I 29.2:C 35/3

landscape management plan
comprehensive design

PUBLIC DOCUMENTS
DEPOSITORY SYSTEM

NOV 13 1989

CLEMSON
LIBRARY

CHAMIZAL

NATIONAL MEMORIAL • TEXAS

Digitized by the Internet Archive
in 2012 with funding from
LYRASIS Members and Sloan Foundation

http://www.archive.org/details/landscapemanagem00nat2

landscape management plan
comprehensive design

september 1989

CHAMIZAL NATIONAL MEMORIAL • TEXAS

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

TABLE OF CONTENTS

I. VISITOR EXPERIENCES AT CHAMIZAL 1

II. "WALKING" THROUGH THE DESIGN 2
- A. Entry and Visitor Center Approach. 2
- B. Trail System 12
  - 1. Loop 1 12
  - 2. Loop 2 18
    - a. Interpretive Planting Areas 19
    - b. Boundary Markers 22
  - 3. Loop 3 22
- C. Enhancing General Outdoor Recreation Experiences 22

III. PLANTING PLAN 23
- A. Shade Trees 23
- B. Desert Planting Areas 23
- C. Interpretive Planting Areas 23
- D. Accent Planting 24
- E. Native/Historical/Interpretive Planting Areas 24
- F. Shrub List 24

IV. ESTABLISHMENT AND MAINTENANCE GUIDELINES 26
- A. Plant Acquisition 26
- B. Soil Preparation 27
- C. Irrigation 29
- D. Transplanting 30
- E. Pruning 32
- F. Mulching 32
- G. Miscellaneous 33

V. PHASING 34

VI. MATERIALS LIST 35

VII. SELECTED REFERENCES 36

VIII. PREPARERS AND CONSULTANTS 37

LIST OF FIGURES

Figure 1. Water feature 5

Figure 2. Water feature area guideline and plan view of example . . . 7

Figure 3. Juarez statue 9

Figure 4. Juarez statue area guideline and plan view of example . . . 11

Figure 5. Monument area 15

Figure 6. Monument area guidelines and plan view of example 17

Figure 7. Planting area section. 28

Figure 8. Planting area edging berm 30

Figure 9. Tree wells 31

Figure 10. Thinning vs. shearing 32

Figure 11. Planting area divisions 33

Figure 12. Drainage crossings 34

ATTACHMENTS

Phase One

Site Plan . . . . . Sheet 1

Planting Plan . . . . . Sheet 2

Phase Two

Index . . . . . Sheet 1

Planting Plan . . . . . Sheets 2-7

Shrub and Tree Planting Detail . . . . . Sheet 8

Construction Details . . . . . Sheet 9

Sections . . . . . Sheet 10

I. VISITOR EXPERIENCES AT CHAMIZAL

Chamizal National Memorial is a unique and special place. Unlike other units of the National Park System (NPS) where the nature and location of existing physical and cultural resources in large part predetermines visitor experiences, Chamizal presents the opportunity to influence visitor experiences through design. The significant memorial resources are the location of the site itself and the intangible relationship between the Anglo and Hispanic cultures. Existing physical natural and cultural resources are either outside the memorial (i.e., the Rio Grande), or are on the border of the memorial (i.e., the boundary markers), leaving most of the memorial's 55 acres open for creating an environment for visitor experiences. Because of this, the comprehensive design is guided by a consideration of visitor experiences, that is, what visitors want and what the NPS wants for visitors. The comprehensive design follows from the General Management Plan (GMP) for Chamizal (NPS 1986), which gives direction for development of the Memorial.

Chamizal serves a dual role as an international peace memorial for the peoples of the world and as a city park for El Paso residents (NPS 1986). At Chamizal, the NPS has an opportunity to increase the awareness of visitors--both local and national/international--of ways to promote cooperation and prevent discord. Of the many factors involved in the prevention of discord, increasing the understanding of other peoples through education and eliminating discrimination are two which Chamizal can address. Therefore, two important elements of the comprehensive design are: 1) expanding the interpretive program to include a series of outdoor exhibits that promote an understanding of how peoples of the two border cultures used and appreciated native flora; and 2) making facilities and opportunities accessible to all types of visitors.

At present, experience opportunities include interpretation and outdoor recreation, with overlap occurring at concerts and charreadas. Desired experiences can be thought of as a continuum, from interpretation to outdoor recreation, with mixtures of the two in between. Within these types of experiences, some visitors will want a more social or a more solitary experience, some a more active and others a more passive experience, and some a more formal and others a more informal experience. The GMP/DCP (NPS 1986) identifies the general facility layout which will allow for this diversity of experiences. Encouraging more interest in the interpretive program is a planning goal for Chamizal (NPS 1986); this can be accomplished by making interpretation an enjoyable element in the day-time experience of the memorial grounds. The comprehensive design expands on the GMP/DCP, describing in more detail how the grounds can be developed to achieve planning goals.

II. "WALKING" THROUGH THE DESIGN

Rationale for each design element is described, following the sequence of a visitor's experience at the memorial.

A. Entry and Visitor Center Approach.

Additional tree plantings and the large inspirational monument will make the memorial appear as a visual oasis for approaching visitors because of the contrast with its surroundings and the vertical emphasis of the monument (NPS 1986). If the strip of city land between Paisano Drive and the memorial's north boundary is also planted, through a cooperative agreement between the city and the park, the visual impression of the memorial for approaching visitors would be greatly enhanced. Dense plantings of small shrubs in this area would help buffer visitors from street noise and fumes. Shrubs should not be a hazard for out-of-control vehicles.

The existing entrances will be made more attractive and more easily identifiable, especially the primary entrance on San Marcial Street (NPS 1986). The existing low wall at the San Marcial entrance will be expanded horizontally, a memorial sign added, and the native plant theme continued (as in drawing set 441/41012). The addition of a backdrop of Palo Verde trees will extend the entrance vertically. In this way, the entrance will be enhanced while leaving the existing donated entry intact. Visitors entering from Delta drive will experience the same kind of entry, at a smaller scale.

Existing chain link fence around the memorial is obtrusive and gives the site an institutional appearance. This fence would ideally be replaced by a combination of wrought iron fence (four foot height recommended, up to six feet if protection is critical) and stone wall (three foot height). Until this is accomplished, the visibility and reflectivity of the existing fence can be reduced by painting it a flat medium brown color (Woskey Brown). When the fence is replaced, the combination of wrought iron and stone will allow for surveillance and access regulation while strengthening entrance identity and providing visual variety.

Visitors will be directed to the parking lot by formal tree plantings on both sides of the entry roads and by existing directional signs. The tree canopy will provide an enclosed, shaded drive contrasting with the bright, open, relatively bare surrounding streets. The tree canopy will be broken, with a double row of trees on the left only, as the road curves to the north, allowing visitors a "preview" view of the visitor center and monument. After their visit, more visitors will return to cooler cars as a result of the additional tree plantings in the parking lot. Because of their potential to provide denser shade than low water-use trees such as Palo Verde, Arizona Ash will be planted in the existing desert planting areas adjacent to the parking lot. Drip irrigation will be necessary to provide the Ash with enough water for healthy growth.

Providing direct, safe, comfortable, and attractive pedestrian access will also enhance visitor experiences at Chamizal. Walkways leading

to the visitor center from the high school parking lot and trails throughout the memorial will all be partially shaded. All memorial walkways and trails will be handicapped-accessible, and a short handicapped-accessible trail spur will provide access to the amphitheater. Curb ramps (see Phase Two, Sheet 9, Detail K) and crosswalk striping will be provided wherever trails or walkways cross roads. The Chamizal DCP recommends a pedestrian overpass across Paisano Drive which would provide safe and direct access to Chamizal from community park and recreation facilities to the north and east of the memorial; this pedestrian connection is provided for in the comprehensive design.

Elements added to the esplanade (plaza) will make the experience of walking to the visitor center more interesting, attractive, and welcoming. A water feature will be added to the west of the visitor center (see Phase One, Sheet 1). The sound and sight of the water feature will attract and welcome people as they approach. Ideas for the final design of the water feature will be generated by a design competition. The following criteria should be used to guide and evaluate design proposals:

--the scale, style, form, color, and texture of the water feature should be compatible with the existing architectural style of the visitor center and esplanade.

--to increase visitors' feeling of closeness to and involvement with the water, the feature should be designed to give visitors maximum access to the water's edge, with pools on or near ground level, and seating nearby.

--a low water-use design is necessary to conserve water in the hot and arid El Paso climate. However, there are many ways to maximize the effects of water even if only a small amount of water is used and evapotranspiration minimized. Instead of sprays and jets, shallow pools with reflective blue tile, small bubblers (just breaking the water's surface), and small drops in elevation between pools should be used to make the feature appear larger and to add the element of sound.

--a backdrop of shade trees and colorful accent shrubs should be provided and interpretive messages or inspirational quotations incorporated into the feature to make the water feature area a place where visitors will linger and feel refreshed.

Figures 1 and 2 show an example of what the water feature could look like. As with all donated features, final design and construction should be completed under the supervision of a qualified landscape architect.

FIGURE 1. WATER FEATURE

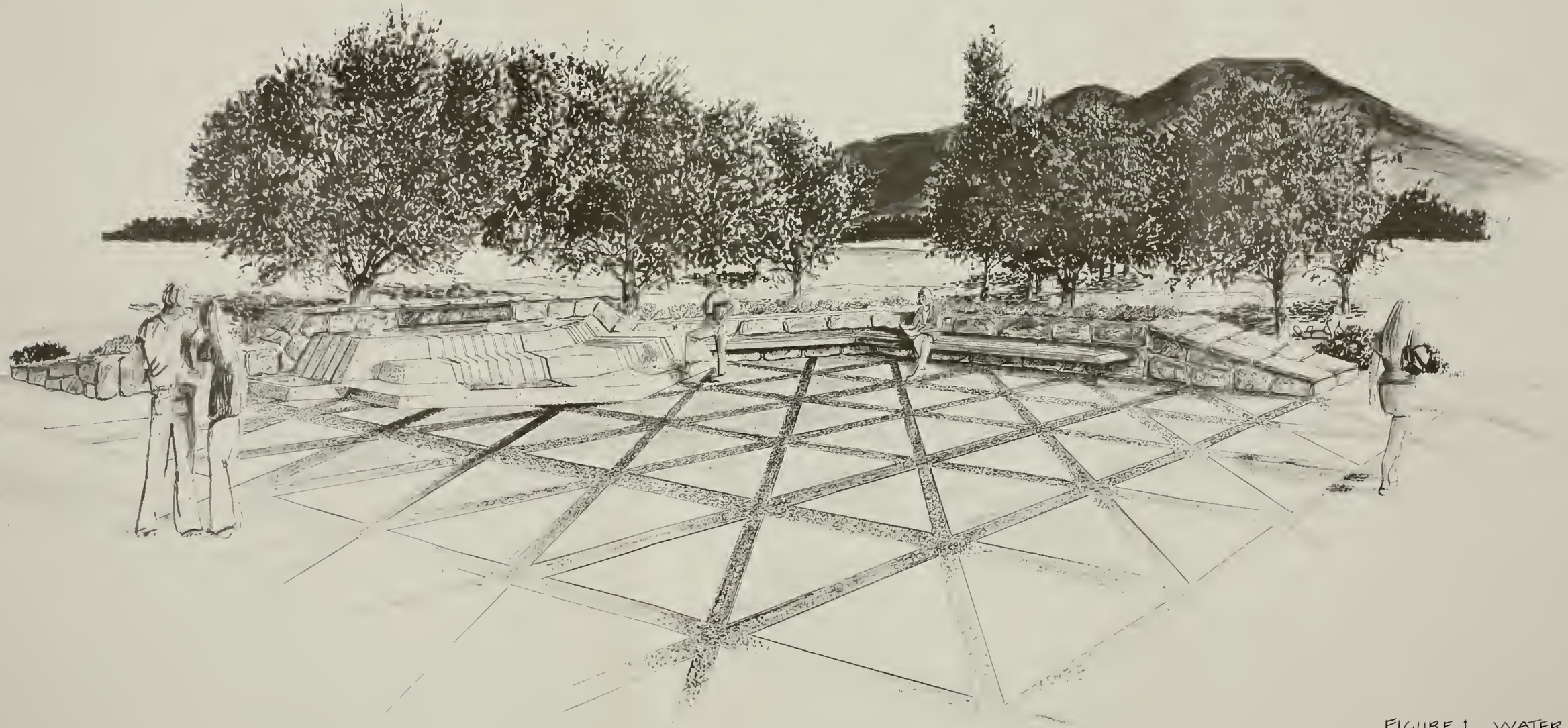


FIGURE 1. WATER FEATURE

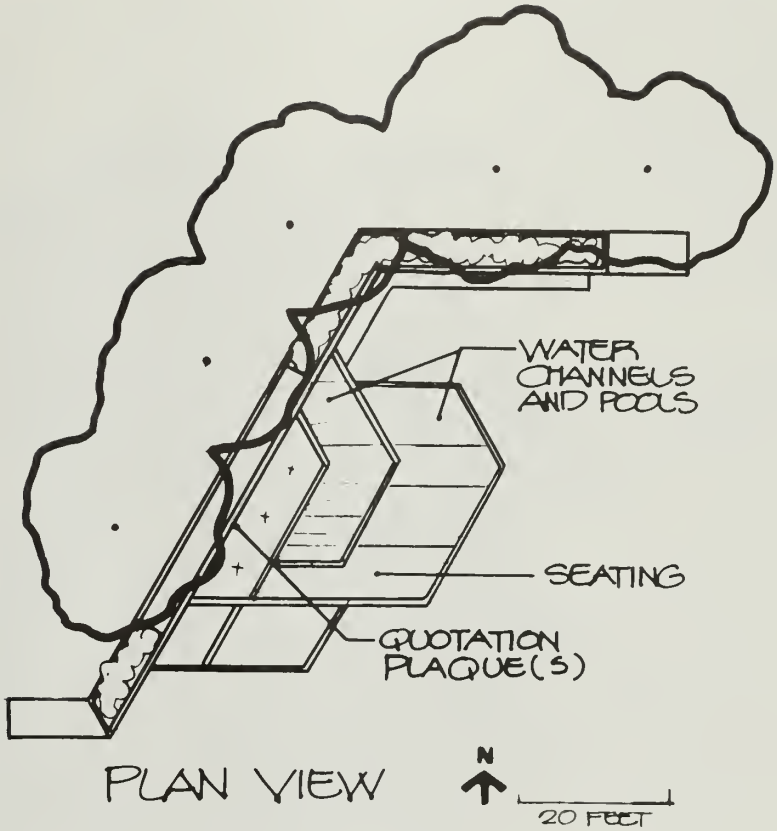


Figure 2. Water feature area guideline and plan view of example

Water feature and related site development to be constructed through private donations

This sketch does not necessarily represent the final design; ideas for design to be generated by a design competition

Design Criteria - see Chamizal National Memorial Comprehensive Design:

Use shapes, materials, etc. similar to those within existing esplanade development; including seating

Incorporate low water-use design (e.g., shallow pools, low water bubblers, minor elevation changes)

Incorporate quotation plaques

Provide pools at ground and seating level

As visitors approach the visitor center from the west, the Juarez statue and inspirational monument will also be visible. The Juarez statue and water feature should be aligned on a visual axis so visitors will sense a strong and direct connection between these two features which relate to the memorial's primary theme (NPS 1986). Figures 3 and 4 illustrate an example of what the Juarez statue and its immediate setting could look like. The base and pedestal design already developed (DSC 441/41,009) can be used, if slightly modified. Since the statue will be integrated into the east end of the esplanade and not be a freestanding element (as in the 441/41,009 design), the outer circular walk will not be necessary.

Visitors interested in the interpretive program or general site information would continue on to the visitor center (NPS 1987). The trail system offers a variety of interpretive and recreational experiences in addition to the interpretive program offered within the visitor center.

FIGURE 3. JUAREZ STATUE

FIGURE 3. JUAREZ STATUE

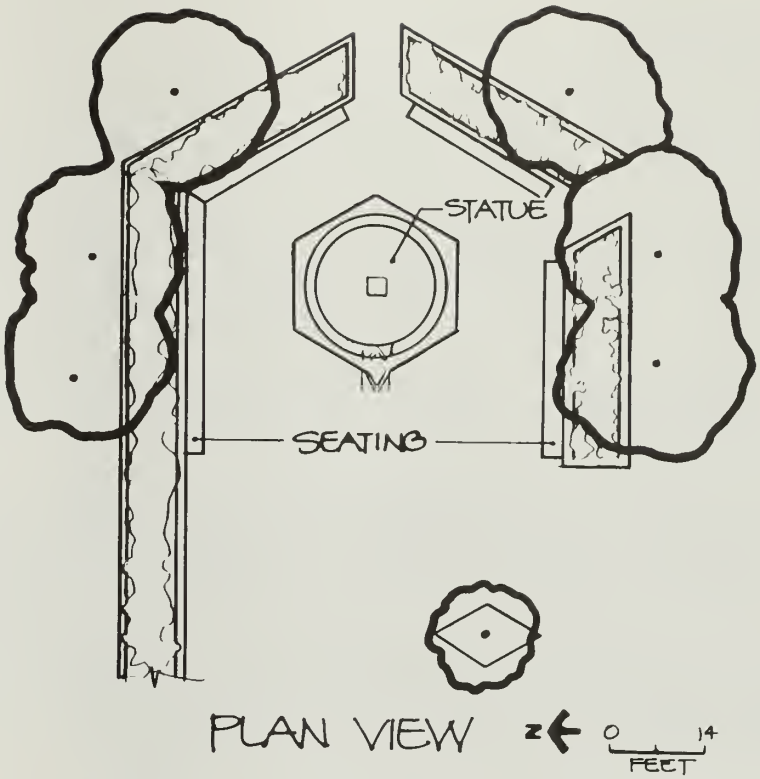


Figure 4. Juarez statue area guideline and plan view of example

Statue and related site development will be constructed through private donations

This sketch does not necessarily represent the final design; ideas for design to be generated by a design competition

Design Criteria - see Chamizal National Memorial Comprehensive Design:

Use existing base and pedestal design as basis for this design (see DSC Drawing 441/41,009)

Use materials, shapes,etc. similar to those used in existing Esplanade development

Include seating and shade trees

Incorporated trail connections

B. Trail System

The trail system will include three trails, each of different lengths, and each with a different interpretive emphasis. The three trails will be arranged as loops, all starting and ending around the visitor center. Trail layouts are based on those proposed in the DCP, with the DCP "loop trail" becoming loops 2 and 3 (see Phase One, Sheet 1, Site Plan). Loop 1 takes visitors out to the monument, around the edge of the knoll, and back to the visitor center by way of the Juarez statue (0.3 miles total). Loop 2 heads northeast from the Juarez statue, takes visitors past a series of interpretive planting areas and the boundary markers, then returns to the parking lot or visitor center (0.8 miles total). The third loop takes visitors past several special events areas and the lienzo (Mexican rodeo arena) before returning to the parking lot or visitor center (1.3 miles total).

All trails will be handicapped-accessible. The trails will have a hard, smooth surface; lineal slope will not exceed five percent and cross slope will not exceed two percent; and curb ramps will be provided at all road crossings (see Phase Two, Sheet 9, Details G, H, K). Rest areas will be provided along all trails. Site features such as interpretive waysides, picnic tables, and rest area benches will be accessible to those with mobility handicaps, and to some degree for those with sensory handicaps (see Phase Two, Sheet 9, Details A, B, C, D, E, F, I, and J).

The paved walkway to the monument will be 15 feet wide and will be an extension of the esplanade. The paving pattern used on the walkway will be similar to that used on the esplanade, but at a smaller scale. All loop trails will be six feet wide. Trails to picnic areas will have the same surface as the loop trails, and will also be six feet wide. Trails will not be provided in two areas: 1) the amphitheater area (except for the handicapped access spur) to allow for free circulation and amphitheater seating; and 2) in the southeast swale area to provide an area where visitors can walk or jog in a more informal setting.

1. Loop 1: The Theme of the Memorial is Reinforced

Loop 1 will provide visitors with the opportunity to view and experience the inspirational monument and the Juarez statue at close range. As visitors walk the trail, they will be able to connect the visitor center interpretive message with the outdoor features by reading several inspirational quotations incorporated into the monument, statue, and waysides.

As visitors exit the visitor center through the main south doorway, they will experience a strong and direct connection with the monument; the monument will be straight ahead, and visitors will approach by way of the formal, paved walkway which will look and feel similar to the esplanade. The monument area consists of the approximately 100-foot diameter area shown on the plans (see Phase One, Sheet 1). Although final design of the monument will be generated by a design competition, the following

concepts and features, which reinforce the intent of the monument as described in the DCP, should be used to guide and evaluate design proposals:

--the inspirational monument should be a strong, highly visible vertical form, aligned with the monument within the Mexican park (NPS 1986).

--the scale, style, form, color and texture of features (e.g., seating, paving) within the monument area should be compatible with features in the visitor center/esplanade area.

--a semicircle of trees south of the monument is recommended (see Phase Two, Sheet 6). Trees in this location will allow visitors to view the monument with much of the background "noise" screened, and blend the tall structure into the rolling terrain of the memorial. The semicircle of trees should be designed to maintain the view through to the monument within the Chamizal Park in Mexico (see Figure 5).

--a series of beds containing low-growing, flowering native shrub--such as Encilia farinosa--should line and reinforce the walkway to the monument (see Phase Two, Sheet 6). Taller plantings such as parallel rows of trees along the length of the walkway are not recommended because they would obscure the view of the monument. Spaces (6-8 feet wide) should be left between shrub beds to allow for circulation to and from the special events area to the east.

Figures 5 and 6 show an example of what the monument and surrounding area could look like. The same species of low native shrub should be incorporated into the design of the water feature and Juarez statue areas to provide visual accent and to emphasize their relationship to the monument. The formal treatment (paved walkways and accent planting) should be limited to areas around these commemorative features and should not appear elsewhere on the site. This treatment will highlight these features (see Phase Two, Sheets 3, 4, and 6).

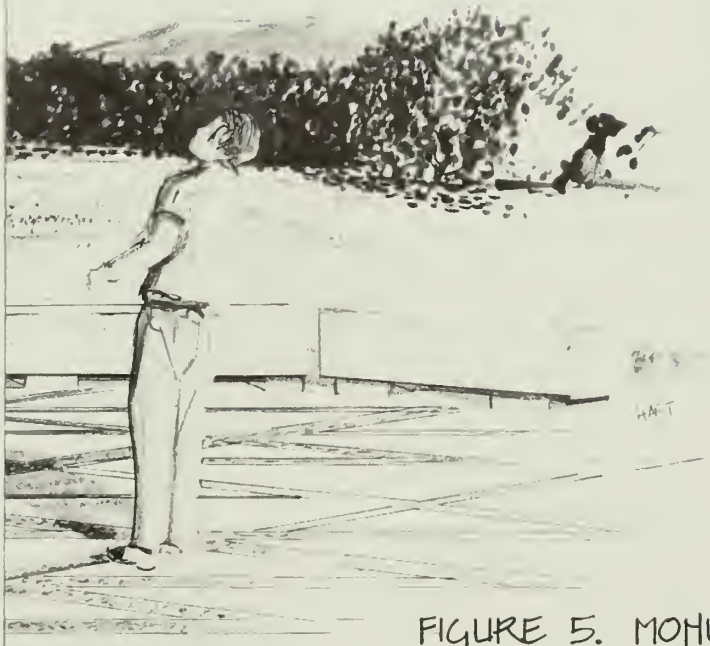


FIGURE 5. MONUMENT AREA

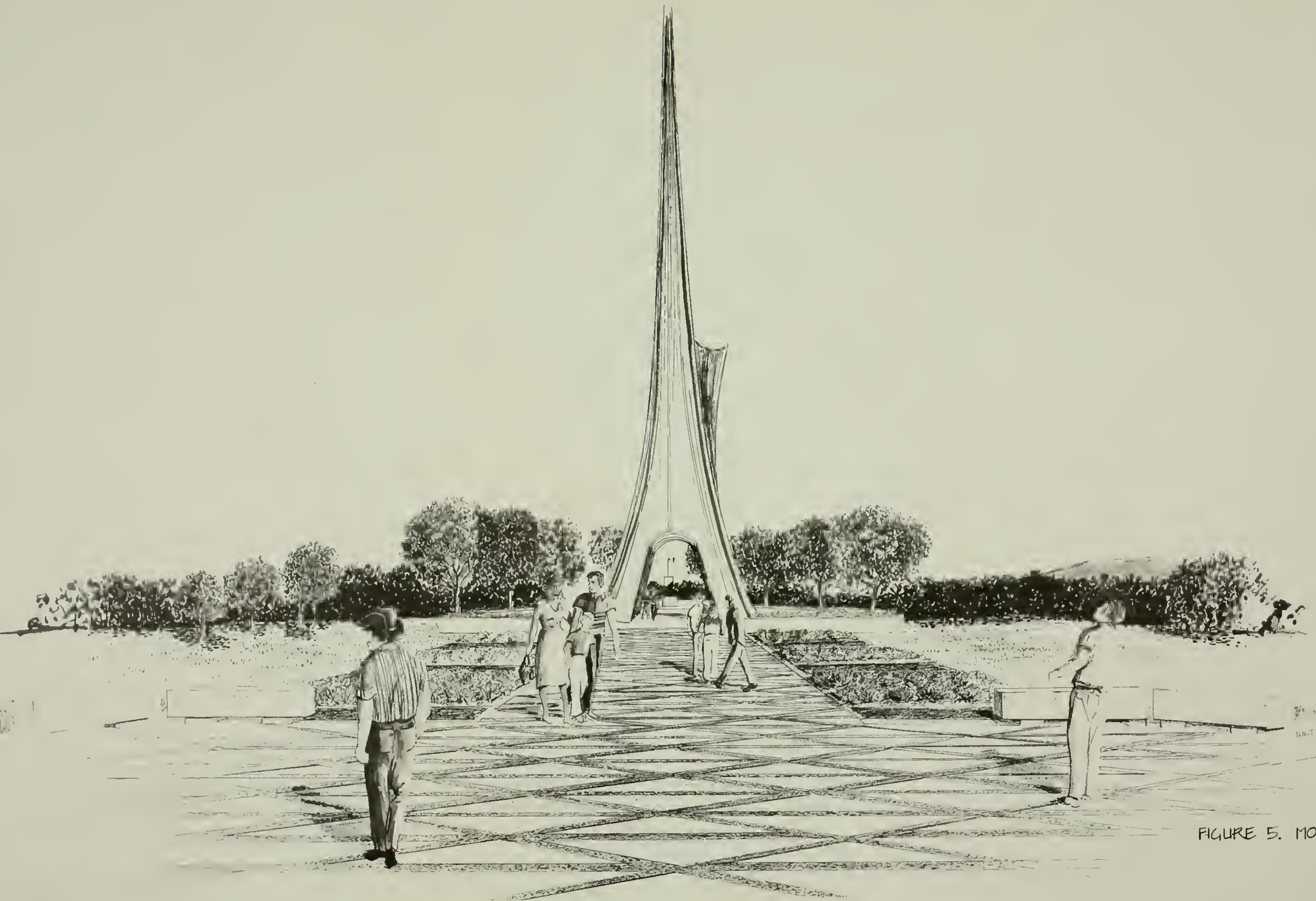


FIGURE 5. MONUMENT AREA

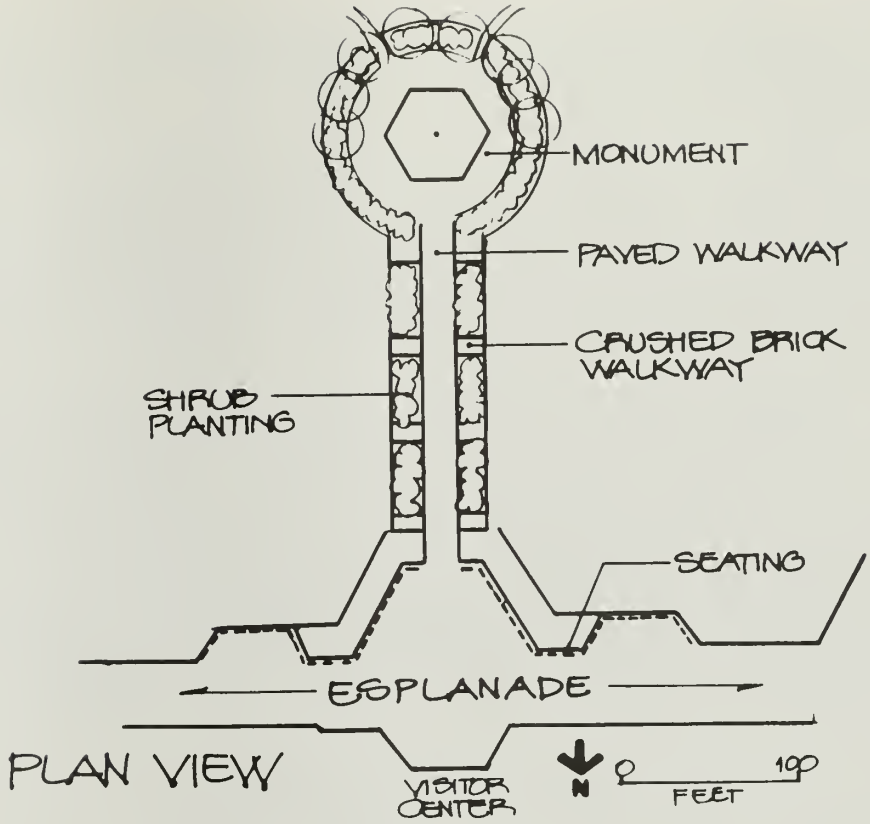


Figure 6. Monument area guidelines and plan view of example

Monument and related site development will be constructed through private donations

This sketch does not necessarily represent the final design; ideas to be generated by a design competition

Design Criteria - see Chamizal National Memorial Comprehensive Design;

Monument	Use strong vertical form, align with visitor center entrance and Cuidad Juarez Monument
	Frame view with trees
	Use asymmetrical design to provide a variety of visual configurations from different angles
Walkway and Base	Use geometric, not free form design
	Use low foreground plantings

Between the monument and the Juarez statue, the Loop 1 trail passes three waysides that also serve as rest areas. Each area will incorporate a quotation relating to what visitors can observe from that point. At the first area, visitors will see the Juarez statue; at the second, they will have a view back to the monument; and at the third, they will see the U.S. Port of Entry. The number of waysides/rest areas is limited to three because this number enables all relevant features to be interpreted and offers handicapped or elderly visitors several places to rest, without making the experience too repetitive. Several areas of native plants will also be incorporated along Loop 1.

2. Loop 2: Interpretation of Plant Use in the Border Region

The Loop 2 trail leads around the northeast corner of the memorial to the boundary markers, and then returns to the parking lot or visitor center (see Phase One, Sheets 1 and 2). The objective of this trail is to provide visitors an opportunity to increase their understanding of how peoples of both Hispanic and Anglo cultures utilized plants in the border region throughout the period of Chamizal's history. A series of native/historical/interpretive planting areas will be incorporated along the trail in the following sequence: 1) a cluster of areas suggesting native plant communities to interpret the use of native plants in the wild; 2) a cluster of areas suggesting crop plantings to interpret plant cultivation; and 3) a cluster of ornamental planting areas to show how native plants can be used in residential and commercial landscapes today. A self-guiding interpretive pamphlet should be used instead of waysides to make the interpretive experience more informal, to avoid the visual clutter and expense of additional waysides, to give visitors the option of reading as much or as little as they want, and to avoid a formal, structured atmosphere for those people using the trail for a casual stroll. The emphasis will be on Anglo and Hispanic cultures--those most directly associated with the Chamizal settlement--and not Native American cultures, to avoid duplication of the interpretive program at the Wilderness Park Museum north of El Paso.

Planting areas designed as part of a structured interpretive program are included only on the Loop 2 trail for several reasons. People using the Loop 2 trail will most likely include both first-time visitors unfamiliar with the layout of the memorial who are specifically interested in interpretation, as well as return or local visitors who enjoy walking the trail as part of their recreation experience, but who are not necessarily interested in interpretation. Those visitors interested in interpretation must be able to identify the specific locations where they need to go. Visitors will more easily be directed to a specific trail than to several different, dispersed locations throughout the memorial. If the interpretive planting areas relating to the ethnobotanical theme are dispersed throughout all three trails, visitors might miss certain parts of the sequence if they choose not to walk the entire distance, or they might confuse the ethnobotanical theme with other themes and features. Visitors might also miss the relationship between the different parts of the sequence if these sequences are separated. Dispersing the interpretive planting areas throughout the site might be appropriate if the intent were to identify types of plants separately and individually. However, the intent of the proposed

interpretive experience is broader--to identify individual plants and plant communities, to show the relationships between them, to explain the sequence of their use through time, and to discuss how the use of plants reflects border lifeways.

Planting areas will be arranged in clusters of relatively small areas for several reasons. Like chapters in a book or the outline of a report, clusters of planting areas will help "readers" simplify and understand the message. Arranging areas in clusters is appropriate for interpreting a series of subthemes within one overall theme. Native, cultivated, and ornamental plants will be grouped together because each type forms a visual and subject unit. A series of clusters is more likely to interest visitors than a series of individual areas because pauses between messages and visual variety add diversity to the experience. These planting areas, as with all of the planting areas throughout the site, can be divided into smaller, distinct, identifiable sections to encourage donations (see Section IV, Establishment and Maintenance Guidelines).

In addition to the interpretive planting areas, trees will be planted along Loop 2 and around the outside of the memorial to buffer and screen visitors from the sight, sound, and smell of traffic on Paisano Drive. Benches and wheelchair turnouts will be provided at all rest areas along the trial.

a. Interpretive Planting Areas

The objective of these planting areas is to give visitors an opportunity to increase their understanding of how Hispanic and Anglo peoples have, over time, interacted with their common environment--flora in particular--and the similarities and differences in the way they used plants. The interpretive theme for the series of planting areas is that peoples from two different cultural backgrounds shared and adapted to a common environment. Three clusters of areas--the native plant community cluster, the cultivated areas cluster, and the ornamental areas cluster--make up the series. For visitors specifically interested in interpretation, a self-guiding brochure should be available at the visitor center. The following is a description of the interpretive role and design of each area. Guidelines for the establishment and maintenance of these areas can be found in Section IV.

(1) Native Plant Communities. These areas will enhance visitors' understanding of different plant communities native to the El Paso region. The brochure will discuss how different plants interact within communities and will describe how different plants were used in the two cultures. The intent is to suggest the character of the different communities, not to try to replicate the natural setting.

--Lower arroyo community (see Phase Two, Sheet 4; and Sheet 10, Section 1). Plantings in this area will suggest a lower arroyo plant community. The interpretive brochure will discuss plant interactions and how plants were used, e.g., that flowers of the Desert Willow have been used as a source of honey. From the trail or either of the two rest areas

provided, visitors will be able to see the gravel "washes" developed in the existing drainage swales, the tree plantings (shown on sheet 4), and shrubs characteristic of this plant community planted in an irregular arrangement typical of such an area in the wild. Native shrubs should not be planted evenly spaced or in rows. Where the trail crosses existing drainage channels, sections of concrete trail, of the same width and colored to match the adjacent crushed brick, will be necessary to provide for drainage and prevent trail erosion (see Section IV, Establishment and Maintenance Guidelines). The following species should be planted in this area:

Desert Willow (Chilopsis linearis) (tree)
Mescat Acacia (Acacia constricta Benth.)(large shrub)
Apache Plume (Fallugia paradoxa) (medium shrub)
Brickellbush (Brickellia lacineata) (small shrub)
Shrubby poreleaf (Porophyllum scoparium) (shrubby perrenial)

--Springside/Upper Arroyo Community (see Phase Two, Sheet 4; and Sheet 10, Section 2). The plant community typical of a springside or upper arroyo will be suggested in this planting area. Located on the side of an existing slope it will reflect where this plant grouping grows naturally. Interpretive material should discuss plant interactions within this community and use of plants by peoples of both cultures. As with the lower arroyo area, trees to be planted are shown on sheet 4, and spacing and arrangement of shrubs should be typical of a native area. The following species should be planted in this area:

Western Soapberry (Sapindus saponaria var. drummondii) (tree)
Arizona Ash (Fraxinus velutina) (tree)
Arizona White Oak (Quercus arizonica) (tree or shrub)
Fremont Cottonwood (Populus fremontii) (tree)
Netleaf Hackberry (Celtis laevigata reticulata) (tree)
Mapleleaf Mulberry (Morus microphylla) (tree)
Apache Plume (Fallugia paradoxa) (medium shrub)
Catclaw Mimosa (Mimosa biuncifera) (medium shrub
Brickellbush (Brickellia lacineata) (small shrub)

--Desert scrub (see Phase Two, Sheet 4; and Sheet 10, Section 3). The desert scrub area is located on top of a slope to suggest the dry, hillslope setting of this native plant community. As with the other areas, interactions between plants within this community should be interpreted in addition to plant uses, for example, the medicinal use of creosote leaves. Within this area is a rest stop from which visitors can look back on all native plant community planting areas and over to the grove of trees at the picnic area. The desert scrub area is planted primarily with shrubs and with trees for shade. Again, native shrubs should be planted in

a naturalistic arrangement, with spacing typical of a desert scrub area in the wild. The following species should be planted in this area:

Catclaw Mimosa (Mimosa biuncifera) (medium shrub)
Creosote (Larrea tridentata) (medium shrub)
Torrey Yucca (Yucca torreyi)
Ocotillo (Fouqueria splendens)
Prickly Pear (Opuntia polycantha)
Cholla (Opuntia imbricata)
Sotol (Dasylirion Wheeler)
Sticky Little-leaf Krameria (Krameria parvifolia Benth. var. glandulosa)

(2) Native/Historical/Interpretive Areas. The three areas planted with crop plants will give visitors an opportunity to enhance their understanding of plant cultivation in the border region. The interpretive brochure should discuss what plants were used, how they were cultivated and used, and how cultivation and use patterns reflect border lifeways. The intent is to suggest the character of typical agricultural areas, not to replicate historical conditions.

-- Native Staples (see Phase Two, Sheet 3; and Sheet 10, Section 4). Sample plots of native plants typically used as staple crops are included in this area. The plant layout shown on sheet 3 is based on a consideration of plant size and compatibility: corn grows in the back, corn and squash together, beans and chili together, tomatoes and chili separated from each other, and cotton separated from other plants. Planting should be in rows to reflect typical early farming layouts. Pairs of compatible species can be planted alternating within rows or in alternating rows. A separate herb garden is located close to the trail and rest area.

--Early Introduced (see Phase Two, Sheet 3; and Sheet 10, Section 5). Plots in this area are slightly larger, reflecting the larger scale of farms after the introduction of crops such as wheat and oats. Broccoli and cauliflower are planted in rows, and the grains broadcast. A group of 7-8 different fruit trees suggest an orchard. Apple, apricot, peach, walnut, pear, plum, and quince trees can be included here. Historic varieties (e.g., the San Juan pear) are preferred if available; if not, nonhistoric varieties can be planted.

--Later Commercial (see Phase Two, Sheet 3; and Sheet 10, Section 6). Plants in this area have been grown commercially in the twentieth century in the El Paso area: grapes; jojoba (Simmondsia chinensis); and guayule (Parthenium argentatum). Planting is in rows, with row length emphasized by orienting rows parallel to the visitors' line of sight.

(3) Ornamental Areas (see Phase Two, Sheet 3; and Sheet 10, Section 7). Possibilities and advantages of using native plants in home and commercial landscapes today will be demonstrated in these three smaller areas. Low water-use plants will be used in the first area, low-medium water-use in the second, and medium water-use in the third to show

the difference in appearance. Since these areas are smaller and specifically ornamental, emphasis should be placed on specimen plants and special visual/color effects. Perennials such as aster, sunflower, and purple cone flower are appropriate for these areas. The plan on sheet 3 shows tree locations and species. Shrubs should be chosen from the shrub lists for general native/historical/interpretive planting areas (low water-use for the first area, low and medium water use for the second, and medium water-use for the third). (See Section III E).

b. Boundary Markers

Visitors continuing on the Loop 2 trail past the interpretive planting areas will come to the boundary markers and a wayside explaining the significance of the markers (see Phase Two, Sheet 2). To maximize visibility of the historic boundary markers, the fenceline should be moved to the north approximately ten feet, and the wayside located where visitors can see the line of markers in both directions (NPS 86). If moving the fence 10 feet is not possible, alternatives of either integrating the markers into the new wrought iron fence or moving the fence to the other side of the markers should be considered. The surrounding native/historical/interpretive planting will identify the markers as a special element and will provide a visual setting relating the historic markers to the border environment.

3. Loop 3

On the Loop 3 trail, visitors will pass special events areas and the lienzo. On this trail, they will experience a traditional park environment of shade trees and open spaces. Trail layout allows for circulation between special event areas without interfering with the use of those areas. Construction of a new lienzo is anticipated within the next ten to fifteen years, and landscaping adjacent to the lienzo will need to be postponed and integrated with the new lienzo. A wayside explaining the structure and function of the lienzo will be available to visitors. The seating area of the new lienzo should be handicapped-accessible, with the wayside located up at the level of the first row of seating, out of the main circulation flow, to give visitors a view down into the structure. Native/historical/interpretive planting areas will be included in the vicinity of the lienzo to identify it as a special element, and included along the trail immediately to the north to provide visual interest.

C. Enhancing General Outdoor Recreation Experiences

Opportunities for both passive and active outdoor recreation need to be maintained for visitors at the Memorial. When the comprehensive design is implemented, visitors watching amphitheater performances will have more shade without their view of the stage being obstructed. Acoustics will be improved with the addition of a soundshell (NPS 1986). Additional tree planting will provide more shade at special event areas. Joggers will be able to use loop trails instead of the road. The water feature will provide an additional area for unstructured play, and open play areas of different sizes will be maintained. Unstructured areas throughout the memorial (e.g.,

the southeast swale area and the special event areas when not in use for festivals) will provide areas for passive recreation.

Visitors coming to the memorial to picnic will have a choice of three different areas, each with a different setting and view. Picnic sites with two and three tables will be provided for small groups, and handicapped-accessible tables will be provided on at least one site in each picnic area. Picnic area trails and sites will have the same surface as loop trails (see Phase Two, Sheet 9, Detail I).

III. PLANTING PLAN

Throughout the memorial, planting defines and identifies different use areas, provides shade, and increases visual attractiveness. Plants native to the borderlands region are used wherever possible. Planting falls into the five main categories listed below.

A. Shade Trees

This category includes both deciduous and coniferous trees (see Phase Two, Sheets 2-7). The large evergreen used for shade and screening will be the Chihuahua Pine (Afghan Pine, Pinus eldarica, can be used if the Chihuahua is not available). Pinyon Pine and One-seed Juniper will be the medium evergreens used. Based on their size, availability, suitability for the area, and amount of shade produced, Arizona Ash, Fremont Cottonwood, and Western Soapberry will be the major deciduous shade trees. Arizona Ash will delineate major circulation routes (e.g., entry road), Cottonwoods will provide shade in lower, moister areas, and Soapberries will provide shade and visual backdrop in outlying, informal areas. Because of the berries they produce, Soapberries are not suited for planting in formal areas or adjacent to trails. In addition to these major shade trees, other native deciduous trees will be used, such as Arizona Sycamore, Netleaf Hackberry, and Southern Live Oak [Chinquapin Oak (Quercus muhlenbergii Engelm.) can be substituted for Southern Live Oak]. Shade trees will be planted in groves (clusters of same species) to develop a variety of environments and visual scenes throughout the memorial while maintaining a unified appearance.

B. Desert Planting Areas

Areas of native desert plants such as cactus and yucca presently growing in traffic and parking lot islands and at entrances will be maintained. Palo Verdes will be added to the entrance areas to increase this species' visual impact.

C. Interpretive Planting Areas

As described above, these areas will occur along Loop 2, using primarily native plants to illustrate specific interpretive themes.

D. Accent Planting

As described in the discussion of Loop 1, accent planting will be used around the three commemorative features to highlight and strengthen the connection between these areas (see areas identified as accent shrub areas on Phase One, Sheet 2). These areas are the only locations within the planting plan where shrubs are to be planted in rows. The same species of native flowering shrub will be planted in shrub beds in all three areas, and will be a low-growing (1-1/2 ft tall) mounding plant such as Brittlebrush (Encilia farinosa).

E. Native/Historical/Interpretive Planting Areas

Native/historical/interpretive planting areas differ from desert planting areas in that they include plants native to the borderlands region at higher elevations. Some introduced plants used by both cultures during the historic period at Chamizal are also appropriate for these areas. These areas occur around the perimeter to buffer visitors from street noise, to increase the sense of enclosure, and to strengthen the memorial boundary. Native/historical/interpretive planting areas located on trail loop 1, 2, and 3 add visual and sensory interest and provide opportunities for unstructured "discovery" interpretation. In these areas along the trails, annual and perennials can be used and individual plant and special uses of plants can be highlighted. As indicated on the plans (Phase Two, Sheets 2-7), a variety of smaller, colorful plants should be used next to the trail and seating areas with larger shrub masses behind.

F. Shrub List

The following five-category list of shrubs is recommended for the native/historical/interpretive planting areas: large non-ornamental (L); medium non-ornamental (M1); medium ornamental (M2); small non-ornamental (S1); and small ornamental (S2). On Phase Two, Sheets 2-7, native/historical/interpretive planting areas are divided into shrub category zones. Each of the five shrub categories is divided between low water-use (less than 8 or 10 inches of water needed per year) and medium water-use (between 8-10 and 16 inches of water needed per year). Shrubs are listed by common name, followed by botanical name in parenthesis. Botanical names should be used when ordering plants, since common names may vary.

L--large (over 6 ft tall), evergreen, non-ornamental, dense and full shrubs for screening/buffer.

low water-use (< 8-10 inches/year)
Texas Ranger (Leucophyllum frutescens)
Roemer Acacia (Acacia roemeriana)
Cholla (Opuntia imbricata)
Yellowbells (Tecoma stans)

medium water-use (between 8-10 and 16 inches/year)
Emory Oak (Quercus emoryi)
Redberry Juniper (Juniperus pinchotti)

M1--medium (3-6 ft tall), deciduous or evergreen, non-ornamental shrubs.

low water-use
Fourwing Saltbush (Atriplex canascens)
Rabbitbrush (Chrysothamnus nauseosis)
Sacahuista (Nolina texana)
Longleaf Ephedra (Ephedra trifurca)

medium water-use
Mormon Tea (Ephedra torreyana)
Gambel Oak (Quercus gambelii)
Scrub Oak (Quercus turbinella)
California Brickell Bush (Brickellia californica)

M2--medium (3-6 ft tall), deciduous or evergreen, ornamental shrubs

low water-use
Century plan (Agave americana)
Mescal (Agave neomexicana)
Sotol (Dasylirion Wheeler)
Ocotillo (Fouqueria splendens)
Prickly Pear (Opuntia polycantha)
Red Yucca (Hesperaloe paviflora)
Yellowbells (Tecoma stans)
Littleleaf Sumac (Rhus microphylla)

medium water-use
Larch-leaf Goldenweed (Ericameria larixfolia)
Apache Plume (Fallugia paradoxa)
Pale Wolfberry (Lycium pallidum)
Catclaw Mimosa (Mimosa biuncifera)
Yellow Trumpet (Stenolobium)
Sand Sage (Artemisia filifolia)
Texas Current (Berberis trifoliolata)
Evergreen Sumac (Rhus virens)

S1--small (under 3 ft tall), deciduous or evergreen non-ornamental shrubs

low water-use
Guayule (Parthenium argentatum)
Tuberclad Saltbush (Atriplex acanthocarpa)
Broom Dalea (Dalea scoparia)

medium water-use
Prairie Acacia (Acacia angustissima var. chisosiana)
Desert Seepweed (Suaeda suffrutescens)
Hoary Rosemary-mint (Poliomintha incana)

S2--small (under 3 ft tall), deciduous or evergreen, ornamental shrubs.

low water-use
Plume Coldenia (Coldenia Greggii)
Southwestern Barrel Cactus (Ferocactus wislenzii)
Feather (Purple) Dalea (Dalea formosa)
Silver Carpet Dalea (Dalea greggii)

medium water-use
Brittlebrush (Encilia farinosa)
Mexican oregano (Poliomintha longifolia).

IV. ESTABLISHMENT AND MAINTENANCE GUIDELINES

The following maintenance guidelines provide general background and direction for the establishment and maintenance of plantings throughout the Memorial. During the design/construction phase, specific irrigation and fertilization schedules should be developed, particularly for native/historical/interpretive/interpretive planting areas ("planting areas"). Securing the services of a horticulturalist specializing in native plants either on a part-time staff or consultant basis, is recommended to ensure establishment success and continued appropriate maintenance.

A. Plant Acquisition

1. Although most plant materials will be acquired through donations and the quality of donated plant materials may vary, it is important to accept and use only plants in good condition. This will minimize the amount of plant replacement required later.

2. If plants are acquired from a nursery, ensure they have a replacement guarantee.

3. Ball and burlap or container plants are much preferred over bare root plants because of potential root damage and desiccation with bare root plants. Transplanting success may be improved if plants grown in pulp containers are used; since there is no need to remove the container, roots are not disturbed.

4. When acquiring cactus from the wild or from a nursery, mark the south-facing side before relocating, and store or plant with the same side facing south to prevent sunburn.

5. Botanical names should be used when ordering plant materials since common names for the same plant may vary.

6. Donated plants should be held in the park plant nursery until all necessary soil preparation and irrigation system installation is completed in the area where the plant is to be installed, and after the exact

planting location has been staked by a landscape architect. The area immediately north of the lienzo, adjacent to the well, can be used to hold plants until new lienzo construction begins.

B. Soil Preparation

1. Throughout the memorial, areas of alkaline soil, saline soil, nutrient deficiencies, and underlying caliche layer make for difficult growing conditions. To ensure transplant survival and continued healthy growth of native plants accustomed to well-drained, slightly alkaline soils, soil amending prior to planting will be necessary, even if this means delaying planting. If soil amending is not done prior to planting, more work and expense may be required later to replace plants, apply fertilizers, or attempt to improve drainage through the caliche layer with the new plantings in place. Specific treatments for different areas will depend on existing soil characteristics and the type of plants designated for the specific area. (Marc Kelley at Back to Earth Resources, Inc., in Dallas, can be consulted concerning a soil map for enhancing the growth and drainage through soil to remove salts.)

2. Roots tend to grow in the best soil available. If nutrients or organic matter are added to soil used to backfill the transplant hole, roots will tend to grow in that area only, as if they were still in a container, rather than grow out into existing soil. To avoid this "container effect", soil should be amended throughout an entire planting area, or not at all. Trees planted within existing lawn, on the other hand, would probably do better if planted in the existing soil with fertilizers added as necessary on a seasonal basis.

3. For each planting area:

a. Determine characteristics of existing soil. Characteristics should include soil texture (percent sand/clay/silt), pH, salinity, nutrient levels (especially nitrogen, phosphorous, and potassium),topsoil depth, and depth to and through caliche layer. Some of this information is available in soil studies completed at Chamizal in 1971 and 1975 (Jaco and Lambert 1971; NPS 1975). More soil testing may be necessary.

b. Determine soil amendment program. The objective for native plants is to develop a soil with characteristics similar to the native soil in which they would have grown in the wild. Soils will differ slightly between areas:

--Lower and upper arroyo areas: simulate native arroyo soils with high gravel/sand content

--Desert scrub areas: simulate native hillside soils with a rocky surface in places

--Native/Historical/Interpretive areas: simulate valley soils with loam/sandy loam texture

--Ornamental and native/historical/interpretive areas: simulate typical landscaping soil with sandy loam texture

Soils should be well-drained but not so well-drained that nutrients leach out of the root zone. Nutrient levels should approximate those found in native soil, that is, be relatively low.

c. Amend soil prior to planting. To avoid the container effect described above, fertilizers and organic material should not be added to backfill. Instead, fertilizers should be added as necessary after transplanting on a seasonal basis. If a caliche layer is present within the root zone--which could be quite deep if plants with tap roots are to be planted--a drainage hole should be drilled and backfilled with sand or gravel prior to planting (see Phase Two, Sheet 8). Increasing soil drainage will help leach salts out of the root zone, and will prevent soil saturation. The drainage hole should be tested before planting: fill the transplant hole approximately one fourth full of water, and check to see if the infiltration rate is the same as that of native soil. Existing bare patches where turf growth is stunted by salty soil would also benefit from drilling through the caliche layer.

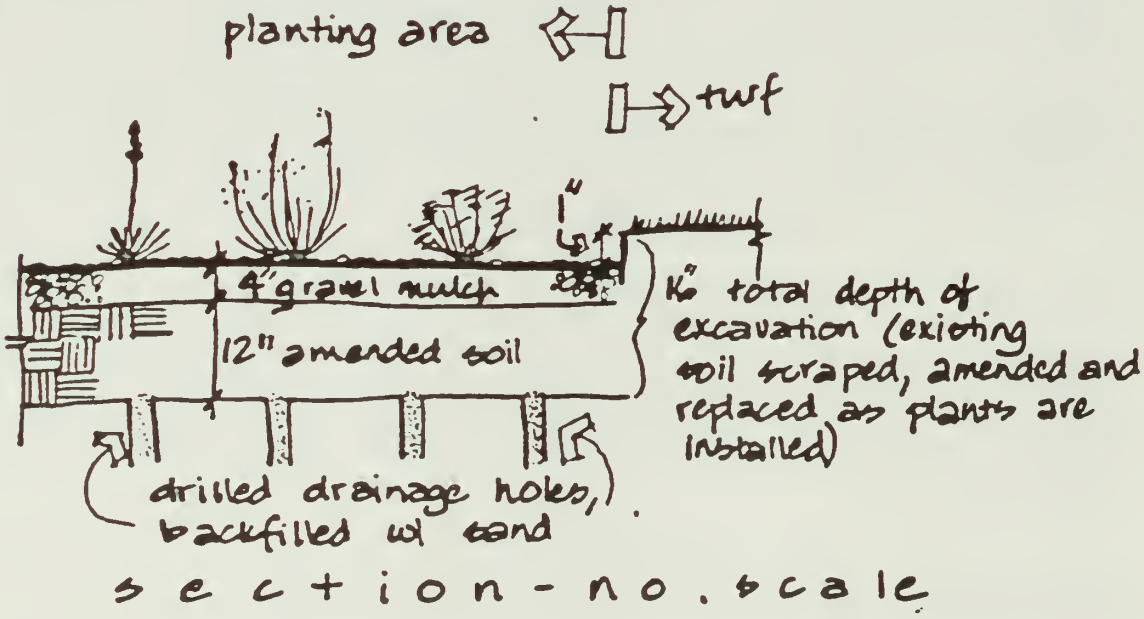


Figure 7 . Planting area section.

4. The addition of sand or pumice to saline soils will open up the soil and increase the leaching of salts below the root zone.

5. Mycorrhizae (natural fungi that help plants absorb nutrients) should be encouraged by maintaining a soil environment similar to native soil, by not using fungicides, and by not overwatering or overfertilizing.

6. Arizona Sycamores may need additional applications of chelated iron to maintain health.

7. Oak trees grow better in acid soils. If soil is alkaline where oaks are to be planted, soil pH will need to be lowered, that is, made more acidic. Also, oaks are not as salt tolerant as other trees to be planted at the Memorial. Therefore, avoid spraying oak foliage with saline irrigation water from the rotor heads.

8. Fertilizers do not need to be added during the rainy season because rainwater fertilizes naturally.

C. Irrigation

1. Two systems will be necessary to irrigate the Memorial: the existing rotor spray system to water the turf and trees planted in the turf areas; and a drip irrigation system to water planting areas, Arizona Ash planted in existing desert planting area directly south of the parking lot, and areas of native plants around the Monument, water feature, and Juarez statue. Maintenance problems associated with mineral deposits in the drip system will be minimized if irrigation water is filtered to eliminated salts. The two systems will need to run off separate lines and controls to accommodate different watering schedules. Drip irrigation should be used for all planting areas because plants in these areas need infrequent, deep soakings; not the frequent light coverage as supplied by the rotor system. The drip system will allow for precise placement of water at the root zone of each plant, thereby conserving water and giving each plant the correct amount. To avoid overspray onto the planting areas, the radius and angle of spray from some rotor heads adjacent to these areas will need adjusting. All drip irrigation system components should be installed underground to avoid vandalism and deterioration of lines.

2. In turf areas, only the amount of water appropriate for the particular time of year, at a rate not exceeding the infiltration rate of the soil, should be applied (Jacob and Lambert 1971, p. 6). This will avoid overwatering and ponding. Salinity of well water should be reduced by introducing a filtration system.

3. Trees planted in turf areas should be well watered, by hand or hose if necessary, right after transplanting, and then watered every day for two weeks. After this, water received from regular turf irrigation should suffice.

4. Native plants should receive periodic deep soaks to promote deeper root growth. They should be well watered, using the drip system, directly after transplanting, every day as necessary for the first week or two, then weekly and then monthly as necessary. Once the plants are established, they will be able to thrive on little or no water, supplemented by natural rainfall. Length of time required for establishment depends on the individual plant, and usually is about one year. Young transplants will establish more quickly than mature transplants or plants collected from the

wild. Once established, plants in the arroyo areas will need more water than those in the desert scrub areas. Curling leaves are an indication that the plant needs watering; drying conditions to the point of wilting should be avoided.

5. It is better to slightly underwater than to slightly overwater dry climate and drought tolerant plants. Overwatering should be avoided because it promotes rank growth which in turn necessitates pruning and attracts insects. It may also lead to plant "suffocation" due to saturation of the root zone and the resulting unavailability of oxygen.

6. Plants receiving more water (e.g., those in the arroyo areas) will also need more nutrients because of the leaching effect of watering. Time-release fertilizers are recommended, if needed.

7. Metal edging should be used around all planting areas to separate lawn and gravel mulch, and a combination of metal edging and turf-covered swale should be developed around the upper slope of the planting areas to divert saline irrigation water.

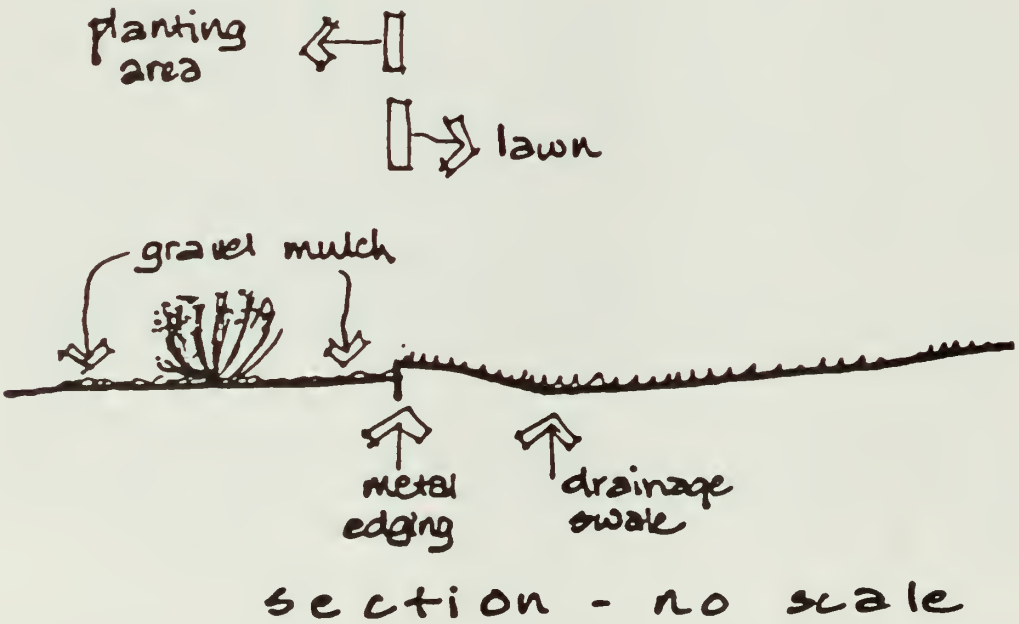


Figure 8. Planting area edging berm

D. Transplanting

1. All planting area boundaries and specific plant locations are to be staked in the field by a landscape architect. Area boundaries will be laid out in accordance with the planting plan as much as possible, with some modifications made as necessary for coordination with the existing rotor irrigation system. Transplanting native vegetation should be done only after soil preparation is completed.

2. In the El Paso area, the best time for transplanting if from November to early March. During this time there is less danger of roots drying out because of cooler temperatures and less severe winds.

3. Root disturbance should be minimized during transplanting. Plants which develop tap roots should be transplanted young to avoid disturbance of a large root. The root ball of a ball and burlap plant should be moist before transplanting. Root breakage should be avoided. Thinning the upper plant will help prevent roots drying out, but shearing is to be avoided since it inhibits new root production (see section on pruning below).

4. Planting holes should be dug according to the details on the planting detail sheet (See Phase Two, Sheet 8). Drilling a hole through the caliche layer to ensure adequate drainage as discussed above, is an important step prior to transplanting.

5. As shown in the details, plants should be supported through at least the first growing season with stakes and guy wires. The stakes and wires will also make the new plants more visible and less prone to mower damage.

6. Fertilizers and organic material should not be mixed in with the backfill soil to prevent a container effect, as described above.

7. All transplants should be well-watered directly after being planted, and given frequent deep watering for the first week or two following planting (see irrigation section above).

8. Trees planted adjacent to curbs or walks should be planted five feet from the edge of the curb or walk.

9. Berms should be developed around trees planted in dirt areas (e.g., west of the lienzo) to increase water retention and to discourage traffic over root zone.

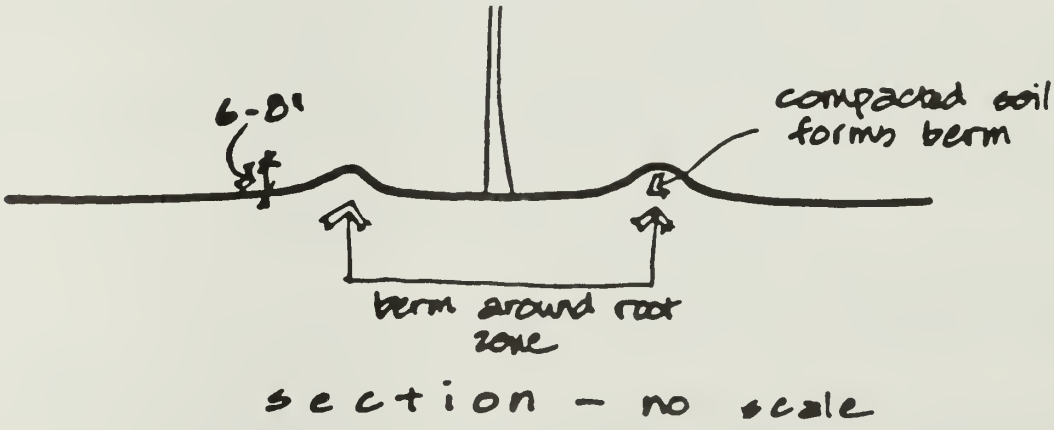


Figure 9. Tree wells

10. Weed growth should be kept to a minimum to reduce competition with desired plants.

E. Pruning

1. Native plants should need little or no pruning if they are not overwatered or overfertilized. Some thinning to clear out deadwood or extraneous growth to increase attractiveness is appropriate.

2. Shearing, which causes the plant to increase branch and twig density is appropriate for formal hedges, but not for native plants:

Figure 10. Thinning vs. shearing
(from Phillips, 1987 p. 62)

3. Shade trees may need to have lower branches pruned to maintain a 6-8 foot canopy height.

4. Pruning cuts should be made just above a bud or at the base of a stem or branch to avoid leaving a stub that will wither, die, and possibly provide an entry point for decay.

5. Summer pruning will last longer than spring pruning because it does not stimulate further growth.

F. Mulching

1. Mulching conserves soil moisture and discourages weed growth. Inorganic materials such as crushed brick, decomposed granite or arroyo gravel, and organic materials such as cotton seed hulls can be used.

2. Mulch needs to be deep--4-6 inches--to be most effective.

3. A weed barrier of black plastic is not recommended because the plastic blocks the natural movement of soil oxygen, water, and nutrients. Woven filter fabric should be used in new planting areas and existing desert planting areas.

4. In the interpretive planting areas that represent the different ecological zones, a mulch/ground cover of gravel mixed with crusher fines is recommended, to suggest the natural desert floor. Within the historical areas, an organic mulch typical of what was used on early farms should be used. In the other planting areas, a combination of gravel/fines and low-water using ground cover, for example, native grasses or native wildflowers, should be used.

G. Miscellaneous

1. Local groups interested in donating materials and/or labor for the planting areas can choose an individual small area or a section of a larger area. Although it is important to maintain the visual continuity of the areas, especially those along Loop 2 suggesting different plant communities, it is possible to define distinct smaller sections. For example, the trail, interpretive rest stop, and drainage channel can be used to divide the lower arroyo area into meaningful sections.

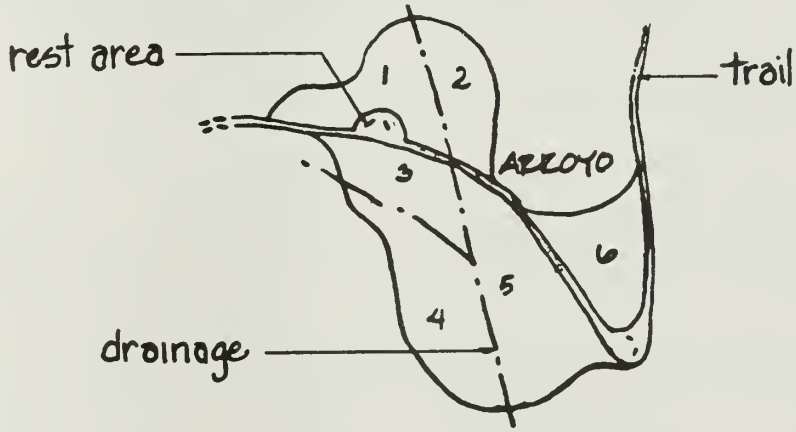


Figure 11. Planting area divisions

Also, narrow gravel paths established for maintenance access can be used to divide areas and sections. These paths should be staked in the field by a landscape architect.

2. Crushed brick trails should be compacted (see Phase Two, Sheet 9, Detail G). Raking and recompacting may be necessary if cross-slope drainage causes resettling of brick particles. To prevent trail erosion where trails cross existing drainages (e.g., in the center of the lower

arroyo area), a concrete trail section, of the same width as the crushed brick trail (i.e. six feet) and colored to match the crushed brick, should be constructed. The length of these concrete sections will depend on the width of the drainage, and should be kept as short as possible:

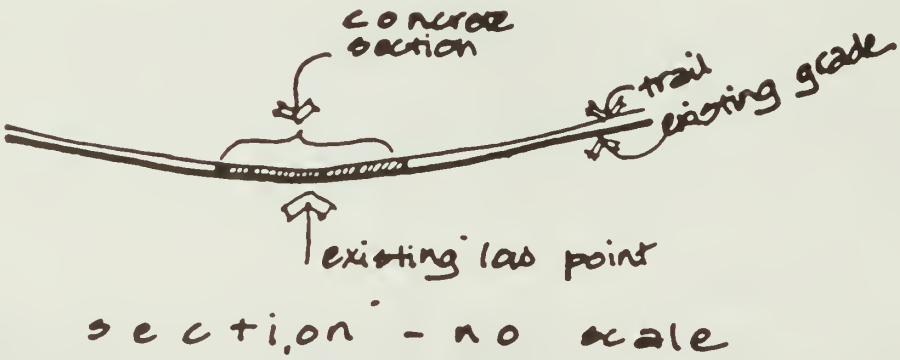


Figure 12. Drainage crossings

The concrete should be colored by mixing crushed brick particles in the concrete mix or by using a concrete-coloring process (e.g., Color-crete, a chemical colorant sprayed on after concrete has set. ref: Color-crete, P.O. Box 9307, Santa Fe, New Mexico, 87504). It is important that the color of the concrete sections be the same throughout.

3. During layout of planting areas, narrow strips of lawn should be avoided to eliminate mowing.

4. Anyone doing planting should be aware of the location of the various buried facilities such as: irrigation system pipes, buried telephone and electricity lines. The easement granted to the state of Texas for storm drainage facilities has nine conditions of the deed, and these should be checked before implementing the final actions of this planting plan.

5. Weed and pest control procedures should be worked out prior to and incorporated with soil preparation/planting.

6. A comprehensive turf management plan is needed to reevaluate condition and management of turf throughout the monument

V. PHASING

Trails, picnic areas, and commemorative features should be installed as soon as possible. Trails and picnic areas should, ideally, be installed prior to planting to avoid additional redesign or transplanting. Trees to be planted in existing lawn areas can be installed as soon as they are available because no additional soil or irrigation work is needed in lawn areas. Preparatory work, including determination of a water source for the drip irrigation system, and some soil amending, is necessary before native/historical/interpretive areas are planted (see Section IV,

Establishment and Maintenance Guidelines). Drip irrigation should be installed after planting to insure accurate coverage. Planting areas around the memorial perimeter should be established first, to improve the overall environment; then establish areas on Loops 1, 2, and 3. Planting areas should be installed only as money, time, labor, and expertise are available for their proper establishment and maintenance.

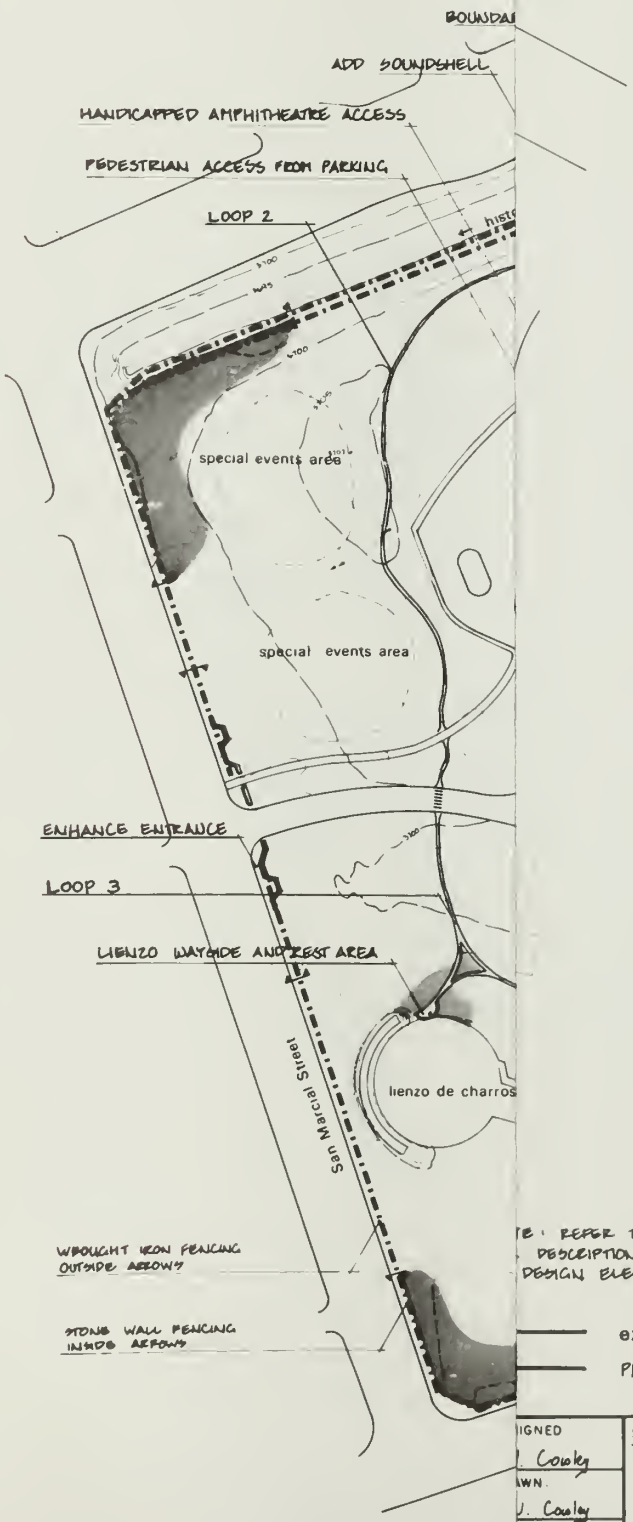
VI. MATERIALS LIST

National Park Service funding:

--7 interpretive waysides ($50,000; Harpers Ferry estimate)
--6350 lineal feet of 6-foot wide trail: 355 cubic yds crushed brick, compacted, and 465 cubic yds road base material, compacted.
--12 trail turnouts at 120 sq ft each (160 sq yd total); same surface as trails.
--0.75. cubic yds concrete
--425 sq yd surface for picnic areas (same surface as trails)
--20 picnic tables (at least 3 wheelchair-accessible)
--20 picnic site trash receptacles
--20 picnic site grills (3 or 4 suitable for small groups)
--Approx. 14,000 lineal feet drip irrigation line, plus valves etc as needed
--Irrigation pipe, valves, and heads as needed to modify existing rotor irrigation system.
--20 sq ft wood sign
--4040 lineal feet 4-foot high wrought iron fence
--1840 lineal feet 3-foot high stone wall

Donations:

--20 benches
--20 pedestal grills
--20 trash receptacles
--monument and related site development
--water feature and related site development
--Juarez statue and related site development
--Lienzo de charros and related site development
--approx. 500 shade trees
--approx. 10,800 native plants
--approx. 2500 cultivated plants
--approx. 5000 accent shrubs



TE: REFER TO "DESIGN ANALYSIS"
DESCRIPTION / EXPLANATION
DESIGN ELEMENTS

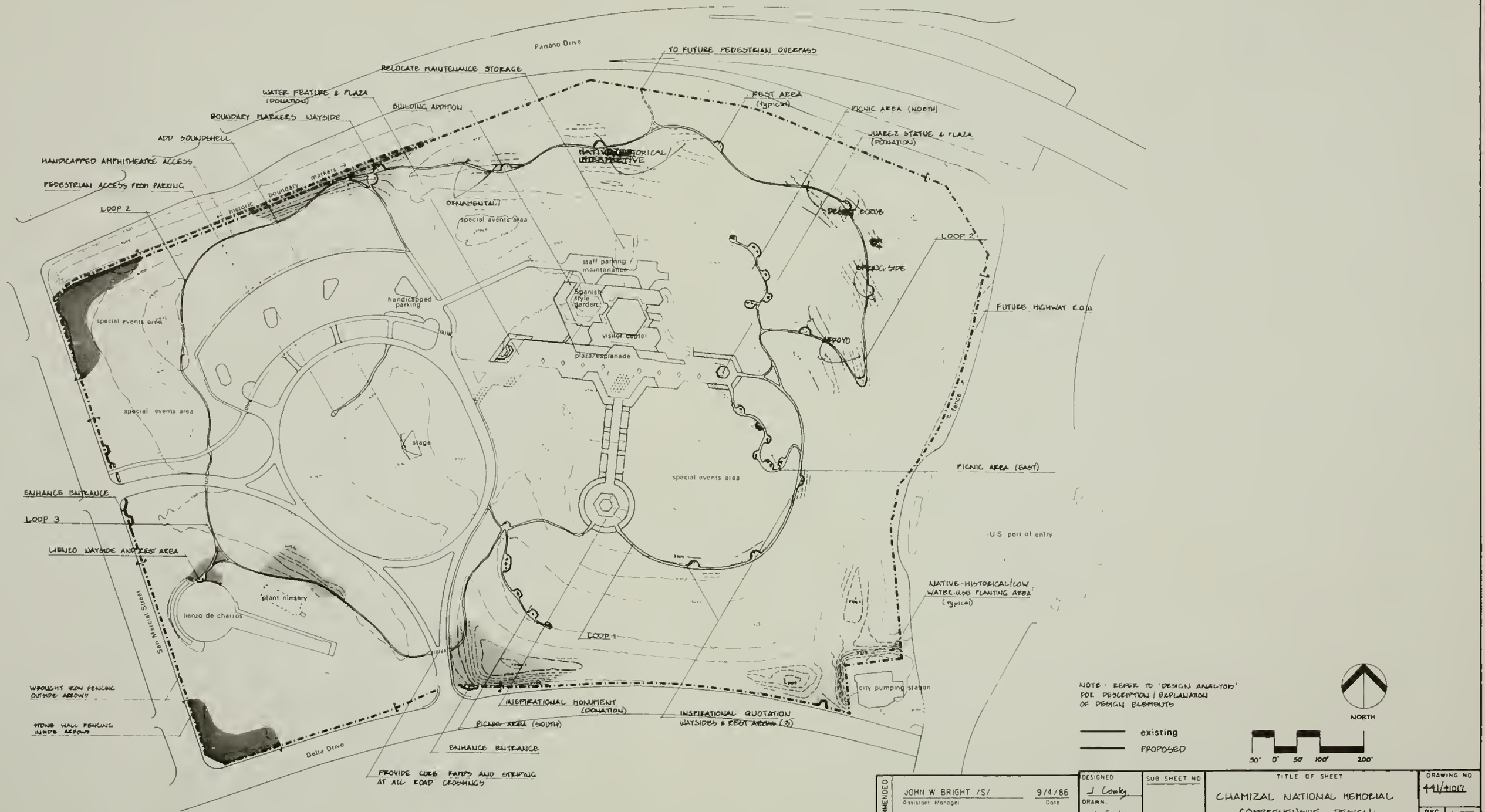
NORTH

existing
PROPOSED

50' 0' 50' 100' 200'

IGNED J. Cowley	SUB SHEET NO	TITLE OF SHEET CHAMIZAL NATIONAL MEMORIAL COMPREHENSIVE DESIGN: PHASE ONE **Site Plan**	DRAWING NO. 441/41017
AWN. J. Cowley			PKG. NO. 143 / SHEET 1
CH. REVIEW T. DALL			OF 2
TE 9/86			

☆U.S. GOVERNMENT PRINTING OFFICE: 1985



RECOMMENDED	JOHN W BRIGHT /S/ — Assistant Manager	9/4/86 Date	DESIGNED: J Cowley
	FRANKLIN G SMITH /S/ — Superintendent	9/4/86 Date	DRAWN: J Cowley; TECH. REVIEW: T DALL
APPROVED	ELDON G. REYER, SWRO /S/ — Assistant Director - Region	9/4/86 Date	DATE: 9/86

SUB SHEET NO

TITLE OF SHEET

CHAMIZAL NATIONAL MEMORIAL

COMPREHENSIVE DESIGN: PHASE ONE

Site Plan

DRAWING NO 441/41017

PKG. NO. 143 — SHEET 1 OF 2

PLANTING LEGEND

* See DESIGN ANALYSIS for suggested plants

EXISTING PROPOSED

SHADE TREE

NATIVE/low water-use TREE

LARGE EVERGREEN TREE

MEDIUM EVERGREEN TREE

ACCENT SHRUBS

DESERT PLANTING ISLANDS

NATIVE-HISTORICAL/LOW WATER-USE PLANTING AREAS

NORTH

50' 0' 50' 100' 200'

EXISTING

PROPOSED

SIGNED J Cowley	SUB SHEET NO	TITLE OF SHEET	DRAWING NO. 441/41017
RAWN J. Cowley		CHAMIZAL NATIONAL MEMORIAL COMPREHENSIVE DESIGN PHASE ONE **Planting Plan**	PKG. NO.
ECH. REVIEW T DALL			SHEET 2 OF 2
ATE 9/86			

☆ U S GOVERNMENT PRINTING OFFICE · 1985

PLANTING LEGEND

* See DESIGN ANALYSIS for suggested plants

EXISTING PROPOSED

SHADE TREE

NATIVE/low water-use TREE

LARGE EVERGREEN TREE

MEDIUM EVERGREEN TREE

ACCENT SHRUBS

DESERT PLANTING ISLANDS

NATIVE-HISTORICAL/LOW WATER-USE PLANTING AREAS

NORTH

EXISTING

PROPOSED

50' 0' 50' 100' 200'

DESIGNED	SUB SHEET NO	TITLE OF SHEET	DRAWING NO
J Cowley		CHAMIZAL NATIONAL MEMORIAL	441/41017
DRAWN. J Cowley		COMPREHENSIVE DESIGN	PKG. NO.
TECH. REVIEW T. DALL		PHASE ONE	SHEET 2
DATE 9/86		**Planting Plan**	OF 2

U.S. GOVERNMENT PRINTING OFFICE: 1983

PLANTING LEGEND

* See DESIGN ANALYSIS for suggested plants

EXISTING PROPOSED

SHADE TREE

NATIVE/low water-use TREE

LARGE EVERGREEN TREE

MEDIUM EVERGREEN TREE

ACCENT SHRUBS

DESERT PLANTING ISLANDS

NATIVE-HISTORICAL/LOW WATER-USE PLANTING AREAS

IDENTIFICATION LETTER

SHEET DETAIL SHOWN ON

A

9

DETAIL IDENTIFICATION SYMBOL (SEE SHEETS 2-7 FOR REFERENCE LOCATIONS)

Comprehensive Design Package:

SHEET 1 - INDEX
2 - PLANTING PLAN
3 - " "
4 - " "
5 - " "
6 - " "
7 - " "
8 - PLANTING DETAILS
9 - CONSTRUCTION DETAILS
10 - INTERPRETIVE AREAS - SECTIONS

NOTE: PLANTING PLAN SHOWN HERE (PHASE ONE) IS INCLUDED FOR GENERAL REFERENCE PURPOSES ONLY. FOR ACTUAL - PLANT INSTALLATION AND CONSTRUCTION OF TRAILS ETC, SEE SHEETS 2-7 OF THIS SET.

NORTH

SCALE 1"=100'

75' 25' 100' 200'

100' 50' 0

STING

OPOSED

GNED OWLEY	SUB SHEET NO	TITLE OF SHEET CHAMIZAL NATIONAL MEMORIAL COMPREHENSIVE DESIGN PHASE TWO PACKAGE **Index**	DRAWING NO 441 / 41019
WN: NLEY/LASKO			PKG. NO. 143
H. REVIEW: T DALL			SHEET 1 OF 10
E: 7/88			

☆U S GOVERNMENT PRINTING OFFICE · 1985 · 170-9AA

PLANTING LEGEND

* See DESIGN ANALYSIS for suggested plants

EXISTING PROPOSED

- SHADE TREE
- NATIVE/low water-use TREE
- LARGE EVERGREEN TREE
- MEDIUM EVERGREEN TREE
- ACCENT SHRUBS
- DESERT PLANTING ISLANDS
- NATIVE-HISTORICAL/LOW WATER USE PLANTING AREAS
- IDENTIFICATION LETTER / SHEET DETAIL SHOWN ON — DETAIL IDENTIFICATION SYMBOL (see sheets 2-7 for reference locations)

Comprehensive Design Package:

SHEET 1 - INDEX
2 - PLANTING PLAN
3 - " "
4 - " "
5 - " "
6 - " "
7 - " "
8 - PLANTING DETAILS
9 - CONSTRUCTION DETAILS
10 - INTERPRETIVE AREAS - SECTIONS

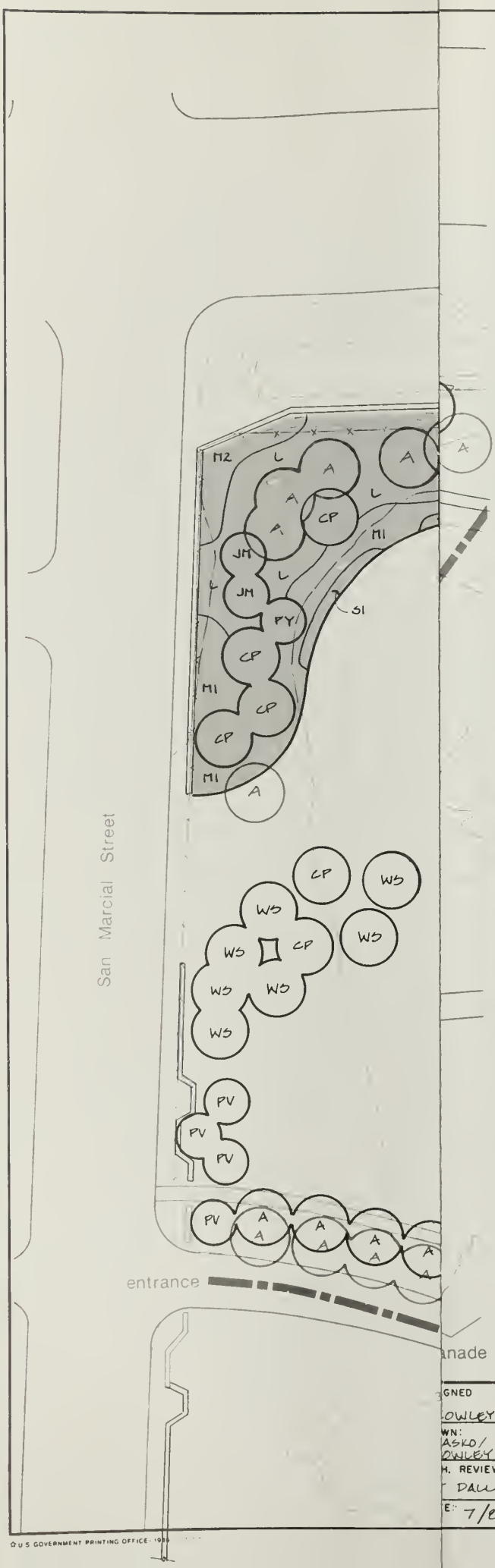
NOTE: PLANTING PLAN SHOWN HERE (PHASE ONE) IS INCLUDED FOR GENERAL REFERENCE PURPOSES ONLY. FOR ACTUAL PLANT INSTALLATION AND CONSTRUCTION OF TRAILS ETC., REF SHEETS 2-7 OF THIS SET

EXISTING
PROPOSED

NORTH

SCALE 1"=100'
75' 25' 100 200'
100 50 0

RECOMMENDED: JOHN W BRIGHT /S/, Assistant Manager — 9/19/88 Date	DESIGNED: COWLEY	SUB SHEET NO	TITLE OF SHEET: CHAMIZAL NATIONAL MEMORIAL — COMPREHENSIVE DESIGN PHASE TWO PACKAGE — Index
RECOMMENDED: FRANKLIN G SMITH /S/, Superintendent — 12/23/88 Date	DRAWN: COWLEY/LACEO		DRAWING NO 441 / 41019
APPROVED: EDWIN L SHELLENBERGER, Assoc Director - Region SWRO — 12/23/88 Date	TECH. REVIEW: T DALL		PKG. NO. 143
	DATE: 7/88		SHEET 1 OF 10



Key

- EXISTING
- PROPOSED
- EXISTING TO REMOVE
- NATIVE/HISTORICAL/INTERPRETIVE PLANTING AREAS

Plant List

Code	Common Name	Botanical Name	Qnty. to add	Size
TREES (see Design Analysis for more information) • NATIVE				
A	Arizona Ash•	Fraxinus velutina	61	3-3½"/24" box
AS	Arizona Sycamore•	Platanus wrightii	13	15 gal.
CB	Chinaberry	Melia azedarach		
CL	Cherry Laurel	Prunus caroliniana		
CP	Chihuahua Pine•	Pinus leiphylla var. chihuahuana	17	
DW	Desert Willow•	Chilopsis linearis		5 gal.
EO	European Olive	Olea europaea		
F	Fruit tree			1-1¼"
FC	Freemont Cottonwood•	Populus fremontii	2	2½-3"
GW	Globe Willow•	Salix matsudana		
H	Netleaf Hackberry•	Celtis laevigata var. reticulata		15 gal.
HL	Honey Locust	Gleditsia triacanthos		
HM	Honey Mesquite•	Prosopis glandulosa		15 gal
IC	Italian Cypress	Cupressus sempervirens		
JM	One-seed Juniper•	Juniperus monosperma	4	5 gal
LO	Southern Live Oak•	Quercus virginiana		10 gal.
LP	Lombardy Poplar	Populus nigra 'Italica'		
M	Mulberry	Morus alba		
MB	Mexican Buckeye•	Ungnadia sp.		1-1½"
ME	Mexican Elder•	Sambucus mexicana		
MFP	Mexican Fan Palm	Washingtonia robusta		
MIM	Texas Mimosa•	Acacia greggii		
MM	Mapleleaf Mulberry•	Morus microphylla		
MR	Mexican Redbud•	Cercis canadensis var. mexicana		5 gal
PV	Mexican Palo Verde•	Parkinsonia aculeata	4	15 gal.
PY	Pinyon Pine•	Pinus cembroides edulis	3	5 gal.
SM	Screwbean Mesquite•	Prosopis pubescens		24" box
TE	Texas Ebony•	Pithecellobium flexicaule		20" box
VC	Valley Cottonwood•	Populus fremontii var. wislizenii		
WS	Western Soapberry•	Sapindus saponaria var. drummondii	10	1-1½"

SHRUBS (see Design Analysis for descriptions, shrub lists)	
1	Existing - misc. deciduous shrubs
2	Existing - misc. ornamental shrubs
3	Existing - flowering, accent plants
4	Existing - desert plants
L	Proposed - large native shrubs
M1	Proposed - medium, non-ornamental native shrubs
M2	Proposed - medium, ornamental native shrubs
S1	Proposed - small, non-ornamental native shrubs
S2	Proposed - small, ornamental native shrubs

Notes

- Plants to be installed after all necessary soil has been been completed and after location has been staked in the field by a landscape architect.

Detail Identification Symbol

Identification Letter — A

Sheet Detail shown on — 9

NORTH

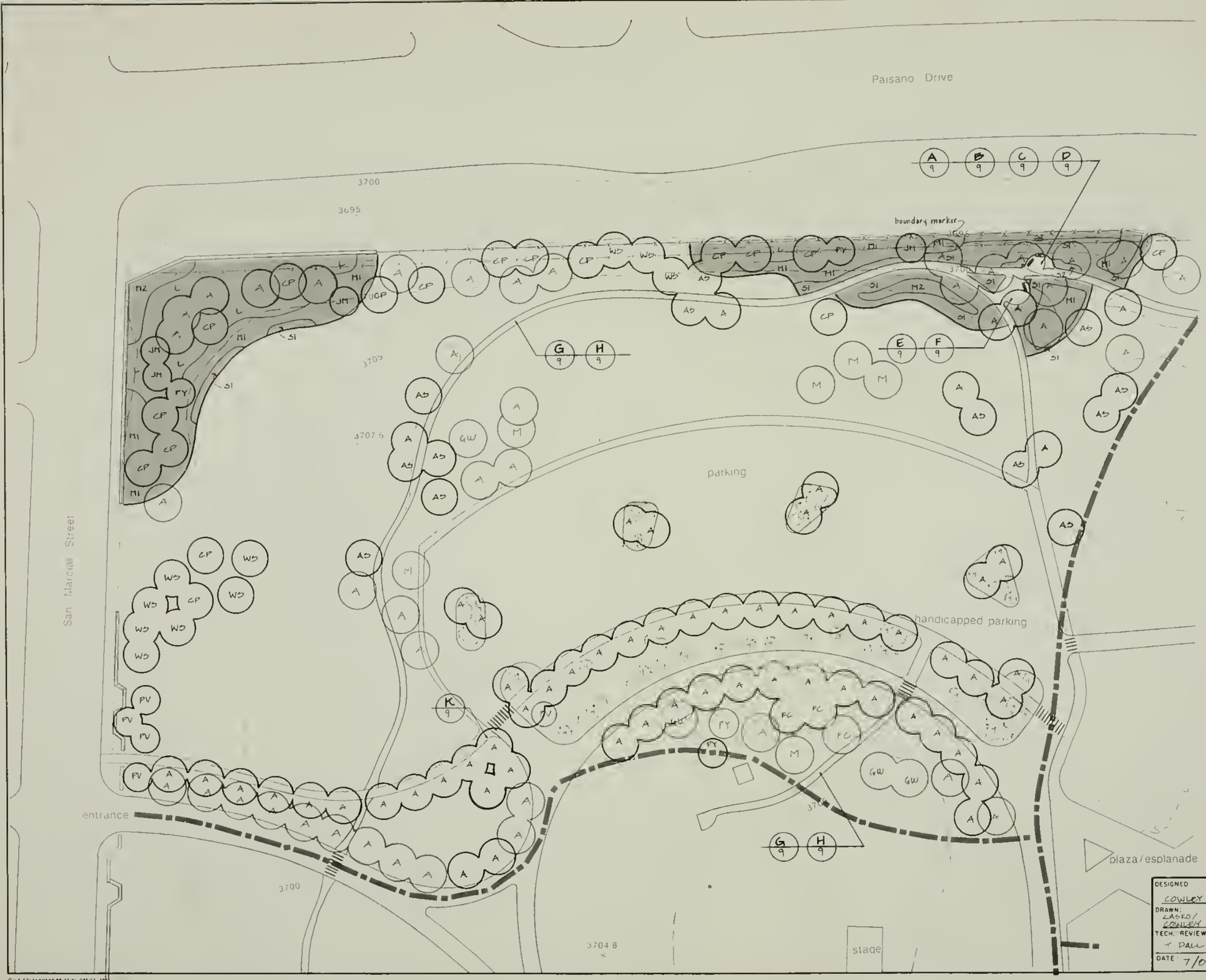
SCALE 1" = 40'

30' 10' 40' 80'

40' 20' 0

GNED: OWLEY	SUB SHEET NO	TITLE OF SHEET	DRAWING NO. 441 / 41019
WN: ASKO/ OWLEY		CHAMIZAL NATIONAL MEMORIAL	
H. REVIEW: DALL		COMPREHENSIVE DESIGN: PHASE TWO PACKAGE	PKG. NO. 143
E: 7/00		**Planting Plan**	SHEET 2 OF 10

☆ U.S. GOVERNMENT PRINTING OFFICE: 1986



Key

- EXISTING
- PROPOSED
- EXISTING TO REMOVE
- NATIVE/HISTORICAL/INTERPRETIVE PLANTING AREAS

Plant List

Code	Common Name	Botanical Name	Qty. to add	Size
Trees (see Design Analysis for more information)		* Native		
A	Arizona Ash*	Fraxinus velutina	61	3-5½"/24" box
AS	Arizona Sycamore*	Platanus wrightii	13	15 gal.
CB	Chinaberry	Melia azedarach		
CL	Cherry Laurel	Prunus caroliniana		
CP	Chihuahua Pine*	Pinus leiophylla var. chihuahuana	17	
DW	Desert Willow*	Chilopsis linearis		5 gal
EO	European Olive	Olea europaea		
F	Fruit tree			1-1½"
FC	Freemont Cottonwood*	Populus fremontii	2	2½-3"
GW	Globe Willow*	Salix matsudana		
H	Netleaf Hackberry*	Celtis laevigata var. reticulata		15 gal
HL	Honey Locust	Gleditsia triacanthos		
HM	Honey Mesquite*	Prosopis glandulosa		15 gal
IC	Italian Cypress	Cupressus sempervirens		
JM	One-seed Juniper*	Juniperus monosperma	4	5 gal
LO	Southern Live Oak*	Quercus virginiana		10 gal
LP	Lombardy Poplar	Populus nigra "Italica"		
M	Mulberry	Morus alba		
MB	Mexican Buckeye*	Ungnadia sp.		1-1½"
ME	Mexican Elder*	Sambucus mexicana		
MFP	Mexican Fan Palm	Washingtonia robusta		
MIM	Texas Mimosa*	Acacia greggii		
MM	Mapleleaf Mulberry*	Morus microphylla		
MR	Mexican Redbud*	Cercis canadensis var mexicana		5 gal
PV	Mexican Palo Verde*	Parkinsonia aculeata	4	15 gal
PY	Pinyon Pine*	Pinus cembroides edulis	3	5 gal
SM	Screwbean Mesquite*	Prosopis pubescens		24" box
TB	Texas Ebony*	Pithecellobium flexicaule		20" box
VC	Valley Cottonwood*	Populus fremontii var wislizenii		
WS	Western Soapberry*	Sapindus saponaria var drummondii	10	1-1½"
SHRUBS (see Design Analysis for descriptions, shrub list)				
1	Existing - mass deciduous shrubs			
2	Existing - mass ornamental shrubs			
3	Existing - flowering, accent plants			
4	Existing - desert plants			
L	Proposed - large native shrubs			
M1	Proposed - medium, non-ornamental native shrubs			
M2	Proposed - medium, ornamental native shrubs			
S1	Proposed - small, non-ornamental native shrubs			
S2	Proposed - small, ornamental native shrubs			

Notes

- Plants to be installed after all necessary soil has been been completed and after location has been staked in the field by a landscape architect

Detail Identification Symbol — Identification Letter: A; Sheet Detail shown on: 9

NORTH

SCALE 1" = 40'

30 10 40 80

40 20 0

DESIGNED	SUB SHEET NO	TITLE OF SHEET	DRAWING NO.
COWLEY		CHAMIZAL NATIONAL MEMORIAL	441 / 41019
DRAWN: LASKO/COWLEY		COMPREHENSIVE DESIGN PHASE TWO PACKAGE	PKG. NO. 143
TECH. REVIEW: T DALL		**Planting Plan**	SHEET 2 OF 10
DATE 7/00			

© U.S. GOVERNMENT PRINTING OFFICE 1987

Key

EXISTING

PROPOSED

EXISTING TO REMOVE

NATIVE/HISTORICAL/INTERPRETIVE PLANTING AREAS

Plant List

Code	Common Name	Botanical Name	Qnty. to add	Size
TREES (see Design Analysis for more information)		• NATIVE		
A	Arizona Ash•	Fraxinus velutina	6	3-3½"/21" box
AS	Arizona Sycamore•	Platanus wrightii	10	15 gal
CB	Chinaberry	Melia azedarach		
CL	Cherry Laurel	Prunus caroliniana		
CP	Chihuahua Pine•	Pinus leiphylla var. chihuahuana	10	
DW	Desert Willow•	Chilopsis linearis		5 gal
EO	European Olive	Olea europaea		
F	Fruit tree		8	1-1¼"
FC	Freemont Cottonwood•	Populus fremontii	13	2½-3"
GW	Globe Willow•	Salix matsudana		
H	Netleaf Hackberry•	Celtis laevigata var. reticulata		15 gal.
HL	Honey Locust	Gleditsia triacanthos		
HM	Honey Mesquite•	Prosopis glandulosa		15 gal
IC	Italian Cypress	Cupressus sempervirens		
JM	One-seed Juniper•	Juniperus monosperma	1	5 gal
LO	Southern Live Oak•	Quercus virginiana	12	10 gal
LP	Lombardy Poplar	Populus nigra 'Italica'		
M	Mulberry	Morus alba		
MB	Mexican Buckeye•	Ungnadia sp.		1-1½"
ME	Mexican Elder•	Sambucus mexicana		
MFP	Mexican Fan Palm	Washingtonia robusta		
MIM	Texas Mimosa•	Acacia greggii		
MM	Mapleleaf Mulberry•	Morus microphylla		
MR	Mexican Redbud•	Cercis canadensis var. mexicana	2	5 gal
PV	Mexican Palo Verde•	Parkinsonia aculeata		15 gal
PY	Pinyon Pine•	Pinus cembroides edulis	3	5 gal
SM	Screwbean Mesquite•	Prosopis pubescens	11	24" box
TE	Texas Ebony•	Pithecellobium flexicaule		20" box
VC	Valley Cottonwood•	Populus fremontii var wislizenii		
WS	Western Soapberry•	Sapindus saponaria var. drummondii	15	1-1½"
SHRUBS (see Design Analysis for descriptions, shrub lists)				
(1)	Existing - misc. deciduous shrubs			
(2)	Existing - misc ornamental shrubs			
(3)	Existing - flowering, accent plants			
(4)	Existing - desert plants			
L	Proposed - large native shrubs			
M1	Proposed - medium, non-ornamental native shrubs			
M2	Proposed - medium, ornamental native shrubs			
S1	Proposed - small, non-ornamental native shrubs			
S2	Proposed - small, ornamental native shrubs			

Notes

- Plants to be installed after all necessary soil has been been completed and after location has been staked in the field by a landscape architect.

Detail Identification Symbol

Identification Letter — A

Sheet Detail Shown on — 9

NORTH

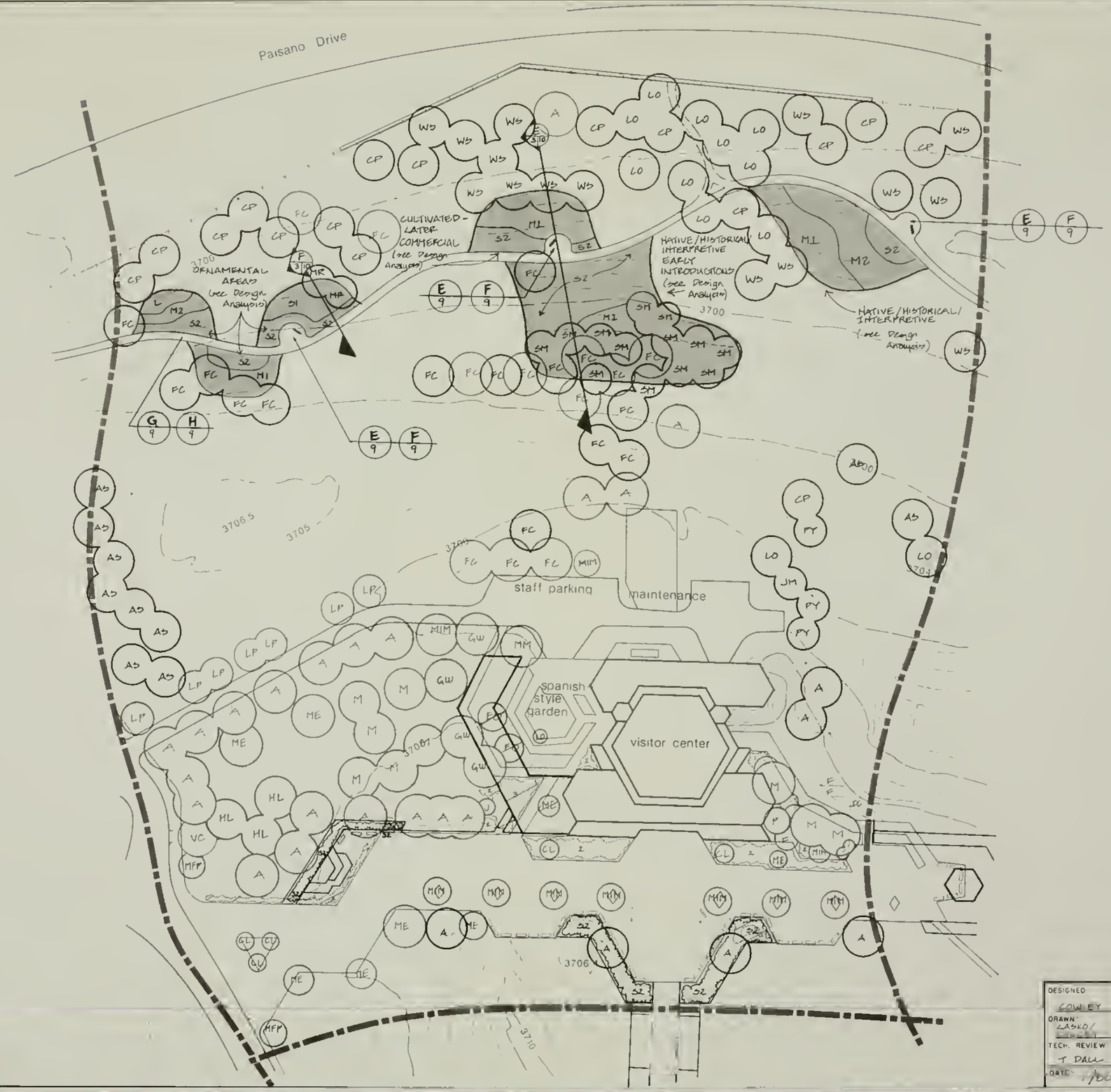
SCALE 1" = 40'

30 10 40 80

40' 20' 0

GNED: OWLEY	SUB SHEET NO	TITLE OF SHEET: CHAMIZAL NATIONAL MEMORIAL — COMPREHENSIVE DESIGN: PHASE TWO PACKAGE — **Planting Plan**	DRAWING NO. 441 / 41019
WN: ASKO/ OWLEY			PKG. NO. 143
. REVIEW: DALL			SHEET 3 OF 10
E: 7/00			

☆U.S. GOVERNMENT PRINTING OFFICE: 1985



Key

- EXISTING
- PROPOSED
- EXISTING TO REMOVE
- NATIVE/HISTORICAL/INTERPRETIVE PLANTING AREAS

Plant List

Code	Common Name	Botanical Name	Qty. to add	Size
TREES (see Design Analysis for more information)		*Native		
A	Arizona Ash*	Fraxinus velutina	6	3-3½"/24" box
AS	Arizona Sycamore*	Platanus wrightii	10	15 gal
CB	Chinaberry	Melia azedarach		
CL	Cherry Laurel	Prunus caroliniana		
CP	Chihuahua Pine*	Pinus leiophylla var chihuahuana	10	
DW	Desert Willow*	Chilopsis linearis		5 gal
EO	European Olive	Olea europaea		
F	Fruit tree		8	1-1¼"
FC	Freemont Cottonwood*	Populus fremontii	13	2½-3"
GW	Globe Willow*	Salix matsudana		
H	Netleaf Hackberry*	Celtis laevigata var reticulata		15 gal
HL	Honey Locust	Gleditsia triacanthos		
HM	Honey Mesquite*	Prosopis glandulosa		15 gal
IC	Italian Cypress	Cupressus sempervirens		
JM	One-seed Juniper*	Juniperus monosperma	1	5 gal
LO	Southern Live Oak*	Quercus virginiana	12	10 gal
LP	Lombardy Poplar	Populus nigra "Italica"		
M	Mulberry	Morus alba		
MB	Mexican Buckeye*	Ungnadia sp.		1-1½"
ME	Mexican Elder*	Sambucus mexicana		
MFP	Mexican Fan Palm	Washingtonia robusta		
MIM	Texas Mimosa*	Acacia greggii		
MM	Mapleleaf Mulberry*	Morus microphylla		
MR	Mexican Redbud*	Cercis canadensis var mexicana	2	5 gal
PV	Mexican Palo Verde*	Parkinsonia aculeata		15 gal
PY	Pinyon Pine*	Pinus cembroides edulis	3	5 gal
SM	Screwbean Mesquite*	Prosopis pubescens	11	24" box
TE	Texas Ebony*	Pithecellobium flexicaule		20" box
VC	Valley Cottonwood*	Populus fremontii var wislizeni		
WS	Western Soapberry*	Sapindus saponaria var drummondii	15	1-1½"
SHRUBS (see Design Analysis for descriptions, shrub lists)				
1	Existing - mass deciduous shrubs			
2	Existing - mass ornamental shrubs			
3	Existing - flowering, accent plants			
4	Existing - desert plants			
L	Proposed - large native shrubs			
M1	Proposed - medium, non-ornamental native shrubs			
M2	Proposed - medium, ornamental native shrubs			
S1	Proposed - small, non-ornamental native shrubs			
S2	Proposed - small, ornamental native shrubs			

Notes

- Plants to be installed after all necessary soil has been been completed and after location has been staked in the field by a landscape architect

Detail Identification Symbol — Identification Letter: A; Sheet Detail shown on: 9

NORTH

SCALE 1" = 40

30 10 40 80

10' 20' 0

DESIGNED	SUB SHEET NO	TITLE OF SHEET	DRAWING NO
COWLEY		CHAMIZAL NATIONAL MEMORIAL	441 / 41019
DRAWN: LASKO		COMPREHENSIVE DESIGN PHASE TWO PACKAGE	PKG. NO. 143
TECH. REVIEW: T DALL		**Planting Plan**	SHEET 3 OF 10
DATE: 7/86			

Key

EXISTING

PROPOSED

EXISTING TO REMOVE

NATIVE/HISTORICAL/INTERPRETIVE PLANTING AREAS

Plant List

Code	Common Name	Botanical Name	Qnty to add	Size
TREES (see Design Analysis for more information) • NATIVE				
A	Arizona Ash•	Fraxinus velutina	12	3-3½"/21" box
AS	Arizona Sycamore•	Platanus wrightii	8	15 gal.
CB	Chinaberry	Melia azedarach		
CL	Cherry Laurel	Prunus caroliniana		
CP	Chihuahua Pine•	Pinus leiphylla var. chihuahuana	30	
DW	Desert Willow•	Chilopsis linearis	9	5 gal
EO	European Olive	Olea europaea		
F	Fruit tree			1-1¼"
FC	Freemont Cottonwood•	Populus fremontii	12	2½-3"
GW	Globe Willow•	Salix matsudana		
H	Netleaf Hackberry•	Celtis laevigata var. reticulata	15	15 gal.
HL	Honey Locust	Gleditsia triacanthos		
HM	Honey Mesquite•	Prosopis glandulosa	1	15 gal
IC	Italian Cypress	Cupressus sempervirens		
JM	One-seed Juniper•	Juniperus monosperma		5 gal
LO	Southern Live Oak•	Quercus virginiana	7	10 gal
LP	Lombardy Poplar	Populus nigra 'Italica'		
M	Mulberry	Morus alba		
MB	Mexican Buckeye•	Ungnadia sp.		1-1½"
ME	Mexican Elder•	Sambucus mexicana		
MFP	Mexican Fan Palm	Washingtonia robusta		
MIM	Texas Mimosa•	Acacia greggii		
MM	Mapleleaf Mulberry•	Morus microphylla	1	
MR	Mexican Redbud•	Cercis canadensis var mexicana		5 gal
PV	Mexican Palo Verde•	Parkinsonia aculeata	1	15 gal
PY	Pinyon Pine•	Pinus cembroides edulis		5 gal
SM	Screwbean Mesquite•	Prosopis pubescens		24" box
TE	Texas Ebony•	Pithecellobium flexicaule		20" box
VC	Valley Cottonwood•	Populus fremontii var wislizeni		
WS	Western Soapberry•	Sapindus saponaria var. drummondii	30	1-1½"
SHRUBS (see Design Analysis for descriptions, shrub lists)				
(1)	Existing - misc deciduous shrubs			
(2)	Existing - misc ornamental shrubs			
(3)	Existing - flowering, accent plants			
(4)	Existing - desert plants			
L	Proposed - large native shrubs			
M1	Proposed - medium, non-ornamental native shrubs			
M2	Proposed - medium, ornamental native shrubs			
S1	Proposed - small, non-ornamental native shrubs			
S2	Proposed - small, ornamental native shrubs			

Notes

- Plants to be installed after all necessary soil has been been completed and after location has been staked in the field by a landscape architect

Detail Identification Symbol

Identification Letter — A

Sheet Detail shown on — 9

NORTH

SCALE 1"=40'

30' 10' 40' 80'

40' 20' 0'

GNED: LOWLEY	SUB SHEET NO	TITLE OF SHEET: CHAMIZAL NATIONAL MEMORIAL — COMPREHENSIVE DESIGN PHASE TWO PACKAGE — **Planting Plan**	DRAWING NO. 441 / 41019
WN: ASKO/ OWLEY			PKG. NO. 143
H. REVIEW: DALL			SHEET 4 OF 10
E: 7/00			

☆ U.S. GOVERNMENT PRINTING OFFICE 1985

Key

- EXISTING
- PROPOSED
- EXISTING TO REMOVE
- NATIVE/HISTORICAL/INTERPRETIVE PLANTING AREAS

Plant List

Code	Common Name	Botanical Name	Qnty to add	Size
TREES (see Design Analysis for more information)		*Native		
A	Arizona Ash*	Fraxinus velutina	12	3-3½"/24" box
A5	Arizona Sycamore*	Platanus wrightii	8	15 gal
CB	Chinaberry	Melia azedarach		
CL	Cherry Laurel	Prunus carolinana		
CP	Chihuahua Pine*	Pinus leiphylla var. chihuahuana	30	
DW	Desert Willow*	Chilopsis linearis	9	5 gal
EO	European Olive	Olea europaea		
F	Fruit tree			1-1¼"
FC	Freemont Cottonwood*	Populus fremontii	12	2½-3"
GW	Globe Willow*	Salix matsudana		
H	Netleaf Hackberry*	Celtis laevigata var. reticulata	15	15 gal
HL	Honey Locust	Gleditsia triacanthos		
HM	Honey Mesquite*	Prosopis glandulosa	1	15 gal
IC	Italian Cypress	Cupressus sempervirens		
JM	One-seed Juniper*	Juniperus monosperma		5 gal
LO	Southern Live Oak*	Quercus virginiana	7	10 gal
LP	Lombardy Poplar	Populus nigra 'Italica'		
M	Mulberry	Morus alba		
MB	Mexican Buckeye*	Ungnadia sp.		1-1½"
ME	Mexican Elder*	Sambucus mexicana		
MFP	Mexican Fan Palm	Washingtonia robusta		
MIM	Texas Mimosa*	Acacia greggii		
MM	Mapleleaf Mulberry*	Morus microphylla	1	
MR	Mexican Redbud*	Cercis canadensis var mexicana		5 gal
PV	Mexican Palo Verde*	Parkinsonia aculeata	1	15 gal
PY	Pinyon Pine*	Pinus cembroides edulis		5 gal
SM	Screwbean Mesquite*	Prosopis pubescens		24" box
TE	Texas Ebony*	Pithecellobium flexicaule		20" box
VC	Valley Cottonwood*	Populus fremontii var wislizenii		
WS	Western Soapberry*	Sapindus saponaria var. drummondii	30	1-1½"
SHRUBS (see Design Analysis for descriptions, shrub lists)				
1	Existing - mixed deciduous shrubs			
2	Existing - mixed ornamental shrubs			
3	Existing - flowering, accent plants			
4	Existing - desert plants			
L	Proposed - large native shrubs			
M1	Proposed - medium, non-ornamental native shrubs			
M2	Proposed - medium, ornamental native shrubs			
S1	Proposed - small, non-ornamental native shrubs			
S2	Proposed - small, ornamental native shrubs			

Notes

- Plants to be installed after all necessary soil has been been completed and after location has been staked in the field by a landscape architect

Detail Identification Symbol — Identification Letter: A; Sheet Detail shown on: 9

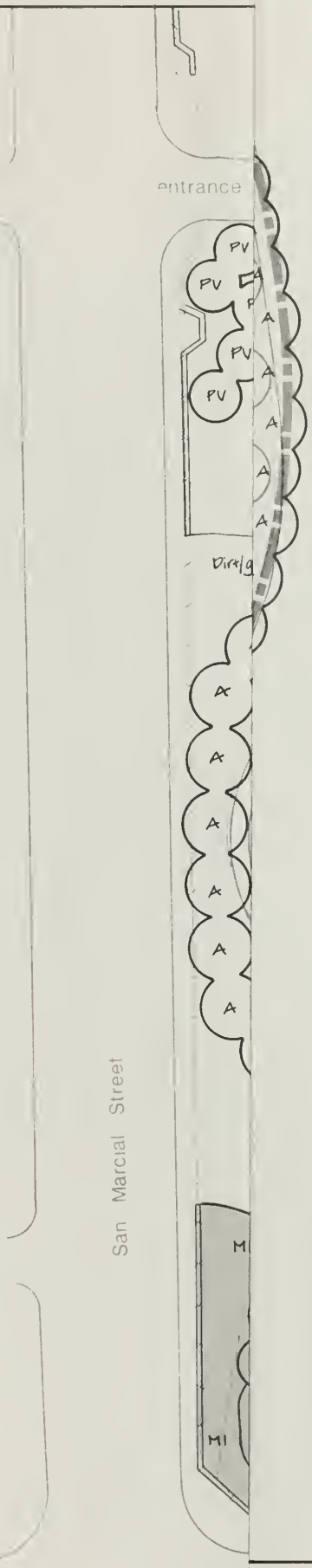
NORTH

SCALE 1"=40'

30 10 40 80

40' 20 0

DESIGNED	SUB SHEET NO	TITLE OF SHEET	DRAWING NO
COWLEY		CHAMIZAL NATIONAL MEMORIAL	441 / 41019
DRAWN LAYKO / COWLEY		COMPREHENSIVE DESIGN PHASE TWO PACKAGE	PKG. NO. 143
TECH. REVIEW T DALL		**Planting Plan**	SHEET 4 OF 10
DATE 7/00			



Key

- EXISTING
- PROPOSED
- EXISTING TO REMOVE
- NATIVE/HISTORICAL/INTERPRETIVE PLANTING AREAS

Plant List

Code	Common Name	Botanical Name	Qnty to add	Size
TREES (see Design Analysis for more information) • NATIVE				
A	Arizona Ash•	Fraxinus velutina	65	3-3½"/24" box
AS	Arizona Sycamore•	Platanus wrightii	8	15 gal
CB	Chinaberry	Melia azedarach		
CL	Cherry Laurel	Prunus caroliniana		
CP	Chihuahua Pine•	Pinus leiphylla var. chihuahuana	8	
DW	Desert Willow•	Chilopsis linearis		5 gal
EO	European Olive	Olea europaea		
F	Fruit tree			1-1¼"
FC	Freemont Cottonwood•	Populus fremontii	3	2½-3"
GW	Globe Willow•	Salix matsudana		
H	Netleaf Hackberry•	Celtis laevigata var. reticulata		15 gal.
HL	Honey Locust	Gleditsia triacanthos		
HM	Honey Mesquite•	Prosopis glandulosa	1	15 gal
IC	Italian Cypress	Cupressus sempervirens		
JM	One-seed Juniper•	Juniperus monosperma	2	5 gal
LO	Southern Live Oak•	Quercus virginiana	4	10 gal
LP	Lombardy Poplar	Populus nigra 'Italica'		
M	Mulberry	Morus alba		
MB	Mexican Buckeye•	Ungnadia sp.	2	1-1½"
ME	Mexican Elder•	Sambucus mexicana		
MFP	Mexican Fan Palm	Washingtonia robusta		
MIM	Texas Mimosa•	Acacia greggii		
MM	Mapleleaf Mulberry•	Morus microphylla		
MR	Mexican Redbud•	Cercis canadensis var mexicana		5 gal
PV	Mexican Palo Verde•	Parkinsonia aculeata	10	15 gal
PY	Pinyon Pine•	Pinus cembroides edulis	3	5 gal
SM	Screwbean Mesquite•	Prosopis pubescens		24" box
TE	Texas Ebony•	Pithecellobium flexicaule	2	20" box
VC	Valley Cottonwood•	Populus fremontii var wislizeni		
WS	Western Soapberry•	Sapindus saponaria var drummondii	2	1-1½"
SHRUBS (see Design Analysis for descriptions, shrub lists)				
1	Existing - misc deciduous shrubs			
2	Existing - misc ornamental shrubs			
3	Existing - flowering accent plants			
4	Existing - desert plants			
L	Proposed - large native shrubs			
M1	Proposed - medium, non-ornamental native shrubs			
M2	Proposed - medium, ornamental native shrubs			
S1	Proposed - small, non-ornamental native shrubs			
S2	Proposed - small, ornamental native shrubs			

Notes

- Plants to be installed after all necessary soil has been been completed and after location has been staked in the field by a landscape architect

Detail Identification Symbol

Identification Letter — A

Sheet Detail shown on — 9

NORTH

SCALE 1" 40'

30' 10' 40' 80'

40' 20' 0

SNED	SUB SHEET NO	TITLE OF SHEET	DRAWING NO
OWLEY		CHAMIZAL NATIONAL MEMORIAL	441 / 41019.
WN: ASKO/ OWLEY		COMPREHENSIVE DESIGN PHASE TWO PACKAGE	PKG. NO. 143
. REVIEW DALL		**Planting Plan**	SHEET 5 OF 10
E: 7/00			

☆U.S. GOVERNMENT PRINTING OFFICE · 1985

Key

- EXISTING
- PROPOSED
- EXISTING TO REMOVE
- NATIVE/HISTORICAL/INTERPRETIVE PLANTING AREAS

Plant List

Code	Common Name	Botanical Name	Qnty to add	Size
TREES (see Design Analysis for more information)			• NATIVE	
A	Arizona Ash*	Fraxinus velutina	65	3-3½"/29" box
AS	Arizona Sycamore*	Platanus wrightii	8	15 gal
CB	Chinaberry	Melia azedarach		
CL	Cherry Laurel	Prunus caroliniana		
CP	Chihuahua Pine*	Pinus leiphylla var Chihuahuana	8	
DW	Desert Willow*	Chilopsis linearis		5 gal
EO	European Olive	Olea europaea		
F	Fruit tree			1-1¼"
FC	Freemont Cottonwood*	Populus fremontii	3	2½-5"
GW	Globe Willow*	Salix matsudana		
H	Netleaf Hackberry*	Celtis laevigata var. reticulata		15 gal
HL	Honey Locust	Gleditsia triacanthos		
HM	Honey Mesquite*	Prosopis glandulosa	1	15 gal
IC	Italian Cypress	Cupressus sempervirens		
JM	One-seed Juniper*	Juniperus monosperma	2	5 gal
LO	Southern Live Oak*	Quercus virginiana	4	10 gal
LP	Lombardy Poplar	Populus nigra 'Italica'		
M	Mulberry	Morus alba		
MB	Mexican Buckeye*	Ungnadia sp.	2	1-1½"
ME	Mexican Elder*	Sambucus mexicana		
MFP	Mexican Fan Palm	Washingtonia robusta		
MIM	Texas Mimosa*	Acacia greggii		
MM	Mapleleaf Mulberry*	Morus microphylla		
MR	Mexican Redbud*	Cercis canadensis var mexicana		5 gal
PV	Mexican Palo Verde*	Parkinsonia aculeata	10	15 gal
PY	Pinyon Pine*	Pinus cembroides edulis	3	5 gal
SM	Screwbean Mesquite*	Prosopis pubescens		29" box
TE	Texas Ebony*	Pithecellobium flexicaule	2	20" box
VC	Valley Cottonwood*	Populus fremontii var wislizenii		
WS	Western Soapberry*	Sapindus saponaria var drummondii	2	1-1½"

SHRUBS (see Design Analysis for descriptions, shrub lists)

1	Existing - misc deciduous shrubs
2	Existing - misc ornamental shrubs
3	Existing - flowering, accent plants
4	Existing - desert plants
L	Proposed - large native shrubs
M1	Proposed - medium, non-ornamental native shrubs
M2	Proposed - medium, ornamental native shrubs
S1	Proposed - small, non-ornamental native shrubs
S2	Proposed - small, ornamental native shrubs

Notes

- Plants to be installed after all necessary soil has been been completed and after location has been staked in the field by a landscape architect

Detail Identification Symbol

Identification Letter — A

Sheet Detail shown on — 9

NORTH

SCALE 1"=40

30 10 40 80

40 20 0

DESIGNED	SUB SHEET NO	TITLE OF SHEET	DRAWING NO
COWLEY		CHAMIZAL NATIONAL MEMORIAL	441 / 41019.
DRAWN: LASKO/COWLEY		COMPREHENSIVE DESIGN PHASE TWO PACKAGE	PKG. NO. 143
TECH. REVIEW: T DALL		**Planting Plan**	SHEET 5 OF 10
DATE: 7/00			

Key

EXISTING

PROPOSED

EXISTING TO REMOVE

NATIVE/HISTORICAL/INTERPRETIVE PLANTING AREAS

Plant List

Code	Common Name	Botanical Name	Qnty to add	Size
TREES (see Design Analysis for more information) • NATIVE				
A	Arizona Ash•	Fraxinus velutina	23	3-3½"/24" box
AS	Arizona Sycamore•	Platanus wrightii	3	15 gal.
CB	Chinaberry	Melia azedarach		
CL	Cherry Laurel	Prunus caroliniana		
CP	Chihuahua Pine•	Pinus leiphylla var. chihuahuana	10	
DW	Desert Willow•	Chilopsis linearis		5 gal
EO	European Olive	Olea europaea		
F	Fruit tree			1-1¼"
FC	Freemont Cottonwood•	Populus fremontii	13	2½-3"
GW	Globe Willow•	Salix matsudana		
H	Netleaf Hackberry•	Celtis laevigata var. reticulata		15 gal.
HL	Honey Locust	Gleditsia triacanthos		
HM	Honey Mesquite•	Prosopis glandulosa		15 gal
IC	Italian Cypress	Cupressus sempervirens		
JM	One-seed Juniper•	Juniperus monosperma		5 gal
LO	Southern Live Oak•	Quercus virginiana		10 gal
LP	Lombardy Poplar	Populus nigra 'Italica'		
M	Mulberry	Morus alba		
MB	Mexican Buckeye•	Ungnadia sp.		1-1½"
ME	Mexican Elder•	Sambucus mexicana		
MFP	Mexican Fan Palm	Washingtonia robusta		
MIM	Texas Mimosa•	Acacia greggii		
MM	Mapleleaf Mulberry•	Morus microphylla		
MR	Mexican Redbud•	Cercis canadensis var. mexicana		5 gal
PV	Mexican Palo Verde•	Parkinsonia aculeata	3	15 gal
PY	Pinyon Pine•	Pinus cembroides edulis		5 gal.
SM	Screwbean Mesquite•	Prosopis pubescens		24" box
TE	Texas Ebony•	Pithecellobium flexicaule		20" box
VC	Valley Cottonwood•	Populus fremontii var wislizenii		
WS	Western Soapberry•	Sapindus saponaria var. drummondii	1	1-1½"
SHRUBS (see Design Analysis for descriptions, shrub lists)				
(1)	Existing - misc. deciduous shrubs			
(2)	Existing - misc ornamental shrubs			
(3)	Existing - flowering, accent plants			
(4)	Existing - desert plants			
L	Proposed - large native shrubs			
M1	Proposed - medium, non-ornamental native shrubs			
M2	Proposed - medium, ornamental native shrubs			
S1	Proposed - small, non-ornamental native shrubs			
S2	Proposed - small, ornamental native shrubs			

Notes

- Plants to be installed after all necessary soil has been been completed and after location has been staked in the field by a landscape architect.

Detail Identification Symbol

Identification Letter — A

Sheet Detail shown on — 9

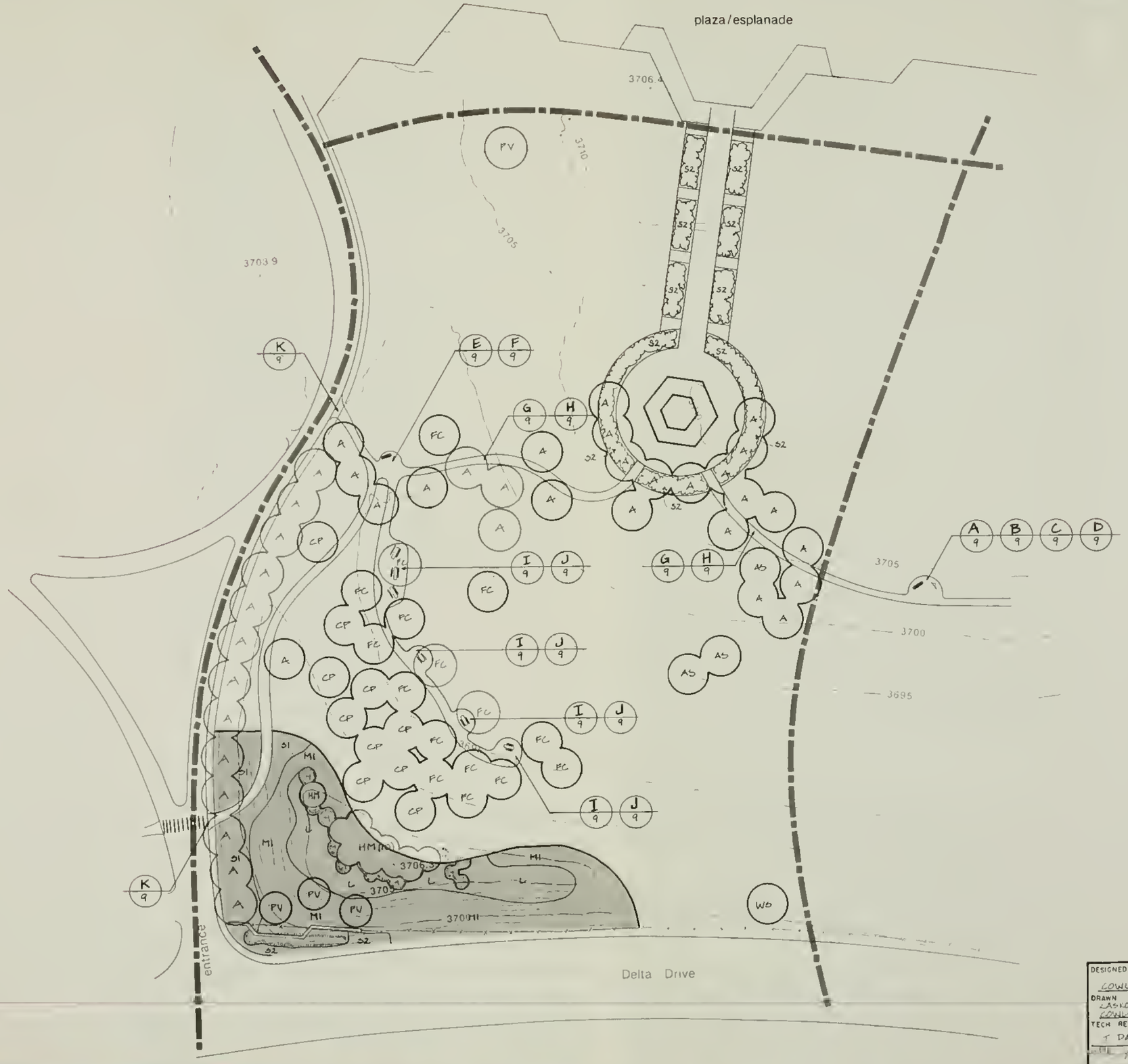
NORTH

SCALE 1" = 40'

40' 20' 0 10 30 40 80

IGNED: COWLEY	SUB SHEET NO	TITLE OF SHEET: CHAMIZAL NATIONAL MEMORIAL — COMPREHENSIVE DESIGN PHASE TWO PACKAGE — **Planting Plan**	DRAWING NO. 441 / 41019
AWN: LASKO/COWLEY			PKG. NO. 143
CH. REVIEW: T DALL			SHEET 6 OF 10
TE: 7/00			

☆ U.S. GOVERNMENT PRINTING OFFICE · 1985



Key

- EXISTING
- PROPOSED
- EXISTING TO REMOVE
- NATIVE/HISTORICAL/INTERPRETIVE PLANTING AREAS

Plant List

Code	Common Name	Botanical Name	Qnty to add	Size
TREES (see Design Analysis for more information)		*NATIVE		
A	Arizona Ash*	Fraxinus velutina	23	3-3½"/24" box
AS	Arizona Sycamore*	Platanus wrightii	3	15 gal
CB	Chinaberry	Melia azedarach		
CL	Cherry Laurel	Prunus caroliniana		
CP	Chihuahua Pine*	Pinus leiphylla var. chihuahuana	10	
DW	Desert Willow*	Chilopsis linearis		5 gal
EO	European Olive	Olea europaea		
F	Fruit tree			1-1¼"
FC	Freemont Cottonwood*	Populus fremontii	13	2½-5"
GW	Globe Willow*	Salix matsudana		
H	Netleaf Hackberry*	Celtis laevigata var. reticulata		15 gal
HL	Honey Locust	Gleditsia triacanthos		
HM	Honey Mesquite*	Prosopis glandulosa		15 gal
IC	Italian Cypress	Cupressus sempervirens		
JM	One-seed Juniper*	Juniperus monosperma		5 gal
LO	Southern Live Oak*	Quercus virginiana		10 gal
LP	Lombardy Poplar	Populus nigra 'Italica'		
M	Mulberry	Morus alba		
MB	Mexican Buckeye*	Ungnadia sp.		1-1½"
ME	Mexican Elder*	Sambucus mexicana		
MFP	Mexican Fan Palm	Washingtonia robusta		
MIM	Texas Mimosa*	Acacia greggii		
MM	Mapleleaf Mulberry*	Morus microphylla		
MR	Mexican Redbud*	Cercis canadensis var. mexicana		5 gal
PV	Mexican Palo Verde*	Parkinsonia aculeata	3	15 gal
PY	Pinyon Pine*	Pinus cembroides edulis		5 gal
SM	Screwbean Mesquite*	Prosopis pubescens		24" box
TE	Texas Ebony*	Pithecellobium flexicaule		20" box
VC	Valley Cottonwood*	Populus fremontii var wislizeni		
WS	Western Soapberry*	Sapindus saponaria var. drummondii	/	1-1½"
SHRUBS (see Design Analysis for descriptions, shrub lists)				
1	Existing - misc deciduous shrubs			
2	Existing - misc ornamental shrubs			
3	Existing - flowering, accent plants			
4	Existing - desert plants			
L	Proposed - large native shrubs			
M1	Proposed - medium, non-ornamental native shrubs			
M2	Proposed - medium, ornamental native shrubs			
S1	Proposed - small, non-ornamental native shrubs			
S2	Proposed - small, ornamental native shrubs			

Notes

- Plants to be installed after all necessary soil has been been completed and after location has been staked in the field by a landscape architect

Detail Identification Symbol — Identification Letter: A; Sheet Detail shown on: 9

NORTH

SCALE 1"=40'

30' 10 40 80

40' 20' 0

DESIGNED	SUB SHEET NO	TITLE OF SHEET	DRAWING NO
COWLEY		CHAMIZAL NATIONAL MEMORIAL	441 / 41019
DRAWN CASKO / COWLEY		COMPREHENSIVE DESIGN PHASE TWO PACKAGE	PKG. NO. 143
TECH REVIEW T DALL		**Planting Plan**	SHEET 6 OF 10

Key

EXISTING

PROPOSED

EXISTING TO REMOVE

NATIVE/HISTORICAL/INTERPRETIVE PLANTING AREAS

Plant List

Code	Common Name	Botanical Name	Qnty. to add	Size
TREES (see Design Analysis for more information) • NATIVE				
A	Arizona Ash•	Fraxinus velutina	23	3-3½"/24" box
AS	Arizona Sycamore•	Platanus wrightii		15 gal.
CB	Chinaberry	Melia azedarach		
CL	Cherry Laurel	Prunus caroliniana		
CP	Chihuahua Pine•	Pinus leiphylla var. chihuahuana	8	
DW	Desert Willow•	Chilopsis linearis		5 gal
EO	European Olive	Olea europaea		
F	Fruit tree			1-1¼"
FC	Freemont Cottonwood•	Populus fremontii	2	2½-3"
GW	Globe Willow•	Salix matsudana		
H	Netleaf Hackberry•	Celtis laevigata var. reticulata		15 gal.
HL	Honey Locust	Gleditsia triacanthos		
HM	Honey Mesquite•	Prosopis glandulosa		15 gal
IC	Italian Cypress	Cupressus sempervirens		
JM	One-seed Juniper•	Juniperus monosperma		5 gal
LO	Southern Live Oak•	Quercus virginiana		10 gal.
LP	Lombardy Poplar	Populus nigra 'Italica'		
M	Mulberry	Morus alba		
MB	Mexican Buckeye•	Ungnadia sp.		1-1½"
ME	Mexican Elder•	Sambucus mexicana		
MFP	Mexican Fan Palm	Washingtonia robusta		
MIM	Texas Mimosa•	Acacia greggii		
MM	Mapleleaf Mulberry•	Morus microphylla		
MR	Mexican Redbud•	Cercis canadensis var mexicana		5 gal
PV	Mexican Palo Verde•	Parkinsonia aculeata		15 gal
PY	Pinyon Pine•	Pinus cembroides edulis		5 gal
SM	Screwbean Mesquite•	Prosopis pubescens		24" box
TE	Texas Ebony•	Pithecellobium flexicaule	1	20" box
VC	Valley Cottonwood•	Populus fremontii var wislizenii		
WS	Western Soapberry•	Sapindus saponaria var. drummondii	5	1-1½"
SHRUBS (see Design Analysis for descriptions, shrub lists)				
(1)	Existing - misc. deciduous shrubs			
(2)	Existing - misc ornamental shrubs			
(3)	Existing - flowering, accent plants			
(4)	Existing - desert plants			
L	Proposed - large native shrubs			
M1	Proposed - medium, non-ornamental native shrubs			
M2	Proposed - medium, ornamental native shrubs			
S1	Proposed - small, non-ornamental native shrubs			
S2	Proposed - small, ornamental native shrubs			

Notes

- Plants to be installed after all necessary soil has been been completed and after location has been staked in the field by a landscape architect

Detail Identification Symbol

Identification Letter — A

Sheet Detail Shown on — 9

NORTH

SCALE 1"=40'

30' 10' 40' 80'

40 20' 0

SIGNED: FOWLEY	SUB SHEET NO	TITLE OF SHEET: CHAMIZAL NATIONAL MEMORIAL — COMPREHENSIVE DESIGN PHASE TWO PACKAGE — **Planting Plan**	DRAWING NO. 441 / 41019
DRAWN: LASKO/FOWLEY			PKG. NO. 143
CH. REVIEW: T DALL			SHEET 7 OF 10
DATE: 7/00			

☆U.S. GOVERNMENT PRINTING OFFICE: 1985

Key

- EXISTING
- PROPOSED
- EXISTING TO REMOVE
- NATIVE/HISTORICAL/INTERPRETIVE PLANTING AREAS

Plant List

Code	Common Name	Botanical Name	Qnty. to add	Size
TREES (see Design Analysis for more information)			• NATIVE	
A	Arizona Ash*	Fraxinus velutina	23	3-3½"/24" box
AS	Arizona Sycamore*	Platanus wrightii		15 gal
CB	Chinaberry	Melia azedarach		
CL	Cherry Laurel	Prunus caroliniana		
CP	Chihuahua Pine*	Pinus leiphylla var. chihuahuana	8	
DW	Desert Willow*	Chilopsis linearis		5 gal
EO	European Olive	Olea europaea		
F	Fruit tree			1-1¼"
FC	Freemont Cottonwood*	Populus fremontii	2	2½-5"
GW	Globe Willow*	Salix matsudana		
H	Netleaf Hackberry*	Celtis laevigata var. reticulata		15 gal.
HL	Honey Locust	Gleditsia triacanthos		
HM	Honey Mesquite*	Prosopis glandulosa		15 gal
IC	Italian Cypress	Cupressus sempervirens		
JM	One-seed Juniper*	Juniperus monosperma		5 gal
LO	Southern Live Oak*	Quercus virginiana		10 gal
LP	Lombardy Poplar	Populus nigra 'Italica'		
M	Mulberry	Morus alba		
MB	Mexican Buckeye*	Ungnadia sp.		1-1½"
ME	Mexican Elder*	Sambucus mexicana		
MFP	Mexican Fan Palm	Washingtonia robusta		
MIM	Texas Mimosa*	Acacia greggii		
MM	Mapleleaf Mulberry*	Morus microphylla		
MR	Mexican Redbud*	Cercis canadensis var mexicana		5 gal
PV	Mexican Palo Verde*	Parkinsonia aculeata		15 gal
PY	Pinyon Pine*	Pinus cembroides edulis		5 gal
SM	Screwbean Mesquite*	Prosopis pubescens		24" box
TE	Texas Ebony*	Pithecellobium flexicaule	1	20" box
VC	Valley Cottonwood*	Populus fremontii var wislizenii		
WS	Western Soapberry*	Sapindus saponaria var. drummondii	5	1-1½"

SHRUBS (see Design Analysis for descriptions, shrub lists)	
1	Existing - misc. deciduous shrubs
2	Existing - misc ornamental shrubs
3	Existing - flowering, accent plants
4	Existing - desert plants
L	Proposed - large native shrubs
M1	Proposed - medium, non-ornamental native shrubs
M2	Proposed - medium, ornamental native shrubs
S1	Proposed - small, non-ornamental native shrubs
S2	Proposed - small, ornamental native shrubs

Notes

- Plants to be installed after all necessary soil has been been completed and after location has been staked in the field by a landscape architect

Detail Identification Symbol

Identification Letter — A

Sheet Detail shown on — 9

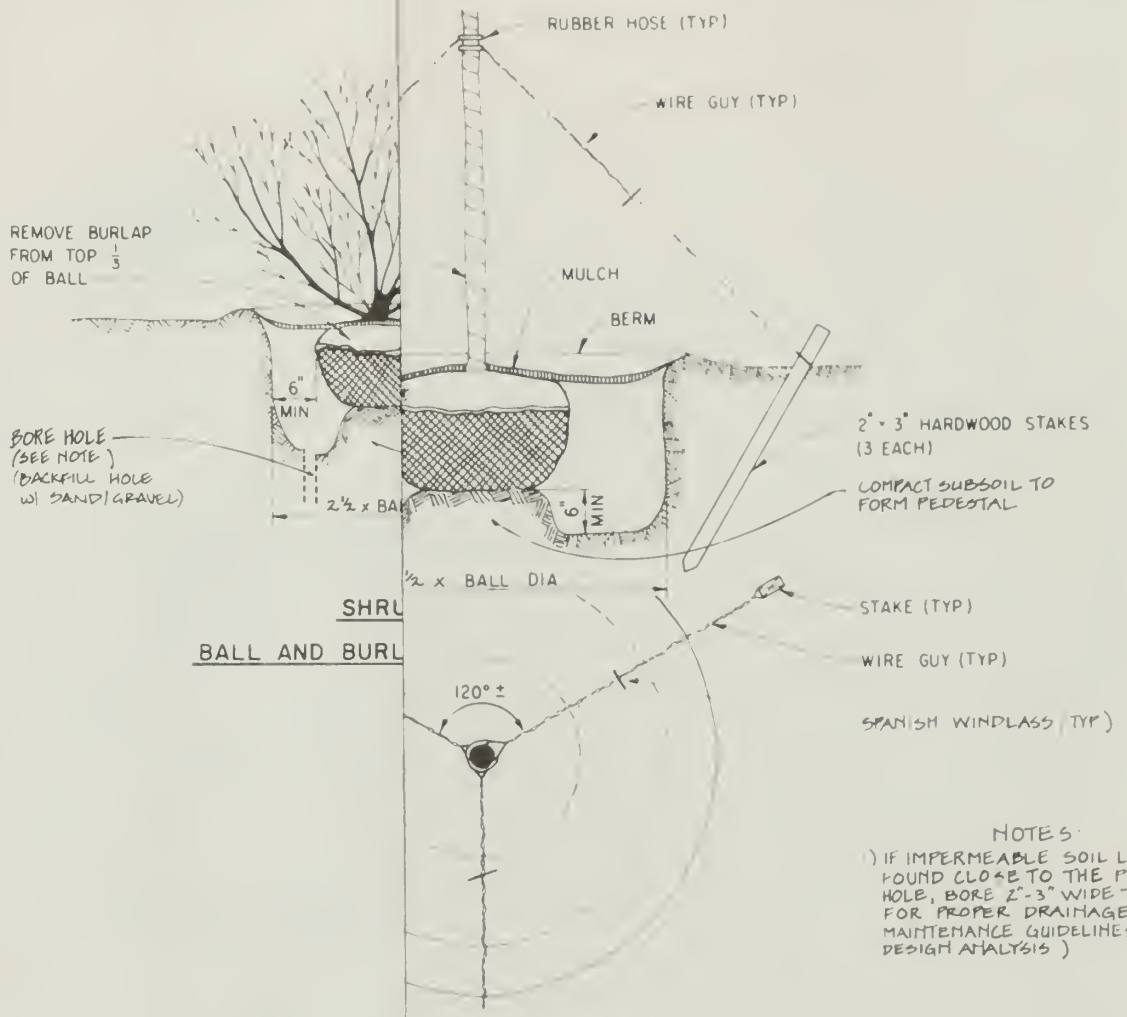
NORTH

SCALE 1" = 40'

30 10 40 80'

40' 20' 0

DESIGNED	SUB SHEET NO	TITLE OF SHEET	DRAWING NO
COWLEY		CHAMIZAL NATIONAL MEMORIAL	441 / 41019
DRAWN: LASKO / COWLEY		COMPREHENSIVE DESIGN: PHASE TWO PACKAGE	PKG. NO. 143
TECH. REVIEW: T DALL		**Planting Plan**	SHEET 7 OF 10
DATE: 7/00			



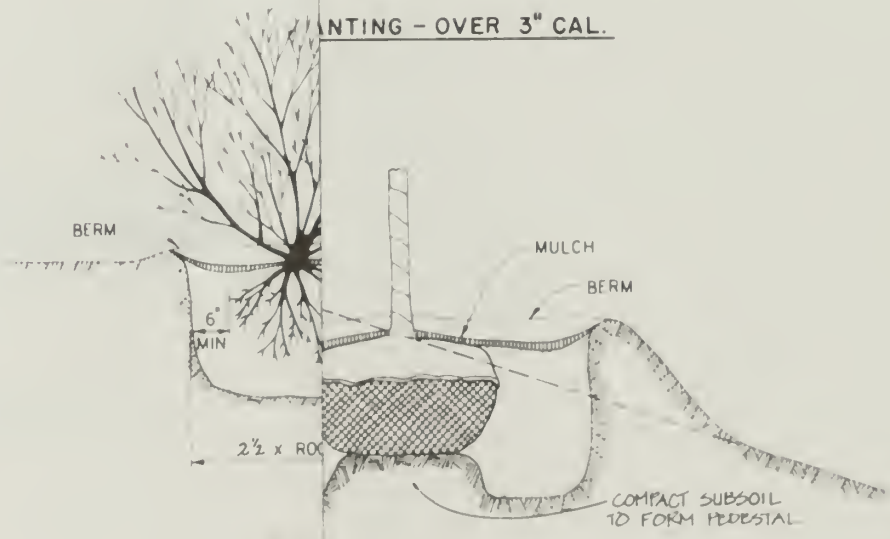
SHRU

BALL AND BURL

NOTES:

1) IF IMPERMEABLE SOIL LAYER IS FOUND CLOSE TO THE PLANTING HOLE, BORE 2"-3" WIDE THROUGH FOR PROPER DRAINAGE (SEE MAINTENANCE GUIDELINES OF DESIGN ANALYSIS)

NTING - OVER 3" CAL.

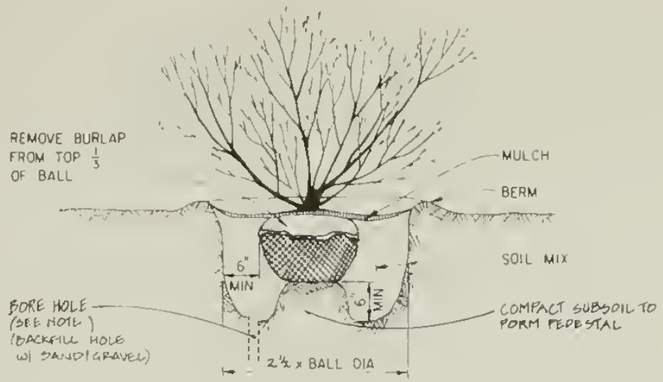


SHRU

BAREROOT NG ON SLOPES 1:5 AND STEEPER

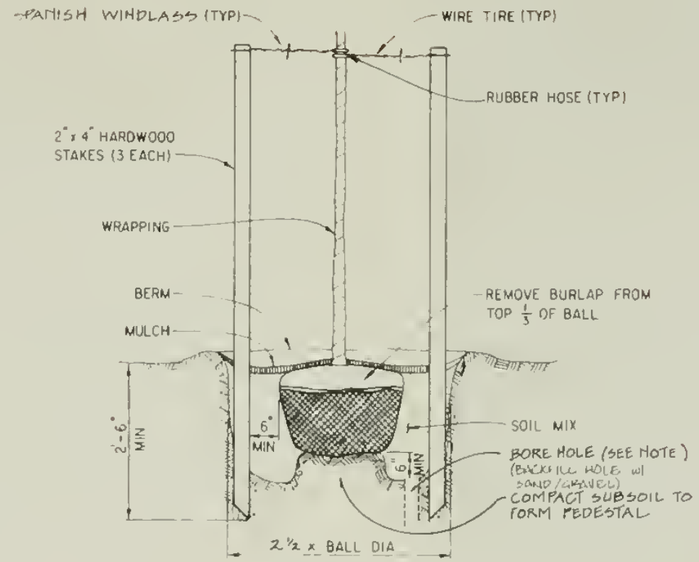
NO SCALE

GNED TANDARD WN Del H REVIEW T DALL TE 8/85	SUB SHEET NO	TITLE OF SHEET SHRUB AND TREE PLANTING DETAILS FOR BALL AND BURLAP AND BAREROOT STOCK (STANDARD DESIGN #02950)	DRAWING NO 441 / 41019 PKG NO 143 SHEET 8 OF 10



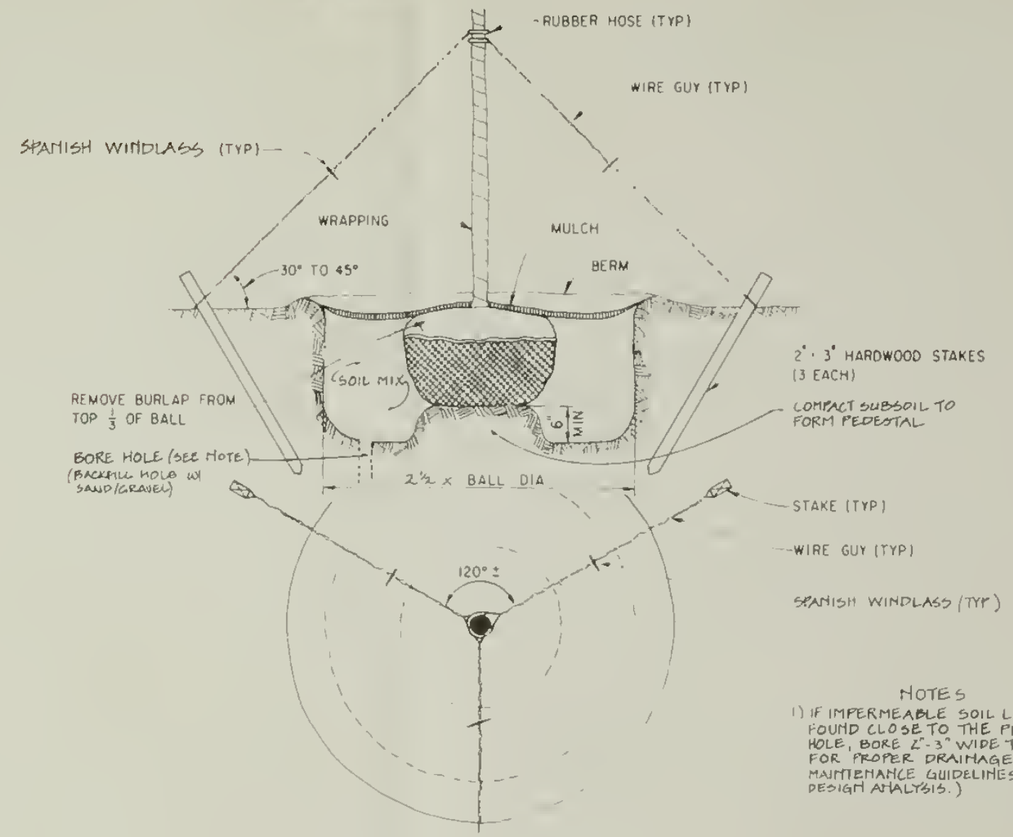
SHRUB

BALL AND BURLAP PLANTING



TREE - 1" TO 3" CAL

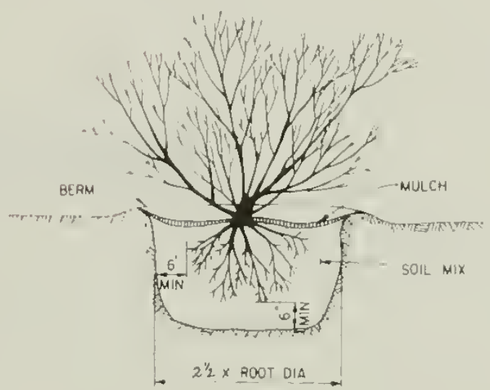
BALL AND BURLAP PLANTING



NOTES

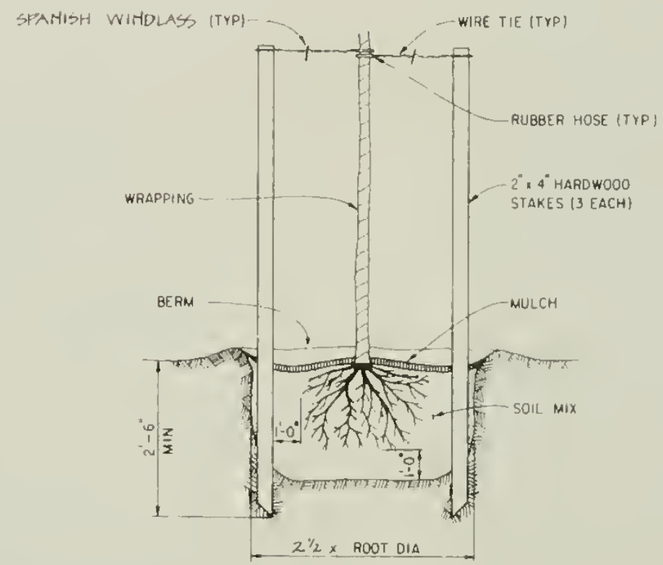
1) IF IMPERMEABLE SOIL LAYER IS FOUND CLOSE TO THE PLANTING HOLE, BORE 2"-3" WIDE THROUGH FOR PROPER DRAINAGE (SEE MAINTENANCE GUIDELINES OF DESIGN ANALYSIS.)

TREE PLANTING - OVER 3" CAL.



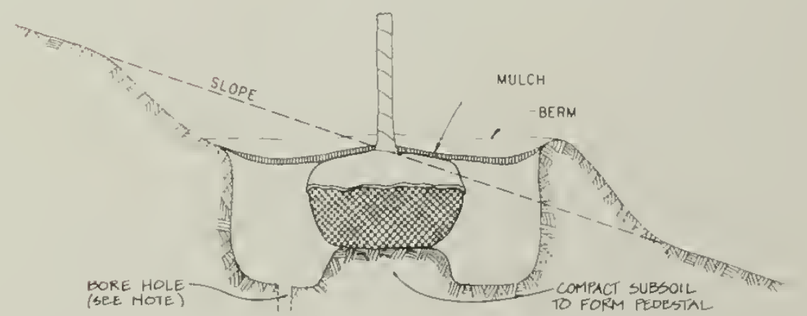
SHRUB

BAREROOT PLANTING



TREE - 1" TO 3" CAL.

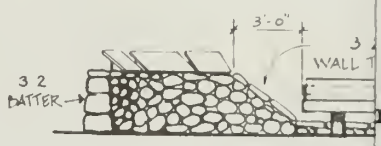
BAREROOT PLANTING



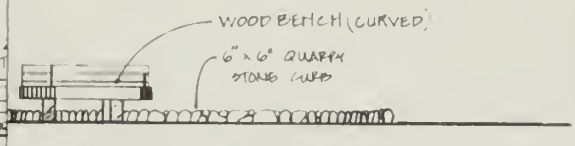
GRADING FOR PLANTING ON SLOPES 1:5 AND STEEPER

NO SCALE

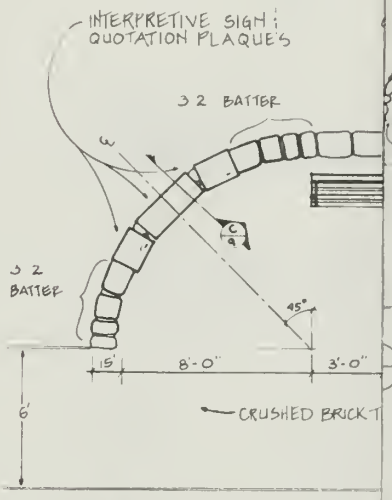
DESIGNED	SUB SHEET NO	TITLE OF SHEET	DRAWING NO
STANDARD		SHRUB AND TREE PLANTING DETAILS FOR BALL AND BURLAP AND BAREROOT STOCK (STANDARD DESIGN #02950)	441 / 41019
DRAWN: C Delm			PKG NO 143
TECH REVIEW: T DALL			SHEET 8 OF 10
DATE 8/85			



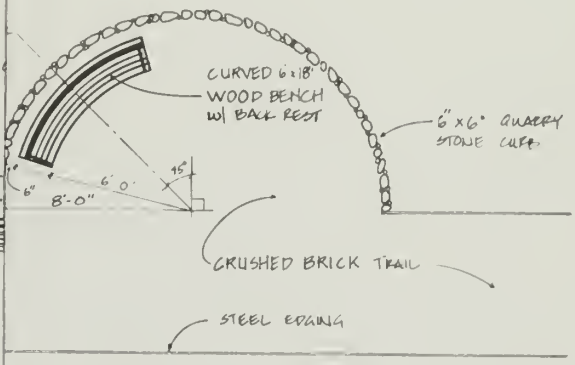
A/9 ELEVATION - LOOP 1 WA
SCALE: 1/4" = 1'-0"



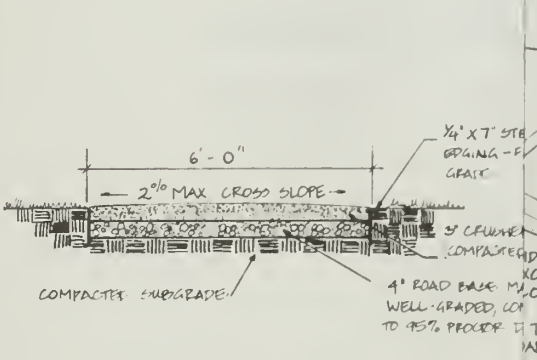
E/9 ELEVATION - LOOP 2 REST AREA
SCALE 1/4" = 1'-0"



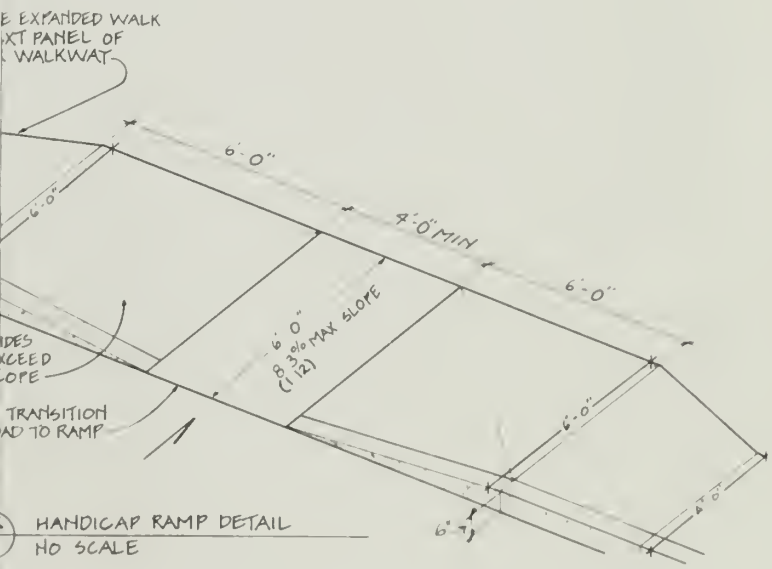
B/9 PLAN VIEW - LOOP 1 WA
SCALE: 1/4" = 1'-0"



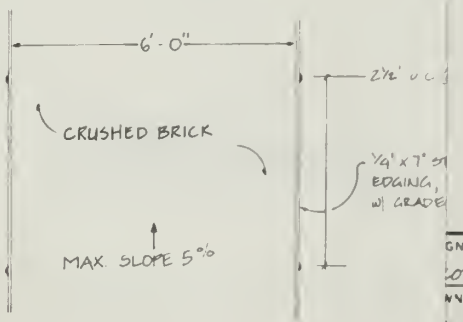
PLAN VIEW - LOOP 2 REST AREA
SCALE: 1/4" = 1'-0"



G/9 SECTION - LOOP TRAIL (TYP.)
SCALE: 1/2" = 1'-0"



HANDICAP RAMP DETAIL
NO SCALE

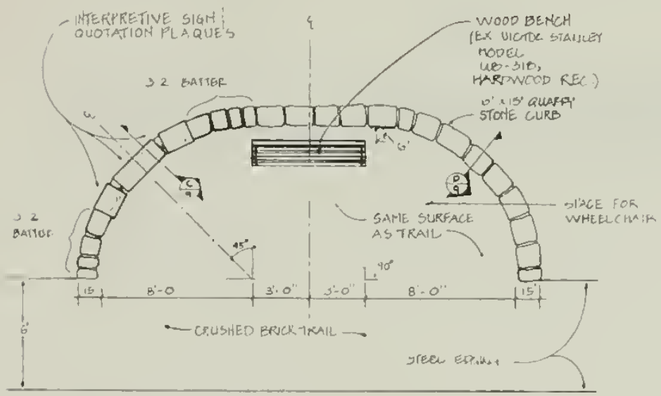


H/9 PLAN VIEW - LOOP TRAIL (TYP)
SCALE: 1/2" = 1'-0"

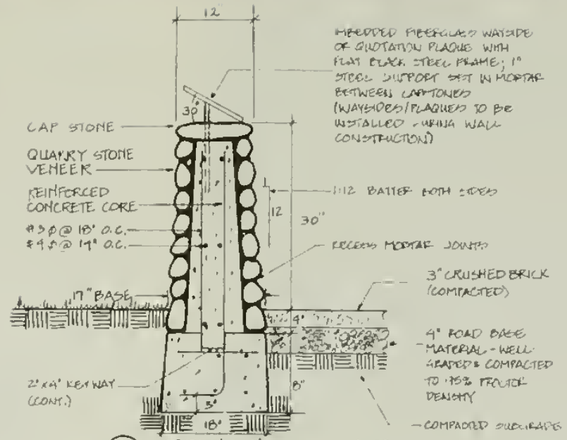
GNED COWLEY	SUB SHEET NO	TITLE OF SHEET	DRAWING NO
NN		CHAMIZAL NATIONAL MEMORIAL	441 / 41019
O/COWLEY		COMPREHENSIVE DESIGN PHASE TWO PACKAGE	PKG NO. 143 / SHEET 9
H. REVIEW DALL		Construction Details	OF 10
E 7/00			

U.S. GOVERNMENT PRINTING OFFICE 1985

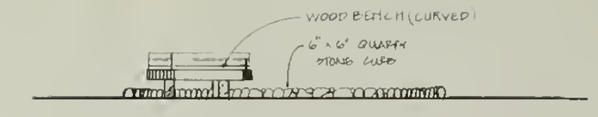
A/9 ELEVATION - LOOP 1 WAYSIDE
SCALE: 1/4" = 1'-0"



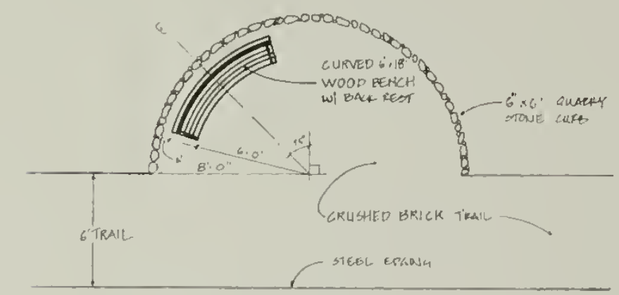
B/9 PLAN VIEW - LOOP 1 WAYSIDE
SCALE: 1/4" = 1'-0"



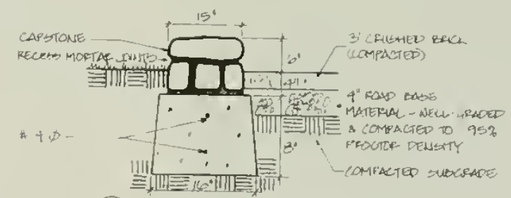
C/9 SECTION A-A' - WALL & WAYSIDE
NO SCALE



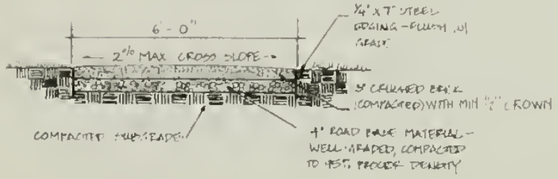
E/9 ELEVATION - LOOP 2 REST AREA
SCALE 1/4" = 1'-0"



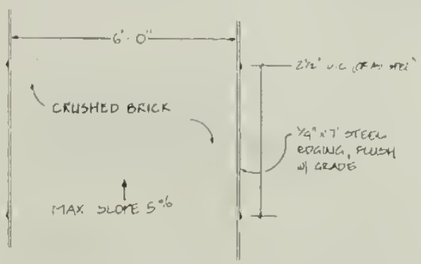
F/9 PLAN VIEW - LOOP 2 REST AREA
SCALE: 1/4" = 1'-0"



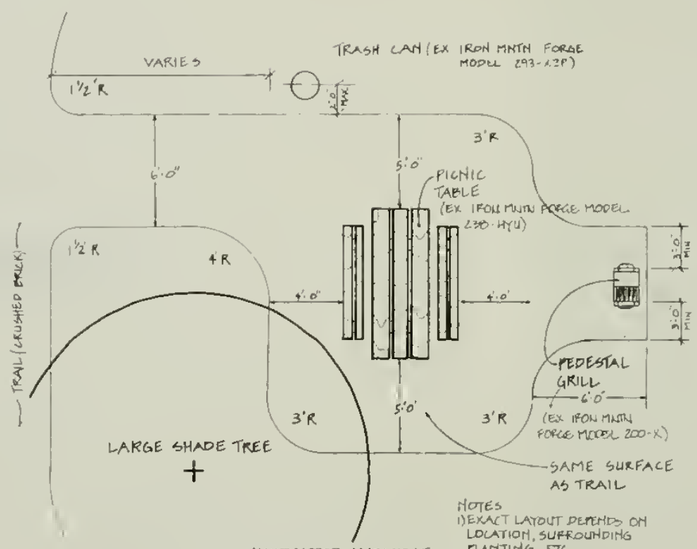
D/9 SECTION B-B' - STONE CURB
NO SCALE



G/9 SECTION - LOOP TRAIL (TYP)
SCALE 1/2" = 1'-0"

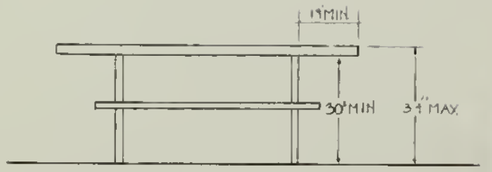


H/9 PLAN VIEW - LOOP TRAIL (TYP)
SCALE 1/2" = 1'-0"

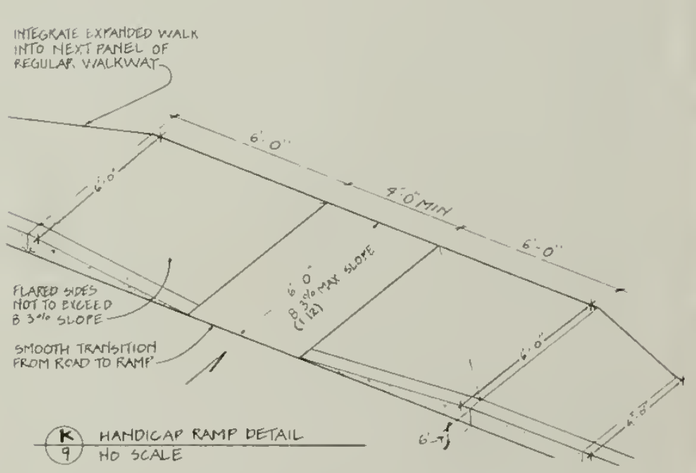


NOTES
1) EXACT LAYOUT DEPENDS ON LOCATION, SURROUNDING PLANTING, ETC.
2) PLACE GRILL DOWNWIND FROM TABLE

I/9 HANDICAPPED-ACCESSIBLE PLAN VIEW - PICNIC AREA (TYP)
SCALE 1/4" = 1'-0"



J/9 ACCESSIBLE PICNIC TABLE
NO SCALE



K/9 HANDICAP RAMP DETAIL
NO SCALE

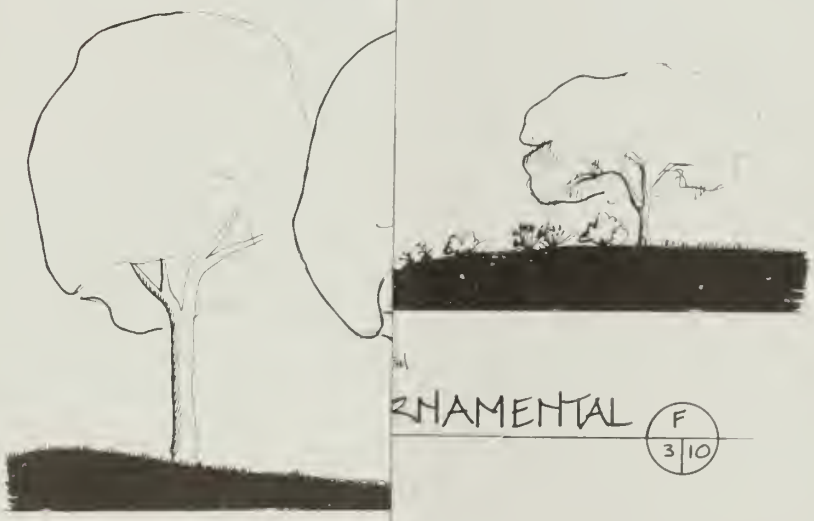
DESIGNED	SUB SHEET NO	TITLE OF SHEET	DRAWING NO
COWLEY		CHAMIZAL NATIONAL MEMORIAL	441 / 41019
DRAWN: J. M. COWLEY		COMPREHENSIVE DESIGN PHASE TWO PACKAGE	PKG. NO. 143 / SHEET 9
TECH REVIEW T. DALL		Construction Details	OF 10
DATE: 9/00			

SECTION - LOVOYO (B 4/10)

NO SCALE

SECTION - DESE BERM OMITTED

NO SCALE



RNAMENTAL (F 3/10)

SECTION - LATER

NO SCALE

SIGNED COWLEY DRAWN: COWLEY CH. REVIEW: T DALL DATE 7/88	SUB SHEET NO	TITLE OF SHEET CHAMIZAL NATIONAL MEMORIAL COMPREHENSIVE DESIGN PHASE TWO PACKAGE Sections	DRAWING NO. 441/4109 PKG. NO. 143 SHEET 10 OF 10

☆ U.S. GOVERNMENT PRINTING OFFICE - 1985

SECTION - LOWER ARROYO (A 4|10)
NO SCALE

SECTION - SPRINGSIDE, UPPER ARROYO (B 4|10)
NO SCALE

SECTION - DESERT SCRUB (C 4|10)
NO SCALE

SECTION D, NATIVE STAPLES (NO BERM) OMITTED

SECTION - LATER COMMERCIAL (E 3|10)
NO SCALE

SECTION - ORNAMENTAL (F 3|10)
NO SCALE

DESIGNED	SUB SHEET NO	TITLE OF SHEET	DRAWING NO.
COWLEY		CHAMIZAL NATIONAL MEMORIAL	441 / 41019
DRAWN: COWLEY		COMPREHENSIVE DESIGN PHASE TWO PACKAGE	PKG. NO. 143 / SHEET 10
TECH. REVIEW: T DALL		Sections	OF 10
DATE 7/88			

Clemson University
3 1604 004 718 880

As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural and cultural resources. This includes fostering wise use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people. The department also promotes the goals of the Take Pride in America campaign by encouraging stewardship and citizen responsibility for the public lands and promoting citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

NPS D-13 September 1989