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TECHNICAL AND ECONOMIC FINAL REPORT

Lattakia to Ariha
Volume II

prepared for the

SYRIAN ARAB REPUBLIC

and the

U.S. AGENCY for INTERNATIONAL DEVELOPMENT

LYON associates, inc.

in association with

MORRISON - MAIERLE, INC. and

JAMES R. SNITZLER ASSOCIATES, INC.

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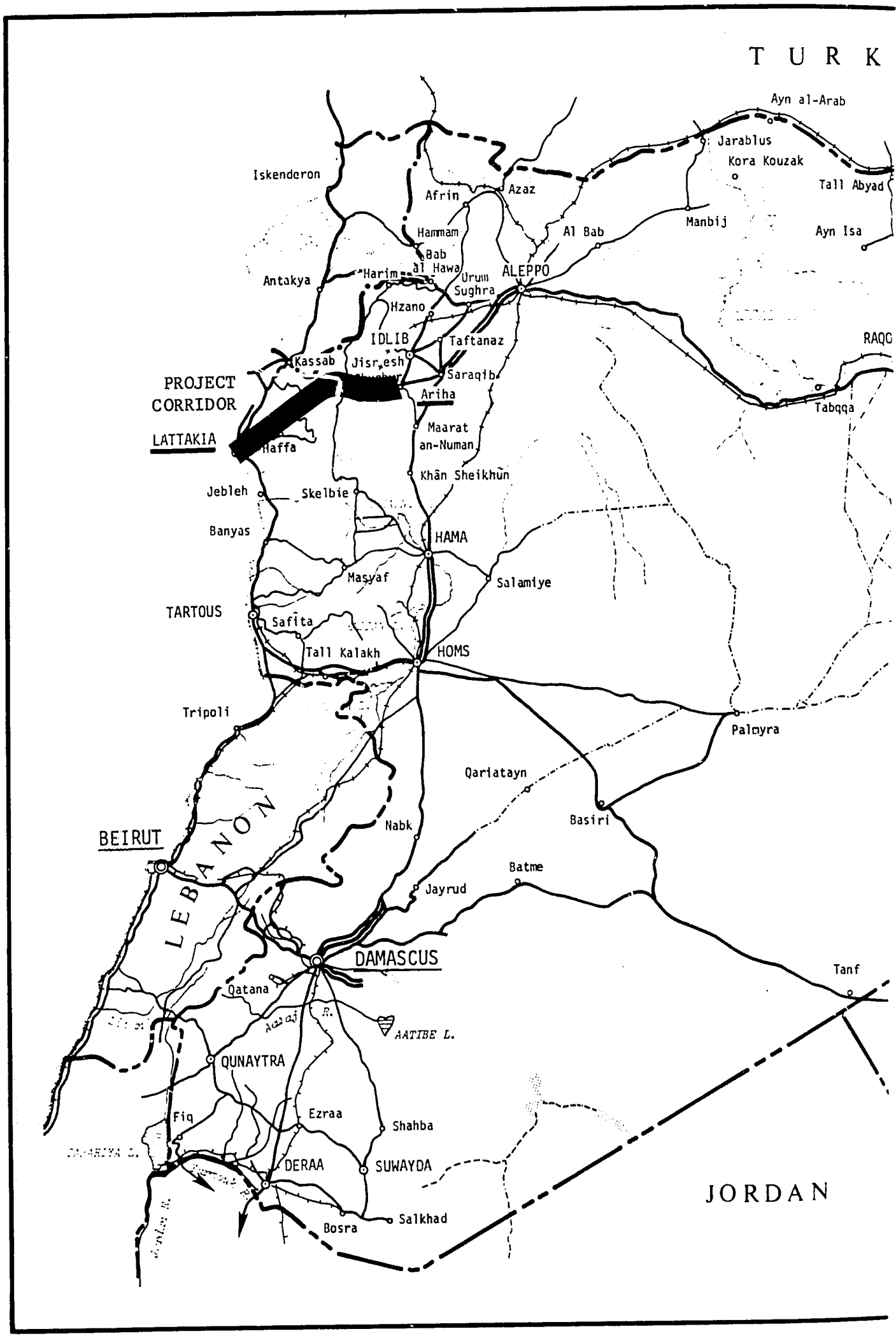
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Antakya
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Taftanaz
Kassab
Jisr esh
Saraqib
Ariha
PROJECT CORRIDOR
LATTAKIA
Haffa
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Khân Sheikhûn
Jebleh
Skelbie
Banyas
HAMA
Masyaf
Salamiye
TARTOUS
Safita
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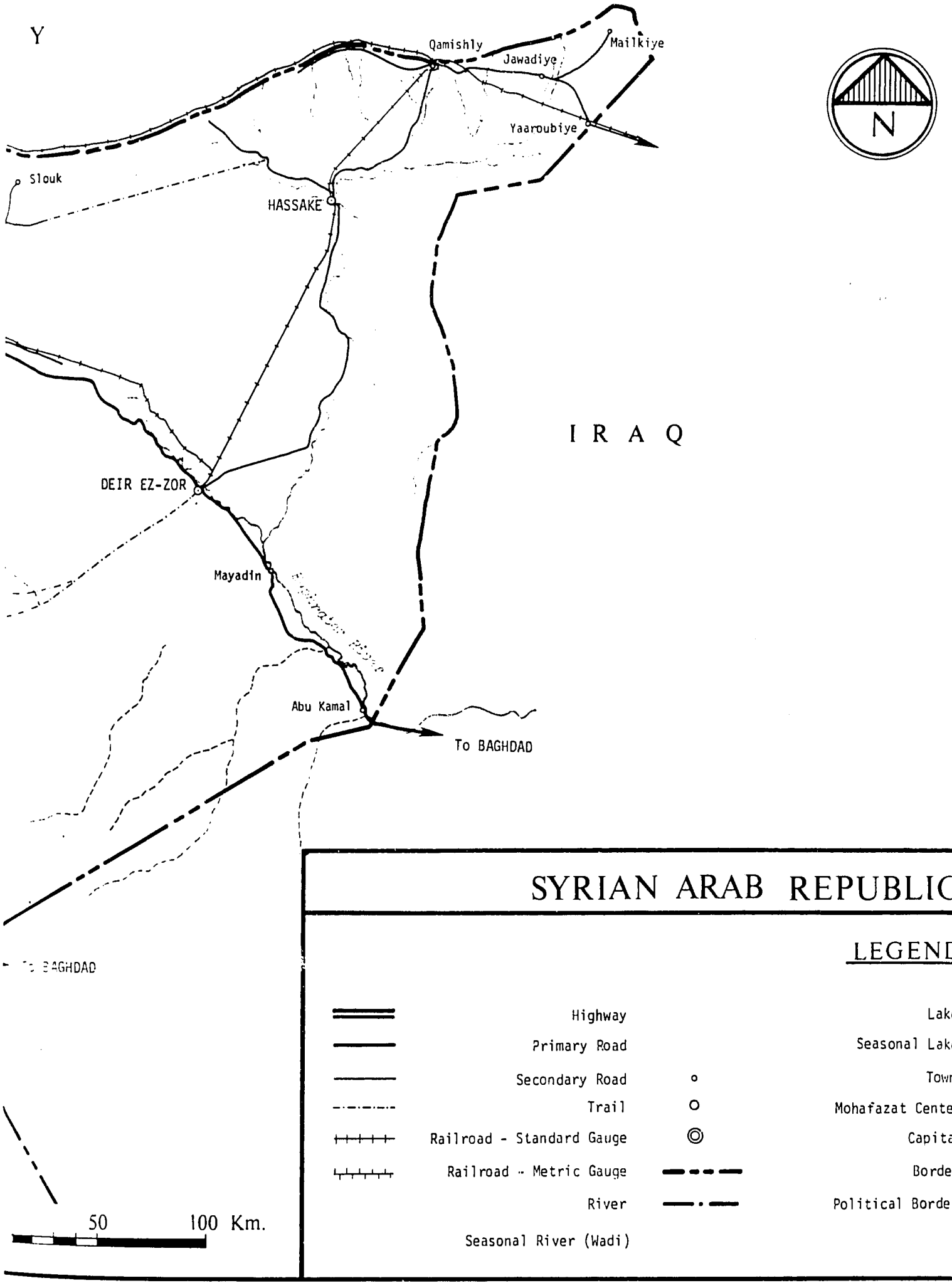
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IRAQ
DEIR EZ-ZOR
Mayadin
Abu Kamal
To BAGHDAD
BAGHDAD
N
SYRIAN ARAB REPUBLIC
LEGEND
Highway
Primary Road
Secondary Road
Trail
Railroad - Standard Gauge
Railroad - Metric Gauge
River
Seasonal River (Wadi)
Lake
Seasonal Lake
Town
Mohafazat Center
Capital
Border
Political Border
50
100 Km.

Preliminary Design Drawings

APPENDIX A

LYON

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PLAN

PROF

SYRIAN ARAB REPUBLIC
Ministry of Communications

LATTAK
Pr

END

XISTING

- CONTOUR
- ROAD CLASS I
- ROAD CLASS II
- ROAD CLASS III
- RAILROAD
- RIVER
- CHANNEL MORE THAN 5m WIDE
- CHANNEL LESS THAN 5m WIDE
- CREEK
- SUBSURFACE CHANNEL
- POWER LINE
- OIL PIPE LINE

OPOSED

- ℄ OF CONSTRUCTION
- VIADUCT
- GRADE SEPARATION/OVERPASS
- GRADE SEPARATION/UNDERPASS
- INTERCHANGE/OVERPASS
- INTERCHANGE/UNDERPASS
- RIVER CROSSING
- POINT OF INTERSECTION
- PC OR PT STATION

- EXISTING GROUND LINE

OPOSED

- PROFILE GRADE LINE
- PVC OR PVT STATION
- POINT OF INTERSECTION

ABBREVIATIONS

PC	POINT OF CURVATURE
PT	POINT OF TANGENCY
PI	POINT OF INTERSECTION
Δ	DELTA (CURVE CENTRAL ANGLE)
T	TANGENT LENGTH
R	RADIUS
L	LENGTH OF HORIZONTAL CURVE
PVC	POINT OF VERTICAL CURVATURE
PVT	POINT OF VERTICAL TANGENCY
PVI	POINT OF VERTICAL INTERSECTION
LVC	LENGTH OF VERTICAL CURVE
CORR.	VERTICAL OFFSET FROM PVI TO MIDDLE OF CURVE

NOTES

1. ALL DIMENSIONS SHOWN ON THE DRAWING ARE IN METERS.
2. THE VERTICAL DATUM FOR THE SURVEY IS MEAN SEA LEVEL IN METERS.
3. TOPOGRAPHY SHOWN ON THE PLANS IS OBTAINED FROM 1:25000 AERIAL MAPPING FURNISHED BY THE MINISTRY OF COMMUNICATIONS.
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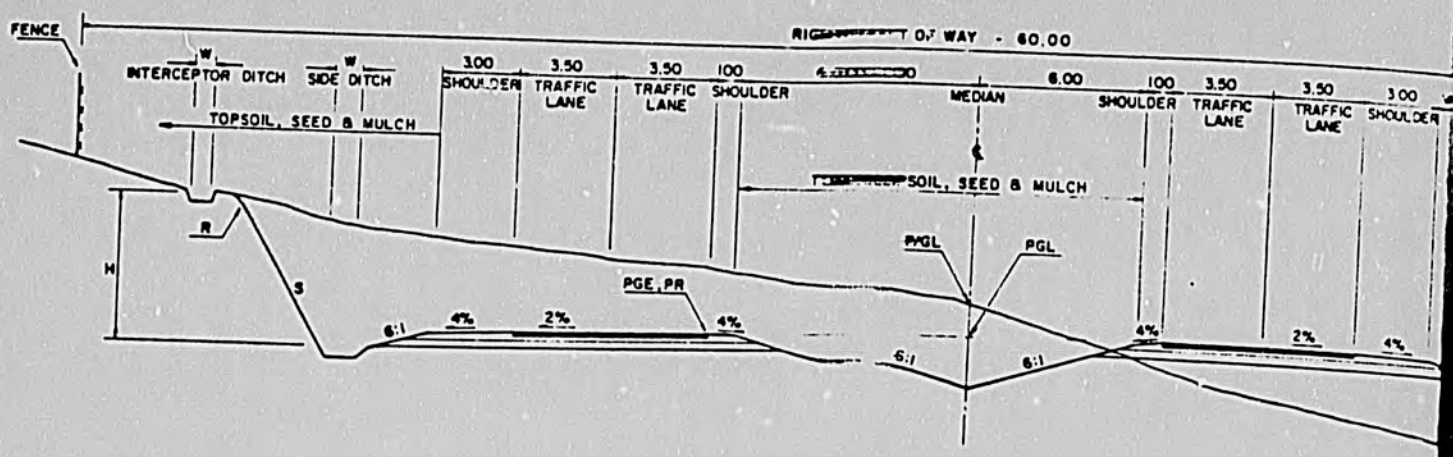
5. FOR VERTICAL CURVE DATA SEE PLATES A-20 AND A-21.

TO ARIHA EXPRESSWAY inary Engineering ITLE SHEET	LYON associates, inc. in association with Morrison-Maierle Inc. and James R. Snitzler Associates, Inc.	PLATE NO. A - 1 SHEET NO. 1a OF 27



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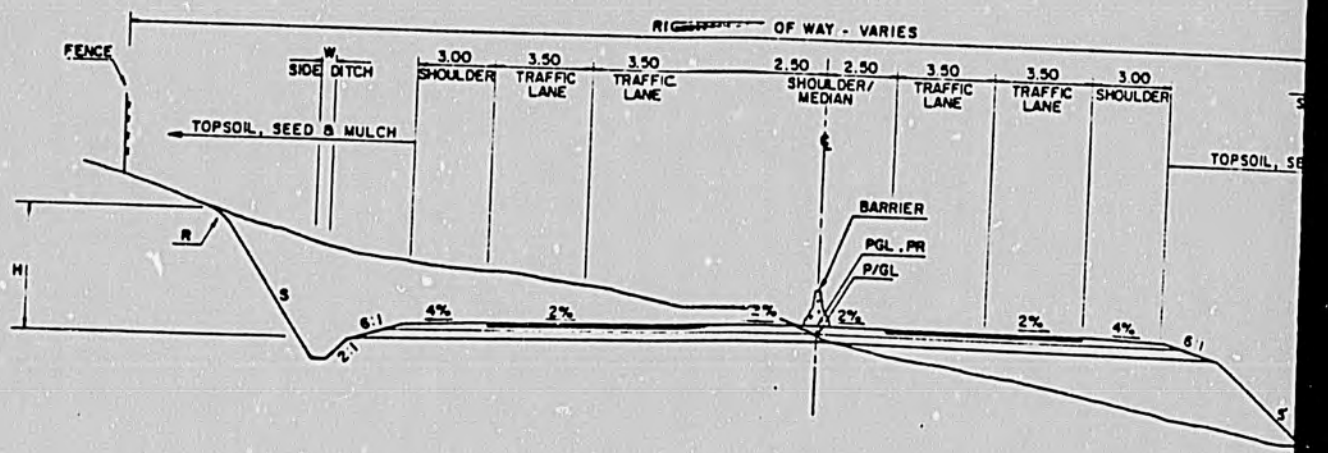

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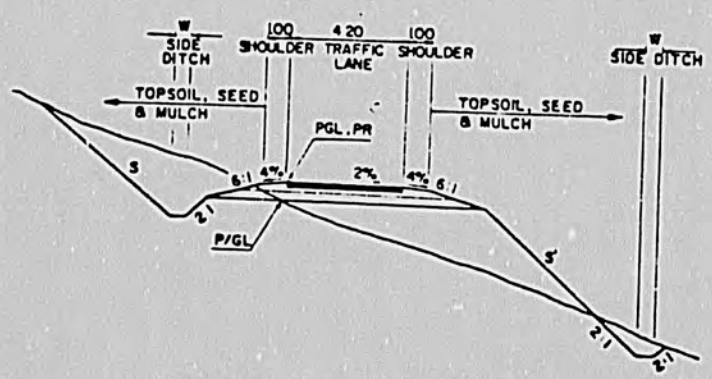

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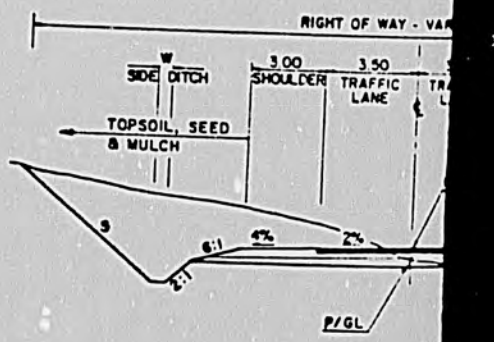

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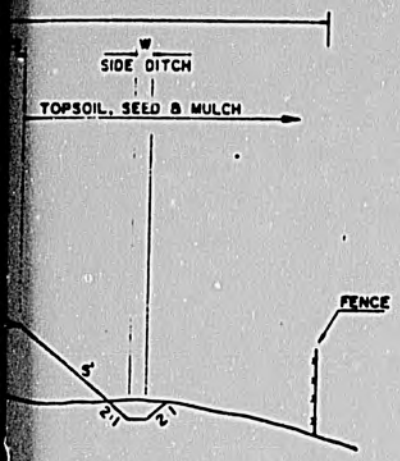
2

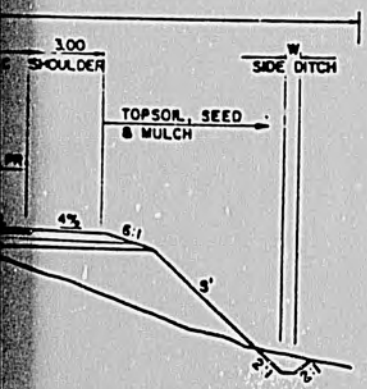


LEGEND

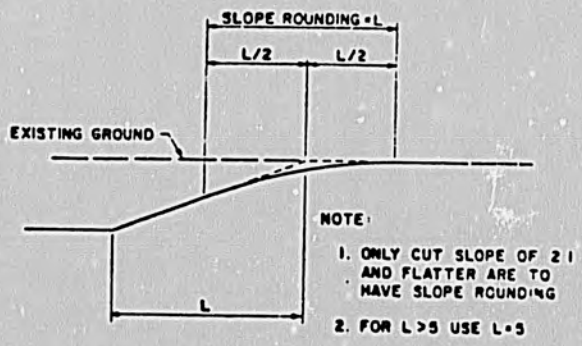
PVGL	PROFILE GROUND LINE
PVGE	PROFILE GRADE ELEVATION
PGL	PROFILE GRADE LINE
PR	POINT OF ROTATION
W	DITCH WIDTH VARIES
H	HEIGHT OF SLOPE
S	CUT SLOPE VARIES - BENCHING REQUIRED FOR H ≥ 10 MAX
S'	FILL SLOPE VARIES H ≤ 3.00, S' = 4:1 H > 3.00, S' = 2:1 (GUARD RAIL REQUIRED)
R	SLOPE ROUNDING

NOTES

1. ALL DIMENSIONS ARE IN METERS.
2. SEE SHEET 25 OF 27 (FOR PLATE A-25) PAVEMENT DETAILS
3. DIVIDED HIGHWAYS WILL BE BIFURCATED WHERE ECONOMICALLY AND TECHNICALLY FEASIBLE TO DO SO.
4. SUBGRADE DRAINAGE WILL BE PROVIDED AS REQUIRED BY GROUND WATER CONDITIONS



FRONTAGE ROAD

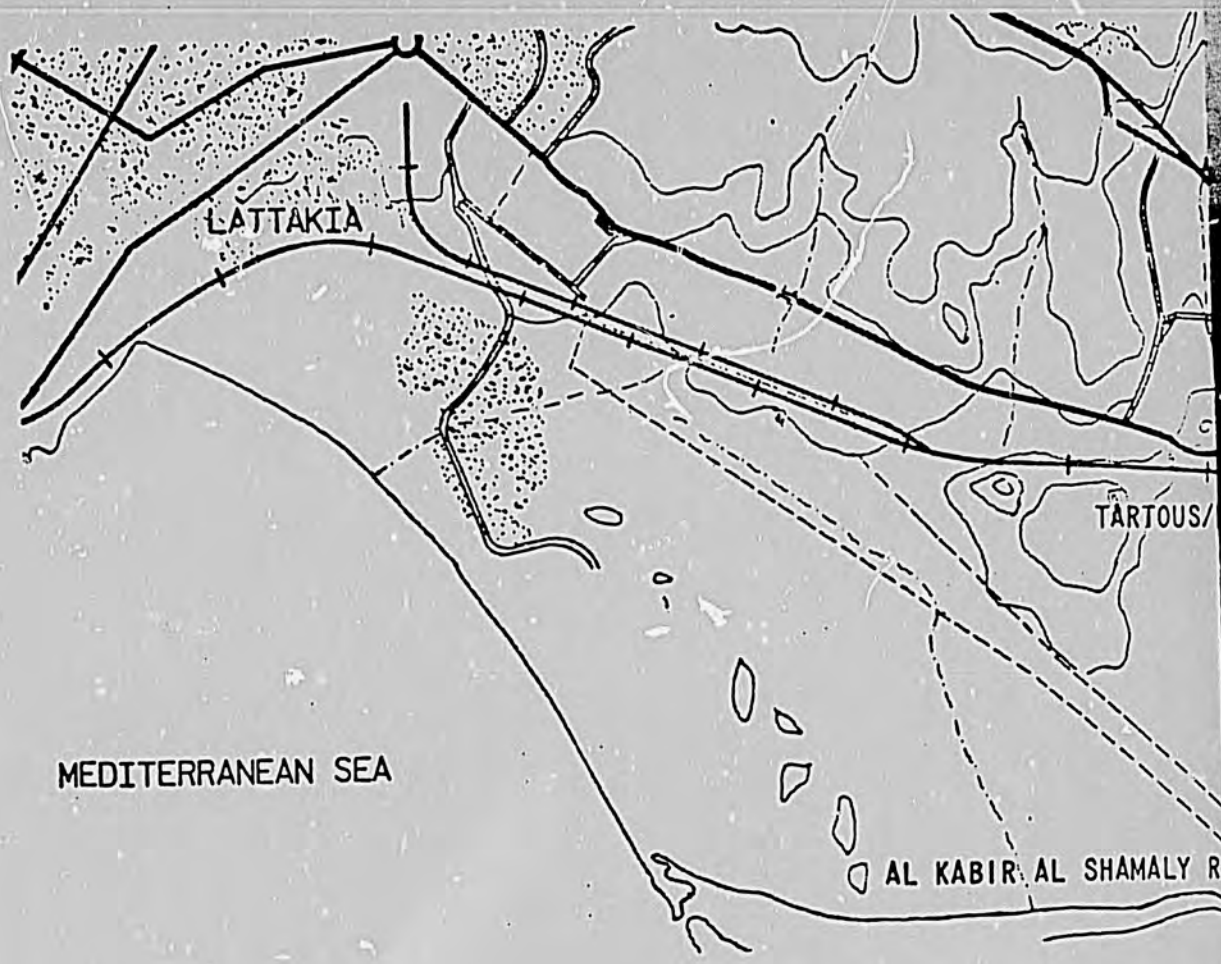


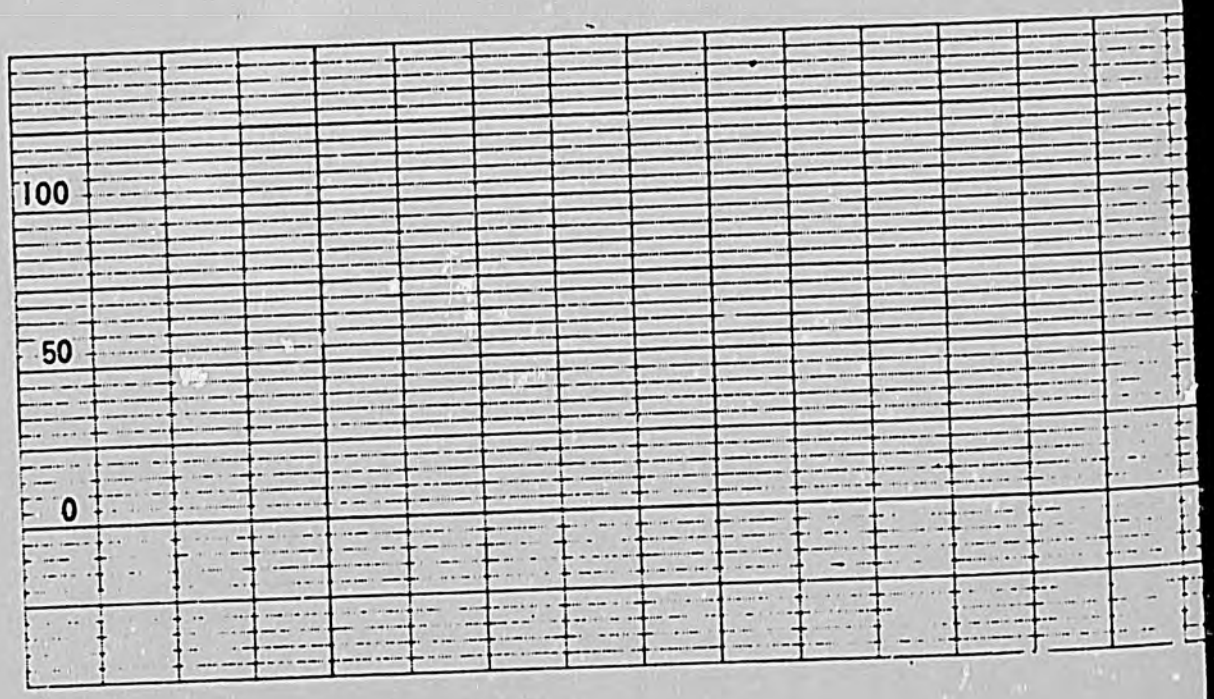
NOTE:

1. ONLY CUT SLOPE OF 2:1 AND FLATTER ARE TO HAVE SLOPE ROUNDING
2. FOR L > 5 USE L = 5

SLOPE ROUNDING
NOT TO SCALE

PRESSWAY ering NS	LYON associates, inc. in association with Morrison-Maierle Inc. and James R. Snitzler Associates, Inc.	PLATE NO. A-2 SHEET NO. 2a OF 27





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SYRIAN ARAB REPUBLIC
Ministry of Communications

3

LATTAKIA
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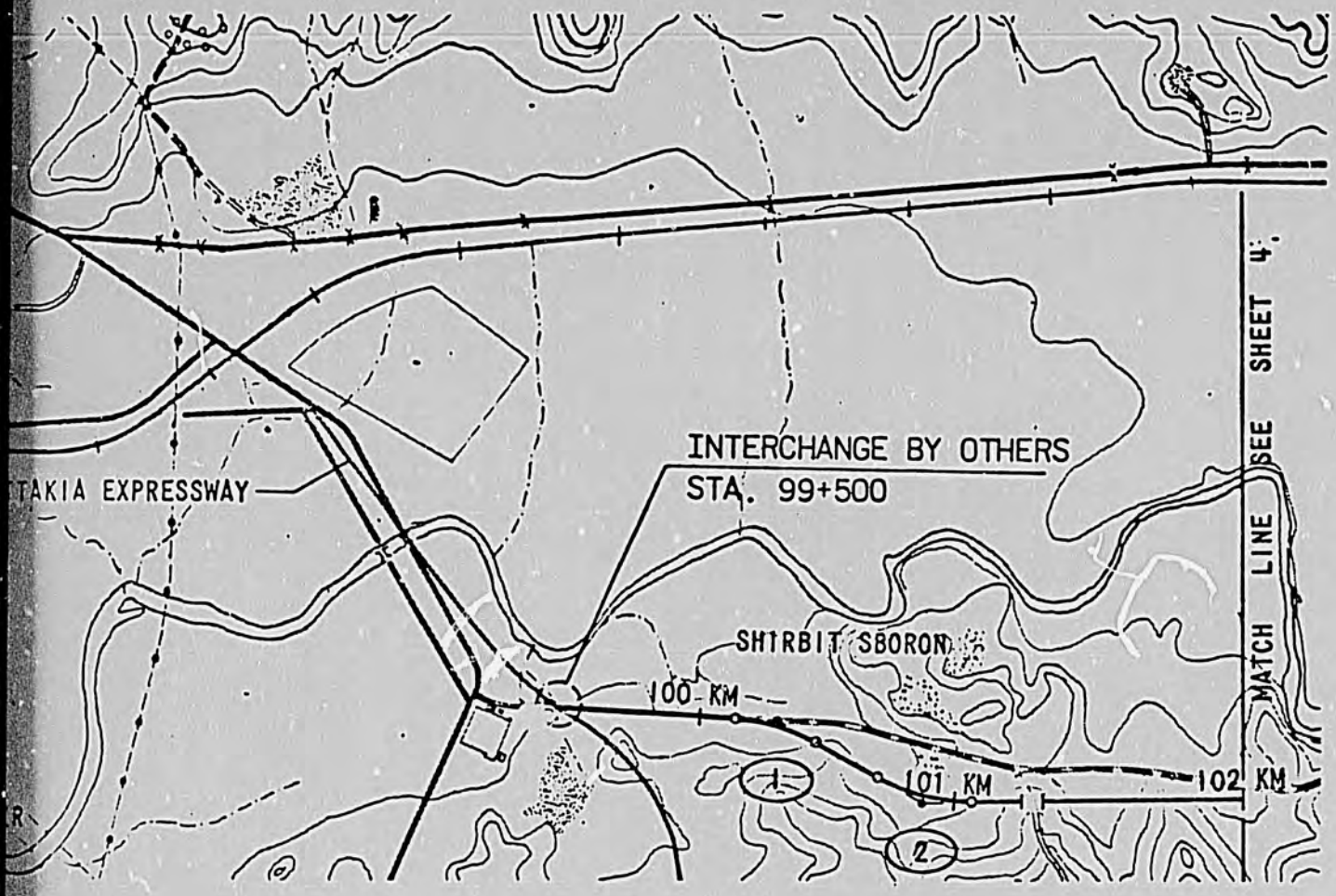
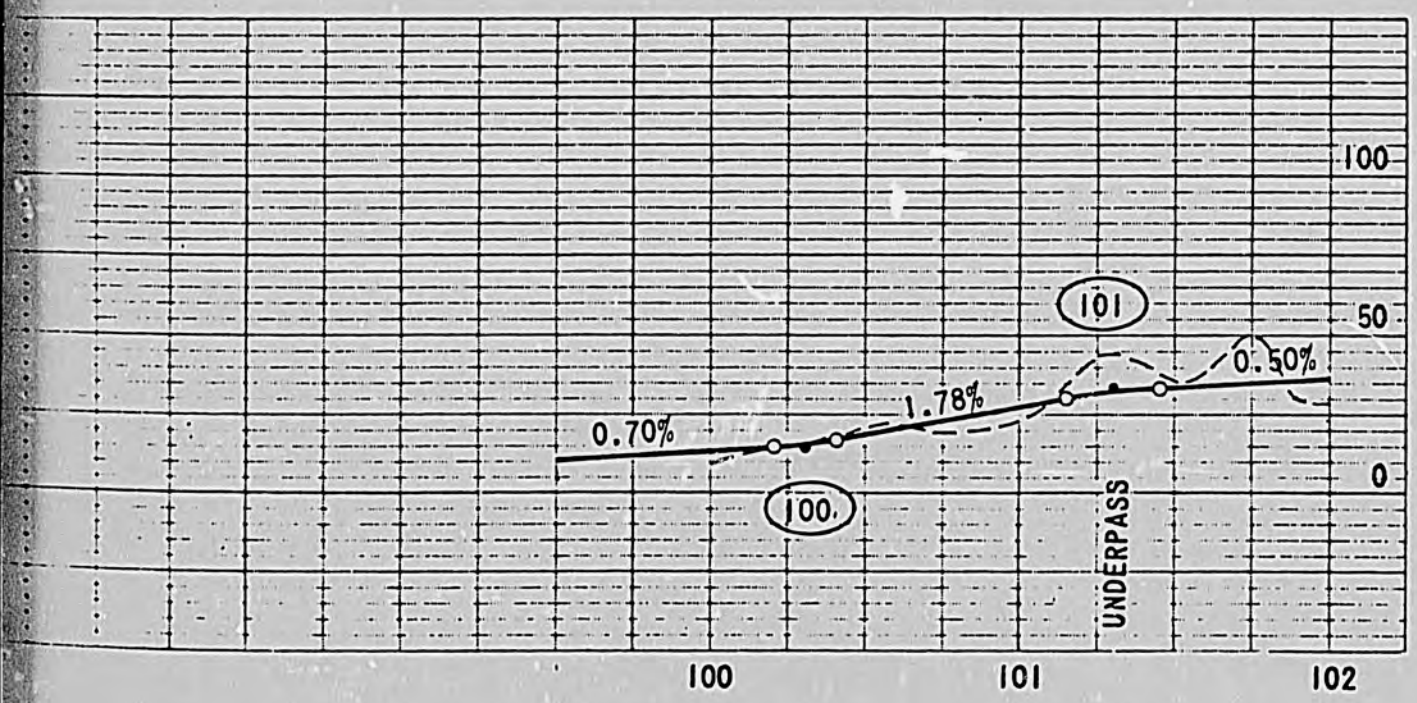
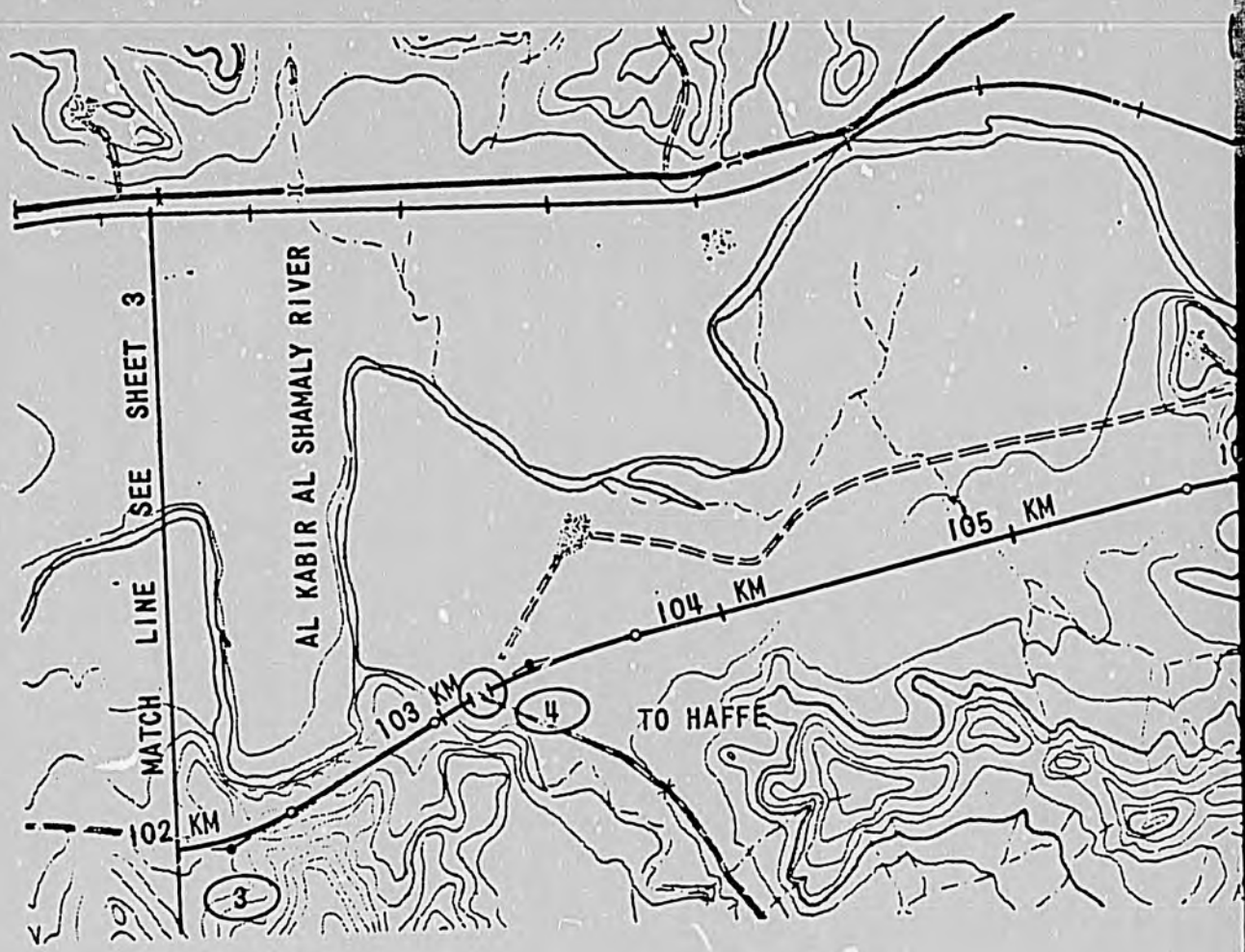
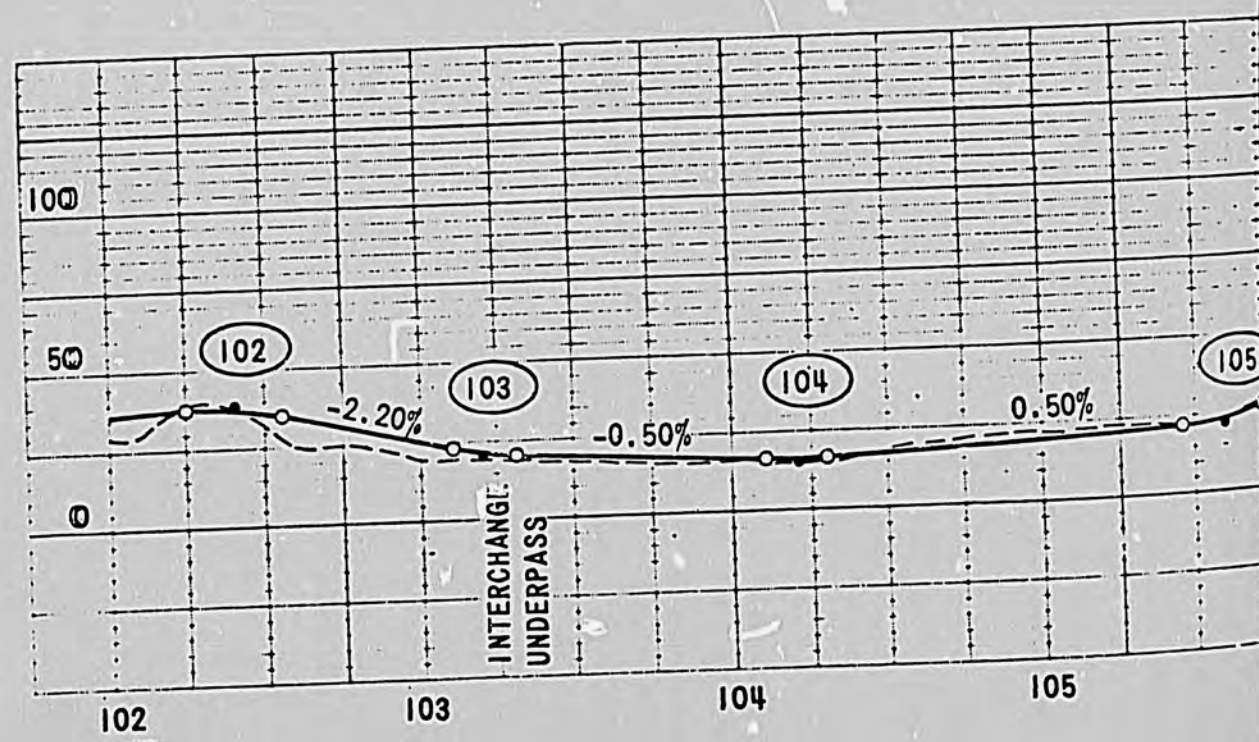




TO ARIHA EXPRESSWAY inary Engineering E KM 99+500 TO KM 102+000	LYON associates, inc. in association with Morrison-Maierle Inc. and James R. Snitzler Associates, Inc.	PLATE NO. A-3 SHEET NO. 3a OF 27





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SYRIAN ARAB REPUBLIC
Ministry of Communications

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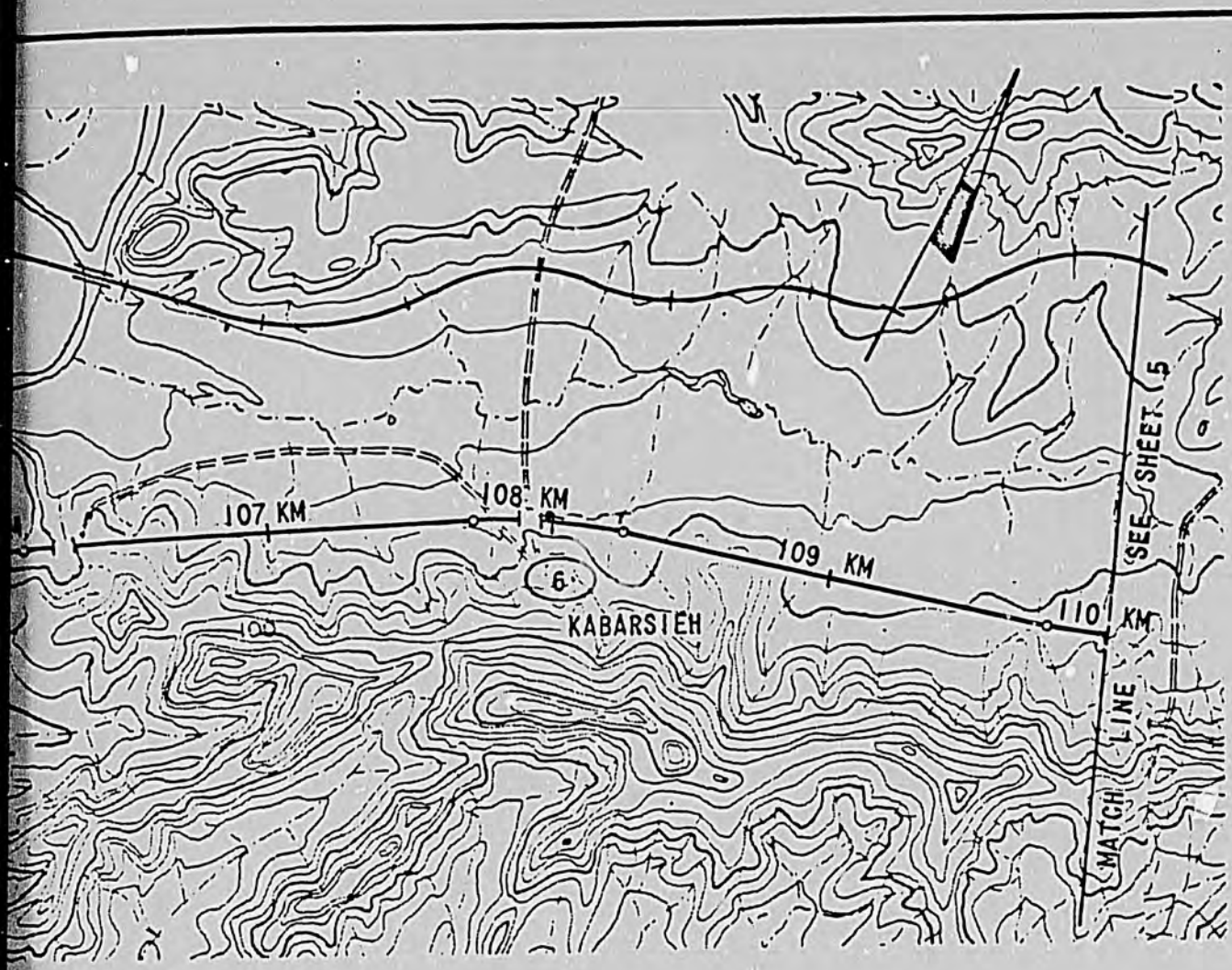
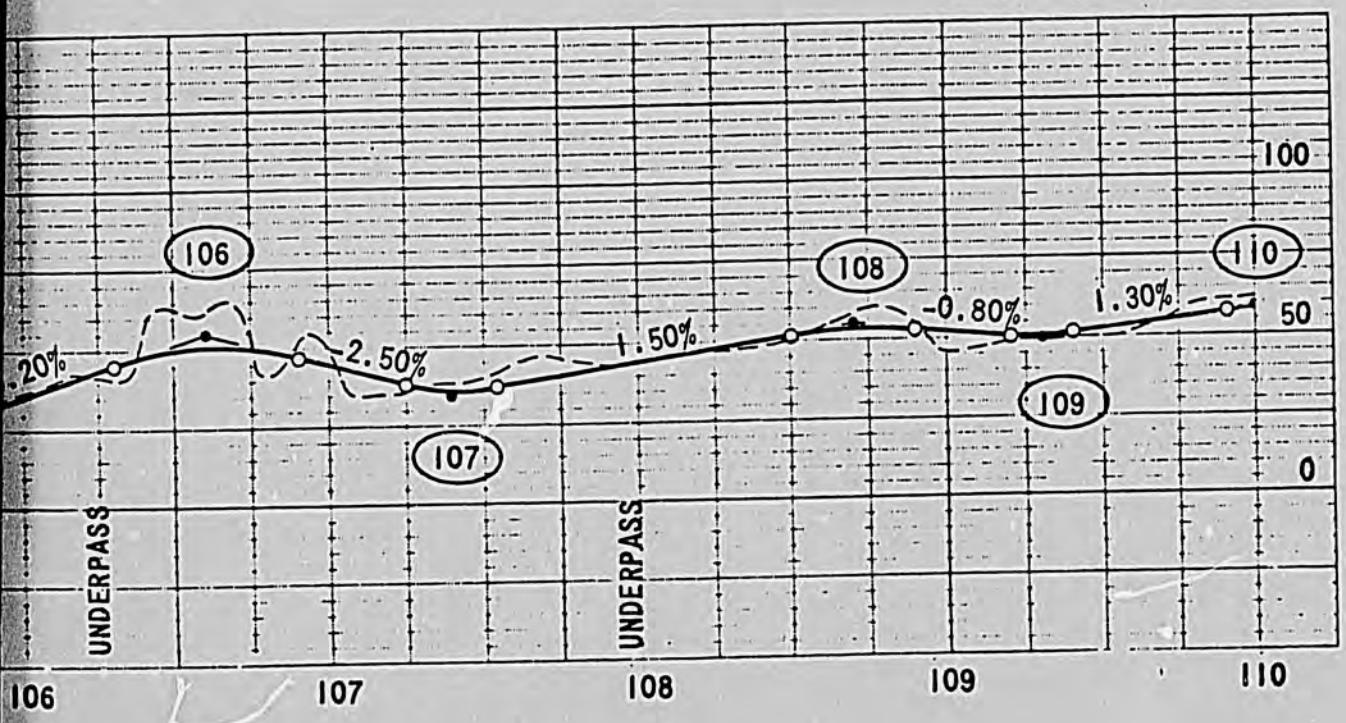
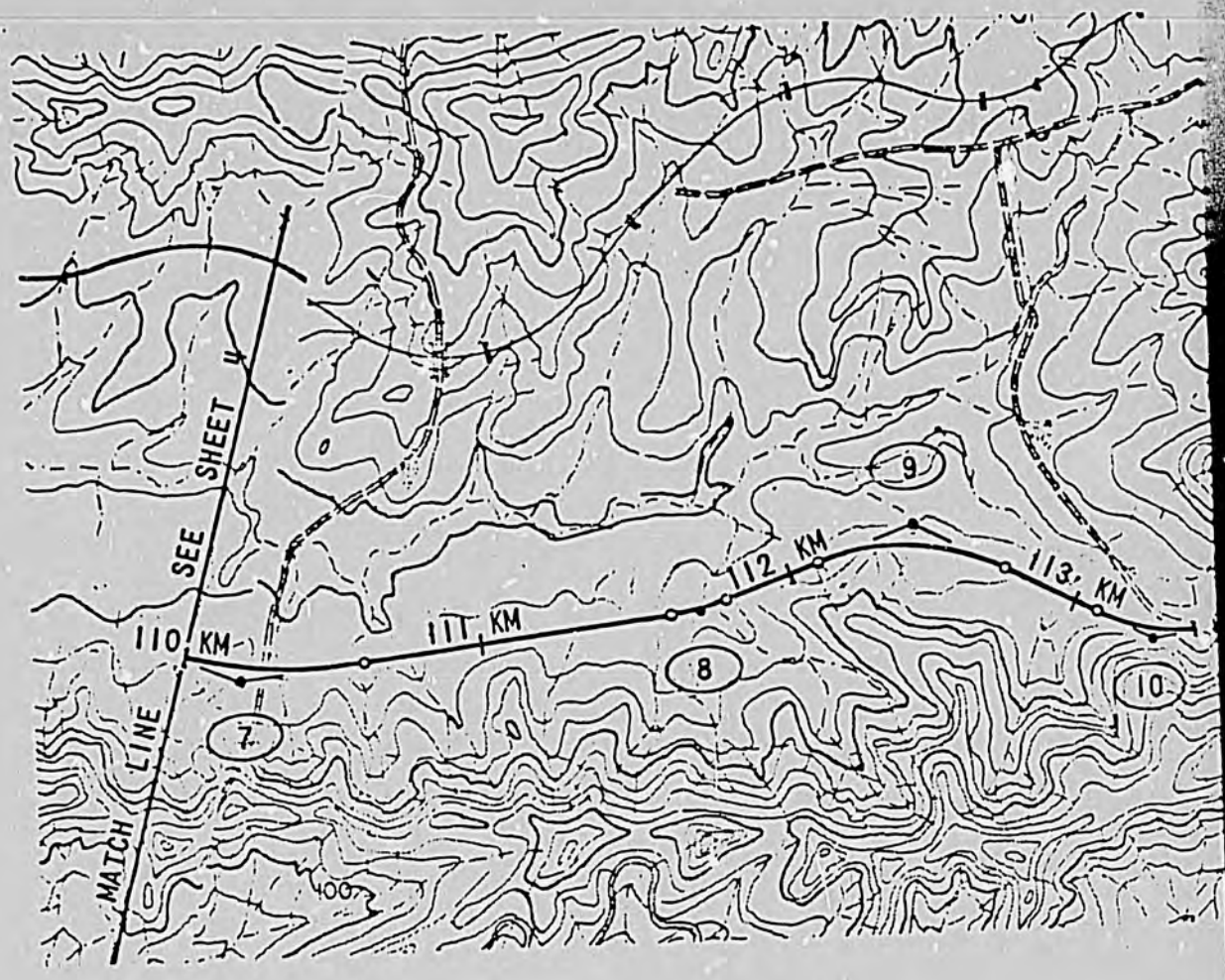
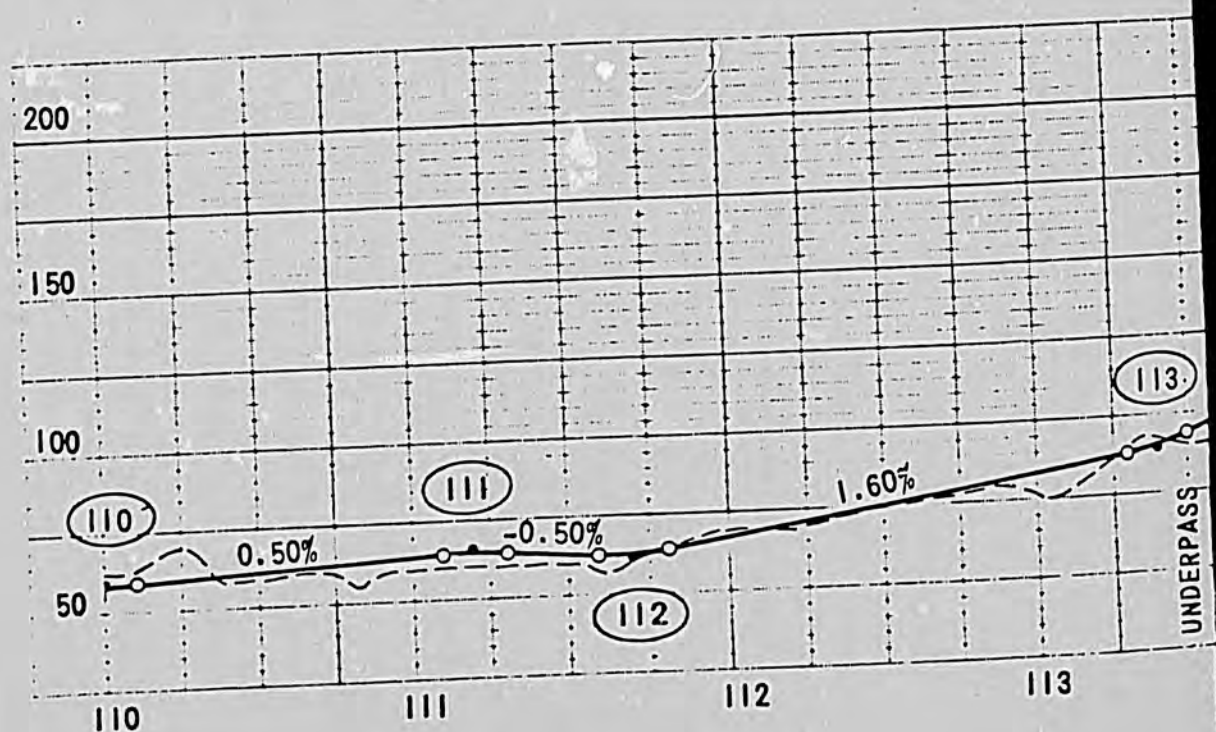




ARIHA EXPRESSWAY Engineering KM 102+000 TO KM 110+000	LYON associates, inc. in association with Morrison-Maierle Inc. and James R. Snitzler Associates, Inc.	PLATE NO. A-4 SHEET NO. 4a OF 27





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5

LATTAKIA
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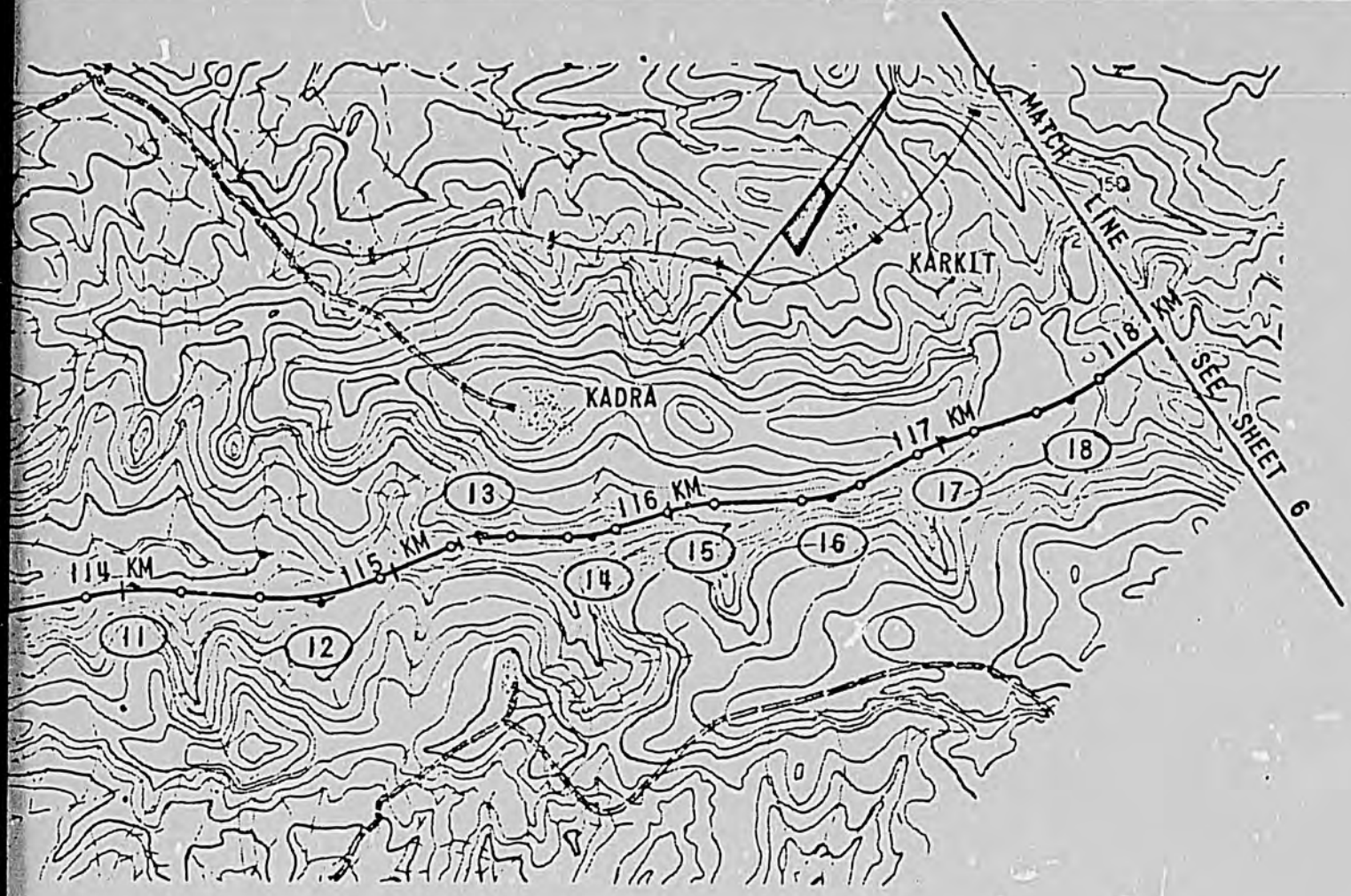
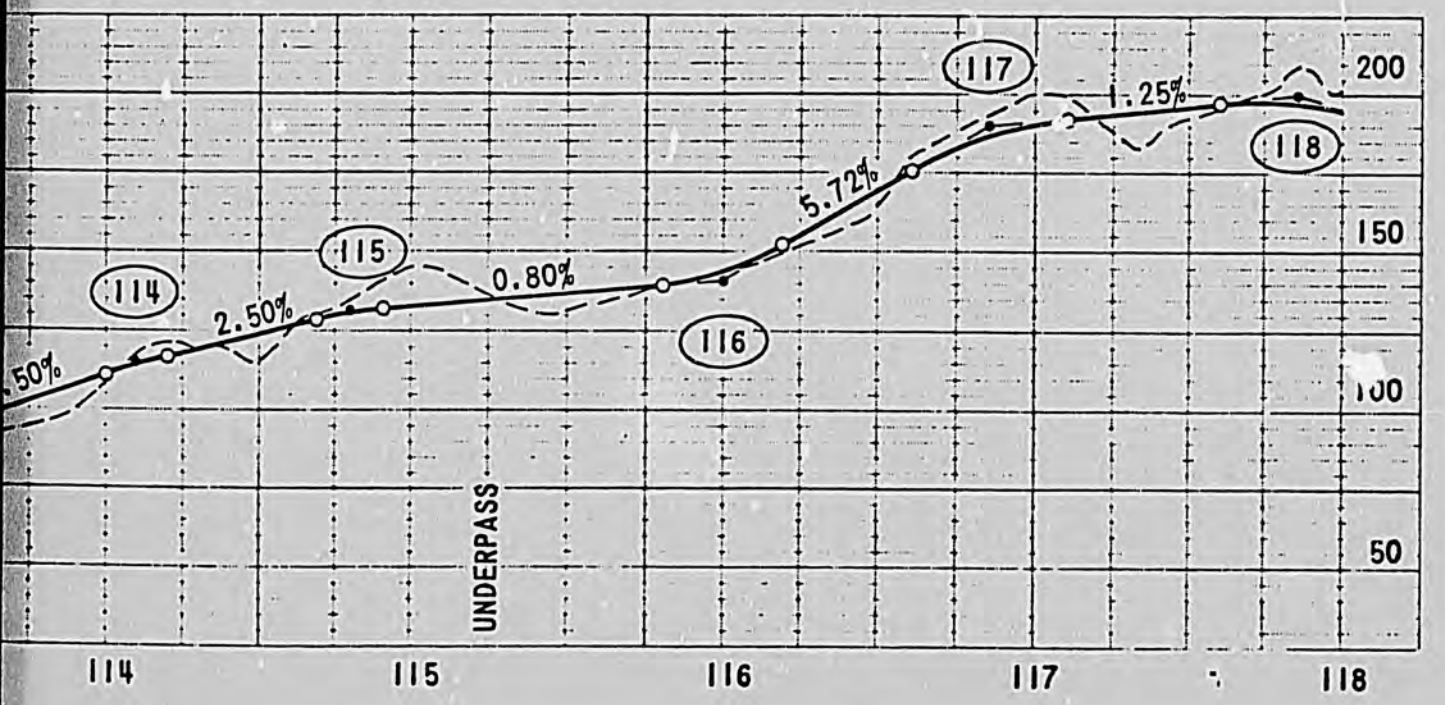
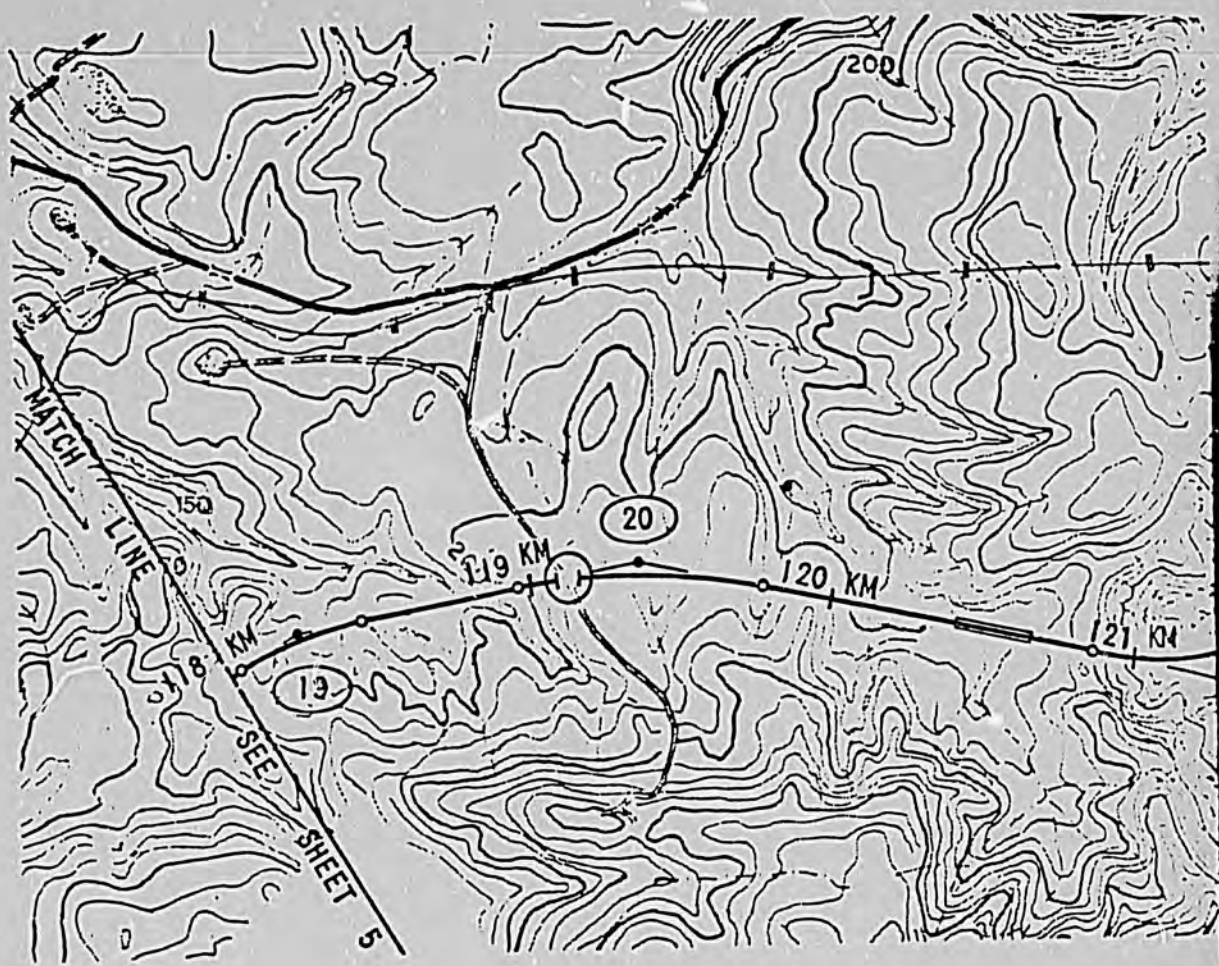
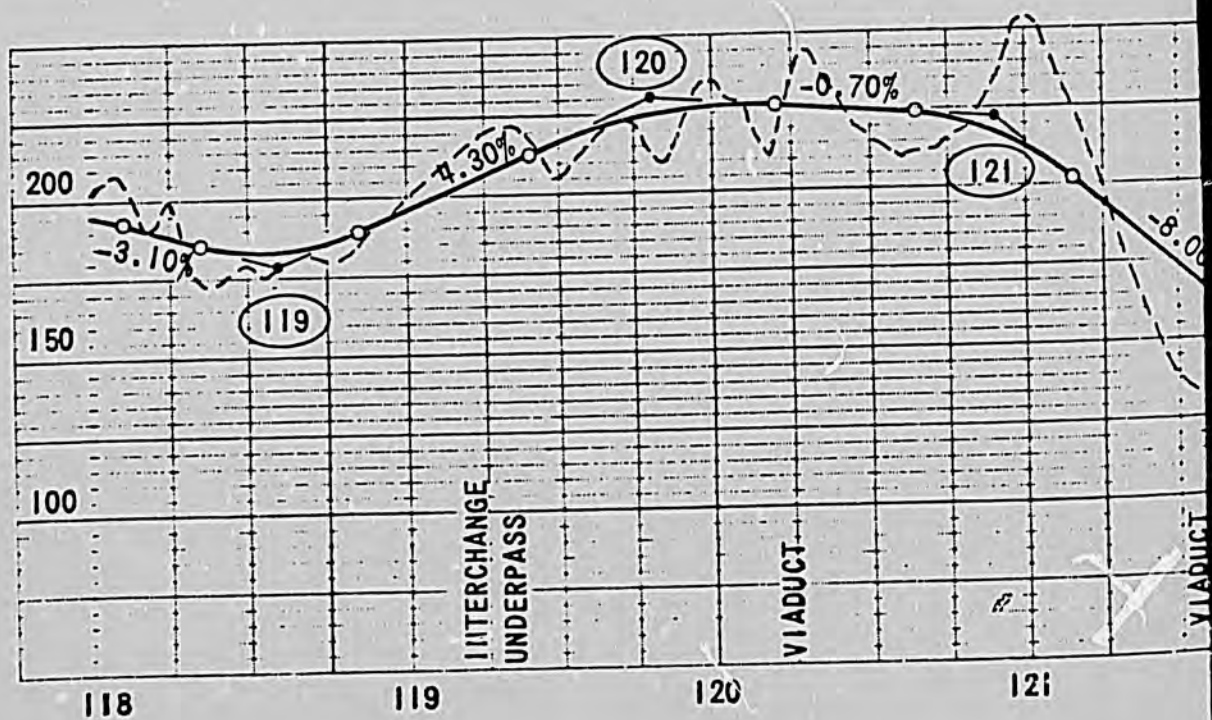




TO ARIHA EXPRESSWAY ninary Engineering LE KM 110+000 TO KM 118+000	LYON associates, inc. in association with Morrison-Maierle Inc. and James R. Snitzler Associates, Inc.	PLATE NO. A – 5 SHEET NO. 5 OF 27





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SYRIAN ARAB REPUBLIC
Ministry of Communications

6

LATTAKIA
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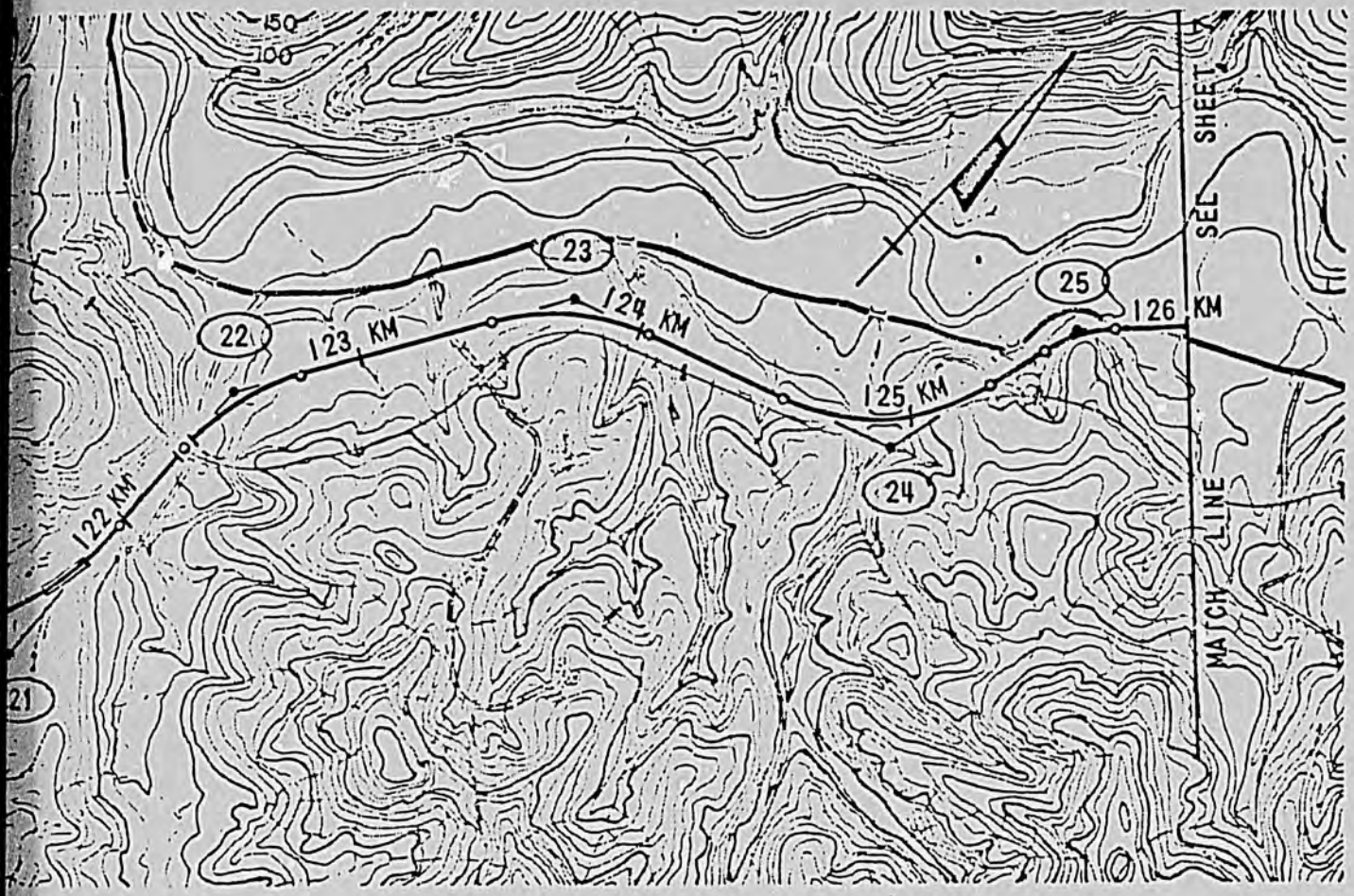
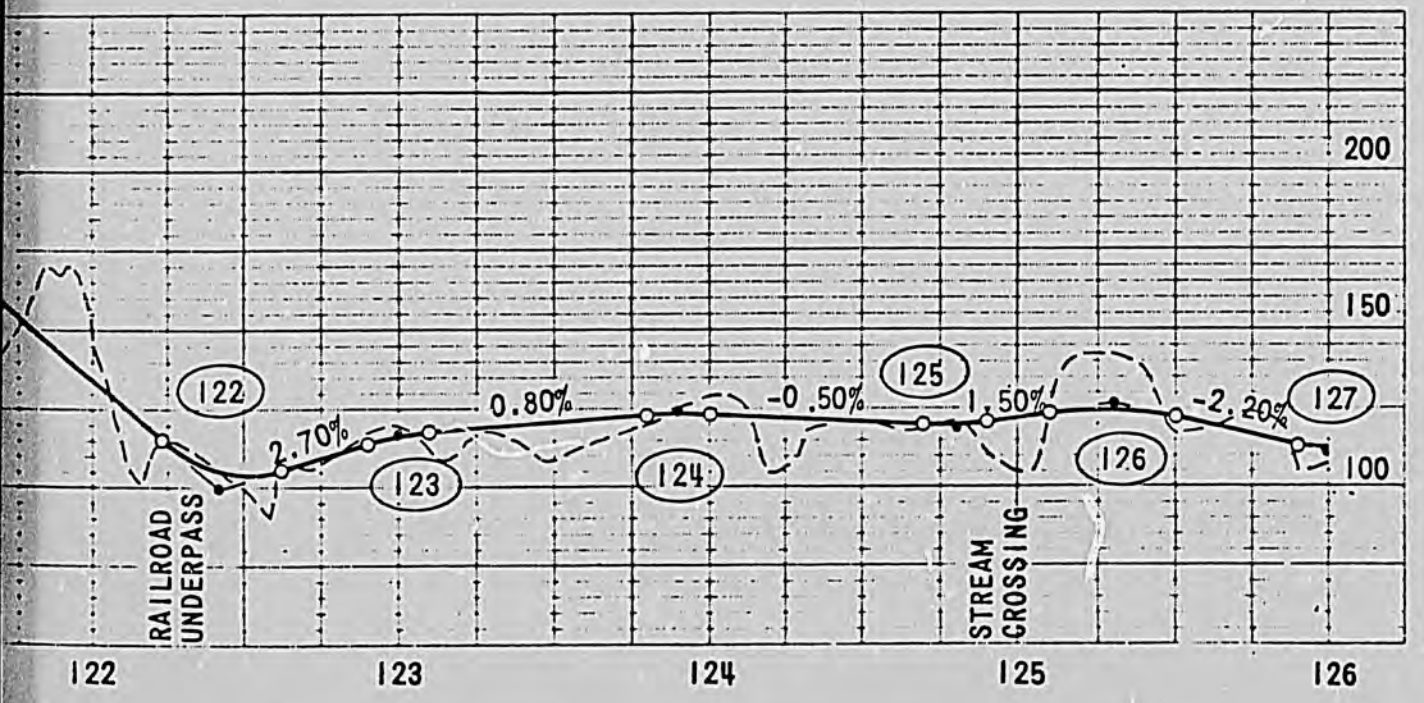
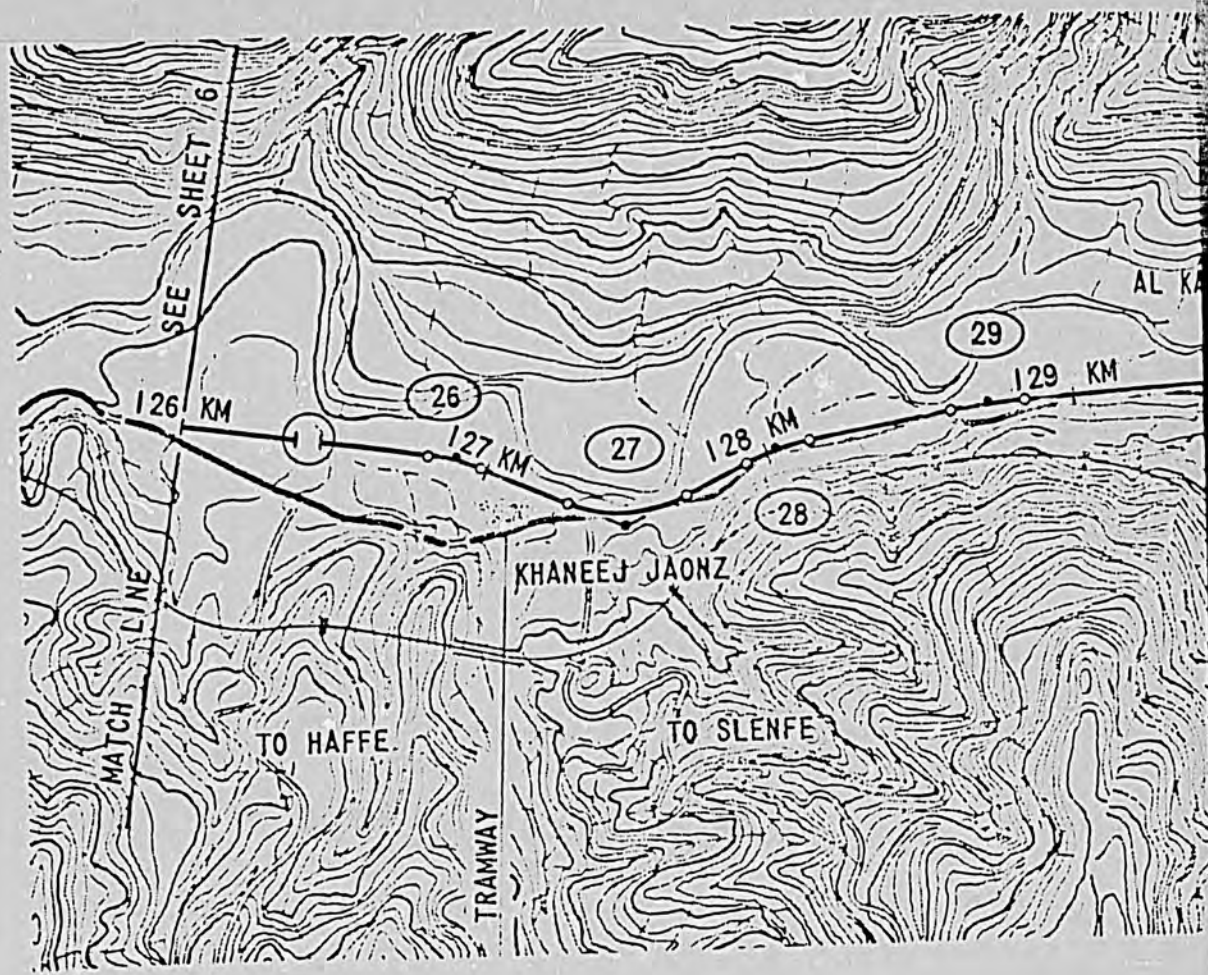
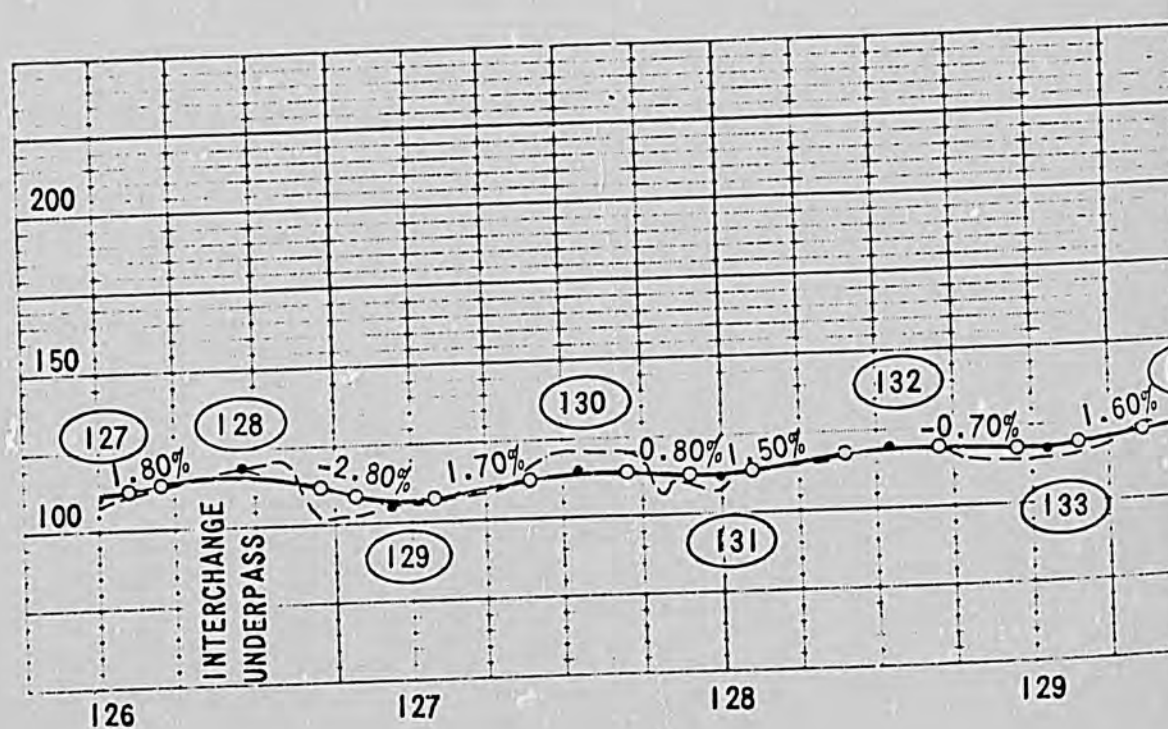




TO ARIHA EXPRESSWAY inary Engineering LE KM 118+000 TO KM 126+000	LYON associates, inc. in association with Morrison-Maierle Inc. and James R. Snitzler Associates, Inc.	PLATE NO. A - 6 SHEET NO. 6 OF 27





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SYRIAN ARAB REPUBLIC
Ministry of Communications

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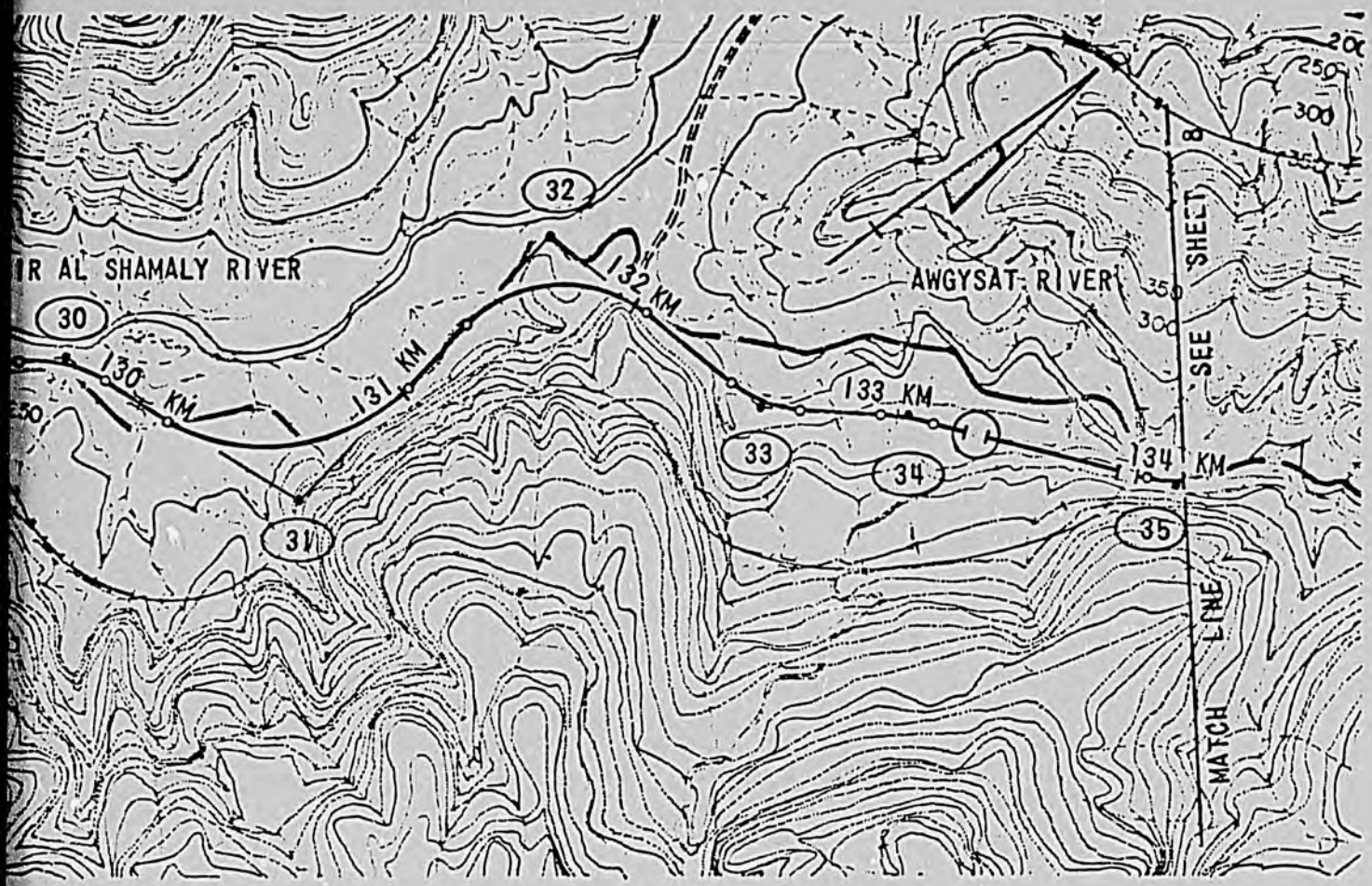
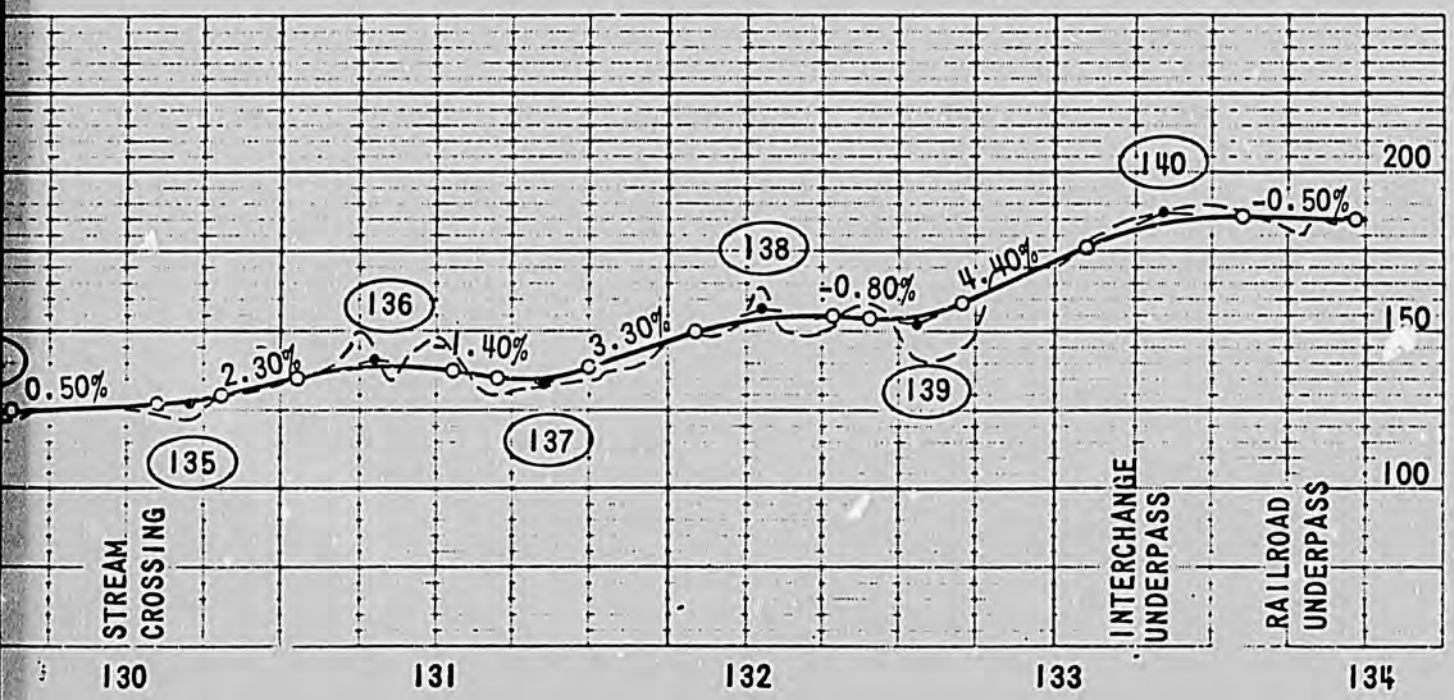
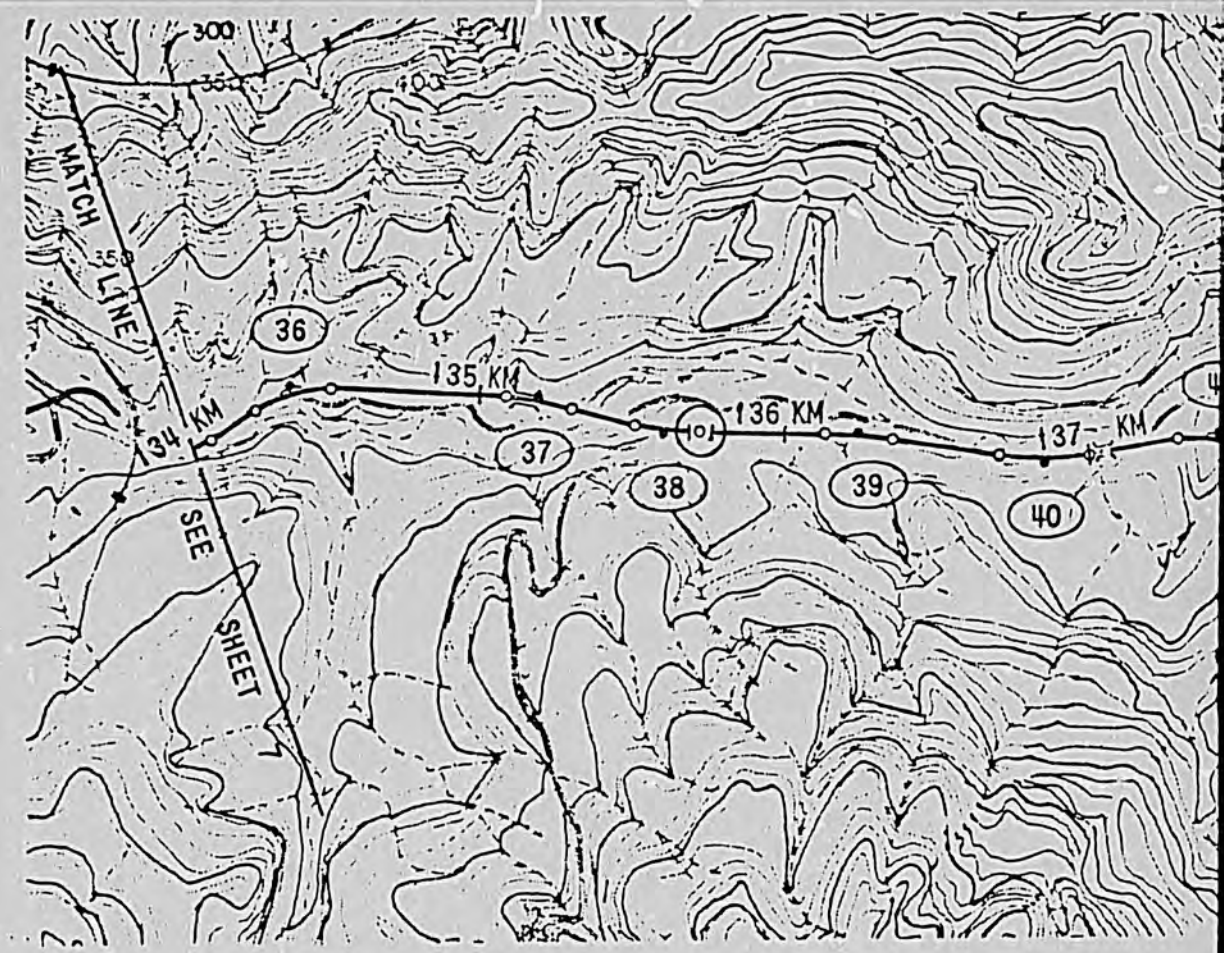
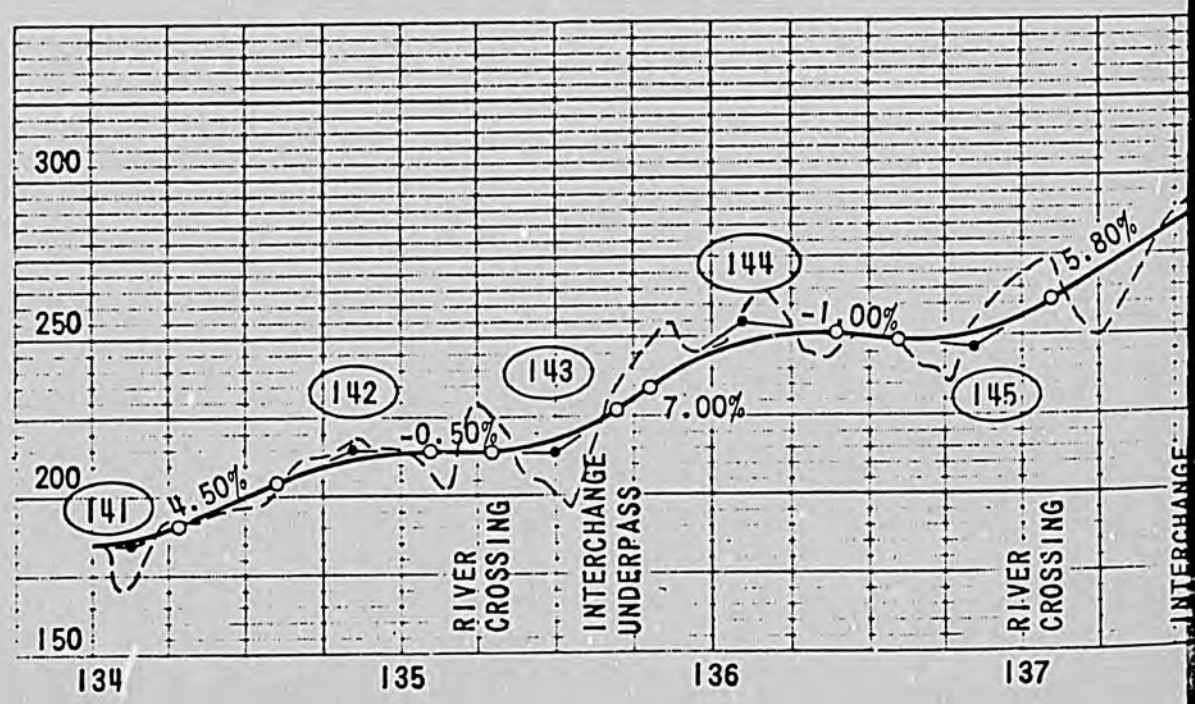




TO ARIHA EXPRESSWAY iminary Engineering FILE KM 126+000 TO KM 134+000	LYON associates, inc. in association with Morrison-Maierle Inc. and James R. Snitzler Associates, Inc.	PLATE NO. A – 7 SHEET NO. 7 a OF 27





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SYRIAN ARAB REPUBLIC
Ministry of Communications

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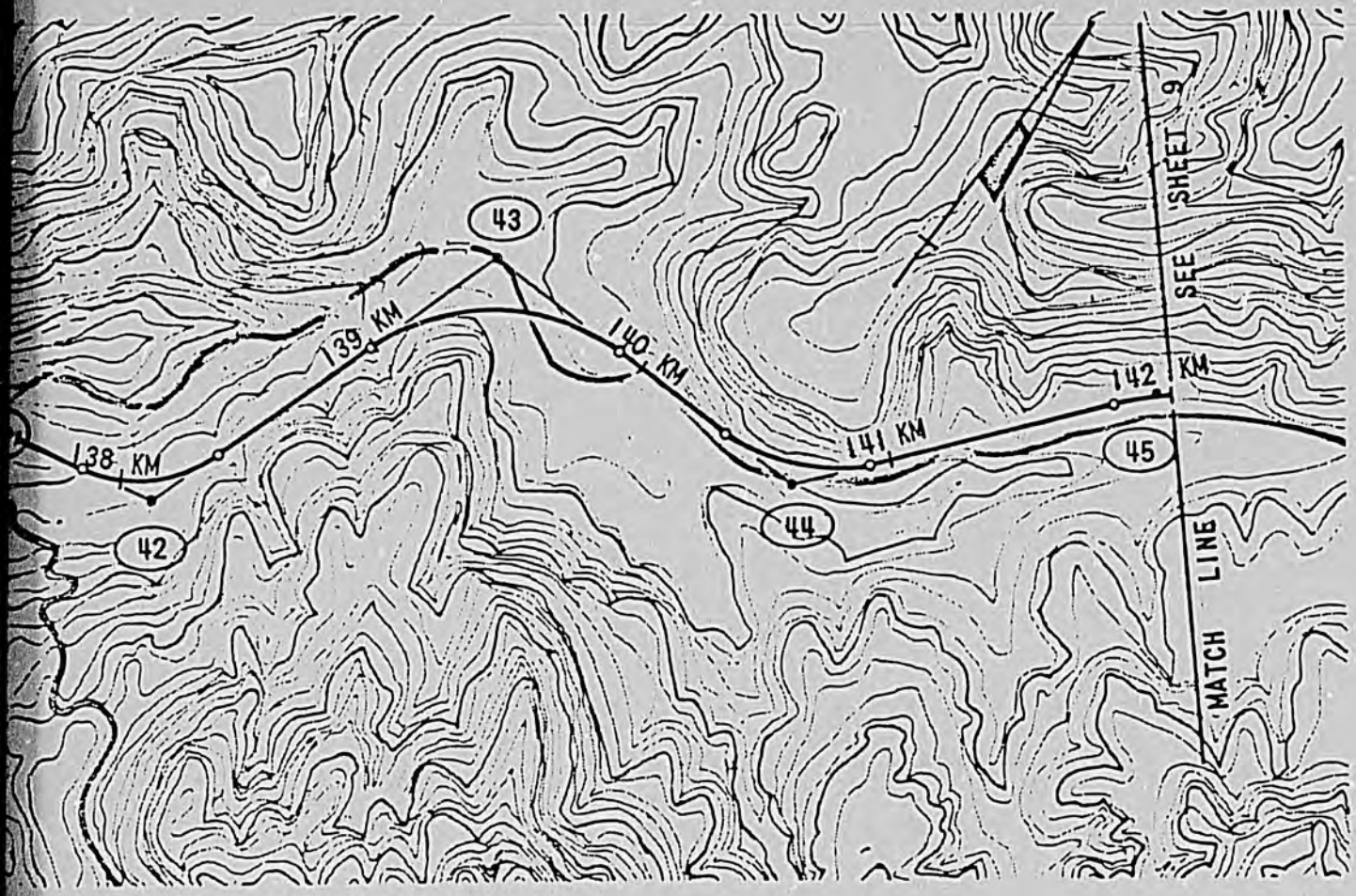
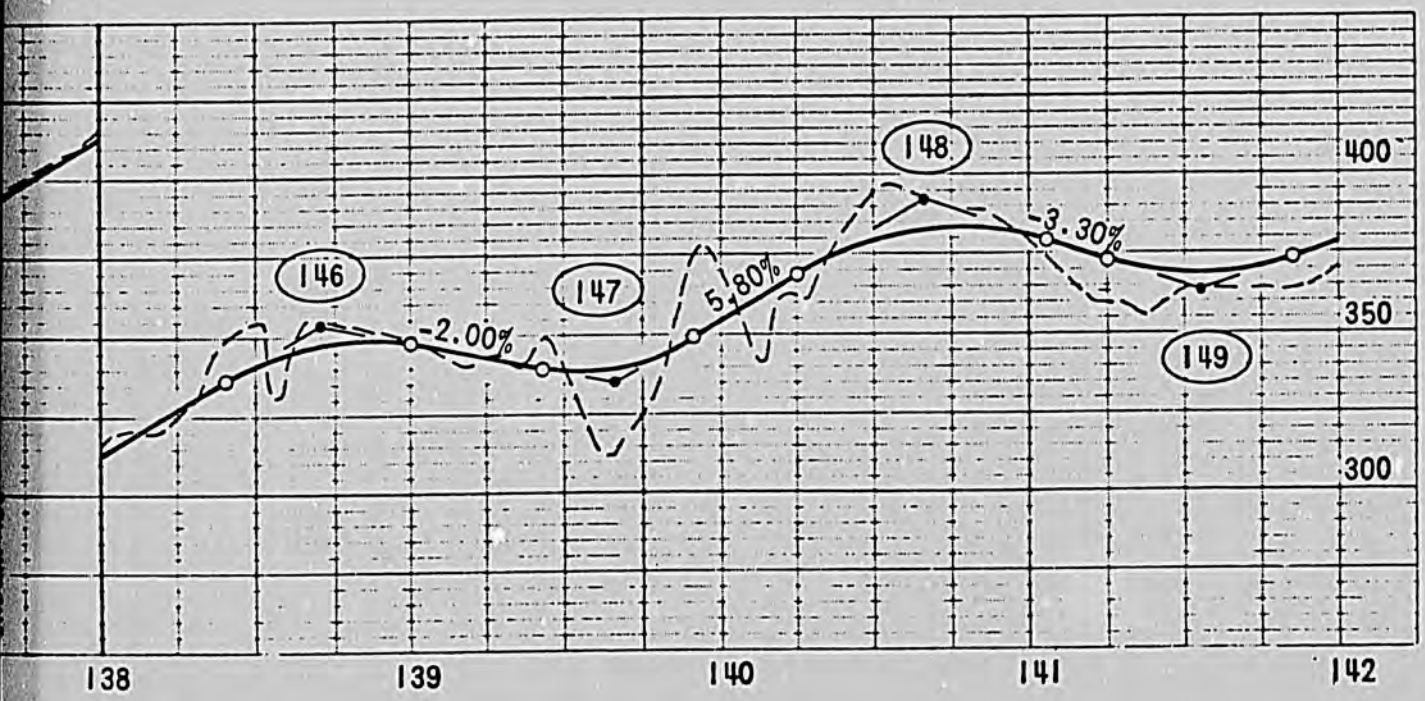
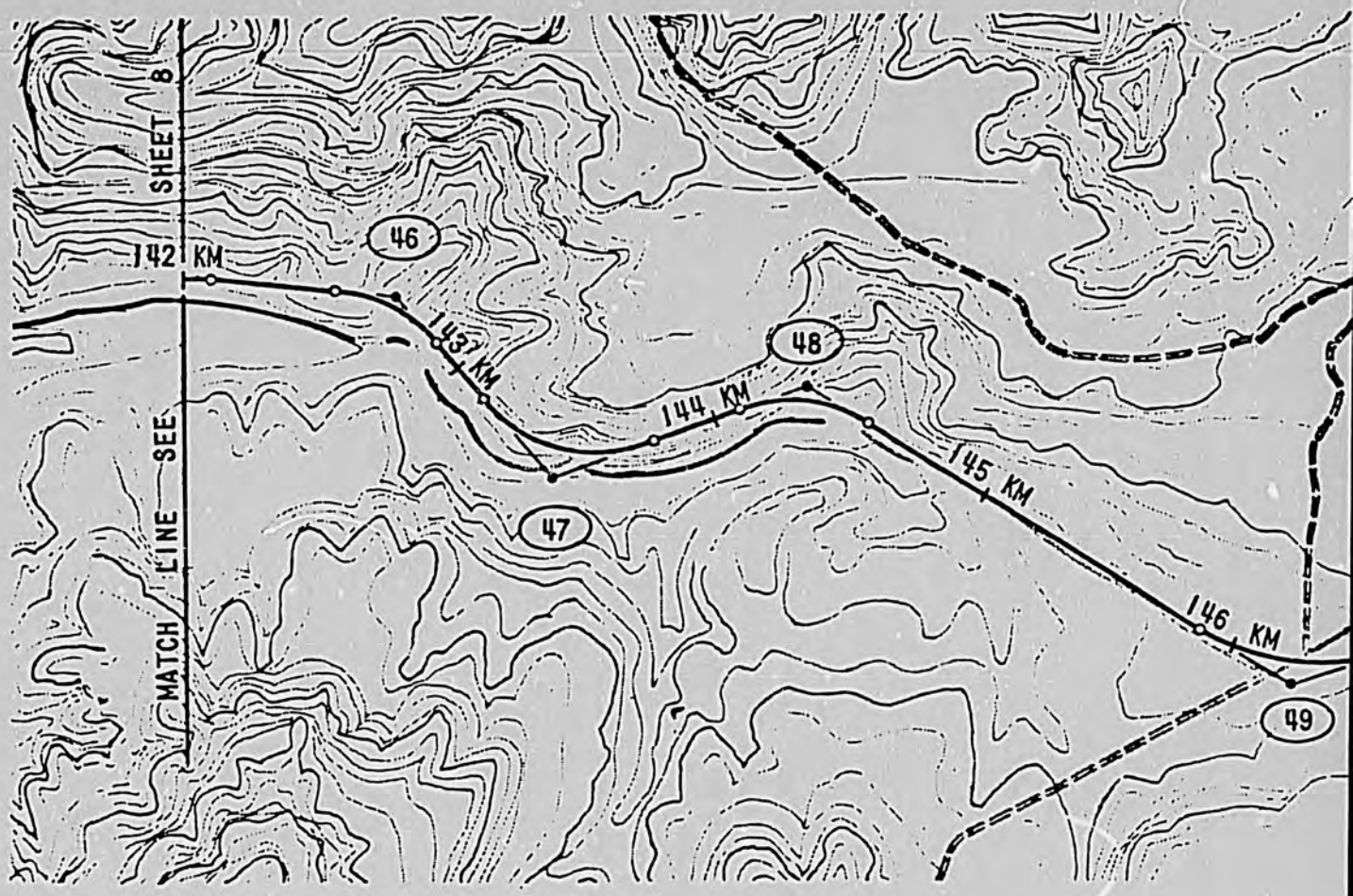
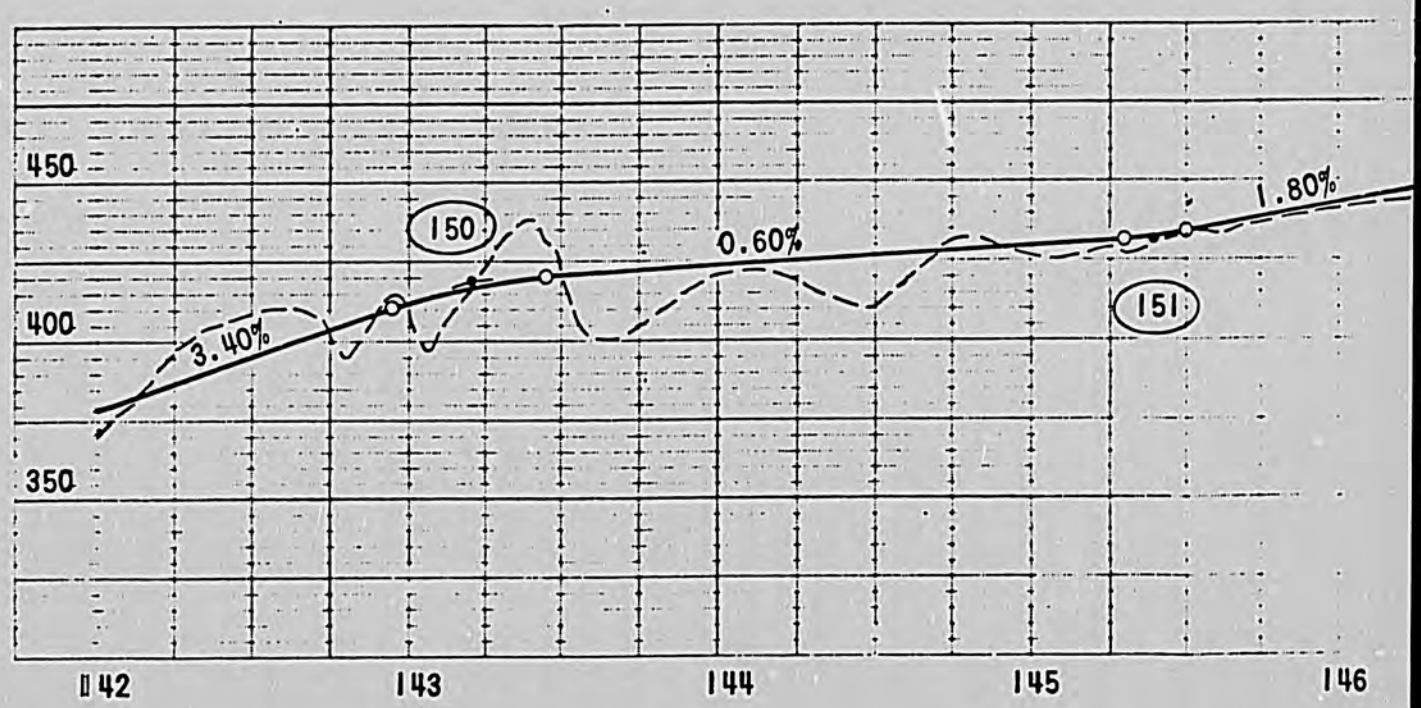




TO ARIHA EXPRESSWAY ninary Engineering LE KM 134+000 TO KM 142+000	LYON associates, inc. in association with Morrison-Maierle Inc. and James R. Snitzler Associates, Inc.	PLATE NO. A - 8 SHEET NO. 8 OF 27





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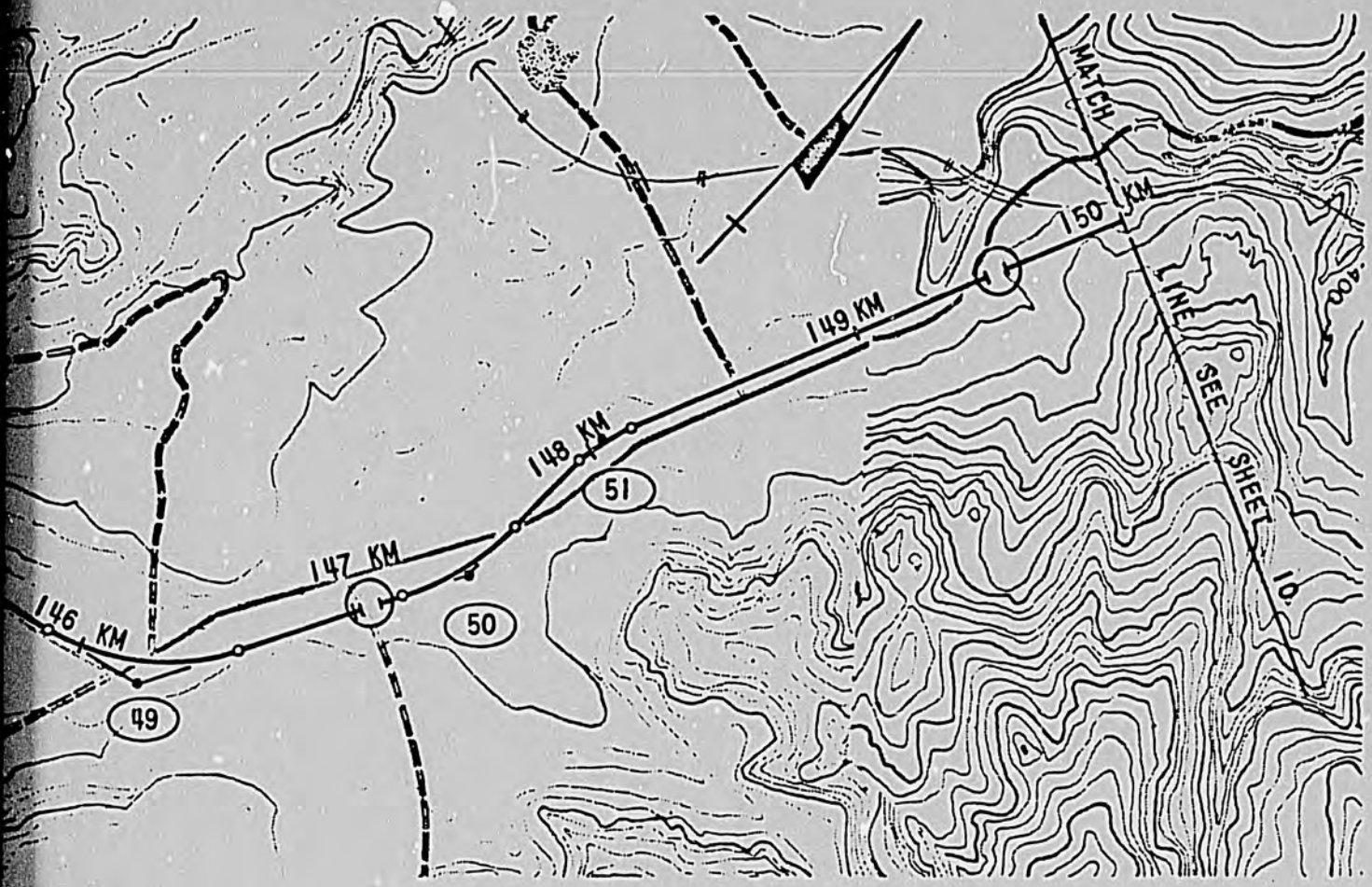
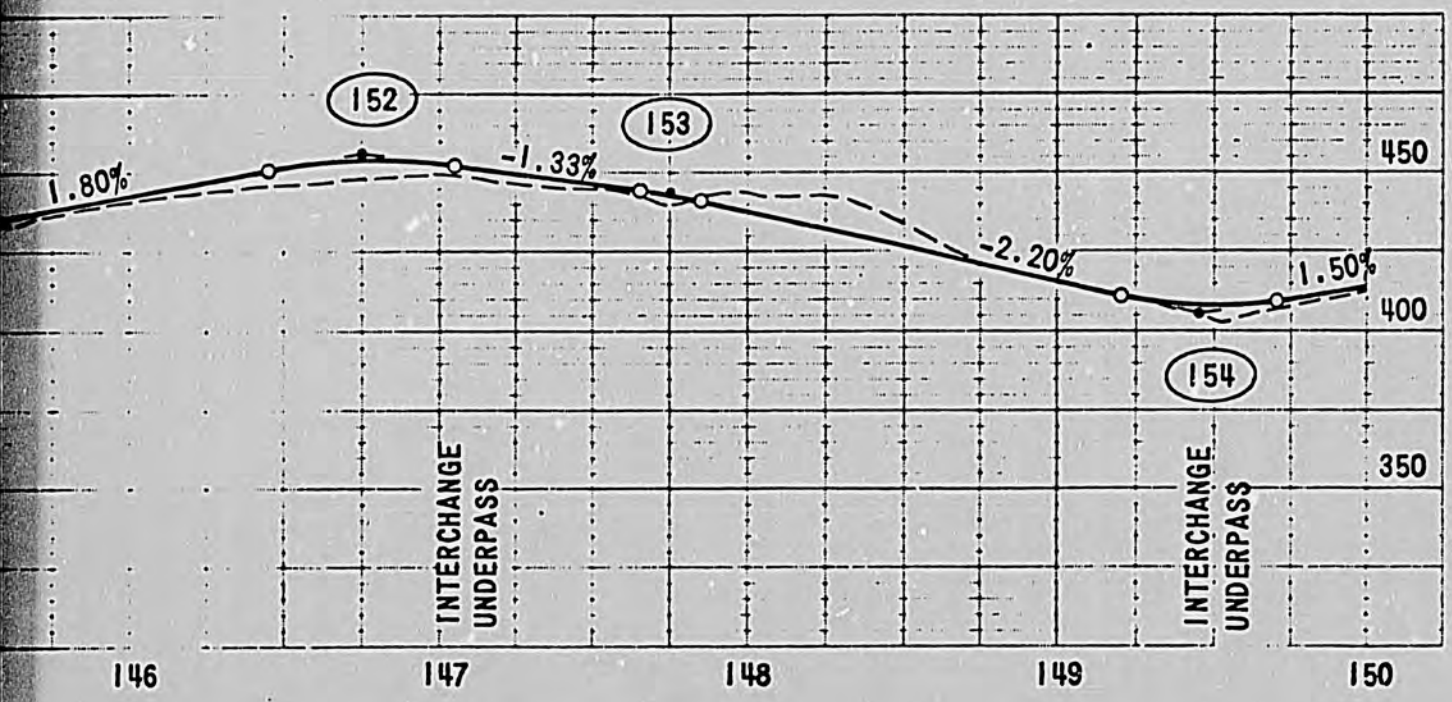
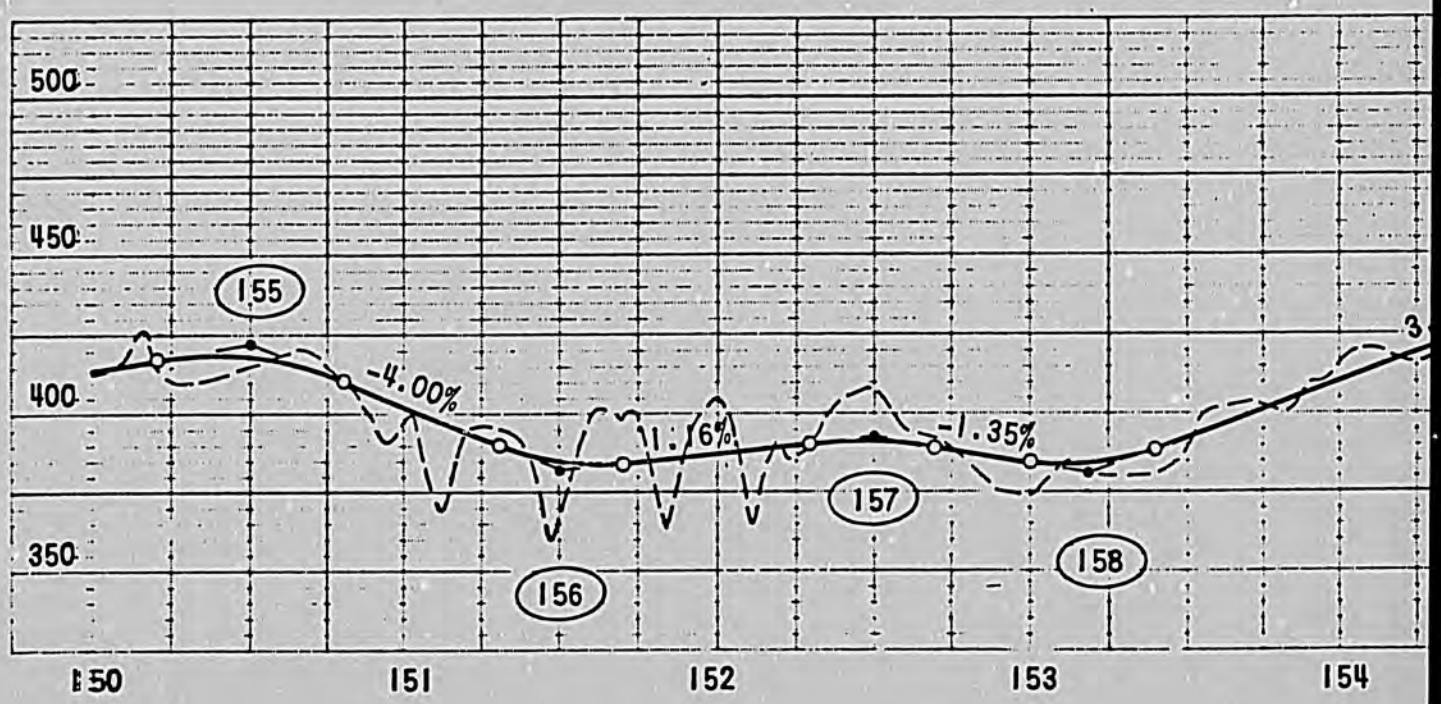
SYRIAN ARAB REPUBLIC
Ministry of Communications

LATTAKIA TO ARIHA
Preliminary Eng
PLAN AND PROFILE KM142+





TO ARIHA EXPRESSWAY liminary Engineering FILE KM142+000 TO KM 150+000	LYON associates, inc. in association with Morrison-Maierle Inc. and James R. Snitzler Associates, Inc.	PLATE NO. A – 9 SHEET NO. 9 OF 27



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SYRIAN ARAB REPUBLIC
Ministry of Communications

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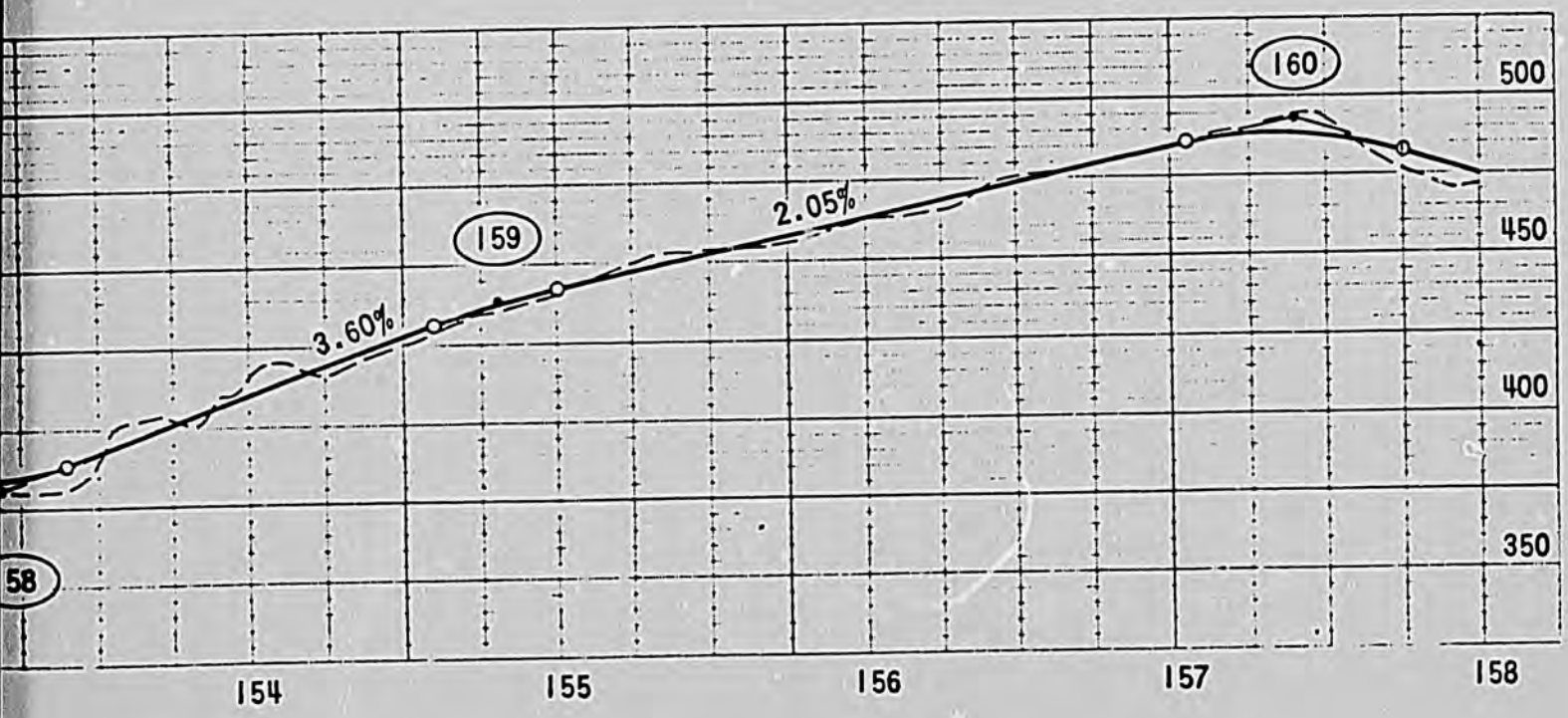
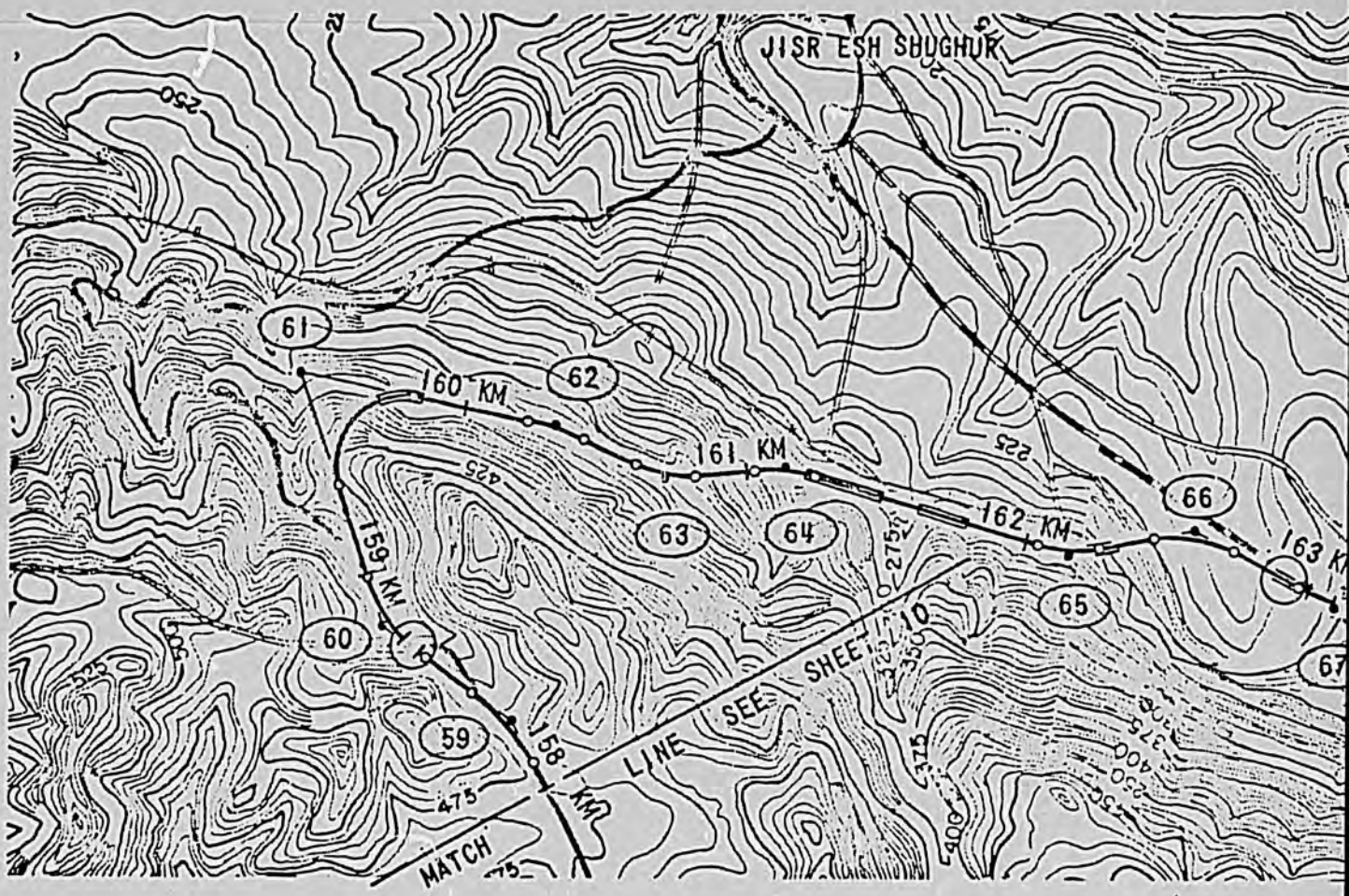
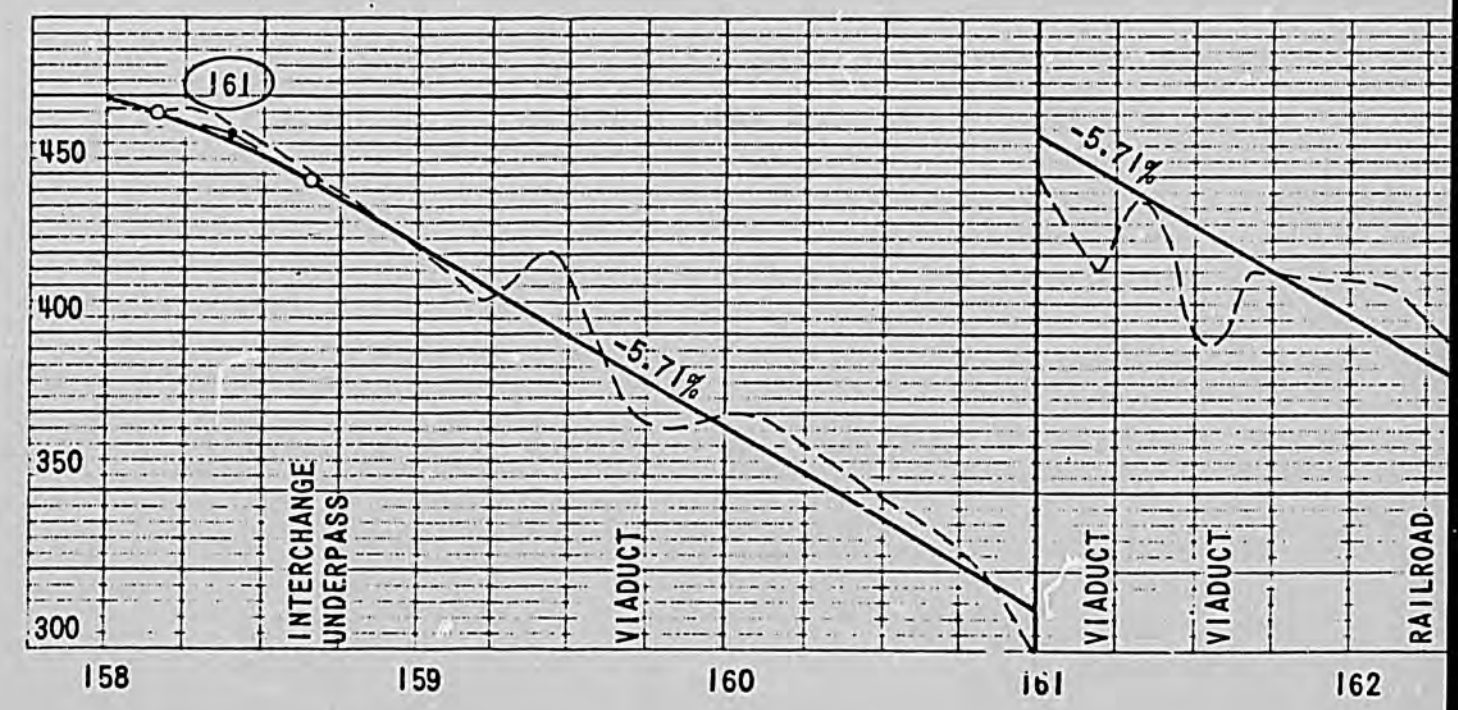
LATTAKIA TO ARIHA E
Preliminary Engin
PLAN AND PROFILE KM 150+0



LATTAKIA TO ARIHA EXPRESSWAY Preliminary Engineering ND PROFILE KM 150+000 TO KM 158+000	LYON associates, inc. in association with Morrison-Maierle Inc. and James R. Snitzler Associates, Inc.	PLATE NO. A-10 SHEET NO. 10 of





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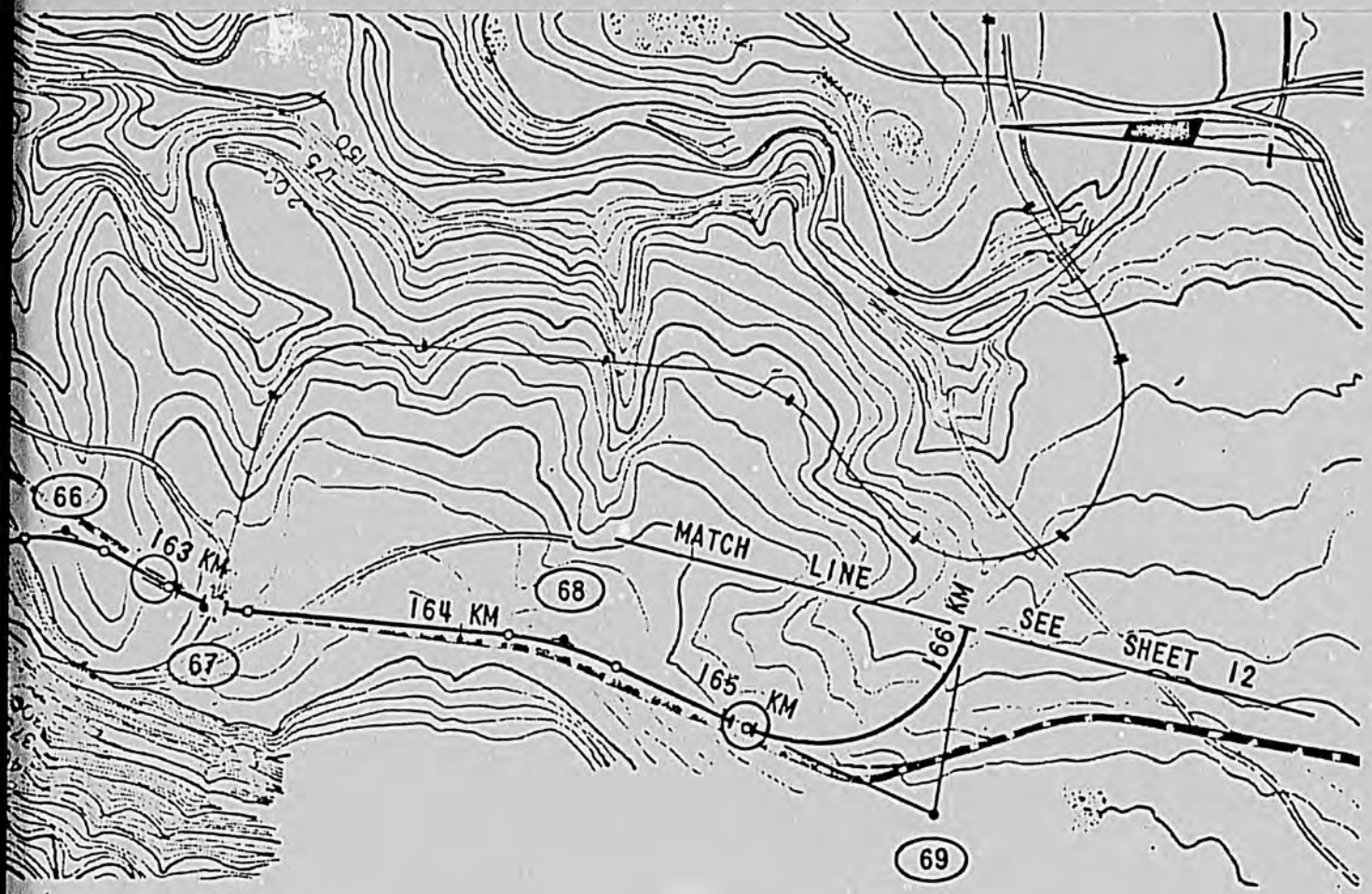
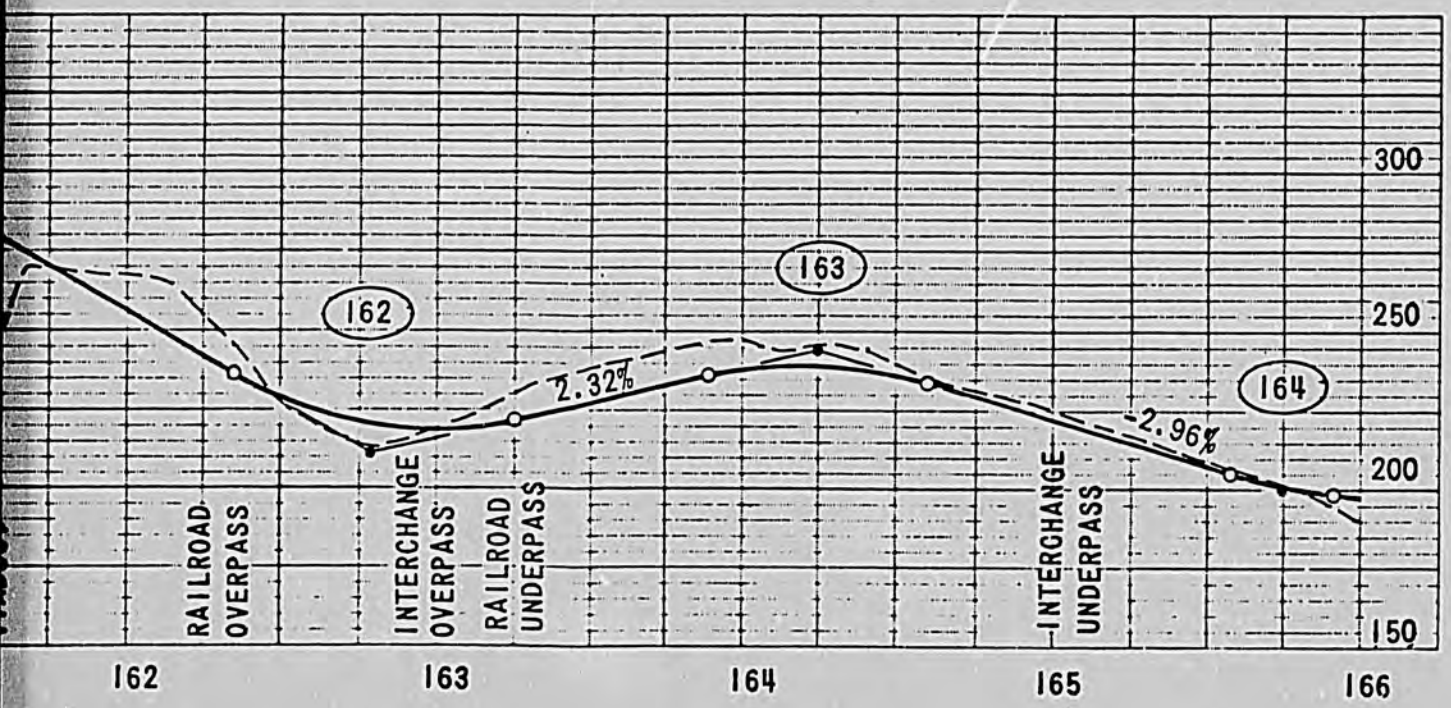
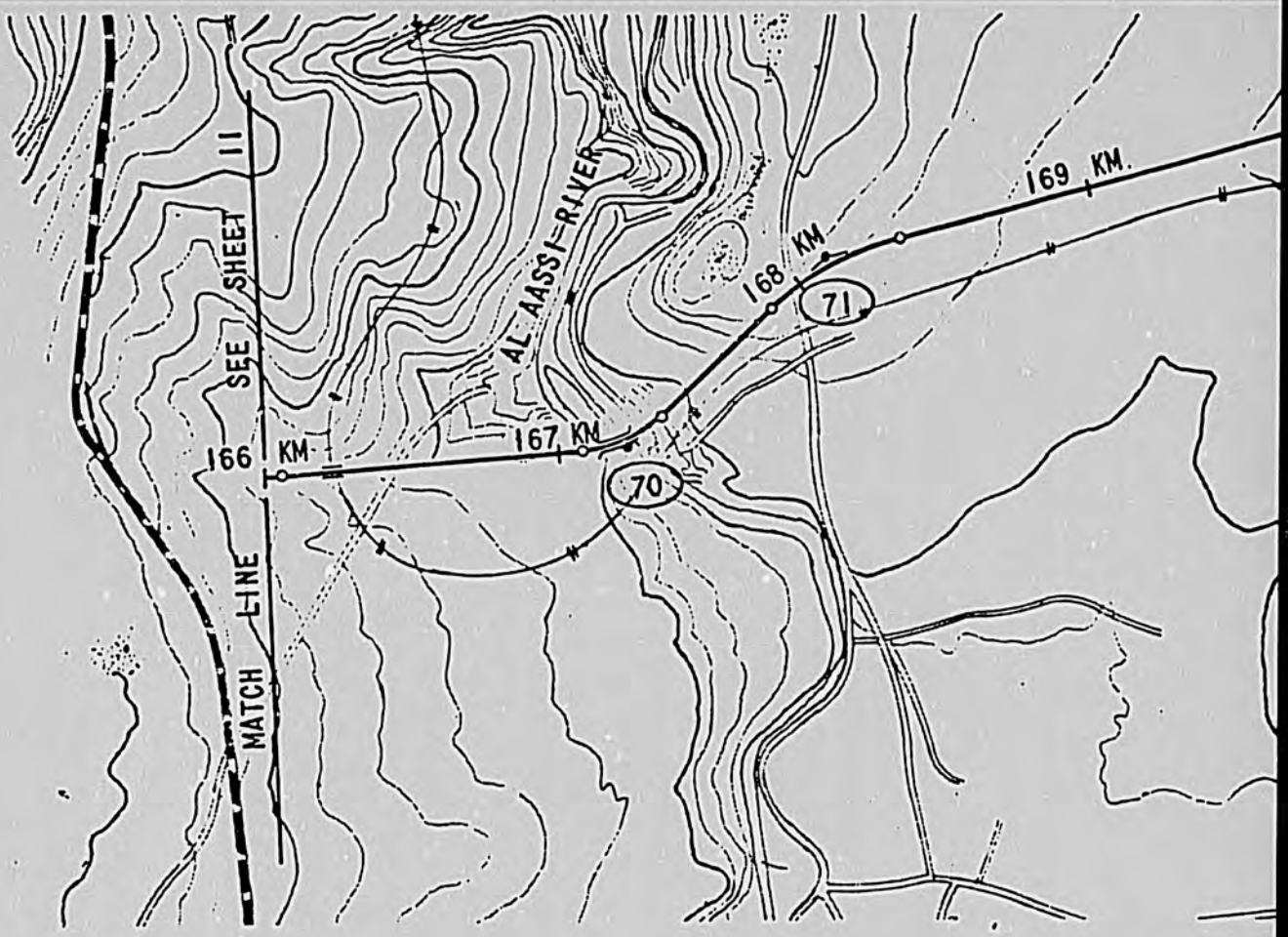
SYRIAN ARAB REPUBLIC
Ministry of Communications

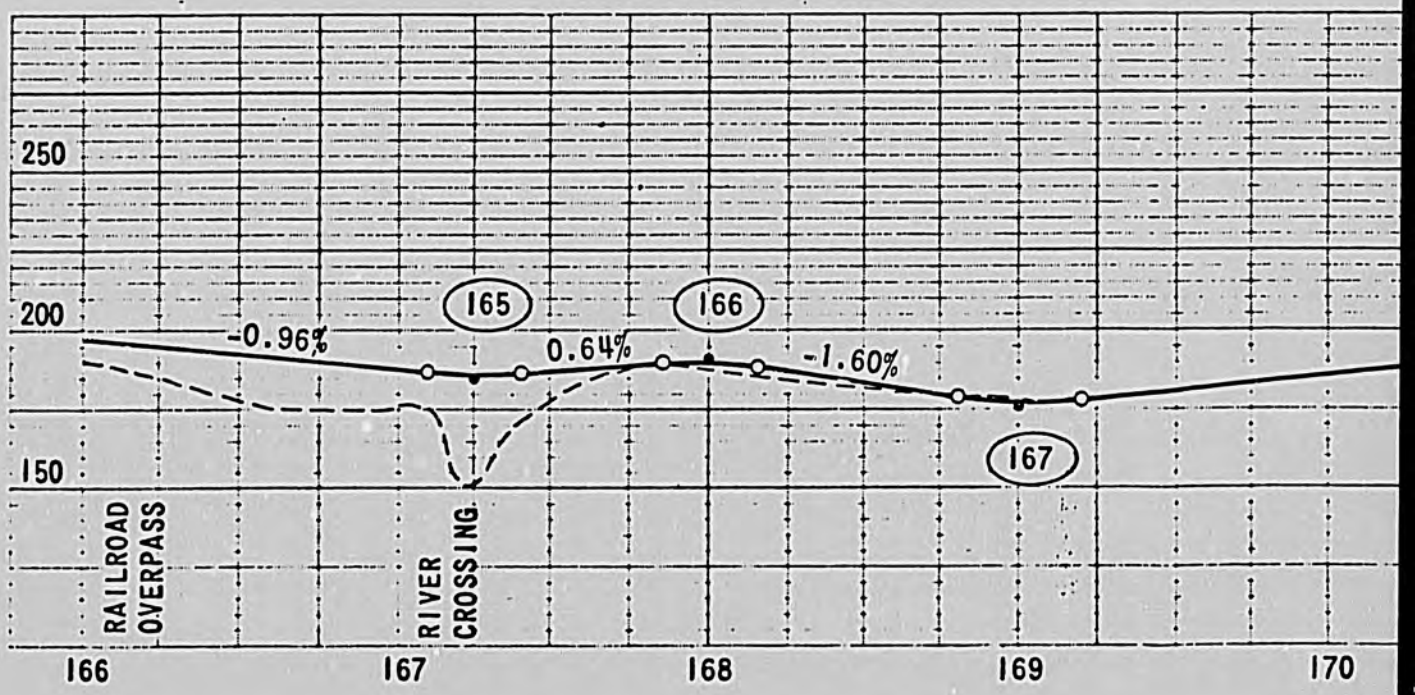
LATTAKIA TO ARIHA E
Preliminary Engin
PLAN AND PROFILE KM 158+0





TO ARIHA EXPRESSWAY iminary Engineering FILE KM 158+000 TO KM 166+000	LYON associates, inc. in association with Morrison-Maierle Inc. and James R. Snitzler Associates, Inc.	PLATE NO. A-11 SHEET NO. 11 OF 27





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SYRIAN ARAB REPUBLIC
Ministry of Communications

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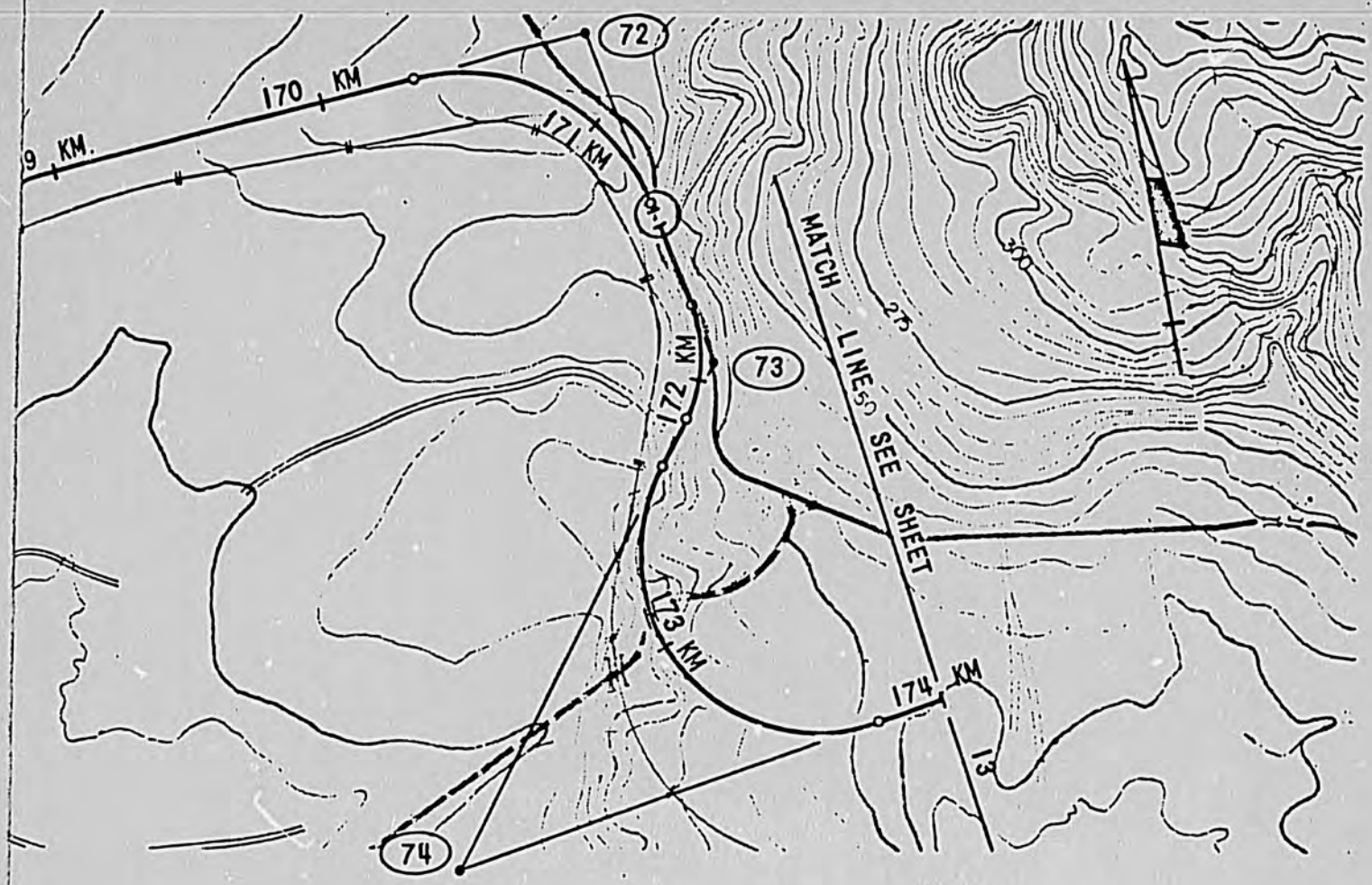
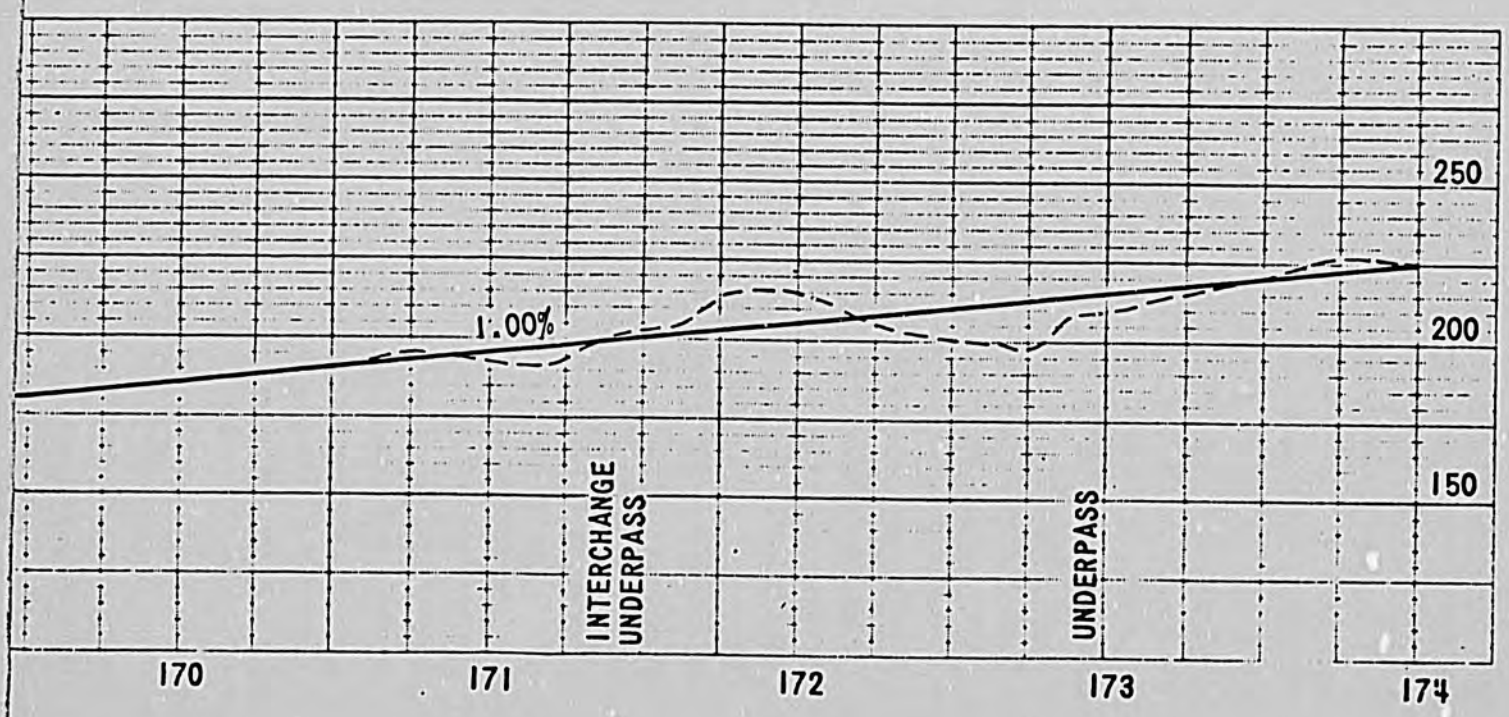
LATTAKIA TO ARIHA
Preliminary Eng
PLAN AND PROFILE KM 166-





KIA TO ARIHA EXPRESSWAY Preliminary Engineering PROFILE KM 166+000 TO KM 174+000	LYON associates, inc. in association with Morrison-Maierle Inc. and James R. Snitzler Associates, Inc.	PLATE NO. A - 12 SHEET NO. 12 OF 27

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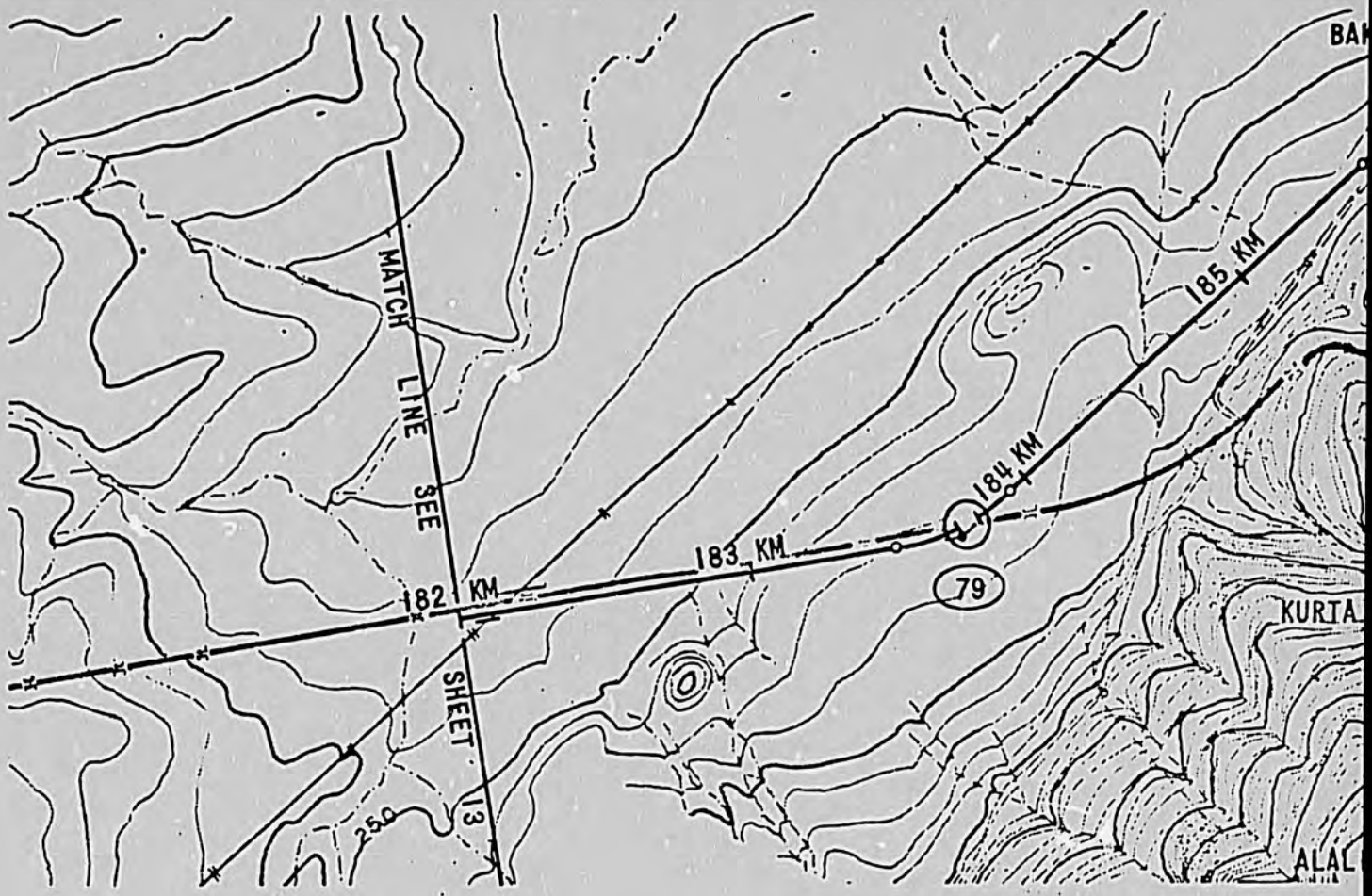
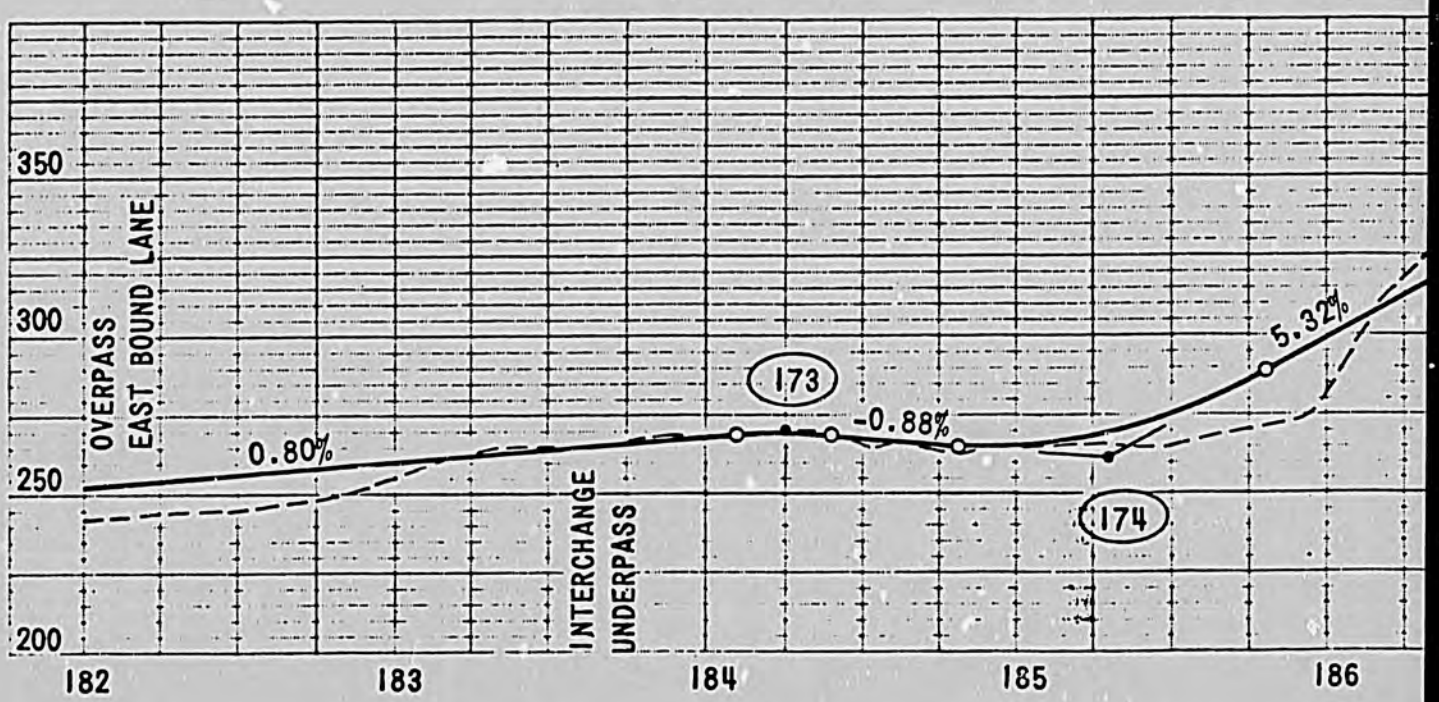
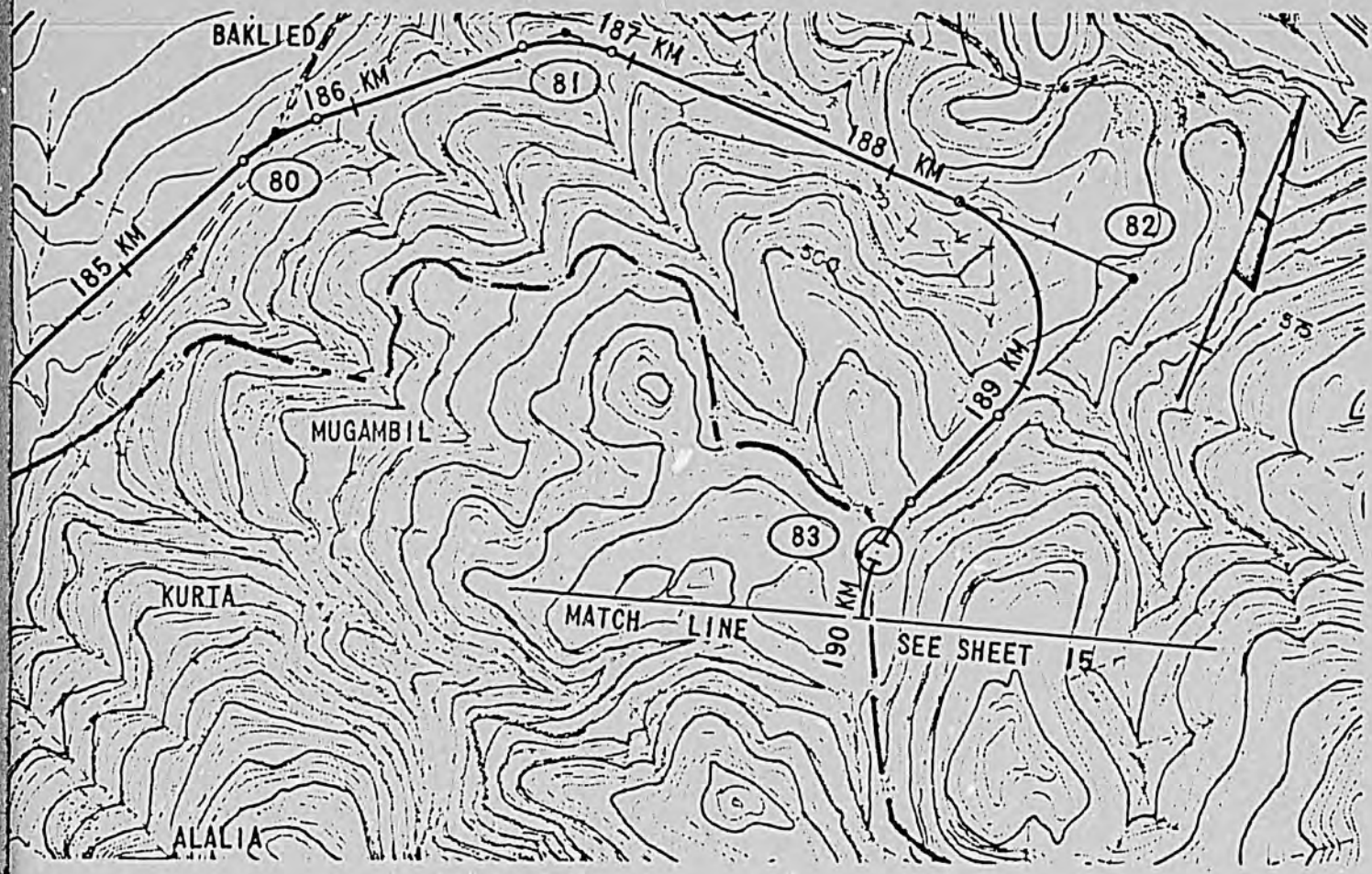
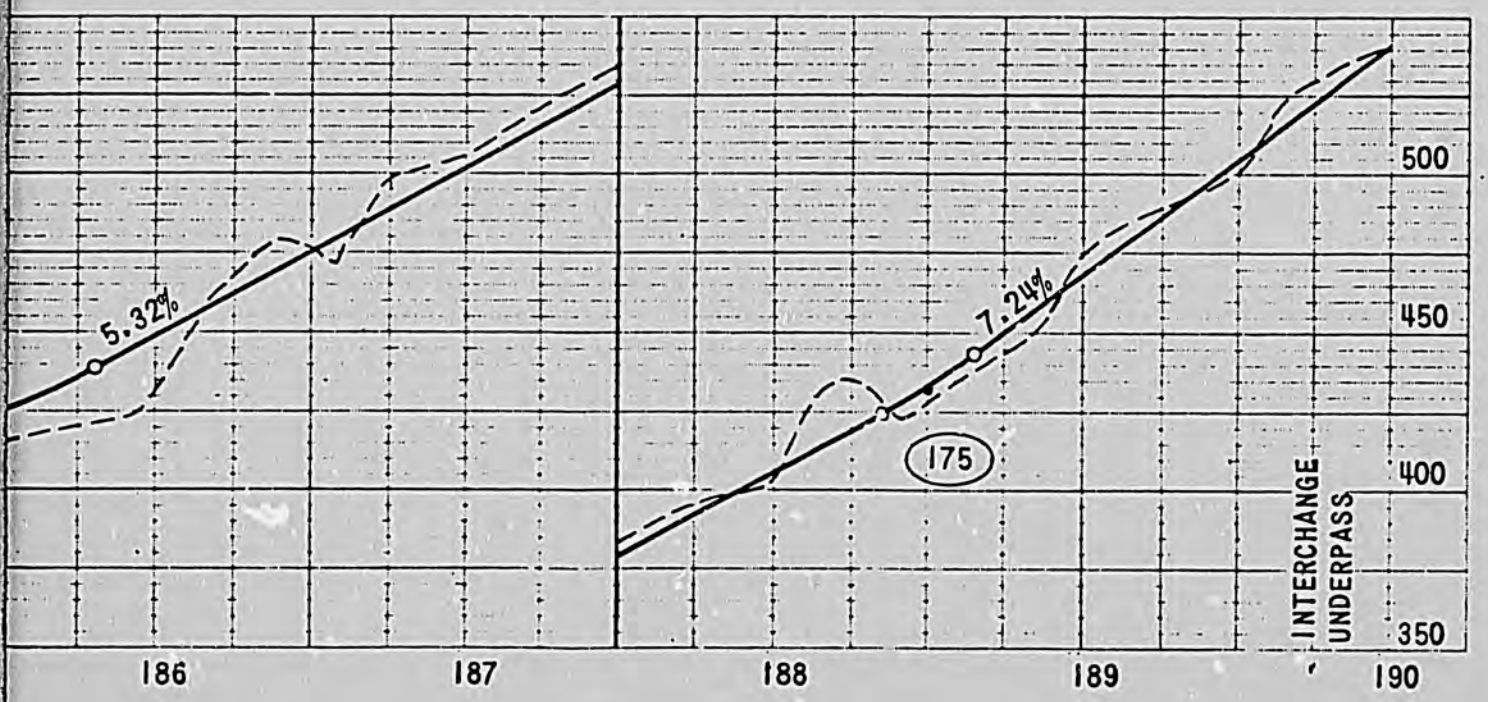
NO. 13



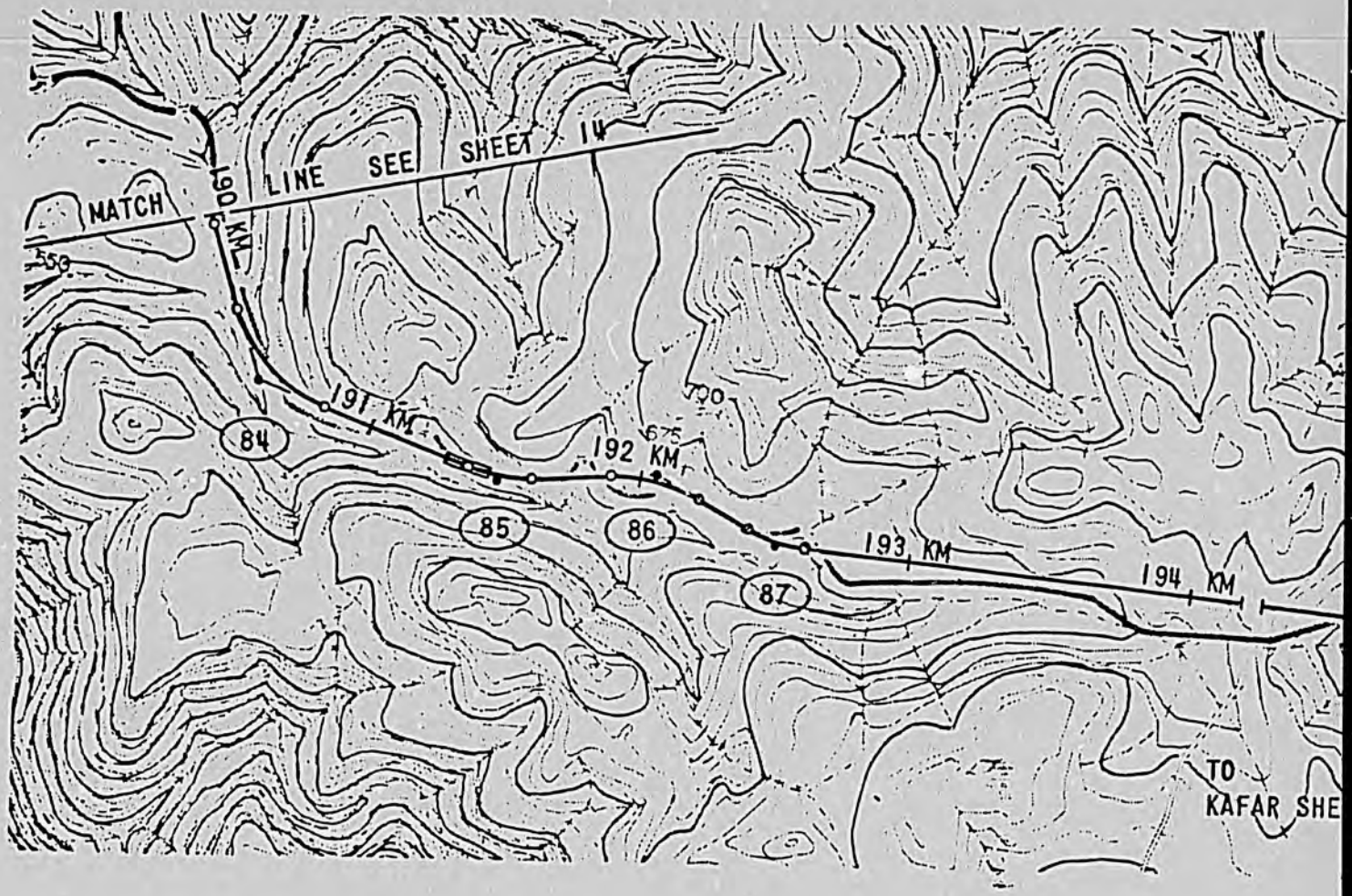


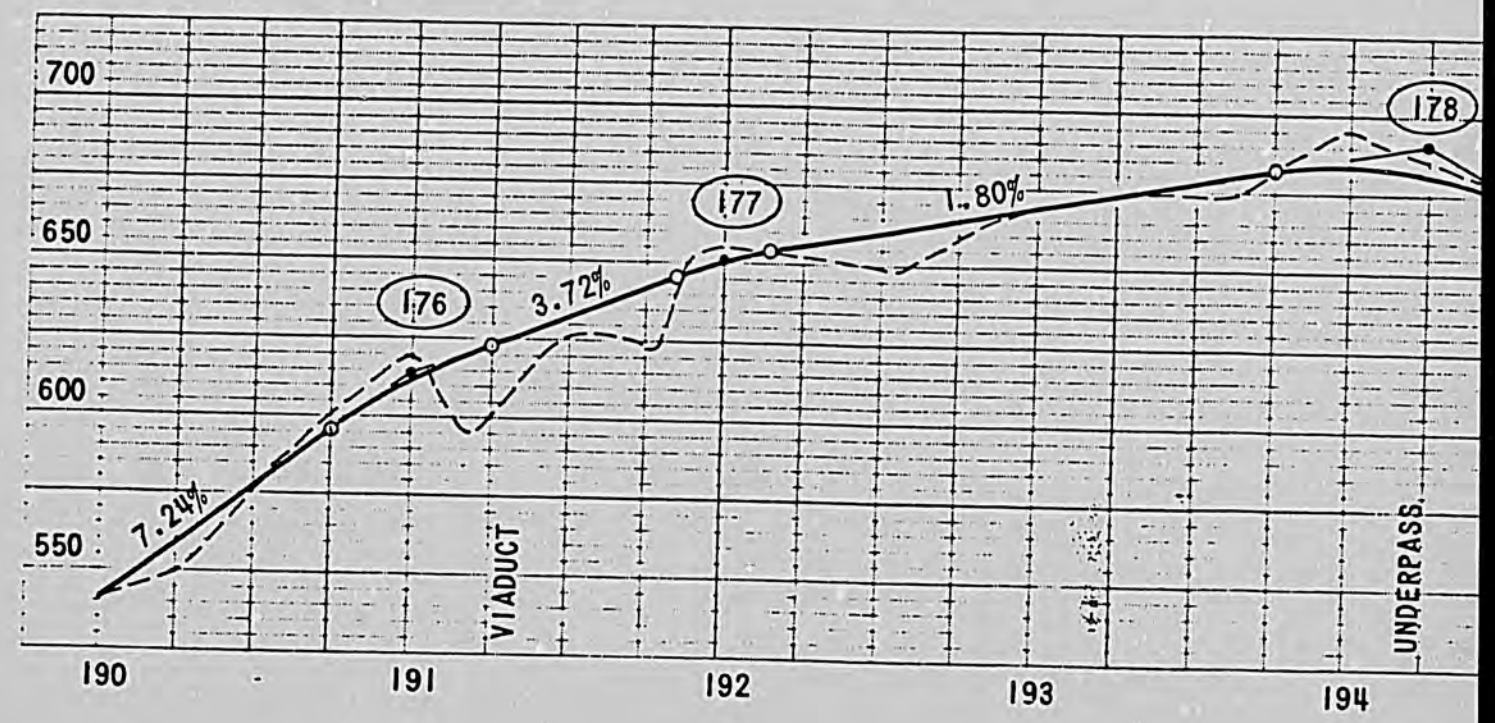
Horiz. 0 500 1000m 1 : 25000 Vert. 0 50 100m 1 : 2500	SYRIAN ARAB REPUBLIC Ministry of Communications	14 LATTAKIA TO ARIHA E , Preliminary Engin PLAN AND PROFILE KM 182+0





A TO ARIHA EXPRESSWAY eliminary Engineering OFILE KM 182+000 TO KM 190+000	LYON associates, inc. in association with Morrison-Maierle Inc. and James R. Snitzler Associates, Inc.	PLATE NO. A - 14 SHEET NO. 14 OF 27





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SYRIAN ARAB REPUBLIC
Ministry of Communications

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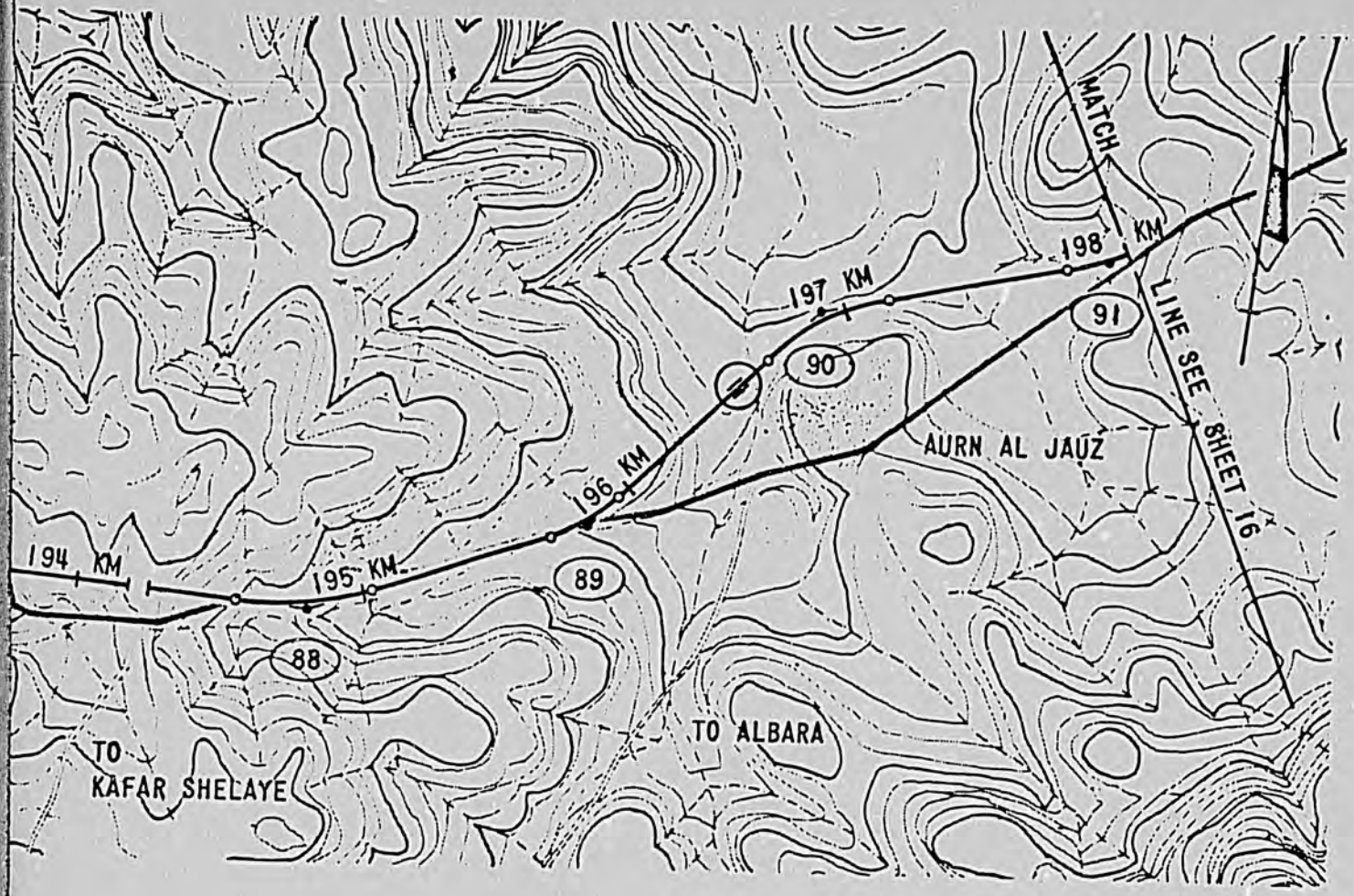
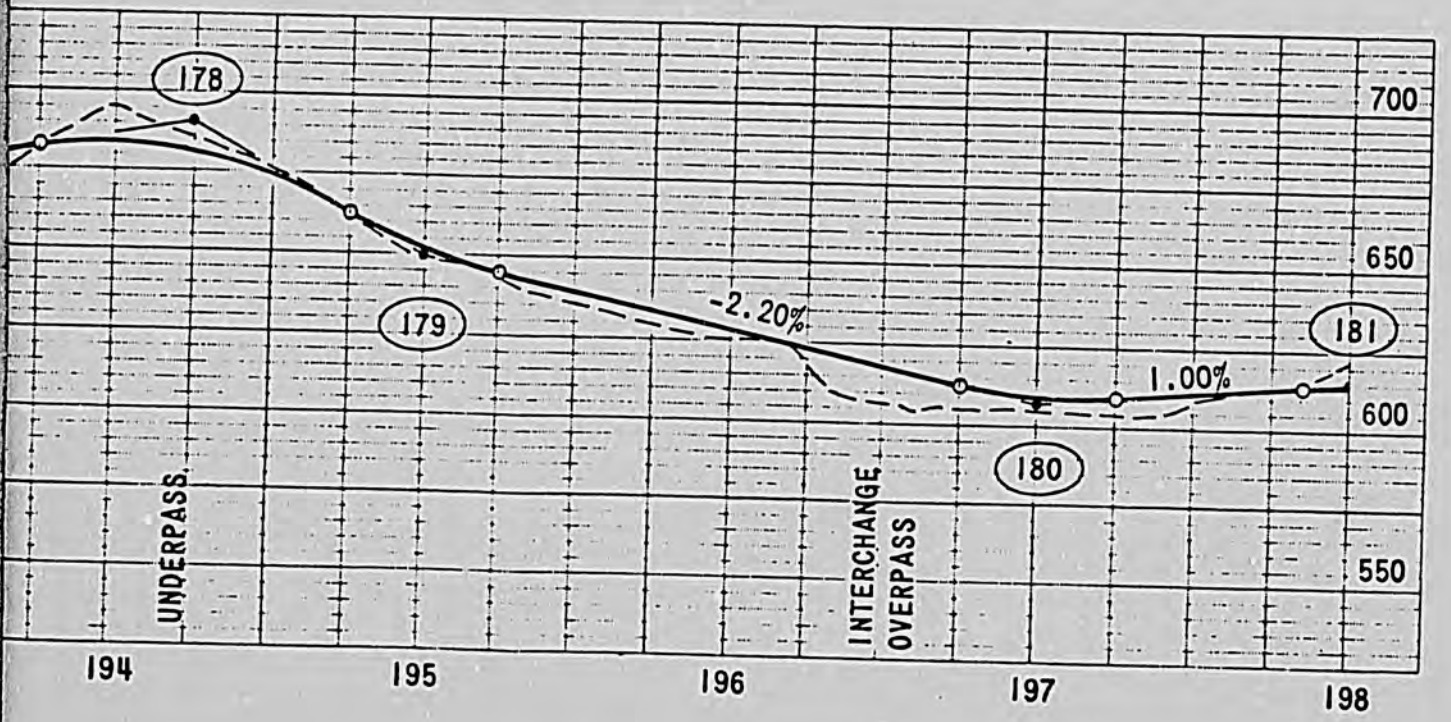
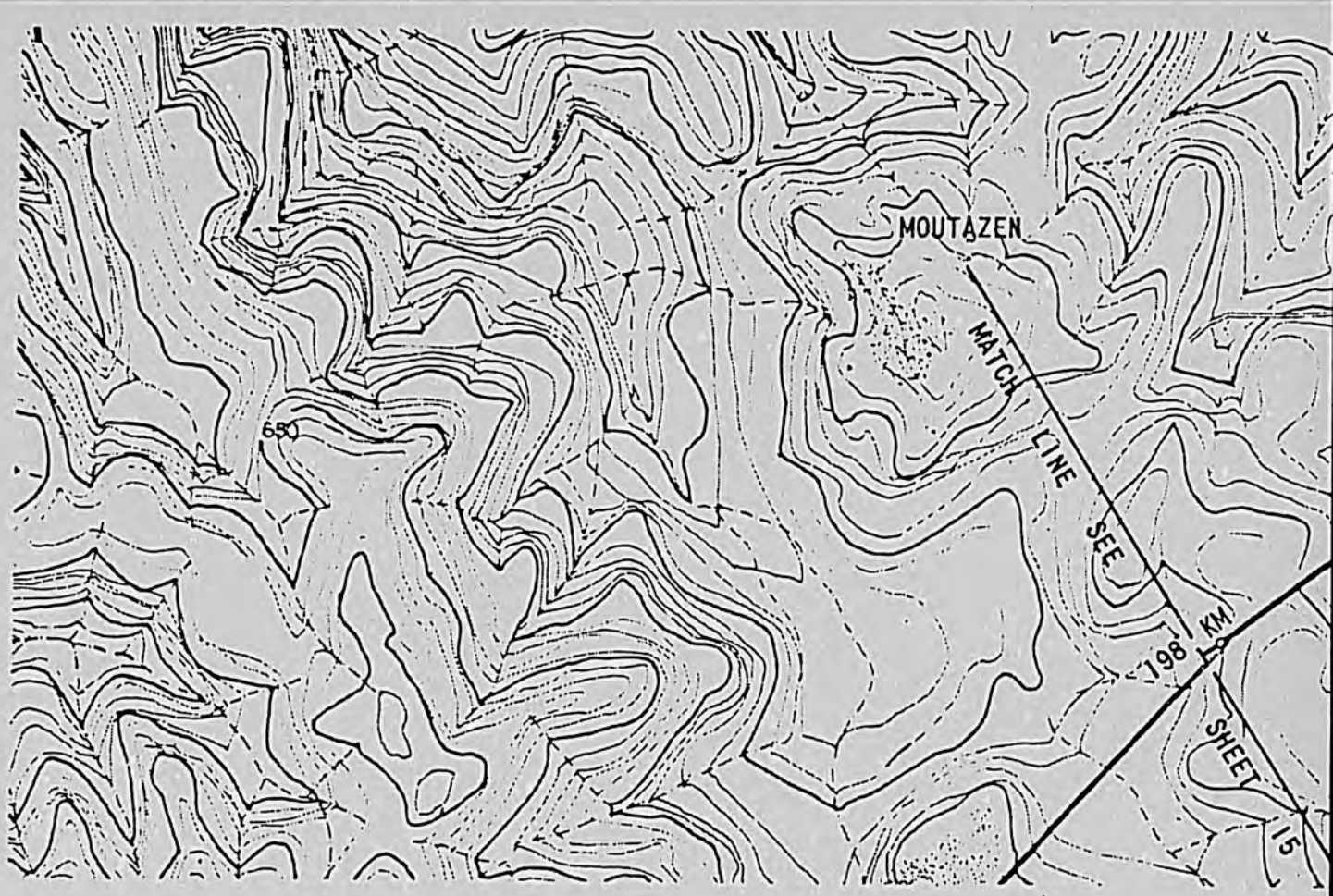
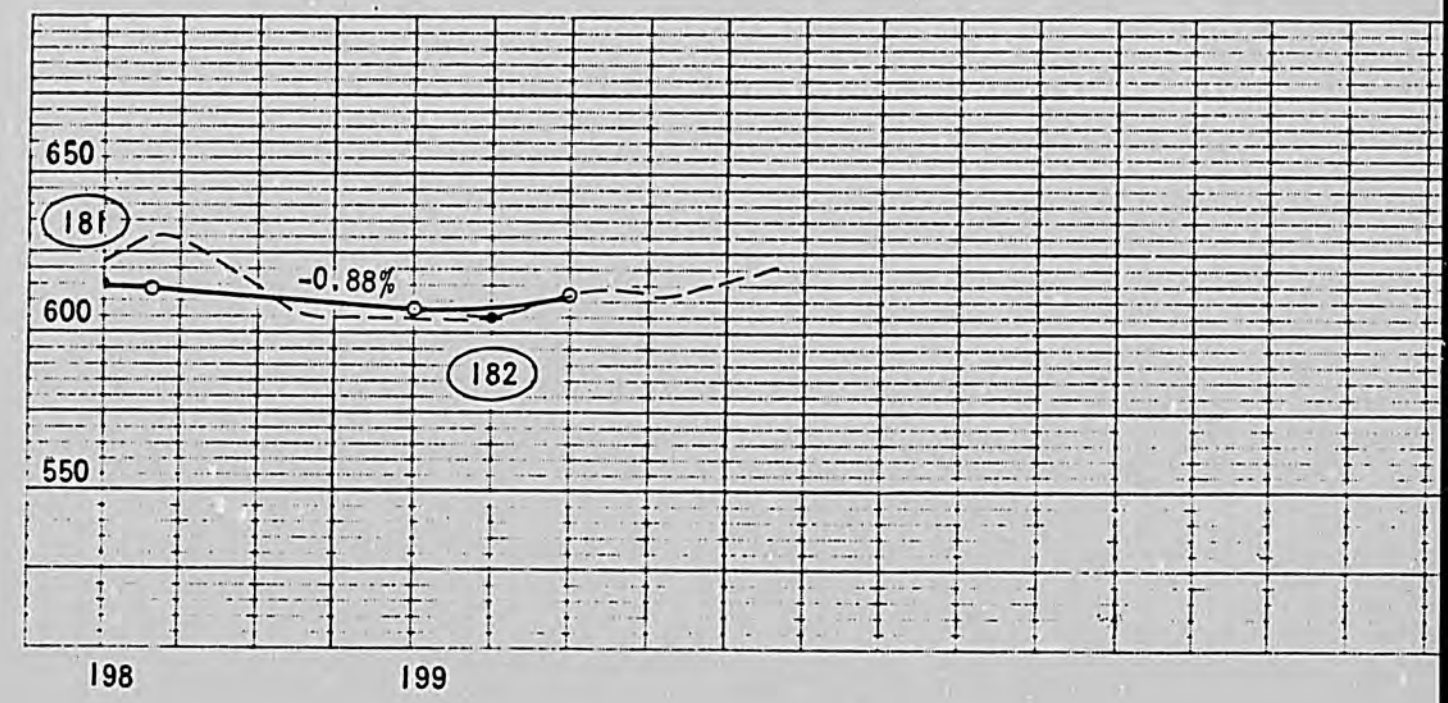
LATTAKIA TO ARIHA EXPR
Preliminary Engineer
PLAN AND PROFILE KM190+000





TO ARIHA EXPRESSWAY inary Engineering LE KM 190+000 TO KM 198+000	LYON associates, inc. in association with Morrison-Maierle Inc. and James R. Snitzler Associates, Inc.	PLATE NO. A – 15 SHEET NO. 15 OF 27





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SYRIAN ARAB REPUBLIC
Ministry of Communications

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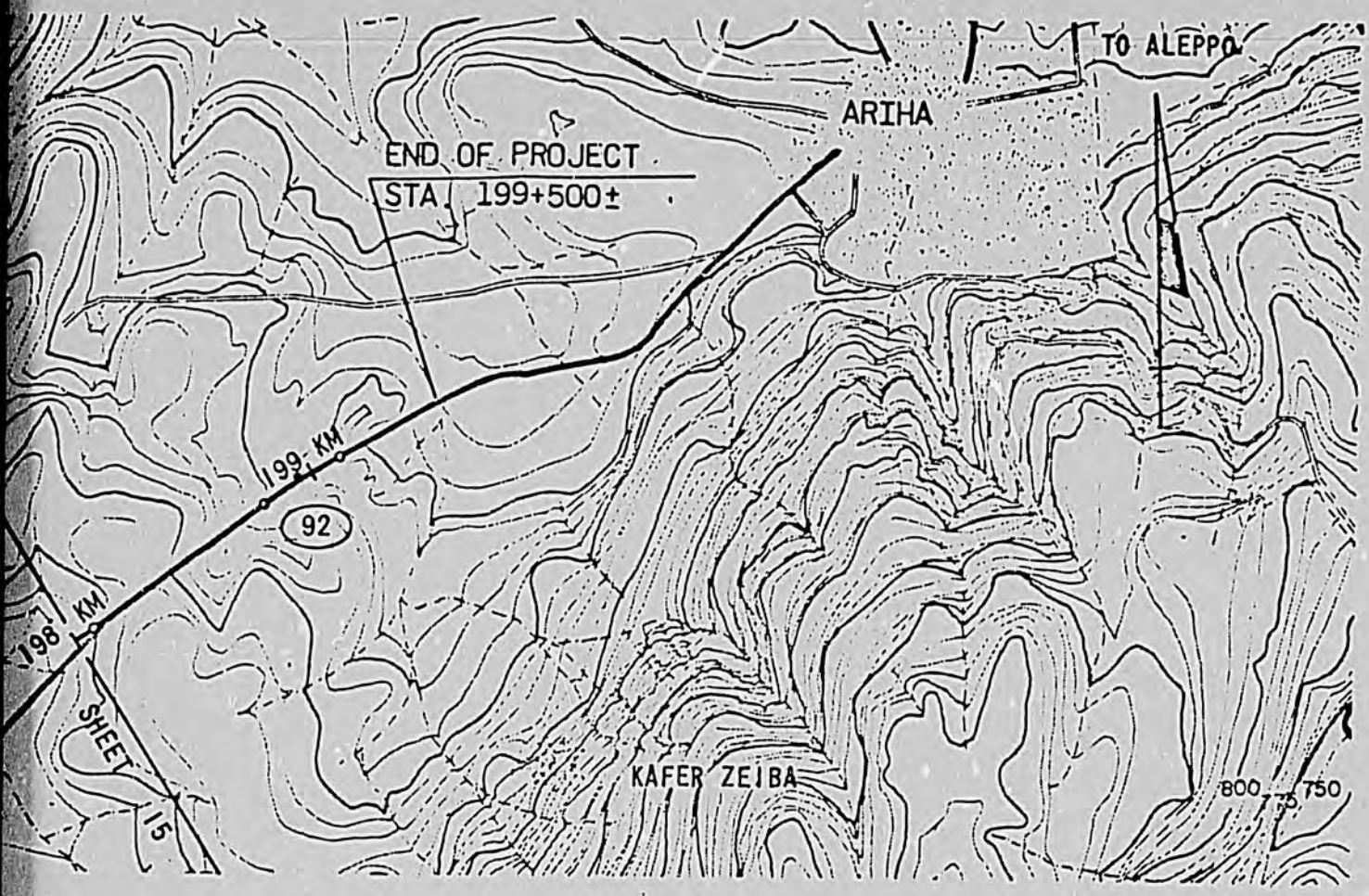
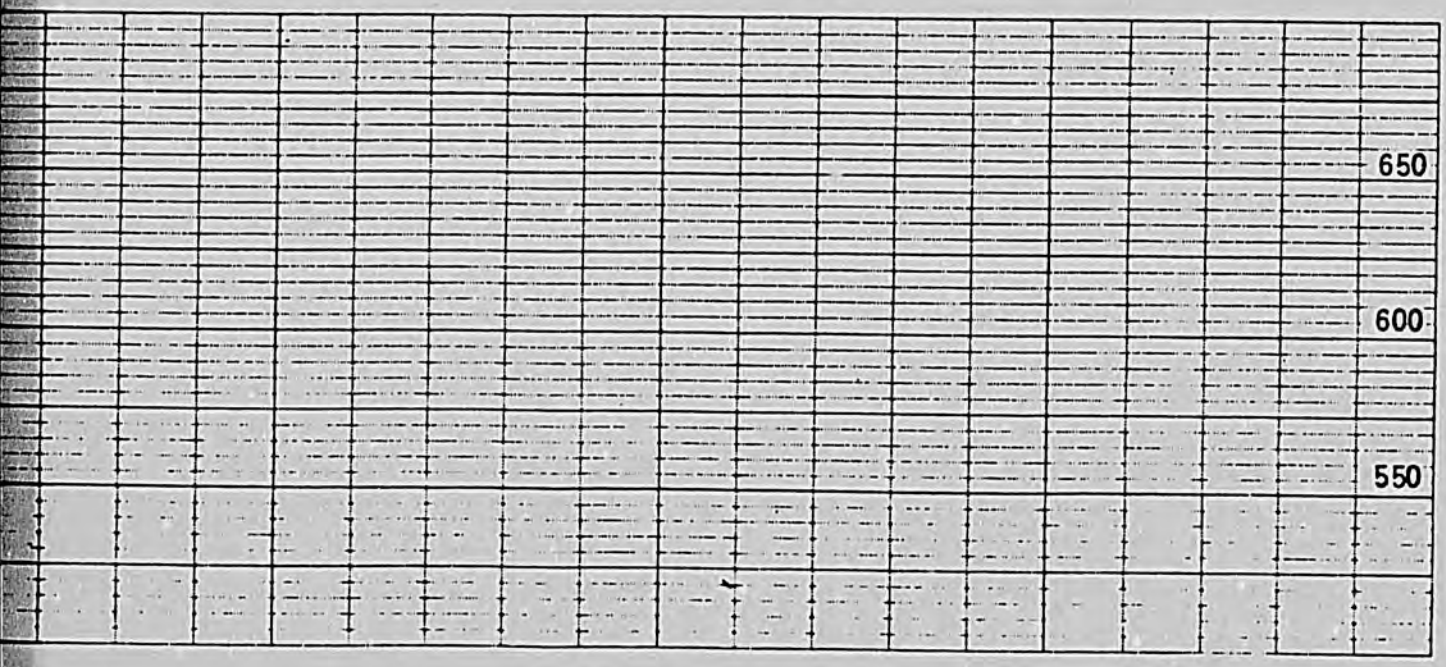
LATTAKIA TO ARIHA E
Preliminary Engin
PLAN AND PROFILE KM 198+0





TO ARIHA EXPRESSWAY minary Engineering LE KM 198+000 TO KM 199+500	LYON associates, inc. in association with Morrison-Maierle Inc. and James R. Snitzler Associates, Inc.	PLATE NO. A - 16 SHEET NO. 16 a OF 27

	CURVE NO.1	CURVE NO.2	CURVE NO.3
Δ (GRADS)	27.7778	27.5926	36.6667
T (METERS)	155.19	176.14	236.97
R (METERS)	700.00	800.00	800.00
L (METERS)	305.43	346.74	460.77
PI STA. FWD.	100+250.00	100+875.06	102+189.53

	CURVE NO.9	CURVE NO.10	CURVE NO.11
Δ (GRADS)	50.3704	38.5185	14.8148
T (METERS)	334.10	218.47	175.32
R (METERS)	800.00	700.00	1500.00
L (METERS)	632.97	423.53	349.07
PI STA. FWD.	112+437.17	113+271.94	114+038.53

	CURVE NO.17	CURVE NO.18	CURVE NO.19
Δ (GRADS)	7.5926	21.2963	25.5556
T (METERS)	107.47	135.07	203.45
R (METERS)	1800.00	800.00	1000.00
L (METERS)	214.68	267.62	401.43
PI STA. FWD.	117+031.28	117+521.03	118+228.50

	CURVE NO.25	CURVE NO.26	CURVE NO.27
Δ (GRADS)	34.7222	14.9630	54.0370
T (METERS)	125.85	94.45	203.34
R (METERS)	450.00	800.00	450.00
L (METERS)	245.44	188.03	381.97
PI STA. FWD.	125+639.65	126+896.38	127+490.51

CURVE NO.4	CURVE NO.5	CURVE NO.6	CURVE NO.7	CURVE NO.8
18.7037	11.4815	17.2222	33.5185	11.8519
369.91	226.05	272.19	404.26	93.35
2500.00	2500.00	2000.00	1500.00	1000.00
734.49	450.88	541.05	789.76	186.17
103+346.35	105+831.02	107+999.80	110+206.47	111+687.71

CURVE NO.12	CURVE NO.13	CURVE NO.14	CURVE NO.15	CURVE NO.16
28.8889	22.4074	18.3333	16.4815	16.4815
230.87	106.70	87.00	84.61	116.07
1000.00	600.00	600.00	650.00	550.00
453.79	211.18	172.79	168.28	228.78
114+726.95	115+319.00	115+716.79	116+065.58	116+584.64

CURVE NO.20	CURVE NO.21	CURVE NO.22	CURVE NO.23	CURVE NO.24
25.9259	66.8519	36.8519	43.9815	63.2407
412.97	579.29	238.24	287.89	406.51
2000.00	1000.00	800.00	800.00	750.00
814.49	1050.11	463.09	552.69	745.04
119+353.02	121+431.57	122+553.10	123+745.72	124+967.63

CURVE NO.28	CURVE NO.29	CURVE NO.30	CURVE NO.31	CURVE NO.32
17.4074	7.5000	39.6667	87.8148	95.1481
110.06	117.95	161.01	536.14	416.95
800.00	2000.00	500.00	650.00	450.00
218.75	235.62	311.54	896.60	672.56
128+020.79	128+711.42	129+706.15	130+648.66	131+747.99

A TO ARIHA EXPRESSWAY liminary Engineering ZONTAL CURVE DATA	LYON associates, inc. in association with Morrison-Maierle Inc. and James R. Snitzler Associates, Inc.	PLATE NO. A - 17 SHEET NO. 17 a OF 27

	CURVE NO.33	CURVE NO.34	CURVE NO.35
Δ (GRADS)	38.2963	9.9074	29.5370
T (METERS)	139.59	93.56	100.40
R (METERS)	450.00	1200.00	425.00
L (METERS)	270.70	186.75	197.19
PI STA. FWD.	132+549.66	133+046.19	133+976.81

	CURVE NO.41	CURVE NO.42	CURVE NO.43
Δ (GRADS)	40.0556	69.6296	81.9815
T (METERS)	146.43	273.96	525.42
R (METERS)	450.00	450.00	700.00
L (METERS)	283.14	492.18	901.43
PI STA. FWD.	137+444.72	138+124.99	139+534.25

	CURVE NO.49	CURVE NO.50	CURVE NO.51
Δ (GRADS)	54.2593	29.7593	24.5556
T (METERS)	363.18	238.08	107.41
R (METERS)	800.00	1000.00	550.00
L (METERS)	681.84	467.46	212.14
PI STA. FWD.	146+255.44	147+410.93	148+042.23

	CURVE NO.57	CURVE NO.58	CURVE NO.59
Δ (GRADS)	29.0741	86.6667	27.7778
T (METERS)	278.88	404.89	166.27
R (METERS)	1200.00	500.00	750.00
L (METERS)	548.03	680.68	327.25
PI STA. FWD.	156+274.51	157+454.78	158+265.68

CURVE NO.36	CURVE NO.37	CURVE NO.38	CURVE NO.39	CURVE NO.40
39.7222	11.0556	16.6667	10.0000	19.2963
137.07	104.46	105.32	110.18	152.72
425.00	1200.00	800.00	1400.00	1000.00
265.18	208.39	209.44	219.91	303.11
134+413.20	135+176.24	135+600.72	136+235.51	136+835.06

CURVE NO.44	CURVE NO.45	CURVE NO.46	CURVE NO.47	CURVE NO.48
57.1296	13.6111	51.5556	79.8148	57.1667
288.87	150.23	214.30	362.16	240.90
600.00	1400.00	500.00	500.00	500.00
538.43	299.32	404.92	626.86	448.99
140+655.85	141+923.55	142+742.40	143+491.72	144+342.26

CURVE NO.52	CURVE NO.53	CURVE NO.54	CURVE NO.55	CURVE NO.56
54.4815	65.6481	99.9630	49.9630	50.0926
205.23	255.03	449.74	186.24	311.30
450.00	450.00	450.00	450.00	750.00
385.11	464.04	706.60	353.17	590.14
150+459.56	151+118.19	152+217.17	154+046.29	155+176.97

CURVE NO.60	CURVE NO.61	CURVE NO.62	CURVE NO.63	CURVE NO.64
38.7037	135.5556	11.7593	30.0926	22.1296
188.22	405.91	101.88	108.38	105.35
600.00	225.00	1100.00	450.00	600.00
364.77	479.09	203.19	212.71	208.57
158+820.39	159+718.72	160+315.99	160+715.41	161+131.36

	CURVE NO.65	CURVE NO.66	CURVE NO.67
Δ (GRADS)	27.2222	40.0000	24.6296
T (METERS)	108.56	146.21	156.71
R (METERS)	500.00	450.00	800.00
L (METERS)	213.80	282.74	309.51
PI STA. FWD.	162+149.23	162+585.92	163+116.23

	CURVE NO.73	CURVE NO.74	CURVE NO.75
Δ (GRADS)	58.7963	154.2593	46.4815
T (METERS)	223.95	1597.69	458.64
R (METERS)	450.00	600.00	1200.00
L (METERS)	415.61	1453.86	876.16
PI STA. FWD.	171+953.93	173+921.63	175+480.12

	CURVE NO.81	CURVE NO.82	CURVE NO.83
Δ (GRADS)	45.9259	124.4444	54.4444
T (METERS)	169.74	667.15	250.65
R (METERS)	450.00	450.00	550.00
L (METERS)	324.63	879.65	470.37
PI STA. FWD.	186+800.83	188+925.98	189+821.32

	CURVE NO.89	CURVE NO.90	CURVE NO.91
Δ (GRADS)	29.1667	37.2222	17.2222
T (METERS)	151.56	255.82	149.70
R (METERS)	650.00	850.00	1100.00
L (METERS)	297.80	496.98	297.58
PI STA. FWD.	195+846.96	196+921.64	197+936.98

CURVE NO.68	CURVE NO.69	CURVE NO.70	CURVE NO.71	CURVE NO.72
21.5741	115.7407	41.2037	31.1111	90.0926
205.30	706.08	150.93	249.33	641.50
1200.00	550.00	450.00	1000.00	750.00
406.66	999.93	291.25	488.69	1061.38
164+362.31	165+778.37	167+226.14	168+125.53	170+975.56

CURVE NO.76	CURVE NO.77	CURVE NO.78	CURVE NO.79	CURVE NO.80
15.6481	73.3333	19.4444	36.2037	26.1111
148.23	519.53	153.91	233.81	145.60
1200.00	800.00	1000.00	800.00	700.00
294.96	921.53	305.43	454.95	287.11
176+639.00	178+097.51	179+289.99	183+737.59	185+704.92

CURVE NO.84	CURVE NO.85	CURVE NO.86	CURVE NO.87	CURVE NO.88
55.1852	25.3704	33.9815	25.7407	26.1111
254.52	121.16	164.05	112.73	249.60
550.00	600.00	600.00	550.00	1200.00
476.77	239.11	320.27	222.38	492.18
190+610.39	191+488.10	192+054.89	192+517.06	194+803.98

CURVE NO.92				
9.0741				
157.05				
2200.00				
313.58				
198+955.15				

	CURVE NO.100	CURVE NO.101	CURVE NO.102
PVI STA.	100+300.00	101+300.00	102+400.00
PVI ELEV.	15.10	32.90	38.40
LVC	200.00	300.00	300.00
CORRECTION	+0.54	-0.48	-1.01

	CURVE NO.108	CURVE NO.109	CURVE NO.110
PVI STA.	108+700.00	109+300.00	110+000.00
PVI ELEV.	54.30	49.50	58.60
LVC	400.00	200.00	200.00
CORRECTION	-1.15	+0.53	-0.20

	CURVE NO.116	CURVE NO.117	CURVE NO.118
PVI STA.	116+000.00	116+850.00	117+850.00
PVI ELEV.	140.90	189.52	202.02
LVC	400.00	500.00	500.00
CORRECTION	+2.46	-2.83	-2.72

	CURVE NO.124	CURVE NO.125	CURVE NO.126
PVI STA.	123+900.00	124+800.00	125+300.00
PVI ELEV.	123.40	118.90	126.40
LVC	200.00	200.00	400.00
CORRECTION	-0.33	+0.50	-1.85

	CURVE NO. 132	CURVE NO.133	CURVE NO.134
PVI STA.	128+550.00	129+050.00	129+500.00
PVI ELEV.	119.95	116.45	123.65
LVC	300.00	200.00	240.00
CORRECTION	-0.83	+0.58	-0.33

CURVE NO.103	CURVE NO.104	CURVE NO.105	CURVE NO.106	CURVE NO.107
103+200.00	104+200.00	105+600.00	106+600.00	107+400.00
20.80	15.80	22.80	54.80	34.80
200.00	200.00	300.00	600.00	300.00
+0.43	+0.25	+1.01	-4.28	+1.50

CURVE NO.111	CURVE NO.112	CURVE NO.113	CURVE NO.114	CURVE NO.115
111+200.00	111+700.00	113+400.00	114+100.00	114+800.00
64.60	62.10	89.30	113.80	131.30
200.00	200.00	200.00	200.00	220.00
-0.25	+0.53	+0.48	-0.25	-0.47

CURVE NO.119	CURVE NO.120	CURVE NO.121	CURVE NO.122	CURVE NO.123
118+600.00	119+800.00	120+900.00	122+425.00	123+000.00
178.77	230.37	222.67	100.67	116.20
500.00	800.00	500.00	400.00	200.00
+4.63	-5.00	-4.56	+5.35	-0.48

CURVE NO.127	CURVE NO.128	CURVE NO.129	CURVE NO.130	CURVE NO.131
126+000.00	126+450.00	126+950.00	127+550.00	128+000.00
111.00	119.10	105.10	115.30	111.70
200.00	500.00	260.00	300.00	200.00
+1.00	-2.88	+1.46	-0.94	+0.58

CURVE NO.135	CURVE NO.136	CURVE NO.137	CURVE NO.138	CURVE NO.139
130+200.00	130+800.00	131+350.00	132+050.00	132+550.00
127.15	140.95	133.25	156.35	152.35
200.00	500.00	300.00	440.00	300.00
+0.45	-2.31	+1.76	-2.26	+1.95

	CURVE NO.140	CURVE NO.141	CURVE NO.142	CURVE NO.143	CURV
PVI STA.	133+350.00	134+150.00	134+850.00	135+500.00	13
PVI ELEV.	187.55	183.55	215.05	211.80	
LVC	500.00	300.00	500.00	400.00	
CORRECTION	-3.06	+1.88	-3.13	+3.75	

	CURVE NO.149	CURVE NO.150	CURVE NO.151	CURVE NO.152	CURV
PVI STA.	141+550.00	143+200.00	145+400.00	146+750.00	14
PVI ELEV.	362.90	419.00	432.20	456.50	
LVC	600.00	500.00	200.00	600.00	
CORRECTION	+5.03	-1.75	+0.30	-2.35	

	CURVE NO.158	CURVE NO.159	CURVE NO.160	CURVE NO.161	CURV
PVI STA.	153+200.00	154+800.00	157+400.00	158+400.00	16
PVI ELEV.	382.10	439.70	493.00	462.00	
LVC	400.00	200.00	700.00	500.00	
CORRECTION	+2.48	-0.39	-4.51	-1.63	

	CURVE NO.167	CURVE NO.168	CURVE NO.169	CURVE NO.170	CURV
PVI STA.	169+000.00	176+500.00	177+800.00	178+500.00	1
PVI ELEV.	174.40	249.40	288.40	284.20	
LVC	400.00	300.00	600.00	200.00	
CORRECTION	+1.30	+0.75	-2.70	+0.30	

	CURVE NO.176	CURVE NO.177	CURVE NO.178	CURVE NO.179	CUR
PVI STA.	191+000.00	192+000.00	194+250.00	195+000.00	1
PVI ELEV.	612.70	649.90	690.40	649.90	
LVC	500.00	300.00	1000.00	500.00	
CORRECTION	-2.20	-0.72	-9.00	+2.00	

NO.143	CURVE NO.144	CURVE NO.145	CURVE NO.146	CURVE NO.147	CURVE NO.148
500.00	136+100.00	136+850.00	139+700.00	139+650.00	140+650.00
211.80	253.80	246.30	353.60	334.60	392.60
400.00	600.00	500.00	600.00	500.00	800.00
+3.75	-6.00	+4.25	-5.85	+4.88	-9.10

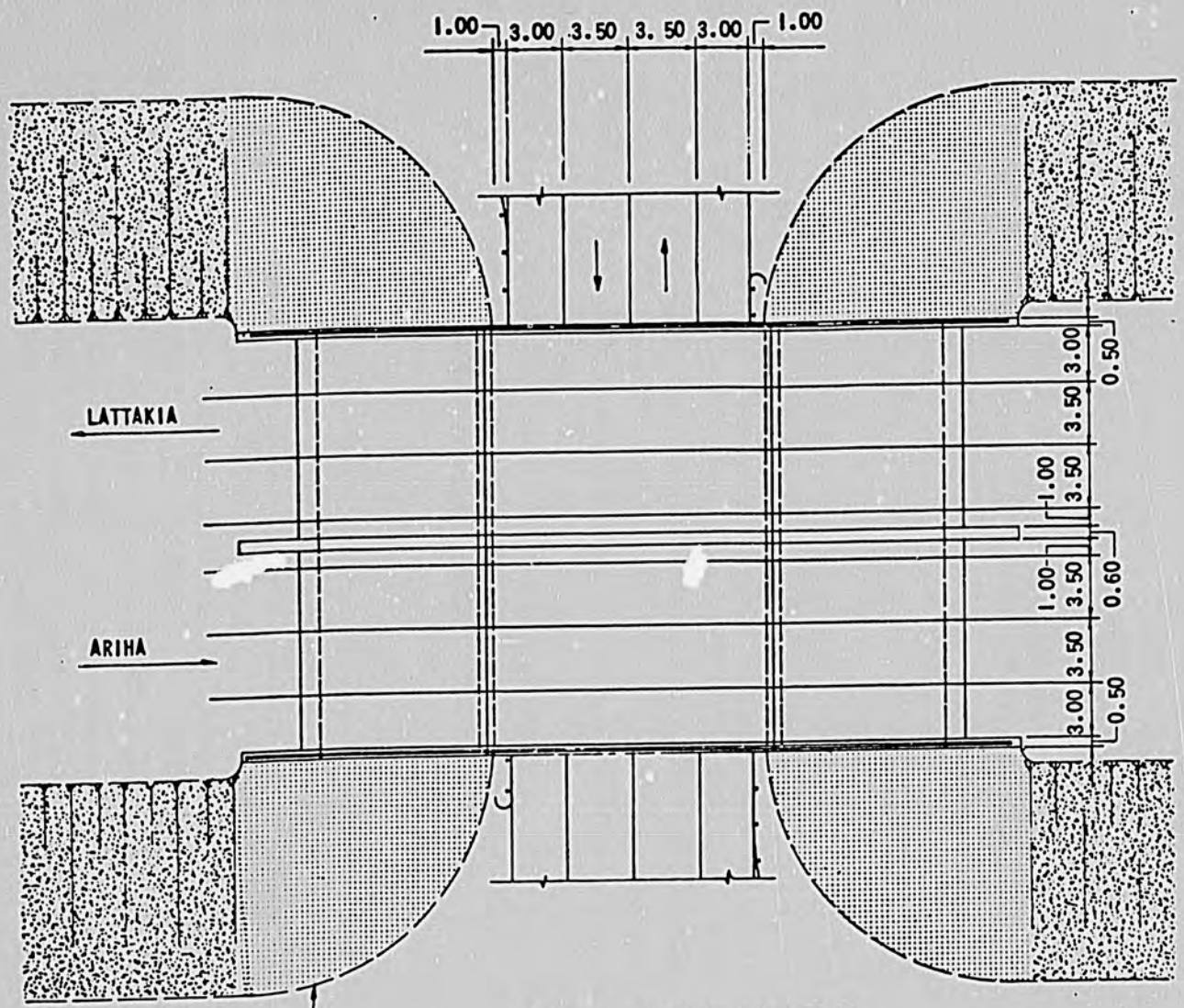
NO.152	CURVE NO.153	CURVE NO.154	CURVE NO.155	CURVE NO.156	CURVE NO.157
750.00	147+750.00	149+450.00	150.500.00	151+500.00	152+500.00
456.50	443.20	405.80	421.55	381.55	391.55
600.00	200.00	500.00	600.00	400.00	400.00
-2.35	-0.22	+2.31	-4.13	+2.50	-1.18

NO.161	CURVE NO.162	CURVE NO.163	CURVE NO.164	CURVE NO.165	CURVE NO.166
400.00	162+800.00	164+250.00	165+750.00	167+250.00	168+000.00
462.00	210.76	244.40	200.00	185.60	190.40
500.00	900.00	700.00	300.00	300.00	300.00
-1.63	+9.03	-4.62	+0.75	+0.60	-0.84

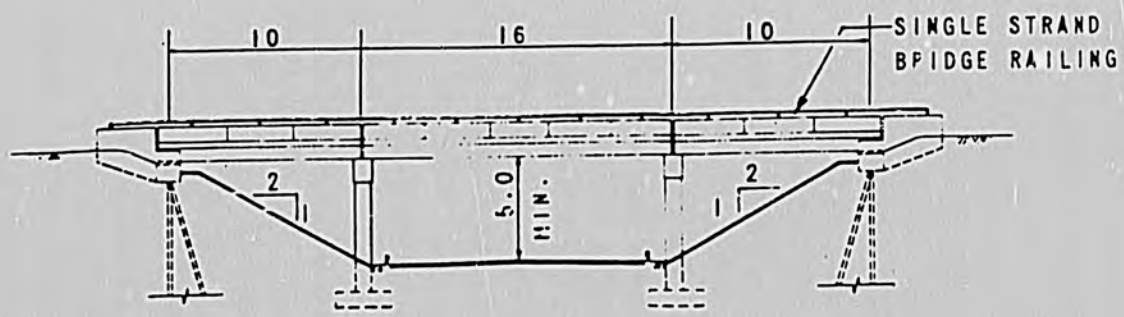
NO.170	CURVE NO.171	CURVE NO.172	CURVE NO.173	CURVE NO.174	CURVE NO.175
500.00	179+000.00	181+250.00	184+250.00	185+300.00	188.500.00
284.20	287.20	246.70	270.70	261.46	431.70
200.00	400.00	400.00	300.00	1000.00	300.00
+0.30	-1.20	+1.30	-0.63	+7.75	+0.72

NO.179	CURVE NO.180	CURVE NO.181	CURVE NO.182		
000.00	197+000.00	198+000.00	199+250.00		
649.90	605.90	615.90	605.00		
500.00	500.00	300.00	500.00		
+2.00	+2.00	-0.71	+2.30		

TO ARIHA EXPRESSWAY liminary Engineering RTICAL CURVE DATA	LYON associates, inc. in association with Morrison-Maierle Inc. and James R. Snitzler Associates, Inc.	PLATE NO. A-21 SHEET NO. 21 OF 27



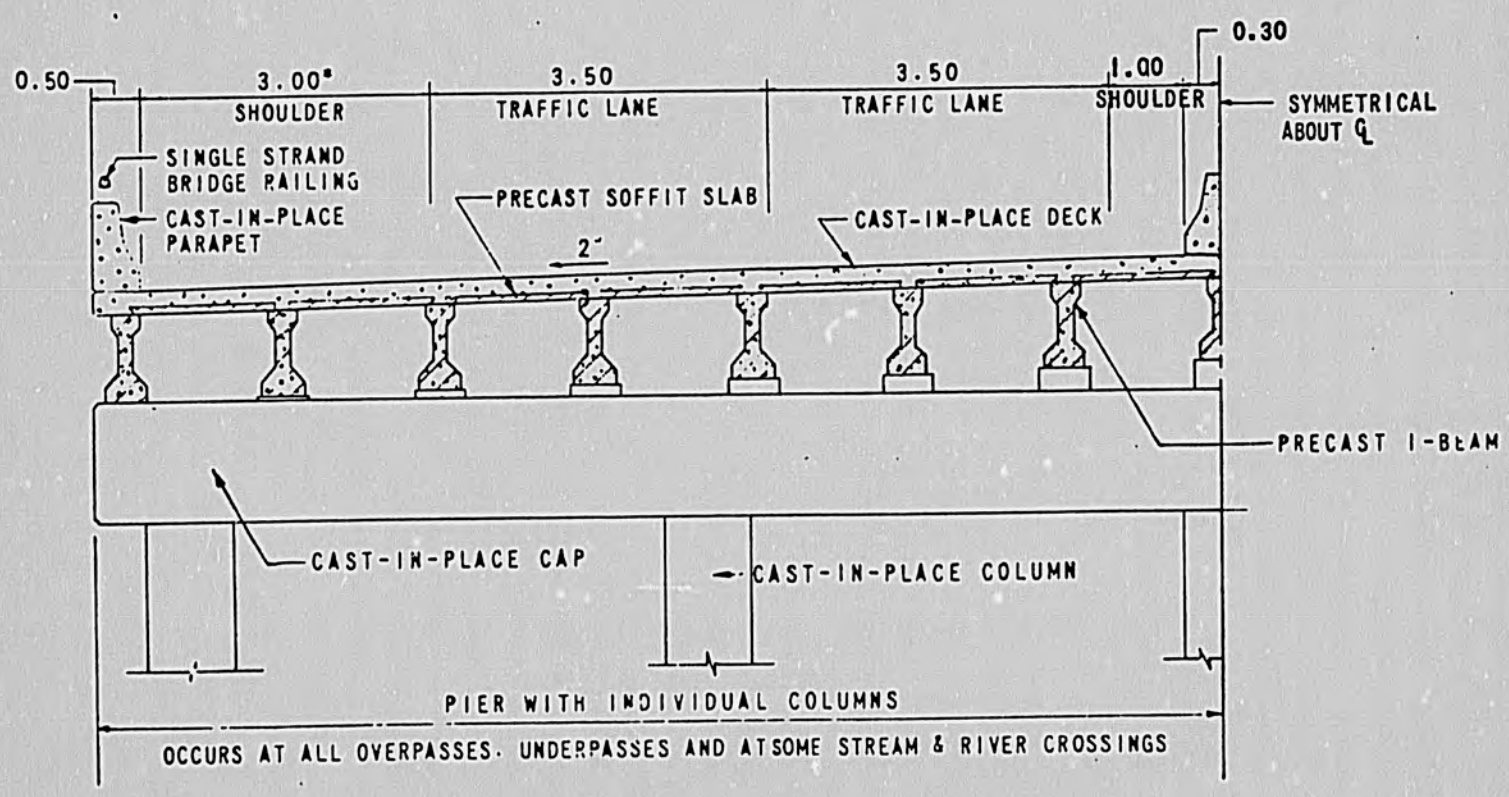
PLAN - TYPICAL OVERPASS



ELEVATION - TYPICAL OVERPASS

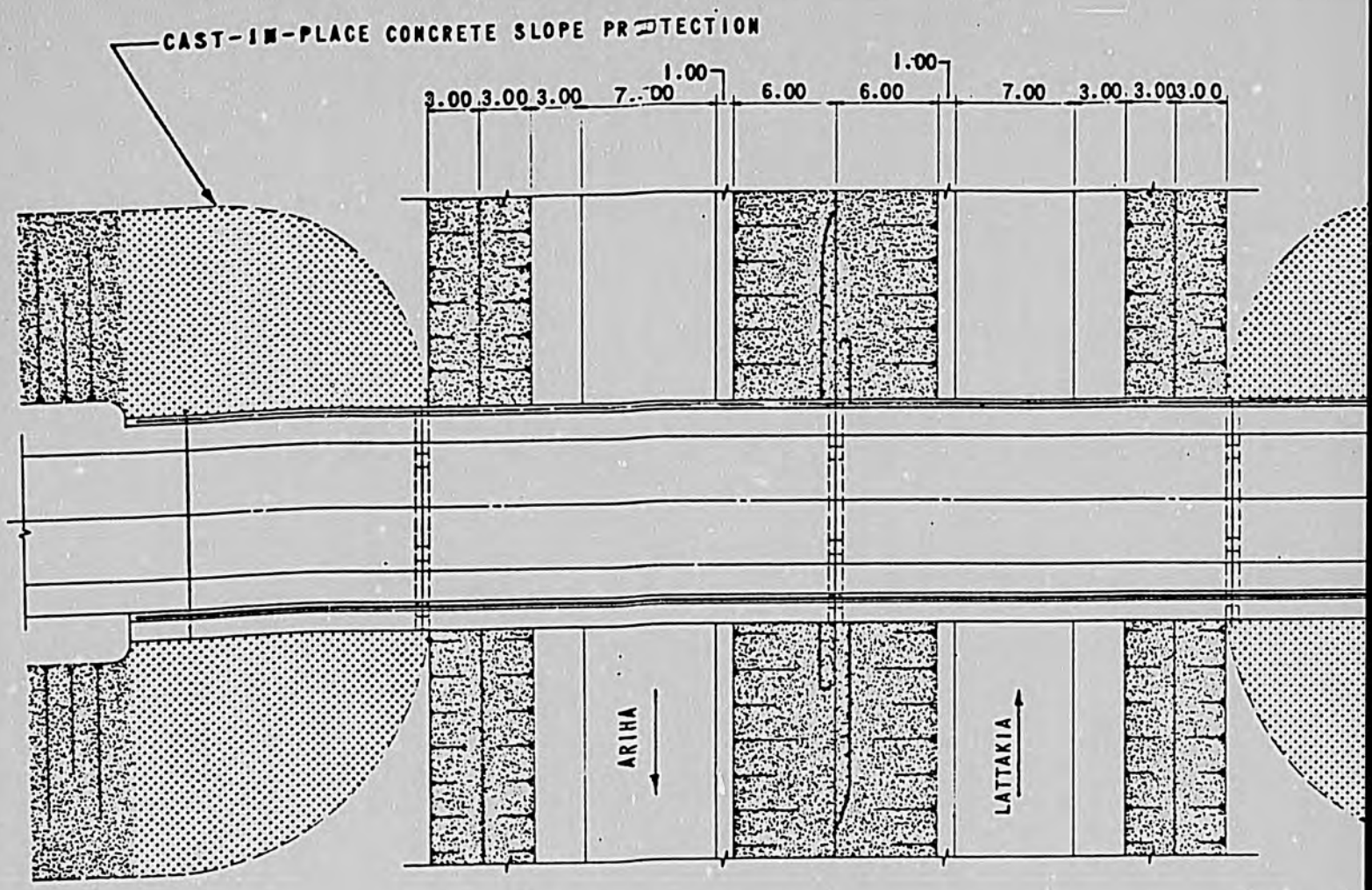
NOT TO SCALE	SYRIAN ARAB REPUBLIC Ministry of Communications	22	LATTAKIA TO ARIHA EX Preliminary Engine TYPICAL OVERPA

NOTE: ALL SPANS ARE SIMPLE SPANS.
2.00 SHOULDER FOR VIADUCT
STRUCTURES.

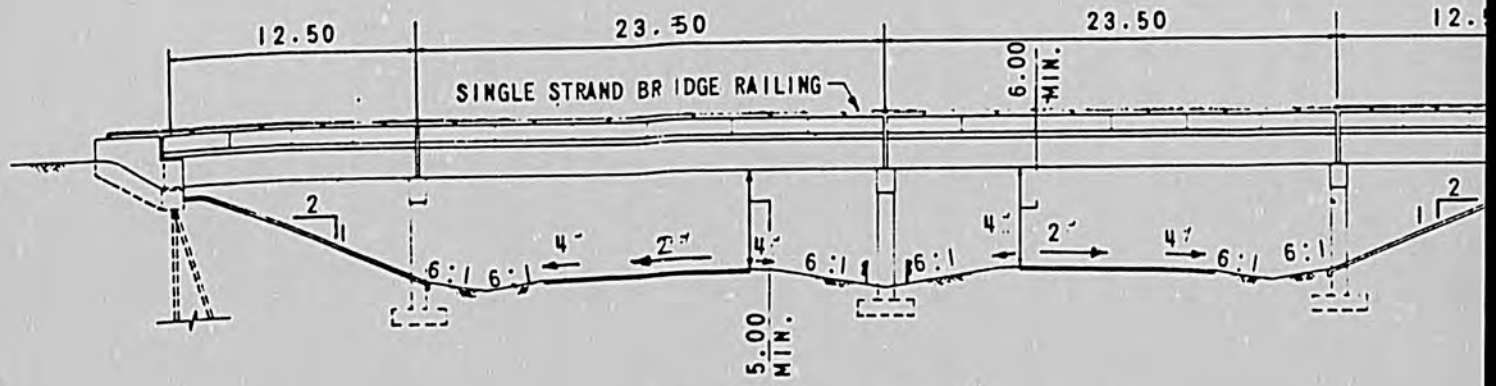


TYPICAL DECK SECTION - SPANS OVER 14 m

TO ARIHA EXPRESSWAY iminary Engineering YPICAL OVERPASS	LYON associates, inc. in association with Morrison-Maierle Inc. and James R. Snitzler Associates, Inc.	PLATE NO. A-22 SHEET NO. 22 OF 27

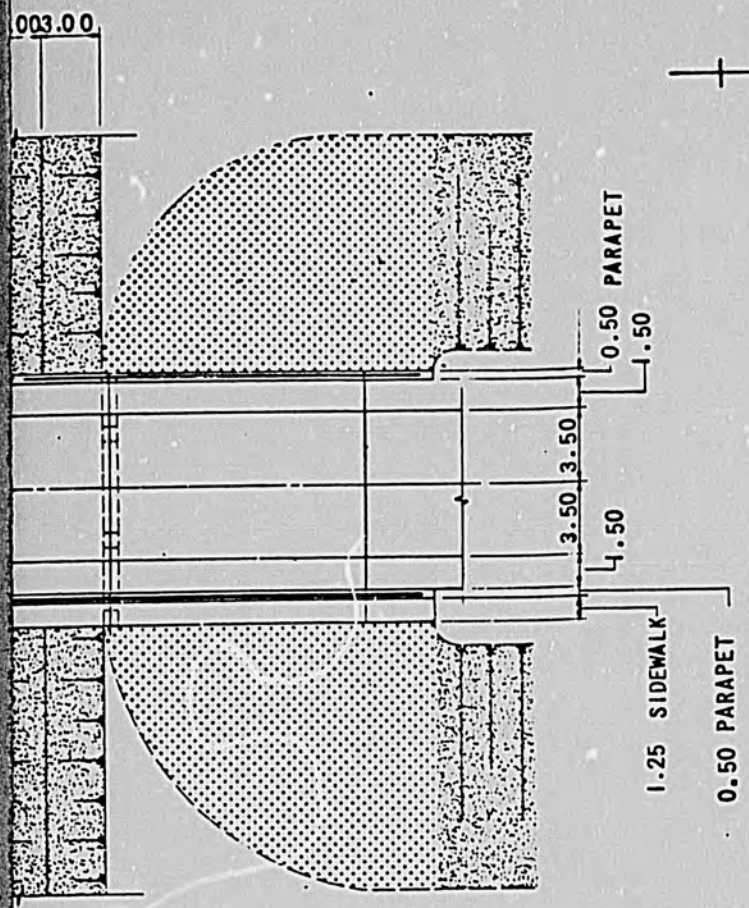


PLAN - TYPICAL UNDERPASS

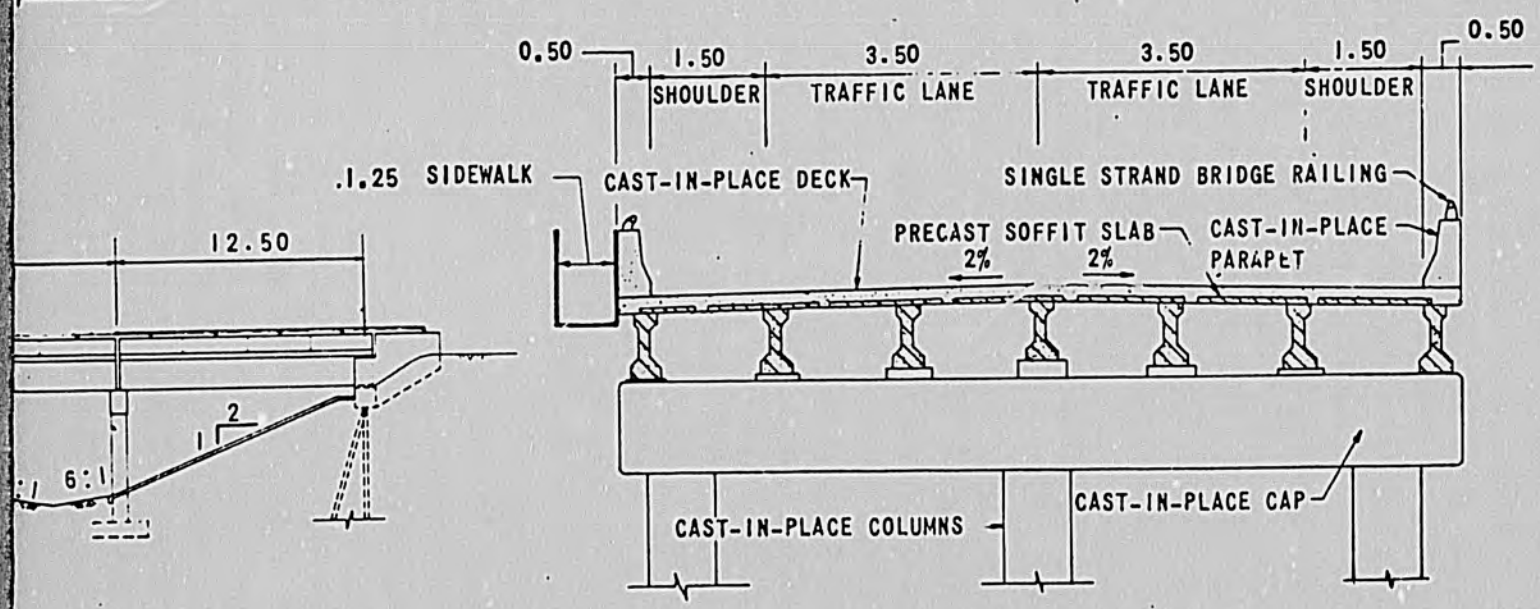


ELEVATION - TYPICAL UNDERPASS

NOT TO SCALE	SYRIAN ARAB REPUBLIC Ministry of Communications	23	LATTAKIA TO ARIHA EXP Preliminary Engineer TYPICAL UNDERPAS

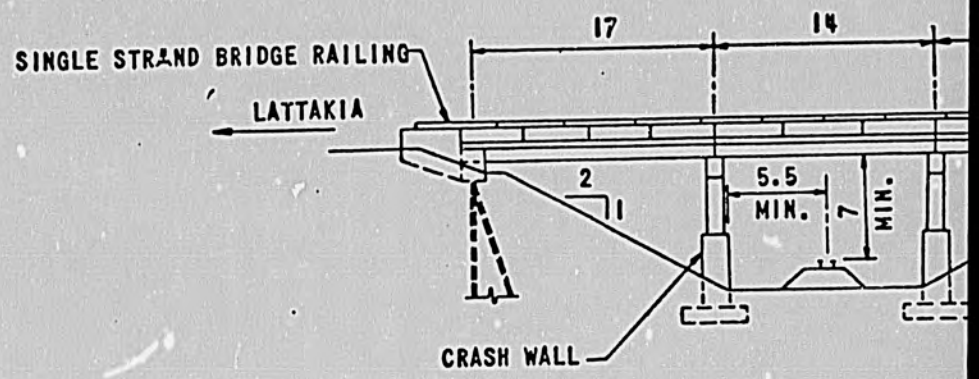


NOTE: ALL SPANS ARE SIMPLE SPANS.

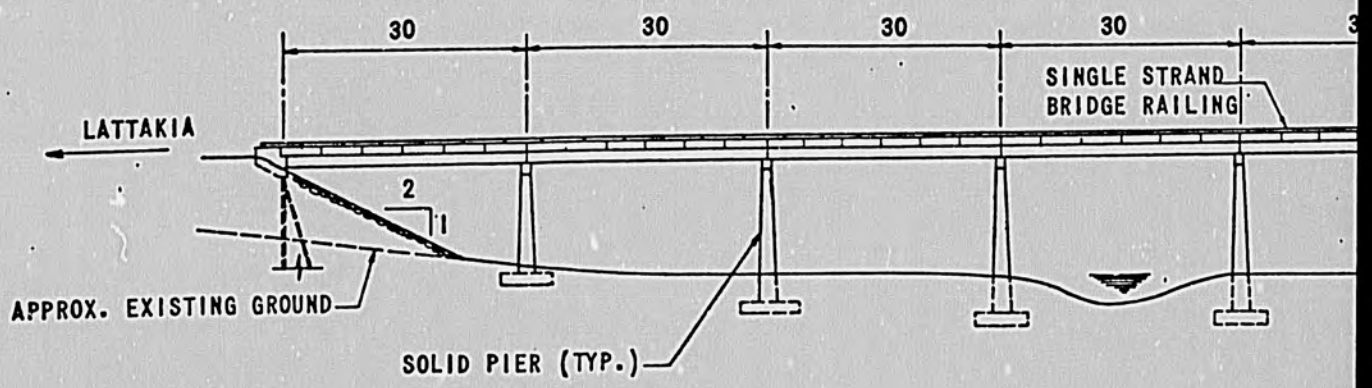


DECK SECTION - UNDERPASS

TO ARIHA EXPRESSWAY iminary Engineering PICAL UNDERPASS	LYON associates, inc. in association with Morrison-Maierle Inc. and James R. Snitzler Associates, Inc.	PLATE NO A - 23 SHEET NO. 23 OF 27

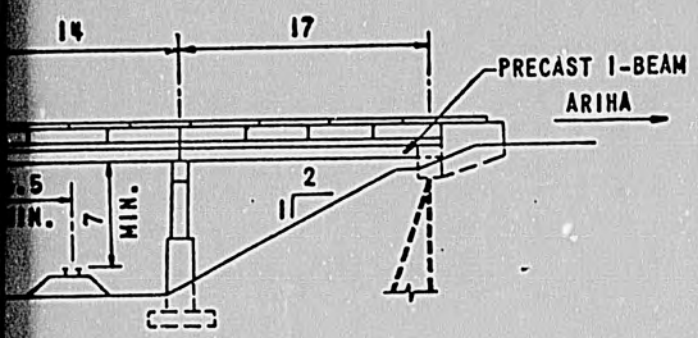


RAILROAD CROSSING

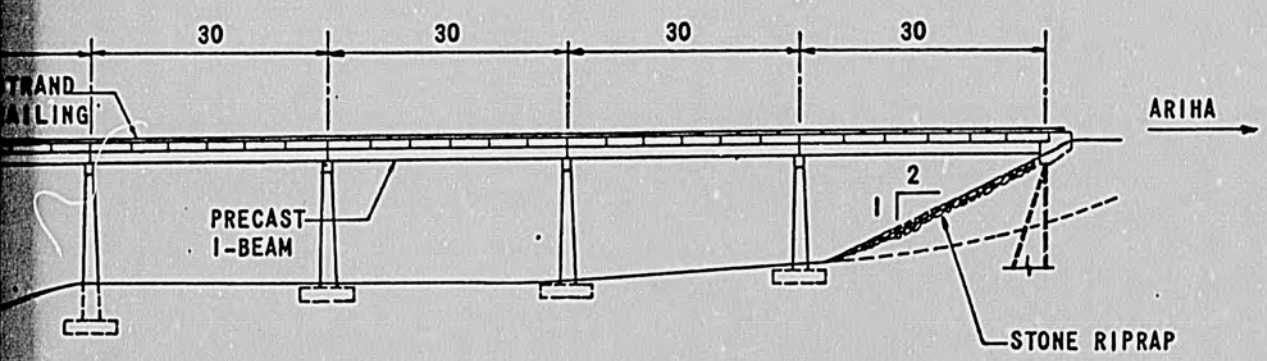


RIVER CROSSING

NOT TO SCALE	SYRIAN ARAB REPUBLIC Ministry of Communications	24	LATTAKIA TO ARIHA EX Preliminary Engine BRIDGE STRUCTU



ROAD CROSSING



VER CROSSING

NOTE: ALL SPANS ARE SIMPLE SPANS.

TO ARIHA EXPRESSWAY inary Engineering GE STRUCTURES	LYON associates, inc. in association with Morrison-Maierle Inc. and James R. Snitzler Associates, Inc.	PLATE NO. A - 24 SHEET NO. 24 a OF 27

LEGAL LOAD LIMITS ENFORCED

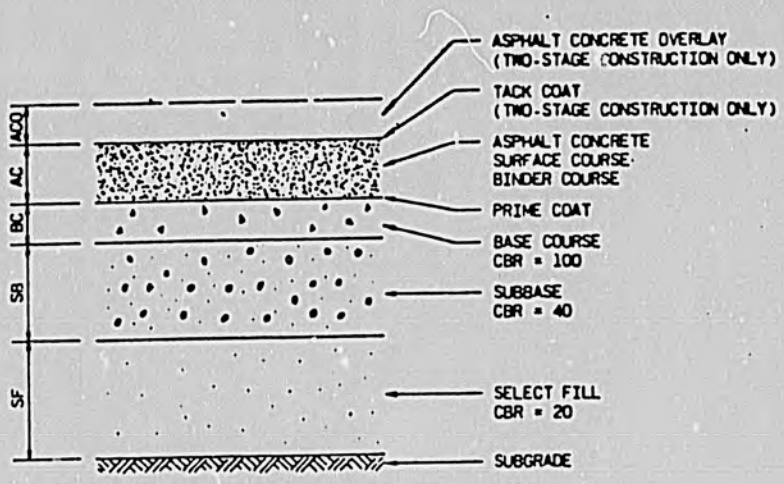
EXPRESSWAY SEGMENT		SINGLE STAGE CONSTRUCTION 20 YEAR LIFE 20 YEAR DESIGN				TWO STAGE CONSTRUCTION 20 YEAR LIFE 7 YEAR DESIGN/OVERLAY IN 7th YEAR					TWO STAGE CONSTRUCTION 20 YEAR LIFE 10 YEAR DESIGN/OVERLAY IN 10th YEAR					15 YEAR
		AC	BC	SB	SF	AC	BC	SB	SF	ACO	AC	BC	SB	SF	ACO	AC
99+500 TO	EB	15	10	25	25	15	10	25	-	8.5	15	10	25	10	5	15
110+000	WB	15	10	25	-	10	15	15	-	6.5	10	15	20	-	5	10
110+000 TO	EB	15	10	25	20	15	10	20	-	8.5	15	10	25	10	3.5	15
120+000	WB	15	10	25	-	10	15	10	-	8.5	10	15	15	-	6.5	10
120+000 TO	EB	15	10	25	25	15	10	20	-	10.5	15	10	25	10	5.0	15
127+000	WB	15	10	25	-	10	15	15	-	6.5	10	15	20	-	5.0	10
127+000 TO	EB	15	10	25	25	15	10	20	-	10.5	15	10	25	10	5.0	15
150+000	WB	15	10	25	-	10	15	15	-	6.5	10	15	20	-	5.0	10
150+000 TO	EB	15	10	25	20	15	10	20	-	9.5	15	10	25	10	3.5	15
168+000	WB	15	10	25	-	10	15	10	-	8.5	10	15	15	-	6.5	10
168+000 TO	EB	15	10	25	20	10	15	25	-	10.0	15	10	25	-	7.5	15
171+000	WB	15	10	20	-	5	20	-	-	5.0	10	15	15	-	5.0	10
171+000 TO	EB	15	10	25	20	10	15	25	-	10.0	15	10	25	-	7.5	15
185+000	WB	15	10	25	-	10	15	10	-	8.5	10	15	15	-	6.5	10
185+000 TO	EB	15	10	10	-	10	15	-	-	6.0	15	10	-	-	4.0	15
190+000	WB	15	10	-	-	10	10	-	-	5.0	10	10	-	-	5.0	10
190+000 TO	EB	15	10	25	20	10	15	25	-	10.0	15	10	25	-	7.5	15
197+000	WB	15	10	25	-	10	15	10	-	8.5	10	15	15	-	6.5	10
197+000 TO	EB	15	10	25	25	10	15	25	-	11.5	15	10	25	10	5.0	15
199+500	WB	15	10	25	-	10	15	15	-	6.0	10	15	20	-	5.0	10

PRESENT LOADING PRACTICE

EXPRESSWAY SEGMENT		SINGLE STAGE CONSTRUCTION 20 YEAR LIFE 20 YEAR DESIGN				TWO STAGE CONSTRUCTION 20 YEAR LIFE 7 YEAR DESIGN/OVERLAY IN 7th YEAR					TWO STAGE CONSTRUCTION 20 YEAR LIFE 10 YEAR DESIGN/OVERLAY IN 10th YEAR					15 YEAR
		AC	BC	SB	SF	AC	BC	SB	SF	ACO	AC	BC	SB	SF	ACO	AC
99+500 TO	EB	25	10	25	40	15	10	25	20	17.5	15	10	25	30	13.5	17.5
110+000	WB	15	10	25	25	10	15	25	-	12.5	15	10	25	10	5	15
110+000 TO	EB	25	10	25	40	15	10	25	15	18.5	15	10	25	25	15	15
120+000	WB	15	10	25	20	10	15	20	-	12.5	15	10	25	-	7.5	15
120+000 TO	EB	25	10	25	40	15	10	25	20	18.5	15	10	25	30	13.5	17.5
127+000	WB	15	10	25	25	10	15	25	-	12.5	15	10	25	10	5	15
127+000 TO	EB	25	10	25	40	15	10	25	15	18.5	15	10	25	30	13.5	17.5
150+000	WB	15	10	25	20	10	15	25	-	10.0	15	10	25	-	7.5	15
150+000 TO	EB	25	10	25	40	15	10	25	15	18.5	15	10	25	25	15	17.5
168+000	WB	15	10	25	20	10	15	25	-	10.0	15	10	25	-	7.5	15
168+000 TO	EB	22.5	10	25	40	15	10	25	15	16.0	15	10	25	30	12	15
171+000	WB	15	10	25	15	10	15	20	-	7.5	15	10	20	-	5	15
171+000 TO	EB	25	10	25	40	15	10	25	15	18.5	15	10	25	25	13	17.5
185+000	WB	15	10	25	20	10	15	15	-	15.0	15	10	20	-	10	15
185+000 TO	EB	25	10	25	-	15	10	10	-	16.0	15	10	15	-	14	15
190+000	WB	15	10	10	-	10	10	-	-	10.0	15	10	-	-	5	15
190+000 TO	EB	25	10	25	40	15	10	25	15	18.5	15	10	25	25	13	17.5
197+000	WB	15	10	25	20	10	15	15	-	15.0	15	10	20	-	10	15
197+000 TO	EB	25	10	25	40	15	10	25	20	18.5	15	10	25	25	15	15
199+500	WB	15	10	25	20	10	15	15	-	12.5	15	10	20	-	10	15

UCTION E IN 10th YEAR		TWO STAGE CONSTRUCTION 20 YEAR LIFE 15 YEAR DESIGN/OVERLAY IN 15th YEAR				
SF	ACO	AC	BC	SB	SF	ACO
10	5	15	10	25	15	3.5
-	5	10	15	25	-	2.5
10	3.5	15	10	25	10	3.5
-	6.5	10	15	20	-	5.0
10	5.0	15	10	25	15	3.5
-	5.0	10	15	25	-	2.5
10	5.0	15	10	25	15	3.5
-	5.0	10	15	25	-	2.5
10	3.5	15	10	25	10	3.5
-	6.5	10	15	25	-	2.5
-	7.5	15	10	25	10	3.5
-	5.0	10	15	20	-	2.5
-	7.5	15	10	25	10	3.5
-	6.5	10	15	25	-	2.5
-	4.0	15	10	-	-	4.0
-	5.0	10	10	-	-	5.0
-	7.5	15	10	25	10	3.5
-	6.5	10	15	25	-	2.5
10	5.0	15	10	25	15	3.5
-	5.0	10	15	25	-	2.5

RUCTION FE IN 10th YEAR		TWO STAGE CONSTRUCTION 20 YEAR LIFE 15 YEAR DESIGN/OVERLAY IN 15th YEAR				
SF	ACO	AC	BC	SB	SF	ACO
30	13.5	17.5	10	25	40	7.5
10	5	15	10	25	15	3.5
25	15	15	10	25	40	10
-	7.5	15	10	25	10	3.5
30	13.5	17.5	10	25	40	7.5
10	5	15	10	25	15	3.5
30	13.5	17.5	10	25	40	7.5
-	7.5	15	10	25	10	3.5
25	15	17.5	10	25	40	7.5
-	7.5	15	10	25	10	3.5
30	12	15	10	25	40	7.5
-	5	15	10	25	10	2.5
25	13	17.5	10	25	40	7.5
-	10	15	10	25	10	3.5
-	14	15	10	25	-	10
-	5	15	10	-	-	5
25	13	17.5	10	25	40	7.5
-	10	15	10	25	10	3.5
25	15	15	10	25	40	10
-	10	15	10	25	10	3.5



PAVEMENT SECTION
NOT TO SCALE

ABBREVIATIONS

ACO	ASPHALT CONCRETE OVERLAY (TWO-STAGE CONSTRUCTION)
AC	ASPHALT CONCRETE
BC	BASE COURSE
SB	SUBBASE
SF	SELECT FILL
CBR	CALIFORNIA BEARING RATIO
EB	EASTBOUND
WB	WESTBOUND

NOTES

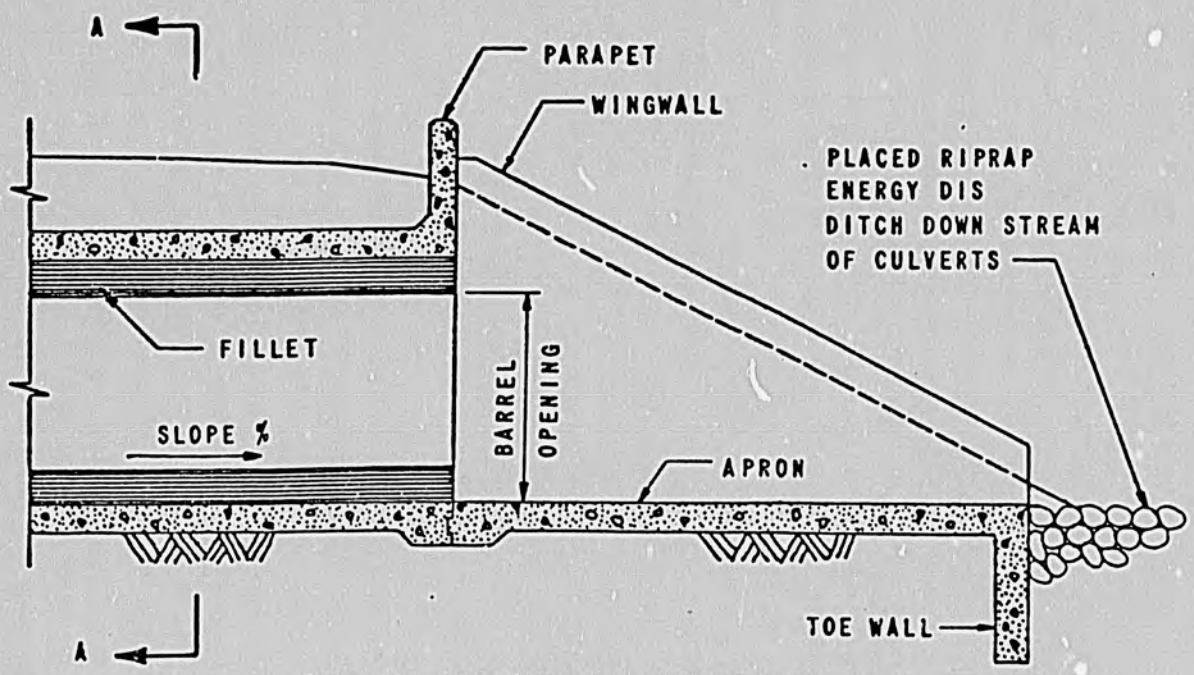
1. ALL PAVEMENT SECTION VALUES ARE GIVEN IN CENTIMETERS THICKNESS.
2. SEE PLATE A-2 FOR TYPICAL SECTIONS.

A TO ARIHA EXPRESSWAY
liminary Engineering
DETAIL 1 - PAVING

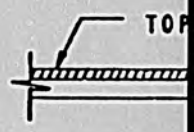
LYON associates, inc.
in association with
Morrison-Maierle Inc. and
James R. Snitzler Associates, Inc.

PLATE NO. A-25

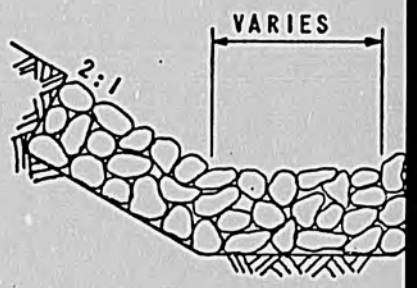
SHEET NO. 25 OF 27



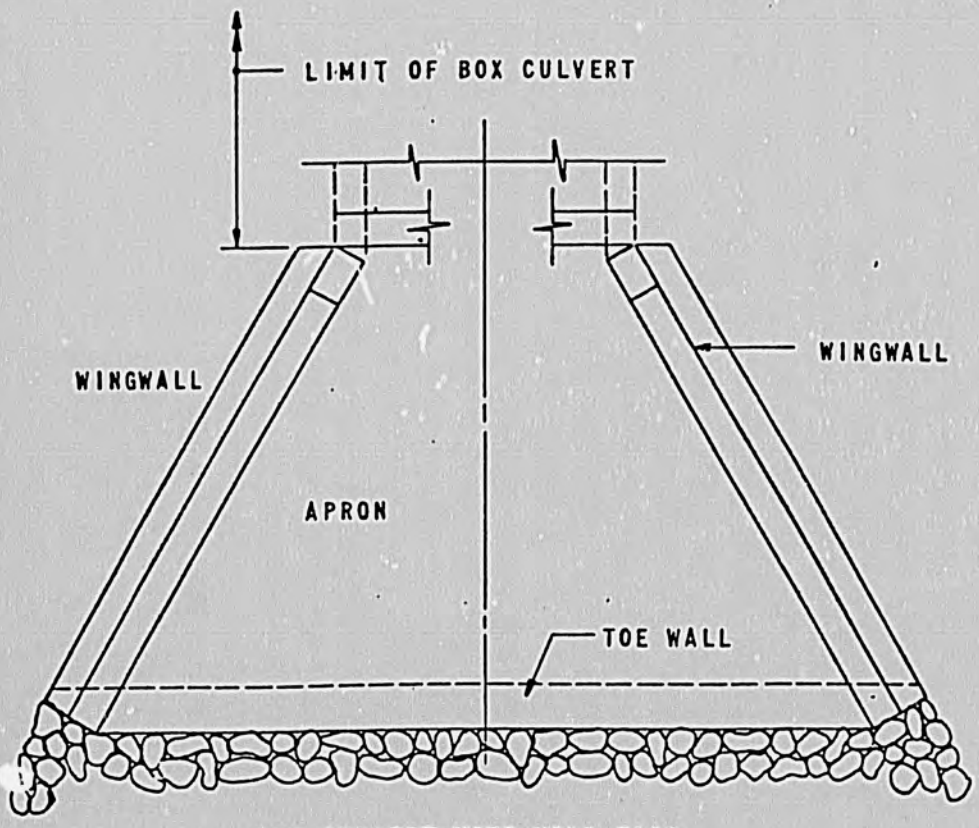
TYPICAL LONGITUDINAL SECTION IN
REINFORCED CONCRETE BOX CULVERT



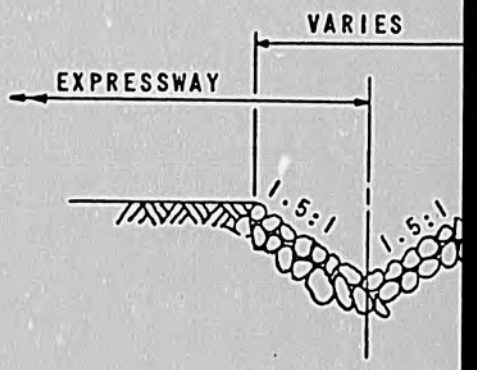
SINGLE



ENERGY DISSIPATING D

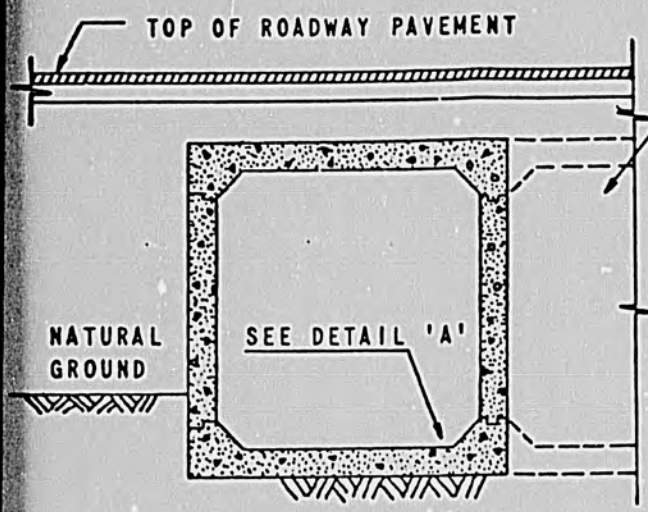


BOX CULVERT WING WALL PLAN



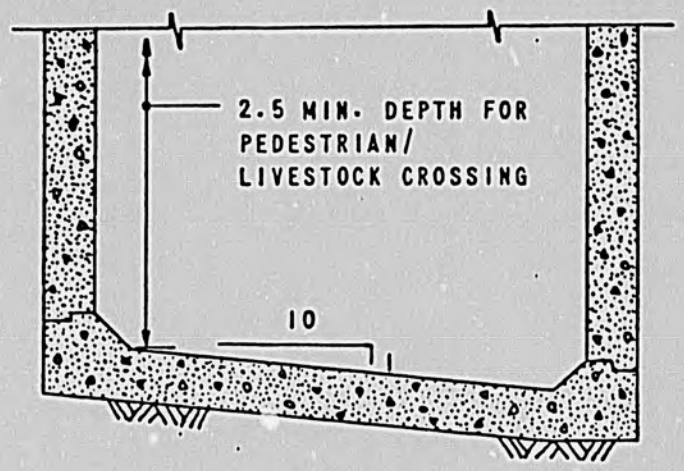
INTERCEPTOR DIT

NOT TO SCALE	SYRIAN ARAB REPUBLIC Ministry of Communications	26	LATTAKIA TO ARIHA Preliminary Engi DETAIL 2 - DRAIN



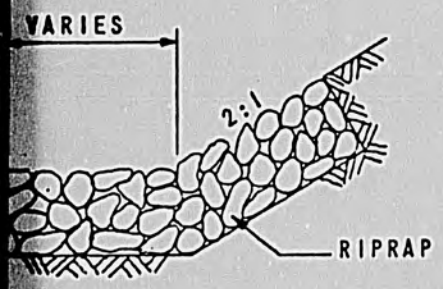
SECTION A-A

SINGLE CELL R.C. BOX CULVERT

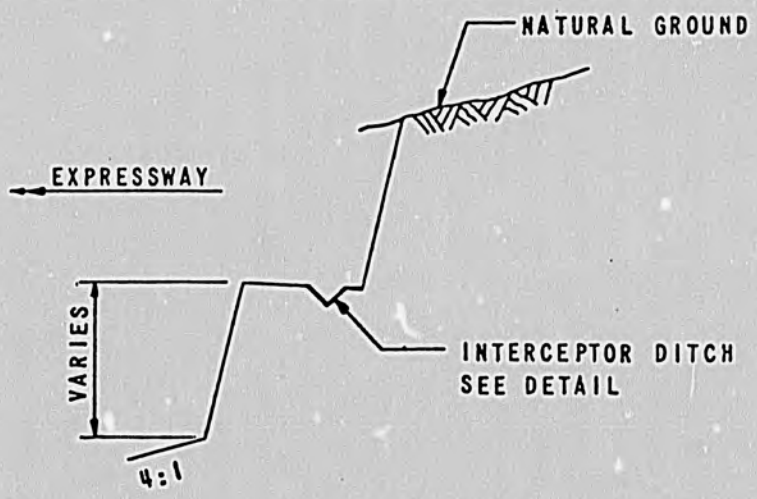


DETAIL 'A'

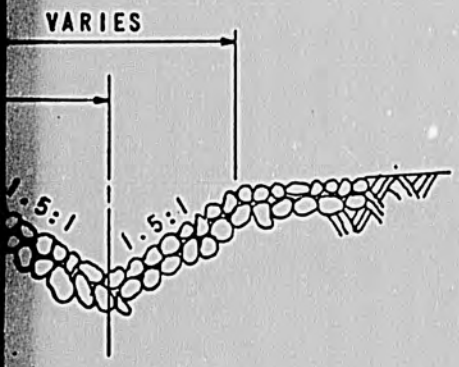
ALTERNATE SHAPE OF PEDESTRIAN/LIVESTOCK CROSSING WHEN USED AS SECONDARY DRAINAGE STRUCTURE.



DISSIPATING DITCH

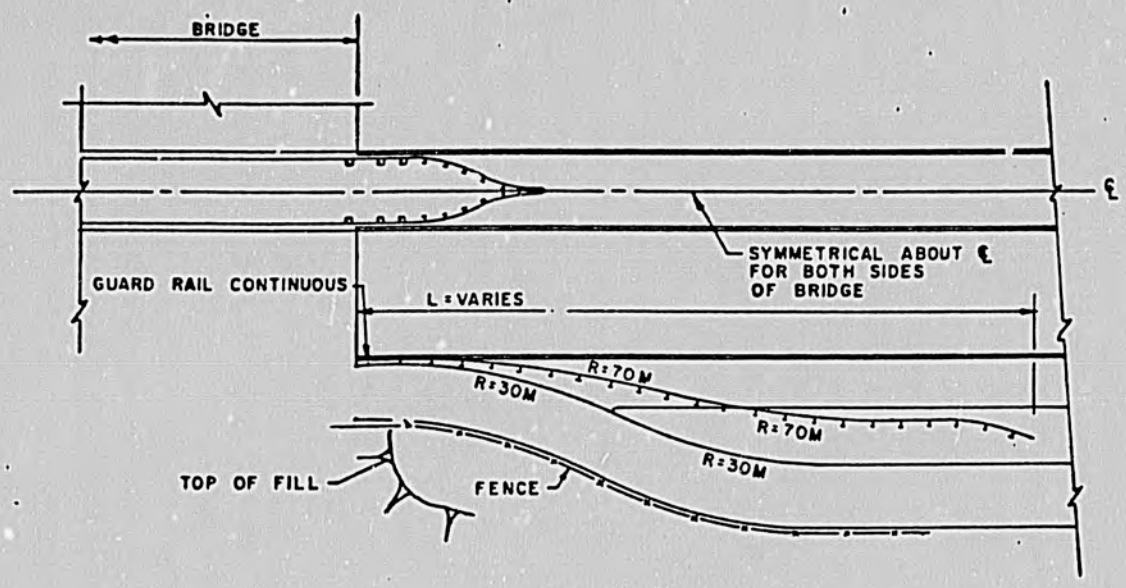


SLOPE BENCH

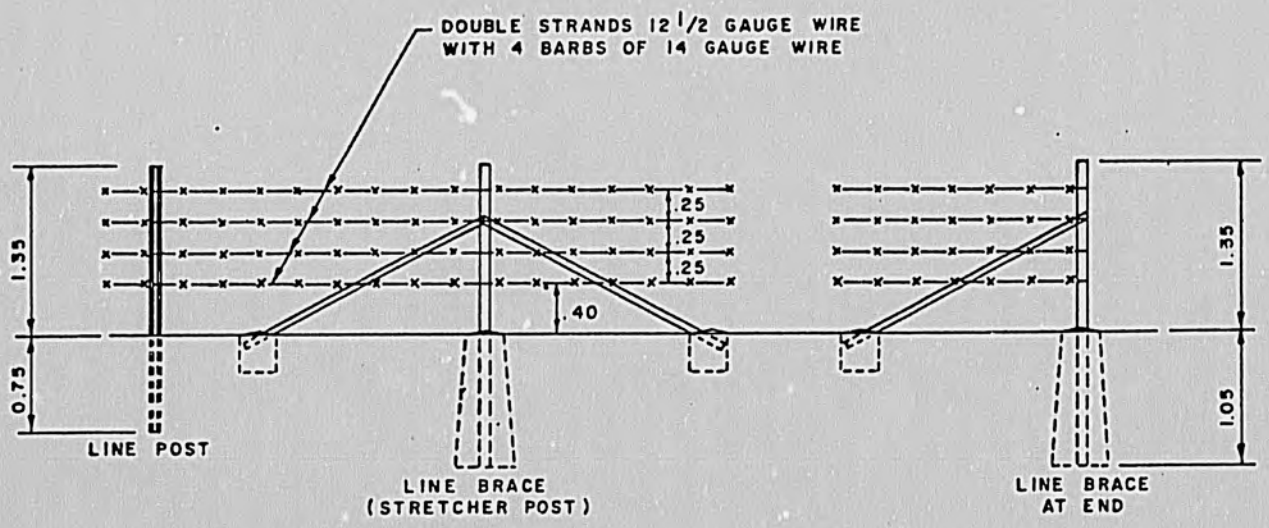


ERCEPTOR DITCH

TO ARIHA EXPRESSWAY minary Engineering AIL 2 - DRAINAGE	LYON associates, inc. in association with Morrison-Maierle Inc. and James R. Snitzler Associates, Inc.	PLATE NO. A - 26 SHEET NO. 26 OF 27



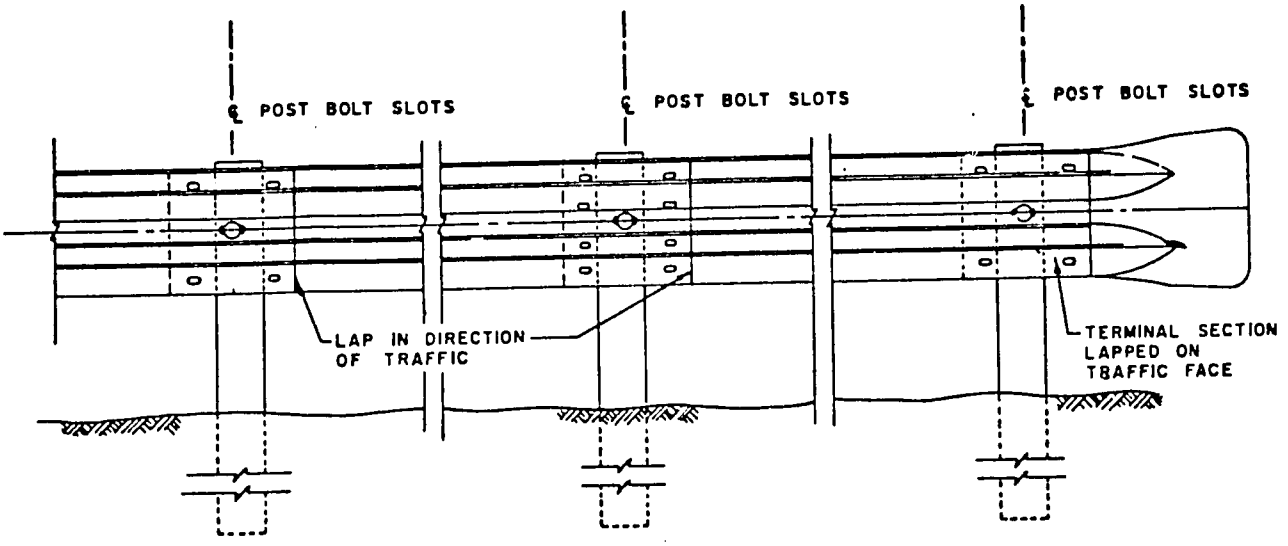
TYPICAL GUARD RAIL AND FENCE LAYOUT
AT BRIDGE APPROACH
NOT TO SCALE



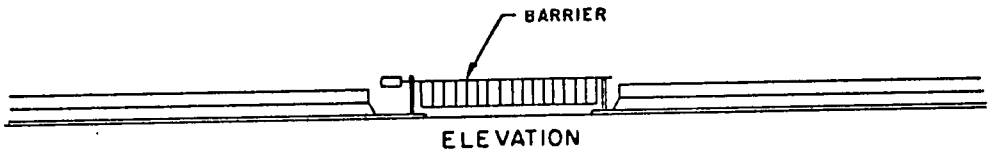
SPACING OF STRANDS SHOWN IS SUGGESTED ONLY AND MAY BE ALTERED AS APPROVED BY THE ENGINEER.

BARBED WIRE FENCE
NOT TO SCALE

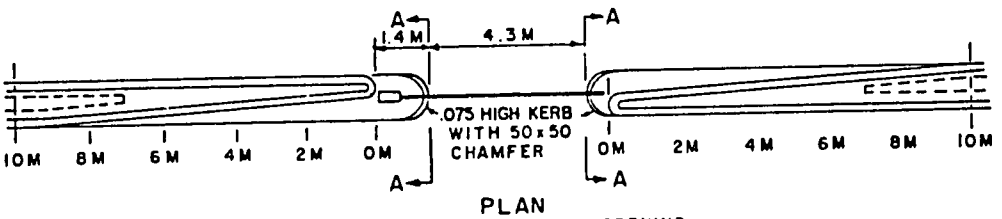
NOT TO SCALE	SYRIAN ARAB REPUBLIC Ministry of Communications	27	LATTAKIA TO ARIHA EX Preliminary Engine DETAIL 3-INCIDEN



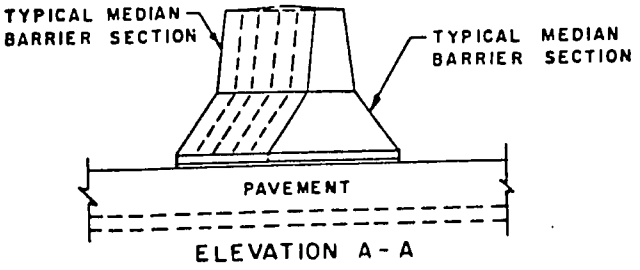
GUARD RAIL
NOT TO SCALE



ELEVATION



PLAN
DETAILS OF EMERGENCY OPENING



ELEVATION A - A

MEDIAN BARRIER
NOT TO SCALE

TO ARIHA EXPRESSWAY inary Engineering IL 3-INCIDENTAL	LYON associates, inc. in association with Morrison-Maierle Inc. and James R. Snitzler Associates, Inc.	PLATE NO. A - 27 SHEET NO. 27 a OF 27

General Economics

APPENDIX B

LYON

TABLE 1

SHARE OF THE AGRICULTURAL SECTOR IN GROSS DOMESTIC PRODUCT AT MARKET PRICES, SAR (MILLION SL)

	1976p	1975r	1974	1973	1972	1971	1971-7[illegible]
	. . . . . at current prices						
GDP	22,956	18,816	14,870	9,413	8.891	7,448	25.0
Agriculture	5,069	3,623	3,045	1,709	2,352	1,627	26.0
Agric. % GDP	22.1	19.3	20.5	18.2	26.5	21.8	-
	. . . . . at constant 1963 prices						
GDP	10,103	9,323	8,255	6,938	6,787	6,186	10.3
Agriculture	1,891	1,669	1,535	1,107	1,524	1,187	9.8
Agric. % GDP	18.7	17.9	18.5	15.9	22.5	19.2	-

Source: Statistical Abstract, 1977, Central Bureau of Statistics; Quarterly Bulletin, 1976, Central Bank of Syria, p. 43.

1/Annual average growth rate.

TABLE 2

VALUE OF AGRICULTURAL EXPORTS, SAR, 1970-1976 (MILLION SL)

Commodities	1970	1971	1972	1973	1974	1975	1976
Cotton, raw	309.8	313.9	373.1	448.3	715.0	439.4	637.7
Tobacco	17.6	14.0	20.3	45.2	67.0	81.5	93.2
Lentils	6.4	19.8	21.3	17.4	10.9	18.3	43.2
Fruits and vegetables	24.6	27.4	38.9	28.7	38.9	37.1	37.8
Wool	10.7	18.5	36.5	77.2	57.0	29.7	34.5
Raw hides and leather	8.8	7.7	17.0	34.0	19.3	23.4	28.5
Oil-cake	20.8	11.6	29.3	9.9	8.7	4.4	8.8
Live animals and meats	71.4	25.7	60.5	50.3	12.3	13.1	4.1
Wheat	-	0.1	84.2	45.0	0.1	-	2.7
Sub-total, Agriculture	470.1	438.7	681.1	756.0	929.2	646.9	890.5
Crude oil	128.8	176.0	200.2	291.2	1607.5	2376.9	2585.7
Other	176.4	174.2	259.4	294.1	377.3	417.1	665.1
Total	775.3	788.9	1140.7	1341.3	2914.0	3440.9	4141.3
Agric. % Total	60.6	55.6	59.7	56.4	31.9	18.8	21.5
Agric. % Total less crude oil	72.7	71.6	72.4	72.0	71.1	60.8	57.2
Cotton % Agric.	65.9	71.6	54.8	59.3	76.9	67.9	71.6
Cotton % Total	40.0	39.8	32.7	33.4	24.5	12.8	15.4

Source: Central Bureau of Statistics and General Directorate of Customs, in Quarterly Bulletin, Central Bank of Syria, 1976, Vol. XIV, No. 4, Tables 49 and 50.

TABLES 1 & 2

GENERAL ECONOMICS

LYON

TABLE 3

VALUE OF AGRICULTURAL (FOOD) IMPORTS, SAR, 1970-1976 (MILLION SL)

Commodities	1970	1971	1972	1973	1974	1975.	1976
Fruits and vegetables	60.1	81.3	81.1	102.9	122.8	124.4	196.8
Live animals and meats	22.4	30.0	33.4	44.2	126.7	82.7	27.1
Sugar, raw and refined	39.9	99.4	113.0	137.3	360.7	427.1	315.2
Other foodstuffs	236.0	376.7	258.4	284.8	581.3	520.3	559.7
Total, food	358.4	587.4	485.9	569.2	1,191.5	1,154.5	1,098.8
Total, all imports	1,374.6	1,703.5	2,081.9	2,342.0	4,571.0	6,236.2	9,203.3
Food, % all imports	26.1	34.5	23.3	24.3	26.1	18.5	11.9

Source: Central Bureau of Statistics and General Directorate of Customs, in Quarterly Bulletin, Central Bank of Syria, 1976, Vol. XIV, No. 4, Table 49 and 51.

TABLE 4

VALUE OF AGRICULTURAL PRODUCTION, SAR, 1963-1976, AT CONSTANT 1963 PRICES (MILLION SL)

Year	Plant Production	Animal Production	Total
1963	983.6	417.1	1,400.7
1964	1,109.8	461.7	1,571.5
1965	1,061.5	442.3	1,503.8
1966	794.9	489.8	1,248.7
1967	1,024.7	445.2	1,469.9
1968	951.8	355.2	1,307.0
1969	1,052.0	573.4	1,625.4
1970	846.7	526.2	1,372.9
1971	994.2	400.6	1,394.8
1972	1,411.3	352.5	1,763.8
1973	919.3	501.8	1,421.1
1974	1,466.4	404.0	1,870.4
1975	1,536.5	477.7	2,014.2
1976	1,723.7	550.1	2,273.8

Source: Statistical Abstracts 1971-77, Central Bureau of Statistics.

TABLES 3 & 4
GENERAL ECONOMICS
LYON

TABLE 5

LAND USE, 1976, SAR AND SELECTED MOHAFAZATS

Land Use	Syria Total	Mohafazats			
		Lattakia	Tartous	Idlib	Hama
	000 hectares				
Total area	18,518	230	189	610	888
Uncultivable	12,636	123	59	269	378
Steppe/pasture	8,549	3	1	77	115
Forests	457	83	31	47	129
Other 1/	3,630	37	27	145	134
Cultivable but unused 2/	338	12	-	-	1
Cultivated	5,544	95	130	341	509
Fallow	1,295	4	-	42	124
Cropped	4,249	91	130	299	385
of which: irrigated	547	17	16	13	75
rainfed	3,702	74	114	286	310
	percent of total				
Total area	100.0	100.0	100.0	100.0	100.0
Uncultivable	68.2	53.5	31.2	44.1	42.6
Steppe/pasture	46.2	1.3	.5	12.6	13.0
Forests	2.4	36.1	16.4	7.7	14.5
Other 1/	19.6	16.1	14.3	23.8	15.1
Cultivable but unused 2/	1.8	5.2	-	-	0.1
Cultivated	30.0	41.3	68.8	55.9	57.3
Fallow	7.0	1.7	-	6.9	14.0
Cropped	23.0	39.6	68.8	49.0	43.3
of which: irrigated	3.0	7.4	8.5	2.1	8.4
rainfed	20.0	32.2	60.3	46.9	34.9

Source: Central Bureau of Statistics, Statistical Abstract, 1977.

1/ Rocky and sandy lands, marshes, lakes, roads and buildings.

2/ Primarily land cultivable under good rainfall conditions.

TABLE 5
GENERAL ECONOMICS
LYON

TABLE 5

LAND USE, 1976, SAR AND SELECTED MOHAFAZATS

Land Use	Syria Total	Mohafazats			
		Lattakia	Tartous	Idlib	Hama
	- - - - - - - - - - 000 hectares - - - - - - - - - -				
l area	18,518	230	189	610	888
tivable	12,636	123	59	269	378
pe/pasture	8,549	3	1	77	115
sts	457	83	31	47	129
1/	3,630	37	27	145	134
vable but unused 2/	338	12	-	-	1
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ped	4,249	91	130	299	385
which: irrigated	547	17	16	13	75
rainfed	3,702	74	114	286	310
	- - - - - - - - - percent of total - - - - - - - - -				
l area	100.0	100.0	100.0	100.0	100.0
tivable	68.2	53.5	31.2	44.1	42.6
pe/pasture	46.2	1.3	.5	12.6	13.0
sts	2.4	36.1	16.4	7.7	14.5
1/	19.6	16.1	14.3	23.8	15.1
vable but unused 2/	1.8	5.2	-	-	0.1
vated	30.0	41.3	68.8	55.9	57.3
ow	7.0	1.7	-	6.9	14.0
ped	23.0	39.6	68.8	49.0	43.3
which: irrigated	3.0	7.4	8.5	2.1	8.4
rainfed	20.0	32.2	60.3	46.9	34.9

s: Central Bureau of Statistics, Statistical Abstract, 1977.

y and sandy lands, marshes, lakes, roads and buildings.

arily land cultivable under good rainfall conditions.

TABLE 5 A
GENERAL ECONOMICS
LYON

TABLE 6

ANNUAL AVERAGE GROWTH RATES IN CROP AREA, PRODUCTION AND YIELDS, SAR, BASED ON 3-YEAR AVERAGES, 1970/1972-1974/1976 1/

Crop		Three-Year Average Growth Rate		
		1970/72	1974/76	Rate (%)
Cereals Total	A	2,080	2,610	5.8
	P	1,421	2,479	14.9
	Y	0.68	0.95	8.7
Wheat	A	1,323	1,606	5.0
	P	1,032	1,657	12.6
	Y	0.78	1.03	7.2
Barley	A	718	960	7.5
	P	356	771	21.0
	Y	0.50	0.80	12.5
Dry Legumes Total	A	227	263	3.8
	P	159	211	7.3
	Y	0.70	0.80	3.4
Lentils	A	122	110	-2.1
	P	72	95	7.1
	Y	0.59	0.86	9.9
Vegetables Total	A	134	210	11.9
	P	1,146	2,177	17.4
	Y	8.55	10.37	4.9
Tomatoes	A	19	29	11.1
	P	252	429	8.3
	Y	1,326	14.79	2.2
Cucumbers	A	10	14	8.8
	P	68	167	25.0
	Y	6.8	11.93	15.1
Squash	A	4	7	15.0
	P	43	99	23.0
	Y	10.75	14.14	7.1
Industrial Crops Total	A	302	285	-1.4
	P	680	649	-1.2
	Y	2.25	2.28	0.3
Cotton	A	246	198	-5.3
	P	403	403	-
	Y	1.64	2.04	5.6
Sugar Beets	A	9	8	-3.0
	P	236	190	-5.3
	Y	26.22	23.75	-2.4

Continued--

TABLE 6
(Continued)

ANNUAL AVERAGE GROWTH RATES IN CROP AREA, PRODUCTION AND YIELDS, SAR, BASED ON 3-YEAR AVERAGES, 1970/1972-1974/1976 1/

Crop		Three-Year Average Growth Rate		
		1970/72	1974/76	Rate (%)
Tobacco	A	13	17	6.9
	P	9	11	5.1
	Y	0.69	0.65	-1.5
Peanuts	A	11	13	4.2
	P	20	21	1.2
	Y	1.82	1.62	-2.6
Fruits 2/ Total	A	270	369	8.1
	P	517	742	9.4
	Y	7.20	8.40	3.9
Olives 2/	A	133	196	9.9
	P	121	202	13.6
	Y	9.07	12.31	7.9
Apples 2/	A	8.3	16.7	19.1
	P	31	5.7	16.4
	Y	17.35	21.54	5.6
Citrus 2/ (Oranges)	A	1.6	2.4	10.7
	P	7.2	17.60	25.0
	Y	19.78	35.99	16.1

1/ Area (A) = 1,000 hec.; Production (P) - 1,000 MT; Yield (Y) = MT/hec.

2/ Yield = kg/bearing tree.

Source: Statistical Abstracts, 1971-77, Central Bureau of Statistics.

TABLE 6 A

GENERAL ECONOMICS

LYON

TABLE 7

LAND DISTRIBUTED UNDER THE AGRARIAN REFORM UP TO 1975, SYRIA AND SELECTED MOHAFAZATS (000 HEC.)

	Syria	Lattakia	Tartous	Idlib	Hama
Distributed Land					
Total	466.1	4.8	7.6	53.8	82.[illegible]
Rainfed	405.4	1.9	5.3	49.9	80.6
Irrigated and planted with trees	60.7	2.9	2.3	3.9	2.3
Excluded and sold land	329.8	1.0	2.6	2.2	25.7
Allocated land[1/]	254.0	0.5	0.5	17.8	2.9
Non-distributed land	351.4	-	-	9.9	3.2
Total Expropriated land					
Total	1,401.3	6.3	10.7	83.7	114.7
Uncultivated	185.5	1.0	1.6	18.6	22.5
Rainfed	1,147.8	2.3	6.6	61.2	89.5
Irrigated and planted with trees	68.0	3.0	2.5	3.9	2.7

Source: Statistical Abstract, 1977, CBS, p. 193.

1/ Allocated to cooperatives or various Ministries, etc.

TABLE 9

AREA OF CULTIVATED LAND BY PUBLIC, COOPERATIVE AND PRIVATE SECTORS, SYRIA AND SELECTED MOHAFAZATS, 1976 (000 HEC.)

	Syria	Lattakia	Tartous	Idlib	Hama
Cultivable area					
Total	5,882.0	107.0	130.0	341.0	510.0
Private	4,512.8	73.7	66.0	209.0	347.8
Cooperative	1,317.0	33.0	64.0	132.0	162.0
Public	52.2	0.3	-	-	0.2
Cultivated area					
Total	4,249.0	91.0	130.0	299.0	385.0
Private	3,370.2	65.7	61.5	214.7	277.2
Cooperative	826.9	25.1	68.5	84.3	107.6
Public	51.9	0.2	-	-	0.2

Source: Statistical Abstract, 1977, CBS p. 192.

TABLE 8

NUMBER AND SIZE OF AGRICULTURAL LAND HOLDINGS, SYRIA AND SELECTED MOHAFAZATS, 1970

	Syria	Lattakia	Tartous	Idlib	Hama
No. of families	1,064,486	68,283	50,381	68,477	82,441
No. of land holding families	476,636	34,857	33,978	42,188	47,861
Percentage	45	51	67	62	58
No. of agricultural holders	527,301	44,803	42,165	44,602	52,706
Average area of holding					
Cultivable land (dunums)	97	19	33	60	82
Uncult. land (dunums)	5.7	1.2	8.7	4.1	15.2
Total (dunums)	102.7	20.2	41.7	64.1	97.2
Total (hectares)	10.3	2.0	4.2	6.4	9.7

Source: Statistical Abstract, 1977, CBS, p. 181, from Agricultural Census of 1970-71.

TABLE 10

NUMBER, MEMBERSHIP AND AREA OF COOPERATIVES, SYRIA AND SELECTED MOHAFAZATS, 1976

	Syria	Lattakia	Tartous	Idlib	Hama
Number of cooperatives	3,413	260	283	380	318
Number of members	256,036	13,155	25,772	27,117	34,855
Area (000 hec)					
Total	1,317	33	64	132	162
Irrigated	204	5	8	5	43
Rainfed	1,007	20	29	105	114
Planted with trees	106	8	27	22	5

Source: Statistical Abstract, 1977, CBS, pp. 224-6.

TABLES 7, 8, 9 & 10
GENERAL ECONOMICS

LYON

TABLE 11

STATE FARMS FOR PLANT PRODUCTION, SYRIA AND LATTAKIA MOHAFAZAT, 1976

	Syria (13 farms) 1/				Lattakia (1 farm)	
	Area		Production		Area	Prod.
	Hec.	%2/	Tons	%2/		
Total area	91,102	2	-	-	238	-
Total harvested area	50,429	1	-	-	128	-
Cereals	36,698	1	24,345	1	-	-
Legumes	8,536	3	1,621	1	-	-
Vegetables	-	-	-	-	-	-
Industrial Crops	209	0	268	0	19	19
Pastoral Crops	4,486	19	87,799	25	-	-
Fruit	500	0	2,382	0	109	1,603
Animals	-	-	-	-	-	-

Source: Statistical Abstract, 1977, CBS, p. 22.

1/ Area and production data for 11 only.

2/ Percent of national total.

TABLE 12

STATE FARMS FOR ANIMAL PRODUCTION, SYRIA AND LATTAKIA MOHAFAZAT, 1976

	Units	Syria (7 farms)		Lattakia
		Total	%1/	(1 farm-total)
Total area				
Total	hec	1,644	0	74
Rainfed	hec	749	0	35
Irrigated	hec	895	0	39
Pastoral Crops				
Area	hec	1,438	5	54
Production	tons	19,478	7	2,081
Animals				
Total cows	No.	4,602	1	248
Milking cows	No.	3,145	1	150
Sheep and goats	No.	-	-	-.
Milk Production	Tons	7,655	1	433

Source: Statistical Abstract, 1977, CBS, p. 223.

1/ Percent of national total.

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TABLE 13

OUTSTANDING LOANS OF THE AGRICULTURAL COOPERATIVE BANK, 1970-1976, SAR (MILLION SL) AND SELECTED MOHAFAZATS (THOUSAND SL) 1/ 2/

End of Period	Syria Total	Lattakia				Tartous			
		Ind.	Co-op.	Public	Total	Ind.	Co-op.	Public	Total
1970	209.0	57	51	-	108	71	52	-	123
1971	234.0	1,824	1,946	-	3,770	1,321	4,455	3	5,779
1972	236.0	1,840	1,715	-	3,555	1,316	3,143	-	4,459
1973	285.0	1,545	1,370	-	2,915	1,741	4,942	41	6,724
1974	266.8	1,863	1,483	-	3,346	1,703	5,557	-	7,260
1975	349.5	4,101	1,698	-	5,799	3,724	10,502	-	14,226
1976	458.1	3,258	3,990	100	7,348	2,472	12,843	6	15,321

End of Period	Idlib				Hama			
	Ind.	Co-op.	Public	Total	Ind.	Co-op.	Public	Total
1970	135	61	2	198	287	33	19	339
1971	3,693	4,229	-	7,922	11,769	5,391	100	17,260
1972	2,856	3,220	1,600	7,676	8,520	5,403	1,677	15,600
1973	3,785	4,121	1,115	9,021	7,844	4,114	1,191	13,149
1974	6,236	3,417	300	9,953	10,330	5,080	1,444	16,754
1975	8,968	6,055	298	15,321	15,753	12,442	1,974	30,169
1976	8,945	7,667	332	16,944	13,429	16,833	2,332	32,594

1/ Ind. = Individuals; Co-op. = Cooperatives.

2/ Location of branch banks as follows:
Lattakia Mohafazat: Lattakia; Jebleh; Al Hafeh; and Kirdaha.
Tartous Mohafazat: Sheikh Badr; Safita; Banyas; and (to be established) Tartous.
Idlib Mohafazat: Idlib; Harim; Ma'arra' Jisr esh Shughur; and Saraqib.
Hama Mohafazat: Hama; Al Ghab; Salamiye ; Masyaf; and (to be established) Mhardeh.

Source: Agricultural Cooperative Bank, Main Office, Damascus.

TABLE 13

GENERAL ECONOMICS

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TABLE 14

OUTSTANDING LOANS OF SPECIALIZED BANKS BY ECONOMIC SECTOR, SAR, 1970-1976 (MILLION SL)

End of Period	Agriculture[1/]	Commerce[1/]	Industry[1/]	Construction	Services/ Misc.	Total
1970	277.9	938.8	113.[illegible]	47.1	14.0	1,391.4
1971	298.1	1,053.4	110.[illegible]	58.2	15.2	1,535.5
1972	301.8	1,393.5	142.[illegible]	77.0	10.5	1,925.4
1973	347.5	1,782.1	165.[illegible]	92.2	10.0	2,397.0
1974	328.0	3,007.0	236.[illegible]	133.2	16.2	3,720.4
1975	407.5	4,557.5	299.[illegible]	238.6	26.3	5,529.2
1976[2/]	514.7	6,250.7	708.[illegible]	444.4	31.2	7,949.1

Source: Quarterly Bulletin, Central Bank of Syria, 1976, Vol. XIV, No. 4, Table 11.

1/ The Quarterly Bulletin notes that "a significant part of commercial credit is actually utilized to finance the agricultural and industrial sectors.

2/ Preliminary

TABLE 16

UTILIZATION OF FERTILIZER IN SYRIA, 1969/1970-1975/1976, AND BY SELECTED MOHAFAZATS, 1975/1976 (000 MT)

Year	Total	Potassium	Phosphatic	Nitrogen
1969/70	28.9	0.9	7.8	20.2
71	40.4	1.4	12.9	26.1
72	53.2	1.3	17.0	34.9
73	49.4	1.6	14.9	32.9
74	42.5	1.8	7.5	33.2
75	52.7	1.6	13.4	37.7
1975/76	70.5	1.6	21.7	47.2
Mohafazats				
Lattakia	4.6	0.4	0.8	3.4
Tartous	3.6	0.2	0.8	2.6
Idlib	3.7	-	1.6	2.1
Hama	7.0	0.2	1.8	5.0

Source: Annual Agricultural Statistical Abstract, 1976, MOA, Table 91.

TABLE 15

PRODUCTION AND IMPORT OF AGRICULTURAL FERTILIZERS AND INSECTICIDES, SAR, 1970-1976

Year	Fertilizer (000 MT)						Insecticides Imported (MT)
	Manufactured 1/	Imported					
		Compound	Potassium	Phosphatic	Nitrogen	Total	
1970	-	25	2/	34	95	154	1.2
1971	-	30	-	42	98	170	0.6
1972	56	29	1	13	74	117	2.0
1973	33	13	-	5	26	44	1.9
1974	53	-	2	34	80	116	1.2
1975	86	13	2/	51	113	177	1.5
1976	82	2	-	16	3	21	2.0

Source: Statistical Abstract, 1977, Central Bureau of Statistics, Pp. 247 & 371.

1/Azotic

2/Less than 500 MT.

TABLES 14, 15 & 16
GENERAL ECONOMICS

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TABLE 17

AGRICULTURAL MACHINERY USED IN CULTIVATION, SAR, AND BY SELECTED MOHAFAZATS, 1970 AND 1976
(NUMBER OF UNITS)

Item	Syria		Lattakia		Tartous		Idlib	
	1970	1976	1970	1976	1970	1976	1970	1976
Tractors	9,031	18,567	685	768	691	816	1,528	1,929
Ploughs, modern	11,797	23,714	592	625	450	435	2,434	2,698
Disk harrow & pulverizer	929	2,486	5	11	-	-	64	34
Seeders	1,838	2,020	5	4	-	-	41	61
Threshers	474	1,448	137	119	122	141	130	167
Combines (harvester/ thresher)	1,455	2,146	4	6	16	25	119	141
Water raising pumps	29,042	40,500	1,517	1,760	1,657	1,822	1,031	1,212

Item	Al Ghab	
	1970	1976
Tractors	608	751
Ploughs, modern	606	722
Disk harrow & pulverizer	364	424
Seeders	14	50
Threshers	19	41
Combines (harvester/ thresher)	98	159
Water raising pumps	553	759

Source: Annual Agricultural Statistical Abstract, 1976, MOTA, Tables 88 and 89.

TABLE 17
GENERAL ECONOMICS
LYON

TABLE 18

OFFICIAL PRODUCER PRICES ESTABLISHED FOR AGRICULTURAL COMMODITIES, 1968-1977 (SL PER MT)

Crop Year	Wheat		Barley		Lentils		Seed	Sugar Beets		Peanuts	
	Hard	Soft	Light	Dark	Golden	Red	Cotton	Summer	Autumn	Light	Dark
1968	300	290	160	155	-	-	800	-	-	-	-
1969	300	290	160	155	370	360	800	-	-	-	-
1970	300	290	130	125	450	440	800	65	70	-	-
1971	300	290	180	175	400	400	800	65	70	-	-
1972	330	320	230	225	440	430	840	65	70	-	-
1973	380	370	280	275	500	490	900	80	88	900	850
1974	460	440	350	345	600	590	1,150	115	130	1,250	1,200
1975	520	500	410	400	1,250	1,150	1,350	140	125	1,600	1,500
1976	520	500	410	400	1,350	1,250	1,450	140	125	1,600	1,500
1977	630	600	450	440	1,100	1,000	1,700	145	130	1,800	350

Source: Annual Agricultural Statistical Abstract, 1976, MOA Table 94.

TABLE 19

NUMBER AND DISTRIBUTION OF BRANCH BANKS IN SYRIA AND SELECTED MOHAFAZATS AS OF JANUARY 1, 1977

Name of bank	Syria	Mohafazat and city 1/		
		Lattakia	Tartous	Idlib
Central Bank of Syria	10	Lattakia	Tartous	Idlib
Commercial Bank of Syria	27	Lattakia	Tartous	Idlib
Industrial Bank	6	Lattakia	-	-
Agricultural Cooperative Bank	54	Lattakia Jebleh	Tartous Sahta	Idlib Jisr esh Shughur
		Kirdaha Al Hafeh	Banyas Al Sheikh Badr	Harim Ma'arra Saraqib
Real Estate Bank	10	Lattakia	Tartous	Idlib
Popular Credit Bank	30	Lattakia Jebleh	Tartous Banyas	Idlib Jisr esh Shughur
				Ma'arra Al Bab Salheen
Total	137	10	9	13

1/ Each city shown contains one branch of the bank for which it is listed.

Source: Central Bank of Syria, Quarterly Bulletin, 1976.

TABLES 18 & 19
GENERAL ECONOMICS

LYON

TABLE 20

STRUCTURE OF SPECIALIZED BANKS' INTEREST RATES, SYRIA

1. Commercial Bank of Syria

Its discount rate to the public sector is 7 per cent, and 8 per cent to the private sector. On loans and advances, its rates are as follows (per cent):

	Public Sector	Private Sector
Against export contracts or export documentary credits	5-1/4	6-3/4
Against storage of agricultural products and goods to be exported	5-1/2	7
Against other mortgages	7	8-1/2
On overdrafts	7-1/2	9

2. Industrial Bank

Rates in effect since July 1970 (per cent):

	Producer & Professional Cooperatives	Public Sector	Private Sector
Discounts:			
Industrial bills	4	5-1/2	6-1/2
Commercial bills	4	6	7
Loans & advances:			
Short-term	4-1/2	5-1/2	6-1/2
Medium-term	4-1/2	6	7
Overdrafts:	7	7	8

3. Agricultural Cooperative Bank

Rates in effect since July 1970. Interest charged on loans to cooperatives in 4 per cent, and to individuals, 5-1/2 per cent. On loans to individuals, in excess of 50,000 Syrian pounds, the rate is 7-1/2 per cent per year.

Continued--

TABLE 20
(Continued)

4. Real Estate Bank

Rates in effect since July 1970 (per cent):

	Up to 1 Year	Up to 5 Years	Up to 10 Years
Discounts to:			
building tradesmen	7	7-1/2	-
Loans & Advances to:			
cooperatives & housing institutions	5-1/2	6	6-1/2
Individuals, hotels & tourist establishments	6	6-1/2	7
Building tradesmen & companies	7	7-1/2	-

5. Popular Credit Bank

Rates in effect since July 1974 (per cent):

		Loans & Allowances		
Borrower	Discounts	Short-term	Medium-term	Long-term
Consumer cooperatives	6-1/2	7	7-1/2	-
Producer cooperatives	6	6-1/4	6-1/2	-
Hospitals, labs, & medical institutions	-	7	7-1/4	7-1/2
Small merchants & tradesmen	7-1/2	8	8-1/2	-
Small industries & artisans	6-1/4	6-1/2	7-1/2	-
Limited-income groups	-	8	9	-

On overdrawn current accounts backed by collateral, the interest charge is 8 per cent. Loans to owners of housing savings accounts is 7-1/2 per cent.

Source: Central Bank of Syria, Quarterly Bulletin, 1976.

TABLE 20 A
GENERAL ECONOMICS
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TABLE 21

DIRECTION OF FOREIGN TRADE, SAR, 1968, 1972 AND 1976 (SL MILLION)

Destination or Origin	1968		1972		1976	
	Value	%	Value	%	Value	%
A. Exports (FOB)						
Arab Common Market & Arab Economic Unity Council 1/	112.7	16.7	90.7	8.2	221.3	5.3
Other Arab Countries 2/	167.3	24.9	184.4	16.8	231.1	5.6
Socialist Countries 3/	156.6	23.3	423.5	38.6	1046.2	25.3
European Common Market Countries 4/	128.3	19.0	80.8	7.4	2016.2	48.7
Other European Countries 4/	45.0	6.7	124.7	11.3	409.9	9.9
U.S.A. and Canada	3.7	0.6	8.4	0.8	43.3	1.0
Rest of the World	59.4	8.8	185.1	16.9	173.3	4.2
Total	673.0	100.0	1097.6	100.0	4141.3	100.0
B. Imports (CIF)						
Arab Common Market & Arab Economic Unity Council 1/	105.4	8.8	150.2	7.3	384.9	4.2
Other Arab Countries 2/	61.8	5.2	140.5	6.8	780.3	8.5
Socialist Countries 3/	401.3	33.7	424.0	20.6	942.3	10.2
European Common Market Countries 4/	354.9	29.8	659.4	32.0	3076.3	33.4
Other European Countries 5/	84.2	7.0	195.5	9.5	2234.0	24.3
U.S.A. and Canada	87.5	7.3	136.2	6.6	548.6	6.0
Rest of the World	97.5	8.2	354.9	17.2	1236.9	13.4
Total	1192.6	100.0	2060.7	100.0	9203.3	100.0

1/ Comprises Jordan, Iraq, Kuwait, Egypt, Yemen, Sudan, and from January 1975 also includes Libya, Somalia, Yemen Democratic Republic and Arab Emirates.

2/ Algeria, Bahrein, Qatar, Lebanon, Morocco, Palestine, Tunisia, Saudi Arabia. It also includes Libya and Yemen Democratic Republic up to January 1975.

3/ Bulgaria, People's Republic of China, Czechoslovakia, German Democratic Republic, Hungary, Poland, Romania, USSR and Yugoslavia.

4/ Belgium, France, Federal Republic of Germany, Netherlands, Italy, Luxembourg, United Kingdom, Ireland and Denmark.

5/ Spain, Sweden, Portugal, Greece, Turkey, Finland, Austria, Switzerland, and Norway.

Source: Central Bureau of Statistics and the General Directorate of Customs.

TABLE 22

COMPOSITION OF SYRIAN EXPORTS, 1968 1972, AND 1976 (000 MT)

Items	1968		1972		1976	
	Quantity	%	Quantity	%	Quantity	%
Crude petroleum	833	56.9	4,197	81.7	9,662	88.2
Phosphate	-	-	62	1.2	422	3.9
Raw cotton	100	6.8	116	2.3	118	1.1
Textiles	17	1.2	36	0.7	36	0.3
Fruits, vegetables	105	7.2	104	2.0	25	0.2
Lentils	28	1.9	29	0.6	22	0.2
Oilcake	89	6.1	79	1.5	13	0.3
Wool	6	0.4	10	0.2	6	0.3
Tobacco	2	0.1	4	0.1	4	0.3
Wheat	5	0.3	278	5.4	3	0.3
Raw Hides & leather[1]	2	0.1	3	0.1	3	0.3
Meat (fresh & canned)	1	-	[2]	-	0	0
Live animals (1,000 head)	(763)	-	(234)	-	(30)	-
All other	277	18.9	216	4.2	635[3]	5.8
Total	1,465	100.0	5,134	100.0	10,949	100.0

[1] Excluding furs.

[2] Less than 500 metric tons.

[3] Includes 389,000 tons of petroleum products.

Source: Quarterly Bulletin 1976, Central Bank of Syria.

TABLES 21 & 22
GENERAL ECONOMICS

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TABLE 23

COMPOSITION OF SYRIAN IMPORTS, 1968, 1972, AND 1976 (000 MT)

Items	1968		1972		1976	
	Quantity	%	Quantity	%	Quantity	%
Fuel	1,738	57.5	721	26.2	2,828	45.2
Metals & metal products	212	7.0	365	13.2	813	13.0
Foodstuffs [1/]	401	13.3	443	16.1	308	4.9
Fruits & vegetables	161	5.3	167	6.1	266	4.3
Sugar (raw & refined)	59	2.0	152	5.5	184	2.9
Chemicals & chemical products	178	5.9	186	6.7	107	1.7
Wood & wood products	65	2.2	98	3.6	103	1.6
Machinery & equipment	37	1.2	50	1.8	98	1.6
Transport equipment	17	0.6	17	0.6	97	1.6
Resins & artificial rubber	13	0.4	34	1.2	60	1.0
Textiles & textile products	30	1.0	44	1.6	57	0.9
Paper & paper products	22	0.7	30	1.1	25	0.4
Live animals, meats, & canned meats	6	0.2	5	0.2	6	0.1
Cement	-	-	362	13.1	1,125	18.0
All other	83	2.7	82	3.0	174	2.8
Total	3,022	100.0	2,756	100.0	6,251	100.0

[1/] Other than fruits and vegetables; live animals, meat and canned meat; and sugar.

Source: Quarterly Bulletin 1976, Central Bank of Syria.

TABLE 24

SYRIA'S EXPENDITURES ON THE GROSS DOMESTIC PRODUCT, 1969, 1972 AND 1976 (MILLION SL AT 1963 PRICES)

Type of Expenditure	1969	1972	1976
Consumption, private	3,809	4,569	6,094
Gross domestic investment	932	1,012	2,494
Private	391	412	786
Public	541	600	1,708
Government purchases of goods and services	1,003	1,427	2,583
Net foreign sector	-258	-222	-1,068
Exports 1/	1,180	1,186	1,442
Imports 1/	1,438	1,408	2,510
Gross domestic product at market prices	5,486	6,786	10,103

1/Of goods and services.

Source: Central Bank of Syria, Quarterly Bulletin, 1976, p. 39.

TABLES 23 & 24
GENERAL ECONOMICS

LYON

TABLE 25

SYRIAN EXPENDITURES IN THE CONSOLIDATED BUDGET ESTIMATES, 1970-1977 1/ (IN MILLIONS OF SYRIAN POUNDS)

Year	Ordinary	%	Development	%	Total
1970	1383.5	49.8	1396.5	50.2	2780.0
1971	1442.7	50.3	1426.3	49.7	2869.0
1972	1593.6	50.0	1594.4	50.0	3188.0
1973	1670.0	48.9	1743.0	51.1	3413.0
1974	2882.1	44.5	3598.4	55.5	6480.5
1975	4594.8	44.0	5850.7	56.0	10445.6
1976	5895.6	35.6	10668.4	64.4	16564.0
1977	6644.5	39.0	10403.9	61.0	17048.4

Source: Statistical Abstract, 1977, p. 625.

1/ The fiscal year is the same as the calendar year for the period shown.

TABLE 26

ESTIMATED EXPENDITURES IN THE CONSOLIDATED BUDGET, 1970 AND 1977
(IN MILLIONS OF SYRIAN POUNDS)

Type of Expenditure	1970		1977	
	Amount	% of Total	Amount	% of Total
Industry & Mining[1]	443.6	16.0	4794.3	28.2
National security	679.3	24.4	4160.0	24.4
Communication utilities and public works	371.6	13.4	1675.5	9.8
Culture & Information	293.4	10.6	1578.1	9.3
Agriculture and land reclamation	554.5	19.9	1422.1	8.3
Executive, legislative, and judicial	45.8	1.6	1351.2	7.9
Economy & Finance	276.2	9.9	1144.4	6.7
Social welfare	58.7	2.1	133.6	0.8
Other outlays	56.9	2.1	789.6	4.6
Total	2780.0	100.0	17048.4	100.0

Source: Statistical Abstract, 1977, pp. 626-641; 1971, pp. 286-291.

[1] Includes petroleum activities.

TABLES 25 & 26
GENERAL ECONOMICS

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TABLE 27

MOTOR VEHICLE REGISTRATIONS BY TYPE OF VEHICLE FOR THE MOHAFAZATS OF LATTAKIA, TARTOUS, IDLIB AND HAMA, 1971 AND 1976

Type of Vehicles 1/	Lattakia		Tartous		Idlib		Hama	
	1971	1976	1971	1976	1971	1976	1971	1976
Automobiles	1,745	2,781	219	1,335	141	426	937	4,589
Taxis	889	879	131	550	48	202	358	1,299
Private	856	1,902	88	785	93	224	579	3,290
Government	-	-	-	-	-	-	-	-
Buses	90	231	7	100	4	135	109	382
Public	50	228	2	99	4	134	108	362
Private	27	3	4	1	-	1	1	20
Government	13	-	1	-	-	-	-	-
Goods Vehicles	622	1,045	64	424	77	298	596	3,075
Public	461	866	62	371	65	278	504	1,516
Private	161	179	2	53	12	20	92	1,559
Government	-	-	-	-	-	-	-	-
Tankers	24	129	2	-	4	6	77	299
Public	23	128	2	-	4	6	75	272
Private	1	1	-	-	-	-	2	27
Government	-	-	-	-	-	-	-	-
Pickups 2/	168	418	8	771	40	1,018	651	1,975
Public	167	269	6	219	26	241	175	952
Private	1	149	2	552	14	777	476	1,023
Land Rovers (4-wheel drive)	250	212	97	163	-	-	18	8
Total	2,899	4,816	397	2,793	266	1,883	2,388	10,328
Annual Average Increase, 1976 over 1971	10.7		48.0		48.0		34.0	

1/ Excludes "transit" vehicles, "temporary entrance" vehicles and two-wheel motorcycles.

2/ Includes four-wheel and three-wheel motorcycle pickups.

Source: Statistical Abstract, 1973 and 1977, pp. 276-277.

TABLE 27

GENERAL ECONOMICS

TABLE 28

FREIGHT TONNAGE BY RAILWAY AND COMMODITY, SAR, 1971-1976

Commodity	Northern Railways (tons) 1971	1972	1973	1974	1975	1976
Fruits and vegetables	5,380	710	2,688	-	-	-
Rice	-	-	-	-	-	11,977
Flour	-	-	-	-	-	133,841
Wheat	7,398	42,565	-	-	-	-
Other Cereals	-	27,751	6,900	18,416	14,570	-
Livestock (live)	54,246	43,725	39,247	29,624	34,549	19,833
Animal products	12,389	4,432	10,473	-	12,070	-
Sugar	23,650	58,581	1,891	10,190	22,186	38,530
Wood	1,250	3,730	4,627	2,900	23,932	42,248
Straw	-	-	-	-	-	3,298
Cotton, lint and seed	252	6,751	10,773	9,142	30,100	26,586
Phosphates	-	-	-	-	-	-
Rubber tires	355	220	-	-	7,702	-
Paper and Paper board	-	-	-	-	10,478	1,608
Cement	172,914	168,670	141,851	113,025	110,787	118,446
Iron bars	200	64,348	20,083	-	28,307	136,245
Iron sheets	-	-	-	-	-	-
Iron	5,630	-	62,737	55,338	105,542	-
Petroleum	349,261	264,024	-	-	-	384,227
Water	-	-	-	-	-	-
Glassware	82	-	-	-	108	-
Fuel oil	150,234	145,477	178,630	156,613	120,805	122,612
Clothing and textiles	9,694	10,475	12,192	35	23,954	-
Refrigerators and washing machines	-	-	-	-	-	-
Motor cars and locomotives	5,950	30,825	28,325	-	107,798	2,890
Machines and tools	102,520	16,351	77,361	-	116,821	-
Empty vessels	-	-	-	-	-	-
Carpets	10,355	10,915	-	43,839	-	71,838
Miscellaneous	124,959	173,122	125,216	472,415	222,935	536,201
Total	1,036,719	1,072,672	722,994	912,537	992,644	1,650,380

Source: Ministry of Transport, Annual Statistical Report, 1977.

TABLE 28

FREIGHT TONNAGE BY RAILWAY AND COMMODITY, SAR, 1971-1976

Commodity	Both Railways Combined (tons) 1971	1972	1973	1974	1975	1976
Fruits and vegetables	5,583	1,085	3,048	209	179	62
Rice	833	4,265	247	652	-	11,977
Flour	20,058	23,836	15,041	36,715	19,554	138,738
Wheat	12,969	42,565	-	-	-	-
Other Cereals	465	27,836	7,979	19,517	18,551	16
Livestock (live)	55,983	43,797	39,636	32,476	36,300	20,036
Animal products	12,389	5,042	10,934	-	12,070	124
Sugar	30,426	64,319	19,354	19,661	23,191	39,149
Wood	1,916	3,945	5,927	4,498	23,934	42,248
Straw	74	126	210	262	174	3,338
Cotton, lint and seed	252	6,751	10,773	9,142	30,370	27,007
Phosphates	38,372	48,428	43,972	51,798	16,289	11
Rubber tires	427	254	165	268	7,751	35
Paper and Paper board	3,898	726	1,085	6,700	10,988	1,608
Cement	172,914	168,886	141,884	113,399	111,036	118,468
Iron bars	200	64,348	20,579	-	28,307	136,245
Iron sheets	768	-	-	-	-	-
Iron	6,236	340	62,748	57,207	105,542	-
Petroleum	399,261	264,230	202	-	206	393,618
Water	242	2,917	8,407	7,334	22,824	-
Glassware	82	67	27	1,845	108	190
Fuel oil	150,234	145,477	178,696	156,786	120,913	122,612
Clothing and textiles	11,440	10,813	15,019	2,617	24,366	19
Refrigerators and washing machines	504	8	492	1,338	111	28
Motor cars and locomotives	5,950	30,882	28,355	268	108,020	2,890
Machines and tools	102,520	16,412	80,094	2,146	116,956	-
Empty vessels	292	1,668	653	1,197	93	167
Carpets	10,355	10,915	-	43,839	-	71,838
Miscellaneous	138,833	182,574	132,929	485,779	227,433	541,883
Total	1,134,830	1,172,512	828,456	1,055,653	1,065,266	1,672,307

Source: Ministry of Transport, Annual Statistical Report, 1977.

TABLE 28

FREIGHT TONNAGE BY RAILWAY AND COMMODITY, SAR, 1971-1976

Commodity	Hedjaz Railways (tons) 1971	1972	1973	1974	1975	1976
Fruits and vegetables	203	375	360	209	179	62
Rice	833	4,265	247	652	-	-
Flour	20,058	23,836	15,041	36,715	19,554	4,897
Wheat	5,565	-	-	-	-	-
Other Cereals	465	85	1,079	1,101	3,981	16
Livestock (live)	1,737	72	389	2,852	1,751	203
Animal products	-	610	461	-	-	124
Sugar	6,776	5,738	17,463	9,471	1,005	619
Wood	666	215	1,300	1,598	2	-
Straw	74	126	210	262	174	40
Cotton, lint and seed	-	-	-	-	270	421
Phosphates	38,372	48,428	43,972	51,798	16,283	11
Rubber tires	72	34	165	268	49	35
Paper and Paper board	3,898	726	1,085	6,700	510	-
Cement	-	216	33	374	249	22
Iron bars	-	-	496	-	-	-
Iron sheets	768	-	-	-	-	-
Iron	606	340	11	869	-	-
Petroleum	-	206	202	-	206	9,391
Water	242	2,917	8,407	7,334	22,824	-
Glassware	-	67	27	1,845	-	-
Fuel oil	-	-	66	173	108	-
Clothing and textiles	2,746	338	2,827	2,582	412	19
Refrigerators and washing machines	504	8	492	1,338	111	24
Motor cars and locomotives	-	57	30	268	222	-
Machines and tools	-	61	2,733	2,146	135	-
Empty vessels	292	1,668	653	1,197	93	167
Carpets	-	-	-	-	-	-
Miscellaneous	13,874	9,452	7,713	13,364	4,498	5,682
Total	98,111	99,840	105,462	143,116	72,622	21,734

Source: Ministry of Transport, Annual Statistical Report, 1977.

TABLE 28 A
GENERAL ECONOMICS

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TABLE 29

LATTAKIA ARIHA PRIMARY ZONE OF INFLUENCE, CULTIVABLE LAND AREA, 1976 1/ (000 Hec.)

Location	Cultivable Land Area		
	Total	Rainfed	Irrigated
In Mohafazat:			
Lattakia	107.4	90.4	17.0
Idlib	341.0	327.7	13.3
Total	448.4	418.1	30.3
% of total	100.0	93.2	6.8
In Zone of Influence:			
Lattakia	44.8	38.0	6.8
Idlib	124.4	117.9	6.5
Total	169.2	155.9	13.3
% of total	100.0	92.1	7.9

1/ Cultivable land area in zone of influence as percent of cultivable land area in mohafazat calculated from 1970-1971 Agricultural Census Mantika data on arable land areas, see Table 30.

TABLE 30

LATTAKIA-ARIHA PRIMARY ZONE OF INFLUENCE, ARABLE LAND AREAS, 1970-1971 (HECTARES)

Mohafazat and Mantika	Agricultural Activity in Z.I. (%) 1/	Arable Land in Mantikas 2/			Arable Land in Zone of Influence		
		Total	Rainfed	Irrigated	Total	Rainfed	Irrigated
Lattakia							
Lattakia	38	31,050	27,453	3,597	11,799	10,432	1,367
Haffa	48	19,072	18,055	1,017	9,154	8,666	488
Sub-total	-	50,122	45,508	4,614	20,953	19,098	1,855
Idlib							
Idlib	7	72,114	68,979	3,135	5,048	4,829	219
Ariha	60	26,476	25,118	1,358	15,886	15,071	815
Jisr	100	23,909	21,666	2,243	23,909	21,666	2,243
Sub-total	-	122,499	115,763	6,736	44,843	41,566	3,277
Total	-	172,621	161,271	11,350	65,796	60,664	5,132
Z.I. areas as per cent of Mohafazat areas:							
Lattakia	-	-	-	-	41.8	42.0	40.2
Idlib	-	-	-	-	36.6	35.9	46.6
Total	-	-	-	-	38.1	37.6	45.2

1/From Table B-27.

2/From 1970-1971 Agricultural Census Data, First Stage--Basic Data, Lattakia and Idlib Mohafazats.

TABLE 31

LATTAKIA-MOHAFAZAT: TOTAL POPULATION BY MANTIKA AND NAHIA, 1960 AND 1970

Mantika and Nahia	1960 1/	1970 2/
Lattakia:		
Center of Lattakia (city & villages)	98,565	165,309
Ein Al Beida	20,994	23,114
Kastal Mu-af	9,622	10,856
Kabalich	3,433	6,861
Kassab	3,838	3,048
Total	136,452	209,188
Jablch:		
Center of Jablch	15,038	38,891
Al Hussan	24,797	28,592
Ein Al Sharkie	22,509	24,662
Total	62,344	92,145
Al Haffa:		
Center of Haffa	9,040	15,649
Slinfeh	11,897	12,192
Kansaba	13,898	14,962
Muzeir	10,818	11,288
Total	45,653	54,091
Al Kirdaha:		
Center of Kirdaha	18,357	21,791
Al Fakhoura	12,004	12,337
Total	30,361	34,128
Grand Total	274,810 3/	389,552

1/ Data adjusted by the Consultant to reflect changes in administrative boundaries between 1960 and 1970. Data are from Central Bureau of Statistics, Census of Population, 1960, Lattakia Mohafazat.

2/ Source: Central Bureau of Statistics, Population Census, 1970, Vol. 8.

3/ Excludes Bedouin population of 2,318.

TABLES 29,30 & 31

GENERAL ECONOMICS

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TABLE 32

IDLIB MOHAFAZAT: TOTAL POPULATION BY MANTIKA AND NAHIA, 1960 AND 1970

Mantika and Nahia	1960 1/	1970 2/
Idlib		
Center of Idlib (city & villages)	39,270	54,193
Abou Zuhour	5,875	8,402
Saraqib	23,191	24,844
Mu'arat Misrin	22,573	26,847
Total	90,909	114,286
Ariha		
Center of Ariha	32,159	37,089
Ihsem	16,698	18,748
Total	48,857	55,837
Jisr esh Shughur		
Center of Jisr esh Shughur	32,159	42,765
Bdama	8,967	9,562
Darkoush	9,277	10,144
Total	50,403	62,471
Harim		
Center of Harim	12,060	14,837
Dana	12,369	15,344
Salkin	14,533	18,255
Kafret Kharim	15,770	17,632
Total	54,732	66,068
Maarat an Numan		
Center of Maarrat an Numan	26,593	36,438
Khan Shekhoun	14,842	22,555
Sinjan	8,040	9,594
Kafr Nubl	14,842	16,446
Total	64,317	85,033
Grand Total	309,218 3/	383,695

1/ Data adjusted by the consultant to reflect changes in administrative boundaries between 1960 and 1970. Data are from Central Bureau of Statistics, Census of Population, 1960, Idlib Mohafazat.
2/ Source: Central Bureau of Statistics, Population Census 1970, Vol. 9.
3/ Excludes Bedouin population of 23,560.

TABLE 34

LATTAKIA-ARIHA PRIMARY ZONE OF INFLUENCE, URBAN AND RURAL POPULATION BY MANTIKA, 1970

Mohafazat and Mantika	Urban		Rural		Total	
	No.	%	No.	%	No.	%
Lattakia						
Lattakia	38,972	50.4	38,428	49.6	77,400	100.0
Haffa	3,301	12.7	22,663	87.3	25,964	100.0
Idlib						
Idlib	17,258	62.9	10,171	37.1	27,429	100.0
Ariha	12,944	37.4	21,675	62.6	34,619	100.0
Jisr esh Shughur	15,163	24.3	47,308	75.7	62,471	100.0
Hama						
Al Ghab	-	-	7,075	100.0	7,075	100.0
Total or average	87,638	37.3	147,320	62.7	234,958	100.0

Source: Computed from Population Census, 1970.

TABLE 33

LATTAKIA-ARIHA PRIMARY ZONE OF INFLUENCE, URBAN AND RURAL POPULATION BY MANTIKA, 1960

Mohafazat and Mantika	Urban		Rural		Total	
	No.	%	No.	%	No.	%
Lattakia						
Lattakia	20,957	41.5	29,530	58.5	50,487	100.0
Haffa	2,715	12.4	19,198	87.6	21,913	100.0
Idlib						
Idlib	11,852	54.3	9,966	45.7	21,818	100.0
Ariha	9,226	30.5	21,065	69.5	30,291	100.0
Jisr esh Shughur	10,366	20.6	40,037	79.4	50,403	100.0
Hama						
Al Ghab	-	-	5,815	100.0	5,815	100.0
Total or average	55,116	30.5	125,661	69.5	180,727	100.0

Source Computed from Population Census, 1960.

TABLE 35

LATTAKIA-ARIHA PRIMARY ZONE OF INFLUENCE, ANNUAL AVERAGE GROWTH RATES USED IN ESTIMATING 1976 POPULATION-TOTAL, URBAN AND RURAL BY MANTIKAS

Mantika	Projected Period, 1970-1976 Annual Average Growth Rate of Population		
	Total	Urban	Rural
Lattakia	4.4	6.3(6.4)	2.3 (2.7)
Haffa	1.7	2.0	1.7
Idlib	2.3	3.4(3.8)	0.2
Ariha	1.3	2.8(3.4)	0.3
Jisr esh Shughur	2.2	3.9	1.6(1.7)
Al Ghab	2.0	-	2.0
Weighted average of Mantikas	2.7	4.7	1.6

Note: Historical rates shown in parentheses were adjusted to reconcile urban and/or rural population to the total estimated population.

TABLES 32,33,34 & 35

GENERAL ECONOMICS

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TABLE 36

EDUCATIONAL FACILITIES AND ENROLLMENTS IN THE MOHAFAZATS OF LATTAKIA, TARTOUS, IDLIB AND HAMA, 1970-1971 AND 1975-1976

Type of School	1970-1971				1975-1976			
	Lattakia	Tartous	Idlib	Hama	Lattakia	Tartous	Idlib	Hama
Primary:								
No. Schools	370	344	401	484	446	479	458	658
No. Students	68,682	50,921	52,477	77,813	90,697	71,521	76,132	110,266
No. Teachers	1,583	1,142	1,465	2,126	2,733	2,258	2,239	3,298
No. Classrooms	2,363	2,241	2,204	2,657	2,850	3,118	2,519	4,205
No. Students per Teacher	43	45	36	37	33	32	34	33
Intermediate & Secondary:								
No. Schools	86	76	53	81	119	96	71	101
No. Students	29,094	21,865	17,671	30,422	45,93[illegible]	34,593	25,673	40,552
No. Teachers	1,137	892	779	1,222	2,141	1,638	1,199	2,014
No. Classrooms	548	741	408	790	758	625	547	649
No. Students per Teacher	26	25	23	25	21	21	21	20

Sources: Statistical Abstract, 1973 and 1977, and Ministry of Education.

TABLE 37

NUMBER OF MEDICAL PROFESSIONALS IN LATTAKIA AND IDLIB MOHAFAZATS, 1971, 1972, 1975 AND 1976

Profession	Number of Professionals				Number of Persons per Professional			
	1971	1972	1975	1976	1971	1972	1975	1976
Lattakia:								
Physicians	65	95	103	116	6,154	4,357	4,311	3,905
Dentists	25	29	29	33	16,000	14,207	15,310	13,727
Pharmacists	30	25	37	45	13,333	16,480	12,000	10,067
Nurses	59	83	63	63	6,780	4,987	7,048	7,190
Midwives	34	48	64	64	11,765	8,623	6,938	7,078
Idlib:								
Physicians	37	33	43	54	10,622	12,303	9,953	8,185
Dentists	7	10	14	15	56,142	40,600	30,571	29,467
Pharmacists	17	16	34	36	23,118	25,375	12,588	12,278
Nurses	32	38	40	61	12,281	10,684	10,700	7,246
Midwives	14	16	38	34	28,071	25,375	11,263	13,000

Source: Statistical Abstracts, 1973 and 1977.

TABLES 36 & 37

GENERAL ECONOMICS

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TABLE 38

ANNUAL AVERAGE GROWTH RATES IN CROP AREA, PRODUCTION AND YIELDS, LATTAKIA AND IDLIB MOHAFAZATS, BASED ON 3-YEAR AVERAGES, 1970-1972 AND 1974-1976 1/ 2/

Crop		1970-1972			1974-1976			Growth Rate (%)
		Lattakia	Idlib	Lattakia & Idlib	Lattakia	Idlib	Lattakia & Idlib	
Cereals-Total	A	25.2	117.1	71.2	29.6	135.5	82.6	3.8
	P	26.4	102.0	64.2	33.2	171.7	102.5	12.4
	Y	1.05	0.87	0.90	1.12	1.26	1.24	8.3
Wheat	A	18.3	71.7	45.0	23.3	88.7	56.0	5.6
	P	21.0	68.0	44.5	27.3	111.0	69.2	11.7
	Y	1.15	0.95	0.99	1.17	1.25	1.24	5.8
Barley	A	4.0	43.3	23.7	4.0	44.7	24.3	0.6
	P	3.3	32.3	17.8	4.0	59.0	31.5	15.3
	Y	0.83	0.75	0.75	1.00	1.32	1.30	14.7
Dry Legumes-Total	A	3.0	30.0	16.5	2.8	25.7	14.3	-3.6
	P	2.8	22.9	12.9	2.4	26.1	14.3	2.6
	Y	0.93	0.76	0.78	0.85	1.02	1.00	6.4
Lentils	A	0.6	23.0	11.8	0.6	16.7	8.8	-7.3
	P	0.3	16.5	8.4	0.5	18.2	9.3	2.6
	Y	0.50	0.72	0.71	0.83	1.09	1.07	10.8
Vegetables-Total	A	11.2	12.5	11.9	14.8	38.3	26.5	22.0
	P	113.4	142.0	127.7	188.1	203.7	195.9	11.3
	Y	10.13	11.36	10.73	12.71	5.32	7.39	-12.7
Tomatoes	A	3.5	3.5	3.5	4.5	3.7	4.1	14.4
	P	46.4	31.2	38.8	74.8	18.9	46.9	4.8
	Y	13.36	8.91	11.09	16.62	5.11	11.43	0.8
Cucumbers	A	1.2	0.7	0.9	0.9	0.7	0.8	-2.9
	P	8.6	5.0	6.8	9.8	3.6	6.7	-0.3
	Y	7.17	7.14	7.55	10.89	5.14	8.37	2.6
Squash	A	1.7	0.3	1.0	2.4	0.2	1.3	3.1
	P	19.4	2.8	11.1	37.1	3.0	20.1	16.0
	Y	11.41	9.3	11.10	15.45	15.0	15.42	8.6
Industrial Crops-Total	A	15.4	23.7	19.5	14.3	26.9	20.6	1.4
	P	15.1	21.8	18.5	13.1	25.5	19.3	1.1
	Y	0.98	0.92	0.95	0.92	0.95	0.94	-0.3

Continued--

TABLE 38
(Cont'd)

ANNUAL AVERAGE GROWTH RATES IN CROP AREA, PRODUCTION AND YIELDS, LATTAKIA AND IDLIB MOHAFAZATS, BASED ON 3-YEAR AVERAGES, 1970-1972 AND 1974-1976 1/ 2/

Crop		1970-1972			1974-1976			Growth Rate (%)
		Lattakia	Idlib	Lattakia & Idlib	Lattakia	Idlib	Lattakia & Idlib	
Cotton	A	1.3	18.4	9.9	0.2	11.2	11.4	3.6
	P	0.5	13.2	6.9	-	11.7	11.7	14.1
	Y	0.38	0.72	0.69	-	1.04	1.03	10.5
Sugar Beets	A	-	0.2	0.2	-	0.5	0.5	26.0
	P	-	6.5	6.5	-	8.1	8.1	5.7
	Y	-	32.5	32.5	-	16.2	16.2	-16.0
Tobacco	A	8.2	2.2	5.2	9.6	4.7	7.1	8.1
	P	5.8	1.4	3.6	6.9	2.7	4.8	7.5
	Y	0.71	0.64	0.69	0.72	0.57	0.68	-0.4
Peanuts	A	4.1	-	4.1	3.4	-	3.4	-4.6
	P	7.4	-	7.4	5.7	-	5.7	-6.3
	Y	1.80	-	1.80	1.68	-	1.68	-1.7
Fruits-Total	A	24.3	56.3	40.3	28.2	87.7	57.9	9.5
	P	55.1	63.0	59.1	68.3	95.0	81.7	8.5
	Y	13.90	9.9	11.47	16.74	12.0	13.61	4.4
Olives	A	15.7	32.7	24.2	18.0	58.0	38.0	12.0
	P	21.0	33.3	27.1	15.7	65.0	40.3	10.4
	Y	12.57	9.2	10.35	8.72	13.9	12.43	4.7
Apples	A	1.3	1.3	1.3	3.0	2.3	2.7	20.0
	P	7.7	1.8	4.7	14.4	2.1	8.3	15.3
	Y	22.06	18.7	21.07	24.16	10.6	20.91	-0.2
Oranges	A	1.0	-	1.0	1.4	-	1.4	8.8
	P	2.9	-	2.9	12.5	-	12.5	44.0
	Y	12.39	-	12.39	40.58	-	40.58	34.0

1/Area (A) = 1,000 hec.; Production (P) = 1,000 MT; Yield (Y) = MT/hec.

2/Fruit yields = kg./bearing tree.

Source: Statistical Abstracts, 1971-1977, Central Bureau of Statistics.

TABLE 38 A
GENERAL ECONOMICS
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TABLE 39

ANNUAL AVERAGE GROWTH RATES OF LIVESTOCK PRODUCTS, LATTAKIA AND IDLIB MOHAFAZATS, 1970-1972 AND 1974-1976

Product	1970-1972			1974-1976			Growth Rate (%)
	Lattakia	Idlib	Lattakia & Idlib	Lattakia	Idlib	Lattakia & Idlib	
Production (000 MT)							
Milk	27.0	35.3	62.3	21.7	29.3	51.0	-4.9
Animals 1/	2.19	2.96	5.15	2.32	3.22	5.54	1.8
Eggs 2/	0.58	0.52	1.10	0.58	0.88	1.46	7.3
Poultry 3/	0.23	0.15	0.38	0.23	0.24	0.47	5.5
Yield (MT per milked animal) 4/							
Cow milk	1.14	0.72	1.86	0.82	0.71	1.53	-4.8
Sheep milk	0.09	0.08	0.17	0.11	0.07	0.18	1.4
Goat milk	0.12	0.12	0.24	0.11	0.12	0.23	-1.1

1/ Live weight of animals for slaughter based on number of animals slaughtered (Statistical Abstracts) and average carcass weights (Animal Health Service, MOA). Carcass weights assumed at 50% of live weight. For Lattakia Mohafazat, adjustments made to number slaughtered because the Animal Service estimates 70 per cent of the sheep and 20 per cent of the goats slaughtered are not locally produced (imported from Aleppo); but essentially all cows slaughtered are locally produced.

2/ Number of eggs converted to MT on basis of 1 lb. per dozen.

3/ Number of chickens converted to MT on basis of 2 kg/chicken; assumed 50 per cent of chickens on hand slaughtered annually.

4/ Milk production divided by number of animals milked.

TABLE 41

ESTIMATED INDUSTRIAL PRODUCTION IN LATTAKIA AND IDLIB MOHAFAZATS, SAR, 1976 (000 MT)

Industry Group	Lattakia			Idlib			Lattakia and Idlib		
	Public	Private	Total	Public	Private	Total	Public	Private	Total
A. Manufacturing									
Foodstuffs 1/	188.3	337.6	525.9	283.8	104.2	388.0	472.1	441.8	913.9
Textiles 2/	3.7	37.5	41.2	25.0	40.0	65.0	28.7	77.5	106.2
Wood 3/	12.0	55.1	67.1	-	37.8	37.8	12.0	92.9	104.9
Chemicals 4/	0.4	5.6	6.0	12.4	1.8	14.2	12.8	7.4	20.2
Printing 5/	-	8.4	8.4	-	0.6	0.6	-	9.0	9.0
Cement 6/	83.0	281.6	364.6	-	192.4	192.4	83.0	474.0	557.0
Metal 7/	10.1	132.2	142.3	-	93.8	93.8	10.1	226.0	236.1
Other 8/	-	6.1	6.1	-	15.7	15.7	-	21.8	21.8
Sub-total	297.5	864.1	1,161.6	321.2	486.3	807.5	618.7	1,350.4	1,969.1
B. Quarrying									
Stone 9/	2,277.0	-	2,277.0	-	1,908.3	1,908.3	2,277.0	1,908.3	4,185.3
Sand & gravel 10/	2,314.6	50.0	2,364.6	-	597.9	579.9	2,314.6	647.9	2,962.5
Natural asphalt	40.0	-	40.0	-	-	-	40.0	-	40.0
Gypsum	38.4	-	38.4	-	-	-	38.4	-	38.4
Semi-marble stone	60.0	-	60.0	-	-	-	60.0	-	60.0
Sub-total	4,730.0	50.0	4,780.0	-	2,506.2	2,506.2	4,730.0	2,556.2	7,286.2
Total	5,027.5	914.1	5,941.6	321.2	2,992.5	3,313.7	5,348.7	3,906.6	9,255.3
Percentage	84.6	15.1	100.0	9.7	90.3	100.0	57.8	42.2	100.0

1/ Foodstuffs, beverages and tobacco.
2/ Textiles, clothing, leather, shoes and cotton ginning.
3/ Wood and furniture.
4/ Chemicals, fertilizer, paint, soap and plastic products.
5/ Printing and binding.
6/ Cement, glass, tile, marble and stone.
7/ Metal working, cutting, casting, etc.
8/ Car bodies, tractor trailers, pre-cast blocks, etc.
9/ Includes 1.8 million MT of stone used for Lattakia Port breakwater.
10/ Includes 480,000 MT of sand and 720,000 MT of gravel used for Lattakia Port breakwater.

Source: Statistical Abstract, 1977, pp. 248-251 and 689-696, and interviews with industrial organizations.

TABLE 40

NUMBER OF INDUSTRIAL ESTABLISHMENTS IN LATTAKIA AND IDLIB MOHAFAZATS, SAR, 1976

Industry Group	Lattakia			Idlib			Lattakia and Idlib		
	Public	Private	Total	Public	Private	Total	Public	Private	Total
A. Manufacturing									
Foodstuffs 1/	11	606	617	13	560	573	24	1,166	1,190
Textiles 2/	2	452	454	7	643	650	9	1,095	1,100
Wood 3/	1	418	419	-	389	389	1	807	808
Chemicals 4/	-	40	40	-	46	46	-	86	86
Printing 5/	-	14	14	-	1	1	-	15	15
Cement 6/	1	142	143	-	74	74	1	216	217
Metal 7/	3	209	212	-	212	212	3	421	424
Other 8/	-	33	33	-	85	85	-	118	118
Sub-total	18	1,914	1,932	20	2,010	2,030	38	3,924	3,962
B. Quarrying	7	12	19	-	15	15	7	27	34
C. Construction	9	30	39	4	33	37	13	63	76
D. Electricity and Water	43	-	43	81	-	81	124	-	124
Total	77	1,959	2,033	105	2,058	2,163	182	4,014	4,196
Percentage	3.7	96.3	100.0	4.9	95.1	100.0	4.3	95.7	100.0

1/ Foodstuffs, beverages and tobacco.
2/ Textiles, clothing, leather, shoes and cotton ginning.
3/ Wood and furniture.
4/ Chemicals, fertilizer, paint, soap and plastic products.
5/ Printing and binding.
6/ Cement, glass, tile, marble and stone.
7/ Metal working, cutting, casting, etc.
8/ Car bodies, tractor trailers, precast blocks, etc.

Source: Statistical Abstract, 1977, pp. 689-696.

TABLE 42 A

POTENTIALS FOR AGRICULTURAL IMPORT SUBSTITUTION WITHIN THE ZONES OF INFLUENCE OF PROJECTED ROADS

1. Vegetable crops. The introduction of soil management practices, by growth of soil-improving crops in the rotation to improve soil structure and contribute nitrogen, warrants attention. Present systems invite soil degradation. Benefits may amount to 10 to 20 percent yearly. Such soil-improving crops are excellent feed to use in support of ruminant livestock enterprises.

2. Potatoes. The present national imports of SL 9 million of potatoes yearly may be replaced by local production. This is feasible by growing potatoes in midsummer plantings on lands that were cropped to wheat and barley in winter wherever pump irrigation in summer from local wells is practiced. It is probable that such supplemental irrigation is possible wherever grains are grown on lands of the coastal plain that are imperfectly drained in the winter rainy season.

3. Tomatoes. The present national imports of SL 18.7 million may be replaced by expansion of winter production of tomatoes in plastic greenhouses, as demonstrated by the FAO project in the coastal plain region. Production of cucumbers, eggplant, and similar crops may provide winter supplies of fresh vegetables that are now imported.

4. Tobacco. At least SL 40 million of national imports of cigarette types of tobacco may readily be replaced by local production in the coastal plain. To achieve this substitution, it will be necessary to introduce suitable varieties, to adopt cultural practices designed to produce the desired quality of leaf, and to install suitable new tobacco curing facilities. There must be appropriate economic rewards to individual producers, to stimulate adoption of the necessary innovations.

5. Apples. The climate is favorable for economic production of apples on well-drained soils of the coastal plain, and on alluvial soils in the hill regions. The present national import costs of SL 20 million may be replaced by local production. Stony soils of the coastal plain and alluvial soils of stream basins in hill lands are preferred. To provide income from newly planted orchards, the interplanting of perennial forages for support of ruminant livestock should be introduced. Milk and meat production may be sharply increased within existing farms without adding to farm size.

6. Barley and Wheat. These crops are grown in the road zones of influence, primarily on lands that tend to become waterlogged during the winter rainy season. A practical inexpensive development program for such soils should be based on improvement of surface drainage. This requires smoothing of the soil surface, and creation of enough slope, field by field, to insure excess water runoff. An inexpensive, permanent practice is so-called "bedding," by which topsoil is moved toward the higher crest of each field, and away from the surface lower border ditches at the side of each bed. For this a moldboard plow, or offset disk, is needed. Some additional channeling of the side ditches may be needed, to deliver surface water to natural drainage channels. This method is particularly useful on heavy textured soils. There appear to be no examples of this practice in the coastal plain at present. Grain yields should be substantially higher on bedded lands, and the opportunities for growing a second crop on the same land (such as sunflowers, sesame or groundnuts) then becomes feasible. Total productivity per year may be greatly enhanced.

Research is needed to identify improved varieties of cereal grains for these soils, particularly naked barley varieties that are suitable for local supplies of feed for poultry.

7. Oilseed Crops. Present national imports of vegetable oil crops and oilseed cake amount to more than SL 10 million yearly; and these may be replaced by growing sunflowers, sesame and groundnuts as summer crops on lands of the coastal plain that have produced a winter crop of barley, wheat or broad beans. An alternative cropping pattern would consist of a cool-season forage crop harvested in March, and prompt seed bed preparation and planting of sunflowers or the shatter-resistant type of sesame. Where supplemental irrigation in summer is feasible, groundnuts may be grown on loamy soils. A livestock enterprise for production of meat and/or milk should be a component of the farming system, for effective utilization of the forage.

8. Production of Milk and Meat from ruminant livestock is undoubtedly the greatest undeveloped potential of the zones of influence for the projected roads. National imports of meat and meat animals totaled about SL 34 million in 1976, and imports of dairy products (milk powder, cheese and butter) amounted to SL 172 million in the same year. The import bill has increased substantially in recent years, despite efforts to establish state dairy farms. There are opportunities to move strongly toward national self-sufficiency in such livestock products by decentralization of production to the great mass of small farmers, by stimulating expansion beyond local subsistence needs, to commercial levels. Not only are there opportunities to introduce forage production into present farming systems, but there is urgent need to revise cropping patterns to improve soil structure and provide nitrogen from leguminous crops, as a means of improving vegetable crop production. The apparent opportunities for increasing effective land use and augmenting farm incomes, by development of livestock production, has received little attention to date.

The most important undeveloped opportunity is the reclamation of extensive limestone hills and uplands. This would require establishment of perennial ground cover of adapted forage legumes and grasses, to halt the present and long-continued sheet erosion losses of soil, to increase the infiltration of rainfall, and thereby provide high quality forage for support to cattle, sheep and goats. Such preliminary trials as have been made indicate that the reclamation procedure would include some initial scarification of the land surface, broadcasting substantial amounts of superphosphate, followed by surface seeding to vetches, clovers, and medics in mixture with perennial ryegrass, harding grass and fescue grasses, at the start of the rainy season. These lands are producing almost no products at present. An exception is the establishment of low yielding olives; and in such orchards, the proposed interplanting with perennial forages would strengthen the olives as well as provide feed for ruminant livestock.

One of the enterprises that would provide immediate supplemental income would be the establishment of milk collection systems along existing roads to pick up the morning milk for prompt transport to central milk processing plants for production of milk powder, butter and cheese to replace these commodities now being imported. The operation of such collection systems and processing plants has been highly successful and profitable in such dissimilar countries as Chad and Nicaragua Small, individual producers are the most ardent supporters of such systems.

9. Wool. Syria now imports SL 26 million of wool to meet domestic demand. Sheep may provide a suitable utilization of forages in the Orontes River basin, and in the limestone hills and uplands in all three zones of influence for the projected roads. Such sheep enterprises would also serve as important sources of milk for commercial processing. Sheep milk is produced in quantity in other sections of Syria.

TABLE 42 (cont'd)

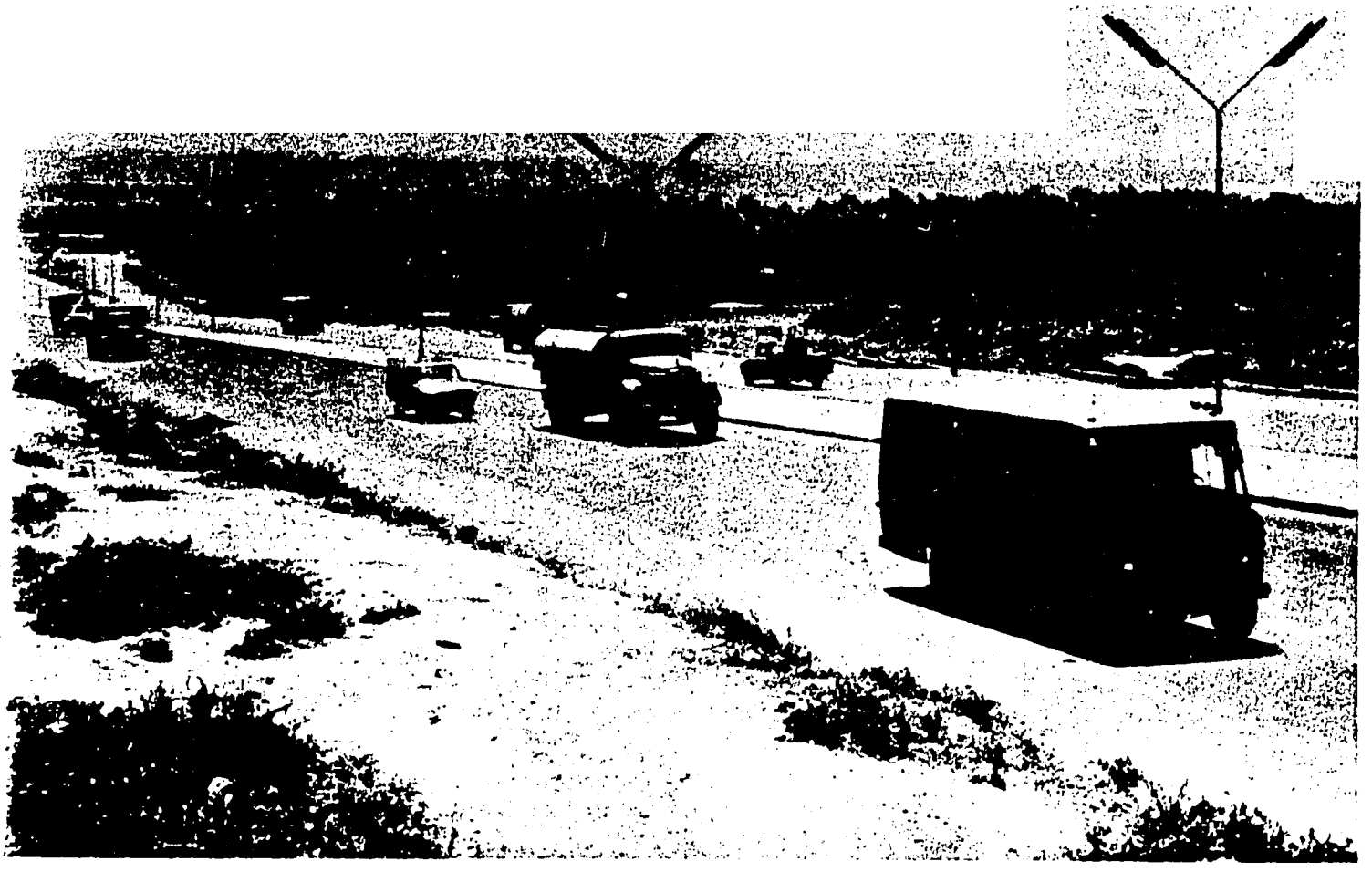
10. Poultry Production. Poultry enterprises, for either broilers or eggs, must be based on adequate supplies of concentrate feeds, such as wheat, naked barley, and maize, and these may be produced on lands of the coastal plain that are not well suited for vegetable production. Wheat and barley as preferred cool-season crops on lands that are imperfectly drained in winter, and maize, may be grown as a summer crop on the same lands wherever supplemental irrigation is feasible. The inclusion of grains grown at lower costs would permit expansion of local poultry enterprises by many small farmers. The necessary animal proteins needed to balance rations for poultry may be meat meal (a by-product of slaughter houses), whey from cheesemaking, or dried fish meal. These may be supplied to farmers for their use in supplementing feed grains. National egg imports amounted to SL 9 million in 1976, and such income would be important to small farmers.

TABLE 43

INDUSTRIAL PRODUCTION TARGETS, FOURTH FIVE-YEAR PLAN, 1976-1980, SAR

Commodity	Unit	Base Year 1975	Target Year 1980	Annual Growth Rate (%)
Cotton yarns	000 MT	15	84	41.0
Cotton textiles	000 MT	14	22	9.5
Ready-made garments	000 doz.	16	150	58.6
Underwear	000 dox.	1,028	2,023	14.5
Metal products	SL million	13	141	61.5
Electric motors	SL million	5	13	21.0
Cable	000 ST	12	36	25.1
Refrigerators	000's	49	200	32.5
Television sets	000's	38	250	45.8
Billets	000 MT	-	100	-
Cement	000 MT	1,000	5,500	41.0
Nitrogen fertilizers	000 MT	100	450	35.2
Phosphate fertilizers	000 MT	-	700	-
Glass	000 MT	18	103	41.9
Tires	000's	-	598	-
Paper	000 MT	-	60	-
Medicines	SL million	5	35	47.9
Baby food	MT	-	1,500	-
Sugar	000 MT	136	275	15.1
Vegetable oil	000 MT	33	35	1.2
Preserves	000 MT	9	25	22.8

Source: Fourth Five-Year Economic and Social Development Plan of the Syrian Arab Republic, 1976-1980, P. 15.



Transport Economics

APPENDIX C

LYON

TABLE 1
TRUCKS STUDIED BY TYPE AND WEIGHT
SINGLE UNIT VEHICLES
PORT OF LATTAKIA
FEBRUARY, 1978

Weight Metric Tons	2-Axle Medium With Load	2-Axle Medium Without Load	2-Axle Large With Load	2-Axle Large Without Load	3-Axle With Load	3-Axle Without Load	Total With Load	Total Without Load
0 - 2.50								
2.51 - 4.50		15						15
4.51 - 6.50		51						51
6.51 - 8.50	3	34		5			3	39
8.51 - 10.50	8			43			8	43
10.51 - 12.50	11			2		5	11	7
12.51 - 14.50	24					6	24	6
14.51 - 16.50	8					1	8	1
16.51 - 18.50	35					-	35	-
18.51 - 20.50	17		2			1	19	1
20.51 - 22.50			7				7	
22.51 - 24.50			12				12	
24.51 - 26.50			9				9	
26.51 - 28.50			9				9	
28.51 - 30.50			3		1		4	
30.51 - 32.50					2		2	
32.51 - 34.50					2		2	
34.51 - 36.50					3		3	
36.51 - 38.50					-		-	
38.51 - 40.50					1		1	
40.51 - 42.50					-		-	
42.51 - 44.50					1		1	
Total	106	100	42	50	10	13	158	163

TABLE 2
TRUCKS STUDIED BY TYPE AND WEIGHT
COMBINATION VEHICLES
PORT OF LATTAKIA
FEBRUARY, 1978

Weight Metric Tons	Truck plus Trailer		4-Axle Combination (Tractor + Semi-Trailer		5-Axle Combination Tractor + Semi-Trailer		Total	
	With Load	Without Load	With Load	Without Load	With Load	Without Load	With Load	Without Load
0 - 10.50								
10.51 - 12.50				2				2
12.51 - 14.50		1		6				7
14.51 - 16.50		6		7		1		14
16.51 - 18.50		28		11		6		45
18.51 - 20.50		6		13		3		22
20.51 - 22.50						3		3
22.51 - 24.50								
24.51 - 26.50			1				1	
26.51 - 28.50			-				-	
28.51 - 30.50			1				1	
30.51 - 32.50			-				-	
32.51 - 34.50			-				-	
34.51 - 36.50			2				2	
36.51 - 38.50			-				-	
38.51 - 40.50			-				-	
40.51 - 42.50	3		3		1		7	
42.51 - 44.50	1		4		-		5	
44.51 - 46.50	1		7		2		10	
46.51 - 48.50	-		6		4		10	
48.51 - 50.50	2		5		2		9	
50.51 - 52.50	3		3		2		8	
52.51 - 54.50	2		19		5		26	
54.51 - 56.50	5		11		1		17	
56.51 - 58.50	5		16		1		22	
58.51 - 60.50	8		5				13	
60.51 - 62.50	1						1	
62.51 - 64.50	1						1	
Total	32	41	83	39	18	13	133	93

TABLES 1 & 2
TRUCK INVENTORY
LYON

TABLE 3
AXLE LOADINGS
SINGLE UNIT TRUCKS
PORT OF LATTAKIA
FEBRUARY, 1978

Weight Metric Tons	2-Axle Medium		2-Axle Large		3-Axle			
	With Load	Without Load	With Load	Without Load	With Load		Without Load	
	Single Axle	Single Axle	Single Axle	Single Axle	Single Axle	Tandem Axle	Single Axle	Tandem Axle
0 - 1.50	-	5						
1.51 - 2.50	3	38						
2.51 - 3.50	13	117						
3.51 - 4.50	32	40		43				
4.51 - 5.50	42			36			5	
5.51 - 6.50	23		6	21			6	
6.51 - 7.50	5		17		1		1	
7.51 - 8.50	7		16		6		1	3
8.51 - 9.50	22		3		1			6
9.51 - 10.50	7				2			2
10.51 - 11.50	4							1
11.51 - 12.50	29							-
12.51 - 13.50	23							1
13.51 - 14.50	2		2					
14.51 - 15.50			6					
15.51 - 16.50			6					
16.51 - 17.50			9					
17.51 - 18.50			6					
18.51 - 19.50			7					
19.51 - 20.50			5					
20.51 - 21.50			1					
21.51 - 22.50						1		
22.51 - 23.50						-		
23.51 - 24.50						2		
24.51 - 25.50						-		
25.51 - 26.50						3		
26.51 - 27.50						2		
27.51 - 28.50						-		
28.51 - 29.50						-		
29.51 - 30.50						1		
31.51 - 31.50						-		
32.51 - 33.50						1		
33.51 - 34.50						-		
Total	212	200	84	100	10	10	13	13

TABLE 4
AXLE LOADINGS
COMBINATION VEHICLES
PORT OF LATTAKIA
FEBRUARY, 1978

Metric Tons	Truck & Trailer With Load Single Axle	Truck & Trailer Without Load Single Axle	Tractor & Semi-Trailer (4 Axles) With Load Single Axle	Tractor & Semi-Trailer (4 Axles) With Load Tandem Axle	Tractor & Semi-Trailer (4 Axles) Without load Single Axle	Tractor & Semi-Trailer (4 Axles) Without load Tandem Axle	Tractor & Semi-Trailer (5 Axles) With Load Single Axle	Tractor & Semi-Trailer (5 Axles) With Load Tandem Axle	Tractor & Semi-Trailer (5 Axles) Without load Single Axle	Tractor & Semi-Trailer (5 Axles) Without load Tandem Axle
0 - 1.50										
1.51 - 2.50		2								
2.51 - 3.50		74	1		8					
3.51 - 4.50		8	1		29				1	
4.51 - 5.50		41	5		20				12	
5.51 - 6.50	4	31	22		21		9			
6.51 - 7.50	4	8	45			8	9			2
7.51 - 8.50	17		10			7				9
8.51 - 9.50	7		1			14				12
9.51 - 10.50	-		-			10				3
10.51 - 11.50	10		2							
11.51 - 12.50	2		-							
12.51 - 13.50	12		6							
13.51 - 14.50	15		10							
14.51 - 15.50	11		9	1						
15.51 - 16.50	17		8	-				1		
16.51 - 17.50	5		25	1				1		
17.51 - 18.50	7		17	-				5		
18.51 - 19.50	7		4	-				3		
19.51 - 20.50	7			2				5		
20.51 - 21.50	3			-				3		
21.51 - 22.50				-				-		
22.51 - 23.50				3				1		
23.51 - 24.50				3				-		
24.51 - 25.50				5				2		
25.51 - 26.50				5				4		
26.51 - 27.50				4				2		
27.51 - 28.50				6				1		
28.51 - 29.50				3				4		
29.51 - 30.50				18				2		
30.51 - 31.50				10				2		
31.51 - 32.50				16						
32.51 - 33.50				2						
33.51 - 34.50				4						
Total	128	164	166	83	78	39	18	36	13	26

TABLES 3 & 4
TRUCK INVENTORY

LYON

TABLE 5
TRAFFIC PROJECTIONS
EXISTING AND PROPOSED ROAD, PRESENT LOADINGS
LATTAKIA - HAFFE/SLENFE ROAD JUNCTION - EASTBOUND

GROWTH RATES

	1978-83	1983-93	1993-2003
CAR	10.20	8.60	6.10
PICK-UP	9.20	8.30	5.70
BUS	9.90	8.20	6.40
TRUCK(SINGLE-UNIT)	9.20	8.30	5.70
TRUCK(COMB.)	9.20	8.30	5.70

YEAR	CAR	PICKUP	BUS	TRUCK SINGLE-UNIT	TRUCK COMB.	TOTAL	P.C. OF TOTAL CAR+P.U.	BUS+S.U.T.	TRUCK COMB.
1978	174.	127.	111.	323.	49.	784.	38.	55.	6.
1979	192.	139.	122.	353.	54.	850.	38.	55.	6.
1980	212.	152.	134.	385.	59.	942.	39.	55.	6.
1981	234.	166.	147.	420.	64.	1031.	39.	55.	6.
1982	258.	181.	162.	459.	70.	1130.	39.	55.	6.
1983	284.	198.	178.	501.	76.	1237.	39.	55.	6.
1984	308.	214.	193.	543.	82.	1340.	39.	55.	6.
1985	334.	232.	209.	588.	89.	1452.	39.	55.	6.
1986	363.	251.	226.	637.	96.	1573.	39.	55.	6.
1987	394.	272.	245.	690.	104.	1705.	39.	55.	6.
1988	428.	295.	265.	747.	113.	1848.	39.	55.	6.
1989	465.	319.	287.	809.	122.	2002.	39.	55.	6.
1990	505.	345.	311.	876.	132.	2169.	39.	55.	6.
1991	548.	374.	337.	949.	143.	2351.	39.	55.	6.
1992	595.	405.	365.	1028.	155.	2548.	39.	55.	6.
1993	646.	439.	395.	1113.	168.	2761.	39.	55.	6.
1994	685.	464.	420.	1176.	178.	2923.	39.	55.	6.
1995	727.	490.	447.	1243.	188.	3095.	39.	55.	6.
1996	771.	518.	476.	1314.	199.	3278.	39.	55.	6.
1997	818.	548.	506.	1389.	210.	3471.	39.	55.	6.
1998	868.	579.	538.	1468.	222.	3675.	39.	55.	6.
1999	921.	612.	572.	1552.	235.	3892.	39.	55.	6.
2000	977.	647.	609.	1640.	248.	4121.	39.	55.	6.
2001	1037.	684.	648.	1733.	262.	4364.	39.	55.	6.
2002	1100.	723.	689.	1832.	277.	4621.	39.	55.	6.
2003	1167.	764.	733.	1936.	293.	4893.	39.	55.	6.

TABLE 7
TRAFFIC PROJECTIONS
EXISTING AND PROPOSED ROAD, PRESENT LOADINGS
LATTAKIA - HAFFE/SLENFE ROAD JUNCTION - TWO DIRECTIONS

GROWTH RATES

	1978-83	1983-93	1993-2003
CAR	10.20	8.60	6.10
PICK-UP	9.20	8.30	5.70
BUS	9.90	8.20	6.40
TRUCK(SINGLE-UNIT)	9.20	8.30	5.70
TRUCK(COMB.)	9.20	8.30	5.70

YEAR	CAR	PICKUP	BUS	TRUCK SINGLE-UNIT	TRUCK COMB.	TOTAL	P.C. OF TOTAL CAR+P.U.	BUS+S.U.T.	TRUCK COMB.
1978	344.	249.	206.	634.	101.	1534.	39.	55.	7.
1979	379.	272.	226.	692.	110.	1679.	39.	55.	7.
1980	418.	297.	248.	756.	120.	1839.	39.	55.	7.
1981	461.	324.	273.	826.	131.	2015.	39.	55.	7.
1982	508.	354.	300.	902.	143.	2207.	39.	54.	6.
1983	560.	387.	330.	985.	156.	2418.	39.	54.	6.
1984	608.	419.	357.	1067.	169.	2620.	39.	54.	6.
1985	660.	454.	386.	1156.	183.	2839.	39.	54.	6.
1986	717.	492.	418.	1252.	198.	3077.	39.	54.	6.
1987	779.	533.	452.	1356.	214.	3334.	39.	54.	6.
1988	846.	577.	489.	1469.	232.	3613.	39.	54.	6.
1989	919.	625.	529.	1591.	251.	3915.	39.	54.	6.
1990	998.	677.	572.	1723.	272.	4242.	39.	54.	6.
1991	1084.	733.	619.	1866.	295.	4597.	40.	54.	6.
1992	1177.	794.	670.	2021.	319.	4981.	40.	54.	6.
1993	1278.	860.	725.	2189.	345.	5397.	40.	54.	6.
1994	1356.	909.	771.	2314.	365.	5715.	40.	54.	6.
1995	1439.	961.	820.	2446.	386.	6052.	40.	54.	6.
1996	1527.	1016.	872.	2585.	408.	6408.	40.	54.	6.
1997	1620.	1074.	928.	2732.	431.	6785.	40.	54.	6.
1998	1719.	1135.	987.	2888.	456.	7185.	40.	54.	6.
1999	1824.	1200.	1050.	3053.	482.	7609.	40.	54.	6.
2000	1935.	1269.	1117.	3227.	509.	8058.	40.	54.	6.
2001	2053.	1340.	1188.	3411.	538.	8530.	40.	54.	6.
2002	2178.	1416.	1264.	3605.	569.	9032.	40.	54.	6.
2003	2311.	1497.	1345.	3810.	601.	9564.	40.	54.	6.

TABLE 6
TRAFFIC PROJECTIONS
EXISTING AND PROPOSED ROAD, PRESENT LOADINGS
LATTAKIA - HAFFE/SLENFE ROAD JUNCTION - WESTBOUND

GROWTH RATES

	1978-83	1983-93	1993-2003
CAR	10.20	8.60	6.10
PICK-UP	9.20	8.30	5.70
BUS	9.90	8.20	6.40
TRUCK(SINGLE-UNIT)	9.20	8.30	5.70
TRUCK(COMB.)	9.20	8.30	5.70

YEAR	CAR	PICKUP	BUS	TRUCK SINGLE-UNIT	TRUCK COMB.	TOTAL	P.C. OF TOTAL CAR+P.U.	BUS+S.U.T.	TRUCK COMB.
1978	170.	122.	95.	311.	52.	750.	39.	54.	7.
1979	187.	133.	104.	340.	57.	821.	39.	54.	7.
1980	206.	145.	114.	371.	62.	898.	39.	54.	7.
1981	227.	158.	125.	405.	68.	983.	39.	54.	7.
1982	250.	173.	137.	442.	74.	1076.	39.	54.	7.
1983	276.	189.	151.	483.	81.	1180.	39.	54.	7.
1984	300.	205.	163.	523.	88.	1279.	39.	54.	7.
1985	326.	222.	176.	566.	95.	1385.	40.	54.	7.
1986	354.	240.	190.	613.	103.	1500.	40.	54.	7.
1987	384.	260.	206.	664.	112.	1626.	40.	54.	7.
1988	417.	282.	223.	719.	121.	1762.	40.	53.	7.
1989	453.	305.	241.	779.	131.	1909.	40.	53.	7.
1990	492.	330.	261.	844.	142.	2069.	40.	53.	7.
1991	534.	357.	282.	914.	154.	2241.	40.	53.	7.
1992	580.	387.	305.	990.	167.	2429.	40.	53.	7.
1993	630.	419.	330.	1072.	181.	2632.	40.	53.	7.
1994	668.	443.	351.	1133.	191.	2786.	40.	53.	7.
1995	709.	468.	373.	1198.	202.	2950.	40.	53.	7.
1996	752.	495.	397.	1266.	214.	3124.	40.	53.	7.
1997	798.	523.	422.	1338.	226.	3307.	40.	53.	7.
1998	847.	553.	449.	1414.	239.	3502.	40.	53.	7.
1999	899.	585.	478.	1495.	253.	3710.	40.	53.	7.
2000	994.	618.	509.	1580.	267.	3928.	40.	53.	7.
2001	1012.	653.	542.	1670.	282.	4159.	40.	53.	7.
2002	1074.	690.	577.	1765.	298.	4404.	40.	53.	7.
2003	1140.	729.	614.	1866.	315.	4664.	40.	53.	7.

TABLES 5,6 & 7
TRAFFIC PROJECTIONS
LYON

TABLE 8
TRAFFIC PROJECTIONS
EXISTING AND PROPOSED ROAD, PRESENT LOADINGS
MAFFE/SLENFE ROAD JUNCTION - JISR ESH SHUGUR - EASTBOUND

	GROWTH RATES 1978-83	1983-93	1993-2003
CAR	10.20	8.60	6.10
PICK-UP	9.20	8.30	5.70
BUS	9.90	8.20	6.40
TRUCK(SINGLE-UNIT)	9.20	8.30	5.70
TRUCK(COMB.)	9.20	8.30	5.70

YEAR	CAR	PICKUP	BUS	TRUCK SINGLE-UNIT	TRUCK COMB.	TOTAL	P.C. OF TOTAL CAR+P.U.	BUS+S.U.T.	TRUCK COMB.
1978	155.	86.	50.	304.	52.	647.	37.	55.	8.
1979	171.	94.	55.	332.	57.	709.	37.	55.	8.
1980	188.	103.	60.	363.	62.	776.	38.	55.	8.
1981	207.	112.	66.	396.	68.	849.	38.	54.	8.
1982	228.	122.	73.	432.	74.	929.	38.	54.	8.
1983	251.	133.	80.	472.	81.	1017.	38.	54.	8.
1984	273.	144.	87.	511.	88.	1103.	38.	54.	8.
1985	296.	156.	94.	553.	95.	1194.	38.	54.	8.
1986	321.	169.	102.	599.	103.	1294.	38.	54.	8.
1987	349.	183.	110.	649.	112.	1403.	38.	54.	8.
1988	379.	198.	119.	703.	121.	1520.	38.	54.	8.
1989	412.	214.	129.	761.	131.	1647.	38.	54.	8.
1990	447.	232.	140.	824.	142.	1785.	38.	54.	8.
1991	485.	251.	151.	892.	154.	1933.	38.	54.	8.
1992	527.	272.	163.	966.	167.	2095.	38.	54.	8.
1993	572.	295.	176.	1046.	181.	2270.	38.	54.	8.
1994	607.	312.	187.	1106.	191.	2403.	38.	54.	8.
1995	644.	330.	199.	1169.	202.	2544.	38.	54.	8.
1996	683.	349.	212.	1236.	214.	2694.	38.	54.	8.
1997	725.	369.	226.	1306.	226.	2852.	38.	54.	8.
1998	769.	390.	240.	1380.	239.	3018.	38.	54.	8.
1999	816.	412.	255.	1459.	253.	3195.	38.	54.	8.
2000	866.	435.	271.	1542.	267.	3381.	38.	54.	8.
2001	19.	460.	288.	1630.	282.	3579.	39.	54.	8.
2002	75.	486.	306.	1723.	298.	3788.	39.	54.	8.
2003	1034.	514.	326.	1821.	315.	4010.	39.	54.	8.

TABLE 10
TRAFFIC PROJECTIONS
EXISTING AND PROPOSED ROAD, PRESENT LOADINGS
MAFFE/SLENFE ROAD JUNCTION - JISR ESH SHUGUR - TWO DIRECTIONS

	GROWTH RATES 1978-83	1983-93	1993-2003
CAR	10.20	8.60	6.10
PICK-UP	9.20	8.30	5.70
BUS	9.90	8.20	6.40
TRUCK(SINGLE-UNIT)	9.20	8.30	5.70
TRUCK(COMB.)	9.20	8.30	5.70

YEAR	CAR	PICKUP	BUS	TRUCK SINGLE-UNIT	TRUCK COMB.	TOTAL	P.C. OF TOTAL CAR+P.U.	BUS+S.U.T.	TRUCK COMB.
1978	298.	182.	96.	581.	104.	1261.	38.	54.	8.
1979	328.	199.	105.	634.	114.	1381.	38.	54.	8.
1980	361.	217.	116.	692.	124.	1510.	38.	54.	8.
1981	398.	237.	127.	755.	135.	1653.	38.	53.	8.
1982	439.	259.	140.	826.	147.	1811.	39.	53.	8.
1983	484.	283.	154.	902.	161.	1984.	39.	53.	8.
1984	526.	306.	167.	977.	174.	2150.	39.	53.	8.
1985	571.	331.	181.	1058.	188.	2329.	39.	53.	8.
1986	620.	358.	196.	1146.	204.	2524.	39.	53.	8.
1987	673.	388.	212.	1241.	221.	2735.	39.	53.	8.
1988	731.	420.	229.	1344.	239.	2963.	39.	53.	8.
1989	794.	455.	248.	1456.	259.	3212.	39.	53.	8.
1990	862.	493.	268.	1577.	280.	3480.	39.	53.	8.
1991	936.	534.	290.	1708.	303.	3771.	39.	53.	8.
1992	1016.	578.	314.	1850.	328.	4086.	39.	53.	8.
1993	1103.	626.	340.	2004.	355.	4428.	39.	53.	8.
1994	1170.	662.	362.	2118.	375.	4687.	39.	53.	8.
1995	1241.	700.	385.	2239.	396.	4961.	39.	53.	8.
1996	1317.	740.	410.	2367.	419.	5253.	39.	53.	8.
1997	1397.	782.	436.	2502.	443.	5560.	39.	53.	8.
1998	1482.	827.	464.	2645.	468.	5886.	39.	53.	8.
1999	1572.	874.	494.	2796.	495.	6231.	39.	53.	8.
2000	1668.	924.	526.	2955.	523.	6596.	39.	53.	8.
2001	1770.	977.	560.	3123.	553.	6983.	39.	53.	8.
2002	1878.	1033.	596.	3301.	585.	7393.	39.	53.	8.
2003	1993.	1092.	634.	3489.	618.	7826.	39.	53.	8.

TABLE 9
TRAFFIC PROJECTIONS
EXISTING AND PROPOSED ROAD, PRESENT LOADINGS
HAFFE/SLENFE ROAD JUNCTION - JISR ESH SHUGUR - WESTBOUND

	GROWTH RATES 1978-83	1983-93	1993-2003
CAR	10.20	8.60	6.10
PICK-UP	9.20	8.30	5.70
BUS	9.90	8.20	6.40
TRUCK(SINGLE-UNIT)	9.20	8.30	5.70
TRUCK(COMB.)	9.20	8.30	5.70

YEAR	CAR	PICKUP	BUS	TRUCK SINGLE-UNIT	TRUCK COMB.	TOTAL	P.C. OF TOTAL CAR+P.U.	BUS+S.U.T.	TRUCK COMB.
1978	143.	96.	46.	277.	52.	614.	39.	53.	8.
1979	159.	105.	51.	302.	57.	673.	39.	52.	8.
1980	174.	115.	56.	330.	62.	737.	39.	52.	8.
1981	192.	126.	62.	360.	68.	808.	39.	52.	8.
1982	212.	139.	69.	393.	74.	885.	40.	52.	8.
1983	234.	151.	75.	429.	81.	970.	40.	52.	8.
1984	254.	164.	81.	465.	88.	1052.	40.	52.	8.
1985	276.	179.	88.	504.	95.	1141.	40.	52.	8.
1986	300.	193.	95.	546.	103.	1237.	40.	52.	8.
1987	326.	209.	103.	591.	112.	1341.	40.	52.	8.
1988	354.	226.	111.	640.	121.	1452.	40.	52.	8.
1989	384.	245.	120.	693.	131.	1573.	40.	52.	8.
1990	417.	265.	130.	751.	142.	1705.	40.	52.	8.
1991	453.	287.	141.	813.	154.	1848.	40.	52.	8.
1992	492.	311.	153.	880.	167.	2003.	40.	52.	8.
1993	534.	337.	166.	953.	181.	2171.	40.	52.	8.
1994	567.	356.	177.	1007.	191.	2298.	40.	52.	8.
1995	602.	376.	188.	1064.	202.	2432.	40.	51.	8.
1996	639.	397.	200.	1125.	214.	2575.	40.	51.	8.
1997	678.	420.	213.	1189.	226.	2726.	40.	51.	8.
1998	719.	444.	227.	1257.	239.	2886.	40.	51.	8.
1999	763.	469.	242.	1329.	253.	3056.	40.	51.	8.
2000	810.	496.	257.	1405.	267.	3235.	40.	51.	8.
2001	859.	524.	273.	1485.	282.	3423.	40.	51.	8.
2002	911.	554.	290.	1570.	298.	3623.	40.	51.	8.
2003	967.	586.	309.	1659.	315.	3836.	40.	51.	8.

TABLE 11
TRAFFIC PROJECTIONS
EXISTING AND PROPOSED ROAD, PRESENT LOADINGS
JISR ESH SHUGUR BYPASS - EASTBOUND

GROWTH RATES

	1978-83	1983-93	1993-2003
CAR	10.20	8.60	6.10
PICK-UP	9.20	8.30	5.70
BUS	9.90	8.20	6.40
TRUCK(SINGLE-UNIT)	9.20	8.30	5.70
TRUCK(COMB.)	9.20	8.30	5.70

YEAR	CAR	PICKUP	BUS	TRUCK SINGLE-UNIT	TRUCK COMB.	TOTAL	P.C. OF TOTAL CAR+P.U.	BUS+S.U.T.	TRUCK COMB
1978	128.	53.	11.	272.	48.	512.	35.	55.	9.
1979	141.	58.	12.	297.	52.	560.	36.	55.	9.
1980	155.	63.	13.	324.	57.	612.	36.	55.	9.
1981	171.	69.	14.	354.	62.	670.	36.	55.	9.
1982	188.	75.	15.	387.	68.	733.	36.	55.	9.
1983	207.	82.	16.	423.	74.	802.	36.	55.	9.
1984	225.	89.	17.	458.	80.	869.	36.	55.	9.
1985	244.	96.	18.	496.	87.	941.	36.	55.	9.
1986	265.	104.	19.	537.	94.	1019.	36.	55.	9.
1987	288.	113.	21.	582.	102.	1106.	36.	55.	9.
1988	313.	122.	23.	630.	110.	1198.	36.	55.	9.
1989	340.	132.	25.	682.	119.	1298.	36.	54.	9.
1990	369.	143.	27.	739.	129.	1407.	36.	54.	9.
1991	401.	155.	29.	800.	140.	1525.	36.	54.	9.
1992	435.	168.	31.	866.	152.	1652.	37.	54.	9.
1993	472.	182.	34.	938.	165.	1791.	37.	54.	9.
1994	501.	192.	36.	991.	174.	1894.	37.	54.	9.
1995	532.	203.	38.	1047.	184.	2004.	37.	54.	9.
1996	564.	215.	40.	1107.	194.	2120.	37.	54.	9.
1997	598.	227.	43.	1170.	205.	2243.	37.	54.	9.
1998	634.	240.	46.	1237.	217.	2374.	37.	54.	9.
1999	673.	254.	49.	1308.	229.	2513.	37.	54.	9.
2000	714.	268.	52.	1383.	242.	2659.	37.	54.	9.
2001	758.	283.	55.	1462.	256.	2814.	37.	54.	9.
2002	804.	299.	59.	1545.	271.	2978.	37.	54.	9.
2003	853.	316.	63.	1633.	286.	3151.	37.	54.	9.

TABLE 13
TRAFFIC PROJECTIONS
EXISTING AND PROPOSED ROAD, PRESENT LOADINGS
JISR ESH SHUGUR BYPASS - TWO DIRECTIONS

GROWTH RATES

	1978-83	1983-93	1993-2003
CAR	10.20	8.60	6.10
PICK-UP	9.20	8.30	5.70
BUS	9.90	8.20	6.40
TRUCK(SINGLE-UNIT)	9.20	8.30	5.70
TRUCK(COMB.)	9.20	8.30	5.70

YEAR	CAR	PICKUP	BUS	TRUCK SINGLE-UNIT	TRUCK COMB.	TOTAL	P.C. OF TOTAL CAR+P.U.	BUS+S.U.T.	TRUCK COMB
1978	254.	120.	27.	499.	95.	995.	38.	53.	10.
1979	280.	131.	30.	545.	104.	1090.	38.	53.	10.
1980	309.	143.	33.	595.	114.	1194.	38.	53.	10.
1981	341.	156.	36.	650.	124.	1307.	38.	52.	9.
1982	376.	170.	40.	710.	135.	1431.	38.	52.	9.
1983	414.	186.	44.	775.	147.	1566.	38.	52.	9.
1984	450.	201.	48.	839.	159.	1697.	38.	52.	9.
1985	489.	218.	52.	909.	172.	1840.	38.	52.	9.
1986	531.	236.	56.	984.	186.	1993.	38.	52.	9.
1987	577.	256.	61.	1066.	201.	2161.	39.	52.	9.
1988	627.	277.	66.	1154.	218.	2342.	39.	52.	9.
1989	681.	300.	71.	1250.	236.	2538.	39.	52.	9.
1990	740.	325.	77.	1354.	256.	2752.	39.	52.	9.
1991	804.	352.	83.	1466.	277.	2982.	39.	52.	9.
1992	873.	381.	90.	1588.	300.	3232.	39.	52.	9.
1993	948.	413.	97.	1720.	325.	3503.	39.	52.	9.
1994	1006.	437.	103.	1818.	344.	3708.	39.	52.	9.
1995	1067.	462.	110.	1922.	364.	3925.	39.	52.	9.
1996	1132.	489.	117.	2032.	385.	4154.	39.	52.	9.
1997	1201.	516.	124.	2148.	407.	4396.	39.	52.	9.
1998	1274.	545.	132.	2270.	430.	4651.	39.	52.	9.
1999	1352.	576.	140.	2399.	455.	4922.	39.	52.	9.
2000	1434.	609.	149.	2536.	481.	5209.	39.	52.	9.
2001	1521.	644.	159.	2681.	508.	5513.	39.	52.	9.
2002	1614.	681.	169.	2834.	537.	5835.	39.	51.	9.
2003	1712.	720.	180.	2996.	568.	6176.	39.	51.	9.

TABLE 12
TRAFFIC PROJECTIONS
EXISTING AND PROPOSED ROAD. PRESENT LOADINGS
JISR ESH SHUGUR BYPASS - WESTBOUND

GROWTH RATES

	1978-83	1983-93	1993-2003
CAR	10.20	8.60	6.10
PICK-UP	9.20	8.30	5.70
BUS	9.90	8.20	6.40
TRUCK(SINGLE-UNIT)	9.20	8.30	5.70
TRUCK(COMB.)	9.20	8.30	5.70

YEAR	CAR	PICKUP	BUS	TRUCK SINGLE-UNIT	TRUCK COMB.	TOTAL	P.C. OF TOTAL CAR+P.U.	BUS+S.U.T.	TRUCK COMB.
1978	126.	67.	16.	227.	47.	483.	40.	50.	10.
1979	139.	73.	18.	248.	51.	529.	40.	50.	10.
1980	153.	80.	20.	271.	56.	580.	40.	50.	10.
1981	169.	87.	22.	296.	61.	635.	40.	50.	10.
1982	186.	95.	24.	323.	67.	695.	40.	50.	10.
1983	205.	104.	26.	353.	73.	761.	41.	50.	10.
1984	223.	113.	28.	382.	79.	825.	41.	50.	10.
1985	242.	122.	30.	414.	86.	894.	41.	50.	10.
1986	263.	132.	32.	448.	93.	968.	41.	50.	10.
1987	286.	143.	35.	485.	101.	1050.	41.	50.	10.
1988	311.	155.	38.	525.	109.	1138.	41.	49.	10.
1989	338.	168.	41.	569.	118.	1234.	41.	49.	10.
1990	367.	182.	44.	616.	128.	1337.	41.	49.	10.
1991	399.	197.	48.	667.	139.	1450.	41.	49.	10.
1992	433.	213.	52.	722.	151.	1571.	41.	49.	10.
1993	470.	231.	56.	782.	164.	1703.	41.	49.	10.
1994	499.	244.	60.	827.	173.	1803.	41.	49.	10.
1995	529.	258.	64.	874.	183.	1908.	41.	49.	10.
1996	561.	273.	68.	924.	193.	2019.	41.	49.	10.
1997	595.	289.	72.	977.	204.	2137.	41.	49.	10.
1998	631.	305.	77.	1033.	216.	2262.	41.	49.	10.
1999	669.	322.	82.	1092.	228.	2393.	41.	49.	10.
2000	710.	340.	87.	1154.	241.	2532.	41.	49.	10.
2001	753.	359.	93.	1220.	255.	2680.	41.	49.	10.
2002	799.	379.	99.	1290.	270.	2837.	42.	49.	10.
2003	848.	401.	105.	1364.	285.	3003.	42.	49.	9.

TABLES 11, 12 & 13
TRAFFIC PROJECTIONS

LYDN

TABLE 14
TRAFFIC PROJECTIONS
EXISTING AND PROPOSED ROAD, PRESENT LOADINGS
JISR ESH SHUGUR - ARIHA - EASTBOUND

	GROWTH RATES 1978-83	1983-93	1993-2003
CAR	10.20	8.60	6.10
PICK-UP	9.20	8.30	5.70
BUS	9.90	8.20	6.40
TRUCK(SINGLE-UNIT)	9.20	8.30	5.70
TRUCK(COMB.)	9.20	8.30	5.70

YEAR	CAR	PICKUP	BUS	TRUCK SINGLE-UNIT	TRUCK COMB.	TOTAL	P.C. OF TOTAL CAR+P.U.	BUS+S.U.T.	TRUCK CO
1978	275.	252.	64.	299.	61.	951.	55.	38.	6.
1979	303.	275.	70.	327.	67.	1042.	55.	38.	6.
1980	334.	300.	77.	357.	73.	1141.	56.	38.	6.
1981	368.	329.	85.	390.	80.	1251.	56.	38.	6.
1982	406.	358.	93.	426.	87.	1370.	56.	38.	6.
1983	447.	391.	102.	465.	95.	1500.	56.	38.	6.
1984	485.	423.	110.	504.	103.	1625.	56.	38.	6.
1985	527.	459.	119.	546.	112.	1762.	56.	38.	6.
1986	572.	496.	129.	591.	121.	1909.	56.	38.	6.
1987	621.	537.	140.	640.	131.	2069.	56.	38.	6.
1988	674.	582.	151.	693.	142.	2242.	56.	38.	6.
1989	732.	630.	163.	751.	154.	2430.	56.	38.	6.
1990	795.	682.	176.	813.	167.	2633.	56.	38.	6.
1991	863.	739.	190.	880.	181.	2853.	56.	38.	6.
1992	937.	800.	206.	953.	196.	3092.	56.	37.	6.
1993	1018.	866.	223.	1032.	212.	3351.	56.	37.	6.
1994	1080.	915.	237.	1091.	224.	3547.	56.	37.	6.
1995	1146.	967.	252.	1153.	237.	3755.	56.	37.	6.
1996	1216.	1022.	268.	1219.	251.	3976.	56.	37.	6.
1997	1290.	1080.	285.	1288.	265.	4208.	56.	37.	6.
1998	1369.	1142.	303.	1361.	280.	4455.	56.	37.	6.
1999	1453.	1207.	322.	1439.	296.	4717.	56.	37.	6.
2000	1542.	1276.	343.	1521.	313.	4995.	56.	37.	6.
2001	1636.	1349.	365.	1608.	331.	5289.	56.	37.	6.
2002	1736.	1426.	388.	1700.	350.	5600.	56.	37.	6.
2003	1842.	1507.	413.	1797.	370.	5929.	56.	37.	6.

TABLE 15
TRAFFIC PROJECTIONS
EXISTING AND PROPOSED ROAD, PRESENT LOADINGS
JISR ESH SHUGUR - ARIHA - TWO DIRECTIONS

	GROWTH RATES 1978-83	1983-93	1993-2003
CAR	10.20	8.60	6.10
PICK-UP	9.20	8.30	5.70
BUS	9.90	8.20	6.40
TRUCK(SINGLE-UNIT)	9.20	8.30	5.70
TRUCK(COMB.)	9.20	8.30	5.70

YEAR	CAR	PICKUP	BUS	TRUCK SINGLE-UNIT	TRUCK COMB.	TOTAL	P.C. OF TOTAL CAR+P.U.	BUS+S.U.T.	TRUCK CO
1978	448.	457.	120.	599.	109.	1733.	52.	41.	6.
1979	494.	499.	132.	654.	119.	1898.	52.	41.	6.
1980	544.	545.	145.	714.	130.	2078.	52.	41.	6.
1981	599.	595.	159.	780.	142.	2275.	52.	41.	6.
1982	660.	650.	175.	852.	155.	2492.	53.	41.	6.
1983	727.	710.	192.	930.	169.	2728.	53.	41.	6.
1984	790.	769.	208.	1007.	183.	2957.	53.	41.	6.
1985	858.	833.	225.	1091.	198.	3205.	53.	41.	6.
1986	932.	902.	243.	1182.	214.	3473.	53.	41.	6.
1987	1012.	977.	263.	1280.	232.	3764.	53.	41.	6.
1988	1099.	1058.	285.	1386.	251.	4079.	53.	41.	6.
1989	1194.	1145.	308.	1501.	272.	4421.	53.	41.	6.
1990	1297.	1241.	333.	1626.	295.	4792.	53.	41.	6.
1991	1409.	1344.	360.	1761.	319.	5193.	53.	41.	6.
1992	1530.	1456.	390.	1907.	345.	5628.	53.	41.	6.
1993	1662.	1577.	422.	2065.	374.	6100.	53.	41.	6.
1994	1763.	1667.	449.	2183.	395.	6457.	53.	41.	6.
1995	1871.	1762.	478.	2307.	418.	6836.	53.	41.	6.
1996	1985.	1862.	509.	2438.	442.	7236.	53.	41.	6.
1997	2106.	1968.	542.	2577.	467.	7660.	53.	41.	6.
1998	2234.	2080.	577.	2724.	494.	8109.	53.	41.	6.
1999	2370.	2199.	614.	2879.	522.	8584.	53.	41.	6.
2000	2515.	2324.	653.	3043.	552.	9087.	53.	41.	6.
2001	2668.	2456.	695.	3216.	583.	9618.	53.	41.	6.
2002	2831.	2596.	739.	3399.	616.	10181.	53.	41.	6.
2003	3004.	2744.	786.	3593.	651.	10778.	53.	41.	6.

TABLE 15
TRAFFIC PROJECTIONS
EXISTING AND PROPOSED ROAD, PRESENT LOADINGS
JISR ESH SHUGUR - ARIHA - WESTBOUND

GROWTH RATES

	1978-83	1983-93	1993-2003
CAR	10.20	8.60	6.10
PICK-UP	9.20	8.30	5.70
BUS	9.90	8.20	6.40
TRUCK(SINGLE-UNIT)	9.20	8.30	5.70
TRUCK(COMB.)	9.20	8.30	5.70

YEAR	CAR	PICKUP	BUS	TRUCK SINGLE-UNIT	TRUCK COMB.	TOTAL	P.C. OF TOTAL CAR+P.U.	BUS-S.U.T.	TRUCK COMB.
1978	173.	205.	56.	300.	48.	782.	48.	46.	6.
1979	191.	224.	62.	328.	52.	857.	48.	45.	6.
1980	210.	245.	68.	358.	57.	938.	49.	45.	6.
1981	231.	268.	75.	391.	62.	1027.	49.	45.	6.
1982	255.	293.	82.	427.	68.	1125.	49.	45.	6.
1983	281.	320.	90.	466.	74.	1231.	49.	45.	6.
1984	305.	347.	97.	505.	80.	1334.	49.	45.	6.
1985	331.	376.	105.	547.	87.	1446.	49.	45.	6.
1986	359.	407.	114.	592.	94.	1566.	49.	45.	6.
1987	390.	441.	123.	641.	102.	1697.	49.	45.	6.
1988	424.	478.	133.	694.	110.	1839.	49.	45.	6.
1989	460.	518.	144.	752.	119.	1993.	49.	45.	6.
1990	500.	561.	156.	814.	129.	2160.	49.	45.	6.
1991	543.	608.	169.	882.	140.	2342.	49.	45.	6.
1992	590.	658.	183.	955.	152.	2538.	49.	45.	6.
1993	641.	713.	198.	1034.	165.	2751.	49.	45.	6.
1994	695.	754.	211.	1093.	174.	2912.	49.	45.	6.
1995	721.	797.	225.	1155.	184.	3082.	49.	45.	6.
1996	765.	842.	239.	1221.	194.	3261.	49.	45.	6.
1997	812.	890.	254.	1291.	205.	3452.	49.	45.	6.
1998	862.	941.	270.	1365.	217.	3655.	49.	45.	6.
1999	915.	995.	287.	1443.	229.	3869.	49.	45.	6.
2000	971.	1052.	305.	1525.	242.	4095.	49.	45.	6.
2001	1030.	1112.	325.	1612.	256.	4335.	49.	45.	6.
2002	1093.	1175.	346.	1704.	271.	4589.	49.	45.	6.
2003	1160.	1242.	368.	1801.	286.	4857.	49.	45.	6.

TABLES 14, 15 & 16
TRAFFIC PROJECTIONS

LYDN

TABLE 17
TRAFFIC PROJECTIONS
EXISTING AND PROPOSED ROAD LEGAL LOADINGS
LATTAKIA - HAFFE/SLENFE ROAD JUNCTION - EASTBOUND

	GROWTH RATES 1978-83	1983-93	1993-2003
CAR	10.20	8.60	6.10
PICK-UP	9.60	7.40	5.40
BUS	9.90	8.20	6.40
TRUCK(SINGLE-UNIT)	9.60	7.40	5.40
TRUCK(COMB.)	9.60	7.40	5.40

YEAR	CAR	PICKUP	BUS	TRUCK SINGLE-UNIT	TRUCK COMB.	TOTAL	P.C. OF TOTAL CAR+P.U.	BUS+S.U.T.	TRUCK COMB.
1978	174.	127.	111.	581.	88.	1081.	28.	64.	8.
1979	192.	139.	122.	637.	96.	1186.	28.	64.	8.
1980	212.	152.	134.	698.	105.	1301.	28.	64.	8.
1981	234.	167.	147.	765.	115.	1428.	28.	64.	8.
1982	258.	183.	162.	838.	126.	1567.	28.	64.	8.
1983	284.	201.	178.	918.	138.	1719.	28.	64.	8.
1984	308.	216.	193.	986.	148.	1851.	28.	64.	8.
1985	334.	232.	209.	1059.	159.	1993.	28.	64.	8.
1986	363.	249.	226.	1137.	171.	2146.	29.	64.	8.
1987	394.	267.	245.	1221.	184.	2311.	29.	63.	8.
1988	428.	287.	265.	1311.	198.	2489.	29.	63.	8.
1989	465.	308.	287.	1405.	213.	2681.	29.	63.	9.
1990	505.	331.	311.	1512.	229.	2888.	29.	63.	9.
1991	548.	355.	337.	1624.	246.	3110.	29.	63.	9.
1992	595.	381.	365.	1744.	264.	3349.	29.	63.	9.
1993	646.	409.	395.	1873.	284.	3607.	29.	63.	9.
1994	685.	431.	420.	1974.	299.	3809.	29.	63.	9.
1995	727.	454.	447.	2081.	315.	4024.	29.	63.	9.
1996	771.	479.	476.	2193.	332.	4251.	29.	63.	9.
1997	818.	505.	506.	2311.	350.	4490.	29.	63.	9.
1998	868.	532.	538.	2436.	369.	4743.	30.	63.	8.
1999	921.	561.	572.	2568.	389.	5011.	30.	63.	8.
2000	977.	591.	609.	2707.	410.	5294.	30.	63.	8.
2001	1037.	623.	648.	2853.	432.	5593.	30.	63.	8.
2002	1100.	657.	689.	3007.	455.	5908.	30.	63.	8.
2003	1167.	692.	733.	3169.	480.	6241.	30.	63.	8.

TABLE 19
TRAFFIC PROJECTIONS
EXISTING AND PROPOSED ROAD LEGAL LOADINGS
LATTAKIA - HAFFE/SLENFE ROAD JUNCTION - TWO DIRECTIONS

	GROWTH RATES 1978-83	1983-93	1993-2003
CAR	10.20	8.60	6.10
PICK-UP	9.60	7.40	5.40
BUS	9.90	8.20	6.40
TRUCK(SINGLE-UNIT)	9.60	7.40	5.40
TRUCK(COMB.)	9.60	7.40	5.40

YEAR	CAR	PICKUP	BUS	TRUCK SINGLE-UNIT	TRUCK COMB.	TOTAL	P.C. OF TOTAL CAR+P.U.	BUS+S.U.T.	TRUCK COMB.
1978	344.	249.	206.	1141.	182.	2122.	28.	63.	9.
1979	379.	273.	226.	1251.	199.	2328.	28.	63.	9.
1980	418.	299.	248.	1371.	218.	2554.	28.	63.	9.
1981	461.	328.	273.	1503.	239.	2804.	28.	63.	9.
1982	508.	359.	300.	1647.	262.	3076.	28.	63.	9.
1983	560.	393.	330.	1805.	287.	3375.	28.	63.	9.
1984	608.	422.	357.	1939.	308.	3634.	28.	63.	8.
1985	660.	453.	386.	2082.	331.	3912.	28.	63.	8.
1986	717.	487.	418.	2236.	355.	4213.	29.	63.	8.
1987	779.	523.	452.	2401.	381.	4536.	29.	63.	8.
1988	846.	562.	489.	2579.	409.	4885.	29.	63.	8.
1989	919.	604.	529.	2770.	439.	5261.	29.	63.	8.
1990	998.	649.	572.	2975.	471.	5665.	29.	63.	8.
1991	1084.	697.	619.	3195.	506.	6101.	29.	63.	8.
1992	1177.	749.	670.	3431.	543.	6570.	29.	62.	8.
1993	1278.	804.	725.	3685.	583.	7075.	29.	62.	8.
1994	1356.	847.	771.	3884.	614.	7472.	29.	62.	8.
1995	1439.	893.	820.	4094.	647.	7893.	30.	62.	8.
1996	1527.	941.	872.	4315.	682.	8337.	30.	62.	8.
1997	1620.	992.	928.	4548.	719.	8807.	30.	62.	8.
1998	1719.	1045.	987.	4794.	758.	9304.	30.	62.	8.
1999	1824.	1102.	1050.	5053.	799.	9829.	30.	62.	8.
2000	1935.	1162.	1117.	5326.	842.	10382.	30.	62.	8.
2001	2053.	1225.	1188.	5614.	887.	10967.	30.	62.	8.
2002	2178.	1291.	1264.	5917.	935.	11585.	30.	62.	8.
2003	2311.	1361.	1345.	6237.	985.	12239.	30.	62.	8.

TABLE 18
TRAFFIC PROJECTIONS
EXISTING AND PROPOSED ROAD LEGAL LOADINGS
LATTAKIA - HAFFE/SLENFE ROAD JUNCTION - WESTBOUND

GROWTH RATES

	1978-83	1983-93	1993-2003
CAR	10.20	8.60	6.10
PICK-UP	9.60	7.40	5.40
BUS	9.90	8.20	6.40
TRUCK(SINGLE-UNIT)	9.60	7.40	5.40
TRUCK(COMB.)	9.60	7.40	5.40

YEAR	CAR	PICKUP	BUS	TRUCK SINGLE-UNIT	TRUCK COMB.	TOTAL	P.C. OF TOTAL CAR+P.U.	BUS+S.U.T.	TRUCK COMB.
1978	170.	122.	95.	560.	94.	1041.	28.	63.	9.
1979	187.	134.	104.	614.	103.	1142.	28.	63.	9.
1980	206.	147.	114.	673.	113.	1253.	28.	63.	9.
1981	227.	161.	125.	738.	124.	1375.	28.	63.	9.
1982	250.	176.	137.	809.	136.	1508.	28.	63.	9.
1983	276.	193.	151.	887.	149.	1656.	28.	63.	9.
1984	300.	207.	163.	953.	160.	1783.	28.	63.	9.
1985	326.	222.	176.	1024.	172.	1920.	29.	63.	9.
1986	354.	238.	190.	1100.	185.	2067.	29.	62.	9.
1987	384.	256.	206.	1181.	199.	2226.	29.	62.	9.
1988	417.	275.	223.	1268.	214.	2397.	29.	62.	9.
1989	453.	295.	241.	1362.	230.	2581.	29.	62.	9.
1990	492.	317.	261.	1463.	247.	2780.	29.	62.	9.
1991	534.	340.	282.	1571.	265.	2992.	29.	62.	9.
1992	580.	365.	305.	1687.	285.	3222.	29.	62.	9.
1993	630.	392.	330.	1812.	306.	3470.	29.	62.	9.
1994	668.	413.	351.	1910.	323.	3665.	29.	62.	9.
1995	709.	435.	373.	2013.	340.	3870.	30.	62.	9.
1996	752.	458.	397.	2122.	358.	4087.	30.	62.	9.
1997	798.	483.	422.	2237.	377.	4317.	30.	62.	9.
1998	847.	509.	449.	2358.	397.	4560.	30.	62.	9.
1999	899.	536.	478.	2485.	418.	4816.	30.	62.	9.
2000	954.	565.	509.	2619.	441.	5088.	30.	61.	9.
2001	1012.	596.	542.	2760.	465.	5375.	30.	61.	9.
2002	1074.	628.	577.	2909.	490.	5678.	30.	61.	9.
2003	1140.	662.	614.	3066.	516.	5998.	30.	61.	9.

TABLES 17, 18 & 19

TRAFFIC PROJECTIONS

LYDN

TABLE 20
TRAFFIC PROJECTIONS
EXISTING AND PROPOSED ROAD LEGAL LOADINGS
HAFFE/SLENFE ROAD JUNCTION - JISR ESH SHUGUR - EASTBOUND

	GROWTH RATES 1978-83	1983-93	1993-2003
CAR	10.20	8.60	6.10
PICK-UP	9.60	7.40	5.40
BUS	9.90	8.20	6.40
TRUCK(SINGLE-UNIT)	9.60	7.40	5.40
TRUCK(COMB.)	9.60	7.40	5.40

YEAR	CAR	PICKUP	BUS	TRUCK SINGLE-UNIT	TRUCK COMB.	TOTAL	P.C. OF TOTAL CAR+P.U.	BUS+S.U.T.	TRUCK COMB
1978	155.	86.	50.	548.	94.	933.	26.	64.	10.
1979	171.	94.	55.	601.	103.	1024.	26.	64.	10.
1980	188.	103.	60.	659.	113.	1123.	26.	64.	10.
1981	207.	113.	66.	722.	124.	1232.	26.	64.	10.
1982	228.	124.	73.	791.	136.	1352.	26.	64.	10.
1983	251.	136.	80.	867.	149.	1483.	26.	64.	10.
1984	273.	146.	87.	931.	160.	1597.	26.	64.	10.
1985	296.	157.	94.	1000.	172.	1719.	26.	64.	10.
1986	321.	169.	102.	1074.	185.	1851.	26.	64.	10.
1987	349.	182.	110.	1153.	199.	1993.	27.	63.	10.
1988	379.	195.	119.	1238.	214.	2145.	27.	63.	10.
1989	412.	209.	129.	1330.	230.	2310.	27.	63.	10.
1990	447.	224.	140.	1428.	247.	2486.	27.	63.	10.
1991	485.	241.	151.	1534.	265.	2676.	27.	63.	10.
1992	527.	259.	163.	1648.	285.	2882.	27.	63.	10.
1993	572.	278.	176.	1770.	306.	3102.	27.	63.	10.
1994	607.	293.	187.	1866.	323.	3276.	27.	63.	10.
1995	644.	309.	199.	1967.	340.	3459.	28.	63.	10.
1996	683.	326.	212.	2073.	358.	3652.	28.	63.	10.
1997	725.	344.	226.	2185.	377.	3857.	28.	63.	10.
1998	769.	363.	240.	2303.	397.	4072.	28.	62.	10.
1999	816.	383.	255.	2427.	418.	4299.	28.	62.	10.
2000	866.	404.	271.	2558.	441.	4540.	28.	62.	10.
2001	919.	426.	288.	2696.	465.	4794.	28.	62.	10.
2002	975.	449.	306.	2842.	490.	5062.	28.	62.	10.
2003	1034.	473.	326.	2995.	516.	5344.	28.	62.	10.

TABLE 22
TRAFFIC PROJECTIONS
EXISTING AND PROPOSED ROAD LEGAL LOADINGS
HAFFE/SLENFE ROAD JUNCTION - JISR ESH SHUGUR - TWO DIRECTIONS

	GROWTH RATES 1978-83	1983-93	1993-2003
CAR	10.20	8.60	6.10
PICK-UP	9.60	7.40	5.40
BUS	9.90	8.20	6.40
TRUCK(SINGLE-UNIT)	9.60	7.40	5.40
TRUCK(COMB.)	9.60	7.40	5.40

YEAR	CAR	PICKUP	BUS	TRUCK SINGLE-UNIT	TRUCK COMB.	TOTAL	P.C. OF TOTAL CAR+P.U.	BUS+S.U.T.	TRUCK COMB
1978	298.	182.	96.	1046.	188.	1810.	27.	63.	10.
1979	328.	199.	106.	1146.	206.	1985.	27.	63.	10.
1980	361.	218.	116.	1256.	226.	2177.	27.	63.	10.
1981	398.	239.	127.	1377.	248.	2389.	27.	63.	10.
1982	439.	262.	140.	1509.	272.	2622.	27.	63.	10.
1983	484.	287.	154.	1654.	298.	2877.	27.	63.	10.
1984	526.	308.	167.	1776.	320.	3097.	27.	63.	10.
1985	571.	331.	181.	1907.	344.	3334.	27.	63.	10.
1986	620.	355.	196.	2048.	369.	3588.	27.	63.	10.
1987	673.	381.	212.	2200.	396.	3862.	27.	62.	10.
1988	731.	409.	229.	2363.	425.	4157.	27.	62.	10.
1989	794.	439.	248.	2538.	456.	4475.	28.	62.	10.
1990	862.	471.	268.	2726.	490.	4817.	28.	62.	10.
1991	936.	506.	290.	2928.	526.	5186.	28.	62.	10.
1992	1016.	543.	314.	3145.	565.	5583.	28.	62.	10.
1993	1103.	583.	340.	3378.	607.	6011.	28.	62.	10.
1994	1170.	614.	362.	3560.	640.	6346.	28.	62.	10.
1995	1241.	647.	385.	3752.	675.	6700.	28.	62.	10.
1996	1317.	682.	410.	3955.	711.	7075.	28.	62.	10.
1997	1397.	719.	436.	4169.	749.	7470.	28.	62.	10.
1998	1482.	758.	464.	4394.	789.	7887.	28.	62.	10.
1999	1572.	799.	494.	4631.	832.	8328.	28.	62.	10.
2000	1668.	842.	526.	4881.	877.	8794.	29.	61.	10.
2001	1770.	887.	560.	5145.	924.	9286.	29.	61.	10.
2002	1878.	935.	596.	5423.	974.	9806.	29.	61.	10.
2003	1993.	985.	634.	5716.	1027.	10355.	29.	61.	10.

TABLE 21
TRAFFIC PROJECTIONS
EXISTING AND PROPOSED ROAD LEGAL LOADINGS
HAFFE/SLENFE ROAD JUNCTION - JISR ESH SHUGUR - WESTBOUND

GROWTH RATES

	1978-83	1983-93	1993-2003
CAR	10.20	8.60	6.10
PICK-UP	9.60	7.40	5.40
BUS	9.90	8.20	6.40
TRUCK(SINGLE-UNIT)	9.60	7.40	5.40
TRUCK(COMB.)	9.60	7.40	5.40

YEAR	CAR	PICKUP	BUS	TRUCK SINGLE-UNIT	TRUCK COMB.	TOTAL	P.C. OF TOTAL CAR+P.U.	BUS+S.U.T.	TRUCK COMB.
1978	143.	96.	46.	498.	94.	877.	27.	62.	11.
1979	158.	105.	51.	546.	103.	963.	27.	62.	11.
1980	174.	115.	56.	598.	113.	1056.	27.	62.	11.
1981	192.	126.	62.	655.	124.	1159.	27.	62.	11.
1982	212.	138.	68.	718.	136.	1272.	28.	62.	11.
1983	234.	151.	75.	787.	149.	1396.	28.	62.	11.
1984	254.	162.	81.	845.	160.	1502.	28.	62.	11.
1985	276.	174.	88.	908.	172.	1618.	28.	62.	11.
1986	300.	187.	95.	975.	185.	1742.	28.	61.	11.
1987	326.	201.	103.	1047.	199.	1876.	28.	61.	11.
1988	354.	216.	111.	1124.	214.	2019.	28.	61.	11.
1989	384.	232.	120.	1207.	230.	2173.	28.	61.	11.
1990	417.	249.	130.	1296.	247.	2339.	28.	61.	11.
1991	453.	267.	141.	1392.	265.	2518.	29.	61.	11.
1992	492.	287.	153.	1495.	285.	2712.	29.	61.	11.
1993	534.	308.	166.	1606.	306.	2920.	29.	61.	10.
1994	567.	325.	177.	1693.	323.	3085.	29.	61.	10.
1995	602.	343.	188.	1784.	340.	3257.	29.	61.	10.
1996	639.	362.	200.	1880.	358.	3439.	29.	60.	10.
1997	678.	382.	213.	1982.	377.	3632.	29.	60.	10.
1998	719.	403.	227.	2089.	397.	3835.	29.	60.	10.
1999	763.	425.	242.	2202.	418.	4050.	29.	60.	10.
2000	810.	448.	257.	2321.	441.	4277.	29.	60.	10.
2001	859.	472.	273.	2446.	465.	4515.	29.	60.	10.
2002	911.	497.	290.	2578.	490.	4766.	30.	60.	10.
2003	967.	524.	309.	2717.	516.	5033.	30.	60.	10.

TABLES 20, 21 & 22
TRAFFIC PROJECTIONS

LYON

TABLE 23
TRAFFIC PROJECTIONS
EXISTING AND PROPOSED ROAD LEGAL LOADINGS
JISR ESH SHUGUR BYPASS - EASTBOUND

	GROWTH RATES 1978-83	1983-93	1993-2003
CAR	10.20	8.60	6.10
PICK-UP	9.60	7.40	5.40
BUS	9.90	8.20	6.40
TRUCK (SINGLE-UNIT)	9.60	7.40	5.40
TRUCK (COMB.)	9.60	7.40	5.40

YEAR	CAR	PICKUP	BUS	TRUCK SINGLE-UNIT	TRUCK COMB.	TOTAL	P.C. OF TOTAL CAR+P.U.	BUS+S.U.T.	TRUCK COMB.
1978	128.	53.	11.	490.	86.	768.	24.	65.	11.
1979	141.	58.	12.	537.	94.	842.	24.	65.	11.
1980	155.	64.	13.	589.	103.	924.	24.	65.	11.
1981	171.	70.	14.	646.	113.	1014.	24.	65.	11.
1982	188.	77.	15.	708.	124.	1112.	24.	65.	11.
1983	207.	84.	16.	776.	136.	1219.	24.	65.	11.
1984	225.	90.	17.	833.	146.	1311.	24.	65.	11.
1985	244.	97.	18.	895.	157.	1411.	24.	65.	11.
1986	265.	104.	19.	961.	169.	1518.	24.	65.	11.
1987	288.	112.	21.	1032.	182.	1635.	24.	64.	11.
1988	313.	120.	23.	1108.	195.	1759.	25.	64.	11.
1989	340.	129.	25.	1190.	209.	1893.	25.	64.	11.
1990	369.	139.	27.	1278.	224.	2037.	25.	64.	11.
1991	401.	149.	29.	1373.	241.	2193.	25.	64.	11.
1992	435.	160.	31.	1475.	259.	2360.	25.	64.	11.
1993	472.	172.	34.	1584.	278.	2540.	25.	64.	11.
1994	501.	181.	36.	1670.	293.	2681.	25.	64.	11.
1995	532.	191.	38.	1760.	309.	2830.	26.	64.	11.
1996	564.	201.	40.	1855.	326.	2986.	26.	63.	11.
1997	598.	212.	43.	1955.	344.	3152.	26.	63.	11.
1998	634.	223.	46.	2061.	363.	3327.	26.	63.	11.
1999	673.	235.	49.	2172.	383.	3512.	26.	63.	11.
2000	714.	248.	52.	2289.	404.	3707.	26.	63.	11.
2001	758.	261.	55.	2413.	426.	3913.	26.	63.	11.
2002	804.	275.	59.	2543.	449.	4130.	26.	63.	11.
2003	853.	290.	63.	2680.	473.	4359.	26.	63.	11.

TABLE 25
TRAFFIC PROJECTIONS
EXISTING AND PROPOSED ROAD LEGAL LOADINGS
JISR ESH SHUGUR BYPASS - TWO DIRECTIONS

	GROWTH RATES 1978-83	1983-93	1993-2003
CAR	10.20	8.60	6.10
PICK-UP	9.60	7.40	5.40
BUS	9.90	8.20	6.40
TRUCK (SINGLE-UNIT)	9.60	7.40	5.40
TRUCK (COMB.)	9.60	7.40	5.40

YEAR	CAR	PICKUP	BUS	TRUCK SINGLE-UNIT	TRUCK COMB.	TOTAL	P.C. OF TOTAL CAR+P.U.	BUS+S.U.T.	TRUCK COMB.
1978	254.	120.	27.	899.	171.	1471.	25.	63.	12.
1979	280.	132.	30.	985.	187.	1614.	26.	63.	12.
1980	309.	145.	33.	1080.	205.	1772.	26.	63.	12.
1981	341.	159.	36.	1184.	225.	1945.	26.	63.	12.
1982	376.	174.	40.	1298.	247.	2135.	26.	63.	12.
1983	414.	191.	44.	1423.	271.	2343.	26.	63.	12.
1984	450.	205.	48.	1528.	291.	2522.	26.	62.	12.
1985	489.	220.	52.	1641.	313.	2715.	26.	62.	12.
1986	531.	236.	56.	1762.	336.	2921.	26.	62.	12.
1987	577.	253.	61.	1892.	361.	3144.	26.	62.	11.
1988	627.	272.	66.	2032.	388.	3385.	27.	62.	11.
1989	681.	292.	71.	2182.	417.	3643.	27.	62.	11.
1990	740.	314.	77.	2343.	448.	3922.	27.	62.	11.
1991	804.	337.	83.	2516.	481.	4221.	27.	62.	11.
1992	873.	362.	90.	2702.	517.	4544.	27.	61.	11.
1993	948.	389.	97.	2902.	555.	4891.	27.	61.	11.
1994	1005.	410.	103.	3059.	585.	5163.	27.	61.	11.
1995	1067.	432.	110.	3224.	617.	5450.	28.	61.	11.
1996	1132.	455.	117.	3398.	650.	5752.	28.	61.	11.
1997	1201.	480.	124.	3581.	685.	6071.	28.	61.	11.
1998	1274.	506.	132.	3774.	722.	6408.	28.	61.	11.
1999	1352.	533.	140.	3978.	761.	6764.	28.	61.	11.
2000	1434.	562.	149.	4193.	802.	7140.	28.	61.	11.
2001	1521.	592.	159.	4419.	845.	7536.	28.	61.	11.
2002	1614.	624.	169.	4658.	891.	7956.	28.	61.	11.
2003	1712.	658.	180.	4910.	939.	8399.	28.	61.	11.

TABLE 24
TRAFFIC PROJECTIONS
EXISTING AND PROPOSED ROAD LEGAL LOADINGS
JISR ESH SHUGUR BYPASS - WESTBOUND

GROWTH RATES

	1978-83	1983-93	1993-2003
CAR	10.20	8.60	6.10
PICK-UP	9.60	7.40	5.40
BUS	9.90	8.20	6.40
TRUCK(SINGLE-UNIT)	9.60	7.40	5.40
TRUCK(COMB.)	9.60	7.40	5.40

YEAR	CAR	PICKUP	BUS	TRUCK SINGLE-UNIT	TRUCK COMB.	TOTAL	P.C. OF TOTAL CAR+P.U.	BUS+S.U.T.	TRUCK COMB.
1978	126.	67.	16.	409.	85.	703.	27.	60.	12.
1979	139.	73.	18.	448.	93.	771.	27.	60.	12.
1980	153.	80.	20.	491.	102.	846.	28.	60.	12.
1981	169.	88.	22.	538.	112.	929.	28.	60.	12.
1982	186.	96.	24.	590.	123.	1019.	28.	60.	12.
1983	205.	105.	26.	647.	135.	1118.	28.	60.	12.
1984	223.	113.	28.	695.	145.	1204.	28.	60.	12.
1985	242.	121.	30.	746.	156.	1295.	28.	60.	12.
1986	263.	130.	32.	801.	168.	1394.	28.	60.	12.
1987	286.	140.	35.	860.	180.	1501.	28.	60.	12.
1988	311.	150.	38.	924.	193.	1616.	29.	60.	12.
1989	339.	161.	41.	992.	207.	1739.	29.	59.	12.
1990	367.	173.	44.	1065.	222.	1871.	29.	59.	12.
1991	399.	186.	48.	1144.	238.	2015.	29.	59.	12.
1992	433.	200.	52.	1229.	256.	2170.	29.	59.	12.
1993	470.	215.	56.	1320.	275.	2336.	29.	59.	12.
1994	499.	227.	60.	1391.	290.	2467.	29.	59.	12.
1995	529.	239.	64.	1466.	306.	2604.	29.	59.	12.
1996	561.	252.	68.	1545.	323.	2749.	30.	59.	12.
1997	595.	266.	72.	1628.	340.	2901.	30.	59.	12.
1998	631.	280.	77.	1716.	358.	3062.	30.	59.	12.
1999	669.	295.	82.	1809.	377.	3232.	30.	58.	12.
2000	710.	311.	87.	1907.	397.	3412.	30.	58.	12.
2001	753.	328.	93.	2010.	418.	3602.	30.	58.	12.
2002	799.	346.	99.	2119.	441.	3804.	30.	58.	12.
2003	848.	365.	105.	2233.	465.	4016.	30.	58.	12.

TABLES 23, 24 & 25
TRAFFIC PROJECTIONS

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TABLE 26
TRAFFIC PROJECTIONS
EXISTING AND PROPOSED ROAD LEGAL LOADINGS
JISR ESH SHUGUR - ARIHA - EASTBOUND

GROWTH RATES

	1978-83	1983-93	1993-2003
CAR	10.20	8.60	6.10
PICK-UP	9.60	7.40	5.40
BUS	9.90	8.20	6.40
TRUCK(SINGLE-UNIT)	9.60	7.40	5.40
TRUCK(COMB.)	9.60	7.40	5.40

YEAR	CAR	PICKUP	BUS	TRUCK SINGLE-UNIT	TRUCK COMB.	TOTAL	P.C. OF TOTAL CAR+P.U.	BUS+S.U.T.	TRUCK C
1978	275.	252.	64.	538.	110.	1239.	43.	49.	9.
1979	303.	276.	70.	590.	121.	1360.	43.	49.	9.
1980	334.	302.	77.	647.	133.	1493.	43.	48.	9.
1981	368.	331.	85.	709.	146.	1639.	43.	48.	9.
1982	406.	363.	93.	777.	160.	1799.	43.	48.	9.
1983	447.	398.	102.	852.	175.	1974.	43.	48.	9.
1984	485.	427.	110.	915.	188.	2125.	43.	48.	9.
1985	527.	459.	119.	983.	202.	2290.	43.	48.	9.
1986	572.	493.	129.	1056.	217.	2467.	43.	48.	9.
1987	621.	529.	140.	1134.	233.	2657.	43.	48.	9.
1988	674.	568.	151.	1218.	250.	2861.	43.	48.	9.
1989	732.	610.	163.	1308.	269.	3082.	44.	48.	9.
1990	795.	655.	176.	1405.	289.	3320.	44.	48.	9.
1991	863.	703.	190.	1509.	310.	3575.	44.	48.	9.
1992	937.	755.	206.	1621.	333.	3852.	44.	47.	9.
1993	1018.	811.	223.	1741.	358.	4151.	44.	47.	9.
1994	1080.	855.	237.	1835.	377.	4384.	44.	47.	9.
1995	1146.	901.	252.	1934.	397.	4630.	44.	47.	9.
1996	1216.	950.	268.	2038.	418.	4890.	44.	47.	9.
1997	1290.	1001.	285.	2148.	441.	5165.	44.	47.	9.
1998	1369.	1055.	303.	2264.	465.	5456.	44.	47.	9.
1999	1453.	1112.	322.	2386.	490.	5763.	45.	47.	9.
2000	1542.	1172.	343.	2515.	516.	6088.	45.	47.	8.
2001	1636.	1235.	365.	2651.	544.	6431.	45.	47.	8.
2002	1736.	1302.	388.	2794.	573.	6793.	45.	47.	8.
2003	1842.	1372.	413.	2945.	604.	7176.	45.	47.	8.

TABLE 28
TRAFFIC PROJECTIONS
EXISTING AND PROPOSED ROAD LEGAL LOADINGS
JISR ESH SHUGUR - ARIHA - TWO DIRECTIONS

GROWTH RATES

	1978-83	1983-93	1993-2003
CAR	10.20	8.60	6.10
PICK-UP	9.60	7.40	5.40
BUS	9.90	8.20	6.40
TRUCK(SINGLE-UNIT)	9.60	7.40	5.40
TRUCK(COMB.)	9.60	7.40	5.40

YEAR	CAR	PICKUP	BUS	TRUCK SINGLE-UNIT	TRUCK COMB.	TOTAL	P.C. OF TOTAL CAR+P.U.	BUS+S.U.T.	TRUCK C
1978	448.	457.	120.	1078.	196.	2299.	39.	52.	9
1979	494.	501.	132.	1181.	215.	2523.	39.	52.	9
1980	544.	549.	145.	1294.	236.	2768.	39.	52.	9
1981	599.	602.	159.	1418.	259.	3037.	40.	52.	9
1982	660.	660.	175.	1554.	284.	3333.	40.	52.	9
1983	727.	723.	192.	1703.	311.	3656.	40.	52.	9
1984	790.	777.	208.	1829.	334.	3938.	40.	52.	8
1985	858.	834.	225.	1964.	359.	4240.	40.	52.	8
1986	932.	896.	243.	2109.	386.	4566.	40.	52.	8
1987	1012.	962.	263.	2265.	415.	4917.	40.	51.	8
1988	1099.	1033.	285.	2433.	446.	5296.	40.	51.	8
1989	1194.	1109.	308.	2613.	479.	5703.	40.	51.	8
1990	1297.	1191.	333.	2806.	514.	6141.	41.	51.	8
1991	1409.	1279.	360.	3014.	552.	6614.	41.	51.	8
1992	1530.	1374.	390.	3237.	593.	7124.	41.	51.	8
1993	1662.	1476.	422.	3477.	637.	7674.	41.	51.	8
1994	1753.	1556.	449.	3665.	671.	8104.	41.	51.	8
1995	1871.	1640.	478.	3863.	707.	8559.	41.	51.	8
1996	1985.	1729.	509.	4072.	745.	9040.	41.	51.	8
1997	2106.	1822.	542.	4292.	785.	9547.	41.	51.	8
1998	2234.	1920.	577.	4524.	827.	10082.	41.	51.	8
1999	2370.	2024.	614.	4768.	872.	10648.	41.	51.	8
2000	2515.	2133.	653.	5025.	919.	11245.	41.	50.	8
2001	2668.	2248.	695.	5296.	969.	11876.	41.	50.	8
2002	2831.	2369.	739.	5582.	1021.	12542.	41.	50.	8
2003	3004.	2497.	786.	5883.	1076.	13246.	42.	50.	8

TABLE 27
TRAFFIC PROJECTIONS
EXISTING AND PROPOSED ROAD LEGAL LOADINGS
JISR ESH SHUGUR - ARIHA - WESTBOUND

GROWTH RATES

	1978-83	1983-93	1993-2003
CAR	10.20	8.60	6.10
PICK-UP	9.60	7.40	5.40
BUS	9.90	8.20	6.40
TRUCK(SINGLE UNIT)	9.60	7.40	5.40
TRUCK(COMB.)	9.60	7.40	5.40

YEAR	CAR	PICKUP	BUS	TRUCK SINGLE-UNIT	TRUCK COMB.	TOTAL	P.C. OF TOTAL CAR+P.U.	BUS+S.U.T.	TRUCK COMB.
1978	173.	205.	56.	540.	86.	1060.	36.	56.	8.
1979	191.	225.	62.	592.	94.	1164.	36.	56.	8.
1980	210.	247.	68.	649.	103.	1277.	36.	56.	8.
1981	231.	271.	75.	711.	113.	1401.	36.	56.	8.
1982	255.	297.	82.	779.	124.	1537.	36.	56.	8.
1983	281.	326.	90.	854.	136.	1687.	36.	56.	8.
1984	309.	350.	97.	917.	146.	1815.	36.	56.	8.
1985	331.	376.	105.	985.	157.	1954.	36.	56.	8.
1986	359.	404.	114.	1058.	169.	2104.	36.	56.	8.
1987	390.	434.	123.	1136.	182.	2255.	36.	55.	8.
1988	424.	466.	133.	1220.	195.	2438.	37.	55.	8.
1989	460.	500.	144.	1310.	209.	2623.	37.	55.	8.
1990	500.	537.	156.	1407.	224.	2824.	37.	55.	8.
1991	543.	577.	169.	1511.	241.	3041.	37.	55.	8.
1992	590.	620.	183.	1623.	259.	3275.	37.	55.	8.
1993	641.	666.	198.	1743.	278.	3526.	37.	55.	8.
1994	696.	702.	211.	1837.	293.	3723.	37.	55.	8.
1995	721.	740.	225.	1936.	309.	3931.	37.	55.	8.
1996	765.	780.	239.	2041.	326.	4151.	37.	55.	8.
1997	812.	822.	254.	2151.	344.	4383.	37.	55.	8.
1998	862.	866.	270.	2267.	363.	4628.	37.	55.	8.
1999	915.	913.	287.	2389.	383.	4887.	37.	55.	8.
2000	971.	962.	305.	2518.	404.	5160.	37.	55.	8.
2001	1030.	1014.	325.	2654.	426.	5449.	38.	55.	8.
2002	1093.	1069.	346.	2797.	449.	5754.	38.	55.	8.
2003	1160.	1127.	368.	2948.	473.	6075.	38.	55.	8.

TABLES 26, 27 & 28
TRAFFIC PROJECTIONS
LYON

TABLE 29

EQUIVALENT AXLE LOAD FACTORS
PRESENT TRUCK LOADING PRACTICES

ROAD SECTION: Lattakia to Haffe/Slenfe Road Junction

VEHICLE TYPE	PERCENT OF TRUCKS	AVERAGE EAL	DIRECTION TO: Ariha PERCENT	DIRECTION TO: Ariha DAILY EAL	DIRECTION TO: Lattakia PERCENT	DIRECTION TO: Lattakia DAILY EAL
SINGLE UNIT VEHICLES						
2-axle, 6-tire, medium 1/	41.2					
empty		0.05	11.7	3/	71.7	0.01
loaded		4.10	88.3	1.49	28.3	0.48
2-axle, 6-tire, large 1/	41.2					
empty		0.27	11.7	0.01	71.7	0.08
loaded		31.11	88.3	11.32	28.3	3.63
3-axle, 10-tire	3.8					
empty		0.26	12.5	3/	61.5	0.01
loaded		12.17	87.5	0.40	38.5	0.18
COMBINATION VEHICLES						
Truck + Trailer (2 axles + 2 axles)	4.0					
empty		0.51	3.1	3/	85.7	0.02
loaded		63.60	96.9	2.47	14.3	0.36
Tractor + ½ Trailer 2/ (2 axles + 2 axles)	8.6					
empty		0.34	6.0	3/	77.0	0.02
loaded		37.33	94.0	3.02	23.0	0.74
Tractor + ½ Trailer 2/ (3 axles + 2 axles)	1.2					
empty		0.19	6.0	3/	77.0	3/
loaded		13.27	94.0	0.15	23.0	0.04
TOTAL	100.0	-	-	18.86	-	5.57

1/ Estimated at 50/50 proportion.

2/ Based upon truck inventory proportions, Table C-2, Tartous-Lattakia Draft Final Report.

3/ Less than 0.01.

TABLE 30

EQUIVALENT AXLE LOAD FACTORS
PRESENT TRUCK LOADING PRACTICES

ROAD SECTION: Haffe/Slenfe Road Junction - Jish Esh Shugur

VEHICLE TYPE	PERCENT OF TRUCKS	AVERAGE EAL	DIRECTION TO: Ariha PERCENT	DIRECTION TO: Ariha DAILY EAL	DIRECTION TO: Lattakia PERCENT	DIRECTION TO: Lattakia DAILY EAL
SINGLE UNIT VEHICLES						
2-axle, 6-tire, medium 1/	40.85					
empty		0.05	11.7	3/	71.7	0.01
loaded		4.10	88.3	1.48	28.3	0.47
2-axle, 6-tire, large 1/	40.85					
empty		0.27	11.7	0.01	71.7	0.08
loaded		31.11	88.3	11.22	28.3	3.60
3-axle, 10-tire	3.1					
empty		0.26	12.5	3/	61.5	3/
loaded		12.17	87.5	0.33	38.5	0.15
COMBINATION VEHICLES						
Truck + Trailer (2 axles + 2 axles)	4.4					
empty		0.51	3.1	3/	85.7	0.02
loaded		63.60	96.9	2.71	14.3	0.40
Tractor + ½ Trailer 2/ (2 axles + 2 axles)	9.5					
empty		0.34	6.0	3/	77.0	0.02
loaded		37.33	94.0	3.33	23.0	0.82
Tractor + ½ Trailer 2/ (3 axles + 2 axles)	1.3					
empty		0.19	6.0	3/	77.0	3/
loaded		13.27	94.0	0.16	23.0	0.04
TOTAL	100.0	-	-	19.24	-	5.61

1/ Estimated at 50/50 proportion.

2/ Based upon truck inventory, Table C-2, Tartous-Lattakia Draft Final Report

3/ Less than 0.01.

TABLE 29 & 30
AXLE LOAD FACTORS

LYON

TABLE 31

EQUIVALENT AXLE LOAD FACTORS
PRESENT TRUCK LOADING PRACTICES

ROAD SECTION: Jisr Esh Shugur Bypass

VEHICLE TYPE	PERCENT OF TRUCKS	AVERAGE EAL	DIRECTION TO: Ariha PERCENT	DIRECTION TO: Ariha DAILY EAL	DIRECTION TO: Lattakia PERCENT	DIRECTION TO: Lattakia DAILY EAL
SINGLE UNIT VEHICLES						
2-axle, 6-tire, medium 1/	40.4					
empty		0.05	11.7	3/	71.7	0.01
loaded		4.10	88.3	1.46	28.3	0.47
2-axle, 6-tire, large 1/	40.4					
empty		0.27	11.7	0.01	71.7	0.08
loaded		31.11	88.3	11.10	28.3	3.56
3-axle, 10-tire	3.2					
empty		0.26	12.5	3/	61.5	0.01
loaded		12.17	87.5	0.34	38.5	0.15
COMBINATION VEHICLES						
Truck + Trailer (2 axles + 2 axles)	4.0					
empty		0.51	3.1	3/	85.7	0.02
loaded		63.60	96.9	2.47	14.3	0.36
Tractor + ½ Trailer 2/ (2 axles + 2 axles)	10.5					
empty		0.34	6.0	3/	77.0	0.03
loaded		37.33	94.0	3.68	23.0	0.90
Tractor + ½ Trailer 2/ (3 axles + 2 axles)	1.5					
empty		0.19	6.0	3/	77.0	3/
loaded		13.27	94.0	0.19	23.0	0.05
TOTAL	100.0	-	-	19.25	-	5.64

1/ Estimated at 50/50 proportion.

2/ Based upon truck inventory, Table C-2, Tartous-Lattakia Draft Final Report.

3/ Less than 0.01.

TABLE 32

EQUIVALENT AXLE LOAD FACTORS
PRESENT TRUCK LOADING PRACTICES

ROAD SECTIONS: Jisr Esh Shugur - Ariha

VEHICLE TYPE	PERCENT OF TRUCKS	AVERAGE EAL	DIRECTION TO: Ariha PERCENT	DIRECTION TO: Ariha DAILY EAL	DIRECTION TO: Lattakia PERCENT	DIRECTION TO: Lattakia DAILY EAL
SINGLE UNIT VEHICLES						
2-axle, 6-tire, medium 1/	39.1					
empty		0.05	11.7	3/	71.7	0.01
loaded		4.10	88.3	1.42	28.3	0.45
2-axle, 6-tire, large 1/	39.1					
empty		0.27	11.7	0.01	71.7	0.08
loaded		31.11	88.3	10.74	28.3	3.44
3-axle, 10-tire	6.4					
empty		0.26	12.5	3/	61.5	0.01
loaded		12.17	87.5	0.68	38.5	0.30
COMBINATION VEHICLES						
Truck + Trailer (2 axles + 2 axles)	4.9					
empty		0.51	3.1	3/	85.7	0.02
loaded		63.60	96.9	3.02	14.3	0.45
Tractor + ½ Trailer 2/ (2 axles + 2 axles)	9.2					
empty		0.34	6.0	3/	77.0	0.02
loaded		37.33	94.0	3.23	23.0	0.79
Tractor + ½ Trailer 2/ (3 axles + 2 axles)	1.3					
empty		0.19	6.0	3/	77.0	3/
loaded		13.27	94.0	0.16	23.0	0.04
TOTAL	100.0	-	-	19.26	-	5.61

1/ Estimated at 50/50 proportion.

2/ Based upon truck inventory, Table C-2, Tartous-Lattakia Draft Final Report.

3/ Less than 0.01.

TABLES 31 & 32
AXLE LOAD FACTORS

LYON

TABLE 33
LATTAKIA TO ARIHA - PRESENT PRACTICES
LATTAKIA TO HAFFE/SLENFE ROAD JUNCTION
BOTH DIRECTIONS
EQUIVALENT AXLE LOADS (EAL)
(EAL TOTALS IN THOUSANDS)

GROWTH RATES

	1978-83	1983-93	1993-2003
TRUCK	9.20	8.30	5.70
BUS	9.90	8.20	6.40

YEAR	TRUCK (F=12.30) VOLUME	ANNUAL EAL	CUMUL. EAL	BUS (F=0.05) VOLUME	ANNUAL EAL	CUMUL. EAL	TRUCK + BUS ANNUAL EAL	TRUCK + BUS CUMUL. EAL
1978	735.	3300.	3300.	206.	4.	4.	3303.	3303.
1979	803.	3603.	6903.	226.	4.	8.	3607.	6911.
1980	876.	3935.	10838.	249.	5.	12.	3939.	10850.
1981	957.	4297.	15135.	273.	5.	17.	4301.	15152.
1982	1045.	4692.	19827.	301.	5.	23.	4697.	19849.
1983	1141.	5124.	24951.	330.	6.	29.	5129.	24979.
1984	1236.	5549.	30500.	357.	7.	35.	5555.	30535.
1985	1339.	6010.	36510.	387.	7.	43.	6016.	36552.
1986	1450.	6509.	43018.	418.	8.	50.	6516.	43068.
1987	1570.	7049.	50067.	453.	8.	58.	7057.	50125.
1988	1700.	7634.	57701.	490.	9.	67.	7642.	57768.
1989	1841.	8267.	65968.	530.	10.	77.	8277.	66045.
1990	1994.	8954.	74922.	573.	10.	87.	8964.	75009.
1991	2160.	9697.	84619.	620.	11.	99.	9708.	84717.
1992	2339.	10502.	95120.	671.	12.	111.	10513.	95231.
1993	2533.	11373.	106493.	726.	13.	124.	11386.	106617.
1994	2745.	12321.	118815.	773.	14.	138.	12035.	118653.
1995	2830.	12707.	131522.	822.	15.	153.	12721.	131375.
1996	2992.	13431.	144953.	875.	16.	169.	13446.	144822.
1997	3162.	14197.	159149.	931.	17.	186.	14213.	159035.
1998	3347.	15006.	173855.	990.	18.	204.	15023.	174059.
1999	3533.	15851.	189716.	1054.	19.	224.	15880.	189939.
2000	3734.	16765.	206481.	1121.	20.	244.	16785.	206725.
2001	3947.	17721.	224202.	1193.	22.	266.	17742.	224467.
2002	4172.	18731.	242933.	1269.	23.	289.	18754.	243221.
2003	4410.	19799.	262731.	1351.	25.	314.	19823.	263045.

TABLE 35
LATTAKIA TO ARIHA - PRESENT PRACTICES
LATTAKIA TO HAFFE/SLENFE ROAD JUNCTION
WESTBOUND
EQUIVALENT AXLE LOADS (EAL)
(EAL TOTALS IN THOUSANDS)

GROWTH RATES

	1978-83	1983-93	1993-2003
TRUCK	9.20	8.30	5.70
BUS	9.90	8.20	6.40

YEAR	TRUCK (F= 5.57) VOLUME	ANNUAL EAL	CUMUL. EAL	BUS (F=0.05) VOLUME	ANNUAL EAL	CUMUL. EAL	TRUCK + BUS ANNUAL EAL	TRUCK + BUS CUMUL. EAL
1978	363.	738.	738.	95.	2.	2.	739.	739.
1979	396.	806.	1544.	104.	2.	4.	807.	1547.
1980	433.	880.	2424.	115.	2.	6.	882.	2429.
1981	473.	961.	3385.	126.	2.	8.	963.	3392.
1982	516.	1049.	4434.	139.	3.	11.	1051.	4444.
1983	564.	1146.	5580.	152.	3.	13.	1148.	5593.
1984	610.	1241.	6821.	165.	3.	16.	1244.	6837.
1985	661.	1344.	8165.	178.	3.	20.	1347.	8185.
1986	716.	1456.	9621.	193.	4.	23.	1459.	9644.
1987	775.	1576.	11198.	209.	4.	27.	1580.	11224.
1988	840.	1707.	12905.	226.	4.	31.	1711.	12935.
1989	909.	1849.	14754.	244.	4.	36.	1853.	14789.
1990	985.	2002.	16756.	264.	5.	40.	2007.	16796.
1991	1067.	2169.	18925.	286.	5.	46.	2173.	18970.
1992	1155.	2349.	21274.	310.	6.	51.	2354.	21324.
1993	1251.	2544.	23817.	335.	6.	57.	2549.	23874.
1994	1372.	2689.	26506.	356.	7.	64.	2695.	26569.
1995	1396.	2842.	29348.	379.	7.	71.	2848.	29418.
1996	1476.	3004.	32352.	403.	7.	78.	3011.	32429.
1997	1562.	3175.	35527.	429.	8.	86.	3182.	35612.
1998	1651.	3356.	38883.	457.	8.	94.	3364.	38976.
1999	1745.	3547.	42430.	486.	9.	103.	3556.	42533.
2000	1844.	3750.	46180.	517.	9.	113.	3758.	46292.
2001	1949.	3963.	50143.	550.	10.	123.	3973.	50265.
2002	2061.	4189.	54332.	585.	11.	133.	4199.	54465.
2003	2178.	4428.	58760.	623.	11.	145.	4439.	58904.

TABLE 34
LATTAKIA TO ARIHA - PRESENT PRACTICES
LATTAKIA TO HAFFE/SLENFE ROAD JUNCTION
EASTBOUND
EQUIVALENT AXLE LOADS (EAL)
(EAL TOTALS IN THOUSANDS)

GROWTH RATES

	1978-83	1983-93	1993-2003
TRUCK	9.20	8.30	5.70
BUS	9.90	8.20	6.40

YEAR	TRUCK (F=19.86) VOLUME	ANNUAL EAL	CUMUL. EAL	BUS (F=0.05) VOLUME	ANNUAL EAL	CUMUL. EAL	TRUCK + BUS ANNUAL EAL	TRUCK + BUS CUMUL. EAL
1978	372.	2561.	2561.	111.	2.	2.	2562.	2562.
1979	406.	2796.	5357.	122.	2.	4.	2798.	5361.
1980	444.	3054.	8411.	134.	2.	7.	3056.	8417.
1981	484.	3335.	11746.	147.	3.	9.	3337.	11754.
1982	529.	3641.	15387.	162.	3.	12.	3644.	15399.
1983	578.	3976.	19363.	178.	3.	16.	3979.	19378.
1984	626.	4306.	23670.	193.	4.	19.	4309.	23688.
1985	678.	4664.	28334.	208.	4.	23.	4667.	28356.
1986	734.	5051.	33385.	225.	4.	27.	5055.	33411.
1987	795.	5470.	38855.	244.	4.	31.	5474.	38886.
1988	861.	5924.	44779.	264.	5.	36.	5929.	44815.
1989	932.	6416.	51195.	286.	5.	41.	6421.	51236.
1990	1009.	6948.	58144.	309.	5.	47.	6954.	58190.
1991	1093.	7525.	65669.	334.	6.	53.	7531.	65721.
1992	1184.	8150.	73819.	362.	7.	60.	8156.	73878.
1993	1282.	8826.	82645.	391.	7.	67.	8833.	82711.
1994	1355.	9329.	91974.	416.	8.	75.	9336.	92048.
1995	1432.	9861.	101835.	443.	8.	83.	9869.	101917.
1996	1514.	10423.	112258.	471.	9.	91.	10431.	112349.
1997	1600.	11017.	123276.	502.	9.	100.	11026.	123376.
1998	1692.	11645.	134921.	534.	10.	110.	11655.	135031.
1999	1788.	12309.	147230.	568.	10.	121.	12319.	147350.
2000	1890.	13011.	160241.	604.	11.	132.	13021.	160372.
2001	1998.	13752.	173993.	643.	12.	143.	13764.	174136.
2002	2112.	14536.	188529.	684.	12.	156.	14548.	188684.
2003	2232.	15365.	203894.	728.	13.	169.	15378.	204062.

TABLES 33, 34 & 35
PRESENT LOADING PRACTICES
LYON

TABLE 36
LATTAKIA TO ARIHA - PRESENT PRACTICES
HAFFE/SLENFE ROAD JUNCTION TO JISR ESH SHUGUR
BOTH DIRECTIONS
EQUIVALENT AXLE LOADS (EAL)
(EAL TOTALS IN THOUSANDS)

GROWTH RATES

	1978-83	1983-93	1993-2003
TRUCK	9.20	8.30	5.70
BUS	9.90	8.20	6.40

YEAR	TRUCK (F=12.69) VOLUME	ANNUAL EAL	CUMUL. EAL	BUS (F=0.05) VOLUME	ANNUAL EAL	CUMUL. EAL	TRUCK + BUS ANNUAL EAL	TRUCK + BUS CUMUL. EAL
1978	685.	3173.	3173.	96.	2.	2.	3174.	3174.
1979	748.	3465.	6638.	106.	2.	4.	3466.	6641.
1980	817.	3783.	10421.	116.	2.	6.	3785.	10426.
1981	892.	4132.	14553.	127.	2.	8.	4133.	14560.
1982	974.	4512.	19064.	140.	3.	11.	4514.	19074.
1983	1064.	4927.	23991.	154.	3.	13.	4929.	24004.
1984	1152.	5336.	29327.	167.	3.	17.	5338.	29343.
1985	1248.	5779.	35105.	180.	3.	20.	5781.	35124.
1986	1351.	6258.	41363.	195.	4.	23.	6261.	41386.
1987	1463.	6778.	48141.	211.	4.	27.	6781.	48167.
1988	1585.	7340.	55481.	228.	4.	31.	7344.	55512.
1989	1716.	7949.	63430.	247.	5.	36.	7953.	63465.
1990	1859.	8609.	72039.	267.	5.	41.	8613.	72079.
1991	2013.	9324.	81363.	299.	5.	46.	9328.	81408.
1992	2180.	10098.	91460.	313.	6.	52.	10103.	91512.
1993	2361.	10936.	102396.	338.	6.	58.	10941.	102453.
1994	2558.	11559.	113955.	360.	7.	65.	11565.	114019.
1995	2638.	12218.	126173.	383.	7.	71.	12224.	126244.
1996	2755.	12914.	139087.	408.	7.	79.	12921.	139165.
1997	2947.	13650.	152737.	434.	8.	87.	13658.	152824.
1998	3115.	14428.	167166.	462.	8.	95.	14436.	167260.
1999	3293.	15251.	182416.	491.	9.	104.	15259.	182520.
2000	3480.	16120.	198537.	523.	10.	114.	16129.	198650.
2001	3679.	17039.	215575.	556.	10.	124.	17049.	215699.
2002	3886.	18010.	233556.	592.	11.	135.	18020.	233720.
2003	4110.	19037.	252622.	629.	11.	146.	19048.	252768.

TABLE 38
LATTAKIA TO ARIHA - PRESENT PRACTICES
HAFFE/SLENFE ROAD JUNCTION TO JISR ESH SHUGUR
WESTBOUND
EQUIVALENT AXLE LOADS (EAL)
(EAL TOTALS IN THOUSANDS)

GROWTH RATES

	1978-83	1983-93	1993-2003
TRUCK	9.20	8.30	5.70
BUS	9.90	8.20	6.40

YEAR	TRUCK (F= 5.61) VOLUME	ANNUAL EAL	CUMUL. EAL	BUS (F=0.05) VOLUME	ANNUAL EAL	CUMUL. EAL	TRUCK + BUS ANNUAL EAL	TRUCK + BUS CUMUL. EAL
1978	329.	674.	674.	46.	1.	1.	674.	674.
1979	359.	736.	1409.	51.	1.	2.	736.	1411.
1980	392.	803.	2213.	56.	1.	3.	804.	2215.
1981	428.	877.	3090.	61.	1.	4.	878.	3093.
1982	468.	958.	4048.	67.	1.	5.	959.	4052.
1983	511.	1046.	5094.	74.	1.	6.	1047.	5100.
1984	553.	1133.	6227.	80.	1.	8.	1134.	6234.
1985	599.	1227.	7454.	86.	2.	9.	1228.	7463.
1986	649.	1329.	8783.	93.	2.	11.	1330.	8793.
1987	703.	1439.	10222.	101.	2.	13.	1440.	10234.
1988	761.	1559.	11780.	109.	2.	15.	1560.	11795.
1989	824.	1688.	13463.	118.	2.	17.	1690.	13485.
1990	893.	1828.	15296.	128.	2.	20.	1830.	15315.
1991	967.	1980.	17276.	139.	3.	22.	1982.	17297.
1992	1047.	2144.	19420.	150.	3.	25.	2146.	19444.
1993	1134.	2322.	21741.	162.	3.	28.	2324.	21769.
1994	1199.	2454.	24196.	173.	3.	31.	2457.	24226.
1995	1267.	2594.	26790.	184.	3.	34.	2597.	26824.
1996	1339.	2742.	29532.	195.	4.	38.	2745.	29569.
1997	1415.	2898.	32430.	208.	4.	42.	2902.	32471.
1998	1496.	3064.	35494.	221.	4.	46.	3067.	35539.
1999	1581.	3238.	38732.	235.	4.	50.	3242.	38781.
2000	1672.	3423.	42155.	250.	5.	55.	3427.	42209.
2001	1767.	3618.	45773.	266.	5.	59.	3622.	45832.
2002	1868.	3824.	49597.	283.	5.	65.	3829.	49661.
2003	1974.	4042.	53639.	302.	6.	70.	4047.	53708.

TABLE 37
LATTAKIA TO ARIHA - PRESENT PRACTICES
HAFFE/SLENFE ROAD JUNCTION TO JISR ESH SHUGUR
EASTBOUND
EQUIVALENT AXLE LOADS (EAL)
(EAL TOTALS IN THOUSANDS)

GROWTH RATES

	1978-83	1983-93	1993-2003
TRUCK	9.20	8.30	5.70
BUS	9.90	8.20	6.40

YEAR	TRUCK (F=19.24) VOLUME	ANNUAL EAL	CUMUL. EAL	BUS (F=0.05) VOLUME	ANNUAL EAL	CUMUL. EAL	TRUCK + BUS ANNUAL EAL	TRUCK + BUS CUMUL. EAL
1978	356.	2500.	2500.	50.	1.	1.	2500.	2500.
1979	389.	2730.	5230.	55.	1.	2.	2731.	5232.
1980	425.	2981.	8211.	60.	1.	3.	2982.	8214.
1981	464.	3255.	11467.	66.	1.	4.	3256.	11471.
1982	506.	3555.	15022.	73.	1.	6.	3556.	15027.
1983	553.	3882.	18904.	80.	1.	7.	3883.	18910.
1984	599.	4204.	23109.	87.	2.	9.	4205.	23116.
1985	648.	4553.	27661.	94.	2.	10.	4554.	27671.
1986	702.	4931.	32592.	102.	2.	12.	4932.	32604.
1987	760.	5340.	37933.	110.	2.	14.	5342.	37947.
1988	824.	5784.	43717.	119.	2.	16.	5785.	43732.
1989	892.	6264.	49980.	129.	2.	19.	6266.	49998.
1990	966.	6784.	56764.	139.	3.	21.	6756.	56785.
1991	1046.	7347.	64110.	151.	3.	24.	7349.	64134.
1992	1133.	7956.	72067.	163.	3.	27.	7959.	72093.
1993	1227.	8617.	80684.	176.	3.	30.	8620.	80713.
1994	1297.	9103.	89792.	138.	3.	34.	9111.	89825.
1995	1371.	9627.	99419.	200.	4.	37.	9630.	99455.
1996	1449.	10176.	109595.	212.	4.	41.	10179.	109635.
1997	1532.	10756.	120350.	226.	4.	45.	10759.	120395.
1998	1619.	11369.	131719.	240.	4.	50.	11373.	131769.
1999	1711.	12017.	143736.	256.	5.	54.	12021.	143790.
2000	1809.	12702.	156438.	272.	5.	59.	12706.	156497.
2001	1912.	13426.	169864.	290.	5.	65.	13431.	169928.
2002	2021.	14191.	184056.	308.	6.	70.	14196.	184125.
2003	2136.	15000.	199056.	328.	6.	76.	15006.	199131.

TABLES 36, 37 & 38
PRESENT LOADING PRACTICES

LYON

TABLE 39
LATTAKIA TO ARIHA - PRESENT PRACTICES
JISR ESH SHUGUR BYPASS
BOTH DIRECTIONS
EQUIVALENT AXLE LOADS (EAL)
(EAL TOTALS IN THOUSANDS)

GROWTH RATES

	1978-83	1983-93	1993-2003
TRUCK	9.20	8.30	5.70
BUS	9.90	8.20	6.40

YEAR	TRUCK (F=12.97) VOLUME	ANNUAL EAL	CUMUL. EAL	BUS (F=0.05) VOLUME	ANNUAL EAL	CUMUL. EAL	TRUCK + BUS ANNUAL EAL	TRUCK + BUS CUMUL. EAL
1978	594.	2812.	2812.	27.	0.	0.	2812.	2812.
1979	649.	3071.	5883.	30.	1.	1.	3071.	5883.
1980	708.	3353.	9236.	33.	1.	2.	3353.	9237.
1981	773.	3662.	12898.	36.	1.	2.	3662.	12900.
1982	845.	3999.	16896.	39.	1.	3.	3999.	16899.
1983	922.	4366.	21263.	43.	1.	4.	4367.	21266.
1984	999.	4729.	25992.	47.	1.	5.	4729.	25996.
1985	1082.	5121.	31113.	51.	1.	6.	5122.	31118.
1986	1172.	5546.	36660.	55.	1.	7.	5547.	36666.
1987	1269.	6007.	42666.	59.	1.	8.	6007.	42674.
1988	1374.	6505.	49172.	64.	1.	9.	6506.	49180.
1989	1488.	7045.	56217.	69.	1.	10.	7046.	56227.
1990	1612.	7630.	63847.	75.	1.	11.	7631.	63858.
1991	1748.	8263.	72111.	81.	1.	13.	8264.	72123.
1992	1890.	8949.	81060.	88.	2.	15.	8950.	81074.
1993	2047.	9692.	90752.	95.	2.	16.	9693.	90768.
1994	2164.	10245.	100997.	101.	2.	18.	10246.	101014.
1995	2287.	10828.	111825.	108.	2.	20.	10830.	111845.
1996	2418.	11446.	123271.	115.	2.	22.	11447.	123293.
1997	2556.	12098.	135369.	122.	2.	24.	12100.	135393.
1998	2701.	12788.	148157.	130.	2.	27.	12790.	148183.
1999	2855.	13517.	161673.	138.	3.	29.	13519.	161702.
2000	3018.	14287.	175960.	147.	3.	32.	14289.	175992.
2001	3190.	15101.	191062.	156.	3.	35.	15104.	191096.
2002	3372.	15962.	207024.	166.	3.	38.	15965.	207061.
2003	3564.	16872.	223896.	177.	3.	41.	16875.	223936.

TABLE 41
LATTAKIA TO ARIHA - PRESENT PRACTICES
JISR ESH SHUGUR BYPASS
WESTBOUND
EQUIVALENT AXLE LOADS (EAL)
(EAL TOTALS IN THOUSANDS)

GROWTH RATES

	1978-83	1983-93	1993-2003
TRUCK	9.20	8.30	5.70
BUS	9.90	8.20	6.40

YEAR	TRUCK (F= 5.64) VOLUME	ANNUAL EAL	CUMUL. EAL	BUS (F=0.05) VOLUME	ANNUAL EAL	CUMUL. EAL	TRUCK + BUS ANNUAL EAL	TRUCK + BUS CUMUL. EAL
1978	274.	564.	564.	16.	0.	0.	564.	564.
1979	299.	616.	1180.	18.	0.	1.	616.	1180.
1980	327.	673.	1853.	19.	0.	1.	672.	1853.
1981	357.	734.	2587.	21.	0.	1.	734.	2588.
1982	390.	802.	3389.	23.	0.	2.	802.	3390.
1983	425.	876.	4265.	26.	0.	2.	876.	4267.
1984	461.	949.	5214.	28.	1.	3.	949.	5216.
1985	499.	1027.	6241.	30.	1.	3.	1027.	6244.
1986	540.	1113.	7353.	32.	1.	4.	1113.	7357.
1987	585.	1205.	8558.	35.	1.	5.	1205.	8562.
1988	634.	1305.	9863.	38.	1.	5.	1305.	9868.
1989	686.	1413.	11276.	41.	1.	6.	1413.	11282.
1990	743.	1531.	12807.	45.	1.	7.	1531.	12813.
1991	805.	1658.	14465.	48.	1.	8.	1658.	14472.
1992	872.	1795.	16260.	52.	1.	9.	1796.	16268.
1993	944.	1944.	18204.	56.	1.	10.	1945.	18213.
1994	998.	2055.	20259.	60.	1.	11.	2056.	20269.
1995	1055.	2172.	22431.	64.	1.	12.	2173.	22442.
1996	1115.	2296.	24727.	68.	1.	13.	2297.	24739.
1997	1179.	2427.	27153.	72.	1.	14.	2428.	27167.
1998	1246.	2565.	29718.	77.	1.	16.	2566.	29734.
1999	1317.	2711.	32430.	82.	1.	17.	2712.	32446.
2000	1392.	2866.	35295.	87.	2.	19.	2867.	35314.
2001	1471.	3029.	38325.	93.	2.	21.	3030.	38345.
2002	1555.	3202.	41526.	99.	2.	22.	3203.	41548.
2003	1644.	3384.	44911.	105.	2.	24.	3386.	44935.

TABLE 40
LATTAKIA TO ARIHA - PRESENT PRACTICES
JISR ESH SHUGUR BYPASS
EASTBOUND
EQUIVALENT AXLE LOADS (EAL)
(EAL TOTALS IN THOUSANDS)

GROWTH RATES

	1978-83	1983-93	1993-2003
TRUCK	9.20	8.30	5.70
BUS	9.90	8.20	6.40

YEAR	TRUCK (F=19.25) VOLUME	TRUCK ANNUAL EAL	TRUCK CUMUL. EAL	BUS (F=0.05) VOLUME	BUS ANNUAL EAL	BUS CUMUL. EAL	TRUCK ANNUAL EAL	BUS CUMUL. EAL
1978	320.	2248.	2248.	11.	0.	0.	2248.	2248.
1979	349.	2455.	4704.	12.	0.	0.	2455.	4704.
1980	382.	2681.	7385.	13.	0.	1.	2681.	7385.
1981	417.	2928.	10313.	15.	0.	1.	2928.	10313.
1982	455.	3197.	13510.	16.	0.	1.	3197.	13510.
1983	497.	3491.	17001.	18.	0.	2.	3491.	17002.
1984	538.	3781.	20782.	19.	0.	2.	3781.	20784.
1985	583.	4095.	24877.	21.	0.	2.	4095.	24879.
1986	631.	4435.	29312.	22.	0.	3.	4435.	29314.
1987	684.	4803.	34115.	24.	0.	3.	4803.	34117.
1988	740.	5202.	39316.	26.	0.	4.	5201.	39319.
1989	802.	5633.	44949.	28.	1.	4.	5633.	44953.
1990	868.	6101.	51050.	31.	1.	5.	6101.	51054.
1991	940.	6607.	57657.	33.	1.	5.	6607.	57662.
1992	1018.	7156.	64813.	36.	1.	6.	7156.	64818.
1993	1103.	7749.	72562.	39.	1.	7.	7750.	72568.
1994	1165.	8191.	80754.	41.	1.	7.	8191.	80760.
1995	1232.	8658.	89412.	44.	1.	8.	8658.	89419.
1996	1302.	9152.	98563.	47.	1.	9.	9152.	98572.
1997	1377.	9673.	108236.	50.	1.	10.	9674.	108246.
1998	1455.	10225.	118461.	53.	1.	11.	10225.	118471.
1999	1538.	10807.	129268.	56.	1.	12.	10808.	129280.
2000	1626.	11423.	140692.	60.	1.	13.	11424.	140704.
2001	1718.	12075.	152766.	64.	1.	14.	12075.	152780.
2002	1816.	12763.	165529.	68.	1.	15.	12764.	165544.
2003	1920.	13490.	179019.	72.	1.	17.	13491.	179036.

TABLES 39, 40 & 41
PRESENT LOADING PRACTICES

LYON

TABLE 42
LATTAKIA TO ARIHA - PRESENT PRACTICES
JISR ESH SHUGUR TO ARIHA
BOTH DIRECTIONS
EQUIVALENT AXLE LOADS (EAL)
(EAL TOTALS IN THOUSANDS)

GROWTH RATES

	1978-83	1983-93	1993-2003
TRUCK	9.20	8.30	5.70
BUS	9.90	8.20	6.40

YEAR	TRUCK (F=12.55) VOLUME	ANNUAL EAL	CUMUL. EAL	BUS (F=0.05) VOLUME	ANNUAL EAL	CUMUL. EAL	TRUCK ANNUAL EAL	BUS CUMUL. EAL
1978	708.	3243.	3243.	120.	2.	2.	3245.	3245.
1979	773.	3542.	6785.	132.	2.	5.	3543.	6789.
1980	844.	3867.	10652.	145.	3.	7.	3870.	10659.
1981	922.	4223.	14875.	159.	3.	10.	4226.	14885.
1982	1007.	4612.	19487.	175.	3.	13.	4614.	19500.
1983	1099.	5036.	24523.	192.	4.	17.	5039.	24539.
1984	1191.	5454.	29977.	208.	4.	21.	5457.	29997.
1985	1289.	5907.	35833.	225.	4.	25.	5910.	35908.
1986	1396.	6397.	42280.	244.	4.	29.	6401.	42309.
1987	1512.	6928.	49208.	264.	5.	34.	6932.	49242.
1988	1638.	7503.	56711.	285.	5.	39.	7508.	56750.
1989	1774.	8126.	64837.	309.	6.	45.	8131.	64881.
1990	1921.	8800.	73637.	334.	6.	51.	8806.	73687.
1991	2081.	9530.	83167.	361.	7.	58.	9536.	83224.
1992	2253.	10321.	93488.	391.	7.	65.	10328.	93553.
1993	2440.	11178.	104666.	423.	8.	72.	11185.	104738.
1994	2579.	11815.	116482.	450.	8.	81.	11823.	116562.
1995	2726.	12489.	128970.	479.	9.	89.	12497.	129059.
1996	2882.	13201.	142171.	510.	9.	99.	13209.	142269.
1997	3046.	13953.	156124.	542.	10.	109.	13962.	156232.
1998	3220.	14746.	170872.	577.	11.	119.	14758.	170991.
1999	3403.	15589.	186461.	614.	11.	130.	15600.	186591.
2000	3597.	16478.	202939.	653.	12.	142.	16489.	203081.
2001	3802.	17417.	220356.	695.	13.	155.	17429.	220510.
2002	4019.	18410.	238765.	739.	13.	168.	18423.	238933.
2003	4248.	19459.	258224.	787.	14.	193.	19473.	258406.

TABLE 44
LATTAKIA TO ARIHA - PRESENT PRACTICES
JISR ESH SHUGUR TO ARIHA
WESTBOUND
EQUIVALENT AXLE LOADS (EAL)
(EAL TOTALS IN THOUSANDS)

GROWTH RATES

	1978-83	1983-93	1993-2003
TRUCK	9.20	8.30	5.70
BUS	9.90	8.20	6.40

YEAR	TRUCK (F= 5.61) VOLUME	ANNUAL EAL	CUMUL. EAL	BUS (F=0.05) VOLUME	ANNUAL EAL	CUMUL. EAL	TRUCK ANNUAL EAL	BUS CUMUL. EAL
1978	346.	713.	713.	56.	1.	1.	713.	713.
1979	380.	778.	1491.	62.	1.	2.	779.	1492.
1980	415.	850.	2340.	68.	1.	3.	850.	2343.
1981	453.	928.	3268.	74.	1.	5.	929.	3273.
1982	495.	1013.	4282.	82.	1.	6.	1014.	4287.
1983	540.	1106.	5388.	90.	2.	8.	1108.	5395.
1984	585.	1198.	6586.	97.	2.	10.	1200.	6596.
1985	634.	1298.	7884.	105.	2.	12.	1299.	7895.
1986	686.	1406.	9290.	114.	2.	14.	1407.	9303.
1987	743.	1522.	10812.	123.	2.	16.	1524.	10827.
1988	805.	1649.	12460.	133.	2.	18.	1650.	12478.
1989	872.	1785.	14246.	144.	3.	21.	1787.	14266.
1990	944.	1934.	16179.	156.	3.	24.	1936.	16203.
1991	1023.	2094.	18273.	169.	3.	27.	2097.	18300.
1992	1108.	2268.	20541.	182.	3.	30.	2271.	20571.
1993	1199.	2456.	22997.	197.	4.	34.	2459.	23030.
1994	1268.	2596.	25593.	210.	4.	38.	2599.	25630.
1995	1340.	2744.	28337.	224.	4.	42.	2748.	28378.
1996	1416.	2900.	31237.	238.	4.	46.	2904.	31283.
1997	1497.	3066.	34303.	253.	5.	51.	3070.	34353.
1998	1583.	3240.	37544.	269.	5.	56.	3245.	37599.
1999	1673.	3425.	40969.	286.	5.	61.	3430.	41029.
2000	1768.	3620.	44589.	305.	6.	66.	3625.	44655.
2001	1869.	3827.	48415.	324.	6.	72.	3832.	48488.
2002	1975.	4045.	52461.	345.	6.	79.	4051.	52539.
2003	2088.	4275.	56736.	367.	7.	85.	4282.	56821.

TABLE 43
LATTAKIA TO ARIHA - PRESENT PRACTICES
JISR ESH SHUGUR TO ARIHA
EASTBOUND
EQUIVALENT AXLE LOADS (EAL)
(EAL TOTALS IN THOUSANDS)

GROWTH RATES

	1978-83	1983-93	1993-2003
TRUCK	9.20	8.30	5.70
BUS	9.90	8.20	6.40

YEAR	TRUCK (F=19.26) VOLUME	TRUCK ANNUAL EAL	TRUCK CUMUL. EAL	BUS (F=0.05) VOLUME	BUS ANNUAL EAL	BUS CUMUL. EAL	TRUCK ANNUAL EAL	TRUCK CUMUL. EAL	BUS ANNUAL EAL	BUS CUMUL. EAL
1978	360.	2531.	2531.	64.	1.	1.	2531.	2531.		
1979	393.	2764.	5294.	70.	1.	2.	2764.	5296.		
1980	429.	3018.	8312.	77.	1.	4.	3019.	8316.		
1981	469.	3295.	11608.	85.	2.	5.	3297.	11613.		
1982	512.	3599.	15206.	93.	2.	7.	3600.	15213.		
1983	559.	3930.	19136.	103.	2.	9.	3931.	19145.		
1984	605.	4256.	23392.	111.	2.	11.	4257.	23403.		
1985	656.	4609.	28001.	120.	2.	13.	4611.	28014.		
1986	710.	4992.	32993.	130.	2.	16.	4994.	33008.		
1987	769.	5406.	38399.	141.	3.	18.	5408.	38417.		
1988	833.	5855.	44254.	152.	3.	21.	5857.	44274.		
1989	902.	6341.	50594.	165.	3.	24.	6343.	50618.		
1990	977.	6867.	57461.	178.	3.	27.	6870.	57488.		
1991	1058.	7437.	64898.	193.	4.	31.	7440.	64928.		
1992	1146.	8054.	72952.	209.	4.	35.	8057.	72986.		
1993	1241.	8723.	81675.	226.	4.	39.	8726.	81713.		
1994	1312.	9220.	90895.	240.	4.	43.	9224.	90937.		
1995	1386.	9745.	100640.	255.	5.	48.	9750.	100687.		
1996	1465.	10301.	110941.	272.	5.	53.	10305.	110993.		
1997	1549.	10888.	121829.	289.	5.	58.	10893.	121887.		
1998	1637.	11509.	133338.	308.	6.	64.	11514.	133401.		
1999	1730.	12165.	145503.	327.	6.	69.	12170.	145572.		
2000	1829.	12859.	158361.	348.	6.	76.	12864.	158436.		
2001	1933.	13591.	171951.	371.	7.	83.	13597.	172034.		
2002	2044.	14366.	186317.	394.	7.	90.	14372.	186406.		
2003	2160.	15184.	201502.	420.	8.	97.	15192.	201599.		

TABLES 42, 43 & 44
PRESENT LOADING PRACTICES
LYON

TABLE 45

EQUIVALENT AXLE LOAD FACTORS
LEGAL TRUCK LOADING PRACTICES

ROAD SECTIONS: Lattakia to Haffe/Slenfe Road Junction

VEHICLE TYPE	PERCENT OF TRUCKS	AVERAGE EAL	DIRECTION TO: Ariha PERCENT	DIRECTION TO: Ariha DAILY EAL	DIRECTION TO: Lattakia PERCENT	DIRECTION TO: Lattakia DAILY EAL
SINGLE UNIT VEHICLES						
2-axle, 6-tire	82.4					
empty		0.11	11.7	0.01	71.7	0.06
loaded		4.31	88.3	3.14	28.3	1.01
3-axle, 10-tire	3.8					
empty		0.12	12.5	2/	61.5	2/
loaded		1.82	87.5	0.06	38.5	0.03
COMBINATION VEHICLES						
Tractor + ½ Trailer 1/ (2 axles + 2 axles)	1.4					
empty		0.11	5.1	2/	79.8	2/
loaded		1.20	94.9	0.02	20.2	2/
Tractor + ½ Trailer 1/ (3 axles + 2 axles)	12.4					
empty		0.06	5.1	2/	79.8	0.01
loaded		2.03	94.9	0.24	20.2	0.05
TOTAL	100.0	-	-	3.47	-	1.16

1/ Assumed 90 percent 5 axle combinations.

2/ Less than 0.01.

TABLE 46

EQUIVALENT AXLE LOAD FACTORS
LEGAL TRUCK LOADING PRACTICES

ROAD SECTION: Haffe/Slenfe Road Junction to Jisr Esh Shugur

VEHICLE TYPE	PERCENT OF TRUCKS	AVERAGE EAL	DIRECTION TO: Arilha PERCENT	DIRECTION TO: Arilha DAILY EAL	DIRECTION TO: Lattakia PERCENT	DIRECTION TO: Lattakia DAILY EAL
SINGLE UNIT VEHICLES						
2-axle, 6-tire	81.7					
empty		0.11	11.7	0.01	71.7	0.06
loaded		4.31	88.3	3.11	28.3	1.00
3-axle, 10-tire	3.1					
empty		0.12	12.5	2/	61.5	2/
loaded		1.82	87.5	0.05	38.5	0.02
COMBINATION VEHICLES						
Tractor + ½ Trailer 1/ (2 axles + 2 axles)	1.5					
empty		0.11	5.1	2/	79.8	2/
loaded		1.20	94.9	0.02	20.2	2/
Tractor + ½ Trailer 1/ (3 axles + 2 axles)	13.7					
empty		0.06	5.1	2/	79.8	0.01
loaded		2.03	94.9	0.26	20.2	0.06
TOTAL	100.0	-	-	3.45	-	1.15

1/ Assumed 90 percent 5 axle combinations.

2/ Less than 0.01.

TABLES 45 & 46
AXLE LOAD FACTORS

LYON

TABLE 47

EQUIVALENT AXLE LOAD FACTORS
LEGAL TRUCK LOADING PRACTICES

ROAD SECTION: Jisr Esh Shugur Bypass

VEHICLE TYPE	PERCENT OF TRUCKS	AVERAGE EAL	DIRECTION TO: Ariha PERCENT	DIRECTION TO: Ariha DAILY EAL	DIRECTION TO: Lattakia PERCENT	DIRECTION TO: Lattakia DAILY EAL
SINGLE UNIT VEHICLES						
2-axle, 6-tire	80.8					
empty		0.11	11.7	0.01	71.7	0.06
loaded		4.31	88.3	3.08	28.3	0.99
3-axle, 10-tire	3.2					
empty		0.12	12.5	2/	61.5	2/
loaded		1.82	87.5	0.05	38.5	0.02
COMBINATION VEHICLES						
Tractor + ½ Trailer 1/ (2 axles + 2 axles)	1.6					
empty		0.11	5.1	2/	79.8	2/
loaded		1.20	94.9	0.02	20.2	2/
Tractor + ½ Trailer 1/ (3 axles + 2 axles)	14.4					
empty		0.06	5.1	2/	79.8	0.01
loaded		2.03	94.9	0.28	20.2	0.06
TOTAL	100.0	-	-	3.44	-	1.14

1/ Assumed 90 percent 5 axle combinations.

2/ Less than 0.01.

TABLE 48

EQUIVALENT AXLE LOAD FACTORS
LEGAL TRUCK LOADING PRACTICES

ROAD SECTION: Jisr Esh Shugur to Ariha

VEHICLE TYPE	PERCENT OF TRUCKS	AVERAGE EAL	DIRECTION TO: Ariha PERCENT	DIRECTION TO: Ariha DAILY EAL	DIRECTION TO: Lattakia PERCENT	DIRECTION TO: Lattakia DAILY EAL
SINGLE UNIT VEHICLES						
2-axle, 6-tire	78.2					
empty		0.11	11.7	0.01	71.7	0.06
loaded		4.31	88.3	2.98	28.3	0.95
3-axle, 10-tire	6.4					
empty		0.12	12.5	2/	61.5	2/
loaded		1.82	87.5	0.10	38.5	0.04
COMBINATION VEHICLES						
Tractor + ½ Trailer 1/ (2 axles + 2 axles)	1.5					
empty		0.11	5.1	2/	79.8	2/
loaded		1.20	94.9	0.02	20.2	2/
Tractor + ½ Trailer 1/ (3 axles + 2 axles)	13.9					
empty		0.06	5.1	2/	79.8	0.01
loaded		2.03	94.9	0.27	20.2	0.06
TOTAL	100.0	-	-	3.38	-	1.12

1/ Assumed 90 percent 5 axle combinations.

2/ Less than 0.01.

TABLES 47 & 48
AXLE LOAD FACTORS

LYON

TABLE 49
LATTAKIA TO ARIHA - LEGAL LOADINGS
LATTAKIA TO HAFFE/SLENFE ROAD JUNCTION
BOTH DIRECTIONS
EQUIVALENT AXLE LOADS (EAL)
(EAL TOTALS IN THOUSANDS)

GROWTH RATES

	1978-83	1983-93	1993-2003
TRUCK	9.60	7.40	5.40
BUS	9.90	8.20	6.40

YEAR	TRUCK (F= 2.33) VOLUME	ANNUAL EAL	CUMUL. EAL	BUS (F=0.05) VOLUME	ANNUAL EAL	CUMUL. EAL	TRUCK ANNUAL EAL	BUS CUMUL. EAL
1978	1323.	1125.	1125.	206.	4.	4.	1128.	1128.
1979	1450.	1233.	2358.	226.	4.	8.	1237.	2366.
1980	1589.	1352.	3710.	249.	5.	12.	1356.	3722.
1981	1742.	1481.	5191.	273.	5.	17.	1486.	5208.
1982	1909.	1623.	6815.	301.	5.	23.	1628.	6837.
1983	2092.	1779.	8594.	330.	6.	29.	1785.	8622.
1984	2247.	1911.	10505.	357.	7.	35.	1917.	10540.
1985	2413.	2052.	12557.	387.	7.	43.	2059.	12599.
1986	2592.	2204.	14762.	418.	8.	50.	2211.	14811.
1987	2784.	2367.	17129.	453.	8.	58.	2375.	17187.
1988	2990.	2543.	19672.	490.	9.	67.	2551.	19739.
1989	3211.	2731.	22403.	530.	10.	77.	2740.	22479.
1990	3449.	2933.	25335.	573.	10.	87.	2943.	25422.
1991	3704.	3150.	28485.	620.	11.	99.	3161.	28584.
1992	3978.	3383.	31868.	671.	12.	111.	3395.	31979.
1993	4272.	3633.	35502.	726.	13.	124.	3646.	35625.
1994	4588.	3830.	39331.	773.	14.	138.	3843.	39469.
1995	4746.	4036.	43368.	822.	15.	153.	4051.	43520.
1996	5002.	4254.	47622.	875.	16.	169.	4270.	47791.
1997	5273.	4484.	52106.	931.	17.	186.	4500.	52292.
1998	5557.	4726.	56832.	990.	18.	204.	4744.	57036.
1999	5857.	4981.	61813.	1054.	19.	224.	5000.	62036.
2000	6174.	5250.	67064.	1121.	20.	244.	5270.	67307.
2001	6507.	5534.	72598.	1193.	22.	266.	5555.	72863.
2002	6858.	5833.	78430.	1269.	23.	289.	5855.	78719.
2003	7229.	6148.	84578.	1351.	25.	314.	6172.	84891.

TABLE 51
LATTAKIA TO ARIHA - LEGAL LOADINGS
LATTAKIA TO HAFFE/SLENFE ROAD JUNCTION
WESTBOUND
EQUIVALENT AXLE LOADS (EAL)
(EAL TOTALS IN THOUSANDS)

GROWTH RATES

	1978-83	1983-93	1993-2003
TRUCK	9.60	7.40	5.40
BUS	9.90	8.20	6.40

YEAR	TRUCK (F= 1.16) VOLUME	ANNUAL EAL	CUMUL. EAL	BUS (F=0.05) VOLUME	ANNUAL EAL	CUMUL. EAL	TRUCK ANNUAL EAL	BUS CUMUL. EAL
1978	654.	277.	277.	95.	2.	2.	278.	278.
1979	717.	303.	580.	104.	2.	4.	305.	584.
1980	786.	333.	913.	115.	2.	6.	334.	918.
1981	861.	365.	1278.	126.	2.	8.	366.	1285.
1982	944.	400.	1677.	139.	3.	11.	402.	1687.
1983	1034.	438.	2115.	152.	3.	13.	440.	2128.
1984	1111.	470.	2585.	165.	3.	16.	473.	2601.
1985	1193.	505.	3090.	178.	3.	20.	509.	3110.
1986	1281.	542.	3633.	193.	4.	23.	546.	3656.
1987	1376.	583.	4216.	209.	4.	27.	586.	4242.
1988	1478.	626.	4841.	226.	4.	31.	629.	4872.
1989	1587.	672.	5513.	244.	4.	36.	676.	5548.
1990	1705.	722.	6235.	264.	5.	40.	726.	6275.
1991	1831.	775.	7010.	286.	5.	46.	780.	7055.
1992	1966.	833.	7843.	310.	6.	51.	838.	7894.
1993	2112.	894.	8737.	335.	6.	57.	900.	8794.
1994	2226.	942.	9680.	356.	7.	64.	948.	9743.
1995	2345.	993.	10673.	379.	7.	71.	1000.	10743.
1996	2473.	1047.	11720.	403.	7.	78.	1054.	11798.
1997	2606.	1104.	12823.	429.	8.	86.	1111.	12909.
1998	2747.	1163.	13987.	457.	8.	94.	1171.	14080.
1999	2895.	1226.	15213.	486.	9.	103.	1234.	15315.
2000	3052.	1292.	16505.	517.	9.	113.	1301.	16617.
2001	3217.	1362.	17867.	550.	10.	123.	1371.	17989.
2002	3390.	1435.	19302.	585.	11.	133.	1446.	19435.
2003	3573.	1513.	20815.	623.	11.	145.	1524.	20959.

TABLE 50
LATTAKIA TO ARIHA - LEGAL LOADINGS
LATTAKIA TO HAFFE/SLENFE ROAD JUNCTION
EASTBOUND
EQUIVALENT AXLE LOADS (EAL)
(EAL TOTALS IN THOUSANDS)

GROWTH RATES

	1978-83	1983-93	1993-2003
TRUCK	9.60	7.40	5.40
BUS	9.90	8.20	6.40

YEAR	TRUCK (F= 3.47) VOLUME	ANNUAL EAL	CUMUL. EAL	BUS (F=0.05) VOLUME	ANNUAL EAL	CUMUL. EAL	TRUCK ANNUAL EAL	BUS CUMUL. EAL
1978	669.	847.	847.	111.	2.	2.	849.	849.
1979	733.	929.	1776.	122.	2.	4.	930.	1780.
1980	804.	1018.	2794.	134.	2.	7.	1020.	2800.
1981	881.	1116.	3909.	147.	3.	9.	1118.	3918.
1982	965.	1223.	5132.	162.	3.	12.	1225.	5144.
1983	1056.	1340.	6472.	178.	3.	16.	1343.	6487.
1984	1136.	1439.	7911.	193.	4.	19.	1442.	7930.
1985	1220.	1546.	9457.	208.	4.	23.	1549.	9479.
1986	1311.	1660.	11117.	225.	4.	27.	1664.	11143.
1987	1408.	1733.	12900.	244.	4.	31.	1787.	12931.
1988	1512.	1915.	14814.	264.	5.	36.	1919.	14850.
1989	1624.	2056.	16871.	286.	5.	41.	2061.	16912.
1990	1744.	2209.	19080.	309.	6.	47.	2214.	19126.
1991	1873.	2372.	21452.	334.	6.	53.	2378.	21504.
1992	2011.	2548.	23999.	362.	7.	60.	2554.	24059.
1993	2160.	2736.	26735.	391.	7.	67.	2743.	26802.
1994	2277.	2834.	29619.	416.	8.	75.	2891.	29694.
1995	2400.	3040.	32659.	443.	8.	83.	3047.	32741.
1996	2530.	3204.	35863.	471.	9.	91.	3212.	35954.
1997	2666.	3377.	39240.	502.	9.	100.	3385.	39340.
1998	2810.	3559.	42799.	534.	10.	110.	3568.	42909.
1999	2962.	3751.	46550.	568.	10.	121.	3761.	46670.
2000	3122.	3954.	50504.	604.	11.	132.	3964.	50635.
2001	3290.	4167.	54672.	643.	12.	143.	4179.	54814.
2002	3468.	4392.	59064.	684.	12.	156.	4404.	59219.
2003	3655.	4630.	63694.	728.	13.	169.	4642.	63862.

TABLES 49, 50 & 51

LEGAL LOADING PRACTICES

LYON

TABLE 52
LATTAKIA TO ARIHA - LEGAL LOADINGS
HAFFE/SLENFE ROAD JUNCTION TO JISR ESH SHUGUR
BOTH DIRECTIONS
EQUIVALENT AXLE LOADS (EAL)
(EAL TOTALS IN THOUSANDS)

GROWTH RATES

	1978-83	1983-93	1993-2003
TRUCK	9.60	7.40	5.40
BUS	9.90	8.20	6.40

YEAR	TRUCK (F= 2.34) VOLUME	ANNUAL EAL	CUMUL. EAL	BUS (F=0.05) VOLUME	ANNUAL EAL	CUMUL. EAL	TRUCK + BUS ANNUAL EAL	CUMUL. EAL
1978	1234.	1054.	1054.	96.	2.	2.	1055.	1055.
1979	1352.	1155.	2209.	106.	2.	4.	1157.	2212.
1980	1432.	1266.	3475.	116.	2.	6.	1268.	3480.
1981	1525.	1388.	4863.	127.	2.	8.	1389.	4870.
1982	1781.	1521.	6383.	140.	3.	11.	1523.	6394.
1983	1951.	1667.	8050.	154.	3.	13.	1669.	8063.
1984	2096.	1790.	9840.	167.	3.	17.	1793.	9856.
1985	2251.	1923.	11763.	180.	3.	20.	1925.	11782.
1986	2418.	2065.	13829.	195.	4.	23.	2068.	13851.
1987	2596.	2218.	16045.	211.	4.	27.	2221.	16072.
1988	2789.	2382.	18427.	228.	4.	31.	2385.	18458.
1989	2995.	2558.	20985.	247.	5.	36.	2562.	21021.
1990	3217.	2747.	23733.	267.	5.	41.	2752.	23773.
1991	3455.	2951.	26683.	289.	5.	46.	2955.	26729.
1992	3710.	3169.	29852.	313.	6.	52.	3174.	29903.
1993	3985.	3403.	33256.	338.	6.	58.	3409.	33313.
1994	4280.	3587.	36843.	360.	7.	65.	3593.	36907.
1995	4427.	3781.	40624.	383.	7.	71.	3787.	40695.
1996	4666.	3985.	44609.	408.	7.	79.	3992.	44687.
1997	4918.	4200.	48809.	434.	8.	87.	4208.	48896.
1998	5183.	4427.	53236.	462.	8.	95.	4435.	53331.
1999	5463.	4666.	57902.	491.	9.	104.	4675.	58005.
2000	5758.	4918.	62821.	523.	10.	114.	4927.	62934.
2001	6069.	5184.	68004.	556.	10.	124.	5193.	68128.
2002	6397.	5464.	73468.	592.	11.	135.	5474.	73602.
2003	6742.	5759.	79227.	629.	11.	146.	5770.	79373.

TABLE 54
LATTAKIA TO ARIHA - LEGAL LOADINGS
HAFFE/SLENFE ROAD JUNCTION TO JISR ESH SHUGUR
WESTBOUND
EQUIVALENT AXLE LOADS (EAL)
(EAL TOTALS IN THOUSANDS)

GROWTH RATES

	1978-83	1983-93	1993-2003
TRUCK	9.60	7.40	5.40
BUS	9.90	8.20	6.40

YEAR	TRUCK (F= 1.15) VOLUME	ANNUAL EAL	CUMUL. EAL	BUS (F=0.05) VOLUME	ANNUAL EAL	CUMUL. EAL	TRUCK + BUS ANNUAL EAL	CUMUL. EAL
1978	592.	248.	248.	46.	1.	1.	249.	249.
1979	649.	272.	521.	51.	1.	2.	273.	522.
1980	711.	298.	819.	56.	1.	3.	299.	822.
1981	779.	327.	1146.	61.	1.	4.	328.	1150.
1982	854.	359.	1505.	67.	1.	5.	359.	1510.
1983	936.	393.	1898.	74.	1.	6.	394.	1904.
1984	1025.	422.	2320.	80.	1.	8.	423.	2327.
1985	1030.	453.	2773.	86.	2.	9.	454.	2782.
1986	1160.	487.	3260.	93.	2.	11.	488.	3271.
1987	1246.	523.	3783.	101.	2.	13.	524.	3796.
1988	1338.	562.	4345.	109.	2.	15.	563.	4359.
1989	1437.	603.	4948.	118.	2.	17.	605.	4964.
1990	1543.	648.	5595.	128.	2.	20.	650.	5614.
1991	1657.	696.	6291.	139.	3.	22.	698.	6313.
1992	1780.	747.	7038.	150.	3.	25.	749.	7063.
1993	1912.	802.	7841.	162.	3.	28.	805.	7868.
1994	2015.	846.	8686.	173.	3.	31.	848.	8717.
1995	2124.	891.	9578.	184.	3.	34.	894.	9612.
1996	2238.	940.	10517.	195.	4.	38.	943.	10555.
1997	2359.	990.	11508.	208.	4.	42.	994.	11549.
1998	2487.	1044.	12552.	221.	4.	46.	1047.	12597.
1999	2621.	1100.	13652.	235.	4.	50.	1104.	13701.
2000	2762.	1160.	14811.	250.	5.	55.	1164.	14865.
2001	2912.	1222.	16033.	266.	5.	59.	1227.	16092.
2002	3069.	1288.	17322.	283.	5.	65.	1293.	17386.
2003	3235.	1358.	18679.	302.	6.	70.	1363.	18749.

TABLE 53
LATTAKIA TO ARIHA - LEGAL LOADINGS
HAFFE/SLENFE ROAD JUNCTION TO JISR ESH SHUGUR
EASTBOUND
EQUIVALENT AXLE LOADS (EAL)
(EAL TOTALS IN THOUSANDS)

GROWTH RATES

	1978-83	1983-93	1993-2003
TRUCK	9.60	7.40	5.40
BUS	9.90	8.20	6.40

YEAR	TRUCK (F= 3.45) VOLUME	ANNUAL EAL	CUMUL. EAL	BUS (F=1.15) VOLUME	ANNUAL EAL	CUMUL. EAL	TRUCK ANNUAL EAL	BUS CUMUL. EAL
1978	642.	808.	808.	50.	21.	21.	829.	829.
1979	704.	886.	1694.	55.	23.	44.	909.	1738.
1980	771.	971.	2666.	60.	25.	69.	996.	2734.
1981	845.	1064.	3730.	66.	28.	97.	1092.	3827.
1982	926.	1167.	4896.	73.	31.	128.	1197.	5024.
1983	1015.	1278.	6175.	80.	34.	162.	1312.	6336.
1984	1090.	1373.	7548.	87.	36.	198.	1409.	7745.
1985	1171.	1475.	9023.	94.	39.	237.	1514.	9260.
1986	1255.	1584.	10607.	102.	43.	280.	1626.	10886.
1987	1351.	1701.	12308.	110.	46.	326.	1747.	12633.
1988	1451.	1827.	14135.	119.	50.	376.	1876.	14510.
1989	1558.	1962.	16097.	129.	54.	430.	2016.	16526.
1990	1673.	2107.	18204.	139.	58.	488.	2165.	18692.
1991	1797.	2263.	20467.	151.	63.	552.	2326.	21018.
1992	1930.	2431.	22898.	163.	68.	620.	2499.	23517.
1993	2073.	2611.	25509.	176.	74.	694.	2684.	26202.
1994	2185.	2752.	28260.	188.	79.	773.	2830.	29032.
1995	2303.	2900.	31160.	200.	84.	856.	2983.	32016.
1996	2427.	3057.	34217.	212.	89.	945.	3145.	35162.
1997	2559.	3222.	37439.	226.	95.	1040.	3316.	38479.
1998	2697.	3396.	40835.	240.	101.	1141.	3496.	41976.
1999	2842.	3579.	44414.	256.	107.	1249.	3686.	45662.
2000	2996.	3772.	48187.	272.	114.	1363.	3886.	49549.
2001	3158.	3976.	52163.	290.	122.	1485.	4097.	53647.
2002	3328.	4191.	56354.	308.	129.	1614.	4320.	57967.
2003	3508.	4417.	60771.	328.	138.	1751.	4554.	62522.

TABLES 52, 53 & 54
LEGAL LOADING PRACTICES

LYON

TABLE 55
LATTAKIA TO ARIHA - LEGAL LOADINGS
JISR ESH SHUGUR BYPASS
BOTH DIRECTIONS
EQUIVALENT AXLE LOADS (EAL)
(EAL TOTALS IN THOUSANDS)

GROWTH RATES

	1978-83	1983-93	1993-2003
TRUCK	9.60	7.40	5.40
BUS	9.90	8.20	6.40

YEAR	TRUCK (F= 2.38) VOLUME	ANNUAL EAL	CUMUL. EAL	BUS (F=0.05) VOLUME	ANNUAL EAL	CUMUL. EAL	TRUCK + BUS ANNUAL EAL	TRUCK + BUS CUMUL. EAL
1978	1070.	930.	930.	27.	0.	0.	930.	930.
1979	1173.	1019.	1948.	30.	1.	1.	1019.	1949.
1980	1285.	1117.	3065.	33.	1.	2.	1117.	3066.
1981	1409.	1224.	4289.	36.	1.	2.	1224.	4290.
1982	1544.	1341.	5630.	39.	1.	3.	1341.	5632.
1983	1692.	1470.	7100.	43.	1.	4.	1470.	7103.
1984	1817.	1579.	8678.	47.	1.	5.	1579.	8683.
1985	1952.	1696.	10374.	51.	1.	6.	1696.	10379.
1986	2096.	1821.	12195.	55.	1.	7.	1822.	12201.
1987	2251.	1956.	14151.	59.	1.	8.	1956.	14158.
1988	2418.	2101.	16251.	64.	1.	9.	2101.	16260.
1989	2597.	2256.	18507.	69.	1.	10.	2257.	18517.
1990	2789.	2423.	20930.	75.	1.	11.	2424.	20941.
1991	2996.	2602.	23532.	81.	1.	13.	2603.	23545.
1992	3217.	2795.	26327.	88.	2.	15.	2796.	26341.
1993	3455.	3002.	29329.	95.	2.	16.	3003.	29345.
1994	3642.	3164.	32492.	101.	2.	18.	3165.	32510.
1995	3838.	3334.	35827.	108.	2.	20.	3336.	35847.
1996	4046.	3515.	39341.	115.	2.	22.	3516.	39363.
1997	4264.	3704.	43046.	122.	2.	24.	3706.	43070.
1998	4495.	3904.	45950.	130.	2.	27.	3906.	46977.
1999	4737.	4115.	51065.	138.	3.	29.	4117.	51094.
2000	4993.	4337.	55403.	147.	3.	32.	4340.	55434.
2001	5263.	4572.	59975.	156.	3.	35.	4574.	60009.
2002	5547.	4819.	64793.	166.	3.	38.	4821.	64830.
2003	5846.	5079.	69872.	177.	3.	41.	5081.	69912.

TABLE 57
LATTAKIA TO ARIHA - LEGAL LOADINGS
JISR ESH SHUGUR BYPASS
WESTBOUND
EQUIVALENT AXLE LOADS (EAL)
(EAL TOTALS IN THOUSANDS)

GROWTH RATES

	1978-83	1983-93	1993-2003
TRUCK	9.60	7.40	5.40
BUS	9.90	8.20	6.40

YEAR	TRUCK (F= 1.14) VOLUME	ANNUAL EAL	CUMUL. EAL	BUS (F=0.05) VOLUME	ANNUAL EAL	CUMUL. EAL	TRUCK + BUS ANNUAL EAL	TRUCK + BUS CUMUL. EAL
1978	494.	206.	206.	16.	0.	0.	205.	205.
1979	541.	225.	431.	18.	0.	1.	225.	431.
1980	593.	247.	678.	19.	0.	1.	247.	678.
1981	650.	271.	948.	21.	0.	1.	271.	949.
1982	713.	297.	1245.	23.	0.	2.	297.	1246.
1983	781.	325.	1570.	26.	0.	2.	325.	1572.
1984	839.	349.	1919.	28.	1.	3.	349.	1921.
1985	901.	375.	2294.	30.	1.	3.	375.	2297.
1986	968.	403.	2697.	32.	1.	4.	403.	2700.
1987	1039.	433.	3129.	35.	1.	5.	433.	3133.
1988	1116.	465.	3594.	38.	1.	5.	465.	3599.
1989	1199.	499.	4093.	41.	1.	6.	499.	4098.
1990	1288.	536.	4629.	45.	1.	7.	536.	4635.
1991	1383.	575.	5204.	48.	1.	8.	576.	5211.
1992	1485.	618.	5822.	52.	1.	9.	618.	5830.
1993	1595.	664.	6436.	56.	1.	10.	664.	6495.
1994	1681.	700.	7185.	60.	1.	11.	700.	7196.
1995	1772.	737.	7923.	64.	1.	12.	738.	7934.
1996	1868.	777.	8700.	68.	1.	13.	778.	8713.
1997	1969.	819.	9519.	72.	1.	14.	820.	9533.
1998	2075.	863.	10383.	77.	1.	16.	864.	10398.
1999	2187.	910.	11293.	82.	1.	17.	911.	11310.
2000	2305.	959.	12252.	87.	2.	19.	960.	12270.
2001	2430.	1011.	13263.	93.	2.	21.	1012.	13283.
2002	2561.	1066.	14328.	99.	2.	22.	1067.	14350.
2003	2699.	1123.	15452.	105.	2.	24.	1125.	15475.

TABLE 56
LATTAKIA TO ARIHA - LEGAL LOADINGS
JISR ESH SHUGUR BYPASS
EASTBOUND
EQUIVALENT AXLE LOADS (EAL)
(EAL TOTALS IN THOUSANDS)

GROWTH RATES

	1978-83	1983-93	1993-2003
TRUCK	9.60	7.40	5.40
BUS	9.90	8.20	6.40

YEAR	TRUCK (F= 3.44) VOLUME	ANNUAL EAL	CUMUL. EAL	BUS (F=0.05) VOLUME	ANNUAL EAL	CUMUL. EAL	TRUCK + BUS ANNUAL EAL	TRUCK + BUS CUMUL. EAL
1978	576.	723.	723.	11.	0.	0.	723.	723.
1979	631.	793.	1516.	12.	0.	0.	792.	1516.
1980	692.	869.	2385.	13.	0.	1.	868.	2385.
1981	758.	952.	3337.	15.	0.	1.	952.	3337.
1982	831.	1044.	4380.	16.	0.	1.	1043.	4381.
1983	911.	1144.	5524.	18.	0.	2.	1144.	5525.
1984	975.	1228.	6752.	19.	0.	2.	1228.	6754.
1985	1051.	1319.	8072.	21.	0.	2.	1319.	8073.
1986	1126.	1417.	9489.	22.	0.	3.	1417.	9491.
1987	1212.	1522.	11010.	24.	0.	3.	1522.	11013.
1988	1302.	1634.	12645.	26.	0.	4.	1634.	12649.
1989	1398.	1755.	14400.	28.	1.	4.	1755.	14404.
1990	1501.	1885.	16285.	31.	1.	5.	1885.	16289.
1991	1613.	2025.	18310.	33.	1.	5.	2025.	18315.
1992	1732.	2175.	20484.	36.	1.	6.	2175.	20490.
1993	1862.	2335.	22820.	39.	1.	7.	2336.	22826.
1994	1962.	2462.	25281.	41.	1.	7.	2462.	25288.
1995	2066.	2594.	27876.	44.	1.	8.	2595.	27884.
1996	2178.	2735.	30611.	47.	1.	9.	2735.	30619.
1997	2296.	2882.	33493.	50.	1.	10.	2883.	33502.
1998	2419.	3038.	36531.	53.	1.	11.	3036.	36541.
1999	2550.	3202.	39733.	56.	1.	12.	3202.	39744.
2000	2688.	3375.	43107.	60.	1.	13.	3375.	43120.
2001	2833.	3557.	46665.	64.	1.	14.	3558.	46678.
2002	2986.	3749.	50414.	68.	1.	15.	3750.	50429.
2003	3147.	3952.	54365.	72.	1.	17.	3952.	54382.

TABLES 55, 56 & 57
LEGAL LOADING PRACTICES

TABLE 58
LATTAKIA TO ARIHA - LEGAL LOADINGS
JISR ESH SHUGUR TO ARIHA
BOTH DIRECTIONS
EQUIVALENT AXLE LOADS (EAL)
(EAL TOTALS IN THOUSANDS)

GROWTH RATES

	1978-83	1983-93	1993-2003
TRUCK	9.60	7.40	5.40
BUS	9.90	8.20	6.40

YEAR	TRUCK (F= 2.27) VOLUME	ANNUAL EAL	CUMUL. EAL	BUS (F=0.05) VOLUME	ANNUAL EAL	CUMUL. EAL	TRUCK + BUS ANNUAL EAL	TRUCK + BUS CUMUL. EAL
1978	1274.	1056.	1056.	120.	2.	2.	1057.	1057.
1979	1396.	1157.	2212.	132.	2.	5.	1159.	2217.
1980	1530.	1269.	3480.	145.	3.	7.	1270.	3487.
1981	1677.	1390.	4870.	159.	3.	10.	1392.	4880.
1982	1838.	1523.	6393.	175.	3.	13.	1526.	6406.
1983	2015.	1669.	8063.	192.	4.	17.	1672.	8079.
1984	2154.	1793.	9855.	208.	4.	21.	1796.	9876.
1985	2324.	1926.	11781.	225.	4.	25.	1929.	11805.
1986	2496.	2058.	13849.	244.	4.	29.	2072.	13878.
1987	2681.	2221.	16070.	264.	5.	34.	2225.	16104.
1988	2879.	2385.	18455.	285.	5.	39.	2390.	18494.
1989	3092.	2562.	21017.	309.	6.	45.	2567.	21062.
1990	3321.	2752.	23769.	334.	6.	51.	2757.	23819.
1991	3567.	2955.	26724.	361.	7.	58.	2961.	26781.
1992	3831.	3174.	29898.	391.	7.	65.	3180.	29962.
1993	4114.	3409.	33306.	423.	8.	72.	3416.	33378.
1994	4336.	3593.	36899.	450.	8.	81.	3600.	36979.
1995	4570.	3787.	40686.	479.	9.	89.	3795.	40775.
1996	4817.	991.	44677.	510.	9.	99.	4000.	44775.
1997	5077.	4207.	48884.	542.	10.	109.	4216.	48992.
1998	5351.	4434.	53318.	577.	11.	119.	4444.	53436.
1999	5640.	4673.	57991.	614.	11.	130.	4684.	58121.
2000	5945.	4926.	62917.	653.	12.	142.	4937.	63059.
2001	6266.	5192.	68109.	695.	13.	155.	5204.	65263.
2002	6604.	5472.	73581.	739.	13.	168.	5485.	73748.
2003	6961.	5768.	79348.	787.	14.	183.	5781.	79530.

TABLE 60
LATTAKIA TO ARIHA - LEGAL LOADINGS
JISR ESH SHUGUR TO ARIHA
WESTBOUND
EQUIVALENT AXLE LOADS (EAL)
(EAL TOTALS IN THOUSANDS)

GROWTH RATES

	1978-83	1983-93	1993-2003
TRUCK	9.60	7.40	5.40
BUS	9.90	8.20	6.40

YEAR	TRUCK (F= 1.12) VOLUME	ANNUAL EAL	CUMUL. EAL	BUS (F=0.05) VOLUME	ANNUAL EAL	CUMUL. EAL	TRUCK + BUS ANNUAL EAL	TRUCK + BUS CUMUL. EAL
1978	626.	256.	256.	56.	1.	1.	256.	256.
1979	686.	280.	536.	62.	1.	2.	281.	533.
1980	752.	307.	844.	68.	1.	3.	308.	847.
1981	824.	337.	1181.	74.	1.	5.	338.	1185.
1982	903.	369.	1550.	82.	1.	6.	370.	1556.
1983	990.	405.	1955.	90.	2.	8.	406.	1962.
1984	1063.	435.	2389.	97.	2.	10.	436.	2398.
1985	1142.	467.	2856.	105.	2.	12.	468.	2867.
1986	1226.	501.	3357.	114.	2.	14.	503.	3371.
1987	1317.	538.	3896.	123.	2.	16.	540.	3911.
1988	1415.	578.	4474.	133.	2.	18.	580.	4492.
1989	1519.	621.	5095.	144.	3.	21.	623.	5116.
1990	1632.	667.	5762.	156.	3.	24.	669.	5786.
1971	1753.	716.	6479.	169.	3.	27.	719.	6505.
1992	1882.	769.	7249.	182.	3.	30.	772.	7278.
1993	2021.	826.	8075.	197.	4.	34.	829.	8108.
1994	2131.	871.	8946.	210.	4.	38.	874.	8983.
1995	2246.	918.	9864.	224.	4.	42.	922.	9905.
1996	2367.	968.	10831.	238.	4.	46.	971.	10877.
1997	2495.	1020.	11851.	253.	5.	51.	1024.	11901.
1998	2629.	1075.	12926.	269.	5.	56.	1079.	12981.
1999	2771.	1133.	14059.	286.	5.	61.	1138.	14119.
2000	2921.	1194.	15253.	305.	6.	66.	1199.	15319.
2001	3079.	1259.	16512.	324.	6.	72.	1264.	16584.
2002	3245.	1327.	17839.	345.	6.	79.	1332.	17917.
2003	3420.	1398.	19237.	367.	7.	85.	1404.	19322.

TABLE 59
LATTAKIA TO ARIHA - LEGAL LOADINGS
JISR ESH SHUGUR TO ARIHA
EASTBOUND
EQUIVALENT AXLE LOADS (EAL)
(EAL TOTALS IN THOUSANDS)

GROWTH RATES

	1978-83	1983-93	1993-2003
TRUCK	9.60	7.40	5.40
BUS	9.90	8.20	6.40

YEAR	TRUCK (F= 3.38) VOLUME	ANNUAL EAL	CUMUL. EAL	BUS (F=0.05) VOLUME	ANNUAL EAL	CUMUL. EAL	TRUCK + BUS ANNUAL EAL	TRUCK + BUS CUMUL. EAL
1978	648.	799.	799.	64.	1.	1.	800.	800.
1979	710.	876.	1676.	70.	1.	2.	877.	1678.
1980	778.	960.	2636.	77.	1.	4.	961.	2639.
1981	853.	1052.	3688.	85.	2.	5.	1054.	3693.
1982	935.	1154.	4842.	93.	2.	7.	1155.	4849.
1983	1025.	1264.	6106.	103.	2.	9.	1266.	6115.
1984	1101.	1358.	7464.	111.	2.	11.	1359.	7475.
1985	1182.	1458.	8922.	120.	2.	13.	1460.	8935.
1986	1270.	1566.	10489.	130.	2.	16.	1568.	10504.
1987	1363.	1682.	12171.	141.	3.	18.	1684.	12188.
1988	1464.	1807.	13977.	152.	3.	21.	1809.	13993.
1989	1573.	1940.	15917.	165.	3.	24.	1943.	15941.
1990	1687.	2084.	18001.	178.	3.	27.	2087.	18028.
1991	1814.	2238.	20239.	193.	4.	31.	2241.	20270.
1992	1948.	2404.	22643.	209.	4.	35.	2407.	22677.
1993	2093.	2582.	25225.	226.	4.	39.	2585.	25263.
1994	2206.	2721.	27946.	240.	4.	43.	2725.	27988.
1995	2325.	2868.	30813.	255.	5.	48.	2872.	30861.
1996	2450.	3023.	33836.	272.	5.	53.	3027.	33888.
1997	2582.	3186.	37022.	289.	5.	58.	3191.	37080.
1998	2722.	3358.	40380.	308.	6.	64.	3363.	40443.
1999	2869.	3539.	43920.	327.	6.	69.	3545.	43989.
2000	3024.	3730.	47650.	346.	6.	76.	3736.	47725.
2001	3187.	3932.	51582.	371.	7.	83.	3938.	51664.
2002	3359.	4144.	55726.	394.	7.	90.	4151.	55816.
2003	3541.	4368.	60094.	420.	8.	97.	4375.	60191.

TABLES 58, 59 & 60
LEGAL LOADING PRACTICES

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TABLE 61

VEHICLE OPERATING COSTS ON LEVEL TANGENT ROAD *
PER 1000 VEHICLE KILOMETERS

VEHICLE: PASSENGER CAR
TAX STATUS: WITHOUT TAXES
MONETARY UNIT: SYRIAN POUNDS

COST ITEM	BASIS COST	UNIT VALUE	UNIFORM SPEED (KM PER HOUR) 20	30	40	50	60	70	80
VEHICLE RUNNING COSTS									
FUEL	LITER	0.653	102.39	90.96	80.44	63.41	64.58	66.15	68.17
TIRES	TIRE & TUBE	90.000	1.19	1.85	2.74	3.37	4.24	5.19	6.13
OIL	LITER	0.544	1.14	1.21	0.91	0.82	0.81	0.77	0.71
MAINTENANCE: PARTS	% OF VEH.	17,470.	12.23	13.98	15.72	15.72	17.47	17.47	19.22
LABOR	HOUR	2.88	1.27	1.35	1.53	1.53	1.64	1.76	1.90
DEPRECIATION	% OF VEH.	17,020.	54.46	45.95	39.15	34.04	30.64	27.23	25.53
SUB - TOTAL	-	-	172.98	155.30	140.49	118.89	119.38	118.57	121.84
RELATED COSTS									
OCCUPANTS TIME:									
OPERATORS	HOUR	10.50	525.00	350.00	262.50	210.00	175.00	150.00	131.25
PASSENGERS	HOUR								
ACCIDENTS	% OF VEH.	17,470.	83.86	55.90	41.93	33.54	27.95	23.96	20.96
VEHICLE INVESTMENT	% OF VEH.	17,470.	98.27	65.51	49.13	39.31	32.76	23.08	24.57
TIME DEPRECIATION	% OF VEH.	17,020.	54.75	34.43	24.04	18.54	14.75	11.72	9.71
SUB - TOTAL	-	-	761.88	505.84	377.60	301.39	250.46	213.76	186.49
MANAGEMENT	% OF ABOVE	5%	46.74	33.06	25.90	21.01	18.49	16.62	15.42
SUB- TOTAL	-	-	808.62	538.90	403.50	322.40	268.95	230.38	201.91
GRAND TOTAL	-	-	981.60	694.20	543.99	441.29	388.33	348.95	323.75

* ON HIGH TYPE SURFACE IN GOOD CONDITION

TABLE 63

VEHICLE OPERATING COSTS ON LEVEL TANGENT ROAD *
PER 1000 VEHICLE KILOMETERS

VEHICLE: BUS
TAX STATUS: WITHOUT TAXES
MONETARY UNIT: SYRIAN POUNDS

COST ITEM	BASIS OF COST	UNIT VALUE	UNIFORM SPEED (KM PER HOUR) 20	30	40	50	60	70	80
VEHICLE RUNNING COSTS									
FUEL	LITER	0.641	140.76	157.69	107.50	117.30	129.42	142.94	157.05
TIRES	TIRE & TUBE	264.000	3.59	5.73	8.24	10.88	13.75	16.87	20.33
OIL	LITER	0.553	3.17	3.43	2.25	3.03	2.37	2.22	2.15
MAINTENANCE: PARTS	% OF VEH.	82,710	165.42	173.69	190.23	215.05	239.86	264.67	297.76
LABOR	HOUR	2.880	6.36	6.77	7.52	8.50	9.71	11.06	12.53
DEPRECIATION	% OF VEH.	80,870	121.30	97.04	88.96	72.78	64.70	56.61	48.52
SUB - TOTAL	-	-	440.60	444.35	404.70	427.54	459.81	494.37	538.34
RELATED COSTS									
OCCUPANTS TIME:									
OPERATORS	HOUR	23.97	1198.50	799.00	599.25	479.40	399.50	342.43	299.63
PASSENGERS	HOUR								
ACCIDENTS	% OF VEH.	82,710	134.40	89.60	67.20	53.76	44.80	38.40	33.60
VEHICLE INVESTMENT	% OF VEH.	82,710	155.08	103.39	77.54	62.03	51.69	44.31	38.77
TIME DEPRECIATION	% OF VEH.	80,870	39.47	22.73	17.72	12.77	10.62	9.22	8.31
SUB - TOTAL	-	-	1527.45	1014.72	761.71	607.96	506.61	434.36	380.31
MANAGEMENT	% OF ABOVE	10%	195.81	145.91	116.64	103.55	96.64	92.37	91.87
SUB - TOTAL	-	-	1724.26	1160.63	878.35	711.51	603.25	527.23	472.18
GRAND TOTAL	-	-	2164.86	1604.98	1283.05	1139.05	1063.06	1021.60	1010.52

* ON HIGH TYPE SURFACE IN GOOD CONDITION

TABLE 62

VEHICLE OPERATING COSTS ON LEVEL TANGENT ROAD *
PER 1000 VEHICLE KILOMETERS

VEHICLE: PICK-UP TRUCK
TAX STATUS: WITHOUT TAXES
MONETARY UNIT: SYRIAN POUNDS

COST ITEM	BASIS OF COST	UNIT VALUE	UNIFORM SPEED (KM PER HOUR) 20	30	40	50	60	70	80
VEHICLE RUNNING COSTS									
FUEL	LITER	0.653	134.71	94.55	67.39	70.26	74.38	78.88	84.17
TIRES	TIRE & TUBE	160.000	1.82	2.83	3.92	5.14	6.48	7.95	9.65
OIL	LITER	0.544	1.66	1.11	0.76	0.77	0.75	0.71	0.61
MAINTENANCE: PARTS	% OF VEH.	16,200.	14.58	16.20	16.20	17.82	19.44	19.44	21.06
LABOR	HOUR	2.860	1.56	1.67	1.79	1.90	2.02	2.16	2.30
DEPRECIATION	% OF VEH.	15,4000.	77.00	64.63	55.44	47.74	43.12	39.50	35.42
SUB- TOTAL	-	-	231.33	181.04	145.50	143.50	146.19	147.64	153.21
RELATED COSTS									
OCCUPANTS TIME:									
OPERATORS	HOUR	3.33	166.50	111.00	83.25	66.60	55.50	47.57	41.63
PASSENGERS	HOUR	-	-	-	-	-	-	-	-
ACCIDENTS	% OF VEH.	16,200.	103.68	69.12	51.84	41.47	34.56	29.62	25.92
VEHICLE INVESTMENT	% OF VEH.	16,200.	121.50	81.00	60.75	48.60	40.50	34.71	30.38
TIME DEPRECIATION	% OF VEH.	15,400.	57.16	36.65	25.96	19.66	15.32	12.73	10.25
SUB - TOTAL	-	-	448.84	297.77	221.80	176.33	145.88	124.63	103.18
MANAGEMENT	% OF ABOVE	10%	68.02	47.88	36.73	32.00	29.21	27.33	26.14
SUB- TOTAL	-	-	516.86	345.65	258.53	208.33	175.09	151.86	134.32
GRAND TOTAL	-	-	748.19	526.69	404.03	351.96	321.28	299.50	287.53

* ON HIGH TYPE SURFACE IN GOOD CONDITION

TABLES 61, 62 & 63
VEHICLE RUNNING COSTS

LYDEN

TABLE 64

VEHICLE OPERATING COSTS ON LEVEL TANGENT ROAD *
PER 1000 VEHICLE KILOMETERS

VEHICLE: SINGLE UNIT TRUCK (DIESEL)
TAX STATUS: WITHOUT TAXES
MONETARY UNIT: SYRIAN POUNDS

COST ITEM	BASIS OF COST	UNIT VALUE	UNIFORM SPEED (KM PER HOUR) 20	30	40	50	60	70	80
VEHICLE RUNNING COSTS									
FUEL	LITER	0.641	264.80	165.31	188.39	128.78	137.24	147.30	158.01
TIRES	TIRE & TUBE	520.000	6.29	9.67	13.62	17.84	22.46	27.51	33.44
OIL	LITER	0.553	6.07	3.62	3.98	2.58	2.54	2.34	2.16
MAINTENANCE: PARTS	% OF VEH.	109.040.	141.75	141.75	152.66	163.56	174.46	196.27	207.18
LABOR	HOUR	2.880	4.06	4.29	4.61	5.04	5.56	6.13	6.74
DEPRECIATION	% OF VEH.	104,990.	209.98	178.48	146.99	125.99	115.49	104.99	94.49
SUB - TOTAL	-	-	632.95	503.12	510.25	443.79	457.75	484.54	502.02
RELATED COSTS									
OCCUPANTS TIME:									
OPERATORS	HOUR	7.69	384.50	256.33	192.25	153.80	128.17	109.86	96.13
PASSENGERS	HOUR	-	-	-	-	-	-	-	-
ACCIDENTS	% OF VEH.	109,040.	174.46	116.31	87.23	69.79	58.15	49.85	43.62
VEHICLE INVESTMENT	% OF VEH.	109,040.	272.60	181.73	136.30	109.04	90.87	77.89	68.15
TIME DEPRECIATION	% OF VEH.	104,990.	189.86	109.69	76.55	56.67	43.62	36.03	30.25
SUB- TOTAL	-	-	1021.42	664.06	492.33	389.30	320.81	273.63	238.15
MANAGEMENT	% OF ABOVE	10 %	165.44	116.72	100.26	83.31	77.86	75.82	74.01
SUB - TOTAL	-	-	1186.86	780.78	592.59	472.61	398.67	349.45	312.16
GRAND TOTAL	-	-	1819.81	1283.90	1102.84	916.40	856.41	833.99	814.18

* ON HIGH TYPE SURFACE IN GOOD CONDITION

TABLE 65

VEHICLE OPERATING COSTS ON LEVEL TANGENT ROAD *
PER 1000 VEHICLE KILOMETERS

VEHICLE; TRUCK COMBINATION
TAX STATUS: WITHOUT TAXES
MONETARY UNIT: SYRIAN POUNDS

COST ITEM	BASIS OF COST	UNIT VALUE	UNIFORM SPEED (KM PER HOUR) 20	30	40	50	60	70	80
VEHICLE RUNNING COSTS									
FUEL	LITER	0.641	397.23	248.00	282.62	193.20	205.89	220.95	237.04
TIRES	TIRE & TUBE	520.000	6.81	10.76	15.18	20.23	26.21	33.33	41.95
OIL	LITER	0.553	4.56	3.36	4.36	3.15	3.32	3.13	2.84
MAINTENANCE: PARTS	% OF VEH.	172,820.	86.41	103.69	103.69	103.69	120.97	120.97	135.26
LABOR	HOUR	2.880	6.57	6.88	7.37	8.06	8.90	9.85	10.83
DEPRECIATION	% OF VEH.	164,810.	412.02	329.62	280.18	247.21	214.25	197.77	181.29
SUB- TOTAL	-	-	913.60	702.31	693.40	575.54	579.54	586.00	612.22
RELATED COSTS									
OCCUPANTS TIME:									
OPERATORS	HOUR	7.69	384.50	256.33	192.25	153.80	128.17	109.86	96.13
PASSENGERS	HOUR	-	-	-	-	-	-	-	-
ACCIDENTS	% OF VEH.	172,820.	253.47	168.98	126.73	101.39	84.49	72.42	63.37
VEHICLE INVESTMENT	% OF VEH.	172.820	432.05	288.03	216.03	172.82	144.02	123.44	108.01
TIME DEPRECIATION	% OF VEH.	164,810	132.04	75.10	48.31	36.83	29.27	24.41	22.25
SUB - TOTAL	-	-	1202.06	788.44	583.32	464.84	385.95	330.13	289.77
MANAGEMENT	% OF ABOVE		211.57	149.08	127.67	104.04	96.55	91.61	90.20
SUB - TOTAL	-	-	1413.63	937.52	710.99	568.88	482.50	421.74	379.97
GRAND TOTAL	-	-	2327.23	1639.83	1404.39	1144.42	1062.04	1007.74	992.19

* ON HIGH TYPE SURFACE IN GOOD CONDITION

TABLES 64 & 65
VEHICLE RUNNING COSTS

*** S Y R I A N F E A S I B I L I T Y S T U D Y ***

TABLE 66 VEHICLE RUNNING COSTS ON VERTICAL GRADE
ON HIGH TYPE PAVEMENT IN GOOD CONDITION
COMPUTED EXCLUDING TAXES
VEHICLE TYPE = PASSENGER CAR

UNIT = SYRIAN POUNDS PER 1,000 VEHICLE-KMS.

UNIFORM SPEED KM/HOUR	MINUS GRADE . PERCENT. -8	-7	-6	-5	-4	-3	-2	-1	LEVEL
10..	226.14	224.07	222.06	220.13	219.99	219.77	219.64	251.78	265.71
15..	167.47	165.35	163.37	163.14	163.01	161.06	160.94	194.37	208.02
20..	134.26	132.17	130.10	129.92	129.76	129.62	134.67	160.09	172.98
25..	119.59	116.99	114.90	114.64	116.26	114.37	125.61	146.90	160.45
30..	109.12	107.00	106.74	104.68	109.06	104.30	122.29	141.11	155.39
35..	90.34	90.03	89.70	89.49	89.29	91.47	104.99	116.16	129.37
40..	86.08	83.82	83.67	83.43	83.21	89.40	102.44	114.33	125.86
45..	80.50	78.41	78.13	77.87	78.00	87.36	99.49	112.73	124.44
50..	75.61	73.49	73.15	72.90	75.44	84.68	95.63	105.87	118.88
55..	72.69	72.30	71.99	71.74	77.18	86.19	96.93	106.91	118.23
60..	69.97	69.62	69.28	68.99	77.13	85.97	96.32	107.98	119.37
65..	67.35	66.94	66.58	68.34	77.01	85.89	95.93	107.66	118.89
70..	64.81	64.40	63.93	68.18	76.75	87.22	97.46	107.24	118.56
75..	64.34	63.86	63.44	69.91	78.40	87.18	97.43	107.25	118.46
80..	64.00	63.49	63.80	71.69	80.13	88.91	100.82	110.73	121.83
85..	61.85	61.20	63.81	71.52	81.65	90.76	103.83	110.76	121.99
90..	59.99	59.26	64.18	71.54	81.69	91.01	101.13	111.49	122.44
95..	59.94	61.97	68.21	75.33	83.73	93.33	103.40	113.81	125.72
100..	59.94	62.43	68.47	75.58	84.25	93.98	104.18	116.78	127.84
105..	59.94	62.43	68.47	79.48	88.63	98.27	108.60	119.74	130.96
110..	59.94	62.43	68.47	79.48	94.28	102.75	113.38	124.64	136.21

NOTE -- REPEATED COSTS INDICATE VEHICLE SPEEDS BEYOND MAXIMUM SPEED CONSIDERED IN ANALYSIS

*** S Y R I A N F E A S I B I L I T Y S T U D Y ***

TABLE 68 VEHICLE RUNNING COSTS ON VERTICAL GRADE
ON HIGH TYPE PAVEMENT IN GOOD CONDITION
COMPUTED EXCLUDING TAXES
VEHICLE TYPE = PICK-UP TRUCK

UNIT = SYRIAN POUNDS PER 1,000 VEHICLE-KMS.

UNIFORM SPEED KM/HOUR	MINUS GRADE . PERCENT. -8	-7	-6	-5	-4	-3	-2	-1	LEVEL
10..	309.47	300.79	300.54	298.69	298.47	302.03	320.46	338.89	360.31
15..	202.86	199.16	196.92	198.68	196.85	200.74	215.33	221.17	247.82
20..	178.56	176.49	174.51	174.30	172.41	178.80	195.31	212.39	231.32
25..	147.20	141.83	139.80	139.58	139.36	146.09	159.21	171.12	185.89
30..	132.72	133.69	130.33	128.37	128.14	137.26	151.57	165.51	181.03
35..	109.02	108.73	106.73	106.48	106.21	114.49	129.13	133.92	147.14
40..	104.01	103.62	101.65	101.39	102.84	111.57	124.40	133.50	145.49
45..	99.65	97.56	97.25	96.94	101.14	109.45	122.76	132.33	144.49
50..	95.07	93.02	92.68	92.28	99.23	107.37	119.37	131.27	143.62
55..	91.02	90.63	88.61	88.85	97.50	107.53	119.79	129.96	143.31
60..	85.66	88.17	87.78	90.05	99.11	107.56	120.94	131.42	146.18
65..	84.78	84.36	83.92	88.40	97.50	106.09	119.18	130.89	145.86
70..	82.50	82.05	81.67	87.69	97.08	106.59	121.75	133.80	147.64
75..	82.01	79.66	80.17	89.25	98.61	109.15	123.13	135.25	151.58
80..	80.16	79.31	80.65	88.89	100.38	112.00	126.93	138.78	153.20
85..	80.16	79.31	80.85	89.74	100.15	113.43	129.14	142.26	156.95
90..	80.16	79.31	80.85	89.09	100.20	114.77	130.24	144.25	159.28
95..	80.16	79.31	80.85	89.09	100.20	117.69	131.51	146.35	162.51
100..	80.16	79.31	80.85	89.09	100.20	117.69	134.62	150.28	166.23
105..	80.16	79.31	80.85	89.09	100.20	117.69	134.62	156.78	172.42
110..	80.16	79.31	80.85	89.09	100.20	117.69	134.62	162.41	177.32

NOTE -- REPEATED COSTS INDICATE VEHICLE SPEEDS BEYOND MAXIMUM SPEED CONSIDERED IN ANALYSIS

*** S Y R I A N F E A S I B I L I T Y S T U D Y ***

TABLE 67 VEHICLE RUNNING COSTS ON VERTICAL GRADE
ON HIGH TYPE PAVEMENT IN GOOD CONDITION
COMPUTED EXCLUDING TAXES

VEHICLE TYPE = PASSENGER CAR

UNIT = SYRIAN POUNDS PER 1.000 VEHICLE-KMS.

UNIFORM SPEED KM/HOUR	PLUS GRADE . PERCENT. LEVEL	+ 1	+ 2	+ 3	+ 4	+ 5	+ 6	+ 7	+ 8
10.	265.71	282.09	299.50	317.95	323.89	359.21	379.57	402.68	430.26
15.	208.02	223.75	240.68	258.54	269.78	293.43	315.98	340.30	366.46
20.	172.98	189.59	205.78	222.35	239.25	255.58	276.39	297.74	322.05
25.	166.45	175.62	192.35	211.15	228.54	247.21	266.96	288.98	315.69
30.	155.30	170.92	188.36	205.77	225.50	244.46	264.88	288.03	313.42
35.	129.37	141.87	155.48	169.55	183.62	200.55	216.54	235.03	254.94
40.	125.66	140.48	154.32	168.58	182.95	198.27	214.72	235.80	256.12
45.	124.44	137.36	151.33	165.69	180.30	195.77	214.53	233.96	254.56
50.	118.88	131.01	143.99	157.42	171.16	187.57	203.48	222.06	243.28
55.	118.23	132.05	144.87	158.33	172.09	188.56	204.74	223.34	242.83
60.	119.37	131.15	143.78	157.01	170.84	185.56	203.43	222.12	242.12
65.	118.69	130.30	142.78	155.68	171.19	185.88	204.00	220.43	242.38
70.	118.56	129.57	143.73	156.26	169.71	184.16	200.40	218.86	240.66
75.	118.46	129.28	141.21	155.25	168.45	182.59	198.66	218.87	239.19
80.	121.83	132.36	143.87	157.51	170.42	184.39	200.19	218.46	240.37
85.	121.99	132.17	143.33	158.73	169.16	182.94	198.57	218.44	238.46
90.	122.44	132.26	144.71	155.47	168.22	181.81	199.03	216.84	236.92
95.	126.72	136.31	146.60	157.51	169.60	183.07	204.08	217.67	237.87
100.	127.84	137.19	147.14	157.51	171.20	184.58	199.90	217.23	237.87
105.	130.96	141.99	151.50	161.78	173.32	186.63	199.98	217.23	237.87
110.	136.21	146.91	156.10	166.26	177.41	186.63	199.98	217.23	237.87

NOTE -- REPEATED COSTS INDICATE VEHICLE SPEEDS BEYOND MAXIMUM SPEED CONSIDERED IN ANALYSIS

*** S Y R I A N F E A S I B I L I T Y S T U D Y ***

TABLE 69 VEHICLE RUNNING COSTS ON VERTICAL GRADE
ON HIGH TYPE PAVEMENT IN GOOD CONDITION
COMPUTED EXCLUDING TAXES

VEHICLE TYPE = PICK-UP TRUCK

UNIT = SYRIAN POUNDS PER 1.000 VEHICLE-KMS.

UNIFORM SPEED KM/HOUR	PLUS GRADE . PERCENT. LEVEL	+ 1	+ 2	+ 3	+ 4	+ 5	+ 6	+ 7	+ 8
10.	360.31	381.04	402.90	426.92	454.38	488.39	526.69	571.90	624.45
15.	247.82	263.95	281.54	301.10	323.13	348.34	377.85	412.61	453.84
20.	231.32	249.44	269.56	291.79	316.88	347.27	389.46	420.62	466.47
25.	185.89	200.48	216.41	235.91	255.83	278.47	304.78	335.77	373.11
30.	181.03	196.92	213.56	232.93	254.44	278.59	308.45	341.53	381.65
35.	147.14	158.80	171.59	185.02	203.42	221.38	242.36	264.56	258.45
40.	145.49	157.68	171.03	187.68	204.26	223.51	245.41	271.15	304.18
45.	144.49	157.25	171.37	187.10	204.41	225.79	248.67	275.53	309.73
50.	143.62	156.93	171.59	189.42	207.40	227.83	251.46	250.89	314.72
55.	143.31	157.07	173.93	190.62	209.33	232.09	256.43	285.11	320.26
60.	144.18	160.51	176.28	193.39	212.47	234.10	260.74	290.28	326.22
65.	145.66	160.67	176.70	194.20	215.18	237.20	262.57	294.60	332.40
70.	147.64	162.87	180.96	198.83	218.42	240.92	268.47	299.74	339.32
75.	151.08	166.72	183.58	201.79	221.94	244.60	272.77	305.23	347.64
80.	153.20	169.20	186.25	206.51	226.92	250.08	279.07	313.44	360.06
85.	156.93	173.14	190.48	210.88	231.42	255.08	279.07	313.44	360.06
90.	159.28	175.48	192.96	213.48	234.22	256.15	279.07	313.44	360.06
95.	163.51	179.85	197.41	216.53	234.22	258.15	279.07	313.44	360.06
100.	166.93	182.69	202.19	216.53	234.22	258.15	279.07	313.44	360.06
105.	172.42	188.86	202.19	216.53	234.22	258.15	279.07	313.44	360.06
110.	177.32	194.06	202.19	216.53	234.22	258.15	279.07	313.44	360.06

NOTE -- REPEATED COSTS INDICATE VEHICLE SPEEDS BEYOND MAXIMUM SPEED CONSIDERED IN ANALYSIS

TABLES 66, 67, 68 & 69
VEHICLE RUNNING COSTS

LYON

TABLE 70 VEHICLE RUNNING COSTS ON VERTICAL GRADE ON HIGH TYPE PAVEMENT IN GOOD CONDITION COMPUTED EXCLUDING TAXES

VEHICLE TYPE = BUS (DIESEL)

UNIT = SYRIAN POUNDS PER 1,000 VEHICLE-KMS.

UNIFORM SPEED KM/HOUR	MINUS GRADE, PERCENT. -8	-7	-6	-5	-4	-3	-2	-1	LEVEL
10.	478.76	478.49	478.30	477.12	476.27	476.00	475.70	486.73	516.32
15.	455.21	444.85	444.49	442.99	441.84	441.40	441.01	454.36	502.39
20.	378.70	379.45	377.71	376.34	375.02	366.25	382.94	400.72	440.63
25.	364.02	363.20	354.14	352.38	350.84	350.63	372.02	391.79	440.81
30.	350.70	342.60	341.86	339.79	337.85	341.36	361.95	386.49	444.35
35.	314.15	313.29	312.68	302.11	302.00	306.57	325.46	350.24	390.51
40.	320.33	311.16	310.27	308.05	308.61	315.61	332.50	362.79	404.70
45.	320.27	310.93	311.46	308.47	311.16	311.50	340.09	369.11	411.32
50.	318.43	308.79	308.75	300.78	305.29	314.76	345.96	375.79	427.54
55.	326.25	316.13	317.07	319.19	324.55	326.11	360.41	390.73	442.91
60.	326.10	317.32	318.64	314.90	320.13	341.42	367.11	397.29	459.80
65.	325.79	325.08	320.97	325.59	332.27	354.96	372.59	412.72	476.71
70.	325.79	328.93	324.63	330.18	337.61	360.05	385.19	429.66	494.36
75.	325.79	328.93	353.09	351.64	365.53	375.57	412.47	454.94	520.26
80.	325.79	328.93	360.69	358.32	368.19	384.28	422.43	466.51	538.34
85.	325.79	328.93	360.69	383.34	394.08	411.40	451.21	496.21	564.63
90.	325.79	328.93	360.69	383.34	404.60	431.23	474.05	526.40	592.63
95.	325.79	328.93	360.69	383.34	404.60	454.10	502.02	555.78	617.06
100.	325.79	328.93	360.69	383.34	404.60	481.15	514.52	574.94	654.74
105.	325.79	328.93	360.69	383.34	404.60	481.15	535.48	601.28	674.84
110.	325.79	328.93	360.69	383.34	404.60	481.15	559.39	627.20	721.25

NOTE -- REPEATED COSTS INDICATE VEHICLE SPEEDS BEYOND MAXIMUM SPEED CONSIDERED IN ANALYSIS

TABLE 72 VEHICLE RUNNING COSTS ON VERTICAL GRADE ON HIGH TYPE PAVEMENT IN GOOD CONDITION COMPUTED EXCLUDING TAXES

VEHICLE TYPE = 2-AXLE TRUCK (DIESEL)

UNIT = SYRIAN POUNDS PER 1,000 VEHICLE-KMS.

UNIFORM SPEED KM/HOUR	MINUS GRADE, PERCENT. -8	-7	-6	-5	-4	-3	-2	-1	LEVEL
10.	693.37	692.33	692.21	691.69	685.35	718.76	764.07	832.41	839.91
15.	612.55	611.45	610.94	610.21	624.15	666.39	709.89	756.34	819.57
20.	461.37	460.53	460.53	467.78	482.69	509.98	543.22	583.50	632.95
25.	455.65	454.82	453.45	452.88	474.55	494.39	539.49	573.14	634.20
30.	389.39	386.17	387.10	377.45	391.76	408.80	429.21	454.23	503.12
35.	367.96	366.62	365.22	371.13	374.85	392.42	425.64	452.82	505.67
40.	368.56	367.21	356.88	366.10	381.19	399.72	423.73	465.46	510.24
45.	368.56	376.24	337.74	334.04	343.69	355.39	370.75	403.16	446.19
50.	368.56	325.28	329.46	325.93	335.56	348.10	374.85	426.99	443.78
55.	358.56	319.14	323.43	330.37	340.03	353.10	369.14	403.96	450.65
60.	368.56	319.14	341.25	336.54	345.95	359.69	385.70	416.24	457.75
65.	368.56	319.14	341.25	344.61	353.79	365.74	381.91	428.46	465.82
70.	353.56	319.14	341.25	344.81	360.74	372.07	400.25	435.53	484.53
75.	368.56	319.14	341.25	344.81	360.74	380.93	406.90	443.26	482.31
80.	368.56	319.14	341.25	344.81	360.74	401.41	428.86	461.85	502.01
85.	368.56	319.14	341.25	344.81	360.74	413.07	439.59	459.26	511.50
90.	368.56	319.14	341.25	344.81	360.74	413.07	450.82	478.64	532.11
95.	368.56	319.14	341.25	344.81	360.74	413.07	473.90	498.19	553.24
100.	368.56	319.14	341.25	344.81	360.74	413.07	487.23	507.64	564.31
105.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

NOTE -- REPEATED COSTS INDICATE VEHICLE SPEEDS BEYOND MAXIMUM SPEED CONSIDERED IN ANALYSIS

*** S Y R I A N F E A S I B I L I T Y S T U D Y ***

TABLE 71 VEHICLE RUNNING COSTS ON VERTICAL GRADE
ON HIGH TYPE PAVEMENT IN GOOD CONDITION
COMPUTED EXCLUDING TAXES
VEHICLE TYPE = BUS (DIESEL)

UNIT = SYRIAN POUNDS PER 1,000 VEHICLE-KMS.

UNIFORM SPEED KM/HOUR	PLUS GRADE . PERCENT. LEVEL	+ 1	+ 2	+ 3	+ 4	+ 5	+ 6	+ 7	+ 8
10.	516.32	555.40	610.22	649.21	697.95	764.53	822.60	884.25	945.69
15.	502.39	567.71	636.77	701.72	779.77	870.37	948.30	1033.98	1136.62
20.	440.60	493.75	556.54	615.20	681.93	762.45	844.87	919.06	1005.06
25.	440.81	510.78	579.13	648.65	724.09	825.57	917.79	1013.87	1121.01
30.	494.35	522.95	598.55	676.02	779.15	861.23	1003.50	1115.90	1246.24
35.	390.51	447.59	502.16	575.48	645.20	726.75	826.53	923.49	1030.01
40.	404.70	472.91	538.76	607.01	680.45	788.98	894.18	1003.63	1123.20
45.	411.32	482.71	556.66	638.54	723.68	844.94	952.03	1032.02	1205.64
50.	427.54	500.82	570.65	661.16	766.17	904.65	1007.75	1141.61	1253.67
55.	442.91	527.69	607.58	700.48	823.21	949.21	1067.35	1232.73	1356.15
60.	459.20	546.18	636.65	739.33	864.19	1001.56	1149.97	1296.22	1396.15
65.	476.71	564.23	664.37	777.18	923.50	1085.35	1243.90	1296.22	1396.15
70.	494.36	572.19	694.12	816.72	991.48	1150.84	1357.65	1296.22	1396.15
75.	520.26	619.43	730.91	872.05	1075.09	1297.35	1486.28	1296.22	1396.15
80.	538.34	647.09	776.79	919.38	1142.19	1392.44	1486.28	1296.22	1396.15
85.	564.63	675.26	814.64	983.69	1234.47	1392.44	1486.28	1296.22	1396.15
90.	591.63	712.73	853.45	1032.28	1318.85	1392.44	1486.28	1296.22	1396.15
95.	619.06	750.82	909.39	1106.03	1318.85	1392.44	1486.28	1296.22	1396.15
100.	654.74	796.97	965.00	1171.40	1318.85	1392.44	1486.28	1296.22	1396.15
105.	674.84	828.18	1014.06	1171.40	1318.85	1392.44	1486.28	1296.22	1396.15
110.	711.29	847.45	1062.53	1171.40	1318.35	1392.44	1486.28	1296.22	1396.15

NOTE -- REPEATED COSTS INDICATE VEHICLE SPEEDS BEYOND MAXIMUM SPEED CONSIDERED IN ANALYSIS

*** S Y R I A N F E A S I B I L I T Y S T U D Y ***

TABLE 73 VEHICLE RUNNING COSTS ON VERTICAL GRADE
ON HIGH TYPE PAVEMENT IN GOOD CONDITION
COMPUTED EXCLUDING TAXES
VEHICLE TYPE = 2-AXLE TRUCK (DIESEL)

UNIT = SYRIAN POUNDS PER 1,000 VEHICLE-KMS.

UNIFORM SPEED KM/HOUR	PLUS GRADE . PERCENT. LEVEL	+ 1	+ 2	+ 3	+ 4	+ 5	+ 6	+ 7	+ 8
10.	839.91	876.25	914.07	955.89	1001.57	1063.28	1120.88	1196.25	1283.75
15.	819.57	867.06	927.68	983.24	1042.53	1121.38	1196.55	1291.61	1398.78
20.	632.95	666.51	702.44	743.20	797.23	845.50	910.38	981.10	1071.90
25.	634.20	673.90	727.14	775.65	837.62	905.31	979.53	1071.58	1173.81
30.	503.12	539.13	565.72	607.17	650.19	696.54	758.26	834.59	928.56
35.	505.67	535.32	573.91	618.95	645.79	726.85	804.00	896.35	1006.27
40.	510.24	551.82	595.54	645.64	704.20	782.93	864.91	995.49	1006.27
45.	445.19	480.44	514.30	543.07	612.22	697.52	764.40	995.49	1006.27
50.	443.78	477.01	522.90	572.76	634.73	732.48	812.02	995.49	1006.27
55.	450.65	484.95	531.62	594.35	668.22	778.52	812.02	995.49	1006.27
60.	457.75	503.82	551.96	615.67	713.27	835.80	812.02	995.49	1006.27
65.	465.82	513.32	573.30	649.42	770.44	835.80	812.02	995.49	1006.27
70.	484.53	532.95	594.16	671.12	770.44	835.80	812.02	995.49	1006.27
75.	482.31	542.53	619.57	709.46	770.44	835.80	812.02	995.49	1006.27
80.	502.01	574.12	647.73	748.81	770.44	835.80	812.02	995.49	1006.27
85.	511.50	584.32	669.78	748.81	770.44	835.80	812.02	995.49	1006.27
90.	532.11	616.47	669.78	748.81	770.44	835.80	812.02	995.49	1006.27
95.	553.24	638.05	669.78	748.81	770.44	835.80	812.02	995.49	1006.27
100.	564.31	649.39	669.78	748.81	770.44	835.80	812.02	995.49	1006.27
105.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

NOTE -- REPEATED COSTS INDICATE VEHICLE SPEEDS BEYOND MAXIMUM SPEED CONSIDERED IN ANALYSIS

TABLES 70, 71, 72 & 73
VEHICLE RUNNING COSTS

LYON

TABLE 74 VEHICLE RUNNING COSTS ON VERTICAL GRADE
ON HIGH TYPE PAVEMENT IN GOOD CONDITION
COMPUTED EXCLUDING TAXES
VEHICLE TYPE = TRUCK-TRAILER

UNIT = SYRIAN POUNDS PER 1.000 VEHICLE-KMS.

UNIFORM SPEED KM/HOUR	MINUS GRADE, PERCENT. -8	-7	-6	-5	-4	-3	-2	-1	LEVEL
10.	1166.43	1145.18	1119.21	1096.33	1062.06	1055.89	1103.65	1148.70	1257.65
15.	1062.28	1038.30	1003.78	968.12	921.86	910.73	984.63	1050.37	1204.97
20.	792.19	767.69	759.82	730.92	680.71	669.72	743.69	797.46	913.60
25.	792.19	734.73	695.68	658.11	604.65	593.93	671.76	746.65	897.07
30.	792.19	734.73	550.93	526.45	507.40	530.37	533.54	584.19	792.31
35.	792.19	734.73	528.75	499.47	483.41	473.53	507.44	568.31	704.25
40.	792.19	734.73	487.74	456.32	445.85	441.84	467.14	556.45	693.39
45.	792.19	734.73	487.74	414.96	410.59	403.77	437.28	437.04	583.31
50.	792.19	734.73	487.74	414.96	395.77	394.73	403.09	475.16	575.54
55.	792.19	734.73	487.74	414.96	396.77	379.87	407.43	465.18	585.68
60.	792.19	734.73	487.74	414.96	396.77	383.38	357.41	458.59	579.54
65.	792.19	734.73	487.74	414.96	396.77	368.68	391.46	470.73	574.33
70.	792.19	734.73	487.74	414.96	396.77	370.52	404.56	465.03	586.00
75.	792.19	734.73	487.74	414.96	396.77	370.52	402.71	478.60	599.12
80.	792.19	734.73	487.74	414.96	396.77	370.52	436.50	491.05	612.21
85.	792.19	734.73	487.74	414.96	396.77	370.52	454.15	503.42	626.69
90.	792.19	734.73	487.74	414.96	396.77	370.52	454.15	529.90	641.55
95.	792.19	734.73	487.74	414.96	396.77	370.52	454.15	519.94	657.75
100.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

NOTE -- REPEATED COSTS INDICATE VEHICLE SPEEDS BEYOND MAXIMUM SPEED CONSIDERED IN ANALYSIS

TABLE 76 VEHICLE RUNNING COSTS ON HORIZONTAL CURVE
ON HIGH TYPE PAVEMENT IN GOOD CONDITION
COMPUTED EXCLUDING TAXES
VEHICLE TYPE = PASSENGER CAR

UNIT = SYRIAN POUNDS PER 1.000 VEHICLE-KMS.

UNIFORM SPEED KM/HOUR	RADIUS OF HORIZONTAL CURVE, METERS 1500	900	600	450	370	300	275	240	210	180	150	120	90	75	60
5.0	0.79	1.14	1.36	1.78	2.01	2.47	2.57	2.84	3.28	3.90	4.66	5.53	6.44	8.28	10.09
10.0	1.59	2.29	2.73	3.40	4.02	4.94	5.15	5.68	6.56	7.81	9.73	11.06	12.93	16.56	20.17
15.0	2.17	3.09	3.65	4.54	5.33	6.13	6.56	7.11	8.41	10.20	13.21	15.00	16.87	22.14	27.81
20.0	2.55	3.62	4.24	5.21	5.97	6.46	7.60	8.54	10.18	12.41	15.93	18.63	22.12	29.49	36.69
25.0	2.53	3.97	4.62	5.47	6.45	7.46	8.58	9.93	11.87	14.47	18.67	22.10	27.52	37.55	44.31
30.0	2.75	3.82	4.53	5.51	6.93	8.44	9.52	10.97	13.18	16.10	21.17	25.59	34.62	44.75	57.84
35.0	2.73	3.75	4.57	6.10	7.37	9.14	10.53	11.94	14.39	17.70	23.55	28.52	41.74	57.54	71.59
40.0	2.75	3.76	4.69	6.52	7.88	9.75	11.05	12.79	15.51	19.22	25.88	32.38	49.24	69.54	88.03
45.0	2.94	4.23	5.19	6.93	8.37	10.49	11.80	13.65	16.67	21.35	33.28	45.36	62.24	178.75	156.67
50.0	3.13	4.60	5.60	7.20	8.81	10.97	12.48	14.62	18.73	25.26	42.66	59.27	89.12	153.39	156.67
55.0	3.27	4.75	5.78	7.52	9.14	11.44	13.08	15.40	22.48	33.00	55.65	76.57	122.43	188.93	156.67
60.0	3.41	4.98	6.20	8.44	10.74	14.18	16.66	20.92	29.73	43.29	70.99	96.32	141.58	188.93	156.67
65.0	3.73	5.44	6.96	9.49	13.10	18.01	21.65	27.65	38.44	54.61	87.51	117.73	141.98	188.93	156.67
70.0	4.13	7.66	9.74	13.57	17.43	23.74	29.16	35.54	44.51	67.78	106.66	143.64	141.98	188.93	156.67
75.0	6.68	10.38	12.71	17.53	22.53	29.44	35.94	44.06	59.37	82.03	127.42	173.45	141.98	188.93	156.67
80.0	8.46	12.72	15.42	21.75	27.74	36.44	42.82	52.18	71.02	97.31	151.52	215.29	141.98	188.93	156.67
85.0	10.54	15.73	19.66	26.76	32.74	43.19	51.02	64.06	84.84	115.68	178.99	215.29	141.98	188.93	156.67
90.0	12.75	19.00	23.64	32.09	38.79	51.02	61.40	75.71	99.79	135.53	178.99	215.29	141.98	188.93	156.67
95.0	15.21	22.59	28.08	37.93	47.40	61.72	72.97	88.72	118.62	160.01	178.99	215.29	141.98	188.93	156.67
100.0	17.97	26.63	33.07	44.68	56.07	72.79	84.51	103.63	137.99	160.01	178.99	215.29	141.98	188.93	156.67
105.0	20.94	30.97	38.39	51.76	64.93	84.11	97.78	121.50	137.99	160.01	178.99	215.29	141.98	188.93	156.67
110.0	24.52	36.24	44.91	60.46	75.74	98.87	113.87	141.26	137.99	160.01	178.99	215.29	141.98	188.93	156.67

NOTE -- REPEATED COSTS INDICATE VEHICLE SPEEDS BEYOND MAXIMUM SPEED CONSIDERED IN ANALYSIS

*** S Y R I A N F E A S I B I L I T Y S T U D Y ***

TABLE 75 VEHICLE RUNNING COSTS ON VERTICAL GRADE
ON HIGH TYPE PAVEMENT IN GOOD CONDITION
COMPUTED EXCLUDING TAXES

VEHICLE TYPE = TRUCK-TRAILER

UNIT = SYRIAN POUNDS PER 1,000 VEHICLE-KMS.

UNIFORM SPEED KM/HOUR	PLUS GRADE, PERCENT. LEVEL	+ 1	+ 2	+ 3	+ 4	+ 5	+ 6	+ 7	+ 8
10.	1257.65	1287.21	1321.58	1364.03	1415.39	1479.40	1565.11	1689.15	1903.69
15.	1208.97	1260.37	1320.29	1390.38	1474.29	1533.92	1715.17	1925.31	2245.22
20.	913.60	960.59	1014.56	1078.59	1172.74	1267.61	1389.18	1561.31	1855.09
25.	697.07	966.09	1060.78	1156.03	1271.62	1412.38	1618.32	1890.97	1855.09
30.	732.31	756.00	813.22	888.09	938.52	1113.69	1290.90	1890.97	1855.09
35.	704.25	776.23	869.74	972.46	1123.92	1330.93	1560.97	1890.97	1855.09
40.	693.39	788.73	905.45	1043.63	1252.94	1579.38	1560.97	1890.97	1855.09
45.	583.31	677.62	757.66	888.29	1073.65	1579.38	1560.97	1890.97	1855.09
50.	575.54	686.56	802.18	940.31	1196.99	1579.38	1560.97	1890.97	1855.09
55.	585.68	697.57	834.15	1017.59	1196.99	1579.38	1560.97	1890.97	1855.09
60.	579.54	729.57	891.00	1101.29	1196.99	1579.38	1560.97	1890.97	1855.09
65.	574.33	746.51	936.75	1101.29	1196.99	1579.38	1560.97	1890.97	1855.09
70.	586.00	783.14	1019.05	1101.29	1196.99	1579.38	1560.97	1890.97	1855.09
75.	595.12	827.15	1070.84	1101.29	1196.99	1579.38	1560.97	1890.97	-1855.09
80.	612.21	872.07	1156.23	1101.29	1196.99	1579.38	1560.97	1890.97	1855.09
85.	626.69	912.79	1156.23	1101.29	1196.99	1579.38	1560.97	1890.97	1855.09
90.	641.55	962.38	1156.23	1101.29	1196.99	1579.38	1560.97	1890.97	1855.09
95.	657.75	962.38	1156.23	1101.29	1196.99	1579.38	1560.97	1890.97	1855.09
100.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

NOTE -- REPEATED COSTS INDICATE VEHICLE SPEEDS BEYOND MAXIMUM SPEED CONSIDERED IN ANALYSIS

*** S Y R I A N F E A S I B I L I T Y S T U D Y ***

TABLE 77 VEHICLE RUNNING COSTS ON HORIZONTAL CURVE
ON HIGH TYPE PAVEMENT IN GOOD CONDITION
COMPUTED EXCLUDING TAXES

VEHICLE TYPE = PICK-UP TRUCK

UNIT = SYRIAN POUNDS PER 1,000 VEHICLE-KMS.

UNIFORM SPEED KM/HOUR	RADIUS OF HORIZONTAL CURVE, METERS 1200	900	600	450	370	300	275	240	210	180	150	120	90	75	60
5.0	1.17	1.67	1.97	2.45	2.82	3.26	3.48	3.78	4.36	5.19	6.57	7.60	9.22	12.18	14.71
10.0	2.34	3.35	3.95	4.90	5.65	6.42	6.97	7.57	8.73	10.38	13.15	15.20	18.44	24.37	29.43
15.0	3.50	4.63	5.42	6.67	7.67	8.71	9.21	9.93	11.76	14.26	18.35	21.44	26.22	36.21	44.54
20.0	3.88	5.39	6.30	7.69	8.68	10.04	10.99	12.27	14.46	17.87	23.15	27.97	33.44	47.46	58.44
25.0	4.25	5.64	6.74	8.37	9.46	11.20	12.55	14.48	17.39	21.27	27.65	32.66	41.21	59.12	72.39
30.0	4.13	5.41	6.70	8.61	10.23	12.49	14.08	16.24	19.54	24.01	31.53	37.75	50.24	71.21	88.65
35.0	4.12	5.57	6.80	9.12	11.06	13.66	15.41	17.79	21.56	26.57	35.36	43.28	62.21	85.94	109.22
40.0	4.17	5.78	7.09	9.84	11.92	14.71	16.60	19.23	23.39	29.05	39.18	49.11	74.14	102.79	134.94
45.0	4.47	6.42	7.87	10.52	12.69	15.73	17.82	20.64	25.27	32.34	50.35	68.66	103.14	141.70	232.61
50.0	4.76	6.99	8.51	11.08	13.39	16.63	18.89	22.18	28.41	38.94	64.63	98.45	153.52	222.58	232.61
55.0	4.49	7.22	8.77	11.46	13.92	17.35	19.73	23.94	34.06	49.98	84.10	115.26	144.34	273.35	232.61
60.0	5.19	7.53	9.29	12.82	16.33	21.43	25.25	32.75	45.07	65.44	107.15	144.79	211.29	276.35	232.61
65.0	5.60	8.25	10.55	15.03	19.91	27.37	32.85	41.98	58.33	82.73	132.14	176.91	211.29	276.35	232.61
70.0	6.77	11.69	14.83	20.64	26.80	36.68	42.87	54.05	73.44	102.72	142.00	217.87	211.29	276.35	232.61
75.0	10.71	15.47	19.47	26.75	34.33	45.62	53.76	67.18	90.43	125.09	196.72	268.58	211.29	276.35	232.61
80.0	12.22	19.53	24.49	33.35	42.45	55.44	65.28	81.36	108.64	149.43	222.23	331.66	211.29	276.35	232.61
85.0	16.23	24.27	30.27	41.07	50.25	66.33	79.63	96.44	133.96	179.43	278.00	331.66	211.29	276.35	232.61
90.0	19.73	29.32	36.48	49.41	59.81	78.77	94.93	117.03	157.14	214.24	278.00	331.66	211.29	276.35	232.61
95.0	23.60	35.05	43.55	58.88	73.67	96.19	112.64	138.51	186.00	253.56	278.00	331.66	211.29	276.35	232.61
100.0	28.16	41.76	51.92	70.14	88.44	115.43	135.01	166.28	222.68	253.56	278.00	331.66	211.29	276.35	232.61
105.0	33.12	49.18	61.01	82.50	103.97	136.46	160.20	197.47	222.68	253.56	278.00	331.66	211.29	276.35	232.61
110.0	39.29	58.31	72.43	97.89	123.32	163.33	195.26	241.44	222.68	253.56	278.00	331.66	211.29	276.35	232.61

NOTE -- REPEATED COSTS INDICATE VEHICLE SPEEDS BEYOND MAXIMUM SPEED CONSIDERED IN ANALYSIS

TABLES 74, 75, 76 & 77
VEHICLE RUNNING COSTS

LYON

TABLE 78 VEHICLE RUNNING COSTS ON HORIZONTAL CURVE
ON HIGH TYPE PAVEMENT IN GOOD CONDITION
COMPUTED EXCLUDING TAXES
VEHICLE TYPE = BUS (DIESEL)

UNIT = SYRIAN POUNDS PER 1.000 VEHICLE-KMS.

UNIFORM SPEED KM/HOUR	RADIUS OF HORIZONTAL CURVE, METERS														
	1500	900	600	450	370	300	275	240	210	180	150	120	90	75	60
5.0	3.36	4.61	5.38	6.59	7.46	8.61	9.31	10.23	11.33	12.93	16.12	20.49	28.79	32.66	42.02
10.0	6.72	9.23	10.76	13.18	14.97	17.22	18.62	20.47	22.67	25.87	32.25	40.98	57.41	65.32	84.05
15.0	8.99	12.79	14.87	17.97	20.25	22.89	24.58	26.83	30.60	36.20	46.91	56.17	72.57	100.52	150.72
20.0	10.31	14.39	16.30	20.62	23.34	26.63	28.64	31.77	38.21	46.67	60.36	73.23	94.49	132.50	193.69
25.0	11.16	15.62	18.18	22.09	26.09	30.21	32.94	38.23	46.29	56.78	73.07	93.20	129.21	168.65	236.84
30.0	11.18	15.76	18.80	24.35	28.33	33.87	37.75	43.59	52.69	65.04	85.84	107.52	154.04	206.86	252.51
35.0	11.54	15.62	19.06	25.66	30.35	37.12	42.00	48.51	58.89	73.49	100.83	131.20	182.72	254.41	301.19
40.0	11.63	15.66	19.72	27.34	32.91	40.46	45.87	53.37	66.12	83.83	120.76	160.15	236.10	306.72	366.89
45.0	12.20	17.26	21.40	29.21	35.26	44.30	51.21	60.01	75.30	97.30	147.18	197.12	288.97	374.69	366.89
50.0	13.18	19.22	23.61	31.30	38.79	49.40	57.97	68.18	86.62	114.66	181.87	243.59	352.37	374.69	366.89
55.0	14.34	21.62	26.36	35.05	44.17	57.40	66.49	79.11	100.72	139.06	220.33	310.15	442.69	374.69	366.89
60.0	16.27	24.34	30.19	40.54	51.16	66.77	77.91	93.50	126.26	175.78	266.35	382.50	544.22	374.69	366.89
65.0	18.27	26.61	35.73	47.96	60.49	79.63	93.72	113.72	156.40	219.72	358.76	477.87	544.22	374.69	366.89
70.0	23.30	34.60	43.01	57.49	73.23	97.43	115.50	142.46	201.26	276.76	430.92	565.79	544.22	374.69	366.89
75.0	28.71	42.34	52.67	71.40	91.52	122.72	145.87	186.48	244.33	332.24	509.19	566.79	544.22	374.69	366.89
80.0	35.51	52.50	65.43	89.02	113.68	149.43	182.87	221.66	291.91	394.83	575.57	566.79	544.22	374.69	366.89
85.0	43.67	64.87	80.89	109.92	147.30	198.42	213.41	262.80	345.75	465.03	595.57	566.79	544.22	374.69	366.89
90.0	52.94	78.96	97.94	131.76	170.93	219.52	256.53	312.60	407.27	465.03	595.57	566.79	544.22	374.69	366.89
95.0	63.28	94.18	116.50	164.40	202.01	260.40	304.00	369.14	407.27	465.03	595.57	566.79	544.22	374.69	366.89
100.0	74.91	111.66	139.22	196.63	240.49	307.49	358.57	369.14	407.27	465.03	595.57	566.79	544.22	374.69	366.89
105.0	87.13	138.36	170.65	229.40	240.49	307.49	358.57	369.14	407.27	465.03	595.57	566.79	544.22	374.69	366.89
110.0	100.07	157.67	196.41	263.03	240.49	307.49	358.57	369.14	407.27	465.03	595.57	566.79	544.22	374.69	366.89

NOTE -- REPEATED COSTS INDICATE VEHICLE SPEEDS BEYOND MAXIMUM SPEED CONSIDERED IN ANALYSIS

TABLE 80 VEHICLE RUNNING COSTS ON HORIZONTAL CURVE
ON HIGH TYPE PAVEMENT IN GOOD CONDITION
COMPUTED EXCLUDING TAXES
VEHICLE TYPE = TRUCK-TRAILER

UNIT = SYRIAN POUNDS PER 1.000 VEHICLE-KMS.

UNIFORM SPEED KM/HOUR	RADIUS OF HORIZONTAL CURVE, METERS														
	1500	900	600	450	370	300	275	240	210	180	150	120	90	75	60
5.0	5.03	7.32	8.92	11.77	13.08	16.44	18.65	20.82	24.29	28.82	35.06	39.09	44.80	55.64	65.09
10.0	10.07	14.64	17.85	23.54	28.16	33.49	37.30	41.65	48.58	57.65	70.12	78.19	89.61	111.28	130.19
15.0	13.03	18.33	22.20	29.08	34.07	39.98	43.41	47.69	56.48	67.91	84.93	95.41	109.02	139.11	183.54
20.0	15.23	21.23	25.25	32.05	36.87	43.41	47.87	54.00	64.46	77.88	98.50	113.33	132.12	171.16	221.47
25.0	16.73	23.29	27.35	33.97	38.91	46.43	52.09	60.16	72.15	87.52	111.85	133.97	158.11	206.53	274.52
30.0	16.18	22.26	26.72	34.39	40.99	50.93	56.62	65.63	79.75	96.05	125.39	147.64	186.01	244.46	275.51
35.0	16.03	22.09	26.92	36.00	43.70	54.90	61.21	70.74	85.44	105.09	139.41	164.31	217.71	280.51	352.54
40.0	16.22	22.26	27.74	38.37	46.01	58.10	65.68	76.01	92.22	114.32	153.74	177.76	252.49	332.54	426.49
45.0	17.56	25.31	31.24	41.34	50.09	62.15	70.43	81.43	100.04	128.03	193.31	271.68	302.50	332.54	426.49
50.0	18.79	27.75	33.74	44.02	53.19	66.15	75.11	88.54	112.59	153.87	255.50	363.51	504.14	332.54	426.49
55.0	20.03	29.16	35.65	46.16	56.10	70.08	79.71	94.83	137.92	202.34	340.75	466.47	705.02	332.54	426.49
60.0	21.17	30.56	38.55	52.16	67.20	88.50	104.01	133.76	185.74	269.85	460.37	615.15	705.02	332.54	426.49
65.0	23.43	34.53	44.10	62.77	82.96	114.14	137.14	175.44	243.89	346.56	573.62	618.15	705.02	332.54	426.49
70.0	32.87	49.64	62.99	87.71	113.90	153.53	182.41	230.20	321.61	457.36	730.62	618.15	705.02	332.54	426.49
75.0	44.00	66.70	84.71	115.71	148.61	197.47	233.36	292.10	412.00	565.24	730.62	618.15	705.02	332.54	426.49
80.0	56.75	85.39	107.10	146.55	186.96	246.80	289.66	377.91	501.77	686.77	730.62	618.15	705.02	332.54	426.49
85.0	72.44	108.47	135.69	185.59	226.59	259.44	370.27	465.44	501.77	686.77	730.62	618.15	705.02	332.54	426.49
90.0	89.71	133.48	166.83	227.03	226.59	259.44	378.17	465.44	501.77	686.77	730.62	618.15	705.02	332.54	426.49
95.0	109.44	162.65	202.91	275.31	226.59	259.44	378.17	465.44	501.77	686.77	730.62	618.15	705.02	332.54	426.49
100.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

NOTE -- REPEATED COSTS INDICATE VEHICLE SPEEDS BEYOND MAXIMUM SPEED CONSIDERED IN ANALYSIS

TABLE 79 VEHICLE RUNNING COSTS ON HORIZONTAL CURVE ON HIGH TYPE PAVEMENT IN GOOD CONDITION COMPUTED EXCLUDING TAXES

VEHICLE TYPE = 2-AXLE TRUCK (DIESEL)

UNIT = SYRIAN POUNDS PER 1,000 VEHICLE-KMS.

UNIFORM SPEED KM/HOUR	RADIUS OF HORIZONTAL CURVE, METERS 1500	900	600	450	375	300	275	240	210	180	150	120	90	75	60
5.0	3.52	5.49	6.84	7.94	9.04	10.91	10.83	11.59	13.14	15.57	20.12	23.70	29.47	35.23	47.27
10.0	7.85	10.99	12.80	15.88	18.08	20.42	21.66	23.18	26.28	31.15	40.25	47.41	58.95	70.46	94.5-
15.0	11.13	15.41	17.96	22.00	25.53	27.98	29.53	31.46	37.09	44.98	58.41	69.21	86.21	122.29	189.8[illegible]
20.0	13.13	18.24	21.13	25.44	28.72	32.44	35.00	39.07	47.59	58.11	75.90	90.[illegible]	119.16	167.71	255.8[illegible]
25.0	14.66	19.95	23.19	28.17	31.65	37.20	41.62	47.94	57.66	73.59	92.74	111.03	151.72	213.31	261.72
30.0	14.09	19.33	22.04	29.14	34.44	41.40	47.16	54.37	65.58	80.70	106.72	124.46	180.78	241.23	335.71
35.0	14.03	19.29	22.32	31.01	37.41	46.13	52.05	60.15	72.92	90.23	120.57	147.67	236.47	325.19	369.72
40.0	14.12	19.39	24.11	33.44	40.45	50.03	56.59	65.53	79.75	99.29	134.23	168.23	232.61	373.72	470.72
45.0	15.24	21.94	24.56	35.79	43.25	53.60	60.69	70.45	86.20	110.44	172.10	234.09	374.49	393.72	470.72
50.0	16.25	22.47	25.69	37.76	45.63	56.71	64.37	75.70	95.98	131.17	219.84	317.56	461.35	393.72	470.72
55.0	17.95	24.75	28.95	39.09	47.35	59.07	67.15	81.40	115.65	160.60	295.16	398.60	592.57	393.72	470.72
60.0	17.95	25.14	31.68	43.51	55.33	72.49	85.65	107.50	143.35	231.57	369.29	502.49	592.57	393.72	470.72
65.0	24.92	27.22	35.44	50.73	67.18	92.41	110.49	141.74	207.05	227.76	459.12	502.49	592.57	393.72	470.72
70.0	26.29	29.32	49.85	69.48	90.13	121.17	154.68	191.92	256.27	350.78	469.30	502.49	592.57	393.72	470.72
75.0	34.21	51.75	65.25	79.53	125.54	162.94	189.06	233.84	319.62	440.16	469.30	502.49	592.57	393.72	470.72
80.0	43.21	64.94	81.26	110.81	151.73	195.47	227.27	289.20	386.52	522.77	569.30	502.49	592.57	393.72	470.72
85.0	53.68	80.11	99.76	146.22	175.42	227.16	281.23	340.65	386.52	522.77	569.30	502.49	592.57	393.72	470.72
90.0	64.74	96.11	119.63	172.20	175.42	227.16	281.23	340.65	386.52	522.77	569.30	502.49	592.57	393.72	470.72
95.0	76.91	124.73	151.82	200.75	175.42	227.16	281.23	340.65	386.52	522.77	569.30	502.49	592.57	393.72	470.72
100.0	93.46	144.46	176.11	243.69	175.42	227.16	281.23	340.65	386.52	522.77	569.30	502.49	592.57	393.72	470.72
105.0	104.84	165.56	201.02	277.78	175.42	227.16	281.23	340.65	386.52	522.77	569.30	502.49	592.57	393.72	470.72
110.0	122.23	191.03	233.10	318.94	175.42	227.16	281.23	340.65	386.52	522.77	569.30	502.49	592.57	393.72	470.72

NOTE -- REPEATED COSTS INDICATE VEHICLE SPEEDS BEYOND MAXIMUM SPEED CONSIDERED IN ANALYSIS

TABLES 78, 79 & 80

VEHICLE RUNNING COSTS

LYON

TABLE 81

*** *** HIGHWAY FEASIBILITY STUDIES - LATTAKIA REGION *** ***

R O A D W A Y E V A L U A T I O N
(COSTS SHOWN IN DOLLARS)

DATE 7 DECEMBER 1978

SECTION CODE NUMBER
COMPUTER CODE NUMBER 31 - 43

PROJECT - LATTAKIA - ARIHA FEASIBILITY STUDY
PROVINCE - LATTAKIA AND IDLIB
ROAD SECTION LATTAKIA-ARIHA,PRES.LOADS,ALL INCL.W/ROW

IMPROVEMENT - RESURFACE AND WIDEN

FROM CODE NO.	31	32	33	34	35	36	37	38	39	40	41	42	43
BEFORE OR BASE SITUATION =		1											
VARIATION NO.	1	1	1	1	0	0	0	0	0	0	0	0	0
SURFACE TYPE	2	2	2	2	0	0	0	0	0	0	0	0	0
COND	3	3	3	3	0	0	0	0	0	0	0	0	0
WIDTH	6.6	6.6	7.0	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SHOULDER TYPE	4	4	4	4	0	0	0	0	0	0	0	0	0
COND.	3	3	3	3	0	0	0	0	0	0	0	0	0
WIDTH	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AFTER OR ALTERNATE SITUATION =		1											
VARIATION NO.	0	0	0	0	9	9	9	9	9	9	9	9	9
SURFACE TYPE	0	0	0	0	1	1	1	1	1	1	1	1	2
COND	0	0	0	0	1	1	1	1	1	1	1	1	3
WIDTH	0.0	0.0	0.0	0.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
SHOULDER TYPE	0	0	0	0	3	3	3	3	3	3	3	3	4
COND.	0	0	0	0	1	1	1	1	1	1	1	1	3
WIDTH	0.0	0.0	0.0	0.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0

C O N S T R U C T I O N C O S T S

YEAR		R-W/UT.REL (40 YRS)	PAVEMENT (20 YRS)	EARTHWORK (75 YRS)	SM DRN/MISC. (25 YRS)	STRUCTURES (50 YRS)	START-UP (30 YRS)	INCIDENTAL (5 YRS)	TOTAL
1981	BEFORE/BASE	0.	0.	0.	0.	0.	0.	0.	
	AFTER/ALTER.	10978050.	4283730.	19997252.	635987.	6571652.	11413800.	0.	
	DIFFERENCE	10978050.	4283730.	19997252.	635987.	6571652.	11413800.	0.	53180471.
1982	BEFORE/BASE	0.	0.	0.	0.	0.	0.	0.	
	AFTER/ALTER.	10978050.	8805445.	23654696.	1104609.	11428960.	0.	269200.	
	DIFFERENCE	10978050.	8805445.	23654696.	1104609.	11428960.	0.	269200.	56248960.
1983	BEFORE/BASE	0.	0.	0.	0.	0.	0.	0.	
	AFTER/ALTER.	0.	10709325.	19997252.	1606704.	10571788.	0.	269200.	
	DIFFERENCE	0.	10709325.	19997252.	1606704.	10571788.	0.	269200.	42454269.
1993	BEFORE/BASE		0.						
	AFTER/ALTER.		9718500.						
	DIFFERENCE		9718500.						9718500.
	UNDISCOUNTED TOTALS	21956100.	33517000.	62949200.	3347300.	28572400.	11413800.	538400.	161594200.

TABLE 82

*** *** HIGHWAY FEASIBILITY STUDIES - LATTAKIA REGION *** ***

VEHICLE OPERATING COSTS
(SHOWN IN 000 U.S. DOLLARS)

PROJECT = LATTAKIA - ARIHA FEASIBILITY STUDY
PROVINCE = LATTAKIA AND IDLIB
ROAD SECTION LATTAKIA-ARIHA.PRES.LOADS.ALL INCL.W/ROW

CAR AND PICK-UP

YEAR	BEFORE					AFTER					SAVING				
	RUNN. COSTS	OCCUP. TIME	ACCID-ENTS	OTHERS **	TOTAL	RUNN. COSTS	OCCUP. TIME	ACCID-ENTS	OTHERS **	TOTAL	RUNN. COSTS	OCCUP. TIME	ACCID-ENTS	OTHERS **	TOTAL
1978	1632.7	912.1	230.2	680.3	3455.4	1162.3	580.9	92.8	422.8	2258.9	470.3	331.2	137.3	257.5	1196.4
1979	1791.3	1004.6	253.1	747.3	3796.5	1274.8	639.1	101.9	463.8	2479.7	516.4	365.4	151.2	283.5	1316.7
1980	1961.8	1134.7	265.5	841.2	4223.1	1397.4	704.9	112.0	510.5	2724.8	564.4	429.8	173.5	330.6	1498.2
1981	2154.3	1308.1	327.8	966.7	4757.0	1533.2	779.1	124.1	562.9	2999.5	621.1	529.0	203.6	403.7	1757.5
1982	2360.6	1416.2	354.1	1042.7	5173.9	1676.0	865.0	137.2	622.5	3300.9	684.6	551.2	216.9	420.2	1873.0
1983	2591.5	1562.3	389.5	1148.7	5692.0	1838.0	952.4	150.2	683.0	3625.7	753.4	609.8	239.2	465.6	2068.3
1984	2811.8	1738.4	433.0	1277.1	6260.5	1993.1	1036.6	164.3	743.7	3937.9	818.7	701.7	268.6	533.4	2322.5
1985	3063.8	2029.4	505.0	1467.3	7085.7	2163.7	1135.4	181.2	815.8	4296.2	900.1	894.0	323.8	651.5	2789.5
1986	3315.9	2113.0	525.0	1548.1	7502.1	2335.5	1242.2	197.2	888.5	4663.5	980.4	870.7	327.7	659.5	2838.6
1987	3601.9	2334.7	572.8	1687.7	8166.9	2531.9	1351.1	214.0	965.4	5062.6	1069.6	983.5	358.7	722.2	3104.2
1988	3915.4	2573.0	638.6	1882.5	9009.8	2747.4	1475.4	234.6	1054.7	5512.3	1168.2	1097.5	403.9	827.7	3497.4
1989	4258.3	2841.4	779.6	2304.5	10183.8	3016.6	1623.2	260.4	1165.2	6065.6	1241.6	1218.1	519.2	1139.3	4118.1
1990	4643.3	3179.3	789.9	2326.1	10938.8	3232.2	1774.1	280.7	1263.7	6550.8	1411.1	1405.1	509.1	1062.4	4387.9
1991	5050.4	3493.2	865.1	2553.4	11962.3	3503.0	1936.4	307.1	1377.8	7124.3	1547.4	1556.8	558.0	1175.6	4837.9
1992	5533.4	3911.3	969.3	2859.7	13273.9	3812.4	2120.8	337.3	1508.8	7779.5	1720.9	1790.4	631.9	1350.8	5494.3
1993	6361.6	4953.5	1225.8	4638.4	16179.5	4151.4	2410.6	386.9	1716.3	8665.3	2210.1	2542.9	838.9	1922.1	7514.1
1994	6499.5	4722.4	1167.4	3458.4	15847.9	4380.5	2499.7	395.8	1772.6	9048.6	2119.0	2222.7	771.5	1685.8	6799.2
1995	6917.7	5069.2	1250.2	3703.9	16941.2	4641.5	2661.3	420.8	1884.3	9608.1	2276.2	2407.9	829.4	1819.5	7333.1
1996	7405.0	5597.6	1379.7	4086.4	18468.7	4929.7	2839.3	450.2	2013.3	10232.7	2475.2	2758.2	929.4	2073.0	8236.0
1997	8407.4	7314.8	1661.0	5329.9	22857.4	5248.5	3106.6	508.8	2211.1	11071.2	3159.0	4212.2	1296.2	3118.7	11786.2
1998	8420.5	6480.2	1619.6	4793.5	21414.0	5544.0	3273.5	521.9	2312.5	11652.0	2876.5	3206.7	1097.7	2481.0	9761.9
1999	8973.1	7047.4	1735.0	5143.1	22918.7	5874.5	3487.4	554.1	2559.2	12375.4	3098.5	3560.0	1180.9	2583.8	10543.3
2000	9629.9	7785.7	1910.5	5665.5	24969.8	6222.5	3722.4	592.7	2622.8	13160.6	3407.3	4061.2	1317.8	3042.7	11829.2
2001	12246.5	10777.6	2640.0	7761.8	32426.0	6651.3	4098.2	674.4	2904.3	14328.2	4595.1	6679.3	1965.5	4857.7	18097.8
2002	10943.4	9188.3	2248.6	6660.9	29041.3	6987.1	4264.2	677.0	2994.3	14922.7	3956.3	4924.1	1571.5	3666.6	14118.6
2003	11636.5	9858.3	2417.3	7157.1	31109.4	7408.9	4642.2	735.2	3242.3	16028.7	4227.6	5256.1	1682.1	3914.8	15080.6

** INCLUDES COSTS FOR VEHICLE INVESTMENT, TIME DEPRECIATION AND MANAGEMENT (WHEN APPLICABLE)

TABLES 81 & 82
DETAILS OF ANALYSIS

LYON

TABLE 83

*** *** HIGHWAY FEASIBILITY STUDIES - LATTAKIA REGION *** ***

V E H I C L E O P E R A T I N G C O S T S
(SHOWN IN 000 U.S. DOLLARS)

PROJECT = LATTAKIA - ARIHA FEASIBILITY STUDY
PROVINCE = LATTAKIA AND IDLIB
ROAD SECTION LATTAKIA-ARIHA.PRES.LOADS.ALL INCL.M/PC.

B U S

YEAR	BEFORE					AFTER					SAVING				
	RUNN. COSTS	OCCUP. TIME	ACCID-ENTS	OTHERS **	TOTAL	RUNN. COSTS	OCCUP. TIME	ACCID-ENTS	OTHERS **	TOTAL	RUNN. COSTS	OCCUP. TIME	ACCID-ENTS	OTHERS **	TOTAL
1978	1265.2	700.8	77.8	360.9	2409.0	970.4	530.8	36.9	274.4	1812.7	298.8	169.9	40.9	86.4	596.2
1979	1395.0	770.9	85.8	397.9	2649.7	1066.4	583.8	40.6	301.7	1992.6	328.6	187.0	45.1	96.1	657.0
1980	1526.7	871.2	96.6	444.3	2938.9	1173.9	644.4	45.3	332.9	2196.6	352.7	226.8	51.3	111.4	742.3
1981	1668.1	1069.5	111.6	509.8	3299.2	1286.7	715.1	50.5	367.9	2420.6	381.4	294.3	60.4	136.8	873.5
1982	1838.3	1096.2	120.8	544.5	3597.9	1417.4	794.0	55.5	406.6	2673.7	420.9	296.1	65.2	141.9	924.2
1983	2019.3	1220.5	133.7	604.2	3955.1	1557.8	872.6	60.8	447.3	2938.6	461.5	328.1	72.9	156.9	1019.4
1984	2174.5	1337.4	146.2	665.3	4325.6	1682.9	950.3	66.5	485.4	3185.2	491.6	387.0	81.7	179.9	1140.2
1985	2321.0	1573.9	174.5	760.4	4839.8	1813.4	1046.8	73.9	530.8	3465.0	517.6	527.1	100.6	229.5	1374.8
1986	2491.4	1622.7	180.1	797.2	5141.6	1969.6	1138.9	80.2	576.8	3765.6	571.8	483.7	99.9	220.4	1375.9
1987	2744.5	1769.1	195.9	867.4	5579.0	2130.5	1234.0	87.0	624.6	4076.2	615.9	535.0	108.8	242.8	1502.7
1988	2969.2	1977.0	218.9	958.3	6118.6	2300.0	1350.7	96.2	680.3	4427.4	669.1	626.2	122.7	277.9	1692.1
1989	3271.1	2459.6	273.2	1149.3	7153.6	2471.1	1504.2	108.7	747.4	4831.6	799.9	955.6	164.5	401.9	2322.0
1990	3480.8	2454.7	273.5	1168.5	7377.6	2689.5	1625.8	115.5	809.8	5240.7	791.3	828.9	157.9	358.6	2136.8
1991	3801.6	2697.8	298.4	1282.8	8060.8	2909.9	1770.2	125.5	879.1	5684.9	891.6	927.6	172.9	403.6	2395.9
1992	4142.3	3030.0	337.4	1426.1	8936.0	3143.5	1940.5	137.7	959.0	6180.8	998.8	1089.5	199.7	467.1	2755.2
1993	4555.9	3413.9	385.4	1799.3	10554.5	3398.2	2270.7	165.3	1090.4	6924.8	1107.5	1143.1	279.0	658.9	3629.6
1994	4766.9	3701.6	411.5	1710.7	10592.6	3617.5	2311.1	165.3	1127.8	7222.0	1151.3	1390.4	245.9	582.9	3370.6
1995	5062.5	4013.9	447.7	1644.9	11369.2	3851.2	2471.9	176.8	1203.2	7703.3	1211.2	1541.9	270.9	641.7	3665.9
1996	5395.5	4476.5	497.4	2031.4	12401.1	4095.5	2665.3	190.6	1292.7	8244.2	1300.0	1811.2	306.7	738.7	4156.8
1997	5838.1	4890.6	679.9	2550.2	15159.0	4367.3	3006.5	221.1	1428.9	9024.0	1470.8	3084.0	458.7	1121.3	6134.9
1998	6082.8	5365.6	594.3	2389.2	14432.1	4640.6	3144.2	225.8	1503.2	9513.9	1442.2	2221.4	368.5	885.9	4918.1
1999	6472.1	5832.2	648.7	2580.2	15533.4	4939.0	3371.4	243.4	1609.3	10163.3	1533.0	2460.8	405.3	970.9	5370.1
2000	6883.9	6413.4	725.1	2644.7	16667.2	5261.4	3642.6	263.7	1729.4	10897.3	1622.5	2870.7	461.3	1115.2	6069.9
2001	7319.1	8775.7	977.1	3613.2	20685.2	5610.8	3996.2	292.2	1879.0	11776.3	1908.2	4779.4	684.8	1734.1	9106.6
2002	7931.5	7860.6	874.1	3382.0	20048.4	5965.1	4249.8	307.5	2000.3	12522.8	1966.4	3610.6	566.6	1381.6	7525.5
2003	8542.0	8605.8	955.3	3679.1	21782.4	6349.0	4636.0	338.2	2178.5	13551.8	2193.0	3919.8	617.1	1500.6	8230.6

** INCLUDES COSTS FOR VEHICLE INVESTMENT, TIME DEPRECIATION AND MANAGEMENT (WHEN APPLICABLE)

TABLE 84

*** *** HIGHWAY FEASIBILITY STUDIES - LATTAKIA REGION *** ***

V E H I C L E O P E R A T I N G C O S T S

(SHOWN IN OCC U.S. DOLLARS)

PROJECT = LATTAKIA - ARIHA FEASIBILITY STUDY
PROVINCE = LATTAKIA AND IDLIB
ROAD SECTION LATTAKIA-ARIHA.PRES.LOADS.ALL INCL.W/ROW

T R U C K

YEAR	BEFORE RUNN. COSTS	BEFORE OCCUP. TIME	BEFORE ACCID-ENTS	BEFORE ** OTHERS	BEFORE TOTAL	AFTER RUNN. COSTS	AFTER OCCUP. TIME	AFTER ACCID-ENTS	AFTER ** OTHERS	AFTER TOTAL	SAVING RUNN. COSTS	SAVING OCCUP. TIME	SAVING ACCID-ENTS	SAVING ** OTHERS	SAVING TOTAL
1978	8243.8	1195.6	578.9	2846.6	12864.6	5579.9	858.8	246.6	1869.4	8554.9	2663.9	336.7	331.8	977.1	4309.6
1979	9613.2	1307.1	632.5	3113.9	14666.8	6093.5	937.9	269.6	2082.3	9343.4	2915.6	369.2	362.9	1071.6	4723.4
1980	9819.6	1469.9	711.1	3496.7	15557.5	6654.9	1026.1	295.4	2253.7	10210.2	3264.7	443.8	415.7	1242.9	5347.2
1981	11104.3	1695.6	820.7	4044.7	17665.1	7281.1	1124.0	323.8	2448.8	11177.9	3822.8	571.6	496.9	1595.8	6487.2
1982	12003.1	1919.7	880.4	4335.4	19038.8	7967.9	1245.7	358.9	2713.2	12285.3	4035.2	673.9	522.0	1622.2	6753.4
1983	13124.0	1941.6	963.7	4745.5	20824.9	8701.4	1361.7	391.6	2964.9	13419.7	4422.6	629.9	572.1	1780.5	7405.1
1984	14379.1	2202.6	1074.7	5295.9	22971.4	9434.5	1477.8	425.3	3218.5	14556.2	4943.5	744.8	649.3	2077.4	8415.2
1985	15954.1	2625.9	1270.4	6234.9	26085.5	10241.3	1610.7	464.7	3508.9	15825.4	5712.7	1015.1	805.6	2726.5	10260.1
1986	17234.1	2701.9	1307.8	6436.2	27680.2	11114.0	1771.3	510.1	3857.2	17252.7	5920.1	930.6	797.6	2578.9	10227.4
1987	18466.0	2846.0	1424.9	7024.8	29846.8	12043.6	1922.7	553.2	4186.8	18706.5	6422.3	1023.2	871.7	2922.9	11140.2
1988	20106.2	3249.5	1596.5	7635.7	32588.3	13064.0	2092.4	603.1	4557.9	20321.5	7038.1	1157.1	993.6	3277.8	12266.7
1989	22458.6	4115.8	1992.7	8712.3	38279.6	14135.2	2287.6	662.6	4977.2	22062.7	8323.3	1828.2	1330.1	4735.0	16216.8
1990	23900.7	4099.5	1984.9	8729.9	38695.1	15406.0	2519.9	727.9	5488.9	24142.9	8494.7	1579.5	1256.9	4231.0	15552.2
1991	25909.4	4523.1	2182.510677.5		43262.6	16717.4	2749.9	793.3	5990.5	26251.3	9192.0	1763.1	1390.1	4686.9	17011.2
1992	28291.6	5373.5	2959.711988.6		47805.5	18140.3	3005.2	868.9	6546.3	28560.8	10151.2	2068.2	1585.8	5442.2	19247.7
1993	32262.0	6578.0	3139.915337.6		57222.6	19960.0	3457.8	999.4	7490.9	31888.3	12102.0	3140.1	2185.8	7936.6	25333.3
1994	35051.7	6160.9	2980.314532.5		56753.4	21001.5	3559.0	1028.6	7760.7	33350.0	12080.1	2601.8	1951.6	6749.7	23403.3
1995	35120.4	6619.8	3199.815555.8		60516.4	22306.7	3785.7	1094.6	8261.9	35449.0	12813.1	2833.0	2105.2	7318.9	25067.3
1996	37145.9	7321.8	3533.117153.2		65164.1	23663.2	4030.0	1165.3	8798.5	37657.2	13482.6	3291.7	2377.8	8354.6	27506.8
1997	41471.7	8961.0	4772.322643.9		75948.2	25164.6	4346.1	1268.5	9481.7	40281.0	16306.5	5514.5	3503.4	13162.2	38667.2
1998	41821.4	8627.8	4174.920125.2		74749.9	26831.7	4660.9	1351.0	10201.7	43045.5	14989.1	3966.9	2823.8	9923.4	31704.3
1999	44451.1	9262.9	4482.121594.5		79790.7	28462.1	4965.5	1438.7	10876.6	45743.1	15989.0	4297.3	3043.9	10717.8	34047.5
2000	47608.4	10229.0	4945.623796.3		86596.4	30231.2	5292.5	1535.3	11603.8	48662.9	17376.9	4941.4	3420.5	12194.5	37933.4
2001	53498.2	13812.9	6681.931393.1		105385.3	32099.1	5649.8	1647.3	12377.7	51774.2	21399.1	8161.0	5034.5	19016.3	53611.1
2002	53756.4	12106.1	5854.527579.2		99446.4	34270.4	6067.6	1761.9	13334.5	55434.5	19485.9	6038.4	4092.6	14244.7	44261.8
2003	57114.1	13081.0	6325.833153.2		106674.3	36693.6	6679.7	1936.9	14718.3	60028.1	20420.9	6401.2	4389.4	15434.9	46646.1

** INCLUDES COSTS FOR VEHICLE INVESTMENT, TIME DEPRECIATION AND MANAGEMENT (WHEN APPLICABLE)

TABLE 85

*** *** HIGHWAY FEASIBILITY STUDIES - LATTAKIA REGION *** ***

V E H I C L E O P E R A T I N G C O S T S
(SHOWN IN 000 U.S. DOLLARS)

PROJECT = LATTAKIA - ARIHA FEASIBILITY STUDY
PROVINCE = LATTAKIA AND IDLIB
ROAD SECTION LATTAKIA-ARIHA.PRES.LOADS.ALL INCL.W/ROW

A L L V E H I C L E S

YEAR	BEFORE RUNN. COSTS	BEFORE OCCUP. TIME	BEFORE ACCID-ENTS	BEFORE ** OTHERS	BEFORE TOTAL	AFTER RUNN. COSTS	AFTER OCCUP. TIME	AFTER ACCID-ENTS	AFTER ** OTHERS	AFTER TOTAL	SAVING RUNN. COSTS	SAVING OCCUP. TIME	SAVING ACCID-ENTS	SAVING ** OTHERS	SAVING TOTAL
1978	11195.9	2868.5	886.6	3887.9	18729.0	7712.7	1970.6	376.4	2566.7	12626.6	3533.2	837.8	510.1	1321.1	6102.4
1979	12199.8	3182.7	971.5	4259.2	20513.1	8434.7	2161.0	412.1	2807.8	13815.6	3764.8	921.7	559.3	1451.3	6697.3
1980	13409.2	3475.9	1043.1	4732.2	22759.6	9226.3	2375.4	452.7	3077.2	15131.8	4181.8	1100.5	640.4	1705.0	7627.8
1981	14926.5	4013.3	1220.2	5514.2	25716.4	10101.1	2618.4	498.8	3379.7	16598.1	4825.4	1394.9	761.3	2136.5	9118.2
1982	16202.2	4424.2	1355.4	5926.7	27810.7	11061.4	2904.8	551.2	3742.9	18259.9	5140.7	1471.4	804.2	2184.3	9550.7
1983	17734.9	4724.7	1426.9	6490.4	30475.0	12097.3	3186.8	602.7	4095.3	19982.1	5637.5	1547.9	884.2	2403.0	10492.9
1984	19464.4	5248.5	1556.0	7230.5	33517.6	13110.5	3464.9	656.2	4447.7	21679.5	6253.9	1853.6	999.7	2790.7	11878.1
1985	21568.0	6229.5	1550.0	8462.7	38011.1	14218.4	3793.0	719.9	4855.2	23586.7	7130.5	2436.5	1230.0	3627.5	14424.4
1986	22991.5	6637.7	2013.0	8781.6	40124.0	15419.1	4152.4	787.7	5322.6	25681.9	7572.4	2265.2	1225.5	3459.0	14442.0
1987	24414.1	7019.9	2197.7	9965.0	43592.8	16706.1	4508.0	854.3	5776.9	27845.8	8107.9	2511.9	1339.3	3788.0	15747.3
1988	26086.1	7849.6	2454.4	10676.6	47966.8	18115.5	4918.6	934.1	6293.0	30261.3	8870.5	2930.9	1520.3	4383.5	17705.4
1989	30088.0	9717.2	3045.7	13166.0	56017.1	19623.0	5415.1	1031.7	6890.0	32960.0	10464.9	4302.1	2013.4	6276.0	23057.3
1990	32824.9	9733.6	3042.3	15203.6	58011.7	21327.7	5920.0	1124.2	7562.5	35934.5	10697.2	3813.6	1924.0	5642.1	22077.1
1991	34760.5	10724.3	3247.1	16513.8	63325.8	23130.4	6456.6	1225.9	8247.5	39060.6	11630.1	4247.6	2121.1	6266.2	24265.1
1992	37947.4	12014.9	3761.6	16274.5	70018.5	25096.3	7066.5	1344.0	9014.2	42521.3	12871.0	4948.3	2417.4	7260.3	27497.2
1993	42329.4	15445.4	4446.1	20785.4	84006.7	27509.8	8119.2	1551.7	10297.6	47478.5	15419.7	7326.2	3294.4	10487.7	36528.1
1994	44450.1	16443.0	4999.2	19659.6	85194.0	29999.6	8369.9	1590.0	10661.2	49620.8	15350.5	8073.0	2969.0	9038.4	35573.2
1995	47121.2	19698.0	4677.9	21129.7	88626.9	30799.5	8919.0	1692.3	11349.5	52760.5	16301.6	6778.9	3205.4	9780.2	36066.4
1996	49946.5	21396.0	5420.3	23271.1	96034.0	32688.5	9539.6	1806.3	12104.6	56134.2	17258.0	7861.3	3614.0	11166.4	39899.7
1997	55916.9	24370.5	7251.0	30154.2	116994.7	34800.5	10459.3	1994.6	13121.8	60376.3	21116.4	12811.2	5255.3	17032.4	56618.4
1998	56325.3	25973.8	6588.9	27307.9	115596.2	37016.4	11078.7	2098.8	14017.5	64211.6	19308.9	9495.1	4290.1	13290.3	46384.5
1999	59496.3	22162.6	6865.9	29317.9	118242.9	39275.7	11824.4	2236.3	14945.2	68281.9	20620.6	10338.1	4629.6	14372.6	49961.0
2000	64122.0	24511.1	7591.5	32304.6	128553.4	41715.2	12657.6	2391.8	15956.1	72720.8	22406.8	11873.5	5199.7	16352.5	55832.6
2001	72259.9	31318.3	10294.1	42774.2	156696.7	44361.3	13744.3	2614.1	17160.9	77880.8	27898.6	19619.9	7684.9	25612.3	80815.8
2002	72651.4	29155.1	8977.3	38022.2	148806.1	47222.7	14581.7	2746.5	18329.1	82880.2	25428.6	14573.3	6230.5	19693.0	65925.9
2003	77292.6	31445.2	9698.4	40967.6	159566.2	50451.6	16008.0	3009.8	20139.1	89608.7	26841.1	15577.1	6688.6	20850.4	69957.4

** INCLUDES COSTS FOR VEHICLE INVESTMENT, TIME DEPRECIATION AND MANAGEMENT (WHEN APPLICABLE)

TABLE 86

*** *** HIGHWAY FEASIBILITY STUDIES - LATTAKIA REGION *** ***

ROADWAY EVALUATION
(COSTS SHOWN IN 000 U.S. DOLLARS

DATE 7 DECEMBER 1978

PROJECT - LATTAKIA - ARIHA FEASIBILITY STUDY
PROVINCE - LATTAKIA AND IDLIB
ROAD SECTION LATTAKIA-ARIHA.PRES.LOADS.ALL INCL.W/ROW

CHANGE IN CONSTRUCTION COSTS = 0 PERCENT
CHANGE IN VEHICLE OPERATING COSTS = 0 PERCENT

YR	CONST COSTS	ROAD MAINT COSTS BEFORE	ROAD MAINT COSTS AFTER	ROAD MAINT COSTS SAVINGS	VEHICLE OPER COSTS BEFORE	VEHICLE OPER COSTS AFTER	VEHICLE OPER COSTS SAVINGS	ADDED COSTS ECON	ADDED COSTS SOCIAL	ADDED SAVINGS ECON	ADDED SAVINGS SOCIAL	TOTAL SAVINGS	*** ANNUAL R-OF-R
81	53180.							0.	0.	0.	0.	0.	
82	56241.							0.	0.	0.	0.	0.	
83	242454.							0.	0.	0.	0.	0.	
84		419.	641.	-222.	33558.	21680.	11878.	0.	0.	1527.	0.	13183.	8.6 0/0
85		449.	686.	-237.	38011.	23587.	14424.	0.	0.	1527.	0.	15714.	10.3 0/0
86		480.	734.	-254.	40124.	25682.	14442.	0.	0.	1527.	0.	15715.	10.3 0/0
87		514.	786.	-272.	43393.	27845.	15548.	0.	0.	1527.	0.	17003.	11.2 0/0
88		550.	840.	-290.	47987.	30261.	17706.	0.	0.	1527.	0.	18943.	12.4 0/0
89		588.	899.	-311.	56017.	32960.	23057.	0.	0.	1527.	0.	24273.	15.9 0/0
90		629.	962.	-333.	58012.	35935.	22077.	0.	0.	1527.	0.	23271.	15.3 0/0
91		673.	1030.	-357.	63326.	39061.	24265.	0.	0.	1527.	0.	25435.	16.7 0/0
92		720.	1102.	-382.	70019.	42521.	27498.	0.	0.	1527.	0.	28643.	18.8 0/0
93	9719.	771.	1179.	-408.	84007.	47479.	36528.	0.	0.	1527.	0.	37647.	24.7 0/0
94		809.	1238.	-429.	83190.	49691.	33573.	0.	0.	1527.	0.	34671.	22.8 0/0
95		850.	1300.	-450.	88827.	52781.	36046.	0.	0.	1527.	0.	37143.	24.4 0/0
96		892.	1365.	-473.	96034.	56134.	39908.	0.	0.	1527.	0.	40959.	26.9 0/0
97		937.	1433.	-496.	116995.	60376.	56619.	0.	0.	1527.	0.	57650.	37.9 0/0
98		984.	1505.	-521.	110536.	64212.	46324.	0.	0.	1527.	0.	47390.	31.2 0/0
99		1033.	1580.	-547.	118243.	68282.	49961.	0.	0.	1527.	0.	50941.	33.5 0/0
00		1085.	1659.	-574.	128553.	72791.	55832	0.	0.	1527.	0.	56785.	37.3 0/0
01		1139.	1742.	-603.	156697.	77881.	80816	0.	0.	1527.	0.	81740.	53.8 0/0
02		1196.	1829.	-633.	148806.	82840.	65926.	0.	0.	1527.	0.	66820.	44.0 0/0
03		1255.	1920.	-665.	159506.	89609.	69957.	0.	0.	1527.	0.	70819.	46.6 0/0
DISCOUNTED TOTALS	161594.	15973.	24430.	-8457.	1744145.	1001988.	742657.	0.	0.	30540.	0.	764740.	

*** ANNUAL RATE OF RETURN DEFINED AS TOTAL SAVINGS DIVIDED BY TOTAL CONSTRUCTION COSTS

BENEFIT COST (B/C) ANALYSIS

DISCOUNT RATE	DISCOUNTED BENEFITS	DISCOUNTED COSTS	B/C RATIO
10 0/0	245174.	147791.	1.6589
15 0/0	159193.	169056.	0.9416
20 0/0	111525.	183229.	0.6086
25 0/0	83167.	194634.	0.4273
30 0/0	65183.	205045.	0.3178

INTERNAL RATE OF RETURN 14.39 0/0

TABLES 85 & 86
DETAILS OF ANALYSIS

LYON

الجمهورية العربية السورية
وزارة المواصلات
شركة لوبيه
الاستشاريون المتحدون
دمشق - سوريا

احصاء مرتب

التصنيف	C1	C2	C3	C4	C5	C6	C7	C8	C9	10	11	12
	سيارة خاصة / سيارة صالون / تاكسي	بيك آب / بيك آب مغلق	ميكرو باص	باص	٢ محور / شاحنة / صهريج	٣ محاور / شاحنة / صهريج	شاحنة مقطورة ٤ أو ٥ أو ٦ عدد المحاور الإجمالي	رأس (قاطر) ونصف مقطورة (آ) ٢ أو ٤ أو ٥ عدد المحاور الإجمالي	(ب) أكثر من ٥ عدد المحاور الإجمالي	مقطورة وسيلة / شاحنة / مقطورة شاحنة / مقطورة	قرا / تجرر / زراعي / بعد / تراكتور	طنابر / دراجات نارية
الساعة												

اتجاه الحركة الى :

موقع مركز الاحصاء :

SYRIAN ARAB REPUBLIC
MINISTRY OF COMMUNICATIONS

LYON ASSOCIATES, INC.
UNICONSULT
DAMASCUS, SYRIA

TRAFFIC SURVEY - VOLUMES

CLASS	01	02	03	04	05	06	07	08	09	10	11	12
HOUR	SEDAN / STATION WAGON / TAXI	PICK-UP / DELIVERY VAN	MICRO-BUS	BUS	2 AXLE: TRUCK / TANKER	3 AXLE: TRUCK / TANKER	TRUCK AND TRAILER 4.5 OR 5 TOTAL AXLES	TRACTOR & HALF TRAILER (a) 3,4 OR 5 TOTAL AXLES	TRACTOR & HALF TRAILER (b) MORE THAN 5 TOTAL AXLES	MOTORCYCLE / SCOOTER / 3-WHEELER	FARM TRACTOR WITH/WIT-OUT TRAILER	NON-MOTORIZED BICYCLE

ROAD: STATION LOCATION: DIRECTION OF FLO : TO:

FORMS 1 & 2
TRANSPORT ECONOMICS
LYON

الجمهورية العربية السورية
وزارة المواصلات
شركة الهاتف
الدستشاريون المتحدون
دمشق - سوريا

احصاء طرقي

التصنيف	1	2	3	4	5	6	7	8	9	10	11	12	المجموع
الساعة	سيارة خاصة / تاكسي	باص / باص كبير منظم	ميكروباص	باص	٢ محور شاحنة صغيرة	شاحنة صغيرة ٣ محاور	شاحنة ومقطورة ٤ أو ٥ أو ٦ محاور الدخيل	٣ أسرار كامل ومقطورة ٤ أو ٥ محاور الدخيل (٤)	٣ أسرار كامل ونصف مقطورة ٥ محاور الدخيل (٥)	صهريج شاحنة ثابت ومقطورة	قاطرة زراعية مقطورة مع أو بدون مقطورة	طنبر / دراجات نارية	
06 – 07													
07 – 08													
08 – 09													
09 – 10													
10 – 11													
11 – 12													
12 – 13													
13 – 14													
14 – 15													
15 – 16													
16 – 17													
17 – 18													
18 – 19													
19 – 20													
20 – 21													
21 – 22													
22 – 23													
23 – 24													
24 – 01													
01 – 02													
02 – 03													
03 – 04													
04 – 05													
05 – 06													
المجموع													

اتجاه الحركة الى

موقع مركز الاحصاء

دمشق من قبل

حالة الطقس

القائم بالاحصاء

SYRIAN ARAB REPUBLIC
MINISTRY OF COMMUNICATIONS

LYON ASSOCIATES, INC.
UNICONSULT
DAMASCUS, SYRIA

TRAFFIC SURVEY - SUMMARY

CLASS	1		2	3	4	5	6	7	8	9	10	11	12	TOTAL
HOUR	SEDAN	STATION WAGON / TAXI	PICK-UP / DELIVERY VAN	MICRO-BUS	BUS	2 AXLES TRUCK / TANKER	3 AXLES TRUCK / TANKER	TRUCK AND TRAILER 5,5 OR 6 TOTAL AXLES	TRACTOR & HALF TRAILER (a) 5,4 OR 5 TOTAL AXLES	TRACTOR & HALF TRAILER (b) MORE THAN 5 TOTAL AXLES	MOTORCYCLE SCOOTER 3-WHEELER	FARM TRACTOR WITH/WITHOUT TRAILER	NON-MOTORIZED BICYCLE	
06 – 07														
07 – 08														
08 – 09														
09 – 10														
10 – 11														
11 – 12														
12 – 13														
13 – 14														
14 – 15														
15 – 16														
16 – 17														
17 – 18														
18 – 19														
19 – 20														
20 – 21														
21 – 22														
22 – 23														
23 – 24														
24 – 01														
01 – 02														
02 – 03														
03 – 04														
04 – 05														
05 – 06														
TOTAL														

ROAD: STATION LOCATION:
DIRECTION OF FLOW: TO:
DATE: SURVEYOR: CHECKED BY:

4

FORMS 3 & 4
TRANSPORT ECONOMICS
LYON

الجمهورية العربية السورية
وزارة المواصلات

شركة لاين
الاستشاريون المتحدون
دمشق - سوريا

مسح طرقي لمصدر - الوجهة

تعبئة العمود

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

جميع العربات

١) التاريخ : _____

٢) الساعة : _____

٣) المركز : _____

٤) رقم العربة : _____

٥) جنسية العربة

١ - سورية حمراء
٢ - = سوداء
٣ - = خضراء
٤ - = اخرى
٥ - لبنان
٦ - الاردن
٧ - الكويت
٨ - السعودية
٩ - تركيا
١٠ - اوروبا

٦) مصدر الرحلة من : _____

٧) اتجاه الرحلة الى : _____

عربات الشحن

٨) نوع العربة ؟

١ - بيك اب
٢ - محورين
٣ - ٣ محاور
٤ - شاحنة ومقطورة
٥ - رأس قاطر ونصف مقطورة

٩) هل أخذت او افرغت
هل ستأخذ او ستفرغ حمولة في ؟

طرطوس : نعم لا
بانياس : نعم لا
جبلة : نعم لا

١٠) حمولة البضاعة (طن)

١ - فارغة
٢ - ٠ - ٢
٣ - ٣ - ٥
٤ - ٦ - ١٠
٥ - ١١ - ١٥
٦ - ١٦ - ٢٠
٧ - ٢١ - ٢٥
٨ - ٢٦ - ٣٠
٩ - ٣١ - ٤٠
١٠ - ٤١ - ٥٠
١١ - ٥١ - ٦٠
١٢ - ٦١ - ٧٠
١٣ - ٧١ - ٨٠
١٤ - ٨١ - ٩٠
١٥ - ٩١ - ١٠٠
١٦ - اكثر من ١٠٠

١١) نوع البضاعة :

١ - حاوية (كونتينر)
٢ - مواد بناء
٣ - فواكه وخضار
٤ - مواد صناعية
٥ - حيوانات
٦ - تجارة عامة
٧ - بالات
٨ - منتجات بترولية
٩ - اشجار مقطوعة

١٢) كم شهر من السنة
تأخذ مثل هذه البضاعة ؟

١ - ١ - ٣
٢ - ٤ - ٦
٣ - ٧ - ٩
٤ - ١٠ - ١٢

عربات نقل المسافرين

١٣) نوع العربة :

١ - سياحية
٢ - تاكسي
٣ - ميكروباص
٤ - باص
٥ - شاحنة حكومية

١٤) هل انزلت او اخذت
هل ستنزل او ستأخذ ركاب من ؟

طرطوس : نعم لا
بانياس : نعم لا
جبلة : نعم لا

١٥) عدد الركاب بما فيهم السائق :

١ - ١ - ٣
٢ - ٤ - ٨
٣ - ٩ - ١٥
٤ - ١٦ - ٢٥
٥ - ٢٦ - ٣٥
٦ - ٣٦ - ٤٥
٧ - ٤٦ - ٥٥
٨ - ٥٦ - ٦٥
٩ - ٦٦ - ٧٥
١٠ - ٧٦ - ٨٥
١١ - ٨٦ - ١٠٠
١٢ - اكثر من ١٠٠

١٦) هل تحمل رحلات في المهنة
اكثر من الشتاء ؟

١ - لا (تنتهي الاسئلة)
٢ - نعم ٠ كم رحلة زيادة في الصيف
عن الشتاء اسبوعيا ؟

٣ - ١ - ٥
٤ - ٦ - ١٠
٥ - ١١ - ١٥
٦ - ١٦ - ٢٠
٧ - ٢١ - ٢٥
٨ - اكثر من ٢٥

LYON ASSOCIATES INC.
DAMASCUS, SYRIA
(UNI CONSULT)

SYRIAN ARAB REP.
MINISTRY OF COMMUNICATIONS

ORIGIN DESTINATION SURVEY

ALL VEHICLES

1. DATE: _____
2. TIME OF PAY: _____
3. STATION: _____
4. VEHICLE NUMBER: _____
5. REGISTRATION:
   01 SYRIA: RED
   02 : BLACK
   03 : GREEN
   04 : OTHERS
   05 LEBANON
   06 JORDAN
   07 KUWAIT
   08 SAUDI ARABIA
   09 TURKEY
   10 EUROPE
6. WHERE DID THIS TRIP START ?
   _____
7. WHERE WILL THIS TRIP END ?
   _____

CARGO VEHICLES

8. TYPE OF TRUCK ?
   01 PICK UP
   02 2 AXLES
   03 3 AXLES
   04 TRUCK TRAILER
   05 TRACTOR ½ TRAILER
9. DID YOU PICK UP OR DELIVER
   WILL YOU PICK UP OR DELIVER
   GOODS IN:

TARTOUS:	YES	NO
BANIAS:	YES	NO
JEBLEH:	YES	NO

10. CARGO WEIGHT ?
    01 EMPTY
    02 0 - 2
    03 3 - 5
    04 6 - 10
    05 11 - 15
    06 16 - 20
    07 21 - 25
    08 26 - 30
    09 31 - 40
    10 41 - 50
    11 51 - 60
    12 61 - 70
    13 71 - 80
    14 81 - 90
    15 91 - 100
    16 MORE THAN 100
11. CARGO TYPE ?
    01 CONTAINER
    02 CONSTRUCTION
    03 FRUIT & VEG.
    04 INDUSTRY
    05 LIVESTOCK
    06 GENERAL MERCH.
    07 BULK GOODS
    08 PETROLEUM PRODUCTS
    09 FORESTRY
12. HOW MANY MONTH EACH
    YEAR DO YOU CARRY THESE
    TYPE GOODS ?
    01 1 - 3
    02 4 - 6
    03 7 - 9
    04 10 - 12

PASSENGER VEHICLES

13. TYPE OF VEHICLE ?
    01 SEDAN
    02 TAXI
    03 MICRO BUS
    04 BUS
    05 TRUCK(GOV'T)
14. DID YOU PICK UP OR DROP
    WILL YOU PICK UP OR DROP
    PASSENGERS IN:

TARTOUS	YES	NO
BANIAS	YES	NO
JEBLEH	YES	NO

16. DO YOU MAKE MORE TRIPS
    IN SUMMER THAN IN WINTER
    01 NO (NO MORE QUESTIONS)
    02 YES-HOW MANY MORE TRIPS
    IN SUMMER THAN IN WINTER
    03 1 - 5
    04 6 - 10
    05 11 - 15
    06 16 - 20
    07 21 - 25
    08 OVER 25
15. NUMBER OF OCCUPANTS?
    (INCLUDING DRIVER)
    01 1 - 3
    02 4 - 8
    03 9 - 15
    04 16 - 25
    05 26 - 35
    06 36 - 45
    07 46 - 55
    08 56 - 65
    09 66 - 75
    10 76 - 85
    11 86 - 100
    12 OVER 100

6

FORMS 5 & 6
TRANSPORT ECONOMICS
LYON

Technical Planning

APPENDIX D

LYON

LATTAKIA-ARIHA HIGHWAY PROJECT
SYRIA

SUMMARY: PRELIMINARY FEASIBILITY COST ESTIMATE

- In 1978 U. S. Dollars -

	U.S. $ Expenditure	Syrian Expenditure	Total Expenditure
Construction Cost Estimate	$91,906,262	$37,737,883	$129,644,145
Engineering Design Estimate . . . (includes, but not limited to, detailed survey and field investigations, soils investigation and testing, total engineering design and documentation, pre-qualification and tendering assistance.)	4,213,435	2,268,772	6,482,207
Construction Supervision	3,565,214	2,916,993	6,482,207
Appropriation of Lane	-	8,238,460	8,238,460
Totals	$99,684,911	$51,162,108	$150,847,019

(This Preliminary Feasibility Cost Estimate was prepared utilizing interim quantity estimates subsequently refined.)

L

SUMMARY: FEASIBIL

Construction Cost

Engineering Design
(Includes, but n
detailed survey
gation, soils i
testing, total
and documentati
cation and tend

Construction Super

Appropriation of L

Totals .

(This Feasibility
developed in the
in full accord wi

Sheet 1

(1)

LATTAKIA-ARIHA HIGHWAY PROJECT
SYRIA

ARY: FEASIBILITY COST ESTIMATE

- In 1978 U. S. Dollars -

	U.S. $ Expenditure	Syrian Expenditure	Total Expenditure
truction Cost Estimate	$89,568,788	$36,534,387	$126,103,175
neering Design Estimate . . . ncludes, but not limited to, etailed survey and field investi- ation, soils investigation and esting, total engineering design nd documentation, pre-qualifi- ation and tendering assistance.)	4,098,354	2,206,806	6,305,160
truction Supervision	3,467,837	2,837,321	6,305,158
opriation of Land	-	8,238,460	8,238,460
Totals	$97,134,979	$49,816,974	$146,951,953

e Feasibility Cost Estimate is based on the application of unit prices eloped in the Preliminary Feasibility Cost Estimate reflecting quantities full accord with preliminary design.)

LATTAKIA-ARIHA HIGHWAY PROJECT
SYRIA

SUMMARY: BUDGET COST ESTIMATE

- In U.

	U.S. $ Expenditure	Ex
Construction Cost Estimate	$129,098,007	$7
Engineering Design Estimate . . . (Includes, but not limited to, detailed survey and field investigation, soils investigation and testing, total engineering design and documentation, pre-qualification and tendering assistance.)	4,689,224	
Construction Supervision	4,998,291	
Appropriation of Land	-	1
Totals	$138,785,522	$9

(The feasibility cost estimate in 1978 dollars was analyses, wherein all costs and benefits are state financing, however, must be based on cost includin rates, which the Consultant assumes to be eight pe 15 percent for Syrian costs. The Consultant furth design contract will be negotiated at the mid-poin subject to one and three quarters years of inflati costs will be negotiated at mid-1981 and be subjec quarters years of inflation.

SUMM
COST

(2)

HIGHWAY PROJECT
RIA

ATE

- In 1978 U. S. Dollars -

	U.S. $ Expenditure	Syrian Expenditure	Total Expenditure
.	$89,568,788	$36,534,387	$126,103,175
.	4,098,354	2,206,806	6,305,160
esti- nd esign i- ce.)			
.	3,467,837	2,837,321	6,305,158
.	-	8,238,460	8,238,460
.	$97,134,979	$49,816,974	$146,951,953

is based on the application of unit prices easibility Cost Estimate reflecting quantities design.)

LATTAKIA-ARIHA HIGHWAY PROJECT
SYRIA

SUMMARY: BUDGET COST ESTIMATE

- In U. S. Dollars -

	U.S. $ Expenditure	Syrian Expenditure	Total Expenditure
Construction Cost Estimate	$129,098,007	$70,960,484	$200,058,491
Engineering Design Estimate . . . (Includes, but not limited to, detailed survey and field investigation, soils investigation and testing, total engineering design and documentation, pre-qualification and tendering assistance.)	4,689,224	2,818,288	7,507,512
Construction Supervision	4,998,291	5,510,909	10,509,200
Appropriation of Land	-	12,529,668	12,529,668
Totals	$138,785,522	$91,819,349	$230,604,871

(The feasibility cost estimate in 1978 dollars was required in economic analyses, wherein all costs and benefits are stated at 1978 value. Project financing, however, must be based on cost including escalation at prevailing rates, which the Consultant assumes to be eight percent for U.S. costs and 15 percent for Syrian costs. The Consultant further assumes that the design contract will be negotiated at the mid-point of 1979 and will be subject to one and three quarters years of inflation; and that all other costs will be negotiated at mid-1981 and be subject to four and three quarters years of inflation.

(3)

SUMMARY SHEET I
COST ESTIMATE
LYON

TYPICAL PRODUCTION ANALYSIS
LATTAKIA ARTIK MICHRAY, SYRIA

ITEM 301

Common Excavation = 22,897,000 M^3 (Bank)
at 1.7 MT/M^3 = 38,925,000 MT
Production Schedule: 31 months = 6,800 hours (100% eff)
From Mass Diagram

Scraper Spread (Average Haul 450 M) $\frac{15,000,000\ M^3}{6,800}$ = 2,205 BM^3/HR
Use: 2,250 "

Truck Spread (Average Haul 1000 M) $\frac{7,897,000}{6,800}$ = 1,161 BM^3/HR
Use: 1,200 "
= 2,040 M.T./HR

Scrapers:

Haul 15 KPH = 250 M/M
Return 20 KPH = 330 M/M

Load 1.00 Min

Haul $\frac{450}{250}$ = 1.8

Dump, Shift = .5

Return $\frac{450}{330}$ = 1.4

Delay = .4
5.1 Min

$\frac{50\ \text{Min}}{5.1\ \text{Min}} \times \frac{16\ BM^3}{\text{Trip}}$ = 156.8 $\frac{BM^3}{\text{Unit-HR}}$

$\frac{2250\ BM^3}{156.8\ BM^3 - HR}$ = 14.4 Units

Rent 16 Haul Units

Operate 15

Trucks:

Haul 25 KPH = 416 M/M
Return 25 KPH = 416 M/M

Load (with 980 c's) = 7.0

Haul $\frac{1000}{416}$ = 2.4

Dump = 1.0

Return = 2.4

Delay = .5
13.3

$\frac{55}{13.3} \times 17\ BM^3/\text{Unit} = 70\ BM^3/\text{Unit-HR}$

$\frac{1,200\ BM^3}{70\ BM^3\ HR}$ = 17. Units

Rent 20 Haul Units

Operate 18

Project Lattakia - Ari
Description Common Excav
Bid Quantity 22,897,000 M

DESCRIPTION			
NO	EQUIPMENT	NO	
		11	
1	Pickup	1	
2	F.B. Trk	2	
16	631 Scraper	15	
12	D 9's	12	
20	769 Trucks	18	
9	980 Loaders	9	
2	Mech Truck	4	
2	14 Grader	2	
2	T. Tractor	2	
2	H_2O Trailer	2	
1	4" Pump	2	
		4	
	Crew & Equip.		
	Cost/Hour		
	Total Crew & Equ		
		x	
	Unit Cost		
		.	
		.	
	TOTALS		

Sheet 2

1

Project Lattakia - Ariha Location Syria Item No. 301

Description Common Excavation Estimator K.R. Checked By _____ Sheet No. _____

Bid Quantity 22,897,000 M^3 Take Off Quantity 38,925,000 MT Date 11/26/78

DESCRIPTION				QUANTITY	EQUIPMENT RENTAL				OPERATING EXPENSE						SERVICES TOOLS & SUPPLIES		LABOR EXPENSE				SUBTOTAL		PER MAT
					CO. OWNED		OTHER		TIRES & TRACKS		EQUIP REPAIR		FUEL OIL-GREASE				WAGES		ADD-ONS				
NO	EQUIPMENT	NO	CREW		U P	TOTAL	U P	TOTAL	U P	TOTAL	U P	TOTAL	U P	TOTAL	U P	TOTAL	U P	TOTAL	U P	TOTAL	U P	TOTAL	U.P.
				SCHEDULE 31 MONTHS = 6,800 HOURS																			
		11	4/M															49.50					
1	Pickup	1	Gen'l 4/M			1.50				.20		.25		.60		.10		6.15					
2	F.B. Trk	2	Driver			5.80				.25		.25		.60		.10		5.60					
16	631 Scraper	15	Oper.			603.20				262.50		150.00		90.00		22.50		48.60					
12	D 9's	12	Oper.			489.00				-		180.00		108.00		24.00		38.88					
20	769 Trucks	18	Driver			648.00				54.00		144.00		63.00		18.00		38.32					
9	980 Loaders	9	Oper.			185.40				77.40		63.00		54.00		6.75		29.16					
2	Mech Truck	4	Mech			7.00				.80		.60		1.50		2.00		6.48					
2	14 Grader	2	Oper			34.00				4.60		9.00		6.00		1.80		8.40					
2	T. Tractor	2	Driver			15.00				3.40		3.00		3.60		.40		6.48					
2	H_2O Trailer	2	Labor			9.40				2.20		1.20		.60		.20		5.20					
1	4" Pump	2	Grade	Checker		1.00				-		.30		.85		.10		5.60					
		4	Labor															7.60					
	Crew & Equip. Cost/Hour					1,999.30				405.35		551.60		328.75		75.95		275.97					
																				Provision for Water			
	Total Crew & Equip.		x 6,800 hours			13,595,240				2,756,380		3,750,880		2,235,500		516,460		1,876,596					
	Unit Cost		22,897,000			.60				.12		.16		.10		.02		.08					
	TOTALS																						

SU
CO

Item No. 301

Sheet No.

Date 11/26/78

OPERATING EXPENSE						SERVICES TOOLS & SUPPLIES		LABOR EXPENSE				SUBTOTAL		PERMANENT MATERIALS		SUB CONTRACTS		TOTAL DIRECT COST	
TIRES & TRACKS		EQUIP REPAIR		FUEL OIL-GREASE				WAGES		ADD-ONS									
U P	TOTAL	U P	TOTAL	U P	TOTAL	U P.	TOTAL	U P.	TOTAL	U P.	TOTAL	U P	TOTAL	U P.	TOTAL	U P	TOTAL	U P	TOTAL
RS																			
									49.50										
	.20		.25		.60		.10		6.15										
	.25		.25		.60		.10		5.60										
	262.50		150.00		90.00		22.50		48.60										
	-		180.00		108.00		24.00		38.88										
	54.00		144.00		63.00		18.00		58.32										
	77.40		63.00		54.00		6.75		29.16										
	.80		.60		1.50		2.00		6.48										
	4.60		9.00		6.00		1.80		8.40										
	3.40		3.00		3.60		.40		6.48										
	2.20		1.20		.60		.20		5.20										
	-		.30		.85		.10		5.60										
									7.60										
	405.35		551.60		328.75		75.95		275.92										3,636.92
											Provision for Water				50,000				50,000
	2,756,380		3,750,880		2,235,500		516,460		1,876,596						50,000				24,781,056
																			1.08
	.12		.16		.10		.02		.08										

SUMMARY SHEET 2

COST ESTIMATE

LYON

3

ITEM SUMMARY — Analysis

Project Lattakia - Ariha

Location Syria

Description

Direct Costs

SUMMARY

Date 11-30-78

Estimator KR

Bid Quantity

Est. Quantity

Operation	Move In	CO. Rent	Other Rent	Repairs	FOG	ST&S	Perm. Matl.	Lab.	Ins.	Sub. Costs.	Total
Direct Cost:											
Equipment Rental										$ 44,031,342	
Equipment Write-off										1,167,908	
Tires										5,528,190	
Repair Parts										11,167,276	
Fuel - Oil - Grease										7,208,407	
Small Tools and Supplies										1,692,849	
Syria Wages										14,514,671	
U.S. $ Perm Material										1,947,000	
Syrian Pound Perm Material										6,625,332	
Sub Contracts										3,942,270	
Total Direct Cost										$108,727,530	
Total Cost per											

Remarks:

Sheet 3

ITEM SUMMARY — Analysis

Project Lattakia - Ariha

Location Syria

Description

Indirect Costs

SUMMARY

Date 11-30-78

Estimator KR

Bid Quantity

Est. Quantity

Operation	Move In	CO. Rent	Other Rent	Repairs	FOG	ST&S	Perm. Matl.	Lab.	Ins.	Sub. Costs	Total
Indirect Costs											
Equipment Rental									$	461,825	
Equipment Write-off										128,000	
Tires										58,875	
Repair Parts										85,230	
Fuel - Oil - Grease										153,350	
Small Tools - Supplies										252,358	
Syrian Wages										3,213,114	
U.S. $ Wages										3,980,622	
U.S. $ Perm Material										2,817,429	
Syrian Perm Material										1,309,096	
Sub-Contracts										145,000	
Total Indirect Cost									$	12,604,899	
Total Cost per											

Remarks:

2

SUMMARY SHEET 3

COST ESTIMATE

LYON

LATTAKIA ARIHA (SYRIA)
SUMMARY: - HORIZONTAL DISTRIBUTION OF CURRENCY REQUIREMENTS

11/28/78
S.J.B.

ITEM	DESCRIPTION	UNIT	QUANTITY	ESTIMATED TOTAL DIRECT COST F.C.	ESTIMATED TOTAL DIRECT COST L.C.	ESTIMATED UNIT COST F.C.	ESTIMATED UNIT COST L.C.	INDIRECT MULTIPLIER F.C.	CO L.
101	Mobilization	L.S.		5,194,000	2,239,000			1.2296	1.09
201	Relocate Utilities	L.S.		-	600,000				
202	Clear and Grub	HA	724	138,348	70,144	191.09	96.88	1.2296	1.09
203	Stripping	CM	134,370	82,946	18,549	0.62	0.14	1.2296	1.09
301	Common Excavation	CM	22,897,000	20,102,500	4,678,556	0.88	.20	1.2296	1.0
302	Rock Excavation	CM	3,345,000	8,248,581	1,918,996	2.47	0.57	1.2296	1.0
303	Borrow	CM	4,793,000	2,656,893	1,057,882	0.55	0.22	1.2296	1.0
304	Over-Haul	Sta.M	19,775,500	1,119,292	245,216	0.06	0.01	1.2296	1.0
305	Embankment	CM	20,929,000	5,933,520	2,681,044	0.28	0.13	1.2296	1.0
306	Remove Unsuitable Mat'l	CM	120,670	106,189	24,134	0.88	0.20	1.2296	1.0
307	Select Fill	CM	324,190	1,835,096	495,253	5.66	1.53	1.2296	1.0
401	Sub-Base	CM	756,680	4,760,614	1,398,771	6.29	1.85	1.2296	1.0
402	Base	CM	276,960	2,841,905	914,210	10.26	3.30	1.2296	1.0
501	Prime Coat	SM	1,498,700	29,046	242,440	0.02	0.16	1.2296	1.0
502	Binder Coarse	MT	351,580	2,609,546	2,926,255	7.42	8.32	1.2296	1.0
504	Surface Coarse	MT	187,340	1,503,664	1,735,316	8.03	9.26	1.2296	1.0

COST L.C.	ESTIMATED DIRECT & INDIRECT UNIT COST F.C.	ESTIMATED DIRECT & INDIRECT UNIT COST L.C.	BALANCED UNIT COST DIRECT & INDIRECT F.C.	BALANCED UNIT COST DIRECT & INDIRECT L.C.	BALANCED ESTIMATED COST IN DOLLARS F.C.	BALANCED ESTIMATED COST IN DOLLARS L.C.	TOTAL CONTRACT ESTIMATED COST IN DOLLARS	UNIT BID PRICE
1.09948					$ 6,318,232	$ 2,936,935	$ 9,255,167	L.S.
						659,688	659,688	L.S.
1.09948	234.96	106.52	235.00	106.50	170,140	77,106	247,246	341.50
1.09948	0.76	0.15	0.76	0.15	102,121	20,155	122,276	.91
1.09948	1.08	0.22	1.08	0.22	24,728,760	5,037,340	29,766,100	1.30
1.09948	3.04	0.63	3.05	0.63	10,202,250	2,107,350	12,309,600	3.68
1.09948	0.68	0.24	0.68	0.24	3,259,240	1,150,320	4,409,560	.92
1.09948	0.07	0.01	0.07	0.01	1,384,285	197,755	1,582,040	.08
1.09948	0.34	0.14	0.34	0.14	7,115,860	2,930,060	10,045,920	.48
1.09948	1.08	0.22	1.08	0.22	130,324	26,547	156,871	1.30
1.09948	6.96	1.68	7.00	1.70	2,269,330	551,123	2,820,453	8.70
1.09948	7.73	2.03	7.70	2.00	5,826,436	1,513,360	7,339,796	9.70
1.09948	12.61	3.63	12.60	3.65	3,489,696	1,010,904	4,500,600	16.25
1.09948	0.02	0.18	0.02	0.18	29,974	269,766	299,740	.20
1.09948	9.12	9.15	9.10	9.15	3,199,378	3,216,957	6,416,335	18.25
1.09948	9.87	10.18	10.50	11.50	1,967,070	2,154,410	4,121,480	22.00
			Sub-Totals - Sheet 1		$ 70,193,096	$ 23,859,776	$ 94,052,872	

SUMMARY SHEET 4

2

COST ESTIMATE

LYON

LATTAKIA ARIHA (SYRIA)

SUMMARY: - HORIZONTAL DISTRIBUTION OF CURRENCY REQUIREMENTS

11/29/78

S.J.B.

ITEM	DESCRIPTION	UNIT	QUANTITY	ESTIMATED TOTAL DIRECT COST F.C.	ESTIMATED TOTAL DIRECT COST L.C.	ESTIMATED UNIT COST F.C.	ESTIMATED UNIT COST L.C.	INDIRECT COST MULTIPLIER F.C.	INDIRECT COST MULTIPLIER L.C.
601	Finish & Stabilize Shoulders	CM	21,300	189,199	67,940	8.88	3.19	1.2296	1.0
602	Erosion Control Seeding	HA	319	122,777	68,781	384.88	215.61	1.2296	1.0
701	Concrete Head Walls	CM	1,755	49,035	166,265	27.94	94.74	1.2296	1.0
702	Stone Riprap	CM	1,650	9,608	4,843	5.82	2.94	1.2296	1.0
703	R.C.P. 60 cm. ϕ	ML	930	57,567	33,062	61.90	35.55	1.2296	1.0
704	R.C.P. 80 cm. ϕ	ML	930	64,654	35,851	69.52	38.55	1.2296	1.0
705	R.C.P. 100 cm. ϕ	ML	950	87,400	37,505	92.00	39.48	1.2296	1.0
706	R.C.P. 120 cm. ϕ	ML	1,980	195,109	84,150	98.54	42.50	1.2296	1.0
707	R.C.P. 150 cm. ϕ	ML	2,250	285,075	113,625	126.70	50.50	1.2296	1.0
708	Concrete Box Culverts	CM	3,500	166,070	227,238	47.45	64.93	1.2296	1.0
801	Bridge Hand Rail	ML	10,440	142,506	78,196	13.65	7.49	1.2296	1.0
802	Structural Excavation	CM	12,110	39,870	27,750	3.29	2.29	1.2296	1.0
803	Rock Excavation	CM	9,490	60,238	36,012	6.35	3.79	1.2296	1.0
804	Concrete Footings	CM	9,800	266,440	530,055	27.19	54.09	1.2296	1.0
805	Concrete Sub-structure	CM	12,560	544,097	845,625	43.32	67.33	1.2296	1.0
806	Concrete Super-structure	CM	17,620	858,786	1,380,358	48.74	78.34	1.2296	1.0
807	Concrete Slope protection	CM	2,310	218,034	260,504	94.39	112.77	1.2296	1.0
808	Concrete Crib Walls	CM	7,260	639,335	699,292	88.06	96.32	1.2296	1.0
809	Stone Riprap	CM	10,100	59,590	30,300	5.90	3.00	1.2296	1.0
810	Prestressed I-Beams	CM	18,130	4,985,750	2,452,989	275.00	135.30	1.2296	1.0
811	Prestressed Piles	ML	17,020	490,687	252,746	28.83	14.85	1.2296	1.0
812	Point Piles	ML	17,627	1,097,440	109,026	62.26	6.18	1.2296	1.0
813	Reinforcing Steel	Kg.	7,250,000	4,930,000	2,102,500	.68	.29	1.2296	1.0

Sheet 5

RECT COST PLIER	ESTIMATED DIRECT & INDIRECT UNIT COST		BALANCED UNIT COST DIRECT & INDIRECT		BALANCED ESTIMATED COST IN DOLLARS		TOTAL CONTRACT ESTIMATED COST IN DOLLARS	UNIT BID PRICE
L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.		
1.09948	10.92	3.51	10.92	3.50	$ 232,596	$ 74,550	$ 307,146	14.42
1.09948	473.25	237.06	473.25	237.05	150,967	75,619	226,586	710.30
1.09948	34.16	104.16	34.35	104.15	60,284	182,783	243,067	138.50
1.09948	7.16	3.23	7.15	3.25	11,798	5,363	17,161	10.40
1.09948	76.11	39.09	76.10	39.10	70,773	36,363	107,136	115.20
1.09948	85.48	42.38	85.50	42.40	79,515	39,432	118,947	127.90
1.09948	113.12	43.41	113.10	43.40	107,445	41,230	148,675	156.50
1.09948	121.16	46.73	121.15	46.75	239,877	92,565	332,442	167.90
1.09948	155.79	55.52	155.80	55.50	350,550	124,875	475,425	211.30
1.09943	58.34	71.39	58.35	71.40	204,225	249,900	454,125	129.75
1.09948	16.78	8.24	16.80	8.25	175,392	86,130	261,522	25.05
1.09948	4.05	2.52	4.05	2.50	49,045	30,275	79,320	6.55
1.09948	7.81	4.17	7.80	4.15	74,022	39,384	113,406	11.95
1.09948	33.43	59.47	33.45	59.45	327,810	582,610	910,420	92.90
1.09948	53.27	74.03	53.25	74.05	668,820	930,068	1,593,888	127.30
1.09948	59.93	86.13	59.95	86.10	1,056,319	1,517,082	2,573,401	146.05
1.09948	116.06	123.99	116.05	124.00	268,075	286,440	554,515	240.05
1.09948	108.28	105.90	108.30	105.90	786,258	768,834	1,555,092	214.20
1.09948	7.25	3.30	7.25	3.30	73,225	33,330	106,555	10.55
1.09948	338.14	148.76	338.15	148.75	6,130,659	2,696,837	8,827,496	486.90
1.09948	35.45	16.33	35.45	16.35	603,359	278,277	881,636	51.80
1.09948	76.55	6.79	76.55	6.80	1,349,347	119,864	1,469,211	83.35
1.09948	0.84	0.32	0.85	0.30	6,162,500	2,175,000	8,337,500	1.15
			Sub-Totals - Sheet 3b.		$ 19,232,861	$ 10,466,811	$ 29,699,672	

2

SUMMARY SHEET 5
COST ESTIMATE
LYON

LATTAKIA ARIHA (SYRIA)

SUMMARY: - HORIZONTAL DISTRIBUTION OF CURRENCY REQUIREMENTS

11/29/78
S.J.B.

ITEM	DESCRIPTION	UNIT	QUANTITY	ESTIMATED TOTAL DIRECT COST F.C.	ESTIMATED TOTAL DIRECT COST L.C.	ESTIMATED UNIT COST F.C.	ESTIMATED UNIT COST L.C.	MUL
814	Retaining wall footing concrete	CM	5,400	146,826	292,086	27.19	54.09	1.22
815	Retaining Wall Stem Concrete	CM	6,180	267,718	416,099	43.32	67.33	"
901	Fencing	KM	211	553,474	347,950	2,623.00	1,649.00	"
902	Guard Rail	ML	21,360	488,716	72,624	22.88	3.40	"
903	Road Signs, Small	Ea.	884	32,213	26,829	36.44	30.35	"
904	Road Signs, Medium	Ea.	195	19,108	11,856	97.99	60.80	"
905	Road Signs, Large	Ea.	87	17,534	6,434	201.54	73.95	"
1001	Housing, Staff		L.S.	194,341	1,439,204	-	-	
1101	Project Offices		L.S.	40,450	164,150			
1102	Soil & Materials Laboratory		L.S.	60,000	30,240		-	
1103	Vehicles for Engineers	Ea	9	87,660	-		-	
1104	Operate & Maintain Vehicles for Engineers	Veh, Mo	306	6,732	204,579	22.00	668.56	
1201	Truck Weighing Scales		L.S.	20,000	-			
1202	Paint dashed center line	KM	205	19,639	22,857	95.80	111.49	
1203	Paint Solid Edge Line	KM	446.30	68,283	58,242	152.99	130.50	

Sheet 6

ETRIBUTION OF
EMENTS

11/29/78
S.J.B.

	UNIT	QUANTITY	ESTIMATED TOTAL DIRECT COST F.C.	ESTIMATED TOTAL DIRECT COST L.C.	ESTIMATED UNIT COST F.C.	ESTIMATED UNIT COST L.C.	INDIRECT COST MULTIPLIER F.C.	INDIRECT COST MULTIPLIER L.C.	ESTIMATED DIRECT & INDIRECT UNIT COST F.C.	ESTIMATED DIRECT & INDIRECT UNIT COST L.C.
oncrete	CM	5,400	146,826	292,086	27.19	54.09	1.2296	1.09948	33.43	59.47
rete	CM	6,180	267,718	416,099	43.32	67.33	"	"	53.27	74.03
	KM	211	553,474	347,950	2,623.00	1,649.00	"	"	3,225.00	1,813.0
	ML	21,360	488,716	72,624	22.88	3.40	"	"	28.13	3.7
	Ea.	884	32,213	26,829	36.44	30.35	"	"	44.81	33.3
	Ea.	195	19,108	11,856	97.99	60.80	"	"	120.49	66.8
	Ea.	87	17,534	6,434	201.54	73.95	"	"	247.81	81.3
		L.S.	194,341	1,439,204	-	-	"	"		
		L.S.	40,450	164,150			"	"		
tory		L.S.	60,000	30,240		-	"	"		
	Ea	9	87,660	-		-	"	"		
ales	Veh, Mo	306	6,732	20[illegible],579	22.00	668.56	"	"	27.05	735,
		L.S.	20,000				"	"		
	KM	205	19,639	22,857	95.80	111.49	"	"	117.79	122.
	KM	446.30	68,283	58,242	152.99	130.50	"	"	188,11	143.
										TOTAL ESTI

Sheet 6

COST L.C.	ESTIMATED DIRECT & INDIRECT UNIT COST F.C.	ESTIMATED DIRECT & INDIRECT UNIT COST L.C.	BALANCED UNIT COST DIRECT & INDIRECT F.C.	BALANCED UNIT COST DIRECT & INDIRECT L.C.	BALANCED ESTIMATED COST IN DOLLARS F.C.	BALANCED ESTIMATED COST IN DOLLARS L.C.	TOTAL CONTRACT ESTIMATED COST IN DOLLARS	UNIT BID PRICE
1.09948	33.43	59.47	33.00	60.00	$ 178,200	$ 324,000	$ 502,200	93.00
"	53.27	74.03	53.00	74.50	327,540	460,410	787,950	127.50
"	3,225.00	1,813.00	3,225.00	1,810.00	680,475	381,910	1,062,385	5,035.00
"	28.13	3.74	28.00	4.00	598,080	85,440	683,520	32.00
"	44.81	33.37	45.00	33.00	39,780	29,172	68,952	78.00
"	120.49	66.85	120.00	67.00	23,400	13,065	36,465	187.00
"	247.81	81.31	247.00	82.00	21,489	7,134	28,623	329.00
"					238,960	1,582,400	1,821,360	L.S.
"					49,750	180,500	230,250	L.S.
"					73,775	33,250	107,025	L.S.
"					108,000	-	108,000	12,000
"	27.05	735.06	27.00	735.00	8,262	224,910	233,172	762.00
"					24,500	-	24,500	L.S.
"	117.79	122.58	118.00	122.25	24,190	25,061	49,251	240.25
"	188.11	143.48	188.00	143.50	83,904	64,044	147,948	331.50
			Sub-Total Sheet 3c.		2,480,305	3,411,296	5,891,601	
			" " Sheet 3b.		19,232,861	10,466,811	29,699,672	
			" " Sheet 3a.		70,193,096	23,859,776	94,052,872	
			TOTAL ESTIMATED PROJECT COST (Less Land & Engineering)		$ 91,906,262	$ 37,737,883	$ 129,644,145	

SUMMARY SHEET 6

COST ESTIMATE

LYON

3

ITEM SUMMARY — Analysis

Project Lattakia - Ariha Highway

Location Syria

Description

Appropriation of Land & Buildings
Estimated Cost

Date 11-30-78

Estimator KR

Bid Quantity
Use 750 HA

Est. Quantity
724 HA

Operation	Move In	CO. Rent	Other Rent	Repairs	FOG	STAS	Perm. Matl.	Estr.	Ins.	Sub. Conts.	Total
				%		HA		Value			
								Sp			
Cultivated Irrigated Land				10%		75		150,000		11250000	
Cultivated Non-Irrigated Land				10%		75		120,000		9000000	
Fruit and Olive Grove, Prime				10%		75		60,000		4500000	
Fruit and Olive Grove, Marginal				10%		75		40,000		3000000	
Uncultivated Land				20%		150		15,000		2250000	
Waste Land and Grazing				40%		300		5,000		1500000	
Buildings										630000	
							Syrian Pounds			32,130,000	
		SP	32,130,000	=	US$	8,238,460					
Total Cost per											

Remarks: Estimated Total Buildings = 30

Est Average Area Per Building = 70 M^2

Est Average Value Per M^2 = SP 300/M^2

Building Value Therefore 30 x 70 x 300 = SP 630,000

Note U.S. $1.00 = SP.3.90

Sheet 7

ITEM SUMMARY — Analysis

Project Lattakia - Ariha

Location Syria

Description Direct and Indirect Cost
Horizontal Balanced Bid Factors
Foreign and Syrian Currency

SUMMARY

Date 12/1/78

Estimator K.R.

Bid Quantity

Est. Quantity

Operation	Move In	CO. Rent	Other Rent	Repairs	FOG	ST&S	Perm. Matl.	Lab.	Ins.	Suc. Costs	Total
		FOREIGN			SYRIAN				TOTAL		
Total Direct Cost		$ 74,744,101			$ 33,983,529				$ 108,727,630		
Total Indirect Cost		7,531,981			5,072,918				12,604,899		
Sub-Total		82,276,082			39,056,447				121,332,529		
Less: Mobilization		5,194,000			2,239,000				7,433,000		
(Item 101)											
Sub-Total		77,082,082			36,817,447				113,899,529		
Contingency											
1½% F.C.		1,156,230							1,156,230		
2½% L.C.					920,436				920,436		
Overhead & Margin		13,667,950							13,667,950		
12% (113,899,529)											
TOTAL CONSTRUCTION COST											
ESTIMATE		$ 91,906,262			$ 37,737,883				$ 129,644,145		
(Less Engineering & Land)											
Total Cost per											

BALANCED BID MULTIPLIERS (BY CURRENCY)

Remarks:

U.S. Dollar Cost = 1.2296
(F.C.)

Syrian Cost = 1.09948
(L.C.)

SUMMARY SHEET 7
COST ESTIMATE

LYON

ARIHA-LATTAKIA, PRESENT LOAD PRACTICE

ROAD SECTION TOTAL

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 10					
1001	RIGHT-OF-WAY	1.	LS	8238460.00	8238.460	
1002	RELOCATE UTILITIES	1.	LS	659688.00	659.688	
	CATEGORY NO. 10 SUB-TOTAL					8898.148
	CATEGORY NO. 20					
2001	SUB BASE	738700.	CM	9.70	7165.390	
2002	BASE	275700.	CM	16.25	4480.125	
2003	PRIME COAT	1491700.	SM	0.20	298.340	
2004	BINDER COURSE	349900.	MT	18.25	6385.675	
2005	SURFACE COURSE	186500.	MT	22.00	4103.000	
2006	FINISH AND STA-BILIZE SHOULDERS	79000.	CM	14.42	1139.180	
2007	EROSION CONTROL SEEDING	319.	HA	710.30	226.799	
	CATEGORY NO. 20 SUB-TOTAL					23798.509
	CATEGORY NO. 30					
3001	CLEAR AND GRUB	724.	HA	341.50	247.246	
3002	STRIP	134370.	CM	0.91	122.277	
3003	COMMONEXCAVATION	22897000.	CM	1.30	29766.100	
3004	ROCK EXCAVATION	3345000.	CM	3.68	12309.600	
3005	BORROW	4793000.	CM	0.92	4409.560	
3006	OVER-HAUL	19775500.	ST.M	0.08	1582.040	
3007	EMBANKMENT	20929000.	CM	0.48	10045.920	
3008	REMOVE UNSUIT-ABLE MATERIAL	120670.	CM	1.30	156.871	
3009	SELECT FILL	414900.	CM	8.70	3609.630	
	CATEGORY NO. 30 SUB-TOTAL					62249.244
	CATEGORY NO. 40					
4001	CONCRETE HEAD WALLS	1755.	CM	138.50	243.068	
4002	STONE RIPRAP	1650.	CM	10.40	17.160	
4003	REINFORCED CONCRETE PIPE 60 CM	930.	ML	115.20	107.136	
4004	REINFORCED CONCRETE PIPE 80 CM	930.	ML	127.90	118.947	
4005	REINFORCED CONCRETE PIPE 100 CM	950.	ML	156.50	148.675	
4006	REINFORCED CONCRETE PIPE 120 CM	1980.	ML	167.90	332.442	
406A	REINFORCED CONCRETE PIPE 150 CM	2250.	ML	211.30	475.425	
4007	FENCING	211.	KM	5035.00	1062.385	
4008	GUARD RAIL	21380.	ML	32.00	683.520	
4009	ROAD SIGNS SMALL	884.	EA	78.00	68.952	
4010	ROAD SIGNS MEDIUM	195.	EA	187.00	36.465	
4011	ROAD SIGNS LARGE	87.	EA	329.00	28.623	

Table 1

ARIHA-LATTAKIA. PRESENT LOAD PRACTICE

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 40					
4012	TRUCK WEIGHING SCALES	1.	LS	24500.00	24.500	
	CATEGORY NO. 40 SUB-TOTAL					2347.298
	CATEGORY NO. 50					8898.148
5001	BRIDGE HAND RAIL	10440.	LM	25.05	261.522	
5002	STRUCTURAL EXCAVATION	12110.	CM	6.55	79.321	
502A	ROCK EXCAVATION	9490.	CM	11.95	113.406	
5003	CONCRETE-BRIDGE FOOTINGS	9800.	CM	92.90	910.420	
5004	CONCRETE-BRIDGE SUB STRUCTURE	12560.	CM	127.30	1598.888	
5005	CONCRETE-BRIDGE SUPER STRUCTURE	17620.	CM	146.05	2573.401	
5006	CONCRETE-SLOPE PROTECTION	2310.	CM	240.05	554.516	
						23798.509
5007	PRESTRESSED I-BEAMS	18130.	CM	486.90	8827.497	
5008	POINT PILES	17627.	ML	83.35	1469.210	
5009	PRESTRESSED PILING 30 CM	8510.	ML	51.80	440.818	
5010	STONE RIPRAP	10100.	CM	10.55	106.555	
5011	REINFORCING STEEL	7250000.	KG	1.15	8337.500	
5012	CONCRETE-BOX CULVERTS	3500.	CM	129.75	454.125	
5013	FOOTING CONCRETE RETAINING WALL	5400.	CM	93.00	502.200	
5014	STEM CONCRETE RETAINING WALL	6180.	CM	127.50	787.950	
5015	CONCRETE FOR CRIB WALLS	7260.	CM	214.20	1555.092	
						82249.244
	CATEGORY NO. 50 SUB-TOTAL					28572.421
	CATEGORY NO. 60					
6001	CONSTRUCT PROJECT OFFICES	1.	LS	230250.00	230.250	
6002	CONSTRUCT AND EQUIP LABORATORY	1.	LS	107025.00	107.025	
6003	CONSTRUCT HOUSING	1.	LS	1821360.00	1821.360	
6004	MOBILIZATION	1.	LS	9255167.01	9255.167	
	CATEGORY NO. 60 SUB-TOTAL					11413.802
	CATEGORY NO. 70					
7001	PAINTING-DASHED CENTER LINE	205.	KM	240.25	49.251	
7002	PAINTING-SOLID EDGE LINE	446.	KM	331.50	147.948	
7003	VEHICLES FOR ENGINEERS	9.	EA	12000.00	108.000	
7004	OPERATE & MAINTAIN VEHICLES FOR ENGINEERS	1.	LS	233172.00	233.172	
	CATEGORY NO. 70 SUB-TOTAL					538.371
	GRAND TOTAL					138817.793

1A

TABLE II A

COST ES

LATTAKIA-ARIHA, PRESENT LOAD PRACTICE

ROAD SECTION 1

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 10					
1001	RIGHT-OF-WAY	1.	LS	3306769.00	3306.769	
1002	RELOCATE UTILITIES	1.	LS	181414.00	181.414	
	CATEGORY NO. 10 SUB-TOTAL					3488.1
	CATEGORY NO. 20					
2001	SUB BASE	218300.	CM	9.70	2117.510	
2002	BASE	78100.	CM	16.25	1269.125	
2003	PRIME COAT	420700.	SM	0.20	84.140	
2004	BINDER COURSE	96100.	MT	18.25	1753.825	
2005	SURFACE COURSE	52600.	MT	22.00	1157.200	
2006	FINISH AND STA-BILIZE SHOULDERS	22100.	CM	14.42	318.682	
2007	EROSION CONTROL SEEDING	87.	HA	710.30	62.364	
	CATEGORY NO. 20 SUB-TOTAL					6762.8
	CATEGORY NO. 30					
3001	CLEAR AND GRUB	199.	HA	341.50	67.959	
3002	STRIP	36950.	CM	0.91	33.625	
3003	COMMONEXCAVATION	5407000.	CM	1.30	7029.100	
3004	ROCK EXCAVATION	1430000.	CM	3.68	5262.400	
3005	BORROW	123000.	CM	0.92	113.160	
3006	OVER-HAUL	3715000.	ST.M	0.08	297.200	
3007	EMBANKMENT	4919000.	CM	0.48	2361.120	
3008	REMOVE UNSUIT-ABLE MATERIAL	33170.	CM	1.30	43.121	
3009	SELECT FILL	142200.	CM	8.70	1237.140	
	CATEGORY NO. 30 SUB-TOTAL					16444.82
	CATEGORY NO. 40					
4001	CONCRETE HEAD WALLS	400.	CM	138.50	55.400	
4002	STONE RIPRAP	350.	CM	10.40	3.640	
4003	REINFORCED CONCRETE PIPE 60 CM	300.	ML	115.20	34.560	
4004	REINFORCED CONCRETE PIPE 80 CM	350.	ML	127.90	44.765	
4005	REINFORCED CONCRETE PIPE 100 CM	400.	ML	156.50	62.600	
4006	REINFORCED CONCRETE PIPE 120 CM	550.	ML	167.90	92.345	
406A	REINFORCED CONCRETE PIPE 150 CM	700.	ML	211.30	147.910	
4007	FENCING	58.	KM	5035.00	292.030	
4008	GUARD RAIL	5870.	ML	32.00	187.840	
4009	ROAD SIGNS SMALL	243.	EA	78.00	18.954	
4010	ROAD SIGNS MEDIUM	53.	EA	167.00	9.911	
4011	ROAD SIGNS LARGE	24.	EA	329.00	7.896	

Table 2

LATTAKIA-ARIHA, PRESENT LOAD PRACTICE

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 40					
4012	TRUCK WEIGHING SCALES	1.	LS	6738.00	6.738	
	CATEGORY NO. 40 SUB-TOTAL					964.589
	CATEGORY NO. 50					
5001	BRIDGE HAND RAIL	3320.	LM	25.05	83.166	
5002	STRUCTURAL EXCAVATION	3380.	CM	6.55	22.139	
502A	ROCK EXCAVATION	3050.	CM	11.95	36.448	
5003	CONCRETE-BRIDGE FOOTINGS	3140.	CM	92.90	291.706	
5004	CONCRETE-BRIDGE SUB STRUCTURE	4070.	CM	127.30	518.111	
5005	CONCRETE-BRIDGE SUPER STRUCTURE	5650.	CM	146.05	825.183	
5006	CONCRETE-SLOPE PROTECTION	430.	CM	240.05	103.222	
5007	PRESTRESSFD I-BEAMS	5870.	CM	486.90	2858.103	
5008	POINT PILES	5340.	ML	83.35	445.089	
5009	PRESTRESSED PILING 30 CM	2440.	ML	51.80	126.392	
5010	REINFORCING STEEL	2100000.	KG	1.15	2415.000	
5011	CONCRETE-BOX CULVERTS	550.	CM	129.75	71.363	
5012	CONCRETE CRIB WALLS	1210.	CM	214.20	259.182	
5013	STONE RIPRAP	2777.	CM	10.55	29.302	
5014	CONCRETE RETAINING WALL FOOTINGS	900.	CM	93.00	83.700	
5015	CONCRETE RETAINING WALL STEMS	1030.	CM	127.50	131.325	
	CATEGORY NO. 50 SUB-TOTAL					8299.431
	CATEGORY NO. 60					
6001	CONSTRUCT PROJECT OFFICES	1.	LS	63319.00	63.319	
6002	CONSTRUCT AND EQUIP LABORATORY	1.	LS	29432.00	29.432	
6003	CONSTRUCT HOUSING	1.	LS	500874.00	500.874	
6004	MOBILIZATION	1.	LS	2545171.00	2545.171	
	CATEGORY NO. 60 SUB-TOTAL					3138.796
	CATEGORY NO. 70					
7001	PAINTING-DASHED CENTER LINE	56.	KM	240.25	13.550	
7002	PAINTING-SOLID EDGE LINE	122.	KM	331.50	40.675	
7003	VEHICLES FOR ENGINEERS	2.	EA	12000.00	24.000	
7004	OPERATE & MAIN-TAIN VEHICLES FOR ENGINEERS	1.	LS	64122.00	64.122	
	CATEGORY NO. 70 SUB-TOTAL					142.347
	GRAND TOTAL					[illegible]

TABLE 2 A

COST ESTIMATE

LYON

LAITANIA-ARIHA, PRESENT LOAD PRACTICE

ROAD SECTION 2

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 10					
1001	RIGHT-OF-WAY	1.	LS	2636307.00	2636.307	
1002	RELOCATE UTILITIES	1.	LS	211100.00	211.100	
	CATEGORY NO. 10 SUB-TOTAL					2847.407
	CATEGORY NO. 20					
2001	SUB BASE	249900.	CM	9.70	2424.030	
2002	BASE	86700.	CM	16.25	1408.875	
2003	PRIME COAT	470400.	SM	0.20	94.080	
2004	BINDER COURSE	112000.	MT	18.25	2044.000	
2005	SURFACE COURSE	58800.	MT	22.00	1293.600	
2006	FINISH AND STA-BILIZE SHOULDERS	25000.	CM	14.42	360.500	
2007	EROSION CONTROL SEEDING	102.	HA	710.30	72.593	
	CATEGORY NO. 20 SUB-TOTAL					7697.678
	CATEGORY NO. 30					
3001	CLEAR AND GRUB	232.	HA	341.50	79.228	
3002	STRIP	43000.	CM	0.91	39.130	
3003	COMMONEXCAVATION	12263000.	CM	1.30	15941.900	
3004	ROCK EXCAVATION	171000.	CM	3.68	629.280	
3005	BORROW	105000.	CM	0.92	96.600	
3006	OVER-HAUL	3194500.	ST.M	0.08	255.560	
3007	EMBANKMENT	6516000.	CM	0.48	3127.680	
3008	REMOVE UNSUIT-ABLE MATERIAL	38600.	CM	1.30	50.180	
3009	SELECT FILL	137300.	CM	8.70	1194.510	
	CATEGORY NO. 30 SUB-TOTAL					21414.068
	CATEGORY NO. 40					
4001	CONCRETE HEAD WALLS	525.	CM	138.50	72.713	
4002	STONE RIPRAP	450.	CM	10.40	4.680	
4003	REINFORCED CONCRETE PIPE 60 CM	450.	ML	115.20	51.840	
4004	REINFORCED CONCRETE PIPE 80 CM	350.	ML	127.90	44.765	
4005	REINFORCED CONCRETE PIPE 100 CM	250.	ML	156.50	39.125	
4006	REINFORCED CONCRETE PIPE 120 CM	1100.	ML	167.[illegible]0	184.690	
406A	REINFORCED CONCRETE PIPE 150 CM	500.	ML	211.30	105.650	
4007	FENCING	67.	KM	5035.00	339.863	
4008	GUARD RAIL	6830.	ML	32.00	218.560	
4009	ROAD SIGNS SMALL	283.	EA	78.00	22.074	
4010	ROAD SIGNS MEDIUM	62.	EA	187.00	11.594	
4011	ROAD SIGNS LARGE	28.	EA	329.00	9.212	

Table 3

LATTAKIA-ARIHA, PRESENT LOAD PRACTICE

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 40					
4012	TRUCK WEIGHING SCALES	1.	LS	7840.00	7.840	
	CATEGORY NO. 40 SUB-TOTAL					1112.406
	CATEGORY NO. 50					
5001	BRIDGE HAND RAIL	1600.	LM	25.05	40.080	
5002	STRUCTURAL EXCAVATION	1160.	CM	6.55	7.598	
502A	ROCK EXCAVATION	1890.	CM	11.95	22.586	
5003	CONCRETE-BRIDGE FOOTINGS	1100.	CM	92.90	102.190	
5004	CONCRETE-BRIDGE SUB STRUCTURE	1400.	CM	127.30	178.220	
5005	CONCRETE-BRIDGE SUPER STRUCTURE	2530.	CM	146.05	369.507	
5006	CONCRETE-SLOPE PROTECTION	0.	CM	240.05	0.000	
5007	PRESTRESSED I-BEAMS	2200.	CM	486.90	1071.180	
5008	POINT PILES	4070.	ML	83.35	339.235	
5009	PRESTRESSED PILING 30 CM	0.	ML	51.80	0.000	
5010	PRESTRESSED PILING 40 CM	0.	ML	0.00	0.000	
5011	REINFORCING STEEL	1150000.	KG	1.15	1322.500	
5012	CONCRETE-BOX CULVERTS	800.	CM	129.75	103.800	
5013	FOOTING CONC. RETAINING WALL	1800.	CM	93.00	167.400	
5014	STEM CONCRETE RETAINING WALL	2060.	CM	127.50	262.650	
5015	CONCRETE FOR CRIB WALLS	3630.	CM	214.20	777.546	
5016	STONE RIPRAP	3232.	CM	10.55	34.098	
	CATEGORY NO. 50 SUB-TOTAL					4798.590
	CATEGORY NO. 60					
6001	CONSTRUCT PROJECT OFFICES	1.	LS	73680.00	73.680	
6002	CONSTRUCT AND EQUIP LABORATORY	1.	LS	34248.00	34.248	
6003	CONSTRUCT HOUSING	1.	LS	582835.00	582.835	
6004	MOBILIZATION	1.	LS	2961653.00	2961.653	
	CATEGORY NO. 60 SUB-TOTAL					3652.416
	CATEGORY NO. 70					
7001	PAINTING-DASHED CENTER LINE	65.	KM	240.25	15.760	
7002	PAINTING-SOLID EDGE LINE	142.	KM	331.50	47.338	
7003	VEHICLES FOR ENGINEERS	2.	EA	12000.00	24.000	
7004	OPERATE & MAINTAIN VEHICLES FOR ENGINEERS	1.	LS	74615.00	74.615	
	CATEGORY NO. 70 SUB-TOTAL					161.713
	GRAND TOTAL					41684.478

TABLE 3 A

COST ESTIMATE

LYON

LATTAKIA-ARIHA, PRESENT LOAD PRACTICE

ROAD SECTION 3

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 10					
1001	RIGHT-OF-WAY	1.	LS	988615.00	988.615	
1002	RELOCATE UTILITIES	1.	LS	79163.00	79.163	
	CATEGORY NO. 10 SUB-TOTAL					1067.778
	CATEGORY NO. 20					
2001	SUB BASE	92100.	CM	9.70	893.370	
2002	BASE	33100.	CM	16.25	337.875	
2003	PRIME COAT	179200.	SM	0.20	35.840	
2004	BINDER COURSE	42000.	MT	18.25	766.500	
2005	SURFACE COURSE	22400.	MT	22.00	492.800	
2006	FINISH AND STA-BILIZE SHOULDERS	9500.	CM	14.42	136.990	
2007	EROSION CONTROL SEEDING	38.	HA	710.30	27.204	
	CATEGORY NO. 20 SUB-TOTAL					2890.579
	CATEGORY NO. 30					
3001	CLEAR AND GRUB	87.	HA	341.50	29.711	
3002	STRIP	16120.	CM	0.91	14.669	
3003	COMMONEXCAVATION	2839000.	CM	1.30	3690.700	
3004	ROCK EXCAVATION	839000.	CM	3.68	3087.520	
3005	BORROW	1180000.	CM	0.92	1085.600	
3006	OVER-HAUL	6200000.	ST.M	0.08	496.000	
3007	EMBANKMENT	3372000.	CM	0.48	1618.560	
3008	REMOVE UNSUIT-ABLE MATERIAL	14500.	CM	1.30	18.850	
3009	SELECT FILL	47300.	CM	8.70	411.510	
	CATEGORY NO. 30 SUB-TOTAL					10453.120
	CATEGORY NO. 40					
4001	CONCRETE HEAD WALLS	230.	CM	138.50	31.855	
4002	STONE RIPRAP	300.	CM	10.40	3.120	
4003	REINFORCED CONCRETE PIPE 60 CM	80.	ML	115.20	9.216	
4004	REINFORCED CONCRETE PIPE 80 CM	80.	ML	127.90	10.232	
4005	REINFORCED CONCRETE PIPE 100 CM	100.	ML	156.50	15.650	
4006	REINFORCED CONCRETE PIPE 120 CM	80.	ML	167.90	13.432	
406A	REINFORCED CONCRETE PIPE 150 CM	100.	ML	211.30	21.130	
4007	FENCING	25.	KM	5035.00	128.393	
4008	GUARD RAIL	2560.	ML	32.00	81.920	
4009	ROAD SIGNS SMALL	106.	EA	78.00	8.268	
4010	ROAD SIGNS MEDIUM	24.	EA	187.00	4.488	
4011	ROAD SIGNS LARGE	10.	EA	329.00	3.290	

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LATTAKIA-ARIHA, PRESENT LOAD PRACTICE

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	COST	
				(DOLLARS)	(X $1,000)	
	CATEGORY NO. 40					
4012	TRUCK WEIGHING SCALES	1.	LS	2940.00	2.940	
	CATEGORY NO. 40 SUB-TOTAL					333.934
	CATEGORY NO. 50					
5001	BRIDGE HAND RAIL	3560.	LM	25.05	89.178	
5002	STRUCTURAL EXCAVATION	4910.	CM	6.55	32.161	
502A	STRUCTURAL EXCAVATION ROCK	3360.	CM	11.95	40.152	
5003	CONCRETE-BRIDGE FOOTINGS	3960.	CM	92.90	367.884	
5004	CONCRETE-BRIDGE SUB STRUCTURE	5530.	CM	127.30	703.969	
5005	CONCRETE-BRIDGE SUPER STRUCTURE	6210.	CM	146.05	906.971	
5006	CONCRETE-SLOPE PROTECTION	1070.	CM	240.05	256.854	
5007	PRESTRESSED I-BEAMS	6750.	CM	486.90	3286.575	
5008	POINT PILES	5900.	CM	83.35	491.765	
5009	PRESTRESSED PILING 30 CM	2210.	ML	51.80	114.478	
5010	REINFORCING STEEL	2700000.	KG	1.15	3105.000	
5011	CONCRETE-BOX CULVERTS	950.	CM	129.75	123.263	
5012	CONC RETAINING WALL FOOTING	1800.	CM	93.00	167.400	
5013	CONC RETAINING WALL STEM	2060.	CM	127.50	262.650	
5014	STONE RIPRAP	1212.	CM	10.55	12.787	
5015	CONC CRIB WALLS	1210.	CM	214.20	259.182	
	CATEGORY NO. 50 SUB-TOTAL					10220.269
	CATEGORY NO. 60					
6001	CONSTRUCT PROJECT OFFICES	1.	LS	27630.00	27.630	
6002	CONSTRUCT AND EQUIP LABORATORY	1.	LS	12843.00	12.843	
6003	CONSTRUCT HOUSING	1.	LS	218563.00	218.563	
6004	MOBILIZATION	1.	LS	1110620.00	1110.620	
	CATEGORY NO. 60 SUB-TOTAL					1369.656
	CATEGORY NO. 70					
7001	PAINTING-DASHED CENTER LINE	24.	KM	240.25	5.910	
7002	PAINTING-SOLID EDGE LINE	53.	KM	331.50	17.768	
7003	VEHICLES FOR ENGINEERS	2.	EA	12000.00	24.000	
7004	OPERATE & MAINTAIN VEHICLES FOR ENGINEERS	1.	LS	27981.00	27.981	
	CATEGORY NO. 70 SUB-TOTAL					75.659
	GRAND TOTAL					26410.999

TABLE 4 A

COST ESTIMATE

LYON

LATTAKIA-ARIHA, PRESENT LOAD PRACTICE

ROAD SECTION 4

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 10					
1001	RIGHT-OF-WAY	1.	LS	1306769.00	1306.769	
1002	RELOCATE UTILITIES	1.	LS	188011.00	188.011	
	CATEGORY NO. 10 SUB-TOTAL					1494.780
	CATEGORY NO. 20					
2001	SUB BASE	178400.	CM	9.70	1730.480	
2002	BASE	77800.	CM	16.25	1264.250	
2003	PRIME COAT	421400.	SM	0.20	84.280	
2004	BINDER COURSE	99800.	MT	18.25	1821.350	
2005	SURFACE COURSE	52700.	MT	22.00	1159.400	
2006	FINISH AND STA-BILIZE SHOULDERS	22400.	CM	14.42	323.008	
2007	EROSION CONTROL SEEDING	91.	HA	710.30	64.637	
	CATEGORY NO. 20 SUB-TOTAL					6447.405
	CATEGORY NO. 30					
3001	CLEAR AND GRUB	206.	HA	341.50	70.349	
3002	STRIP	38300.	CM	0.91	34.853	
3003	COMMONEXCAVATION	2388000.	CM	1.30	3104.400	
3004	ROCK EXCAVATION	905000.	CM	3.68	3330.400	
3005	BORROW	3385000.	CM	0.92	3114.200	
3006	OVER-HAUL	6666000.	ST.M	0.08	533.280	
3007	EMBANKMENT	6122000.	CM	0.48	2938.560	
3008	REMOVE UNSUIT-ABLE MATERIAL	34400.	CM	1.30	44.720	
3009	SELECT FILL	88100.	CM	8.70	766.470	
	CATEGORY NO. 30 SUB-TOTAL					13937.232
	CATEGORY NO. 40					
4001	CONCRETE HEAD WALLS	600.	CM	138.50	83.100	
4002	STONE RIPRAP	550.	CM	10.40	5.720	
4003	REINFORCED CONCRETE PIPE 40 CM	100.	ML	115.20	11.520	
4004	REINFORCED CONCRETE PIPE 80 CM	150.	ML	127.90	19.185	
4005	REINFORCED CONCRETE PIPE 100 CM	200.	ML	156.50	31.300	
4006	REINFORCED CONCRETE PIPE 120 CM	250.	ML	167.90	41.975	
406A	REINFORCED CONCRETE PIPE 150 CM	950.	ML	211.30	200.735	
4007	FENCING	60.	KM	5035.00	302.100	
4008	GUARD RAIL	6100.	ML	32.00	195.200	
4009	ROAD SIGNS SMALL	252.	EA	78.00	19.656	
4010	ROAD SIGNS MEDIUM	56.	EA	187.00	10.472	
4011	ROAD SIGNS LARGE	25.	EA	329.00	8.225	

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LATTAKIA-ARIMA: PRESENT LOAD PRACTICE

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 40					
012	TRUCK WEIGHING SCALES	1.	LS	6982.00	6.982	
	CATEGORY NO. 40 SUB-TOTAL					936.170
	CATEGORY NO. 50					
5001	BRIDGE HAND RAIL	1960.	LM	25.05	49.098	
5002	STRUCTURAL EXCAVATION	2660.	CM	6.55	17.423	
502A	STRUCTURAL ROCK EXCAVATION	1190.	CM	11.95	14.221	
5003	CONCRETE-BRIDGE FOOTINGS	1600.	CM	92.90	148.640	
5004	CONCRETE-BRIDGE SUB STRUCTURE	1560.	CM	127.30	198.588	
5005	CONCRETE-BRIDGE SUPER STRUCTURE	3230.	CM	146.05	471.742	
5006	CONCRETE-SLOPE PROTECTION	810.	CM	240.05	194.441	
5007	PRESTRESSED I-BEAMS	3310.	CM	486.90	1611.639	
5008	POINT PILES	2317.	CM	83.35	193.122	
5009	PRESTRESSED PILING 30 CM	3860.	ML	51.80	199.948	
5010	REINFORCING STEEL	1300000.	KG	1.15	1495.000	
5011	CONCRETE-BOX CULVERTS	1200.	CM	129.75	155.700	
5012	CONCRETE RETAINING WALL FOOTING	900.	CM	93.00	83.700	
5013	CONCRETE RETAINING WALL STEM	1030.	CM	127.50	131.325	
5014	STONE RIPRAP	2878.	CM	10.55	30.369	
5015	CONCRETE CRIB WALLS	1210.	CM	214.20	259.182	
	CATEGORY NO. 50 SUB-TOTAL					5254.138
	CATEGORY NO. 60					
6001	CONSTRUCT PROJECT OFFICES	1.	LS	65621.00	65.621	
6002	CONSTRUCT AND EQUIP LABORATORY	1.	LS	30502.00	30.502	
6003	CONSTRUCT HOUSING	1.	LS	519088.00	519.088	
6004	MOBILIZATION	1.	LS	2637723.00	2637.723	
	CATEGORY NO. 60 SUB-TOTAL					3252.934
	CATEGORY NO. 70					
7001	PAINTING-DASHED CENTER LINE	58.	KM	240.25	14.031	
7002	PAINTING-SOLID EDGE LINE	127.	KM	331.50	42.167	
7003	VEHICLES FOR ENGINEERS	3.	EA	12000.00	36.000	
7004	OPERATE & MAINTAIN VEHICLES FOR ENGINEERS	1.	LS	66454.00	66.454	
	CATEGORY NO. 70 SUB-TOTAL					158.652
	GRAND TOTAL					31481.311

TABLE 5 A

COST ESTIMATE

LYON

LATTAKIA-ARIHA, LEGAL LOAD LIMIT ENFORCED

ROAD SECTION TOTAL

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 10					
1001	RIGHT-OF-WAY	1.	LS	8238460.00	8238.460	
1002	RELOCATE UTILITIES	1.	LS	659688.00	659.688	
	CATEGORY NO. 10 SUB-TOTAL					8898.148
	CATEGORY NO. 20					
2001	SUB BASE	635200.	CM	9.70	6161.440	
2002	BASE	336500.	CM	16.25	5468.125	
2003	PRIME COAT	1491700.	SM	0.20	298.340	
2004	BINDER COURSE	262400.	MT	18.25	4788.800	
2005	SURFACE COURSE	186500.	MT	22.00	4103.000	
2006	FINISH AND STA-BILIZE SHOULDERS	66500.	CM	14.42	958.930	
2007	EROSION CONTROL SEEDING	319.	HA	710.30	226.799	
	CATEGORY NO. 20 SUB-TOTAL					22005.434
	CATEGORY NO. 30					
3001	CLEAR AND GRUB	724.	HA	341.50	247.246	
3002	STRIP	134370.	CM	0.91	122.277	
3003	COMMONEXCAVATION	22897000.	CM	1.30	29766.100	
3004	ROCK EXCAVATION	3345000.	CM	3.68	12309.600	
3005	BORROW	4793000.	CM	0.92	4409.560	
3006	OVER-HAUL	19775500.	ST.M	0.08	1582.040	
3007	EMBANKMENT	20929000.	CM	0.48	10045.920	
3008	REMOVE UNSUIT-ABLE MATERIAL	120670.	CM	1.30	156.871	
3009	SELECT FILL	106500.	CM	8.70	926.550	
	CATEGORY NO. 30 SUB-TOTAL					59566.164
	CATEGORY NO. 40					
4001	CONCRETE HEAD WALLS	1755.	CM	138.50	243.068	
4002	STONE RIPRAP	1650.	CM	10.40	17.160	
4003	REINFORCED CONCRETE PIPE 60 CM	930.	ML	115.20	107.136	
4004	REINFORCED CONCRETE PIPE 80 CM	930.	ML	127.90	118.947	
4005	REINFORCED CONCRETE PIPE 100 CM	950.	ML	156.50	148.675	
4006	REINFORCED CONCRETE PIPE 120 CM	1980.	ML	167.90	332.442	
406A	REINFORCED CONCRETE PIPE 150 CM	2250.	ML	211.30	475.425	
4007	FENCING	211.	KM	5035.00	1062.385	
4008	GUARD RAIL	21360.	ML	32.00	683.520	
4009	ROAD SIGNS SMALL	884.	EA	78.00	68.952	
4010	ROAD SIGNS MEDIUM	195.	EA	187.00	36.465	
4011	ROAD SIGNS LARGE	87.	EA	329.00	28.623	

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LATTAKIA-ARIMA, LEGAL LOAD LIMIT ENFORCED

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 40					
4012	TRUCK WEIGHING SCALES	1.	LS	24500.00	24.500	
	CATEGORY NO. 40 SUB-TOTAL					3347.298
	CATEGORY NO. 50					
5001	BRIDGE HAND RAIL	10440.	LM	25.05	261.522	
5002	STRUCTURAL EXCAVATION	12110.	CM	6.55	79.321	
502A	STRUCTURAL EXCAVATION, ROCK	9490.	CM	11.95	113.406	
5003	CONCRETE-BRIDGE FOOTINGS	9800.	CM	92.90	910.420	
5004	CONCRETE-BRIDGE SUB STRUCTURE	12560.	CM	127.30	1598.888	
5005	CONCRETE-BRIDGE SUPER STRUCTURE	17620.	CM	146.05	2573.401	
5006	CONCRETE-SLOPE PROTECTION	2310.	CM	240.05	554.516	
5007	PRESTRESSED I-BEAMS	18130.	CM	486.90	8827.497	
5008	POINT PILES	17627.	ML	83.35	1469.210	
5009	PRESTRESSED PILING 30 CM	8510.	ML	51.80	440.818	
5010	REINFORCING STEEL	7250000.	KG	1.15	8337.500	
5011	CONCRETE-BOX CULVERTS	3500.	CM	129.75	454.123	
5012	CONCRETE RETAINING WALL FOOTINGS	5400.	CM	93.00	502.200	
5013	CONCRETE RETAINING WALL STEMS	6180.	CM	127.50	787.950	
5014	CONCRETE CRIB WALLS	7260.	CM	214.20	1555.092	
5015	STONE RIPRAP	10100.	CM	10.55	106.555	
	CATEGORY NO. 50 SUB-TOTAL					28572.421
	CATEGORY NO. 60					
6001	CONSTRUCT PROJECT OFFICES	1.	LS	230250.00	230.250	
6002	CONSTRUCT AND EQUIP LABORATORY	1.	LS	107025.00	107.025	
6003	CONSTRUCT HOUSING	1.	LS	1821360.00	1821.360	
6004	MOBILIZATION	1.	LS	9255167.01	9255.167	
	CATEGORY NO. 60 SUB-TOTAL					11413.802
	CATEGORY NO. 70					
7001	PAINTING-DASHED CENTER LINE	205.	KM	240.25	49.251	
7002	PAINTING-SOLID EDGE LINE	446.	KM	331.50	147.948	
7003	VEHICLES FOR ENGINEERS	9.	EA	12000.00	108.000	
7004	OPERATE & MAINTAIN VEHICLES FOR ENGINEERS	1.	LS	233172.00	233.172	
	CATEGORY NO. 70 SUB-TOTAL					538.371

TABLE 6 A

COST ESTIMATE

LYON

LATTAKIA-ARIHA LEGAL LOAD LIMIT ENFORCED

ROAD SECTION 1

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 10					
1001	RIGHT-OF-WAY	1.	LS	3306769.00	3306.769	
1002	RELOCATE UTILITIES	1.	LS	181414.00	181.414	
	CATEGORY NO. 10 SUB-TOTAL					3488.183
	CATEGORY NO. 20					
2001	SUB BASE	189700.	CM	9.70	1840.090	
2002	BASE	95700.	CM	16.25	1555.125	
2003	PRIME COAT	420700.	SM	0.20	84.140	
2004	BINDER COURSE	72100.	MT	18.25	1315.825	
2005	SURFACE COURSE	52600.	MT	22.00	1157.200	
2006	FINISH AND STA-BILIZE SHOULDERS	18700.	CM	14.42	269.654	
2007	EROSION CONTROL SEEDING	87.	HA	710.30	62.364	
	CATEGORY NO. 20 SUB-TOTAL					6284.398
	CATEGORY NO. 30					
3001	CLEAR AND GRUB	199.	HA	341.50	67.959	
3002	STRIP	36950.	CM	0.91	33.625	
3003	COMMONEXCAVATION	5407000.	CM	1.30	7029.100	
3004	ROCK EXCAVATION	1430000.	CM	3.68	5262.400	
3005	BORROW	123000.	CM	0.92	113.160	
3006	OVER-HAUL	3715000.	ST.M	0.08	297.200	
3007	EMBANKMENT	4919000.	CM	0.48	2361.120	
3008	REMOVE UNSUIT-ABLE MATERIAL	33170.	CM	1.30	43.121	
3009	SELECT FILL	41200.	CM	8.70	358.440	
	CATEGORY NO. 30 SUB-TOTAL					15566.125
	CATEGORY NO. 40					
4001	CONCRETE HEAD WALLS	400.	CM	138.50	55.400	
4002	STONE RIPRAP	350.	CM	10.40	3.640	
4003	REINFORCED CONCRETE PIPE 60 CM	300.	ML	115.20	34.560	
4004	REINFORCED CONCRETE PIPE 80 CM	350.	ML	127.90	44.765	
4005	REINFORCED CONCRETE PIPE 100 CM	400.	ML	156.50	62.600	
4006	REINFORCED CONCRETE PIPE 120 CM	550.	ML	167.90	92.345	
4007	REINFORCED CONCRETE PIPE 150 CM	700.	ML	211.30	147.910	
4008	FENCING	58.	KM	5035.00	292.030	
4009	GUARD RAIL	5870.	ML	32.00	187.840	
4010	ROAD SIGNS SMALL	243.	EA	78.00	18.954	
4011	ROAD SIGNS MEDIUM	53.	EA	187.00	9.911	
4012	ROAD SIGNS LARGE	24.	EA	329.00	7.896	

LATTAKIA-ARIHA LEGAL LOAD LIMIT ENFORCED

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 40					
4013	TRUCK WEIGHING SCALES	1.	LS	6738.00	6.738	
	CATEGORY NO. 40 SUB-TOTAL					964.589
	CATEGORY NO. 50					
5001	BRIDGE HAND RAIL	3320.	LM	25.05	83.166	
5002	STRUCTURAL EXCAVATION	3380.	CM	6.55	22.139	
5003	STRUCTURAL EXCAVATION,ROCK	3050.	CM	11.95	36.448	
5004	CONCRETE-BRIDGE FOOTINGS	3140.	CM	92.90	291.706	
5005	CONCRETE-BRIDGE SUB STRUCTURE	4070.	CM	127.30	518.111	
5006	CONCRETE-BRIDGE SUPER STRUCTURE	5650.	CM	146.05	825.183	
5007	CONCRETE-SLOPE PROTECTION	430.	CM	240.05	103.222	
5008	PRESTRESSED I-BEAMS	5870.	CM	486.90	2858.103	
5009	PRESTRESSED PILING 30 CM	2440.	ML	51.80	126.392	
5010	POINT BEARING PILES	5340.	ML	83.35	445.089	
5011	REINFORCING STEEL	2100000.	KG	1.15	2415.000	
5012	CONCRETE-BOX CULVERTS	550.	CM	129.75	71.363	
5013	CONCRETE RETAINING WALL FOOTINGS	900.	CM	93.00	83.700	
5014	CONCRETE RETAINING WALL STEMS	1030.	CM	127.50	131.325	
5015	CONCRETE CRIB WALLS	1210.	CM	214.20	259.182	
5016	STONE RIPRAP	2777.	CM	10.55	29.302	
	CATEGORY NO. 50 SUB-TOTAL					8299.431
	CATEGORY NO. 60					
6001	CONSTRUCT PROJECT OFFICES	1.	LS	63319.00	63.319	
6002	CONSTRUCT AND EQUIP LABORATORY	1.	LS	29432.00	29.432	
6003	CONSTRUCT HOUSING	1.	LS	500874.00	500.874	
6004	MOBILIZATION	1.	LS	2545171.00	2545.171	
	CATEGORY NO. 60 SUB-TOTAL					3138.796
	CATEGORY NO. 70					
7001	PAINTING-DASHED CENTER LINE	56.	KM	240.25	13.550	
7002	PAINTING-SOLID EDGE LINE	122.	KM	331.50	40.675	
7003	VEHICLES FOR ENGINEERS	2.	EA	12000.00	24.000	
7004	OPERATE & MAINTAIN VEHICLES FOR ENGINEERS	1.	LS	64122.00	64.122	
	CATEGORY NO. 70 SUB-TOTAL					142.347
	GRAND TOTAL					37883.869

TABLE 7

COST ESTIMATE

LYDEN

LATTAKIA-ARIHA, LEGAL LOAD LIMIT ENFORCED

ROAD SECTION 2

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 10					
1001	RIGHT-OF-WAY	1.	LS	2636307.00	2636.307	
1002	RELOCATE UTILITIES	1.	LS	211100.00	211.100	
	CATEGORY NO. 10 SUB-TOTAL					2847.407
	CATEGORY NO. 20					
2001	SUB BASE	218600.	CM	9.70	2120.420	
2002	BASE	107200.	CM	16.25	1742.000	
2003	PRIME COAT	470400.	SM	0.20	94.080	
2004	BINDER COURSE	84000.	MT	18.25	1533.000	
2005	SURFACE COURSE	58800.	MT	22.00	1293.600	
2006	FINISH AND STA-BILIZE SHOULDERS	21000.	CM	14.42	302.820	
2007	EROSION CONTROL SEEDING	102.	HA	710.30	72.593	
	CATEGORY NO. 20 SUB-TOTAL					7158.513
	CATEGORY NO. 30					
3001	CLEAR AND GRUB	232.	HA	341.50	79.228	
3002	STRIP	43000.	CM	0.91	39.130	
3003	COMMONEXCAVATION	12263000.	CM	1.30	15941.900	
3004	ROCK EXCAVATION	171000.	CM	3.68	629.280	
3005	BORROW	105000.	CM	0.92	96.600	
3006	OVER-HAUL	3194500.	ST.M	0.08	255.560	
3007	EMBANKMENT	6516000.	CM	0.48	3127.680	
3008	REMOVE UNSUIT-ABLE MATERIAL	38600.	CM	1.30	50.180	
3009	SELECT FILL	48000.	CM	8.70	417.600	
	CATEGORY NO. 30 SUB-TOTAL					20637.158
	CATEGORY NO. 40					
4001	CONCRETE HEAD WALLS	525.	CM	138.50	72.713	
4002	STONE RIPRAP	450.	CM	10.40	4.680	
4003	REINFORCED CONCRETE PIPE 60 CM	450.	ML	115.20	51.840	
4004	REINFORCED CONCRETE PIPE 80 CM	350.	ML	127.90	44.765	
4005	REINFORCED CONCRETE PIPE 100 CM	250.	ML	156.50	39.125	
4006	REINFORCED CONCRETE PIPE 120 CM	1100.	ML	167.90	184.690	
406A	REINFORCED CONCRETE PIPE 150 CM	500.	ML	211.30	105.650	
4007	FENCING	67.	KM	5035.00	339.863	
4008	GUARD RAIL	6830.	ML	32.00	218.560	
4009	ROAD SIGNS SMALL	283.	EA	78.00	22.074	
4010	ROAD SIGNS MEDIUM	62.	EA	187.00	11.594	
4011	ROAD SIGNS LARGE	28.	EA	329.00	9.212	

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LATTAKIA-ARIHA, LEGAL LOAD LIMIT ENFORCED

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 40					
4012	TRUCK WEIGHING SCALES	1.	LS	7840.00	7.840	
	CATEGORY NO. 40 SUB-TOTAL					1112.606
	CATEGORY NO. 50					
5001	BRIDGE HAND RAIL	1600.	LM	25.05	40.080	
5002	STRUCTURAL EXCAVATION	1160.	CM	6.55	7.598	
502A	STRUCTURAL EXCAVATION, ROCK	1890.	CM	11.95	22.586	
5003	CONCRETE-BRIDGE FOOTINGS	1100.	CM	92.90	102.190	
5004	CONCRETE-BRIDGE SUB STRUCTURE	1400.	CM	127.30	178.220	
5005	CONCRETE-BRIDGE SUPER STRUCTURE	2530.	CM	146.05	369.507	
5006	CONCRETE-SLOPE PROTECTION	0.	CM	0.00	0.000	
5007	PRESTRESSED I-BEAMS	2200.	CM	486.90	1071.180	
5008	POINT PILES	4070.	CM	83.35	339.235	
5009	PRESTRESSED PILING 30 CM	0.	ML	0.00	0.000	
5010	REINFORCING STEEL	1150000.	KG	1.15	1322.500	
5011	CONCRETE-BOX CULVERTS	800.	CM	129.75	103.800	
5012	CONCRETE RETAINING WALL FOOTINGS	1800.	CM	93.00	167.400	
5013	CONCRETE RETAINING WALL STEMS	2060.	CM	127.50	262.650	
5014	CONCRETE CRIB WALLS	3630.	CM	214.20	777.546	
5015	STONE RIPRAP	3232.	CM	10.55	34.098	
	CATEGORY NO. 50 SUB-TOTAL					4798.590
	CATEGORY NO. 60					
6001	CONSTRUCT PROJECT OFFICES	1.	LS	73680.00	73.680	
6002	CONSTRUCT AND EQUIP LABORATORY	1.	LS	34248.00	34.248	
6003	CONSTRUCT HOUSING	1.	LS	582835.00	582.835	
6004	MOBILIZATION	1.	LS	2961653.00	2961.653	
	CATEGORY NO. 60 SUB-TOTAL					3652.416
	CATEGORY NO. 70					
7001	PAINTING-DASHED CENTER LINE	65.	KM	240.25	15.760	
7002	PAINTING-SOLID EDGE LINE	142.	KM	331.50	47.338	
7003	VEHICLES FOR ENGINEERS	2.	EA	12000.00	24.000	
7004	OPERATE & MAINTAIN VEHICLES FOR ENGINEERS	1.	LS	74615.00	74.615	
	CATEGORY NO. 70 SUB-TOTAL					161.713
	GRAND TOTAL					40368.403

TABLE 8

COST ESTIMATE

LYDN

LATTAKIA-ARIHA, LEGAL LOAD LIMIT ENFORCED

ROAD SECTION 3

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 10					
1001	RIGHT-OF-WAY	1.	LS	988615.00	988.615	
1002	RELOCATE UTILITIES	1.	LS	79163.00	79.163	
	CATEGORY NO. 10 SUB-TOTAL					1067.778
	CATEGORY NO. 20					
2001	SUB BASE	76000.	CM	9.70	737.200	
2002	BASE	40800.	CM	16.25	663.000	
2003	PRIME COAT	179200.	SM	0.20	35.840	
2004	BINDER COURSE	31500.	MT	18.25	574.875	
2005	SURFACE COURSE	22400.	MT	22.00	492.800	
2006	FINISH AND STA-BILIZE SHOULDERS	8000.	CM	14.42	115.360	
2007	EROSION CONTROL SEEDING	38.	HA	710.30	27.204	
	CATEGORY NO. 20 SUB-TOTAL					2646.279
	CATEGORY NO. 30					
3001	CLEAR AND GRUB	87.	HA	341.50	29.711	
3002	STRIP	16120.	CM	0.91	14.669	
3003	COMMONEXCAVATION	2839000.	CM	1.30	3690.700	
3004	ROCK EXCAVATION	839000.	CM	3.68	3087.520	
3005	BORROW	1180000.	CM	0.92	1085.600	
3006	OVER-HAUL	6200000.	ST.M	0.08	496.000	
3007	EMBANKMENT	3372000.	CM	0.48	1618.560	
3008	REMOVE UNSUIT-ABLE MATERIAL	14500.	CM	1.30	18.850	
3009	SELECT FILL	13500.	CM	8.70	117.450	
	CATEGORY NO. 30 SUB-TOTAL					10159.060
	CATEGORY NO. 40					
4001	CONCRETE HEAD WALLS	230.	CM	138.50	31.855	
4002	STONE RIPRAP	300.	CM	10.40	3.120	
4003	REINFORCED CONCRETE PIPE 60 CM	80.	ML	115.20	9.216	
4004	REINFORCED CONCRETE PIPE 80 CM	80.	ML	127.90	10.232	
4005	REINFORCED CONCRETE PIPE 100 CM	100.	ML	156.50	15.650	
4006	REINFORCED CONCRETE PIPE 120 CM	80.	ML	167.90	13.432	
406A	REINFORCED CONCRETE PIPE 150 CM	100.	ML	211.30	21.130	
4007	FENCING	25.	KM	5035.00	120.393	
4008	GUARD RAIL	2560.	ML	32.00	81.920	
4009	ROAD SIGNS SMALL	106.	EA	78.00	8.268	
4010	ROAD SIGNS MEDIUM	24.	EA	187.00	4.488	
4011	ROAD SIGNS LARGE	10.	EA	329.00	3.290	

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LATTAKIA-ARIHA, LEGAL LOAD LIMIT ENFORCED

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 40					
4012	TRUCK WEIGHING SCALES	1.	LS	2940.00	2.940	
	CATEGORY NO. 40 SUB-TOTAL					333.934
	CATEGORY NO. 50					
5001	BRIDGE HAND RAIL	3560.	LM	25.05	89.178	
5002	STRUCTURAL EXCAVATION	4910.	CM	6.55	32.161	
502A	STRUCTURAL EXCAVATION, ROCK	3360.	CM	11.95	40.152	
5003	CONCRETE-BRIDGE FOOTINGS	3960.	CM	92.90	367.884	
5004	CONCRETE-BRIDGE SUB STRUCTURE	5530.	CM	127.30	703.969	
5005	CONCRETE-BRIDGE SUPER STRUCTURE	6210.	CM	146.05	906.971	
5006	CONCRETE-SLOPE PROTECTION	1070.	CM	240.05	256.854	
5007	PRESTRESSED I-BEAMS	6750.	CM	486.90	3286.575	
5008	POINT PILES	5900.	ML	83.35	491.765	
5009	PRESTRESSED PILING 30 CM	2210.	ML	51.80	114.478	
5010	REINFORCING STEEL	2700000.	KG	1.15	3105.000	
5011	CONCRETE-BOX CULVERTS	950.	CM	129.75	123.263	
5012	CONCRETE RETAINING WALL FOOTINGS	1800.	CM	93.00	167.400	
5013	CONCRETE RETAINING WALL STEMS	2060.	CM	127.50	262.650	
5014	CONCRETE CRIB WALLS	1210.	CM	214.20	259.182	
5015	STONE RIPRAP	1212.	CM	10.55	12.787	
	CATEGORY NO. 50 SUB-TOTAL					10220.269
	CATEGORY NO. 60					
6001	CONSTRUCT PROJECT OFFICES	1.	LS	27630.00	27.630	
6002	CONSTRUCT AND EQUIP LABORATORY	1.	LS	12843.00	12.843	
6003	CONSTRUCT HOUSING	1.	LS	218563.00	218.563	
6004	MOBILIZATION	1.	LS	1110620.00	1110.620	
	CATEGORY NO. 60 SUB-TOTAL					1369.656
	CATEGORY NO. 70					
7001	PAINTING-DASHED CENTER LINE	24.	KM	240.25	5.910	
7002	PAINTING-SOLID EDGE LINE	53.	KM	321.50	17.768	
7003	VEHICLES FOR ENGINEERS	2.	EA	12000.00	24.000	
7004	OPERATE & MAINTAIN VEHICLES FOR ENGINEERS	1.	LS	27981.00	27.981	
	CATEGORY NO. 70 SUB-TOTAL					75.659
	GRAND TOTAL					25872.635

TABLE 9 A

COST ESTIMATE

LYON

LATTAKIA-ARIHA, LEGAL LOAD LIMIT ENFORCED

ROAD SECTION 4

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 10					
1001	RIGHT-OF-WAY	1.	LS	1306769.00	1306.769	
1002	RELOCATE UTILITIES	1.	LS	188011.00	188.011	
	CATEGORY NO. 10 SUB-TOTAL					1494.780
	CATEGORY NO. 20					
2001	SUB BASE	150900.	CM	9.70	1463.730	
2002	BASE	92800.	CM	16.25	1508.000	
2003	PRIME COAT	421400.	SM	0.20	84.280	
2004	BINDER COURSE	74900.	MT	18.25	1365.100	
2005	SURFACE COURSE	52700.	MT	22.00	1159.400	
2006	FINISH AND STA-BILIZE SHOULDERS	18800.	CM	14.42	271.096	
2007	EROSION CONTROL SEEDING	91.	HA	710.30	64.637	
	CATEGORY NO. 20 SUB-TOTAL					5916.243
	CATEGORY NO. 30					
3001	CLEAR AND GRUB	206.	HA	341.50	70.349	
3002	STRIP	38300.	CM	0.91	34.853	
3003	COMMONEXCAVATION	2388000.	CM	1.30	3104.400	
3004	ROCK EXCAVATION	905000.	CM	3.68	3330.400	
3005	BORROW	3385000.	CM	0.92	3114.200	
3006	OVER-HAUL	6666000.	ST.M	0.08	533.280	
3007	EMBANKMENT	6122000.	CM	0.48	2938.560	
3008	REMOVE UNSUIT-ABLE MATERIAL	34400.	CM	1.30	44.720	
3009	SELECT FILL	3800.	CM	8.70	33.060	
	CATEGORY NO. 30 SUB-TOTAL					13203.822
	CATEGORY NO. 40					
4001	CONCRETE HEAD WALLS	600.	CM	138.50	83.100	
4002	STONE RIPRAP	550.	CM	10.40	5.720	
4003	REINFORCED CONCRETE PIPE 60 CM	100.	ML	115.20	11.520	
4004	REINFORCED CONCRETE PIPE 80 CM	150.	ML	127.90	19.185	
4005	REINFORCED CONCRETE PIPE 100 CM	200.	ML	156.50	31.300	
4006	REINFORCED CONCRETE PIPE 120 CM	250.	ML	167.90	41.975	
406A	REINFORCED CONCRETE PIPE 150 CM	950.	ML	211.30	200.735	
4007	FENCING	60.	KM	5035.00	302.100	
4008	GUARD RAIL	6100.	ML	32.00	195.200	
4009	ROAD SIGNS SMALL	252.	EA	78.00	19.656	
4010	ROAD SIGNS MEDIUM	56.	EA	187.00	10.472	
4011	ROAD SIGNS LARGE	25.	EA	329.00	8.225	

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LATTAKIA-ARIHA: LEGAL LOAD LIMIT ENFORCED

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 40					
4012	TR[illegible]ING SC[illegible]	1.	LS	6982.00	6.982	
	CATEGORY NO. 40 SUB-TOTAL					936.170
	CATEGORY NO. 50					
5001	BRIDGE HAND RAIL	1960.	LM	25.05	49.098	
5002	STRUCTURAL EXCAVATION	2660.	CM	6.55	17.423	
5002A	STRUCTURAL EXCAVATION: ROCK	1190.	CM	11.95	14.221	
5003	CONCRETE-BRIDGE FOOTINGS	1600.	CM	92.90	148.640	
5004	CONCRETE-BRIDGE SUB STRUCTURE	1560.	CM	127.30	198.588	
5005	CONCRETE-BRIDGE SUPER STRUCTURE	3230.	CM	146.05	471.742	
5006	CONCRETE-SLOPE PROTECTION	810.	CM	240.05	194.441	
5007	PRESTRESSED I-BEAMS	3310.	CM	486.90	1611.639	
5008	POINT PILES	2317.	ML	83.35	193.122	
5009	PRESTRESSED PILING 30 CM	3860.	ML	51.80	199.948	
5010	REINFORCING STEEL	1300000.	KG	1.15	1495.000	
5011	CONCRETE-BOX CULVERTS	1200.	CM	129.75	155.700	
5012	CONCRETE RETAINING WALL FOOTINGS	900.	CM	93.00	83.700	
5013	CONCRETE RETAINING WALL STEMS	1030.	CM	127.50	131.325	
5014	CONCRETE CRIB WALLS	1210.	CM	214.20	259.182	
5015	STONE RIPRAP	2879.	CM	10.55	30.373	
	CATEGORY NO. 50 SUB-TOTAL					5254.142
	CATEGORY NO. 60					
6001	CONSTRUCT PROJECT OFFICES	1.	LS	65621.00	65.621	
6002	CONSTRUCT AND EQUIP LABORATORY	1.	LS	30502.00	30.502	
6003	CONSTRUCT HOUSING	1.	LS	519088.00	519.088	
6004	MOBILIZATION	1.	LS	2637723.00	2637.723	
	CATEGORY NO. 60 SUB-TOTAL					3252.934
	CATEGORY NO. 70					
7001	PAINTING-DASHED CENTER LINE	58.	KM	240.25	14.031	
7002	PAINTING-SOLID EDGE LINE	127.	KM	331.50	42.167	
7003	VEHICLES FOR ENGINEERS	3.	EA	12000.00	36.000	
7004	OPERATE & MAINTAIN VEHICLES FOR ENGINEERS	1.	LS	153432.00	153.432	
	CATEGORY NO. 70 SUB-TOTAL					245.630
	GRAND TOTAL					30303.721

TABLE 10 A

COST ESTIMATE

LYDN

L Y O N A S S O C I A T E S , I N C .

LATTAKIA-ARIHA, PRESENT LOAD PRACTICE

ROAD SECTION TOTAL

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 80					
8001	MOBILIZATION	1.	LS	850000.00	850.000	
8002	AC OVERLAY	384100.	MT	22.00	8450.200	
8003	TACK COAT	1491700.	SM	0.20	298.340	
8004	MAINTENANCE OF TRAFFIC	1.	LS	120000.00	120.000	
				CATEGORY NO. 80 SUB-TOTAL		9718.540

GRAND TOTAL 9718.540

L Y O N A S S O C I A T E S , I N C .

LATTAKIA-ARIHA, PRESENT LOAD PRACTICE

ROAD SECTION 1

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 80					
8001	MOBILIZATION	1.	LS	233750.00	233.750	
8002	AC OVERLAY	100600.	MT	22.00	2213.200	
8003	TACK COAT	420700.	SM	0.20	84.140	
8004	MAINTENANCE OF TRAFFIC	1.	LS	33000.00	33.000	
				CATEGORY NO. 80 SUB-TOTAL		2564.090

GRAND TOTAL 2564.090

L Y O N A S S O C I A T E S , I N C .

LATTAKIA-ARIHA, PRESENT LOAD PRACTICE

ROAD SECTION 2

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 80					
8001	MOBILIZATION	1.	LS	272000.00	272.000	
8002	AC OVERLAY	122800.	MT	22.00	2701.600	
8003	TACK COAT	470400.	SM	0.20	94.080	
8004	MAINTENANCE OF TRAFFIC	1.	LS	38400.00	38.400	
				CATEGORY NO. 80 SUB-TOTAL		3106.080

GRAND TOTAL 3106.080

L Y O N A S S O C I A T E S , I N C .

LATTAKIA-ARIHA, PRESENT LOAD PRACTICE

ROAD SECTION 3

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)
	CATEGORY NO. 80				
8001	MOBILIZATION	1.	LS	102000.00	102.000
8002	AC OVERLAY	45800.	MT	22.00	1007.600
8003	TACK COAT	179200.	SM	0.20	35.840
8004	MAINTENANCE OF TRAFFIC	1.	LS	14400.00	14.400
	CATEGORY NO. 80 SUB-TOTAL				1159.840

GRAND TOTAL 1159.840

L Y O N A S S O C I A T E S , I N C .

LATTAKIA-ARIHA, PRESENT LOAD PRACTICE

ROAD SECTION 4

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)
	CATEGORY NO. 80				
8001	MOBILIZATION	1.	LS	242250.00	242.250
8002	AC OVERLAY	114900.	MT	22.00	2527.800
8003	TACK COAT	421400.	SM	0.20	84.280
8004	MAINTENANCE OF TRAFFIC	1.	LS	34200.00	34.200
	CATEGORY NO. 80 SUB-TOTAL				2888.530

GRAND TOTAL 2888.530

TABLE II A

COST ESTIMATE

LYON

L Y O N A S S O C I A T E S , I N C .

LATTAKIA-ARIHA, LEGAL LOAD LIMIT ENFORCED

ROAD SECTION TOTAL

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)
	CATEGORY NO. 80				
8001	MOBILIZATION	1.	LS	850000.00	850.000
8002	AC OVERLAY	201600.	MT	22.00	4435.200
8003	TACK COAT	1491700.	SM	0.20	298.340
8004	MAINTENANCE OF TRAFFIC	1.	LS	120000.00	120.000
	CATEGORY NO. 80 SUB-TOTAL				5703.540

GRAND TOTAL 5703.540

L Y O N A S S O C I A T E S , I N C .

LATTAKIA-ARIHA, LEGAL LOAD LIMIT ENFORCED

ROAD SECTION 1

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)
	CATEGORY NO. 80				
8001	MOBILIZATION	1.	LS	233750.00	233.750
8002	AC OVERLAY	52600.	MT	22.00	1157.200
8003	TACK COAT	420700.	SM	0.20	84.140
8004	MAINTENANCE OF TRAFFIC	1.	LS	33000.00	33.000
	CATEGORY NO. 80 SUB-TOTAL				1508.090

GRAND TOTAL 1508.090

L Y O N A S S O C I A T E S , I N C .

LATTAKIA-ARIHA, LEGAL LOAD LIMIT ENFORCED

ROAD SECTION 2

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)
	CATEGORY NO. 80				
8001	MOBILIZATION	1.	LS	272000.00	272.000
8002	AC OVERLAY	58800.	MT	22.00	1293.600
8003	TACK COAT	470400.	SM	0.20	94.080
8004	MAINTENANCE OF TRAFFIC	1.	LS	38400.00	38.400
	CATEGORY NO. 80 SUB-TOTAL				1698.080

GRAND TOTAL 1698.080

L Y O N A S S O C I A T E S , I N C .

LATTAKIA-ARIHA, LEGAL LOAD LIMIT ENFORCED

ROAD SECTION 3

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 80					
8001	MOBILIZATION	1.	LS	102000.00	102.000	
8002	AC OVERLAY	23700.	MT	22.00	521.400	
8003	TACK COAT	179200.	SM	0.20	35.840	
8004	MAINTENANCE OF TRAFFIC	1.	LS	14400.00	14.400	
				CATEGORY NO. 80 SUB-TOTAL		673.640

GRAND TOTAL 673.640

L Y O N A S S O C I A T E S , I N C .

LATTAKIA-ARIHA, LEGAL LOAD LIMIT ENFORCED

ROAD SECTION 4

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 80					
8001	MOBILIZATION	1.	LS	242250.00	242.250	
8002	AC OVERLAY	66500.	MT	22.00	1463.000	
8003	TACK COAT	421400.	SM	0.20	84.280	
8004	MAINTENANCE OF TRAFFIC	1.	LS	34200.00	34.200	
				CATEGORY NO. 80 SUB-TOTAL		1823.730

GRAND TOTAL 1823.730

TABLE 12 /1

COST ESTIMATE

LYON

L Y O N A S S O C I A T E S, I N C.

LATTAKIA-ARIHA, LEGAL LOAD LIMIT ENFORCED

ROAD SECTION TOTAL

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 1 MOBILIZATION					
101	MOBILIZATION	1.	LS	9255167.01	9255.167	
	CATEGORY NO. 1 SUB-TOTAL					9255.167
	CATEGORY NO. 2 SITE CLEARANCE					
201	RELOCATE UTILITIES	1.	LS	659688.00	659.688	
202	CLEAR AND GRUB	724.	HA	341.50	247.246	
203	STRIP	134.10.	CM	0.91	122.277	
	CATEGORY NO. 2 SUB-TOTAL					1029.211
	CATEGORY NO. 3 EARTHWORK					
301	COMMONEXCAVATION	22891000.	CM	1.30	29766.100	
302	ROCK EXCAVATION	3345000.	CM	3.68	12309.600	
303	BORROW	4793000.	CM	0.92	4409.560	
304	OVER-HAUL	19775500.	ST.M	0.08	1582.040	
305	EMBANKMENT	20929000.	CM	0.48	10045.920	
306	REMOVE UNSUIT-ABLE MATERIAL	120670.	CM	1.30	156.871	
307	SELECT FILL	106500.	CM	8.70	926.550	
	CATEGORY NO. 3 SUB-TOTAL					59196.641
	CATEGORY NO. 4 SUB-BASE & BASE					
401	SUB BASE	633200.	CM	9.70	6141.440	
402	BASE	336500.	CM	16.25	5468.125	
	CATEGORY NO. 4 SUB-TOTAL					116.[illegible]565
	CATEGORY NO. 5 ASPHALT PAVING					
501	PRIME COAT	1491700.	SM	0.20	298.340	
502	BINDER COURSE	262400.	MT	18.25	4788.800	
503	SURFACE COURSE	186500.	MT	22.00	4103.000	
	CATEGORY NO. 5 SUB-TOTAL					9190.140
	CATEGORY NO. 6 SHLDRS&FINISHING					
601	FINISH AND STA-BILIZE SHOULDERS	66300.	CM	14.42	958.930	
602	EROSION CONTROL SEEDING	319.	HA	710.30	226.799	
	CATEGORY NO. 6 SUB-TOTAL					1185.729
	CATEGORY NO. 7 DRAINAGE STRUCT.					
701	CONCRETE HEAD WALLS	1755.	CM	138.50	243.068	
702	STONE RIPRAP	1650.	CM	10.40	17.160	
703	REINFORCED CONCRETE PIPE 60 CM	930.	ML	115.20	107.136	
704	REINFORCED CONCRETE PIPE 80 CM	930.	ML	127.98	118.947	
705	REINFORCED CONCRETE PIPE 100 CM	930.	ML	156.50	145.675	
706	REINFORCED CONCRETE PIPE 120 CM	1980.	ML	167.90	332.442	
707	REINFORCED CONCRETE PIPE 150 CM	2250.	ML	211.30	475.425	
708	CONCRETE-BOX CULVERTS	3300.	CM	129.75	454.125	
	CATEGORY NO. 7 SUB-TOTAL					1896.978

LYON ASSOCIATES, INC.

LATTAKIA-ARIMA, LEGAL LOAD LIMIT ENFORCED

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (DOLLARS)	COST (X $1,000)	
	CATEGORY NO. 8 BRIDGES					
801	BRIDGE HAND RAIL	10440.	LM	25.05	261.522	
802	STRUCTURAL EXCAVATION	12110.	CM	6.55	79.321	
803	STRUCTURAL EXCAVATION, ROCK	9490.	CM	11.95	113.406	
804	CONCRETE-BRIDGE FOOTINGS	9800.	CM	92.90	910.420	
805	CONCRETE-BRIDGE SUB STRUCTURE	12560.	CM	127.30	1598.888	
806	CONCRETE-BRIDGE SUPER STRUCTURE	17620.	CM	146.05	2573.401	
807	CONCRETE-SLOPE PROTECTION	2310.	CM	240.05	554.516	
808	CONCRETE CRIB WALLS	7260.	CM	214.20	1555.092	
809	STONE RIPRAP	10100.	CM	10.55	106.555	
810	PRESTRESSED I-BEAMS	18130.	CM	486.90	8827.497	
811	PRESTRESSED PILING 30 CM	6510.	ML	51.80	440.818	
812	POINT PILES	17627.	ML	83.35	1469.210	
813	REINFORCING STEEL	7250000.	KG	1.15	8337.500	
814	CONCRETE RETAINING WALL FOOTINGS	9400.	CM	93.00	902.200	
815	CONCRETE RETAINING WALL STEMS	6180.	CM	127.50	787.950	
	CATEGORY NO. 8 SUB-TOTAL					28118.296
	CATEGORY NO. 9 FENCE,GDRL,SIGNS					
901	FENCING	211.	KM	5035.00	1062.385	
902	GUARD RAIL	21360.	ML	32.00	683.520	
903	ROAD SIGNS SMALL	884.	EA	78.00	68.952	
904	ROAD SIGNS MEDIUM	195.	EA	187.00	36.465	
905	ROAD SIGNS LARGE	87.	EA	329.00	28.623	
	CATEGORY NO. 9 SUB-TOTAL					1879.945
	CATEGORY NO. 10 STAFF HOUSING					
1001	CONSTRUCT HOUSING	1.	LS	1821360.00	1821.360	
	CATEGORY NO. 10 SUB-TOTAL					1821.360
	CATEGORY NO. 11 CONSULT.SUPPORT					
1101	CONSTRUCT PROJECT OFFICES	1.	LS	230250.00	230.250	
1102	CONSTRUCT AND EQUIP LABORATORY	1.	LS	107025.00	107.025	
1103	VEHICLES FOR ENGINEERS	9.	EA	12000.00	108.000	
1104	OPERATE & MAIN-	1.	LS	233172.00	233.172	
	CATEGORY NO. 11 SUB-TOTAL					678.447
	CATEGORY NO. 12 MISC.ITEMS					
1201	TRUCK WEIGHING SCALES	1.	LS	24500.00	24.500	
1202	PAINTING-DASHED CENTER LINE	205.	KM	240.25	49.251	
1203	PAINTING-SOLID EDGE LINE	446.	KM	331.50	147.948	
	CATEGORY NO. 12 SUB-TOTAL					221.699
	GRAND TOTAL					126103.178

TABLE 13 A

COST ESTIMATE

LYON

SUBGRADE SECTION NO. 1
STATIONS 100+000 TO 111+000
SOIL TYPE - QUATERNARY DEPOSITS
DESIGN CBR (%) 2

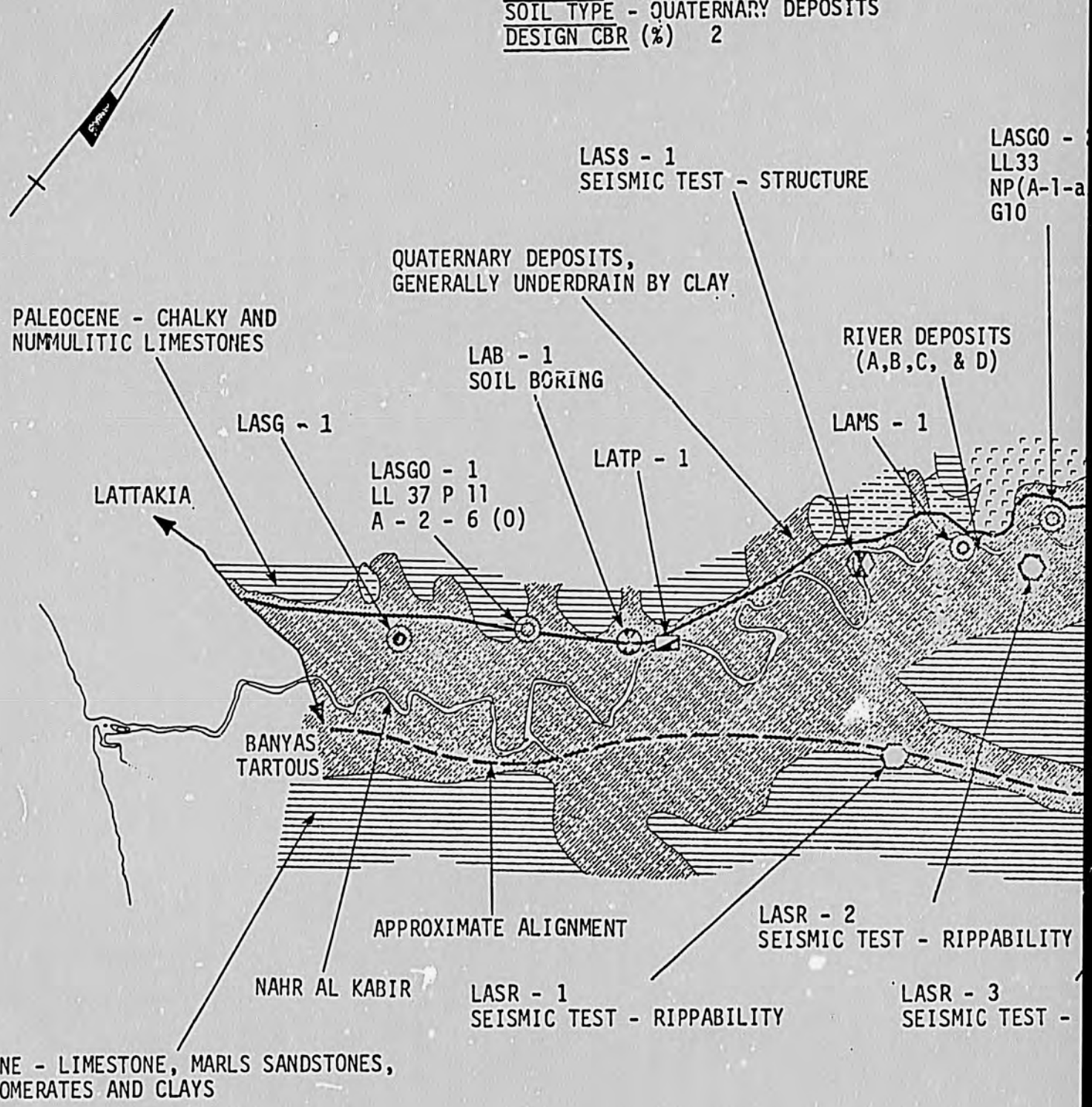


Plate 1

(1)

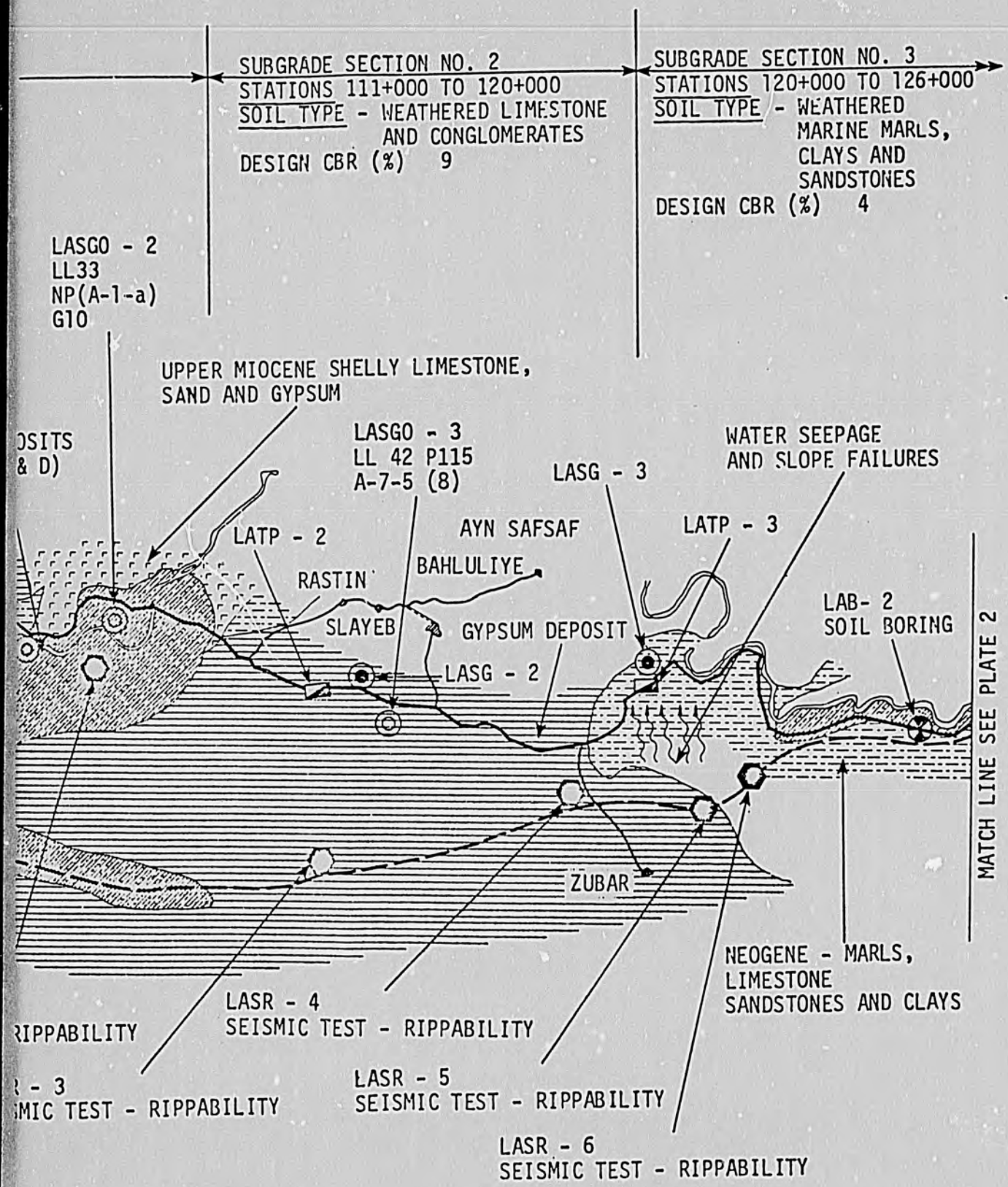


PLATE I

SOILS AND MATERIALS PLAN

LYON

(2)

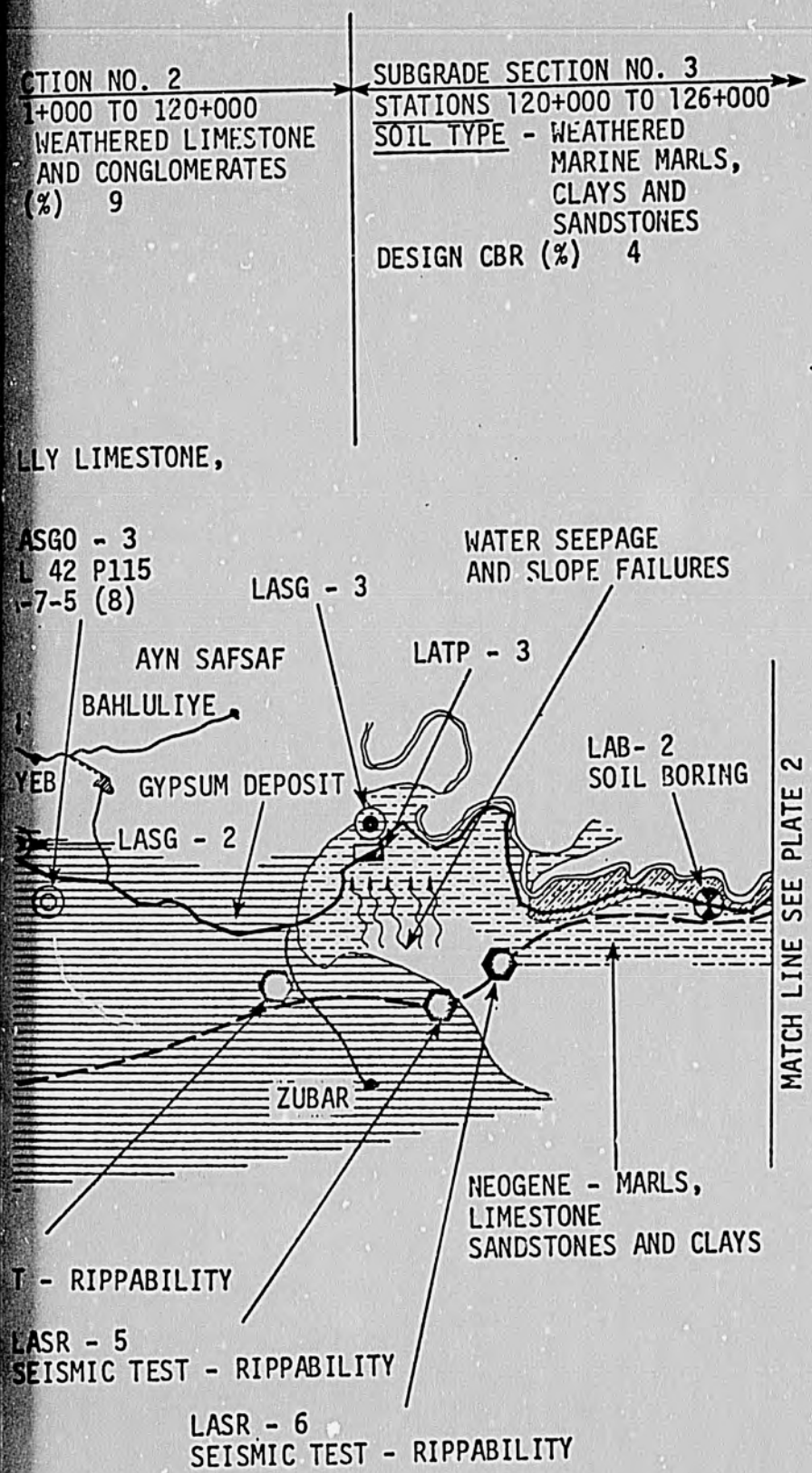


PLATE I

SOILS AND MATERIALS PLAN

LYDN

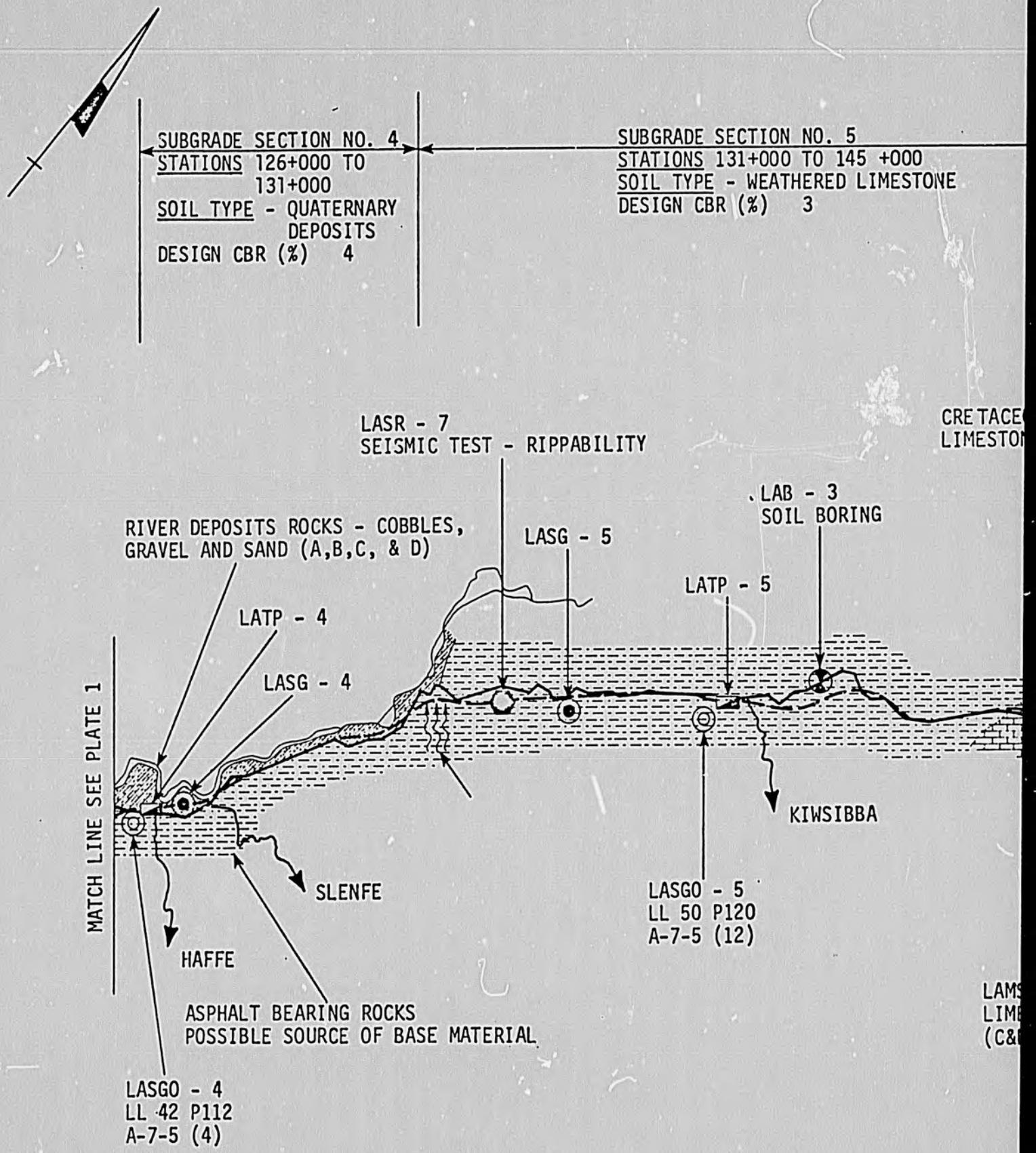

SUBGRADE SECTION NO. 4
STATIONS 126+000 TO 131+000
SOIL TYPE - QUATERNARY DEPOSITS
DESIGN CBR (%) 4
SUBGRADE SECTION NO. 5
STATIONS 131+000 TO 145 +000
SOIL TYPE - WEATHERED LIMESTONE
DESIGN CBR (%) 3
LASR - 7
SEISMIC TEST - RIPPABILITY
LAB - 3
SOIL BORING
RIVER DEPOSITS ROCKS - COBBLES, GRAVEL AND SAND (A,B,C, & D)
LASG - 5
LATP - 5
LATP - 4
LASG - 4
MATCH LINE SEE PLATE 1
KIWSIBBA
SLENFE
LASGO - 5
LL 50 P120
A-7-5 (12)
HAFFE
ASPHALT BEARING ROCKS
POSSIBLE SOURCE OF BASE MATERIAL
LASGO - 4
LL 42 P112
A-7-5 (4)

Plate 2
(1)

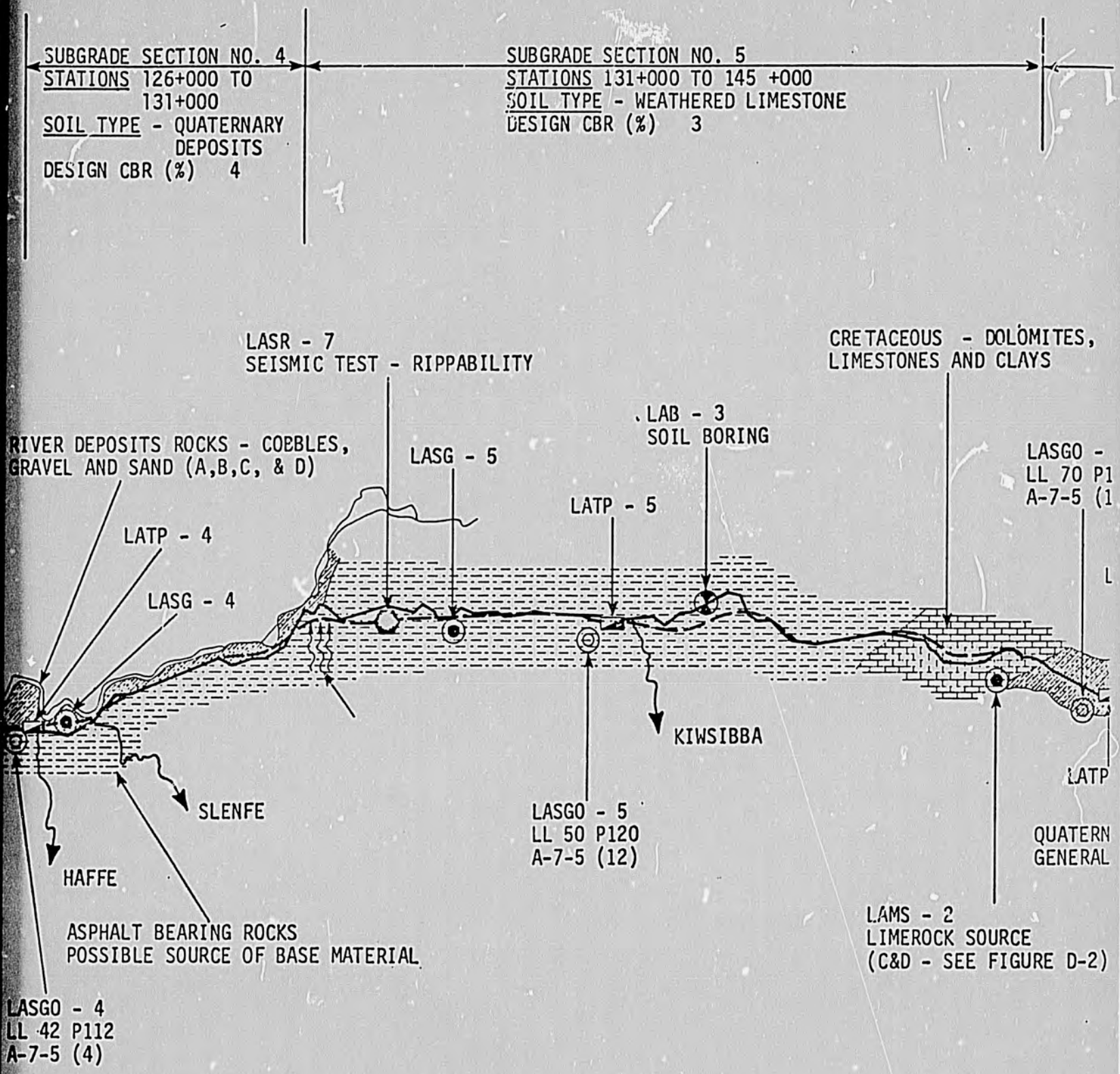

SUBGRADE SECTION NO. 4
STATIONS 126+000 TO 131+000
SOIL TYPE - QUATERNARY DEPOSITS
DESIGN CBR (%) 4
SUBGRADE SECTION NO. 5
STATIONS 131+000 TO 145 +000
SOIL TYPE - WEATHERED LIMESTONE
DESIGN CBR (%) 3
LASR - 7
SEISMIC TEST - RIPPABILITY
CRETACEOUS - DOLOMITES, LIMESTONES AND CLAYS
LAB - 3
SOIL BORING
RIVER DEPOSITS ROCKS - COBBLES, GRAVEL AND SAND (A,B,C, & D)
LASG - 5
LASGO -
LL 70 P1
A-7-5 (1
LATP - 5
LATP - 4
LASG - 4
L
KIWSIBBA
LATP
SLENFE
LASGO - 5
LL 50 P120
A-7-5 (12)
QUATERN
GENERAL
HAFFE
ASPHALT BEARING ROCKS
POSSIBLE SOURCE OF BASE MATERIAL
LAMS - 2
LIMEROCK SOURCE
(C&D - SEE FIGURE D-2)
LASGO - 4
LL 42 P112
A-7-5 (4)

Plate 2

(2)

SUBGRADE SECTION NO. 6
STATIONS 145+000 TO 150+000
SOIL TYPE - FLOOD PLAIN SOILS
DESIGN CBR (%) 4

SUBGRADE SECTION NO. 7
STATIONS 150+000 TO 168+000
SOIL TYPE - WEATHERED LIMESTONE
DESIGN CBR (%) 6

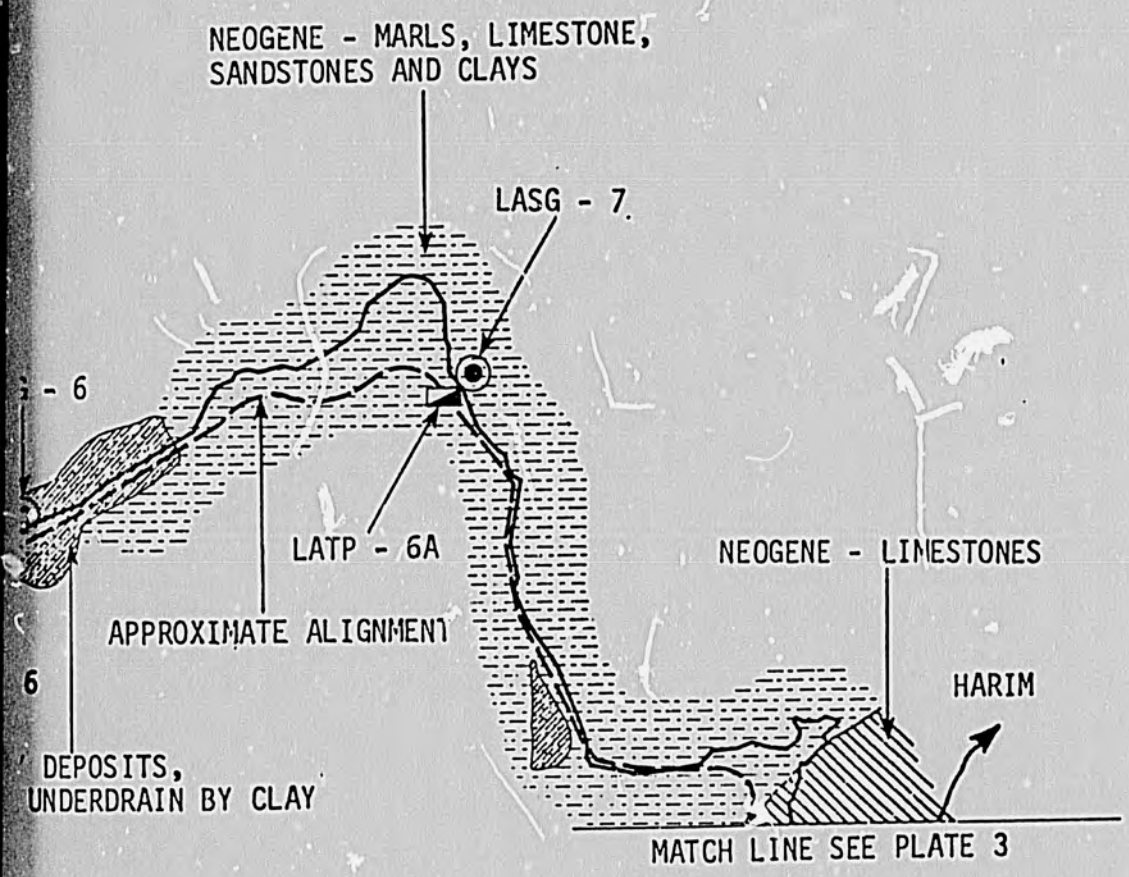


PLATE 2
SOILS AND MATERIALS PLAN

LYON

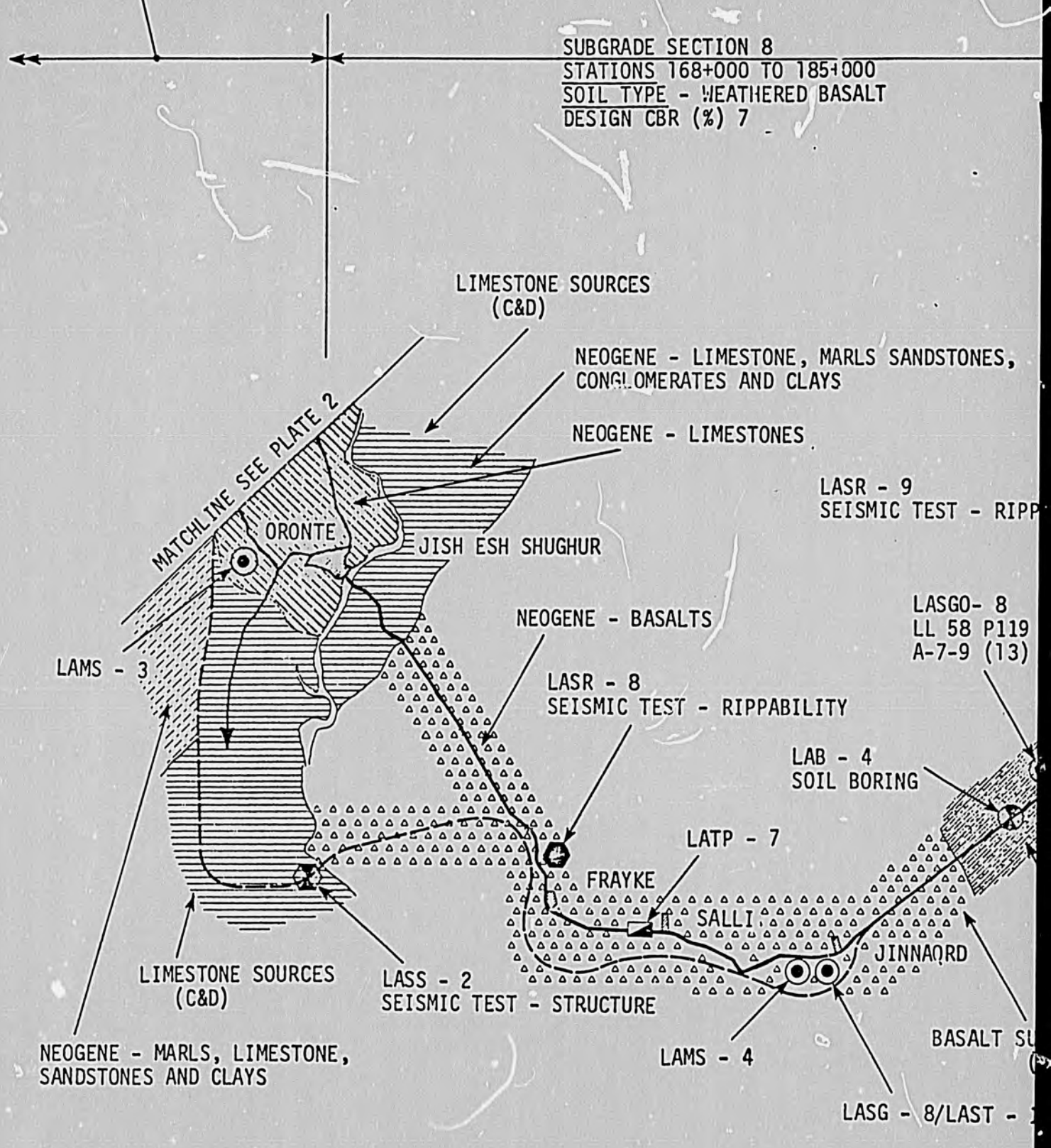

SUBGRADE SECTION NO. 7
STATIONS 150+000 TO 168+000
SOIL TYPE - WEATHERED LIMESTONE
DESIGN CBR (%) 6
SUBGRADE SECTION 9
STATIONS 185+000 to 190
SOIL TYPE - LIMESTONE
DESIGN CBR (%) 25 (CUT-
SUBGRADE SECTION 8
STATIONS 168+000 TO 185+000
SOIL TYPE - WEATHERED BASALT
DESIGN CBR (%) 7
LIMESTONE SOURCES
(C&D)
NEOGENE - LIMESTONE, MARLS SANDSTONES,
CONGLOMERATES AND CLAYS
NEOGENE - LIMESTONES
MATCHLINE SEE PLATE 2
LASR - 9
SEISMIC TEST - RIPP
ORONTE
JISH ESH SHUGHUR
NEOGENE - BASALTS
LASGO- 8
LL 58 P119
A-7-9 (13)
LAMS - 3
LASR - 8
SEISMIC TEST - RIPPABILITY
LAB - 4
SOIL BORING
LATP - 7
FRAYKE
SALLI
JINNAQRD
LIMESTONE SOURCES
(C&D)
LASS - 2
SEISMIC TEST - STRUCTURE
NEOGENE - MARLS, LIMESTONE,
SANDSTONES AND CLAYS
LAMS - 4
BASALT SU
LASG - 8/LAST -

Plate 3

(1)

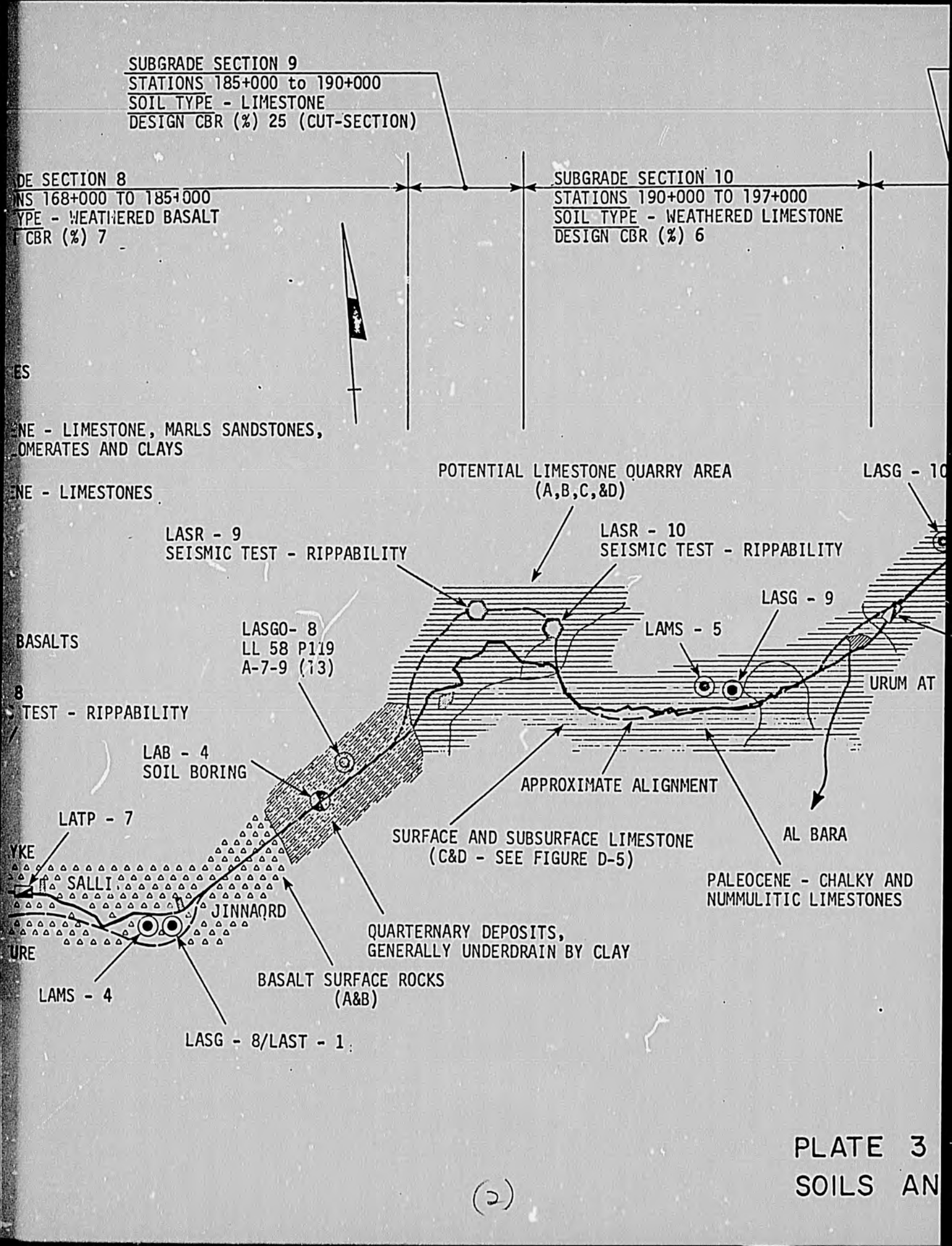


PLATE 3
SOILS AN

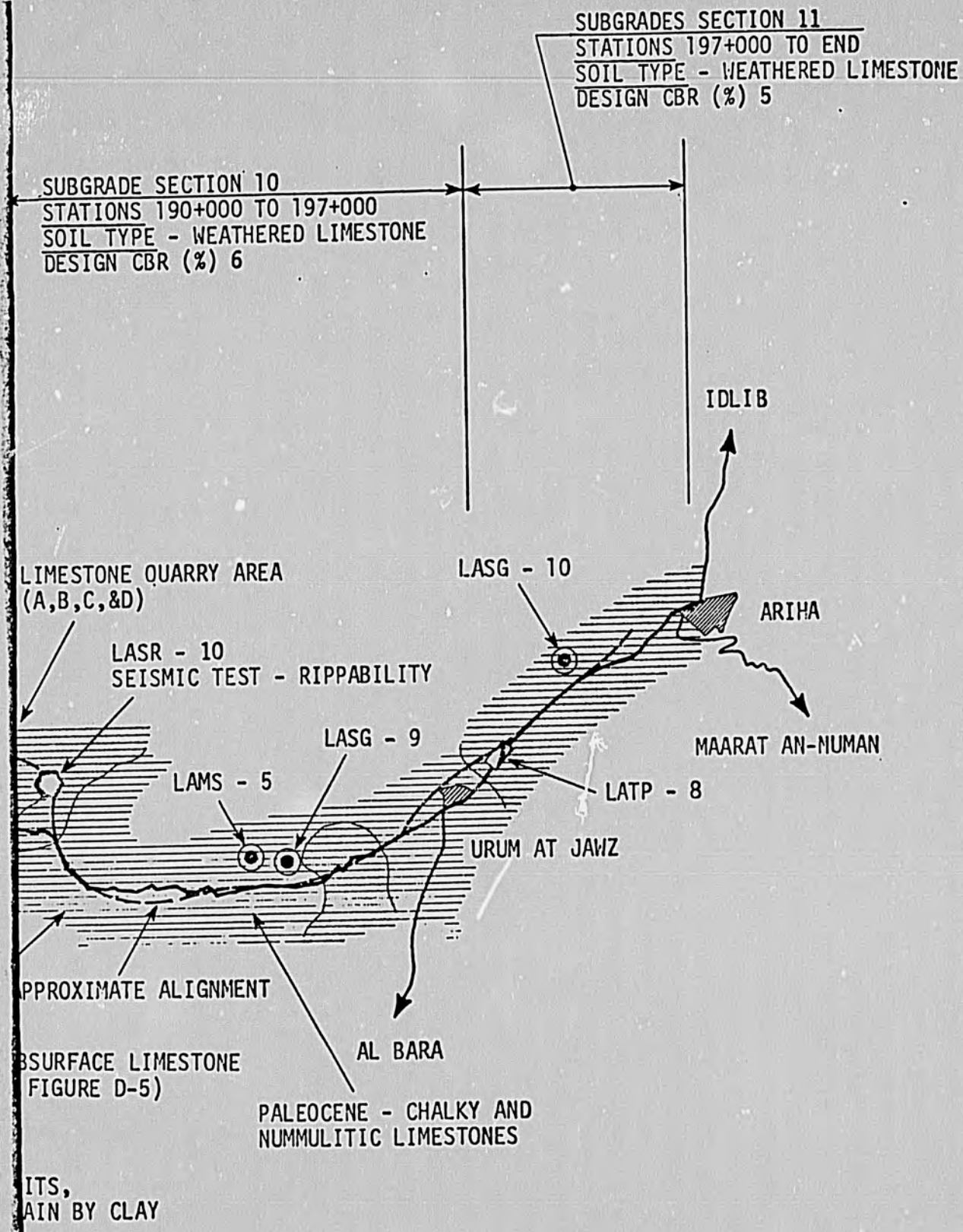


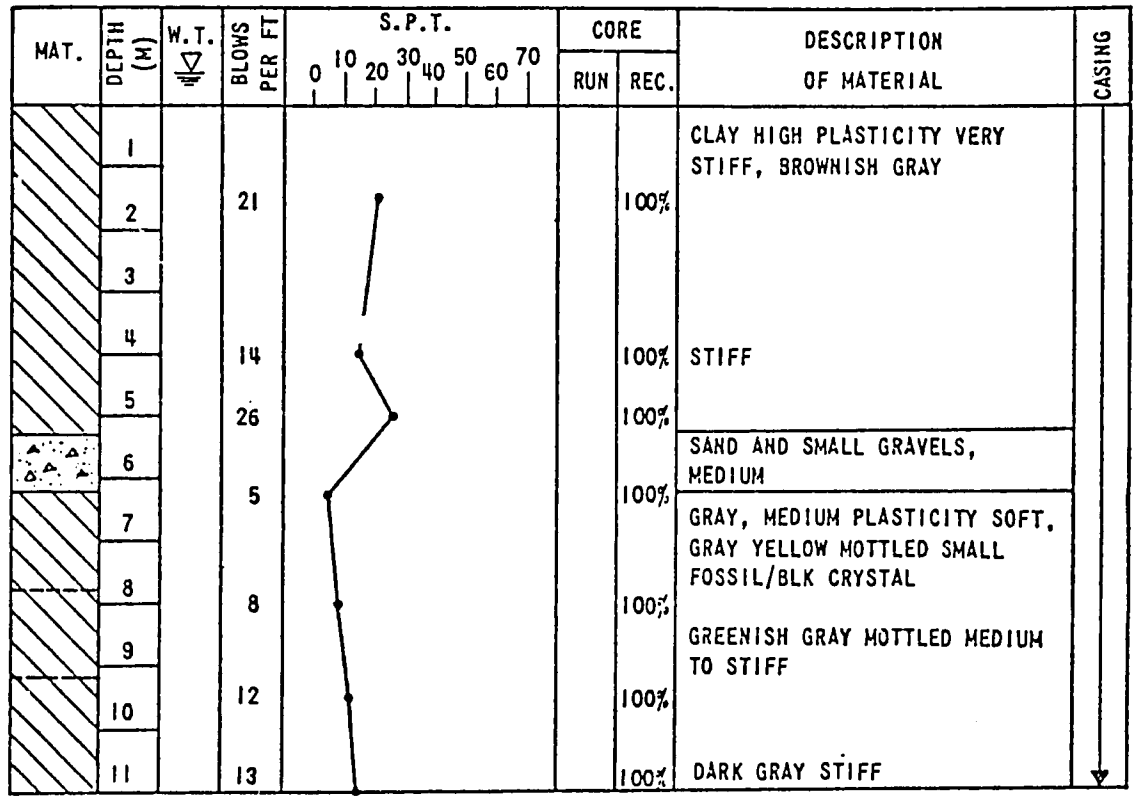
PLATE 3

SOILS AND MATERIALS PLAN

(3)

LYON

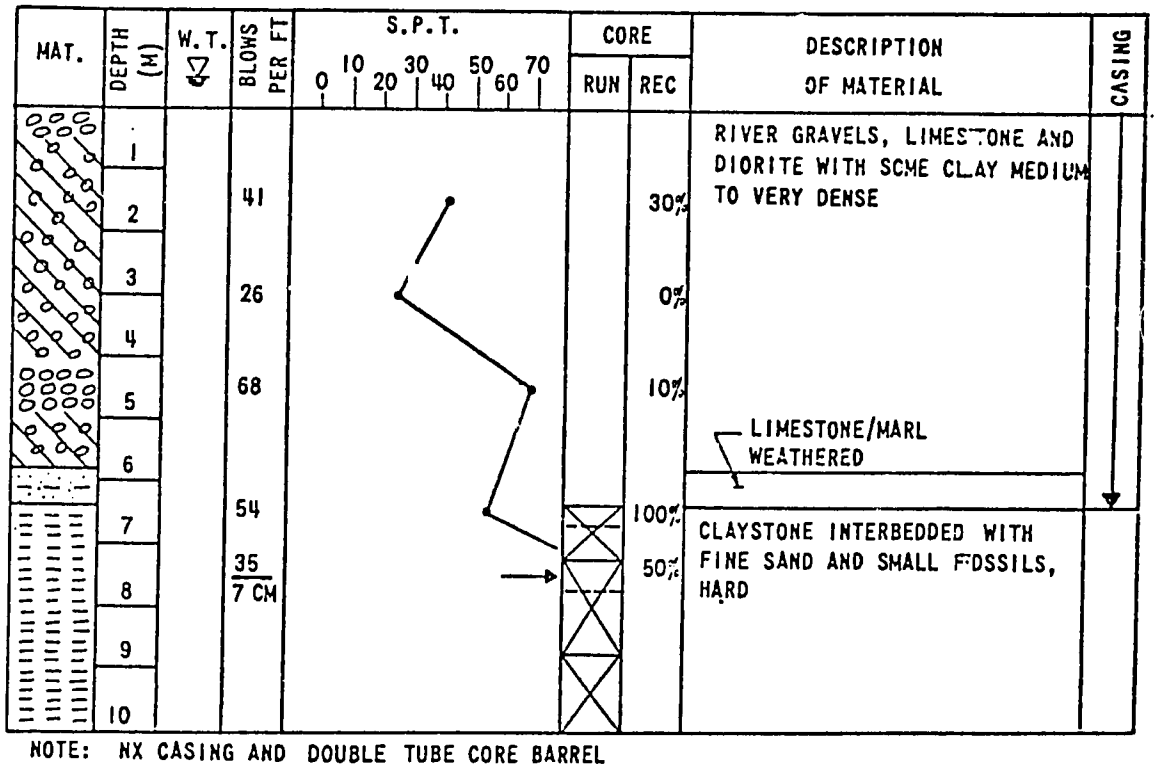
LAB-1



NOTE: NX CASING

Plate 4

LAB-2



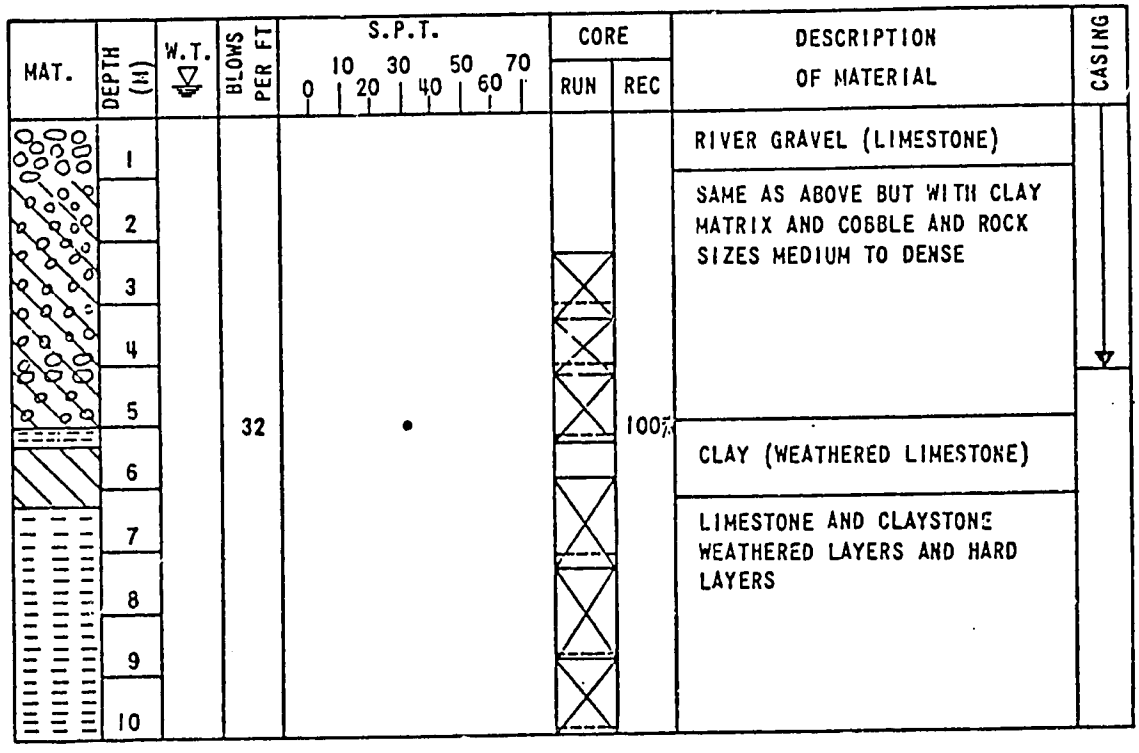
NOTE: NX CASING AND DOUBLE TUBE CORE BARREL

PLATE 4 A

BORING LOGS LAB-1 & LAB-2

LYON

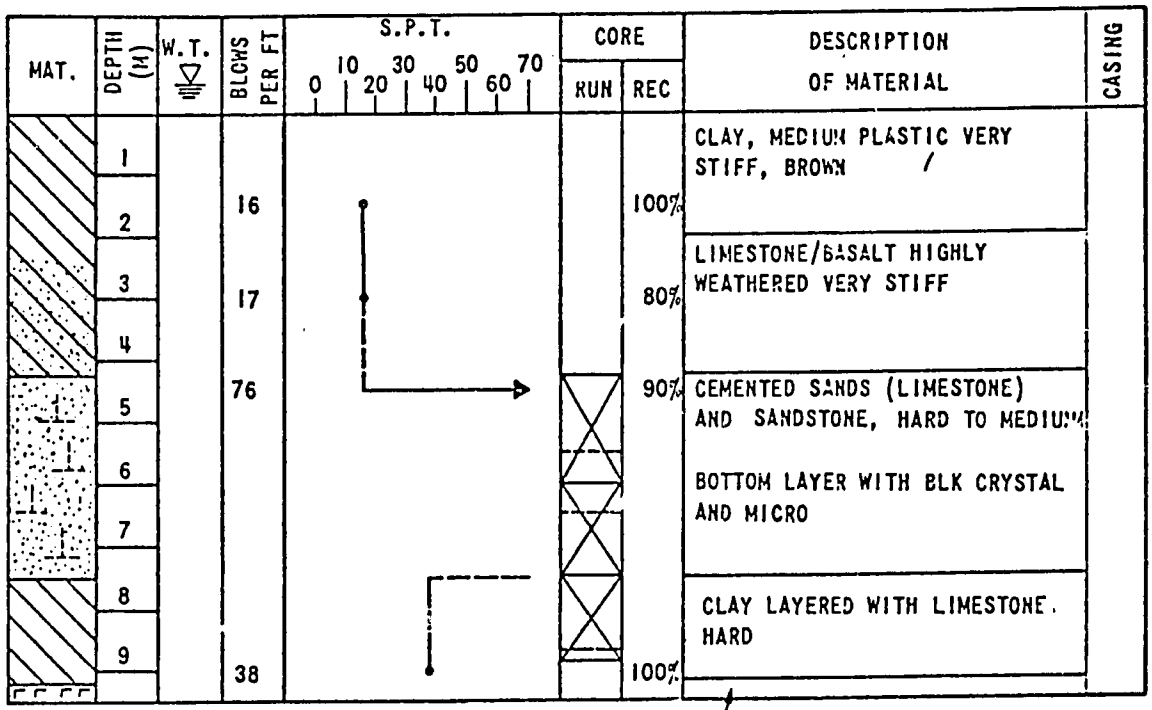
LAB-3



NOTE: 1. NX CASING AND DOUBLE TUBE CORE BARREL.
2. POOR CORE RECOVERY DUE TO MALFUNCTION OF CORE BARREL.

Plate 5

LAB-4



NOTE: NX CASING AND DOUBLE TUBE CORE BARREL.

PLATE 5 A

BORING LOGS LAB-3 & LAB-4

LYON

RAINFALL
INTENSITY-FREQUENCY-DURA

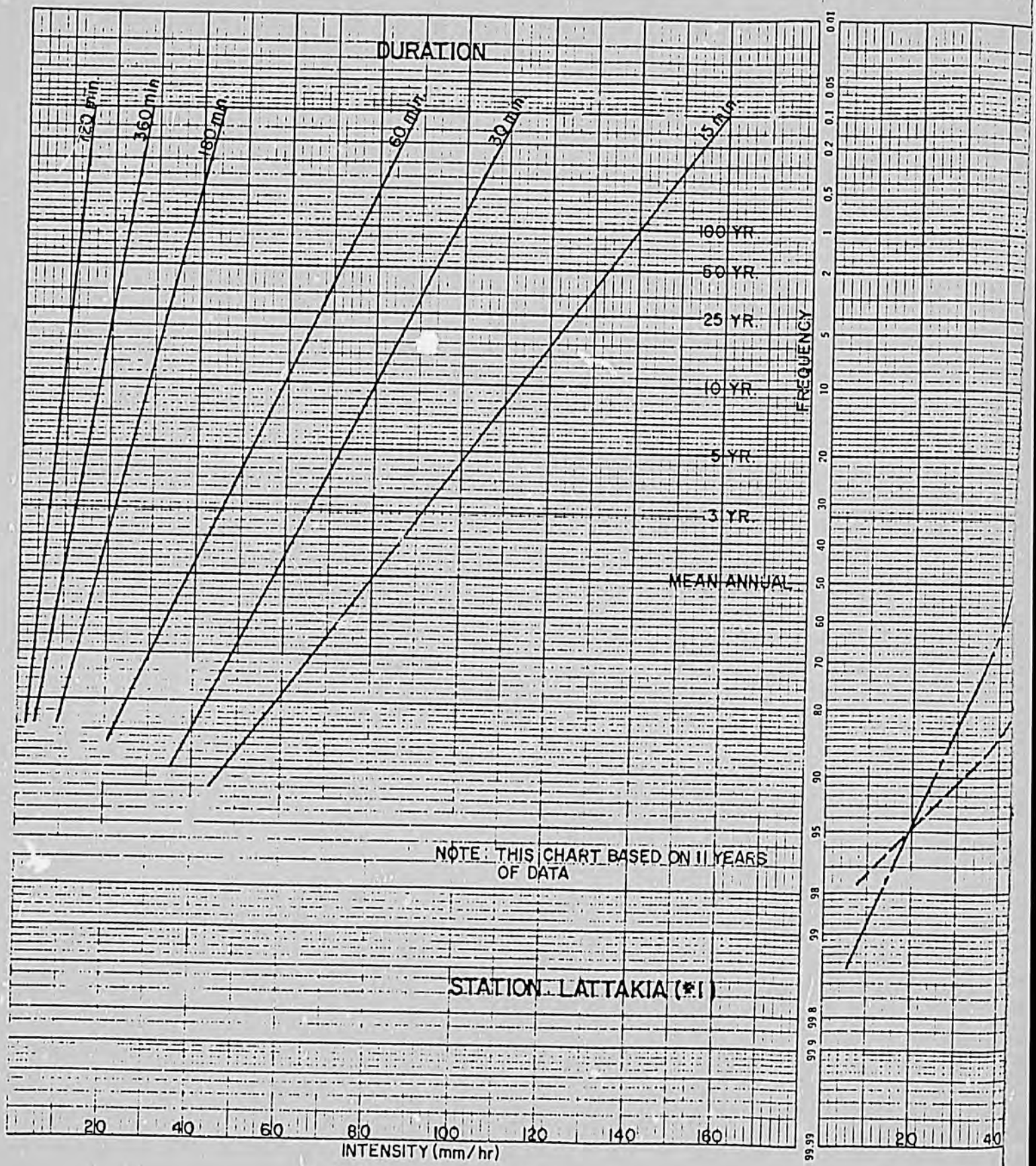


Plate 6

(1)

RAINFALL
INTENSITY - FREQUENCY - DURATION

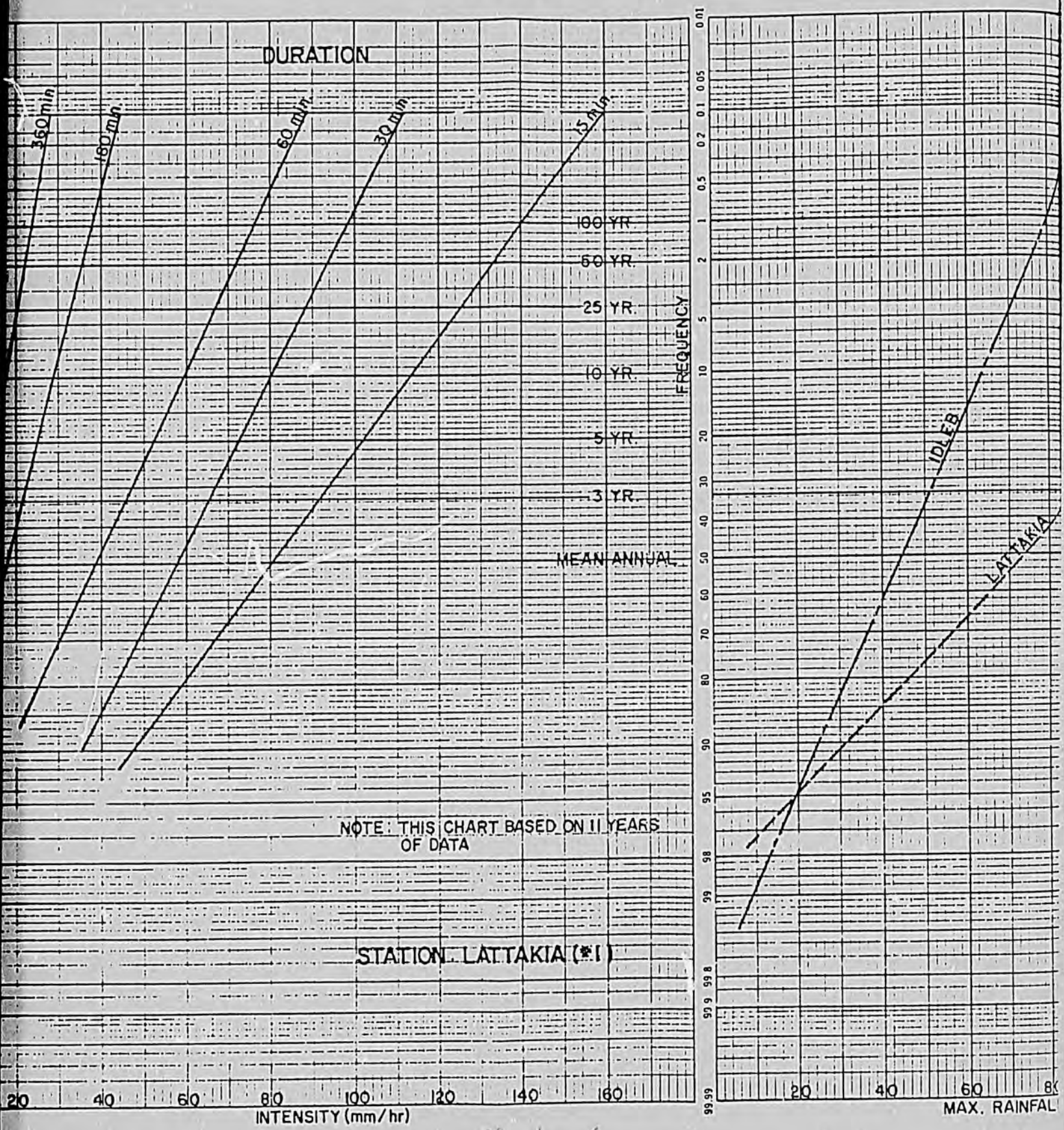


Plate 6

(2)

NFALL
QUENCY-DURATION

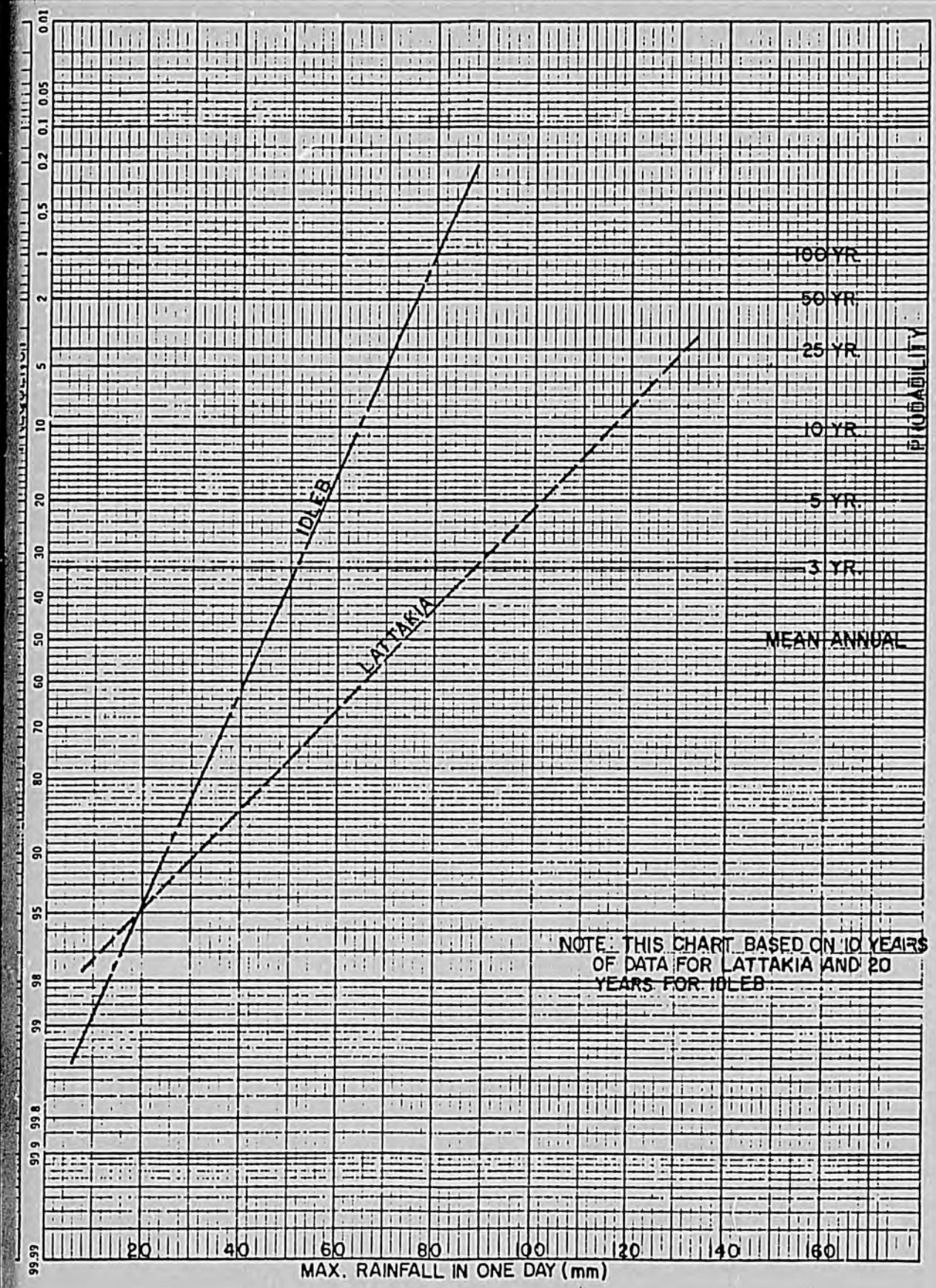
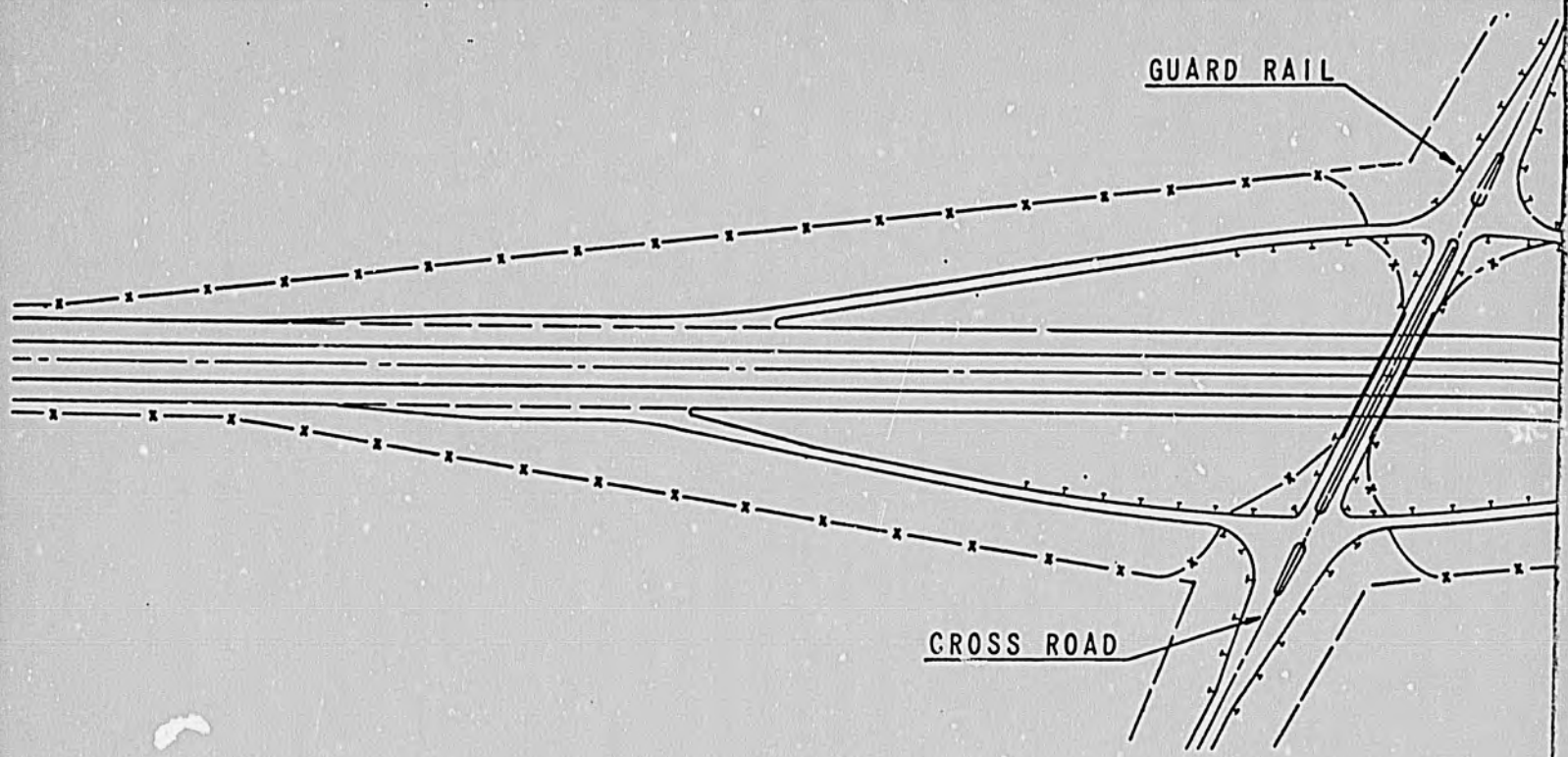


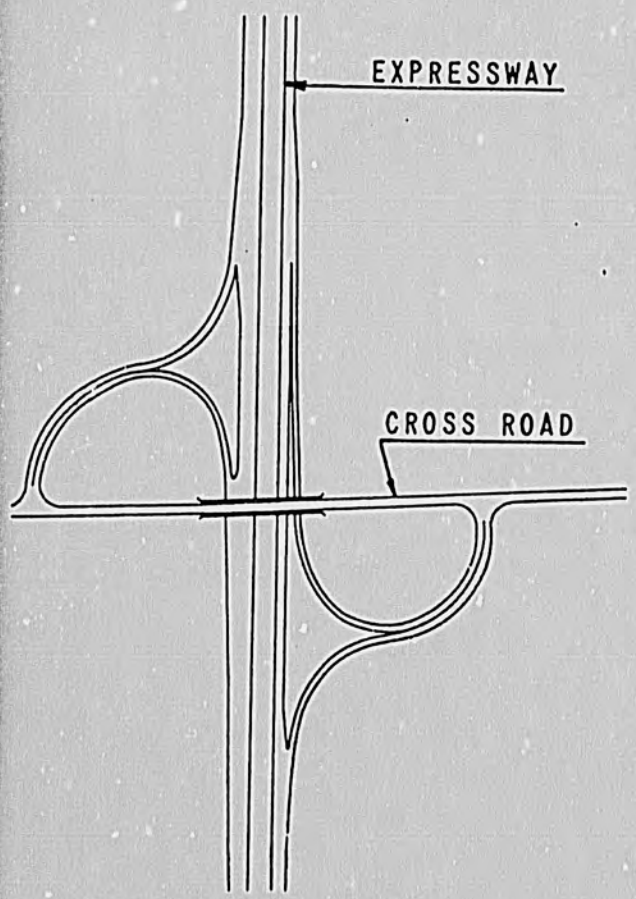
PLATE 6
RAINFALL CURVE

(3)

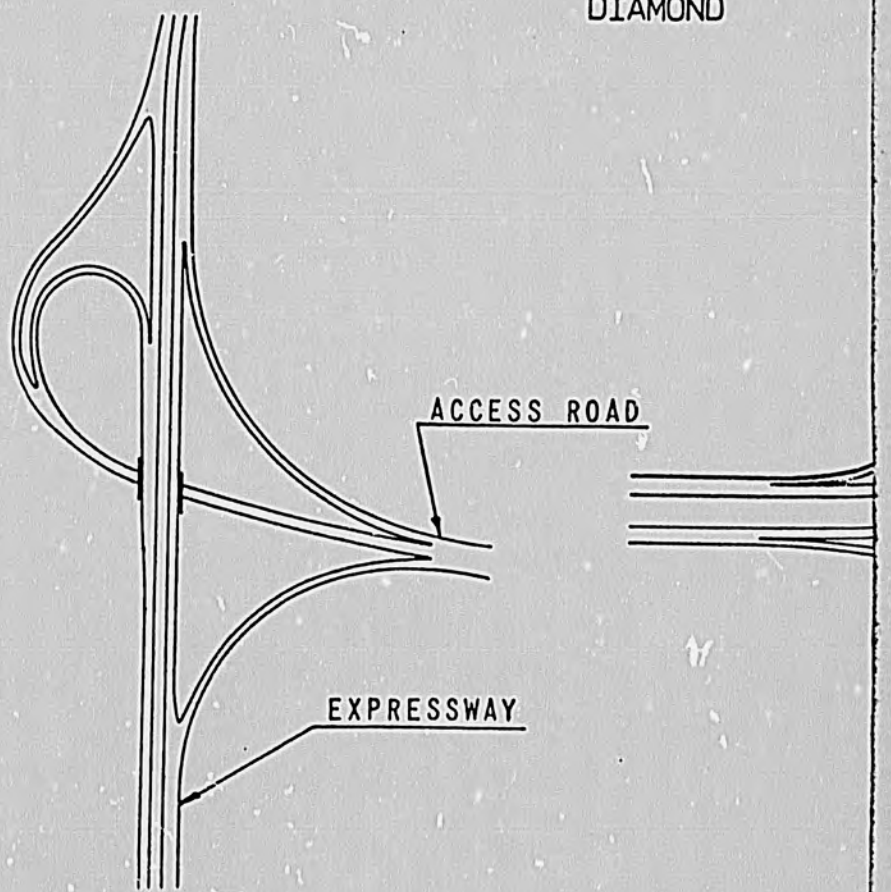
LYON



DIAMOND



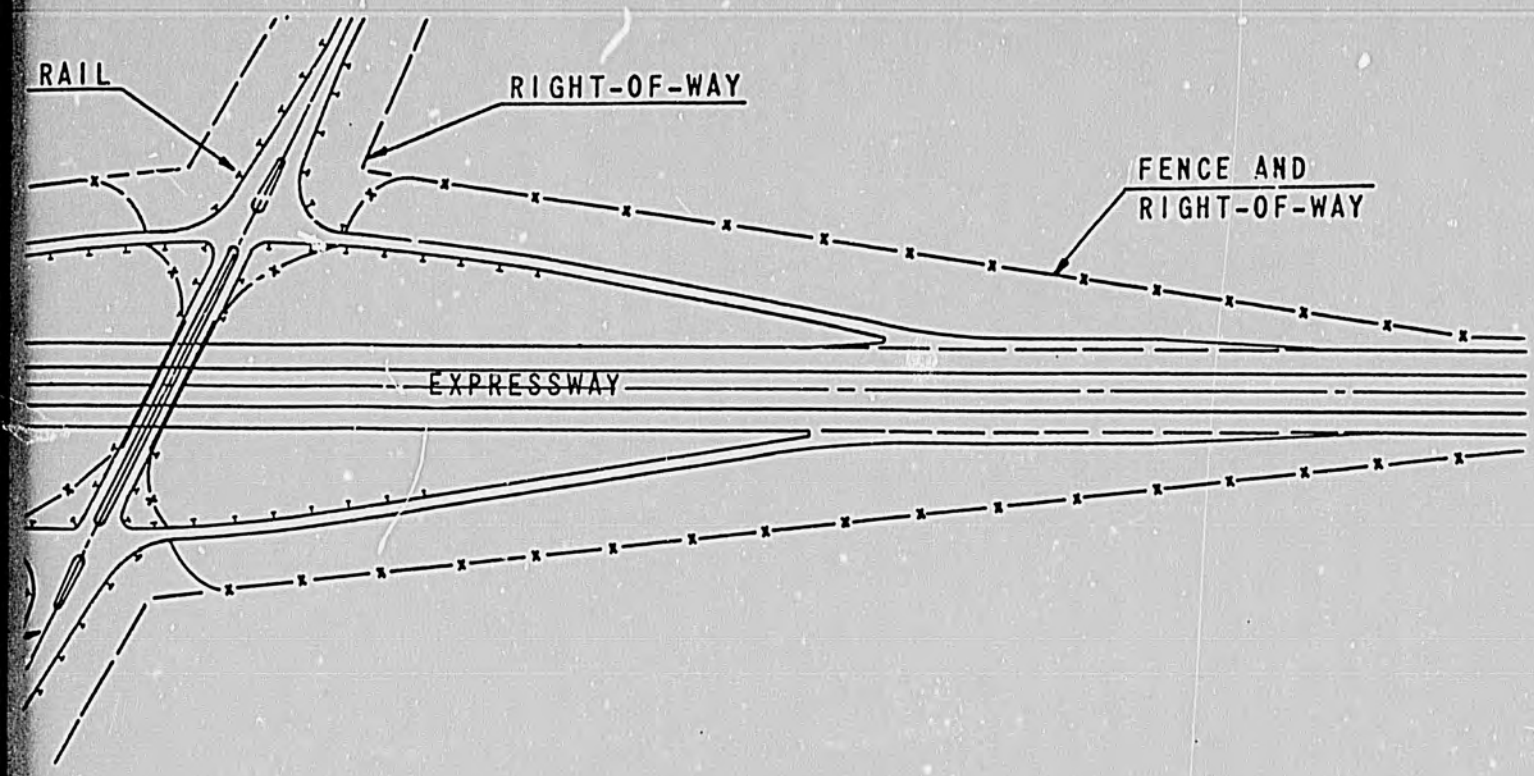
2-QUADRANT CLOVERLEAF



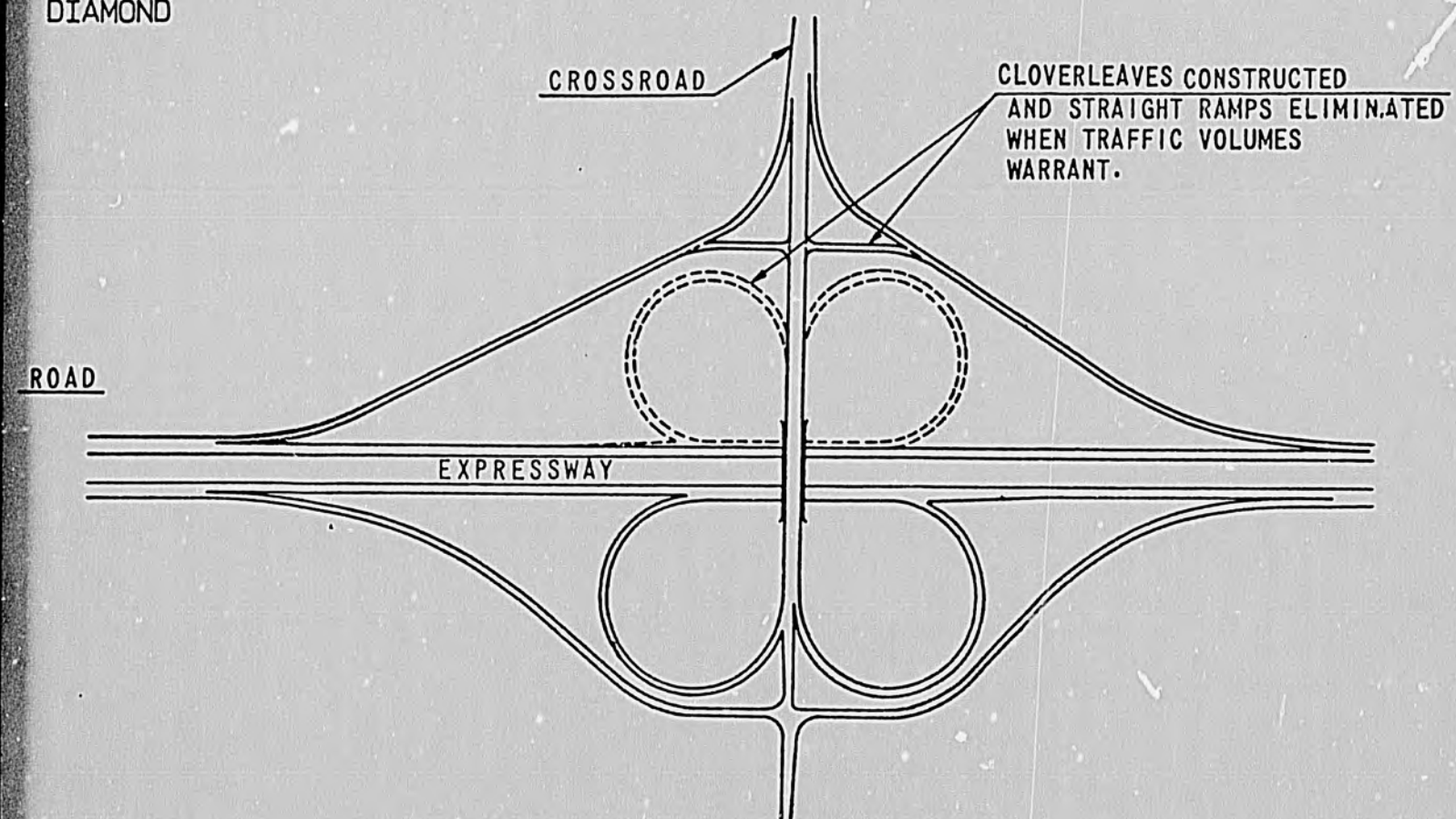
T-TYPE

Plate 7

(1)



DIAMOND



CLOVERLEAF-STAGE CONSTRUCTION

PLATE 7

INTERCHANGE CONFIGURATIONS

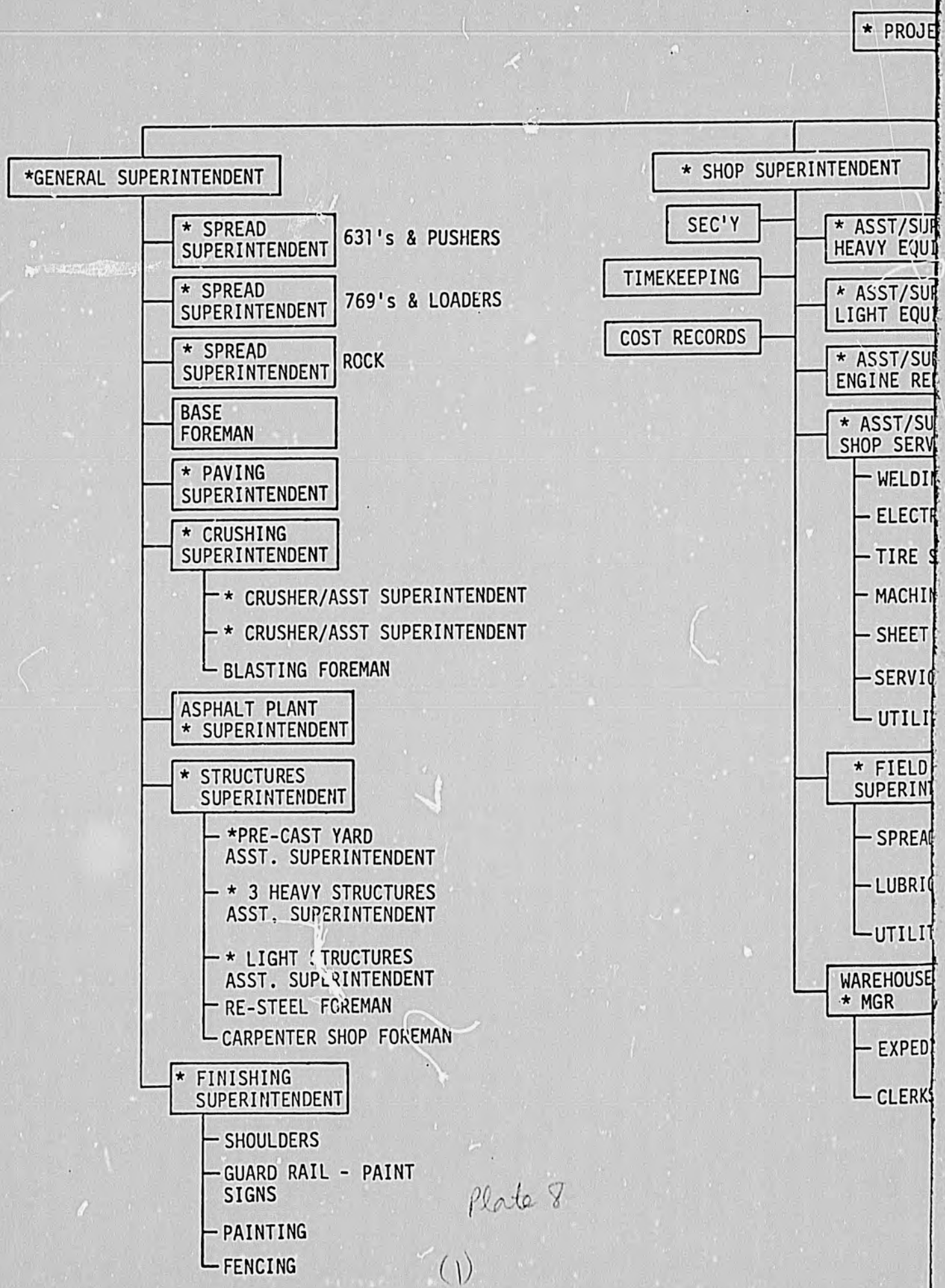


Plate 8

(1)

* EXPATRIATE PERSONNEL

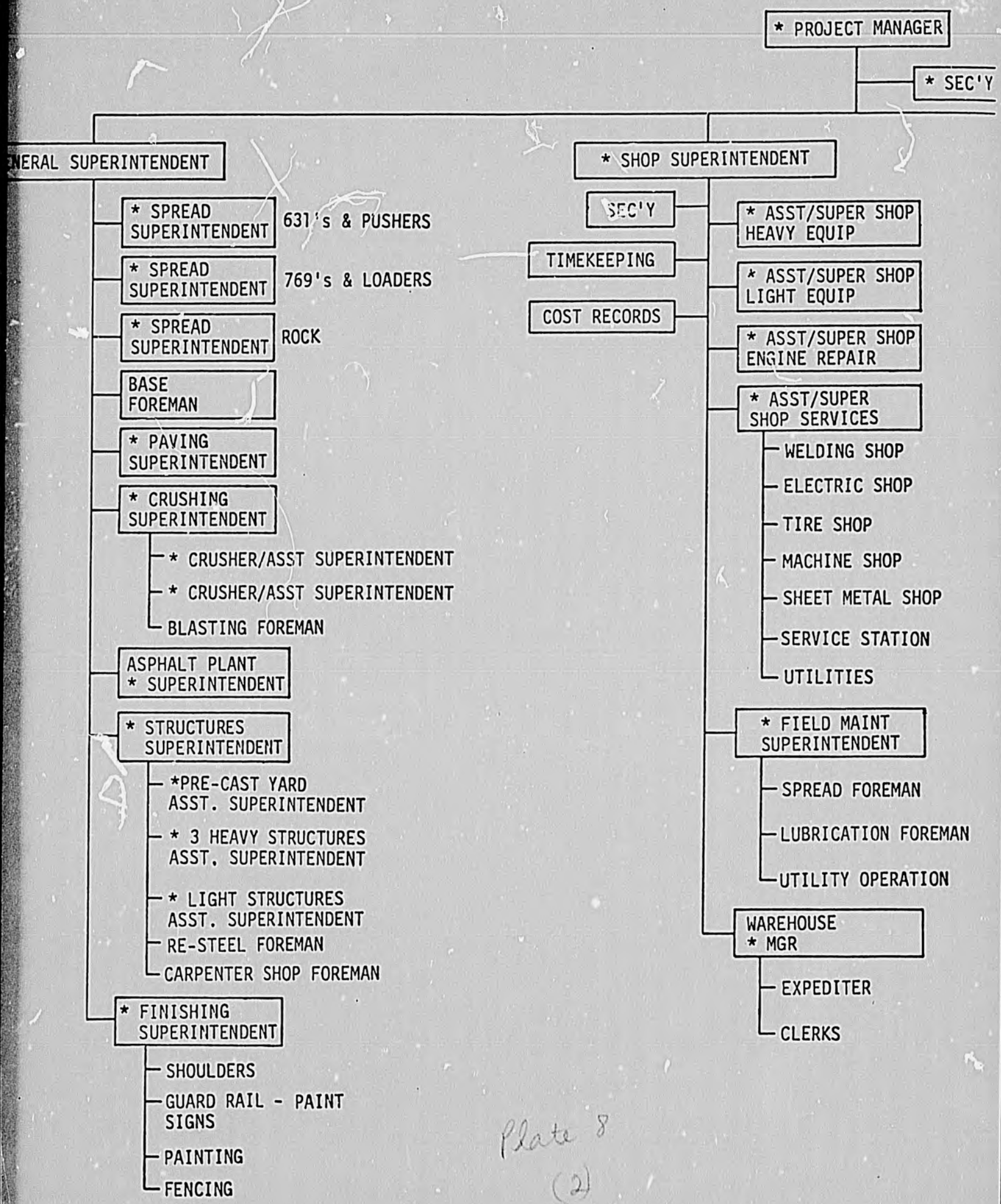


Plate 8

(2)

PATRIATE PERSONNEL

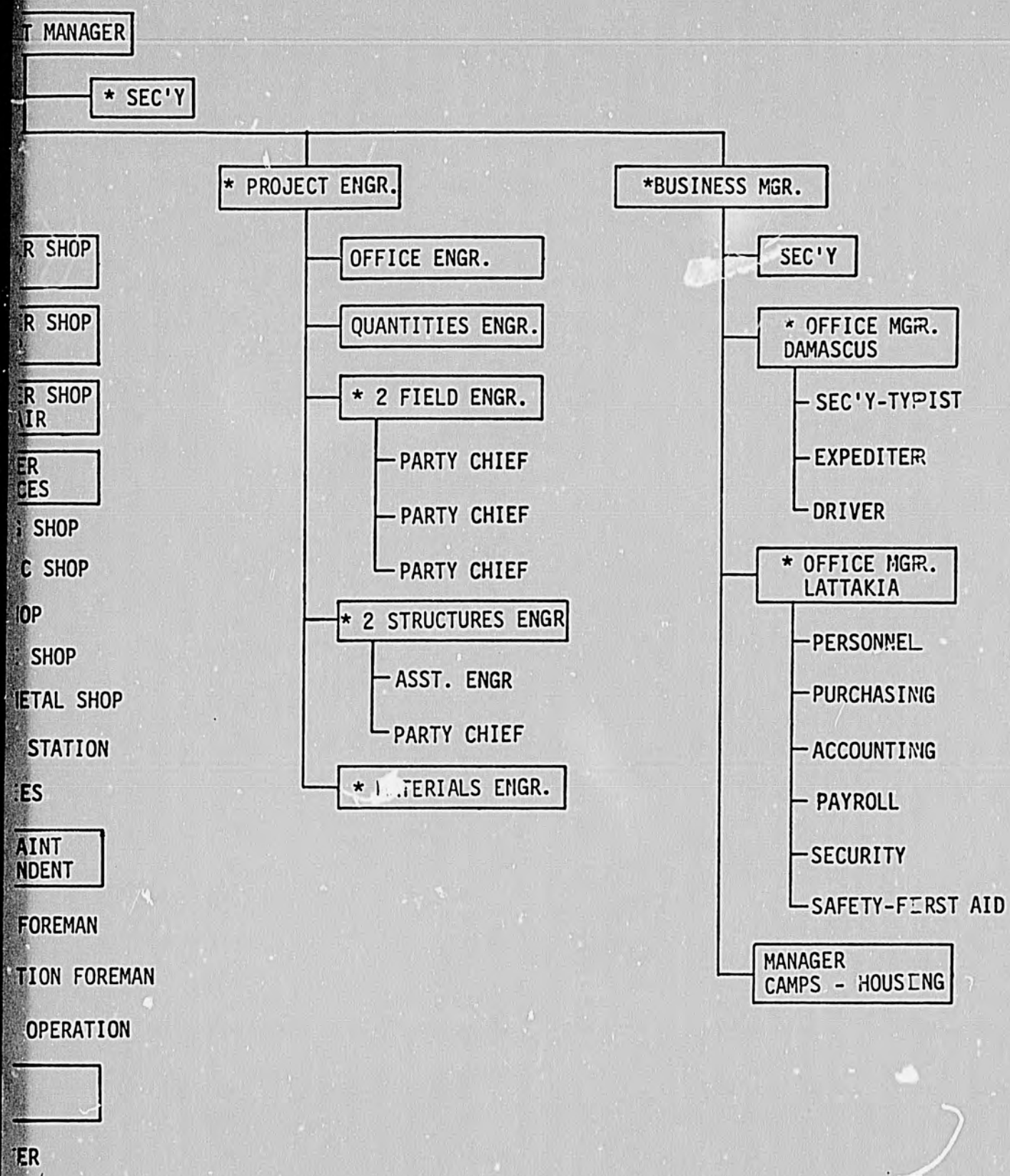
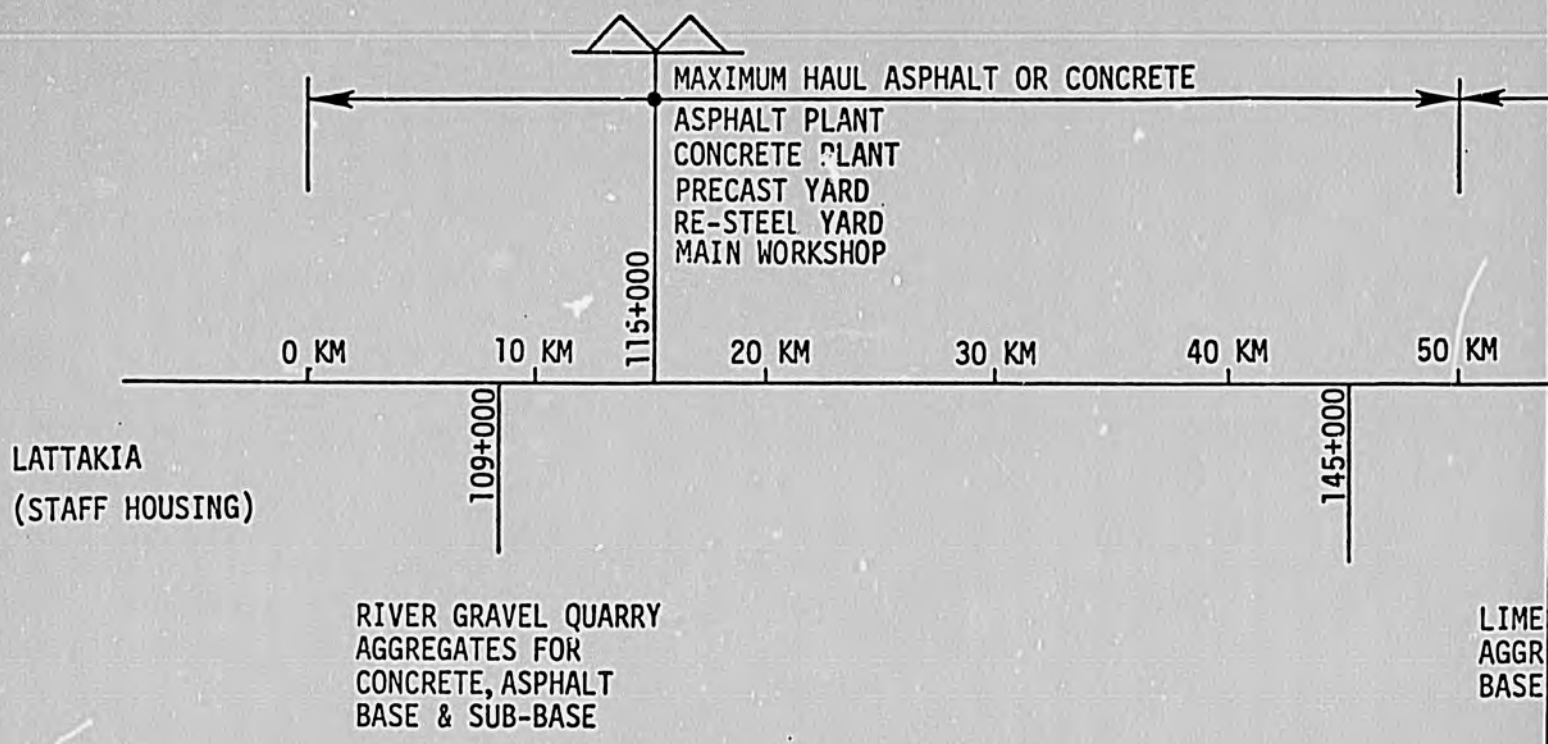


PLATE 8

PROPOSED CONTRACTORS ORGANIZATIONAL CHART

LYON


MAXIMUM HAUL ASPHALT OR CONCRETE
ASPHALT PLANT
CONCRETE PLANT
PRECAST YARD
RE-STEEL YARD
MAIN WORKSHOP
115+000
0 KM
10 KM
20 KM
30 KM
40 KM
50 KM
LATTAKIA
(STAFF HOUSING)
109+000
145+000
RIVER GRAVEL QUARRY
AGGREGATES FOR
CONCRETE, ASPHALT
BASE & SUB-BASE
LIME
AGGR
BASE

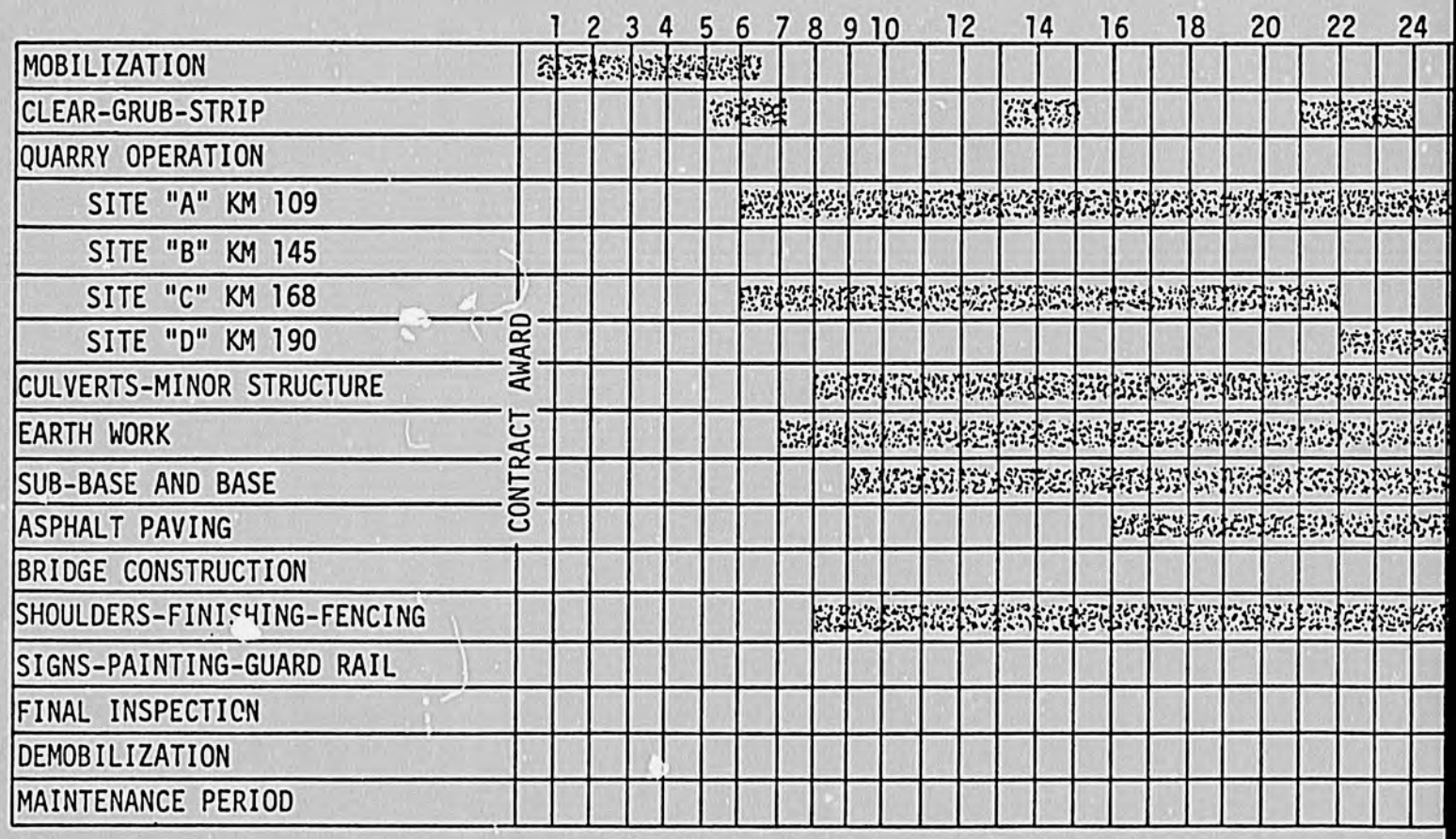
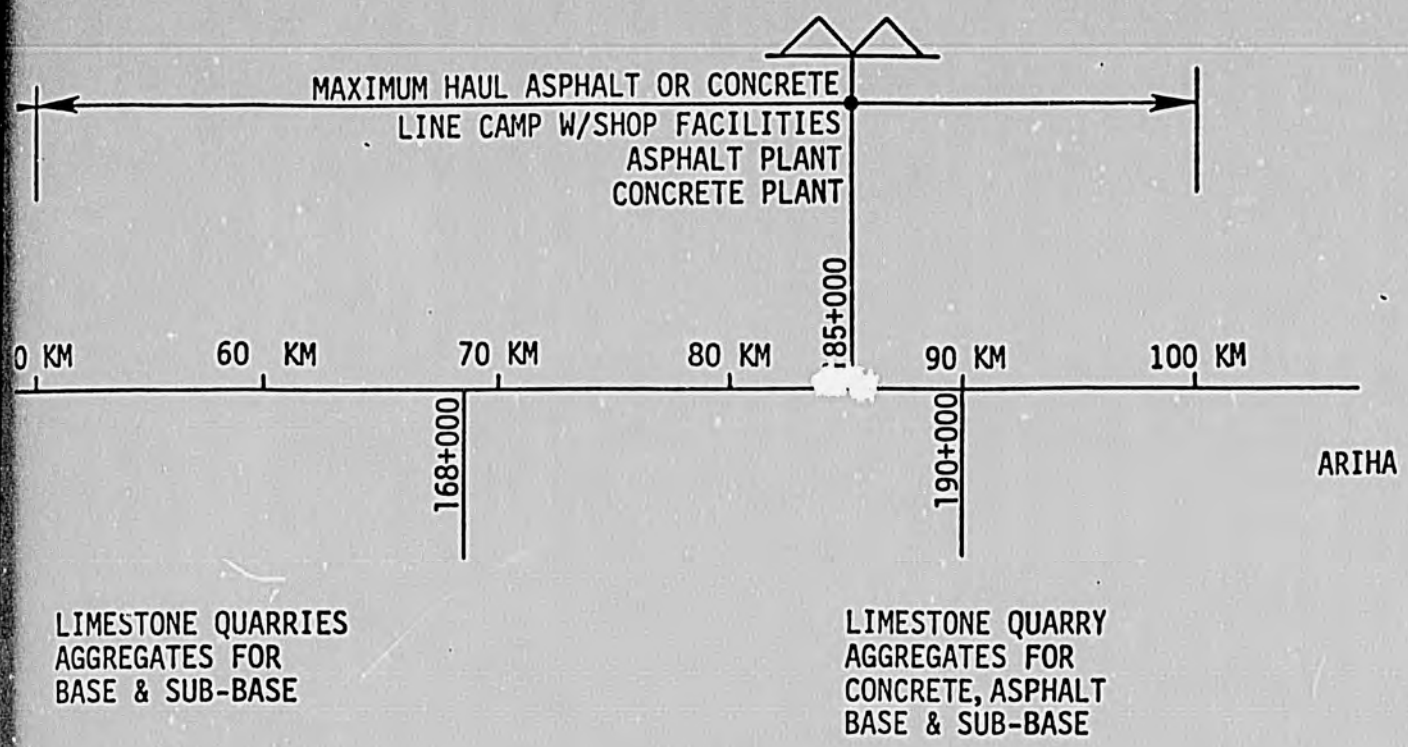

1 2 3 4 5 6 7 8 9 10 12 14 16 18 20 22 24
MOBILIZATION
CLEAR-GRUB-STRIP
QUARRY OPERATION
SITE "A" KM 109
SITE "B" KM 145
SITE "C" KM 168
SITE "D" KM 190
CULVERTS-MINOR STRUCTURE
EARTH WORK
SUB-BASE AND BASE
ASPHALT PAVING
BRIDGE CONSTRUCTION
SHOULDERS-FINISHING-FENCING
SIGNS-PAINTING-GUARD RAIL
FINAL INSPECTION
DEMOBILIZATION
MAINTENANCE PERIOD
CONTRACT AWARD

Plate 9

1



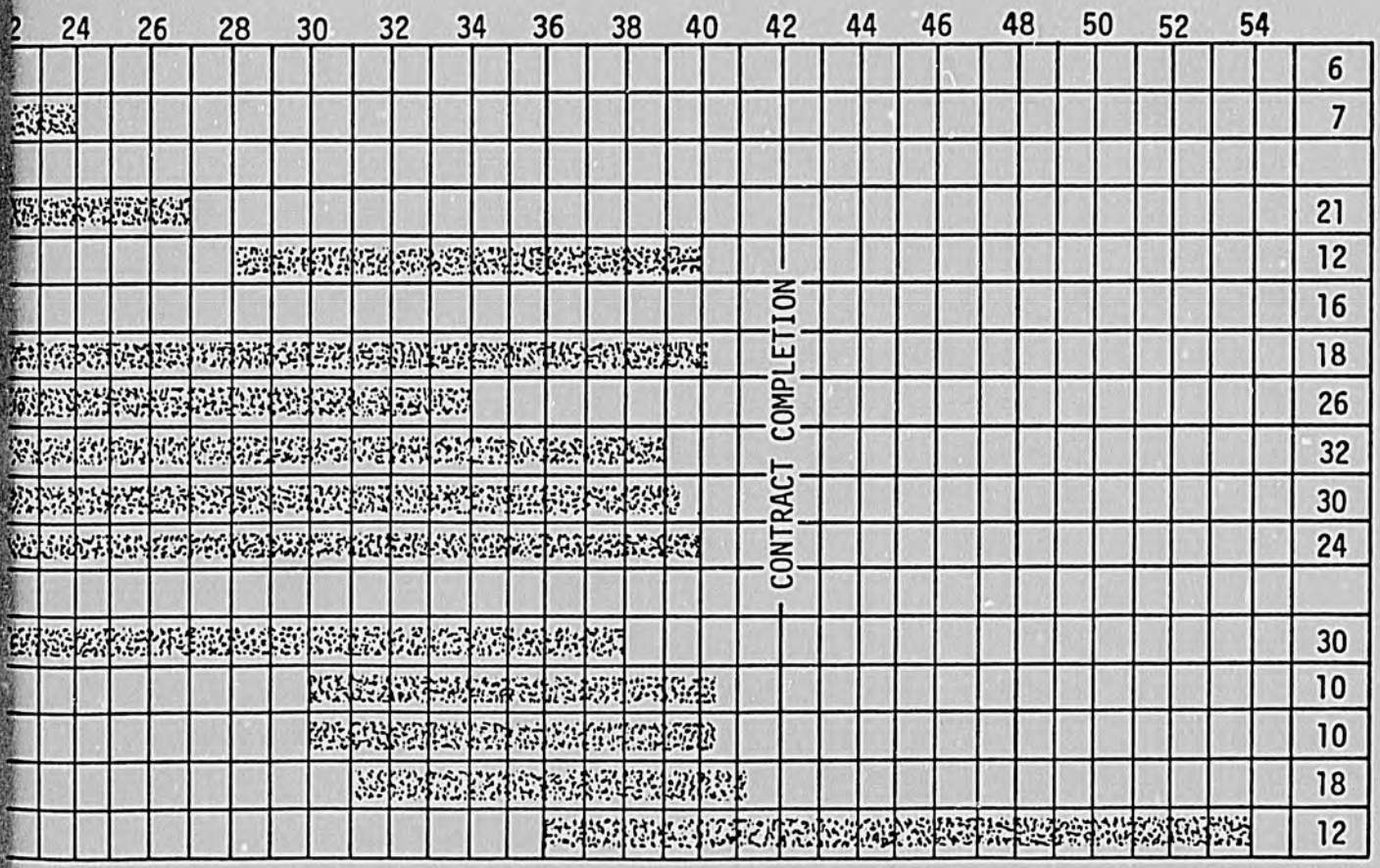
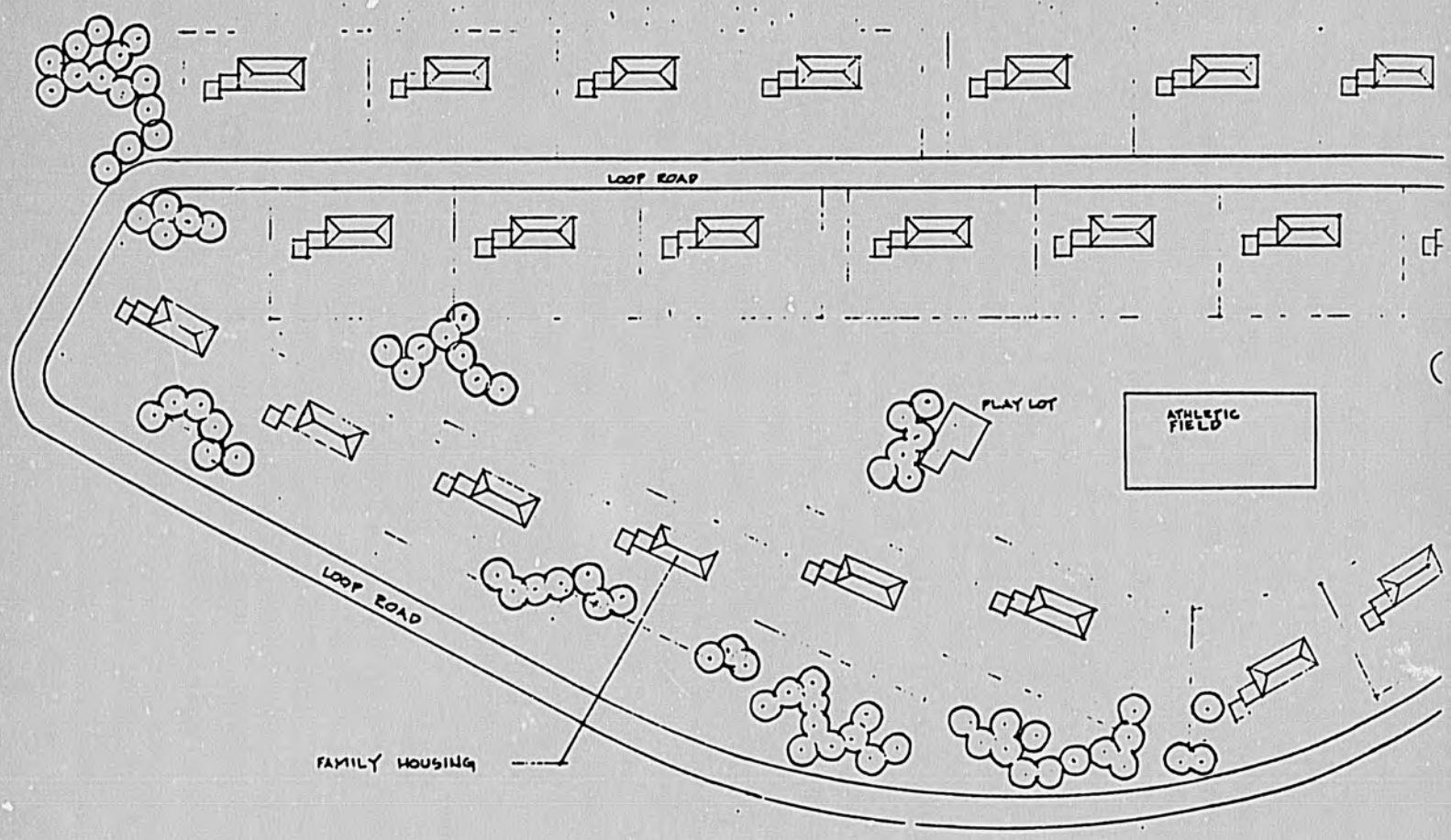


PLATE 9

PROPOSED CONSTRUCTION SCHEDULE

LYON



SITE PLAN

HIGHWAY

Plate 10

(1)

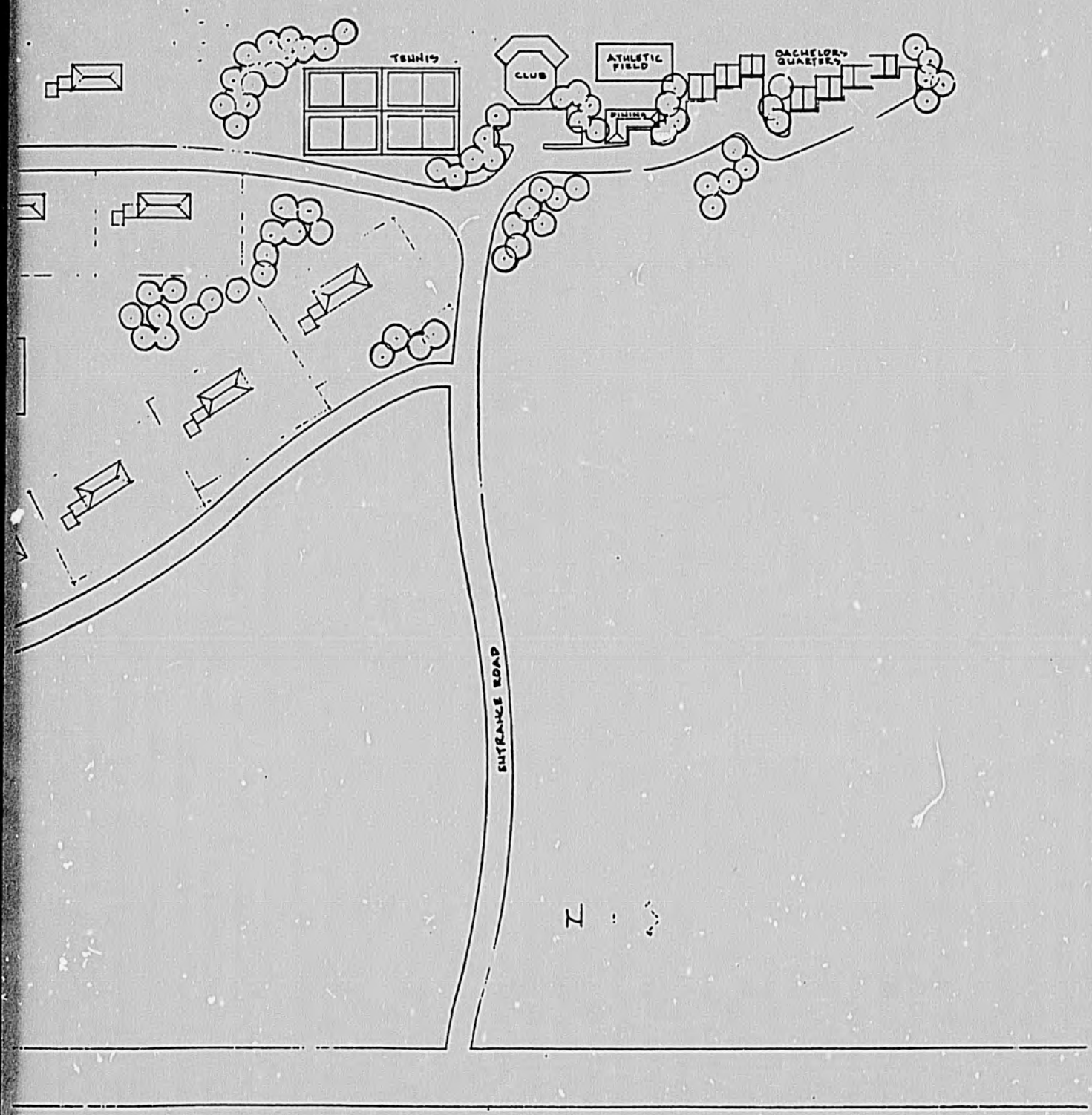
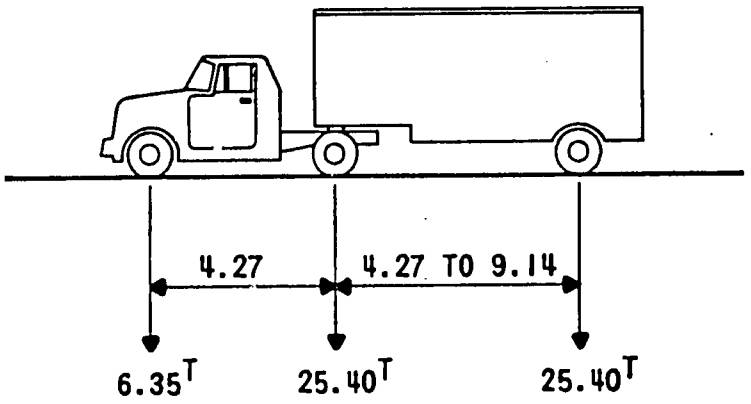


PLATE 10 (2)

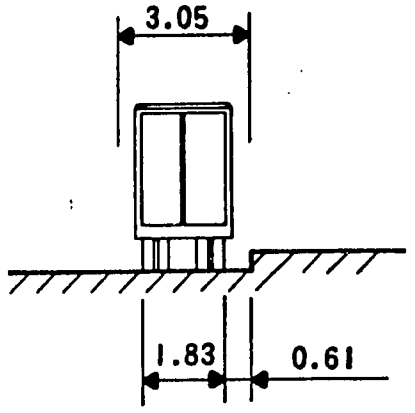
PROPOSED CONTRACTOR'S AND ENGINEER'S HOUSING

LYDN

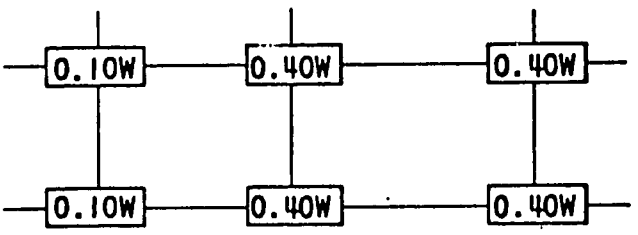
AASHTO LOADING

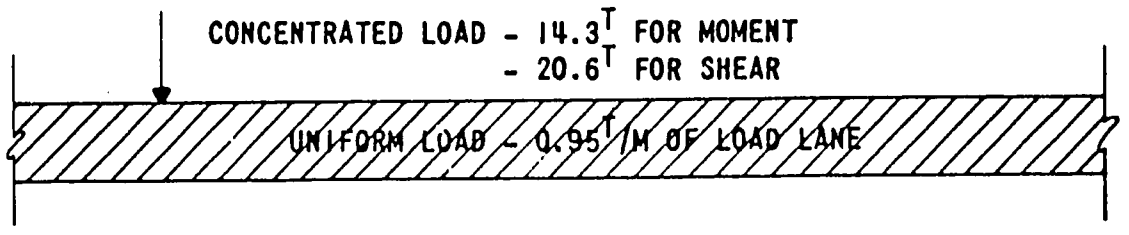


LONGITUDINAL



TRANSVERSE

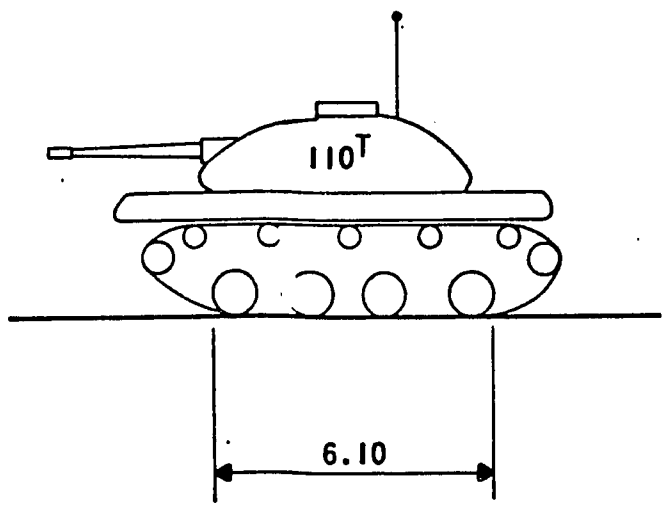


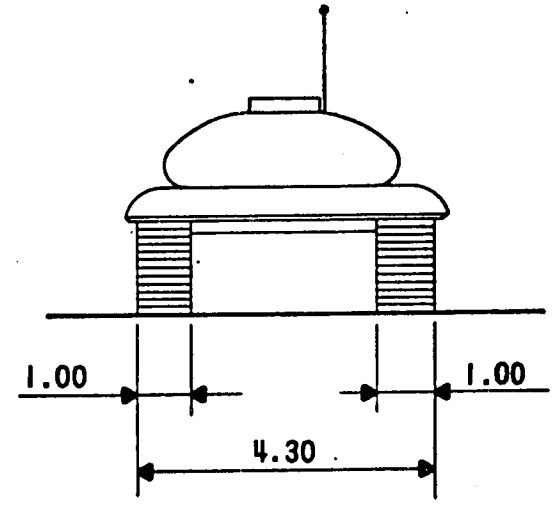


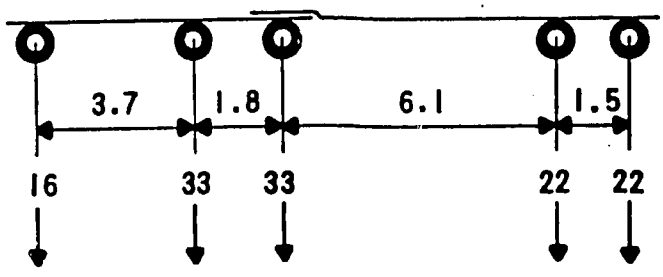
TRUCK TRAIN LOADING

MILITARY LOADING

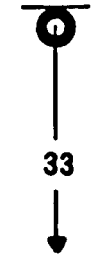
CLASS 120



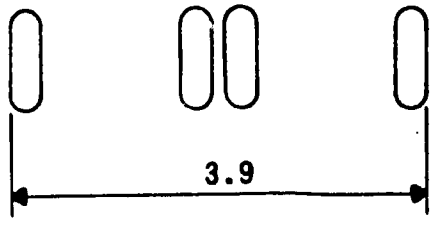




MULTI-AXLE



SINGLE AXLE



BOGIE AXLE

PLATE 11 (2)

PROPOSED DESIGN LOADING FOR STRUCTURES

EARTHQUAKE DATA FILE (U.S. DEPARTMENT OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NOTES OF STRONG EARTHQUAKES IN AREA

April 8, 1951	Six killed, 10 injured and 13 buildings destroyed at Iskendron, Turk
October 22, 1952	Twenty killed, 44 injured and extensive property damage at Adana, Tu
January 1, 1975	Damage in the Hatay, Turkey area.

MODIFIED MERCALLI INTENSITY
(Abridged)

I. Not felt except by a very few under especially favorable circumstances.

II. Felt only by a few persons at rest, especially on upper floors of buildings. Delicatel

III. Felt quite noticeably indoors, especially on upper floors of buildings, but many people Vibration like a passing truck. Duration estimated.

IV. During the day felt indoors by many, outdoors by few. At night, some awakened. Dishes striking building. Standing motorcars rocked noticeably.

V. Felt by nearly everyone, many awakened. Some dishes, windows, etc., broken; a few inst poles, and other tall objects sometimes noticed. Pendulum clocks may stop.

VI. Felt by all; many frightened and run outdoors. Some heavy furniture moved; a few inst

VII. Everybody runs outdoors. Damage negligible in buildings of good design and constructi built or badly designed structures; some chimneys broken. Noticed by persons drivin

VIII. Damage slight in specially designed structures; considerable in ordinary substantial b thrown out of frame structures. Fall of chimneys, factory stacks, columns, monument Changes in well water. Persons driving motorcars disturbed.

*IX Damage considerable in specially designed structures; well-designed frame structures th shifted off foundations. Ground cracked conspicuously. Underground pipes broken.

X. Some well-built wooden structures destroyed; most masonry and frame structures destroy from river banks and steep slopes. Shifted sand and mud. Water splashed (slopped)

XI. Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures slips in soft ground. Rails bent greatly.

XII. Damage total. Waves seen on ground surfaces. Lines of slight and level distorted. O

*Only intensity listed is IX on the Modified Mercalli Scale for the earthquake on October 22

Plate 12

(1)

ATION, ENVIRONMENTAL DATA SERVICE, NATIONAL GEOPHYSICAL AND SOLAR-TERRESTRIAL DATA CENTER)

AREA 34-37 N., 35-38 E.

, Turkey.

na, Turkey.

NSITY SCALE OF 1931
ed)

icately suspended objects may swing.

people do not recognize it as an earthquake. Standing motorcars may rock slightly.

Dishes, windows, doors disturbed; walls make creaking sound. Sensation like heavy truck

w instances of cracked plaster; unstable objects overturned. Disturbances of trees,

instances of fallen plaster or damaged chimneys. Damage slight.

ruction; slight to moderate in well-built ordinary structures; considerable in poorly
riving motorcars.

ial buildings, with partial collapse; great in poorly built structures. Panel walls
uments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts.

res thrown out of plumb; great in substantial buildings, with partial collapse. Buildings
en.

stroyed with their foundations; ground badly cracked. Rails bent. Landslides considerable
ped) over banks.

sures in ground. Underground pipelines completely out of service. Earth slumps and land

d. Objects thrown upward into air.

er 22, 1952.

PLATE 12 (2)
EARTHQUAKE DATA FILE
LYONS

EARTHQUAKE DATA FILE (U.S. DEPARTMENT OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINI

SOURCE	YEAR	MO	DA	HR	MN	SEC	LAT	LONG	DEPTH (KM)	MAG BODY	MAG SURF
G-R	1928	08	23	06	15	55.0	36.500N	036.000E			
G-R	1936	06	14	17	01	30.0	37.000N	035.500E			
ISS	1951	04	08	21	38	05.0	36.600N	036.100E			
BCI	1951	07	12	06	51	12.0	36.500N	036.500E			
ISS	1951	08	05	15	12	07.0	34.200N	036.000E			
CGS	1952	10	22	17	00	38.0	36.500N	035.500E			
ISS	1953	03	24	21	17	32.0	37.000N	037.000E			
CGS	1964	04	23	14	23	43.2	36.900N	037.900E	057	4.80 MB	
CGS	1964	11	17	22	50	53.7	36.700N	035.200E	037	4.50 MB	
CGS	1965	04	01	01	11	36.4	36.000N	035.800E	042	4.30 MB	
CGS	1966	06	26	13	17	00.2	37.000N	035.900E	045	4.50 MB	
CGS	1968	03	26	19	37	33.7	34.200N	035.500E	033	4.90 MB	
CGS	1969	05	24	11	49	27.0	36.942N	035.418E	043	4.30 MB	
GS	1974	06	12	10	19	51.1*	34.040N	037.692E	033N	4.60 MB	
GS	1975	01	01	00	29	56.8	36.581N	036.463E	015	4.80 MB	
GS	1976	07	30	07	23	24.9*	36.767N	035.893E	041	4.2 MB	

NUMBER OF HITS 1

PREPARED BY THE NATIONAL GEOPHYSICA
ENVIRONMENTAL DATA SERVICE - NATIONAL

78/09/25

RN Flinn - Engdahl Regions
366 - Turkey
374 - Jordan, Syria

CE - Cultural Effects - C, D, F, or H indicates reported Casualties, Damage or Felt infor
The notations listed here provide a brief summary of the earthquake effects on
Casualty, damage, or felt reports associated with a particular earthquake do n
were noted at the epicentral position. Especially with offshore earthquakes,
be reported at some distance from the source of the shock. An "F" in this pos
intensity (position 49) is likely associated with an intensity of I-III on the

MAR-DG - Marsden 10° square and 1° subsquare.

SOURCE -
G-R - Gutenberg - Richter
ISS - International Seismological Summary
BCI - Bureau Central International de Seismologie
CGS - Coast & Geodetic Society
GS - U.S. Geological Survey

Plate

13 (1)

SPHERIC ADMINISTRATION, ENVIRONMENTAL DATA SERVICE, NATIONAL GEOPHYSICAL AND SOLAR-TERRESTRIAL DATA

MAGNITUDES				INT	INT	PHENOM						
BODY	SURF	OTHER	LOCAL	MAP	MAX	DISVNO	RN	CE	Q/S	MAR	DG	DIST (KM)
		5.60 PAS	(Pasadena, Ca., U.S.A.)				374			141	66	
		5.60 PAS	(Pasadena, Ca., U.S.A.)				366			141	75	
		6.00 PRA	(Prague, Czechoslovakia)				374	C		141	66	
							374			141	66	
							374	F		141	46	
		5.00 ROM	(Rome, Italy)		IX		366	C		141	65	
							366	F		141	77	
4.80 MB							374		017	141	67	
4.50 MB							366		013	141	65	
4.30 MB							366		016	141	65	
4.50 MB							366	F	020	141	75	
4.90 MB							374		017	141	45	
4.30 MB							366	F	025	141	65	
4.60 MB							374	F	12	141	47	
4.80 MB							374	D	38	141	66	
4.2 MB							366		16	141	65	

BER OF HITS 16

NAL GEOPHYSICAL AND SOLAR-TERRESTRIAL DATA CENTER
ICE - NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

or Felt information, or earthquake Heard.
ake effects on population and buildings.
arthquake do not imply that the effects
earthquakes, the maximum intensity may
F" in this position with no accompanying
f I-III on the Modified Mercalli Scale.

13 (2)

PLATE 13
EARTHQUAKE DA

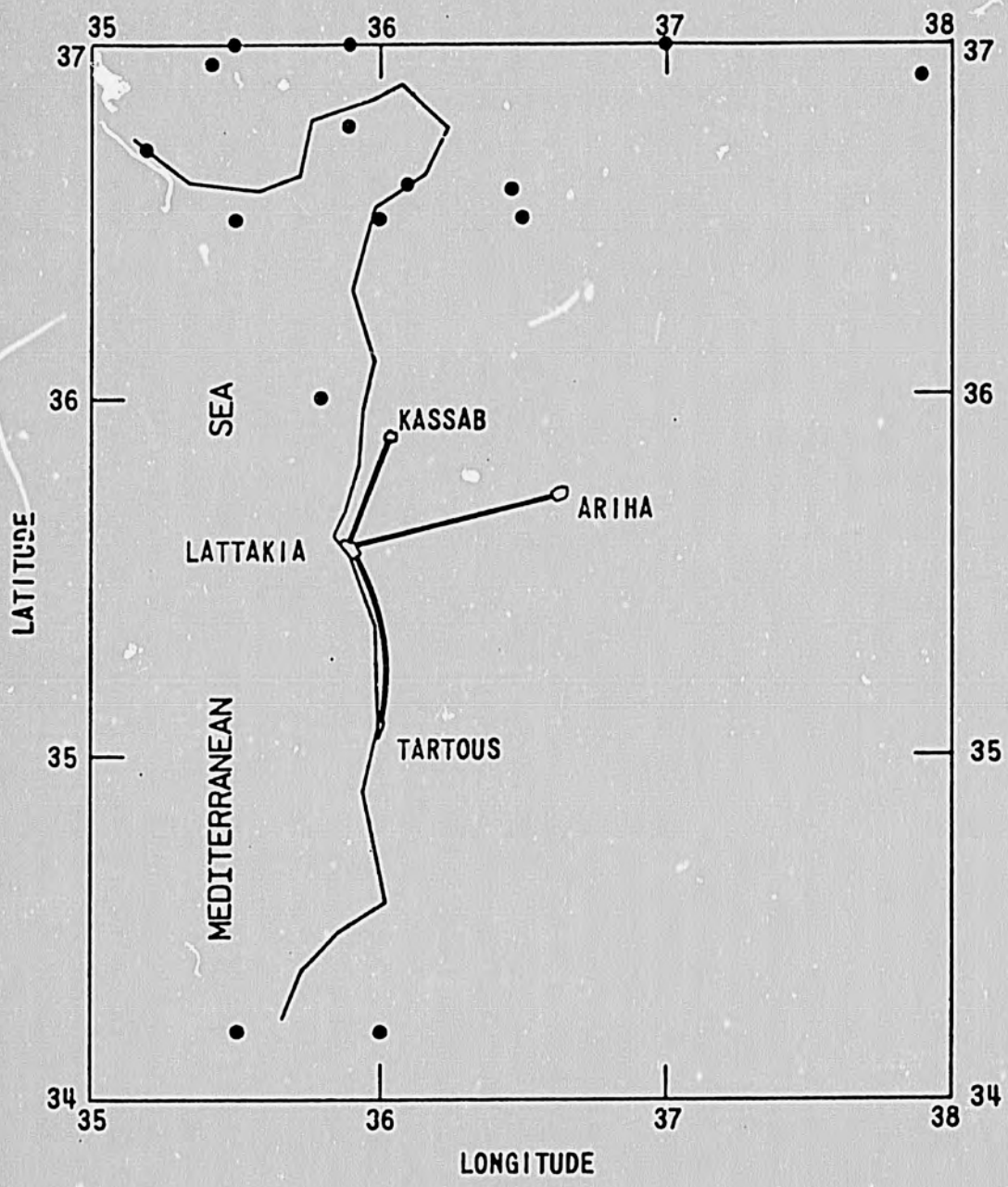
TION, ENVIRONMENTAL DATA SERVICE, NATIONAL GEOPHYSICAL AND SOLAR-TERRESTRIAL DATA CENTER)

DES OTHER	LOCAL	INT MAP	INT MAX	PHENOM DISVNO	RN	CE	Q/S	MAR	DG	DIST (KM)
0 PAS	(Pasadena, Ca., U.S.A.)				374			141	66	
0 PAS	(Pasadena, Ca., U.S.A.)				366			141	75	
0 PRA	(Prague, Czechoslovakia)				374	C		141	66	
					374			141	66	
					374	F		141	46	
0 ROM	(Rome, Italy)		IX		366	C		141	65	
					366	F		141	77	
					374		017	141	67	
					366		013	141	65	
					366		016	141	65	
					366	F	020	141	75	
					374		017	141	45	
					366	F	025	141	65	
					374	F	12	141	47	
					374	D	38	141	66	
					366		16	141	65	

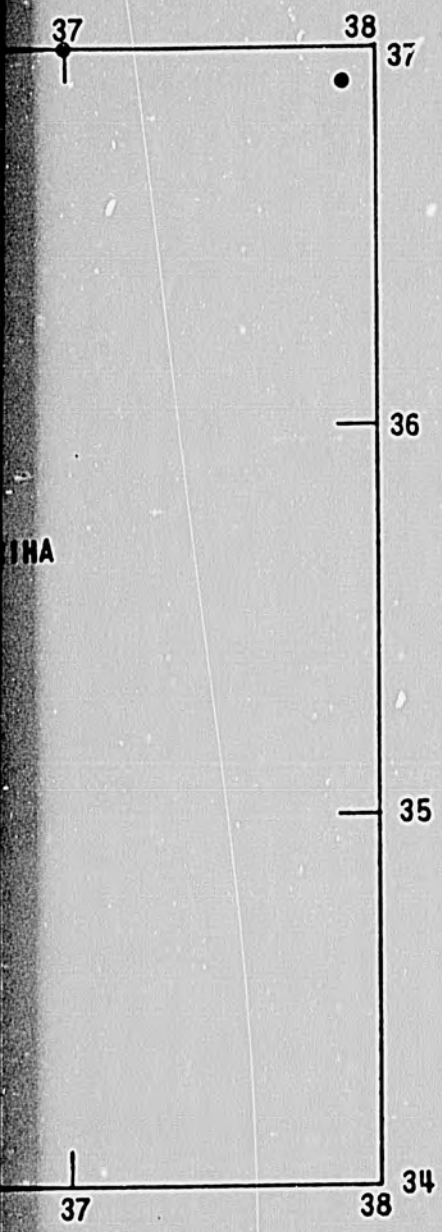
D SOLAR-TERRESTRIAL DATA CENTER
NIC AND ATMOSPHERIC ADMINISTRATION

on, or earthquake Heard.
ulation and buildings.
mply that the effects
maximum intensity may
n with no accompanying
ified Mercalli Scale.

PLATE 13 (3)
EARTHQUAKE DATA FILE
LYON



● DENOTES EARTHQUAK
DEPARTMENT OF COM
ATMOSPHERIC ADMIN
NATIONAL GEOPHYSI



● DENOTES EARTHQUAKE LOCATIONS AS RECEIVED FROM U.S. DEPARTMENT OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, ENVIRONMENTAL DATA SERVICE, NATIONAL GEOPHYSICAL AND SOLAR-TERRESTRIAL CENTER.

PLATE 14 (2)

LOCATION MAP

LYON

Turkey

	AGENCY	YEAR	MO	DY	HR	MN	SEC	LATITUDE
1	CGS	1936	06	14	17	01	24.0	37.000N
2	GUTE	1936	06	14	17	01	30.0	37.000N
3	CGS	1951	04	08	21	38	08.0	36.500N
4	CGS	1952	10	22	17	00	38.0	36.500N
5	BCIS	1953	03	24	21	17	32.0	37.000N
6	ISS	1953	03	24	21	17	32.0	37.000N
7	BCIS	1961	09	10	16	17	16.0	36.600N
8	ISC	1964	02	02	06	26	55.3	36.510N
9	ISC	1964	11	17	22	50	49.1	36.810N
10	KSA	1965	02	25	13	43	18.0	36.100N
11	ISC	1966	06	26	13	17	01.7	36.840N
12	ISC	1969	05	24	11	49	28.0	36.820N
13	ISC	1972	04	09	05	45	12.0	36.650N

REGION BOUNDED BY 34-37°N 35-38°E FROM HISTORICAL FILE FOR 1906 TO 1975
ONAL SEISMOLOGICAL CENTER, BERKSHIRE, U. K.

ATITUDE	LONGITUDE	DEP	MAG					
37.000N	036.000E				366			USE
37.000N	035.500E		5.60	PAS	366			GUTE
36.500N	035.500E		"		366			USE
36.500N	035.500E		"		366			USE
37.000N	037.000E		"		366	FELT		BCIS
37.000N	037.000E		"		366			ISS
36.600N	035.800E		"		366			BCIS
36.510N	35.800E	81	"		366		N 11	ISC
36.810N	35.330E	4	"		366		N 24	ISC
36.100N	35.500E		"		366		N 2	ISC
36.840N	35.920E	50	4.50		366		N 28	ISC
36.820N	35.310E	44	4.40		366		N 54	ISC
36.658N	035.623E	33	"		366		N 7	ISC

PLATE 15 (2)

EARTHQUAKE DATA FILE

374 Jordan-Syria Region

	AGENCY	YEAR	MO	DY	HR	MN	SEC	LATITUDE
14	GUTE	1928	08	23	06	15	55.0	36.500N
15	BCIS	1951	04	08	21	38	00.0	36.400N
16	ISS	1951	04	08	21	38	05.0	36.600N
17	BCIS	1951	07	12	06	51	12.0	36.500N
18	BCIS	1951	08	05	15	12	02.0	34.200N
19	ISS	1951	08	05	15	12	07.0	34.200N
20	KSA	1964	01	03	04	57	57.0	34.350N
21	KSA	1964	06	28	16	08	00.0	35.500N
22	ISC	1964	10	14	16	56	06.0	36.000N
23	ISC	1964	10	14	23	30	00.0	36.000N
24	ISC	1965	04	01	01	11	36.5	35.950N
25	KSA	1965	06	29	02	46	04.0	34.160N
26	KSA	1965	11	11	13	22	00.0	35.300N
27	KSA	1966	01	27	01	04	00.0	36.600N
28	KSA	1966	04	29	22	06	00.0	34.300N
29	KSA	1966	05	20	19	51	00.0	34.200N
30	KSA	1966	06	11	20	23	00.0	34.100N
31	ISC	1968	03	26	19	37	34.1	34.080N
32	LAO	1968	05	30	12	32	11.0	36.300N
33	ISC	1969	11	30	00	39	23.4	35.700N
34	ISC	1970	07	30	05	00	47.0	34.400N
35	ISC	1973	08	12	16	55	36.3	34.193N
36	ISC	1973	11	08	15	49	49.1	35.511N
37	ISC	1974	06	12	10	19	48.8	34.100N
38	ISC	1974	07	31	08	41	05.0	36.785N
39	ISC	1974	11	08	20	10	38.5	36.408N
40	ISC	1975	01	01	00	30	01.3	36.666N

1 - ISK Some damage at Hassa Town 36.83°N 36.50°E Felt at Hatay, Gaziantep, Mana

2 - NEIS Felt

3 - KSA Felt at Tripoli and Beirut

4 - KSA Felt I = V MCS in the north of Begaa

5 - BCIS Felt I = III - IV MCS Lebanon and Northern Israel

REGION BOUNDED BY 34-37°N 35-38°E FROM HISTORICAL FILE FOR 1906 TO 1975
IONAL SEISMOLOGICAL CENTER, BERKSHIRE, U. K.

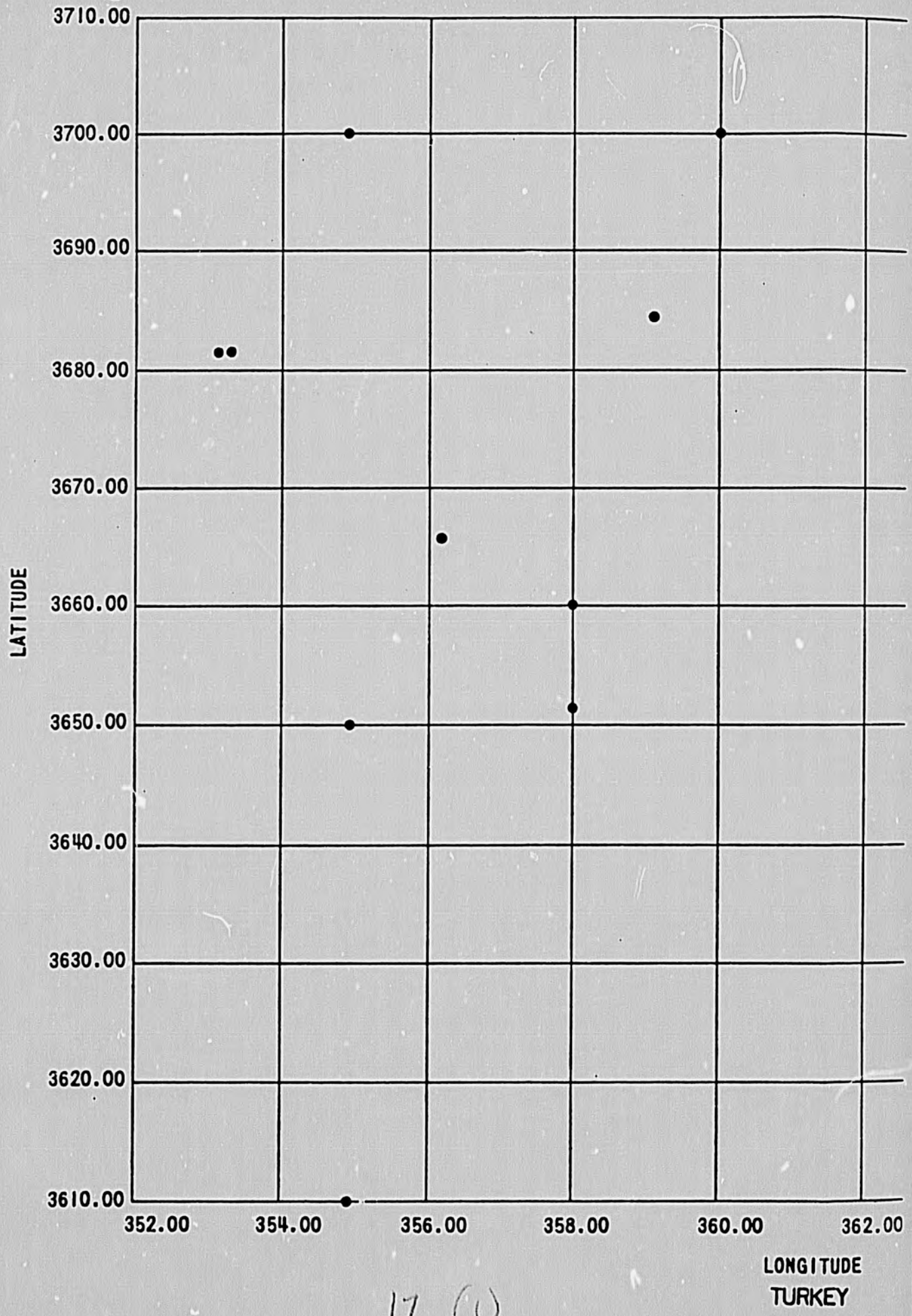
LATITUDE	LONGITUDE	DEP	MAG					
36.500N	036.000E		5.60	PAS	374		GUTE	
36.400N	037.500E	100	6.00	PRA	374		BCIS	
36.600N	036.100E		"		374		ISS	
36.500N	036.500E		"		374		BCIS	
34.200N	036.000E		"	FELT	374		BCIS	
34.200N	036.000E		"	FELT	374		ISS	
34.350N	35.500E		"		374	N 2	ISC	
35.500N	36.300E		"		374	N 3	ISC	
36.000N	36.000E		"		374	N 3	ISC	
36.000N	36.000E		"		374	N 3	ISC	
35.950N	35.770E	40	"		374	N 25	ISC	
34.160N	36.500E		"		374	N 3	ISC	
35.300N	37.700E		"		374	N 3	ISC	
36.600N	37.000E		"		374	N 3	ISC	
34.300N	35.500E		"		374	N 2	ISC	
34.200N	35.300E		"		374	N 2	ISC	
34.100N	35.400E		"		374	N 2	ISC	
34.080N	35.470E	37	4.80		374	N 50	ISC	5
36.300N	36.200E		4.40		374	N 1	ISC	
35.700N	35.600E	33	"		374	N 7	ISC	
34.400N	35.500E	33	"		374	N 3	ISC	
34.193N	036.624E	0	"		374	N 3	ISC	4
35.511N	036.216E	33	"		374	N 15	ISC	3
34.100N	037.278E	0	4.60		374	N 29	ISC	2
36.785N	036.595E	0	"		374	N 7	ISC	
36.408N	036.412E	0	"		374	N 7	ISC	
36.666N	036.485E	35	4.80		374	N145	ISC	1

ntep, Manas, Adana

PLATE 16 (2)

EARTHQUAKE DATA FILE

LYGDN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3650.00
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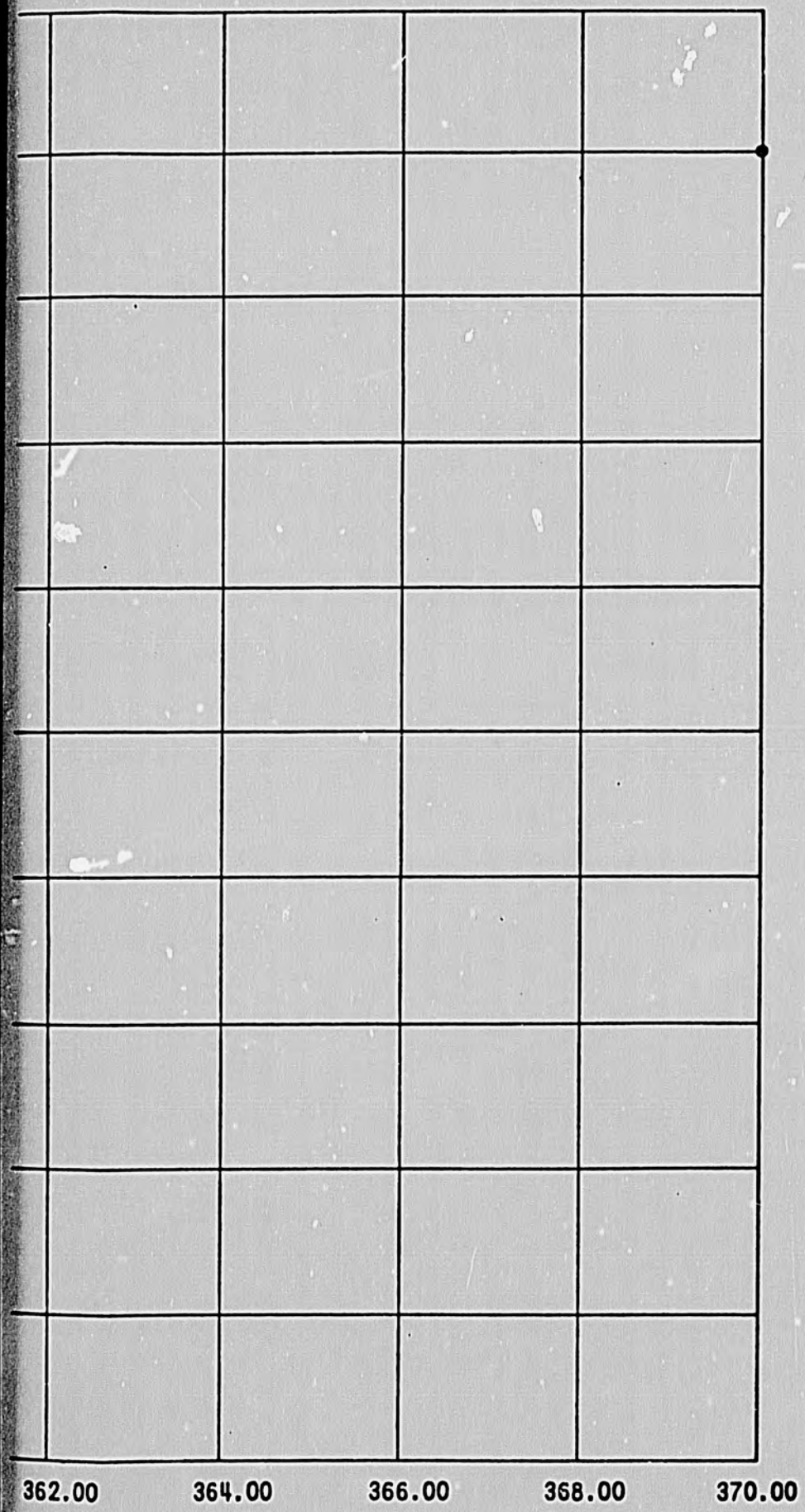
3630.00
3620.00
3610.00
LATITUDE
352.00
354.00
356.00
358.00
360.00
362.00
LONGITUDE
TURKEY

17 (1)

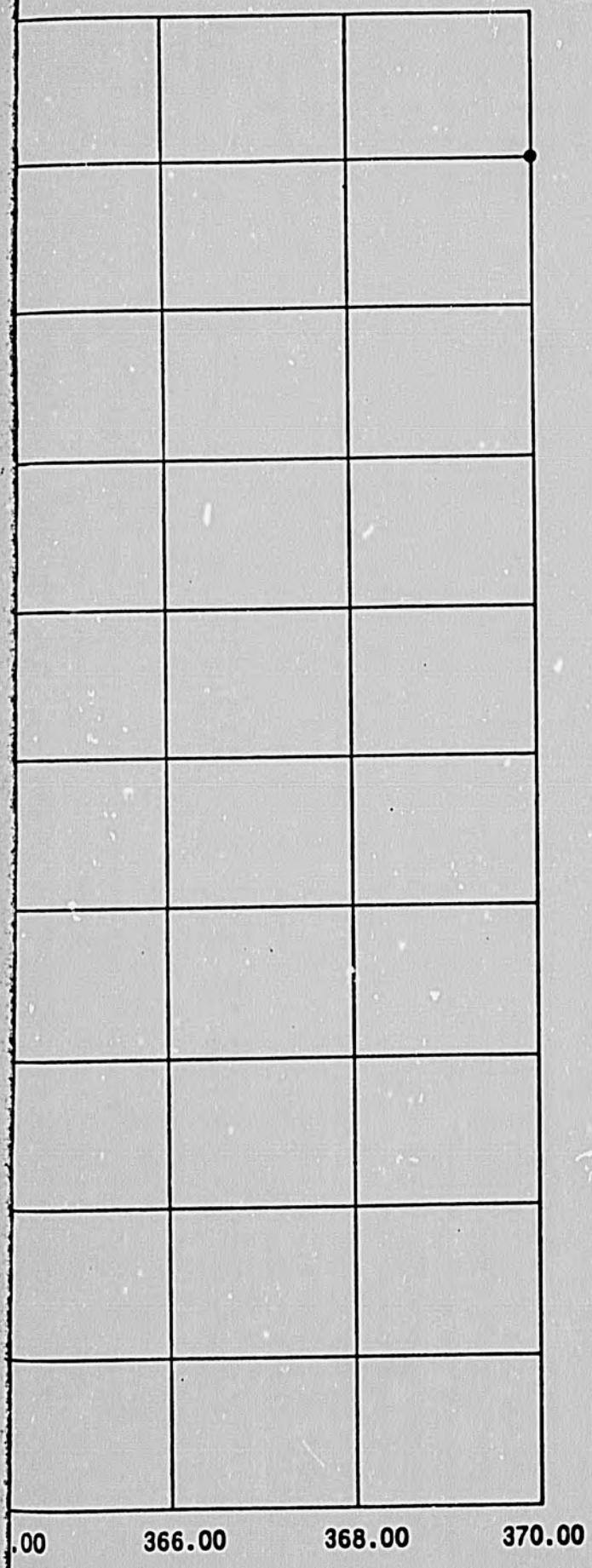


● DENOTES EPICENTERS OF EARTHQUAKES AS RECEIVED FROM INTERNATIONAL SEISMOLOGICAL CENTRE, BERKSHIRE, U.K.

PLATE 17 (2)

EPICENTER LOCATIO

LY

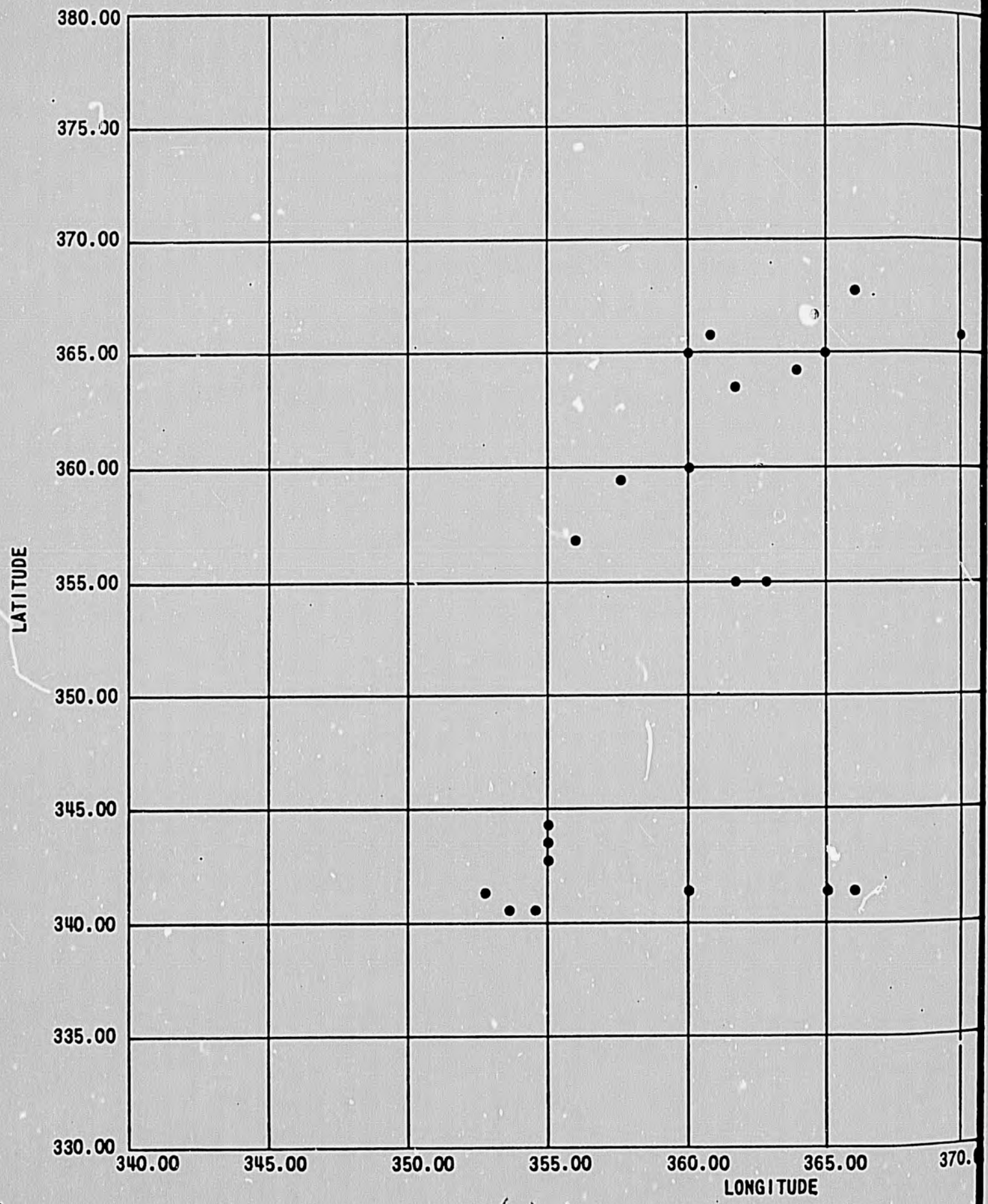


● DENOTES EPICENTERS OF EARTHQUAKES AS RECEIVED FROM INTERNATIONAL SEISMOLOGICAL CENTRE, BERKSHIRE, U.K.

PLATE 17 (3)

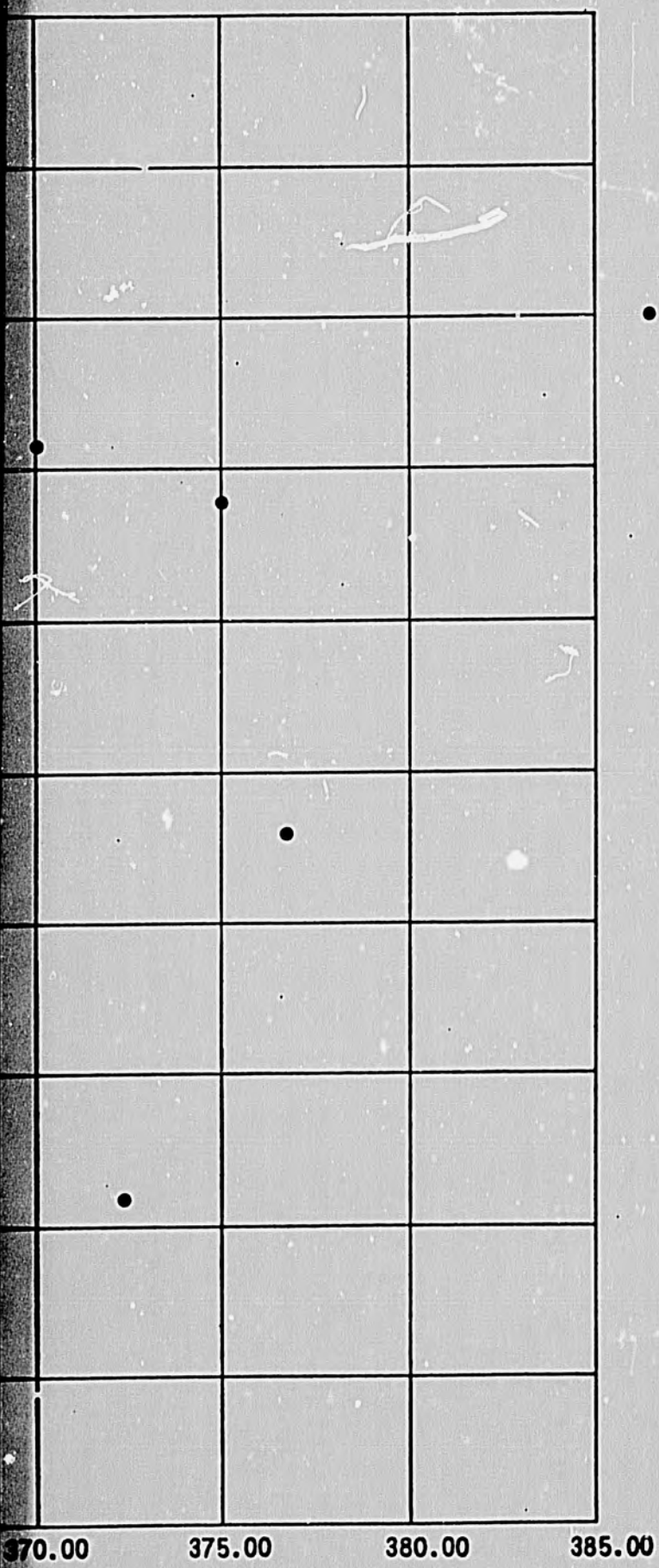
EPICENTER LOCATIONS

LYON



18 (1)

JORDAN-SYRIA REGION

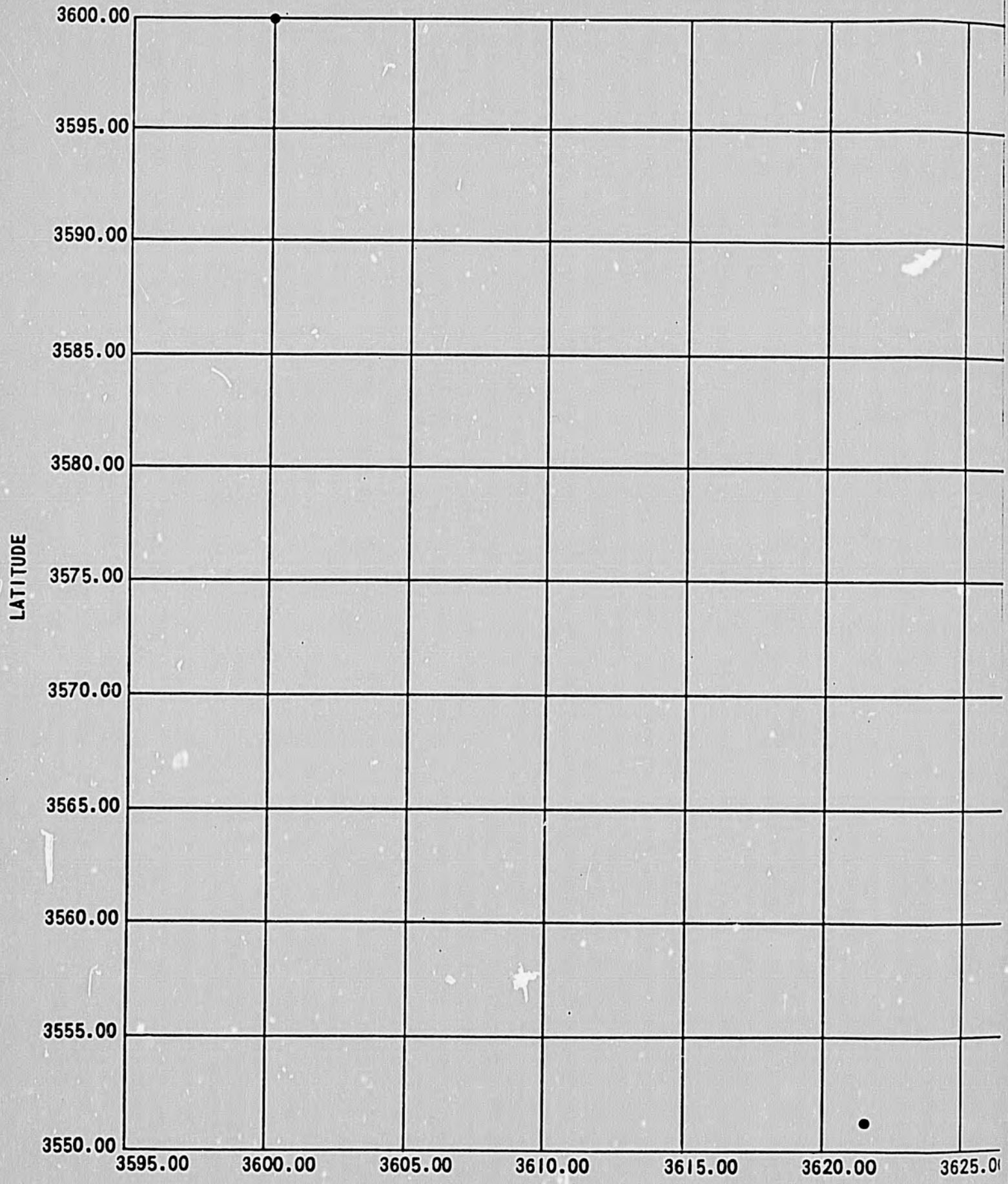


● DENOTES EPICENTERS OF EARTHQUAKES AS RECEIVED FROM INTERNATIONAL SEISMOLOGICAL CENTRE, BERKSHIRE, U.K.

PLATE 18 (2)

EPICENTER LOCATIONS

LYON



CENTRAL AREA

19 (1)

● DENOTES EPICENTERS OF EARTHQUAKES AS RECEIVED FROM INTERNATIONAL SEISMOLOGICAL CENTRE, BERKSHIRE, U.K.

PLATE 19 (2)

EPICENTER LOCATIONS

LYON