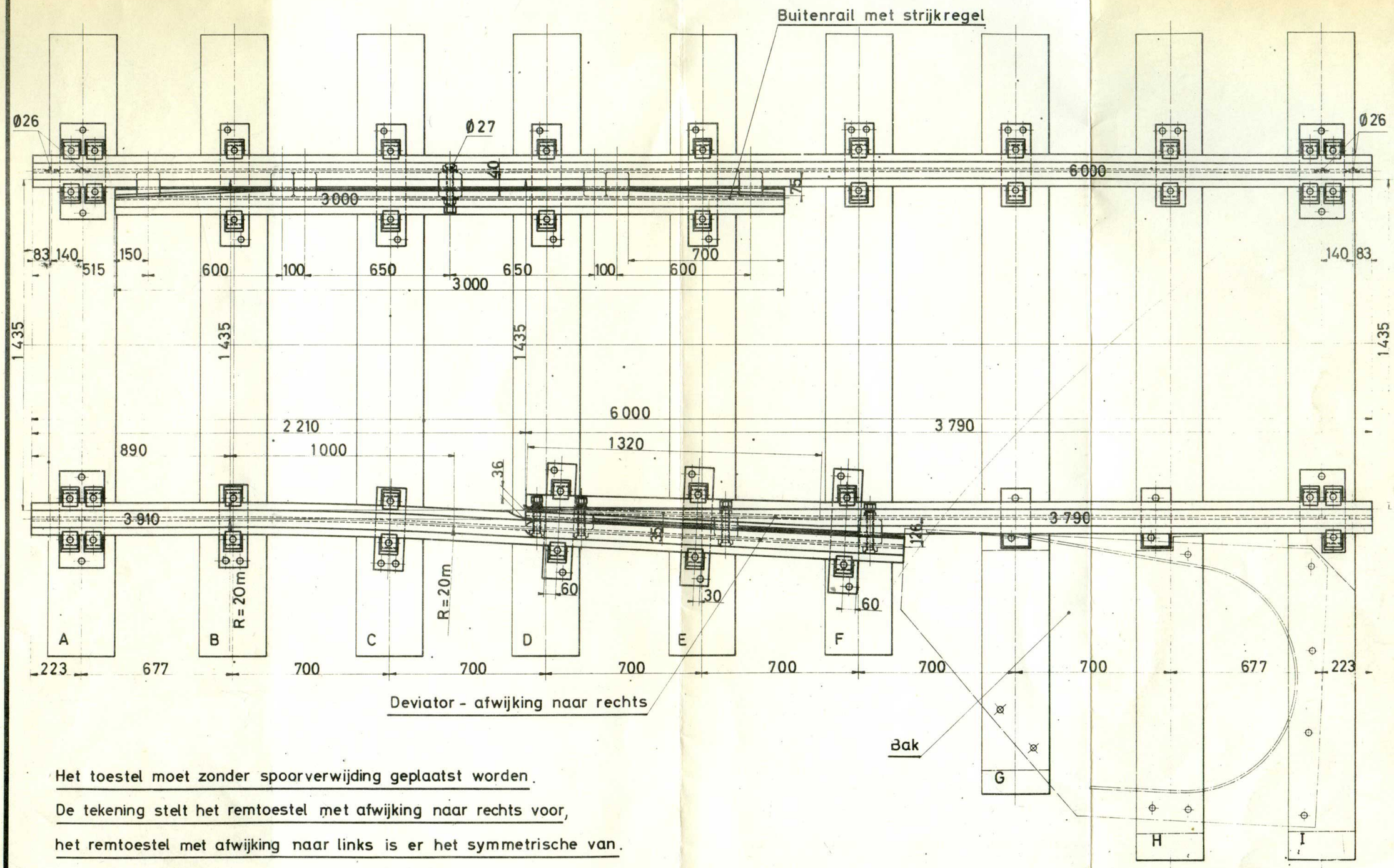
ALBUM

DER

SPOORTOESTELLEN

239609

REMTOESTEL - LOPEND SPOOR - MOD.54



Het toestel moet zonder spoorverwijding geplaatst worden.

De tekening stelt het remtoestel met afwijking naar rechts voor,

het remtoestel met afwijking naar links is er het symmetrische van.

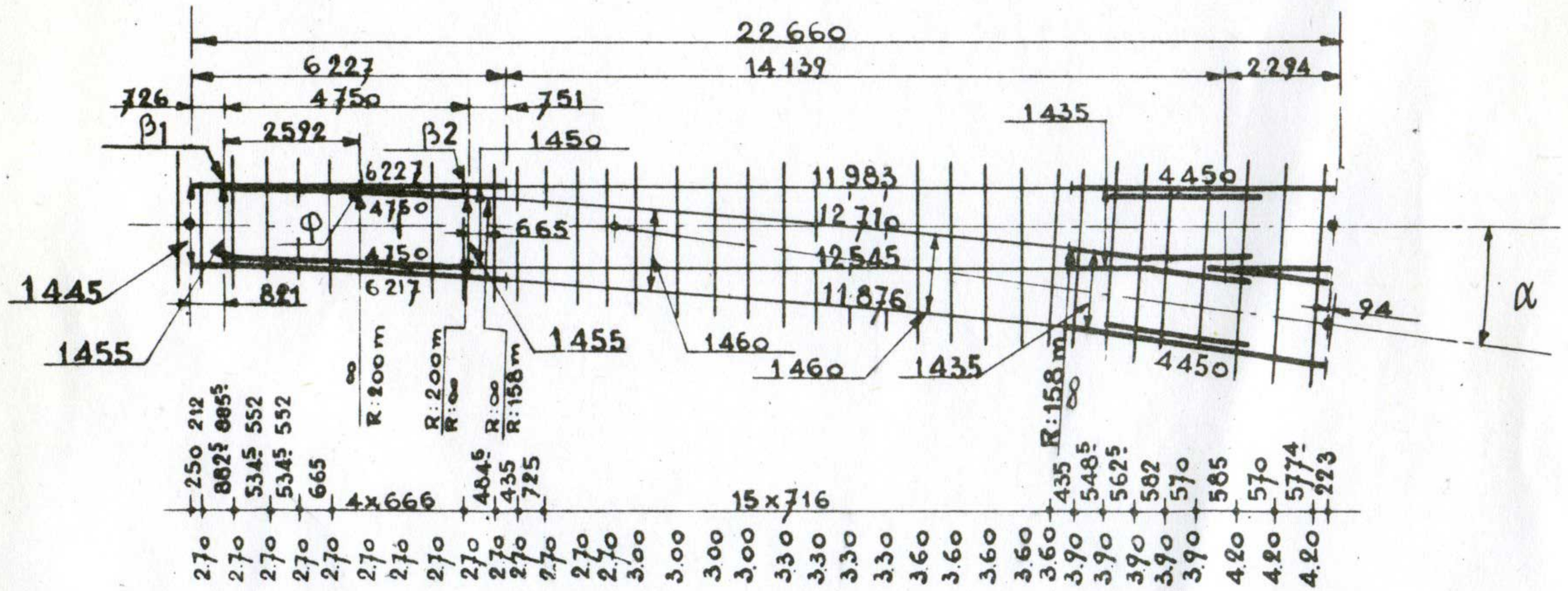
6-69

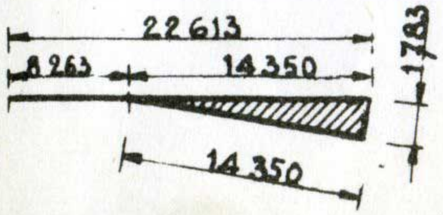
1966

Ⓑ

1/8.000

F[1]-H[4]





$\beta 1 = 1°\,35'\,30'' = 1^{g},768519$

$\beta 2 = 2°\,35'\,09'' = 2^{g},873148$

$\varphi = 0°\,22'\,18'' = 0^{g},412963$

$\alpha = 7°\,07'\,30'' = 7^{g},916667$

R = 158,10 m

tg α = 0,125000

11 - 14

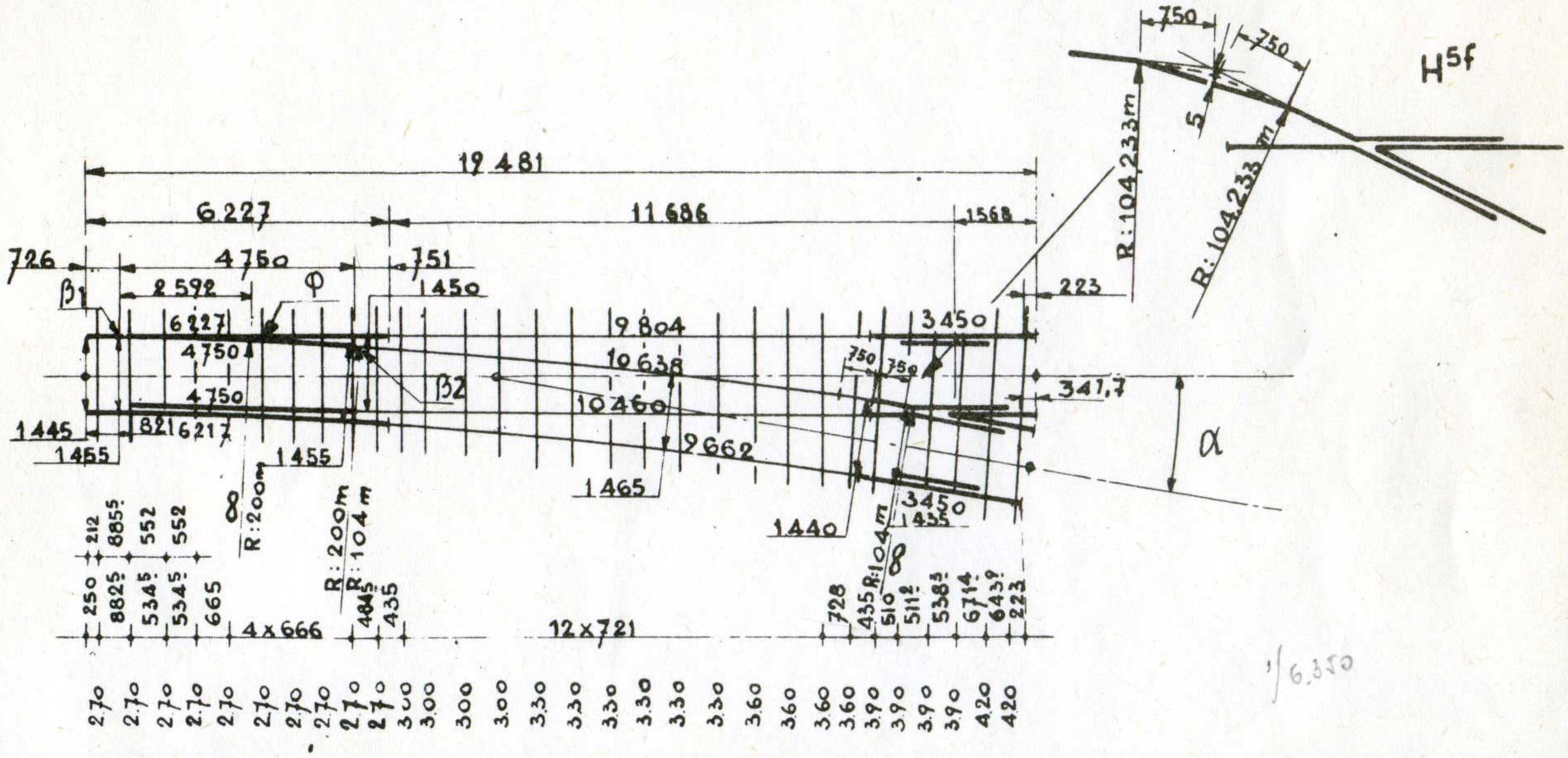
12.66

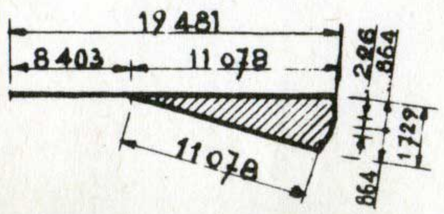
1966

B

1/6.350

$F^1 - H^{5f}$





$\beta_1 = 1°35'30'' = 1^g,768519$

$\beta_2 = 2°35'09'' = 2^g,873148$

$\varphi = 0°22'18'' = 0^g,412963$

$\alpha = 8°57'01'' = 9^g,944753$

R = 104,23 m

tg α = 0,157495

11 - 15 f

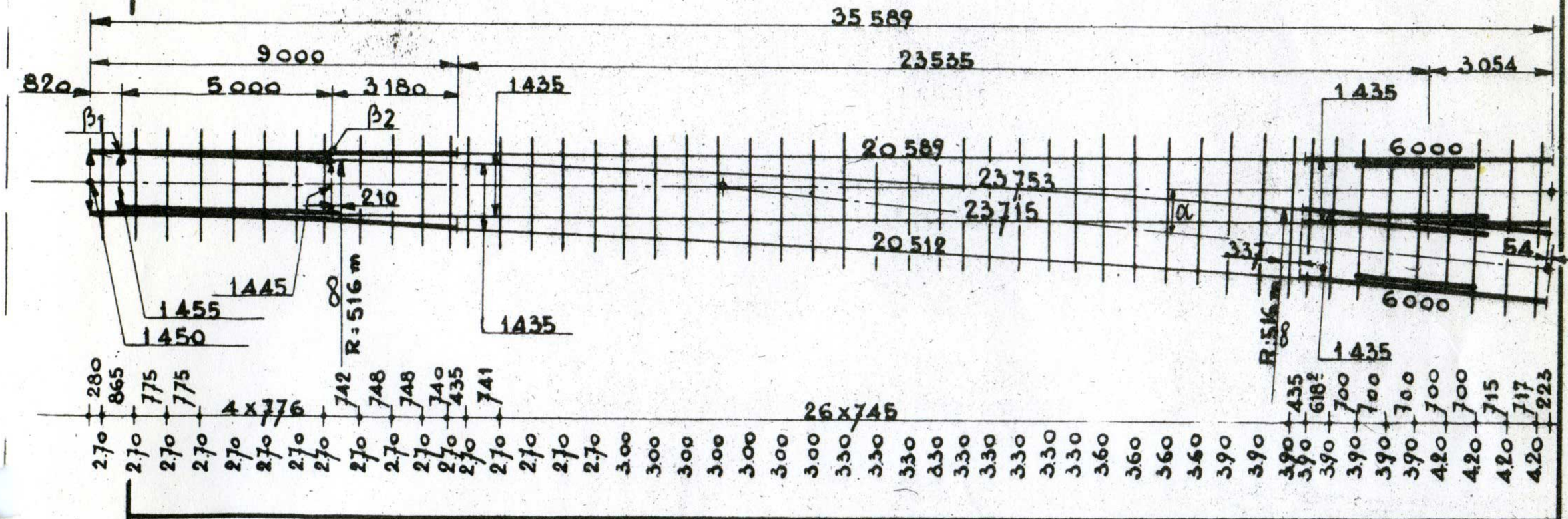
72-65

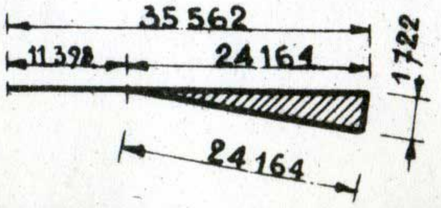
1966

Ⓑ

1/14.010

$F^{3}-H^{1}$





$\beta_1 = \beta_2 = 1°\,30'\,46'' = 1^{g},680864$ $R = 516{,}38\ m$

$\alpha = 4°05'00'' = 4^{g},537037$ $\operatorname{tg}\alpha = 0{,}071388$

11 - 31

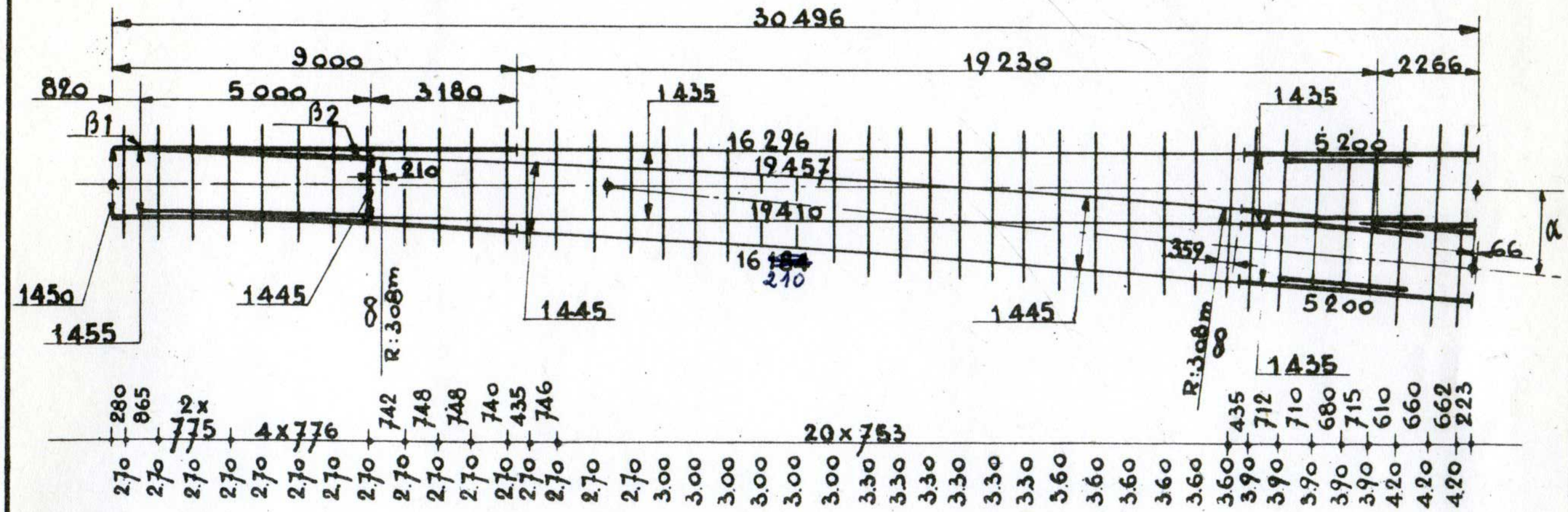
12-65

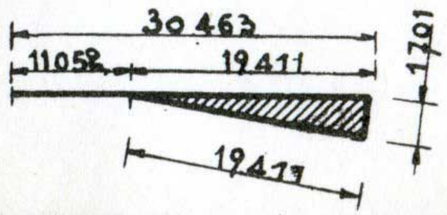
1966

B

1/11.378

F^3-H^2





$\beta_1 = \beta_2 = 1°\,30'\,46'' = 1^{g},680864$ $R = 307{,}61$ m

$\alpha = 5°\,01'\,24'' = 5^{g},581481$ $tg\,\alpha = 0{,}087899$

11 - 32

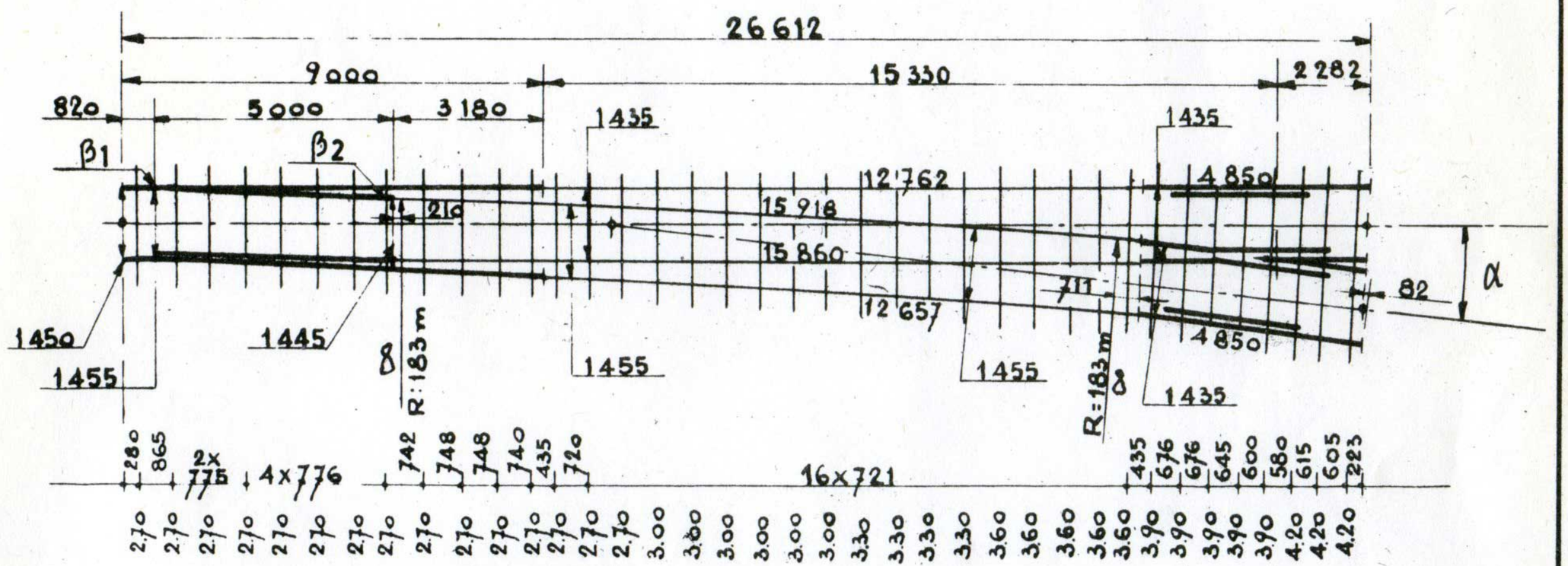
12-65

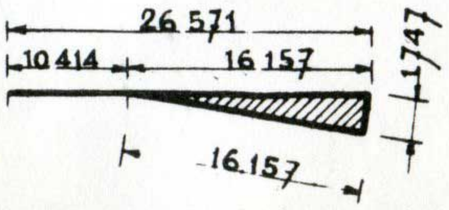
1966

Ⓑ

1/9.208

F^3-H^3





$\beta_1 = \beta_2 = 1°30'46'' = 1^g,680864$ $R = 182,89\ m$

$\alpha = 6°11'55'' = 6^g,887346$ $tg\,\alpha = 0,108611$

11 - 33

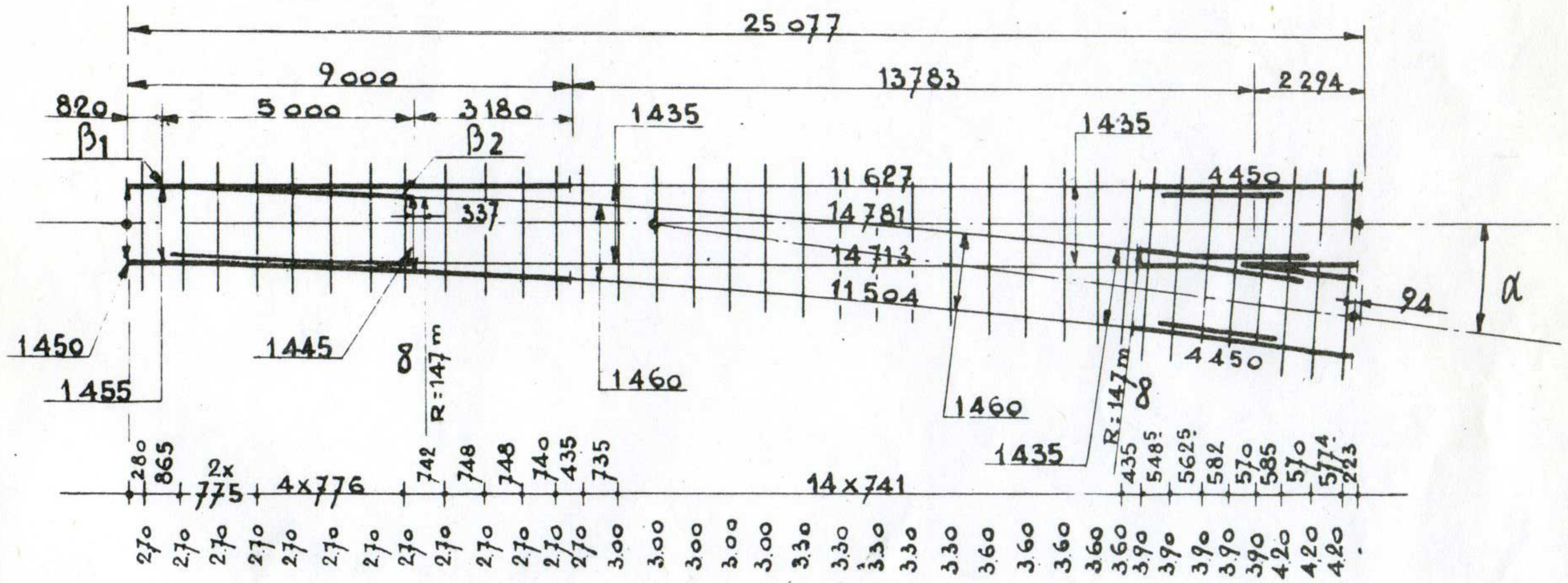
12-65

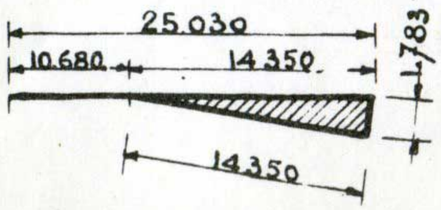
1966

Ⓑ

1/8.000

$F^3 - H^4$





$\beta_1 = \beta_2 = 1°30'46'' = 1^g,680864$

$\alpha = 7°07'30'' = 7^g,916667$

$R = 147,42\,m$

$tg\,\alpha = 0,125000$

11 - 34

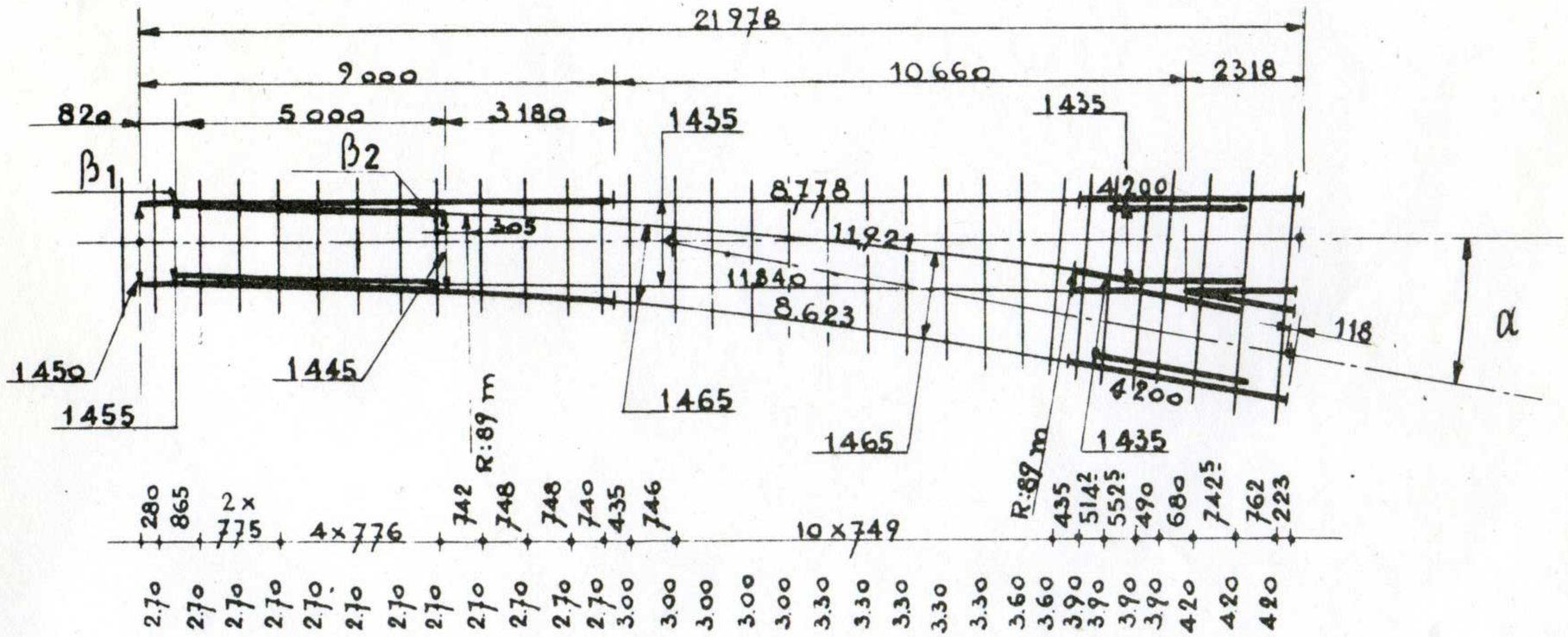
12.65

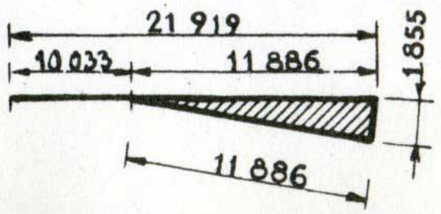
1966

Ⓑ

1/6.950

$F^3 - H^5$





$\beta_1 = \beta_2 = 1°30'46'' = 1^g,680864$ $R = 89,18$ m

$\alpha = 8°57'01'' = 9^g,944753$ $\operatorname{tg}\alpha = 0,157495$

11 - 35

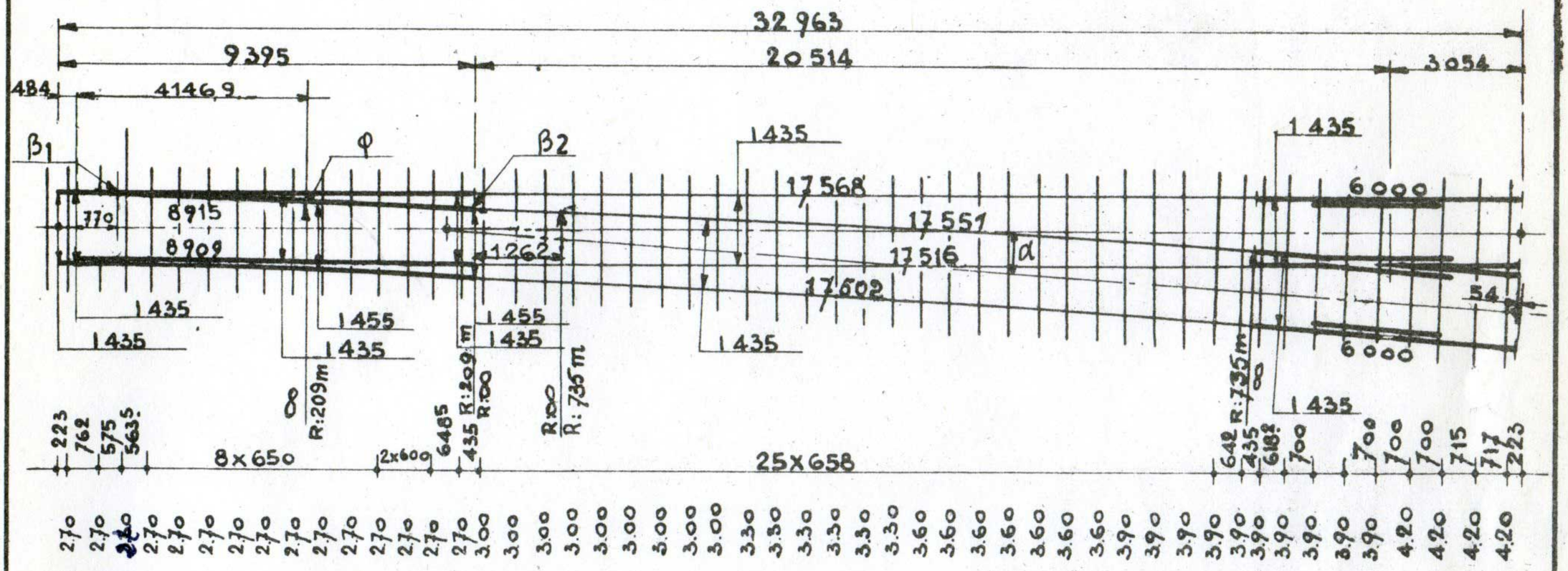
12·65

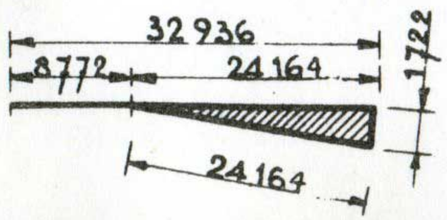
1966

Ⓑ

1/14.010

$F^4 - H^1$





$\beta_1 = 1°\,13'\,18'' = 1^g,357444$

$\beta_2 = 2°\,48'\,48'' = 3^g,125957$

$\varphi = 0°\,16'\,59'' = 0^g,314562$

$\alpha = 4°\,05'\,00'' = 4^g,537037$

R = 734,87 m

tg α = 0,071388

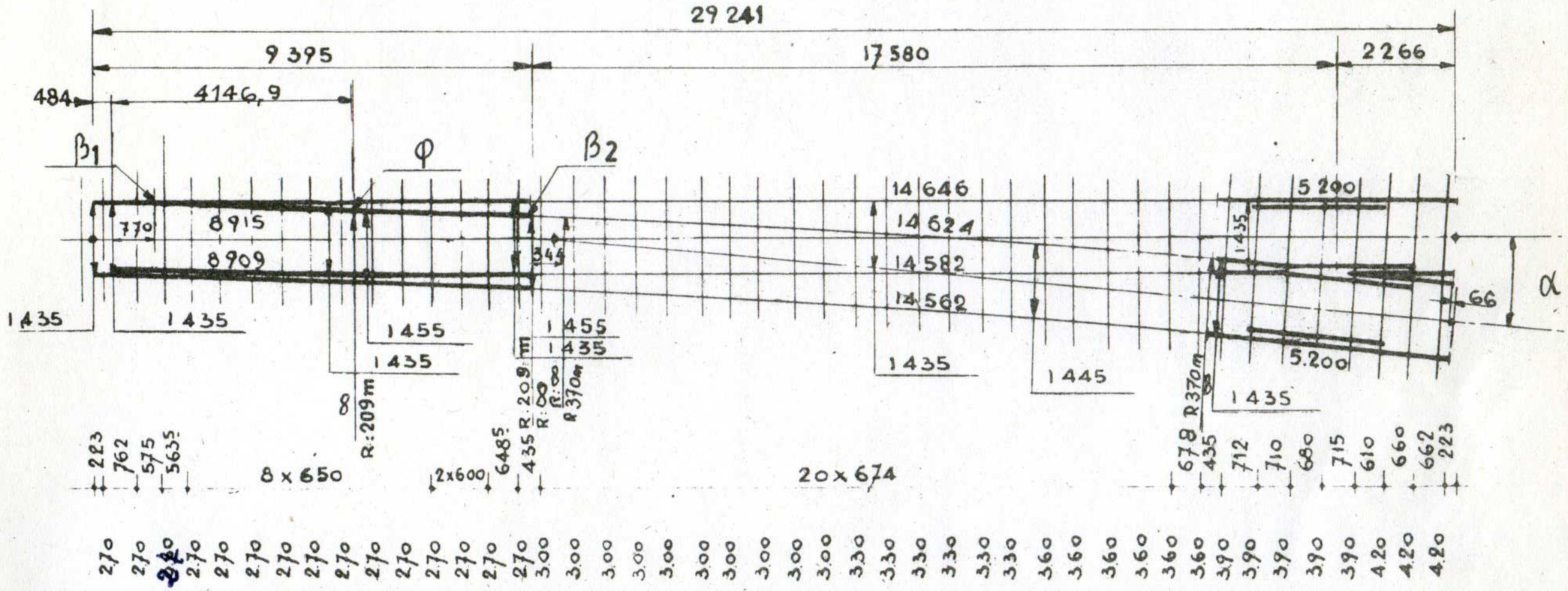
11 -41

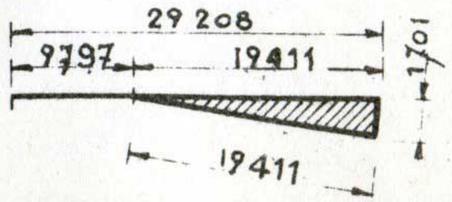
1966

Ⓑ

1/11.378

$F^4 - H^2$





$\beta 1 = 1°13'18'' = 1^g,357444$

$\beta 2 = 2°48'48'' = 3^g,125957$

$\varphi = 0°16'59'' = 0^g,314562$

$\alpha = 5°01'24'' = 5^g,581481$

R = 370,18 m

tg α = 0,087899

11 - 42

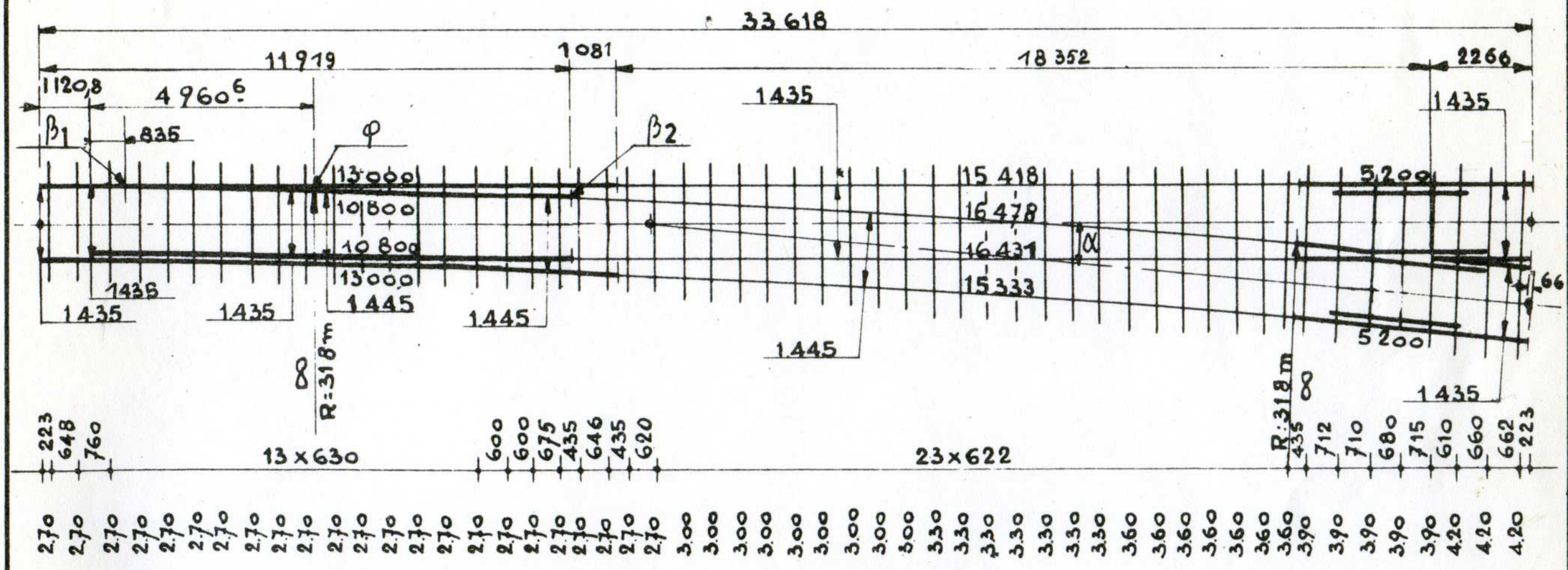
12-65

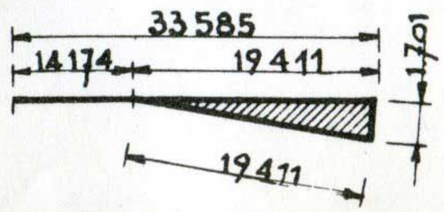
1966

Ⓑ

1/11.378

$F^5 - H^2$





β1 = 1° 00' 00" = $1^g,111111$
β2 = 2° 03' 10" = $2^g,280833$
φ = 0
α = 5° 01' 24" = $5^g,581481$

R = 317,79 m

tg α = 0,087899

11 - 52

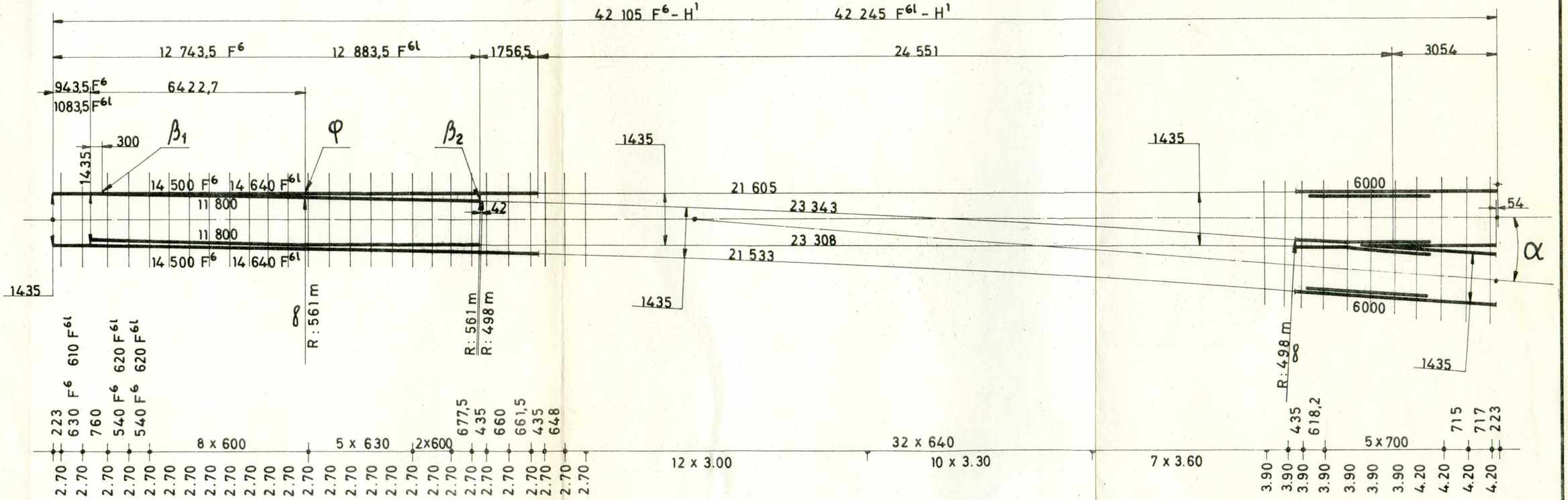
12·65

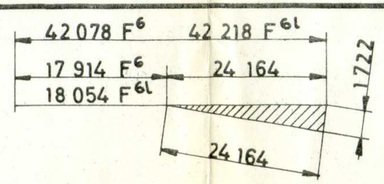
1966

Ⓑ

1/14.010

F^6 - H^1 F^{6l}





β_1 = 0° 40' 26" = 0^g,748688

β_2 = 1° 24' 03" = 1^g,556481

φ = 0° 10' 42" = 0^g,198037

α = 4° 05' 00" = 4^g,537037

R= 497,65 m

tg α = 0,071388

11 - 61

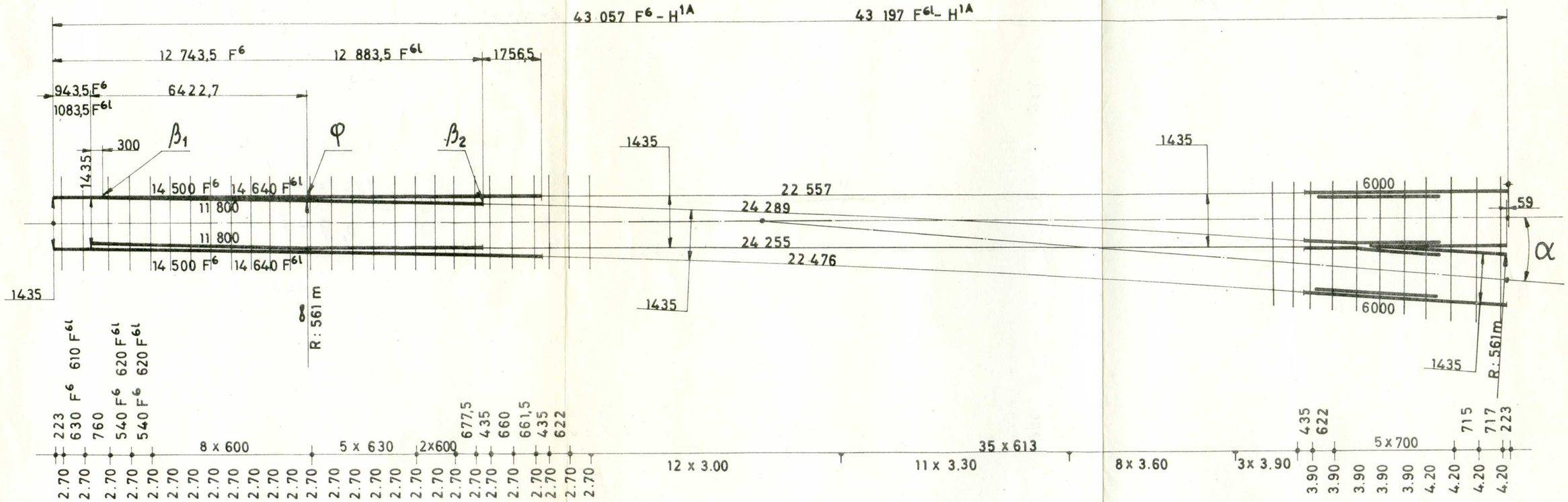
6-69

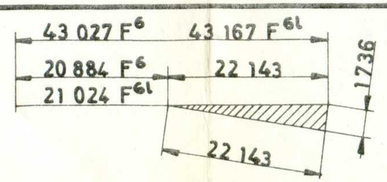
1966

Ⓑ

1/12.727

F^6 - H^{1A} / F^{6l} - H^{1A}





β_1 = 0° 40' 26" = $0^g,748688$

β_2 = 1° 24' 03" = $1^g,556481$

φ = 0° 10' 42" = $0^g,198037$

α = 4° 29' 34" = $4^g,991830$

R= 561,26 m

tg α = 0,078572

11 - 61 A

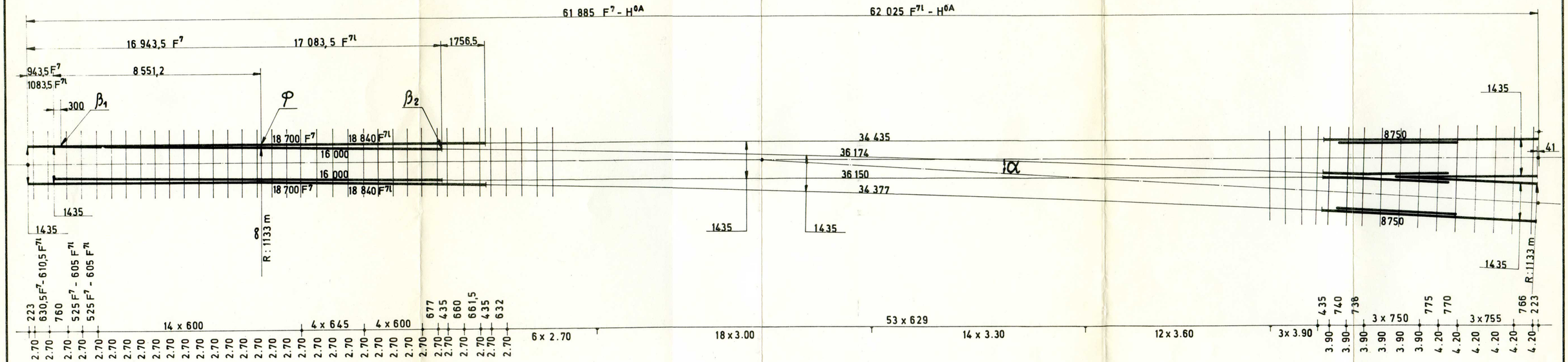
6-69

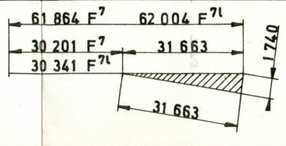
1966

B

1/18.180

F^7 - H^{0A}
F^{7l}





β_1 = 0° 30' 00" = 0^g,555556
β_2 = 0° 52' 36" = 0^g,974136
φ = 0
α = 3° 08' 55" = 3^g,498457

R = 1132,92 m

tg α = 0,055009

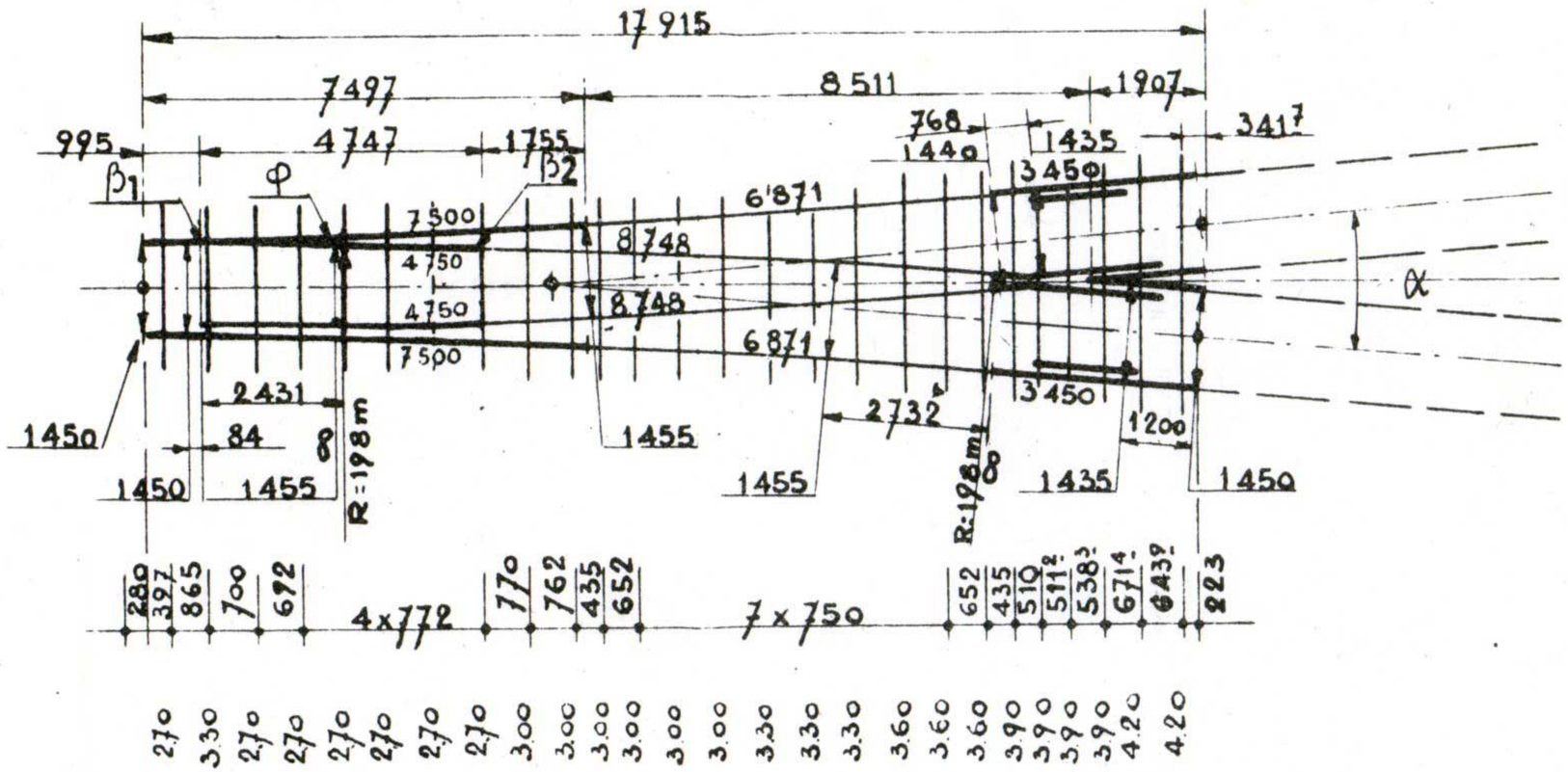
11 - 70 A

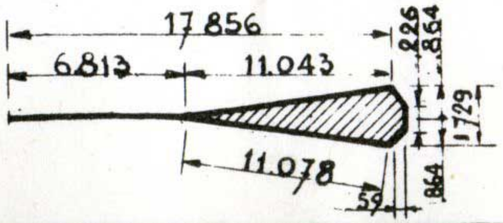
6-69

1966

0,5 / 6.350 / 0,5

$F^{2sym}-H^{5f}$





$\beta_1 = 1°16'46' = 1^{g},421605$

$\beta_2 = 1°57'00'' = 2^{g},166667$

$\varphi = 0$

$\alpha = 8°57'01'' = 9^{g},944753$

R = 198,41 m

tg α = 0,157495

12 - 25f

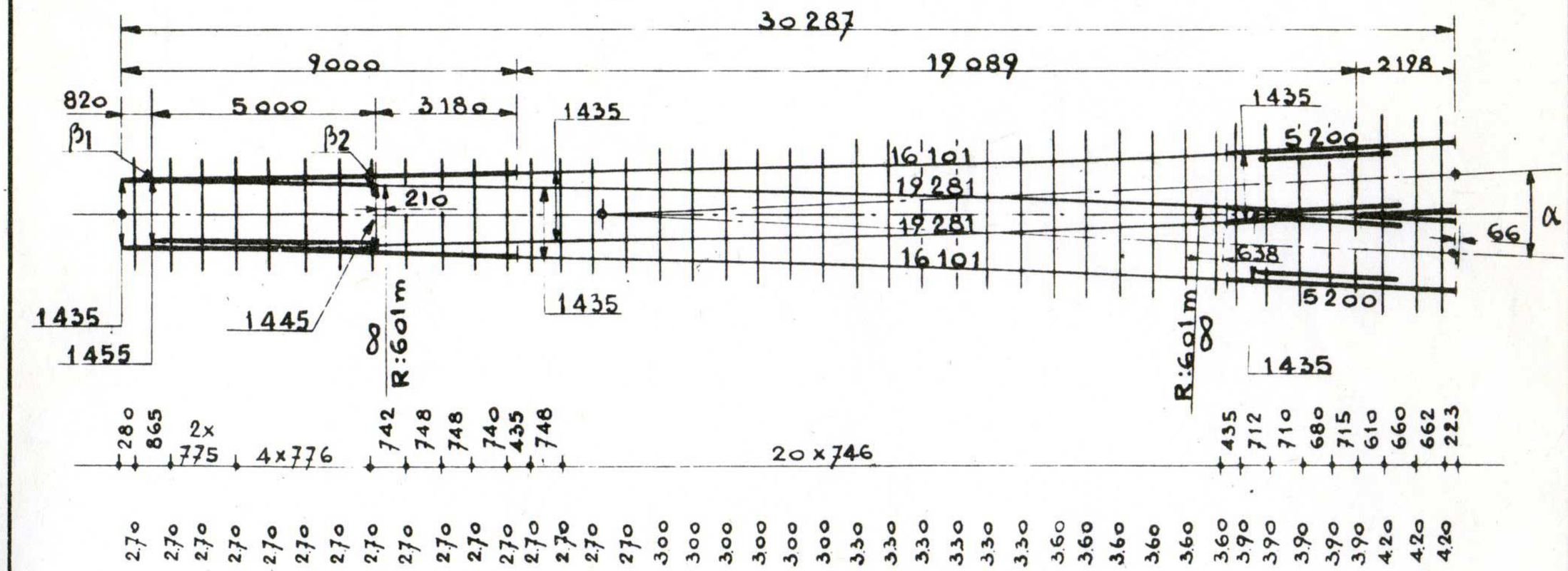
12-65

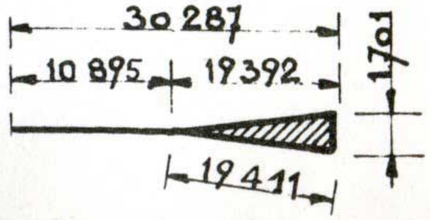
1966

Ⓑ

0,5 / 11.378 / 0,5

$F^{3sym}-H^2$





$\beta_1 = \beta_2 = 0° 45' 23'' = 0^g,840432$ $R = 601,03$ m

$\alpha = 5° 01' 24'' = 5^g,581481$ $\operatorname{tg}\alpha = 0,087899$

12 - 32

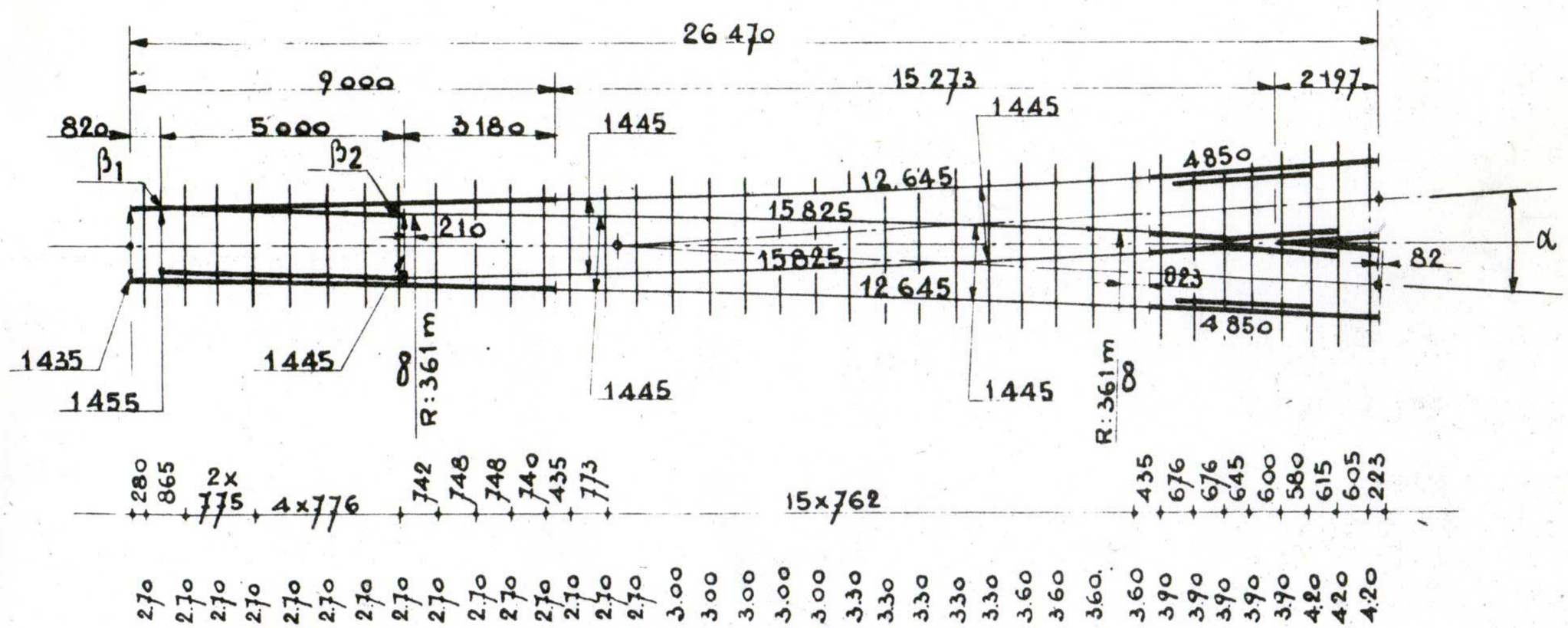
12-65

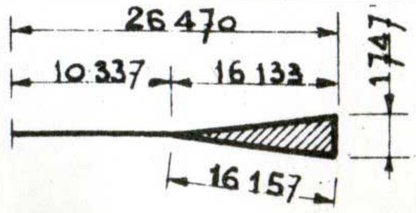
1966

Ⓑ

0.5 / 9.208 / 0.5

$F^{3sym}-H^3$





$\beta_1 = \beta_2 = 0° 45' 23'' = 0^g,840432$ $R = 361{,}05$ m

$\alpha = 6° 11' 55'' = 6^g 887346$ $tg\,\alpha = 0{,}108611$

12 - 33

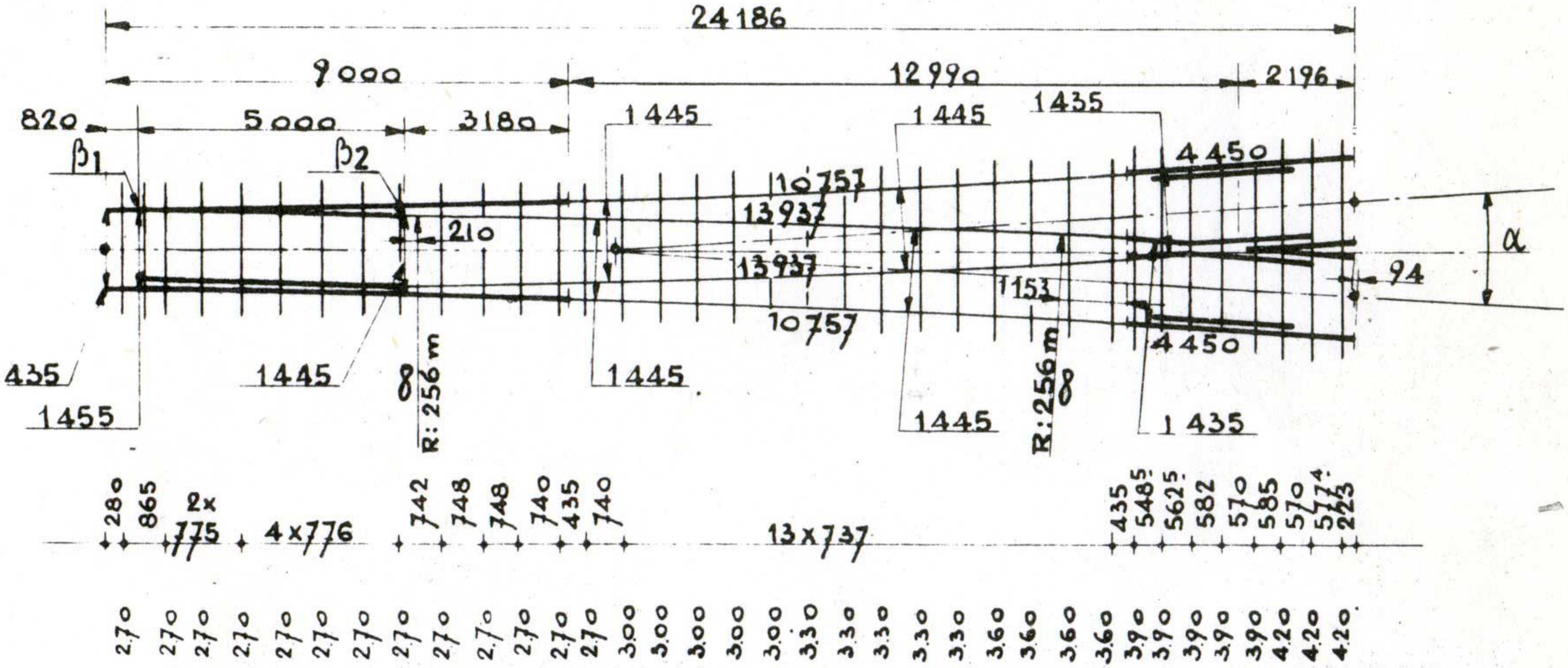
12-65

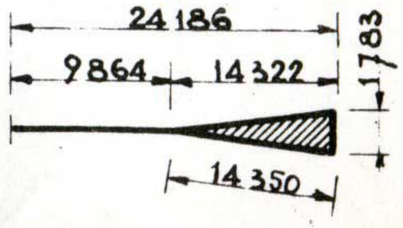
1966

Ⓑ

0.5 / 8.000 / 0.5

$F^{3sym}-H^{4}$





$\beta_1 = \beta_2 = 0°45'23'' = 0^{g},840432$ $R = 256,33\ m$

$\alpha = 7°07'30'' = 7^{g},916667$ $tg\,\alpha = 0,125000$

12 - 34

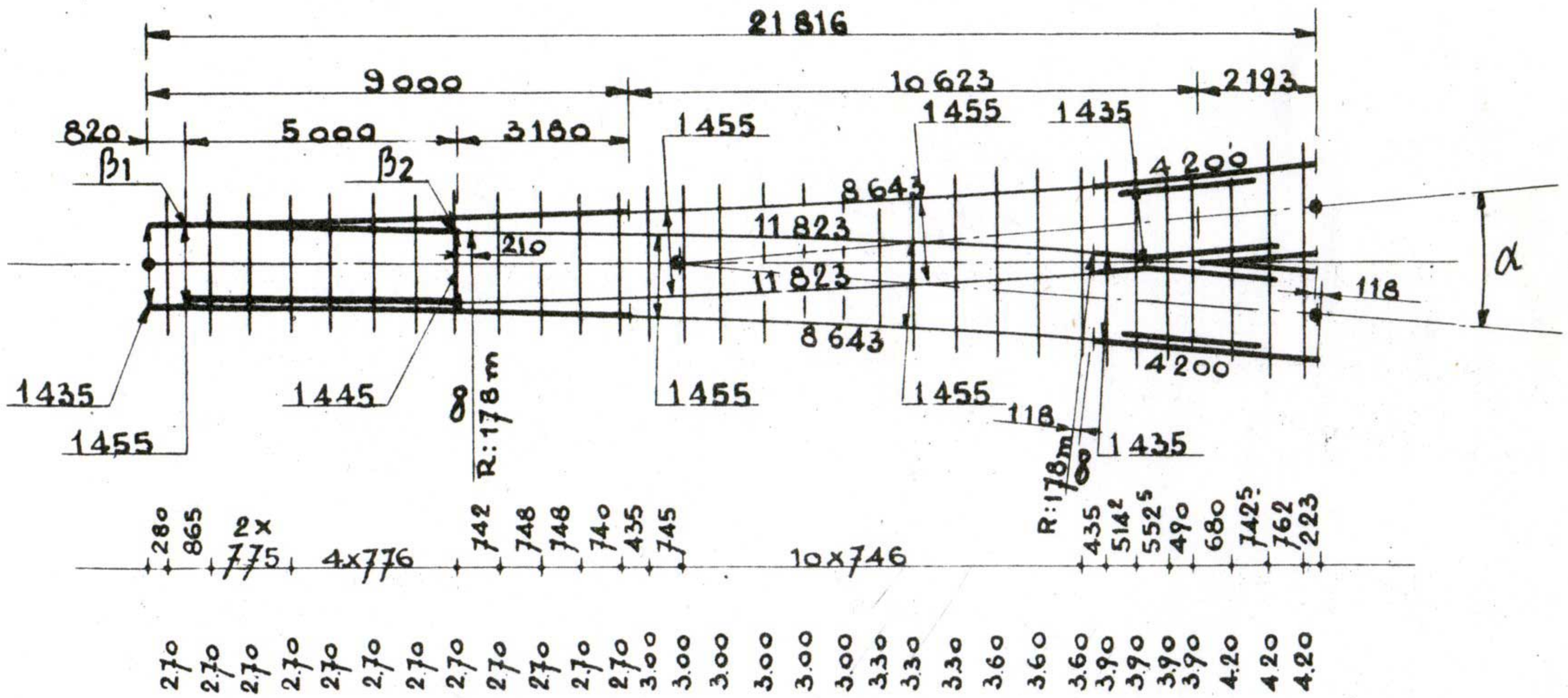
12-65

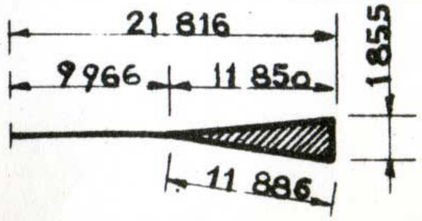
1966

Ⓑ

0,5 / 6.950 / 0,5

F 3sym – H 5





$\beta_1 = \beta_2 = 0°45'23'' = 0^g,840432$

$\alpha = 8°57'01'' = 9^g,944753$

R = 178,35 m

$tg\alpha = 0,157495$

12 - 35

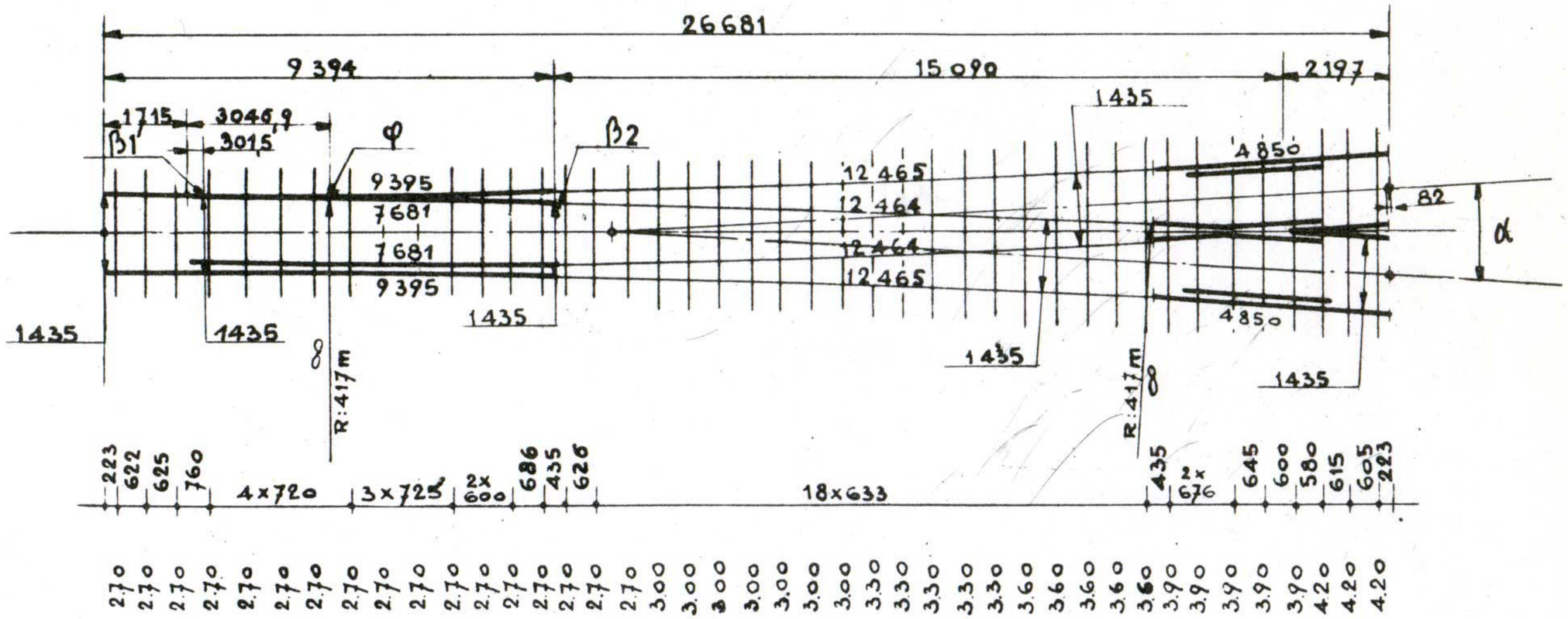
12-65

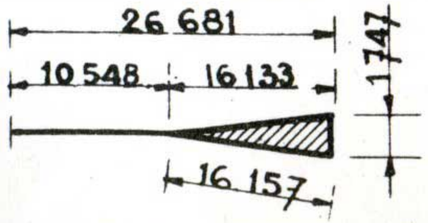
1966

Ⓑ

0.5 / 9.208 / 0.5

$F^{4\,\text{sym}}\text{—}H^{3}$





$\beta_1 = 0°45'04'' = 0^{g},834722$

$\beta_2 = 1°23'16'' = 1^{g},541821$

$\varphi = 0$

$\alpha = 6°11'55'' = 6^{g},887346$

R = 417,16 m

tg α = 0,108611

12 – 43

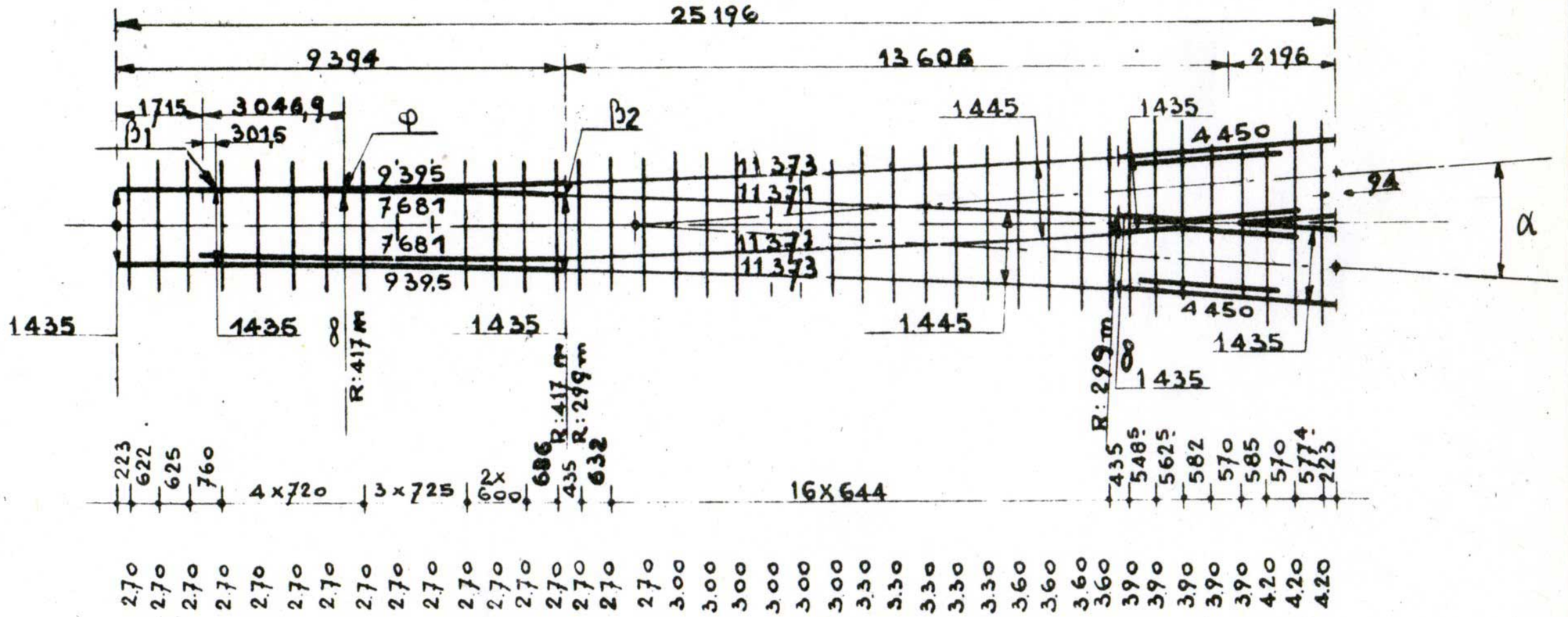
12-65

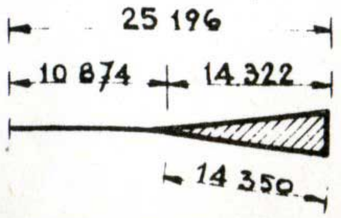
1966

B

0.5 / 8.000 / 0,5

F 4 sym H 4





$\beta 1 = 0°45'04'' = 0^{g},834722$

$\beta 2 = 1°23'16'' = 1^{g},541821$

$\varphi = 0$

$\alpha = 7°07'30'' = 7^{g},916667$

R = 299,07 m

$tg\ \alpha = 0,125000$

12 – 44

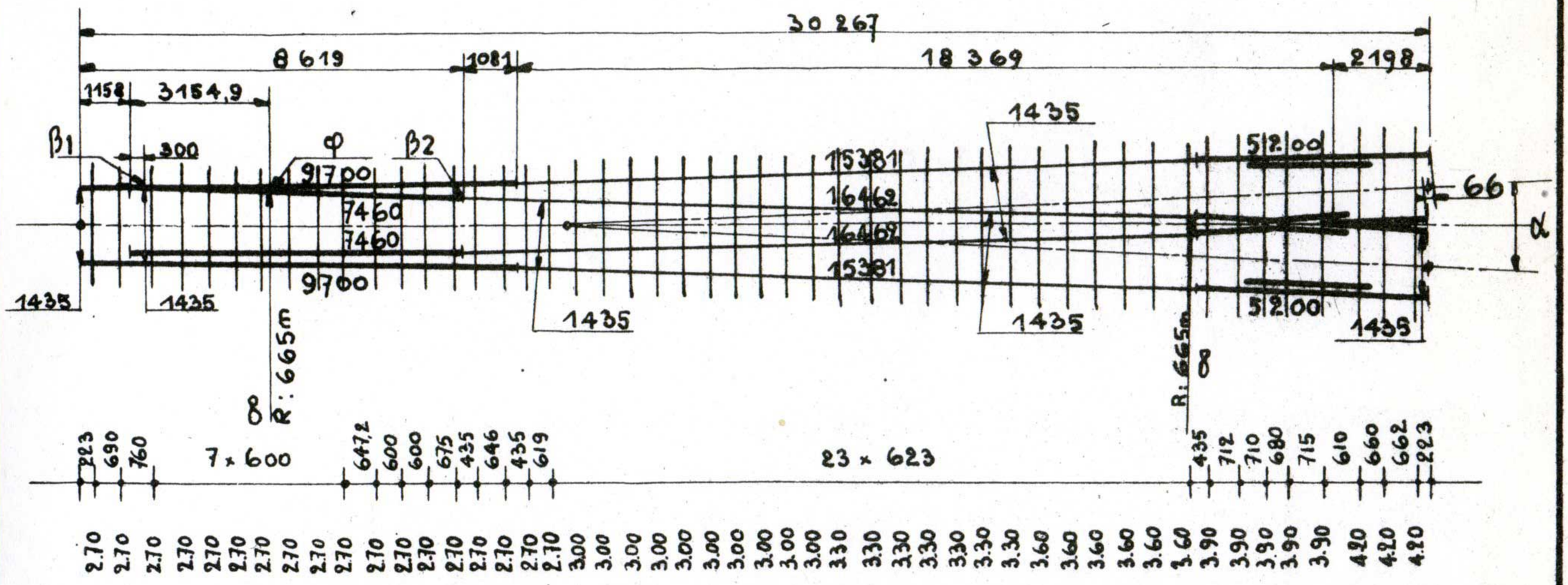
12-65

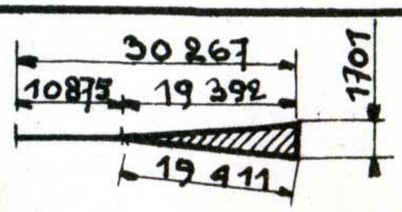
1966

Ⓑ

0,5 / 11.378 / 0.5

$F^{5sym}-H^{2}$





$\beta_1 = 0°43'21'' = 0^{g},802728$

$\beta_2 = 1°05'36'' = 1^{g},214867$

$\varphi = 0$

$\alpha = 5°01'24'' = 5^{g},581481$

R = 665 m

$tg\,\alpha = 0,087899$

12–52

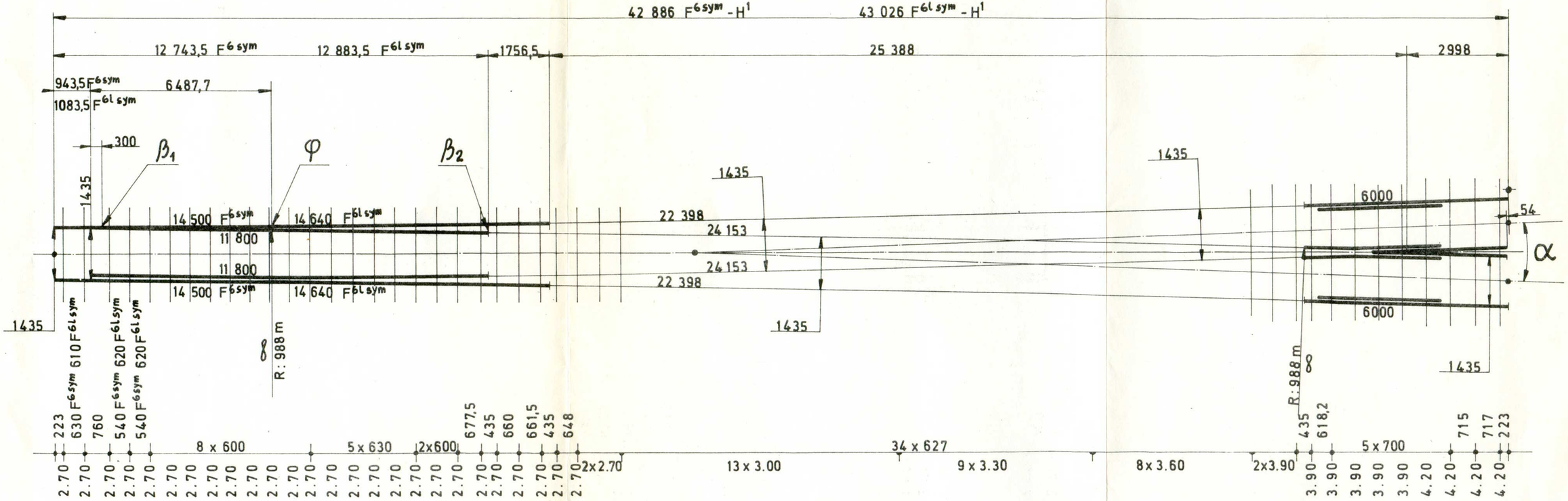
12-65

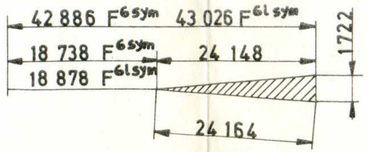
1966

Ⓑ

0,5 / 14.010 / 0,5

F^{6sym} - H^1 F^{6lsym}





β_1 = 0° 20′ 00″ = 0^g,370370

β_2 = 0° 38′ 29″ = 0^g,712574

φ = 0

α = 4° 05′ 00″ = 4^g,537037

R = 988,20 m

tg α = 0,071388

12 - 61

6 - 69

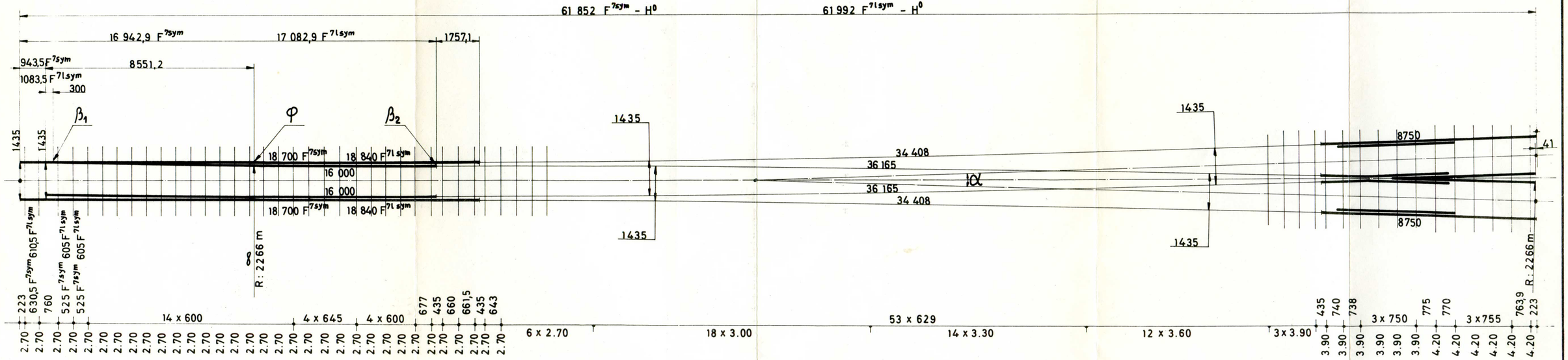
1966

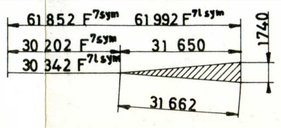
Ⓑ

0,5 / 18.100 / 0,5

$F^{7sym} - H^0$

F^{7lsym}





β_1 = 0° 15' 00" = 0°,277778

β_2 = 0° 26' 18" = 0°,487086

φ = 0

α = 3° 08' 55" = 3°,498457

R = 2265,51 m

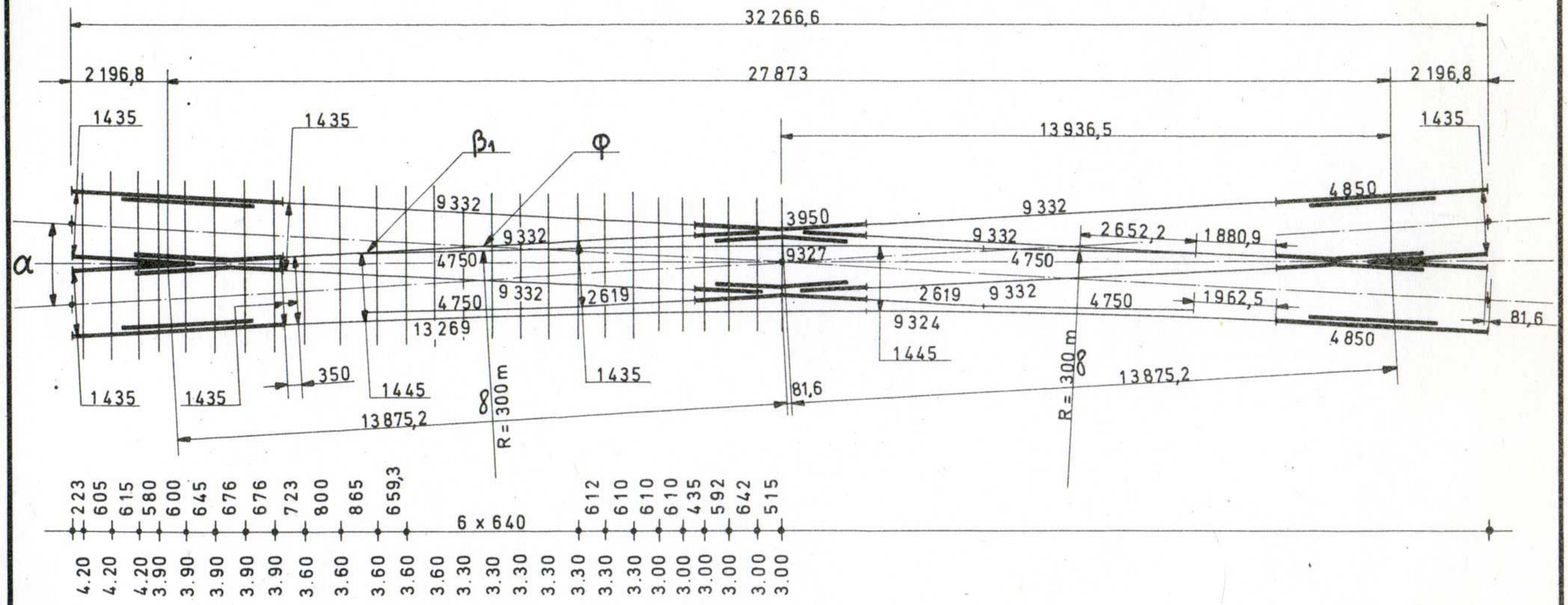
tg α = 0,055009

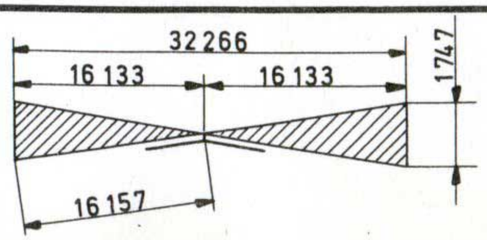
12 - 70

6-69

1966

TJS-TH^3





β_1 = 1°33'20" = 1^g,728395

φ = 0°15'09" = 0^g,280648

α = 6°11'55" = 6^g,887346

R = 300 m

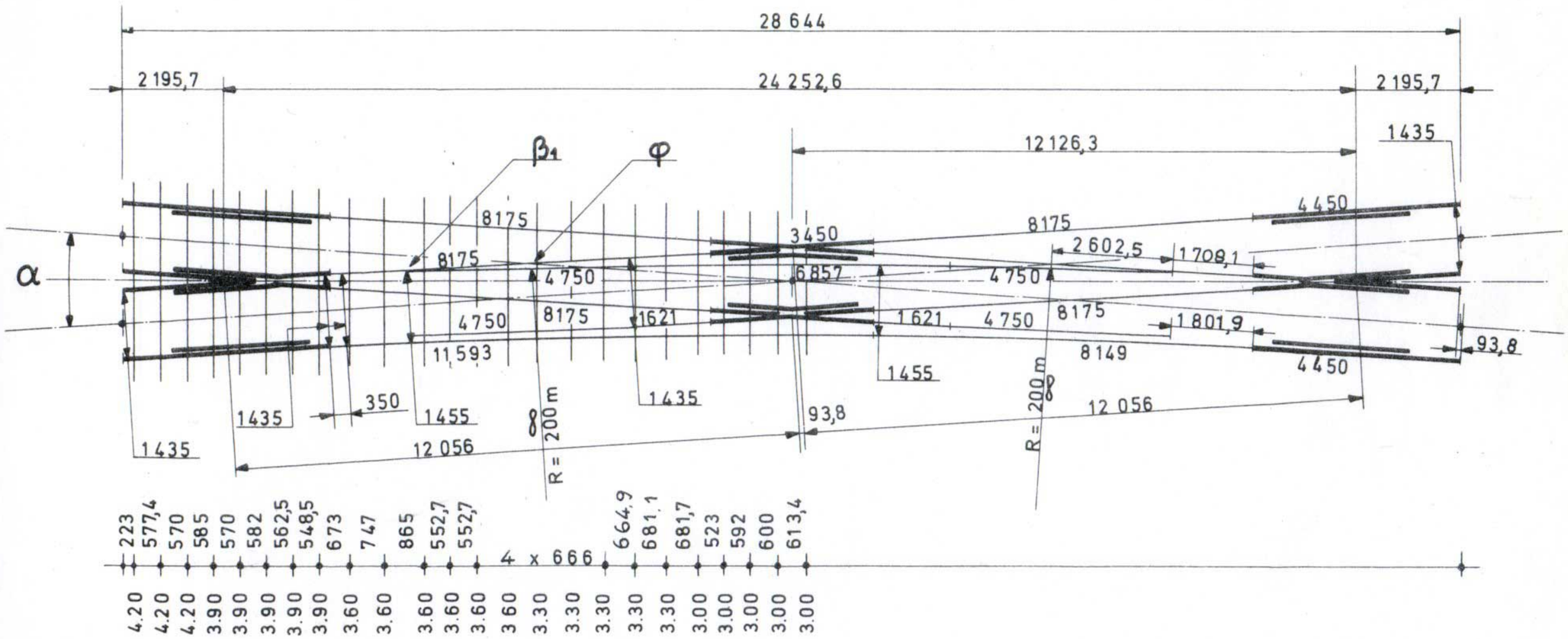
tg α = 0,108611

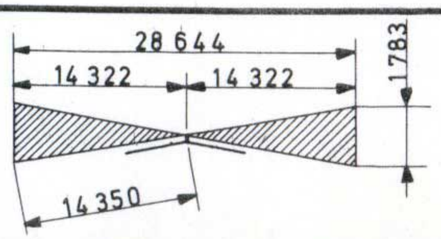
31 - 333

12-65

1966

TJS-TH^4





β_1 = 1° 35′ 07″ = 1^g,761420

φ = 0° 22′ 49″ = 0^g,422361

α = 7° 07′ 30″ = 7^g,916667

R = 200 m

tg α = 0,125000

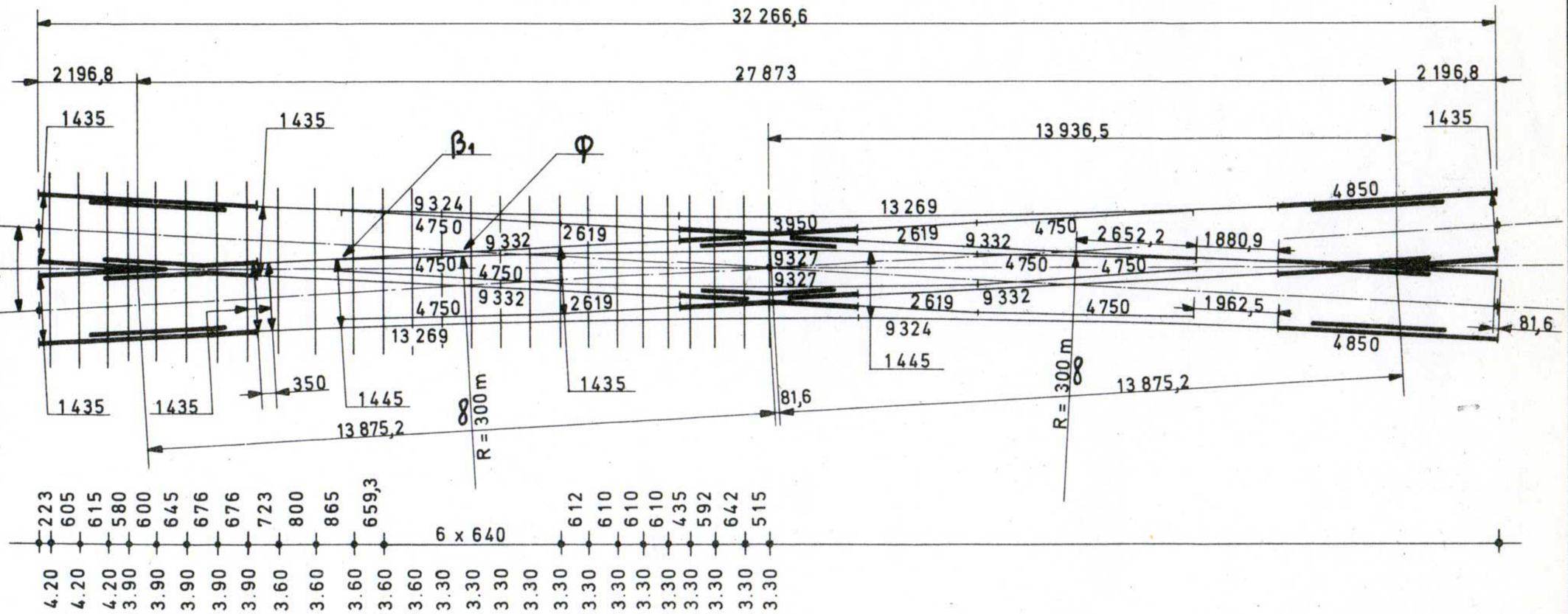
31 - 444

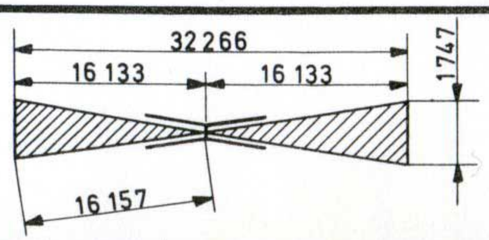
6-69

1966

Ⓑ

TJD-TH 3





β_1 = 1°33'20" = 1^g,728395

φ = 0°15'09" = 0^g,280648

α = 6°11'55" = 6^g,887346

R = 300 m

tg α = 0,108611

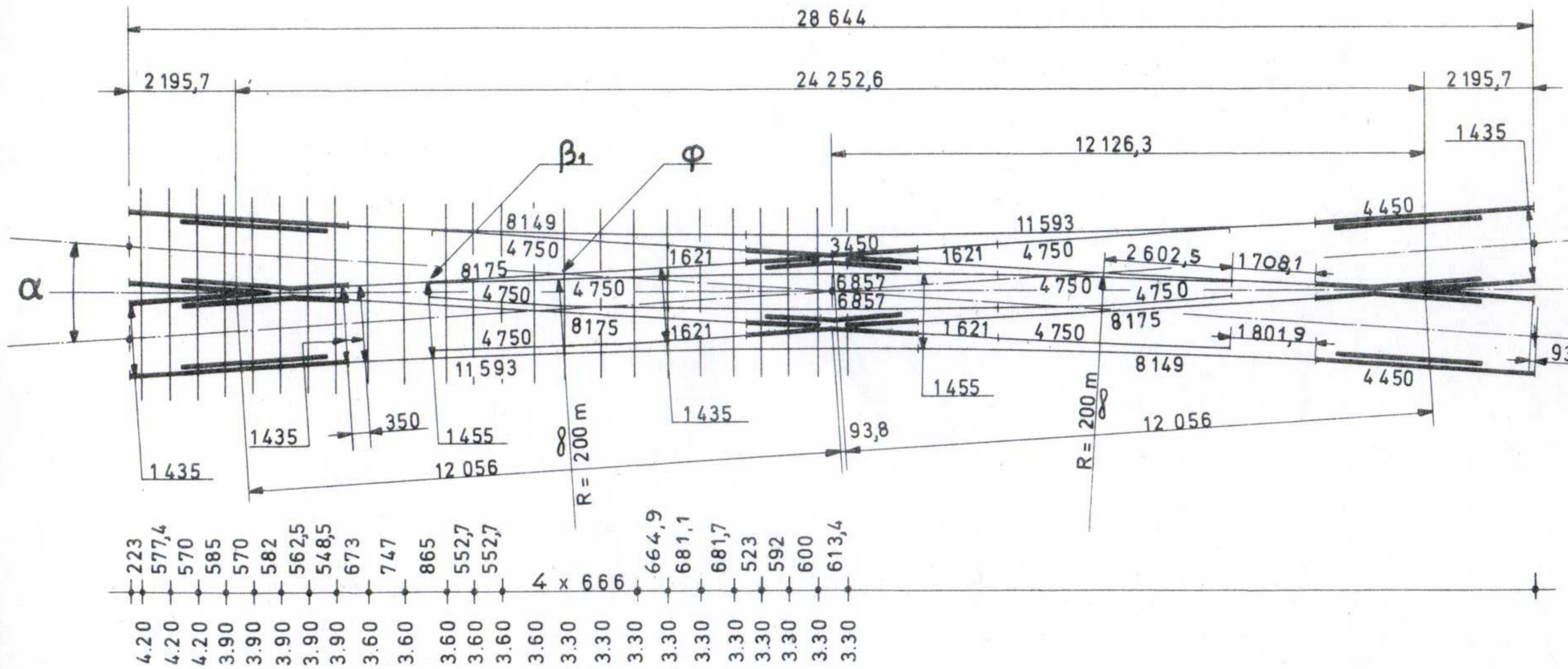
32 - 333

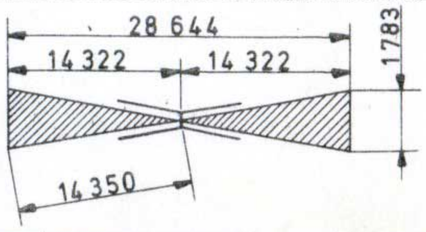
12-65

1966

Ⓑ

TJD-TH⁴





β_1 = 1° 35′ 07″ = 1⁹,761420

φ = 0° 22′ 49″ = 0⁹,422361

α = 7° 07′ 30″ = 7⁹,916667

R = 200 m

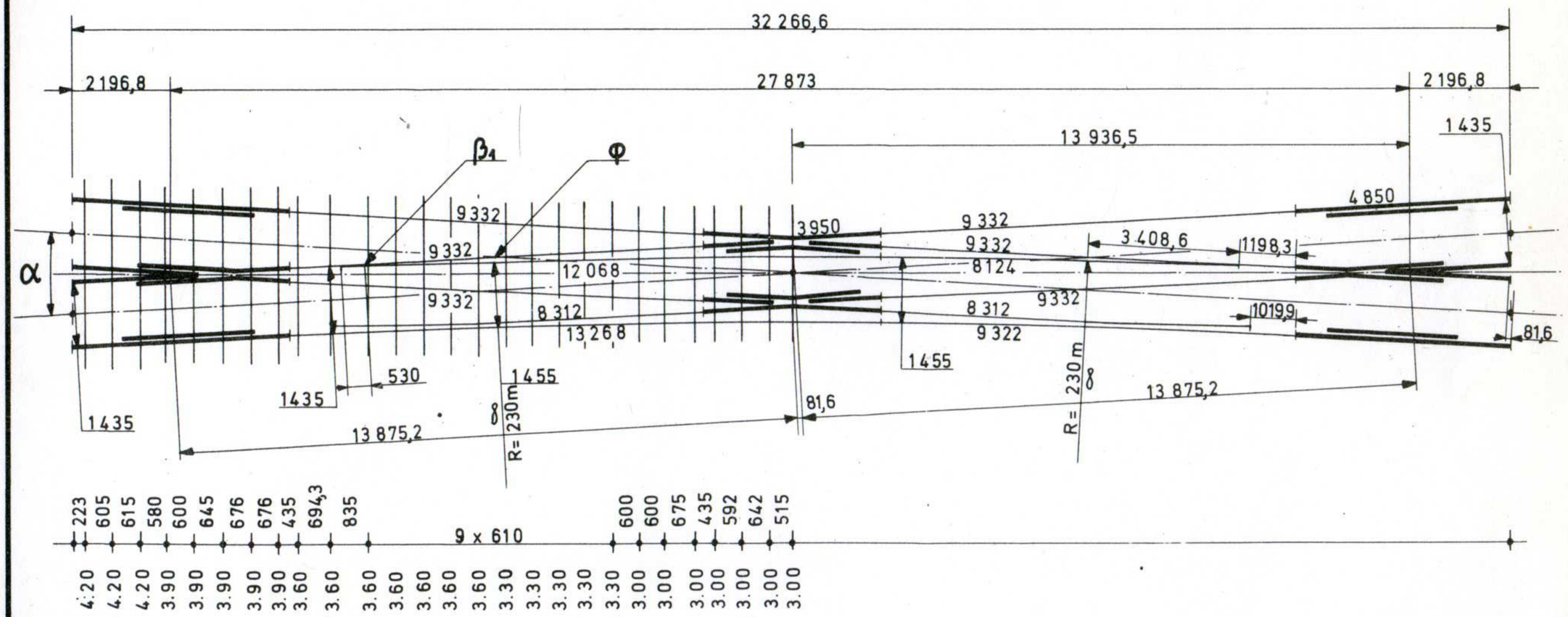
tg α = 0,125000

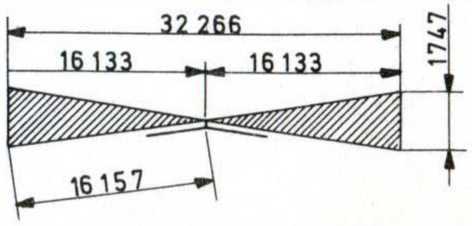
32 - 444

6-69

1966

TJS-EH³





β_1 = 1°26'00" = $1^{9},592469$

φ = 0

α = 6°11'55" = $6^{9},887346$

R = 230 m

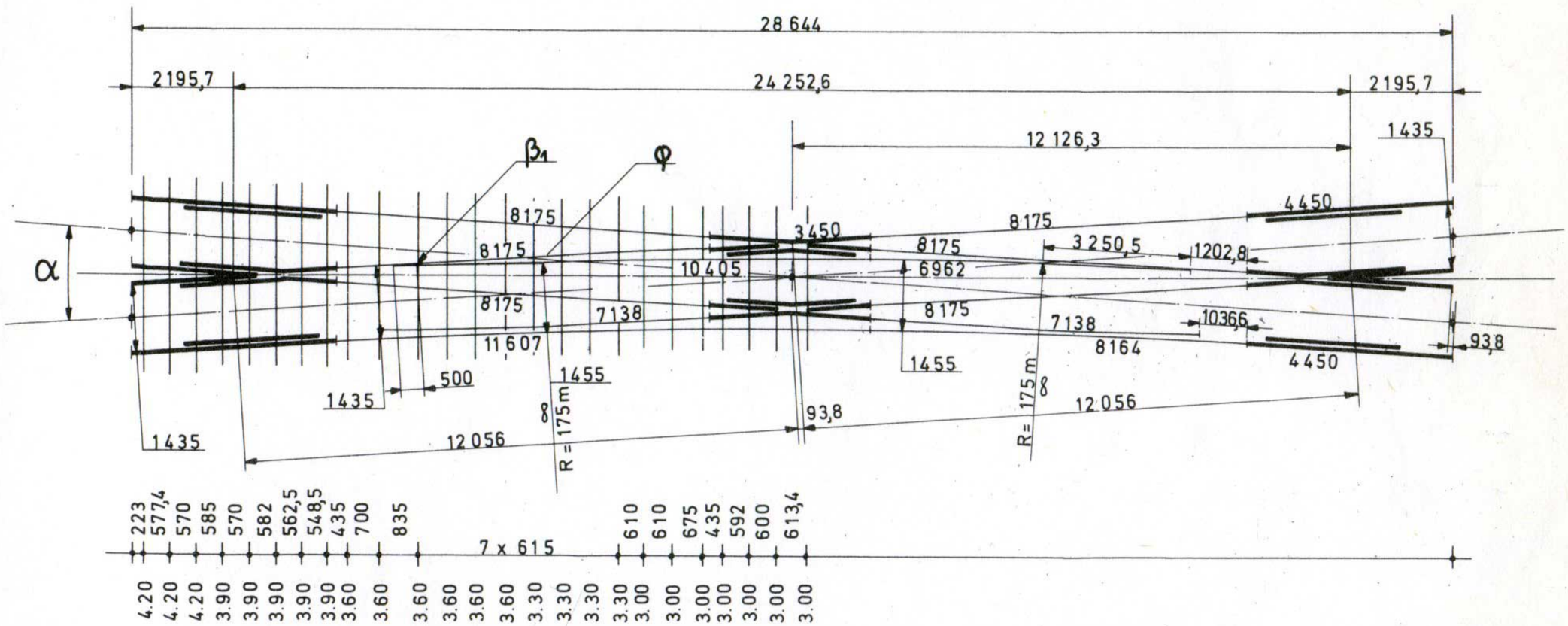
$tg\alpha$ = 0,108611

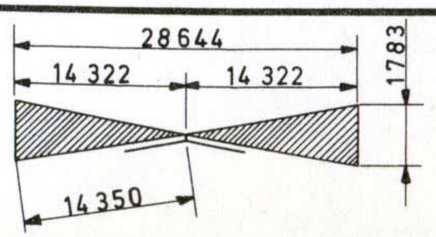
33 - 333

12-65

1966

TJS-EH⁴





β_1 = 1° 30' 00" = 1°,666667

φ = 0° 17' 02" = 0°,315457

α = 7° 07' 30" = 7°,916667

R = 175 m

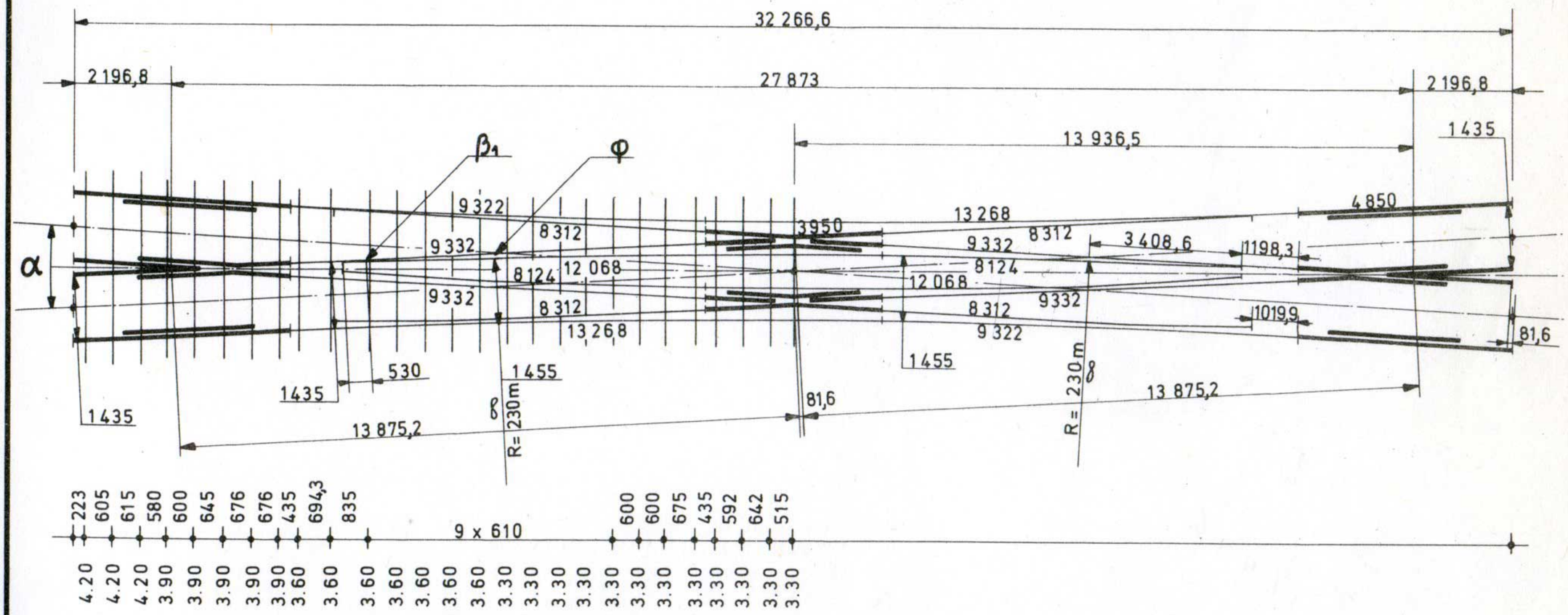
tg α = 0,125000

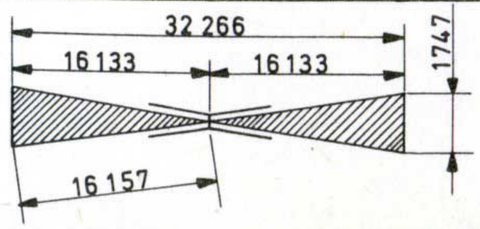
33 - 444

12-65

1966

TJD-EH³





β_1 = 1°26'00" = 1°,592469

φ = 0

α = 6°11'55" = 6°,887346

R = 230 m

tg α = 0,108611

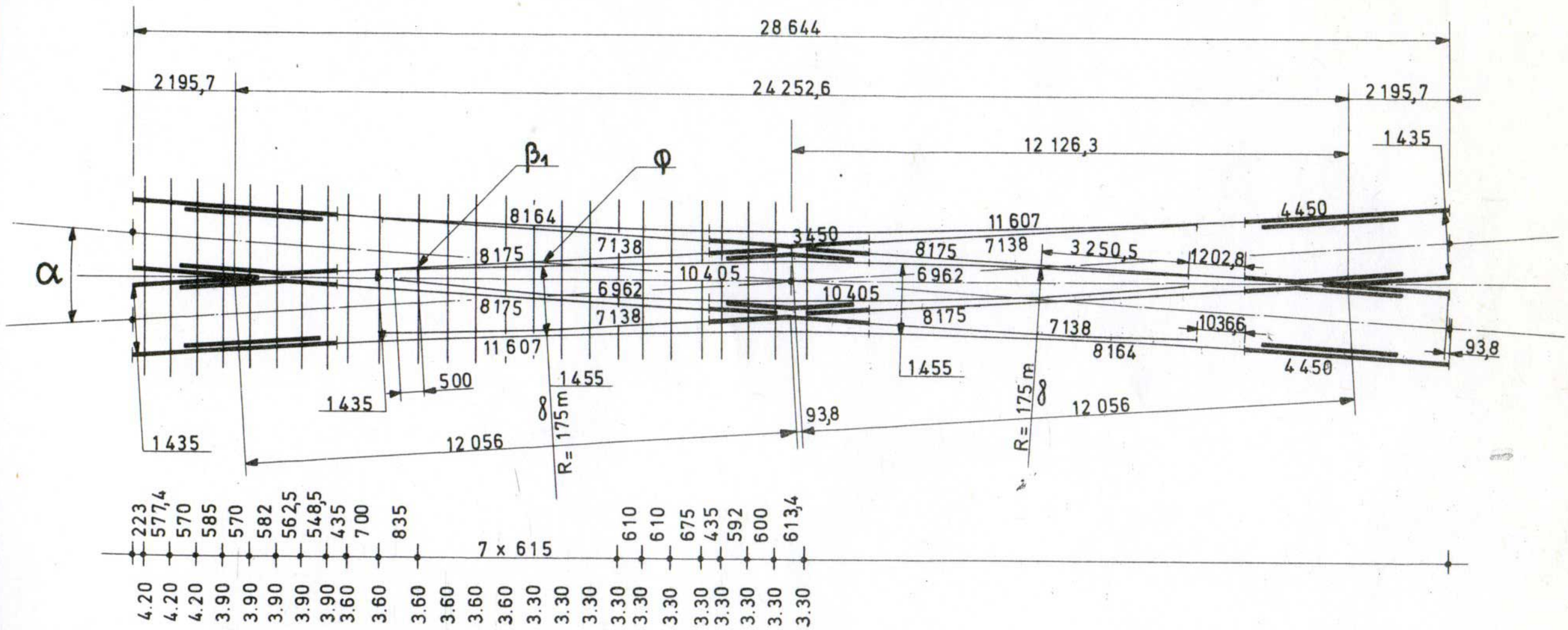
34 – 333

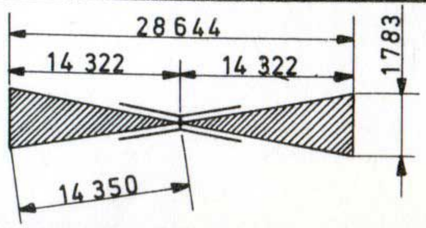
12-65

1966

Ⓑ

TJD-EH⁴





β_1 = 1° 30′ 00″ = $1^{g},666667$

φ = 0° 17′ 02″ = $0^{g},315457$

α = 7° 07′ 30″ = $7^{g},916667$

R = 175 m

tg α = 0,125000

34 – 444

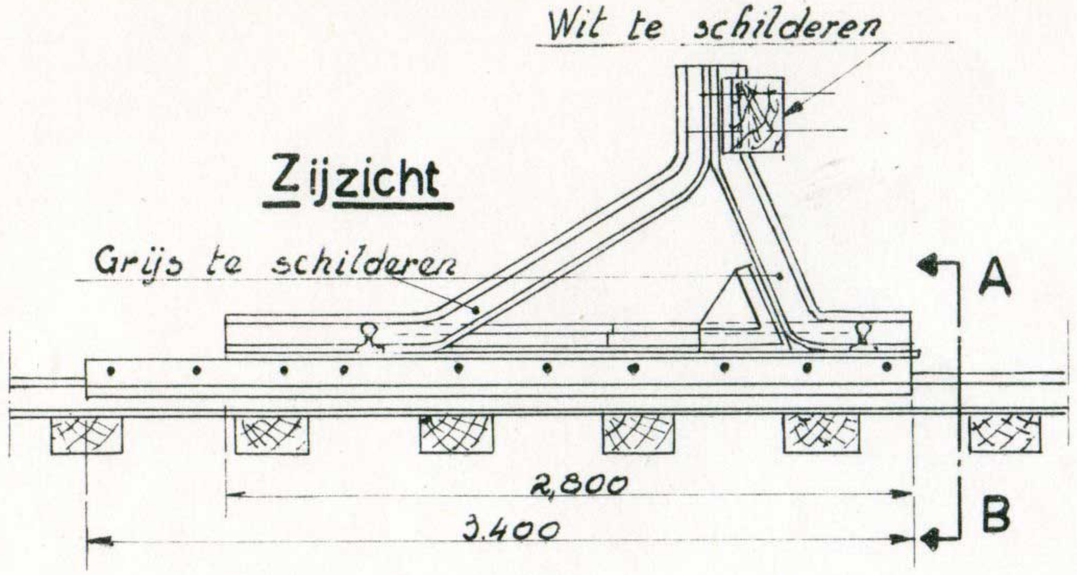
12-65

1966

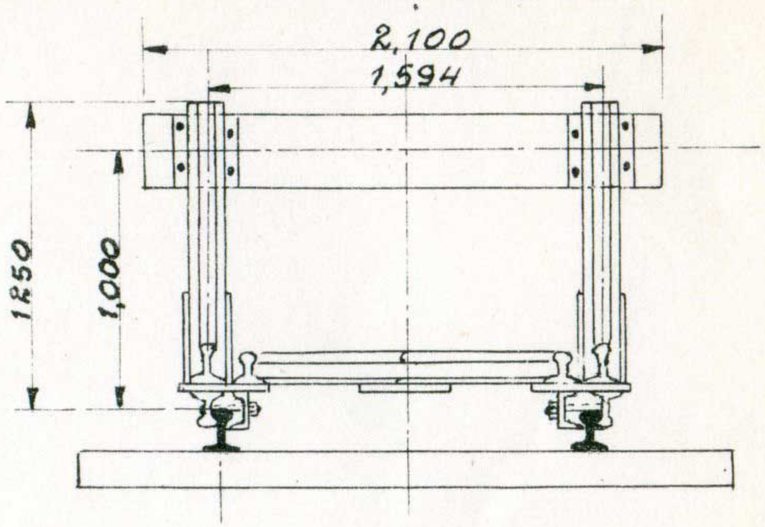
LANGE SCHUIVENDE STOOTBOK (niet geëlectrificeerde spoor zonder spoorkring)

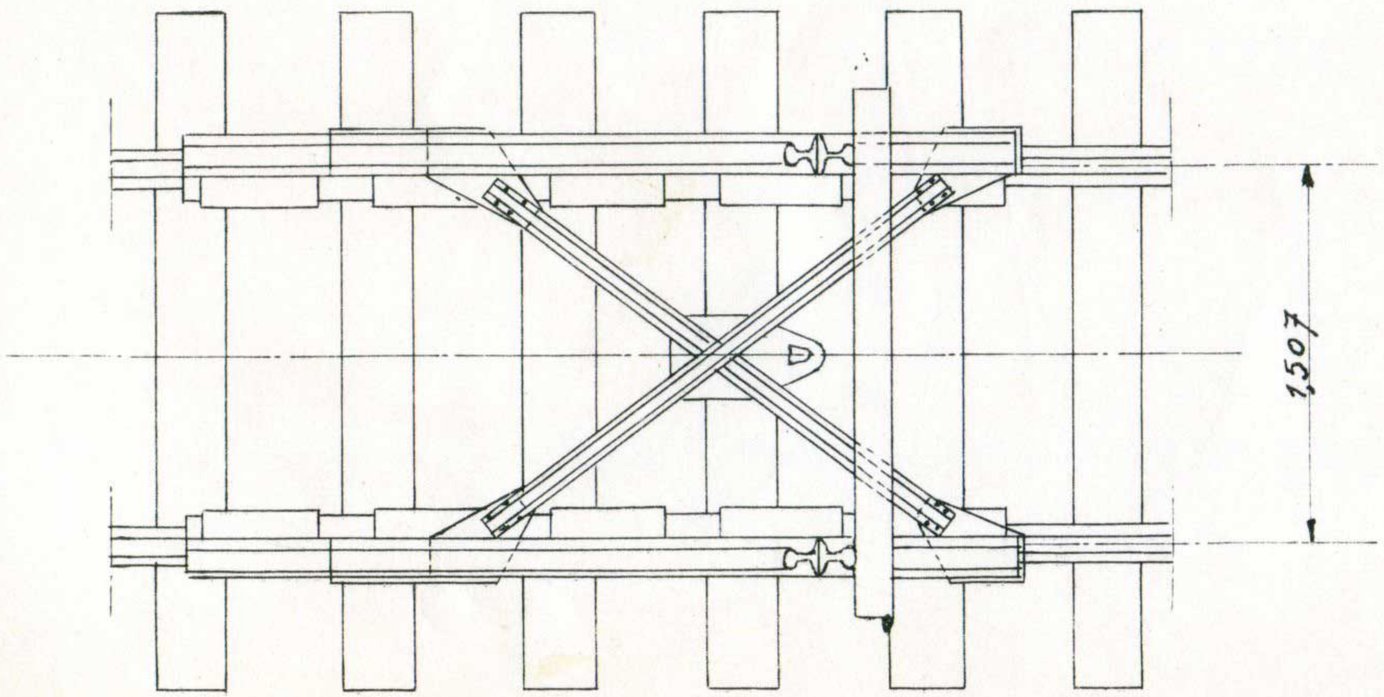
XII b

TYPE B Nº 29.00 0002

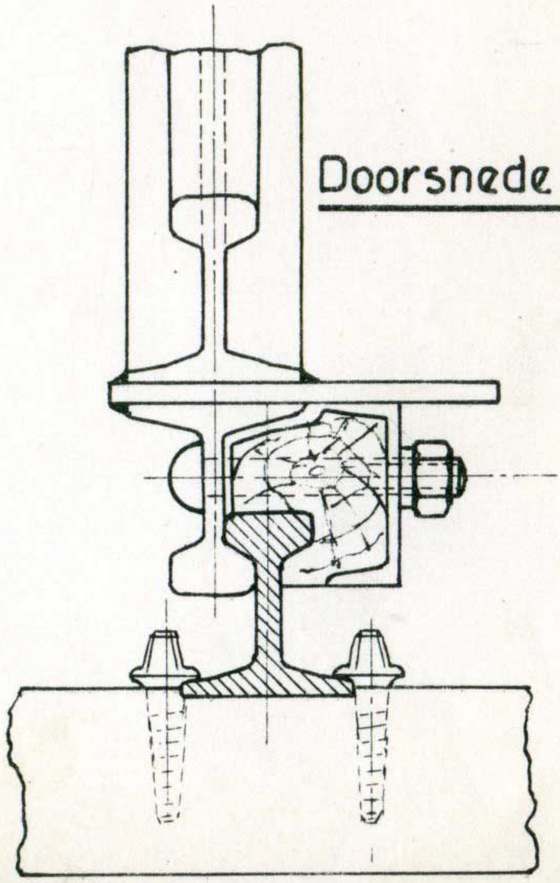


Achterzicht





Bovenaanzicht



Doorsnede AB

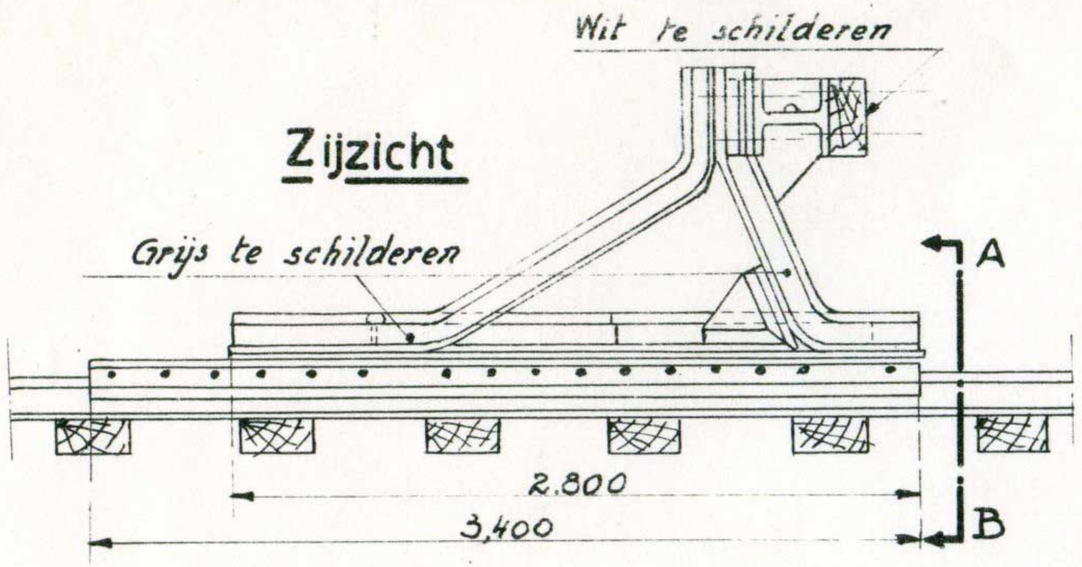
Juli 1955

SCHUIVENDE STOOTBOK (geëlectrificeerde lijn.)

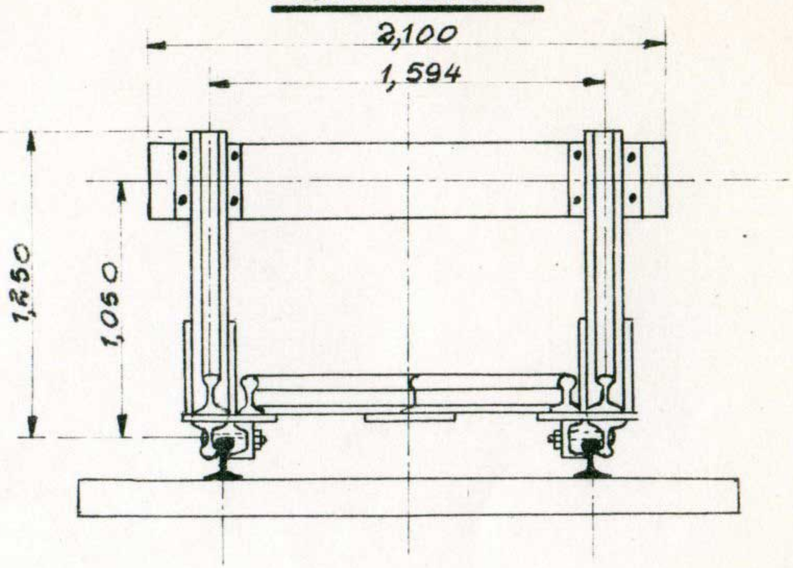
XII^{C}

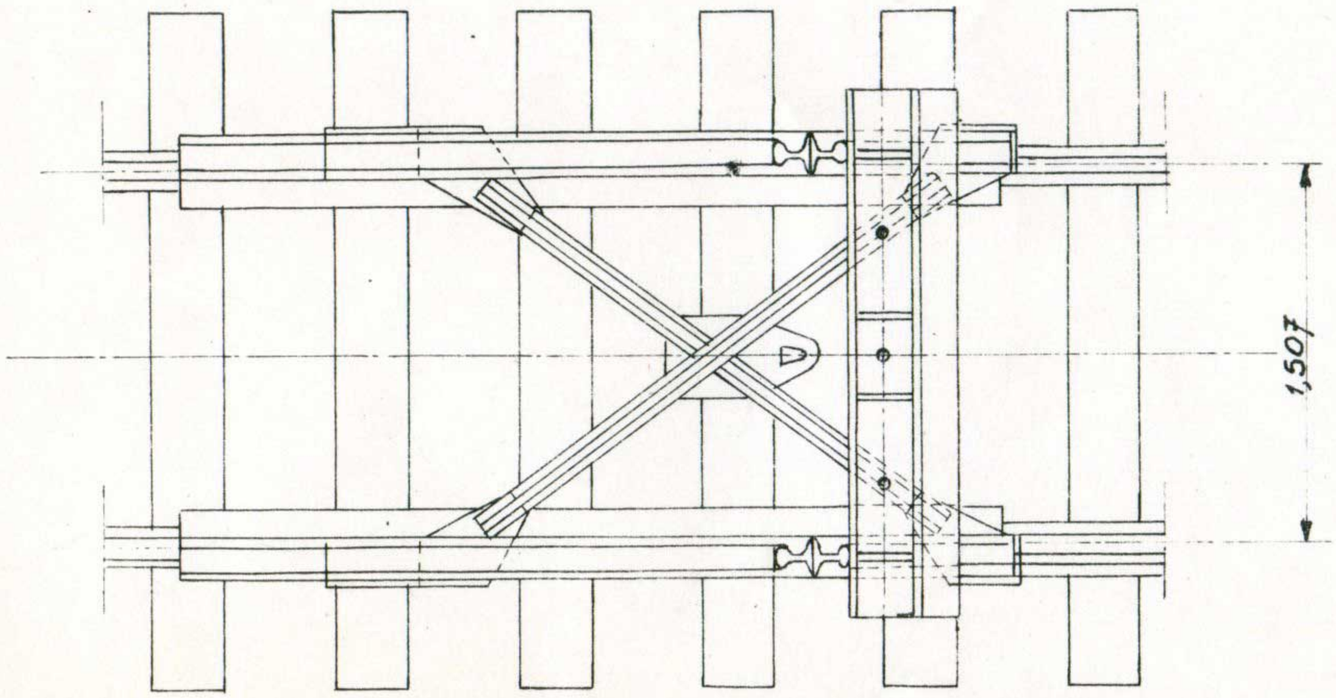
TYPE C Nº 29.000003

Zijzicht



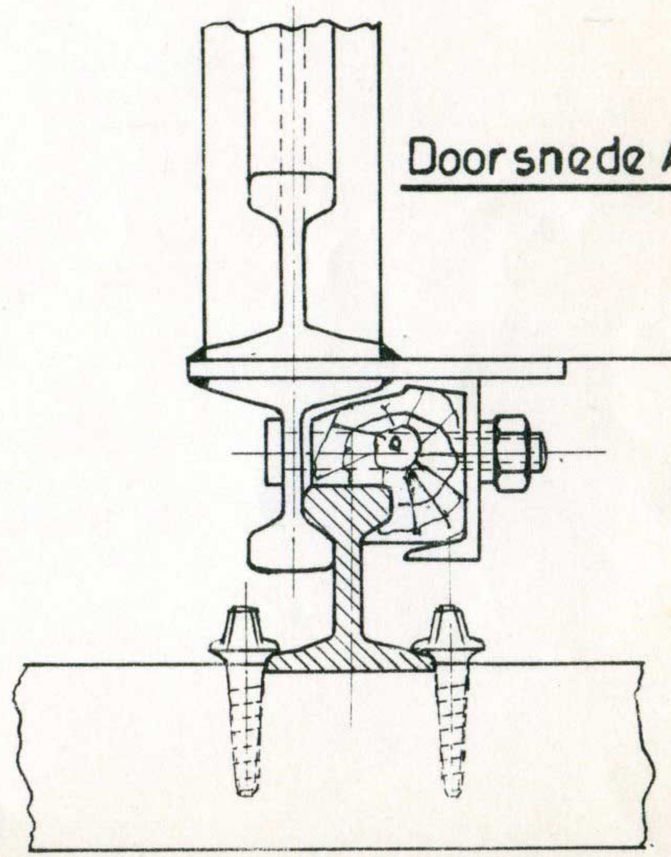
Achterzicht





Bovenaanzicht

Doorsnede AB

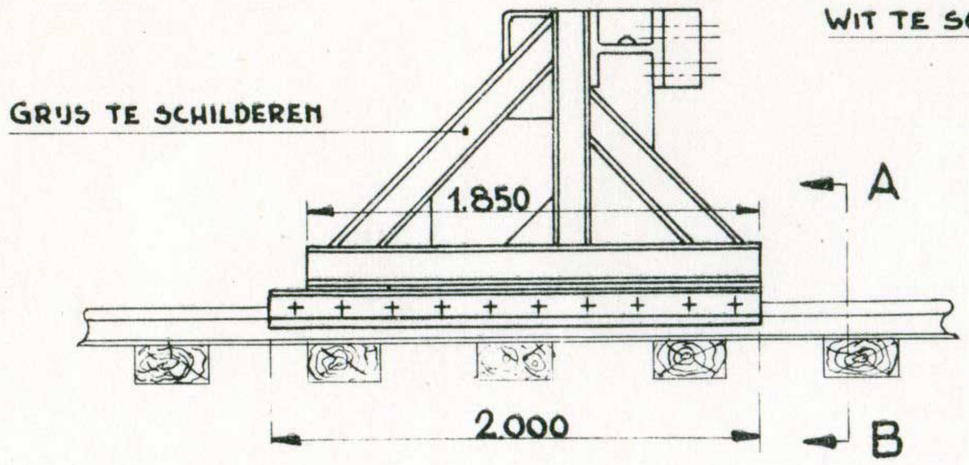


Juli 1955

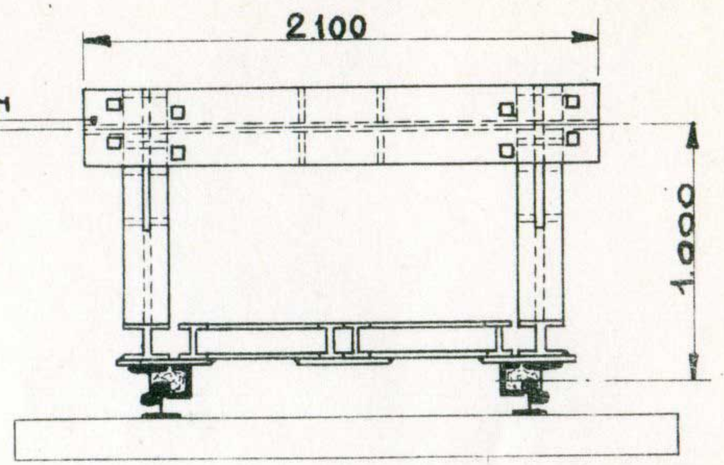
KORTE SCHUIVENDE STOOTBOK. (niet geëlectrificeerde spoor zonder spoorkring)

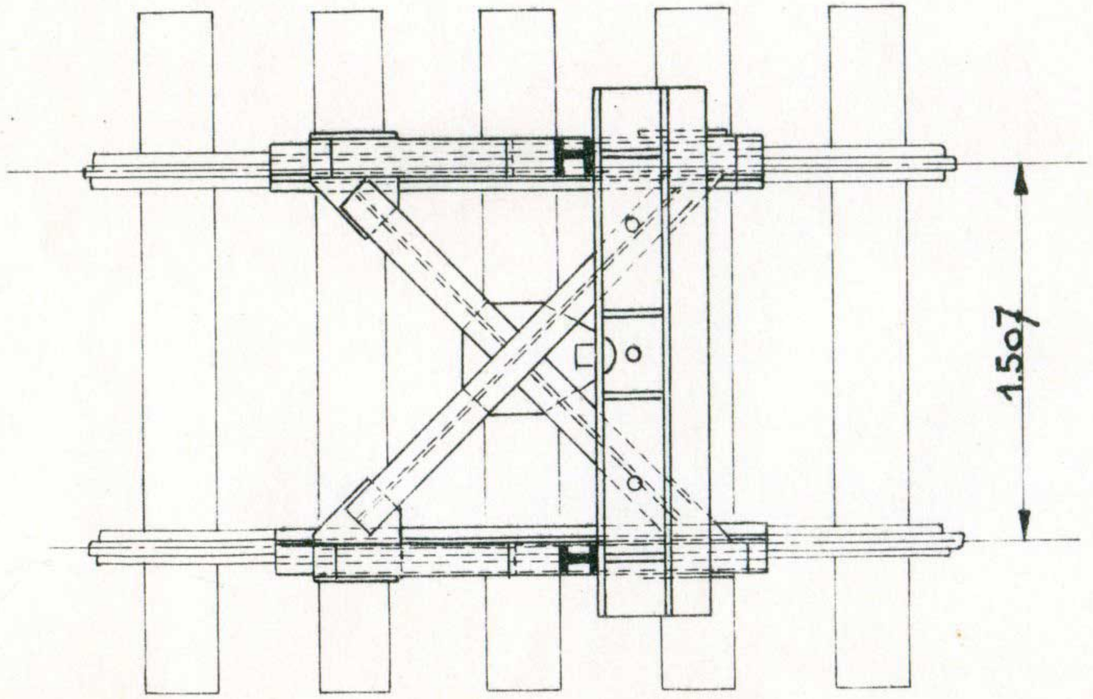
TYPE D Nº 29.000005

Zijzicht



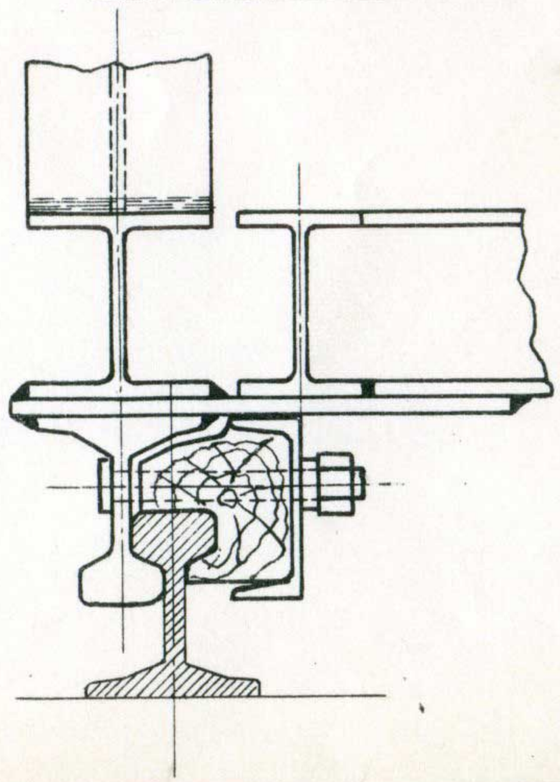
Voorzicht





Bovenzicht

Doorsnede A-B.

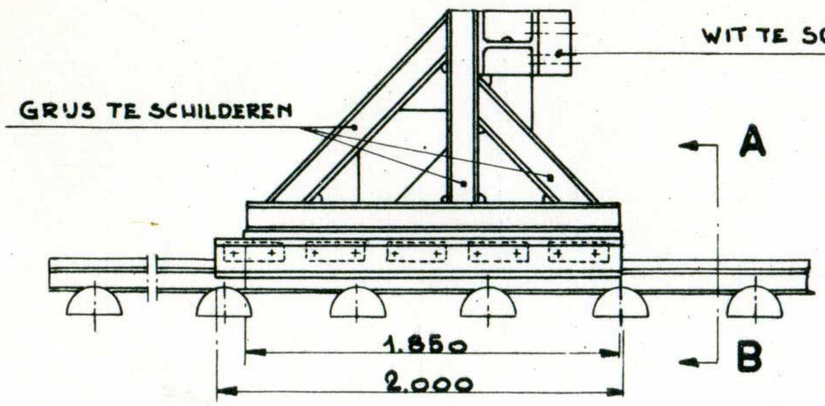


SCHUIVENDE STOOTBOK. (lijn met spoorkring)

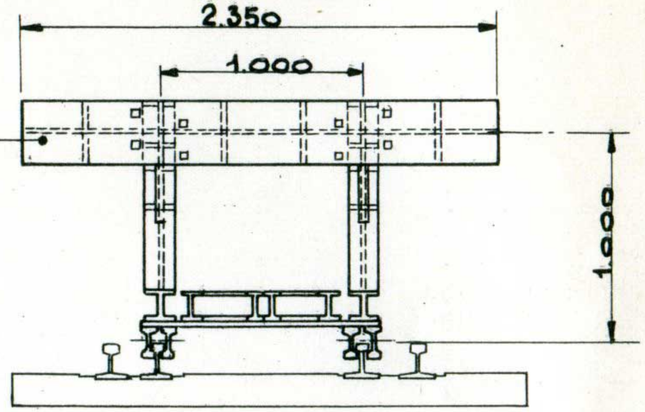
TYPE E Nº 29.000006

XII e

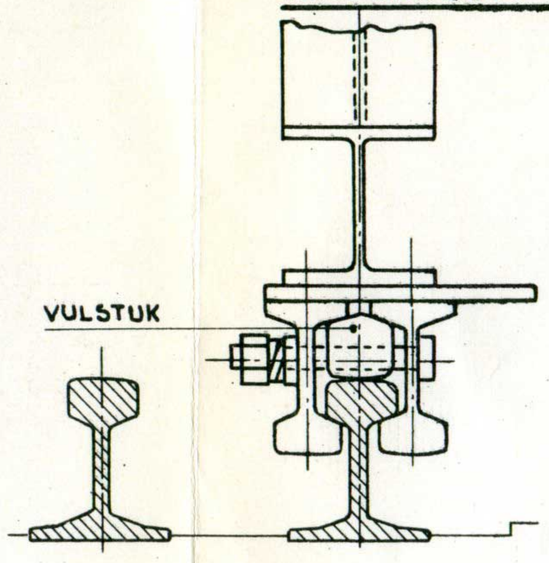
Zijzicht

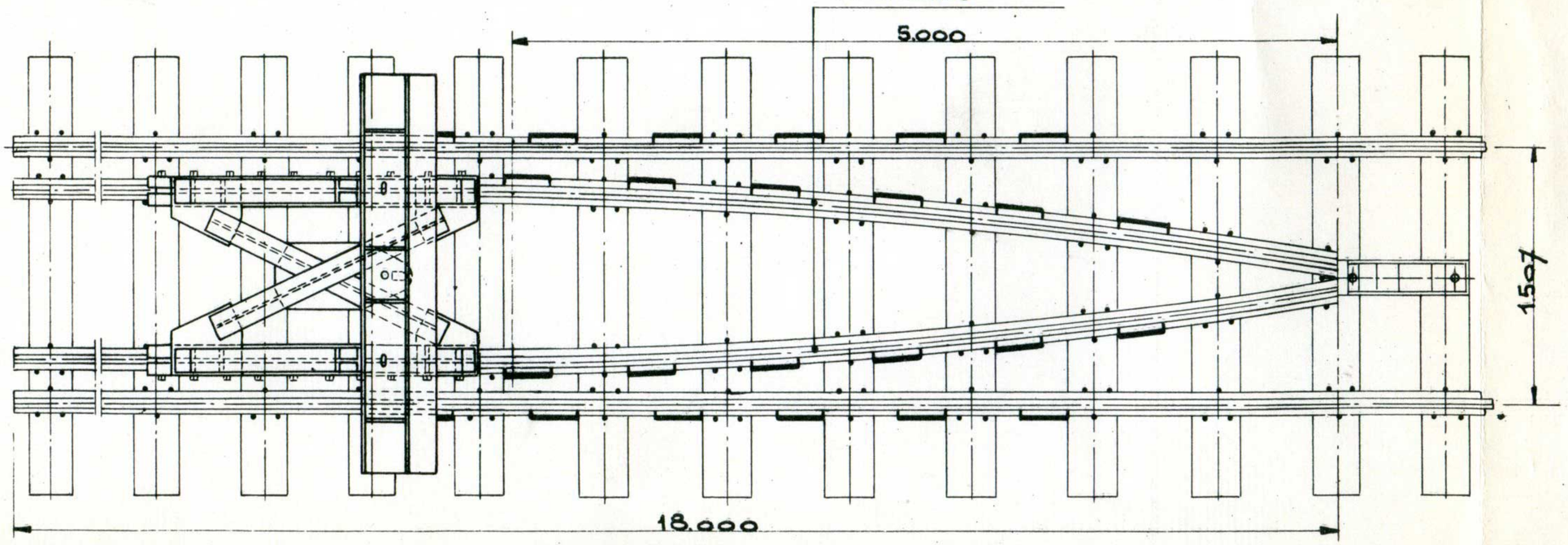


Voorzicht



Doorsnede A-B



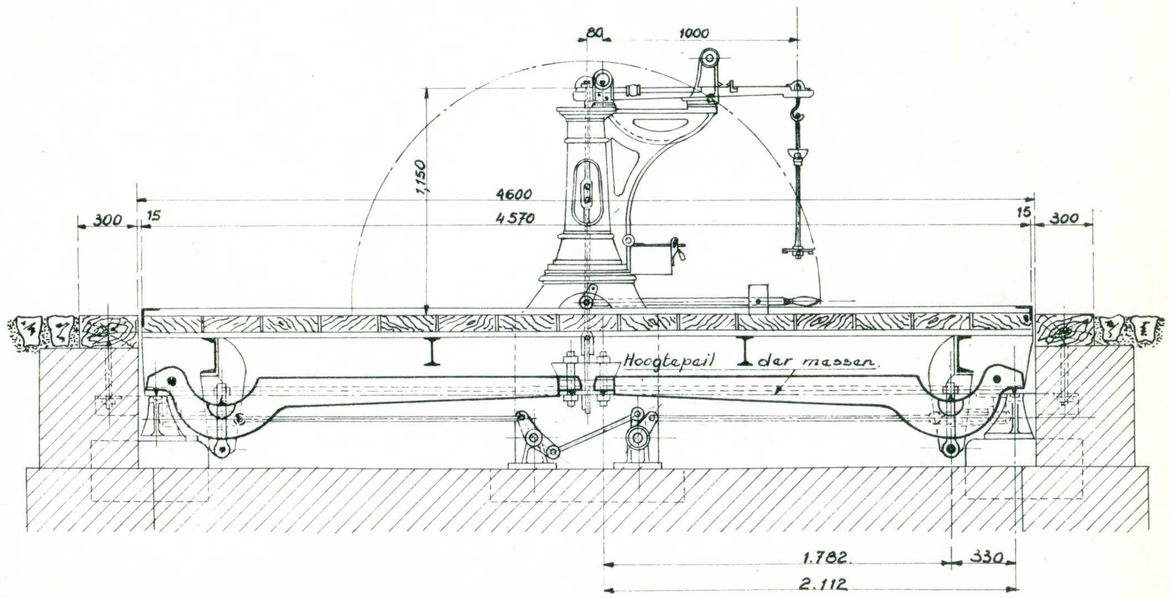


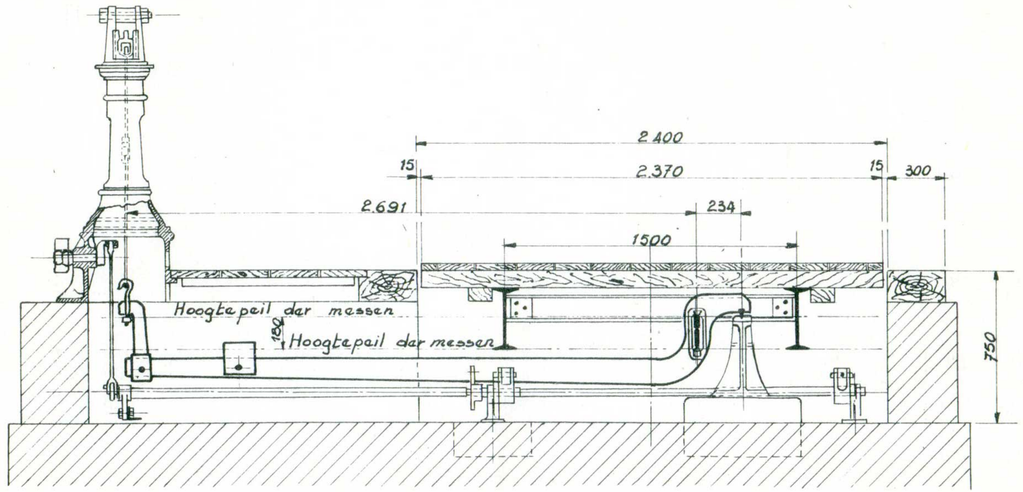
Bovenzicht

OCTOBER 1956

WEEGBRUG VOOR KARREN. KRACHT 15 TON.

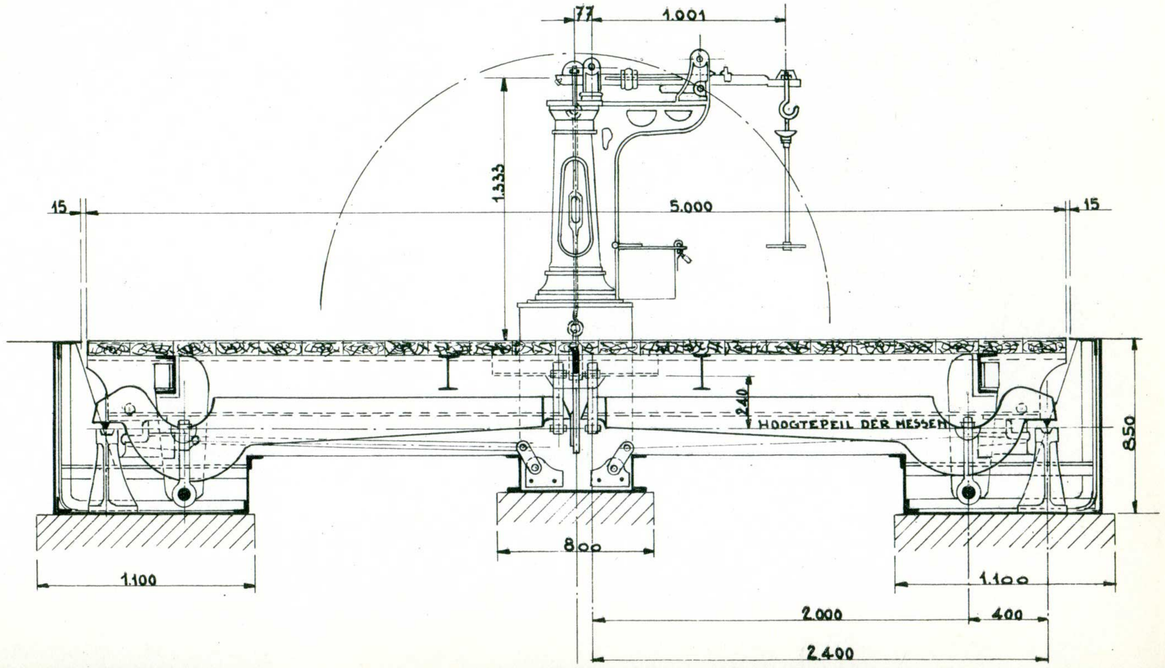
TYPE FLAMACHE.

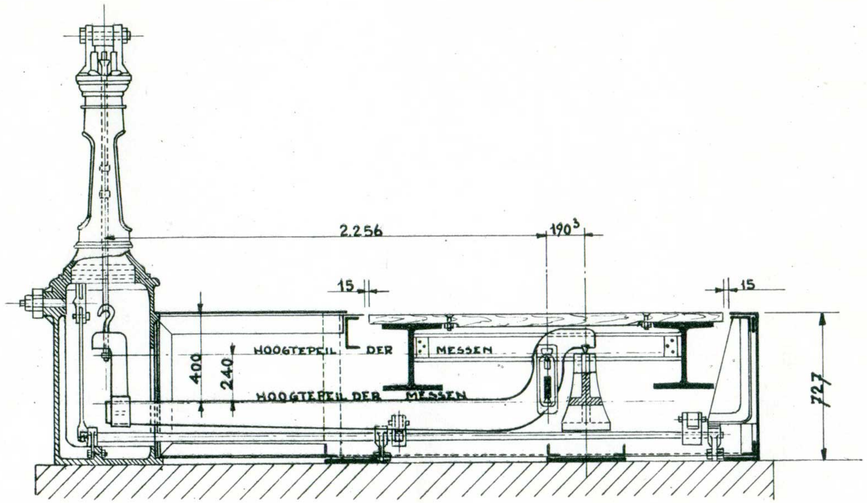




WEEGBRUG VOOR KARREN. KRACHT 20 TON.

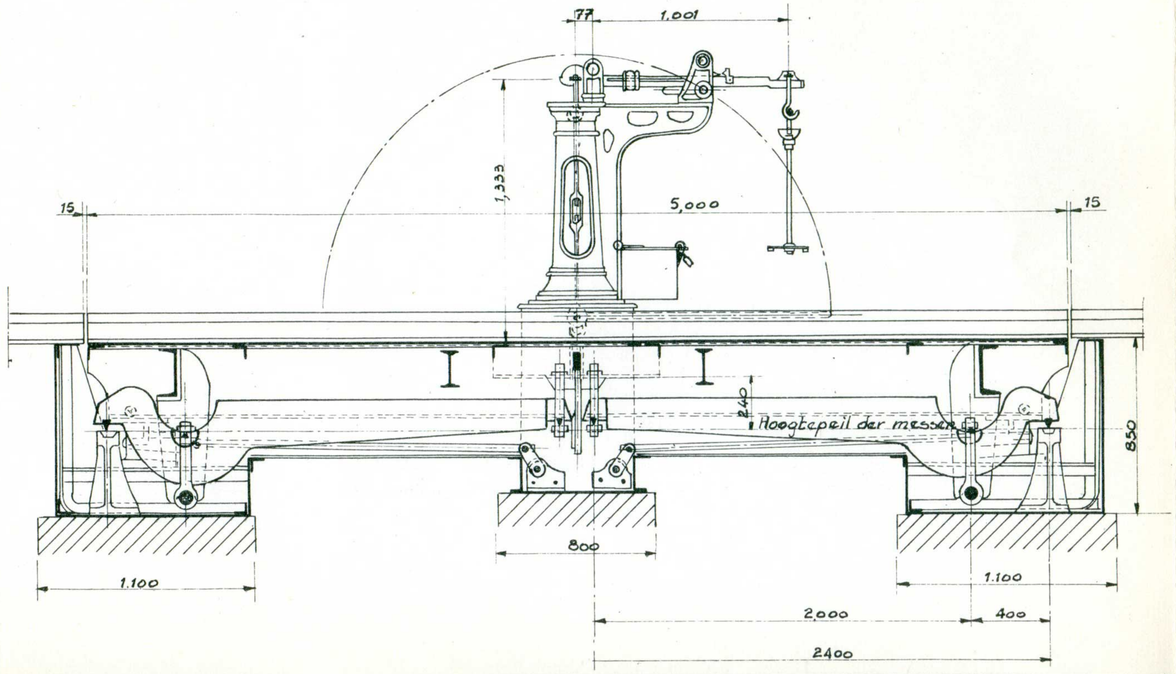
TYPE FLAMACHE.

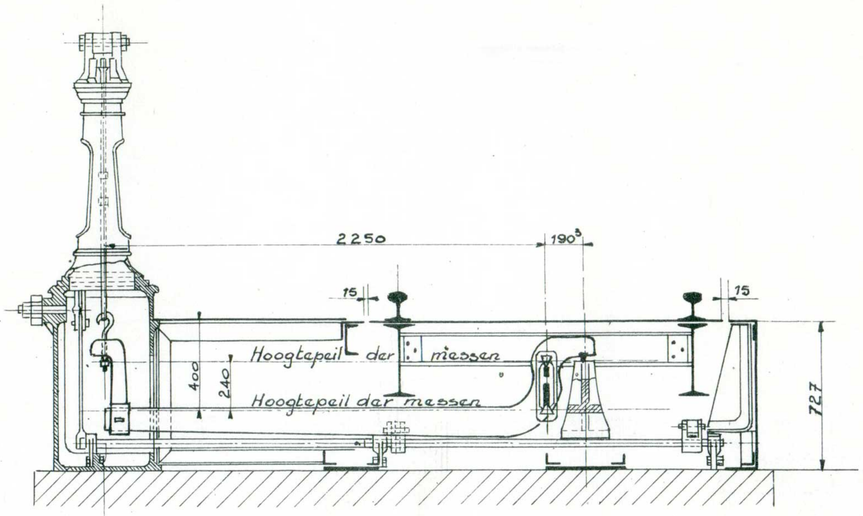




WEEGBRUG VOOR WAGENS. KRACHT 30 TON.

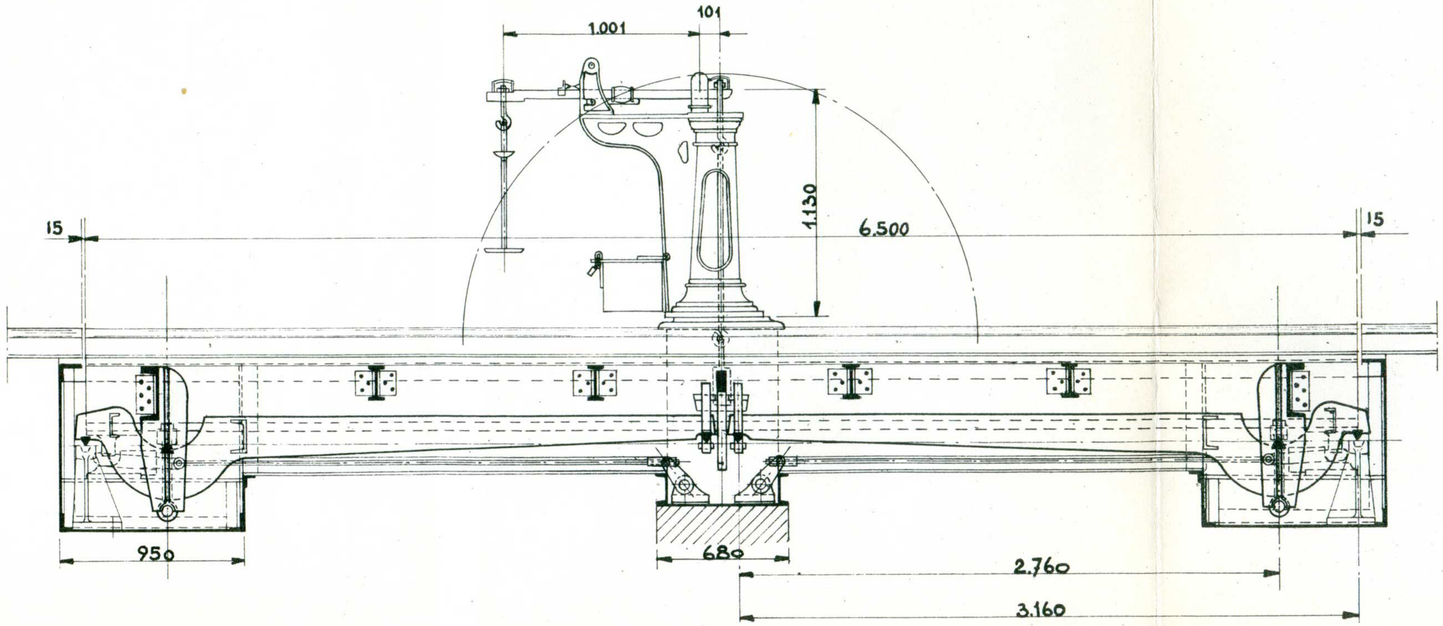
TYPE FLAMACHE.

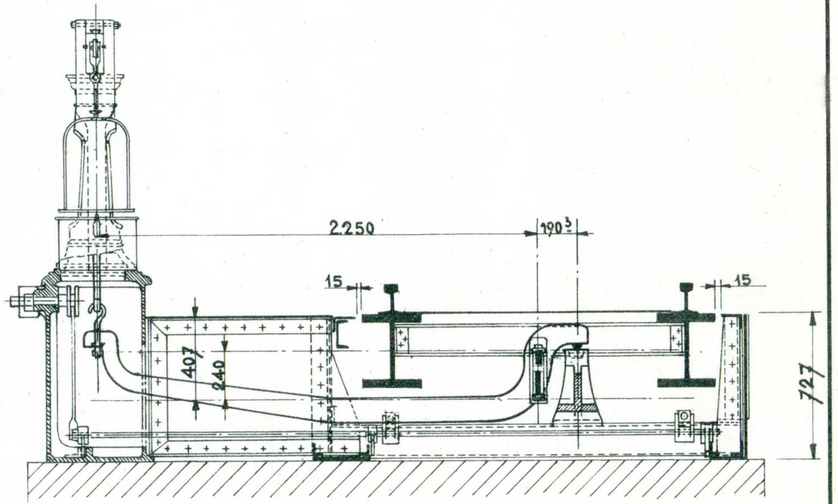




WEEGBRUG VOOR WAGENS. KRACHT 35 TON.

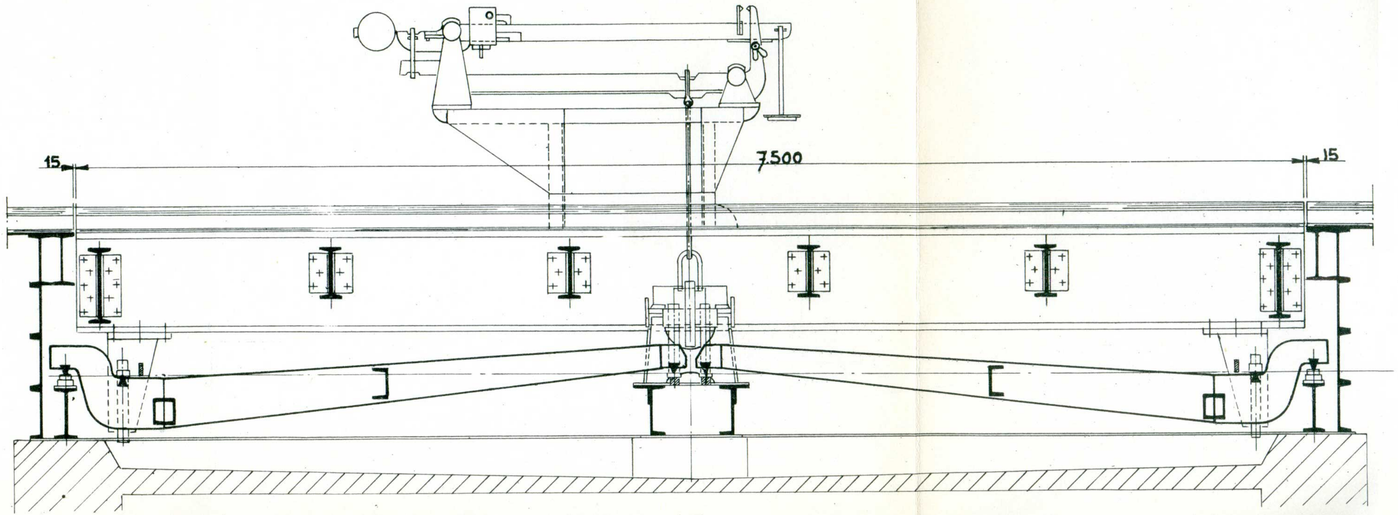
TYPE FLAMACHE.

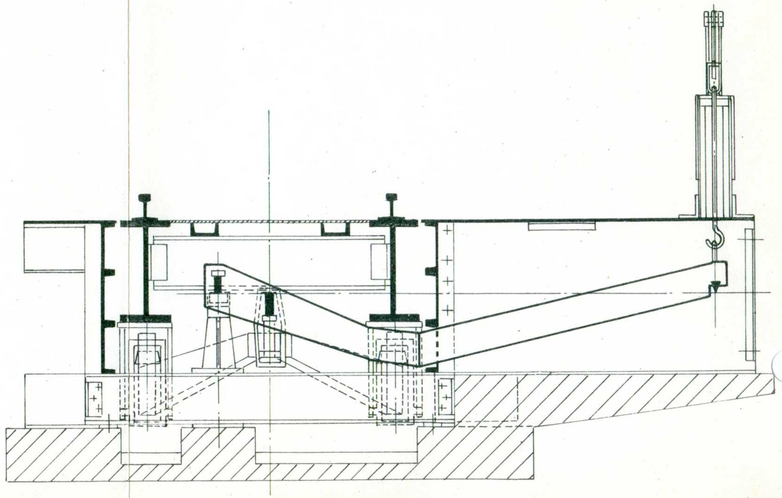




WEEGBRUG VOOR WAGENS. KRACHT 50/120 TON.

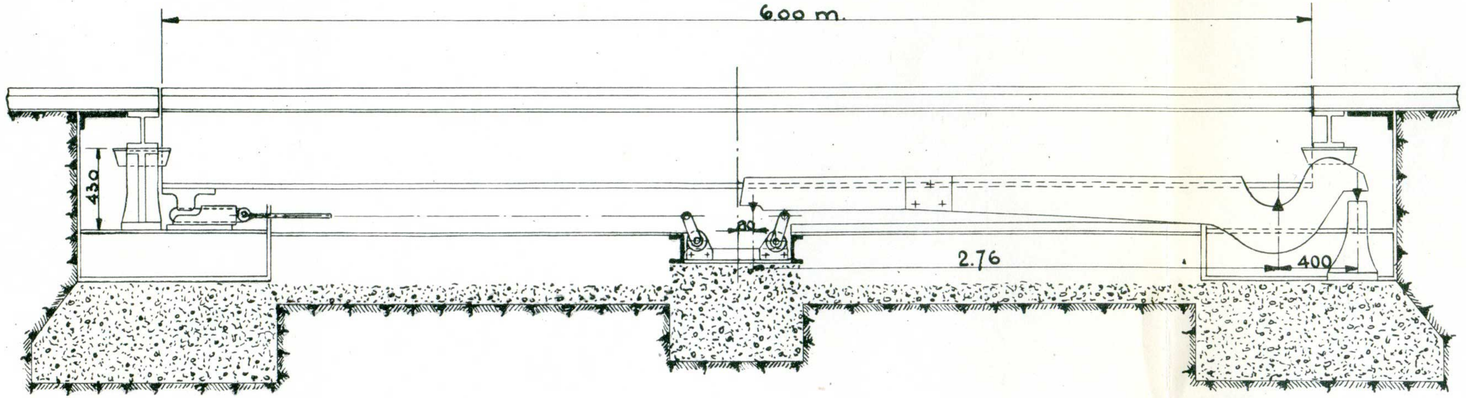
TYPE DALIMIER.

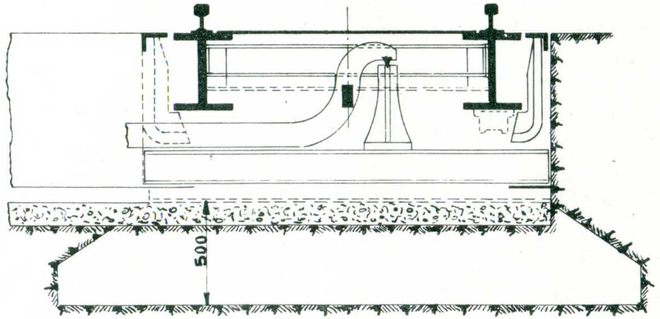




WEEGBRUG VOOR WAGENS. KRACHT 35 TON.

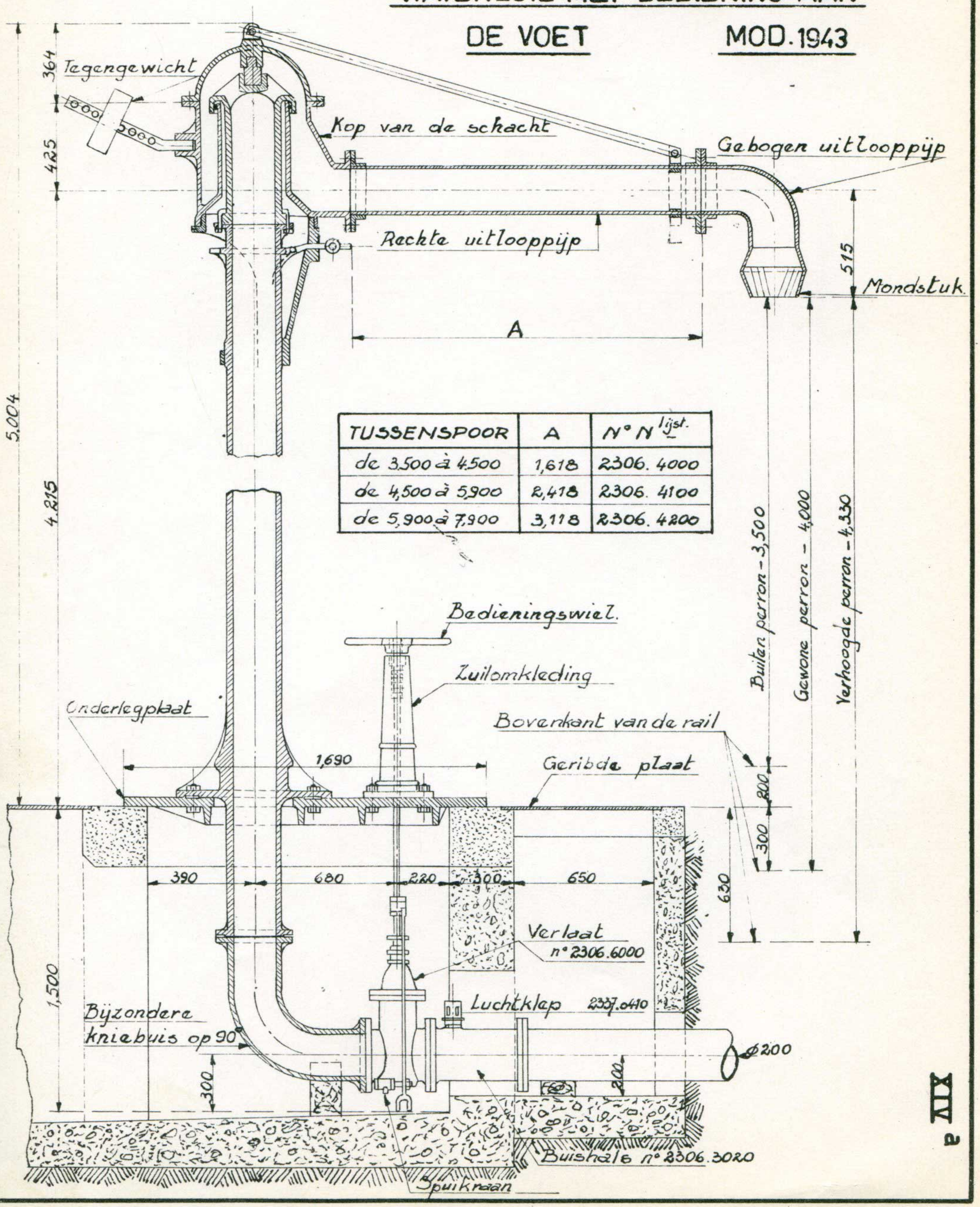
TYPE FLAMACHE.





Juli 1955

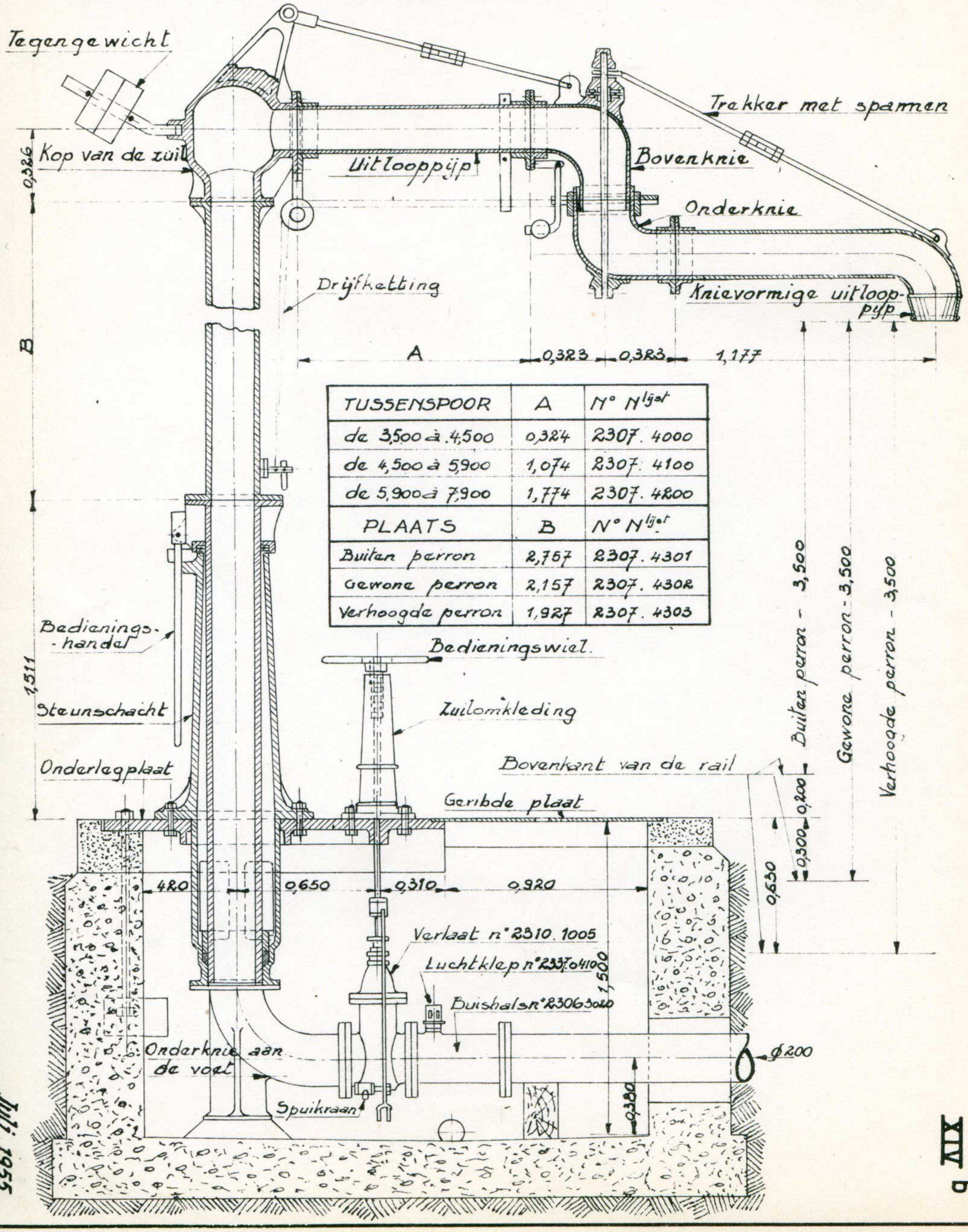
WATERZUIL MET BEDIENING AAN DE VOET MOD. 1943



TUSSENSPOOR	A	N° N lijst.
de 3.500 à 4.500	1,618	2306. 4000
de 4,500 à 5,900	2,418	2306. 4100
de 5,900 à 7,900	3,118	2306. 4200

WATERZUIL-DUBBELE GEWRICHTSARM

MOD. 1948

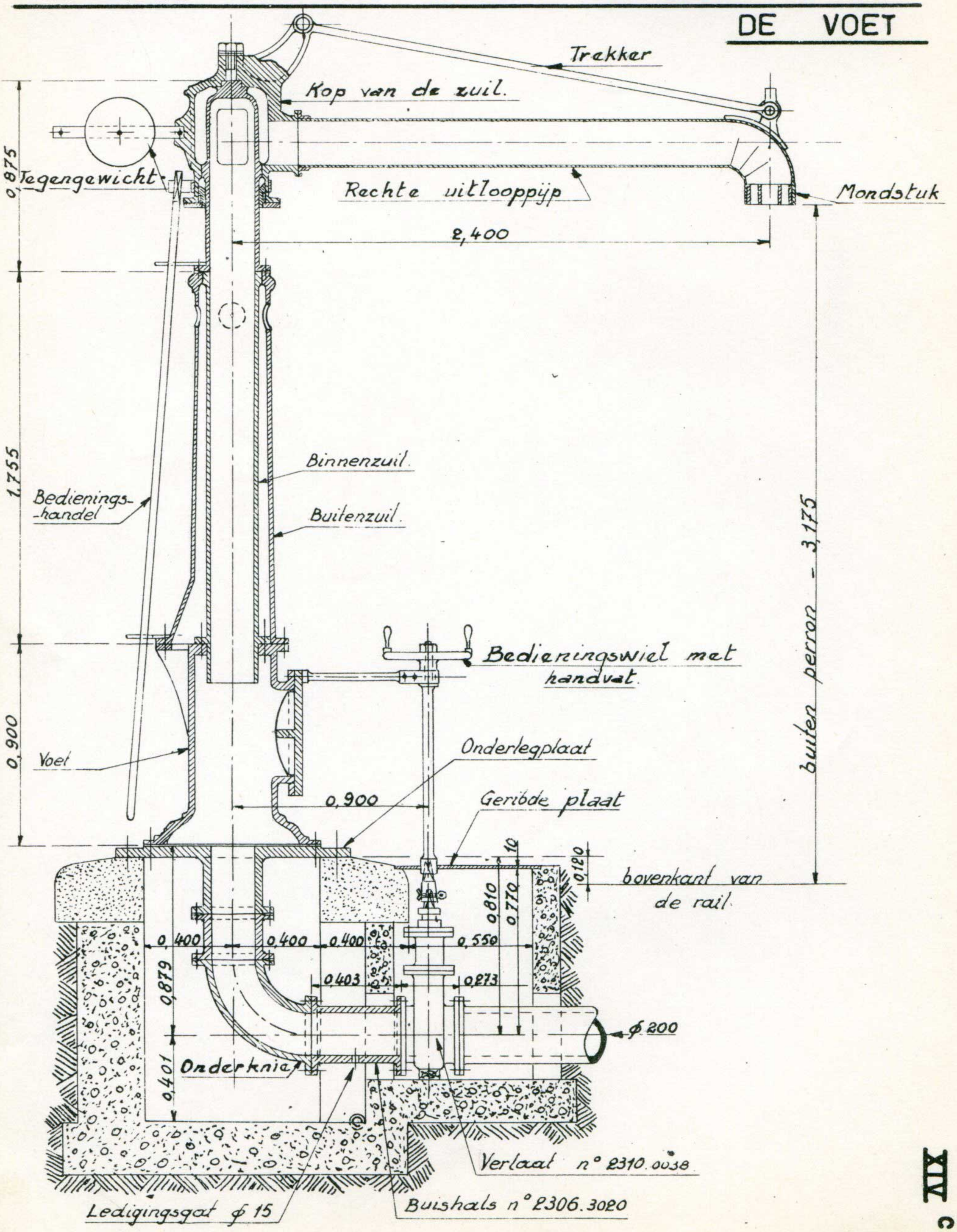


TUSSENSPOOR	A	N° Nlijst
de 3,500 à 4,500	0,324	2307. 4000
de 4,500 à 5,900	1,074	2307. 4100
de 5,900 à 7,900	1,774	2307. 4200
PLAATS	B	N° Nlijst
Buiten perron	2,757	2307. 4301
Gewone perron	2,157	2307. 4302
Verhoogde perron	1,927	2307. 4303

Juli 1955

XIV b

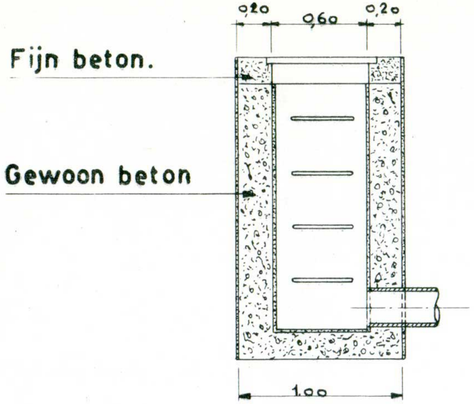
GEWIJZIGDE WATERZUIL MAJOLINI MET BEDIENING AAN DE VOET



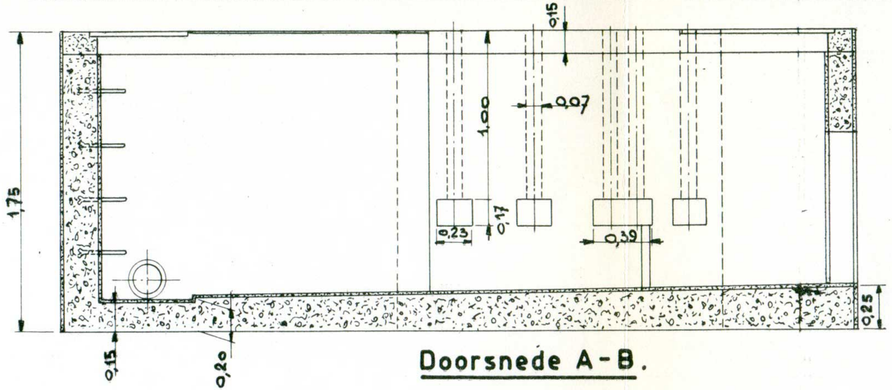
Juli 1955

XIX c

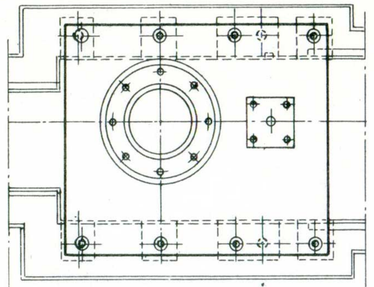
GEMEENSCHAPPELIJKE FUNDERING VOOR DE WATERZUILEN.



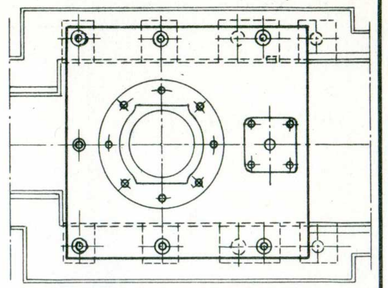
Doorsnede C-D



Doorsnede A-B.



a) Met automatische lediging. Mod. 1943.



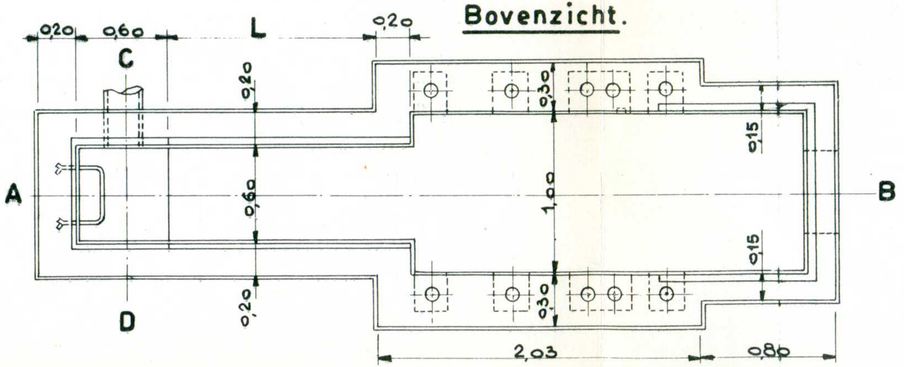
b) Met dubbele gewrichts-arm. Mod. 1948.

Voor tussenspoor: 3.40 - 4.50 m. L = 1.25 m.

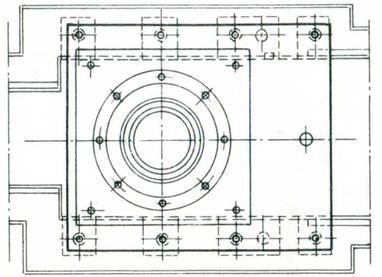
Voor tussenspoor: 4.50 - 5.90 m. L = 2.05 m.

Voor tussenspoor: 5.90 - 7.90 m. L = 2.75 m.

Bovenzicht.

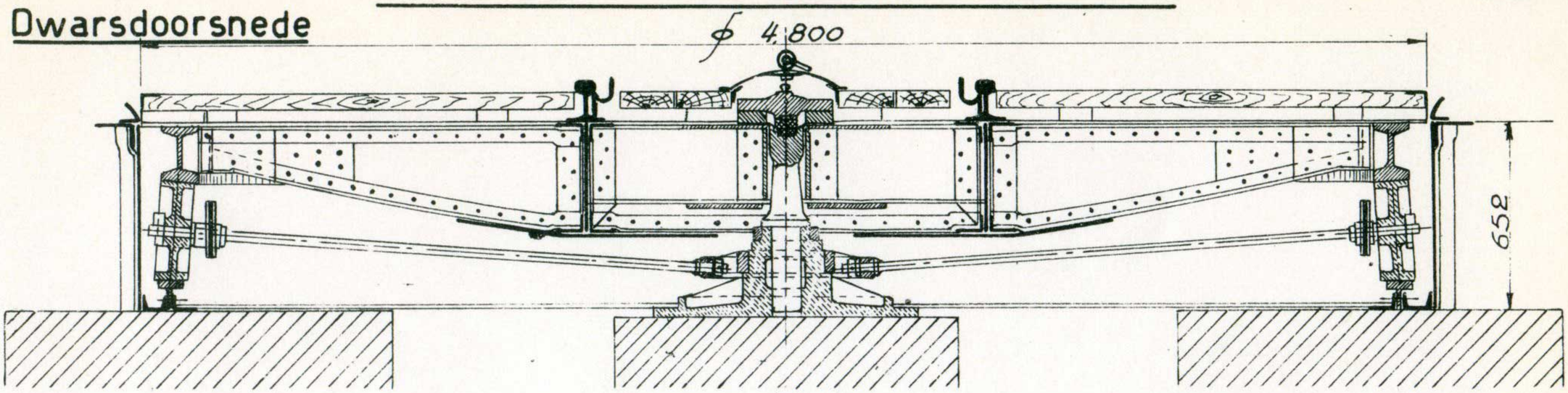


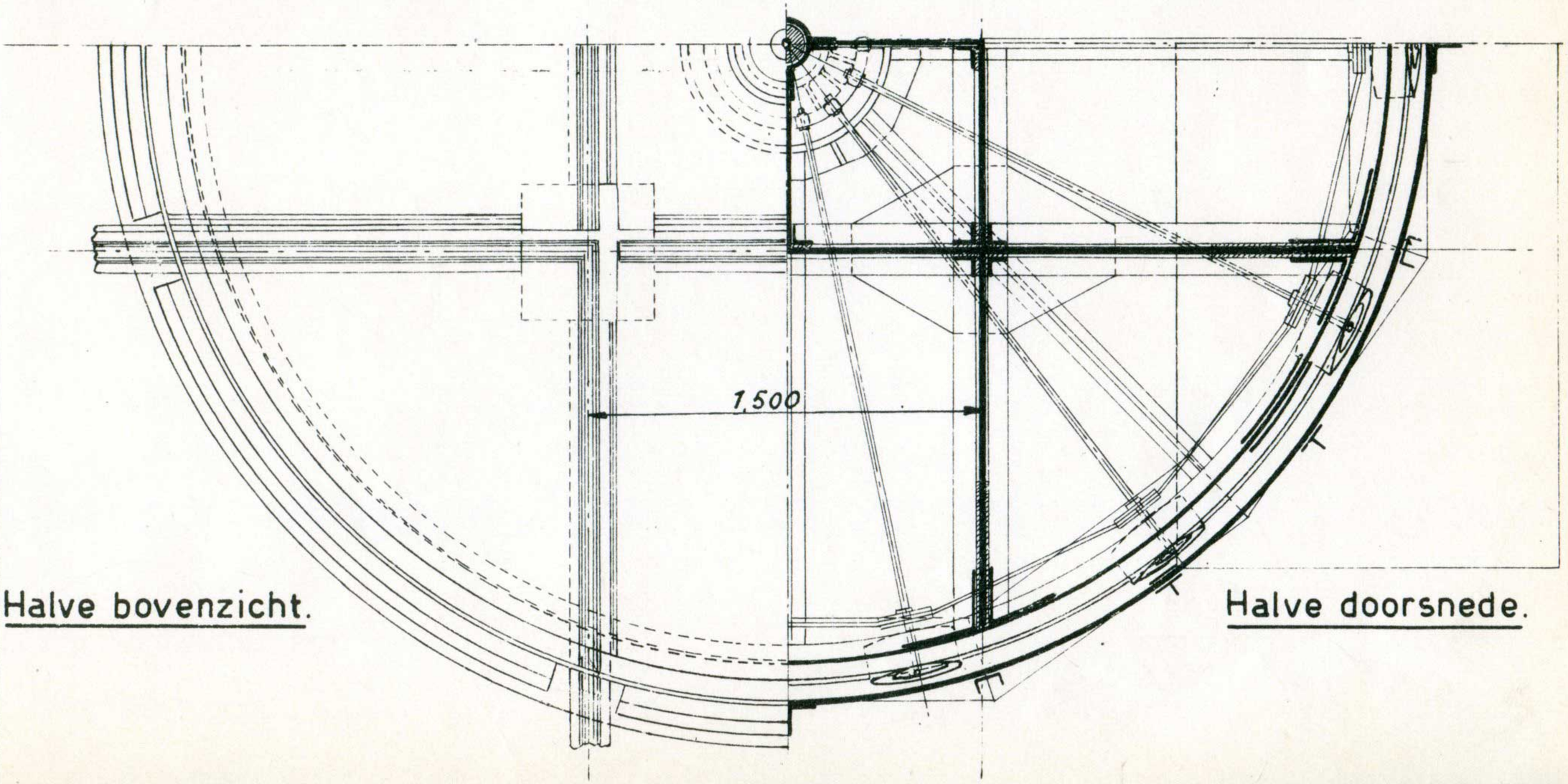
c) Systeem "MAJOLINI"



DRAAISCHIJF VAN 4.800 m MIDDELLIJN.

Dwarsdoorsnede





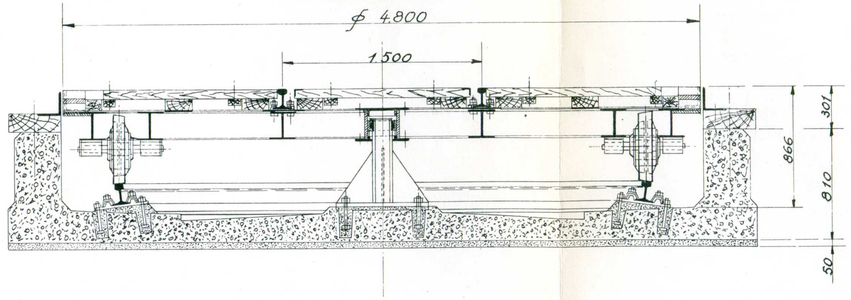
Halve bovenzicht.

Halve doorsnede.

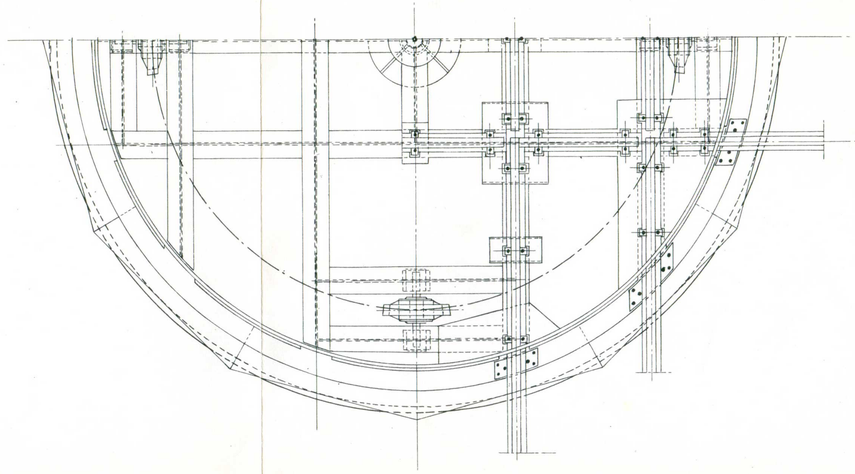
DRAAISCHUF VAN 4.800 m MIDDELLIJN.

(VOOR STELPLAATS)

Dwarsdoorsnede.

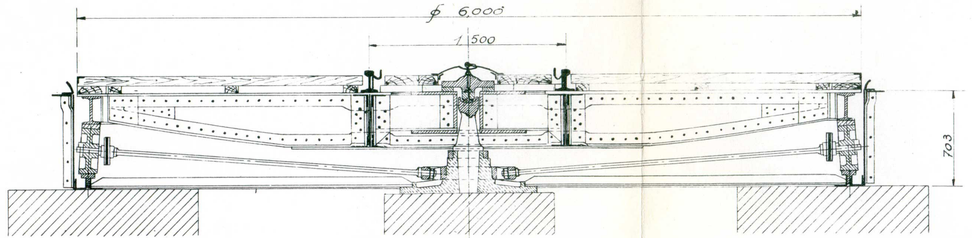


Bovenzicht.



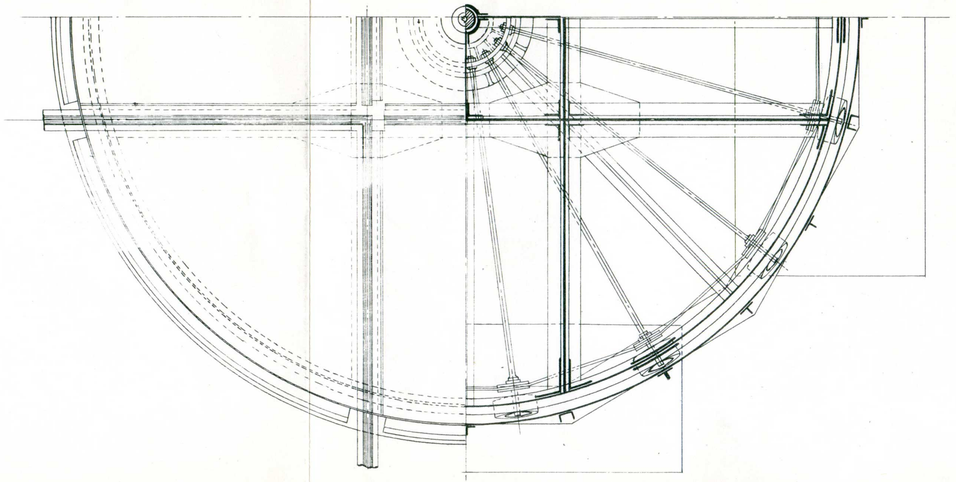
DRAAISCHIJF VAN 6.000 m MIDDELLIJN.

Dwarsdoorsnede.



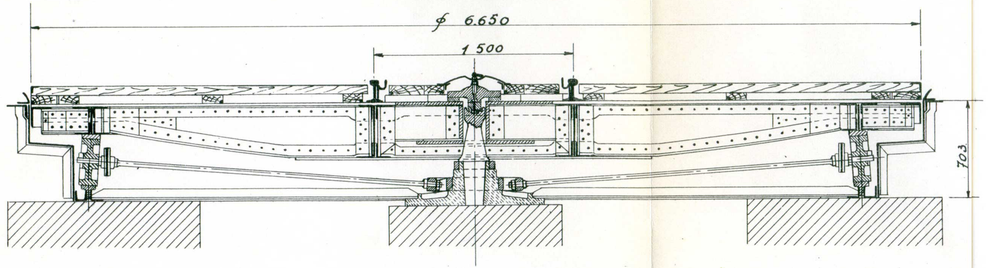
Halve bovenzicht.

Halve doorsnede.



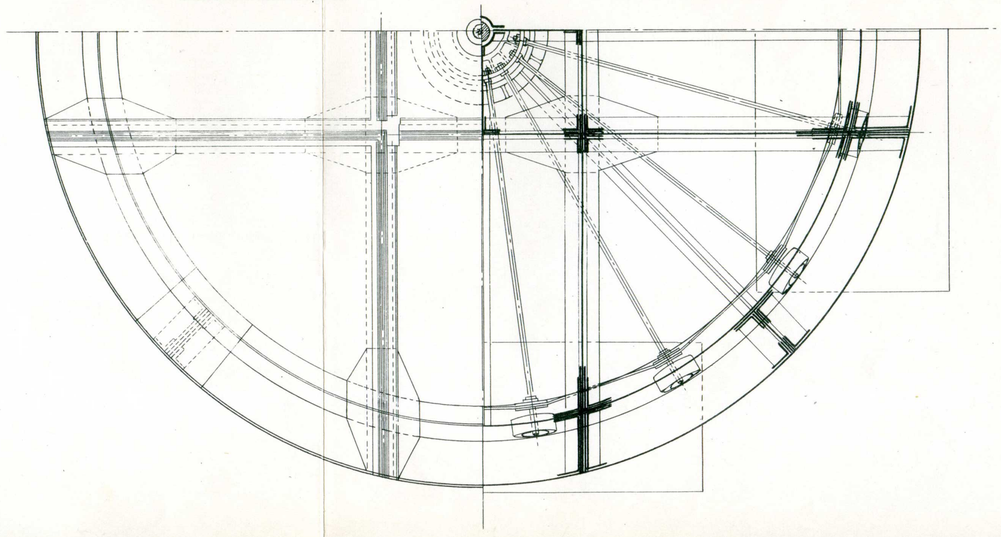
DRAAISCHIJF VAN 6.650 m MIDDELLIJN.

Dwarsdoorsnede.



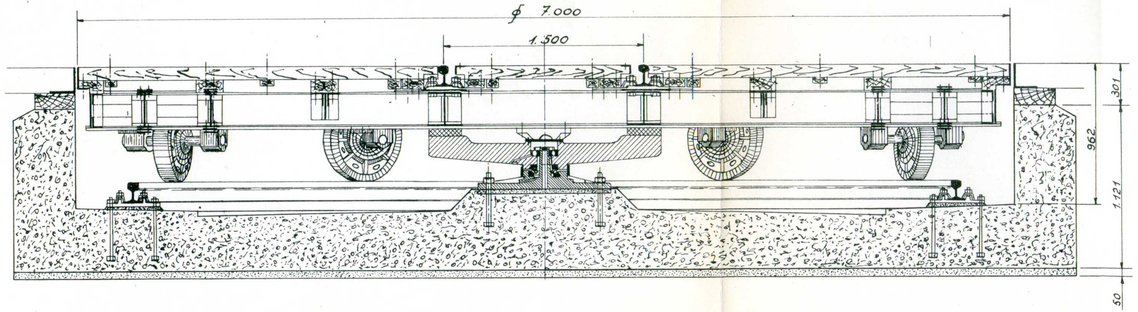
Halve bovenzicht.

Halve doorsnede.



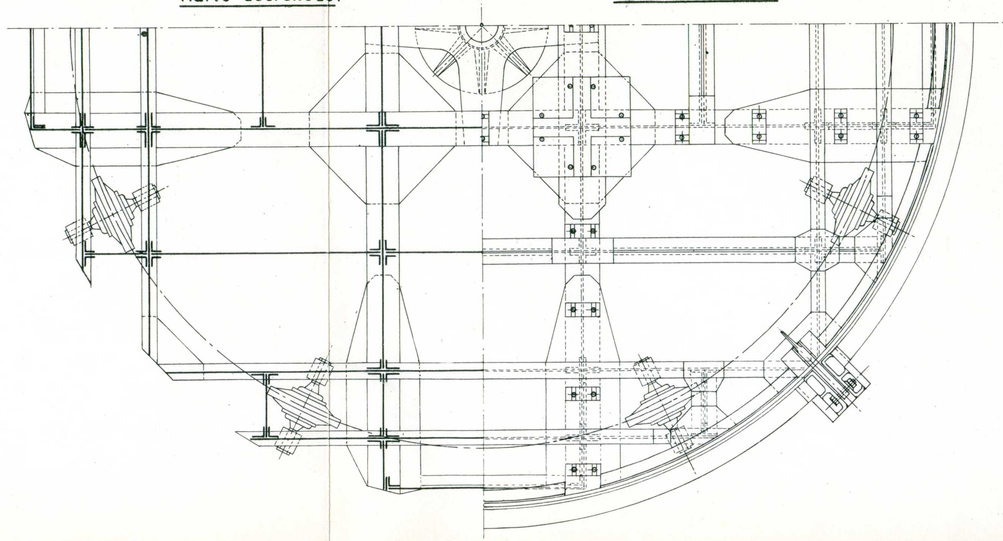
DRAAISCHIJF VAN 7.000 m MIDDELLIJN.

Dwarsdoorsnede.



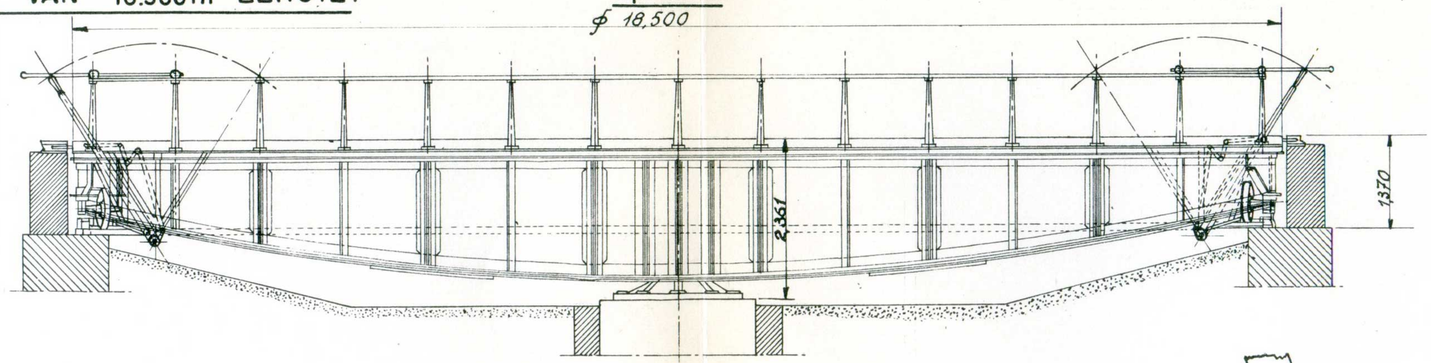
Halve doorsnede.

Halve bovenzicht.

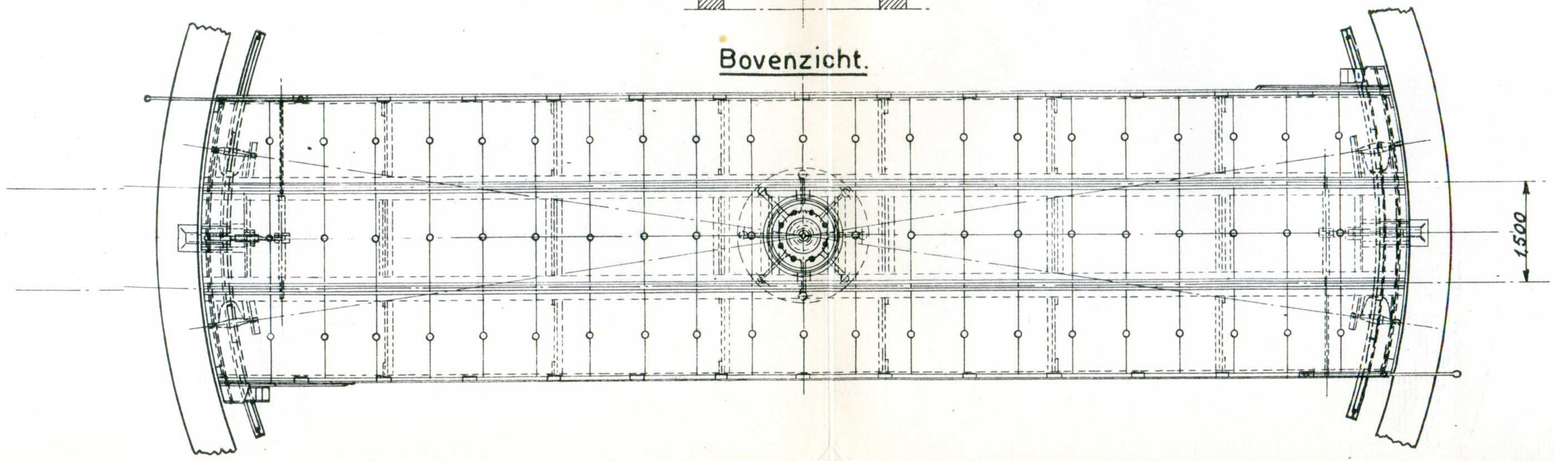


DRAAIBRUG VAN 18.500 m LENGTE.

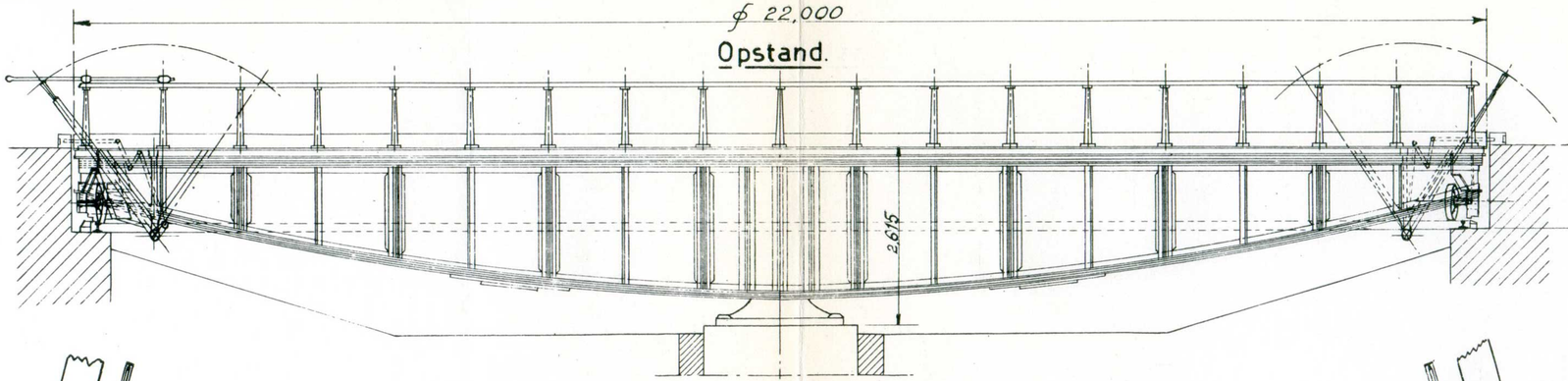
Opstand.



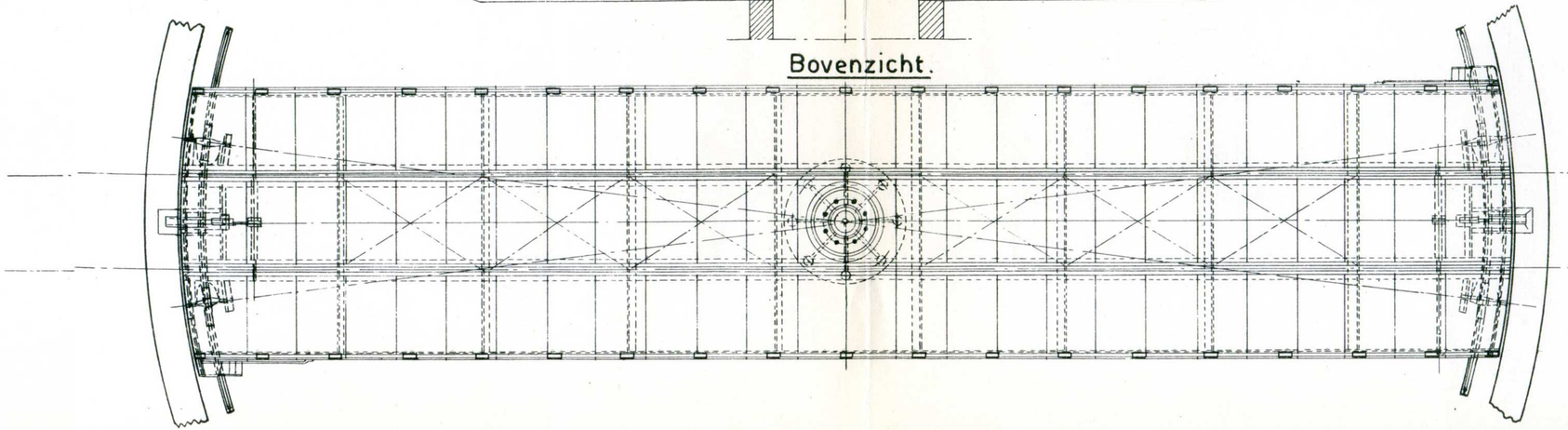
Bovenzicht.



DRAAIBRUG VAN 22.000 m LENGTE.

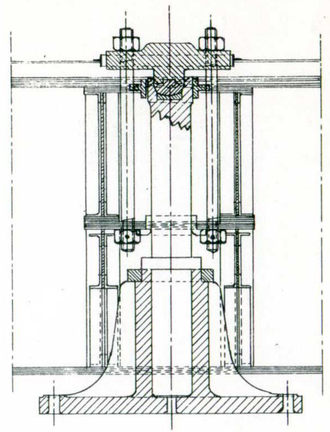


Opstand.



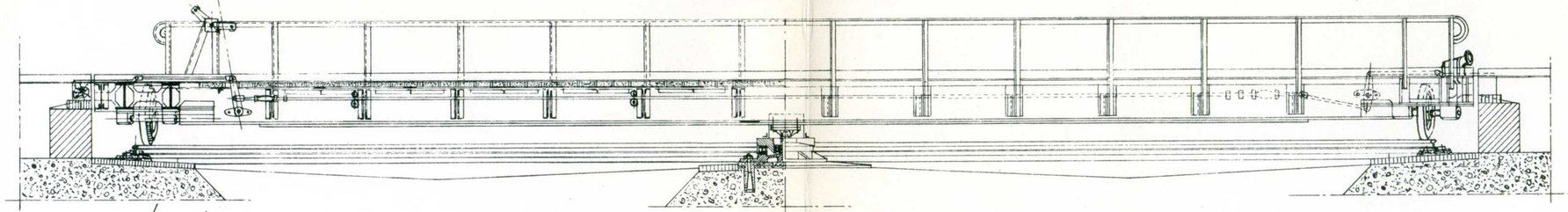
Bovenzicht.

Detail van het ophangwerk.



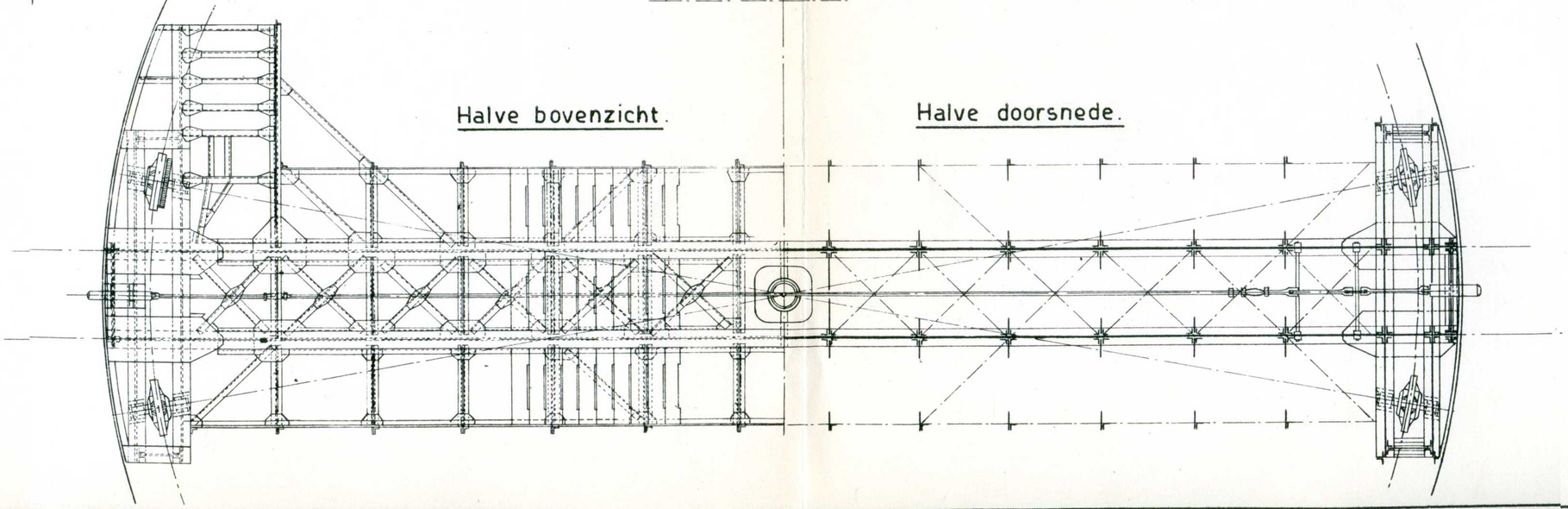
DRAAIBRUG VAN 24.000 m LENGTE.

Dwarsdoorsnede.



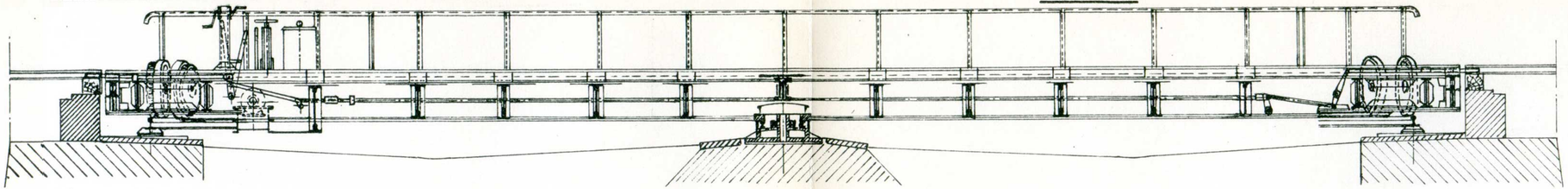
Halve bovenzicht.

Halve doorsnede.

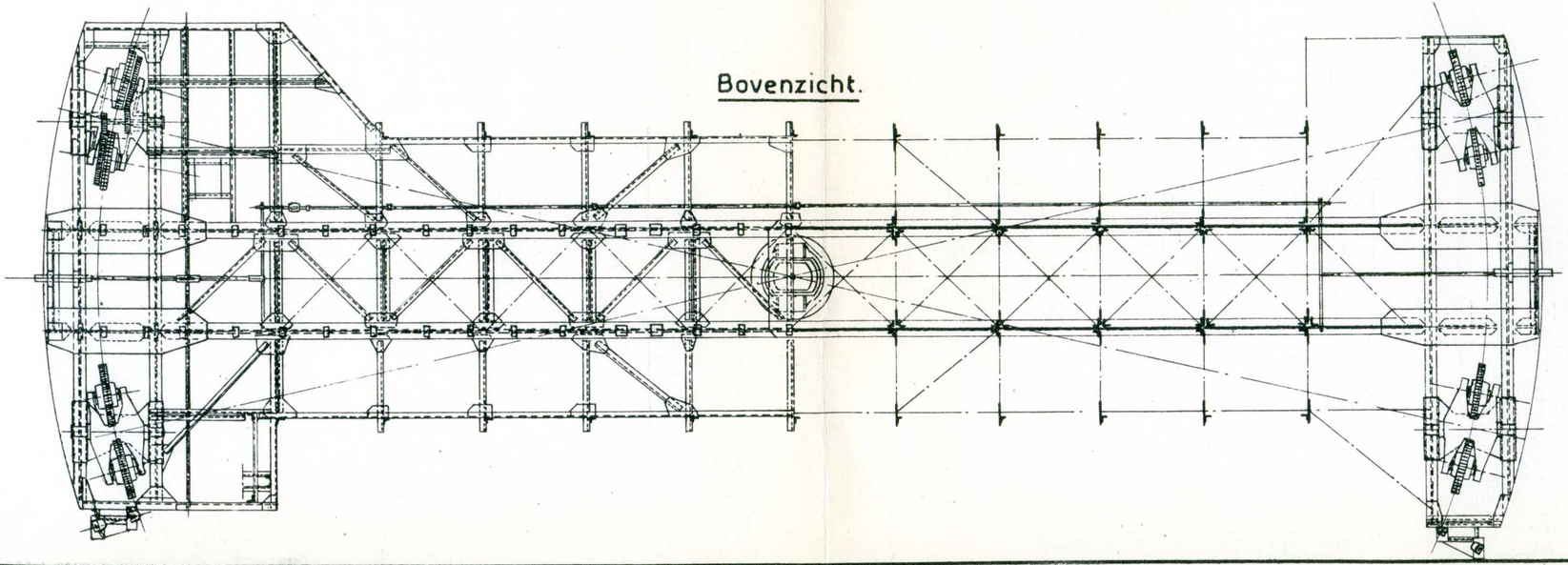


DRAAIBRUG VAN 24.000 m LENGTE.

Opstand.



Bovenzicht.



NATIONALE MAATSCHAPPIJ
DER BELGISCHE SPOORWEGEN
Directie van de Baan
Bureau 31.12
Sectie 54
Tf. 2308
/HVM.

Bericht 2 AD. van 1964.

Brussel, 1 augustus 1972.

ALBUM DER SPOORTOESTELLEN

Uitreiking: Typelijst B 8
(Vernietigt en vervangt de lijst verschenen met Bericht 4 V van 1968).

---

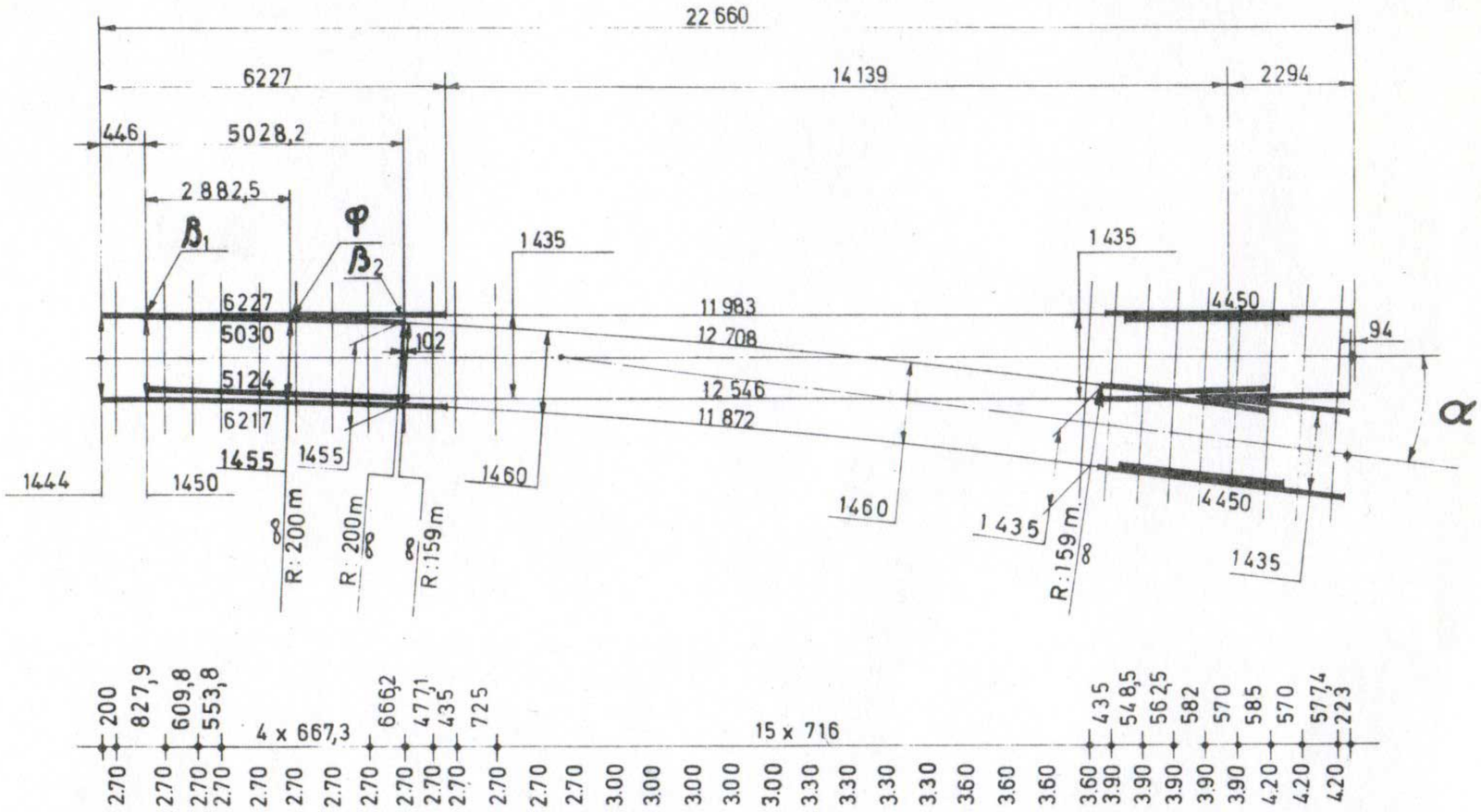
3 - (behalve diensten 31, 33 en 34)
1, 2, 3, 4, 5, 10, 22a (1 ex. uitgezonderd
36.14 + 5 ex. voor 36.13
36.24 + 2 ex. voor 36.23)
31.11, 31.12, 33.22 - 10 (1 ex.)
31,36 - 2, 3, 4, 5, 10 (1 ex.) 22a
34 - 10 (3 ex.)
300 - 4, 5, 10 (1 ex.), 21, 22a
310 - 2, 4, 5, 10 (1 ex. behalve Schaarbeek 6 ex.)

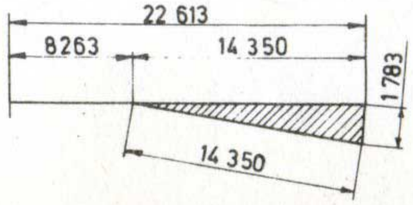
I - 72 - 2, 3, 4
72.13, 73.13, 74.13 - 10 (1 ex.)
70 - 2
72 - 3, 4, 10 (1 ex.)
700 - 4, 5, 10
775 - 10 (1 ex.)

Ⓑ

F[1] mod. 70

F[1] - H[4]





β_1 = 1° 34' 42" = 1^g,753727

β_2 = 2° 34' 51" = 2^g,867623

φ = 0° 23' 14" = 0^g,430141

α = 7° 07' 30" = 7^g,916667

R= 158,90 m

tg α = 0,125000

11 - 14

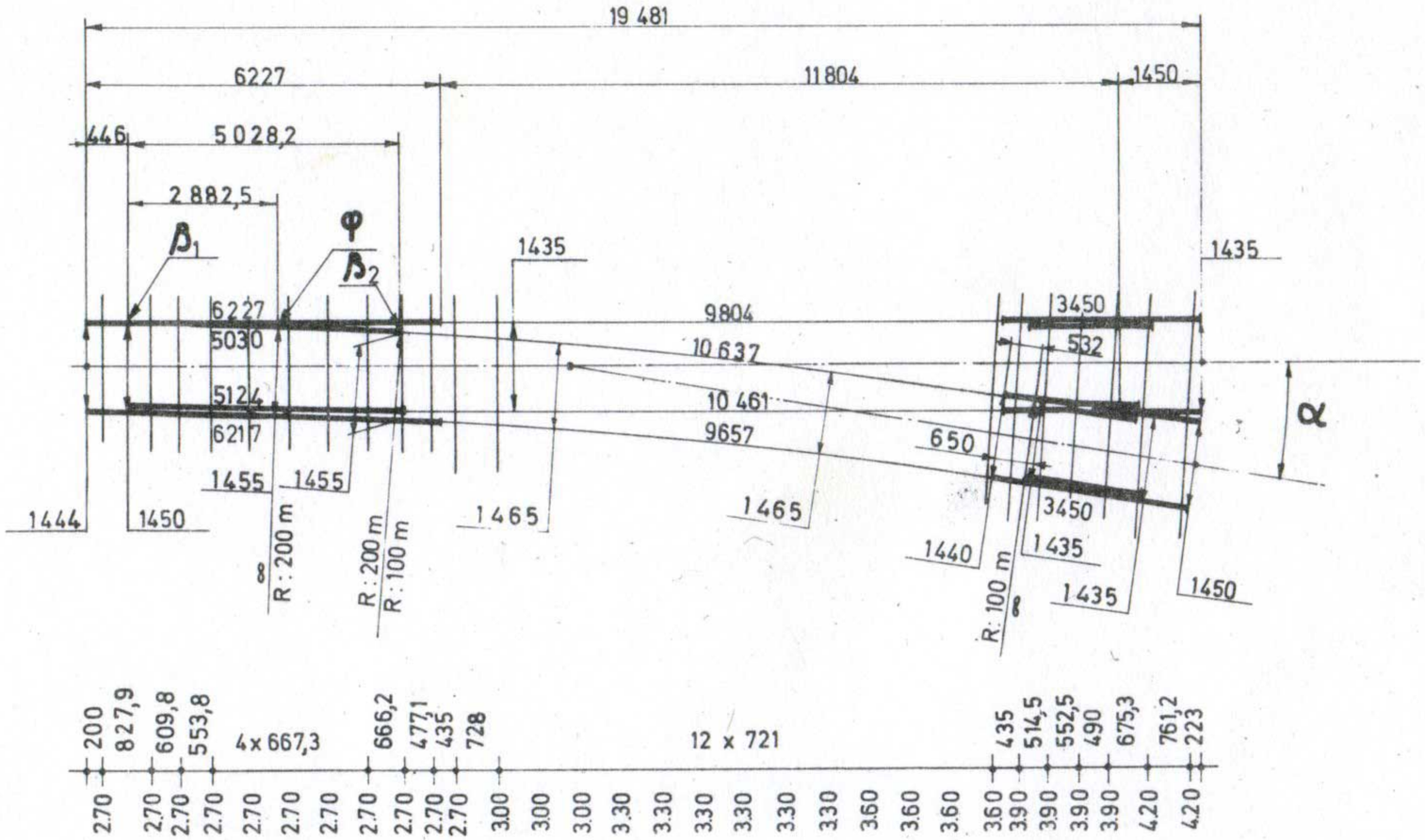
6 - 72

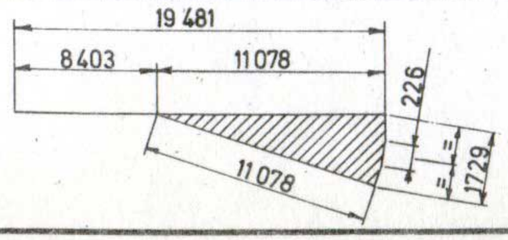
1972

Ⓑ

F¹ mod. 70

F¹ - H 5f





β_1 = 1°34'42" = $1^g,753727$

β_2 = 2°34'51" = $2^g,867623$

φ = 0°23'14" = $0^g,430141$

α = 8°57'01" = $9^g,944753$

R = 100,43 m.

tg α = 0,157495

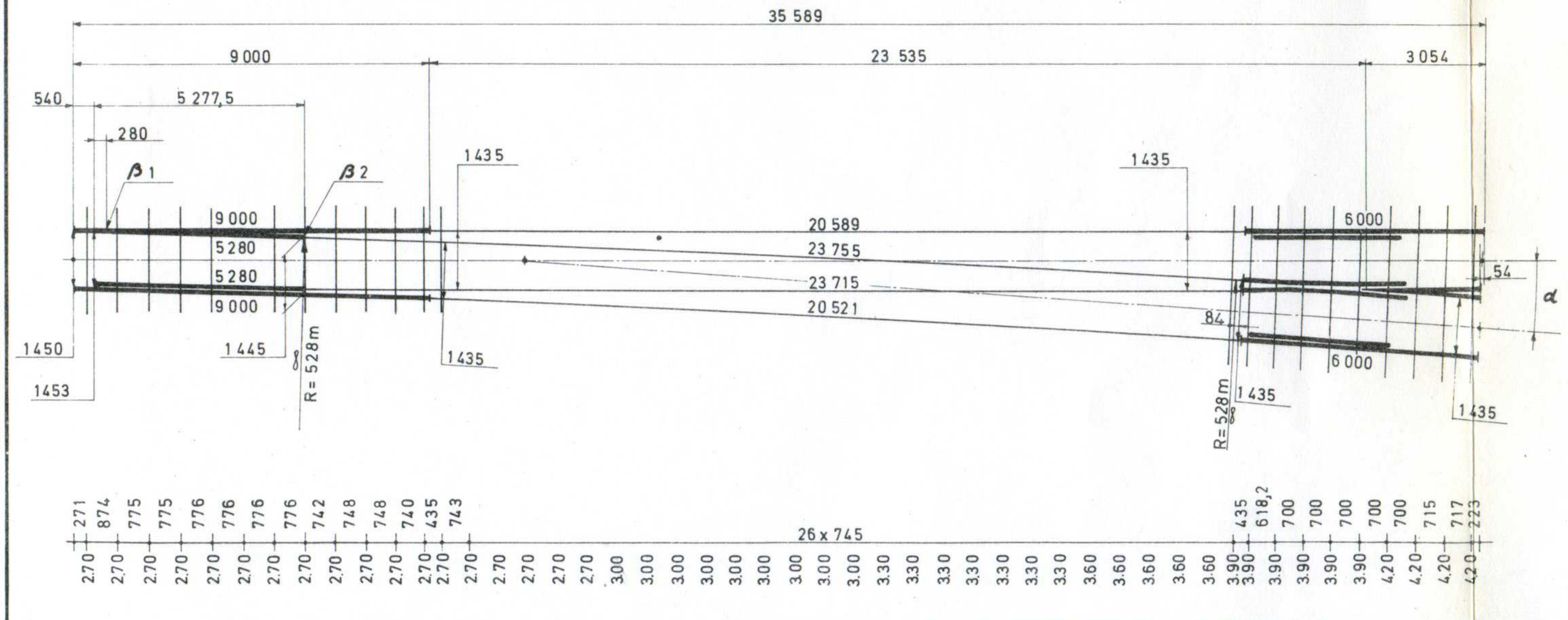
11-15f

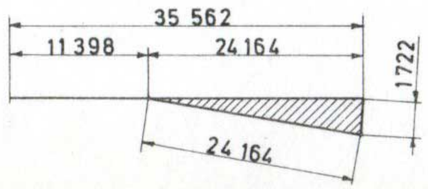
6-72

1972

F 3 mod. 70

F 3 - H 1





$\beta_1 = \beta_2 = 1^\circ 3\,0'46'' = 1{,}^g680864$

$\alpha = 4^\circ 05'00'' = 4{,}^g537037$

R= 527,58 m

$tg\,\alpha = 0{,}071388$

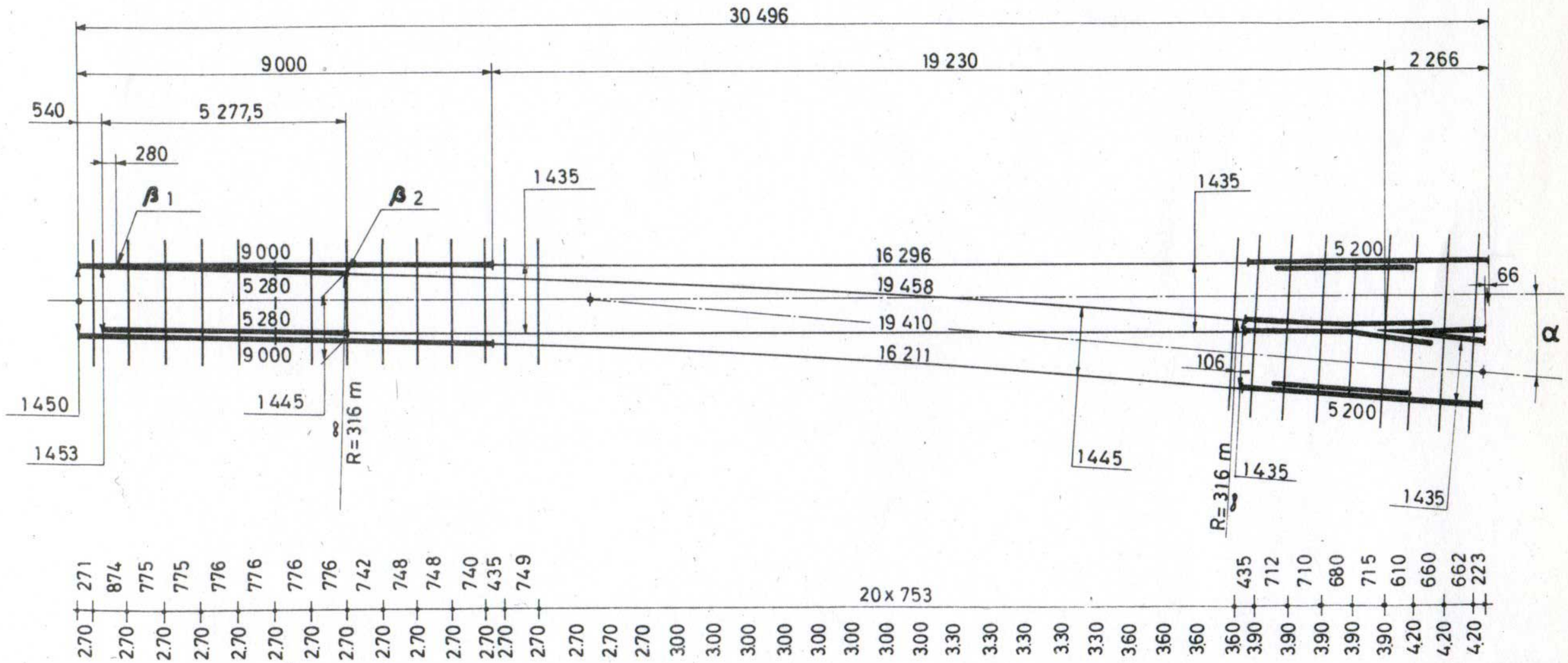
11-31

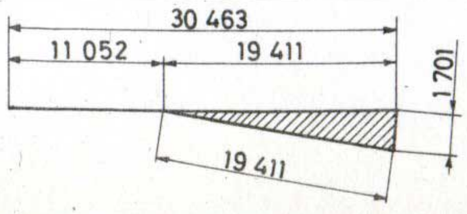
6-72

1972

F 3 mod. 70

F 3 - H 2





$\beta_1 = \beta_2 = 1^\circ 30' 46'' = 1{,}^g680864$

$\alpha = 5^\circ 01' 24'' = 5{,}^g581481$

R = 315,80 m

$tg\,\alpha = 0{,}087899$

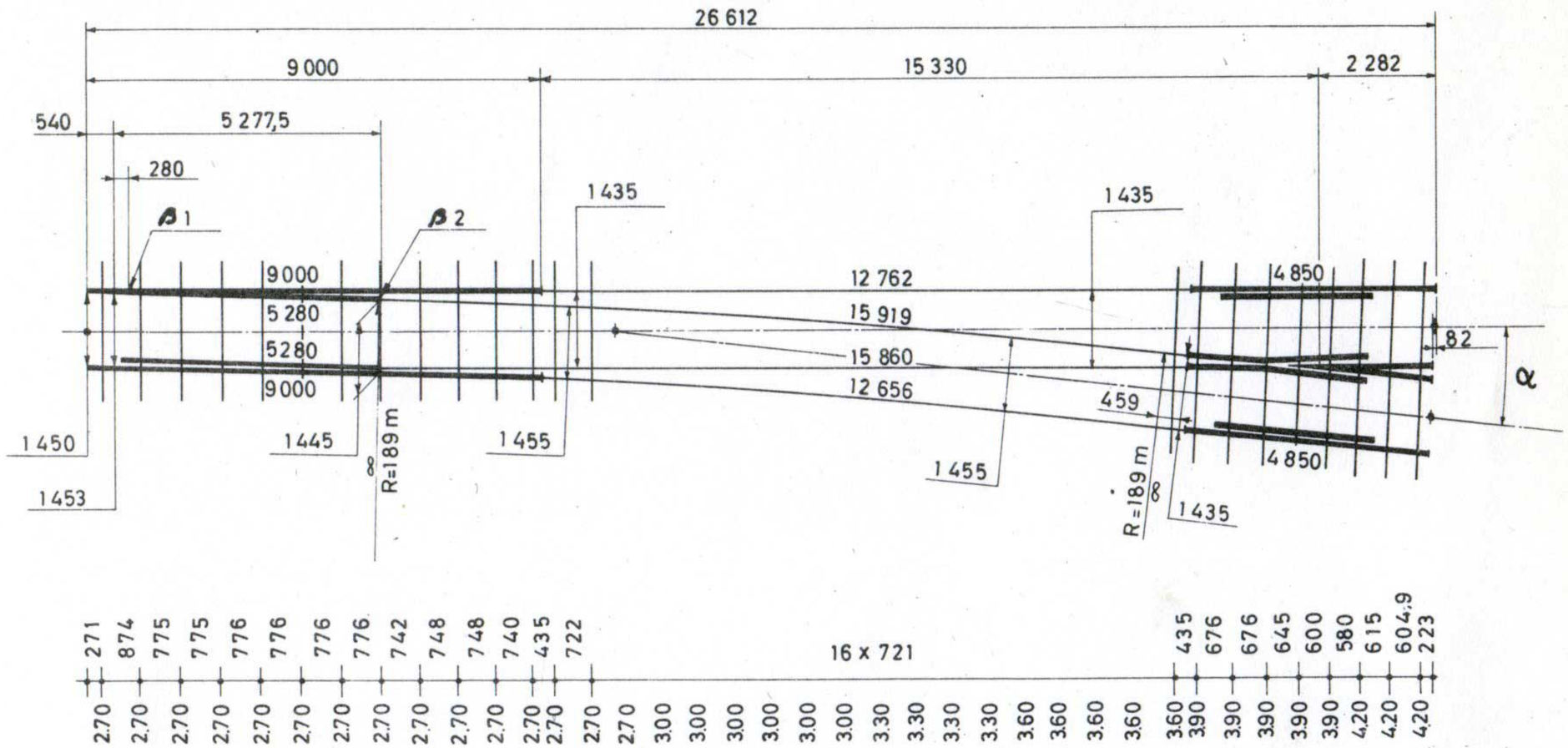
11 - 32

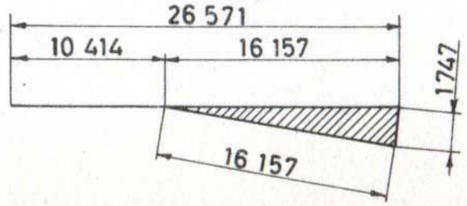
6-72

1972

F3 mod. 70

F3 - H3





$\beta_1 = \beta_2 = 1°30'46'' = 1{,}^{g}680864$

$\alpha = 6°11'55'' = 6{,}^{g}887346$

R= 189 m

$tg\alpha = 0{,}108610$

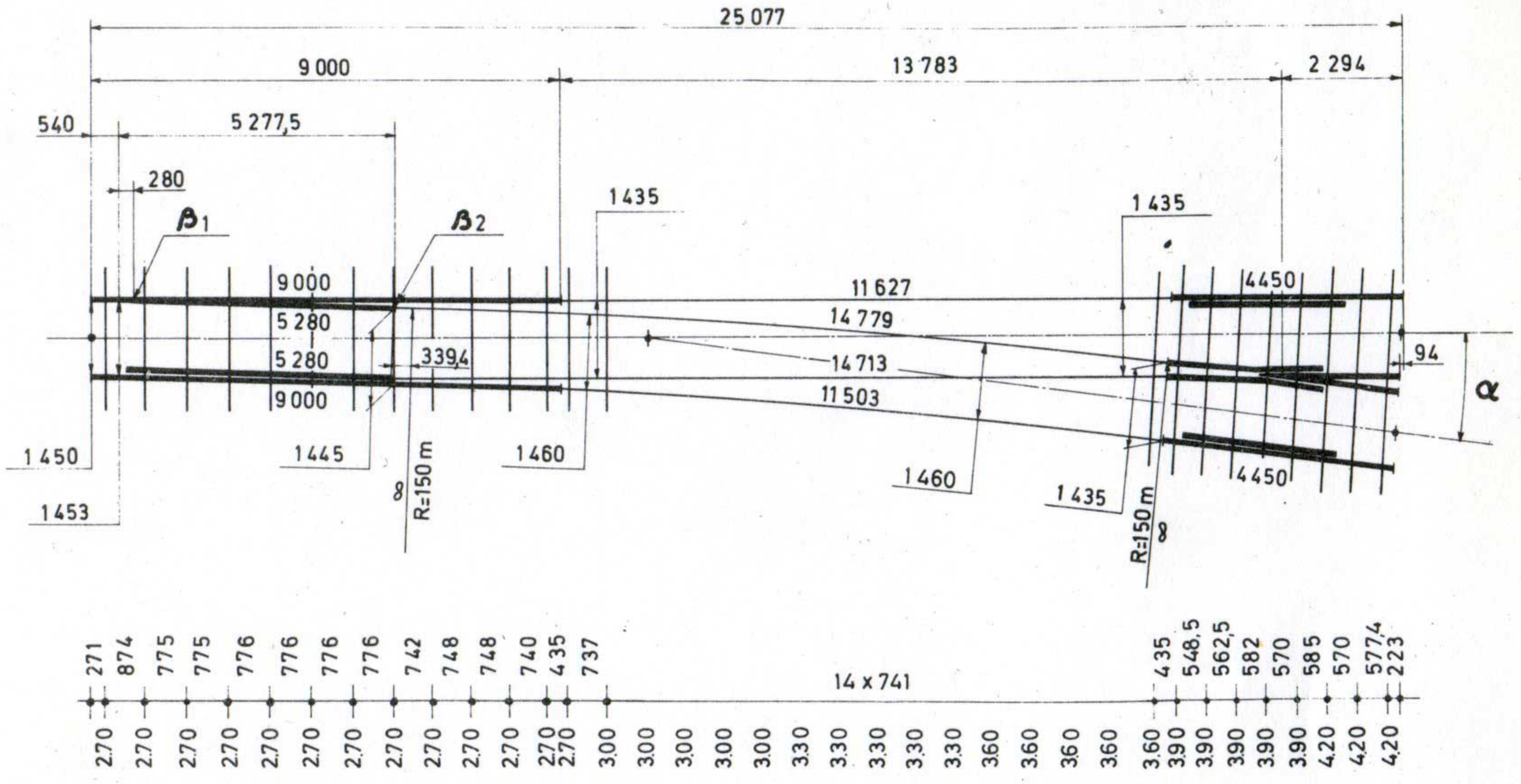
11 - 33

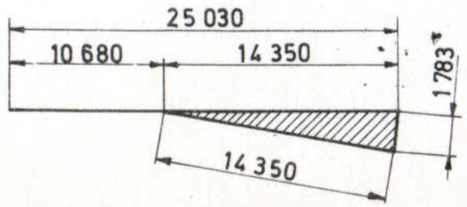
6-72

1972

F³ mod. 70

F³ - H⁴





$\beta_1 = \beta_2 = 1^\circ\,30'\,46'' = 1^g,680864$

$\alpha = 7^\circ\,07'\,30'' = 7^g,916667$

R= 150 m

$tg\,\alpha = 0,125000$

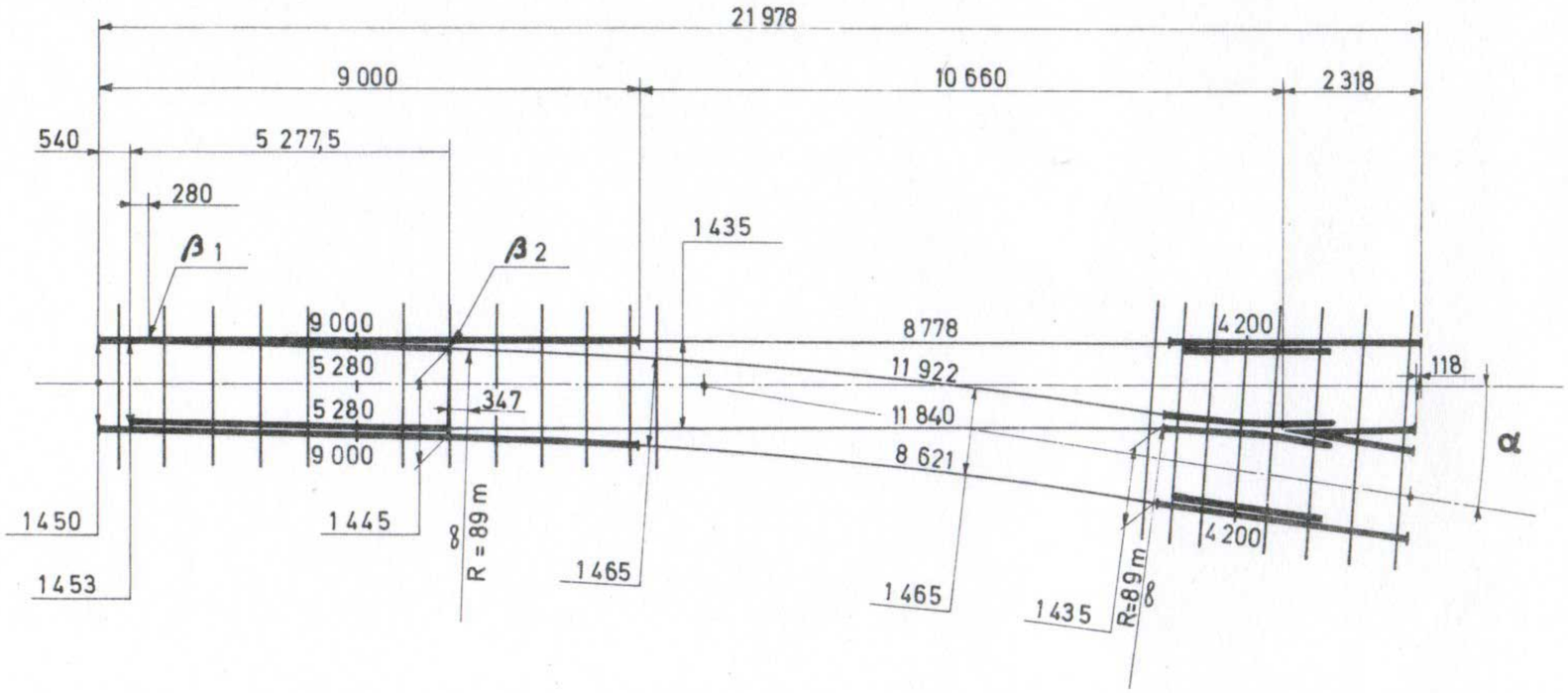
11 - 34

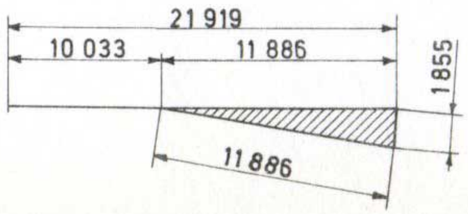
6 - 72

1972

F 3 mod. 70

F 3 - H 5





$\beta_1 = \beta_2 = 1^g\,3\,0'46'' = 1{,}^g680864$

$\alpha = 8^g\,57'01'' = 9{,}^g944753$

R = 89,14 m

$tg\,\alpha = 0{,}157495$

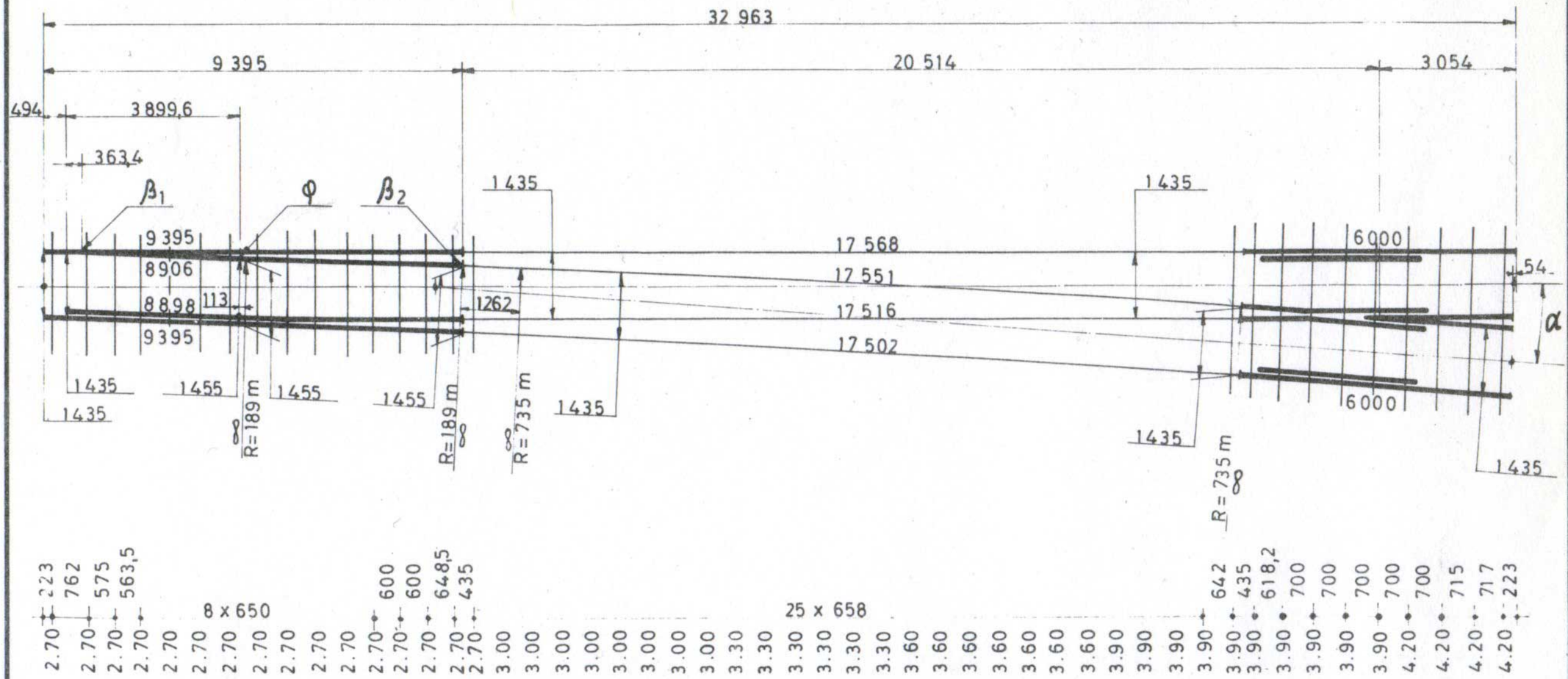
11-35

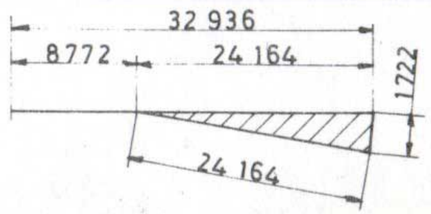
6-72

1972

F 4 mod. 70

F 4 - H 1





β_1 = 1° 10' 00" = 1^g,296296

β_2 = 2° 48' 48" = 3^g,125966

φ = 0° 10' 00" = 0^g,185185

α = 4° 05' 00" = 4^g,537037

R = 734,87 m

tg α = 0,071388

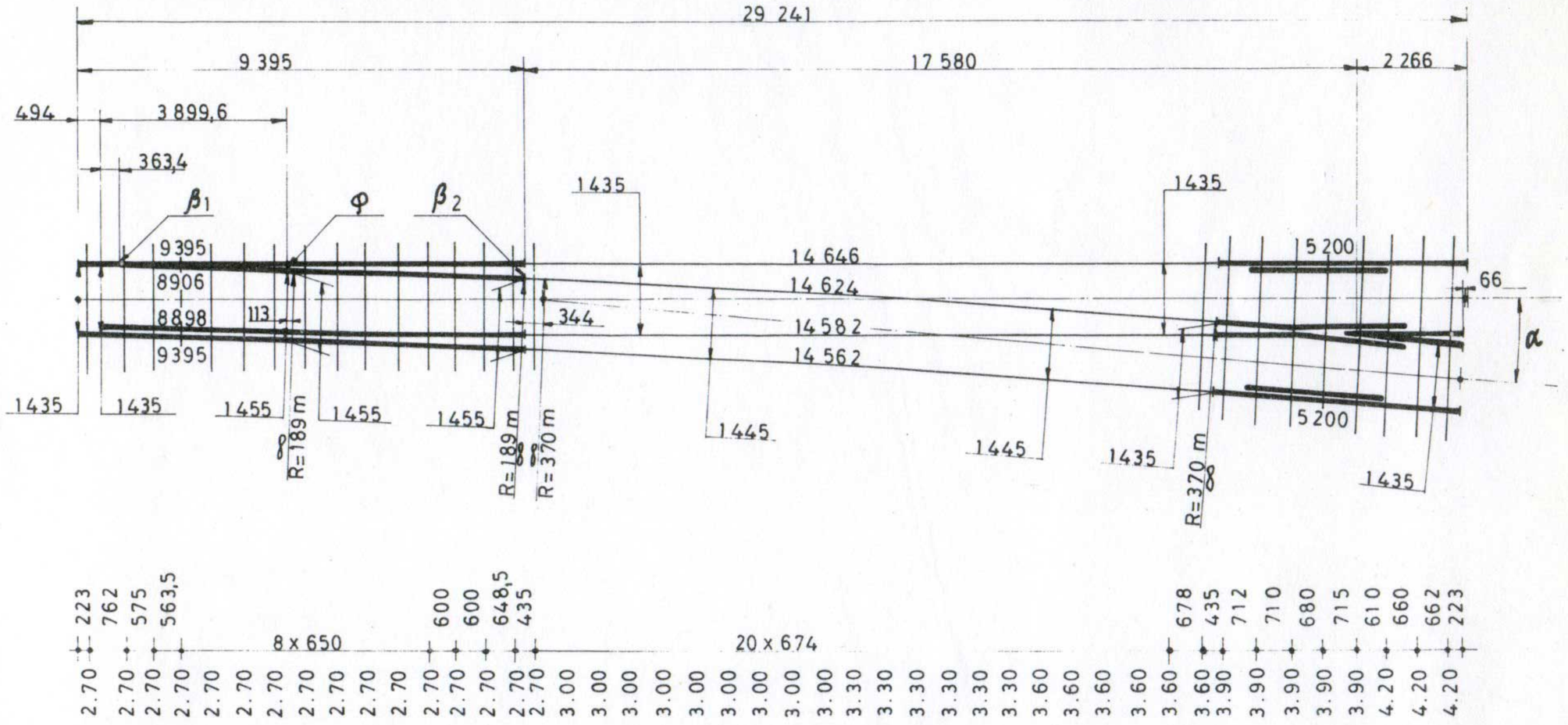
11-41

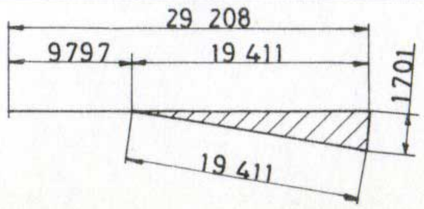
6 - 72

1972

F4 mod. 70

F4 - H2





β_1 = 1° 10' 00" = 1^g,296296

β_2 = 2° 48' 48" = 3^g,125966

φ = 0° 10' 00" = 0^g,185185

α = 5° 01' 24" = 5^g,581481

R = 370,18 m

tg α = 0,087899

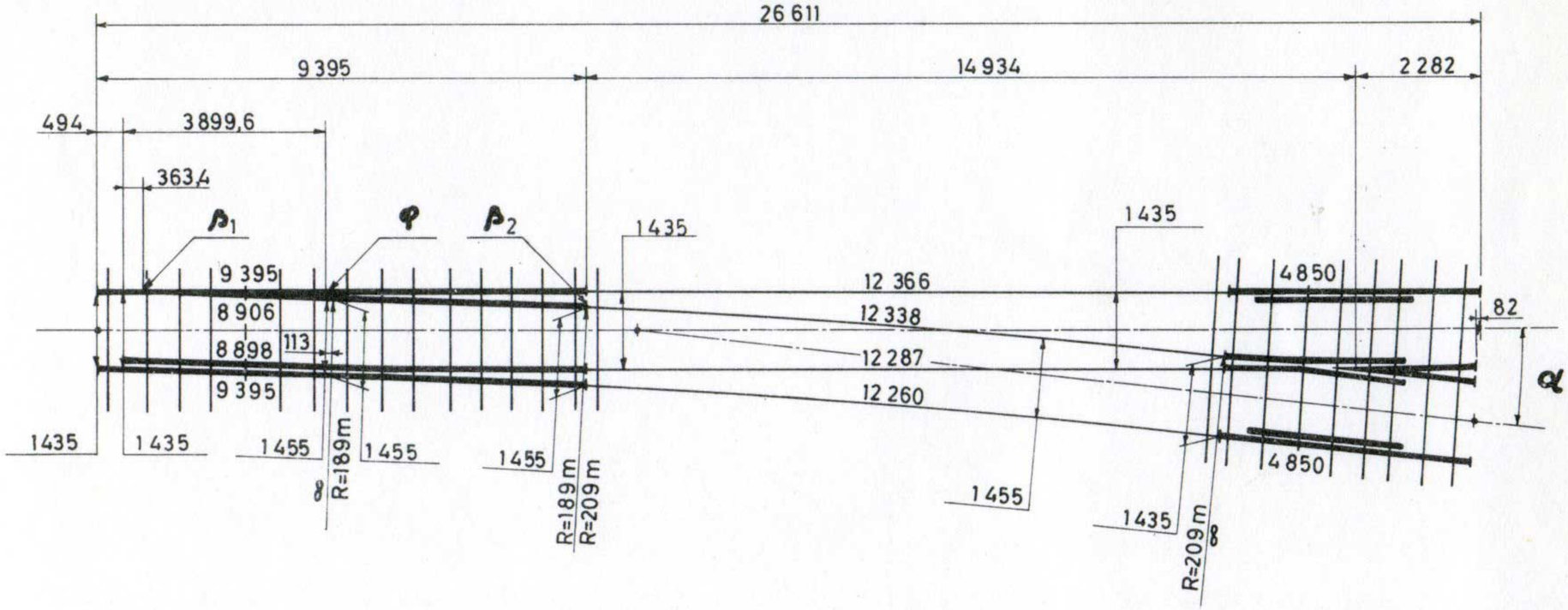
11-42

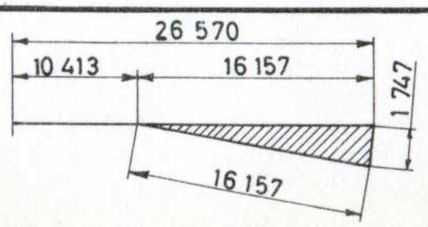
6 - 72

1972

F4 mod. 70

F4 - H3





β_1 = 1° 10' 00" = 1^g,296296

β_2 = 2° 48' 48" = 3^g,125966

φ = 0° 10' 00" = 0^g,185185

α = 6° 11' 55" = 6^g,887346

R = 208,79 m

tg α = 0,108611

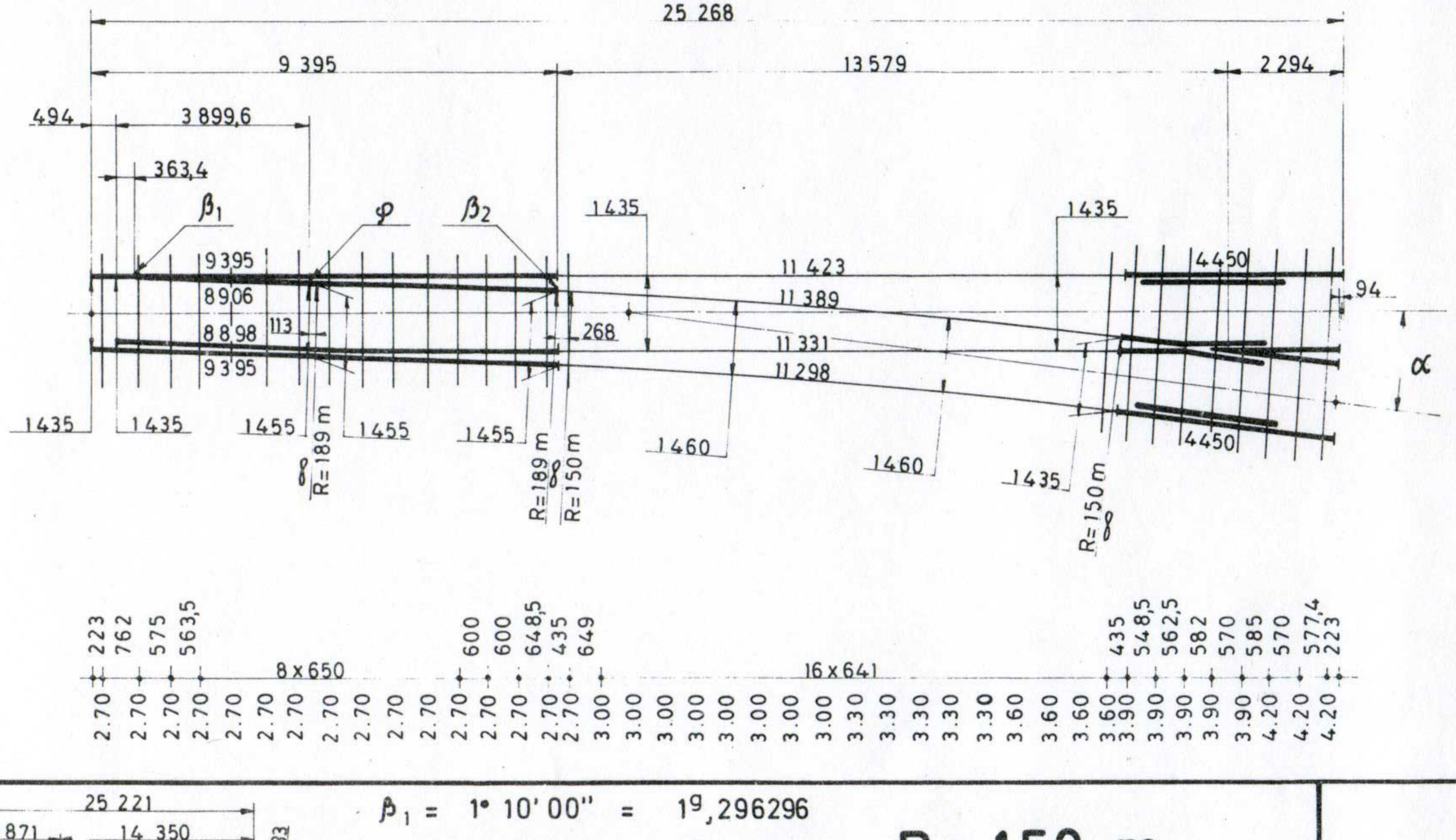
11-43

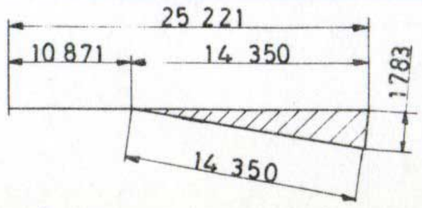
6-72

1972

F4 mod. 70

F4 - H4





β_1 = 1° 10' 00" = 1^g,296296

β_2 = 2° 48' 48" = 3^g,125966

φ = 0° 10' 00" = 0^g,185185

α = 7° 07' 30" = 7^g,916667

R = 150 m

tg α = 0,125000

11-44

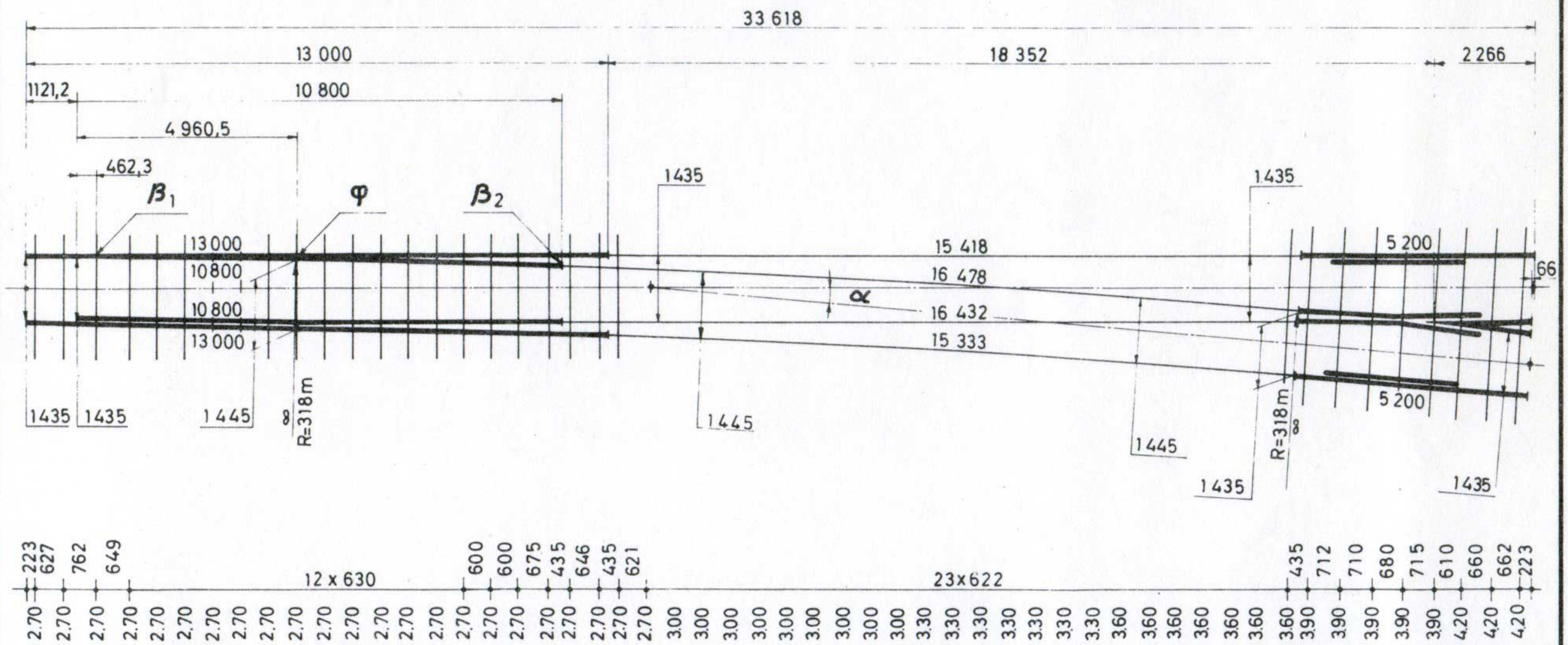
6-72

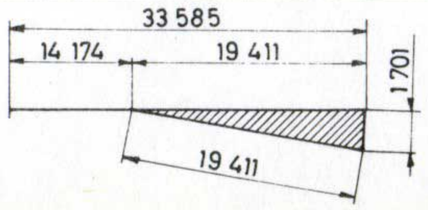
1972

Ⓑ

F5 mod. 70

F5 - H2





β_1 = 0° 55' 02" = 1^g,019062

β_2 = 2° 03' 10" = 2^g,280884

φ = 0° 04' 58" = 0^g,092049

α = 5° 01' 24" = 5^g,581481

R= 317,79 m

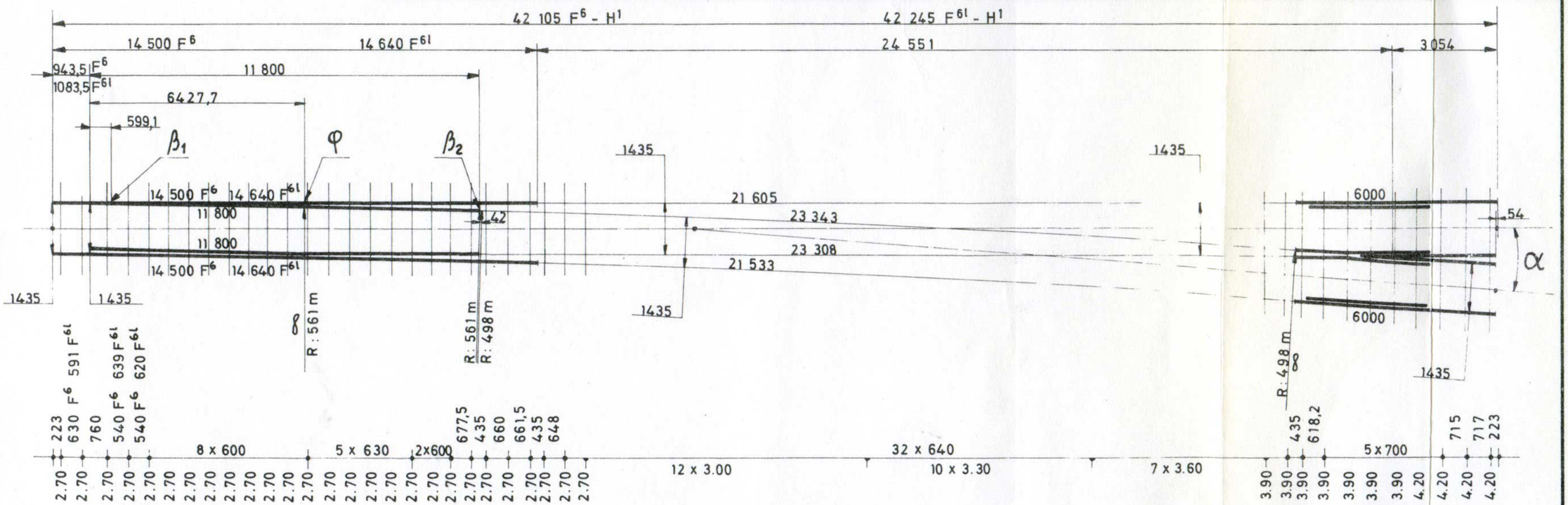
tg α = 0,087899

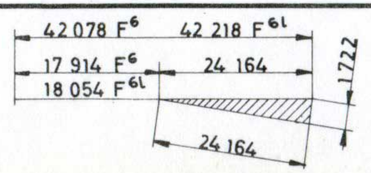
11 - 52

6 - 72

1972

F6 mod. 70 - H1
F6l mod. 70





β_1 = 0° 42' 28" = 0^g,786285

β_2 = 1° 24' 03" = 1^g,556403

φ = 0° 08' 42" = 0^g,161005

α = 4° 05' 00" = 4^g,537037

R= 497,65 m

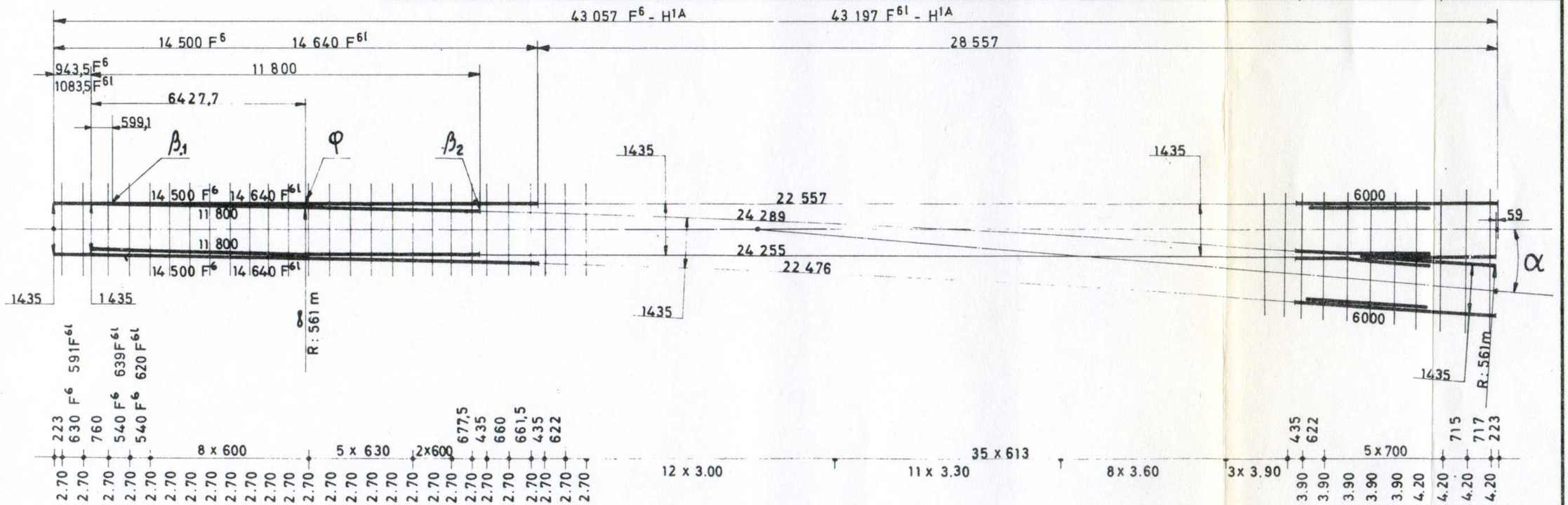
tg α = 0,071388

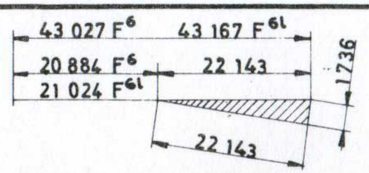
11 - 61

6-72

1972

F6 mod. 70 - H1A
F61 mod. 70





β_1 = 0° 42' 28" = 0^g,786285

β_2 = 1° 24' 03" = 1^g,556403

φ = 0° 08' 42" = 0^g,161005

α = 4° 29' 34" = 4^g,991830

R= 561,26 m

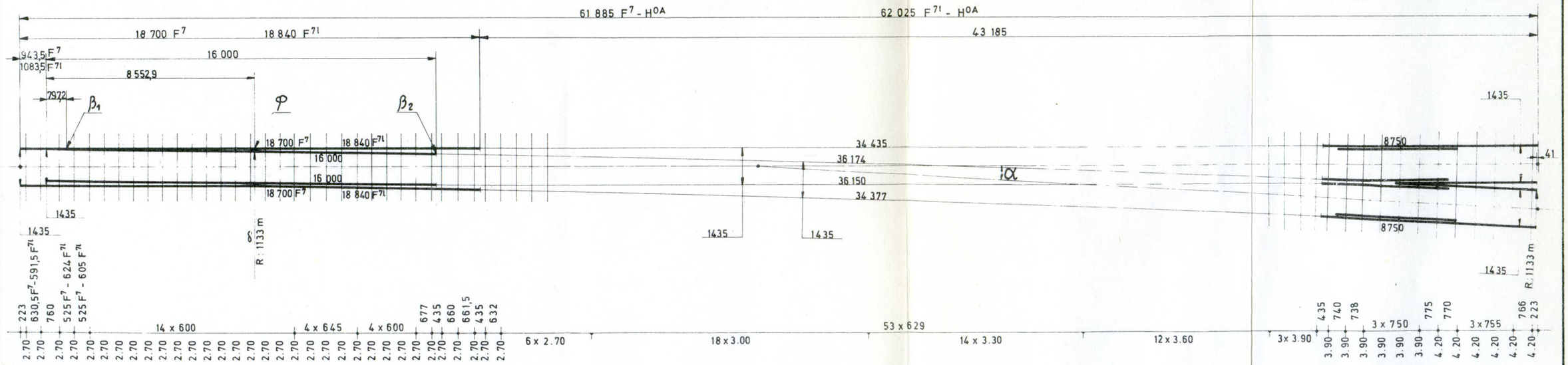
tg α = 0,078572

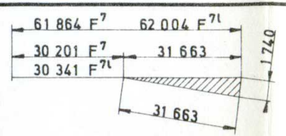
11 - 61 A

6-72

1972

F7 mod. 70 - H0A
F71 mod. 70





β1 = 0° 31' 55" = 0⁹,590964

β2 = 0° 52' 36" = 0⁹,974112

φ = 0° 01' 54" = 0⁹,035315

α = 3° 08' 55" = 3⁹,498457

R = 1132,92 m

tg α = 0,055009

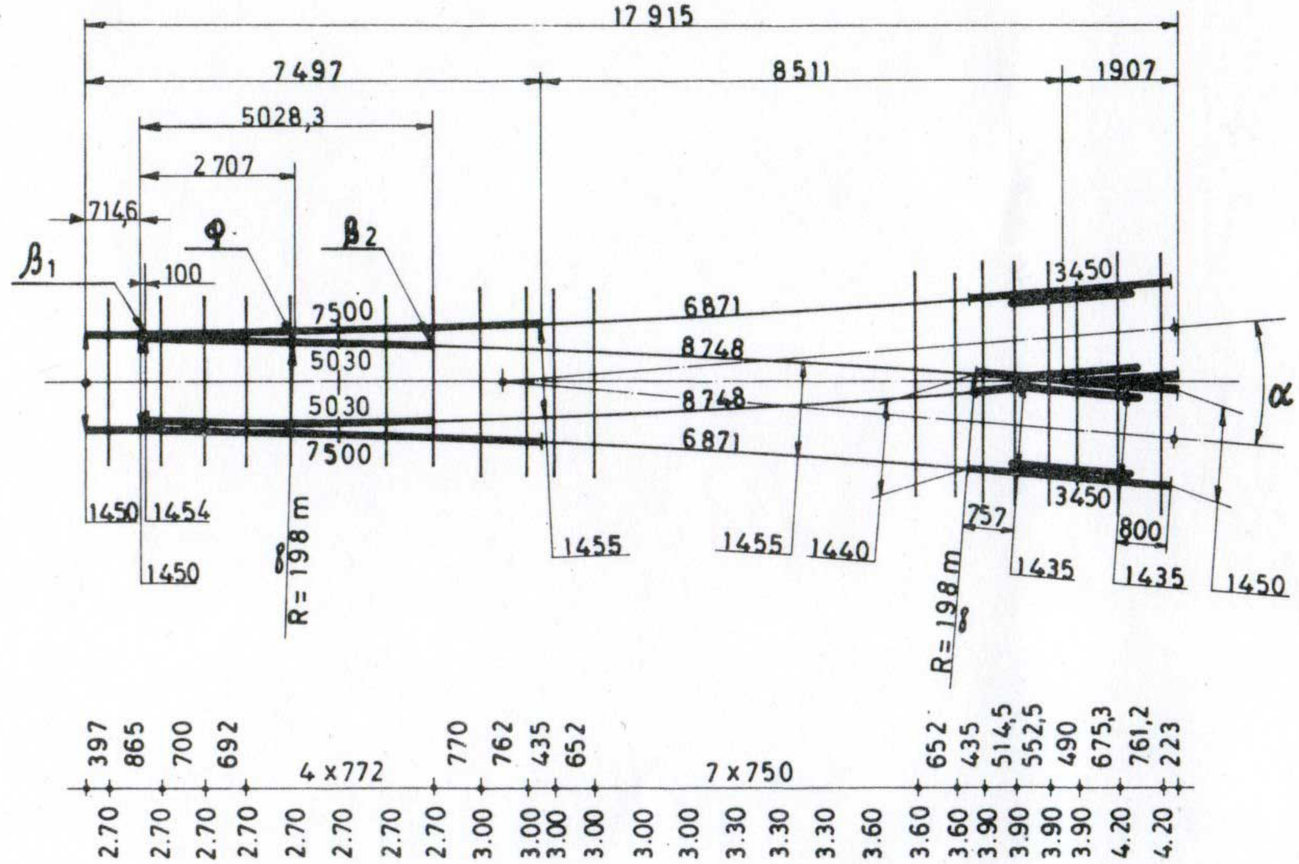
11 - 70 A

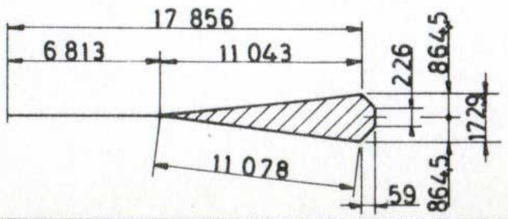
6-72

1972

F 2sym mod. 70

F 2sym – H 5f





β_1 = 1° 07' 52" = 1^g,256812

β_2 = 1° 57' = 2^g,166667

φ = 8' 54" = 0^g,164733

α = 8° 57' 01" = 9^g,944753

R= 198,41 m

tg α = 0,157495

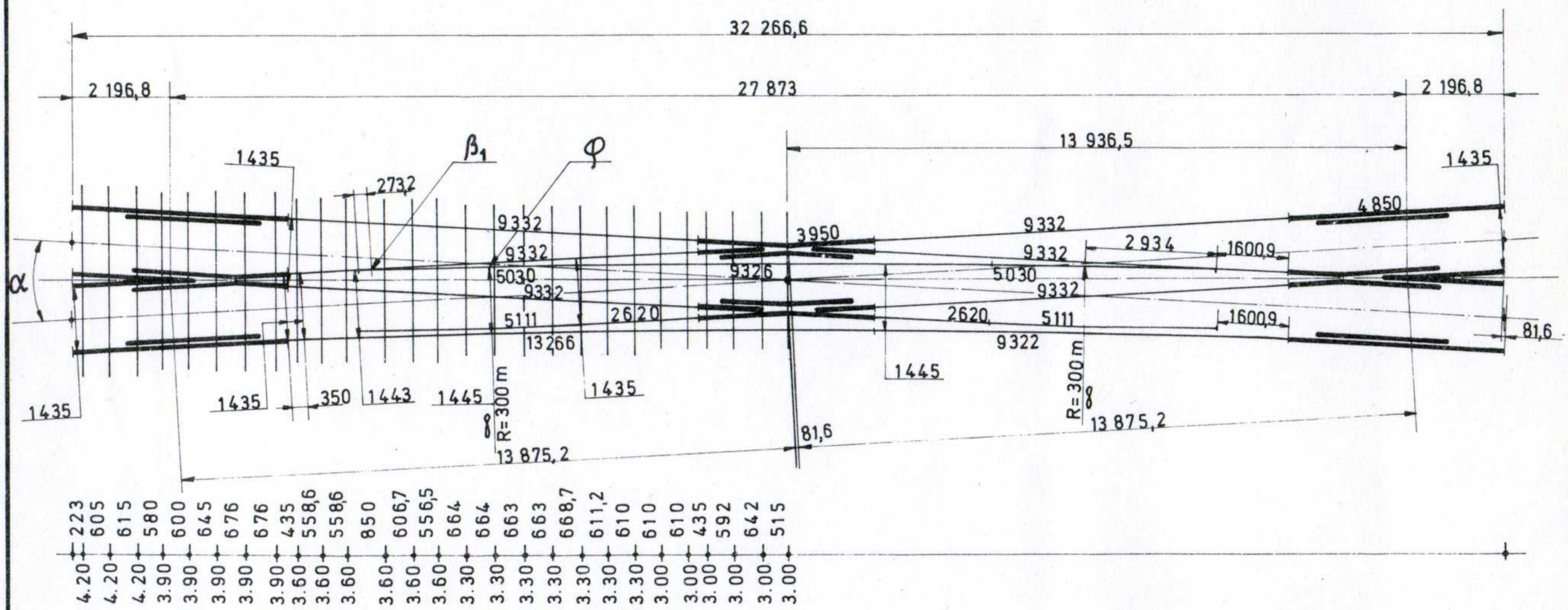
12 - 25f

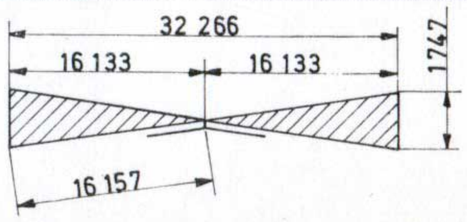
6-72

1972

TH³ mod. 70

TJS-TH³





β_1 = 1°33'06" = 1^g,723958

φ = 0°15'24" = 0^g,285081

α = 6°11'55" = 6^g,887346

R = 300 m

tg α = 0,108611

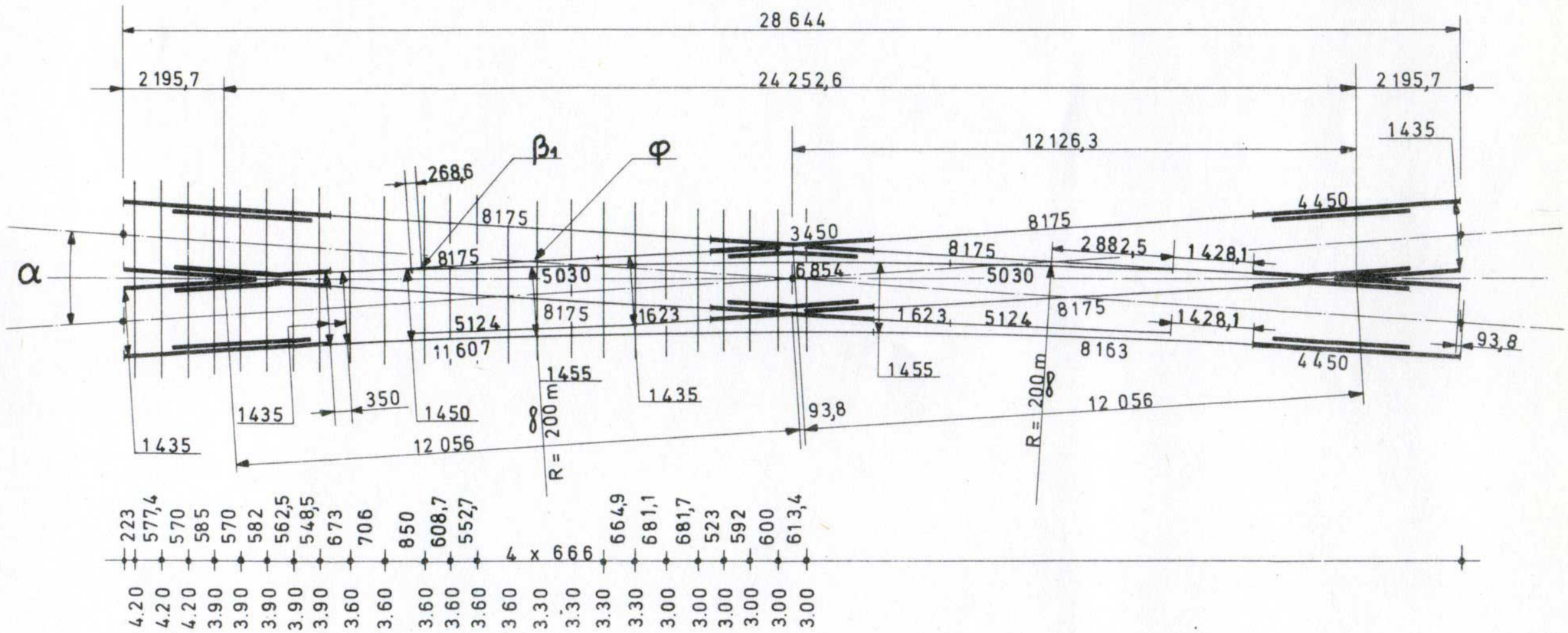
31 - 333

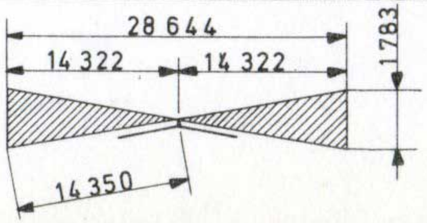
6-72

1972

TH4 mod. 70

TJS-TH4





β_1 = 1°34'42" = 1°,753727

φ = 0°23'14" = 0°,430141

α = 7°07'30" = 7°,916667

R = 200 m

tg α = 0,125000

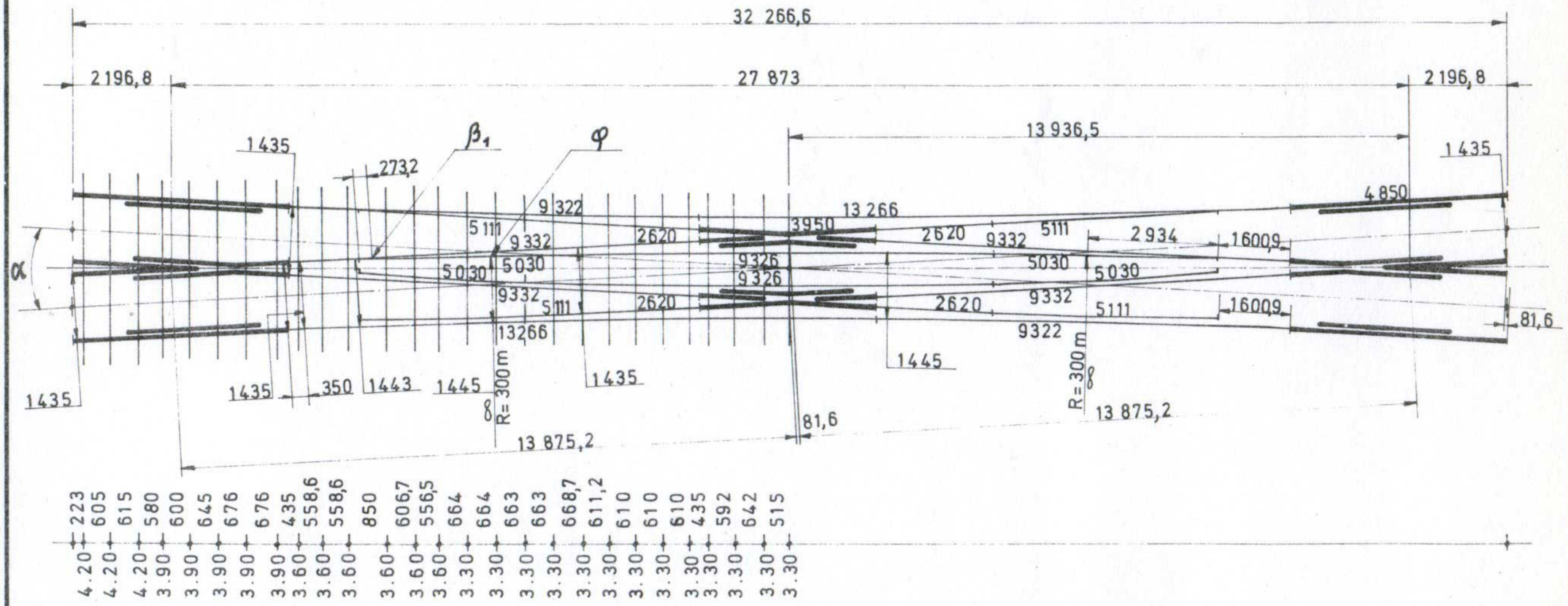
31 - 444

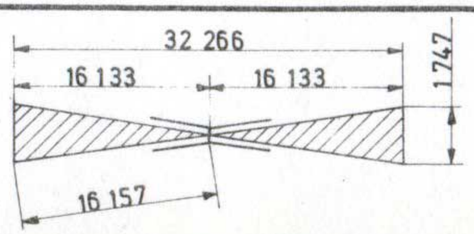
6-72

1972

TH³ mod. 70

TJD-TH³





β_1 = 1°33'06" = 1^g,723958

φ = 0°15'24" = 0^g,285081

α = 6°11'55" = 6^g,887346

R = 300 m

tg α = 0,108611

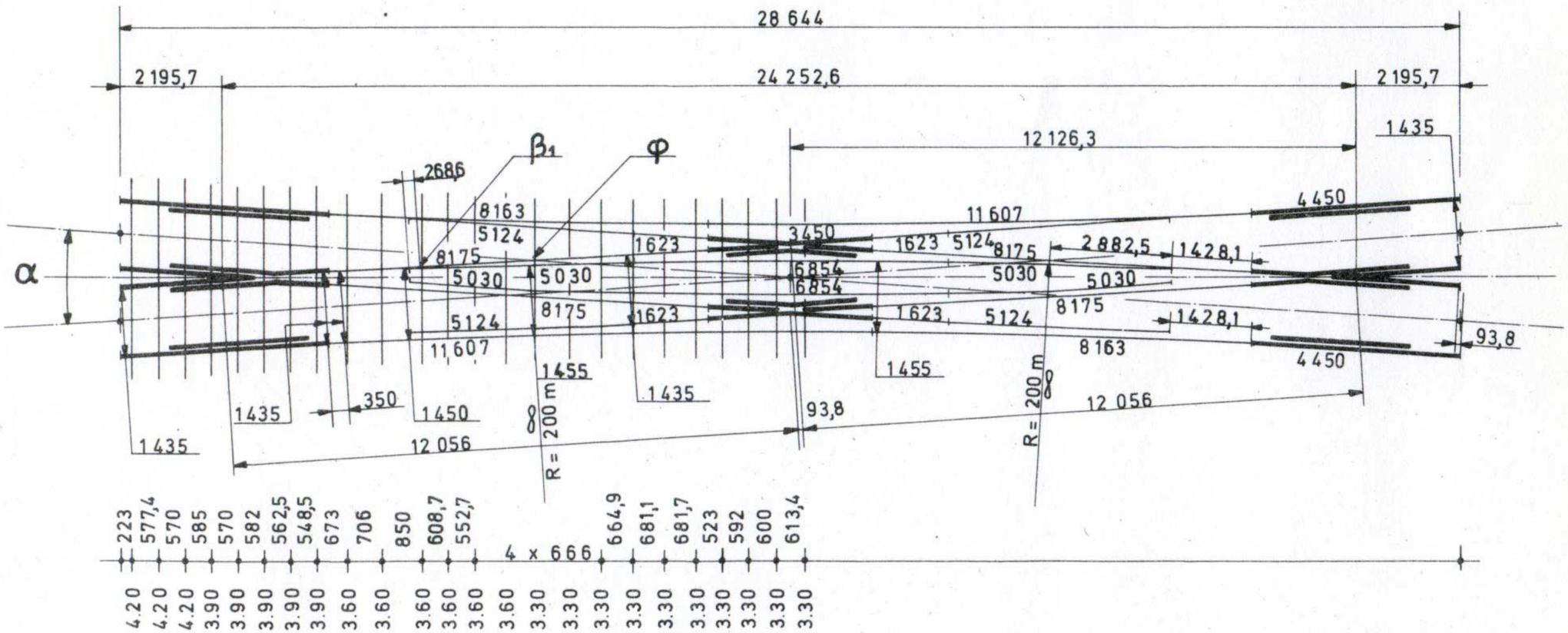
32-333

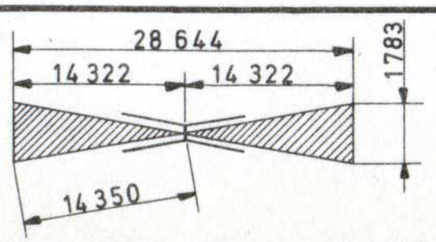
6-72

1972

TH⁴ mod. 70

TJD-TH⁴





β_1 = 1° 34' 42" = 1°,753727

φ = 0° 23' 14" = 0°,430141

α = 7° 07' 30" = 7°,916667

R = 200 m

tg α = 0,125000

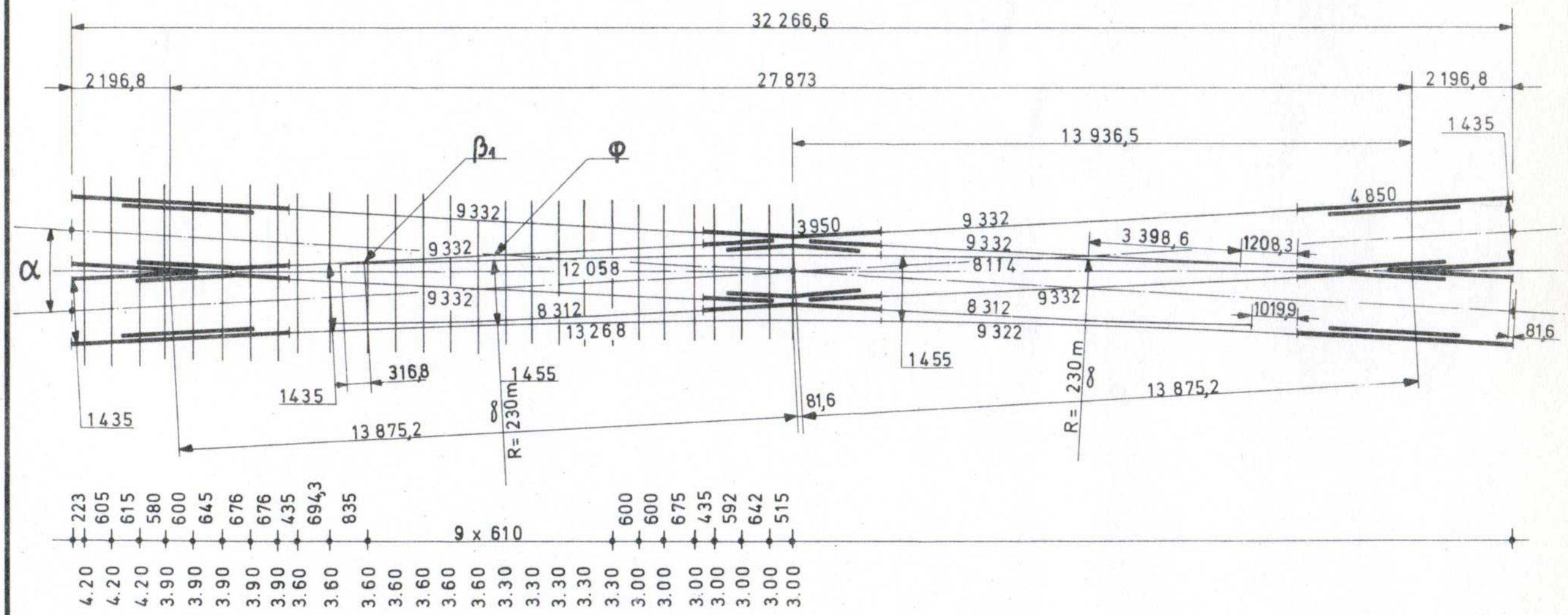
32 - 444

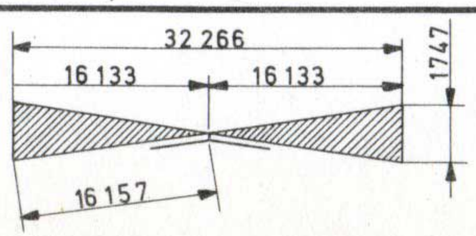
6-72

1972

EH3 mod. 70

TJS-EH3





β_1 = 1°20'17" = 1^g,486615

φ = 0°05'43" = 0^g,105854

α = 6°11'55" = 6^g,887346

R = 230 m

$tg\alpha$ = 0,108611

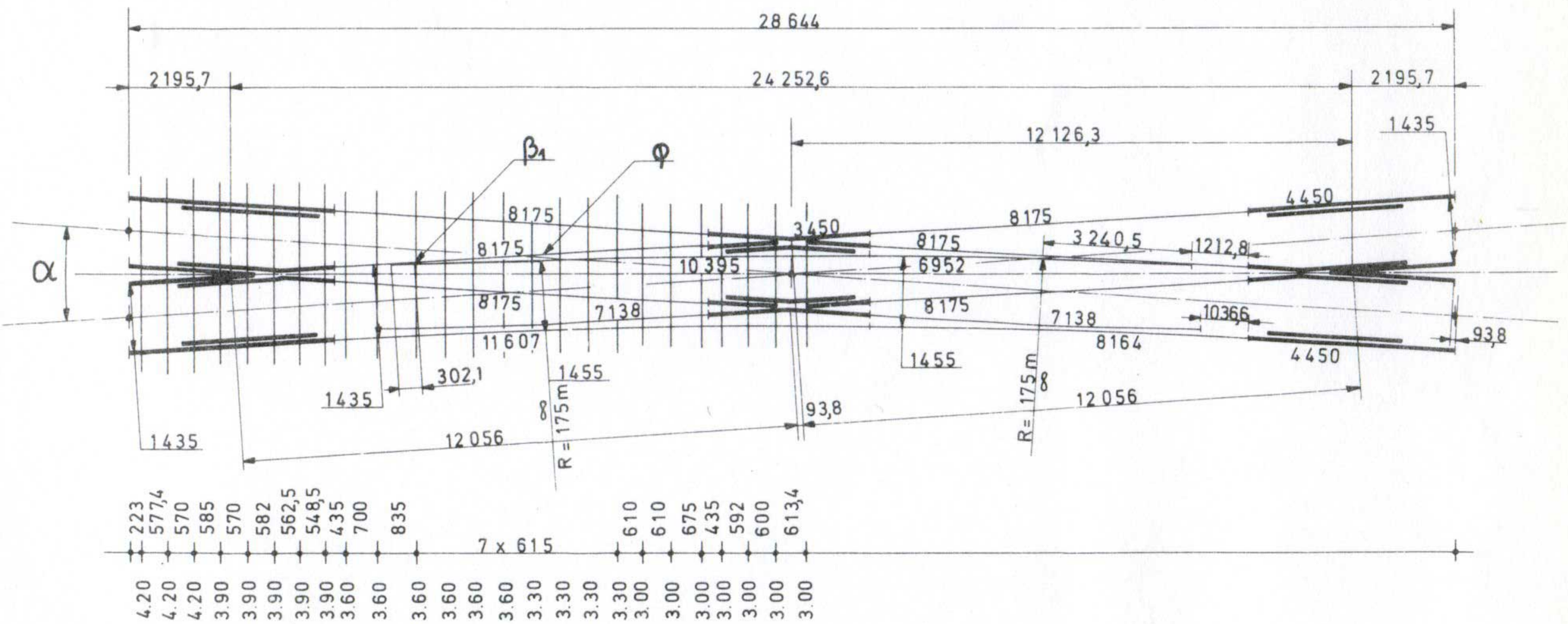
33 - 333

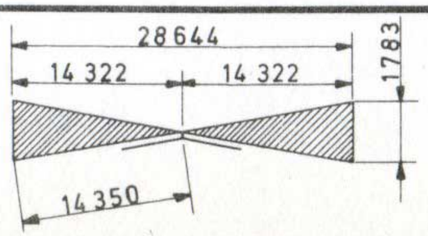
6-72

1972

EH⁴ mod. 70

TJS-EH⁴





β_1 = 1° 24' 11" = 1°,558888

φ = 0° 22' 51" = 0°,423236

α = 7° 07' 30" = 7°,916667

R = 175 m

tg α = 0,125000

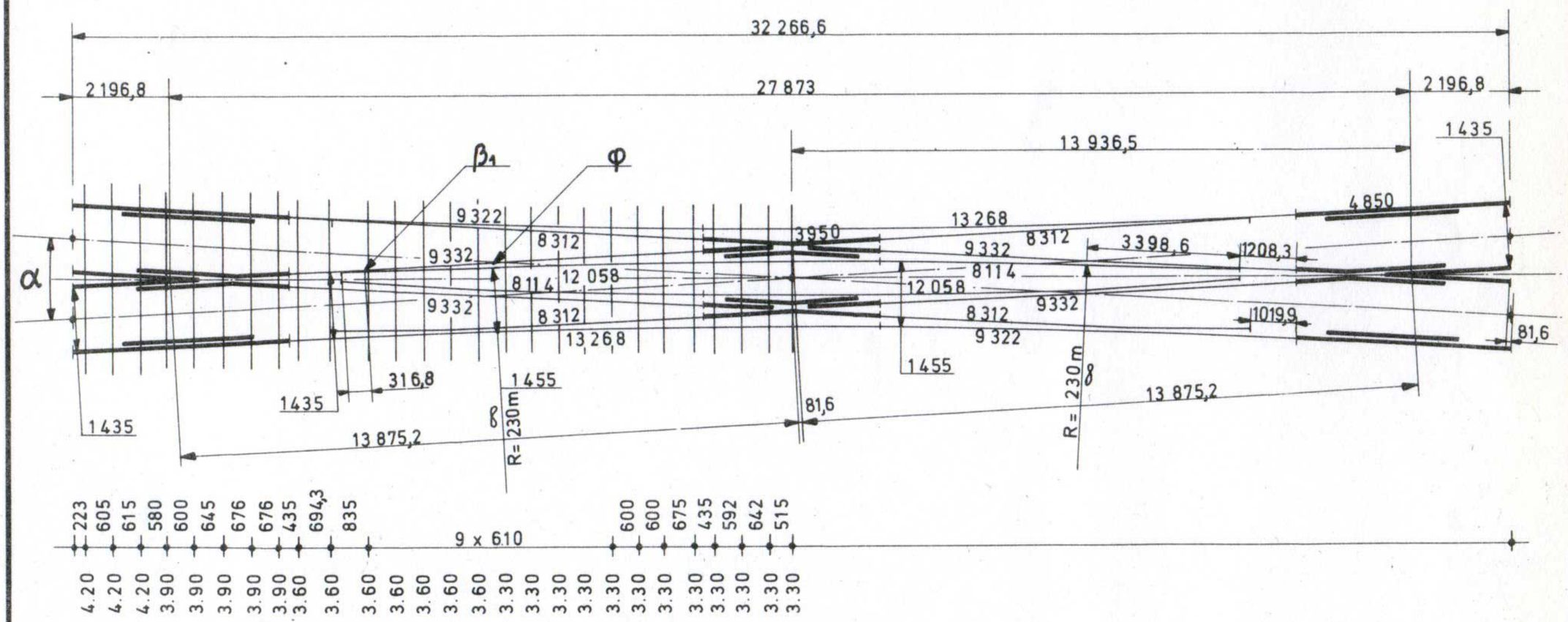
33 - 444

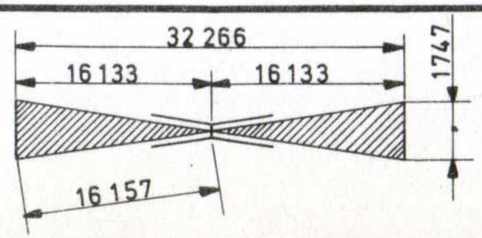
6-72

1972

EH³ mod. 70

TJD-EH³





β_1 = 1°20'17" = 1°,486615

φ = 0°05'43" = 0°,105854

α = 6°11'55" = 6°,887346

R = 230 m

tg α = 0,108611

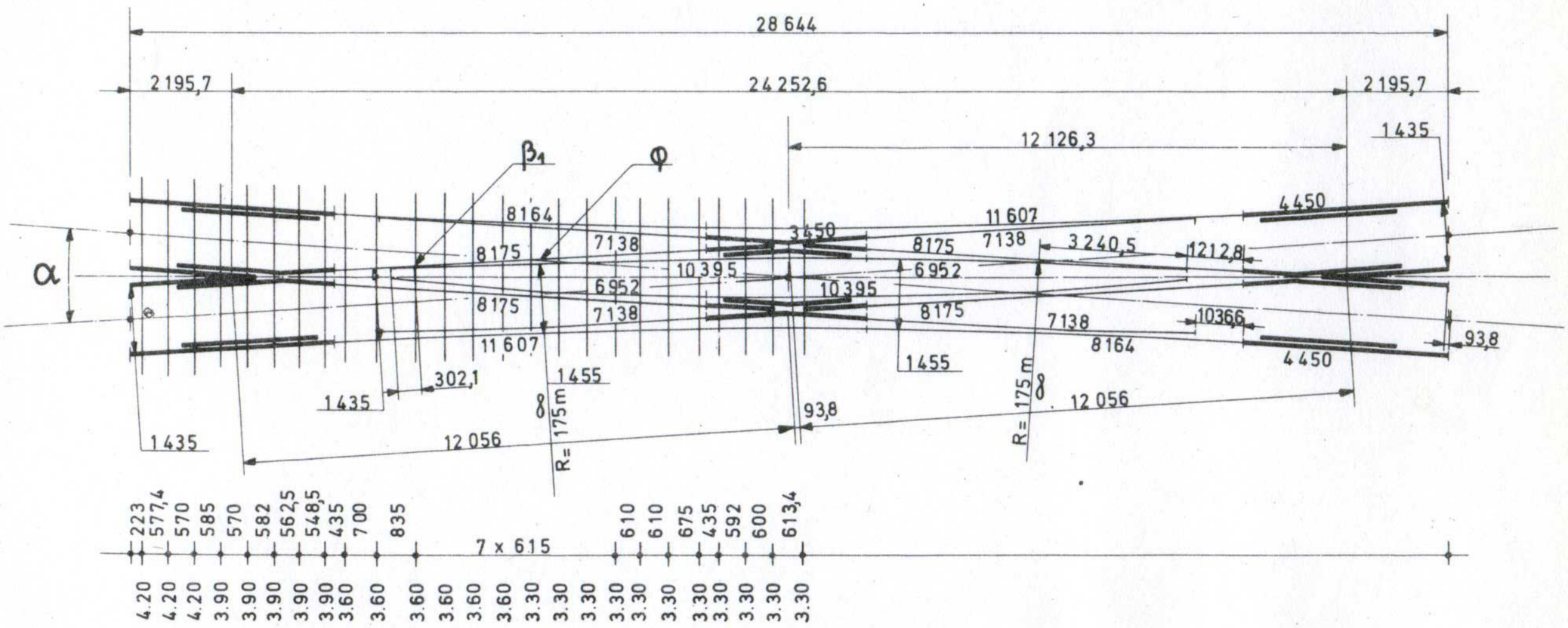
34 – 333

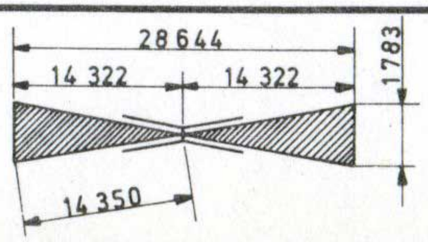
6-72

1972

EH4 mod. 70

TJD-EH4





β_1 = 1° 24' 11" = 1°,558888

φ = 0° 22' 51" = 0°,423236

α = 7° 07' 30" = 7°,916667

R = 175 m

tg α = 0,125000

34 - 444

6-72

1972

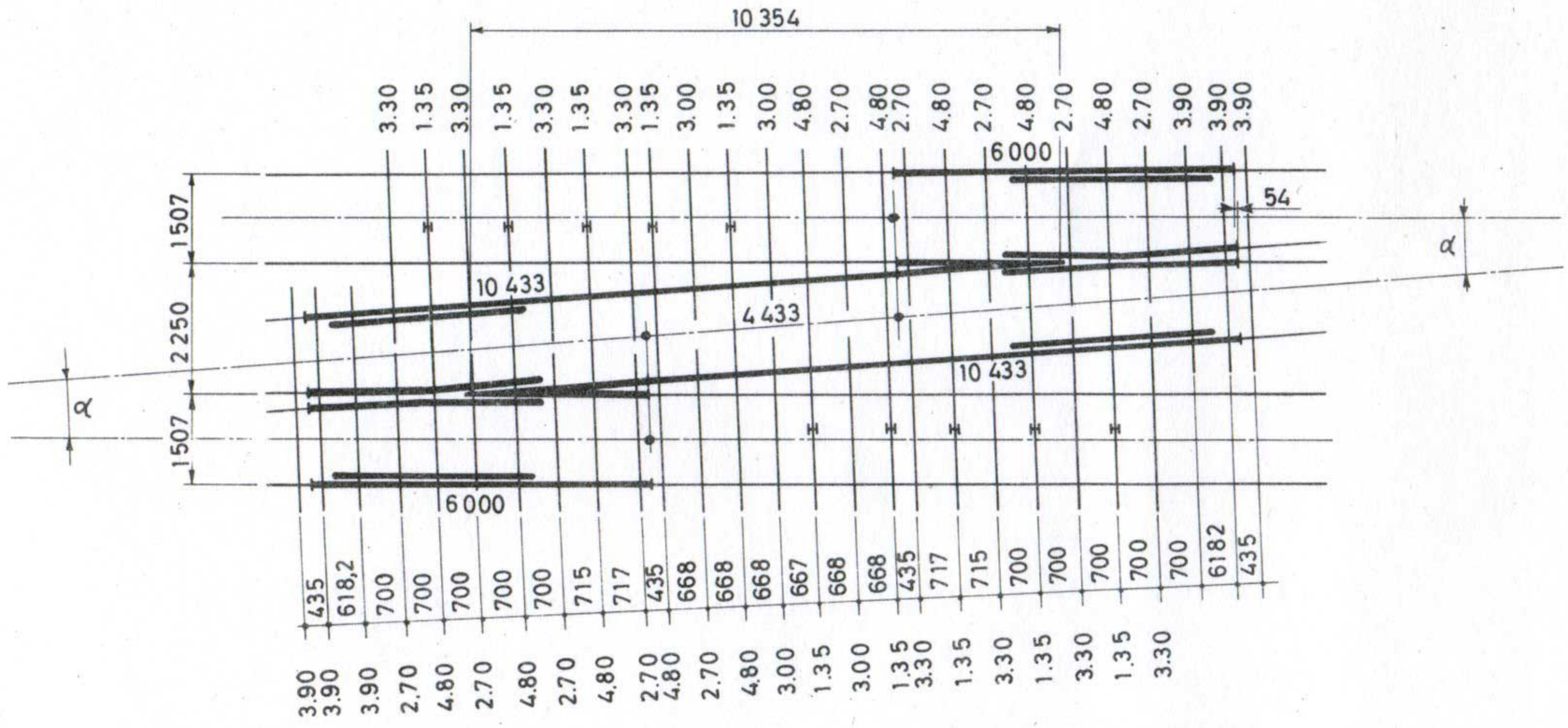
Houtstukken aan te leggen voorbij de puntstukken

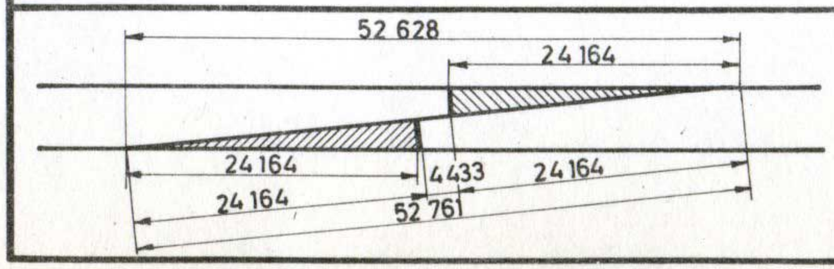
Rangnummer der houtstukken	Afstanden der houtstukken tot de voegen van de puntstukken	Afstand tussen de spoorstaven gelegen achter het hart van het puntstuk (spoor in rechte lijn)									
		H^{0A}	H^{1A}	H^{1}	H^{2}	H^{3}	H^{4}	H^{5}	H^{6}	H^{7}	H^{8}
1	0,21	0,24	0,24	0,23	0,21	0,26	0,30	0,38	0,48	0,40	0,40
2	0,90	0,28	0,30	0,28	0,27	0,34	0,39	0,48	0,61	0,55	0,57
3	1,60	0,32	0,35	0,33	0,33	0,41	0,47	0,59	0,75	0,71	0,74
4	2,30	0,36	0,41	0,38	0,39	0,49	0,56	0,70	0,89	0,86	
5	3,00	0,40	0,46	0,43	0,46	0,56	0,65	0,81			
6	3,70	0,44	0,52	0,48	0,52	0,64	0,73				
7	4,40	0,47	0,57	0,53	0,58	0,71	0,82				
8	5,10	0,51	0,63	0,58	0,64	0,79					
9	5,80	0,55	0,68	0,63	0,70	0,87					
10	6,50	0,59	0,74	0,68	0,76						
11	7,20	0,63	0,79	0,73	0,82						
12	7,90	0,67	0,85	0,78	0,89						
13	8,60	0,71		0,83							
14	9,30	0,74		0,88							
15	10,00	0,78									
16	10,70	0,82									
17	11,40	0,86									

Lengte der houtstukken	Aantal bijkomende houtstukken voor uiteenlopende sporen in rechte lijn									
4,20 m	2	2	2	2	1	1	0	0	0	0
4,50 m	8	5	6	5	4	3	3	1	2	2
4,80 m	7	5	6	5	4	3	2	3	2	1

BELANGRIJKE OPMERKING: Wanneer een van beide sporen een bijspoor van middelmatig ofgering belang is worden alle houtstukken weggelaten zodra de afstand tussen de spoorstaven meer dan 0,70 m bedraagt indien beide sporen in dit geval zijn wordt deze afstand tot 0,50 m teruggebracht.

H1 - H1
(2,250 m)





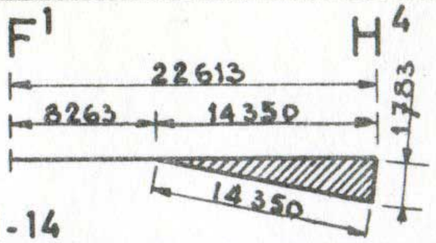
$\alpha = 4°05'00'' = 4^{g},537037 \quad tg\alpha = 0,071388$

41 - 11

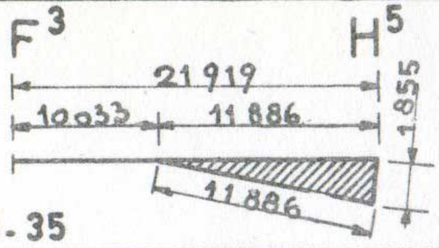
6-72

1966

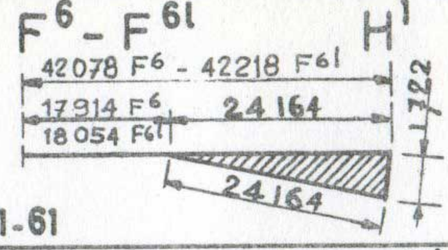
Schema's der wissels.



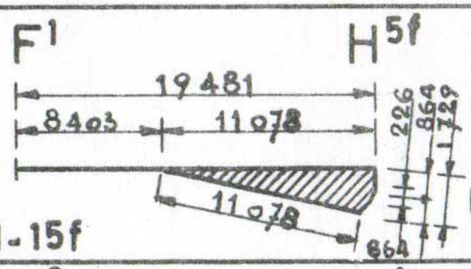
11-14 R: 158 m



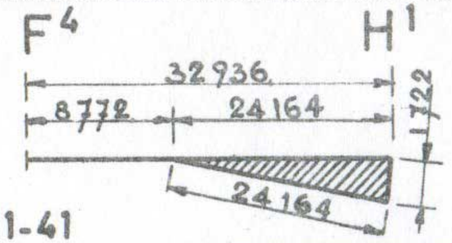
11-35 R: 89 m



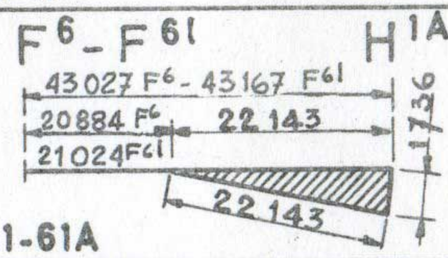
11-61 R: 498 m



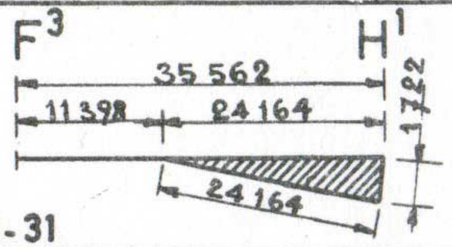
11-15f R: 100 m



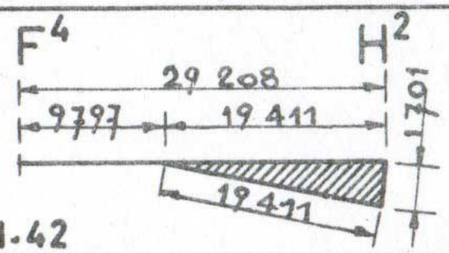
11-41 R: 735m



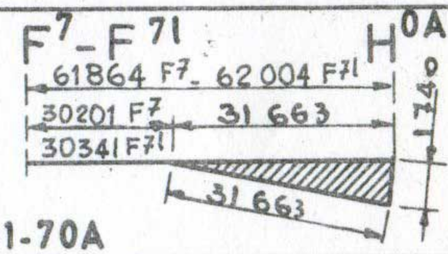
11-61A R: 561 m



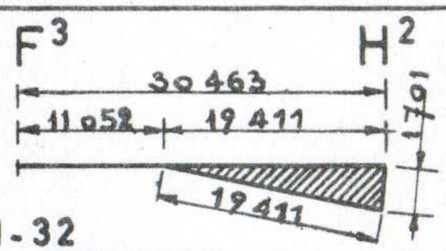
11-31 R: 528 m (mod. 70) R: 516 m (mod. 62)



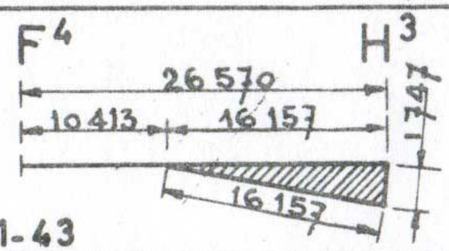
11-42 R: 370 m



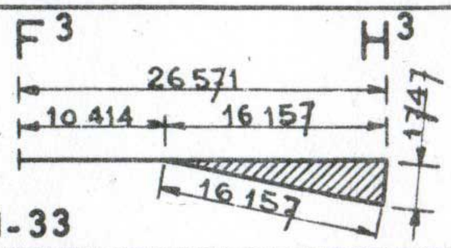
11-70A R: 1.133 m



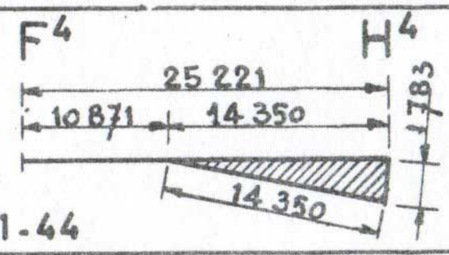
11-32 R: 316 m (mod. 70) R: 307 m (mod. 62)



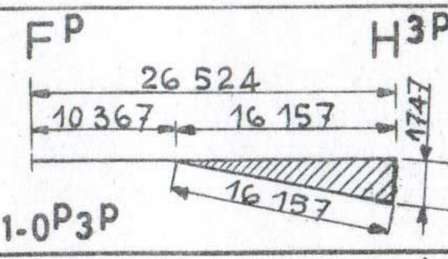
11-43 R: 209m



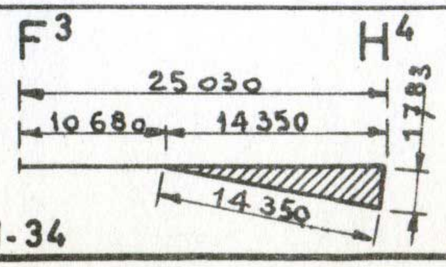
11-33 R: 189m (mod. 70) R: 183 m (mod. 62)



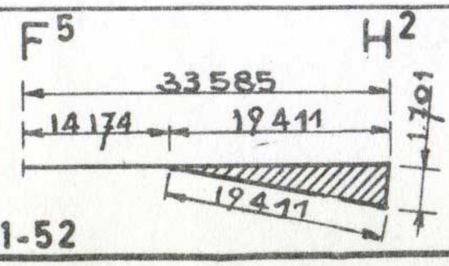
11-44 R: 150 m (mod. 70) R: 148 m (mod 62)



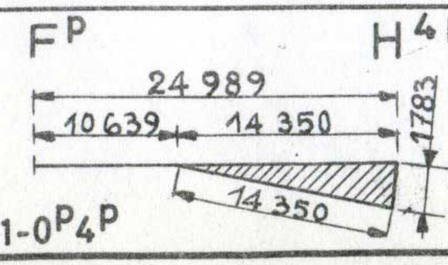
11-0P3P R: 198 m



11-34 R: 150 m (mod. 70) R: 147 m (mod. 62)



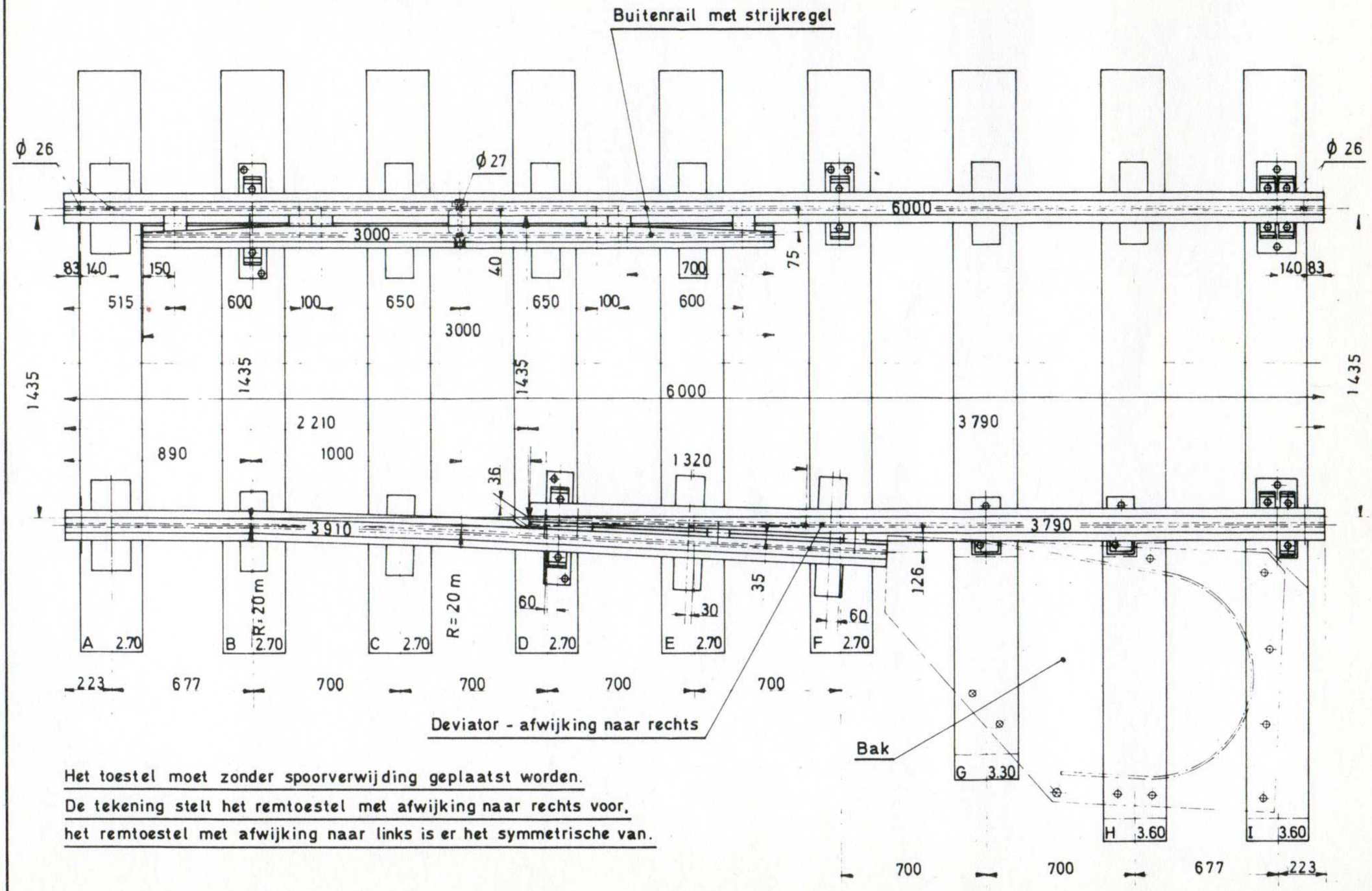
11-52 R: 318 m



11-0P4P R: 146 m

6-72

REMTOESTEL - LOPEND SPOOR - MOD. 54



Het toestel moet zonder spoorverwijding geplaatst worden.

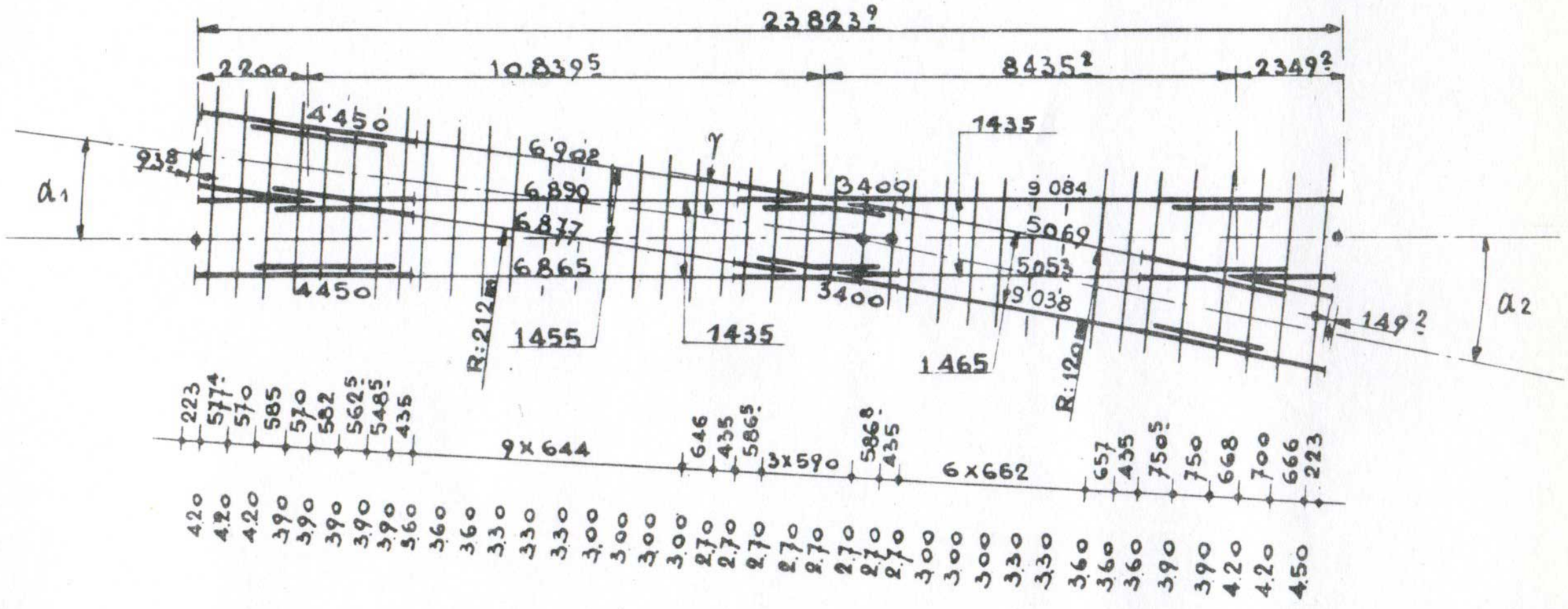
De tekening stelt het remtoestel met afwijking naar rechts voor, het remtoestel met afwijking naar links is er het symmetrische van.

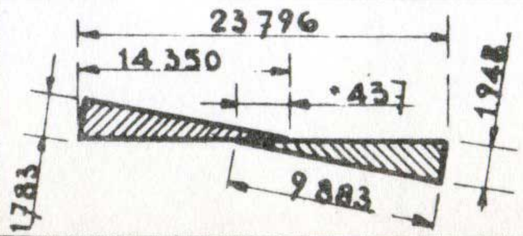
6 - 72

1966

B

$H^4 V^5 H^6$
ASYM.





$\alpha_1 = 7°07'30'' = 7^{g},916667$

$\gamma = 8°57'01'' = 9^{g},944753$

$\alpha_2 = 11°18'40'' = 12^{g},567901$

R = 212,20 m

R = 120,16 m

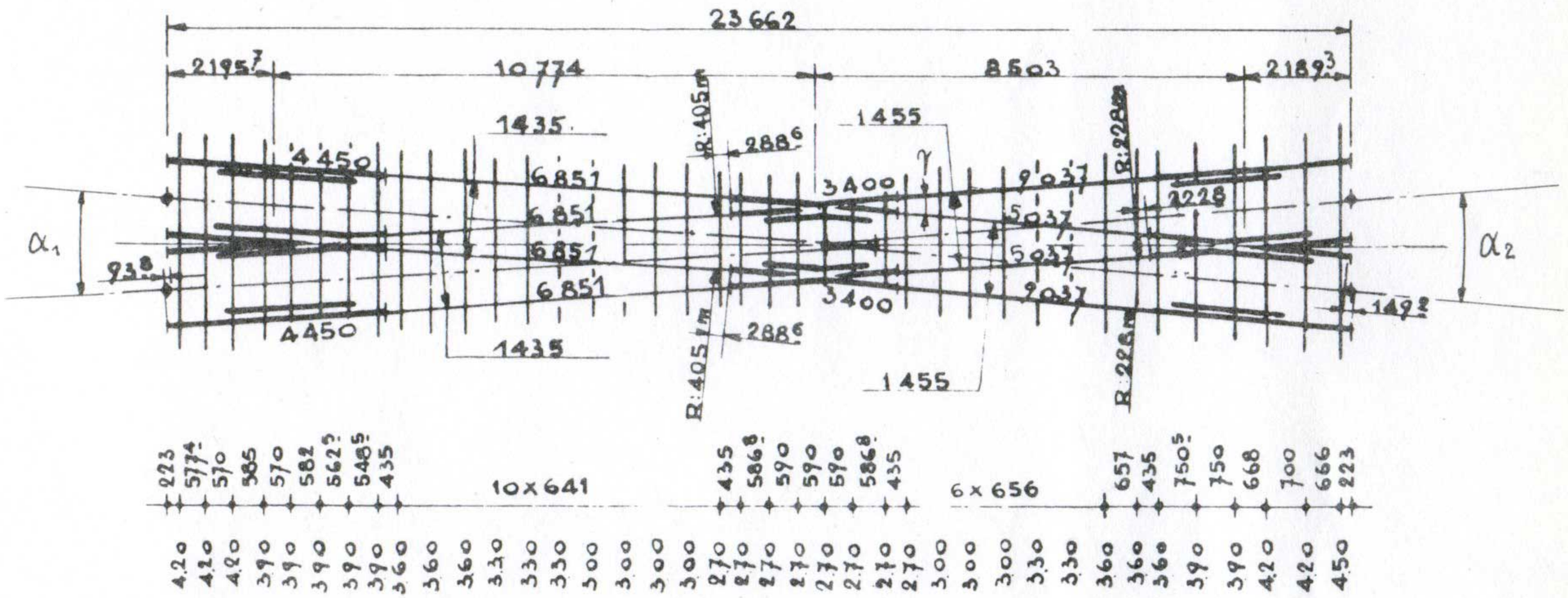
21 - 456

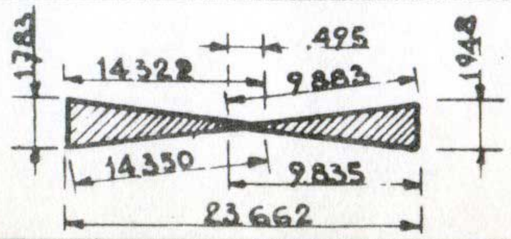
6-72

1966

Ⓑ

$H^4 V^5 H^6$
SYM





$\alpha_1 = 7°07'30'' = 7^g,916667$

$\gamma = 8°57'01'' = 9^g,944753$

$\alpha_2 = 11°18'40'' = 12^g,567901$

R = 404,55 m

R = 227,94 m

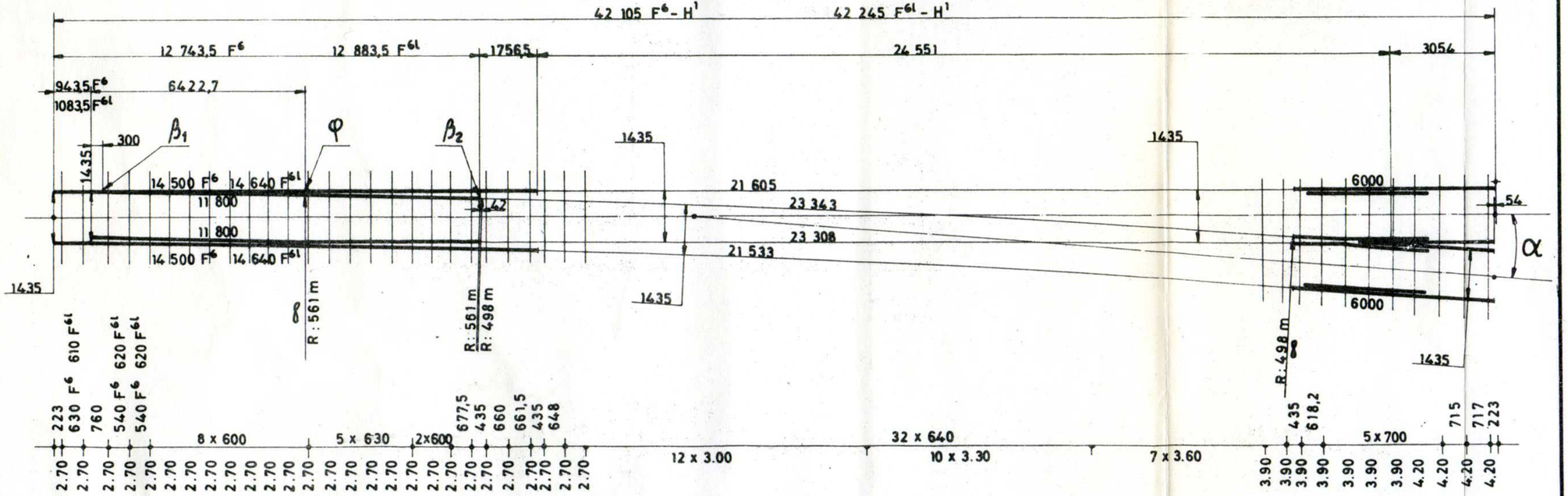
22-456

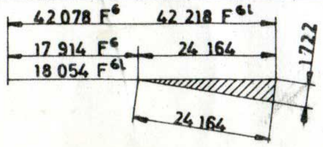
6-72

1966

Ⓑ

F^6 F^{6l} $-H^1$





β_1 = 0° 40' 26" = 0^g,748688

β_2 = 1° 24' 03" = 1^g,556481

φ = 0° 10' 42" = 0^g,198037

α = 4° 05' 00" = 4^g,537037

R= 497,65 m

tg α = 0,071388

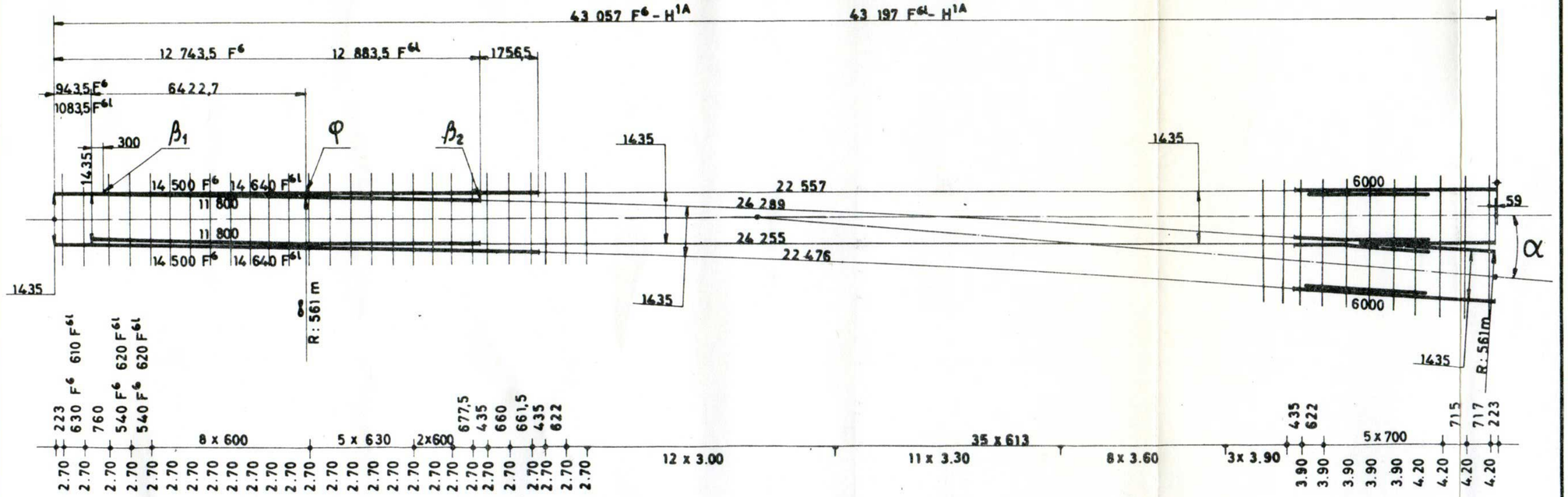
11 - 61

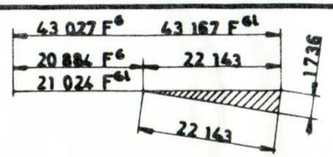
6-69

1966

Ⓑ

F^{6} - H^{1A} F^{6l}





β_1 = 0° 40' 26" = 0^{g},748688

β_2 = 1° 24' 03" = 1^{g},556481

φ = 0° 10' 42" = 0^{g},198037

α = 4° 29' 34" = 4^{g},991830

R= 561,26 m

tg α = 0,078572

11 - 61 A

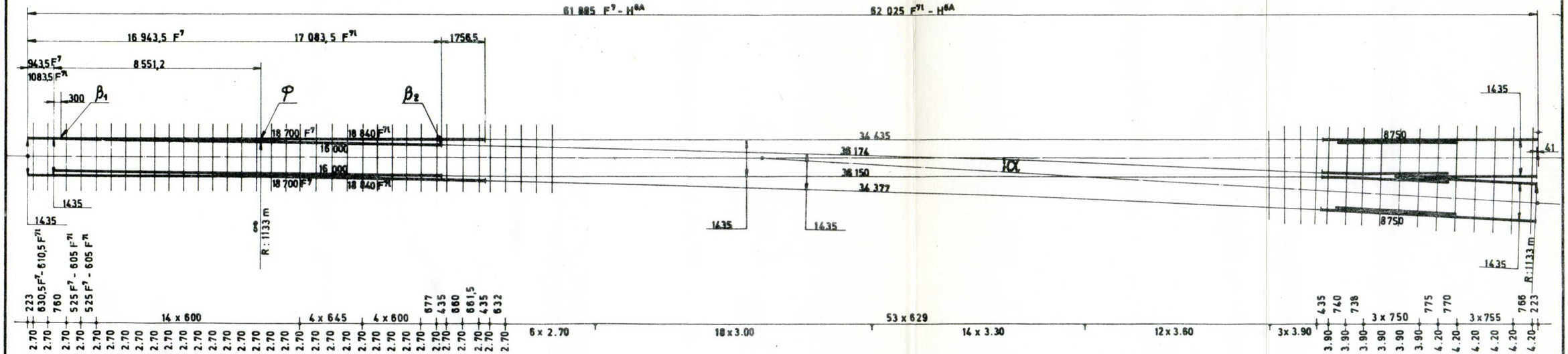
6-69

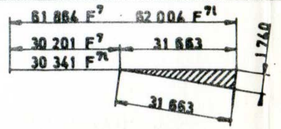
1966

Ⓑ

$F^7 - H^{0A}$

F^{7l}





β_1 = 0° 30' 00" = 0^g,555556

β_2 = 0° 52' 36" = 0^g,974136

φ = 0

α = 3° 08' 55" = 3^g,498457

R = 1132,92 m

tg α = 0,055009

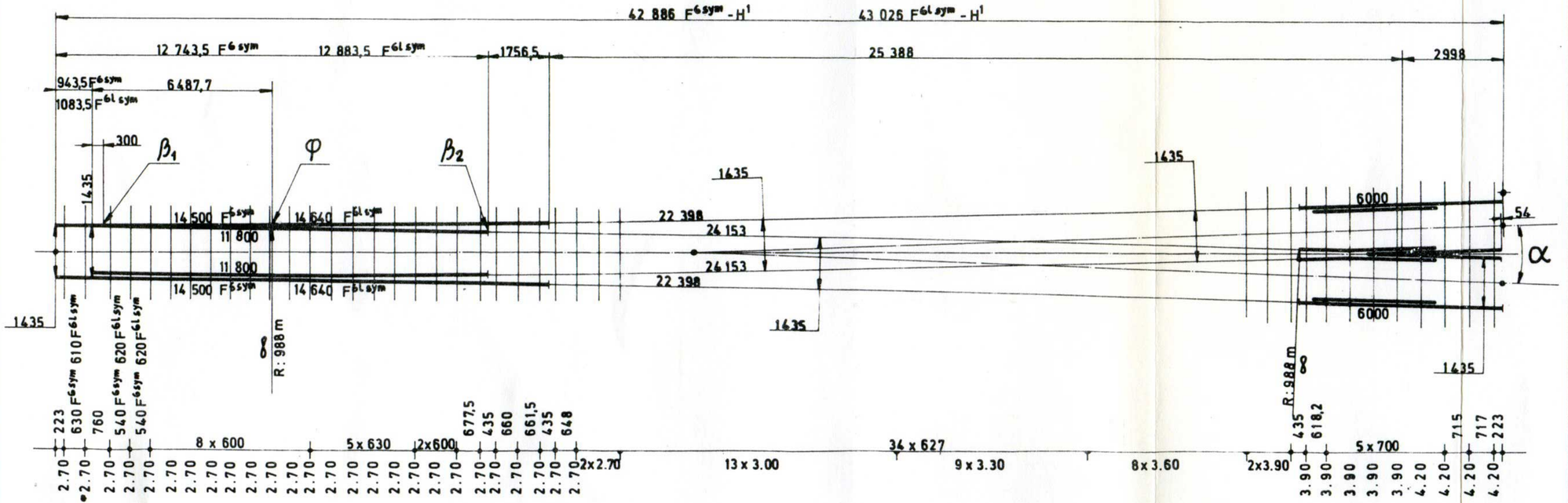
11 - 70 A

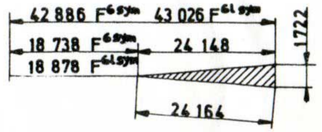
6-69

1966

Ⓑ

F^{6sym} $-H^1$ F^{6lsym}





β_1 = 0° 20′ 00″ = $0^g,370370$

β_2 = 0° 38′ 29″ = $0^g,712574$

φ = 0

α = 4° 05′ 00″ = $4^g,537037$

R = 988,20 m

tg α = 0,071388

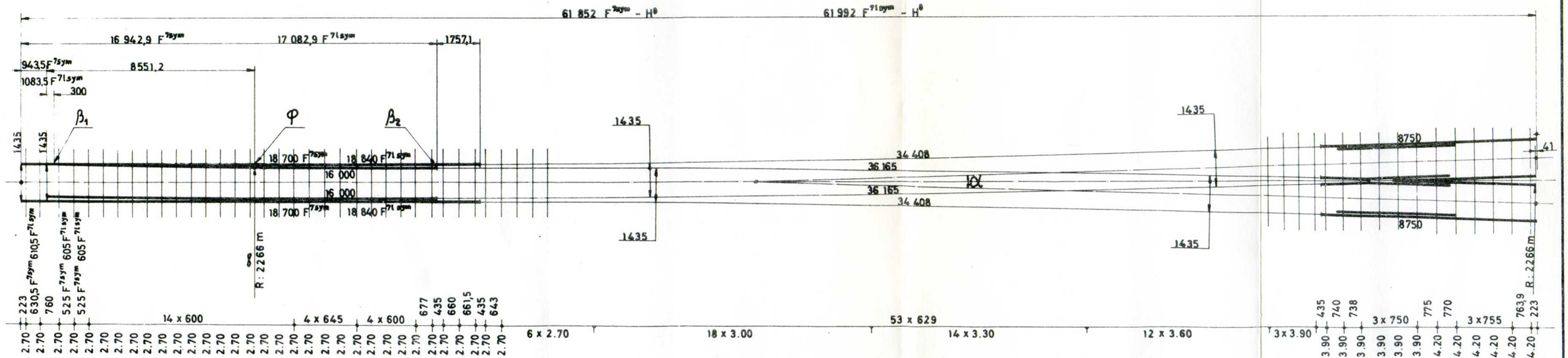
12 - 61

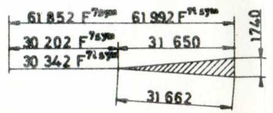
6 - 69

1966

Ⓑ

F^{7sym} $-H^0$ F^{7lsym}





β_1 = 0° 15' 00" = $0^g,277778$

β_2 = 0° 26' 18" = $0^g,487086$

φ = 0

α = 3° 08' 55" = $3^g,498457$

R = 2265,51 m

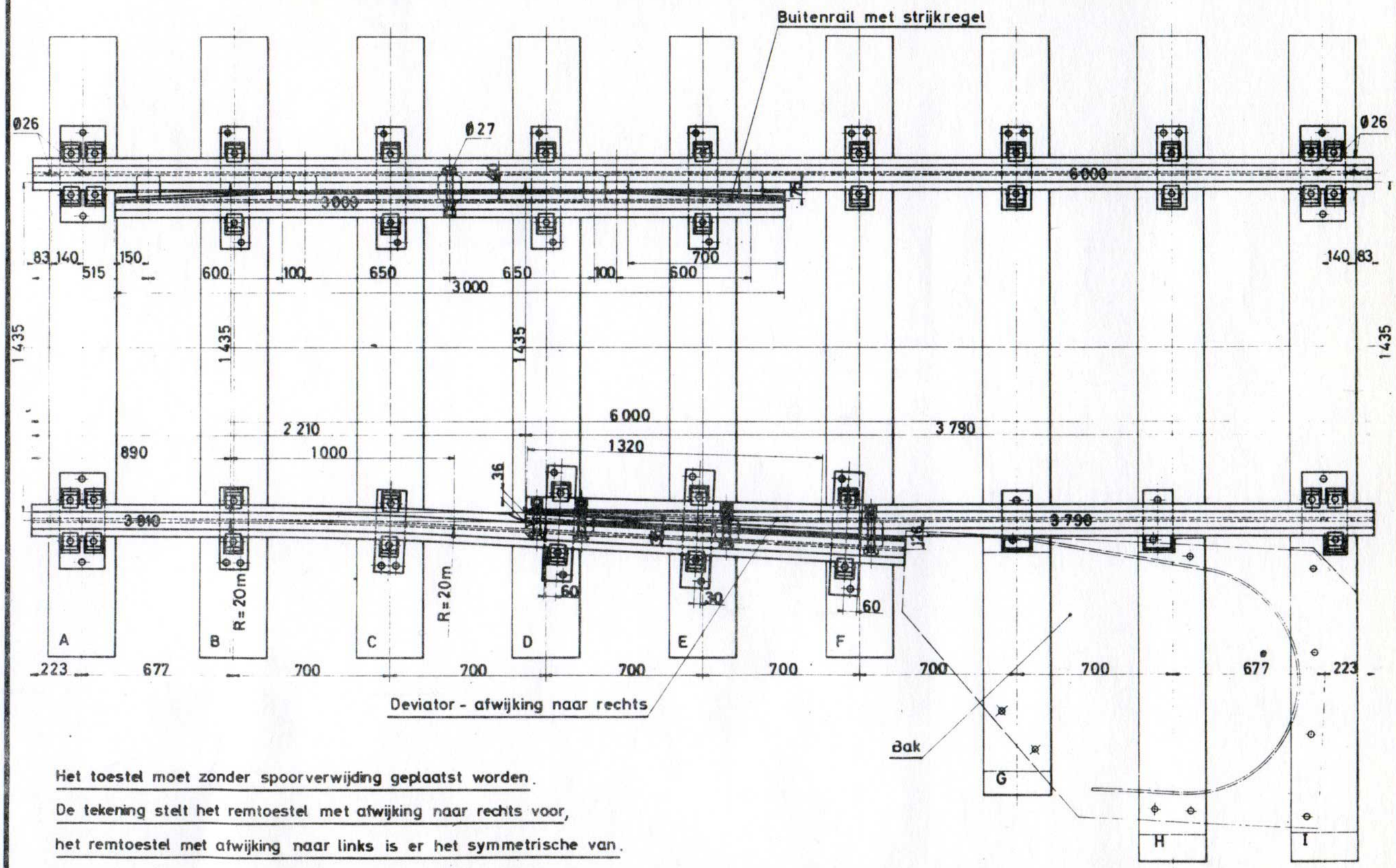
tg α = 0,055009

12 - 70

6-69

1966

REMTOESTEL - LOPEND SPOOR - MOD.54



Het toestel moet zonder spoorverwijding geplaatst worden.

De tekening stelt het remtoestel met afwijking naar rechts voor,

het remtoestel met afwijking naar links is er het symmetrische van.

6-69

1966

T.I.32

DIRECTIE VAN DE BAAN
Afdeling 36.2
Sectie 10
Tf.3382

Brussel, 20 october 1969.

32.69

BERICHT NR. 3 V.

Uitreiking - typelijst B.8.

SPOORTOESTELLEN - ALBUM.

Om reden van standaardisatie van de bedieningsuitrusting vraagt Directie E.S. ons de aanslagrails van de tongenstellen F6 en F7 14 cm te verlengen.

Van nu af moeten zowel bij aanleg als bij vernieuwing de verlengde toestellen aangeduid door de symbolen F6L en F7L gebruikt worden.

Voor onderhoudswerken zal de werkplaats van Bascoup korte halve tongenstellen mogen blijven afleveren aangeduid door de symbolen F6 en F7.

Anderzijds moeten aan de bestaande platen van het album 1966 hiernavolgende wijzigingen gebracht worden:

- de vroegere bladen 3; 4; 11-61; 11-61A; 11-70A; 12-61; 12-70; 31-444;32-444; 42-33 en 52-12, vervangen door bladen met zelfde nummer gedateerd op 6/69 en hierbij gevoegd;

- blad 18 dat de bijzonderheden van het remtoestel mod.54 voor lopend spoor weergeeft bijvoegen.

Volgende verbeteringen aanbrengen:

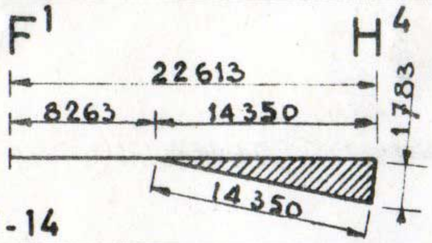
	Er staat	Moet zijn.
Blad 10, vak H3-H3,A tussenspoor 4,50m	58,308	55,308
Blad 11-32, tussenspoorstaaf IV	16,184	16,210
Bladen 11-41;11-42;11-43; 3e houtstuk	3,60	2,70
Bladen 20-777; 20-888, 4 laatste houtstukken	3.00	2.70
Blad 40-33, 3 houtstukken in het midden	592-599-592	605-612-605

DE DIRECTEUR VAN DE BAAN,

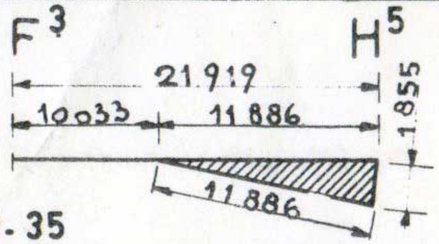
F.Baeyens.

(B) 36/24-289927 - 10.69 - 400 -

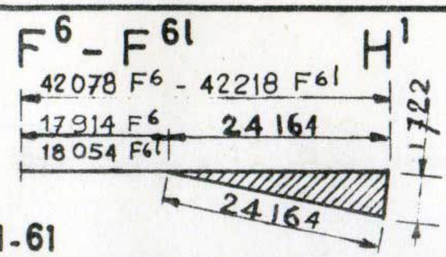
Schema's der wissels.



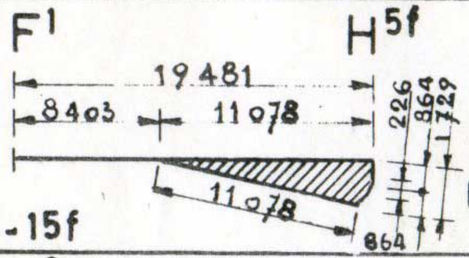
11-14 R: 158 m



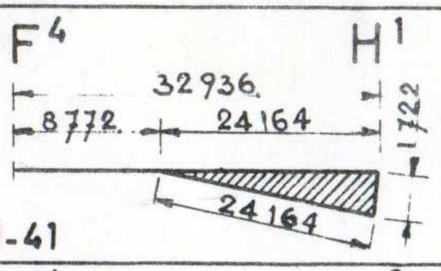
11-35 R: 89 m



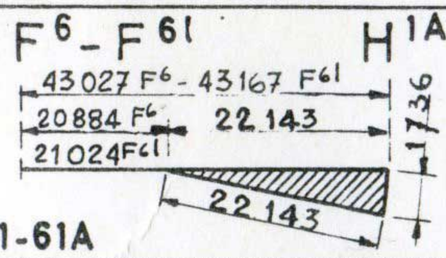
11-61 R: 498 m



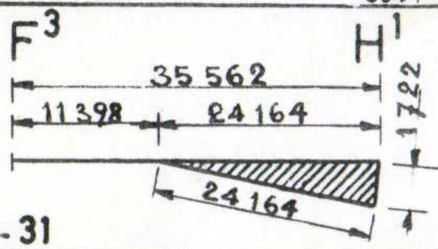
11-15f R: 104 m



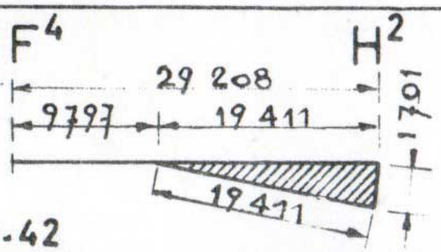
11-41 R: 735 m



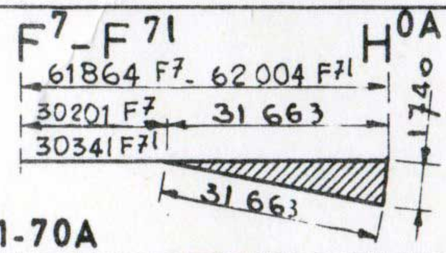
11-61A R: 561 m



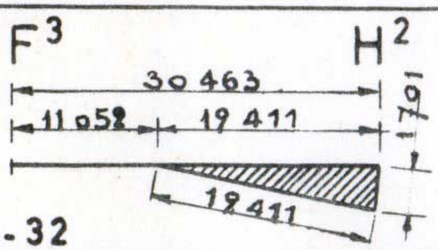
11-31 R: 516 m



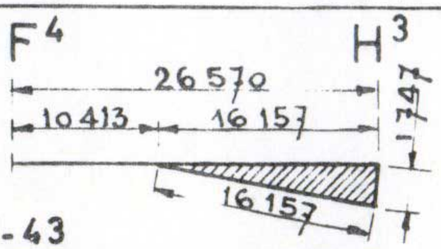
11-42 R: 370 m



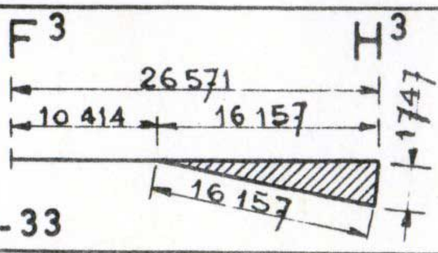
11-70A R: 1133 m



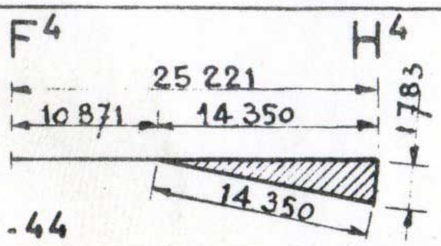
11-32 R: 307 m



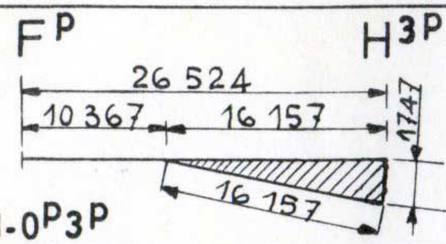
11-43 R: 209 m



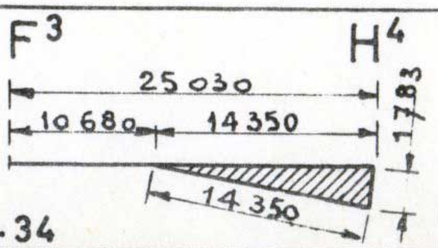
11-33 R: 183 m



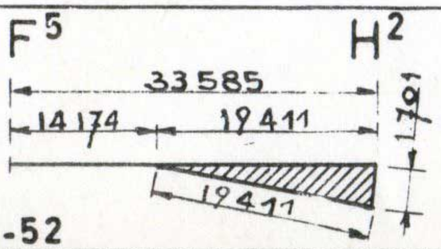
11-44 R: 148 m



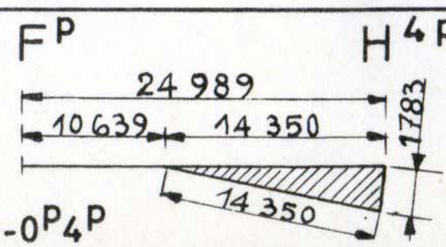
11-0P3P R: 198 m



11-34 R: 147 m



11-52 R: 318 m



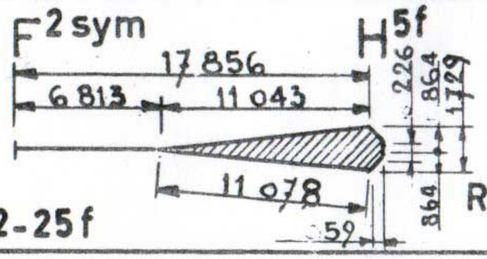
11-0P4P R: 146 m

6-69

1966

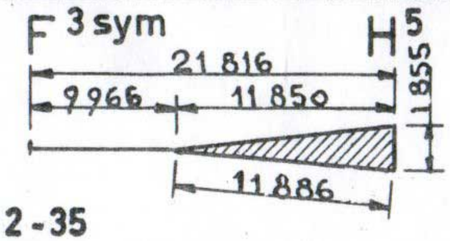
Schema's der wissels.

F 2 sym — H 5f



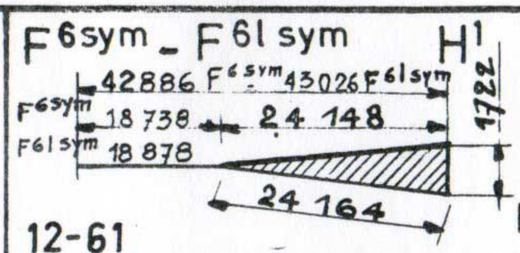
12-25f R: 198 m

F 3 sym — H 5



12-35 R: 178 m

F 6 sym _ F 61 sym — H 1



12-61 R: 988 m

F 4 sym — H 1

12-41

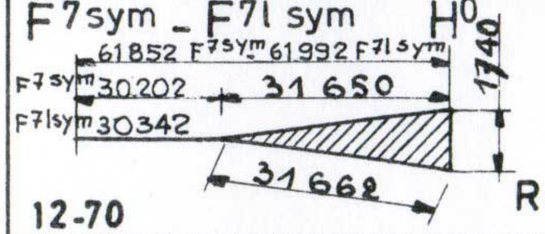
F 3 sym — H 1

12-31

F 4 sym — H 2

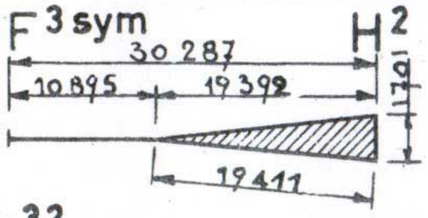
12-42

F 7 sym _ F 71 sym — H 0



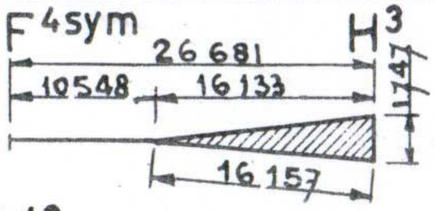
12-70 R: 2266 m

F 3 sym — H 2



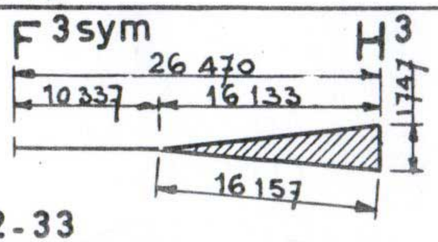
12-32 R: 601 m

F 4 sym — H 3



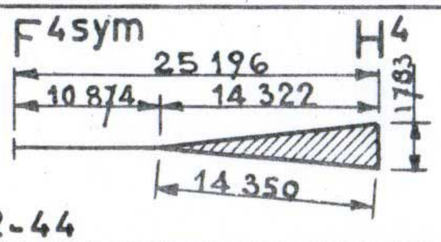
12-43 R: 417 m

F 3 sym — H 3



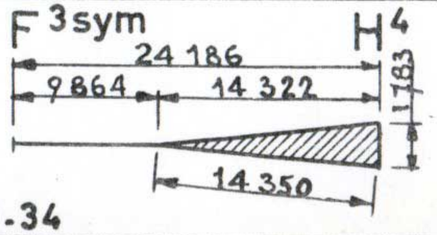
12-33 R: 361 m

F 4 sym — H 4



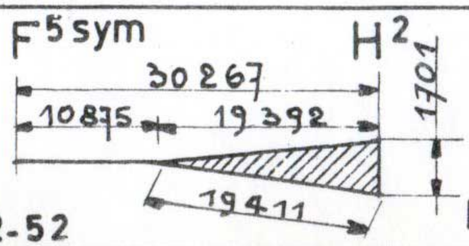
12-44 R: 299 m

F 3 sym — H 4



12-34 R: 256 m

F 5 sym — H 2



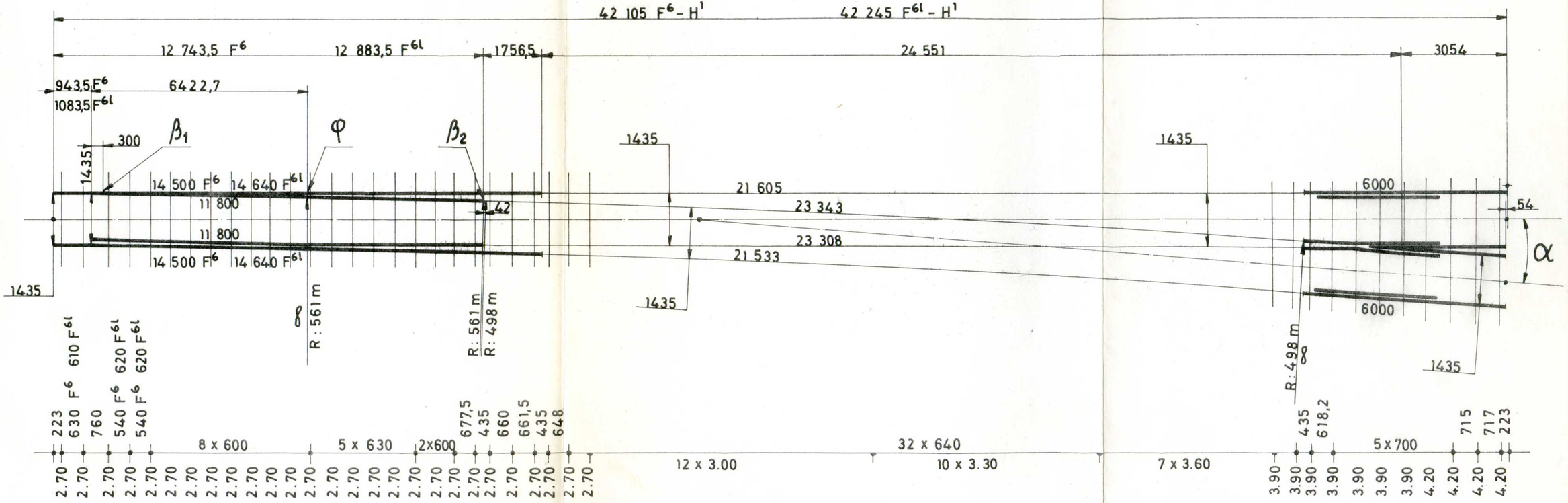
12-52 R: 665 m

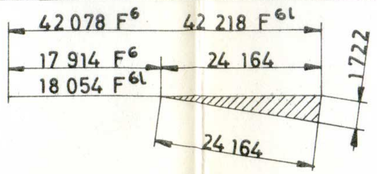
6-69

1966

Ⓑ

F^6 F^{6l} $-H^1$





β_1 = 0° 40' 26" = 0^g,748688

β_2 = 1° 24' 03" = 1^g,556481

φ = 0° 10' 42" = 0^g,198037

α = 4° 05' 00" = 4^g,537037

R= 497,65 m

tg α = 0,071388

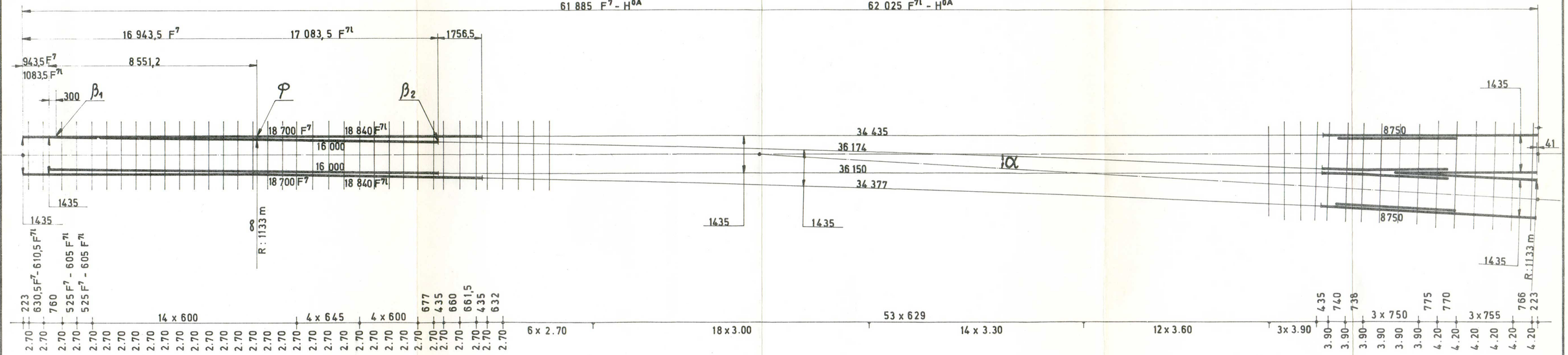
11 - 61

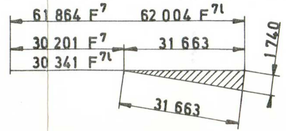
6-69

1966

Ⓑ

F^7 - H^{0A} / F^{7l}





β_1 = 0° 30' 00" = 0^g,555556

β_2 = 0° 52' 36" = 0^g,974136

φ = 0

α = 3° 08' 55" = 3^g,498457

R = 1132,92 m

tg α = 0,055009

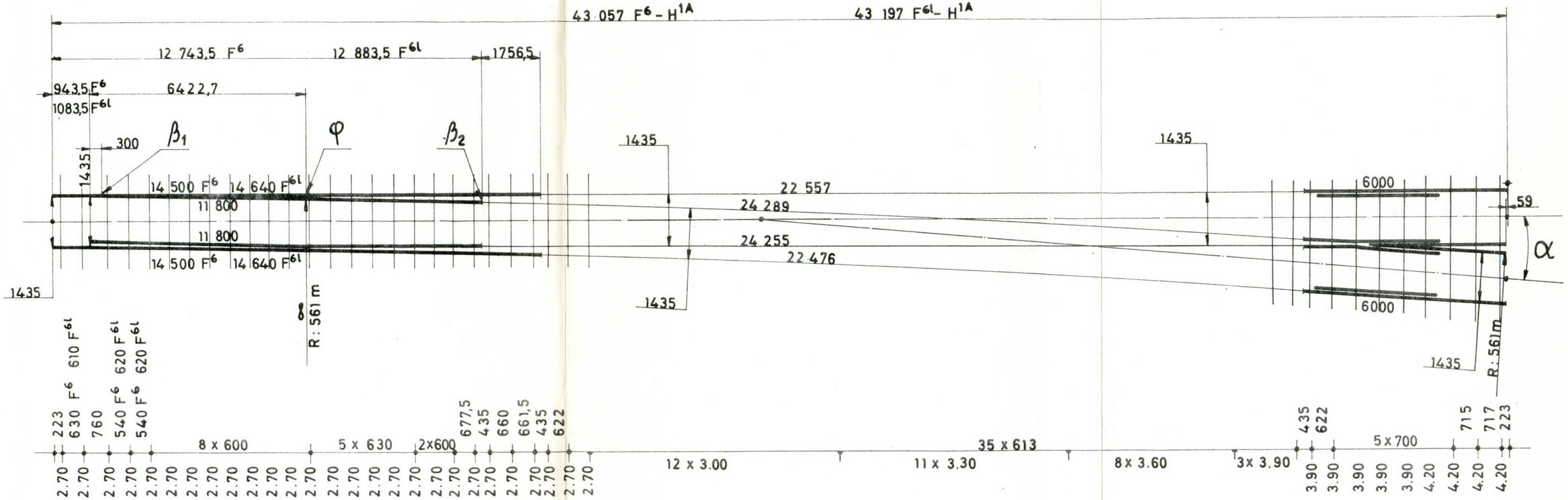
11 - 70 A

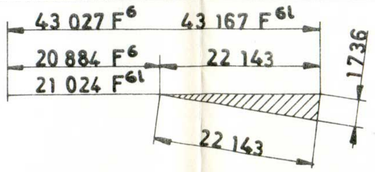
6-69

1966

B

F^6 - H^{1A} / F^{6l}





β_1 = 0° 40' 26" = 0^g,748688

β_2 = 1° 24' 03" = 1^g,556481

φ = 0° 10' 42" = 0^g,198037

α = 4° 29' 34" = 4^g,991830

R= 561,26 m

tg α = 0,078572

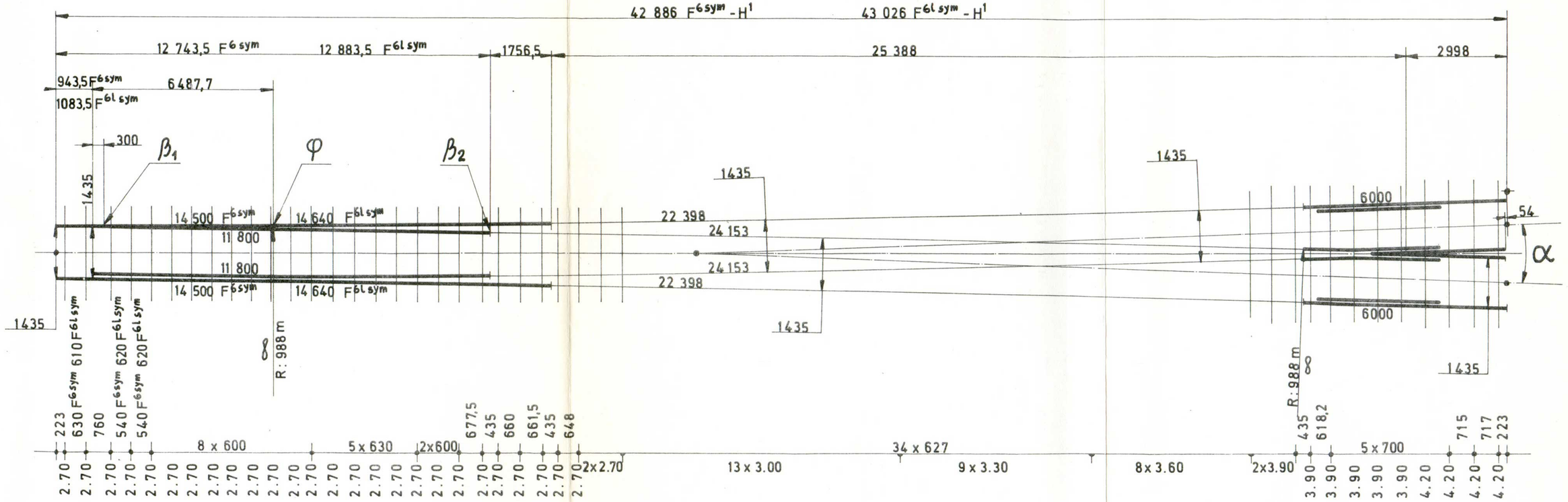
11 - 61 A

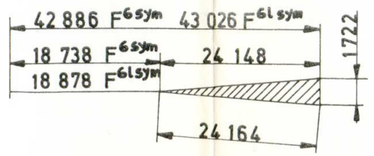
6 - 69

1966

B

F^{6sym} - H^1
F^{6lsym}





β_1 = 0° 20' 00" = 0^g,370370

β_2 = 0° 38' 29" = 0^g,712574

φ = 0

α = 4° 05' 00" = 4^g,537037

R = 988,20 m

tg α = 0,071388

12 - 61

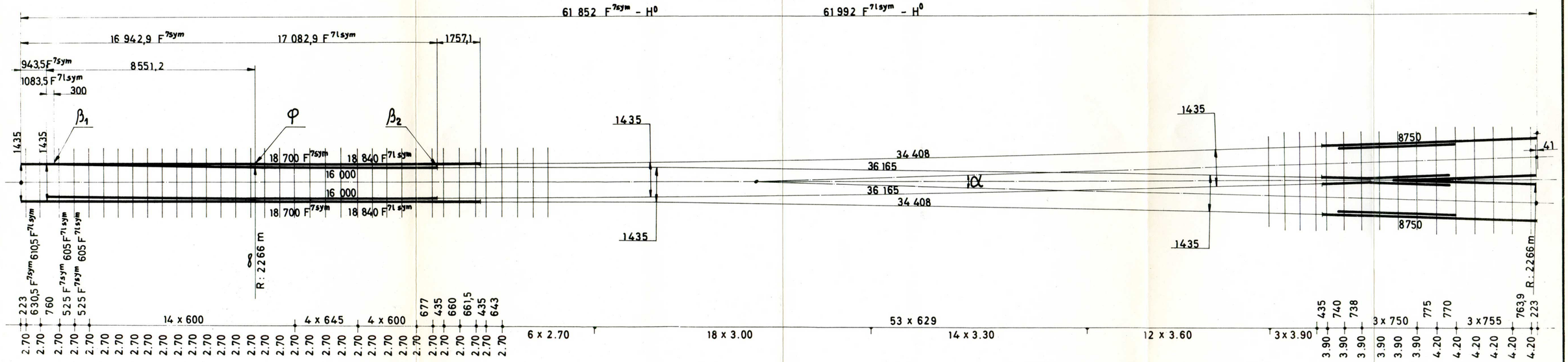
6 - 69

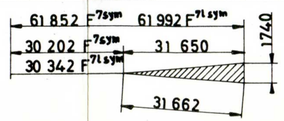
1966

B

$F^{7sym} - H^0$

F^{71sym}





β_1 = 0° 15' 00" = 0^g,277778

β_2 = 0° 26' 18" = 0^g,487086

φ = 0

α = 3° 08' 55" = 3^g,498457

R= 2265,51 m

tg α = 0,055009

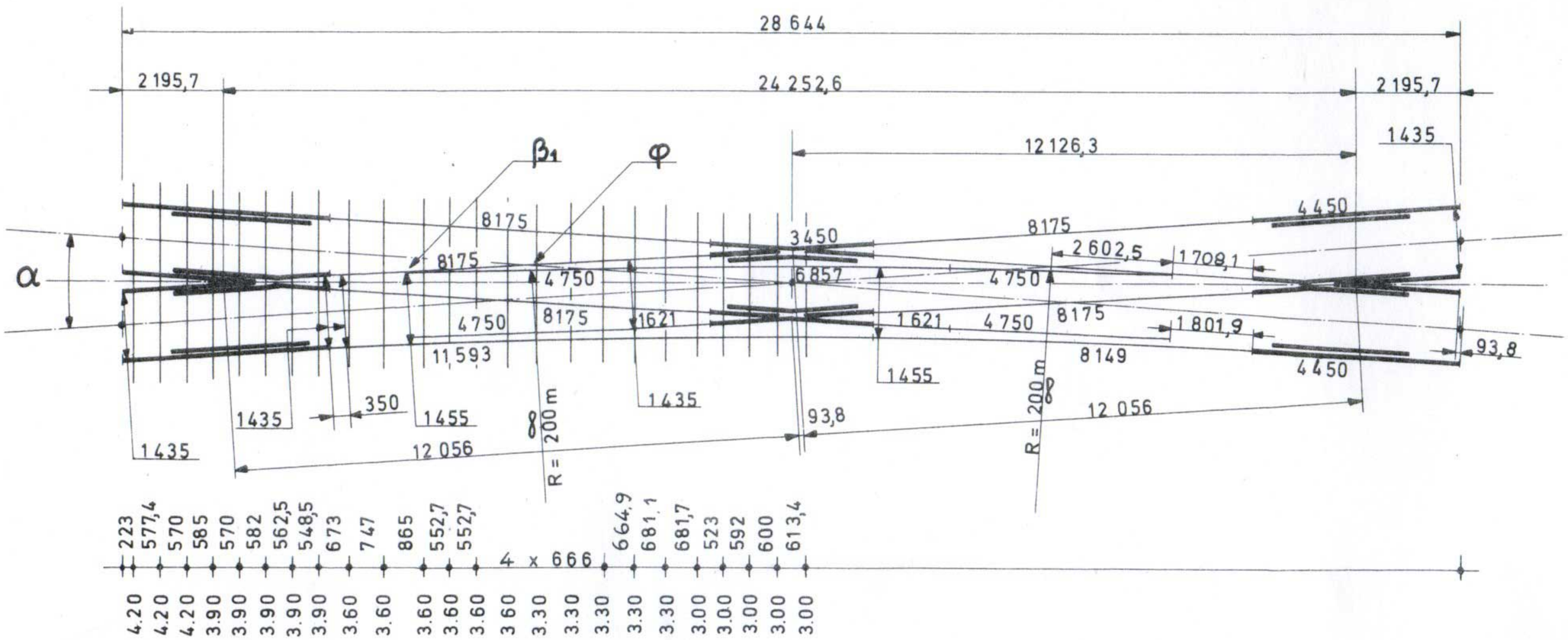
12 - 70

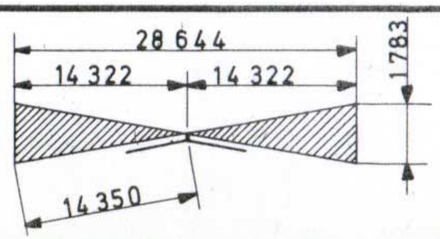
6-69

1966

Ⓑ

TJS-TH⁴





β_1 = 1°35'07" = 1⁹,761420

φ = 0°22'49" = 0⁹,422361

α = 7°07'30" = 7⁹,916667

R = 200 m

tg α = 0,125000

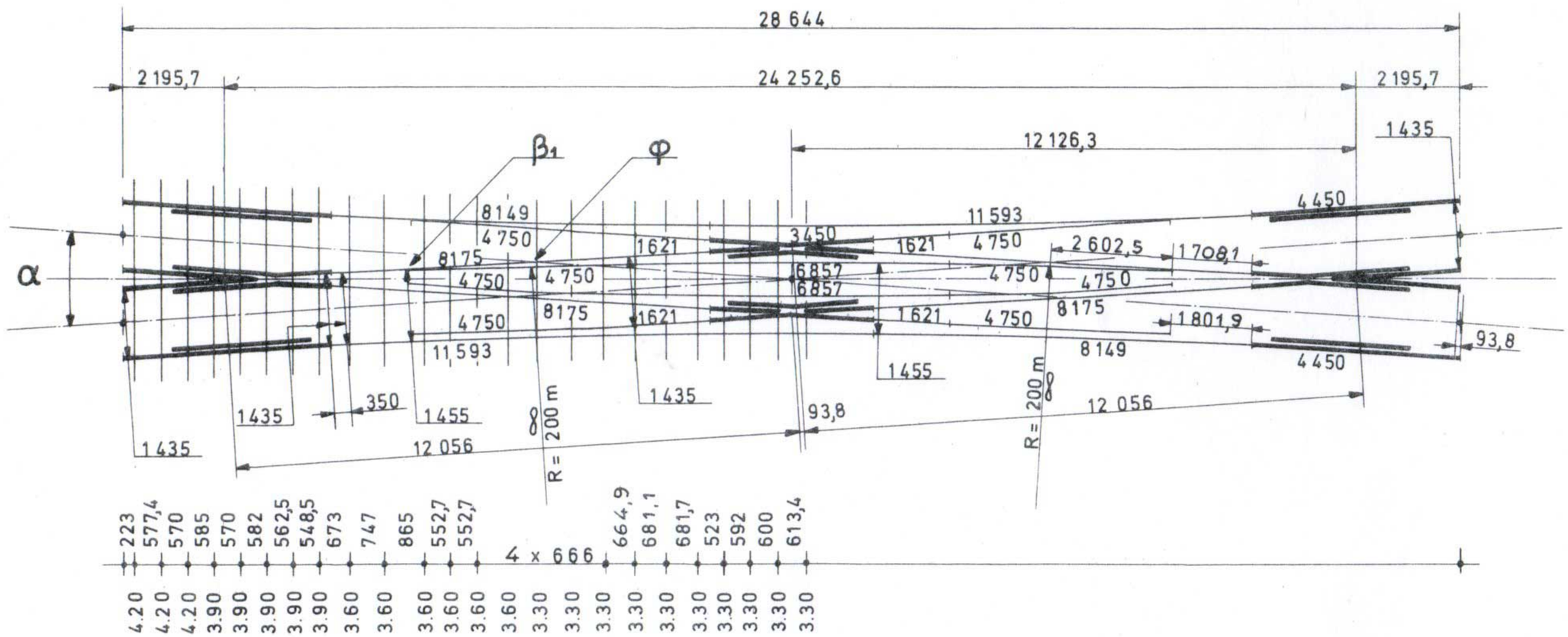
31 - 444

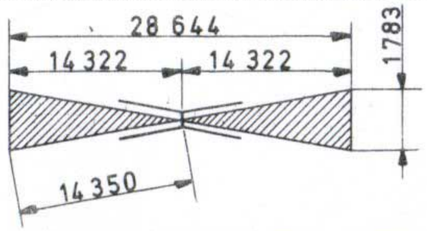
6-69

1966

Ⓑ

TJD-TH⁴





β_1 = 1° 35′ 07″ = 1°,761420

φ = 0° 22′ 49″ = 0°,422361

α = 7° 07′ 30″ = 7°,916667

R = 200 m

tg α = 0,125000

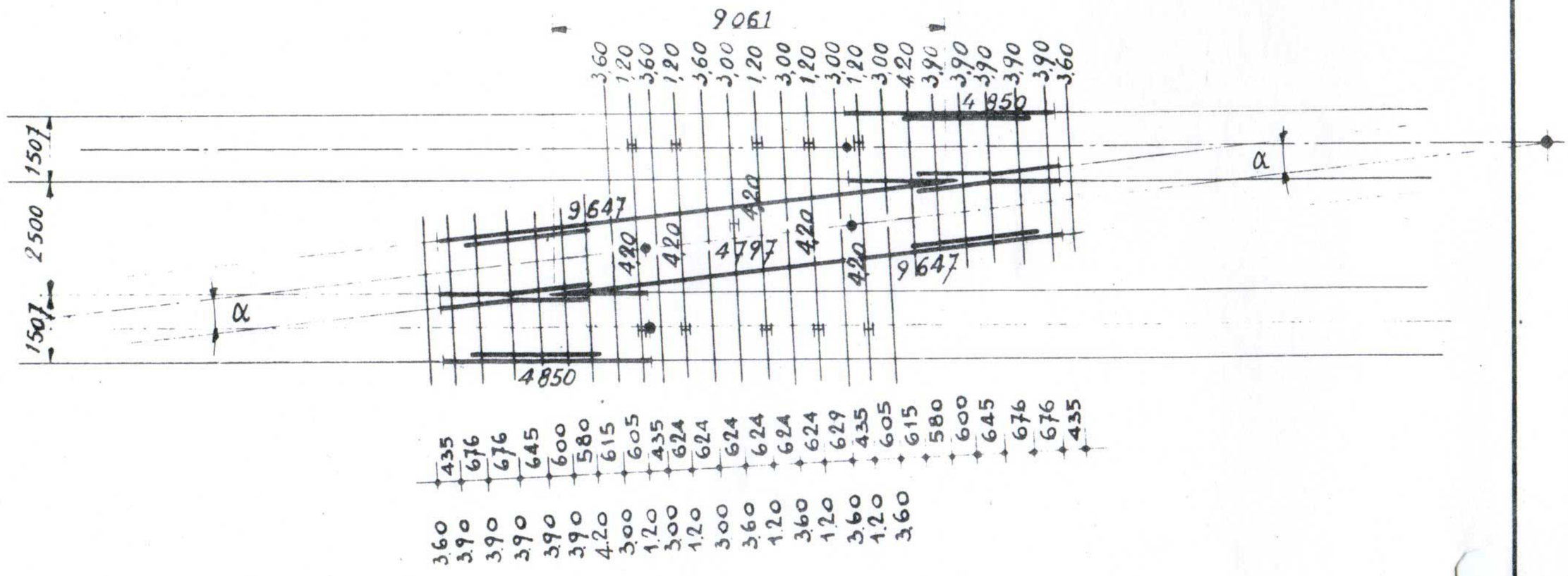
32 - 444

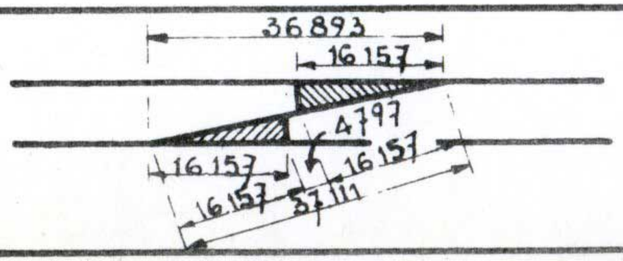
6-69

1966

Ⓑ

$H^3 - H^3$
(2.500m)





$\alpha = 6°11'55'' = 6^{9},887346 \quad tg\,\alpha = 0,108611$

42-33

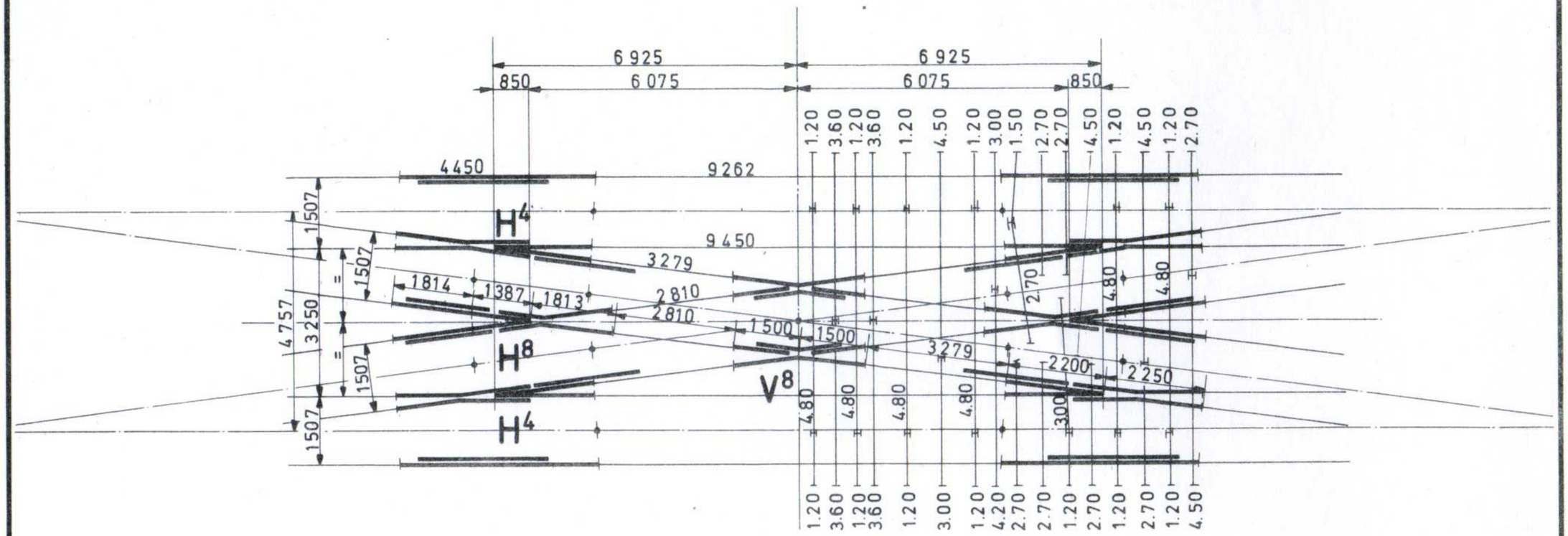
6-69

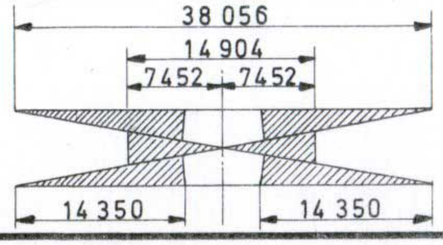
1966

Ⓑ

$H^4H^8V^8H^8H^4$

(3,250 m)





H^4 $\alpha = 7°07'30'' = 7^{9},916667$ $\operatorname{tg}\alpha = 0{,}125000$

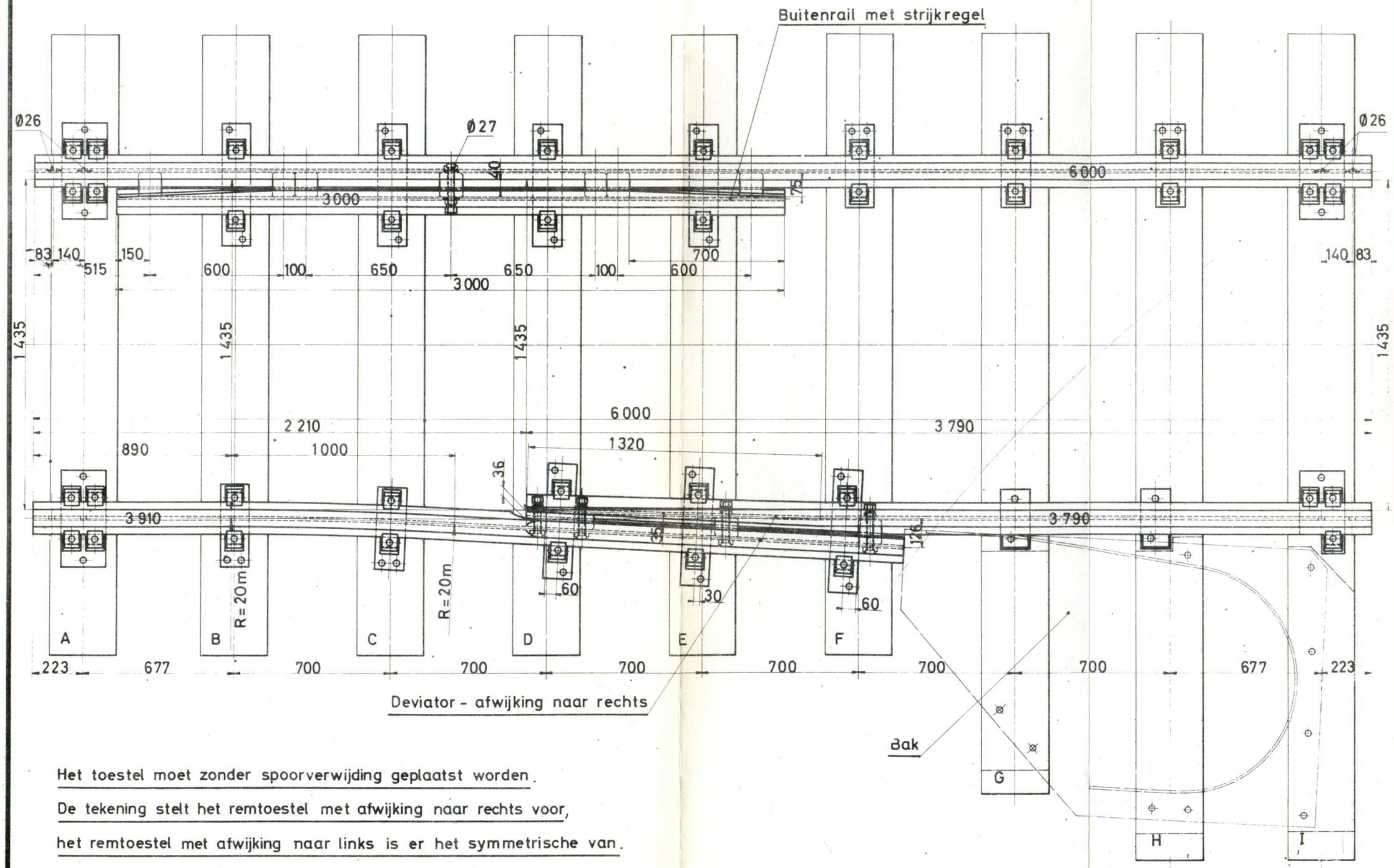
V^8H^8 $\alpha = 14°15'00'' = 15^{9},833333$ $\operatorname{tg}\alpha = 0{,}253968$

52 - 12

6-69

1966

REMTOESTEL - LOPEND SPOOR - MOD.54



Het toestel moet zonder spoorverwijding geplaatst worden.

De tekening stelt het remtoestel met afwijking naar rechts voor,

het remtoestel met afwijking naar links is er het symmetrische van.

6-69

1966

SPOORTOESTELLEN

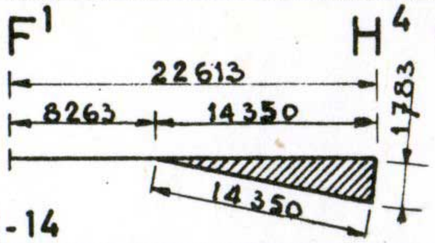
B.36-2

239604

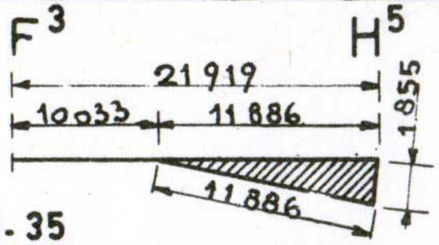
INHOUDSTAFEL

11		ASYMMETRISCHE WISSELS	
12		SYMMETRISCHE WISSELS	
20		KRUISINGEN MET GELIJKE HOEKEN	
21		ASYMMETRISCHE KRUISINGEN MET ONGELIJKE HOEKEN	
22		SYMMETRISCHE KRUISINGEN MET ONGELIJKE HOEKEN	
31-32		ENKELE EN DUBBELE ENGELSE WISSELS - TYPE TH	
33-34		ENKELE EN DUBBELE ENGELSE WISSELS - TYPE EH	
40		PUNTSTUKVERBINDINGEN - TUSSENSPOOR 2.00 m	
41		PUNTSTUKVERBINDINGEN - TUSSENSPOOR 2.25 m	
42		PUNTSTUKVERBINDINGEN - TUSSENSPOOR 2.50 m	
52	0	SYMMETRISCHE KRUISVERBINDINGEN	TUSSENSPOOR 2.80 m
	1		TUSSENSPOOR 3.25 m
	2		TUSSENSPOOR 3.50 m
	3		TUSSENSPOOR 4.00 m
61	1	ASYMMETRISCHE VERTAKKINGEN	TUSSENSPOOR 2.00 m
	2		TUSSENSPOOR 2.35 m
	3		TUSSENSPOOR 7.00 m
62		SYMMETRISCHE VERTAKKINGEN	TUSSENSPOOR 2.00 m

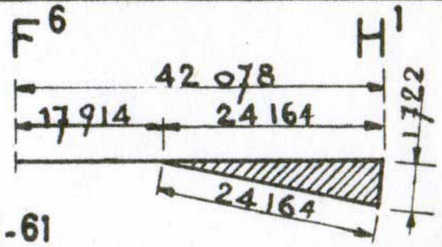
Schema's der wissels.



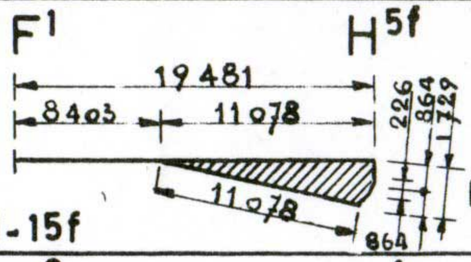
11-14 R: 158 m



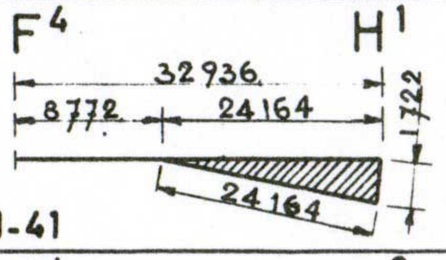
11-35 R: 89 m



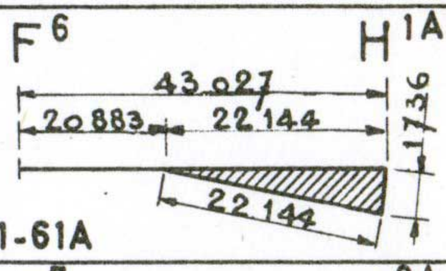
11-61 R: 498 m



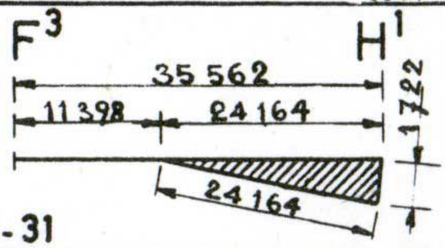
11-15f R: 104 m



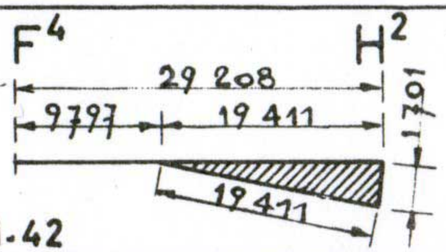
11-41 R: 735 m



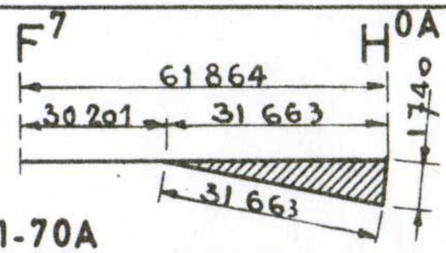
11-61A R: 561 m



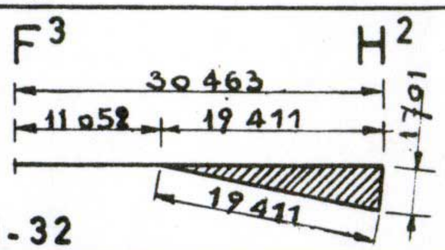
11-31 R: 516 m



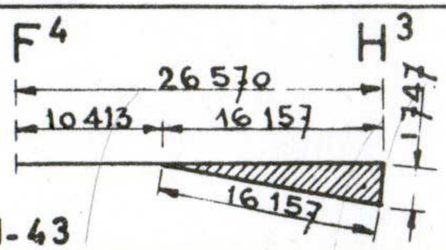
11-42 R: 370 m



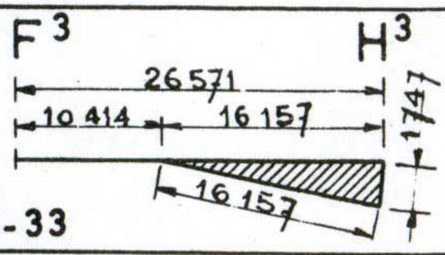
11-70A R: 1133 m



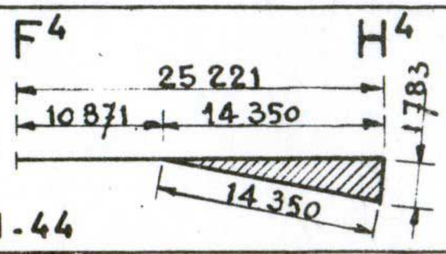
11-32 R: 307 m



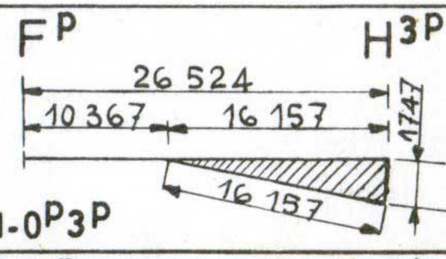
11-43 R: 209 m



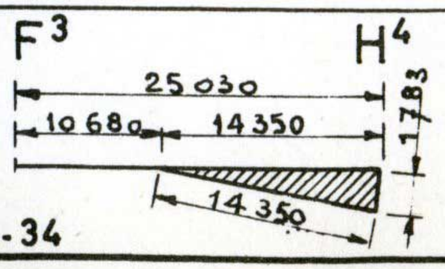
11-33 R: 183 m



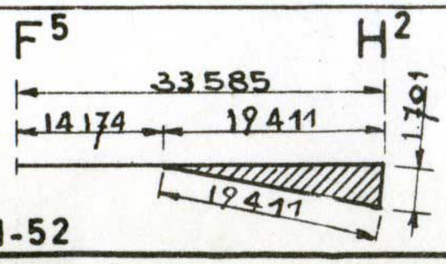
11-44 R: 148 m



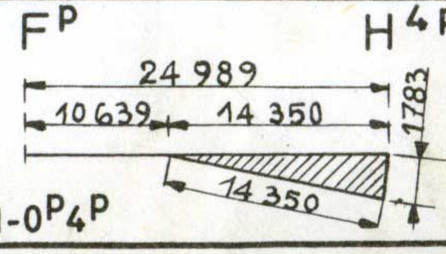
11-0P3P R: 198 m



11-34 R: 147 m



11-52 R: 318 m

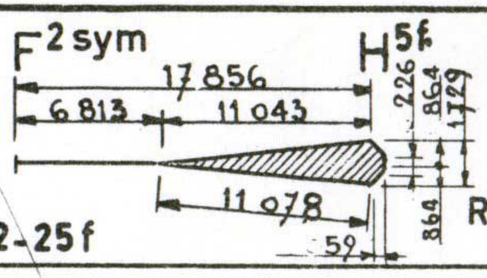


11-0P4P R: 146 m

12-65

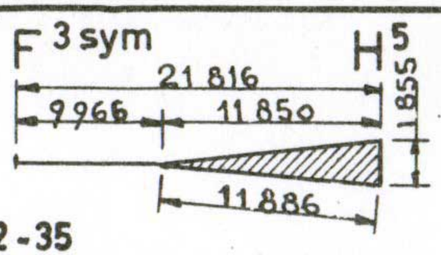
Schema's der wissels.

F 2 sym H 5f



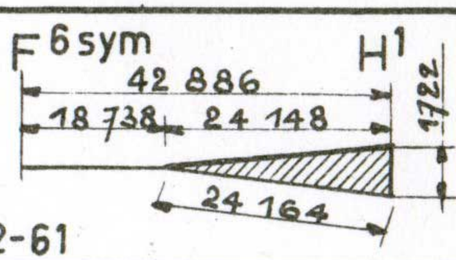
12-25f R: 198 m

F 3 sym H 5



12-35 R: 178 m

F 6 sym H 1



12-61 R: 988 m

F 4 sym H 1

12-41

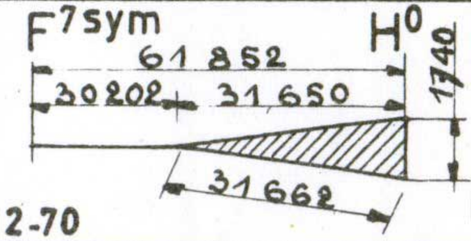
F 3 sym H 1

12-31

F 4 sym H 2

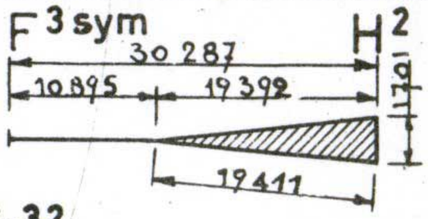
12-42

F 7 sym H 0



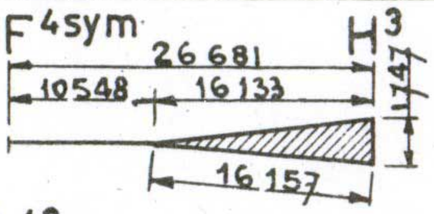
12-70 R: 2266 m

F 3 sym H 2



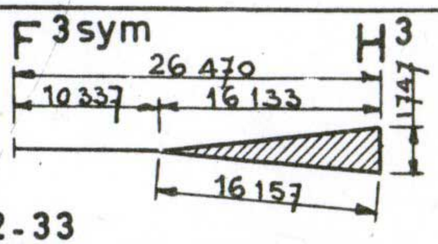
12-32 R: 601 m

F 4 sym H 3



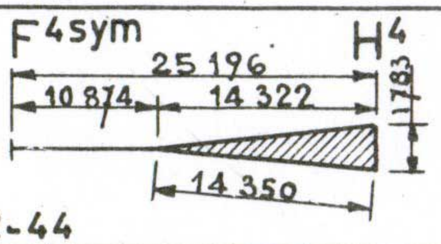
12-43 R: 417 m

F 3 sym H 3



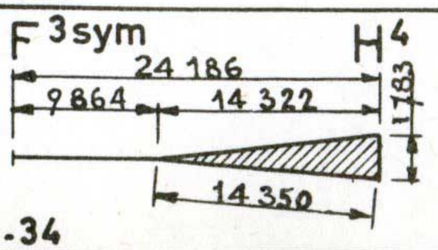
12-33 R: 361 m

F 4 sym H 4



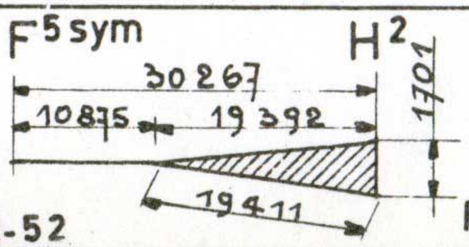
12-44 R: 299 m

F 3 sym H 4



12-34 R: 256 m

F 5 sym H 2



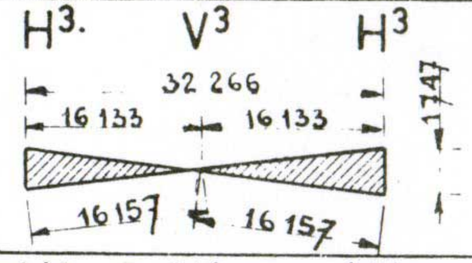
12-52 R: 665 m

12-65

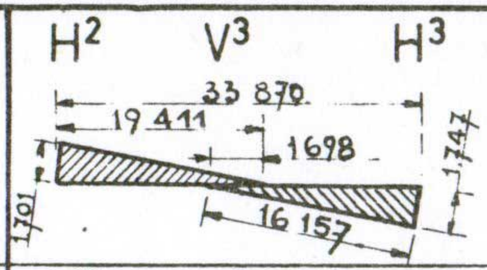
1966

Schema's der kruisingen.

12-65

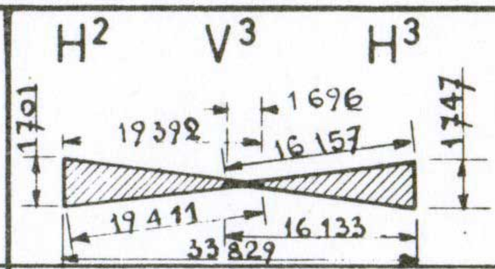


20-333



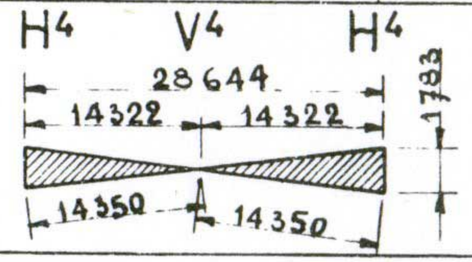
R: 510 m

21-233

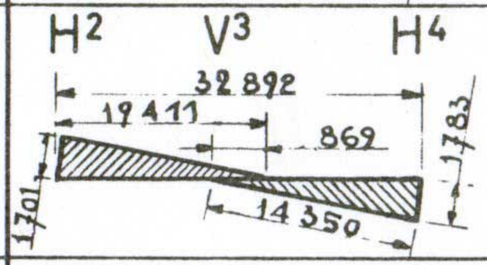


R: 1.005 m

22-233

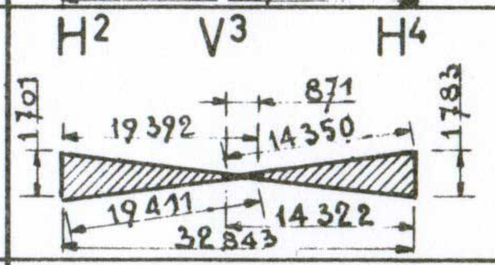


20-444



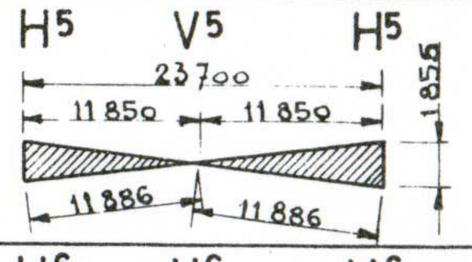
R: 510 m
R: 536 m

21-234

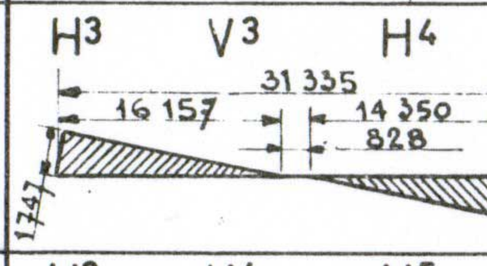


R: 1.005 m
R: 1.050 m

22-234

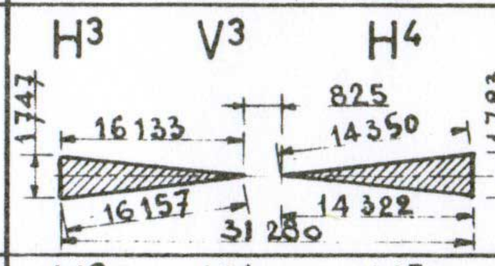


20-555



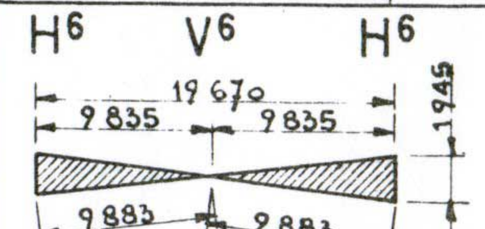
R: 536 m

21-334

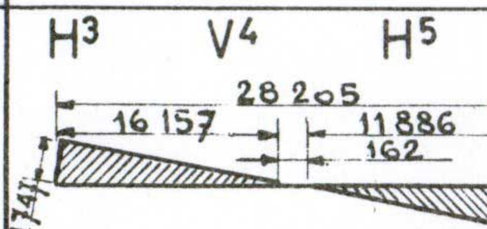


R: 1.050 m

22-334

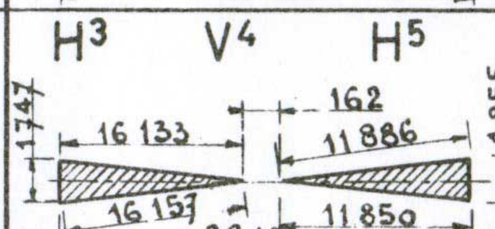


20-666



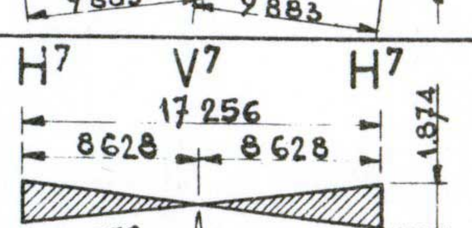
R: 531 m
R: 218 m

21-345

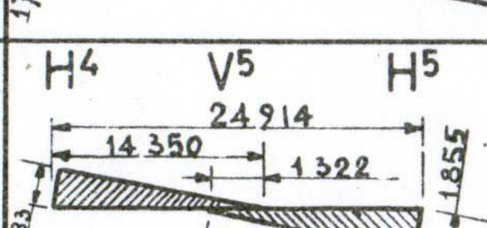


R: 1.062 m
R: 435 m

22-345

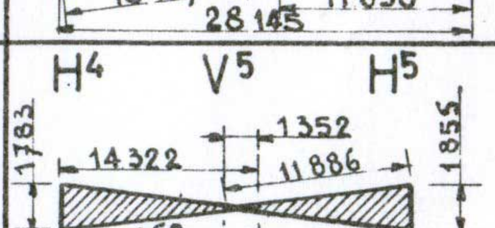


20-777



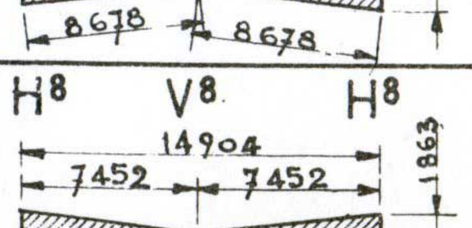
R: 212 m

21-455

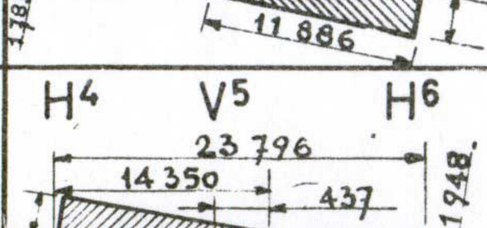


R: 405 m

22-455

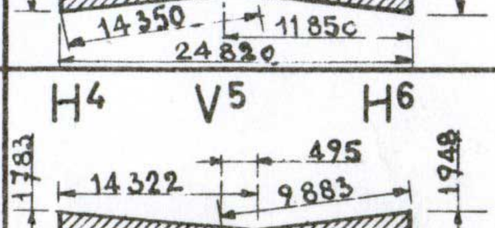


20-888



R: 212 m
R: 120 m

21-456

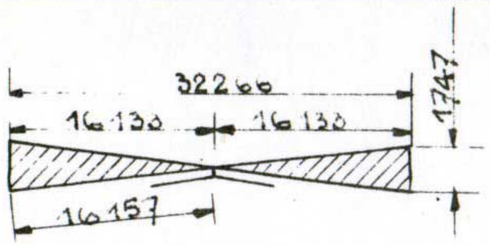


R: 405 m.
R: 228 m

22-456

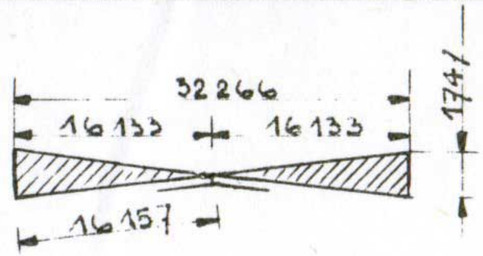
Enkele en dubbele engelse wissels

TJS TH³



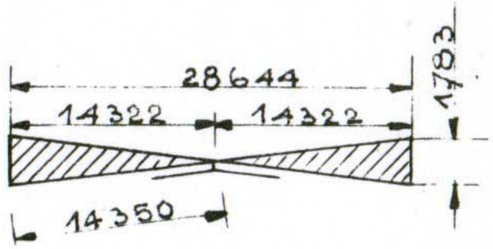
31-333 R: 300 m.

TJS EH³



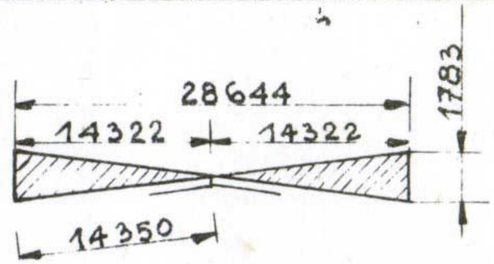
33-333 R: 230 m.

TJS TH⁴



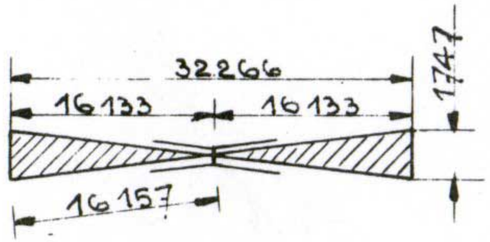
31-444 R: 200 m.

TJS EH⁴



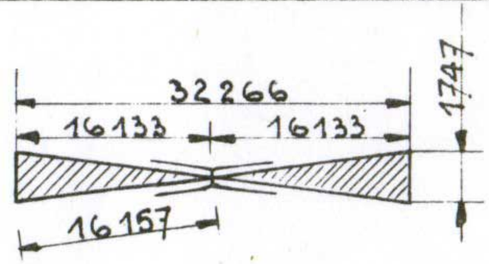
33-444 R: 175 m.

TJD T H³



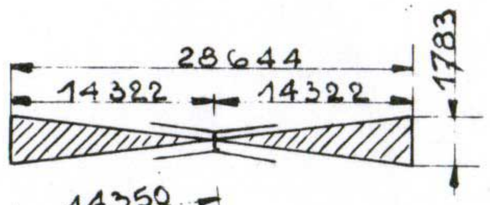
32-333 R: 300 m.

TJD EH³



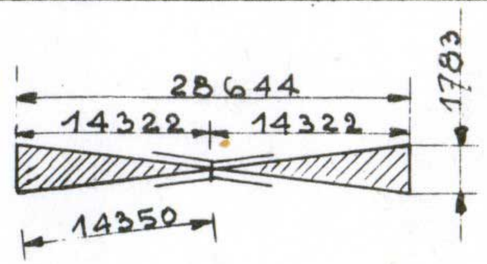
34-333 R: 230 m.

TJD TH⁴



32-444 R: 200 m.

TJD EH⁴



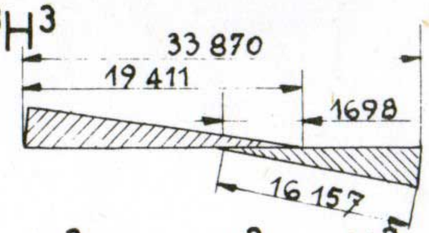
34-444 R: 175 m.

12-65

1966

TJS met ongelijke hoeken

TJS $EH^2V^3H^3$



R: 230 m
R: 510 m

33-233 H^2 V^3 H^3

Hoeken der verschillende toestellen en hun trigonometrische functies.

TYPEN	BUITEN H	HOEKEN EN HALVE HOEKEN		SINUS	COSINUS	TANGENS
		°	g			
H^0	41,4	3° 08' 55"	3^g,498457	0,054926	0,998490	0,055009
H^{0A}		1° 34'27" 5	1^g,749228	0,027474	0,999622	0,027484
H^{1A}	59,1	4° 29' 33" 5	4^g,991830	0,078331	0,996928	0,078572
		2° 14' 46" 8	2^g,495915	0,039196	0,999232	0,039226
H^1	53,7	4° 05' 00"	4^g,537037	0,071207	0,997461	0,071388
		2° 02' 30"	2^g,268519	0,035626	0,999365	0,035649
H^2	66,1	5° 01' 24"	5^g,581481	0,087561	0,996159	0,087899
		2° 30' 42"	2^g,790741	0,043823	0,999039	0,043865
H^3V^3	81,6	6° 11' 55"	6^g,887346	0,107975	0,994154	0,108611
		3° 05' 57" 5	3^g,443673	0,054067	0,998538	0,054146
H^4V^4	93,8	7° 07' 30"	7^g,916667	0,124034	0,992278	0,125000
		3° 33' 45"	3^g,958333	0,062138	0,998068	0,062258
H^5V^5	117,9	8° 57' 01"	9^g,944753	0,155577	0,987823	0,157495
		4° 28' 30" 5	4^g,972377	0,078026	0,996952	0,078265
H^6V^6	149,2	11° 18' 40"	12^g,567901	0,196136	0,980577	0,200021
		5° 39' 20"	6^g,283951	0,098548	0,995133	0,099030
H^7V^7	163,7	12° 23' 50"	13^g,774691	0,214688	0,976683	0,219813
		6° 11' 55"	6^g,887346	0,107975	0,994154	0,108611
H^8V^8	188,4	14° 15' 00"	15^g,833333	0,246153	0,969231	0,253968
		7° 07' 30"	7^g,916667	0,124034	0,992278	0,125000

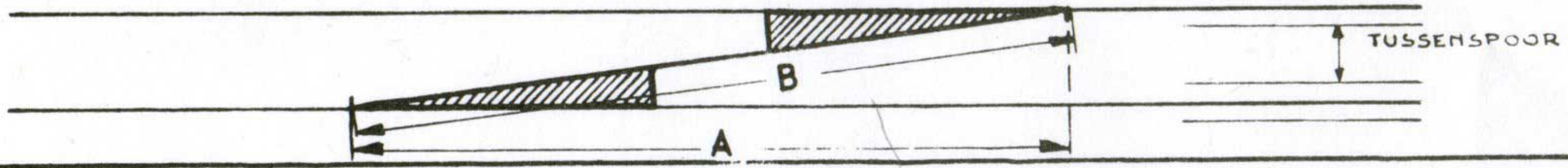
Houtstukken voorbij de puntstukken te leggen.

Rangnummer der houtstukken	Afstanden der houtstukken tot de voegen van de puntstukken.	Openingen der beide op het hartstuk volgende spoorstaven (spoor in rechte lijn)									
		H^{0A}	H^{1A}	H^{1}	H^{2}	H^{3}	H^{4}	H^{5}	H^{6}	H^{7}	H^{8}
1	0,21 $\frac{2}{-}$	0,24	0,24	0,22	0,20	0,24	0,28	0,35	0,45	0,37	0,36
2	0,70	0,27	0,28	0,25	0,24	0,30	0,34	0,43	0,54	0,48	0,48
3	1,40	0,31	0,33	0,30	0,30	0,37	0,43	0,54	0,68	0,63	0,66
4	2,10	0,35	0,39	0,35	0,36	0,45	0,52	0,65	0,82	0,78	0,83
5	2,80	0,38	0,44	0,40	0,42	0,52	0,60	0,76			
6	3,50	0,42	0,50	0,45	0,48	0,60	0,69	0,87			
7	4,20	0,46	0,55	0,50	0,55	0,67	0,78				
8	4,90	0,50	0,61	0,55	0,61	0,75	0,86				
9	5,60	0,54	0,66	0,60	0,67	0,83					
10	6,30	0,58	0,72	0,65	0,73						
11	7,00	0,61	0,77	0,70	0,79						
12	7,70	0,66	0,83	0,75	0,86						
13	8,40	0,70	0,88	0,80							
14	9,10	0,73		0,85							
15	9,80	0,77									
16	10,50	0,81									
17	11,20	0,85									

Lengte der houtstukken.	Aantal bijkomende houtstukken voor uiteenlopende sporen in rechte lijn.									
4.20 m	2	2	2	2	1	0	0	0	0	0
4.50 m	8	5	6	5	4	4	3	1	2	1
4.80 m	7	6	6	5	4	4	3	3	2	3

BELANGRIJKE OPMERKING: Wanneer één van beide sporen een bijspoor van middelmatig of gering belang is, worden alle houtstukken, waarvoor de spoorstaaf-afstand meer dan 0.70m bedraagt, weggelaten; indien ze beide in dit geval zijn geldt dit voor een afstand van meer dan 0.50m.

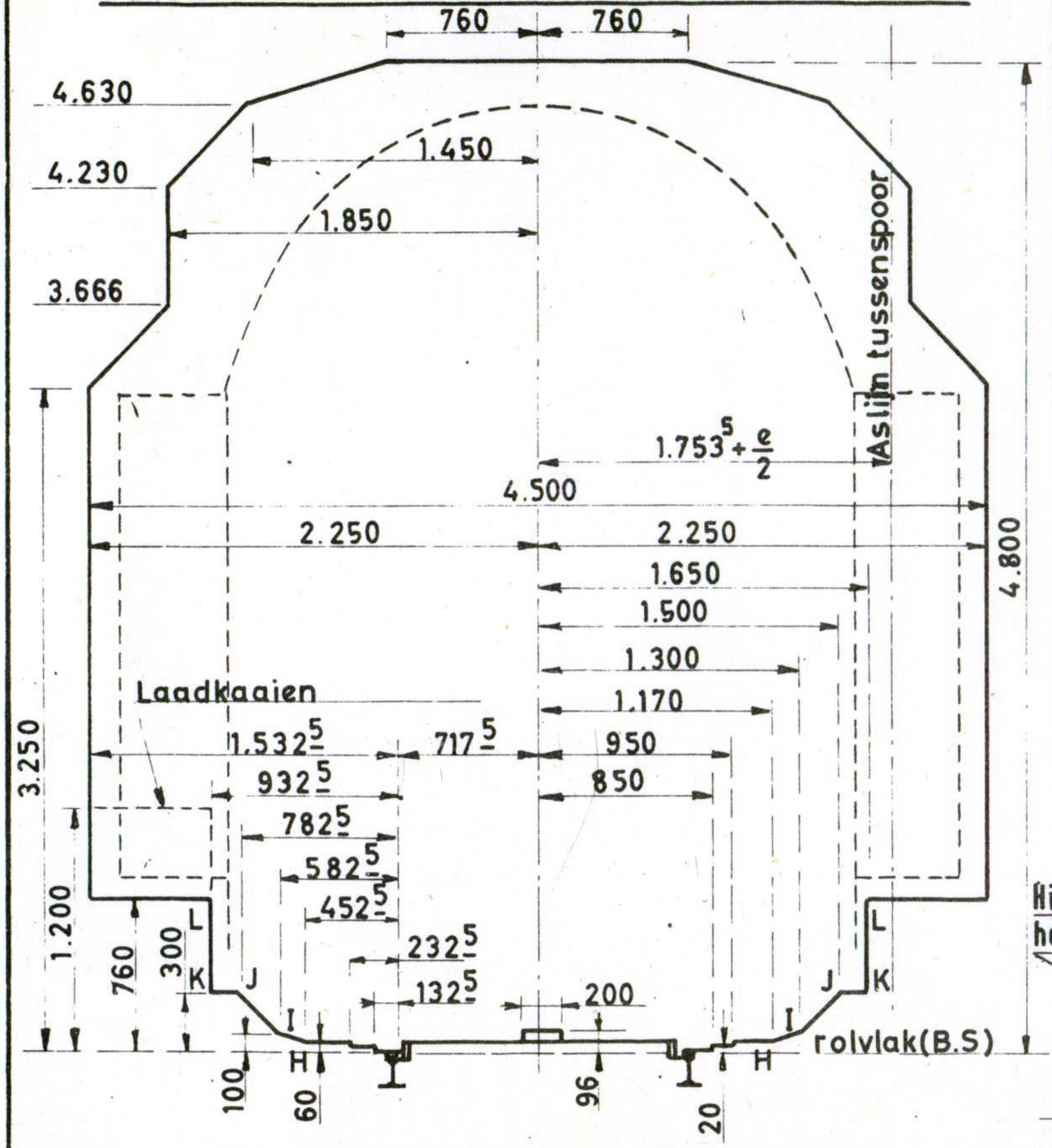
Puntstukverbindingen met gelijke hoeken.



12-65

		tussenspoor van									
		2.00	2.25	2.35	2.50	2.75	3.00	3.50	4.00	4.50	5.00
H^{0A} - H^{0A}	A	—	—	—	—	77.390	81.935	91.025	100.115	109.204	118.294
	B	—	—	—	—	77.504	82.056	91.159	100.262	109.365	118.468
H^{1A} - H^{1A}	A	—	—	—	50.997	54.178	57.359	63.723	70.086	76.449	82.813
	B	—	—	—	51.155	54.345	57.536	63.919	70.302	76.685	83.068
H^{1} - H^{1}	A	49.126	52.628	54.029	56.130	59.632	63.134	70.138	77.142	84.146	91.150
	B	49.251	52.762	54.166	56.273	59.783	63.294	70.316	77.338	84.360	91.381
H^{2} - H^{2}	A	39.898	42.742	43.880	45.587	48.431	51.275	56.964	62.652	68.341	74.029
	B	40.052	42.907	44.049	45.762	48.618	51.473	57.183	62.893	68.604	74.314
H^{3} - H^{3}	A	32.290	34.592	35.512	36.893	39.195	41.497	46.101	50.704	58.308	59.912
	B	32.480	34.795	35.721	37.110	39.426	41.741	46.372	51.003	55.633	60.264
H^{4} - H^{4}	A	28.056	30.056	30.856	32.056	34.056	36.056	40.056	44.056	48.056	52.056
	B	28.275	30.290	31.096	32.306	34.321	36.337	40.368	44.399	48.430	52.461
H^{5} - H^{5}	A	22.267	23.855	24.490	25.442	27.029	28.617	31.791	34.966	38.141	41.316
	B	22.543	24.149	24.792	25.756	27.363	28.970	32.183	35.397	38.611	41.825
H^{6} - H^{6}	A	17.533	18.783	19.283	20.033	21.283	22.533	25.032	27.532	30.032	32.532
	B	17.880	19.155	19.655	20.430	21.704	22.979	25.528	28.077	30.627	33.176
H^{7} - H^{7}	A	15.954	17.092	17.547	18.229	19.366	20.504	22.778	25.053	27.328	29.602
	B	16.335	17.500	17.966	18.664	19.829	20.993	23.322	25.651	27.980	30.309
H^{8} - H^{8}	A	13.809	14.793	15.187	15.778	16.762	17.746	19.715	21.684	23.653	25.621
	B	14.247	15.263	15.669	16.278	17.294	18.310	20.341	22.372	24.404	26.435

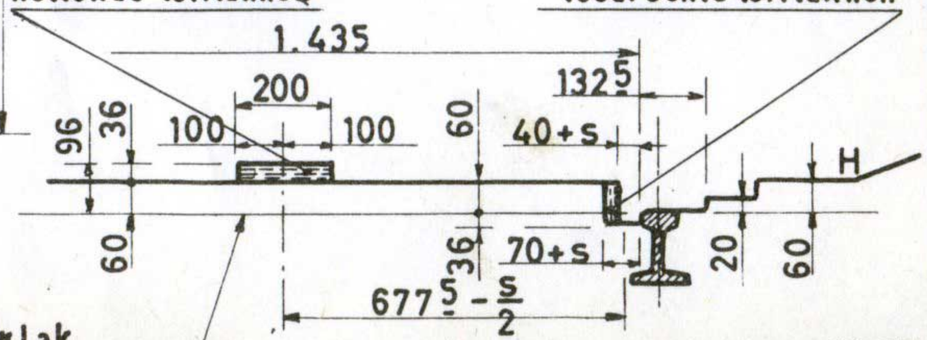
LIJNEN MET STOOM- OF DIESELTRACTIE.



Straal der bogen R(m)	Verbreding van profiel a(mm) Art.29	Verbreding tussenspoor e(mm) Art.67	Spoor-verwijding S(mm) Art.65	Gewoon perron b(mm)
1.000	0		0	R ≥ 700 10mm
900	4			
800	9			
700	15			20
600	23			30
500	35			50
450	43			
400	53	0		70
350	56	23	10	
300	82	56		100
250	105	103		130
200	140	173	20	160
175	165	223		190
150	198	290	30	
	aan ieder zijde bijte voegen in zone HIJKL		aan totale breedte bij te voegen over gehele hoogte	
	met interpolatie		zonder interpolatie	

Hindernissen met vaste hellende leivlakken

Hindernissen met vaste loodrechte leivlakken

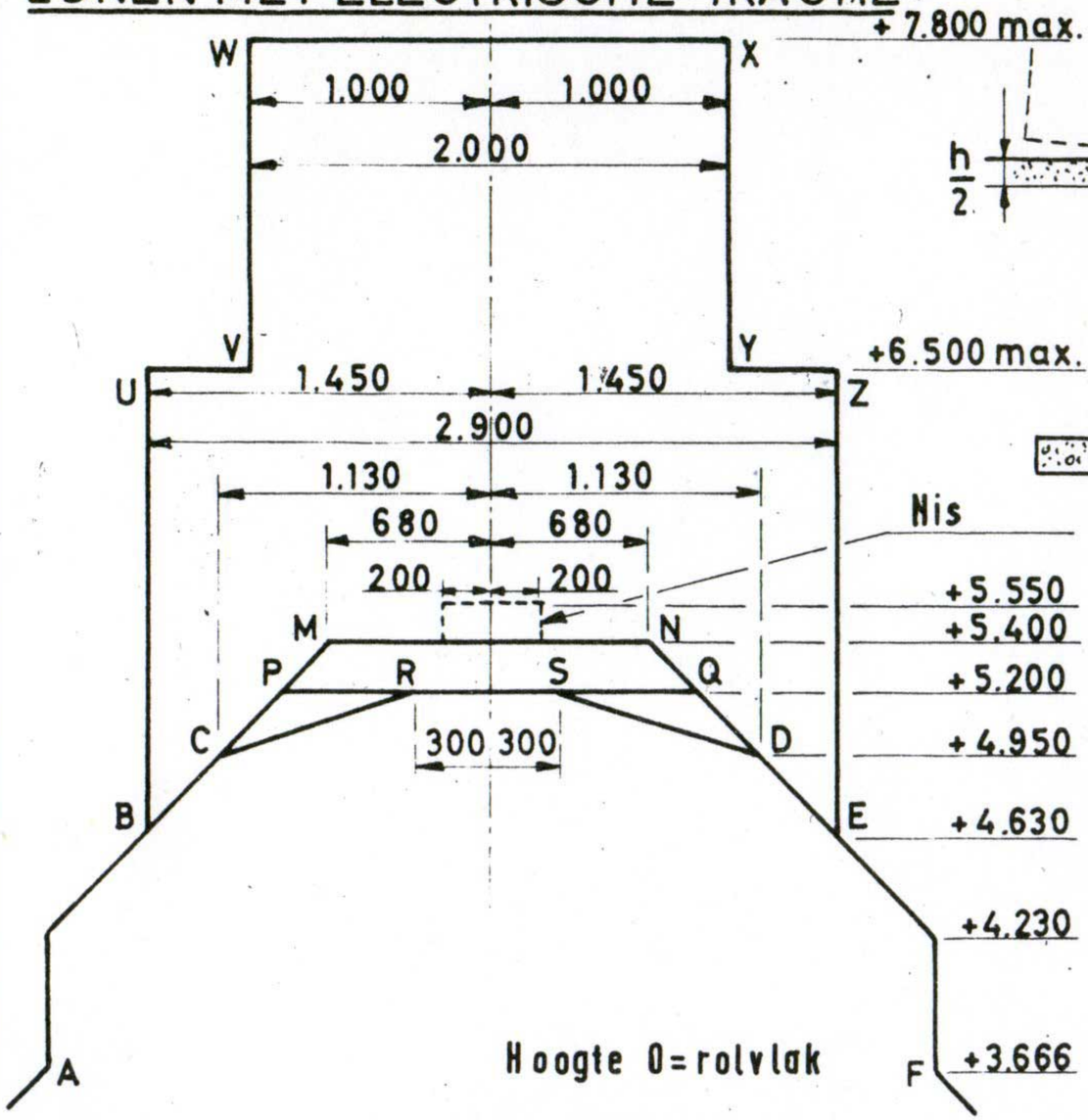


12-65

1966

BOVENSTE DEEL VAN HET PROFIEL

LIJNEN MET ELECTRISCHE TRACTIE.



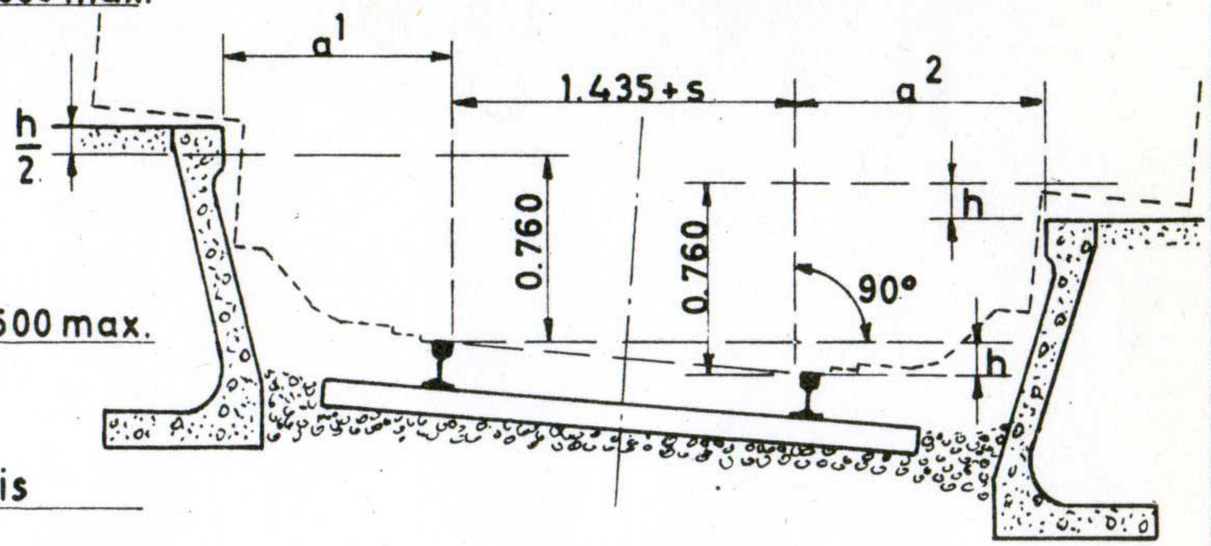
ABCMNDEF NORMAAL PROFIEL (met eventuele ophanging van rijdraad)

ABCRSDEF UITZONDERLIJK VERLAAGD PROFIEL (met ophanging van rijdraad.)

ABCPQDEF UITZONDERLIJK PROFIEL VOOR TUNNELS.

ABUVWXYZEF PROFIEL VOOR LICHTE BOUWWERKEN. (geen enkel ophanging.)

VERHOOGDE PERRONRAND.

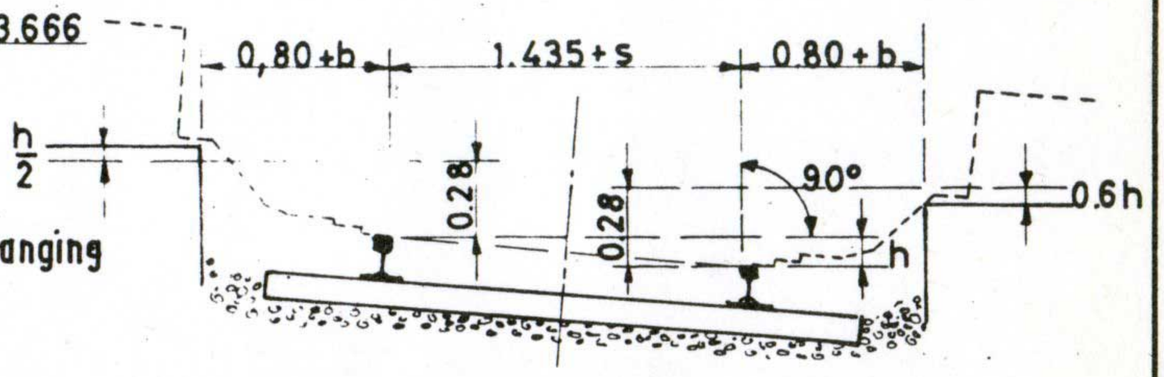


$a^1 = 932\frac{5}{-} + a$

$a^2 = a^1 + \frac{h}{2}$

h = verkanting

GEWONE PERRONRAND.



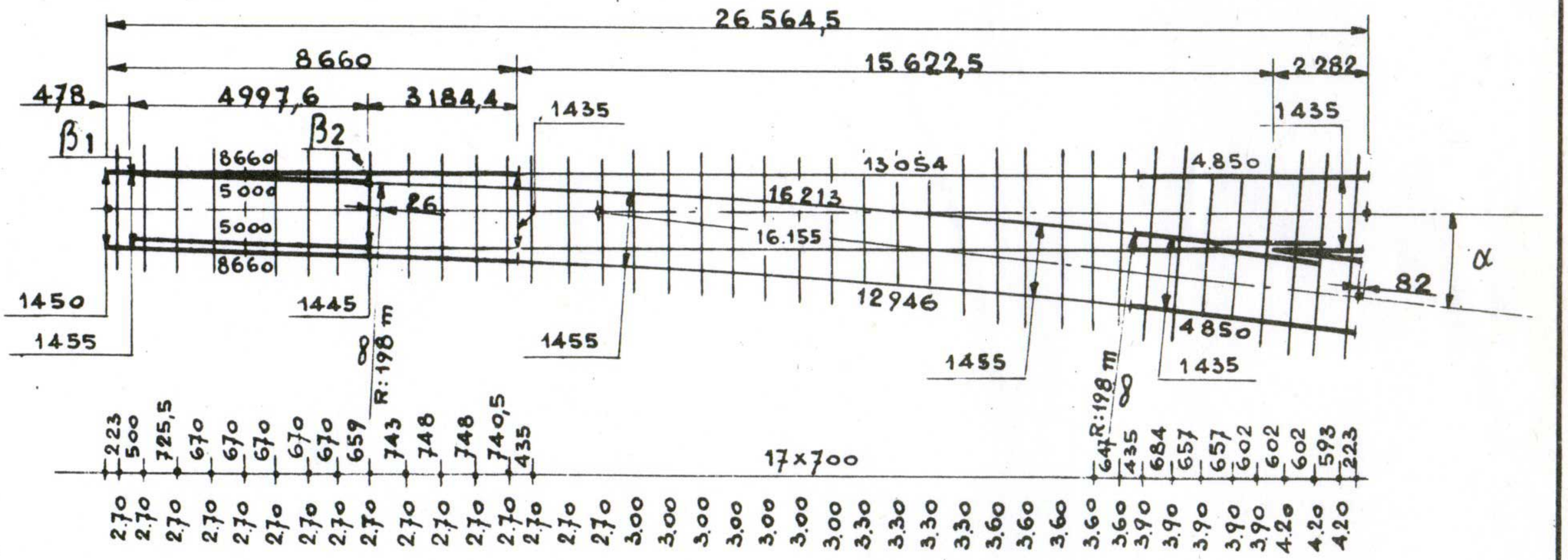
12-65

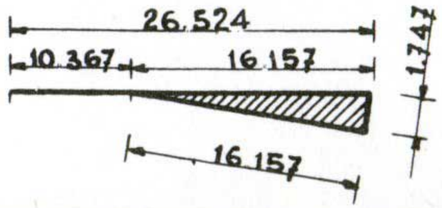
1966

WISSELS

Ⓑ

$F^P - H^{3P}$





$\beta_1 = \beta_2 = 1°30'46'' = 1^g,680864$

$\alpha = 6°11'55'' = 6^g,887346$

R = 197,89 m

tg α = 0,108611

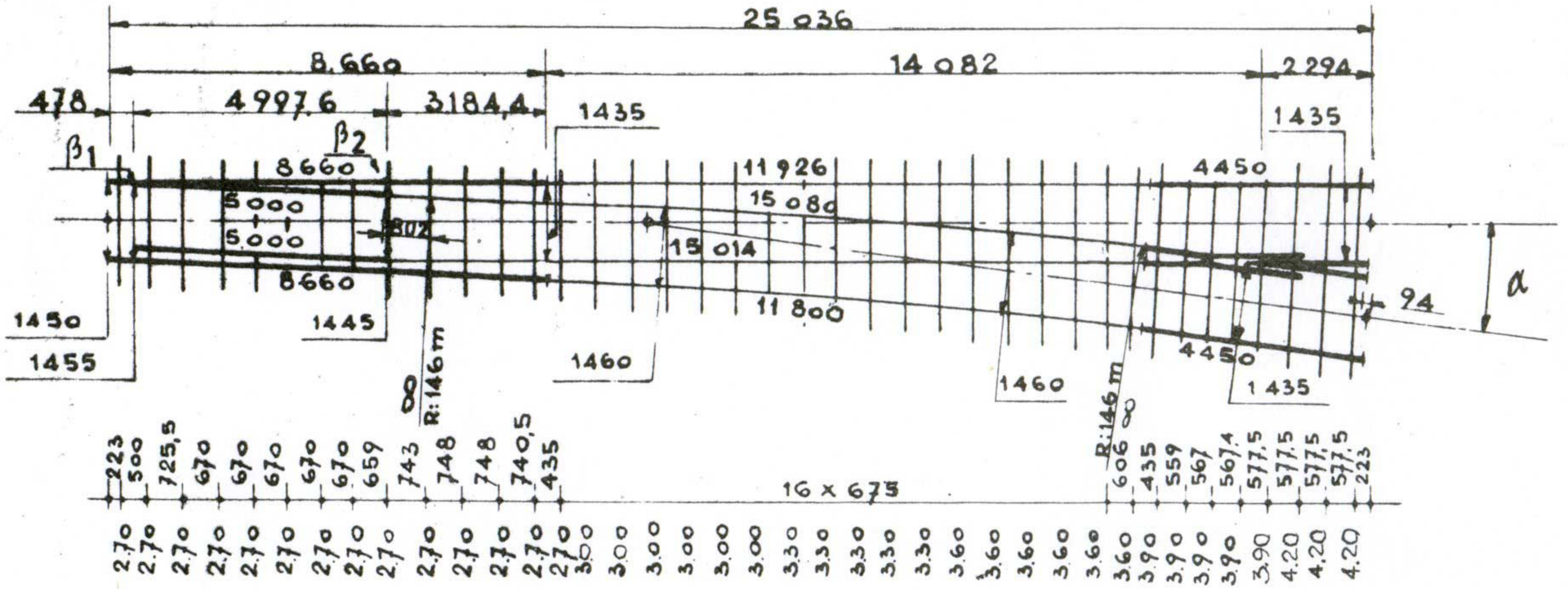
11-0P3P

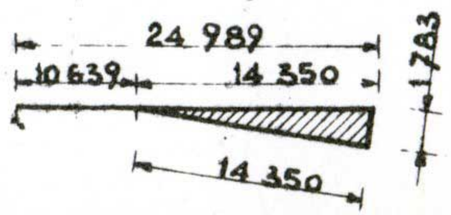
1-66

1966

Ⓑ

$F^p - H^{4p}$





$\beta_1 = \beta_2 = 1°30'46'' = 1^g,680864$

$\alpha = 7°07'30'' = 7^g,916667$

$R = 145,72\,m$

$tg\,\alpha = 0,125000$

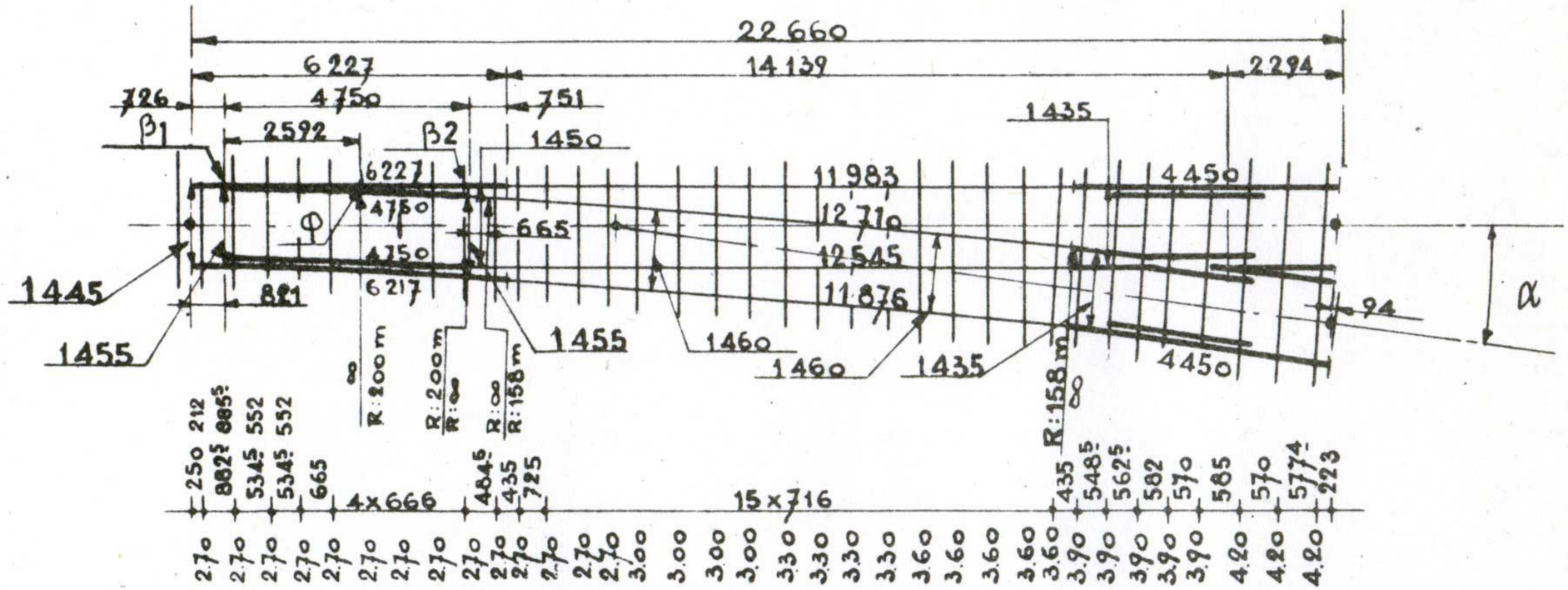
11-OP4P

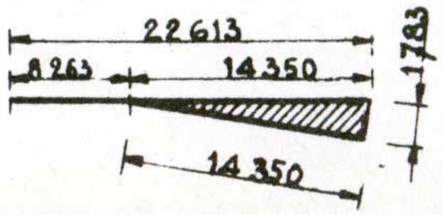
1-66

1966

Ⓑ

F[1]-H[4]





$\beta_1 = 1°\,35'\,30'' = 1^g,768519$

$\beta_2 = 2°\,35'\,09'' = 2^g,873148$

$\varphi = 0°\,22'\,18'' = 0^g,412963$

$\alpha = 7°\,07'\,30'' = 7^g,916667$

R = 158,10 m

tg α = 0,125000

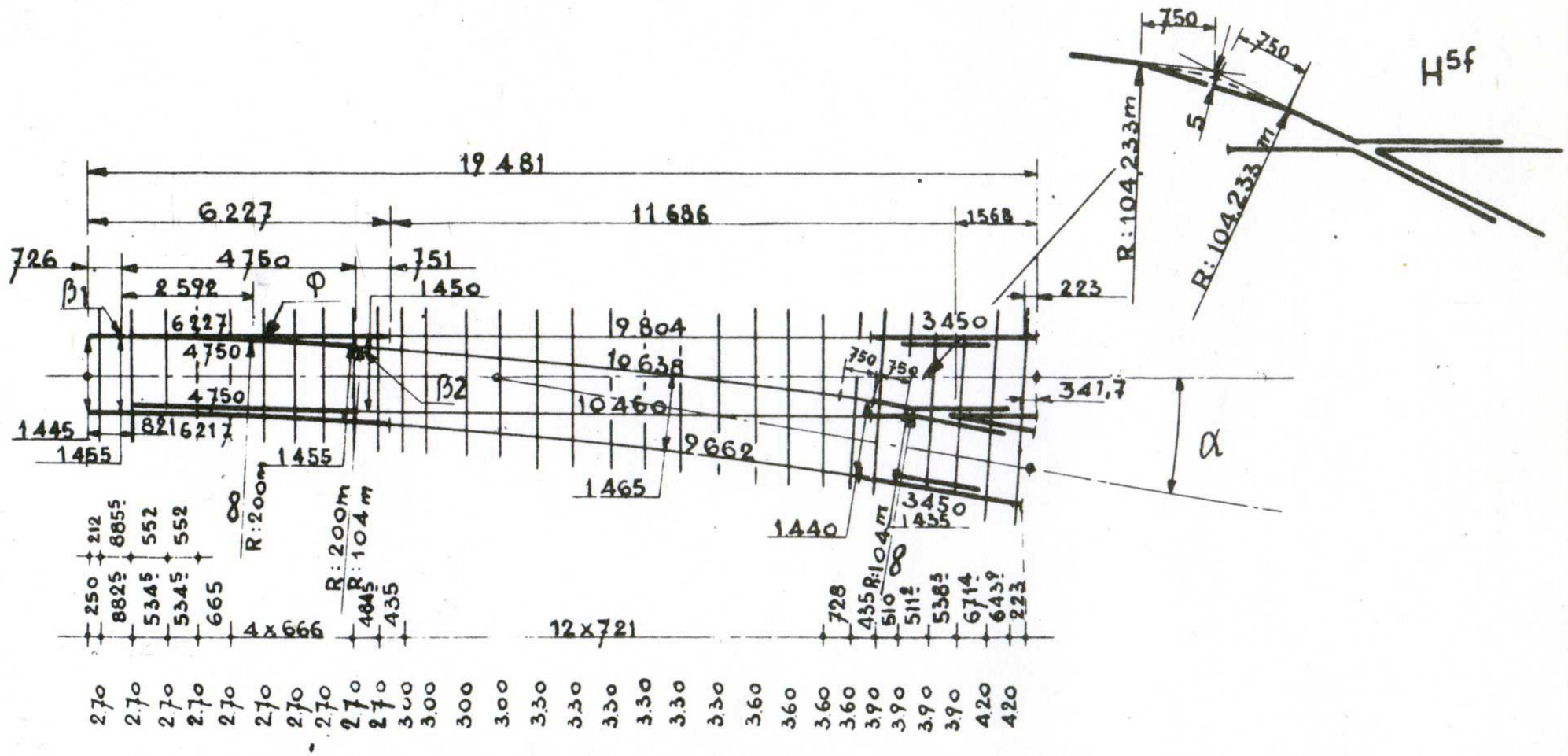
11 - 14

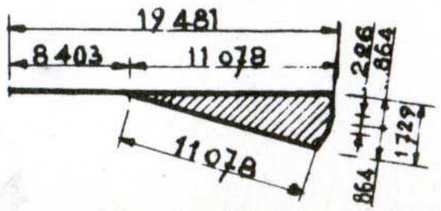
12.65

1966

Ⓑ

$F^{1}-H^{5f}$





$\beta_1 = 1°35'30'' = 1^{g},768519$

$\beta_2 = 2°35'09'' = 2^{g},873148$

$\varphi = 0°22'18'' = 0^{g},412963$

$\alpha = 8°57'01'' = 9^{g},944753$

$R = 104,23\ m$

$tg\ \alpha = 0,157495$

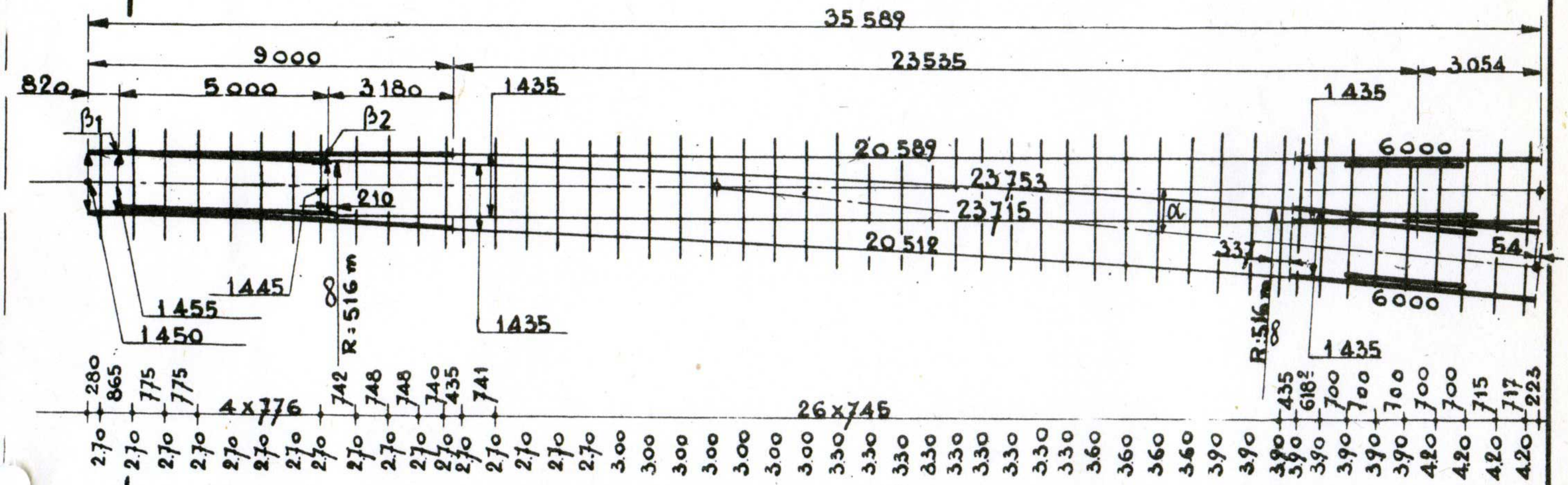
11 - 15 f

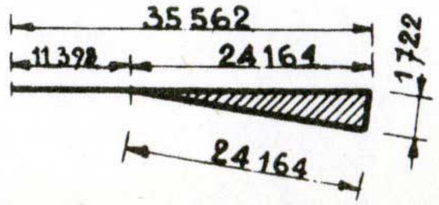
12-65

1966

Ⓑ

$F^{3}-H^{1}$





$\beta_1 = \beta_2 = 1°\,30'\,46'' = 1^{g},680864$ $R = 516{,}38\ m$

$\alpha = 4°05'00'' = 4^{g},537037$ $tg\,\alpha = 0{,}071388$

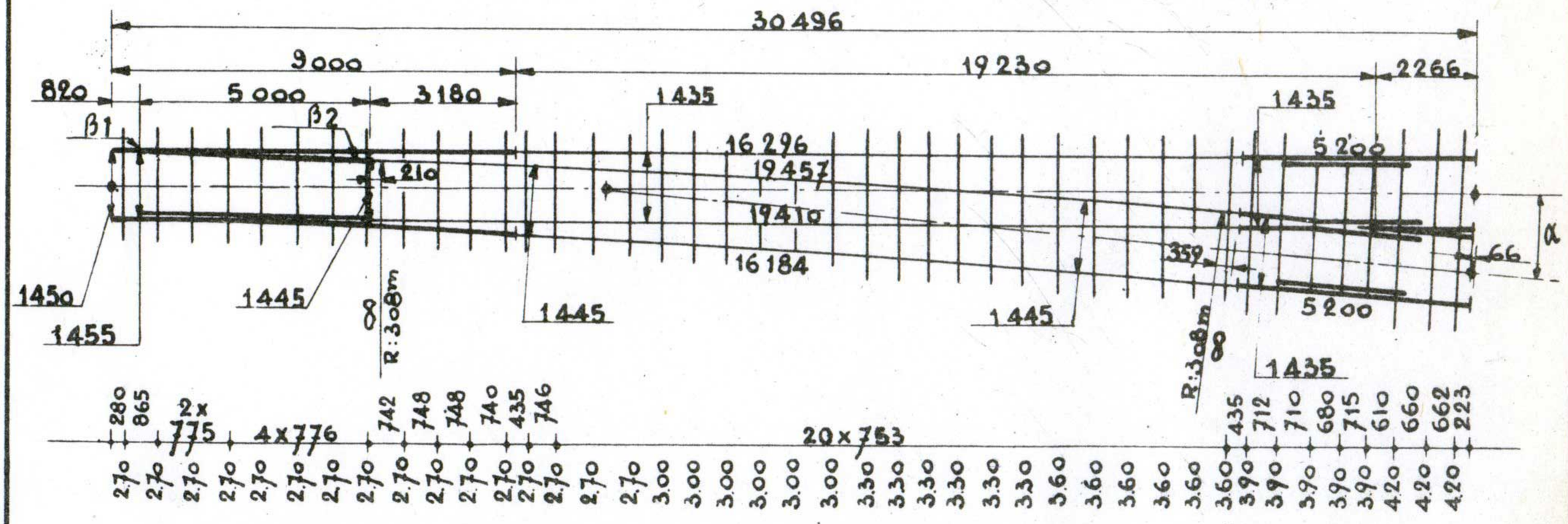
11 - 31

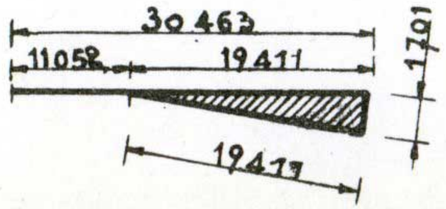
12-65

1966

Ⓑ

F^3-H^2





$\beta_1 = \beta_2 = 1°\,30'\,46'' = 1^g,680864$ $R = 307{,}61$ m

$\alpha = 5°\,01'\,24'' = 5^g,581481$ $\operatorname{tg}\alpha = 0{,}087899$

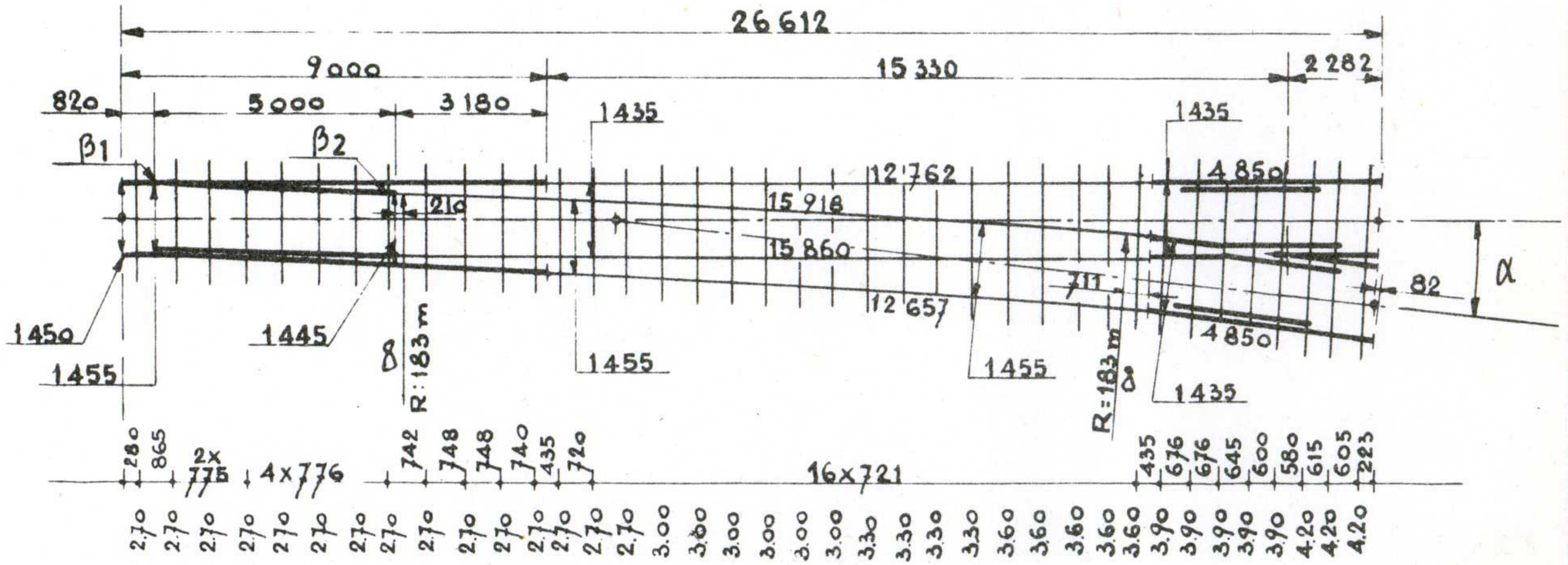
11 - 32

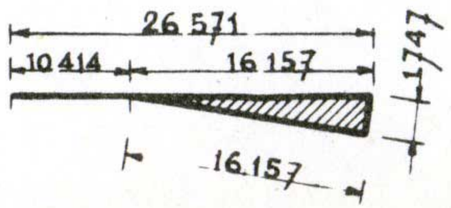
12·65

1966

Ⓑ

$F^3 - H^3$





$\beta_1 = \beta_2 = 1°\,30'\,46'' = 1^g,680864$ $R = 182,89\,m$

$\alpha = 6°\,11'\,55'' = 6^g,887346$ $\operatorname{tg}\alpha = 0,108611$

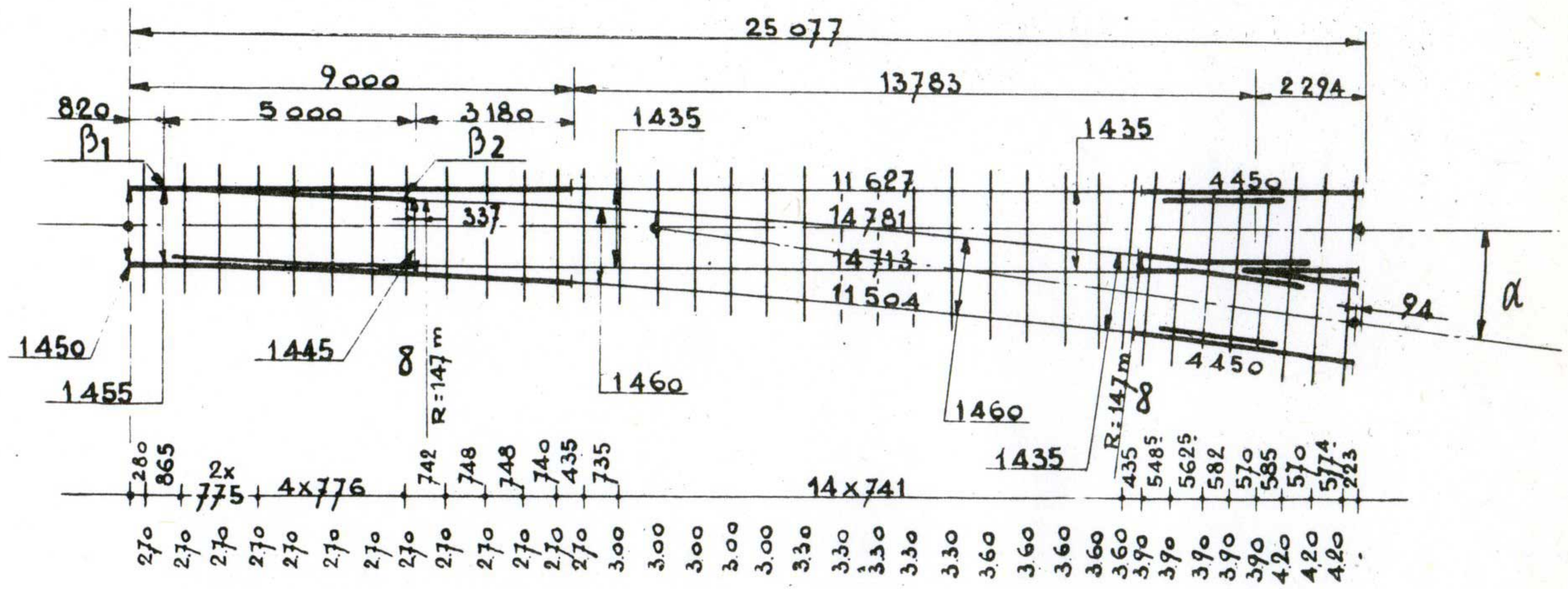
11 - 33

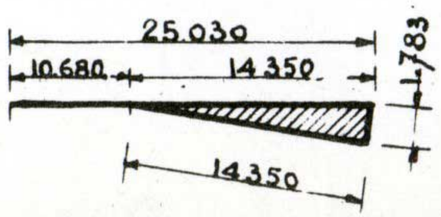
12-65

1966

Ⓑ

$F^3 - H^4$





$\beta_1 = \beta_2 = 1°30'46'' = 1^g,680864$

$\alpha = 7°07'30'' = 7^g,916667$

$R = 147,42\ m$

$tg\,\alpha = 0,125000$

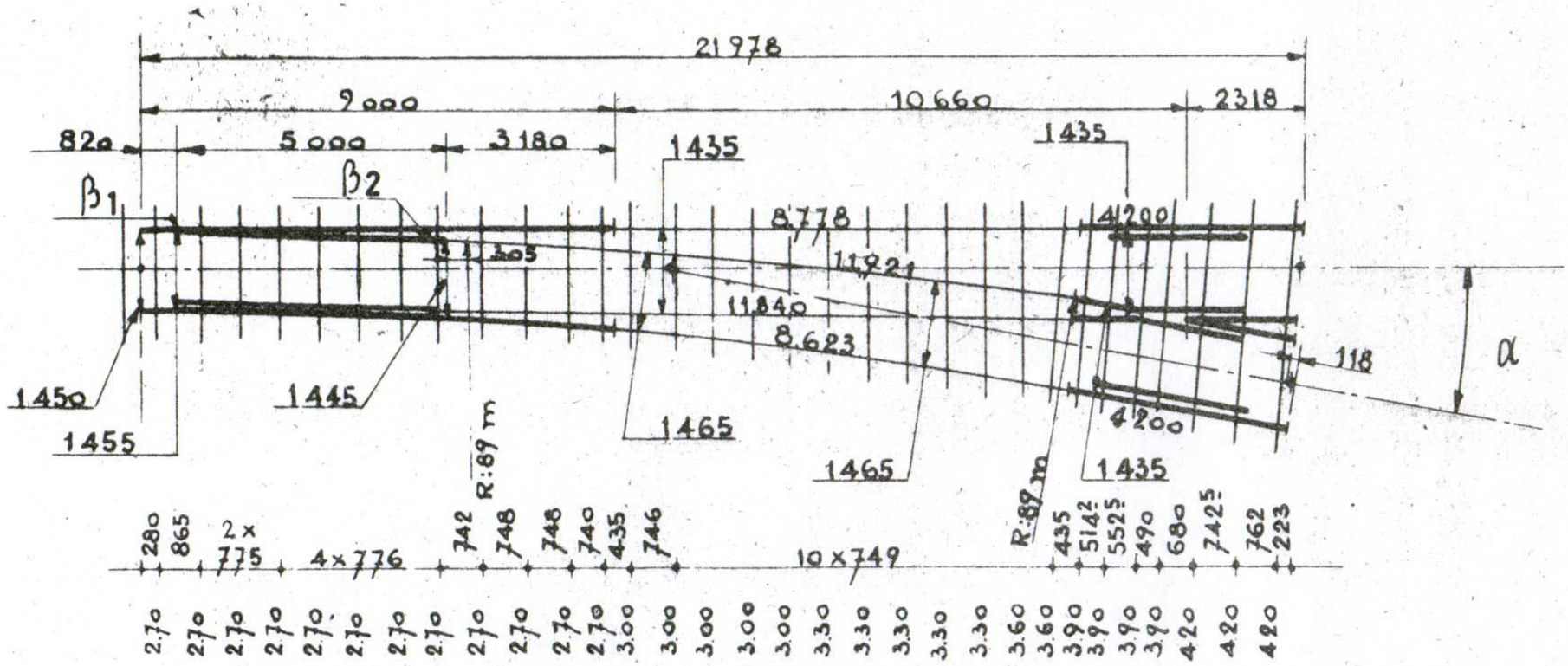
11 - 34

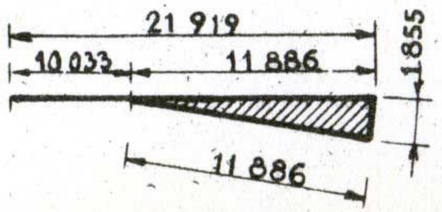
12.65

1966

Ⓑ

$F^3 - H^5$





$\beta_1 = \beta_2 = 1°30'46'' = 1^g,680864$ $R = 89,18$ m

$\alpha = 8°57'01'' = 9^g,944753$ $\operatorname{tg}\alpha = 0,157495$

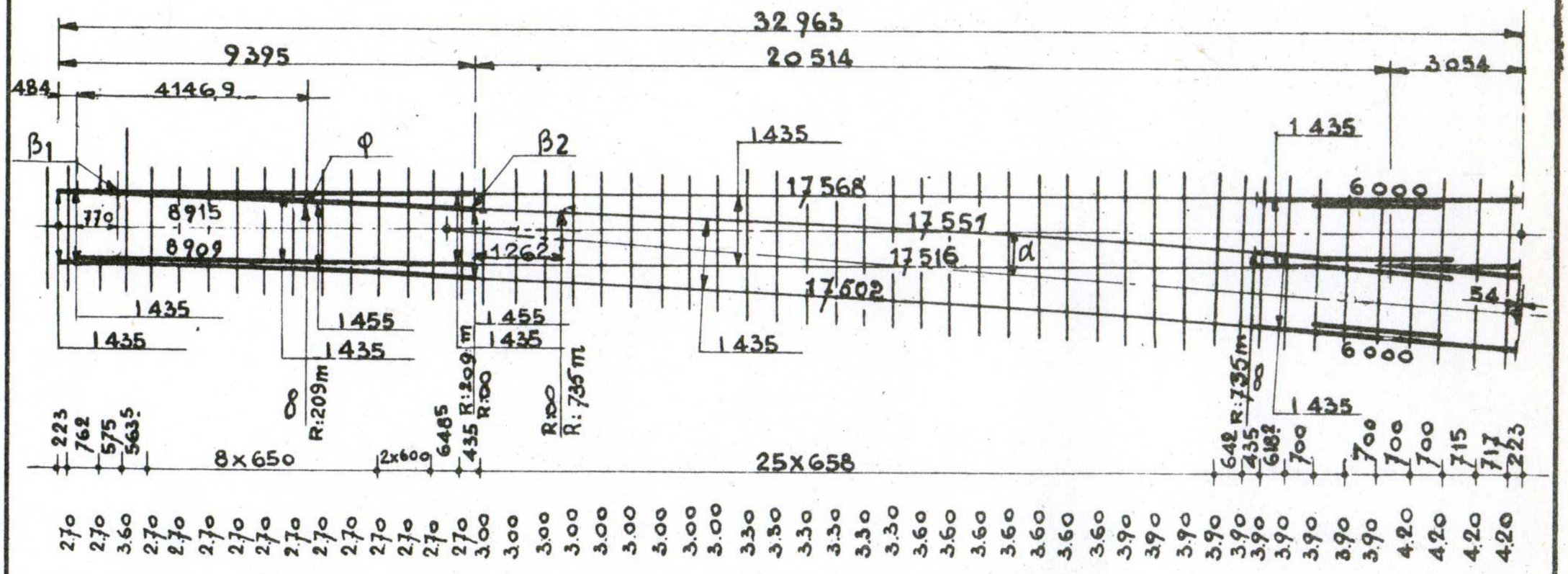
11 - 35

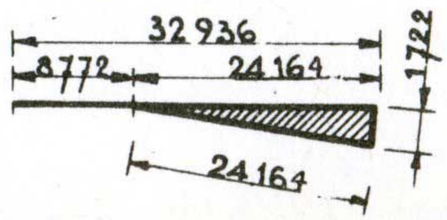
12·65

1966

Ⓑ

$F^4 - H^1$





$\beta 1 = 1°13'18'' = 1^g,357444$

$\beta 2 = 2°48'48'' = 3^g,125957$

$\varphi = 0°16'59'' = 0^g,314562$

$\alpha = 4°05'00'' = 4^g,537037$

R = 734,87 m

tg α = 0,071388

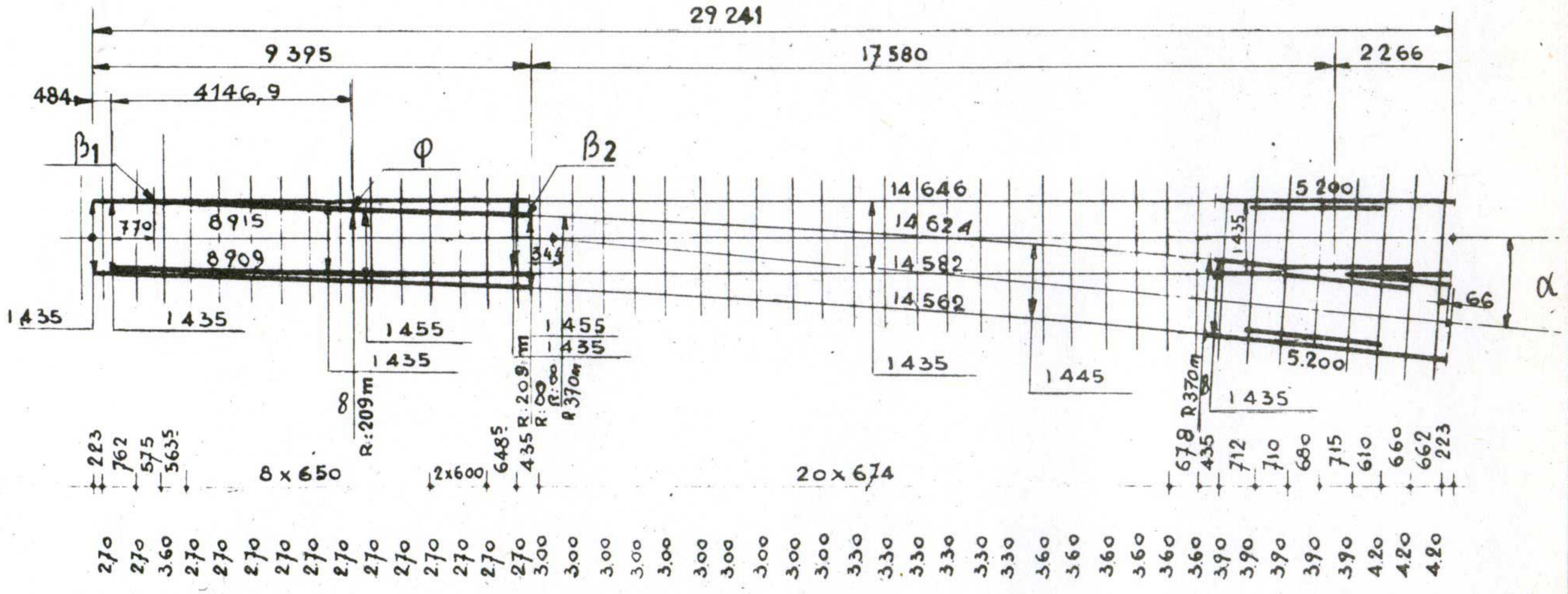
11 -41

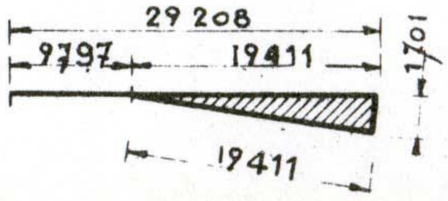
72-65

1966

Ⓑ

$F^4 - H^2$





β1 = 1° 13' 18" = 1^g,357444
β2 = 2° 48' 48" = 3^g,125957
φ = 0° 16' 59" = 0^g,314562
α = 5° 01' 24" = 5^g,581481

R = 370,18 m

tg α = 0,087899

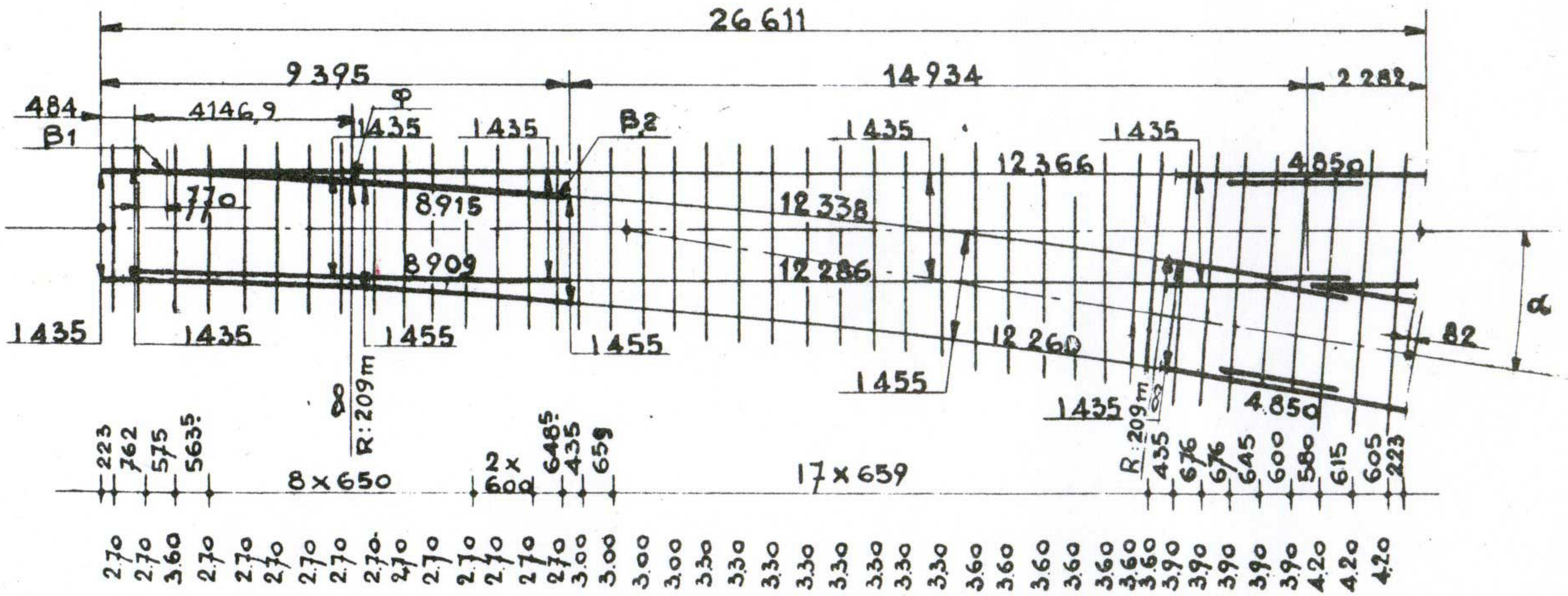
11 - 42

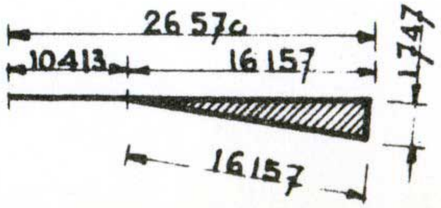
12-65

1966

Ⓑ

$F^4 - H^3$





$\beta_1 = 1°13'18'' = 1^g,357444$

$\beta_2 = 2°48'48'' = 3^g,125957$

$\varphi = 0°16'59'' = 0^g,314562$

$\alpha = 6°11'55'' = 6^g,887346$

R = 208,79 m

tg α = 0,108611

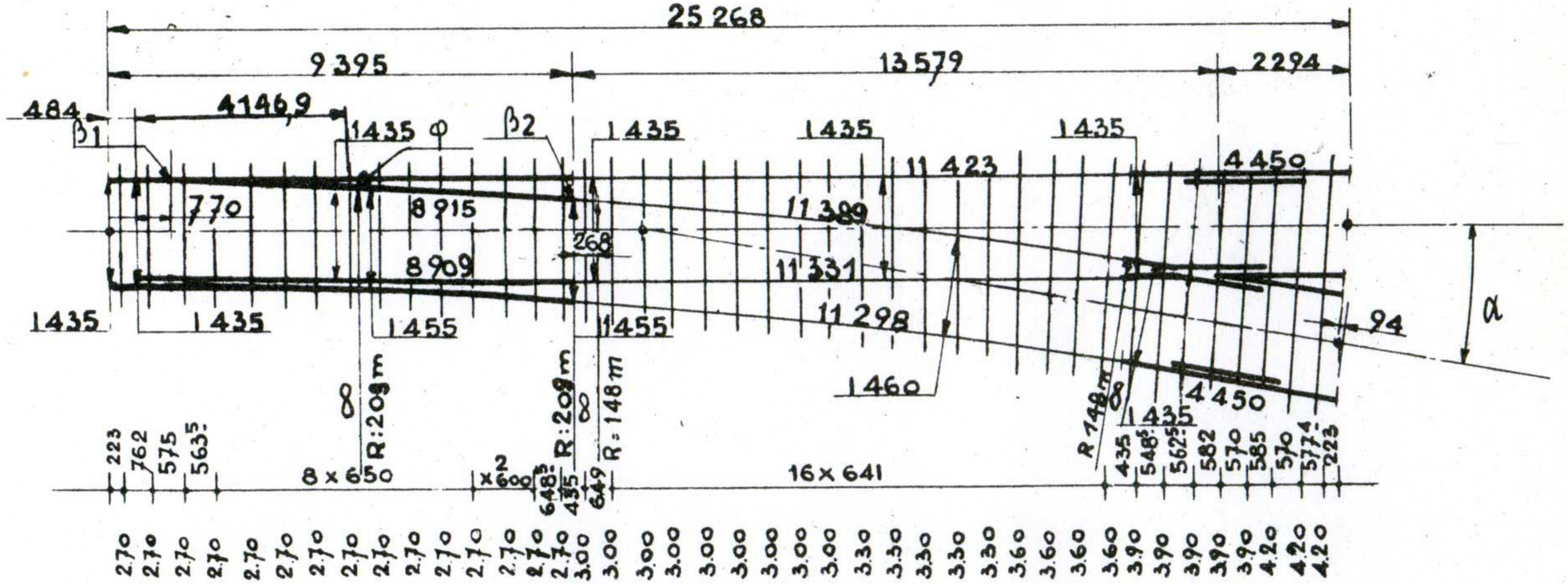
11 - 43

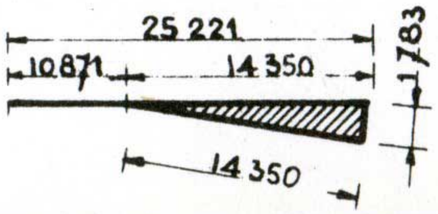
m. 66

1966

Ⓑ

$F^4 - H^4$





$\beta 1 = 1°13'18'' = 1^{g},357444$

$\beta 2 = 2°48'48'' = 3^{g},125957$

$\varphi = 0°16'59'' = 0^{g},314562$

$\alpha = 7°07'30'' = 7^{g},916667$

$R = 147,75\ m$

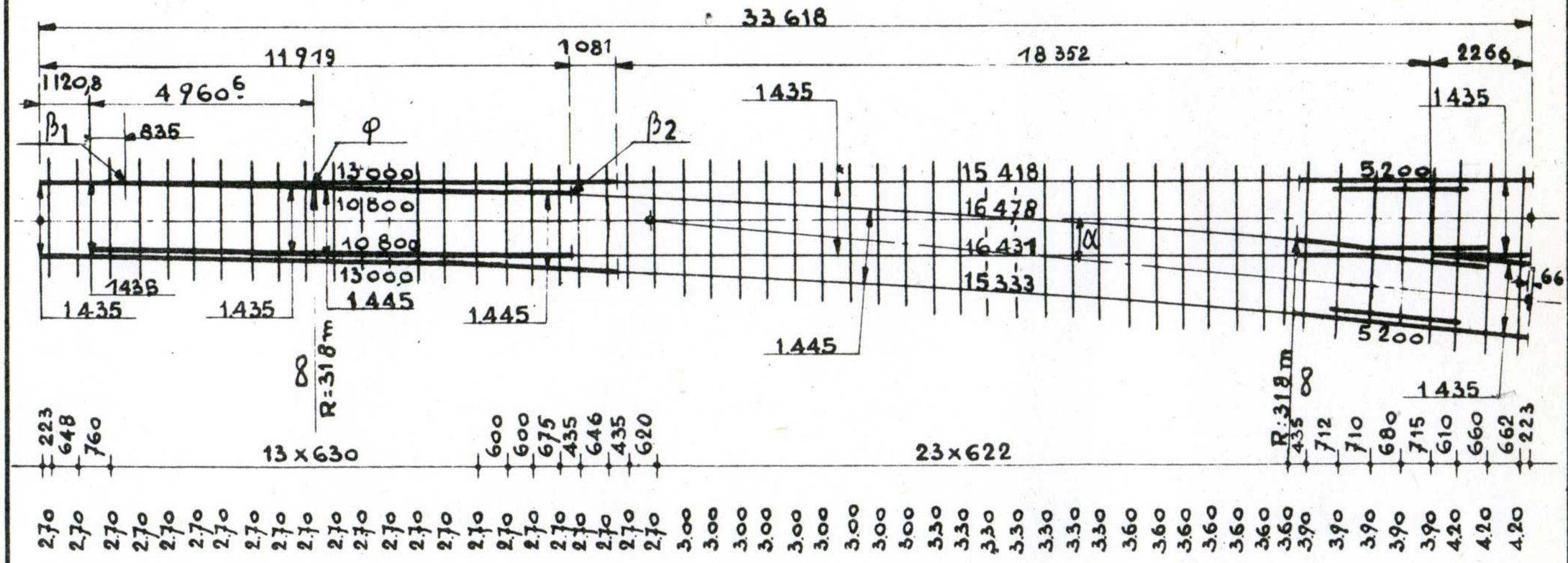
$tg\ \alpha = 0,125000$

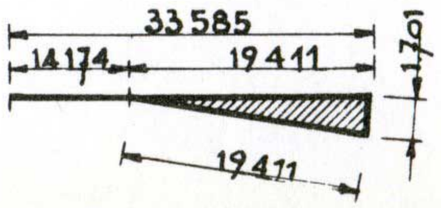
11 -44

1966

Ⓑ

$F^5 - H^2$





$\beta 1 = 1°\,00'\,00'' = 1^g,111111$

$\beta 2 = 2°\,03'\,10'' = 2^g,280833$

$\varphi = 0$

$\alpha = 5°\,01'\,24'' = 5^g,581481$

$R = 317{,}79$ m

$\operatorname{tg}\alpha = 0{,}087899$

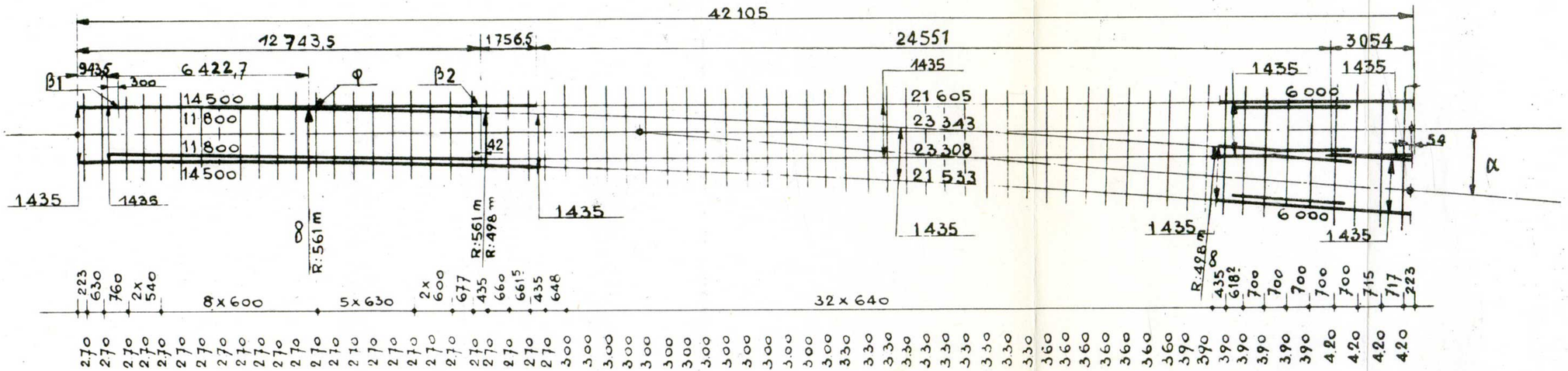
11 – 52

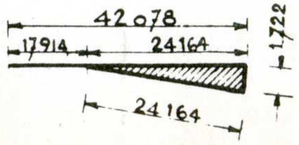
12·65

1966

Ⓑ

$F^{6} - H^{1}$





$\beta_1 = 0°40'26'' = 0^{g},748688$

$\beta_2 = 1°24'03'' = 1^{g},556481$

$\varphi = 0°10'42'' = 0^{g},198037$

$\alpha = 4°05'00'' = 4^{g},537037$

R = 497,65 m

tg α = 0,071388

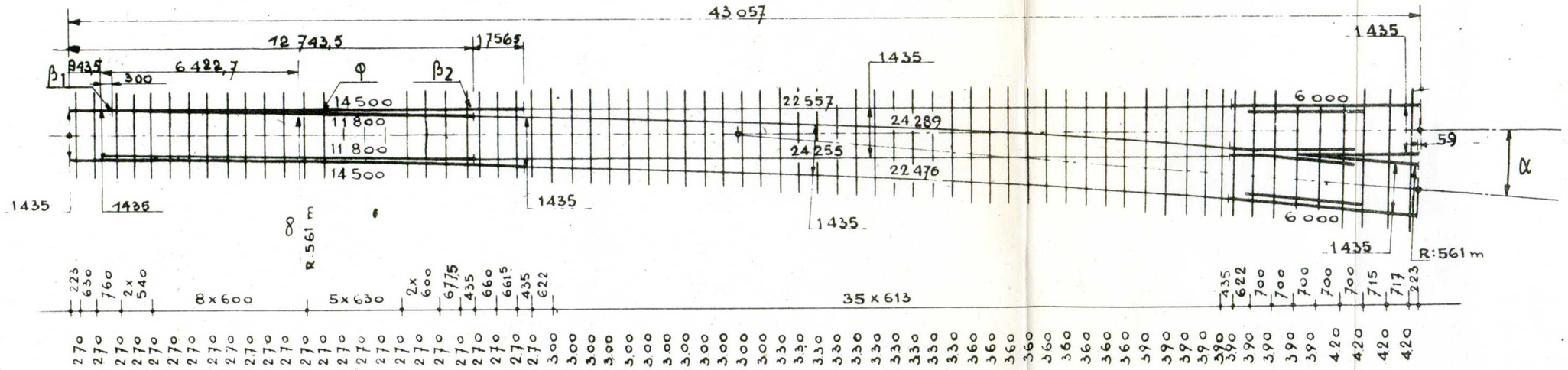
11-61

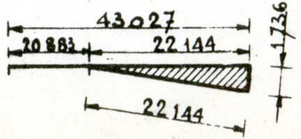
12-65

1966

Ⓑ

F^6-H^{1A}





β_1 = 0° 40′ 26″ = $0^{g},748688$

β_2 = 1° 24′ 03″ = $1^{g},556481$

φ = 0° 10′ 42″ = $0^{g},198037$

α = 4° 29′ 34″ = $4^{g},991830$

R = 561,26 m

tg α = 0,078572

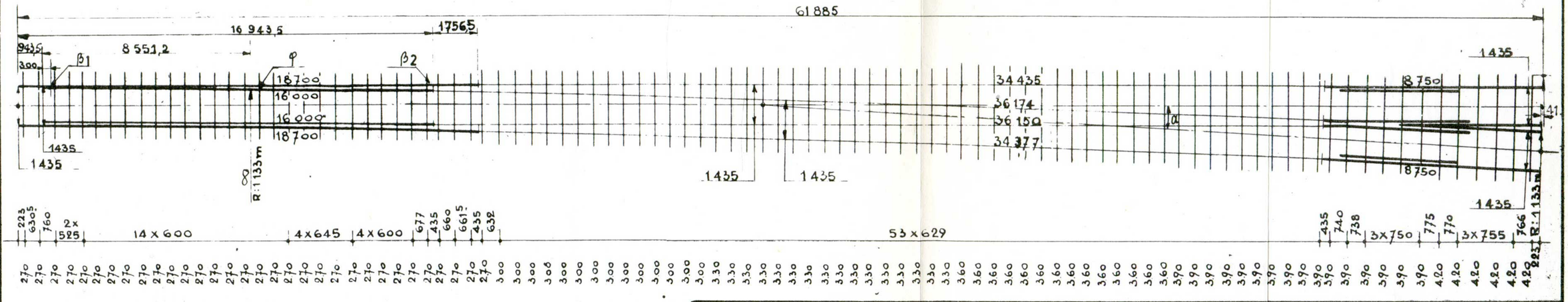
11 - 61 A

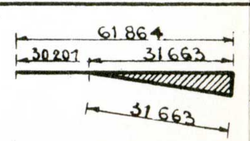
12-66

1966

Ⓑ

F⁷-H⁰ᴬ





β1 = 0° 30′ 00″ = 0ᵍ,555556
β2 = 0° 52′ 36″ = 0ᵍ,974136
φ = 0
α = 3° 08′ 55″ = 3ᵍ,498457

R = 1132,92 m

tg α = 0,055009

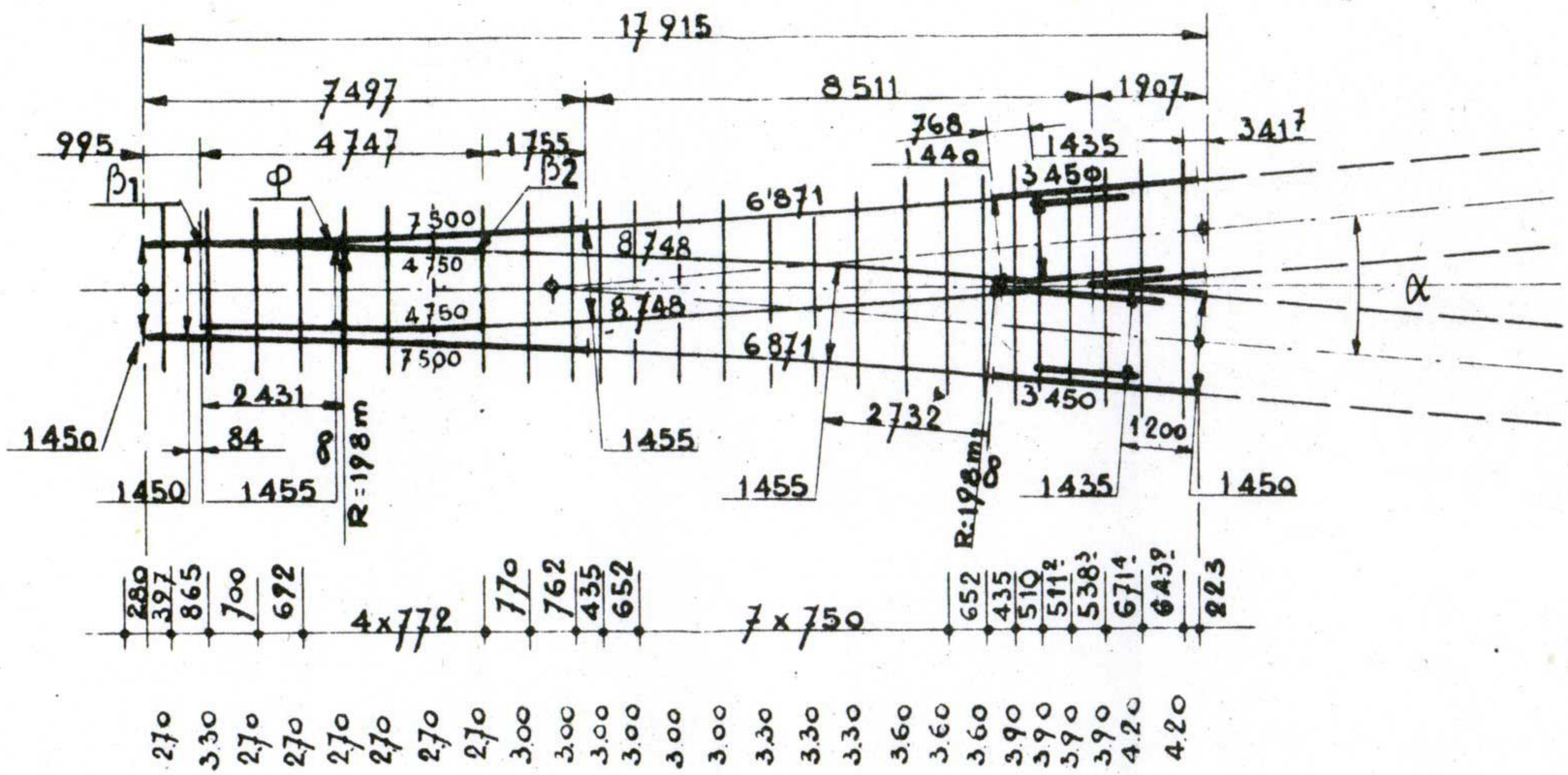
11 - 70 A

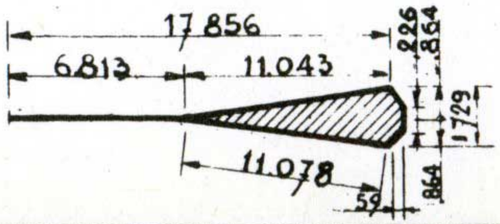
12-65

1966

B

$F^{2sym}-H^{5f}$





$\beta_1 = 1°16'46' = 1^{9},421605$

$\beta_2 = 1°57'00'' = 2^{9},166667$

$\varphi = 0$

$\alpha = 8°57'01'' = 9^{9},944753$

R = 198,41 m

tg α = 0,157495

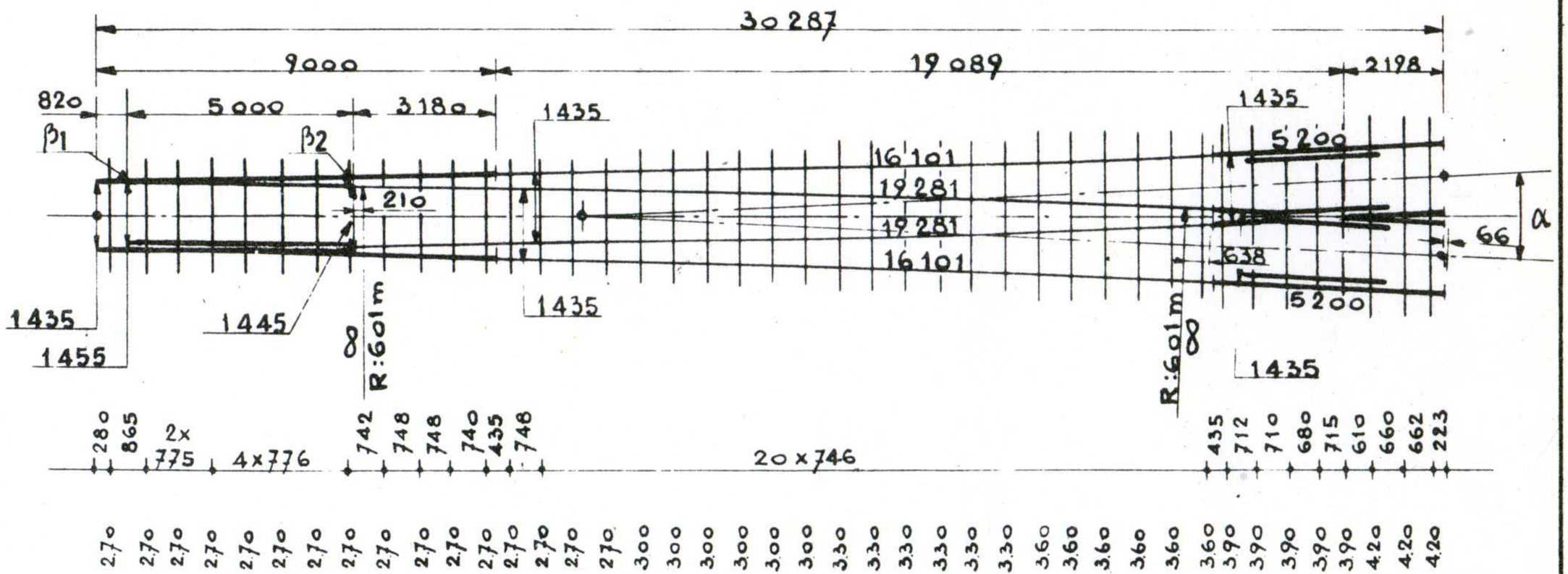
12 - 25 f

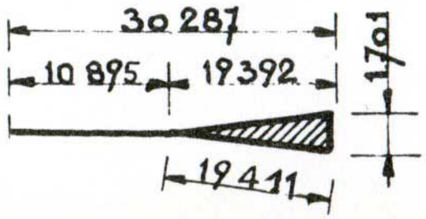
12-65

1966

Ⓑ

$F^{3sym}-H^{2}$





$\beta_1 = \beta_2 = 0°\,45'\,23'' = 0^{g},840432$ $R = 601{,}03$ m

$\alpha = 5°\,01'\,24'' = 5^{g},581481$ $\operatorname{tg}\alpha = 0{,}087899$

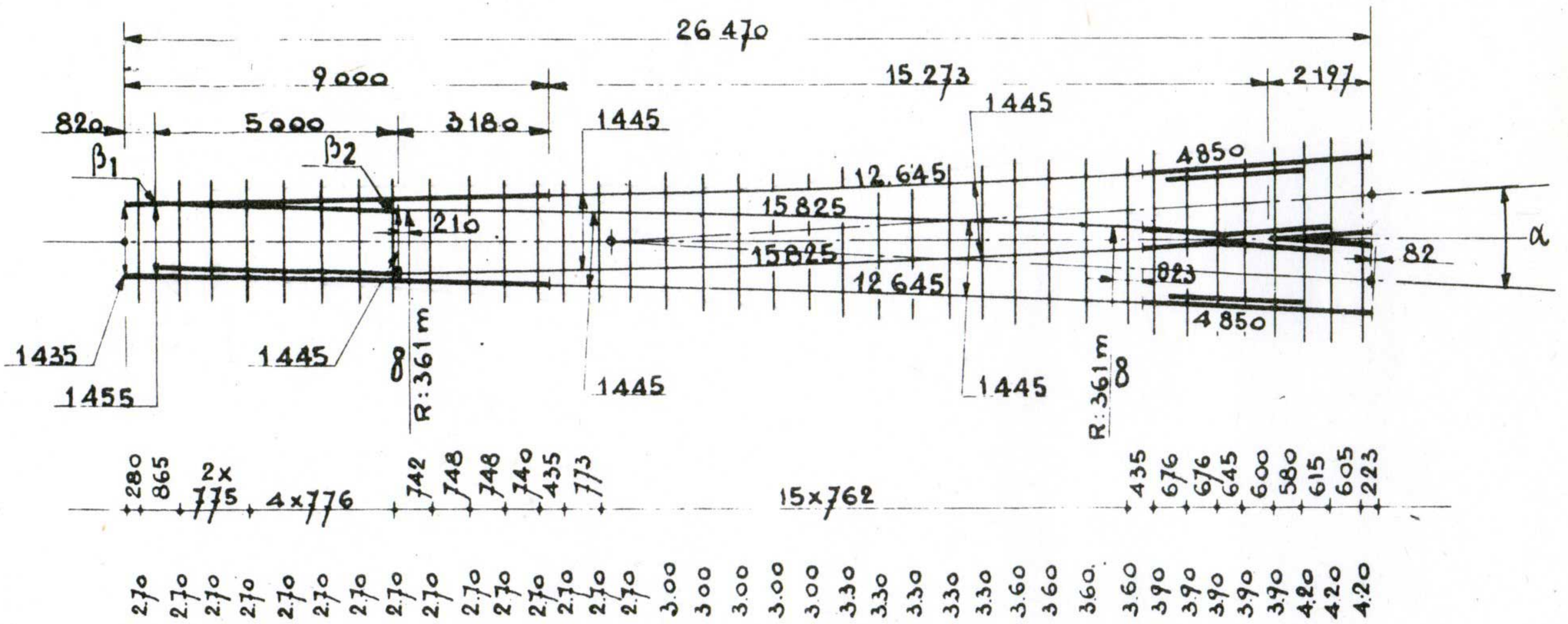
12 - 32

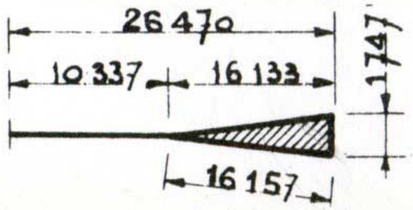
12.65

1966

Ⓑ

$F^{3sym}-H^3$





$\beta_1 = \beta_2 = 0° 45' 23'' = 0^g,840432$ $R = 361{,}05$ m

$\alpha = 6° 11' 55'' = 6^g 887346$ $tg\,\alpha = 0{,}108611$

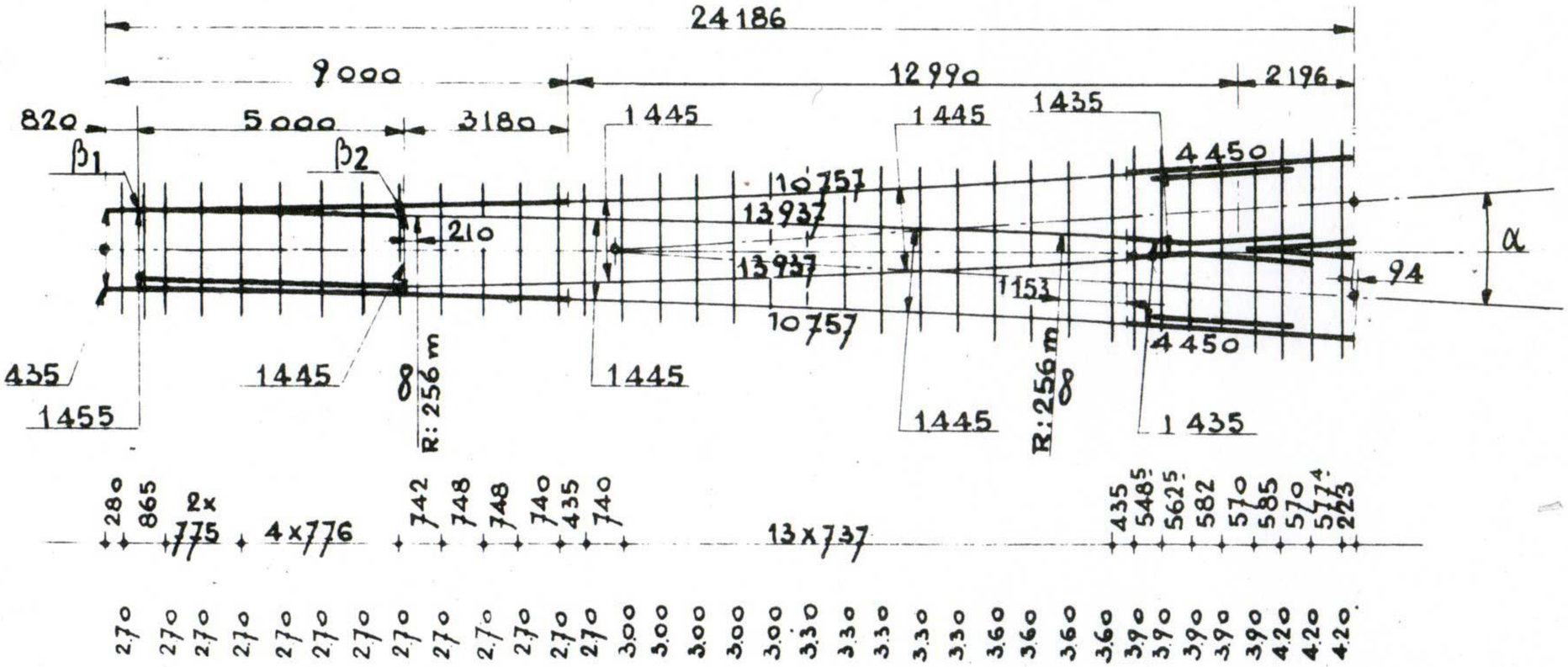
12 - 33

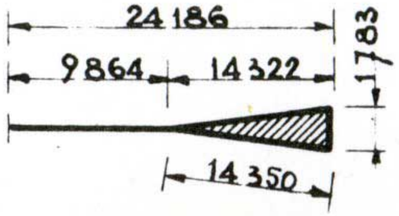
12·65

1966

Ⓑ

$F^{3sym}-H^{4}$





$\beta_1 = \beta_2 = 0°45'23'' = 0^{g},840432$

$\alpha = 7°07'30'' = 7^{g},916667$

$R = 256{,}33$ m

$\lg \alpha = 0{,}125000$

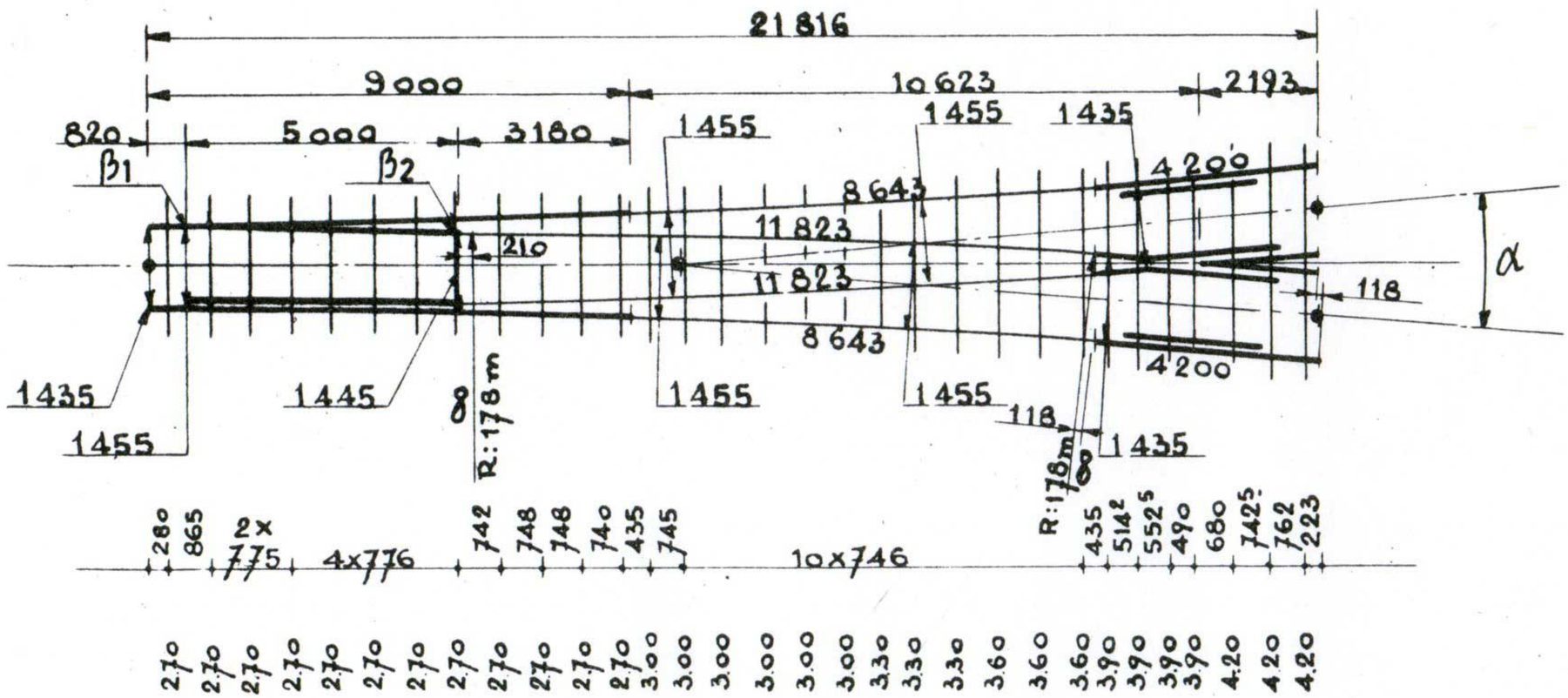
12 - 34

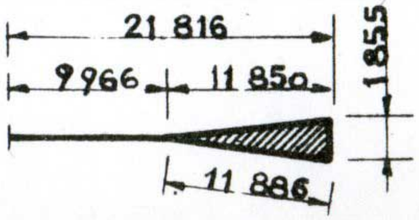
12-65

1966

Ⓑ

F 3sym – H 5





$\beta_1 = \beta_2 = 0°45'23'' = 0^g,840432$

$\alpha = 8°57'01'' = 9^g,944753$

R = 178,35 m

$tg\alpha = 0,157495$

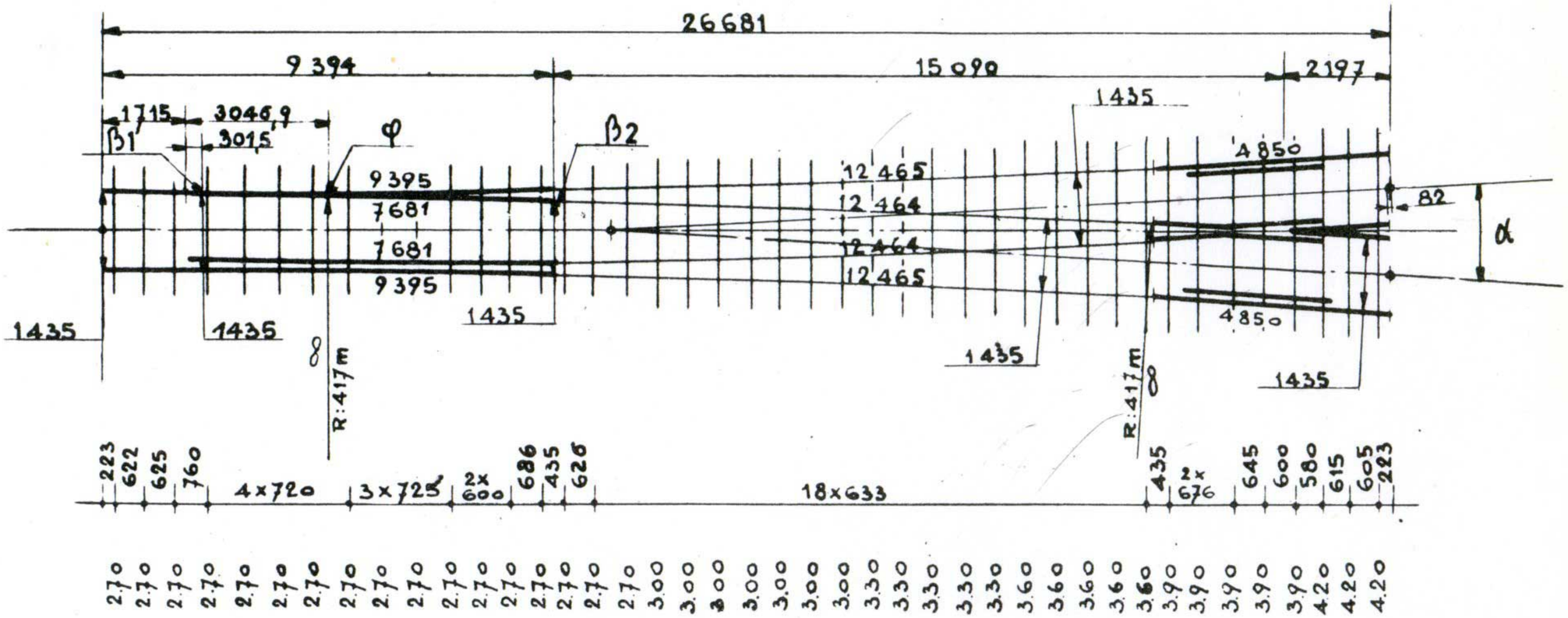
12 - 35

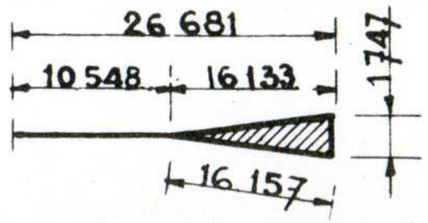
12.65

1966

Ⓑ

$F^{4\,\text{sym}}\text{—}H^{3}$





$\beta_1 = 0°45'04'' = 0^{g},834722$

$\beta_2 = 1°23'16'' = 1^{g},541821$

$\varphi = 0$

$\alpha = 6°11'55'' = 6^{g},887346$

R = 417,16 m

tg α = 0,108611

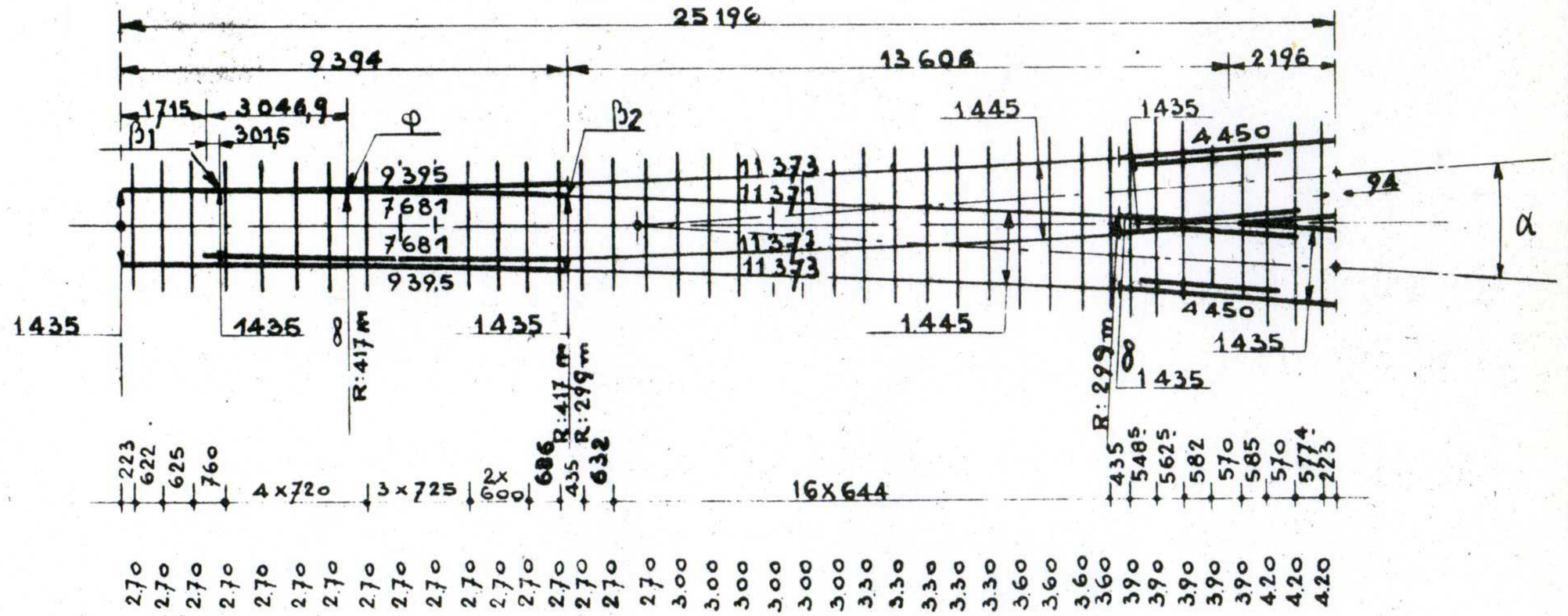
12 – 43

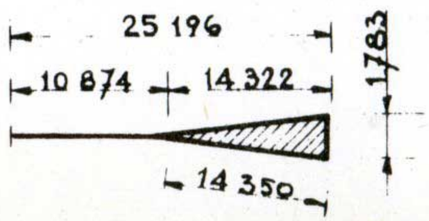
12-65

1966

Ⓑ

$F^{4sym}-H^{4}$





$\beta_1 = 0°45'04'' = 0^{9},834722$

$\beta_2 = 1°23'16'' = 1^{9},541821$

$\varphi = 0$

$\alpha = 7°07'30'' = 7^{9},916667$

R = 299,07 m

tg α = 0,125000

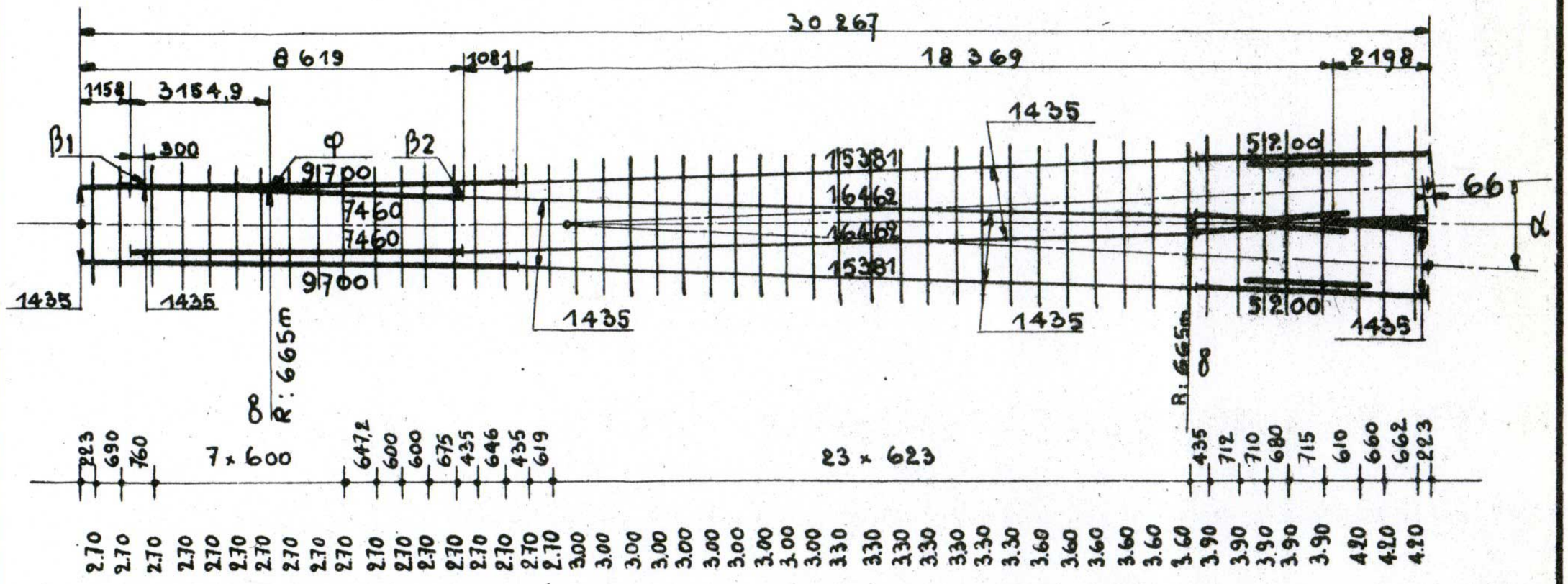
12 – 44

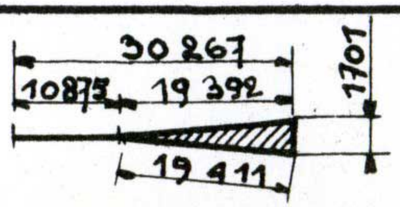
12-65

1966

Ⓑ

$F^{5sym}-H^{2}$





$\beta_1 = 0°43'21'' = 0^{g},802728$

$\beta_2 = 1°05'36'' = 1^{g},214867$

$\varphi = 0$

$\alpha = 5°01'24'' = 5^{g},581481$

R = 665 m

$tg\,\alpha = 0,087899$

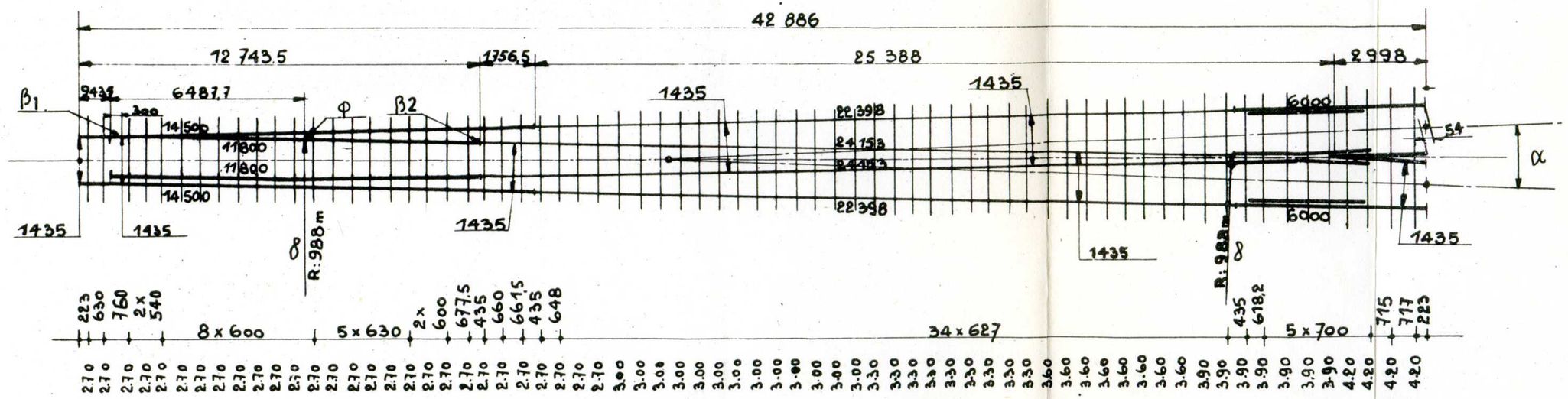
12–52

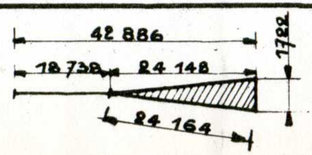
12-65

1966

Ⓑ

F^{6sym}-H^1





$\beta_1 = 0°\,20'\,00'' = 0^{g},370370$

$\beta_2 = 0°\,38'\,29'' = 0^{g},712574$

$\varphi = 0$

$\alpha = 4°\,05'\,00'' = 4^{g},537037$

R = 988,20 m

tg α = 0,071388

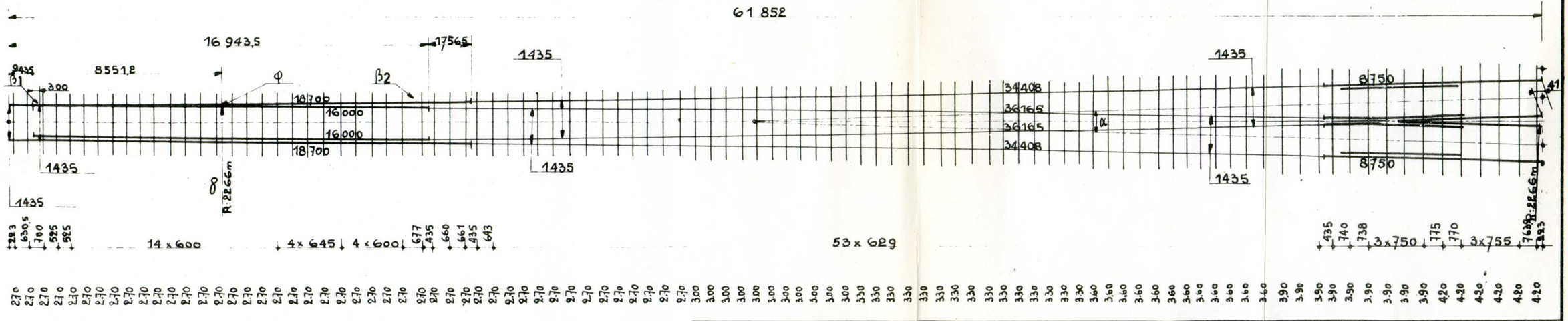
12 -61

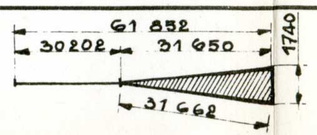
12-65.

1966

Ⓑ

$F^{7sym}-H^{0}$





$\beta_1 = 0°15'00'' = 0^{g},277778$

$\beta_2 = 0°26'18'' = 0^{g},487086$

$\varphi = 0$

$\alpha = 3°08'55'' = 3^{g},498457$

$R = 2265{,}51\ m$

$\lg \alpha = 0{,}055009$

12 – 70

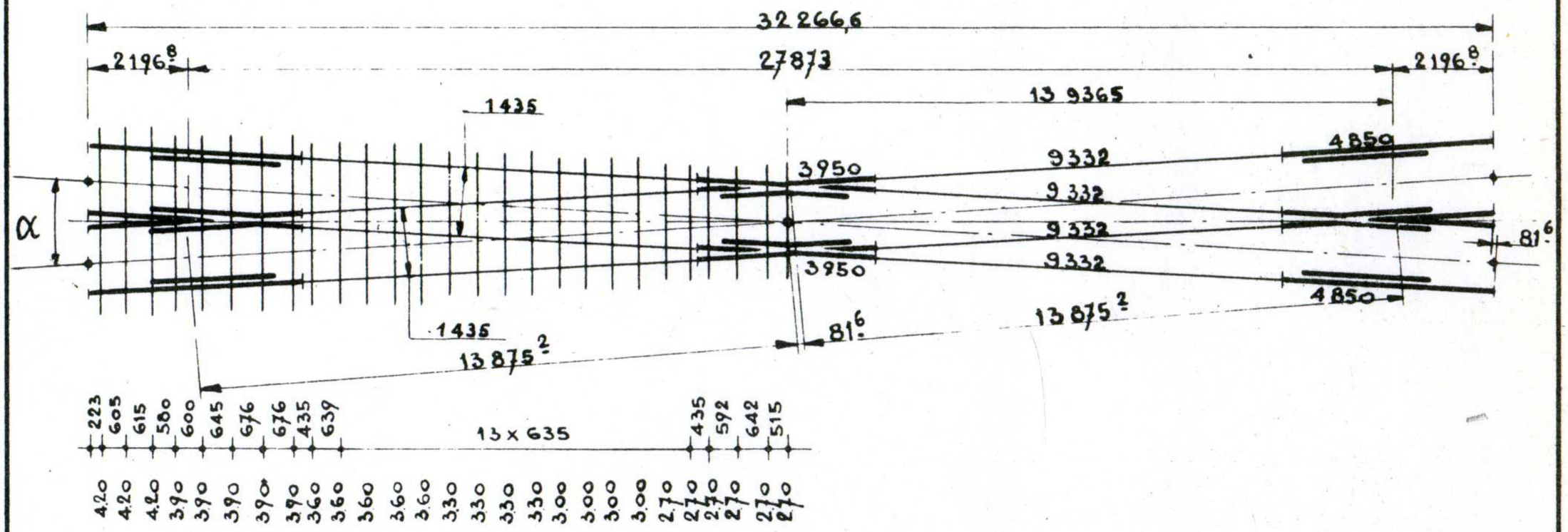
12-65

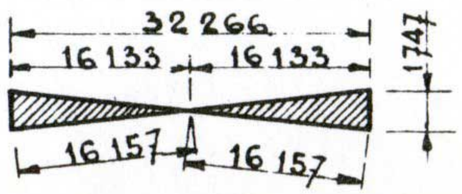
1966

KRUISINGEN

Ⓑ

$H^3 V^3 H^3$





$\alpha = 6°11'55'' = 6^{9},887346 \quad tg\,\alpha = 0{,}108611$

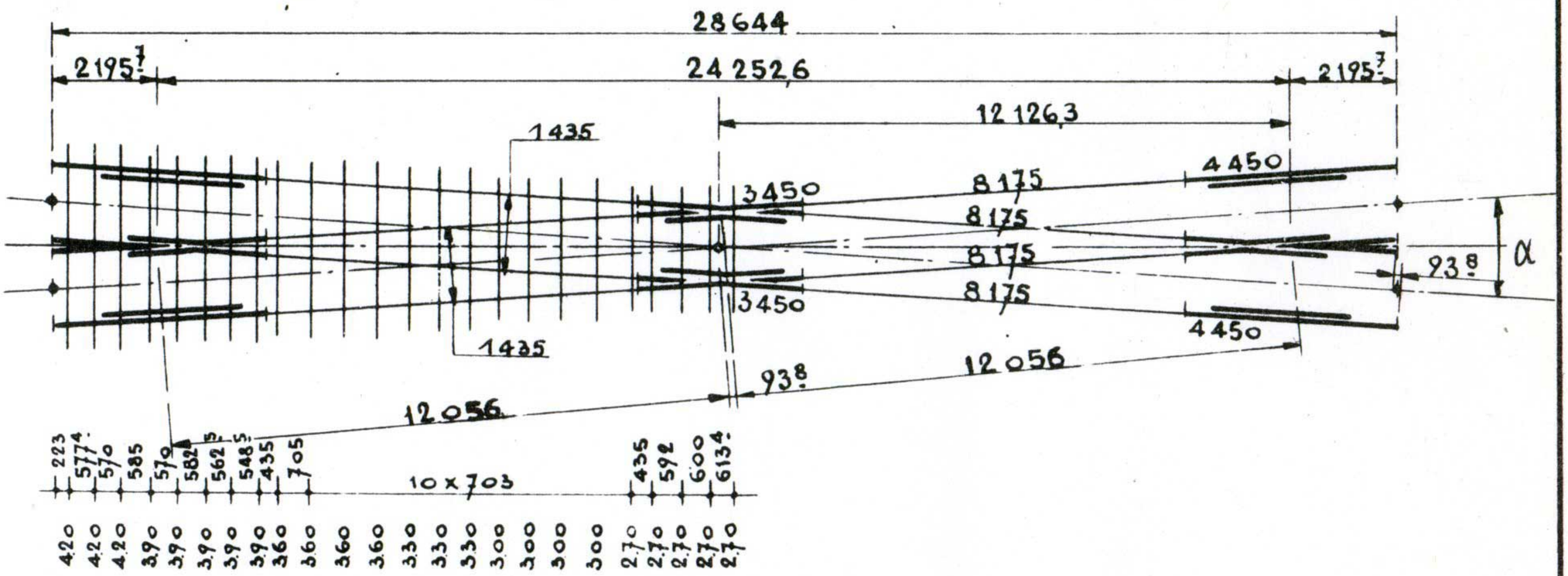
20 - 333

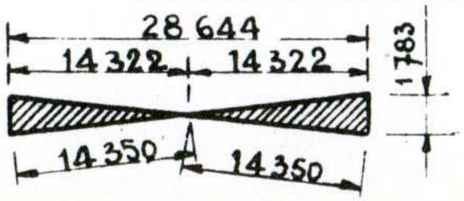
12-65

1966

Ⓑ

$H^4 V^4 H^4$





$\alpha = 7°07'30'' = 7^{9},916667 \quad tg\,\alpha = 0,125000$

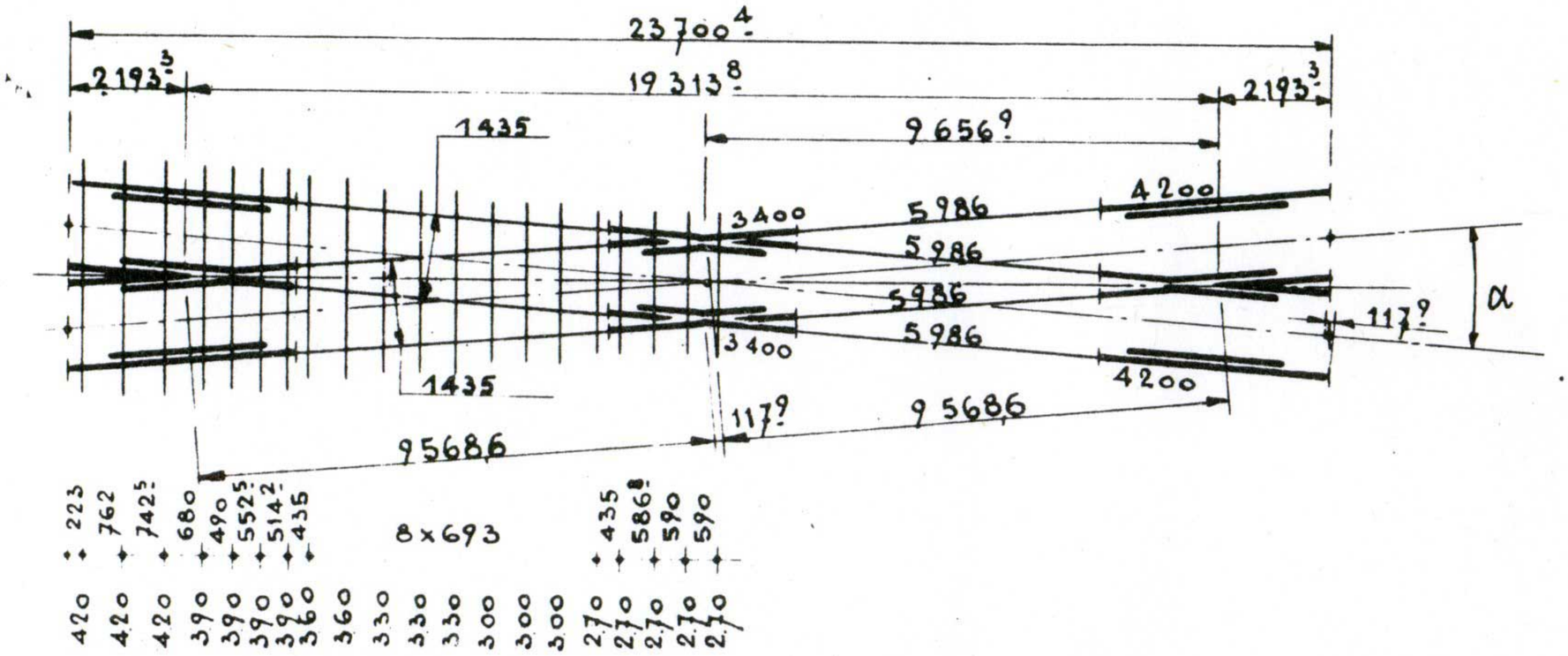
20 - 444

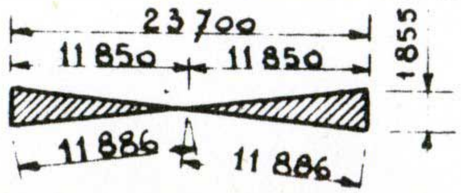
12-65

1966

Ⓑ

$H^5 V^5 H^5$





$\alpha = 8°57'01'' = 9^g,944753$ $\quad tg\,\alpha = 0,157495$

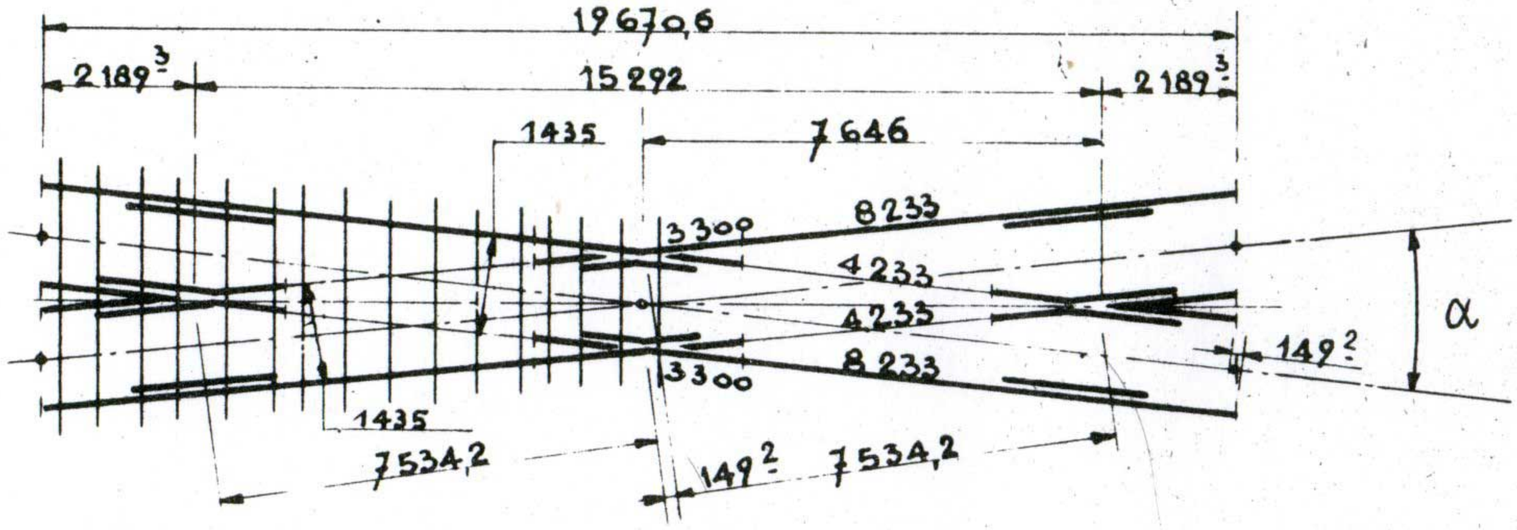
20 - 555

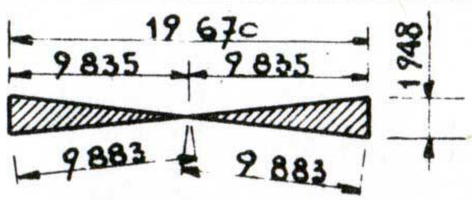
12·65

1966

Ⓑ

$H^6 V^6 H^6$





$\alpha = 11° 18' 40'' = 12^{g},567901 \quad tg\,\alpha = 0,200021$

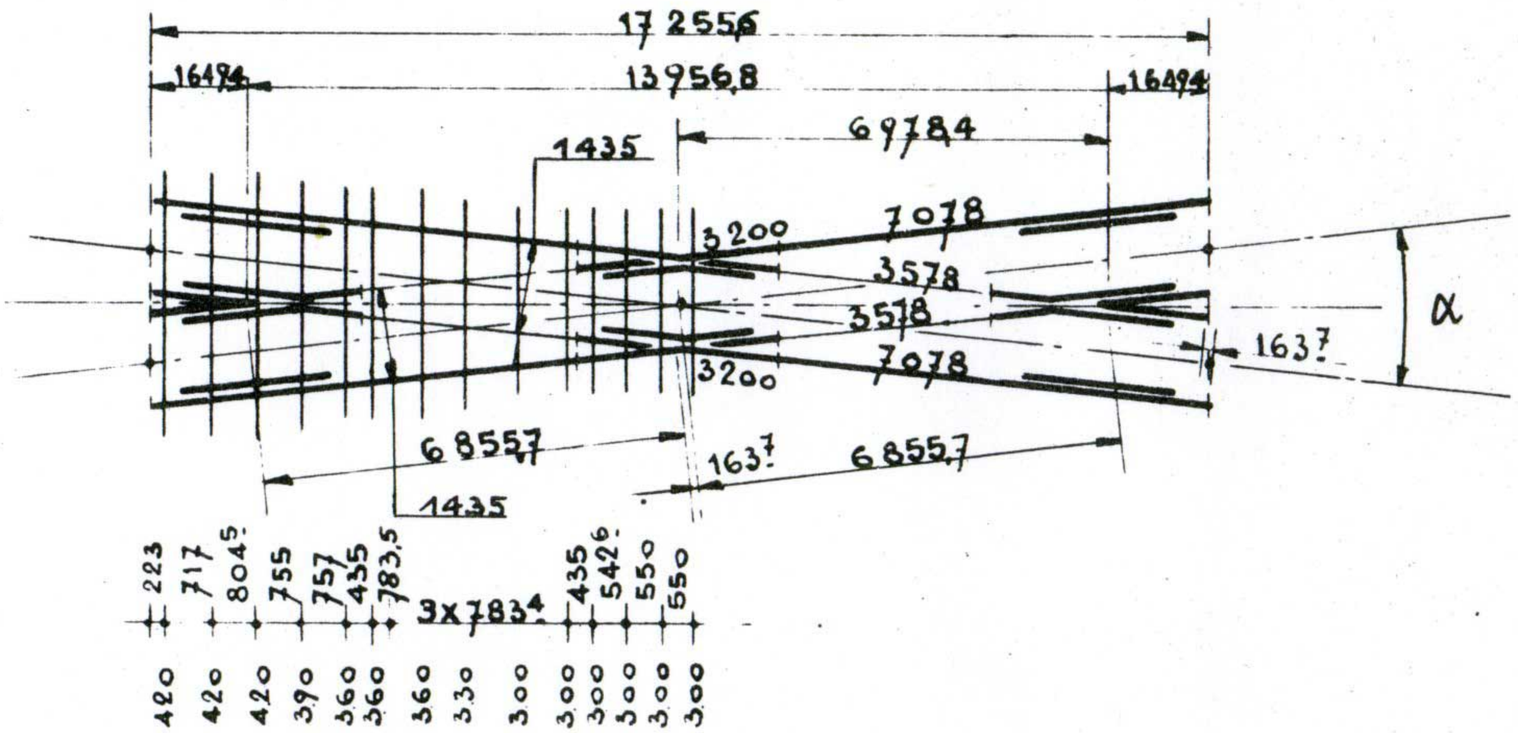
20 - 666

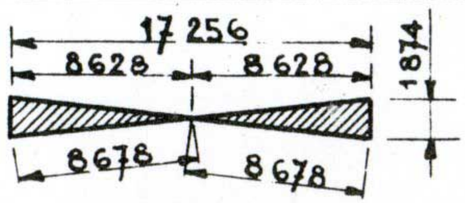
12-65

1966

Ⓑ

$H^7 V^7 H^7$





$\alpha = 12° 23' 50'' = 13^{9},774691 \quad tg\,\alpha = 0{,}219813$

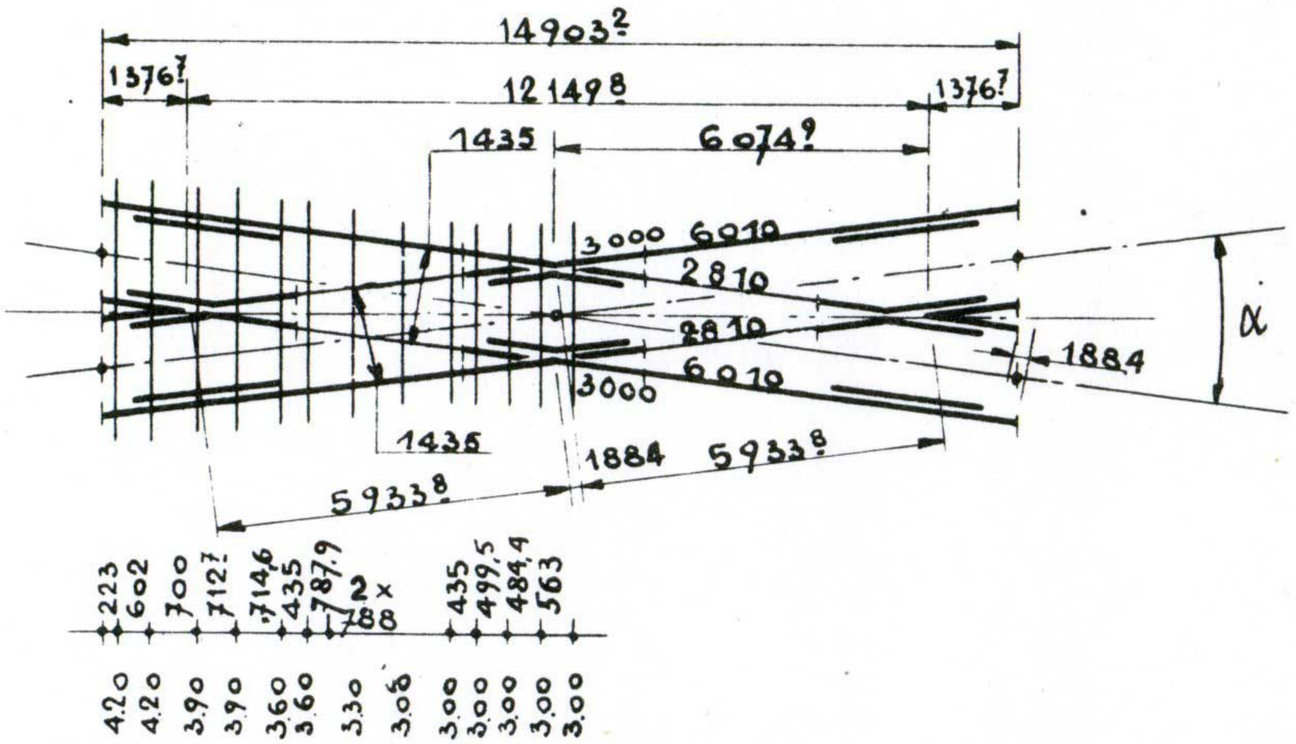
20 - 777

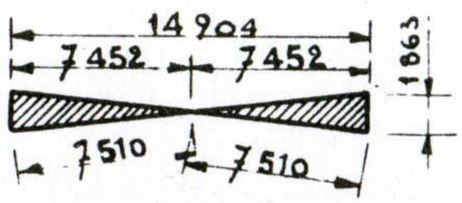
12-65

1966

Ⓑ

$H^8 V^8 H^8$





$\alpha = 14° 15' 00'' = 15^{9},833333 \quad tg\alpha = 0,253968$

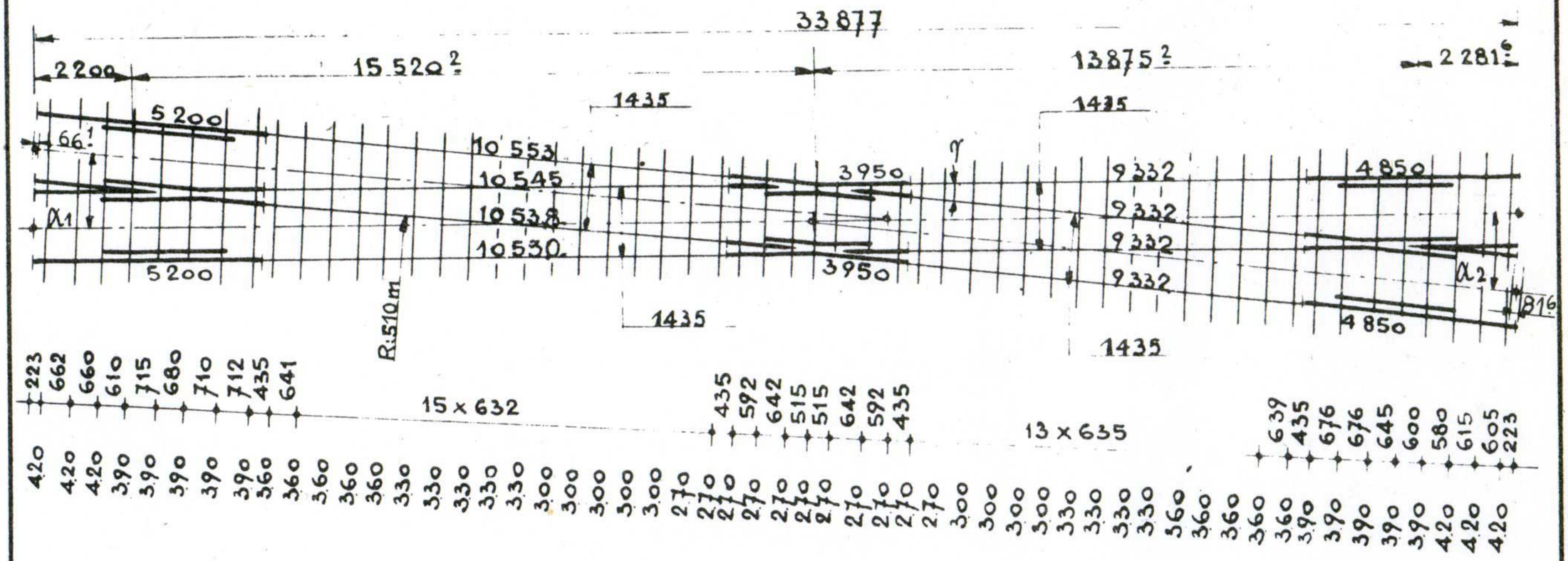
20 - 888

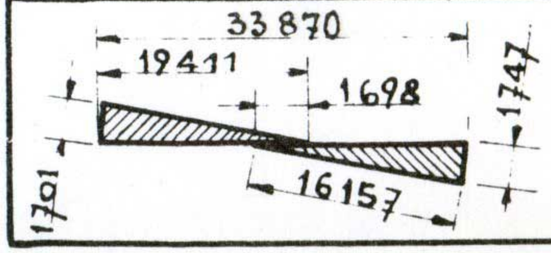
12-65

1966

B

$H^2 V^3 H^3$
ASYM.





$\alpha_1 = 5°01'24'' = 5^g,581481$

$\gamma = \alpha_2 = 6°11'55'' = 6^g,887346$

R = 509,74 m

21 - 233

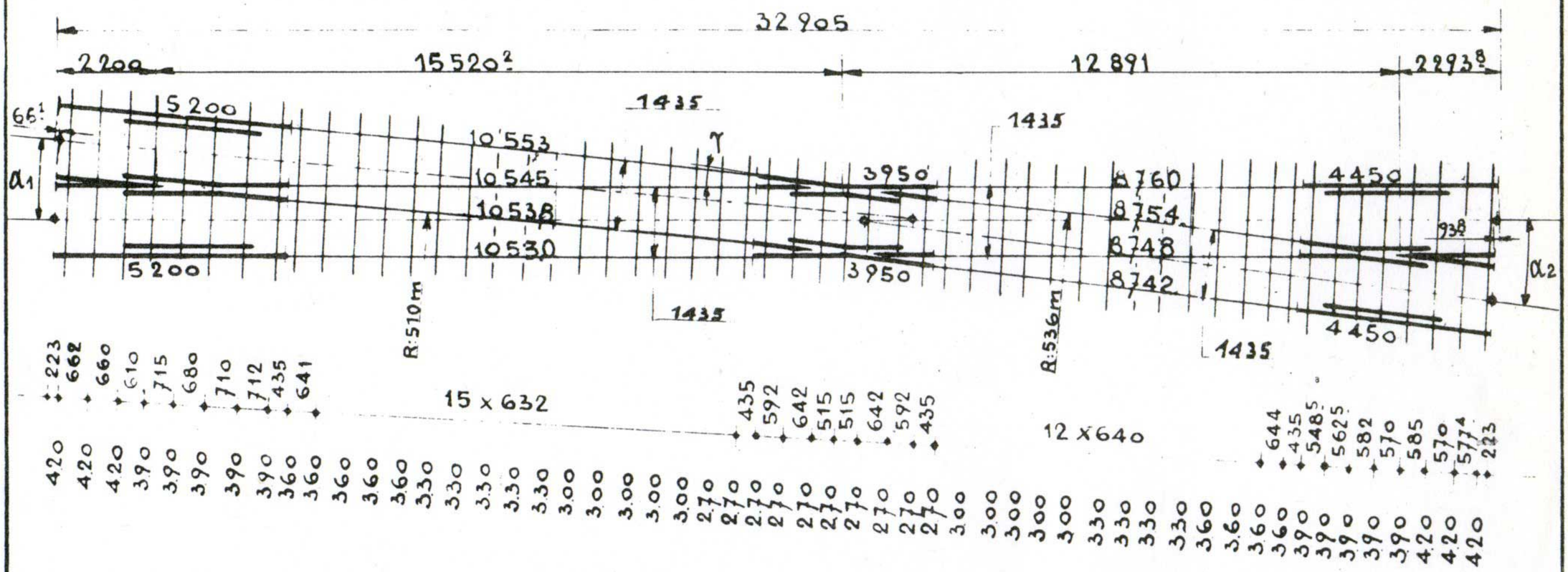
12 65

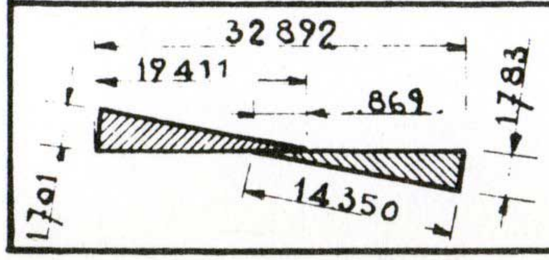
1966

Ⓑ

$H^2 V^3 H^4$

ASYM.





$\alpha_1 = 5° 01' 24'' = 5^g,581481$

$\gamma = 6° 11' 55'' = 6^g,887346$

$\alpha_2 = 7° 07' 30'' = 7^g,916667$

R = 509,74 m

R = 536,37 m

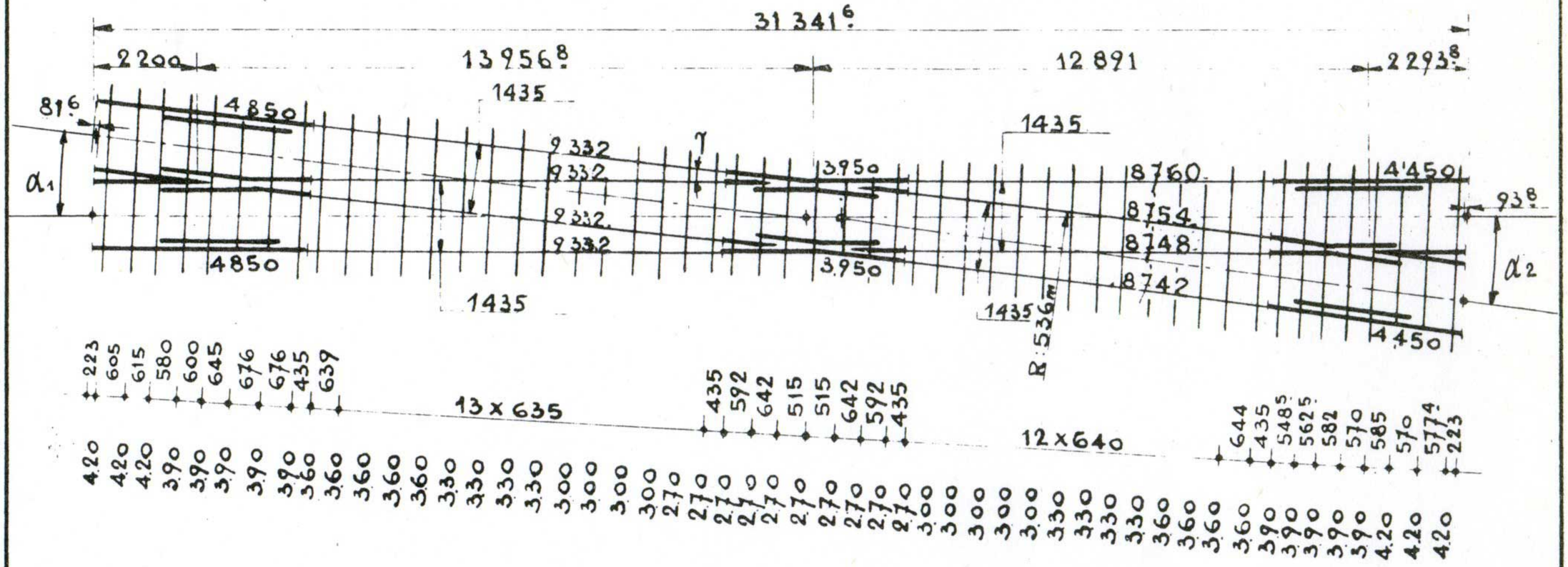
21 - 234

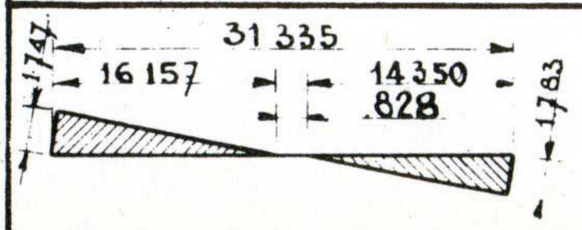
12·65

1966

Ⓑ

$H^3 V^3 H^4$
ASYM.





$\alpha_1 = \gamma = 6°11'55'' = 6^{\circ},887346$

$\alpha_2 = 7°07'30'' = 7^{\circ},916667$

R = 536,37 m

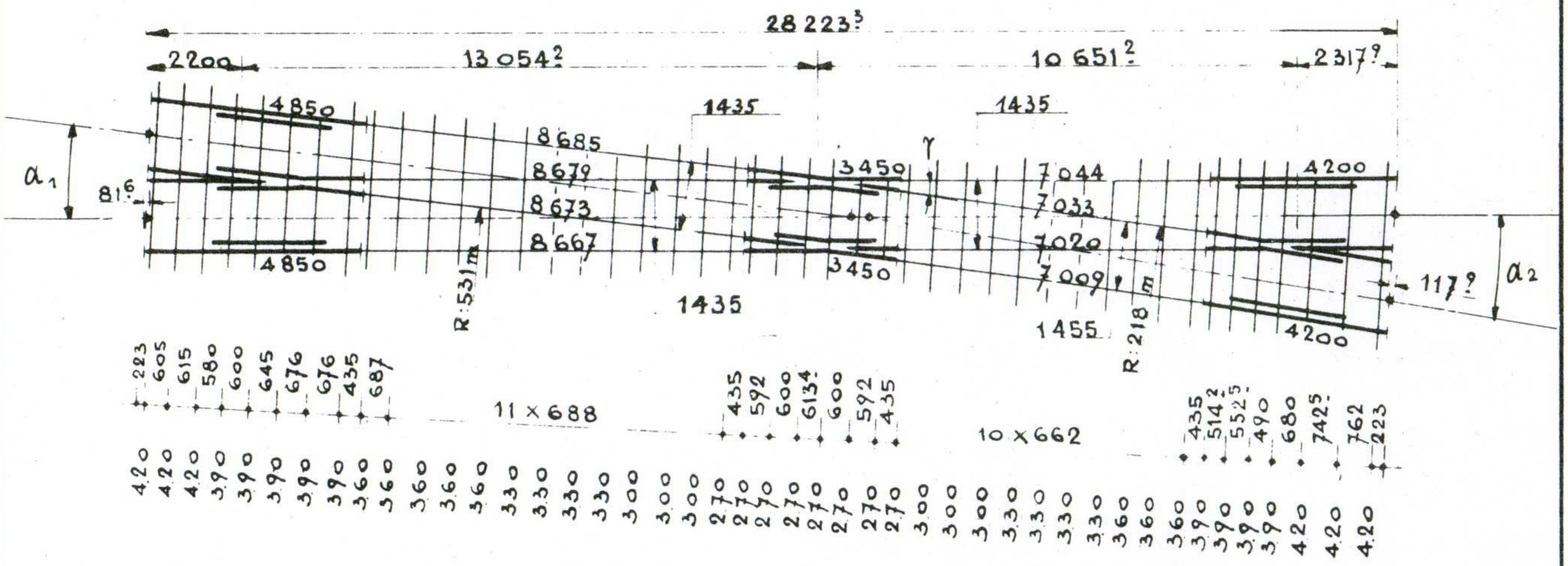
21 - 334

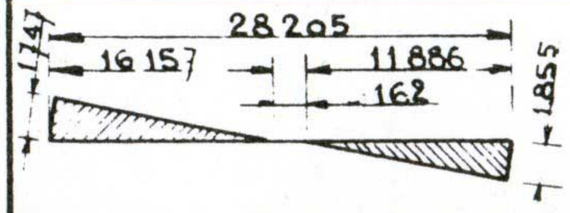
12-65

1966

Ⓑ

$H^3\ V^4\ H^5$
ASYM.





α_1 = 6°11'55" = 6^g,887346

γ = 7°07'30" = 7^g,916667

α_2 = 8°57'01" = 9^g 944753

R = 531 m

R = 217,82 m

21 - 345

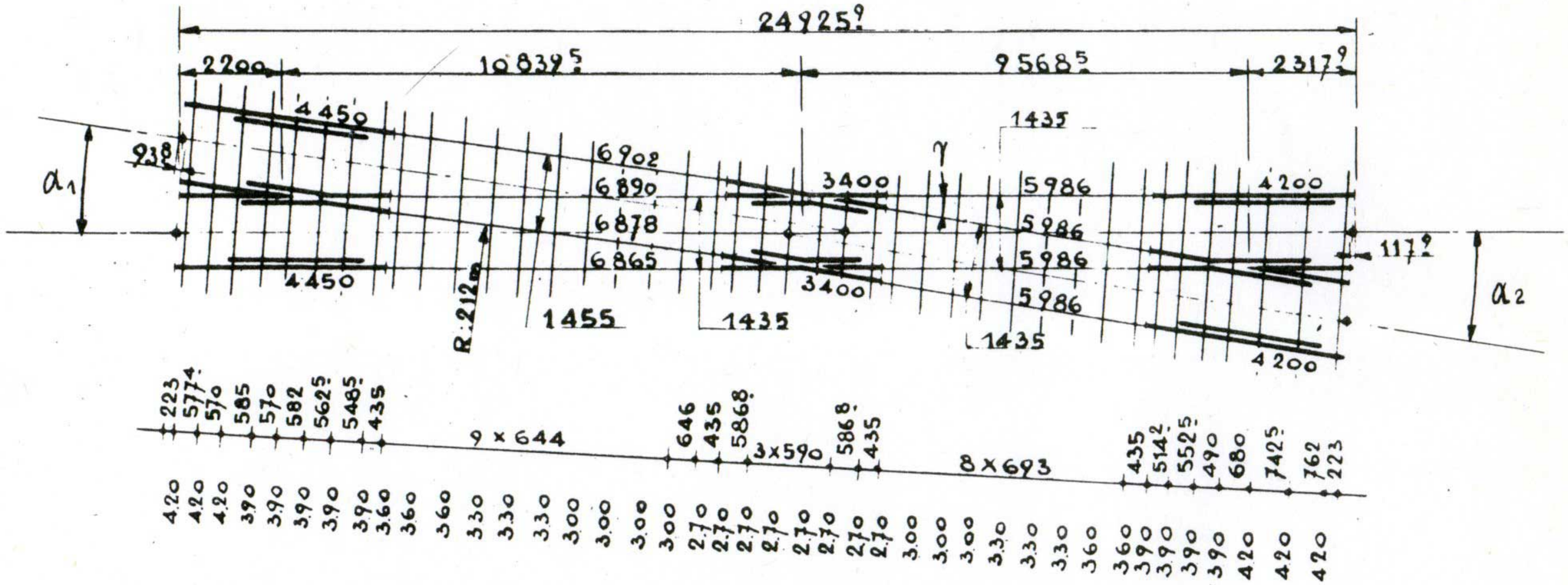
12 · 65

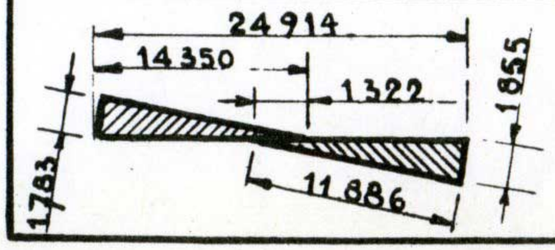
1966

Ⓑ

$H^4 V^5 H^5$

ASYM.





$\alpha_1 = 7°07'30'' = 7^g,916667$

$\gamma = \alpha_2 = 8°57'01'' = 9^g,944753$

R = 212,20 m

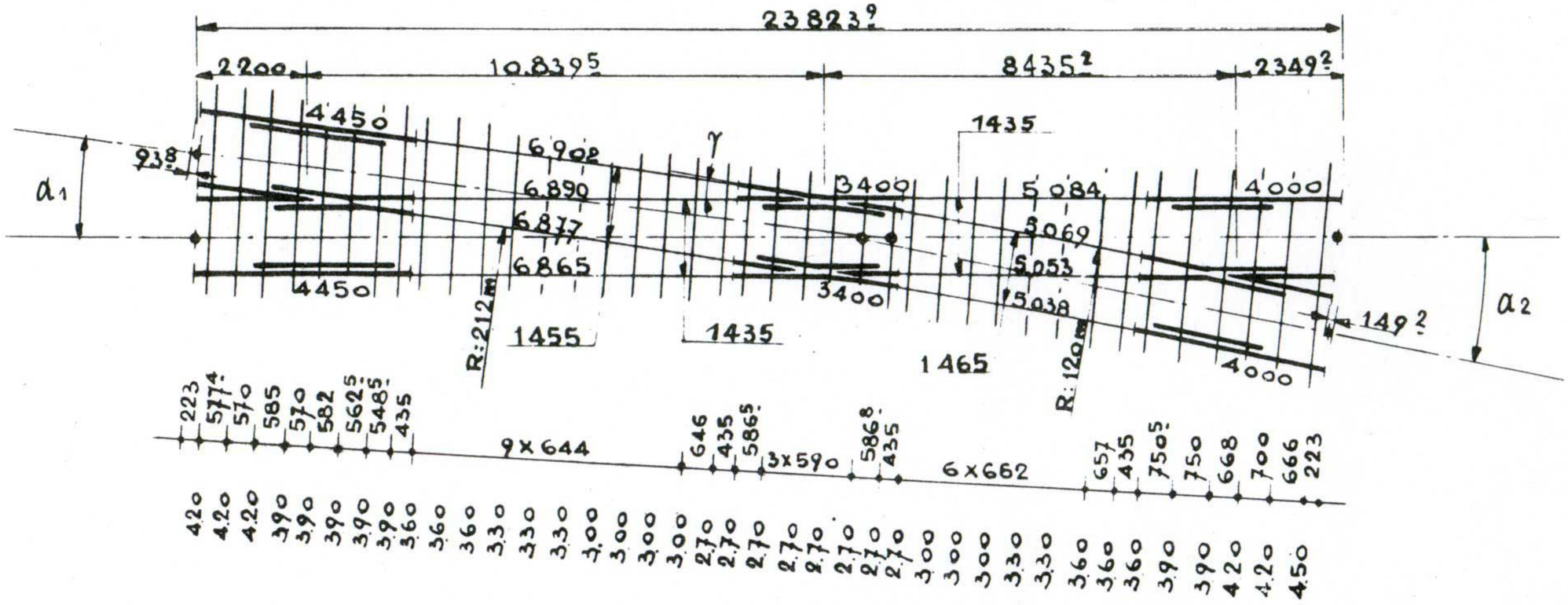
21 - 455

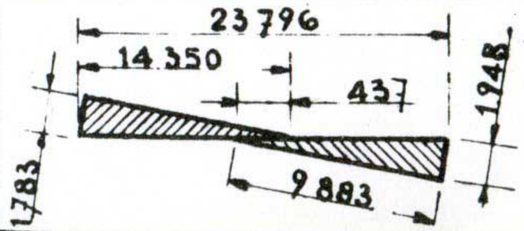
12-65

1966

Ⓑ

$H^4 V^5 H^6$
ASYM.





$\alpha_1 = 7°07'30'' = 7^g,916667$

$\gamma = 8°57'01'' = 9^g,944753$

$\alpha_2 = 11°18'40'' = 12^g,567901$

R = 212,20 m

R = 120,16 m

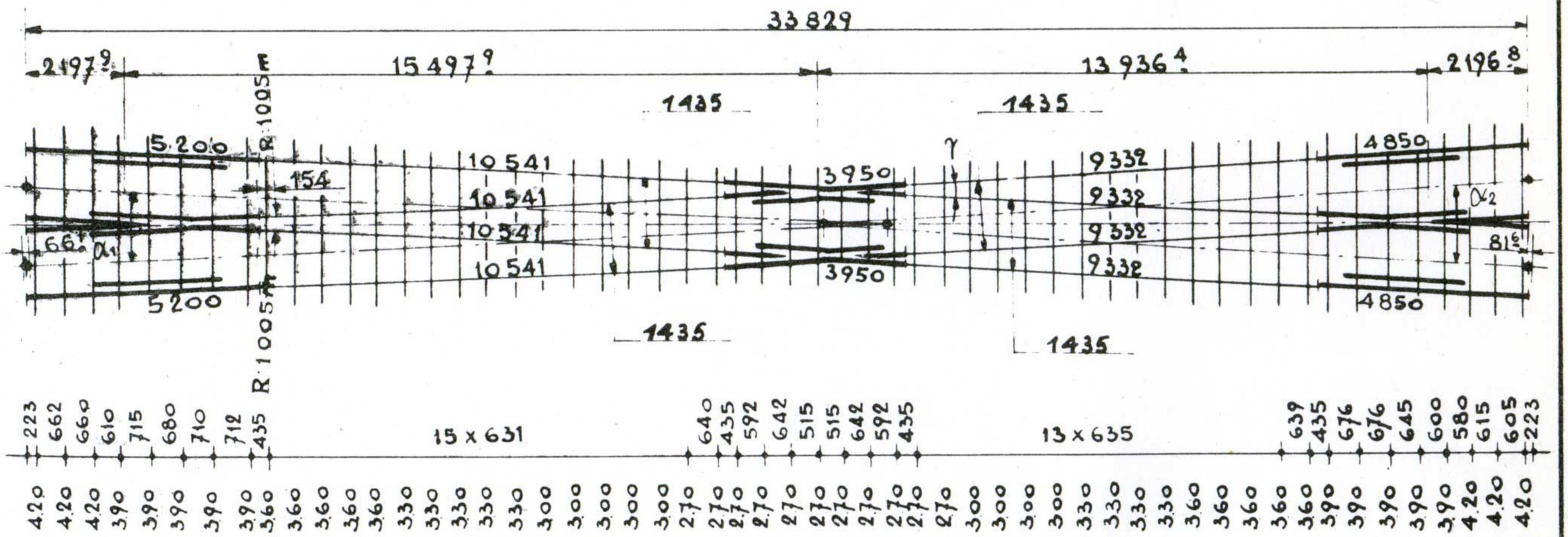
21 - 456

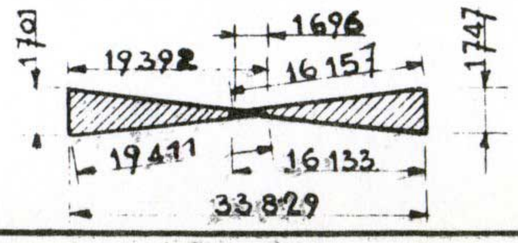
12 65

1966

Ⓑ

$H^2 V^3 H^3$
SYM





$\alpha_1 = 5° 01' 24'' = 5^{g},581481$

$\gamma = \alpha_2 = 6° 11' 55'' = 6^{g},887346$

R = 1004,76 m

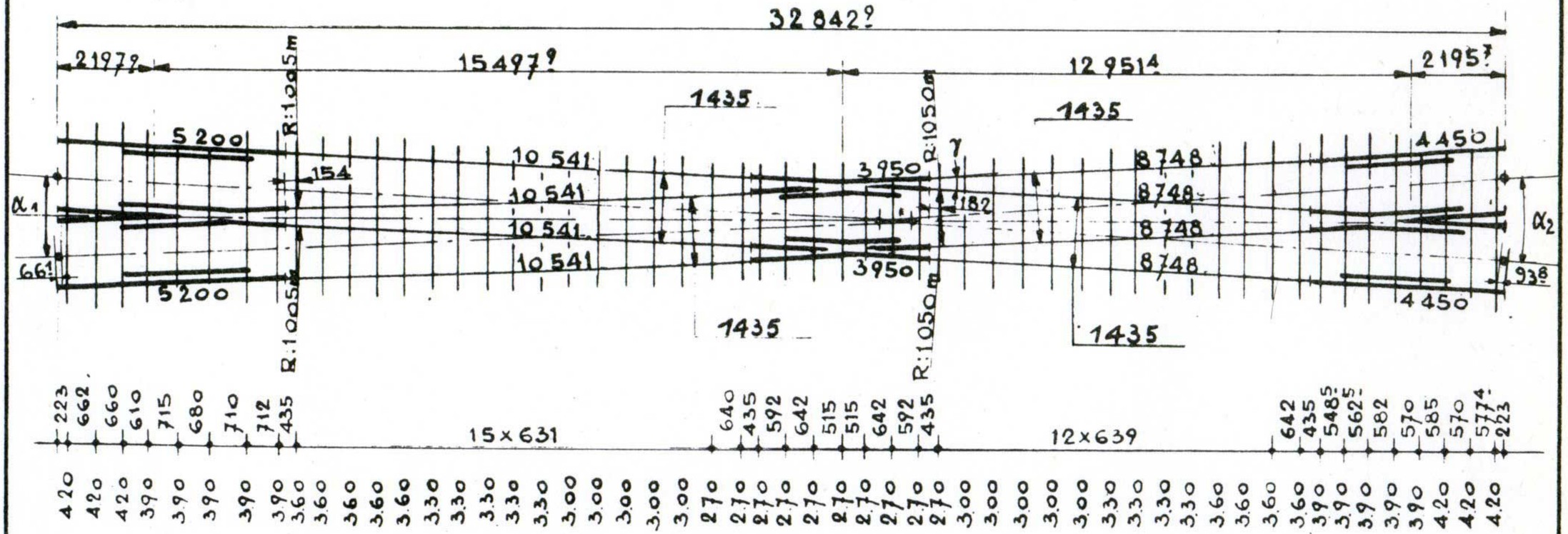
22 - 233

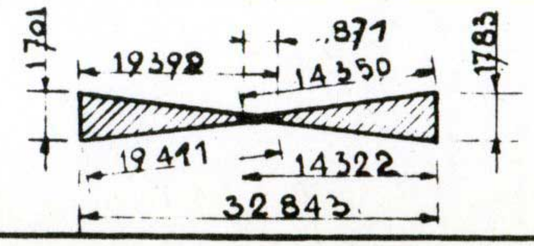
12·65

1966

B

$H^2 V^3 H^4$
SYM





$\alpha_1 = 5°\,01'\,24'' = 5^g,581481$

$\gamma = 6°\,11'\,55'' = 6^g,887346$

$\alpha_2 = 7°\,07'\,30'' = 7^g,916667$

R = 1004,74 m

R = 1049,64 m

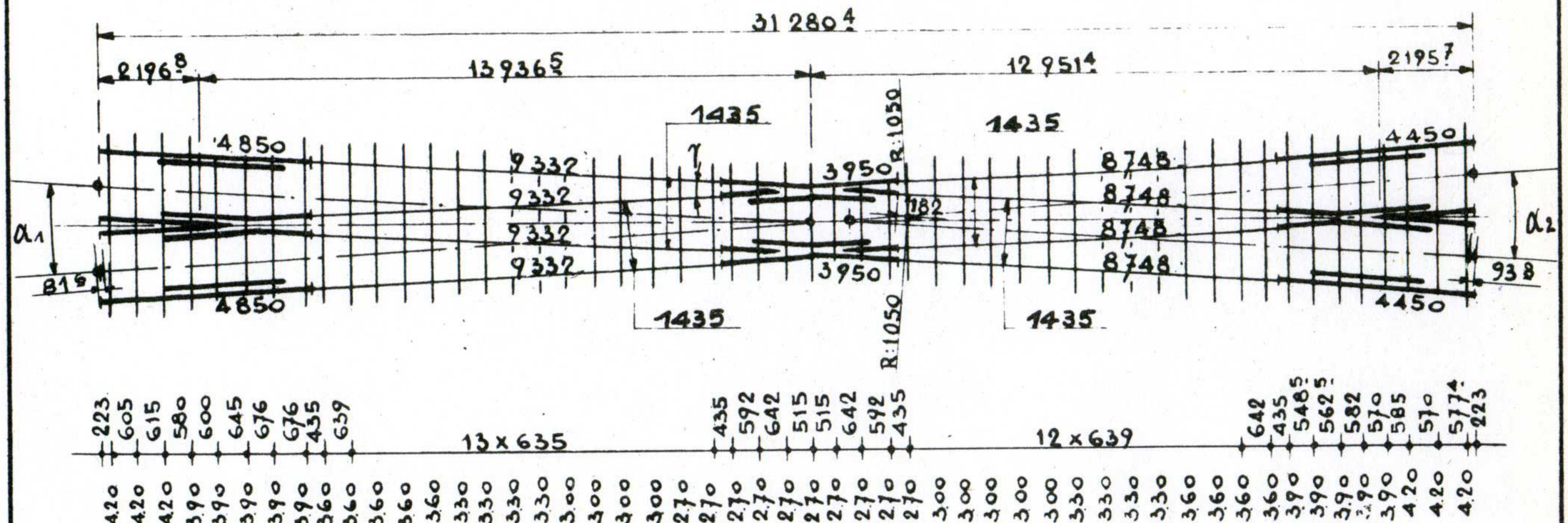
22 - 234

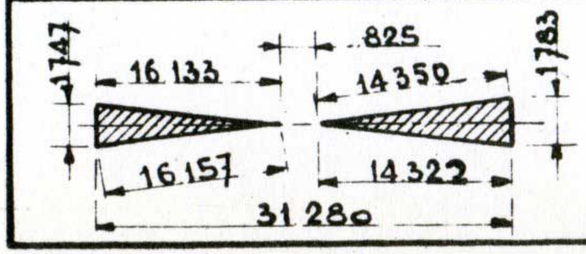
12-65

1966

Ⓑ

$H^3 V^3 H^4$
SYM





$\alpha_1 = \gamma = 6°11'55'' = 6^g,887346$

$\alpha_2 = 7°07'30'' = 7^g,9166 67$

R=1049,64 m

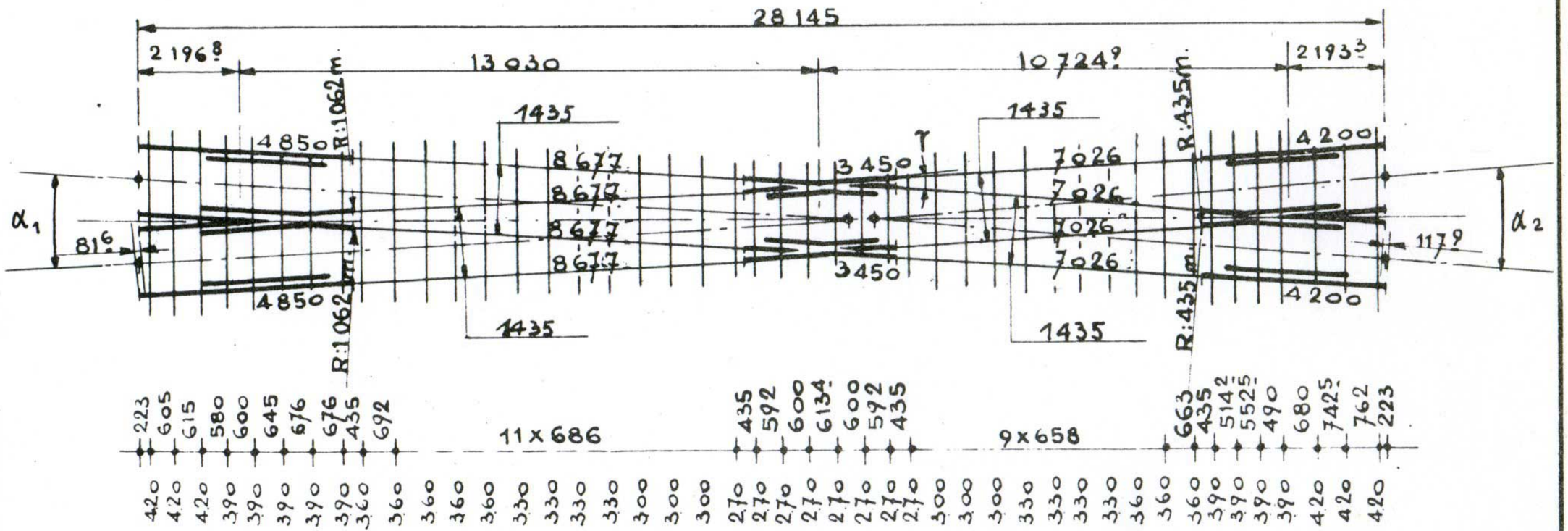
22-334

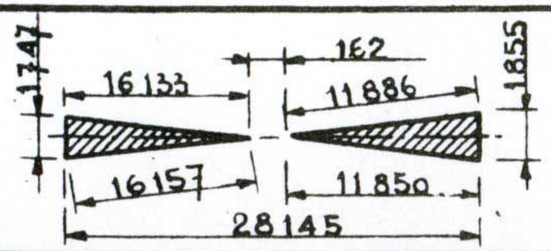
12·65

1966

Ⓑ

$H^3\ V^4\ H^5$
SYM





$\alpha_1 = 6°11'55'' = 6^g,887346$

$\gamma = 7°07'30'' = 7^g,916667$

$\alpha_2 = 8°57'01'' = 9^g,944753$

R=1061,80 m

R= 435,23 m

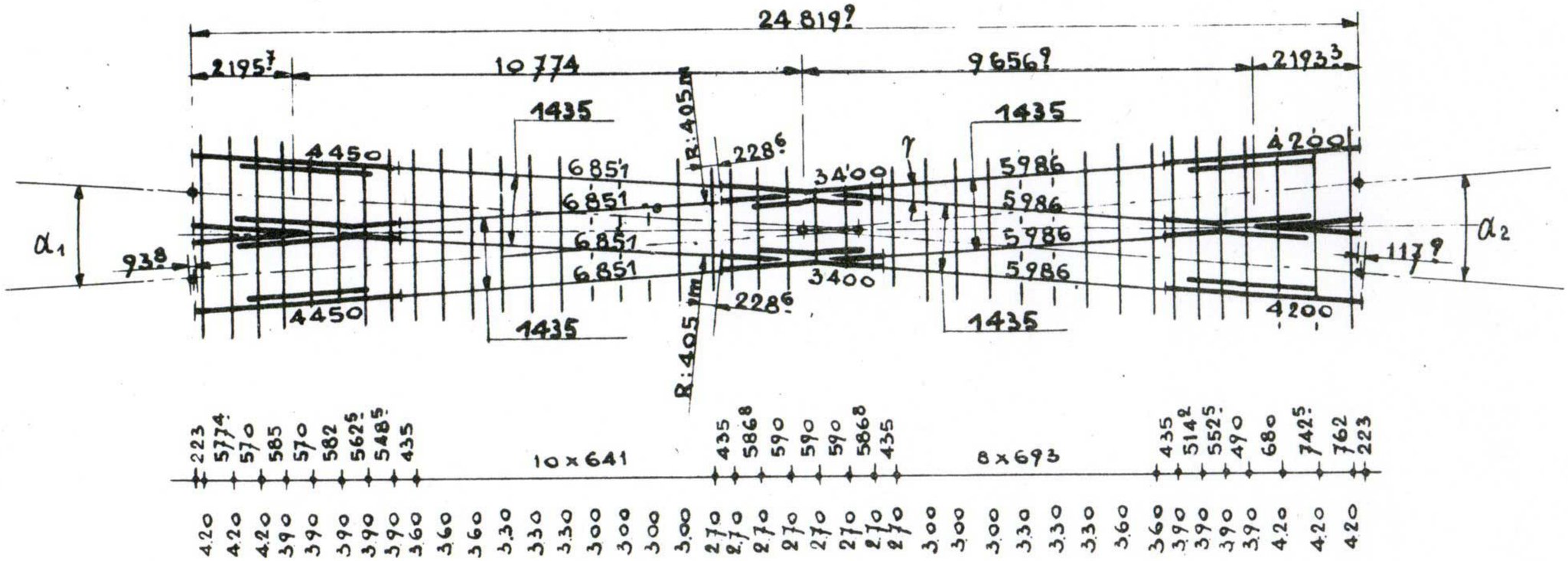
22-345

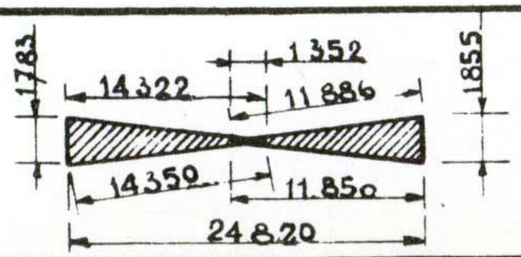
12-65

1966

Ⓑ

$H^4 V^5 H^5$
SYM





$\alpha_1 = 7°07'30'' = 7^g,916667$

$\gamma = \alpha_2 = 8°57'01'' = 9^g,944753$

R = 404,55 m

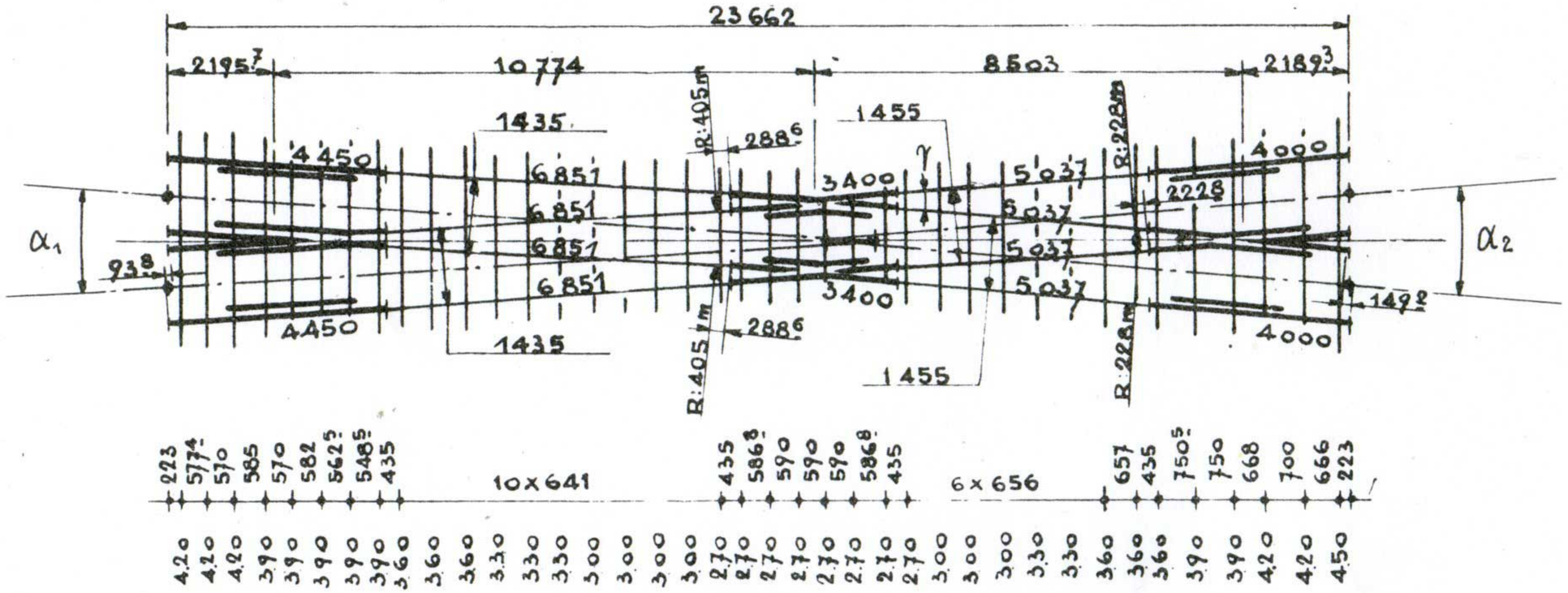
22 - 455

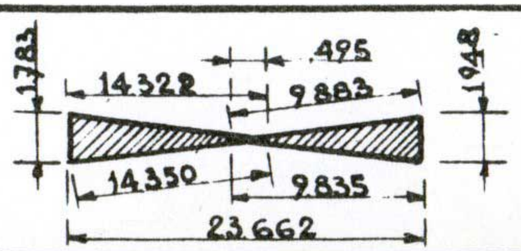
12·65

1966

Ⓑ

$H^4\ V^5\ H^6$
SYM





$\alpha_1 = 7°07'30'' = 7^g,916667$

$\gamma = 8°57'01'' = 9^g,944753$

$\alpha_2 = 11°18'40'' = 12^g,567901$

R = 404,55 m

R = 227,94 m

22-456

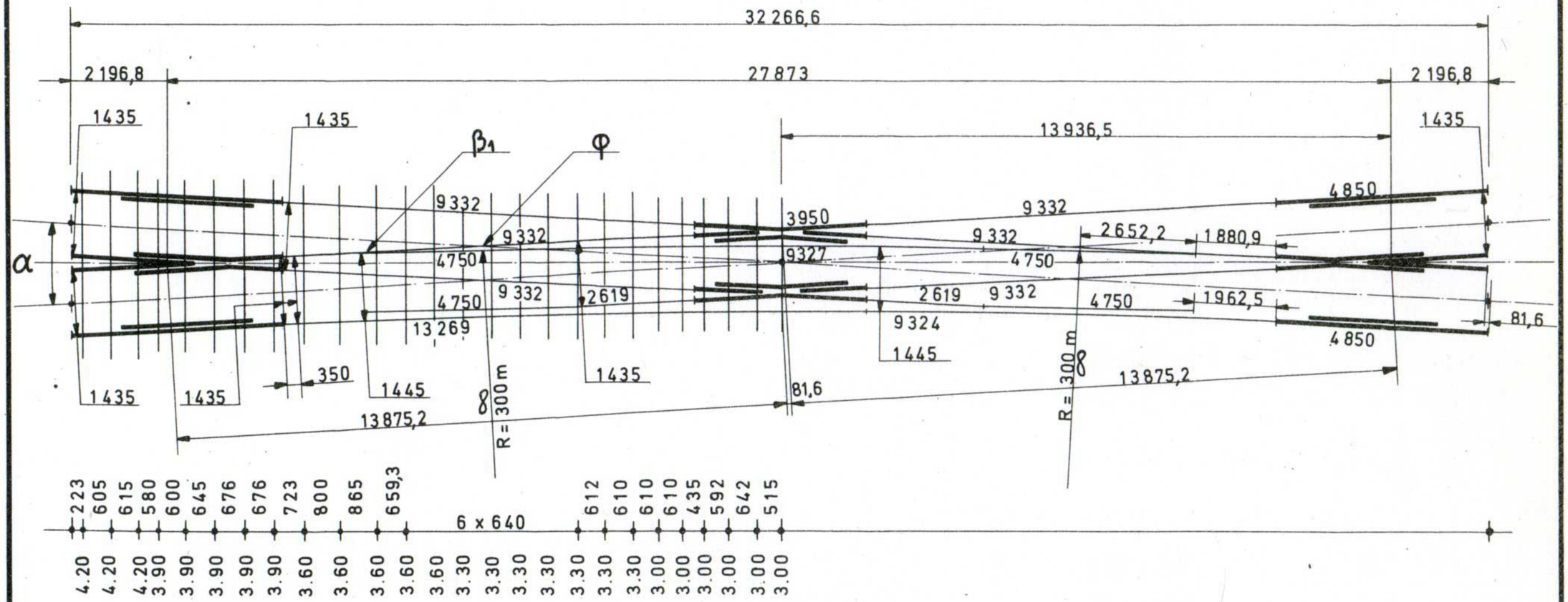
12-65

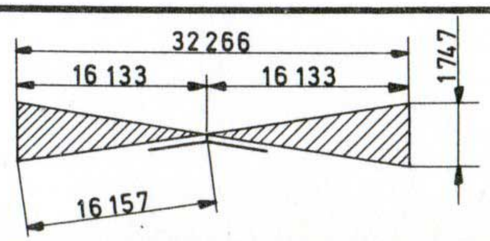
1966

ENG. WISSELS

Ⓑ

TJS-TH^3





β_1 = 1°33′20″ = 1^g,728395

φ = 0°15′09″ = 0^g,280648

α = 6°11′55″ = 6^g,887346

R = 300 m

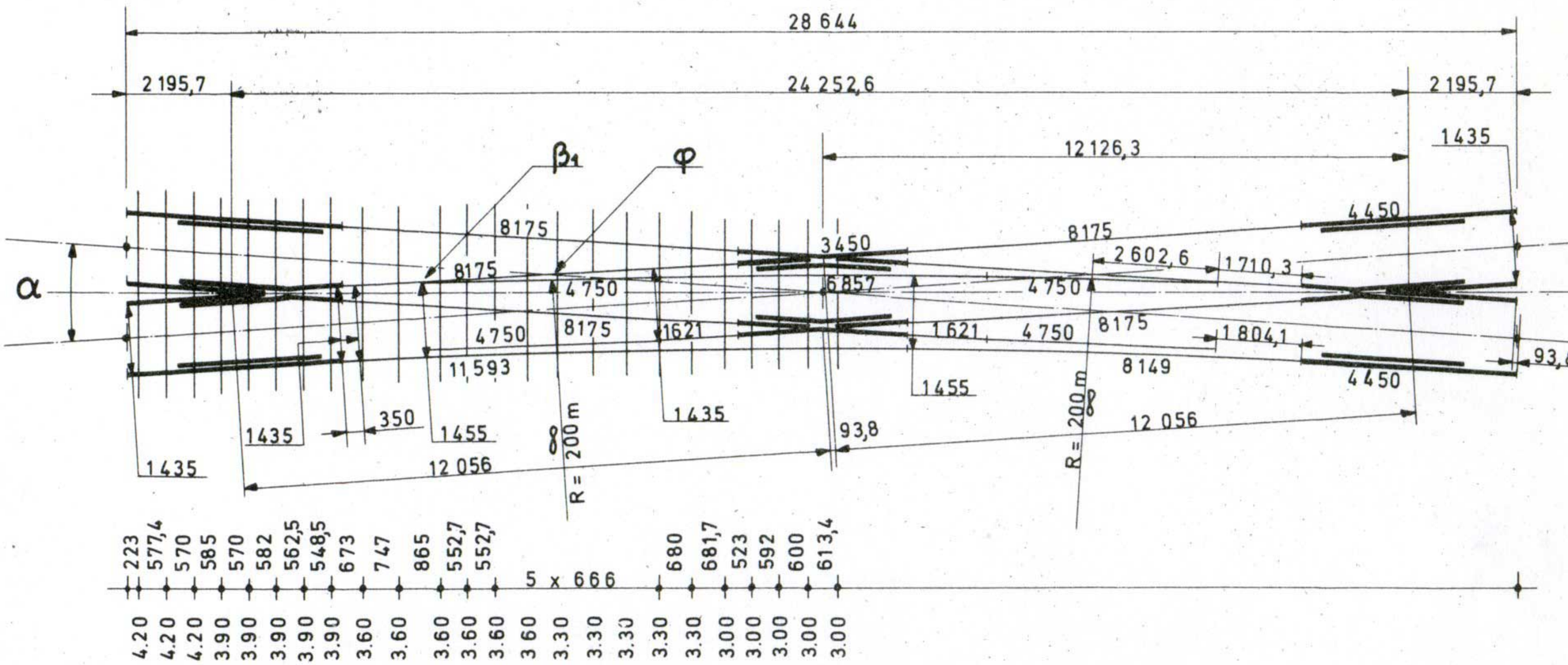
tg α = 0,108611

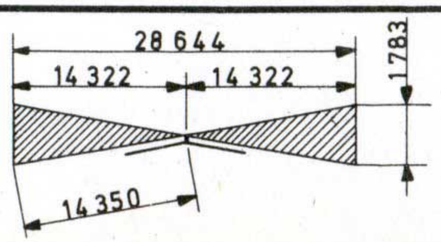
31 - 333

12-65

1966

TJS-TH⁴





β_1 = 1° 35' 07" = 1⁹,761420

φ = 0° 22' 49" = 0⁹,422361

α = 7° 07' 30" = 7⁹,916667

R = 200 m

tg α = 0,125000

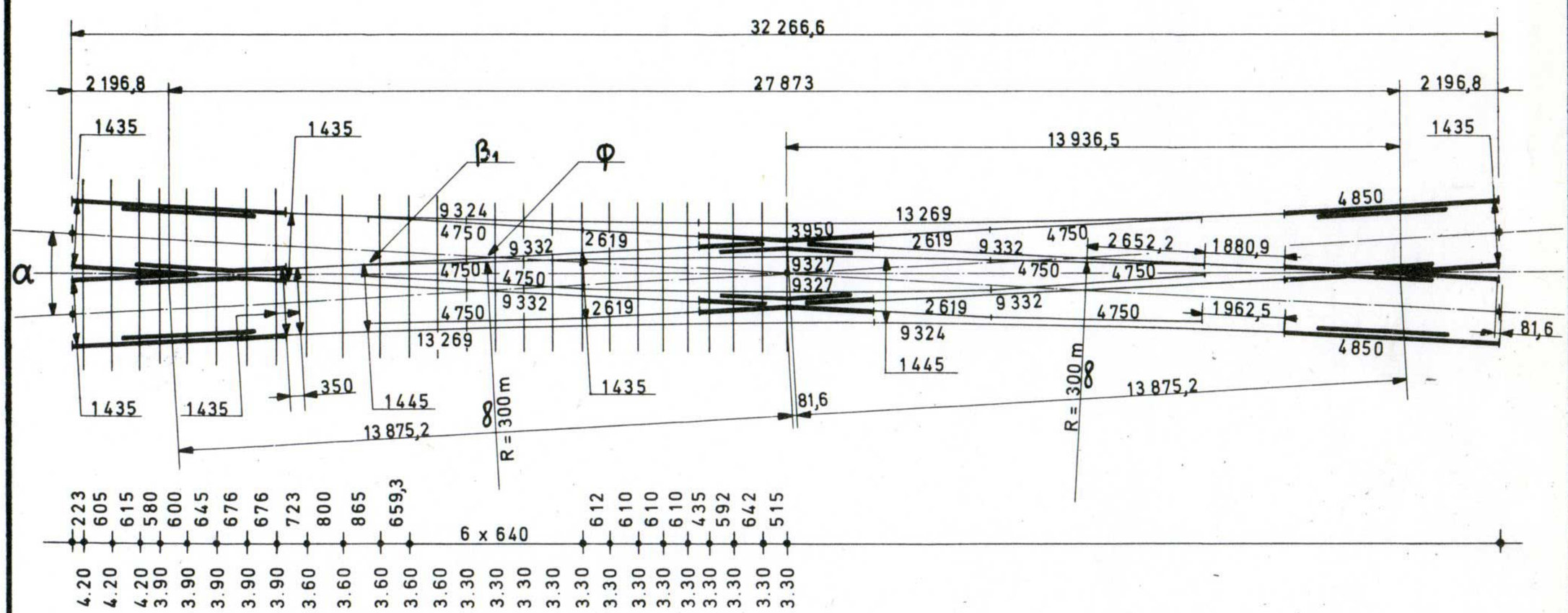
31 - 444

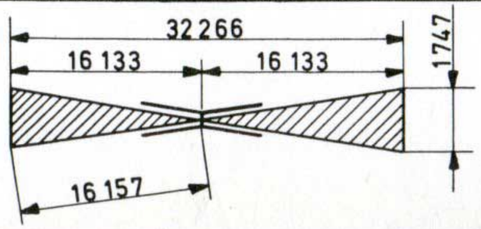
12-65

1966

Ⓑ

TJD-TH 3





β_1 = 1°33'20" = 1^g,728395

φ = 0°15'09" = 0^g,280648

α = 6°11'55" = 6^g,887346

R = 300 m

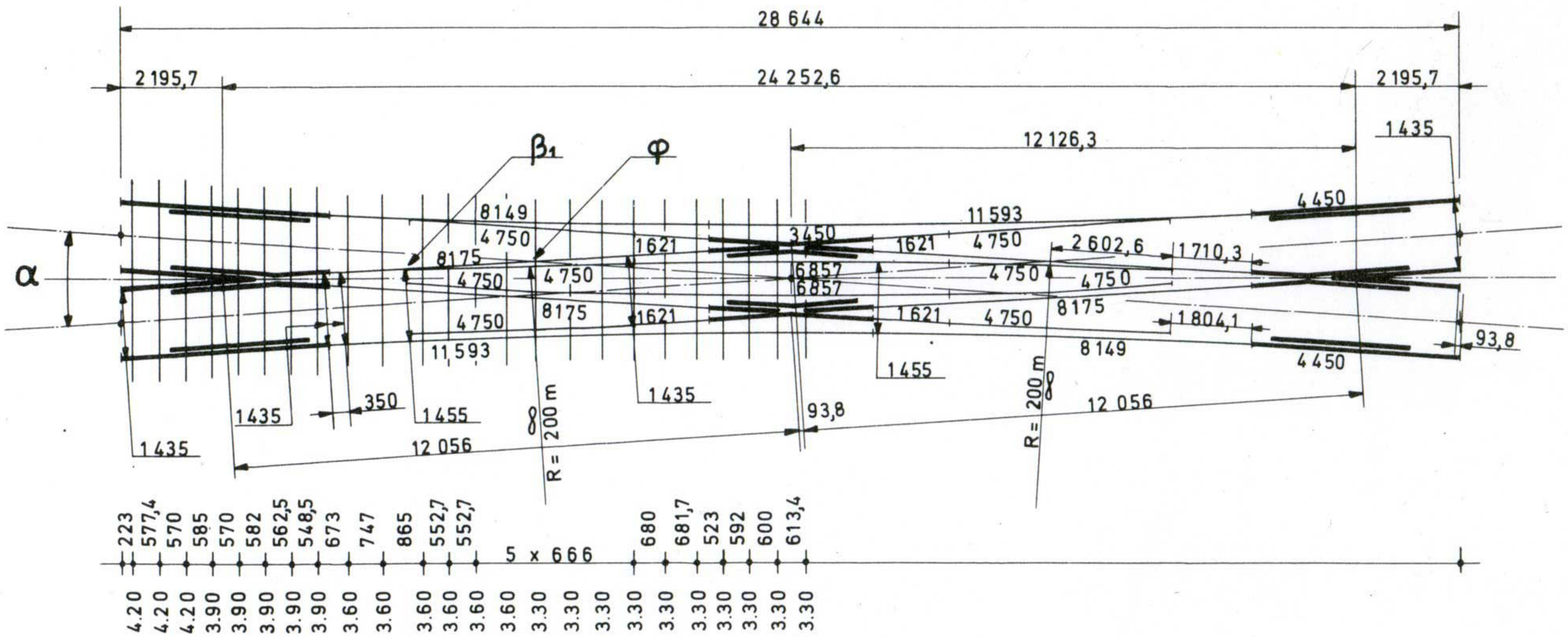
tg α = 0,108611

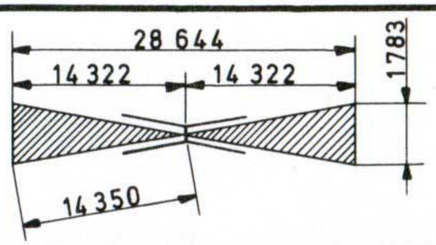
32 - 333

12-65

1966

TJD-TH⁴





$\beta_1 = 1°35'07'' = 1^{g},761420$

$\varphi = 0°22'49'' = 0^{g},422361$

$\alpha = 7°07'30'' = 7^{g},916667$

R = 200 m

$tg\,\alpha = 0{,}125000$

32 - 444

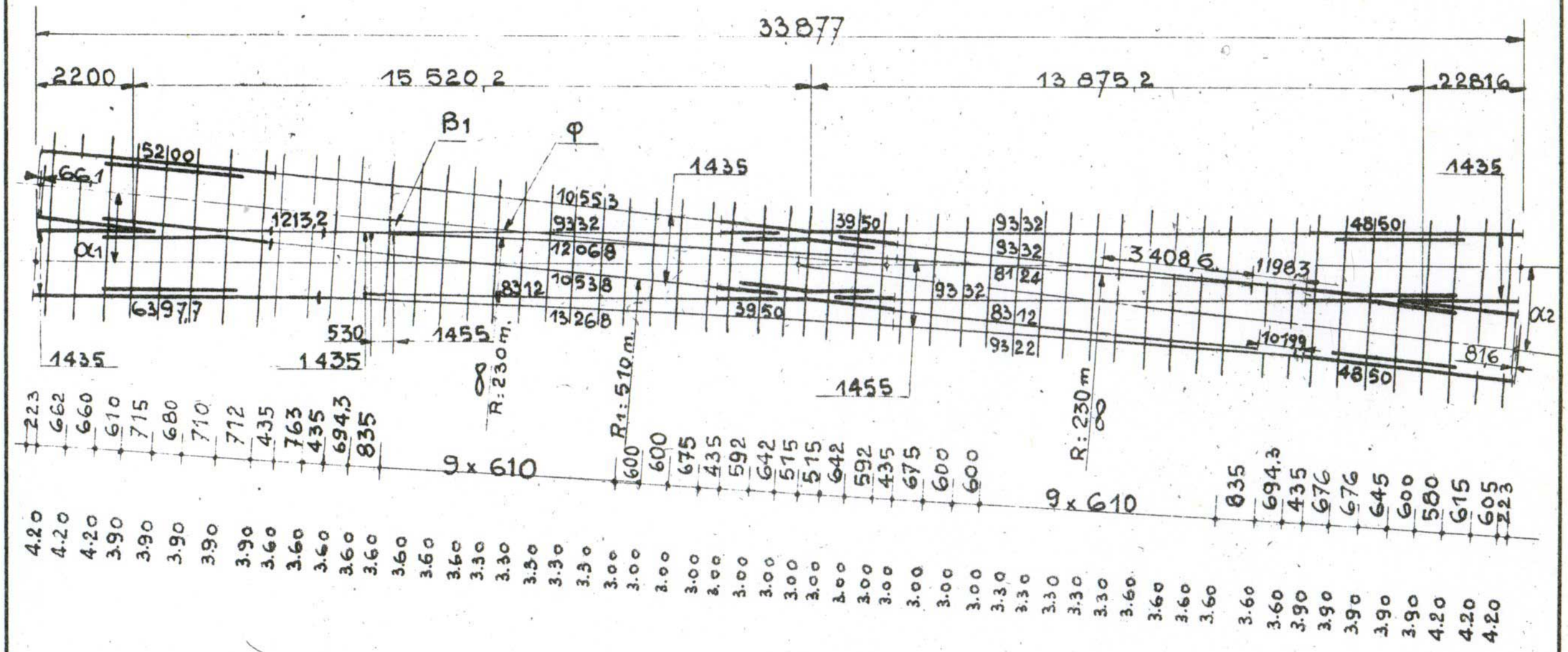
12-65

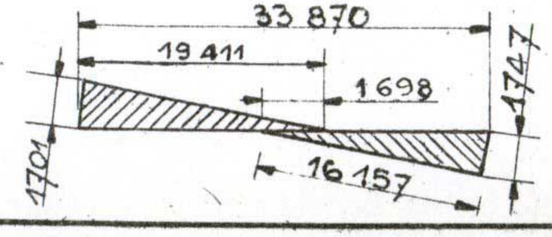
1966

Ⓑ

TJS

$EH^2V^3H^3$





$\beta_1 = 1°26'00'' = 1^g,592469$

$\varphi = 0$

$\alpha_1 = 5°01'24'' = 5^g,581481$

$\alpha_2 = 6°11'55'' = 6^g,887346$

R = 230 m

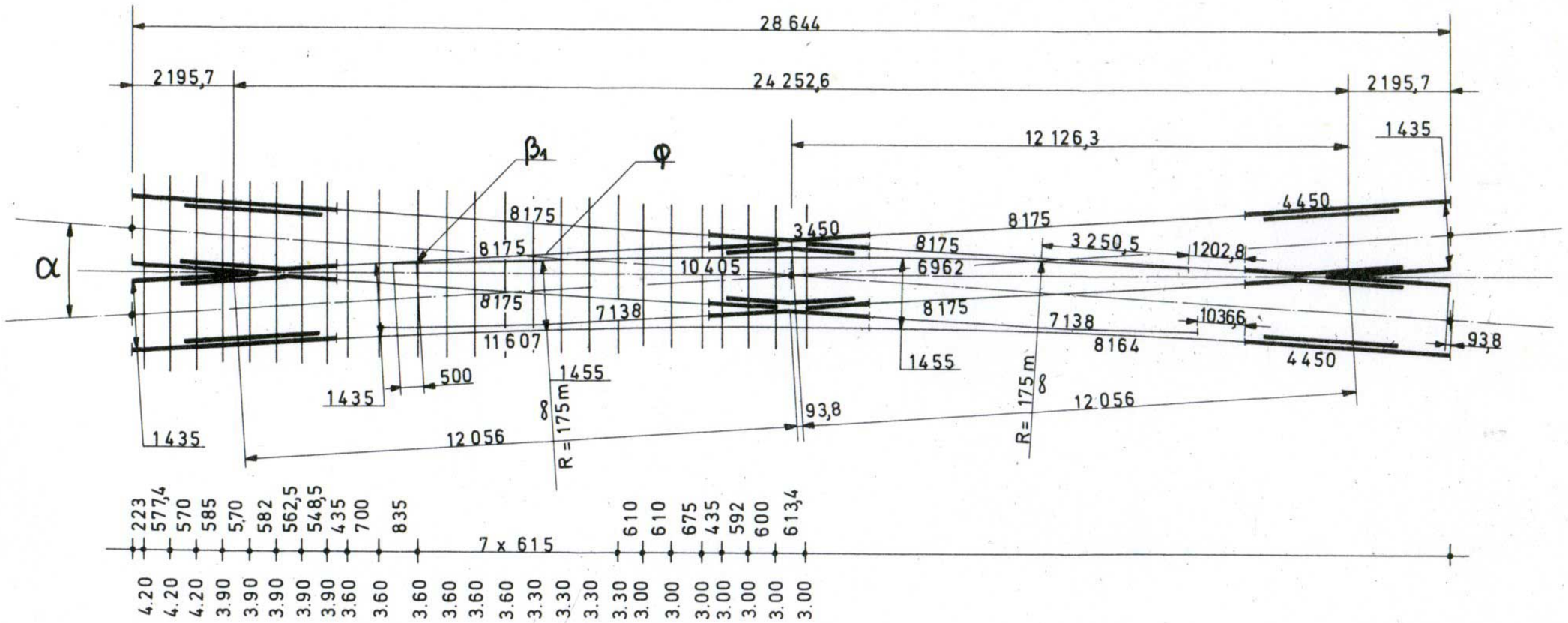
R = 509,74 m

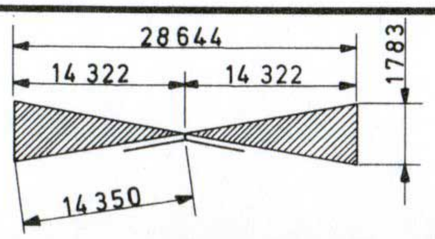
33-233

12-65

1966

TJS-EH⁴





β_1 = 1° 30′ 00″ = $1^{g},666667$

φ = 0° 17′ 02″ = $0^{g},315457$

α = 7° 07′ 30″ = $7^{g},916667$

R = 175 m

tg α = 0,125000

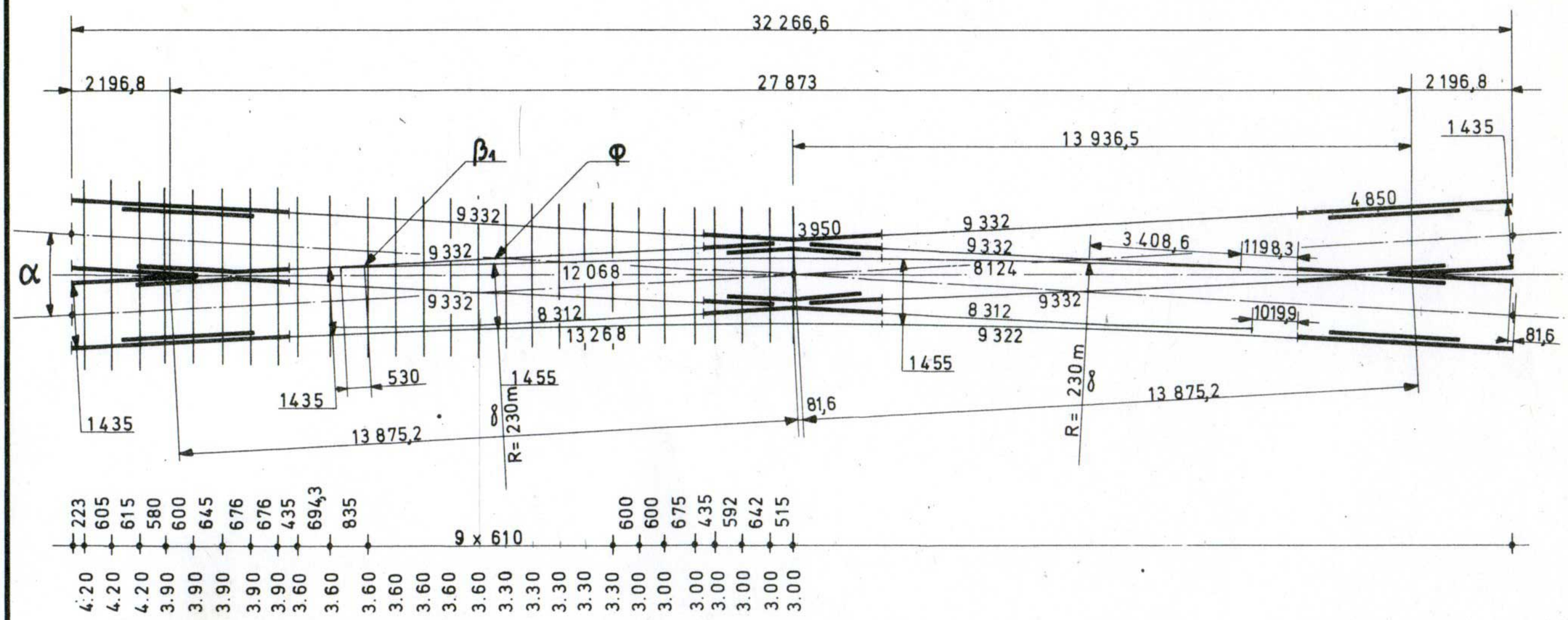
33 – 444

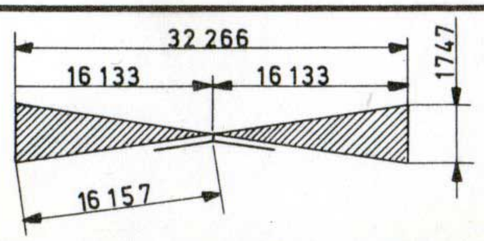
12-65

1966

Ⓑ

TJS-EH^3





β_1 = 1°26'00" = 1^9,592469

φ = 0

α = 6°11'55" = 6^9,887346

R = 230 m

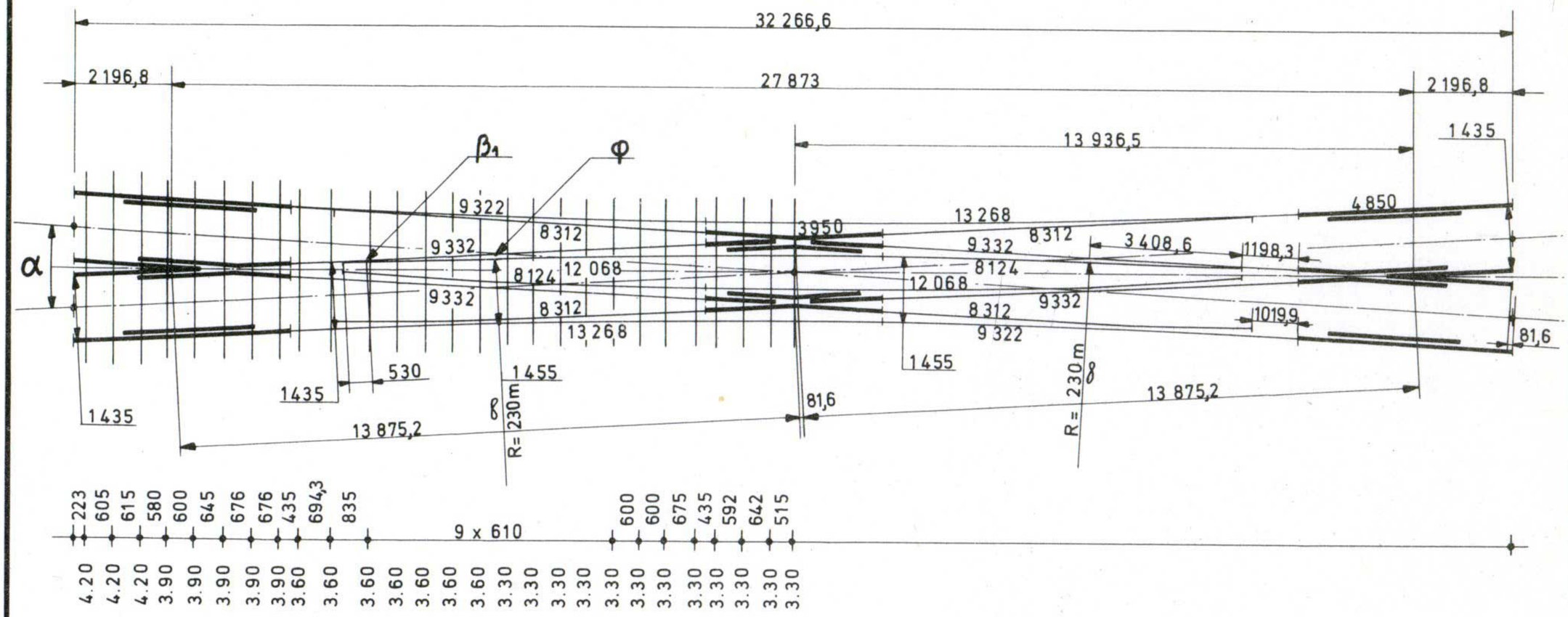
tg α = 0,108611

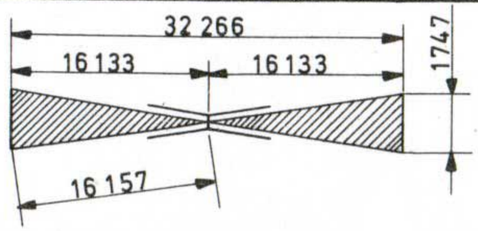
33 - 333

12-65

1966

TJD-EH³





β_1 = 1°26'00" = 1^g,592469

φ = 0

α = 6°11'55" = 6^g,887346

R = 230 m

tg α = 0,108611

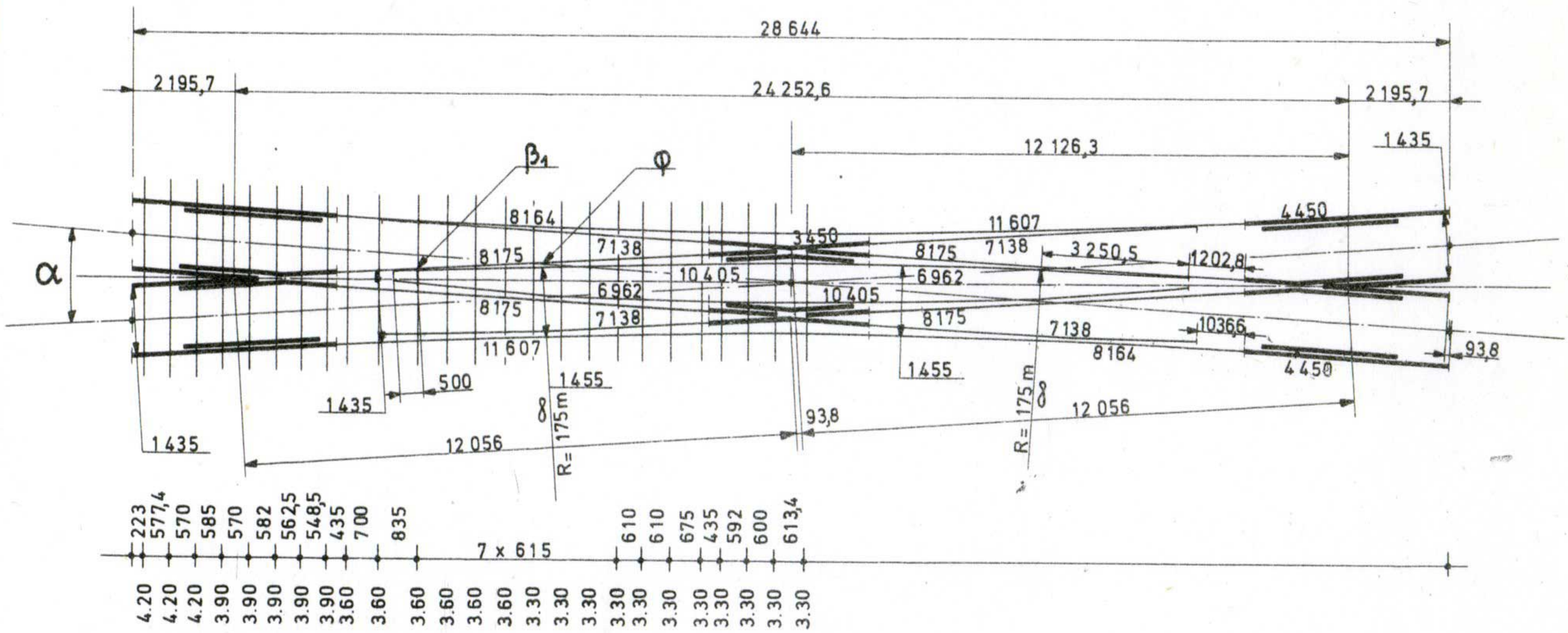
34 – 333

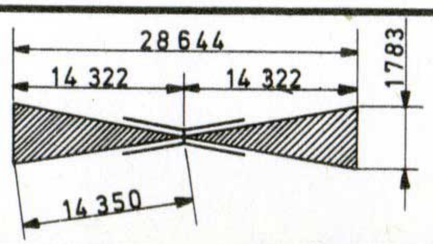
12-65

1966

Ⓑ

TJD-EH⁴





β_1 = 1° 30′ 00″ = 1^g,666667

φ = 0° 17′ 02″ = 0^g,315457

α = 7° 07′ 30″ = 7^g,916667

R = 175 m

tg α = 0,125000

34 - 444

12-65

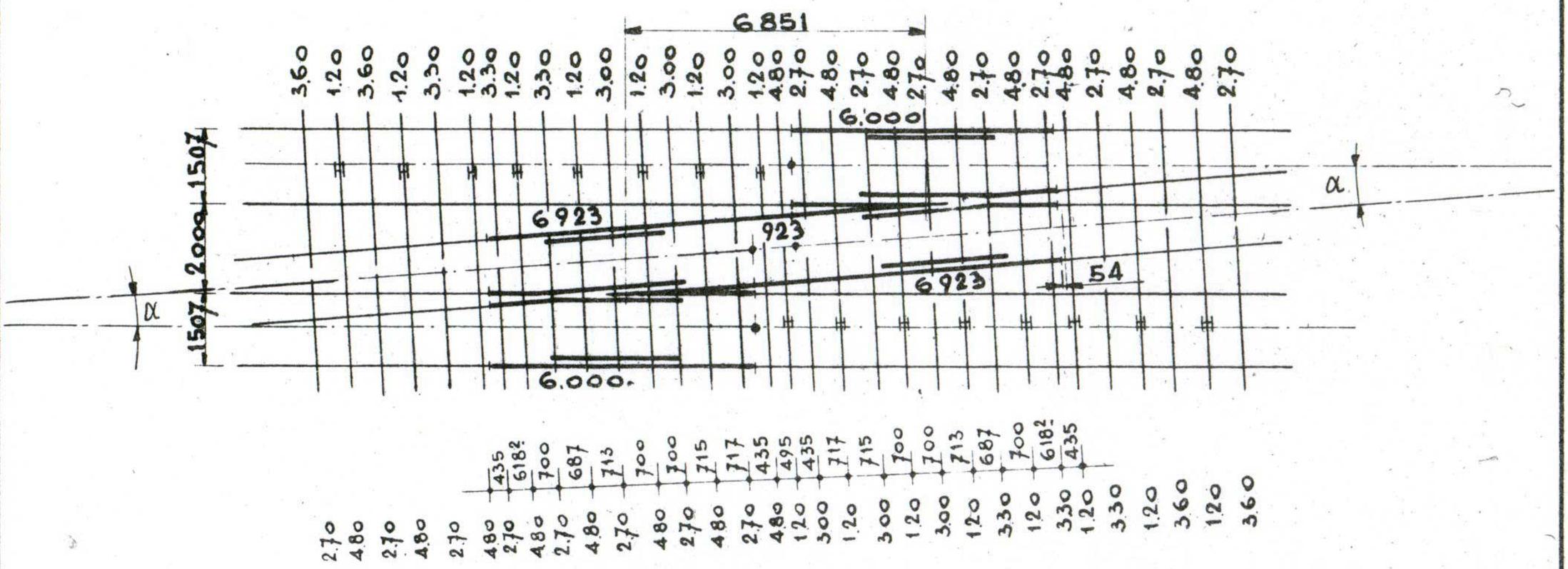
1966

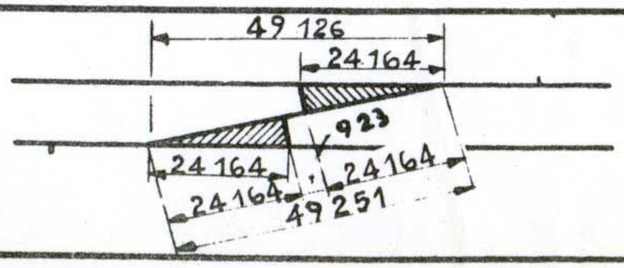
PUNTSTUKVERB.

2.00

Ⓑ

$H^1 - H^1$
(2.000m)





$\alpha = 4°05'00'' = 4^{g},537037 \quad tg\alpha = 0,071388$

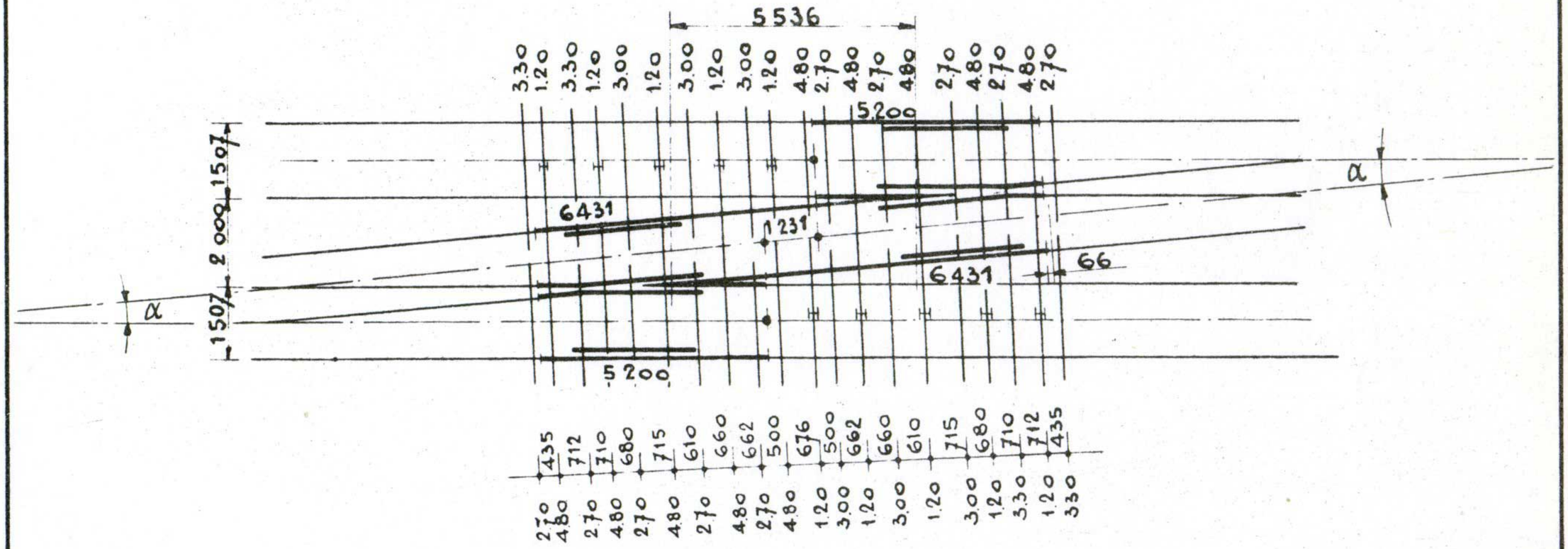
40-11

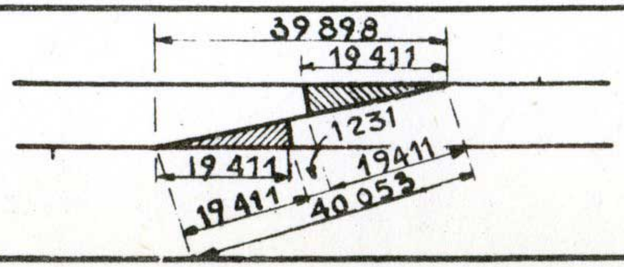
12-65

1966

Ⓑ

$H^2 - H^2$
(2.000m)





$\alpha = 5°01'24'' = 5^{g},581481 \quad tg\alpha = 0,087899$

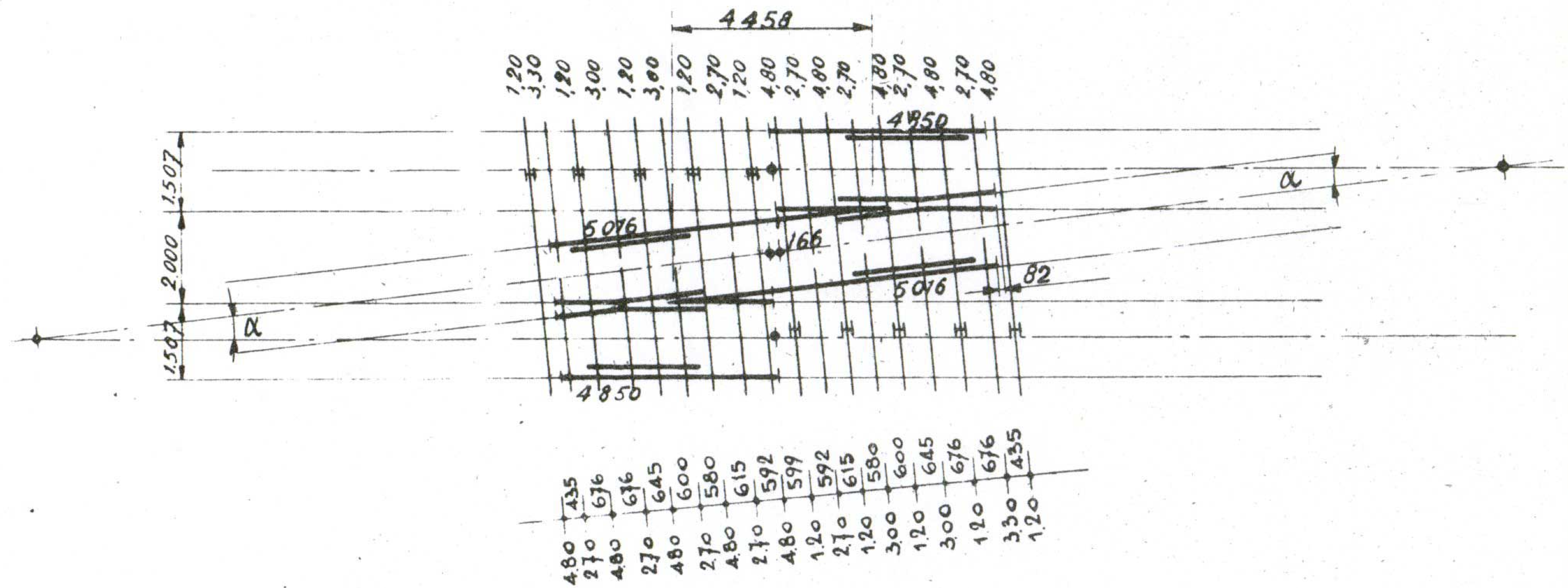
40-22

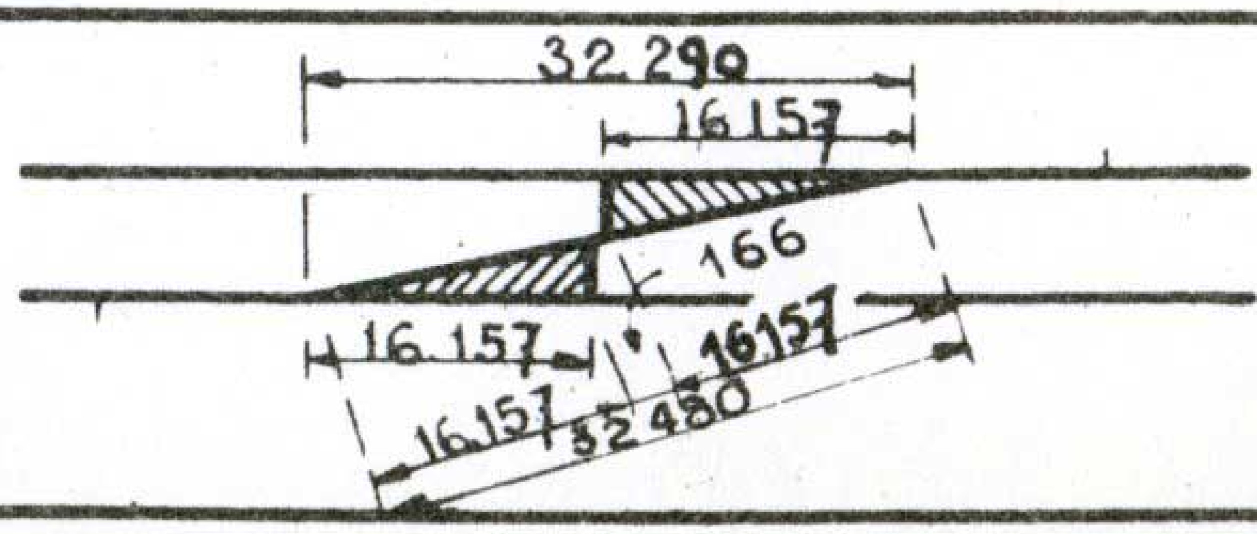
12-65

1966

$H^3 - H^3$

(2.000m)





α = 6°11'55" = $6^g,887346$ tgα = 0,108611

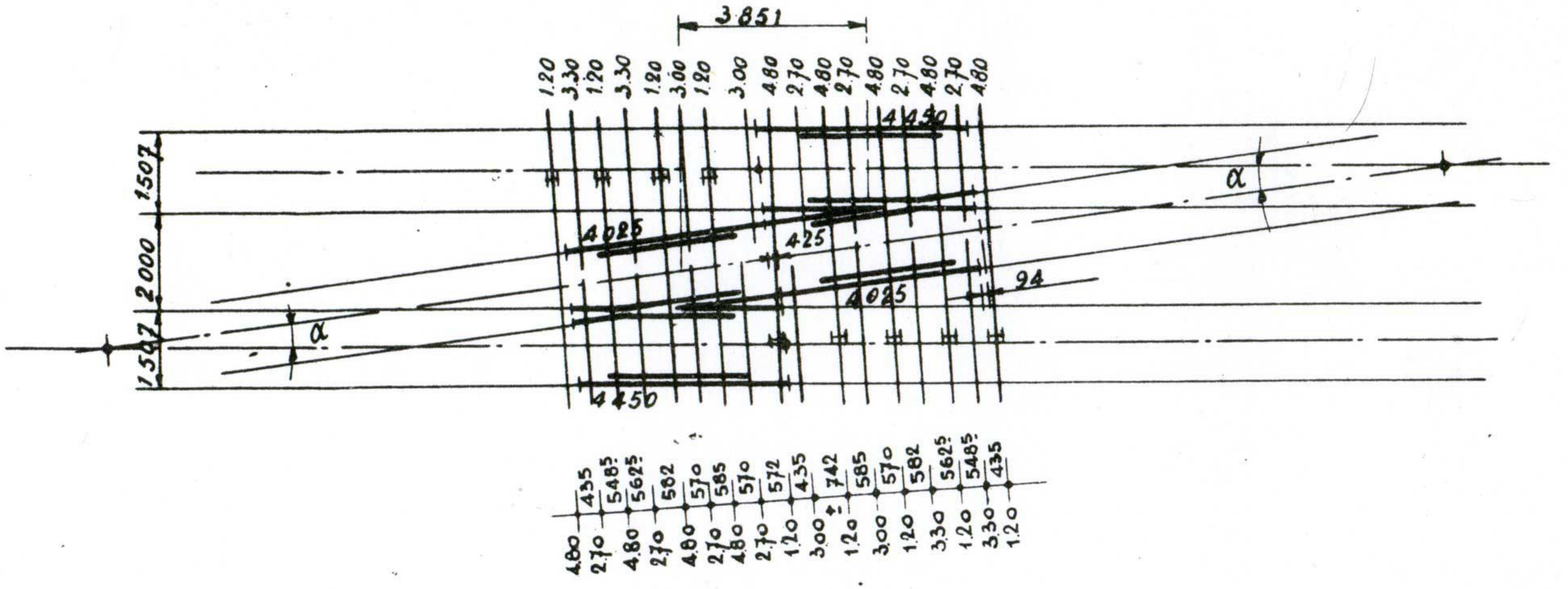
40-33

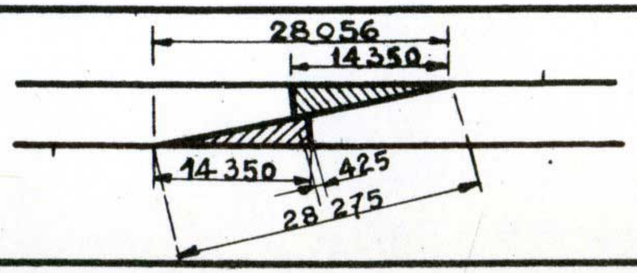
12-65

1966

Ⓑ

$H^4 - H^4$
(2.000m)





$\alpha = 7°07'30'' = 7^{g},916667 \quad tg\alpha = 0,125000$

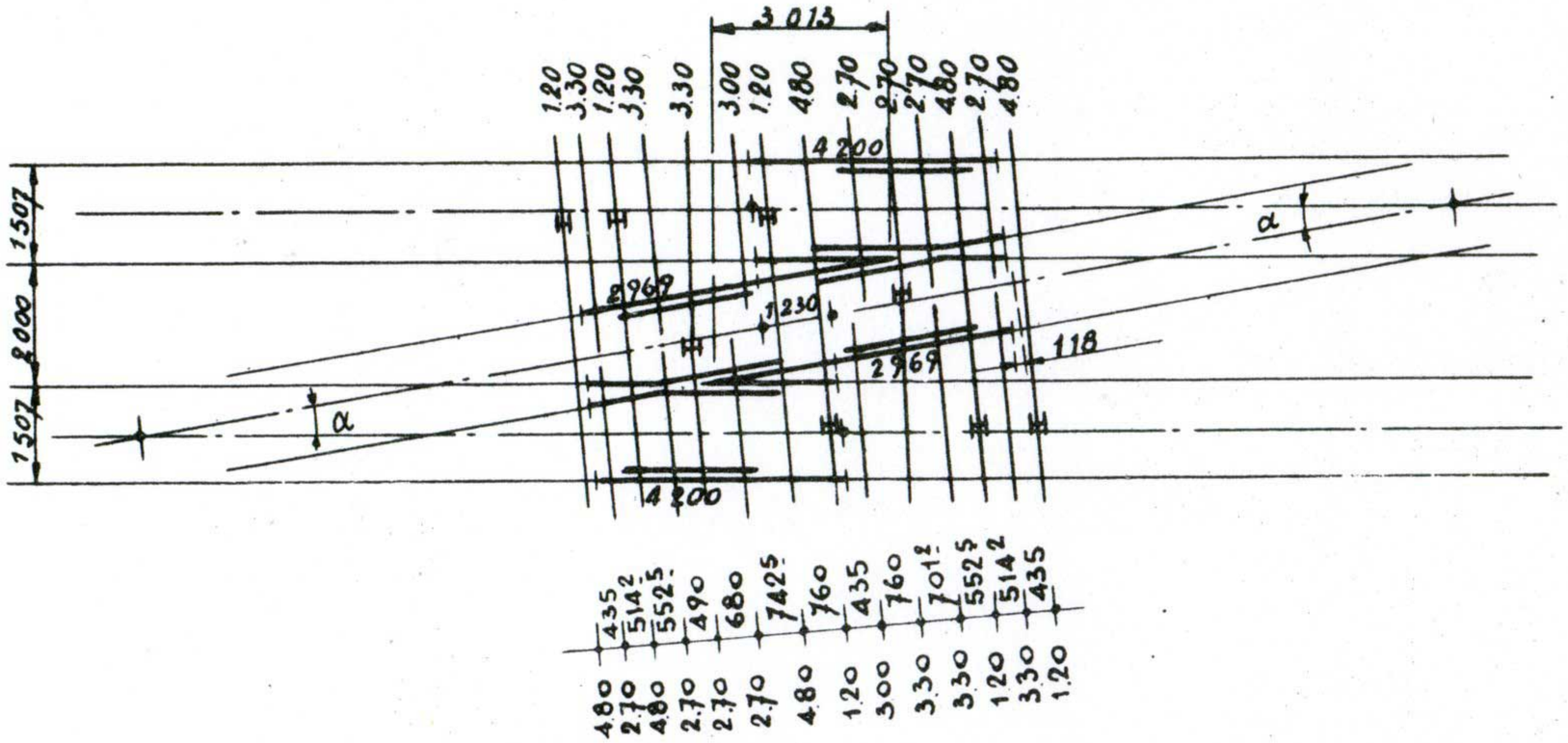
40-44

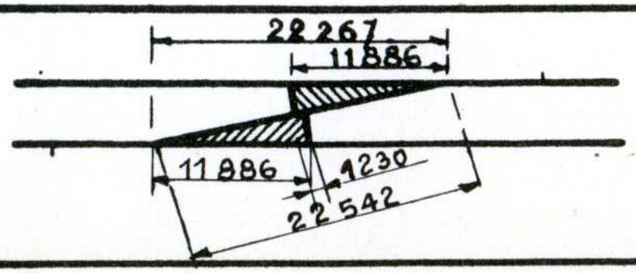
12-65

1966

Ⓑ

$H^5 - H^5$
(2000m)





$\alpha = 8°57'01'' = 9^g,944753 \quad tg\alpha = 0,157495$

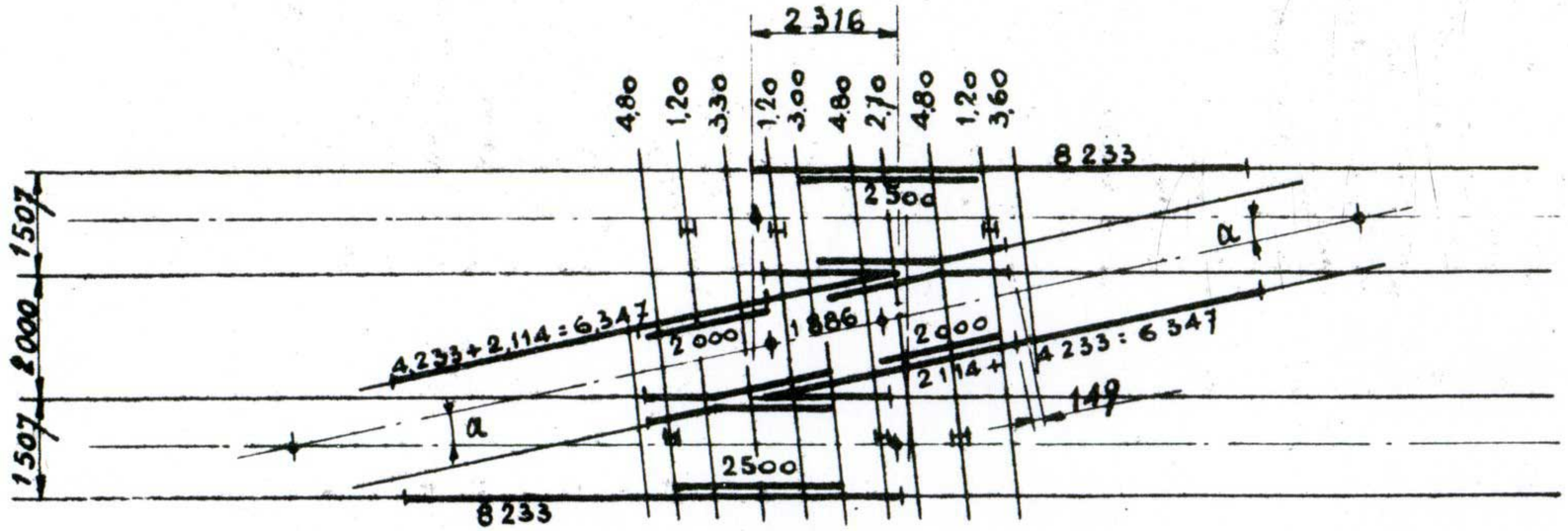
40-55

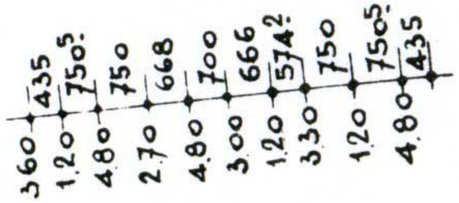
12-65

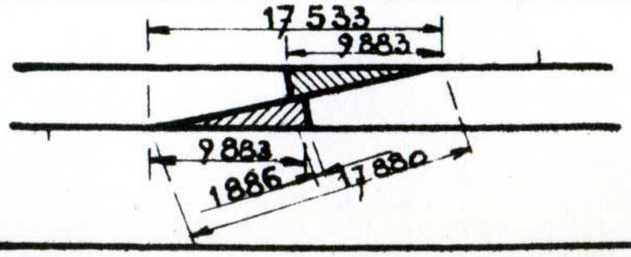
1966

Ⓑ

$H^6 - H^6$
(2.000m)







$\alpha = 11° 18' 40'' = 12^{g},567901 \quad tg\alpha = 0,200021$

40-66

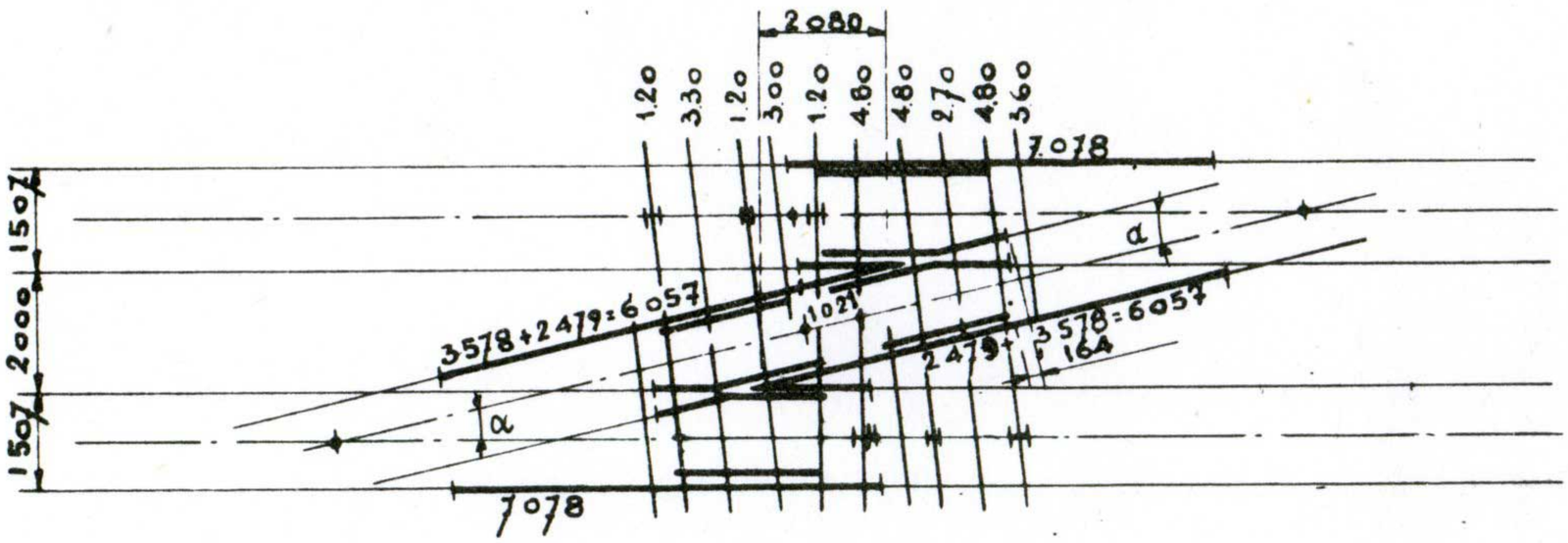
12-65

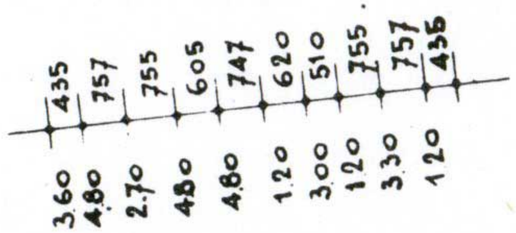
1966

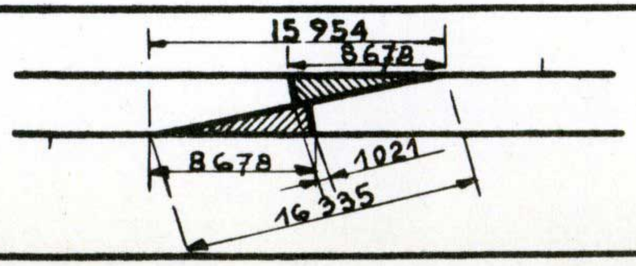
Ⓑ

$H^7 - H^7$

(2.000 m)







$\alpha = 12° 23'50'' = 13^{g},774691 \quad tg\alpha = 0,219813$

40 - 77

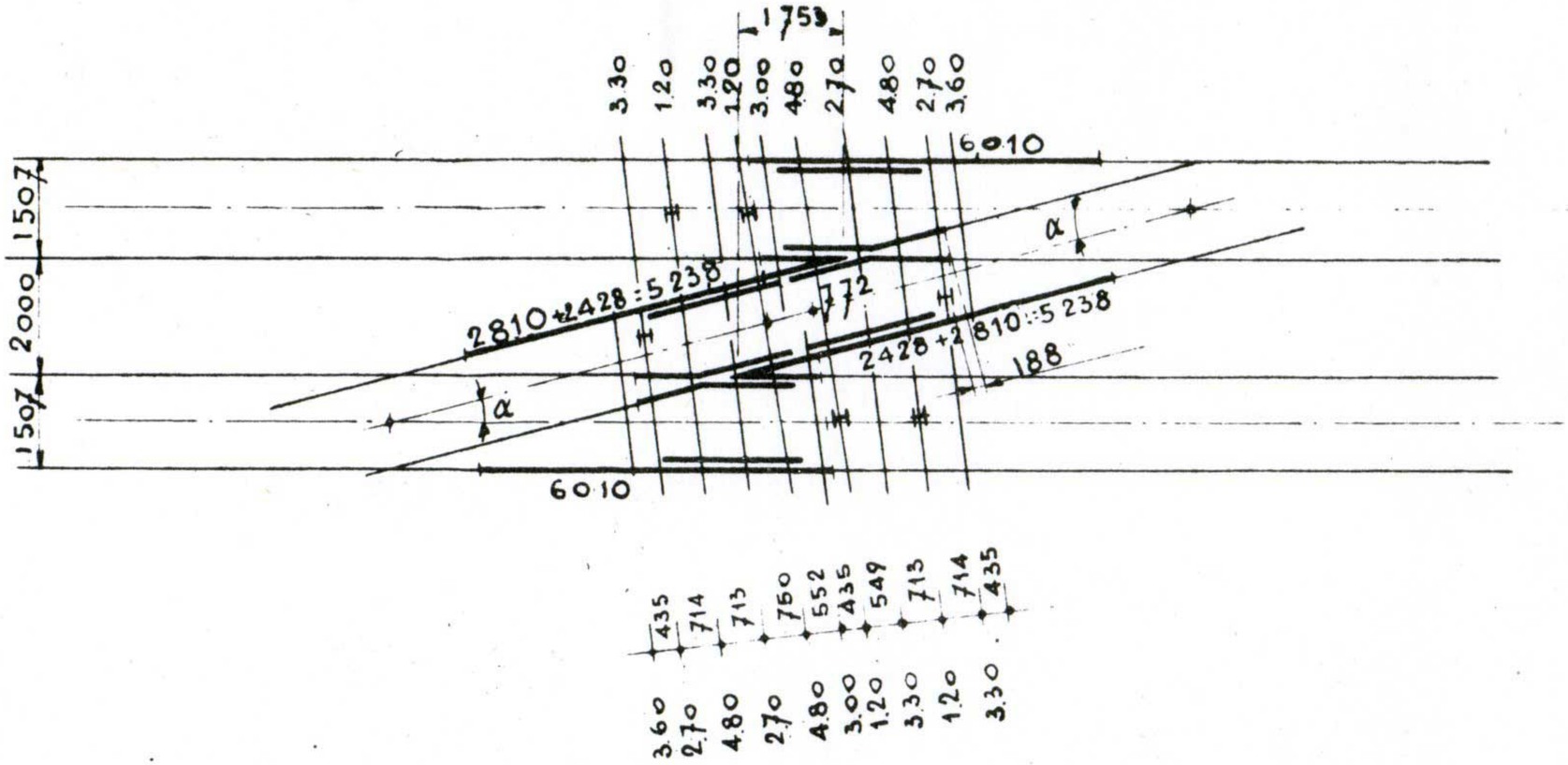
12-65

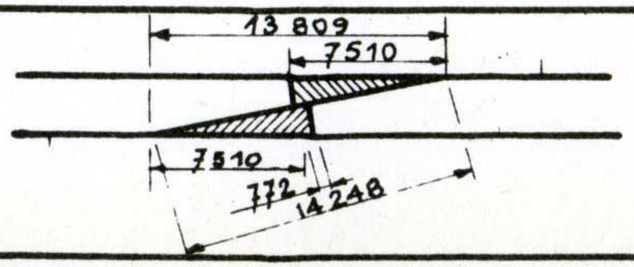
1966

Ⓑ

$H^8 - H^8$

(2.000m)





$\alpha = 14°15'00'' = 15^{g},833333 \quad tg\,\alpha = 0,253968$

40-88

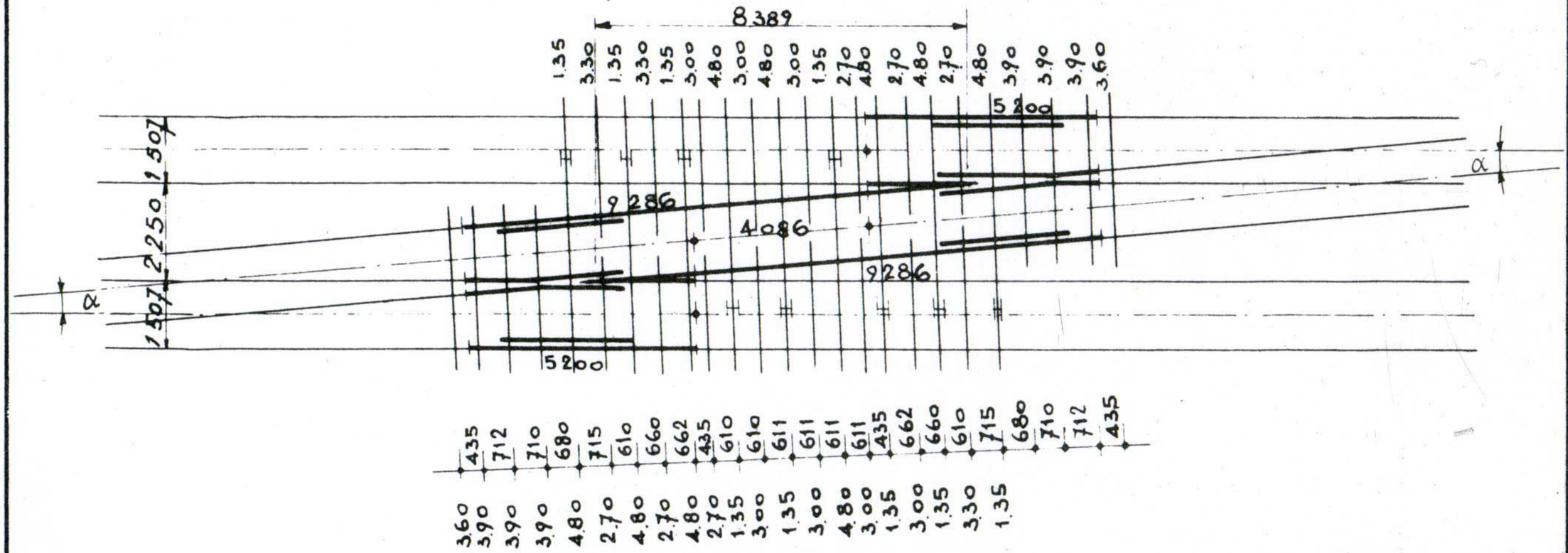
12-65

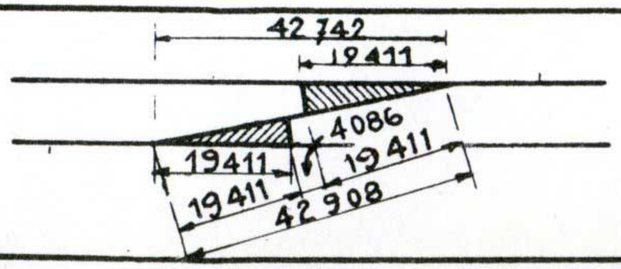
1966

PUNTSTUKVERB.
2.25

Ⓑ

$H^2 - H^2$
(2.250 m)





$\alpha = 5°01'24'' = 5^{9},581481 \quad tg\,\alpha = 0087899$

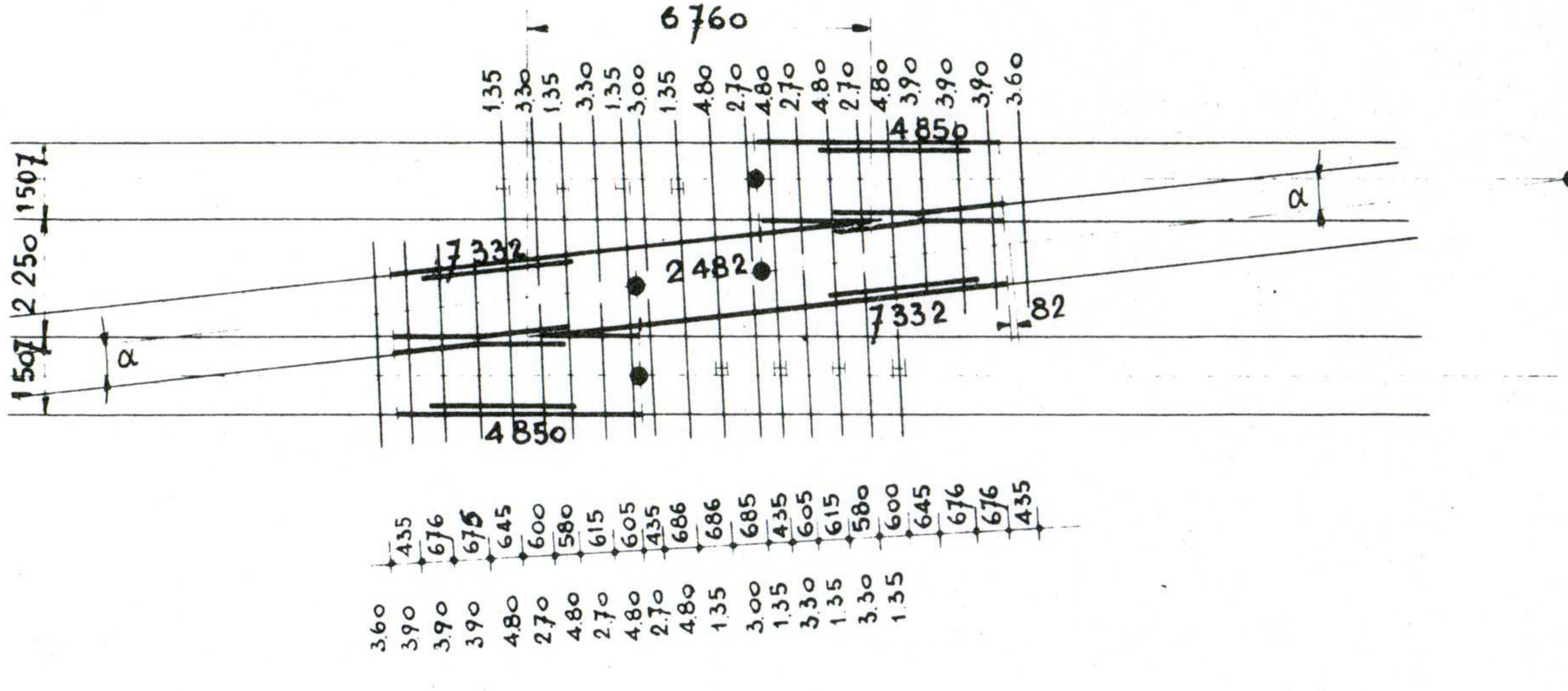
41-22

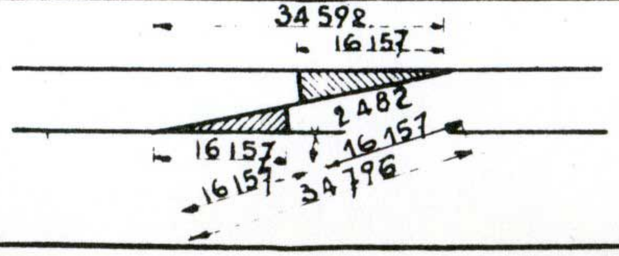
12-65

1966

Ⓑ

$H^3 - H^3$
(2.250 m)





$\alpha = 6°11'55'' = 6^{9},887346 \quad tg\alpha = 0,108611$

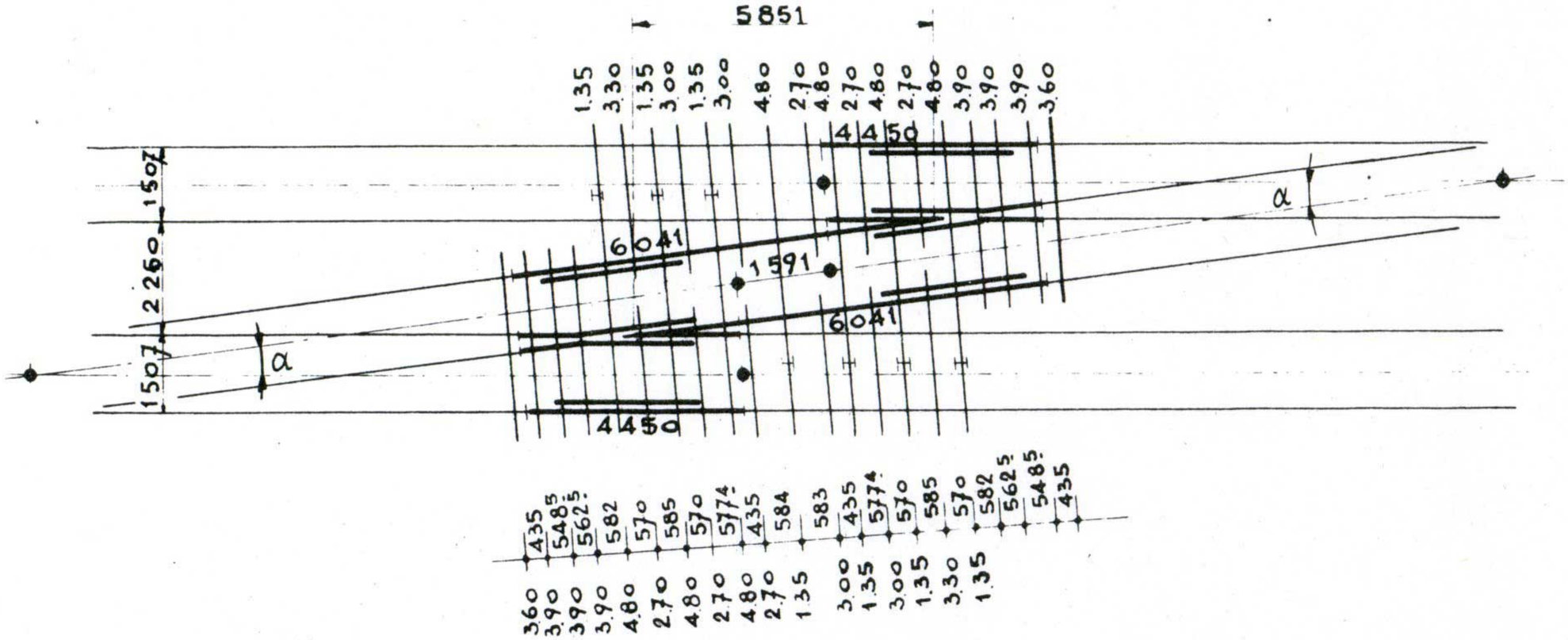
41 -33

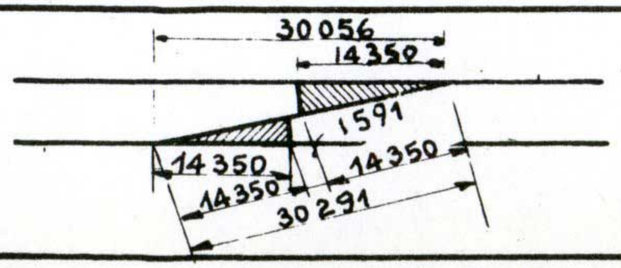
12-65

1966

Ⓑ

$H^4 - H^4$
(2.250m)





$\alpha = 7°07'30'' = 7^{g},916667 \quad tg\,\alpha = 0,125000$

41 - 44

12-65

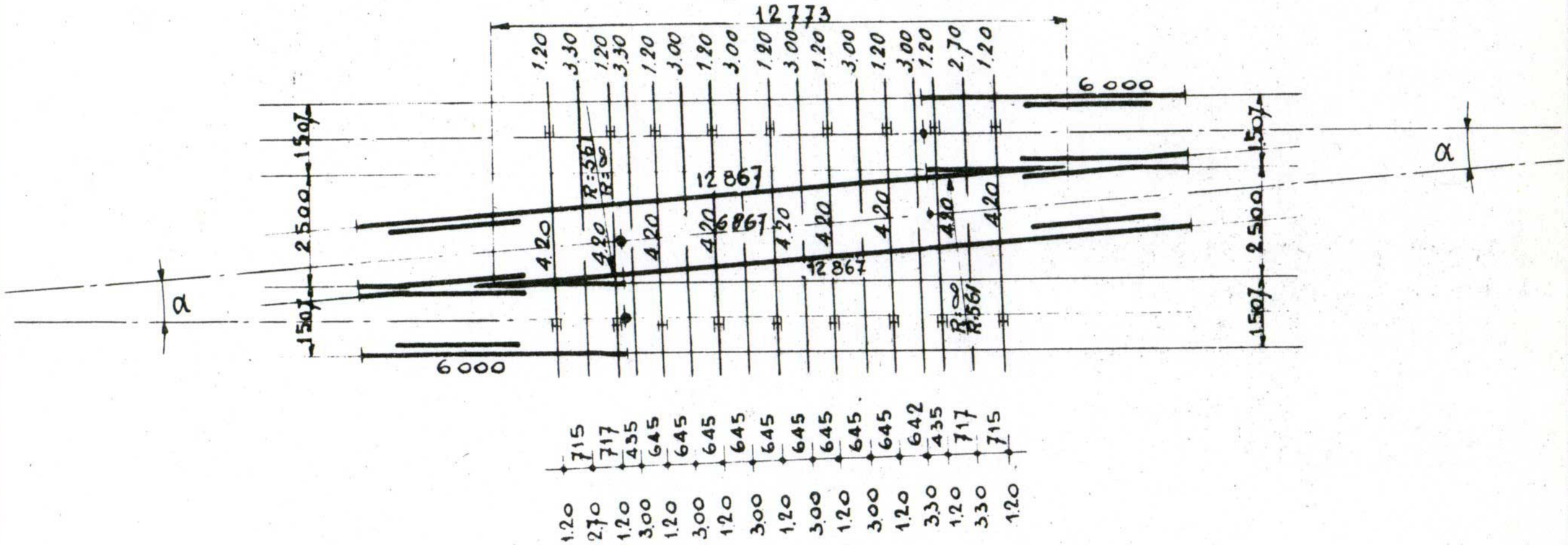
1966

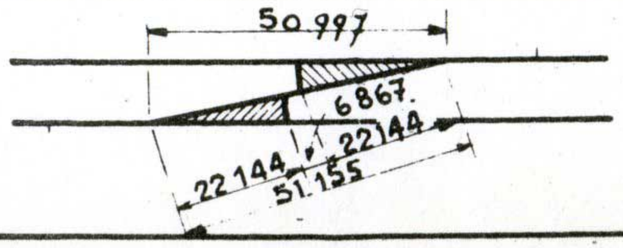
PUNTSTUKVERB.
2.50

Ⓑ

$H^{1A} - H^{1A}$

(2.500m)





$\alpha = 4°29'34'' = 4^{g},991830 \quad tg\,\alpha = 0{,}078572$

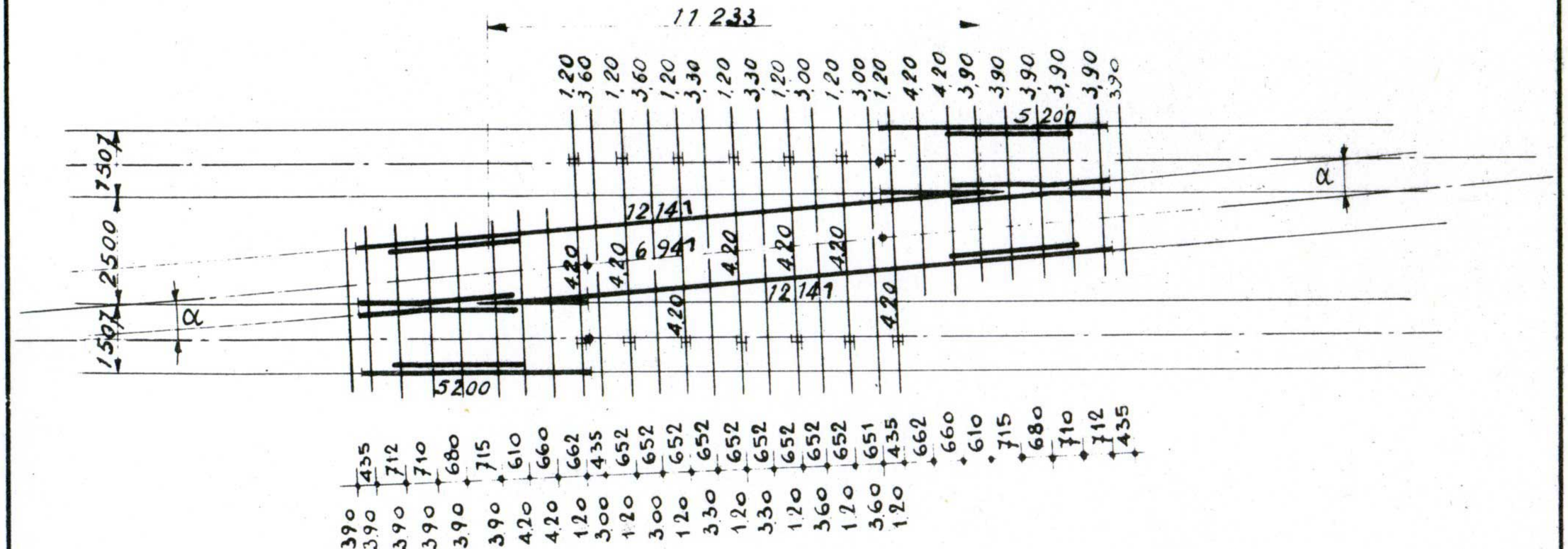
42-11A

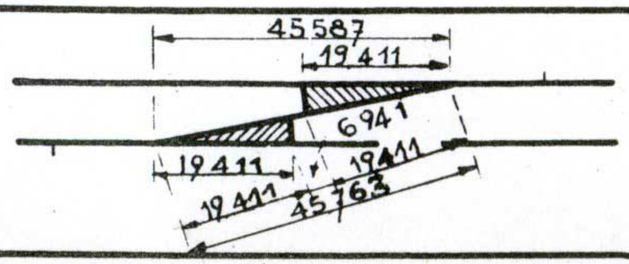
12-65

1966

Ⓑ

$H^2 - H^2$
(2.500m)





$\alpha = 5°\,01'\,24'' = 5^{g},581481 \quad tg\,\alpha = 0,087899$

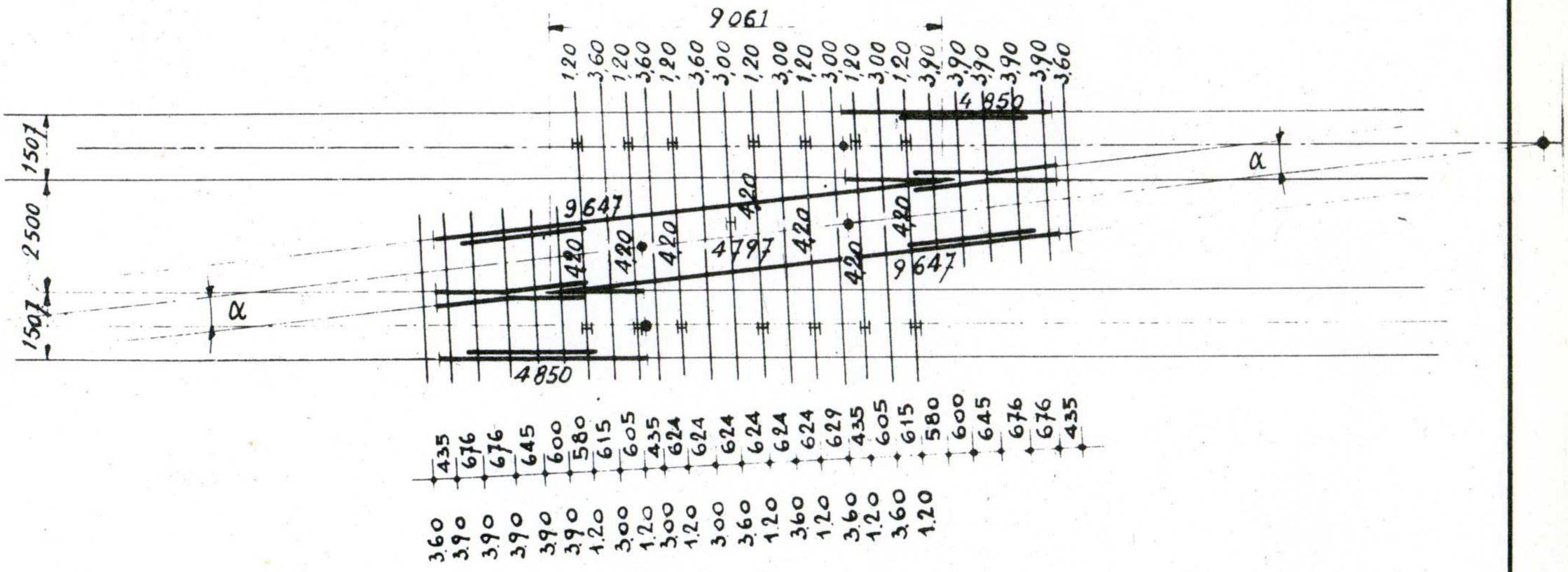
42-22

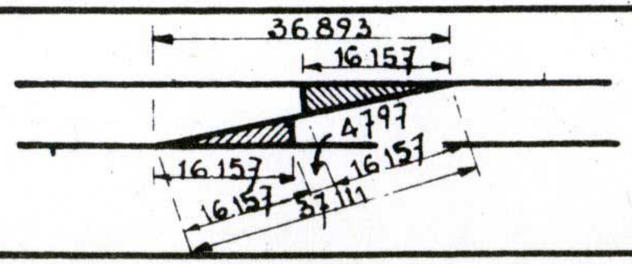
12·65

1966

Ⓑ

$H^3 - H^3$
(2.500m)





$\alpha = 6°11'55'' = 6^{9},887346 \quad tg\,\alpha = 0,108611$

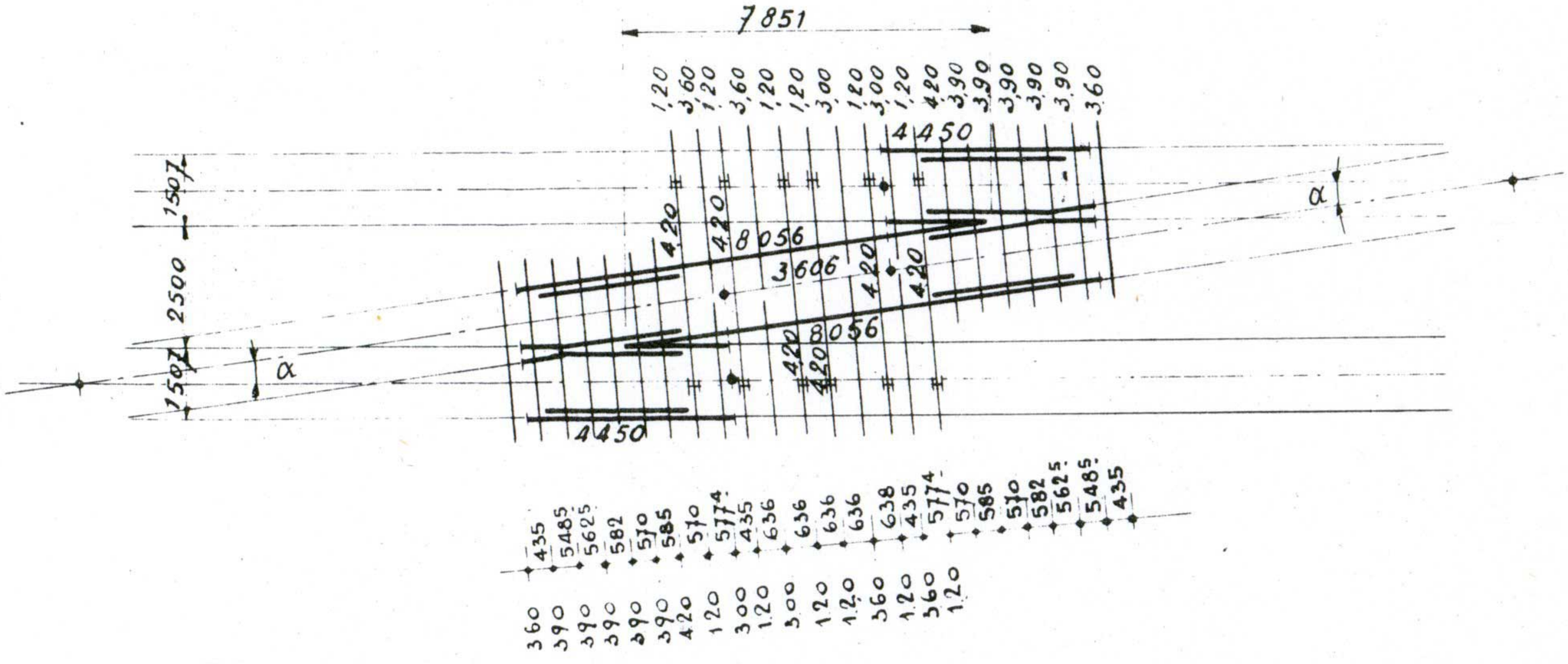
42-33

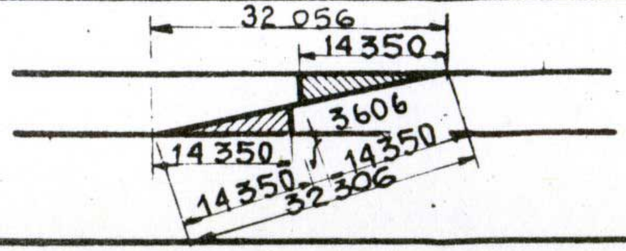
12-65

1966

Ⓑ

$H^4 - H^4$
(2.500m)





$\alpha = 7°07'30'' = 7^{9},916667 \quad tg\alpha = 0,125000$

42-44

12-65

1966

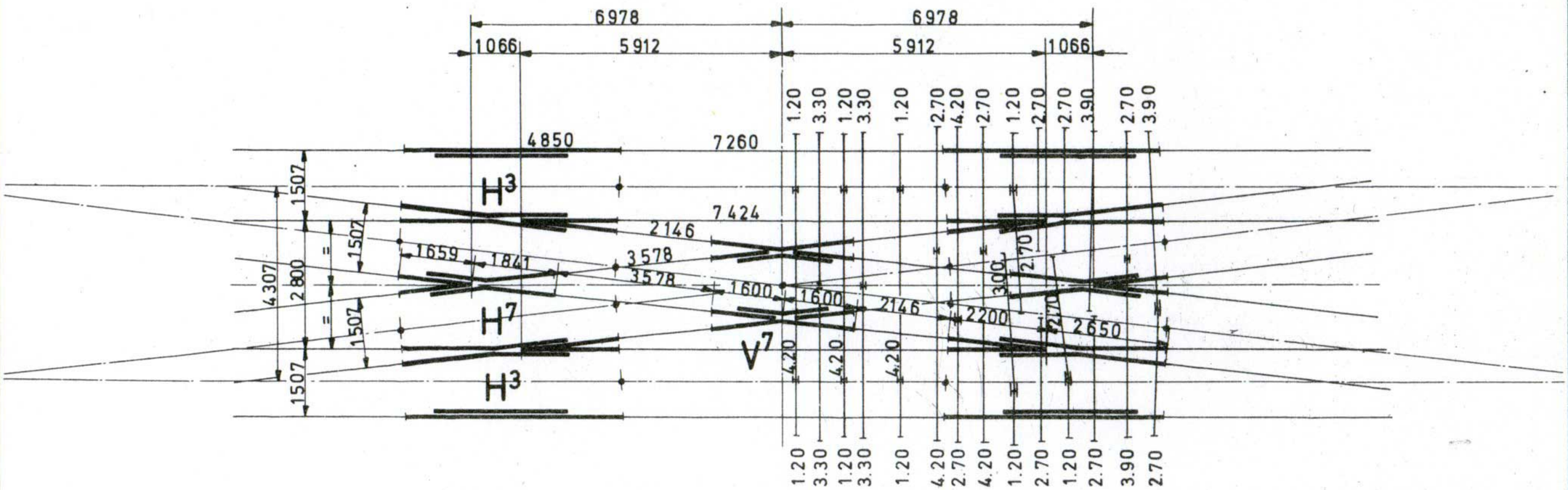
KRUISVERBIND.

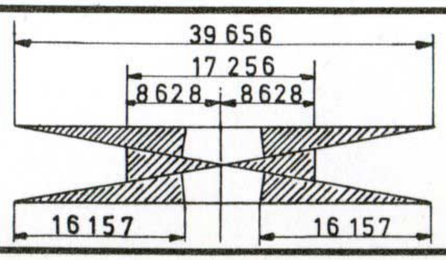
2.80

B

$H^3H^7V^7H^7H^3$

(2,800 m)





H^3 $\alpha = 6°11'55'' = 6^{9},887346$ $\quad tg\,\alpha = 0,108611$

V^7H^7 $\alpha = 12°23'50'' = 13^{9},774691$ $\quad tg\,\alpha = 0,219813$

52 - 01

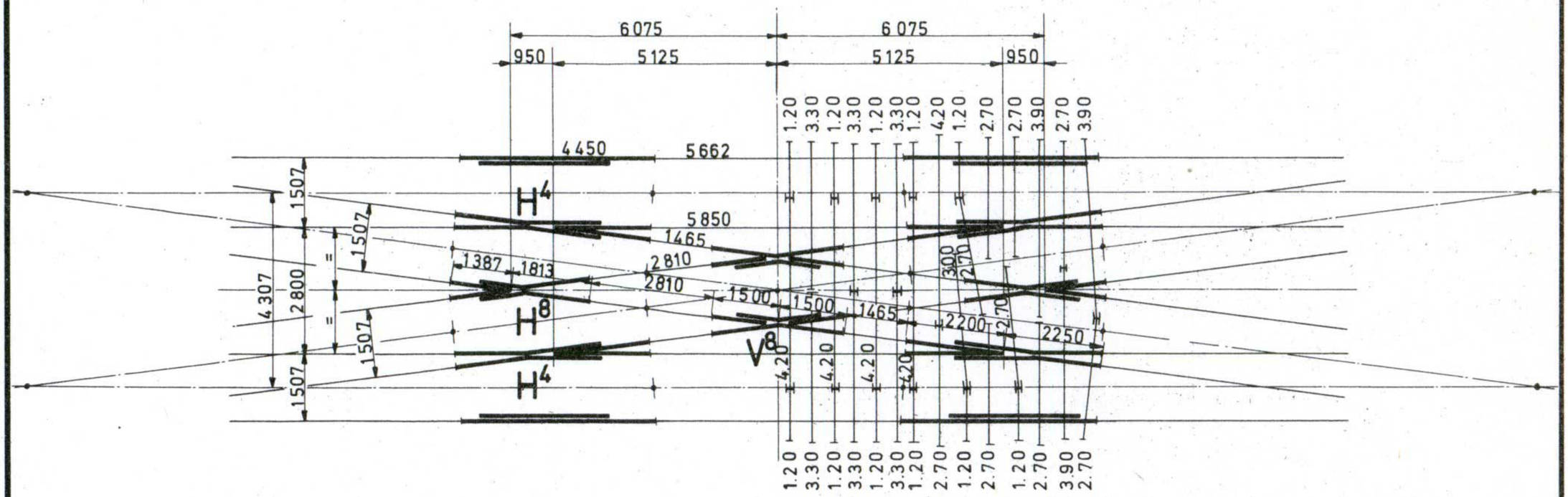
12-65

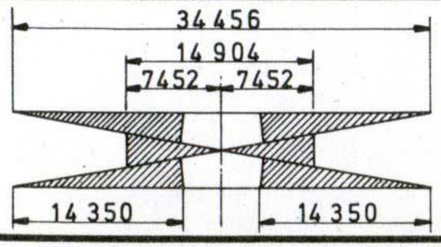
1966

B

$H^4H^8V^8H^8H^4$

(2,800 m)





H^4 $\alpha = 7°07'30'' = 7^{9},916667$ $tg\,\alpha = 0,125000$

V^8H^8 $\alpha = 14°15'00'' = 15^{9},833333$ $tg\,\alpha = 0,253968$

52 - 02

12-65

1966

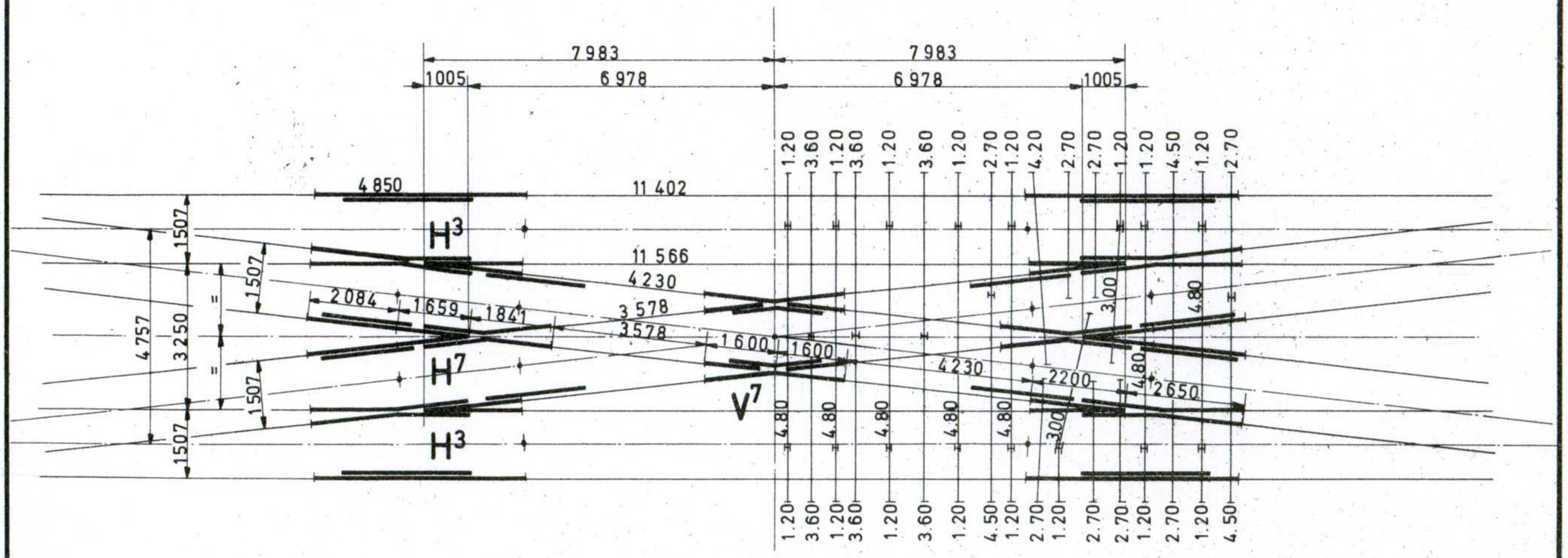
KRUISVERBIND.

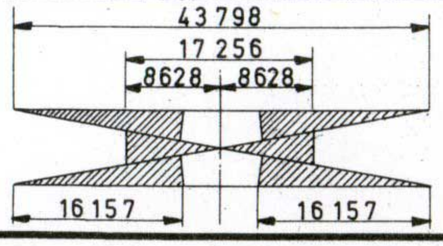
3.25

B

$H^3H^7V^7H^7H^3$

(3,250 m)





H^3 $\alpha = 6^\circ 11' 55'' = 6^g,887346$ $\operatorname{tg}\alpha = 0,108611$

V^7H^7 $\alpha = 12^\circ 23' 50'' = 13^g,774691$ $\operatorname{tg}\alpha = 0,219813$

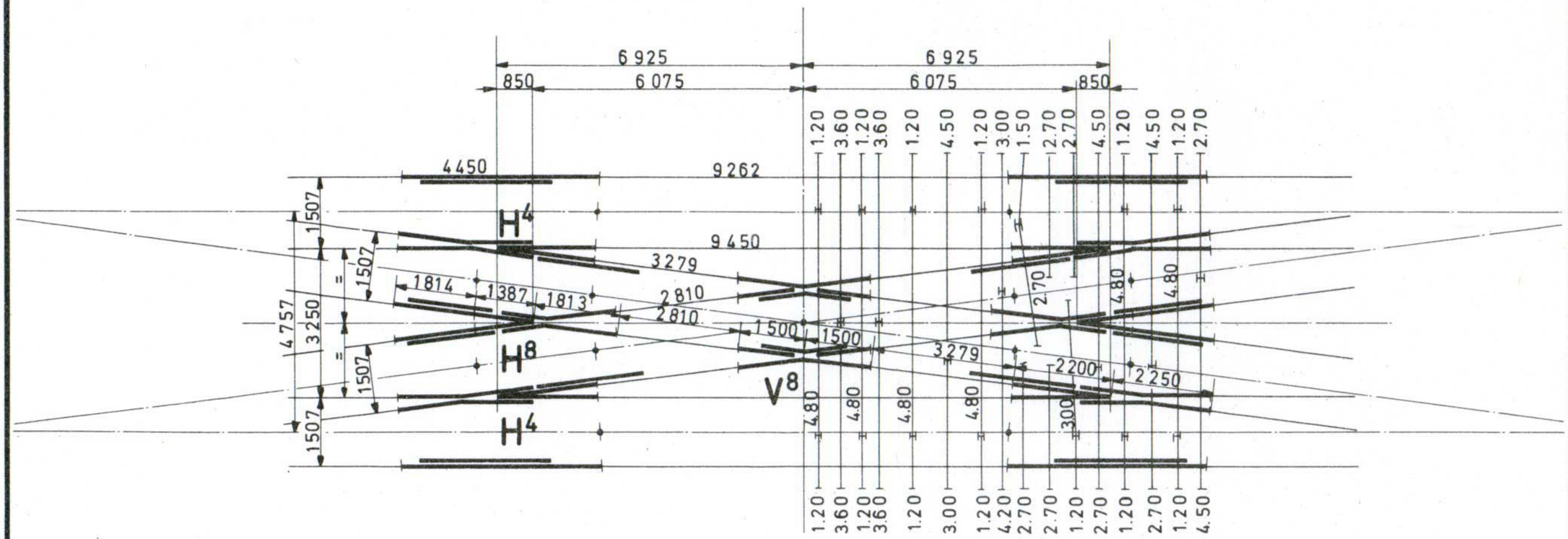
52 - 11

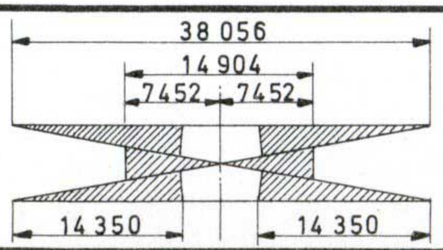
12-65

1966

$H^4H^8V^8H^8H^4$

(3,250 m)





H^4 $\alpha = 7°07'30'' = 7^{9},916667$ $\operatorname{tg}\alpha = 0{,}125000$

V^8H^8 $\alpha = 14°15'00'' = 15^{9},833333$ $\operatorname{tg}\alpha = 0{,}253968$

52 - 12

12-65

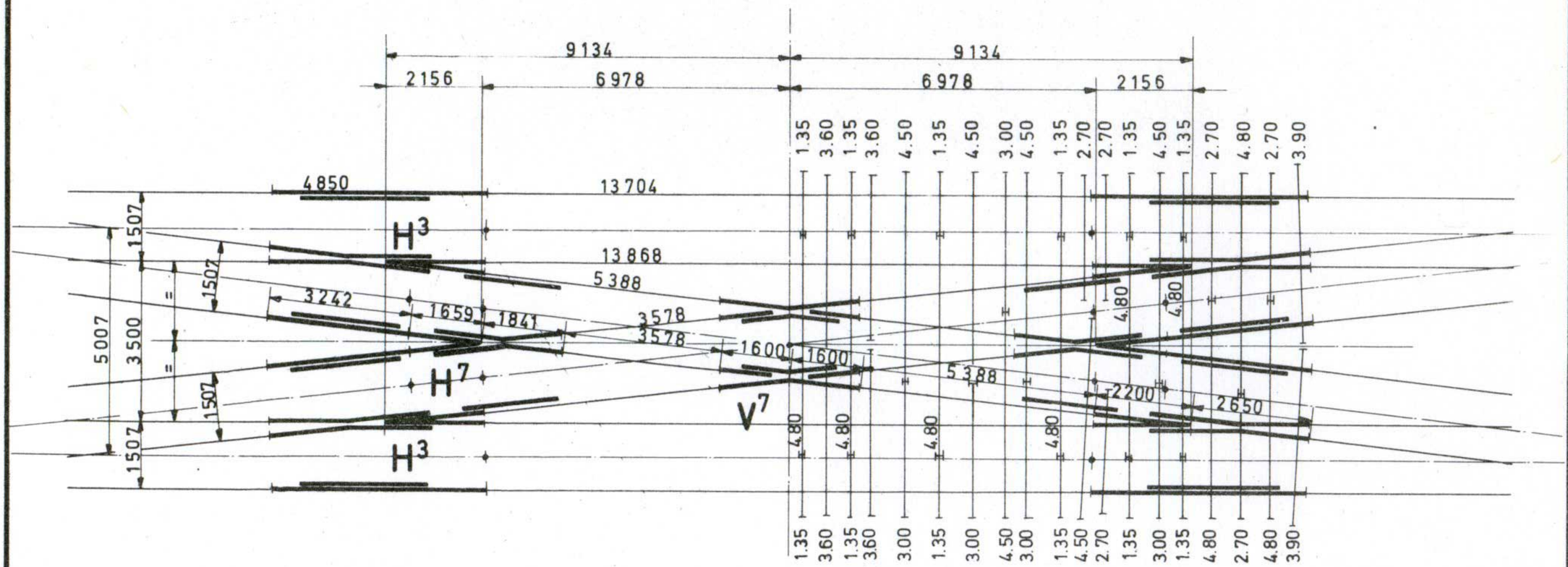
1966

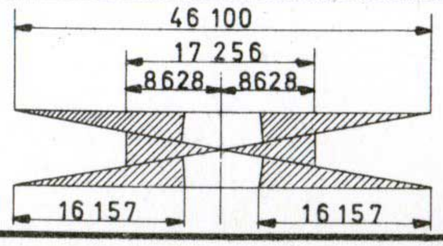
KRUISVERBIND.
3.50

Ⓑ

$H^3H^7V^7H^7H^3$

(3,500m)





H^3 $\alpha = 6°11'55'' = 6^{9},887346$ $tg\,\alpha = 0,108611$

V^7H^7 $\alpha = 12°23'50'' = 13^{9},774691$ $tg\,\alpha = 0,219813$

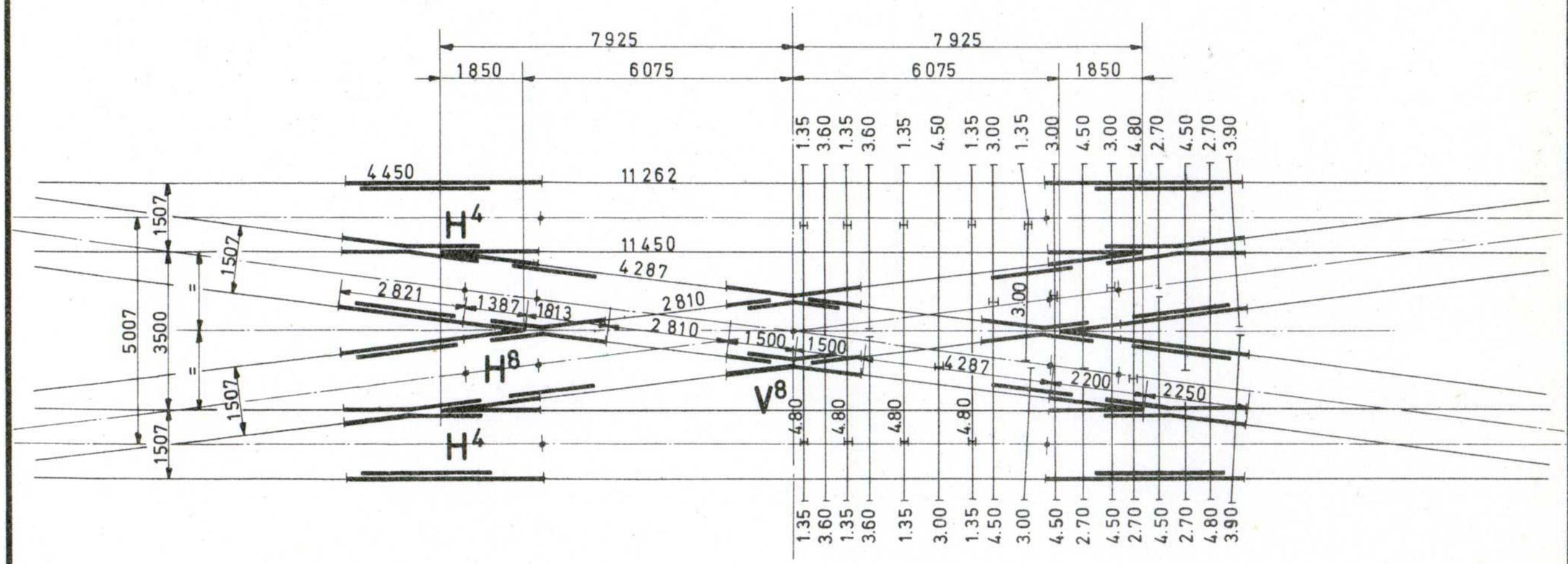
52 - 21

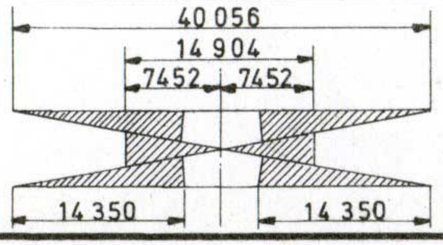
12-65

1966

$H^4H^8V^8H^8H^4$

(3,500 m)





H^4 α = 7°07'30" = 7°,916667 tg α = 0,125000

V^8H^8 α = 14°15'00" = 15°,833333 tg α = 0,253968

52 - 22

12-65

1966

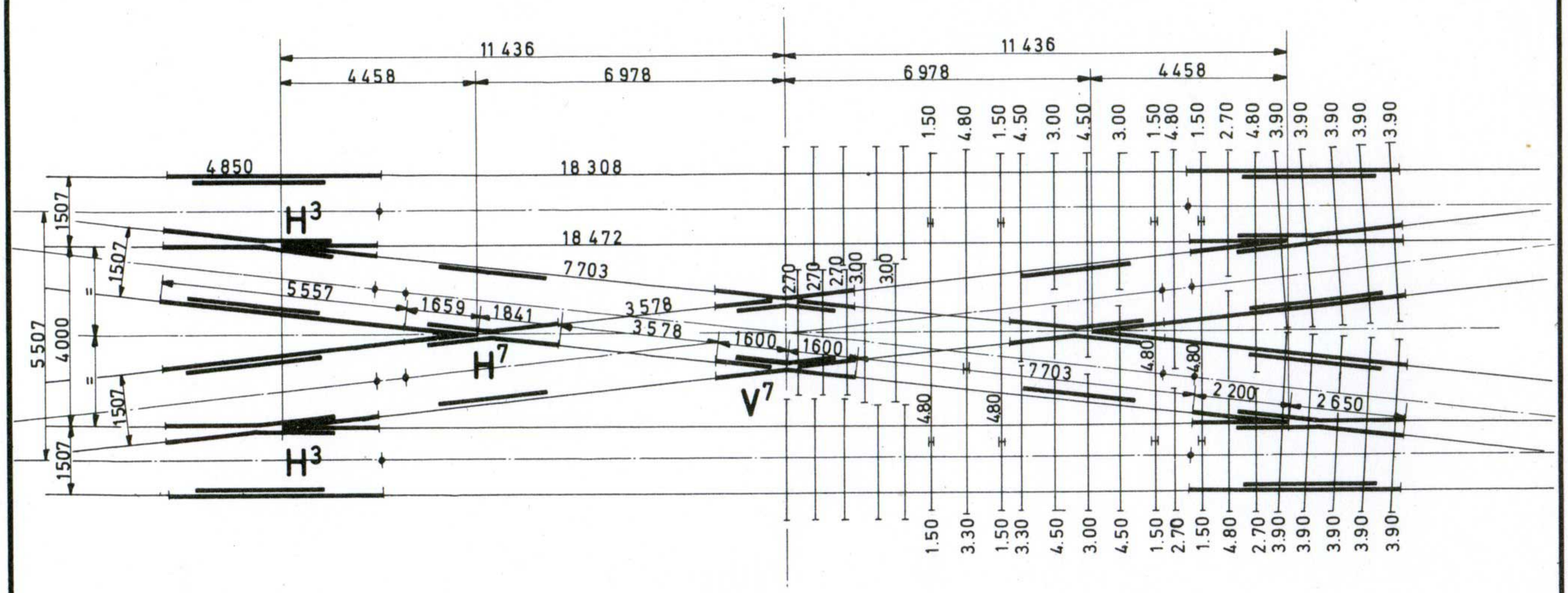
KRUISVERBIND.

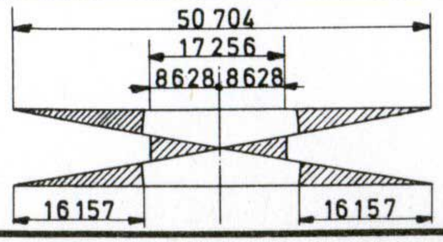
4.00

Ⓑ

$H^3H^7V^7H^7H^3$

(4,000m)





H^3 $\alpha = 6°11'55'' = 6^{9},887346$ $tg\alpha = 0,108611$

V^7H^7 $\alpha = 12°23'50'' = 13^{9},774691$ $tg\alpha = 0,219813$

52 - 31

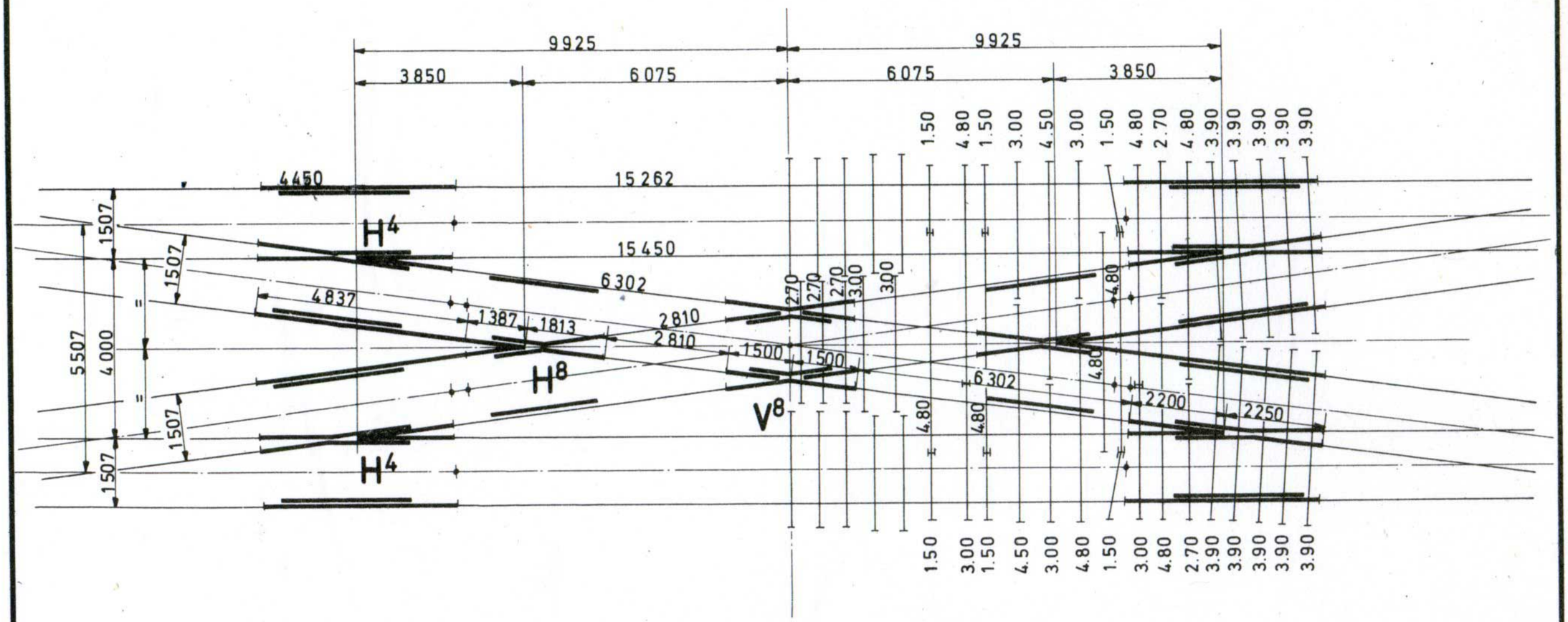
12-65

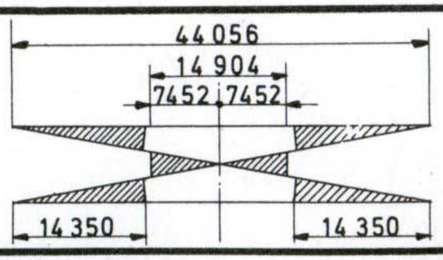
1966

B

$H^4H^8V^8H^8H^4$

(4,000 m)





H^4 α = 7°07'30" = 7°,916667 tg α = 0,125000

V^8H^8 α = 14°15'00" = 15°,833333 tg α = 0,253968

52 - 32

12-65

1966

VERTAKKINGEN