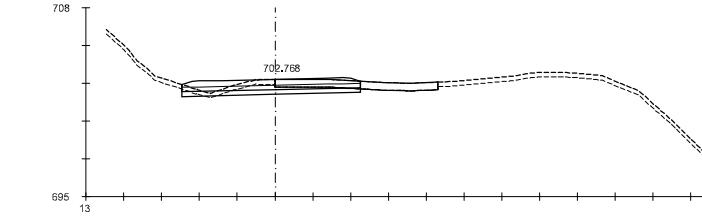
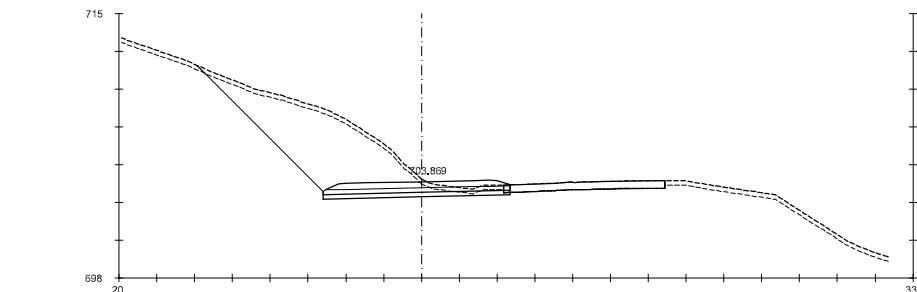


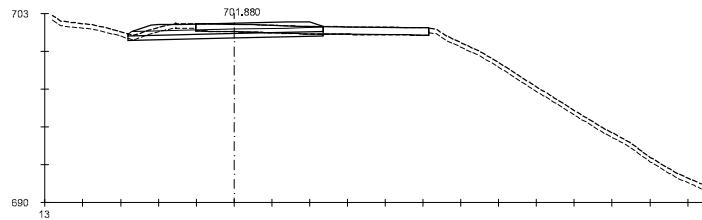
S. FIRME = 4,34 m², S. D FIRME = 4,63 m²,
S. D TIERRA = 5,34 m², S. TERRAPLEN = 0,64 m²,
S. SUELO SEL 2 = 3,41 m², S. VEGETAL = 0,64 m²,
S. SUELO SEL 1 = 3,41 m².



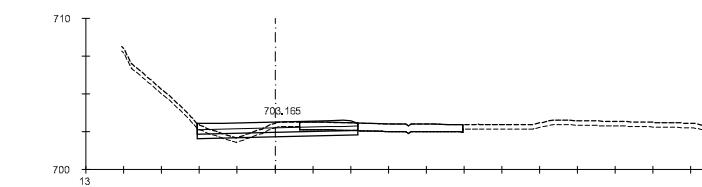
S. FIRME = 4,54 m², S. D FIRME = 2,82 m²,
S. D TIERRA = 4,35 m², S. TERRAPLEN = 0,05 m²,
S. SUELO SEL 2 = 3,53 m², S. VEGETAL = 1,84 m²,
S. SUELO SEL 1 = 3,53 m².



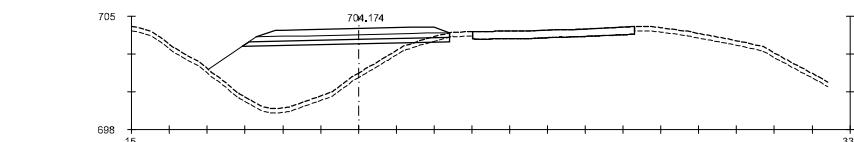
S. FIRME = 4,54 m², S. D FIRME = 3,22 m²,
S. D TIERRA = 44,95 m², S. TERRAPLEN = 5,89 m²,
S. SUELO SEL 2 = 3,70 m², S. VEGETAL = 3,70 m²,
S. SUELO SEL 1 = 3,70 m².



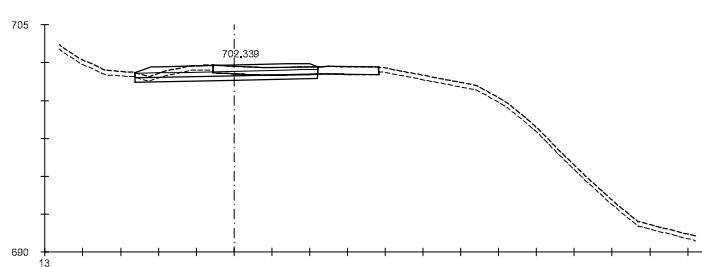
S. FIRME = 4,82 m², S. D FIRME = 4,22 m²,
S. D TIERRA = 5,09 m², S. TERRAPLEN = 0,00 m²,
S. SUELO SEL 2 = 3,87 m², S. VEGETAL = 1,34 m²,
S. SUELO SEL 1 = 3,85 m².



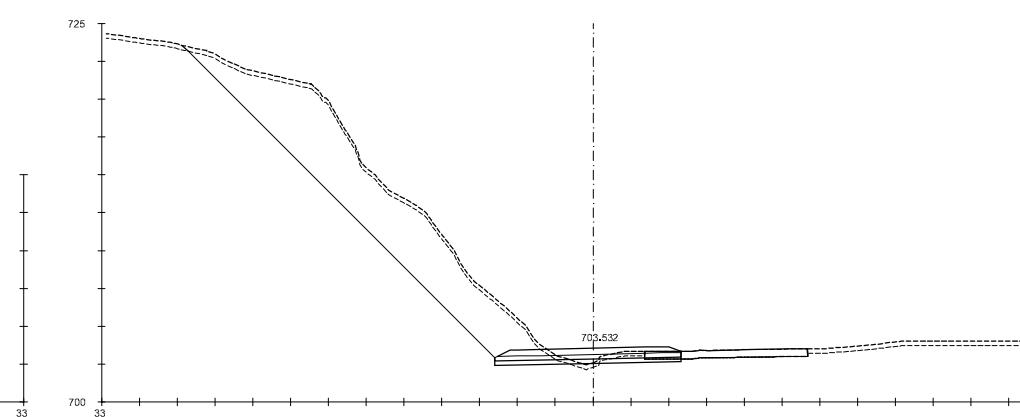
S. FIRME = 4,19 m², S. D FIRME = 1,93 m²,
S. D TIERRA = 3,60 m², S. TERRAPLEN = 0,28 m²,
S. SUELO SEL 2 = 3,19 m², S. VEGETAL = 2,03 m²,
S. SUELO SEL 1 = 3,19 m².



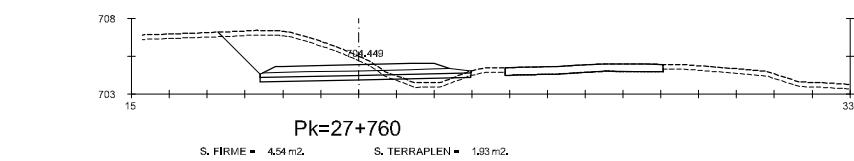
S. FIRME = 4,63 m², S. TERRAPLEN = 38,01 m²,
S. D TIERRA = 0,19 m², S. VEGETAL = 4,79 m²,
S. SUELO SEL 2 = 4,04 m²,
S. SUELO SEL 1 = 3,91 m².



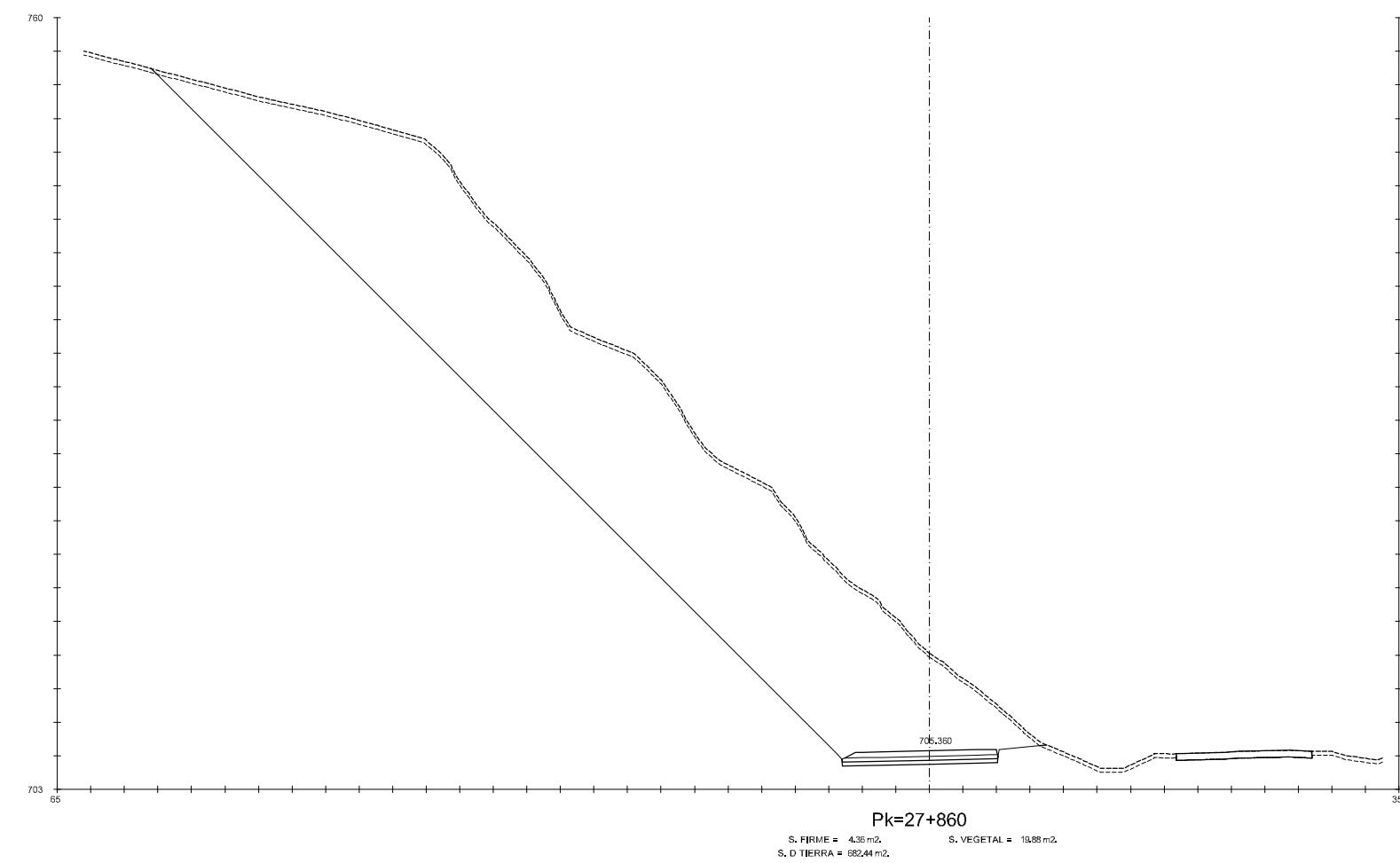
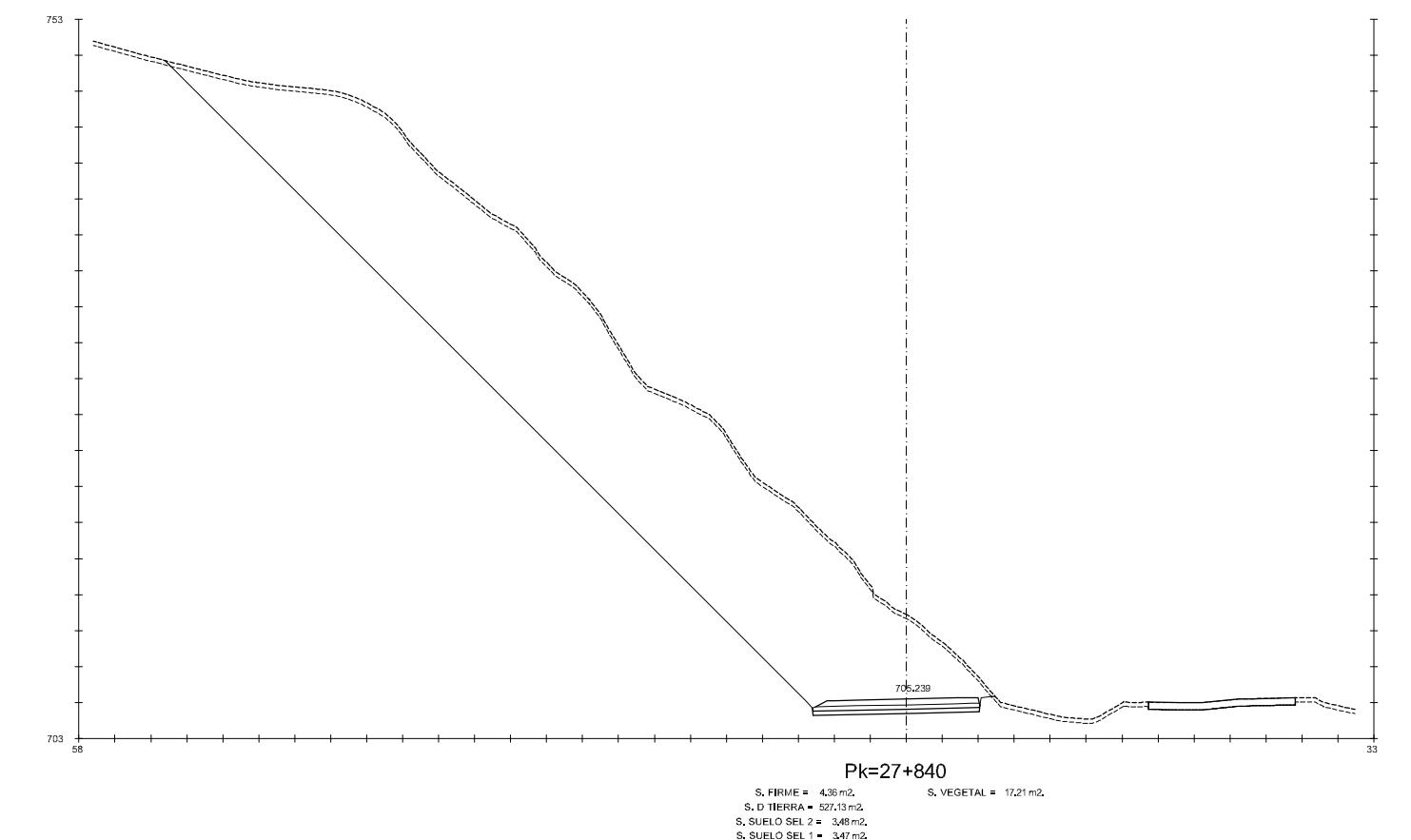
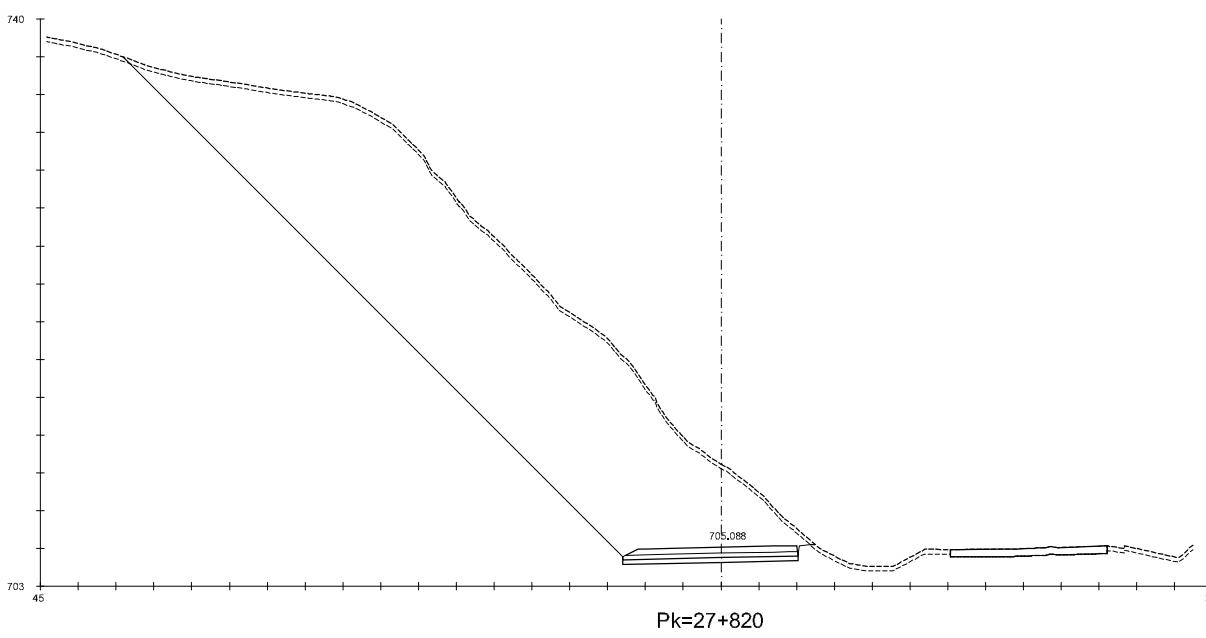
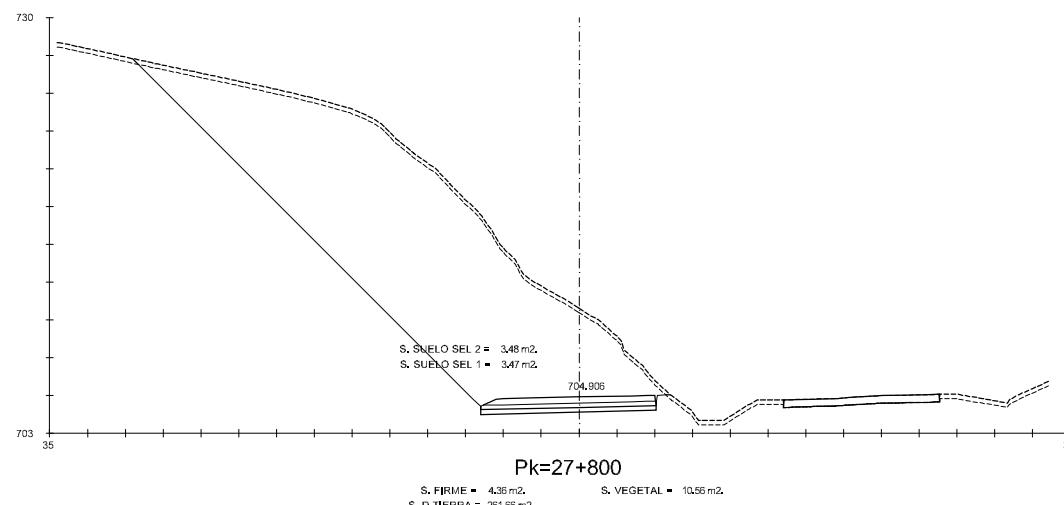
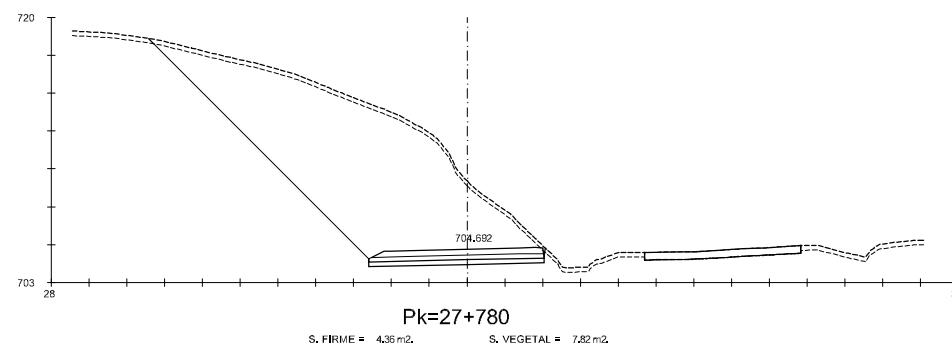
S. FIRME = 4,59 m², S. D FIRME = 3,47 m²,
S. D TIERRA = 4,85 m², S. VEGETAL = 1,54 m²,
S. SUELO SEL 2 = 3,82 m²,
S. SUELO SEL 1 = 3,82 m².

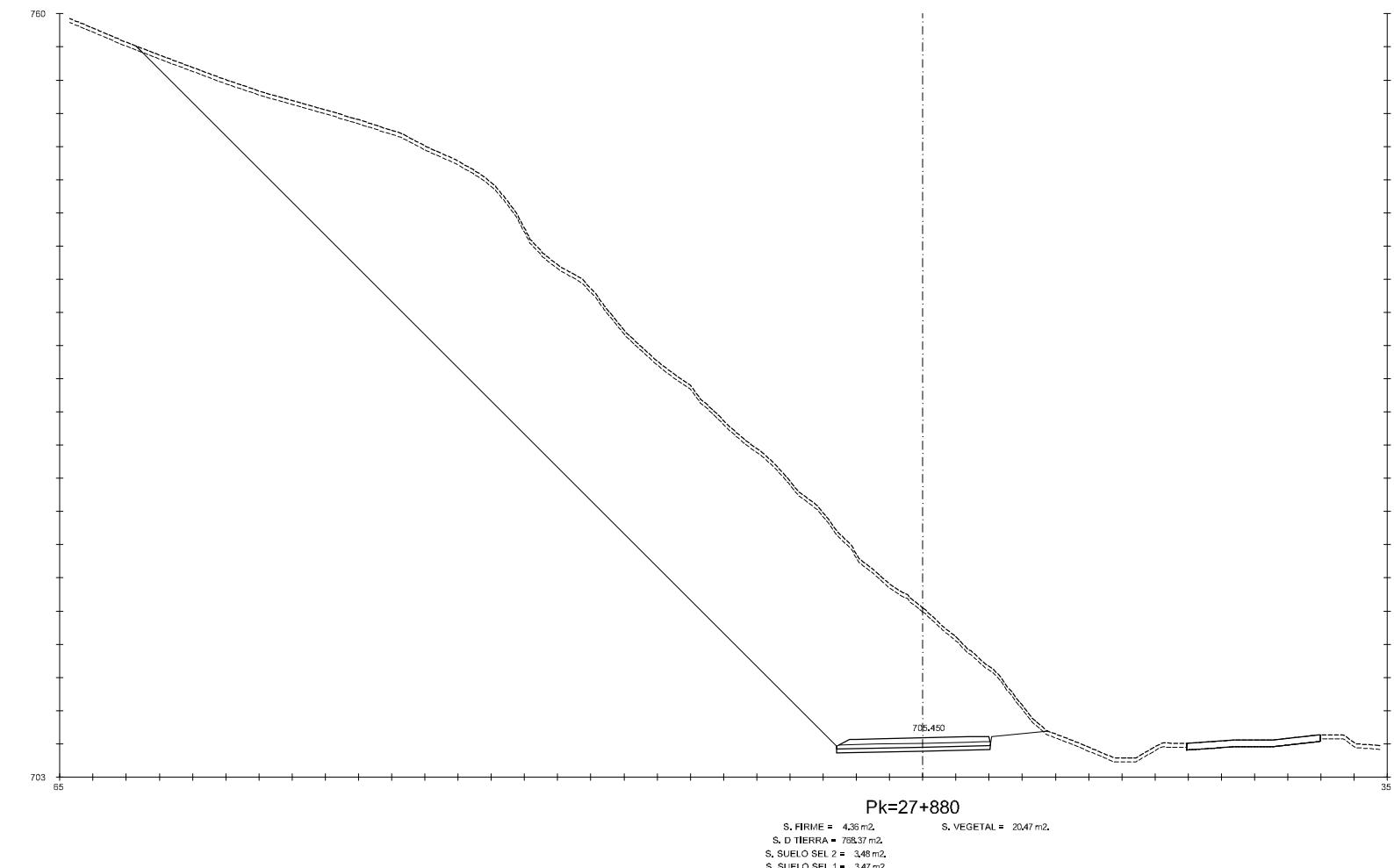


S. FIRME = 4,53 m², S. D FIRME = 1,19 m²,
S. D TIERRA = 85,31 m², S. TERRAPLEN = 0,44 m²,
S. SUELO SEL 2 = 3,89 m², S. VEGETAL = 9,12 m²,
S. SUELO SEL 1 = 3,89 m².



S. FIRME = 4,54 m², S. TERRAPLEN = 1,93 m²,
S. D TIERRA = 20,61 m², S. VEGETAL = 4,98 m²,
S. SUELO SEL 2 = 4,16 m²,
S. SUELO SEL 1 = 4,05 m².





DEPARTAMENTO DE FOMENTO
DIRECCIÓN GENERAL DE OBRAS PÚBLICAS
SERVICIO DE ESTUDIOS Y PROYECTOS
SECCIÓN DE PROYECTOS

Vº Bº LA ICCP DIRECTORA DEL ESTUDIO
Mº CARMEN GONZÁLEZ MARTÍNEZ



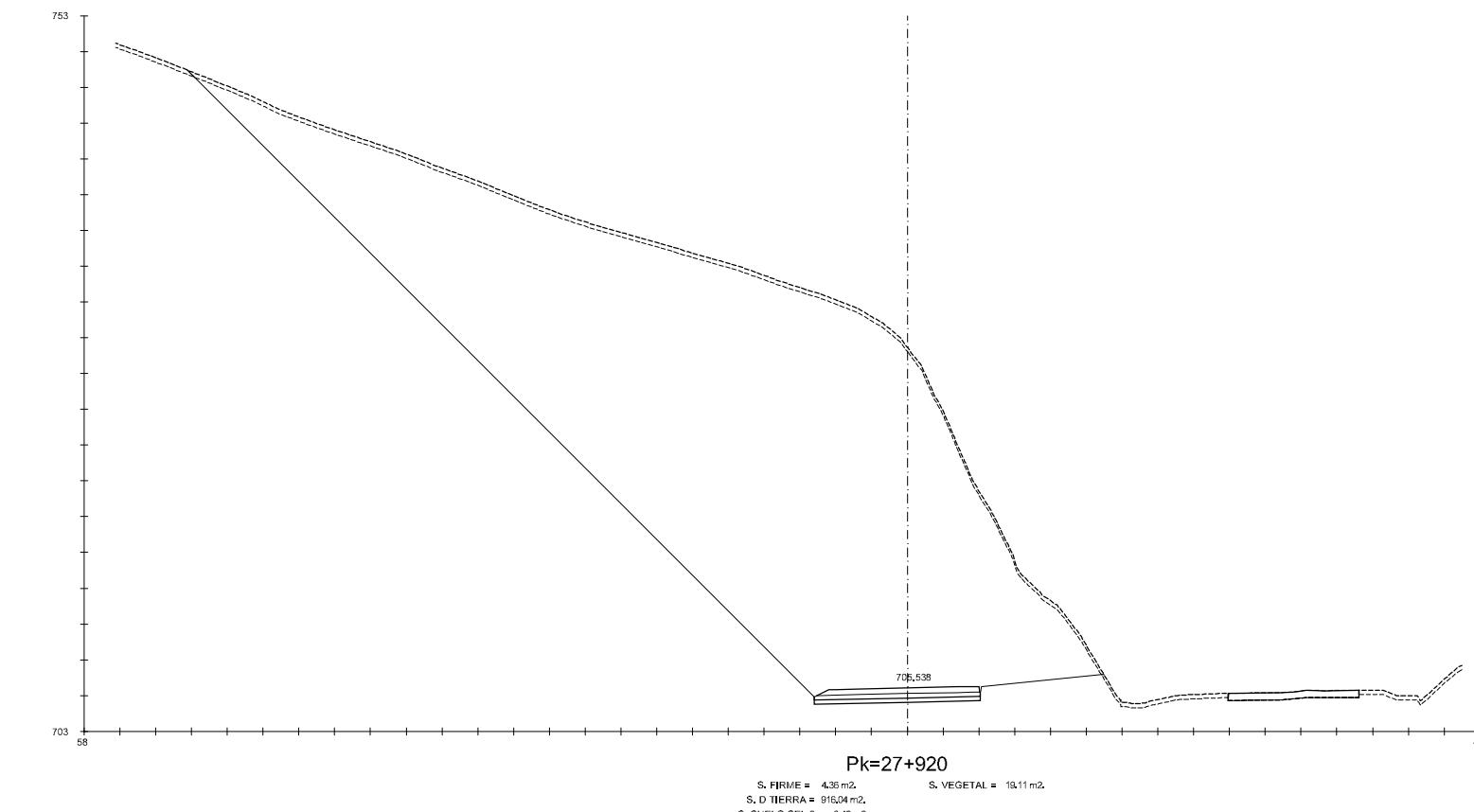
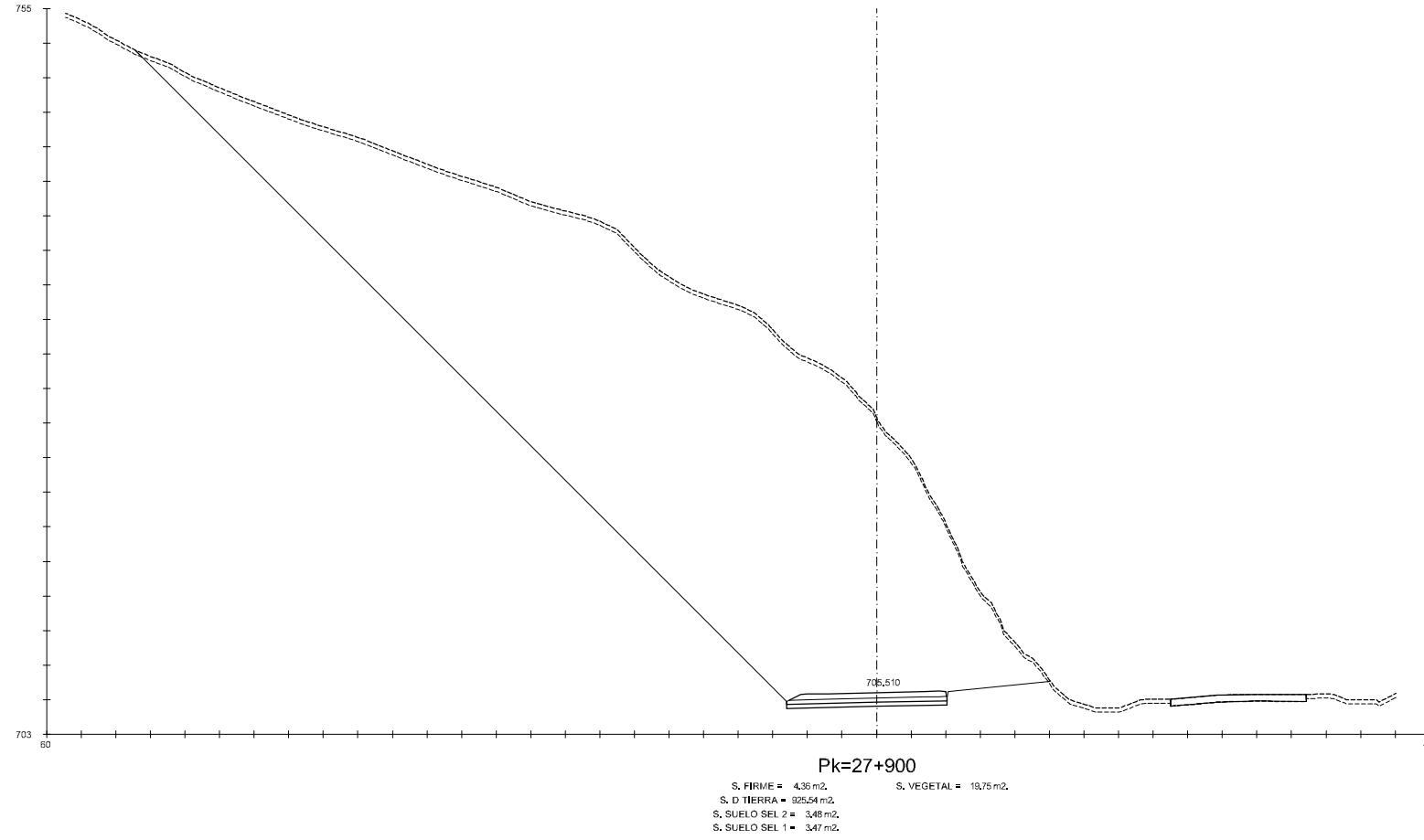
EL INGENIERO DE CAMINOS, C. y P.
AUTOR DEL ESTUDIO
JOAQUÍN BERNAD BERNAD

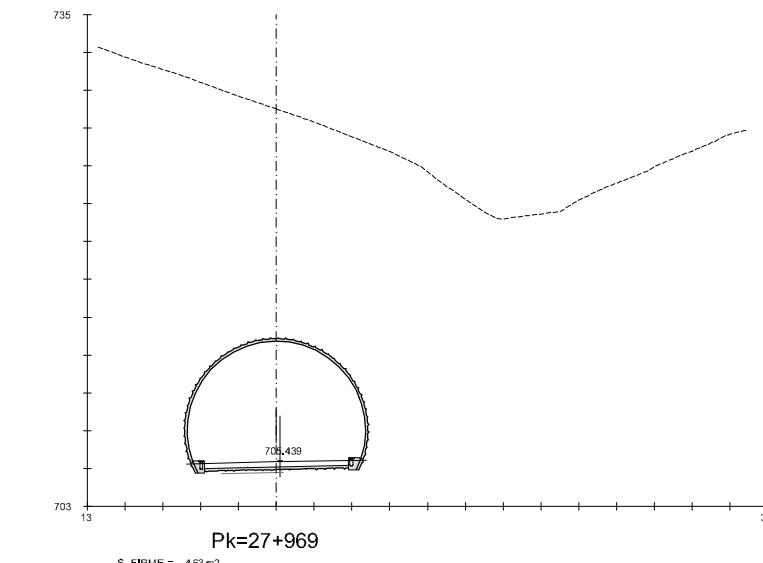
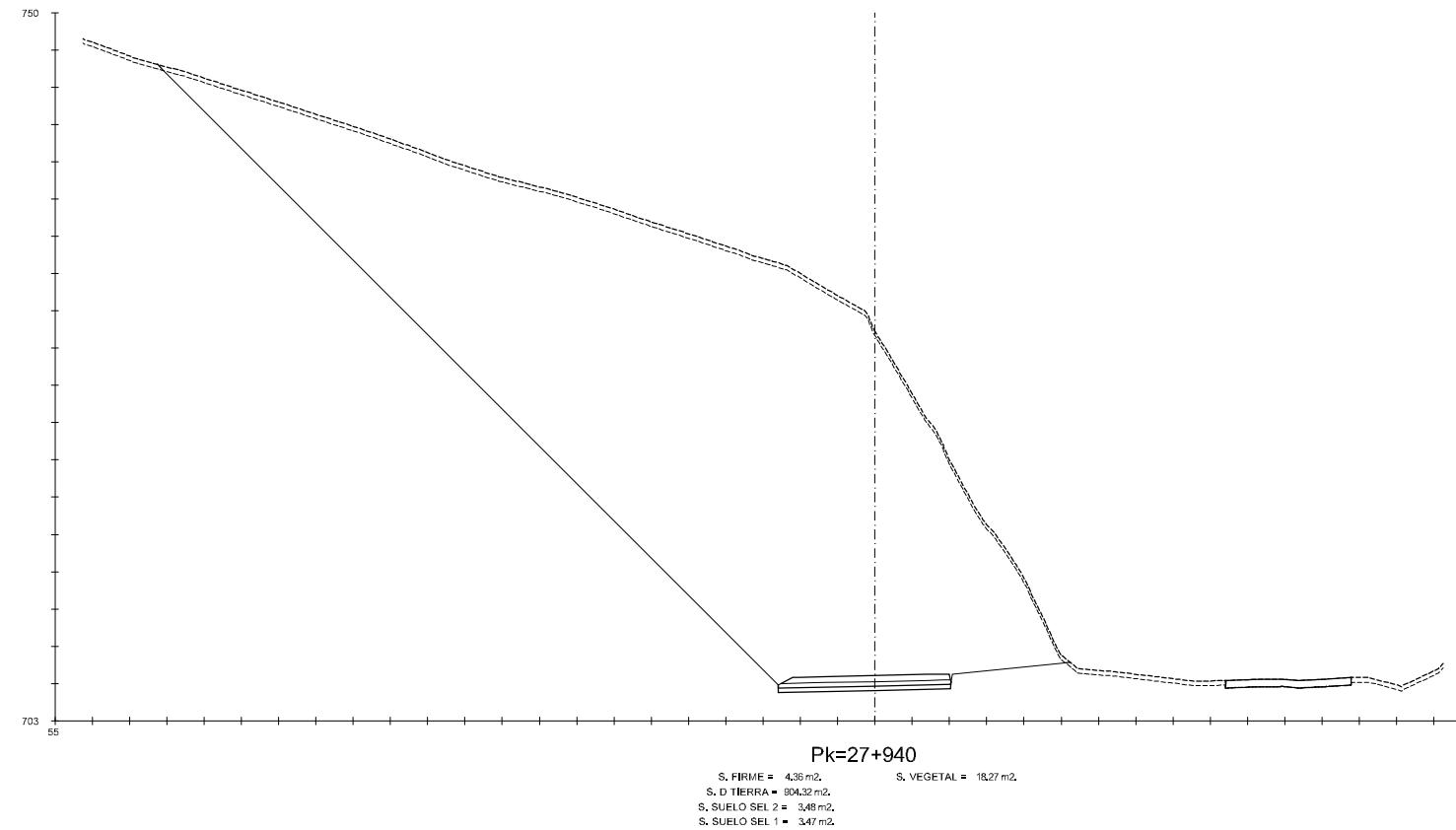
ESCALA:
1 / 500

TÍTULO
ESTUDIO DE ALTERNATIVAS PARA LA DUPLICACIÓN
DE LOS TÚNELES DE BELATE Y ALMANDOZ EN LA CARRETERA
N-121-A (PAMPLONA-BEHOBIA)

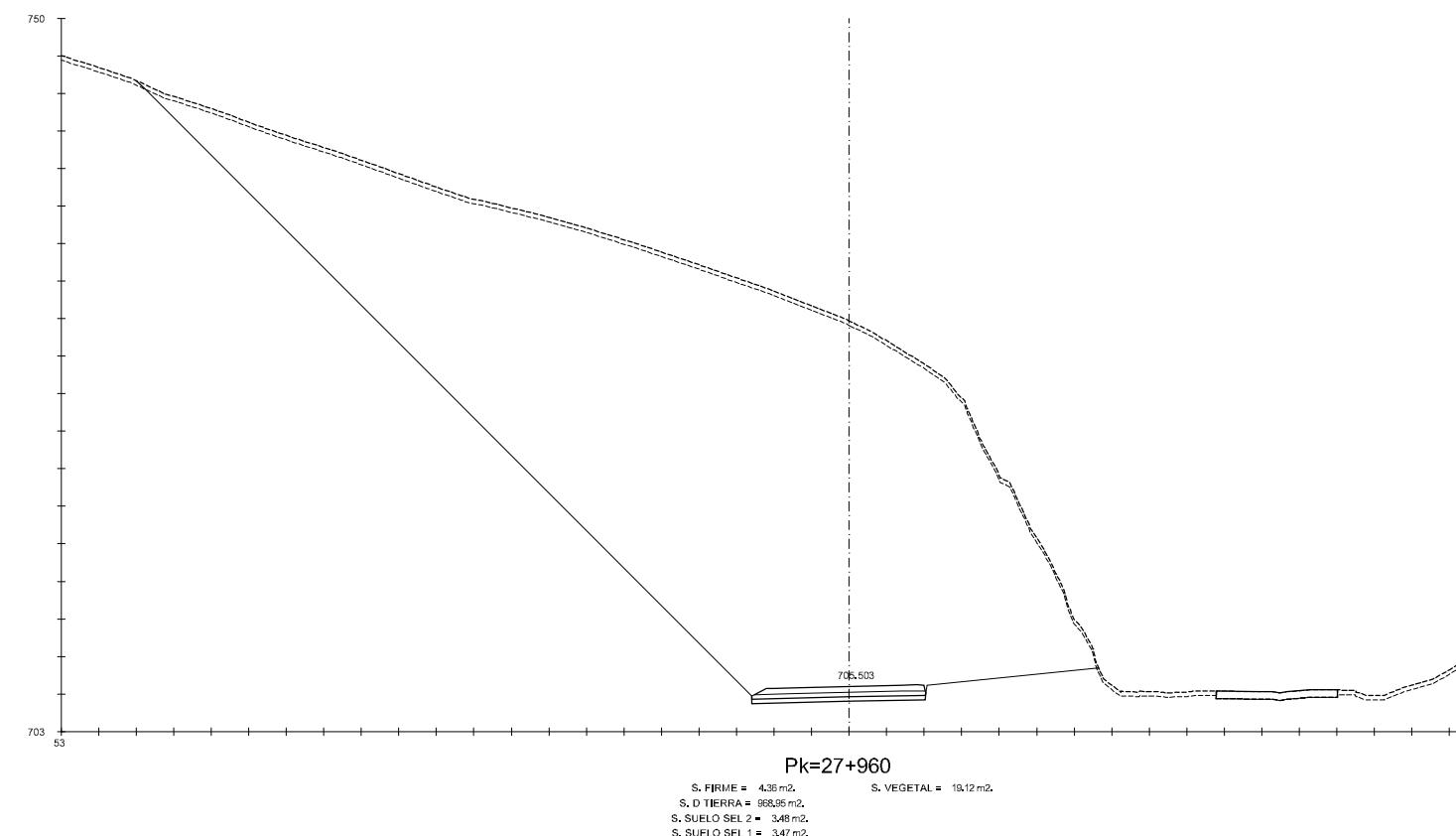
DESIGNACIÓN DEL PLANO
DEFINICIÓN DE ALTERNATIVAS
ALTERNATIVA-1
PERFILES TRANSVERSALES

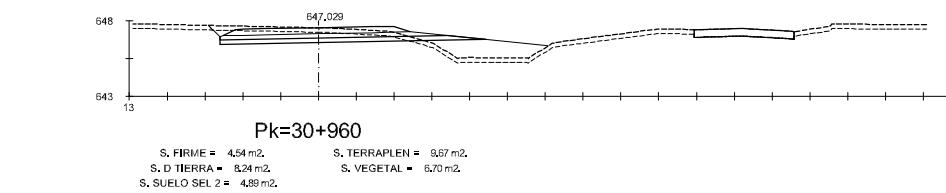
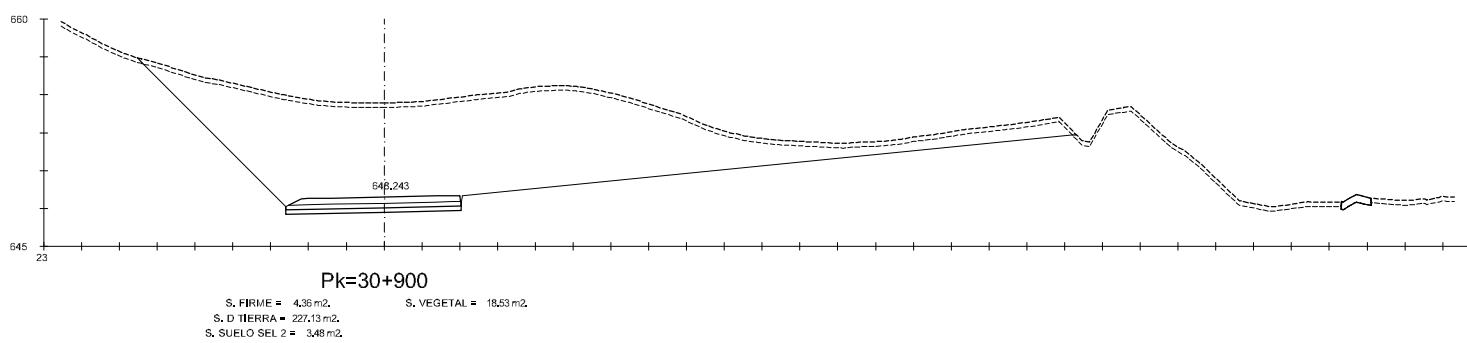
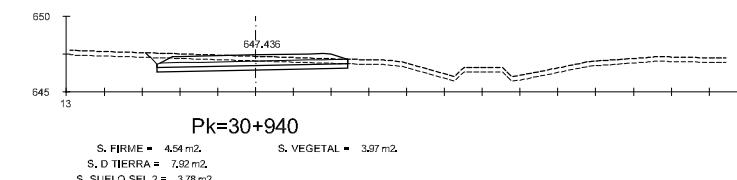
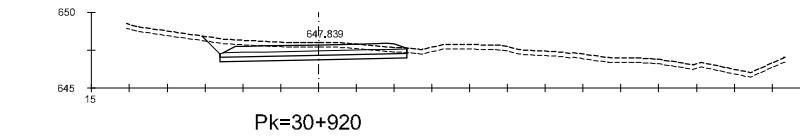
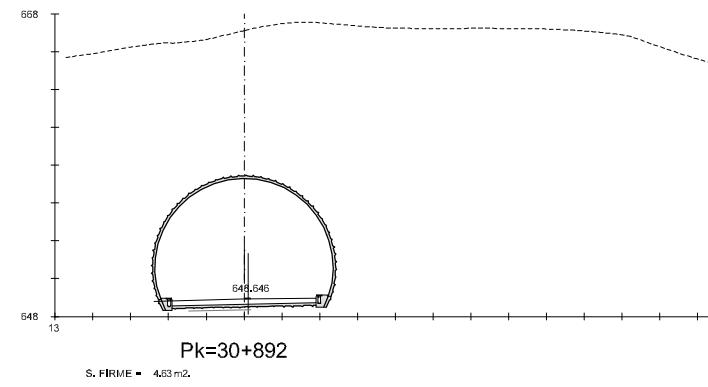
DOCUMENTO PLANOS
PLANO 5.1.5
FECHA
DICIEMBRE 2014
HOJA 5 DE 36

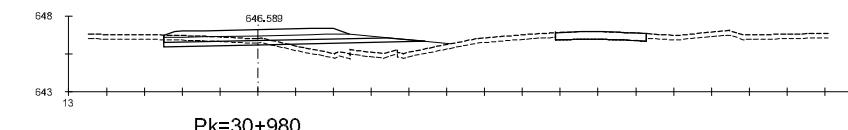




TUNEL DE BELATE
LONGITUD L=2935m.

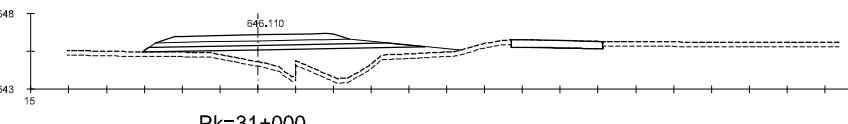






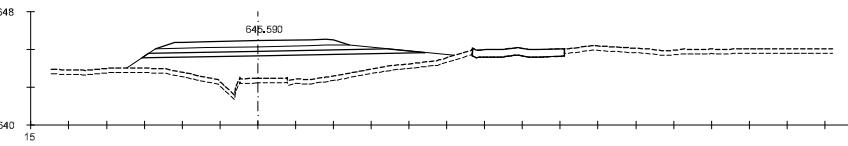
Pk=30+980

S. FIRME = 4,58 m²
S. D TIERRA = 1,92 m²
S. SUELO SEL 2 = 4,80 m²
S. SUELO SEL 1 = 4,05 m²
S. TERRAPLEN = 8,58 m²
S. VEGETAL = 5,67 m²



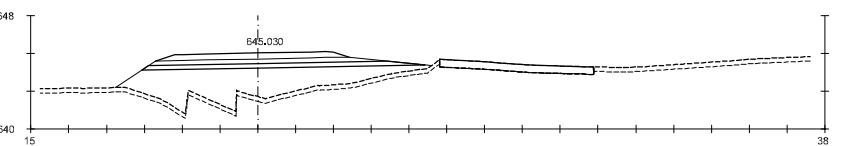
Pk=31+000

S. FIRME = 4,63 m²
S. SUELO SEL 2 = 5,17 m²
S. SUELO SEL 1 = 4,28 m²
S. TERRAPLEN = 21,08 m²
S. VEGETAL = 6,31 m²



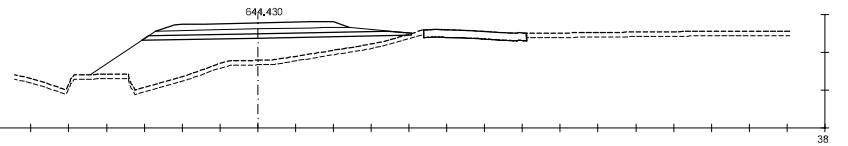
Pk=31+020

S. FIRME = 4,63 m²
S. SUELO SEL 2 = 5,17 m²
S. SUELO SEL 1 = 4,28 m²
S. TERRAPLEN = 31,00 m²
S. VEGETAL = 6,50 m²



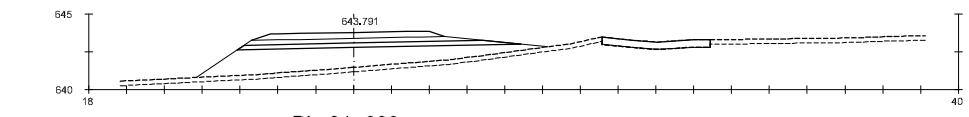
Pk=31+040

S. FIRME = 4,63 m²
S. SUELO SEL 2 = 5,17 m²
S. SUELO SEL 1 = 4,28 m²
S. TERRAPLEN = 35,59 m²
S. VEGETAL = 6,27 m²



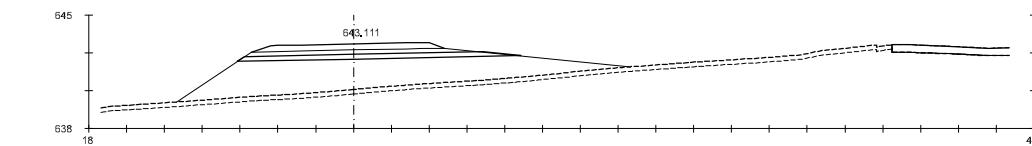
Pk=31+060

S. FIRME = 4,63 m²
S. SUELO SEL 2 = 5,17 m²
S. SUELO SEL 1 = 4,28 m²
S. TERRAPLEN = 35,86 m²
S. VEGETAL = 6,37 m²



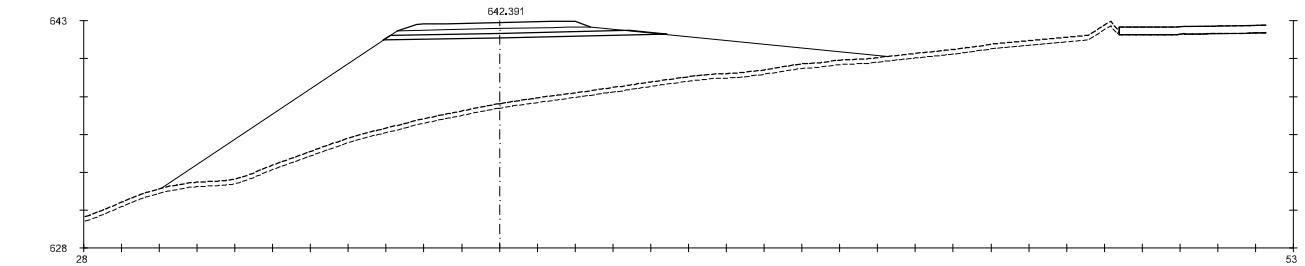
Pk=31+080

S. FIRME = 4,63 m²
S. SUELO SEL 2 = 5,17 m²
S. SUELO SEL 1 = 4,28 m²
S. TERRAPLEN = 31,83 m²
S. VEGETAL = 6,97 m²



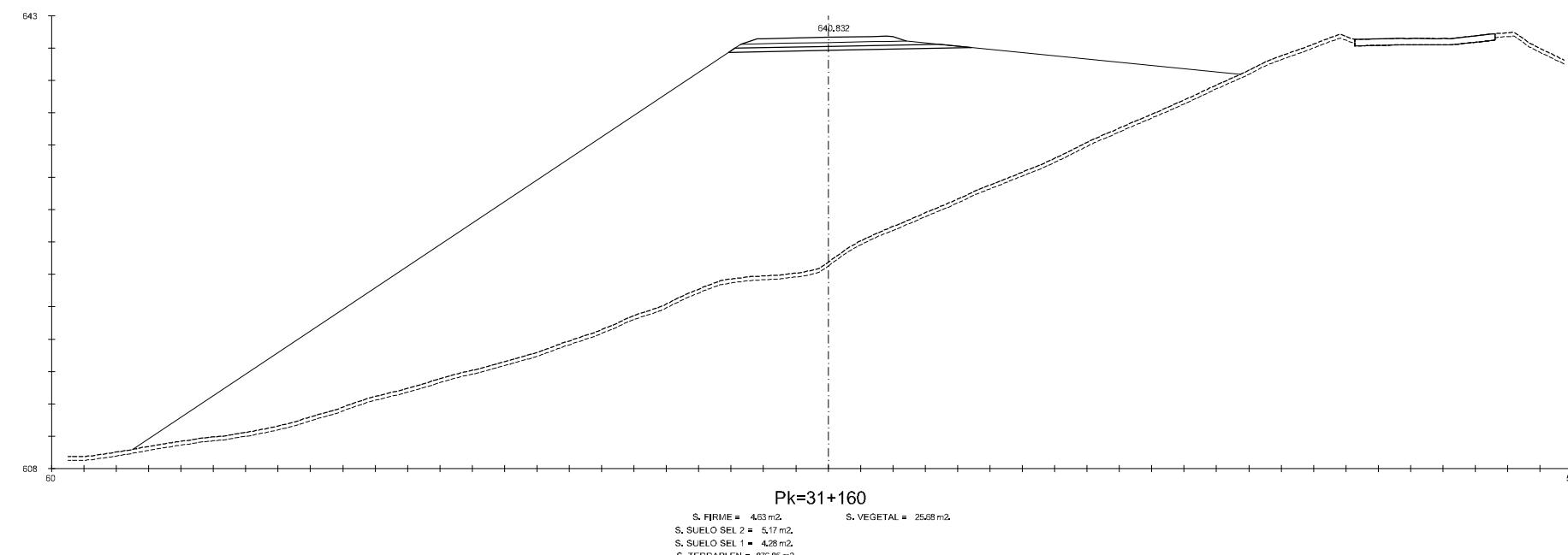
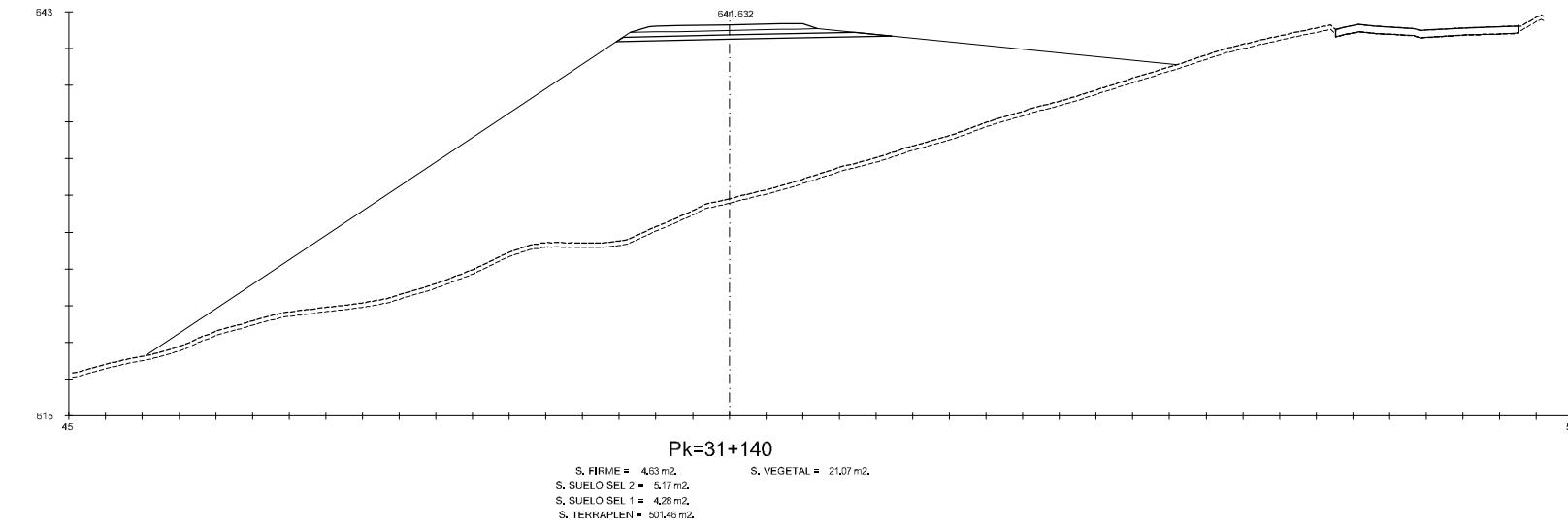
Pk=31+100

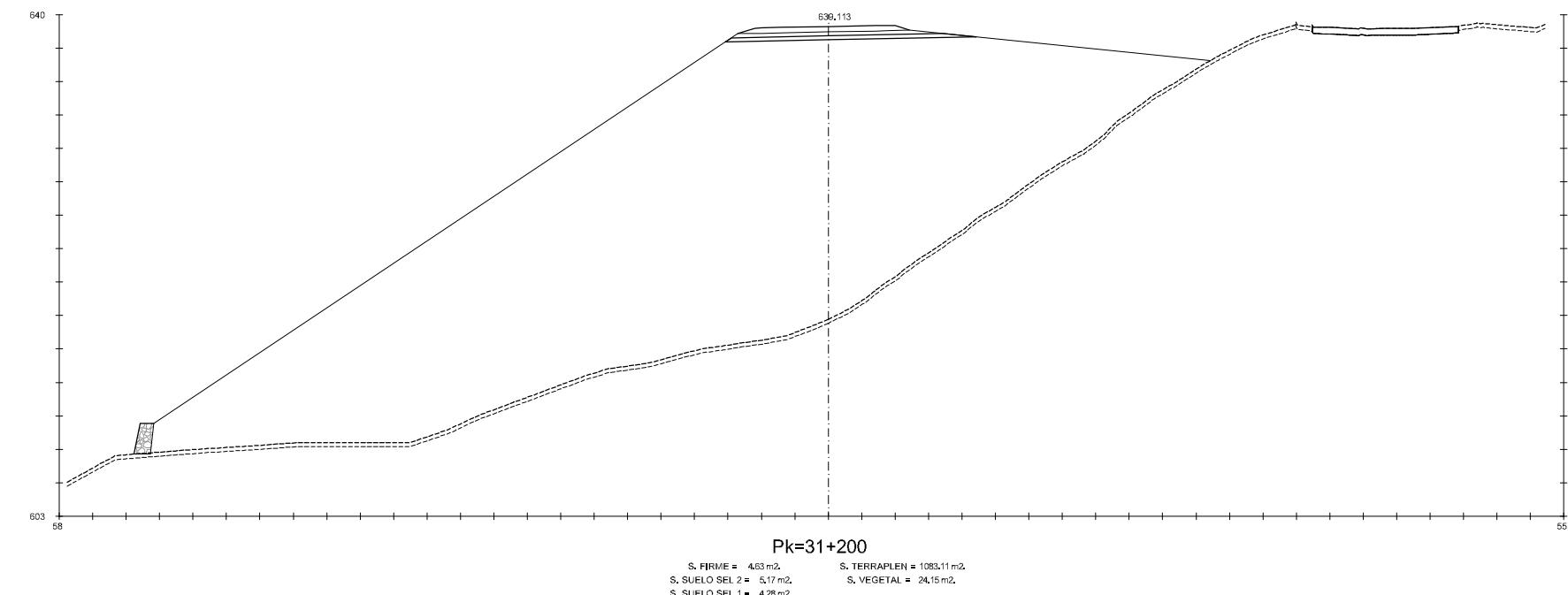
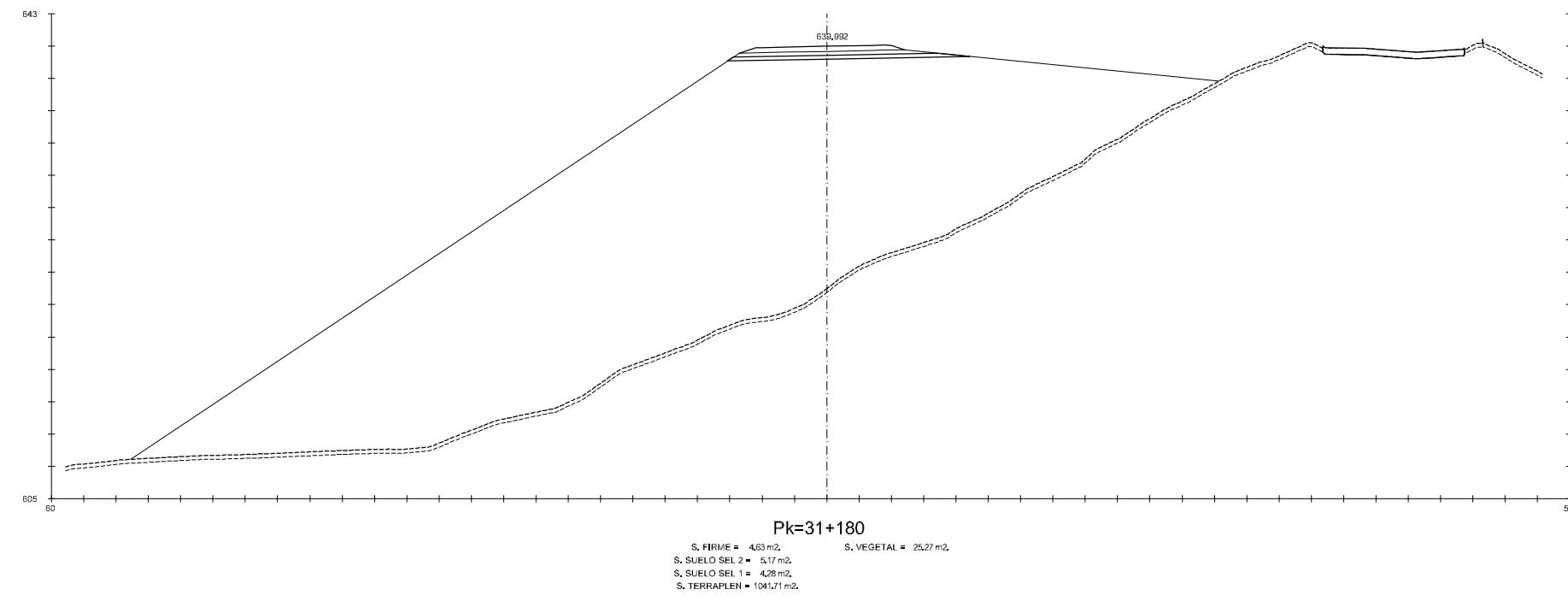
S. FIRME = 4,63 m²
S. SUELO SEL 2 = 5,17 m²
S. SUELO SEL 1 = 4,28 m²
S. TERRAPLEN = 54,84 m²
S. VEGETAL = 9,02 m²

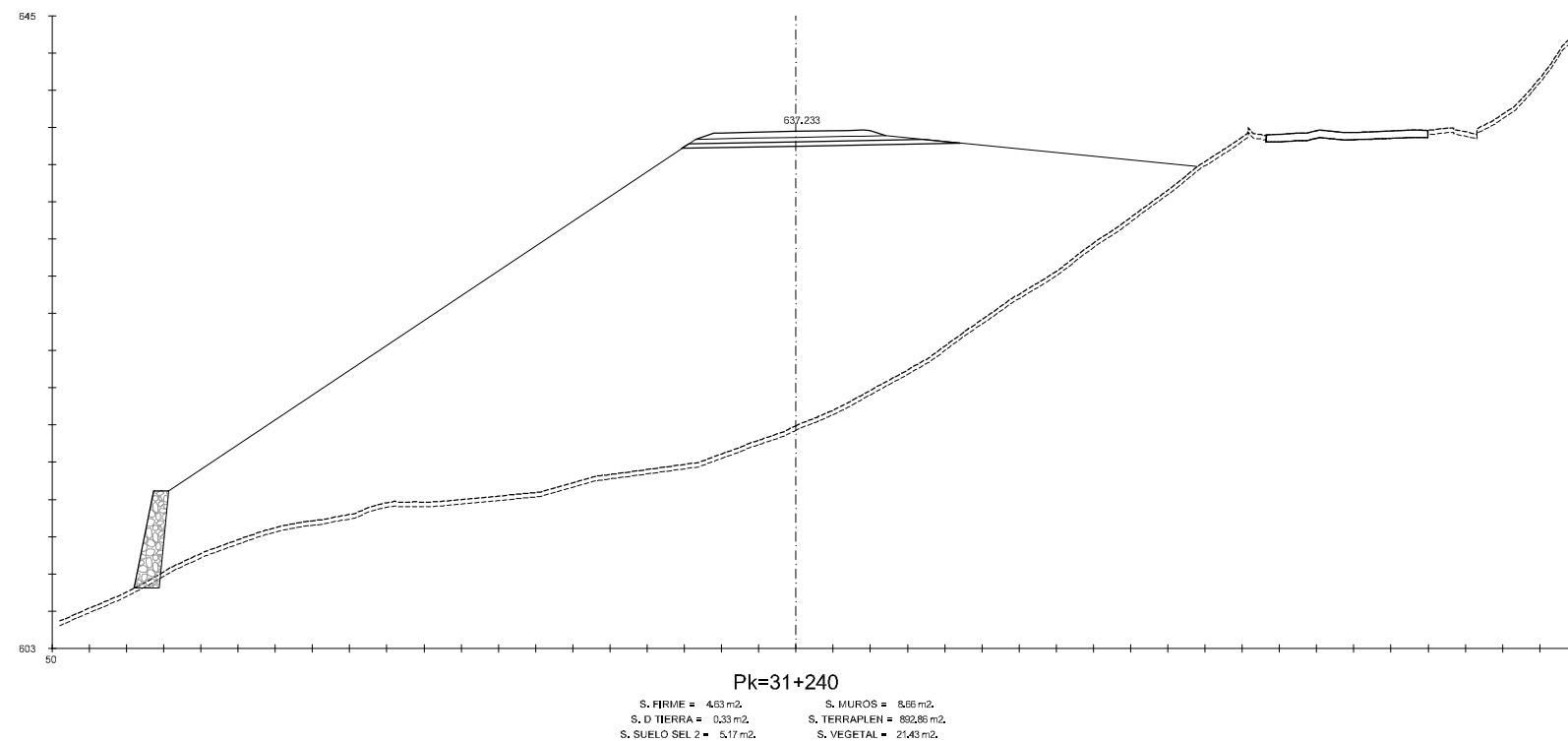
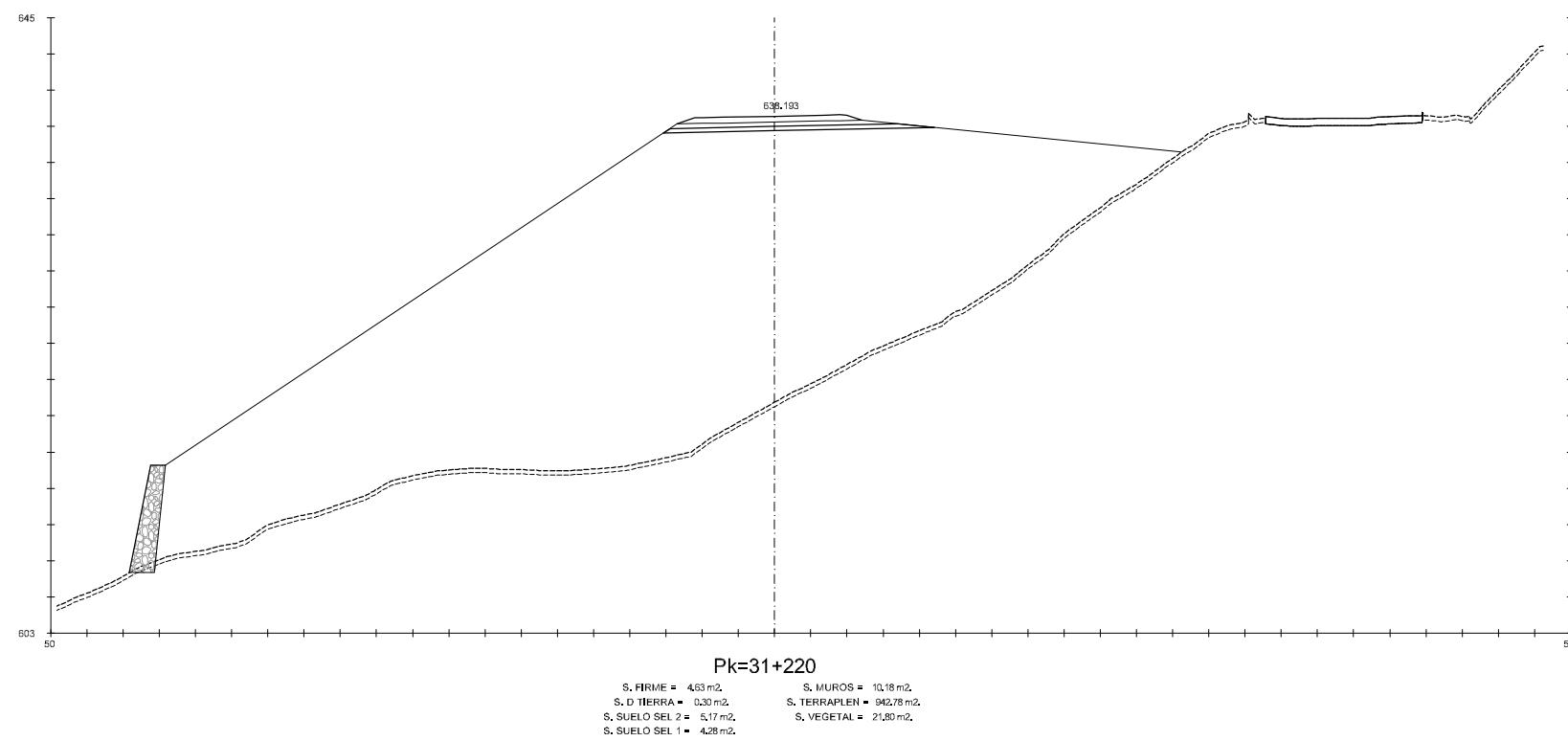


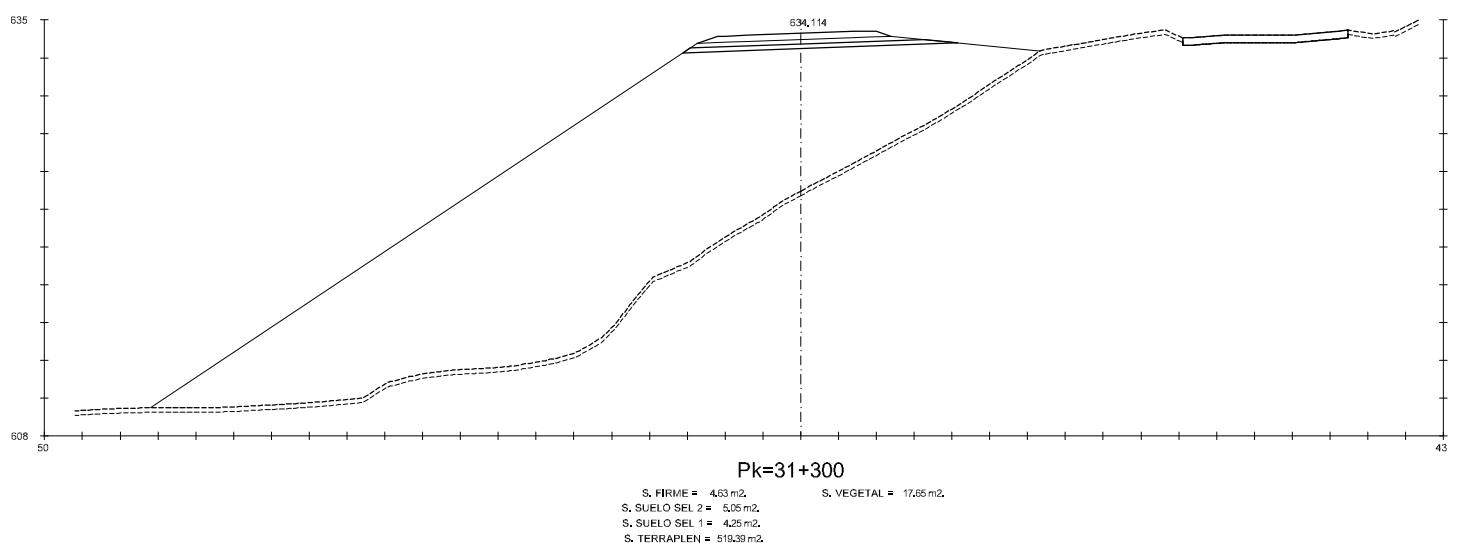
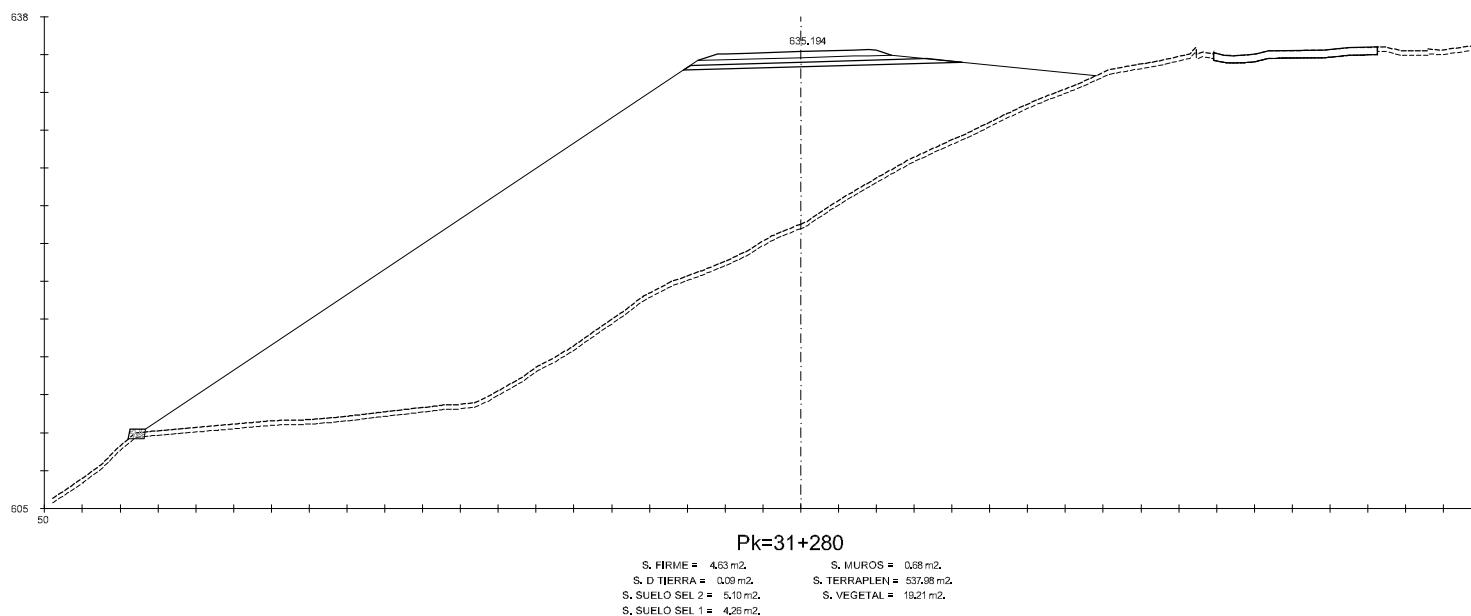
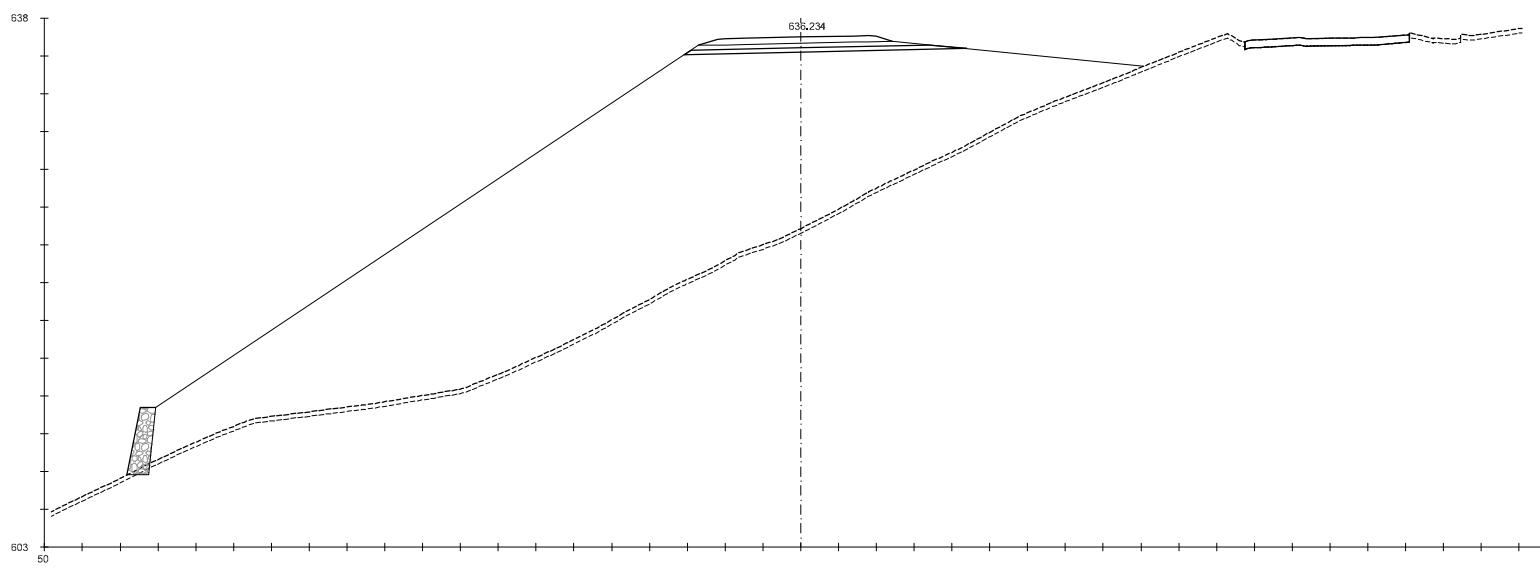
Pk=31+120

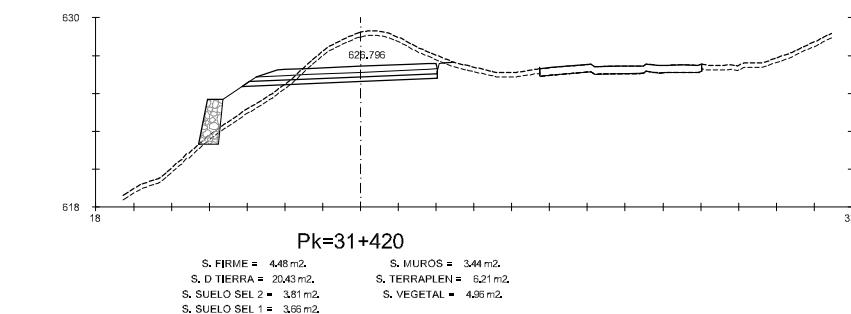
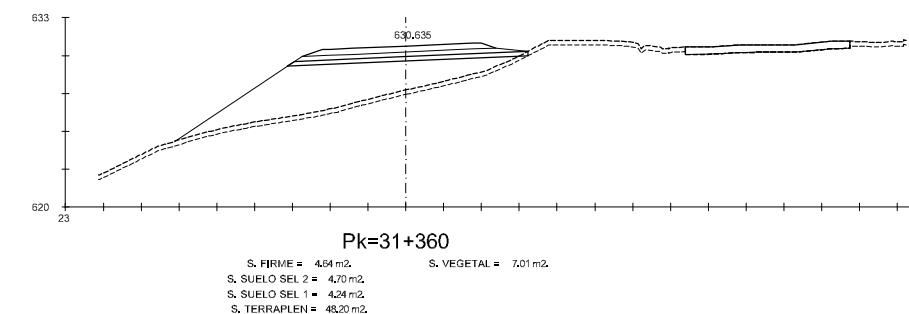
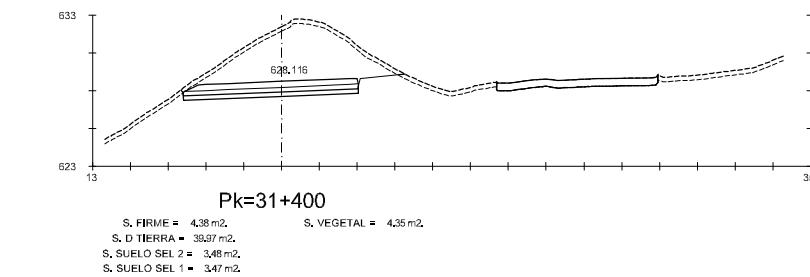
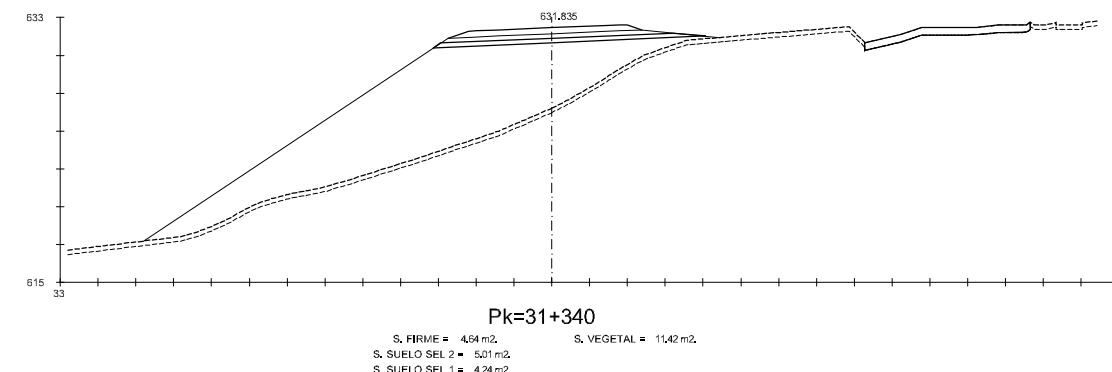
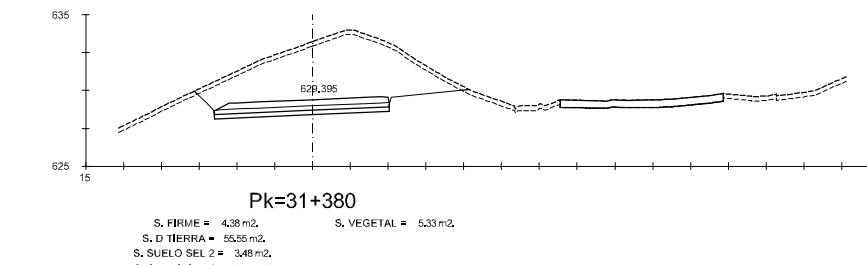
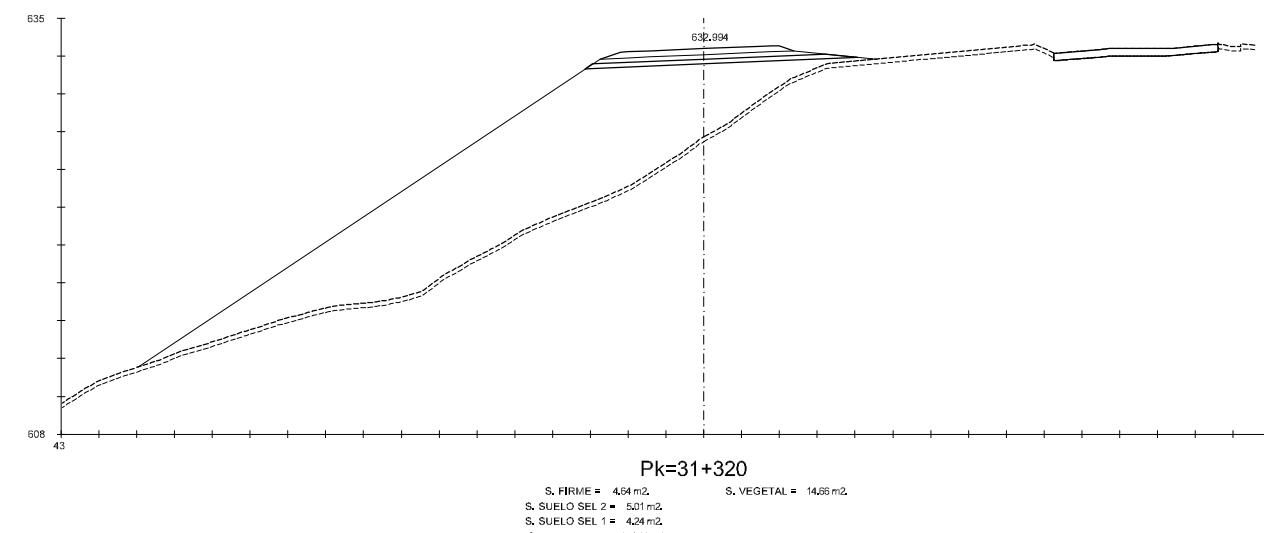
S. FIRME = 4,63 m²
S. SUELO SEL 2 = 5,17 m²
S. SUELO SEL 1 = 4,28 m²
S. TERRAPLEN = 162,48 m²
S. VEGETAL = 14,42 m²

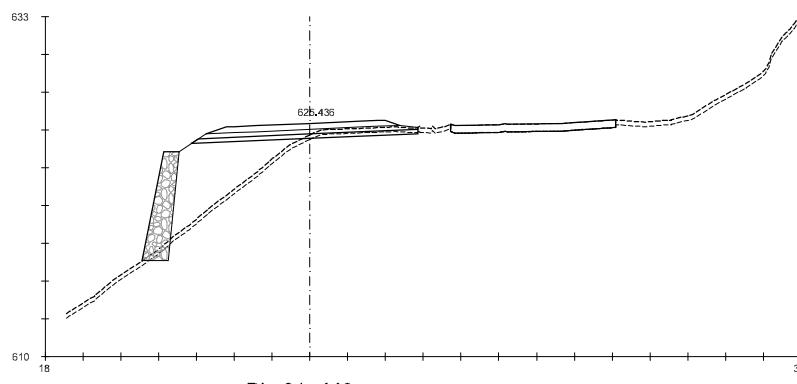




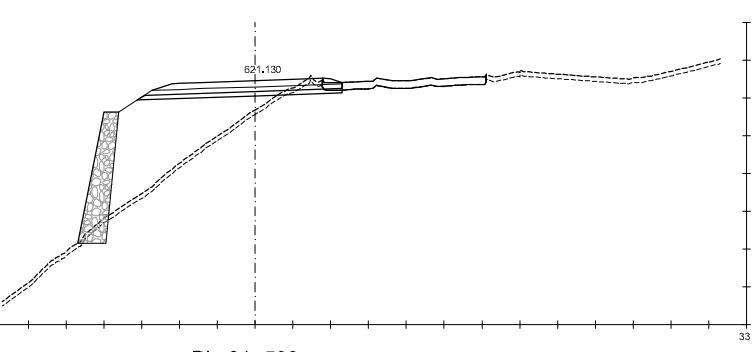




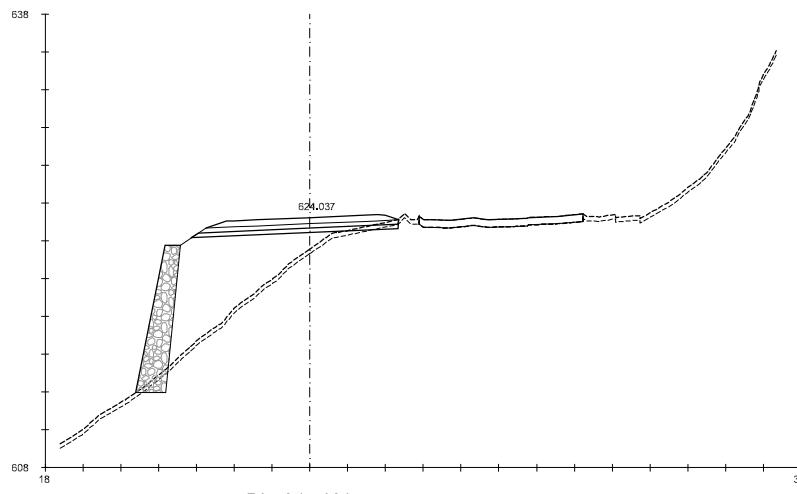




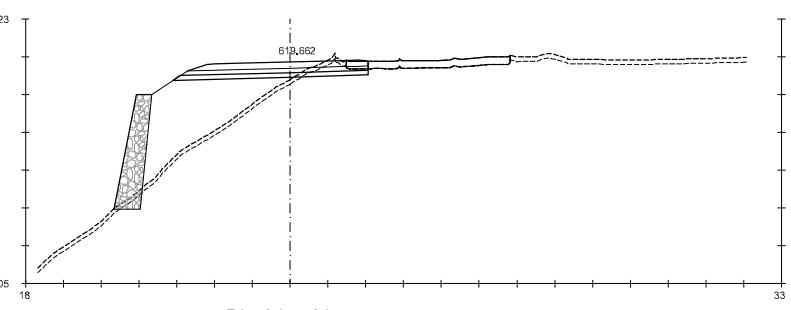
Pk=31+440



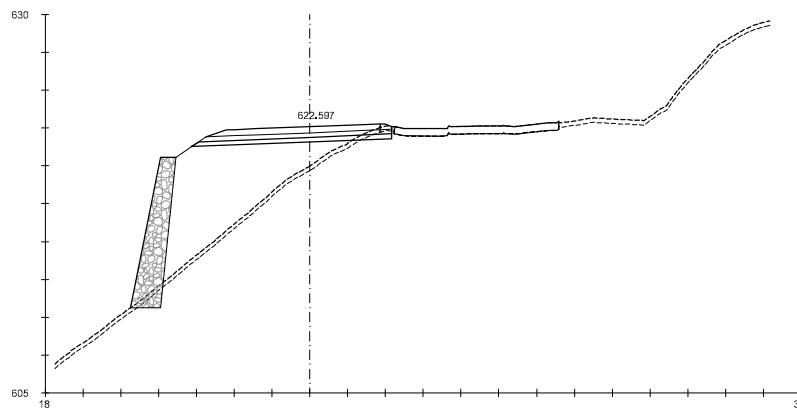
Pk=31+500



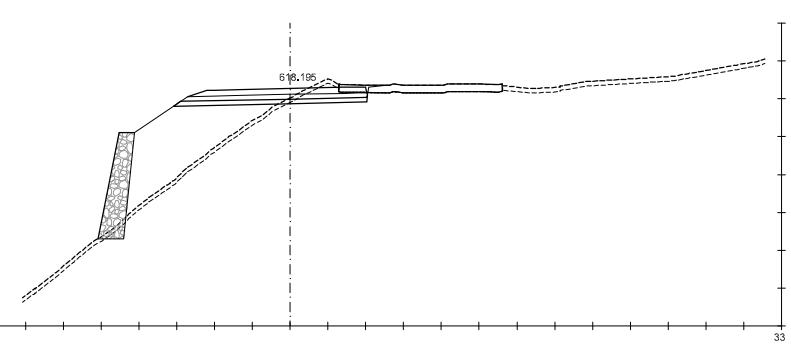
Pk=31+460



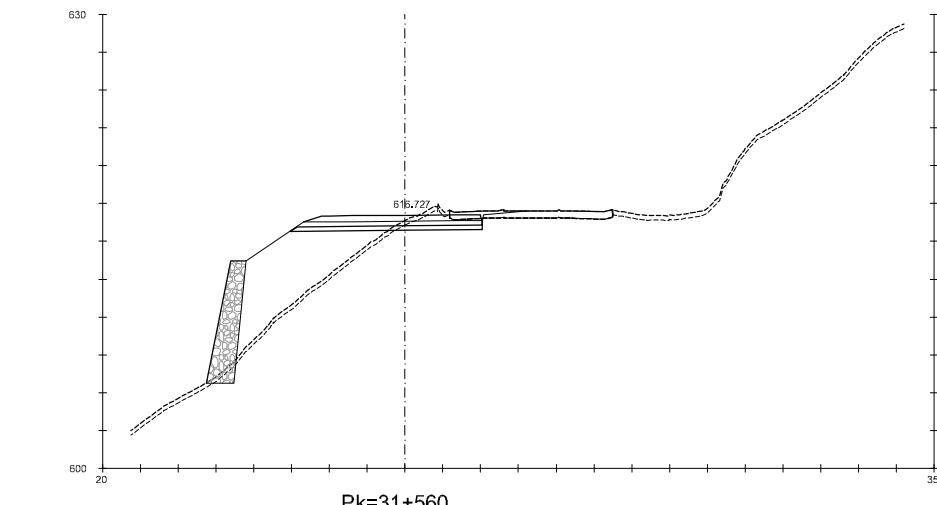
Pk=31+520



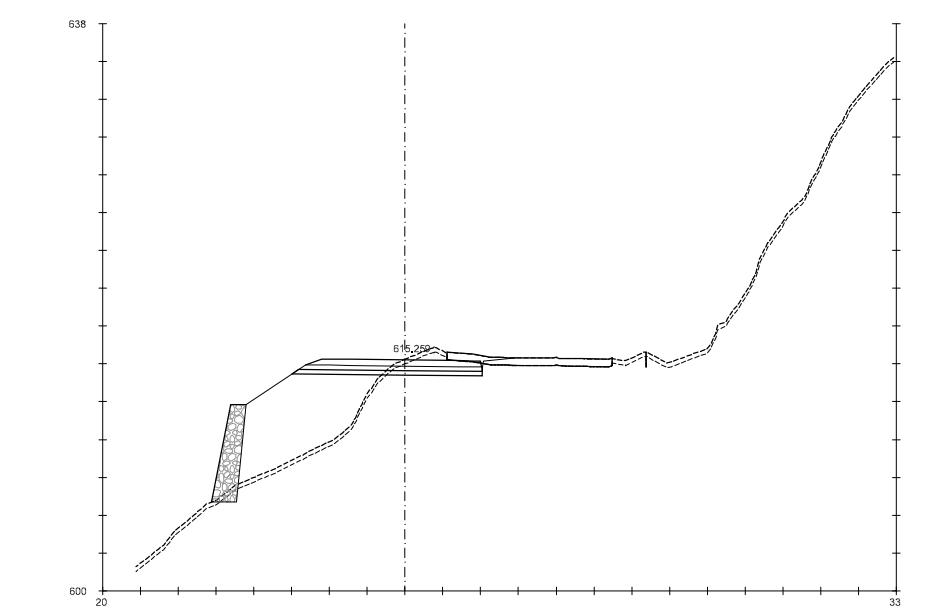
Pk=31+480



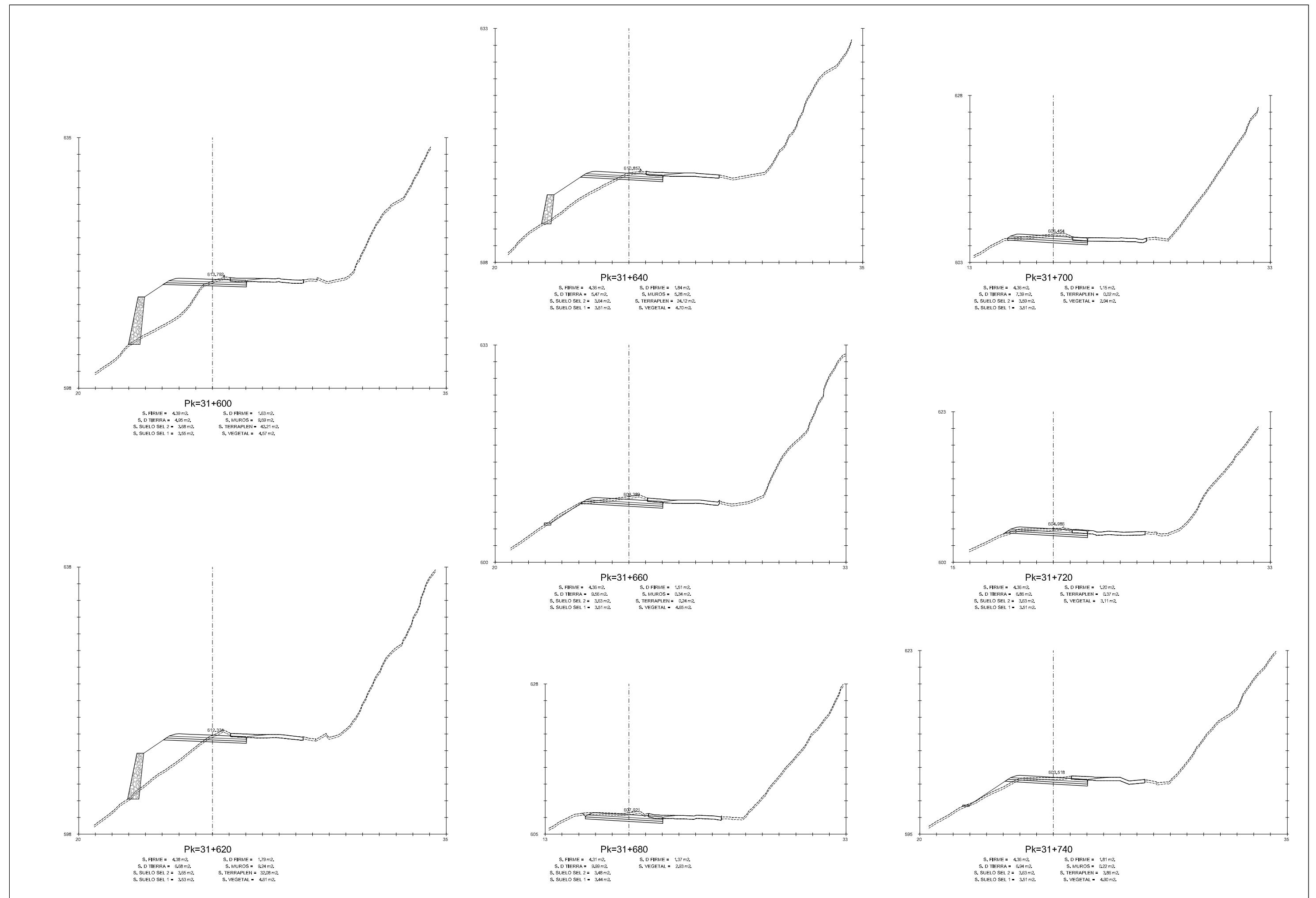
Pk=31+540

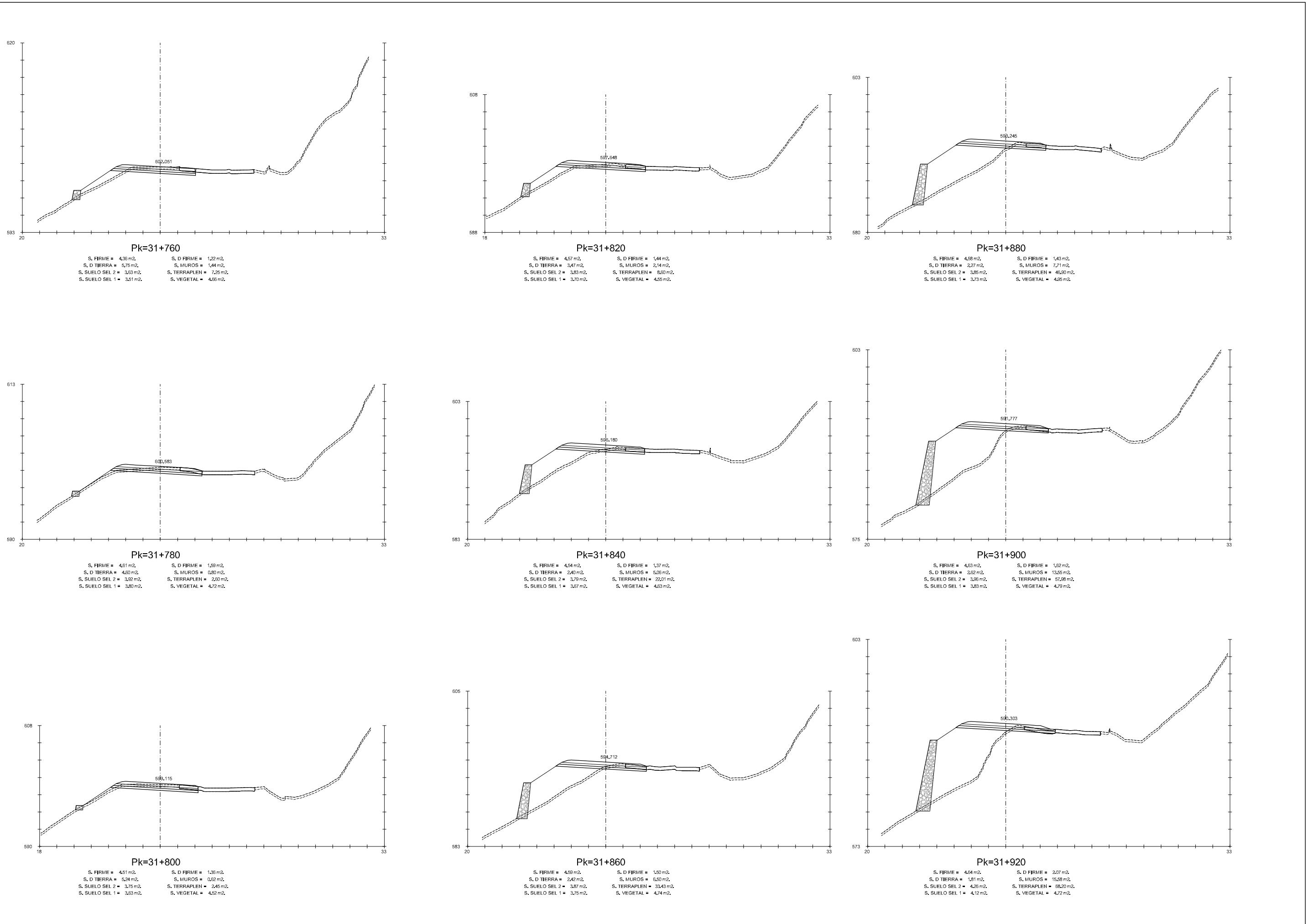


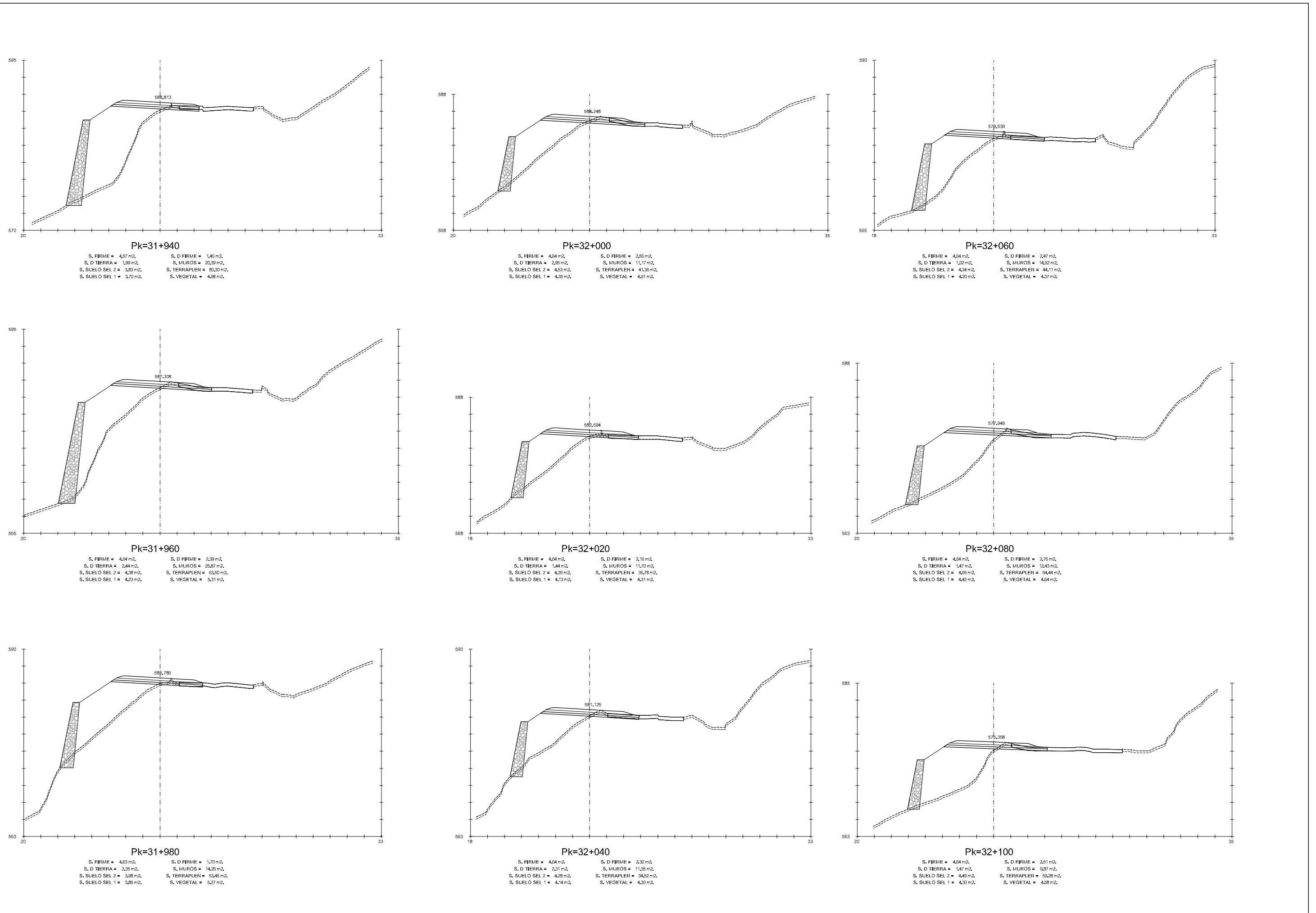
Pk=31+560

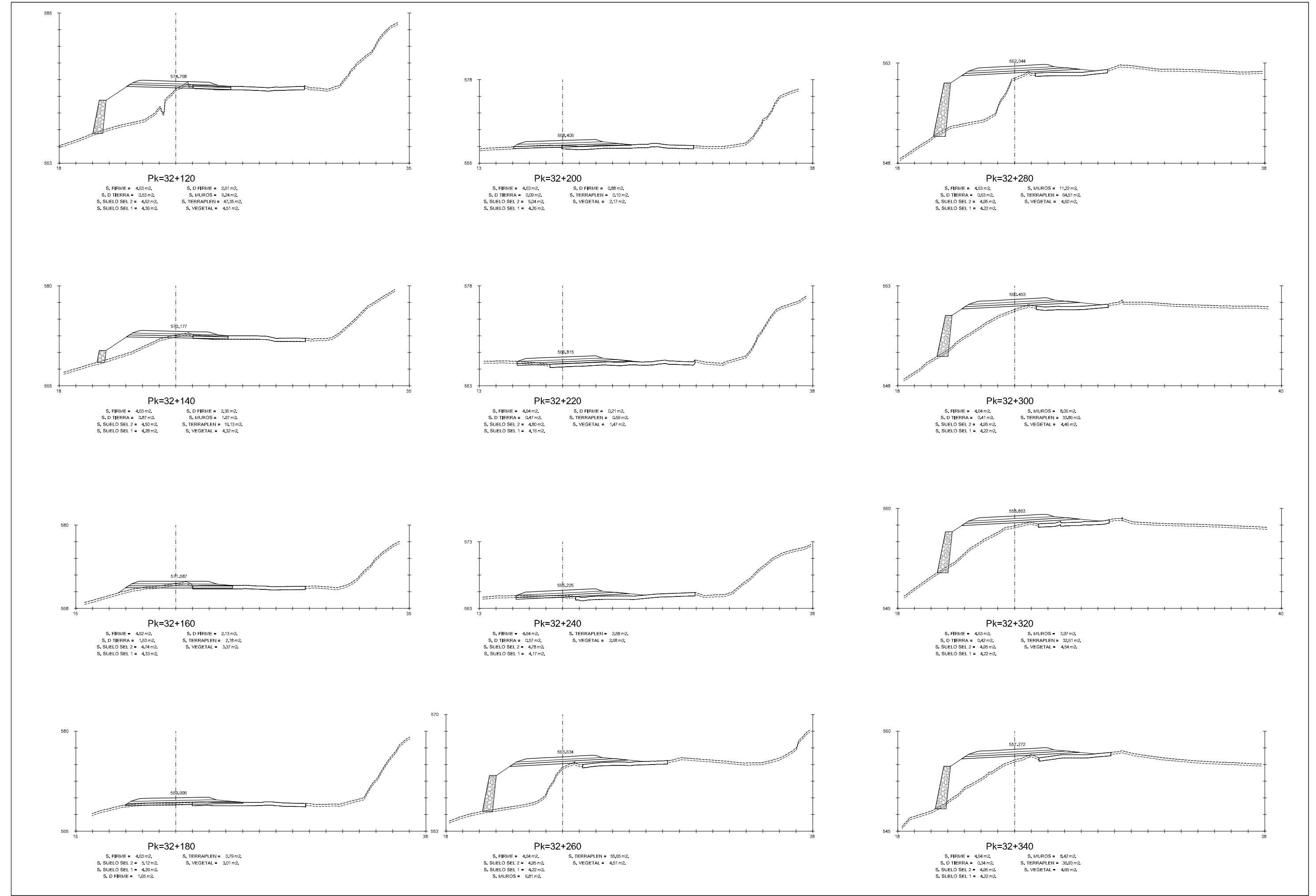


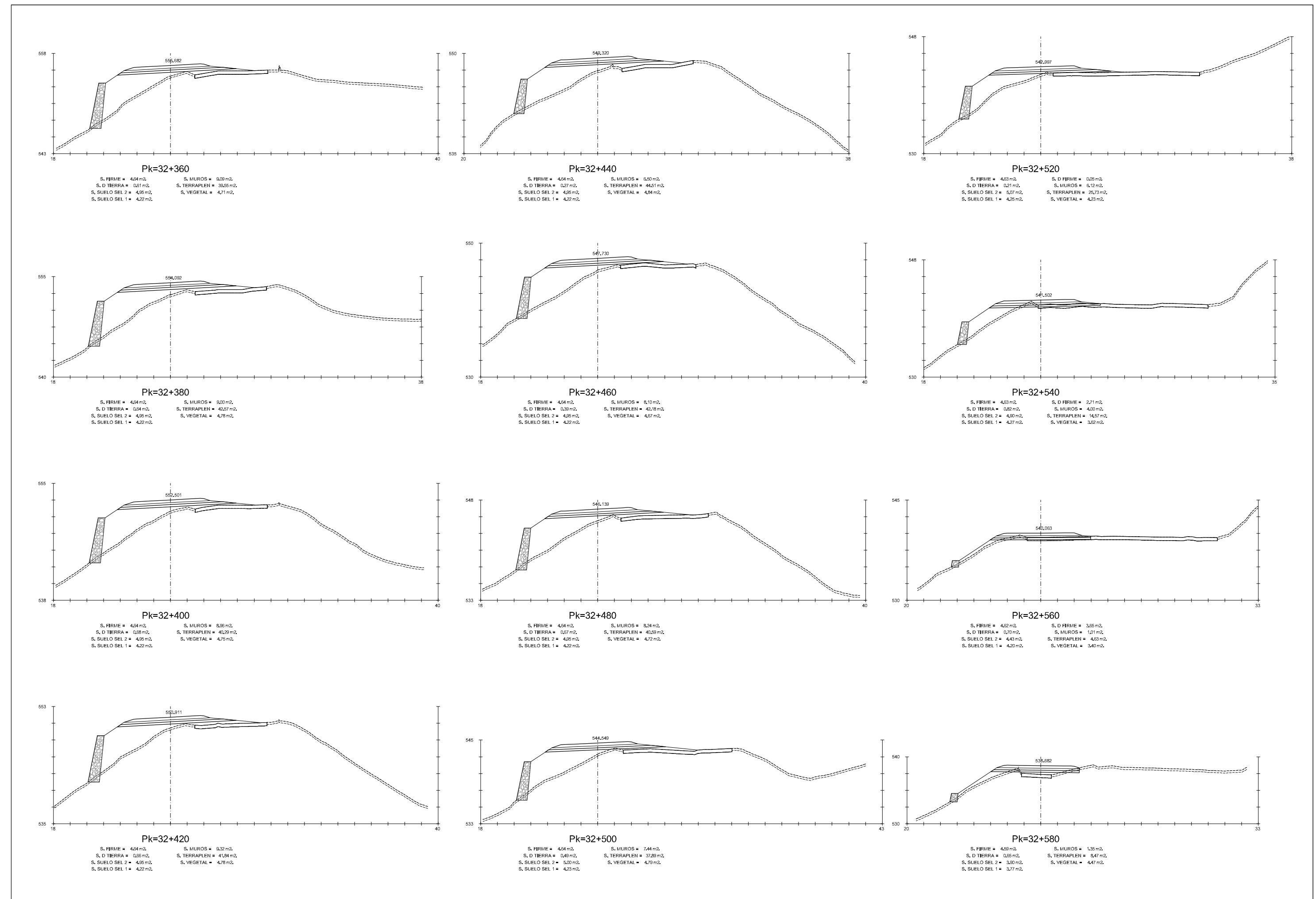
Pk=31+580

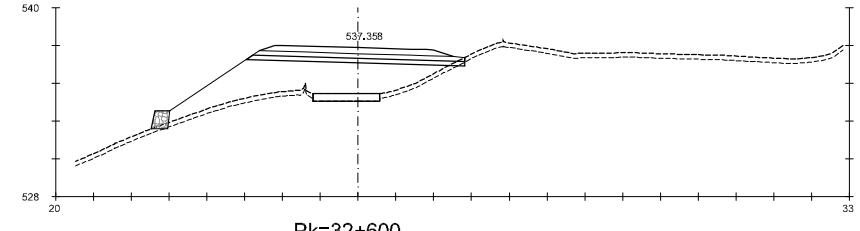




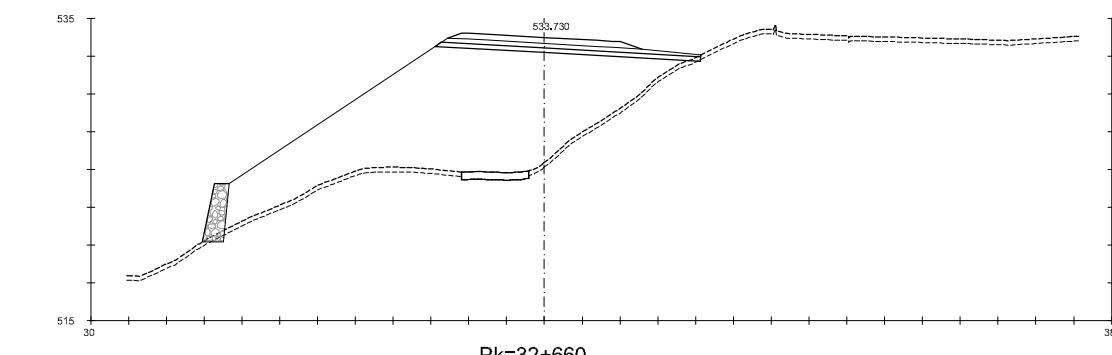




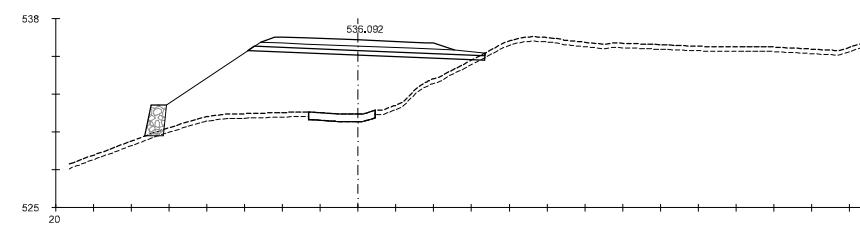




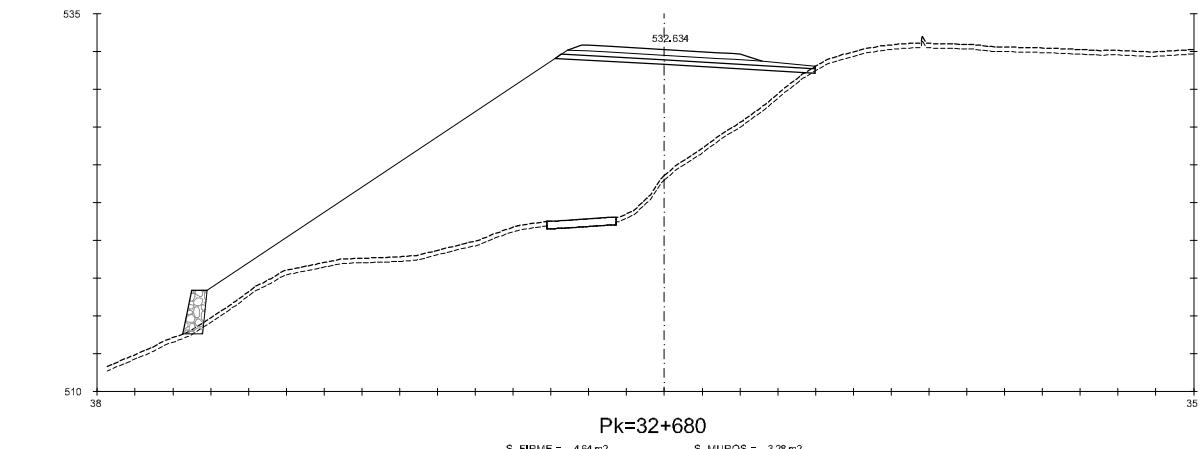
S. FIRME = 4,63 m²,
S. D TIERRA = 0,07 m²,
S. SUELO SEL 2 = 4,27 m²,
S. SUELO SEL 1 = 4,12 m².



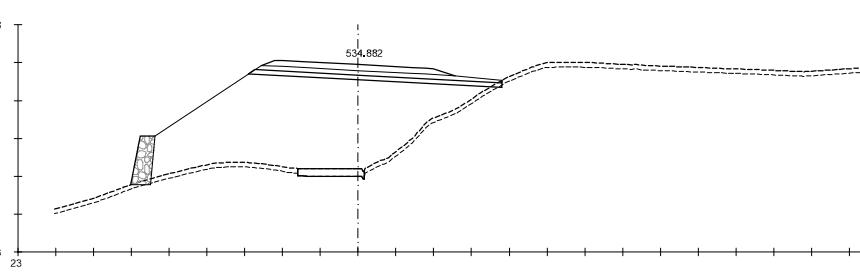
S. FIRME = 4,64 m²,
S. D TIERRA = 0,21 m²,
S. SUELO SEL 2 = 5,20 m²,
S. SUELO SEL 1 = 4,76 m².



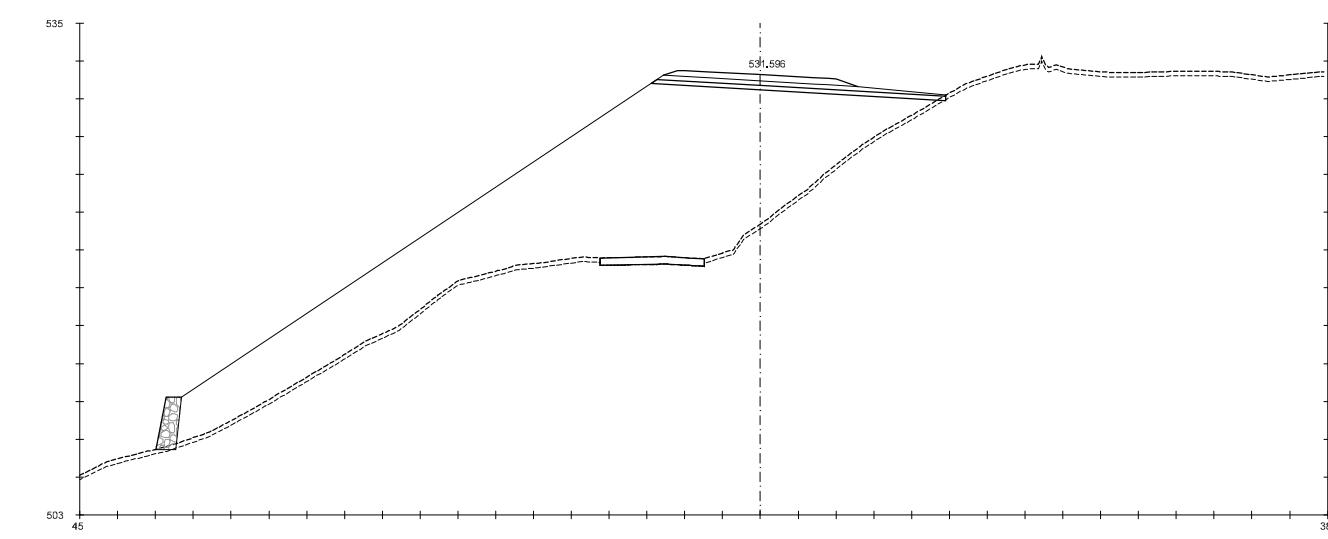
S. FIRME = 4,64 m²,
S. D TIERRA = 0,05 m²,
S. SUELO SEL 2 = 4,65 m²,
S. SUELO SEL 1 = 4,40 m².



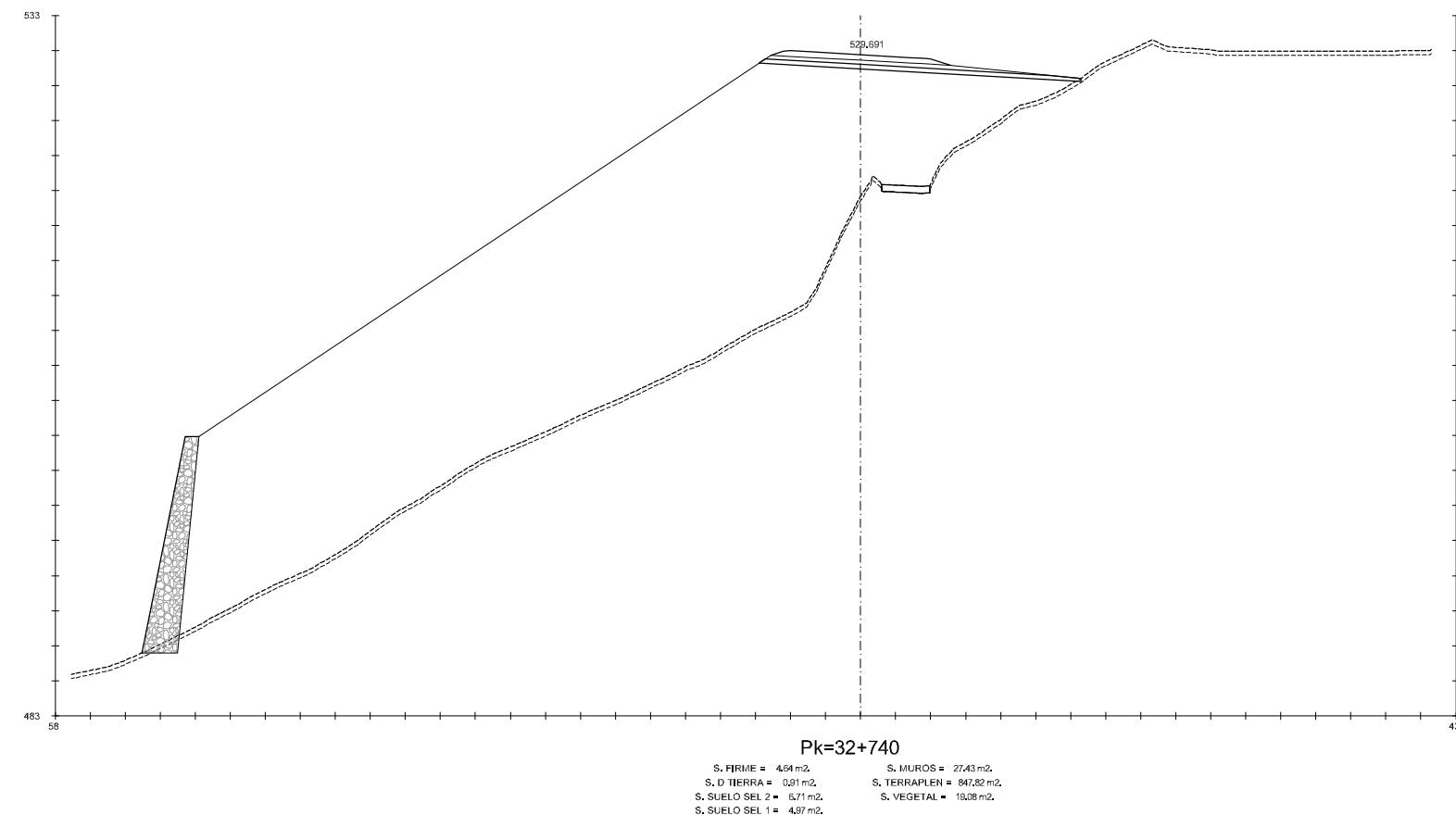
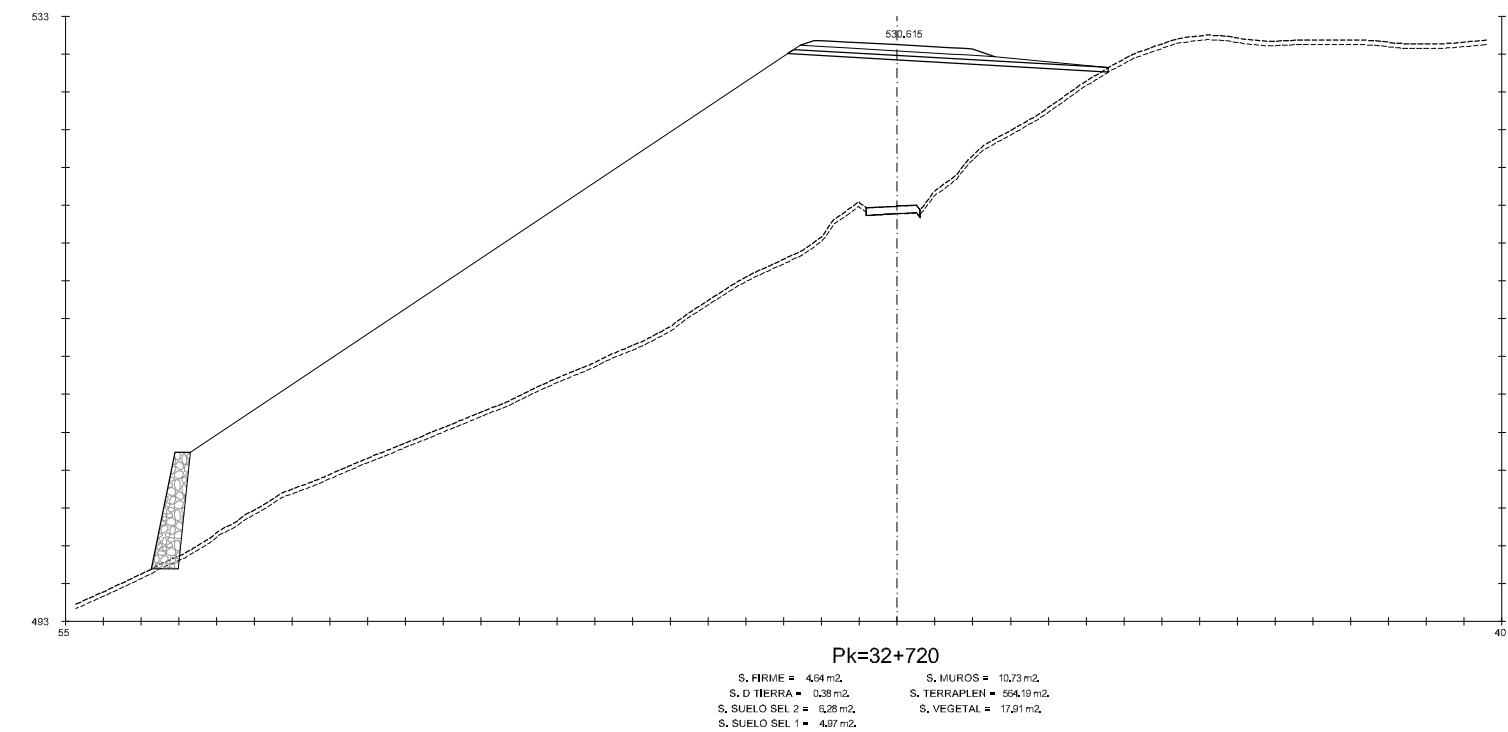
S. FIRME = 4,64 m²,
S. D TIERRA = 0,16 m²,
S. SUELO SEL 2 = 5,10 m²,
S. SUELO SEL 1 = 4,71 m².

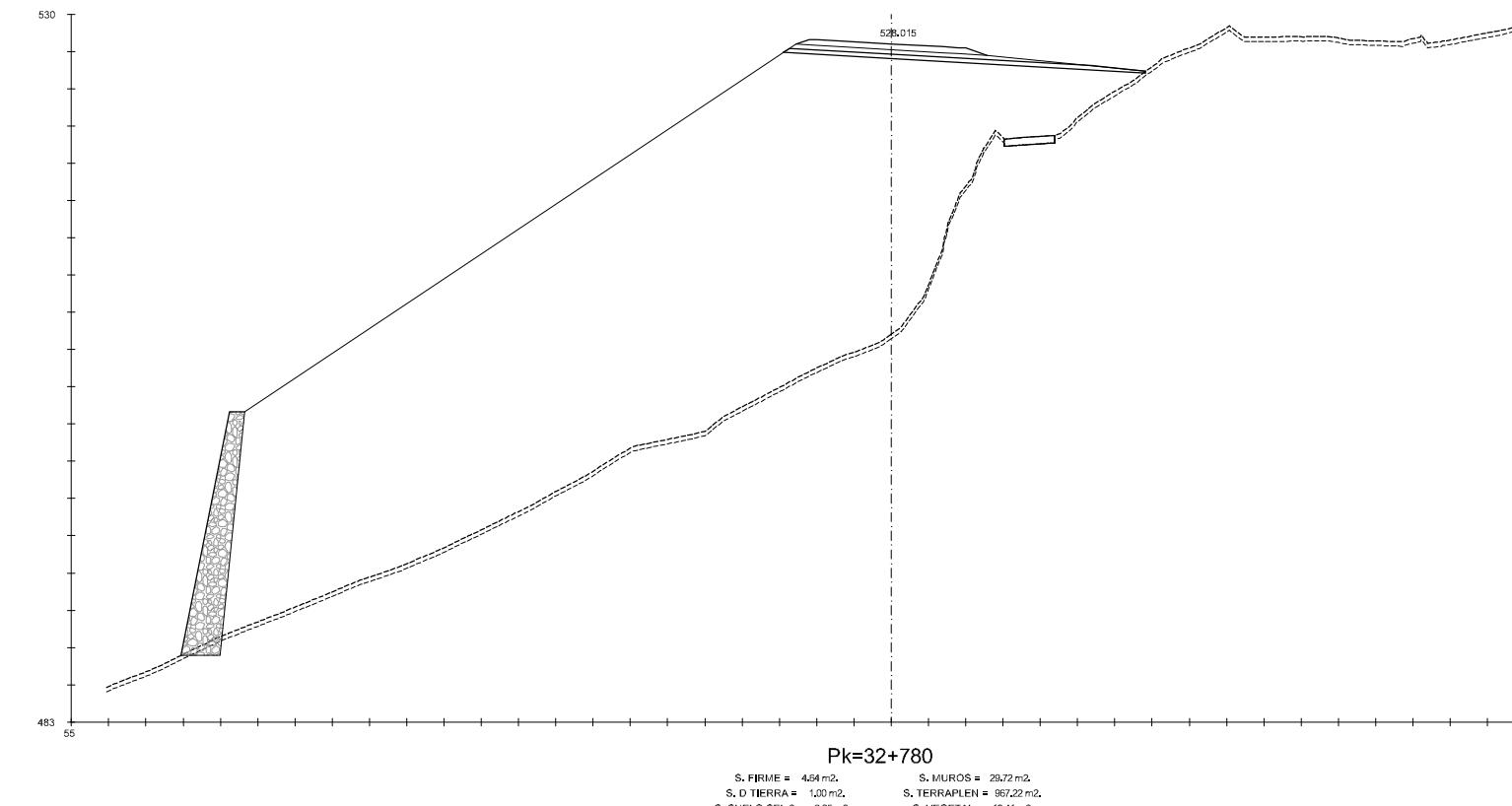
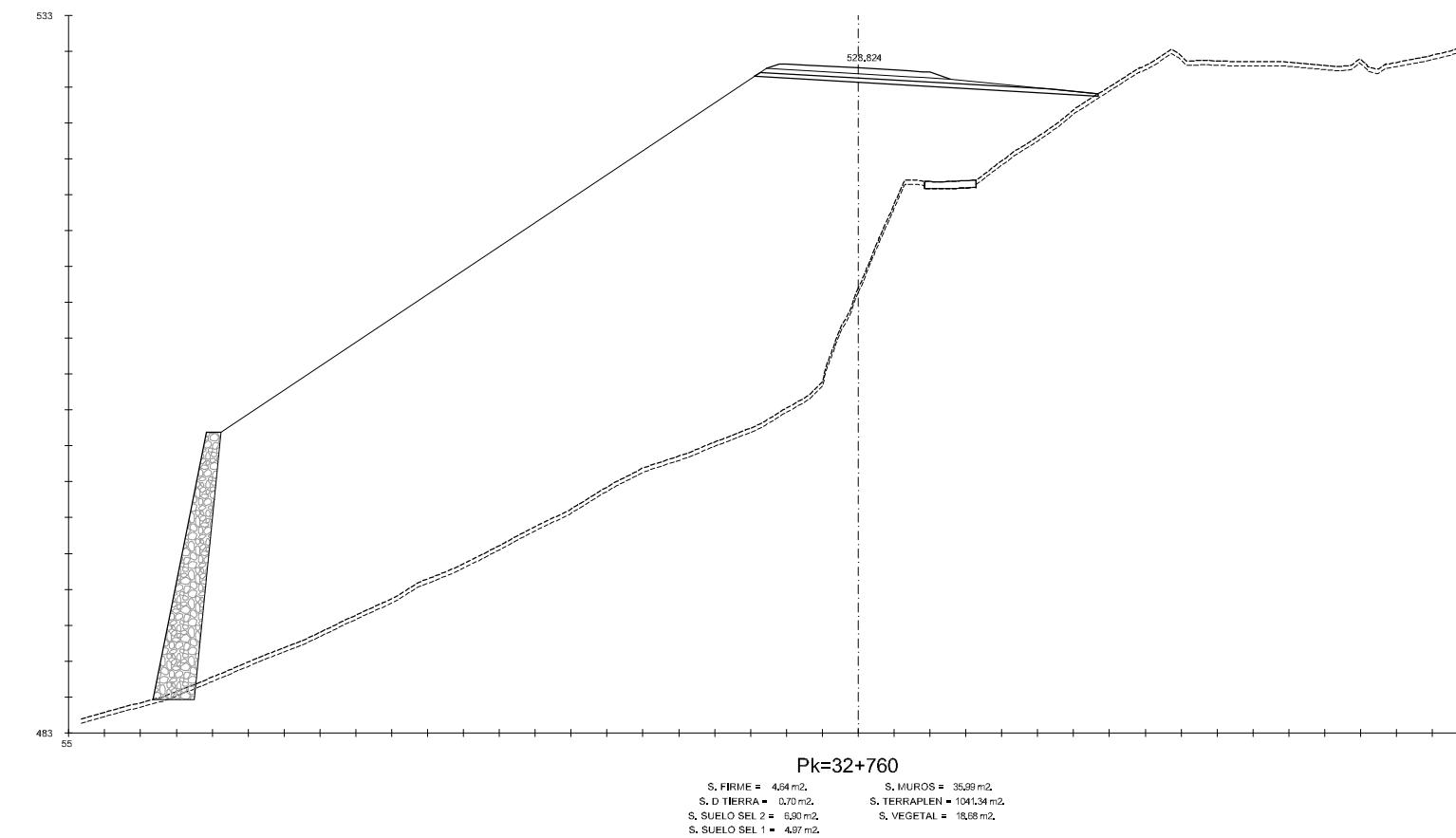


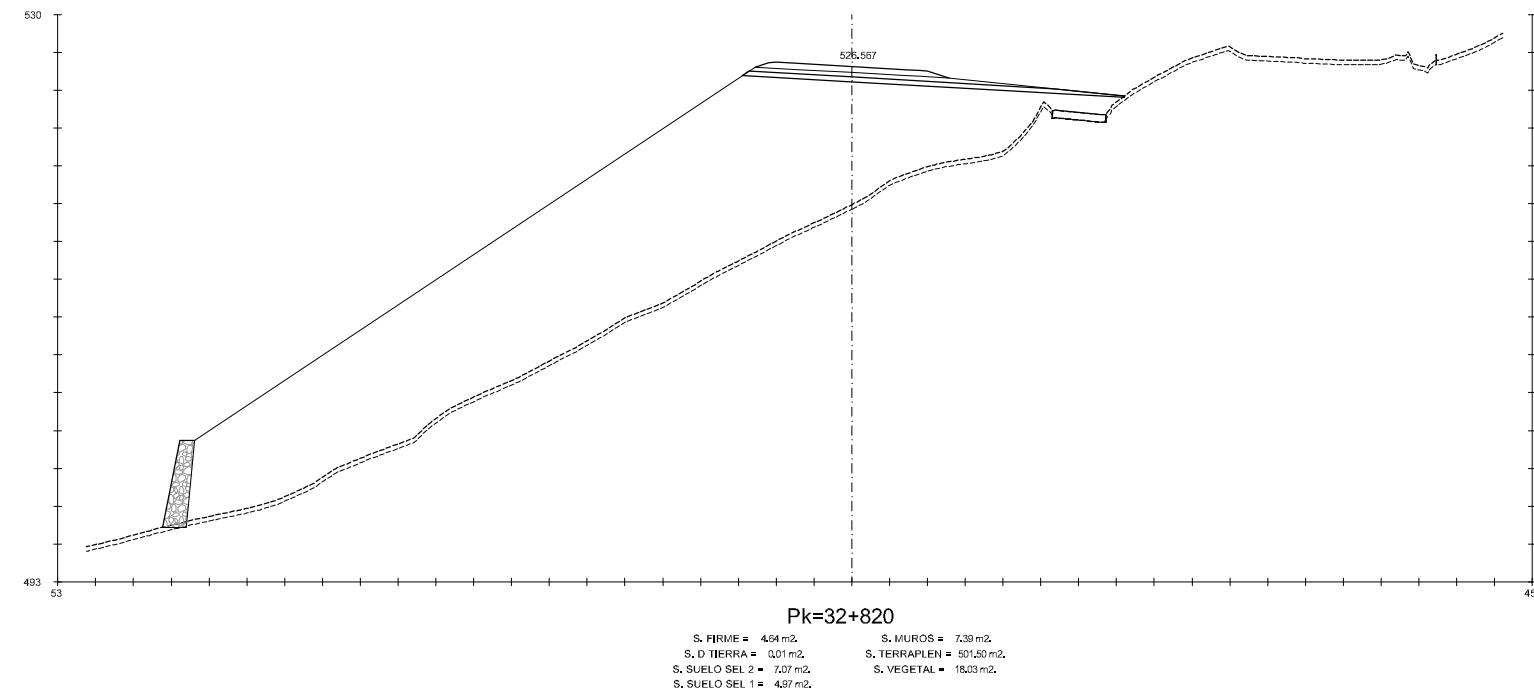
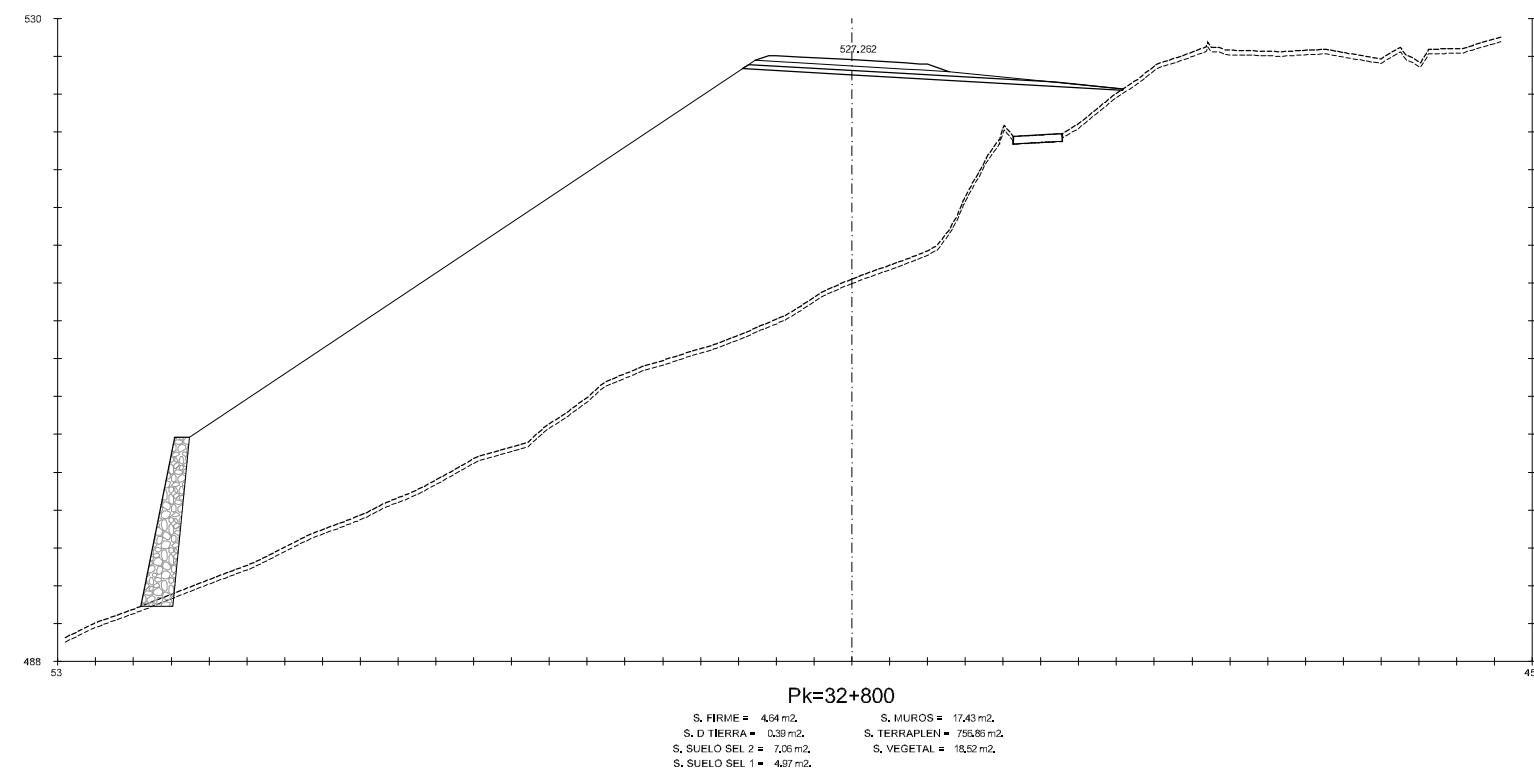
S. FIRME = 4,64 m²,
S. D TIERRA = 0,03 m²,
S. SUELO SEL 2 = 4,38 m²,
S. SUELO SEL 1 = 4,32 m².

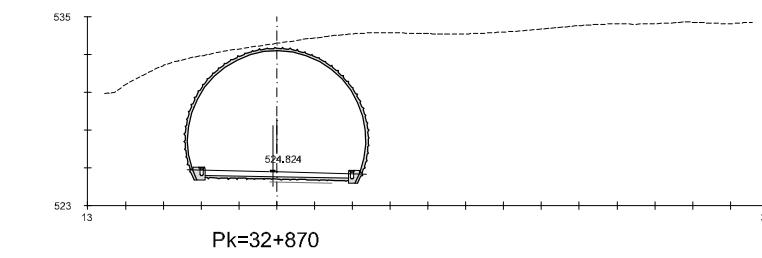
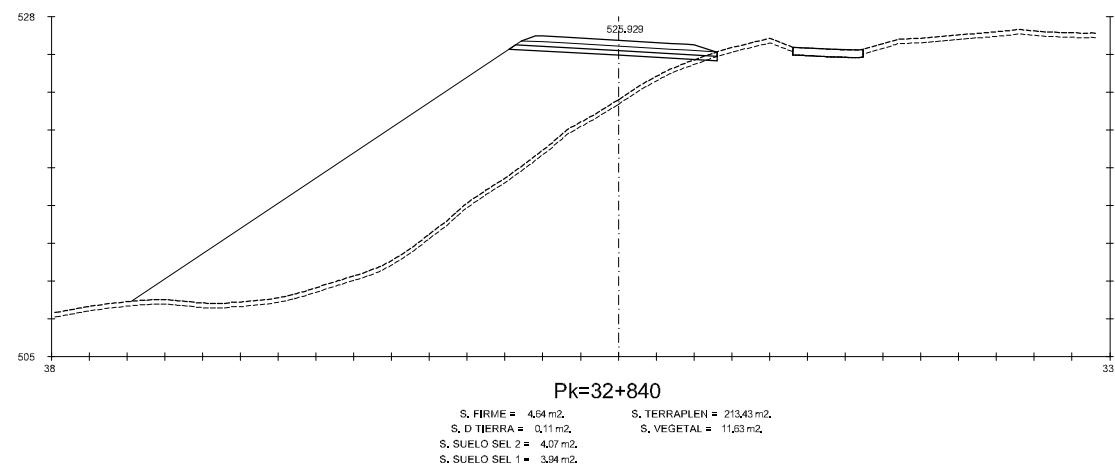


S. FIRME = 4,64 m²,
S. D TIERRA = 0,01 m²,
S. SUELO SEL 2 = 4,71 m²,
S. SUELO SEL 1 = 4,54 m².

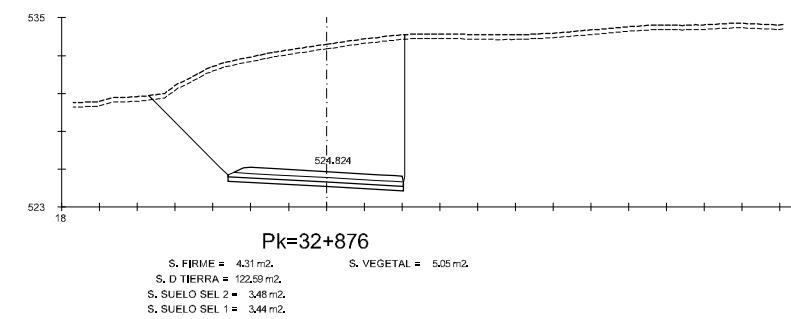
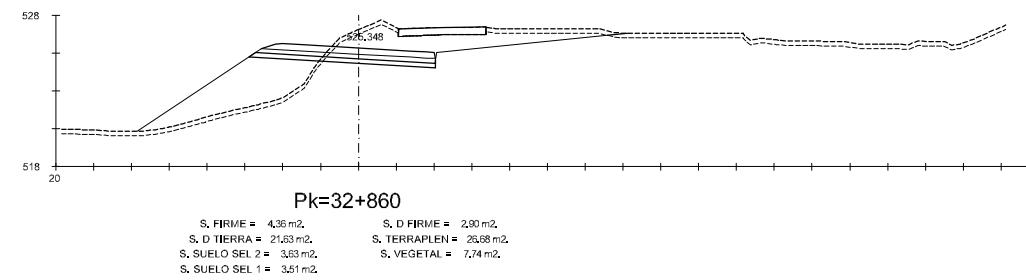


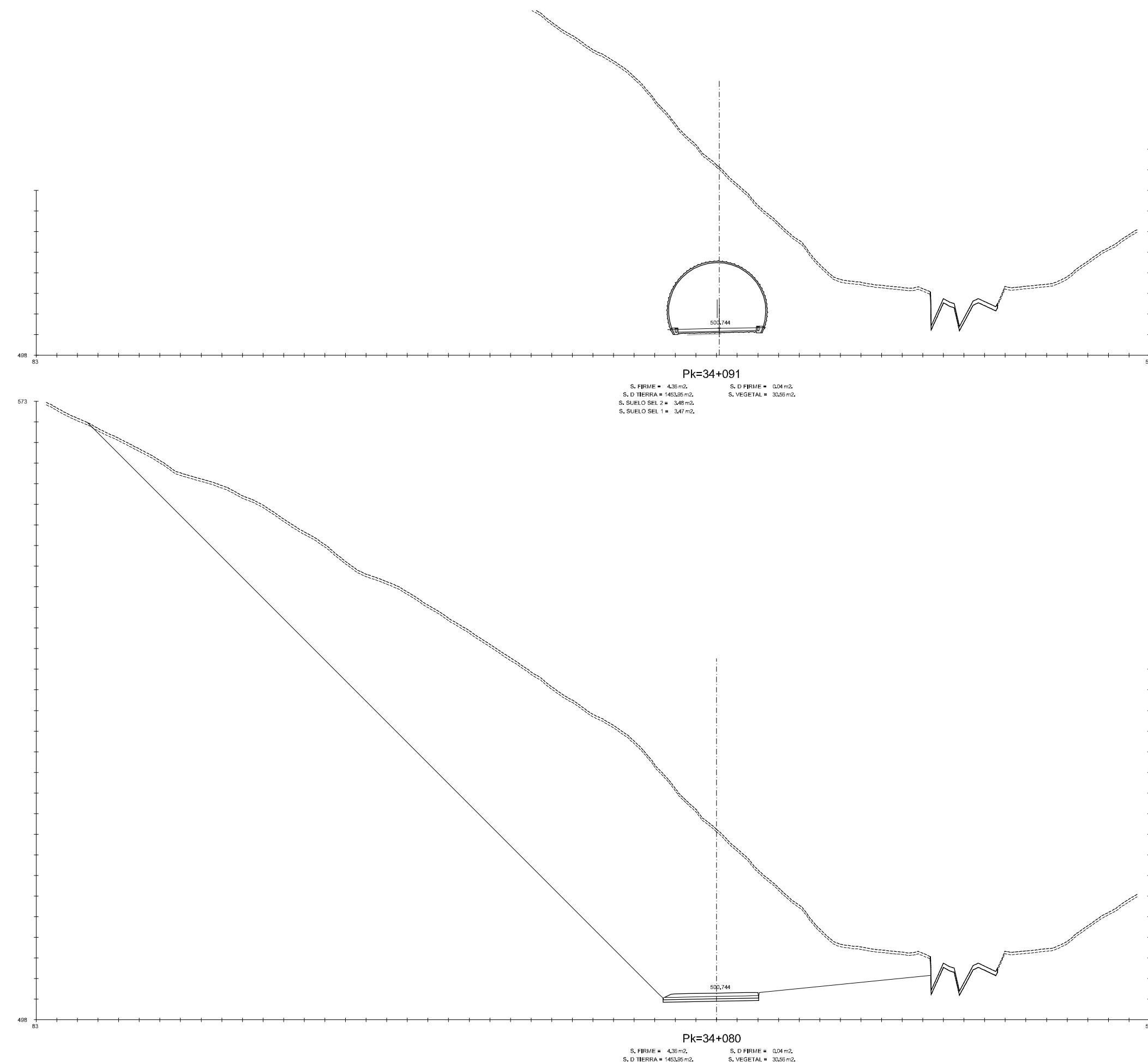


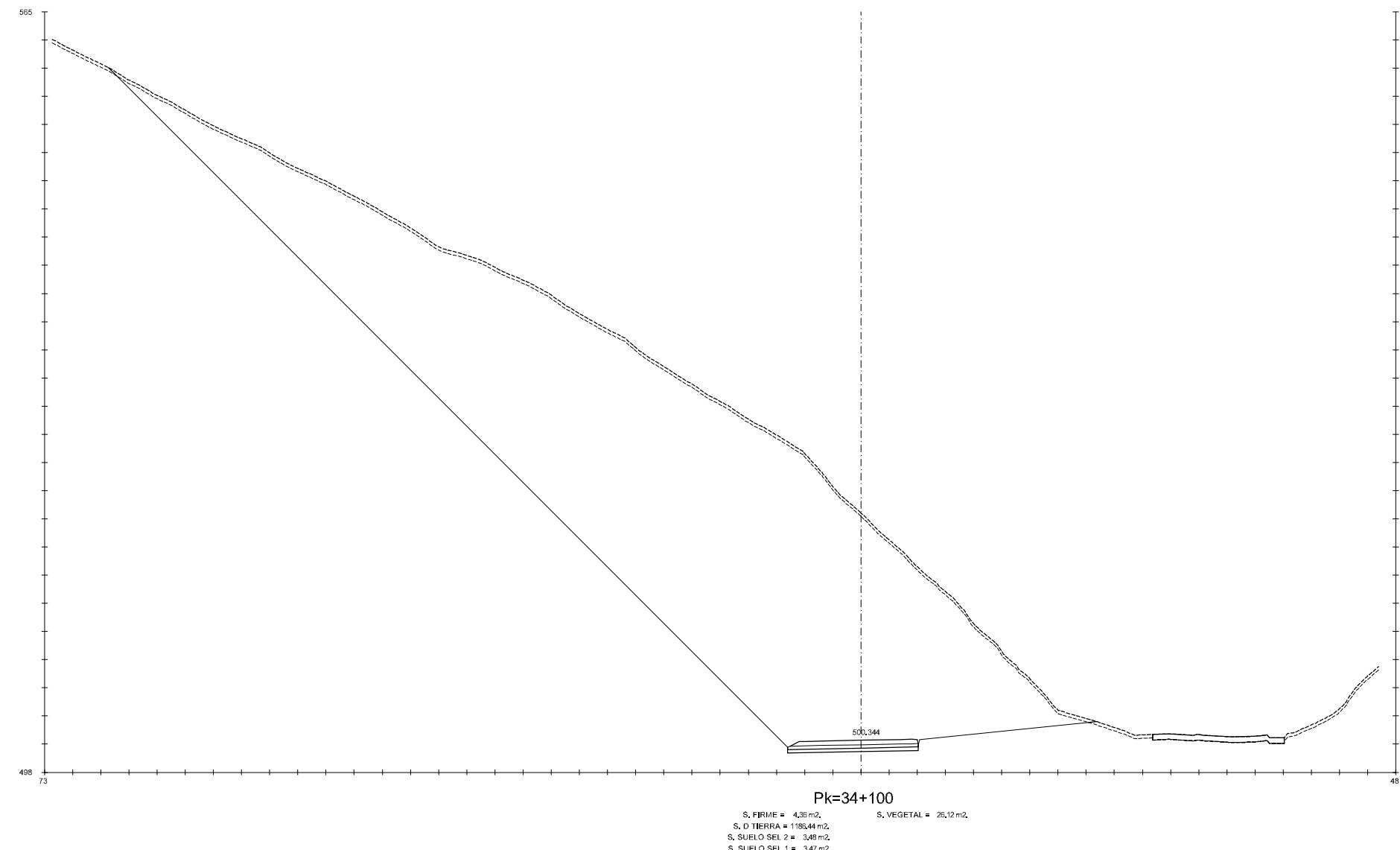




TÚNEL DE ALMÁDOZ
LONGITUD L=1221m.







DEPARTAMENTO DE FOMENTO
DIRECCIÓN GENERAL DE OBRAS PÚBLICAS
SERVICIO DE ESTUDIOS Y PROYECTOS
SECCIÓN DE PROYECTOS

Vº Bº LA ICCP DIRECTORA DEL ESTUDIO
Mº CARMEN GONZÁLEZ MARTÍNEZ



EL INGENIERO DE CAMINOS, C. y P.
AUTOR DEL ESTUDIO
JOAQUÍN BERNAD BERNAD

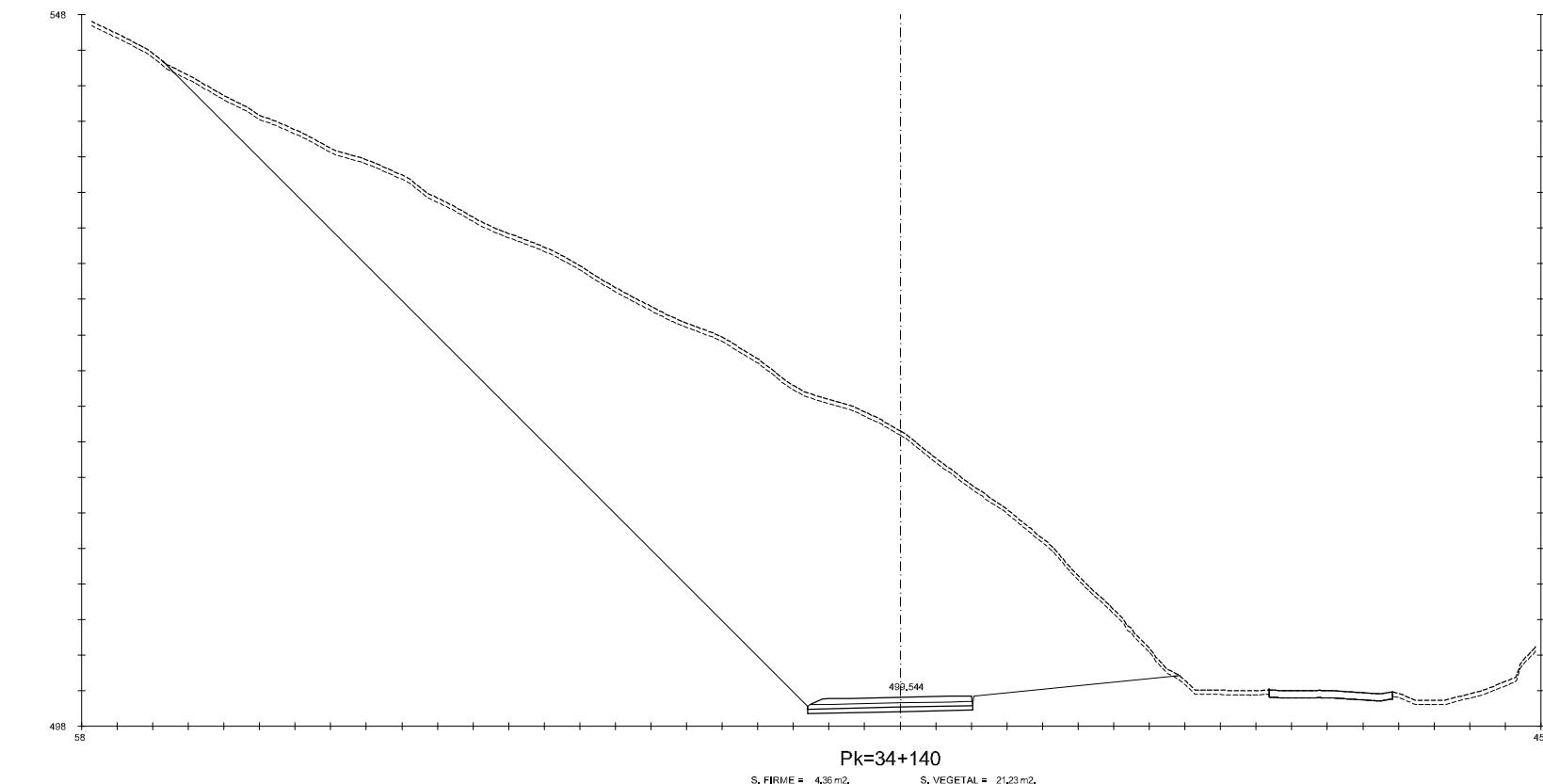
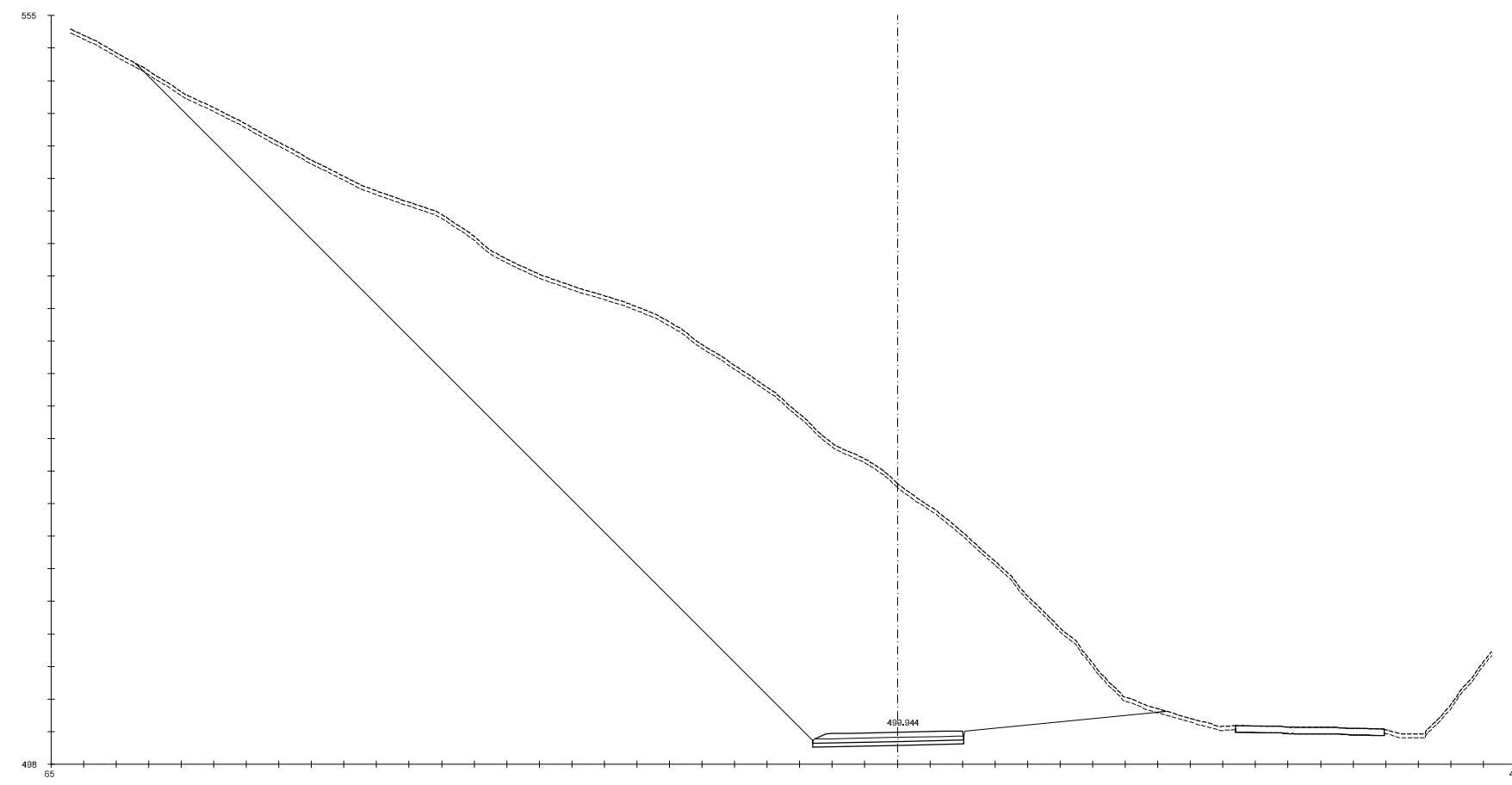
ESCALA:
1 / 500

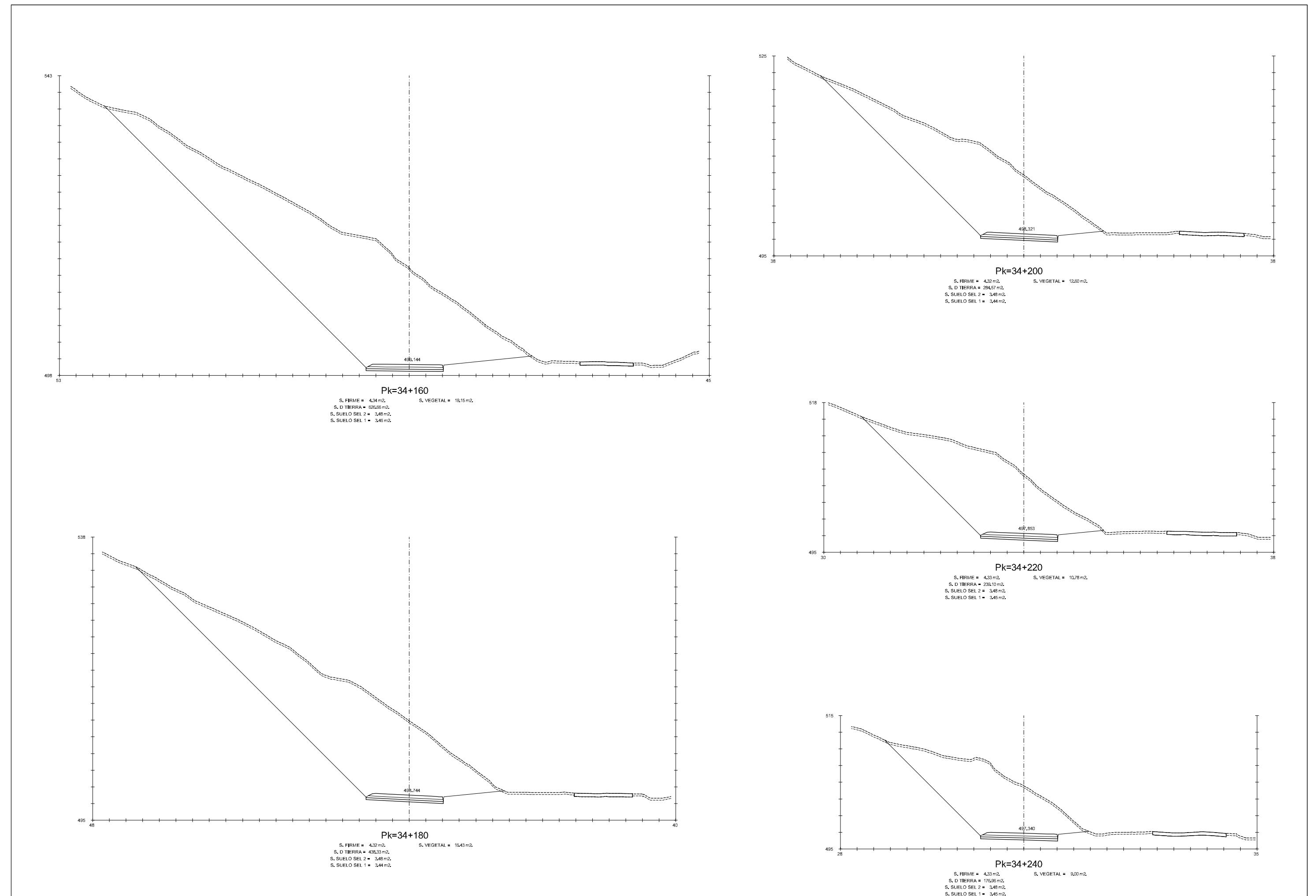
0 1 5 10 m

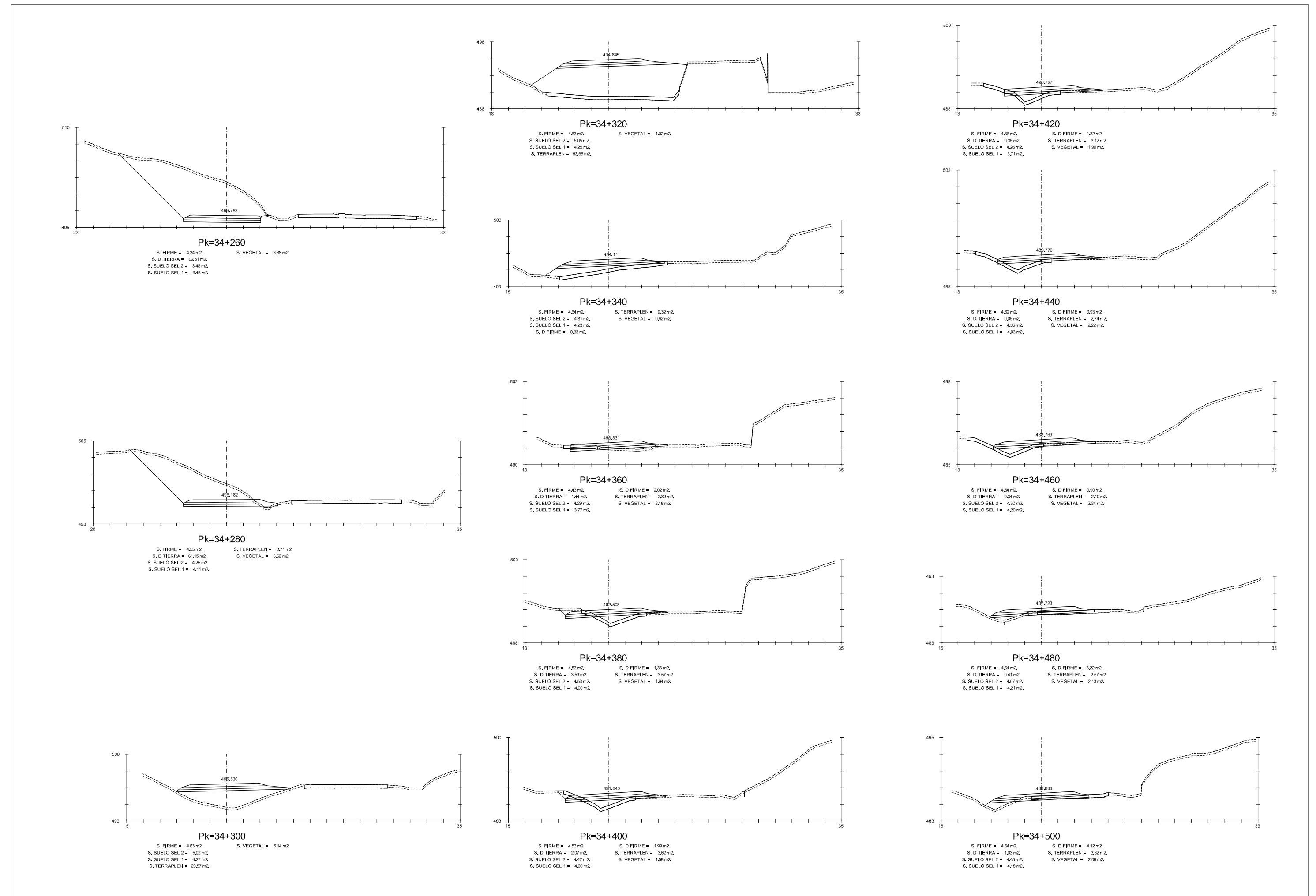
TÍTULO
ESTUDIO DE ALTERNATIVAS PARA LA DUPLICACIÓN
DE LOS TÚNELES DE BELATE Y ALMANDOZ EN LA CARRETERA
N-121-A (PAMPLONA-BEHOBIA)

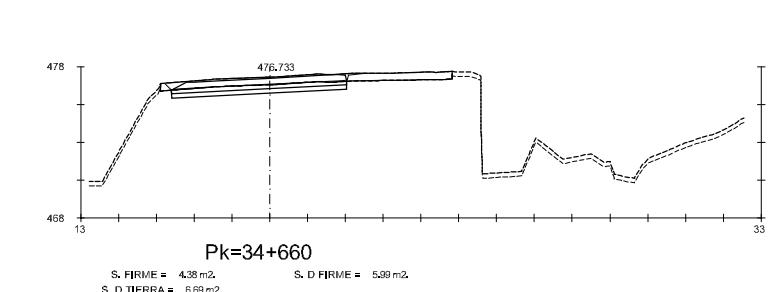
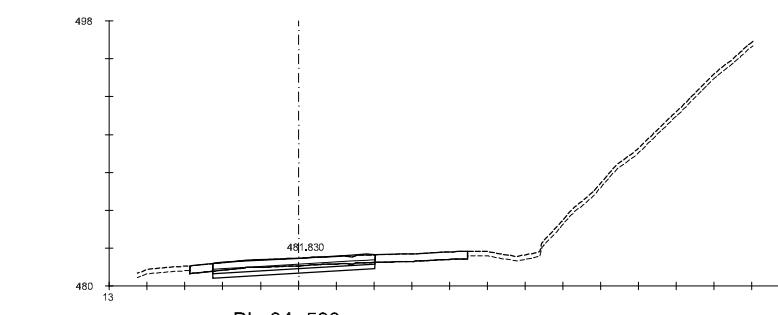
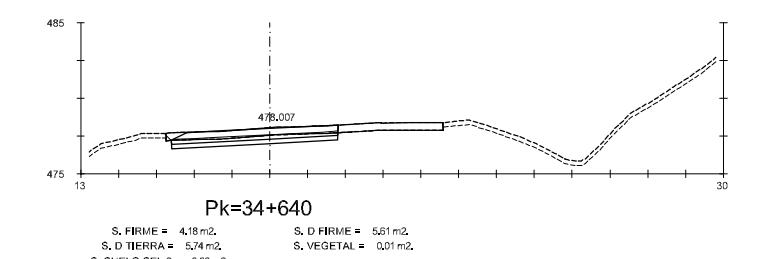
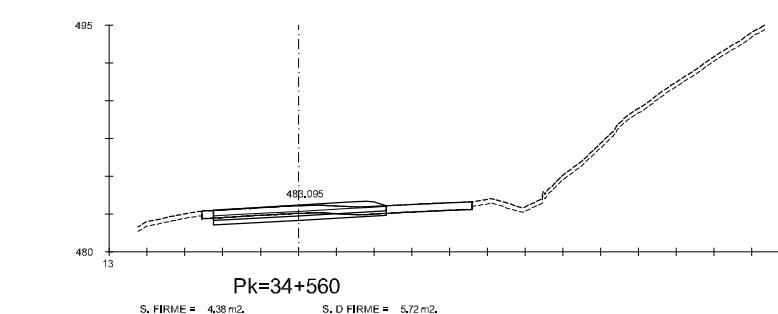
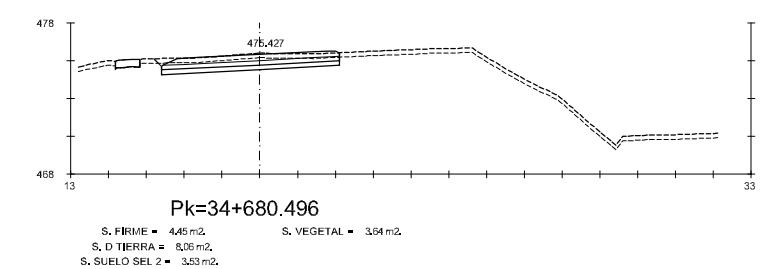
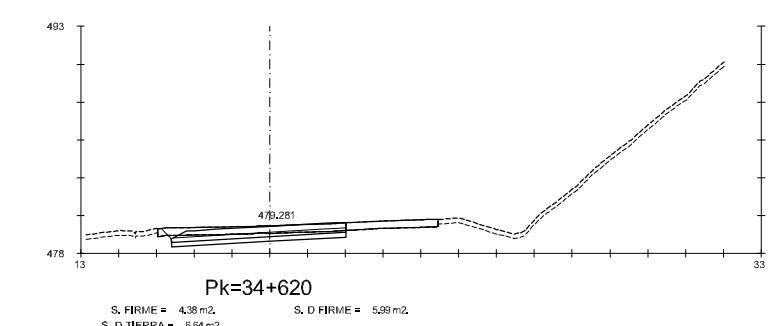
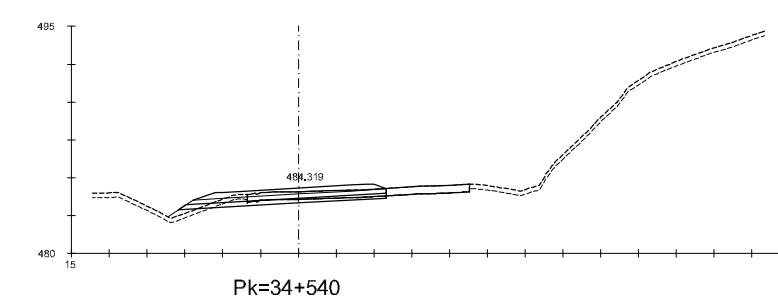
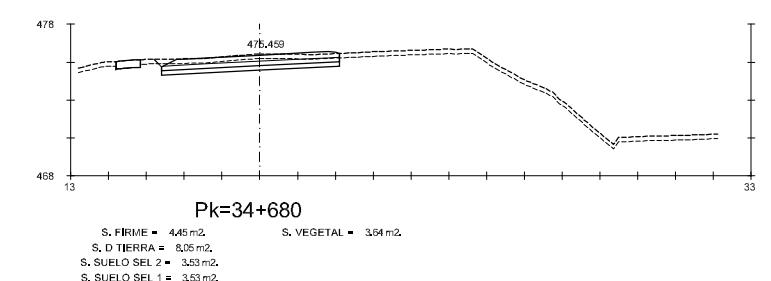
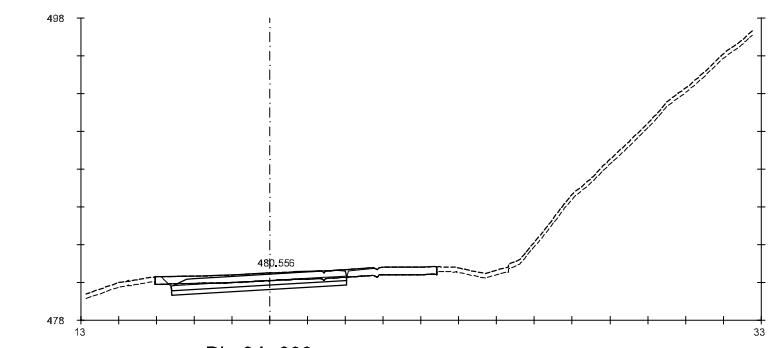
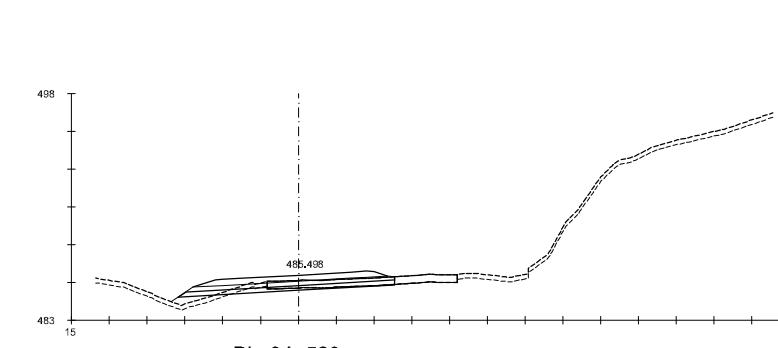
DESIGNACIÓN DEL PLANO
DEFINICIÓN DE ALTERNATIVAS
ALTERNATIVA-1
PERFILES TRANSVERSALES

DOCUMENTO PLANOS
PLANO 5.1.5
FECHA DICIEMBRE 2014
HOJA 27 DE 36

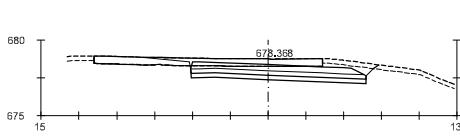




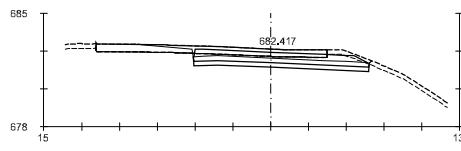




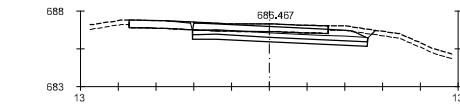
EJE 3
CALZADA DERECHA EN ALTERNATIVAS 1 Y 2. TRAMO INICIAL



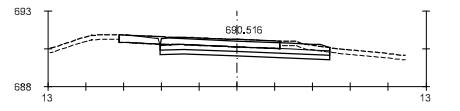
S. FIRME = 4,47 m², S. D FIRME = 4,80 m²,
S. D TIERRA = 11,14 m², S. VEGETAL = 1,05 m²,
S. SUELO SEL 2 = 3,48 m²,
S. SUELO SEL 1 = 3,47 m².



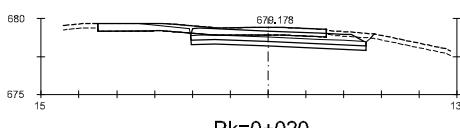
S. FIRME = 4,46 m², S. D FIRME = 4,89 m²,
S. D TIERRA = 8,97 m², S. VEGETAL = 0,85 m²,
S. SUELO SEL 2 = 3,48 m²,
S. SUELO SEL 1 = 3,47 m².



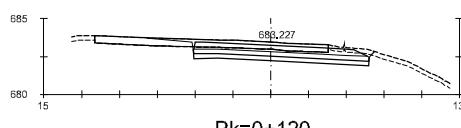
S. FIRME = 4,47 m², S. D FIRME = 4,60 m²,
S. D TIERRA = 8,25 m², S. VEGETAL = 0,80 m²,
S. SUELO SEL 2 = 3,48 m²,
S. SUELO SEL 1 = 3,47 m².



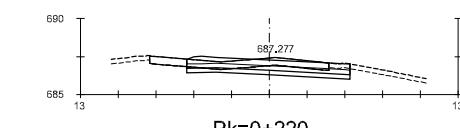
S. FIRME = 4,49 m², S. D FIRME = 4,12 m²,
S. D TIERRA = 7,11 m², S. VEGETAL = 0,99 m²,
S. SUELO SEL 2 = 3,37 m²,
S. SUELO SEL 1 = 3,37 m².



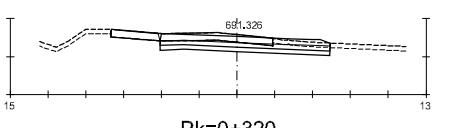
S. FIRME = 4,46 m², S. D FIRME = 4,89 m²,
S. D TIERRA = 8,72 m², S. VEGETAL = 0,91 m²,
S. SUELO SEL 2 = 3,48 m²,
S. SUELO SEL 1 = 3,47 m².



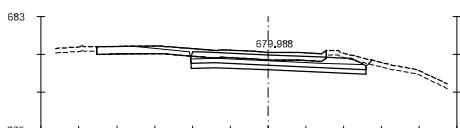
S. FIRME = 4,47 m², S. D FIRME = 4,79 m²,
S. D TIERRA = 8,70 m², S. VEGETAL = 0,88 m²,
S. SUELO SEL 2 = 3,48 m²,
S. SUELO SEL 1 = 3,47 m².



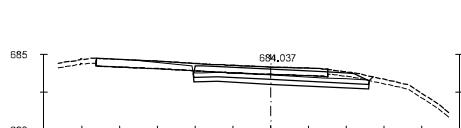
S. FIRME = 4,39 m², S. D FIRME = 4,70 m²,
S. D TIERRA = 5,29 m², S. VEGETAL = 0,42 m²,
S. SUELO SEL 2 = 3,24 m²,
S. SUELO SEL 1 = 3,24 m².



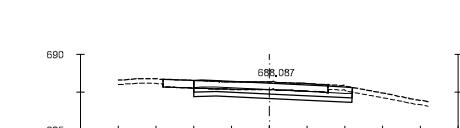
S. FIRME = 4,49 m², S. D FIRME = 3,84 m²,
S. D TIERRA = 6,98 m², S. VEGETAL = 1,14 m²,
S. SUELO SEL 2 = 3,37 m²,
S. SUELO SEL 1 = 3,37 m².



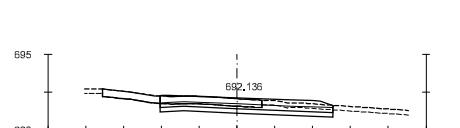
S. FIRME = 4,47 m², S. D FIRME = 5,14 m²,
S. D TIERRA = 8,86 m², S. VEGETAL = 0,87 m²,
S. SUELO SEL 2 = 3,48 m²,
S. SUELO SEL 1 = 3,47 m².



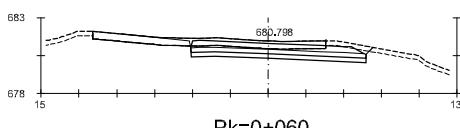
S. FIRME = 4,47 m², S. D FIRME = 4,89 m²,
S. D TIERRA = 7,89 m², S. VEGETAL = 0,85 m²,
S. SUELO SEL 2 = 3,48 m²,
S. SUELO SEL 1 = 3,47 m².



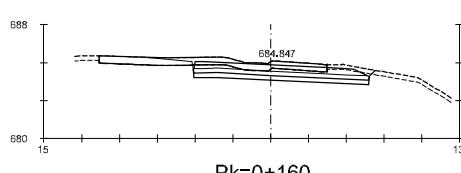
S. FIRME = 4,26 m², S. D FIRME = 4,44 m²,
S. D TIERRA = 6,19 m², S. VEGETAL = 0,48 m²,
S. SUELO SEL 2 = 3,14 m²,
S. SUELO SEL 1 = 3,15 m².



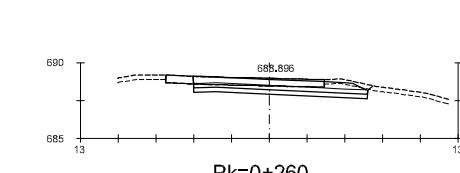
S. FIRME = 4,63 m², S. D FIRME = 3,37 m²,
S. D TIERRA = 5,71 m², S. VEGETAL = 1,41 m²,
S. SUELO SEL 2 = 3,43 m²,
S. SUELO SEL 1 = 3,43 m².



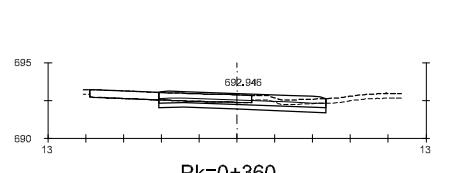
S. FIRME = 4,47 m², S. D FIRME = 4,67 m²,
S. D TIERRA = 8,85 m², S. VEGETAL = 0,91 m²,
S. SUELO SEL 2 = 3,48 m²,
S. SUELO SEL 1 = 3,47 m².



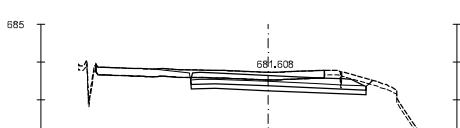
S. FIRME = 4,47 m², S. D FIRME = 4,80 m²,
S. D TIERRA = 8,94 m², S. VEGETAL = 0,92 m²,
S. SUELO SEL 2 = 3,48 m²,
S. SUELO SEL 1 = 3,47 m².



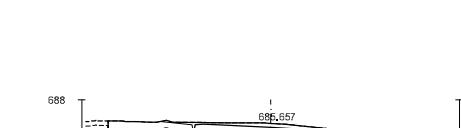
S. FIRME = 4,45 m², S. D FIRME = 4,34 m²,
S. D TIERRA = 7,18 m², S. VEGETAL = 0,92 m²,
S. SUELO SEL 2 = 3,45 m²,
S. SUELO SEL 1 = 3,45 m².



S. FIRME = 4,65 m², S. D FIRME = 3,07 m²,
S. D TIERRA = 5,31 m², S. VEGETAL = 1,49 m²,
S. SUELO SEL 2 = 3,32 m²,
S. SUELO SEL 1 = 3,32 m².



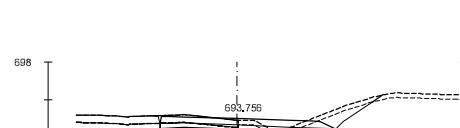
S. FIRME = 4,47 m², S. D FIRME = 4,74 m²,
S. D TIERRA = 8,72 m², S. VEGETAL = 0,92 m²,
S. SUELO SEL 2 = 3,48 m²,
S. SUELO SEL 1 = 3,47 m².



S. FIRME = 4,47 m², S. D FIRME = 4,82 m²,
S. D TIERRA = 8,67 m², S. VEGETAL = 0,92 m²,
S. SUELO SEL 2 = 3,48 m²,
S. SUELO SEL 1 = 3,47 m².

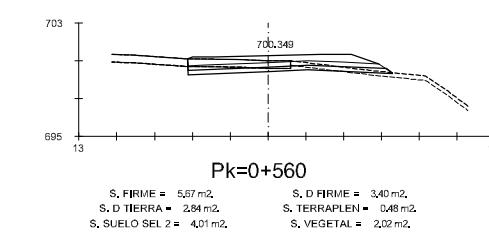
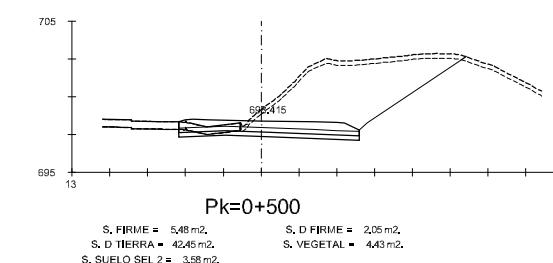
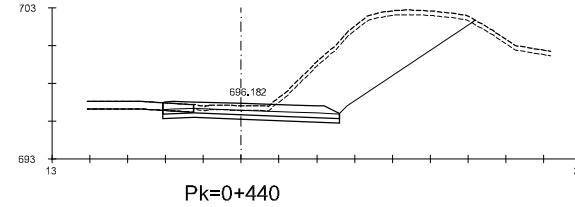
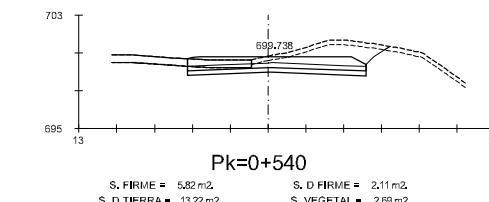
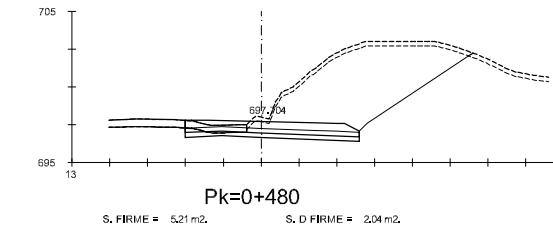
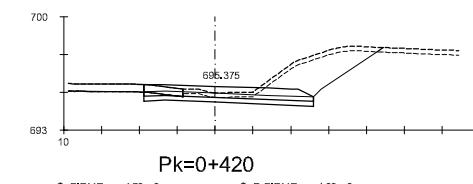
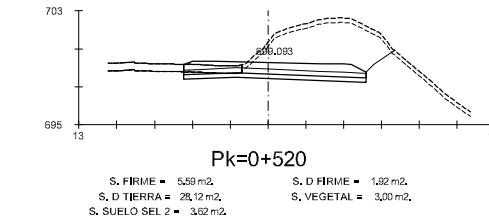
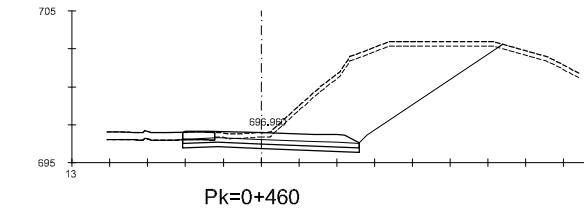
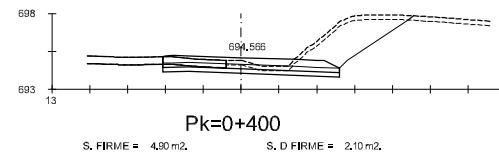


S. FIRME = 4,47 m², S. D FIRME = 4,23 m²,
S. D TIERRA = 7,17 m², S. VEGETAL = 1,05 m²,
S. SUELO SEL 2 = 3,48 m²,
S. SUELO SEL 1 = 3,47 m².

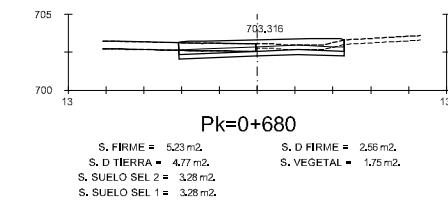
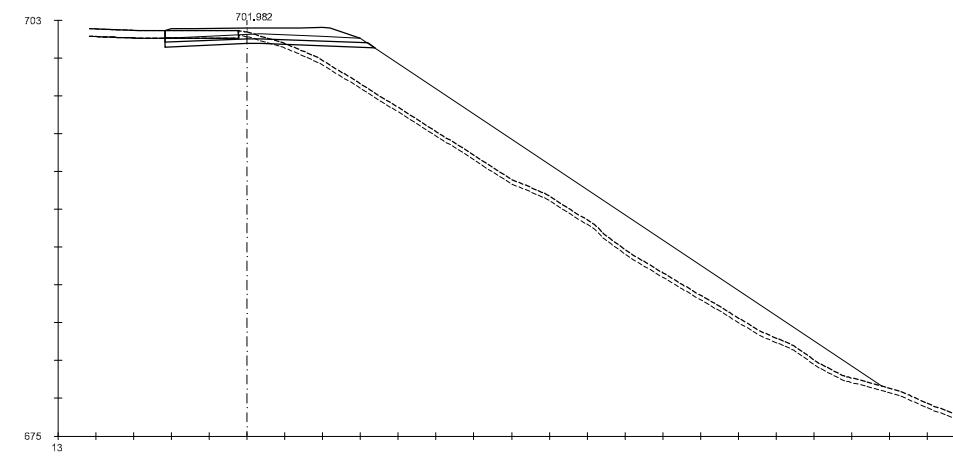
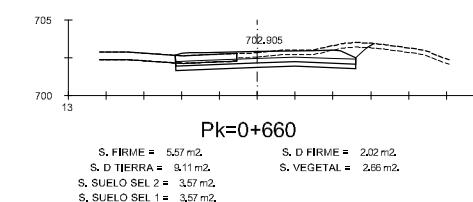
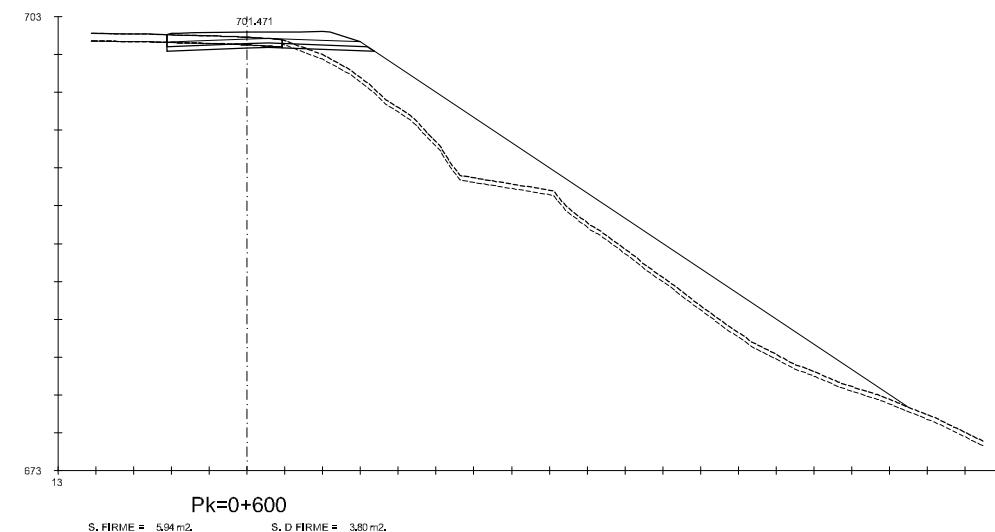
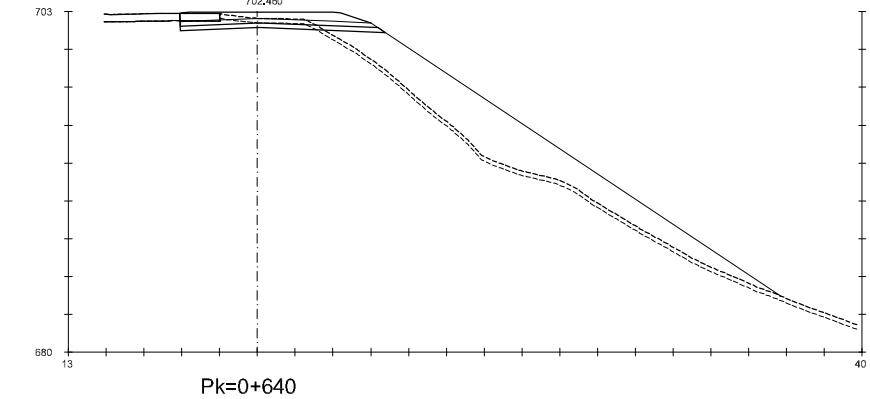
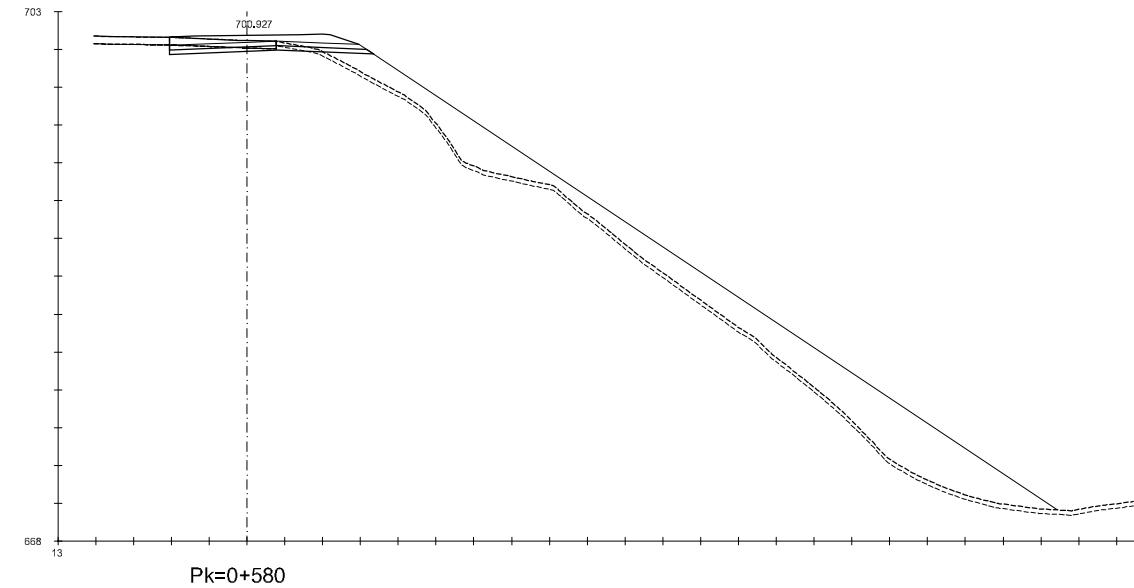


S. FIRME = 4,75 m², S. D FIRME = 2,83 m²,
S. D TIERRA = 7,95 m², S. VEGETAL = 2,76 m²,
S. SUELO SEL 2 = 3,48 m²,
S. SUELO SEL 1 = 3,48 m².

EJE 3
CALZADA DERECHA EN ALTERNATIVAS 1 Y 2. TRAMO INICIAL



EJE 3
CALZADA DERECHA EN ALTERNATIVAS 1 Y 2. TRAMO INICIAL



EJE 3
CALZADA DERECHA EN ALTERNATIVAS 1 Y 2. TRAMO INICIAL

