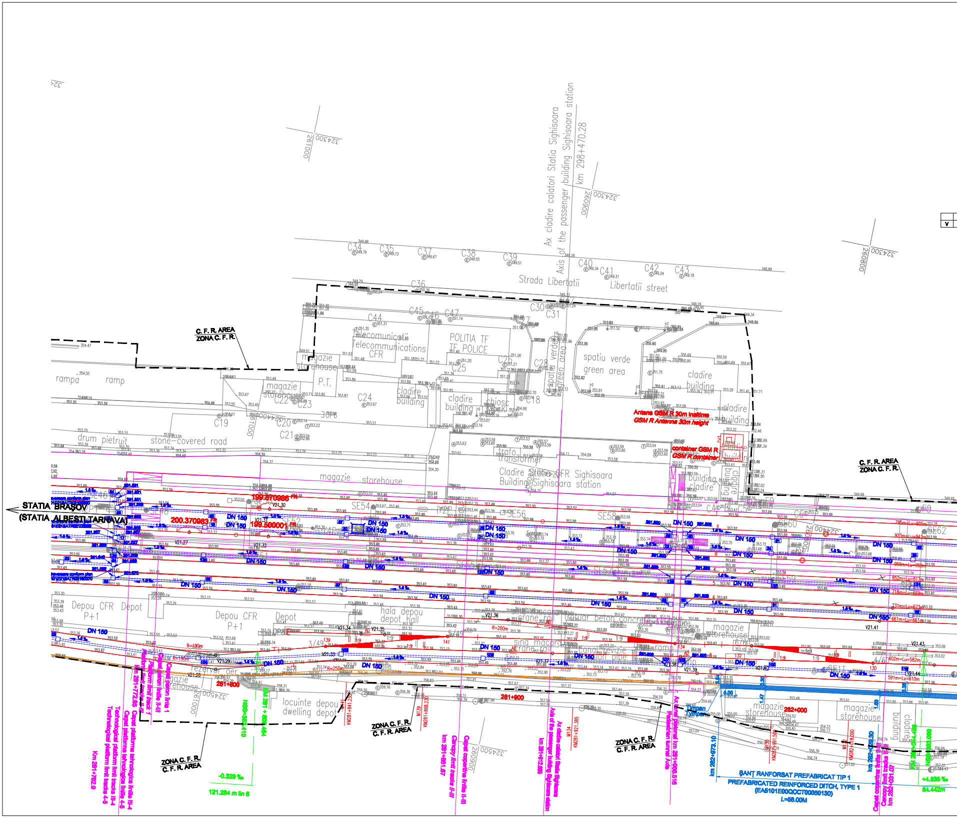

Ax cladire calatori Statia Sighisoara
Axis of the passenger building Sighisoara station
km 298+470.28
Strada Libertatii
Libertatii street
C. F. R. AREA
ZONA C. F. R.
Telecomunicatii
Telecommunications CFR
POLITIA TF
TF POLICE
magazie
storehouse
P.T.
cladire
building
chiosc
kiosk
spatiu verde
green area
rampa
ramp
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
STATIA BRASOV
(STATIA ALBESTI TARNAVA)
200.370983
199.870986
199.500001
DN 150
Depou CFR Depot
P+1
hala depou
depot hall
rezervor apa
locuinte depou
dwelling depot
canal revizie
pipe
sina macara
crane rail
281+800
281+900
282+000
Km 281+762.9
Technological platform limit tracks III-4
Capat platforma tehnologica liniile 4-5
Capat peron linia 1
Platform limit track 1
Capat coperisine liniile II-III
Canopy limit tracks II-III
km 281+881.87
Pasaj pietonal km 281+958.516
Pedestrian tunnel Axis
km 281+912.885
km 282+073.10
km 282+128.50
km 282+031.07
-0.329 ‰
121.284 m lin 8
+4.636 ‰
64.442m
SANT RANFORSAT PREFABRICAT TIP 1
PREFABRICATED REINFORCED DITCH, TYPE 1
(EA5101E00QOCT00050130)
L=58.00M
R=190m
R=200m
R=250m
1:9
324300
261000
260900
260800

V 21.69	
V=	80
U=	199.8562

Y	X
260277.075	324203.284

V 21.66	
V=	80
U=	199.8675

	Y	X
V	260274.527	324207.295

V 21.32	
V=	80
U=	199.5000

	Y	X
V	260987.524	324442.567

V 21.31	
V=	80
U=	199.8709

	Y	X
V	260989.026	324438.022

V 21.27	
V=	80
U=	199.8290

	Y	X
V	261015.185	324446.697

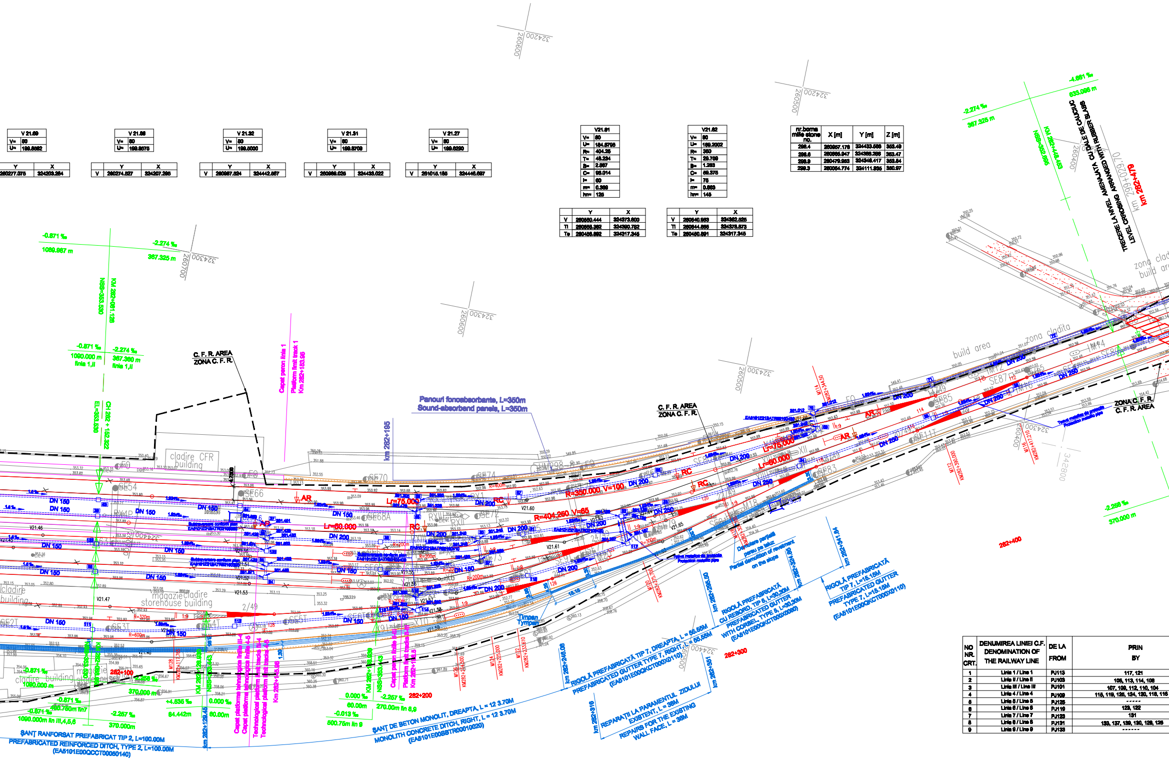
V21.61	
V=	80
U=	184.5795
R=	404.25
T=	48.234
B=	2.867
C=	95.014
l=	60
m=	0.389
hn=	125

	Y	X
V	260550.444	324373.800
Ti	260558.382	324390.782
Te	260458.882	324317.345

V21.62	
V=	80
U=	189.2002
R=	350
T=	29.759
B=	1.263
C=	59.375
l=	75
m=	0.883
hn=	145

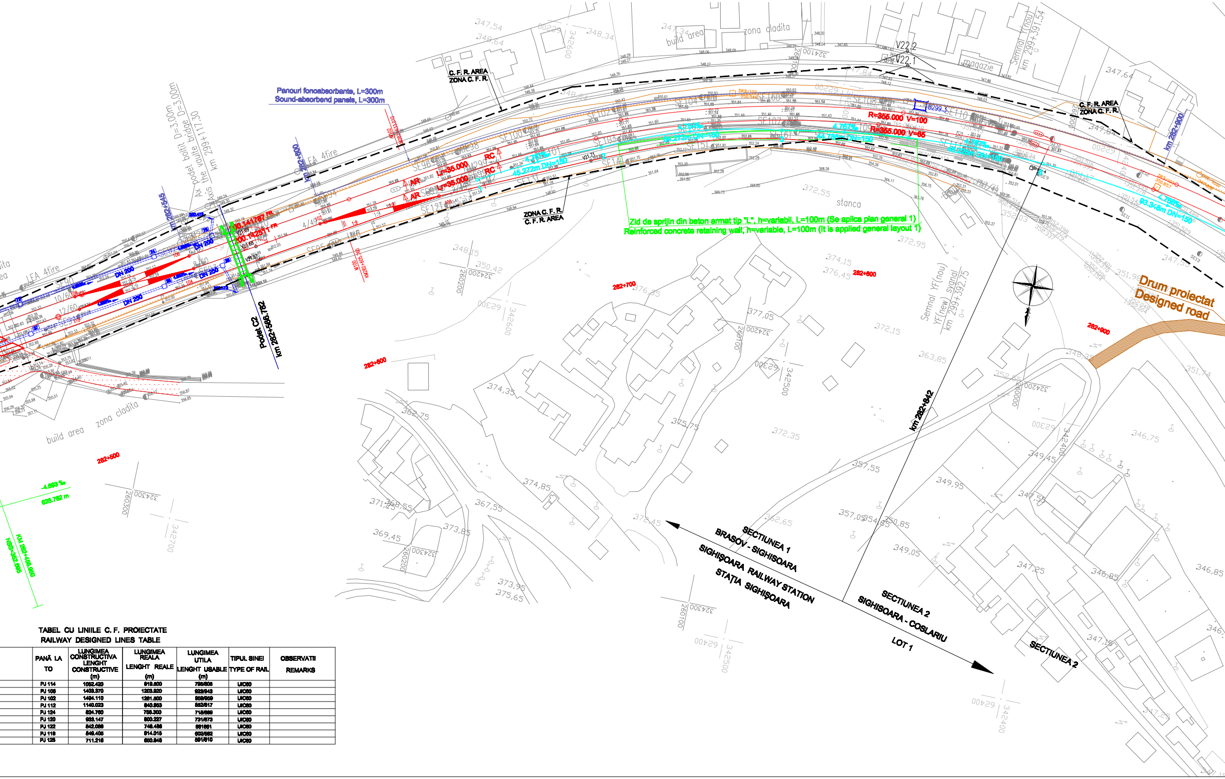
	Y	X
V	260540.983	324362.525
Ti	260544.886	324378.573
Te	260460.891	324317.345

nr.borna mille stone no.	X [m]	Y [m]	Z [m]
298.4	260957.178	324433.588	353.49
298.6	260865.947	324388.286	353.47
298.9	260479.983	324346.417	353.84
299.3	260054.774	324111.935	360.97



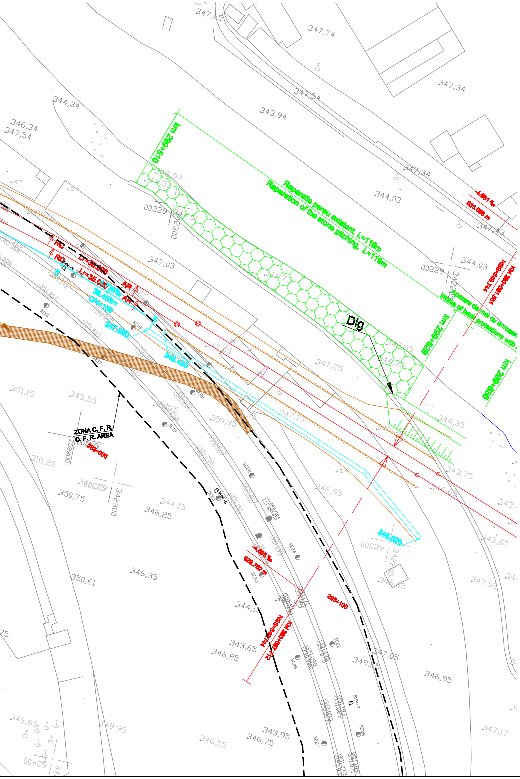
324200
260600
324200
260500
324300
260700
324300
260600
324300
260500
260400
324300
342800
324400
260500
-0.871 ‰
1089.967 m
-2.274 ‰
367.325 m
NSS=353.355
KM 282+091.128
-0.871 ‰
1090.000 m
linia 1,II
-2.274 ‰
367.350 m
linia 1,II
EL=353.530
CH 282 + 192.323
C. F. R. AREA
ZONA C. F. R.
Capat peron linia 1
Platform limit track 1
Km 282+153.95
Panouri fonoabsorbante, L=350m
Sound-absorbend panels, L=350m
km 282+195
cladire CFR
building
C. F. R. AREA
ZONA C. F. R.
-2.274 ‰
367.325 m
-4.881 ‰
833.096 m
NSS=352.885
KM 282+448.453
TRECERE LA NIVEL AMENAJATA CU DALE DE CAUCIUC
LEVEL CROSSING ARRANGED WITH RUBBER SLABS
km 299+029.70
km 282+479
zona cladiri
build area
build area
zona cladita
ZONA C. F. R.
C. F. R. AREA
Teava metalica de protectie
Protection metallic pipe
DN 150
DN 200
DN 250
AR
RC
Lr=75.000
Lr=60.000
R=350.000 V=100
R=404.250 V=65
R=400m
R=320m
R=600m
R=300m
R=200m
V21.46
V21.47
V21.53
V21.57
V21.58
V21.59
V21.60
V21.61
V21.62
V21.64
V21.65
magazie cladire
storehouse building
cladire
building
2/49
1:9
M128
KM282+117.765
M126
KM282+214.500
M124
KM282+225.000
M122
KM282+233.610
M120
KM282+275.700
M118
KM282+30
M116
KM282+347.50
M114
KM282+314.50
M112
KM282+380.000
-0.871 ‰
1090.000 m
282+100
-2.258 ‰
370.000 m
-0.871 ‰
480.750m lin7
-0.871 ‰
1090.000m lin III,4,5,6
-2.257 ‰
370.000m
+4.535 ‰
84.442m
KM 282+128.930
NSS=353.443
0.000 ‰
60.00m
km 282+128.45
Capat platforma tehnologica liniile III-4
Capat platforma tehnologica liniile 4-5
Technological platform limit tracks III-4
Technological platform limit tracks 4-5
Km 282+145.96
0.000 ‰
60.00m
-2.257 ‰
270.00m lin 8,9
-0.013 ‰
500.75m lin 9
KM 282+188.930
NSS=353.43
Capat peron liniile 8-9
Platform limit tracks 8-9
Km 282+188.5
282+200
Timpan
Tympan
15.15
-2.258 ‰
370.000 m
282+300
282+400
Demolare partiala perete pe taluz
Partial demolition of revetment on the slope
ŞANŢ RANFORSAT PREFABRICAT TIP 2, L=100.00M
PREFABRICATED REINFORCED DITCH, TYPE 2, L=100.00M
(EA5101E00QCCT00050140)
ŞANŢ DE BETON MONOLIT, DREAPTA, L = 12 3.70M
MONOLITH CONCRETE DITCH, RIGHT, L = 12 3.70M
(EA5101E00BBTR00010020)
km 282+246.06
RIGOLĂ PREFABRICATĂ TIP 7, DREAPTA, L = 55.55M
PREFABRICATED GUTTER TYPE 7, RIGHT, L = 55.55M
(EA5101E00QKCT000X0110)
km 282+316
REPARAŢII LA PARAMENTUL ZIDULUI EXISTENT, L = 36M
REPAIRS FOR THE EXISTING WALL FACE, L = 36M
km 282+351
km 282+295.50
RIGOLĂ PREFABRICATĂ CU REBORD, TIP 5, L=30,30M
PREFABRICATED GUTTER WITH CORBEL, TYPE 5, L=30,30M
(EA5101E00QKCT000X0080)
km 282+324.85
RIGOLĂ PREFABRICATĂ TIP 7, L=15.15M
PREFABRICATED GUTTER TYPE 7, L=15.15M
(EA5101E00QKCT000X0110)
km 282+341.64

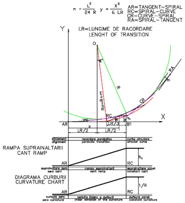
NO NR. CRT.	DENUMIREA LINIEI C.F. DENOMINATION OF THE RAILWAY LINE	DE LA FROM	PRIN BY
1	Linia 1 / Line 1	PJ113	117, 121
2	Linia II / Line II	PJ103	105, 113, 114, 108
3	Linia III / Line III	PJ101	107, 109, 112, 110, 104
4	Linia 4 / Line 4	PJ109	115, 119, 125, 124, 120, 118, 116
5	Linia 5 / Line 5	PJ125	------
6	Linia 6 / Line 6	PJ119	123, 122
7	Linia 7 / Line 7	PJ123	131
8	Linia 8 / Line 8	PJ131	133, 137, 139, 130, 128, 126
9	Linia 9 / Line 9	PJ133	------


Panouri fonoabsorbante, L=300m
Sound-absorbend panels, L=300m
C. F. R. AREA
ZONA C. F. R.
ZONA C. F. R.
C. F. R. AREA
build area
zona cladita
Ax podet boltit D=3.00m
Axis the vaulte bridge D=3.00m
km 299+117.30
km 282+545
km 282+600
km 282+842
km 282+900
Podet C2
km 282+566.782
M102
KM282+633.010
M100
KM282+605.760
LEA 4fire
SE96
SE98
SE100
SE102
SE104
SE107
SE108
SE110
SE95
SE12T
SE13T
SE14T
SE15T
SE16T
SE9
SE10
SE11
SE13
RC
AR
Lr=35.000
00.141787 FR
00.142511 FR
V21.69
V21.68
V21.67
V21.71
V22.2
V22.1
1:9
4/49
DN 200
DN 250
4.757‰
45.272m DN=150
4.754‰
64.272m DN=150
4.767‰
44.785m DN=150
4.767‰
48.225m DN=150
4.767‰
93.348m DN=150
R=355.000 V=100
R=355.000 V=65
DRB/102
350.948
B299.3
magazie
stanca
Semnal YF(nou)
YF(new) sygnal
km 299+392.75
Semnal YF(nou)
km 299+391.54
Zid de sprijin din beton armat tip "L", h=variabil, L=100m (Se aplica plan general 1)
Reinforced concrete retaining wall, h=variable, L=100m (It is applied general layout 1)
Drum proiectat
Designed road
282+500
282+600
282+700
282+800
282+900
-4.693 ‰
626.762 m
KM 282+449.660
NIV=352.698
SECTIUNEA 1
BRASOV - SIGHISOARA
SIGHIŞOARA RAILWAY STATION
STAŢIA SIGHIŞOARA
SECTIUNEA 2
SIGHISOARA - COSLARIU
LOT 1
SECTIUNEA 2
372,55
374,15
376,45
377,05
372,15
363,85
374,35
375,75
372,35
357,55
349,95
349,45
347,50
346,75
362,65
357,05
354,65
350,85
349,05
347,25
346,85
347,15
374,85
367,55
373,85
371,25
368,55
369,45
373,95
375,65
362,75
348,15
350,42
347,54
348,64
348,34
347,34
347,84
347,64
351,98
352,65
351,74
346,86
260200
324200
260300
324300
342600
342700
260100
324100
342500
260000
342400
629300

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

	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
	PJ 114	1062.420	919.800	796/806	UIC60	
	PJ 106	1403.370	1203.920	922/943	UIC60	
	PJ 102	1494.110	1261.800	959/959	UIC60	
	PJ 112	1140.023	840.963	882/817	UIC60	
	PJ 124	824.760	766.300	718/699	UIC60	
	PJ 120	933.147	800.227	731/673	UIC60	
	PJ 122	842.088	746.486	661/661	UIC60	
	PJ 118	849.405	814.015	602/582	UIC60	
	PJ 126	711.216	650.846	591/610	UIC60	


Reparatie perete existent, L=119m
Reparation of the stone pitching, L=119m
Dig
km 259+510
km 259+639
km 259+659
Aparare de mal cu anrocamente
Works of bank protections with
ZONA C.F.R.
C.F.R. AREA
259+000
259+100
RC
RO
AR
LT=35.000
LF=35.000
38.453m
Dn=150
347,000
348,450
346,520
4.691 ‰
633.098 m
4.063 ‰
628.762 m
KM 259+336
NSS=349.744
347,65
347,74
347,34
347,54
343,94
344,34
346,34
347,54
347,03
344,03
351,15
345,55
350,35
347,15
344,35
343,75
351,20
346,25
350,75
344,15
346,25
346,95
346,65
350,61
346,35
347,05
343,65
346,85
349,65
346,95
346,65
349,95
346,55
343,95
346,75
347,17


$m = \frac{L^2}{24R}$ $y = \frac{x^3}{6LR}$
AR=TANGENT–SPIRAL
RC=SPIRAL–CURVE
CR=CURVE–SPIRAL
RA=SPIRAL–TANGENT
LR=LUNGIME DE RACORDARE
LENGHT OF TRANSITION
Y
X
O
R
Ro=R+m
RC
CR
RA
AR
B1
LR/2
LR/2
LR/3
RAMPA SUPRAINALTARII
CANT RAMP
DIAGRAMA CURBURII
CURVATURE CHART
1/R

TABEL CARACTERISTICI APARATE DE CALE PROIECTATE CAP Y

CHARACTERISTICS DESIGNED TURNOUTS TABLE Y END

NO NR. CRT.	NO NR. P.G.	DEVIATIE DEVIATION		TIP TYPE	Tg.	R RADIUS (m)	TIPUL ACELOR TYPE OF SWITCH	PROVENIENTA COMING FROM		COORDONATE COORDINATES		OBSERVATII OBSERVATION
		STG. LEFT	DR. RIGHT					NOI NEW	REFOLOSITI DISMANTLING	X	Y	
1	100		●	60	1:9	300	flexibil	•		260214.854	324177.007	
2	102		●	60	1:9	300	flexibil	•		260253.949	324194.939	
3	104			60	1:9	300	flexibil	•		260294.496	324219.345	Bretea nr. 104 - 106 - 108 - 110
4	106			60	1:9	300	flexibil	•		260298.950	324215.278	
5	108			60	1:9	300	flexibil	•		260333.582	324237.366	
6	110			60	1:9	300	flexibil	•		260331.096	324241.433	
7	112	●		60	1:9	300	flexibil	•		260402.138	324284.303	
8	114		●	60	1:9	300	flexibil	•		260432.361	324287.005	
9	116	●		60	1:9	300	flexibil	•		260436.266	324310.456	
10	118	●		60	1:9	300	flexibil	•		260466.687	324330.010	
11	120		●	60	1:9	300	flexibil	•		260496.337	324347.903	
12	122		●	60	1:9	300	flexibil	•		260535.550	324370.161	
13	124		●	60	1:9	300	flexibil	•		260546.493	324369.861	
14	126		●	60	1:9	300	flexibil	•		260552.064	324367.184	
15	128		●	60	1:9	300	flexibil	•		260645.673	324419.055	
16	130		●	60	1:9	300	flexibil	•		260769.606	324443.831	
17	132		●	40	1:9	190	flexibil	•		260812.800	324446.394	
18	134		●	40	1:9	190	flexibil	•		260839.455	324460.986	

TABEL CURBE PROIECTATE - LINII ABATERE CAP Y

DESIGNED CURVES - ON DEVIATION LINES TABLE Y END

NR.CURBA NO.CURVE	V SPEED (km/h)	ELEMENTE ELEMENTS					h_n (mm)	COORDONATE COORDINATES					
								V		Ti		Te	
		U	R	T	B	C		X	Y	X	Y	X	Y
V21.38	40	199.5000	FRANTURA				0	260836.641	324455.074	FRANTURA		FRANTURA	
V21.39	40	199.5000	FRANTURA				0	260829.891	324459.714	FRANTURA		FRANTURA	
V21.40	40	199.5000	FRANTURA				0	260804.485	324449.816	FRANTURA		FRANTURA	
V21.41	40	199.5000	FRANTURA				0	260770.324	324428.825	FRANTURA		FRANTURA	
V21.42	40	199.5000	FRANTURA				0	260766.674	324422.418	FRANTURA		FRANTURA	
V21.43	40	199.5000	FRANTURA				0	260752.639	324436.072	FRANTURA		FRANTURA	
V21.44	40	199.5000	FRANTURA				0	260746.297	324440.175	FRANTURA		FRANTURA	
V21.45	40	199.5000	FRANTURA				0	260740.572	324414.340	FRANTURA		FRANTURA	
V21.46	40	199.5000	FRANTURA				0	260731.206	324407.906	FRANTURA		FRANTURA	
V21.47	35	199.5000	FRANTURA				0	260703.015	324427.956	FRANTURA		FRANTURA	
V21.48	40	191.5204	600	40.018	1.333	79.916	0	260686.116	324437.224	260725.662	324443.417	260647.752	324425.836
V21.49	40	193.4677	320	16.432	0.422	32.835	0	260686.092	324429.994	260702.248	324432.846	260670.172	324425.895
V21.50	40	199.5000	FRANTURA				0	260656.707	324396.155	FRANTURA		FRANTURA	
V21.51	30	199.5000	FRANTURA				0	260658.007	324400.949	FRANTURA		FRANTURA	
V21.52	30	199.5000	FRANTURA				0	260657.195	324406.537	FRANTURA		FRANTURA	
V21.53	30	199.5000	FRANTURA				0	260656.466	324410.231	FRANTURA		FRANTURA	
V21.54	30	189.5291	280	15.818	0.640	31.586	0	260598.509	324386.858	260614.630	324389.314	260583.580	324381.916
V21.55	30	182.7645	280	27.289	1.842	54.694	0	260592.544	324390.692	260619.430	324394.867	260567.751	324379.486
V21.56	40	182.7645	280	27.206	1.842	54.064	0	260591.135	324395.280	260618.021	324399.465	260566.341	324384.076
V21.57	30	175.7369	280	39.578	3.886	78.215	0	260584.224	324399.014	260622.343	324404.933	260551.041	324379.343
V21.58	30	190.5412	280	14.865	0.593	29.718	0	260590.865	324404.199	260605.232	324408.093	260577.233	324398.222
V21.59	30	185.0174	280	23.844	1.269	47.659	0	260588.834	324408.256	260611.200	324414.985	260568.061	324398.428
V21.60	30	180.8013	400	60.775	4.590	120.529	0	260568.333	324361.709	260626.370	324371.155	260511.911	324334.567
V21.63	30	191.7432	300	19.462	0.632	38.909	0	260516.527	324366.652	260533.395	324376.396	260501.060	324354.606
V21.64	30	199.5000	FRANTURA					260520.989	324355.359	FRANTURA		FRANTURA	
V21.65	30	199.5000	FRANTURA				0	260516.872	324359.086	FRANTURA		FRANTURA	
V21.66	30	196.3678	1000	12.663	0.080	25.324	0	260473.145	324315.814	260484.505	324321.409	260461.646	324310.509
V21.67	30	199.8575	FRANTURA				0	260272.105	324211.361	FRANTURA		FRANTURA	

1	2

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

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

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. Gambell		
Verificat Checked	Expert Verificator Checking Expert	S. MENICHINI		

SUBCONTRACTANT / SUBCONTRACTOR

AREX COMPANY

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 2   2