

AUTOSTRADA (A14) : BOLOGNA–BARI–TARANTO

TRATTO: BOLOGNA BORGO PANIGALE – BOLOGNA SAN LAZZARO

POTENZIAMENTO DEL SISTEMA TANGENZIALE DI BOLOGNA  
TRA BORGO PANIGALE E SAN LAZZARO

## PROGETTO DEFINITIVO

### DOCUMENTAZIONE GENERALE

INSERIMENTO PAESAGGISTICO E OPERE A VERDE

PARCHI

ABACO DETTAGLI

IL PROGETTISTA SPECIALISTICO  Ing. Dott. Daniele Mascellani Ord. Ingg. Milano N.A30087  RESPONSABILE NATURA E TERRITORIO	IL RESPONSABILE INTEGRAZIONE PRESTAZIONI SPECIALISTICHE  Ing. Raffaele Rinaldesi Ord. Ingg. Macerata N. A1068	IL DIRETTORE TECNICO  Ing. Orlando Mazza Ord. Ingg. Pavia N. 1496  PROGETTAZIONE NUOVE OPERE AUTOSTRADALI
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CODICE IDENTIFICATIVO														Ordinatore:																					
RIFERIMENTO PROGETTO				RIFERIMENTO DIRETTORIO						RIFERIMENTO ELABORATO				00																					
Codice Commessa	Lotto Cod. Appalto	Sub-Prog.	Fase	Capitolo	Paragrafo	Tipologia	WBS progressivo	PARTE D'OPERA	Tip.	Disciplina	Progressivo	Rev.	SCALA:																						
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 	PROJECT MANAGER:		SUPPORTO SPECIALISTICO:				REVISIONE	
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	REDATTO:		VERIFICATO:		0	GIUGNO 2017		
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VISTO DEL COMMITTENTE    IL RESPONSABILE UNICO DEL PROCEDIMENTO Ing. Marilisa Conte	VISTO DEL CONCEDENTE    Ministero delle Infrastrutture e dei Trasporti <small>DIPARTIMENTO PER LE INFRASTRUTTURE E GLI AFFARI GENERALI ED IL PERSONALE STRUTTURA DI VIGILANZA SULLE CONCESSIONI E AUTOSTRADALI</small>
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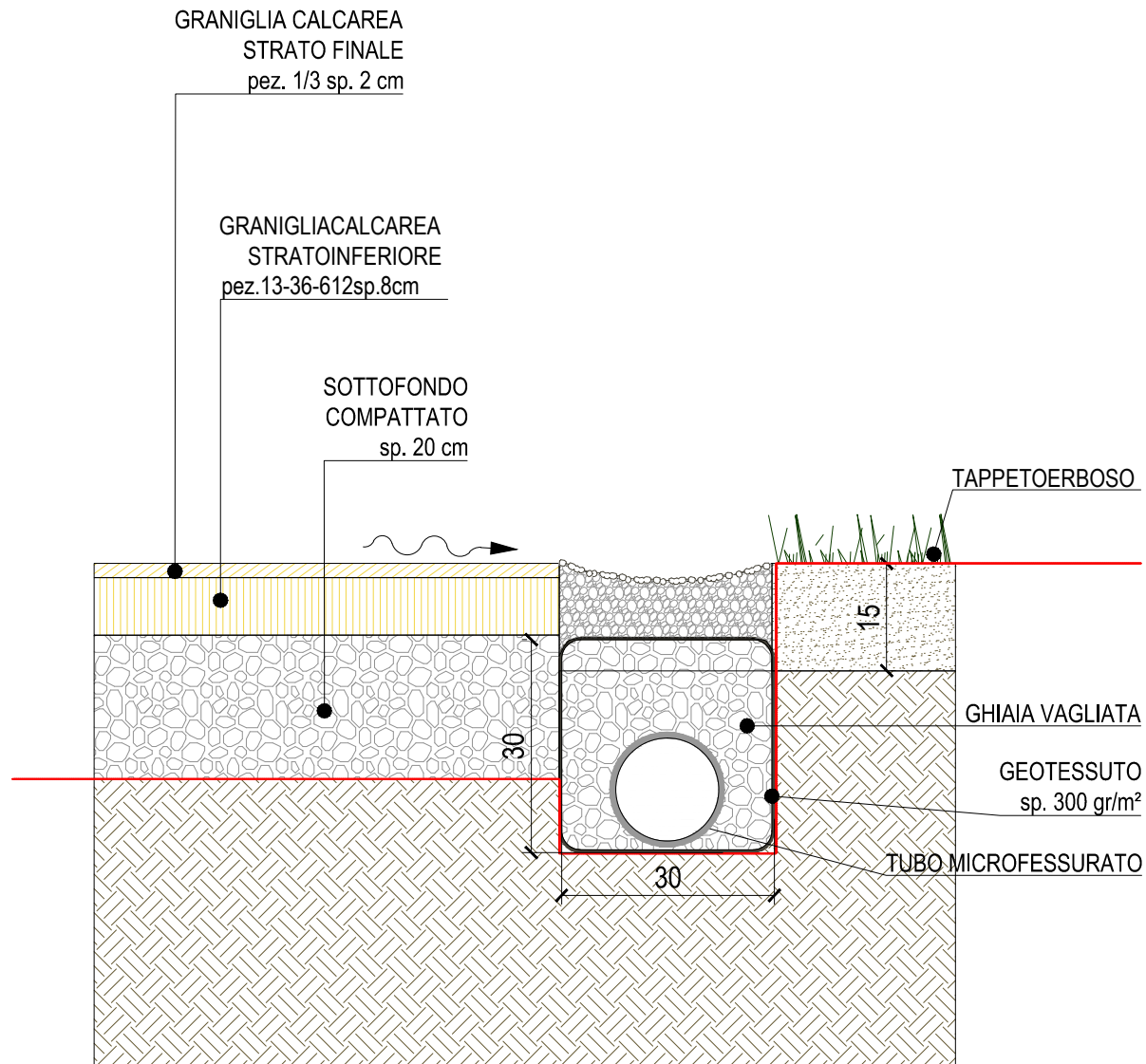
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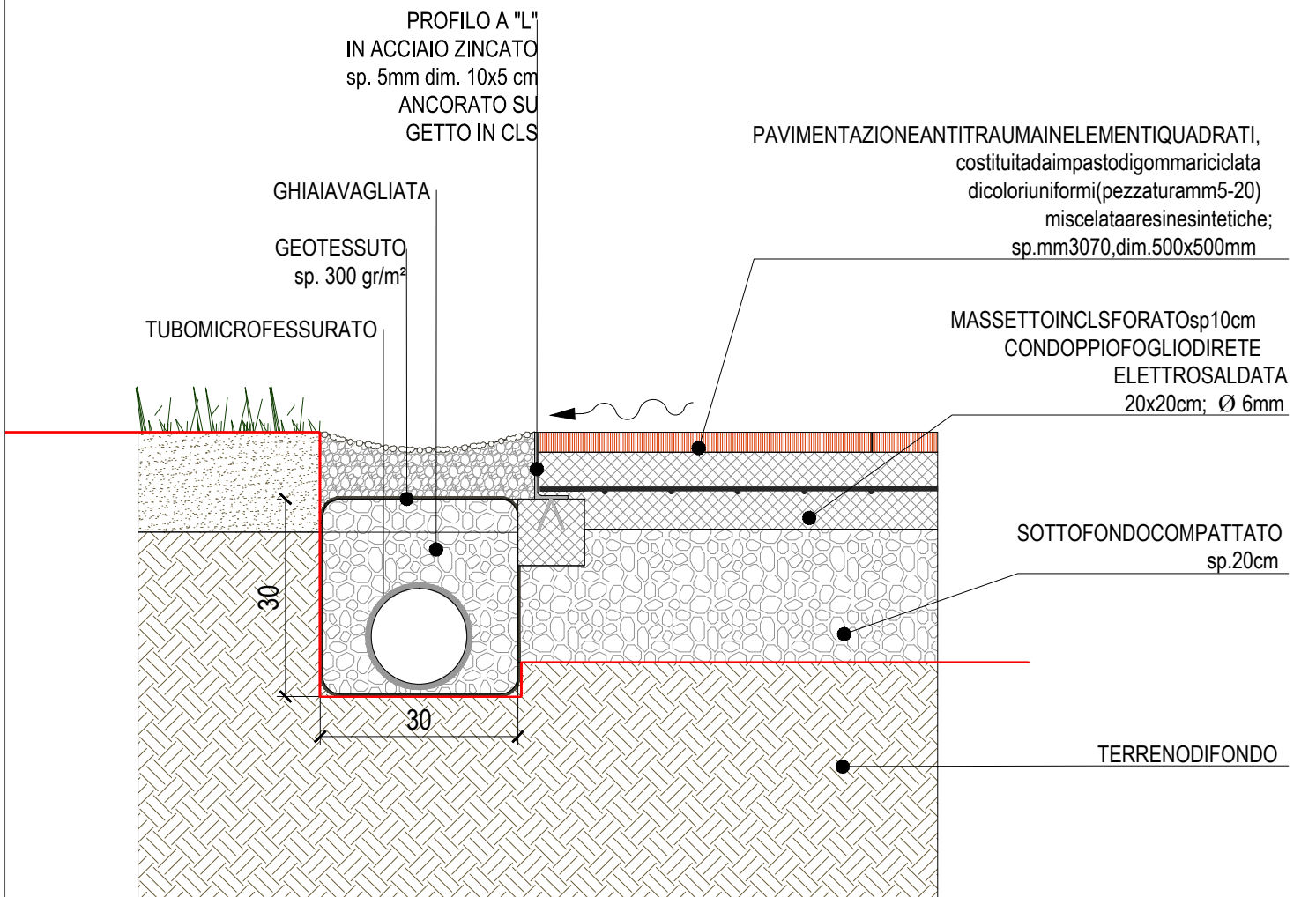
## Arredi

*(L'accettazione di tali tipologie di opere è subordinata all'approvazione del settore tecnico competente del Comune o dell'amministrazione che prenderà in carico e in gestione il parco di progetto)*

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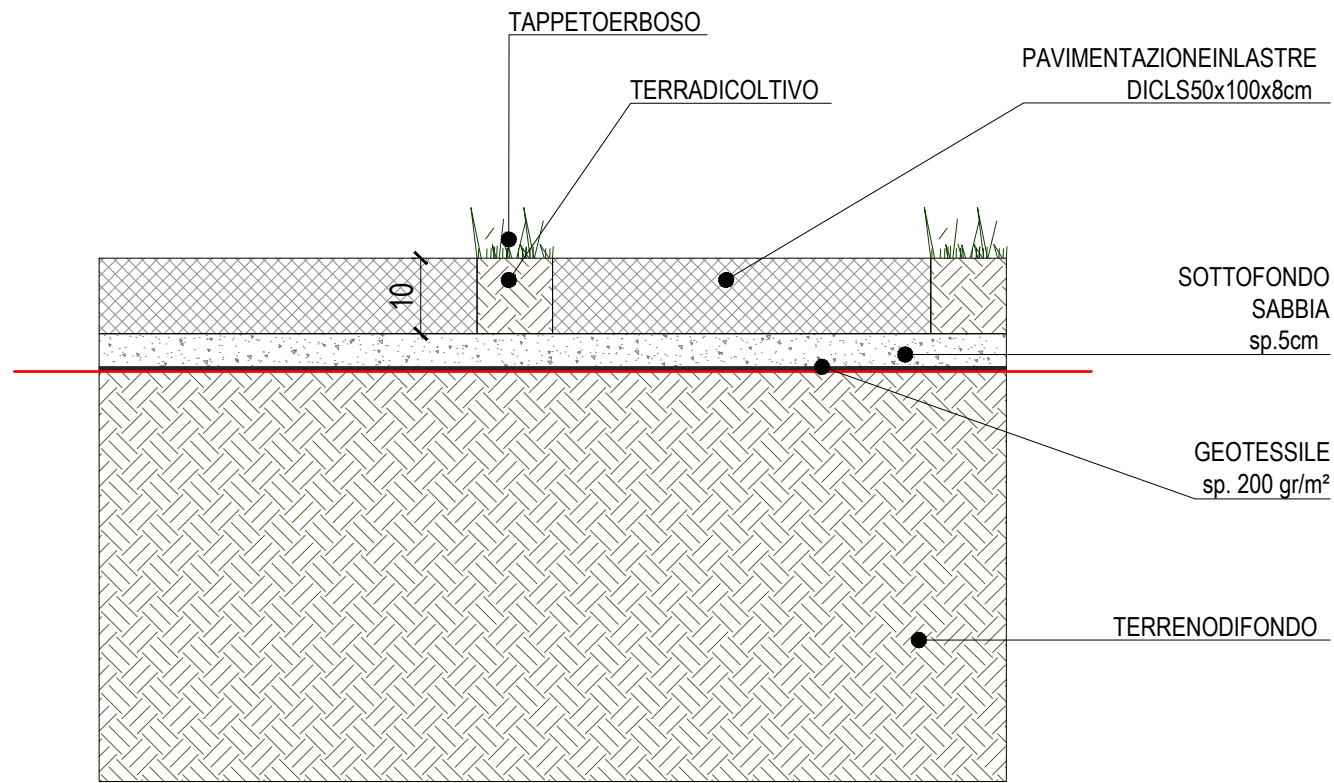
**P01**  
Pavimentazione in calcestre  
SCALA 1:10



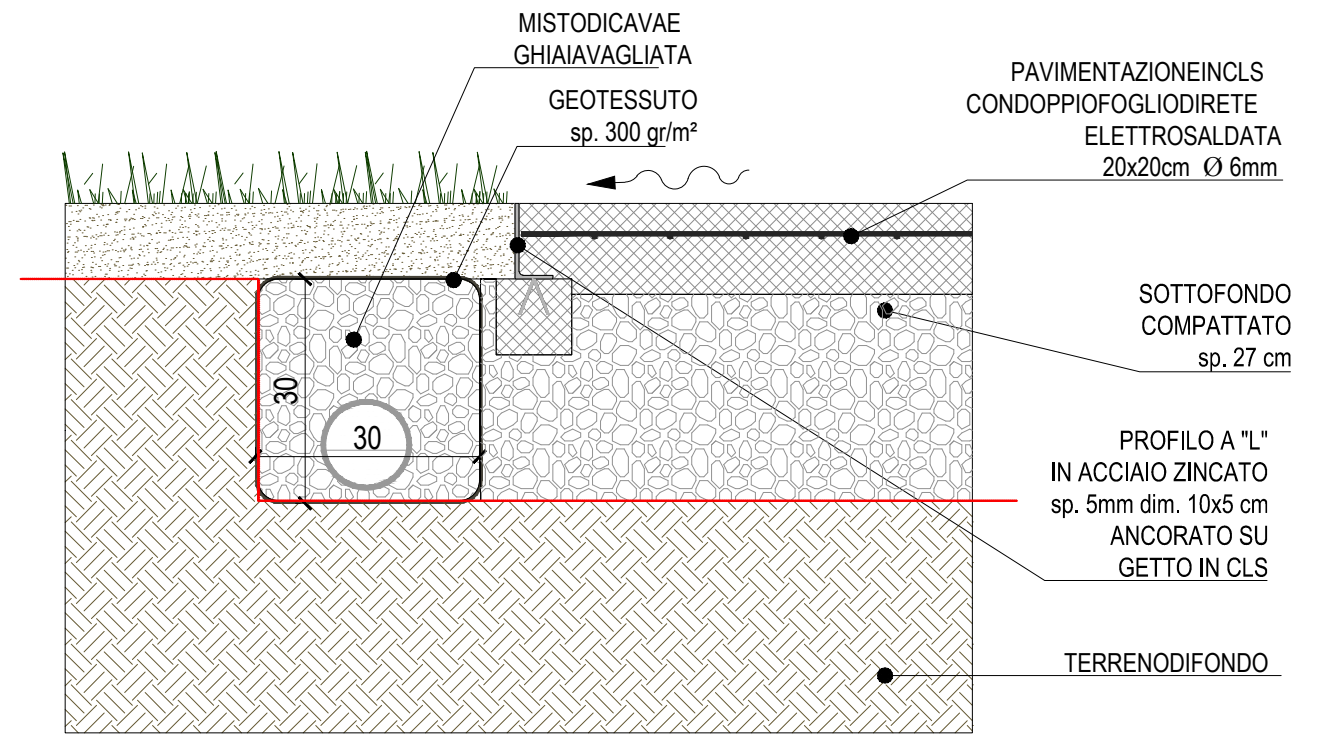
**P02**  
Pavimentazione in gomma antitrauma in elementi quadrati per area gioco  
SCALA 1:10

— Limitedi forniture progetto opere verde

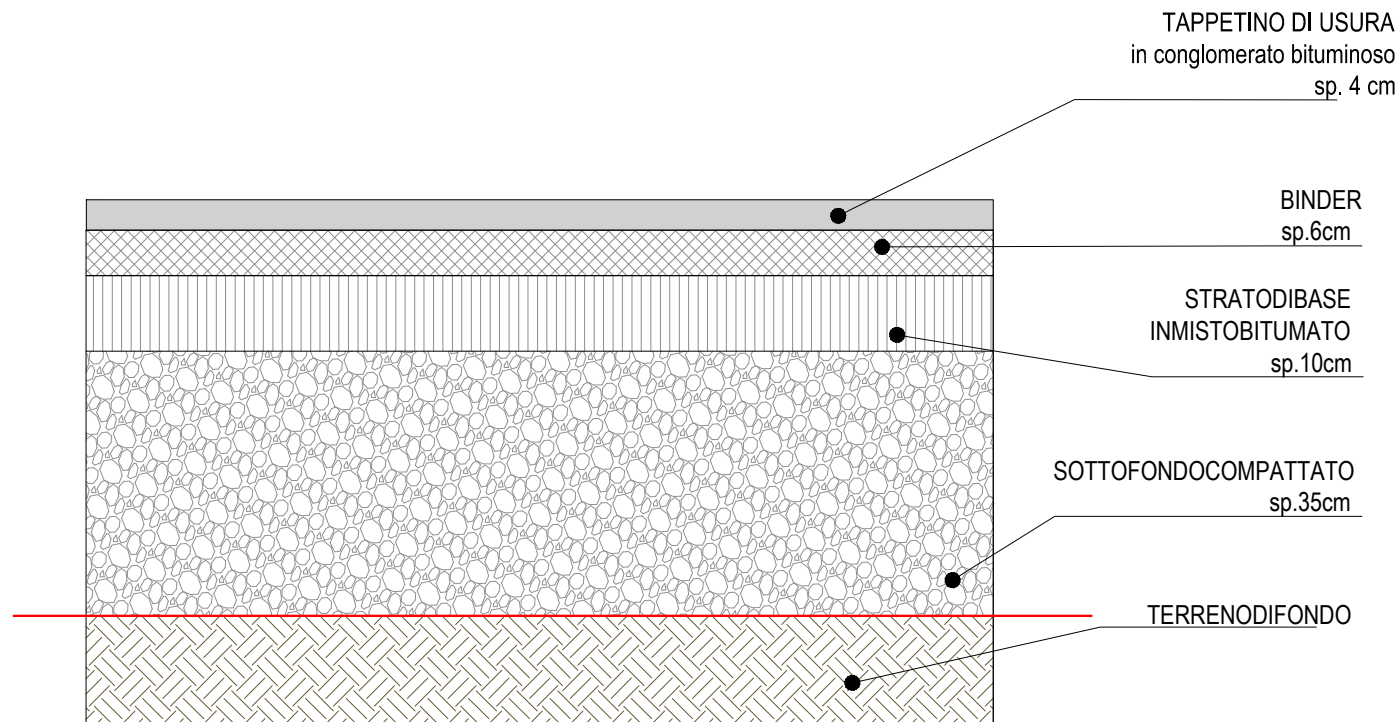
# Pavimentazioni



**P03**  
Passipersiinlastredicalcestruzzoconfugheinerbite  
SCALA1:10

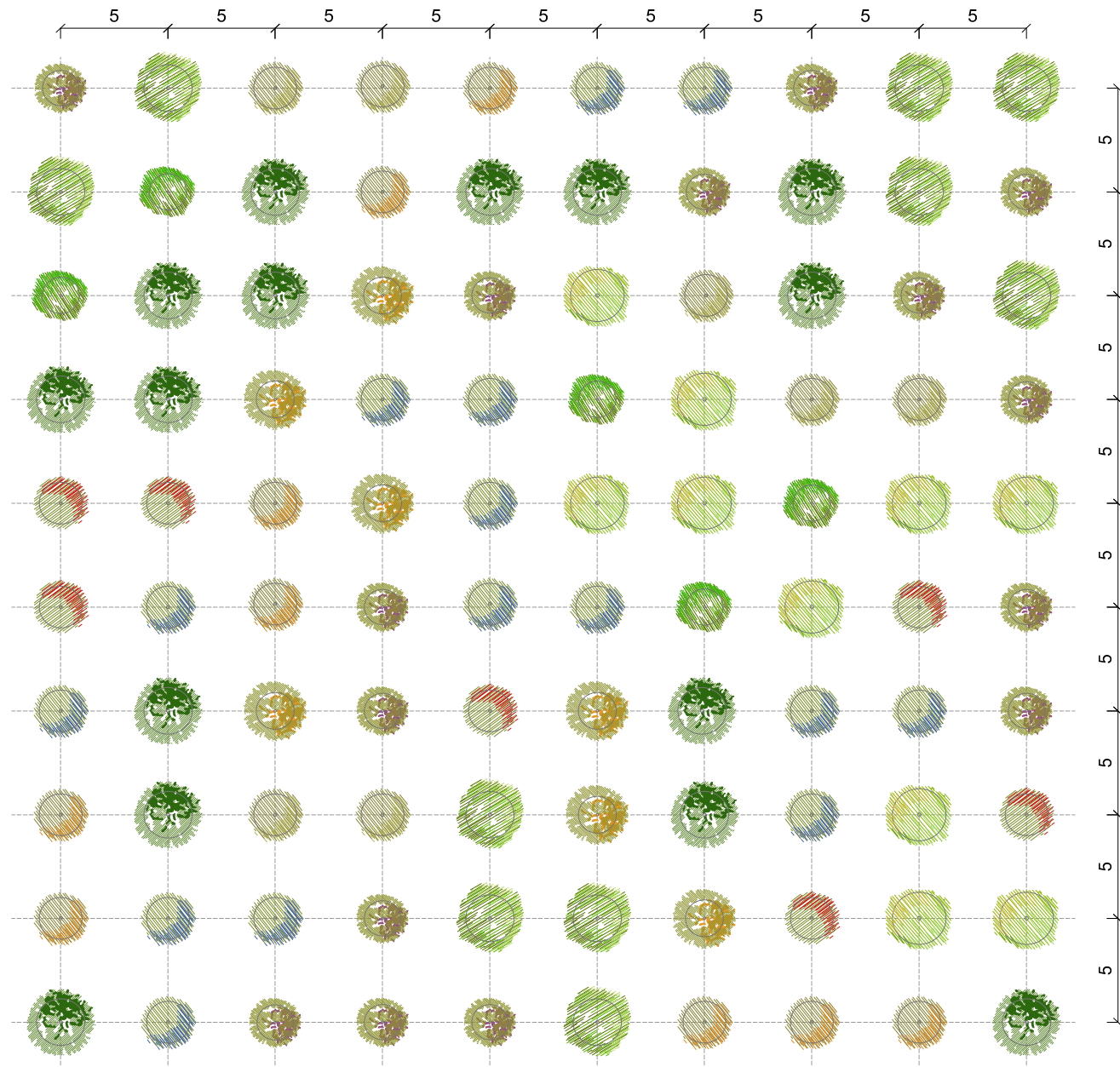


**P05**  
Pavimentazioneincemento  
SCALA1:10



**P04**  
Pavimentazionecarrabileinasfalto  
SCALA1:10

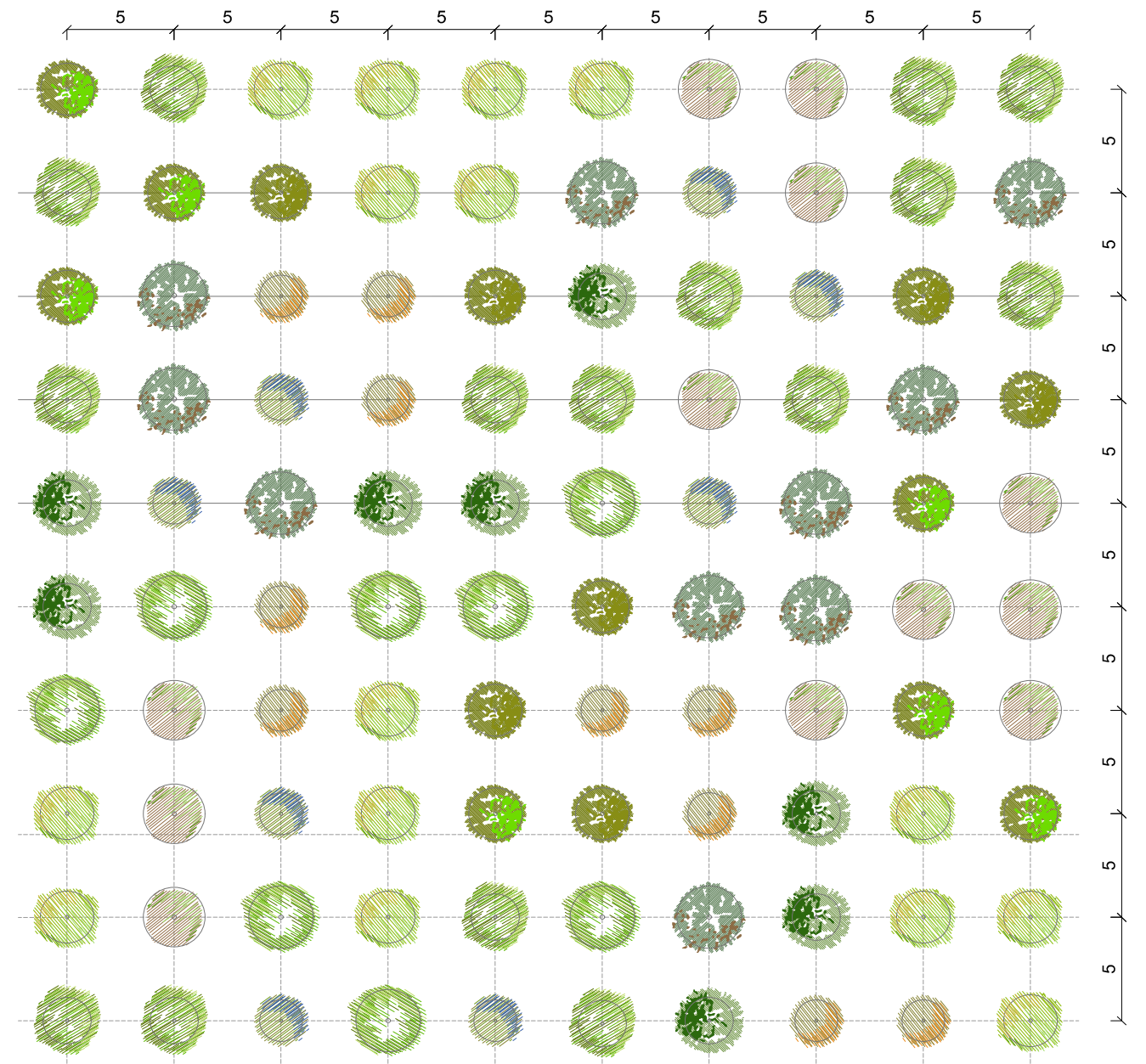
— Limitediforniturasiprogettoopereaverde



**ALBERI**

<i>Quercus robur</i> (I)	10%	Qr		<i>Prunus padus</i> (II)	7%	Prp	
<i>Tilia cordata</i> (I)	15%	Tc		<i>Cercis siliquastrum</i> (I)	7%	Cs	
<i>Carpinus betulus</i> (II)	10%	Cb		<i>Platanus occidentalis</i> (I)	5%	Po	
<i>Populus tremula</i> (II)	15%	Pt		<i>Celtis australis</i> (II)	7%	Ca	
<i>Prunus avium</i> (II)	9%	Pra		<i>Ginkgo biloba</i> (I)	15%	Gb	

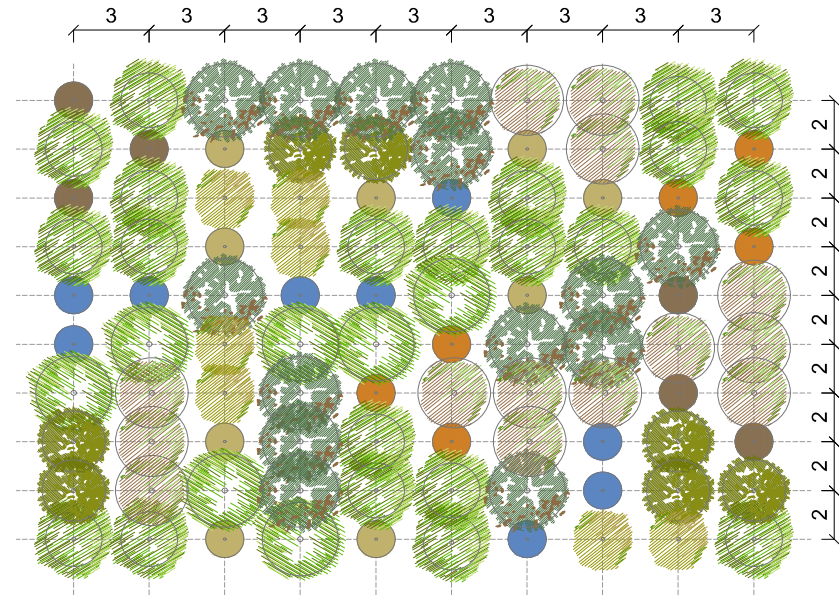
**RIOR**  
Rimboschimento ornamentale  
SCALA1:300



**ALBERI**

<i>Quercus robur</i> (I)	15%	Qr		<i>Acer platanoides</i> (I)	12%	Ap	
<i>Populus alba</i> (I)	8%	Pa		<i>Fraxinus excelsior</i> (I)	7%	Fe	
<i>Ulmus campestris</i> (I)	10%	Uc		<i>Fraxinus ornus</i> (I)	7%	Fo	
<i>Carpinus betulus</i> (II)	15%	Cb		<i>Tilia platyphyllos</i> (I)	8%	Tp	
<i>Prunus avium</i> (II)	10%	Pra		<i>Tilia cordata</i> (II)	8%	Tc	

**RIRU**  
Rimboschimento rustico ecologico  
SCALA1:300



**ALBERI (70%)**

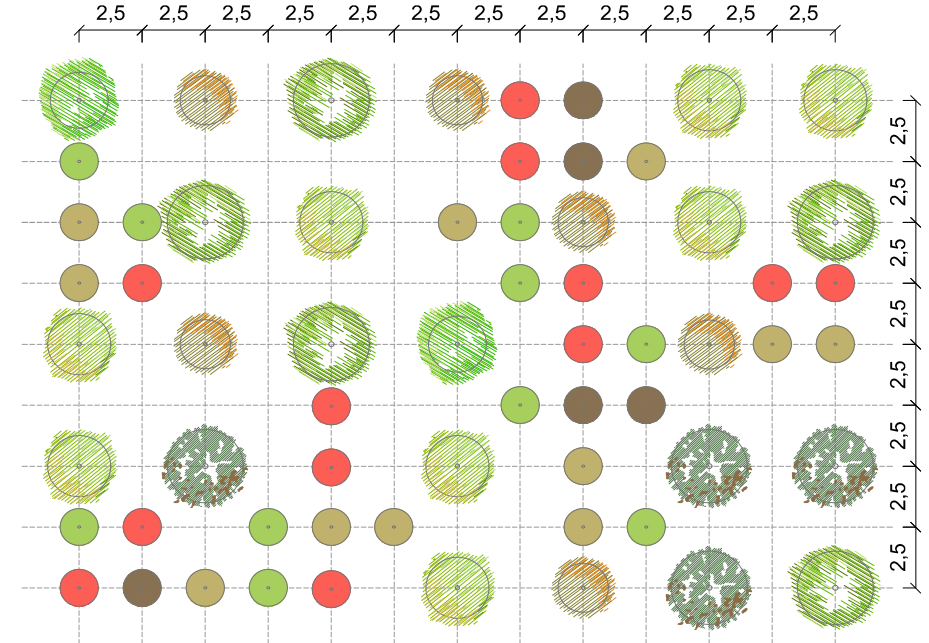
<i>Quercus robur</i> (I)	30%	Qr	
<i>Populus alba</i> (I)	10%	Pa	
<i>Ulmus minor</i> (II)	20%	Um	
<i>Fraxinus ornus</i> (II)	10%	Fo	
<i>Salix alba</i> (II)	10%	Sa	
<i>Acer platanoides</i> (I)	20%	Ap	

**ARBUSTI (30%)**

<i>Sambucus nigra</i>	20%	Sn	
<i>Cornus mas</i>	30%	Cm	
<i>Prunus spinosa</i>	30%	Prs	
<i>Spartium junceum</i>	20%	Sj	

**RIM1**

Rimboschimento dimitigazione ecologica (70-30)  
SCALA 1:300



**ALBERI (50%)**

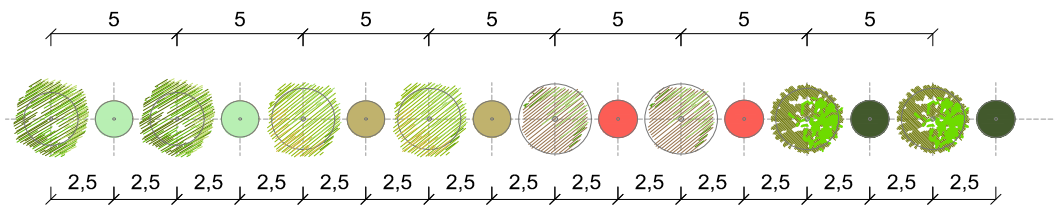
<i>Quercus robur</i> (I)	10%	Ca	
<i>Populus alba</i> (I)	10%	Pa	
<i>Ulmus minor</i> (II)	20%	Um	
<i>Carpinus betulus</i> (II)	20%	Cb	
<i>Prunus avium</i> (II)	20%	Pra	
<i>Acer platanoides</i> (I)	20%	Ap	

**ARBUSTI (50%)**

<i>Sambucus nigra</i>	20%	Sn	
<i>Cornus mas</i>	30%	Cm	
<i>Cornus sanguinea</i>	30%	Cs	
<i>Corylus avellana</i>	20%	Coa	

**RIM2**

Rimboschimento dimitigazione ecologica (50-50)  
SCALA 1:300



**ALBERI**

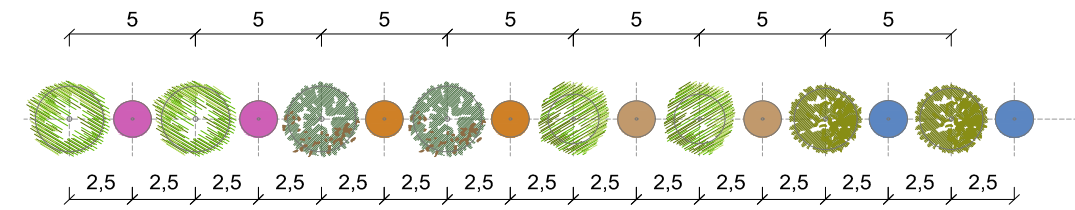
- Sorbus torminalis* (III) 25% St
- Acer monspessulanum* (III) 25% Am
- Acer campestre* (III) 25% Ac
- Malus fluribonda* (III) 25% Mf

**ARBUSTI**

- Sambucus nigra* 25% Sn
- Cornus mas* 25% Com
- Cornus sanguinea* 25% Cos
- Viburnum opulus* 25% Vo

**FAAN**

Filarearboreo-arbustivo-EsposizioneprevalenteanordscarpateASPI  
SCALA1:300



**ALBERI**

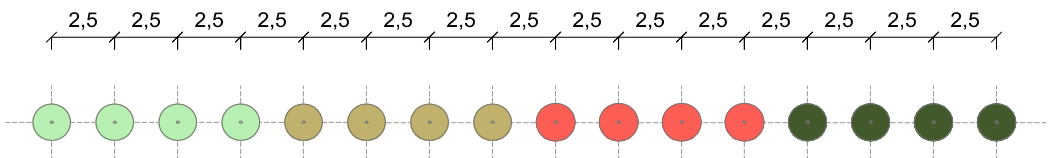
- Punica granatum* (III) 25% Pg
- Prunus cerasifera* (III) 25% Pc
- Acer monspessulanum* (III) 25% Am
- Acer opalus* (III) 25% Ao

**ARBUSTI**

- Rosa canina* 25% Rc
- Spartium junceum* 25% Sj
- Ligustrum vulgare* 25% Lv
- Prunus spinosa* 25% Prs

**FAAS**

Filarearboreo-arbustivo-EsposizioneprevalenteasudscarpateASPI  
SCALA1:300

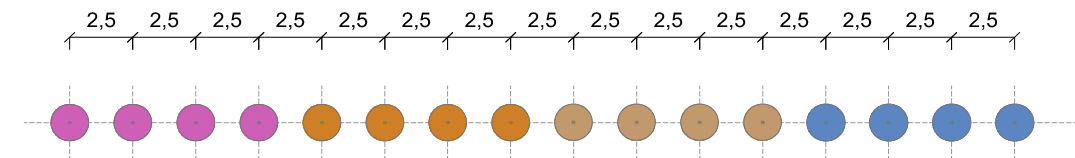


**ARBUSTI**

- Sambucus nigra* 25% Sn
- Cornus mas* 25% Com
- Cornus sanguinea* 25% Cos
- Viburnum opulus* 25% Vo

**FAN**

Filarearbustivo-EsposizioneprevalenteanordscarpateASPI  
SCALA1:300

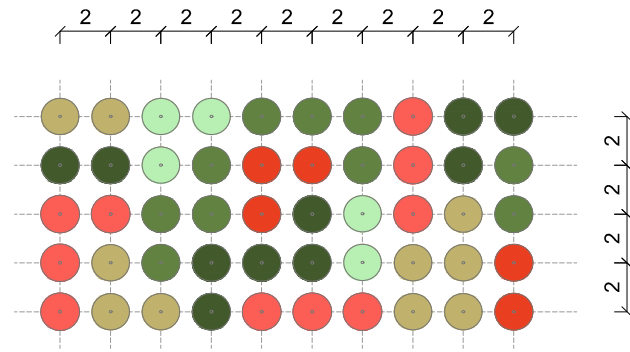


**ARBUSTI**

- Rosa canina* 25% Rc
- Spartium junceum* 25% Sj
- Ligustrum vulgare* 25% Lv
- Prunus spinosa* 25% Prs

**FAS**

Filarearbustivo-EsposizioneprevalenteasudscarpateASPI  
SCALA1:300

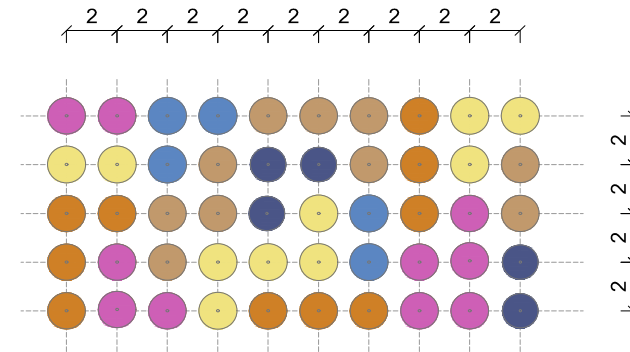


**ARBUSTI**

- |                         |     |     |  |                           |     |    |  |
|-------------------------|-----|-----|--|---------------------------|-----|----|--|
| <i>Sambucus nigra</i>   | 10% | Sn  |  | <i>Viburnum opulus</i>    | 20% | Vo |  |
| <i>Cornus mas</i>       | 20% | Com |  | <i>Euonymus europaeus</i> | 20% | Ee |  |
| <i>Cornus sanguinea</i> | 20% | Cos |  | <i>Corylus avellana</i>   | 10% | Ca |  |

**IAS**

Inverdimentoarbustivo-EsposizioneprevalenteanordscarpateASPI  
SCALA1:300

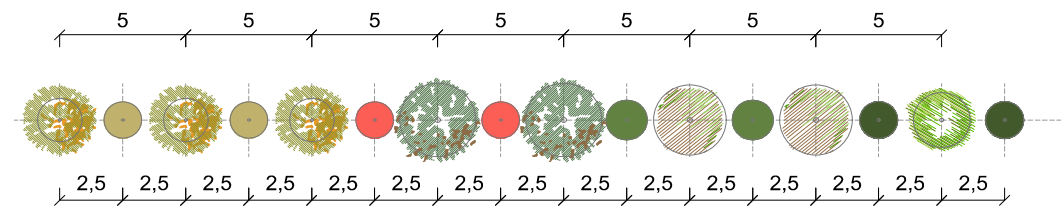


**ARBUSTI**

- |                          |     |    |  |                           |     |     |  |
|--------------------------|-----|----|--|---------------------------|-----|-----|--|
| <i>Rosa canina</i>       | 20% | Rc |  | <i>Prunus spinosa</i>     | 10% | Prs |  |
| <i>Spartium junceum</i>  | 20% | Sj |  | <i>Berberis vulgaris</i>  | 20% | Bv  |  |
| <i>Ligustrum vulgare</i> | 20% | Lv |  | <i>Rhamnus cathartica</i> | 10% | Rc  |  |

**IAS**

Inverdimentoarbustivo-EsposizioneprevalenteasudscarpateASPI  
SCALA1:300



**ALBERI**

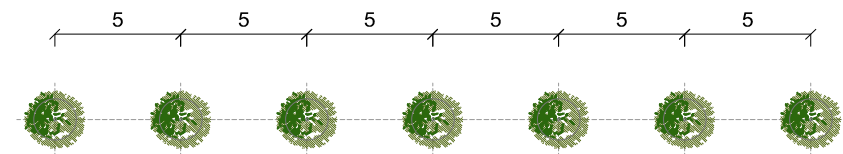
- |                             |     |    |  |
|-----------------------------|-----|----|--|
| <i>Prunus avium</i> (II)    | 40% | Lt |  |
| <i>Ulmus minor</i> (I)      | 25% | Um |  |
| <i>Acer platanoides</i> (I) | 25% | Ap |  |
| <i>Populus alba</i> (I)     | 10% | Pa |  |

**ARBUSTI**

- |                           |     |     |  |
|---------------------------|-----|-----|--|
| <i>Cornus mas</i>         | 25% | Com |  |
| <i>Cornus sanguinea</i>   | 25% | Cos |  |
| <i>Euonymus europaeus</i> | 25% | Ee  |  |
| <i>Viburnum opulus</i>    | 25% | Vo  |  |

**FAA**

Filarearboreo-arbustivo-Ambitoornamentale  
SCALA1:300

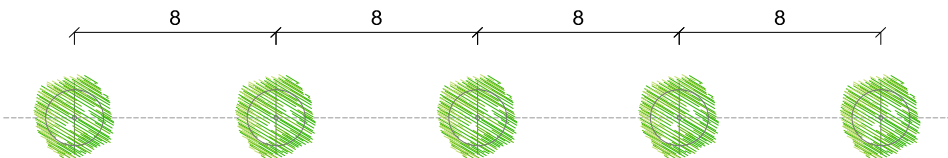


**ALBERI**

- |                               |      |    |  |
|-------------------------------|------|----|--|
| <i>Tilia platyphyllos</i> (I) | 100% | Tp |  |
|-------------------------------|------|----|--|

**FM1**

Filarearboreomonospecifico-Ambitoruraleurbano  
SCALA1:300



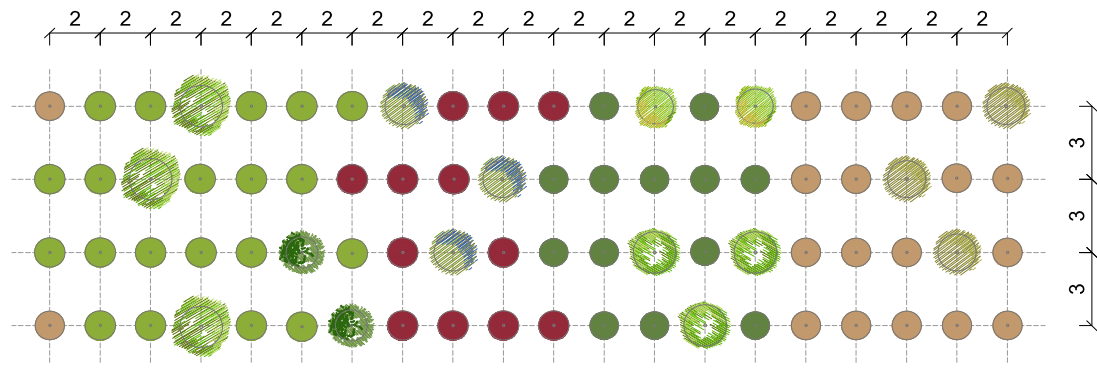
**ALBERI**

- |                             |      |    |  |
|-----------------------------|------|----|--|
| <i>Celtis australis</i> (I) | 100% | Ca |  |
|-----------------------------|------|----|--|

**FM2**

Filarearboreomonospecifico-Ambitoruraleurbano  
SCALA1:300





**ARBUSTI (80%)**

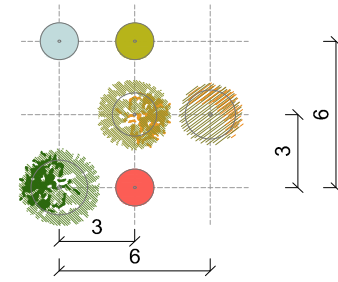
- Pirus piraster* 30% Pip
- Viburnum lantana* 20% Vl
- Euonymus europaeus* 20% Ee
- Ligustrum vulgare* 30% Lv

**ALBERI (20%)**

- Quercus robur* (I) 20% Qr
- Tilia cordata* (I) 10% Tc
- Carpinus betulus* (II) 10% Cb
- Malus silvestris* (III) 20% Mas
- Prunus avium* (II) 20% Pra
- Prunus padus* (II) 20% Prp

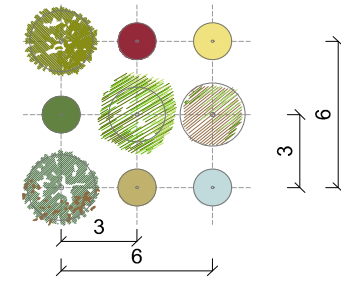
**FP01**

Fasciapaesisticoornamentaleamaggioranzaarbustiva(80-20)  
SCALA1:300



**ALBERI-ARBUSTI ORNAMENTALI**

- Liriodendron tulipifera* (I) 33% Pa
- Tilia cordata* (I) 33% Tc
- Prunus avium* (III) 33% Pra
- Cornus sanguinea* 33% Cs
- Forsythia* spp 33% Fh
- Amelanchier lamarckii* 33% Al

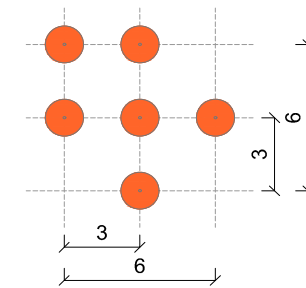


**ALBERI-ARBUSTI RUSTICI**

- Quercus robur* (I) 25% Qr
- Ulmus minor* (II) 25% Um
- Acer campestre* (III) 25% Ac
- Fraxinus ornus* (I) 25% Fo
- Cornus mas* 20% Cm
- Euonymus europaeus* 20% Ee
- Amelanchier lamarckii* 20% Al
- Berberis vulgaris* 20% Bv
- Viburnum lantana* 20% Vl

**GA**

Gruppiarboreo-arbustiviisolati  
SCALA1:300

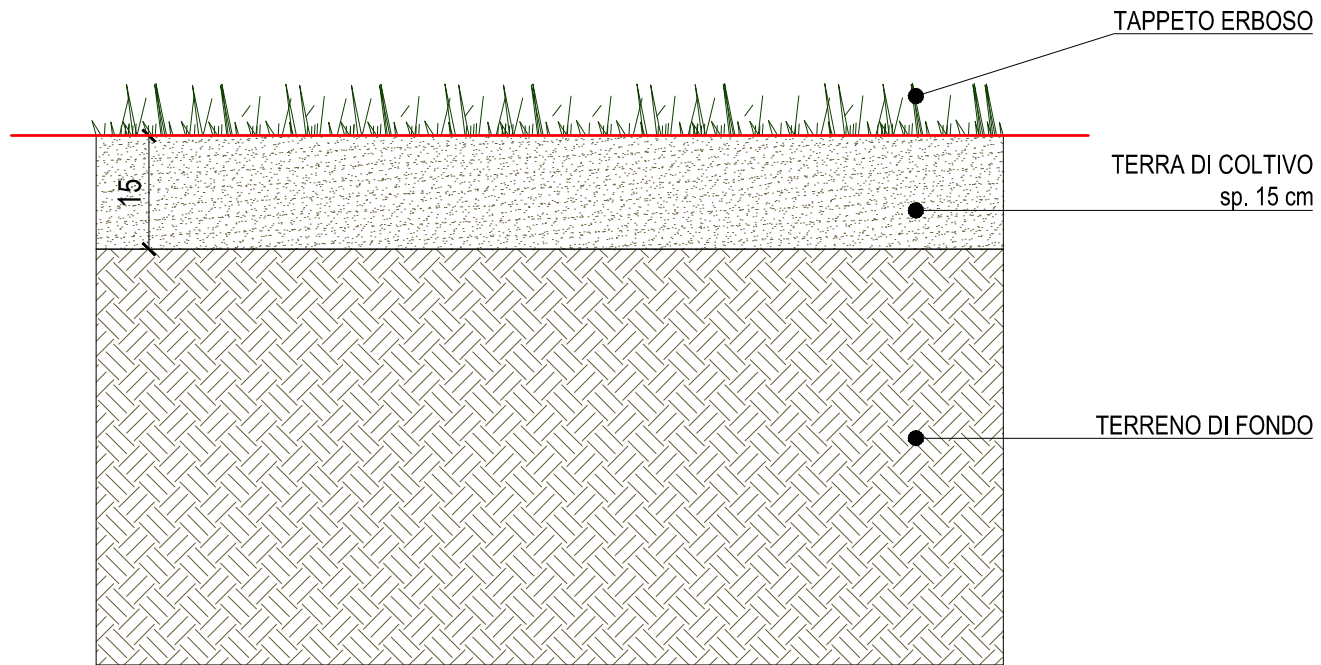


**ARBUSTI ORNAMENTALI**

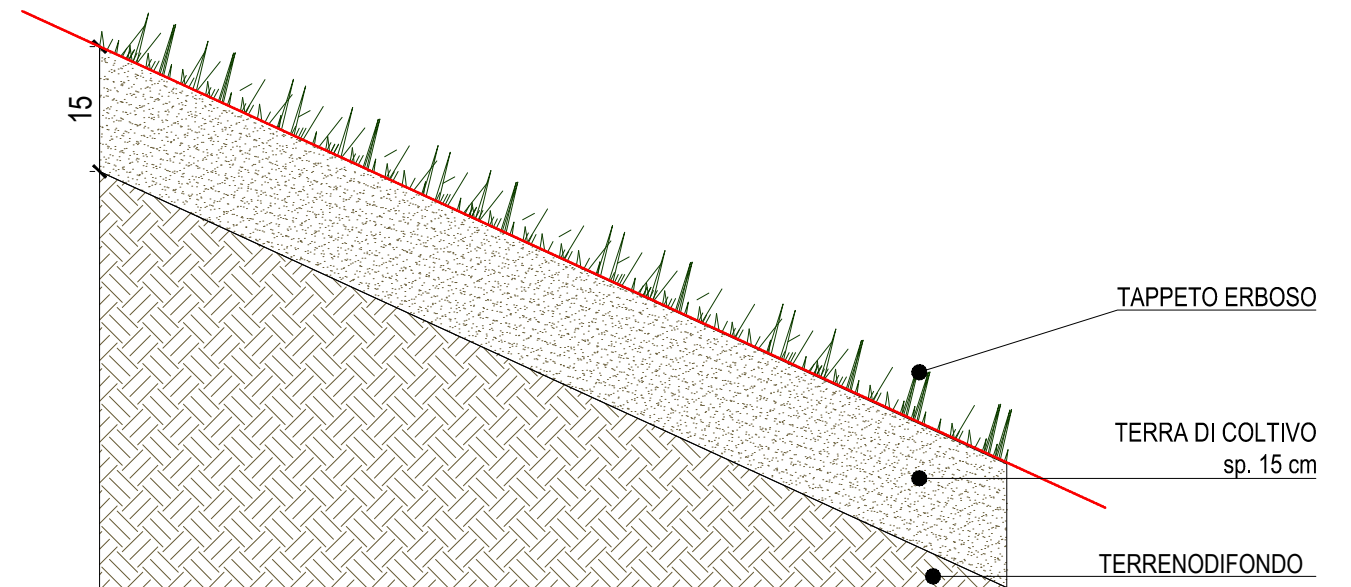
- Arbutus unedo* Aru
- Cornus kousa* Cok
- Cornus florida* 'Rubra' Cof
- Amelanchier canadensis* Amc
- Viburnum tinus* Vit
- Cornus mas* Com
- Chimonanthus praecox* Chp

**GAM**

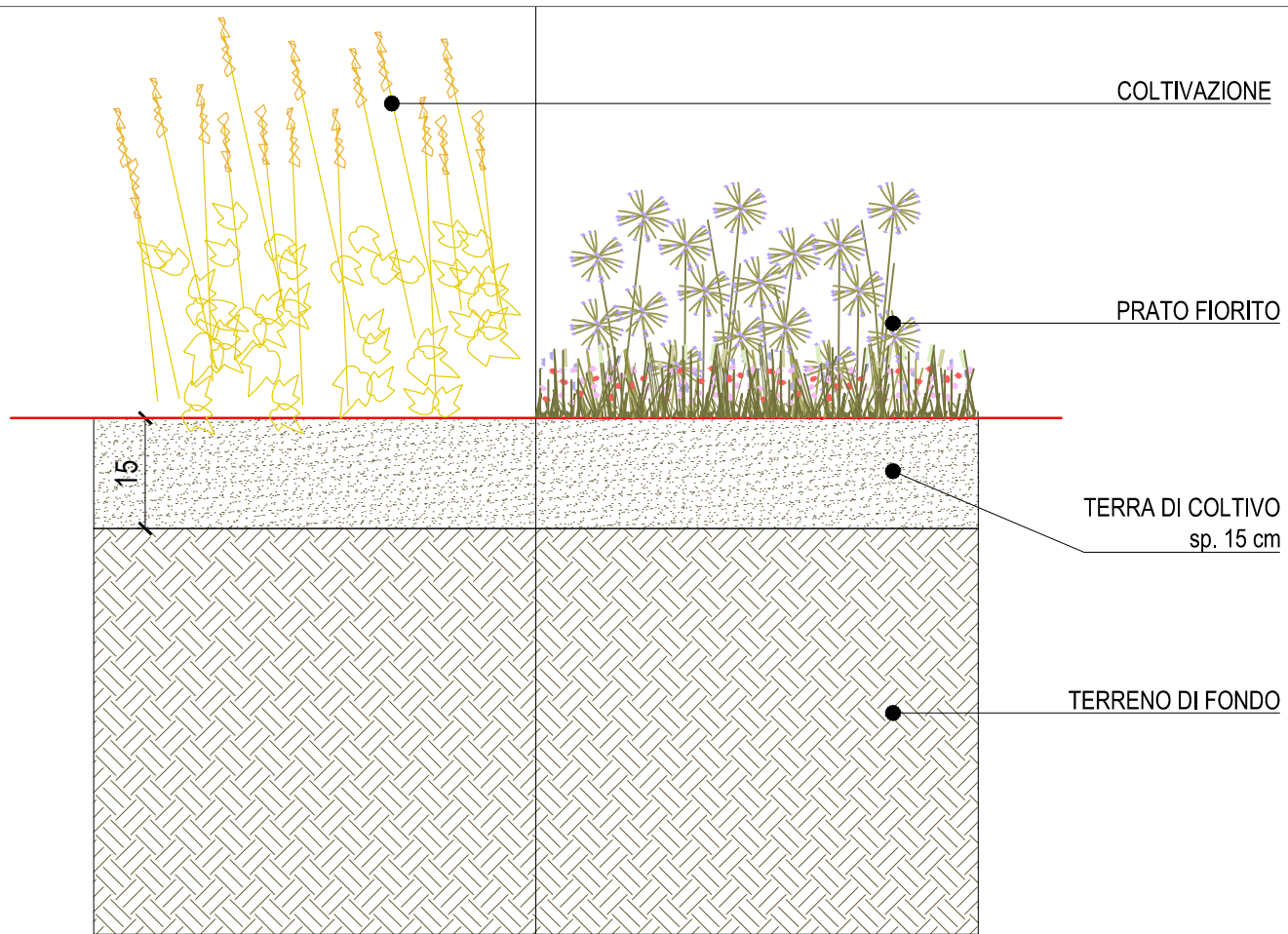
Gruppiarbustiviisolatimonospecifici  
SCALA1:300



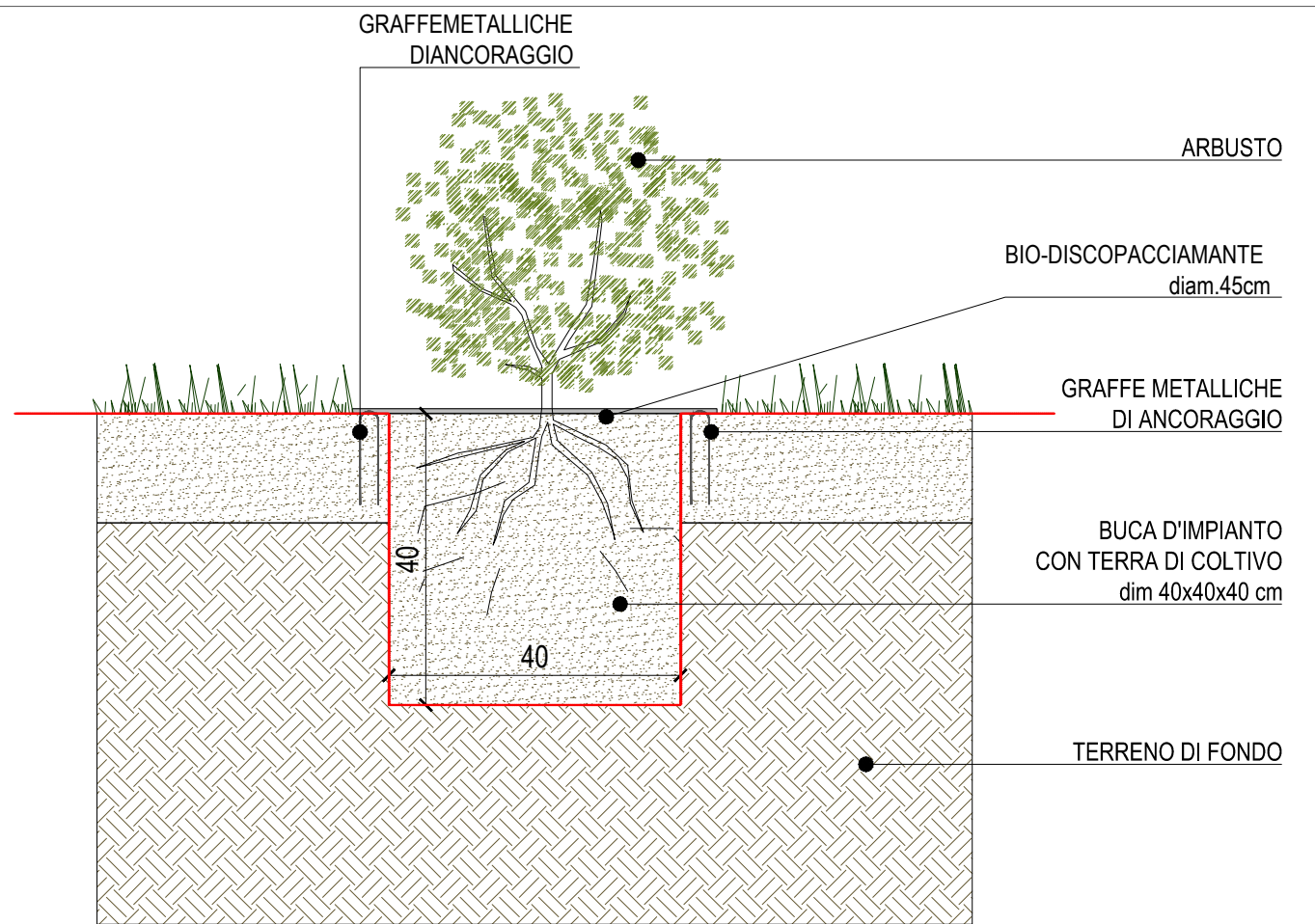
**OV1**  
Tappetoerboso  
SCALA1:10



**OV3**  
Tappetoerbosuscarpate  
SCALA1:10

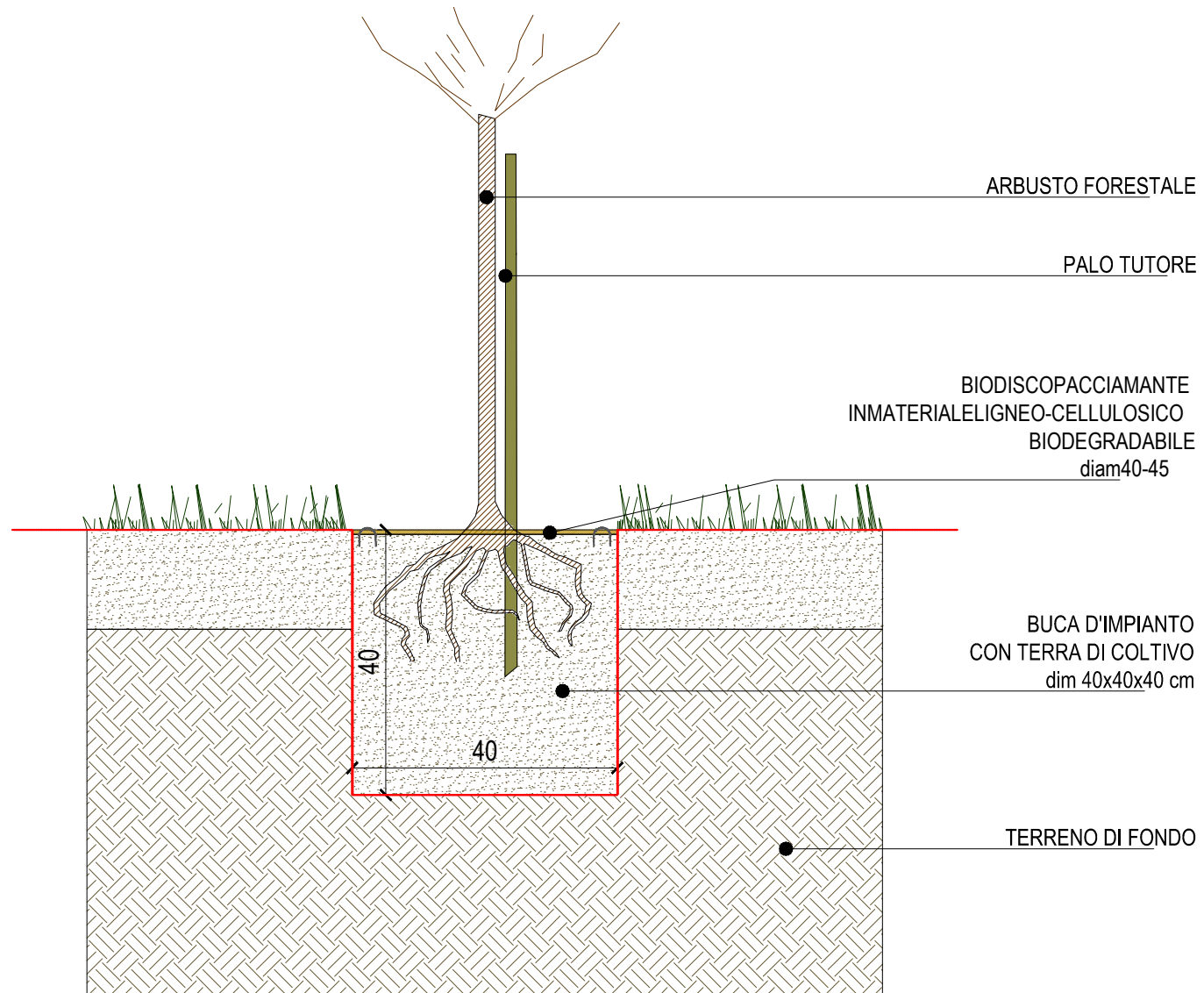


**OV2**  
Coltivazione  
SCALA1:10

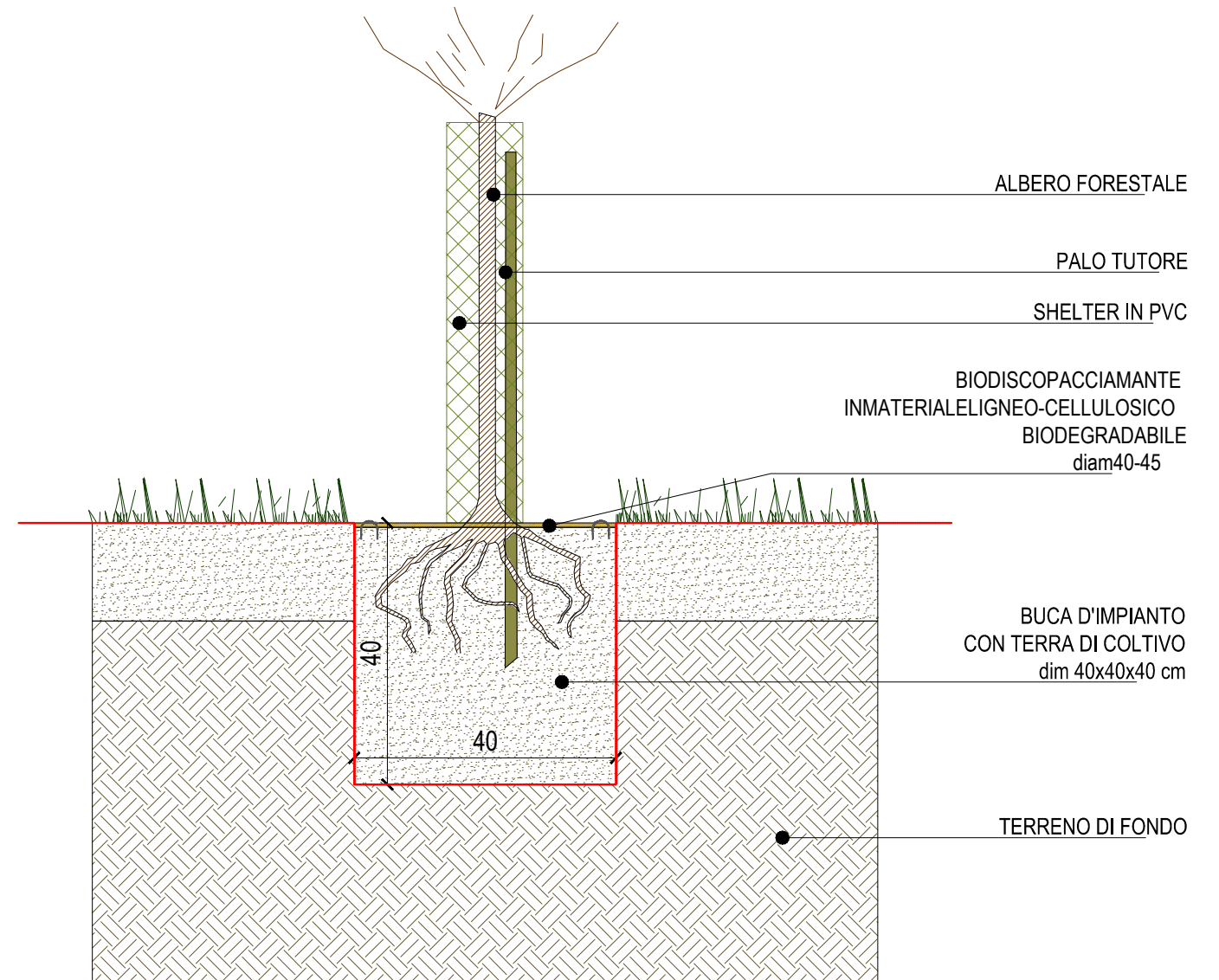


**OV4**  
Bucad'impiantoarbustoconbio-disco, vaso18-24cm  
SCALA1:10

— Limitedifornituraoprogettoopereaverde

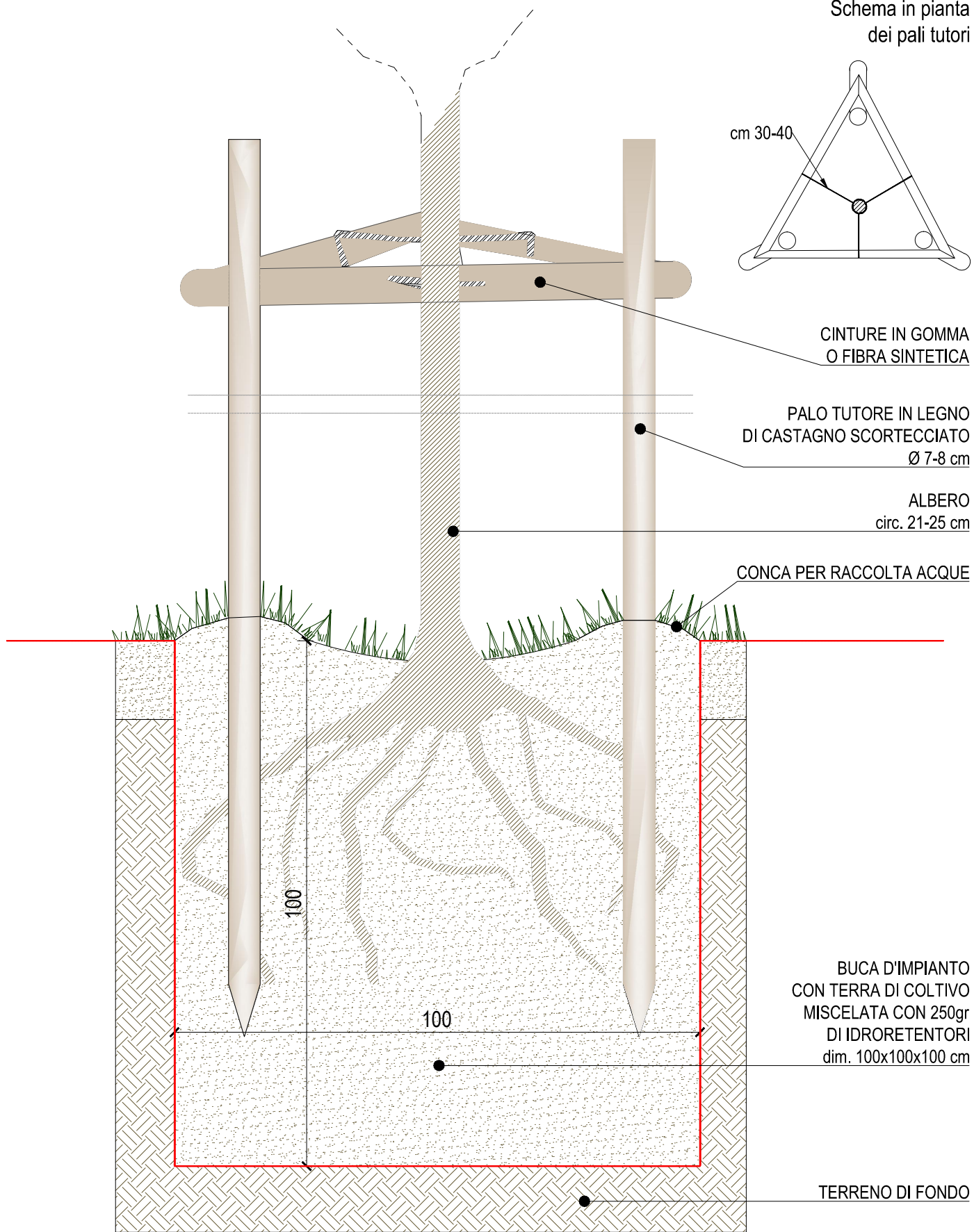


**OV5**  
Bucad'impianto arbusto forestale h60-80cm  
SCALA 1:10

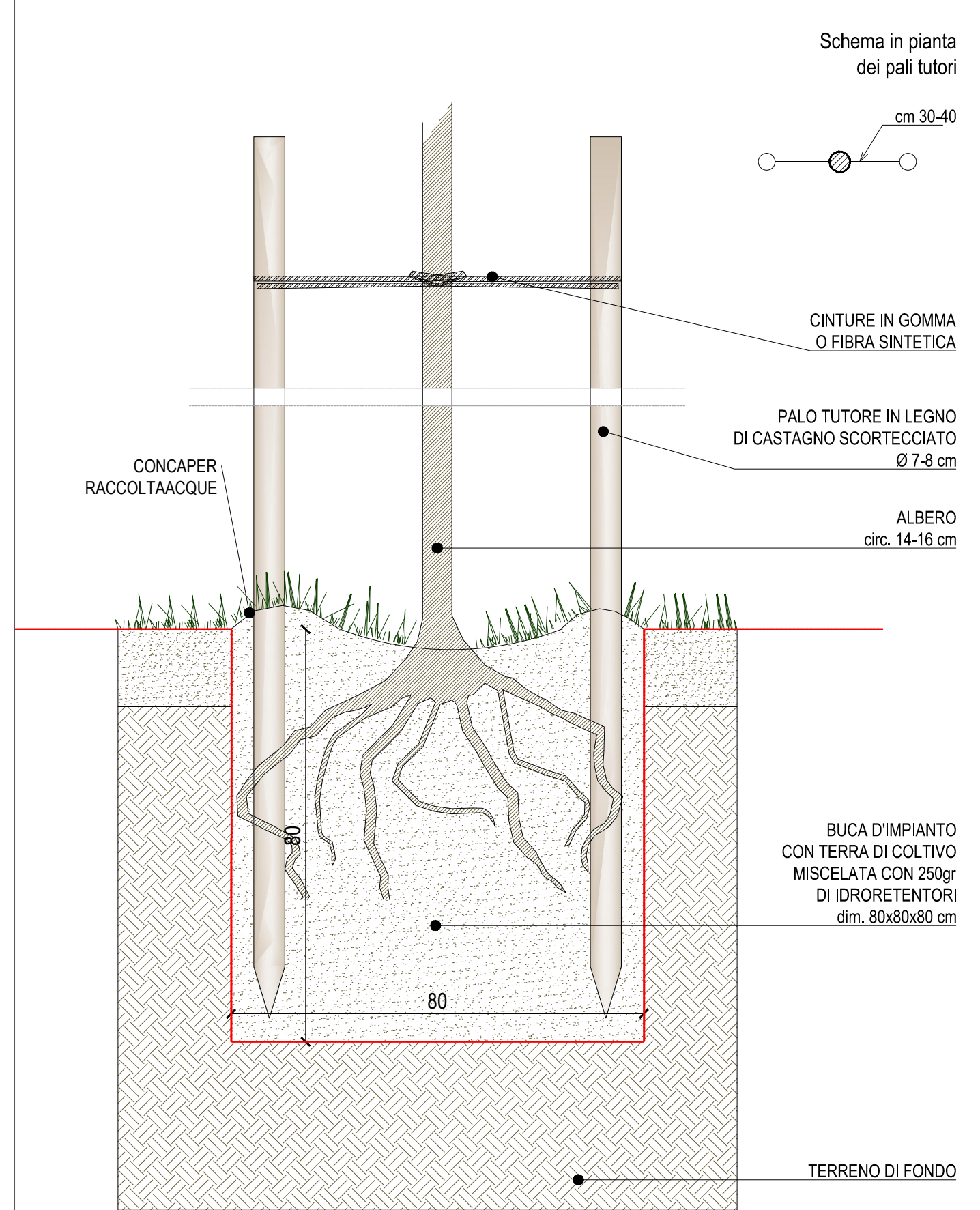


**OV6**  
Bucad'impianto albero forestale h60-80cm  
SCALA 1:10

— Limitedi forniture progetto opereaverde

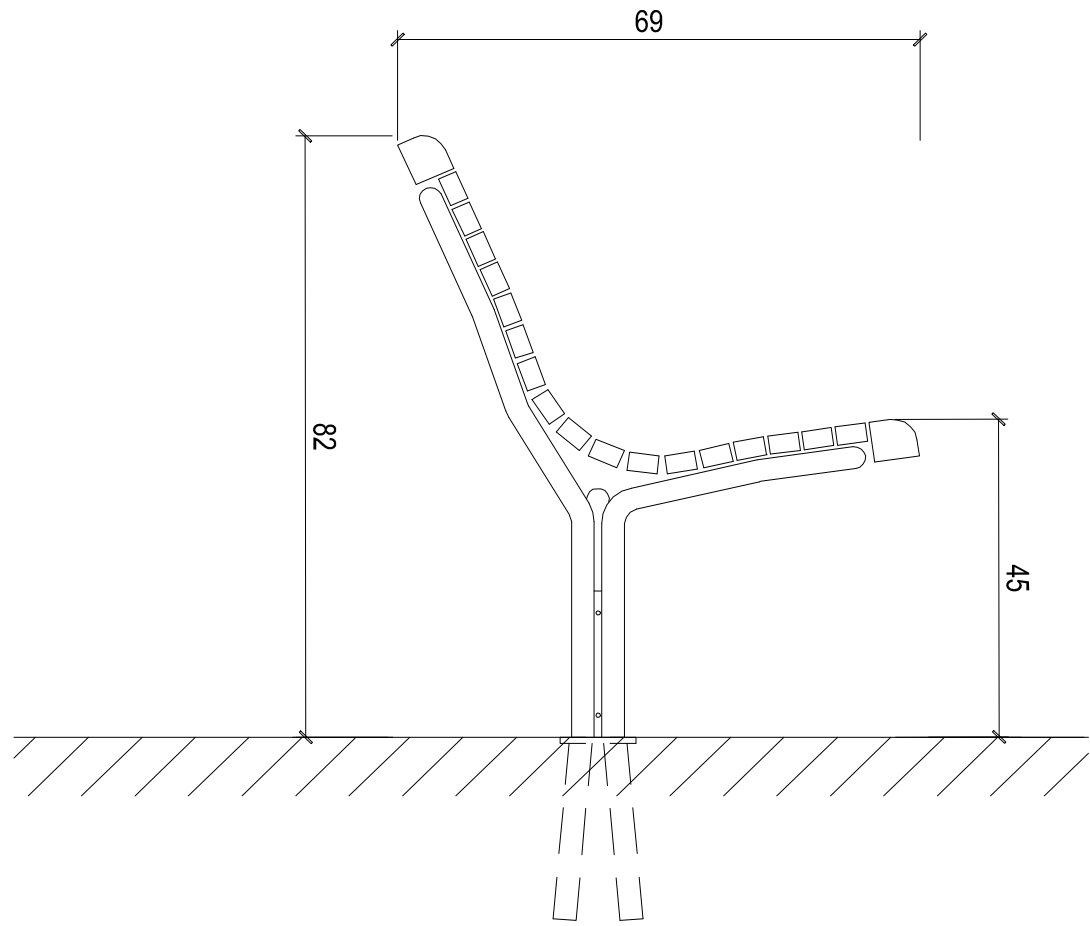
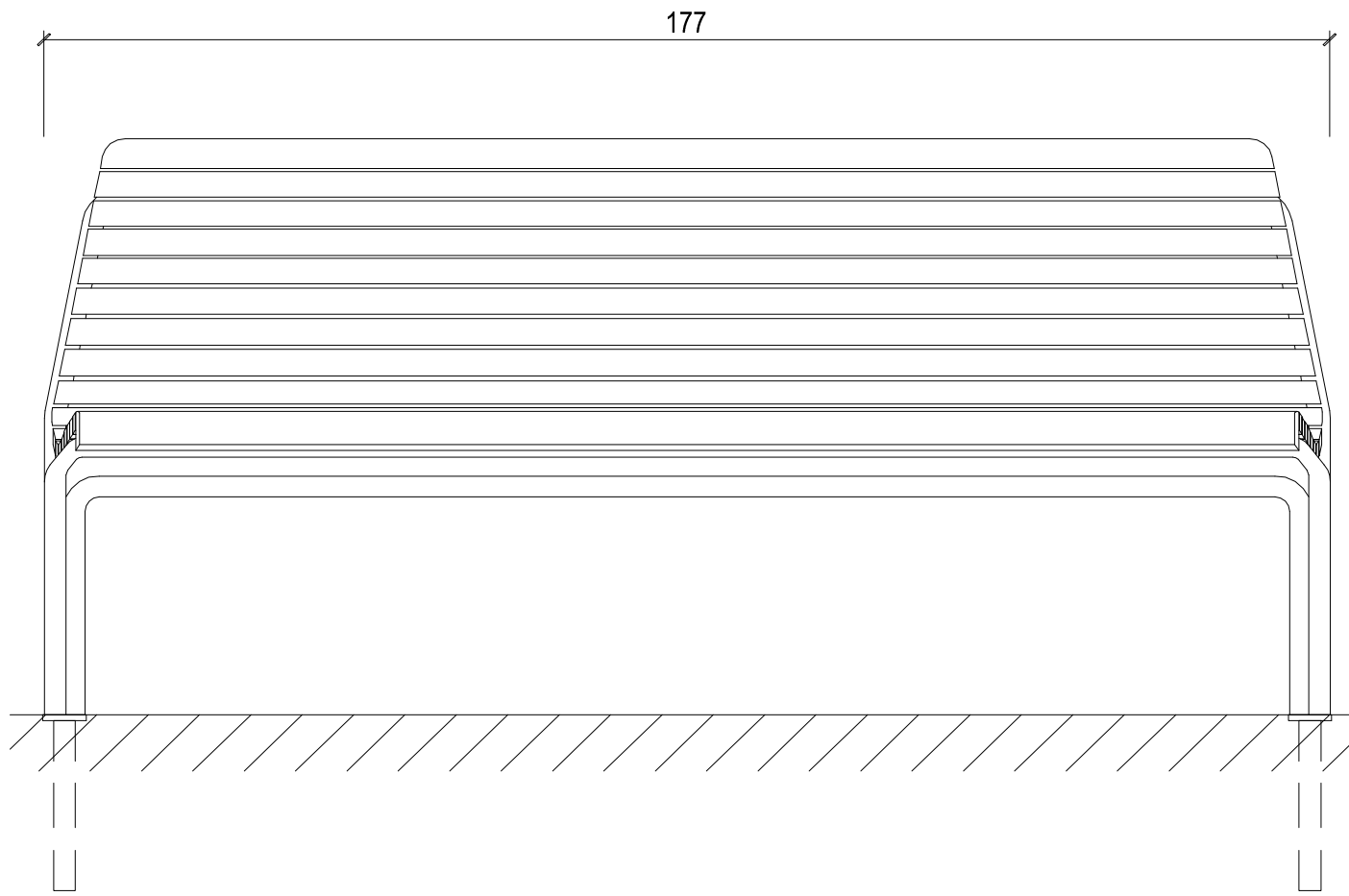


**OV7**  
 Bucad'impiantoperalberoaccresciutocirc.21-25cm,conirrigazioneedisoccorso  
 SCALA1:10

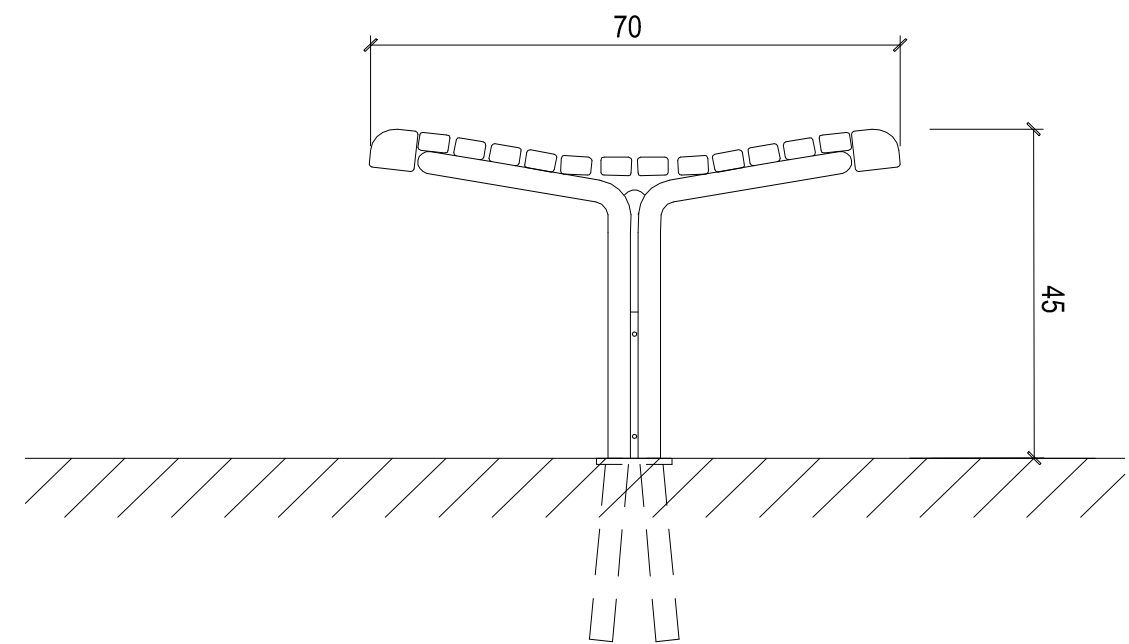
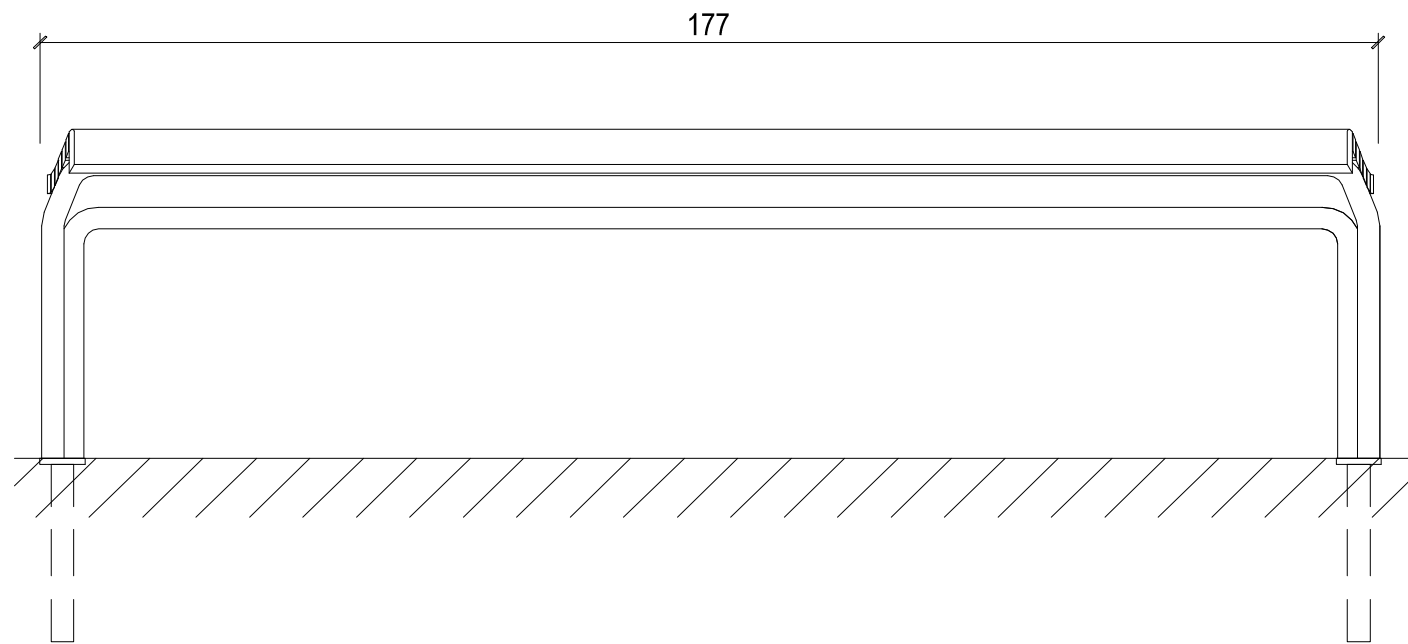
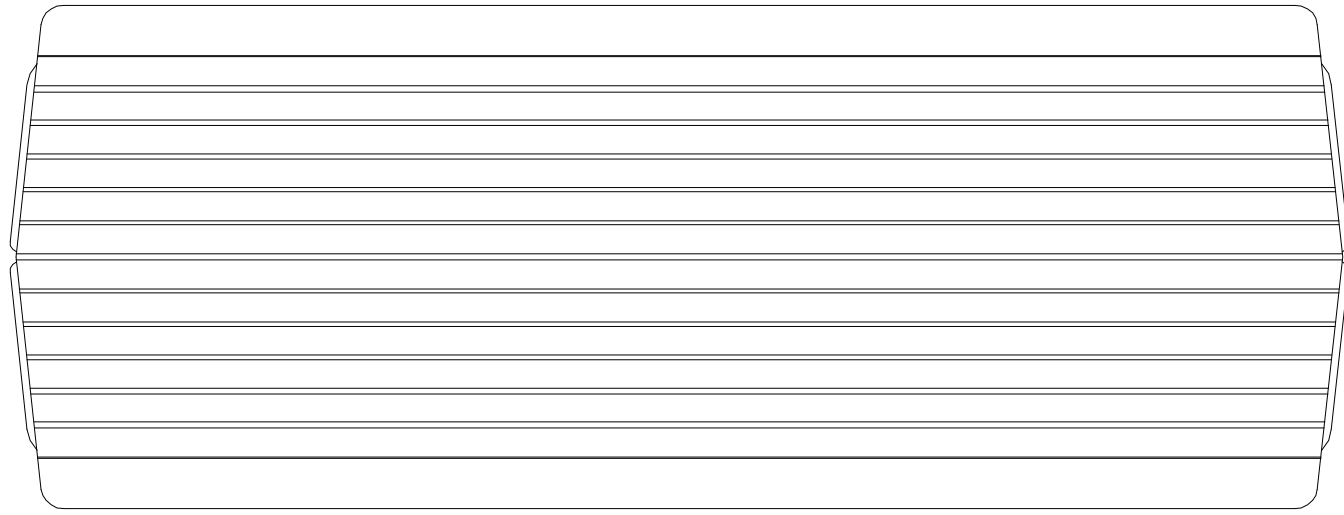


**OV8**  
 Bucad'impiantoperalberoaccresciutocirc.14-16cm  
 SCALA1:10

— Limitediforniturasoprogettoopereaverde



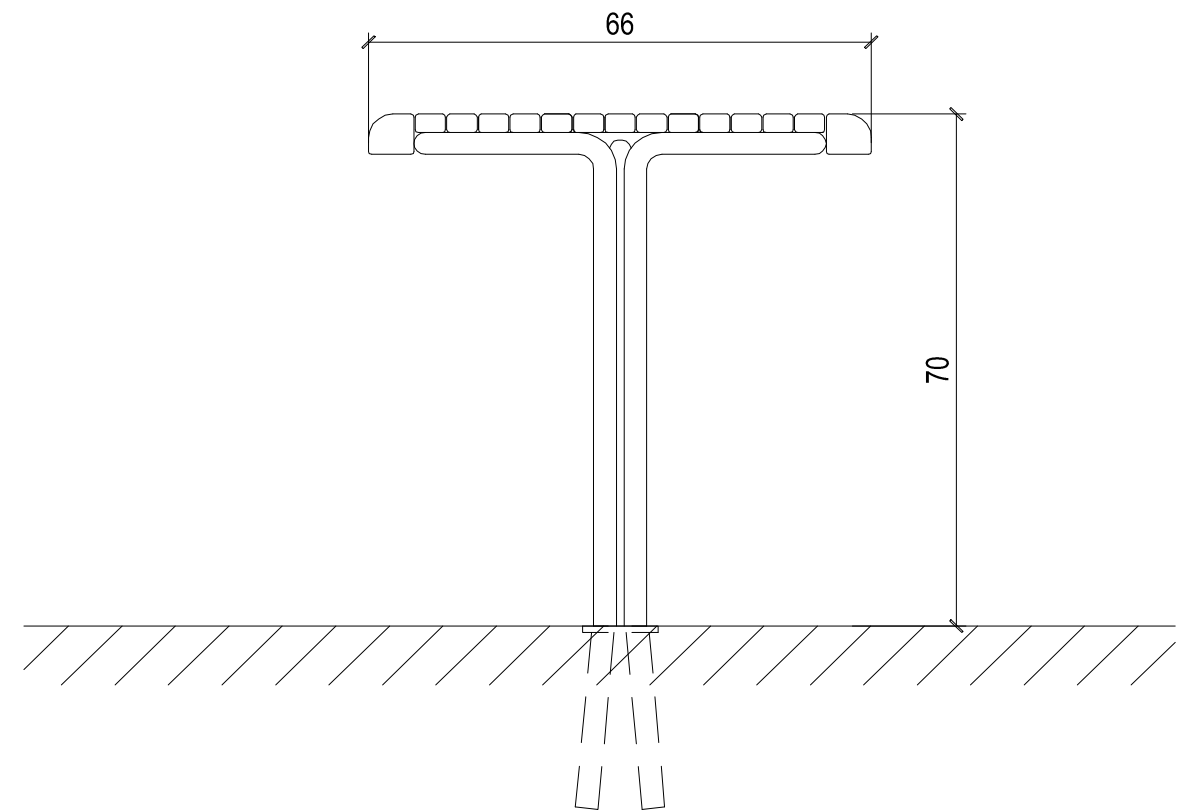
Panca schienale in acciaio zincato e legno tipo mod. Contour  
SCALA 1:100

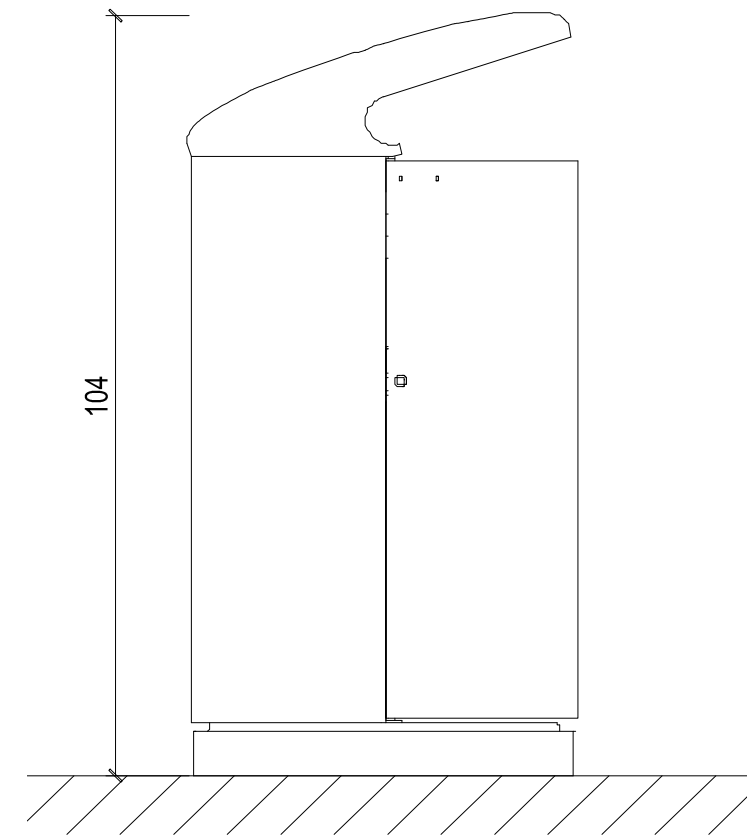
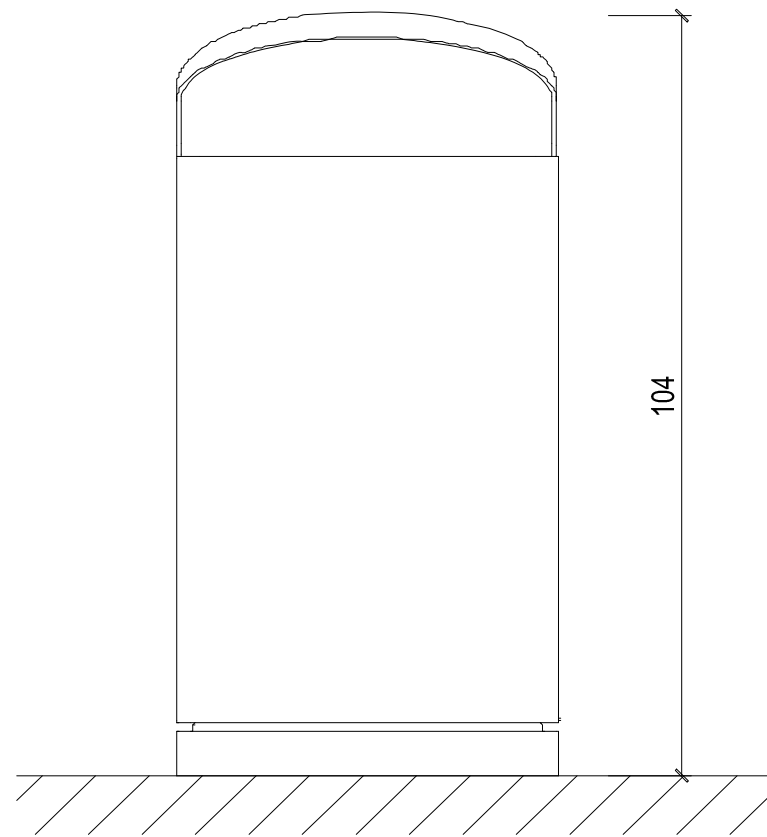
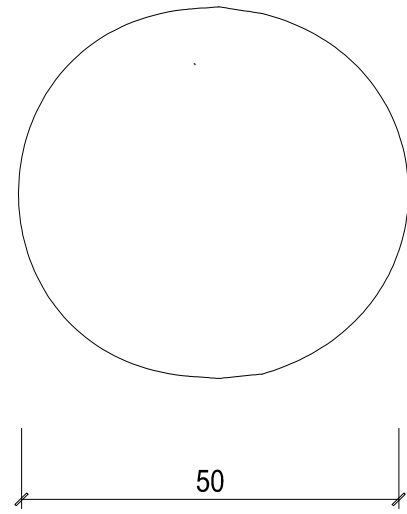


Pancasenzaschienale in acciaio zincato e legno tipo mod. Contour  
SCALA 1:100



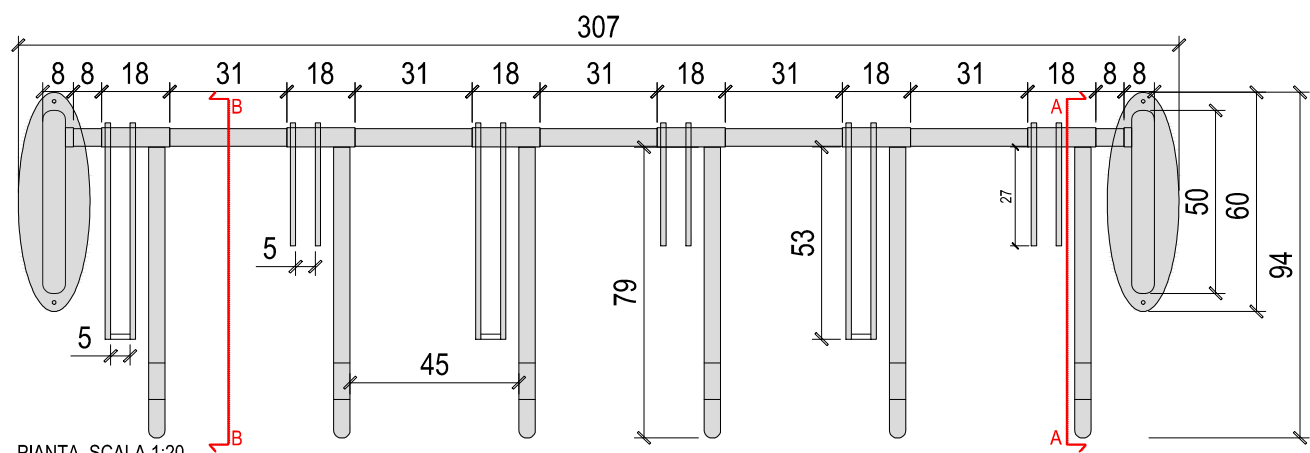
Tavolo in acciaio zincato e legno tipo mod. Contour  
SCALA 1:100



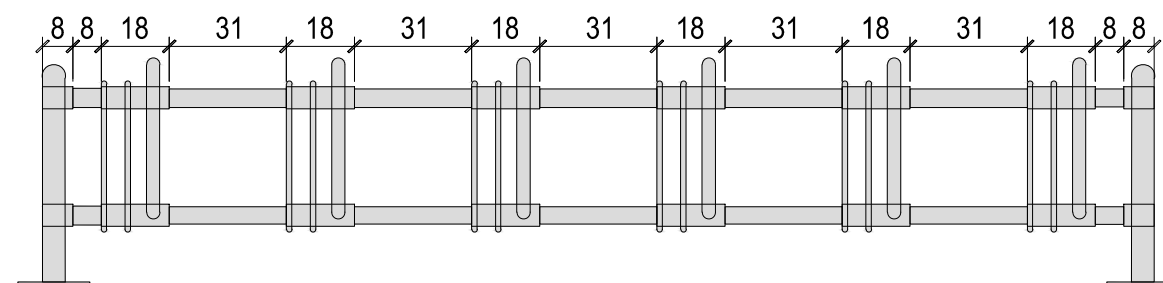


Cestino in acciaio zincato tipo mod. Singlefox  
SCALA 1:100

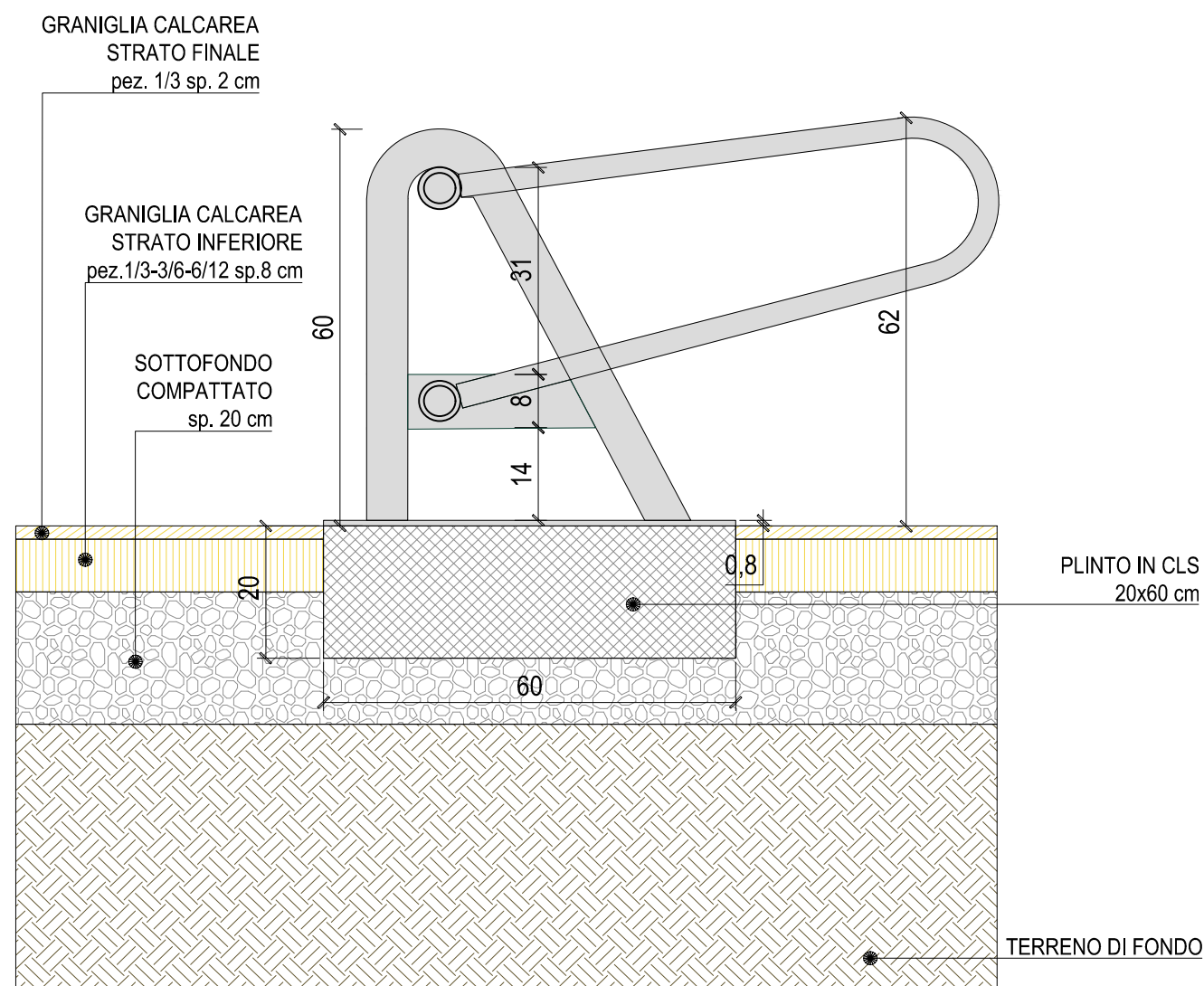




PIANTA, SCALA 1:20

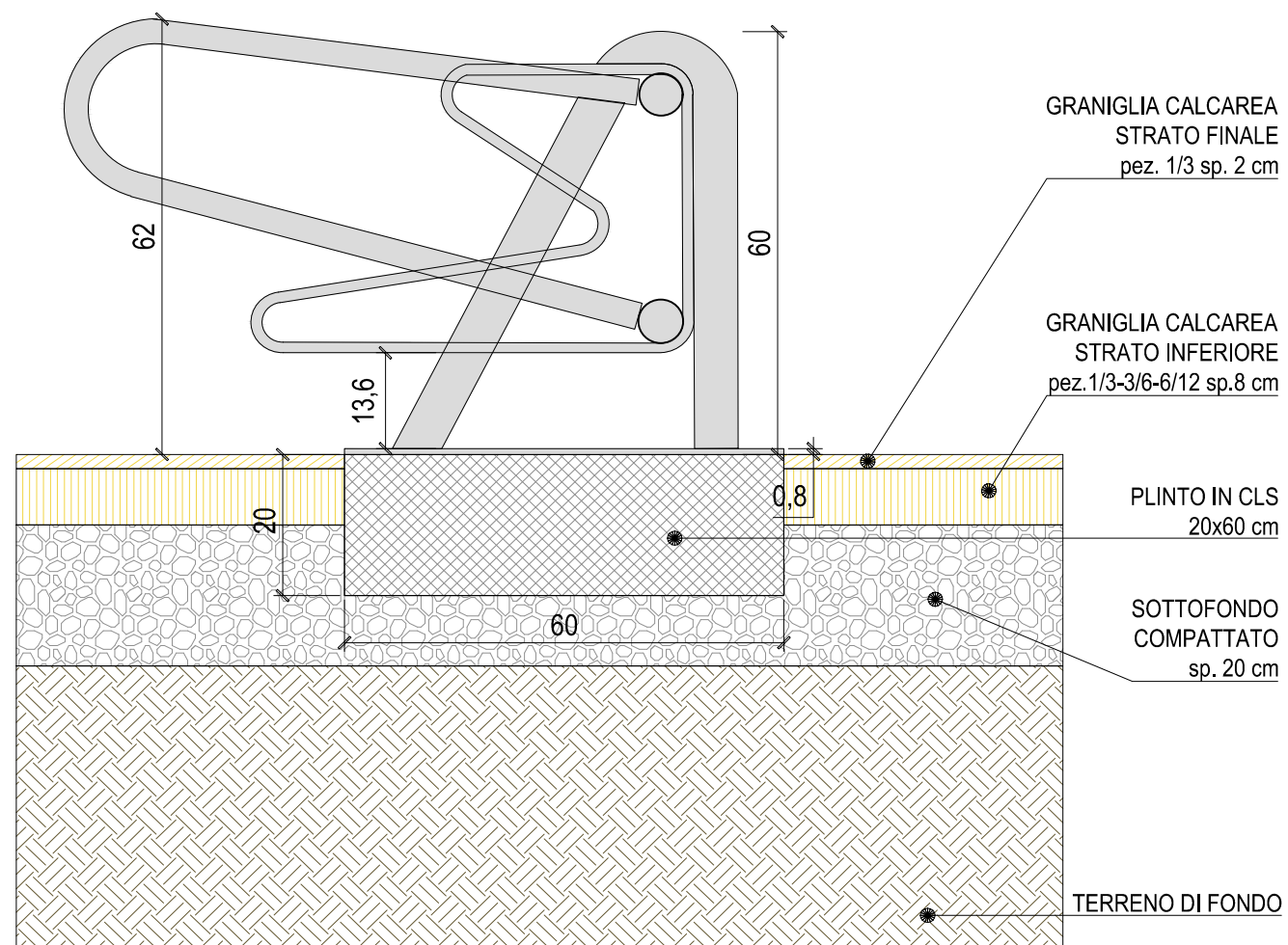


PROSPETTO FRONTALE, SCALA 1:20

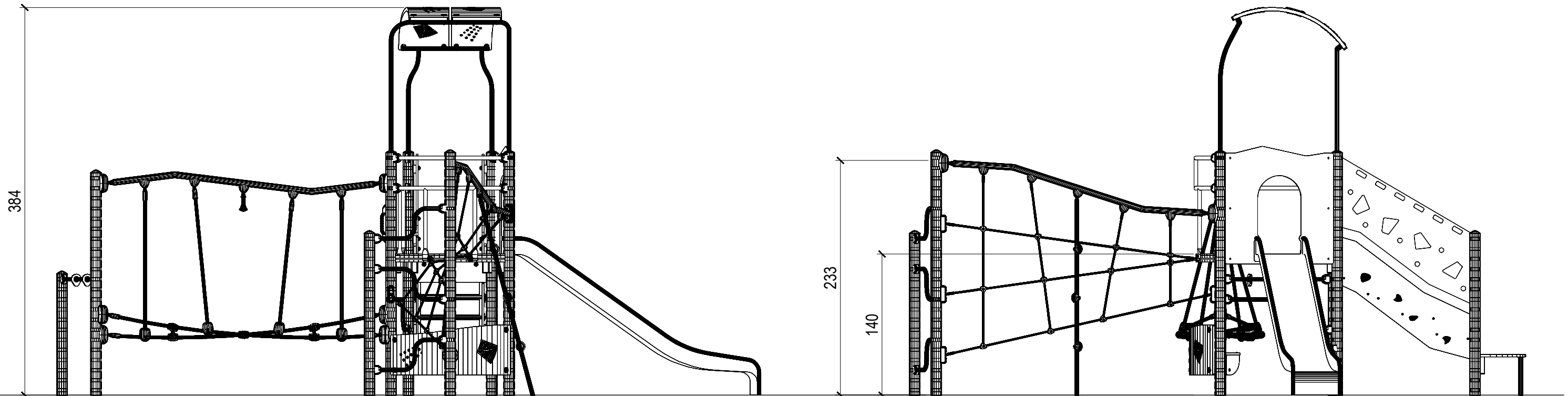


SEZIONE A-A, SCALA 1:10

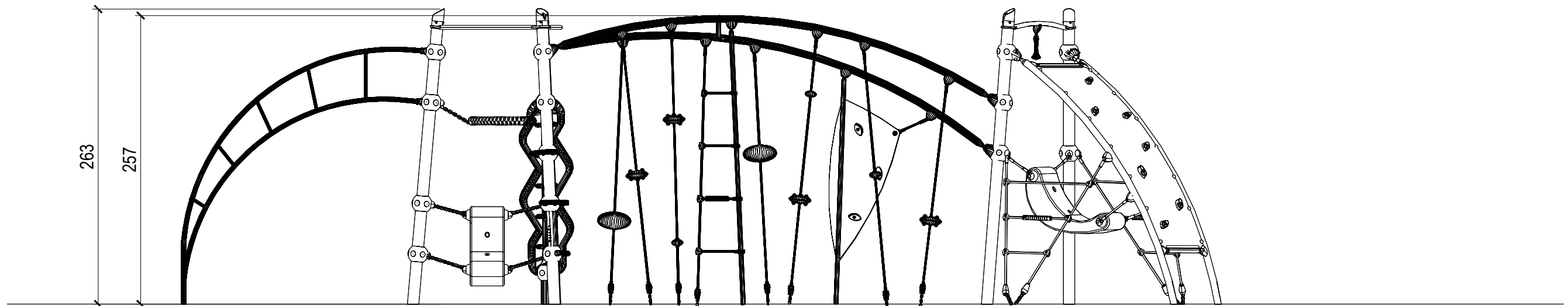
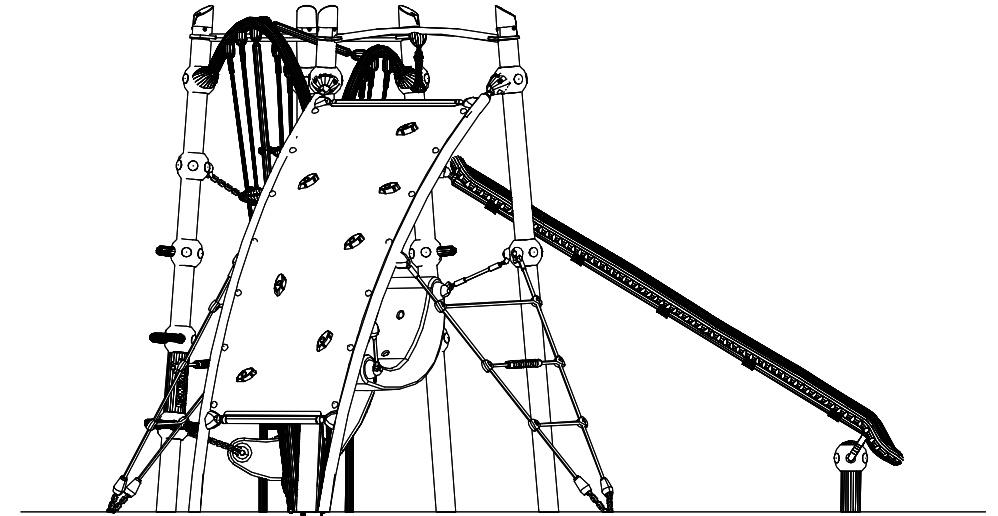
**AR2**  
Rastrelliera in acciaio zincato verniciato (6 posti) su calcestre  
SCALA 1:10/1:20



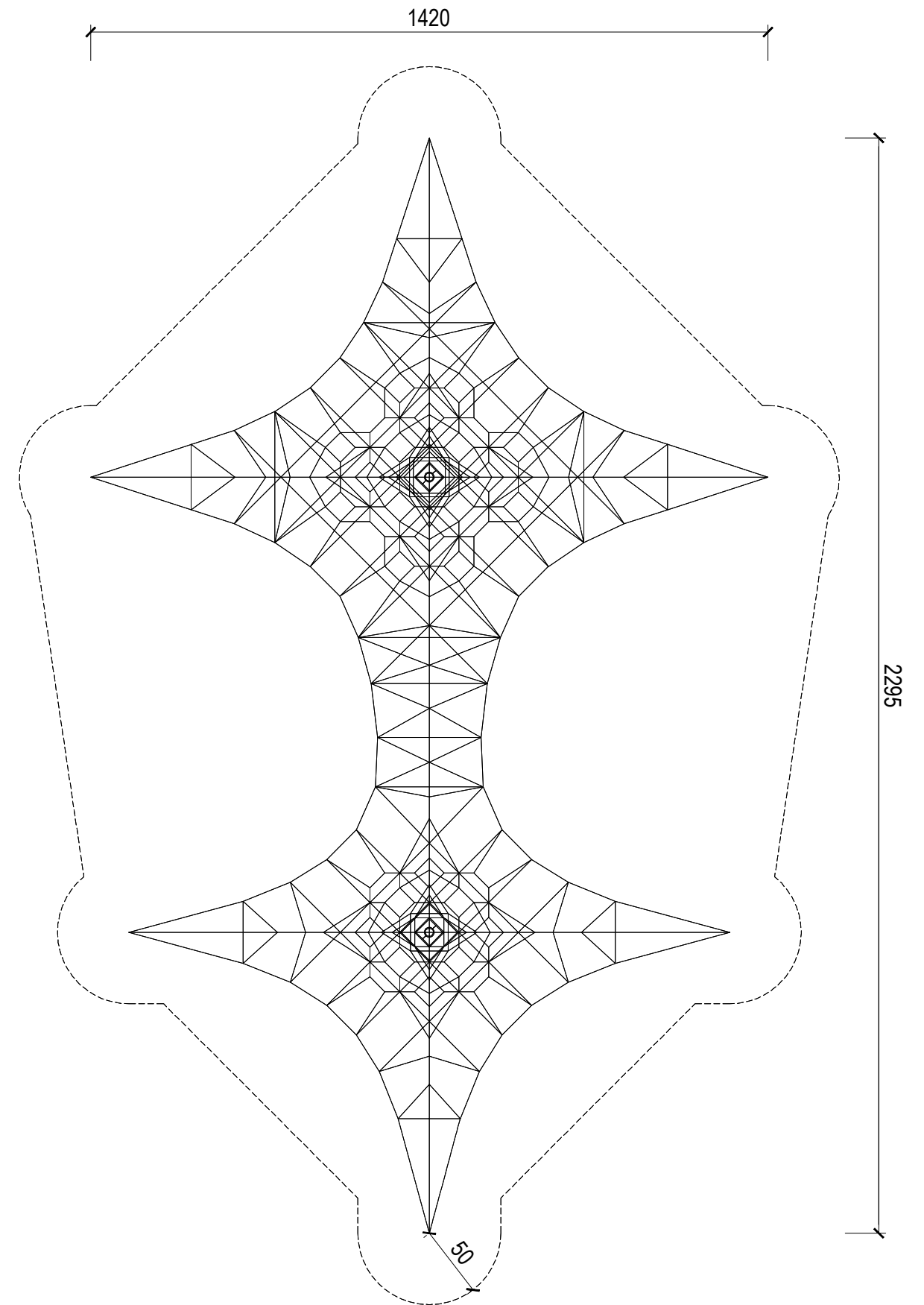
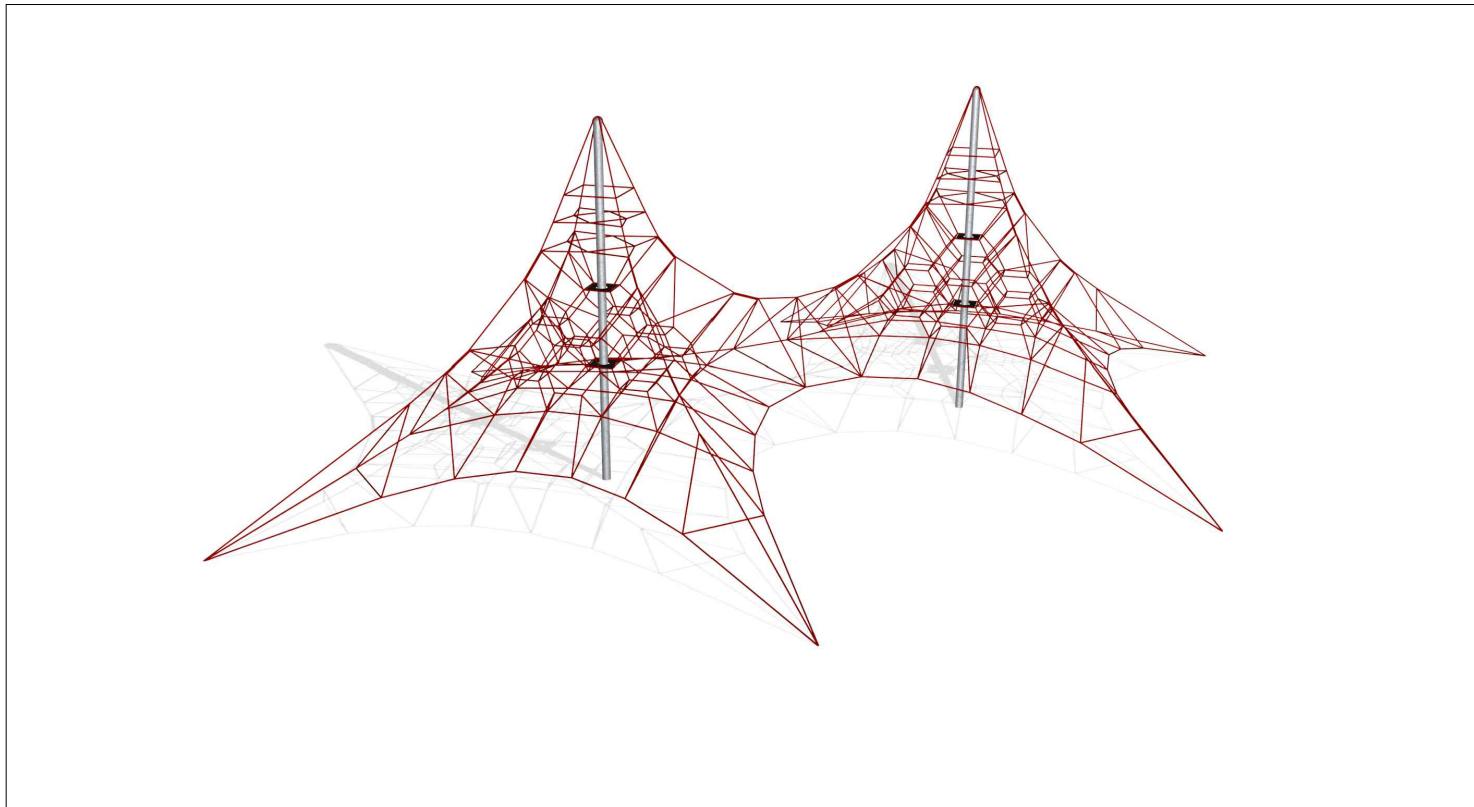
SEZIONE B-B, SCALA 1:10



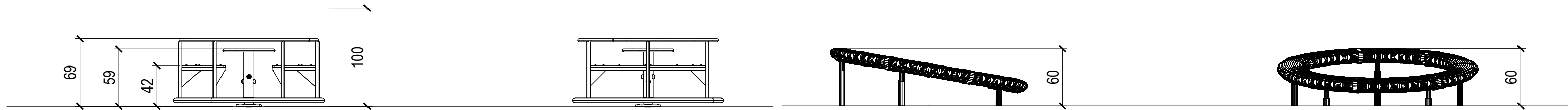
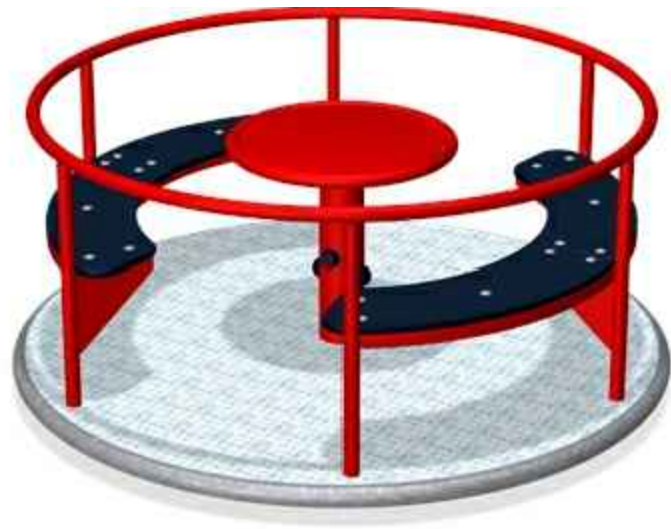
Gioco per età scolare 6-12 anni tipo mod. Canyon  
SCALA 1:100



Struttura gioco multiattività 6-12 anni tipo mod. Aldebaran  
SCALA1:100

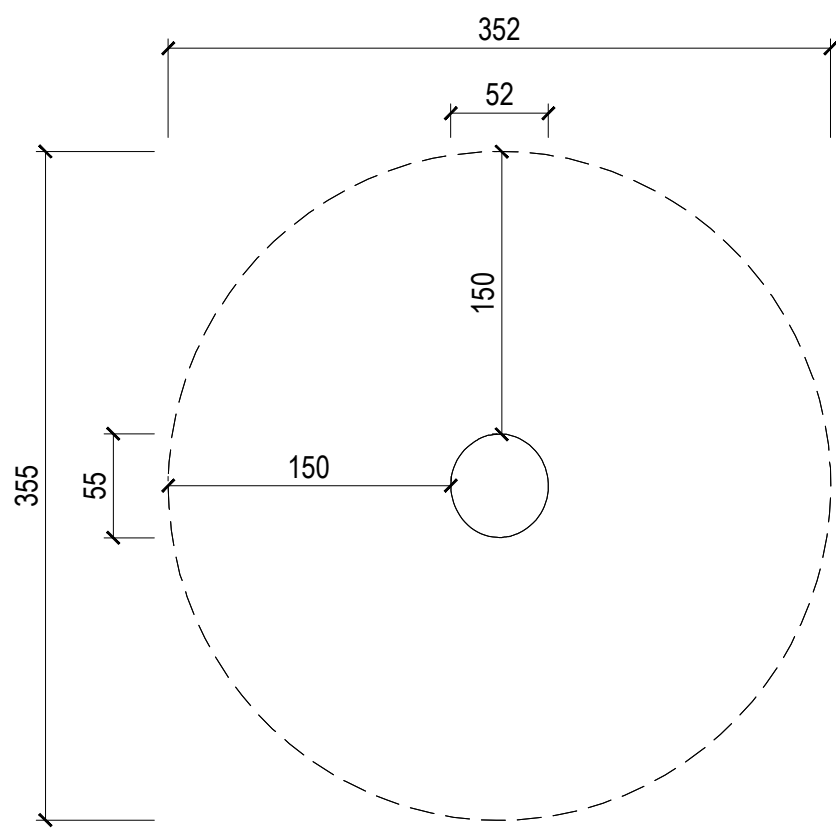


Retidiarrampicataestrutturatipomod.Spacenet  
SCALA1:100

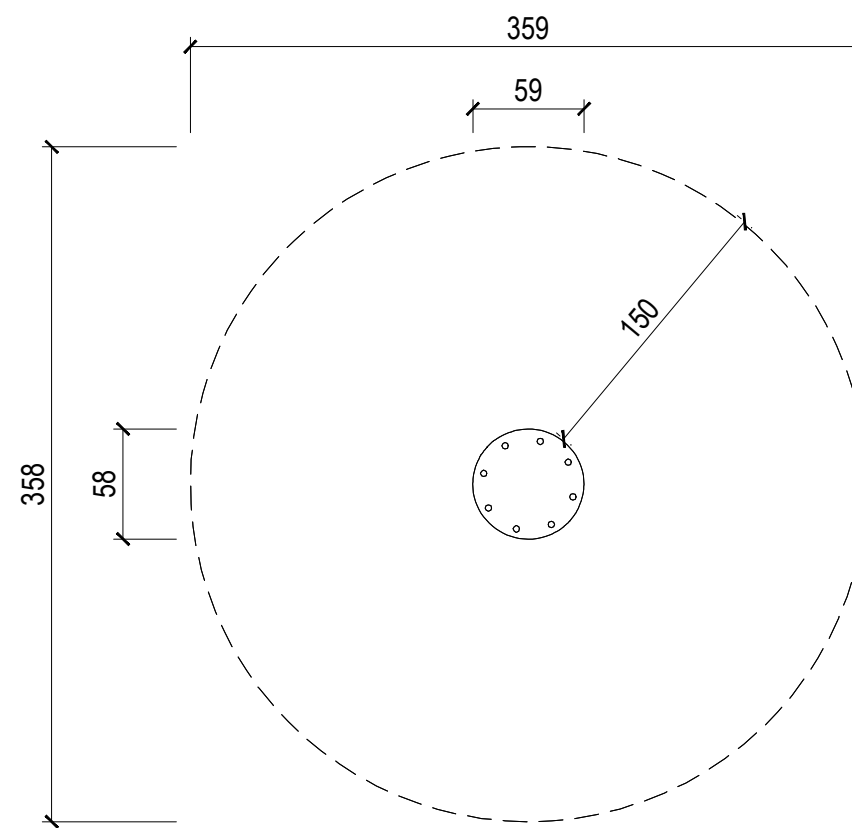


Gioco per età scolare 6-12 anni tipo mod. Canyon  
SCALA1:100

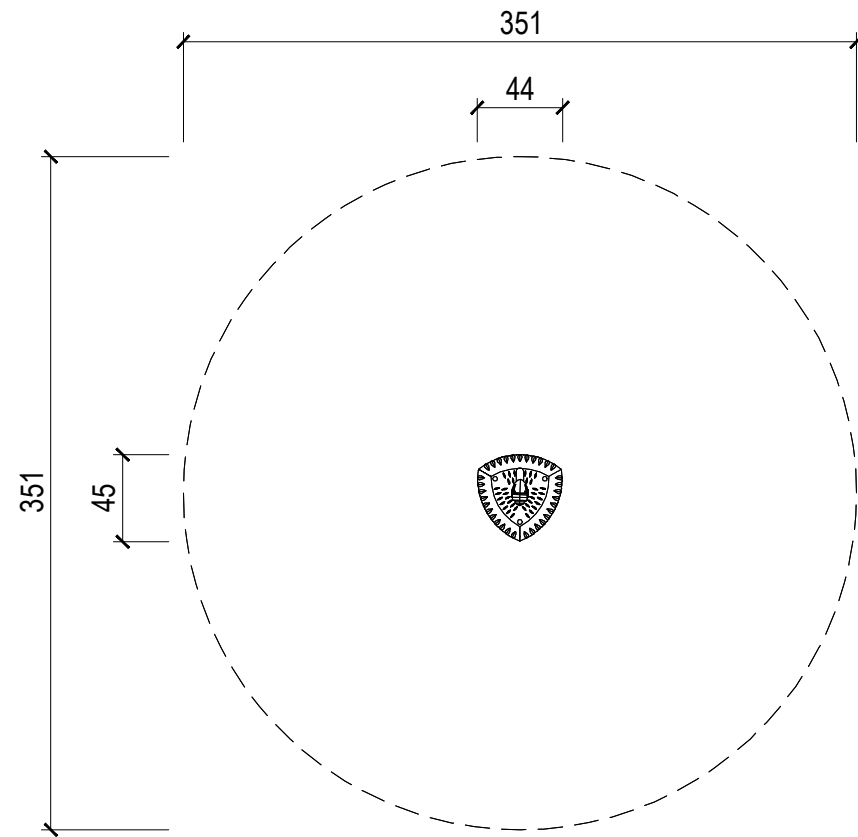
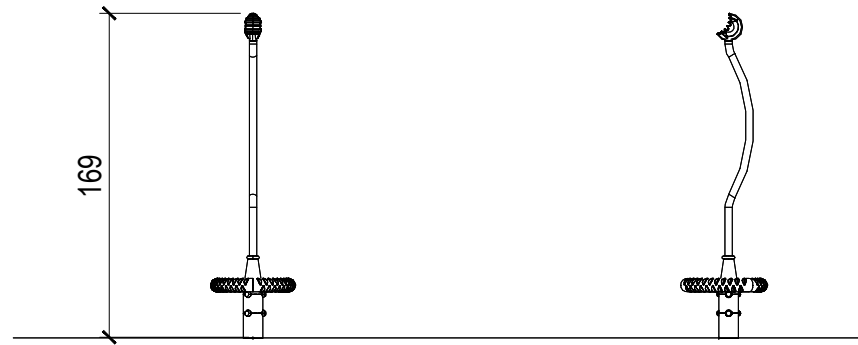
Gioco per età scolare 6-12 anni tipo mod. Canyon  
SCALA1:100



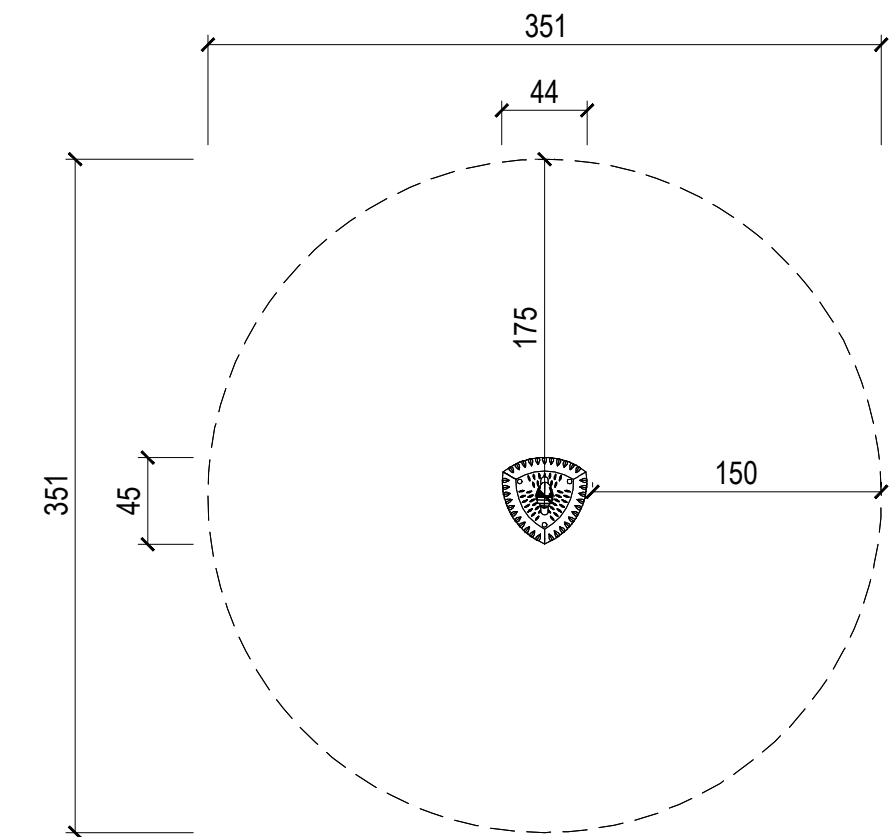
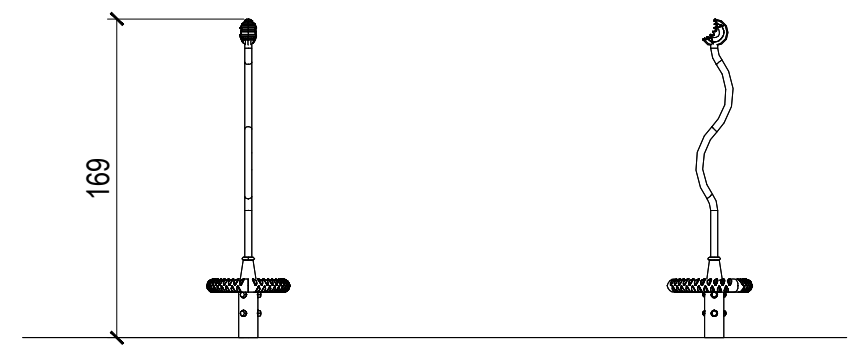
Gioco per età scolare 4-12 anni tipo mod. Spinner Bowl  
SCALA1:100



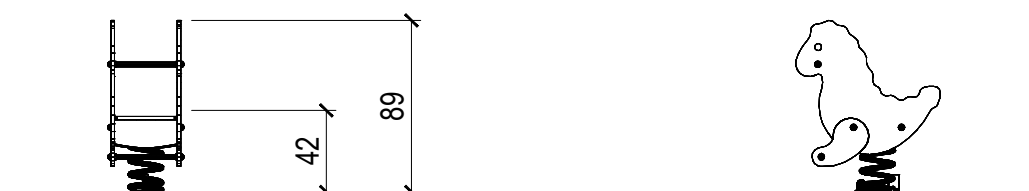
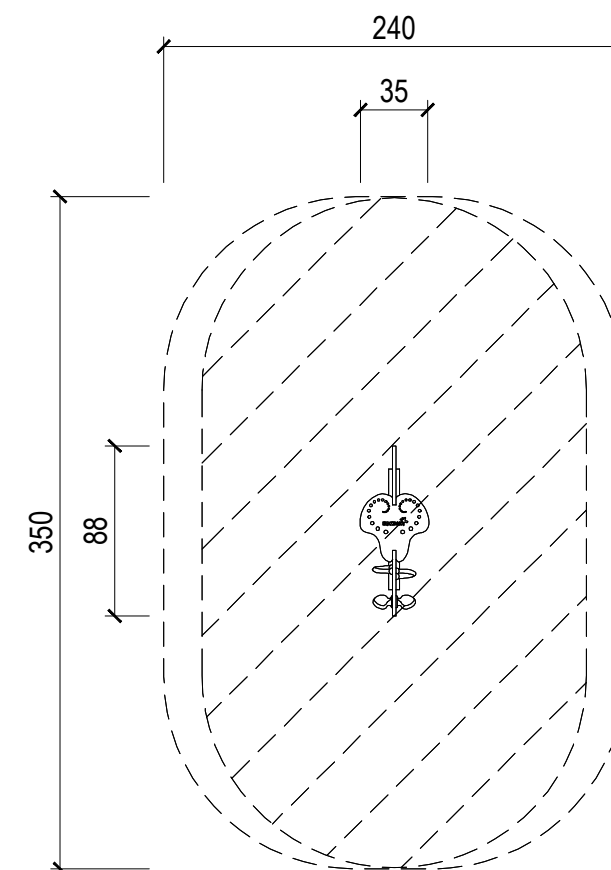
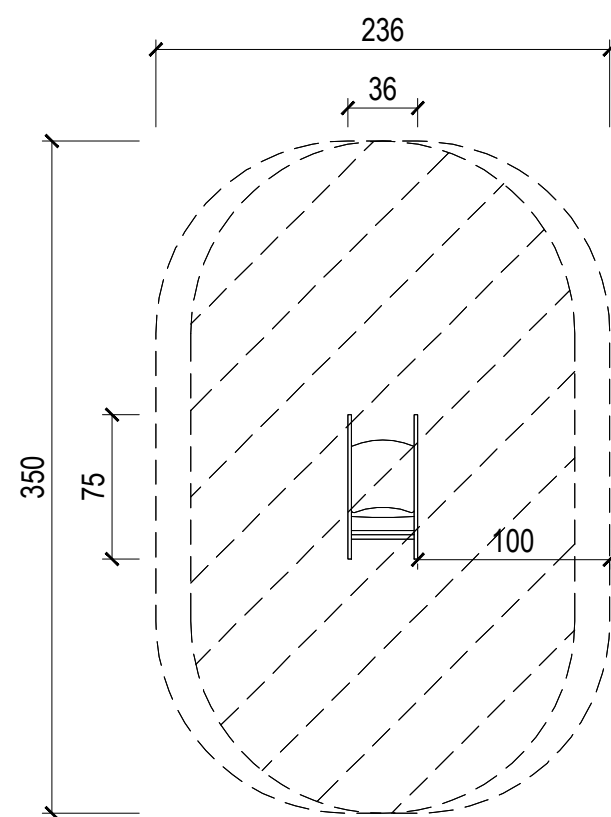
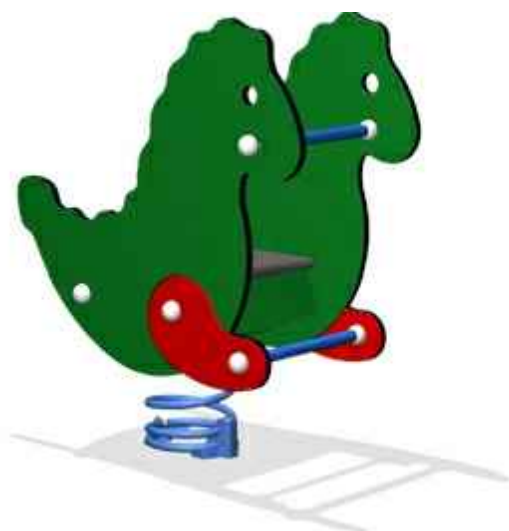
Gioco per età scolare 5-12 anni tipo mod. Vertigo Spinner  
SCALA1:100



Gioco per età scolare 6-12 anni tipo mod. Spica 2  
SCALA1:100



Gioco per età scolare 6-12 anni tipo mod. Spica 1  
SCALA1:100



Gioco per età 1+ anni tipo mod. Crazy Dragon  
SCALA1:100

Gioco per età 1+ anni tipo mod. Scooter Springer  
SCALA1:100