**VENTURA UNIFIED SCHOOL DISTICT**

**PLAYGROUND REPLACEMENT AT ELMHURST ELEMENTARY SCHOOL**

**BID # E4-24**

**December 3, 2024**

**ADDENDUM #01**

**NOTICE TO BIDDERS:**

The following revisions and/or clarifications shall be made to the bidding requirements and contract documents. Revise and amend the documents for the above-named project in accordance with this addendum. The bid shall reflect these addendum changes and each bidder shall refer in their bid to this addendum.

All bidding requirements and contract documents shall apply to this addendum as originally indicated in the applicable portions of the contract documents, unless otherwise modified by this addendum.

**Contractors shall acknowledge this addendum at the space provided on the Bid Proposal.**

**REVISIONS, CLARIFICATIONS, & RESPONSES TO PRE-BID RFI'S:**

1. No pre-bid RFI's submitted. See Addendum #1 below.

**REVISIONS TO THE PLANS**: See pages 2 & 3 of document for details.

**REVISIONS TO THE SPECIFICATIONS:** See pages 2 & 3 of document for details.

REVISED DOCUMENTS ATTACHED AT END OF ADDENDUM #01

Addendum: 1 Pages

ENCLOSURES: 76 Pages

Total Number of Pages: 77 Pages

Roesling Nakamura Terada Architects

www. rntarchitects.com
285 N Ventura Ave | Ste 102 | Ventura, CA 93001 | P805.626.5330 | F805.626.5350

# VENTURA UNIFIED SCHOOL DISTRICT

**BID ADDENDUM NO. 1** ISSUED 12/3/2024

**TO THE CONTRACT DOCUMENTS, SPECIFICATIONS AND PLANS FOR VENTURA UNIFIED SCHOOL DISTRICT**

**PLAYGROUND REPLACEMENT PROJECT**
ELMHURST ELEMENTARY SCHOOL
PROJECT NO. **E4-24**

THE BIDDER SHALL CERTIFY ON THE BID FORM THAT THE INFORMATION CONTAINED IN THIS BID ADDENDUM WAS RECEIVED.

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**BID DUE DATE: Friday, December 6, 2024 by 1:00 pm**

The following additions, modifications, corrections, deletions and clarifications are hereby made to the Contract Documents of the subject Project and constitute **Addendum Number 1**. This Addendum is hereby incorporated into the contract documents by reference.

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## I. GENERAL INFORMATION

A. Contract Documents

Appendix – Play Manufacturer's installation instructions – Additional instructions provided.

## II. REVISED SPECIFICATIONS AND DRAWINGS

A. Specifications – All Projects

Item 1. Revised Specifications: **Bold** for additions, ~~strikeout~~ for deletions.

Section 11 68 13 – Playground Equipment and Structures
Section 32 11 23 – Aggregate Base Courses

Section 32 32 13 – Concrete Walls
Section 32 92 00 – Turf and Grasses
Section 32 93 00 – Plants
Section 32 93 12 – Landscape Maintenance Establishment Period

B. Drawings

Item 1 **EXISTING ELEMENT UPDATES** –
A-1.01

- Including detail for replacement parking lot entry signage.

---- REVISED DOCUMENTS ATTACHED. ----

END OF **BID ADDENDUM NO. 1** ISSUED 12/3/2024

## III. RESPONSES TO REQUESTS FOR INFORMATION

| No. | QUESTION | RESPONSE | RESPONSE BY |
|---|---|---|---|
| | NONE | | |

# Gas Station with 2 Pumps

NRO513



| Item no. NRO513-1021 | |
|---|---|
| **General Product Information** | |
| Dimensions LxWxH | 6'7"x2'8"x7'3" |
| Age group | 2 - 5 |
| Play capacity (users) | 2 |
| Color options | |






This Gas station with Two Pumps is great for any tricycle or transportation track. Children love to role play around the themes of driving and traffic, and this provides great imaginative support for the child. This unit will add attraction and play time. The pumps are elaborate with a rubber tube and red, green, and yellow buttons for choosing the right octane strength. The variety of materials stimulates the fine motor skills and tactile sense, especially for the youngest players. The dramatic play around traffic and gas stations stimulates the child's language development in evoking storytelling and imagination.



*Data is subject to change without prior notice.*

# Gas Station with 2 Pumps

NRO513



**Theme**
**Cognitive:** suggests a theme and supports dramatic play, which stimulates language and communication skills.





**Two pumps**
**Social-Emotional:** the two pumps invite cooperation and co-creation, on and between both sides. The transparency makes interaction possible between the two sides.



**Fuel handle**
**Social-Emotional:** cooperation skills and turn-taking are supported when fueling vehicles for friends. **Cognitive:** dramatic play stimulates language development.



*Data is subject to change without prior notice.*

# Gas Station with 2 Pumps

NRO513



All Organic Robinia products by KOMPAN are made of Robinia wood from sustainable European sources. On request it can be supplied as FSC® Certified (FSC® C004450).



The paint used for coloured components is water based environmentally friendly with excellent UV resistance. The paint is in compliance with EN 71 Part 3.



Ropes are made of UV-stabilized PA with inner steel cable reinforcement. The rope is induction treated in order to create a strong connection between steel and rope which leads to good wear resistance.



Robinia products are available in three different wood treatment options: Untreated Robinia wood or brown painted with a pigment that maintains the wood color and colored version with paint of selected components.

Item no. NRO513-1021

| Installation Information | |
|---|---|
| Max. fall height | 0'0" |
| Safety surfacing area | 0ft² |
| Total installation time | 4.2 |
| Excavation volume | 0.52yd³ |
| Concrete volume | 0yd³ |
| Footing depth (standard) | 3'3" |
| Shipment weight | 558lbs |
| Anchoring options | In-ground ✔ |

| Warranty Information | |
|---|---|
| Robinia Wood | 10 Years |
| Spare Parts Availability | 10 Years |
| Stainless steel components | Lifetime |

| Elevated activities **0** | Accessible elevated activities | Accessible ground level activities | Accessible ground level play types |
|---|---|---|---|
| Present | **0** | **1** | **1** |
| Required | **0** | **1** | **1** |



*Data is subject to change without prior notice.*

# Sustainability Data

NRO513



| Cradle to Gate A1-A3 | Total $CO_2$ emission | $CO_2e$/kg | Recycled materials |
|---|---|---|---|
| | kg $CO_2e$ | kg $CO_2e$/kg | % |
| **NRO513-1021** | 43.37 | 0.20 | 1.32 |

The overall framework applied for these factors is the Environmental Product Declaration (EPD), which quantifies "environmental information on the life cycle of a product and enable comparisons between products fulfilling the same function" (ISO, 2006). This follows the structure and applies a Life-Cycle Assessment approach to the entire Product stage from raw material through manufacturing (A1-A3))

**Kompan A/S**
C.F. Tietgens Boulevard 32C
DK-5220 Odense SØ
Denmark

Validation of $CO_2$ calculation method
**BUREAU VERITAS**
**HSE Denmark A/S**

## Verification of $CO_2$ calculation of: Nature play



Data version no. 2023-10-05

The $CO_2$ calculation and data are in compliance with the principles of a carbon footprint impact according to the GHG protocol (Greenhouse Gas Protocol), Scope 3, cradle to gate related to all individual components in the product category: "Nature play" represented by item no.: NRO409-0621.

(Scope 3 emissions include emission sources in the upstream and downstream value chain).

**Date: 30. October 2023 | Valid until: 30. October 2025**
**Verified by:**

Julie Marie Vejsgaard Larsen, LCA & EPD Consultant

Verification based on report: Validation of $CO_2$ calculation of 9 categories of Kompan product line, version 1.0, prepared by: Bureau Veritas HSE, Denmark: Julie M. V. Larsen.

**Publication date: 30. October 2023**

**By Bureau Veritas HSE**
www.bureauveritas.dk
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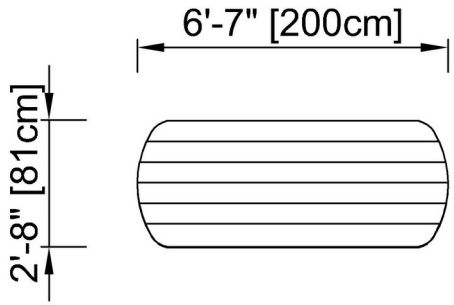


*Data is subject to change without prior notice.*

# Gas Station with 2 Pumps

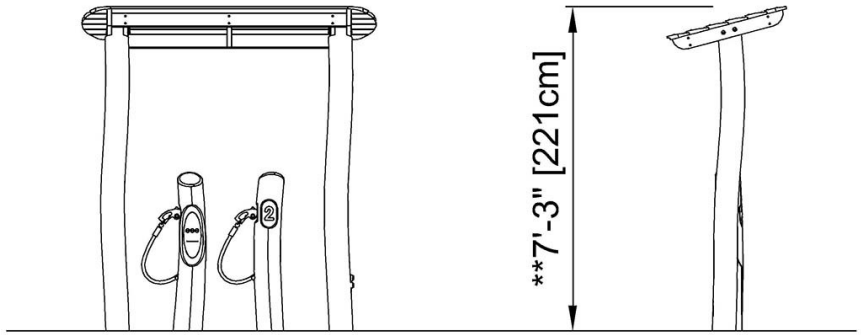
NRO513

* Max fall height | ** Total height | *** Safety surfacing area




NRO513
**7'-3" / 221cm

* Max fall height | ** Total height



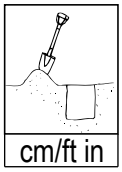

NRO513

Click to see TOP VIEW

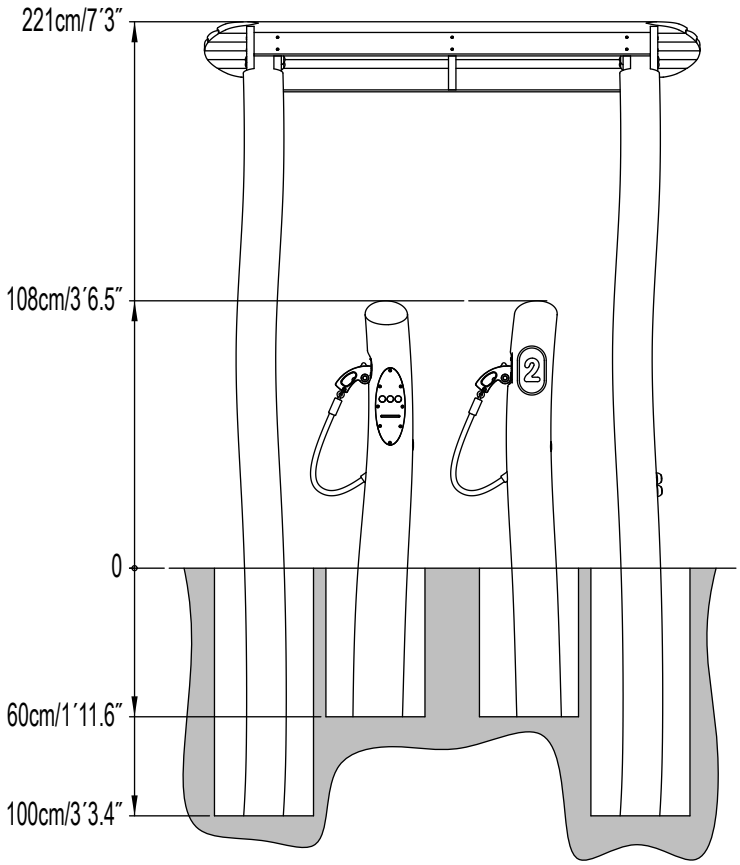
Click to see SIDE VIEW

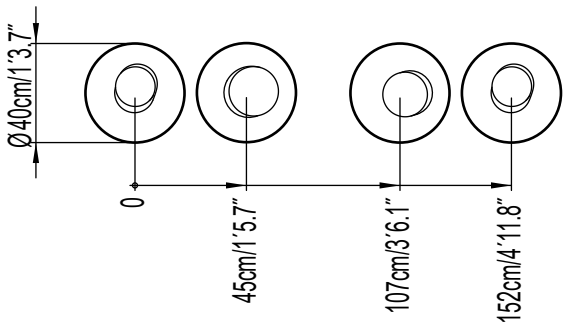


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# NRO513-1001/FSC
# NRO513-1011/FSC
# NRO513-1021
# NRO513-1031




VNRO513 20150924 PetrJu

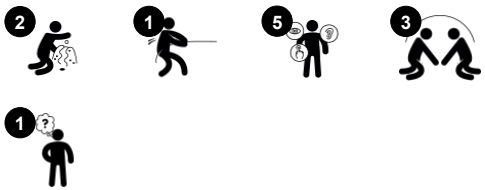
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# Oasis Sand Hut with Two Tables

NRO526



| Item no. NRO526-1021 | |
|---|---|
| **General Product Information** | |
| Dimensions LxWxH | 5'11"x6'5"x8'2" |
| Age group | 2 - 5 |
| Play capacity (users) | 5 |
| Color options | |





This Oasis sand hut with two tables is a great play motivator that will make many children absorbed in play again and again. It can be played from all sides and allows for interaction from the inside-out and vice versa. This makes it a universally designed unit that can be used by all ages and abilities. The two desks and the sand scoop are great for exchanging, or merely for storing stuff or supporting sand play. The theme of the house will inspire dramatic play. Dramatic play is great language stimulation and develops children's cognitive skills. The social nature of the play house will accommodate bigger groups of children playing. The layout allows for eye contact throughout the unit, supporting communication and cooperation, both fundamental for social-emotional development of children.



*Data is subject to change without prior notice.*

# Oasis Sand Hut with Two Tables

NRO526



**Sand shovel**
**Physical:** develops dexterity and upper body muscles. **Cognitive:** understanding of object permanence, emptying and filling scoop.





**Side desk**
**Social-Emotional:** fine meeting place and a space creator. Sharing and cooperation from both sides create a social scenario that supports communication and cooperation.



**Splash basin with plug**
**Social-Emotional:** meeting point for cooperation and sharing. Develops turn-taking and cooperation. **Cognitive:** logical thinking and understanding of cause and effect are trained when children stop or let go of water from the basin. **Creative:** the water plug makes changing water levels possible, which adds to logical thinking skills.



*Data is subject to change without prior notice.*

# Oasis Sand Hut with Two Tables

NRO526



All Organic Robinia products by KOMPAN are made of Robinia wood from sustainable European sources. On request it can be supplied as FSC® Certified (FSC® C004450).



The paint used for coloured components is water based environmentally friendly with excellent UV resistance. The paint is in compliance with EN 71 Part 3.



The Robinia products are designed with a KOMPAN color concept with a number of different standard colors. The wood can also be supplied as untreated or with brown painted with a pigment that maintains the wood color.



The product/activities are preassembled from the factory to ensure all safety requirements are considered.

Item no. NRO526-1021

| Installation Information | |
|---|---|
| Max. fall height | 0'0" |
| Safety surfacing area | 0ft² |
| Total installation time | 7.2 |
| Excavation volume | 0.59yd³ |
| Concrete volume | 0yd³ |
| Footing depth (standard) | 3'3" |
| Shipment weight | 855lbs |
| Anchoring options | In-ground ✔ |

| Warranty Information | |
|---|---|
| Robinia Wood | 10 Years |
| Ropes & nets | 10 Years |
| Spare Parts Availability | 10 Years |
| Stainless steel components | Lifetime |
| Stainless steel components | Lifetime |

| Elevated activities **0** | Accessible elevated activities | Accessible ground level activities | Accessible ground level play types |
|---|---|---|---|
| Present | **0** | **1** | **1** |
| Required | **0** | **1** | **1** |



*Data is subject to change without prior notice.*

# Sustainability Data

NRO526



| Cradle to Gate A1-A3 | Total $CO_2$ emission | $CO_2e$/kg | Recycled materials |
|---|---|---|---|
| | kg $CO_2e$ | kg $CO_2e$/kg | % |
| **NRO526-1021** | 137.53 | 0.41 | 3.99 |

The overall framework applied for these factors is the Environmental Product Declaration (EPD), which quantifies "environmental information on the life cycle of a product and enable comparisons between products fulfilling the same function" (ISO, 2006). This follows the structure and applies a Life-Cycle Assessment approach to the entire Product stage from raw material through manufacturing (A1-A3))

**Kompan A/S**
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DK-5220 Odense SØ
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Validation of $CO_2$ calculation method
**BUREAU VERITAS**
**HSE Denmark A/S**

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Julie Marie Vejsgaard Larsen, LCA & EPD Consultant

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**Publication date: 30. October 2023**

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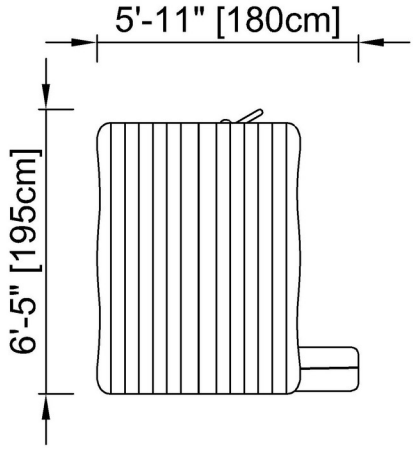


*Data is subject to change without prior notice.*

# Oasis Sand Hut with Two Tables

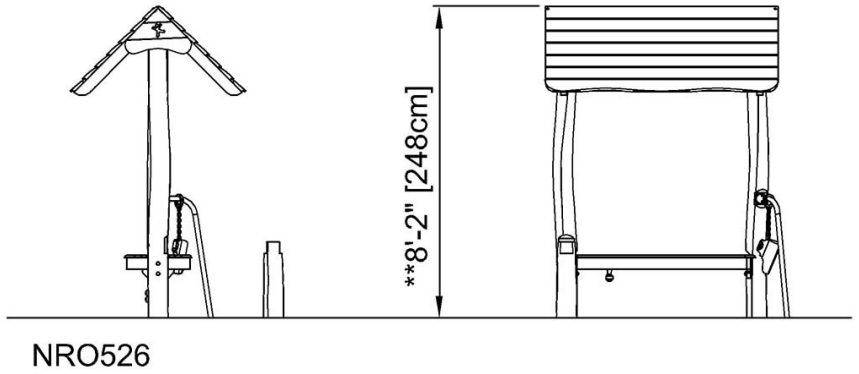
NRO526

* Max fall height | ** Total height | *** Safety surfacing area




NRO526
** 8'-2" / 248cm

* Max fall height | ** Total height



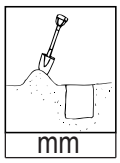

NRO526

Click to see TOP VIEW

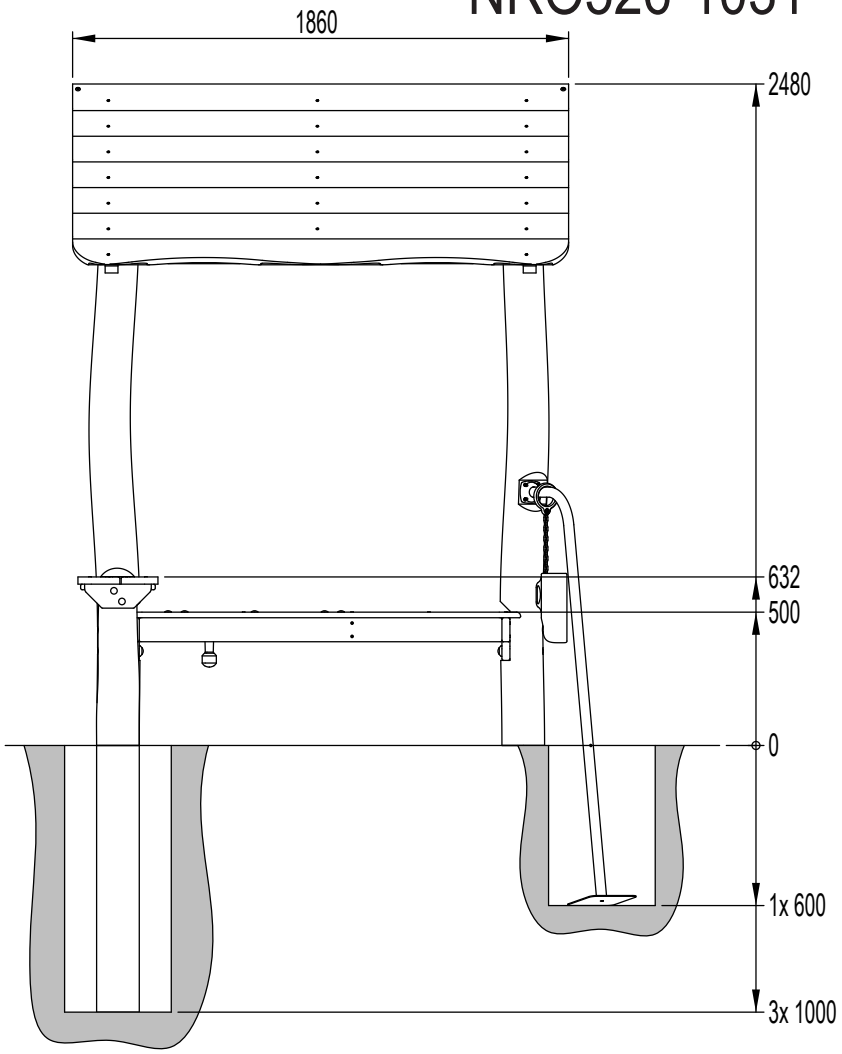
Click to see SIDE VIEW

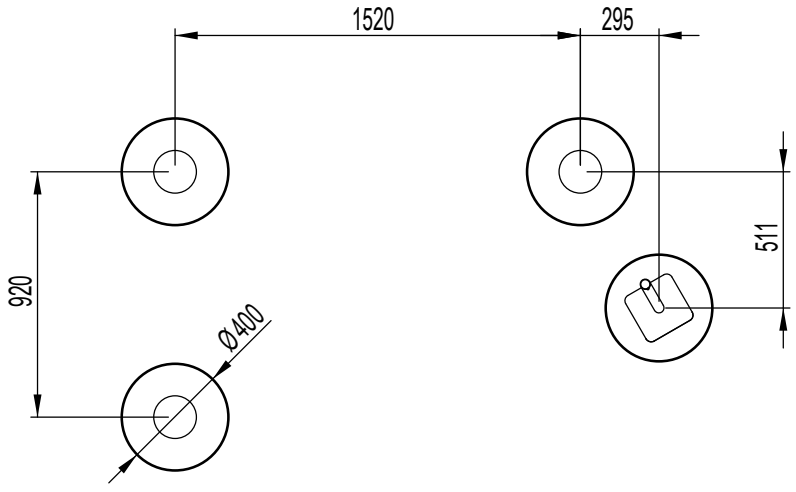


*Data is subject to change without prior notice.*




# NRO526-1001/FSC
# NRO526-1011
# NRO526-1021/FSC
# NRO526-1031



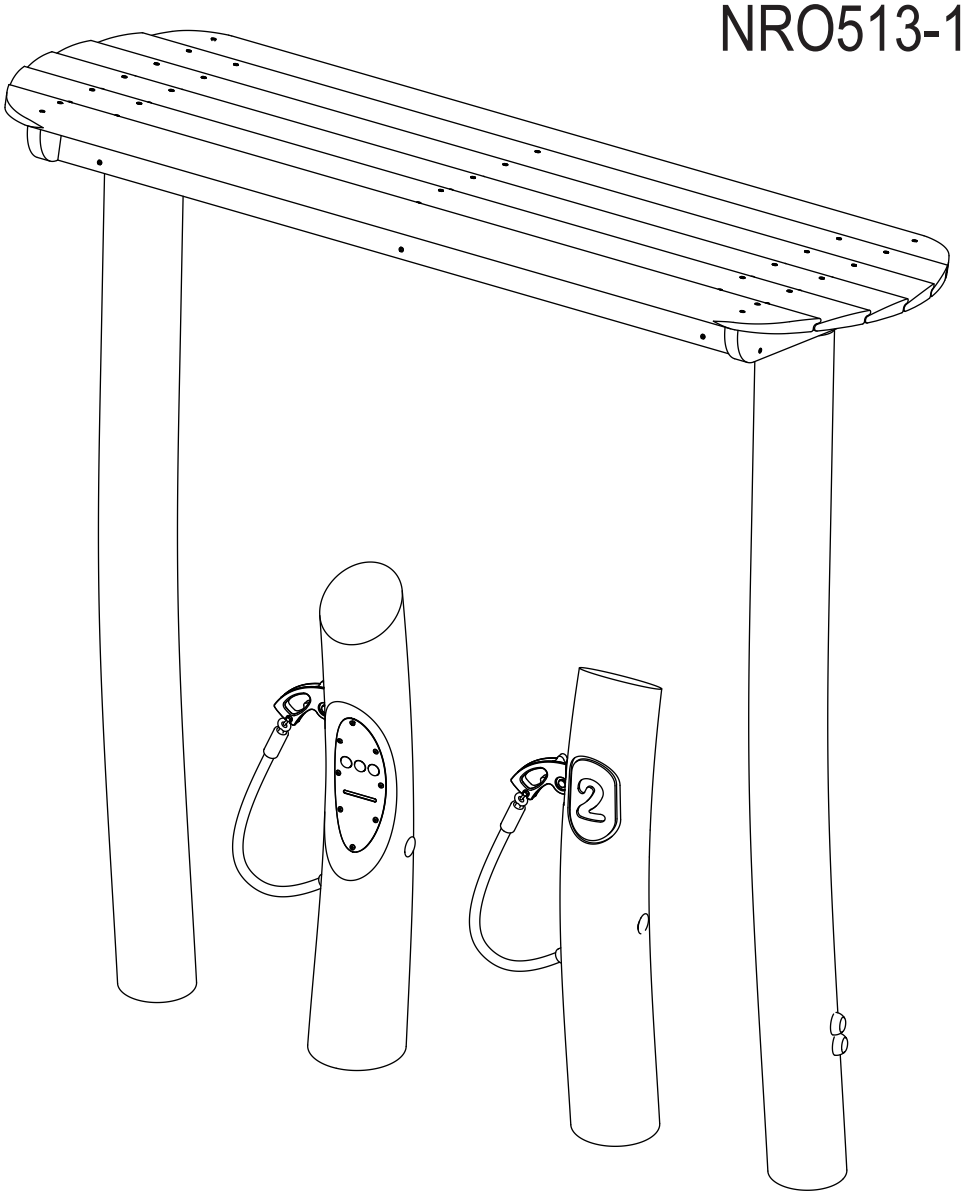




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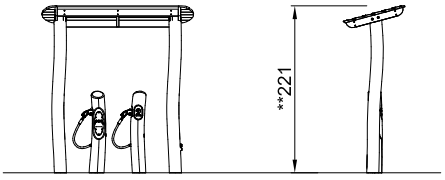
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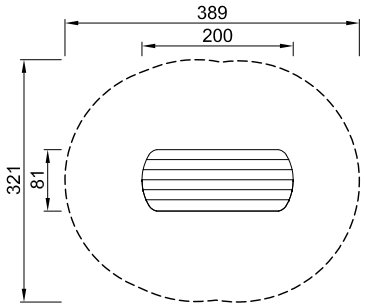

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Safety zone in accordance with EN 1176/AS4685
Sicherheitsabstand gemäß EN 1176/AS4685
Espace d'évolution selon EN 1176/AS4685
Zona de seguridad según EN 1176/AS4685
Distanze di sicurezza in conformità con lo standard EN 1176/AS4685
Veiligheidsgebied in overeenstemming met EN 1176/AS4685
Säkerhetsområde enl EN 1176/AS4685
Sikkerhedsareal iht. EN 1176/AS4685
Зона безопасности в соответствии с EN 1176/AS4685
EN1176/AS4685-normin mukainen turva-alue




NRO513
1:100




NRO513
**221cm
***10.1m²
1:100

* Free height of fall
Freie Fallhöhe
Hauteur de chute libre
Altura de caída libre
Altezza di caduta libera
Vrije valhoogte
Fri fallhöjd
Fri faldhøjde
Высота свободного падения
Vapaa putoamiskorkeus

All measurements are in cm
Alle Maßangaben in cm
Toutes les dimensions sont indiquées en cm
Todas las medidas están indicadas en cm
Tutte le misure sono in cm
Alle afmetingen zijn in cm
Alla mått är angivna i cm
Alle mål er angivet i cm
Все измерения в см.
Kaikki ohjeessa mainitut mitat ovat senttimetrejä.

Please note: The safety zone shown on this drawing is in accordance with EN 1176/AS4685. There may be some locations where a larger safety zone is required. If in doubt, please contact your play consultant.

Achtung: Der angegebene Sicherheitsabstand entspricht EN 1176/AS4685. Bestimmte Länder schreiben größere Sicherheitsabstände vor. Bitte wenden Sie sich in Zweifelsfällen an Ihren Berater.

Attention : l'espace d'évolution montré est conforme à EN 1176/AS4685. Dans certains pays, un espace d'évolution plus grand peut être exigé. Prière de contacter notre conseiller en cas de doute.

Observe: La zona de seguridad demostrada en este dibujo cumple con EN 1176/AS4685. En algunos sitios puede ser necesaria una zona de seguridad más grande. En caso de tener alguna duda, por favor póngase en contacto con nuestro consultor.

Attenzione: la distanza di sicurezza specificata è conforme ai requisiti EN 1176/AS4685. In alcuni paesi, le norme locali possono richiedere distanze di sicurezza maggiori. In caso di dubbi, contattare il nostro consulente.

N.B.: het getoonde veiligheidsgebied is in overeenstemming met EN 1176/AS4685. In sommige landen kan een groter veiligheidsgebied vereist zijn. In geval van twijfel onze adviseur raadplegen.

Obs: Det markerade säkerhetsområdet följer EN 1176/AS4685. I vissa länder kan det finnas krav på större säkerhetsområde. Kontakta vänligen vår konsulent om du är osäker.

Obs.: Det viste sikkerhedsareal er i overensstemmelse med EN 1176/AS4685. I nogle lande kan der være krav om større sikkerhedsareal. Kontakt venligst vores konsulent ved tvivlsspørgsmål.

Внимание: Зона безопасности указана в соответствии с EN 1176/AS4685. Возможны случаи, когда требуется увеличение зоны безопасности. В затруднительных случаях обращайтесь к Вашему консультанту.

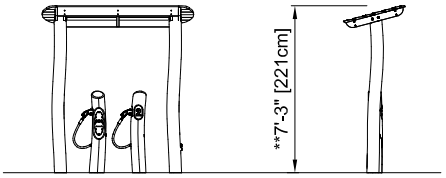
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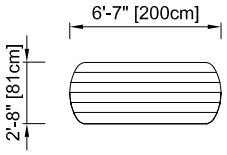
VNRO513 20150924 PetrJu

Safety zone in accordance with ASTM 1487
Sicherheitsabstand gemäß ASTM 1487
Espace d'évolution selon ASTM 1487
Zona de seguridad según ASTM 1487
Distanze di sicurezza in conformità con lo standard ASTM 1487
Veiligheidsgebied in overeenstemming met ASTM 1487
Säkerhetsområde enl ASTM 1487
Sikkerhedsareal iht. ASTM 1487
Зона безопасности в соответствии с ASTM 1487
ASTM 1487-normin mukainen turva-alue




NRO513
1:100

* Free height of fall
Freie Fallhöhe
Hauteur de chute libre
Altura de caída libre
Altezza di caduta libera
Vrije valhoogte
Fri fallhöjd
Fri faldhøjde
Высота свободного падения
Vapaa putoamiskorkeus




NRO513
**7'-3" / 221cm
1/8" = 1'-0"

Please note: The safety zone shown on this drawing is in accordance with ASTM 1487. There may be some locations where a larger safety zone is required. If in doubt, please contact your play consultant.

Achtung: Der angegebene Sicherheitsabstand entspricht ASTM 1487. Bestimmte Länder schreiben größere Sicherheitsabstände vor. Bitte wenden Sie sich in Zweifelsfällen an Ihren Berater.

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Obs.: Det viste sikkerhedsareal er i overensstemmelse med ASTM 1487. I nogle lande kan der være krav  om større sikkerhedsareal. Kontakt venligst vores konsulent ved tvivlsspørgsmål.

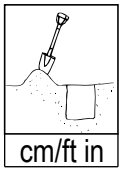
Внимание: Зона безопасности указана в соответствии с ASTM 1487. Возможны случаи, когда требуется увеличение зоны безопасности. В затруднительных случаях обращайтесь к Вашему консультанту.

Huom: Tämän piirustuksen turva-alue on ASTM 1487-normin mukainen. Joissain sijoituspaikoissa saatetaan edellyttää suurempaa turva-aluetta. Jos olet epävarma, otathan yhteyttä KOMPANiin.

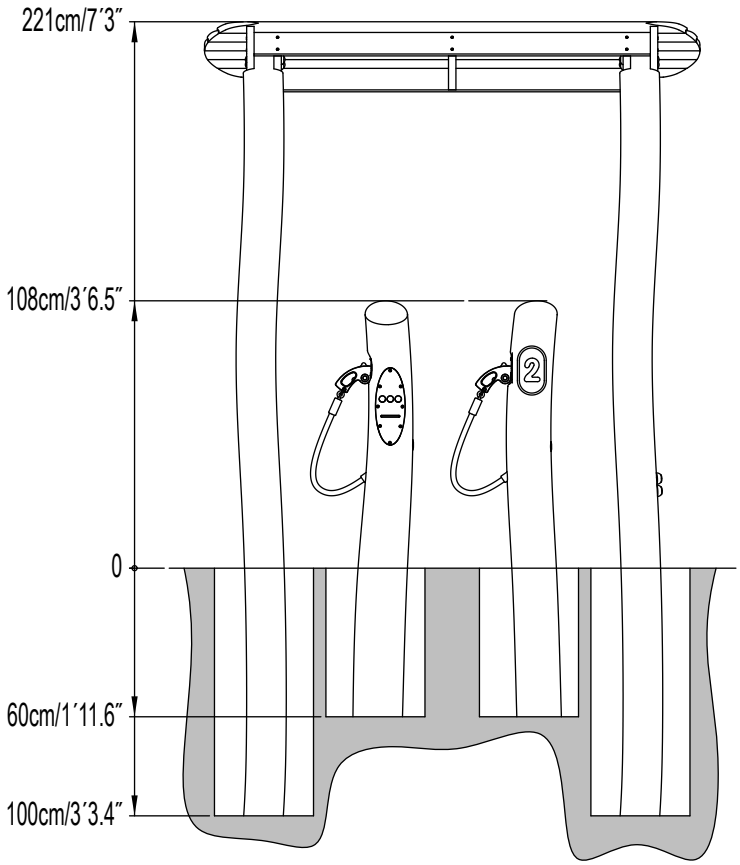
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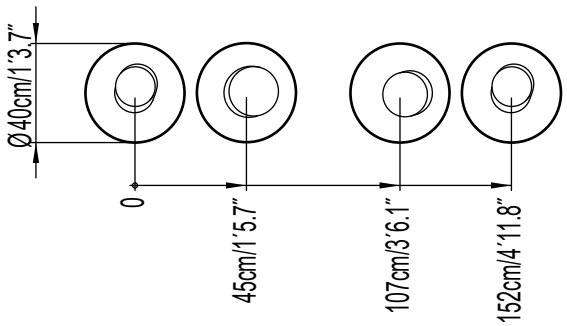


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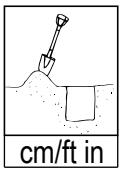

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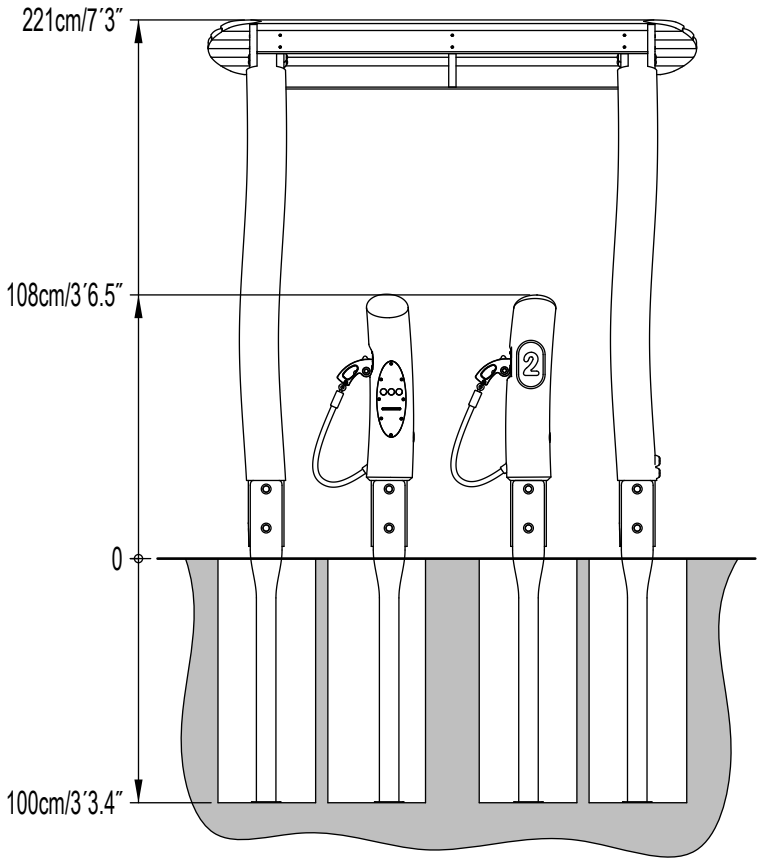



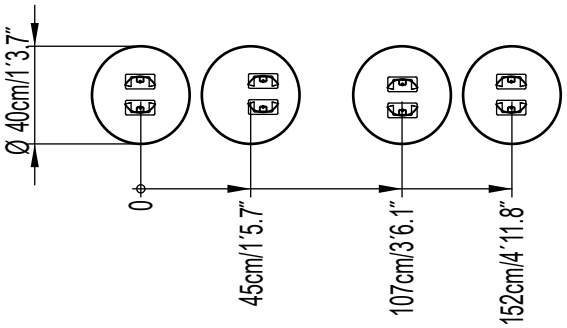

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A



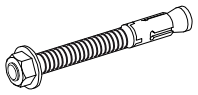
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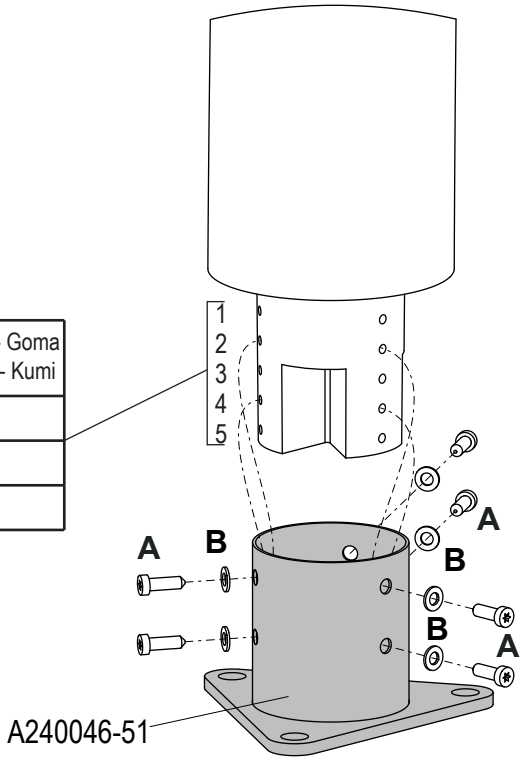
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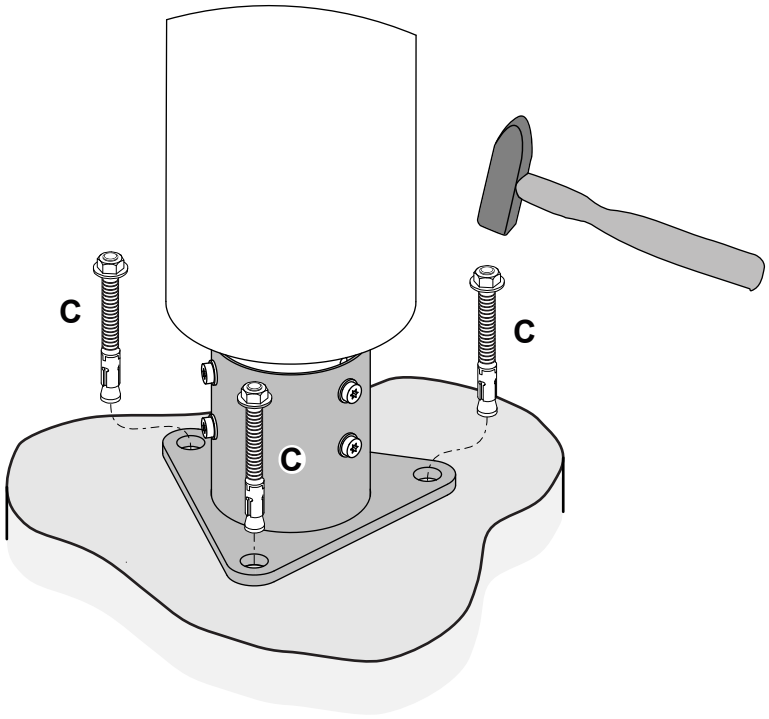


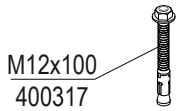
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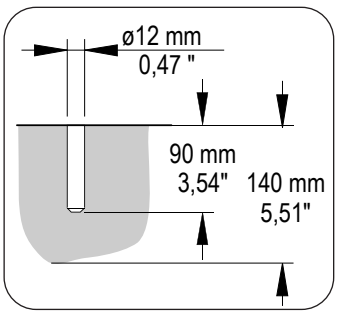
| Rubber - Sol couté - Gummi - Goma<br>Borracha - Gomma - Резина - Kumi | |
|---|---|
| 35mm [1.4″] | 1,3 |
| 55mm [2.2″] | 2,4 |
| 75mm [3″] | 3,5 |



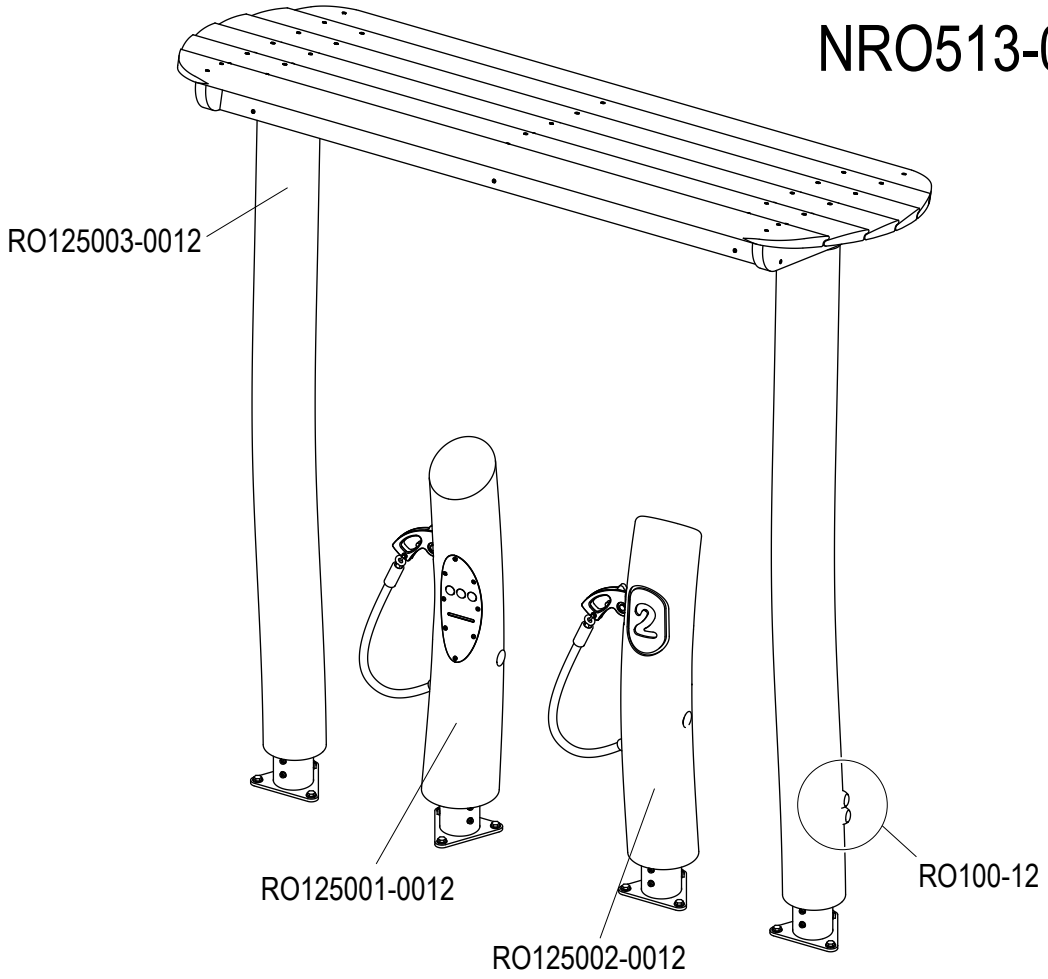

400317 - 12 mm:



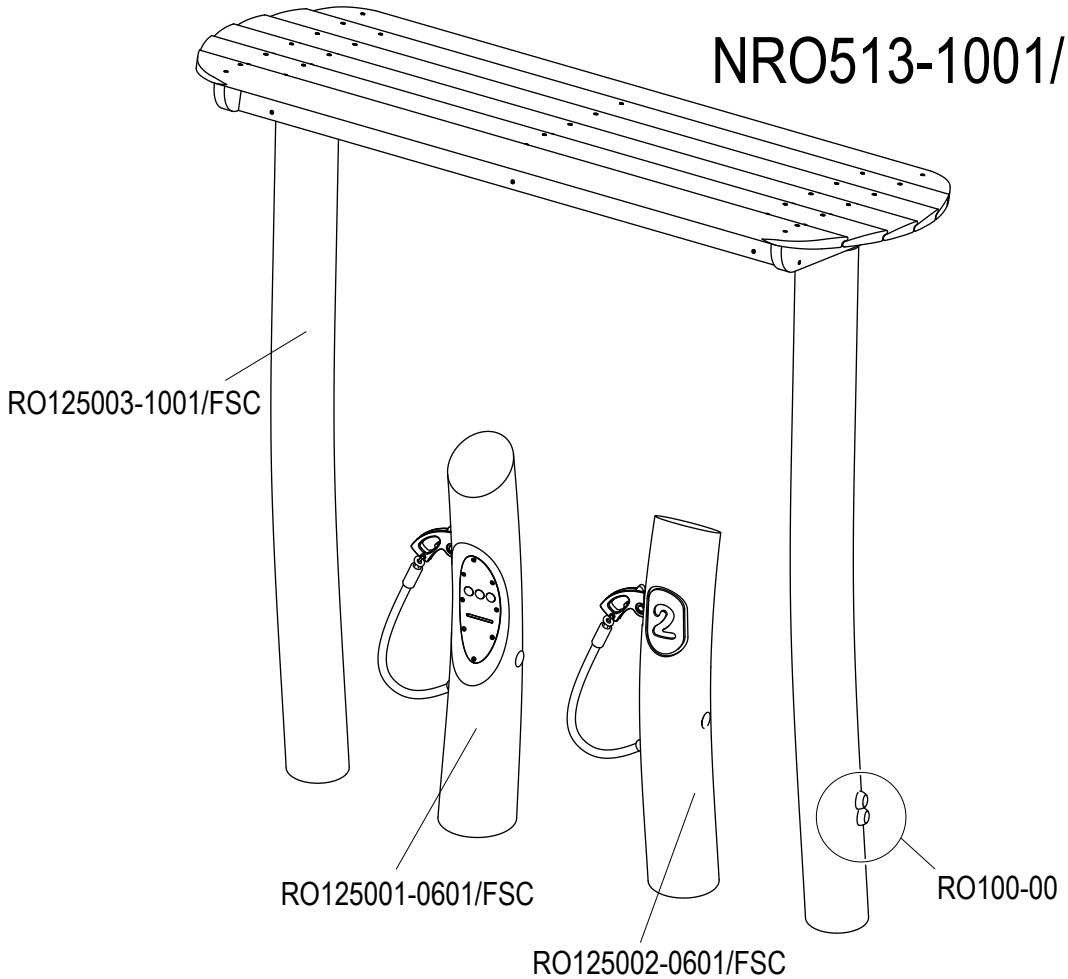

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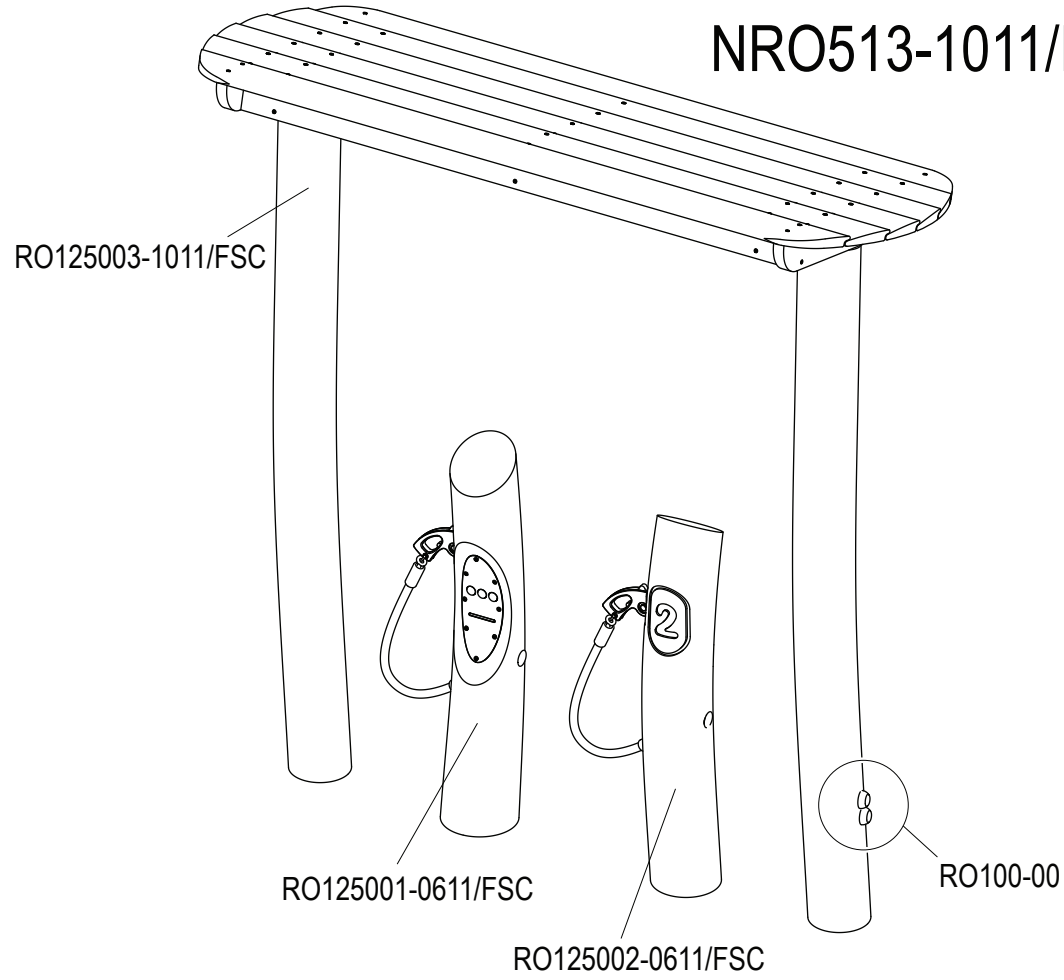

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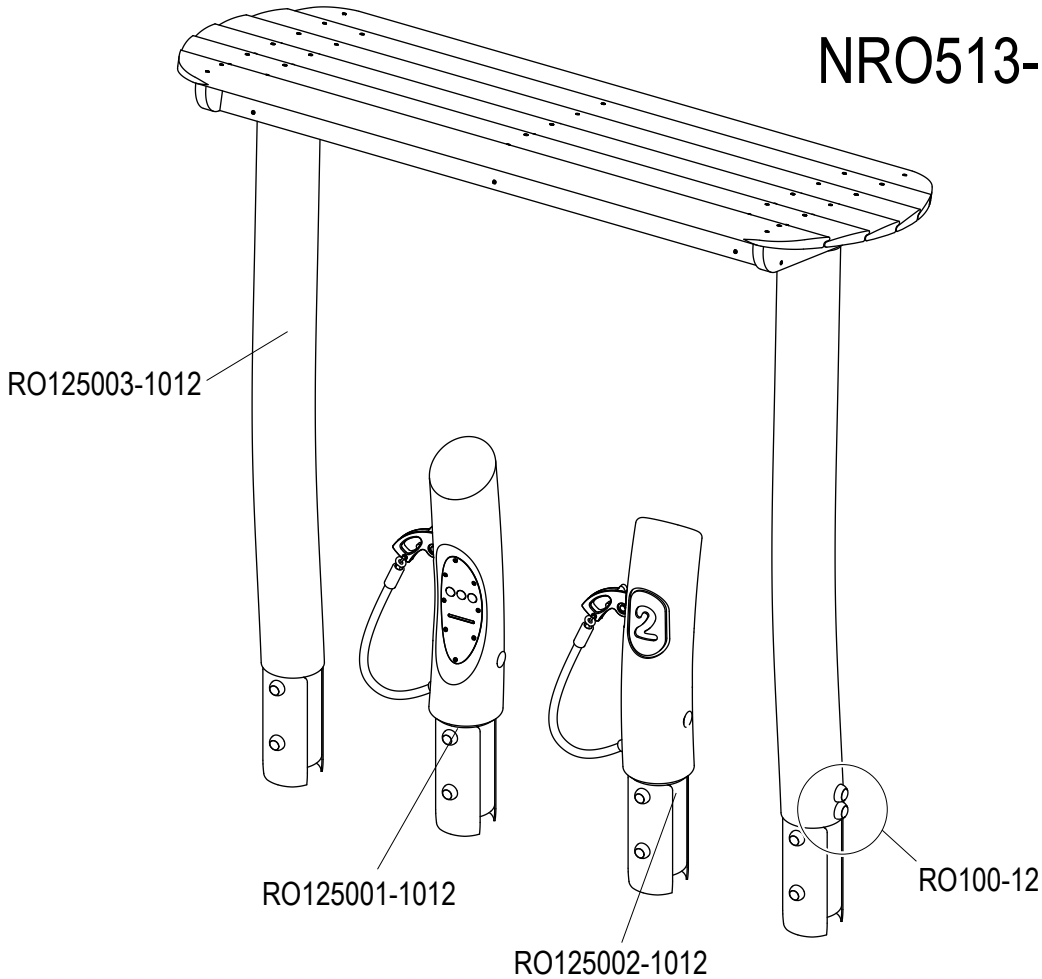

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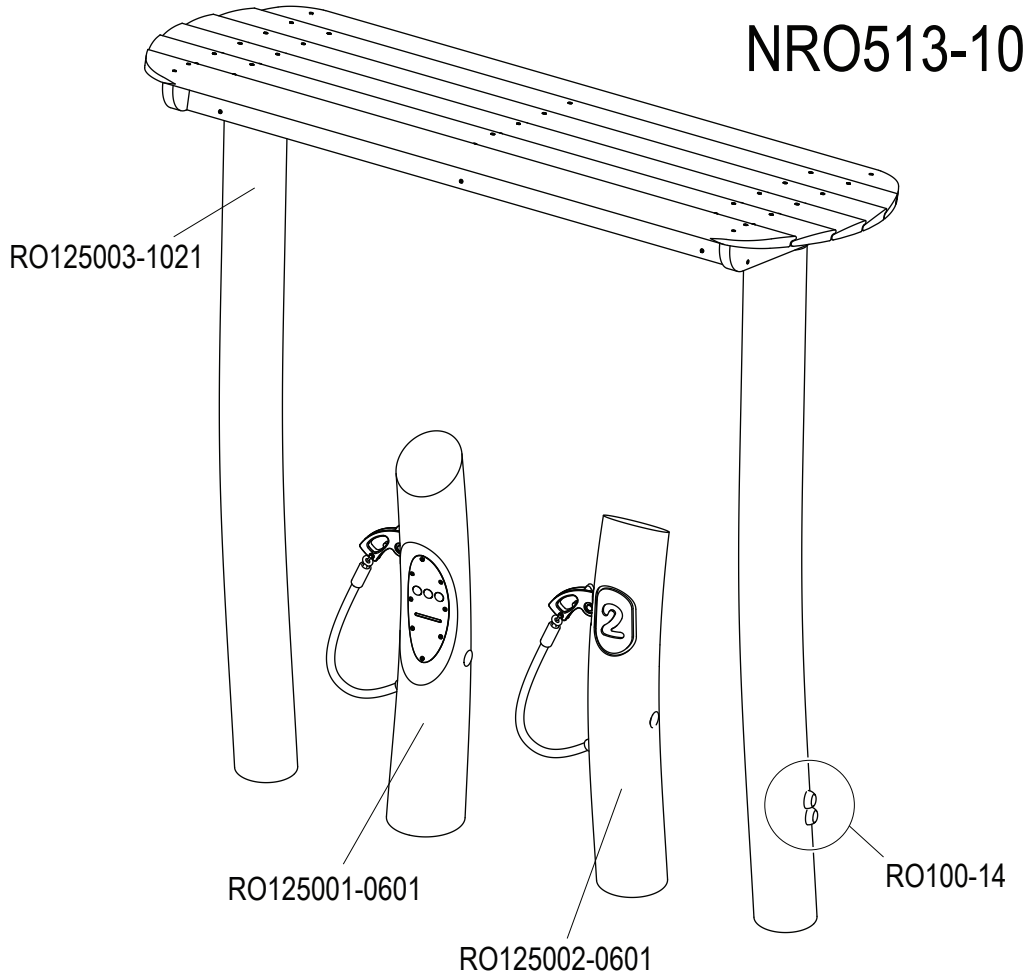

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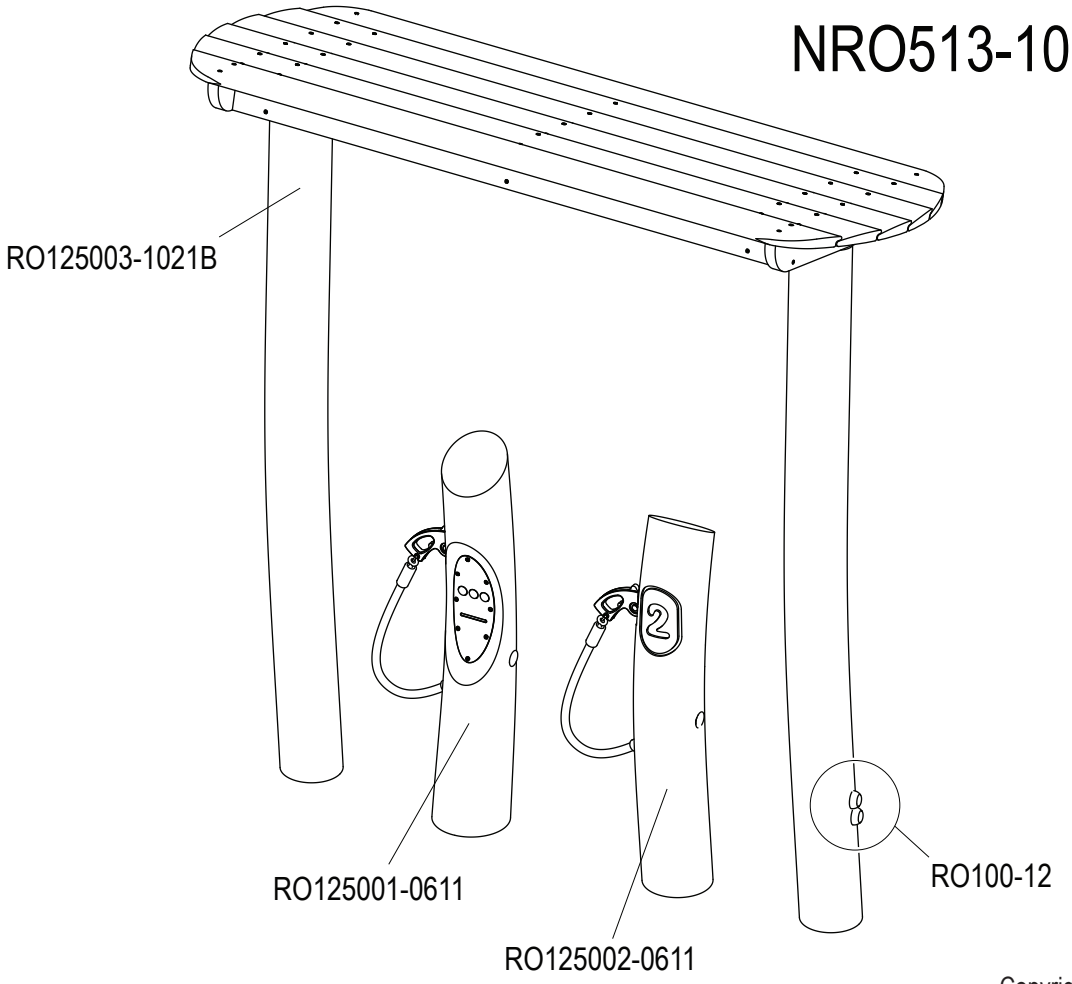

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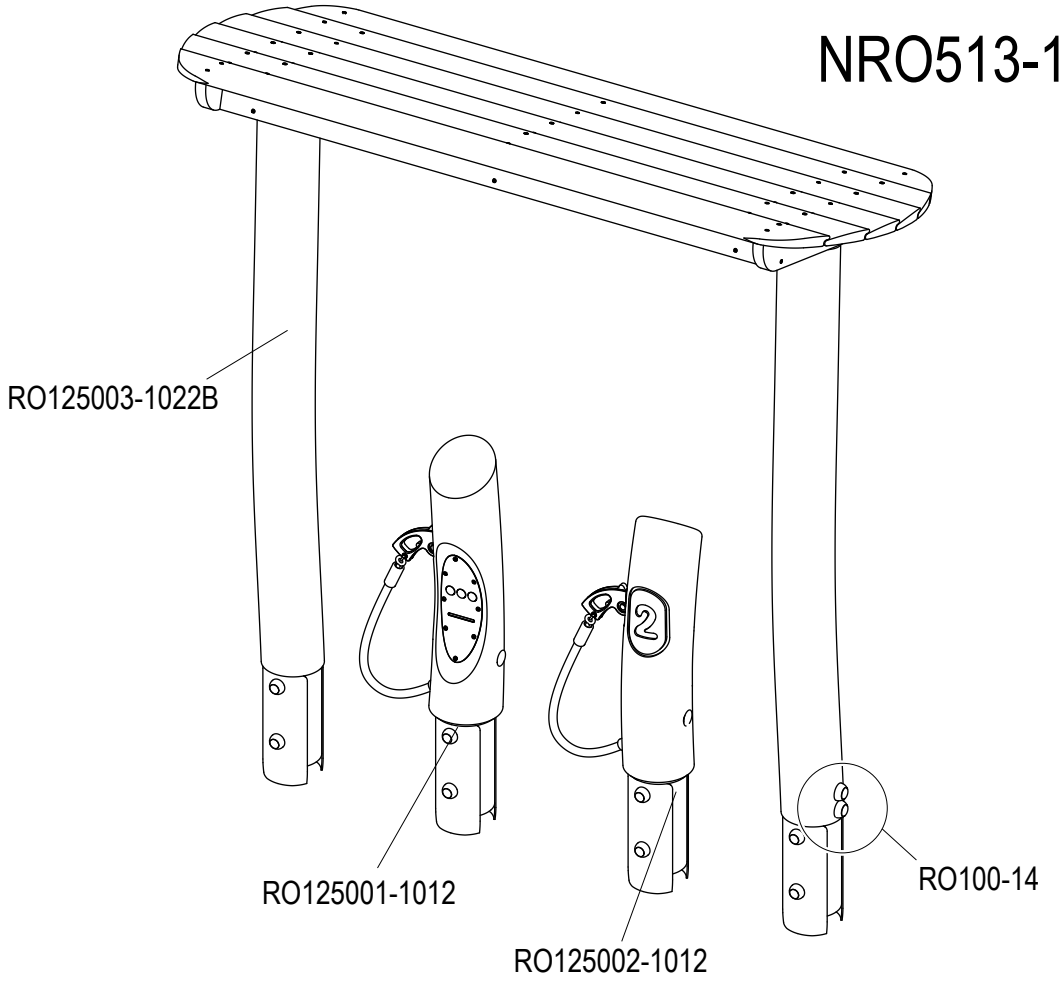

# NRO513-1031




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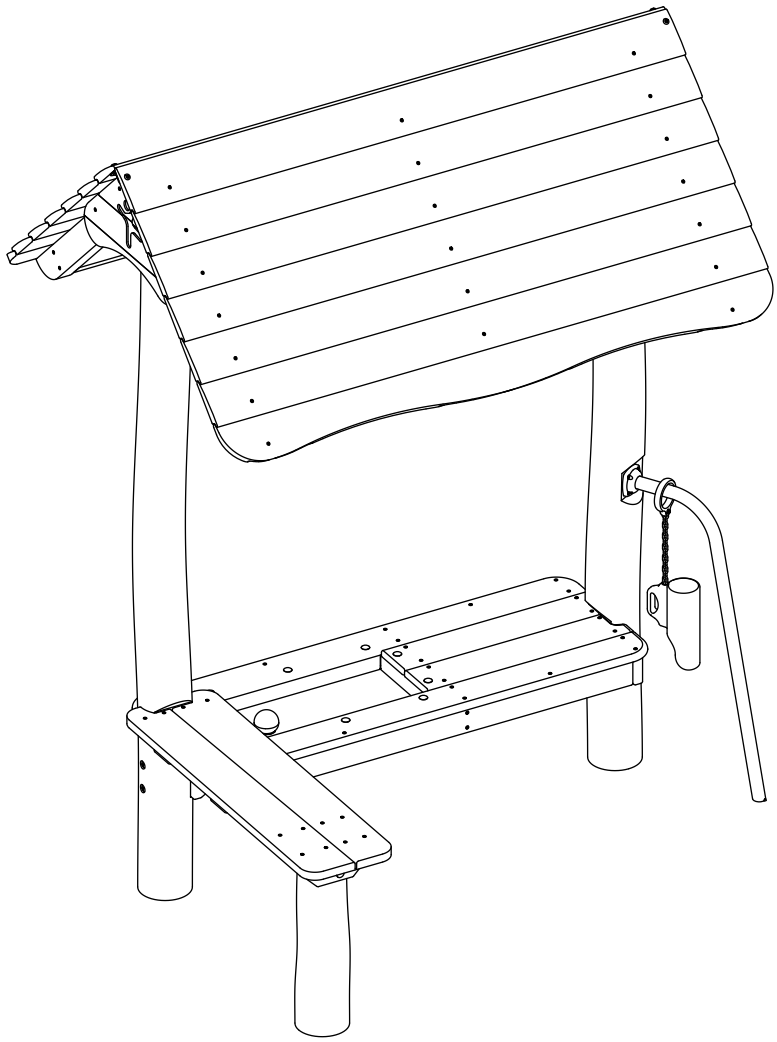



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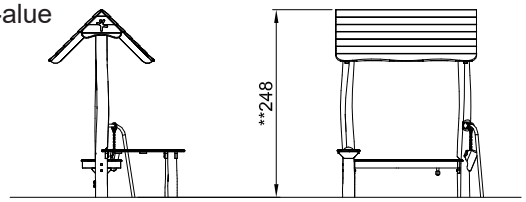
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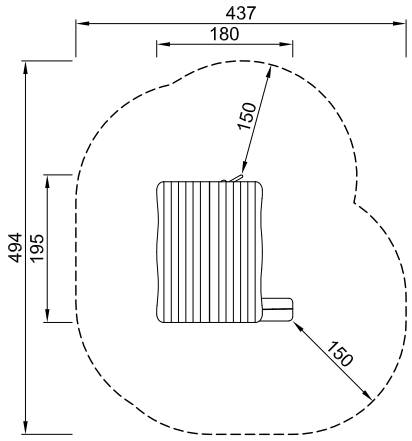
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Safety zone in accordance with EN 1176/AS4685
Sicherheitsabstand gemäß EN 1176/AS4685
Espace d'évolution selon EN 1176/AS4685
Zona de seguridad según EN 1176/AS4685
Distanze di sicurezza in conformità con lo standard EN 1176/AS4685
Veiligheidsgebied in overeenstemming met EN 1176/AS4685
Säkerhetsområde enl EN 1176/AS4685
Sikkerhedsareal iht. EN 1176/AS4685
Зона безопасности в соответствии с EN 1176/AS4685
EN1176/AS4685-normin mukainen turva-alue




NRO526
1:100




NRO526
**248cm
***17.5m²
1:100

All measurements are in cm
Alle Maßangaben in cm
Toutes les dimensions sont indiquées en cm
Todas las medidas están indicadas en cm
Tutte le misure sono in cm
Alle afmetingen zijn in cm
Alla mått är angivna i cm
Alle mål er angivet i cm
Все измерения в см.
Kaikki ohjeessa mainitut mitat ovat senttimetrejä.

* Free height of fall
Freie Fallhöhe
Hauteur de chute libre
Altura de caída libre
Altezza di caduta libera
Vrije valhoogte
Fri fallhöjd
Fri faldhøjde
Высота свободного падения
Vapaa putoamiskorkeus

Please note: The safety zone shown on this drawing is in accordance with EN 1176/AS4685. There may be some locations where a larger safety zone is required. If in doubt, please contact your play consultant.

Achtung: Der angegebene Sicherheitsabstand entspricht EN 1176/AS4685. Bestimmte Länder schreiben größere Sicherheitsabstände vor. Bitte wenden Sie sich in Zweifelsfällen an Ihren Berater.

Attention : l'espace d'évolution montré est conforme à EN 1176/AS4685. Dans certains pays, un espace d'évolution plus grand peut être exigé. Prière de contacter notre conseiller en cas de doute.

Observe: La zona de seguridad demostrada en este dibujo cumple con EN 1176/AS4685. En algunos sitios puede ser necesaria una zona de seguridad más grande. En caso de tener alguna duda, por favor póngase en contacto con nuestro consultor.

Attenzione: la distanza di sicurezza specificata è conforme ai requisiti EN 1176/AS4685. In alcuni paesi, le norme locali possono richiedere distanze di sicurezza maggiori. In caso di dubbi, contattare il nostro consulente.

N.B.: het getoonde veiligheidsgebied is in overeenstemming met EN 1176/AS4685. In sommige landen kan een groter veiligheidsgebied vereist zijn. In geval van twijfel onze adviseur raadplegen.

Obs: Det markerade säkerhetsområdet följer EN 1176/AS4685. I vissa länder kan det finnas krav på större säkerhetsområde. Kontakta vänligen vår konsulent om du är osäker.

Obs.: Det viste sikkerhedsareal er i overensstemmelse med EN 1176/AS4685. I nogle lande kan der være krav om større sikkerhedsareal. Kontakt venligst vores konsulent ved tvivlsspørgsmål.

Внимание: Зона безопасности указана в соответствии с EN 1176/AS4685. Возможны случаи, когда требуется увеличение зоны безопасности. В затруднительных случаях обращайтесь к Вашему консультанту.

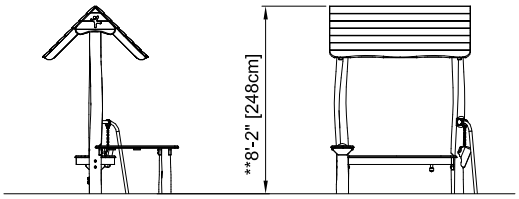
Huom: Tämän piirustuksen turva-alue on EN1176/AS4685-normin mukainen. Joissain sijoituspaikoissa saatetaan edellyttää suurempaa turva-aluetta. Jos olet epävarma, otathan yhteyttä KOMPANiin.

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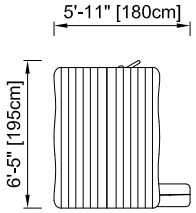
VNRO526 20170109 PetrJu

Safety zone in accordance with ASTM 1487/CSA Z614
Sicherheitsabstand gemäß ASTM 1487/CSA Z614
Espace d'évolution selon ASTM 1487/CSA Z614
Zona de seguridad según ASTM 1487/CSA Z614
Distanze di sicurezza in conformità con lo standard ASTM 1487/CSA Z614
Veiligheidsgebied in overeenstemming met ASTM 1487/CSA Z614
Säkerhetsområde enl ASTM 1487/CSA Z614
Sikkerhedsareal iht. ASTM 1487/CSA Z614
Зона безопасности в соответствии с ASTM 1487/CSA Z614
ASTM 1487/CSA Z614-normin mukainen turva-alue




NRO526
1:100

* Free height of fall
Freie Fallhöhe
Hauteur de chute libre
Altura de caída libre
Altezza di caduta libera
Vrije valhoogte
Fri fallhöjd
Fri faldhøjde
Высота свободного падения
Vapaa putoamiskorkeus




NRO526
** 8'-2" / 248cm
1/8" = 1'-0"

Please note: The safety zone shown on this drawing is in accordance with ASTM 1487/CSA Z614. There may be some locations where a larger safety zone is required. If in doubt, please contact your play consultant.

Achtung: Der angegebene Sicherheitsabstand entspricht ASTM 1487/CSA Z614. Bestimmte Länder schreiben größere Sicherheitsabstände vor. Bitte wenden Sie sich in Zweifelsfällen an Ihren Berater.

Attention : l'espace d'évolution montré est conforme à ASTM 1487/CSA Z614. Dans certains pays, un espace d'évolution plus grand peut être exigé. Prière de contacter notre conseiller en cas de doute.

Observe: La zona de seguridad demostrada en este dibujo cumple con ASTM 1487/CSA Z614. En algunos sitios puede ser necesaria una zona de seguridadmás grande. En caso de tener alguna duda, por favor póngase en contacto con nuestro consultor.

Nota: A área de segurança ilustrada neste desenho está de acordo com a ASTM 1487/CSA Z614. Podem existir alguns territórios onde seja exigida uma área de segurança maior. Na dúvida, por favor contacte o seu consultor local da KOMPAN.

Attenzione: la distanza di sicurezza specificata è conforme ai requisiti ASTM 1487/CSA Z614. In alcuni paesi, le norme locali possono richiedere distanze di sicurezza maggiori. In caso di dubbi, contattare il nostro consulente.

N.B.: het getoonde veiligheidsgebied is in overeenstemming met ASTM 1487/CSA Z614. In sommige landen kan een groter veiligheidsgebied vereist zijn. In geval van twijfel onze adviseur raadplegen.

Obs: Det markerade säkerhetsområdet följer ASTM 1487/CSA Z614. I vissa länder kan det finnas krav på större säkerhetsområde. Kontakta vänligen vår konsulent om du är osäker.

Obs.: Det viste sikkerhedsareal er i overensstemmelse med ASTM 1487/CSA Z614. I nogle lande kan der være krav om større sikkerhedsareal. Kontakt venligst vores konsulent ved tvivlsspørgsmål.

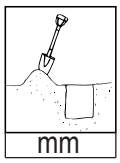
Внимание: Зона безопасности указана в соответствии с ASTM 1487/CSA Z614. Возможны случаи, когда требуется увеличение зоны безопасности. В затруднительных случаях обращайтесь к Вашему консультанту.

Huom: Tämän piirustuksen turva-alue on ASTM 1487/CSA Z614-normin mukainen. Joissain sijoituspaikoissa saatetaan edellyttääsuurempaa turva-aluetta. Jos olet epävarma, otathan yhteyttä KOMPANiin.

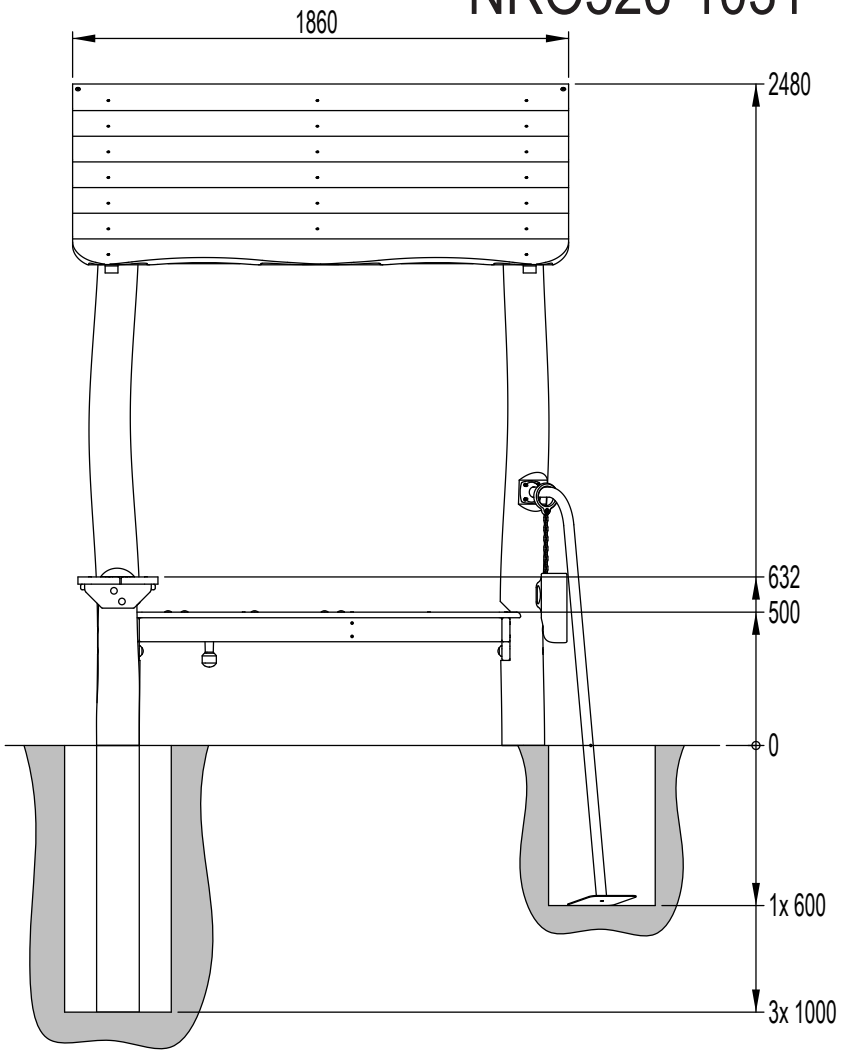
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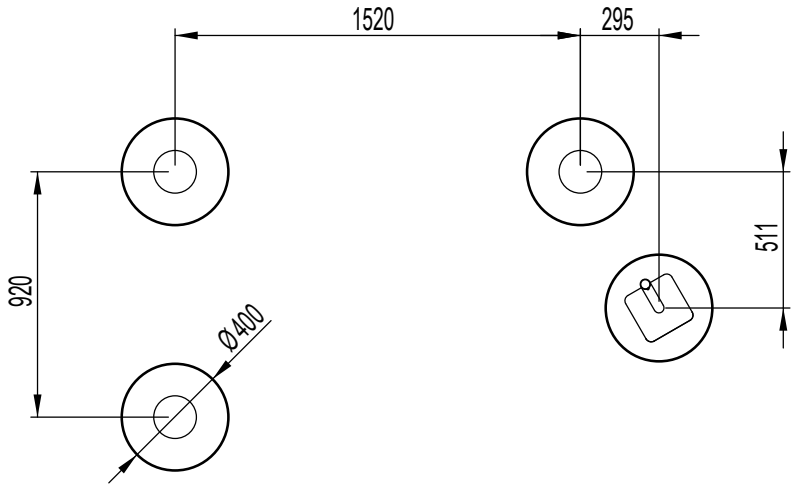


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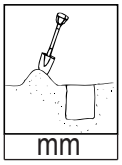

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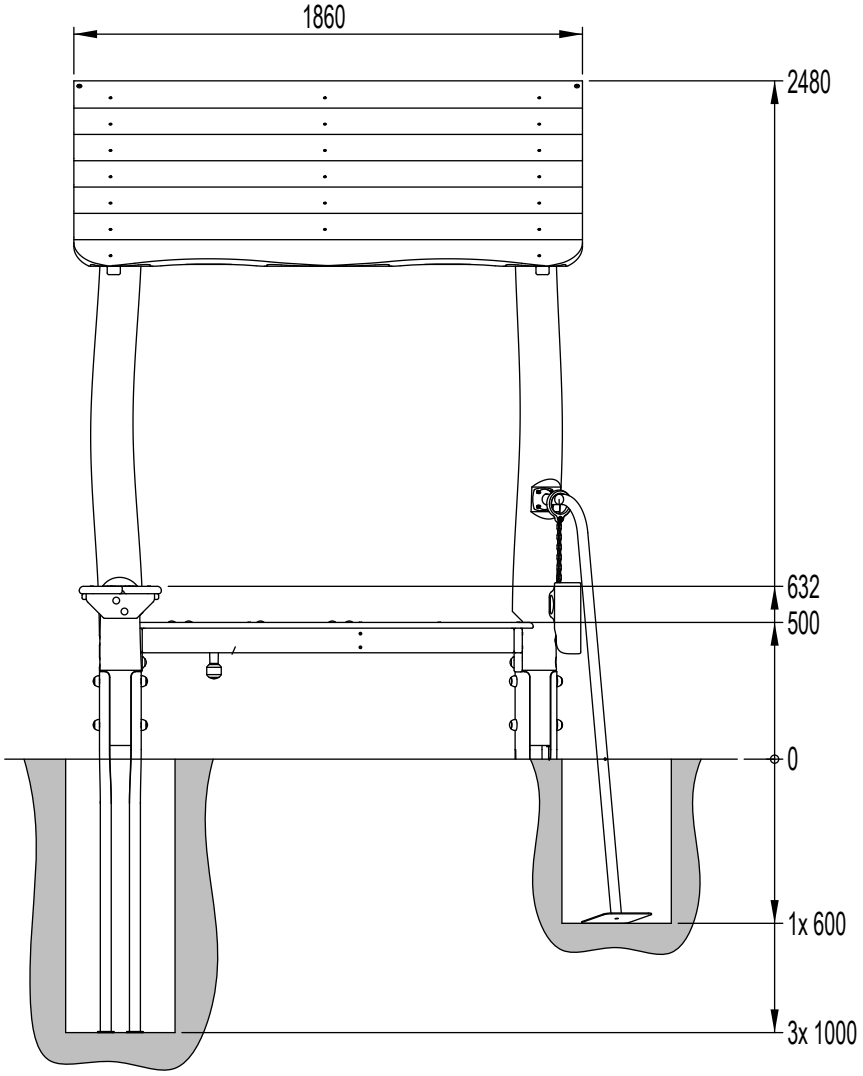



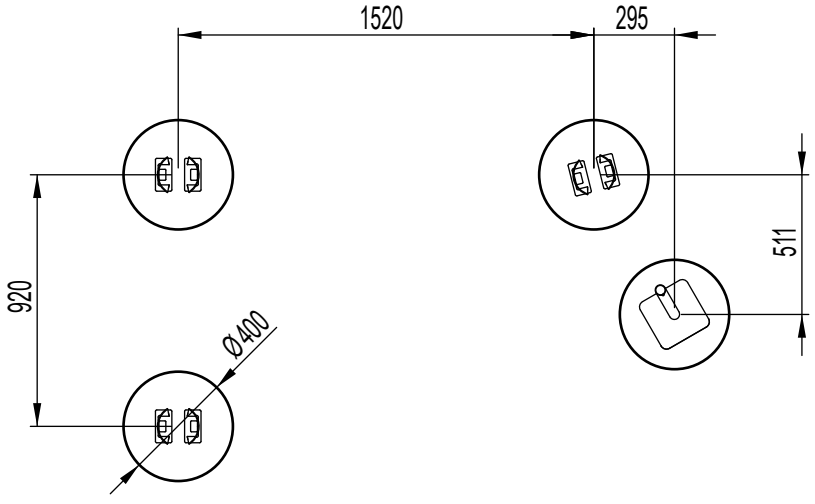

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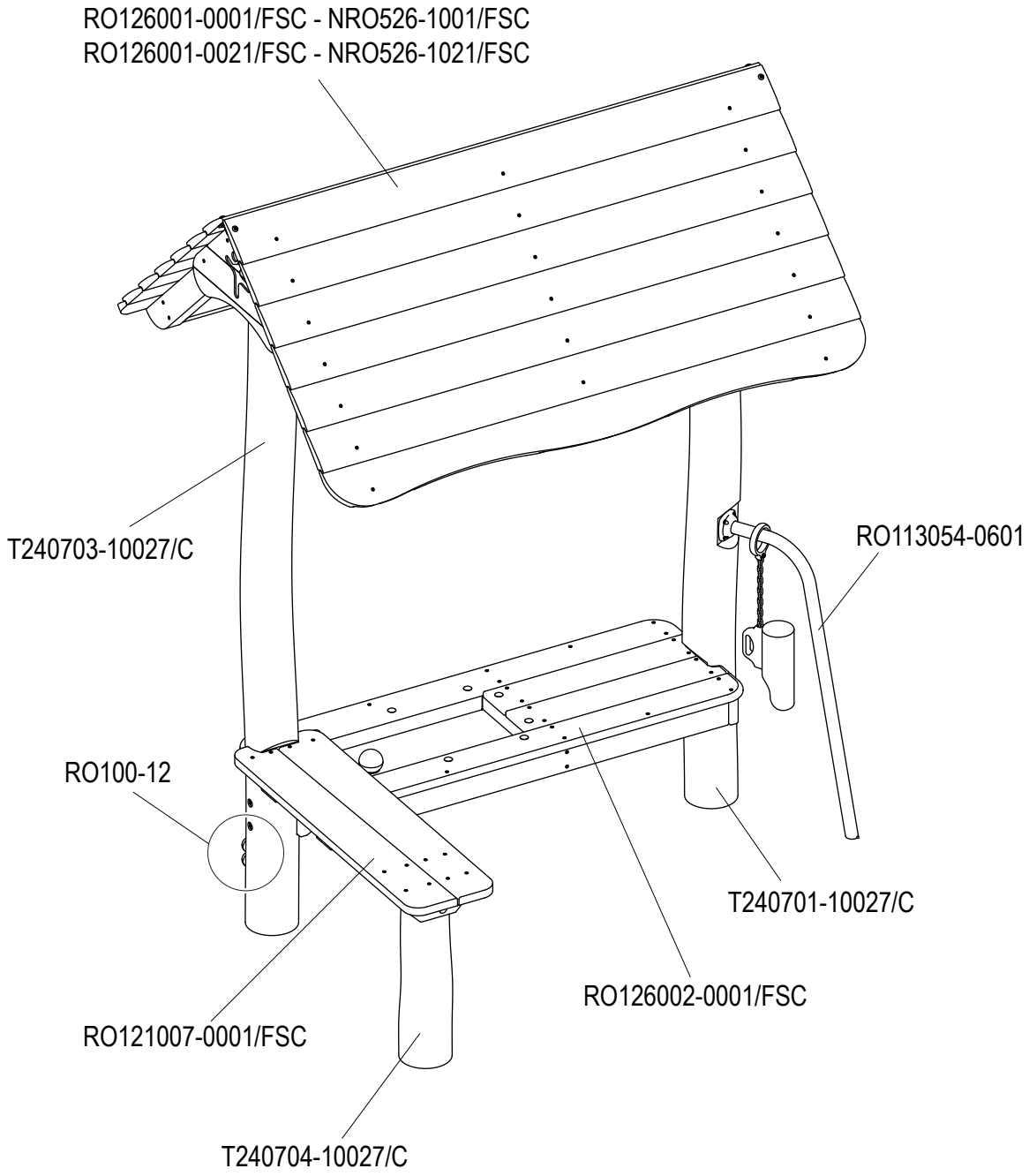



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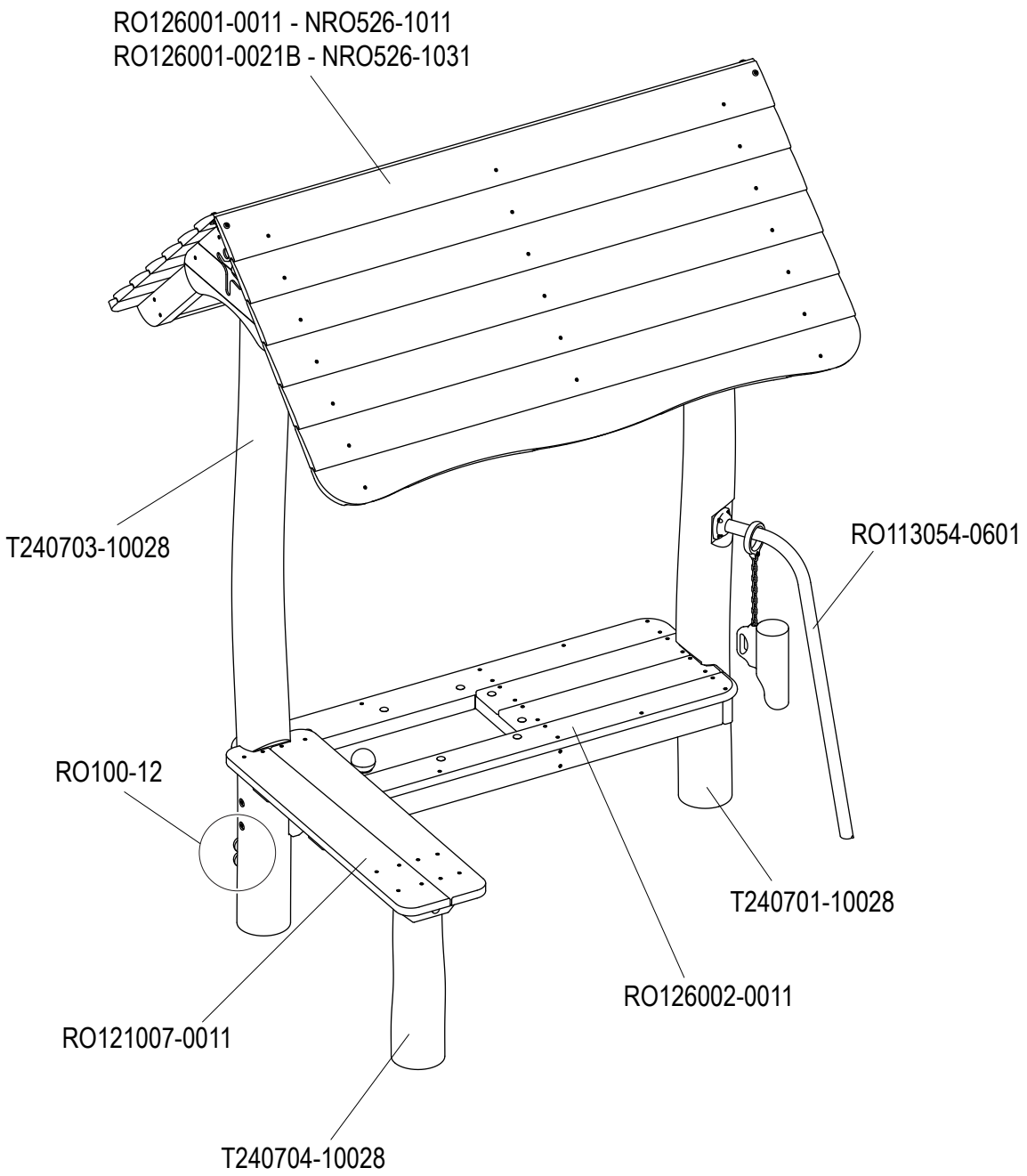
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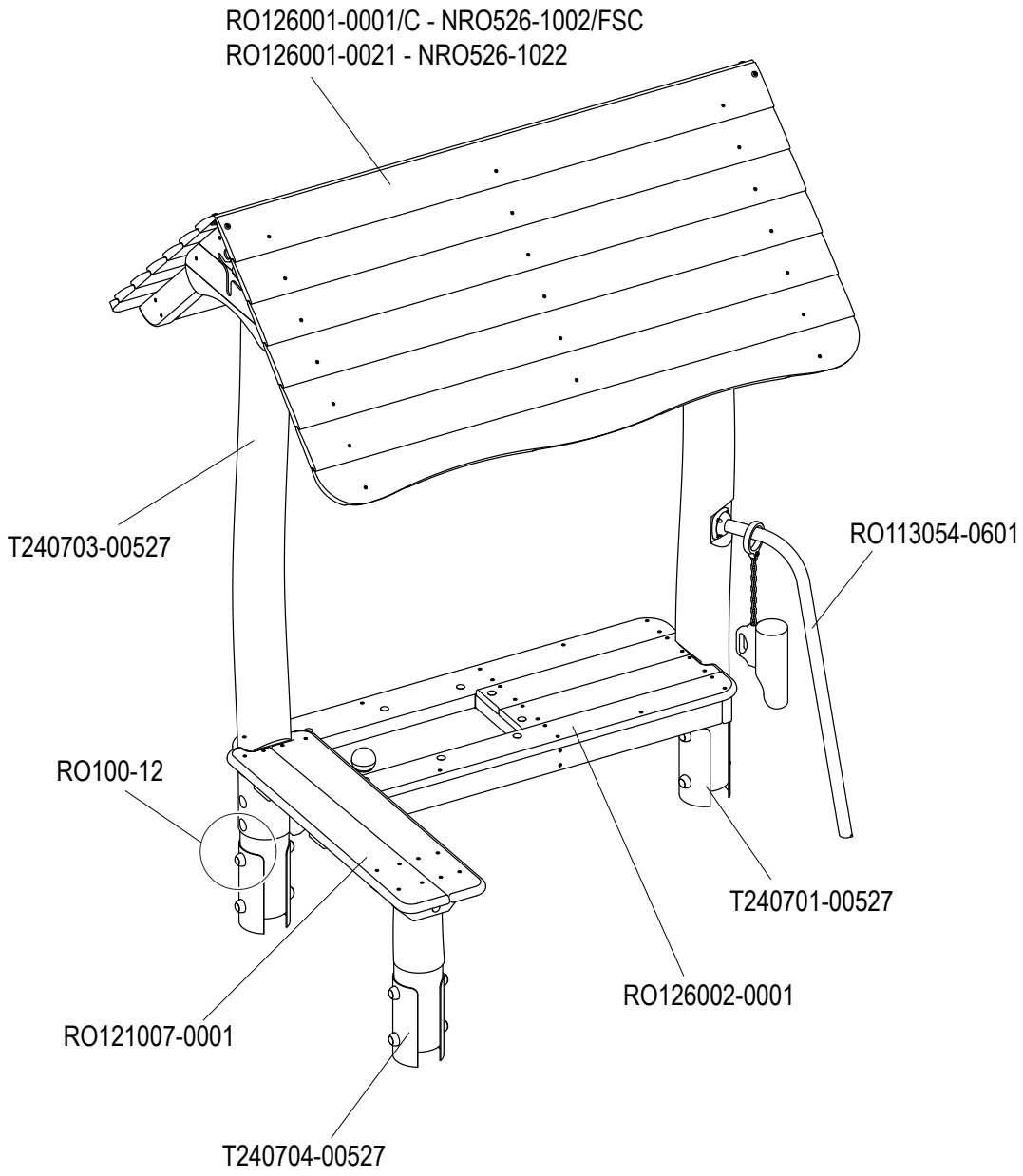
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**SECTION 11 68 13**
**PLAYGROUND EQUIPMENT AND STRUCTURES**

## PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes installation of owner-furnished, contractor installed (OFCI) playground equipment and amenities, including:
   1. Playground equipment
   2. Playground benches
   3. Playground signage

B. Related Requirements:
   1. Section 033000 "Cast-in-Place Concrete"
   2. Section 321816.13 “Playground Protective Surfacing”

1.03 DEFINITIONS

A. Definitions in ASTM F1487 apply to Work of this Section.
B. IPEMA: International Play Equipment Manufacturers Association.

1.04 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.05 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer manufacturer and testing agency.
B. Product Certificates: For each type of playground equipment.
C. Sample Warranty: For manufacturer's special warranties.

1.06 CLOSEOUT SUBMITTALS

A. Maintenance Data: For playground equipment and finishes to include in maintenance manuals.

1.07 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by the manufacturer.
   1. **Installers must have a current manufacturer’s Factory Certification and at least 1 staff member CPSI certified. Installers must have completed projects of this size from the manufacturer in the past 2 years.**

1.08 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of playground equipment that fail in materials or workmanship within specified warranty period.
   1. Failures include, but are not limited to, the following:
      a. Structural failures.
      b. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.
   2. Warranty Period: Per specific manufacturer.

## PART 2 - PRODUCTS

2.01 OWNER-FURNISHED, CONTRACTOR INSTALLED PLAY EQUIPMENT

1. Manufacturer:
   a. Park & Play Structures. Contact Kathy Wiggins at 661.964.7626. kathy.wiggins@playandpark.com
      1) Park & Play Structures Color: **Safari Color Palette**
   b. **TK/K Sensory Totem, Item E-1 on Sheet LC-0.01 of the Contract Plans.**
      **1) Model: #YP446**
   c. **TK/K Play Wheelchair Accessible Structure, Item E-4 on Sheet LC-0.01 of the Contract Plans.**
      **1) Model: #821-169979A.**
   d. **TK/K Double Bay 8 ft. Arch Swing with Selfie Swings and Made-for-Me Swings, Item E-5 on Sheet LC-0.01 of the Contract Plans.**
      **1) Model: #67558/#68035, #65167 and #67860.**
   e. **TK/K Climb & Discover Cave, Item E-6 on Sheet LC-0.01 of the Contract Plans.**
      **1) Model: #67994**
   f. **TK/K Four 4 All Rocker, Item E-7 on Sheet LC-0.01 of the Contract Plans.**
      **1) Model: #65285.**
   g. **TK/K Cozy Pod Spinner, Item E-8 on Sheet LC-0.01 of the Contract Plans.**
      **1) Model: #UPLAY033**
   h. **TK/K Double WaterWay, Item E-9 on Sheet LC-0.01 of the Contract Plans.**
      **1) Model: #MEC049**
   i. **TK/K Triple Conga Drum, Item E-10 on Sheet LC-0.01 of the Contract Plans.**
      **1) Model: #68140**
   j. **TK/K Presto, Item E-11 on Sheet LC-0.01 of the Contract Plans.**
      **1) Model: #68129**
   k. **1st-3rd Play Structure, Item E-12 on Sheet LC-0.01 of the Contract Plans.**
      **1) Model: #821-169933A**
   l. **1st-3rd Leaf Hop, Item E-13 on Sheet LC-0.01 of the Contract Plans.**
      **1) Model: #65130**
   m. **1st-3rd Junior Synchro Spinner, Item E-14 on Sheet LC-0.01 of the Contract Plans.**
      **1) Model: MEC130**
   n. **1st-3rd Mushroom (Freenotes), Item E-15 on Sheet LC-0.01 of the Contract Plans.**
      **1) Model: #MUSH-SML-IG**
   o. **1st-3rd Flower (Freenotes), Item E-16 on Sheet LC-0.01 of the Contract Plans.**
      **1) Model: #FWR-T-IG**
   p. **1st-3rd Communication Panel with Spanish, Item E-17 on Sheet LC-0.01 of the Contract Plans.**
      **1) Model: #65292**
   q. **1st-3rd Double Bay 8 ft. Arch Swing with TweenMates Swings and Made-for-Me Swings, Item E-18 on Sheet LC-0.01 of the Contract Plans.**
      **1) Model: #67558/#68035, #65179, and #67915**

r. **1st-3rd Moon Crater Climber, Item E-19 on Sheet LC-0.01 of the Contract Plans.**
   **1) Model: #UPLAY-032**
s. **1st-3rd Activity Meters, One (1) meter with two sided fun mirror and One (1) with two sided jambox w/ adaptive switch port, Item E-20 on Sheet LC-0.01 of the Contract Plans.**
   **1) Model: #68115, #7340 and #7342**
t. **3rd-5th Activity Meters, One (1) meter with two sided rain panel and One (1) meter with two sided hypnotic wheel, One (1) meter with two sided color wheel, Item E-21 on Sheet LC-0.01 of the Contract Plans.**
   **1) Model: #68115, #7355, #7310 and #7348.**
u. **3rd-5th Wheelchair Accessible Play Structure, Item E-22 on Sheet LC-0.01 of the Contract Plans.**
   **1) Model: #821-169857A**
v. **3rd-5th Spinning Seat, Item E-23 on Sheet LC-0.01 of the Contract Plans.**
   **1) Model: #68156**
w. **3rd-5th Triple Bay 8 ft. Arch Swings with Tweemates swing, One-For-All Swing and Made-For-Me Swing, Item E-24 on Sheet LC-0.01 of the Contract Plans.**
   **1) Model: #65179, #65169, #67734, and #67915**
x. **3rd-5th Tune Drums, Item E-25 on Sheet LC-0.01 of the Contract Plans.**
   **1) Model: #TD-IG-N**
y. **3rd-5th Four 4 All Rocker, Item E-26 on Sheet LC-0.01 of the Contract Plans.**
   **1) Model: #65285**
z. **3rd-5th Presto, Item E-27 on Sheet LC-0.01 of the Contract Plans.**
   **1) Model: #68129**
aa. **3rd-5th Double Temple Trolley with One (1) Made-For-Me seat and One (1) Temple Trolley Belt Seat package, Item E-28 on Sheet LC-0.01 of the Contract Plans.**
   **1) Model: #65275, #65278 and #65277**
bb. **3rd-5th Sonata, Item E-29 on Sheet LC-0.01 of the Contract Plans.**
   **1) Model: #68128**
cc. **3rd-5th Inclusive Orbit, Item E-30 on Sheet LC-0.01 of the Contract Plans.**
   **1) Model: #65218**

2. Manufacturer:
   a. Kompan. Contact James Collis at 805.795.3721. jamcol@kompan.com
      1) Kompan Structures Color: Robinia Turquoise Roof, Wood Base.
   b. **TK/K Gas Station with 2 Pumps, Item E-2 on Sheet LC-0.01 of the Contract Plans.**
      **1) Model: #NRO513**
   c. **TK/K Oasis Sand Hut with Two Tables, Item E-3 on Sheet LC-0.01 of the Contract Plans.**
      **1) Model: #NRO526**

2.02 OWNER-FURNISHED, CONTRACTOR INSTALLED AMENITIES / SIGNAGE

1. Manufacturer:
   a. Park & Play Structures. Contact Kathy Wiggins at 661.964.7626. kathy.wiggins@playandpark.com
      1) Park & Play Structures Color: **Safari Color Palette**
   b. **Punched Steel 6 ft. Bench with Back, Item A-1 on Sheet LC-0.01 of the Contract Plans.**

**1) Model: # SF-126**

c. **TK/K Inclusive Signage, Welcome Sign and Play On Signage, Item A-2 on Sheet LC-0.01 of the Contract Plans.**
**1) Model: #65193, #65291, #65192.**

d. **1st-3rd Welcome Signage, Play On Signage, Item A-4 on Sheet LC-0.01 of the Contract Plans.**
**1) Model: #65288 and #65192**

e. **3rd-5th Inclusive Signage, Welcome Signage and Play On Signage, Item A-4 on Sheet LC-0.01 of the Contract Plans.**
**1) Model: #65193, #65288 and #65192.**

2.03 FABRICATION

A. Factory Assembly: Factory assemble components to greatest extent possible to minimize field assembly. Clearly mark units for assembly in the field.

2.04 CAST-IN-PLACE CONCRETE

1. Concrete Materials and Properties: Class A per Section 033000 "Cast-in-Place Concrete"

**PART 3 - EXECUTION**

3.01 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for earthwork, subgrade elevations, surface and subgrade drainage, and other conditions affecting performance of the Work.
1. Do not begin installation before final grading required for placing playground equipment and protective surfacing is completed.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Comply with manufacturer's written installation instructions for each equipment type unless more stringent requirements are indicated. Anchor playground equipment securely, positioned at locations and elevations indicated.
1. Maximum Equipment Height: Coordinate installed fall heights of equipment with finished elevations and critical-height values of protective surfacing. Set equipment so fall heights and elevation requirements for age group use and accessibility are within required limits. Verify that playground equipment elevations comply with requirements for each type and component of equipment.

B. Post and Footing Excavation: Excavate holes for posts and footings as indicated in firm, undisturbed or compacted subgrade soil.

C. Post Set with Concrete Footing: Comply with Section 033000 "Cast-in-Place Concrete" for measuring, batching, mixing, transporting, forming, and placing concrete.
1. Set equipment posts in concrete footing. Protect portion of posts above footing from concrete splatter. Verify that posts are set plumb or at the correct angle, alignment, height, and spacing.
a. Place concrete around posts and vibrate or tamp for consolidation. Hold posts in position during placement and finishing operations until concrete is sufficiently cured.
2. Embedded Items: Follow equipment manufacturer's written instructions and drawings to ensure correct installation of anchorages for equipment.
3. Finishing Footings: Smooth top, and shape to shed water.

3.03 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
B. Playground equipment items will be considered defective if they do not pass tests and inspections.
C. Prepare test and inspection reports.
D. Notify Architect and Owner 48 hours in advance of date(s) and time(s) of testing and inspection.

**END OF SECTION 11 68 13**

# SECTION 32 11 23

# AGGREGATE BASE COURSES

## PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes the following:
   1. Aggregate base course for, but not limited to concrete flatwork, seatwalls, poured in place rubberized surfacing, and drainage as shown in the Contract Drawings.

B. Related Sections include the following:

   1. Section 01 45 00 - Quality Control
   2. Section 31 20 00 – Earth Moving
   3. Section 31 23 17 - Trenching
   4. Section 31 23 23 - Backfilling
   5. Section 32 12 16 - Asphalt Paving
   6. Section 32 16 00 - Concrete Paving

1.02 REFERENCE STANDARDS

A. *Standard Specification for Public Works Construction (SSPWC)*, Latest Edition
B. ASTM Standards.
C. State Standard Specifications (SSS), Caltrans, latest edition.

1.03 SUBMITTALS

A. Submit product data, samples, and manufacturing sources for materials. All product data shall also include source or manufacturer's name, address, and telephone numbers. Product submittals shall state the amount of recycled materials.
B. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the requirements indicated, based on comprehensive testing of current materials.
C. Material Certificates in lieu of material laboratory test reports when permitted by the ~~City of Guadalupe~~ **District**. Material certificates shall be signed by the manufacturer and Contractor certifying that each material item complies with or exceeds requirements.
D. Submit samples in sufficient quantities for material testing.

## PART 2 - PRODUCTS

2.01 MATERIALS

A. Aggregate Base Material shall be Class 2 Aggregate Base conforming to SSS Section 26-1.02A. Aggregate Base shall have a minimum sand equivalence of 22 and a minimum R-value of 78 and shall be free of organic materials and other deleterious substances.
B. Aggregate Base materials used within building areas shall be free of asphaltic materials.

## PART 3 - EXECUTION

3.01 GENERAL

A. Attention is directed to Section 301-2, “Untreated Base,” of the Greenbook.

3.2 EXAMINATION

A. Verify that subgrade is firm and unyielding, gradients and elevations are correct, area is at suitable moisture content with no standing water, and the Geotechnical Engineer has approved subgrade preparation prior to installation of aggregate base.

3.03 PREPARATION

A. Attention is directed to Section 301-1, “Subgrade Preparation,” of the Greenbook.
B. Correct irregularities in substrate gradient and elevation by scarifying, reshaping, and re-compacting.
C. Do not place fill on soft, yielding, or muddy surfaces.

3.04 AGGREGATE PLACEMENT

A. Aggregate base placement shall conform to the provisions of the SSPWC, Section 301-2.
B. Place aggregate in maximum six-inch loose layers and roller compact to specified density.
C. Level and contour surfaces to elevations and gradients indicated. Attention is directed to Section 301-2, "Untreated Base" of the Greenbook.
D. Crushed aggregate base shall be compacted to a minimum of 95% relative compaction in accordance with the California Test Method 216 or ASTM D1557 at the Geotechnical Engineers direction.
E. Add water to assist compaction. If excess water is apparent, remove aggregate and aerate to reduce moisture content.
F. Where the required aggregate base thickness is 6 inches or less, the watered base may be spread and compacted in one layer. Where the required thickness is more than 6 inches, the aggregate base material shall be spread and compacted in 2 or more layers of approximately equal thickness. The maximum compacted thickness of any one layer shall not exceed 6 inches.
G. Maintain optimum moisture content of fill materials to attain required compaction density.
H. Use mechanical tamping equipment in areas inaccessible to compaction equipment.
I. Aggregate base course shall be dense and unyielding upon proof-rolling with full water truck.

3.05 COMPACTION & TOLERANCES

A. Flatness: Maximum variation of ¼ inch.
B. Scheduled Compacted Thickness shall conform to the provisions of the SSPWC Section 301-2.2 and Section 301-2.3.

3.06 FIELD QUALITY CONTROL

A. Tests.
1. Inspection and testing shall be performed by the Owner’s Testing Laboratory.
2. Compaction testing will be performed in accordance with California Test Method 216 or ASTM D1557 at the Geotechnical Engineers direction.

3. When tests indicate Work does not meet specified requirements, remove, replace and retest work at no additional cost to the Owner.
4. Frequency of Tests: Compaction tests will be taken at the rate of one test for each 500 square yards per lift placed, or as directed by the Geotechnical Engineer, in accordance with the requirements of ASTM D2922 and ATM D3017. Areas represented by noncompliant tests shall be reworked and retested for compliance at the Contractor's expense.

**END OF SECTION 32 11 23**

# SECTION 32 32 13

# CONCRETE WALLS

## PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Cast-in-Place Concrete Seat Wall

B. Related Requirements:

1. Section 032000 "Concrete Reinforcement"
2. Section 033000 "Cast-in-Place Concrete"

1.2 ACTION SUBMITTALS

A. Product Data: For each of the following:

1. Forming accessories
2. Form-release agent.
3. Insulating concrete forms.
4. Form ties.
5. Admixtures
6. Chemical Surface Retarders
7. In-form Chemical Surface Retarders
8. Patching Compounds
9. Sealants
10. Qualification Data: For Installer, manufacturer and testing agency.
11. Field quality-control test and inspection reports.

B. INFORMATIONAL SUBMITTALS

C. Product Data: For surface retarder

1.3 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who employs Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.

B. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from one source, and obtain admixtures through one source from a single manufacturer.

C. ASTM International Standards

1. ASTM E408-71 (1996), Standard Test Methods for Total Normal Emittance of Surfaces using Inspection-Meter Techniques.
2. ASTM C1371-04a Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometer
3. ASTM E903-96, Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres.
4. ASTM E1918-97, Standard Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surface in the Field.
5. ASTM C1549-04 Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer.

D. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:

1. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

1.4 DELIVERY, STORAGE, AND HANDLING

A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

B. Insulating Concrete Forms: Store forms off ground and under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

**PART 2 - PRODUCTS**

2.1 PERFORMANCE REQUIREMENTS

A. Concrete Formwork: Design, engineer, erect, shore, brace, and maintain formwork, shores, and reshores in accordance with ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads, so that resulting concrete conforms to the required shapes, lines, and dimensions.

1. Design wood panel forms in accordance with APA's "Concrete Forming Design/Construction Guide."
2. Design formwork to limit deflection of form-facing material to 1/240 of center-to-center spacing of supports.

B. Design, engineer, erect, shore, brace, and maintain insulating concrete forms in accordance with ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads, so that resulting concrete conforms to the required shapes, lines, and dimensions.

2.2 STEEL REINFORCEMENT

A. See Section 03 20 00 “Concrete Reinforcement”

2.3 RELATED MATERIALS

A. Form-Release Agent: Commercially formulated form-release agent that does not bond with, stain, or adversely affect concrete surfaces and does not impair subsequent treatments of concrete surfaces.

1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
2. Form release agent for form liners shall be acceptable to form liner manufacturer.

B. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.

C. Semirigid Joint Filler: Two-component, semirigid, 100 percent solids, aromatic polyurea with a Type A shore durometer hardness range of 90 to 95 per ASTM D 2240.

D. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

E. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:

1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

F. Form Ties: Factory-fabricated, removable or snap-off, glass-fiber-reinforced plastic or metal form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

1. Furnish units that leave no corrodible metal closer than 2 inch to the plane of exposed concrete surface.
2. Furnish ties that, when removed, leave holes no larger than 2 inch in diameter in concrete surface.

3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

2.4 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

B. Admixtures: Use admixtures according to manufacturer's written instructions.

1. Use water-reducing high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.
2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.
4. Use corrosion-inhibiting admixture in concrete mixtures where indicated.
5. Limit lime content in concrete to prevent efflorescence and all other visual defects.

2.5 CONCRETE SURFACE RETARDERS/FINISHING AIDS

A. In-Form chemical surface retarder, calibrated for specific sized aggregates and finish requirements

B. Spray Applied, film forming top surface retarder, calibrated for specific sized aggregates and finish requirements without the use of a plastic covering. Color-coded to allow for ease of application and verification of grade being used as well as even and complete coverage.

1. Acceptable Materials: TOP-CAST water-based Top-Surface Retarders

a. TOP-CAST grade to be ‘Medium Exposure’ 25 Beige color-coded surface retarder.

2. Spray Applied, film forming protective coating for adjacent masonry and concrete surfaces.

a. Acceptable Materials: TOP-CAST SS 100 Site Saver

3. All products distributed by:

a. Manufacturer: GCP Applied Technologies Inc., 2325 Lakeview Parkway, Suite 400, Alpharetta, GA 30009, 1-877-423-6491, https://gcpat.com/en/products/top-cast-decorative-system

**PART 3 - EXECUTION**

3.1 FORMWORK

A. Preparations: All concrete form materials should be free of all oils, chemical residues, greases and other materials that may interfere with the adherence of the painted retarder film to the form surface.

1. Clean all previously used formwork using mineral spirits, acetone or denatured alcohol prior to the application of the form retarder.
2. All timber, plywood and other wood surfaces to be used in the treated areas exposed to view and coated with chemical retarder should be properly sealed prior to any application of the form retarder. This will aide in form clean-up and reduce possible etch differences caused by absorption of the retarders active ingredients as well as cement paste and surface moisture during both the placement and curing processes.

B. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical,

lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.

C. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

D. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:

1. Class A, 1/8 inch (3.2 mm) for smooth-formed finished surfaces that are exposed to view.

E. Construct forms tight enough to prevent loss of concrete mortar.

F. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.

1. Install keyways, reglets, recesses, and the like, for easy removal.

G. Do not use rust-stained steel form-facing material.

H. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

I. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

J. Chamfer exterior corners and edges of permanently exposed concrete.

K. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

L. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

M. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

3.2 RELEASE AGENT

A. Preparations: Form surfaces shall be clean and dry. Remove traces of concrete build-up from form surfaces before applying release agent.

B. Spray apply continuous uniform film free from runs.

C. Avoid overspray on reinforcing materials. Remove overspray on reinforcing materials within 24 hours using degreasing solvent recommended by release agent manufacturer.

D. Do not apply more than 14 days before placing concrete. [Do not apply water-based release agents when ambient or material temperatures are below freezing.]

E. Touch up forms, if necessary, using clean, soft flannel cloth moistened (not wet) with release agent.

F. Protect treated forms from dust, debris and precipitation. Before placing concrete, inspect in-place, erected and treated forms; remove contamination and touch-up forms as required.

3.3 STEEL REINFORCEMENT

A. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.

B. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.

C. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

3.4 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired.

1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches (38 mm) into concrete.
3. Space vertical joints in walls as indicated. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.

C. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

3.5 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

B. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.

1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

C. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.

D. Maintain reinforcement in position on chairs during concrete placement.

E. Screed slab surfaces with a straightedge and strike off to correct elevations.

F. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

3.6 CONCRETE SURFACE FINISHING

A. Concrete Surface Retarders:

1. Spray-applied, film forming top surface retarder, calibrated for specific sized aggregates and specific finish requirements without the use of a plastic covering. Color-coded to allow for ease of application and verification of grade being used as well as even and complete coverage.
2. Allow the bleed water to evaporate the surface. It can then be floated using a wooden hand float or a bull-float preferably wooden to close the surface and surround the coarse aggregate with cement paste. DO NOT OVERWORK THE SURFACE, AS THIS TENDS TO DRIVE THE AGGREGATE DOWN AWAY FROM THE SURFACE TO BE EXPOSED. Float to a uniform appearance.
3. Apply TOP-CAST surface retarder uniformly to the wet concrete after the initial bleed water rises to the surface. Spray with a low-pressure sprayer (plastic preferred) until the

surface has a complete hiding coat. Do not apply too sparingly. Use water for clean up.

3.7 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

3.8 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.

D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.

E. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

1. After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer unless manufacturer certifies curing compound will not interfere with bonding of floor covering used on Project.

3.9 REMOVING AND REUSING FORMS

A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F (10 deg C) for 24 hours after placing concrete, if concrete is hard enough to not be damaged by form-removal operations and curing and protection operations are maintained.

1. The treated retarder matrix should be removed the same day per manufacturer recommendations. (Any delay in the removal of the chemically retarded cement matrix after the formwork has been removed will lead to potential inconsistencies due to the changing ambient conditions such as temperatures, humidity along with wind and rain.)

B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new in-form retarder

3.10 JOINT FILLING

A. Prepare, clean, and install joint filler according to manufacturer's written instructions.

1. Defer joint filling until concrete has aged at least six month(s). Do not fill joints until construction traffic has permanently ceased.

B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.

3.11 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by ~~City~~ **the District** representative. Remove and replace concrete that cannot be repaired and patched to ~~City~~ **the District** representative's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 (1.18-mm) sieve, using only enough water for handling and placing.

C. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
2. After concrete has cured at least 14 days, correct high areas by grinding.
3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch (6 mm) to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
6. Repair defective areas, except random cracks and single holes 1 inch (25 mm) or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch (19-mm) clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.

D. Repair random cracks and single holes 1 inch (25 mm) or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Architect's approval.

**END OF SECTION 32 32 13**

# SECTION 32 92 00

# TURF AND GRASSES

## PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section Includes:

1. Sodding.

B. Related Requirements:

1. Section 329300 "Plants" for trees, shrubs, ground covers, and other plants as well as border edgings and mow strips.

1.03 DEFINITIONS

A. Finish Grade: Elevation of finished surface of planting soil.

B. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant. **VUSD is a pesticide free district. All pest and weed abatement shall be per VUSD requirements and utilize non-toxic ingredients, such as Earth's Ally or approved equal. Toxic chemical based pesticides are prohibited.**

C. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

D. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. See Section 329115 "Soil Preparation (Performance Specification)" and drawing designations for planting soils.

E. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

1.04 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Construction Manager, Superintendent, Landscape Contractor Foreman, Landscape Architect.

1.05 INFORMATIONAL SUBMITTALS

A. Certification of Grass Sod: From seed vendor for each grass-seed monostand or mixture, stating the botanical and common name, percentage by weight of each species and

variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.

1. Certification of each seed mixture for turfgrass sod. Include identification of source and name and telephone number of suppliers.

B. Product Certificates: For fertilizers, from manufacturer.

1.06 CLOSEOUT SUBMITTALS

A. Maintenance Data: Recommended procedures to be established by Owner for maintenance of turf and meadows during a calendar year. Submit before expiration of required maintenance periods.

1.07 QUALITY ASSURANCE

1.08 DELIVERY, STORAGE, AND HANDLING

A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws, as applicable.

B. Sod: Harvest, deliver, store, and handle sod according to requirements in "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" sections in TPI's "Guideline Specifications to Turfgrass Sodding." Deliver sod within 24 hours of harvesting and in time for planting promptly. Protect sod from breakage and drying.

C. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Accompany each delivery of bulk materials with appropriate certificates.

1.09 FIELD CONDITIONS

A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of planting completion.

1. Fall Planting: October 15 through December 31.

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

**PART 2 - PRODUCTS**

2.01 TURFGRASS SOD

A. Turfgrass Sod: Certified, complying with "Specifications for Turfgrass Sod Materials" in TPI's "Guideline Specifications to Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture that is strongly rooted and capable of vigorous growth and development when planted.

B. Turfgrass Species, Cool-Season Grass: Sod of grass species as follows, with not less than 85 percent germination, not less than 95 percent pure seed, and not more than 0.5 percent weed seed:

1. Products: Subject to compliance with requirements, provide the following available products that may be incorporated into the Work include, but are not limited to, the following:

a. Marathon II Sod.
b. Biofiltration Sod.

2.02 FERTILIZERS

A. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition:

a. 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.

b. Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

**PART 3 - EXECUTION**

3.01 EXAMINATION

A. Examine areas to be planted for compliance with requirements and other conditions affecting installation and performance of the Work.

1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
2. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
3. Uniformly moisten excessively dry soil that is not workable, or which is dusty.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.

3.02 PREPARATION

A. Protect structures; utilities; sidewalks; pavements; and other facilities, trees, shrubs, and plantings from damage caused by planting operations.

1. Protect adjacent and adjoining areas from hydroseeding and hydromulching overspray.

2. Protect grade stakes set by others until directed to remove them.

## 3.03 TURF AREA PREPARATION

A. General: Prepare planting area for soil placement and mix planting soil according to Section 329115 "Soil Preparation (Performance Specification)."

B. Placing Planting Soil: Blend planting soil in place.

1. Reduce elevation of planting soil to allow for soil thickness of sod.

C. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

D. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.04 SODDING

A. Lay sod within 24 hours of harvesting unless a suitable preservation method is accepted by Architect prior to delivery time. Do not lay sod if dormant or if ground is frozen or muddy.

B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to soil or sod during installation. Tamp and roll lightly to ensure contact with soil, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.

1. Lay sod across slopes exceeding 1:3.

C. Saturate sod with fine water spray within two hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2 inches below sod.

3.05 TURF MAINTENANCE

A. General: Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.

1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
2. ~~Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.~~ **VUSD is a pesticide free district. All pest and weed abatement shall be per VUSD requirements and utilize non-toxic ingredients, such as Earth's Ally or approved equal. Toxic chemical based pesticides are prohibited.**

B. Watering: Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches.

1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
2. Water turf with fine spray at a minimum rate of 1 inch per week unless rainfall precipitation is adequate.

C. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than one-third of grass height. Remove no more

than one-third of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:

1. Mow Marathon II Sod to a height of 1-1/2 to 2 inches.

D. Turf Postfertilization: Apply slow-release fertilizer after initial mowing and when grass is dry.

1. Use fertilizer that provides actual nitrogen of at least 1 lb/1000 sq. ft. to turf area.

2. Continue weed and feed application for one year or a total of 4 applications to new and established areas.

3.06 SATISFACTORY TURF

A. Turf installations shall meet the following criteria as determined by Architect:

1. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches.

2. Satisfactory Sodded Turf: At end of maintenance period, a healthy, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.

B. Use specified materials to reestablish turf that does not comply with requirements and continue maintenance until turf is satisfactory.

3.07 CLEANUP AND PROTECTION

A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Owner's property.

C. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.

**END OF SECTION 32 92 00**

**SECTION 32 93 00**

**PLANTS**

## PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Plants and Trees.

B. Related Requirements:

1. Section 01 56 39 "Temporary Tree and Plant Protection" for protecting, trimming, pruning, repairing, and replacing existing trees to remain that interfere with, or are affected by, execution of the Work.
2. Section 32 91 15 "Soil Preparation"
3. Section 32 94 00 “Landscape Planting Accessories”
4. Section 32 98 13 “Landscape Maintenance/Establishment Period”

1.2 DEFINITIONS

A. Backfill: The earth used to replace or the act of replacing earth in an excavation.

B. Container-Grown Stock: Healthy, vigorous, well-rooted plants grown in a container, with a well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for type and size of plant required.

C. Finish Grade: Elevation of finished surface of planting soil.

D. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant. Some sources classify herbicides separately from pesticides. **VUSD is a pesticide free district. All pest and weed abatement shall be per VUSD requirements and utilize non-toxic ingredients, such as Earth’s Ally or approved equal. Toxic chemical based pesticides are prohibited.**

E. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

F. Planting Area: Areas to be planted.

G. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. See Section 32 91 13 "Soil Preparation for drawing designations for planting soils.

H. Plant; Plants; Plant Material: These terms refer to vegetation in general, including trees, shrubs, vines, ground covers, ornamental grasses, bulbs, corms, tubers, or herbaceous vegetation.

I. Root Flare: Also called "trunk flare." The area at the base of the plant's stem or trunk where the

stem or trunk broadens to form roots, the area of transition between the root system and the stem or trunk.

J. Stem Girdling Roots: Roots that encircle the stems (trunks) of trees below the soil surface.

K. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Plant Materials: Include quantities, sizes, quality, and sources for plant materials.
2. Plant Photographs: Include color photographs in digital format of each required species and size of plant material as it will be furnished to Project. Take photographs from an angle depicting true size and condition of the typical plant to be furnished. Include a scale rod or other measuring device in each photograph. For species where more than 50 plants are required, include a minimum of three photographs showing the average plant, the best quality plant, and the worst quality plant to be furnished. Identify each photograph with the full scientific name of the plant, plant size, and name of the growing nursery.

B. Samples for Verification: For each of the following:

1. Organic Mulch: 1-quart volume of each organic mulch required; in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of color, texture, and organic makeup.
2. Weed Control Barrier: 12 by 12 inches.
3. Root Barrier: Width of panel by 12 inches.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For landscape Installer. Include list of similar projects completed by Installer demonstrating Installer's capabilities and experience. Include project names, addresses, and year completed, and include names and addresses of owners' contact persons.

B. Product Certificates: For each type of manufactured product, from manufacturer, and complying with the following:

1. Manufacturer's certified analysis of standard products.
2. Analysis of other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.

C. Pesticides and Herbicides: Product label and manufacturer's application instructions specific to Project.

D. Sample Warranty: For special warranty.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: Recommended procedures to be established by Owner for maintenance of plants during a calendar year. Submit before expiration of required maintenance periods.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful establishment of plants.

1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.

B. Provide quality, size, genus, species, and variety of plants indicated, complying with applicable requirements in ANSI Z60.1.

C. Measurements: Measure according to ANSI Z60.1. Do not prune to obtain required sizes.

1. Trees and Shrubs: Measure with branches and trunks or canes in their normal position. Take height measurements from or near the top of the root flare for field-grown stock and container-grown stock. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip to tip. Take caliper measurements 6 inches above the root flare for trees up to 4-inch caliper size, and 12 inches above the root flare for larger sizes.
2. Other Plants: Measure with stems, petioles, and foliage in their normal position.

D. Plants & Trees. The Contractor shall notify the District Representative seven (7) days in advance of delivery of all plant materials and shall submit an itemized list of the plants in each delivery. Maintain and protect plant material in a healthy condition prior to planting. Plant material which has been rejected or damaged after acceptance shall be removed from the site and replaced with acceptable materials.

1. Trees and shrubs provided shall be of equal or better quality to those available at Norman’s Nursery, Devil Mountain Wholesale Nursery or Boething Treeland Farms.
2. All plants and trees shall be No. 1 grade healthy, disease, and pest free, without visible damage, abrasions, or disfigurement.

E. Plants specified shall be delivered in the containers specified and true to industry standard size for the container specified. Plants shall have been growing with the specified container a minimum of six months and no longer than one (1) year and shall be properly rooted without being root bound. Plants with cracked or broken root balls shall be rejected.”

F. All trees shall be true to type or name as ordered or shown on the plans and shall be individually tagged or tagged in groups by species and cultivar (variety).

G. All trees shall be healthy, have a form typical for the species or cultivar, be well-rooted, strong in branching pattern and properly trained. Trees which are deemed by the District Representative not to have these qualities will be rejected and replaced without additional charge to the District.

H. All trees shall comply with Federal and State laws requiring inspection for plant diseases and pest infestations. Inspection certificates required by law shall accompany each shipment of plants.

I. Plant Material Observation: Landscape Architect and District Representative may observe plant material either at place of growth or at site before planting for compliance with requirements for genus, species, variety, cultivar, size, and quality. Landscape Architect and District Representative may also observe trees and shrubs further for size and condition of balls and root systems, pests, disease symptoms, injuries, and latent defects and may reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from Project site.

1. Notify Landscape Architect of sources and estimated time of delivery of planting materials seven days in advance of delivery to site.
2. Rejected plant material must be removed from the Project Site and replaced at the Contractor's time and expense.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws if applicable.

B. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Accompany each delivery of bulk materials with appropriate certificates.

C. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during shipping and delivery. Do not drop plants during delivery and handling.

D. Handle planting stock by root ball.

E. Apply antidesiccant to trees and shrubs using power spray to provide an adequate film over trunks (before wrapping), branches, stems, twigs, and foliage to protect during digging, handling, and transportation.

1. If deciduous trees or shrubs are moved in full leaf, spray with antidesiccant at nursery before moving and again two weeks after planting.

F. Deliver plants after preparations for planting have been completed and install immediately. If planting is delayed more than six hours after delivery, set plants and trees in their appropriate aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.

1. Retain subparagraphs below to suit Project.
2. Do not remove container-grown stock from containers before time of planting.
3. Water root systems of plants stored on-site deeply and thoroughly with a fine-mist spray. Water as often as necessary to maintain root systems in a moist, but not overly wet condition.

1.8 FIELD CONDITIONS

A. Field Measurements: Verify actual grade elevations, service and utility locations, irrigation system components, and dimensions of plantings and construction contiguous with new plantings by field measurements before proceeding with planting work.

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's

written instructions and warranty requirements.

1.9 WARRANTY

A. Special Warranty: Installer agrees to repair or replace plantings and accessories that fail in materials, workmanship, or growth within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Death and unsatisfactory growth, except for defects resulting from abuse, lack of adequate maintenance, or neglect by Owner.
b. Structural failures including plantings falling or blowing over.
c. Faulty performance of tree stabilization.
d. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

2. Warranty Periods: From date of planting completion.

a. Trees, Shrubs, Vines, and Ornamental Grasses: 12 months.
b. Ground Covers, Biennials, Perennials, and Other Plants: 12 months.
c. Annuals: 6 months.

3. Include the following remedial actions as a minimum:

a. Immediately remove dead plants and replace unless required to plant in the succeeding planting season.
b. Replace plants that are more than 25 percent dead or in an unhealthy condition at end of warranty period.
c. A limit of one replacement of each plant is required except for losses or replacements due to failure to comply with requirements.
d. Provide extended warranty for period equal to original warranty period, for replaced plant material.

**PART 2 - PRODUCTS**

2.1 PLANT MATERIAL

A. General: Furnish nursery-grown plants true to genus, species, variety, cultivar, stem form, shearing, and other features indicated in Plant List, Plant Schedule, or Plant Legend indicated on Drawings and complying with ANSI Z60.1; and with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.

1. Trees with damaged, crooked, or multiple leaders; tight vertical branches where bark is squeezed between two branches or between branch and trunk ("included bark"); crossing trunks; cut-off limbs more than 3/4 inch in diameter; or with stem girdling roots are unacceptable.
2. Collected Stock: Do not use plants harvested from the wild, from native stands, from an established landscape planting, or not grown in a nursery unless otherwise indicated.

B. Provide plants of sizes, grades, and ball or container sizes complying with ANSI Z60.1 for types and form of plants required. Plants of a larger size may be used if acceptable to Landscape Architect, with a proportionate increase in size of roots or balls.

C. Root-Ball Depth: Furnish trees and shrubs with root balls measured from top of root ball, which begins at root flare according to ANSI Z60.1. Root flare shall be visible before planting.

D. Annuals and Biennials: Provide healthy, disease-free plants of species and variety shown or listed, with well-established root systems reaching to sides of the container to maintain a firm ball, but not with excessive root growth encircling the container. Provide only plants that are acclimated to outdoor conditions before delivery.

2.2 FERTILIZERS

A. Planting Tablets: Tightly compressed chip-type, long-lasting, slow-release, commercial-grade planting fertilizer in tablet form. Tablets shall break down with soil bacteria, converting nutrients into a form that can be absorbed by plant roots.

1. Size: 7-gram tablets.
2. Nutrient Composition: 12 percent nitrogen, 8 percent phosphorous, and 8 percent potassium, by weight plus micronutrients (12-8-8 NPK).

2.3 MULCHES

A. Refer to Section 32 94 00 Landscape Planting Accessories.

2.4 PESTICIDES

~~A. General: Pesticide registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.~~ **VUSD is a pesticide free district. All pest and weed abatement shall be per VUSD requirements and utilize non-toxic ingredients, such as Earth's Ally or approved equal. Toxic chemical based pesticides are prohibited.**

B. Pre-Emergent Herbicide (Selective and Nonselective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.

C. Post-Emergent Herbicide (Selective and Nonselective): Effective for controlling weed growth that has already germinated.

2.5 TREE-STABILIZATION MATERIALS

A. Refer to Section 32 94 00 Landscape Planting Accessories.

2.6 MISCELLANEOUS PRODUCTS

A. Wood Pressure-Preservative Treatment: AWPA U1, Use Category UC4a; acceptable to authorities having jurisdiction, and containing no arsenic or chromium.

B. Root Barrier: Black, molded, modular panels 24" high (deep), 85 mils thick, and with vertical root deflecting ribs protruding 3/4 inch out from panel surface; manufactured with minimum 50 percent recycled polyethylene plastic with UV inhibitors.

1. Manufacturers: Subject to compliance with requirements, provide products by the following:

a. Century Products Root Barrier.

b. Villa Root Barrier.
c. Substitutions: Products by other manufacturers that comply with specifications will be considered in accordance with Section 012500 – Substitution Procedures.

C. Antidesiccant: Water-insoluble emulsion, permeable moisture retarder, film forming, for trees and shrubs. Deliver in original, sealed, and fully labeled containers and mix according to manufacturer's written instructions.

D. Planter Drainage Gravel: Washed, sound crushed stone or gravel complying with ASTM D 448 for Size No. 8.

E. Planter Filter Fabric: Nonwoven geotextile manufactured for separation applications and made of polypropylene, polyolefin, or polyester fibers or combination of them.

F. Mycorrhizal Fungi: Dry, granular inoculant containing at least 5300 spores per lb of vesicular-arbuscular mycorrhizal fungi and 95 million spores per lb of ectomycorrhizal fungi, 33 percent hydrogel, and a maximum of 5.5 percent inert material.

**PART 3 - EXECUTION**

3.1 EXAMINATION

A. Examine areas to receive plants, with Installer present, for compliance with requirements and conditions affecting installation and performance of the Work.

1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
2. Verify that plants and vehicles loaded with plants can travel to planting locations with adequate overhead clearance.
3. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
4. Uniformly moisten excessively dry soil that is not workable or which is dusty.

B. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Landscape Architect and replace with new planting soil.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities and turf areas and existing plants from damage caused by planting operations.

B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

C. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations, outline areas, adjust locations when requested, and obtain Landscape Architect's and City Landscape Inspector’s acceptance of layout before excavating or planting. Make minor adjustments as required.

1. Notify City Landscape Inspector seven days in advance of delivery to site and schedule

an inspection of tree placement.

3.3 PLANTING AREA ESTABLISHMENT

A. General: Prepare planting area for soil placement and mix planting soil according to Section 329115 "Soil Preparation (Performance Specification)."

B. Placing Planting Soil: Blend planting soil in place.

C. Before planting, obtain Landscape Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

D. Planting Pits and Trenches: Excavate circular planting pits.

1. Excavate planting pits with sides sloping inward at a 45-degree angle. Excavations with vertical sides are unacceptable. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil to prevent settling. Scarify sides of planting pit smeared or smoothed during excavation.
2. Excavate approximately three times as wide as ball diameter for container-grown stock.
3. Excavate at least 12 inches wider than root spread and deep enough to accommodate vertical roots for bare-root stock.
4. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.
5. If area under the plant was initially dug too deep, add soil to raise it to the correct level and thoroughly tamp the added soil to prevent settling.
6. Maintain angles of repose of adjacent materials to ensure stability. Do not excavate subgrades of adjacent paving, structures, hardscapes, or other new or existing improvements.
7. Maintain supervision of excavations during working hours.
8. Keep excavations covered or otherwise protected when unattended by Installer's personnel.
9. If drain tile is indicated on Drawings or required under planting areas, excavate to top of porous backfill over tile.

E. Backfill Soil: Subsoil and topsoil removed from excavations may be used as backfill soil unless otherwise indicated. Amend backfill soil as directed by required soil testing per Section 329115 "Soil Preparation (Performance Specification)”

F. Obstructions: Notify Landscape Architect if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavations.

G. Drainage: Notify Landscape Architect if subsoil conditions evidence unexpected water seepage or retention in tree or shrub planting pits.

H. Fill excavations with water and allow to percolate away before positioning trees and shrubs.

3.4 TREE, SHRUB, AND VINE PLANTING

A. Inspection: At time of planting, verify that root flare is visible at top of root ball according to ANSI Z60.1. If root flare is not visible, remove soil in a level manner from the root ball to where the top-most root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements.

B. Roots: Remove stem girdling roots and kinked roots. Remove injured roots by cutting cleanly;

do not break.

1. Backfill: Planting soil amended per required soils tests. For trees, use excavated soil for backfill.
2. After placing some backfill around root ball to stabilize plant, carefully cut and remove burlap, rope, and wire baskets from tops of root balls and from sides, but do not remove from under root balls. Remove pallets, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.
3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
4. Place planting tablets equally distributed around each planting pit when pit is approximately one-half filled. Place tablets beside the root ball about 1 inch from root tips; do not place tablets in bottom of the hole.

    a. Quantity: As indicated on Drawings.

5. Continue backfilling process. Water again after placing and tamping final layer of soil.

C. Container-Grown Stock: Set each plant plumb and in center of planting pit or trench with root flare 2 inches above adjacent finish grades.

1. Carefully remove root ball from container without damaging root ball or plant.
2. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
3. Place planting tablets equally distributed around each planting pit when pit is approximately one-half filled. Place tablets beside the root ball about 1 inch from root tips; do not place tablets in bottom of the hole.

    a. Quantity: As indicated on Drawings

4. Continue backfilling process. Water again after placing and tamping final layer of soil.
5. Slopes: When planting on slopes, set the plant so the root flare on the uphill side is flush with the surrounding soil on the slope; the edge of the root ball on the downhill side will be above the surrounding soil. Apply enough soil to cover the downhill side of the root ball.

## 3.5 TREE, SHRUB, AND VINE PRUNING

A. Remove only dead, dying, or broken branches. Do not prune for shape.

B. Prune, thin, and shape trees, shrubs, and vines as directed by Landscape Architect.

C. Prune, thin, and shape trees, shrubs, and vines according to standard professional horticultural and arboricultural practices. Unless otherwise indicated by Landscape Architect, do not cut tree leaders; remove only injured, dying, or dead branches from trees and shrubs; and prune to retain natural character.

D. Do not apply pruning paint to wounds.

## 3.6 TREE STABILIZATION

A. Trunk Stabilization by Upright Staking and Tying: Install trunk stabilization as follows unless otherwise indicated:

1. Upright Staking and Tying: Stake trees of 2- through 5-inch caliper. Stake trees of less than 2-inch caliper only as required to prevent wind tip out. Use a minimum of two stakes of length required to penetrate at least 18 inches below bottom of backfilled excavation and to extend to the dimension indicated on Drawings above grade. Set vertical stakes and space to avoid penetrating root balls or root masses.
2. Upright Staking and Tying: Stake trees with two stakes for trees up to 12 feet high and 2-1/2 inches or less in caliper; three stakes for trees less than 14 feet high and up to 4 inches in caliper. Space stakes equally around trees.
3. Support trees with bands of flexible ties at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree.
4. Support trees with two strands of tie wire, connected to the brass grommets of tree-tie webbing at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree.

B. Trunk Stabilization by Staking and Guying: Install trunk stabilization as follows unless otherwise indicated on Drawings. Stake and guy trees more than 14 feet in height and more than 3 inches in caliper unless otherwise indicated.

1. Site-Fabricated, Staking-and-Guying Method: Install no fewer than three guys spaced equally around tree.

    a. Securely attach guys to stakes 30 inches long, driven to grade. Adjust spacing to avoid penetrating root balls or root masses. Provide turnbuckle for each guy wire and tighten securely.
    b. For trees more than 6 inches in caliper, anchor guys to wood deadmen buried at least 36 inches below grade. Provide turnbuckle for each guy wire and tighten securely.
    c. Support trees with bands of flexible ties at contact points with tree trunk and reaching to turnbuckle. Allow enough slack to avoid rigid restraint of tree.
    d. Attach flags to each guy wire, 30 inches above finish grade.

2. Proprietary Staking and Guying Device: Install staking and guying system sized and positioned as recommended by manufacturer unless otherwise indicated and according to manufacturer's written instructions.

## 3.7 ROOT-BARRIER INSTALLATION

A. Install root barrier where trees are planted within 60 inches of paving or other hardscape elements, such as walls, curbs, and walkways, unless otherwise indicated on Drawings.

B. Align root barrier vertically and run it linearly along and adjacent to the paving or other hardscape elements to be protected from invasive roots.

C. Install root barrier continuously for a distance of 60 inches in each direction from the tree trunk, for a total distance of 10 feet per tree. If trees are spaced closer, use a single continuous piece of root barrier.

1. Position top of root barrier flush with finish grade.
2. Overlap root barrier a minimum of 12 inches at joints.
3. Do not distort or bend root barrier during construction activities.
4. Do not install root barrier surrounding the root ball of tree.

## 3.8 GROUND COVER AND PLANT PLANTING

A. Set out and space ground cover and plants other than trees, shrubs, and vines as indicated on

Drawings in even rows with triangular spacing.

B. Use planting soil for backfill.

C. Dig holes large enough to allow spreading of roots.

D. For rooted cutting plants supplied in flats, plant each in a manner that minimally disturbs the root system but to a depth not less than two nodes.

E. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water.

F. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.

G. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.

3.9 PLANTING AREA MULCHING

A. Mulch backfilled surfaces of planting areas and other areas indicated.

1. Organic Mulch in Planting Areas: Apply 3-inch average thickness of organic mulch over whole surface of planting area, and finish level with adjacent finish grades. Do not place mulch within 3 inches of trunks or stems.

3.10 PLANT MAINTENANCE

A. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings.

B. Fill in, as necessary, soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.

C. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices when possible to **eliminate** ~~minimize~~ use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.

3.11 PESTICIDE APPLICATION

~~A. Apply pesticides and other chemical products and biological control agents according to authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.~~ **VUSD is a pesticide free district. All pest and weed abatement shall be per VUSD requirements and utilize non-toxic ingredients, such as Earth's Ally or approved equal. Toxic chemical based pesticides are prohibited.**

B. Pre-Emergent Herbicides (Selective and Nonselective): Apply to tree, shrub, and ground-cover areas according to manufacturer's written recommendations. Do not apply to seeded areas.

C. Post-Emergent Herbicides (Selective and Nonselective): Apply only as necessary to treat already-germinated weeds and according to manufacturer's written recommendations.

3.12 REPAIR AND REPLACEMENT

A. General: Repair or replace existing or new trees and other plants that are damaged by construction operations, in a manner approved by Landscape Architect.

1. Submit details of proposed pruning and repairs.
2. Perform repairs of damaged trunks, branches, and roots within 24 hours, if approved.
3. Replace trees and other plants that cannot be repaired and restored to full-growth status, as determined by Landscape Architect.

B. Remove and replace trees that are more than 25 percent dead or in an unhealthy condition before the end of the corrections period or are damaged during construction operations that Landscape Architect determines are incapable of restoring to normal growth pattern.

1. Provide new trees of same size as those being replaced for each tree of 6 inches or smaller in caliper size.
2. Species of Replacement Trees: Same species being replaced.

3.13 CLEANING AND PROTECTION

A. During planting, keep adjacent paving and construction clean and work area in an orderly condition. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Remove surplus soil and waste material including excess subsoil, unsuitable soil, trash, and debris and legally dispose of them off Owner's property.

C. Protect plants from damage due to landscape operations and operations of other contractors and trades. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings.

D. After installation and before Substantial Completion, remove nursery tags, nursery stakes, tie tape, labels, wire, burlap, and other debris from plant material, planting areas, and Project site.

E. At time of Substantial Completion, verify that tree-watering devices are in good working order and leave them in place. Replace improperly functioning devices.

3.14 MAINTENANCE

A. See Section 32 98 13 - Landscape Maintenance / Establishment Period.

**END OF SECTION 32 93 00**

# SECTION 32 98 13

# LANDSCAPE MAINTENANCE / ESTABLISHMENT PERIOD

## PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes materials, labor, apparatus, tools, equipment, temporary construction, transportation, and services necessary for and incidental to performing the proper completion of Work, as required to make a complete Landscape Maintenance / Establishment Period ("Service"), as specified during progress of Work, after installation, for a designated period after Preliminary Acceptance, as shown in the Contract Drawings, and as specified herein this Section.

B. Contractor acknowledges that the Services specified under this Section are not intended to express every detail of the Services to be provided by Contractor, and Contractor hereby represents that it is experienced and competent in providing Services that meets or exceeds generally accepted practices commensurate with those provided by other companies that provide such Service.

C. Work under this Section shall consist of, but not be limited to, furnishing, and installing the following:

1. Establishment of Landscape Installation, for a given frequency and duration as specified herein this Section. Work includes the following:

a. Litter Control.
b. Weed Control.
c. Pest Control.
d. Plant Care.
e. Fertilization of Plant Materials.
f. Plant Replacement.
g. Plant Pruning.
h. Plant Staking and Adjustments.
i. Temporary Plant Protection.
j. Watering of sod, filling and monitoring of Tree Watering Bags.
k. Cleaning of Paving Surfaces.
l. Reapplication of Mulching Materials.
m. Erosion Control and Drainage.
n. Removal of Green Waste.

D. Related Sections: The following Sections contain requirements that relate to Work in this Section:

1. Section 01 77 00 – Closeout Procedures
2. Section 32 93 10 - Plants.
3. Section 32 94 00 - Landscape Planting Accessories.

1.2 DEFINITIONS AND APPLICABLE STANDARDS

A. References:

1. USDA- United States Department of Agriculture.

2. ASTM – American Society for Testing and Materials.
3. ANSI – American National Standards Institute.
4. ISA- International Society of Arboriculture.

B. Standards:

1. American National Standard for Tree Care Operation, Tree, Shrub, and Other Woody Plant Maintenance (ANSI A300), American National Standards Institute, Latest Edition.
2. American National Standard for Tree Care Operations (ANSI Z133), American National Standards Institute, Latest Edition.
3. Tree Pruning Guidelines, International Society of Arboriculture, 1995 Edition.
4. Pruning Standards for Shade Trees, National Arborists Association, Latest Edition.

1.3 SUBMITTALS

A. Digital Submittal Information:

1. Quality Control Submittal:

a. Qualification Data: Submit names for firms and persons specified in the “Quality Assurance and Control” Article to demonstrate their capabilities and experience on similar Landscape Planting Accessories installations.
b. Schedule of maintenance operations and monthly status report, including list of equipment, materials proposed for the job, and watering schedule(s).
c. Licenses, permits and insurance required by the local jurisdiction, the State, or Federal government, pertaining to Work under this Section.
~~d. Pesticide Applicator: Valid California Qualified Applicator Certificate (QAC), with “B- Landscape Maintenance” Category, as administered by the California Department of Pesticide Regulation (DPR).~~
~~e. Employer of the California Qualified Applicator Certificate (QAC), with “B- Landscape Maintenance” Category:~~
~~f. The company which employs the person holding the QAC must possess a Maintenance Gardener Pest Control Business License, as administered by the California Department of Pesticide Regulation (DPR).~~
~~g. Monthly record of herbicides, insecticides and disease control chemicals used for the Project.~~
h. Written application recommendation by a licensed agricultural pest control advisor for weed, pest and disease controls restricted by the Director of Agriculture proposed for this Work.

B. Closeout Procedures Submittal:

1. Include in a single 3-ring binder a Landscape Maintenance Manual for use by the District, containing an indexed collection of all schedules, records and permits listed above, including documentation of accepted condition of planting and irrigation at Final Acceptance.

C. Submittals under this Article will be rejected and returned without the benefit of review by the District or his/her designated representative if they are difficult to read due to insufficient scale, poor image quality, or poor drafting quality; or if all of the required information is missing or not presented in the format as requested. Partial Submittals will not be accepted.

D. No Work shall proceed under this Section until Submittal requirements indicated herein have been reviewed accordingly by the Construction Manager.

1.4 QUALITY ASSURANCE AND CONTROL

A. Installer Qualifications:

1. Experience: Contractor or sub-contractor performing Work under this Section shall have a full-time employee assigned to the Project as foreman for the duration of the Contract. Employee shall have a minimum of four (4) year experience in landscape maintenance supervision, with experience or training in entomology, pest control, soils, fertilizers, and plant identification.
2. Labor Force: Landscape maintenance labor force shall be thoroughly familiar with, and trained in, the Work to be accomplished, and shall perform the task in a competent, efficient manner acceptable to the District.

B. Requirements:

1. Supervision: Landscape Maintenance Foreman shall directly supervise the Work force during duration indicated herein this Section. Notify the District of changes in supervision.
2. Identification: Provide proper identification during duration for landscape maintenance firm's vehicles and labor force. Be uniformly dressed in a manner satisfactory to the District.

1.5 PROJECT/SITE CONDITIONS

A. In addition to Section 01 77 00 Closeout Procedures, the Contractor shall do the following:

1. Site Visit: At beginning of the designated Landscape Maintenance / Establishment Period, visit and tour the site with the District's Representative, Construction Manager, and other interested parties, to clarify the scope of Work, and understand existing project/site conditions.
2. Documentation of Conditions: Document the general condition of installed plant materials and seeding, recording those which are healthy and thriving, and unacceptable materials which are damaged, dead, and/or dying and in need of replacement.

1.6 SEQUENCING AND SCHEDULING

A. The Contractor shall do the following:

1. Perform Work under Landscape Establishment Period during hours mutually agreed upon between the District and Contractor.
2. Work force shall be present at the Project Site at a minimum duration indicated in this Section, and at other times as necessary, to perform specified Work, in accordance with the approved schedule under the Landscape Maintenance / Establishment Period.

1.7 WARRANTY

A. Specific Requirements: Refer to the following Sections:

1. Section 32 93 00- Landscape Planting.
2. Section 32 94 00- Landscape Planting Accessories.

**PART 2 - PRODUCTS**

2.1 MATERIALS

A. General: Materials and equipment as required to perform Work under this Section shall be

provided by Contractor.

B. Water: Clean, potable and fresh, as available from the District.

C. Fertilizers:

1. Fertilizer Tablets: Tightly compressed, slow-release and long-lasting complete fertilizer tablets, bearing manufacturer's label of guaranteed analysis of chemicals present. Refer to Contract Documents, for requirements.
2. Balanced, once-a-season application, controlled-release Fertilizer(s), with a blend of coated prills which supply controlled-release nitrogen, phosphorus, and potassium, and uncoated, rapidly soluble prills containing nitrogen and phosphorus.

D. Herbicides, Insecticides, and Fungicides:

1. Provide materials with original manufacturers' containers, properly labeled with guaranteed analysis. **VUSD is a pesticide free district. All pest and weed abatement shall be per VUSD requirements and utilize non-toxic ingredients, such as Earth's Ally or approved equal. Toxic chemical based pesticides are prohibited.** Use non-staining materials.

E. Replacement Tree Guys, Stakes, Ties and Wire: Match originally accepted existing materials installed on the Project.

2.2 EQUIPMENT

A. General: Use only the proper tool(s) required for each task under this Section.

1. Maintain tools in sharp, properly functioning condition.
2. Clean and sterilize all pruning tools prior to usage.

B. Insect/Disease Prevention: Provide measure to prevent introduction of insect or disease-laden materials onto the Site. Section 329010- Landscape Planting.

## PART 3 - EXECUTION

3.1 FREQUENCY AND DURATION OF LANDSCAPE ESTABLISHMENT PERIOD

A. Following satisfactory completion of work, the Landscape Maintenance / Establishment Period shall commence and progress.

B. Frequency and Duration: Work performed under this Section shall be executed by Contractor at a minimum of once per week, for a duration of a minimum of 90 calendar days period, following acceptance of the Construction Manager.

C. Contractor shall be fully responsible for maintenance of new landscaping at the Project Site for the contract period that includes 90 calendar day maintenance/establishment period.

3.2 COMMENCING THE LANDSCAPE MAINTENANCE/ ESTABLISHMENT PERIOD

A. Preliminary Review: As soon as landscape installation is substantially completed per the Contract Documents for the Project Site, Contractor shall arrange to hold a preliminary review on-site with the Construction Manager, the District, and other interested parties to evaluate the condition and executions of the completed Work. Evaluation of the Work shall be executed by the Construction Manager through a "Landscape Punch List."

B. Date of Review: Notify Construction Manager at least five (5) working days prior to anticipated Date of Review.

C. For the Project Site, it is the Contractor's responsibility to maintain all new landscaping.

D. Commencing the 90-Day Landscape Maintenance / Establishment Period: Following the date on which the Construction Manager determines that the project work is complete for the Project Site, the 90-calendar day shall commence.

3.3 PREPARATION

A. Protection:

1. Protect new landscape planting areas from damage during duration of Landscape Maintenance / Establishment Period, until Final Acceptance.
2. Provide temporary protection fences, barriers, and signs, as required, for protection.

B. Replacements:

1. Immediately treat or replace plant materials as directed, which become damaged or injured as a result of Contractor's operations or negligence, per the Construction Manager or his/her designated representative, at no additional cost to the District.
2. Replacement plant materials shall match size and variety of plant material being replaced.

3.4 PLANTING MAINTENANCE/ ESTABLISHMENT

A. Tree Watering Bags:

1. Maintain watering basins around the perimeter of the installed plant materials so that enough water can be applied to establish and maintain adequate soil moisture through the root zone of the plant materials. Re-dish and tamp basins accordingly which have become damaged or have failed since installation.
2. Reposition empty tree watering bags as necessary to allow tree watering bags to sufficiently irrigate the tree.
3. Fill all tree watering bags in a manner and volume consistent with the manufacturer's intent.
4. Observe proper outflow and fix any drainage issues prior to moving on to next watering or concluding the day's watering operations.

B. Watering Basins:

1. Maintain watering basins around the perimeter of the installed plant materials so that enough water can be applied to establish and maintain adequate soil moisture through the root zone of the plant materials. Re-dish and tamp basins accordingly which have become damaged or have failed since installation.
2. For supplemental hand watering of watering basins, use a watering wand to break the water force. Do not permit use of "jet" type watering equipment. Do not permit crown roots to become exposed to air through dislodging of soil and mulch.
3. Mulch: Maintain originally specified thickness of mulch material to reduce evaporation and frequency of watering, around newly planted trees.
4. During rainy season, open basins to allow surface drainage away from the root crown where excess water may accumulate. Restore watering basins at the end of rainy season.
5. At the end of rainy season, re-dish and tamp watering basin at trees and shrubs.

C. Settlement of Plant Materials: Rest/replant sunken or settled plant materials to proper grades and in upright position.

D. Weed Control:

1. Planting areas throughout site shall be weed-free at all times, including areas between plants and along watering basins.
2. ~~Use only recommended and legally approved herbicides to control and maintain weed growth.~~ **VUSD is a pesticide free district. All pest and weed abatement shall be per VUSD requirements.**
3. Avoid frequent soil cultivation that destroys shallow roots and breaks the seal of pre-emergent herbicides.

E. Pruning:

1. Prune trees to select and develop permanent scaffold branches that are smaller in diameter than the trunk or branch to which they are attached, and which have vertical spacing of eighteen-inches (18") to forty-eight-inches (48") and radial orientation so as not to overlay each other.
2. Prune trees to eliminate diseased or damaged growth, and narrow "V-shaped" branch forks that lack strength. Reduce toppling and wind damage by thinning-out crowns.
3. Prune trees to maintain growth within space limitations, maintaining a natural appearance and balancing crown with roots.
4. No stripping of lower branches of young trees shall be permitted.
5. Retain lower branches in a "tipped back" or pinched condition to promote caliper trunk growth. Do not cut back to fewer than six (6) buds or leaves on such branches. Only cut lower branches flush with the trunk after the tree is able to stand erect without staking or other support.
6. Thin out and shape evergreen trees when necessary to prevent wind and storm damage. Do primary pruning of deciduous trees during the dormant season. Do not permit any pruning of trees prone to excessive "bleeding" during growth season.
7. Prune damaged trees or those that constitute health or safety hazards at any time of year as required.
8. Make pruning cuts clean and close to the trunk, without cutting into the branch collar. "Stubbing" will not be permitted. Cut smaller branches flush with trunk or lateral branch. Make larger cuts one inch (1") diameter or larger parallel to shoulder rings, with the top edge of the cut at the trunk or lateral branch.
9. Branches too heavy to handle shall be precut in three (3) stages to prevent splitting or peeling of bark. Make the first two (2) cuts eighteen inches (18") or more from the trunk to remove the branch. Make the third cut at the trunk to remove the resulting stub.
10. Do not prune or clip shrubs into balled or boxed forms unless specifically called for by design.
11. Clip shrubs to be hedged when branches project two-inches (2") beyond limit of clipped hedge shown on the Contract Drawings.
12. Take extreme care to avoid transmitting disease from one infected plant to another. Properly sterilize pruning tools before going from one infected plant to other plant materials.

F. Staking and Guying of Trees:

1. Adjustments: Inspect stakes and guys periodically (minimum once per month) throughout duration of Landscape Maintenance / Establishment Period to check for rubbing of staking materials on trunks or branches causing bark wounds.
2. Repair and replace faulty staking and guying materials as shown and as specified.

3.5 INSECTS, PESTS, AND DISEASE CONTROL

A. Inspection: Inspect plant materials for signs of stress, damage and potential trouble from the following:

1. Presence of insects, moles, gophers, rabbits, ground squirrels, snails and slugs in planting areas.
2. Discolored or blotching leaves or needles.
3. Unusually light green or yellowish green color inconsistent with normal green color of leaves.

B. Personnel: Only licensed, qualified, trained personnel shall perform spraying for insect, pest and disease control.

C. Application: Spray with extreme care to avoid all hazards to any person or pet in the area or adjacent areas.

D. Lawn or vegetation-damaging pests shall be controlled in a timely manner to minimize damage.

3.6 GRADING AND DRAINAGE

A. During the Landscape Maintenance / Establishment Period, all flow lines shall be maintained to allow for free flow of surface water. Displaced material which interferes with drainage shall be removed and placed as directed. Low spots and pockets shall be graded to drain properly. Jute netting or other erosion control measure as directed shall be installed at flow lines and other locations where surface erosion is evident.

B. Damage to planting areas shall be repaired immediately and throughout the Landscape Maintenance / Establishment Period. Depressions caused by vehicles, bicycles, or foot traffic shall be filled and leveled. Replant damaged areas.

C. All paved areas shall be washed and maintained in a neat and clean condition at all times.

D. All subsurface drains and inlets shall be periodically cleared of debris, leaves, trash, etc., and flushed with clear water to avoid buildup of silt and debris.

3.7 CLEANING

A. General: Dispose of pruned plant materials, vacuum clippings and leaves, sweep walkways and rake smooth mulched areas. Remove from the site containers and other evidence of maintenance activities.

B. Litter Control:

1. Site areas under the Contract shall be cleared on a weekly basis of visible litter or debris, and clippings.
2. Debris caused by normal seasonal winds shall be removed from site.
3. Contractor shall be responsible for disposal of debris in accordance with local rules and regulations.

C. Blowing:

1. Landscape debris generated shall blown-off or swept on a weekly basis. Do not blow grass clippings, edgings, or debris into planting areas or onto paved areas unless after such blowing, the resultant accumulation of material shall be gathered and removed from

the site.

3.8 TERMINATION OF THE LANDSCAPE MAINTENANCE/ESTABLISHMENT PERIOD

A. In addition to Section 01 77 00 Closeout Procedures, the Contractor shall perform the following:

1. Final Acceptance Procedure:

a. Work requires acceptance by the Construction Manager upon satisfactory completion, including Landscape Maintenance / Establishment Period, but exclusive of replacement of materials under the Warranty Period.
b. Submit a written request to Construction Manager for review of Final Acceptance at least five (5) working days prior to anticipated Final Review date, which is at the end of the Landscape Maintenance / Establishment Period.

2. Corrective Work:

a. Work requiring corrective action or replacement shall be performed within ten (10) calendar days after the Final Review.
b. Perform corrective Work and materials replacement in accordance with the Contract Documents, Work shall be made by the Contractor at no cost to the District.
c. After corrective Work is completed, the Contractor shall again request a Final Review for Final Acceptance as outlined above.

1) Continue maintenance of all landscaped areas until such time as all corrective measures have been completed and accepted.

3. Conditions for Acceptance of Work at End of Landscape Maintenance / Establishment Period:

a. All new landscaping shall be alive and thriving, showing signs of growth and no signs of stress, disease, or any other weaknesses.
b. Replace plant materials not meeting these conditions. An additional Warranty Period equal in length to the original shall be commenced for all such plants and planted areas.

4. Final Acceptance Date shall be the date on which the Construction Manager issues a Letter of Final Acceptance. Upon Final Acceptance, the District will assume responsibility for maintenance of the Work beyond the Landscape Maintenance / Establishment Period.

3.9 CLOSE OUT

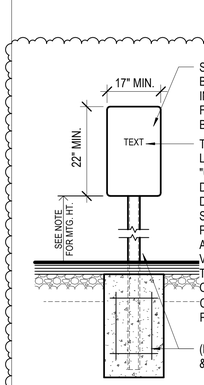
A. In addition to Section 01 77 00 Closeout Procedures, the Contractor shall perform the following:

1. Landscape Maintenance Record:

a. Submit binder to the District with documentation and records required and utilized during the Landscape Maintenance / Establishment Period.

2. Keys and Identification: Return keys and identification materials supplied by the District for the purpose of site access.

**END OF SECTION 32 98 13**




SIGN TO BE REFLECTORIZED WHITE ON DARK BLUE BACKGROUND NOT SMALLER THAN 70 SQ. INCHES - SIGN SHALL BE GALV. STL & FASTENED TO POST W/ (2) GALV. MACHINE BOLTS

THE SIGN SHALL READ, IN NOT LESS THAN 1" LETTER HEIGHT:
"UNAUTHORIZED VEHICLES PARKED IN DESIGNATED ACCESSIBLE SPACES NOT DISPLAYING DISTINGUISHING PLACARDS OR SPECIAL LICENCE PLATES ISSUED FOR PERSONS WITH DISABILITIES MAY BE TOWED AWAY AT OWNER'S EXPENSE. TOWED VEHICLES MAY BE RECLAIMED AT EAGLE TOWING 1386 ROBIN AVE. VENTURA, CA 93003 OR BY TELEPHONING 805-535-5631."

CONTRACTOR TO VERIFY CORRECT POLICE PHONE NUMBER PRIOR TO SIGN FABRICATION.

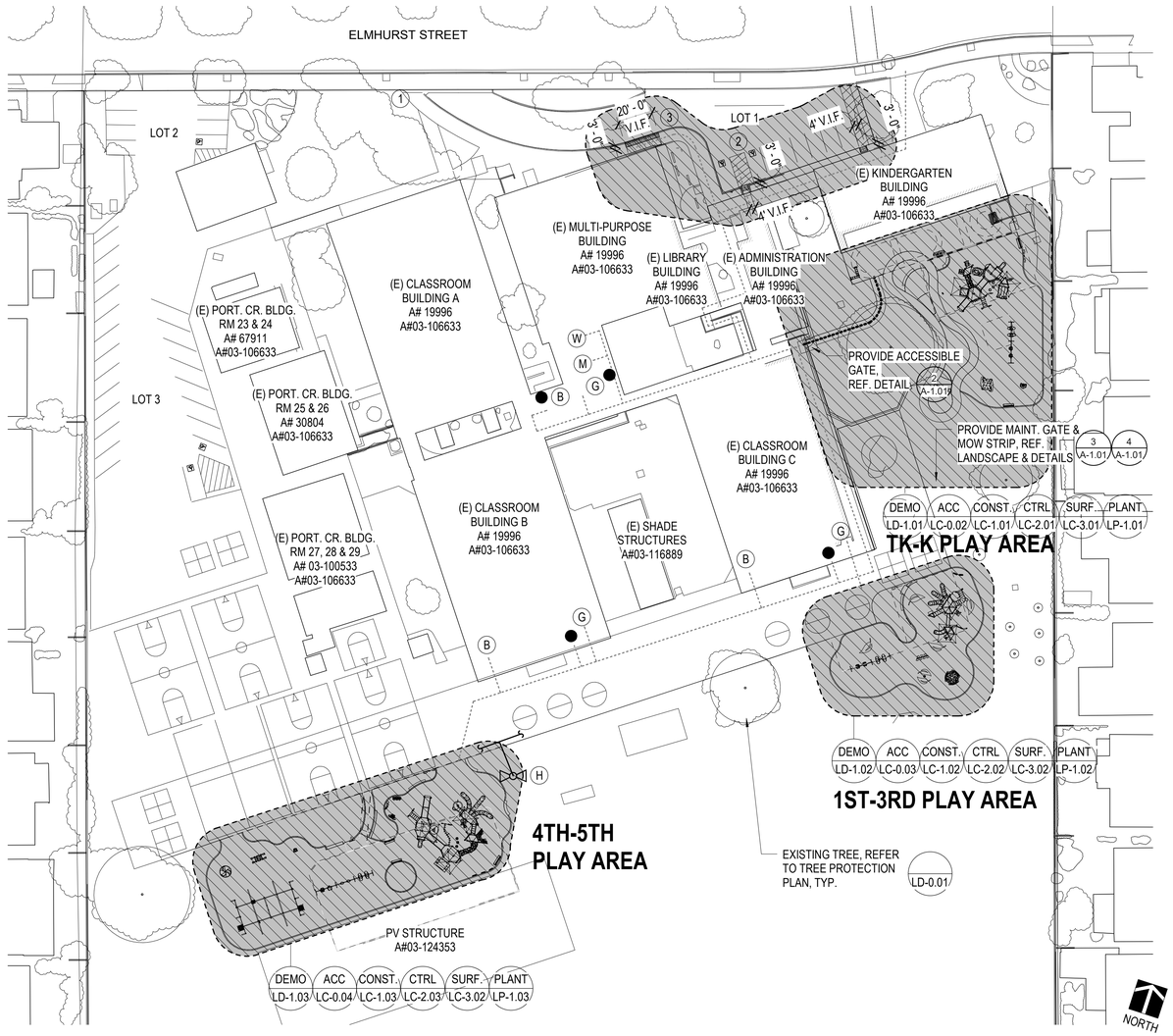
(E) POST & FOOTING

**NOTE:**
MOUNTING HEIGHT OPTIONS
1. 36" MIN.
2. 80" IN PATH OF TRAVEL

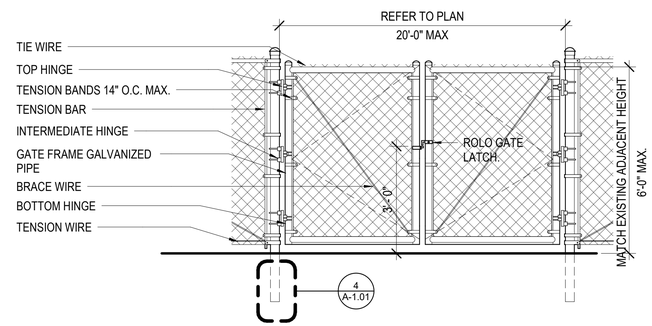
ACCESSIBLE PARKING ENTRY SIGN 1" = 1'-0" (A)



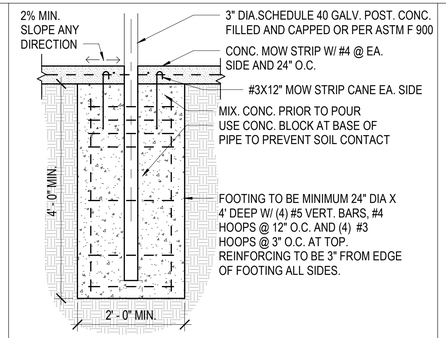

ACCESSIBLE NON-LOCKED CHAIN LINK GATE 3/4" = 1'-0" (2)



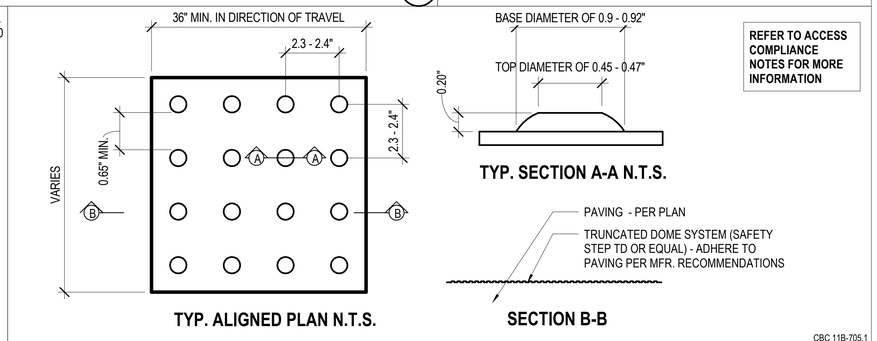

ELMHURST SITE PLAN 1" = 40'-0" (1)




MAINTENANCE CHAIN LINK DOUBLE GATE 1/2" = 1'-0" (3)




MAINTENANCE CHAIN LINK DOUBLE GATE POST FOOTING & MOW STRIP 3/4" = 1'-0" (4)




REFER TO ACCESS COMPLIANCE NOTES FOR MORE INFORMATION

CBC 11B-705.1

DETECTABLE WARNING 1" = 1'-0" (5)

## PARKING CALCULATION

| LOT 1 | EXISTING | REQUIRED. |
|---|---|---|
| PARKING SPACES: | 8 | - |
| ACCESSIBLE: | 2 | 1 |
| VAN ACCESSIBLE: | 1 | 1 |

| LOT 2 | EXISTING | REQUIRED. |
|---|---|---|
| PARKING SPACES: | 8 | - |
| ACCESSIBLE: | 1 | 1 |
| VAN ACCESSIBLE: | 1 | 1 |

| LOT 3 | EXISTING | REQUIRED. |
|---|---|---|
| PARKING SPACES: | 21 | - |
| ACCESSIBLE: | 2 | 1 |
| VAN ACCESSIBLE: | 1 | 1 |

## LEGEND

- AREA OF WORK, REFER TO LANDSCAPE PLANS
- TRUNCATED DOMES (5 / A-1.01)
- NEW ACCESSIBLE PATH OF TRAVEL, REF. LANDSCAPE FOR CON'T
- EXISTING ACCESSIBLE PATH OF TRAVEL A# 03-116633, REF. LANDSCAPE FOR CON'T
- (H) (E) FIRE HYDRANT
- (B) (E) ACCESSIBLE BOYS' TOILET ROOM
- (G) (E) ACCESSIBLE GIRLS' TOILET ROOM
- (M) (E) ACCESSIBLE MENS' TOILET ROOM
- (W) (E) ACCESSIBLE WOMENS' TOILET ROOM
- (E) ACCESSIBLE DRINKING FOUNTAIN A#03-106633
- (1) NEW TOW-AWAY SIGN ON EXISTING POST PER CBC 11B-502.8.2 A# 03-106633 EAGLE TOWING 805-535-5631 1386 ROBIN AVE. VENTURA, CA 93003 (A / A-1.01)
- (2) (E) ACCESSIBLE PARKING STALL. (E) SIGN NOTIFYING OF MIN. FINE $250 @ 80" ABOVE ACCESSIBLE PATH. A# 03-106633 INSTALL DETECTABLE WARNING PER 5 / A-1.01
- (3) (E) ACCESSIBLE LOADING ZONE A#03-106633 INSTALL DETECTABLE WARNING PER 5 / A-1.01

## DSA CERTIFICATION STATUS

| BUILDING NAME | DSA APPL. NO. | CERT. # | YEAR BUILT | MODERNIZATION NO. |
|---|---|---|---|---|
| ADMINISTRATION | 19996 | #2 | 1960 | 03-106633 |
| MULTIPURPOSE | 19996 | #2 | 1960 | 03-106633 |
| LIBRARY | 19996 | #2 | 1960 | 03-106633 |
| KINDERGARTEN | 19996 | #2 | 1960 | 03-106633 |
| CLASSROOM BUILDING A | 19996 | #2 | 1960 | 03-106633 |
| CLASSROOM BUILDING B | 19996 | #2 | 1960 | 03-106633 |
| CLASSROOM BUILDING C | 19996 | #2 | 1960 | 03-106633 |
| PORT. CR. RM 23 & 24 | 67911 | #2 | 1997 | 03-106633 |
| PORT. CR. RM 25 & 26 | 30804 | #2 | - | 03-106633 |
| PORT. CR. RM 27, 28 & 29 | 100553 | #2 | 1998 | 03-106633 |
| SHADE STRUCTURE | 03-116889 | #1 | 2016 | - |
| PV STRUCTURE | 03-124353 | - | 2024 | - |


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VENTURA UNIFIED SCHOOL DISTRICT

ELMHURST ELEMENTARY PLAYGROUNDS E4-24

5080 ELMHURST ST.
VENTURA, CA 93003

CONSTRUCTION DOCUMENTS

| No. | Description | Date |
|---|---|---|
| 1 | BID ADD 1 | 11/25/2024 |

Sheet Name

SITE ACCESS PLAN & DETAILS

| | |
|---|---|
| | 1012.00 |
| Date | 06/14/24 |
| Drawn by | CY |
| Checked by | TC |
| Sheet Number | A-1.01 |

Autodesk Docs://1031 - VUSD Anacapa MS/1012 VUSD Play Equipment_2.rvt