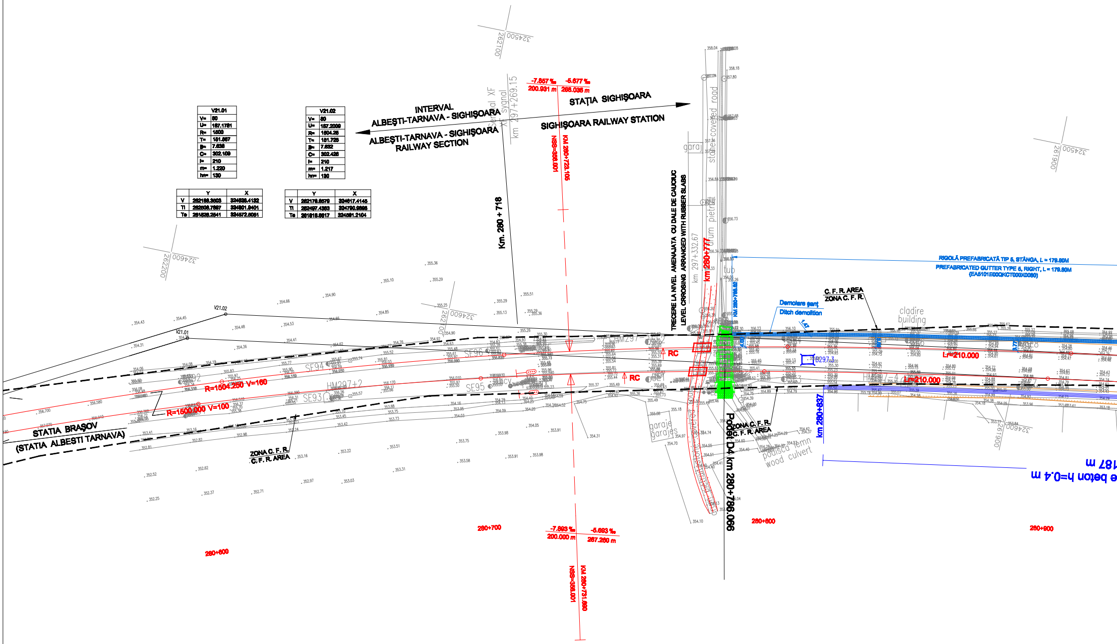

INTERVAL
ALBEŞTI-TARNAVA - SIGHIŞOARA
ALBEŞTI-TARNAVA - SIGHIŞOARA
RAILWAY SECTION
STAŢIA SIGHIŞOARA
SIGHIŞOARA RAILWAY STATION
Semnal XF
XF sygnal
km 297+269.15
-7.857 ‰
200.931 m
-5.677 ‰
268.036 m
NSS=356.001
KM 280+723.105
Km. 280 + 718
TRECERE LA NIVEL AMENAJATA CU DALE DE CAUCIUC
LEVEL CRROSING ARRANGED WITH RUBBER SLABS
km 297+332.67
km 280+777
garaj
stone covered road
drum pietruit
tub
KM 280+786.92
Demolare şanţ
Ditch demolition
C. F. R. AREA
ZONA C. F. R.
cladire
building
RIGOLĂ PREFABRICATĂ TIP 5, STÂNGA, L = 179.80M
PREFABRICATED GUTTER TYPE 5, RIGHT, L = 179.80M
(EA5101E00QKCT000X0080)
B297.3
Lr=210.000
Lr=210.000
RC
RC
V21.02
V21.01
SE96
SE94
SE95
SE93
HM297+2
R=1504.250 V=160
R=1500.000 V=100
STATIA BRASOV
(STATIA ALBESTI TARNAVA)
ZONA C. F. R.
C. F. R. AREA
garaje
garajes
Podet D4 km 280+786.066
ZONA C. F. R.
C. F. R. AREA
podisca lemn
wood culvert
km 280+837
187 m
e beton h=0,4 m
-7.893 ‰
200.000 m
-5.693 ‰
267.260 m
NSS=356.001
KM 280+731.860
280+600
280+700
280+800
280+900
262100
324500
262200
324600
262000
324600
261900
324600
261900
324500

V21.01	
V=	80
U=	157.1781
R=	1500
T=	151.567
β=	7.638
C=	302.109
l=	210
m=	1.220
hn=	130

	Y	X
V	262188.3603	324628.4132
Ti	262506.7867	324801.9401
Te	261828.2541	324572.8051

V21.02	
V=	80
U=	157.2009
R=	1504.25
T=	151.725
β=	7.632
C=	302.428
l=	210
m=	1.217
hn=	130

	Y	X
V	262176.8579	324617.4145
Ti	262497.4363	324790.9898
Te	261818.8817	324561.2104

TABEL COORDONATE BORNE RETEA
MILLE STONE COORDINATES TABLE

nr.borna mille stone no.	X [m]	Y [m]	Z [m]
297.3	261972.521	324592.267	355.08
297.6	261643.824	324550.265	353.76
298.0	261328.563	324477.593	353.86
298.4	260957.178	324433.586	353.49

V 21.24	
V=	80
U=	199.8653

	Y	X
V	261147.132	324467.193

V 21.23	
V=	80
U=	199.8618

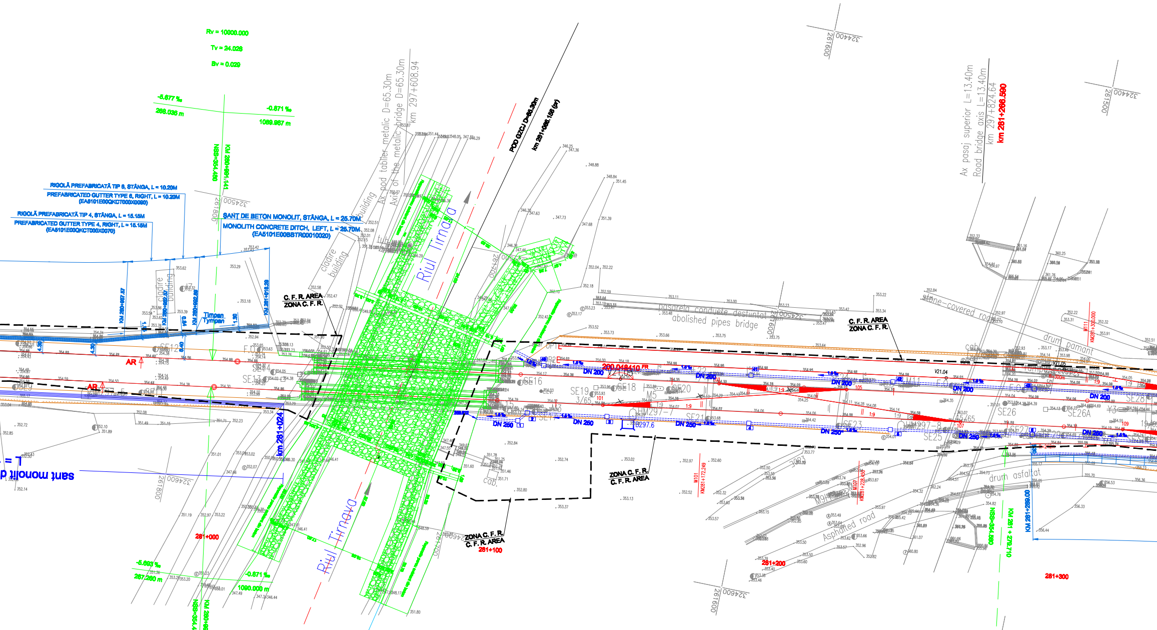
	Y	X
V	261148.580	324457.796

V 21.09	
V=	80
U=	199.8618

	Y	X
V	261346.286	324489.061

V 21.08	
V=	80
U=	199.8653

	Y	X
V	261344.829	324497.449


Rv = 10000.000
Tv = 24.028
Bv = 0.029
-5.677 ‰
269.036 m
-0.871 ‰
1069.967 m
RIGOLĂ PREFABRICATĂ TIP 6, STÂNGA, L = 10.20M
PREFABRICATED GUTTER TYPE 6, RIGHT, L = 10.20M
(EA5101E00QKCT000X0080)
RIGOLĂ PREFABRICATĂ TIP 4, STÂNGA, L = 15.15M
PREFABRICATED GUTTER TYPE 4, RIGHT, L = 15.15M
(EA5101E00QKCT000X0070)
ȘANȚ DE BETON MONOLIT, STÂNGA, L = 25.70M
MONOLITH CONCRETE DITCH, LEFT, L = 25.70M
(EA5101E00BBTR00010020)
Ax pod tablier metalic D=65.30m
Axis of the metalic bridge D=65.30m
km 297+608.94
POD GZCJ D=65.30m
km 281+068.156 (pr)
Riul Tirnava
clădire building
Timpan Tympan
C. F. R. AREA
ZONA C. F. R.
AR
km 281+024
șanț monolit
pasarela conducte desființate
abolished pipes bridge
piatră
DN 200
DN 250
V21.04
V21.05
Ax pasaj superior L=13.40m
Road bridge axis L=13.40m
km 297+824.64
km 281+266.590
drum pământ
Asphalted road
drum asfaltat
ZONA C. F. R.
C. F. R. AREA
281+000
281+100
281+200
281+300
-5.693 ‰
267.260 m
-0.871 ‰
1090.000 m
-5.719 ‰
71.16 m
261800
324500
324600
261600
261500
324400

V 21.03	
V=	80
U=	196.9526

	Y	X
V	261649.526	324535.131

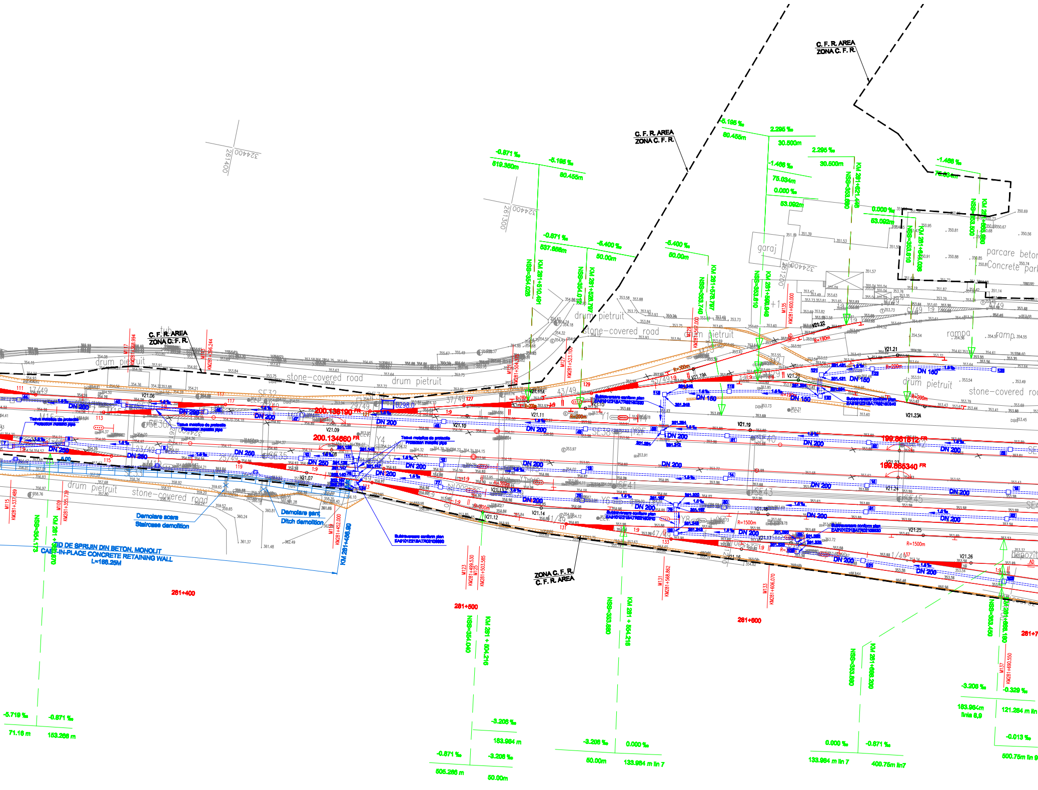
Rv = 10000.000

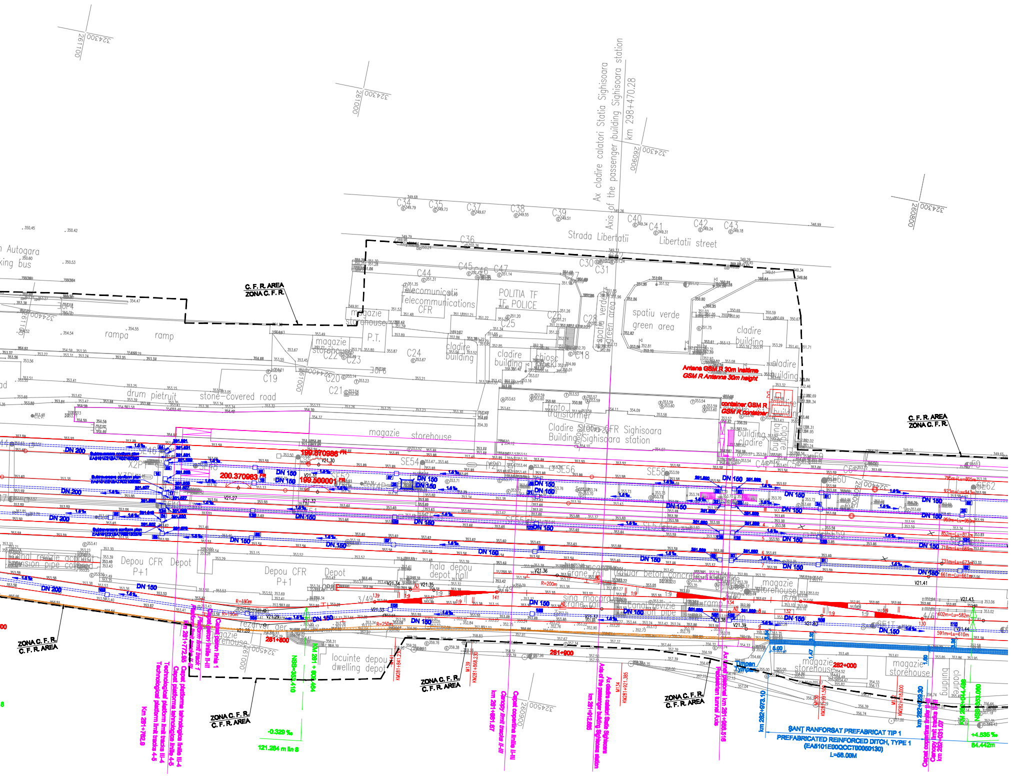
Tv = 24.111

Bv = 0.029

TABEL CU LINIILE C. F. PROIECTATE
RAILWAY DESIGNED LINES TABLE

NO NR. CRT.	DENUMIREA LINIEI C.F. DENOMINATION OF THE RAILWAY LINE	DE LA FROM	PRIN BY	PANĂ LA TO	LUNGIMEA CONSTRUCTIVA LENGHT CONSTRUCTIVE (m)	LUNGIMEA REALA LENGHT REALE (m)	LUNGIMEA UTILA LENGHT USABLE (m)	TIPUL SINEI TYPE OF RAIL	OBSERVATII REMARKS
1	Linia 1 / Line 1	PJ113	117, 121	PJ 114	1052.420	919.500	795/805	UIC60	
2	Linia II / Line II	PJ103	105, 113, 114, 106	PJ 106	1403.370	1209.820	923/943	UIC60	
3	Linia III / Line III	PJ101	107, 109, 112, 110, 104	PJ 102	1494.110	1261.500	959/959	UIC60	
4	Linia 4 / Line 4	PJ109	115, 119, 125, 124, 120, 118, 116	PJ 112	1140.023	840.953	852/817	UIC60	
5	Linia 5 / Line 5	PJ125	-----	PJ 124	824.760	786.300	718/689	UIC60	
6	Linia 6 / Line 6	PJ119	123, 122	PJ 120	993.147	800.227	731/673	UIC60	
7	Linia 7 / Line 7	PJ123	131	PJ 122	842.086	748.486	681/681	UIC60	
8	Linia 8 / Line 8	PJ131	133, 137, 139, 130, 128, 126	PJ 118	849.405	614.015	602/582	UIC60	
9	Linia 9 / Line 9	PJ133	------	PJ 126	711.216	680.846	591/510	UIC60	


C. F. R. AREA
ZONA C. F. R.
C. F. R. AREA
ZONA C. F. R.
C. F. R. AREA
ZONA C. F. R.
ZONA C. F. R.
C. F. R. AREA
261400
324400
261300
324400
drum pietruit
stone-covered road
drum pietruit
stone-covered road
drum pietruit
stone-covered road
drum pietruit
stone-covered road
garaj
parcare beton
Concrete park
rampa
ramp
depozit
-0.871 ‰
519.360m
-5.195 ‰
80.455m
-0.871 ‰
537.666m
-5.400 ‰
50.00m
-5.400 ‰
50.00m
-5.195 ‰
80.455m
2.295 ‰
30.500m
2.295 ‰
30.500m
-1.466 ‰
75.034m
0.000 ‰
53.092m
0.000 ‰
53.092m
-1.466 ‰
75.034m
NSS=354.025
KM 281+510.491
NSS=354.070
KM 281+528.792
NSS=353.740
KM 281+578.707
NSS=353.910
KM 281+593.548
NSS=353.960
KM 281+621.498
NSS=353.910
KM 281+640.098
NSS=353.600
KM 281+669.096
DN 200
DN 250
DN 150
DN 280
Teava metalica de protectie
Protection metallic pipe
200.136190 FR
200.134660 FR
199.881612 FR
199.886340 FR
V21.06
V21.07
V21.09
V21.10
V21.11
V21.11A
V21.12
V21.13
V21.14
V21.15
V21.16
V21.17
V21.18
V21.19
V21.19A
V21.20
V21.21
V21.22
V21.23
V21.23A
V21.24
V21.25
V21.26
R=190m
R=300m
R=200m
R=1500m
1:9
111
113
115
117
119
121
123
127
129
131
133
Subtraversare conform plan
M115
KM281+337.489
M109
KM281+355.739
M117
KM281+358.994
M125
KM281+386.244
M119
KM281+452.000
KM 281+456.90
M123
KM281+499.530
M125
KM281+503.585
M127
KM281+504.325
M127
KM281+523.150
M129
KM281+567.000
M135
KM281+600.000
M131
KM281+568.862
M133
KM281+606.070
M137
KM281+690.550
Demolare scara
Staircase demolition
Demolare sant
Ditch demolition
ZID DE SPRIJIN DIN BETON, MONOLIT
CAST-IN-PLACE CONCRETE RETAINING WALL
L=166.25M
NSS=354.173
KM 281 + 360.870
281+400
281+500
281+600
281+7
NSS=354.040
KM 281 + 501.216
NSS=353.880
KM 281 + 564.218
NSS=353.680
KM 281+686.200
NSS=353.680
KM 281+690.550
-5.719 ‰
71.16 m
-0.871 ‰
153.266 m
-3.208 ‰
183.984 m
-0.871 ‰
505.266 m
-3.208 ‰
50.00m
-3.208 ‰
50.00m
0.000 ‰
133.984 m lin 7
0.000 ‰
133.984 m lin 7
-0.871 ‰
400.75m lin7
-3.208 ‰
183.984m
linia 8,9
-0.329 ‰
121.284 m lin
-0.013 ‰
500.75m lin 9

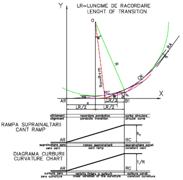

Ax cladire calatori Statia Sighisoara
Axis of the passenger building Sighisoara station
km 298+470.28
Strada Libertatii
Libertatii street
C. F. R. AREA
ZONA C. F. R.
Autogara
bus
rampa
ramp
telecomunicatii
Telecommunications CFR
POLITIA TF
TF POLICE
magazie
storehouse
P.T.
spatiu verde
green area
cladire
building
chiosc
drum pietruit
stone-covered road
Antena GSM R 30m inaltime
GSM R Antenna 30m height
container GSM R
GSM R container
trafo
transformer
Cladire Statie CFR Sighisoara
Building Sighisoara station
199.870986
200.370983
199.500001
DN 200
DN 150
Depou CFR Depot
P+1
hala depou
depot hall
sina macara
crane rail
trotuar beton
concrete sidewalk
canal revizie
revision pipe
rezervor
locuinte depou
dwelling depot
R=190m
R=200m
R=250m
281+800
281+900
282+000
Km 281+762.9
Technological platform limit tracks 4-5
Technological platform limit tracks III-4
Capat platforma tehnologica liniile 4-5
Capat platforma tehnologica liniile III-4
Km 281+772.95
Platform limit tracks II-III
Platform limit track 1
Capat peron liniile II-III
Capat peron linia 1
NSS=353.410
KM 281 + 808.464
-0.329 ‰
121.284 m lin 8
KM281+841.230
KM281+868.230
km 281+881.67
Canopy limit tracks II-III
Capat copertine liniile II-III
km 281+912.885
Axis of the passenger building Sighisoara station
Ax cladire calatori Statia Sighisoara
KM281+921.385
Ax tunel pietonal km 281+958.516
Pedestrian tunnel Axis
Timpan
Tympan
km 282+873.10
KM281+991.500
KM282+018.000
km 282+028.30
Capat copertine liniile II-III
Canopy limit tracks II-III
km 282+031.07
KM 282+044.498
NSS=353.060
+4.535 ‰
84.442m
ȘANȚ RANFORSAT PREFABRICAT TIP 1
PREFABRICATED REINFORCED DITCH, TYPE 1
(EA5101E00QCCT00050130)
L=56.00M
731m=Lu=673m
661m=Lu=661m
602m=Lu=582m
591m=Lu=610m

1	2

$m = \frac{L^2}{24\,R}$ $y = \frac{X^3}{6\,LR}$

AR=TANGENT–SPIRAL
RC=SPIRAL–CURVE
CR=CURVE–SPIRAL
RA=SPIRAL–TANGENT

LR=LUNGIME DE RACORDARE
LENGHT OF TRANSITION


Y
O
α
R
Ro=R+m
RC
CR
RA
m
X
AR
x
LR/2
LR/3
B1
y
aliniament
alignment
racordare parabolica
parabolic transition
curba circulara
circular curve
RAMPA SUPRAINALTARII
CANT RAMP
h_n
supraincltare zero
zero cant
rampa supraînălţării
cant ramp
supraînălţare const
constant cant
DIAGRAMA CURBURII
CURVATURE CHART
1/R
curbura zero
zero curvature
variatia liniara a curburii
linear variation of the curvature
curbura const
constant curvature

TABEL CARACTERISTICI APARATE DE CALE PROIECTATE CAP X
CHARACTERISTICS DESIGNED TURNOUTS TABLE X END

NO NR. CRT.	NO NR. P.G.	DEVIATIE DEVIATION STG. LEFT	DR. RIGHT	TIP TYPE	Tg.	R RADIUS (m)	TIPUL ACELOR TYPE OF SWITCH	PROVENIENTA COMING FROM NOI NEW	REFOLOSITI DISMANTLING	COORDONATE COORDINATES X	Y	OBSERVATII OBSERVATION
1	101	●		60	1:9	300	flexibil	•		261653.797	324545.419	
2	103		●	60	1:9	300	flexibil	•		261615.136	324529.792	Bretea de constructie speciala nr. 103-105
3	105	●		60	1:9	300	flexibil	•		261570.669	324522.665	
4	107		●	60	1:9	300	flexibil	•		261529.090	324528.057	
5	109		●	60	1:9	300	flexibil	•		261472.479	324517.266	
6	111		●	60	1:9	300	flexibil	•		261460.984	324499.177	
7	113	●		60	1:9	300	flexibil	•		261428.203	324500.466	
8	115		●	60	1:9	300	flexibil	•		261420.484	324515.014	
9	117	●		60	1:9	300	flexibil	•		261384.667	324459.206	
10	119		●	60	1:9	300	flexibil	•		261375.986	324509.105	
11	121	●		60	1:9	300	flexibil	•		261334.296	324451.360	
12	123		●	60	1:9	300	flexibil	•		261325.484	324505.865	
13	125		●	60	1:9	300	flexibil	•		261325.484	324500.265	
14	127		●	49	1:9	190	flexibil	•		261302.203	324472.684	
15	129	●		49	1:9	190	flexibil	•		261269.044	324459.600	
16	131	●		60	1:9	300	flexibil	•		261258.574	324506.529	
17	133	●		60	1:9	300	flexibil	•		261221.272	324504.353	
18	135	●		49	1:9	190	flexibil	•		261227.534	324449.015	
19	137	●		60	1:9	300	flexibil	•		261135.779	324494.896	
20	139		●	60	1:9	300	flexibil	•		260960.041	324476.507	
21	141	●		49	1:9	190	flexibil	•		260918.461	324464.524	

TABEL CURBE PROIECTATE - LINII ABATERE CAP X
DESIGNED CURVES - ON DEVIATION LINES TABLE X END

NR.CURBA NO.CURVE	V SPEED (km/h)	ELEMENTE ELEMENTS U	R	T	B	C	h_n (mm)	COORDONATE COORDINATES V X	V Y	Ti X	Ti Y	Te X	Te Y
V21.04	40	199.5000		FRANTURA			0	261537.063	324511.850	FRANTURA		FRANTURA	
V21.04A	40	191.5023	212	14.170	0.473	28.296	0	261496.177	324527.077	261511.765	324531.065	261484.174	324524.903
V21.05	40	192.2306	300	18.326	0.559	36.611	0	261496.797	324500.639	261514.909	324503.460	261476.476	324500.056
V21.06	40	199.5000	FRANTURA				0	261410.992	324493.290	FRANTURA		FRANTURA	
V21.07	40	199.5000	FRANTURA				0	261351.864	324507.058	FRANTURA		FRANTURA	
V21.10	40	199.7236	FRANTURA				0	261300.447	324476.127	FRANTURA		FRANTURA	
V21.11	40	196.7295	300	5.136	0.066	10.274	0	261277.366	324468.626	261262.444	324469.617	261272.336	324467.760
V21.11A	40	196.2161	190	5.645	0.083	11.287	0	261260.411	324466.776	261265.860	324468.255	261275.060	324464.980
V21.12	40	192.5068	200	11.784	0.347	23.541	0	261289.290	324506.263	261300.053	324507.563	261276.526	324507.576
V21.13	40	192.9554	300	16.615	0.460	33.197	0	261281.763	324498.369	261298.363	324499.066	261265.364	324495.819
V21.14	30	192.2958	400	24.233	0.733	48.407	0	261269.327	324502.776	261292.529			
V21.15	30	196.7460	200	5.112	0.065	10.222	0	261260.047	324485.220	261265.052	324486.253	261254.995	324484.434
V21.16	40	199.6963	FRANTURA				0	261196.223	324502.992	FRANTURA		FRANTURA	
V21.17	30	192.6537	300	17.329	0.500	34.619	0	261179.587	324497.243	261196.669	324500.157	261162.293	324496.316
V21.18	35	196.5404	1500	13.662	0.062	27.322	0	261189.546	324489.071	261203.007	324491.412	261176.047	324486.875
V21.19	40	199.7236	FRANTURA				0	261201.554	324461.213	FRANTURA		FRANTURA	
V21.19A	35	196.1671	300	9.033	0.136	18.062	0	261225.563	324444.062	261233.755	324447.857	261217.613	324439.761
V21.20	35	186.1476	190	20.753	1.130	41.342	0	261186.465	324440.547	261206.747	324444.943	261167.713	324440.633
V21.21	35	189.4460	200	16.617	0.689	33.169	0	261155.930	324424.960	261171.863	324430.252	261139.520	324422.341
V21.22	35	192.5357	190	11.001	1.276	21.978	0	261181.759	324420.406	261191.433	324425.630	261170.967	324416.106
V21.25	30	199.0514	1500	11.176	0.042	22.351	0	261134.425	324486.355	261145.441	324487.234	261123.381	324483.640
V21.25A	30	191.3574	200	13.595	0.461	27.151	0	261142.902	324440.736	261156.499	324440.680	261129.423	324436.962
V21.26	40	199.4323	FRANTURA				0	261115.996	324491.569	FRANTURA		FRANTURA	
V21.27	40	199.6290	FRANTURA				0	261015.165	324446.697	FRANTURA		FRANTURA	
V21.28	30	186.5454	190	21.663	1.231	43.140	0	260996.376	324492.163	261018.010	324493.342	260975.562	324486.164
V21.29	30	186.5454	190	21.663	1.231	43.140	0	260998.262	324467.526	261019.914	324468.667	260977.467	324461.526
V21.30	40	199.8710	FRANTURA				0	260989.759	324428.329	FRANTURA		FRANTURA	
V21.31	40	199.8710	FRANTURA				0	260969.030	324433.023	FRANTURA		FRANTURA	
V21.32	40	199.5000	FRANTURA				0	260967.524	324442.567	FRANTURA		FRANTURA	
V21.33	30	192.5266	250	14.667	0.431	29.339	0	260955.755	324480.476	260969.867	324484.543	260941.264	324476.069
V21.34	30	199.6199	FRANTURA				0	260949.534	324469.750	FRANTURA		FRANTURA	
V21.35	30	199.5000	FRANTURA				0	260940.367	324466.267	FRANTURA		FRANTURA	
V21.36	30	193.2615	200	10.595	0.260	21.170	0	260898.799	324454.490	260909.249	324456.231	260888.223	324453.862
V21.37	30	199.6367	FRANTURA				0	260881.034	324462.951	FRANTURA		FRANTURA	

LEGENDA
LEGEND

- Ax linie c.f. existent / Axis of existing railway line
- Ax linie c.f. demontat / Demounted axis line of railway line
- Aparate de cale existente / Existing turnouts
- Aparate de cale demontate / Demounted turnouts
- Name Level — Borne de retea / Benchmarks
- Ax linie c.f. proiectat / Axis of designed railway line
- Aparate de cale proiectate / Designed turnouts
- Marca proiectata / Designed marck
- Semnal proiectat / Designed signal
- Peron proiectat / Designed platform
- Copertina proiectata / Designed canopy
- Sant monolit de beton / Prefabricate concrete ditch
- Dren longitudinal / Longitudinal drain
- Ampriza sapatura/umplutura / Excavation/fillings at the work place of natural soil
- Lucrari de consolidare / Consolidatio works
- Lucrari de drumuri proiectate / Designed road works
- AD — Aparat de dilatatie–joante de compensare / Expancion device–compensating joint

Indice Index	Data Date	Modificare Modification/Revision	Proiectant Designer	Aprobat Consultant Approved Consultant	Aprobat CFR Approved CFR
D					
C					
B					
A					

GUVERNUL ROMANIEI
ROMANIAN GOVERNMENT

PROIECT FINANŢAT DE UNIUNEA EUROPEANĂ
EUROPEAN UNION FINANCED PROJECT

CLIENT / CLIENT
C.N.C.F. "C.F.R." - S.A.

ITALFERR
GRUPPO FERROVIE DELLO STATO
Joint Venture leader
Scott Wilson
OBERMEYER PLANEN + BERATEN GmbH
TECNIC Consulting Engineers

CONSULTANT / CONSULTANT

			Data Date	Semnătură Signature
Aprobat Approved	Şef proiect Project manager	R. Lizza		
Aprobat Approved	Coordonator Secţiune 1 Section 1 Coordinator	C. Gambelli		
Verificat Checked	Expert Verificator Checking Expert	S. MENICHINI		

SUBCONTRACTANT / SUBCONTRACTOR
AREX

Aprobat Approved	Responsabil Subcontractant Subcontractor Responsible	A.Stanciu - Dinulescu		
Întocmit Elaborated	Proiectant Designer	V. Gradin	12.2011	

Reabilitarea liniei de cale ferata Braşov - Simeria, parte componentă a coridorului IV Pan European, pentru circulaţia trenurilor cu viteza maximă de 160 km/h,
Tronsonul : Braşov - Sighişoara
Rehabilitation of the railway line Braşov - Simeria, component Part of the IV Pan-European Corridor, for the trains circulation with maximum speed of 160 km/h,
Section : Braşov - Sighişoara

Proiect/Project
2004/RO/16/P/PA/003

Faza / Phase:
P.Th. / T.D.

Denumire desen / Drawing Title :

Plan de situaţie - Staţia Sighişoara
Sighişoara station - Track Layout on designed plan

Codificare / Codification System	Scara / Scale 1:500	LOT / LOT	Nr. / No
E A 5 1 · 0 1 · C · 2 1 · L 8 · S L · 0 1 · 1	0	0 0 1	2