



TRACECA - Project
Trade and Transport Sectors
Implementation of Pavement
Management Systems
**Feasibility Study for
Rehabilitation of Transit
Roads in Azerbaijan
Final Feasibility Report
Volume II**

December 1997

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Consulting Engineers
Koblenz / Germany

in association with

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and Transport Consultants**
London / U. K.

PHØNIX
Pavement Consultants
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APPENDIX 1

A 1.1 TERMS OF REFERENCE

EUROPEAN UNION - TACIS

Technical Assistance to the Southern Republics of the CIS and
Georgia - TRACECA

TRADE AND TRANSPORT SECTORS

Terms of Reference

for

Transit Roads -

Azerbaijan

Final Recipients:
TRACECA Region Ministries of Transport

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1. Background

1.1 During May 1993 a conference was held in Brussels organised by the Commission and attended by authorities of the eight Republics of the south of the former USSR:

Armenia,	Kyrgyzstan,
Azerbaijan,	Tadjikistan,
Georgia,	Turkmenistan,
Kazakstan,	Uzbekistan.

They are the Beneficiary States of this programme.

The objectives of the conference were :

- to stimulate co-operation among the participating Republics in all matters pertaining to the development and improvement of trade within the Region
- to promote the Central Asian - Trans Caucasian - Europe Transport Corridor
- to identify problems and deficiencies in the Region's trade and transport systems
- to define, in terms of contents and timing a Technical Assistance Programme to be financed by the European Union (EU).

TRACECA (Transport Corridor Europe Caucasus Asia) was thence created as a component of the TACIS interstate programme.

1.2 Regional sectoral Working Groups (trade, rail, road, maritime), composed of experts and officials from each TRACECA state and the EU, have been established as part of the TRACECA programme. They meet periodically in the Region and in Europe. They have inaugurated substantial specific projects of Regional importance, including this present one, and they will monitor results.

1.3 . The World Bank (WB) is negotiating separate loans to two TRACECA States, Armenia and Georgia. In the case of Georgia there is the possibility of additional financing to accompany the WB loan, from another International Financial Institution (IFI). This present project comprises two modules, each linked respectively to the two WB programmes in the neighbouring Beneficiary States.

1.4 The EBRD is interested in financing a roads project in Azerbaijan. A TACIS national project has produced a feasibility study of the road south from Baku, to Alyat and further to the south. However the major TRACECA route turns west at Alyat towards the Georgian border. It now remains to investigate this route. The Islamic Bank has commissioned some studies of this route, but the outcome appears inconclusive.

2A. Introduction - Module A

In Georgia, the World Bank is prepared to engage limited resources for a Transport Rehabilitation Project, to avoid a complete collapse of the sector in the immediate future. Two components are foreseen: Institutional and Investment. For investment, road maintenance is considered a priority. This present project arises from the need to encourage other International Financial Institutions (IFI) to participate in concertion with the package, and to broaden the focus to consider rehabilitation.

In Azerbaijan, the EBRD interest in the east west route must be encouraged.

3A. Objectives

The objective of the project is to review existing reports and elaborate to the standard necessary for definitive negotiations between Georgia and IFI, a feasibility study for rehabilitation works on the following road sections:

Tblisi-Kashuri
Tblisi-Taltari-Azeri Border (-then continuing to Alyat, see below)
Tblisi-Marneuli-Guguti-Armenian Border
Marneuli-Sadakhlo-Armenian Border
Tblisi bypass
Samtrelia-Lanchkhuti-Ureki (shortening the route Tblisi-Batoumi)

These objectives are extended for Azerbaijan to the section of road:

Alyat-Gjandza-Azeri Border

4A. Scope of Work

4A.1 General

“General Requirements for the Preparation of the Feasibility Study” issued by one possible funding institution are included in annex. The Final Report of this project, in so far as concerns Georgia, must satisfy these Requirements.

As these requirements are so general certain particular aspects of the project are highlighted hereafter.

The work in Azerbaijan should conform to standards for feasibility studies set by the EBRD.

4A.2 Existing Studies

Extensive "Technical Documentation on Rehabilitation of the Highways of the Republic of Georgia-Volumes I and II, Tblisi 1995" has been prepared by the The State Highways Survey and Design Institute (Saksakhgzaprojecti), and is also included in annex.

The contents of this study are essentially technical. It identifies works which are to be included in this study.

The TRACECA Pavement Management System project will also provide pertinent input and it may influence the selection of priority works to be undertaken.

4A.3 Road Condition Assessment

The consultant will acquire and record all data necessary for road condition assessment and identify the works required to attain appropriate standards for the traffic. Typically this will include road geometry, pavement structure sub-grade characteristics, pavement deterioration and measurements such as deflection and roughness. Drainage systems and structures including bridges, tunnels and retaining works should be similarly inventoried.

4A.4 Traffic Data

Archived traffic data will be collected and reviewed. It is to be anticipated that traffic counts will need to be performed within the scope of this project.

Traffic should be categorised according to an internationally acceptable standard. Axle load surveys on sample sections must be performed. Transit traffic should be separately counted.

Road traffic forecasts should be projected for the next fifteen years. The forecasts may be based on macro-economic appraisal of trade and passenger flows, include high-low scenarios, and take into account the most authoritative economic projections available (eg. World Bank,...).

Any particularities of the traffic which might distort projections should be recorded (eg. food distribution campaign convoys. ...)

4A.5 Definition of Technical Solutions

The Consultant should review the current road and bridge design standards, justify and recommend appropriate acceptable standards for the future design to the various project sections.

The Consultant shall study the merits of the technical solutions proposed for the rehabilitation or completion of the designated roads, drainage, slope protections, bridges and any other necessary works. He should suggest any necessary changes and fully integrated the final proposed solution with the economic analysis, and the possible budget envelopes to be discussed with all parties to the project.

Unit costs for road, bridge and associated rehabilitation works shall be established and justified in accordance with the standard recommendations of IFI.

The availability and quality of all resources necessary to carry out the works should be verified. After discussion with Georgian and Azeri authorities and IFI, recommendations should be made on the division of works into appropriate lots.

The definition of technical solutions should be developed to the level of detail necessary to validate the economic analysis, and to establish the technical feasibility of the recommendations.

4A.6 Economic Evaluation

Vehicle operating costs (VOC) should be established for the known range of vehicle types. VOC should be formulated using a standard internationally accepted model (eg.HDM3), modified as necessary for local conditions.

The roads shall be considered in separate homogenous sections, for incremental cost/benefit analysis. The standard economic indexes such as cost/benefit, NPV, and IERR are to be presented.

Based on the preceding the consultant shall present the final economic evaluation and define the appropriate programme for the construction and rehabilitation works.

A multi-criteria approach may be presented to account for environmental, safety or other factors, (while respecting the overall "General Requirements for the Preparation of the Feasibility Study" in Georgia).

All data generated within the project should be stored on computerised spread sheets, and left with the Recipient State in an organised and reusable format. A copy should be provided to TACIS.

4A.7 Equipment

Any pavement testing equipment, computer hardware, software or other equipment required for the project should be left with the Recipient State. The Consultant should provide full details in his Technical Proposal.

4A.8 Other Related Projects

Several related reports prepared by Western consultants precede this project. They include:

Aménagement de la Section Erevan-Batoumi de l'Axe Routier Meghri-Batoumi	Georgia and Armenia	TACIS
Road Development Study	Republic of Kazakhstan	EBRD
Armenia Highway Study	Republic of Armenia	TACIS
Roads & Road Transport Study	Russia, Ukraine, Kazakhstan & Bielorussia	EBRD
Azerbaijan Road Project	Azerbaijan	TACIS

At the time of writing the following TRACECA projects, sharing certain domains of interest with this one, are expected to commence shortly. The first two are of particular relevance to the scope of this project:

- Implementation of Pavement Management Systems
- Regional Traffic Forecasting
- Improvement of Roadside Services

Other related projects are or may be expected to commence within the timeframe of this present one.

The Consultants appointed to carry out this project are to co-ordinate their work closely with all other related activities within the TRACECA region. A full collaboration with such projects will be required, including data sharing.

The preceding listing of related projects must not be considered limitative.

4A.9 Local Participation

National consultants should be deeply involved in all aspects of the project. All TRACECA countries have Institutions specialising in various aspects of transport planning and engineering. It is a firm requirement that Organisation and Methodologies include local experts and Institutions to:

- make full use of local experience, antecedent projects and data bases
- promote the emergence of a financially viable local consulting sector
- ensure the effective transfer of know-how to the Beneficiary states
- ensure the enduring effect of project output

Consultants should base their activities for this module largely in Georgia, carrying out the project in collaboration with a local technical organisation(s), and employing both senior and junior professional staff.

Consultants must make amply clear in their Technical Proposal the arrangements they have made to work with local entities. This should include the time allocated to locally hired staff (as distinct from counterpart staff).

Although training is not a defined objective of this project, the consultant may propose training initiatives for the transfer of project know-how unfamiliar to local professionals.

4A.10 Foreign Expertise

The Consultant is free to compose his expatriate Team for this project as he sees fit. The following domains of expertise should be visible in his proposed staff list:

- highway engineering
- structural engineering
- geotechnical engineering
- transport economics

Time allocated to foreign staff should be clearly described in the Technical Proposal, as should the division between time on site and time at home office.

4A.11 Logistics

The Consultant shall be responsible for arranging necessary living accommodation, international and local transportation, telecommunications, equipment (IT and other), surveys, investigations, document reproduction, printing, secretarial services, interpretation, translation, office space and all other input required for the purposes of the work.

5A. Time Table and Reporting

5A.1 The project is to be completed within a period of six months to Draft Final Report stage.

Task durations and staff assignments are to be clearly shown on planning schedules in the proposal. Milestones for output and key dates for data acquisition are to be indicated.

5A.2 All reports are to be delivered in the numbers, languages and locations as follows:

	Bound		Loose-leaf		Diskette (Eng.+Rus)
	English	Russian	English	Russian	
TACIS Brussels	5	1	1	1	2
TRACECA CU (Georgia)	1	5	1	1	0
IFI	5	1	1	1	0

The word processing programme to be used will be agreed with TACIS (and DOS compatible).

5A.3 Reporting is to be in accordance with standard TACIS Guidelines and foresee:

Project inception report

An Inception Report shall be issued within 2 months of the commencement of the project. It shall summarise initial findings and propose any modifications to the methodology and work plan. In particular it will adapt the work plan to the Recipient State and funding institutions' needs, into account the parallel activities of other Technical Assistance programmes, avoiding duplication of effort.

Final Report

The Draft Final Report will be submitted at the end of month 6.

It will comprise the full feasibility study.

Any comments on the Draft Final Report will be issued by TACIS Brussels within six weeks of its receipt. The Final Report incorporating any modifications will be issued one month thereafter (2,5 months after issue of the Draft Final)

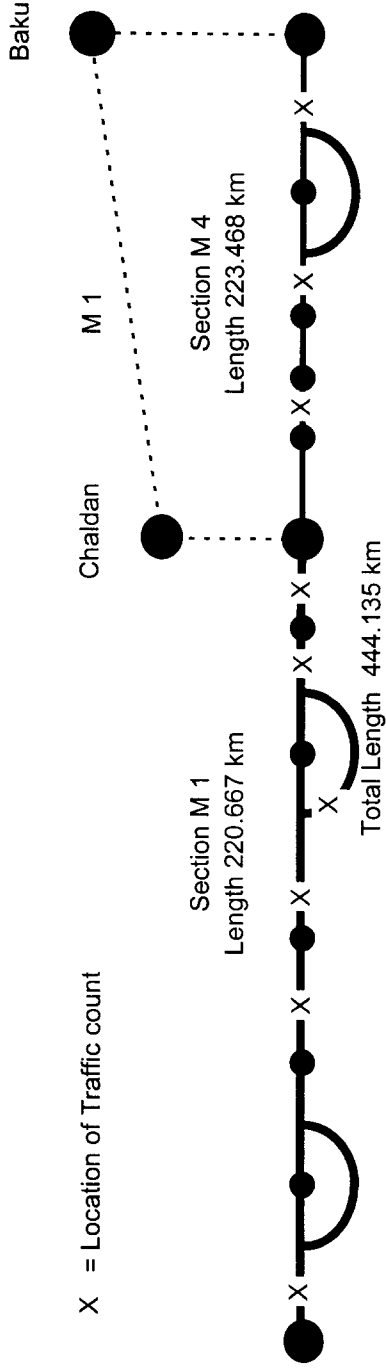
APPENDIX 2

A 2.1 GENERAL LAYOUT

TRACECA - Feasibility Study for Road Rehabilitation in Azerbaijan

Alyat - Ganja - Georgian Border (M 4/M 1)

- General Layout -



Location / Village	Chainage from Baku	Chainage from Alyat	Station/Layout
Georgian Border	501+350		M 1
	463+500		M 4
Gazakh	456+500		
Aghstafa	451+000		
Tovuz	431+000		
	428+500		
	369+500		
Ganja		333+500	
Mingchevir	288+700		
	223+468		
Yevlakh		216+500	
Ujar		170+500	
Kyurdamir		124+300	
		58+980	
Gazi-Mammad			
		43+450	
Alyat		0+000	

APPENDIX 4

TABLE A.4.1.	Classified Volume Count Hourly Form
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Table A4.2

Table A4.2 ALYAT-GEORGIAN BORDER ROAD: RESULTS OF CLASSIFIED VOLUME COUNTS - FEBRUARY AND MARCH 1997

Road No.	Link Name	Vehicle Nationality	Average Daily Traffic (ADT) not adjusted for seasonality											Other Vehicles		Grand Total	
			CAR		UTILITY		BUS	TRUCK		TRUCK		TRUCK > 3 AXLE	Sub total	TOTAL (4+ wheels)	Motor cycles		Tractors
			Mimibus	Pickup	Sub total	2-AXLE		3-AXLE	ruck 4 ax	ruck 5 ax	ruck > 5 a						
M4	Alyat-Kazi Magomet	Azerbaijan	2,923	213	30	243	341	250	338	84	114	3	201	4,298	16	24	4,338
		Foreign	108	7	-	7	14	3	59	49	42	5	96	288	-	-	288
		Total	3,032	221	30	251	355	254	397	133	156	8	297	4,586	16	24	4,626
M4	Kazi Magomet-Kiurdamir	Azerbaijan	2,410	77	45	122	292	193	367	255	125	3	382	3,767	5	12	3,784
		Foreign	104	13	13	26	14	-	86	114	112	5	231	460	-	-	460
		Total	2,514	90	59	148	306	193	453	368	237	8	613	4,227	5	12	4,244
M4	Kazi Magomet-Kiurdamir	Azerbaijan	2,553	128	45	174	446	214	240	52	44	3	99	3,725	10	23	3,758
		Foreign	193	11	24	35	10	137	272	121	52	5	178	823	-	-	823
		Total	2,746	139	69	208	456	350	512	172	96	8	277	4,548	10	23	4,581
M4	Kurdamir-Musulu-Udjar-Jevi	Azerbaijan	3,267	139	60	199	519	212	296	41	84	3	129	4,623	15	30	4,668
		Foreign	249	29	26	56	44	284	326	117	80	5	202	1,161	-	-	1,161
		Total	3,516	169	86	255	563	496	622	159	164	8	331	5,783	15	30	5,829
M4	Kurdamir-Musulu-Udjar-Jevi	Azerbaijan	1,886	37	54	91	317	116	172	43	19	-	62	2,644	18	33	2,695
		Foreign	156	11	33	44	28	188	293	91	28	-	119	828	-	-	828
		Total	2,042	48	87	135	345	304	465	134	47	-	181	3,472	18	33	3,523
M1	Jevlah-Mingacheur Station	Azerbaijan	2,378	77	55	131	362	191	174	23	19	1	43	3,279	10	22	3,311
		Foreign	168	6	15	21	13	63	262	32	14	1	47	573	-	-	573
		Total	2,546	82	70	153	374	254	436	54	33	2	90	3,852	10	22	3,884
M1	Mingacheur St.-Gjandza bypass	Azerbaijan	3,014	49	35	85	338	177	202	168	88	-	256	4,072	-	28	4,100
		Foreign	116	2	15	18	14	3	74	54	59	2	115	339	-	-	339
		Total	3,130	52	51	102	352	180	276	222	147	2	371	4,411	-	28	4,439
M1	Gjandza bypass	Azerbaijan	2,150	60	42	102	251	134	198	256	87	5	348	3,183	-	4	3,187
		Foreign	113	5	13	17	5	1	106	83	47	11	141	384	-	-	384
		Total	2,263	65	55	119	256	135	304	339	134	16	489	3,567	-	4	3,571
M1	Gjandza bypass-Dallar-Tovuz	Azerbaijan	2,900	31	96	128	339	219	143	117	41	-	158	3,886	5	26	3,917
		Foreign	185	16	33	49	20	7	271	29	50	-	79	611	-	-	611
		Total	3,085	47	130	177	359	226	414	146	91	-	237	4,497	5	26	4,528
M1	Tovuz-Akstafa-Kazach	Azerbaijan	1,957	137	188	325	288	205	147	43	22	-	65	2,987	29	30	3,046

Table A4.2

Table A4.2 ALYAT-GEORGIAN BORDER ROAD: RESULTS OF CLASSIFIED VOLUME COUNTS - FEBRUARY AND MARCH 1997

Road No.	Link Name	Vehicle Nationality	Average Daily Traffic (ADT) not adjusted for seasonality											TOTAL		Grand Total	
			CAR		UTILITY		BUS	TRUCK		TRUCK		TRUCK > 3 AXLE		Sub total	Sub total (4+ wheels)	Other Motor cycles	Other Vehicles Tractors
			Mimbus	Pickup	2-AXLE	3-AXLE	2-AXLE	3-AXLE	ruck 4 ax	ruck 5 ax	ruck >5 a						
M1	Kazach-Georgian border	Foreign	195	25	21	46	27	14	373	201	36	8	245	900	-	-	900
		Total	2,152	162	209	371	315	219	520	244	58	8	310	3,887	29	30	3,946
M1	Kazach-Georgian border	Azerbaijan	1,850	320	113	433	248	223	100	55	7	2	64	2,918	17	53	2,988
		Total	2,055	344	183	526	308	253	415	194	91	30	315	3,872	17	53	3,942

Source: Classified volume counts carried for the Consultants by Azeravtoyol staff.

Note: Only 4+ wheeled traffic was used in the economic analyses of road improvements.

Table A4.3

Table A4.3 Alat - Georgian Border Road: Hourly Traffic Distribution at Km 174 from Alat (Kiurdamir - Jevlah section)

Hour From	Hour To	Hourly Traffic Distribution - All Vehicles										Hourly Distribution (%)		
		Car	Minibus	Pickup	Bus	2-ax GV	3-ax GV	4-ax GV	5-ax GV	6+ax GV	TOTAL	Azerbaijan	Foreign	Total
24	1	25	-	-	6	10	12	4	1	-	58	1.4	2.4	1.7
1	2	16	-	-	16	3	14	4	-	-	53	1.3	2.2	1.5
2	3	23	5	4	17	5	16	-	3	-	73	2.3	1.4	2.1
3	4	19	-	-	7	5	4	4	2	-	41	1.3	1.0	1.2
4	5	17	1	-	2	8	8	1	1	-	38	0.9	1.8	1.1
5	6	23	-	-	6	8	5	4	2	-	48	1.4	1.3	1.4
6	7	42	8	6	2	19	19	6	4	-	106	2.6	4.6	3.1
7	8	86	9	9	20	21	25	13	3	-	186	4.9	6.8	5.4
8	9	101	1	3	12	16	19	6	-	-	158	4.5	4.7	4.6
9	10	122	2	4	23	9	13	3	-	-	176	5.5	3.9	5.1
10	11	146	4	9	34	12	15	6	2	-	228	7.2	4.7	6.6
11	12	112	1	8	30	18	25	2	-	-	196	5.7	5.4	5.7
12	13	118	-	2	13	10	28	9	3	-	183	5.4	5.0	5.3
13	14	135	3	6	28	12	19	10	4	-	217	6.4	5.8	6.3
14	15	137	1	5	17	20	23	10	3	-	216	5.8	7.5	6.2
15	16	186	1	3	21	11	42	6	1	-	271	8.1	6.9	7.8
16	17	151	4	11	19	27	27	9	5	-	253	7.4	7.0	7.3
17	18	139	1	10	11	18	23	5	2	-	209	6.4	4.8	6.0
18	19	95	-	-	16	18	36	9	2	-	176	4.9	5.6	5.1
19	20	91	1	2	11	9	27	2	1	-	144	4.4	3.3	4.2
20	21	81	2	2	8	9	21	7	3	-	133	3.8	3.9	3.8
21	22	78	3	3	8	17	25	9	2	-	145	3.7	5.8	4.2
22	23	58	-	-	7	13	9	3	2	-	92	2.7	2.5	2.7
23	24	34	1	-	12	6	10	2	1	-	66	1.9	1.8	1.9
TOTAL		2,035	48	87	346	304	465	134	47	-	3,466	100.0	100.0	100.0
Expansion factors (08.00-20.00 12 hrs. to 24 hour basis)		1.33	2.53	1.38	1.47	1.69	1.57	1.74	2.04	-	1.43	1.39	1.55	1.43

Source: Classified Volume Counts carried out for the Consultants by Azeravtoyol staff.

Note: GV goods vehicles.

Table A4.4

Table A4.4 Alyat-Georgian Border Road: Percentage Distribution of Traffic by Vehicle Type, 1997

Road No.	Link Name	Vehicle Nationality	Percent of Total						TOTAL
			Car	Utility	Bus	Truck 2 axle	Truck 3 axle	Truck >3 axle	
M4	Alyat-Kazi Magomet	Azerbaijan	68	5.7	7.9	5.8	7.9	4.7	100.0
		Foreign	37.6	2.5	4.9	1.1	20.6	33.3	100.0
		Total	66.6	5.5	7.8	5.6	8.5	6	100.0
M4	Kazi Magomet-Padar	Azerbaijan	64	3.2	7.8	5.1	9.7	10.1	100.0
		Foreign	22.5	5.7	3	-	18.6	50.2	100.0
		Total	60.5	3.4	7.4	4.7	10.5	13.5	100.0
M4	Padar-Kiurdamir	Azerbaijan	68.5	4.7	12	5.7	6.4	2.7	100.0
		Foreign	23.4	4.2	1.2	16.6	33	21.6	100.0
		Total	62.2	4.6	10.5	7.3	10.2	5.3	100.0
M4	Kazi Magomet - Kurdamir (weighted average)	Azerbaijan	66.5	4	10.1	5.5	7.9	5.9	100.0
		Foreign	23.1	4.7	1.8	11.6	28.7	30.2	100.0
		Total	61.5	4.1	9.2	6.2	10.3	8.7	100.0
M4	Kurdamir-Udjar	Azerbaijan	70.7	4.3	11.2	4.6	6.4	2.8	100.0
		Foreign	21.4	4.8	3.8	24.5	28.1	17.4	100.0
		Total	63	4.4	10.1	7.7	9.8	5.1	100.0
M4	Udjar-Jevlah	Azerbaijan	71.3	3.4	12	4.4	6.5	2.3	100.0
		Foreign	18.8	5.3	3.4	22.7	35.4	14.4	100.0
		Total	61.4	3.8	10.4	7.8	11.9	4.6	100.0
M4	Kurdamir - Jevlah (weighted average)	Azerbaijan	70.9	4	11.5	4.5	6.4	2.6	100.0
		Foreign	20.3	5	3.6	23.7	31.2	16.1	100.0
		Total	62.4	4.2	10.2	7.8	10.6	4.9	100.0
M1	Jevlah-Mingacheur Station	Azerbaijan	72.5	4	11	5.8	5.3	1.3	100.0
		Foreign	29.2	3.7	2.2	11	45.7	8.2	100.0
		Total	67.6	4	10	6.4	9.9	2.1	100.0
M1	Mingacheur St.-Gjandza bypa	Azerbaijan	74	2.1	8.3	4.3	5	6.3	100.0
		Foreign	34.1	5.2	4.3	0.8	21.7	33.9	100.0
		Total	71.7	2.3	8.1	4.1	5.9	7.9	100.0
M1	Gjandza bypass	Azerbaijan	67.6	3.2	7.9	4.2	6.2	10.9	100.0
		Foreign	29.4	4.5	1.4	0.4	27.6	36.7	100.0
		Total	64.4	3.3	7.4	3.9	8	13	100.0
M1	Gjandza bypass-Dallar-Tovuz	Azerbaijan	74.6	3.3	8.7	5.6	3.7	4.1	100.0
		Foreign	30.3	8.1	3.2	1.1	44.4	12.9	100.0
		Total	70	3.8	8.2	5.2	7.9	5	100.0
M1	Tovuz-Akstafa-Kazach	Azerbaijan	65.5	10.9	9.6	6.9	4.9	2.2	100.0
		Foreign	21.7	5.1	3	1.6	41.4	27.2	100.0
		Total	57.5	9.8	8.4	5.9	11.6	6.7	100.0
M1	Kazach-Georgian border	Azerbaijan	63.4	14.8	8.5	7.6	3.4	2.2	100.0
		Foreign	21.5	9.8	6.2	3.1	33.1	26.3	100.0
		Total	55.2	13.9	8.1	6.8	9.2	6.9	100.0

Table A4.6

Table A4.6 ALYAT-GEORGIAN BORDER ROAD: ANNUAL TRAFFIC GROWTH RATES BY VEHICLE CATEGORY

Road No.	Section Name	Best Estimate - Annual Average Traffic Growth (%) 1997 - 2010						
		Car	Utility	Bus	Truck 2 axle	Truck 3 axle	Truck >3 axle	TOTAL
M4	Alyat-Kazi Magomet	6.9	6.6	5.8	5.4	6.4	7.4	6.7
M4	Kazi Magomet - Kiurdamir (wt.avg.)	6.9	6.7	5.8	5.4	6.4	7.4	6.7
M4	Kiurdamir - Jevlah (wt.avg.)	7.0	6.7	5.9	5.4	6.5	7.5	6.7
M1	Jevlah-Mingacheur Station	6.9	6.7	5.9	5.4	6.4	7.4	6.7
M1	Mingacheur St.-Gjandza bypass	6.8	6.6	5.8	5.3	6.3	7.3	6.7
M1	Gjandza bypass	6.8	6.6	5.7	5.3	6.3	7.3	6.7
M1	Gjandza bypass-Dallar-Tovuz	6.9	6.6	5.8	5.4	6.4	7.4	6.7
M1	Tovuz-Akstafa-Kazach	6.9	6.7	5.8	5.4	6.4	7.4	6.7
M1	Kazach-Georgian border	6.9	6.7	5.8	5.4	6.4	7.4	6.7
Road No.	Section Name	Best Estimate - Annual Average Traffic Growth (%) 2010 - 2025						
		Car	Utility	Bus	Truck 2 axle	Truck 3 axle	Truck >3 axle	TOTAL
M4	Alyat-Kazi Magomet	6.2	5.9	4.9	4.6	5.6	6.6	6.0
M4	Kazi Magomet - Kiurdamir (wt.avg.)	6.2	5.9	4.9	4.6	5.6	6.6	6.0
M4	Kiurdamir - Jevlah (wt.avg.)	6.3	6.0	5.0	4.7	5.7	6.7	6.0
M1	Jevlah-Mingacheur Station	6.2	5.9	5.0	4.7	5.7	6.6	6.0
M1	Mingacheur St.-Gjandza bypass	6.1	5.8	4.9	4.6	5.5	6.5	6.0
M1	Gjandza bypass	6.1	5.8	4.8	4.5	5.5	6.5	6.0
M1	Gjandza bypass-Dallar-Tovuz	6.2	5.9	4.9	4.6	5.6	6.6	6.0
M1	Tovuz-Akstafa-Kazach	6.2	5.9	4.9	4.6	5.6	6.6	6.0
M1	Kazach-Georgian border	6.2	5.9	4.9	4.7	5.6	6.6	6.0
Road No.	Section Name	High Estimate - Annual Average Traffic Growth (%) 1997 - 2010						
		Car	Utility	Bus	Truck 2 axle	Truck 3 axle	Truck >3 axle	TOTAL
M4	Alyat-Kazi Magomet	9.3	8.1	7.2	6.8	7.9	8.9	8.8
M4	Kazi Magomet - Kiurdamir (wt.avg.)	9.1	8.6	7.3	7.6	8.6	9.6	8.8
M4	Kiurdamir - Jevlah (wt.avg.)	9.2	8.6	7.4	7.6	8.6	9.7	8.8
M1	Jevlah-Mingacheur Station	9.1	8.6	7.4	7.6	8.6	9.6	8.8
M1	Mingacheur St.-Gjandza bypass	9.0	8.5	7.2	7.5	8.5	9.5	8.8
M1	Gjandza bypass	9.0	8.5	7.2	7.5	8.5	9.5	8.8
M1	Gjandza bypass-Dallar-Tovuz	9.1	8.6	7.3	7.5	8.6	9.6	8.8
M1	Tovuz-Akstafa-Kazach	9.1	8.6	7.3	7.6	8.6	9.6	8.8
M1	Kazach-Georgian border	9.1	8.6	7.3	7.6	8.6	9.6	8.8
Road No.	Section Name	High Estimate - Annual Average Traffic Growth (%) 2010 - 2025						
		Car	Utility	Bus	Truck 2 axle	Truck 3 axle	Truck >3 axle	TOTAL
M4	Alyat-Kazi Magomet	8.2	7.6	6.1	6.6	7.6	8.6	8.0
M4	Kazi Magomet - Kiurdamir (wt.avg.)	8.3	7.7	6.2	6.7	7.7	8.7	8.0
M4	Kiurdamir - Jevlah (wt.avg.)	8.3	7.7	6.2	6.7	7.7	8.7	8.0
M1	Jevlah-Mingacheur Station	8.3	7.7	6.2	6.7	7.7	8.7	8.0
M1	Mingacheur St.-Gjandza bypass	8.2	7.6	6.1	6.6	7.6	8.6	8.0
M1	Gjandza bypass	8.2	7.6	6.1	6.6	7.6	8.6	8.0
M1	Gjandza bypass-Dallar-Tovuz	8.2	7.6	6.1	6.6	7.6	8.6	8.0
M1	Tovuz-Akstafa-Kazach	8.3	7.7	6.2	6.7	7.7	8.7	8.0
M1	Kazach-Georgian border	8.3	7.7	6.2	6.7	7.7	8.7	8.0

Table A4.6

Table A4.6 ALYAT-GEORGIAN BORDER ROAD: ANNUAL TRAFFIC GROWTH RATES BY VEHICLE CATEGORY

Road No.	Section Name	Low Estimate - Annual Average Traffic Growth (%) 1997 - 2010						TOTAL
		Car	Utility	Bus	Truck 2 axle	Truck 3 axle	Truck >3 axle	
M4	Alyat-Kazi Magomet	4.1	3.9	2.6	2.2	3.1	4.1	3.8
M4	Kazi Magomet - Kiurdamir (wt.avg.)	4.2	3.9	2.7	2.2	3.2	4.2	3.8
M4	Kiurdamir - Jevlah (wt.avg.)	4.2	4.0	2.7	2.2	3.2	4.2	3.8
M1	Jevlah-Mingacheur Station	4.2	3.9	2.7	2.2	3.2	4.2	3.8
M1	Mingacheur St.-Gjandza bypass	4.1	3.8	2.6	2.1	3.1	4.1	3.8
M1	Gjandza bypass	4.1	3.8	2.6	2.1	3.1	4.1	3.8
M1	Gjandza bypass-Dallar-Tovuz	4.1	3.9	2.6	2.1	3.1	4.1	3.8
M1	Tovuz-Akstafa-Kazach	4.2	3.9	2.7	2.2	3.2	4.2	3.8
M1	Kazach-Georgian border	4.2	3.9	2.7	2.2	3.2	4.2	3.8
Road No.	Section Name	Low Estimate - Annual Average Traffic Growth (%) 2010 - 2025						TOTAL
		Car	Utility	Bus	Truck 2 axle	Truck 3 axle	Truck >3 axle	
M4	Alyat-Kazi Magomet	5.0	5.3	4.3	4.0	5.0	6.0	5.0
M4	Kazi Magomet - Kiurdamir (wt.avg.)	5.2	4.9	3.9	3.6	4.6	5.6	5.0
M4	Kiurdamir - Jevlah (wt.avg.)	5.2	5.0	4.0	3.7	4.7	5.6	5.0
M1	Jevlah-Mingacheur Station	5.2	4.9	4.0	3.7	4.6	5.6	5.0
M1	Mingacheur St.-Gjandza bypass	5.1	4.8	3.9	3.6	4.5	5.5	5.0
M1	Gjandza bypass	5.1	4.8	3.8	3.6	4.5	5.5	5.0
M1	Gjandza bypass-Dallar-Tovuz	5.2	4.9	3.9	3.6	4.6	5.6	5.0
M1	Tovuz-Akstafa-Kazach	5.2	4.9	3.9	3.7	4.6	5.6	5.0
M1	Kazach-Georgian border	5.2	4.9	4.0	3.7	4.6	5.6	5.0

Source: Consultant's estimate

Note: Wt.avg. = weighted average

Table A4.7

Table A4.7 ALYAT-GEORGIAN BORDER ROAD: ANNUAL AVERAGE DAILY TRAFFIC BY VEHICLE TYPE

Road No.	Section Name	Annual Average Daily Traffic (AADT) - 1997						TOTAL
		Car	Utility	Bus	Truck 2 axle	Truck 3 axle	Truck >3 axle	
M4	Alyat-Kazi Magomet	4,055	336	474	341	516	368	6,090
M4	Kazi Magomet - Kurdamir (wt.avg.)	3,471	232	517	349	582	494	5,645
M4	Kurdamir - Jevlah (wt.avg.)	3,670	245	599	456	624	288	5,883
M1	Jevlah-Mingacheur Station	3,378	199	501	321	497	105	5,000
M1	Mingacheur St.-Gjandza bypass	4,185	132	470	242	347	460	5,836
M1	Gjandza bypass	3,016	155	344	182	373	610	4,681
M1	Gjandza bypass-Dallar-Tovuz	4,099	221	478	303	464	292	5,857
M1	Tovuz-Akstafa-Kazach	2,837	485	416	291	571	333	4,932
M1	Kazach-Georgian border	2,702	678	394	331	450	338	4,893
Road No.	Section Name	High Growth Forecast - Annual Average Daily Traffic (AADT) - 2010						TOTAL
		Car	Utility	Bus	Truck 2 axle	Truck 3 axle	Truck >3 axle	
M4	Alyat-Kazi Magomet	12,891	925	1,171	807	1,381	1,112	18,286
M4	Kazi Magomet - Kurdamir (wt.avg.)	10,758	676	1,292	901	1,697	1,625	16,950
M4	Kurdamir - Jevlah (wt.avg.)	11,461	720	1,509	1,186	1,833	955	17,664
M1	Jevlah-Mingacheur Station	10,531	584	1,260	833	1,458	348	15,013
M1	Mingacheur St.-Gjandza bypass	12,855	381	1,164	619	1,003	1,500	17,523
M1	Gjandza bypass	9,237	447	850	464	1,075	1,983	14,055
M1	Gjandza bypass-Dallar-Tovuz	12,666	642	1,191	780	1,349	958	17,586
M1	Tovuz-Akstafa-Kazach	8,823	1,419	1,043	754	1,671	1,099	14,809
M1	Kazach-Georgian border	8,419	1,987	990	859	1,319	1,118	14,692
Road No.	Section Name	Low Growth Forecast - Annual Average Daily Traffic (AADT) - 2010						TOTAL
		Car	Utility	Bus	Truck 2 axle	Truck 3 axle	Truck >3 axle	
M4	Alyat-Kazi Magomet	6,861	551	665	450	771	622	9,920
M4	Kazi Magomet - Kurdamir (wt.avg.)	5,906	383	730	463	874	840	9,195
M4	Kurdamir - Jevlah (wt.avg.)	6,282	407	850	609	943	492	9,583
M1	Jevlah-Mingacheur Station	5,755	329	708	426	748	179	8,144
M1	Mingacheur St.-Gjandza bypass	7,032	215	655	317	515	772	9,506
M1	Gjandza bypass	5,074	253	480	239	554	1,025	7,625
M1	Gjandza bypass-Dallar-Tovuz	6,924	362	670	399	692	493	9,540
M1	Tovuz-Akstafa-Kazach	4,833	801	588	387	859	567	8,034
M1	Kazach-Georgian border	4,602	1,120	557	440	677	575	7,970
Road No.	Section Name	High Growth Estimate - Annual Average Daily Traffic (AADT) - 2025						TOTAL
		Car	Utility	Bus	Truck 2 axle	Truck 3 axle	Truck >3 axle	
M4	Alyat-Kazi Magomet	42,224	2,788	2,864	2,117	4,163	3,849	58,005
M4	Kazi Magomet - Kurdamir (wt.avg.)	35,384	2,048	3,175	2,373	5,138	5,648	53,767
M4	Kurdamir - Jevlah (wt.avg.)	38,007	2,197	3,737	3,150	5,597	3,345	56,034
M1	Jevlah-Mingacheur Station	34,862	1,779	3,115	2,210	4,442	1,215	47,623
M1	Mingacheur St.-Gjandza bypass	41,837	1,143	2,830	1,614	3,004	5,158	55,586
M1	Gjandza bypass	29,974	1,334	2,060	1,207	3,210	6,800	44,585
M1	Gjandza bypass-Dallar-Tovuz	41,502	1,938	2,915	2,046	4,069	3,316	55,786
M1	Tovuz-Akstafa-Kazach	29,164	4,318	2,576	1,995	5,083	3,840	46,976
M1	Kazach-Georgian border	27,883	6,059	2,449	2,279	4,022	3,912	46,604
Road No.	Section Name	Low Growth Estimate - Annual Average Daily Traffic (AADT) - 2025						TOTAL
		Car	Utility	Bus	Truck 2 axle	Truck 3 axle	Truck >3 axle	
M4	Alyat-Kazi Magomet	14,270	1,195	1,254	813	1,604	1,487	20,623
M4	Kazi Magomet - Kurdamir (wt.avg.)	12,624	785	1,300	791	1,719	1,897	19,116
M4	Kurdamir - Jevlah (wt.avg.)	13,522	839	1,526	1,047	1,867	1,120	19,922
M1	Jevlah-Mingacheur Station	12,369	678	1,269	732	1,478	406	16,932
M1	Mingacheur St.-Gjandza bypass	14,899	437	1,157	537	1,003	1,729	19,763
M1	Gjandza bypass	10,723	512	846	403	1,077	2,290	15,852
M1	Gjandza bypass-Dallar-Tovuz	14,758	740	1,190	680	1,357	1,110	19,834
M1	Tovuz-Akstafa-Kazach	10,363	1,647	1,051	662	1,694	1,284	16,702
M1	Kazach-Georgian border	9,875	2,304	996	754	1,336	1,304	16,569

Source: Consultant's estimates

Table A4.8

Table A4.8 ALYAT - GEORGIAN BORDER ROAD - FORECAST OF VOLUME-CAPACITY RATIOS

Year	BEST ESTIMATE - VOLUME-CAPACITY RATIOS								
	M4 Alat - Gazi Mohammed	M4 Gazi Mohammed Kurdamir	M4 Kurdamir - Jevlah	M1 Jevlah - Mincacevar Station	M1 Mincacevar Station - Ganja Bypass (E)	M1 Ganja Bypass	M1 Ganja Bypass (W) Tovuz	M1 Tovuz - Kazakh	M1 Kazakh - Georgian border
1997	0.3		0.3	0.2	0.3	0.2	0.3	0.2	0.2
1998	0.3	0.3	0.3	0.2	0.3	0.2	0.3	0.2	0.2
1999	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3
2000	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
2001	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3
2002	0.4	0.4	0.4	0.3	0.4	0.3	0.4	0.3	0.3
2003	0.4	0.4	0.4	0.3	0.4	0.3	0.4	0.3	0.3
2004	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.4
2005	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4
2006	0.5	0.5	0.5	0.4	0.5	0.4	0.5	0.4	0.4
2007	0.5	0.5	0.5	0.4	0.5	0.4	0.5	0.4	0.4
2008	0.6	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.5
2009	0.6	0.6	0.6	0.5	0.6	0.5	0.6	0.5	0.5
2010	0.6	0.6	0.6	0.5	0.6	0.5	0.6	0.5	0.5
2011	0.7	0.7	0.7	0.5	0.6	0.6	0.6	0.6	0.6
2012	0.7	0.7	0.7	0.6	0.7	0.6	0.7	0.6	0.6
2013	0.7	0.7	0.7	0.6	0.7	0.6	0.7	0.6	0.6
2014	0.8	0.8	0.8	0.6	0.8	0.7	0.7	0.7	0.7
2015	0.8	0.8	0.8	0.7	0.8	0.7	0.8	0.7	0.7
2016	0.9	0.9	0.9	0.7	0.9	0.7	0.8	0.7	0.7
2017	0.9	0.9	0.9	0.7	0.9	0.8	0.9	0.8	0.8
2018	1.0	1.0	1.0	0.8	1.0	0.8	0.9	0.8	0.8
2019				0.8		0.9	1.0	0.9	0.9
2020				0.9		0.9		0.9	0.9
2021				0.9		1.0		1.0	1.0
2022				1.0					
2023									
2024									
2025									

Year	HIGH GROWTH ESTIMATE - VOLUME-CAPACITY RATIOS								
	M4 Alat - Gazi Mohammed	M4 Gazi Mohammed Kurdamir	M4 Kurdamir - Jevlah	M1 Jevlah - Mincacevar Station	M1 Mincacevar Station - Ganja Bypass (E)	M1 Ganja Bypass	M1 Ganja Bypass (W) Tovuz	M1 Tovuz - Kazakh	M1 Kazakh - Georgian border
1997	0.3	0.3	0.3	0.2	0.3	0.2	0.3	0.2	0.2
1998	0.3	0.3	0.3	0.2	0.3	0.2	0.3	0.2	0.2
1999	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
2000	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
2001	0.4	0.4	0.4	0.3	0.4	0.3	0.4	0.3	0.3
2002	0.4	0.4	0.4	0.3	0.4	0.3	0.4	0.3	0.3
2003	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
2004	0.5	0.5	0.5	0.4	0.5	0.4	0.5	0.4	0.4
2005	0.5	0.5	0.5	0.4	0.5	0.4	0.5	0.4	0.4
2006	0.6	0.6	0.6	0.5	0.6	0.5	0.5	0.5	0.5
2007	0.6	0.6	0.6	0.5	0.6	0.5	0.6	0.5	0.5
2008	0.7	0.7	0.7	0.5	0.7	0.6	0.6	0.6	0.6
2009	0.7	0.7	0.7	0.6	0.7	0.6	0.7	0.6	0.6
2010	0.8	0.8	0.8	0.6	0.8	0.7	0.8	0.7	0.7
2011	0.9	0.9	0.9	0.7	0.8	0.7	0.8	0.7	0.7
2012	0.9	0.9	0.9	0.7	0.9	0.8	0.9	0.8	0.8
2013	1.0	1.0	1.0	0.8	1.0	0.9	1.0	0.9	0.8
2014				0.9		0.9		0.9	0.9
2015				0.9		1.0		1.0	1.0
2016				1.0					
2017									
2018									
2019									
2020									
2021									
2022									
2023									
2024									
2025									

Source: Consultant's estimates

Note: Assuming a peak hour capacity in passenger car equivalents of (PCE) of 2,400.

Assumed PCE factors were: Cars and Utility vehicles 1.0 Buses and 2 and 3 axle trucks 2.0
Trucks of >3 axles 3.0

APPENDIX 5

TABLE A.5.1. Vehicle Operating Cost Model Inputs

TABLE A.5.2. Summary of World Bank and other Crude Oil Price Forecasts

TABLE A.5.3. Economic Cost of Automotive Fuel

Table A5.1

Table A5.1 AZERBAIJAN - VEHICLE OPERATING COST MODEL INPUTS 1997

Inputs	Unit	AZERBAIJAN					
		1 Car	4 Utility	5 Large Bus	8 Truck 2 axle (Medium)	9 Truck 3 axle (Heavy)	10 Truck > 3 axle (Artic.)
Roadway Characteristics							
Surface type		Paved	Paved	Paved	Paved	Paved	Paved
Average roughness (IRI)	m/km	5	5	5	5	5	5
Average positive gradient	%	5	5	5	5	5	5
Average negative gradient	%	5	5	5	5	5	5
Proportion of uphill travel	%	50	50	50	50	50	50
Average horizontal curvature	deg/km	5	5	5	5	5	5
Average superelevation	fraction	0.00012C	0.00012C	0.00012C	0.00012C	0.00012C	0.00012C
Altitude of terrain	m.	100	100	100	100	100	100
Effective number of lanes		> 1	> 1	> 1	> 1	> 1	> 1
Vehicle Characteristics							
Tare (unladen) weight	kg	960	1,300	11,100	4,525	8,200	12,800
Load carried	kg	300	400	3,000	2,400	6,000	15,000
Maximum used driving power	metric HP	41	39	100	67	147	147
Maximum used braking power	metric HP	20	29	197	147	255	467
Desired speed	km/hour	98.3	94.9	93.4	88.8	88.8	84.1
Aerodynamic drag coefficient	dimensionless	0.45	0.48	0.65	0.85	0.85	0.63
Projected frontal area	m ²	1.8	2.72	6.3	5.2	5.2	5.75
Calibrated engine speed	rpm	3,500	3,300	2,300	1,800	1,800	1,700
Energy efficiency factor	dimensionless	0.95	0.95	0.95	1	1	1
Fuel adjustment factor (alpha 2)	dimensionless	1.16	1.16	1.15	1.15	1.15	1.15
Tyre Wear Data							
Number of tyres per vehicle		4	4	6	6	10	18
Wearable volume of rubber per tyre	dm ³			6.85	7.6	7.3	8.39
Retreading cost per new tyre	fraction	0.3	0.3	0.3	0.3	0.3	0.3
Maximum number of recaps		1	1	1	1	1	1
Constant term of tread wear model	dm ³ /m			0.164	0.164	0.164	0.164
Wear coefficient for tread wear model	10 ⁻³ dm ³ /kj			12.78	12.78	12.78	12.78
Vehicle Utilisation Data							
Average annual utilisation	km	17,500	29,250	62,500	40,000	40,000	66,250
Average annual utilisation	hours	350	650	1,250	1,000	1,000	1,250
Hourly utilisation ratio (HURATIO)	fraction	0.4	0.5	0.6	0.5	0.6	0.65
Average service life	Years	15	8	7	8	8	10
Use constant service life ?		No	No	No	No	No	No
Age of vehicle in km	km	131,250	175,500	218,750	240,000	200,000	281,250
Passengers per vehicle		2	5	32			
Unit Costs							
New vehicle price	US\$	7,800	7,020	38,500	15,438	40,300	50,000
Fuel cost	US\$/litre	0.30	0.30	0.27	0.27	0.27	0.27
Lubricants cost	US\$/litre	1.32	1.32	1.32	1.32	1.32	1.32
New tyre cost	US\$	57	57	200	150	250	250
Crew time cost	US\$/hour	0.20	0.35	0.55	0.61	0.61	0.61
Passenger delay cost	US\$/hour	0.200	0.175	0.175			
Maintenance labour cost	US\$/hour	0.35	0.35	0.35	0.35	0.35	0.35
Cargo delay cost	US\$/hour						
Annual interest rate (%)	%	12	12	12	12	12	12
Overhead per vehicle km	US\$		0.01	0.02	0.025	0.025	0.025
Additional Coefficients							
KP - Maintenance parts		0.308	0.308	0.483	0.371	0.371	0.371
CPo - Maintenance parts	1.00E-05	32.49	32.49	1.77	1.49	8.61	13.94
CPq - Maintenance parts	1.00E-02	13.7	13.7	3.66	251.79	35.31	15.65
QIPo - Maintenance parts		120	120	190	0	0	0
CLo - Maintenance parts		77.14	77.14	293.44	242.03	301.46	652.51
CLp - Maintenance parts		0.547	0.547	0.517	0.519	0.519	0.519
CLq - Maintenance parts		0	0	0.006	0	0	0
COo - Lubricants		1.55	1.55	3.07	3.07	3.07	5.15
FRATIO0 - VCURVE		0.268	0.22	0.233	0.292	0.292	0.179
FRATIO1 - VCURVE	1.00E-03	0	0	0	0.094	0.094	0.023
ARVMAX - VROUGH		259.7	239.7	212.8	177.7	177.7	130.9
BW - VDESIR		1	1	1	1	1	1
BETA - Speed		0.274	0.31	0.273	0.31	0.31	0.244
EO - Speed		1.003	1.004	1.012	1.013	1.013	1.018
A0 - Fuel		-8,201	6,014	-7,276	-22,955	-22,955	-30,559
A1 - Fuel		33.4	37.6	63.5	95	95	156.1
A2 - Fuel		0	0	0	0	0	0
A3 - Fuel		5,630	3,846	4,323	3,758	3,758	4,002
A4 - Fuel		0	1.398	0	0	0	0
A5 - Fuel		0	0	8.64	19.12	19.12	4.41
A6 - Fuel		4,460	3,804	2,479	2,394	2,394	4,435
A7 - Fuel		0	0	11.5	13.76	13.76	26.08
NHO - Fuel		-10	-12	-50	-85	-85	-85
Alpha1		0.7	1	1	1	1	1

Table A.5.2

Table A.5.2 - SUMMARY OF WORLD BANK AND OTHER CRUDE OIL PRICE FORECASTS

Source	Actual price US\$/barrel		Forecasts @ Current US\$/ barrel			Forecasts @ Constant 1990 US\$/ barrel		Forecasts @ Constant 1996 US\$/ barrel		
	1994	1995	1996	1994	1995	1996	2000	2005	2000	2005
No. of forecasts				7	7	7	8	8	8	8
High				16.25	18.25	19.00	24.30	26.85	29.16	32.22
Low				11.75	13.55	13.80	13.05	12.15	15.66	14.58
Average	15.65	17.19	19.59	14.00	15.70	16.55	18.10	20.65	21.72	24.78
World Bank (a)				14.50	15.50	17.00	17.50	17.00	20.52	19.92
World Bank (b)							16.60	16.10	20.45	19.84

Source	Actual price US\$/litre		Forecasts @ Current US\$/ litre			Forecasts @ Constant 1990 US\$/ litre		Forecasts @ Constant 1996 US\$/ litre		
	1994	1995	1996	1994	1995	1996	2000	2005	2000	2005
No. of forecasts				7	7	7	8	8	8	8
High				0.102	0.115	0.120	0.153	26.850	0.184	0.203
Low				0.074	0.085	0.087	0.082	12.150	0.099	0.092
Average	0.099	0.108	0.124	0.088	0.099	0.104	0.114	20.650	0.137	0.156
World Bank (a)				0.091	0.098	0.107	0.110	0.107	0.129	0.126
World Bank (b)							0.105	0.102	0.129	0.125

Source: World Bank

Note: (a) Deflated by G-V countries' Manufacturing Unit Value (MUV) Index

(b) Deflated by G-V countries' Consumer Price Index (CPI)

Table A.5.3

Table A.5.3 - ECONOMIC COST OF AUTOMOTIVE FUEL

Unit	Crude Oil Prices and World Bank Price Forecasts						
	Crude Oil Spot Prices (April 1997)		IEA Average Crude Import Costs		World Bank Forecasts		
	Gulf	North Sea	Russia	1996	1997	2000	2005
US\$/barrel	16.50	18.00	17.00	19.59		20.45	19.84
US\$/tonne	119.63	135.18	124.61	143.59		149.90	145.43
US\$/litre	0.104	0.114	0.107	0.114		0.129	0.125
Automotive Fuel	Pre-Tax Auto. Fuel Prices Based on the Above Crude Price Forecasts						
	Spot Crude Prices (April 1997)		IEA Average Crude Import Costs		World Bank Forecasts		
	Gulf	North Sea	Russia	1996	1997	2000	2005
PETROL							
Premium Unleaded (US\$/litre)	0.249	0.271	0.256	0.271		0.308	0.299
Premium Leaded (US\$/litre)	0.241	0.263	0.249	0.263		0.299	0.290
Automotive Diesel:							
Non-commercial (US\$ / litre)	0.218	0.237	0.224	0.237		0.270	0.262
Commercial (US\$/litre)	0.214	0.234	0.221	0.234		0.266	0.258
Automotive Fuel Pre-Tax as % of Crude Oil Price	Based on:						
	Spot Crude Prices (April 1997)		IEA Average Crude Import Costs		World Bank Forecasts		
	Gulf	North Sea	Russia	1996	1997	2000	2005
Premium Unleaded	239	42					
Premium Leaded	232	43					
Diesel - Non Commercial	209	48					
Diesel - Commercial	206	49					
Physical Conversion Factors	Crude Oil						
	Gulf	North Sea	Russia	Automotive Fuel		Diesel	
				Petrol	Petrol		
Conversion				-Premium	-average		
Specific Gravity (kg/litre)	0.87	0.84	0.86	0.76	0.74	0.75	
Barrels/tonne	7.25	7.51	7.33	8.30	8.52	8.41	
Litres/barrel	158.54	158.52	158.63	158.50	158.60	158.50	
Litres/tonne	1,149.43	1,190.48	1,162.79	1,315.79	1,351.35	1,333.33	
				1,351.35	1,333.33	1,190.48	

APPENDIX 6

A 6.1	Review of Road Design Standards
A 6.2	Road Geometry Standards
A 6.3	Geotechnical Report
A 6.4	Environmental Assessment
A 6.5	Pavement Strength Report
A 6.6	Existing Road Width
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APPENDIX 6.1

REVIEW OF ROAD DESIGN STANDARDS

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1. INTRODUCTION

This report on the Review of Road Design Standards in one of the reports being produced under the European Union - Tacis sponsored TRACECA Project for the Implementation of Pavement Management Systems. The Project covers eight states of the south of the former Soviet Union which are five states in Central Asia

- Kazakhstan
- Kyrgyzstan
- Tadjikistan
- Turkmenistan
- Uzbekistan

and another three states in the Caucasus area

- Armenia
- Azerbaijan
- Georgia.

The introduction of the Terms of Reference already describes a number of deficiencies which were also encountered during the Consultant's studies and review like

- low standard/quality of road construction (e. g. laying techniques, compaction, mix design, workmanship)
- modern Western performance criteria, technical specifications and implementation technologies are little known in the region
- high nominal standards (e. g. design speed of 150 km/h)
- road safety is inadequate

During the Consultant's activities in the project area the above listed deficiencies were further studied, detailed and discussed in a number of meetings and seminars in each of the eight recipient states with the two main headings:

BITUMINOUS BOUND MATERIALS

REVIEW OF METHODS, TECHNOLOGIES AND RELATED STANDARDS IN THE RECIPIENT STATES AND COMPARISON WITH EUROPEAN AND OTHER WESTERN METHODS, TECHNOLOGIES AND STANDARDS

ROAD DESIGN AND ROAD SAFETY

REVIEW OF RELEVANT ROAD DESIGN AND ROAD SAFETY STANDARDS FOR THE TRACECA ROADS (MAGISTRALE) IN THE RECIPIENT STATES AND COMPARISON WITH WESTERN EUROPEAN STANDARDS

In this report under the same headings the topics of the seminars are summarised and the review/analysis of the relevant standards is detailed.

2. BITUMINOUS BOUND MATERIALS

2.1. Pavement Design

2.1.1 Design Philosophies

The pavement design of a road general depends on:

- planned design life
- traffic volume (traffic forecast)
- road category

Taking into consideration the above basic design factors the main aim of the pavement design should be to achieve

- riding comfort acceptable to road users
- economy (implementation and life time)
- limited surface deflection

In the former Soviet Union Standards (SUS) the governing factor for pavement design is the so-called stiffness modulus of the pavement structure, comprising the different pavement layers (e. g. subbase, base course, asphalt concrete). With this stiffness modulus the total pavement thickness and the allowable deflection is specified. The stiffness modulus is calculated under consideration of E-moduli of the respective pavement layers. Based on researches the SUS specifies the E-moduli, which then are used without further verification for the design and on site. The criteria for determination of asphalt layer thickness is the limit on the tensile stress at the bottom of the asphalt layer.

In European/Western standards (E/WS) the pavement design is based on tolerable stresses induced in the subgrade by traffic load. The different subgrade materials and their behaviour are considered with the respective subgrade bearing capacity (e. g. CBR, plate load test) leading to the total pavement thickness. The total pavement thicknesses result from standardised pavement layer thicknesses which have been empirically determined. In addition the materials requirements are specified and have to be verified on site by regular testing to ensure the required bearing capacity of each layer. The criteria for determination of asphalt layer thickness is to provide a satisfactory service over the planned design life period of the pavement, taking into consideration the effects (climate, traffic) on the road surface.

The main differences between the SUS pavement design and E/WS pavement design are:

Requirement	SUS Design	E/WS Design
pavement deformation is limited by	stiffness modulus of the pavement structure	stress on subgrade
asphalt layer thickness is determined by	tensile stress at bottom of asphalt layers	limitation of deterioration resulting in acceptable surface condition

In summary the SUS design procedure is a method using theoretical material values. Although an adequate stiffness of a road structure is an important requirement, this does not necessarily translate into a well designed road, comfortable to use and economic in construction and maintenance.

The E/WS design procedure is based on empirical factors which are the results of practical experience with specified control of each pavement layer on site.

2.1.2 Characterisation of pavement layers

The surface course or wearing course is the top layer of an asphalt pavement and should be constructed of dense asphalt concrete. Between surface course and base course a more porous asphalt layer the so called binder course is placed. The binder course should be an asphalt mixture with a high stability and shear strength.

Below the binder the base course (road base) is the main load spreading layer of the pavement. It will normally consist of crushed stone or suitable natural gravel. For roads with high traffic load the base course can be a bituminous treated layer with high compressive strength for the total layer thickness or for the upper part combined with a lower base course layer of cement or lime treated or untreated gravel sand mixture.

The subbase is the second load spreading layer underlying the base course. It normally consists of a material of lower quality than the base course such as a natural gravel-sand mixture. This layer also serves as a separating layer preventing contamination of the base course by subgrade material during construction. Base course and subbase have to be frost-resistant.

The subgrade (existing natural ground or embankment fill) should be compacted to fulfil the requirements of a sufficient bearing capacity.

2.1.3 Assessment of existing design methods in comparison with western design procedures

In the example below a pavement designed to SUS is recalculated and compared with an E/WS design method. The SUS design provides a service life of the pavement of 15 years. Less than 6 years service life for the same pavement is the result of the recalculation with the E/WS method, the empirical method of AASHTO (American Association of State Highway and Transport Officials).

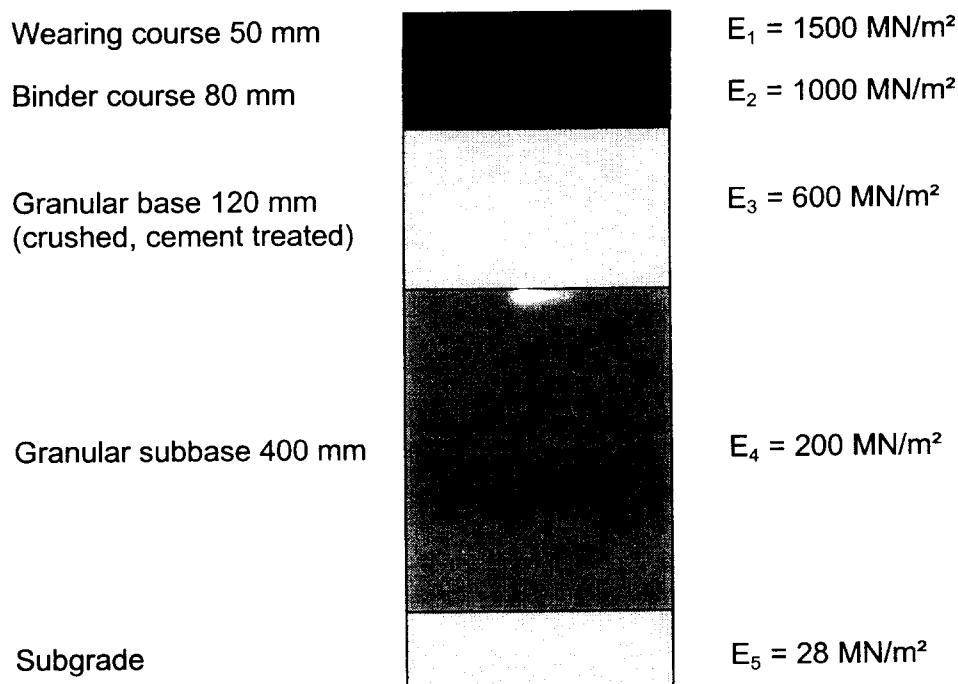
Design with SUS (VSN 46 - 72)

Design Traffic: 1342 equivalent standard vehicles per day in design lane

Initial traffic assuming 1.5 % growth = 1073 vpd

Accumulated $ESAL_{80} = 7.02 \times 10^6$ (15 years)

DESIGN SOLUTION
according to VSN 46 - 72



Recalculation by AASHTO Method

The relation for the number of $ESAL_{80}$ is as follows :

$$\text{Log } ESAL_{80} = Z_R S_o + 9,36 \log (SN + 1) - 0.20 + \frac{\log ((PSI / (4.2 - 1.5)))}{0.4 + (1094 / (SN + 1))^{5.15}} + 2.32 \log M_R - 8.07$$

$Z_R = -1.645$ (Normal deviate for 35 % reliability level)

$S_o = 0.45$ (Standard deviation)

$M_R = 5 \cdot 10^3$ for example 1 (Subgrade resilient modulus)

$PSI = 4.2 - 2.5 = 1.7$ (Change in the present serviceability index)

$PSI = 4.2$ Construction Quality common in USA

$PSI = 2.5$ Minimum acceptable PSI

$$\text{Log ESAL}_{80} = - 0.740 + 7.083 - 0.396 + 8.582 - 8.07 = 6.459$$

$$\text{ESAL}_{80} = 2.88 * 10^6 \quad (\text{Number of passes by Equivalent Standard Axle Load})$$

Design Traffic : 1342 equivalent standard axle loads per day in design lane (assumption)

$$= 2,88 * 10^6 / 1342 = 2146$$

$$2146 / 365 = \underline{5.8 \text{ years Design life according AASHTO}}$$

2.1.4 Assessment and recommendation

The SUS design is a theoretical procedure. It is recommended to use a method more based on values of experience and empirical studies as demonstrated in the above example. Specially the present practice with computation using the stiffness modulus and the tensile stress at the bottom of the asphalt layers should be discarded. If it is necessary to use still the SUS then more attention has to be paid to the bearing capacity of the subgrade (testing of CBR, moisture content, grading). For roads with a high traffic load, as the magistrale are, the upper layer of the base course (road base) should always be a bituminous layer. The thickness of all frost resistance layers should be reconsidered according to local conditions and experience.

For the asphalt concrete itself it is recommended to reduce the maximum grain size of the aggregates and to use as binder a distillation bitumen.

2.2 Materials

Asphalt concrete is a mixture of sand, aggregates and bitumen. A mineral powder is added as filler to provide a sufficient quantity of fine material, which can be also cement or crushed limestone. Between bitumen and aggregates a sufficient adhesion is required. The value of adhesion depends on the kind of bitumen and the aggregate.

Aggregates

The maximum grain size of the aggregates is of great importance for the mechanical values of the asphalt and directly related to thickness of asphalt layers.

Bitumen

The bitumen used in Western European countries for road construction is named according the average penetration value. For example B65 means B for Bitumen, 65 for 65 1/10 mm medium penetration (max/min limits of penetration 50/75). Bitumen in Europe is produced by a two step distillation procedure (atmospheric and vacuum distillation).

The following types of bitumen are available B15, B25, B45, B65, B80, B200, B300.

For road construction (rolled asphalt) bitumen B65 and B80 is preferably used, and Bitumen B200, B300 for road surface treatment

Natural asphalt (bitumen) is found in Azerbaijan, Turkmenistan.

Natural asphalt (bitumen) is found in Azerbaijan, Turkmenistan.

Asphalt job mix design criteria and laboratory testing

The asphalt job mix design provides the optimum values for

- density
- air voids content
- bitumen content
- stability and flow value

standard laboratory tests for bitumen carried out on construction site

- penetration
- softening point
- breaking point
- ductility

Assessment and recommendation

Existing laboratory equipment in the eight recipient states was produced in the former Soviet Union and complies with the relevant SUS.

Main laboratory testing procedures for aggregates, sand, bitumen and asphalt is done according the SUS which differ only little to European/western tests standards. The Marshall test is widely known, but not used due to lack of equipment and missing requirement for limitations.

2.3

Quality Control

The aim of quality control in production and implementation is to maintain a constant level of quality which in the long term results in a cost reduction

Regular testing of the product quality shall be done by the manufacturer before delivery to customers (testing as a measure of self controlling). Furthermore sample controlling and testing shall be carried out by an independent institution to supervise the manufacturer's testing in order to assure constantly the quality of the product/materials.

When materials are used for construction field and laboratory testing is required to assure that the materials used and the workmanship comply with the relevant standards and specifications. The usual approach on a construction site is that the contractor carries out own testing throughout the period of execution of works. The test results are to be submitted to the (independent) supervisor for verification and the supervisor will do own testing.

In the recipient states the European/western approach for quality control and the independent supervision of works is not existing and thus very often the materials and construction requirements of the existing standards and specifications are not achieved resulting in poor quality implementation and short service life with high maintenance costs. Therefore a quality control, a quality assurance system should be introduced which will support the durability of construction and encourage the countries' economy.

2.4 Asphalt Production and Pavement Placing Techniques

Asphalt products for road construction

There are generally two different types of asphalt mixtures used for road construction:

(i) rolled asphalt (with air voids)

The asphalt is placed and compacted at maximum density and there are still air voids not filled with bitumen. The specified temperature for placing hot asphalt mixtures is 120 - 180°C and compaction has to be completed before the temperature drops below 90°C.

In Europe the use of cold asphalt mixtures is restricted to special cases or locations (islands, mountainous regions, temporary repairs).

(ii) Mastic asphalt (without air voids)

In the asphalt mixture there are no air voids and therefore after placing no compaction is necessary. The specified paving temperature is 220 - 240 °C.

Overheating of bitumen will result in a poor quality asphalt mixture and therefore the maximum admissible temperatures of bitumen for asphalt mixtures are specified:

Type of Bitumen	max. Temperature [°C]
B45	190
B65	180
B80	180

Lowest and highest temperatures for asphalt mixtures in °C leaving the mixer:

(i) SUS (GOST)

Type of Bitumen	Temperature of Asphalt [°C]
BND 40 / 60 BND 60 / 90 BND 90 / 130 BN 60 / 90 BN 90 / 130	140 - 160

Note: The maximum temperature may be 10 °C higher if the asphalt is placed at air temperatures below 5 °C.

(ii) E/WS (ZTV - Asphalt, German Standard)

Typ of Bitumen	Temperature of Asphalt for Binder Layer [°C]	Temperature of Asphalt for Surface Course [°C]
B45	130 - 190	140 - 190
B65	120 - 180	130 - 180
B80	120 - 180	130 - 180

Note: Surface course should not be placed at air temperatures below 3°C, Asphalt binder course not below 0°C.

Asphalt mixing plants

A mixing plant for asphalt production shall be designed and operated so as to produce mixtures according to the Job-Mix-Formula. There are general two types of mixing plants used for asphalt production:

- Batch mixing plants
- Continuous mixing plants

Asphalt placing and compacting procedures

Placing of asphalt is done with an asphalt finisher (paver), normal working width 6 m to 8 m, which achieve a so-called precompaction of about 90% of required density. Paving speed is depending on kind, width and thickness of asphalt layers ranging from about 1.0 m/min. (surface course) to 2.5 m/min (binder course, base course).

Compacting of asphalt with tandem steel roller (vibration possible) and pneumatic roller.

Assessment and recommendation

In the recipient states the mixing equipment is of Soviet Union or east German origin. Most of the mixing plants are out of operation since a number of years by various reasons. Due to the lack of operating mixing plants and long haulage distances the use of cold mix asphalt became common for maintenance and repair works. Compacting was and is still done with static steel rollers. Pneumatic rollers and rollers with vibration possibility have not been encountered in the recipient states.

The existing mixing plants could produce a good quality asphalt, but this depends on the condition of the equipment and it is difficult to purchase spare parts. A similar problem for spare parts appears for asphalt placing equipment (pavers, rollers).

With regard to the above problems and the superiority of E/WS asphalt placing equipment some of the recipient states have started to use E/WS equipment to achieve a better quality in pavement construction. However, it is recommended to provide appropriate training for those equipment so that their possibilities are understood and can be fully utilised.

2.5 Rehabilitation of Asphalt Pavement

The deterioration of a pavement manifests itself by various signs of appearance or indicators which can be associated with the probable causes of the failure or imperfection. To determine if and to which extent rehabilitation measures are necessary as a first step an assessment of the road condition is required.

An assessment of road condition should include the following:

- (i) **surface condition**
A visual condition survey of an asphalt pavement shall describe the types of pavement distress relating them to the likely causal factors. The visible manifestations related to pavement distress generally fall into one of the following broad categories:
 - cracking
 - distortion
 - disintegration
 - skid resistance
- (ii) **bearing capacity**
Special equipment is used to assess the actual bearing capacity. The Benkelman beam is widely known but the results of the measurements cannot be related to the different pavement layers. The Falling Weight Deflectometer (FWD) is a fast and most advanced method to collect relevant data from actual deflection measurements and following calculations give distinguished results for the different pavement layers.
- (iii) **pavement composition**
Sampling and laboratory testing of the existing asphalt pavement reveals the actual condition of aggregates and bitumen as well as the used base-course and subbase material.
- (iv) **pavement structure condition**
After a certain time depending for example on traffic load and climatic conditions all pavements need maintenance and repairs to keep a certain level of ride comfort. If maintenance of a pavement is neglected for a longer period the deterioration of the road may accelerate. The pavement condition is quickly getting worse and is then unacceptable to road users. The high degree of deterioration of a neglected pavement results in destruction requiring an expensive reconstruction in the end. A permanent maintenance and repair of smaller deficiencies will extend the life time of a pavement and keeps the surface in good condition.

Assessment and Recommendation

During the road inspections carried out in the 8 recipient states very different quality of road maintenance/repair/rehabilitation works was observed ranging from good to very poor. Cases were observed where on the one hand cold asphalt was dropped into water filled potholes but also on the other hand proper edge cutting with preparation for receiving the asphalt and following compaction. Furthermore placing of asphalt concrete layers was carried out by pavers but without grade control or the materials was spread by graders. In only a few cases the resulting surface condition, in particular the road roughness, was satisfactory. When the above described deficiencies were discussed in the seminars with the specialists of the recipient institutes the main reason given was that maintenance is mostly done

according to financial possibilities/constraints and not according to technical requirements.

In summary the existing methodology as well as the equipment is in most of the recipient states unsatisfactory. As already described in the sub-chapter above some of the states have started to purchase modern European/western equipment and it is recommended to carry out training for operators, foremen, site engineers etc. to achieve an advanced knowledge in the methodology and techniques for road maintenance and rehabilitation works and for an optimum utilisation of the equipment.

2.6 Recycling Techniques and Methods for Asphalt Concrete

Cold and hot recycling

Cold recycled (cut/milled and pulverised) asphalt pavement can only be used for lower layers as base course or as binder course when adding bitumen emulsion and/ or cement or cement suspension. Depending on the traffic load and to achieve the required surface properties the compacted recycled road base is subsequently covered with a bituminous surface layer. Depending on laboratory testing results of the existing asphalt concrete hot recycled asphalt pavement may be used also for surface course with or without adding new materials.

Conventional methods

Deteriorated asphalt pavement is cut or milled and transported to a mixing plant. There the material is pulverised, heated and mixed with or without adding new aggregates and bitumen. The asphalt mixture is then transported to the construction site and placed on the road. This method is used when a mixing plant is close to the site since additional transport of removed asphalt pavement to the mixing plant and of the newly mixed material back to the road construction site has to be considered.

Mix in place recycling

The mix-in-place recycling is a very promising and economical method for the reconstruction of damaged asphalt roads. With this method the material of deteriorated roads is recycled in place and immediately used for the new pavement construction.

- Objectives of this method
 - Rehabilitation of road surface
 - Improvement of load bearing capacity
 - Improvement of frost resistance
- Advantages of this method
 - Avoidance of waste road construction material
 - Saving of natural resources
 - Environmental friendly
 - Reduction of material transports resulting in avoidance of traffic load burden on other rural/public roads in the area usually used for haulage

This construction method is characterised by a recycling equipment which cuts/mills and pulverises the existing road material if necessary including the unbound road base and subsequently mixes the crushed material with cement or bituminous binder agents. At this time available recycling equipment can be used on asphalt layers with a thickness of up to 150 mm. The following methods and techniques are used:

- Reshape: Deteriorated surface course/asphalt pavement will be heated, loosened and the hot material placed without adding material.
- Repave: The loosened and hot replaced material is immediately covered with a new hot asphalt layer containing only new material.
- Remix: Deteriorated surface course/asphalt pavement will be heated, loosened and new material (asphalt mixture or only bitumen) has to be added to get a mixture according the job mix design.

Assessment and Recommendation

Modern asphalt recycling techniques are requiring special equipment and a well trained labour force. In addition in all recipient states the budget for road maintenance and road repair is very limited so that recycling of asphalt concrete, if any, as for example in Uzbekistan and Kazakstan is very rare and done by specialised European/western companies.

However, the specialists of the recipient institutes met in the seminars are very interested in this modern and economical road/pavement rehabilitation technology. When the recycling technology is introduced it should be accompanied by special seminars and training not only for the use of equipment but also for technicians and engineers who have to do the laboratory testing of the existing pavement materials as well as the job mix design for the re-use.

3. ROAD DESIGN AND ROAD SAFETY

3.1 Road Design Standards

3.1.1 General

The standard for the geometrical design of roads and highways in the TRACECA states was developed in the former Soviet Union. In some of the states researches are ongoing for modification of this standard towards the development of national standards, which may consider local requirements as well as harmonisation with western European standards. However, no new standard has been published yet and the Soviet Union road standard (SNIP) is still in use.

For comparison with an western European standard the German standard for road and highway design is used and was presented in the seminars respectively.

The TRACECA Project includes selected international road links in the eight recipient states which in most cases are the so-called magistrale with the highest standard, but also with the next lower category of standard reflecting the requirements of lower traffic volume. The details of road design standards described in the following therefore cover these categories of the TRACECA roads.

3.1.2 Road Categories and Design Speeds

For an better overview all road categories and related design speeds are listed in the tables below. The relevant parameters of the Soviet Union road standard (SUS) are given in Table 3.1 and of the European/German road standard (E/GS) in Table 3.2. Categories not applicable for the TRACECA roads are shaded.

Apparent are the relative high design speeds of the SUS and the subdivision of the group category/road category with particulars of the E/GS. During seminars in the recipient institutes the scientific/research background of the two standards was discussed and some approaches were found as different, however, to discuss and evaluate all the differences of the development of the standards would be beyond the scope of the Project.

As discussed in the seminars the SUS design speed of 150 km/h has been used in flat terrain only (e.g. steppe of Kazakhstan) or not at all (e.g. Azerbaijan, Georgia, Kyrgyzstan, Uzbekistan) since the requirements are very high and the various constraints would have made the implementation to expensive. Considering this approach in the design practice, the differences of the two standards are marginal only.

Table 3.1: Soviet Union Road Standard 2.05.02-85, 1986

CATEGORY	DESIGN SPEED [Km/h]		
	GENERAL	WINDING TERRAIN	MOUNTAIN. TERRAIN
I - a	150	120	80
I - b	120	100	60
II	120	100	60
III	100	80	50
IV	80	60	40
V	60	40	30

Table 3.2: German Standard RAS-Q, 1982/1996

C A T E G O R Y		DESIGN SPEED [km/h]
GROUP CATEGORY	ROAD CATEGORY	
A MAGISTRALE, outside populated areas	A I long distance/international link	90 - 120
	A II regional link	80 - 120
	A III interurban link	60 - 80 (100)
	A IV major infrastructure link	60 - 80
B HIGHWAYS, around or through towns	B II major highway	(60) 70 - 80
	B III main highway	(50) 60 - 70
	B IV highway	50 - 60
C MAJOR URBAN ROADS	C III major road (highway)	50 (- 70)
	C IV main road	(40) 50 (60)
D URBAN MAIN ROADS	D IV main road	40 - 50
	D V main street	none
E URBAN ACCESS ROADS	E V street	none
	E VI lane	none

Values in (...) = Exceptions

3.1.3 Geometrical Design Elements

Based on the selected road category and the design speed respectively the geometrical elements for the road design are defined.

The main parameters for *horizontal and vertical alignment* are summarised in Table 3.3 for the SUS and for the E/GS in Table 3.4. When as described above the requirements of the SUS design speed 150 km/h is not taken into consideration the two standards are very similar with more particulars given in the E/GS.

Table 3.3: Soviet Union Road Standard 2.05.02-85, 1986

DESIGN SPEED	MAX. GRADI - ENT	MINIMUM VERTICAL CURVE			MINIMUM HORIZONTAL CURVE			
		Radius Crest Curve	Radius general	Radius Sag Curve mountain.	Radius general	Crossfall	Radius mountainous	Crossfall
150 km/h	3.0 %	30000 m	8000 m	4000 m	1200 m	2 - 3 %	1000 m	2 - 3 %
120 km/h	4.0 %	15000 m	5000 m	2500 m	800 m	3 - 4 %	600 m	5 - 6 %
100 km/h	5.0 %	10000 m	3000 m	1500 m	600 m	5 - 6 %	400 m	6 %
80 km/h	6.0 %	5000 m	2000 m	1000 m	300 m	6 %	250 m	6 %
60 km/h	7.0 %	2500 m	1500 m	600 m	150 m	6 %	125 m	6 %

Table 3.4: German Standard RAS-L-1, 1984, for Road Category A

DESIGN SPEED	MAX. GRADI - ENT	MINIMUM VERTICAL CURVE		MINIMUM HORIZONTAL CURVE			
		Radius Crest Curve	Radius Sag Curve	Radius and minimum Crossfall	Radius and maximum Crossfall	Radius and maximum Crossfall	Radius and maximum Crossfall
120 km/h	4.0 %	20000 m	10000 m	3000 m & 2.5 %	800 m	7 % (8 %)	7 % (8 %)
100 km/h	4.5 %	10000 m	5000 m	1800 m & 2.5 %	500 m	7 % (8 %)	7 % (8 %)
90 km/h	5.0 %	7000 m	3500 m	1400 m & 2.5 %	380 m	7 % (8 %)	7 % (8 %)
80 km/h	6.0 %	5000 m	2500 m	1100 m & 2.5 %	280 m	7 % (8 %)	7 % (8 %)
70 km/h	7.0 %	3500 m	2000 m	800 m & 2.5 %	200 m	7 % (8 %)	7 % (8 %)
60 km/h	8.0 %	2750 m	1500 m	500 m & 2.5 %	135 m	7 % (8 %)	7 % (8 %)

Values in (...) = Exceptions

With the determined road category and the respective traffic volume both standards define the main parameters for the **road cross section** which are summarised in Table 3.5 for the SUS and for the E/GS in Table 3.6.

Again and as described for other parameters before the two standards for the road cross section are very similar and adequate with the exception of the decision point from two to four lanes in the SUS which requires at least four lanes for a traffic volume of above 14,000 vehicles per day. In the highest category A I of the E/GS and for up to 27,000 vehicles/day the 1982 RAS-Q standard required two lanes only which with regard to traffic flow and road safety recently has been revised (RAS-Q 1996, published on 15.08.96) to three lanes.

Table 3.5: Soviet Union Road Standard 2.05.02-85, 1986

CAT	TRAFFIC VOLUME (ADT)		LANES		SHOULDER TOTAL (PAVED)	MEDIAN TOTAL (PAVED)	TOTAL ROAD WIDTH
	NORMAL + WINDING	DIFFIC. TERRAIN	NO.	WIDTH			
I-a	> 80000	> 70000	8	3.75 m	3.75 m (0.75m)	6.00 m (1.00m)	43.50 m
	> 40000 ≤ 80000	> 34000 ≤ 70000	6	3.75 m	3.75 m (0.75m)	6.00 m (1.00m)	36.00 m
	> 14000 ≤ 40000	> 14000 ≤ 34000	4	3.75 m	3.75 m (0.75m)	6.00 m (1.00m)	28.50 m
I-b	> 80000	> 70000	8	3.75 m	3.75 m (0.75m)	5.00 m (1.00m)	42.50 m
	> 40000 ≤ 80000	> 34000 ≤ 70000	6	3.75 m	3.75 m (0.75m)	5.00 m (1.00m)	35.00 m
	> 14000 ≤ 40000	> 14000 ≤ 34000	4	3.75 m	3.75 m (0.75m)	5.00 m (1.00m)	27.50 m
II	6000 - 14000		2	3.75 m	3.75 m (0.75m)	--	15.00 m
III	2000 - 6000		2	3.50 m	2.50 m (0.75m)	--	12.00 m
IV	200 - 2000		2	3.00 m	2.00 m (0.50m)	--	10.00 m
V	< 200		1	(2.25 m)	1.75 m (--)	--	8.00 m

Table 3.6: German Standard RAS-Q, 1996

ROAD CAT.	TRAFFIC VOLUME (ADT) [veh./day]	LANES		SHOULDER TOTAL (PAVED)	MEDIAN TOTAL (PAVED)	TOTAL ROAD WIDTH	NOTE
		NO.	WIDTH				
A I	45000 - 61000	6	3.75 m 3.50 m	4.50 m (3.00 m)	5.00 m (2x0.75m)	35.50 m	i
	29000 - 39000	4	3.75 m	4.75 m (3.25 m)	5.00 m (2x0.75m)	29.50 m	ii
	14000 - 27000	3	3.75 m 3.50 m 3.25 m	1.75/2.75 m (0.25 m)	0.50 m (0.50 m)	15.50 m	
A II	54000 - 66000	6	3.50 m	4.00 m (2.50 m)	4.00 m (2x0.50m)	34.00 m	ii
	35000 - 42000	4	3.50 m	4.00 m (2.50 m)	4.00 m (2x0.50m)	26.00 m	
	22000 - 27000	3	3.75 m 3.50 m 3.25 m	1.75/2.75 m (0.25 m)	0.50 m (0.50 m)	15.50 m	
		14000 - 21000	2	3.50 m	1.75 m (0.25 m)	--	
A III	33000 - 42000	4	3.25 m	2.00 m (0.50m)	3.00 m (2x0.50m)	20.00 m	
	11000 - 21000	2	3.00 m	1.75 m (0.25m)	--	9.50 m	
A IV	11000 - 14000	2	3.00 m	1.75 m (0.25m)	--	9.50 m	

- NOTES:**
- (i) total width of 35.50 m with width of right lane 1 x 3.75 m and left lanes 2 x 3.50 m
 - (ii) total width of 15.50 m:
 - no. of lanes 3 (2+1 alternating)
 - width of single (1) lane 1 x 3.75 m with shoulder 2.75 m (0.25m paved)
 - width of double (2) lanes 1 x 3.50 m (right) + 1 x 3.25 m (left) with shoulder 1.75 m (0.25m paved)
 - width of "median" 0.50 m (paved)

3.2 Road Safety and Road Design Aspects

3.2.1 Preliminary Remarks

Road and traffic safety is based on the three 'E' which can be described as:

Engineering (e. g. standards for road design and traffic engineering, control of quality in implementation, supervision of works for and maintenance of a good/safe road condition)

Education (e. g. education of pedestrians and motorists, training, public promotion)

Enforcement (e. g. laws and regulations, police, justice)

and is a complex process where dynamic, visual, geometrical, drainage and psychological requirements need to be optimised.

In the following those aspects concerning road safety and related road design details are described which were presented and discussed in the seminars held in the recipient states.

3.2.2 Technical Aspects of Road Safety and Road Design

- **Sequence of Radii for horizontal Alignment**

The relation of the radii of horizontal curves in the road alignment is specified in both standards, the SUS as well as the E/GS. The aim is to achieve a relative constant travelling speed resulting in safety for the road users (avoidance of unexpected narrow curves). In cases where constraints do not allow to follow the requirements of the standard(s) extensive signalisation is necessary.

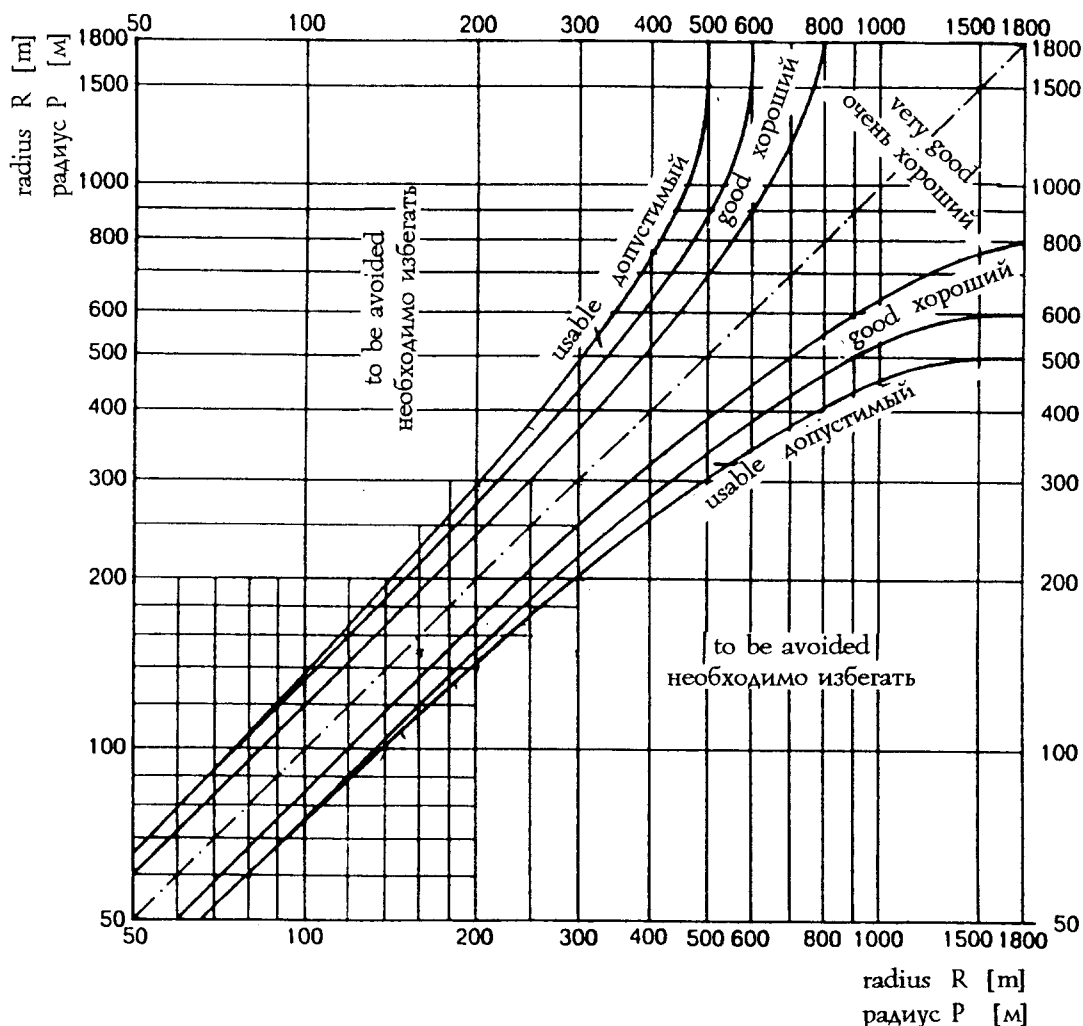
In sub-chapter 4.3.3 of the SUS (SNIP 2.05.02 - 85) the relation of radii is specified as

$$R_1 : R_2 = 1 : (\text{maximum } 1.3)$$

which is considered as too rigid and not reflecting the requirements of moving vehicle dynamics.

The suitability of the sequence of radii in the E/GS (RAS-L-1, 1984) is determined according to the diagramm below and improvement of the SUS is recommended.

Sequence of Radii for Horizontal Curves, RAS-L-1, 1984



- Length of straight Road Section and minimum Radius of Curve after straight Road Section

At long straight road section it is rather difficult for drivers to assess distance and speed of approaching vehicles. Furthermore for the safety of road users it is important to decide on an appropriate radius after a straight section of road, where vehicles may build up speed. The SUS (SNIP) specifies maximum 5 km length of straight and should be complemented by the requirements of the E/GS for the radius after a straight road section as summarised in table 3.7 below.

Table 3.7: German Standard RAS-L-1, 1984

ROAD CATEGORY	LENGTH OF STRAIGHT	MINIMUM RADIUS
A I, A II	$L \geq 600$ m	min R > 600 m
	$L < 600$ m	min R > L
A III, A IV, B II	$L \geq 500$ m	min R > 500 m
	$L < 500$ m	min R > L

- **Junctions incl. Approaches and Slowing Down/Acceleration Lanes**

For Junctions and intersections one of the main design requirement is safety for the road users which can be achieved when the junction/intersection system

- provides adequate visibility
- is easy to understand
- is designed for appropriate speed
- is furnished with adequate horizontal and vertical signalisation (road markings and traffic signs)

Those requirements are of high importance especially for non-local drivers, who also need information signs for orientation and decision which direction to take well ahead of the junction.

The priority in the SUS for junctions at grade is to achieve a relative high speed for vehicles entering and moving in the junction. The resulting relative big radii used in those junctions lead to large islands and a large area for the entire junction itself with the consequence of a reduced visibility.

In comparison the E/GS has relative small radii in the junction with small islands resulting in a good visibility. To achieve a speed of entering vehicles with little difference to the through traffic acceleration lanes are provided.

In summary the E/GS with constructural measures reducing the speed in the junction approach and providing good visibility which both make the 'system' of the junction clearly understandable has advantage in traffic safety and therefore the SUS should be improved accordingly.

The SUS for grade separated junctions/intersections including clover leaves is very similar to the E/GS. During field visits in the course of the seminars several cases were observed where the SUS has been modified and shorter slowing down/acceleration lanes were constructed. This modification was explained with budget constraints and the relative low traffic volume at the time of the implementation. The theory is to provide the necessary slowing down/acceleration lanes when the traffic volume has reached a certain level and the full standard is required.

- **Signalisation**

The SUS for road and traffic signs is in line with western European/international standards and modification is considered not to be necessary. In many cases the information signs were encountered with description in Latin letters in addition to the Cyrillic, which is appreciated by foreign road users and which should be shown on all informative signs along the international, the TRACECA roads. However, the quality of materials should be improved, especially the brightness of reflective material and/or the workmanship should be better controlled.

The same applies for road marking. The SUS is appropriate and the materials/quality should be improved. Some modification/additions should be considered to increase traffic safety as for example on two lane roads arrows in the centreline ahead of a continuous centreline marking (non overtaking). In general road marking has been neglected in the TRACECA states for some time by various reasons - budget constraints for maintenance, broken down equipment, supply of paint abandoned etc.

In the TRACECA states marker posts are used at junctions, bridge approaches, railway crossings and at culvert locations only. According to the SUS the posts are white with a black stripe, reflective material or reflectors are not used. The existing standard is considered as not appropriate and should be improved: size of post and use of reflectors. Marker posts are a very important component of road safety, especially in the darkness they provide together with an appropriate road marking the best possible guidance for road users. It is understood that the provision of marker post for the entire road network in the TRACECA states would be rather costive, but it is recommended that marker posts with an appropriate spacing (say 50 to 75 m) along the international, the TRACECA roads are successively installed when road sections are improved/rehabilitated.

- **Safety for Town Passages with high Traffic Volume**

The magistrale, the TRACECA roads inspected often run through towns and villages which is inconvenient for both the road users as well as the inhabitants. For the latter besides environmental inconvenience (exhaust gases, noise) the traffic on the magistrale form a danger for crossing vehicles and pedestrians. Low speed in the town passages resulting in longer travelling time (economic losses) is the inconvenience for drivers together with the potential high danger of an accident.

A by-pass for those towns and villages would be the best solution for the above problems. As in Europe also in the TRACECA states it takes several years up to decades to prepare such a by-pass project - feasibility, financing, land acquisition etc. - and until the implementation. Therefore it is necessary to implement measures for immediate improvement of the traffic safety and if possible for mitigation of the other inconveniences.

In the meetings and seminars held in the recipient it carried out that the local engineers/specialists are familiar with and aware of the required safety improvements but financing is not available possibly because other projects have a higher priority. The following measures were discussed and include also low-cost solutions which can produce considerable improvement:

- (i) Where sufficient space can be made available private accesses to the magistrale should be abandoned and collected with a parallel minor road which then enters into the magistrale with a proper junction (= reduction of danger points).
- (ii) Provision of safe pedestrian crossings
 - subways or bridges (= very expensive)
 - traffic lights (= expensive)
 - prefabricated islands bolted on the road surface as safety waiting zone after crossing of one lane and before crossing the other (= low cost and quickly implemented)
- (iii) Adequate road marking and traffic signs (= minimum requirement)
- (iv) Sensibly determined/useful speed limits which will be understood and accepted by drivers:

- when the houses/village is situated on one side of the road only there is hardly any crossing traffic (vehicles and pedestrians) and the village name signboards which require a speed of 50 or 60 km/h should be removed and a speed of 70 or 80 km/h should be allowed by traffic signs (= improvement of traffic flow, reduction of travelling time)
- village name signboards which very often are placed several hundred meters before the first houses appear (leads to disregarding of the 50/60 km/h limit) should be relocated close to the real village entrance, where necessary the approach can be provided with a first speed limit of 70 or 80 km/h (= improvement of traffic flow, reduction of travelling time).

- **Emergency Escape Lanes at extended Descends**

The SNIP does not include such a standard. Due to the nature of the terrain and the necessity local standards were developed in for example Kazakhstan and Kyrgyzstan which are appropriate.

- **Winter Maintenance**

In those TRACECA states where winter conditions are experienced the aim and the requirements of winter maintenance are well known by the engineers/specialists of the institutes and departments in the recipient states. Presently the problem is that a reduced scope of winter maintenance can be carried out only due to budget constraints and equipment at the end of service life. In most cases application of salt or grit is done by throwing the material by shovel from a moving truck.

In meetings and seminars (and during the Study Tour to Europe in November 1996) European methods and technologies were presented and possible development/improvements discussed which can be summarised as

- updating/upgrading of winter maintenance management plans
- introduction of modern/economically working equipment for removal of snow and for application of grit/salt (including the benefit for the environment)

3.2.3 Non Technical Aspects of Road Safety

- **Public Promotion/Information Programmes**

The above sub-chapters present and discuss a number of technical safety measures which are the one part of road and traffic safety. The other part which is assumed to be the more difficult one is the so-called human factor, which includes all participants in the public traffic from vehicle drivers to pedestrians. Technical safety measures may not provide the planned results when the human factor fails. It has been experienced for example when a bad road was rehabilitated and had received a smooth surface, all necessary signalisation and safety measures (road marking, marker posts etc.) the number of accidents increased because drivers tended to overspeed.

Risky behaviour may in many cases result from lack of discipline but also from not understanding or accepting measures and regulations. Therefore public promotion/information programmes are of high importance to provide the necessary background information for understanding and acceptance to increase safety. But also to enhance the understanding of one another like pedestrians and drivers as for example:

- pedestrians must understand that a car with a speed of, say, 50 km/h cannot come to a full stop within 10 metres.
- drivers have to control/keep the allowable maximum speed, if necessary reduce it, to give pedestrians a chance to cross safely the road
- etc.

Before independence of the TRACECA states public promotion/information programmes existed (e. g. on TV, radio) but only a few are left like the education/training of primary school pupils. It is therefore recommended to re-activate or initiate those programmes - on TV and radio, with brochures, advertisement etc. - which in Europe are running since decades and always have to continue.

- **Enforcement of Regulations**

During the seminars in the recipient institutes the decreasing discipline and the increase of violation of traffic regulations was put into discussion as another problem of road safety aspects. Besides the above mentioned public promotion/information programmes for education possibilities to control and discipline road users repeatedly violating regulations were discussed. As an example the system in force in Germany was presented as described below.

- **Point System for Violation of Traffic Regulations (Germany)**

In addition to fines a central register has been installed for supervising repeated violations. Registration is done for all fines above 55 US\$. Samples of the point system are shown in the table below.

VIOLATION	POINTS	NOTE
Exceeding of speed limit in towns		
21 - 25 km/h	●	
26 - 30 km/h	●●●	
31 - 40 km/h	●●●	
41 - 50 km/h	●●●●●	i
51 - 60 km/h	●●●●●	i
> 60 km/h	●●●●●●	ii
Driving under the influence of alcohol		
0.8 - 1.1 ‰	●●●●	
> 1.1 ‰	●●●●●●●	
Exceeding technical vehicle check > 8 months	●●	
Driving without valid driving licence	●●●●●●	
Driving without valid third party insurance	●●●●●●	
Misuse of number plate	●●●●●●	
Bad signalisation of broken down vehicle	●●	
Worn out tyres (< 1.6 mm)	●●●●	
Disappearance of accident site	●●●●●●●	
Dangerous overtaking	●●	
Disregarding NO OVERTAKING sign	●●●●	
Disregarding STOP sign	●●●	
Disregarding RED traffic light	●●●	
Insufficient space to vehicle in front	●●●●	
Aggressive closing up and use of flashing light	●●●●●●●	
Driving without light in fog or heavy rain	●●●●	
Turning or reversing on a motorway	●●●	
Right-hand side overtaking outside towns	●●●	

NOTES: (i) One month confiscation of driving licence in addition
(ii) Two months confiscation of driving licence in addition

Action is taken by the central register department at a

SUM OF 9 POINTS: A warning letter is issued and advise is given to attend a training course, which attendance results in the deletion/reduction of 4 points.

SUM OF 14 POINTS: The theoretical and in some cases the practical examination test for the driving licence has to be repeated.

SUM OF 18 POINTS: A medical - psychological examination is required. Non-appearance is equal to not being qualified for a driving licence, which will then be confiscated.

- **Violation of Load Regulations (Germany)**

For vehicles with a gross weight of >7.5 tons the following fines apply when the maximum gross weight or the allowable maximum axle load is exceeded.

EXCESS		FINE	
	> 5 %		70 US\$
	> 10 %		80 US\$
	> 15 %		90 US\$
	> 20 %		140 US\$
	> 25 %		200 US\$
	> 30 %		270 US\$

In cases with an excess of >30 % unloading might be required.

- **Legislation**

In the meetings and seminars further questions and problems concerning road/traffic safety were discussed which can only be controlled by appropriate legislation as demonstrated in the above paragraphs with possibilities for enforcement of regulations.

Two highlighted problems are given below:

After independence in some of the recipient states it became somehow rather easy to get a driving license. The training is not any more comprehensive enough and many drivers drive vehicles (e. g. trucks) which class they have not acquired with their driving license.

Another growing problem is the import of right-hand steering vehicles. Since the driver has a considerably reduced sight, overtaking other vehicles becomes dangerous. Also right-hand steering vans and mini buses have the doors for passengers on the left side, the road side respectively resulting in a danger for leaving/entering passengers especially children.

4. CONCLUSION AND RECOMMENDATION

4.1 Bituminous Bound Material

The low standard and the low quality of road construction respectively encountered in most of the eight recipient states is mainly caused by:

- an inadequate pavement design methodology
- use of sub-standard materials
- poor workmanship
- inadequate equipment

A modification/improvement of the pavement design is recommended in order to base the design on empirical data which are results of practical experience. Together with a longer service life of the pavement a more economical construction and maintenance can be expected.

However, an improved design methodology will not automatically improve the quality of the roads. Two of the above reasons for the present low quality of the roads can be summarised as the problem of quality and quality control. In the former Soviet Union the supervision of works was not functioning and although the testing procedures for materials differ only little to European/western test standards sub-standard/low quality materials have been used for construction. Even when good quality materials were available the specified standards were not achieved due to poor workmanship. A quality control/assurance system should be introduced which is essential for the durability of all road components (pavement, earthworks, bridges, etc.) and should include the testing of materials as well as the supervision of construction works. Furthermore training of all levels of staff involved in road construction and road maintenance works is necessary.

On the equipment side the situation deteriorated during the past years mainly due to lack of spare parts (may be funds as well) and associated maintenance. In some states modern European/western equipment was already introduced to improve the situation. Appropriate training in the use of this equipment is recommended. In this context special seminars and training for the new recycling technology is recommended which should range from testing of existing pavement material, pavement design for re-used materials to the operation of equipment.

4.2 Road Design and Road Safety

The road design standard presently used in the TRACECA states, the Soviet Union road standard (SNIP), is as far as reviewed in the course of the Project in most aspects adequate. Under consideration of economical and safety aspects some modifications are recommended which should be introduced in the current standard or in the national standards under preparation:

- deletion of the design speed of 150 km/h and its related design parameters
- introduction of a road cross section with three lanes (2+1 alternating) for a traffic volume of 14,000 to 27,000 vehicles per day
- improvement of road design standards for junctions and horizontal alignment
- improvement of signalisation
- improvement of safety in town passages

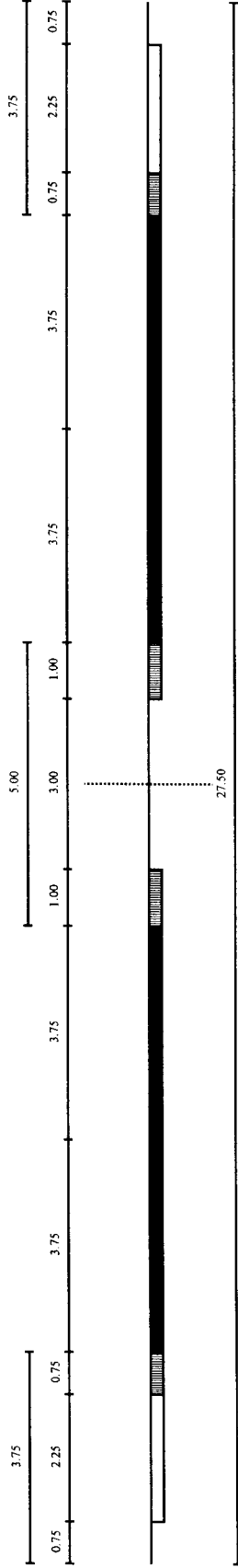
- reactivation/implementation of public promotion/information programmes for road/traffic safety
- amendments/additions of legislation if and where necessary

It should be noted that the three lane (2+1 alternating) cross section was encountered in a section of one of the TRACECA roads, namely in town/village passages of the M 39 in Kyrgyzstan west of Bishkek to Kara Balta and the border with Kazakhstan. This local standard should be reviewed with regard to results and findings described above.

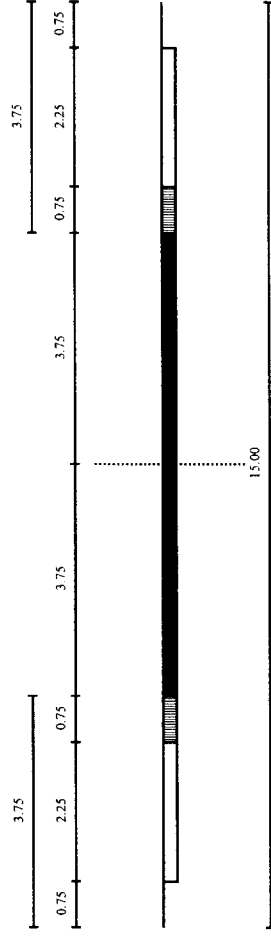
APPENDIX 6.2

ROAD GEOMETRY STANDARDS

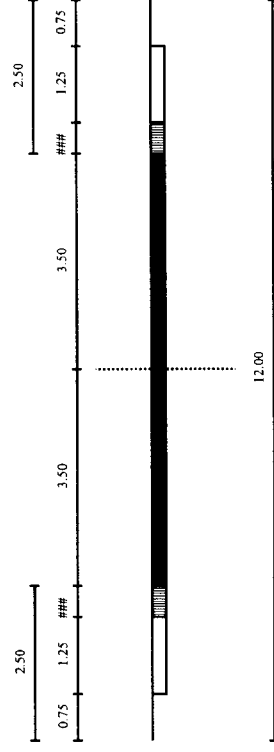
ROAD CATEGORY I - b (SNIP 2.05.02-85)



ROAD CATEGORY II (SNIP 2.05.02-85)



ROAD CATEGORY III (SNIP 2.05.02-85)



APPENDIX 6.3

GEOTECHNICAL REPORT

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Abbreviations:

CBR:	California bearing ratio
DIN:	German Standards - Deutsche Industrie Normen
DD:	Dry density
D.H.	Dam height
DPL:	Dynamic penetrometer - light
LL:	Liquid limit
MC:	Moisture content
MDD:	Maximum dry density
OMC:	Optimum moisture content
PI:	Plasticity index
PL:	Plastic limit

GEOTECHNICAL REPORT

1. Geotechnical & Materials Investigation

1.1 Introduction

This chapter presents the summary of soil and asphalt laboratory test results which have been carried out in the laboratories of "AZERAVTOYOL" in Baku and of "TURKMENAVTOYOLLARY" in Ashgabat. The obtained geological, geotechnical and construction materials data which are provided by the Client "AZERAVTOYOL" and collected by the Consultant during site visits and site investigations, have been studied and analysed and are the basis of this report.

1.2 Scope of work

- Collecting information and available geological maps covering the general project area
- Studying and reviewing the material reports which were provided to the Consultant by the Client "AZERAVTOYOL"
- On the job-training of laboratory assistants on site
- Carrying out additional geotechnical investigations
- Carrying out soil and asphalt laboratory tests
- Digging of trial pits to determine the pavement structure
- Developing conclusions and recommendations, based on the obtained field and laboratory findings

1.3 Purpose of investigations and soil testing

The purpose of the site investigations and the geological, geotechnical and materials study is to provide the design team with all the necessary and required data.

While site investigations, the field operations, includes studies of the geology and history of the site as well as subsurface explorations, the study of the existing road construction and in-situ testing, laboratory testing permits a greater degree of accuracy of measurements than does field testing.

The parameters determined from site investigations and laboratory tests, taken together with descriptive data relating to the soil are required from the design team to determine the future structure of the road.

2. Geological Overview

2.1 Section **Alyat - Gazi Mammad** has been described already in ARAB CONSULT'S final report.

The project road lies on a type of sediments which belongs to the same family of alluvial deposits, although there are some varieties within the constituents, especially in size.

These deposits consist mainly of modern alluvial composed of loam materials (colluvials deposits may also exist side by side with wadi deposits at some locations). Also offshore deposits of Caspian Sea were observed at the beginning of the Project.

2.2 General description of geological structure **Gazi Mammad - Kyurdamir** section: This road section crosses Kura-Araks region and Shirvan alluvial-proluvial foothill depressions.

The area consists of upper-pliocen-quadernary and quadernary alluvial - proluvial deposits, with a thickness about 10 - 100m. These deposits are comprising gravel - pebbles, and clayish silts with gravel and pebbles. In the lower parts of foothill depressions these deposits are consisting of clays, clayish silts, silty fines sands with gravel and gravel-pebbles. Close to Kura riverbed the deposits are made of clays, clayish silts and silty fine sands. Alluvial deposits of riverbeds are consisting of fragmented sandy gravelly materials. The genesis of these deposits is alluvial-proluvial.

Depth of ground water in this area is about 1 - 160m. In some places composition of ground water includes sulphates, which is aggressive to concrete

The seismic activity in the region is up to 7 - 8 degrees on the intensity scale.

2.3 **General description of geological structure Kyurdamir - Georgian border**

Kura Araks area consist of clayish - sandy deposits of Neogen and quadernary period. Neogen deposits comprises hard sandy clays with layers of sand and clayish silts and sands with limestones. The thickness is about 32 -500m.

Lower quaternal deposits are made of clays, clayish silts and sands with a thickness about 120m up to 170m. Upper quaternal deposits are consisting of gravel - pebbles and coarse sands from alluvial, proluvial, deluvial and eolian periods. Riverbeds consist of clayish silts, sandy silts, clays, gravel - pebbles. Thickness is about 25m. Depth of ground water is about 5 - 10m, and close to channels only 1m. Composition consist of chlorid - sulphate - natrium and is aggressive to concrete. Seismic activity of the area is about 7 degrees according to intensity scale.

3. Training of laboratory assistants

Equipment required for field investigations was imported from Germany and handed over to "AZERAVTOYOL". The Client's laboratory staff has been thoroughly introduced to the use of these devices during several days.

The photos below show laboratory assistants while carrying out drop penetration testings and drill soundings.

Drop Penetration Test



Drill sounding, analyse of
extracted soil sample



4. Geotechnical and materials investigations

Between the 01.05. and the 31.05.97 an investigation programme was carried out on site, to collect data on the pavement, the pavement foundation and the stability of existing earthstructure consisting of:

- ⇒ 56 Nrs. of drop penetration tests up to 5 m depth, to determine the compactness and the consistency of the soil
 - 3 Nrs. - section **Alyat - Gazi Mammad** (for geotechnical information only)
 - 12 Nrs. - section **Gazi Mammad - Kyurdamir**
 - 41 Nrs. - section **Kyurdamir - Georgian border**

- ⇒ 56 Nrs. of drill-soundings up to 5 m depth, to determine the type of soil and the moisture content in different layers
 - 3 Nrs. - section **Alyat - Gazi Mammad** (for geotechnical information only)
 - 12 Nrs. - section **Gazi Mammad - Kyurdamir**
 - 41 Nrs. - section **Kyurdamir - Georgian border**
(The DPL diagrams and soil sections are presented in Appendix 2)

- ⇒ 10 Nrs. of trial pits to determine the type of soil and the structure of existing embankment, to take samples for laboratory testing and to get information about the pavement structure
 - 1 Nr. - section **Alyat - Gazi Mammad**
 - 3 Nrs. - section **Gazi Mammad - Kyurdamir**
 - 6 Nrs. - section **Kyurdamir - Georgian border**
(The trial pit diagrams are shown in Appendix 3)

- ⇒ 30 Nrs. of trial pits to determine the structure of pavement
 - 8 Nrs. - section **Gazi Mammad - Kyurdamir**
 - 22 Nrs. - section **Kyurdamir - Georgian border**
(Details of pavement structures are given in Appendix 4)

- ⇒ 4 Nrs. of asphalt mixture tests, to determine the bitumen content and the composition of the existing asphalt.
(Test results are summarised in Appendix 5)

The dynamic cone penetrometer (DCP) was used for a rapid survey of the existing layer. The penetrometer described in the German Standard DIN 4094.

5. Laboratory test programme

The samples taken from the trial pits were brought to the Client's laboratory in Baku and tested as follows:

- ⇒ 156 Nrs. of moisture contents, oven dried
(Results are shown in Appendix 6)
- ⇒ 18 Nrs. of sieve analysis, according to SIS (Soviet Industrial Standards) and DIN 18 123 (for comparison), to determine the relative proportions of each size range
- ⇒ 2 Nrs. - section **Alyat - Gazi Mammad**
6 Nrs. - section **Gazi Mammad - Kyurdamir**
10 Nrs. - section **Kyurdamir - Georgian border**
- ⇒ 5 Nrs. of liquid limits according to SIS and DIN (for comparison), to determine the moisture content at which soil passes from the plastic to the liquid state
- ⇒ 5 Nrs. of plastic limits (PL) according to SIS and DIN (for comparison), to determine the moisture content at which a soil passes from the plastic state to the solid state
- ⇒ 15 Nrs. of sulphate content tests according to SIS, to determine the content of total sulphates in soil
5 Nrs. - section **Gazi Mammad - Kyurdamir**
10 Nrs. - section **Kyurdamir - Georgian border**

Since no CBR - test equipment was available in Baku, 200 kg of soil have been brought by plane to Ashgabat/Turkmenistan to the laboratory of "TURKMENAVTOYOLLARI".

The following tests have been carried out there:

- ⇒ 17 Nrs. of compaction tests according to DIN 18127 to determine:
 - a) the moisture content (OMC) of the soil at which a specified amount of compaction will produce the maximum dry density
 - b) the maximum dry density (MDD) obtained using a specified amount of compaction at the optimum moisture content
- 2 Nrs. - section **Alyat - Gazi Mammad**
6 Nrs. - section **Gazi Mammad - Kyurdamir**
9 Nrs. - section **Kyurdamir - Georgian border**
- ⇒ 18 Nrs. of unsoaked and
- ⇒ 18 Nrs. of soaked California Bearing Ratio Tests - CBR, to determine the ratio of the force required to penetrate a piston into compacted soil in a special mould, compared to that required for similar penetration into a standard sample of compacted crushed rock (100% CBR)
 - 4 Nrs. - section **Alyat - Gazi Mammad**
 - 12 Nrs. - section **Gazi Mammad - Kyurdamir**
 - 20 Nrs. - section **Kyurdamir - Georgian border**

(Laboratory test results are summarised in Appendix 7)

6. Typical surface distresses

Ruttings-Deformations, unevenness in the transverse profile, are caused by plastic deformations, either because of

- compaction under traffic with volumetric decrease or displacement of material without volumetric decrease or
- wrong choice of material and/or
- wrong composition of material and/or
- insufficient compaction

Water splashes (rare), unevenness' in the longitudinal profile, are caused in bituminous layers by deformations due to horizontal stress-applications.

Cracks, are caused either by

- unsuitable material or under dimensioned gravel layers below the asphalt or
- because of deformations due to under dimensioned pavement structure or
- because of wrong choice of bitumen or
- because of material fatigue

Pot-holes are resulting from

- wrong granulometric graduation
- wrong and/or overdosage of bitumen

Due to the suction effect of the tires, first bitumen and subsequently the aggregates are pulled out of the road surface

Loss of surface roughness or polishing effect due to subside of surface grains in the bituminous mortar as a result of

- wrong choice of bitumen
- over dosage of bitumen

7. Materials in the existing road

7.1 **Fill-material**

Obviously the embankments were constructed with the in - situ soil next to the road.

The material found in the embankment consists mainly of clayish, fine sandy silts of low and moderate plasticity and is partly not suitable as subgrade. The plasticity index varies from 12.7 to 23.0 %. In particular it's losing bearing capacity under the influence of water.

The CBR-results are as follows:

	unsoaked %	soaked %
Alyat - Gazi Mammad	7.2	4.1
Gazi Mammad - Kyurdamir	1.3 - 8.3	1.0 - 2.6
Kyurdamir - Georgian border	11.3 - 19.6	0.0 - 5.3

In-situ moisture contents measured in the earth embankment ranges between 10.61 and 26.90% in the upper layers and between 13.9 and 30.2 % in layers below 1 m. This would indicate that the in-situ moisture content conditions are sometimes below or around the optimum, but very often above. First tests resulted in OMC's between 16.3 and 24.1 %. General moisture content conditions, i.e. drainage problems and the influence of ground water in the embankment have to be investigated in greater detail.

Because of the low bearing capacity and the sensitivity to the influence of water it is recommended to replace or reinforce this material particularly in reconstruction sections where the elevation of the road is close to the existing ground surface, by selected fill-material of minimum CBR of 15 % for a minimum thickness of 0.4 m.

Due to traffic and time the consolidation of the embankments can be assumed to be completed. The performed DPL tests result in high to medium resistance 10 - 40 blows/10 cm = firm to semi stiff consistency often higher, rarely 3 - 10 blows/10 cm = soft. Soft consistency in the embankment was found in the section Gazi Mammad - Kyurdamir between ch. 80+100 - 115+000 and in the section Kyurdamir - Georgian border at ch. 170+000 and from ch. 426+713 up to 473+215.

Below the embankment soft consistency has been discovered in the section Gazi Mammad - Kyurdamir from ch. 49+800 - ch. 57+400 and from ch. 108+000 - 118+000, in the section Kyurdamir - Georgian border from ch. 128+000 - 159+000, and around ch. 230+500, 395+215 and 442+215.

7.2 **Road base material/sub-base**

The layer under the asphalt does not correspond with the technical specifications for sub-base or road base. Neither the particle size distributions nor the CBR results fulfil the requirements. Moreover, due to the high fines content the gravel is very sensitive to water and cannot be evaluated as separating or filter layer. Partly this layer is composed of a varying blend of rounded to flat gravel and cobbles in a clayey matrix of moderate plasticity. No crushed material has been found.

This material can be partly classified as ordinary sub-base, partly as fill-material only. Since the thickness of this layer in some sections is not as designed a levelling and reinforcing layer has to be previewed in reconstruction sections.

The CBR - results are as follows:

	unsoaked %	soaked %	
Alyat - Gazi Mammad	12.8	1.9	(low fill quality)
Gazi Mammad - Kyurdamir	1.3 - 19.5	1.0 - 4.0	(low fill quality)
Kyurdamir - Georgian border			
chainage 124 - chainage 391+215	14.5 - 47.1	2.6 - 33.6	(good fill quality, low subbase quality)
chainage 448+215	108	102	(road base quality)

Since neither an internal nor an external drainage was found the layers below the asphalt are confined between impermeable fill and shoulder material. The evacuation of penetrated water is not possible. During sampling works on site, water has been noticed under the asphalt after rainfall in the section **Gazi Mammad - Kyurdamir**.

Due to the unsealed shoulders and the cracked asphalt, both sections are pervious, saturation of the "sub-base" is likely and may have been one of the causes for surface distresses. According to the CBR-results this silty gravel is loosing, like the fill-material, bearing capacity under influence of water. Further laboratory tests have shown that the stability of this material is degrading rapidly when the optimum moisture content has been exceeded. For that reason the composition of the new overlay has to be dense to prevent water to penetrate into the road structure.

7.3 Bituminous material

The composition of the existing pavement differs strongly. Mostly the pavement consists of two bituminous layers placed on a natural untreated granular/sand/clay base of low bearing capacity. The upper layer, the wearing course, is a more or less well graded bituminous mixture, while the layer below, the binder course, has a less dense aggregate structure and the bitumen content is less as well. Mostly this layer is only a bitumen stabilised gravel. The total thickness of the bituminous layer is varying between 4 - 20 cm.

In large parts of the road surface, the bleeding of bitumen and polished aggregates is conspicuous. The bitumen content is partly much too high, between 6.41 and 13.48 %, the bitumen is too soft and the aggregates are not well graded. Segregation, deformations and ruttings, as well as other surface damages are the consequences.

Obviously the gravel itself is too weak and will not fulfil the abrasion requirements.

8. Conclusions and recommendations

Intensive site investigation and laboratory testing works shall be carried out to identify homogenous sections of the road and to verify if the results of the present first test series are representative for the whole road.

Alyat - Kyurdamir Kyurdamir - km 407+215

According to the already obtained test results and to several visual inspections, the bearing capacity of the upper layers of the road structure is already insufficient for the present traffic load. Traffic study identifies for the planning horizon of 15 years distinct increase of traffic load. Measures have to be taken to strengthen the pavement including the road base and the sub-base, to assure the load sharing between the different layers and to avoid further surface distresses. A simple asphalt overlay is not recommended.

The existing base course material (gravel/sand/silt mixture) could be used as subbase, provided that a CBR value of min. 30 % is reached and the designed thickness has been obtained. But due to high fines-content this material is very sensitive to water and cannot be evaluated as separating or filter layer. Should the material fail to reach 30 % soaked CBR, substitution of material is necessary.

In this case tests should be carried out to investigate if the existing bituminous mixes, specially the bitumen stabilised gravel, can be re-used to reinforce the subbase after milling, sieving and the addition of missing gradations.

Km 407+215

At chainage 448+215 CBR - value of the gravel layer below the asphalt reaches 102.4%, i.e. that the bearing capacity of the material itself is sufficient, but since the thickness of this layer is varying from 10 to 55 cm a levelling and reinforcing layer has to be partly included in the planning.

In those sections, where the required thickness has not been reached, additional load bearing tests should be carried out to determine the in-situ bearing capacity. Based on these results it can be decided whether a reinforcement of this layer is necessary.

If the CBR- result is representative for the whole section and where the required thickness is achieved, it will be sufficient to reinforce the existing pavement by an appropriate overlay, after repair works.

9. Materials for further Construction Works

9.1 **Fill material** for embankment will not be necessary, but if needed will be provided from borrow-sources adjacent to the road. Almost all types of soils can be used, only soils with high sulphate content should be avoided.

9.2 **Sub-base material** secondary load spreading layer underlying the road-base, consists normally of a lower quality than that used in the roadbase, such as unprocessed natural gravel. The greater part of natural occurring materials has to be processed before placing i. e. sieved over 35 mm and screened. but since recycled asphalt will be used to reinforce the existing gravel layer, natural sub-base deposits are only important for shoulder construction works.

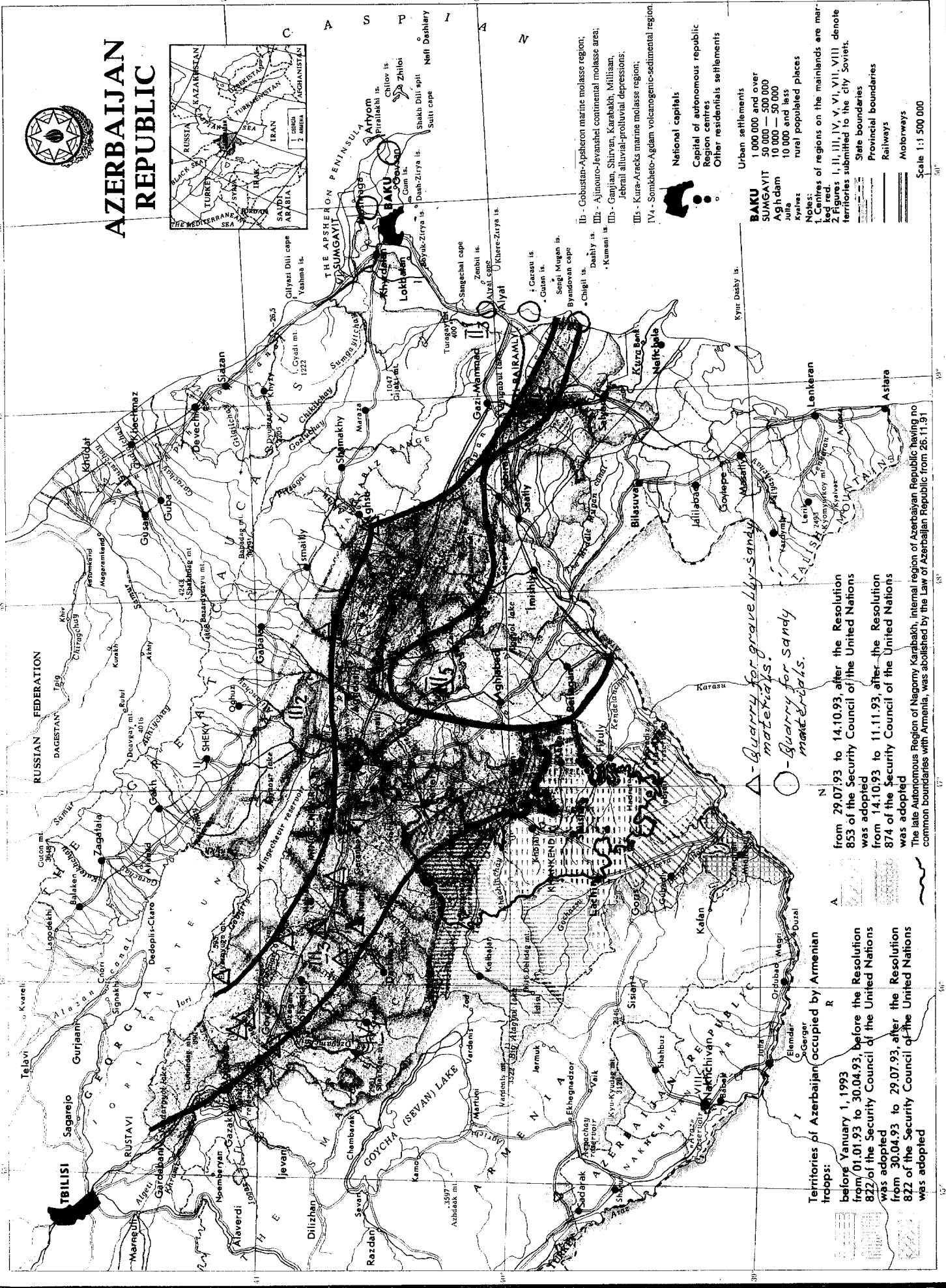
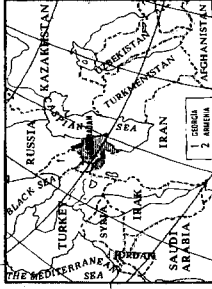
9.3 The use of **crushed stone roadbase or mechanically stable natural gravel** is not planned.

Quarries which might be taken into consideration for exploitation for pavement construction works are drawn in the geological map, Appendix G.

GEOLOGICAL MAP



AZERBAIJAN REPUBLIC



- National capitals
- Capital of autonomous republic
- Region centres
- Other residential settlements

BAKU
1 000 000 and over
SUMGAYIT
50 000 — 500 000
Agh dam
10 000 — 50 000
Kyrlak
10 000 and less
rural populated places

Notes:
1. Centres of regions on the mainlands are marked in red.
2. Figures 1, II, III, IV, V, VI, VII, VIII denote territories submitted to the city Soviets.
— State boundaries
— Provincial boundaries
— Railways
— Motorways

Scale 1:1 500 000

from 29.07.93 to 14.10.93, after the Resolution 853 of the Security Council of the United Nations was adopted
from 14.10.93 to 11.11.93 after the Resolution 874 of the Security Council of the United Nations was adopted
The late Autonomous Region of Nagorno Karabakh, internal region of Azerbaijan Republic having no common boundaries with Armenia, was abolished by the Law of Azerbaijan Republic from 26.11.91

Territories of Azerbaijan occupied by Armenian troops:
before January 1, 1993
from 01.01.93 to 30.04.93, before the Resolution 822 of the Security Council of the United Nations was adopted
from 30.04.93 to 29.07.93, after the Resolution 822 of the Security Council of the United Nations was adopted

△ - Quarry for gravelly-sandy materials.
○ - Quarry for sandy materials.

- II - Cobustan-Apsheron marine molasse region;
- III - Ajinuro-levanshel continental molasse area;
- IV - Ganjan, Shirvan, Karabakh, Milhaman, Jebrai alluvial-proluvial depressions;
- V - Kura-Araks marine molasse region;
- VI - Somkheto-Agdam volcanogenic-sedimental region.

**DPL DIAGRAMS
AND SOIL SECTIONS**

DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 1**

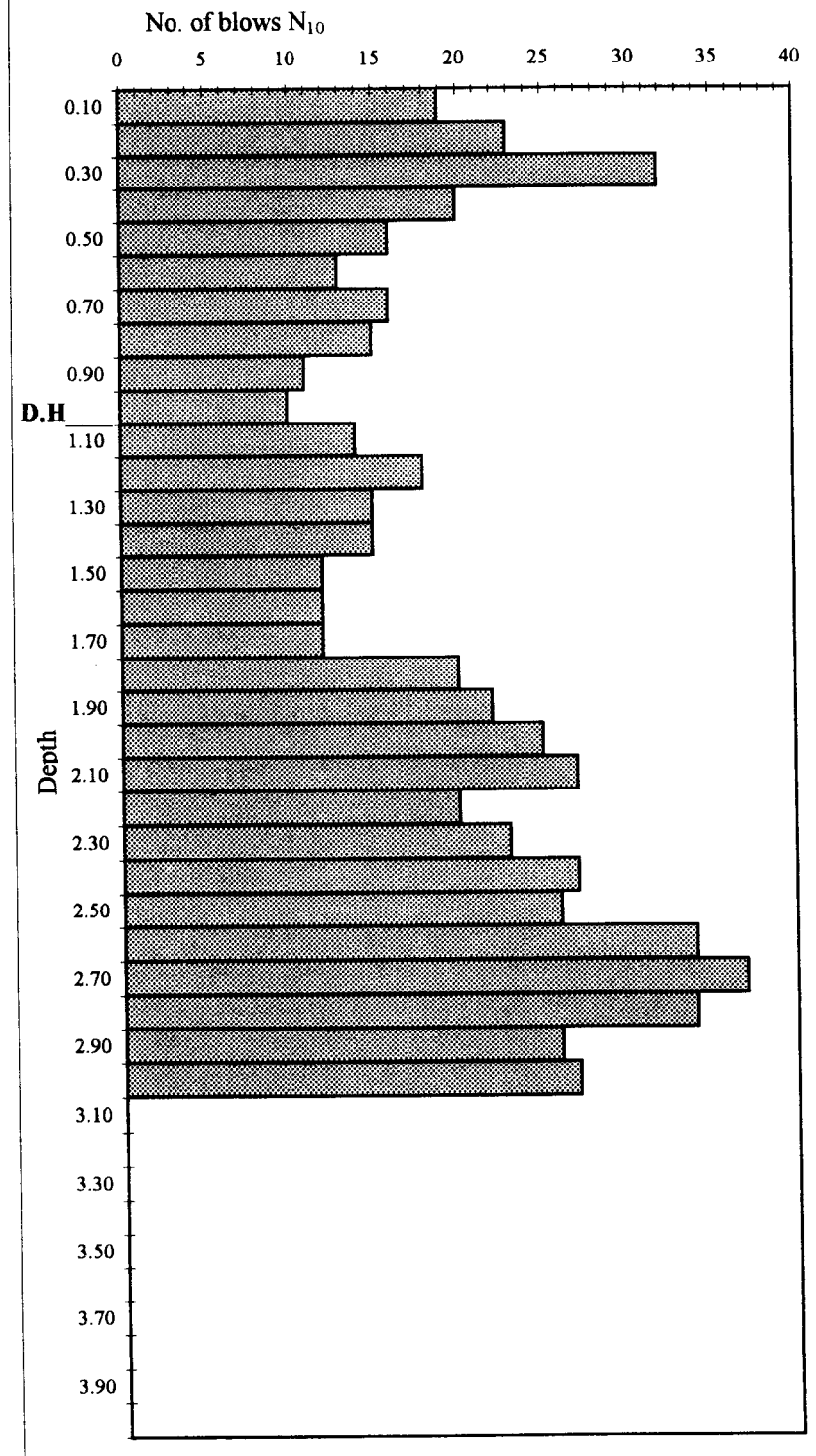
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 001+500 / R

Date / Дата : 03. 04. 1997

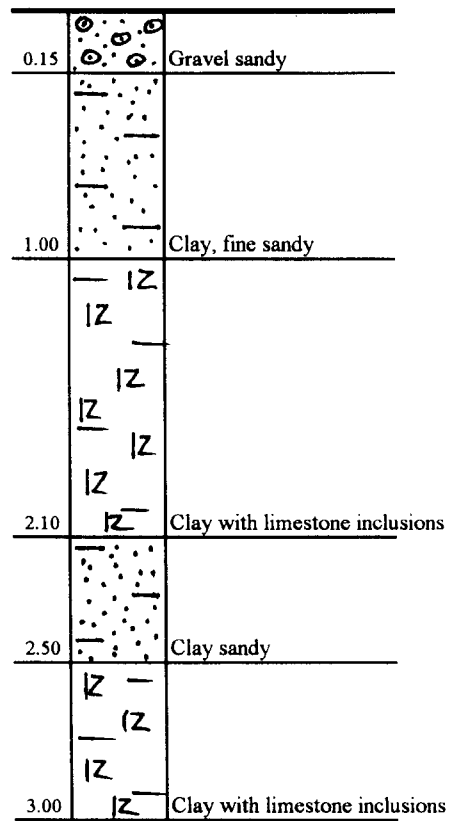
Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N ₁₀
0.10	19
0.20	23
0.30	32
0.40	20
0.50	16
0.60	13
0.70	16
0.80	15
0.90	11
1.00	10
1.10	14
1.20	18
1.30	15
1.40	15
1.50	12
1.60	12
1.70	12
1.80	20
1.90	22
2.00	25
2.10	27
2.20	20
2.30	23
2.40	27
2.50	26
2.60	34
2.70	37
2.80	34
2.90	26
3.00	27
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



SOIL SECTION

No. 1

Location/Место: km 001+500 / RData/Дата: 03.04.1997Level/Уровень: Shoulder surface

DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 2**

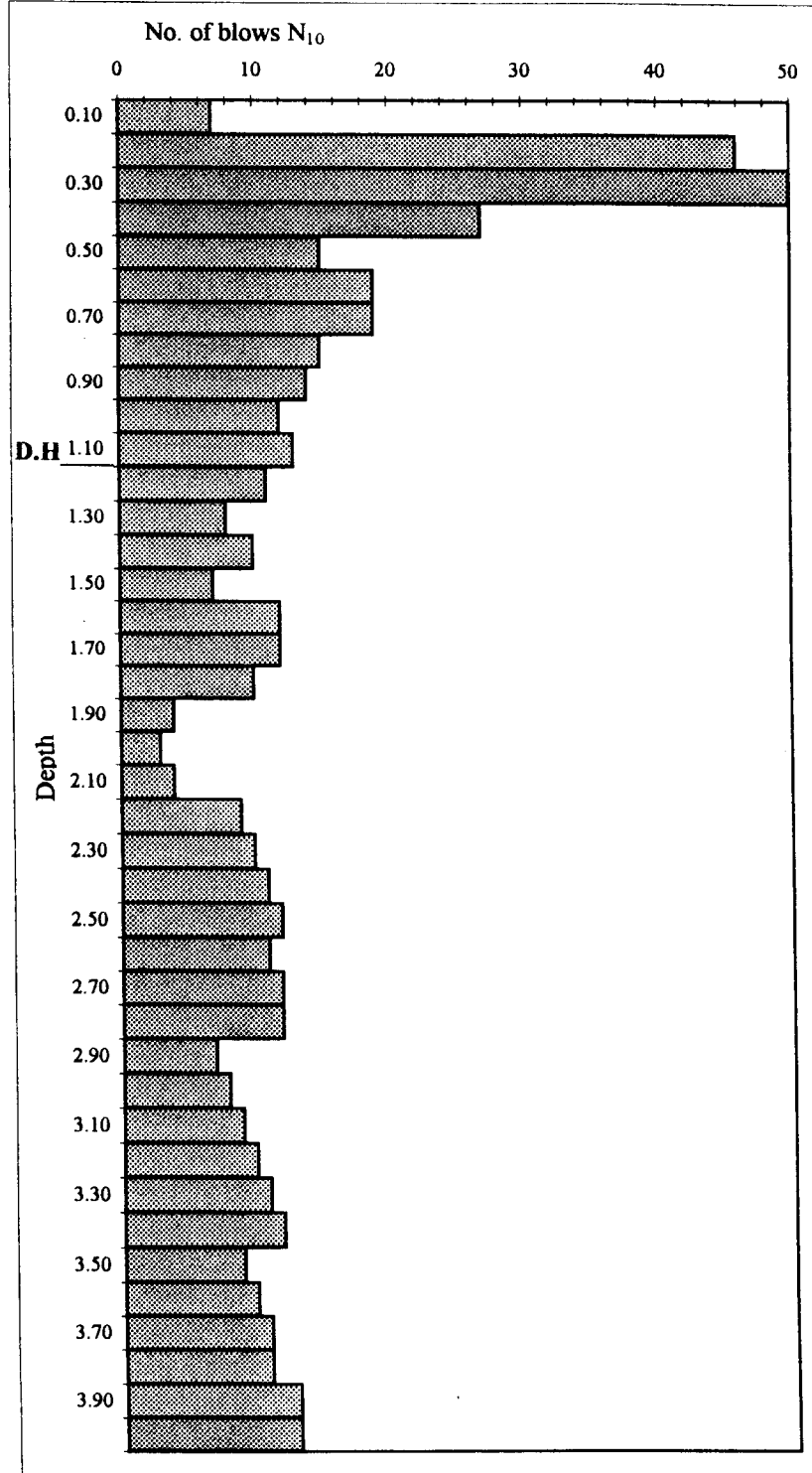
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 018+800 / L

Date / Дата : 03. 04. 1997

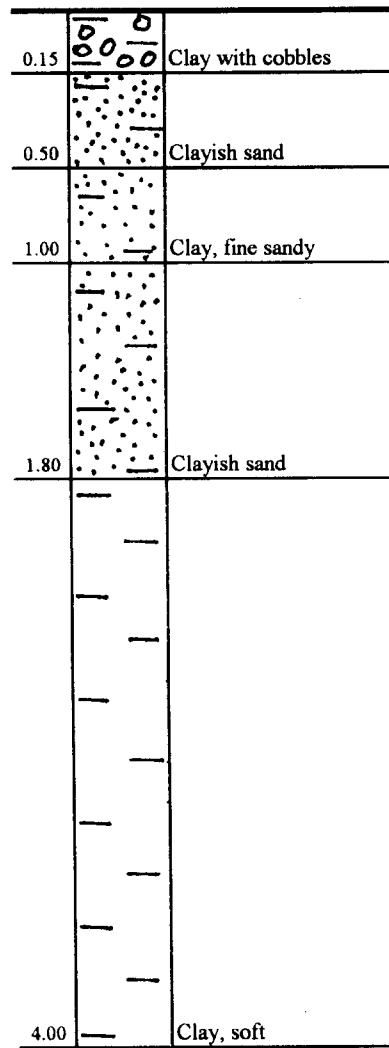
Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N_{10}
0.10	7
0.20	46
0.30	50
0.40	27
0.50	15
0.60	19
0.70	19
0.80	15
0.90	14
1.00	12
1.10	13
1.20	11
1.30	8
1.40	10
1.50	7
1.60	12
1.70	12
1.80	10
1.90	4
2.00	3
2.10	4
2.20	9
2.30	10
2.40	11
2.50	12
2.60	11
2.70	12
2.80	12
2.90	7
3.00	8
3.10	9
3.20	10
3.30	11
3.40	12
3.50	9
3.60	10
3.70	11
3.80	11
3.90	13
4.00	13



SOIL SECTION

No. 2

Location/Место: km 018+800 / LData/Дата: 03.04.1997Level/Уровень: Shoulder surface

DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)

No. 3

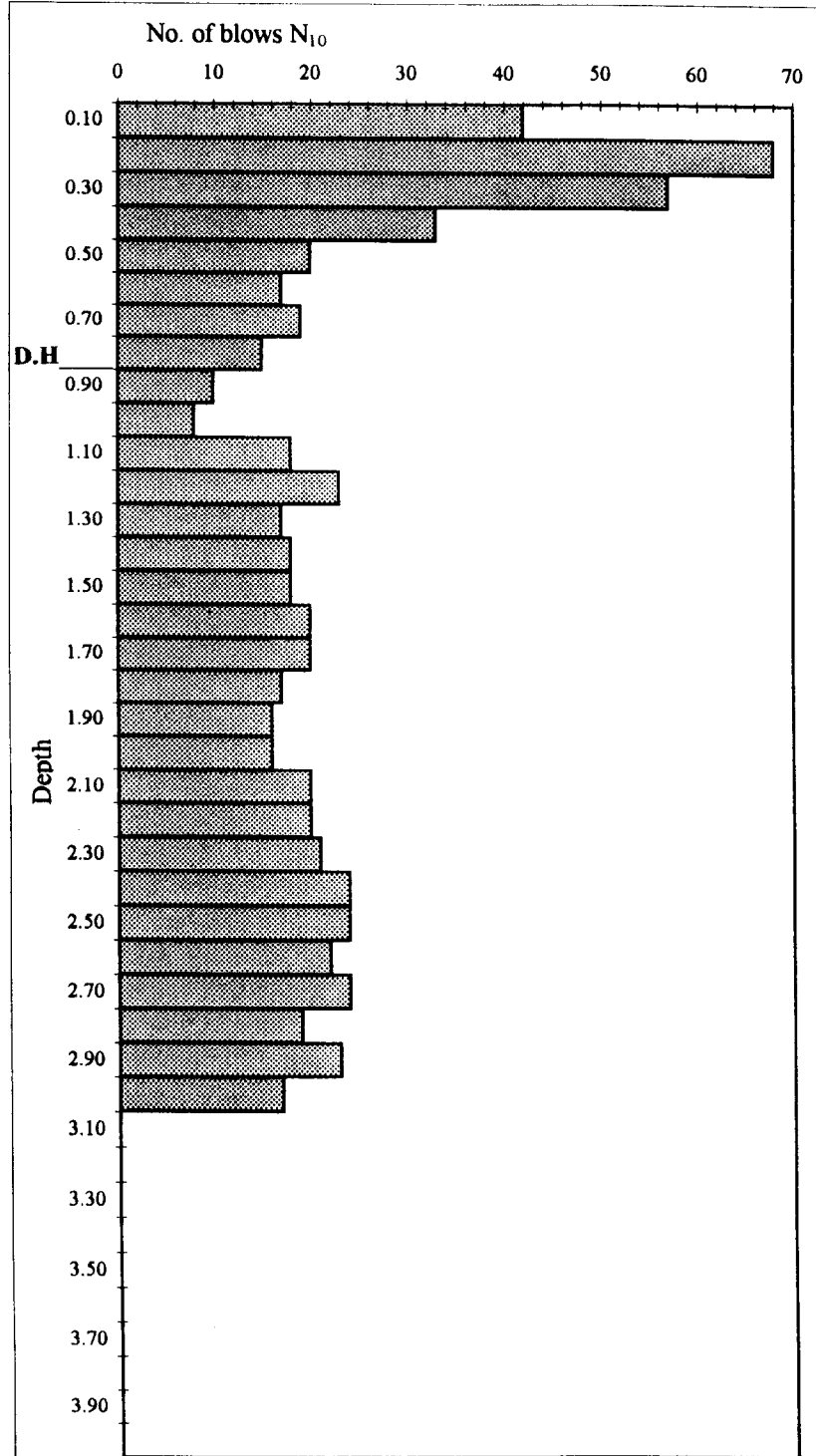
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 031+500 / L

Date / Дата : 03.04.1997

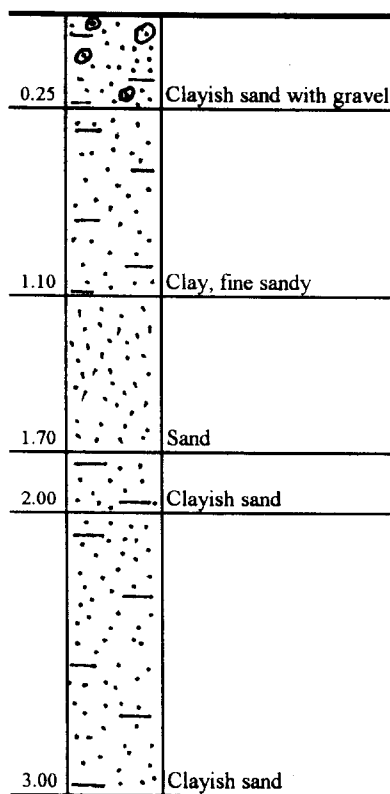
Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N ₁₀
0.10	42
0.20	68
0.30	57
0.40	33
0.50	20
0.60	17
0.70	19
0.80	15
0.90	10
1.00	8
1.10	18
1.20	23
1.30	17
1.40	18
1.50	18
1.60	20
1.70	20
1.80	17
1.90	16
2.00	16
2.10	20
2.20	20
2.30	21
2.40	24
2.50	24
2.60	22
2.70	24
2.80	19
2.90	23
3.00	17
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



SOIL SECTION

No. 3

Location/Место: km 031+500/ LData/Дата: 03.04.1997Level/Уровень: Shoulder surface

DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 4**

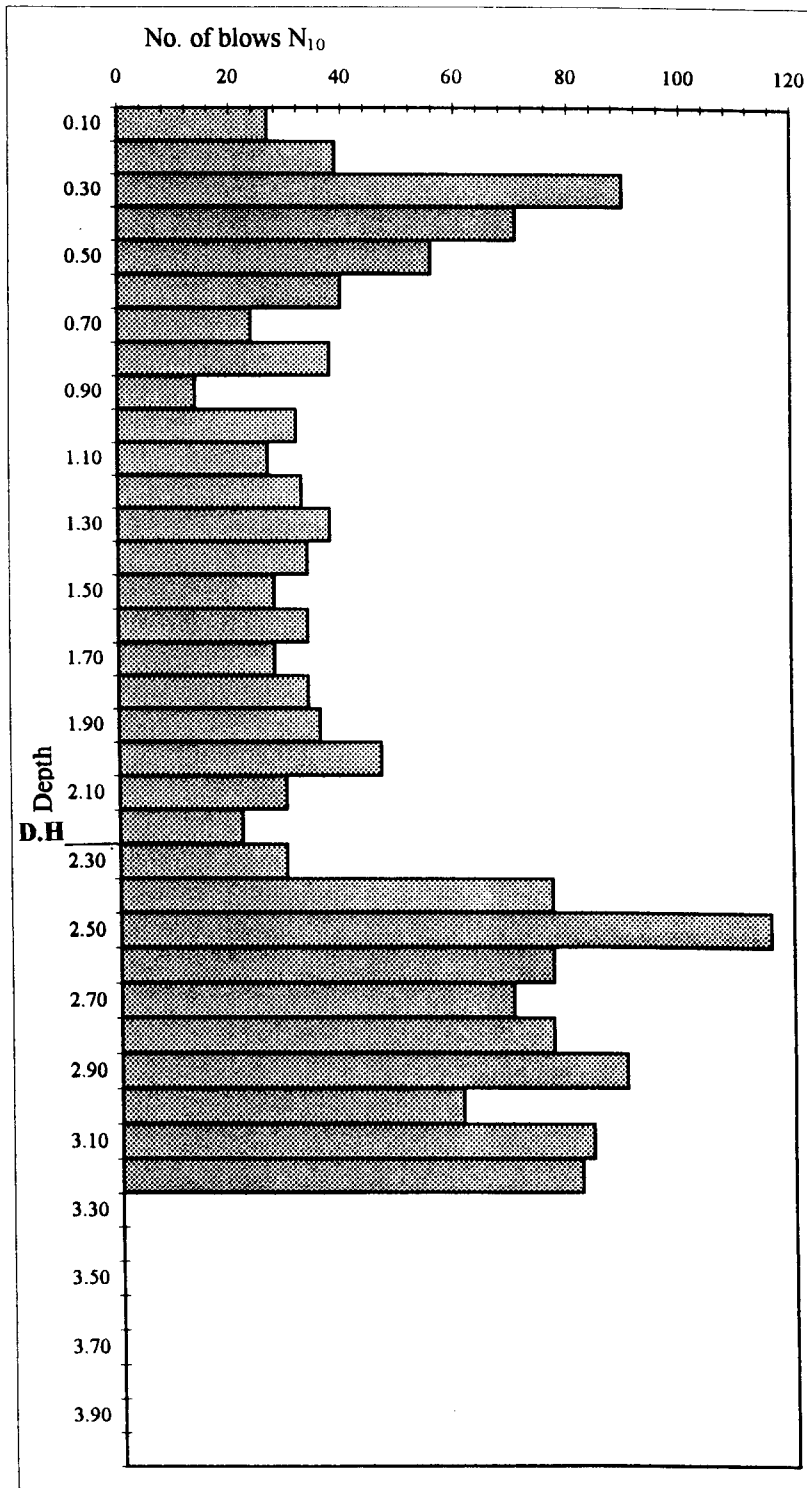
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 044+000 / R

Date / Дата : 04. 04. 1997

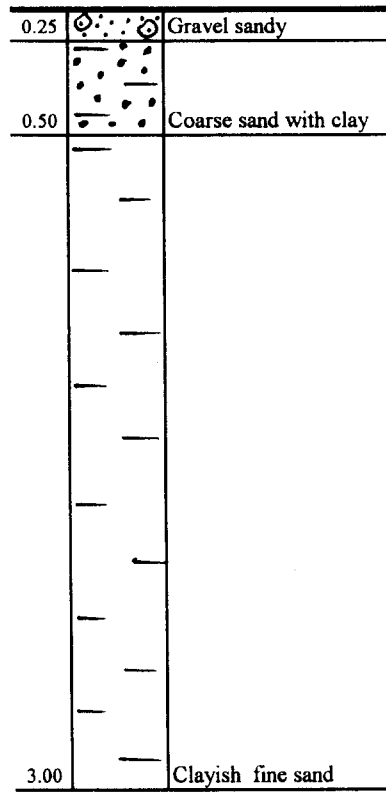
Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N_{10}
0.10	27
0.20	39
0.30	90
0.40	71
0.50	56
0.60	40
0.70	24
0.80	38
0.90	14
1.00	32
1.10	27
1.20	33
1.30	38
1.40	34
1.50	28
1.60	34
1.70	28
1.80	34
1.90	36
2.00	47
2.10	30
2.20	22
2.30	30
2.40	77
2.50	116
2.60	77
2.70	70
2.80	77
2.90	90
3.00	61
3.10	84
3.20	82
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



SOIL SECTION

No. 4

Location/Место: km 044+000 / RData/Дата: 04.04.1997Level/Уровень: Shoulder surface

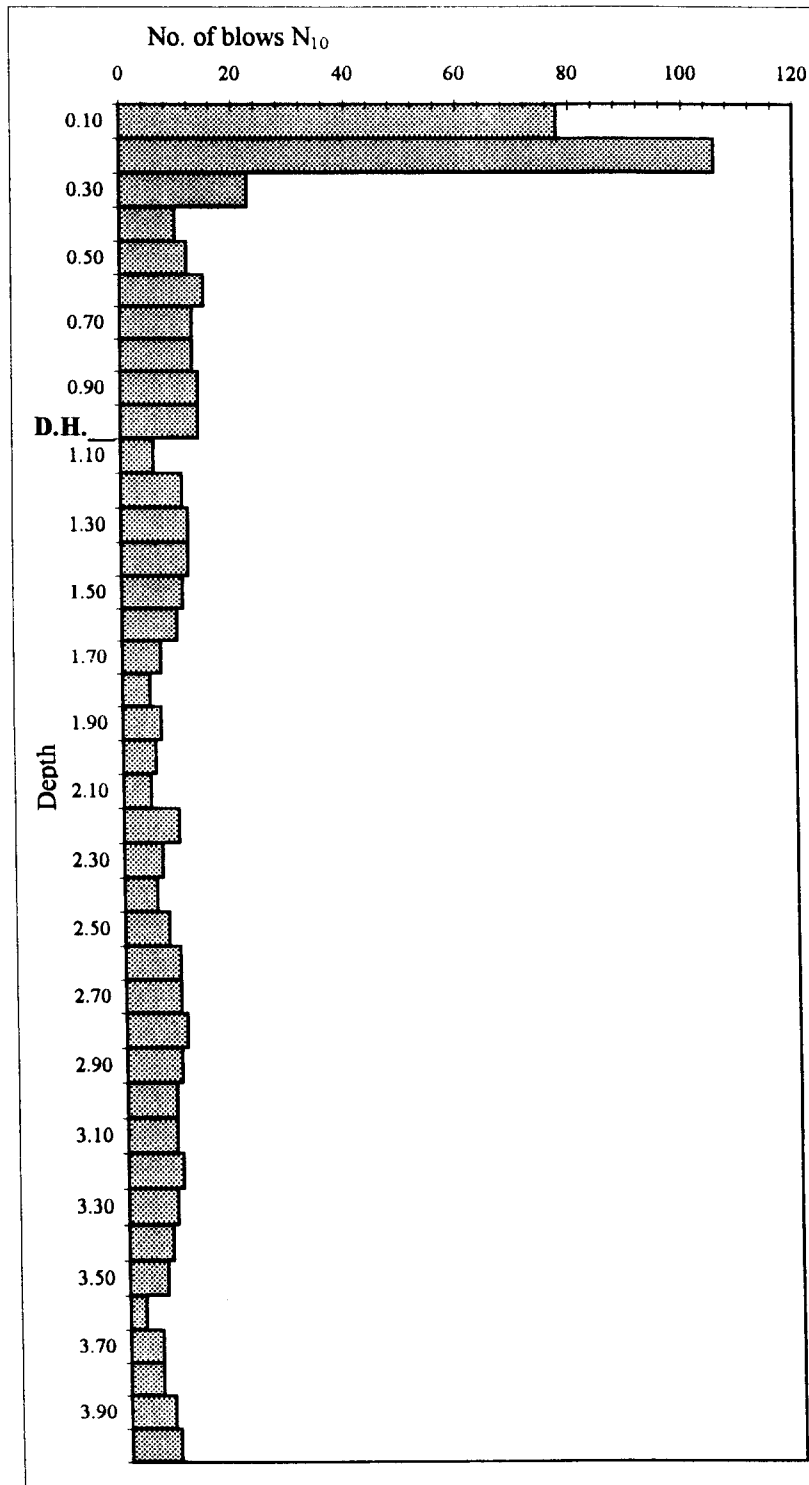
DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 5.1****Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)**

Location / место : km 049+800 / R

Date / Дата : 04. 04. 1997

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число
[m]	вдуваний
	N_{10}
0.10	78
0.20	106
0.30	23
0.40	10
0.50	12
0.60	15
0.70	13
0.80	13
0.90	14
1.00	14
1.10	6
1.20	11
1.30	12
1.40	12
1.50	11
1.60	10
1.70	7
1.80	5
1.90	7
2.00	6
2.10	5
2.20	10
2.30	7
2.40	6
2.50	8
2.60	10
2.70	10
2.80	11
2.90	10
3.00	9
3.10	9
3.20	10
3.30	9
3.40	8
3.50	7
3.60	3
3.70	6
3.80	6
3.90	8
4.00	9



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 5.2**

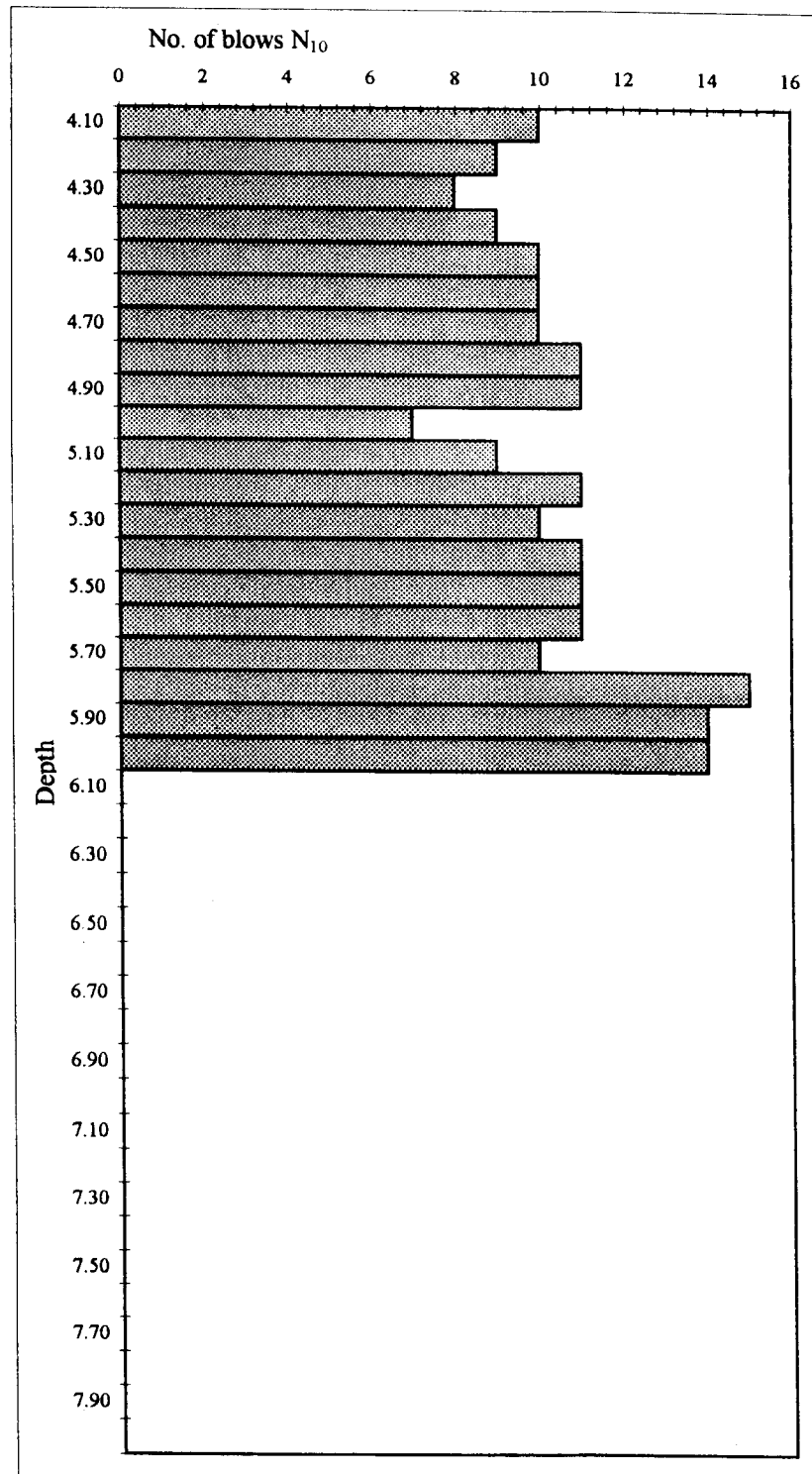
Динамические пробы Легкие (ДПЛ 5, в соотв.ДИН4094)

Location / место : km 049+800 / R

Date / Дата : 04. 04. 1997

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N_{10}
4.10	10
4.20	9
4.30	8
4.40	9
4.50	10
4.60	10
4.70	10
4.80	11
4.90	11
5.00	7
5.10	9
5.20	11
5.30	10
5.40	11
5.50	11
5.60	11
5.70	10
5.80	15
5.90	14
6.00	14
6.10	
6.20	
6.30	
6.40	
6.50	
6.60	
6.70	
6.80	
6.90	
7.00	
7.10	
7.20	
7.30	
7.40	
7.50	
7.60	
7.70	
7.80	
7.90	
8.00	



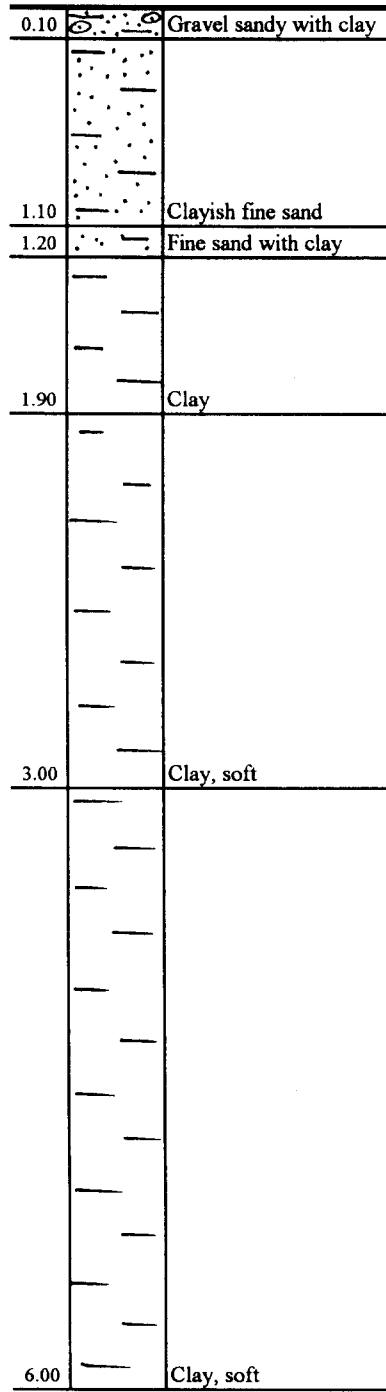
SOIL SECTION

No. 5

Location/Место: km 049 + 800/ R

Data/Дата: 04.04.1997

Level/Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 6**

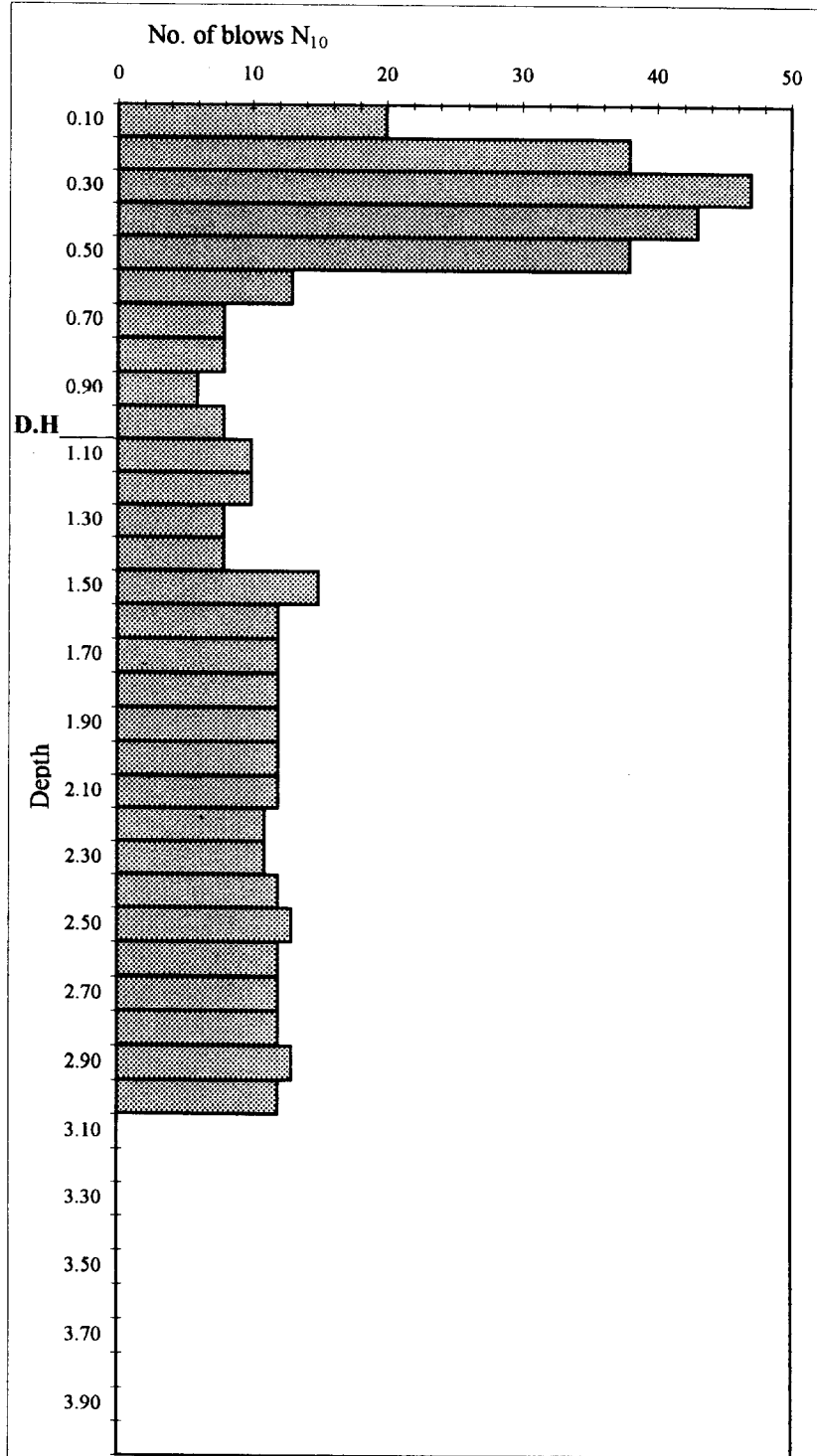
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 053+800 / R

Date / Дата : 05. 04. 1997

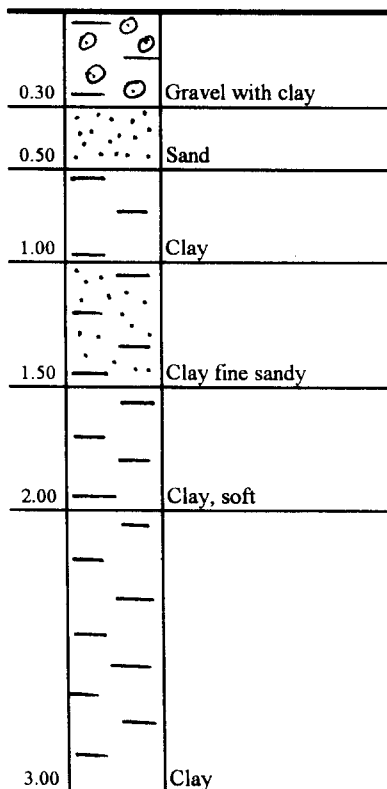
Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N_{10}
0.10	20
0.20	38
0.30	47
0.40	43
0.50	38
0.60	13
0.70	8
0.80	8
0.90	6
1.00	8
1.10	10
1.20	10
1.30	8
1.40	8
1.50	15
1.60	12
1.70	12
1.80	12
1.90	12
2.00	12
2.10	12
2.20	11
2.30	11
2.40	12
2.50	13
2.60	12
2.70	12
2.80	12
2.90	13
3.00	12
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



SOIL SECTION

No. 6

Location/Место: km 053+800 / RData/Дата: 05.04.1997Level/Уровень: Shoulder surface

DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 7**

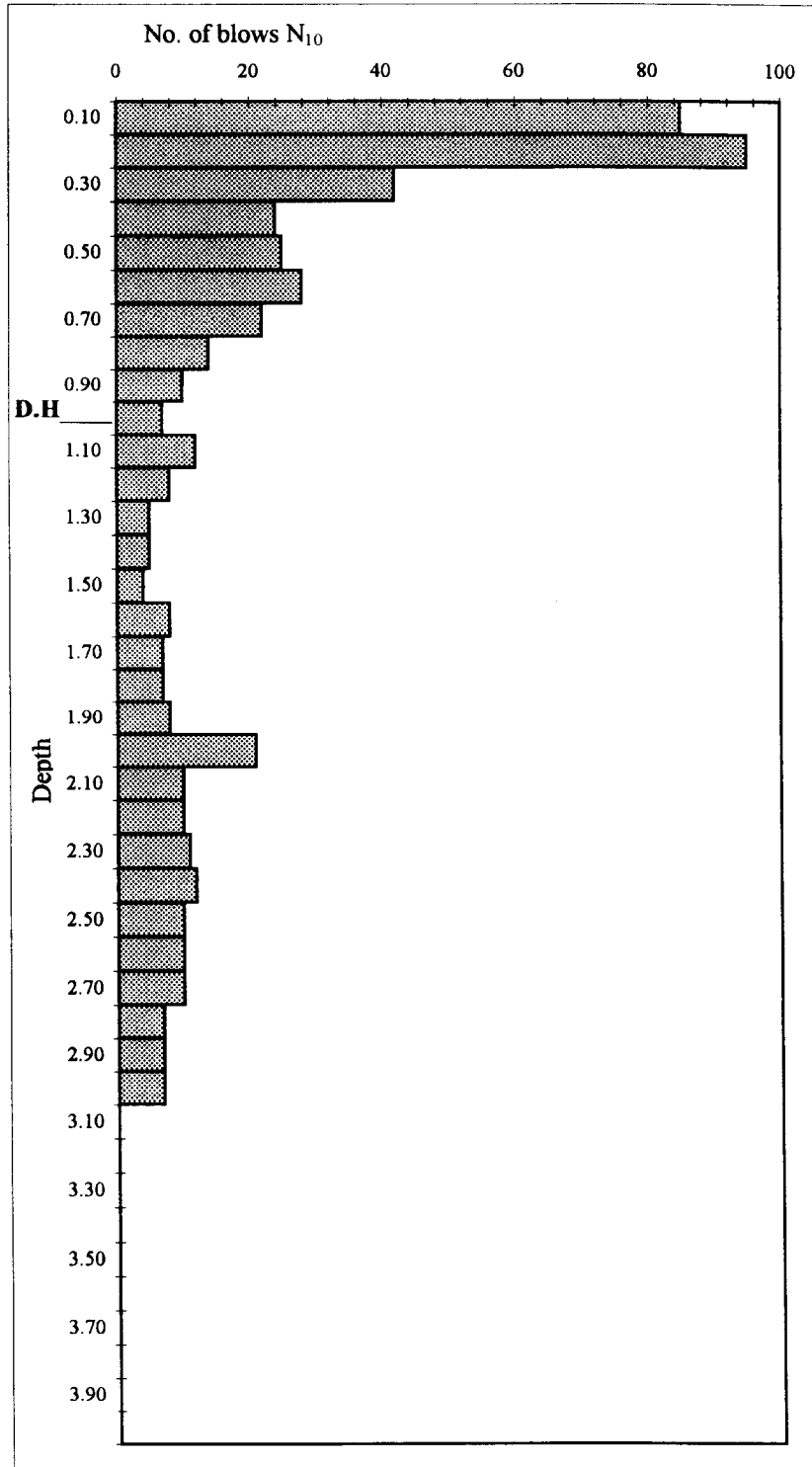
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 057+400 / L

Date / Дата : 05. 04. 1997

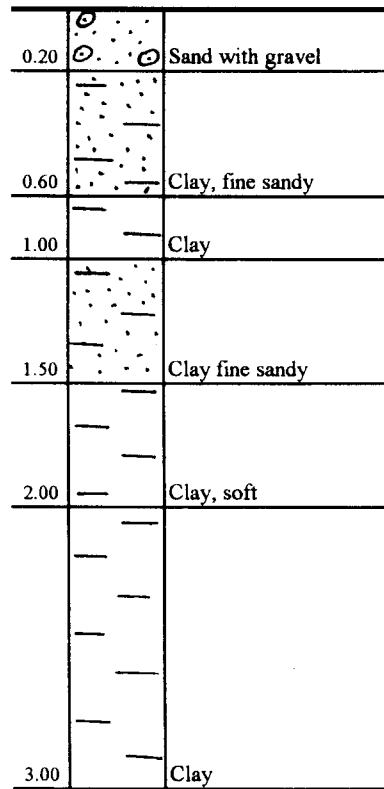
Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N_{10}
0.10	85
0.20	95
0.30	42
0.40	24
0.50	25
0.60	28
0.70	22
0.80	14
0.90	10
1.00	7
1.10	12
1.20	8
1.30	5
1.40	5
1.50	4
1.60	8
1.70	7
1.80	7
1.90	8
2.00	21
2.10	10
2.20	10
2.30	11
2.40	12
2.50	10
2.60	10
2.70	10
2.80	7
2.90	7
3.00	7
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



SOIL SECTION

No. 7

Location/Место: km 057+400 / LData/Дата: 05.04.1997Level/Уровень: Shoulder surface

DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 8**

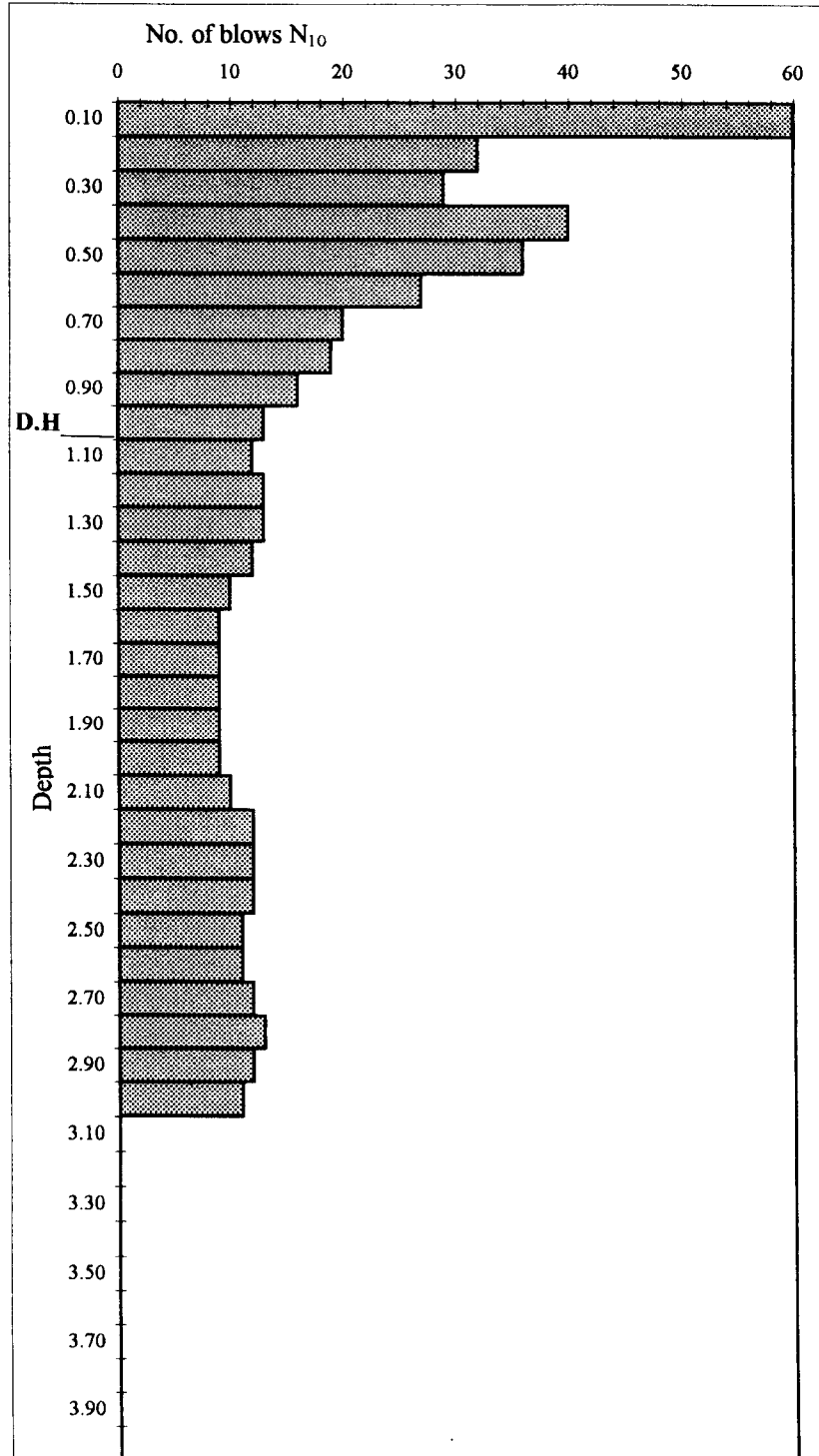
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 063+100 / R.

Date / Дата : 05. 04. 1997

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N ₁₀
0.10	60
0.20	32
0.30	29
0.40	40
0.50	36
0.60	27
0.70	20
0.80	19
0.90	16
1.00	13
1.10	12
1.20	13
1.30	13
1.40	12
1.50	10
1.60	9
1.70	9
1.80	9
1.90	9
2.00	9
2.10	10
2.20	12
2.30	12
2.40	12
2.50	11
2.60	11
2.70	12
2.80	13
2.90	12
3.00	11
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



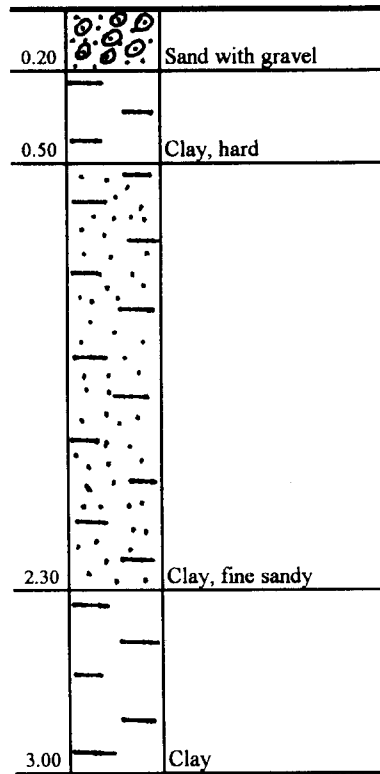
SOIL SECTION

No. 8

Location/Место: k 063+100 / R

Data/Дата: 05.04.1997

Level/Уровень: Shoulder surface



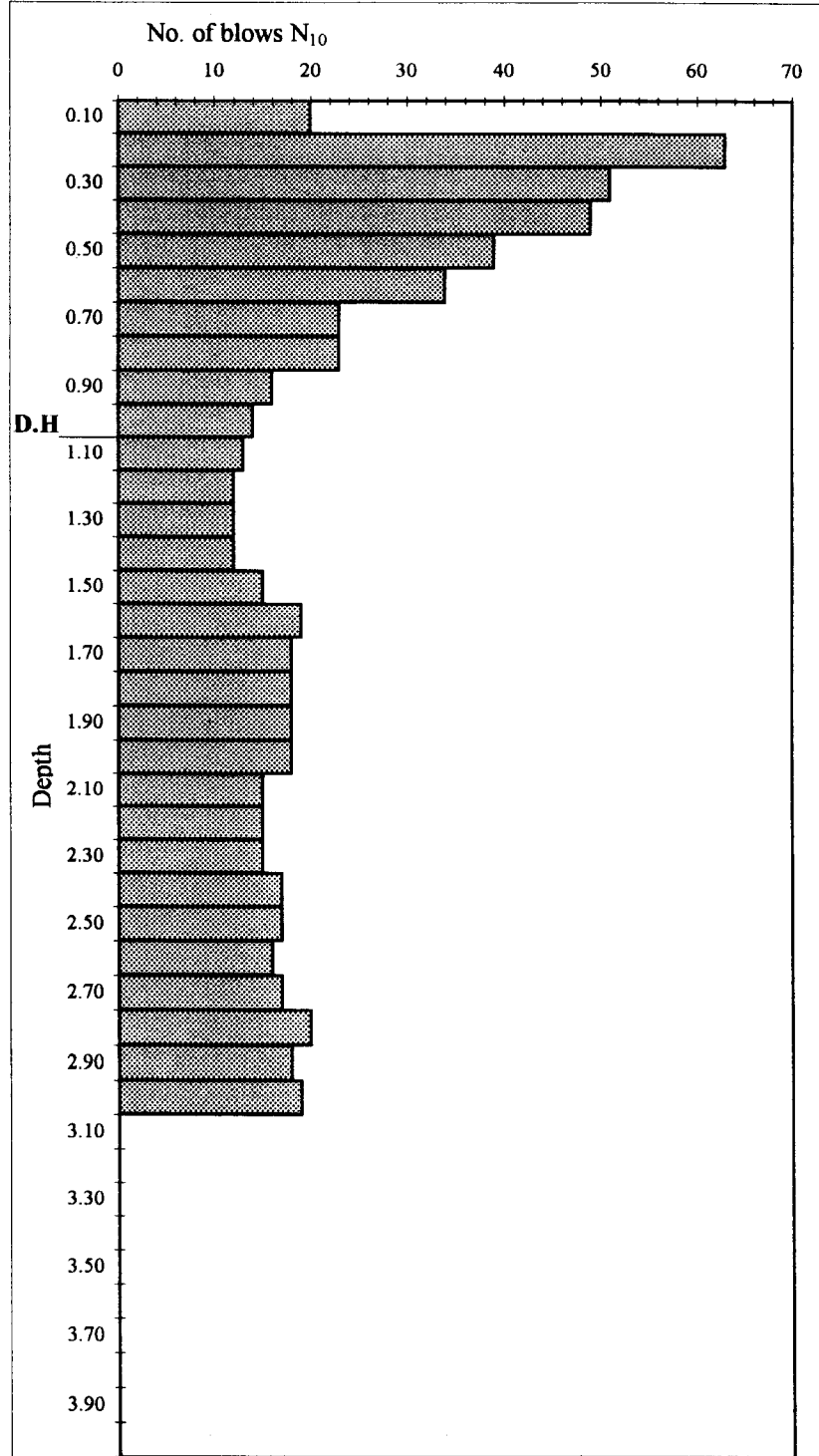
DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 9****Динамические пробы Легкие (ДПЛ 5, в соотв.ДИН4094)**

Location / место : km 075+800 / R

Date / Дата : 06. 04. 1997

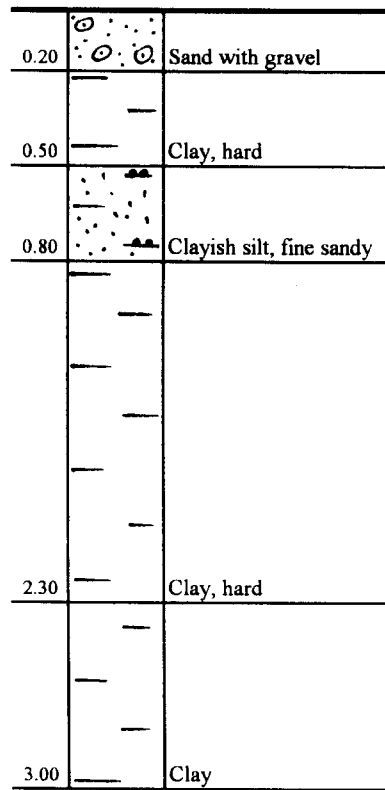
Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N ₁₀
0.10	20
0.20	63
0.30	51
0.40	49
0.50	39
0.60	34
0.70	23
0.80	23
0.90	16
1.00	14
1.10	13
1.20	12
1.30	12
1.40	12
1.50	15
1.60	19
1.70	18
1.80	18
1.90	18
2.00	18
2.10	15
2.20	15
2.30	15
2.40	17
2.50	17
2.60	16
2.70	17
2.80	20
2.90	18
3.00	19
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



SOIL SECTION

No. 9

Location/Место: km 075+800 / RData/Дата: 06.04.1997Level/Уровень: Shoulder surface

DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 10**

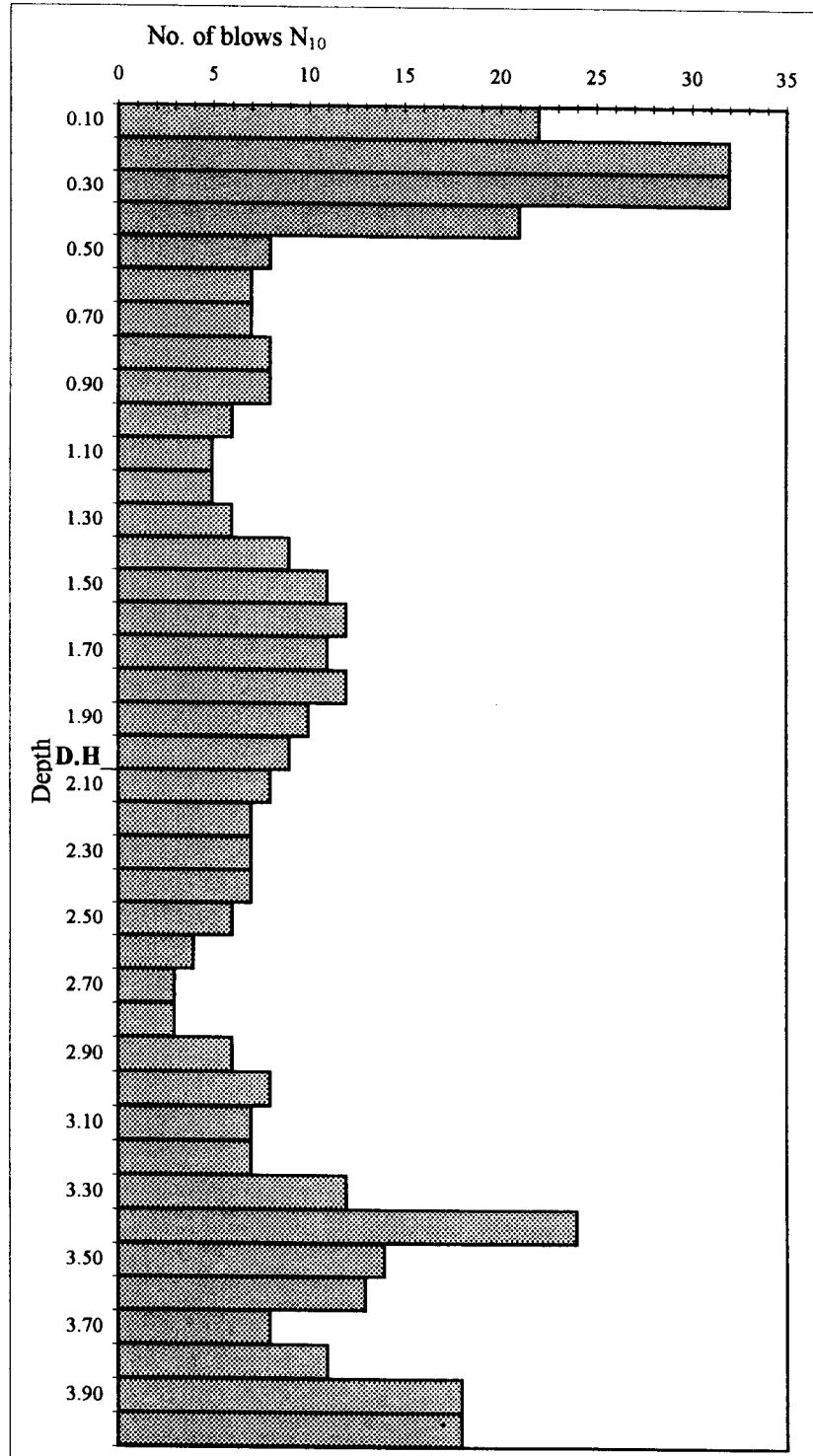
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 080+100 / R

Date / Дата : 06. 04. 1997

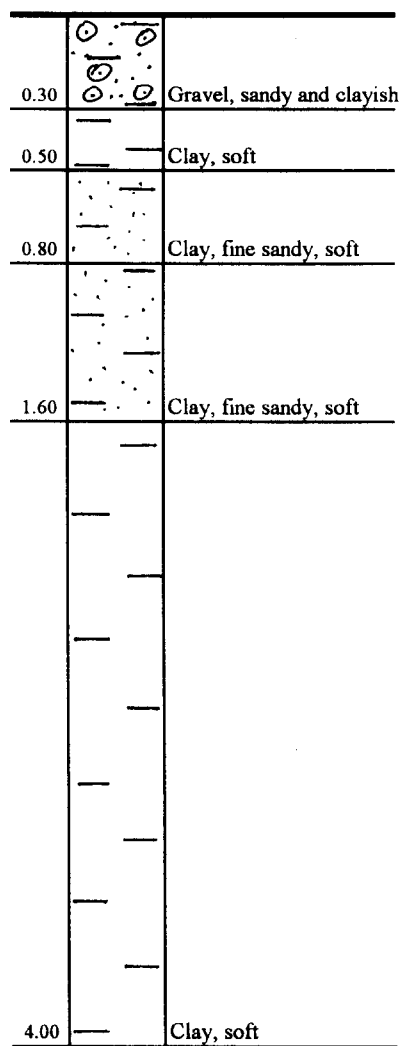
Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдвиганий
[m]	N ₁₀
0.10	22
0.20	32
0.30	32
0.40	21
0.50	8
0.60	7
0.70	7
0.80	8
0.90	8
1.00	6
1.10	5
1.20	5
1.30	6
1.40	9
1.50	11
1.60	12
1.70	11
1.80	12
1.90	10
2.00	9
2.10	8
2.20	7
2.30	7
2.40	7
2.50	6
2.60	4
2.70	3
2.80	3
2.90	6
3.00	8
3.10	7
3.20	7
3.30	12
3.40	24
3.50	14
3.60	13
3.70	8
3.80	11
3.90	18
4.00	18



SOIL SECTION

No. 10

Location/Место: km 080+100 / R**Data/Дата:** 06.04.1997**Level/Уровень:** Shoulder surface

DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 11**

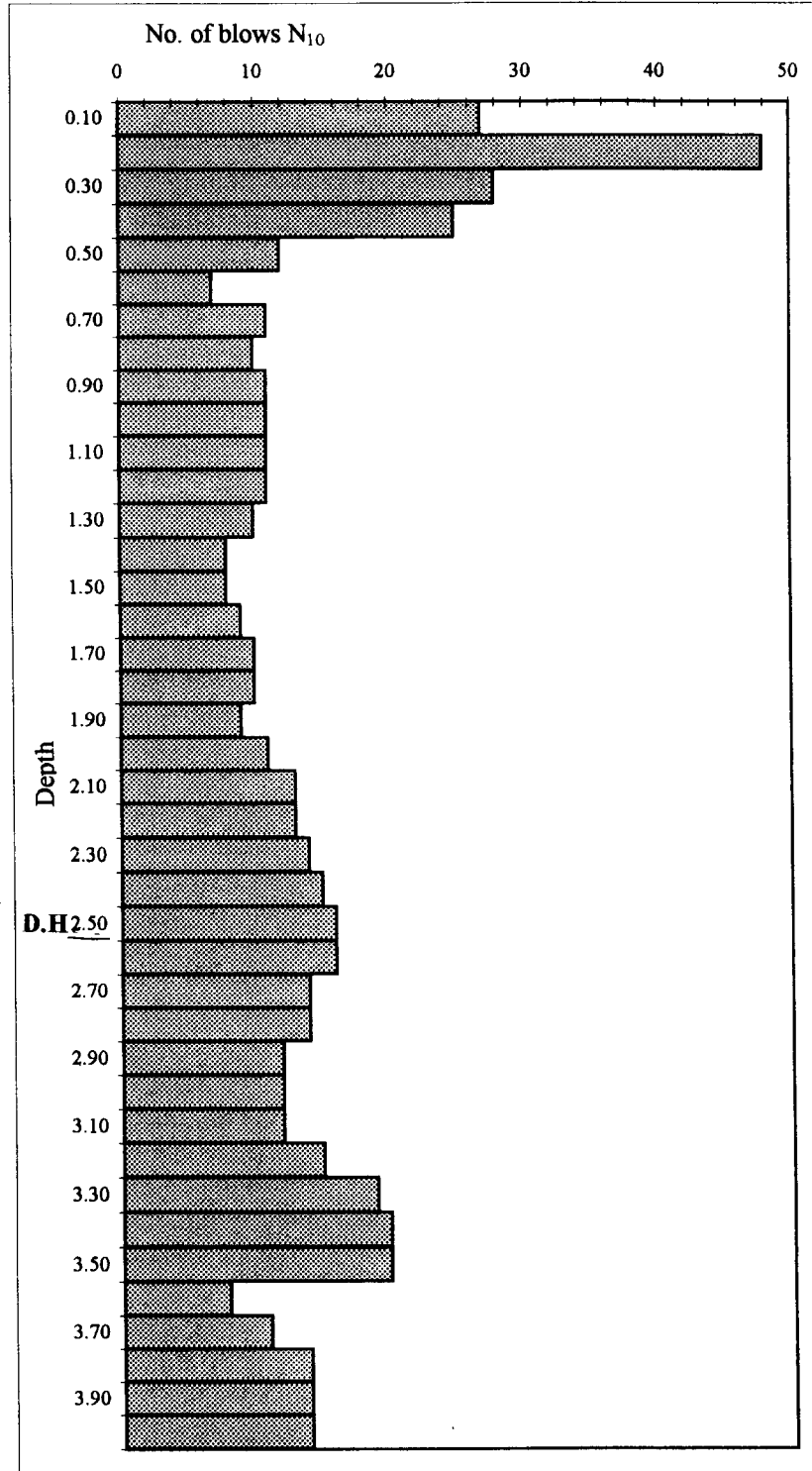
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 088+000 / R

Date / Дата : 06. 04. 1997

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N_{10}
0.10	27
0.20	48
0.30	28
0.40	25
0.50	12
0.60	7
0.70	11
0.80	10
0.90	11
1.00	11
1.10	11
1.20	11
1.30	10
1.40	8
1.50	8
1.60	9
1.70	10
1.80	10
1.90	9
2.00	11
2.10	13
2.20	13
2.30	14
2.40	15
2.50	16
2.60	16
2.70	14
2.80	14
2.90	12
3.00	12
3.10	12
3.20	15
3.30	19
3.40	20
3.50	20
3.60	8
3.70	11
3.80	14
3.90	14
4.00	14



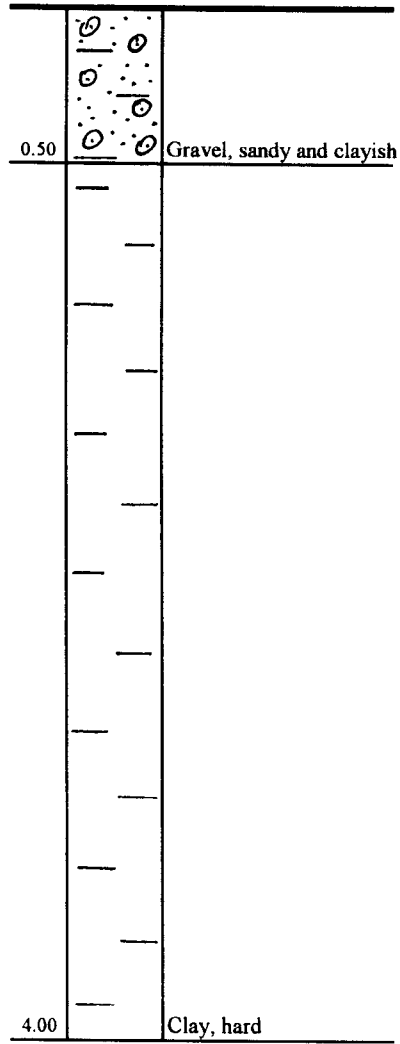
SOIL SECTION

No. 11

Location/Место: km 088+000 / R

Data/Дата: 06.04.1997

Level/Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 12**

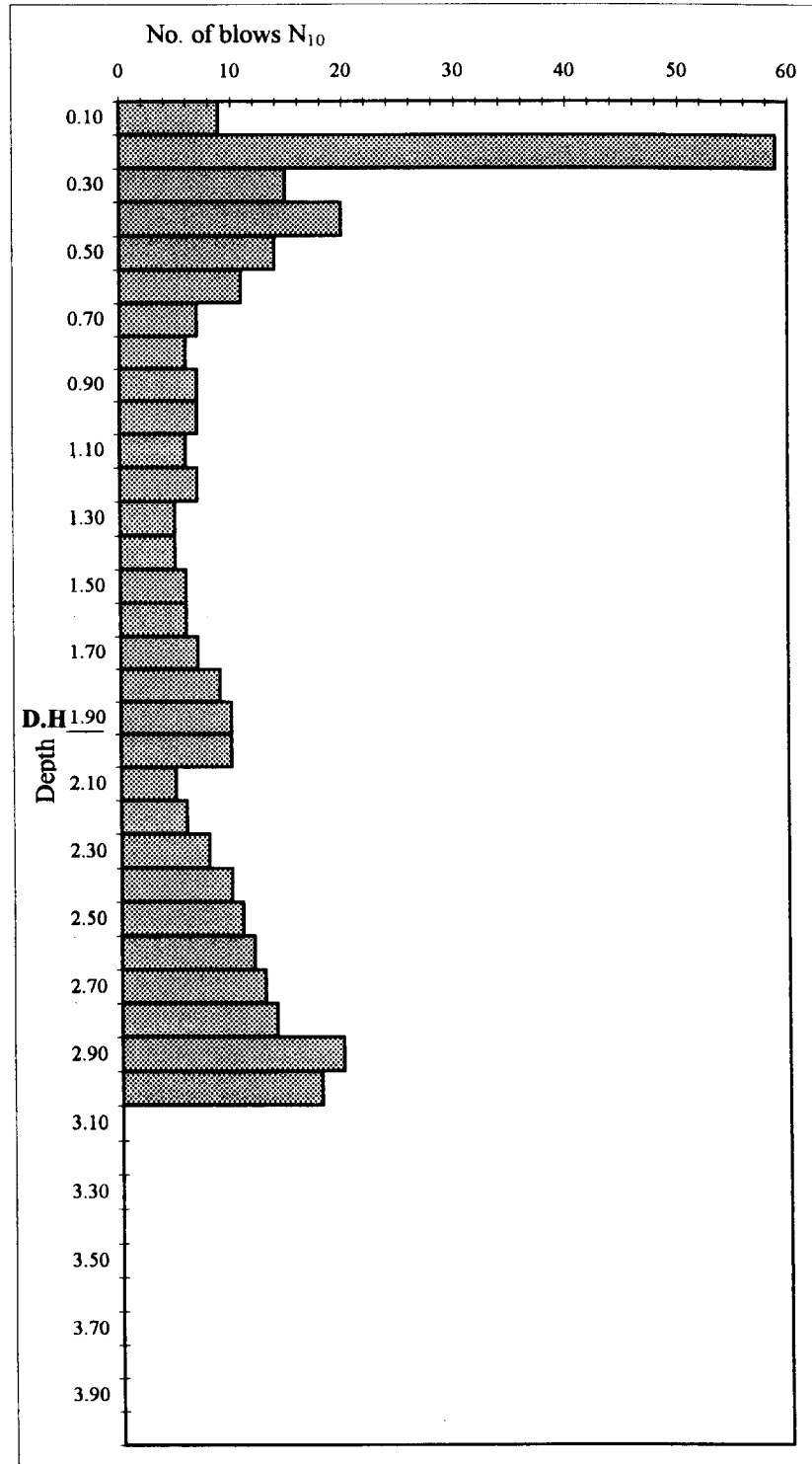
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 099+000 / R

Date / Дата : 06. 04. 1997

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N ₁₀
0.10	9
0.20	59
0.30	15
0.40	20
0.50	14
0.60	11
0.70	7
0.80	6
0.90	7
1.00	7
1.10	6
1.20	7
1.30	5
1.40	5
1.50	6
1.60	6
1.70	7
1.80	9
1.90	10
2.00	10
2.10	5
2.20	6
2.30	8
2.40	10
2.50	11
2.60	12
2.70	13
2.80	14
2.90	20
3.00	18
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



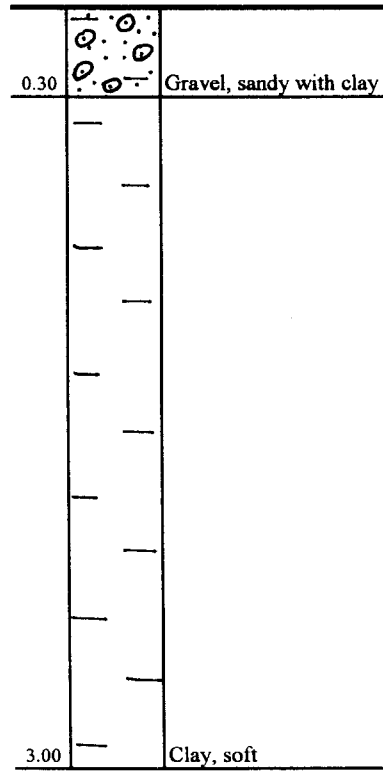
SOIL SECTION

No. 12

Location/Место: k 099+000/ R

Data/Дата: 06.04.1997

Level/Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 13**

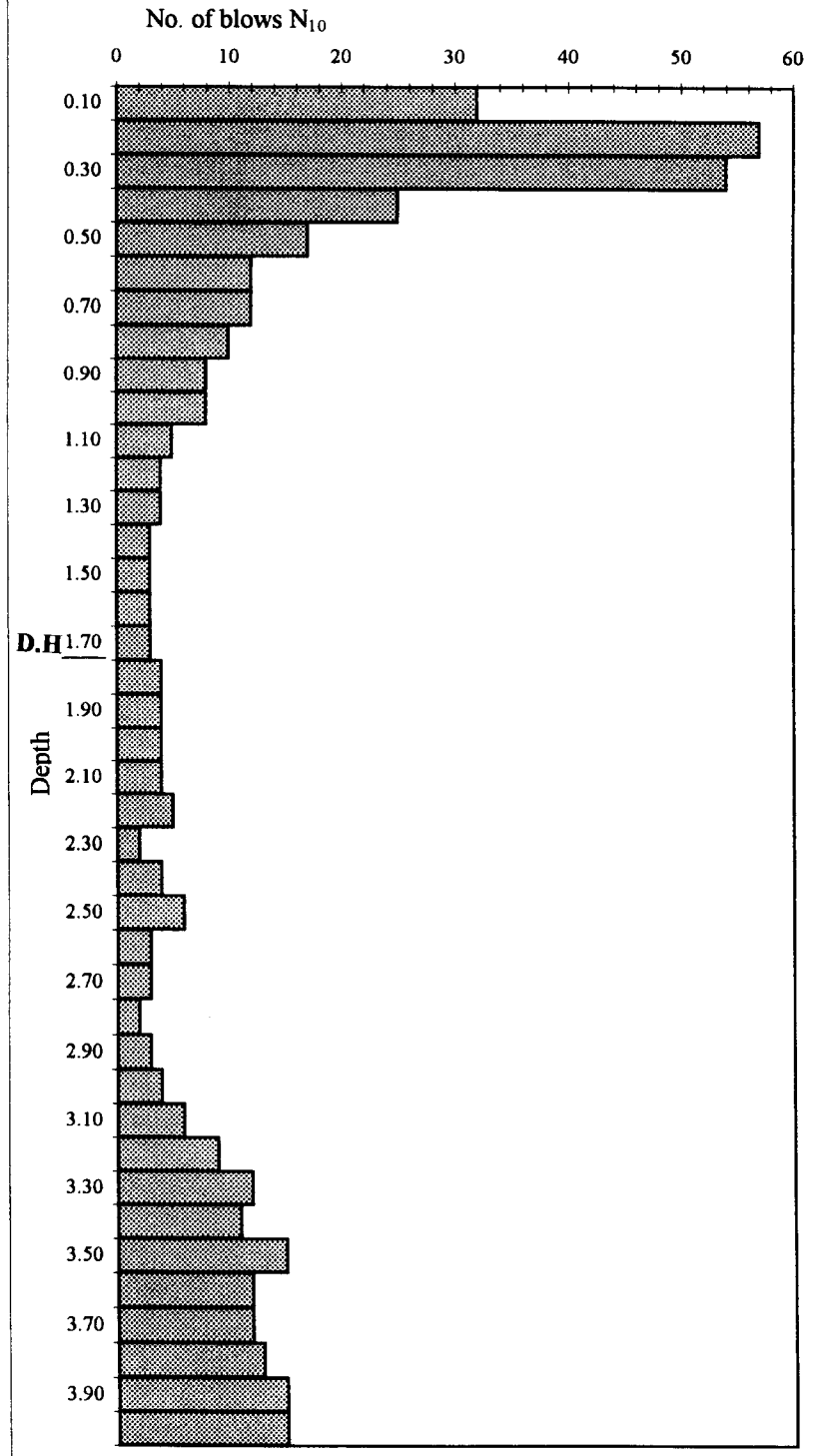
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 108+000 / R

Date / Дата : 06. 04. 1997

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N ₁₀
0.10	32
0.20	57
0.30	54
0.40	25
0.50	17
0.60	12
0.70	12
0.80	10
0.90	8
1.00	8
1.10	5
1.20	4
1.30	4
1.40	3
1.50	3
1.60	3
1.70	3
1.80	4
1.90	4
2.00	4
2.10	4
2.20	5
2.30	2
2.40	4
2.50	6
2.60	3
2.70	3
2.80	2
2.90	3
3.00	4
3.10	6
3.20	9
3.30	12
3.40	11
3.50	15
3.60	12
3.70	12
3.80	13
3.90	15
4.00	15



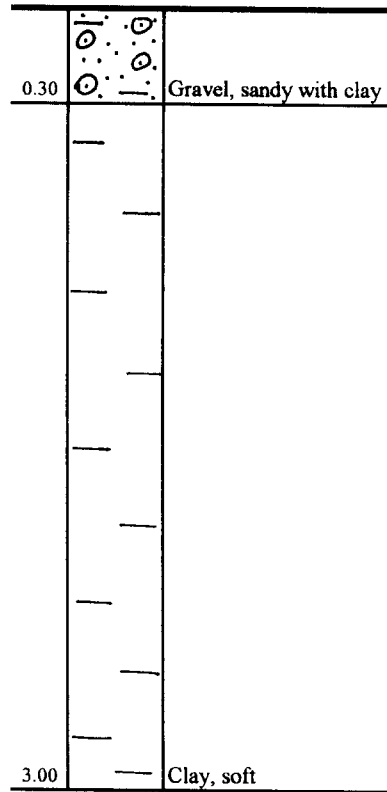
SOIL SECTION

No. 13

Location/Место: km 108+000 / R

Data/Дата: 06.04.1997

Level/Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 14**

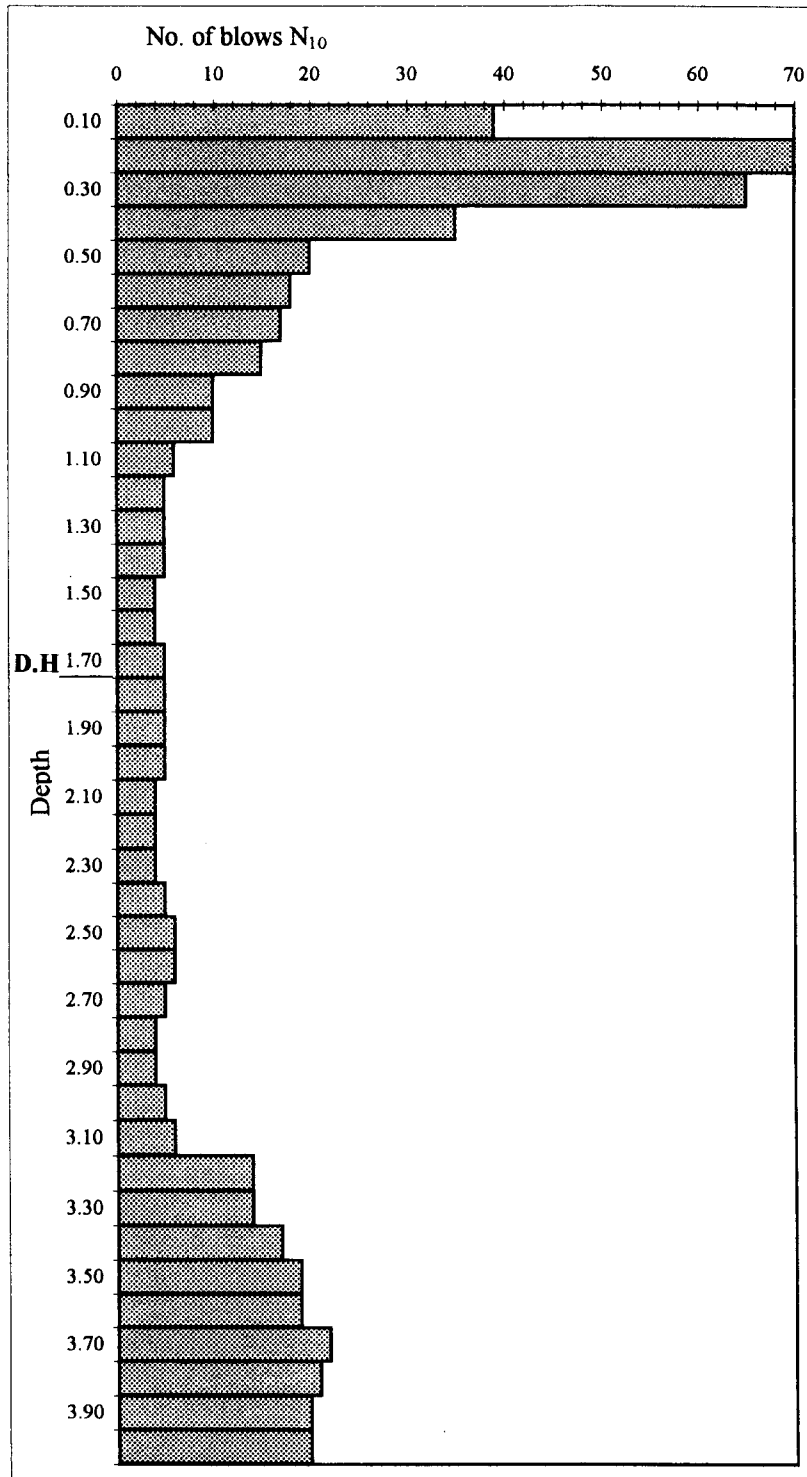
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 115+500 / L

Date / Дата : 06.04.1997

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N ₁₀
0.10	39
0.20	70
0.30	65
0.40	35
0.50	20
0.60	18
0.70	17
0.80	15
0.90	10
1.00	10
1.10	6
1.20	5
1.30	5
1.40	5
1.50	4
1.60	4
1.70	5
1.80	5
1.90	5
2.00	5
2.10	4
2.20	4
2.30	4
2.40	5
2.50	6
2.60	6
2.70	5
2.80	4
2.90	4
3.00	5
3.10	6
3.20	14
3.30	14
3.40	17
3.50	19
3.60	19
3.70	22
3.80	21
3.90	20
4.00	20



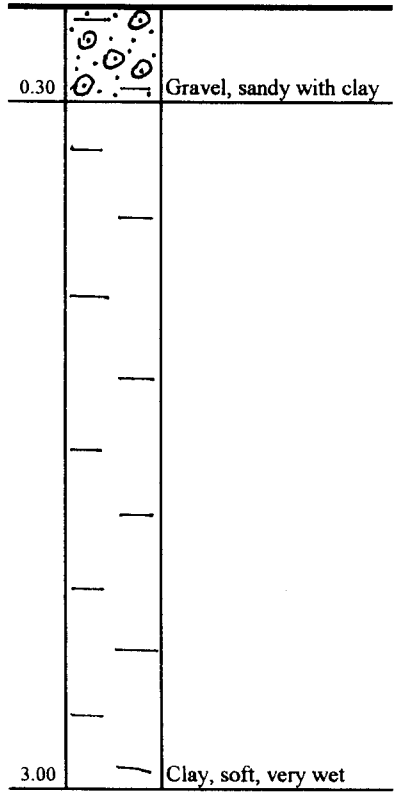
SOIL SECTION

No. 14

Location/Micro: km 115+500 / L

Data/Aara: 06.04.1997

Level/Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 15**

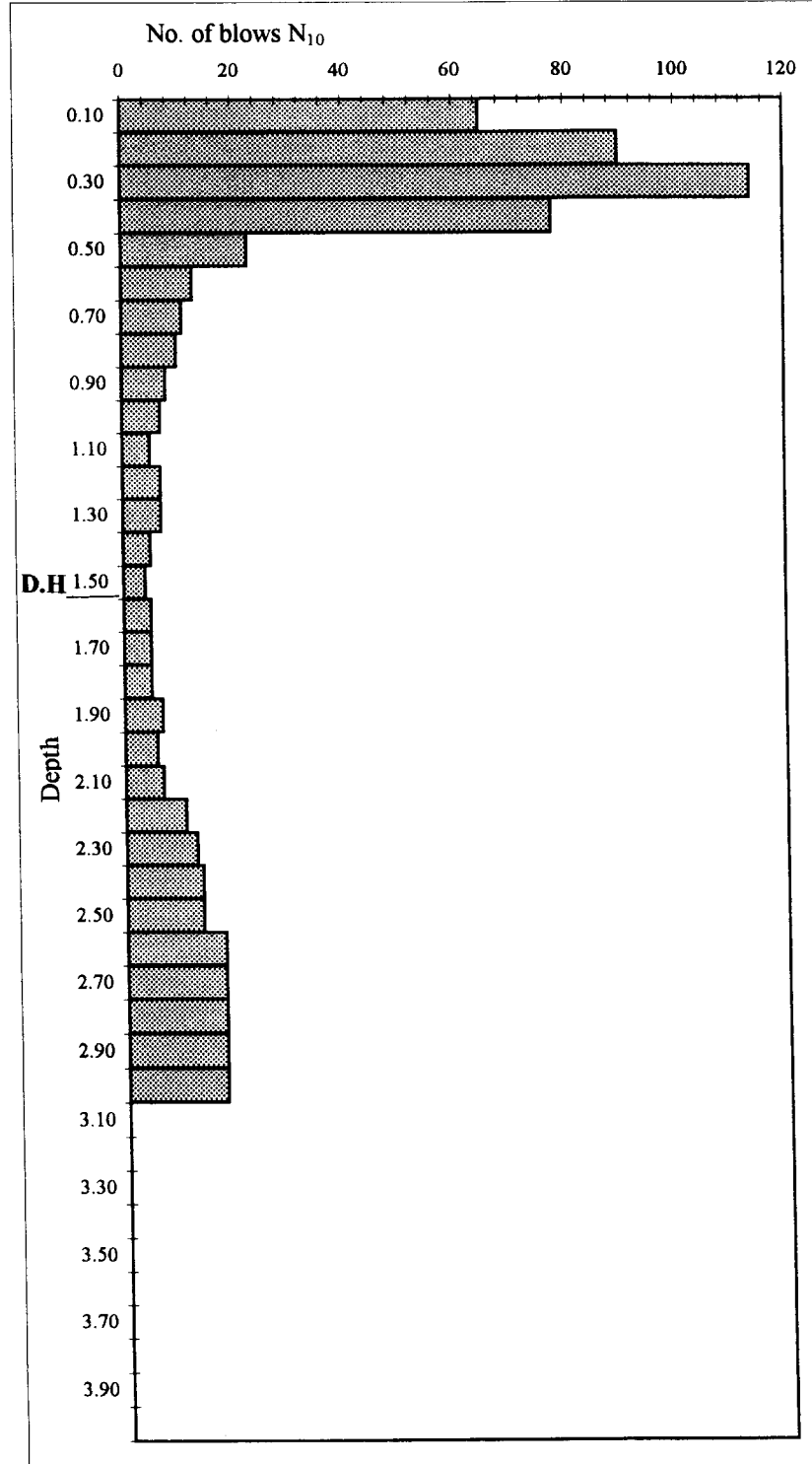
Динамические пробы Легкие (ДПЛ 5, в соотв.ДИН4094)

Location / место : km 118+800 / R

Date / Дата : 06. 04. 1997

Level / Уровень : Shoulder surface .

Depth	No. of blows
Глубина	Число вдуваний
[m]	N ₁₀
0.10	65
0.20	90
0.30	114
0.40	78
0.50	23
0.60	13
0.70	11
0.80	10
0.90	8
1.00	7
1.10	5
1.20	7
1.30	7
1.40	5
1.50	4
1.60	5
1.70	5
1.80	5
1.90	7
2.00	6
2.10	7
2.20	11
2.30	13
2.40	14
2.50	14
2.60	18
2.70	18
2.80	18
2.90	18
3.00	18
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



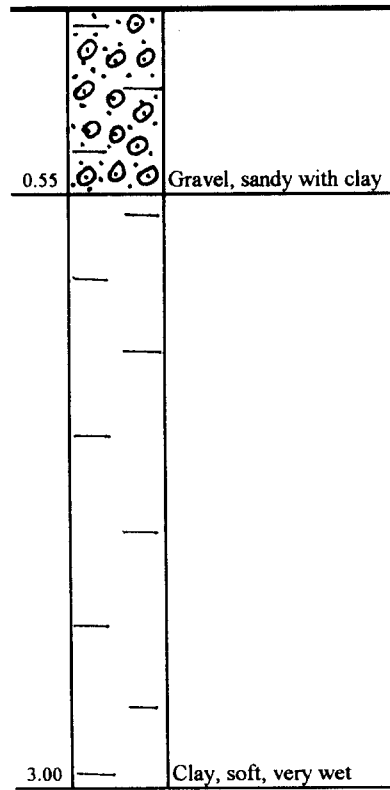
SOIL SECTION

No. 15

Location/Место: km 118+800 / R

Data/Дата: 06.04.1997

Level/Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 16**

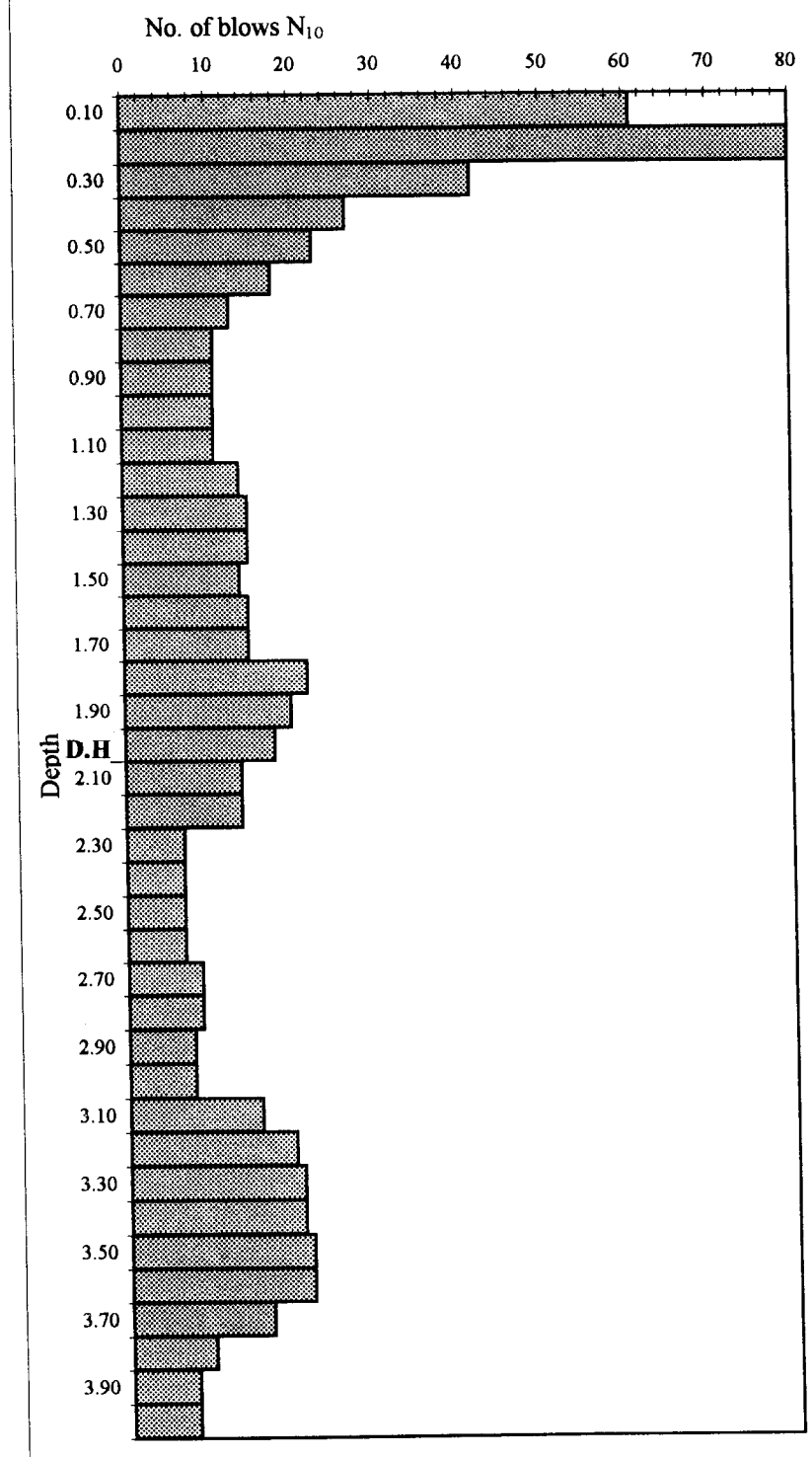
Динамические пробы Легкие (ДПЛ 5, в соотв.ДИН4094)

Location / место : km 128+800 / R

Date / Дата : 06. 04. 1997

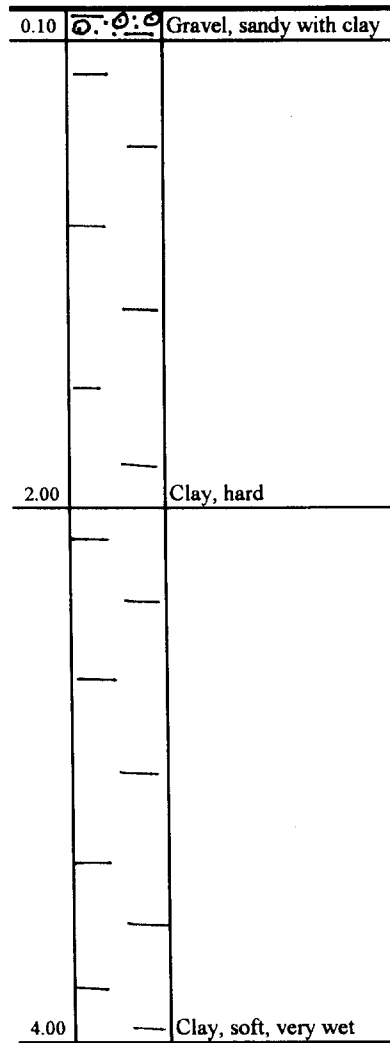
Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N_{10}
0.10	61
0.20	80
0.30	42
0.40	27
0.50	23
0.60	18
0.70	13
0.80	11
0.90	11
1.00	11
1.10	11
1.20	14
1.30	15
1.40	15
1.50	14
1.60	15
1.70	15
1.80	22
1.90	20
2.00	18
2.10	14
2.20	14
2.30	7
2.40	7
2.50	7
2.60	7
2.70	9
2.80	9
2.90	8
3.00	8
3.10	16
3.20	20
3.30	21
3.40	21
3.50	22
3.60	22
3.70	17
3.80	10
3.90	8
4.00	8



SOIL SECTION

No. 16

Location/Место: km 128+800 / RData/Дата: 06.04.1997Level/Уровень: Shoulder surface

DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 17**

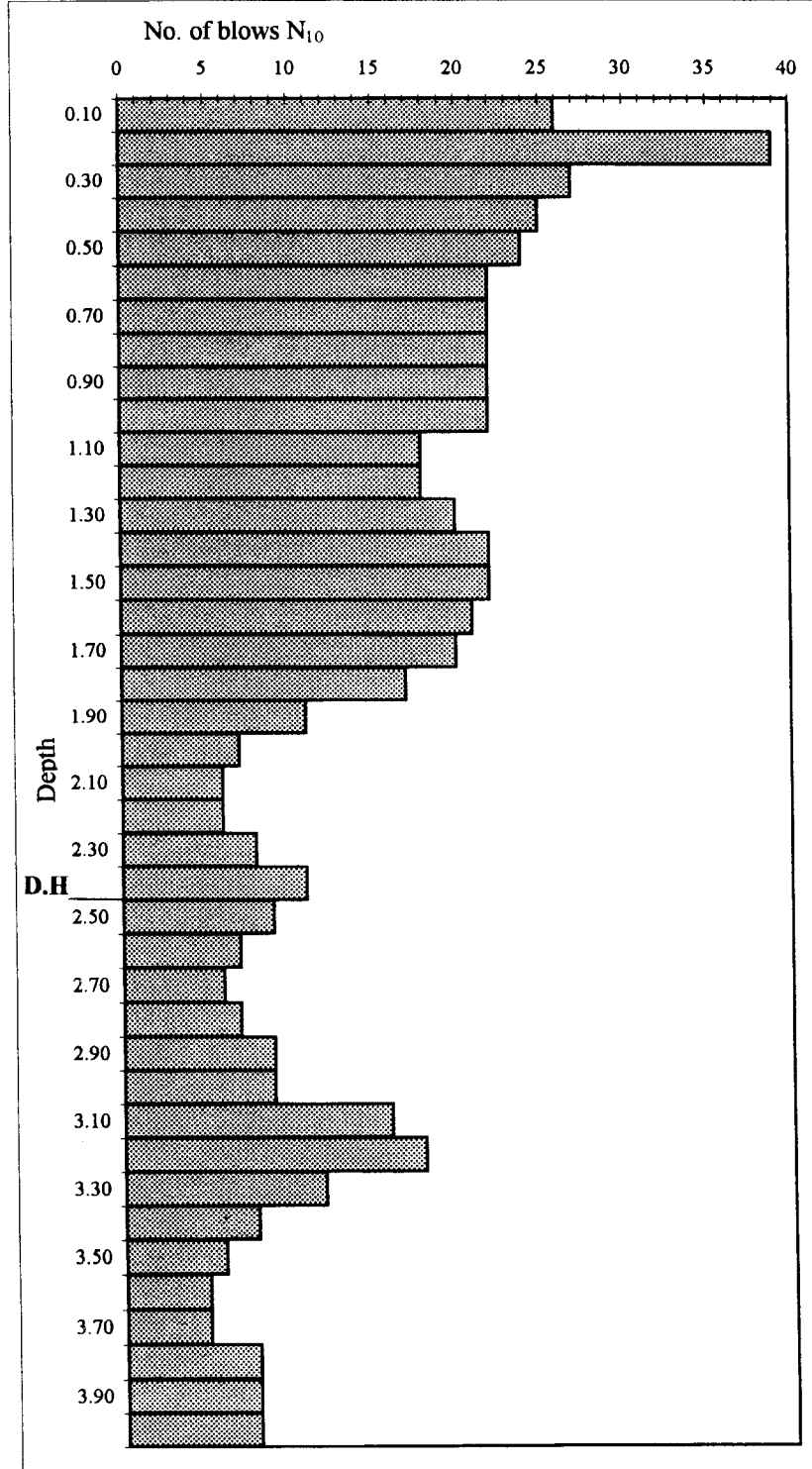
Динамические пробы Легкие (ДПЛ 5, в соотв.ДИН4094)

Location / место : km 135+200 / R

Date / Дата : 07. 04. 1997

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N ₁₀
0.10	26
0.20	39
0.30	27
0.40	25
0.50	24
0.60	22
0.70	22
0.80	22
0.90	22
1.00	22
1.10	18
1.20	18
1.30	20
1.40	22
1.50	22
1.60	21
1.70	20
1.80	17
1.90	11
2.00	7
2.10	6
2.20	6
2.30	8
2.40	11
2.50	9
2.60	7
2.70	6
2.80	7
2.90	9
3.00	9
3.10	16
3.20	18
3.30	12
3.40	8
3.50	6
3.60	5
3.70	5
3.80	8
3.90	8
4.00	8



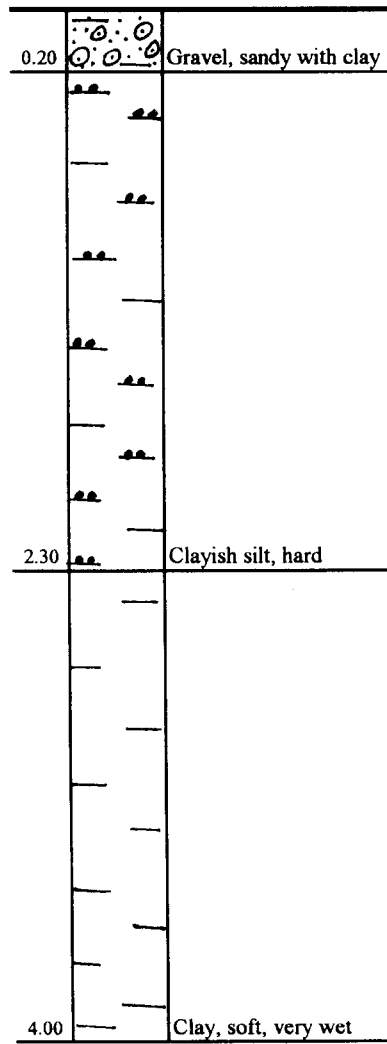
SOIL SECTION

No. 17

Location/Место: km 135+200 / R

Data/Дата: 07.04.1997

Level/Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 18**

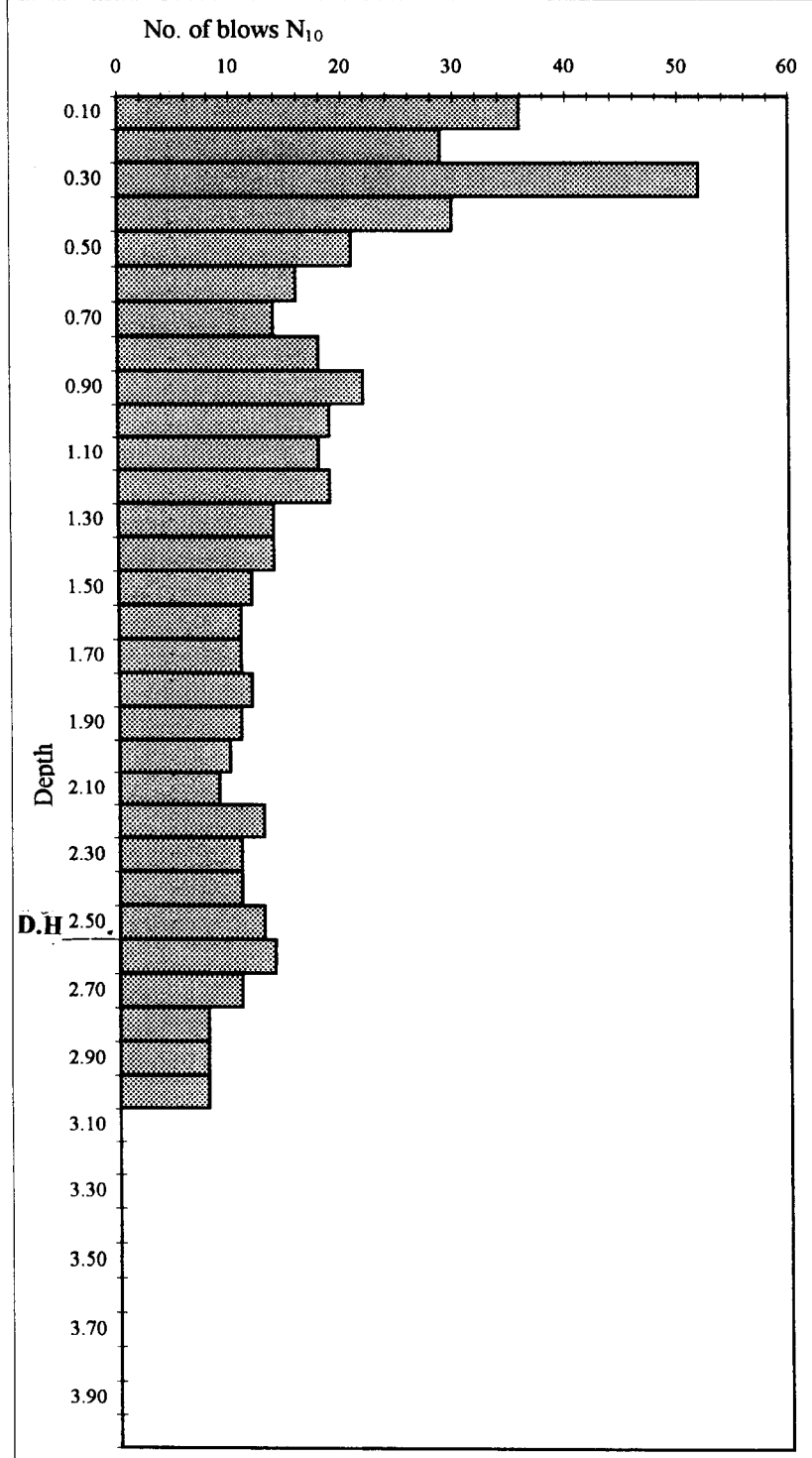
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 145+200 / R

Date / Дата : 07. 04. 1997

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число
[m]	вдуваний
	N_{10}
0.10	36
0.20	29
0.30	52
0.40	30
0.50	21
0.60	16
0.70	14
0.80	18
0.90	22
1.00	19
1.10	18
1.20	19
1.30	14
1.40	14
1.50	12
1.60	11
1.70	11
1.80	12
1.90	11
2.00	10
2.10	9
2.20	13
2.30	11
2.40	11
2.50	13
2.60	14
2.70	11
2.80	8
2.90	8
3.00	8
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



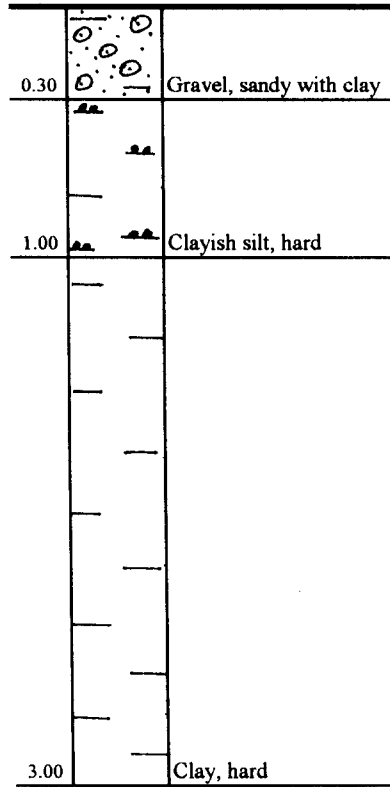
SOIL SECTION

No. 18

Location/Место: km 145+200 / R

Data/Дата: 07.04.1997

Level/Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 19.1**

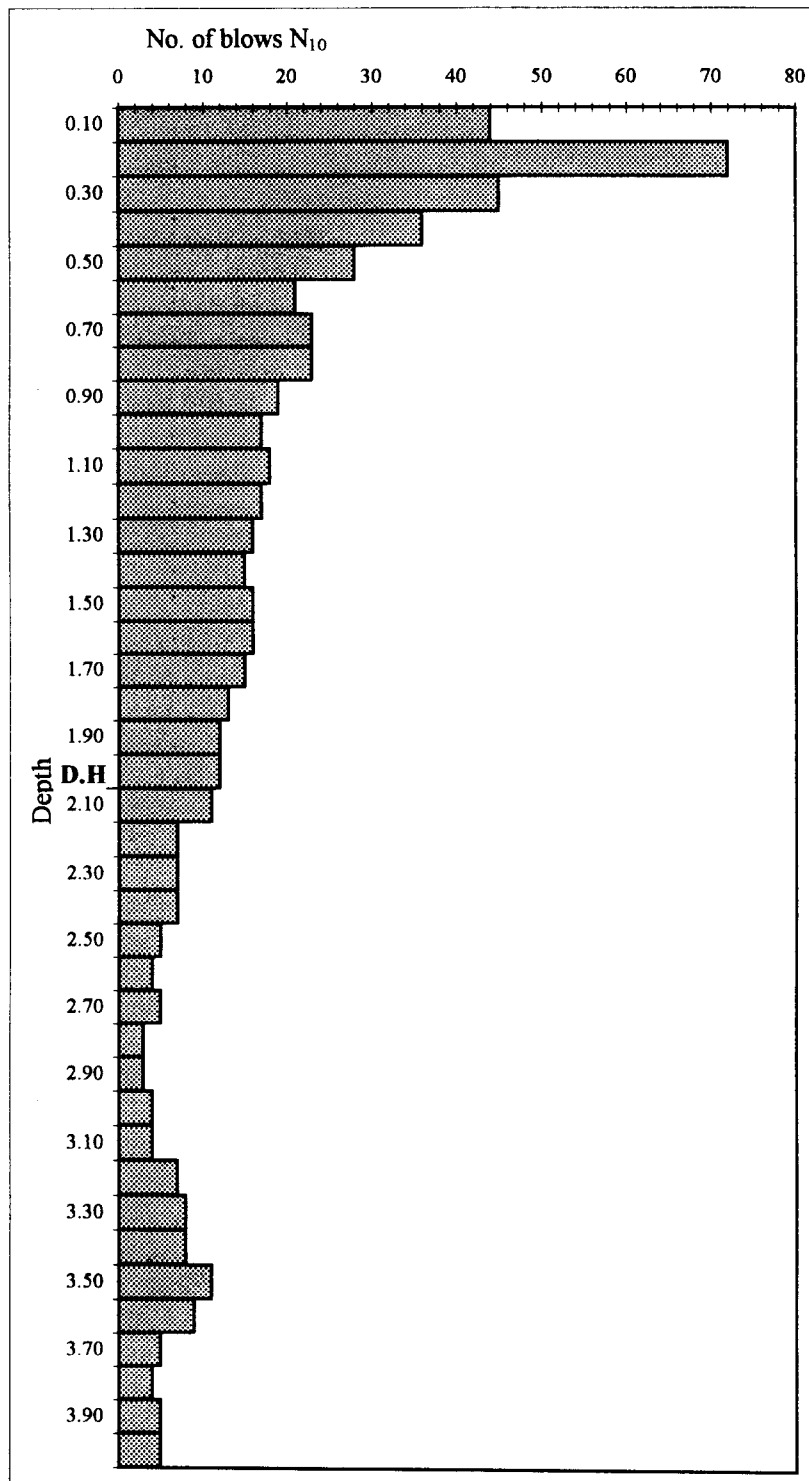
Динамические пробы Легкие (ДПЛ 5, в соотв.ДИН4094)

Location / место : km 151+000 / R

Date / Дата : 07.04.1997

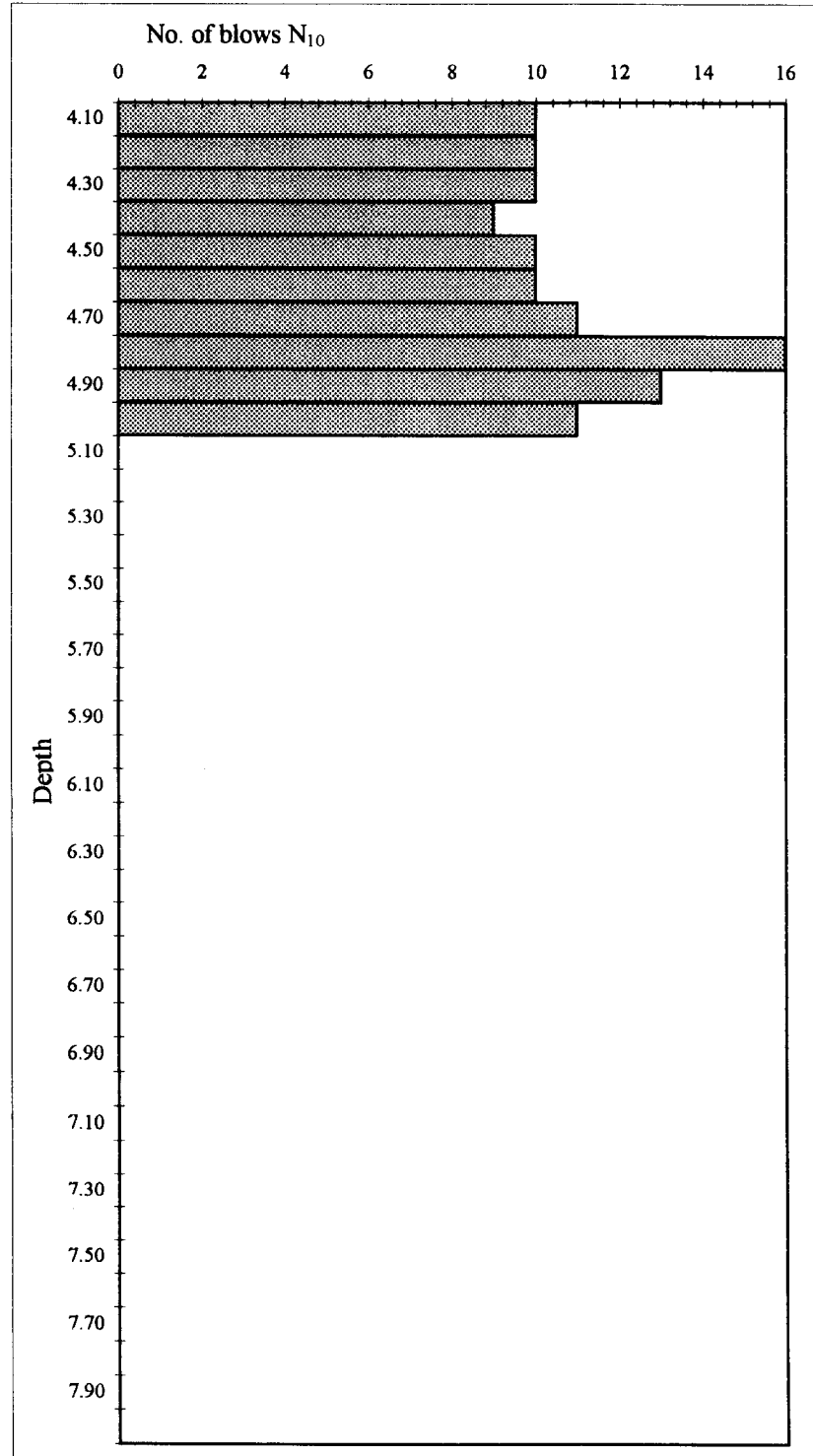
Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N ₁₀
0.10	44
0.20	72
0.30	45
0.40	36
0.50	28
0.60	21
0.70	23
0.80	23
0.90	19
1.00	17
1.10	18
1.20	17
1.30	16
1.40	15
1.50	16
1.60	16
1.70	15
1.80	13
1.90	12
2.00	12
2.10	11
2.20	7
2.30	7
2.40	7
2.50	5
2.60	4
2.70	5
2.80	3
2.90	3
3.00	4
3.10	4
3.20	7
3.30	8
3.40	8
3.50	11
3.60	9
3.70	5
3.80	4
3.90	5
4.00	5



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 19.2****Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)****Location / место : km 151+000 / R****Date / Дата : 07. 04. 1997****Level / Уровень : Shoulder surface**

Depth	No. of blows
Глубина	Число вдуваний
[m]	N ₁₀
4.10	10
4.20	10
4.30	10
4.40	9
4.50	10
4.60	10
4.70	11
4.80	16
4.90	13
5.00	11
5.10	
5.20	
5.30	
5.40	
5.50	
5.60	
5.70	
5.80	
5.90	
6.00	
6.10	
6.20	
6.30	
6.40	
6.50	
6.60	
6.70	
6.80	
6.90	
7.00	
7.10	
7.20	
7.30	
7.40	
7.50	
7.60	
7.70	
7.80	
7.90	
8.00	



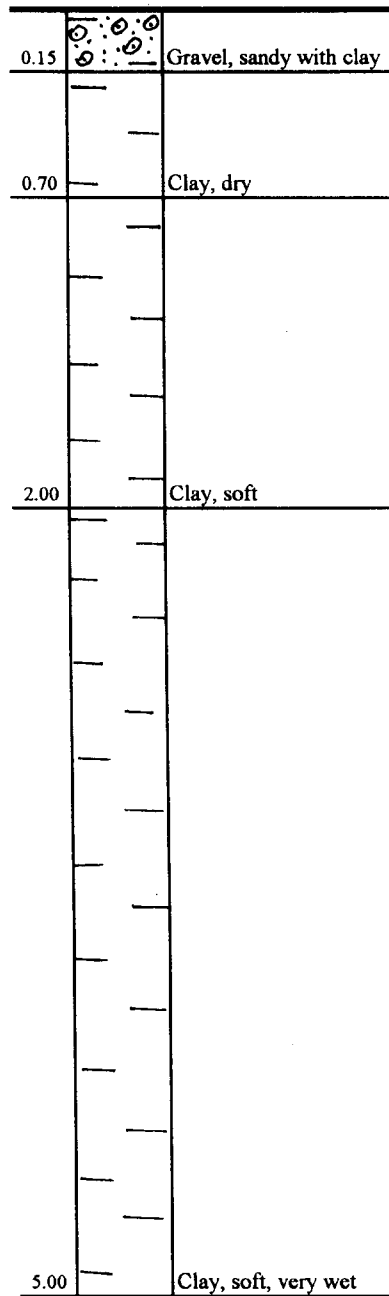
SOIL SECTION

No. 19

Location/Место: km 151+000 / R

Data/Дата: 07.04.1997

Level/Уровень: Shoulder surface



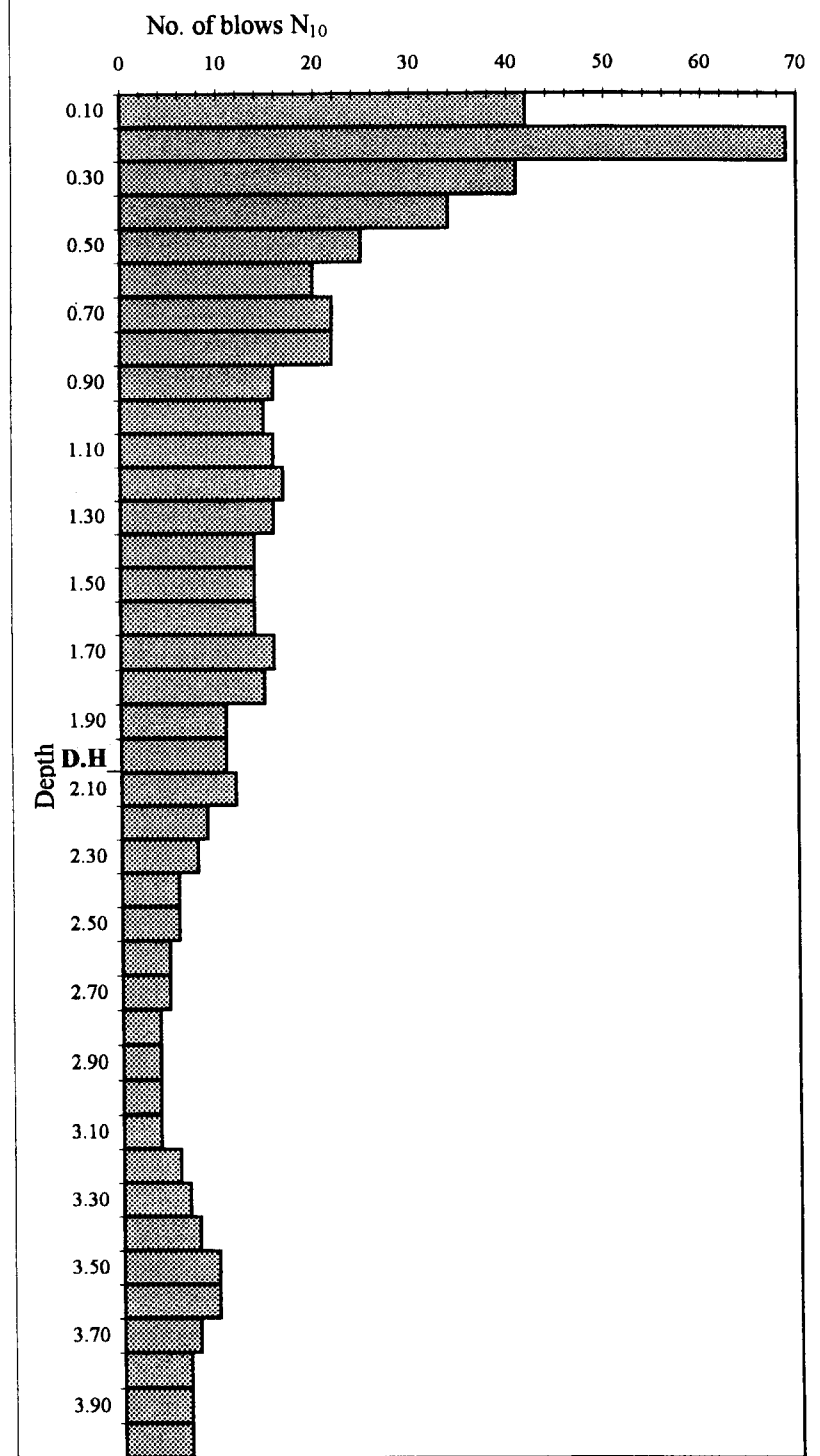
DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 20.1****Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)**

Location / место : km 159+500 / R

Date / Дата : 07. 04. 1997

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N ₁₀
0.10	42
0.20	69
0.30	41
0.40	34
0.50	25
0.60	20
0.70	22
0.80	22
0.90	16
1.00	15
1.10	16
1.20	17
1.30	16
1.40	14
1.50	14
1.60	14
1.70	16
1.80	15
1.90	11
2.00	11
2.10	12
2.20	9
2.30	8
2.40	6
2.50	6
2.60	5
2.70	5
2.80	4
2.90	4
3.00	4
3.10	4
3.20	6
3.30	7
3.40	8
3.50	10
3.60	10
3.70	8
3.80	7
3.90	7
4.00	7



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 20.2**

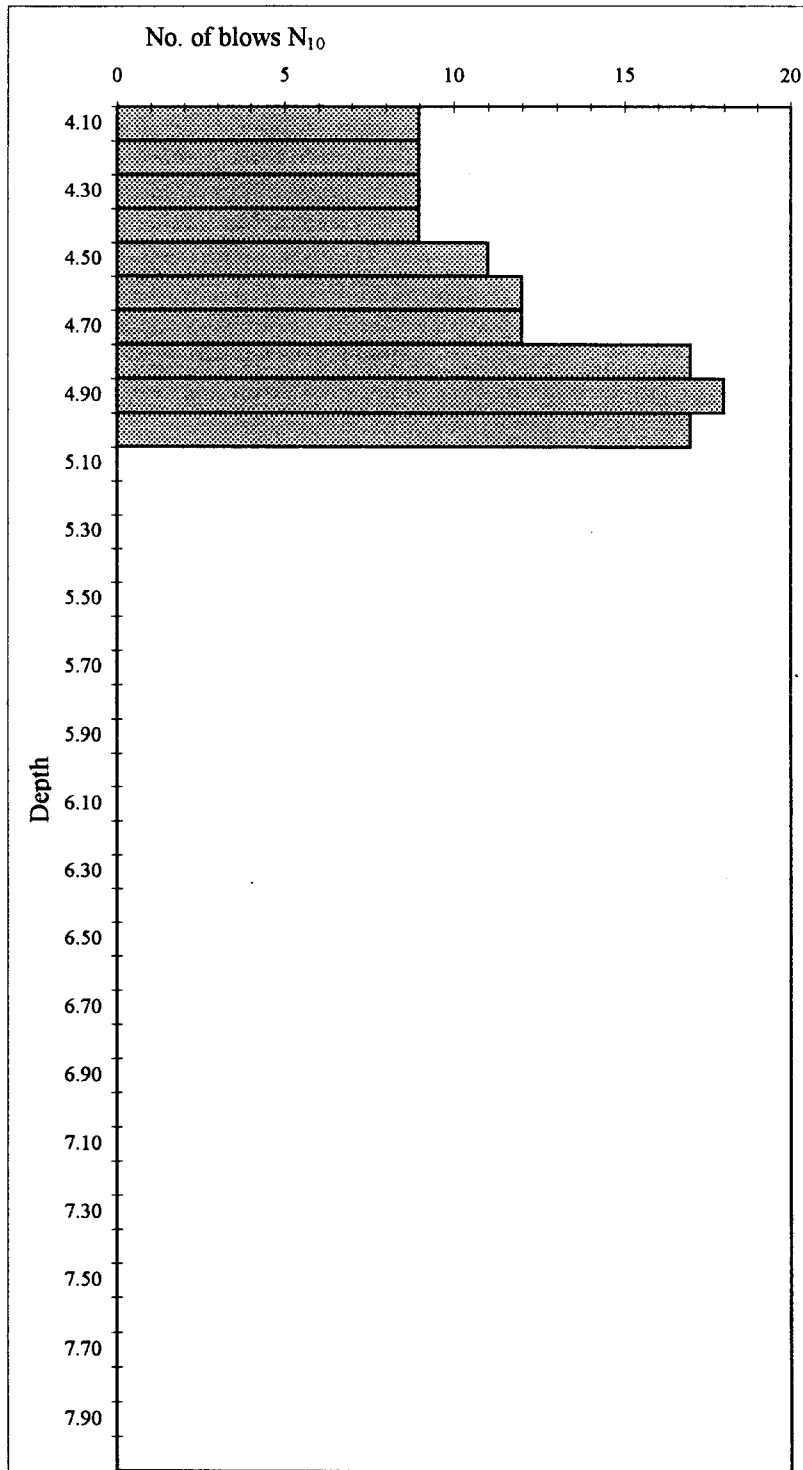
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 159+500 / R

Date / Дата : 07. 04. 1997

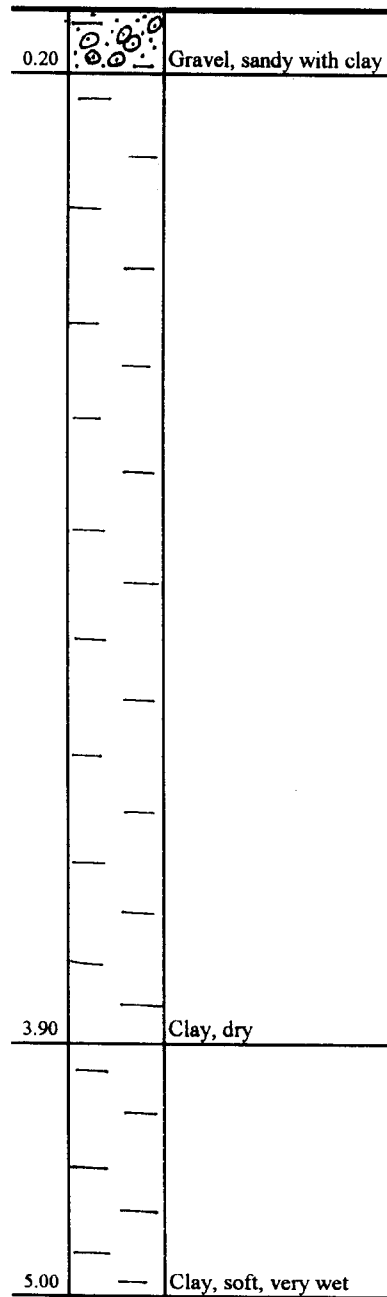
Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N_{10}
4.10	9
4.20	9
4.30	9
4.40	9
4.50	11
4.60	12
4.70	12
4.80	17
4.90	18
5.00	17
5.10	
5.20	
5.30	
5.40	
5.50	
5.60	
5.70	
5.80	
5.90	
6.00	
6.10	
6.20	
6.30	
6.40	
6.50	
6.60	
6.70	
6.80	
6.90	
7.00	
7.10	
7.20	
7.30	
7.40	
7.50	
7.60	
7.70	
7.80	
7.90	
8.00	



SOIL SECTION

No. 20

Location/Место: km 159+500 / RData/Дата: 07.04.1997Level/Уровень: Shoulder surface

DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 21**

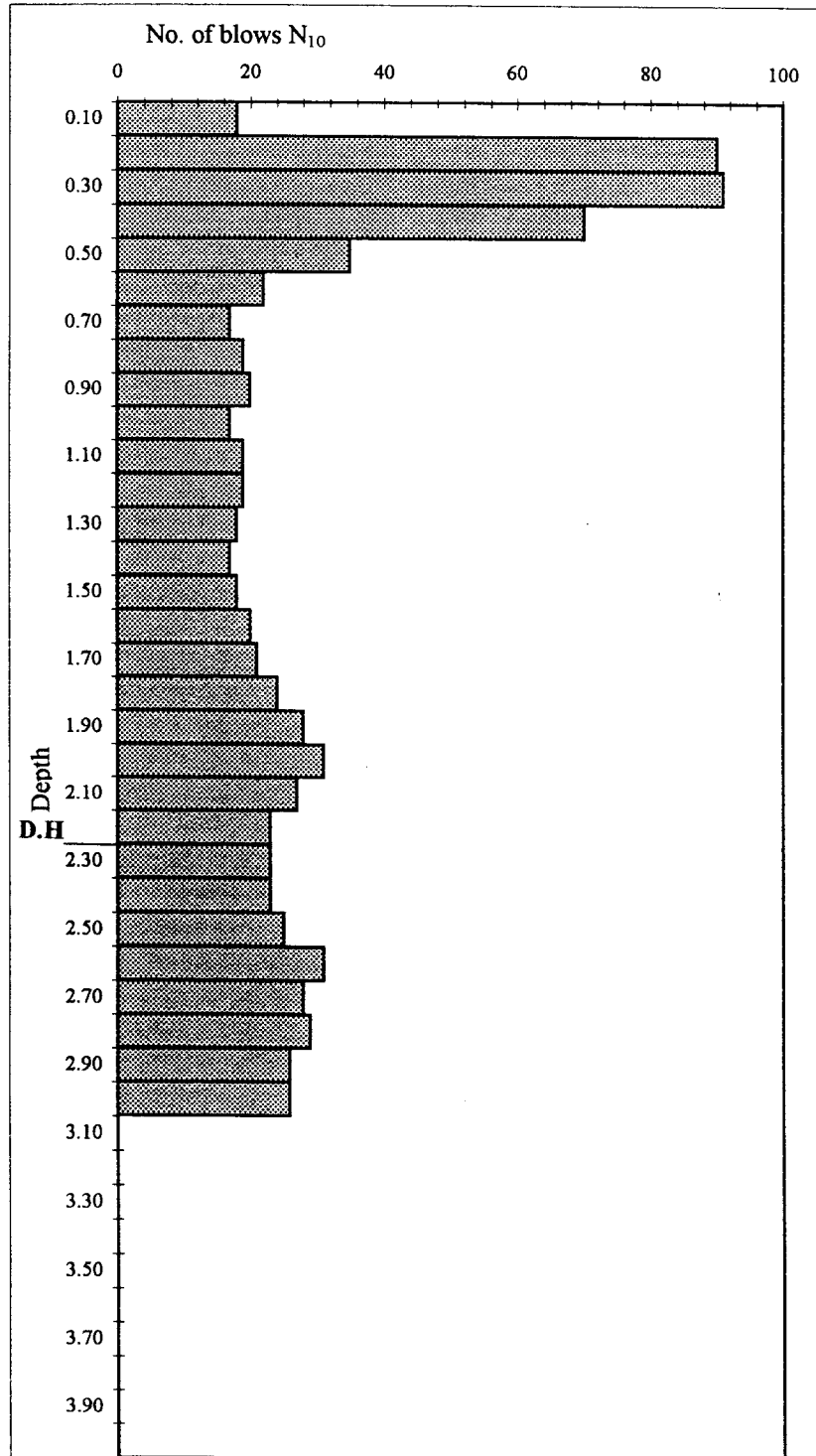
Динамические пробы Легкие (ДПЛ 5, в соотв.ДИН4094)

Location / место : km 162+500 / R

Date / Дата : 08.04.1997

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N_{10}
0.10	18
0.20	90
0.30	91
0.40	70
0.50	35
0.60	22
0.70	17
0.80	19
0.90	20
1.00	17
1.10	19
1.20	19
1.30	18
1.40	17
1.50	18
1.60	20
1.70	21
1.80	24
1.90	28
2.00	31
2.10	27
2.20	23
2.30	23
2.40	23
2.50	25
2.60	31
2.70	28
2.80	29
2.90	26
3.00	26
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



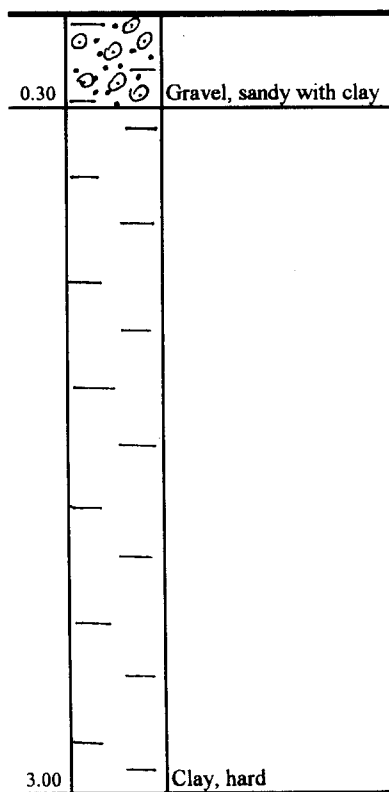
SOIL SECTION

No. 21

Location/Место: km 162+500 / R

Data/Дата: 08.04.1997

Level/Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 22**

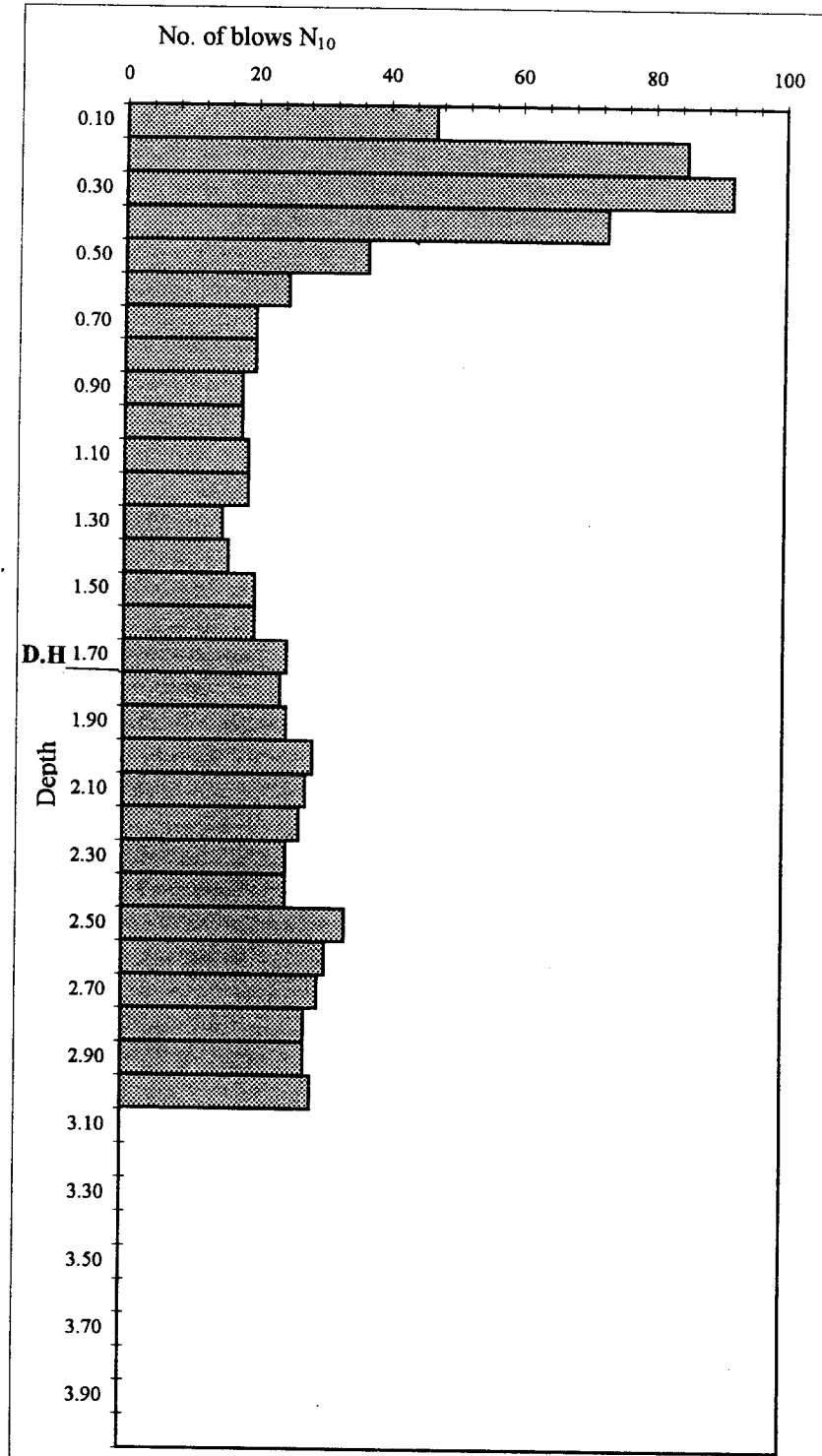
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 164+000 / R |

Date / Дата : 08.04.1997

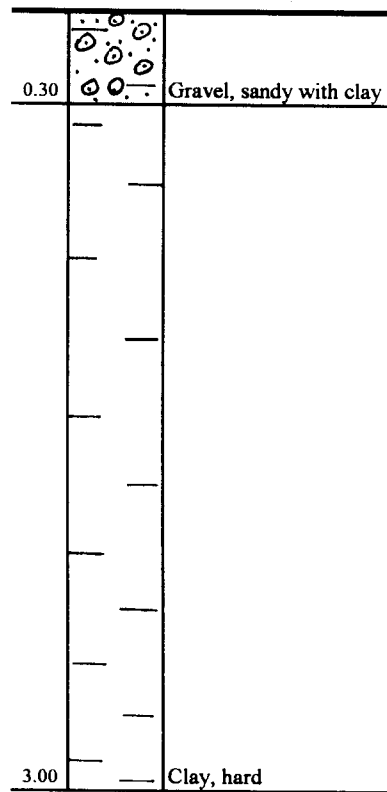
Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число
[m]	вдуваний
	N_{10}
0.10	47
0.20	85
0.30	92
0.40	73
0.50	37
0.60	25
0.70	20
0.80	20
0.90	18
1.00	18
1.10	19
1.20	19
1.30	15
1.40	16
1.50	20
1.60	20
1.70	25
1.80	24
1.90	25
2.00	29
2.10	28
2.20	27
2.30	25
2.40	25
2.50	34
2.60	31
2.70	30
2.80	28
2.90	28
3.00	29
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



SOIL SECTION

No. 22

Location/Место: km 164+000 / RData/Дата: 08.04.1997Level/Уровень: Shoulder surface

DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 23**

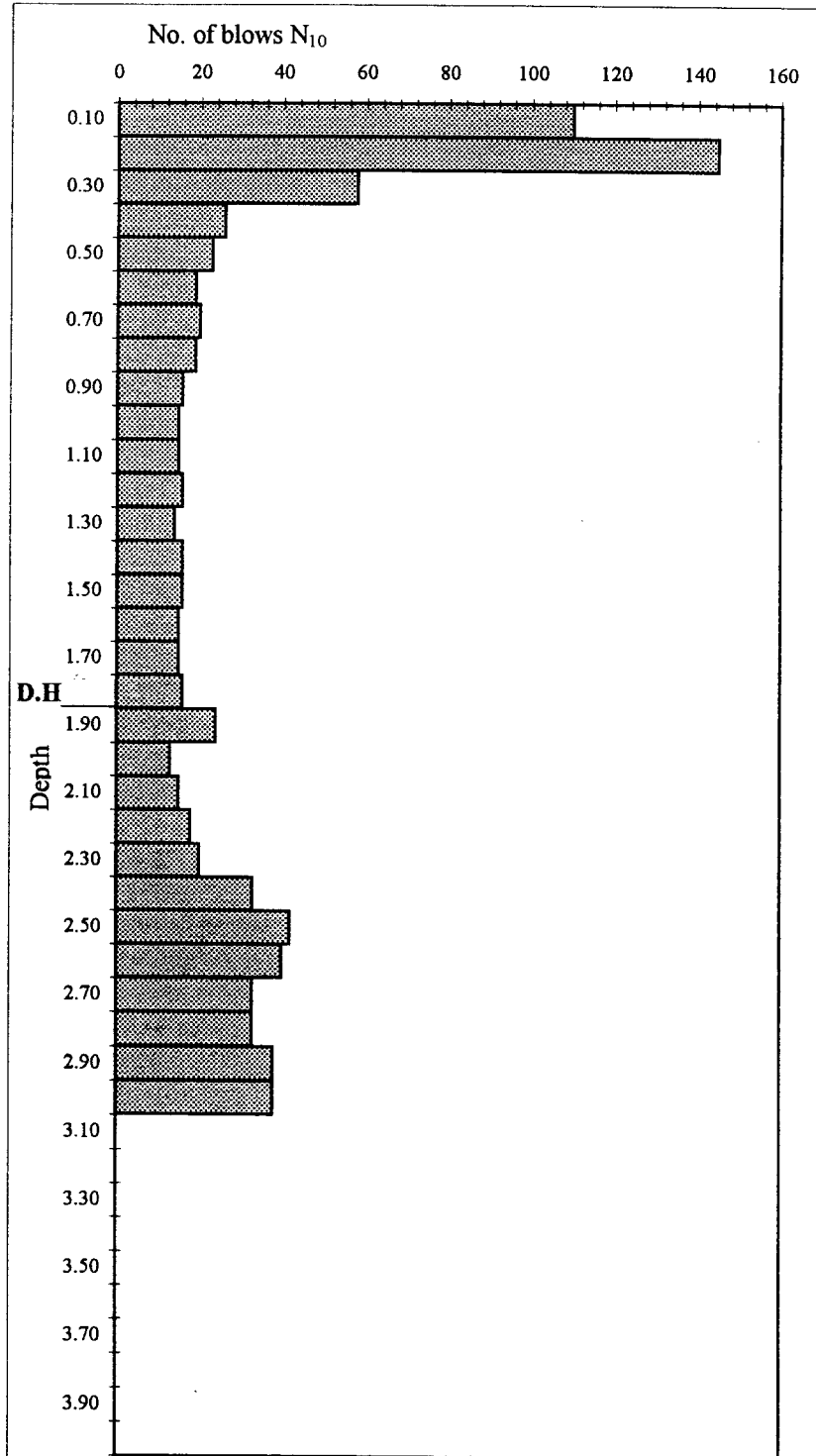
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 167+000 / R

Date / Дата : 08. 04. 1997

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число
[m]	вдуваний
	N_{10}
0.10	110
0.20	145
0.30	58
0.40	26
0.50	23
0.60	19
0.70	20
0.80	19
0.90	16
1.00	15
1.10	15
1.20	16
1.30	14
1.40	16
1.50	16
1.60	15
1.70	15
1.80	16
1.90	24
2.00	13
2.10	15
2.20	18
2.30	20
2.40	33
2.50	42
2.60	40
2.70	33
2.80	33
2.90	38
3.00	38
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



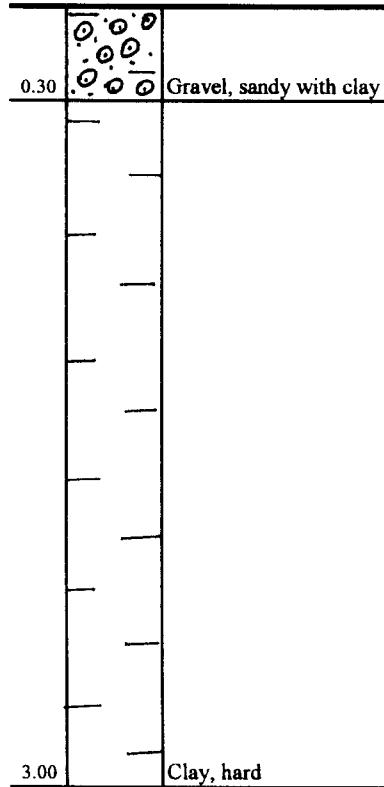
SOIL SECTION

No. 23

Location/Место: km 167+000 / R

Data/Дата: 08.04.1997

Level/Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 24**

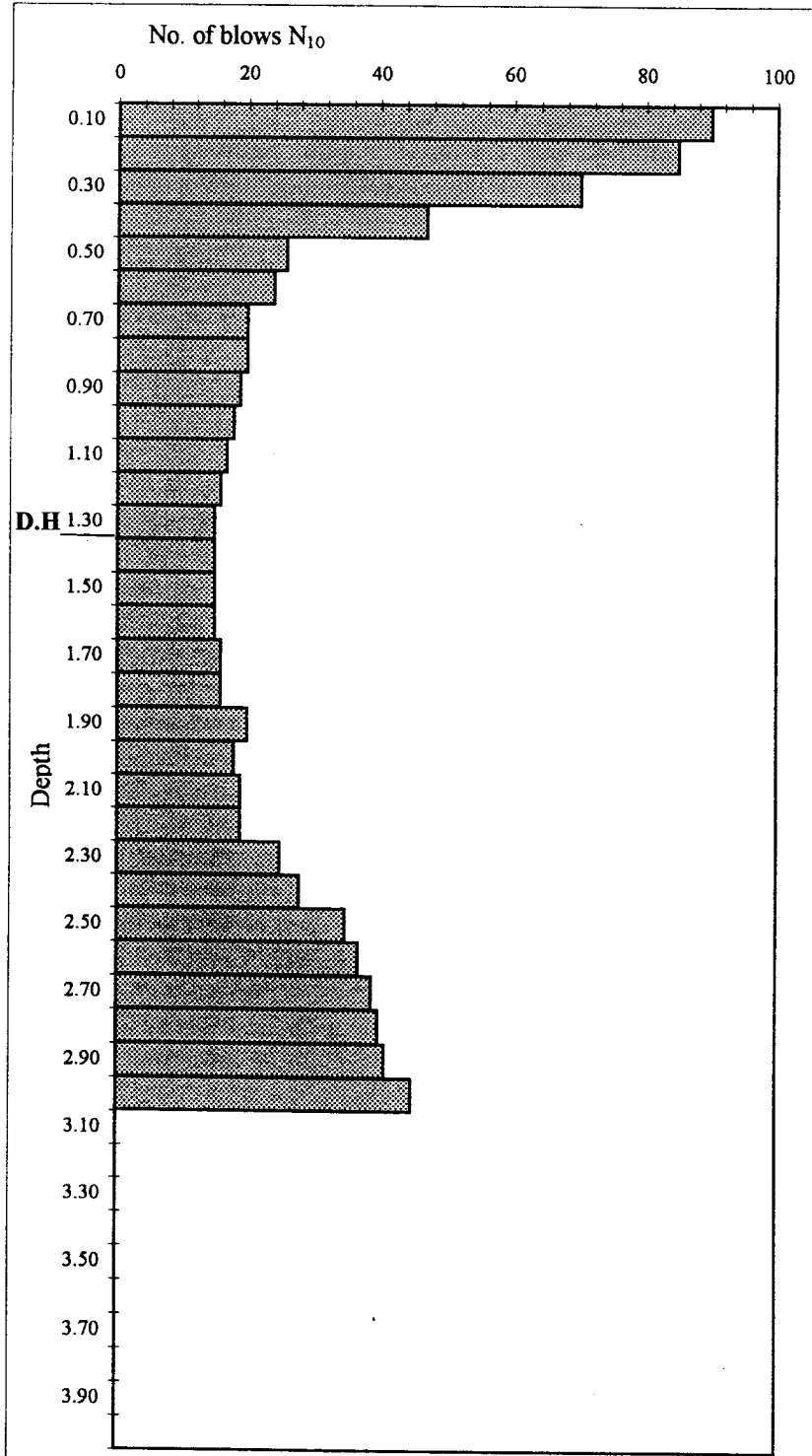
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 168+000 / R

Date / Дата : 09. 04. 1997

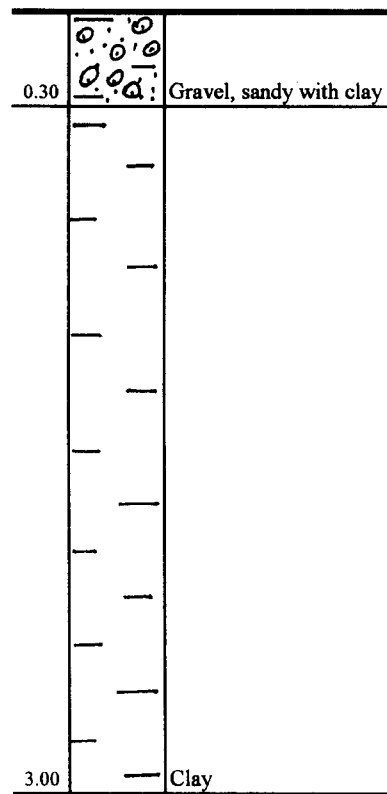
Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N_{10}
0.10	90
0.20	85
0.30	70
0.40	47
0.50	26
0.60	24
0.70	20
0.80	20
0.90	19
1.00	18
1.10	17
1.20	16
1.30	15
1.40	15
1.50	15
1.60	15
1.70	16
1.80	16
1.90	20
2.00	18
2.10	19
2.20	19
2.30	25
2.40	28
2.50	35
2.60	37
2.70	39
2.80	40
2.90	41
3.00	45
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



SOIL SECTION

No. 24

Location/Место: km 168+000 / RData/Дата: 06.04.1997Level/Уровень: Shoulder surface

DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 25**

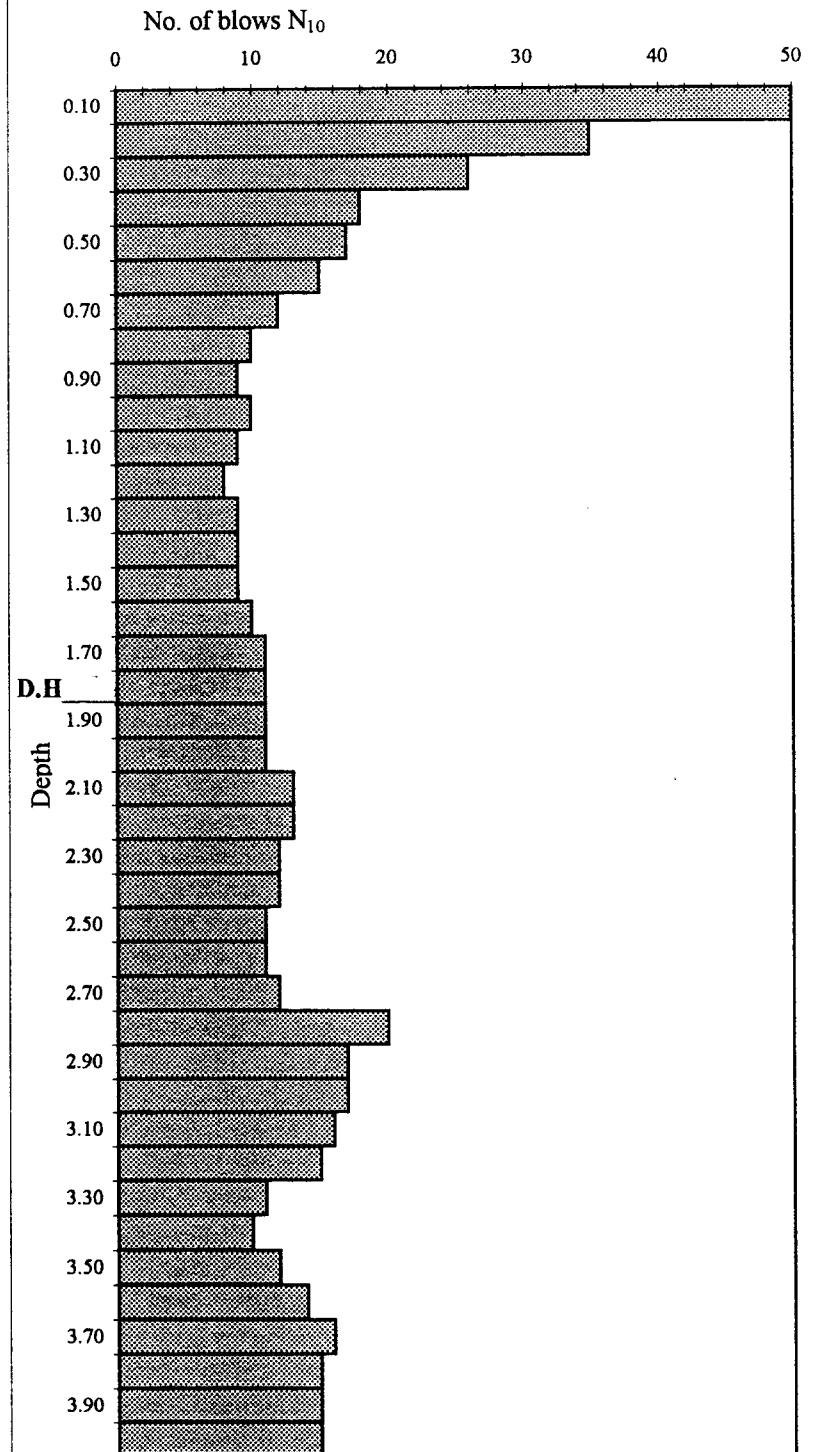
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 170+700 / R

Date / Дата : 09. 04. 1997

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N_{10}
0.10	50
0.20	35
0.30	26
0.40	18
0.50	17
0.60	15
0.70	12
0.80	10
0.90	9
1.00	10
1.10	9
1.20	8
1.30	9
1.40	9
1.50	9
1.60	10
1.70	11
1.80	11
1.90	11
2.00	11
2.10	13
2.20	13
2.30	12
2.40	12
2.50	11
2.60	11
2.70	12
2.80	20
2.90	17
3.00	17
3.10	16
3.20	15
3.30	11
3.40	10
3.50	12
3.60	14
3.70	16
3.80	15
3.90	15
4.00	15



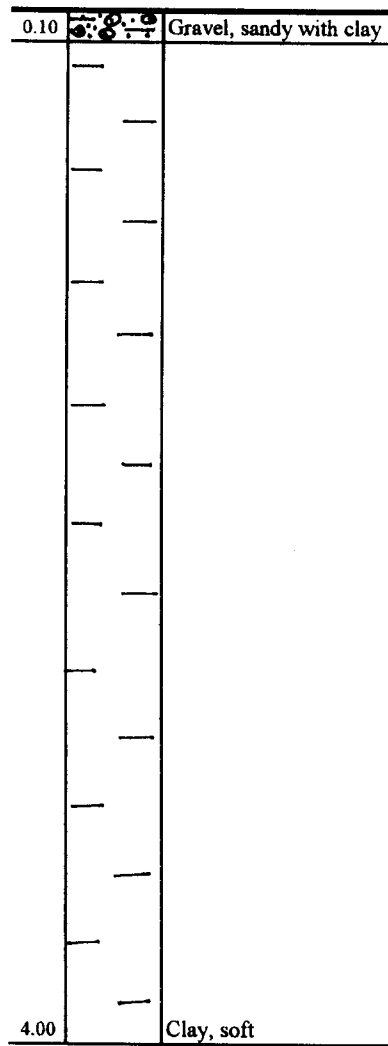
SOIL SECTION

No. 25

Location/Место: km 170+700 / R

Data/Дата: 09.04.1997

Level/Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 26**

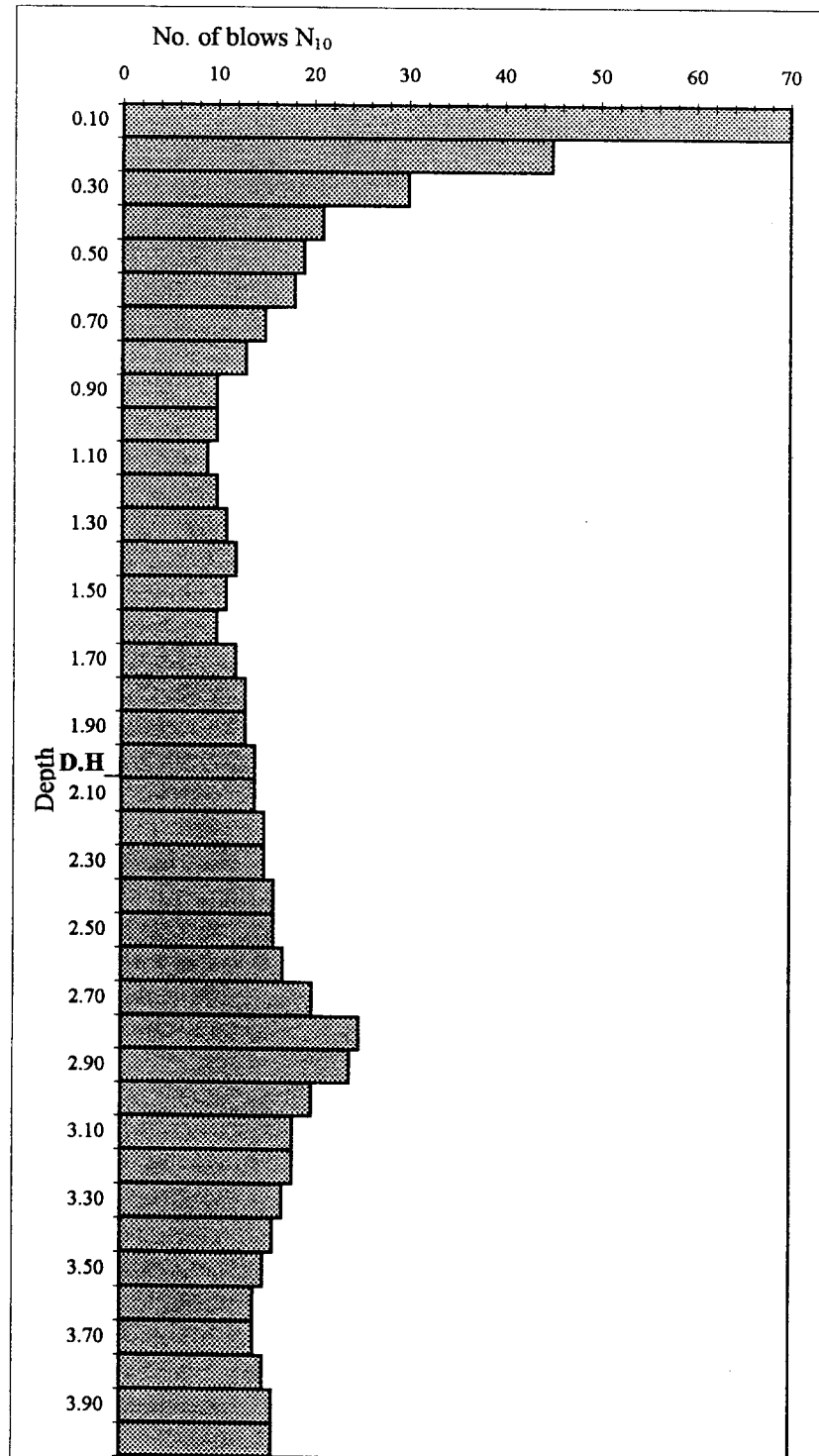
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 191+600 / R

Date / Дата : 09. 04. 1997

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число
[m]	вдуваний
	N_{10}
0.10	70
0.20	45
0.30	30
0.40	21
0.50	19
0.60	18
0.70	15
0.80	13
0.90	10
1.00	10
1.10	9
1.20	10
1.30	11
1.40	12
1.50	11
1.60	10
1.70	12
1.80	13
1.90	13
2.00	14
2.10	14
2.20	15
2.30	15
2.40	16
2.50	16
2.60	17
2.70	20
2.80	25
2.90	24
3.00	20
3.10	18
3.20	18
3.30	17
3.40	16
3.50	15
3.60	14
3.70	14
3.80	15
3.90	16
4.00	16



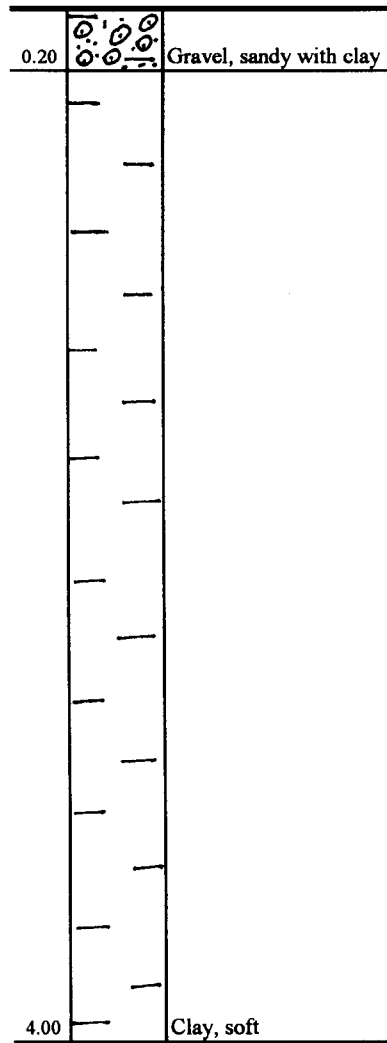
SOIL SECTION

No. 26

Location/Место: km 191+600 / R

Data/Дата: 09.04.1997

Level/Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 27**

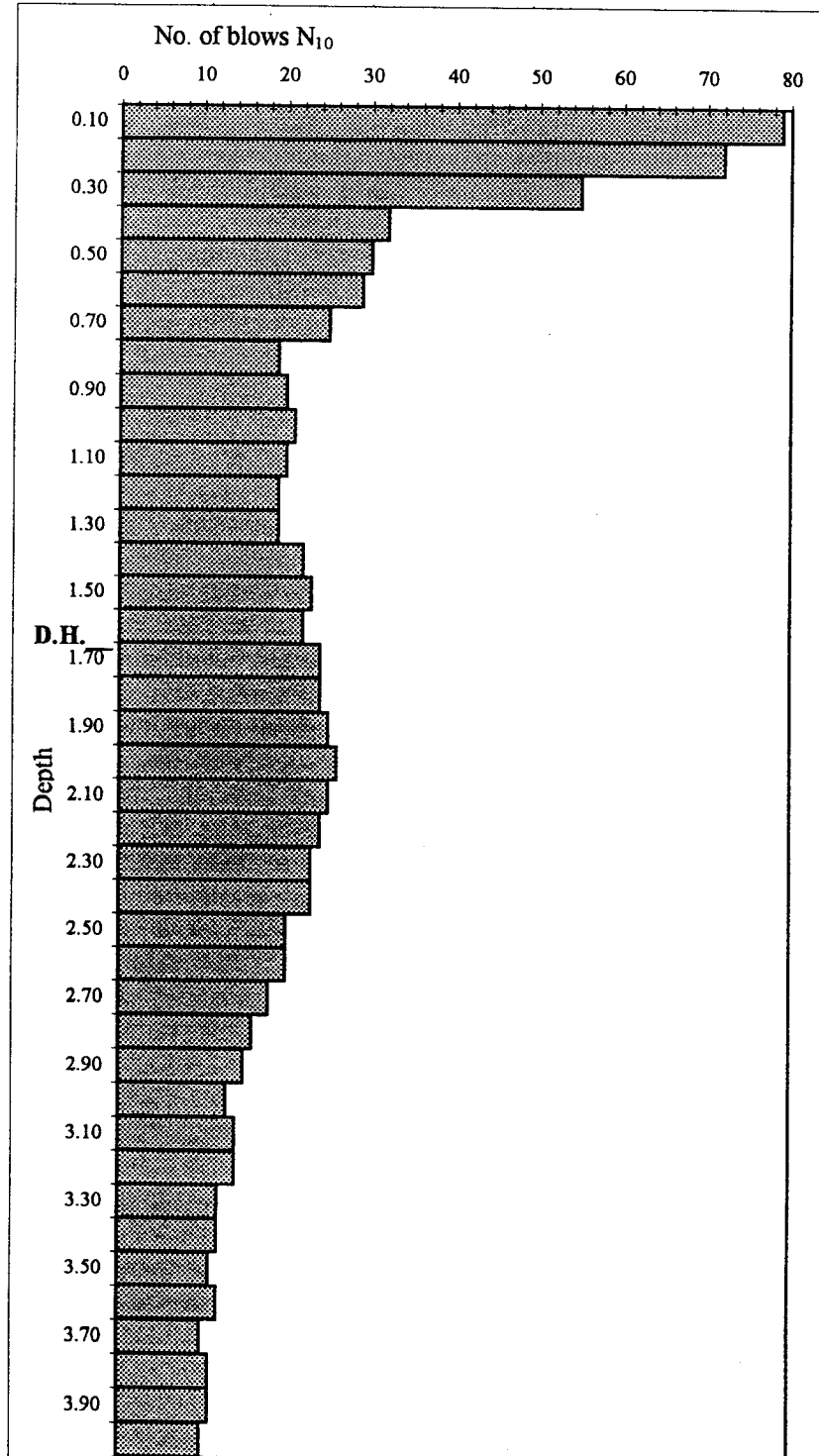
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 196+000 / L

Date / Дата : 10. 04. 1997

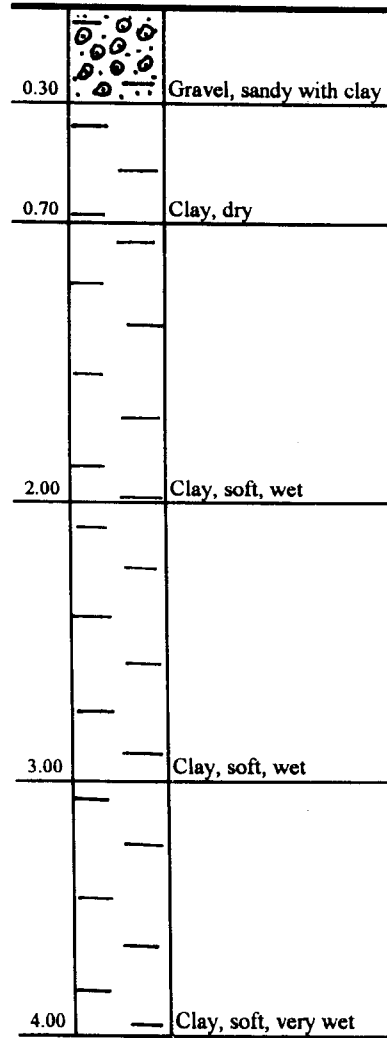
Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N_{10}
0.10	79
0.20	72
0.30	55
0.40	32
0.50	30
0.60	29
0.70	25
0.80	19
0.90	20
1.00	21
1.10	20
1.20	19
1.30	19
1.40	22
1.50	23
1.60	22
1.70	24
1.80	24
1.90	25
2.00	26
2.10	25
2.20	24
2.30	23
2.40	23
2.50	20
2.60	20
2.70	18
2.80	16
2.90	15
3.00	13
3.10	14
3.20	14
3.30	12
3.40	12
3.50	11
3.60	12
3.70	10
3.80	11
3.90	11
4.00	10



SOIL SECTION

No. 27

Location/Место: km 196 + 000 / LData/Дата: 10.04.1997Level/Уровень: Shoulder surface

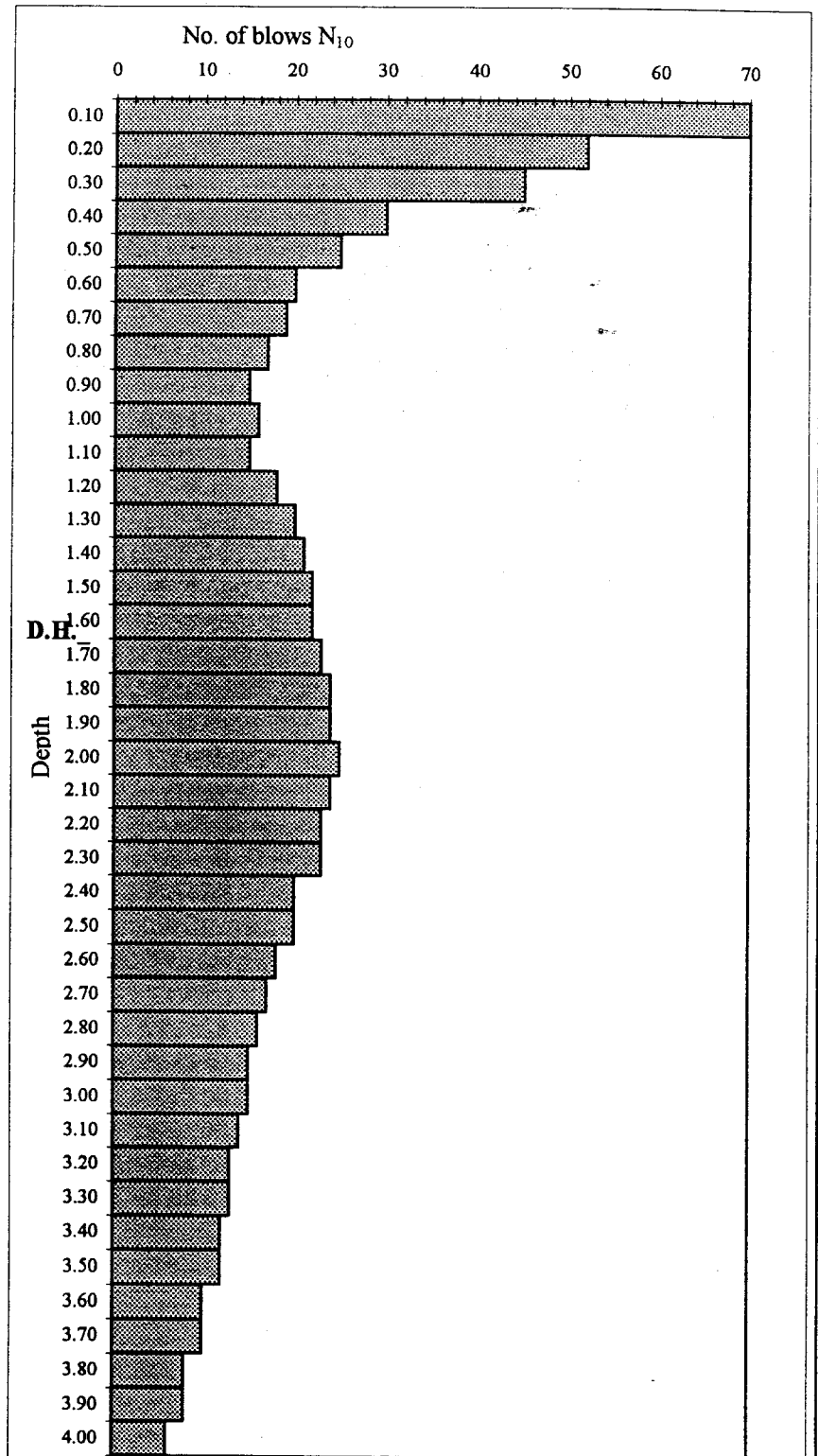
DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 28****Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)**

Location / место : km 202 + 000 / L

Date / Дата : 10.04.97

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N ₁₀
0.10	70
0.20	52
0.30	45
0.40	30
0.50	25
0.60	20
0.70	19
0.80	17
0.90	15
1.00	16
1.10	15
1.20	18
1.30	20
1.40	21
1.50	22
1.60	22
1.70	23
1.80	24
1.90	24
2.00	25
2.10	24
2.20	23
2.30	23
2.40	20
2.50	20
2.60	18
2.70	17
2.80	16
2.90	15
3.00	15
3.10	14
3.20	13
3.30	13
3.40	12
3.50	12
3.60	10
3.70	10
3.80	8
3.90	8
4.00	6



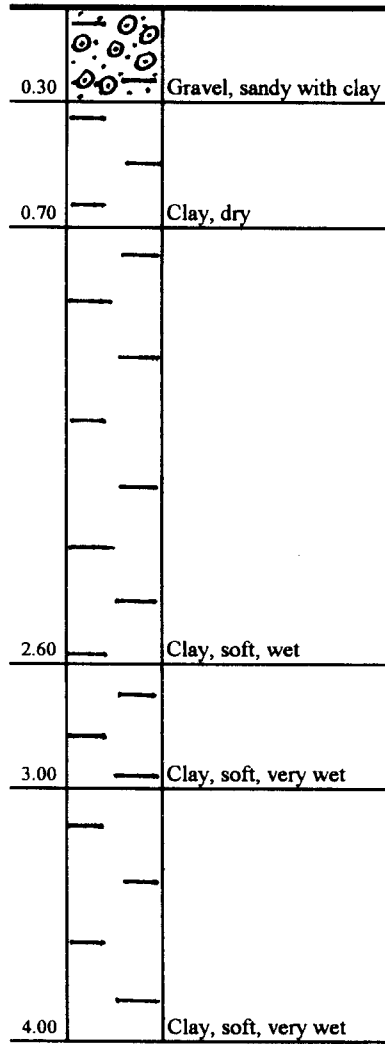
SOIL SECTION

No. 28

Location/Место: km 202+000 / L

Data/Дата: 10.04.1997

Level/Уровень: Shoulder surface



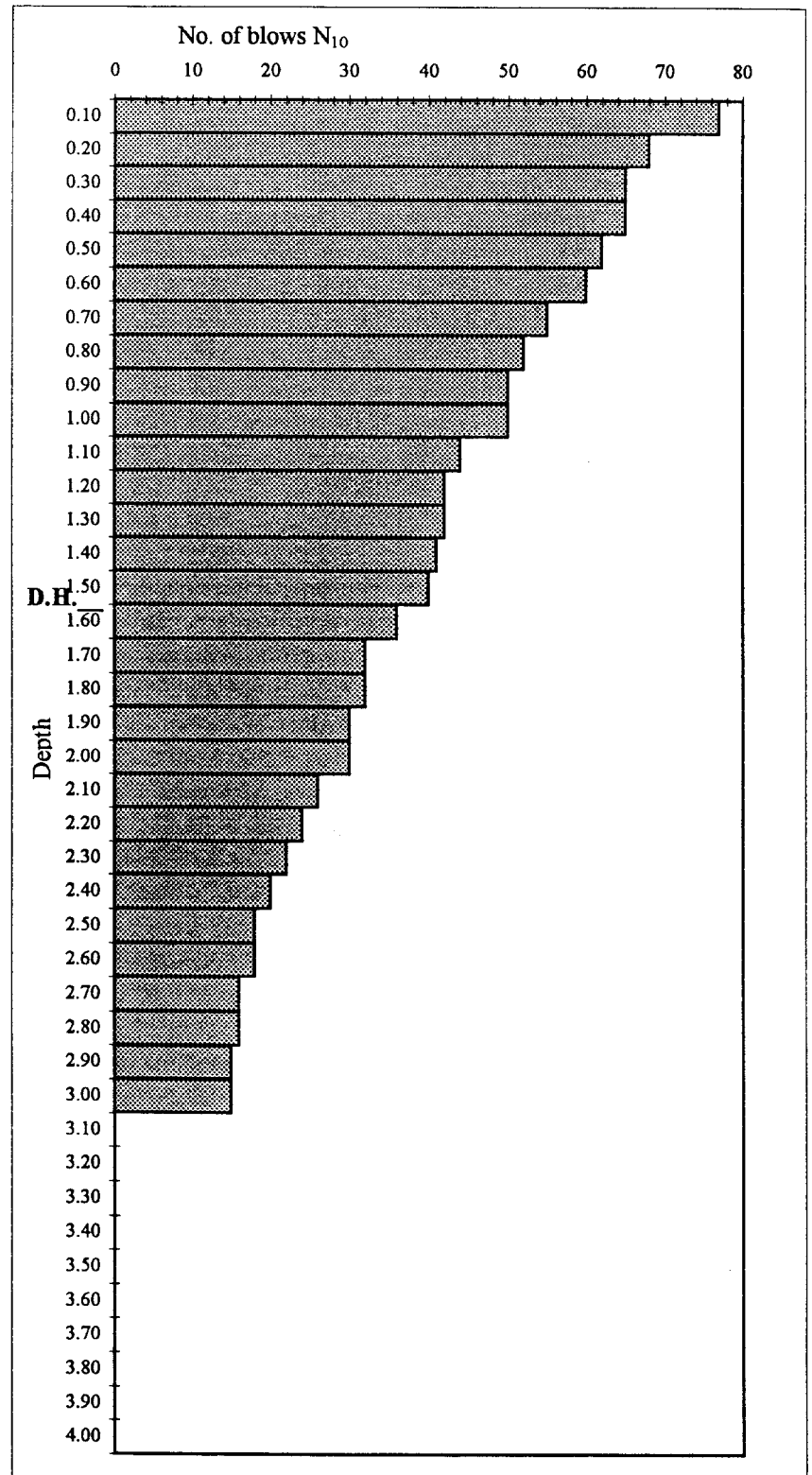
DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 29****Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)**

Location / место : km 206 + 000 / L

Date / Дата : 11.04.97

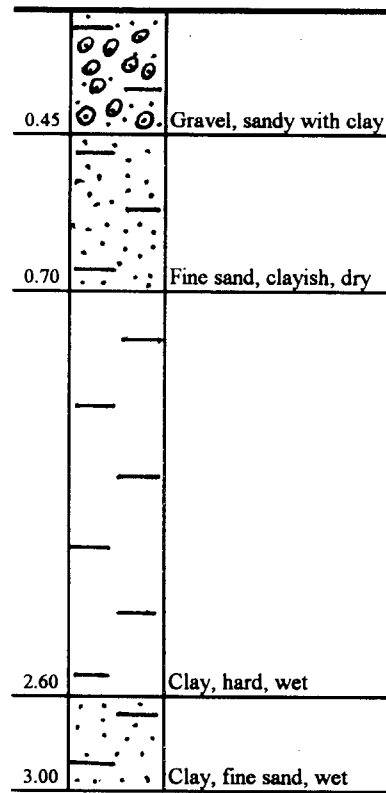
Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N ₁₀
0.10	77
0.20	68
0.30	65
0.40	65
0.50	62
0.60	60
0.70	55
0.80	52
0.90	50
1.00	50
1.10	44
1.20	42
1.30	42
1.40	41
1.50	40
1.60	36
1.70	32
1.80	32
1.90	30
2.00	30
2.10	26
2.20	24
2.30	22
2.40	20
2.50	18
2.60	18
2.70	16
2.80	16
2.90	15
3.00	15
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



SOIL SECTION

No. 29

Location/Место: km 206+000 / LData/Дата: 11.04.1997Level/Уровень: Shoulder surface

DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 30**

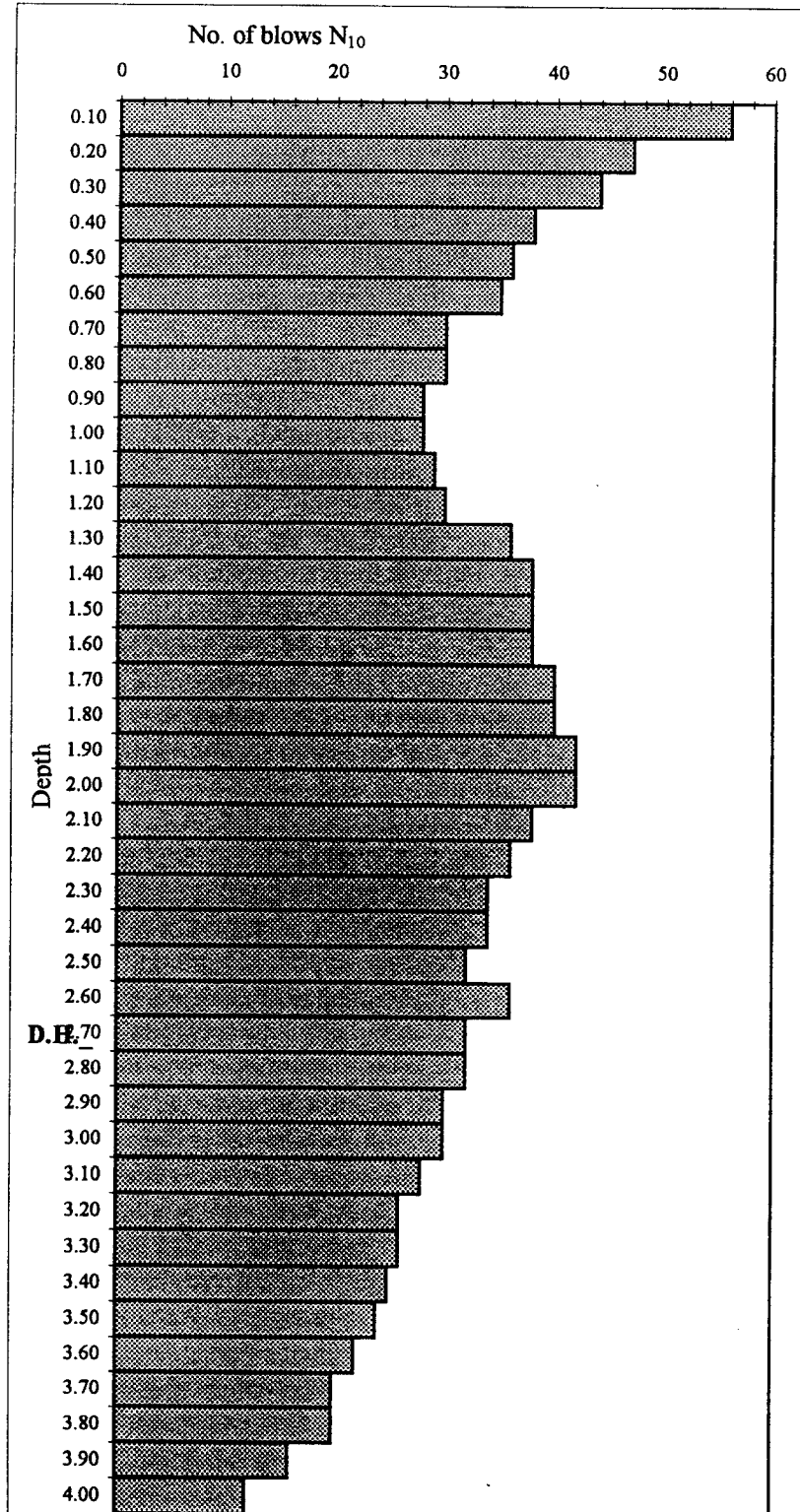
Динамические пробы Легкие (ДПЛ 5, в соотв.ДИН4094)

Location / место : km 212 + 300 / L

Date / Дата : 12.04.97

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N ₁₀
0.10	56
0.20	47
0.30	44
0.40	38
0.50	36
0.60	35
0.70	30
0.80	30
0.90	28
1.00	28
1.10	29
1.20	30
1.30	36
1.40	38
1.50	38
1.60	38
1.70	40
1.80	40
1.90	42
2.00	42
2.10	38
2.20	36
2.30	34
2.40	34
2.50	32
2.60	36
2.70	32
2.80	32
2.90	30
3.00	30
3.10	28
3.20	26
3.30	26
3.40	25
3.50	24
3.60	22
3.70	20
3.80	20
3.90	16
4.00	12



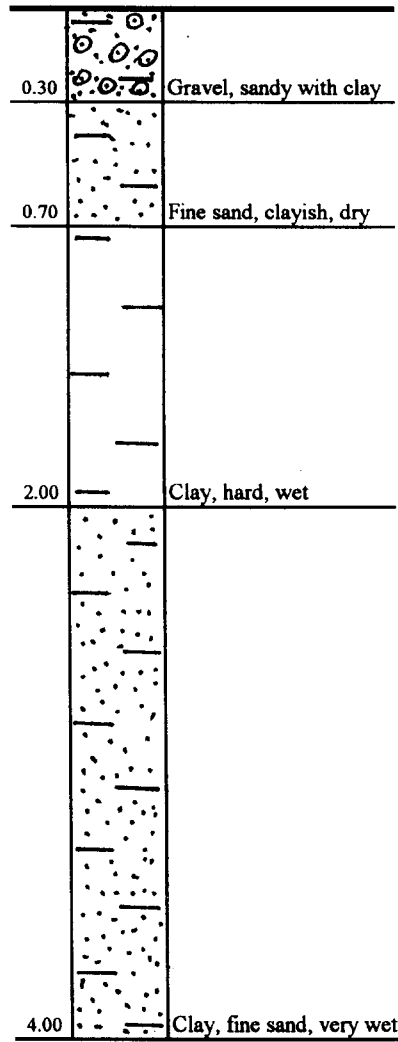
SOIL SECTION

No. 30

Location/Место: km 212 + 300 / L

Data/Дата: 12.04.1997

Level/Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 31**

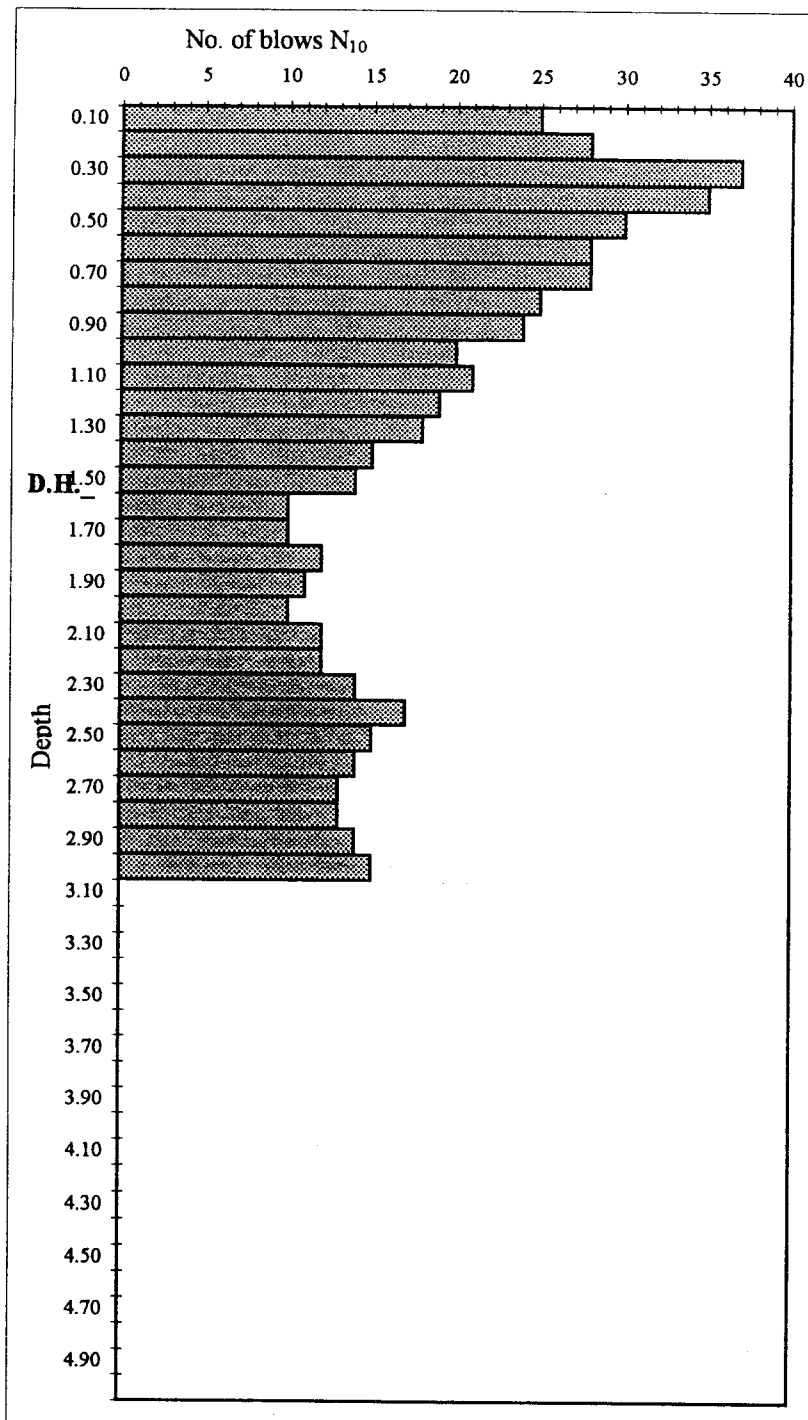
Динамические пробы Легкие (ДПЛ 5, в соотв.ДИН4094)

Location / место : km 214 + 100 / L

Date / Дата : 13.04.97

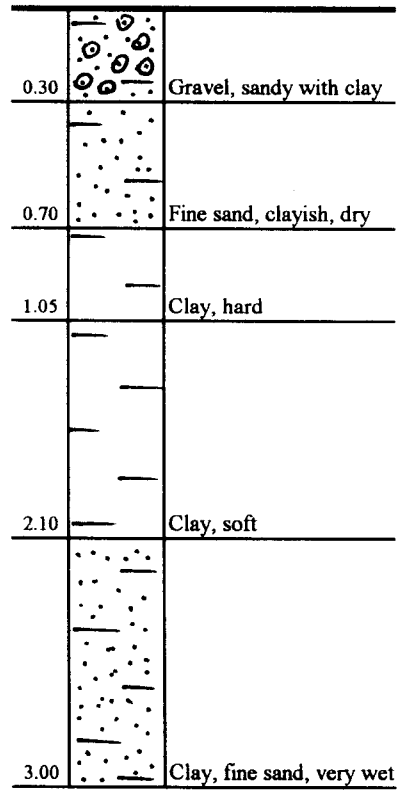
Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число
[m]	вдуваний
	N ₁₀
0.10	25
0.20	28
0.30	37
0.40	35
0.50	30
0.60	28
0.70	28
0.80	25
0.90	24
1.00	20
1.10	21
1.20	19
1.30	18
1.40	15
1.50	14
1.60	10
1.70	10
1.80	12
1.90	11
2.00	10
2.10	12
2.20	12
2.30	14
2.40	17
2.50	15
2.60	14
2.70	13
2.80	13
2.90	14
3.00	15
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	
4.10	
4.20	
4.30	
4.40	
4.50	
4.60	
4.70	
4.80	
4.90	
5.00	



SOIL SECTION

No. 31

Location/Место: km 214 + 100 / LData/Дата: 13.04.1997Level/Уровень: Shoulder surface

DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 32**

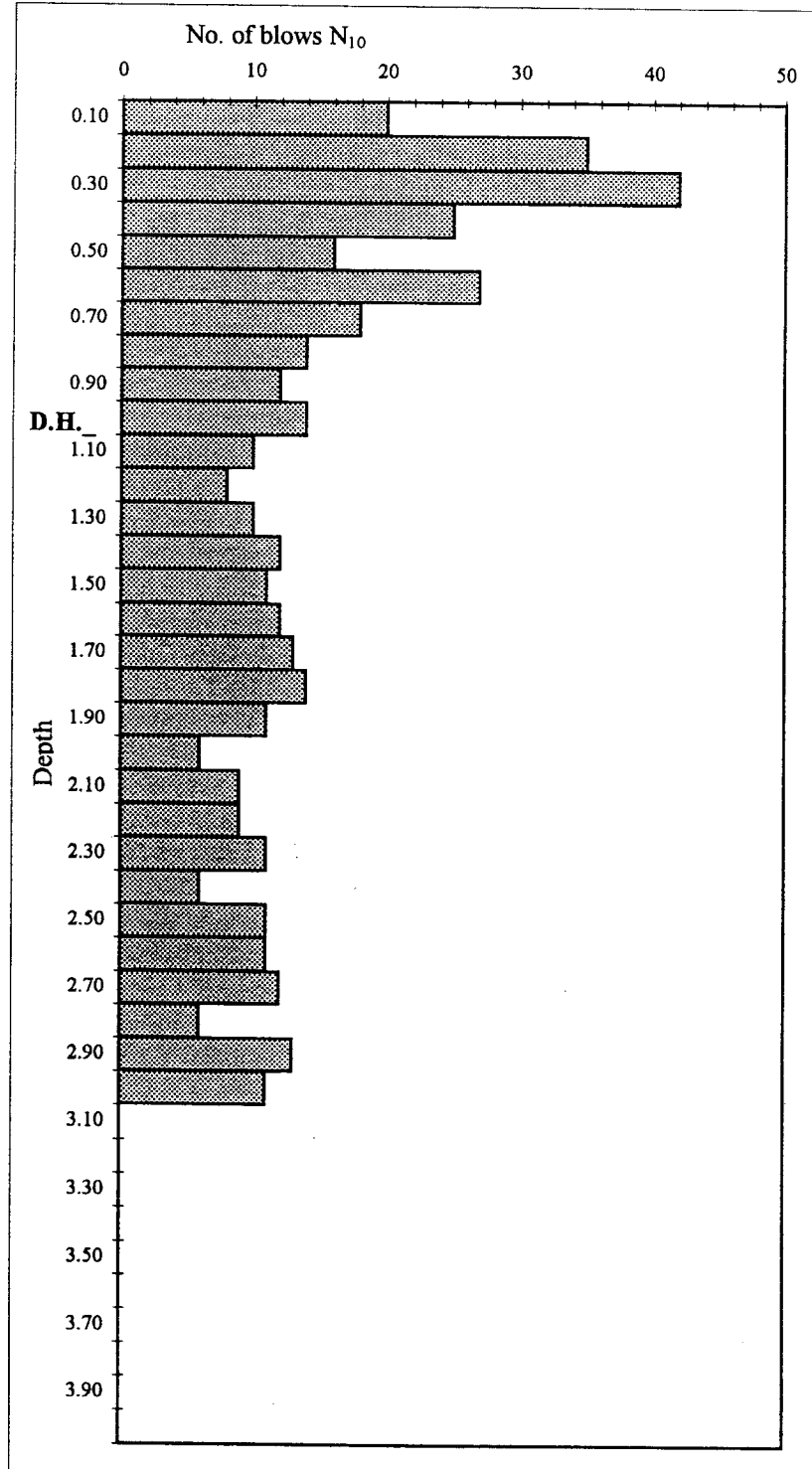
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 287 + 715 / L

Date / Дата : 14.04.97

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N ₁₀
0.10	20
0.20	35
0.30	42
0.40	25
0.50	16
0.60	27
0.70	18
0.80	14
0.90	12
1.00	14
1.10	10
1.20	8
1.30	10
1.40	12
1.50	11
1.60	12
1.70	13
1.80	14
1.90	11
2.00	6
2.10	9
2.20	9
2.30	11
2.40	6
2.50	11
2.60	11
2.70	12
2.80	6
2.90	13
3.00	11
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



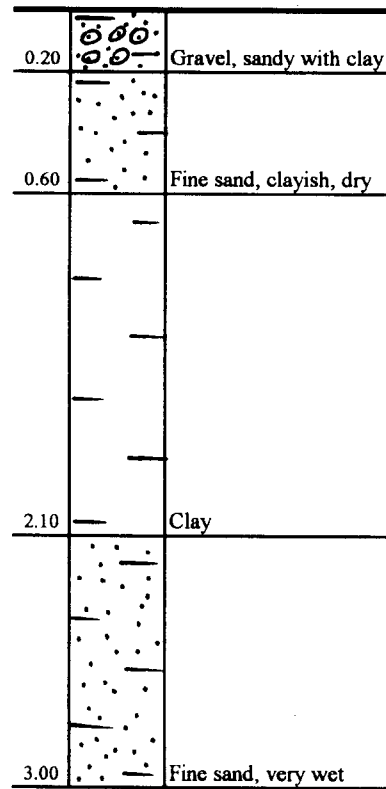
SOIL SECTION

No. 32

Location /место : km 287 + 715 / L

Date/Дата: 14.04.1997

Level/Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 33**

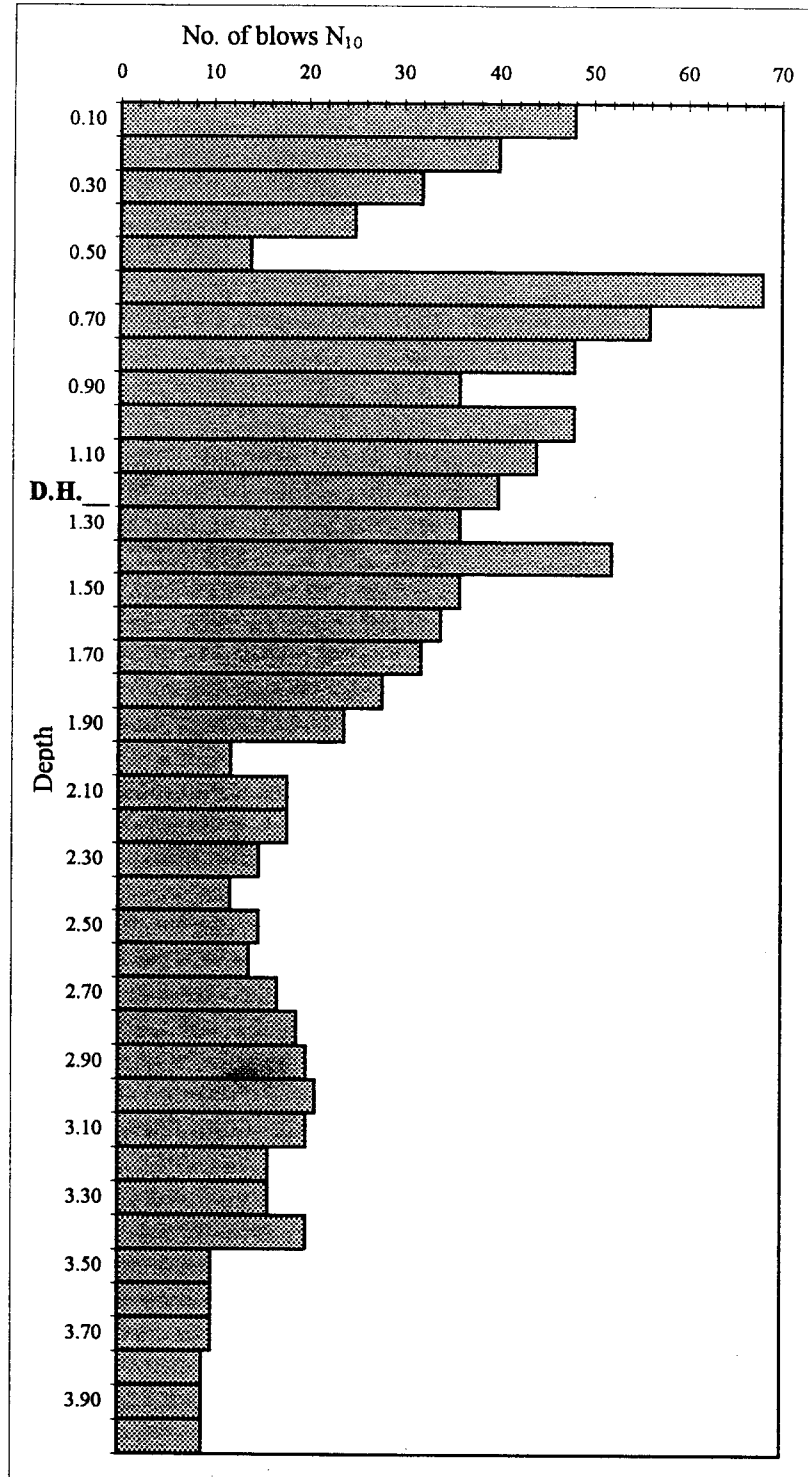
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 294 + 015 / L

Date / Дата : 15.04.97

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N ₁₀
0.10	48
0.20	40
0.30	32
0.40	25
0.50	14
0.60	68
0.70	56
0.80	48
0.90	36
1.00	48
1.10	44
1.20	40
1.30	36
1.40	52
1.50	36
1.60	34
1.70	32
1.80	28
1.90	24
2.00	12
2.10	18
2.20	18
2.30	15
2.40	12
2.50	15
2.60	14
2.70	17
2.80	19
2.90	20
3.00	21
3.10	20
3.20	16
3.30	16
3.40	20
3.50	10
3.60	10
3.70	10
3.80	9
3.90	9
4.00	9



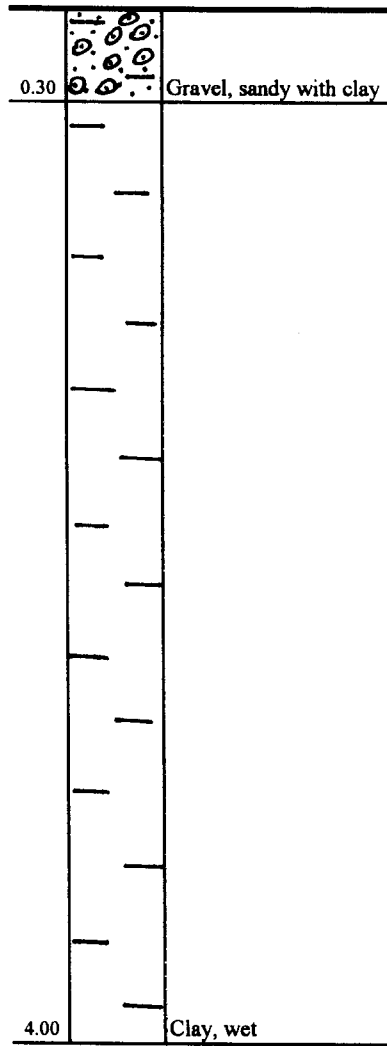
SOIL SECTION

No. 33

Location / место : km 294 + 015 / L

Data / Дата: 15.04.1997

Level / Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 34**

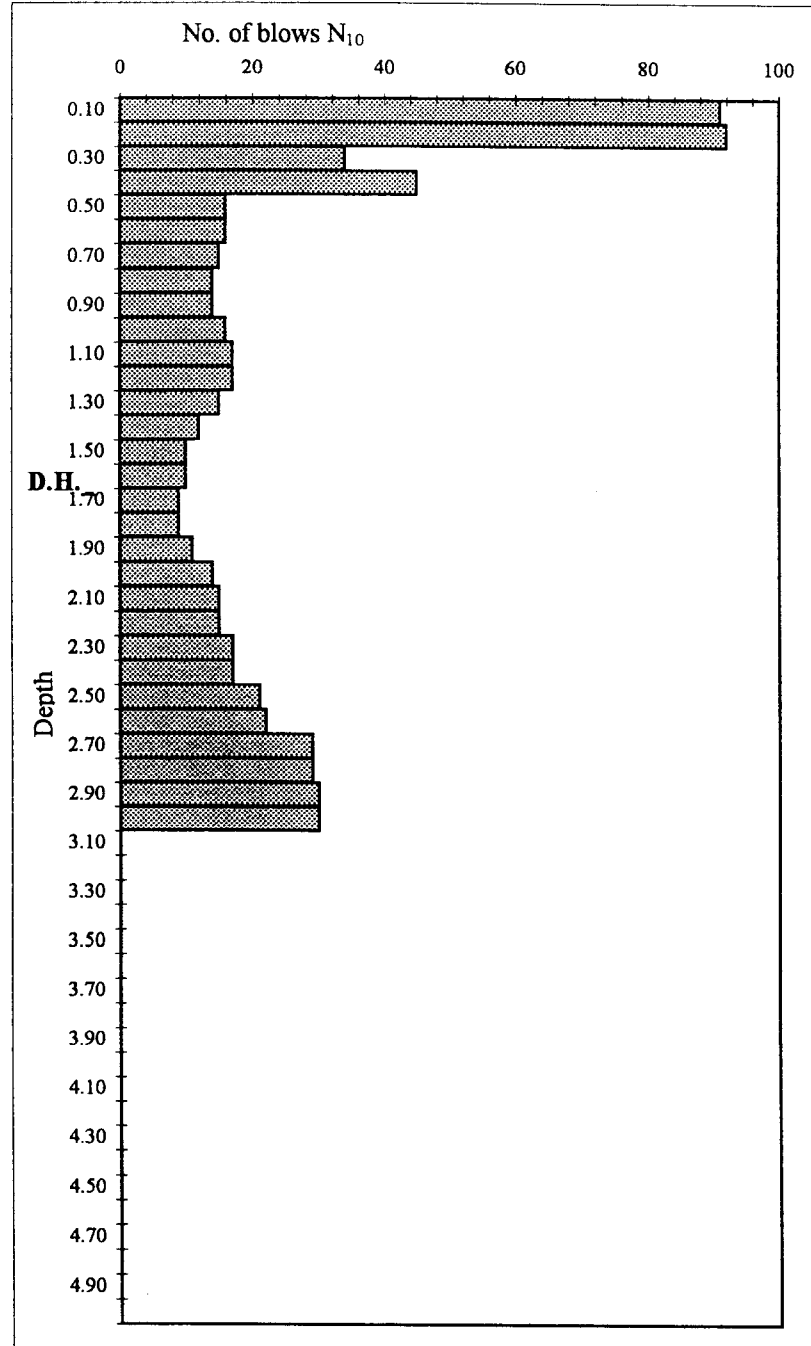
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 301 + 215 / L

Date / Дата : 16.04.97

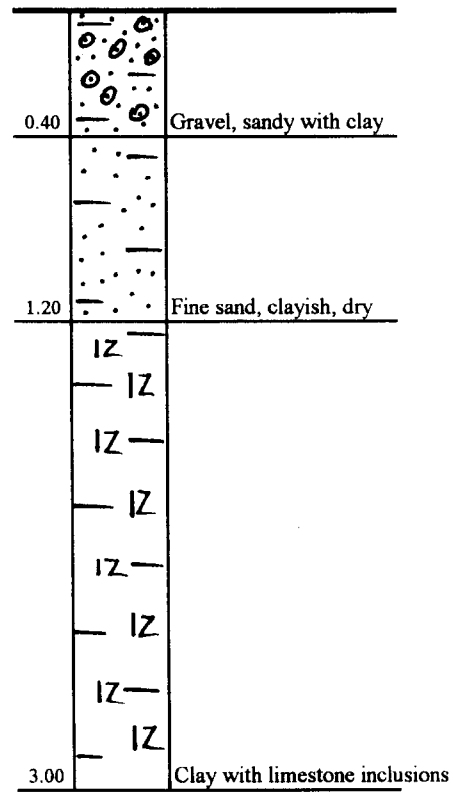
Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число
[m]	вдуваний
	N ₁₀
0.10	91
0.20	92
0.30	34
0.40	45
0.50	16
0.60	16
0.70	15
0.80	14
0.90	14
1.00	16
1.10	17
1.20	17
1.30	15
1.40	12
1.50	10
1.60	10
1.70	9
1.80	9
1.90	11
2.00	14
2.10	15
2.20	15
2.30	17
2.40	17
2.50	21
2.60	22
2.70	29
2.80	29
2.90	30
3.00	30
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	
4.10	
4.20	
4.30	
4.40	
4.50	
4.60	
4.70	
4.80	
4.90	
5.00	



SOIL SECTION

No. 34

Location / место : km 301 + 215 / LData / Дата: 16.04.1997Level / Уровень: Shoulder surface

DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 35**

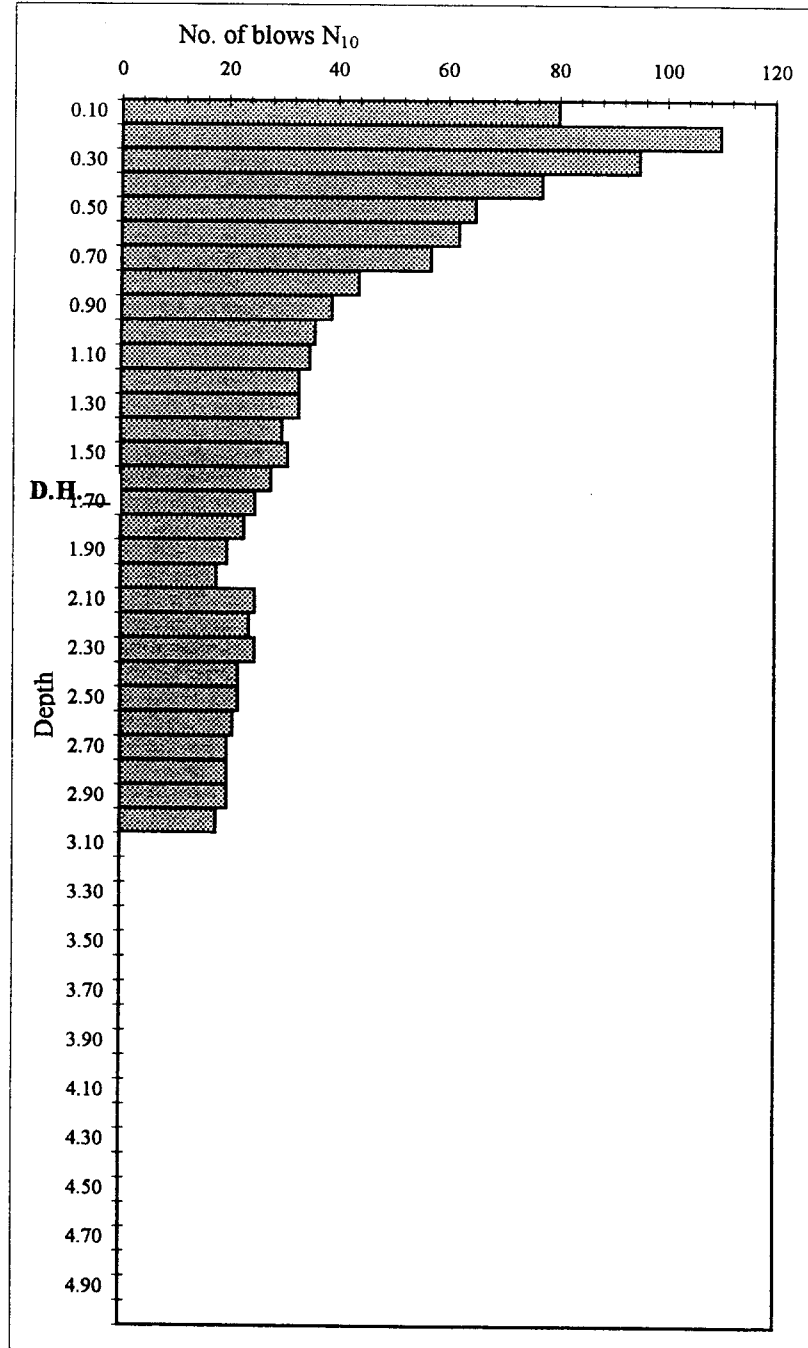
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 308 + 215 / L

Date / Дата : 17.04.97

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число
[m]	вдуваний
	N_{10}
0.10	80
0.20	110
0.30	95
0.40	77
0.50	65
0.60	62
0.70	57
0.80	44
0.90	39
1.00	36
1.10	35
1.20	33
1.30	33
1.40	30
1.50	31
1.60	28
1.70	25
1.80	23
1.90	20
2.00	18
2.10	25
2.20	24
2.30	25
2.40	22
2.50	22
2.60	21
2.70	20
2.80	20
2.90	20
3.00	18
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	
4.10	
4.20	
4.30	
4.40	
4.50	
4.60	
4.70	
4.80	
4.90	
5.00	



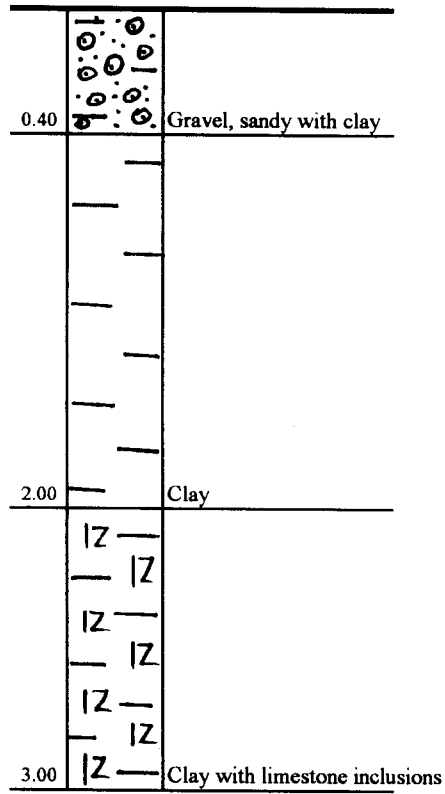
SOIL SECTION

No. 35

Location /место : km 308 + 215 / L

Data/Дата: 17.04.1997

Level/Уровень: Shoulder surface



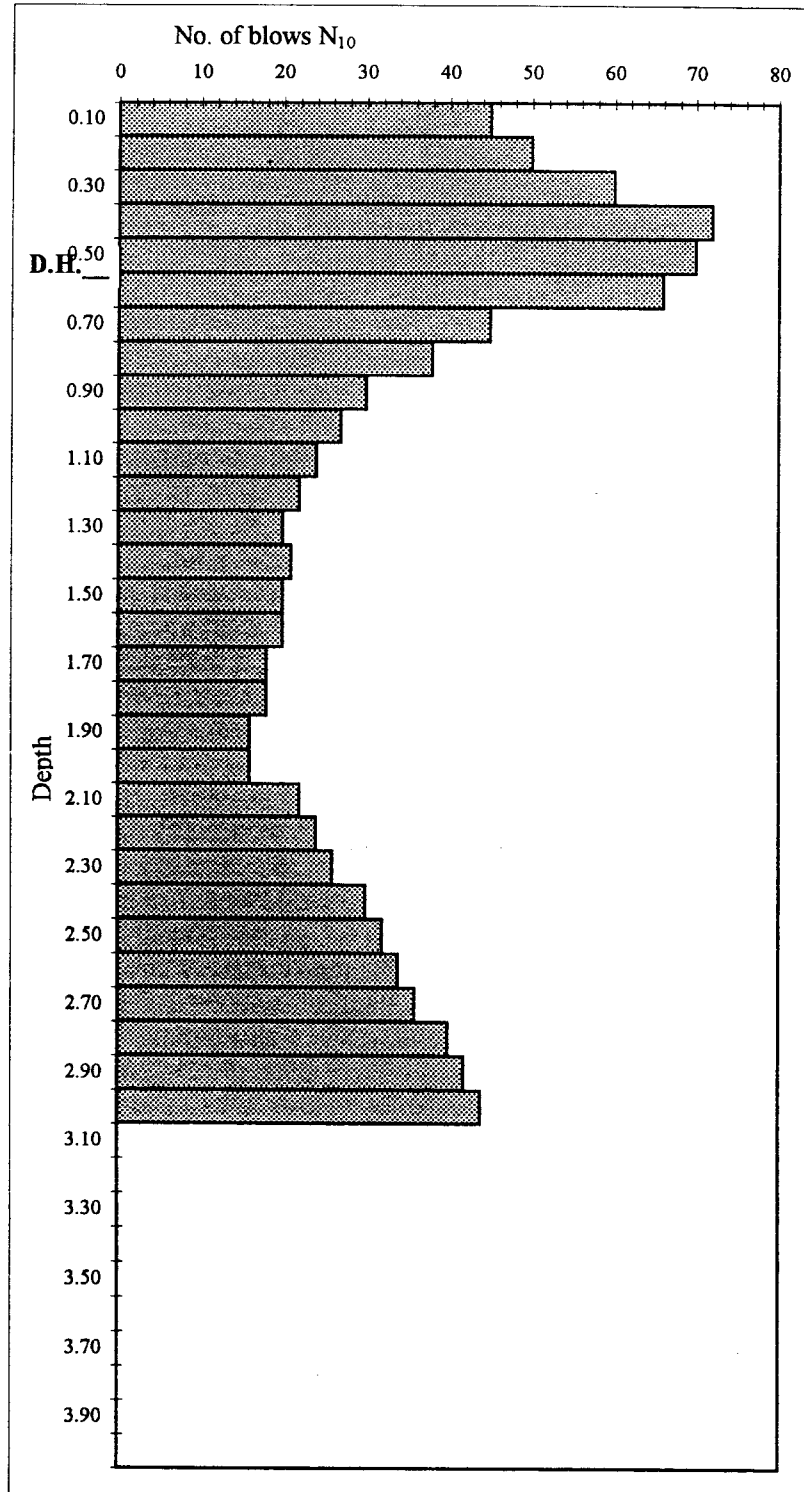
DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 36****Динамические пробы Легкие (ДПЛ 5, в соотв.ДИН4094)**

Location / место : km 315 + 315 / L

Date / Дата : 18.04.97

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число
[m]	вауваний
	N_{10}
0.10	45
0.20	50
0.30	60
0.40	72
0.50	70
0.60	66
0.70	45
0.80	38
0.90	30
1.00	27
1.10	24
1.20	22
1.30	20
1.40	21
1.50	20
1.60	20
1.70	18
1.80	18
1.90	16
2.00	16
2.10	22
2.20	24
2.30	26
2.40	30
2.50	32
2.60	34
2.70	36
2.80	40
2.90	42
3.00	44
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



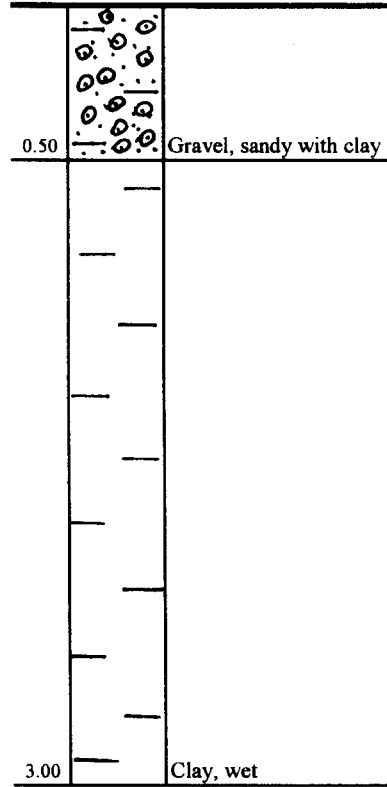
SOIL SECTION

No. 36

Location / место : km 315 + 315 / L

Data / Дата: 18.04.1997

Level / Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 37**

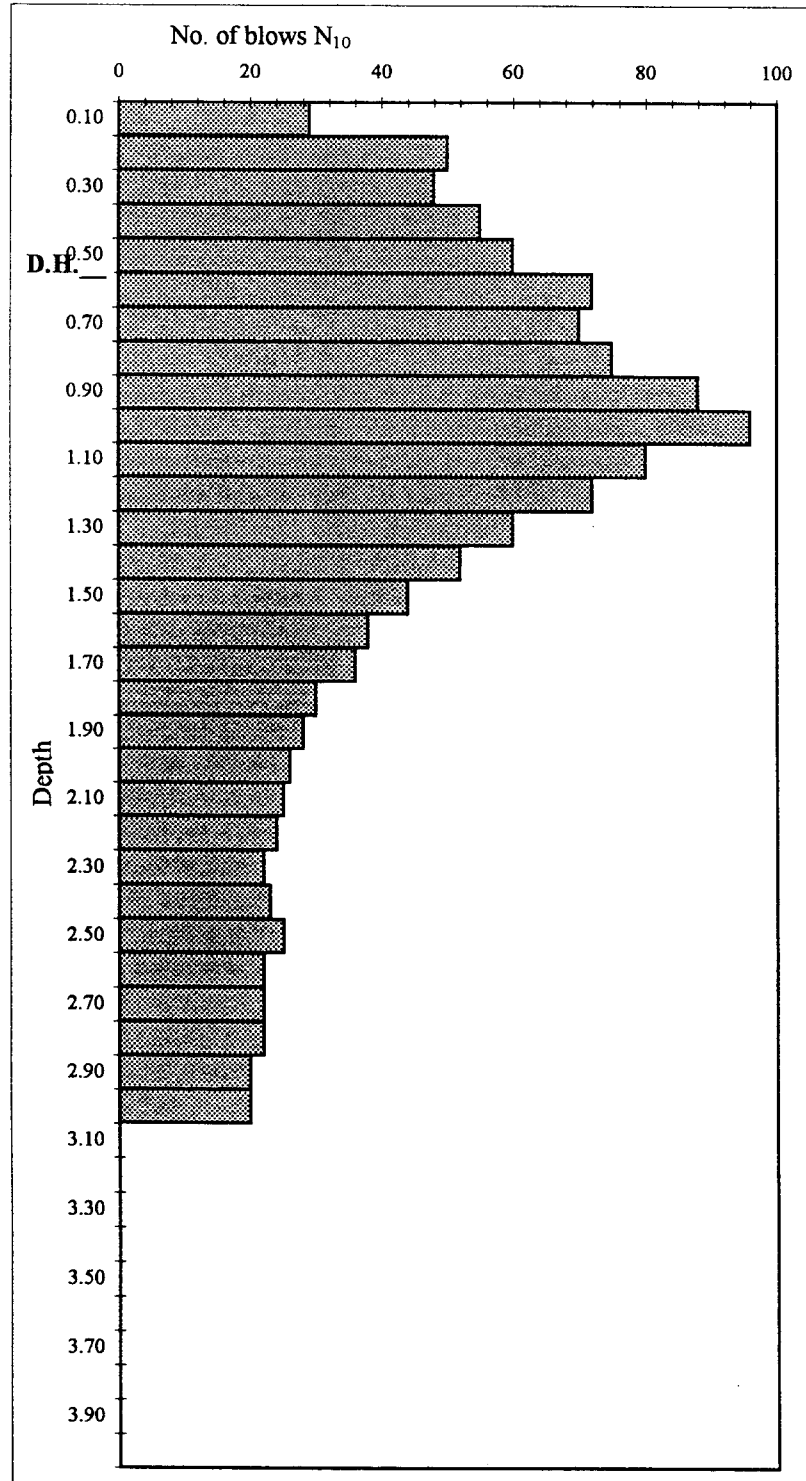
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 320 + 215 / L

Date / Дата : 19.04.97

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N_{10}
0.10	29
0.20	50
0.30	48
0.40	55
0.50	60
0.60	72
0.70	70
0.80	75
0.90	88
1.00	96
1.10	80
1.20	72
1.30	60
1.40	52
1.50	44
1.60	38
1.70	36
1.80	30
1.90	28
2.00	26
2.10	25
2.20	24
2.30	22
2.40	23
2.50	25
2.60	22
2.70	22
2.80	22
2.90	20
3.00	20
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



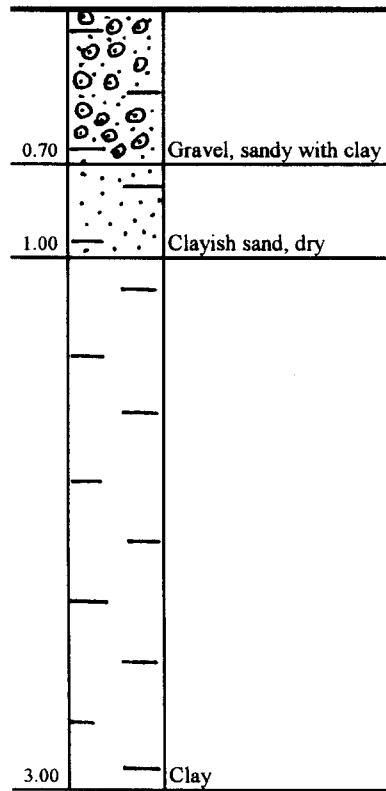
SOIL SECTION

No. 37

Location / место : km 320 + 215 / L

Data / Дата: 19.04.1997

Level / Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 38**

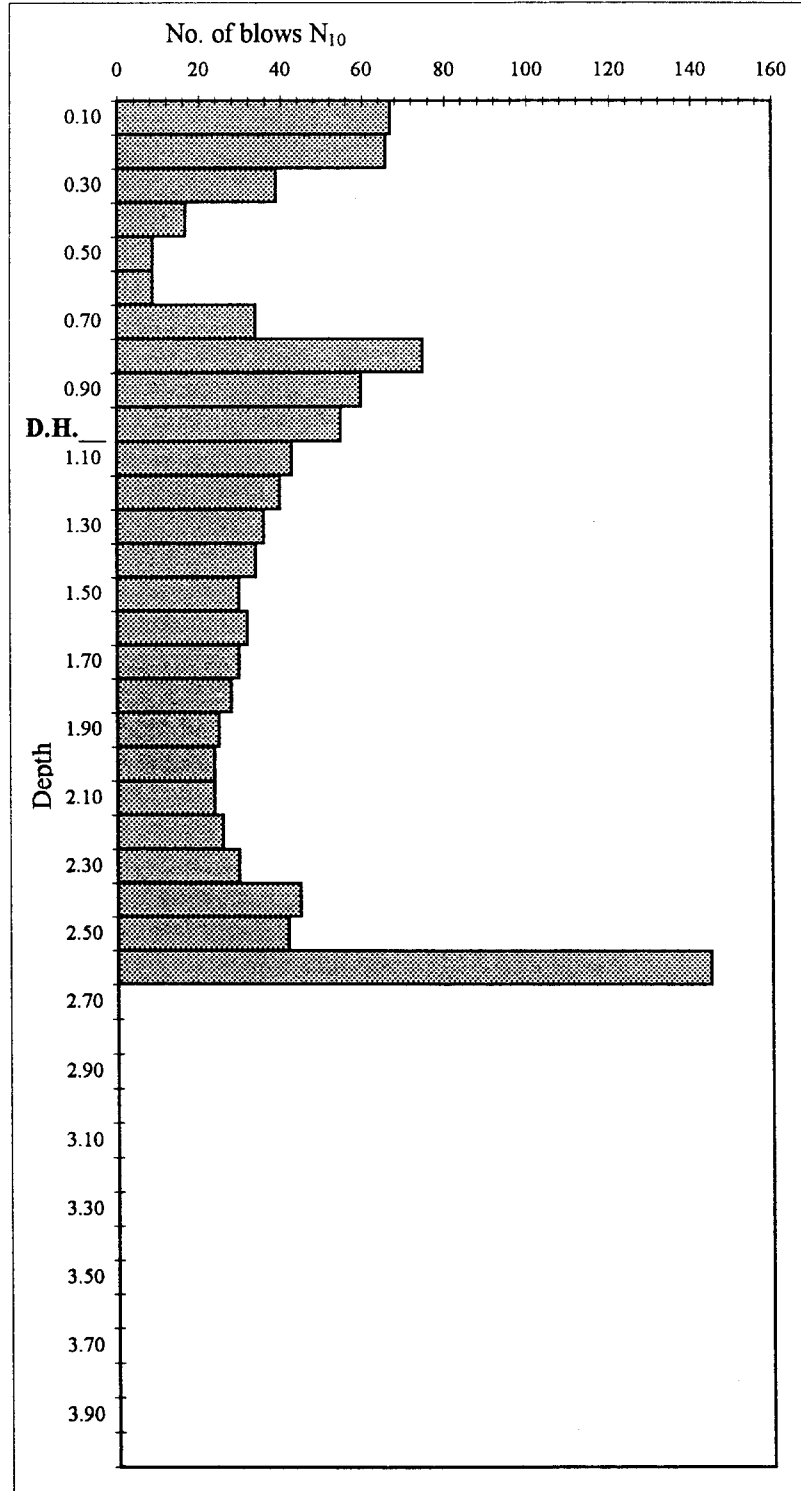
Динамические пробы Легкие (ДПЛ 5, в соотв.ДИН4094)

Location / место : km 329 + 215 / L

Date / Дата : 22.04.97

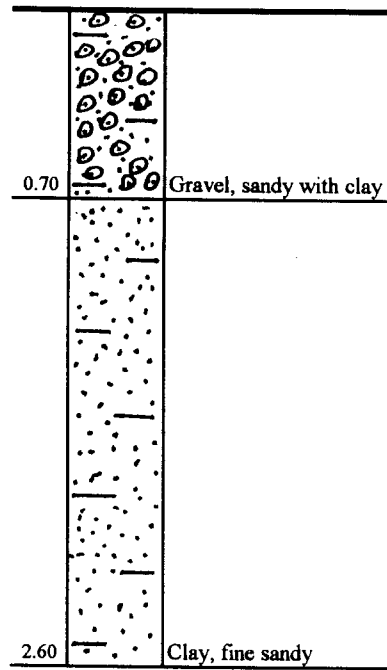
Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число
[m]	вдуваний
	N_{10}
0.10	67
0.20	66
0.30	39
0.40	17
0.50	9
0.60	9
0.70	34
0.80	75
0.90	60
1.00	55
1.10	43
1.20	40
1.30	36
1.40	34
1.50	30
1.60	32
1.70	30
1.80	28
1.90	25
2.00	24
2.10	24
2.20	26
2.30	30
2.40	45
2.50	42
2.60	145
2.70	
2.80	
2.90	
3.00	
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



SOIL SECTION

No. 38

Location / место : km 329 + 215 / LData / Дата: 22.04.1997Level / Уровень: Shoulder surface

DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 39**

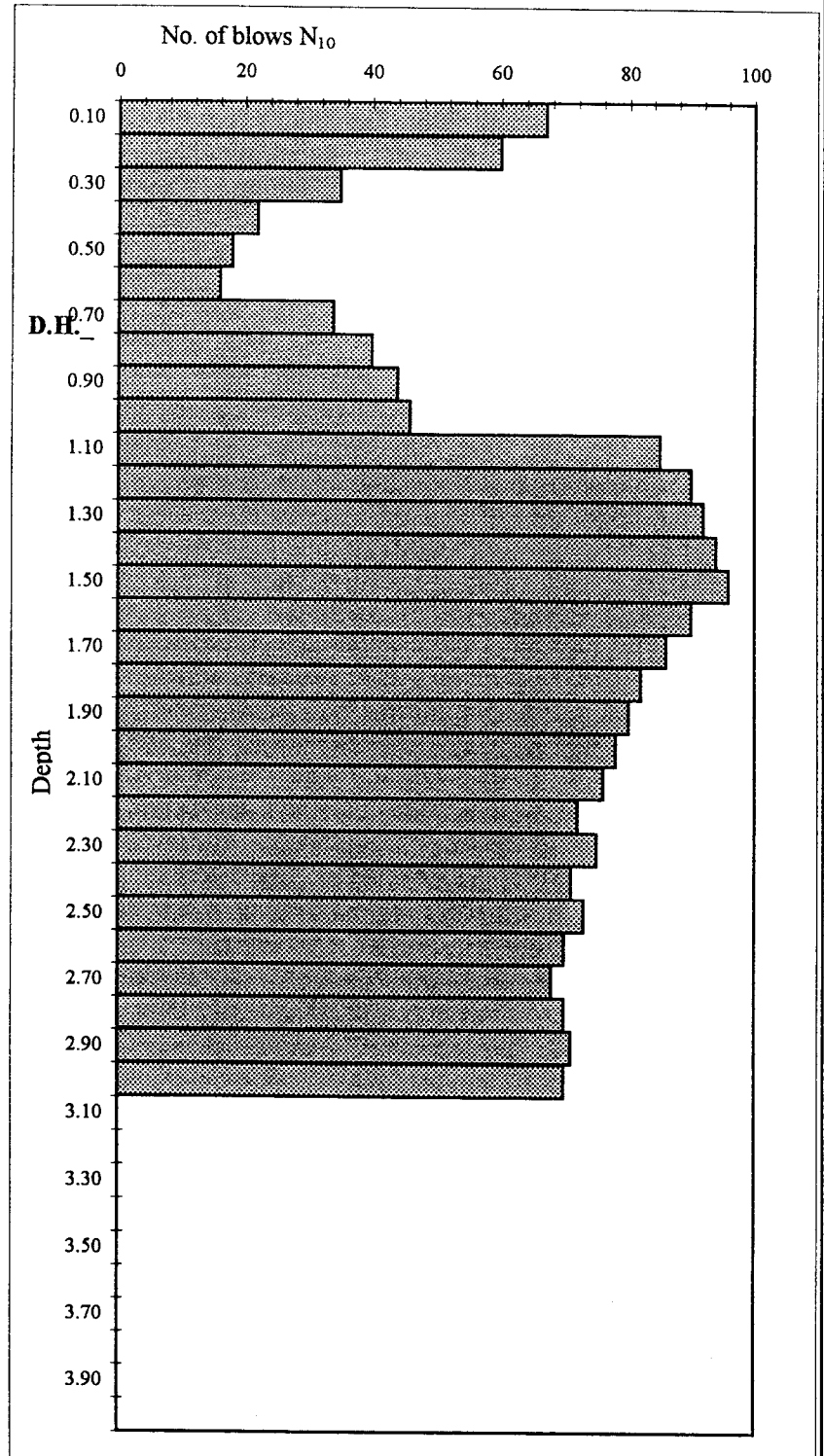
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 337 + 215 / L

Date / Дата : 22.04.97

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N_{10}
0.10	67
0.20	60
0.30	35
0.40	22
0.50	18
0.60	16
0.70	34
0.80	40
0.90	44
1.00	46
1.10	85
1.20	90
1.30	92
1.40	94
1.50	96
1.60	90
1.70	86
1.80	82
1.90	80
2.00	78
2.10	76
2.20	72
2.30	75
2.40	71
2.50	73
2.60	70
2.70	68
2.80	70
2.90	71
3.00	70
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



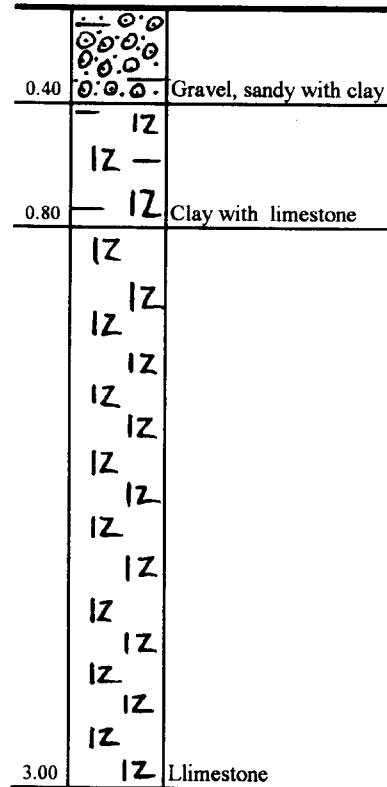
SOIL SECTION

No. 39

Location / место : km 337 + 215 / L

Data / Дата: 22.04.1997

Level / Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 40**

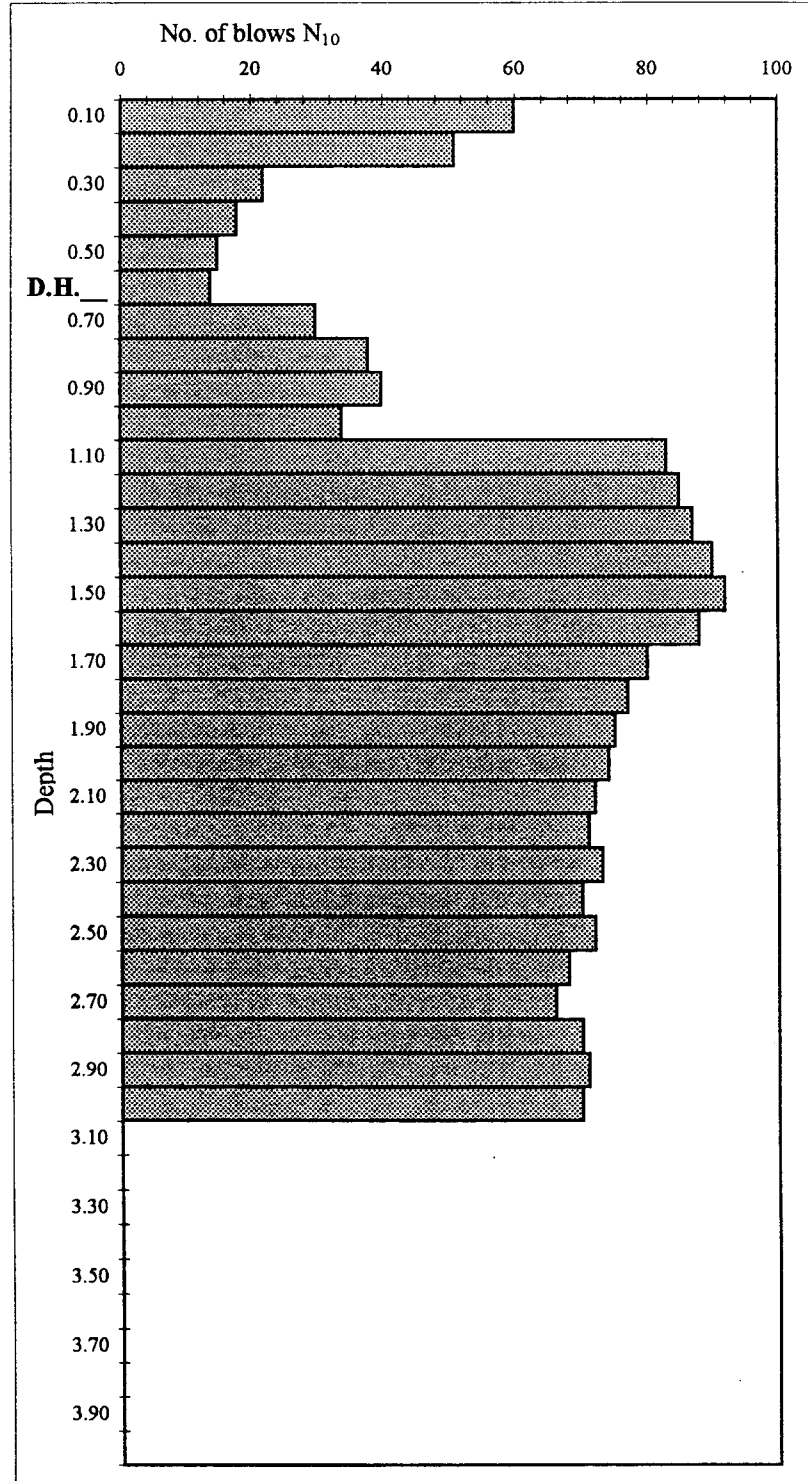
Динамические пробы Легкие (ДПЛ 5, в соотв.ДИН4094)

Location / место : km 344 + 215 / L

Date / Дата : 22.04.97

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N ₁₀
0.10	60
0.20	51
0.30	22
0.40	18
0.50	15
0.60	14
0.70	30
0.80	38
0.90	40
1.00	34
1.10	83
1.20	85
1.30	87
1.40	90
1.50	92
1.60	88
1.70	80
1.80	77
1.90	75
2.00	74
2.10	72
2.20	71
2.30	73
2.40	70
2.50	72
2.60	68
2.70	66
2.80	70
2.90	71
3.00	70
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



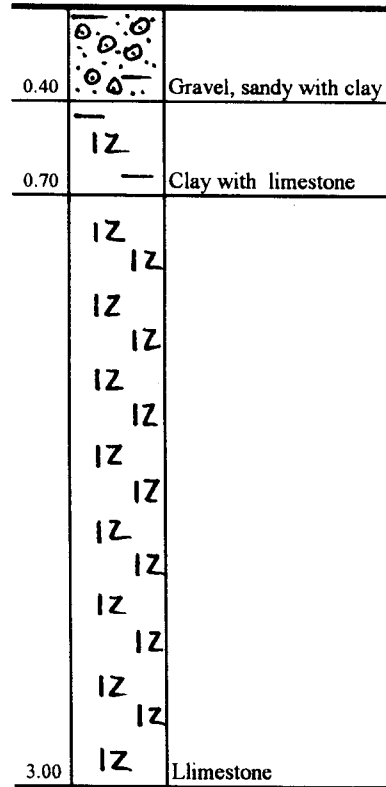
SOIL SECTION

No. 40

Location / место : km 344 + 215 / L

Date / Дата: 22.04.1997

Level / Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 41**

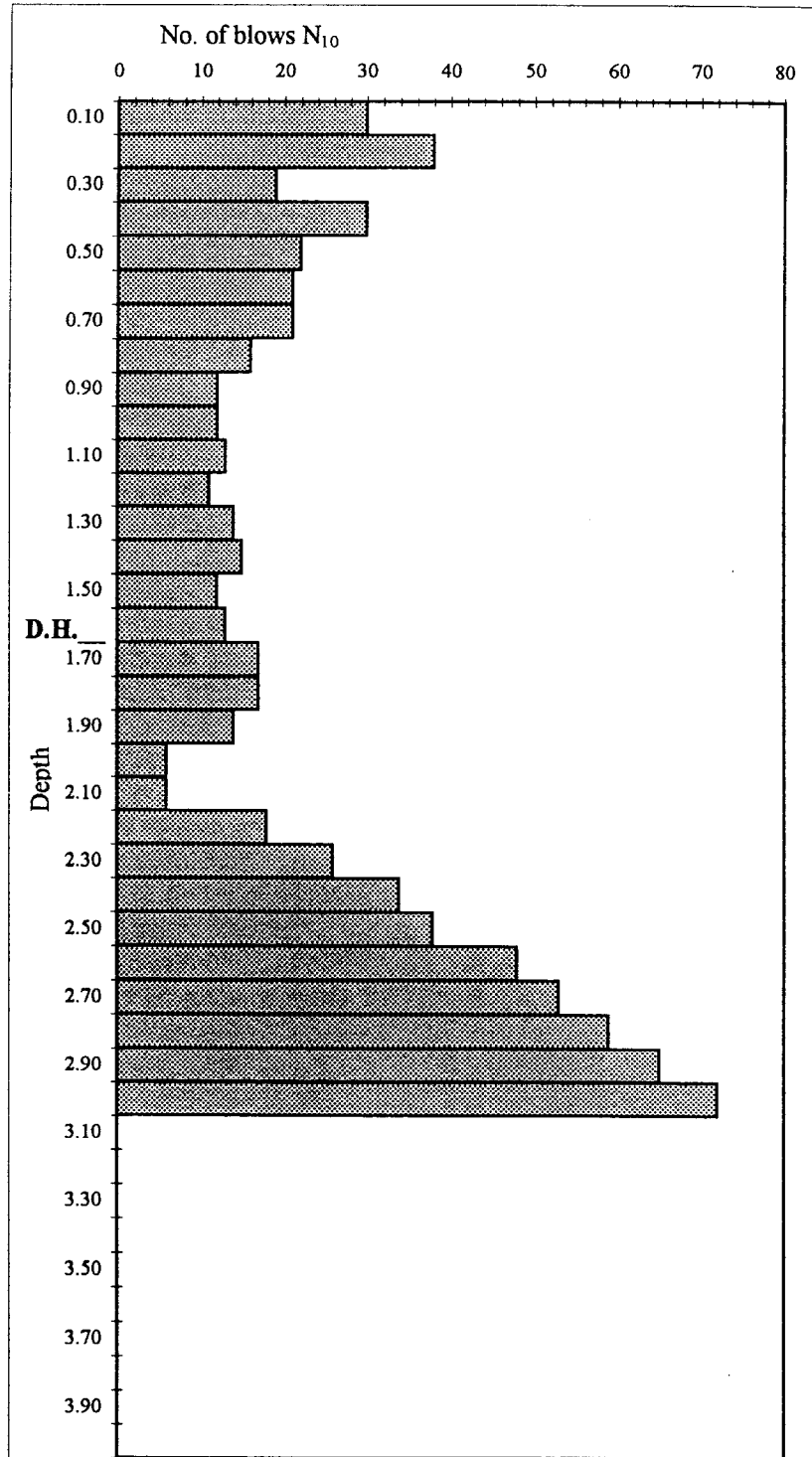
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 349 + 715 / L

Date / Дата : 23.04.97

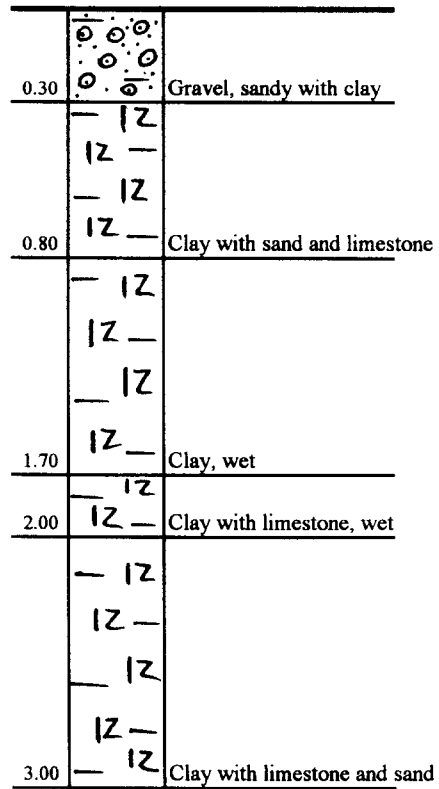
Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N ₁₀
0.10	30
0.20	38
0.30	19
0.40	30
0.50	22
0.60	21
0.70	21
0.80	16
0.90	12
1.00	12
1.10	13
1.20	11
1.30	14
1.40	15
1.50	12
1.60	13
1.70	17
1.80	17
1.90	14
2.00	6
2.10	6
2.20	18
2.30	26
2.40	34
2.50	38
2.60	48
2.70	53
2.80	59
2.90	65
3.00	72
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



SOIL SECTION

No. 41

Location / место : km 349 + 715 / LData / Дата: 23.04.1997Level / Уровень: Shoulder surface

DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 42**

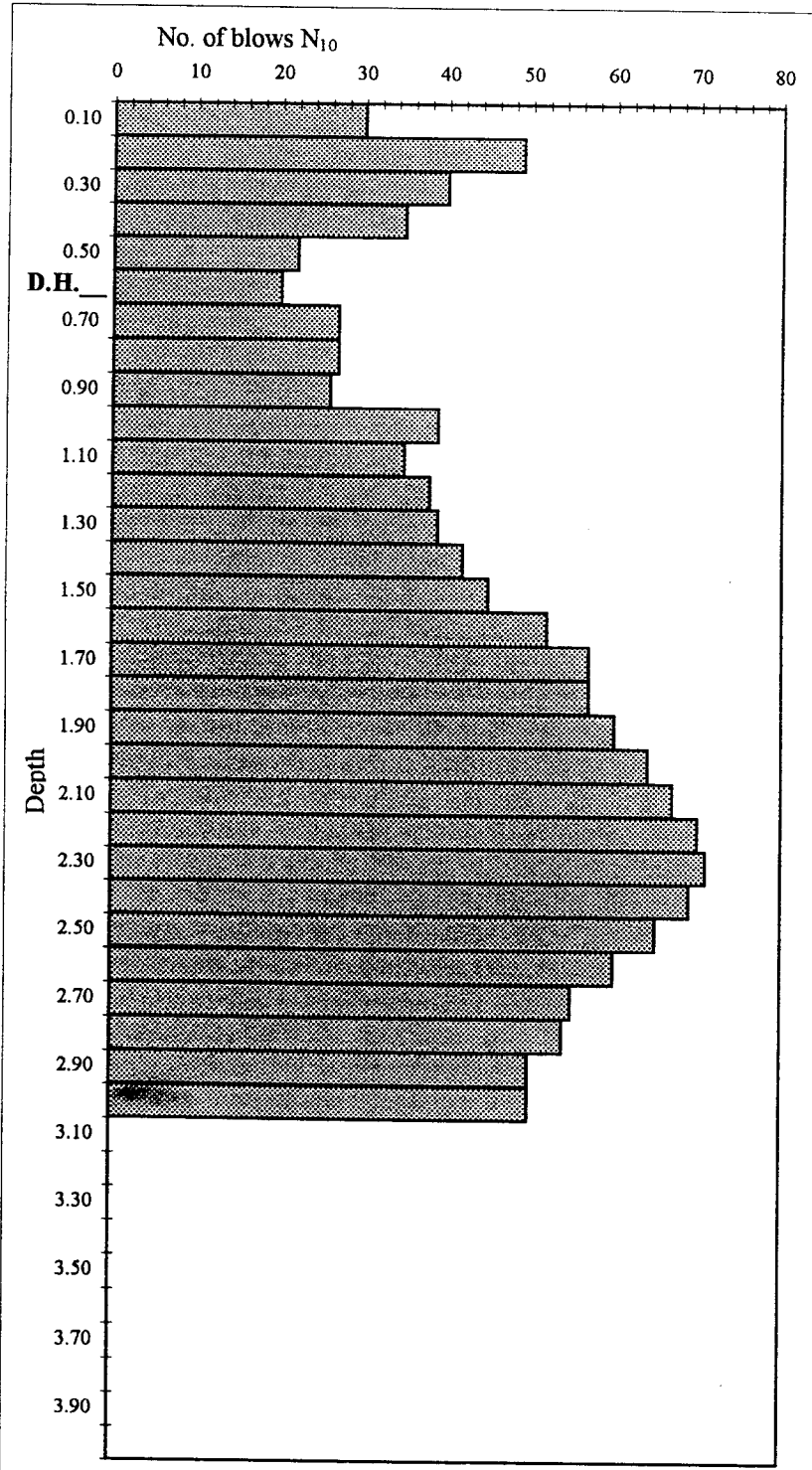
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 361 + 215 / L

Date / Дата : 23.04.97

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вауваний
[m]	N_{10}
0.10	30
0.20	49
0.30	40
0.40	35
0.50	22
0.60	20
0.70	27
0.80	27
0.90	26
1.00	39
1.10	35
1.20	38
1.30	39
1.40	42
1.50	45
1.60	52
1.70	57
1.80	57
1.90	60
2.00	64
2.10	67
2.20	70
2.30	71
2.40	69
2.50	65
2.60	60
2.70	55
2.80	54
2.90	50
3.00	50
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



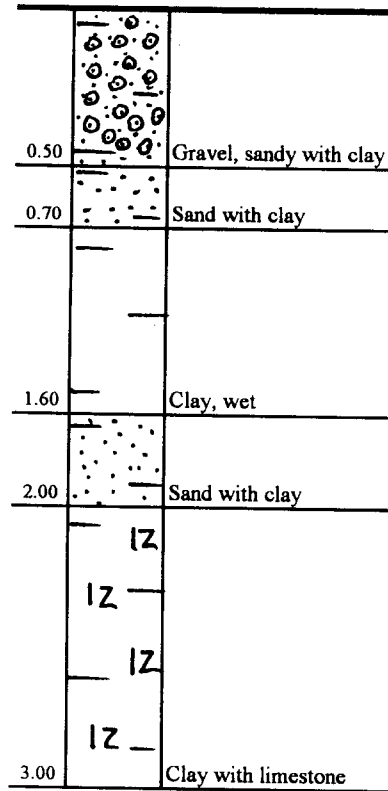
SOIL SECTION

No. 42

Location / место : km 361 + 215 / L

Date / Дата: 23.04.1997

Level / Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 43**

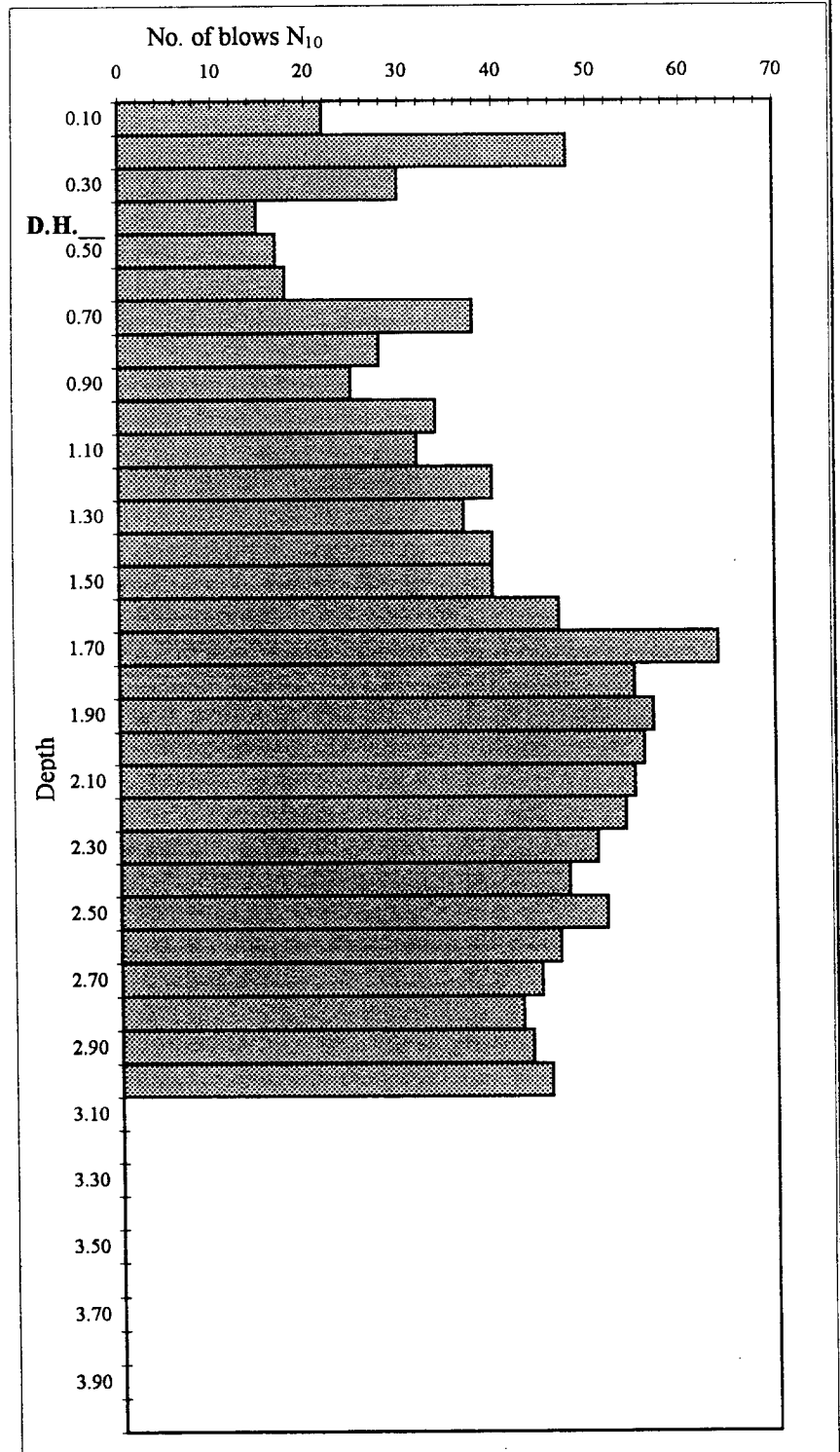
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 368 + 015 / L

Date / Дата : 23.04.97

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдавний
[m]	N ₁₀
0.10	22
0.20	48
0.30	30
0.40	15
0.50	17
0.60	18
0.70	38
0.80	28
0.90	25
1.00	34
1.10	32
1.20	40
1.30	37
1.40	40
1.50	40
1.60	47
1.70	64
1.80	55
1.90	57
2.00	56
2.10	55
2.20	54
2.30	51
2.40	48
2.50	52
2.60	47
2.70	45
2.80	43
2.90	44
3.00	46
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



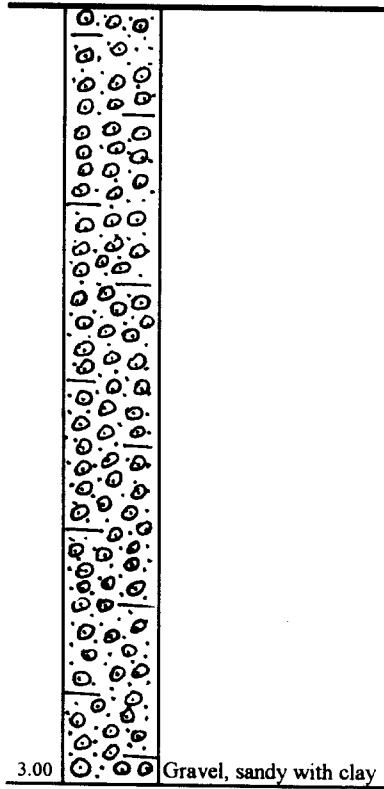
SOIL SECTION

No. 43

Location / место : km 368 + 015 / L

Data / Дата: 23.04.1997

Level / Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 44**

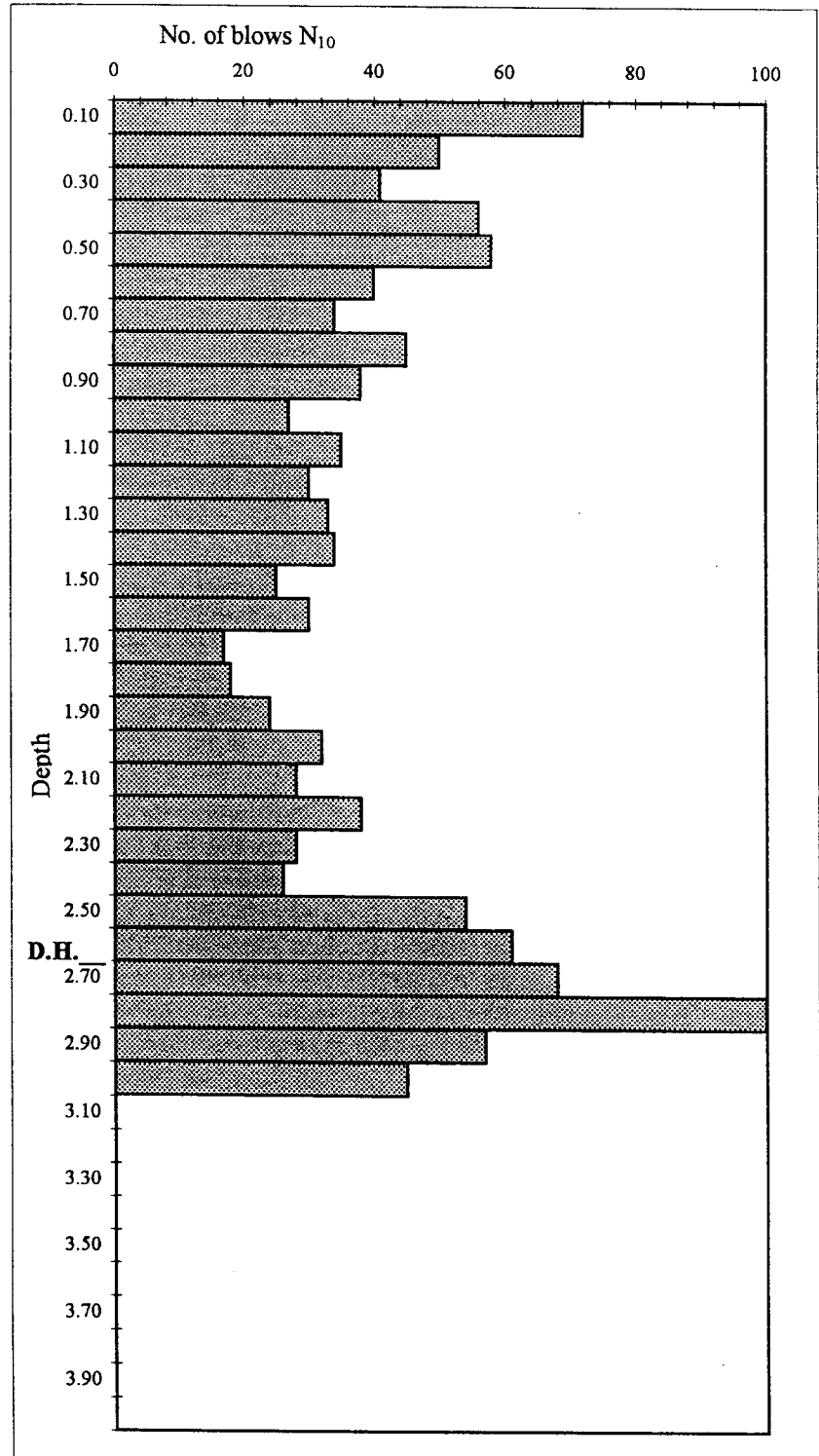
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 376 + 515 / L

Date / Дата : 24.04.97

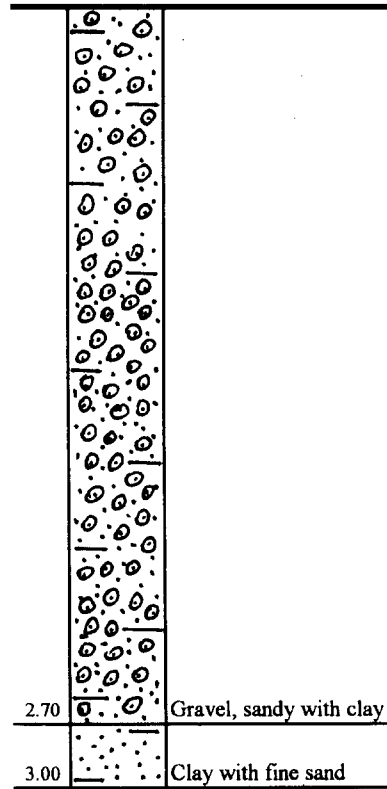
Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N ₁₀
0.10	72
0.20	50
0.30	41
0.40	56
0.50	58
0.60	40
0.70	34
0.80	45
0.90	38
1.00	27
1.10	35
1.20	30
1.30	33
1.40	34
1.50	25
1.60	30
1.70	17
1.80	18
1.90	24
2.00	32
2.10	28
2.20	38
2.30	28
2.40	26
2.50	54
2.60	61
2.70	68
2.80	100
2.90	57
3.00	45
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



SOIL SECTION

No. 44

Location / место : km 376 + 515 / LData / Дата: 24.04.1997Level / Уровень: Shoulder surface

DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 45**

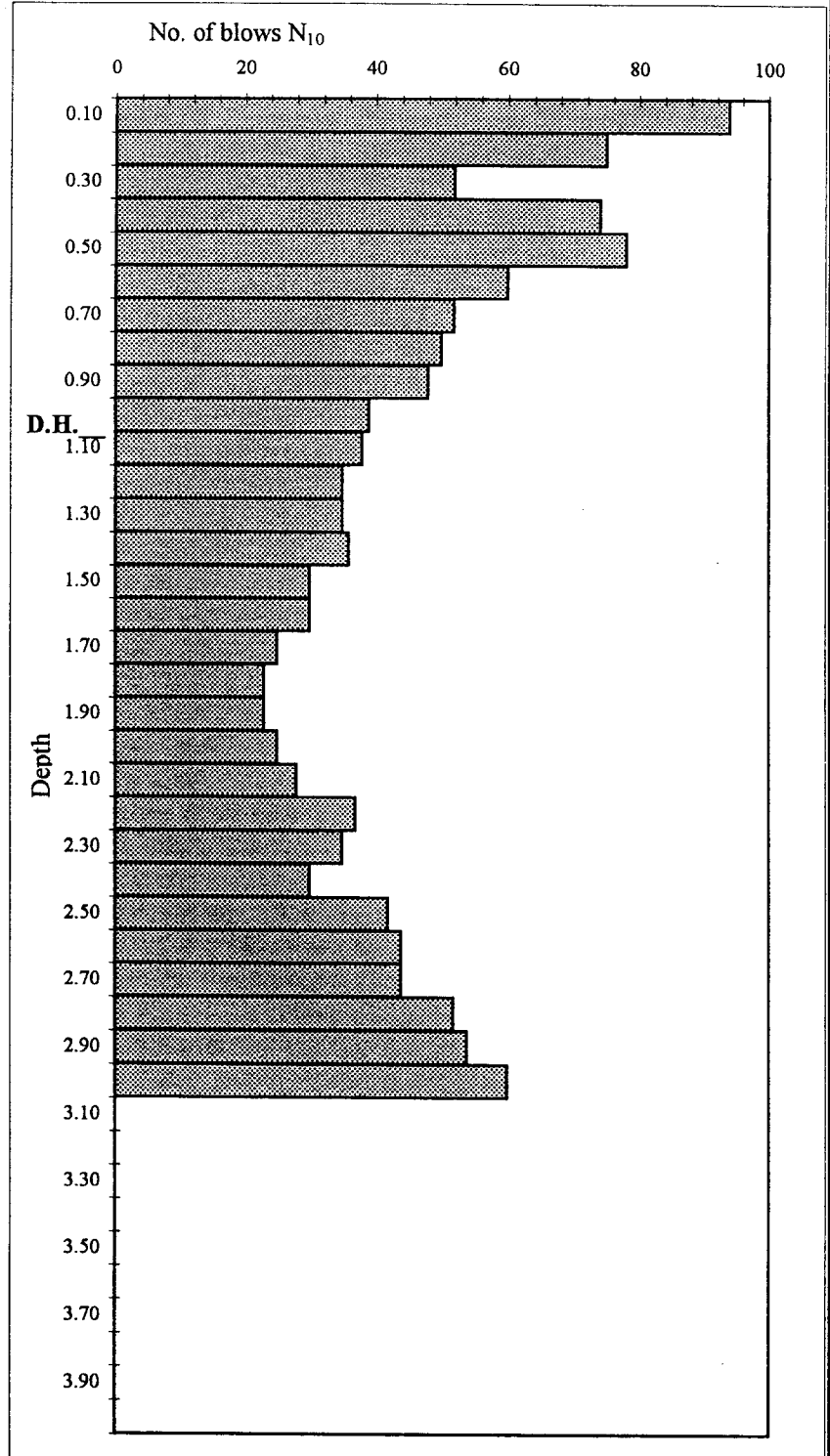
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 388 + 815 / L

Date / Дата : 24.04.97

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N ₁₀
0.10	94
0.20	75
0.30	52
0.40	74
0.50	78
0.60	60
0.70	52
0.80	50
0.90	48
1.00	39
1.10	38
1.20	35
1.30	35
1.40	36
1.50	30
1.60	30
1.70	25
1.80	23
1.90	23
2.00	25
2.10	28
2.20	37
2.30	35
2.40	30
2.50	42
2.60	44
2.70	44
2.80	52
2.90	54
3.00	60
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



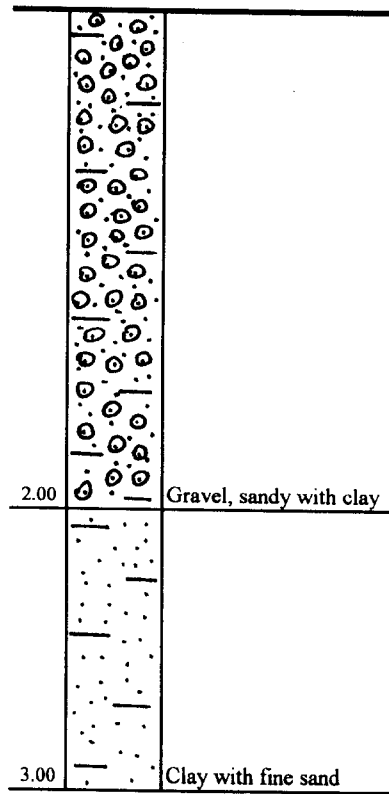
SOIL SECTION

No. 45

Location /место : km 388 + 815 /L

Data/Дата: 24.04.1997

Level/Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 46**

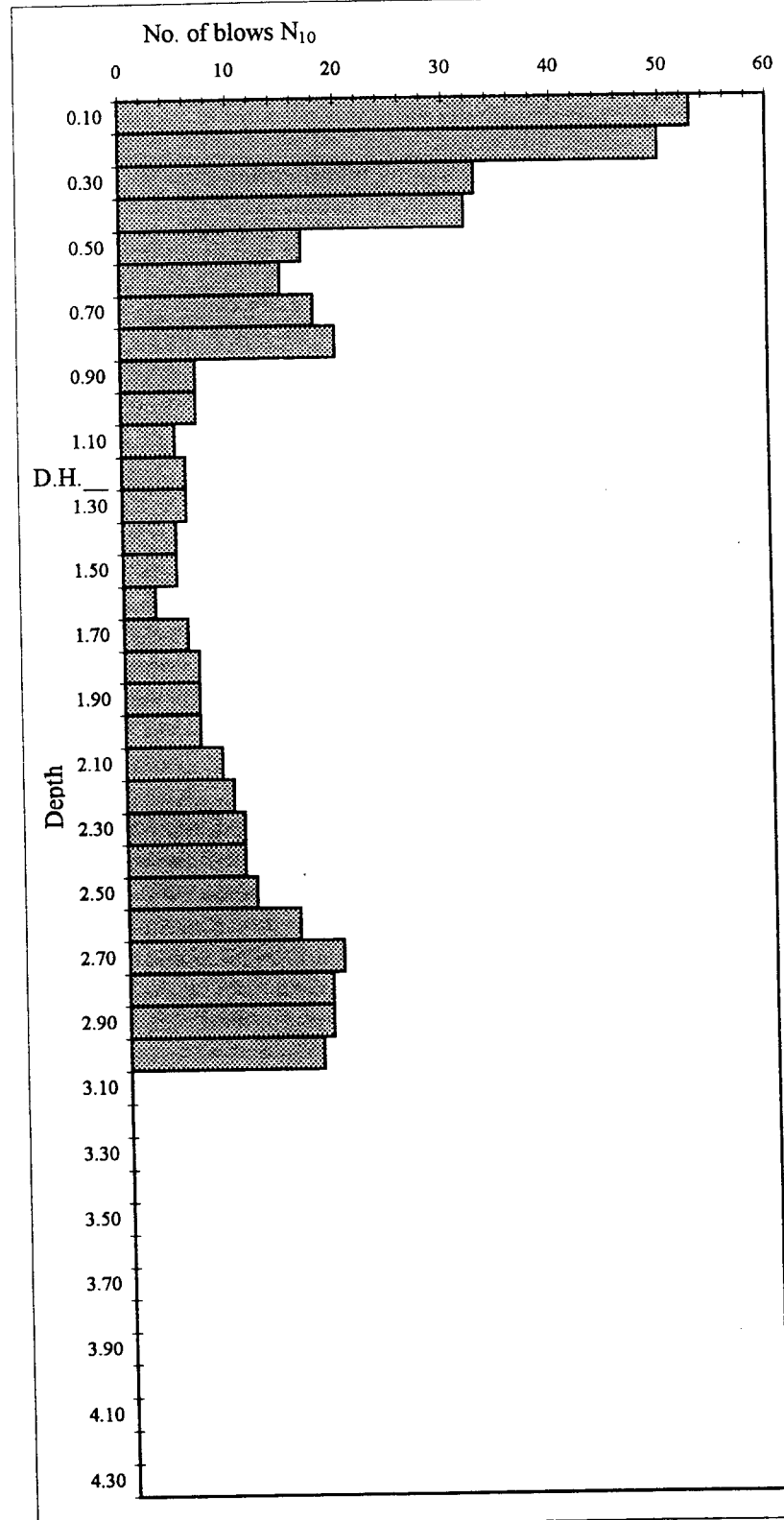
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 395 + 215 / L

Date / Дата : 24.04.97

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдавнений
[m]	N ₁₀
0.10	53
0.20	50
0.30	33
0.40	32
0.50	17
0.60	15
0.70	18
0.80	20
0.90	7
1.00	7
1.10	5
1.20	6
1.30	6
1.40	5
1.50	5
1.60	3
1.70	6
1.80	7
1.90	7
2.00	7
2.10	9
2.20	10
2.30	11
2.40	11
2.50	12
2.60	16
2.70	20
2.80	19
2.90	19
3.00	18
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	
4.10	
4.20	
4.30	



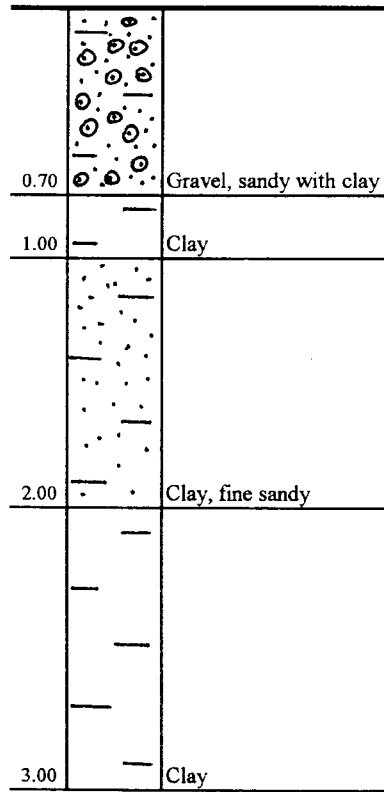
SOIL SECTION

No. 46

Location / место : km 395 + 215 / L

Data / Дата: 24.04.1997

Level / Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 47**

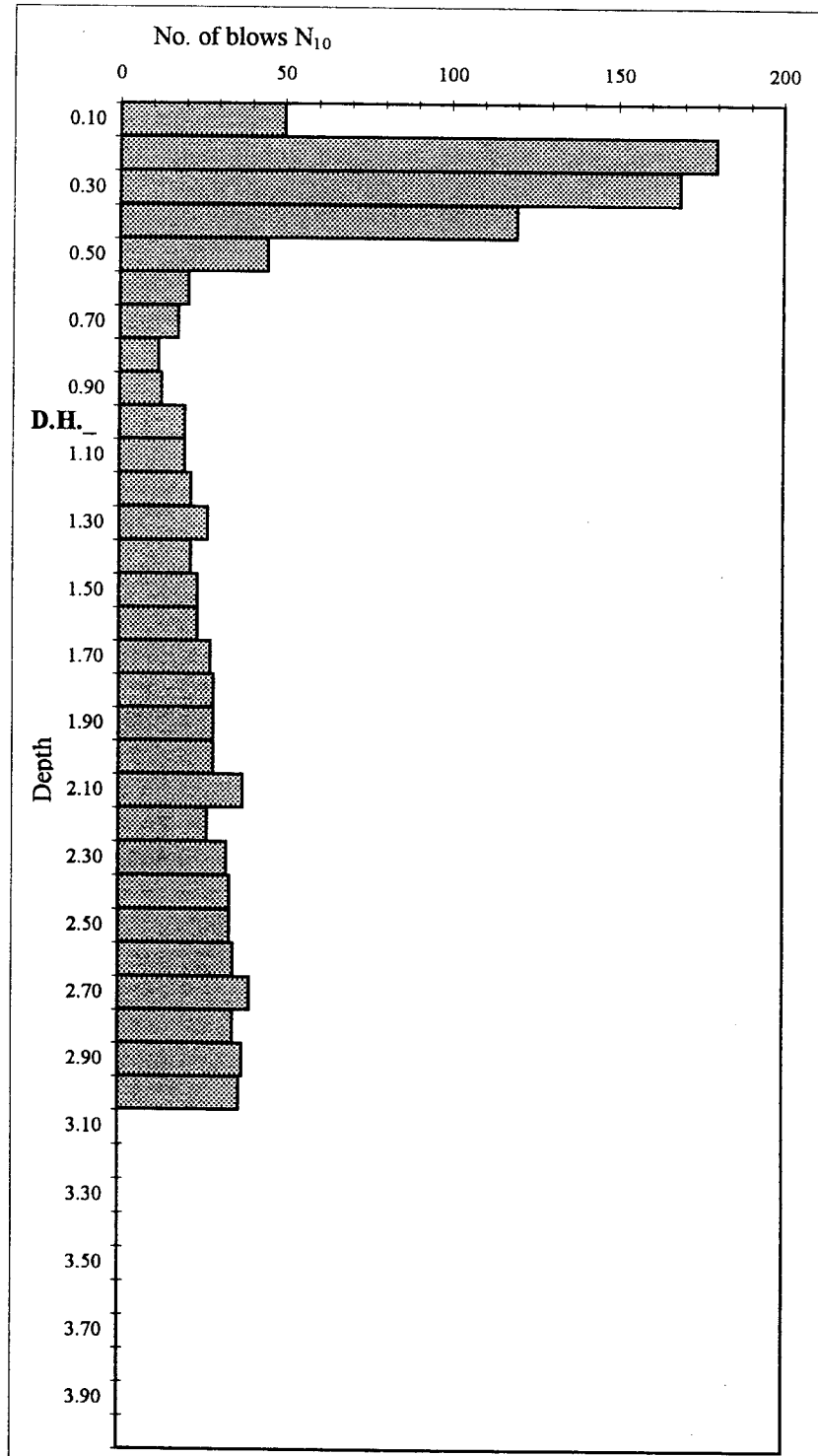
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 406 + 915 / L

Date / Дата : 25.04.97

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N_{10}
0.10	50
0.20	180
0.30	169
0.40	120
0.50	45
0.60	21
0.70	18
0.80	12
0.90	13
1.00	20
1.10	20
1.20	22
1.30	27
1.40	22
1.50	24
1.60	24
1.70	28
1.80	29
1.90	29
2.00	29
2.10	38
2.20	27
2.30	33
2.40	34
2.50	34
2.60	35
2.70	40
2.80	35
2.90	38
3.00	37
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



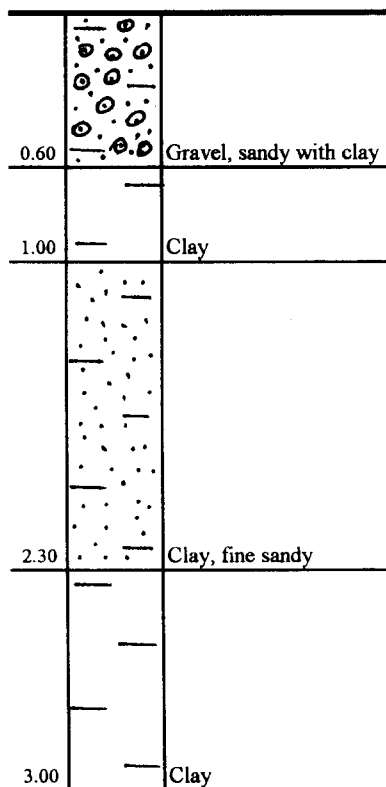
SOIL SECTION

No. 47

Location / место : km 406 + 915 / L

Date / Дата: 25.04.1997

Level / Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 48**

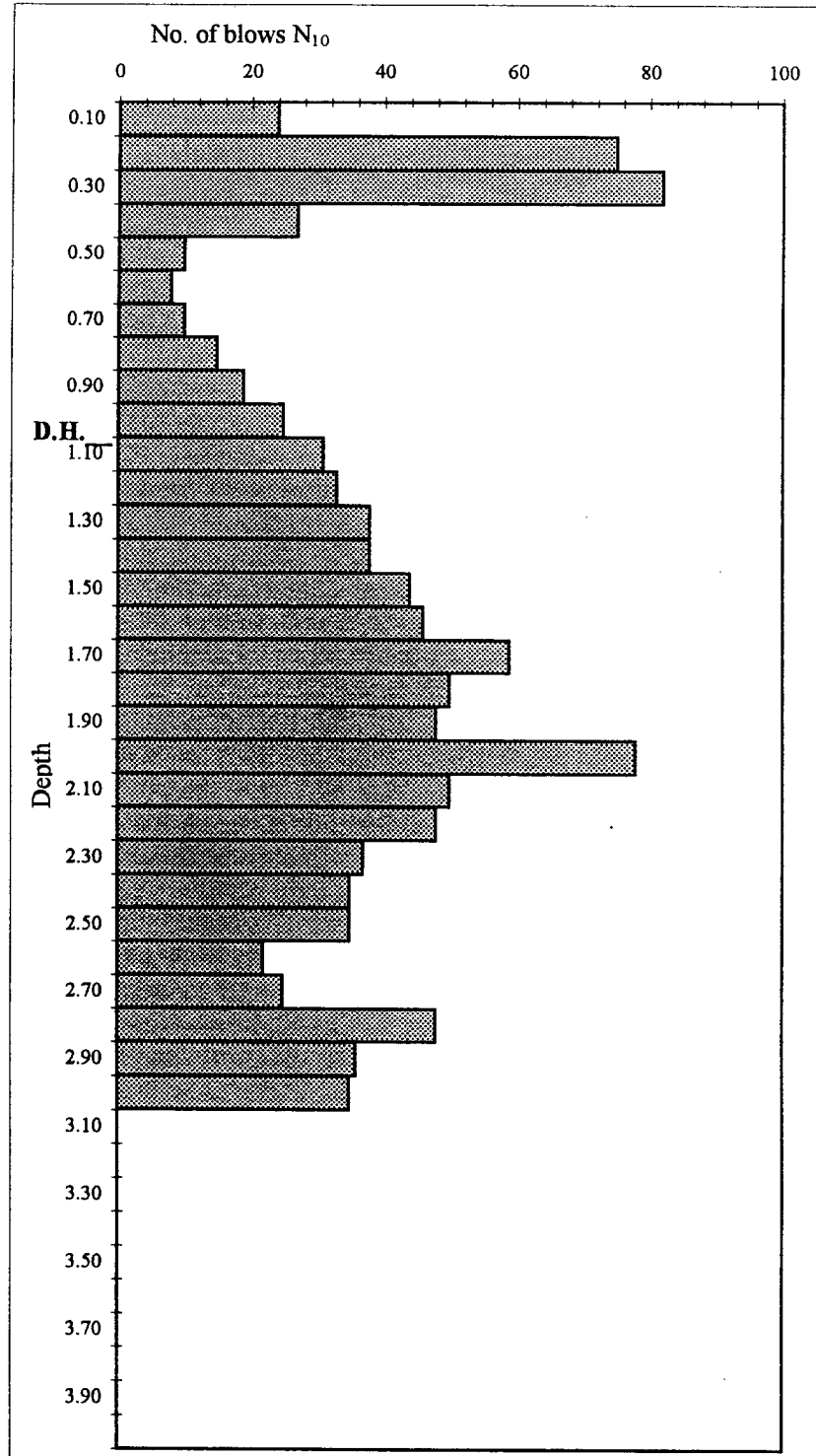
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 414 + 415 / L

Date / Дата : 25. 04. 1997

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N ₁₀
0.10	24
0.20	75
0.30	82
0.40	27
0.50	10
0.60	8
0.70	10
0.80	15
0.90	19
1.00	25
1.10	31
1.20	33
1.30	38
1.40	38
1.50	44
1.60	46
1.70	59
1.80	50
1.90	48
2.00	78
2.10	50
2.20	48
2.30	37
2.40	35
2.50	35
2.60	22
2.70	25
2.80	48
2.90	36
3.00	35
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



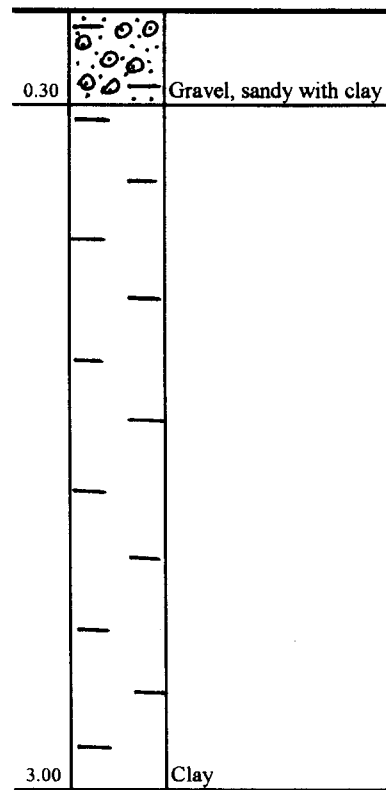
SOIL SECTION

No. 48

Location / место : km 414 + 415 / L

Data / Дата: 25.04.1997

Level / Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 49**

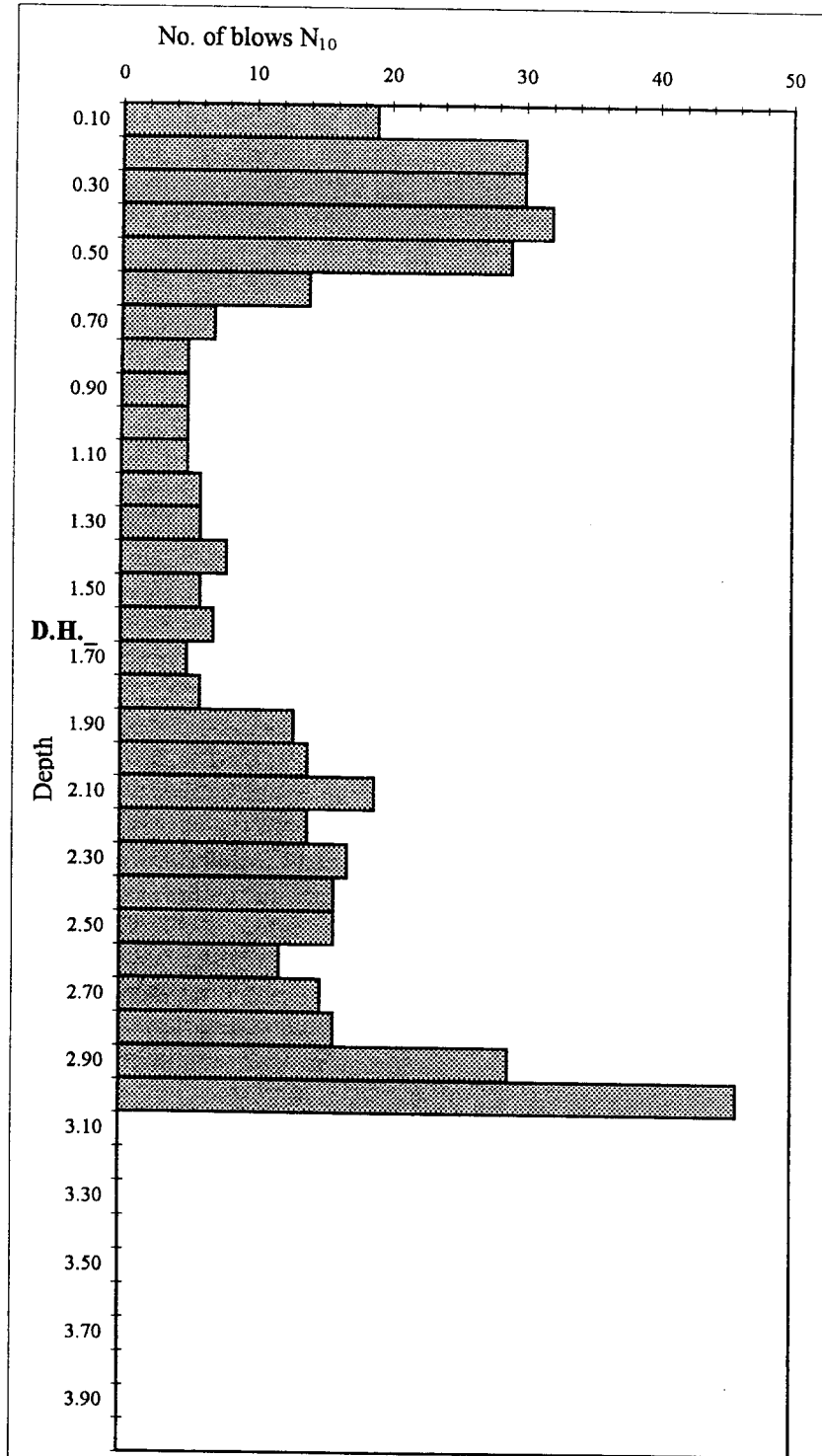
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 426 + 715 / L

Date / Дата : 25.04.97

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число
[m]	вдуваний
	N_{10}
0.10	19
0.20	30
0.30	30
0.40	32
0.50	29
0.60	14
0.70	7
0.80	5
0.90	5
1.00	5
1.10	5
1.20	6
1.30	6
1.40	8
1.50	6
1.60	7
1.70	5
1.80	6
1.90	13
2.00	14
2.10	19
2.20	14
2.30	17
2.40	16
2.50	16
2.60	12
2.70	15
2.80	16
2.90	29
3.00	46
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



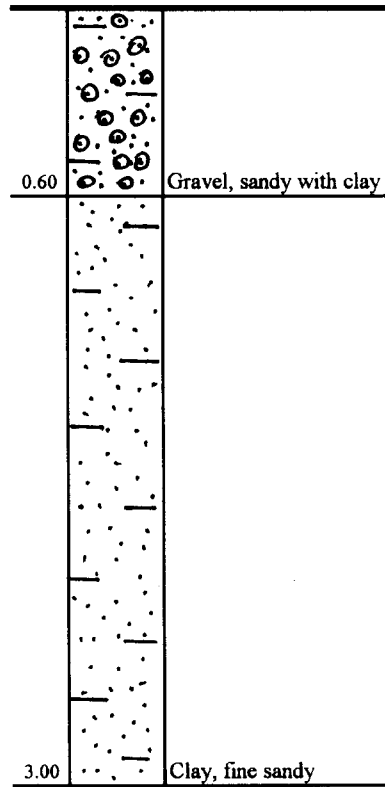
SOIL SECTION

No. 49

Location / место : km 426 + 715 / L

Data / Дата: 25.04.1997

Level / Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 50**

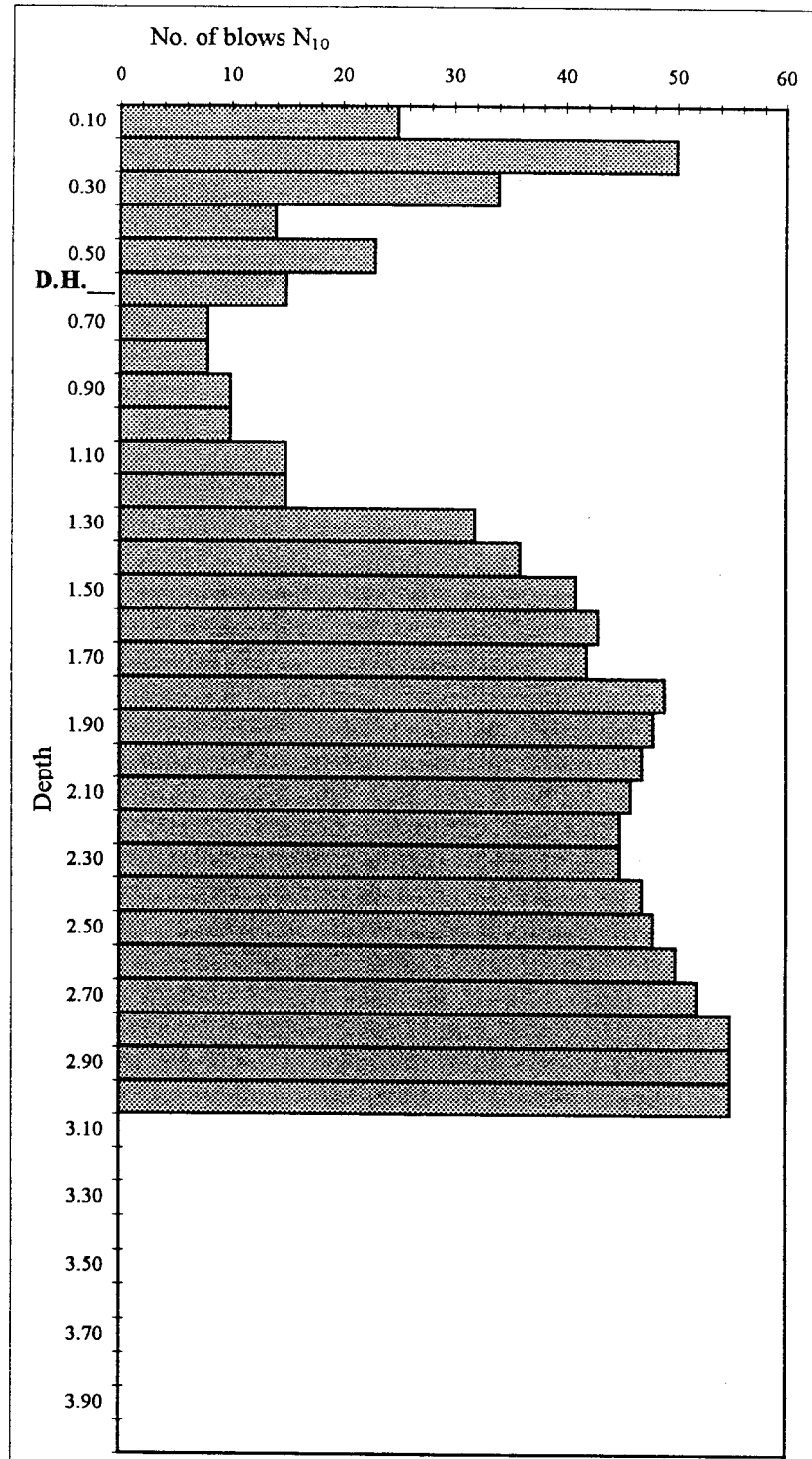
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 436 + 015 / L

Date / Дата : 25. 04. 1997

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N_{10}
0.10	25
0.20	50
0.30	34
0.40	14
0.50	23
0.60	15
0.70	8
0.80	8
0.90	10
1.00	10
1.10	15
1.20	15
1.30	32
1.40	36
1.50	41
1.60	43
1.70	42
1.80	49
1.90	48
2.00	47
2.10	46
2.20	45
2.30	45
2.40	47
2.50	48
2.60	50
2.70	52
2.80	55
2.90	55
3.00	55
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



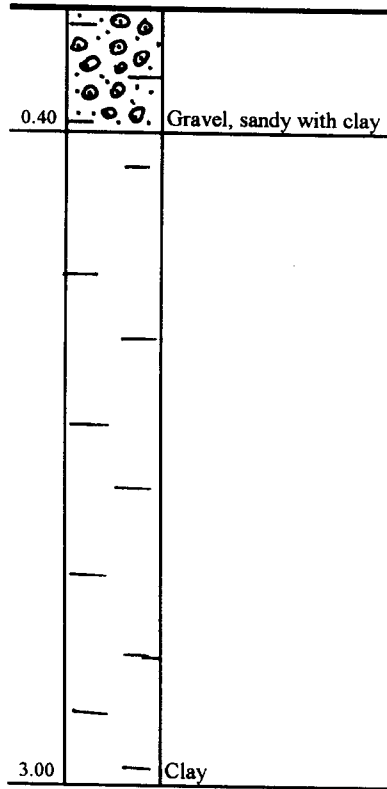
SOIL SECTION

No. 50

Location /место : km 436 + 015 / L

Data/Дата: 25.04.1997

Level/Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 51**

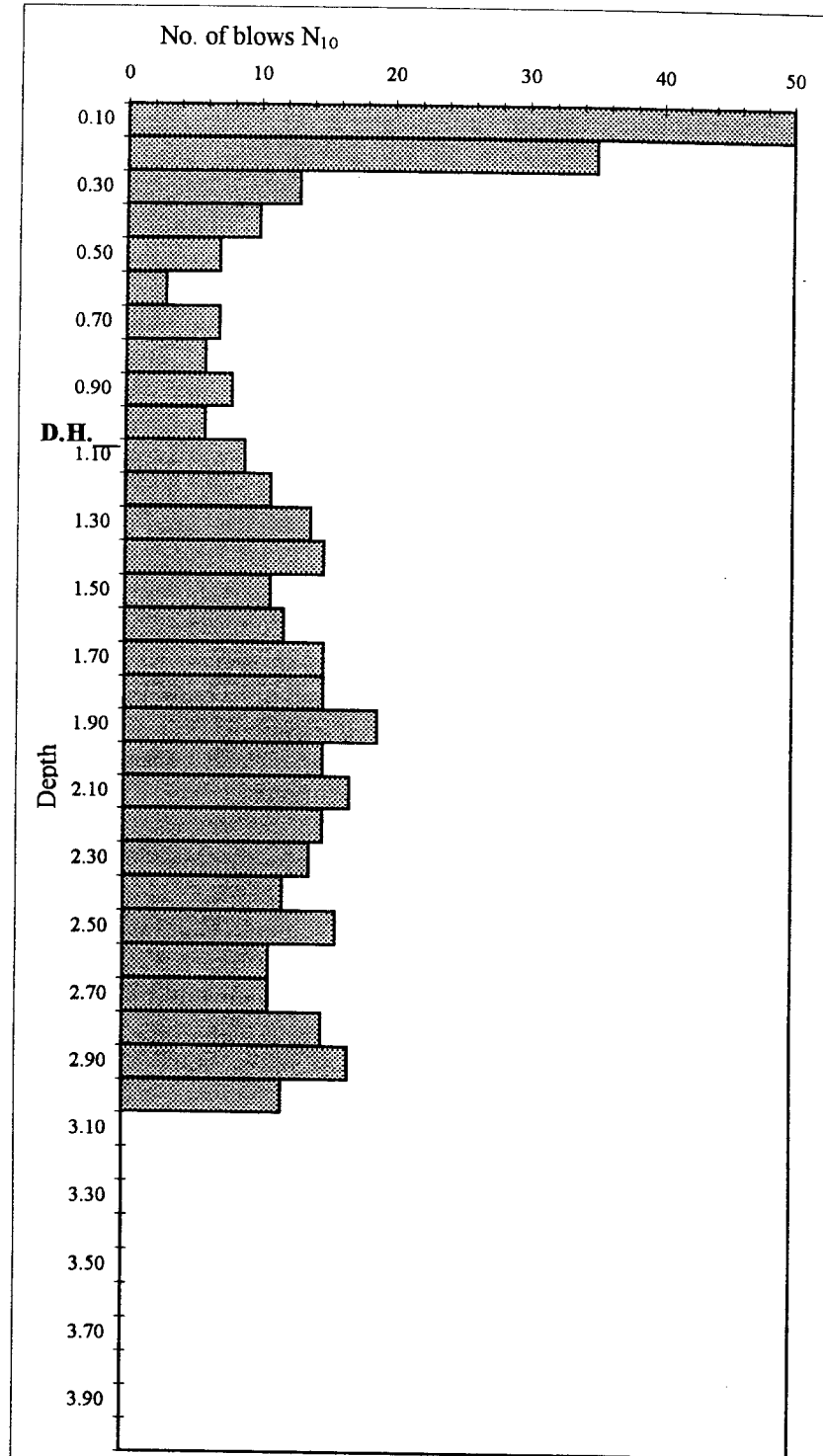
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 443 + 015 / L

Date / Дата : 25. 04. 1997

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N_{10}
0.10	50
0.20	35
0.30	13
0.40	10
0.50	7
0.60	3
0.70	7
0.80	6
0.90	8
1.00	6
1.10	9
1.20	11
1.30	14
1.40	15
1.50	11
1.60	12
1.70	15
1.80	15
1.90	19
2.00	15
2.10	17
2.20	15
2.30	14
2.40	12
2.50	16
2.60	11
2.70	11
2.80	15
2.90	17
3.00	12
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



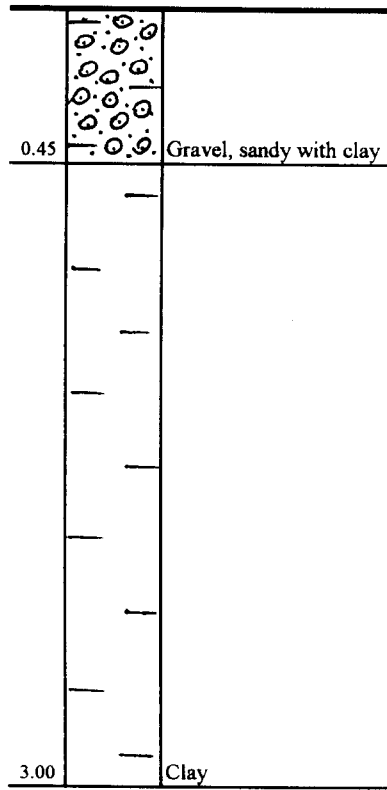
SOIL SECTION

No. 51

Location / место : km 443 + 015 / L

Data / Дата: 25.04.1997

Level / Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 52**

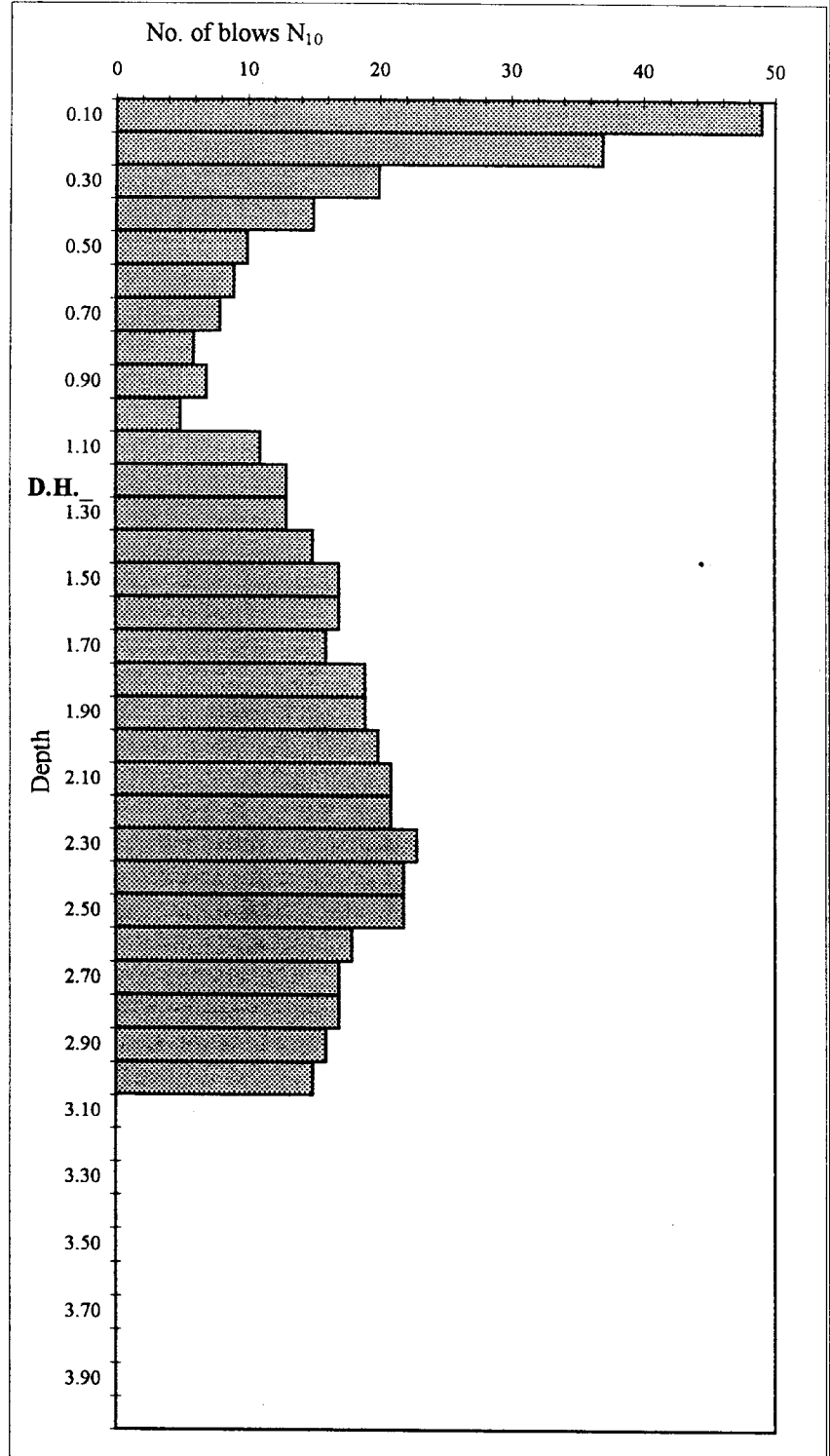
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 452 + 015 / L

Date / Дата : 25.04.97

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число
[m]	вдуваний
	N_{10}
0.10	49
0.20	37
0.30	20
0.40	15
0.50	10
0.60	9
0.70	8
0.80	6
0.90	7
1.00	5
1.10	11
1.20	13
1.30	13
1.40	15
1.50	17
1.60	17
1.70	16
1.80	19
1.90	19
2.00	20
2.10	21
2.20	21
2.30	23
2.40	22
2.50	22
2.60	18
2.70	17
2.80	17
2.90	16
3.00	15
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



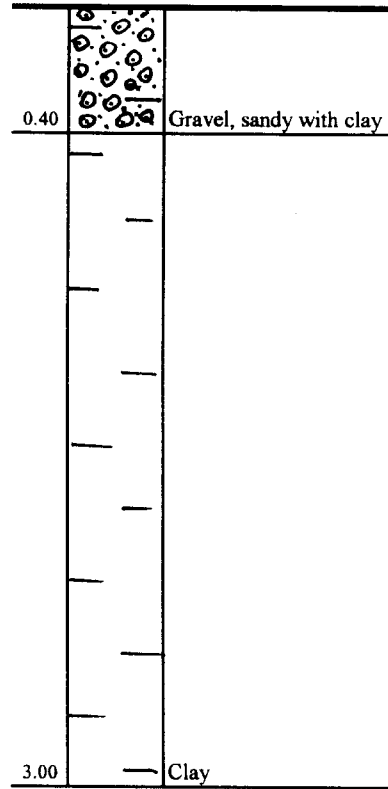
SOIL SECTION

No. 52

Location / место : km 452 + 015 / L

Data / Дата: 25.04.1997

Level / Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 53**

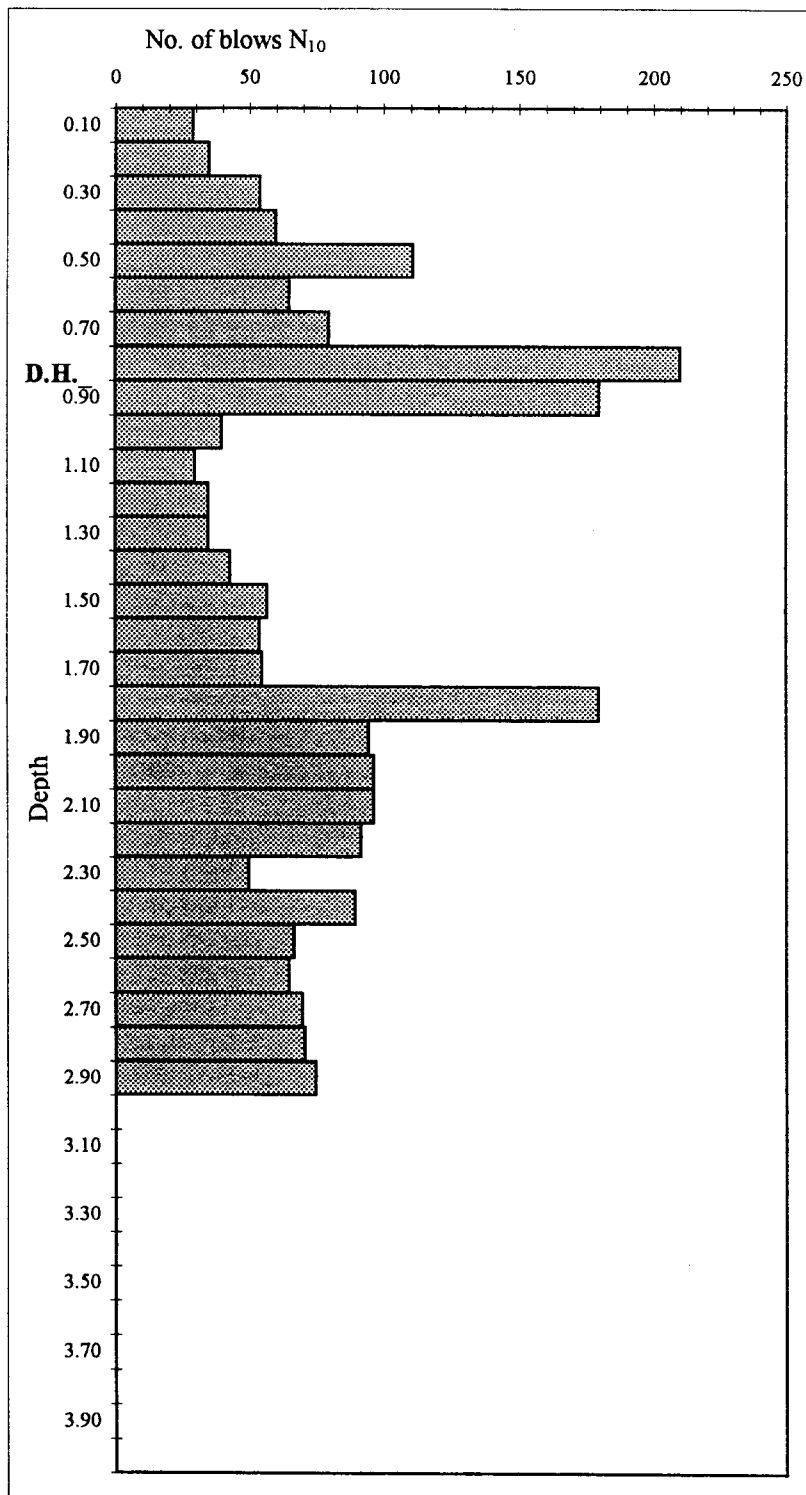
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 459 + 215 / L

Date / Дата : 26.04.97

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число
[m]	вдуваний
	N_{10}
0.10	29
0.20	35
0.30	54
0.40	60
0.50	111
0.60	65
0.70	80
0.80	210
0.90	180
1.00	40
1.10	30
1.20	35
1.30	35
1.40	43
1.50	57
1.60	54
1.70	55
1.80	180
1.90	95
2.00	97
2.10	97
2.20	92
2.30	50
2.40	90
2.50	67
2.60	65
2.70	70
2.80	71
2.90	75
3.00	
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



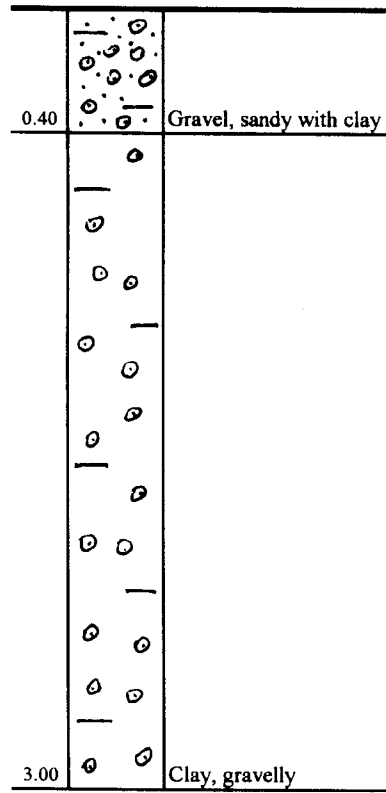
SOIL SECTION

No. 53

Location /место : km 459 + 215 / L

Data/Дата: 26.04.1997

Level/Уровень: Shoulder surface



Geotechnical Investigation

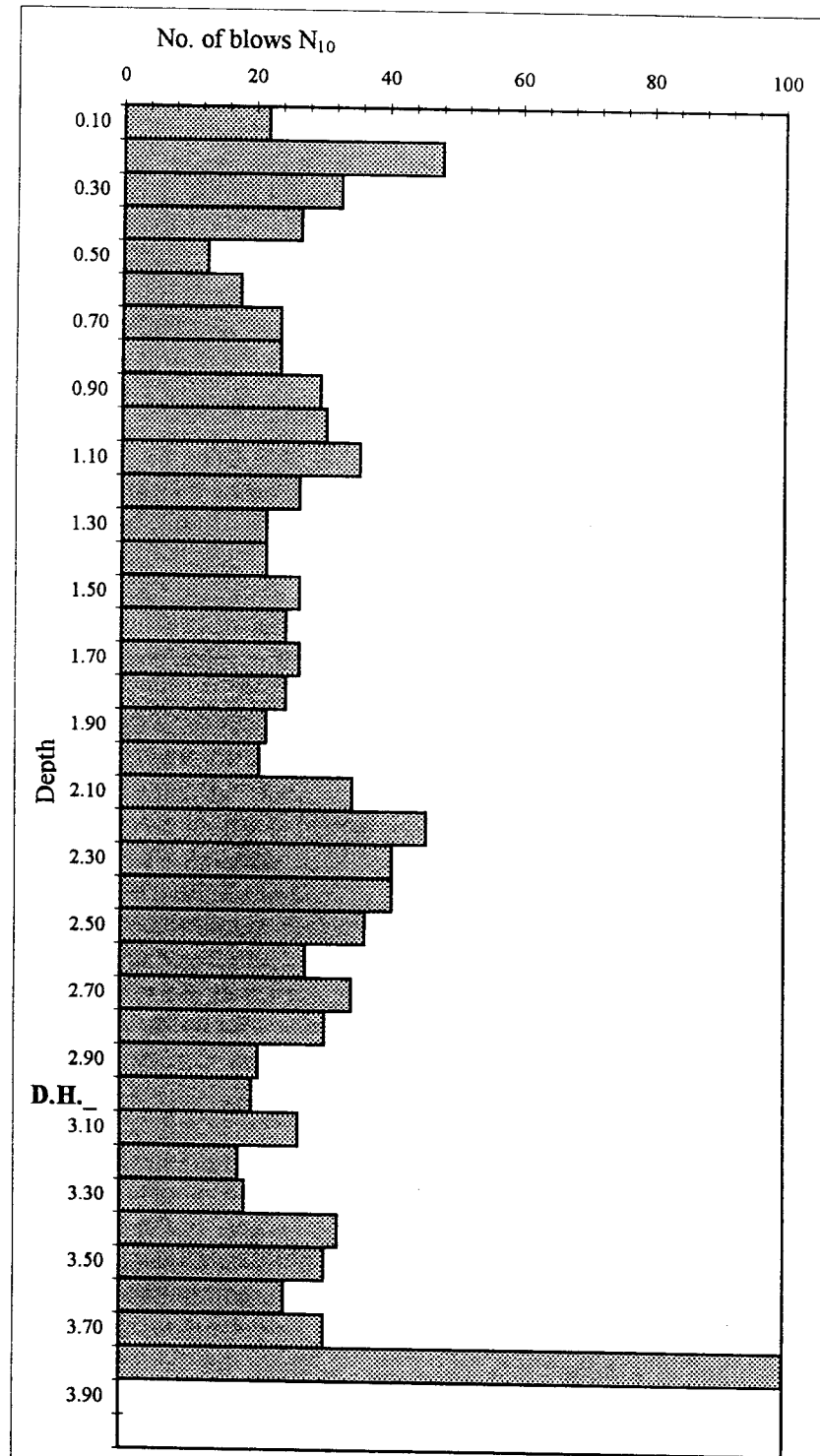
DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)
No. 54
Динамические пробы Легкие (ДПЛ 5, в соотв.ДИН4094)

Location / место : km 466 + 215 / L

Date / Дата : 26.04.97

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдавний
[m]	N_{10}
0.10	22
0.20	48
0.30	33
0.40	27
0.50	13
0.60	18
0.70	24
0.80	24
0.90	30
1.00	31
1.10	36
1.20	27
1.30	22
1.40	22
1.50	27
1.60	25
1.70	27
1.80	25
1.90	22
2.00	21
2.10	35
2.20	46
2.30	41
2.40	41
2.50	37
2.60	28
2.70	35
2.80	31
2.90	21
3.00	20
3.10	27
3.20	18
3.30	19
3.40	33
3.50	31
3.60	25
3.70	31
3.80	100
3.90	
4.00	



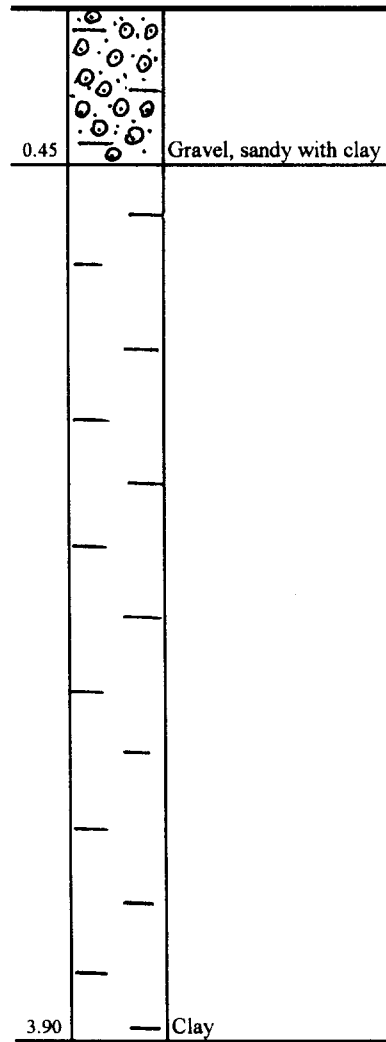
SOIL SECTION

No. 54

Location / место : km 466 + 215 / L

Data / Дата: 26.04.1997

Level / Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 55**

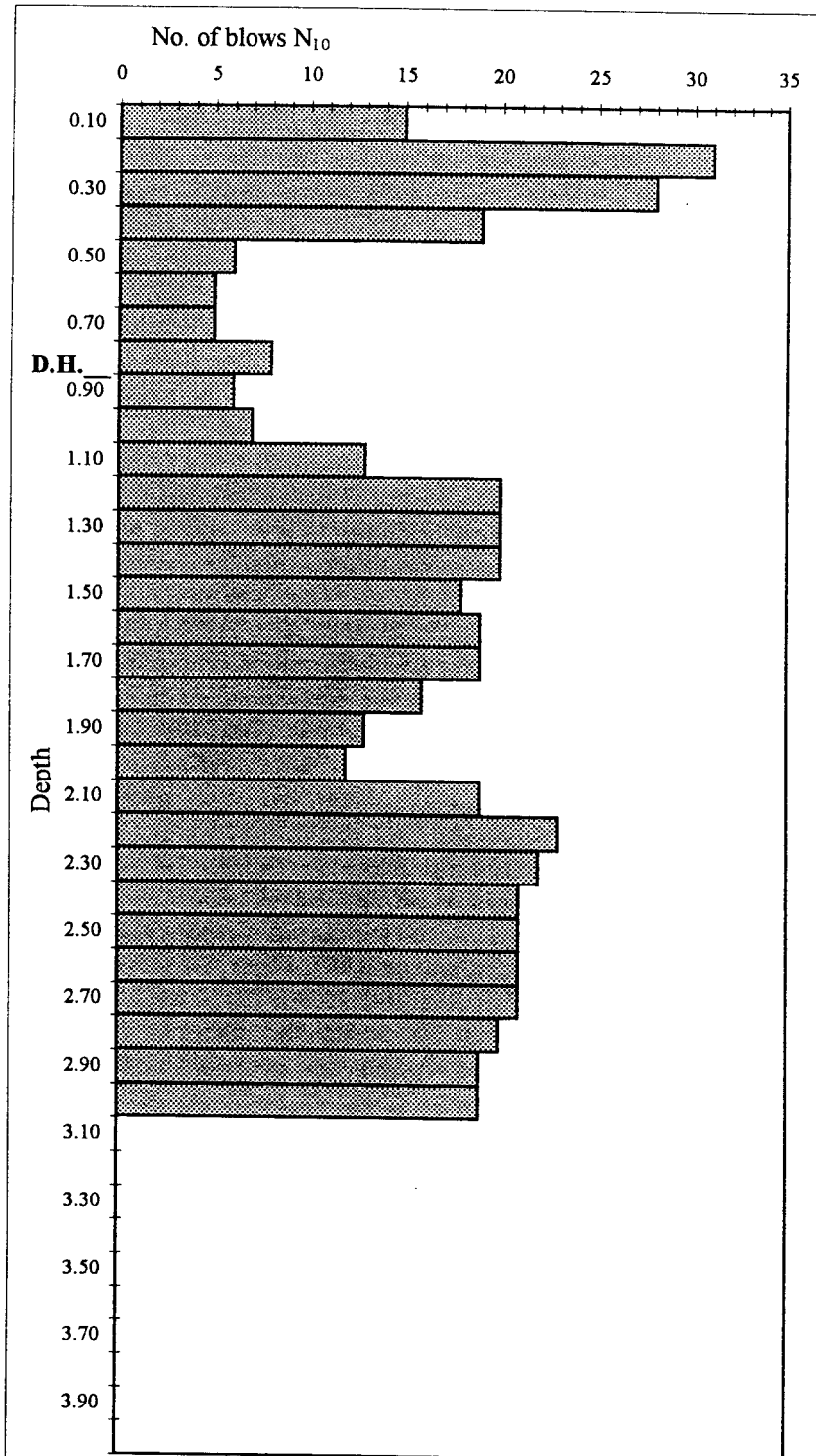
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 473 + 215 / L

Date / Дата : 26.04.97

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N_{10}
0.10	15
0.20	31
0.30	28
0.40	19
0.50	6
0.60	5
0.70	5
0.80	8
0.90	6
1.00	7
1.10	13
1.20	20
1.30	20
1.40	20
1.50	18
1.60	19
1.70	19
1.80	16
1.90	13
2.00	12
2.10	19
2.20	23
2.30	22
2.40	21
2.50	21
2.60	21
2.70	21
2.80	20
2.90	19
3.00	19
3.10	
3.20	
3.30	
3.40	
3.50	
3.60	
3.70	
3.80	
3.90	
4.00	



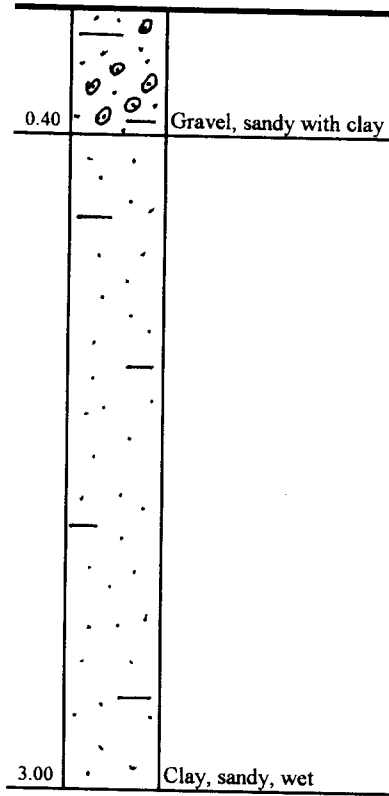
SOIL SECTION

No. 55

Location / место : km 473 + 215 / L

Data / Дата: 26.04.1997

Level / Уровень: Shoulder surface



DYNAMIC PROBING LIGHT (DPL - 5, acc. DIN 4094)**No. 56**

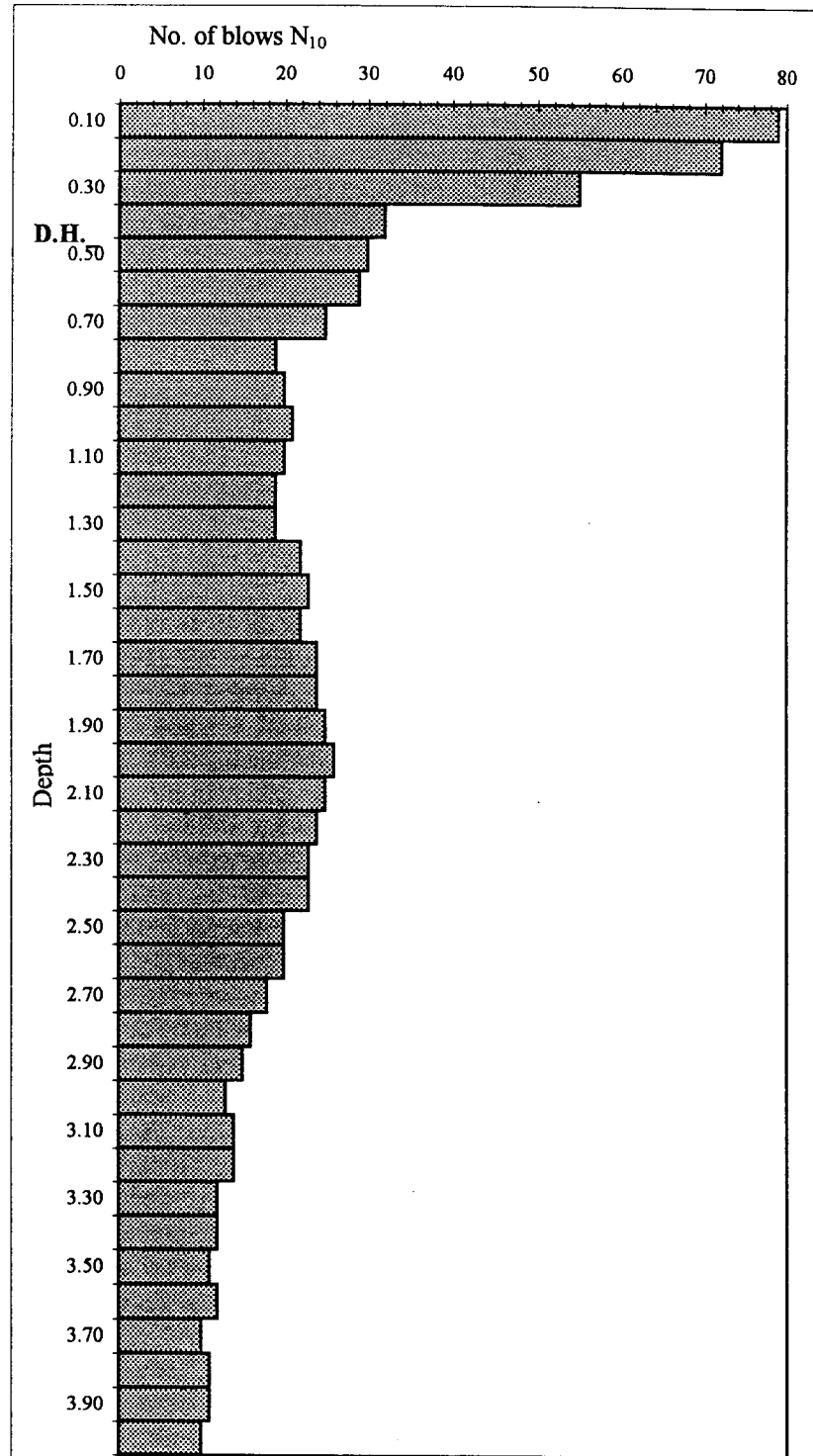
Динамические пробы Легкие (ДПЛ 5, в соотв. ДИН4094)

Location / место : km 481 + 715 / L ,

Date / Дата : 27.04.97

Level / Уровень : Shoulder surface

Depth	No. of blows
Глубина	Число вдуваний
[m]	N_{10}
0.10	79
0.20	72
0.30	55
0.40	32
0.50	30
0.60	29
0.70	25
0.80	19
0.90	20
1.00	21
1.10	20
1.20	19
1.30	19
1.40	22
1.50	23
1.60	22
1.70	24
1.80	24
1.90	25
2.00	26
2.10	25
2.20	24
2.30	23
2.40	23
2.50	20
2.60	20
2.70	18
2.80	16
2.90	15
3.00	13
3.10	14
3.20	14
3.30	12
3.40	12
3.50	11
3.60	12
3.70	10
3.80	11
3.90	11
4.00	10



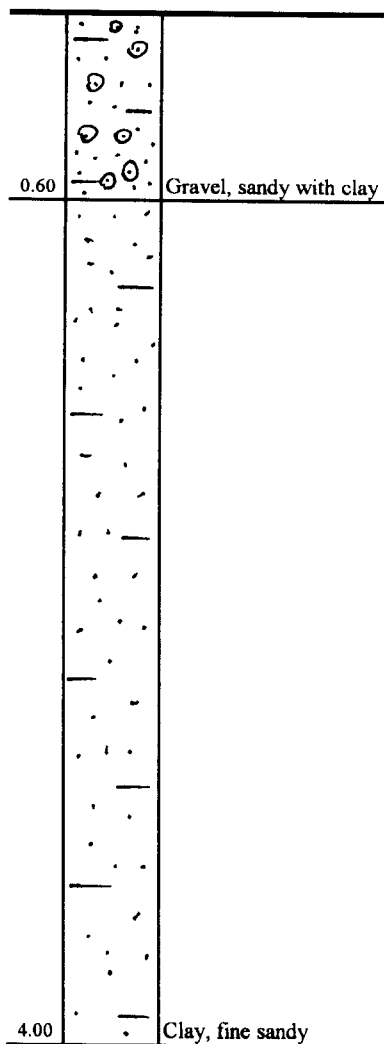
SOIL SECTION

No. 56

Location / место : km 481 + 715 / L




Data / Дата: 27.04.1997

Level / Уровень: Shoulder surface


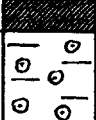


TRIAL PIT DIAGRAMS




TRIAL PITS**Location/Место: km 074+000****No.** TP - 1**Data/Дата: 9.04.1997****Level/Уровень: Shoulder surface**

0.05		Bitumenious mixture
0.15		Bitumen stabilized gravel
0.50		Silt, clayish





Location/Место: km 087+000**No.** TP - 2**Data/Дата: 10.04.1997****Level/Уровень: Shoulder surface**

0.20		Bitumen stabilized gravel
0.50		Clay, gravelly





Location/Место: km 104+000**No.** TP - 3**Data/Дата: 11.04.1997****Level/Уровень: Shoulder surface**

0.09		Bitumenious mixture
0.24		Gravel, sandy, silty
0.50		Silt, clayish, sandy





TRIAL PITS**Location/Место: km 132+000****No. TP - 4****Data/Дата: 27.04.1997****Level/Уровень: Shoulder surface**

0.04		Bitumenious mixture
0.11		Bitumen stabilized gravel
0.48		Gravel, sandy, silty
		Silt, clayish

Location/Место: km 180+000**No. TP - 5****Data/Дата: 27.04.1997****Level/Уровень: Shoulder surface**

0.04		Bitumenious mixture
0.10		Bitumen stabilized gravel
0.33		Gravel, sandy, silty
		Silt, clayish

Location/Место: km 287+215**No. TP - 6****Data/Дата: 28.04.1997****Level/Уровень: Shoulder surface**

0.04		Bitumenious mixture
0.10		Bitumen stabilized gravel
0.30		Gravel, sandy, silty
		Silt, fine sandy

TRIAL PITS**Location/Место:** km 345+215**Data/Дата:** 28.04.1997**Level/Уровень:** Shoulder surface**No.** TP - 7

0.05		Bitumenious mixture
0.70		Gravel, sandy, silty

Location/Место: km 391+215**Data/Дата:** 29.04.1997**Level/Уровень:** Shoulder surface**No.** TP - 8





0.05		Bitumenious mixture
0.26		Gravel, sandy, silty
0.70		Silt, sandy

Location/Место: km 448+215**Data/Дата:** 29.04.1997**Level/Уровень:** Shoulder surface**No.** TP - 9




0.05		Bitumenious mixture
0.15		Bitumen stabilized gravel
0.70		Gravel, sandy, silty
		Silt, fine sandy

PAVEMENT STRUCTURES




STRUCTURE OF PAVEMENT**Location/Место: km 045+585 / L****No. PS-1****Data/Дата: 12.04.1997****Level/Уровень: Shoulder surface**

0.04		Bitumenious mixture
0.10		Bitumen stabilized gravel
0.20		Crushed stone with bitumen
0.42		Crushed stone, sand




Location/Место: km 050+000 / L**No. PS-2****Data/Дата: 13.04.1997****Level/Уровень: Shoulder surface**

0.03		Bitumenious mixture
0.07		Bitumen stabilized gravel
0.27		Gravel, sandy




Location/Место: km 059+585 / L**No. PS-3****Data/Дата: 14.04.1997****Level/Уровень: Shoulder surface**

0.03		Bitumenious mixture
0.10		Bitumen stabilized gravel
0.17		Crushed stone with sand




STRUCTURE OF PAVEMENT**Location/Место: km 064+000 / L****No. PS- 4****Data/Дата: 15.04.1997****Level/Уровень: Shoulder surface**

0.04		Bitumenous mixture
0.10		Crushed stone with bitumen
0.20		Gravel, sandy




Location/Место: km 074+585 / L**No. PS- 5****Data/Дата: 16.04.1997****Level/Уровень: Shoulder surface**

0.05		Bitumenous mixture
0.12		Bitumen stabilized gravel
0.30		Crushstone, sand




Location/Место: km 079+000 / L**No. PS- 6****Data/Дата: 17.04.1997****Level/Уровень: Shoulder surface**

0.04		Bitumenous mixture
0.20		Bitumen stabilized gravel
0.42		Gravel, sandy



STRUCTURE OF PAVEMENT**Location/Место: km 106+000 / L****No. PS-7****Data/Дата: 18.04.1997****Level/Уровень: Shoulder surface**

0.03		Bitumenious mixture
0.10		Bitumen stabilized gravel
0.17		Gravel, sandy




Location/Место: km 121+000 / L**No. PS-8****Data/Дата: 19.04.1997****Level/Уровень: Shoulder surface**

0.05		Bitumenious mixture
0.12		Bitumen stabilized gravel
0.30		Gravel, sandy




Location/Место: km 128+000 / L**No. PS-9****Data/Дата: 20.04.1997****Level/Уровень: Shoulder surface**

0.05		Bitumenious mixture
0.28		Gravel, sandy




Location/Место: km 142+000 / L**No. PS-10****Data/Дата: 21.04.1997****Level/Уровень: Shoulder surface**

0.03		Bitumenious mixture
0.10		Bitumen stabilized gravel
0.35		Gravel, sandy




STRUCTURE OF PAVEMENTLocation/Место: km 151+000 / LNo. PS- 11Data/Дата: 22.04.1997Level/Уровень: Shoulder surface

0.05		Bitumenious mixture
0.12		Bitumen stabilized gravel
0.42		Gravel, sandy




Location/Место: km 158+000 / LNo. PS- 12Data/Дата: 23.04.1997Level/Уровень: Shoulder surface

0.03		Bitumenious mixture
0.09		Bitumen stabilized gravel
0.31		Gravel, sandy




Location/Место: km 167+000 / LNo. PS- 13Data/Дата: 24.04.1997Level/Уровень: Shoulder surface

0.04		Bitumenious mixture
0.09		Bitumen stabilized gravel
0.29		Gravel, sandy




Location/Место: km 179+000 / LNo. PS- 14Data/Дата: 25.04.1997Level/Уровень: Shoulder surface

0.03		Bitumenious mixture
0.11		Bitumen stabilized gravel
0.21		Gravel, sandy




STRUCTURE OF PAVEMENTLocation/Место: km 197+000 / LNo. PS- 15Data/Дата: 26.04.1997Level/Уровень: Shoulder surface

0.05		Bitumenious mixture
0.12		Bitumen stabilized gravel
0.42		Gravel, sandy




Location/Место: km 214+000 / LNo. PS- 16Data/Дата: 27.04.1997Level/Уровень: Shoulder surface

0.04		Bitumenious mixture
0.10		Bitumen stabilized gravel
0.20		Gravel, sandy




Location /место : km 293 + 215 / LNo. PS- 17Data/Дата: 28.04.1997Level/Уровень: Shoulder surface

0.04		Bitumenious mixture
0.10		Bitumen stabilized gravel
0.20		Gravel, sandy




Location /место : km 305 + 215 / LNo. PS- 18Data/Дата: 29.04.1997Level/Уровень: Shoulder surface

0.06		Bitumenious mixture
0.12		Bitumen stabilized gravel
0.62		Gravel, sandy



STRUCTURE OF PAVEMENTLocation / место : km 320 + 215 / LNo. PS- 19Data / Дата: 30.04.1997Level / Уровень: Shoulder surface

0.04		Bitumenous mixture
0.10		Bitumen stabilized gravel
0.40		Gravel, sandy




Location / место : km 335 + 215 / LNo. PS- 20Data / Дата: 01.05.1997Level / Уровень: Shoulder surface

0.06		Bitumenous mixture
0.10		Crushed stone with bitumen
0.40		Gravel, sandy




Location / место : km 349 + 715 / LNo. PS- 21Data / Дата: 02.05.1997Level / Уровень: Shoulder surface

0.05		Bitumenous mixture
0.55		Gravel, sandy




Location / место : km 367 + 215 / LNo. PS- 22Data / Дата: 03.05.1997Level / Уровень: Shoulder surface

0.03		Bitumenous mixture
0.07		Bitumen stabilized gravel
>207		Gravel, sandy




STRUCTURE OF PAVEMENTLocation / место : km 388 + 815 / LNo. PS- 23Data / Дата: 04.05.1997Level / Уровень: Shoulder surface

0.05		Bitumenous mixture
0.08		Bitumen stabilized gravel
0.38		Gravel, sandy





Location / место : km 404 + 215 / LNo. PS- 24Data / Дата: 05.05.1997Level / Уровень: Shoulder surface

0.03		Bitumenous mixture
0.08		Bitumen stabilized gravel
0.18		Gravel, sandy




Location / место : km 413 + 215 / LNo. PS- 25Data / Дата: 06.05.1997Level / Уровень: Shoulder surface

0.04		Bitumenous mixture
0.08		Bitumen stabilized gravel
0.21		Gravel, sandy




Location / место : km 426 + 215 / LNo. PS- 26Data / Дата: 07.05.1997Level / Уровень: Shoulder surface

0.07		Bitumenous mixture
0.12		Bitumen stabilized gravel
0.15		Crushed stone with bitumen
0.35		Gravel, sandy




STRUCTURE OF PAVEMENTLocation / место : km 440 + 215 / LNo. PS- 27Data/Дата: 08.05.1997Level/Уровень: Shoulder surface

0.04		Bitumenious mixture
0.10		Bitumen stabilized gravel
0.26		Gravel, sandy



Location / место : km 452 + 015 / LNo. PS- 28Data/Дата: 09.05.1997Level/Уровень: Shoulder surface

0.04		Bitumenious mixture
0.16		Bitumen stabilized gravel
0.34		Gravel, sandy

Location / место : km 474 + 215 / LNo. PS- 29Data/Дата: 10.05.1997Level/Уровень: Shoulder surface

0.04		Bitumenious mixture
0.10		Bitumen stabilized gravel
0.40		Gravel, sandy

Location / место : km 481 + 715 / LNo. PS- 30Data/Дата: 11.05.1997Level/Уровень: Shoulder surface

0.04		Bitumenious mixture
0.27		Gravel, sandy

ASPHALT TEST RESULTS

Sample Nr.	Grain size distribution in %										Bitumen content %	In-situ density t/m ³	Maximum density (Marshall) t/m ³	In-situ density %
	<20 mm	<15 mm	<10 mm	<5 mm	<2.5 mm	<1.25 mm	<0.63 mm	<0.315 mm	<0.14 mm	<0.071 mm				
Nr. 1	84	72	56	41	33	26	20	14	6	1	7.02	2.32	2.33	99.6
Nr. 2	82	69	58	44	35	29	23	14	5	1	6.41	2.24	2.32	96.6
Nr. 3	100	94	85	68	53	47	38	23	7	2	10.19	2.25	2.27	99.1
Nr. 4	93	82	71	53	42	39	32	20	6	2	6.73	2.24	2.37	94.5
Nr. 5	97	93	84	65	54	49	41	25	7	2	7.42	2.24	2.27	98.7
Nr. 6	90	80	73	62	51	46	38	25	8	2	13.48	2.25	2.29	98.3

NATURAL MOISTURE CONTENT

Sample Nr.	Chainage	Depth m	Moisture content	Sample Nr.	Chainage	Depth m	Moisture content	Sample Nr.	Chainage	Depth m	Moisture content
1	001+500	0.15-0.3	12.50	53	151+000	2.0-2.45	20.58	132	287+715	1.1-2.1	37.50
2	001+500	0.3-1.0	17.92	54	151+000	2.45-3.0	21.77	133	287+715	2.1-2.9	31.08
3	001+500	2.5-3.0	20.90	55	151+000	3.0-4.0	31.35	129	294+015	0.3-1.0	26.20
4	018+800	0.15-0.3	14.26	56	151+000	4.0-4.5	31.92	130	294+015	2.0-4.0	26.84
5	018+800	0.3-1.0	19.92	57	151+000	4.5-5.0	32.68	126	301+215	1.2-1.6	21.59
6	018+800	1.8-4.0	23.08	58	159+500	0.2-0.7	13.48	127	301+215	1.6-2.3	40.74
7	044+000	0.15-0.5	10.09	59	159+500	0.7-1.5	18.51	128	301+215	2.3-3.0	39.54
8	044+000	0.5-3.0	14.84	60	159+500	2.0-2.5	21.00	123	308+215	1.6-2.0	14.13
9	049+800	0.1-1.1	20.03	61	159+500	2.5-3.0	29.90	124	301+215	2.0-2.3	21.01
10	049+800	1.5-1.9	20.75	62	159+500	3.0-3.9	31.36	125	301+215	2.3-3.0	18.64
11	049+800	1.9-3.0	28.69	63	159+500	3.9-4.5	29.74	120	315+315	1.3-1.7	17.65
12	053+800	0.45-1.0	23.07	64	159+500	4.5-5.0	33.07	121	315+315	1.7-2.6	18.95
13	057+400	0.2-0.6	14.48	65	162+500	0.3-1.0	17.92	122	315+315	2.6-3.0	26.84
14	057+400	0.6-1.0	18.12	66	162+500	1.0-2.3	19.45	119	320+215	1.4-2.0	10.74
15	063+100	0.5-1.0	18.30	67	162+500	2.3-3.0	19.81	118	329+215	0.7-1.0	7.65
16	063+100	2.3-2.8	22.58	68	164+000	0.3-0.2	20.32	116	337+215	0.4-0.8	17.58
17	063+100	2.8-3.0	22.68	69	164+000	1.0-2.4	20.74	117	337+215	0.8-1.0	24.00
18	075+800	0.2-0.8	15.04	70	164+000	2.4-3.0	20.40	114	344+215	0.15-0.4	16.86
19	075+800	1.9-3.0	16.40	71	167+000	0.3-1.2	19.68	115	344+215	0.7-1.0	24.70
20	080+100	0.3-0.7	26.90	72	167+000	2.3-3.0	19.37	110	349+715	0.3-0.8	17.76
21	080+100	1.0-1.6	16.74	73	168+000	0.3-1.3	21.00	111	349+715	0.8-1.0	25.79
22	080+100	1.6-2.0	28.13	74	168+000	2.3-3.0	18.61	112	349+715	1.7-2.0	32.12
23	080+100	2.6-3.0	24.81	75	170+700	0.1-1.1	23.53	113	349+715	2.6-3.0	13.79
24	080+100	3.0-3.4	37.61	76	170+700	2.0-3.0	27.00	108	361+215	0.5-0.7	6.42
25	080+100	3.4-4.0	23.09	77	170+700	3.0-4.0	27.11	109	361+215	0.7-1.0	26.91
26	088+000	0.5-1.0	25.49	78	191+600	0.2-1.2	23.03	107	376+515	2.7-3.0	19.63
27	088+000	2.4-3.0	25.16	79	191+600	2.0-3.0	28.55	106	388+815	2.0-3.0	18.65
28	099+000	0.3-1.0	23.43	80	191+600	3.0-4.0	25.90	103	395+215	0.7-1.0	12.17
29	099+000	2.6-3.0	25.05	151	196+000	0.3-0.7	14.41	104	395+215	1.0-2.0	18.05
30	108+000	0.3-1.0	19.59	152	196+000	0.7-1.0	21.87	105	395+215	2.3-3.0	18.42
31	108+000	1.0-2.0	26.78	153	196+000	1.0-1.4	23.46	100	406+915	0.6-1.0	13.75
32	108+000	2.0-3.0	26.92	154	196+000	1.4-2.0	25.82	101	406+915	1.0-2.3	13.51
33	115+500	0.3-1.0	20.08	155	196+000	2.7-3.0	25.46	102	406+915	2.3-3.0	12.86
34	115+500	1.0-2.0	25.39	156	196+000	3.5-4.0	26.74	98	414+415	0.3-1.0	19.22
35	115+500	2.0-3.0	27.86	145	202+000	0.3-0.7	13.83	99	414+415	2.0-3.0	12.02
36	118+800	1.0-2.0	22.27	146	202+000	0.7-1.0	22.01	95	426+715	0.6-1.0	12.27
37	118+800	12.0-3.0	25.85	147	202+000	1.0-1.5	23.84	96	426+715	1.6-2.0	22.74
38	128+800	0.6-1.0	18.47	148	202+000	1.5-2.0	24.38	97	426+715	2.8-3.0	6.63
39	128+800	1.0-2.0	15.36	149	202+000	2.6-3.0	23.86	93	436+015	0.4-1.0	20.70
40	128+800	2.4-3.0	18.10	150	202+000	3.4-4.0	25.87	94	436+015	1.0-2.0	15.70
41	128+800	3.0-3.85	29.96	142	206+000	0.5-1.0	16.93	91	443+015	0.45-1.0	20.87
42	128+800	3.85-4.0	22.96	143	206+000	1.5-2.0	18.89	92	443+015	1.6-2.0	14.30
43	135+200	0.2-1.0	19.32	144	206+000	2.6-3.0	19.72	90	452+015	0.4-1.0	13.68
44	135+200	2.3-3.0	24.36	137	212+300	0.7-1.0	24.64	88	459+215	0.4-1.0	14.54
45	135+200	3.0-3.25	24.25	138	212+300	1.3-1.8	18.35	89	459+215	1.0-2.0	19.96
46	135+200	3.25-3.75	27.39	139	212+300	1.8-2.0	27.48	86	466+215	0.45-1.0	10.61
47	135+200	3.75-4.0	27.09	140	212+300	3.0-3.5	51.61	87	466+215	1.5-2.0	9.28
48	145+200	0.3-1.0	13.84	141	212+300	3.5-4.0	33.25	83	473+215	0.4-1.1	16.94
49	145+200	1.0-2.7	20.37	134	214+100	0.7-1.0	20.00	84	473+215	1.5-2.0	25.82
50	145+200	2.7-3.0	19.36	135	214+100	1.0-2.0	30.17	85	473+215	2.1-3.0	14.55
51	151+000	0.15-0.7	12.50	136	214+100	2.0-3.0	32.63	81	481+715	0.6-1.0	18.86
52	151+000	0.7-2.0	13.92	131	287+715	0.6-1.0	19.54	85	481+715	1.4-3.0	12.55

SOIL TEST RESULTS

TRACECA - Feasibility Study of Transit Roads in Azerbaijan
Laboratory Test Results

Chainage	Depth of sampling m	Grain size distribution in %					Atterberg Limits			Moisture density relation	CBR, % dry/soaked	Sulphat %	
		>31.5 mm	>16 mm	>8 mm	>2 mm	<0.063 mm	PL %	LL %	PI %				opt. W. %
Gazi Mammad - Kyurdamir													
074 + 000	0.15 - 0.50			6.1	7.6	88.6				20.0	1.68	1.3/1.0	0.8118
087 + 000	0.05-0.20				4.6	91.6				22.0	1.55	11.7 / 1.51	
087 + 000	0.20 - 0.50	9.6	24.8	28.7	32.0	63.3				18.0	1.75	2.7 / 2.6	0.1726
104 + 000	0.09 - 0.24	7.7	40.6	49.0	55.4	28.3				8.0	2.07	19.5 / 4.0	0.2575
104 + 000	0.24 - 0.50			6.6	8.8	74.3				16.0	1.79	8.3 / 1.4	0.1578
Kyurdamir - Georgian border													
132 + 000	0.11 - 0.48	8.7	51.7	62.5	71.6	12.6				8.0	2.12	45.6 / 19.6	0.0201
132 + 000	below 0.48		2.9	5.9	7.3	74.9				16.0	1.82	14.0 / 5.3	0.0451
180 + 000	0.10 - 0.33	4.0	21.1	39.3	57.4	18.2				10.00	2.29	14.5 / 14.0	0.0867
180 + 000	below 0.33			1.4	4.1	90.8				16.0	1.72	19.6 / 0.0	0.02689
287 + 215	0.10 - 0.30	3.1	35.4	48.3	59.6	23.1				8.0	2.12	47.1 / 11.3	0.7088
287 + 215	below 0.30			0.8	2.1	80.7				16.0	1.76	16.6 / 3.0	1.3610
345 + 215	0.05 - 0.55	4.1	26.4	41.3	61.2	13.2				8.0	2.22	40.6 / 33.6	2.0525
391 + 215	0.05 - 0.26		27.6	38.8	55.6	15.5						15.9 / 2.6	0.0240
391 + 215	below 0.26			0.5	4.3	69.6				16.0	1.74	11.2 / 2.3	0.0636
448 + 215	0.15 - 0.70	7.0	25.4	42.0	65.2	8.1				8.0	2.23	108.2 / 102.4	0.0166

APPENDIX 6.4

ENVIRONMENTAL ASSESSMENT

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Note:

The present Environmental Assessment refers to the pure rehabilitation of the existing 2 lane road.

However, after the completion of this report, a most recent traffic survey revealed that a 4 lane road could be justified in the future.

In this case the potential environmental implications of the project would have to be reassessed.

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May 21 1997

1 Introduction

1.1 Project background and terms of reference

The project road is located on the territory of the Republic of Azerbaijan and is part of one of the major road connections between the Caspian and the Black Sea. The present feasibility study will determine the *design of pavement repair / rehabilitation* for one section of this road, namely the 80,85 km of *existing paved road* between Gazi-Mammad and Kyurdamir (see map 1). The layout of the road (alignment, width and gradient) shall mainly remain unchanged. Exceptions to this could be in those cases where the structural stability of existing bridges is questionable. Replacements may be necessary and they could be constructed either on or off line¹. Given this project frame and the actual state of the road environment (see chapter 1.2) it can be assumed that the project will not entail *significant* impacts on the natural environment such as large scale soil erosion, changes to streams, underground water or interference with animal or plant life. However, according to the national legal and regulatory requirements and also according to EBRD-standards, this in fact does not exclude the need to plan for measures, that would help to avoid or minimize construction-related impacts and those impacts, that could potentially be related to the extraction of construction material from borrow pits.

In preparation of the planning stages to follow the present environmental assessment will comprize the following:

- Identification of project-related key concerns with regard to
 - environmental impacts
 - human health
 - human safety
- Compilation of key environmental, health and safety regulations that will be relevant to the proposed project
- Development of a rough concept of mandatory and additional measures for impact mitigation or environmental enhancement

¹¹ When this report was prepared no decision had been taken with regard to the question whether rehabilitation of these bridges would be included in the project or not.

1.2 **Short description of the project environment**

The project area is located in the *Mugan Desert* between the range of the *Lyangyabiz Mountains* in the north and the *River Kyra* in the south. In this area the terrain is completely flat and the ground level lies slightly below sea level on average.

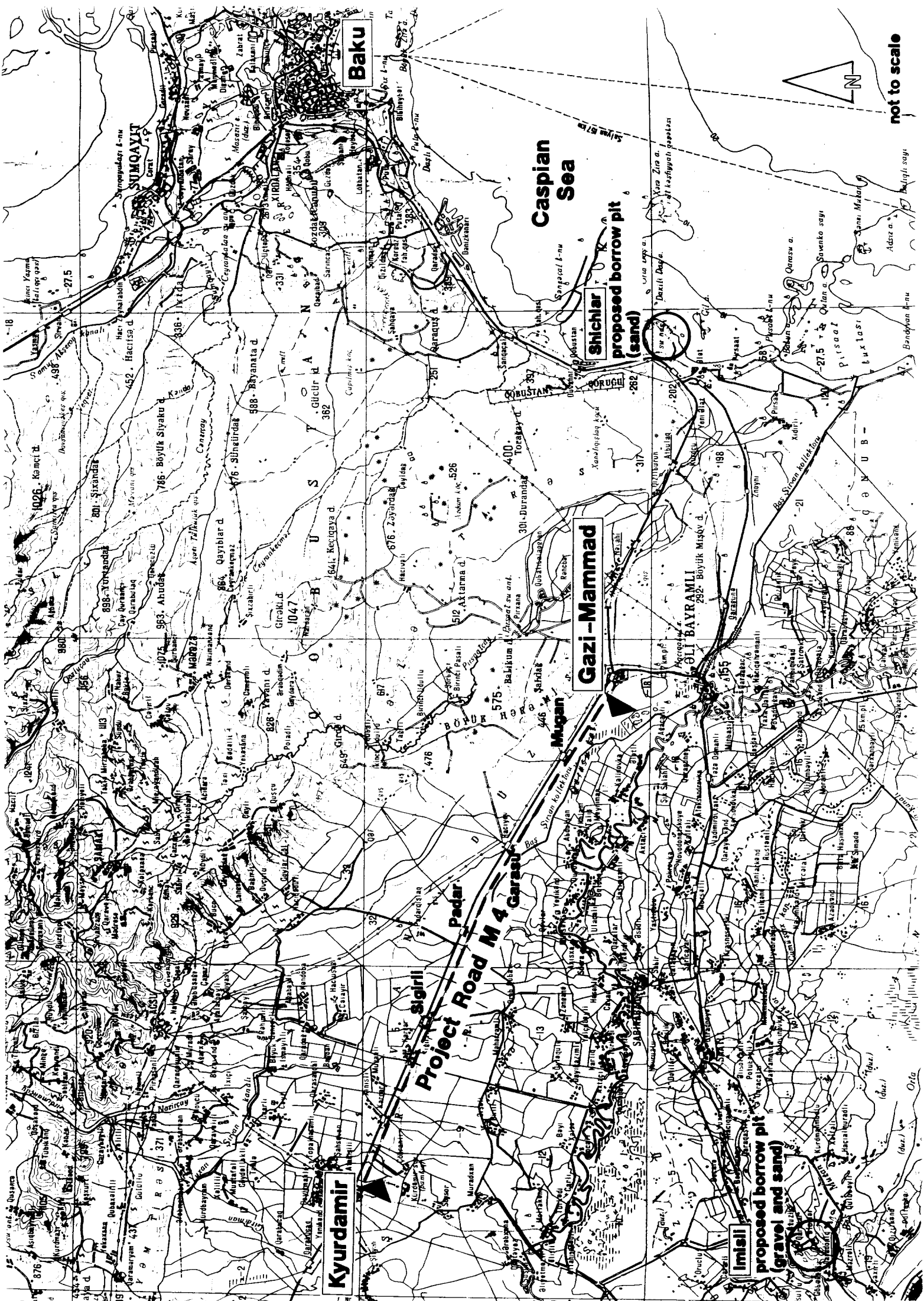
Between Gazi-Mammad and Kyurdamir the road environment is mainly composed of two types of landscape:

- treeless desertic to semi-desertic steppe in the section between Gazi-Mammad and Padar with sections being used for cattle grazing (mainly sheep)
- Irrigated, cultivated land, mainly west of Padar up to Kyurdamir

Between Gazi-Mammad and Kyurdamir the M 4 passes through four villages (from east to west): Mugan, Garasu, Padar and Sigirli (see map 1). In all cases the houses are widely spaced and located in distances between 20 and 100 m on both sides of the road.

The water courses crossed by the road are all irrigation or drainage channels and a number of these also follow the road on both sides and at variable distances. Furthermore, numerous stagnant and shallow water bodies exist in the immediate vicinity of the road. According to staff from Azeravtoyol material has been extracted at these locations and reused on the embankments when the road was built. These areas as well as the artificial channels often contain bigger stands of rushes which are often the only structures in the otherwise desertic landscape.

Almost all of this land has been and still is subject to extensive human interference and uses such as the construction of the railway line north to the M 4, the construction of the electricity and telecommunication lines, the construction and maintenance of irrigation and drainage facilities, agriculture, grazing, development of settlements and last but not least the construction of the road itself. Moreover, most of the planning area suffers from severe salination of soils, so that significant natural habitats hardly remain. In this first 50 km-section of the study-road the overall impression of the area is that of a very monotone, deserted landscape (see picture 1 in Appendix 2).



Baku

Caspian Sea

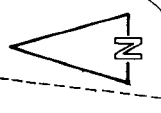
Shichlar
proposed borrow pit (sand)

Gazi-Mammad

Kyurdamir

Imisli
proposed borrow pit (gravel and sand)

Project Road M4 Garasli-Padar



not to scale

West of Padar the landscape changes and huge fields with cereals and sometimes cotton or wine production border the M 4 on both sides. In many locations bushes grow in or below the embankments and planted trees follow the road in single, double or even more rows, which has a very positive effect on the perception of the landscape (picture 2 in Appendix 2).

Within the road section under study two 'vehicle repair ramps' exist. According to the existing regulations (SNIP 2.05.02-8) such facilities have to be installed every 80 km at least. As shown in fig. 5, 6 and 7 these ramps are sources of considerable pollution with waste, oil and probably many other harmful substances.

With respect to fauna mention shall be made of the White stork (*Ciconia ciconia*), a bird species showing significant long-term decline all over Europe, Asia and Africa. In the area east of Kyurdamir breeding sites of this species can be observed in significant numbers on the electricity masts some 50 to 100 m south of the M 4.

1.3 **Borrow pits**

Borrow pits that will be used as sources for construction materials have not been determined to date, but two potential sites have been visited.

The first borrow pit is located south of Alyat, near to **Shichlar** (Gobustan), where the mining area covers a 2 km section on the shore-line of the Caspian Sea (see picture 3 in Appendix 2). The material here is sand and coarse sand with admixtures of shells and gravel and material extraction reaches down to sea level (3 - 4 m). In order to preserve the beaches on the sea a 100 m wide strip between the shore line and the actual borrow pit is excluded from mining.

In previous times hydraulic pumps were in use at the site, but these are now out of order. Also, this method is considered to be too expensive.

Active recultivation is not done at Shichlar, but it is obvious, that the seaborne winds smoothen the site continuously. Also, natural regrowth of vegetation takes place (see picture 3 in Appendix 2).

The access road to the mining site is unpaved and in rather bad condition. Along that road a few *datchas* have been built in the recent past some 50 m distance from the road.

Azeravtoyol obtains permits for the extraction of defined volumes of material from the Ministry of Construction Material which must be approved by the regional administration Garadag.

The second borrow pit is located south of **Imisli** in an area with agriculture as predominant type of land use (picture 4 in Appendix 2). At this site gravel and sand are mined from an area which contains fluvial deposits from the river Kyra. The thickness of these deposits is about 40 m, but the actual extraction only reaches down to depths of 23 m.

A crushing plant and railway access exist directly on the site and this railway line leads in direction of the project road with rail-sidings at Ali Bayramli and Gazi-Mammad. According to staff from Azeravtoyol this site is the only one in the Caucasus equipped with a pumping plant.

1.4 Observations on some road characteristics related to safety

The embankments of the existing M 4 are mainly between 1 and 1.5 m high and often rather steep (1:1 or 1:1.5 / horizontal : vertical). Where the road crosses existing culverts, the road gradient raises and the embankments sometimes reach up over 3 m height. In many such cases no crash barriers exist.

On one bigger bridge near Sigirli (km 105), space for pedestrians is very narrow (about 0.6 m) and there are no advertisements for drivers or pedestrians to this regard. Another inadequacy related to road safety is the very bad condition of the existing railings on this bridge (see pictures 8, 9 and 10 in Appendix 2).

In a number of road sections (e.g. in the area of km 68 left) the shoulders of the road do not exist anymore. In cases of emergency, evading maneuvers would not be possible.

Finally, mention shall be made of the existing road marks. Although the M 4 is a classified road, white lining does only exist partly in the road section under study and is mainly restricted to the center line.

2 Compilation of key environmental, health and safety regulations

The compilation of the existing legal and regulatory framework aims at

- the identification of the general national requirements for impact mitigation or other environmental protection measures with regard to human health and safety in pavement repair / rehabilitation and borrow pit operations
- the identification of further measures required for the project to meet international / EBRD standards

2.1 Laws and regulations

The Consultant has examined the Environmental laws of Azerbaijan as well as regulations on worker's health and safety related to road construction operations that could be made available at Azeravtoyol. Moreover, representatives from the 'Azerbaijan State Committee on Ecology and Control of Natural Resources Utilization' (ASCE) were consulted for possible additional provisions that would be relevant in the case of the present project. Thus, the following laws and regulations have to be considered:

The '**Law of the Republic of Azerbaijan on the Protection of the Environment and the Utilization of Nature**' represents a general framework for all National objectives in the area of environmental protection. With regard to the present project 2 articles of this law are relevant.

Article 31 defines (among other s) the type of projects, that would require compulsory '**State Ecological Expertise**' (= EIA). Among construction projects 'reconstruction, extension and technical re-equipment projects' would fall under the requirements of this regulation, while pavement repair / rehabilitation on existing roads would not be affected.

Article 49 of the same law deals with '**General Ecological Demands During Siting, Designing, Construction, Commissioning of Enterprises Installations and Other Facilities**': 'During ... the feasibility study of the project ... the standards and requirements of ecological safety and protection of health of humans should be complied with, and measures for nature protection, rational utilization, restoration and reproduction of natural resources, saving of resources, regeneration of natural environment should be envisaged.

The system of ecological standards includes:

- maximum permitted concentrations of pollutants in natural environment
- maximum permitted discharges and emissions of pollutants into the natural environment;
- maximum permitted levels of noise, ... and other harmful physical influences as well as ... health norms ...'.

Specifications hereupon can be obtained from **SNIP-Regulations** (= construction norms and rules), **GOST-standards** (= state standards) and a number of further regulations. All of these documents are former Soviet Union regulations which date back to the time period between 1980 and 1989. However, according to a decision of the Cabinet of Ministers of the Republic of Azerbaijan (Nr. 217 of 15 April 1992) these documents will all remain officially binding until national regulations or standards are adopted.

The following is a short summary of the existing regulatory instruments related to environmental protection, health and safety issues associated with the Project.

SNIP 2.05.02-85: Regulation on Road Construction

This regulation deals with environmental issues under section 3. Most of the statements under this section are very general and do mainly apply to impact avoidance or mitigation on *new* road projects. However, some of the provisions (like those on the treatment of top soil during construction works) would also have to be applied in the case of the rehabilitation of existing roads.

BCH 8-89: Regulation on Environmental Protection in Construction, Rehabilitation and Maintenance of Roads

This document includes most comprehensive regulations on environmental protection in road construction, rehabilitation or maintenance activities (among others: use of soils, protection of water resources, protection of forests, flora and fauna, use, preparation and storage of road construction machinery and materials, provisional structures, provisional roads, fire protection, borrow pits and material transport, avoidance of dust, protection of soils from pollution, prevention of soil erosion etc.).

The appendices to this document also include standards for:

- the maximum permitted concentrations of toxic substances
- noise control measures
- soil pollution through losses of oil and fuel from construction equipment
- standards for quality of surface waters

SNIP III 4-80: Norms for Construction Safety

This document refers to construction activities in general and comprises, among others, detailed regulations on worker's health and safety. With regard to the present project the chapters 2 and 5 may be relevant (organization of the construction site, the work sites and transport works). It also determines the maximum permissible concentration of toxic substances in the air, which could be relevant for road marking operations for example (Appendix 9).

Safety Regulations for Construction, Rehabilitation and Maintenance of Roads 1978 (corresponds to SNIP III A-11-70)

This document is a comprehensive compilation of safety rules for almost all aspects and stages of road construction, eg requirements for the technical safety for work with road construction equipment, the construction of dams, the rehabilitation and maintenance of bridges and culverts, loading and unloading operations, operation and maintenance of asphalt plants, work with toxic substances, work in quarries and borrow pits, work with compressors, mobile power plants, operation and maintenance of road construction machines etc.

GOST 13508-74

This document deals with road marking and describes the requirements and standards of white lining for the various road categories, which is an important aspect of road safety.

Convention on the Conservation of Migratory Species of Wild Animals (CMS)

The Migratory Species Convention (Bonn 1979) is a skeleton agreement on the conservation of migratory species of wild animals and prepares the establishment of further regional agreements. This convention was not signed by the former USSR at that time but is relevant for the EBRD as a European donor organization.

The White stork *Ciconia ciconia* which (as has already been mentioned) breeds in the immediate planning area is listed in the appendix of the Convention.

African-Eurasian-Waterbird Agreement (AEWA)

This regional agreement results from the aforementioned 'Bonn-Convention'. According to Article II (1.) parties to the agreement 'shall take co-ordinated measures to maintain migratory waterbird species in a favourable conservation status or to restore them to such a status'. With regard to human activities parties to the Agreement shall 'assess the impact of proposed projects ... and human interests... In cases where human disturbance threatens the conservation status ... parties should endeavour to take measures to limit the level of threat'. The agreement applies to species as listed in Annex 2, again including the White stork *Ciconia ciconia* .

The agreement remains open for signature at The Hague until the date of its entry into force. According to the Bonn Agreement secretariat this is expected to be by mid 1998 and it is also expected, that Azerbaijan will ratify the agreement.

2.2 Requirements for public participation

According to the existing legal provisions, public participation will be mandatory in cases where residents 'might be affected directly by disruption, displacement, noise, smells, traffic or some other impact; it also includes community organizations and special interest groups. Also among the public are professional organizations and individuals who may have valid, technical opinions and views'. ...¹.

¹ from: Handbook for the Environmental Impact Assessment Process in Azerbaijan. ASCE / UNDP, Baku 1996

With respect to road construction such regulations however would mainly apply to *new* road projects, where land acquisition is required in considerable amounts.

In the present case additional land shall only be temporarily required for the siting of the constructor's yard itself, while the pavement repair operations will be restricted to the existing carriageway. In the case of material extraction, the project will only use such sites, that have already been in operation for a long time, so that no fundamentally new environmental impacts are to be expected. Also, transport roads are existing at all quarry sites so that no new facts or sources of disturbances will be created.

Given this frame the character of the proposed project is more that of *road rehabilitation* than *road construction*, so that special measures for public participation will not be required.

2.3 Conclusions

The existing national laws and regulations do in fact include the general conception of avoiding or minimizing construction-related impacts on the environment and also health and safety regulations seem to be adequate. From this point of view and also considering (the relatively few) requirements for the Project is assumed, that there are in general sufficient provisions to ensure environmentally sound planning and construction practices which would also meet EBRD-standards for road rehabilitation projects. In *practise* however, no bodies / institutions or mechanisms have been established, that would pursue the consistent implementation of the full range of existing laws and regulations.

The next planning stages will have to analyse the quoted norms and regulations in some more detail, identify remaining gaps and develop and establish mechanisms which will ensure the consistent implementation of the necessary measures.

The following chapter outlines the legally required environmental protection and safety measures and also contains additional measures for environmental improvement or environmental enhancement opportunities, which do largely

follow World Bank recommendations for similar road rehabilitation projects². As for the measures controlled by regulatory requirements, these proposals will then have to be discussed with the appropriate official bodies and developed to some more detail in the future planning stages.

A summary of all potential impacts, recommended measures and the existing regulatory framework is given in Appendix 1, tables 1 - 4.

3 Environmental impacts, avoidance and mitigation measures

The Consultant undertook visits to the project area (road and two potential borrow pits) and discussed the project features with staff from Azeravtoyol, representatives from the 'State Committee on Ecology and Control of Natural Resources'. The conclusions are as follows:

Environmental impacts

As the project is restricted to the repair of the pavement on an existing road *no significant* impacts are to be expected. Possible adverse impacts would be those that are caused by the purely *construction related activities*, the *temporary use of land* for the contractor's yard(s) as well as the extraction of construction material from *existing borrow pits*.

Human Health

As the project will improve the surface and the 'furniture' of an existing road potential negative impacts on human health would be restricted to the construction period where workers deal with exhaust fumes, noise, dust and potentially harmful substances and materials.

Human Safety

With regard to road users travelling safety will be improved through a smoother road surface and a better road furniture (crash barriers, road marking, traffic signs etc.)

During construction however, safety could be affected by construction traffic, activities within the contractor's yard and works in borrow pits.

² The World Bank 1994: 'Roads and Environment: A Handbook'

Measures

The measures to be specified as the planning proceeds will thus have to focus on the activities within the contractor's yard(s) and the management of construction works. The concept will have to address aspects like ground and surface water protection, dust control, waste management, materials handling and storage areas, worker's health and safety as well as road safety.

Expected project-related impacts as well as a *general concept* of suitable mitigation and proposals for additional environmental enhancement will be discussed in broader terms below. Where norms and regulations exist, these will be stated.

3.1

Establishment, setup and operation of the work site

Impacts

The location of work facilities is a key environmental issue during the establishment of the construction site. Depending on the site that is chosen, the installation of equipment and storage of materials may cause traffic disruption, noise and dust affecting road users and neighbouring residential areas (the latter could refer to the peripheries of the villages that exist along the road, if a construction camp was installed there). During harvest seasons temporary detours or road closures could create additional problems. Pollution of soils, surface and ground waters could result from equipment cleaning and materials storage and handling. Finally, site establishment could disturb the breeding sites of endangered species like the White stork, which are situated in the vicinity of the road in the area of Kyurdamir.

Mitigation measures (Appendix 1, table 1)

Reasonable siting of the contractor's yard would not exclusively take technical or economical aspects into account but would also consider environmental requirements. The project will have to develop criteria to this regard, e.g. the avoidance of lands adjacent to settlements, drinking water sources, avoidance of the disturbance of the breeding sites of the White Stork (Construction Norms BCH 8-89 no. 2.3.3, AEWA 1995).

Site selection and preparation shall also avoid, as far as possible, the removal of trees or bushes. Should trees be growing in the immediate vicinity or within the selected site, they shall be protected against damage by suitable

measures (BCH 8-89, no. 2.3.4 - 2.3.7). Also, site preparation shall include removal and storage of topsoil according to existing regulations (SNIP 2.05.02-85, no. 3.4 and 3.5).

Depending on the number of workers and the mode of accommodation (i.e. construction camp with containers or other accommodation facilities), provisions will also have to be established for the proper treatment of sewerage and waste (BCH 8-89 No. 2.2.1, 2.2.4, 2.2.5).

If not handled properly, storage and handling of hazardous substances such as detergents, lubricants, oil, fuels, paint etc. within the contractor's yard can be considerable sources of groundwater pollution, the pollution of surface water or soil or affect worker's health (Safety Regulations for Construction, Rehabilitation and Maintenance of Roads, Chapters 1,2,11 and 17; BCH 8-89 no. 2.2.1, 2.4.11 and 2.5; SNIP III-4-80). BCH 8-89 also defines protection zones along rivers, where the pollution of soils, storage of waste as well as vehicle parking and cleaning is prohibited. As mentioned in Chapter 1.2 of this Report, no natural rivers exist in the direct surroundings of the project road, but it is felt that the provisions of BCH 8-89 no. 2.2.9, 2.2.10 and 2.4.11 should be also applied to irrigation and drainage facilities of the project area, which sooner or later all flow into rivers.

Traffic safety within the contractor's yard shall be ensured by a well designed traffic management plan (only partly covered by the provisions of SNIP III-4-80 Nr. 2.20).

Also, it must be assumed, that the awareness about adverse environmental impacts potentially arising from operations within the contractor's yard (and also construction activities in general) will probably be very low among the workers. It is therefore also recommended that the construction supervision shall provide some on-site training or briefing for the workshop personnel as well as for those operating and maintaining machines and equipment.

Another important aspect of contractor responsibility shall be the restoration of work areas, work depots and material storage sites. Restoration would also include respreding of top soil, removal of all machines or waste material (partly covered by BCH 8-89, no. 2.4.1, 2.4.2) from the work site.

In order to ensure the proper implementation of the existing regulations and further recommended measures it is recommended that responsibilities shall be clearly defined and compliance monitored by an inspector or the construction supervision team. Also, the contractor shall submit a method statement for the establishment, maintenance and restoration of the work site.

3.2 **Activities within the construction corridor**

Impacts

According to the stage of the present project, no statements are yet available on the design of the technical improvement requirements of the various road sections. Consequently, only very general presumptions can be made with regard to the impacts that could be related to the construction activities, the temporary diversion of traffic or traffic management during construction. Safety of road workers and other road users can be put at risk by inadequate traffic management and work zone controls.

Also, attention should be paid to the existing stands of trees. In some sections (mainly west of Padar) planted trees and bushes grow very close to the roadside. If suitable protection measures are not carried out, destruction of road-side vegetation is rather likely.

In the case that existing bridges or culverts would need replacement this would require some major earthworks on the sensitive embankments of the streams and, if no further precautions are taken, soil erosion and water pollution could be caused.

Depending on the local soil properties, soil compaction may be caused by work-site machinery moving around the construction site which may harm the soil's potential for future agricultural use or other activities. Dust development could be caused by moving machinery.

Finally, abandoned machinery and waste materials could disfigure the landscape.

Mitigation measures (see Appendix 1, table 2)

With regard to traffic and worker's safety, potential risks and disturbances for local residents can be avoided or mitigated through well designed plans for

traffic and work management. The latter is partly covered by SNIP III-4-80 (safety provisions for construction activities in general, some of which would also apply to road construction) and also by the Safety Regulations on Construction, Rehabilitation and Maintenance of Roads of 1978 (corresponding to SNIP III A-11-70).

Within or near to settlements, where material transport may disturb local residents, minimization of dust development can be achieved by periodically watering the transport roads and using covered trucks (see also BCH 8-89, no. 4.1.1).

In the sections west of Padar trees sometimes grow in the immediate vicinity of the road so that construction operations in these sections should be carried out with special care with regard to the protection of road side trees (BCH 8-89, no. 2.3.4 - 2.3.7). The project shall work out mechanisms that ensure the implementation of such measures.

In the case that bridges are replaced, the material (reinforced concrete) shall be removed and disposed of properly in suitable locations. In cases of bridge rehabilitation safety regulations shall be considered (Safety Regulations on Construction, Rehabilitation and Maintenance of Roads, Chapter 6).

Wherever possible, processing and reuse of existing materials (subbase and surface material or material from demolished bridges for example) should be considered. This would help to avoid or minimize the need of waste disposal and also reduce adverse impacts potentially resulting from material extraction and transport.

Finally, all land that has been temporarily used for construction will have to be restored to the initial state. This shall also include the removal of all machines and waste material from the construction site (only partly covered by BCH 8-89, no. 2.4.1 and 2.4.2).

3.3 **Material extraction and transport**

Impacts

Borrow sites which provide road building materials may have substantial adverse impacts on soils, water, the natural environment and human health.

Any evaluation of the quality and dimension of potential environmental impacts that would be related to additional (yet unknown) amounts of material extraction from existing borrow sites can only be general in the present cases. The main reason for this is the lack of useful and reliable base-line data. In general, purely project-related, additional material extraction from existing and operating borrow sites is not expected to create serious additional or new impacts on the natural surroundings, animal or plant life, groundwater or landscape.

Measures (see Appendix 1, table 3)

As a first step to avoid or reduce transport-related disturbances for local residents and also road users in general it should be considered as to how far the existing railway line can be integrated into the material transport plan.

If transport through villages cannot be avoided, roads should be periodically watered (BCH 8-89, no. 4.1.1). The use of covered trucks would also mitigate dust development. In both cases a well designed traffic management plan should consider traffic safety and make statements on working hours for material transport. Again a contractor method statement on material handling and transportation should be sought for approval.

Local people should be informed of construction works to be carried out in advance of their start in order to allay fears and complaints.

With respect to worker's health and safety the existing safety regulations shall be applied and compliance monitored.

3.4 **Proposals for additional environmental enhancement (App. 1, table 4)**

Tree planting

As has been mentioned under chapter 1.2 of this Report, top soil has been scratched from the land adjacent to the road to be reused on the road embankments in many places. Within the villages these sites often contain polluted stagnant water and also waste (especially at Garasu and Mugan). It is suggested that all these sites shall be identified and recultivated, including removal of waste, filling, landscaping and tree planting. Within the coming design phase of the project the individual local requirements for this measures shall be analysed and evaluated and discussed with the local authorities in all four villages (locations and amount of land fill, requirements for waste removal, growing conditions for trees, suitable species, irrigation opportunities, maintenance demands and organization, views of local authorities etc.).

Vehicle Repair Ramps

It is felt that keeping up the situation as described under chapter 1.2 of this Report would not be in line with good western standards so that the Project should work out a concept to improve on that situation. First of all the usefulness of these ramps should be discussed among the appropriate bodies. If it is decided that these facilities are in fact necessary, some analyses of the quality and actual extent of soil pollution could be carried out. Based on the results of this, the existing regulations on the design of the ramps should then be revised under the aspect of the prevention of soil and groundwater pollution (e.g. sealing, oil/fuel separator etc.)

In addition to the purely technical improvement of the ramps it is also recommended that some kind of public advertisement / signboards with appropriate explanations on the handling of oil and waste shall be installed at the sites.

Establishment of a waste collection system

Along the M 4 numerous restaurants, kiosks, police posts and other stopping points are sources of waste generation. Since no alternatives exist, all waste (mainly tin cans, bottles and other packaging material) is disposed of in the surrounding landscape.

In order to alleviate this situation is proposed that a waste collection system be installed along the road which of course would have to include regular

waste collection, proper disposal and public advertisement by road signs, radio and newspaper advertisements etc. Together with the appropriate authorities the Project shall develop a tailor-made concept to improve on the present situation. This concept may then serve as a model for other sections of the national magistrate road network.

Measures for the improvement of road safety

Road safety may be improved by the consistent application of the existing regulations on road marking. Also, the present condition of the bridge near Sigirly represents a serious risk for pedestrians and drivers and it is recommended that immediate action be taken to improve on that situation (e.g. replacement of the existing handrails, see pictures 8, 9 and 10 in Appendix 2). Finally, some sections exist, where the embankments of the road are higher than 3 m. In these locations, crash barriers should be installed to improve road safety.

Table 1: Establishment, setup and operation of the work site - potential impacts, measures and regulations

Potential Impact	Measures	Regulations
Loss or disturbance of valuable habitats	<ul style="list-style-type: none"> work site establishment to avoid breeding sites of protected endangered bird species and or sensible breeding period 	CNS 1979; AEWA 1995; BCH 8-89 no. 2.3.3
Loss of or damage to roadside trees and bushes	<ul style="list-style-type: none"> preserve / protect single trees and bushes within or adjacent to the work site 	BCH 8-89 no. 2.3.4 - 2.3.7
Loss of valuable topsoil	<ul style="list-style-type: none"> remove and store topsoil 	SNIP 2.05.02-85, no. 3.4 and 3.5
Pollution of soils, surface and ground waters	<ul style="list-style-type: none"> avoid water protection zones and surface waters, restrict activities in areas near to rivers or streams / irrigation facilities proper storage, use and handling of hazardous materials (detergents, lubricants, fuel, oil, point etc.) 	BCH 8-89, no. 2.2.5, 2.2.9, 2.2.10; BCH 8-89 no. 2.4.11
	<ul style="list-style-type: none"> temporary sealing of contractor's yard (storage area of machines, filling and washing sites, workshop, storage areas for hazardous substances), installation of oil-fuel separator proper treatment of sewerage and waste from worker's accommodation raise awareness of workers and other personnel on use and handling of hazardous materials by on-site training / briefing on completion of works: restore site (work areas, work depots and material storage site) to initial state; respread top-soil remove machines and waste material 	Safety Regulations for Construction, Rehabilitation and Maintenance of Roads (corresponds to SNIP III A-11-70) Chapter 11; BCH 8-89 no. 2.2.1, 2.2.4, 2.2.5; SNIP III-4-80 -- (BCH 8-89 no. 2.2.1 and 2.2.4) -- -- --
Noise development	<ul style="list-style-type: none"> define clear responsibilities, monitor compliance by inspector or construction supervision team use machinery corresponding to existing noise regulations work site establishment to avoid neighbourhood of settlements 	BCH 8-89 no. 2.4.2
Dust development	<ul style="list-style-type: none"> adopt dust control measures 	--
Traffic disruption and worker's safety	<ul style="list-style-type: none"> develop well designed traffic management plan 	BCH 8-89 no. 4.1.1 (applies to roads within settlements)
Risk for worker's health and safety	<ul style="list-style-type: none"> apply and supervise safety regulations for road works 	Safety Regulations for Construction, Rehabilitation and Maintenance of Roads (corresponds to SNIP III A-11-70) Chapters 1, 2, 11, 17; SNIP III 4-80 no. 2

Note: Measures in bold are mandatory due to existing regulations; (...) regulations only partly cover recommended measures
 -- indicates additional recommended measures

Table 2: Activities within the construction corridor - potential impacts, measures and regulations

Potential Impact	Measures	Regulations
<p>Risk for worker's health and safety</p> <p>Destruction of roadside trees</p> <p>Surface water pollution (eg</p> <p>Noise development</p> <p>Dust development</p> <p>Worker's health</p> <p>Generation of waste from road rehabilitation</p> <p>Traffic disruption</p>	<p>• apply and supervise safety regulations for road works</p> <p>• in case of works on bridges and culverts apply and supervise specific regulations</p> <p>• develop well designed traffic management plan</p> <p>• preserve / protect trees within or adjacent to the construction corridor</p> <p>• respect protection zones along streams and rivers</p> <p>• use machinery corresponding to existing noise regulations</p> <p>• limit working hours</p> <p>• adopt dust control measures</p> <p>• apply health and safety regulations for road construction equipment</p> <p>• reuse material wherever possible</p> <p>• develop well designed traffic management plan</p>	<p>Safety Regulations for Construction, Rehabilitation and Maintenance of Roads (corresponds to SNIP III A-11-70) Chapters 2, 9, 11 see above, Chapter 6 (SNIP III-4-80 no. 2.20)</p> <p>BCH 8-89 no. 2.3.4 - 2.3.7</p> <p>BCH 8-89 no. 2.2</p> <p>BCH 8-89 Annex 2</p> <p>-.-</p> <p>BCH 8-89 no. 4.1.1</p> <p>BCH 8-89 no. 2.4 and Annex 2; SNIP III-4-80</p> <p>-.-</p> <p>-.-</p>
<p>For better control of measures to apply</p> <p>Additional environmental enhancement measures:</p>	<p>• contractor to provide a method statement</p> <p>• identify possibilities for tree planting within villages along road; consider local conditions (growing conditions, land use etc.), irrigation opportunities, possibilities for maintenance organization</p>	<p>-.-</p>

Table 3: Material extraction and transport - potential impacts, measures and regulations

Potential Impact	Measures	Regulations
<p>Disturbances of local residents through material transport (noise, dust)</p> <p>loss of valuable topsoil</p> <p>safety risks because of material transport through settlements</p> <p>risk for worker's health and safety</p>	<ul style="list-style-type: none"> • consider possibility of material transport by railway • inform local people about project (responsibilities, purpose, duration...) • apply measures for dust control (watering of roads, covered trucks, speed restrictions etc.) • • remove and store topsoil • develop of well designed traffic management plan • apply and supervise safety regulations for works in quarries and borrow pits 	<p>-,-</p> <p>-,-</p> <p>(BCH 8-89 Nr. 3.4), no. 4.1.1</p> <p>SNIP 2.05.02-85 no. 3.4 and 3.5 (SNIP III-4-80), no. 2.20)</p> <p>Safety Regulations for Construction, Rehabilitation and Maintenance of Roads (corresponds to SNIP III A-11-70) Chapter 12</p>

Table 4: Further opportunities for positive environmental enhancement

Aim	Measures	Regulations
Improvement of road safety	<ul style="list-style-type: none"> • white linings (preferably using environmentally friendly products) • repair / improvement of bridge near Sigirli (km 105), especially handrails • crash barriers in road sections with embankments > 3m height 	GOST 13508-74
Improvement of road sides within settlements	<ul style="list-style-type: none"> • removal of waste from roadside depressions • landscaping • tree planting 	GOST
Reduction of soil pollution at existing vehicle repair ramps	<ul style="list-style-type: none"> • rediscuss usefulness of facilities with appropriate bodies • carry out analyses with regard to quality and extent of actual soil pollution • removal of existing pollutants and waste • development of an improved technical design • development and installation of signpost with information on handling and treatment of waste, used oil and other potentially harmful substances 	--
Waste management	<ul style="list-style-type: none"> • development of a concept for waste reduction and collection on Magistrale Roads (consultation with appropriate official bodies, establishment of a system for waste avoidance, collection and disposal, public information campaigns) 	--

Appendix 2: Photographs



Fig. 1: Mugan desert: typical aspect of the road environment in the eastern part of the project area

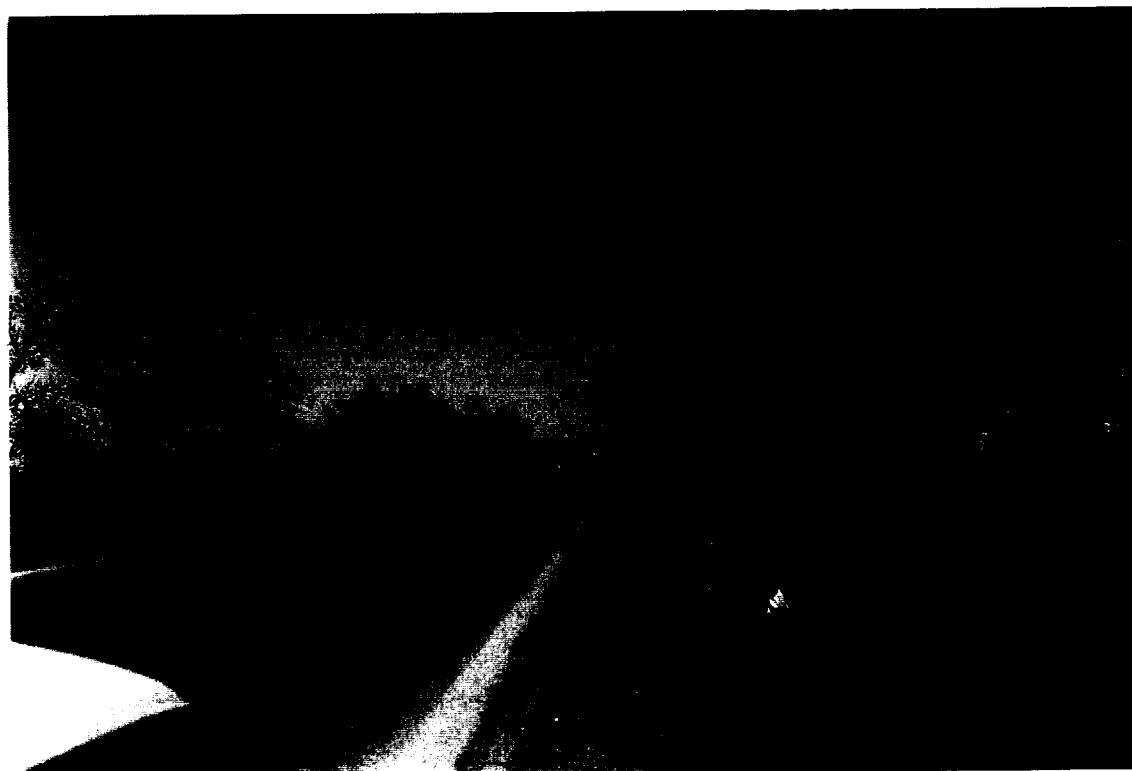


Fig. 2: Roadside trees and bushes on the M 4 near Padar



Fig. 3: Potential borrow pit on the Caspian Sea near Shichlar



Fig. 4: Potential borrow pit near Imisli



Fig. 5, 6 and 7:
Vehicle repair ramps on the M 4:
permanent sources of pollution
with oil and waste and probably
other harmful substances and
waste



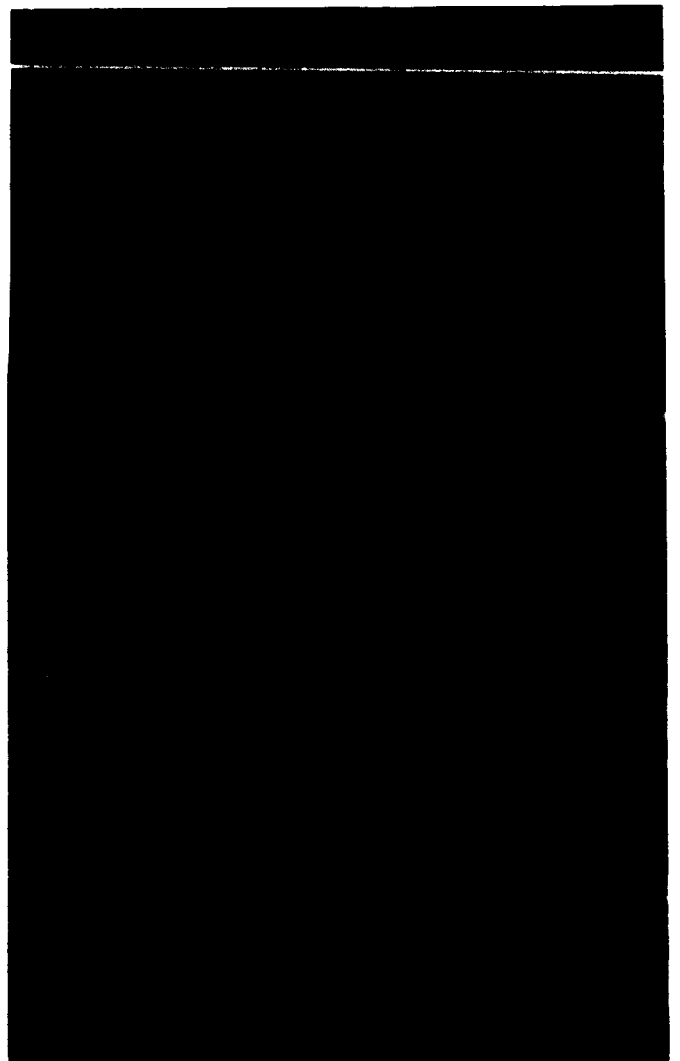
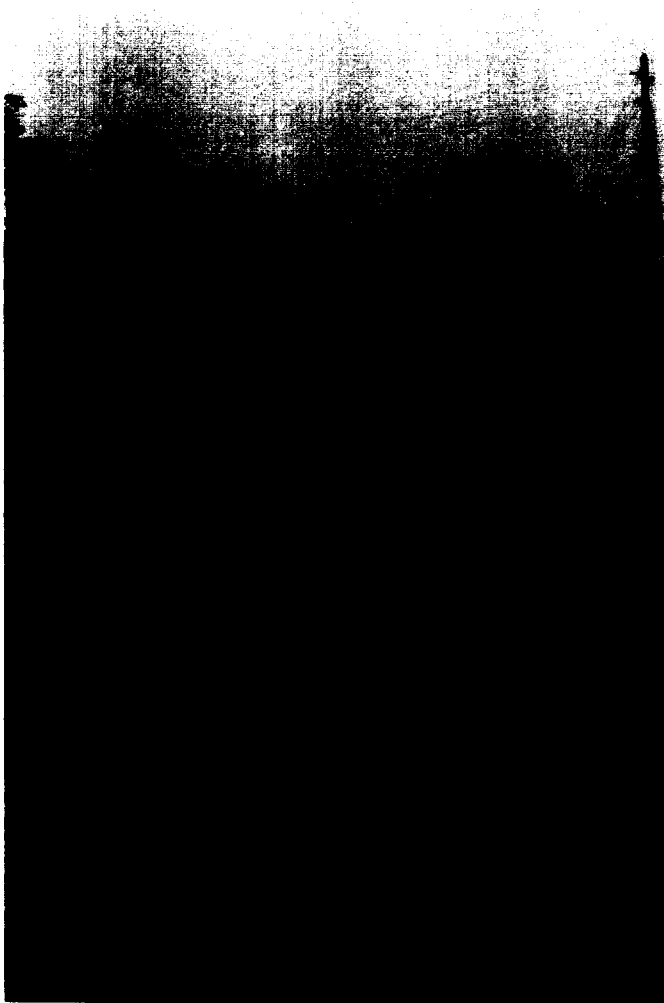


Fig. 8, 9 and 10: Safety deficits at the bridge near Sigiri:
railings are dilapidated and too low, fixing inadequate and dangerous

APPENDIX 6.5

PAVEMENT STRENGTH REPORT

BEARING CAPACITY OF EQUAL SECTIONS

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Client: TACIS

SECTION NO. 1 ALYAT TO GAZI-MAMMAD

Link no.: 37.001

A/S PHØNIX
 P. P. C

Design date: 10-30-1997

Link ref.: M4

Mea. date: 970416 2

The classification is based on sections => 4 measurements.

For each section the overlay thickness is calculated as average + 33% of the standard deviation.

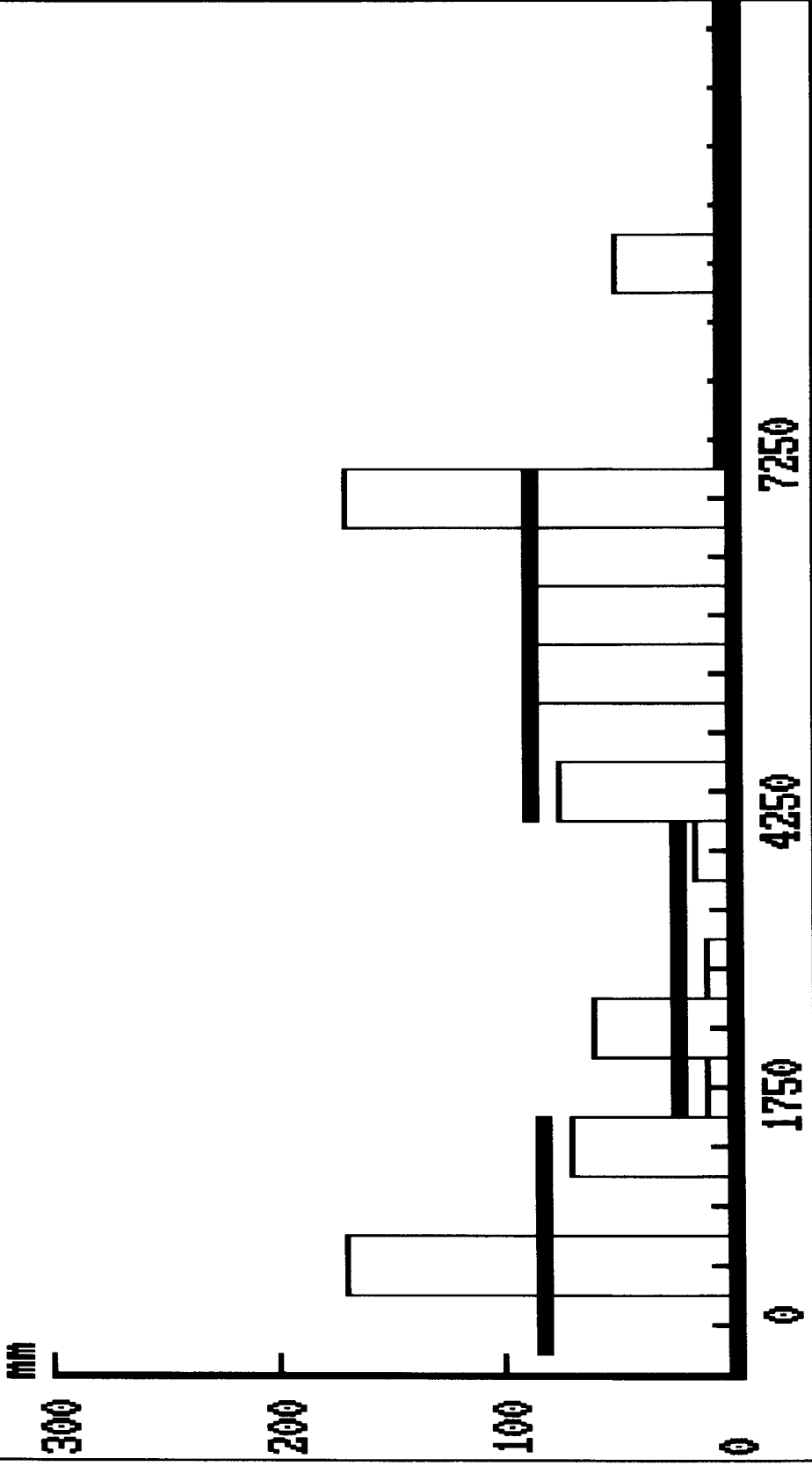
The stated layer thickness must be considered as instructive, as there might be material or technical reasons why another layer thickness than the here stated should be carried out, especially in connection with thin overlay thicknesses.

Section	Overlay Thickness in mm	<-----Life----->		extra tons
		before years	after years	
0 - 1750	85	7	15	526
1750 - 4250	25	10	15	217
4250 - 7250	90	5	15	495
7250 - 15750	5	14	15	278
15750 - 17750	90	5	15	402
17750 - 30250	10	14	15	588
30250 - 32250	35	9	15	155
32250 - 34750	0	20	20	0
34750 - 37750	125	3	15	743
37750 - 39750	0	20	20	0
39750 - 42000	120	3	15	681

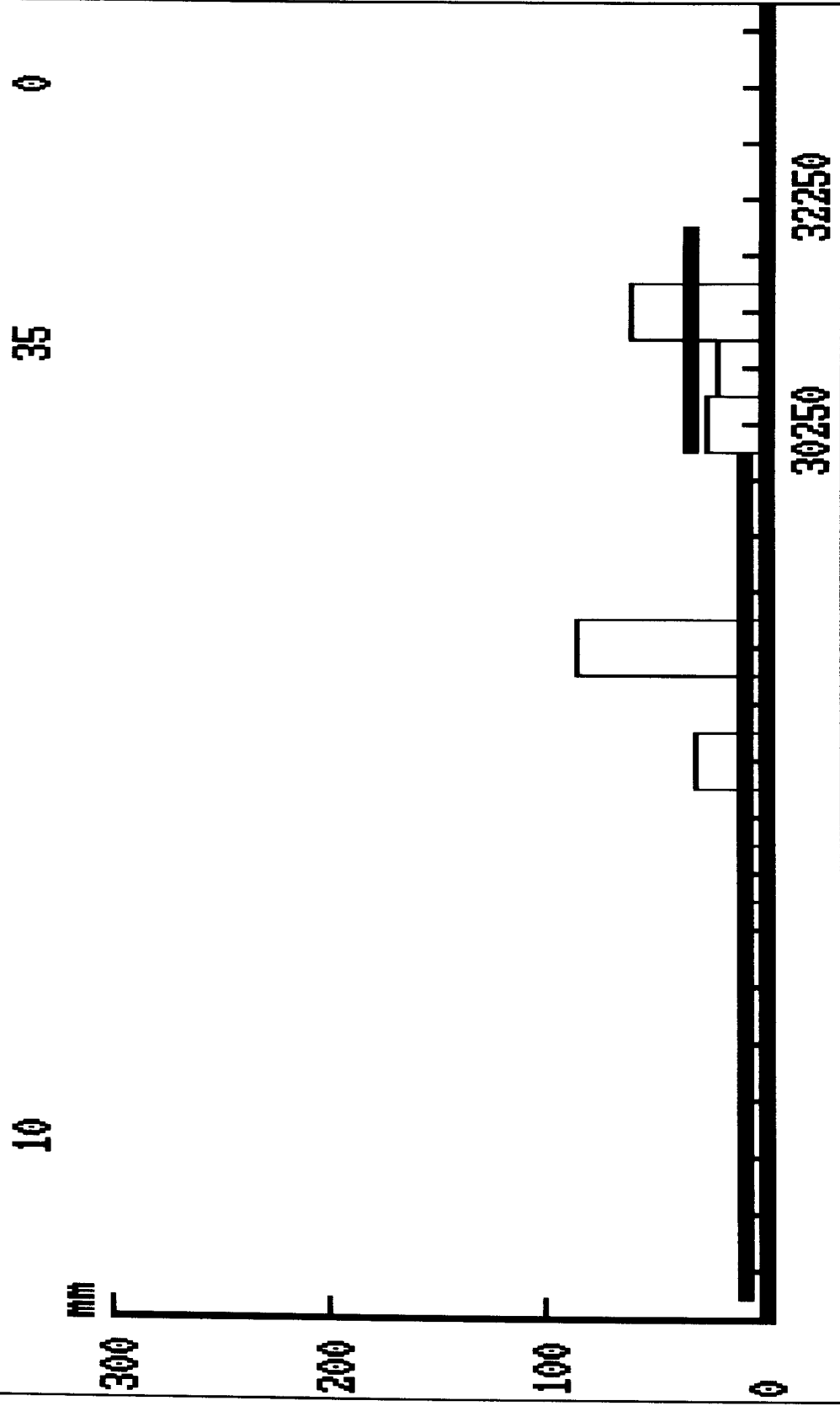
Link no.: 37.001 Link ref.: M4

Height of new overlay in mm:

85 25 90



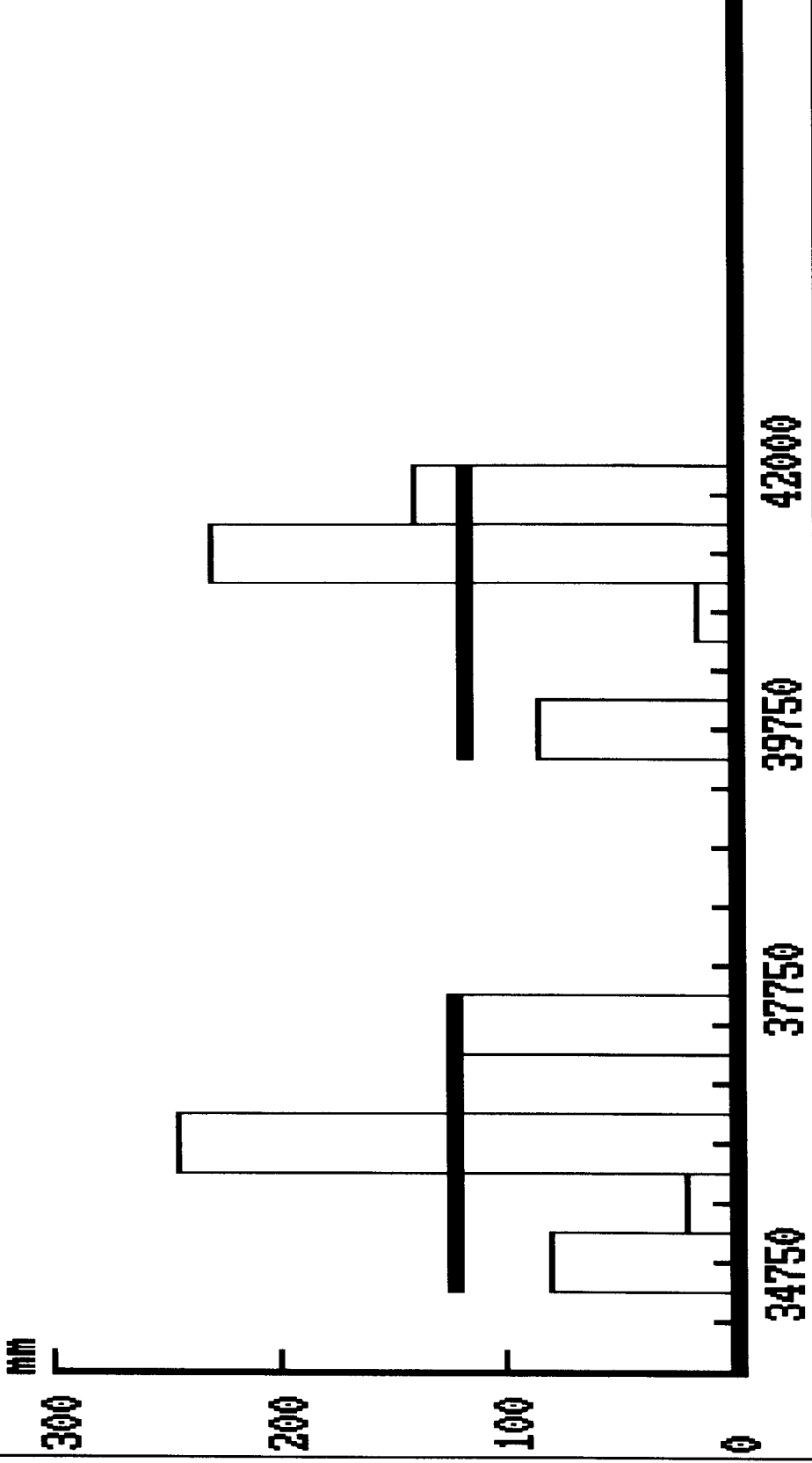
Link no.: 37.001 Link ref.: M4
Height of new overlay in mm:



Link no.: 37.001 Link ref.: M4

Height of new overlay in mm:

125 0 120



BEARING CAPACITY OF EQUAL SECTIONS

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Client: TACIS

SECTION NO. 2 GAZI-MAMMAD TO KURDAMIR

Link no.: 0001

A/S PHØNIX
 P. P. C

Design date: 10-30-1997

Link ref.: M4

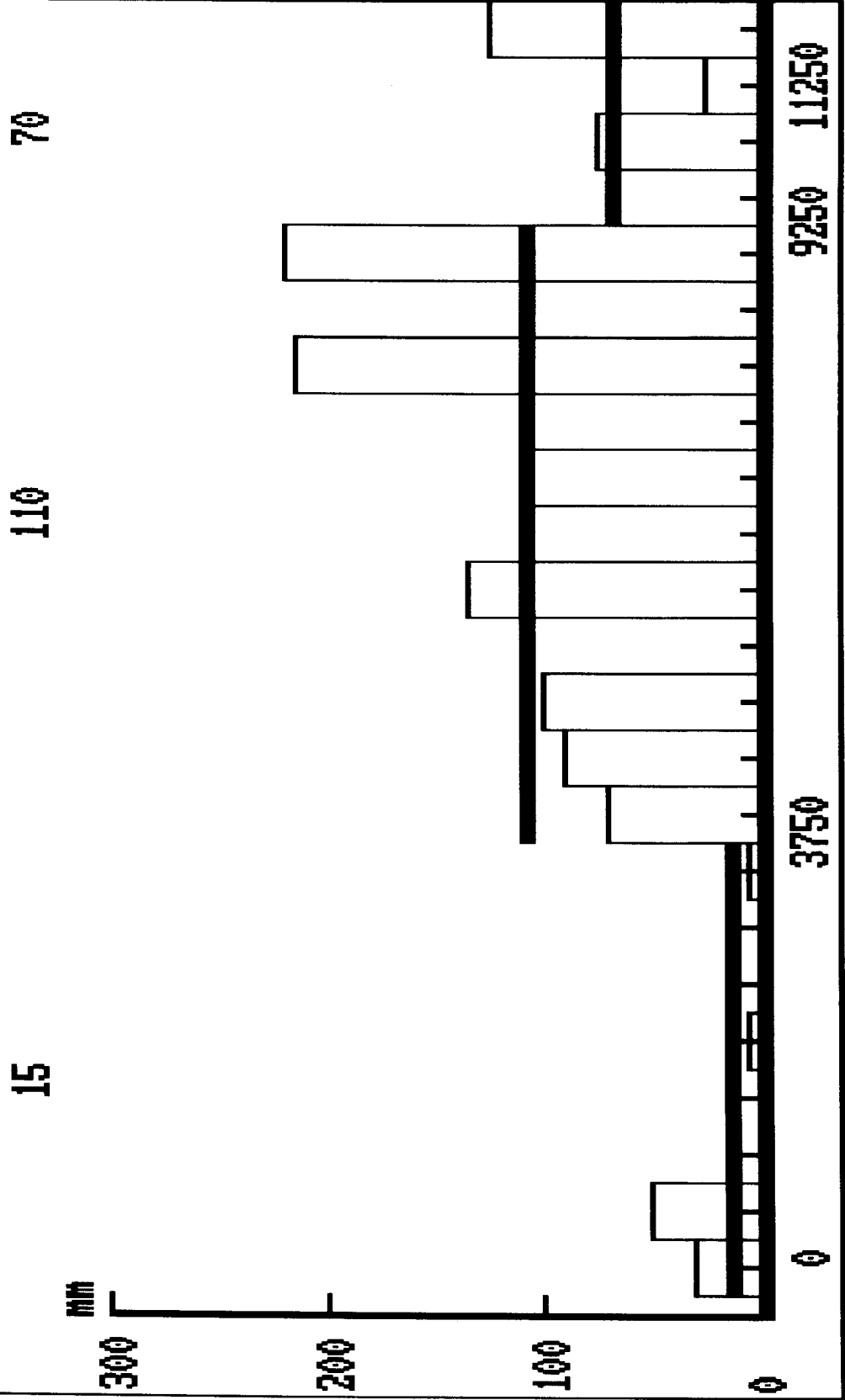
Mea. date: 970413 2

The classification is based on sections => 4 measurements.
 For each section the overlay thickness is calculated as average + 33% of the standard deviation.
 The stated layer thickness must be considered as instructive, as there might be material or technical reasons why another layer thickness than the here stated should be carried out, especially in connection with thin overlay thicknesses.

Section	Overlay Thickness in mm	<-----Life----->		extra tons
		before years	after years	
0 - 3750	15	13	15	263
3750 - 9250	110	5	15	1330
9250 - 11250	70	6	15	340
11250 - 18250	55	10	15	1485
18250 - 22750	20	13	15	402
22750 - 26250	45	7	15	186
26250 - 30250	125	2	15	835
30250 - 34750	95	4	15	897
34750 - 37750	150	0	15	1578
37750 - 43750	80	5	15	851
43750 - 45750	130	1	15	340
45750 - 48250	150	1	15	1671
48250 - 50250	55	6	15	278
50250 - 54750	45	9	15	557
54750 - 56750	150	1	15	743
56750 - 62250	35	10	15	526
62250 - 64250	145	1	15	0
64250 - 83500	75	11	15	5646

Link no.: 0001 Link ref.: M4

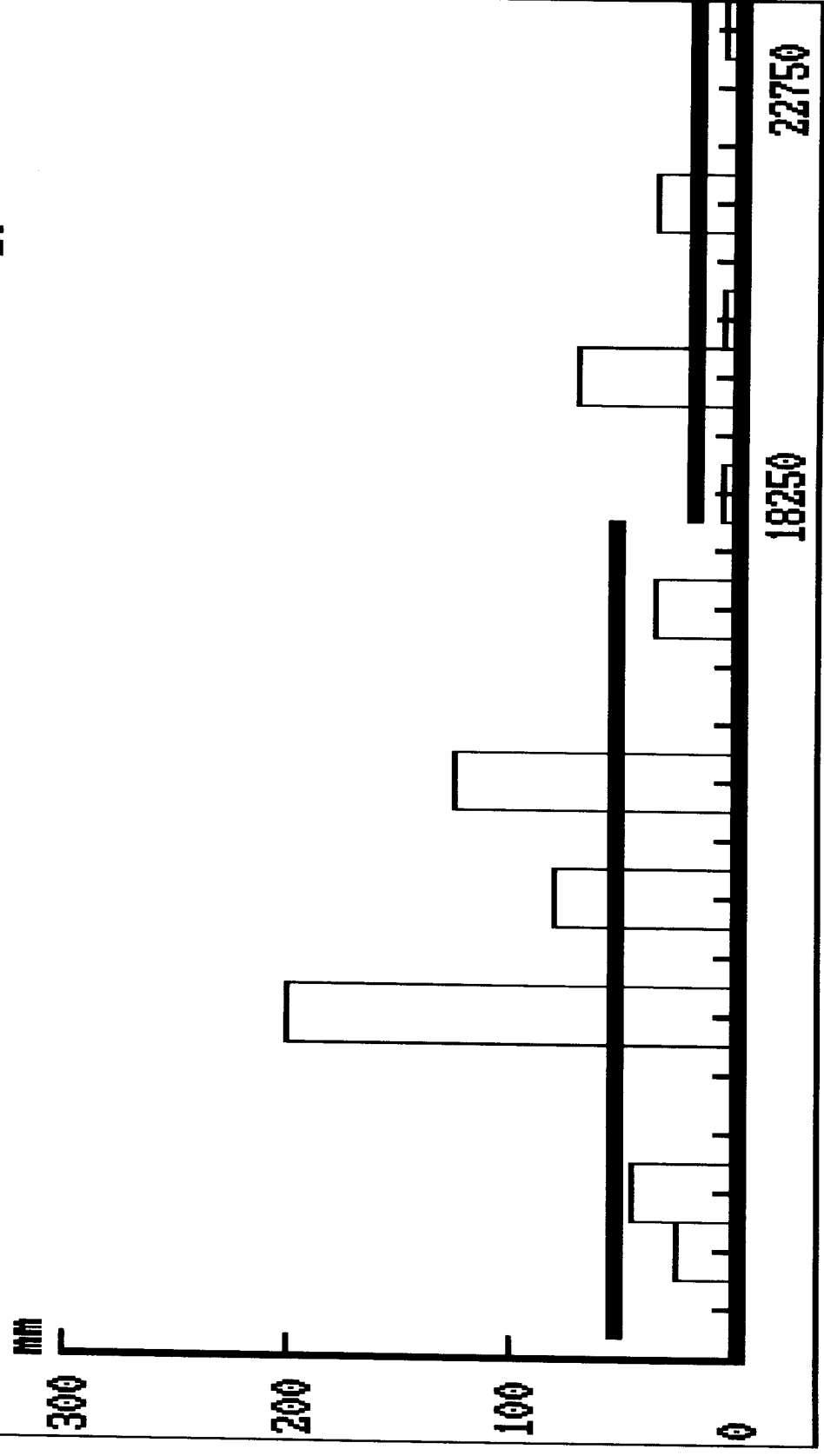
Height of new overlay in mm:



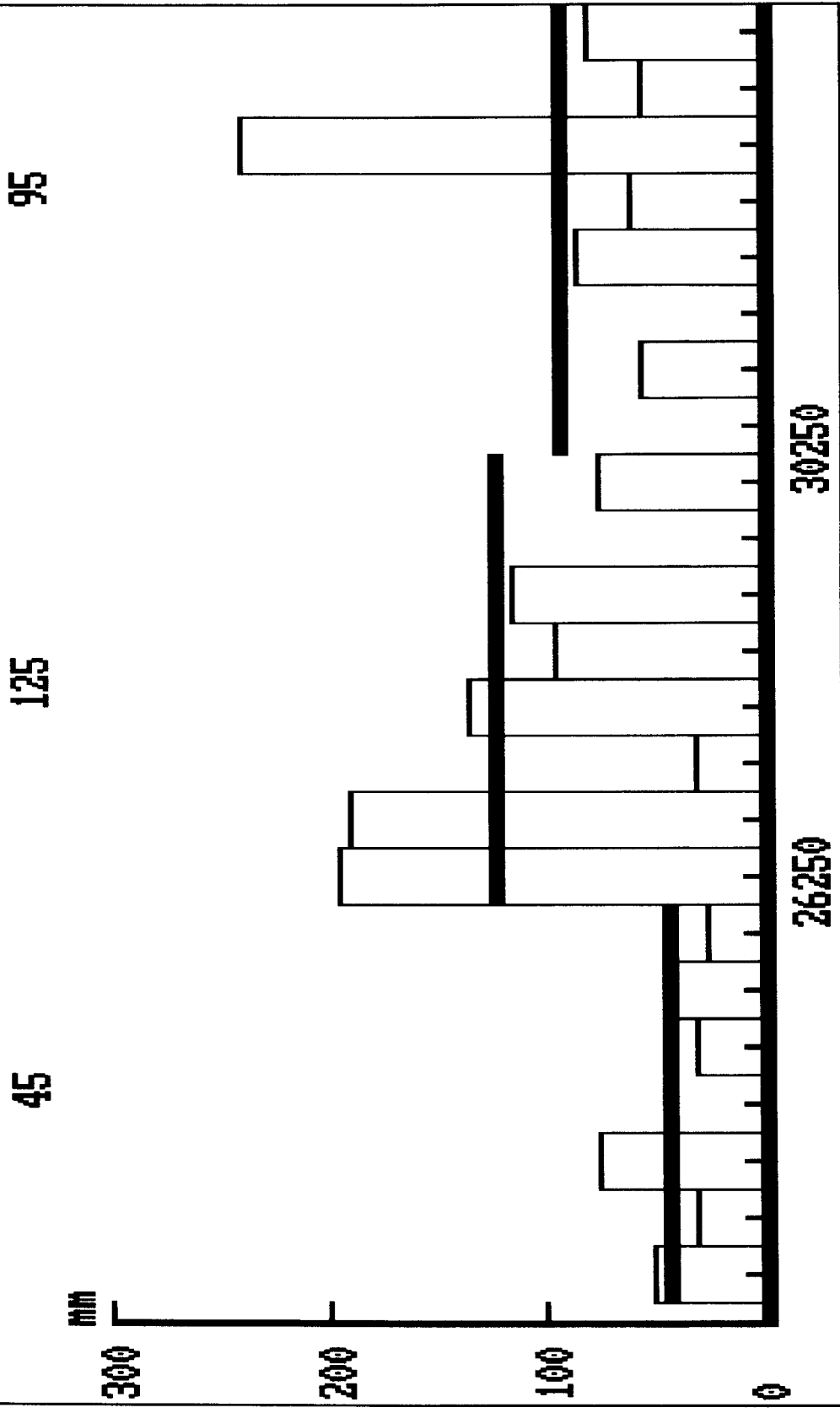
Link no.: 0001 Link ref.: M4
Height of new overlay in mm:

55

20



Link no.: 0001 Link ref.: M4
Height of new overlay in mm:



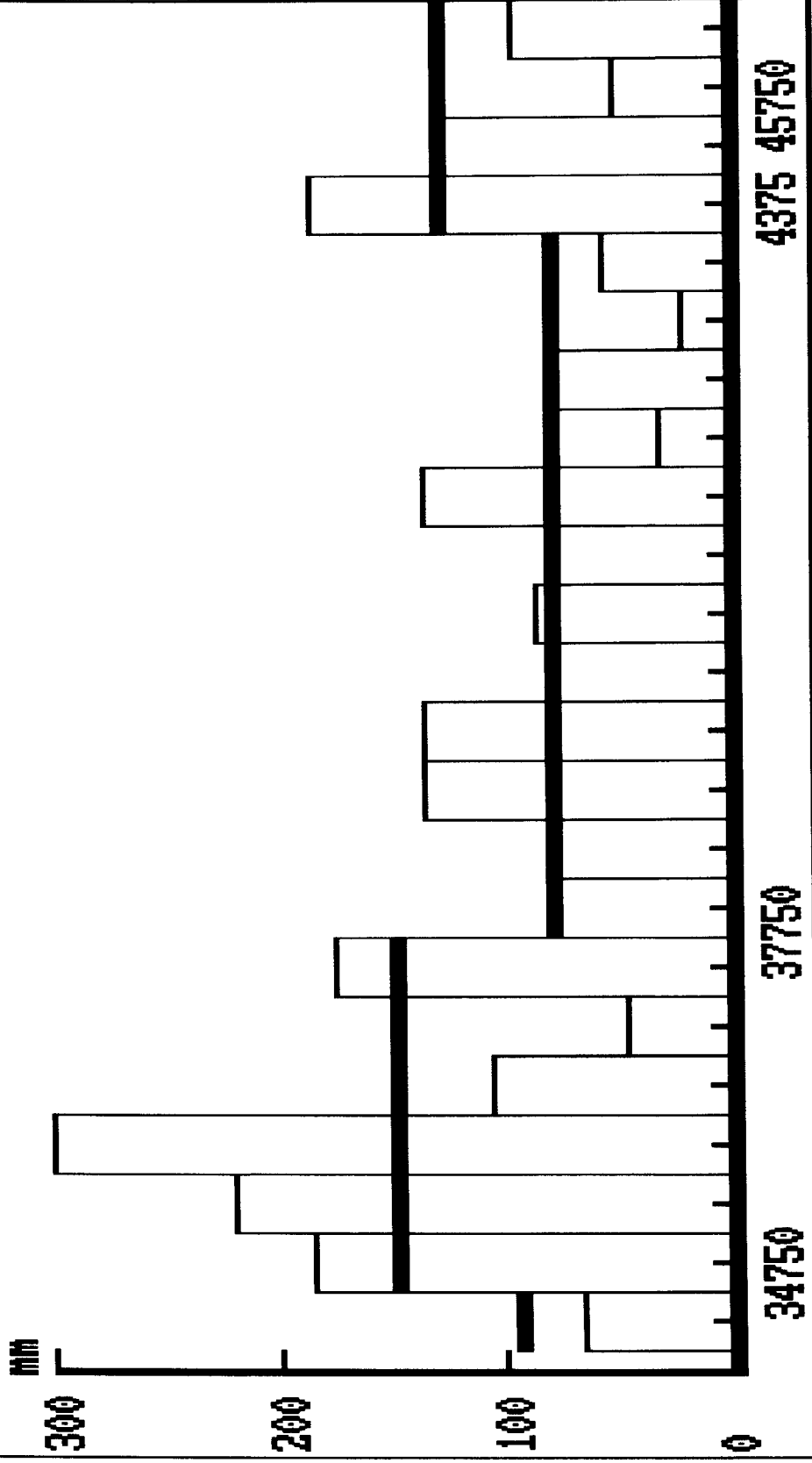
Link no.: 0001 Link ref.: M4

Height of new overlay in mm:

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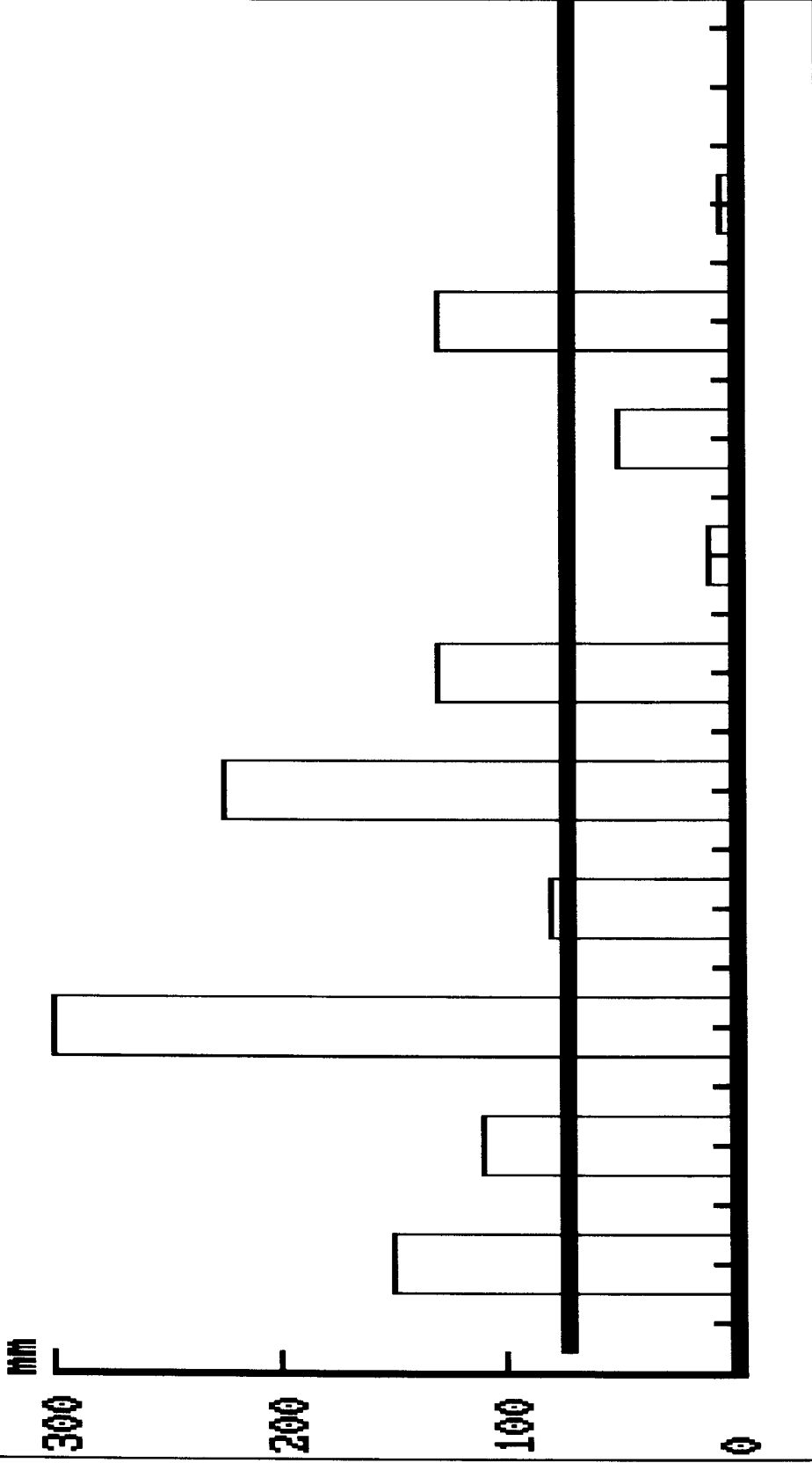
80

150



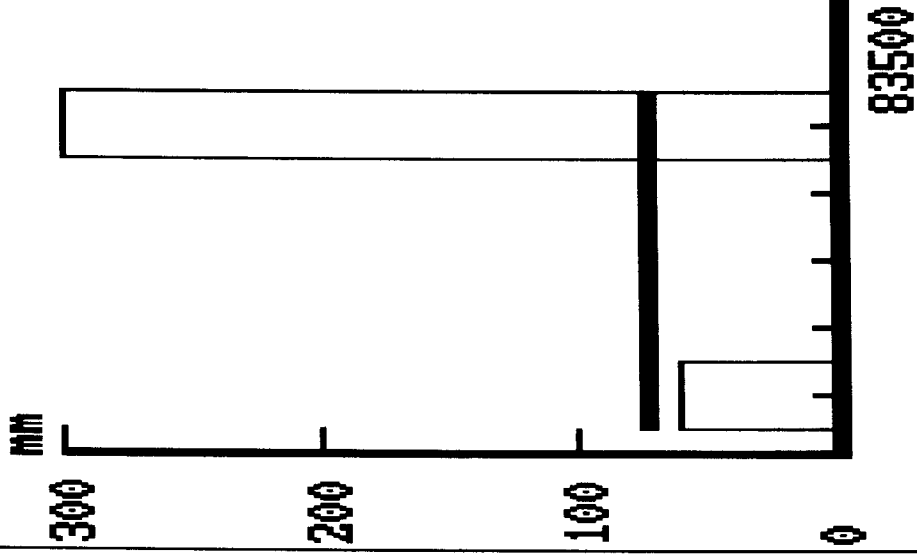
Link no.: 0001 Link ref.: M4
Height of new overlay in mm:

75



Link no.: 0001 Link ref.: M4

Height of new overlay in mm:



BEARING CAPACITY OF EQUAL SECTIONS

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Client: TACIS

SECTION NO. 3 KYURDAMIR to UJAR

Link no.: 37.001

A/S PHØNIX
 P. P. C

Design date: 10-30-1997

Link ref.: M4

Mea. date: 970417 2

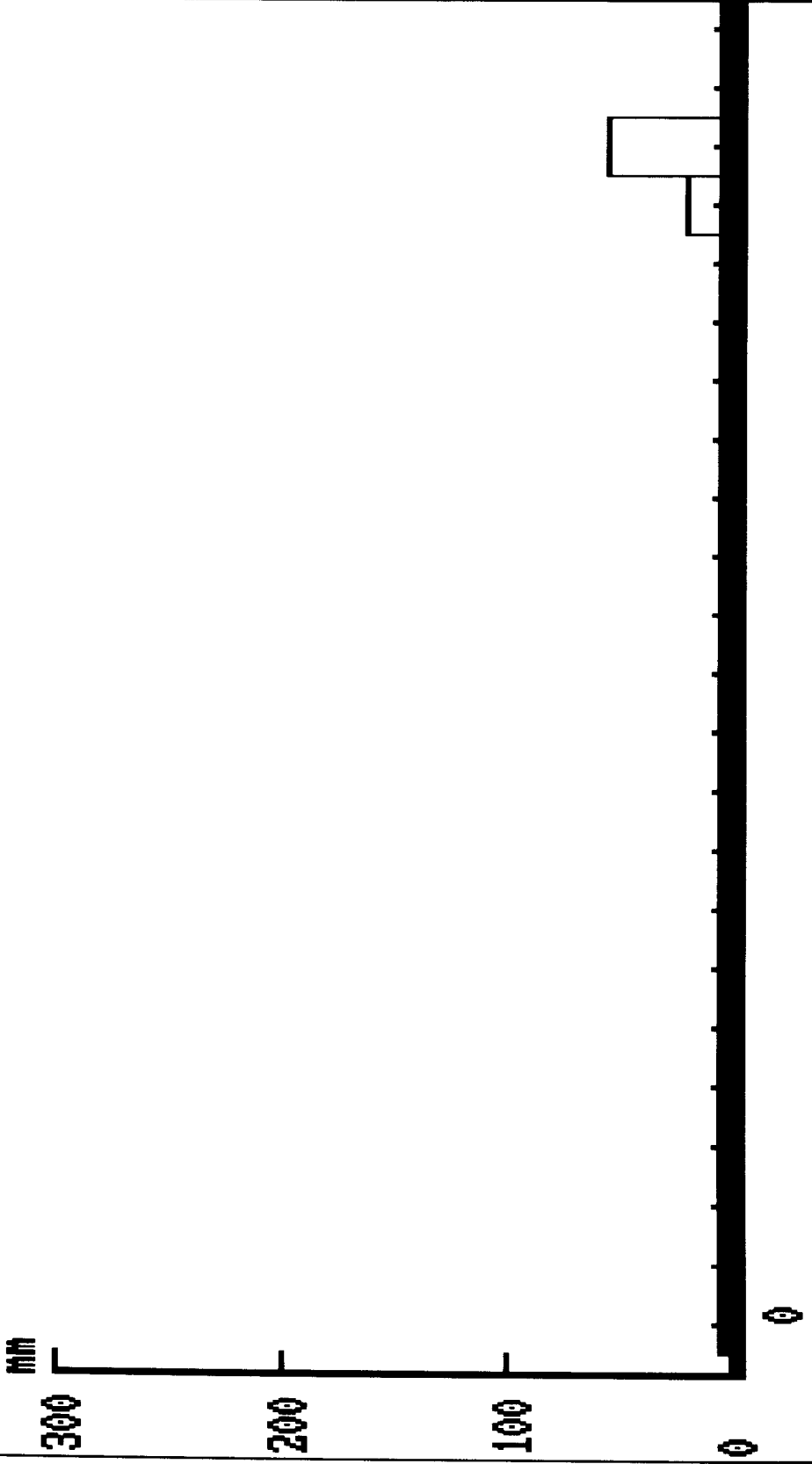
The classification is based on sections => 4 measurements.
 For each section the overlay thickness is calculated as average + 33% of the standard deviation.
 The stated layer thickness must be considered as instructive, as there might be material or technical reasons why another layer thickness than the here stated should be carried out, especially in connection with thin overlay thicknesses.

Section	Overlay Thickness in mm	<-----Life----->		extra tons
		before years	after years	
0 - 11250	5	14	15	402
11250 - 13250	60	6	15	248
13250 - 15250	0	20	20	0
15250 - 20250	60	8	15	897
20250 - 48000	10	14	15	1238

Link no.: 37.001 Link ref.: M4

Height of new overlay in mm:

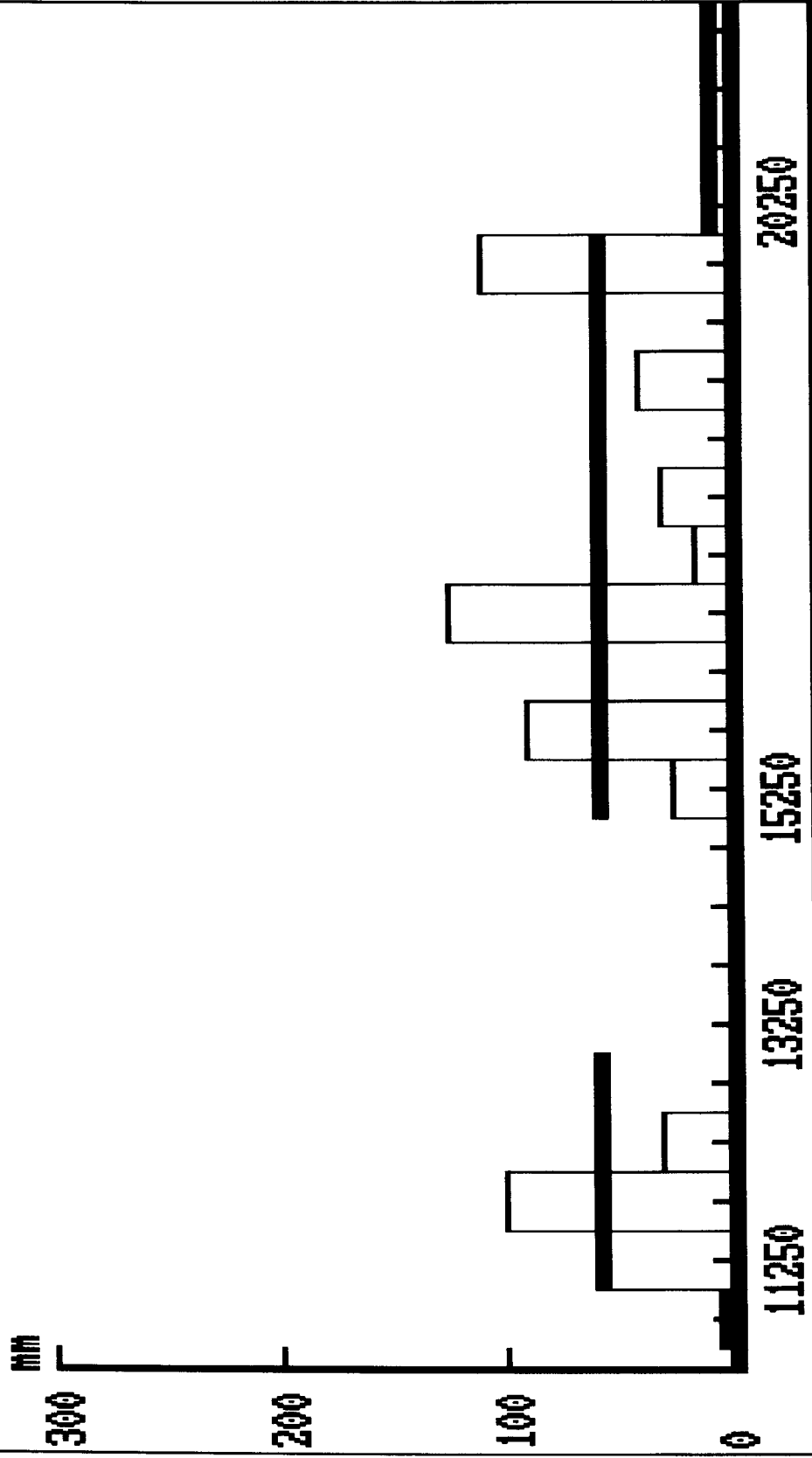
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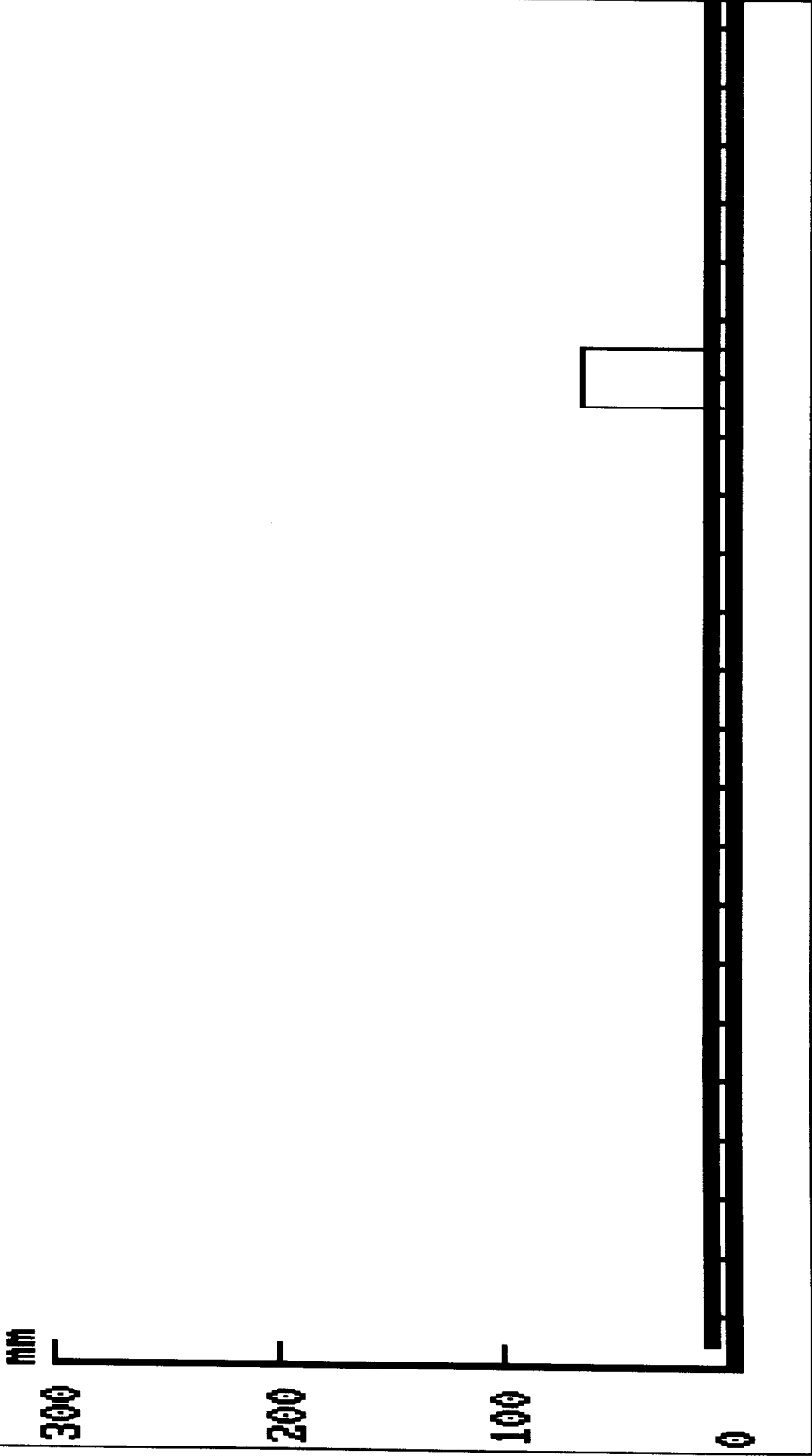
Link no.: 37.001 Link ref.: M4

Height of new overlay in mm:

60 0 60



Link no.: 37.001 Link ref.: M4
Height of new overlay in mm:



Link no.: 37.001 Link ref.: M4
Height of new overlay in mm:

10

mm

300

200

100

0



Link no.: 37.001 Link ref.: M4
Height of new overlay in mm:

mm

300

200

100

0

48000



BEARING CAPACITY OF EQUAL SECTIONS

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Client: TACIS

SECTION NO. 4 UJAR to MINGACHEUR

Link no.: 37.001

A/S PHØNIX
 P. P. C

Design date: 10-30-1997

Link ref.: M4

Mea. date: 970418 2

The classification is based on sections => 4 measurements.

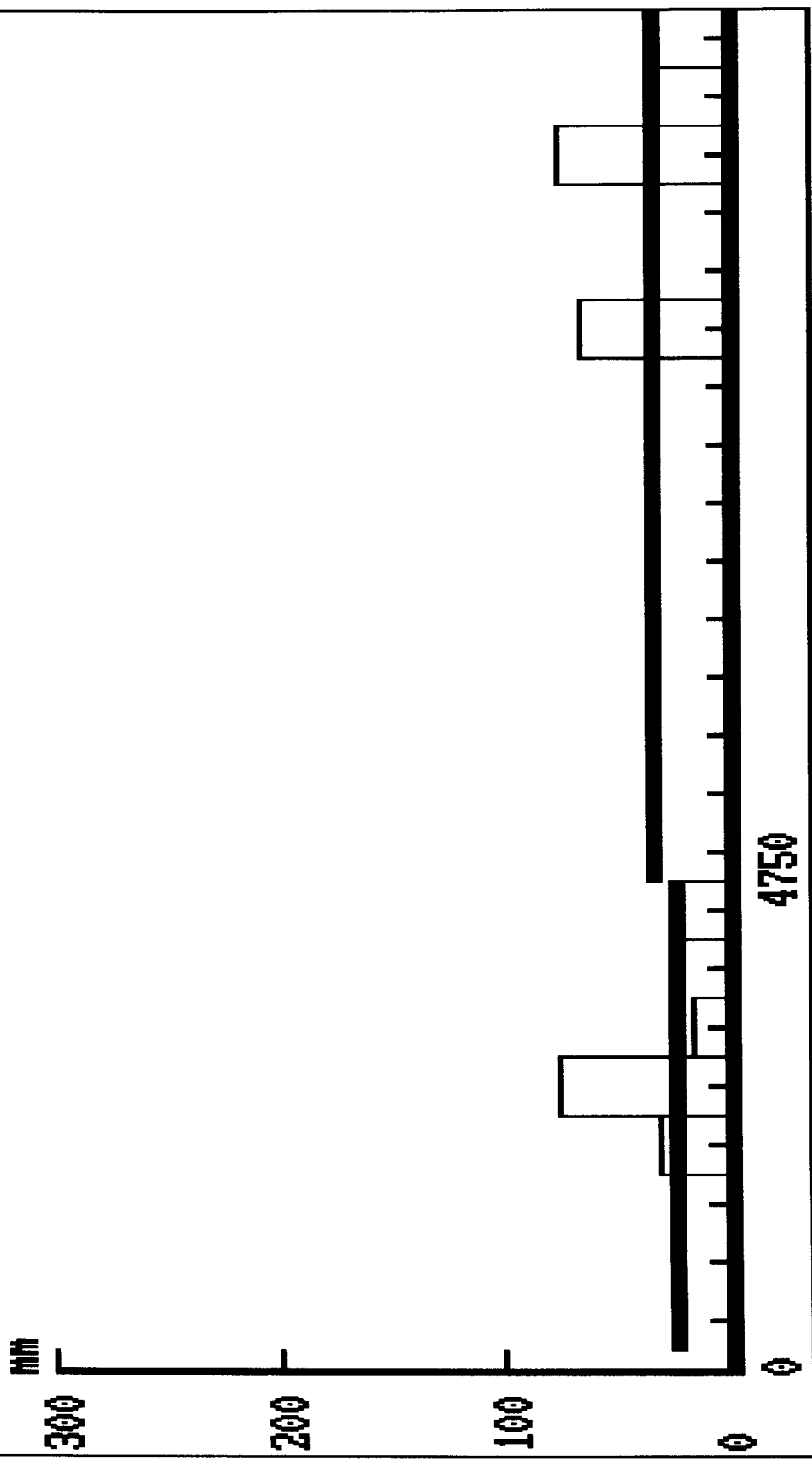
For each section the overlay thickness is calculated as average + 33% of the standard deviation.

The stated layer thickness must be considered as instructive, as there might be material or technical reasons why another layer thickness than the here stated should be carried out, especially in connection with thin overlay thicknesses.

Section	Overlay Thickness in mm	<-----Life----->		extra tons
		before years	after years	
0 - 4750	25	12	15	309
4750 - 23750	35	14	15	2506
23750 - 25750	75	5	15	248
25750 - 27750	125	3	15	217
27750 - 33250	5	14	15	155
33250 - 35250	15	12	15	93
35250 - 38250	45	9	15	402
38250 - 40250	75	5	15	309
40250 - 46000	35	13	15	897
46000 - 56250	150	0	15	6033
56250 - 59750	25	12	15	433
59750 - 61500	60	5	15	0

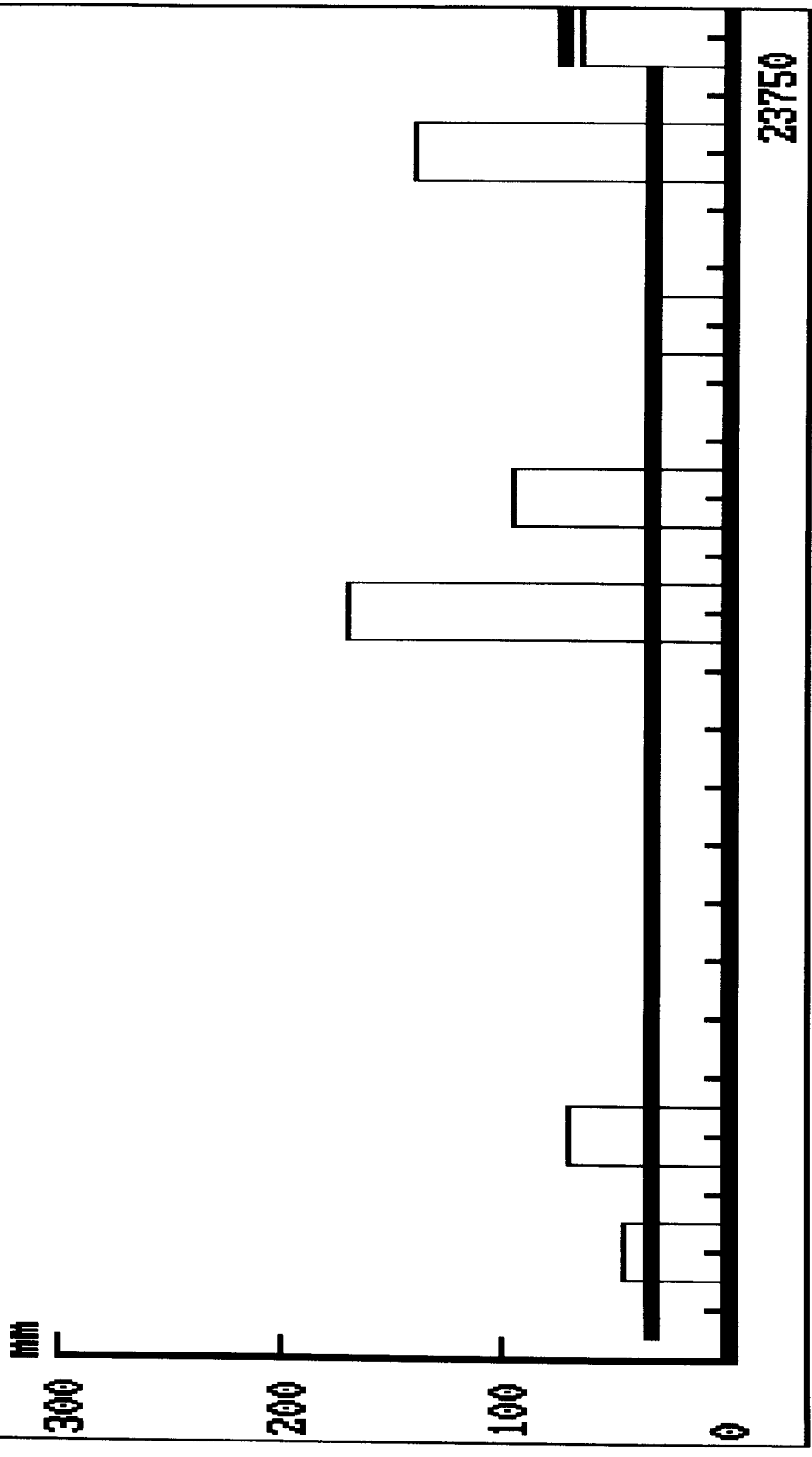
Link no.: 37.001 Link ref.: M4
Height of new overlay in mm:

25

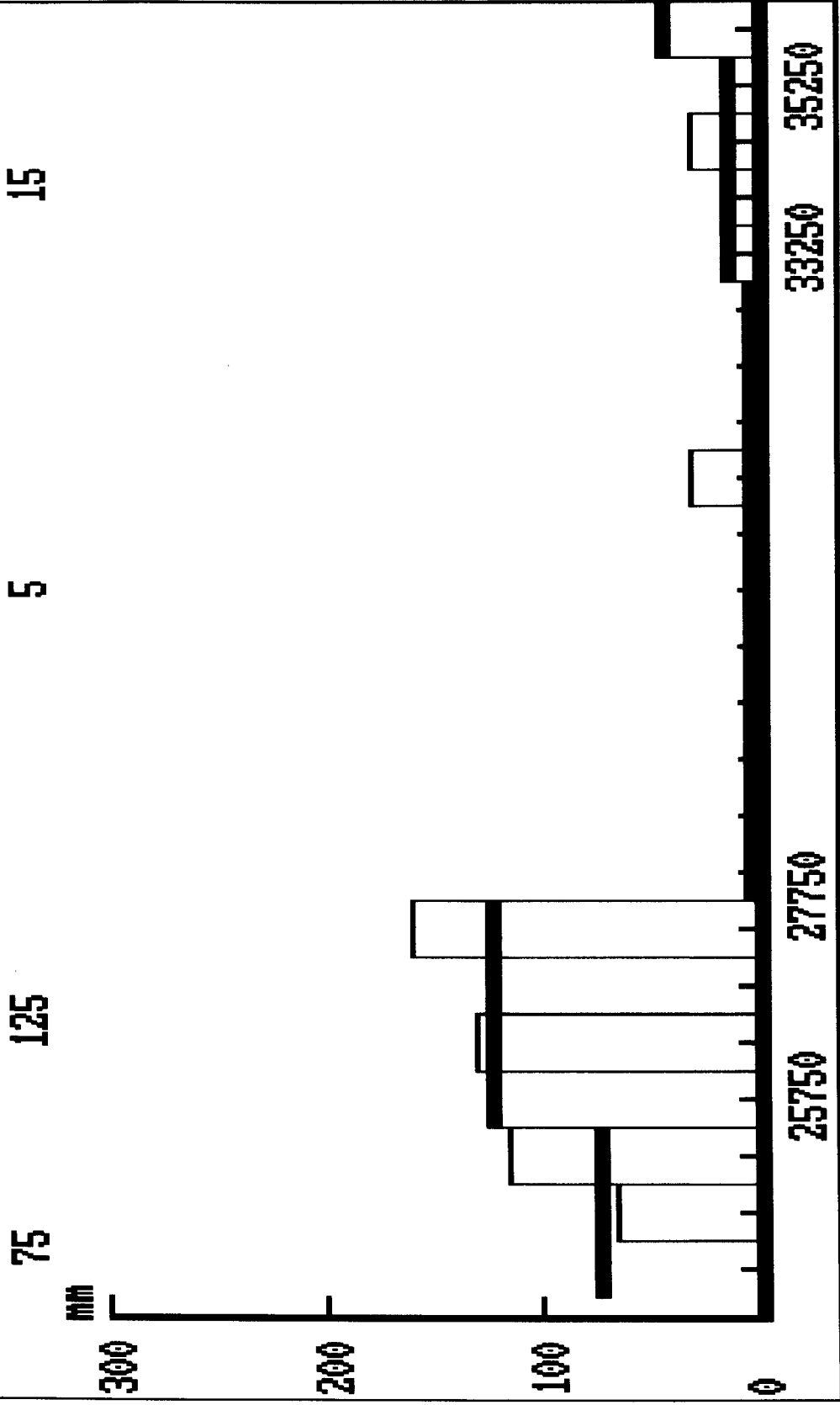


Link no.: 37.001 Link ref.: M4
Height of new overlay in mm:

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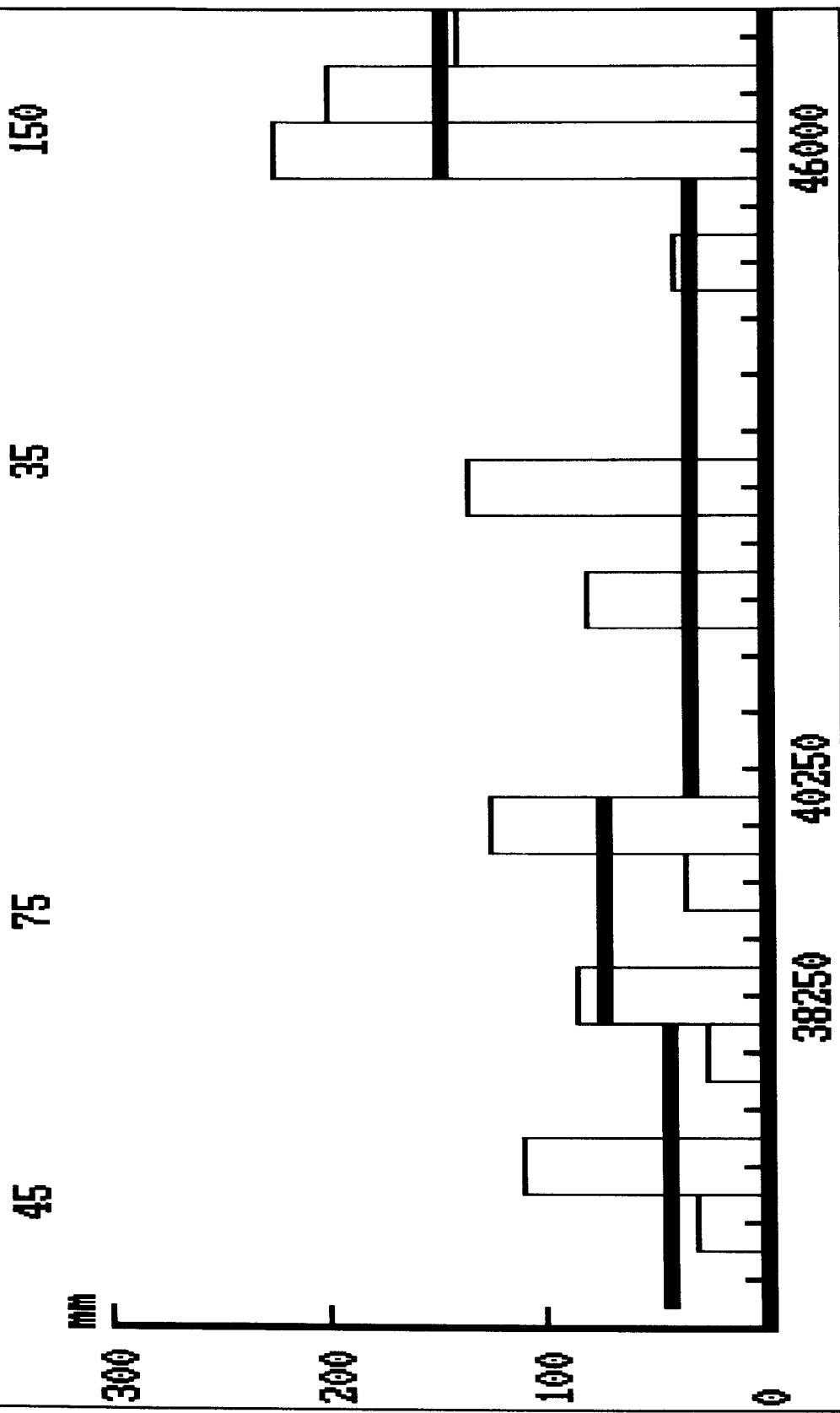


Link no.: 37.001 Link ref.: M4
Height of new overlay in mm:



Link no.: 37.001 Link ref.: M4

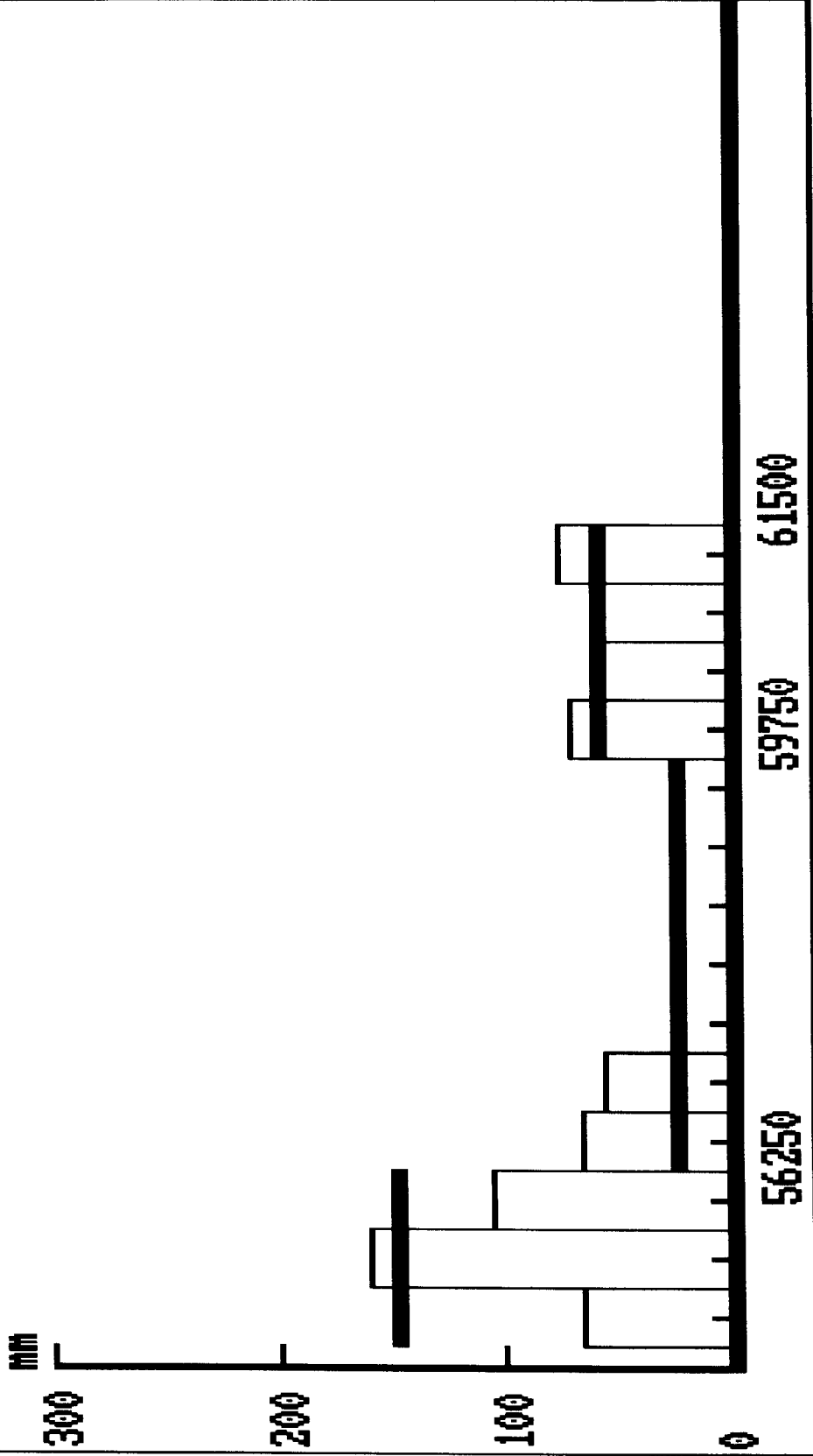
Height of new overlay in mm:



Link no.: 37.001 Link ref.: M4

Height of new overlay in mm:

25 60



BEARING CAPACITY OF EQUAL SECTIONS

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Client: TACIS

SECTION NO. 5 MINGACHEUR TO GJANDZA

Link no.: 37.001

A/S PHØNIX
 P. P. C

Design date: 10-30-1997

Link ref.: M1

Mea. date: 1804 2

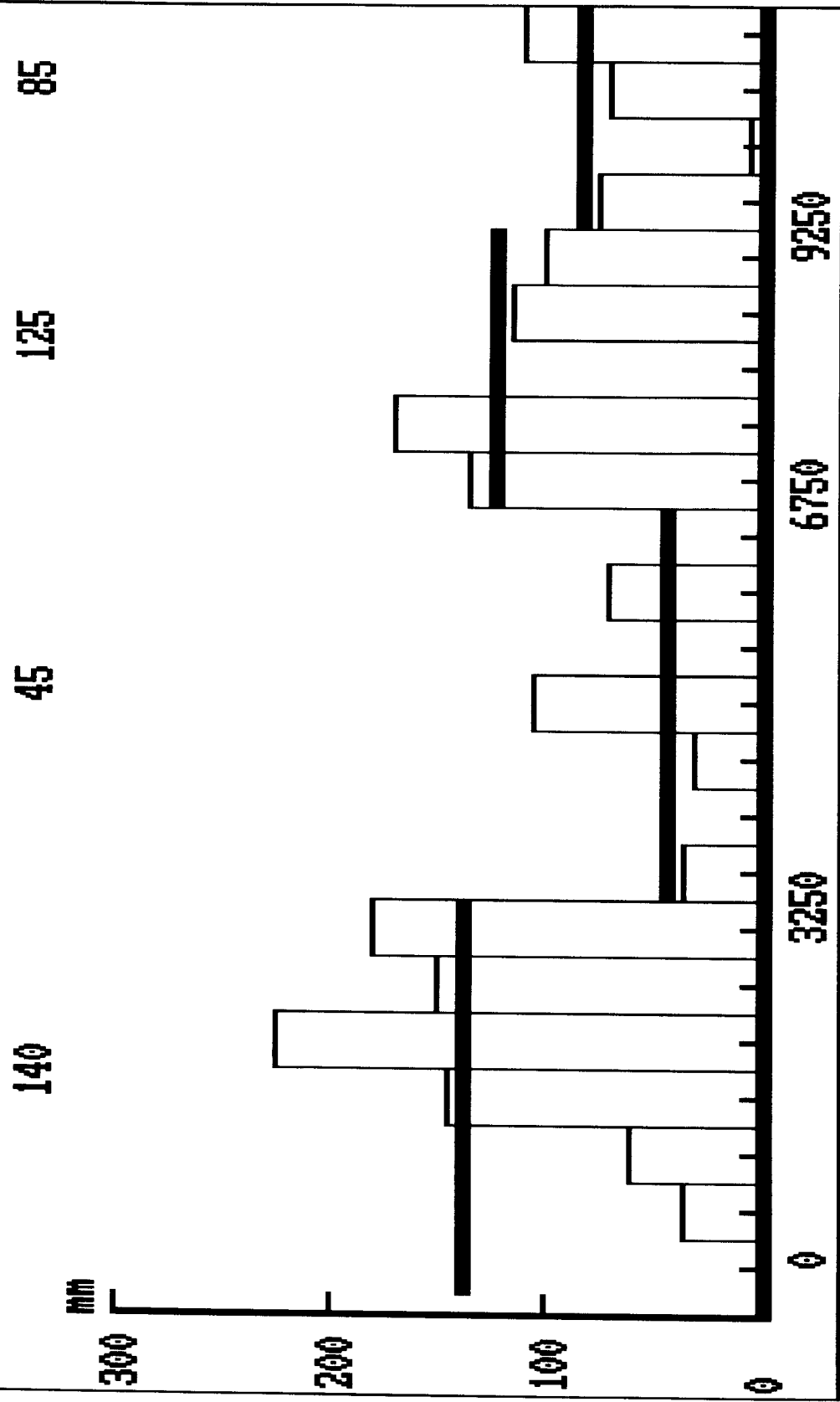
The classification is based on sections => 4 measurements.

For each section the overlay thickness is calculated as average + 33% of the standard deviation.

The stated layer thickness must be considered as instructive, as there might be material or technical reasons why another layer thickness than the here stated should be carried out, especially in connection with thin overlay thicknesses.

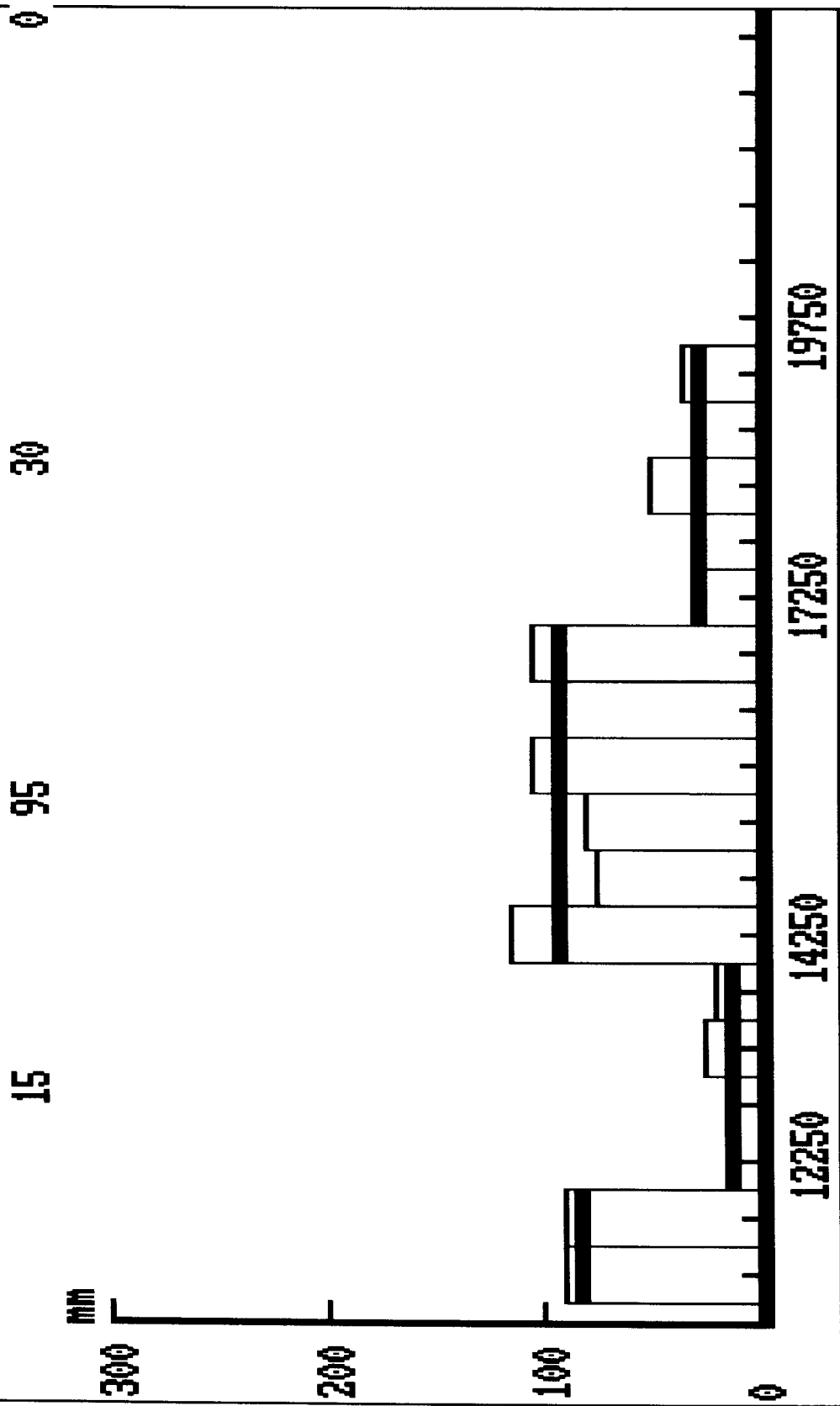
Section	Overlay Thickness in mm	<-----Life----->		extra tons
		before years	after years	
0 - 3250	140	2	15	773
3250 - 6750	45	9	15	526
6750 - 9250	125	2	15	278
9250 - 12250	85	2	15	0
12250 - 14250	15	12	15	0
14250 - 17250	95	2	15	0
17250 - 19750	30	11	15	124
19750 - 26750	0	18	18	0
26750 - 28750	90	3	15	0
28750 - 32750	75	5	15	650
32750 - 34750	10	14	15	124
34750 - 38750	50	6	15	371
38750 - 41250	95	1	15	0
41250 - 43000	125	1	15	0

Link no.: 37.001 Link ref.: M1
Height of new overlay in mm:



140 45 125 85

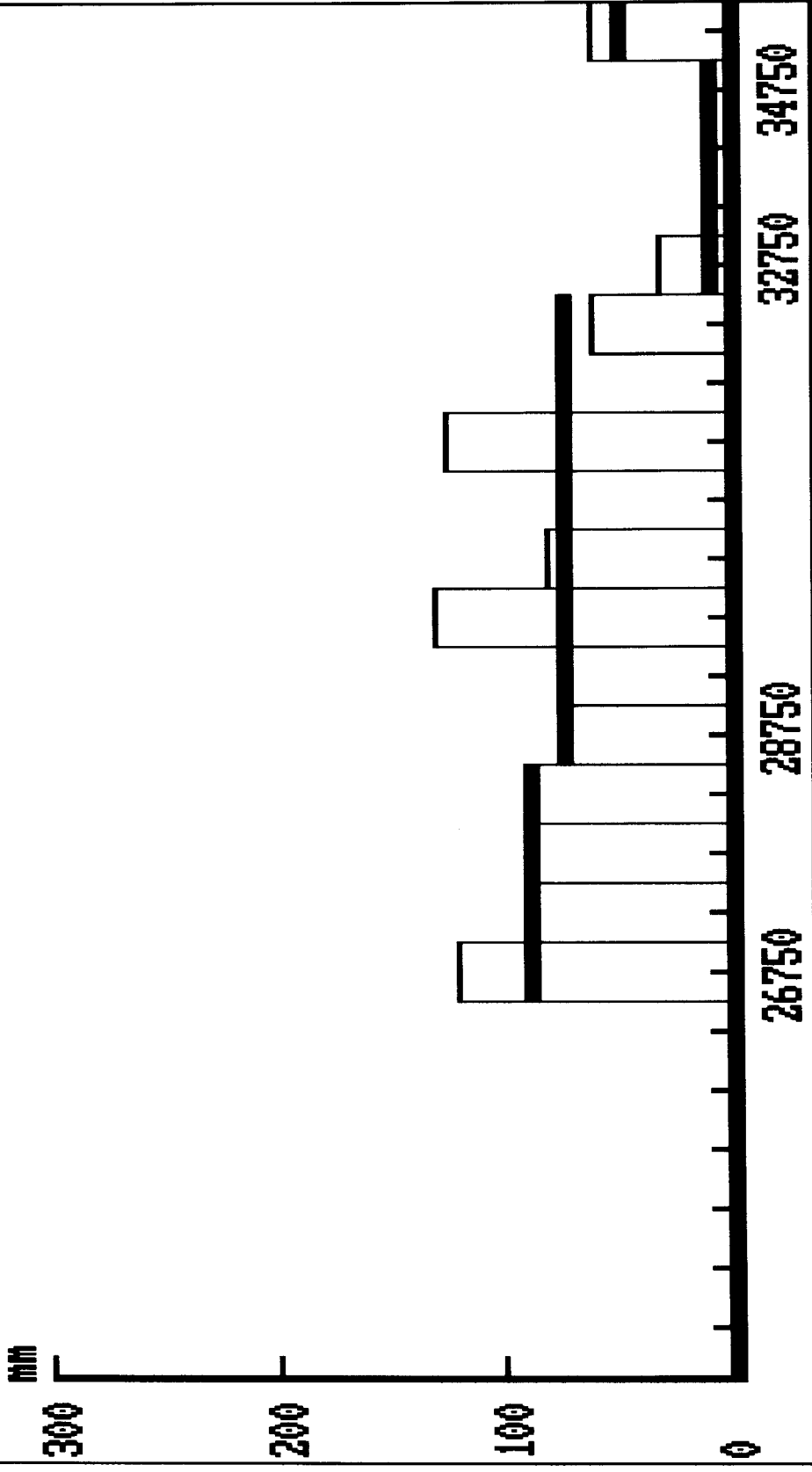
Link no.: 37.001 Link ref.: M1
Height of new overlay in mm:



Link no.: 37.001 Link ref.: M1

Height of new overlay in mm:

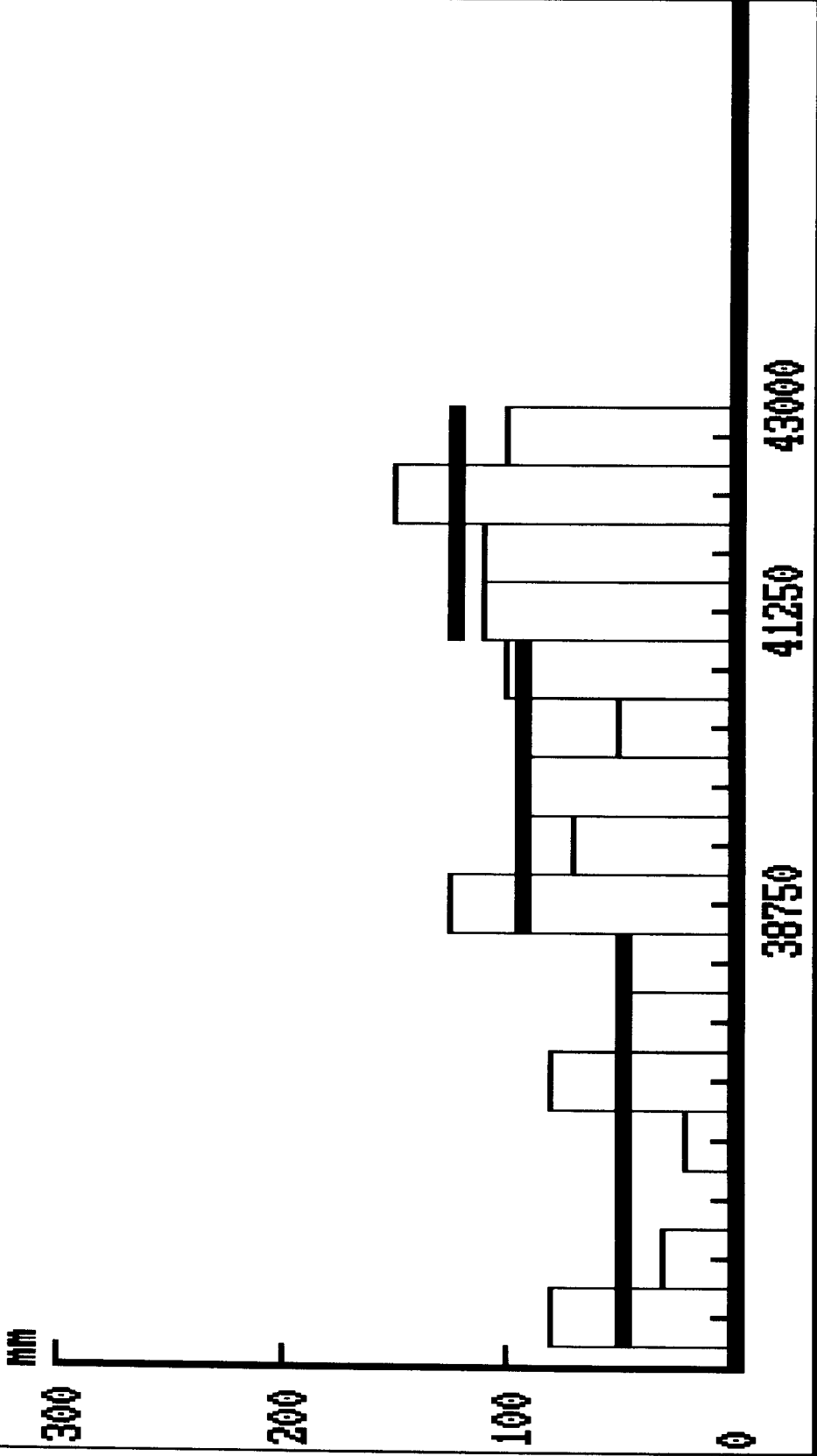
90 75 10



Link no.: 37.001 Link ref.: M1

Height of new overlay in mm:

50 95 125



BEARING CAPACITY OF EQUAL SECTIONS

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Client: TACIS

SECTION NO. 6 START OF GJANDZA BYPASS TO END OF GJANDZA BYPASS

Link no.: 37.001

A/S PHØNIX
 P. P. C

Design date: 10-30-1997

Link ref.: M1

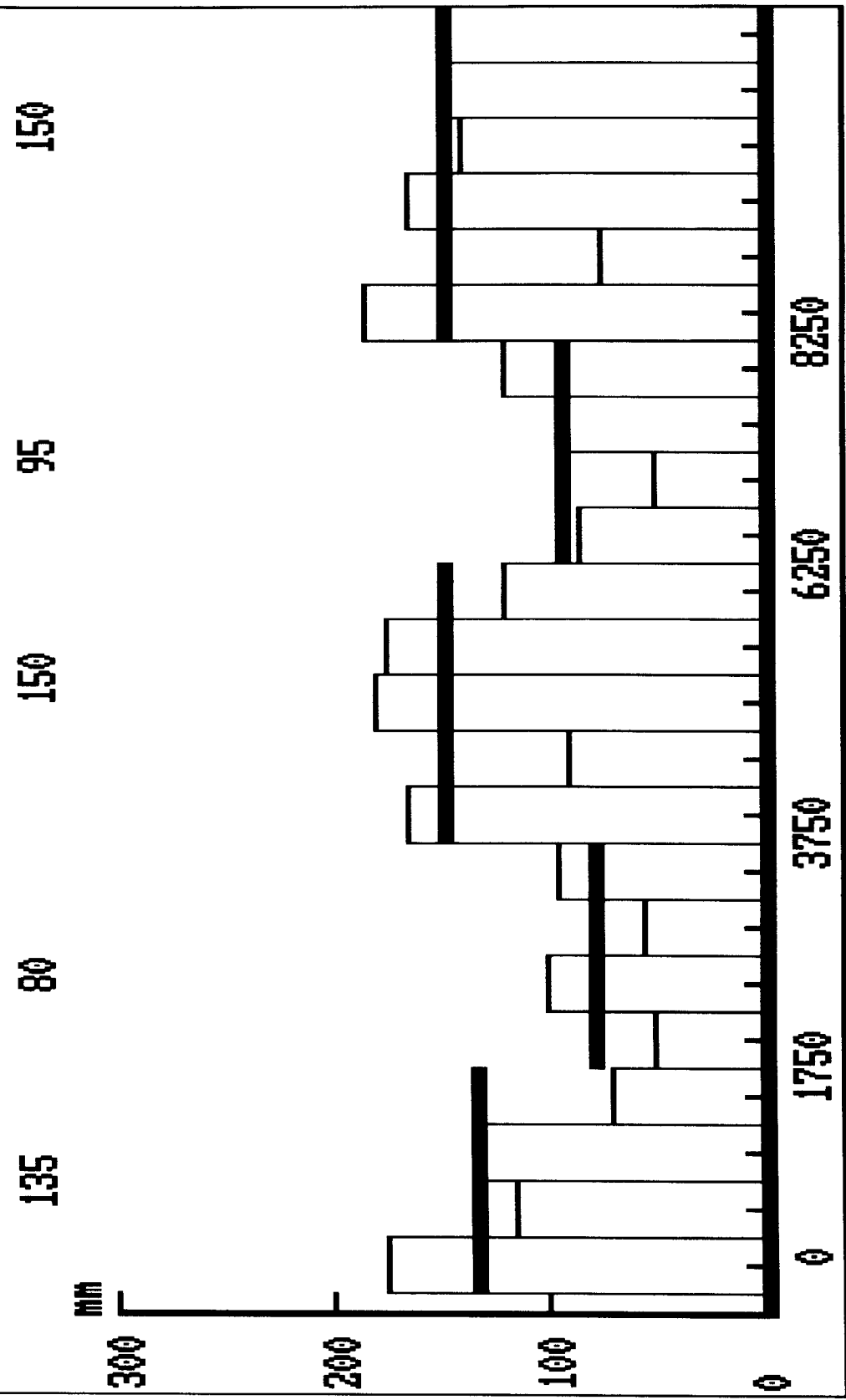
Mea. date: 1804 2

The classification is based on sections => 4 measurements.
 For each section the overlay thickness is calculated as
 average + 33% of the standard deviation.
 The stated layer thickness must be considered as instructive, as there might
 be material or technical reasons why another layer thickness than the here
 stated should be carried out, especially in connection with thin
 overlay thicknesses.

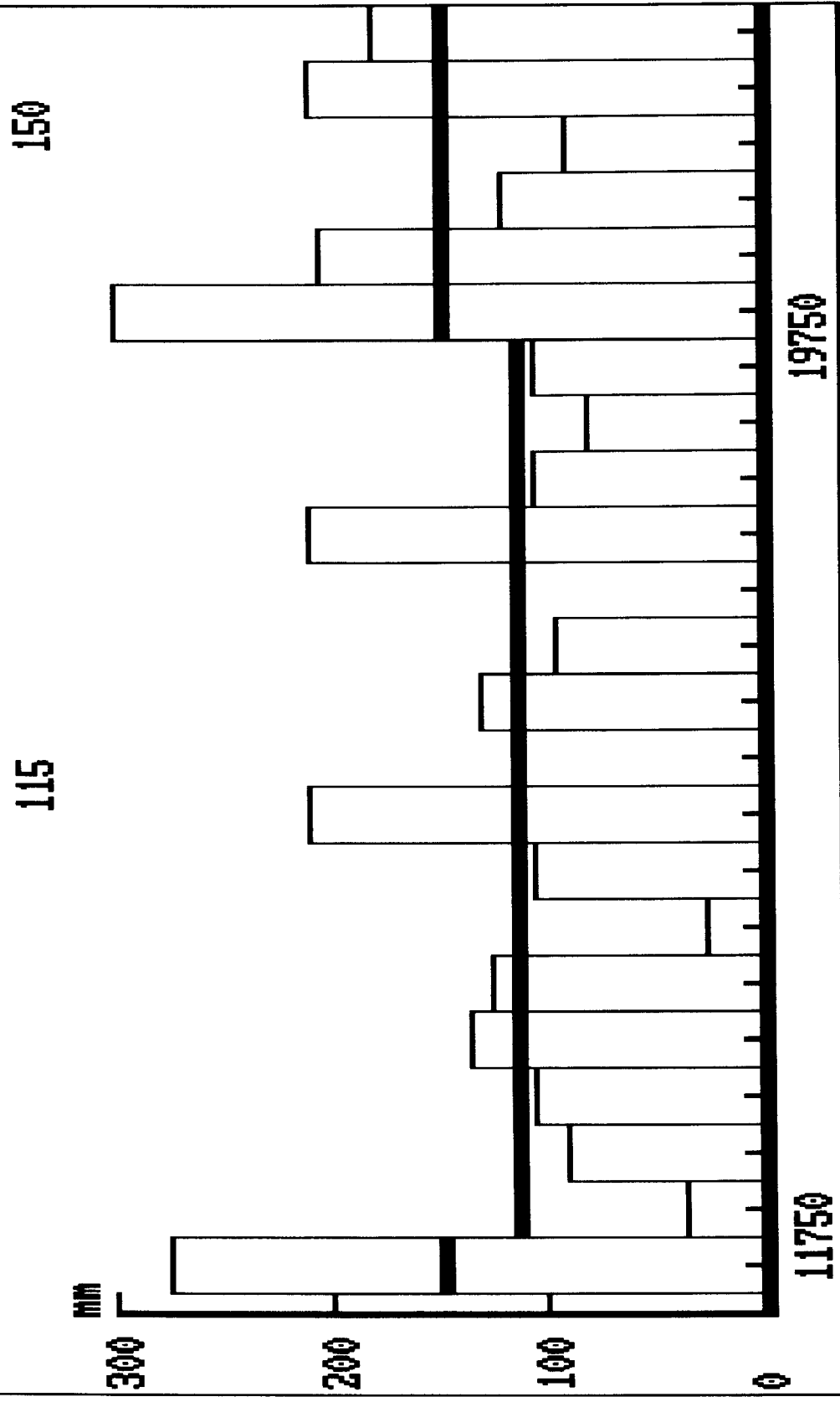
Section	Overlay Thickness in mm	<-----Life----->		extra tons
		before years	after years	
0 - 1750	135	1	15	124
1750 - 3750	80	2	15	0
3750 - 6250	150	0	15	0
6250 - 8250	95	1	15	0
8250 - 11750	150	0	15	990
11750 - 19750	115	2	15	1176
19750 - 23750	150	0	15	1640
23750 - 26750	150	0	15	0
26750 - 32750	105	1	15	340
32750 - 35000	150	0	15	217

Link no.: 37.001 Link ref.: M1

Height of new overlay in mm:



Link no.: 37.001 Link ref.: M1
Height of new overlay in mm:

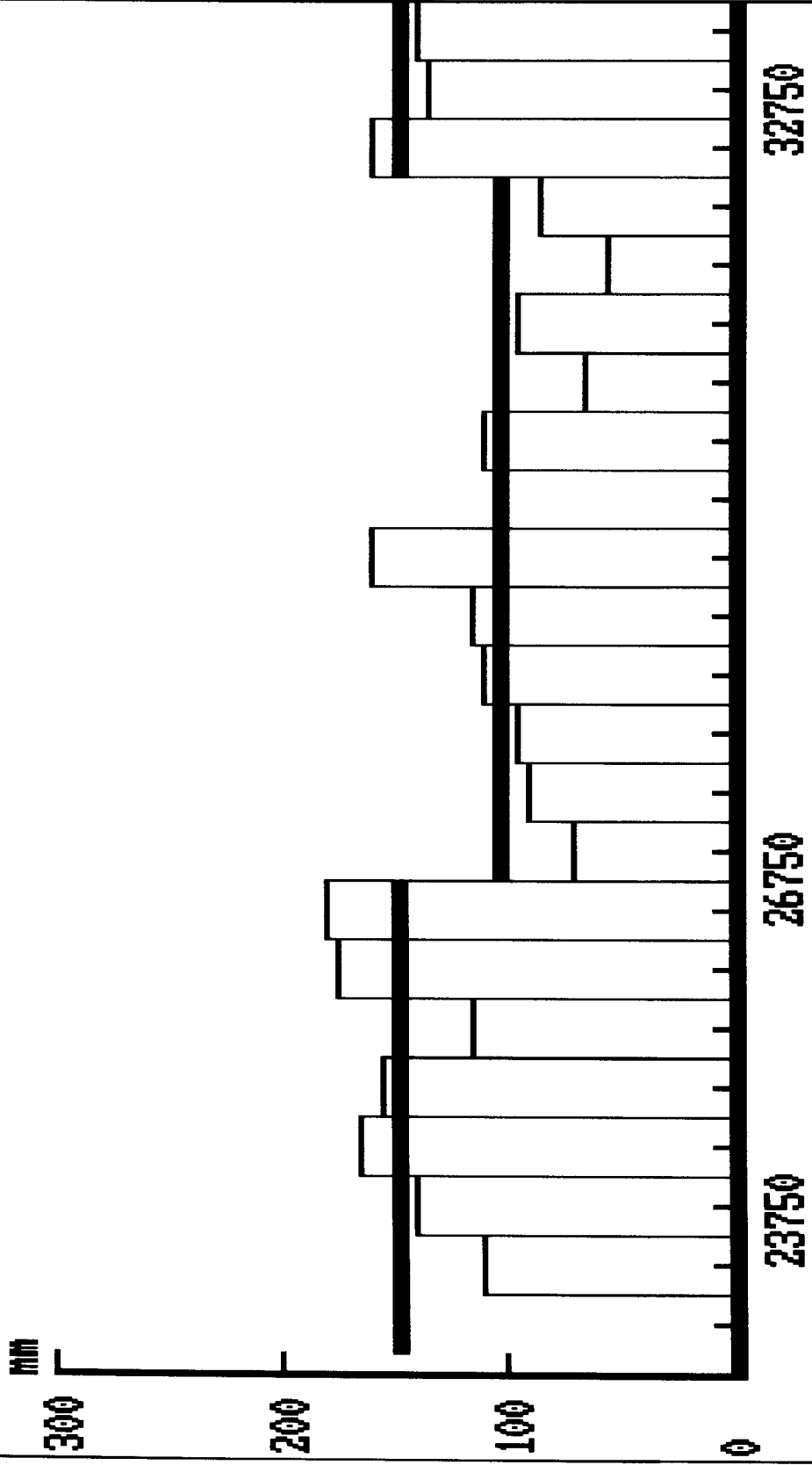


Link no.: 37.001 Link ref.: M1
Height of new overlay in mm:

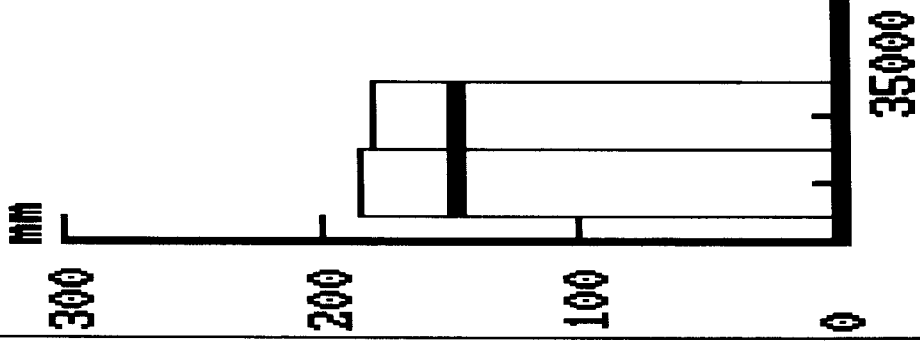
150

105

150



Link no.: 37.001 Link ref.: M1
Height of new overlay in mm:



BEARING CAPACITY OF EQUAL SECTIONS

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Client: TACIS

SECTION NO. 7 END OF GJANDZA BYPASS TO AKSTAF

Link no.: 37.001

A/S PHØNIX
 P. P. C

Design date: 10-30-1997

Link ref.: M1

Mea. date: 1949 2

The classification is based on sections => 4 measurements.

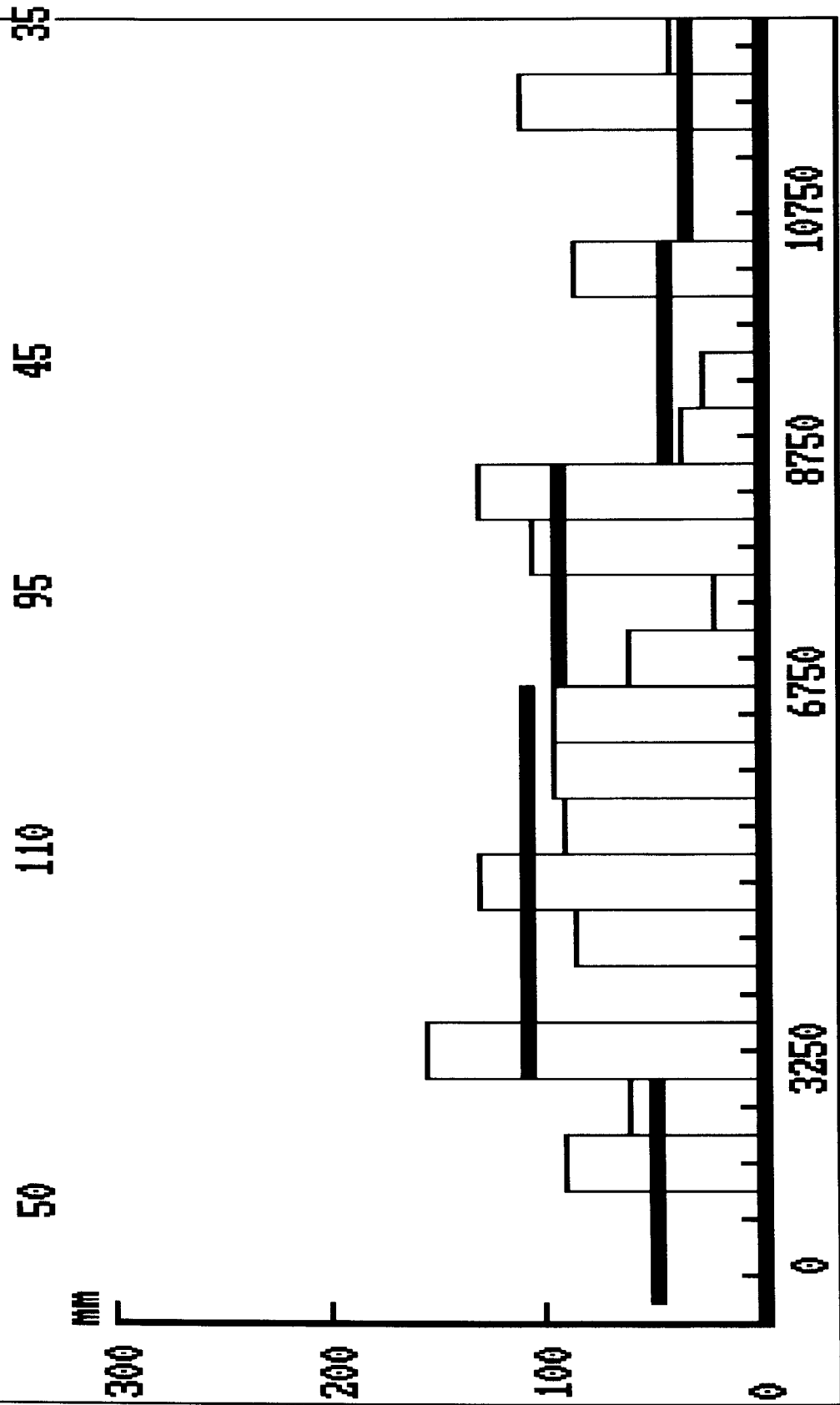
For each section the overlay thickness is calculated as average + 33% of the standard deviation.

The stated layer thickness must be considered as instructive, as there might be material or technical reasons why another layer thickness than the here stated should be carried out, especially in connection with thin overlay thicknesses.

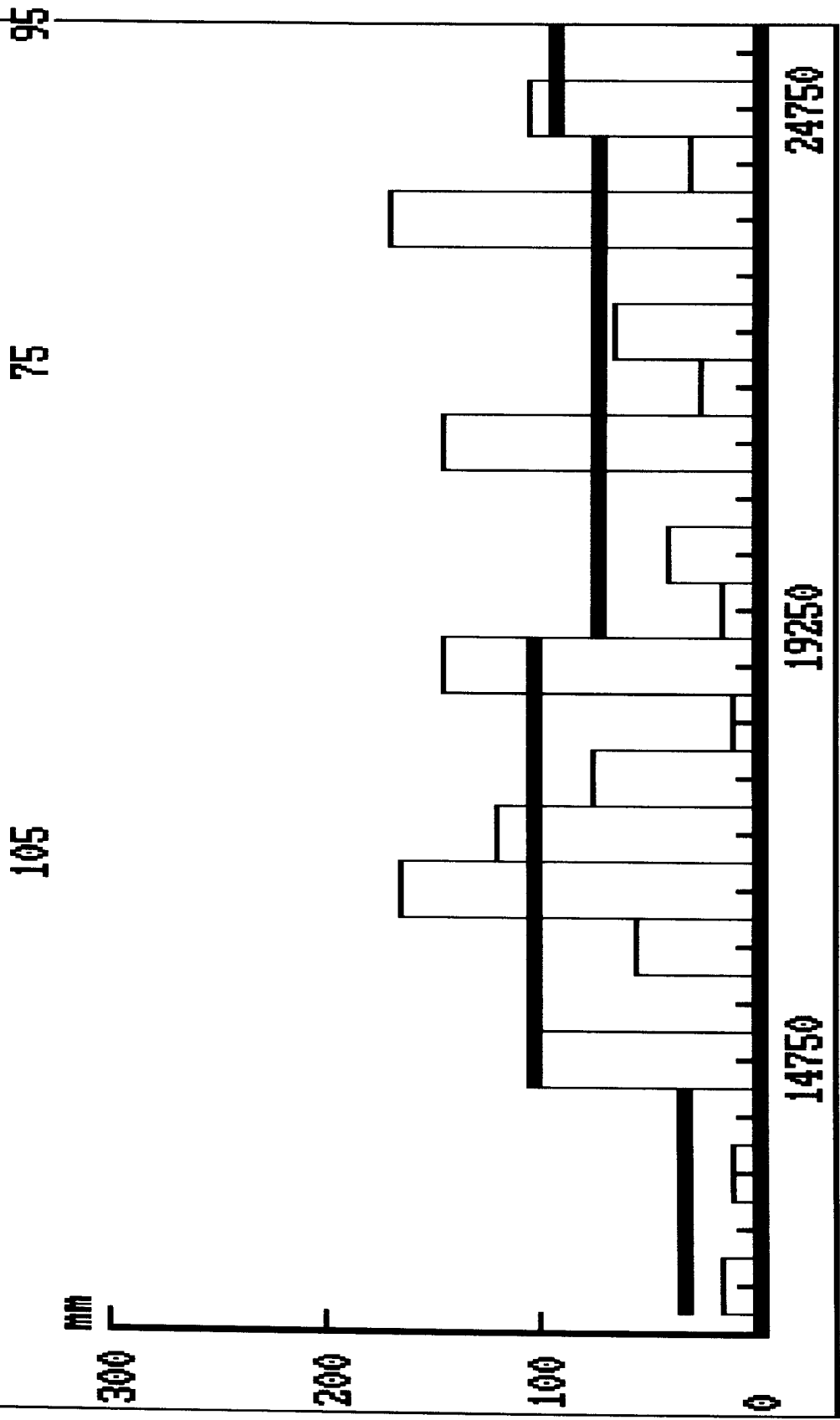
Section	Overlay Thickness in mm	<-----Life----->		extra tons
		before years	after years	
0 - 3250	50	9	15	495
3250 - 6750	110	2	15	278
6750 - 8750	95	2	15	217
8750 - 10750	45	8	15	248
10750 - 14750	35	11	15	464
14750 - 19250	105	3	15	804
19250 - 24750	75	7	15	1238
24750 - 26750	95	3	15	0
26750 - 29250	75	5	15	278
29250 - 33250	65	5	15	433
33250 - 36750	50	10	15	526
36750 - 41500	65	6	15	340
41500 - 43750	125	3	15	495
43750 - 47500	70	7	15	975
47500 - 50250	80	4	15	371
50250 - 54750	30	13	15	789
54750 - 59250	120	1	15	217
59250 - 62750	55	11	15	557
62750 - 65250	95	3	15	248
65250 - 67750	110	3	15	371
67750 - 70750	125	2	15	278
70750 - 73750	90	2	15	0
73750 - 77750	130	2	15	1052
77750 - 80000	115	7	15	572

Link no.: 37.001 Link ref.: M1

Height of new overlay in mm:

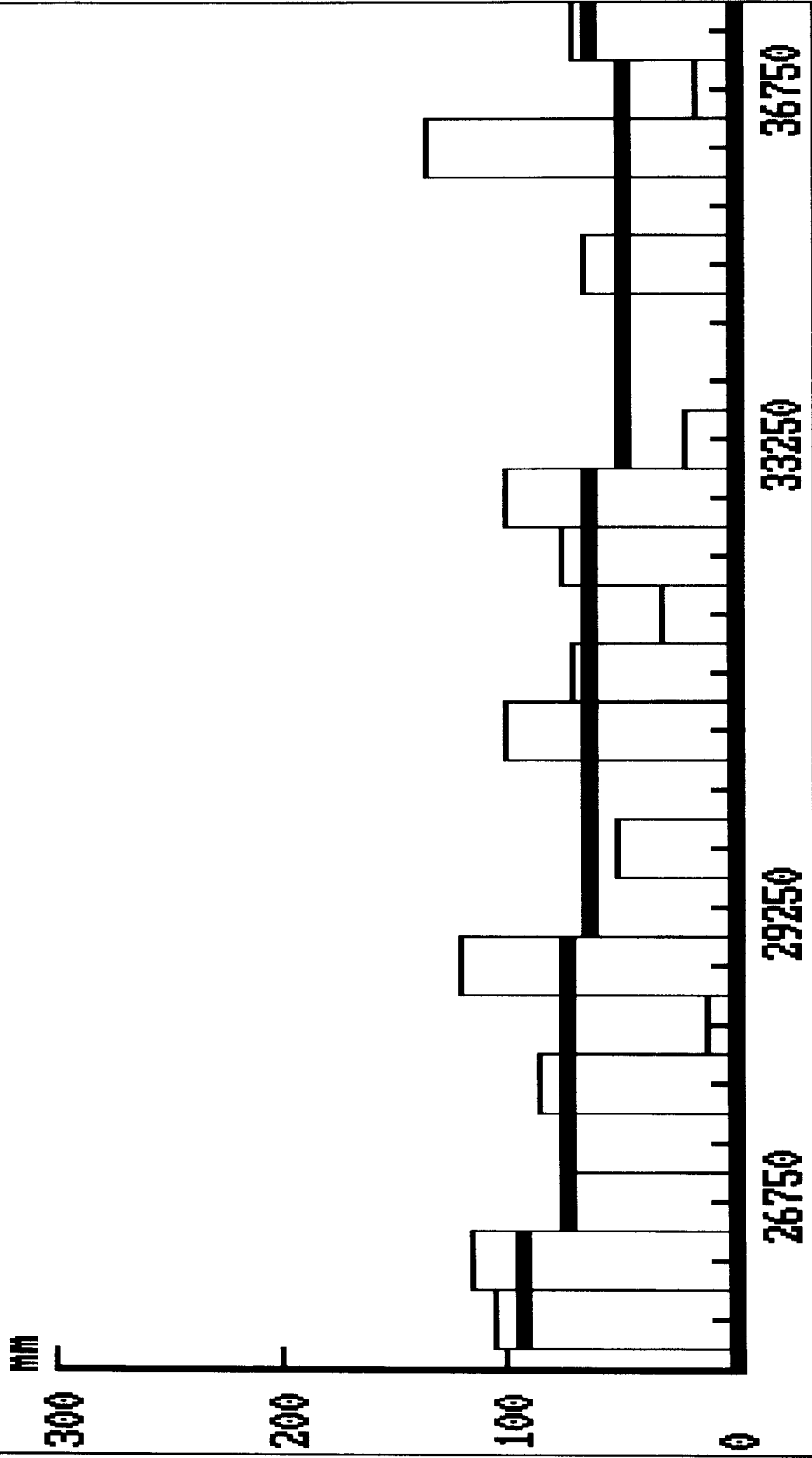


Link no.: 37.001 Link ref.: M1
Height of new overlay in mm:

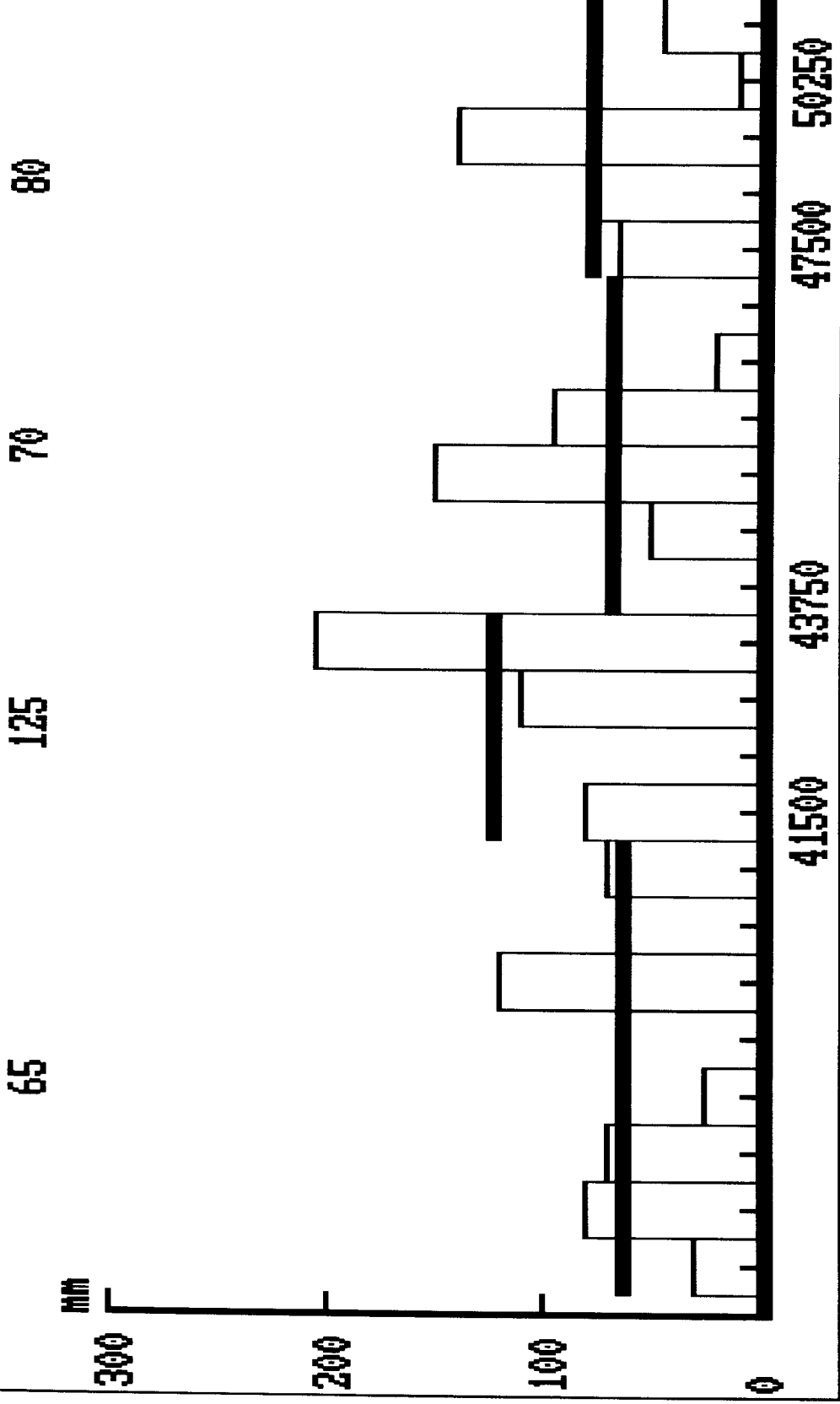


Link no.: 37.001 Link ref.: M1
Height of new overlay in mm:

75 65 50

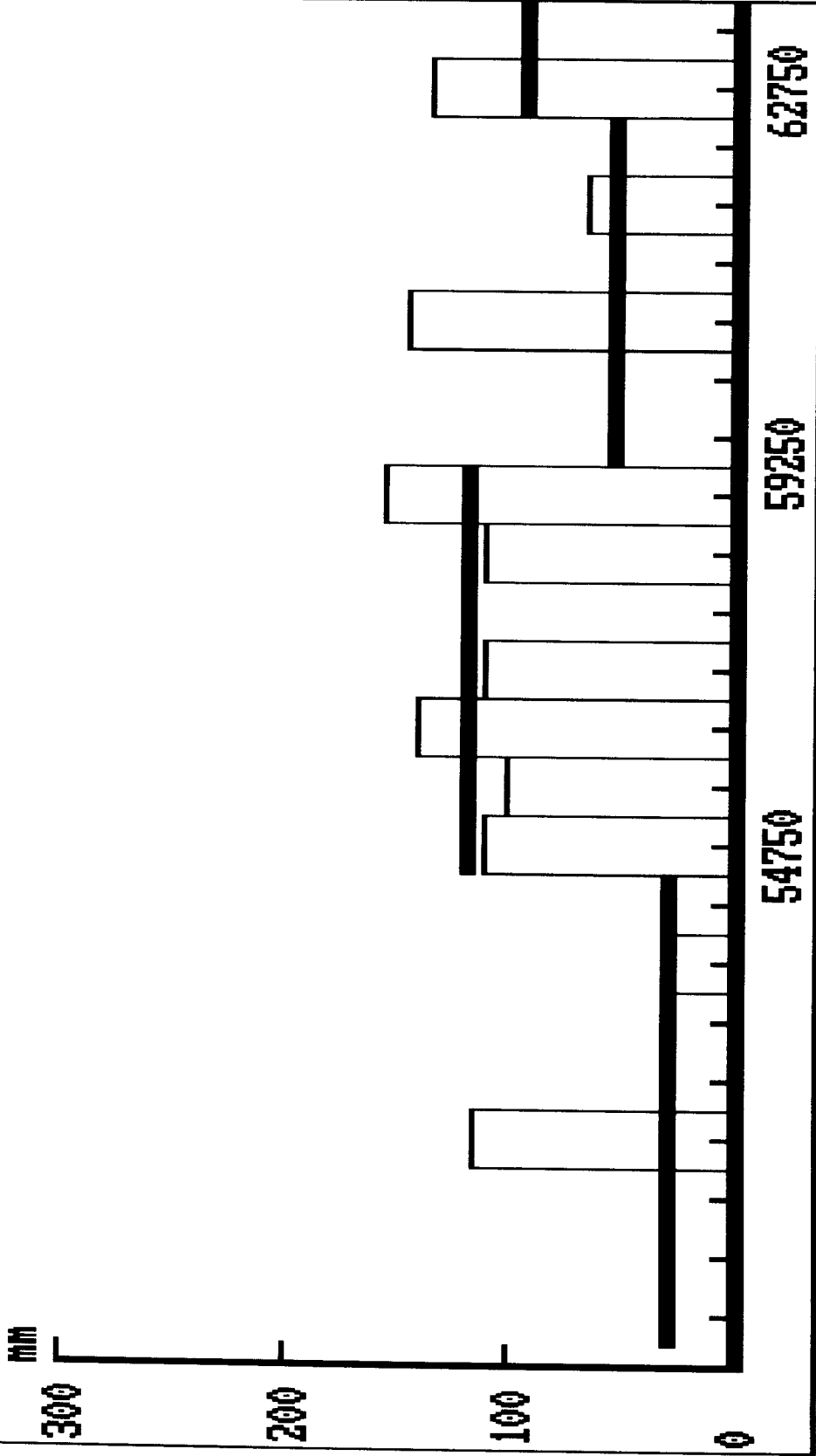


Link no.: 37.001 Link ref.: M1
Height of new overlay in mm:

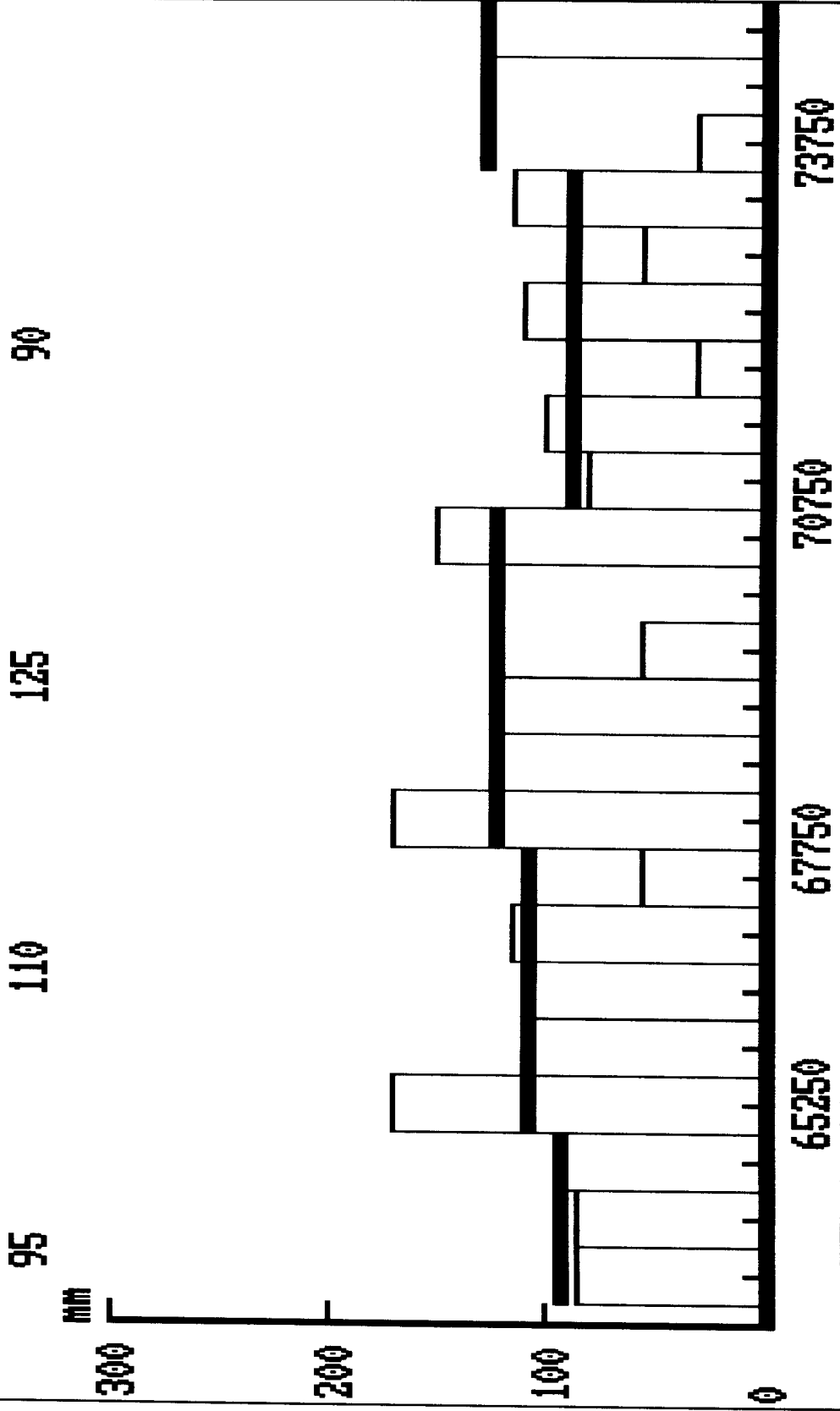


Link no.: 37.001 Link ref.: M1
Height of new overlay in mm:

30 120 55



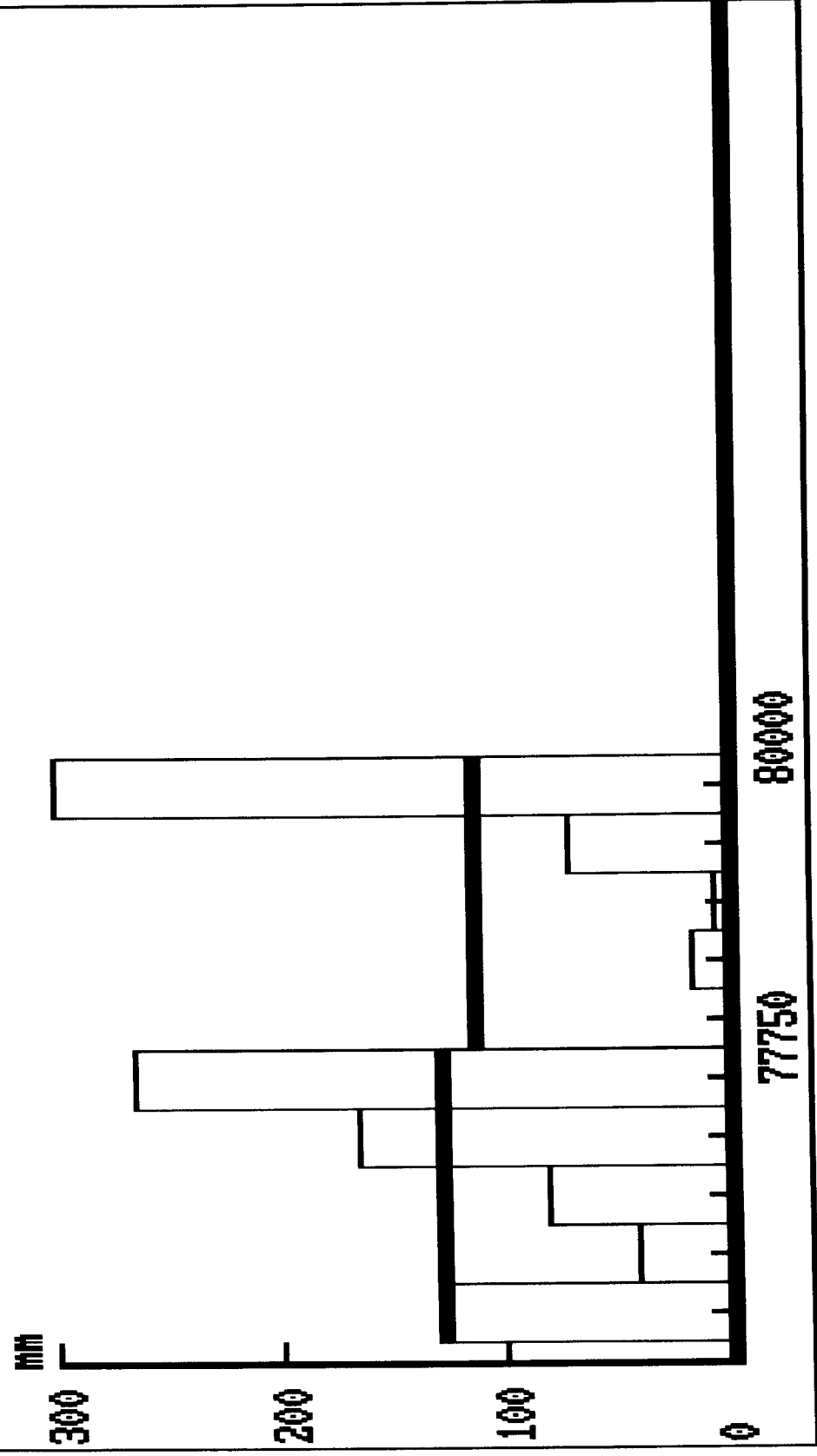
Link no.: 37.001 Link ref.: M1
Height of new overlay in mm:



Link no.: 37.001 Link ref.: M1

Height of new overlay in mm:

130 115



BEARING CAPACITY OF EQUAL SECTIONS

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Client: TACIS

SECTION NO. 8 AKSTAF A TO THE GEORGIAN BORDER

Link no.: 37.001

A/S PHØNIX
 P. P. C

Design date: 10-30-1997

Link ref.: M1

Mea. date: 2049 2

The classification is based on sections => 4 measurements.

For each section the overlay thickness is calculated as average + 33% of the standard deviation.

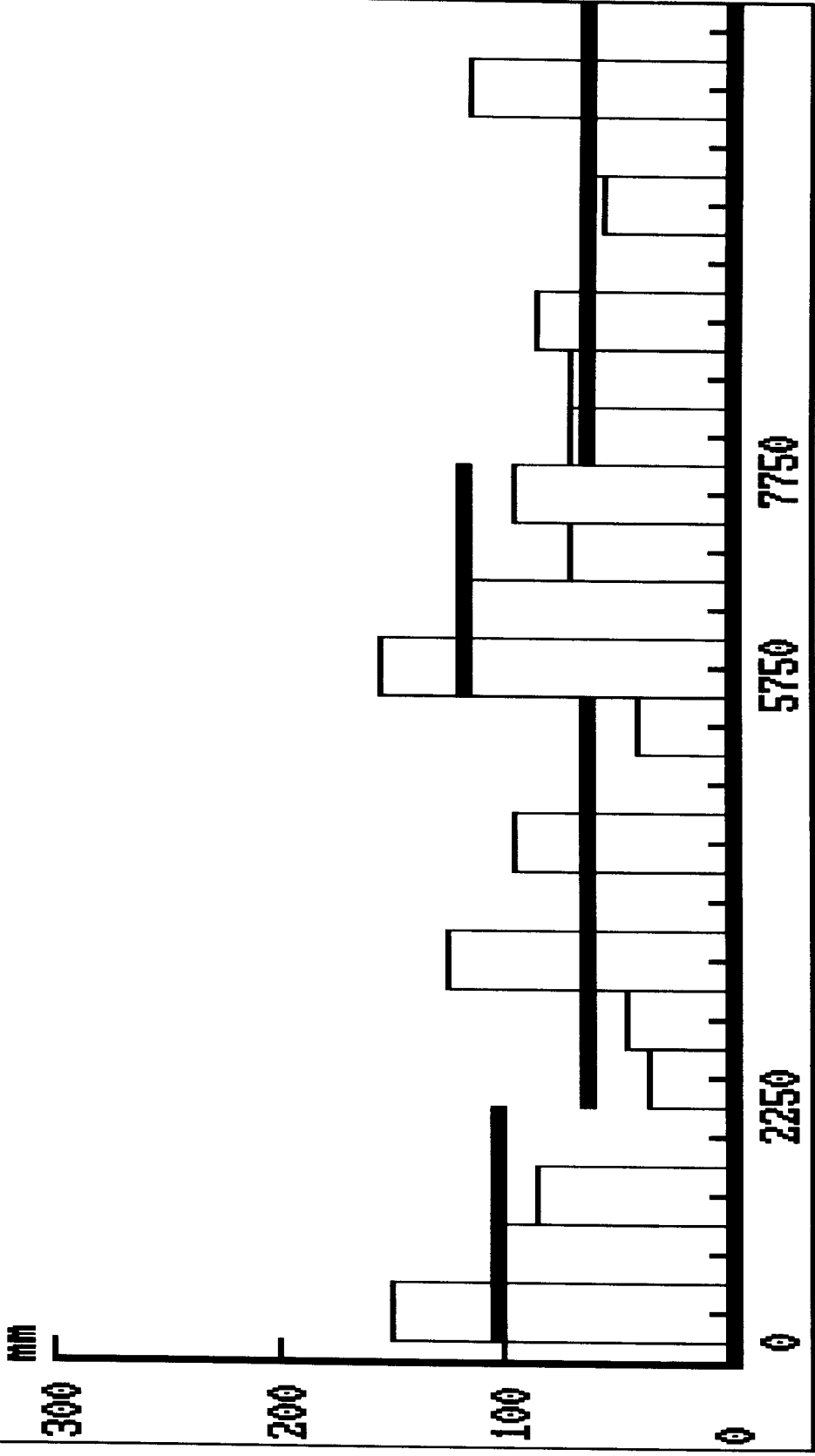
The stated layer thickness must be considered as instructive, as there might be material or technical reasons why another layer thickness than the here stated should be carried out, especially in connection with thin overlay thicknesses.

Section	Overlay Thickness in mm	<-----Life----->		extra tons
		before years	after years	
0 - 2250	105	3	15	278
2250 - 5750	65	6	15	557
5750 - 7750	120	1	15	217
7750 - 12250	65	5	15	309
12250 - 19750	85	3	15	495
19750 - 23250	130	4	15	897
23250 - 26250	40	11	15	526
26250 - 29250	80	2	15	0
29250 - 31250	135	1	15	217
31250 - 34250	45	7	15	186
34250 - 36250	0	20	20	0
36250 - 38750	70	7	15	588
38750 - 42250	85	6	15	743
42250 - 46000	75	5	15	510

Link no.: 37.001 Link ref.: M1

Height of new overlay in mm:

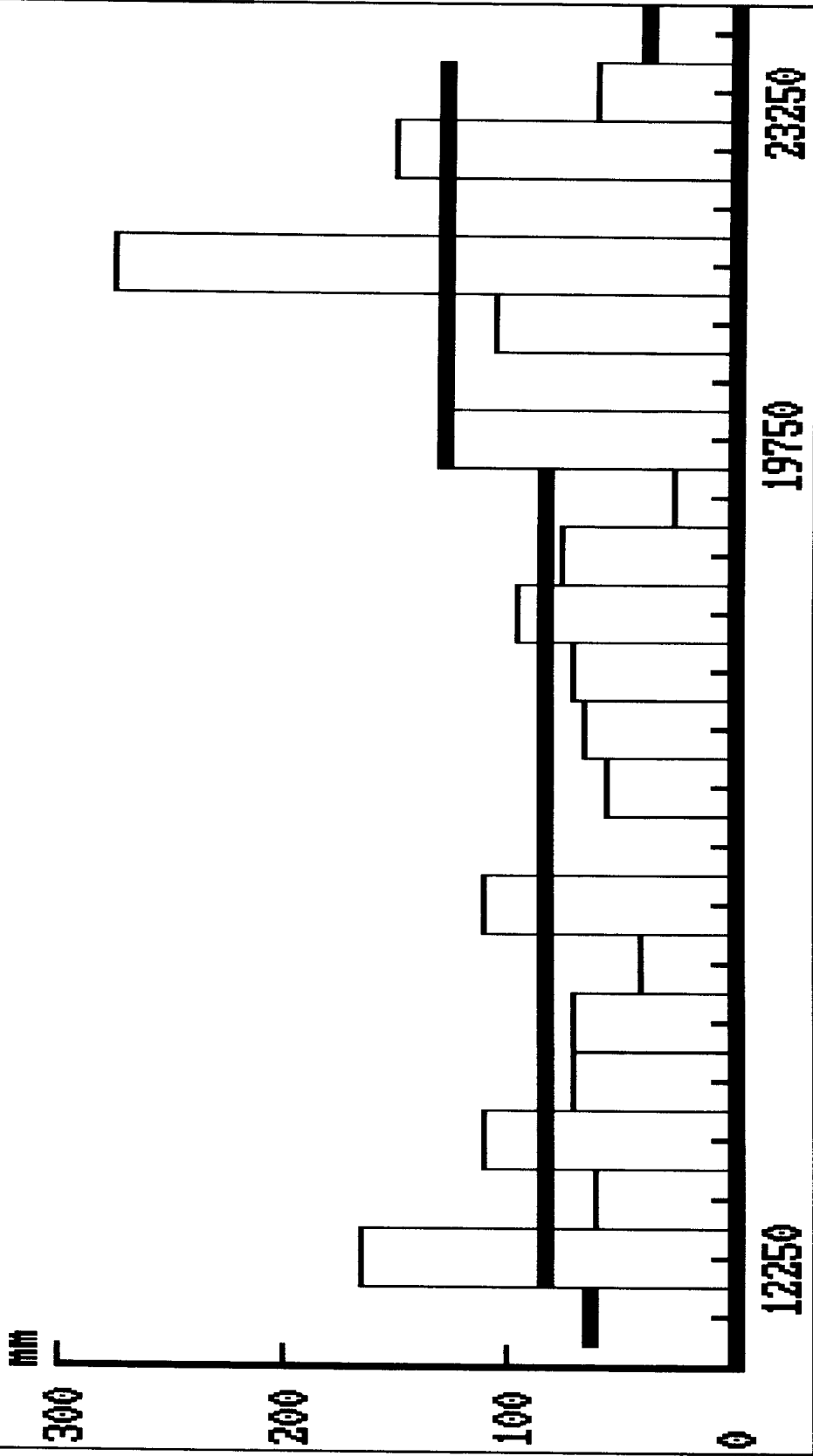
105 65 120 65



Link no.: 37.001 Link ref.: M1
Height of new overlay in mm:

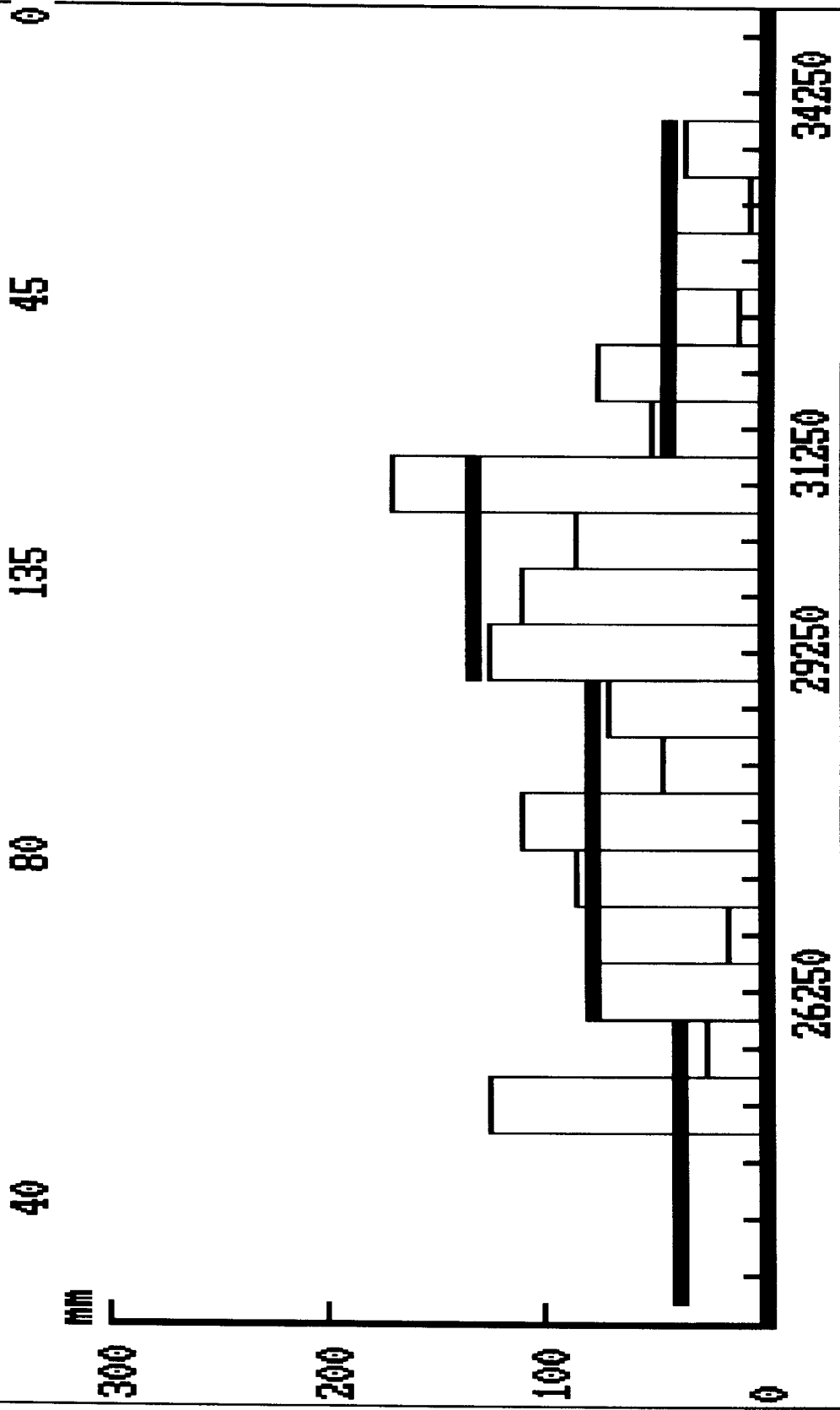
85

130

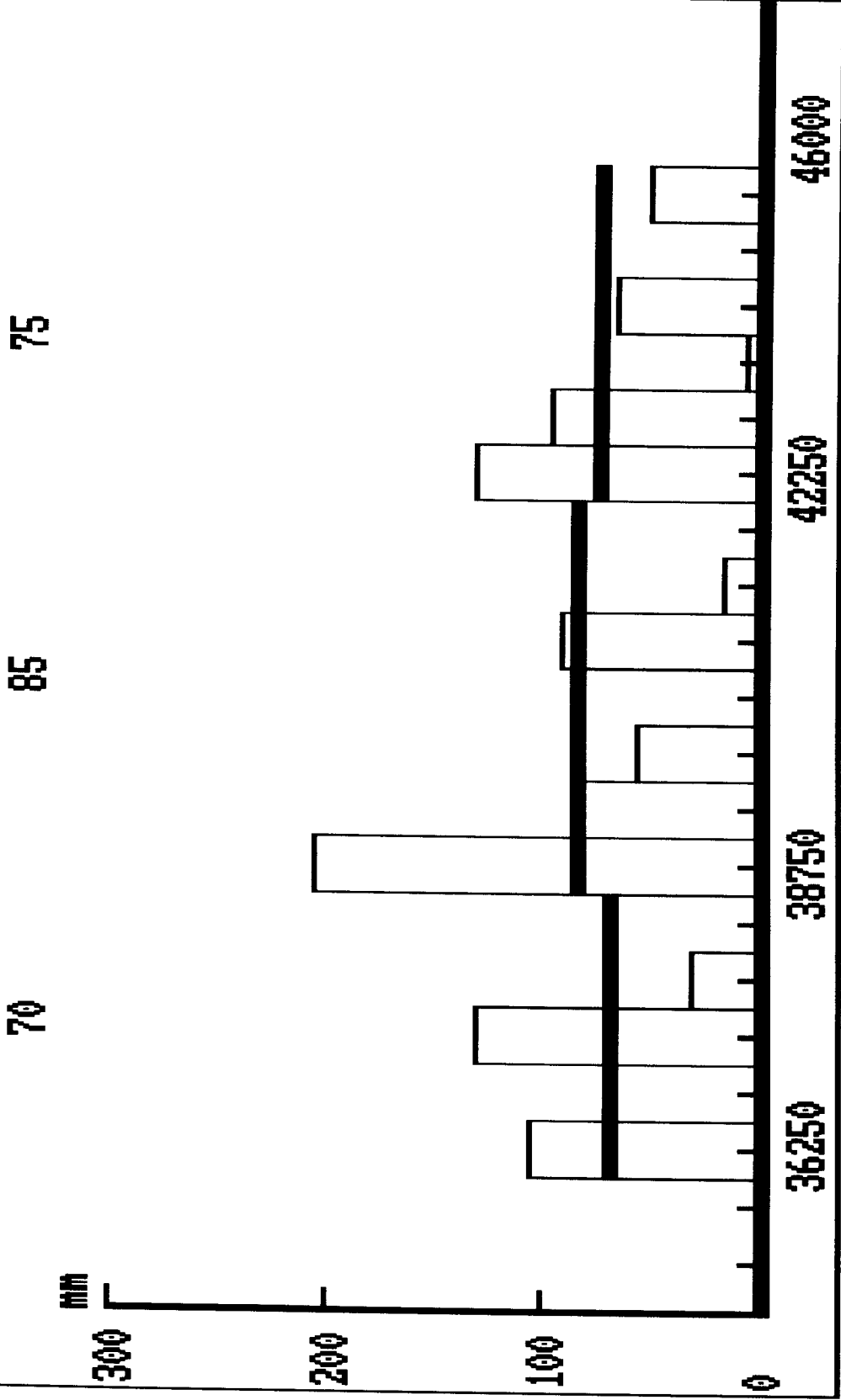


Link no.: 37.001 Link ref.: M1

Height of new overlay in mm:



Link no.: 37.001 Link ref.: M1
Height of new overlay in mm:



ALYAT-GEORGIAN BORDER ROAD: BEARING CAPACITY RESULTS pr. POINT 1997																					
SECTION NO. 1 ALYAT TO GAZI-MAMMAD																					
chainage/lane	remarks	E1	E2	E subg.	Cr.layer	est.life	H1	H2	est.traffic	overlay	SNSG	a(l)*h(l)	a(l)*h(l)	SNC	A(l)*H(l)	SNC	a(l)*h(l)	SNC	before str.	SNC	after str.
[m]		[Mpa]	[Mpa]	[Mpa]		[Years]	[mm]	[mm]	[S. A.]	[mm]		E1	E2								
0/R	*	4534	4903	245	3	20	110	250	1.18E+07	0	2.12	49.50	35.00	5.45	0.00	5.45	35.00	5.45	0.00	5.45	5.45
500/L		2371	177	66	1	0	110	250	1.18E+07	170	1.03	43.24	20.69	3.55	73.96	6.46	20.69	3.55	73.96	3.55	6.46
1000/R	*	6767	7317	353	3	20	110	250	1.18E+07	0	2.19	49.50	35.00	5.52	0.00	5.52	35.00	5.52	0.00	5.52	5.52
1500/L		10421	171	114	2	2	110	250	1.18E+07	70	1.65	49.50	19.96	4.39	30.45	5.59	19.96	4.39	30.45	4.39	5.59
2000/		1974	1514	119	3	13	110	250	1.18E+07	10	1.69	39.65	35.00	4.63	4.35	4.80	35.00	4.63	4.35	4.63	4.80
2500/L		7218	604	66	3	5	110	250	1.18E+07	60	1.03	49.50	35.00	4.36	26.10	5.39	35.00	4.36	26.10	4.36	5.39
3000/R		10150	634	91	3	12	110	250	1.18E+07	10	1.42	49.50	35.00	4.75	4.35	4.92	35.00	4.75	4.35	4.75	4.92
3500/L	K *	1371	1728	133	3	15	110	250	1.18E+07	0	1.78	32.50	35.00	4.44	0.00	4.44	35.00	4.44	0.00	4.44	4.44
4000/R		7786	644	109	2	11	110	250	1.18E+07	15	1.61	49.50	35.00	4.94	6.53	5.19	35.00	4.94	6.53	4.94	5.19
4500/L		5741	512	76	3	4	110	250	1.18E+07	75	1.21	49.50	35.00	4.54	32.63	5.83	35.00	4.54	32.63	4.54	5.83
5000/R	*	3605	3898	198	3	20	110	250	1.18E+07	0	2.04	49.50	35.00	5.37	0.00	5.37	35.00	5.37	0.00	5.37	5.37
5500/L		2352	783	84	3	3	110	250	1.18E+07	85	1.33	43.08	35.00	4.41	36.98	5.87	35.00	4.41	36.98	4.41	5.87
6000/R		5946	237	97	2	1	110	250	1.18E+07	90	1.49	49.50	26.85	4.50	39.15	6.04	26.85	4.50	39.15	4.50	6.04
6500/L	K *	2354	2968	100	3	20	110	250	1.18E+07	0	1.52	43.10	35.00	4.60	0.00	4.60	35.00	4.60	0.00	4.60	4.60
7000/R		5124	77	91	2	0	110	250	1.18E+07	170	1.42	49.50	3.13	3.50	73.96	6.41	3.13	3.50	73.96	3.50	6.41
7500/L		7685	1590	114	3	20	110	250	1.18E+07	0	1.65	49.50	35.00	4.98	0.00	4.98	35.00	4.98	0.00	4.98	4.98
8000/R	*	4158	4496	224	3	20	110	250	1.18E+07	0	2.09	49.50	35.00	5.42	0.00	5.42	35.00	5.42	0.00	5.42	5.42
8500/L		11771	653	93	3	15	110	250	1.18E+07	0	1.45	49.50	35.00	4.77	0.00	4.77	35.00	4.77	0.00	4.77	4.77
9000/R	*	1447	1564	86	3	6	110	250	1.18E+07	50	1.36	33.56	35.00	4.06	21.75	4.92	35.00	4.06	21.75	4.06	4.92
9500/L		9505	2985	166	3	20	110	250	1.18E+07	0	1.94	49.50	35.00	5.27	0.00	5.27	35.00	5.27	0.00	5.27	5.27
10000/R	*	4016	4342	190	3	20	110	250	1.18E+07	0	2.02	49.50	35.00	5.35	0.00	5.35	35.00	5.35	0.00	5.35	5.35
10500/L	*	2355	2969	123	3	20	110	250	1.18E+07	0	1.72	43.11	35.00	4.79	0.00	4.79	35.00	4.79	0.00	4.79	4.79
11000/R		11189	846	103	3	20	110	250	1.18E+07	0	1.55	49.50	35.00	4.88	0.00	4.88	35.00	4.88	0.00	4.88	4.88
11500/L	*	2380	3000	158	3	20	110	250	1.18E+07	0	1.91	43.32	35.00	4.99	0.00	4.99	35.00	4.99	0.00	4.99	4.99
12000/R	*	3406	3683	177	3	20	110	250	1.18E+07	0	1.98	49.50	35.00	5.31	0.00	5.31	35.00	5.31	0.00	5.31	5.31
12500/L		11772	862	116	3	20	110	250	1.18E+07	0	1.66	49.50	35.00	4.99	0.00	4.99	35.00	4.99	0.00	4.99	4.99
13000/R	*	3182	3441	147	3	20	110	250	1.18E+07	0	1.86	49.01	35.00	5.17	0.00	5.17	35.00	5.17	0.00	5.17	5.17
13500/L	*	4603	4518	189	3	20	110	250	1.18E+07	0	2.01	49.50	35.00	5.34	0.00	5.34	35.00	5.34	0.00	5.34	5.34
14000/R	*	3209	3470	145	3	20	110	250	1.18E+07	0	1.85	49.17	35.00	5.16	0.00	5.16	35.00	5.16	0.00	5.16	5.16

14500/L	*	3358	3296	162	3	20	110	250	1.18E+07	0	1.92	49.50	35.00	5.25	0.00	5.25
15000/R	*	2665	2882	106	3	20	110	250	1.18E+07	0	1.58	45.53	35.00	4.75	0.00	4.75
15500/L	*	5052	4959	264	3	20	110	250	1.18E+07	0	2.15	49.50	35.00	5.48	0.00	5.48
16000/R	*	2113	2285	72	3	10	110	250	1.18E+07	20	1.14	40.98	35.00	4.14	8.70	4.48
16500/L		9751	243	55	3	2	110	250	1.18E+07	100	0.77	49.50	27.38	3.80	43.50	5.51
17000/R		1036	427	66	3	1	110	250	1.18E+07	155	1.03	27.01	35.00	3.47	67.43	6.13
17500/L		14735	980	94	3	20	110	250	1.18E+07	0	1.46	49.50	35.00	4.79	0.00	4.79
18000/R	*	2774	3000	103	3	20	110	250	1.18E+07	0	1.55	46.32	35.00	4.76	0.00	4.76
18500/L		12202	538	107	2	15	110	250	1.18E+07	0	1.59	49.50	35.00	4.92	0.00	4.92
19000/R		14789	1115	97	3	20	110	250	1.18E+07	0	1.49	49.50	35.00	4.82	0.00	4.82
19500/L	*	2371	2327	102	3	20	110	250	1.18E+07	0	1.54	43.24	35.00	4.62	0.00	4.62
20000/R	*	4833	5226	174	3	20	110	250	1.18E+07	0	1.97	49.50	35.00	5.30	0.00	5.30
20500/L	*	2593	2545	83	3	17	110	250	1.18E+07	0	1.32	45.00	35.00	4.47	0.00	4.47
21000/R	*	2851	3083	145	3	20	110	250	1.18E+07	0	1.85	46.86	35.00	5.07	0.00	5.07
21500/L	*	1958	1921	109	3	15	110	250	1.18E+07	0	1.61	39.49	35.00	4.54	0.00	4.54
22000/R		14048	1092	102	3	20	110	250	1.18E+07	0	1.54	49.50	35.00	4.87	0.00	4.87
22500/L		12002	915	94	3	20	110	250	1.18E+07	0	1.46	49.50	35.00	4.79	0.00	4.79
23000/R	*	3666	3965	135	3	20	110	250	1.18E+07	0	1.79	49.50	35.00	5.12	0.00	5.12
23500/L	*	3779	3709	120	3	20	110	250	1.18E+07	0	1.70	49.50	35.00	5.02	0.00	5.02
24000/R		11687	792	115	3	20	110	250	1.18E+07	0	1.66	49.50	35.00	4.99	0.00	4.99
24500/L		14158	3582	127	3	20	110	250	1.18E+07	0	1.74	49.50	35.00	5.07	0.00	5.07
25000/R	*	4749	5135	185	3	20	110	250	1.18E+07	0	2.00	49.50	35.00	5.33	0.00	5.33
25500/L	*	3300	3239	123	3	20	110	250	1.18E+07	0	1.72	49.50	35.00	5.05	0.00	5.05
26000/R	*	5988	6475	206	3	20	110	250	1.18E+07	0	2.06	49.50	35.00	5.39	0.00	5.39
26500/L	*	2089	2050	89	3	12	110	250	1.18E+07	10	1.40	40.76	35.00	4.38	4.35	4.55
27000/R		10867	1099	96	3	20	110	250	1.18E+07	0	1.48	49.50	35.00	4.81	0.00	4.81
27500/L		6002	775	91	3	9	110	250	1.18E+07	30	1.42	49.50	35.00	4.75	13.05	5.27
28000/R	*	4412	4770	178	3	20	110	250	1.18E+07	0	1.98	49.50	35.00	5.31	0.00	5.31
28500/L		2287	639	95	3	3	110	250	1.18E+07	85	1.47	42.53	35.00	4.52	36.98	5.98
29000/R		4344	2141	119	3	20	110	250	1.18E+07	0	1.69	49.50	35.00	5.02	0.00	5.02
29500/L		2211	2216	151	3	20	110	250	1.18E+07	0	1.88	41.87	35.00	4.91	0.00	4.91
30000/R	*	5428	5869	187	3	20	110	250	1.18E+07	0	2.01	49.50	35.00	5.34	0.00	5.34
30500/L		14725	439	75	3	9	110	250	1.18E+07	25	1.20	49.50	35.00	4.52	10.88	4.95
31000/R		8447	693	89	3	10	110	250	1.18E+07	20	1.40	49.50	35.00	4.73	8.70	5.07
31500/L		7250	534	73	3	5	110	250	1.18E+07	60	1.16	49.50	35.00	4.49	26.10	5.52
32000/R	*	3246	3510	150	3	20	110	250	1.18E+07	0	1.87	49.40	35.00	5.20	0.00	5.20

32500/L		9860	4013	210	3	20	110	250	1.18E+07	0	2.07	49.50	35.00	5.39	0.00	5.39
33000/R		14795	883	179	2	20	110	250	1.18E+07	0	1.98	49.50	35.00	5.31	0.00	5.31
33500/L	*	1926	1890	144	3	20	110	250	1.18E+07	0	1.84	39.17	35.00	4.76	0.00	4.76
34000/R		933	6007	307	3	20	110	250	1.18E+07	0	2.18	24.96	35.00	4.54	0.00	4.54
34500/L	*	2754	2703	179	3	20	110	250	1.18E+07	0	1.98	46.18	35.00	5.18	0.00	5.18
35000/R		5452	310	113	2	2	110	250	1.18E+07	80	1.64	49.50	32.52	4.87	34.80	6.24
35500/L		8552	536	100	2	9	110	250	1.18E+07	20	1.52	49.50	35.00	4.85	8.70	5.19
36000/R		4691	33	112	2	0	110	250	1.18E+07	245	1.63	49.50	-14.75	3.00	106.58	7.20
36500/L		9577	794	138	2	20	110	250	1.18E+07	0	1.81	49.50	35.00	5.14	0.00	5.14
37500/L		4114	166	108	2	0	110	250	1.18E+07	125	1.60	49.50	19.34	4.31	54.38	6.45
38000/R		13522	1052	174	2	20	110	250	1.18E+07	0	1.97	49.50	35.00	5.30	0.00	5.30
38500/L		14906	893	156	2	20	110	250	1.18E+07	0	1.90	49.50	35.00	5.23	0.00	5.23
39000/R	*	2424	2424	210	3	20	110	250	1.18E+07	0	2.07	43.67	35.00	5.17	0.00	5.17
39500/L	*	2644	2596	138	3	20	110	250	1.18E+07	0	1.81	45.38	35.00	4.98	0.00	4.98
40000/R		7724	185	227	2	1	110	250	1.18E+07	85	2.10	49.50	21.62	4.90	36.98	6.36
40500/L		6073	2751	240	3	20	110	250	1.18E+07	0	2.12	49.50	35.00	5.45	0.00	5.45
41000/R		5025	750	128	2	10	110	250	1.18E+07	15	1.75	49.50	35.00	5.08	6.53	5.34
41500/L		3021	54	113	2	0	110	250	1.18E+07	230	1.64	47.99	-4.36	3.36	100.06	7.30
42000/R		3530	152	79	1	0	110	250	1.18E+07	140	1.26	49.50	17.48	3.90	60.90	6.30

ALYAT-GEORGIAN BORDER ROAD: BEARING CAPACITY RESULTS pr. POINT 1997																
SECTION NO. 2 GAZI-MAMMAD TO KURDAMIR																
chainage/lane [m]	remarks	E1 [Mpa]	E2 [Mpa]	E subg. [Mpa]	Cr. layer	est. life [Years]	H1 [mm]	H2 [mm]	est. traffic [S. A.]	overlay [mm]	SNSG	a(l)*h(l)		SNC before str.	A(l)*H(l) str. layer after str.	SNC
												E1	E2			
0/R		8611	449	127	2	7	110	250	1.18E+07	30	1.74	49.50	35.00	5.07	13.05	5.59
500/L		5566	450	128	2	4	110	250	1.18E+07	50	1.75	49.50	35.00	5.08	21.75	5.94
1000/R		12672	710	150	2	20	110	250	1.18E+07	0	1.87	49.50	35.00	5.20	0.00	5.20
1500/L	*	2436	3000	198	3	20	110	250	1.18E+07	0	2.04	43.77	35.00	5.14	0.00	5.14
2000/R		10884	561	177	2	14	110	250	1.18E+07	5	1.98	49.50	35.00	5.31	2.18	5.39
2500/L	*	3128	3852	285	3	20	110	250	1.18E+07	0	2.16	48.67	35.00	5.46	0.00	5.46
3000/R	*	4365	5706	70	3	20	110	250	1.18E+07	0	1.11	49.50	35.00	4.44	0.00	4.44
3500/L		9940	608	121	2	14	110	250	1.18E+07	5	1.70	49.50	35.00	5.03	2.18	5.12
4000/R		4402	361	141	2	2	110	250	1.18E+07	70	1.83	49.50	35.00	5.16	30.45	6.36
4500/L		6185	318	78	2	2	110	250	1.18E+07	90	1.24	49.50	33.05	4.50	39.15	6.04
5000/R		4786	234	162	2	1	110	250	1.18E+07	100	1.92	49.50	26.58	4.92	43.50	6.64
5500/L		10386	976	135	2	20	110	250	1.18E+07	0	1.79	49.50	35.00	5.12	0.00	5.12
6000/R		3916	151	90	2	0	110	250	1.18E+07	135	1.41	49.50	17.34	4.04	58.73	6.36
6500/L	*	1726	3041	255	3	20	110	250	1.18E+07	0	2.14	37.02	35.00	4.97	0.00	4.97
7000/R		4981	319	71	2	2	110	250	1.18E+07	110	1.13	49.50	33.12	4.38	47.85	6.27
7500/L	*	1527	2690	129	3	20	110	250	1.18E+07	0	1.76	34.62	35.00	4.50	0.00	4.50
8000/R		6563	40	59	2	0	110	250	1.18E+07	215	0.87	49.50	-10.69	2.40	93.53	6.09
8500/L	*	1636	2883	160	3	20	110	250	1.18E+07	0	1.92	35.97	35.00	4.71	0.00	4.71
9000/R		3754	50	82	2	0	110	250	1.18E+07	220	1.30	49.50	-5.98	3.02	95.71	6.79
9500/L	*	1749	3081	176	3	20	110	250	1.18E+07	0	1.98	37.28	35.00	4.82	0.00	4.82
10000/R		7584	433	70	3	4	110	250	1.18E+07	75	1.11	49.50	35.00	4.44	32.63	5.72
10500/L		5028	749	111	3	10	110	250	1.18E+07	25	1.62	49.50	35.00	4.95	10.88	5.38
11000/R		2639	311	81	2	1	110	250	1.18E+07	125	1.29	45.34	32.58	4.36	54.38	6.50
11500/L		13622	581	115	2	20	110	250	1.18E+07	0	1.66	49.50	35.00	4.99	0.00	4.99
12000/R		7846	523	105	2	8	110	250	1.18E+07	25	1.57	49.50	35.00	4.90	10.88	5.33
12500/L		7145	420	124	2	5	110	250	1.18E+07	45	1.72	49.50	35.00	5.05	19.58	5.82
13000/R		10815	703	97	3	15	110	250	1.18E+07	0	1.49	49.50	35.00	4.82	0.00	4.82
13500/L	*	1880	3313	176	3	20	110	250	1.18E+07	0	1.98	38.69	35.00	4.88	0.00	4.88

14000/R		4507	183	40	3	0	110	250	1.18E+07	200	0.26	49.50	21.40	3.05	87.01	6.48
14500/L	*	2103	3706	248	3	20	110	250	1.18E+07	0	2.13	40.89	35.00	5.12	0.00	5.12
15000/R		9798	208	76	2	2	110	250	1.18E+07	80	1.21	49.50	24.10	4.11	34.80	5.48
15500/L	*	1350	2378	124	3	20	110	250	1.18E+07	0	1.72	32.20	35.00	4.37	0.00	4.37
16000/R		3651	345	69	2	1	110	250	1.18E+07	125	1.09	49.50	34.77	4.41	54.38	6.55
16500/L	*	1657	2919	189	3	20	110	250	1.18E+07	0	2.01	36.22	35.00	4.82	0.00	4.82
17000/R		8018	1505	138	3	20	110	250	1.18E+07	0	1.81	49.50	35.00	5.14	0.00	5.14
17500/L		9586	531	82	3	8	110	250	1.18E+07	35	1.30	49.50	35.00	4.63	15.23	5.23
18000/R		13129	739	112	3	20	110	250	1.18E+07	0	1.63	49.50	35.00	4.96	0.00	4.96
18500/L		13403	472	106	2	14	110	250	1.18E+07	5	1.58	49.50	35.00	4.91	2.18	4.99
19000/R	*	2410	3151	187	3	20	110	250	1.18E+07	0	2.01	43.56	35.00	5.10	0.00	5.10
19500/L		5740	506	78	3	4	110	250	1.18E+07	70	1.24	49.50	35.00	4.57	30.45	5.77
20000/R	*	1677	2192	95	3	13	110	250	1.18E+07	5	1.47	36.45	35.00	4.28	2.18	4.37
20500/L	*	1560	2749	143	3	20	110	250	1.18E+07	0	1.84	35.04	35.00	4.60	0.00	4.60
21000/R		6943	532	125	2	7	110	250	1.18E+07	35	1.73	49.50	35.00	5.06	15.23	5.66
21500/L	*	1549	2729	168	3	20	110	250	1.18E+07	0	1.95	34.90	35.00	4.70	0.00	4.70
22000/R		7376	1284	173	2	20	110	250	1.18E+07	0	1.96	49.50	35.00	5.29	0.00	5.29
22500/L		12862	495	143	2	15	110	250	1.18E+07	5	1.84	49.50	35.00	5.17	2.18	5.25
23000/R		5390	535	99	2	5	110	250	1.18E+07	50	1.51	49.50	35.00	4.84	21.75	5.70
23500/L		11169	504	79	3	8	110	250	1.18E+07	30	1.26	49.50	35.00	4.59	13.05	5.10
24000/R		5146	363	99	2	2	110	250	1.18E+07	75	1.51	49.50	35.00	4.84	32.63	6.13
24500/L	*	1781	3138	183	3	20	110	250	1.18E+07	0	2.00	37.63	35.00	4.86	0.00	4.86
25000/R		11612	395	83	3	8	110	250	1.18E+07	30	1.32	49.50	35.00	4.65	13.05	5.16
25500/L		6396	647	86	3	7	110	250	1.18E+07	45	1.36	49.50	35.00	4.69	19.58	5.46
26000/R		7194	609	100	2	9	110	250	1.18E+07	25	1.52	49.50	35.00	4.85	10.88	5.28
26500/L		1332	439	41	3	0	110	250	1.18E+07	195	0.30	31.94	35.00	2.94	84.83	6.28
27000/R		1973	232	50	3	0	110	250	1.18E+07	190	0.63	39.64	26.40	3.23	82.66	6.48
27500/L		12513	360	86	2	8	110	250	1.18E+07	30	1.36	49.50	35.00	4.69	13.05	5.20
28000/R		2640	311	72	2	1	110	250	1.18E+07	135	1.14	45.35	32.58	4.21	58.73	6.53
28500/L		4449	293	96	2	1	110	250	1.18E+07	95	1.48	49.50	31.33	4.66	41.33	6.29
29000/R		3333	333	85	2	1	110	250	1.18E+07	115	1.35	49.50	34.03	4.64	50.03	6.61
29500/L	*	1703	3000	195	3	20	110	250	1.18E+07	0	2.03	36.75	35.00	4.86	0.00	4.86
30000/R		6577	401	75	3	3	110	250	1.18E+07	75	1.20	49.50	35.00	4.52	32.63	5.81
30500/L		13150	502	108	2	16	110	250	1.18E+07	0	1.60	49.50	35.00	4.93	0.00	4.93
31000/R	*	1267	1656	79	3	5	110	250	1.18E+07	55	1.26	30.96	35.00	3.86	23.93	4.80
31500/L		12927	657	133	2	20	110	250	1.18E+07	0	1.78	49.50	35.00	5.11	0.00	5.11

32000/R		5748	398	78	2	3	110	250	1.18E+07	85	1.24	49.50	35.00	4.57	36.98	6.03
32500/L	*	580	1021	160	2	5	110	250	1.18E+07	60	1.92	15.64	35.00	3.91	26.10	4.94
33000/R	k	1171	141	38	1	0	110	250	1.18E+07	240	0.17	29.41	15.89	1.95	104.41	6.07
33500/L		5939	424	107	2	4	110	250	1.18E+07	55	1.59	49.50	35.00	4.92	23.93	5.86
34000/R		5748	349	84	2	2	110	250	1.18E+07	80	1.33	49.50	35.00	4.66	34.80	6.03
34500/L		4112	431	121	2	3	110	250	1.18E+07	65	1.70	49.50	35.00	5.03	28.28	6.15
35000/R		1897	237	52	3	0	110	250	1.18E+07	185	0.69	38.87	26.85	3.28	80.48	6.45
35500/L		3042	54	79	1	0	110	250	1.18E+07	220	1.26	48.13	-4.36	2.98	95.71	6.75
36000/R		3642	12	1250	2	0	110	250	1.18E+07	300	1.62	49.50	-36.09	2.14	130.51	7.29
36500/L		3045	472	82	3	2	110	250	1.18E+07	105	1.30	48.15	35.00	4.58	45.68	6.38
37000/R		7363	445	89	2	5	110	250	1.18E+07	45	1.40	49.50	35.00	4.73	19.58	5.50
37500/L		1585	280	57	3	0	110	250	1.18E+07	175	0.82	35.35	30.37	3.41	76.13	6.41
38000/R		6602	1070	133	3	20	110	250	1.18E+07	0	1.78	49.50	35.00	5.11	0.00	5.11
38500/L		3880	549	84	3	3	110	250	1.18E+07	80	1.33	49.50	35.00	4.66	34.80	6.03
39000/R		52	414	133	2	0	110	250	1.18E+07	135	1.78	-31.63	35.00	1.91	58.73	4.23
39000/L		3090	561	94	2	3	110	250	1.18E+07	80	1.46	48.43	35.00	4.74	34.80	6.12
40000/R		11812	801	131	2	20	110	250	1.18E+07	0	1.77	49.50	35.00	5.10	0.00	5.10
40500/L		3702	417	94	2	2	110	250	1.18E+07	85	1.46	49.50	35.00	4.79	36.98	6.24
41000/R	R *	3530	4065	101	3	20	110	250	1.18E+07	0	1.53	49.50	35.00	4.86	0.00	4.86
41500/L		2422	400	69	3	1	110	250	1.18E+07	135	1.09	43.66	35.00	4.19	58.73	6.50
42000/R		6886	546	108	2	7	110	250	1.18E+07	30	1.60	49.50	35.00	4.93	13.05	5.44
42500/L		2896	434	119	2	2	110	250	1.18E+07	80	1.69	47.16	35.00	4.92	34.80	6.30
43000/R		10024	472	126	2	9	110	250	1.18E+07	20	1.74	49.50	35.00	5.07	8.70	5.41
43500/L		7305	406	87	2	4	110	250	1.18E+07	55	1.37	49.50	35.00	4.70	23.93	5.64
44000/R		235	417	57	3	0	110	250	1.18E+07	185	0.82	-2.07	35.00	2.12	80.48	5.29
44500/L		302	740	84	3	1	110	250	1.18E+07	125	1.33	2.85	35.00	2.82	54.38	4.97
45000/R		8258	451	81	3	6	110	250	1.18E+07	50	1.29	49.50	35.00	4.62	21.75	5.48
45500/L		4546	423	78	2	2	110	250	1.18E+07	95	1.24	49.50	35.00	4.57	41.33	6.20
46000/R		2827	289	64	3	1	110	250	1.18E+07	150	0.99	46.69	31.04	4.05	65.26	6.62
46500/L		1345	34	40	1	0	110	250	1.18E+07	290	0.26	32.13	-14.12	0.97	126.16	5.94
47000/R	K	13746	204	75	2	4	110	250	1.18E+07	55	1.20	49.50	23.69	4.08	23.93	5.02
47500/L		1708	33	59	1	0	110	250	1.18E+07	280	0.87	36.81	-14.75	1.74	121.81	6.54
48000/R		4971	239	68	2	1	110	250	1.18E+07	120	1.07	49.50	27.03	4.08	52.20	6.14
48500/L	*	665	1461	174	3	12	110	250	1.18E+07	10	1.97	18.32	35.00	4.07	4.35	4.24
49000/R		7363	491	80	3	5	110	250	1.18E+07	55	1.27	49.50	35.00	4.60	23.93	5.55
49500/L		13743	395	94	2	11	110	250	1.18E+07	15	1.46	49.50	35.00	4.79	6.53	5.04

50000/R						73	2	2	110	250	1.18E+07	100	1.16	49.50	35.00	4.49	43.50	6.20
50500/L						79	3	7	110	250	1.18E+07	45	1.26	49.50	35.00	4.59	19.58	5.36
51000/R						86	2	8	110	250	1.18E+07	35	1.36	49.50	35.00	4.69	15.23	5.29
51500/L						88	2	5	110	250	1.18E+07	45	1.38	49.50	32.79	4.63	19.58	5.40
52000/R	*					113	3	20	110	250	1.18E+07	0	1.64	41.60	35.00	4.66	0.00	4.66
52500/L						65	3	1	110	250	1.18E+07	135	1.01	49.50	35.00	4.34	58.73	6.65
53000/R	*					110	3	20	110	250	1.18E+07	0	1.62	39.79	35.00	4.56	0.00	4.56
53500/L	*					177	3	20	110	250	1.18E+07	0	1.98	32.19	35.00	4.63	0.00	4.63
54000/R						96	3	19	110	250	1.18E+07	0	1.48	49.50	35.00	4.81	0.00	4.81
54500/L						86	3	6	110	250	1.18E+07	45	1.36	49.50	35.00	4.69	19.58	5.46
55000/R						109	2	8	110	250	1.18E+07	25	1.61	49.50	35.00	4.94	10.88	5.36
55500/L						71	1	0	110	250	1.18E+07	225	1.13	41.18	-1.44	2.69	97.88	6.55
56000/R						81	2	2	110	250	1.18E+07	105	1.29	49.50	35.00	4.62	45.68	6.42
56500/L						54	2	0	110	250	1.18E+07	195	0.74	28.85	24.40	2.84	84.83	6.18
57000/R						112	2	16	110	250	1.18E+07	0	1.63	49.50	35.00	4.96	0.00	4.96
58000/R	*					147	3	20	110	250	1.18E+07	0	1.86	45.58	35.00	5.03	0.00	5.03
59000/R	*					213	3	20	110	250	1.18E+07	0	2.07	49.50	35.00	5.40	0.00	5.40
59500/L						106	2	3	110	250	1.18E+07	70	1.58	49.50	35.00	4.91	30.45	6.11
60000/R						85	3	9	110	250	1.18E+07	25	1.35	49.50	35.00	4.67	10.88	5.10
60500/L						89	2	3	110	250	1.18E+07	60	1.40	49.50	32.31	4.62	26.10	5.65
61000/R						86	2	4	110	250	1.18E+07	60	1.36	49.50	35.00	4.69	26.10	5.72
61500/L	*					105	3	18	110	250	1.18E+07	0	1.57	30.09	35.00	4.14	0.00	4.14
62000/R	*					143	3	20	110	250	1.18E+07	0	1.84	42.14	35.00	4.88	0.00	4.88
62500/L						86	2	0	110	250	1.18E+07	175	1.36	49.50	-3.22	3.18	76.13	6.18
63000/R						62	3	1	110	250	1.18E+07	150	0.94	47.10	31.82	4.05	65.26	6.62
63500/L						72	2	1	110	250	1.18E+07	145	1.14	42.35	29.91	3.99	63.08	6.48
64000/R						90	3	8	110	250	1.18E+07	30	1.41	49.50	35.00	4.74	13.05	5.25
64500/L						120	2	19	110	250	1.18E+07	0	1.70	49.50	35.00	5.02	0.00	5.02
65000/R	*					161	3	20	110	250	1.18E+07	0	1.92	41.20	35.00	4.92	0.00	4.92
65500/L						58	3	0	110	250	1.18E+07	175	0.85	37.39	31.90	3.58	76.13	6.58
66000/R	*					144	3	20	110	250	1.18E+07	0	1.84	45.09	35.00	5.00	0.00	5.00
66500/L						201	2	20	110	250	1.18E+07	0	2.05	49.50	35.00	5.37	0.00	5.37
67000/R	*					122	3	20	110	250	1.18E+07	0	1.71	40.65	35.00	4.69	0.00	4.69
67500/L	*					141	3	20	110	250	1.18E+07	0	1.83	32.40	35.00	4.48	0.00	4.48
68000/R	*					110	3	20	110	250	1.18E+07	0	1.62	42.77	35.00	4.68	0.00	4.68
68500/L	*					117	3	17	110	250	1.18E+07	0	1.67	27.59	35.00	4.14	0.00	4.14

69000/R		8785	785	105	3	3	17	110	250	1.18E+07	0	1.57	49.50	35.00	4.90	0.00	4.90
69500/L		2002	349	48	3	3	0	110	250	1.18E+07	180	0.56	39.93	35.00	3.51	78.31	6.60
70000/R	*	3112	3583	222	3	3	20	110	250	1.18E+07	0	2.09	48.57	35.00	5.38	0.00	5.38
70500/L		3037	333	57	3	3	1	110	250	1.18E+07	150	0.82	48.09	34.03	4.06	65.26	6.63
71000/R	*	2638	3038	197	3	3	20	110	250	1.18E+07	0	2.04	45.33	35.00	5.20	0.00	5.20
71500/L		6575	286	63	3	3	2	110	250	1.18E+07	110	0.97	49.50	30.82	4.13	47.85	6.02
72000/R		12799	618	129	2	2	20	110	250	1.18E+07	0	1.76	49.50	35.00	5.09	0.00	5.09
72500/L		970	12	80	1	1	0	110	250	1.18E+07	300	1.27	25.72	-36.09	0.87	130.51	6.01
73000/R	*	2605	3000	148	3	3	20	110	250	1.18E+07	0	1.86	45.09	35.00	5.02	0.00	5.02
73500/L		5656	418	80	2	2	3	110	250	1.18E+07	80	1.27	49.50	35.00	4.60	34.80	5.97
74000/R	*	2605	3000	186	3	3	20	110	250	1.18E+07	0	2.01	45.09	35.00	5.16	0.00	5.16
74500/L		1493	68	68	1	1	0	110	250	1.18E+07	225	1.07	34.18	0.51	2.44	97.88	6.29
75000/R	*	2143	2468	154	3	3	20	110	250	1.18E+07	0	1.89	41.26	35.00	4.90	0.00	4.90
75500/L		3118	348	71	3	3	1	110	250	1.18E+07	130	1.13	48.61	34.96	4.42	56.55	6.65
76000/R		12585	735	158	2	2	20	110	250	1.18E+07	0	1.91	49.50	35.00	5.24	0.00	5.24
76500/L		10740	531	135	2	2	12	110	250	1.18E+07	10	1.79	49.50	35.00	5.12	4.35	5.29
77000/R	*	2997	3451	195	3	3	20	110	250	1.18E+07	0	2.03	47.83	35.00	5.29	0.00	5.29
77500/L		4168	556	168	2	2	5	110	250	1.18E+07	50	1.95	49.50	35.00	5.28	21.75	6.13
78000/R	*	2605	3000	196	3	3	20	110	250	1.18E+07	0	2.03	45.09	35.00	5.19	0.00	5.19
78500/L		2675	239	155	2	2	0	110	250	1.18E+07	130	1.89	45.61	27.03	4.76	56.55	6.98
79000/R		13723	523	111	2	2	18	110	250	1.18E+07	0	1.62	49.50	35.00	4.95	0.00	4.95
79500/L		8533	682	108	2	2	14	110	250	1.18E+07	5	1.60	49.50	35.00	4.93	2.18	5.01
80000/R	*	2916	3358	222	3	3	20	110	250	1.18E+07	0	2.09	47.30	35.00	5.33	0.00	5.33
80500/L		8492	827	112	3	3	18	110	250	1.18E+07	0	1.63	49.50	35.00	4.96	0.00	4.96
81000/R		14061	592	103	3	3	20	110	250	1.18E+07	0	1.55	49.50	35.00	4.88	0.00	4.88
81500/L		3605	498	129	2	2	3	110	250	1.18E+07	60	1.76	49.50	35.00	5.09	26.10	6.11
82000/R	*	2192	2524	147	3	3	20	110	250	1.18E+07	0	1.86	41.70	35.00	4.88	0.00	4.88
82500/L	*	1846	4059	254	3	3	20	110	250	1.18E+07	0	2.14	38.34	35.00	5.03	0.00	5.03
83000/R		248	2768	247	3	3	20	110	250	1.18E+07	0	2.13	-1.01	35.00	3.47	0.00	3.47
83500/L		5006	13	66	2	2	0	110	250	1.18E+07	300	1.03	49.50	-34.40	1.62	130.51	6.77

ALYAT-GEORGIAN BORDER ROAD: BEARING CAPACITY RESULTS pr. POINT 1997																
SECTION NO. 3 KYURDAMIR to UJAR																
chainage/lane	remarks	E1 [Mpa]	E2 [Mpa]	E subg. [Mpa]	Cr.layer	est.life [Years]	H1 [mm]	H2 [mm]	est.traffic [S. A.]	overlay [mm]	SNSG	a(l)*h(l) E1	a(l)*h(l) E2	SNC before str.	A(l)*H(l) str. layer	SNC after str.
0/L		10782	617	159	2	17	110	250	1.13E+07	0	1.91	49.50	35.00	5.24	0.00	5.24
500/L		7327	752	165	2	17	110	250	1.13E+07	0	1.94	49.50	35.00	5.27	0.00	5.27
1000/R	*	6485	6609	205	3	20	110	250	1.13E+07	0	2.05	49.50	35.00	5.38	0.00	5.38
1500/L	K	9552	802	172	2	20	110	250	1.13E+07	0	1.96	49.50	35.00	5.29	0.00	5.29
2000/R		3191	2212	134	3	20	110	250	1.13E+07	0	1.79	49.06	35.00	5.10	0.00	5.10
2500/L		4657	968	122	3	16	110	250	1.13E+07	0	1.71	49.50	35.00	5.04	0.00	5.04
3000/R	*	4613	4701	172	3	20	110	250	1.13E+07	0	1.96	49.50	35.00	5.29	0.00	5.29
3500/L		5435	1311	199	2	20	110	250	1.13E+07	0	2.04	49.50	35.00	5.37	0.00	5.37
4000/R		13662	929	96	3	20	110	250	1.13E+07	0	1.48	49.50	35.00	4.81	0.00	4.81
4500/L		10798	884	150	2	20	110	250	1.13E+07	0	1.87	49.50	35.00	5.20	0.00	5.20
5000/R	*	2474	2522	102	3	20	110	250	1.13E+07	0	1.54	44.08	35.00	4.66	0.00	4.66
5500/L	*	1788	2396	108	3	20	110	250	1.13E+07	0	1.60	37.71	35.00	4.46	0.00	4.46
6000/R		13219	4115	139	3	20	110	250	1.13E+07	0	1.82	49.50	35.00	5.15	0.00	5.15
6500/L		7608	1688	176	3	20	110	250	1.13E+07	0	1.98	49.50	35.00	5.30	0.00	5.30
7000/R	*	3098	3157	150	3	20	110	250	1.13E+07	0	1.87	48.48	35.00	5.16	0.00	5.16
7500/L	R	3466	1487	172	2	20	110	250	1.13E+07	0	1.96	49.50	35.00	5.29	0.00	5.29
8000/R		8933	1406	114	3	20	110	250	1.13E+07	0	1.65	49.50	35.00	4.98	0.00	4.98
8500/L		10906	789	137	2	20	110	250	1.13E+07	0	1.80	49.50	35.00	5.13	0.00	5.13
9000/R		3377	1347	96	3	12	110	250	1.13E+07	20	1.48	49.50	35.00	4.81	8.70	5.15
9500/L		5071	423	145	2	3	110	250	1.13E+07	55	1.85	49.50	35.00	5.18	23.93	6.12
10000/R		11000	711	97	3	17	110	250	1.13E+07	0	1.49	49.50	35.00	4.82	0.00	4.82
10500/L		4749	1237	136	3	20	110	250	1.13E+07	0	1.80	49.50	35.00	5.13	0.00	5.13
11000/R		2134	3119	99	3	20	110	250	1.13E+07	0	1.51	41.18	35.00	4.51	0.00	4.51
11500/L	R	4935	535	96	3	5	110	250	1.13E+07	55	1.48	49.50	35.00	4.81	23.93	5.75
12000/R		3226	300	97	2	1	110	250	1.13E+07	100	1.49	49.28	31.82	4.69	43.50	6.40
12500/L		6867	543	206	2	7	110	250	1.13E+07	30	2.06	49.50	35.00	5.39	13.05	5.90
13000/R		11693	1626	103	3	20	110	250	1.13E+07	0	1.55	49.50	35.00	4.88	0.00	4.88
13500/L	*	2887	3869	337	3	20	110	250	1.13E+07	0	2.19	47.10	35.00	5.42	0.00	5.42
14000/R		6962	1684	94	3	20	110	250	1.13E+07	0	1.46	49.50	35.00	4.79	0.00	4.79

14500/L		10178	865	155	2	20	110	250	1.13E+07	0	1.89	49.50	35.00	5.22	0.00	5.22
15000/R	*	3600	3669	118	3	20	110	250	1.13E+07	0	1.68	49.50	35.00	5.01	0.00	5.01
15500/L		6898	605	196	2	9	110	250	1.13E+07	25	2.03	49.50	35.00	5.36	10.88	5.79
16000/R		2049	643	91	3	3	110	250	1.13E+07	90	1.42	40.38	35.00	4.39	39.15	5.93
16500/L	*	2184	2927	213	3	20	110	250	1.13E+07	0	2.07	41.63	35.00	5.09	0.00	5.09
17000/R		866	886	63	3	1	110	250	1.13E+07	125	0.97	23.50	35.00	3.27	54.38	5.41
17500/L		7510	626	181	2	10	110	250	1.13E+07	15	1.99	49.50	35.00	5.32	6.53	5.58
18000/R		2284	1604	85	3	9	110	250	1.13E+07	30	1.35	42.51	35.00	4.40	13.05	4.91
18500/L		10786	843	171	2	20	110	250	1.13E+07	0	1.96	49.50	35.00	5.29	0.00	5.29
19000/R	R	1905	1459	91	3	8	110	250	1.13E+07	40	1.42	38.95	35.00	4.34	17.40	5.02
19500/L		8212	2280	123	3	20	110	250	1.13E+07	0	1.72	49.50	35.00	5.05	0.00	5.05
20000/R		931	881	79	3	2	110	250	1.13E+07	110	1.26	24.92	35.00	3.62	47.85	5.51
20500/L		9452	708	138	2	18	110	250	1.13E+07	0	1.81	49.50	35.00	5.14	0.00	5.14
21000/R		1458	2549	96	3	17	110	250	1.13E+07	0	1.48	33.71	35.00	4.19	0.00	4.19
21500/L		1332	1606	150	3	17	110	250	1.13E+07	0	1.87	31.94	35.00	4.51	0.00	4.51
22000/R		4444	2026	96	3	20	110	250	1.13E+07	0	1.48	49.50	35.00	4.81	0.00	4.81
22500/L		9488	1774	128	3	20	110	250	1.13E+07	0	1.75	49.50	35.00	5.08	0.00	5.08
23000/R	R *	2944	3000	126	3	20	110	250	1.13E+07	0	1.74	47.48	35.00	4.99	0.00	4.99
23500/L		11335	786	97	3	19	110	250	1.13E+07	0	1.49	49.50	35.00	4.82	0.00	4.82
24000/R		1163	2356	154	3	20	110	250	1.13E+07	0	1.89	29.28	35.00	4.42	0.00	4.42
24500/L	*	2680	3592	136	3	20	110	250	1.13E+07	0	1.80	45.64	35.00	4.98	0.00	4.98
25000/R		675	6628	199	3	20	110	250	1.13E+07	0	2.04	18.61	35.00	4.15	0.00	4.15
25500/L	*	2340	3135	151	3	20	110	250	1.13E+07	0	1.88	42.98	35.00	4.95	0.00	4.95
26000/R		891	5134	163	3	20	110	250	1.13E+07	0	1.93	24.06	35.00	4.25	0.00	4.25
26500/L	R *	3248	4353	197	3	20	110	250	1.13E+07	0	2.04	49.41	35.00	5.36	0.00	5.36
27000/R		4027	1262	229	2	20	110	250	1.13E+07	0	2.10	49.50	35.00	5.43	0.00	5.43
27500/L		12708	988	112	3	20	110	250	1.13E+07	0	1.63	49.50	35.00	4.96	0.00	4.96
28000/R		2089	3994	107	3	20	110	250	1.13E+07	0	1.59	40.76	35.00	4.57	0.00	4.57
28500/L	*	2953	3957	165	3	20	110	250	1.13E+07	0	1.94	47.54	35.00	5.19	0.00	5.19
29000/R		1441	2459	151	3	20	110	250	1.13E+07	0	1.88	33.48	35.00	4.57	0.00	4.57
29500/L	*	3253	4359	156	3	20	110	250	1.13E+07	0	1.90	49.44	35.00	5.23	0.00	5.23
30000/R		1186	6163	188	3	20	110	250	1.13E+07	0	2.01	29.66	35.00	4.56	0.00	4.56
30500/L		5792	360	130	2	3	110	250	1.13E+07	65	1.76	49.50	35.00	5.09	28.28	6.21
31000/R		2658	3660	188	3	20	110	250	1.13E+07	0	2.01	45.48	35.00	5.18	0.00	5.18
31500/L	K *	2971	3981	146	3	20	110	250	1.13E+07	0	1.85	47.66	35.00	5.11	0.00	5.11
32000/R		1313	5969	188	3	20	110	250	1.13E+07	0	2.01	31.66	35.00	4.64	0.00	4.64

32500/L		11484	765	136	2	20	110	250	1.13E+07	0	1.80	49.50	35.00	5.13	0.00	5.13
33000/R		2570	3129	212	3	20	110	250	1.13E+07	0	2.07	44.82	35.00	5.21	0.00	5.21
33500/L	R *	2302	3085	171	3	20	110	250	1.13E+07	0	1.96	42.66	35.00	5.02	0.00	5.02
34000/R		2691	2338	174	3	20	110	250	1.13E+07	0	1.97	45.72	35.00	5.15	0.00	5.15
34500/L		6258	630	79	3	6	110	250	1.13E+07	50	1.26	49.50	35.00	4.59	21.75	5.45
35000/R		660	3178	173	3	20	110	250	1.13E+07	0	1.96	18.17	35.00	4.06	0.00	4.06
35500/L	*	3301	4423	163	3	20	110	250	1.13E+07	0	1.93	49.50	35.00	5.26	0.00	5.26
36000/R		3153	1180	160	2	19	110	250	1.13E+07	0	1.92	48.83	35.00	5.22	0.00	5.22
36500/L	*	2389	3201	115	3	20	110	250	1.13E+07	0	1.66	43.39	35.00	4.75	0.00	4.75
37000/R	*	3386	3451	207	3	20	110	250	1.13E+07	0	2.06	49.50	35.00	5.39	0.00	5.39
37500/L		14362	1098	99	3	20	110	250	1.13E+07	0	1.51	49.50	35.00	4.84	0.00	4.84
38000/R		949	4603	133	3	20	110	250	1.13E+07	0	1.78	25.29	35.00	4.16	0.00	4.16
38500/L	R *	2215	2968	149	3	20	110	250	1.13E+07	0	1.87	41.91	35.00	4.90	0.00	4.90
39000/R		2436	3893	145	3	20	110	250	1.13E+07	0	1.85	43.77	35.00	4.95	0.00	4.95
39500/L		9177	2387	166	3	20	110	250	1.13E+07	0	1.94	49.50	35.00	5.27	0.00	5.27
40000/R		2306	1115	90	3	6	110	250	1.13E+07	55	1.41	42.70	35.00	4.47	23.93	5.41
40500/L	*	3607	4834	131	3	20	110	250	1.13E+07	0	1.77	49.50	35.00	5.10	0.00	5.10
41000/R	R	2089	859	96	3	5	110	250	1.13E+07	70	1.48	40.76	35.00	4.46	30.45	5.66
41500/L	R	12724	807	130	2	20	110	250	1.13E+07	0	1.76	49.50	35.00	5.09	0.00	5.09
42000/R	R *	2638	2689	159	3	20	110	250	1.13E+07	0	1.91	45.33	35.00	5.08	0.00	5.08
42500/L	*	2423	3246	130	3	20	110	250	1.13E+07	0	1.76	43.67	35.00	4.86	0.00	4.86
43000/R		2886	2634	124	3	20	110	250	1.13E+07	0	1.72	47.09	35.00	4.96	0.00	4.96
43500/L		11186	771	93	3	17	110	250	1.13E+07	0	1.45	49.50	35.00	4.77	0.00	4.77
44000/R		3394	2138	107	3	20	110	250	1.13E+07	0	1.59	49.50	35.00	4.92	0.00	4.92
44500/L	*	4355	5837	287	3	20	110	250	1.13E+07	0	2.17	49.50	35.00	5.50	0.00	5.50
45000/R		2460	4215	212	3	20	110	250	1.13E+07	0	2.07	43.96	35.00	5.18	0.00	5.18
45500/L	*	2239	3000	212	3	20	110	250	1.13E+07	0	2.07	42.12	35.00	5.11	0.00	5.11
46000/R		4493	2257	192	3	20	110	250	1.13E+07	0	2.02	49.50	35.00	5.35	0.00	5.35
47000/R		1129	1974	214	3	20	110	250	1.13E+07	0	2.07	28.70	35.00	4.58	0.00	4.58
47500/L	*	2239	3000	114	3	20	110	250	1.13E+07	0	1.65	42.12	35.00	4.69	0.00	4.69
48000/L		14216	3236	181	3	20	110	250	1.13E+07	0	1.99	49.50	35.00	5.32	0.00	5.32

ALYAT-GEORGIAN BORDER ROAD: BEARING CAPACITY RESULTS pr. POINT 1997															
SECTION NO. 4 UJAR to MINGACHEUR															
chainage/lane	remarks	E1	E2	E subg.	Cr. layer	est. life	H1	H2	est. traffic	overlay	SNSG	a(l)*h(l)	a(l)*h(l)	SNC	A(l)*H(l)
[m]		[Mpa]	[Mpa]	[Mpa]		[Years]	[mm]	[mm]	[S. A.]	[mm]		[E1]	[E2]	before str.	str. layer
1000/R		9337	1278	124	3	20	110	250	1.13E+07	0	1.72	49.50	35.00	5.05	0.00
1500/L		2153	2156	214	3	20	110	250	1.13E+07	0	2.07	41.35	35.00	5.08	0.00
2000/R		2463	2026	98	3	17	110	250	1.13E+07	0	1.50	43.99	35.00	4.61	0.00
2500/L		1100	1747	106	3	10	110	250	1.13E+07	30	1.58	28.19	35.00	4.07	13.05
3000/R		1532	1751	62	3	4	110	250	1.13E+07	75	0.94	34.68	35.00	3.69	32.63
3500/L		6809	793	99	3	12	110	250	1.13E+07	15	1.51	49.50	35.00	4.84	6.53
4000/R		4021	2061	98	3	20	110	250	1.13E+07	0	1.50	49.50	35.00	4.83	0.00
4500/L		9035	749	75	3	10	110	250	1.13E+07	20	1.20	49.50	35.00	4.52	8.70
5000/R	R	4732	2096	102	3	20	110	250	1.13E+07	0	1.54	49.50	35.00	4.87	0.00
5500/L		6597	1379	88	3	19	110	250	1.13E+07	0	1.38	49.50	35.00	4.71	0.00
6000/R	*	5735	5789	275	3	20	110	250	1.13E+07	0	2.16	49.50	35.00	5.49	0.00
6500/L		2692	2092	84	3	15	110	250	1.13E+07	0	1.33	45.73	35.00	4.51	0.00
7000/R		6326	4005	138	3	20	110	250	1.13E+07	0	1.81	49.50	35.00	5.14	0.00
7500/L	*	3334	4013	133	3	20	110	250	1.13E+07	0	1.78	49.50	35.00	5.11	0.00
8000/R	*	3640	3674	171	3	20	110	250	1.13E+07	0	1.96	49.50	35.00	5.29	0.00
8500/L	*	4754	5722	236	3	20	110	250	1.13E+07	0	2.11	49.50	35.00	5.44	0.00
9000/R	*	2770	2796	82	3	20	110	250	1.13E+07	0	1.30	46.29	35.00	4.51	0.00
9500/L		2824	599	106	2	4	110	250	1.13E+07	65	1.58	46.67	35.00	4.80	28.28
10000/R	*	2324	2346	135	3	20	110	250	1.13E+07	0	1.79	42.85	35.00	4.86	0.00
10500/L		11186	924	125	3	20	110	250	1.13E+07	0	1.73	49.50	35.00	5.06	0.00
11000/R		1168	1061	93	3	4	110	250	1.13E+07	75	1.45	29.36	35.00	3.98	32.63
11500/L		3074	1491	77	3	9	110	250	1.13E+07	35	1.23	48.33	35.00	4.51	15.23
12000/R		3856	1812	183	3	20	110	250	1.13E+07	0	2.00	49.50	35.00	5.33	0.00
12500/L		6849	2184	93	3	20	110	250	1.13E+07	0	1.45	49.50	35.00	4.77	0.00
13000/R		994	1512	100	3	7	110	250	1.13E+07	45	1.52	26.20	35.00	3.93	19.58
13500/L		7025	1951	144	3	20	110	250	1.13E+07	0	1.84	49.50	35.00	5.17	0.00
14000/R		1487	1275	80	3	5	110	250	1.13E+07	70	1.27	34.10	35.00	4.00	30.45
14500/L		3822	1594	148	3	20	110	250	1.13E+07	0	1.86	49.50	35.00	5.19	0.00
15500/L	*	3026	3642	205	3	20	110	250	1.13E+07	0	2.05	48.02	35.00	5.33	0.00

16000/R		3670	2270	113	3	20	110	250	1.13E+07	0	1.64	49.50	35.00	4.97	0.00
16500/L	*	2602	3132	126	3	20	110	250	1.13E+07	0	1.74	45.06	35.00	4.89	0.00
17000/R		2746	2507	128	3	20	110	250	1.13E+07	0	1.75	46.12	35.00	4.95	0.00
17500/L		7496	2677	156	3	20	110	250	1.13E+07	0	1.90	49.50	35.00	5.23	0.00
18000/R		1527	5083	196	3	20	110	250	1.13E+07	0	2.03	34.62	35.00	4.78	0.00
18500/L		5469	2264	183	3	20	110	250	1.13E+07	0	2.00	49.50	35.00	5.33	0.00
19000/R		2349	328	49	3	1	110	250	1.13E+07	170	0.59	43.06	33.71	3.62	73.96
19500/L		9543	916	169	2	20	110	250	1.13E+07	0	1.95	49.50	35.00	5.28	0.00
20000/R		3596	404	84	2	2	110	250	1.13E+07	95	1.33	49.50	35.00	4.66	41.33
20500/L	*	2492	3000	149	3	20	110	250	1.13E+07	0	1.87	44.22	35.00	4.99	0.00
21000/R		3266	1575	172	3	20	110	250	1.13E+07	0	1.96	49.50	35.00	5.29	0.00
21500/L		1574	1539	95	3	8	110	250	1.13E+07	35	1.47	35.21	35.00	4.23	15.23
22000/R	R *	4443	4485	264	3	20	110	250	1.13E+07	0	2.15	49.50	35.00	5.48	0.00
22500/L		1073	3771	179	3	20	110	250	1.13E+07	0	1.98	27.70	35.00	4.46	0.00
23000/R		1132	409	76	2	1	110	250	1.13E+07	140	1.21	28.75	35.00	3.72	60.90
23500/L	*	1350	1625	183	3	20	110	250	1.13E+07	0	2.00	32.20	35.00	4.64	0.00
24000/R		2467	1001	83	3	5	110	250	1.13E+07	65	1.32	44.02	35.00	4.43	28.28
24500/L		4674	1230	127	3	20	110	250	1.13E+07	0	1.74	49.50	35.00	5.07	0.00
25000/R		1315	1557	73	3	5	110	250	1.13E+07	65	1.16	31.69	35.00	3.79	28.28
25500/L		909	641	89	3	2	110	250	1.13E+07	115	1.40	24.45	35.00	3.74	50.03
26000/R		3254	300	78	2	1	110	250	1.13E+07	120	1.24	49.45	31.82	4.45	52.20
26500/L		1591	961	53	3	2	110	250	1.13E+07	130	0.72	35.42	35.00	3.49	56.55
27000/R		2206	3041	177	3	20	110	250	1.13E+07	0	1.98	41.83	35.00	5.01	0.00
27500/L		1530	385	61	3	1	110	250	1.13E+07	160	0.92	34.65	35.00	3.67	69.61
28000/R		2830	1919	147	3	20	110	250	1.13E+07	0	1.86	46.71	35.00	5.08	0.00
28500/L		3920	1159	118	3	16	110	250	1.13E+07	0	1.68	49.50	35.00	5.01	0.00
29000/R		2767	3234	171	3	20	110	250	1.13E+07	0	1.96	46.27	35.00	5.16	0.00
29500/L		4828	2508	176	3	20	110	250	1.13E+07	0	1.98	49.50	35.00	5.30	0.00
30000/R	*	2972	3000	140	3	20	110	250	1.13E+07	0	1.82	47.67	35.00	5.08	0.00
30500/L		3848	1873	139	3	20	110	250	1.13E+07	0	1.82	49.50	35.00	5.15	0.00
31000/R		2928	1730	236	2	20	110	250	1.13E+07	0	2.11	47.38	35.00	5.36	0.00
31500/L		4008	796	104	3	8	110	250	1.13E+07	30	1.56	49.50	35.00	4.89	13.05
32000/R		4869	2769	164	3	20	110	250	1.13E+07	0	1.93	49.50	35.00	5.26	0.00
32500/L		3715	3282	474	2	20	110	250	1.13E+07	0	2.17	49.50	35.00	5.50	0.00
33000/R		2665	3257	104	3	20	110	250	1.13E+07	0	1.56	45.53	35.00	4.73	0.00
33500/L		1335	1363	134	3	11	110	250	1.13E+07	15	1.79	31.98	35.00	4.43	6.53

34000/R		2411	1396	125	3	15	110	250	1.13E+07	0	1.73	43.57	35.00	4.83	0.00
34500/L		3134	1562	79	3	10	110	250	1.13E+07	30	1.26	48.71	35.00	4.56	13.05
35000/R		4544	851	192	2	13	110	250	1.13E+07	10	2.02	49.50	35.00	5.35	4.35
35500/L		1483	1496	96	3	7	110	250	1.13E+07	40	1.48	34.04	35.00	4.20	17.40
36000/R		2358	2528	84	3	18	110	250	1.13E+07	0	1.33	43.13	35.00	4.41	0.00
36500/L		3943	1161	86	3	10	110	250	1.13E+07	30	1.36	49.50	35.00	4.69	13.05
37000/R	K	1662	603	83	3	2	110	250	1.13E+07	110	1.32	36.28	35.00	4.13	47.85
37500/L		5435	1606	112	3	20	110	250	1.13E+07	0	1.63	49.50	35.00	4.96	0.00
38000/R		2035	1574	98	3	10	110	250	1.13E+07	25	1.50	40.25	35.00	4.47	10.88
38500/L		1820	697	93	3	3	110	250	1.13E+07	85	1.45	38.06	35.00	4.32	36.98
39000/R		3396	1042	164	2	15	110	250	1.13E+07	0	1.93	49.50	35.00	5.26	0.00
39500/L		3711	940	98	3	9	110	250	1.13E+07	35	1.50	49.50	35.00	4.83	15.23
40000/R		2190	419	76	2	1	110	250	1.13E+07	125	1.21	41.68	35.00	4.23	54.38
40500/L		1165	2720	118	3	20	110	250	1.13E+07	0	1.68	29.31	35.00	4.21	0.00
41000/R		2859	2440	186	3	20	110	250	1.13E+07	0	2.01	46.91	35.00	5.23	0.00
41500/L		4706	2585	130	3	20	110	250	1.13E+07	0	1.76	49.50	35.00	5.09	0.00
42000/R		4248	521	83	3	4	110	250	1.13E+07	80	1.32	49.50	35.00	4.65	34.80
42500/L		9975	942	256	2	20	110	250	1.13E+07	0	2.14	49.50	35.00	5.47	0.00
43000/R		1176	416	83	2	1	110	250	1.13E+07	135	1.32	29.50	35.00	3.86	58.73
43500/L		6410	1446	105	3	20	110	250	1.13E+07	0	1.57	49.50	35.00	4.90	0.00
44000/R	R	4029	2294	180	3	20	110	250	1.13E+07	0	1.99	49.50	35.00	5.32	0.00
44500/L	*	2616	3149	182	3	20	110	250	1.13E+07	0	1.99	45.17	35.00	5.15	0.00
45000/R		1054	1087	134	3	7	110	250	1.13E+07	40	1.79	27.35	35.00	4.24	17.40
45500/L	*	2173	2616	157	3	20	110	250	1.13E+07	0	1.90	41.53	35.00	4.92	0.00
46500/L		1088	73	161	1	0	110	250	1.13E+07	225	1.92	27.97	2.00	3.10	97.88
53500/L		1758	123	57	1	0	110	250	1.13E+07	200	0.82	37.38	13.01	2.81	87.01
54000/R		2523	189	91	1	0	110	250	1.13E+07	140	1.42	44.46	22.08	4.04	60.90
54500/L		4938	437	97	2	3	110	250	1.13E+07	65	1.49	49.50	35.00	4.82	28.28
55000/R		4290	100	103	2	0	110	250	1.13E+07	160	1.55	49.50	8.64	3.84	69.61
56000/R		942	499	193	2	1	110	250	1.13E+07	105	2.03	25.15	35.00	4.40	45.68
56500/L		1565	724	157	2	3	110	250	1.13E+07	65	1.90	35.10	35.00	4.67	28.28
57000/R		4559	429	213	2	3	110	250	1.13E+07	55	2.07	49.50	35.00	5.40	23.93
57500/L		3858	1433	201	2	20	110	250	1.13E+07	0	2.05	49.50	35.00	5.37	0.00
58000/R		960	5345	166	3	20	110	250	1.13E+07	0	1.94	25.52	35.00	4.32	0.00
58500/L		1904	2747	174	3	20	110	250	1.13E+07	0	1.97	38.94	35.00	4.88	0.00
59000/R		876	1749	191	3	20	110	250	1.13E+07	0	2.02	23.72	35.00	4.33	0.00

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59500/L	14935	531	139	2	20	110	250	1.13E+07	0	1.82	49.50	35.00	5.15	0.00
60000/R	1961	634	137	2	3	110	250	1.13E+07	70	1.80	39.52	35.00	4.74	30.45
60500/L	4710	2678	147	3	20	110	250	1.13E+07	0	1.86	49.50	35.00	5.19	0.00
61000/R	1451	1030	109	3	6	110	250	1.13E+07	55	1.61	33.62	35.00	4.31	23.93
61500/L	3917	354	258	2	2	110	250	1.13E+07	75	2.14	49.50	35.00	5.47	32.63

ALYAT-GEORGIAN BORDER ROAD: BEARING CAPACITY RESULTS pr. POINT 1997																				
SECTION NO. 5 MINGACHEUR TO GJANDZA																				
chainage/lane	remarks	E1	E2	E subg.	Cr.layer	est.life	H1	H2	est.traffic	overlay	SNSG	a(l)*h(l)	a(l)*h(l)	SNC	A(l)*H(l)	SNC	before str.	str. layer	SNC	after str.
[m]		[Mpa]	[Mpa]	[Mpa]		[Years]	[mm]	[mm]	[S. A.]	[mm]		[E1]	[E2]							
0/R	*	2817	2871	195	3	20	110	250	9615500	0	2.03	46.62	35.00	5.25	0.00	5.25				5.25
500/L		1664	945	142	2	8	110	250	9615500	35	1.83	36.30	35.00	4.64	15.23	5.24				5.24
1000/R		4453	379	167	2	2	110	250	9615500	60	1.94	49.50	35.00	5.27	26.10	6.30				6.30
1500/L		1841	187	115	2	0	110	250	9615500	145	1.66	38.28	21.85	4.03	63.08	6.51				6.51
2000/R		638	76	55	1	0	110	250	9615500	225	0.77	17.51	2.85	1.57	97.88	5.43				5.43
2500/L		1347	255	77	2	0	110	250	9615500	150	1.23	32.16	28.40	3.61	65.26	6.18				6.18
3000/R		1077	122	86	1	0	110	250	9615500	180	1.36	27.77	12.84	2.96	78.31	6.04				6.04
3500/L		2036	861	134	2	7	110	250	9615500	35	1.79	40.26	35.00	4.75	15.23	5.35				5.35
4000/R		1425	3561	172	3	20	110	250	9615500	0	1.96	33.26	35.00	4.65	0.00	4.65				4.65
4500/R		704	1157	158	2	9	110	250	9615500	30	1.91	19.44	35.00	4.05	13.05	4.57				4.57
5000/R		511	555	168	2	1	110	250	9615500	105	1.95	13.16	35.00	3.84	45.68	5.64				5.64
5500/L	*	3667	3737	207	3	20	110	250	9615500	0	2.06	49.50	35.00	5.39	0.00	5.39				5.39
6000/R		2873	470	180	2	3	110	250	9615500	70	1.99	47.01	35.00	5.22	30.45	6.42				6.42
6500/L		2581	2117	141	3	20	110	250	9615500	0	1.83	44.90	35.00	4.98	0.00	4.98				4.98
7000/R	K	1393	220	163	2	0	110	250	9615500	135	1.93	32.82	25.28	4.22	58.73	6.53				6.53
7500/L		804	151	143	2	0	110	250	9615500	170	1.84	22.04	17.34	3.39	73.96	6.30				6.30
8000/R	*	1430	1457	207	2	20	110	250	9615500	0	2.06	33.33	35.00	4.75	0.00	4.75				4.75
8500/L		1415	324	257	2	1	110	250	9615500	115	2.14	33.12	33.45	4.76	50.03	6.73				6.73
9000/R	R	2655	290	199	2	1	110	250	9615500	100	2.04	45.46	31.11	5.06	43.50	6.77				6.77
9500/L		1365	635	238	2	3	110	250	9615500	75	2.11	32.42	35.00	4.77	32.63	6.06				6.06
10000/R		1951	1133	162	2	14	110	250	9615500	5	1.92	39.42	35.00	4.86	2.18	4.94				4.94
10500/L		3611	375	265	2	2	110	250	9615500	70	2.15	49.50	35.00	5.48	30.45	6.68				6.68
11000/R		1164	369	211	2	1	110	250	9615500	110	2.07	29.30	35.00	4.60	47.85	6.49				6.49
11500/L		1272	613	100	2	2	110	250	9615500	90	1.52	31.03	35.00	4.12	39.15	5.67				5.67
12000/R		1430	486	196	2	1	110	250	9615500	90	2.03	33.33	35.00	4.73	39.15	6.27				6.27
12500/L		1158	1721	171	3	20	110	250	9615500	0	1.96	29.19	35.00	4.49	0.00	4.49				4.49
13000/R		7064	3996	306	3	20	110	250	9615500	0	2.18	49.50	35.00	5.51	0.00	5.51				5.51
13500/L		6904	540	221	2	8	110	250	9615500	25	2.09	49.50	35.00	5.42	10.88	5.84				5.84
14000/R	R	3240	834	157	2	10	110	250	9615500	20	1.90	49.36	35.00	5.23	8.70	5.57				5.57

14500/L		1392	312	152	2	1	110	250	9615500	115	1.88	32.80	32.65	4.46	50.03	6.43
15000/R		1160	665	140	2	3	110	250	9615500	75	1.82	29.23	35.00	4.35	32.63	5.64
15500/L		2206	450	121	2	2	110	250	9615500	80	1.70	41.83	35.00	4.73	34.80	6.10
16000/R		2490	275	175	2	1	110	250	9615500	105	1.97	44.20	29.99	4.89	45.68	6.69
16500/L		2852	1109	330	2	18	110	250	9615500	0	2.19	46.86	35.00	5.41	0.00	5.41
17000/R		2376	293	124	2	1	110	250	9615500	105	1.72	43.28	31.33	4.66	45.68	6.46
17500/L		2217	886	128	2	8	110	250	9615500	30	1.75	41.93	35.00	4.78	13.05	5.30
18000/R		10413	831	106	3	20	110	250	9615500	0	1.58	49.50	35.00	4.91	0.00	4.91
18500/L		1821	1862	64	3	7	110	250	9615500	50	0.99	38.07	35.00	3.87	21.75	4.72
19000/R		8874	1566	82	3	20	110	250	9615500	0	1.30	49.50	35.00	4.63	0.00	4.63
19500/L		2708	1071	94	3	9	110	250	9615500	35	1.46	45.85	35.00	4.64	15.23	5.24
20000/R		14613	1301	104	3	20	110	250	9615500	0	1.56	49.50	35.00	4.89	0.00	4.89
20500/L		6202	3989	85	3	20	110	250	9615500	0	1.35	49.50	35.00	4.67	0.00	4.67
21000/R		3507	2360	63	3	15	110	250	9615500	0	0.97	49.50	35.00	4.30	0.00	4.30
22000/R		6064	3109	100	3	20	110	250	9615500	0	1.52	49.50	35.00	4.85	0.00	4.85
22500/L		6186	1348	78	3	16	110	250	9615500	0	1.24	49.50	35.00	4.57	0.00	4.57
23000/R	*	2271	2703	110	3	20	110	250	9615500	0	1.62	42.40	35.00	4.67	0.00	4.67
23500/L		14189	841	82	3	20	110	250	9615500	0	1.30	49.50	35.00	4.63	0.00	4.63
24000/R		2468	2371	72	3	14	110	250	9615500	0	1.14	44.03	35.00	4.26	0.00	4.26
25000/R	*	5071	6036	257	3	20	110	250	9615500	0	2.14	49.50	35.00	5.47	0.00	5.47
25500/L	*	2868	3414	112	3	20	110	250	9615500	0	1.63	46.97	35.00	4.86	0.00	4.86
26000/R		4726	1637	240	2	20	110	250	9615500	0	2.12	49.50	35.00	5.45	0.00	5.45
26500/L		2552	1986	126	3	20	110	250	9615500	0	1.74	44.68	35.00	4.88	0.00	4.88
27000/R		4768	147	646	2	1	110	250	9615500	120	2.07	49.50	16.77	4.68	52.20	6.74
27500/L		3455	1187	221	2	20	110	250	9615500	0	2.09	49.50	35.00	5.42	0.00	5.42
28000/R		2205	398	263	2	1	110	250	9615500	90	2.15	41.82	35.00	5.17	39.15	6.71
28500/L		4159	299	441	2	1	110	250	9615500	90	2.18	49.50	31.75	5.38	39.15	6.92
29000/R		3717	380	244	2	2	110	250	9615500	70	2.12	49.50	35.00	5.45	30.45	6.65
29500/L		1307	2716	154	3	20	110	250	9615500	0	1.89	31.57	35.00	4.51	0.00	4.51
30000/R		3424	159	380	2	0	110	250	9615500	130	2.19	49.50	18.43	4.87	56.55	7.10
30500/L		3068	381	176	2	2	110	250	9615500	80	1.98	48.29	35.00	5.26	34.80	6.63
31000/R		5199	1877	192	3	20	110	250	9615500	0	2.02	49.50	35.00	5.35	0.00	5.35
31500/L		1896	221	176	2	0	110	250	9615500	125	1.98	38.86	25.38	4.51	54.38	6.65
32000/R		4652	1698	496	2	20	110	250	9615500	0	2.16	49.50	35.00	5.49	0.00	5.49
32500/L		827	855	327	2	4	110	250	9615500	60	2.19	22.60	35.00	4.45	26.10	5.48
33000/R		5286	519	288	2	5	110	250	9615500	30	2.17	49.50	35.00	5.50	13.05	6.01

33500/L		12510	1093	177	2	20	110	250	9615500	0	1.98	49.50	35.00	5.31	0.00	5.31
34000/R		2819	1558	354	2	20	110	250	9615500	0	2.19	46.63	35.00	5.41	0.00	5.41
34500/L	R *	2633	3134	323	3	20	110	250	9615500	0	2.18	45.30	35.00	5.35	0.00	5.35
35000/R		3130	510	226	2	3	110	250	9615500	60	2.10	48.69	35.00	5.39	26.10	6.42
35500/L		1696	525	155	2	2	110	250	9615500	80	1.89	36.67	35.00	4.72	34.80	6.09
36000/R		4494	598	143	2	7	110	250	9615500	30	1.84	49.50	35.00	5.17	13.05	5.68
36500/L		5553	1934	319	2	20	110	250	9615500	0	2.18	49.50	35.00	5.51	0.00	5.51
37000/R		5967	569	187	2	8	110	250	9615500	20	2.01	49.50	35.00	5.34	8.70	5.68
37500/L		3667	306	186	2	1	110	250	9615500	80	2.01	49.50	32.24	5.23	34.80	6.60
38000/R		6381	1768	164	3	20	110	250	9615500	0	1.93	49.50	35.00	5.26	0.00	5.26
38500/L		8895	263	358	2	4	110	250	9615500	50	2.19	49.50	29.05	5.29	21.75	6.14
39000/R		4283	148	322	2	0	110	250	9615500	125	2.18	49.50	16.92	4.80	54.38	6.94
39500/L		4041	333	154	2	2	110	250	9615500	70	1.89	49.50	34.03	5.18	30.45	6.38
40000/R		4402	267	216	2	1	110	250	9615500	90	2.08	49.50	29.37	5.19	39.15	6.73
40500/L		5746	424	219	2	4	110	250	9615500	50	2.08	49.50	35.00	5.41	21.75	6.27
41000/R		3697	283	192	2	1	110	250	9615500	100	2.02	49.50	30.59	5.18	43.50	6.89
41500/L		3635	219	189	2	1	110	250	9615500	110	2.01	49.50	25.18	4.96	47.85	6.84
42000/R		2551	250	167	2	1	110	250	9615500	110	1.94	44.68	27.98	4.81	47.85	6.69
42500/L		1618	182	155	2	0	110	250	9615500	150	1.89	35.75	21.28	4.14	65.26	6.71
43000/R		3029	346	89	2	2	110	250	9615500	100	1.40	48.04	34.83	4.66	43.50	6.38

ALYAT-GEORGIAN BORDER ROAD: BEARING CAPACITY RESULTS pr. POINT 1997																				
SECTION NO. 6 START OF GJANDZA BYPASS TO END OF GJANDZA BYPASS																				
chainage/lane	remarks	E1	E2	E subg.	Cr.layer	est.life	H1	H2	est.traffic	overlay	SNSG	a(l)*h(l)	a(l)*h(l)	SNC	A(l)*H(l)	SNC	before str.	A(l)*H(l)	SNC	after str.
[m]		[Mpa]	[Mpa]	[Mpa]		[Years]	[mm]	[mm]	[S. A.]	[mm]		[E1]	[E2]							
0/R	R	4077	125	77	2	0	80	250	9911400	175	1.23	39.18	13.35	3.30	76.13	6.30				
500/L		3371	642	74	3	2	80	250	9911400	115	1.18	36.46	35.00	3.99	50.03	5.97				
1000/R	R *	1132	1154	55	3	1	80	250	9911400	135	0.77	20.91	35.00	2.97	58.73	5.29				
1500/L	*	964	982	282	2	4	80	250	9911400	70	2.16	18.62	35.00	4.27	30.45	5.47				
2000/R		13426	385	190	2	3	80	250	9911400	50	2.02	49.50	35.00	5.35	21.75	6.20				
2500/L		4625	360	108	2	1	80	250	9911400	100	1.60	40.97	35.00	4.59	43.50	6.31				
3000/R		7215	549	217	2	3	80	250	9911400	55	2.08	47.31	35.00	5.32	23.93	6.27				
3500/L		11291	196	280	2	1	80	250	9911400	95	2.16	49.50	22.84	5.01	41.33	6.64				
4000/R		10052	76	442	2	0	80	250	9911400	165	2.18	49.50	2.85	4.24	71.78	7.07				
4500/L		11777	207	281	2	1	80	250	9911400	90	2.16	49.50	24.00	5.06	39.15	6.60				
5000/R		6925	86	478	2	0	80	250	9911400	180	2.17	46.73	5.46	4.22	78.31	7.31				
5500/L		4001	153	68	2	0	80	250	9911400	175	1.07	38.91	17.62	3.30	76.13	6.30				
6000/R		8185	167	323	2	0	80	250	9911400	120	2.18	49.11	19.46	4.89	52.20	6.94				
6500/L		10568	267	326	2	1	80	250	9911400	85	2.19	49.50	29.37	5.29	36.98	6.75				
7000/R	*	1111	1132	230	2	7	80	250	9911400	50	2.10	20.64	35.00	4.29	21.75	5.15				
7500/L	R	4621	389	460	2	1	80	250	9911400	95	2.17	40.96	35.00	5.17	41.33	6.79				
8000/R		9613	149	395	2	0	80	250	9911400	120	2.19	49.50	17.06	4.81	52.20	6.87				
8500/L		5269	92	95	2	0	80	250	9911400	185	1.47	42.83	6.88	3.43	80.48	6.60				
9000/R		11044	321	324	2	2	80	250	9911400	75	2.18	49.50	33.25	5.44	32.63	6.73				
9500/L		8455	91	217	2	0	80	250	9911400	165	2.08	49.50	6.65	4.29	71.78	7.12				
10000/R		9896	110	312	2	0	80	250	9911400	140	2.18	49.50	10.66	4.55	60.90	6.95				
10500/L		4014	174	86	2	0	80	250	9911400	150	1.36	38.95	20.33	3.69	65.26	6.27				
11000/R		4959	163	223	2	0	80	250	9911400	145	2.09	41.97	18.95	4.49	63.08	6.98				
11500/L		530	217	30	3	0	80	250	9911400	275	-0.27	10.09	24.99	1.11	119.63	5.82				
12000/R		9365	673	264	2	6	80	250	9911400	35	2.15	49.50	35.00	5.48	15.23	6.08				
12500/L		1069	1003	102	3	3	80	250	9911400	90	1.54	20.09	35.00	3.71	39.15	5.26				
13000/R		4684	322	110	2	1	80	250	9911400	105	1.62	41.15	33.32	4.55	45.68	6.35				
13500/L		3755	272	263	2	0	80	250	9911400	135	2.15	38.00	29.76	4.82	58.73	7.13				
14000/R		3226	300	183	2	0	80	250	9911400	125	2.00	35.84	31.82	4.66	54.38	6.81				

14500/L		4462	1037	183	2	9	80	250	9911400	25	2.00	40.46	35.00	4.97	10.88	5.40
15000/R		7528	267	235	2	1	80	250	9911400	105	2.11	47.92	29.37	5.16	45.68	6.96
15500/L	K	3490	82	122	2	0	80	250	9911400	210	1.71	36.96	4.46	3.34	91.36	6.94
16000/R		602	2252	166	3	18	80	250	9911400	0	1.94	11.91	35.00	3.79	0.00	3.79
16500/L		4382	243	152	2	0	80	250	9911400	130	1.88	40.20	27.38	4.54	56.55	6.77
17000/R	*	774	789	597	2	2	80	250	9911400	95	2.10	15.49	35.00	4.09	41.33	5.72
17500/L		876	1486	488	2	15	80	250	9911400	0	2.16	17.25	35.00	4.22	0.00	4.22
18000/R		1839	102	86	1	0	80	250	9911400	210	1.36	27.83	9.06	2.81	91.36	6.41
18500/L		9708	195	306	2	1	80	250	9911400	105	2.18	49.50	22.74	5.02	45.68	6.82
19000/R		4817	475	115	2	1	80	250	9911400	80	1.66	41.55	35.00	4.67	34.80	6.04
19500/L	*	691	691	400	2	1	80	250	9911400	105	2.19	13.87	35.00	4.11	45.68	5.91
20000/R		4061	20	285	2	0	80	250	9911400	300	2.16	39.12	-25.32	2.71	130.51	7.85
20500/L		5362	72	316	2	0	80	250	9911400	205	2.18	43.08	1.71	3.95	89.18	7.46
21000/R		11208	126	164	2	0	80	250	9911400	120	1.93	49.50	13.52	4.42	52.20	6.47
21500/L	R	9148	297	174	2	1	80	250	9911400	90	1.97	49.50	31.61	5.16	39.15	6.71
22000/R		4598	69	239	2	0	80	250	9911400	210	2.12	40.89	0.81	3.76	91.36	7.36
22500/L		5967	92	266	2	0	80	250	9911400	180	2.15	44.61	6.88	4.18	78.31	7.26
23000/R	*	1662	1662	156	3	15	80	250	9911400	0	1.90	26.38	35.00	4.32	0.00	4.32
23500/L		10013	176	200	2	1	80	250	9911400	110	2.04	49.50	20.57	4.80	47.85	6.69
24000/R		6017	157	152	2	0	80	250	9911400	140	1.88	44.72	18.16	4.36	60.90	6.76
24500/L		6931	104	194	2	0	80	250	9911400	165	2.03	46.74	9.47	4.24	71.78	7.07
25000/R		7003	115	256	2	0	80	250	9911400	155	2.14	46.89	11.59	4.44	67.43	7.10
25500/L		13700	114	263	2	0	80	250	9911400	115	2.15	49.50	11.41	4.55	50.03	6.52
26000/R		11573	59	241	2	0	80	250	9911400	175	2.12	49.50	-2.49	3.97	76.13	6.97
26500/L		8190	76	242	2	0	80	250	9911400	180	2.12	49.12	2.85	4.17	78.31	7.25
27000/R		11552	314	226	2	2	80	250	9911400	70	2.10	49.50	32.79	5.34	30.45	6.54
27500/L		6861	359	139	2	1	80	250	9911400	90	1.82	46.60	35.00	5.03	39.15	6.57
28000/R	*	790	790	164	2	2	80	250	9911400	95	1.93	15.78	35.00	3.93	41.33	5.56
28500/L	R	8480	201	198	2	0	80	250	9911400	110	2.04	49.50	23.37	4.91	47.85	6.79
29000/R	*	598	598	222	2	1	80	250	9911400	115	2.09	11.81	35.00	3.93	50.03	5.90
29500/L	R	6551	115	177	2	0	80	250	9911400	160	1.98	45.94	11.59	4.24	69.61	6.99
30000/R		10295	175	211	2	1	80	250	9911400	105	2.07	49.50	20.45	4.82	45.68	6.62
30500/L		9576	183	146	2	0	80	250	9911400	110	1.85	49.50	21.40	4.65	47.85	6.53
31000/R	*	1020	1020	138	3	5	80	250	9911400	65	1.81	19.42	35.00	3.95	28.28	5.07
31500/L	*	859	859	107	3	2	80	250	9911400	95	1.59	16.97	35.00	3.64	41.33	5.27
32000/R	*	1170	1170	129	3	5	80	250	9911400	55	1.76	21.38	35.00	3.98	23.93	4.92

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32500/L	R	5388	425	106	2	1	80	250	9911400	85	1.58	43.15	35.00	4.66	36.98	6.12
33000/R		4703	142	118	2	0	80	250	9911400	160	1.68	41.21	16.04	3.94	69.61	6.68
33500/L		7132	156	138	2	0	80	250	9911400	135	1.81	47.15	18.03	4.38	58.73	6.69
34000/R		3609	239	124	2	0	80	250	9911400	140	1.72	37.44	27.03	4.26	60.90	6.66
34500/L		9016	65	208	2	0	80	250	9911400	185	2.06	49.50	-0.45	3.99	80.48	7.16
35000/R		7071	83	145	2	0	80	250	9911400	180	1.85	47.03	4.71	3.89	78.31	6.97

ALYAT-GEORGIAN BORDER ROAD: BEARING CAPACITY RESULTS pr. POINT 1997																	
SECTION NO. 7 END OF GJANDZA BYPASS TO AKSTAFI																	
chainage/lane	remarks	E1	E2	E subg.	Cr.layer	est.life	H1	H2	est.traffic	overlay	SNSG	a(l)*h(l)	a(l)*h(l)	SNC	A(l)*H(l)	SNC	after str.
[m]		[Mpa]	[Mpa]	[Mpa]		[Years]	[mm]	[mm]	[S. A.]	[mm]		[E1]	[E2]	before str.	str. layer		
0/R		14669	2085	104	3	20	80	250	9166200	0	1.56	49.50	35.00	4.89	0.00	4.89	
1000/R		906	3295	152	3	20	80	250	9166200	0	1.88	17.73	35.00	3.96	0.00	3.96	
2000/R		7042	340	233	2	1	80	250	9166200	90	2.11	46.97	34.47	5.32	39.15	6.86	
3000/R	*	987	1025	371	2	6	80	250	9166200	60	2.19	18.95	35.00	4.32	26.10	5.35	
3500/L		12450	69	208	2	0	80	250	9166200	155	2.06	49.50	0.81	4.04	67.43	6.70	
4000/R	*	2277	2366	191	3	20	80	250	9166200	0	2.02	30.87	35.00	4.62	0.00	4.62	
4500/L	*	593	871	174	2	3	80	250	9166200	85	1.97	11.69	35.00	3.81	36.98	5.26	
5000/R		4198	243	456	2	0	80	250	9166200	130	2.17	39.59	27.38	4.81	56.55	7.04	
5500/L	*	556	817	211	2	3	80	250	9166200	90	2.07	10.77	35.00	3.87	39.15	5.41	
6000/R		2433	626	99	2	2	80	250	9166200	95	1.51	31.82	35.00	4.14	41.33	5.77	
6500/L		12209	164	361	2	1	80	250	9166200	95	2.19	49.50	19.08	4.89	41.33	6.52	
7000/R		6667	518	113	2	3	80	250	9166200	60	1.64	46.19	35.00	4.84	26.10	5.87	
7500/L	*	923	1356	163	3	10	80	250	9166200	20	1.93	18.00	35.00	4.02	8.70	4.36	
8000/R	*	780	810	98	3	2	80	250	9166200	105	1.50	15.60	35.00	3.49	45.68	5.29	
8500/L	*	325	478	242	2	0	80	250	9166200	130	2.12	3.12	35.00	3.62	56.55	5.85	
9000/R		686	2129	100	3	7	80	250	9166200	35	1.52	13.77	35.00	3.44	15.23	4.04	
9500/L		3467	1139	127	3	10	80	250	9166200	25	1.74	36.87	35.00	4.58	10.88	5.00	
10000/R		5703	1417	168	2	20	80	250	9166200	0	1.95	43.96	35.00	5.06	0.00	5.06	
10500/L	*	601	883	275	2	3	80	250	9166200	85	2.16	11.88	35.00	4.00	36.98	5.46	
11000/R		9833	1735	163	3	20	80	250	9166200	0	1.93	49.50	35.00	5.26	0.00	5.26	
11500/L	*	1138	1673	163	3	15	80	250	9166200	0	1.93	20.98	35.00	4.13	0.00	4.13	
12000/R		4183	323	113	2	1	80	250	9166200	110	1.64	39.54	33.38	4.51	47.85	6.40	
12500/L		11649	525	111	2	5	80	250	9166200	40	1.62	49.50	35.00	4.95	17.40	5.64	
13000/R		12545	905	91	3	11	80	250	9166200	15	1.42	49.50	35.00	4.75	6.53	5.01	
13500/L		11707	1069	146	2	20	80	250	9166200	0	1.85	49.50	35.00	5.18	0.00	5.18	
14000/R		13786	972	88	3	13	80	250	9166200	10	1.38	49.50	35.00	4.71	4.35	4.89	
14500/L	*	2244	3298	192	3	20	80	250	9166200	0	2.02	30.66	35.00	4.61	0.00	4.61	
15000/R		1553	1273	67	3	2	80	250	9166200	105	1.05	25.42	35.00	3.43	45.68	5.23	
15500/L	*	1068	1570	249	2	20	80	250	9166200	0	2.13	20.08	35.00	4.30	0.00	4.30	

16000/R	*	1312	1363	110	3	6	80	250	9166200	55	1.62	23.01	35.00	3.90	23.93	4.84
17000/R		4466	127	141	2	0	80	250	9166200	165	1.83	40.47	13.69	3.96	71.78	6.79
17500/L	*	608	894	76	3	1	80	250	9166200	120	1.21	12.05	35.00	3.07	52.20	5.12
18000/R		885	921	169	2	4	80	250	9166200	75	1.95	17.40	35.00	4.02	32.63	5.30
18500/L	*	1659	2438	99	3	14	80	250	9166200	10	1.51	26.36	35.00	3.93	4.35	4.10
19000/R	*	415	432	95	2	0	80	250	9166200	145	1.47	6.60	35.00	3.11	63.08	5.59
19500/L	R *	1489	2188	103	3	11	80	250	9166200	15	1.55	24.82	35.00	3.91	6.53	4.17
20000/R	*	1607	1669	101	3	8	80	250	9166200	40	1.53	25.90	35.00	3.93	17.40	4.62
20500/L		5470	2226	151	3	20	80	250	9166200	0	1.88	43.37	35.00	4.96	0.00	4.96
21000/R	*	522	542	79	3	1	80	250	9166200	145	1.26	9.87	35.00	3.03	63.08	5.51
22000/R	*	1531	1591	122	3	9	80	250	9166200	25	1.71	25.21	35.00	4.08	10.88	4.51
22500/L	*	1092	1605	89	3	5	80	250	9166200	65	1.40	20.40	35.00	3.58	28.28	4.69
23500/L	*	1921	2823	191	3	20	80	250	9166200	0	2.02	28.45	35.00	4.52	0.00	4.52
24000/R		3927	354	49	3	0	80	250	9166200	170	0.59	38.64	35.00	3.50	73.96	6.41
24500/L	*	1815	2668	75	3	10	80	250	9166200	30	1.20	27.64	35.00	3.66	13.05	4.18
25000/R	*	736	765	102	3	2	80	250	9166200	105	1.54	14.77	35.00	3.50	45.68	5.30
25500/L	*	1600	2352	129	3	20	80	250	9166200	0	1.76	25.84	35.00	4.15	0.00	4.15
26000/R	*	1034	1075	76	3	2	80	250	9166200	105	1.21	19.62	35.00	3.36	45.68	5.16
26500/L		4604	299	157	2	1	80	250	9166200	115	1.90	40.91	31.75	4.77	50.03	6.74
27000/R	*	1208	1256	92	3	3	80	250	9166200	75	1.43	21.83	35.00	3.67	32.63	4.96
27500/L	*	2261	3323	125	3	20	80	250	9166200	0	1.73	30.77	35.00	4.32	0.00	4.32
28000/R		6459	494	86	2	2	80	250	9166200	85	1.36	45.74	35.00	4.54	36.98	6.00
28500/L		14069	726	157	2	12	80	250	9166200	10	1.90	49.50	35.00	5.23	4.35	5.40
29000/R	*	508	528	157	2	1	80	250	9166200	120	1.90	9.49	35.00	3.66	52.20	5.71
29500/L	*	2248	3305	207	3	20	80	250	9166200	0	2.06	30.69	35.00	4.65	0.00	4.65
30000/R		7741	573	101	2	4	80	250	9166200	50	1.53	48.32	35.00	4.81	21.75	5.67
30500/L	*	1951	2867	87	3	15	80	250	9166200	0	1.37	28.67	35.00	3.88	0.00	3.88
31000/R	*	1065	1107	82	3	2	80	250	9166200	100	1.30	20.04	35.00	3.47	43.50	5.19
31500/L		9622	608	70	3	3	80	250	9166200	70	1.11	49.50	35.00	4.44	30.45	5.64
32000/R		5212	1955	65	3	8	80	250	9166200	30	1.01	42.68	35.00	4.07	13.05	4.58
32500/L		3836	1641	55	3	4	80	250	9166200	75	0.77	38.31	35.00	3.66	32.63	4.94
33000/R	*	978	1016	88	3	2	80	250	9166200	100	1.38	18.82	35.00	3.51	43.50	5.22
33500/L	K-R	11624	1025	82	3	10	80	250	9166200	20	1.30	49.50	35.00	4.63	8.70	4.98
34000/R	*	2887	3000	129	3	20	80	250	9166200	0	1.76	34.26	35.00	4.49	0.00	4.49
34500/L		162	14204	70	3	20	80	250	9166200	0	1.11	-6.81	35.00	2.22	0.00	2.22
35000/R		1305	1611	85	3	5	80	250	9166200	65	1.35	22.94	35.00	3.63	28.28	4.74

35500/L	*	1556	2287	130	3	19	80	250	9166200	0	1.76	25.44	35.00	4.14	0.00	4.14
36000/R	*	822	854	66	3	1	80	250	9166200	135	1.03	16.35	35.00	3.05	58.73	5.37
36500/L	*	935	1375	275	2	13	80	250	9166200	15	2.16	18.18	35.00	4.25	6.53	4.51
37000/R		11046	316	116	2	2	80	250	9166200	70	1.66	49.50	32.92	4.91	30.45	6.11
37500/L	*	1074	1578	130	3	9	80	250	9166200	30	1.76	20.16	35.00	3.94	13.05	4.45
38000/R	*	1291	1341	83	3	3	80	250	9166200	80	1.32	22.78	35.00	3.59	34.80	4.97
38500/L	*	676	994	163	2	5	80	250	9166200	70	1.93	13.56	35.00	3.84	30.45	5.04
39000/R		5716	974	195	2	10	80	250	9166200	25	2.03	43.99	35.00	5.14	10.88	5.57
39500/L		183	13424	91	3	20	80	250	9166200	0	1.42	-5.07	35.00	2.60	0.00	2.60
40000/R		6779	211	93	2	0	80	250	9166200	120	1.45	46.42	24.40	4.24	52.20	6.29
40500/L		8224	2338	132	3	20	80	250	9166200	0	1.78	49.18	35.00	5.09	0.00	5.09
41000/R		818	2030	70	3	4	80	250	9166200	70	1.11	16.28	35.00	3.13	30.45	4.33
42000/R		4343	1085	68	3	4	80	250	9166200	80	1.07	40.08	35.00	4.03	34.80	5.40
42500/L		437	9706	83	3	20	80	250	9166200	0	1.32	7.34	35.00	2.99	0.00	2.99
43000/R		1271	745	90	3	2	80	250	9166200	110	1.41	22.56	35.00	3.68	47.85	5.56
43500/L		905	239	56	2	0	80	250	9166200	205	0.80	17.72	27.03	2.56	89.18	6.07
44000/R	*	4137	4298	132	3	20	80	250	9166200	0	1.78	39.38	35.00	4.71	0.00	4.71
44500/L		2807	1242	98	3	6	80	250	9166200	50	1.50	33.85	35.00	4.21	21.75	5.07
45000/R		4560	399	56	3	1	80	250	9166200	150	0.80	40.77	35.00	3.78	65.26	6.35
46000/R		1255	1757	61	3	3	80	250	9166200	95	0.92	22.38	35.00	3.18	41.33	4.81
46500/L		140	4517	69	3	10	80	250	9166200	20	1.09	-8.89	35.00	2.12	8.70	2.46
47000/R	*	3721	3866	112	3	20	80	250	9166200	0	1.63	37.87	35.00	4.50	0.00	4.50
48000/R		7855	744	74	3	4	80	250	9166200	65	1.18	48.52	35.00	4.47	28.28	5.58
48500/L	*	634	931	161	2	4	80	250	9166200	75	1.92	12.64	35.00	3.80	32.63	5.08
49000/R	*	5504	169	152	2	0	80	250	9166200	140	1.88	43.45	19.72	4.37	60.90	6.77
49500/L		1588	2334	105	3	14	80	250	9166200	10	1.57	25.73	35.00	3.96	4.35	4.14
50000/R		12226	627	78	3	6	80	250	9166200	45	1.24	49.50	35.00	4.57	19.58	5.34
50500/L	*	2238	3289	131	3	20	80	250	9166200	0	1.77	30.63	35.00	4.36	0.00	4.36
51000/R	*	2468	3039	146	3	20	80	250	9166200	0	1.85	32.02	35.00	4.49	0.00	4.49
51500/L	*	1959	2879	93	3	17	80	250	9166200	0	1.45	28.73	35.00	3.96	0.00	3.96
52000/R	*	514	633	101	3	1	80	250	9166200	115	1.53	9.65	35.00	3.29	50.03	5.26
53000/R		3849	1402	131	3	15	80	250	9166200	0	1.77	38.36	35.00	4.66	0.00	4.66
53500/L	*	3085	4535	134	3	20	80	250	9166200	0	1.79	35.20	35.00	4.55	0.00	4.55
54000/R	*	1632	2010	104	3	10	80	250	9166200	25	1.56	26.12	35.00	3.97	10.88	4.40
54500/L	*	1734	2548	149	3	20	80	250	9166200	0	1.87	26.99	35.00	4.31	0.00	4.31
55000/R		3009	365	223	2	1	80	250	9166200	110	2.09	34.85	35.00	4.84	47.85	6.73

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75000/R	*	372	458	112	2	0	80	250	9166200	130	1.63	5.04	35.00	3.21	56.55	5.44
75500/L		5196	240	114	2	0	80	250	9166200	125	1.65	42.63	27.12	4.40	54.38	6.54
76000/R	R *	1432	1764	102	3	8	80	250	9166200	40	1.54	24.26	35.00	3.88	17.40	4.56
76500/L		13732	205	99	2	1	80	250	9166200	80	1.51	49.50	23.79	4.40	34.80	5.77
77000/R	*	355	438	70	3	0	80	250	9166200	165	1.11	4.38	35.00	2.66	71.78	5.49
77500/L		12179	21	71	2	0	80	250	9166200	265	1.13	49.50	-24.29	2.12	115.28	6.66
78000/R	*	1817	2238	114	3	16	80	250	9166200	0	1.65	27.65	35.00	4.12	0.00	4.12
78500/L	*	1294	1557	142	3	11	80	250	9166200	15	1.83	22.82	35.00	4.11	6.53	4.37
79000/R		7078	1713	86	3	14	80	250	9166200	5	1.36	47.04	35.00	4.59	2.18	4.68
80000/R		760	31	99	1	0	80	250	9166200	300	1.51	15.23	-16.07	1.48	130.51	6.62
79500/L	*	1444	1738	74	3	5	80	250	9166200	70	1.18	24.38	35.00	3.52	30.45	4.72

ALYAT-GEORGIAN BORDER ROAD: BEARING CAPACITY RESULTS pr. POINT 1997																
SECTION NO. 8 AKSTAF TO THE GEORGIAN BORDER																
chainage/lane	remarks	E1	E2	E subg. [Mpa]	Cr. layer	est. life [Years]	H1 [mm]	H2 [mm]	est. traffic [S. A.]	overlay [mm]	SNSG	a(l)*h(l) [E1]	a(l)*h(l) [E2]	SNC before str.	A(l)*H(l) after str.	
500/L	*	407	502	80	3	0	80	250	8944300	150	1.27	6.33	35.00	2.90	65.26	5.47
1000/R	*	509	815	105	3	2	80	250	8944300	105	1.57	9.51	35.00	3.32	45.68	5.12
1500/L		6782	391	137	2	1	80	250	8944300	85	1.80	46.43	35.00	5.01	36.98	6.47
2000/R		580	4582	193	3	20	80	250	8944300	0	2.03	11.38	35.00	3.85	0.00	3.85
2500/L		13597	722	77	3	7	80	250	8944300	35	1.23	49.50	35.00	4.56	15.23	5.16
3000/R	*	992	1590	106	3	6	80	250	8944300	45	1.58	19.03	35.00	3.71	19.58	4.48
3500/L	*	700	862	73	3	1	80	250	8944300	125	1.16	14.06	35.00	3.09	54.38	5.24
4000/R	*	1698	2722	96	3	16	80	250	8944300	0	1.48	26.69	35.00	3.91	0.00	3.91
4500/L	*	751	925	100	3	2	80	250	8944300	95	1.52	15.06	35.00	3.49	41.33	5.12
5000/R		12025	3485	209	3	20	80	250	8944300	0	2.06	49.50	35.00	5.39	0.00	5.39
5500/L	*	1273	1568	112	3	8	80	250	8944300	40	1.63	22.58	35.00	3.90	17.40	4.59
6000/R	*	182	292	187	2	0	80	250	8944300	155	2.01	-5.15	31.25	3.04	67.43	5.69
6500/L	*	883	1087	69	3	2	80	250	8944300	115	1.09	17.37	35.00	3.15	50.03	5.12
7000/R		3203	679	188	2	3	80	250	8944300	70	2.01	35.74	35.00	4.80	30.45	6.00
7500/L	*	610	751	115	3	2	80	250	8944300	95	1.66	12.09	35.00	3.51	41.33	5.14
8000/R		9780	463	82	2	3	80	250	8944300	70	1.30	49.50	35.00	4.63	30.45	5.83
8500/L		13710	319	73	2	2	80	250	8944300	70	1.16	49.50	33.12	4.42	30.45	5.62
9000/R		7521	682	64	3	3	80	250	8944300	85	0.99	47.91	35.00	4.25	36.98	5.71
9500/L	*	1593	1962	139	3	17	80	250	8944300	0	1.82	25.78	35.00	4.21	0.00	4.21
10000/R		5557	596	144	2	3	80	250	8944300	55	1.84	43.59	35.00	4.94	23.93	5.88
10500/L	*	852	1050	173	2	6	80	250	8944300	60	1.96	16.86	35.00	4.01	26.10	5.04
11000/R		7651	186	109	2	0	80	250	8944300	115	1.61	48.15	21.74	4.36	50.03	6.33
11500/L		14772	1136	142	2	20	80	250	8944300	0	1.83	49.50	35.00	5.16	0.00	5.16
12000/R	*	1822	2920	171	3	20	80	250	8944300	0	1.96	27.69	35.00	4.43	0.00	4.43
12500/L		5365	299	46	3	0	80	250	8944300	165	0.49	43.09	31.75	3.44	71.78	6.27
13000/R	*	967	1550	98	3	5	80	250	8944300	60	1.50	18.66	35.00	3.62	26.10	4.64
13500/L	*	520	640	186	2	1	80	250	8944300	110	2.01	9.82	35.00	3.77	47.85	5.66
14000/R	*	607	972	181	2	4	80	250	8944300	70	1.99	12.02	35.00	3.84	30.45	5.04
14500/L	*	780	960	175	2	4	80	250	8944300	70	1.97	15.60	35.00	3.97	30.45	5.17

15000/R	*	747	1196	231	2	9	80	250	8944300	40	2.10	14.98	35.00	4.07	17.40	4.76
15500/L	*	528	650	127	2	1	80	250	8944300	110	1.74	10.04	35.00	3.52	47.85	5.40
16000/R		592	2144	247	3	20	80	250	8944300	0	2.13	11.67	35.00	3.97	0.00	3.97
16500/L	*	872	1074	192	2	6	80	250	8944300	55	2.02	17.19	35.00	4.08	23.93	5.02
17000/R		6505	466	188	2	2	80	250	8944300	65	2.01	45.84	35.00	5.20	28.28	6.31
17500/L		10893	307	93	2	2	80	250	8944300	70	1.45	49.50	32.31	4.67	30.45	5.87
18500/L		8366	248	88	2	1	80	250	8944300	95	1.38	49.42	27.81	4.43	41.33	6.06
19000/R	*	714	1144	105	3	3	80	250	8944300	75	1.57	14.34	35.00	3.51	32.63	4.80
19500/L	*	1093	1346	148	3	9	80	250	8944300	25	1.86	20.41	35.00	4.05	10.88	4.47
20000/R	*	387	620	92	3	1	80	250	8944300	130	1.43	5.61	35.00	3.03	56.55	5.26
20500/L	*	1806	2224	202	3	20	80	250	8944300	0	2.05	27.57	35.00	4.51	0.00	4.51
21000/R	*	498	799	99	3	1	80	250	8944300	105	1.51	9.20	35.00	3.25	45.68	5.05
21500/L		1926	50	36	1	0	80	250	8944300	275	0.07	28.48	-5.98	0.96	119.63	5.67
22000/R		7677	1518	140	3	20	80	250	8944300	0	1.82	48.20	35.00	5.10	0.00	5.10
22500/L	*	259	319	96	2	0	80	250	8944300	150	1.48	-0.12	33.12	2.78	65.26	5.35
23000/R	*	654	1048	165	2	6	80	250	8944300	60	1.94	13.09	35.00	3.83	26.10	4.86
23500/L	*	1402	1727	170	3	19	80	250	8944300	0	1.95	23.96	35.00	4.28	0.00	4.28
24000/R	*	1558	2496	109	3	16	80	250	8944300	0	1.61	25.46	35.00	3.99	0.00	3.99
24500/L	*	2682	3303	192	3	20	80	250	8944300	0	2.02	33.21	35.00	4.71	0.00	4.71
25000/R		13890	842	109	3	15	80	250	8944300	0	1.61	49.50	35.00	4.94	0.00	4.94
25500/L		6366	199	93	2	0	80	250	8944300	125	1.45	45.53	23.16	4.15	54.38	6.29
26000/R		891	1299	360	2	11	80	250	8944300	25	2.19	17.50	35.00	4.26	10.88	4.69
26500/L		8548	343	213	2	1	80	250	8944300	80	2.07	49.50	34.65	5.39	34.80	6.76
27000/R		10269	813	165	2	11	80	250	8944300	15	1.94	49.50	35.00	5.27	6.53	5.52
27500/L	*	681	839	175	2	3	80	250	8944300	85	1.97	13.66	35.00	3.89	36.98	5.35
28000/R	*	412	661	114	2	1	80	250	8944300	110	1.65	6.50	35.00	3.28	47.85	5.17
28500/L		9999	526	104	2	4	80	250	8944300	45	1.56	49.50	35.00	4.89	19.58	5.66
29000/R		4800	558	125	2	2	80	250	8944300	70	1.73	41.50	35.00	4.74	30.45	5.94
29500/L	*	658	811	78	3	1	80	250	8944300	125	1.24	13.17	35.00	3.14	54.38	5.28
30000/R	*	418	671	263	2	1	80	250	8944300	110	2.15	6.71	35.00	3.79	47.85	5.67
30500/L	*	843	1039	103	3	3	80	250	8944300	85	1.55	16.71	35.00	3.59	36.98	5.05
31000/R		8842	78	90	2	0	80	250	8944300	170	1.41	49.50	3.40	3.49	73.96	6.41
31500/L	*	915	1127	141	3	6	80	250	8944300	50	1.83	17.87	35.00	3.91	21.75	4.77
32000/R	*	614	927	154	2	4	80	250	8944300	75	1.89	12.19	35.00	3.75	32.63	5.04
32500/L		6529	1358	103	3	13	80	250	8944300	10	1.55	45.89	35.00	4.74	4.35	4.91
33000/R		5558	681	132	2	4	80	250	8944300	45	1.78	43.59	35.00	4.87	19.58	5.64

33500/L	*	1353	1666	150	3	14	80	250	8944300	5	1.87	23.45	35.00	4.18	2.18	4.26
34000/R	*	857	1295	144	3	8	80	250	8944300	35	1.84	16.94	35.00	3.89	15.23	4.49
34500/L	*	308	10893	140	3	20	80	250	8944300	0	1.82	2.35	35.00	3.29	0.00	3.29
35000/R	*	1724	2606	208	3	20	80	250	8944300	0	2.06	26.91	35.00	4.50	0.00	4.50
35500/L	*	3177	3912	132	3	20	80	250	8944300	0	1.78	35.62	35.00	4.56	0.00	4.56
36000/R	*	2384	3603	89	3	20	80	250	8944300	0	1.40	31.53	35.00	4.02	0.00	4.02
36500/L	*	1143	1408	62	3	2	80	250	8944300	105	0.94	21.05	35.00	3.15	45.68	4.95
37000/R		7763	1535	141	3	20	80	250	8944300	0	1.83	48.36	35.00	5.11	0.00	5.11
37500/L		3970	421	68	2	1	80	250	8944300	130	1.07	38.80	35.00	3.98	56.55	6.21
38000/R	*	1230	1859	111	3	9	80	250	8944300	30	1.62	22.09	35.00	3.87	13.05	4.39
38500/L	*	5015	6176	234	3	20	80	250	8944300	0	2.11	42.13	35.00	5.15	0.00	5.15
39000/R		2781	89	116	1	0	80	250	8944300	205	1.66	33.72	6.19	3.24	89.18	6.75
39500/L		7832	358	100	2	1	80	250	8944300	80	1.52	48.48	35.00	4.81	34.80	6.18
40000/R		7800	636	90	2	5	80	250	8944300	55	1.41	48.42	35.00	4.70	23.93	5.64
40500/L	*	1365	1681	226	3	20	80	250	8944300	0	2.10	23.58	35.00	4.40	0.00	4.40
41000/R	*	864	1306	80	3	3	80	250	8944300	90	1.27	17.06	35.00	3.33	39.15	4.87
41500/L		6338	1006	162	2	12	80	250	8944300	15	1.92	45.47	35.00	5.09	6.53	5.35
42000/R	*	1349	2040	160	3	20	80	250	8944300	0	1.92	23.41	35.00	4.22	0.00	4.22
42500/L	*	593	730	79	3	1	80	250	8944300	130	1.26	11.69	35.00	3.10	56.55	5.33
43500/L	*	1005	1237	78	3	3	80	250	8944300	95	1.24	19.21	35.00	3.38	41.33	5.01
44000/R		14359	769	184	2	14	80	250	8944300	5	2.00	49.50	35.00	5.33	2.18	5.42
44500/L	*	826	1017	254	2	5	80	250	8944300	65	2.14	16.42	35.00	4.16	28.28	5.28
45000/R	*	2260	3417	482	3	20	80	250	8944300	0	2.16	30.76	35.00	4.76	0.00	4.76
46000/R		8077	578	294	2	4	80	250	8944300	50	2.17	48.92	35.00	5.48	21.75	6.33

ROAD EVALUATION REPORT

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Client: TACIS

Sec. no.: 0001

Link no.: 37.001

A/S PHØNIX

P. P. C

Design date: 10-30-1997

Link ref.: M4

Mea. date: 970416 2

Start at: ALYAT

Surface: ASF

Calculation parameters:

Load radius 150 mm
 Contact pressure 0.70 MPa
 Poisson's ratio 0.35
 Annual traf. growth .01 %
 Design temperature 30 C
 Design period 15 years
 S. kor. factor 1.00

Signature index:

B=Block cracking R=Rutting
 A=Alligator cracking O=No remarks
 C=other cracking S=Surface defect
 P=Potholes H=Future design
 D=Deformation X=Local def. only
 Y=General defect Z=Reconstruction area
 T=Temperature taken

* - after remarks indicates that the point has been calculated as a 2-layer system and that the thickness and E-values of 1st and 2nd layer are the same when calculating the new overlay needed in the actual point, the calculation is done for a 3-layer system

E-value of new asphalt layer < 100 mm MPa: 2000

E-value of new asphalt layer > 100 mm MPa: 3000

Point	Remarks	E1 MPa	E2 Mpa	E3 MPa	Esub MPa	Critical layer	Estimated life years	Ex. layer			Estimated traffic 8.16 t	New overlay mm
								H1 mm	H2 mm	H3 mm		
0/R	*	4534	4903	0	245	3	20	110	250	0	11848200	0
500/L		2371	177	0	66	1	0	110	250	0	11848200	170
1000/R	*	6767	7317	0	353	3	20	110	250	0	11848200	0
1500/L		10421	171	0	114	2	2	110	250	0	11848200	70
2000/		1974	1514	0	119	3	13	110	250	0	11848200	10
2500/L		7218	604	0	66	3	5	110	250	0	11848200	60
3000/R		10150	634	0	91	3	12	110	250	0	11848200	10
3500/L	K *	1371	1728	0	133	3	15	110	250	0	11848200	0
4000/R		7786	644	0	109	2	11	110	250	0	11848200	15
4500/L		5741	512	0	76	3	4	110	250	0	11848200	75
5000/R	*	3605	3898	0	198	3	20	110	250	0	11848200	0
5500/L		2352	783	0	84	3	3	110	250	0	11848200	85
6000/R		5946	237	0	97	2	1	110	250	0	11848200	90
6500/L	K *	2354	2968	0	100	3	20	110	250	0	11848200	0
7000/R		5124	77	0	91	2	0	110	250	0	11848200	170
7500/L		7685	1590	0	114	3	20	110	250	0	11848200	0
8000/R	*	4158	4496	0	224	3	20	110	250	0	11848200	0
8500/L		11771	653	0	93	3	15	110	250	0	11848200	0
9000/R	*	1447	1564	0	86	3	6	110	250	0	11848200	50
9500/L		9505	2985	0	166	3	20	110	250	0	11848200	0
10000/R	*	4016	4342	0	190	3	20	110	250	0	11848200	0
10500/L	*	2355	2969	0	123	3	20	110	250	0	11848200	0
11000/R		11189	846	0	103	3	20	110	250	0	11848200	0
11500/L	*	2380	3000	0	158	3	20	110	250	0	11848200	0
12000/R	*	3406	3683	0	177	3	20	110	250	0	11848200	0
12500/L		11772	862	0	116	3	20	110	250	0	11848200	0

Point	Remarks	E1	E2	E3	Esub	Critical layer	Estimated life years	Ex.layer			Estimated traffic 8.16 t	New overlay mm
		MPa	Mpa	MPa	MPa			H1 mm	H2 mm	H3 mm		
13000/R	*	3182	3441	0	147	3	20	110	250	0	11848200	0
13500/L	*	4603	4518	0	189	3	20	110	250	0	11848200	0
14000/R	*	3209	3470	0	145	3	20	110	250	0	11848200	0
14500/L	*	3358	3296	0	162	3	20	110	250	0	11848200	0
15000/R	*	2665	2882	0	106	3	20	110	250	0	11848200	0
15500/L	*	5052	4959	0	264	3	20	110	250	0	11848200	0
16000/R	*	2113	2285	0	72	3	10	110	250	0	11848200	20
16500/L		9751	243	0	55	3	2	110	250	0	11848200	100
17000/R		1036	427	0	66	3	1	110	250	0	11848200	155
17500/L		14735	980	0	94	3	20	110	250	0	11848200	0
18000/R	*	2774	3000	0	103	3	20	110	250	0	11848200	0
18500/L		12202	538	0	107	2	15	110	250	0	11848200	0
19000/R		14789	1115	0	97	3	20	110	250	0	11848200	0
19500/L	*	2371	2327	0	102	3	20	110	250	0	11848200	0
20000/R	*	4833	5226	0	174	3	20	110	250	0	11848200	0
20500/L	*	2593	2545	0	83	3	17	110	250	0	11848200	0
21000/R	*	2851	3083	0	145	3	20	110	250	0	11848200	0
21500/L	*	1958	1921	0	109	3	15	110	250	0	11848200	0
22000/R		14048	1092	0	102	3	20	110	250	0	11848200	0
22500/L		12002	915	0	94	3	20	110	250	0	11848200	0
23000/R	*	3666	3965	0	135	3	20	110	250	0	11848200	0
23500/L	*	3779	3709	0	120	3	20	110	250	0	11848200	0
24000/R		11687	792	0	115	3	20	110	250	0	11848200	0
24500/L		14158	3582	0	127	3	20	110	250	0	11848200	0
25000/R	*	4749	5135	0	185	3	20	110	250	0	11848200	0
25500/L	*	3300	3239	0	123	3	20	110	250	0	11848200	0
26000/R	*	5988	6475	0	206	3	20	110	250	0	11848200	0
26500/L	*	2089	2050	0	89	3	12	110	250	0	11848200	10
27000/R		10867	1099	0	96	3	20	110	250	0	11848200	0
27500/L		6002	775	0	91	3	9	110	250	0	11848200	30
28000/R	*	4412	4770	0	178	3	20	110	250	0	11848200	0
28500/L		2287	639	0	95	3	3	110	250	0	11848200	85
29000/R		4344	2141	0	119	3	20	110	250	0	11848200	0
29500/L		2211	2216	0	151	3	20	110	250	0	11848200	0
30000/R	*	5428	5869	0	187	3	20	110	250	0	11848200	0
30500/L		14725	439	0	75	3	9	110	250	0	11848200	25
31000/R		8447	693	0	89	3	10	110	250	0	11848200	20
31500/L		7250	534	0	73	3	5	110	250	0	11848200	60
32000/R	*	3246	3510	0	150	3	20	110	250	0	11848200	0
32500/L		9860	4013	0	210	3	20	110	250	0	11848200	0
33000/R		14795	883	0	179	2	20	110	250	0	11848200	0
33500/L	*	1926	1890	0	144	3	20	110	250	0	11848200	0
34000/R		933	6007	0	307	3	20	110	250	0	11848200	0
34500/L	*	2754	2703	0	179	3	20	110	250	0	11848200	0
35000/R		5452	310	0	113	2	2	110	250	0	11848200	80
35500/L		8552	536	0	100	2	9	110	250	0	11848200	20
36000/R		4691	33	0	112	2	0	110	250	0	11848200	245
36500/L		9577	794	0	138	2	20	110	250	0	11848200	0
37500/L		4114	166	0	108	2	0	110	250	0	11848200	125
38000/R		13522	1052	0	174	2	20	110	250	0	11848200	0
38500/L		14906	893	0	156	2	20	110	250	0	11848200	0
39000/R	*	2424	2424	0	210	3	20	110	250	0	11848200	0
39500/L	*	2644	2596	0	138	3	20	110	250	0	11848200	0
40000/R		7724	185	0	227	2	1	110	250	0	11848200	85
40500/L		6073	2751	0	240	3	20	110	250	0	11848200	0
41000/R		5025	750	0	128	2	10	110	250	0	11848200	15
41500/L		3021	54	0	113	2	0	110	250	0	11848200	230
42000/R		3530	152	0	79	1	0	110	250	0	11848200	140

ROAD EVALUATION REPORT

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Client: tadis
 Sec. no.: 0001
 Link no.: 0001

A/S PHØNIX
 P. P. C

Design date: 10-30-1997

Link ref.: m4 Mea. date: 970413 2
 Start at: gazi mammad
 Surface: asf

Calculation parameters:	Signature index:
Load radius 150 mm	B=Block cracking R=Rutting
Contact pressure 0.70 MPa	A=Alligator cracking O=No remarks
Poisson's ratio 0.35	C=other cracking S=Surface defect
Annual traf. growth .01 %	P=Potholes H=Future design
Design temperature 30 C	D=Deformation X=Local def. only
Design period 15 years	Y=General defect Z=Reconstruction area
S. kor. factor 1.00	T=Temperature taken

* - after remarks indicates that the point has been calculated as a 2-layer system and that the thickness and E-values of 1st and 2nd layer are the same when calculating the new overlay needed in the actual point, the calculation is done for a 3-layer system

E-value of new asphalt layer < 100 mm MPa: 2000
 E-value of new asphalt layer > 100 mm MPa: 3000

Point	Remarks	E1	E2	E3	Esub	Critical layer	Estimated life years	Ex. layer			Estimated traffic 8.16 t	New overlay mm
		MPa	Mpa	MPa				H1 mm	H2 mm	H3 mm		
0/R		8611	449	0	127	2	7	110	250	0	11848200	30
500/L		5566	450	0	128	2	4	110	250	0	11848200	50
1000/R		12672	710	0	150	2	20	110	250	0	11848200	0
1500/L	*	2436	3000	0	198	3	20	110	250	0	11848200	0
2000/R		10884	561	0	177	2	14	110	250	0	11848200	5
2500/L	*	3128	3852	0	285	3	20	110	250	0	11848200	0
3000/R	*	4365	5706	0	70	3	20	110	250	0	11848200	0
3500/L		9940	608	0	121	2	14	110	250	0	11848200	5
4000/R		4402	361	0	141	2	2	110	250	0	11848200	70
4500/L		6185	318	0	78	2	2	110	250	0	11848200	90
5000/R		4786	234	0	162	2	1	110	250	0	11848200	100
5500/L		10386	976	0	135	2	20	110	250	0	11848200	0
6000/R		3916	151	0	90	2	0	110	250	0	11848200	135
6500/L	*	1726	3041	0	255	3	20	110	250	0	11848200	0
7000/R		4981	319	0	71	2	2	110	250	0	11848200	110
7500/L	*	1527	2690	0	129	3	20	110	250	0	11848200	0
8000/R		6563	40	0	59	2	0	110	250	0	11848200	215
8500/L	*	1636	2883	0	160	3	20	110	250	0	11848200	0
9000/R		3754	50	0	82	2	0	110	250	0	11848200	220
9500/L	*	1749	3081	0	176	3	20	110	250	0	11848200	0
10000/R		7584	433	0	70	3	4	110	250	0	11848200	75
10500/L		5028	749	0	111	3	10	110	250	0	11848200	25
11000/R		2639	311	0	81	2	1	110	250	0	11848200	125
11500/L		13622	581	0	115	2	20	110	250	0	11848200	0
12000/R		7846	523	0	105	2	8	110	250	0	11848200	25
12500/L		7145	420	0	124	2	5	110	250	0	11848200	45

Point	Remarks	E1	E2	E3	Esub	Critical	Estimated	Ex. layer			Estimated	New
		MPa	Mpa	MPa	MPa	layer	life	H1	H2	H3	traffic	overlay
							years	mm	mm	mm	8.16 t	mm
13000/R		10815	703	0	97	3	15	110	250	0	11848200	0
13500/L	*	1880	3313	0	176	3	20	110	250	0	11848200	0
14000/R		4507	183	0	40	3	0	110	250	0	11848200	200
14500/L	*	2103	3706	0	248	3	20	110	250	0	11848200	0
15000/R		9798	208	0	76	2	2	110	250	0	11848200	80
15500/L	*	1350	2378	0	124	3	20	110	250	0	11848200	0
16000/R		3651	345	0	69	2	1	110	250	0	11848200	125
16500/L	*	1657	2919	0	189	3	20	110	250	0	11848200	0
17000/R		8018	1505	0	138	3	20	110	250	0	11848200	0
17500/L		9586	531	0	82	3	8	110	250	0	11848200	35
18000/R		13129	739	0	112	3	20	110	250	0	11848200	0
18500/L		13403	472	0	106	2	14	110	250	0	11848200	5
19000/R	*	2410	3151	0	187	3	20	110	250	0	11848200	0
19500/L		5740	506	0	78	3	4	110	250	0	11848200	70
20000/R	*	1677	2192	0	95	3	13	110	250	0	11848200	5
20500/L	*	1560	2749	0	143	3	20	110	250	0	11848200	0
21000/R		6943	532	0	125	2	7	110	250	0	11848200	35
21500/L	*	1549	2729	0	168	3	20	110	250	0	11848200	0
22000/R		7376	1284	0	173	2	20	110	250	0	11848200	0
22500/L		12862	495	0	143	2	15	110	250	0	11848200	5
23000/R		5390	535	0	99	2	5	110	250	0	11848200	50
23500/L		11169	504	0	79	3	8	110	250	0	11848200	30
24000/R		5146	363	0	99	2	2	110	250	0	11848200	75
24500/L	*	1781	3138	0	183	3	20	110	250	0	11848200	0
25000/R		11612	395	0	83	3	8	110	250	0	11848200	30
25500/L		6396	647	0	86	3	7	110	250	0	11848200	45
26000/R		7194	609	0	100	2	9	110	250	0	11848200	25
26500/L		1332	439	0	41	3	0	110	250	0	11848200	195
27000/R		1973	232	0	50	3	0	110	250	0	11848200	190
27500/L		12513	360	0	86	2	8	110	250	0	11848200	30
28000/R		2640	311	0	72	2	1	110	250	0	11848200	135
28500/L		4449	293	0	96	2	1	110	250	0	11848200	95
29000/R		3333	333	0	85	2	1	110	250	0	11848200	115
29500/L	*	1703	3000	0	195	3	20	110	250	0	11848200	0
30000/R		6577	401	0	75	3	3	110	250	0	11848200	75
30500/L		13150	502	0	108	2	16	110	250	0	11848200	0
31000/R	*	1267	1656	0	79	3	5	110	250	0	11848200	55
31500/L		12927	657	0	133	2	20	110	250	0	11848200	0
32000/R		5748	398	0	78	2	3	110	250	0	11848200	85
32500/L	*	580	1021	0	160	2	5	110	250	0	11848200	60
33000/R	k	1171	141	0	38	1	0	110	250	0	11848200	240
33500/L		5939	424	0	107	2	4	110	250	0	11848200	55
34000/R		5748	349	0	84	2	2	110	250	0	11848200	80
34500/L		4112	431	0	121	2	3	110	250	0	11848200	65
35000/R		1897	237	0	52	3	0	110	250	0	11848200	185
35500/L		3042	54	0	79	1	0	110	250	0	11848200	220
36000/R		3642	12	0	1250	2	0	110	250	0	11848200	300
36500/L		3045	472	0	82	3	2	110	250	0	11848200	105
37000/R		7363	445	0	89	2	5	110	250	0	11848200	45
37500/L		1585	280	0	57	3	0	110	250	0	11848200	175
38000/R		6602	1070	0	133	3	20	110	250	0	11848200	0
38500/L		3880	549	0	84	3	3	110	250	0	11848200	80
39000/R		52	414	0	133	2	0	110	250	0	11848200	135
39000/L		3090	561	0	94	2	3	110	250	0	11848200	80
40000/R		11812	801	0	131	2	20	110	250	0	11848200	0
40500/L		3702	417	0	94	2	2	110	250	0	11848200	85
41000/R	R *	3530	4065	0	101	3	20	110	250	0	11848200	0
41500/L		2422	400	0	69	3	1	110	250	0	11848200	135
42000/R		6886	546	0	108	2	7	110	250	0	11848200	30
42500/L		2896	434	0	119	2	2	110	250	0	11848200	80

Point	Remarks	E1	E2	E3	Esub	Critical	Estimated	Ex.layer			Estimated	New
		MPa	Mpa	MPa	MPa	layer	life	H1	H2	H3	traffic	overlay
							years	mm	mm	mm	8.16 t	mm
43000/R		10024	472	0	126	2	9	110	250	0	11848200	20
43500/L		7305	406	0	87	2	4	110	250	0	11848200	55
44000/R		235	417	0	57	3	0	110	250	0	11848200	185
44500/L		302	740	0	84	3	1	110	250	0	11848200	125
45000/R		8258	451	0	81	3	6	110	250	0	11848200	50
45500/L		4546	423	0	78	2	2	110	250	0	11848200	95
46000/R		2827	289	0	64	3	1	110	250	0	11848200	150
46500/L		1345	34	0	40	1	0	110	250	0	11848200	290
47000/R	K	13746	204	0	75	2	4	110	250	0	11848200	55
47500/L		1708	33	0	59	1	0	110	250	0	11848200	280
48000/R		4971	239	0	68	2	1	110	250	0	11848200	120
48500/L	*	665	1461	0	174	3	12	110	250	0	11848200	10
49000/R		7363	491	0	80	3	5	110	250	0	11848200	55
49500/L		13743	395	0	94	2	11	110	250	0	11848200	15
50000/R		5379	351	0	73	2	2	110	250	0	11848200	100
50500/L		7788	565	0	79	3	7	110	250	0	11848200	45
51000/R		10604	403	0	86	2	8	110	250	0	11848200	35
51500/L		10233	314	0	88	2	5	110	250	0	11848200	45
52000/R	*	2181	2511	0	113	3	20	110	250	0	11848200	0
52500/L		3373	365	0	65	3	1	110	250	0	11848200	135
53000/R	*	1988	2290	0	110	3	20	110	250	0	11848200	0
53500/L	*	1349	2966	0	177	3	20	110	250	0	11848200	0
54000/R		14191	662	0	96	3	19	110	250	0	11848200	0
54500/L		7758	475	0	86	3	6	110	250	0	11848200	45
55000/R		7961	526	0	109	2	8	110	250	0	11848200	25
55500/L		2134	62	0	71	1	0	110	250	0	11848200	225
56000/R		3594	403	0	81	2	2	110	250	0	11848200	105
56500/L		1138	211	0	54	2	0	110	250	0	11848200	195
57000/R		10374	633	0	112	2	16	110	250	0	11848200	0
58000/R	*	2672	3077	0	147	3	20	110	250	0	11848200	0
59000/R	*	3504	4035	0	213	3	20	110	250	0	11848200	0
59500/L		3304	503	0	106	2	3	110	250	0	11848200	70
60000/R		10133	559	0	85	3	9	110	250	0	11848200	25
60500/L		8002	307	0	89	2	3	110	250	0	11848200	60
61000/R		6558	433	0	86	2	4	110	250	0	11848200	60
61500/L	*	1212	2666	0	105	3	18	110	250	0	11848200	0
62000/R	*	2242	2581	0	143	3	20	110	250	0	11848200	0
62500/L		7167	57	0	86	2	0	110	250	0	11848200	175
63000/R		2887	300	0	62	3	1	110	250	0	11848200	150
63500/L		2266	274	0	72	2	1	110	250	0	11848200	145
64000/R		10799	418	0	90	3	8	110	250	0	11848200	30
64500/L		9475	759	0	120	2	19	110	250	0	11848200	0
65000/R	*	2136	2460	0	161	3	20	110	250	0	11848200	0
65500/L		1759	301	0	58	3	0	110	250	0	11848200	175
66000/R	*	2605	3000	0	144	3	20	110	250	0	11848200	0
66500/L		12320	809	0	201	2	20	110	250	0	11848200	0
67000/R	*	2077	2391	0	122	3	20	110	250	0	11848200	0
67500/L	*	1364	3000	0	141	3	20	110	250	0	11848200	0
68000/R	*	2315	2666	0	110	3	20	110	250	0	11848200	0
68500/L	*	1067	2347	0	117	3	17	110	250	0	11848200	0
69000/R		8785	785	0	105	3	17	110	250	0	11848200	0
69500/L		2002	349	0	48	3	0	110	250	0	11848200	180
70000/R	*	3112	3583	0	222	3	20	110	250	0	11848200	0
70500/L		3037	333	0	57	3	1	110	250	0	11848200	150
71000/R	*	2638	3038	0	197	3	20	110	250	0	11848200	0
71500/L		6575	286	0	63	3	2	110	250	0	11848200	110
72000/R		12799	618	0	129	2	20	110	250	0	11848200	0
72500/L		970	12	0	80	1	0	110	250	0	11848200	300
73000/R	*	2605	3000	0	148	3	20	110	250	0	11848200	0
73500/L		5656	418	0	80	2	3	110	250	0	11848200	80

Point	Remarks	E1	E2	E3	Esub	Critical layer	Estimated life years	Ex. layer			Estimated traffic 8.16 t	New overlay mm
		MPa	Mpa	MPa	MPa			H1 mm	H2 mm	H3 mm		
74000/R	*	2605	3000	0	186	3	20	110	250	0	11848200	0
74500/L		1493	68	0	68	1	0	110	250	0	11848200	225
75000/R	*	2143	2468	0	154	3	20	110	250	0	11848200	0
75500/L		3118	348	0	71	3	1	110	250	0	11848200	130
76000/R		12585	735	0	158	2	20	110	250	0	11848200	0
76500/L		10740	531	0	135	2	12	110	250	0	11848200	10
77000/R	*	2997	3451	0	195	3	20	110	250	0	11848200	0
77500/L		4168	556	0	168	2	5	110	250	0	11848200	50
78000/R	*	2605	3000	0	196	3	20	110	250	0	11848200	0
78500/L		2675	239	0	155	2	0	110	250	0	11848200	130
79000/R		13723	523	0	111	2	18	110	250	0	11848200	0
79500/L		8533	682	0	108	2	14	110	250	0	11848200	5
80000/R	*	2916	3358	0	222	3	20	110	250	0	11848200	0
80500/L		8492	827	0	112	3	18	110	250	0	11848200	0
81000/R		14061	592	0	103	3	20	110	250	0	11848200	0
81500/L		3605	498	0	129	2	3	110	250	0	11848200	60
82000/R	*	2192	2524	0	147	3	20	110	250	0	11848200	0
82500/L	*	1846	4059	0	254	3	20	110	250	0	11848200	0
83000/R		248	2768	0	247	3	20	110	250	0	11848200	0
83500/L		5006	13	0	66	2	0	110	250	0	11848200	300

ROAD EVALUATION REPORT

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Client: TACIS

Sec. no.: 0001

Link no.: 37.001

A/S PHØNIX

P. P. C

Design date: 10-30-1997

Link ref.: M4

Mea. date: 970417 2

Start at: KYURDAMIR

Surface: ASF

Calculation parameters:

Signature index:

Load radius 150 mm

B=Block cracking

R=Rutting

Contact pressure 0.70 MPa

A=Alligator cracking

O=No remarks

Poisson's ratio 0.35

C=other cracking

S=Surface defect

Annual traf. growth .01 %

P=Potholes

H=Future design

Design temperature 30 C

D=Deformation

X=Local def. only

Design period 15 years

Y=General defect

Z=Reconstruction area

S. kor. factor 1.00

T=Temperature taken

* - after remarks indicates that the point has been calculated as a 2-layer system and that the thickness and E-values of 1st and 2nd layer are the same when calculating the new overlay needed in the actual point, the calculation is done for a 3-layer system

E-value of new asphalt layer < 100 mm MPa: 2000

E-value of new asphalt layer > 100 mm MPa: 3000

Point	Remarks	E1	E2	E3	Esub	Critical layer	Estimated life years	Ex. layer			Estimated traffic 8.16 t	New overlay mm
		MPa	Mpa	MPa				H1 mm	H2 mm	H3 mm		
0/R		12622	990	0	107	3	20	110	250	0	11316700	0
0/L		10782	617	0	159	2	17	110	250	0	11316700	0
500/L		7327	752	0	165	2	17	110	250	0	11316700	0
1000/R	*	6485	6609	0	205	3	20	110	250	0	11316700	0
1500/L	K	9552	802	0	172	2	20	110	250	0	11316700	0
2000/R		3191	2212	0	134	3	20	110	250	0	11316700	0
2500/L		4657	968	0	122	3	16	110	250	0	11316700	0
3000/R	*	4613	4701	0	172	3	20	110	250	0	11316700	0
3500/L		5435	1311	0	199	2	20	110	250	0	11316700	0
4000/R		13662	929	0	96	3	20	110	250	0	11316700	0
4500/L		10798	884	0	150	2	20	110	250	0	11316700	0
5000/R	*	2474	2522	0	102	3	20	110	250	0	11316700	0
5500/L	*	1788	2396	0	108	3	20	110	250	0	11316700	0
6000/R		13219	4115	0	139	3	20	110	250	0	11316700	0
6500/L		7608	1688	0	176	3	20	110	250	0	11316700	0
7000/R	*	3098	3157	0	150	3	20	110	250	0	11316700	0
7500/L	R	3466	1487	0	172	2	20	110	250	0	11316700	0
8000/R		8933	1406	0	114	3	20	110	250	0	11316700	0
8500/L		10906	789	0	137	2	20	110	250	0	11316700	0
9000/R		3377	1347	0	96	3	12	110	250	0	11316700	20
9500/L		5071	423	0	145	2	3	110	250	0	11316700	55
10000/R		11000	711	0	97	3	17	110	250	0	11316700	0
10500/L		4749	1237	0	136	3	20	110	250	0	11316700	0
11000/R		2134	3119	0	99	3	20	110	250	0	11316700	0
11500/L	R	4935	535	0	96	3	5	110	250	0	11316700	55
12000/R		3226	300	0	97	2	1	110	250	0	11316700	100

Point	Remarks	E1	E2	E3	Esub	Critical layer	Estimated life years	Ex.layer			Estimated traffic 8.16 t	New overlay mm
		MPa	Mpa	MPa	MPa			H1	H2	H3		
								mm	mm	mm		
12500/L		6867	543	0	206	2	7	110	250	0	11316700	30
13000/R		11693	1626	0	103	3	20	110	250	0	11316700	0
13500/L	*	2887	3869	0	337	3	20	110	250	0	11316700	0
14000/R		6962	1684	0	94	3	20	110	250	0	11316700	0
14500/L		10178	865	0	155	2	20	110	250	0	11316700	0
15000/R	*	3600	3669	0	118	3	20	110	250	0	11316700	0
15500/L		6898	605	0	196	2	9	110	250	0	11316700	25
16000/R		2049	643	0	91	3	3	110	250	0	11316700	90
16500/L	*	2184	2927	0	213	3	20	110	250	0	11316700	0
17000/R		866	886	0	63	3	1	110	250	0	11316700	125
17500/L		7510	626	0	181	2	10	110	250	0	11316700	15
18000/R		2284	1604	0	85	3	9	110	250	0	11316700	30
18500/L		10786	843	0	171	2	20	110	250	0	11316700	0
19000/R	R	1905	1459	0	91	3	8	110	250	0	11316700	40
19500/L		8212	2280	0	123	3	20	110	250	0	11316700	0
20000/R		931	881	0	79	3	2	110	250	0	11316700	110
20500/L		9452	708	0	138	2	18	110	250	0	11316700	0
21000/R		1458	2549	0	96	3	17	110	250	0	11316700	0
21500/L		1332	1606	0	150	3	17	110	250	0	11316700	0
22000/R		4444	2026	0	96	3	20	110	250	0	11316700	0
22500/L		9488	1774	0	128	3	20	110	250	0	11316700	0
23000/R	R *	2944	3000	0	126	3	20	110	250	0	11316700	0
23500/L		11335	786	0	97	3	19	110	250	0	11316700	0
24000/R		1163	2356	0	154	3	20	110	250	0	11316700	0
24500/L	*	2680	3592	0	136	3	20	110	250	0	11316700	0
25000/R		675	6628	0	199	3	20	110	250	0	11316700	0
25500/L	*	2340	3135	0	151	3	20	110	250	0	11316700	0
26000/R		891	5134	0	163	3	20	110	250	0	11316700	0
26500/L	R *	3248	4353	0	197	3	20	110	250	0	11316700	0
27000/R		4027	1262	0	229	2	20	110	250	0	11316700	0
27500/L		12708	988	0	112	3	20	110	250	0	11316700	0
28000/R		2089	3994	0	107	3	20	110	250	0	11316700	0
28500/L	*	2953	3957	0	165	3	20	110	250	0	11316700	0
29000/R		1441	2459	0	151	3	20	110	250	0	11316700	0
29500/L	*	3253	4359	0	156	3	20	110	250	0	11316700	0
30000/R		1186	6163	0	188	3	20	110	250	0	11316700	0
30500/L		5792	360	0	130	2	3	110	250	0	11316700	65
31000/R		2658	3660	0	188	3	20	110	250	0	11316700	0
31500/L	K *	2971	3981	0	146	3	20	110	250	0	11316700	0
32000/R		1313	5969	0	188	3	20	110	250	0	11316700	0
32500/L		11484	765	0	136	2	20	110	250	0	11316700	0
33000/R	34000	2570	3129	0	212	3	20	110	250	0	11316700	0
33500/L	R *	2302	3085	0	171	3	20	110	250	0	11316700	0
34000/R		2691	2338	0	174	3	20	110	250	0	11316700	0
34500/L		6258	630	0	79	3	6	110	250	0	11316700	50
35000/R		660	3178	0	173	3	20	110	250	0	11316700	0
35500/L	*	3301	4423	0	163	3	20	110	250	0	11316700	0
36000/R		3153	1180	0	160	2	19	110	250	0	11316700	0
36500/L	*	2389	3201	0	115	3	20	110	250	0	11316700	0
37000/R	*	3386	3451	0	207	3	20	110	250	0	11316700	0
37500/L		14362	1098	0	99	3	20	110	250	0	11316700	0
38000/R		949	4603	0	133	3	20	110	250	0	11316700	0
38500/L	R *	2215	2968	0	149	3	20	110	250	0	11316700	0
39000/R		2436	3893	0	145	3	20	110	250	0	11316700	0
39500/L		9177	2387	0	166	3	20	110	250	0	11316700	0
40000/R		2306	1115	0	90	3	6	110	250	0	11316700	55
40500/L	*	3607	4834	0	131	3	20	110	250	0	11316700	0
41000/R	R	2089	859	0	96	3	5	110	250	0	11316700	70
41500/L	R	12724	807	0	130	2	20	110	250	0	11316700	0
42000/R	R *	2638	2689	0	159	3	20	110	250	0	11316700	0

Point	Remarks	E1	E2	E3	Esub	Critical layer	Estimated life years	Ex.layer			Estimated traffic 8.16 t	New overlay mm
		MPa	Mpa	MPa	MPa			H1 mm	H2 mm	H3 mm		
42500/L	*	2423	3246	0	130	3	20	110	250	0	11316700	0
43000/R		2886	2634	0	124	3	20	110	250	0	11316700	0
43500/L		11186	771	0	93	3	17	110	250	0	11316700	0
44000/R		3394	2138	0	107	3	20	110	250	0	11316700	0
44500/L	*	4355	5837	0	287	3	20	110	250	0	11316700	0
45000/R		2460	4215	0	212	3	20	110	250	0	11316700	0
45500/L	*	2239	3000	0	212	3	20	110	250	0	11316700	0
46000/R		4493	2257	0	192	3	20	110	250	0	11316700	0
47000/R		1129	1974	0	214	3	20	110	250	0	11316700	0
47500/L	*	2239	3000	0	114	3	20	110	250	0	11316700	0
48000/L		14216	3236	0	181	3	20	110	250	0	11316700	0

ROAD EVALUATION REPORT

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Client: TACIS

Sec. no.: 0001

Link no.: 37.001

A/S PHØNIX
 P. P. C

Design date: 10-30-1997

Link ref.: M4 Mea. date: 970417 2

Start at: UJAR

Surface: ASF

Calculation parameters:	Signature index:
Load radius 150 mm	B=Block cracking R=Rutting
Contact pressure 0.70 MPa	A=Alligator cracking O=No remarks
Poisson's ratio 0.35	C=other cracking S=Surface defect
Annual traf. growth .01 %	P=Potholes H=Future design
Design temperature 30 C	D=Deformation X=Local def. only
Design period 15 years	Y=General defect Z=Reconstruction area
S. kor. factor 1.00	T=Temperature taken

* - after remarks indicates that the point has been calculated as a 2-layer system and that the thickness and E-values of 1st and 2nd layer are the same when calculating the new overlay needed in the actual point, the calculation is done for a 3-layer system

E-value of new asphalt layer < 100 mm MPa: 2000
 E-value of new asphalt layer > 100 mm MPa: 3000

Point	Remarks	E1 MPa	E2 Mpa	E3 MPa	Esub MPa	Critical layer	Estimated life years	Ex.layer			Estimated traffic 8.16 t	New overlay mm
								H1 mm	H2 mm	H3 mm		
1000/R		9337	1278	0	124	3	20	110	250	0	11316700	0
1500/L		2153	2156	0	214	3	20	110	250	0	11316700	0
2000/R		2463	2026	0	98	3	17	110	250	0	11316700	0
2500/L		1100	1747	0	106	3	10	110	250	0	11316700	30
3000/R		1532	1751	0	62	3	4	110	250	0	11316700	75
3500/L		6809	793	0	99	3	12	110	250	0	11316700	15
4000/R		4021	2061	0	98	3	20	110	250	0	11316700	0
4500/L		9035	749	0	75	3	10	110	250	0	11316700	20
5000/R	R	4732	2096	0	102	3	20	110	250	0	11316700	0
5500/L		6597	1379	0	88	3	19	110	250	0	11316700	0
6000/R	*	5735	5789	0	275	3	20	110	250	0	11316700	0
6500/L		2692	2092	0	84	3	15	110	250	0	11316700	0
7000/R		6326	4005	0	138	3	20	110	250	0	11316700	0
7500/L	*	3334	4013	0	133	3	20	110	250	0	11316700	0
8000/R	*	3640	3674	0	171	3	20	110	250	0	11316700	0
8500/L	*	4754	5722	0	236	3	20	110	250	0	11316700	0
9000/R	*	2770	2796	0	82	3	20	110	250	0	11316700	0
9500/L		2824	599	0	106	2	4	110	250	0	11316700	65
10000/R	*	2324	2346	0	135	3	20	110	250	0	11316700	0
10500/L		11186	924	0	125	3	20	110	250	0	11316700	0
11000/R		1168	1061	0	93	3	4	110	250	0	11316700	75
11500/L		3074	1491	0	77	3	9	110	250	0	11316700	35
12000/R		3856	1812	0	183	3	20	110	250	0	11316700	0
12500/L		6849	2184	0	93	3	20	110	250	0	11316700	0
13000/R		994	1512	0	100	3	7	110	250	0	11316700	45
13500/L		7025	1951	0	144	3	20	110	250	0	11316700	0

Point	Remarks	E1	E2	E3	Esub	Critical	Estimated	Ex.layer			Estimated	New
		MPa	Mpa	MPa	MPa	layer	life	H1	H2	H3	traffic	overlay
							years	mm	mm	mm	8.16 t	mm
14000/R		1487	1275	0	80	3	5	110	250	0	11316700	70
14500/L		3822	1594	0	148	3	20	110	250	0	11316700	0
15500/L	*	3026	3642	0	205	3	20	110	250	0	11316700	0
16000/R		3670	2270	0	113	3	20	110	250	0	11316700	0
16500/L	*	2602	3132	0	126	3	20	110	250	0	11316700	0
17000/R		2746	2507	0	128	3	20	110	250	0	11316700	0
17500/L		7496	2677	0	156	3	20	110	250	0	11316700	0
18000/R		1527	5083	0	196	3	20	110	250	0	11316700	0
18500/L		5469	2264	0	183	3	20	110	250	0	11316700	0
19000/R		2349	328	0	49	3	1	110	250	0	11316700	170
19500/L		9543	916	0	169	2	20	110	250	0	11316700	0
20000/R		3596	404	0	84	2	2	110	250	0	11316700	95
20500/L	*	2492	3000	0	149	3	20	110	250	0	11316700	0
21000/R		3266	1575	0	172	3	20	110	250	0	11316700	0
21500/L		1574	1539	0	95	3	8	110	250	0	11316700	35
22000/R	R *	4443	4485	0	264	3	20	110	250	0	11316700	0
22500/L		1073	3771	0	179	3	20	110	250	0	11316700	0
23000/R		1132	409	0	76	2	1	110	250	0	11316700	140
23500/L	*	1350	1625	0	183	3	20	110	250	0	11316700	0
24000/R		2467	1001	0	83	3	5	110	250	0	11316700	65
24500/L		4674	1230	0	127	3	20	110	250	0	11316700	0
25000/R		1315	1557	0	73	3	5	110	250	0	11316700	65
25500/L		909	641	0	89	3	2	110	250	0	11316700	115
26000/R		3254	300	0	78	2	1	110	250	0	11316700	120
26500/L		1591	961	0	53	3	2	110	250	0	11316700	130
27000/R		2206	3041	0	177	3	20	110	250	0	11316700	0
27500/L		1530	385	0	61	3	1	110	250	0	11316700	160
28000/R		2830	1919	0	147	3	20	110	250	0	11316700	0
28500/L		3920	1159	0	118	3	16	110	250	0	11316700	0
29000/R		2767	3234	0	171	3	20	110	250	0	11316700	0
29500/L		4828	2508	0	176	3	20	110	250	0	11316700	0
30000/R	*	2972	3000	0	140	3	20	110	250	0	11316700	0
30500/L		3848	1873	0	139	3	20	110	250	0	11316700	0
31000/R		2928	1730	0	236	2	20	110	250	0	11316700	0
31500/L		4008	796	0	104	3	8	110	250	0	11316700	30
32000/R		4869	2769	0	164	3	20	110	250	0	11316700	0
32500/L		3715	3282	0	474	2	20	110	250	0	11316700	0
33000/R		2665	3257	0	104	3	20	110	250	0	11316700	0
33500/L		1335	1363	0	134	3	11	110	250	0	11316700	15
34000/R		2411	1396	0	125	3	15	110	250	0	11316700	0
34500/L		3134	1562	0	79	3	10	110	250	0	11316700	30
35000/R		4544	851	0	192	2	13	110	250	0	11316700	10
35500/L		1483	1496	0	96	3	7	110	250	0	11316700	40
36000/R		2358	2528	0	84	3	18	110	250	0	11316700	0
36500/L		3943	1161	0	86	3	10	110	250	0	11316700	30
37000/R	K	1662	603	0	83	3	2	110	250	0	11316700	110
37500/L		5435	1606	0	112	3	20	110	250	0	11316700	0
38000/R		2035	1574	0	98	3	10	110	250	0	11316700	25
38500/L		1820	697	0	93	3	3	110	250	0	11316700	85
39000/R		3396	1042	0	164	2	15	110	250	0	11316700	0
39500/L		3711	940	0	98	3	9	110	250	0	11316700	35
40000/R		2190	419	0	76	2	1	110	250	0	11316700	125
40500/L		1165	2720	0	118	3	20	110	250	0	11316700	0
41000/R		2859	2440	0	186	3	20	110	250	0	11316700	0
41500/L		4706	2585	0	130	3	20	110	250	0	11316700	0
42000/R		4248	521	0	83	3	4	110	250	0	11316700	80
42500/L		9975	942	0	256	2	20	110	250	0	11316700	0
43000/R		1176	416	0	83	2	1	110	250	0	11316700	135
43500/L		6410	1446	0	105	3	20	110	250	0	11316700	0
44000/R	R	4029	2294	0	180	3	20	110	250	0	11316700	0

Point	Remarks	E1	E2	E3	Esub	Critical	Estimated	Ex.layer			Estimated	New
		MPa	Mpa	MPa	MPa	layer	life	H1	H2	H3	traffic	overlay
							years	mm	mm	mm	8.16 t	mm
44500/L	*	2616	3149	0	182	3	20	110	250	0	11316700	0
45000/R		1054	1087	0	134	3	7	110	250	0	11316700	40
45500/L	*	2173	2616	0	157	3	20	110	250	0	11316700	0
46500/L		1088	73	0	161	1	0	110	250	0	11316700	225
53500/L		1758	123	0	57	1	0	110	250	0	11316700	200
54000/R		2523	189	0	91	1	0	110	250	0	11316700	140
54500/L		4938	437	0	97	2	3	110	250	0	11316700	65
55000/R		4290	100	0	103	2	0	110	250	0	11316700	160
56000/R		942	499	0	193	2	1	110	250	0	11316700	105
56500/L		1565	724	0	157	2	3	110	250	0	11316700	65
57000/R		4559	429	0	213	2	3	110	250	0	11316700	55
57500/L		3858	1433	0	201	2	20	110	250	0	11316700	0
58000/R		960	5345	0	166	3	20	110	250	0	11316700	0
58500/L		1904	2747	0	174	3	20	110	250	0	11316700	0
59000/R		876	1749	0	191	3	20	110	250	0	11316700	0
59500/L		14935	531	0	139	2	20	110	250	0	11316700	0
60000/R		1961	634	0	137	2	3	110	250	0	11316700	70
60500/L		4710	2678	0	147	3	20	110	250	0	11316700	0
61000/R		1451	1030	0	109	3	6	110	250	0	11316700	55
61500/L		3917	354	0	258	2	2	110	250	0	11316700	75

ROAD EVALUATION REPORT

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Client: TACIS
 Sec. no.: 0001
 Link no.: 37.001

A/S PHØNIX
 P. P. C

Design date: 10-30-1997

Link ref.: M1 Mea. date: 17/04/92
 Start at: MINGECHEVIR
 Surface: ASF

Calculation parameters:		Signature index:	
Load radius	150 mm	B=Block cracking	R=Rutting
Contact pressure	0.70 MPa	A=Alligator cracking	O=No remarks
Poisson's ratio	0.35	C=other cracking	S=Surface defect
Annual traf. growth	.01 %	P=Potholes	H=Future design
Design temperature	30 C	D=Deformation	X=Local def. only
Design period	15 years	Y=General defect	Z=Reconstruction area
S. kor. factor	1.00	T=Temperature taken	

* - after remarks indicates that the point has been calculated as a 2-layer system and that the thickness and E-values of 1st and 2nd layer are the same when calculating the new overlay needed in the actual point, the calculation is done for a 3-layer system

E-value of new asphalt layer < 100 mm MPa: 2000
 E-value of new asphalt layer > 100 mm MPa: 3000

Point	Remarks	E1	E2	E3	Esub	Critical layer	Estimated life years	Ex.layer			Estimated traffic 8.16 t	New overlay mm
		MPa	Mpa	MPa				H1 mm	H2 mm	H3 mm		
0/R	*	2817	2871	0	195	3	20	110	250	0	9615500	0
500/L		1664	945	0	142	2	8	110	250	0	9615500	35
1000/R		4453	379	0	167	2	2	110	250	0	9615500	60
1500/L		1841	187	0	115	2	0	110	250	0	9615500	145
2000/R		638	76	0	55	1	0	110	250	0	9615500	225
2500/L		1347	255	0	77	2	0	110	250	0	9615500	150
3000/R		1077	122	0	86	1	0	110	250	0	9615500	180
3500/L		2036	861	0	134	2	7	110	250	0	9615500	35
4000/R		1425	3561	0	172	3	20	110	250	0	9615500	0
4500/R		704	1157	0	158	2	9	110	250	0	9615500	30
5000/R		511	555	0	168	2	1	110	250	0	9615500	105
5500/L	*	3667	3737	0	207	3	20	110	250	0	9615500	0
6000/R		2873	470	0	180	2	3	110	250	0	9615500	70
6500/L		2581	2117	0	141	3	20	110	250	0	9615500	0
7000/R	K	1393	220	0	163	2	0	110	250	0	9615500	135
7500/L		804	151	0	143	2	0	110	250	0	9615500	170
8000/R	*	1430	1457	0	207	2	20	110	250	0	9615500	0
8500/L		1415	324	0	257	2	1	110	250	0	9615500	115
9000/R	R	2655	290	0	199	2	1	110	250	0	9615500	100
9500/L		1365	635	0	238	2	3	110	250	0	9615500	75
10000/R		1951	1133	0	162	2	14	110	250	0	9615500	5
10500/L		3611	375	0	265	2	2	110	250	0	9615500	70
11000/R		1164	369	0	211	2	1	110	250	0	9615500	110
11500/L		1272	613	0	100	2	2	110	250	0	9615500	90
12000/R		1430	486	0	196	2	1	110	250	0	9615500	90
12500/L		1158	1721	0	171	3	20	110	250	0	9615500	0

Point	Remarks	E1	E2	E3	Esub	Critical	Estimated	Ex.layer			Estimated	New
		MPa	Mpa	MPa	MPa	layer	life	H1	H2	H3	traffic	overlay
							years	mm	mm	mm	8.16 t	mm
13000/R		7064	3996	0	306	3	20	110	250	0	9615500	0
13500/L		6904	540	0	221	2	8	110	250	0	9615500	25
14000/R	R	3240	834	0	157	2	10	110	250	0	9615500	20
14500/L		1392	312	0	152	2	1	110	250	0	9615500	115
15000/R		1160	665	0	140	2	3	110	250	0	9615500	75
15500/L		2206	450	0	121	2	2	110	250	0	9615500	80
16000/R		2490	275	0	175	2	1	110	250	0	9615500	105
16500/L		2852	1109	0	330	2	18	110	250	0	9615500	0
17000/R		2376	293	0	124	2	1	110	250	0	9615500	105
17500/L		2217	886	0	128	2	8	110	250	0	9615500	30
18000/R		10413	831	0	106	3	20	110	250	0	9615500	0
18500/L		1821	1862	0	64	3	7	110	250	0	9615500	50
19000/R		8874	1566	0	82	3	20	110	250	0	9615500	0
19500/L		2708	1071	0	94	3	9	110	250	0	9615500	35
20000/R		14613	1301	0	104	3	20	110	250	0	9615500	0
20500/L		6202	3989	0	85	3	20	110	250	0	9615500	0
21000/R		3507	2360	0	63	3	15	110	250	0	9615500	0
22000/R		6064	3109	0	100	3	20	110	250	0	9615500	0
22500/L		6186	1348	0	78	3	16	110	250	0	9615500	0
23000/R	*	2271	2703	0	110	3	20	110	250	0	9615500	0
23500/L		14189	841	0	82	3	20	110	250	0	9615500	0
24000/R		2468	2371	0	72	3	14	110	250	0	9615500	0
25000/R	*	5071	6036	0	257	3	20	110	250	0	9615500	0
25500/L	*	2868	3414	0	112	3	20	110	250	0	9615500	0
26000/R		4726	1637	0	240	2	20	110	250	0	9615500	0
26500/L		2552	1986	0	126	3	20	110	250	0	9615500	0
27000/R		4768	147	0	646	2	1	110	250	0	9615500	120
27500/L		3455	1187	0	221	2	20	110	250	0	9615500	0
28000/R		2205	398	0	263	2	1	110	250	0	9615500	90
28500/L		4159	299	0	441	2	1	110	250	0	9615500	90
29000/R		3717	380	0	244	2	2	110	250	0	9615500	70
29500/L		1307	2716	0	154	3	20	110	250	0	9615500	0
30000/R		3424	159	0	380	2	0	110	250	0	9615500	130
30500/L		3068	381	0	176	2	2	110	250	0	9615500	80
31000/R		5199	1877	0	192	3	20	110	250	0	9615500	0
31500/L		1896	221	0	176	2	0	110	250	0	9615500	125
32000/R		4652	1698	0	496	2	20	110	250	0	9615500	0
32500/L		827	855	0	327	2	4	110	250	0	9615500	60
33000/R		5286	519	0	288	2	5	110	250	0	9615500	30
33500/L		12510	1093	0	177	2	20	110	250	0	9615500	0
34000/R		2819	1558	0	354	2	20	110	250	0	9615500	0
34500/L	R *	2633	3134	0	323	3	20	110	250	0	9615500	0
35000/R		3130	510	0	226	2	3	110	250	0	9615500	60
35500/L		1696	525	0	155	2	2	110	250	0	9615500	80
36000/R		4494	598	0	143	2	7	110	250	0	9615500	30
36500/L		5553	1934	0	319	2	20	110	250	0	9615500	0
37000/R		5967	569	0	187	2	8	110	250	0	9615500	20
37500/L		3667	306	0	186	2	1	110	250	0	9615500	80
38000/R		6381	1768	0	164	3	20	110	250	0	9615500	0
38500/L		8895	263	0	358	2	4	110	250	0	9615500	50
39000/R		4283	148	0	322	2	0	110	250	0	9615500	125
39500/L		4041	333	0	154	2	2	110	250	0	9615500	70
40000/R		4402	267	0	216	2	1	110	250	0	9615500	90
40500/L		5746	424	0	219	2	4	110	250	0	9615500	50
41000/R		3697	283	0	192	2	1	110	250	0	9615500	100
41500/L		3635	219	0	189	2	1	110	250	0	9615500	110
42000/R		2551	250	0	167	2	1	110	250	0	9615500	110
42500/L		1618	182	0	155	2	0	110	250	0	9615500	150
43000/R		3029	346	0	89	2	2	110	250	0	9615500	100

ROAD EVALUATION REPORT

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Client: TACIS
 Sec. no.: 0001
 Link no.: 37.001

A/S PHØNIX
 P. P. C

Design date: 10-30-1997

Link ref.: M1 Mea. date: 970419 2
 Start at: BY PASS GANJA
 Surface: ASF

Calculation parameters:		Signature index:	
Load radius	150 mm	B=Block cracking	R=Rutting
Contact pressure	0.70 MPa	A=Alligator cracking	O=No remarks
Poisson's ratio	0.35	C=other cracking	S=Surface defect
Annual traf. growth	.01 %	P=Potholes	H=Future design
Design temperature	30 C	D=Deformation	X=Local def. only
Design period	15 years	Y=General defect	Z=Reconstruction area
S. kor. factor	1.00	T=Temperature taken	

* - after remarks indicates that the point has been calculated as a 2-layer system and that the thickness and E-values of 1st and 2nd layer are the same when calculating the new overlay needed in the actual point, the calculation is done for a 3-layer system

E-value of new asphalt layer < 100 mm MPa: 2000
 E-value of new asphalt layer > 100 mm MPa: 3000

Point	Remarks	E1	E2	E3	Esub	Critical layer	Estimated life years	Ex. layer			Estimated traffic 8.16 t	New overlay mm
		MPa	Mpa	MPa				H1 mm	H2 mm	H3 mm		
0/R	R	4077	125	0	77	2	0	80	250	0	9911400	175
500/L		3371	642	0	74	3	2	80	250	0	9911400	115
1000/R	R *	1132	1154	0	55	3	1	80	250	0	9911400	135
1500/L	*	964	982	0	282	2	4	80	250	0	9911400	70
2000/R		13426	385	0	190	2	3	80	250	0	9911400	50
2500/L		4625	360	0	108	2	1	80	250	0	9911400	100
3000/R		7215	549	0	217	2	3	80	250	0	9911400	55
3500/L		11291	196	0	280	2	1	80	250	0	9911400	95
4000/R		10052	76	0	442	2	0	80	250	0	9911400	165
4500/L		11777	207	0	281	2	1	80	250	0	9911400	90
5000/R		6925	86	0	478	2	0	80	250	0	9911400	180
5500/L		4001	153	0	68	2	0	80	250	0	9911400	175
6000/R		8185	167	0	323	2	0	80	250	0	9911400	120
6500/L		10568	267	0	326	2	1	80	250	0	9911400	85
7000/R	*	1111	1132	0	230	2	7	80	250	0	9911400	50
7500/L	R	4621	389	0	460	2	1	80	250	0	9911400	95
8000/R		9613	149	0	395	2	0	80	250	0	9911400	120
8500/L		5269	92	0	95	2	0	80	250	0	9911400	185
9000/R		11044	321	0	324	2	2	80	250	0	9911400	75
9500/L		8455	91	0	217	2	0	80	250	0	9911400	165
10000/R		9896	110	0	312	2	0	80	250	0	9911400	140
10500/L		4014	174	0	86	2	0	80	250	0	9911400	150
11000/R		4959	163	0	223	2	0	80	250	0	9911400	145
11500/L		530	217	0	30	3	0	80	250	0	9911400	275
12000/R		9365	673	0	264	2	6	80	250	0	9911400	35
12500/L		1069	1003	0	102	3	3	80	250	0	9911400	90

Point	Remarks	E1	E2	E3	Esub	Critical	Estimated	Ex.layer:			Estimated	New
		MPa	Mpa	MPa	MPa	layer	life	H1	H2	H3	traffic	overlay
							years	mm	mm	mm	8.16 t	mm
13000/R		4684	322	0	110	2	1	80	250	0	9911400	105
13500/L		3755	272	0	263	2	0	80	250	0	9911400	135
14000/R		3226	300	0	183	2	0	80	250	0	9911400	125
14500/L		4462	1037	0	183	2	9	80	250	0	9911400	25
15000/R		7528	267	0	235	2	1	80	250	0	9911400	105
15500/L	K	3490	82	0	122	2	0	80	250	0	9911400	210
16000/R		602	2252	0	166	3	18	80	250	0	9911400	0
16500/L		4382	243	0	152	2	0	80	250	0	9911400	130
17000/R	*	774	789	0	597	2	2	80	250	0	9911400	95
17500/L		876	1486	0	488	2	15	80	250	0	9911400	0
18000/R		1839	102	0	86	1	0	80	250	0	9911400	210
18500/L		9708	195	0	306	2	1	80	250	0	9911400	105
19000/R		4817	475	0	115	2	1	80	250	0	9911400	80
19500/L	*	691	691	0	400	2	1	80	250	0	9911400	105
20000/R		4061	20	0	285	2	0	80	250	0	9911400	300
20500/L		5362	72	0	316	2	0	80	250	0	9911400	205
21000/R		11208	126	0	164	2	0	80	250	0	9911400	120
21500/L	R	9148	297	0	174	2	1	80	250	0	9911400	90
22000/R		4598	69	0	239	2	0	80	250	0	9911400	210
22500/L		5967	92	0	266	2	0	80	250	0	9911400	180
23000/R	*	1662	1662	0	156	3	15	80	250	0	9911400	0
23500/L		10013	176	0	200	2	1	80	250	0	9911400	110
24000/R		6017	157	0	152	2	0	80	250	0	9911400	140
24500/L		6931	104	0	194	2	0	80	250	0	9911400	165
25000/R		7003	115	0	256	2	0	80	250	0	9911400	155
25500/L		13700	114	0	263	2	0	80	250	0	9911400	115
26000/R		11573	59	0	241	2	0	80	250	0	9911400	175
26500/L		8190	76	0	242	2	0	80	250	0	9911400	180
27000/R		11552	314	0	226	2	2	80	250	0	9911400	70
27500/L		6861	359	0	139	2	1	80	250	0	9911400	90
28000/R	*	790	790	0	164	2	2	80	250	0	9911400	95
28500/L	R	8480	201	0	198	2	0	80	250	0	9911400	110
29000/R	*	598	598	0	222	2	1	80	250	0	9911400	115
29500/L	R	6551	115	0	177	2	0	80	250	0	9911400	160
30000/R		10295	175	0	211	2	1	80	250	0	9911400	105
30500/L		9576	183	0	146	2	0	80	250	0	9911400	110
31000/R	*	1020	1020	0	138	3	5	80	250	0	9911400	65
31500/L	*	859	859	0	107	3	2	80	250	0	9911400	95
32000/R	*	1170	1170	0	129	3	5	80	250	0	9911400	55
32500/L	R	5388	425	0	106	2	1	80	250	0	9911400	85
33000/R		4703	142	0	118	2	0	80	250	0	9911400	160
33500/L		7132	156	0	138	2	0	80	250	0	9911400	135
34000/R		3609	239	0	124	2	0	80	250	0	9911400	140
34500/L		9016	65	0	208	2	0	80	250	0	9911400	185
35000/R		7071	83	0	145	2	0	80	250	0	9911400	180

ROAD EVALUATION REPORT

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Client: TACIS

Sec. no.: 0001

Link no.: 37.001

A/S PHØNIX

P. P. C

Design date: 10-30-1997

Link ref.: M1 Mea. date: 1849 2

Start at: GANJA (BYPASS)

Surface: ASF

Calculation parameters:

Signature index:

Load radius 150 mm

B=Block cracking

R=Rutting

Contact pressure 0.70 MPa

A=Alligator cracking

O=No remarks

Poisson's ratio 0.35

C=other cracking

S=Surface defect

Annual traf. growth .01 %

P=Potholes

H=Future design

Design temperature 30 C

D=Deformation

X=Local def. only

Design period 15 years

Y=General defect

Z=Reconstruction area

S. kor. factor 1.00

T=Temperature taken

* - after remarks indicates that the point has been calculated as a 2-layer system and that the thickness and E-values of 1st and 2nd layer are the same when calculating the new overlay needed in the actual point, the calculation is done for a 3-layer system

E-value of new asphalt layer < 100 mm MPa: 2000

E-value of new asphalt layer > 100 mm MPa: 3000

Point	Remarks	E1 MPa	E2 Mpa	E3 MPa	Esub MPa	Critical layer	Estimated life years	Ex.layer			Estimated traffic 8.16 t	New overlay mm
								H1 mm	H2 mm	H3 mm		
0/R		14669	2085	0	104	3	20	80	250	0	9166200	0
1000/R		906	3295	0	152	3	20	80	250	0	9166200	0
2000/R		7042	340	0	233	2	1	80	250	0	9166200	90
3000/R	*	987	1025	0	371	2	6	80	250	0	9166200	60
3500/L		12450	69	0	208	2	0	80	250	0	9166200	155
4000/R	*	2277	2366	0	191	3	20	80	250	0	9166200	0
4500/L	*	593	871	0	174	2	3	80	250	0	9166200	85
5000/R		4198	243	0	456	2	0	80	250	0	9166200	130
5500/L	*	556	817	0	211	2	3	80	250	0	9166200	90
6000/R		2433	626	0	99	2	2	80	250	0	9166200	95
6500/L		12209	164	0	361	2	1	80	250	0	9166200	95
7000/R		6667	518	0	113	2	3	80	250	0	9166200	60
7500/L	*	923	1356	0	163	3	10	80	250	0	9166200	20
8000/R	*	780	810	0	98	3	2	80	250	0	9166200	105
8500/L	*	325	478	0	242	2	0	80	250	0	9166200	130
9000/R		686	2129	0	100	3	7	80	250	0	9166200	35
9500/L		3467	1139	0	127	3	10	80	250	0	9166200	25
10000/R		5703	1417	0	168	2	20	80	250	0	9166200	0
10500/L	*	601	883	0	275	2	3	80	250	0	9166200	85
11000/R		9833	1735	0	163	3	20	80	250	0	9166200	0
11500/L	*	1138	1673	0	163	3	15	80	250	0	9166200	0
12000/R		4183	323	0	113	2	1	80	250	0	9166200	110
12500/L		11649	525	0	111	2	5	80	250	0	9166200	40
13000/R		12545	905	0	91	3	11	80	250	0	9166200	15
13500/L		11707	1069	0	146	2	20	80	250	0	9166200	0
14000/R		13786	972	0	88	3	13	80	250	0	9166200	10

Point	Remarks	E1	E2	E3	Esub	Critical layer	Estimated life years	Ex. layer			Estimated traffic 8.16 t	New overlay mm
		MPa	Mpa	MPa	MPa			H1 mm	H2 mm	H3 mm		
14500/L	*	2244	3298	0	192	3	20	80	250	0	9166200	0
15000/R		1553	1273	0	67	3	2	80	250	0	9166200	105
15500/L	*	1068	1570	0	249	2	20	80	250	0	9166200	0
16000/R	*	1312	1363	0	110	3	6	80	250	0	9166200	55
17000/R		4466	127	0	141	2	0	80	250	0	9166200	165
17500/L	*	608	894	0	76	3	1	80	250	0	9166200	120
18000/R		885	921	0	169	2	4	80	250	0	9166200	75
18500/L	*	1659	2438	0	99	3	14	80	250	0	9166200	10
19000/R	*	415	432	0	95	2	0	80	250	0	9166200	145
19500/L	R	1489	2188	0	103	3	11	80	250	0	9166200	15
20000/R	*	1607	1669	0	101	3	8	80	250	0	9166200	40
20500/L		5470	2226	0	151	3	20	80	250	0	9166200	0
21000/R	*	522	542	0	79	3	1	80	250	0	9166200	145
22000/R	*	1531	1591	0	122	3	9	80	250	0	9166200	25
22500/L	*	1092	1605	0	89	3	5	80	250	0	9166200	65
23500/L	*	1921	2823	0	191	3	20	80	250	0	9166200	0
24000/R		3927	354	0	49	3	0	80	250	0	9166200	170
24500/L	*	1815	2668	0	75	3	10	80	250	0	9166200	30
25000/R	*	736	765	0	102	3	2	80	250	0	9166200	105
25500/L	*	1600	2352	0	129	3	20	80	250	0	9166200	0
26000/R	*	1034	1075	0	76	3	2	80	250	0	9166200	105
26500/L		4604	299	0	157	2	1	80	250	0	9166200	115
27000/R	*	1208	1256	0	92	3	3	80	250	0	9166200	75
27500/L	*	2261	3323	0	125	3	20	80	250	0	9166200	0
28000/R		6459	494	0	86	2	2	80	250	0	9166200	85
28500/L		14069	726	0	157	2	12	80	250	0	9166200	10
29000/R	*	508	528	0	157	2	1	80	250	0	9166200	120
29500/L	*	2248	3305	0	207	3	20	80	250	0	9166200	0
30000/R		7741	573	0	101	2	4	80	250	0	9166200	50
30500/L	*	1951	2867	0	87	3	15	80	250	0	9166200	0
31000/R	*	1065	1107	0	82	3	2	80	250	0	9166200	100
31500/L		9622	608	0	70	3	3	80	250	0	9166200	70
32000/R		5212	1955	0	65	3	8	80	250	0	9166200	30
32500/L		3836	1641	0	55	3	4	80	250	0	9166200	75
33000/R	*	978	1016	0	88	3	2	80	250	0	9166200	100
33500/L	K-R	11624	1025	0	82	3	10	80	250	0	9166200	20
34000/R	*	2887	3000	0	129	3	20	80	250	0	9166200	0
34500/L		162	14204	0	70	3	20	80	250	0	9166200	0
35000/R		1305	1611	0	85	3	5	80	250	0	9166200	65
35500/L	*	1556	2287	0	130	3	19	80	250	0	9166200	0
36000/R	*	822	854	0	66	3	1	80	250	0	9166200	135
36500/L	*	935	1375	0	275	2	13	80	250	0	9166200	15
37000/R		11046	316	0	116	2	2	80	250	0	9166200	70
37500/L	*	1074	1578	0	130	3	9	80	250	0	9166200	30
38000/R	*	1291	1341	0	83	3	3	80	250	0	9166200	80
38500/L	*	676	994	0	163	2	5	80	250	0	9166200	70
39000/R		5716	974	0	195	2	10	80	250	0	9166200	25
39500/L		183	13424	0	91	3	20	80	250	0	9166200	0
40000/R		6779	211	0	93	2	0	80	250	0	9166200	120
40500/L		8224	2338	0	132	3	20	80	250	0	9166200	0
41000/R		818	2030	0	70	3	4	80	250	0	9166200	70
42000/R		4343	1085	0	68	3	4	80	250	0	9166200	80
42500/L		437	9706	0	83	3	20	80	250	0	9166200	0
43000/R		1271	745	0	90	3	2	80	250	0	9166200	110
43500/L		905	239	0	56	2	0	80	250	0	9166200	205
44000/R	*	4137	4298	0	132	3	20	80	250	0	9166200	0
44500/L		2807	1242	0	98	3	6	80	250	0	9166200	50
45000/R		4560	399	0	56	3	1	80	250	0	9166200	150
46000/R		1255	1757	0	61	3	3	80	250	0	9166200	95
46500/L		140	4517	0	69	3	10	80	250	0	9166200	20

Point	Remarks	E1	E2	E3	Esub	Critical	Estimated	Ex.layer			Estimated	New
		MPa	Mpa	MPa	MPa	layer	life	H1	H2	H3	traffic	overlay
							years	mm	mm	mm	8.16 t	mm
47000/R	*	3721	3866	0	112	3	20	80	250	0	9166200	0
48000/R		7855	744	0	74	3	4	80	250	0	9166200	65
48500/L	*	634	931	0	161	2	4	80	250	0	9166200	75
49000/R		5504	169	0	152	2	0	80	250	0	9166200	140
49500/L	*	1588	2334	0	105	3	14	80	250	0	9166200	10
50000/R		12226	627	0	78	3	6	80	250	0	9166200	45
50500/L	*	2238	3289	0	131	3	20	80	250	0	9166200	0
51000/R	*	2468	3039	0	146	3	20	80	250	0	9166200	0
51500/L	*	1959	2879	0	93	3	17	80	250	0	9166200	0
52000/R	*	514	633	0	101	3	1	80	250	0	9166200	115
53000/R		3849	1402	0	131	3	15	80	250	0	9166200	0
53500/L	*	3085	4535	0	134	3	20	80	250	0	9166200	0
54000/R	*	1632	2010	0	104	3	10	80	250	0	9166200	25
54500/L	*	1734	2548	0	149	3	20	80	250	0	9166200	0
55000/R		3009	365	0	223	2	1	80	250	0	9166200	110
56000/R		917	689	0	196	2	2	80	250	0	9166200	100
56500/L	*	349	513	0	89	3	1	80	250	0	9166200	140
57000/R	*	847	1044	0	73	3	2	80	250	0	9166200	110
57500/L	*	2805	4123	0	122	3	20	80	250	0	9166200	0
58500/L	*	440	646	0	148	2	1	80	250	0	9166200	110
59000/R	*	236	290	0	102	2	0	80	250	0	9166200	155
59500/L		6108	2752	0	132	3	20	80	250	0	9166200	0
60500/L	*	2372	3486	0	102	3	20	80	250	0	9166200	0
61000/R	*	299	368	0	129	2	0	80	250	0	9166200	145
61500/L	*	2272	3340	0	223	3	20	80	250	0	9166200	0
62000/R	*	1035	1275	0	105	3	4	80	250	0	9166200	65
62500/L	*	1716	2522	0	142	3	20	80	250	0	9166200	0
63000/R		6106	317	0	59	2	1	80	250	0	9166200	135
63500/L	*	1844	2710	0	139	3	20	80	250	0	9166200	0
64000/R	*	771	949	0	114	3	3	80	250	0	9166200	85
64500/L		7681	338	0	152	2	1	80	250	0	9166200	85
65000/R	*	635	781	0	110	3	2	80	250	0	9166200	95
65500/L		3382	186	0	66	2	0	80	250	0	9166200	170
66000/R	*	842	1036	0	78	3	2	80	250	0	9166200	110
66500/L		11429	1884	0	98	3	20	80	250	0	9166200	0
67000/R	*	467	575	0	128	2	1	80	250	0	9166200	115
67500/L		2333	1235	0	98	3	6	80	250	0	9166200	55
68000/R		14833	48	0	252	2	0	80	250	0	9166200	170
68500/L	*	429	516	0	128	2	1	80	250	0	9166200	125
69000/R	*	459	565	0	112	2	1	80	250	0	9166200	120
69500/L		2126	927	0	164	2	5	80	250	0	9166200	55
70000/R	*	1750	2155	0	122	3	16	80	250	0	9166200	0
70500/L	*	264	317	0	173	2	0	80	250	0	9166200	150
71000/R		14805	175	0	108	2	1	80	250	0	9166200	80
71500/L	*	616	742	0	114	3	2	80	250	0	9166200	100
72000/R		2149	2274	0	80	3	10	80	250	0	9166200	30
72500/L	*	659	794	0	95	3	1	80	250	0	9166200	110
73000/R	K	1138	1401	0	106	3	5	80	250	0	9166200	55
73500/L	*	601	723	0	94	3	1	80	250	0	9166200	115
74000/R	*	1019	1255	0	153	3	8	80	250	0	9166200	30
74500/L	*	1592	1917	0	158	3	20	80	250	0	9166200	0
75000/R	*	372	458	0	112	2	0	80	250	0	9166200	130
75500/L		5196	240	0	114	2	0	80	250	0	9166200	125
76000/R	R	1432	1764	0	102	3	8	80	250	0	9166200	40
76500/L		13732	205	0	99	2	1	80	250	0	9166200	80
77000/R	*	355	438	0	70	3	0	80	250	0	9166200	165
77500/L		12179	21	0	71	2	0	80	250	0	9166200	265
78000/R	*	1817	2238	0	114	3	16	80	250	0	9166200	0
78500/L	*	1294	1557	0	142	3	11	80	250	0	9166200	15
79000/R		7078	1713	0	86	3	14	80	250	0	9166200	5

Point	Remarks	E1	E2	E3	Esub	Critical	Estimated	Ex.layer			Estimated	New
		MPa	Mpa	MPa	MPa	layer	life	H1	H2	H3	traffic	overlay
							years	mm	mm	mm	8.16 t	mm
80000/R		760	31	0	99	1	0	80	250	0	9166200	300
79500/L	*	1444	1738	0	74	3	5	80	250	0	9166200	70

ROAD EVALUATION REPORT

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Client: TACIS
 Sec. no.: 0001
 Link no.: 37.001

A/S PHØNIX
 P. P. C

Design date: 10-30-1997

Link ref.: M1 Mea. date: 2049 2
 Start at: BORDER
 Surface: ASF

Calculation parameters:		Signature index:	
Load radius	150 mm	B=Block cracking	R=Rutting
Contact pressure	0.70 MPa	A=Alligator cracking	O=No remarks
Poisson's ratio	0.35	C=other cracking	S=Surface defect
Annual traf. growth	.01 %	P=Potholes	H=Future design
Design temperature	30 C	D=Deformation	X=Local def. only
Design period	15 years	Y=General defect	Z=Reconstruction area
S. kor. factor	1.00	T=Temperature taken	

* - after remarks indicates that the point has been calculated as a 2-layer system and that the thickness and E-values of 1st and 2nd layer are the same when calculating the new overlay needed in the actual point, the calculation is done for a 3-layer system

E-value of new asphalt layer < 100 mm MPa: 2000
 E-value of new asphalt layer > 100 mm MPa: 3000

Point	Remarks	E1 MPa	E2 Mpa	E3 MPa	Esub MPa	Critical layer	Estimated life years	Ex. layer			Estimated traffic 8.16 t	New overlay mm
								H1 mm	H2 mm	H3 mm		
500/L	*	407	502	0	80	3	0	80	250	0	8944300	150
1000/R	*	509	815	0	105	3	2	80	250	0	8944300	105
1500/L		6782	391	0	137	2	1	80	250	0	8944300	85
2000/R		580	4582	0	193	3	20	80	250	0	8944300	0
2500/L		13597	722	0	77	3	7	80	250	0	8944300	35
3000/R	*	992	1590	0	106	3	6	80	250	0	8944300	45
3500/L	*	700	862	0	73	3	1	80	250	0	8944300	125
4000/R	*	1698	2722	0	96	3	16	80	250	0	8944300	0
4500/L	*	751	925	0	100	3	2	80	250	0	8944300	95
5000/R		12025	3485	0	209	3	20	80	250	0	8944300	0
5500/L	*	1273	1568	0	112	3	8	80	250	0	8944300	40
6000/R	*	182	292	0	187	2	0	80	250	0	8944300	155
6500/L	*	883	1087	0	69	3	2	80	250	0	8944300	115
7000/R		3203	679	0	188	2	3	80	250	0	8944300	70
7500/L	*	610	751	0	115	3	2	80	250	0	8944300	95
8000/R		9780	463	0	82	2	3	80	250	0	8944300	70
8500/L		13710	319	0	73	2	2	80	250	0	8944300	70
9000/R		7521	682	0	64	3	3	80	250	0	8944300	85
9500/L	*	1593	1962	0	139	3	17	80	250	0	8944300	0
10000/R		5557	596	0	144	2	3	80	250	0	8944300	55
10500/L	*	852	1050	0	173	2	6	80	250	0	8944300	60
11000/R		7651	186	0	109	2	0	80	250	0	8944300	115
11500/L		14772	1136	0	142	2	20	80	250	0	8944300	0
12000/R	*	1822	2920	0	171	3	20	80	250	0	8944300	0
12500/L		5365	299	0	46	3	0	80	250	0	8944300	165
13000/R	*	967	1550	0	98	3	5	80	250	0	8944300	60

Point	Remarks	E1	E2	E3	Esub Critical layer	Estimated life years	Ex.layer			Estimated traffic 8.16 t	New overlay mm	
		MPa	Mpa	MPa			H1 mm	H2 mm	H3 mm			
13500/L	*	520	640	0	186	2	1	80	250	0	8944300	110
14000/R	*	607	972	0	181	2	4	80	250	0	8944300	70
14500/L	*	780	960	0	175	2	4	80	250	0	8944300	70
15000/R	*	747	1196	0	231	2	9	80	250	0	8944300	40
15500/L	*	528	650	0	127	2	1	80	250	0	8944300	110
16000/R		592	2144	0	247	3	20	80	250	0	8944300	0
16500/L	*	872	1074	0	192	2	6	80	250	0	8944300	55
17000/R		6505	466	0	188	2	2	80	250	0	8944300	65
17500/L		10893	307	0	93	2	2	80	250	0	8944300	70
18500/L		8366	248	0	88	2	1	80	250	0	8944300	95
19000/R	*	714	1144	0	105	3	3	80	250	0	8944300	75
19500/L	*	1093	1346	0	148	3	9	80	250	0	8944300	25
20000/R	*	387	620	0	92	3	1	80	250	0	8944300	130
20500/L	*	1806	2224	0	202	3	20	80	250	0	8944300	0
21000/R	*	498	799	0	99	3	1	80	250	0	8944300	105
21500/L		1926	50	0	36	1	0	80	250	0	8944300	275
22000/R		7677	1518	0	140	3	20	80	250	0	8944300	0
22500/L	*	259	319	0	96	2	0	80	250	0	8944300	150
23000/R	*	654	1048	0	165	2	6	80	250	0	8944300	60
23500/L	*	1402	1727	0	170	3	19	80	250	0	8944300	0
24000/R	*	1558	2496	0	109	3	16	80	250	0	8944300	0
24500/L	*	2682	3303	0	192	3	20	80	250	0	8944300	0
25000/R		13890	842	0	109	3	15	80	250	0	8944300	0
25500/L		6366	199	0	93	2	0	80	250	0	8944300	125
26000/R		891	1299	0	360	2	11	80	250	0	8944300	25
26500/L		8548	343	0	213	2	1	80	250	0	8944300	80
27000/R		10269	813	0	165	2	11	80	250	0	8944300	15
27500/L	*	681	839	0	175	2	3	80	250	0	8944300	85
28000/R	*	412	661	0	114	2	1	80	250	0	8944300	110
28500/L		9999	526	0	104	2	4	80	250	0	8944300	45
29000/R		4800	558	0	125	2	2	80	250	0	8944300	70
29500/L	*	658	811	0	78	3	1	80	250	0	8944300	125
30000/R	*	418	671	0	263	2	1	80	250	0	8944300	110
30500/L	*	843	1039	0	103	3	3	80	250	0	8944300	85
31000/R		8842	78	0	90	2	0	80	250	0	8944300	170
31500/L	*	915	1127	0	141	3	6	80	250	0	8944300	50
32000/R	*	614	927	0	154	2	4	80	250	0	8944300	75
32500/L		6529	1358	0	103	3	13	80	250	0	8944300	10
33000/R		5558	681	0	132	2	4	80	250	0	8944300	45
33500/L	*	1353	1666	0	150	3	14	80	250	0	8944300	5
34000/R	*	857	1295	0	144	3	8	80	250	0	8944300	35
34500/L		308	10893	0	140	3	20	80	250	0	8944300	0
35000/R	*	1724	2606	0	208	3	20	80	250	0	8944300	0
35500/L	*	3177	3912	0	132	3	20	80	250	0	8944300	0
36000/R	*	2384	3603	0	89	3	20	80	250	0	8944300	0
36500/L	*	1143	1408	0	62	3	2	80	250	0	8944300	105
37000/R		7763	1535	0	141	3	20	80	250	0	8944300	0
37500/L		3970	421	0	68	2	1	80	250	0	8944300	130
38000/R	*	1230	1859	0	111	3	9	80	250	0	8944300	30
38500/L	*	5015	6176	0	234	3	20	80	250	0	8944300	0
39000/R		2781	89	0	116	1	0	80	250	0	8944300	205
39500/L		7832	358	0	100	2	1	80	250	0	8944300	80
40000/R		7800	636	0	90	2	5	80	250	0	8944300	55
40500/L	*	1365	1681	0	226	3	20	80	250	0	8944300	0
41000/R	*	864	1306	0	80	3	3	80	250	0	8944300	90
41500/L		6338	1006	0	162	2	12	80	250	0	8944300	15
42000/R	*	1349	2040	0	160	3	20	80	250	0	8944300	0
42500/L	*	593	730	0	79	3	1	80	250	0	8944300	130
43500/L	*	1005	1237	0	78	3	3	80	250	0	8944300	95
44000/R		14359	769	0	184	2	14	80	250	0	8944300	5

Point	Remarks	E1	E2	E3	Esub	Critical	Estimated	Ex. layer			Estimated	New
		MPa	Mpa	MPa	MPa	layer	life	H1	H2	H3	traffic	overlay
							years	mm	mm	mm	8.16 t	mm
44500/L	*	826	1017	0	254	2	5	80	250	0	8944300	65
45000/R	*	2260	3417	0	482	3	20	80	250	0	8944300	0
46000/R		8077	578	0	294	2	4	80	250	0	8944300	50

ALYAT-GEORGIAN BORDER ROAD: BEARING CAPACITY RESULTS pr. POINT 1997																		
SECTION NO. 1 ALYAT TO GAZI-MAMMAD																		
Sector no.	Road no.	Road name	Chainage/Lane	Contact pressure	Temp	Def 1 R=0	Def 2 R=210	Def 3 R=330	Def 4 R=510	Def 5 R=810	Def 6 R=1270	SCI	Evd1	Evd2	Evd3	Evd4	Evd5	Evd6
1	37.001	M4	0/R	1088	31	200	173	158	115	83	59	548	1432	591	412	366	320	287
1	37.001	M4	500/L	872	24	1014	785	657	296	140	92	58	226	104	79	114	152	147
1	37.001	M4	1000/R	1043	31	131	111	103	80	62	44	725	2096	883	606	505	410	369
1	37.001	M4	1500/L	827	24	501	433	364	174	98	70	217	435	180	136	184	206	184
1	37.001	M4	2000/L	1011	31	533	376	327	182	109	69	77	499	253	185	215	226	228
1	37.001	M4	2500/L	694	24	473	410	366	228	143	91	235	386	159	113	118	119	119
1	37.001	M4	3000/R	882	31	472	406	352	205	130	81	223	492	204	150	167	165	169
1	37.001	M4	3500/L	725	24	310	293	242	126	78	53	951	616	233	179	223	227	213
1	37.001	M4	4000/R	906	31	469	376	319	176	107	67	148	509	227	170	199	206	210
1	37.001	M4	4500/L	727	24	498	416	364	214	135	88	174	384	164	119	132	131	128
1	37.001	M4	5000/R	958	31	220	187	166	110	49	49	441	1146	482	345	337	311	304
1	37.001	M4	5500/L	740	24	527	398	332	185	115	75	100	370	175	133	155	157	162
1	37.001	M4	6000/R	859	31	633	514	416	204	121	82	117	357	157	124	163	173	163
1	37.001	M4	6500/L	791	24	310	298	272	181	123	81	1371	672	250	174	169	157	152
1	37.001	M4	7000/R	772	31	801	648	496	197	116	80	90	254	112	93	152	162	150
1	37.001	M4	7500/L	914	24	370	304	277	195	137	94	213	650	283	197	181	163	151
1	37.001	M4	8000/R	998	31	200	177	170	129	95	72	658	1314	530	351	300	256	215
1	37.001	M4	8500/L	846	24	420	373	328	189	113	69	329	530	213	154	173	182	191
1	37.001	M4	9000/R	975	31	550	507	436	242	147	93	367	467	181	134	156	162	163
1	37.001	M4	9500/L	856	24	233	188	173	124	91	61	307	967	428	296	267	229	218
1	37.001	M4	10000/R	1084	31	10000/R	207	186	123	85	53	418	1179	492	345	341	311	318
1	37.001	M4	10500/L	753	24	262	229	210	149	105	72	453	757	309	215	196	175	163
1	37.001	M4	11000/R	927	31	432	363	321	195	108	69	208	565	240	173	184	209	209
1	37.001	M4	11500/L	856	24	249	208	183	121	84	54	349	905	387	280	274	248	246
1	37.001	M4	12000/R	956	31	239	198	182	123	84	55	346	1053	454	314	301	277	270
1	37.001	M4	12500/L	856	36	378	309	269	167	111	73	203	596	260	190	198	188	182
1	37.001	M4	13000/R	917	31	262	222	199	127	82	49	362	921	388	273	280	273	291
1	37.001	M4	13500/L	751	36	165	139	133	99	73	50	554	1198	508	338	294	251	234
1	37.001	M4	14000/R	933	31	267	237	216	142	97	62	506	920	370	258	254	234	234
1	37.001	M4	14500/L	807	36	223	185	166	105	68	42	374	953	410	291	298	289	299
1	37.001	M4	15000/R	937	31	360	318	298	200	135	88	360	685	277	188	181	169	166
1	37.001	M4	15500/L	962	36	169	143	130	93	69	48	557	1499	632	443	400	340	312
1	37.001	M4	16000/R	740	31	677	608	553	289	184	115	223	293	187	128	128	122	122
1	37.001	M4	16500/L	753	36	1028	703	572	288	177	110	36	229	120	94	120	123	126
1	37.001	M4	17000/R	895	31	346	297	267	177	120	77	300	574	239	169	165	153	152
1	37.001	M4	17500/L	754	36	320	285	267	196	139	92	435	709	284	193	170	151	146
1	37.001	M4	18000/R	862	31	432	371	324	185	111	75	241	525	180	159	180	189	178
1	37.001	M4	18500/L	861	36	350	302	277	183	123	78	308	612	253	176	172	161	162
1	37.001	M4	19000/R	814	31	341	296	272	179	122	81	330	611	251	174	171	158	152
1	37.001	M4	19500/L	791	36	341	296	272	179	122	81	330	611	251	174	171	158	152
1	37.001	M4	20000/R	830	31	180	166	159	122	93	64	1127	1214	470	312	263	218	202
1	37.001	M4	20500/L	795	36	371	331	303	190	119	69	382	564	226	157	162	163	179
1	37.001	M4	21000/R	940	31	284	239	216	139	93	58	320	871	370	258	262	246	252
1	37.001	M4	21500/L	830	36	376	356	288	166	112	71	810	561	219	172	194	181	182
1	37.001	M4	22000/R	723	31	308	263	239	143	88	52	325	618	258	181	196	200	216
1	37.001	M4	22500/L	801	36	394	330	294	175	106	64	224	535	228	163	177	184	195
1	37.001	M4	23000/R	711	31	200	182	170	111	75	46	865	936	367	250	248	231	240
1	37.001	M4	23500/L	746	36	231	207	193	139	101	64	639	850	339	231	208	180	181
1	37.001	M4	24000/R	743	31	326	274	247	154	101	69	277	605	277	181	188	181	169
1	37.001	M4	24500/L	751	36	225	188	174	111	76	38	366	879	357	258	262	265	307
1	37.001	M4	25000/R	919	31	193	169	161	111	76	49	624	1254	511	342	321	295	292

1	37.001	*M4	25500/L	780	36	252	216	200	132	85	52	407	815	340	233	229	224	233
1	37.001	*M4	26000/R	837	31	150	131	125	92	67	43	787	1469	601	401	352	305	303
1	37.001	*M4	26500/L	751	36	368	330	303	174	110	67	404	537	214	148	167	166	174
1	37.001	*M4	27000/R	698	31	328	273	256	166	107	71	259	560	240	163	163	159	153
1	37.001	*M4	27500/L	748	36	449	355	308	177	112	71	144	439	198	164	164	163	164
1	37.001	*M4	28000/R	761	31	169	141	131	88	58	35	510	1185	507	348	335	320	336
1	37.001	*M4	28500/L	723	36	537	382	317	146	78	43	79	354	178	136	192	226	261
1	37.001	*M4	29000/R	711	31	300	231	209	116	67	38	191	624	289	204	237	259	291
1	37.001	*M4	29500/L	801	36	336	231	193	118	81	52	112	628	326	248	263	241	239
1	37.001	*M4	30000/R	908	31	179	160	157	110	75	49	805	1335	534	346	320	295	288
1	37.001	*M4	30500/L	720	36	439	398	363	198	116	71	378	432	170	119	141	151	158
1	37.001	*M4	31000/R	743	31	417	346	308	160	78	42	200	469	202	144	180	232	275
1	37.001	*M4	31500/L	753	36	526	437	384	201	108	61	160	377	162	117	145	170	192
1	37.001	*M4	32000/R	801	31	224	194	181	121	79	52	484	941	388	265	256	247	239
1	37.001	*M4	32500/L	804	36	186	144	128	76	43	25	315	1138	525	376	410	456	500
1	37.001	*M4	33000/R	785	35	246	199	174	98	61	41	295	819	361	263	302	306	290
1	37.001	*M4	33500/L	843	36	332	283	250	143	96	67	298	668	280	202	228	214	196
1	37.001	*M4	34000/R	982	35	266	139	129	87	56	43	70	972	664	455	437	427	355
1	37.001	*M4	34500/L	738	36	219	178	158	96	64	43	339	887	390	279	298	281	267
1	37.001	*M4	35000/R	814	35	537	418	354	156	92	60	112	399	183	138	199	216	211
1	37.001	*M4	35500/L	723	36	407	335	287	148	83	50	196	468	203	151	189	212	225
1	37.001	*M4	36000/R	707	35	868	710	507	154	77	56	77	210	94	83	178	224	196
1	37.001	*M4	36500/L	720	36	311	242	206	123	81	55	193	609	280	209	227	217	204
1	37.001	*M4	37500/L	817	36	709	527	434	174	88	60	70	303	146	113	182	226	212
1	37.001	*M4	38000/R	833	35	272	215	185	106	66	43	237	806	364	269	304	308	301
1	37.001	*M4	38500/L	796	36	279	228	201	112	68	44	274	751	328	237	275	285	281
1	37.001	*M4	39000/R	746	35	215	177	152	78	48	31	371	913	396	284	370	379	374
1	37.001	*M4	39500/L	919	36	320	274	241	128	70	39	319	756	315	228	278	320	366
1	37.001	*M4	40000/R	856	35	429	317	253	89	44	31	113	525	254	202	372	474	429
1	37.001	*M4	40500/L	814	36	208	150	132	82	55	38	213	1030	510	368	384	361	333
1	37.001	*M4	41000/R	962	35	496	370	308	164	98	63	101	511	244	187	227	239	237
1	37.001	*M4	41500/L	825	36	1053	761	593	152	74	46	41	204	102	83	205	272	279
1	37.001	*M4	42000/R	759	35	801	615	494	198	98	59	71	249	116	92	148	189	200

Sector no.		Road no.	Road name	Chainage/ lane	Contact pressure	Temp	Def 1 R=0	Def 2 R=210	Def 3 R=330	Def 4 R=510	Def 5 R=810	Def 6 R=1270	SCI	Evd1	Evd2	Evd3	Evd4	Evd5	Evd6
ALYAT-GEORGIAN BORDER ROAD: BEARING CAPACITY RESULTS DR. POINT 1997																			
SECTION NO. 2 GAZI-MAMMAD TO KURDAMIR																			
1	1	1	M4	0/R	799	22	385	323	274	136	76	53	232	546	233	174	227	256	234
1	1	1	M4	500/L	911	25	490	382	324	182	120	1823	124	489	224	168	194	185	8
1	1	1	M4	1000/R	885	22	322	274	241	130	75	1888	303	724	304	220	264	288	8
1	1	1	M4	1500/R	790	25	208	187	177	130	97	1038	733	1000	397	267	235	199	12
1	1	1	M4	2000/R	772	22	281	232	201	109	71	1787	288	723	313	230	274	265	7
1	1	1	M4	2500/L	814	25	154	132	125	96	72	1153	667	1391	560	390	328	276	11
1	1	1	M4	3000/R	778	22	279	249	241	212	73	1683	509	734	294	193	142	260	7
1	1	1	M4	3500/L	762	12	321	282	256	168	114	1015	385	625	254	178	176	163	12
1	1	1	M4	4000/R	858	22	485	365	304	144	90	1554	107	466	221	169	231	232	9
1	1	1	M4	4500/L	749	12	517	454	399	209	118	1715	239	381	155	112	139	155	7
1	1	1	M4	5000/R	911	12	530	396	309	133	82	1519	95	452	216	176	265	271	9
1	1	1	M4	5500/L	762	12	270	231	217	157	110	1937	375	743	310	210	188	169	9
1	1	1	M4	6000/R	740	22	674	534	434	187	112	1766	97	289	130	102	153	161	7
1	1	1	M4	6500/L	911	12	205	180	172	102	131	601	601	1170	476	317	271	218	7
1	1	1	M4	7000/R	759	22	614	520	456	235	135	1809	154	325	137	100	125	137	7
1	1	1	M4	7500/L	762	12	1027	933	641	284	154	657	715	740	288	197	180	163	18
1	1	1	M4	8000/R	801	12	233	212	198	152	113	83	741	861	338	81	75	109	127
1	1	1	M4	8500/L	762	12	933	758	626	274	200	2061	79	208	91	230	194	164	143
1	1	1	M4	9000/R	736	12	211	182	182	133	96	1708	870	967	378	255	226	197	7
1	1	1	M4	9500/L	775	12	541	478	435	258	157	2114	240	378	378	107	117	121	121
1	1	1	M4	10000/R	777	12	440	349	329	227	161	1363	149	525	236	159	150	133	10
1	1	1	M4	10500/L	877	12	769	579	485	242	142	1777	68	301	143	108	140	151	8
1	1	1	M4	11000/R	878	22	309	281	266	193	138	737	556	549	285	171	135	135	16
1	1	1	M4	11500/L	933	12	492	416	364	201	119	1975	190	499	211	153	160	191	7
1	1	1	M4	12000/R	762	12	368	312	269	159	107	1613	259	541	228	168	184	172	7
1	1	1	M4	12500/L	937	12	451	395	359	218	129	68	268	547	223	156	166	177	7
1	1	1	M4	13000/R	772	12	203	178	170	119	82	1032	600	1001	408	272	251	229	12
1	1	1	M4	14000/R	749	22	959	850	747	388	205	2027	139	206	83	60	75	89	6
1	1	1	M4	14500/L	772	12	161	143	134	103	78	1290	844	1262	508	345	290	241	9
1	1	1	M4	15000/R	775	22	562	502	462	285	200	1963	255	363	145	100	105	94	6
1	1	1	M4	15500/L	762	12	292	269	252	186	136	1045	685	687	266	181	159	137	11
1	1	1	M4	16000/R	759	22	656	535	457	265	167	1861	115	305	133	97	111	111	6
1	1	1	M4	16500/L	775	12	216	199	188	141	108	1444	927	945	366	247	213	175	8
1	1	1	M4	17000/R	937	12	339	275	250	167	107	1443	217	728	320	224	217	213	10
1	1	1	M4	17500/L	791	12	430	391	363	240	157	965	399	484	190	130	128	123	10
1	1	1	M4	18000/R	969	22	408	361	334	221	145	1086	322	825	252	174	170	163	14
1	1	1	M4	18500/L	743	12	331	302	282	197	138	144	538	591	231	158	146	131	80
1	1	1	M4	19000/R	953	12	248	208	208	157	114	1268	501	1012	311	274	235	204	12
1	1	1	M4	19500/L	775	12	492	428	390	238	149	2315	233	415	170	119	126	127	5
1	1	1	M4	20000/R	817	12	375	343	321	213	138	1515	489	574	270	152	148	144	8
1	1	1	M4	20500/L	775	12	257	236	223	174	130	242	748	794	309	208	172	145	50
1	1	1	M4	21000/R	846	12	415	336	295	183	126	77	77	537	237	272	179	164	171
1	1	1	M4	21500/L	775	12	237	214	203	154	116	1667	672	861	340	228	195	163	7
1	1	1	M4	22000/R	872	12	293	228	209	147	105	624	205	783	360	260	230	202	22
1	1	1	M4	22500/L	736	12	277	246	223	149	106	1732	490	699	281	197	191	169	6
1	1	1	M4	23000/R	801	12	475	378	335	207	137	1782	140	599	199	143	150	143	7
1	1	1	M4	23500/L	746	12	406	375	346	228	144	456	510	484	187	129	127	128	25
1	1	1	M4	24000/R	896	12	585	476	404	222	142	963	128	404	177	133	157	154	14
1	1	1	M4	24500/L	759	12	201	180	170	123	89	413	730	994	396	287	239	208	29
1	1	1	M4	25000/R	775	22	451	407	375	233	152	1079	351	452	179	124	129	124	11

1	1	1	M4	25500/L	778	12	433	372	344	233	155	497	241	473	197	135	129	122	24
1	1	1	M4	26000/R	878	22	468	389	357	239	164	1811	180	494	212	147	142	130	8
1	1	1	M4	26500/L	722	12	934	737	648	333	120	1126	57	203	92	69	84	147	10
1	1	1	M4	27000/R	866	22	1139	901	749	359	189	130	57	200	90	67	93	112	104
1	1	1	M4	27500/L	746	12	400	367	341	212	136	534	476	491	191	131	136	134	22
1	1	1	M4	28000/R	775	22	719	550	456	241	142	1211	77	284	132	102	124	133	10
1	1	1	M4	28500/L	746	12	507	420	363	208	141	1745	163	387	167	123	139	129	7
1	1	1	M4	29000/R	769	22	614	480	397	214	133	1937	100	330	151	116	139	141	6
1	1	1	M4	29500/L	756	12	197	181	174	133	102	1986	983	1010	393	260	220	181	6
1	1	1	M4	30000/R	790	22	553	478	423	250	156	1856	197	376	155	112	122	123	7
1	1	1	M4	30500/L	775	12	339	308	287	200	139	636	502	602	162	150	136	19	19
1	1	1	M4	31000/R	807	22	469	434	393	235	141	1045	452	453	175	123	133	140	12
1	1	1	M4	31500/L	772	12	285	254	236	169	121	282	492	713	286	196	177	156	43
1	1	1	M4	32000/R	919	22	649	550	483	264	156	1080	146	373	157	114	135	144	13
1	1	1	M4	32500/L	798	12	399	396	387	159	119	60	5661	527	189	123	194	163	207
1	1	1	M4	33000/R	756	22	1444	1116	931	425	233	929	40	138	64	49	69	79	13
1	1	1	M4	33500/L	772	12	424	358	316	209	148	105	219	479	203	146	143	127	114
1	1	1	M4	34000/R	843	22	589	496	427	231	141	1169	155	377	160	118	141	146	11
1	1	1	M4	34500/L	759	6	406	330	288	177	125	89	183	492	216	158	166	148	133
1	1	1	M4	35000/R	753	22	981	760	632	312	176	1615	60	202	192	137	145	140	7
1	1	1	M4	35500/L	740	6	865	724	371	231	150	96	102	225	96	119	124	120	120
1	1	1	M4	36000/R	753	22	795	646	549	304	299	1729	93	249	110	82	96	61	7
1	1	1	M4	36500/L	785	6	541	438	378	219	132	83	135	382	169	124	139	145	147
1	1	1	M4	37000/R	820	22	496	426	372	221	140	1904	210	435	181	132	144	143	7
1	1	1	M4	37500/L	753	6	843	673	564	303	181	1811	80	235	105	80	96	101	6
1	1	1	M4	38000/R	924	22	384	303	277	187	128	1339	167	633	287	200	191	176	11
1	1	1	M4	38500/L	801	6	498	415	374	241	159	97	172	423	181	128	129	123	128
1	1	1	M4	39000/L	785	6	492	385	344	210	137	82	125	420	192	137	145	140	149
1	1	1	M4	39500/R	995	28	2217	406	343	201	138	587	2	118	230	174	192	176	26
1	1	1	M4	40000/R	950	28	377	316	289	195	133	132	235	663	283	197	189	174	12
1	1	1	M4	40500/L	775	6	489	406	348	213	141	1185	171	417	179	133	141	134	10
1	1	1	M4	41000/R	866	28	286	264	257	214	140	895	718	797	308	202	157	151	15
1	1	1	M4	41500/L	759	6	626	505	447	280	186	104	114	319	141	102	105	99	113
1	1	1	M4	42000/R	765	28	414	334	293	186	126	1225	173	486	215	156	159	148	10
1	1	1	M4	42500/L	833	6	485	372	319	185	125	1683	116	452	211	166	174	162	8
1	1	1	M4	43000/R	765	28	363	305	270	171	120	120	235	248	170	173	155	10	10
1	1	1	M4	43500/L	762	6	431	387	357	225	150	1858	349	465	128	131	124	6	6
1	1	1	M4	44000/R	862	28	1444	807	755	341	203	120	15	157	100	68	98	104	112
1	1	1	M4	44500/L	759	6	742	456	395	221	142	534	37	269	156	115	133	130	22
1	1	1	M4	45000/R	795	28	506	439	388	231	143	89	222	414	170	123	133	136	139
1	1	1	M4	45500/L	762	6	509	442	394	242	156	1998	222	394	162	116	122	119	6
1	1	1	M4	46000/R	764	28	796	626	519	267	156	606	79	253	115	88	111	119	20
1	1	1	M4	46500/L	723	6	1655	1358	1048	383	212	128	47	115	50	41	73	83	88
1	1	1	M4	47000/R	788	28	543	496	437	246	153	2260	333	382	149	108	124	126	5
1	1	1	M4	47500/L	723	6	1302	1059	801	291	183	2092	57	146	64	54	96	96	5
1	1	1	M4	48000/R	764	28	696	583	494	254	183	1414	127	289	123	93	116	124	8
1	1	1	M4	48500/L	849	6	335	324	315	238	200	1492	1505	667	246	161	138	103	9
1	1	1	M4	49000/R	756	28	469	417	378	237	155	1033	203	407	170	120	123	119	11
1	1	1	M4	49500/L	828	6	388	362	339	238	163	2018	614	562	215	146	135	124	6
1	1	1	M4	50000/R	841	28	661	555	484	266	162	1844	136	335	142	104	122	127	7
1	1	1	M4	50500/L	733	6	404	368	334	220	137	299	131	478	187	131	129	130	38
1	1	1	M4	51000/R	775	28	461	408	380	262	187	182	286	443	179	122	115	101	66
1	1	1	M4	51500/L	762	6	415	380	343	215	139	1994	448	483	189	133	137	134	6
1	1	1	M4	52000/R	814	28	320	307	289	280	148	1576	1263	670	249	169	152	134	8
1	1	1	M4	52500/L	746	6	609	523	454	263	157	171	171	322	134	98	110	116	125
1	1	1	M4	53000/R	807	28	337	305	287	205	144	1465	484	630	249	168	152	137	9
1	1	1	M4	53500/L	774	6	221	202	191	149	114	1241	823	922	360	242	201	165	10
1	1	1	M4	54000/R	801	28	378	339	316	209	136	1577	394	558	222	148	144	144	8
1	1	1	M4	54500/L	772	6	420	380	349	216	136	2144	387	484	191	132	138	138	6
1	1	1	M4	55000/R	791	28	416	345	301	185	122	1314	200	501	216	157	166	158	9

1	1	M4	55500/L	798	857	747	294	196	1683	68	198	88	64	105	99	7
1	1	M4	56000/R	807	644	419	220	128	1810	85	330	155	115	142	154	7
1	1	M4	56500/L	830	1088	841	347	208	1898	54	201	93	71	93	97	7
1	1	M4	57000/R	891	418	356	192	121	1835	235	561	235	168	180	179	8
1	1	M4	58000/R	801	28	240	221	98	678	829	879	341	229	215	199	18
1	1	M4	59000/R	995	28	215	190	89	1583	605	1218	492	338	301	273	10
1	1	M4	59500/L	785	6	457	361	1313	81	141	452	204	150	160	153	151
1	1	M4	60000/R	827	468	410	373	232	1487	258	465	190	133	138	139	9
1	1	M4	60500/L	756	438	395	347	226	1636	359	454	180	130	130	120	7
1	1	M4	61000/R	775	6	507	425	224	2096	175	402	171	125	134	130	6
1	1	M4	61500/L	759	303	298	227	168	968	3366	659	239	158	129	110	12
1	1	M4	62000/R	790	270	241	162	116	1790	527	770	308	207	189	166	7
1	1	M4	62500/L	749	630	584	218	142	890	345	313	121	84	133	129	13
1	1	M4	63000/R	762	795	624	280	167	105	79	252	115	86	105	111	113
1	1	M4	63500/L	736	659	535	448	249	159	99	112	294	98	114	113	116
1	1	M4	64000/R	762	439	387	346	219	146	758	290	457	185	132	135	127
1	1	M4	64500/L	859	6	335	298	204	145	1699	411	675	271	180	144	8
1	1	M4	65000/R	791	260	228	209	151	111	492	469	801	226	203	174	25
1	1	M4	65500/L	751	785	636	544	298	120	93	252	111	83	98	102	97
1	1	M4	66000/R	869	277	249	235	175	616	549	826	328	221	192	171	22
1	1	M4	66500/L	878	240	207	190	133	97	1369	447	963	399	276	256	221
1	1	M4	67000/R	795	306	274	258	190	1053	479	684	273	184	162	142	12
1	1	M4	67500/L	885	284	267	250	123	1127	946	820	312	212	196	175	12
1	1	M4	67500/L	777	522	399	344	219	106	70	392	183	135	137	136	173
1	1	M4	68000/R	806	313	290	275	208	117	689	678	261	175	150	135	107
1	1	M4	68500/L	775	309	286	270	145	2090	689	660	255	172	151	130	6
1	1	M4	69000/R	777	425	376	343	152	1508	309	481	194	136	131	125	8
1	1	M4	69500/L	830	899	742	665	354	187	886	90	243	105	75	108	15
1	1	M4	70000/R	778	174	155	143	96	1180	802	1177	472	326	314	287	10
1	1	M4	70500/L	827	6	758	309	169	108	144	287	119	86	104	119	119
1	1	M4	71000/R	814	210	210	177	136	103	929	663	1020	409	275	232	193
1	1	M4	71500/L	795	596	543	488	275	1570	294	351	138	97	112	124	8
1	1	M4	72000/R	814	339	291	260	123	889	306	632	263	187	179	161	14
1	1	M4	72500/L	711	1874	1443	1063	233	157	1862	31	100	46	40	110	6
1	1	M4	73000/R	775	239	227	217	162	119	1661	1354	854	321	214	185	159
1	1	M4	73500/L	762	478	422	382	240	157	1391	420	170	119	123	118	7
1	1	M4	74000/R	775	192	177	177	129	95	1356	869	972	379	262	233	199
1	1	M4	74500/L	736	1081	831	637	235	133	1069	53	83	69	121	135	11
1	1	M4	75000/R	775	260	226	210	148	1487	437	785	322	221	203	178	8
1	1	M4	75500/L	827	660	557	481	254	1635	140	330	140	103	126	140	6
1	1	M4	76000/R	775	278	231	210	210	187	303	734	315	221	207	182	64
1	1	M4	76500/L	762	292	261	237	149	100	65	493	687	274	192	198	186
1	1	M4	77000/R	778	190	172	161	86	1216	861	1078	425	289	253	221	10
1	1	M4	77500/L	791	334	255	218	125	1162	165	623	292	217	245	227	11
1	1	M4	78000/R	801	28	211	182	139	1260	775	999	394	263	223	182	10
1	1	M4	78500/L	775	474	349	270	112	66	1355	101	430	209	172	268	286
1	1	M4	79000/R	801	370	327	289	180	117	1717	352	570	166	172	167	7
1	1	M4	79500/L	866	376	334	301	180	107	1542	362	606	172	186	197	9
1	1	M4	80000/R	759	184	161	152	112	82	1318	651	1142	466	314	276	237
1	1	M4	80500/L	769	314	276	254	179	121	376	396	645	262	181	166	155
1	1	M4	81000/R	788	368	328	301	135	1786	381	564	226	157	152	142	32
1	1	M4	81500/L	753	388	302	257	138	86	540	511	6	175	211	213	22
1	1	M4	82000/R	862	293	251	235	170	121	1428	349	774	323	219	196	174
1	1	M4	82500/L	833	164	156	138	85	56	1838	2035	1337	502	361	379	9
1	1	M4	83000/R	959	550	184	173	130	99	1649	16	459	332	286	236	7
1	1	M4	83500/L	814	1159	1114	710	250	86	366	185	69	69	126	155	147

Sector no.	Road no.	Road name	Chainage/ lane	Contact pressure	Temp	ALYAT-GEORGIAN BORDER ROAD: BEARING CAPACITY RESULTS pr. POINT										1997		
						Def 1 R=0	Def 2 R=210	Def 3 R=330	Def 4 R=510	Def 5 R=810	Def 6 R=1270	SCI	Evd1	Evd2	Evd3		Evd4	Evd5
SECTION NO. 3 KYURDAMIR to UJAR																		
1	37.001	M4	0/R	762	34	334	279	248	153	97	61	260	601	257	184	193	191	194
1	37.001	M4	0/L	759	21	285	238	203	115	77	53	304	701	300	224	256	240	223
1	37.001	M4	500/L	774	21	303	232	196	134	96	73	185	672	314	236	224	197	165
1	37.001	M4	1000/R	953	34	170	169	159	115	83	57	17012	1476	530	359	321	280	260
1	37.001	M4	1500/L	777	21	272	216	185	115	80	57	243	752	338	251	262	237	212
1	37.001	M4	2000/R	838	34	348	255	232	149	101	69	135	634	309	216	218	202	189
1	37.001	M4	2500/L	722	21	344	266	220	133	85	56	170	553	255	196	210	207	200
1	37.001	M4	3000/R	950	34	217	181	173	134	98	66	396	1152	493	329	274	236	224
1	37.001	M4	3500/L	772	21	253	188	160	111	86	63	196	803	366	289	269	219	191
1	37.001	M4	4000/R	807	34	369	317	287	182	116	74	283	576	239	168	172	170	170
1	37.001	M4	4500/L	759	21	273	224	197	120	83	56	287	732	319	231	245	223	211
1	37.001	M4	5000/R	775	34	323	277	252	150	90	52	319	632	263	184	200	210	232
1	37.001	M4	5500/L	811	21	334	301	276	170	109	72	467	639	253	176	185	181	175
1	37.001	M4	6000/R	762	34	210	174	168	120	86	54	394	955	412	271	246	216	219
1	37.001	M4	6500/L	882	21	272	214	194	123	85	59	232	854	387	272	278	253	232
1	37.001	M4	7000/R	950	34	278	235	223	159	113	79	336	900	380	255	231	205	187
1	37.001	M4	7500/L	824	21	309	224	194	117	77	54	146	702	346	254	273	261	237
1	37.001	M4	8000/R	882	34	370	302	273	165	107	67	205	628	275	193	207	201	205
1	37.001	M4	8500/L	748	21	287	241	209	133	93	64	312	686	292	214	218	196	182
1	37.001	M4	9000/R	749	34	421	287	261	168	106	67	130	468	219	156	173	172	174
1	37.001	M4	9500/L	740	21	381	291	241	122	76	53	145	511	239	184	235	237	217
1	37.001	M4	10000/R	782	34	393	334	306	192	127	87	246	524	220	153	158	150	140
1	37.001	M4	10500/L	804	21	338	261	220	136	92	61	172	626	229	219	229	213	205
1	37.001	M4	11000/R	859	34	419	309	297	188	123	78	115	540	261	173	177	170	171
1	37.001	M4	11500/L	743	21	457	361	306	175	114	75	141	428	194	145	164	159	154
1	37.001	M4	12000/R	885	34	728	520	436	201	128	83	59	320	160	121	170	169	166
1	37.001	M4	12500/L	801	21	301	226	169	107	77	57	171	701	333	284	290	254	218
1	37.001	M4	13000/R	798	34	328	276	256	161	109	66	277	640	272	186	192	178	188
1	37.001	M4	13500/L	801	21	139	109	97	66	49	36	447	1517	691	494	470	398	346
1	37.001	M4	14000/R	727	34	345	282	262	169	108	69	222	555	242	166	167	164	164
1	37.001	M4	14500/L	774	21	279	226	197	123	87	60	262	730	322	235	244	217	201
1	37.001	M4	15000/R	843	34	265	249	229	155	105	66	1005	837	318	220	211	196	199
1	37.001	M4	15500/L	762	21	287	215	179	106	76	56	178	699	333	255	278	244	212
1	37.001	M4	16000/R	720	34	551	393	352	179	112	74	77	344	172	122	156	157	151
1	37.001	M4	16500/L	753	21	196	159	143	95	71	51	375	1011	445	315	307	259	230
1	37.001	M4	17000/R	723	34	732	507	472	237	135	82	53	260	134	92	118	131	137
1	37.001	M4	17500/L	746	21	283	218	182	102	68	48	203	694	322	245	283	267	242
1	37.001	M4	18000/R	723	34	449	336	323	182	115	72	113	424	202	134	154	153	156
1	37.001	M4	18500/L	780	21	263	213	180	105	69	46	277	781	344	259	288	276	264
1	37.001	M4	19000/R	929	34	584	424	406	221	131	84	78	419	206	137	163	173	172
1	37.001	M4	19500/L	762	21	267	220	199	142	93	62	300	751	326	229	208	200	191
1	37.001	M4	20000/R	756	34	666	447	418	208	126	81	52	299	159	108	141	146	145
1	37.001	M4	20500/L	774	21	313	259	231	138	93	65	262	651	281	200	217	203	185

1	37.001	M4	21000/R	720	34	401	285	278	161	98	62	105	473	238	155	173	179	181
1	37.001	M4	21500/L	801	21	380	252	203	133	93	65	89	555	299	236	233	210	192
1	37.001	M4	22000/R	738	34	359	282	278	165	101	64	175	541	246	159	173	178	179
1	37.001	M4	22500/L	751	21	264	219	201	144	106	72	315	749	322	224	202	173	161
1	37.001	M4	23000/R	837	34	475	321	305	177	112	72	75	464	245	164	183	182	182
1	37.001	M4	23000/R	833	34	280	239	219	154	107	71	356	783	328	228	209	190	182
1	37.001	M4	23500/L	777	21	361	317	286	177	106	69	342	567	230	163	170	179	175
1	37.001	M4	24000/R	769	34	350	223	207	128	92	65	86	578	324	222	233	204	184
1	37.001	M4	24500/L	740	21	217	199	188	131	91	62	872	898	350	235	219	198	186
1	37.001	M4	25000/R	762	34	270	147	138	103	79	56	76	743	487	330	286	235	212
1	37.001	M4	25500/L	740	21	217	193	177	116	80	54	634	898	360	250	247	225	213
1	37.001	M4	26000/R	795	34	304	188	181	119	85	58	91	688	398	263	259	228	213
1	37.001	M4	26500/L	804	21	176	153	144	105	77	54	647	1203	494	334	296	255	231
1	37.001	M4	27000/R	738	34	252	171	152	90	66	49	143	771	406	290	317	273	234
1	37.001	M4	27500/L	762	21	303	262	237	150	98	63	361	662	462	192	197	190	188
1	37.001	M4	28000/R	728	34	321	235	227	152	104	67	146	597	291	192	185	171	169
1	37.001	M4	28500/L	859	21	216	191	177	132	96	67	605	1047	423	290	252	218	199
1	37.001	M4	29000/R	775	34	338	223	212	125	85	59	98	604	327	219	240	222	204
1	37.001	M4	29500/L	849	21	211	188	179	129	93	62	663	1059	425	284	255	223	213
1	37.001	M4	30000/R	867	34	276	175	172	109	76	51	107	827	466	302	308	278	264
1	37.001	M4	30500/L	830	21	455	363	300	154	95	67	148	480	215	166	209	213	193
1	37.001	M4	31000/R	775	34	242	168	153	96	68	45	161	843	434	303	313	278	268
1	37.001	M4	31500/L	930	21	250	224	211	151	108	72	590	979	390	264	238	210	201
1	37.001	M4	32000/R	849	34	267	172	157	110	82	55	116	837	464	324	299	252	240
1	37.001	M4	32500/L	917	21	352	299	262	148	95	61	274	686	288	209	240	235	234
1	37.001	M4	33000/R	764	34	234	158	155	97	70	51	152	859	455	295	305	266	233
1	37.001	M4	33500/L	885	21	244	214	195	128	89	62	500	955	272	252	268	242	222
1	37.001	M4	34000/R	743	34	271	188	176	115	84	61	143	722	372	253	250	216	189
1	37.001	M4	34500/L	749	21	468	390	350	203	124	78	183	421	181	128	143	147	149
1	37.001	M4	35000/R	762	34	344	194	181	112	75	54	64	583	369	252	263	248	219
1	37.001	M4	35500/L	809	21	195	178	167	124	92	63	919	1092	427	290	253	214	200
1	37.001	M4	36000/R	723	34	319	223	202	120	85	62	125	597	427	290	233	207	181
1	37.001	M4	36500/L	762	21	258	227	215	151	106	69	486	778	316	212	195	175	172
1	37.001	M4	37000/R	738	34	175	148	130	95	72	51	536	1110	469	340	301	250	225
1	37.001	M4	37500/L	723	21	294	260	241	162	109	70	445	647	261	179	173	162	161
1	37.001	M4	38000/R	930	34	402	261	260	162	104	70	79	609	335	214	222	218	207
1	37.001	M4	38500/L	778	21	244	215	200	131	91	64	520	839	340	233	230	208	189
1	37.001	M4	39000/R	843	34	305	218	210	132	88	58	141	728	364	240	247	234	226
1	37.001	M4	39500/L	803	21	229	185	171	114	79	53	314	923	408	281	273	248	236
1	37.001	M4	40000/R	698	34	457	337	330	178	112	75	105	1002	195	127	152	152	145
1	37.001	M4	40500/L	807	21	212	202	190	134	92	58	1631	1002	376	254	233	214	216
1	37.001	M4	41000/R	798	34	547	392	360	180	103	66	79	384	191	133	172	189	188
1	37.001	M4	41500/L	866	21	330	285	252	151	97	64	328	691	286	206	222	218	210
1	37.001	M4	42000/R	788	34	250	222	205	119	80	55	543	830	334	230	256	240	223
1	37.001	M4	42500/L	788	21	247	218	202	136	95	61	521	840	340	233	224	202	201
1	37.001	M4	43000/R	759	34	322	237	221	144	100	67	148	621	301	205	204	185	176
1	37.001	M4	43500/L	759	21	364	321	291	177	112	71	351	549	222	156	166	165	166
1	37.001	M4	44000/R	788	34	372	282	279	163	103	67	144	558	263	169	187	186	183
1	37.001	M4	44500/L	833	21	130	110	105	82	63	46	724	1687	712	475	393	322	282
1	37.001	M4	45000/R	870	34	249	169	162	100	70	48	145	920	484	321	337	303	282
1	37.001	M4	45500/L	885	21	223	185	164	114	86	62	374	1045	450	323	301	251	222

FWBA3DEI.xls

1	37.001	*M4	46000/R	738	34	234	169	163	96	67	47	190	830	411	271	298	268	244
1	37.001	*M4	47000/R	835	34	338	197	184	98	68	48	71	650	399	272	330	299	270
1	37.001	*M4	47500/L	749	21	266	232	215	136	87	53	439	741	304	208	213	210	220
1	37.001	*M4	48000/L	937	21	219	182	168	118	83	54	384	1126	484	334	307	275	270

ALYAT-GEORGIAN BORDER ROAD: BEARING CAPACITY RESULTS pr. POINT													1997					
SECTION NO. 4 UJAR to MINGACHEUR																		
Sector no.	Road no.	Road name	Chainage/lane	Contact pressure	Temp	Def1 R=0	Def2 R=210	Def3 R=330	Def4 R=510	Def5 R=810	Def6 R=1270	SCI	Evd1	Evd2	Evd3	Evd4	Evd5	Evd6
1	37.001	"M4	1000/R	820	34	334	270	243	152	101	67	216	646	286	202	209	198	190
1	37.001	"M4	1500/L	762	26	257	170	160	97	69	51	130	781	421	285	304	269	232
1	37.001	"M4	2000/R	765	34	408	303	277	174	116	75	121	494	237	165	170	161	159
1	37.001	"M4	2500/L	749	26	444	303	287	161	104	69	83	444	232	156	180	176	169
1	37.001	"M4	3000/R	940	34	738	553	533	301	173	100	69	335	160	106	121	132	146
1	37.001	"M4	3500/L	751	26	400	320	303	169	107	70	171	494	221	148	172	171	167
1	37.001	"M4	4000/R	762	34	371	288	285	170	107	69	160	541	249	160	174	174	172
1	37.001	"M4	4500/L	738	26	429	370	330	208	135	84	250	453	188	134	137	133	137
1	37.001	"M4	5000/R	885	34	408	320	306	186	119	75	153	571	260	173	184	181	183
1	37.001	"M4	5500/L	833	26	422	350	335	205	126	80	197	520	224	149	157	161	162
1	37.001	"M4	6000/R	749	34	120	99	93	64	45	30	672	1643	711	482	453	406	388
1	37.001	"M4	6500/L	811	26	450	348	331	199	127	77	130	474	219	147	158	156	164
1	37.001	"M4	7000/R	727	34	230	180	174	114	76	48	268	832	380	250	247	233	235
1	37.001	"M4	7500/L	958	26	270	233	223	159	106	68	399	934	387	257	233	220	219
1	37.001	"M4	8000/R	807	34	206	175	169	109	70	47	469	1031	434	286	287	281	267
1	37.001	"M4	8500/L	937	26	164	133	121	105	79	56	448	1504	662	463	345	289	260
1	37.001	"M4	9000/R	782	34	352	315	303	209	143	91	414	585	233	154	145	133	134
1	37.001	"M4	9500/L	723	26	473	344	322	156	93	63	96	402	198	134	179	189	178
1	37.001	"M4	10000/R	753	34	277	235	215	138	90	64	346	716	301	210	211	204	183
1	37.001	"M4	10500/L	723	26	290	240	231	134	82	56	283	656	283	187	209	215	201
1	37.001	"M4	11000/R	711	34	525	355	332	166	95	61	68	357	188	128	166	182	181
1	37.001	"M4	11500/L	753	26	466	367	359	201	108	65	136	425	193	125	145	170	180
1	37.001	"M4	12000/R	885	34	314	223	206	110	69	46	134	742	373	257	311	313	299
1	37.001	"M4	12500/L	827	26	363	300	292	187	123	76	224	600	259	169	171	164	169
1	37.001	"M4	13000/R	863	34	587	389	360	200	119	80	57	396	213	147	171	181	172
1	37.001	"M4	13500/L	753	26	261	207	204	126	88	60	251	759	342	221	231	209	195
1	37.001	"M4	14000/R	704	34	517	371	350	186	111	69	84	358	178	120	147	155	159
1	37.001	"M4	14500/L	727	26	291	216	206	113	73	49	169	658	316	211	249	243	231
2	37.001	"M4	15000/R	933	34	218	295	319	193	118	78	301	1127	297	175	187	193	186
1	37.001	"M4	15500/L	830	26	193	165	157	97	62	43	522	1132	473	316	331	326	300
1	37.001	"M4	16000/R	828	34	369	280	273	159	104	66	146	591	278	181	202	194	195
1	37.001	"M4	16500/L	862	26	280	250	234	159	108	72	509	810	324	220	210	195	186
1	37.001	"M4	17000/R	811	34	345	292	245	141	91	59	133	617	303	198	223	217	214
1	37.001	"M4	17500/L	966	26	294	233	229	144	95	64	222	865	390	252	260	248	235
1	37.001	"M4	18000/R	762	34	237	154	150	98	70	49	134	846	465	304	301	265	242
1	37.001	"M4	18500/L	837	26	256	193	190	121	83	61	205	861	408	284	268	246	213

1	37.001	M4	19000/R	694	34	862	660	614	298	151	94	65	212	99	68	90	112	115
1	37.001	M4	19500/L	856	26	305	237	225	120	75	52	196	739	340	228	276	278	256
1	37.001	M4	20000/R	795	34	641	477	447	216	124	84	78	326	157	106	142	156	147
1	37.001	M4	20500/L	806	26	248	215	198	129	86	59	450	856	352	244	242	228	212
1	37.001	M4	21000/R	833	34	327	229	219	119	78	55	122	671	342	228	271	260	235
1	37.001	M4	21500/L	830	26	507	365	345	187	116	73	87	431	214	144	172	174	177
1	37.001	M4	22000/R	854	34	157	148	143	88	62	46	1792	1432	543	357	376	336	289
1	37.001	M4	22500/L	856	26	314	200	181	110	72	48	96	718	402	283	301	290	277
1	37.001	M4	23000/R	746	34	801	531	487	221	126	84	42	245	132	92	131	144	138
1	37.001	M4	23500/L	827	26	301	282	256	115	72	53	844	723	276	193	278	280	243
1	37.001	M4	24000/R	846	34	587	439	416	220	128	82	86	379	181	122	149	161	160
1	37.001	M4	24500/L	749	26	335	258	251	137	87	59	171	589	273	179	212	210	197
1	37.001	M4	25000/R	736	34	551	397	388	210	123	76	80	352	174	113	136	146	151
1	37.001	M4	25500/L	743	26	654	430	397	187	104	69	50	299	162	112	154	174	167
1	37.001	M4	26000/R	701	34	640	478	455	200	115	76	79	288	138	92	136	149	143
1	37.001	M4	26500/L	746	26	710	546	532	283	166	99	80	277	128	84	102	110	117
1	37.001	M4	27000/R	761	34	267	182	164	95	64	41	137	750	393	278	310	290	289
1	37.001	M4	27500/L	696	26	776	564	524	245	139	89	59	236	116	79	110	122	122
1	37.001	M4	28000/R	811	34	339	241	226	126	81	54	124	630	316	215	249	244	233
1	37.001	M4	28500/L	725	26	354	270	258	144	94	64	155	539	252	168	196	188	176
1	37.001	M4	29000/R	969	34	328	231	227	129	81	54	124	778	394	255	291	292	279
1	37.001	M4	29500/L	832	26	260	195	188	109	72	48	197	842	401	265	295	282	269
1	37.001	M4	30000/R	801	34	259	244	235	132	85	57	1075	814	309	204	235	230	218
1	37.001	M4	30500/L	908	26	363	273	266	139	78	49	143	658	313	204	253	284	288
1	37.001	M4	31000/R	853	34	281	184	168	96	69	50	116	799	436	304	344	301	265
1	37.001	M4	31500/L	790	26	453	347	326	162	90	57	124	459	214	145	189	214	215
1	37.001	M4	32000/R	775	34	253	189	188	112	77	52	200	806	386	247	268	245	232
1	37.001	M4	32500/L	833	26	148	92	79	56	44	34	190	1482	851	631	576	461	381
1	37.001	M4	33000/R	798	34	361	270	264	171	116	75	141	582	278	181	181	168	165
1	37.001	M4	33500/L	694	26	372	247	233	124	83	57	91	491	264	178	217	204	189
1	37.001	M4	34000/R	801	34	409	290	274	148	99	66	102	516	260	175	210	197	189
1	37.001	M4	34500/L	743	26	445	350	341	204	132	84	142	440	200	130	141	137	138
1	37.001	M4	35000/R	759	34	311	216	197	105	72	53	125	642	330	231	280	257	223
1	37.001	M4	35500/L	830	26	514	367	355	199	131	87	83	425	213	140	161	154	148
1	37.001	M4	36000/R	720	34	401	303	298	183	120	75	132	473	223	145	152	146	149
1	37.001	M4	36500/L	720	26	421	334	330	191	123	82	156	450	203	131	146	143	137
1	37.001	M4	37000/R	736	34	625	440	404	210	137	94	65	310	157	109	136	131	122
1	37.001	M4	37500/L	723	26	318	253	246	153	105	71	209	599	269	176	183	168	158
1	37.001	M4	38000/R	798	34	469	340	329	195	130	89	96	448	221	145	158	150	139
1	37.001	M4	38500/L	741	26	542	388	369	174	100	65	80	360	180	120	165	181	177
1	37.001	M4	39000/R	966	29	421	298	285	163	110	84	98	604	305	203	229	214	179
1	37.001	M4	39500/L	759	26	439	340	329	182	114	78	134	455	210	138	161	162	151
1	37.001	M4	40000/R	706	29	648	472	440	206	119	78	71	287	141	96	133	145	141
1	37.001	M4	40500/L	856	26	422	289	273	165	109	72	88	534	278	188	201	191	185

1	37.001	*M4	41000/R	806	29	273	191	183	105	71	49	146	777	397	264	297	277	256
1	37.001	*M4	41500/L	866	26	321	249	246	148	99	64	184	710	327	211	227	213	210
1	37.001	*M4	42000/R	744	29	536	413	391	203	117	79	107	365	169	114	142	155	146
1	37.001	*M4	42500/L	853	26	241	177	163	82	52	37	196	932	453	313	403	400	358
1	37.001	*M4	43000/R	688	29	685	455	404	202	128	90	49	264	142	102	132	131	119
1	37.001	*M4	43500/L	753	26	342	278	277	161	92	61	217	580	255	163	181	200	192
1	37.001	*M4	44000/R	962	29	316	230	228	143	103	75	145	801	393	252	260	228	199
1	37.001	*M4	44500/L	833	26	220	215	205	125	94	68	3345	997	364	243	258	216	190
1	37.001	*M4	45000/R	778	29	469	295	264	151	105	76	62	437	248	176	199	181	159
1	37.001	*M4	45500/L	803	26	259	242	224	143	105	78	941	816	312	214	217	186	160
1	37.001	*M4	46500/L	740	26	979	532	355	123	83	62	21	199	131	125	233	217	186
1	37.001	*M4	53500/L	725	24	1074	808	714	301	182	126	48	178	84	61	93	97	89
1	37.001	*M4	54000/R	717	29	705	514	444	184	99	69	55	268	131	97	151	177	162
1	37.001	*M4	54500/L	725	24	464	370	352	173	97	67	145	411	184	123	162	182	168
1	37.001	*M4	55000/R	843	29	808	626	527	204	110	82	73	275	127	96	160	187	160
2	37.001	*M4	55500/L	937	24	217	147	241	151	108	73	166	1137	599	233	240	211	200
1	37.001	*M4	56000/R	920	29	610	315	222	125	91	65	30	397	275	248	285	246	220
1	37.001	*M4	56500/L	762	24	431	274	236	122	81	58	69	465	261	193	242	229	204
1	37.001	*M4	57000/R	898	29	412	275	243	111	79	57	83	574	307	221	313	277	245
1	37.001	*M4	57500/L	804	24	277	197	179	94	64	43	152	764	384	269	331	306	291
1	37.001	*M4	58000/R	788	29	285	181	172	120	88	61	104	728	409	274	254	218	201
1	37.001	*M4	58500/L	927	24	334	229	210	128	90	61	112	731	381	264	280	251	236
1	37.001	*M4	59000/R	969	29	446	258	229	139	103	75	53	572	353	253	270	229	201
1	37.001	*M4	59500/L	875	24	342	300	274	144	97	64	357	674	274	191	235	220	213
1	37.001	*M4	60000/R	762	29	468	309	276	147	105	76	71	429	232	165	201	177	156
2	37.001	*M4	60500/L	933	24	151	252	252	153	102	67	-283	1627	348	222	236	223	216
1	37.001	*M4	60500/L	927	24	315	242	240	147	98	66	180	775	360	231	244	231	218
1	37.001	*M4	61000/R	953	29	612	418	378	202	131	88	60	410	214	151	183	177	168
1	37.001	*M4	61500/L	827	24	368	239	201	107	77	64	86	592	325	246	299	262	201

ALYAT-GEORGIAN BORDER ROAD: BEARING CAPACITY RESULTS pr. POINT													1997					
SECTION NO. 5 MINGACHEUR TO GJANDZA																		
Sector no.	Road no.	Road name	Chainage/ lane	Contact pressure	Temp	Def1 R=0	Def2 R=210	Def3 R=330	Def4 R=510	Def5 R=810	Def6 R=1270	SCI	Evd1	Evd2	Evd3	Evd4	Evd5	Evd6
1	37.001	"M1	0/R	911	34	251	217	196	121	85	61	435	955	395	278	291	261	232
1	37.001	"M1	500/L	885	34	501	326	282	155	103	73	64	465	255	188	221	209	188
1	37.001	"M1	1000/R	891	34	483	334	307	157	103	83	79	486	251	174	220	211	167
1	37.001	"M1	1500/L	756	34	742	484	390	171	111	82	43	288	147	116	171	166	143
1	37.001	"M1	2000/R	698	34	1606	995	756	288	162	109	17	114	66	55	94	105	100
1	37.001	"M1	2500/L	749	34	881	578	496	235	149	105	37	224	122	90	123	123	111
1	37.001	"M1	3000/R	725	34	1045	652	506	203	123	87	27	183	105	86	138	144	130
1	37.001	"M1	3500/L	698	34	402	271	241	131	91	64	88	457	242	173	206	187	170
1	37.001	"M1	4000/R	762	34	282	184	173	112	82	57	114	711	389	264	263	227	208
1	37.001	"M1	4500/R	762	34	464	258	220	124	87	62	46	432	278	207	238	213	191
1	37.001	"M1	5000/R	749	34	605	280	200	114	80	57	24	326	251	224	254	228	204
1	37.001	"M1	5500/L	777	34	177	175	163	102	76	55	8460	1156	417	285	295	249	220
1	37.001	"M1	6000/R	743	34	411	261	231	103	71	50	72	476	268	192	279	255	231
1	37.001	"M1	6500/L	775	34	329	234	221	130	91	61	128	620	311	210	231	208	198
1	37.001	"M1	7000/R	738	34	646	355	274	118	81	59	32	301	195	161	242	222	194
1	37.001	"M1	7500/L	711	34	860	428	280	135	92	69	20	218	156	152	204	188	160
1	37.001	"M1	8000/R	807	34	294	246	205	113	83	63	298	723	308	236	276	237	199
1	37.001	"M1	8500/L	762	34	485	237	173	106	80	67	34	414	302	264	278	232	177
1	37.001	"M1	9000/R	778	34	487	294	246	107	75	56	54	421	249	189	281	253	216
1	37.001	"M1	9500/L	807	34	422	222	164	89	64	46	45	503	342	294	351	307	273
1	37.001	"M1	10000/R	748	34	364	238	209	113	80	55	89	541	295	214	256	228	211
1	37.001	"M1	10500/L	738	34	346	207	168	75	53	39	74	561	335	263	381	339	294
1	37.001	"M1	11000/R	814	34	561	281	200	102	76	54	31	382	272	244	309	261	234
1	37.001	"M1	11500/L	725	34	584	383	334	159	97	63	56	327	178	130	177	182	179
1	37.001	"M1	12000/R	775	34	477	262	214	116	90	67	44	428	278	217	259	210	180
1	37.001	"M1	12500/L	793	34	372	228	196	124	92	66	73	561	327	242	248	210	187
1	37.001	"M1	13000/R	748	34	146	105	95	76	61	46	300	1349	670	471	381	299	253
1	37.001	"M1	13500/L	727	34	284	199	184	106	81	64	141	674	343	236	266	219	177
1	37.001	"M1	14000/R	791	34	386	267	241	139	102	75	99	539	279	196	220	189	164
1	37.001	"M1	14500/L	723	34	580	329	271	141	102	79	39	328	207	160	199	173	142
1	37.001	"M1	15000/R	725	34	483	296	250	136	102	72	52	387	230	174	206	173	157
1	37.001	"M1	15500/L	774	34	557	370	313	159	106	75	61	366	197	148	188	178	160
1	37.001	"M1	16000/R	759	34	518	319	269	132	103	78	53	386	224	169	223	180	151
1	37.001	"M1	16500/L	762	34	243	142	131	83	67	54	99	825	505	348	355	277	219
1	37.001	"M1	17000/R	725	34	575	376	320	149	106	75	56	332	181	136	188	167	150
1	37.001	"M1	17500/L	775	34	446	307	282	146	97	67	85	457	237	164	205	195	180

1	37.001	"M1	18000/R	707	34	336	276	260	163	113	78	234	554	241	163	168	153	141
1	37.001	"M1	18500/L	746	34	548	416	411	249	160	100	98	358	169	109	116	114	116
1	37.001	"M1	19000/R	796	34	398	336	318	198	122	73	233	527	223	150	156	159	170
1	37.001	"M1	19500/L	725	34	454	338	334	181	116	79	110	420	202	130	155	152	143
1	37.001	"M1	20000/R	777	34	319	269	254	177	123	83	289	641	272	183	170	154	146
1	37.001	"M1	20500/L	859	26	359	296	250	209	136	82	224	630	273	206	159	154	163
1	37.001	"M1	21000/R	725	26	445	361	374	250	165	105	165	429	189	116	112	107	107
2	37.001	"M1	21500/L	762	26	185	209	227	158	109	70	-806	1084	343	201	187	170	169
1	37.001	"M1	22000/R	749	26	299	243	230	167	113	73	248	659	290	195	174	162	160
1	37.001	"M1	22500/L	727	26	402	335	325	198	125	78	213	476	204	134	142	142	145
1	37.001	"M1	23000/R	799	26	309	270	254	168	114	76	383	681	278	188	184	171	163
1	37.001	"M1	23500/L	727	26	357	322	311	214	145	100	441	536	212	140	132	122	113
1	37.001	"M1	24000/R	743	26	445	347	345	202	121	70	136	440	201	129	142	150	165
2	37.001	"M1	24500/L	803	26	197	202	208	136	89	52	-3509	1073	374	231	229	220	240
1	37.001	"M1	25000/R	749	26	122	115	107	80	61	44	2304	1616	612	419	362	299	265
1	37.001	"M1	25500/L	801	26	268	235	225	154	102	64	455	787	320	213	201	191	195
1	37.001	"M1	26000/R	801	26	235	166	157	80	52	36	175	897	454	305	388	375	346
1	37.001	"M1	26500/L	804	26	361	264	253	140	85	55	129	586	286	190	222	231	227
1	37.001	"M1	27000/R	882	26	368	219	151	45	36	28	68	631	379	349	759	597	490
1	37.001	"M1	27500/L	838	26	297	202	186	92	60	42	123	743	390	270	353	340	310
1	37.001	"M1	28000/R	777	26	394	221	170	73	50	35	55	519	331	273	412	379	345
1	37.001	"M1	28500/L	814	26	309	180	132	49	32	24	77	693	425	369	643	620	527
1	37.001	"M1	29000/R	746	26	346	218	177	73	48	33	84	568	322	252	396	379	351
1	37.001	"M1	29500/L	777	26	324	215	203	108	70	44	104	631	340	229	279	271	275
1	37.001	"M1	30000/R	814	26	432	255	188	49	28	19	57	496	300	259	643	709	666
1	37.001	"M1	30500/L	743	26	420	273	231	85	40	23	76	466	256	192	338	453	502
1	37.001	"M1	31000/R	762	26	240	178	169	78	39	22	205	836	402	270	378	476	538
1	37.001	"M1	31500/L	725	26	542	331	274	99	56	40	50	352	206	158	284	316	282
1	37.001	"M1	32000/R	801	26	161	98	83	39	26	18	165	1310	768	577	795	751	692
1	37.001	"M1	32500/L	762	26	346	154	128	51	31	20	40	580	465	356	578	599	592
1	37.001	"M1	33000/R	827	26	300	194	153	57	36	21	104	726	401	323	562	560	612
1	37.001	"M1	33500/L	798	26	251	200	190	89	44	25	267	837	375	251	347	442	496
1	37.001	"M1	34000/R	827	26	223	135	112	54	34	23	118	976	576	442	593	593	559
1	37.001	"M1	34500/L	917	26	175	162	148	68	38	27	1219	1379	532	371	522	588	528
1	37.001	"M1	35000/R	909	26	419	264	214	83	46	28	70	571	324	254	424	482	505
1	37.001	"M1	35500/L	782	26	489	305	262	109	61	39	58	421	241	179	278	312	312
1	37.001	"M1	36000/R	801	26	409	298	266	114	59	35	112	516	253	180	272	331	356
1	37.001	"M1	36500/L	775	26	181	125	110	50	28	17	211	1127	583	422	600	675	709
1	37.001	"M1	37000/R	743	26	313	225	200	87	51	33	140	625	310	222	331	355	350
1	37.001	"M1	37500/L	753	26	418	286	239	92	52	35	89	474	248	189	317	353	334
1	37.001	"M1	38000/R	825	26	277	214	204	91	40	19	210	764	362	242	351	503	675
1	37.001	"M1	38500/L	740	26	254	183	159	53	20	15	174	767	380	278	541	902	767
1	37.001	"M1	39000/R	707	26	379	245	203	55	28	21	83	491	271	208	498	615	523
1	37.001	"M1	39500/L	740	26	426	307	273	111	58	40	104	457	227	162	258	311	288

1	37.001	*M1	40000/R	827	26	426	293	245	84	43	28	88	511	265	202	381	469	459
1	37.001	*M1	40500/L	775	26	324	231	203	72	37	22	131	630	315	228	417	511	548
1	37.001	*M1	41000/R	740	26	413	282	241	87	51	34	89	472	247	184	329	354	338
1	37.001	*M1	41500/L	756	26	461	314	268	102	62	46	79	432	226	169	287	297	255
1	37.001	*M1	42000/R	727	26	494	325	267	110	70	51	67	387	210	163	256	253	222
1	37.001	*M1	42500/L	704	26	608	373	311	126	77	61	45	305	177	135	216	223	179
1	37.001	*M1	43000/R	837	26	675	500	463	190	83	47	72	326	157	108	171	246	277

		ALYAT-GEORGIAN BORDER ROAD: BEARING CAPACITY RESULTS pr. POINT 1997																
		SECTION NO. 6 START OF GJANDZA BYPASS TO END OF GJANDZA BYPASS																
Sector no.	Road no.	Road name	Chainag lane	Contact pressure	Temp	Def1 R=0	Def2 R=210	Def3 R=330	Def4 R=510	Def5 R=810	Def6 R=1270	SCI	Evd1	Evd2	Evd3	Evd4	Evd5	Evd6
1	37.001	"M1	0/R	749	34	1007	698	596	227	128	89	38	196	101	75	128	143	131
1	37.001	"M1	500/L	725	34	645	474	448	224	138	93	74	296	144	97	125	128	121
1	37.001	"M1	1000/R	711	34	626	572	547	272	155	97	290	299	117	78	101	112	114
1	37.001	"M1	1500/L	775	34	320	223	187	64	29	20	123	638	327	248	469	651	602
1	37.001	"M1	2000/R	775	34	370	270	238	88	40	25	125	551	270	195	341	472	482
1	37.001	"M1	2500/L	803	34	642	444	381	155	86	53	60	329	170	126	201	228	236
1	37.001	"M1	3000/R	740	34	346	218	186	70	38	23	84	563	319	238	409	475	500
1	37.001	"M1	3500/L	723	34	377	246	193	58	33	22	85	505	276	224	483	534	511
1	37.001	"M1	4000/R	761	34	498	317	237	52	27	24	60	402	226	192	567	687	493
1	37.001	"M1	4500/L	762	34	385	253	195	58	26	16	85	521	283	234	509	714	740
1	37.001	"M1	5000/R	740	34	516	291	187	39	23	17	43	378	239	237	735	784	677
1	37.001	"M1	5500/L	740	34	995	711	584	219	104	60	43	196	98	76	131	173	192
1	37.001	"M1	6000/R	790	34	452	268	204	62	38	28	55	460	277	232	493	507	439
1	37.001	"M1	6500/L	975	34	439	273	216	62	30	18	64	585	336	270	609	792	842
1	37.001	"M1	7000/R	940	34	390	333	265	84	39	23	256	635	23	212	433	587	635
1	37.001	"M1	7500/L	765	34	324	148	104	39	20	14	44	622	486	440	759	932	849
1	37.001	"M1	8000/R	866	34	462	276	210	55	31	23	55	493	295	247	610	681	585
1	37.001	"M1	8500/L	775	34	983	681	561	177	70	42	39	208	107	83	170	270	287
1	37.001	"M1	9000/R	749	34	313	197	156	51	26	17	93	630	357	287	569	702	685
1	37.001	"M1	9500/L	762	34	617	408	310	94	46	37	54	325	176	147	314	404	320
1	37.001	"M1	10000/R	775	34	494	316	226	63	33	25	61	413	231	205	476	572	482
1	37.001	"M1	10500/L	743	34	860	591	483	182	97	60	44	227	118	92	158	187	193
1	37.001	"M1	11000/R	723	34	545	311	235	69	31	19	42	349	219	184	406	568	592
1	37.001	"M1	11500/L	688	34	1835	1230	1102	439	236	130	19	99	53	37	61	71	82
1	37.001	"M1	12000/R	898	34	343	217	179	71	44	27	86	689	389	300	490	497	517
1	37.001	"M1	12500/L	753	34	589	376	310	141	82	46	51	337	188	145	207	224	254
1	37.001	"M1	13000/R	738	34	603	418	348	134	69	40	64	322	166	127	213	261	287
1	37.001	"M1	13500/L	817	34	506	266	211	74	41	29	37	425	289	232	427	486	438
1	37.001	"M1	14000/R	807	34	580	325	265	90	50	38	38	366	233	182	347	393	418
1	37.001	"M1	14500/L	843	34	383	253	232	89	48	27	87	579	313	217	367	428	485
1	37.001	"M1	15000/R	762	34	425	265	203	70	36	23	67	472	270	225	421	516	515
1	37.001	"M1	15500/L	753	34	1002	608	472	164	101	77	26	198	116	95	178	182	152
1	37.001	"M1	16000/R	790	34	410	296	193	96	54	32	57	507	315	245	319	357	384
1	37.001	"M1	16500/L	753	34	589	368	285	108	67	43	48	337	192	158	270	274	272
1	37.001	"M1	17000/R	869	34	318	220	143	30	15	9	121	719	371	364	1121	1412	1501
1	37.001	"M1	17500/L	911	34	299	123	106	42	24	16	40	802	696	514	840	925	885

1	37.001	*M1	18000/F	711	34	1171	677	472	154	86	46	20	160	99	90	179	202	240
1	37.001	*M1	18500/L	782	35	414	256	195	60	30	21	67	497	287	240	505	635	579
1	37.001	*M1	19000/F	741	35	541	364	321	126	57	31	65	361	191	138	228	317	372
1	37.001	*M1	19500/L	830	35	379	282	203	66	38	34	131	577	277	245	487	532	380
1	37.001	*M1	20000/F	733	35	1286	843	619	81	41	38	25	150	82	71	350	436	300
1	37.001	*M1	20500/L	762	35	695	395	259	50	33	20	32	289	181	176	590	563	592
1	37.001	*M1	21000/F	749	35	561	404	338	106	55	38	78	351	174	133	274	332	306
1	37.001	*M1	21500/L	914	35	538	372	316	112	53	33	71	447	231	173	316	420	431
1	37.001	*M1	22000/F	878	35	925	530	383	120	64	60	25	250	156	137	283	334	227
1	37.001	*M1	22500/L	888	35	749	440	348	80	45	32	33	312	190	153	430	481	431
1	37.001	*M1	23000/F	801	35	340	337	301	106	38	20	5654	620	223	159	293	514	623
1	37.001	*M1	23500/L	885	35	567	384	312	96	47	30	63	411	217	170	357	459	459
1	37.001	*M1	24000/F	730	35	621	402	327	101	45	27	51	309	171	134	280	395	420
1	37.001	*M1	24500/L	798	35	683	436	337	93	57	38	44	308	172	142	332	341	326
1	37.001	*M1	25000/F	749	35	561	340	264	73	39	29	47	351	207	170	397	468	402
1	37.001	*M1	25500/L	799	35	484	338	260	71	42	29	82	435	222	164	436	464	428
1	37.001	*M1	26000/F	746	35	610	437	321	85	35	29	71	322	160	139	340	520	400
1	37.001	*M1	26500/L	762	35	644	420	315	74	40	28	50	311	171	145	399	464	423
1	37.001	*M1	27000/F	782	35	381	260	219	76	37	24	97	540	283	214	398	515	507
1	37.001	*M1	27500/L	765	35	502	351	310	119	57	36	79	401	205	148	249	327	330
1	37.001	*M1	28000/F	804	35	475	414	343	102	47	28	245	446	183	140	305	417	446
1	37.001	*M1	28500/L	817	35	525	345	279	87	37	22	62	410	223	175	364	538	577
1	37.001	*M1	29000/F	753	35	462	345	288	83	37	27	109	429	205	156	351	496	434
1	37.001	*M1	29500/L	878	35	764	488	405	103	62	38	40	303	169	130	330	345	359
1	37.001	*M1	30000/F	904	35	564	380	298	88	48	29	63	422	224	181	398	459	485
1	37.001	*M1	30500/L	878	35	644	459	385	125	60	36	66	359	180	136	272	357	379
1	37.001	*M1	31000/F	898	35	501	489	435	144	69	45	1392	472	173	124	241	317	310
1	37.001	*M1	31500/L	814	35	560	461	405	157	73	43	142	383	166	120	201	272	294
1	37.001	*M1	32000/F	746	35	399	331	297	118	59	35	209	492	212	150	245	308	331
1	37.001	*M1	32500/L	762	35	573	404	376	147	66	38	71	350	177	121	201	281	312
1	37.001	*M1	33000/F	762	35	792	515	411	131	62	36	40	253	139	111	225	300	329
1	37.001	*M1	33500/L	756	35	642	438	372	121	57	37	57	310	162	122	242	323	318
1	37.001	*M1	34000/F	743	35	669	425	366	120	62	36	45	292	164	121	240	292	321
1	37.001	*M1	34500/L	727	35	658	453	375	95	48	39	57	291	151	116	296	369	290
1	37.001	*M1	35000/F	711	35	728	495	435	113	25	10	50	257	135	98	244	693	1105

ALYAT-GEORGIAN BORDER ROAD: BEARING CAPACITY RESULTS pr. POINT														1997				
SECTION NO. 7 END OF GJANDZA BYPASS TO AKSTAFI																		
Sector no.	Road no.	Road name	Chainage lane	Contact pressure	Temp	Def 1 R=0	Def 2 R=210	Def 3 R=330	Def 4 R=510	Def 5 R=810	Def 6 R=1270	SCI	Evd1	Evd2	Evd3	Evd4	Evd5	Evd6
1	37.001	"M1	O/R	751	33	321	265	247	163	112	73	252	616	266	182	178	163	160
1	37.001	"M1	1000/R	725	33	331	210	195	114	80	54	90	577	325	222	246	221	209
1	37.001	"M1	2000/R	740	33	385	241	214	73	38	26	74	506	289	207	392	475	442
1	37.001	"M1	3000/R	762	33	276	190	125	50	31	22	137	727	377	365	590	599	538
1	37.001	"M1	3500/L	762	18	539	417	277	94	66	47	109	372	172	165	314	281	252
1	37.001	"M1	4000/R	711	33	229	200	155	99	72	52	515	817	334	274	278	241	213
1	37.001	"M1	4500/L	801	18	436	382	277	101	62	40	278	484	197	173	307	315	311
1	37.001	"M1	5000/R	762	33	396	180	171	43	27	20	36	507	398	267	686	688	592
1	37.001	"M1	5500/L	775	18	404	325	239	79	33	20	174	505	224	194	380	572	602
1	37.001	"M1	6000/R	711	33	573	387	322	155	98	62	62	327	173	132	178	177	178
1	37.001	"M1	6500/L	749	18	334	229	172	53	29	22	112	590	308	261	547	630	529
1	37.001	"M1	7000/R	727	33	481	347	276	145	93	61	92	398	197	158	194	191	185
1	37.001	"M1	7500/L	749	18	332	302	190	93	57	34	519	594	233	236	312	320	342
1	37.001	"M1	8000/R	711	33	526	498	309	153	93	58	579	356	134	138	180	186	191
1	37.001	"M1	8500/L	762	18	523	446	231	70	41	27	190	384	161	197	421	453	439
1	37.001	"M1	9000/R	727	33	494	320	300	144	86	50	64	387	214	145	195	206	226
1	37.001	"M1	9500/L	749	18	399	286	232	122	77	47	109	494	246	193	238	237	248
1	37.001	"M1	10000/R	746	33	312	220	191	114	80	57	131	629	319	234	253	227	203
1	37.001	"M1	10500/L	777	18	346	295	164	64	39	26	286	591	248	283	470	486	465
1	37.001	"M1	11000/R	801	33	295	222	201	111	75	49	176	715	339	238	279	260	254
1	37.001	"M1	11500/L	775	18	321	284	205	95	53	31	409	636	257	226	316	356	389
1	37.001	"M1	12000/R	725	33	595	404	312	130	74	44	61	321	169	139	216	239	256
1	37.001	"M1	12500/L	746	18	415	341	279	144	89	56	190	473	206	160	201	204	207
1	37.001	"M1	13000/R	711	33	409	330	293	172	110	71	175	458	203	145	160	158	156
1	37.001	"M1	13500/L	762	18	311	241	218	123	79	54	189	645	297	209	240	235	219
1	37.001	"M1	14000/R	711	33	403	330	288	160	98	57	192	464	203	148	172	177	194
1	37.001	"M1	14500/L	762	18	204	168	148	69	34	16	391	983	426	308	428	546	740
1	37.001	"M1	15000/R	711	33	628	454	398	196	113	60	71	298	147	107	140	153	184
1	37.001	"M1	15500/L	762	18	255	238	155	61	27	15	940	787	301	294	484	688	790
1	37.001	"M1	16000/R	911	33	512	495	471	170	96	58	973	468	173	116	207	231	244
1	37.001	"M1	17000/R	746	33	750	466	304	119	74	49	37	262	151	147	243	246	237

1	37.001	"M1	17500/L	746	18	622	605	396	184	105	57	979	316	116	113	157	173	203
1	37.001	"M1	18000/R	711	33	450	248	238	91	50	32	47	416	270	179	302	347	345
1	37.001	"M1	18500/L	736	18	337	293	257	135	75	39	338	575	236	171	211	239	293
1	37.001	"M1	19000/R	759	33	800	681	408	164	93	56	122	250	105	111	179	199	211
1	37.001	"M1	19500/L	762	18	358	330	264	147	84	49	563	560	217	173	201	221	242
1	37.001	"M1	20000/R	756	33	406	336	281	146	78	44	202	490	212	161	200	236	267
1	37.001	"M1	20500/L	762	18	288	216	202	106	63	39	178	697	332	226	278	295	304
1	37.001	"M1	21000/R	720	33	728	700	462	200	115	75	588	260	97	93	139	153	149
1	37.001	"M1	22000/R	749	33	370	342	265	136	79	52	565	533	206	169	213	231	224
1	37.001	"M1	22500/L	727	18	425	415	317	165	93	55	1671	450	165	137	171	191	205
1	37.001	"M1	23500/L	778	18	231	216	158	86	53	33	1067	887	339	295	350	358	367
1	37.001	"M1	24000/R	811	33	1015	789	781	349	199	124	59	210	97	62	90	99	102
1	37.001	"M1	24500/L	746	18	386	360	313	189	113	63	614	509	195	143	153	161	184
1	37.001	"M1	25000/R	885	33	659	552	437	165	80	43	134	354	151	121	208	270	320
1	37.001	"M1	25500/L	751	18	301	248	224	119	68	41	266	657	285	201	244	269	285
1	37.001	"M1	26000/R	753	33	573	563	417	196	110	64	1681	346	126	108	149	167	183
1	37.001	"M1	26500/L	933	18	619	414	333	135	68	46	56	397	212	168	268	334	315
1	37.001	"M1	27000/R	740	33	475	422	338	165	93	56	287	410	165	131	174	194	205
1	37.001	"M1	27500/L	940	18	319	301	285	151	85	50	897	776	294	197	241	270	292
1	37.001	"M1	28000/R	740	33	571	432	393	196	114	77	93	341	161	113	146	158	149
1	37.001	"M1	28500/L	748	18	305	244	193	99	57	35	224	646	288	232	293	320	332
1	37.001	"M1	29000/R	756	33	576	501	287	111	68	46	198	346	142	158	264	271	255
1	37.001	"M1	29500/L	988	18	253	230	190	104	62	40	676	1028	404	311	368	388	384
1	37.001	"M1	30000/R	756	33	500	376	335	165	93	61	104	398	189	135	177	198	193
1	37.001	"M1	30500/L	749	18	345	337	274	159	91	49	2089	572	209	164	182	201	238
1	37.001	"M1	31000/R	738	33	534	496	402	202	117	78	418	364	140	110	141	154	147
1	37.001	"M1	31500/L	725	18	522	447	390	200	103	57	195	366	152	111	140	174	198
1	37.001	"M1	32000/R	723	33	487	391	371	214	125	71	143	391	174	117	131	141	158
1	37.001	"M1	32500/L	707	18	550	448	446	262	154	93	137	338	148	95	104	112	118
1	37.001	"M1	33000/R	817	33	593	561	424	198	110	69	506	363	137	115	160	181	184
1	37.001	"M1	33500/L	908	18	512	430	417	238	146	93	175	467	199	130	148	152	152
1	37.001	"M1	34000/R	843	33	302	289	269	128	70	40	1260	735	274	187	255	294	328
1	37.001	"M1	34500/L	711	18	450	251	240	224	141	91	48	416	266	177	123	123	121
1	37.001	"M1	35000/R	814	33	601	418	408	204	123	77	65	357	183	119	154	161	164
1	37.001	"M1	35500/L	801	18	325	267	238	124	68	40	242	649	282	201	250	287	311
1	37.001	"M1	36000/R	727	33	665	592	463	236	143	91	209	288	115	94	119	124	124
1	37.001	"M1	36500/L	798	18	275	209	174	66	34	23	197	764	359	274	468	572	539
1	37.001	"M1	37000/R	882	33	590	455	356	171	104	69	98	394	182	148	200	207	199
1	37.001	"M1	37500/L	723	18	347	323	256	117	53	32	664	549	210	169	239	333	351

1	37.001	"M1	38000/R	727	33	479	452	332	165	89	48	598	400	151	131	171	199	235
1	37.001	"M1	38500/L	762	18	397	329	237	112	78	53	209	505	218	192	263	238	224
1	37.001	"M1	39000/R	888	33	381	255	235	96	50	31	91	614	327	226	358	433	445
1	37.001	"M1	39500/L	762	18	418	226	200	176	108	67	48	480	317	228	168	172	177
1	37.001	"M1	40000/R	782	33	731	541	395	186	98	64	67	282	136	118	163	195	190
1	37.001	"M1	40500/L	904	18	342	270	251	144	87	54	188	696	315	215	243	253	260
1	37.001	"M1	41000/R	882	33	728	506	475	265	147	91	54	319	164	111	129	146	151
1	37.001	"M1	42000/R	756	33	589	458	415	218	118	68	102	338	155	109	134	156	173
1	37.001	"M1	42500/L	777	18	395	269	245	213	130	87	92	518	272	190	141	146	139
1	37.001	"M1	43000/R	882	33	783	510	468	224	136	92	41	297	163	113	152	158	149
1	37.001	"M1	43500/L	723	18	1182	756	587	268	162	100	26	161	90	74	104	109	112
1	37.001	"M1	44000/R	911	33	268	263	258	135	72	41	3359	895	326	211	261	308	345
1	37.001	"M1	44500/L	856	18	535	394	375	192	116	75	89	421	204	137	173	180	177
1	37.001	"M1	45000/R	799	33	876	678	613	286	153	90	67	240	111	78	108	127	138
1	37.001	"M1	46000/R	788	33	693	505	485	268	159	97	66	299	147	97	114	121	126
1	37.001	"M1	46500/L	856	18	735	422	345	261	154	96	31	307	191	148	127	135	139
1	37.001	"M1	47000/R	853	33	290	256	236	146	86	48	444	774	313	216	226	242	276
1	37.001	"M1	48000/R	782	33	583	457	413	220	130	80	106	353	161	113	138	147	152
1	37.001	"M1	48500/L	908	18	494	467	328	112	48	26	599	484	183	166	314	461	543
1	37.001	"M1	49000/R	853	25	690	456	421	142	80	60	48	325	176	121	233	260	221
1	37.001	"M1	49500/L	775	18	350	301	259	142	80	45	300	583	242	179	211	236	268
1	37.001	"M1	50000/R	933	25	614	523	496	223	103	53	160	400	168	113	162	221	274
1	37.001	"M1	50500/L	914	18	303	283	262	149	92	58	799	794	304	209	237	242	245
1	37.001	"M1	51000/R	908	25	292	262	250	138	84	55	512	819	326	217	255	263	257
1	37.001	"M1	51500/L	888	18	392	376	356	194	118	71	1026	596	222	149	177	183	194
1	37.001	"M1	52000/R	904	25	749	661	505	201	94	62	172	318	129	107	174	234	227
1	37.001	"M1	53000/R	759	25	379	272	251	138	88	61	115	527	262	181	213	210	193
1	37.001	"M1	53500/L	959	18	274	246	226	145	94	56	549	921	367	254	256	249	266
1	37.001	"M1	54000/R	772	25	374	320	283	148	79	46	271	543	227	163	202	238	261
1	37.001	"M1	54500/L	930	18	331	270	255	131	65	40	229	740	324	218	275	349	361
1	37.001	"M1	55000/R	791	25	487	259	201	74	39	24	40	428	287	235	414	494	512
1	37.001	"M1	56000/R	707	25	444	231	211	72	31	17	42	419	288	200	380	556	647
1	37.001	"M1	56500/L	772	18	759	687	486	182	74	43	215	268	106	95	164	254	279
1	37.001	"M1	57000/R	720	25	567	535	364	177	97	50	505	334	127	118	157	181	224
1	37.001	"M1	57500/L	795	18	250	222	202	131	83	49	543	837	337	235	235	233	252
1	37.001	"M1	58500/L	736	18	510	469	273	101	48	28	384	380	148	161	282	374	409
1	37.001	"M1	59000/R	744	25	960	890	438	154	85	53	227	204	79	102	187	213	218
1	37.001	"M1	59500/L	746	18	284	220	204	100	48	23	207	691	319	219	289	379	504
1	37.001	"M1	60500/L	759	18	283	246	226	138	83	45	402	706	290	201	213	223	262

1	37.001	"M1	61000/R	759	25	775	681	383	140	86	60	160	258	105	119	210	215	197
1	37.001	"M1	61500/L	896	18	219	201	155	88	56	36	873	1077	419	346	394	390	387
1	37.001	"M1	62000/R	774	25	459	402	347	161	93	60	263	444	181	133	186	203	201
1	37.001	"M1	62500/L	788	18	290	247	216	120	72	46	339	715	300	218	254	267	266
1	37.001	"M1	63000/R	723	25	754	614	513	259	155	97	100	252	111	84	108	114	116
1	37.001	"M1	63500/L	775	18	280	234	211	129	87	58	311	729	311	220	233	217	208
1	37.001	"M1	64000/R	723	25	460	379	299	141	79	52	174	414	179	145	199	223	216
1	37.001	"M1	64500/L	798	18	463	339	293	134	84	62	101	454	221	163	231	232	200
1	37.001	"M1	65000/R	807	25	575	559	384	158	80	51	1040	369	136	126	198	246	246
1	37.001	"M1	65500/L	798	18	483	441	298	143	89	61	372	435	170	160	216	219	203
1	37.001	"M1	65500/L	743	26	701	634	457	206	116	72	231	279	110	97	140	156	160
1	37.001	"M1	66000/R	772	25	590	572	419	210	121	76	922	344	127	110	142	156	158
1	37.001	"M1	66500/L	804	26	372	317	295	176	109	69	265	569	238	163	177	180	181
1	37.001	"M1	67000/R	848	25	666	553	382	148	91	60	126	335	144	133	222	227	220
1	37.001	"M1	67500/L	866	26	571	407	401	198	105	70	74	399	200	129	169	201	192
1	37.001	"M1	68000/R	725	25	533	416	297	82	53	42	114	358	164	146	342	333	268
1	37.001	"M1	68500/L	885	26	740	683	484	173	88	66	277	315	122	109	198	245	208
1	37.001	"M1	69000/R	846	25	712	662	459	175	100	69	318	313	120	110	187	206	191
1	37.001	"M1	69500/L	930	26	509	319	296	135	83	58	56	481	274	188	267	273	249
1	37.001	"M1	70000/R	827	25	355	299	274	146	86	55	257	613	260	181	219	234	234
1	37.001	"M1	70500/L	833	26	844	765	540	136	78	64	196	260	102	92	237	260	202
1	37.001	"M1	71000/R	759	25	552	451	321	150	82	52	138	362	158	141	196	226	227
1	37.001	"M1	71500/L	727	26	524	501	326	142	67	44	711	365	136	133	198	264	257
1	37.001	"M1	72000/R	723	25	461	345	303	169	96	52	110	413	197	143	166	184	216
1	37.001	"M1	72500/L	727	26	553	456	357	162	88	55	145	346	150	122	174	201	205
1	37.001	"M1	73000/R	798	25	452	429	314	154	82	49	706	465	175	152	201	237	253
1	37.001	"M1	73500/L	727	26	582	518	359	160	84	51	238	329	132	121	176	211	222
1	37.001	"M1	74000/R	746	25	355	349	227	90	43	22	2804	553	201	197	321	423	527
1	37.001	"M1	74500/L	746	26	301	294	199	95	54	32	2388	652	239	224	304	337	362
1	37.001	"M1	75000/R	746	25	710	687	384	141	74	46	720	277	102	116	205	246	252
1	37.001	"M1	75500/L	701	26	587	456	352	138	75	50	101	314	145	119	197	228	218
1	37.001	"M1	76000/R	849	25	440	415	343	166	92	54	646	508	192	148	198	225	244
1	37.001	"M1	76500/L	727	26	544	456	381	159	84	54	163	352	150	114	177	211	209
1	37.001	"M1	77000/R	699	25	837	789	527	212	109	68	336	220	83	79	128	156	160
1	37.001	"M1	77500/L	723	26	432	387	289	148	86	55	341	441	176	150	189	205	204
1	37.001	"M1	78000/R	749	25	328	275	255	138	82	51	271	601	256	176	210	223	228
1	37.001	"M1	78500/L	743	26	924	706	506	211	124	87	60	212	99	88	136	146	133
1	37.001	"M1	79000/R	725	25	399	321	286	171	107	64	177	478	212	152	164	165	176
1	37.001	"M1	80000/R	723	25	2218	1015	583	178	95	69	7	86	67	74	157	186	163

1	37.001	"M1	79500/L	804	26	503	445	439	222	121	73	261	421	170	110	140	162	171
1	37.001	"M1	78500/L	725	26	334	292	233	116	70	47	356	571	233	186	242	252	240
1	37.001	"M1	77500/L	740	26	1161	1024	530	195	103	55	110	168	68	84	147	175	209
1	37.001	"M1	76500/L	727	26	544	444	381	159	84	54	140	352	154	114	177	211	209
1	37.001	"M1	75500/L	701	26	587	412	352	138	75	50	69	314	160	119	197	228	218
1	37.001	"M1	74500/L	746	26	294	250	199	95	54	32	331	668	281	224	304	337	362
1	37.001	"M1	73500/L	727	26	582	518	359	160	84	51	238	329	132	121	176	211	222
1	37.001	"M1	72500/L	727	26	553	489	357	162	88	55	236	346	140	122	174	201	205
1	37.001	"M1	71500/L	727	26	524	456	326	142	67	44	219	365	150	133	198	264	257
1	37.001	"M1	70500/L	833	26	844	795	540	136	78	64	329	260	99	92	237	260	202
1	37.001	"M1	69500/L	930	26	509	319	296	135	83	58	56	481	274	188	267	273	249
1	37.001	"M1	68500/L	885	26	740	683	484	173	88	66	277	315	122	109	198	245	208
1	37.001	"M1	67500/L	866	26	571	407	401	198	105	70	74	399	200	129	169	201	192
1	37.001	"M1	66500/L	804	26	372	306	295	176	109	69	213	569	247	163	177	180	181
1	37.001	"M1	65500/L	727	26	940	683	522	250	150	100	48	204	100	83	113	118	113

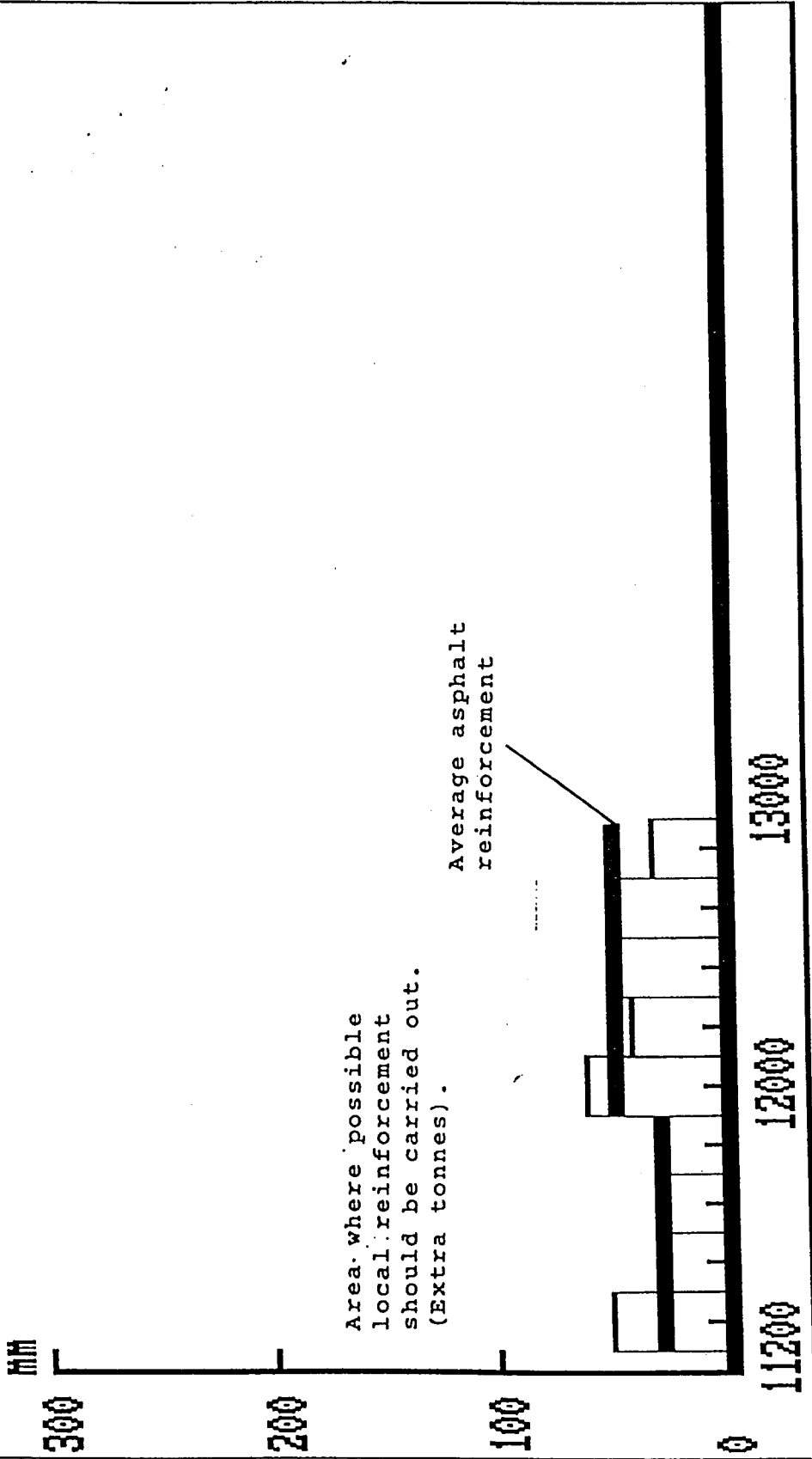
ALYAT-GEORGIAN BORDER ROAD: BEARING CAPACITY RESULTS pr. POINT 1997																		
SECTION NO. 8 AKSTAFI TO THE GEORGIAN BORDER																		
Sector no.	Road no.	Road name	Chainage/ lane	Contact pressure	Temp	Def 1 R=0	Def 2 R=210	Def 3 R=331	Def 4 R=510	Def 5 R=810	Def 6 R=1270	SCI	Evd1	Evd2	Evd3	Evd4	Evd5	Evd6
1	37.001	"M1	500/L	778	25	817	744	507	213	110	71	213	251	98	92	141	172	170
1	37.001	"M1	1000/R	723	15	514	480	326	146	81	51	470	370	142	133	192	218	220
1	37.001	"M1	1500/L	741	25	460	332	290	121	71	47	96	424	210	153	237	254	245
1	37.001	"M1	2000/R	746	15	274	168	128	85	43	28	99	717	417	349	340	423	414
1	37.001	"M1	2500/L	711	25	447	385	337	188	111	67	238	419	174	126	146	156	165
1	37.001	"M1	3000/R	759	15	404	377	293	158	92	60	591	495	189	155	186	201	197
1	37.001	"M1	3500/L	709	25	614	555	416	207	119	75	262	304	120	102	133	145	147
1	37.001	"M1	4000/R	723	15	322	316	269	159	82	51	2799	591	215	161	176	215	220
1	37.001	"M1	4500/L	736	25	504	420	331	171	109	74	170	384	165	133	167	165	155
1	37.001	"M1	5000/R	882	15	215	168	115	98	60	41	285	1080	494	459	348	358	334
1	37.001	"M1	5500/L	798	25	414	351	318	155	82	53	230	507	214	150	199	237	234
1	37.001	"M1	6000/R	798	15	835	758	436	133	92	75	202	252	99	110	232	211	165
1	37.001	"M1	6500/L	746	25	594	545	514	224	125	77	320	331	129	87	129	145	151
1	37.001	"M1	7000/R	798	15	405	257	240	107	62	46	73	519	292	199	289	314	270
1	37.001	"M1	7500/L	736	25	525	461	328	150	97	66	235	369	150	134	190	185	173
1	37.001	"M1	8000/R	788	15	542	457	384	195	113	68	170	383	162	123	156	170	180
1	37.001	"M1	8500/L	774	25	610	522	443	239	152	100	166	334	139	105	125	124	120
1	37.001	"M1	9000/R	772	15	585	495	415	219	118	61	161	347	147	111	136	159	197
1	37.001	"M1	9500/L	830	25	346	297	254	139	90	61	300	631	263	196	231	225	212
1	37.001	"M1	10000/R	795	15	429	304	229	119	74	47	97	488	246	208	259	262	263
1	37.001	"M1	10500/L	901	25	443	400	298	112	50	31	359	535	212	181	311	439	452
1	37.001	"M1	11000/R	746	15	592	456	345	145	81	51	97	332	154	129	199	224	227
1	37.001	"M1	11500/L	775	25	312	245	222	116	67	42	201	654	297	209	259	282	287
1	37.001	"M1	12000/R	827	15	258	226	197	114	75	51	468	844	344	251	281	269	252
1	37.001	"M1	12500/L	707	25	878	729	649	303	145	82	95	212	91	65	90	119	134
1	37.001	"M1	13000/R	749	15	422	397	309	156	87	52	644	467	177	145	186	210	224
1	37.001	"M1	13500/L	774	25	489	469	251	101	62	44	821	417	155	184	297	304	273
1	37.001	"M1	14000/R	856	15	430	357	258	115	76	53	195	524	225	199	288	275	251
1	37.001	"M1	14500/L	759	25	390	362	225	107	73	51	567	512	197	202	275	253	231
1	37.001	"M1	15000/R	795	15	319	276	200	82	50	35	344	656	271	238	375	388	353
1	37.001	"M1	15500/L	722	25	532	520	305	123	72	46	1394	357	131	142	227	244	244

1	37.001	"M1	16000/R	811	15	325	178	172	84	59	42	64	657	428	282	374	335	300
1	37.001	"M1	16500/L	785	25	365	299	220	94	56	38	212	566	247	213	323	342	321
1	37.001	"M1	17000/R	859	15	417	291	231	108	72	49	95	542	278	222	308	291	273
1	37.001	"M1	17500/L	772	25	567	459	352	182	117	75	128	358	158	131	164	161	160
1	37.001	"M1	18500/L	798	25	676	532	450	199	114	74	94	311	141	106	155	171	168
1	37.001	"M1	19000/R	759	15	473	436	370	161	92	61	426	422	164	123	183	201	193
1	37.001	"M1	19500/L	722	25	336	277	227	102	55	34	239	566	245	190	274	320	330
1	37.001	"M1	20000/R	801	15	702	621	446	200	123	83	187	300	121	107	155	159	150
1	37.001	"M1	20500/L	843	25	273	221	187	108	75	54	266	813	359	270	302	274	243
1	37.001	"M1	21000/R	775	15	575	572	402	190	104	75	5674	355	127	115	158	182	161
1	37.001	"M1	21500/L	651	25	1892	1345	1153	401	169	107	22	91	46	34	63	94	95
1	37.001	"M1	22000/R	756	15	307	238	217	130	87	60	192	648	299	208	225	212	196
1	37.001	"M1	22500/L	704	25	877	780	493	170	97	67	157	211	85	85	160	177	163
1	37.001	"M1	23000/R	740	15	373	360	235	108	67	47	1270	522	193	188	265	269	245
1	37.001	"M1	23500/L	933	25	372	316	260	132	83	58	260	660	278	215	274	274	250
1	37.001	"M1	24000/R	807	15	347	306	272	154	88	54	368	612	248	178	203	224	232
1	37.001	"M1	24500/L	772	25	206	178	154	92	62	41	528	987	408	300	325	304	293
1	37.001	"M1	25000/R	775	15	368	312	278	152	92	58	259	554	234	167	197	205	208
1	37.001	"M1	25500/L	740	25	689	515	411	191	117	82	74	283	135	108	150	154	140
1	37.001	"M1	26000/R	901	15	328	160	150	65	46	33	50	723	529	359	537	477	424
1	37.001	"M1	26500/L	796	25	397	270	209	92	61	43	92	528	277	228	335	318	288
1	37.001	"M1	27000/R	833	15	339	258	228	120	77	53	161	647	304	219	269	264	244
1	37.001	"M1	27500/L	740	25	410	327	233	103	71	49	164	475	213	190	278	254	235
1	37.001	"M1	28000/R	777	15	597	545	352	159	100	68	300	343	134	132	189	189	178
1	37.001	"M1	28500/L	885	25	540	432	368	189	114	75	127	431	193	144	181	189	183
1	37.001	"M1	29000/R	807	15	492	350	321	158	100	71	86	432	217	150	198	197	177
1	37.001	"M1	29500/L	827	25	713	659	494	223	118	73	293	305	118	100	144	171	176
1	37.001	"M1	30000/R	814	15	438	399	269	80	36	28	400	489	192	181	394	551	452
1	37.001	"M1	30500/L	733	25	486	429	355	161	88	59	265	397	161	124	176	203	193
1	37.001	"M1	31000/R	727	15	764	620	526	195	93	67	96	251	110	83	144	191	169
1	37.001	"M1	31500/L	725	25	379	358	274	122	75	52	770	504	190	158	230	236	217
1	37.001	"M1	32000/R	801	17	446	380	262	121	75	51	221	473	198	183	256	260	244
1	37.001	"M1	32500/L	856	25	454	353	341	181	105	68	132	496	228	150	183	199	196
1	37.001	"M1	33000/R	749	17	417	297	279	130	75	51	102	473	237	161	223	243	228
1	37.001	"M1	33500/L	859	25	372	360	263	137	88	61	1380	608	224	195	243	238	219
1	37.001	"M1	34000/R	866	17	417	411	281	137	87	58	2811	547	198	184	245	243	232
1	37.001	"M1	34500/L	786	25	328	182	145	128	79	53	65	631	406	324	238	243	231
1	37.001	"M1	35000/R	777	17	229	190	169	88	57	39	364	893	384	275	342	332	310
1	37.001	"M1	35500/L	798	25	245	230	229	140	91	61	1071	857	326	208	221	214	203

1	37.001	"M1	36000/R	782	17	312	308	302	195	126	82	4223	660	239	155	155	151	148
1	37.001	"M1	36500/L	723	25	549	511	423	236	135	80	419	347	133	102	119	131	140
1	37.001	"M1	37000/R	853	17	347	268	259	129	70	44	167	647	299	197	256	297	301
1	37.001	"M1	37500/L	811	25	799	598	555	263	151	98	64	267	128	87	119	131	129
1	37.001	"M1	38000/R	835	17	404	356	323	203	138	103	314	544	221	155	159	147	126
1	37.001	"M1	38500/L	851	25	155	140	127	100	79	56	1030	1445	571	401	329	263	236
1	37.001	"M1	39000/R	772	17	986	620	371	164	95	69	29	206	117	124	182	198	174
1	37.001	"M1	39500/L	711	25	516	400	342	164	100	68	114	363	167	124	168	173	163
1	37.001	"M1	40000/R	803	17	512	414	376	191	109	69	141	413	182	128	163	180	181
1	37.001	"M1	40500/L	759	25	257	198	178	92	60	46	223	777	360	255	319	308	257
1	37.001	"M1	41000/R	791	17	537	491	398	215	131	84	340	388	151	119	142	147	146
1	37.001	"M1	41500/L	795	25	357	255	241	129	87	64	120	586	293	197	239	223	193
1	37.001	"M1	42000/R	748	17	285	242	222	116	72	52	338	691	291	202	250	253	224
1	37.001	"M1	42500/L	807	25	699	653	492	222	119	77	348	304	116	98	141	165	163
1	37.001	"M1	43500/L	833	25	589	544	449	234	141	91	351	372	144	111	138	144	142
1	37.001	"M1	44000/R	777	17	284	223	197	94	50	33	220	720	328	236	320	379	366
1	37.001	"M1	44500/L	904	25	382	298	222	88	49	36	159	623	285	244	398	450	390
1	37.001	"M1	45000/R	814	17	128	102	90	48	32	25	524	1674	750	541	657	620	506
1	37.001	"M1	46000/R	798	17	284	184	164	68	41	30	111	740	408	291	454	474	414

Link no.: 0001 Link ref.: M75
Height of new overlay in mm:

30 50



BEARING CAPACITY OF EQUAL SECTIONS

<p>***** ***** ** ** ** ** ***** ***** ** ** **</p> <p>A/S PHØNIX P. P. C</p>	<p>Client: turk</p> <p>Sec. no.: 0001</p> <p>Link no.: 0001</p> <p align="right">Design date: 04-03-1997</p>
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Link ref.: m75

Mea. date: 970116 2

The classification is based on sections => 4 measurements.

For each section the overlay thickness is calculated as average + 33% of the standard deviation.

The stated layer thickness must be considered as instructive, as there might be material or technical reasons why another layer thickness than the here stated should be carried out, especially in connection with thin overlay thicknesses.

Section	Overlay Thickness in mm	<-----Life----->		extra tons
		before years	after years	
11200 - 12000	30	5	15	30
12000 - 13000	50	2	15	0