.	3/4"	19.1	93.3	2.40	93.34	93		
6.	1/2"	12.7						
7.	3/8"	9.52	259.6	6.68	86.66	87		
8.	No. 4	4.75	286.1	7.38	79.28	79		
9.	No. 8	2.38						
10.	No. 10	2.00	387.1	9.96	69.32	69		
11.	No. 12	1.65						
12.	No. 16	1.19						
13.	No. 20	0.84						
14.	No. 30	.59						
15.	No. 40	.42	1174.0	30.21	39.11	39		
16.	No. 50	.297						
17.	No. 60	.260						
18.	No. 80	.177						
19.	No. 100	.149						
20.	No. 200	.074	1089.6	28.04	11.07	11		
	PAN							
	WASH							
	TOTAL		3886					

FINENESS MODULUS: _____

F. M. = $\frac{\Sigma \text{ \% cum. Ret. of Sieve \# (19, 16, 14, 12, 9, 8, 7, 5 \& 3)}}{100}$

UNIT WEIGHT, g/cc: _____

DRY LOOSE _____

DRY RODDED _____

TESTED BY: G.G. MALATE / MAT'L. TECH. DATE 24 APRIL 1993

CHECKED BY: C.C. FARUM / SR. MAT'L. ENGR. DATE 24 APRIL 1993

Logbook Entry NO.

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501

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COMPACTION TEST

Project SOUTH COTABATO HIGHWAYS Job No. IN-PLACE BASE COURSE MATERIALS (2nd LIFT) @ STA. 0+034.67 RS

Location of Project SECTOR. 7 SURALLAH - TIBOLI ROAD Boring No. ____ Sample No. SM 1

Description of Soil ____

Test Performed By AVZ Date of Test 03 APRIL 1993

Blows/Layer 56 / No. of Layers 5 Wt. of Hammer 10 lb

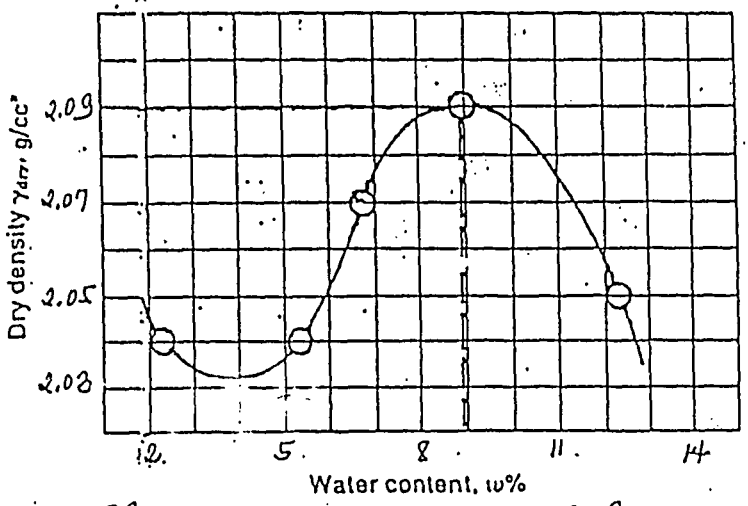
Mold dimensions: Diam. – in. Ht. – in. Vol. 2100 cu.cm.

Water Content Determination

Sample no.	1		2		3		4		5		6	
Moisture can no.	B-3		C-4		A-5		C-8		B-4			
Wt. of can + wet soil	347	20	515	00	531	70	674	50	572	50		
Wt. of can + dry soil	339	50	490	50	499	60	621	80	459	60		
Wt. of water	7	30	24	50	32	10	52	70	52	90		
Wt. of can	21	10	26	80	28	00	31	40	29	20		
Wt. of dry soil	318	70	463	70	471	60	590	40	430	40		
Water content, w%	2	26	5	28	6	80	8	93	12	30		

Density Determination

Assumed water content	–	–	–	–	–	
Water content, w%	2.26	5.28	6.80	8.93	12.30	
Wt. of soil + mold	12830	12956	13086	13229	13277	
Wt. of mold	8443	8443	8443	8443	8443	
Wt. of soil in mold	4387	4513	4643	4786	4834	
Wet density, g/cc	2.089	2.149	2.211	2.279	2.302	
Dry density γ, g/cc	2.04	2.04	2.07	2.09	2.05	



PHIL. GEOANALYTICS SOUTH COTABATO HIGHWAYS PROJECT FG CTO. 0428

Optimum moisture = 8.93 % Maximum dry density = 2.09 g/cc
130.4 PCF

502

PHILIPPINE GEOANALYTICS

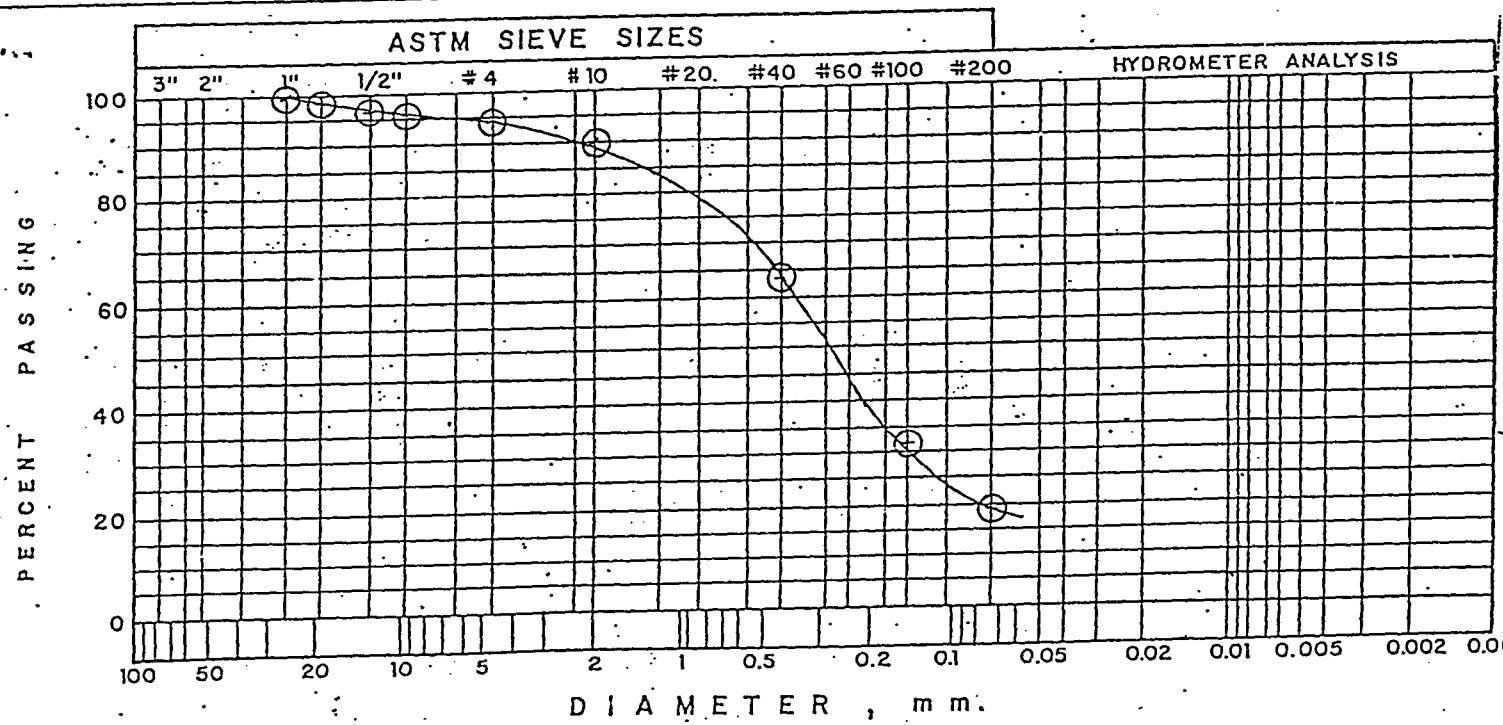
BEST AVAILABLE DOCUMENT

MORRISON KNUDSEN/CSSA

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

GRAIN SIZE DISTRIBUTION CURVES

PROJECT: South Cotabato Roads	SECTOR: 7	SECTION: Surallah - T'boli
	STATION: 18+962 RS/SH	KIND OF MATERIALS: Select Embankment/Shoulder
SOURCE:	PLOTTED BY: WPL	DATE: 5-8-93



MM/CSSA MATERIALS TESTING LABORATORY
DATE: 5-8-93
SIGN. mn 23-155

STATION	TP. NO.	SAMPLE NUMBER	DEPTH	CURVE NUMBER	NMC	LL	PL	PI	CLASS	GI	DESCRIPTION
18+962	E-35-7	S-1			15.03	–	–	NP	A-2-4	0	Sand with little silt and traces of medium to fine gravel, brown

323

Morrison-Maierle/CSSA
Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

E-35-7
S-1

MECHANICAL ANALYSIS

ROAD SECTOR 7			DATE
SPECIFICATION	PURPOSE OF MATERIAL SHOULDER SELECT EMBNKMENT	SAMPLED BY & DATE MM/GEOANALYTICS 4/28	
SAMPLED AT (stockpile, batch plant, etc) (IN-PLACE) STA 18+962 RS SHOULDER		SOURCE, (river, quarry)	

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
3381.6	2939.7	2493.8	15.03		

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM PERCENT RETAINED
2-1/2"	63.5						
2"	52.8						
1-1/2"	38.1						
1"	25.4	0	0	100	100		0
3/4"	19.1	63.8	2.17	97.83	98		2
1/2"	12.7	25.3	0.86	96.97	97		3
3/8"	9.52	18.7	0.64	96.33	96		4
No. 4	4.75	61.9	2.11	94.22	94		6
No. 8	2.38						
No. 10	2.00	114.6	3.90	90.32	90		10
No. 12	1.65						
No. 16	1.19						
No. 20	0.84						
No. 30	0.59						
No. 40	0.42	807.0	27.47	62.85	63		37
No. 50	0.297						
No. 60	0.260						
No. 80	0.177						
No. 100	0.049	909.9	30.95	31.90	32		68
No. 200	0.074	372.5	12.67	19.23	19		81
PAN		119.5					
WASH		445.9					
TOTAL							

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 5-08-93 mm 93-155
SIGN

FINENESS MODULUS:
TESTED BY RPB/RFG DATE 5-1-93
CHECKED BY YSP / CLF DATE
ENTERED BY DATE

UNIT WEIGHT, PCF:
DRY LOOSE
DRY RODDED

BEST AVAILABLE DOCUMENT

504

PHILIPPINE
GEOANALYTICS
CIVIL ENGINEERING LABORATORY

No. 21 Scout de Guia near
corner Scout Reyes, Quezon City
Tel. Nos. : 97-27-12 & 98-21-62
Easy Call # 869-1111 Code # 23638
Cellular Phone No. : 301-3524

GRADATION MECHANICAL ANALYSIS

DATE:

PROJECT: SOUTH COTABATO HIGHWAYS SECTOR 7 SURALLAH - T'BOLI ROAD

DATE OF REPORT:

SPECIFICATION:

PURPOSE OF MATERIAL:

SAMPLED BY AND DATE: RE 16 DEC '92

SAMPLED AT (Stockpile, batch plant, place, etc.): LUMAYAG 3/4 C.A.

SOURCE (River, quarry, etc.):

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
	4,400				1

NO.	SIEVE SIZE	SIEVE OPENING, (MM)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM. PERCENT RETAINED
1	2-1/2"	63.5						
2.	2"	52.8						
3.	1-1/2"	38.1						
4.	1"	25.4			100	100	100	
5.	3/4"	19.1	66	1.50	98.50	99	70-100	
6.	1/2"	12.7	1748	39.73	58.77	59		
7.	3/8"	9.52	1506	34.23	24.54	25	20-55	
8.	No. 4	4.75	907	20.61	3.94	4	0-10	
9.	No. 8	2.38	29	0.66	3.27	3		
10.	No. 10	2.00						
11.	No. 12	1.65						
12.	No. 16	1.19						
13.	No. 20	0.84						
14.	No. 30	.59						
15.	No. 40	.42						
16.	No. 50	.297						
17.	No. 60	.260						
18.	No. 80	.177						
19.	No. 100	.149						
20.	No. 200	.074	39	0.89	2.38	2		
	PAN							
	WASH							
	TOTAL		4,400					

PHILIPPINE GEOANALYTICS
JOB NO. 0339
ROAD PROJECT

FINENESS MODULUS: _____

F. M. = $\frac{\Sigma \text{ \% cum. Ret. of Sieve \# (19, 16, 14, 12, 9, 8, 7, 5 \& 3)}}{100}$

UNIT WEIGHT, g/cc: _____

DRY LOOSE _____

DRY RODDED _____

TESTED BY: R. ESGANAD / MATLS. ENGR.

DATE 17 DEC '92

CHECKED BY: C.C. FARUM / SR. MATLS. ENGR.

DATE 17 DEC '92

Logbook Entry NO.	

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505

MORRISON MAIERLE/CSSA

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

Moisture Density Relation of Soil
AASHTO Designation: T 99 and T 180

E-35-7
S-1

PROJECT: SOUTH COTT. ROAD PROJ. ISLAND:

ROAD SECTOR: 7 SECTION: STATION: 18+962 RS

KIND OF MATERIALS: SELECT EMBKMNT MTL FOR SHOULDER SOURCE:

SAMPLED BY: VSF/RBD DATE SAMPLED:

TESTED BY: ROMY PGA – RUEL MM DATE TESTED: 5-8-93

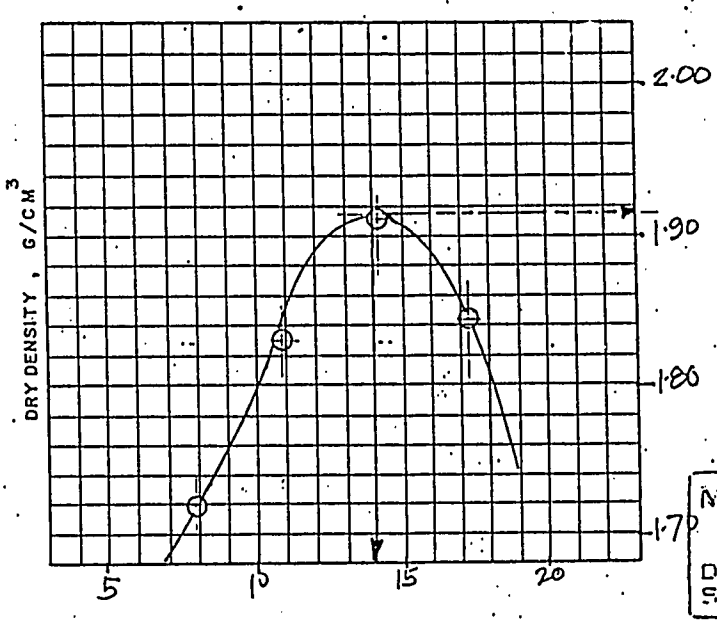
METHOD : A VOLUME OF MOLD: 935.47 CU. CM.

WEIGHT OF MOLD : 4290.2 G. 4" ϕ + 1 BLOWS/LAYER: 25 WT. OF HAMMER: 4535 G.

NUMBER OF LAYER : 5

COMPACTIVE EFFORT: m.Kg/m³

TRIAL NO.	MOLD + WET SOIL (G)	WET SOIL (G)	WET UNIT WEIGHT (G/CC)	MOISTURE CONTENT DETERMINATION							DRY UNIT WEIGHT (G/CC)
				WET SOIL + CAN (G)	DRY SOIL + CAN (G)	MOISTURE (G)	CAN NUMBER	WEIGHT OF CAN (G)	DRY SOIL (G) (G)	MOISTURE CONTENT	
1	6024.1	1733.9	1.854	484.8	451.5	33.3	A-17	26.0	425.5	7.83	1.719
2	6188.2	1898.0	2.029	467.7	424.4	43.3	A-9	25.9	398.5	10.87	1.830
3	6332.2	2042.0	2.183	498.9	439.8	59.1	A-16	24.0	415.8	14.21	1.911
4	6311.1	2020.9	2.160	571.0	490.9	80.1	A-25	25.7	465.2	17.22	.843
5											



MAXIMUM DRY DENSITY 1.916 G/C.C.
119.6 PCF

OPTIMUM MOISTURE CONTENT % 14.0 %

THE SAME CONTROL TO BE USED ON STA. 18+962 L.S AND 21+189 RS

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 5-08-93 · MM 93-155
SIGN.

REMARKS / RECOMMENDATIONS: JOINT SAMPLE/TEST

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CIVIL ENGINEERING LABORATORY

Mindanao Development Program
South Cotabato Road Project

PHIL. GEOANALYTICS PROJECT SOUTH COTABATO HIGHWAY

MECHANICAL ANALYSIS

ROAD SECTOR			DATE
SECTOR 7 SURALLAH - T'BOLI ROAD			
SPECIFICATION	PURPOSE OF MATERIAL	SAMPLED BY & DATE. 5-13-93	
SAMPLED AT (stockpile, batch plant, etc) 3/4 AGGREGATE		SOURCE, (river, quarry) Bo. 4 MARBEL	

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
	8798.8				

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM PERCENT RETAINED
2-1/2"	63.5						
2"	52.8						
1-1/2"	38.1						
1"	25.4	0	0.	100	100		
3/4"	19.1	30.8	0.35	99.65	100		
1/2"	12.7	4376.5	49.74	49.91	50		
3/8"	9.52	2090.6	23.76	26.15	26		
No. 4	4.75	1601.4	18.20	7.95	8		
No. 8	2.38	92.4	1.05	6.90	7		
No. 10	2.00						
No. 12	1.65						
No. 16	1.19	39.6	0.45	6.45	6		
No. 20	0.84						
No. 30	0.59	34.3	0.39	6.06	6		
No. 40	0.42						
No. 50	0.297	70.4	0.80	5.26	5		
No. 60	0.260						
No. 80	0.177						
No. 100	0.149	139.9	1.59	3.67	4		
No. 200	0.074	132.0	1.50	2.17	2		
PAN		190.9	2.17				
WASH							
TOTAL.							

FINENESS MODULUS:
TESTED BY [illegible] DATE 5-15-93
CHECKED BY [illegible] DATE
ENTERED BY DATE

UNIT WEIGHT, PCF:
DRY LOOSE
DRY RODDED

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PHILIPPINE
GEOANALYTICS
CIVIL ENGINEERING LABORATORY

No. 21 Scout de Guia near
corner Scout Reyes, Quezon City
Tel. Nos.: 97-27-12 & 98-21-62
Easy Call # 869-1111 Code # 23638
Cellular Phone No.: 301-3524

PHILIPPINE GEOANALYTICS GEN. SERV. PROJECT JOB NO. 0359

GRADATION MECHANICAL ANALYSIS

DATE: 12-17-92

PROJECT: SEC. 7 BYPULLAH - T'BOLI ROAD		DATE OF REPORT: 12-17-92
SPECIFICATION	PURPOSE OF MATERIAL: FINE AGG. FOR CONCRETING	SAMPLED BY AND DATE: RE 12-16-92
SAMPLED AT (Stockpile, batch plant, place, etc.): LUMBUAG STOCKPILE		SOURCE (River, quarry, etc.): F.A.

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
	1476				1 1/2

NO.	SIEVE SIZE	SIEVE OPENING, (MM)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM. PERCENT RETAINED
1	2-1/2"	63.5						
2.	2"	52.8						
3.	1-1/2"	38.1	0	0	100	100		
4.	1"	25.4	168.8	11.44	88.56	89		
5.	3/4"	19.1						
6.	1/2"	12.7	35	2.37	86.19	86		
7.	3/8"	9.52	22.4	1.52	84.67	85	100	
8.	No. 4	4.75	53.5	3.62	81.05	81	95-100	
9.	No. 8	2.38	54.6	3.70	77.35	77		
10.	No. 10	2.00						
11.	No. 12	1.65						
12.	No. 16	1.19	75.1	5.09	72.26	72	45-80	
13.	No. 20	0.84						
14.	No. 30	.59	205.7	13.92	58.34	56		
15.	No. 40	.42						
16.	No. 50	.297	517.8	35.08	23.26	23	5-30	
17.	No. 60	.260						
18.	No. 80	.177						
19.	No. 100	.149	296.5	20.09	3.17	3	0-10	
20.	No. 200	.074	49.5	3.35	0.18	0.18	0-3	
	PAN							
	WASH							
	TOTAL		1476					

FINENESS MODULUS: _____

F. M. = $\frac{\sum \text{\% cum. Ret. of Sieve \# (19, 16, 14, 12, 9, 8, 7, 5 \& 3)}}{100}$

TESTED BY: M. T. RAYO / MAT'L ENGR.

CHECKED BY: C. C. FARIM / SR. MAT'L ENGR.

UNIT WEIGHT, g/cc: _____

DRY LOOSE _____

DRY RODDED _____

DATE 12-17-92

DATE 12-17-92

Logbook Entry NO.	

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CIVIL ENGINEERING LABORATORY

Mindanao Development Program
South Cotabato Road Project

PHIL. GEOANALYTICS
SOUTH COTABATO ROAD PROJECT
No. 0461

MECHANICAL ANALYSIS

ROAD SECTOR: SECTOR 7 SURALLAH - T'BOLI ROAD		DATE
SPECIFICATION	PURPOSE OF MATERIAL	SAMPLED BY & DATE: 5-13-93
SAMPLED AT (stockpile, batch plant, etc): FINE AGGREGATES		SOURCE, (river, quarry): BO. U MANBEL

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
	1525.3				

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH SC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM PERCENT RETAINED
2-1/2"	63.5						
2"	52.8						
1-1/2"	33.1						
1"	25.4						
3/4"	19.1						
1/2"	12.7						
3/8"	9.52	0	0	100	100		
No. 4	4.75	306.0	20.06	79.94	80		
No. 8	2.38	342.4	22.45	57.49	57		
No. 10	2.00						
No. 12	1.65						
No. 16	1.19	212-17	13.91	43.58	44		
No. 20	0.84						
No. 30	0.59	175.4	11.50	31.98	32		
No. 40	0.42						
No. 50	0.297	161.4	10.58	21.40	21		
No. 60	0.260						
No. 80	0.177						
No. 100	0.149	131.8	8.64	11.76	12		
No. 200	0.074	78.6	5.15	6.61	7		
PAN		100.7	6.60				
WASH							
TOTAL							

FINENESS MODULUS:
TESTED BY: [illegible] DATE: 5-15-93
CHECKED BY: CCP / Sr. [illegible] DATE:
ENTERED BY: DATE:

UNIT WEIGHT, PCF:
DRY LOOSE:
DRY RODDED:

BEST AVAILABLE DOCUMENT

509

GEOANALYTICS

Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

PHIL. GEOANALYTICS · SOUTH COTABATO ROAD PROJECT · FG · No. 044

Specific Gravity and Absorption of Fine and Coarse Aggregates
AASHTO Designation: T84 and T85

Road Sector	SECTOR 7 SURALLAH - T'BOLI ROAD	Date	
Section:		Station	
Kind of Material:	3/4 AGGREGATES	Source	Bo. 4 MARB
Sampled by:		Date Sampled:	5-13-93
Tested by:	S.J.R.F. ESCANAN / MATLS ENGR	Date Tested:	5-14-93
Supervised by:			

COARSE AGGREGATE (Wire Basket Method)				
1.	Wt of SSD Sample + basket in air, g RETAINED NO. 4 OF 3/4 AGG.	5569.4	5818.7	
2.	Wt of Basket in air, g	343.1	351.6	
3.	Wt of SSD Sample in air, g (1)-(2)	5226.3	5467.1	
4.	Wt of Sample + Basket in water, g	4289.3	4485.6	
5.	Wt of Basket in water, g	1147.5	1147.5	
6.	Wt of Sample in water, g (4-5)	3141.8	3278.1	
7.	Wt of oven-dry sample, g	5053.1	5300.4	
8.	Bulk Specific Gravity (DRY) (7)/(3)-(6)	2.424	2.421	2.42
9.	Bulk Specific Gravity (SSD) (3)/(3)-(6)	2.507	2.498	2.50
10.	Apparent Specific Gravity 7/(7)-(6)	2.644	2.621	2.62
11.	Absorption, % (3-7)/(7) x 100	3.428	3.145	3.29

FINE AGGREGATE (Pycnometer Method)				
1.	Wt of SSD sample, g. PASSING NO 4 OF 3/4 AGG.	500.0		
2.	Wt of pycnometer filled with water, g	676.1		
3.	Wt of pycnometer + sample + water, g	989.6		
4.	Wt of oven-dry sample, g	485.9		
5.	Bulk Specific Gravity (DRY) 4/(2)+(1)-(3)	2.605		
6.	Bulk Specific Gravity (SSD) 1/(2)+(1)-(3)	2.681		
7.	Apparent Specific Gravity 4/(2)+(4)-(3)	2.819		
8.	Absorption, % (1)-(4)/4 x 100	2.902		

Remarks:

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PHILIPPINE
GEOANALYTICS
CIVIL ENGINEERING LABORATORY

No. 21 Scout de Guia near
corner Scout Reyes, Quezon City
Tel. Nos. : 97-27-12 & 98-21-62
Easy Call # 869-1111 Code # 23638
Cellular Phone No. : 301-3524

PHIL. GEOANALYTICS SOUTH COTABATO HIGHWAYS PROJ. NO. 0470

GRADATION MECHANICAL ANALYSIS

DATE:

PROJECT SOUTH COTABATO HIGHWAYS SECTOR 7 JURALLAH - TIBOLI ROAD		DATE OF REPORT 28 MAY 1993
SPECIFICATION	PURPOSE OF MATERIAL ASPHALTIC AGGREGATES	SAMPLED BY AND DATE MCB 25 MAY 1993
SAMPLED AT (Stockpile, batch plant, place, etc.) MK CRUSHER PLANT (BARRIO 4 - MABAEL)		SOURCE (River, quarry, etc.)

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY 4720	WASHED OVEN DRY			3/4

NO.	SIEVE SIZE	SIEVE OPENING, (MM)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM. PERCENT RETAINED
1	2-1/2"	63.5						
2.	2"	52.8						
3.	1-1/2"	38.1						
4.	1"	25.4						
5.	3/4"	19.1	0	0	100	100		
6.	1/2"	12.7	2187	46.33	53.67	54		
7.	3/8"	9.52	1610	34.11	19.56	20		
8.	No. 4	4.75	699	14.81	4.75	5		
9.	No. 8	2.38	33	0.07	4.68	5		
10.	No. 10	2.00						
11.	No. 12	1.65						
12.	No. 16	1.19	4.7	0.10	4.58	5		
13.	No. 20	0.84						
14.	No. 30	.59	22.2	0.47	4.11	4		
15.	No. 40	.42						
16.	No. 50	.297	9.4	0.20	3.91	4		
17.	No. 60	.260						
18.	No. 80	.177						
19.	No. 100	.149						
20.	No. 200	.074	29.7	0.63	3.28	3		
	PAN							
	WASH							
	TOTAL		4720					

FINENESS MODULUS: _____

UNIT WEIGHT, g/cc: _____

DRY LOOSE _____

DRY RODDED _____

F. M. = $\frac{\Sigma \text{ \% cum. Ret. of Sieve \# (19, 16, 14, 12, 9, 8, 7, 5 \& 3)}}{100}$

TESTED BY: G.G. MALATE / MAT'LS. TECH.

CHECKED BY: C.C. FAJUM / SR. MAT'LS. ENGR.

DATE 27 MAY 1993

DATE 28 MAY 1993

Logbook Entry NO.	

BEST AVAILABLE DOCUMENT

511

PROJECT	:	South Cotabato Highways
LOCATION	:	General Santos City
CLIENT	:	Morrison Knudsen Corp.
SAMPLE	:	Portland Cement, Type I
BRAND	:	UnionDavao Portland Cement
DATE SAMPLED	:	January 06, 1993
SAMPLED AT	:	Sector 7 Surallah - Tiboli Road
SAMPLED BY	:	D.M. Cuison/C.C. Farum
REFERENCE	:	ASTM C150, Type I
DATE	:	04 March 1993

CERTIFICATION

This is to certify that Physical and Chemical Analysis of the above sample as received had been tested at Cement Central Laboratory of the Philippine Cement Manufacturers Corporation, as covered by Laboratory Reference No. C8191-0193, in accordance with the above reference.

The results of tests are as summarized below:

Requirements	ASTM C150, Type I	Test Results
I. Physical Analysis:		
1. Blaine Air Permeability Test		
Specific Surface, m^2/kg.	280 min.	343
2. Autoclave Expansion, %	0.80 max.	0.24
3. Compressive Strength, psi		
3 days	1800 min.	2810
7 days	2800 min.	3660
28 days	4000 min.	4280
4. Time of Setting Gillmore:		
Initial, minutes	60 min.	128
Final set, minutes	600 max.	213
II. Chemical Analysis:		
1. Silicon dioxide (SiO_2),%		20.1
2. Aluminum Oxide (Al_2O_3),%	-	6.6
3. Ferric Oxide (Fe_2O_3),%	-	3.1
4. Magnesium Oxide (MgO),%	6.0 max.	2.8
5. Sulfur Trioxide (SO_3),%	3.5 max.	2.1
6. Loss on Ignition,%	3.0 max.	1.4
7. Insoluble Residue, %	0.75 max.	0.14
8. Tricalcium Silicate (C_3S),%	-	47
9. Dicalcium Silicate (C_2S),	-	22
10. Tricalcium Aluminate (C_3A),%	-	12
11. Tetracalcium Alumino Ferrite (C_4AF),%	-	9
12. Calcium Oxide (CaO),%	-	62.6

PHILIPPINE GEOANALYTICAL MATERIALS TESTING
PG
MAIN
NO. 25399

Certified by:

EMILIO M. MORALES, MSCE
PHILIPPINE CIVIL ENGINEER
PRC REG. NO. [illegible]

GEOANALYTIC

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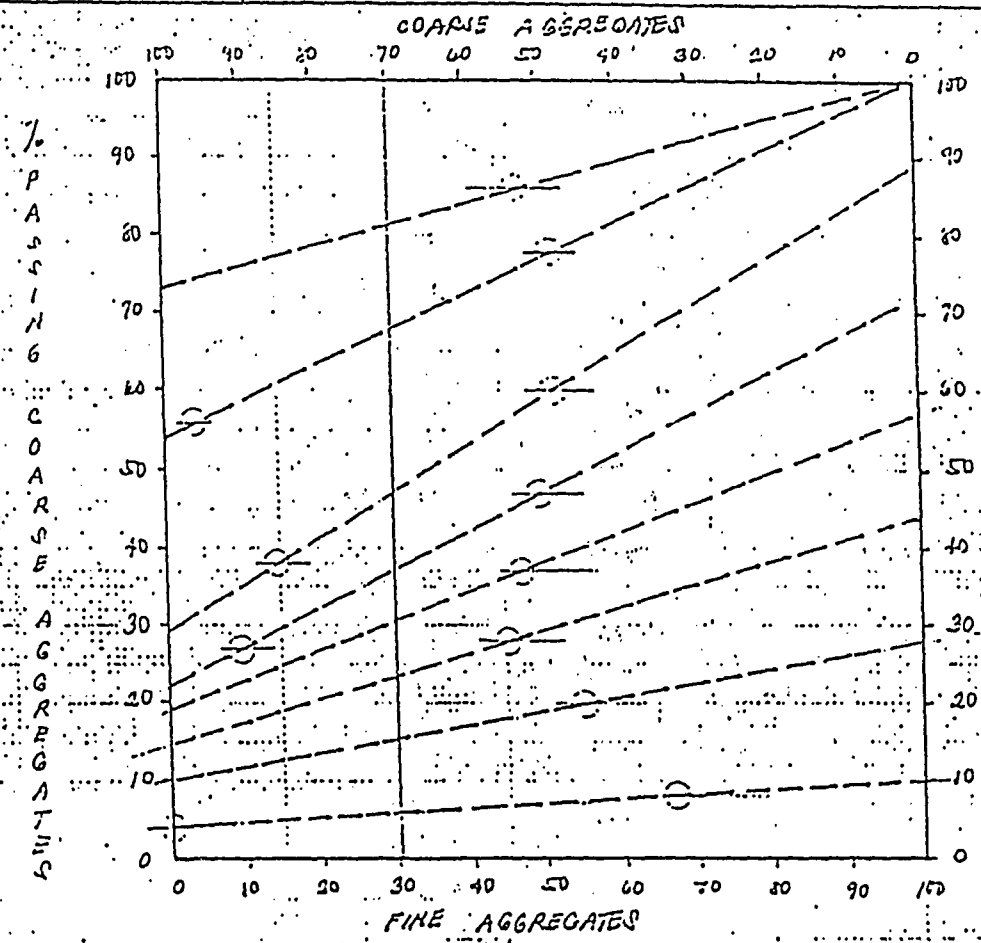
512

PHILIPPINE
GEOANALYTICS

	COMPUTER PRINTOUT ☐ DETAILS PREPARED ☐	SHEET GEO-... OF ...
PROJECT: SECTOR 7 SURALLAH-TIBOLI ROAD	JOB NO:	CROSS REFERENCE:
SUBJECT: BARRIO 4 - CRUSHER PLANT	TESTED BY:	CHECKED BY:
3/4" CA & 3/8" FA COMBINED ASPHALTO AGGREGATES	DATE TESTED:	DATE FINISHED: 20 MAY 1990

DATE SAMPLED: 17 MAY 1990



IDEAL COMBINATION: 70% COARSE / 30% FINE

SIEVE SIZE	THEORETICAL RESULTS	SPEC'S. GRADING "C"
3/4"	100	95-100
1/2"	81	68-86
3/8"	68	50-73
#4	47	38-60
#8	37	27-47
#16	30	18-37
#30	23	13-28
#50	15	9-20
#200	6	4-8

PREPARED BY: E. S. GARCIA, LABORATORY ENGR.

REPORTED BY: C. C. FARUM, JR. MATLS. ENGR.

NOTED BY: R. B. CAPUNG, MRCOC ENGR.

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1 KN = 101.971 KGF
1 KPa = 20.885 PSF
1 MPa = 145 PSI

513

PHILIPPINE
GEOANALYTICS
CIVIL ENGINEERING LABORATORY

No. 21 Scout de.Guia near
Corner Scout Reyes, Quezon City
Tel. Nos. : 97-27-12 & 98-21-62
Easy Call # 869-1111 Code # 23638
Cellular Phone No. : 301-3524

PHIL. GEOANALYTICS SOUTH COTABATO HIGHWAYS PROJECT
NO. 0470

GRADATION MECHANICAL ANALYSIS

DATE:

PROJECT: SOUTH COTABATO HIGHWAYS SECTOR 7 SURALLAH - TIPOLI ROAD		DATE OF REPORT: 28 MAY 1993
SPECIFICATION	PURPOSE OF MATERIAL: ASPHALTIC AGGREGATES	SAMPLED BY AND DATE: MCB 25 MAY 1993
SAMPLED AT (Stockpile, batch plant, place, etc.): MK CRUSHER PLANT (BARRIO 4 - MARBEL)		SOURCE (River, quarry, etc.)

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
	2088				3/8

No.	SIEVE SIZE	SIEVE OPENING, (MM)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM. PERCENT RETAINED
1	2-1/2"	63.5						
2	2"	52.8						
3.	1-1/2"	38.1						
4	1"	25.4						
5	3/4"	19.1						
6.	1/2"	12.7						
	3/8"	9.52	0	0	100	100		
8.	No. 4	4.75	253.9	12.16	87.84	88		
9.	No. 8	2.38	352.7	16.89	70.95	71		
10.	No. 10	2.00						
11.	No. 12	1.65						
12.	No. 16	1.19	297.5	14.25	56.70	57		
13.	No. 20	0.84						
14.	No. 30	.59	267.9	12.83	43.87	44		
15.	No. 40	.42						
16.	No. 50	.297	343.5	16.45	27.42	27		
17.	No. 60	.260						
18.	No. 80	.177						
19.	No. 100	.149						
20.	No. 200	.074	382.3	18.31	9.11	9		
	PAN							
	WASH							
	TOTAL		2088					

FINENESS MODULUS: _____

F.M. = $\frac{\Sigma \text{ \% cum. Ret. of Sieve \# (19, 16, 14, 12, 9, 8, 7, 5 \& 3)}}{100}$

UNIT WEIGHT, g/cc: -

DRY LOOSE -

DRY RODDED -

TESTED BY: G.C. MALAJE / MAT'LS. TECH. DATE 27 MAY 1993

CHECKED BY: A.C. FAPUM / JR. MAT'LS ENGR. DATE 28 MAY 1993

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Logbook Entry NO.	

514

PROJECT	:	South Cotabato Highways Sector 7 Surallah - Tiboli Road
LOCATION	:	General Santos City
CLIENT	:	Morrison Knudsen Corp.
SAMPLE	:	Asphalt Cement, Penetration Grade 60-70
SAMPLED BY	:	CC Farunn/R. B. Cabling
DATE SAMPLED	:	February 23, 1993
SAMPLED AT	:	Surallah Asphalt Plant
REFERENCE	:	AASHTO M-20
DATE	:	February 27, 1993

TAIWAN ORIGIN

CERTIFICATION

This is to certify that the above sample as received had been tested at Philippine Rock Products, Inc. in accordance with the above reference.

The result of test is as summarized below:

Physical Requirement	Reference		Test Result
	min.	max.	
1. Penetration @ 25°C, 100 g., 5 sec.	60	70	64

Certified by:

BEST AVAILABLE DOCUMENT

PHILIPPINE GEOANALYTICS MATERIALS TESTING LABORATORY
PG
MAIN
NO. 8331

EMILIO N. MORALES, MSCE
CIVIL ENGINEER
PRC REG. NO. 11236

PHILIPPINE GEOANALYTICS

515

PROJECT	:	South Cotabato Highways, Sector 7 Surallah-Tiboli Road
LOCATION	:	General Santos City
CLIENT	:	Morrison Knudsen Corp.
SAMPLE	:	Asphalt Cement, Penetration Grade 60-70
SAMPLED BY	:	C.C.Farum/R.B. Cabling
DATE SAMPLED	:	February 23, 1993
SAMPLED AT	:	Surallah Asphalt Plant – stock yard at Dahiog, Allah River
REFERENCE	:	AASHTO M-20
DATE	:	March 02, 1993

From: Kaohsiung, Taiwan

CERTIFICATION

This is to certify that the above sample as received had been tested at our Central Laboratory as covered by Laboratory Report No. PG-93-331, in accordance with the above reference.

The results of tests are as summarized below:

Requirements	Reference min.	Reference max.	Test Results
I. Original Sample:			
1. Solubility in trichloroethylene,%	99.0	-	99.6
2. Flash Point, Cleveland Open Cup, °F	450	-	580
3. Loss on Heating, %	-	0.80	0.48
4. Ductility at 25 °C, 5 cm/min., cm.	100	-	100+

BEST AVAILABLE DOCUMENT

This Laboratory responsible for test only

Certified by:

EMILIO M. MORALES, MSCE
CIVIL ENGINEER
PRC REG. NO. 11236

FROM: COMPUTER / MANUAL
BY:
QUALITY CONTROL
CHKD. BY:
DATE: 3/2/93

PHILIPPINE GEOANALYTICAL TESTING LABORATORY
PG
MAIN
NO. 2331

PHILIPPINE GEOANALYTIC

516

Morrison Maierle/CSSA

Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

E-31-7

Soundness Test
AASHTO Designation: T104

Road Sector	7	Date	
Section:		Station	
Kind of Material:	3/4 CA	Source	PO. 4 MARBEL
Sampled by:	KBD	Date Sampled:	4-17-93
Tested by:	RPB	Date Tested:	4-29-93
Supervised by:	VSF		

CYCLE	IMMERSION PERIOD				Number of Hours Soaked	Specific Gravity of Solution
	From		To			
	Date	Time	Date	Time		
1	4-23-93	1600	4-24-93	0800	16	
2	4-24-93	1600	4-25-93	0800	16	
3	4-26-93	1600	4-27-93	0900	17	
4	4-27-93	1600	4-28-93	0900	17	
5	4-28-93	1600	4-29-93	0800	16	

SIEVE		Sample of Original Grading Percent Retained After AASHTO T11 (A)	Weight Test Fraction Before Test, gram (B)	Size of Sieve used to Determine Loss (C)	Weight Test Fraction After Test, gram (D)	Percent Loss After Test (E)	Weighted Average (Corrected Percentage Loss) (F)
Passing	Retained						
SOUNDNESS TEST FOR FINE AGGREGATE							
# 100							
# 50	# 100						
# 30	# 50						
# 16	# 30						
# 8	# 16						
# 4	# 8						
3/8"	# 4						
TOTALS							
SOUNDNESS TEST FOR COARSE AGGREGATE							
3/8"	# 4	35.91	300.4	#5	276.0	8.12	2.92
3/4"	3/8"	64.09	1000.2	5/16"	933.6	6.66	4.27
1 1/2"	3/4"						
2 1/2"	1 1/2"						
TOTALS		100					(7.19)

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 4-30-93, mm93-146
SIGN:

Remarks: (+) No. 4 : 80.32 %
(-) No. 4 : 19.68 %

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517

Morrison Maierle/CSSA

Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

Soundness Test
AASHTO Designation: T104

E-32-7

Road Sector	7	Date	
Section:		Station	MARBEL
Kind of Material:	FA	Source	BO.4
Sampled by:	RBD	Date Sampled:	4-17-93
Tested by:	RPB	Date Tested:	5-1-93
Supervised by:	NSF		

CYCLE	IMMERSION PERIOD From Date	From Time	To Date	To Time	Number of Hours Soaked	Specific Gravity of Solution
1	4-26-93	1600	4-27-93	0900	17	1.170
2	4-27-93	1600	4-28-93	0900	17	1.170
3	4-28-93	1600	4-29-93	0800	16	1.165
4	4-29-93	1630	4-30-93	0900	16.5	1.160
5	4-30-93	1600	5-01-93	0800	16	1.155

SIEVE Passing	SIEVE Retained	Sample of Original Grading Percent Retained After AASHTO T11 (A)	Weight Test Fraction Before Test, gram (B)	Size of Sieve used to Determine Loss (C)	Weight Test Fraction After Test, gram (D)	Percent Loss After Test (E)	Weighted Average (Corrected Percentage Loss) (F)
SOUNDNESS TEST FOR FINE AGGREGATE							
# 100		11.72					
# 50	# 100	12.26					
# 30	# 50	17.00	100.1	No. 50	99.0	1.10	0.19
# 16	# 30	15.07	100.1	30	96.9	3.20	0.48
# 8	# 16	14.53	100.2	16	96.3	3.89	0.57
# 4	# 8	16.79	100.0	8	90.5	9.50	1.60
3/8"	# 4	12.63	100.7	4	93.0	7.65	0.97
TOTALS		100					3.81
SOUNDNESS TEST FOR COARSE AGGREGATE							
3/8"	# 4						
3/4"	3/8"						
1 1/2"	3/4"						
2 1/2"	1 1/2"						
TOTALS							

OK

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 15-02-93 MM R3-147
SIGN.

Remarks:

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518

GEOANALYTICS

No. 21 Scout de Guia, Quezon City

MECHANICAL ANALYSIS

PHIL. GEOANALYTICS SOUTH COTABATO HIGHWAYS PROJECT FG NO. 6401

LAB. NO.:

DATE:

PROJECT: SECTION 5 NORALA – KOLAMBOG ROAD SOUTH COTABATO HIGHWAYS		DATE OF REPORT
SPECIFICATION	PURPOSE OF MATERIAL: COMMON BORROW MATERIALS	SAMPLED BY AND DATE: BT/OVG 04 MARCH 1973
SAMPLED AT (Stockpile, batch plant, place, etc.): NORALA QUARRY		SOURCE (River, quarry, etc.): STA. 16 + 300

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
	550.9				

SIEVE SIZE	SIEVE OPENING, (MM)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM. PERCENT RETAINED
2-1/2"	63.5						
2"	52.8						
1-1/2"	38.1						
1"	25.4						
3/4"	19.1						
1/2"	12.7						
3/8"	9.52	0	0	100	100		
No. 4	4.75	0.7	.12	99.88	100		
No. 8	2.38						
No. 10	2.00	0.8	.14	99.74	100		
No. 12	1.65						
No. 16	1.19						
No. 20	0.84						
No. 30	.59						
No. 40	.42	112.7	19.40	80.34	80		
No. 50	.297						
No. 60	.260						
No. 80	.177						
No. 100	.149						
No. 200	.074	324.3	55.83	24.51	24		
PAN							
WASH							
TOTAL							

FINENESS MODULUS: _____

UNIT WEIGHT, PCF:

DRY LOOSE _____

DRY RODDED _____

TESTED BY: M. A. BAUTISTA DATE 04 MARCH 1973

CHECKED BY: CC FARUM / SR. MATLS ENGR. DATE _____

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519

Morrison Maierle/CSSA

Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

Resistance to Abrasion of Small Coarse Aggregate by Use of the Los Angeles Machine
AASHTO Designation: T96

E-31-7

Road Sector: 7
Section: SURALLAH – T'BOLI
Kind of Material: 3/4 CA FOR AC
Sampled by: RBD
Tested by: TLD
Supervised by: RPB

Date:
Station:
Source: BO. 4 MARBEL
Date Sampled: 4-17-93
Date Tested: 4-20-93

GRADING OF TEST SAMPLES

Sieve Size				Mass of Indicated Sizes, grams Grading				Actual Mass grams
Passing		Retained		A	B	C	D	B
mm 37.50	inch 1 1/2"	mm 25.0	inch 1"	1250±25				
25.00	1"	19.0	3/4"	1250±25				
19.00	3/4"	12.5	1/2"	1250±10	2500±10			2502.
12.50	1/2"	9.5	3/8"	1250±10	2500±10			2503.
9.50	3/8"	6.3	1/4"			2500±10		
6.30	1/4"	4.75	No. 4			2500±10		
4.75	No. 4	2.36	No. 8				5000±10	
TOTAL				5000±10	5000±10	5000±10	5000±10	5005.

Grading	Number of Spheres	Mass of Charge, grams	Actual Mass, grams
A	12	5000±25	
B	11	4584±25	
C	8	3330±25	
D	6	2500±15	

Weight of Sample Before Test, A: 5005.9 grams
Weight of Sample After Test (Retained on No. 12 Sieve), B: 3431.4 grams

Abrasion Loss (Percentage of Wear) = $\frac{A-B}{A} \times 100 = .3145 \times 100 = 31$ %

Spec's Max. Loss : _____ %

Remarks: _____

MM/CSSA MATERIA
TESTING LABORATOR
DATE: 4-30-93 mm93-1
SIGN.

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520

PHILIPPINE GEOANALYTICS

CIVIL ENGINEERING LABORATORY
Soils, Materials and Foundation Engineers, Laboratory Testing Services, Computer Applications

ATTERBERG LIMITS DETERMINATION

Project: SOUTH COTABATO HIGHWAYS — Job No.: STA. 16 + 300

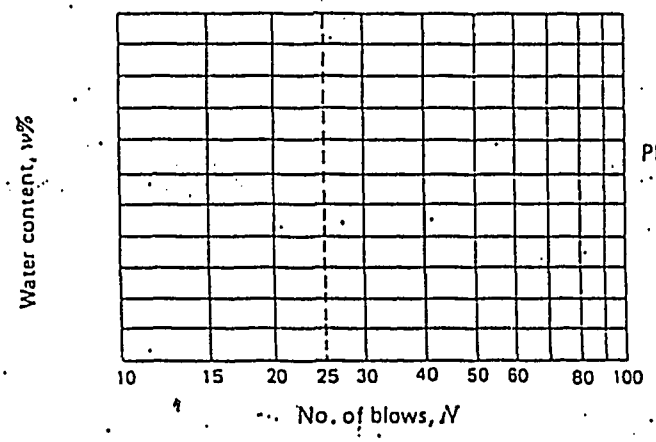
Location of Project: SECTION 8 NORALA - PALAMBAG — Boring No.: _____ Sample No.: _____

Description of Soil: DARK BROWN.

Depth of Sample: _____ Tested By: M.R. Date: 04 NOVEMBER 93

Liquid Limit Determination ASTM D-423

Can no.	W-8					
Wt. of wet soil + can	23.67					
Wt. of dry soil + can	20.07					
Wt. of can	15.21					
Wt. of dry soil	14.86					
Wt. of moisture	3.60					
Water content, w%	24.23					
No. of blows, N	23					



Flow index F_i = _____

Liquid limit = 23.91

Plastic limit = 17.27

Plasticity index I = 6.64

Single Point Formula $LL = w_n (N/25)^{0.12}$

Plastic Limit Determination

Can no.	J-10		
Wt. of wet soil + can	22.56		
Wt. of dry soil + can	20.86		
Wt. of can	10.81		
Wt. of dry soil	10.02		
Wt. of moisture	1.73		
Water content, $w\% = w_p$	17.27		

PHIL. GEOANALYTICS SOUTH COTABATO HIGHWAYS PROJECT NO. 0401

BEST AVAILABLE DOCUMENT

COMPACTION TEST

Project SOUTH COTABATO HIGHWAYS Job No. STA. 16 + 300 QUARRY (COMMON BORROW MAT'L)

Location of Project SECTOR 3 NORALA - KULAMBOG RD. Boring No. ____ Sample No. ____

Description of Soil LIGHT BROWN SILTY SAND * A-2-4 (0)

Test Performed By RFE / LZA Date of Test 02 MARCH 1993

Blows/Layer 50 No. of Layers 5 Wt. of Hammer 10 lb

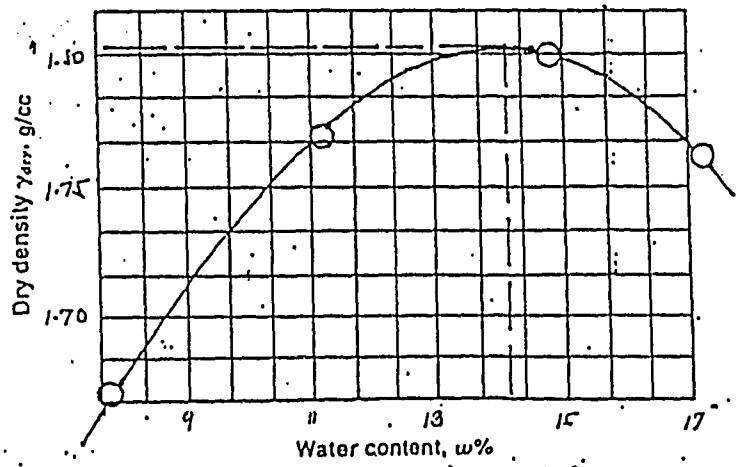
Mold dimensions: Diam. — in. Ht. — in. Vol. 2124 cu.cm.

Water Content Determination

Sample no:	1		2		3		4		5		6	
Moisture can no.	PG-19		GED-9		P-3		PG-19					
Wt. of can + wet soil	435	00	423	50	557	50	532	70				
Wt. of can + dry soil	405	30	384	00	489	00	501	30				
Wt. of water	29	70	39	50	68	50	31	40				
Wt. of can	25	80	28	50	29	00	25	30				
Wt. of dry soil	379	50	355	50	460	00	475	50				
Water content, w%	7	83	11	11	14	89	17	12				

Density Determination

Assumed water content	—	—	—	—		
Water content, w%	7.83	11.11	14.89	17.12		
Wt. of soil + mold	12325	12645	12895	12888		
Wt. of mold	8570	8570	8570	8570		
Wt. of soil in mold	3815	4185	4385	4378		
Wet density, g/cc	1.796	1.970	2.065	2.061		
Dry density γ, g/cc	1.67	1.77	1.80	1.76		



Optimum moisture = 14.2 % Maximum dry density = 1.802 g/cc.
112.4 PCF

PHIL. GEOANALYTICAL SOUTH COTABATO HIGHWAY PG NO. 0401

PHILIPPINE GEOANALYTICAL

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522

Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

E-5-8
S-2

MECHANICAL ANALYSIS

ROAD SECTOR 8			DATE
SPECIFICATION	PURPOSE OF MATERIAL EMBANKMENT	SAMPLED BY & DATE RBD/VSF 3-20-93	
SAMPLED AT (stockpile, batch plant, etc) VICINITY OF NORALA ELEM. SCHOOL		SOURCE, (river, quarry)	

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
2476.5	2375.6	2191.1	4.25		

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM PERCENT RETAINED
2-1/2"	63.5						
2"	52.8						
1-1/2"	38.1						
1"	25.4	0	0	100	100		0
3/4"	19.1	23.0	0.97	99.03	99		1
1/2"	12.7	30.6	1.29	97.74	98		2
3/8"	9.52	40.2	1.69	96.05	96		4
No. 4	4.75	81.2	3.42	92.63	93		7
No. 8	2.38						
No. 10	2.00	164.6	6.93	85.70	86		14
No. 12	1.65						
No. 16	1.19						
No. 20	0.84						
No. 30	0.59						
No. 40	0.42	1044.4	43.96	41.74	42		58
No. 50	0.297						
No. 60	0.260						
No. 80	0.177						
No. 100	0.019	634.5	26.71	15.03	15		85
No. 200	0.074	134.1	5.64	9.39	9 -	OK	91
PAN		38.5					
WASH		184.5					
TOTAL							

FINENESS MODULUS:
TESTED BY RPB DATE 3-25-93
CHECKED BY DATE
ENTERED BY DATE

MM/CGSA MATERIALS TESTING LABORATORY
UNIT WEIGHT PCF:
DATE 3-25-93 mm 93-123
DRY RODDED
SIGN:

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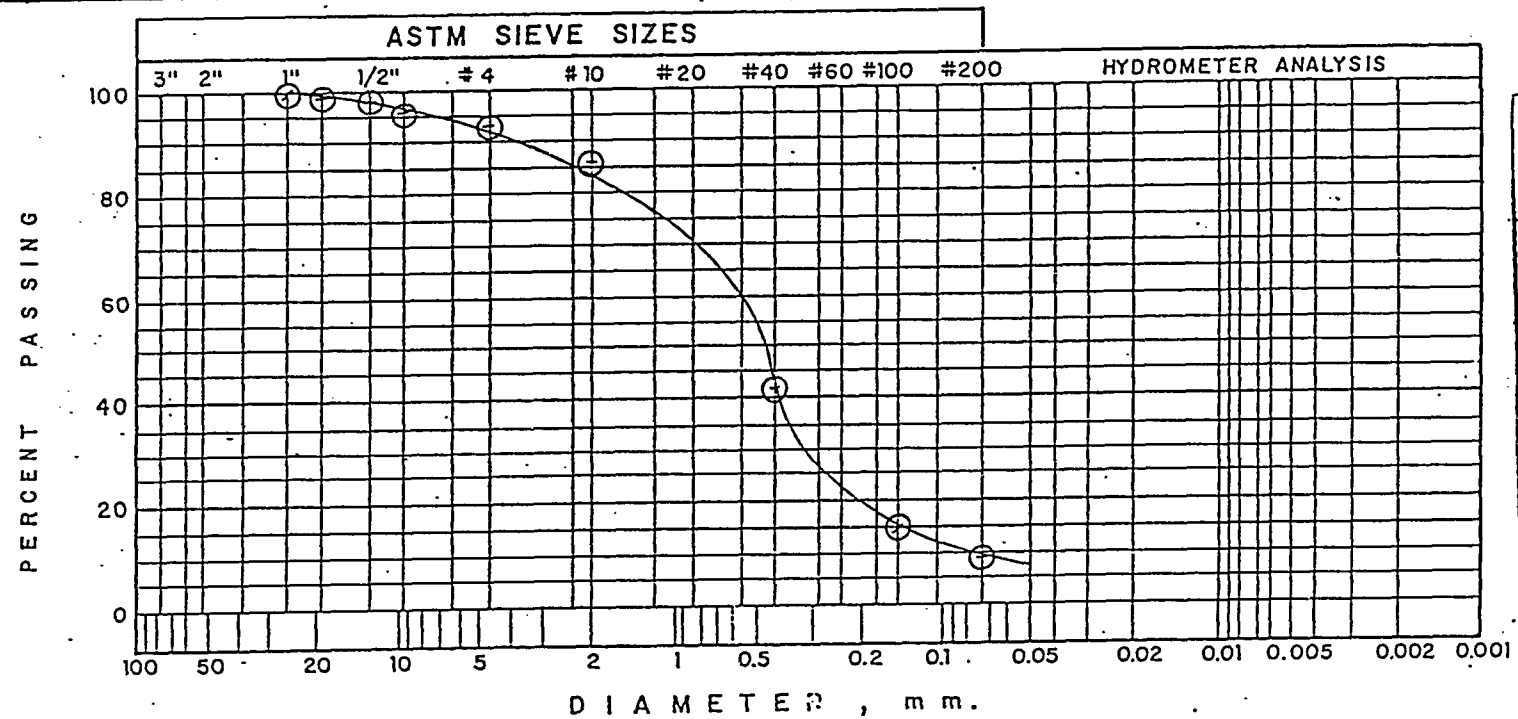
523

MORRISON MAIERLE/CSSA

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

GRAIN SIZE DISTRIBUTION CURVES

PROJECT: South Cotabato Roads	SECTOR: 8	SECTION: Norala – Kolambugan
	STATION:	KIND OF MATERIALS: Embankment
SOURCE: Vicinity of Norala Elem Sch.	PLOTTED BY: WPL	DATE: 3-26-93



MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 3-27-93, mm 93-123
SIGN.

STATION	TP. NO.	SAMPLE NUMBER	DEPTH	CURVE NUMBER	NMC	LL	PL	PI	CLASS	GI	DESCRIPTION
	E-5-8	S-2			4.25	–	–	NP	A-1-b	0	Sand w/ little amount of medium to fine gravel and traces of silt, light brown

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Morrison Materie/CSSA
Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

BC-1-8
S-1

MECHANICAL ANALYSIS

ROAD SECTOR 8			DATE
SPECIFICATION DPWH STD. SPECS TABLE 202.1 GRADING A	PURPOSE OF MATERIAL CABC	SAMPLED BY & DATE VSF/RBD 5-7-93	
SAMPLED AT (stockpile, batch plant, etc) 1st and 2nd 4 ft STA 20+860 4 LS 0.4 m. (IN-PLACE)		SOURCE, (river, quarry) DAJAY	

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
14163.6	13475.7	13180.4	5.10		

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM PERCENT RETAINED
2-1/2"	63.5						
2"	52.8						
1-1/2"	38.1	0	0	100	100	100	0
1"	25.4	2864.3	21.26	78.74	79		21
3/4"	19.1	1783.5	13.23	65.51	66	60-85	34
1/2"	12.7	1604.9	11.91	53.60	54		46
3/8"	9.52	551.4	4.09	49.51	50		50
No. 4	4.75	1046.8	7.77	41.74	42	30-55	58
No. 8	2.38						
No. 10	2.00	860.1	6.38	35.36	35		65
No. 12	1.65						
No. 16	1.19						
No. 20	0.84						
No. 30	0.59						
No. 40	0.42	2241.7	16.64	18.72	19	8-25	81
No. 50	0.297						
No. 60	0.260						
No. 80	0.177						
No. 100	0.049	1667.5	12.37	6.35	6		94
No. 200	0.074	458.1	3.40	2.95	3	2-14	97
PAN		102.1					
WASH		295.3					
TOTAL							

MM/CSSA MATERIALS TESTING LABORATORY
DATE RECEIVED 09-93 ma 93-169
SIEVE
DRY LOOSE
DRY RODDED

FINENESS MODULUS:
TESTED BY RPB DATE 5-9-93
CHECKED BY DATE
ENTERED BY DATE

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GEOANALYTICS

CIVIL ENGINEERING LABORATORY

No. 21 Scout de Guia near
Corner Scout Reyes, Quezon City
Tel. Nos.: 97-27-12 & 98-21-62
Entry Call # 869-1111 Code # 23638
Cellular Phone No.: 301-3524

PHIL. GEOANALYTICS PG NO. 0946 SOUTH COTABATO HIGHWAYS PROJECT

GRADATION MECHANICAL ANALYSIS

DATE:

PROJECT: SOUTH COTABATO HIGHWAYS SECTOR 7 SURALLAH - TIBOLI ROAD

DATE OF REPORT: 30 APRIL 1993

SPECIFICATION:

PURPOSE OF MATERIAL: CRUSHED AGGREGATE BASE COURSE

SAMPLED BY AND DATE: MAO 29 APRIL 1993

SAMPLED AT (Stockpile, batch plant, place, etc.): MK CRUSHER PLANT

SOURCE (River, quarry, etc.): DAHAY RIVER

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
	13225				1½

NO.	SIEVE SIZE	SIEVE OPENING, (MM)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM. PERCENT RETAINED
1	2-1/2"	63.5						
2.	2"	52.8						
3.	1-1/2"	38.1	0	100	100	100	100	
4.	1"	25.4	1867	14.12	85.88	86		
5.	3/4"	19.1	2355	17.81	68.07	68	60-85	
6.	1/2"	12.7						
7.	3/8"	9.52	2357	17.82	50.25	50		
8.	No. 4	4.75	976	7.38	42.87	43	30-55	
	No. 8	2.38						
10.	No. 10	2.00	726	5.49	37.38	37		
11.	No. 12	1.65						
12.	No. 16	1.19						
13.	No. 20	0.84						
14.	No. 30	.59						
15.	No. 40	.42	2005	15.16	22.22	22	8-25	
16.	No. 50	.297						
17.	No. 60	.260						
18.	No. 80	.177						
19.	No. 100	.149						
20.	No. 200	.074	2117	16.01	6.21	6	2-14	
	PAN							
	WASH							
	TOTAL		13225					

FINENESS MODULUS: _____

CONFORMS

UNIT WEIGHT, g/cc: —

DRY LOOSE: —

DRY RODDED: —

F. M. = $\frac{\sum \text{\% cum. Ret. of Sieve \# (19, 16, 14, 12, 9, 8, 7, 5 \& 3)}}{100}$

TESTED BY: G.C. MAYATE / MAT'L. TECH.

DATE: 29 APRIL 1993

CHECKED BY: G.C. FARUM / SR. MAT'L. ENGR.

DATE: 30 APRIL 1993

Logbook Entry NO.	

BEST AVAILABLE DOCUMENT

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PHILIPPINE
GEOANALYTICS
CIVIL ENGINEERING LABORATORY

No. 21 Scout de Guia near
corner Scout Reyes, Quezon City
Tel. Nos.: 97-27-12 & 98-21-62
Easy Call # 869-1111 Code # 23638
Cellular Phone No.: 301-3524

GRADATION MECHANICAL ANALYSIS

DATE: JULY 12, 1993

PROJECT: SOUTH COTABATO HIGHWAYS SEC. 8 (NORALA - KOLAMBUGAN RD)

DATE OF REPORT: JULY 12, 1993

SPECIFICATION:

PURPOSE OF MATERIAL: SUBGRADE SELECT

SAMPLED BY AND DATE: OBG / RDT JULY 05, 1993

SAMPLED AT (Stockpile, batch plant, place, etc.): STA. 104 227 L/S (IN PLACE MAT'LS.)

SOURCE (River, quarry, etc.):

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY 622.1	WASHED OVEN DRY			

NO.	SIEVE SIZE	SIEVE OPENING, (MM)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM. PERCENT RETAINED
1	2-1/2"	63.5						
2.	2"	52.8						
3.	1-1/2"	38.1						
4.	1"	25.4	0	0	100.0	100		
5.	3/4"	19.1	18.9	3.04	96.96	97		
6.	1/2"	12.7	11.1	1.79	95.18	95		
7	3/8"	9.52	3.3	0.53	94.65	95		
8.	No. 4	4.75	9.7	1.56	93.09	93		
9.	No. 8	2.38						
10.	No. 10	2.00	9.6	1.54	91.55	92		
11.	No. 12	1.65						
12.	No. 16	1.19						
13.	No. 20	0.84						
14.	No. 30	.59						
15.	No. 40	.42	101.3	16.28	75.27	75		
16.	No. 50	.297						
17.	No. 60	.260						
18.	No. 80	.177						
19.	No. 100	.149						
20.	No. 200	.074	367.8	59.12	16.15	16		
	PAN							
	WASH							
	TOTAL							

PHIL. GEOANALYTICS - SOUTH COTABATO HIGHWAYS PROJECT NO. 4008

FINENESS MODULUS: _____

CONFORMS

UNIT WEIGHT, g/cc: _____

DRY LOOSE _____

DRY RODDED _____

F. M. = $\frac{\sum \text{\% cum. Ret. of Sieve \# (19, 16, 14, 12, 9, 8, 7, 5 \& 3)}}{100}$

TESTED BY: Benjamin C. Berciano / LAB. TECH.

DATE JULY 12, 1993

CHECKED BY: C. P. Fajardin / SR. MAT'LS. ENGR.

DATE JULY 12, 1993

Logbook Entry NO.

BEST AVAILABLE DOCUMENT

527

MORRISON MAIERLE/CSSA

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

Moisture Density Relation of Soil
AASHTO Designation: T 99 and T 180

BC-1-8
S-1

PROJECT: SOUTH COT. HIGHWAYS ISLAND:

ROAD SECTOR: 8 SECTION: STATION: 20+860.4 (0.4M.L

KIND OF MATERIALS CABC SOURCE: DAHAY

SAMPLED BY: VSF & RBD DATE SAMPLED: 5-7-93

TESTED BY: TLD & RPB DATE TESTED: 5-8-93

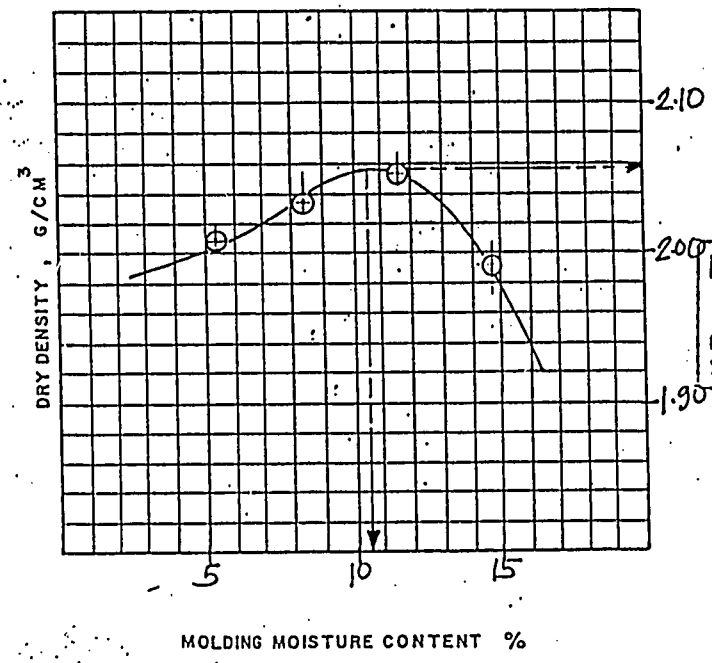
METHOD : D VOLUME OF MOLD: 2121.76 CU. CM.

WEIGHT OF MOLD : 7033.9 G. #1 BLOWS/LAYER: 56 WT. OF HAMMER 4535 G.

NUMBER OF LAYER : 5

COMPACTIVE EFFORT: m.Kg/m³

TRIAL NO.	MOLD + WET SOIL(G)	WET SOIL(G)	WET UNIT WEIGHT (G/CC)	MOISTURE CONTENT DETERMINATION							DRY UNIT WEIGHT (G/CC)
				WET SOIL + CAN(G)	DRY SOIL + CAN(G)	MOIS-TURE (G)	CAN NUMBER	WEIGHT OF CAN (G)	DRY SOIL(G) (G)	MOIS-TURE CONTENT	
1	11579.0	4485.1	2.114	693.9	660.9	33.0	A-13	29.8	631.1	5.23	2.009
2	11770.9	4677.0	2.204	691.6	640.0	51.6	A-30	24.0	616.0	8.38	2.034
3	11954.8	4860.9	2.291	812.3	731.5	80.8	A-41	29.2	702.3	11.51	2.054
4	11942.1	4848.2	2.285	851.4	745.8	105.6	A-4	24.8	721.0	14.65	1.993
5											



MAXIMUM DRY DENSITY 2.058 G/CC
128.4 PCF

OPTIMUM MOISTURE CONTENT % 10.5 %

MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 5.09.93, mm 93-149
SIGN.

REMARKS / RECOMMENDATIONS:

BEST AVAILABLE DOCUMENT

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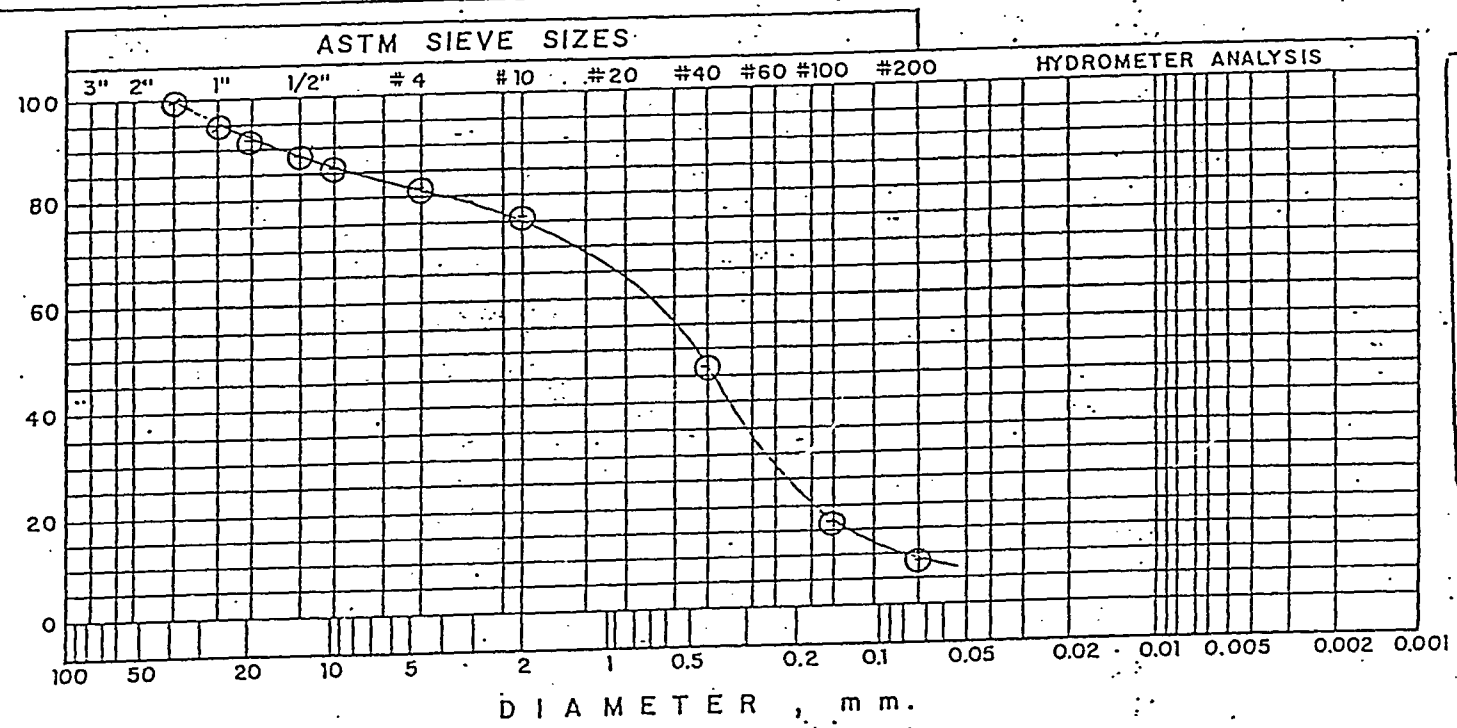
MORRISON MATERLE/CSSA

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

GRAIN SIZE DISTRIBUTION CURVES

PROJECT: SOUTH COTABATO ROADS	SECTOR: 8	SECTION:
	STATION: 18+965 RS/SH	KIND OF MATERIALS: SUBGRADE EMBANKMENT
SOURCE:	PLOTTED BY: WPL	DATE: 8-7-93



MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 8.8.93 mm 93-221
SIGN.

STATION	TP. NO.	SAMPLE NUMBER	DEPTH	CURVE NUMBER	NMC	LL	PL	PI	CLASS	GI	DESCRIPTION
18+965	E-16-8	S-2			10.73	–	–	NP	A-1-b	0	Sand with gravel & traces of silt, light brownish gray

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Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

E-16-
S-2

MECHANICAL ANALYSIS

ROAD SECTOR			DATE
8			
SPECIFICATION	PURPOSE OF MATERIAL	SAMPLED BY & DATE	
	SELECT SHOULDER EMBN.	RBO/RPB 8-3-93	
SAMPLED AT (stockpile, batch plant, etc)		SOURCE, (river, quarry)	
STA 18+965 RS/SH (IN-PLACE)			

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
3666.6	3311.3	3139.9	10.73		

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM PERCENT RETAINED
2-1/2"	63.5						
2"	52.8						
1-1/2"	38.1	0	0	100	100		0
1"	25.4	151.3	4.57	95.43	95		5
3/4"	19.1	113.0	3.41	92.02	92		8
1/2"	12.7	127.4	3.85	88.17	88		12
3/8"	9.52	60.8	1.84	86.33	86		14
No. 4	4.75	153.8	4.64	81.69	82		18
No. 8	2.38						
No. 10	2.00	185.3	5.60	76.09	76		24
No. 12	1.65						
No. 16	1.19						
No. 20	0.84						
No. 30	0.59						
No. 40	0.42	979.1	29.57	46.52	47		53
No. 50	0.297						
No. 60	0.260						
No. 80	0.177						
No. 100	0.049	983.7	29.71	16.81	17		83
No. 200	0.074	283.6	8.57	8.25	8		92
PAN		101.9					
WASH		171.4					
TOTAL							

FINENESS MODULUS:
TESTED BY RPB DATE 8-5-93
CHECKED BY DATE
ENTERED BY DATE

MM/GSSA MATERIAL
UNIT WEIGHT LABORATORY
DRY LOOSE 93-
DATE 8-3-93
DRY RODDED
SIGN.

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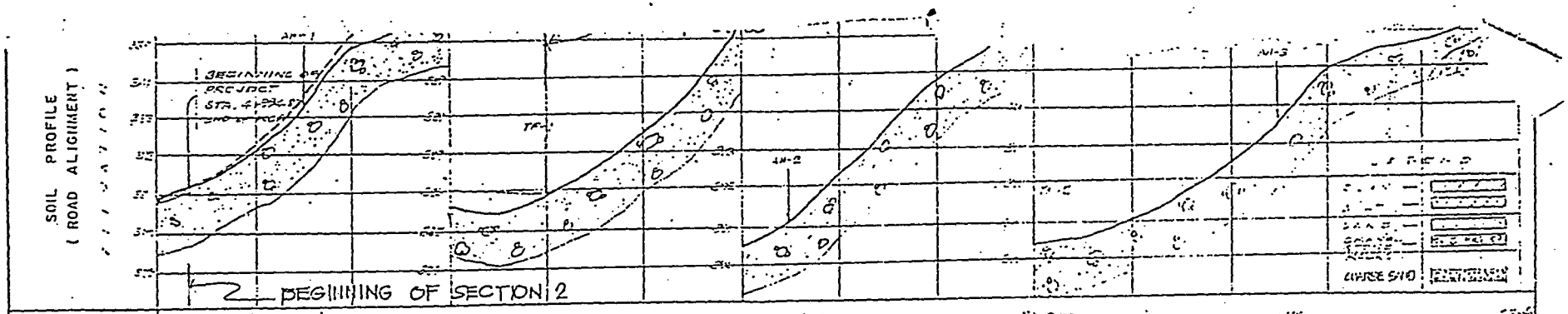
Sector 7 and 8
Field Tests

BEST AVAILABLE DOCUMENT



HOLE NO. / STATION: 5+100 | 5+350 | 5+600 | 5+850 | 6+100

LOCATION STATION	SAMPLE NO.	DEPTH (m)	SOIL DESCRIPTION	AASTHO CLASSIFICATION	GROUP INDEX	WATER CONTENT (%)	ATTERBERG LIMITS % LL	PL	PI	FOT (%) COMPACTION	CBR % 10 BLOWS	30 BLOWS	65 BLOWS	95% OF MDD	% SWELL AT 65 BLOWS	MOISTURE-DENSITY RELATION OMC %	MDD (g/cc)	SIEVE ANALYSIS % PASSING 1-1/2"	1"	3/4"	3/8"	#4	#10	#40	#200	REMARKS
AH-1																										
STA 5+100	S-1	0-0.42	GRAY SAND WITH GRAVEL	A-1-b	0	7.9	18	14	4									100	93	92	86	79	68	43	11	
2.0 M RT.	S-2	0.42-1.50	LIGHT GRAY SAND WITH GRAVEL	A-1-b	0	8.7	18	15	3									100	97	88	84	75	64	42	10	
TP-1																										
STA. 5+350	S-1	0-0.35	GRAY SAND WITH GRAVEL	A-1-b	0	8.2	19	17	2	95	28	59	95	55.0	0	9.95	1.95	93	90	88	73	69	60	38	10	
1.70M LT	S-2	0.35-1.50	LIGHT GRAY SAND WITH GRAVEL	A-1-b	0	7.3	19	16	3	84	15	53	96	38	0	10.50	1.89		90	88	82	74	62	44	14	
AH-2																										
STA. 5+600	S-1	0-1.50	GRAY SANDY GRAVEL	A-1-b	0	9.1	20	16	4									100	97	91	85	67	55	45	15	
1.80M LT																										
TP-2																										
STA. 5+850	S-1	0-1.50	GRAY SAND WITH GRAVEL	A-1-b	0	7.0	21	18	3	81	26	55	80	33.0	0	10.95	1.95		92	88	83	76	67	44	10	
0.60M RT.																										
AH-3																										
STA. 6+100	S-1	0-1.50	GRAY SAND WITH GRAVEL	A-2-4	0	13.2	27	22	5											100	96	90	83	59	24	
1.45M RT																										
TP-3																										
STA. 6+350	S-1	0-0.60	GRAY SAND WITH GRAVEL	A-1-b	0	9.0	18	16	2	90	20	36	75	28.0	0	8.7	1.97	100	92	90	87	81	72	47	11	
1.53M LT.	S-2	0.60-1.50	LIGHT GRAY SILTY SAND W/ GRAVEL	A-2-4	0	9.2	23	20	3	78	7	25	57	31.0	0	16.6	1.71		100	98	95	88	81	59	22	

MORRISON KNUDSEN CORPORATION

ALC

W.D. INCANDO
SOILS & MATERIALS ENGINEER
PROJECT MANAGER

ENGINEER'S REPRESENTATIVE
MORRISON-MAIERLE / CSSA
CONCURRED

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
APPROVED

SOUTH COTABATO HIGHWAY PROJECT
MINDANAO DEVELOPMENT PROGRAM
SECTOR 4 - POLOMOLOK - LAMAN ROAD
STA 5+100 - STA 6+350
SOIL PROFILE AND SUMMARY OF TEST RESULTS

SHEET NO. A-1B

Morrison Maierle/CSSA
Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

MECHANICAL ANALYSIS

ROAD SECTOR 4			DATE
SPECIFICATION	PURPOSE OF MATERIAL	SAMPLED BY & DATE: VSF / RPB 2-4-92	
SAMPLED AT (stockpile, batch plant, etc) STA 2 + 102 AB-1-4 S-1 0-1.50 m		SOURCE, (river, quarry)	

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
2146.5	1984.2	1845.3	8.18		

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM PERCENT RETAINED
2-1/2"	63.5						
2"	52.8						
1-1/2"	38.1						
1"	25.4	0	0	100	100		0
3/4"	19.1	28.3	1.43	98.57	99		1
1/2"	12.7	78.7	3.97	94.60	95		5
3/8"	9.52	69.0	3.48	91.12	91		9
No. 4	4.75	165.1	8.32	82.80	83		17
No. 8	2.38						
No. 10	2.00	230.3	11.61	71.19	71		29
No. 12	1.65						
No. 16	1.19						
No. 20	0.84	240.6	12.13	59.06	59		41
No. 30	0.59						
No. 40	0.42	259.2	13.06	46.00	46		54
No. 50	0.297						
No. 60	0.260	278.7	14.04	31.96	32		68
No. 80	0.177						
No. 100	0.049	270.5	13.63	18.33	18		82
No. 200	0.074	224.9	11.33	7.00	7		93
PAN							
WASH		138.9	7.00				
TOTAL		1984.2	100				

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 2-PROJECT NO. 92-012
NO.: DRY RODDED

FINENESS MODULUS:
TESTED BY DATE
CHECKED BY DATE
ENTERED BY DATE

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Morrison Maierle/CSSA
Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

Moisture Content Determination
ASSHTO Designation: T265

Road Sector	4	Date	
Section	AGRO CENTER – LANDAN	Station	2+102
Test Pit No.		Auger Hole No. AB-1-4	Bore Hole No.
Sampled By	VSF/RPR	Date Sampled	2-4-92
Tested By	WPL	Date Tested	2-5-92
Checked By	VSF		

Type of Test	NATURAL MOISTURE CONTENT					
Sample Number	1	2	3	4	5	6
Depth, m	0-1.50					
Type of Soil	A-1-b					
Wt. of wet soil + can, g	2480.1					
Wt. of dry soil + can, g	2317.8					
Moisture Loss, g	162.3					
Wt. of can, g	333.6					
Wt. of dry soil, g	1984.2					
Moisture content, %	8.18					

REMARKS:

1.40 m. fr. centerline
RIGHT SIDE

MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 2-7-92 MM92-012
SIGN.

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Morrison Maierle/CSSA
Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

Moisture Content Determination
ASSHTO Designation: T265

Road Sector: 4
Date:
Section: AGRO CENTER – LANDAN
Station: 4+353
Test Pit No.: TP-1-4
Auger Hole No.:
Bore Hole No.:
Sampled By: VSF / RPB
Date Sampled: 2-4-92
Tested By: RPB
Date Tested: 2-5-92
Checked By: VSF

Type of Test	NATURAL MOISTURE CONTENT					
Sample Number	1	2	3	4	5	6
Depth, m	0-0.50	0.50-1.50				
Type of Soil	A-2-4	A-2-4				
Wt. of wet soil + can, g	3058.2	2693.4				
Wt. of dry soil + can, g	2947.2	2443.0				
Moisture Loss, g	111.0	250.4				
Wt. of can, g	360.8	343.5				
Wt. of dry soil, g	2586.4	2099.5				
Moisture content, %	4.29	11.93				

REMARKS:

1.40 m. from centerline
Left Side

MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 14 FEB. 1992 mm 92-03
SIGN:

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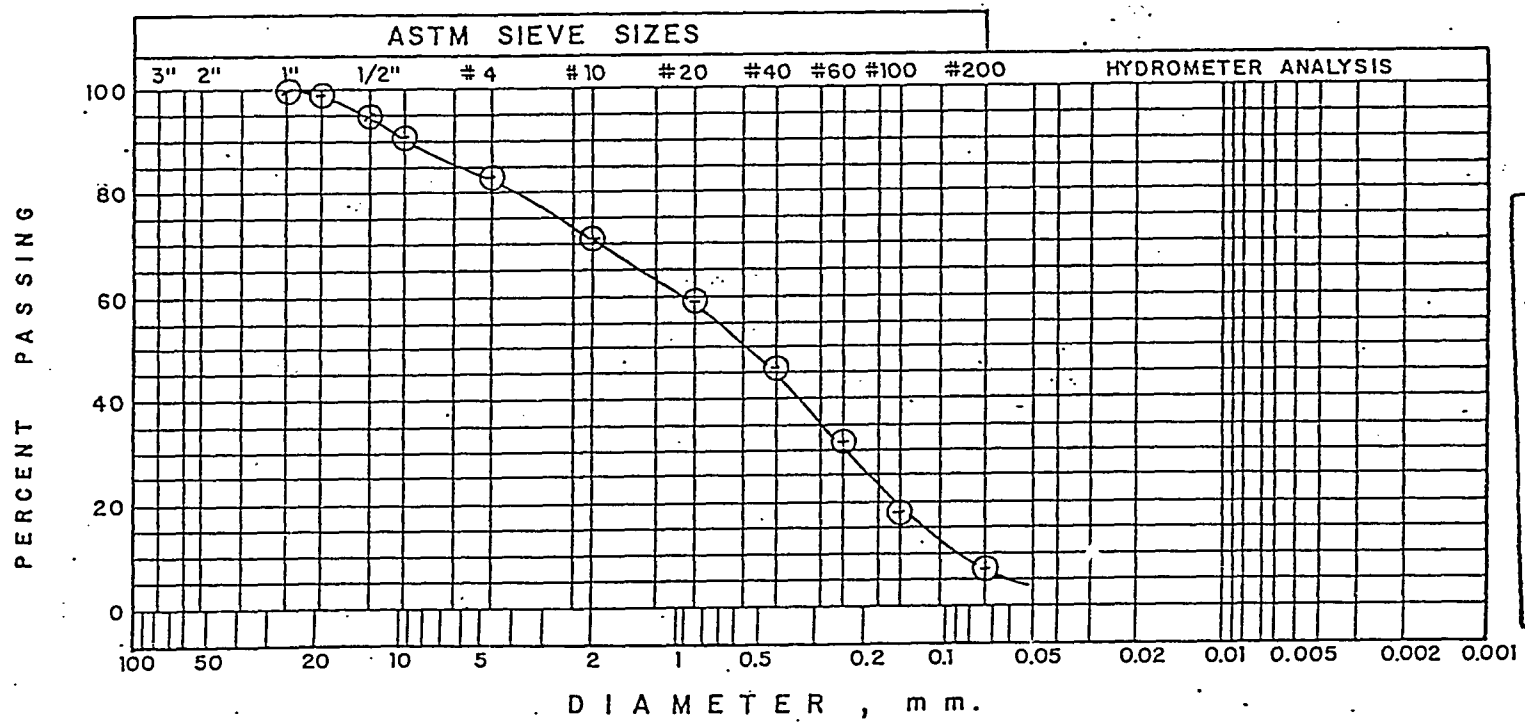
MORRISON MAIERLE/CSSA

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

GRAIN SIZE DISTRIBUTION CURVES

PROJECT: So. COTABATO ROADS	SECTOR: 4	SECTION: AGRO CENTER – LANDAN
	STATION: 2+10	KIND OF MATERIALS:
SOURCE:	PLOTTED BY: WPL	DATE: 2-7-92



MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 2-7-92 MM 92-013
SIGN:

STATION	TP. NO.	SAMPLE NUMBER	DEPTH	CURVE NUMBER	NMC	LL	PL	PI	CLASS	GI	DESCRIPTION
2+100	AB-1-4	S-1	0-1.50		8.18	–	–	NP	A-1-b	0	Sand with gravel and traces of silt, gray

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Morrison Maierle/CSSA
Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

MECHANICAL ANALYSIS

ROAD SECTOR 4				DATE
SPECIFICATION	PURPOSE OF MATERIAL		SAMPLED BY & DATE VSF/RPB 2-4-92	
SAMPLED AT (stockpile, batch plant, etc) STA 4 + 353 TP-1-4 S-2 0.50-1.50			SOURCE, (river, quarry)	

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
2349.9	2099.5	1601.8	11.93		

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM PERCENT RETAINED
2-1/2"	63.5						
2"	52.8						
1-1/2"	38.1	0	0	100	100		0
1"	25.4	46.1	2.20	97.80	98		2
3/4"	19.1	13.5	0.64	97.16	97		3
1/2"	12.7	18.5	0.88	96.28	96		4
3/8"	9.52	21.2	1.01	95.27	95		5
No. 4	4.75	60.4	2.88	92.39	92		8
No. 8	2.38						
No. 10	2.00	94.3	4.49	87.90	88		12
No. 12	1.65						
No. 16	1.19						
No. 20	0.84	181.1	8.63	79.27	79		21
No. 30	0.59						
No. 40	0.42	283.5	13.50	65.77	66		34
No. 50	0.297						
No. 60	0.260	334.2	15.92	49.85	50		50
No. 80	0.177						
No. 100	0.049	280.8	13.37	36.48	36		64
No. 200	0.074	268.2	12.77	23.71	24		76
PAN							
WASH		497.7					
TOTAL		2099.5					

FINENESS MODULUS: _____
TESTED BY WPL DATE 2-6-92
CHECKED BY _____ DATE _____
ENTERED BY _____ DATE _____

MM/CSSA MATERIALS TESTING LABORATORY
UNIT WEIGHT
DRY LOOSE
DRY RODDED
FEB. 1992 MM 92-013

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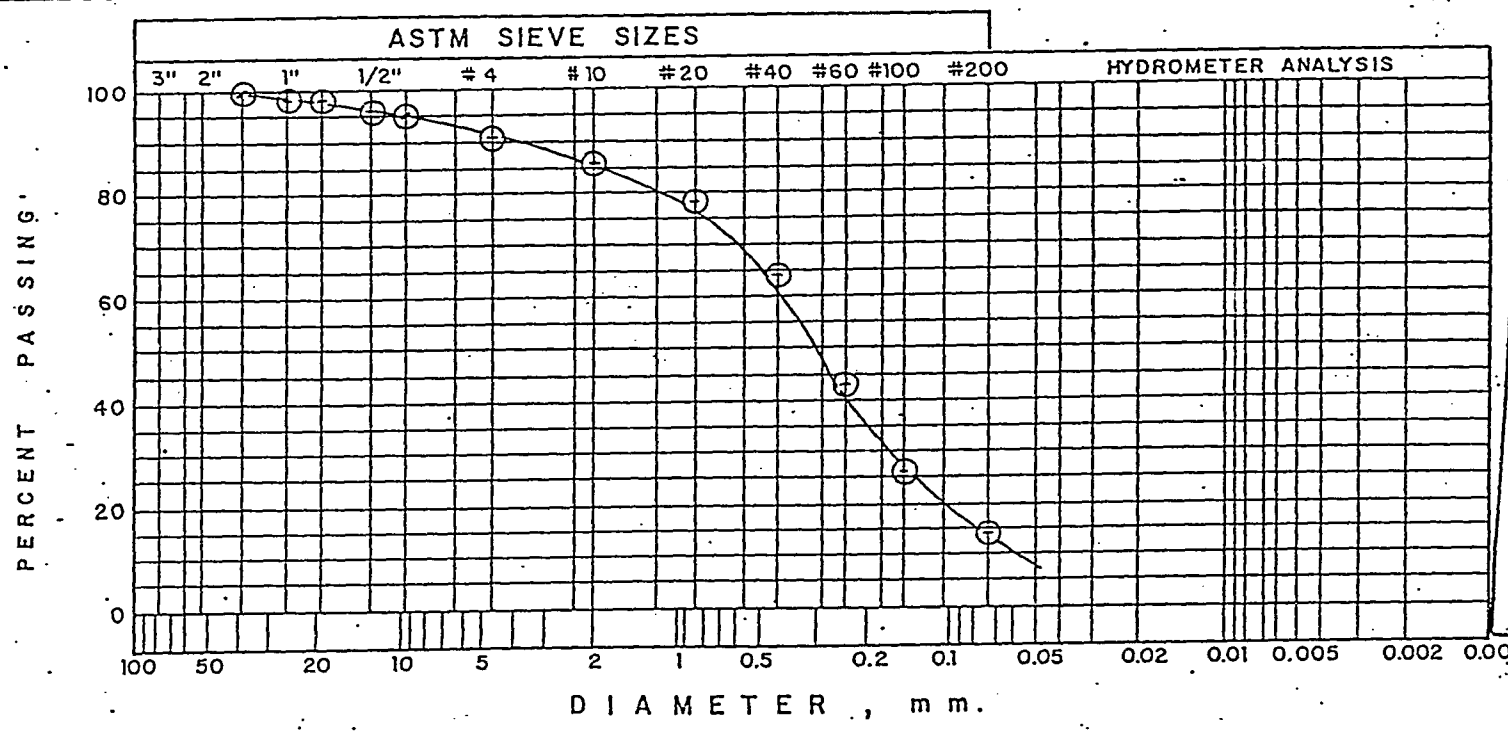
MORRISON MAIERLE/CSSA

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

GRAIN SIZE DISTRIBUTION CURVES

PROJECT: So. Cotabato Roads	SECTOR: 4	SECTION: Agro-Center-Landan
	STATION: 4 + 353	KIND OF MATERIALS:
SOURCE:	PLOTTED BY: WPL	DATE: 2-7-92



MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 14 FEB. 1992 MA 92-013
SIGN:

STATION	TP. NO.	SAMPLE NUMBER	DEPTH	CURVE NUMBER	NMC	LL	PL	PI	CLASS	GI	DESCRIPTION
4+353	TP-1-4	S-1	0-0.50		4.29	–	–	NP	A-2-4	0	Sand with little silt and gravel, light gray

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MORRISON MAIERLE/CSSA

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

Moisture Density Relation of Soil
AASHTO Designation: T 99 and T 180

PROJECT: So. Cotabato Roads ISLAND:

REGION: XI SECTION: Sector 4 Agro Center – Landan STATION: 4+350 TP-1-4 S-1

SAMPLED BY: VSF/RPB (Name/Designation) DATE SAMPLED: 2-4-92

TESTED BY: RPB (Name/Designation) DATE TESTED: 2-5-92

SUPERVISED/CHECKED BY: VSF (Name / Designation)

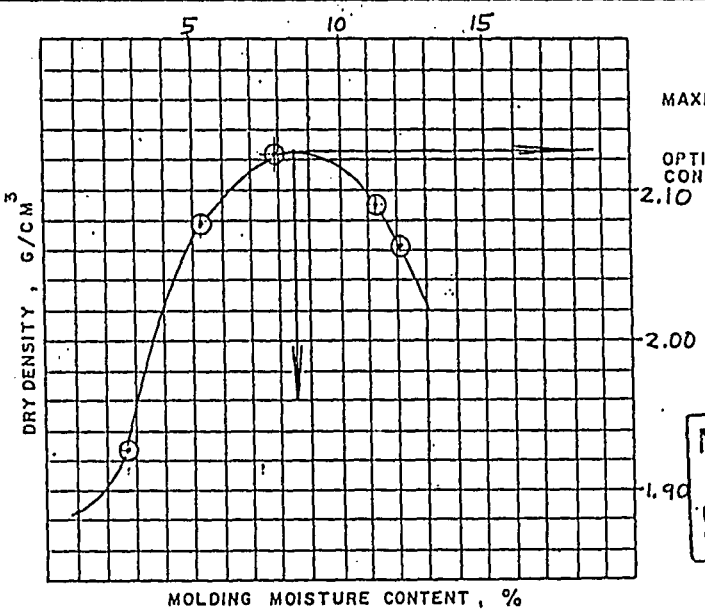
TEST NO. : Method C VOLUME OF MOLD: 929.37 CU. CM.

WEIGHT OF MOLD : 4294.2 G. BLOWS/LAYER: 25 WT. OF HAMMER 4.54 KG.

NUMBER OF LAYER : 5

COMPACTIVE EFFORT: _____ m.Kg/m³

TRIAL NO.	MOLD + WET SOIL(G)	WET SOIL(G)	WET UNIT WEIGHT (G/CC)	MOISTURE CONTENT DETERMINATION							DRY UNIT WEIGHT (G/CC)
				WET SOIL + CAN(G)	DRY SOIL + CAN(G)	MOIS-TURE (G)	CAN NUMBER	WEIGHT OF CAN (G)	DRY SOIL(G) (G)	MOIS-TURE CONTENT	
1	6134.2	1840.0	1.980	358.8	350.0	8.80	A-24	28.8	321.2	2.74	1.927
2	6330.2	2036.0	2.191	360.5	343.3	17.2	A-21	24.0	319.3	5.39	2.079
3	6425.4	2131.2	2.293	384.9	358.5	26.4	A-25	25.8	332.7	7.94	2.124
4	6456.5	2162.3	2.327	522.0	471.7	50.3	A-17	25.8	445.9	11.28	2.091
5	6442.7	2148.5	2.312	490.8	440.4	50.4	A-16	24.0	416.4	12.10	2.062



MAXIMUM DRY DENSITY 2.125 G/CC

OPTIMUM MOISTURE CONTENT % 8.60

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 14 FEB 1992 mm 92-013
SIGN:

REMARKS / RECOMMENDATIONS:

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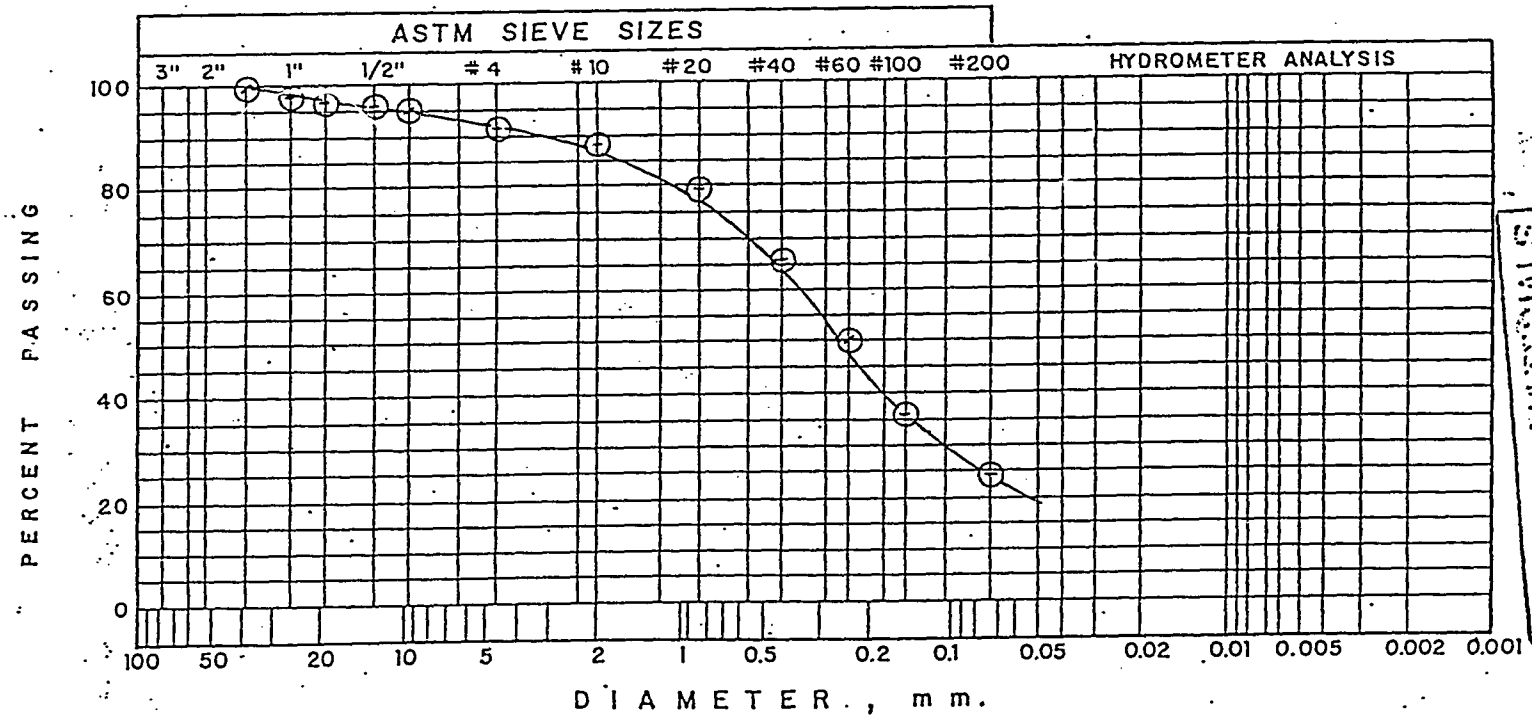
MORRISON MAIERLE/CSSA

MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

GRAIN SIZE DISTRIBUTION CURVES

PROJECT: So. Cotabato Roads	SECTOR: 4	SECTION: Agro Center - Landan
	STATION: 4+353	KIND OF MATERIALS:
SOURCE:	PLOTTED BY: WPL	DATE: 2-7-92



MM/CSSA MATERIALS TESTING LABORATORY
DATE: 4 FEB. 1992 mm 92-013
SIGN:

STATION	TP. NO.	SAMPLE NUMBER	DEPTH	CURVE NUMBER	NMC	LL	PL	PI	CLASS	GI	DESCRIPTION
4+353	TP-1-4	S-2	0.5-1.50		11.93	–	–	NP	A-2-4	0	Sand with silt and little amount of gravel, brown

540

Morrison Maierle/CSSA

Materials Testing Laboratory

SOUTH COTABATO ROAD PROJECT

Summary of CBR Test

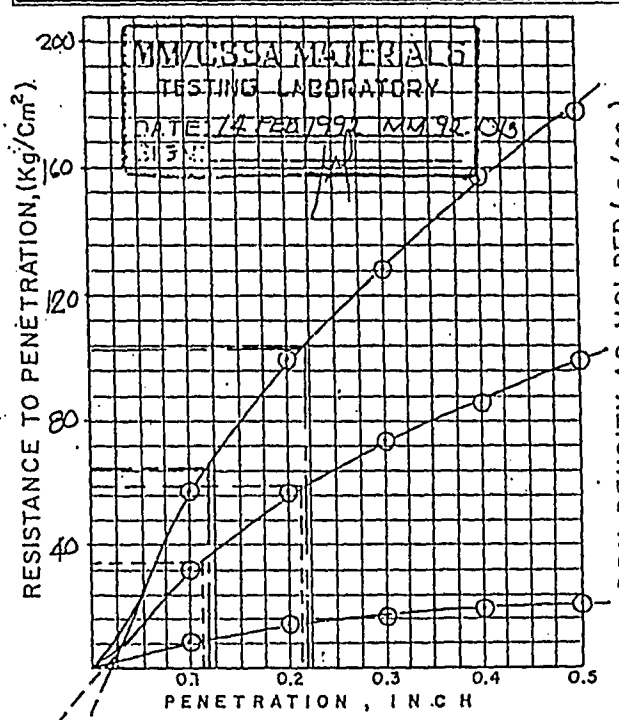
Road Sector: SECTOR-4 Section: AGRO C.-LANDAN Station: STA. 4 +253

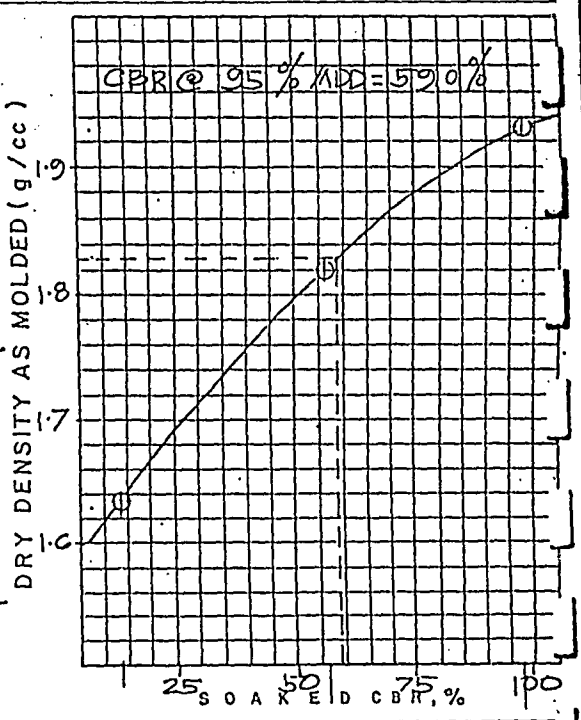
Kind of Material: SAND W/ SILT & LITTLE AMT. OF GRAVEL, BROWN Source: TP-1-4 S-2

MDD 1.925 g/cc OMC 12.1 %

Blows	10	30	65
Dry density as molded, g/cc	1.635	1.820	1.932
Moisture content before soaking, %	12.20	11.98	12.00
Moisture content after 4 days, %	18.59	14.39	13.78
Swell, %	0.262	0.131	0.044

PENETRATION, INCH		0.025	0.050	0.075	0.100	0.200	0.300	0.400	0.500
Resistance to Penetration (actual)	@ 10	2.9	4.7	6.4	8.2	14.1	17.0	19.3	21.1
Resistance to Penetration (actual)	@ 30	7.6	15.2	24.6	32.8	57.4	73.8	86.7	99.6
Resistance to Penetration (actual)	@ 65	10.5	25.8	41.0	57.4	100.2	128.9	157.0	178.1
Resistance to Penetration (corrected)	@ 10				–	–			
Resistance to Penetration (corrected)	@ 30				34.0	59.5			
Resistance to Penetration (corrected)	@ 65				65.0	102.5			
STANDARD					70.3	105.5			
CBR as molded	@ 10				11.66	13.36			
CBR as molded	@ 30				48.86	56.40			
CBR as molded	@ 65				92.46	97.16			





TESTED BY: RPB	CHECKED BY: WPL	NOTED BY: VSF
DATE: 06 FEB. 92	DATE: 12 FEB-92	DATE: 14 FEB. 92

BEST AVAILABLE DOCUMENT

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Morrison Maierle/CSSA
Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

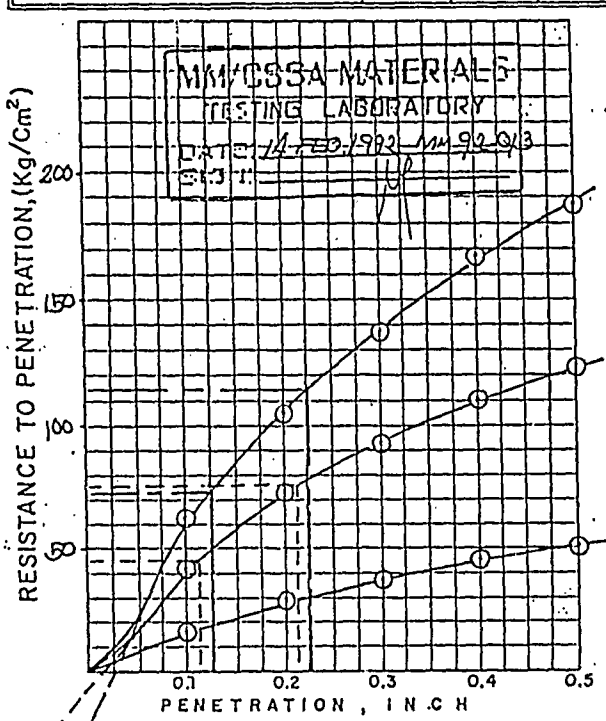
Summary of CBR Test

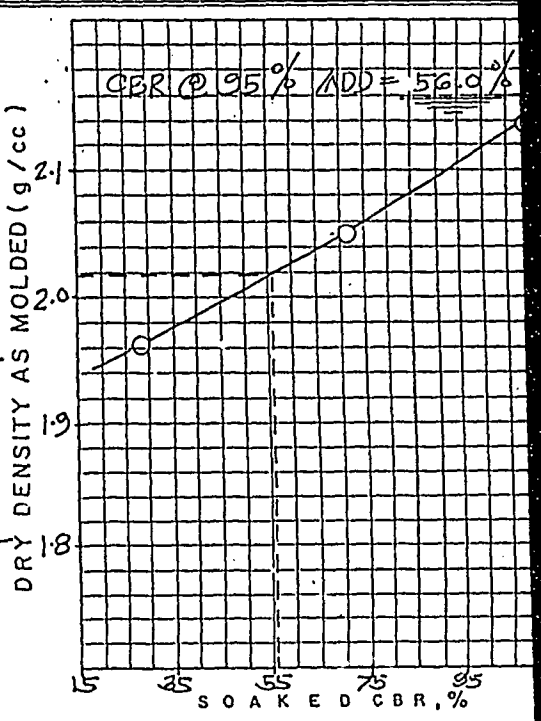
Road Sector SECTOR-4 Section _____ Station STA. 4+353
Kind of Material SAND WITH LITTLE SILT & GRAVEL, LIGHT GRAY Source TP-1-4 S-1

MDD 2.125 g/cc OMC 8.60 %

Blows	10	30	65
Dry density as molded, g/cc	1.962	2.051	2.138
Moisture content before soaking, %	8.48	8.55	8.52
Moisture content after 4 days, %	12.12	10.44	9.60
Swell, %	0.04	0.0	0.0

PENETRATION, INCH		0.025	0.050	0.075	0.100	0.200	0.300	0.400	0.50
Resistance to Penetration (actual)	@ 10	2.9	7.0	11.7	16.4	29.3	38.1	45.7	50.
Resistance to Penetration (actual)	@ 30	7.0	16.4	28.1	42.2	72.6	92.6	110.7	123
Resistance to Penetration (actual)	@ 65	8.2	22.3	42.8	62.7	105.4	137.7	167.5	187
Resistance to Penetration (corrected)	@ 10				–	–			
Resistance to Penetration (corrected)	@ 30				45.0	75.5			
Resistance to Penetration (corrected)	@ 65				72.5	114.0			
STANDARD					70.3	105.5			
CBR as molded	@ 10				23.33	27.77			
CBR as molded	@ 30				64.01	71.56			
CBR as molded	@ 65				103.13	108.06			





TESTED BY: RPB	CHECKED BY: WPL	NOTED BY: VSF
DATE: 06 FEB. '92	DATE: 11 FEB. '92	DATE: 12 FEB. 92

BEST AVAILABLE DOCUMENT

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Morrison Materle/CSSA
Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

E-5-4

MECHANICAL ANALYSIS

ROAD SECTOR 4			DATE
SPECIFICATION	PURPOSE OF MATERIAL	SAMPLED BY & DATE RBD/RPB 8-9-93	
SAMPLED AT (stockpile, batch plant, etc) STA 13+815 LS (IN-PLACE)		SOURCE, (river, quarry) 13+750 LS	

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
3137.8	2783.0	2485.9	12.75		

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM PERCENT RETAINED
2-1/2"	63.5						
2"	52.8						
1-1/2"	38.1	0	0	100	100		0
1"	25.4	54.7	1.97	98.03	98		2
3/4"	19.1	28.4	1.02	87.01	97		3
1/2"	12.7	68.5	2.46	94.55	95		5
3/8"	9.52	73.9	2.66	91.89	92		8
No. 4	4.75	193.9	6.97	84.92	85		15
No. 8	2.38						
No. 10	2.00	243.5	8.75	76.17	76		24
No. 12	1.65						
No. 16	1.19						
No. 20	0.84						
No. 30	0.59						
No. 40	0.42	661.0	23.75	52.42	52		48
No. 50	0.297						
No. 60	0.260						
No. 80	0.177						
No. 100	0.049	769.8	27.66	24.76	25		75
No. 200	0.074	281.6	10.12	14.64	15		85
PAN		110.6					
WASH		297.1					
TOTAL							

MM/CSSA MATERIALS
TESTING LABORATORY
UNIT WEIGHT, PCF:
DATE 8-6-93 MM 93-225
DRY RODDED

FINENESS MODULUS:
TESTED BY RPB DATE 8-12-93
CHECKED BY DATE
ENTERED BY DATE

BEST AVAILABLE DOCUMENT

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PHILIPPINE
GEOANALYTICS
CIVIL ENGINEERING LABORATORY

No. 21 Scout de Guia near corner Scout Reyes, Quezon City
Tel. Nos.: 97-27-12 & 98-21-62
Easy Call # 869-1111 Code # 235
Cellular Phone No.: 301-3524

PHILIPPINE GEOANALYTICS SOUTH SCOUT DE GUIA
No. 0523

GRADATION MECHANICAL ANALYSIS

DATE: 9-13-93

PROJECT: Const. of Pasumalik - Lindan Road		DATE OF REPORT: 9-13-93
SPECIFICATION:	PURPOSE OF MATERIAL:	SAMPLED BY AND DATE: MB/MP 9-9-93
SAMPLED AT (Stockpile, batch plant, place, etc.): Sta. 144+423 Finished Embankment Portion		SOURCE (River, quarry, etc.):

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
	142.4				

NO.	SIEVE SIZE	SIEVE OPENING, (MM)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CU PERC RETA
1	2-1/2"	63.5						
2.	2"	52.6						
3.	1-1/2"	38.1	0	0	100	100		
4.	1"	25.4	67.5	5.91	94.09	94		
5.	3/4"	19.1	45.7	4.00	90.09	90		
6.	1/2"	12.7						
7.	3/8"	9.52	35.2	3.34	86.75	87		
8.	No. 4	4.75	18.8	1.58	81.16	81		
9.	No. 8	2.38						
10.	No. 10	2.00	123.3	10.79	70.37	70		
11.	No. 12	1.65						
12.	No. 16	1.19					A-1-b(0)	
13.	No. 20	0.84						
14.	No. 30	.59						
15.	No. 40	.42	341.8	29.92	40.45	40		
16.	No. 50	.297						
17.	No. 60	.250						
18.	No. 80	.177						
19.	No. 100	.149						
20.	No. 200	.074	358.8	31.41	9.04	9		
	PAN							
	WASH							
	TOTAL							

FINENESS MODULUS: _____

UNIT WEIGHT, g/cc: _____
DRY LOOSE _____
DRY RODDED _____

F. M. = $\frac{\Sigma \text{ \% cum. Ret. of Sieve \# (19, 16, 14, 12, 9, 8, 7, 5 \& 3)}}{100}$

TESTED BY: M. G. Reyes / Mate Engr.
DATE 9-10-93

CHECKED BY: C. C. Tolentino / Sr. Mate Engr.
DATE 9-13-93

Logbook Entry NO.

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PHILIPPINE
GEOANALYTICS
CIVIL ENGINEERING LABORATORY

Head Office: Gala Bldg. corner Roxas Boulevard, Quezon City
Tel. No. 30-97-27-12 & 09-21-42
Easy Connect 1111 Code # 23638
Cellular Phone No.: 301-3524

PHILIPPINE GEOANALYTICS INC. SOUTH COTABATO HIGHWAYS JOB NO. 2005

GRADATION MECHANICAL ANALYSIS

SOUTH COTABATO HIGHWAY

PROJECT: SECTOR 4 POLO MOLOK - LANDAN ROAD

DATE OF REPORT: 30 OCT. 1993

SPECIFICATION	PURPOSE OF MATERIAL	SAMPLED BY AND DATE
	CRUSHED AGGREGATE BASE COURSE	C.C.F / D.B / 27 OCT '93

SAMPLED AT (Stockpile, batch plant, place, etc.)	SOURCE (River, quarry, etc.)
IN-PLACE BASE COURSE MAT'LS @ STA. 3+405.3 R/S	MATANAO RIVER

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
	3773				1"

NO.	SIEVE SIZE	SIEVE OPENING (MM)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM. PERCENT RETAINED
1.	2-1/2"	63.5						
2.	2"	52.8						
3.	1-1/2"	38.1						
4.	1"	25.4					100	CONFORMS
5.	3/4"	19.1	254.7	6.75	93.25	93		
6.	1/2"	12.7	558.4	14.80	78.95	78	60 - 10	CONFORMS
7.	3/8"	9.52	315.0	8.35	70.10	70		
8.	No. 4	4.75	543.7	14.41	55.69	56	35 - 65	CONFORMS
9.	No. 8	2.38						
10.	No. 10	2.00	447.1	11.85	43.84	44		
11.	No. 12	1.65						
12.	No. 16	1.19						
13.	No. 20	0.84						
14.	No. 30	.59						
15.	No. 40	.42	860.6	22.81	21.03	21	16 - 30	CONFORMS
16.	No. 50	.297						
17.	No. 60	.250						
18.	No. 80	.177						
19.	No. 100	.149						
20.	No. 200	.074	528.2	14.0	7.03	7	5 - 15	CONFORMS
	PAN							
	WASH							
	TOTAL		3773					

FINENESS MODULUS: —

F.M = Σ % cum. Ret. of Sieve # (19, 16, 14, 12, 9, 8, 7, 5 & 3) / 100

UNIT WEIGHT, g/cm³: —

DRY LOOSE: —

DRY RODDED:

TESTED BY: D.M. SCOLLO / MAT'LS ENGR

DATE: 29 OCT '93

CHECKED BY: C.C. EARM / Sr. MAT'LS ENGR.

DATE: 30 OCT. 1993

Logbook Entry NO.

NOTE : NON PLASTIC

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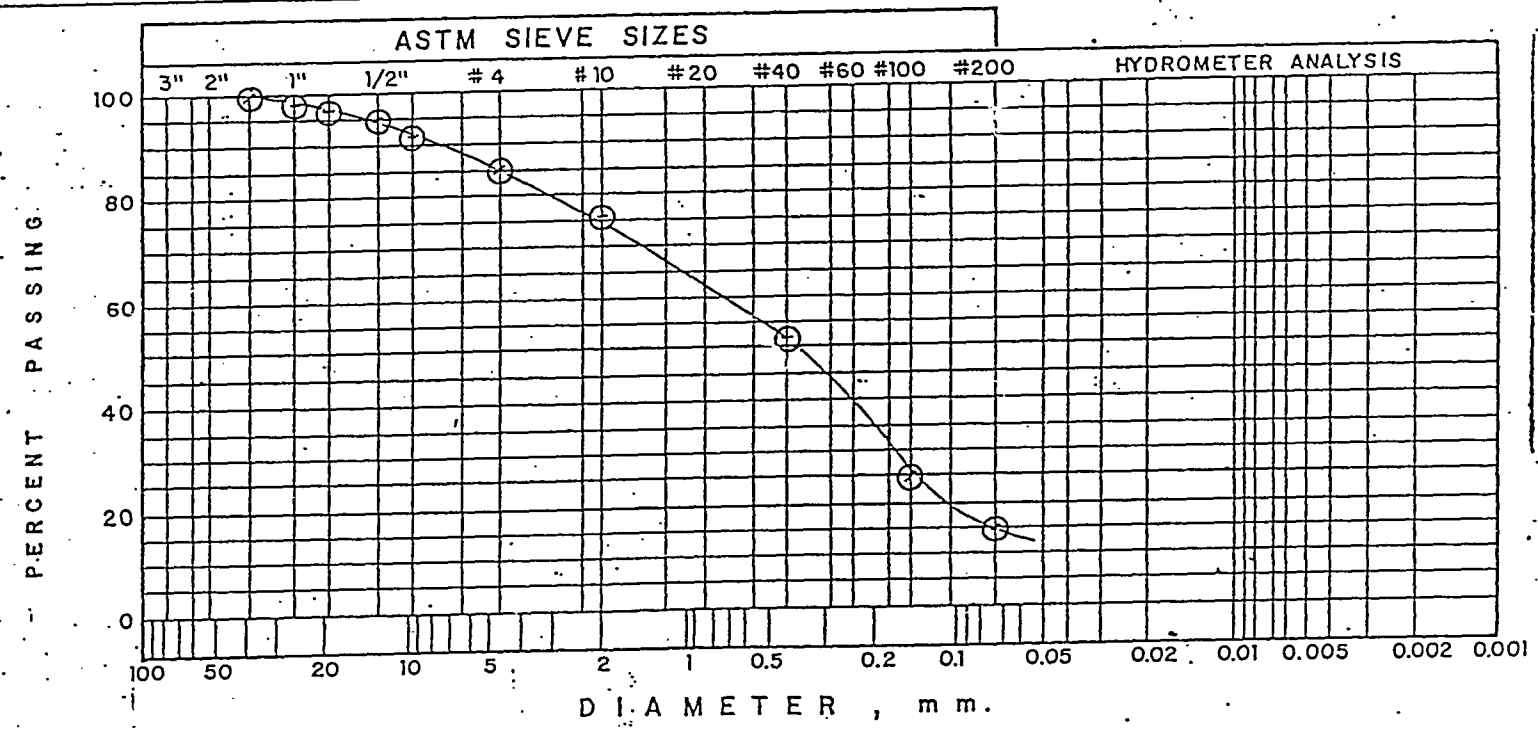
MORRISON MAIERLE/CSSA
MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

BEST AVAILABLE DOCUMENT

GRAIN SIZE DISTRIBUTION CURVES

PROJECT: SOUTH COTABATO ROADS	SECTOR: 4	SECTION: 3
	STATION: 13+815 LS	KIND OF MATERIALS: EMBNKMNT FILL
SOURCE: 13+750 LS	PLOTTED BY: WPL	DATE: 8-16-93



MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 8-16-93 MM93-225
SIGN.

STATION	TP. NO.	SAMPLE NUMBER	DEPTH	CURVE NUMBER	NMC	LL	PL	PI	CLASS	GI	DESCRIPTION
13+815	E-5-4				12.75	–	–	NP	A-2-4	0	Sand with gravel and little amount of silt, gray

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PHILIPPINE
GEOANALYTICS
CIVIL ENGINEERING LABORATORY

No. 21 Scout de Guia near
corner Scout Reyes, Quezon City
Tel. Nos. : 97-27-12 & 98-21-62
Easy Call # 869-1111 Code # 23638
Cellular Phone No. : 301-3524

GRADATION MECHANICAL ANALYSIS

DATE: 11-22-93

PROJECT: SECTOR 4 POLOMOLOK - LANDAN ROAD		DATE OF REPORT: 11-23-93
SPECIFICATION	PURPOSE OF MATERIAL: FOR SHOULDERING	SAMPLED BY AND DATE: CCF
SAMPLED AT (Stockpile, batch plant, place, etc.): QUARRY		SOURCE (River, quarry, etc.)

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY 2426	WASHED OVEN DRY			

NO.	SIEVE SIZE	SIEVE OPENING, (MM)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM. PERCENT RETAINED
1	2-1/2"	63.5	0	0	100	100		
2.	2"	52.8	178.3	7.23	92.77	93		
3.	1-1/2"	38.1	223.2	9.20	83.57	84		
4.	1"	25.4	322.6	13.30	70.27	70		
5.	3/4"	19.1	412.8	17.02	53.25	53		
6.	1/2"	12.7	176.5	7.28	45.98	46		
7.	3/8"	9.52	75.0	3.09	42.89	43		
8.	No. 4	4.75	126.8	5.23	37.66	38		
9.	No. 8	2.38						
10.	No. 10	2.00	105.2	4.34	33.32	33		
11.	No. 12	1.65					A-2-6	Limestone C
12.	No. 16	1.19						SANDY C
13.	No. 20	0.84						
14.	No. 30	.59						
15.	No. 40	.42	182.2	7.51	25.81	26		
16.	No. 50	.297						
17.	No. 60	.260						
18.	No. 80	.177						
19.	No. 100	.149						
20.	No. 200	.074	219.4	9.04	16.77	17		
	PAN							
	WASH							
	TOTAL		2426					

FINENESS MODULUS: _____

F. M. = $\frac{\Sigma \text{ \% cum. Ret. of Sieve \# (19, 16, 14, 12, 9, 8, 7, 5 \& 3)}}{100}$

UNIT WEIGHT, g/cc: _____

DRY LOOSE _____

DRY RODDED _____

TESTED BY: M. C. [illegible] / MATL ENGR.

DATE 11-22-93

CHECKED BY: C. C. [illegible] / SR. MATL ENGR.

DATE 11-22-93

Logbook Entry NO.

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Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

BC-3-4
S-1

MECHANICAL ANALYSIS

ROAD SECTOR 4			DATE
SPECIFICATION ITEM 202.1 DPWH STD. SPECS	PURPOSE OF MATERIAL CA-BC		SAMPLED BY & DATE RBD 10-14-93
SAMPLED AT (stockpile, batch plant, etc) STA 1+515 'RS' (IN-PLACE)			SOURCE, (river, quarry)

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
8646.7	8508.7	8315.1	1.62		

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM PERCENT RETAINED
2-1/2"	63.5					GRADING	
2"	52.8					B	
1-1/2"	38.1	0	0	100	100	100	
1"	25.4	0	0	100	100	100	
3/4"	19.1	359.8	4.23	95.77	96		
1/2"	12.7	1168.3	13.73	82.04	82	60-90	
3/8"	9.52	608.7	7.15	74.89	75		
No. 4	4.75	1011.1	11.88	63.01	63		
No. 8	2.38						
No. 10	2.00	574.3	6.75	56.26	56	35-65	
No. 12	1.65						
No. 16	1.19						
No. 20	0.84						
No. 30	0.59						
No. 40	0.42	1859.0	21.85	34.41	34	10-30	
No. 50	0.297						
No. 60	0.260						
No. 80	0.177						
No. 100	0.149	2146.5	25.23	9.18	9		
No. 200	0.074	435.3	5.12	4.06	4	5-15	
PAN		152.1					
WASH		193.6					
TOTAL							

MM/CSSA MATERIALS TESTING LABORATORY
UNIT WEIGHT, PCF:
CLAPPED: LO/LOSE 19.93, MAX 93-2
SLICED: RODDED

FINENESS MODULUS:
TESTED BY RPB DATE 10-19-93
CHECKED BY DATE
ENTERED BY DATE

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MAXIMSON MATERIALS/CSSA
Materials Testing Laboratory

Mindanao Development Program
South Cotabato Road Project

E-11-4

MECHANICAL ANALYSIS

ROAD SECTOR			DATE
4			
SPECIFICATION	PURPOSE OF MATERIAL	SAMPLED BY & DATE	
	SELECT SH. EMBNKMNT	RBD 10-19-93	
SAMPLED AT (stockpile, batch plant, etc)		SOURCE, (river, quarry)	
75 m. FROM HIGHWAY LS Nr. Polomolok Cemetery		Nr. Polomolok Cemetery	

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENED	MAX. SIZE (INCH)
ORIGINAL	OVEN DRY	WASHED OVEN DRY			
2063.3	1847.2	1614.5	11.70		

SIEVE SIZE	SIEVE OPENING	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS. PERCENT PASSING	CUM PERCENT RETAINED	
2-1/2"	63.5							
2"	52.8							
1-1/2"	38.1					A X		B
1"	25.4	0	0	100	100	100 100	0	100
3/4"	19.1	108.2	5.86	94.14	94		6	
1/2"	12.7	121.6	6.58	87.56	88		12	
3/8"	9.52	97.1	5.26	82.30	82	50-85 70-100	18	60-100
No. 4	4.75	332.6	18.01	64.29	64	35-65 70-100	36	50-85
No. 8	2.38							
No. 10	2.00	390.5	21.14	43.15	43	25-50 55-100	57	40-70
No. 12	1.65							
No. 16	1.19							
No. 20	0.84							
No. 30	0.59							
No. 40	0.42	336.5	18.22	24.93	25	15-30 30-70	75	25-45
No. 50	0.297							
No. 60	0.260							
No. 80	0.177							
No. 100	0.019	112.2	6.07	18.86	19		81	
No. 200	0.074	57.2	3.10	15.76	16	5-20 8-85	84	5-20
PAN		58.6						
WASH		232.7						
TOTAL								

MM/CSSA MATERIALS TESTING LABORATORY
DATE RECEIVED 10-28-93, MM93-251
SIGN

FINENESS MODULUS:
TESTED BY RPB DATE 10-22-93
CHECKED BY DATE
ENTERED BY DATE

DRY LOOSE
DRY RODDED

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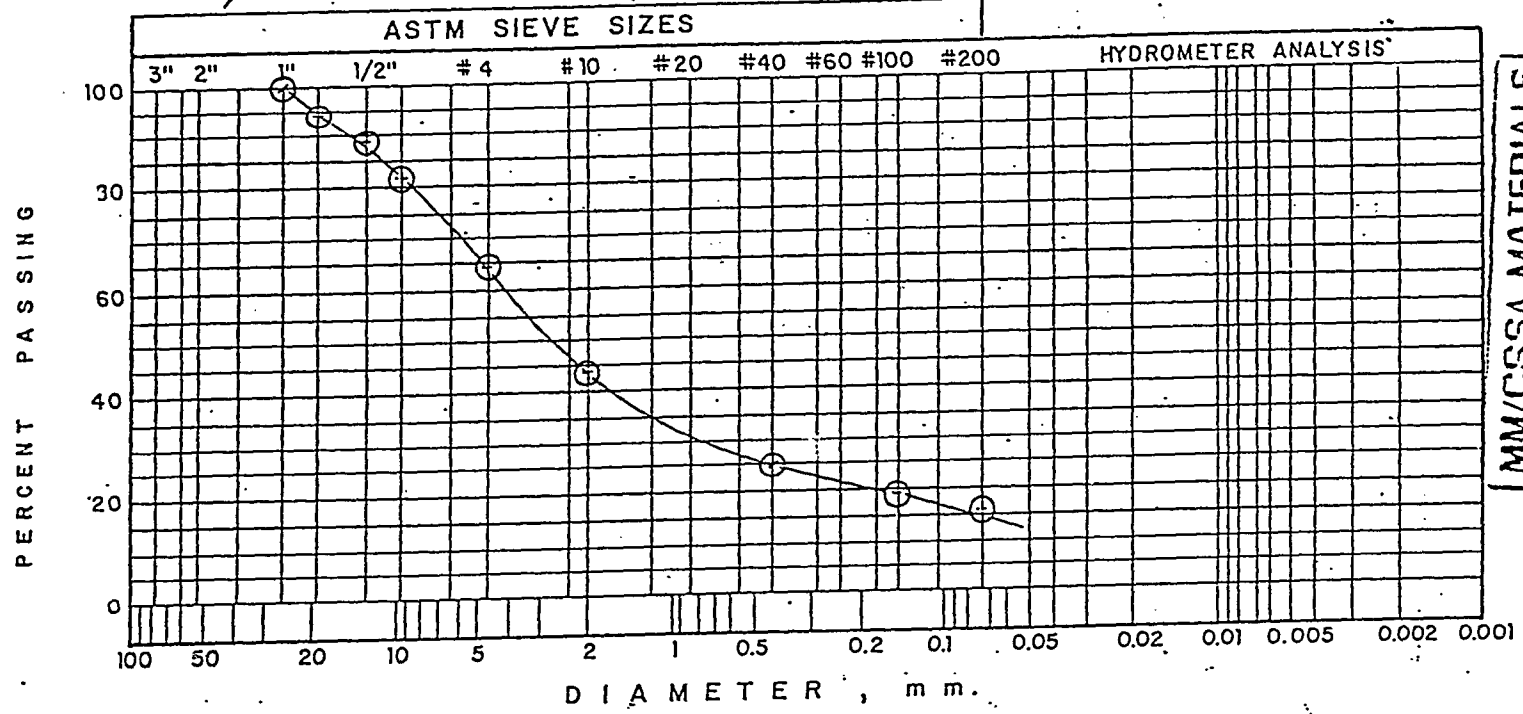
MINDANAO DEVELOPMENT PROJECT
SOUTH COTABATO

GRAIN SIZE DISTRIBUTION CURVES

PROJECT: South Cotabato Roads	SECTOR: 4	SECTION:
	STATION:	KIND OF MATERIALS: SELECT EMBNK.
SOURCE: Poromalok Cemetery	PLOTTED BY: wpl	DATE: 10-26-93



MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 10-26-93 MA 93-257
SIGN.

STATION	TP. NO.	SAMPLE NUMBER	DEPTH	CURVE NUMBER	NMC	LL	PL	PI	CLASS	GI	DESCRIPTION
	E-114				11.70	34	19	15	A-2-6	0	Gravel with sand and little amount of clay

550

Sector 7 and 8
Mix Designs

551

PHILIPPINE GEOANALYTICS

PROJECT: SOUTH COTABATO HIGHWAYS	COMPUTER PRINTOUT ☐ DETAILS PREPARED ☐	SHEET 1 OF 9
SUBJECT: SECTOR 7 SURALLAH – TIBOLI ROAD	JOB NO:	CROSS REFERENCE:
BITUMINOUS HOT-MIX SURFACE COURSE	TESTED BY:	CHECKED BY:
	DATE TESTED:	DATE FINISHED: 10 MAY 1993

GEOANALYTICS SOUTH COTABATO HIGHWAYS PROJECT NO. 023

JOB MIX FORMULA FOR
BITUMINOUS HOT-MIX SURFACE COURSE

I. SOURCES OF MATERIALS:

3/4" MAXIMUM SIZE CRUSHED AGGREGATES – BARRIO 4 (MARBEL)

3/8" MAXIMUM SIZE CRUSHED AGGREGATES – BARRIO 4 (MARBEL)

ASPHALT CEMENT / PENETRATION GRADE 60/70 – TAIWAN

II. AGGREGATES BLENDING PROPORTION:

3/4" COARSE AGGREGATES – (55%)

3/8" FINE AGGREGATES – (45%)

III. JOB MIX FORMULA, SPECIFICATIONS AND TOLERANCES:

SIEVE SIZE NO.	J.M.F.	SPEC'S GRADING "C"	SPEC'S GRADING "F"	TOLERANCE
1"	–	–	–	–
3/4"	100	95-100	100	–
1/2"	81	68-86	–	±7
3/8"	65	56-78	–	±7
#4	47	38-60	45-65	±7
#8	36	27-47	33-58	±4
#16	30	18-37	–	±4
#30	22	13-28	–	±4
#50	14	9-20	10-20	±4
#200	6	4-8	3-8	±2

1 KN = 101.971 Kgf
1 KPa = 20.865 PSF
1 MPa = 145 PSI

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PHILIPPINE GEOANALYTICS

PROJECT: SOUTH COTABATO HIGHWAYS	COMPUTER PRINTOUT DETAILS PREPARED	SHEET 2 OF
SUBJECT: SECTOR 7 SURALLAH - TIBOLI ROAD	JOB NO:	CROSS REFERENCE:
BITUMINOUS HOT-MIX SURFACE COURSE	TESTED BY:	CHECKED BY:
	DATE TESTED:	DATE FINISHED: 10 MAY 19

PHILGEOANALYTICS PG PROJECT NO. 0453 SOUTH COTABATO HIGHWAYS

	TOLERANCE
BITUMINOUS MATERIALS (ASPHALT CEMENT)	±0.4%
TEMPERATURE OF HOT-MIX	±30°F
MAXIMUM TEMPERATURE	320°F
MINIMUM TEMPERATURE PRIOR TO DUMPING INTO THE SPREADER	225°F

IV. ASPHALTIC CONCRETE HOT-MIX BATCH WEIGHTS

@ % VOIDS 3-5 = 4.0% AC @ 6.62%

TOTAL MASS PER BATCH	1000 KGS.	
ASPHALT CEMENT (6.62% X 1000)	66.2 KGS.	
AGGREGATES:		%
55% OF 933.8 (3/4" CA)	513.6	51.3
45% OF 933.8 (3/8" FA)	420.2	42.0
ASPHALT CEMENT	66.2	6.0
TOTAL	1000 KGS/BATCH	100.

1 KN = 101.971 Kgf
1 KPa = 20.885 PSF
1 MPa = 145 PSI

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PHILIPPINE
GEOANALYTICS

PROJECT: SOUTH COTABATO HIGHWAYS	COMPUTER PRINTOUT ☐ DETAILS PREPARED ☐	SHEET 3 OF 3
SUBJECT: SECTOR 7 SURALLAH-TIBOLI ROAD	JOB NO:	CROSS REFERENCE:
BITUMINOUS HOT MIX SURFACE COURSE	TESTED BY:	CHECKED BY:
	DATE TESTED:	DATE FINISHED: 10 MAY 1993

PHIL. GEOANALYTICS SOUTH COTABATO HIGHWAYS PROJECT
FG
NO. 0453

V. SUMMARY OF TEST RESULTS :
(MARSHALL METHOD)

	DESIGN CRITERIA	SPECIFICATIONS
a) UNIT WEIGHT, PCF	141.7	-
b) STABILITY, LBS.	2715	1800 MIN.
c) AIR VOIDS (TOTAL MIX), %	4.4	3-5
d) VOIDS FILLED w/ BITUMEN, %	77	75-85
e) FLOW, mm	12.33	8-14
f) ASPHALT CONTENT, % (OPTIMUM)	6.62	6.22-7.02

PREPARED BY: E.S. GARCIA, LABORATORY ENGR

CHECKED BY: C. FARUM, SR. MAT'L. ENGR

NOTED BY: R.B. CABUNG, MK. CQC ENGR

1 KN = 101.971 Kgf
1 KPa = 20.845 PSF
1 MP = 145 PSI

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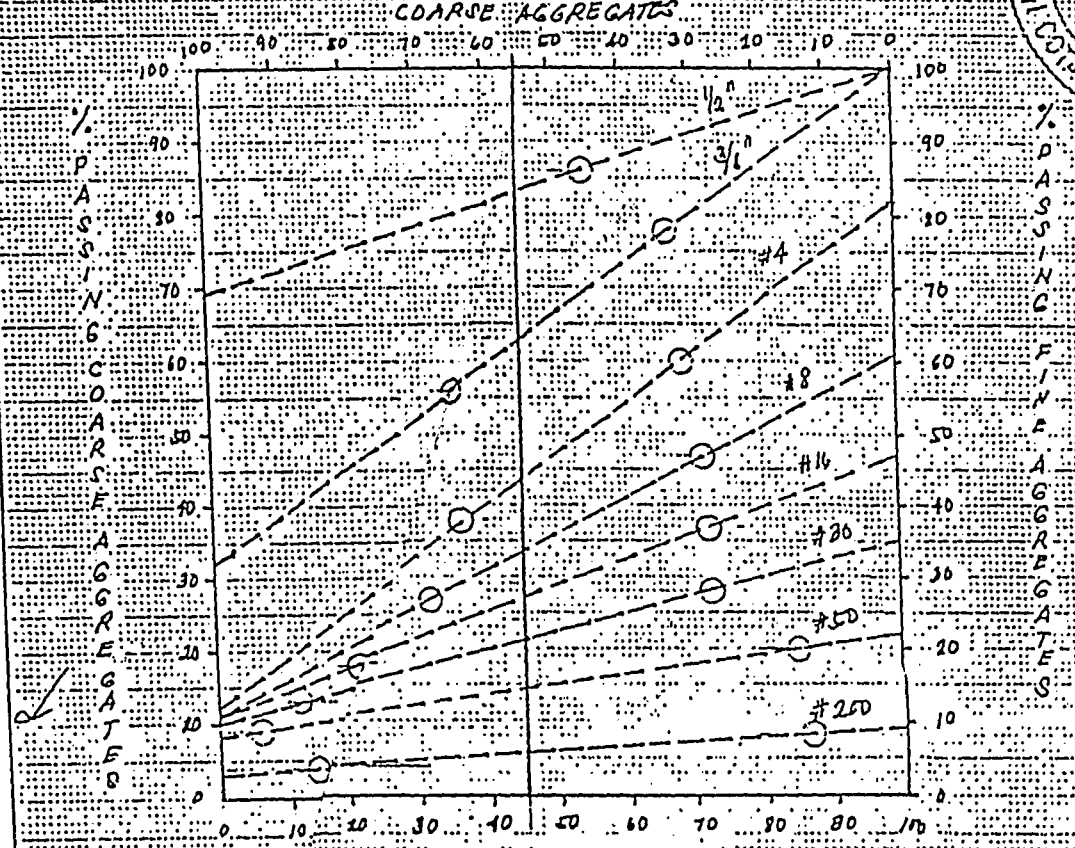
PHILIPPINE **GEOANALYTICS**

PROJECT: SOUTH COTABATO HIGHWAYS	COMPUTER PRINTOUT ☐ DETAILS PREPARED ☐	SHEET ____ OF ____
SUBJECT: SECTOR 7 SURALLAH - TIBOLI ROAD	JOB NO:	CROSS REFERENCE:
BARRIO 4 CRUSHER PLANT - 3/4" CA & 3/8" FA	TESTED BY:	CHECKED BY:
	DATE TESTED:	DATE FINISHED:

ASPHALTIC AGGREGATES

DATE SAMPLED : 15 APRIL 1993 (PM).



IDEAL COMBINATION : 55 % COARSE / 45 % FINE

SIEVE SIZE	THEORETICAL RESULTS	SPEC'S GRADING "C"
3/4"	100 %	95-100
1/2"	83 %	68-82
3/8"	63 %	56-78
#4	44 %	38-60
#8	34 %	27-47
#16	27 %	18-37
#30	21 %	13-28
#50	14 %	9-20
#200	6 %	4-8

PREPARED BY:
E. S. GARCIA
LABORATORY ENG

CHECKED/NOTED BY:
C.C. PARUM
JR. MAT'LS. ENGR

R.P. CABUNG
MK. CDC ENGR.

1 KN = 101.971 Kgf
1 KPa = 20.885 PSF
1 MPa = 145 PSI

BEST AVAILABLE DOCUMENT

555

BEST AVAILABLE DOCUMENT

PHILIPPINE
GEOANALYTICS

PHIL. GEOANALYTICS SOUTH COTABATO HIGHWAYS PROJECT NO. 0278

No. 21 Scout de Guia near Corner Scout Reyes, Quezon City
Tel. No.: 97-27-12 / 93-21-62
Cell # 669-1111 code # 23533
Mobile Phone No.: 501-3524

NUCLEAR DENSITY TESTING FORM

MOISTURE STANDARD (MS) = 639.

DENSITY STANDARD (DS) = 2883

DATE : 08 FEB. 1993

1ST LIFT EMBANKMENT @ STA. 2+400 – STA. 2+750

Test No.	Station	Depth Tested In	Lift No.	Wet Density PCF	Dry Density PCF	% Moisture	Lab. Stand Proctor, PCF	Optimum Moisture Content (Lab)	Required % Compaction	% Compaction
1.	2+400	12"	(1ST LIFT)	121.1	107.9	12.2	112.9	–	95.0	95.6 LS
2.			EMBANK-	120.9	107.6	12.4		–		95.3 RS
3.	2+450		MENT	122.0	110.6	10.3		–		98.0 LS
4.				121.2	110.2	9.9		–		97.7 RS
5.	2+500			122.7	110.9	10.6		–		98.2 LS
6.				120.9	109.6	10.3		–		97.1 RS
7.	2+550			124.2	109.1	13.9		–		96.6 LS
8.				123.2	109.1	12.0		–		95.8 RS
9.	2+600			123.5	109.1	13.2		–		96.7 LS
10.				127.7	112.2	13.8		–		99.4 RS
11.	2+650			122.9	109.0	12.8		–		96.6 LS
12.				126.4	110.8	14.2		–		98.1 RS
13.	2+700			127.4	112.3	13.5		–		99.5 LS
14.				126.5	111.7	13.3		–		98.9 RS
15.	2+750	↓		127.1	112.1	13.4	↓	–	↓	99.3 LS
16.		12"		126.7	110.8	14.4	112.9	–	95.0	98.1 RS
				NOTHING FOLLOWS						

TESTED BY : S. JORDAN / MATLS TECH. R. MAR MK CQC REP.

DATE TESTED : 05 FEB. 93

CHECKED & NOTED BY : C.C. TARLIM SR. MATLS ENGR.

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PHILIPPINE
GEOANALYTICS

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PHIL. GEOANALYTICS — SOUTH COTABATO HIGHWAYS PROJECT — NO. 0245

No. 1 Scout de Guia near
corner Scout Reyes, Quezon City
Tel Nos.: 97-27-12 / 98-21-62
Easy Call # 889-1111 code # 23538
Cellular Phone No.: 301-3524

NUCLEAR DENSITY TESTING FORM

MOISTURE STANDARD (MS) = 636

DENSITY STANDARD (DS) = 2266

DATE: 23 JAN. 1993

WING TRUCKER JR # 20356 SECTOR 7 - JURUWAH - TIBOH ROAD

Test No.	Station	Depth Tested In	Lift No.	Wet Density PCF	Dry Density PCF	% Moisture	Lab. Stand Proctor, PCF	Optimum Moisture Content (Lab)	Required % Compaction	% Compaction
	SEC. 7			BACKFILLING FOR RCP 24" ϕ						
1	5+250	12	1st LAYER	121.6	114.2	6.3	113.5	–	95	96.6 RS
2	5+250	8	2nd LAYER	121.8	115.0	5.9	"	–	"	97.1 RS
3	5+225	12	1st LAYER	120.7	113.5	6.4	"	–	"	95.8 LS
4	5+225	8	2nd LAYER	122.2	115.1	6.1	"	–	"	97.2 LS
				— NOTHING FOLLOWS —						
				ROADWAY EXCAVATION FOR 24" ϕ						
5	5+250	6	GROUND ELEVATION	123.7	115.2	7.4	113.5	–	95	97.2 RS
				BACKFILLING FOR RCP 24" ϕ						
6	5+250	12	1st LAYER	127.6	119.3	6.4	113.5	–	95	100.7 LS
7	– do –	8	2nd LAYER	124.2	116.9	6.2	"	–	"	93.6 LS
				ROADWAY EXCAVATION (LEDGING) GROUND ELEVATION FOR RCP 24" ϕ						
8	6+225	6	GROUND	119.5	115.9	3.1	113.5	–	95	97.8 RS
9	7+125	6	ELEVATION	113.6	114.6	3.5	119.2	–	"	96.2 LS
				— NOTHING FOLLOWS —						

TESTED BY : S.Y. JORDAN / MAT'LS. TECH.

DATE TESTED : 21 JAN. 1993

CHECKED & NOTED BY : J.F. FAGUR / JR. MAT'LS. ENGR.

: R.D. CASING / MT. CHF. ENGR.

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PHILIPPINE
GEOANALYTICS

BEST AVAILABLE DOCUMENT

PHIL. GEOANALYTICS SOUTH COTABATO HIGHWAYS PROJECT NO. 0479

STARTED AT STA. 1+560 cu
ENDED AT STA. 1+325 cu

NUCLEAR DENSITY TESTING FORM

SECTOR. 7 SURALLAH - T'BOLI ROAD

MOISTURE STANDARD (MS) = 629

DENSITY STANDARD (DS) = 2367

DATE : 08 JUNE 1993

TROXLER ID/ SERIAL # 20356

Test No.	Station	Depth Tested In	Lift No.	Wet Density PCF	Dry Density PCF	% Moisture	Lab. Stand Proctor, PCF	Optimum Moisture Content (Lab)	Required % Compaction	% Compaction	
1	1+560	4"	FIRST	137.4	129.1	6.4	129.1	–	100	100	cu
2	–		LIFT	137.3	129.5	6.0		–		100.3	LS
3	1+425		BASE	140.3	132.2	6.1		–		102.4	cu
4	–		COURSE	140.2	131.2	6.9		–		101.6	LS
5	1+350			140.2	130.3	7.6		–		100.9	cu
6	–			139.3	129.4	7.7		–		100.2	LS
7	1+475			140.2	130.9	7.1		–		101.4	cu
8	–			139.9	129.6	7.2		–		100.4	LS
9	1+400			140.4	129.4	8.2		–		100.2	cu
10	–			139.9	130.3	7.4		–		100.9	LS
11	1+325			139.2	130.1	7.0		–		100.8	cu

NOTE : EQUATION

NOTHING FOLLOWS

TESTED BY : [signature] TECH.

DATE TESTED : 07.08.93

A.D. TUMONAC
CQA REP.

CHECKED & NOTED BY : C.C. FORTUN / SR. MOT'LS ENG'R
LIAI. C.E. ENG'R

Fri. 92

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PHILIPPINE
GEOANALYTICS

BEST AVAILABLE DOCUMENT

GEOANALYTICS PHILIPPINES — SOUTH COTABATO HIGHWAY'S PROJECT — FG — NO. 0399

21 Scout de Guia near corner Scout Reyes, Quezon City
Tel. No.: 97-27-12 / 93-21-02
Cell # 0[illegible]-1111 0000 # 23333
Fax Phone No.: 331-3524

SECTOR 7 | SURALLAH - TIBOLI ROAD

NUCLEAR DENSITY TESTING FORM

SUB-GRADE LEVEL: FOR START @ STA. 2+425 & ENDS @ STA. 2+987

MOISTURE STANDARD (MS) = 640

DENSITY STANDARD (DS) = 2364

DATE: MARCH 04, 1993

TROXLER SERIAL NO. 21350

Test No.	Station	Depth Tested In	Lift No.	Wet Density PCF	Dry Density PCF	% Moisture	Lab. Stand Proctor, PCF	Optimum Moisture Content (Lab)	Required % Compaction	% Compaction
1	2+425 ℄	12"	SUB-GRADE	127.0	112.7	12.7	113.0		95.0	99.2
2	- RJ		LEVEL	125.4	112.4	11.0	"		"	95.0
3	2+500 ℄			125.3	111.9	12.0	"		"	98.5
4	- LJ			125.2	112.0	11.8			"	98.6
5	2+575 ℄			126.8	112.9	12.3			"	99.4
6	- RJ			125.9	113.2	11.2			"	99.6
7	2+650 ℄			124.9	112.0	11.5			"	98.6
8	- LJ			125.0	110.8	13.6			"	97.5
9	2+725 ℄			125.5	111.4	12.7			"	98.1
10	- RJ			125.9	111.7	12.7			"	98.3
11	2+800 ℄			126.3	112.6	12.2			"	99.1
12	- LJ			125.9	113.0	12.4			"	99.5
13	2+875 ℄			125.5	113.4	10.7			"	99.8
14	- RJ			125.4	113.6	10.4				100.0
15	2+950 ℄			127.0	112.7	12.7				99.2
16	- LJ	-do-	-do-	126.4	112.7	12.2	-do-		-do-	99.2
				NOTHING FOLLOWS						
										PASSED

TESTED BY : O.B. GARCIA

DATE TESTED : MARCH 03, 1993

R. O. TIMBOLING
HK CQC REP.

CHECKED & NOTED BY : A.C. FORJAN / SR. HWYS. ENGR.

: R. TIMBOLING / HK CQC ENGR.

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PHILIPPINE
GEOANALYTICS

PHIL. GEOANALYTICS — SOUTH COTABATO HIGHWAYS PROJECT — NO. 0487

SEC. 7 (SURALLAH - TEDLI ROAD)

NUCLEAR DENSITY TESTING FORM

SHOULDER POKTION FINAL LIFT: PAT START @ STA. 8+025 & ENDS @ 8+025

MOISTURE STANDARD (MS) = 640

DENSITY STANDARD (DS) = 2862

DATE: JUNE 17, 1993

TROXLER SERIAL NO. 20356

Test No.	Station	Depth Tested In	Lift No.	Wet Density PCF	Dry Density PCF	% Moisture	Lab. Stand Proctor, PCF	Optimum Moisture Content (Lab)	Required % Compaction	% Compaction
1	8+025 LS	8"	SHOULDER	122.3	122.1	8.3	124.4	10.4	95.0	98.2
2	8+850 LS		PORTION	120.0	118.4	9.0				95.1
3	-do- LS		FIN. LIFT	120.0	118.8	8.6				95.5
4	8+775 LS			122.9	121.3	9.6				97.5
5	-do- RS			122.2	121.5	8.4				98.0
6	8+700 RS			121.3	119.8	9.6				96.3
7	8+625 RS			120.3	119.7	8.9				96.2
8	8+550 RS			121.3	119.6	9.7				96.2
9	8+475 RS			121.2	120.2	9.1				96.7
10	8+400 LS			120.9	119.5	9.6				96.0
11	-do- RS			121.1	119.0	10.2				95.7
12	8+375 LS			120.6	120.6	8.3				96.9
13	-do- RS			121.1	121.4	8.9				96.8
14	8+250 LS			121.8	121.3	8.6				97.5
15	-do- RS			121.8	121.1	8.8				97.4
16	8+175 LS			121.6	121.7	9.0				97.0
17	-do- RS			120.5	119.5	8.8				96.4
18	8+100 LS	-do-	-do-	120.6	119.0	8.9	-do-	-do-	-do-	95.7

TESTED BY: J.B. GARCIA — R.O. TRINIDAD, PHL COORDR.

DATE TESTED: 16 JUNE 93

CHECKED & NOTED BY: C.G. TAIZON / SR. MTN'S. ENGR.

: R. BUTTERLING / PHL CDC ENGR.

560

MORRISON MAIERLE/CSSA

Materials Testing Laboratory
Compaction Test
Using Density Gauge

Road Sector: SECTOR-7 Date 02/18/03
Section: SURALLAH - TIBOLI ROAD Station
Tested by: RRD/VSF Date Tested 02/11/03
Checked by: VSF

Type of Material : EMBANKMENT Source : HUMBOLDT
Model 5001P Serial Number 950
Standard Counts (DS) 3402
Standard Counts (MS) 515.7

	ROADWAY					
Location/Station	20+506.4	20+701.1	20+778.0			
OFFSET fr. LS	4.5M	3.2M	1.5M			
Lab No.	EF-106	EF-107	EF-108			
Depth tested (in) @	12	12	12			
Lift	1ST	1ST	1ST			
Thickness	DEEP TEST					
Counts DC	755.3	791.5	809.2			
Counts MC	206.3	229.5	279.8			
Count Average						
Wet Density (WD)	123.5	121.8	120.9			
% Moisture	17.53	20.50	27.04			
Dry Density (DD)	105.1	101.1	95.13			
Proctor Density	106.1	106.1	106.1			
Optimum Moisture						
% Compaction	99.16	95.38	89.66			
Required	95	95	95			
Remarks	PASSED	PASSED	FAILED			

MM/CSSA MATERIAL TESTING LABORATORY
DATE 02-19-93/MM-93-971N
SIGN.

Area Covered: STA. 20+300 - 20+950

NOTE: STA. 20+700 - 20+825 MATERIALS IS UNSUITABLE AND IS OF HIGH PLASTICITY SOIL.

BEST AVAILABLE DOCUMENT

561

MORRISON MAIERLE/CSSA

Materials Testing Laboratory
Compaction Test
Using Density Gauge

Road Sector: SECTOR-7
Section: SURALLAH - TIRCLI
Tested by: RBD
Checked by: VSF

Date: 04/13/93
Station:
Date Tested: 04/01/93

Type of Material: SUBGRADE
Model: 500P
Standard Counts (DS): 3275
Standard Counts (MS): 537.5

Source: HUMBOLDT
Serial Number: 952

MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 04-10-21/MM-93-4&NGT
SIGN.

Location/Station	19+125.7	19+407.3	19+546.8	19+923.4	20+085.3	20+200.8
OFFSET fr. LS	3.9m	0.6m	3.7m	6.5m	1.3m	5.6m
Lab No.	96-535	96-536	96-537	96-538	96-539	96-540
Depth tested (in)	6	6	6	6	6	6
Lift						
Thickness						
Counts DC	2302	2345	2335	2333	2462	2340
Counts MC	129.7	129.9	137.5	132.7	128.7	129.9
Count Average						
Wet Density (WD)	128.2	125.4	127.5	127.7	124.4	126.9
% Moisture	12.18	12.50	13.37	12.74	10.95	12.54
Dry Density (DD)	114.3	111.5	112.5	113.3	112.1	112.8
Proctor Density	117.3	117.3	117.3	117.3	117.3	117.3
Optimum Moisture						
% Compaction	97.44	95.06	95.91	96.59	95.57	96.16
Required	95	95	95	95	95	95
Remarks	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED

Area Covered: STA. 18+900 – 20+400

BEST AVAILABLE DOCUMENT

562

MORRISON MAIERLE/CSSA

Materials Testing Laboratory
Compaction Test
Using Density Gauge

Road Sector: SECTOR-7
Section: SUKALAH-TIBOLI
Tested by: RBD
Checked by: VOF

Date 05/16/93
Station
Date Tested 05/19/93

Type of Material BASECOURSE
Model 500P
Standard Counts (DS) 3275
Standard Counts (MS) 539.9

Source HUMBOLDT
Serial Number 1052

	ROADWAY					
Location/Station	12+621	13+775.5	14+184.0	14+500.1		
OFFSET FI. EDGE LS	5.3m	4.2m	4.1m	4.0m		
Lab No.	BC-784	BC-785	BC-786	BC-787		
Depth tested (in)	4	4	4	4		
Lift	FINAL					
Thickness						
Counts DC	2577	2577	2517	2579		
Counts MC	111.3	109.0	119.2	107.4		
Count Average						
Wet Density (WD)	137.7	137.7	138.8	137.4		
% Moisture	6.658	6.511	7.173	6.371		
Dry Density (DD)	129.1	129.3	129.5	129.2		
Proctor Density	129.0	129.0	129.0	129.0		
Optimum Moisture	8.8	8.8	8.8	8.8		
% Compaction	100.1	100.2	100.4	100.2		
Required	100	100	100	100		
Remarks	PASSED	PASSED	PASSED	PASSED		

MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 05/19/93 93-0467
SIGN:

Area Covered: STA. 14+500 - 13+500
BASECOURSE - FINAL LIFT

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PHILIPPINE
GEOANALYTICS

PHIL. GEOANALYTICS — SOUTH COTABATO HIGHWAYS PROJECT — NO. 0798

SECTOR 8 (NORALA - KOLAMBUG)

NUCLEAR DENSITY TESTING FORM

SUB-GRADE LEVEL: FDT START @ STA. 20+425 & ENDS @ STA. 19+375

MOISTURE STANDARD (MS) = 647

DENSITY STANDARD (DS) = 2269

DATE : APRIL 22, 1993

TROXLER SERIAL NO. 20356

Test No.	Station	Depth Tested In	Lift No.	Wet Density PCF	Dry Density PCF	% Moisture	Lab. Stand Proctor, PCF	Optimum Moisture Content (Lab)	Required % Compaction	% Compaction	
1	20+425 C	6"	SUB-GRADE	121.3	106.9	13.5	104.6		95.0	100.3	
2	- LS @ SH		LEVEL	122.7	106.4	15.3				99.8	
3	20+350 C			119.5	106.3	12.4				99.7	
4	- RS @ SH			122.3	104.8	16.7				98.3	PASSED
5	20+275 C			120.5	106.1	13.6				99.5	
6	- LS @ SH			119.9	104.4	14.8				97.9	
7	20+200 C			120.6	107.0	12.7				100.4	
8	- RS @ SH			119.4	103.1	15.8				96.7	
9	20+125 C			118.1	104.5	13.0				98.0	
10	- LS @ SH			116.1	101.8	14.0				95.5	PASSED
11	20+050 C			121.7	105.7	15.1				99.2	
12	- RS @ SH			121.2	103.4	17.2				97.0	
13	19+975 C			119.6	104.6	14.3				99.0	
14	- LS @ SH			113.0	105.0	13.2				98.5	
15	19+900 C			119.9	105.1	13.9				100.5	PASSED
16	- RS @ SH			122.0	104.5	14.8				98.0	
17	19+825 C			119.8	106.6	12.4				100.0	
18	- LS @ SH	-do-	-do-	122.5	106.6	13.0	-do-		-do-	102.0	

TESTED BY : R. GARCIA

DATE TESTED : APR. 21 1993

R. O. TRILIANAC
- MK C&C REP.

CHECKED & NOTED BY : COTEAZIM / SR. HIGHWAYS ENGR.

R.E. CELINO / MK. C&C ENGR.

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PHILIPPINE
GEOANALYTICS

BEST AVAILABLE DOCUMENT

PHIL. GEOANALYTICS — SOUTH CORRIDOR TOLLWAYS PROJECT — NO. 0493

SECTOR 8 (NOROLA - KOLAMBOG ROAD)

NUCLEAR DENSITY TESTING FORM

BASE COURSE FINAL LIFT : FDT START @ STA. 19+037 X 6M DS.
@ STA. 19+450

MOISTURE STANDARD (MS) = 638

DENSITY STANDARD (DS) = 2873

DATE : JUNE 24, 1993

TROXLER SERIAL NO. 20356

Test No.	Station	Depth Tested In	Lift No.	Wet Density PCF	Dry Density PCF	% Moisture	Lab. Stand Proctor, PCF	Optimum Moisture Content (Lab)	Required % Compaction	% Compaction
01	19+037 RS	4"	BASE	136.2	129.0	5.6	129.1	8.8	100.0	99.9
02	19+075 ℄		COURSE	138.8	129.4	7.3				100.2
03	- LS		FINAL	139.2	129.2	7.7				100.1
04	19+150 ℄		LIFT	138.4	128.8	7.4				99.8
05	- RS			139.3	129.2	7.9				100.0
06	19+225 ℄			138.3	129.2	7.0				100.1
07	- LS			136.1	128.9	5.5				99.8
08	19+300 ℄			139.8	129.0	8.3				100.0
09	- RS			139.1	129.7	7.3				100.5
10	19+375 ℄			140.4	130.5	7.6				101.1
11	- LS			138.2	128.5	7.5				99.6
12	19+450 ℄	-do-	-do-	138.3	128.8	7.3	-do-	-do-	-do-	99.8
				RE-TEST ON BASE COURSE FIRST LIFT						
13	19+337 RS	10"	BASE	138.0	129.3	6.7	129.1	8.8	100.0	100.2
14	19+375 ℄	|	COURSE	137.9	129.0	6.9	|	|	|	99.9
15	19+412 LS	-do-	FIRST LIFT	138.6	129.3	7.0	-do-	-do-	-do-	100.4
				NOTHING FOLLOWS						

TESTED BY : E. GARCIA

DATE TESTED : JUNE 23, 1993

R.O. TUMAMAC
MK CQC REP

CHECKED & NOTED BY : for: D.G. FARZUM / SR. MAT'LS. ENGR.
: R.P. COBLING / MK CQC ENGR.

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BEST AVAILABLE DOCUMENT

PHILIPPINE
GEOANALYTICS

PHILIPPINE GEOANALYTICS
JOB NO. 514
SOUTH COTABATO HIGHWAYS PROJECT

SECTOR 8 (NORALA - KOLAMBOG RD.)

NUCLEAR DENSITY TESTING FORM

SHOULDER PORTION FINAL LIFT: FOT START @ STA. 21+550 & ENDS @ STA. 22+975

MOISTURE STANDARD (MS) = 641

DENSITY STANDARD (DS) = 2866

DATE: JULY 19, 1993

TROXLER SERIAL NO. 20356

Test No.	Station	Depth Tested In	Lift No.	Wet Density PCF	Dry Density PCF	% Moisture	Lab. Stand Proctor, PCF	Optimum Moisture Content (Lab)	Required % Compaction	% Compaction	
01	21+550 LS	8"	SHOULDER	127.3	116.7	9.1	119.8	12.5	95.0	97.4	PASSED
02	-do- RS		PORTION	126.9	117.4	8.1				98.0	
03	21+625 LS		FINAL	126.8	116.0	9.3				96.8	
04	-do- RS		LIFT	127.8	116.6	9.6				97.3	
05	21+700 LS			129.1	117.5	9.9				98.1	
06	-do- RS			127.6	116.6	9.4				97.3	
07	21+775 LS			128.6	118.0	9.0				98.5	
08	-do- RS			126.7	115.8	9.4				96.7	
09	21+850 LS			127.1	116.1	9.5				96.9	
10	-do- RS			129.5	118.5	9.9				98.9	
11	21+925 LS			130.0	118.1	10.1				98.6	FAILED
12	-do- RS			130.6	118.6	10.1				99.0	
13	22+000 LS			131.7	118.2	11.4				98.7	
14	-do- RS			129.1	115.8	11.5				96.7	
15	22+075 LS			132.3	117.5	12.6				98.1	
16	-do- RS			130.5	117.9	10.7				98.4	
17	22+150 RS			128.9	118.5	8.8				98.9	
18	-do- RS	-do-	-do-	129.7	118.0	9.9	-do-	-do-	-do-	98.5	

TESTED BY: G. B. Garcia — L.O. Tumanac, PK QC REP.

DATE TESTED: JULY 17, 1993

CHECKED & NOTED BY: C.C. Farrim / Sr. Mat'ls. Engr.

R.B. Cabling / PK QC ENGR.

926

MORRISON MAIERLE/CSSA

Materials Testing Laboratory
Compaction Test
Using Density Gauge

Road Sector: SECTOR - 8
Section: NORALA - KOLAMBOG
Tested by: RBD
Checked by: VSF

Date: 04/26/93
Station:
Date Tested: 04/21/93

Type of Material: EMBANKMENT
Model: 5001P
Standard Counts (DS): 3275
Standard Counts (MS): 529.7

Source: HUMBOLDT
Serial Number: 952

SHOULDER

Location/Station	20+082 RS	20+550 RS	—			
Lab No.	EF-170	EF-171	EF-172			
Depth tested (in)	6	10	6			
Lift						
Thickness						
Counts DC	2989	776.6	2907			
Counts MC	172.5	201.0	204.3			
Count Average						
Wet Density (WD)	116.5	121.7	117.5			
% Moisture	14.34	16.74	17.73			
Dry Density (DD)	101.9	104.3	99.79			
Proctor Density	107.0	107.0	101.0			
Optimum Moisture						
% Compaction	95.23	97.48	98.80			
Required	95	95	95			
Remarks	PASSED	PASSED	PASSED			

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 04-30-93 / rom-93-421NGT
SIGN.

Area Covered: STA. 23+087 - 20+510, 20+481 - 19+775
SHOULDER EMBANKMENT BELOW SUBGRADE LEVEL

BEST AVAILABLE DOCUMENT

567

MORRISON MAIERLE/CSSA

Materials Testing Laboratory
Compaction Test
Using Density Gauge

Road Sector: SECTOR - 8
Section: NORALA - KOLAMBOG
Tested by: RBD
Checked by: VSF

Date: 04/26/03
Station:
Date Tested: 04/21/03

Type of Material: SUBGRADE
Model: 5001P
Standard Counts (DS): 3275
Standard Counts (MS): 529.7

Source: HUMBOLDT
Serial Number: 952

ROADWAY

Location/Station	20+982.4	20+451.8	20+190.5	19+932.5		
OFFSET Fr: EDGE	4.3m	5.1m	1.8m	3.8m		
Lab No.	96-552	96-553	96-554	96-555		
Depth tested (in)	6	6	6	6		
Lift						
Thickness						
Counts DC	2982	2984	2971	2504		
Counts MC	173.1	187.0	189.7	111.9		
Count Average						
Wet Density (WD)	118.9	118.0	119.4	126.2		
% Moisture	14.74	15.86	15.04	7.742		
Dry Density (DD)	103.6	101.9	103.0	117.1		
Proctor Density	107.0	107.0	107.0	121.7		
Optimum Moisture						
% Compaction	96.82	95.23	96.26	96.22		
Required	95	95	95	95		
Remarks	PASSED	PASSED	PASSED	PASSED		

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 04-29-03 / 04-22-03
SIGN.

Area Covered: STA 23+087 - 20+510, 20+481 - 19+775
SUBGRADE

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MORRISON MAIERLE/CSSA

Materials Testing Laboratory
Compaction Test
Using Density Gauge

Road Sector: SECTOR - 8 Date 06/30/93
Section: NORALA - KOLAMBOG Station
Tested by: RBD / VSF Date Tested 06/26/93
Checked by: VSF

Type of Material BASECOURSE Source HUMBOLDT
Model 500P Serial Number 952
Standard Counts (DS) 3271
Standard Counts (MS) 524.3

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 07-02-93 / MM-93-507NGT
SIGN.

	R	O	A	D	W	A
Location/Station OFFSET fr. LS	20+409 3.0m	do	20+056.6 5.0m	do	19+880.8 4.0m	do
Lab No.	BC-919	BC-920	BC-921	BC-922	BC-923	BC-924
Depth tested (in)	8"	4"	8"	4"	8"	4"
Lift	1ST	FINAL	1ST	FINAL	1ST	FINAL
Thickness						
Counts DC	2590	2592	2570	2604	2680	2573
Counts MC	124.1	125.0	125.8	126.0	118.7	122.7
Count Average						
Wet Density (WD)	136.3	136.4	137.0	136.0	135.3	136.9
% Moisture	7.772	7.842	7.859	7.904	6.901	7.543
Dry Density (DD)	126.5	126.5	127.0	126.0	126.5	127.3
Proctor Density	129.0	129.0	129.0	129	129.0	129.0
Optimum Moisture	8.8	8.8	8.8	8.8	8.8	8.8
% Compaction	98.06	98.06	98.45	97.68	98.06	98.68
APPLYING CORRECTION FACTOR OF X 1.02%	100.0	100.0	100.4	99.63	100.0	100.7
Remarks	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED

Area Covered: STA. 19+000 - 20+481
BASECOURSE - 1ST & FINAL LIFT

BEST AVAILABLE DOCUMENT

PROJECT : SEC. 7 BURAUAN - TIBOLI ROAD

CLIENT : MKC/LUMAYAG

REPORT NO.	39 A-

CONCRETE GRADE	3000	PSI	20.7	MPa
AGGREGATE SIZE (in.)	3/4"	CEMENT TYPE	I	

REMARKS/NOTES

COMPRESSIVE STRENGTH OF CONCRETE CYLINDERS ASTM C-39

	TEST CYLINDER DESIGNATION	WT.	DIA.	Length	DATE SAMPLED	AGE	COMPRESSIVE STRENGTH LOAD (LB)	COMPRESSIVE STRENGTH STRENGTH (PSI)	FRACTURE TYPE	THEORETICAL 28 DAYS STRENGTH
1	STA. 11+725 B/S	—	6"	12"	04 JULY '93	28	114400	4047	C	3000 psi
2	STRAIGHT TYPE	—	6"	12"	04 JULY '93	28	113520	4016	C	@ 28 days
3	HEAD WALL					AVE:		4032 psi		
4	STA. 21+330 R/S				NOTHING	FOLLOWS				
5	L/TYPE HEADWALL							PASSED		
6										
7										
8					CHECKED	AND	NOTED BY:			
9										
10					C.C. PARLAN		R.B. CABLING			
11					SR. MATS ENGR		MKC QC ENGR.			
12										
13										

LABORATORY : ☐ MAIN ☑ SITE

LOCATION : ALABEL

TESTED BY: AVZ DATE: 01 AUG. '93

WITNESSED BY: CCP

☑ SAMPLES PREPARED BY LABORATORY

☐ SAMPLES PREPARED BY OTHERS

FRACTURE TYPE

- ☒ C - CONICAL
- ☒ S - SHEAR
- ☒ CS - CONE & SHEAR
- ☒ CP - CONE & SPLIT
- ☒ CL - COLUMNAR

PHILIPPINE GEOANALYTICS
CIVIL ENGINEERING LABORATORY

Conversion
1 KN = 101.97 Kg
1 MPa = 145 PSI
1 Kg = 2.2 lbs
Area 6" Cyl = 28.27 in² = 182.415 cm²

PHILIPPINE GEOANALYTICS SOIL TEST CONSULTANTS PROJECT
LOG BOOK ENTRY NO.
DATED
NO. 0078

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Morrison Maierle/CSSA

Materials Testing Laboratory

SOUTH COTABATO ROAD PROJECT

Compressive Strength of Cylindrical Concrete Specimens

AASHTO Designation: T22

Road Sector	SECTOR – 7	Date	02/24/93
Section:	SURALLAH - TIBOLI ROAD	Station	
Tested by:	RRD/VSF	Date Tested:	02/10/93
Sampled by:	VSF	Noted by:	VSF

Design Strength:	4000 PSI 28 Days	Cement Factor:	
Type of Cement:	I-UNION DAVAO	Measured Slump:	1 3/4
Mix Number:		Air Content:	
Truck Number:		Weather:	FAIR
Ticket Number:		Air Temperature:	
Time out of Plant:	AM PM	Mix Temperature:	
Time arrived on site:	AM PM	Batch Size:	ONE - BAGGER
Time of sampling:	AM PM	Number of Samples:	3 - CYLINDERS
Time in mixer:	min		

* Water added on site: _____ Gal * BT- Before Test _____ AT-After Test _____

Test Cylinder Designation	Date Cast	Sample Dia. in.	Sample Height in.	Age Test Days	Weight lbs	Fracture Type	Total Load lbs	Compressive Strength PSI	Theoret Streng
RCP – 10B	01-22-93	6	12	28	29.85	CS	143405	5070	4000
– 10C	01-22-93	6	12	28	29.73	CP	143670	5080	4000
					γ_w = 151.8 PCF		AVE =	5075	4000
NOTHING FOLLOWS									

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 02-25-93/MM-93-067C
SIGN.

PASSED

Area of Placement: SECTOR-7

Structure: RCPC– 3 pcs – 36"φ , 3 pcs – 24"φ

Remarks: CASTED @ SURALLAH CASTING YARD
MIX PROPORTION – 1:1.5:2.5

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PHILFUTURE
GEOANALYTICS

TRN	

PROJECT: Bugallon - Tipoli road — Sample # 2 p.m. DATE OF TESTING: 6-9-93

SAMPLE: Binan Now Hot mix surface course — DATE 6-9-93

SUMMARY OF TEST RESULTS - BITUMINOUS PAVING MIXTURES

NAME OF TEST	TEST RESULTS		SPECIFICATION (Job Mix Formula)	REMARKS TOLERANCE
1. SIEVE ANALYSIS	HOT BIN	EXTRACTION		
1"				
3/4"		100	100	
1/2"		79	81	±7
3/8"		67	65	±7
#4		46	47	±7
#8		36	36	±4
#16		29	30	±4
#30		21	21	±4
#50		13	14	±4
#100				
#200		4	6	±2
2. ASPHALT CONTENT, % TOTAL MIX		6.73	6.62	±0.4
3. % VOIDS FILLED WITH ASPHALT		77.15		75-85
4. % AIR VOIDS		4.47		3-5
5. AVERAGE STABILITY, LBS		2816		1800 min.
6. FLOW, 1 over 100"		11.33		8-14
7. BULK SPECIFIC GRAVITY		2.264		-
8. MAX. THEORETICAL SP. GRAVITY		2.370	Conforms	-

Tested by: M. C. Reyes / Mat'ls Engr. — Checked by: C. C. Espino / Sr. Mat'ls Engr.

NOTED by: R. C. Capuno, Mk CRC Rep.

LOG BOOK ENTRY NO.	

FORM AF-3700

PHIL. GEOANALYTICS NO. 0481 DPWH

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PHILIPPINE GEOANALYTICS

PHIL. GEOANALY... SOUTH COTABATO HIGHWA... NO. 0432

DETERMINATION OF THICKNESS AND DEGREE OF PAVEMENT COMPACTION OF BITUMINOUS AGGREGATE MIXTURES (ASTM DESIGNATION D1188-83)

PROJECT: Surallah - T'boli road

DATE OF PAVING: 6-8-93 DATE OF CORING: 6-10-93

1. CORE SAMPLE I.D.	CS. 1	CS. 2	CS. 3	CS. 4	[illegible]
2. Thickness, mm.	53	57	60	57	5[illegible]
3. Core Location STATION	91572.43 RS	91133.41 RS	87546.41 RS	71947.56 LS	
4. Wt. of Sample in Air, gr.	923.2	866.0	1038.9	963.1	
5. Wt. of Sample in Air coated with paraffin	936.3	869.4	1050.9	976.4	
6. Wt. of Sample in water coated with paraffin	507.0	472.2	569.7	515.4	
7. Specific Gravity of paraffin	0.87	0.87	0.87	0.87	
8. Bulk Specific Gravity of Sample $= \frac{(4)}{[(5)-(6)]-[\frac{(5)-(4)}{(7)}]}$	139.1	139.3	138.7	134.8	1[illegible] 138[illegible]
9. Standard Specimen Bulk Specific Gravity, (Lab)	142.5	142.5	142.5	142.5	142[illegible]
10. Degree of Compaction $= \frac{(8)}{(9)} \times 100, \%$	97.6	97.8	97.3	94.5	96[illegible]

TESTED BY: M. G. Rayo / MAT'LS ENGR. Date 6-11-93

CHECKED & NOTED BY: C. C. Fernan / Sr. MAT'LS ENGR. Date 6-11-93

NOTED BY: P.B. CABLING
MK CQC Rep.

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Morrison Maierle/CSSA
Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

DETERMINATION OF THICKNESS AND DEGREE OF PAVEMENT COMPACTION OF BITUMINOUS AGGREGATE MIXTURES

AASHTO Designation: T275-89

Road Sector	7	Date	
Section		Station	
Tested by	WPL	Date Tested	5-28-93
Sampled by	RBN / RPB	Date Sampled	5-27-93
Checked by	VSF		

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 5-29-93
SIGN:

Contractor	MKC	Sample No.	
Asphalt Producer	MKC		
Mix number			

1.	Core Sample I.D.	1	2	3		Ave.
2.	Thickness, mm.	53	60	55		56
3.	Core Location	14+419 LS	14+898 LS	15+534 LS		
	Distance from left or right edge, m	2.5	3.3	1.1		
4.	Wt. of Sample in Air, g	944.0	1079.4	1005.6		
5.	Wt. of Sample in Air coated with paraffin, g	952.1	1090.3	1013.1		
6.	Wt of Sample in Water coated with paraffin, g	510.5	563.6	552.4		
7.	Specific Gravity of paraffin	0.896	0.896	0.896		
8.	Bulk Specific Gravity (4)/[(5)-(6)]-[(5)-(4)/(7)]	2.182	2.098	2.223		2.168
9.	Standard Specimen Bulk Specific Gravity, (LAB)	2.258	2.258	2.258		
10.	Degree of Compaction, (8)/(9)x100, %	96.63	92.91	98.45		96.00

Remarks: STRATIFIED RANDOM SAMPLING
STD. BULK S.G. was taken from CQC lab reports

Date Paved: 5-25-93
Area Paved: 15+812 – 14+279 (LEFT SIDE)

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Morrison Maierle/CSSA
Materials Testing Laboratory
SOUTH COTABATO ROAD PROJECT

Summary of Test Results
Bituminous Paving Mixtures

Road Sector: 7
Section:
Date:
Station: LOAD No. 1

Contractor: MKC
Aphalt Producer: MKC
Sample ID: AC-11-7

NAME OF TEST	TEST RESULTS		SPECIFICATION (Job Mix Formula)	REMARKS TOLERANCE
1. Sieve Analysis	Hot Bin	Extraction		
1"				
3/4"		100	100	
1/2"		80	81	±7
3/8"		70	65	±7
#4		54	47	±7
#8		43	36	±4
#16		34	30	±4
#30		26	22	±4
#50		17	14	±4
#100		9		
#200		5	6	±2
2. Asphalt content, % total mix		6.316	6.62	±0.4
3. % Voids filled with asphalt		69.777	77	75-85
4. % Air voids		4.276	4.4	3-5
5. Average stability, lbs		3152	2715	1800 min.
6. Flow, 1/100"		12	12.33	8-14
7. Bulk specific gravity		2.261		
8. Max theoretical sp. gravity		2.362	VMA - 14.139	

MM/CSSA MATERIALS TESTING LABORATORY
DATE: 01 JUNE 1993
SIGN.

Remarks: DATE PAVED : 5-23-93
AREA PAVED : 14+672 — 14+197 (RIGHT SIDE)

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51/49

AC-117

$Gsb =$ ——— $\rightarrow$ 2.467

$$Gse = \frac{100 - 6.316}{\frac{100}{2.362} - \frac{6.316}{1.01}} = \rightarrow 2.596$$

$Gsa =$ ——— $\rightarrow$ 2.657

$$Pb.a = 100\left[\frac{(2.596) - (2.467)}{(2.467)(2.596)}\right]1.01 = 2.034$$

$$Pbe = 6.316 - \frac{2.034}{100}(93.684) = 4.410$$

$$Vms = 100 - \frac{2.261}{2.467}(93.684) = 14.139$$

MM/CSSA MATERIALS
TESTING LABORATORY
DATE: 01 JUNE 1993
SIGN.

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PHILEPHIL GEOANALYTICS

IRN	

Sample # 2 P.A
Date of Paving: 7-8-9

PROJECT: Norsca - Malampog road

SAMPLE: Binunsoy Apt mix Surface course DATE: 7-9-93

SUMMARY OF TEST RESULTS - BITUMINOUS PAVING MIXTURES

NAME OF TEST	TEST RESULTS		SPECIFICATION (Job Mix Formula)	REMARKS TOLERANC
1. SIEVE ANALYSIS	HOT BIN	EXTRACTION		
1"				
3/4"		19	10	
1/2"		83	81	±7
3/8"		72	65	±7
#4		50	47	±7
#8		39	36	±4
#16		32	30	±4
#30		24	22	±4
#50		15	14	±4
#100				
#200		5	6	±2
2. ASPHALT CONTENT, % TOTAL MIX		6.75		6.62 ±0.4
3. % VOIDS FILLED WITH ASPHALT		77.1		75-85
4. % AIR VOIDS		4.53		3-5
5. AVERAGE STABILITY, LBS		2571		1800 MIN.
6. FLOW, 1 over 100"		13		8-14
7. BULK SPECIFIC GRAVITY		2.277		-
8. MAX THEORETICAL SP GRAVITY		2.385		-

PHIL. GEOANALYTICS NO. 2006 OTAPIAN HIGHWAYS

Tested by: M.C. Pango / Matl'l Engr. Checked by: J.C. Tapion / Sr. Matl'l Engr.

Noted By: R.R. Capuno
Mat'l QC Rep.

CONFORMS

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