NEON-P3 PHASE LANDSCAPE AND AESTHETICS GUIDELINES
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GENERAL
These landscape and aesthetic (L&A) guidelines supplement the project technical specifications and are intended to be used by project developers to guide the aesthetic design of the NEON-P3 Phase. These guidelines set the aesthetic expectations for the project and allow for innovation in achieving project requirements. These guidelines also set the design parameters and prescribe design templates in the project corridor for mainlines, gateways, interchanges, and remnant parcels to specific architecture and landscape architecture components. The components represented in these guidelines were selected to relate to one another through massing, colors, materials, and graphic elements to create an overall aesthetic that supports the Meadow Redux design theme.

These guidelines illustrate the application of L&A elements for the thematic character chosen for the project. The L&A theme is Meadows Redux as described in the Project NEON Landscape and Aesthetics Requirements Report by NDOT listed in the standards and references.

These guidelines lay out the required application of the theme elements. The Developer may design a compatible set of artistic impressions of the theme.

The following sections address Bridge Aesthetics, Wall Treatments, Groundplane Treatments, Vegetation, Sculptural/Artistic Features, and Color Palette.

Placement of L&A elements shall be defined by a hierarchy of treatment levels:
- Standard— the base elements throughout the corridor (base color and texture)
- Accentuated— areas where the traveling public will view an area as pleasing rather than mundane
- Focal— areas to draw attention or that will have focused attention
- Landmark— big theme L&A treatments

STANDARDS AND REFERENCES
(SPECIFIC TO L&A)
Perform the L&A work in accordance with the applicable requirements of the following standards and references:
- NEON P3 Project - ITP, PPA, Technical Provisions (including revisions to the Silver Book)
- Silver Book NDOT 2001
- Project NEON Aesthetics and Landscape Requirements Report, NDOT
- I-15 Landscape and Aesthetics Corridor Plan, NDOT
- Pattern and Palette of Place: A Landscape and Aesthetics Master Plan for the Nevada State Highway System, NDOT
- Aesthetic Alternatives for NDOT Design Standards
- Roadside Design Guide, AASHTO
- A Guide for Transportation Landscape and Environmental Design, AASHTO
- Guide for the Planning, Design, and Operation of Pedestrian Facilities, AASHTO
- A Guide for Achieving Flexibility in Highway Design, AASHTO
- ANSI A300 (Part 1) - Pruning: Tree Care Operations - Tree, Shrub and Other Woody Plant Maintenance - Standard Practices, American National Standards Institute, Washington, DC
- ANSI Z60.1 American Standard for Nursery Stock, American National Standards Institute, Washington, DC
- Best Management Practices: Tree Pruning, Gilman, E. and S. Lilly, International Society of Arboriculture, Champaign, IL
- Aesthetic Concrete Barrier Design, NCHRP Report 554
Las Vegas Metropolitan Area

Dynamic Desert Metropolis Landscape Design Segment

1:15 Corridor Plan

Legend

Dynamic Desert Metropolis Landscape Design Segment

19A. I-15 ELM TO SPEEDWAY
19B. I-15 SOUTH TO 160 TO BECK CANYON
19C. US-93 SPAGHETTI BOWL TO BLYTHE CANYON
20. RAINBOW CURVE TO I-15 AT SUMMERLIN
26. I-15 SOUTH TO HENDERSON
27. I-15 SPAGHETTI BOWL TO RAILROAD PASS

Mojave High Desert Landscape Design Segment

26A. NARROW MOJAVE DESERT SUB-SEGMENT

Major Highway Interchange

Note: Highway mile markers begin at the California/Nevada state line.
MEADOWS REDUX: A HISTORY

Beginning in May 2000, the State of Nevada through the State Transportation Board and the Nevada Department of Transportation began a planning process to create a vision for the state highway system that would satisfy the need for L&A considerations throughout the state. It was recognized that the state highways represent an opportunity to demonstrate the images, history, peoples, and climate that make Nevada a unique place.

Pattern of Place: A Landscape and Aesthetics Master Plan for the Nevada State Highway System (NDOT, 2002) established the framework for developing corridor studies. The I-15 Landscape and Aesthetics Corridor Plan (NDOT, 2005) describes a comprehensive vision for L&A within the corridor from Primm on the California border to Mesquite on the Utah border, a stretch that includes the project. The project falls within the Dynamic Desert Metropolis area identified in the corridor plan.

In 2006, the Project NEON Aesthetics and Landscape Requirements Report was completed. The report provides the State’s past planning efforts, presents the development of conceptual themes, and details design options for structural and landscape aesthetics for the project. Three project themes were developed and presented at a public open house at which the public provided input into the theme selection.

The selected theme, Meadows Redux, seeks to bring back to the center of Las Vegas the meadow imagery for which the city was named. Grassland meadows characterize the aesthetic theme on structures and in the landscape. Mojave flora and fauna are overlaid on this Meadows Redux theme, supporting the diversity of images and plant material. Traveling the corridor from north to south, at the US 95 and I-15 intersection one encounters desert landscape and painted images. This theme transitions to the meadow/grassland theme provided in the Project NEON Aesthetics and Landscape Requirements Report. The farther south one travels in the corridor, the “wetter” the grassland imagery appears until reaching the oasis with palm plantings at the I-15 Sahara Avenue interchange.

Images of flora and fauna supporting the theme shall be expressed on structures and wall treatments. Bridge architecture shall have strong forms, and bridge rails, columns, and abutment/wing walls shall have aesthetic treatments. Fences and railings associated with the structures shall echo the Meadows Redux patterns. At key focal points, sculptural and lighting accents shall highlight gateways into city streets.

“A vision for the State Highway System: We envision a system of state highways that reflect the land and people of Nevada. We believe that Nevada should have highways that are aesthetically pleasing, as well as safe and cost effective. Therefore, no state highway is complete until landscape and aesthetics are considered and addressed.”

-NDOT, Pattern and Palette of Place: A Landscape and Aesthetics Master Plan for the Nevada State Highway System
USE OF L&A GUIDELINES AND INTRODUCTION TO MEADOWS REDUX

Standard— the base elements throughout the corridor (base color and texture)
Accentuated— areas where the traveling public will view an area as pleasing rather than mundane
Focal— areas to draw attention or that will have focused attention
Landmark— big theme L&A treatments
I-15 TO US 95 HIGH OCCUPANCY VEHICLE (HOV) STRUCTURE
1.0 BRIDGE AESTHETICS
1.0 BRIDGE AESTHETICS

**VISION**
Good bridge engineering and good aesthetics should be synonymous. Beauty is not simply a matter of taste alone. When qualities such as proportion, order, and symmetry are applied well, people often agree that the object has aesthetic value; when applied badly, they generally agree that it does not. Aesthetics should be an integral part of design and must be considered both in the general form and the details that support it. The parts must be considered as to how they contribute to the whole.

**DESIGN INTEGRITY**
A well-designed bridge is the product of design decisions that are in alignment with one another, with one result being that the design has integrity. Myriad options are available to design, express, and highlight structural form.
Scale: Scale refers to the size relationships among features of the bridge structure and between the bridge structure and its surroundings. Because most design relates to things that will be used by people, a connection exists between the human body and designed objects. Structures that respond to the size of the human form are often referred to as having human scale. Highways have a larger scale because they are built for vehicles moving at high speeds. Highway elements such as piers or girders can be very large but appear “in scale” with the highway environment. Conflicts in scale become apparent when pedestrian accommodations are integrated into the highway environment. Ways must then be found to humanize the scale of the pedestrian portion of the bridge structure so that the structure operates at both scales.

Proportion: Proportion creates a sense of order by assigning appropriate relative sizes to different elements. The goal of good design is to achieve appropriate proportions among the parts of a structure: between its height, width, and depth; between solids and voids; between surfaces and openings; and between areas of sunlight and shadow. Proportion can suggest the order of significance of the elements or the roles played by the elements in the structure. Surface textures and colors also contribute to the sense of proportion.

Harmony, Contrast, and Rhythm: Harmony results when design elements have visual similarity and a complementary relationship. If planes or lines in a design have more dissimilar characteristics than similar characteristics, they are generally not perceived as being harmonious. Contrast relieves the monotony of simple harmony by juxtaposing the characteristics of some design elements with their opposites. Contrast often takes the form of dramatic differences in color or light and shadow. A dominant theme is essential in organizing the design into a pleasing aesthetic experience. Rhythm creates a sense of order by repeating similar elements in, on, or around a structure. These elements create a pleasing natural flow. On bridges, rhythms may be created by the spacing of light poles, spacing posts within a railing, and applying surface texture and color.

Color: Color can be applied to define, clarify, modify, accentuate, or subdue the visual effects of structural elements. Warm colors tend to emphasize the presence and size of forms, whereas cool colors diminish the visual importance of the elements to which they are applied. Colors are perceived differently throughout the day and during various seasons because of the position of the sun and atmospheric conditions. Colors are also influenced by the background against which they are seen, and their appropriateness is often judged in terms of their fit with their background. Background is particularly important for highway color selections because the highway element is generally a very small part of a much larger scene.

Texture: Texture helps define form through subtle surface variations and shadings. Texture can be used to soften or reduce imposing scale, add visual interest, and introduce human scale to large objects such as piers, abutments, monuments, and retaining walls. Distance and motion alter the perception of texture. When viewed from a distance or at high speeds, fine textures blend into a single tone and appear flat. The greater the distance, the higher the observer’s speed, or the larger the object to which it is applied, the coarser or larger the texture must be to stand out.

### Requirements

- Grass formliner motif along bridge barrier with two accent colors shall extend along the entire length of bridge structures.
- Grass formliner motif along bridge barrier rail with two accent colors shall be used for 30 feet on either side of bridge pier supports on the I-15/US 95 HOV Connector.

### Defined Hierarchy of Treatment Levels

- **Standard**: Base color and texture
- **Accentuated**: Repeating pattern of Meadow Redux motif, accent colors or appliqués
- **Focal**: Meadow Redux motif on barrier rail on bridges and on sections of barrier rail over columns on HOV structure
- **Landmark**: Bridge barrier rails or columns, enhanced to carry out a strong theme statement, draw the traveler’s attention, or make a visual connection to the unique place and/or history

### I-15 to US 95 High Occupancy Vehicle (HOV) Structure

- **HOV Structure Elements**
  - **Accent Color #1**
  - **Accent Color #2**
  - **Base Color**

- **Barrier Rail**
- **Girder**
- **Column**
- **Retaining Wall**
- **HOV Structure**
**PROJECT NEON-P3 PHASE**  
**LANDSCAPE AND AESTHETIC GUIDELINES**

**BRIDGE ELEMENTS**

- Base color
- Accent color #1
- Barrier

- Retaining Wall
- Decorative Texture and Rustication

**DESIGN CHARACTER**

- Meadows Redux Grasses and Flowers: Mojave Fauna, Mojave Flora
- Hierarchy Landmark Treatment: HOV/NEON Gateway, Charleston Boulevard
- Focal Treatment: Bonneville Avenue/Alta Drive

**COLOR PALETTE** (see Section 6.0)

- Base Color: DE 6130 Wooded Acre
- Accent Colors:
  - DE 5978 Plum Wine
  - DE 5537 Woodland Walk
  - DE 5914 Bossa Nova Blue

**PEDESTRIAN RAIL**

- Pedestrian railings shall be used for pedestrian safety and directional control

**SIDEWALK**

- Sidewalks shall be standard finish and accessible, 6 foot to 8 foot wide or greater. The remaining sidewalk area shall be scored or textured under the bridges and at intersections.

**SLOPE PAVE**

- Slope pave shall be base color with accent color patterning and sculptural appliques.

**MEDIAN & MEDIAN BARRIERS**

- Medians under bridge structures shall be stamped concrete or pavers that are base color and textured.

**SCULPTURAL APPLIQUÉ**

- Sculptural applique promoting the Meadows Redux theme and accent colors shall be applied to walls to provide scale, proportion, contrast and interest.

**REQUIREMENTS**

- All highway structure elements shall be painted with the base color.
- Accent colors shall be used in a composition to visually reinforce structural elements on bridges.
- Accent colors shall be used to highlight structural aspects in high-visibility areas.
- Abutment walls with properly scaled aesthetic images and vertical rustication shall provide a strong visual anchor for the bridge.
- A consistent horizontal span across the bridge length shall be provided on either side of bridge column set back from the edge to provide a strong shadow line to the bridge girder.
- Center columns shall be well-proportioned to the overall bridge.
- Placement of lighted mainline bridge barrier sculptures shall occur outside mainline bridge, where the mainline crossing consists of multiple bridges.
BARRIER RAILS AND GIRDERS

requirements

- The minimum exposed retaining abutment wall height shall be 10 feet for a 50-foot length to allow for expression of the corridor theme on walls.
- Aesthetic treatment of the bridge barrier rail shall appear integrated into the approach barrier.
- Bridge barrier rail treatment shall include a minimum of two accent colors.

Barrier Rail
Meadows Redux theme treatment for entire length of bridge

Setback Girder
Creates shadow and emphasizes horizontal span

Exposed Retaining Wall
Height of 10 feet minimum on 50-foot length to allow for aesthetic treatment at focal and landmark, overpass locations

Align Barrier Treatments

Applique Treatments
Grass sculpture appliqué to wrap pier columns at or near accented or focal areas. (See map on page vii)

Barrier Rail on HOV Structure
Aesthetic formliner treatment and two colors each side of column on barrier

Barrier and Girder at Abutment

Aesthetic Treatment for Barrier Rail
2.0 WALL AESTHETICS
2.0 WALL AESTHETICS

INTRODUCTION
This section addresses treatment of retaining walls, soundwalls, and bridge/structure abutment walls.

All walls shall be integral with their caps and associated traffic barriers and/or retaining walls in the application of a unified base color (Section 6.0) and texture (rustication).

DEFINED HIERARCHY OF TREATMENT LEVELS

- **Standard**
  - Base color and texture
- **Accentuated**
  - Repeating pattern of mural inserts, accent colors, or appliqués
- **Focal**
  - All areas viewed for a sustained time, on a curve, on/off ramps, or a stop light condition where the decorative wall motif shall be more detailed
- **Landmark**
  - Wall areas enhanced to carry out a strong theme statement, draw the traveler’s attention, or make a visual connection to the unique place and/or history

REQUIREMENTS
- Grade surrounding land with slopes, terraces, and low walls to minimize wall height and turn ends into slopes.
- Provide planting in front of walls where space permits to soften appearance of wall.
- Segmental block walls may be used if stepped with no height greater than 2 feet. Segmental block walls shall be treated with color and texture to harmonize with adjacent structures and walls. All terraces shall be planted.
**REQUIREMENTS**
- All retaining walls and soundwalls shall be treated with vertical rustication as a base treatment on both sides.
- All retaining walls and soundwalls shall be treated with interspersed aesthetic panels (formliners) depicting the NEON-P3 Phase Meadows Redux theme.
- Varied pattern of number of panels preferred
- Use 1 detailed mural panel to 3 less detailed panels
- Ratio of 1/3 vertical rustication to 2/3 mural patterns
- Placement of aesthetic patterns and appliqués on walls shall be appropriate in scale to the hierarchy of treatment levels.
- All soundwalls shall receive aesthetic treatment on both sides.
- Soundwalls shall have interior columns and single outside seams.
- Each soundwall mural panel shall work independently and in combination with other and special attention paid to avoid horizontal line reveal or texture distortions.

**RETAINING WALLS**
Retaining wall treatments shall include a multi-panel Meadows Redux theme mural that can be used in multiple combinations depending on the wall type, height, and width.

A Meadows Redux motif of grasses, wildflowers, desert cacti, and native wildlife of appropriate size and scale to the location shall be developed into retaining panels or retaining wall formliners and used in areas of lower speeds or to highlight bridges or intersections.

**SOUNDWALLS**
Pattern shall be used on both sides of soundwalls. A series of Meadows Redux landscape murals shall be developed at an appropriate size and scale for highway speeds. A minimum of two textures, including vertical rustication, shall be used.

The incorporation of appliqués on the soundwalls is encouraged to break up patterns.

**Mural Concept** A six panel Meadows Redux mural concept with vertical rustication top and bottom. Depth and scale of reveals shall be appropriate for highway speeds.

**A 250-Foot Sample Wall Segment Series** This 250’ sample soundwall series uses two-thirds mural panels to one-third vertical rustication panels. Ground plane and skyline align at each panel minimizing horizontal and texture distortions as the panels change.
FREESTANDING WALLS
Decorative freestanding art walls can provide vertical elements, add visual interest, and screen traffic from undesirable views.

Metal walls shall be treated with a natural-looking finish such as produced by Natina Products LLC or approved accent colors.

REQUIREMENTS
- The freestanding walls, landscape planting, and rock mulch designs shall be integrated with vehicle recovery zone setbacks in non-parallel, pleasing curvilinear or geometric designs.
- Freestanding walls shall not exceed 14 feet in height without a step in the wall plane; individual step heights shall not exceed 2 feet.
- All freestanding wall foundations shall be covered by groundplane treatment so they are not visually exposed.
3.0 GROUNDPLANE TREATMENTS
3.0 GROUNDPLANE TREATMENTS

GROUNDPLANE CONCEPTS

Groundplane treatments along the roadway provide erosion protection, dust and weed control, and an aesthetically diverse visual environment. This treatment includes uniform depth applications of rock mulch, variable sizes and color of stone, boulders, or glass mulch combined to create textures and patterns that mimic the existing environment and/or the thematic character of the corridor.

The use of varying rock sizes and textures shall break up the monotony of a continuous plane of mulch for a more natural and aesthetically pleasing visual environment. Varying rock sizes and patterns creates shadow lines and reduces the potential for eye fatigue and related safety issues.

Use of rock mulch colors adds special visual interest, depth of visual scene, and an opportunity to reinforce the corridor theme.

Use of groundplane type, size, color, and patterning design shall be defined by the following hierarchy of treatment levels as viewed from I-15 or the local roadways:

- Standard
- Accentuated
- Focal
- Landmark

REQUIREMENTS

- A varied groundplane shall be created by the size, color, texture, and configuration of treatments.
- A variety of mulch colors that correspond to the corridor’s base color and the natural surrounding groundplane shall be used.
- The color of rock mulch shall be coordinated to provide harmony with the corridor theme colors and surrounding environment.
- A variety of rock sizes shall be incorporated into the design.
- Uniformly sized and colored rock mulch in large expanses shall not be accepted.
**GROUNDPLANE CONCEPTS**

The design for groundplane aesthetics should use familiar desert meadow shapes and concepts. Although not always visible, the concepts help organize materials and guard against random placement. The chosen concept should focus on achieving the desired outcome whether disguising linear drainages, or screening or creating patterning on uniform fill slopes. Design rock mulch patterns with a curvilinear alignment that flows over and through linear drainage channels, and up slopes, providing a naturalized appearance.

Rounding of top and toe of slopes in channels and painting of concrete-lined channels add to the integration of drainage into the landscape.

Remnant parcel treatment at I-15 and Symphony Park Avenue. Curvilinear shapes and earthen berms of a second rock mulch type. Landscape boulders, water-wise trees, and desert shrubs are placed infrequently along the edges.

Large remnant parcels that flank I-15 near Loch Lomond Way and South Highland Avenue are shown below. As illustrated, the area has large Mojave rattlesnake patterning of a second rock mulch type. Landscape boulders, water-wise trees, and desert shrubs are placed infrequently along the edges.

The NEON Gateway from I-15 to Western Avenue is envisioned as a landmark treatment area, that includes a formal groundplane treatment. Appropriate height and scale earthen berms, spaced for the travel speed, would be covered with a grid pattern of grasses and contrasting rock mulch. Six grass sculptures (Section 5.0) in increasing height announce the gateway access. Smaller sculptures grace the median together with trees, grasses, and a formal pattern of rock mulch. Glass mulch shall be designed to catch the light from sculptures and street lights.

See cover sheet for rendering.

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See cover sheet for rendering.
RAINWATER HARVESTING

Rainwater harvesting slows water flow during peak rainfall, and may lessen the burden placed on stormwater drainage systems. The goal of rainwater harvesting is to use natural drainage corridors and thoughtful grading to disperse drainage paths over a broad area, decreasing runoff volume and slowing water flow to create greater contact with soils and promote natural infiltration and plant health. This natural infiltration from paved surfaces also may reduce pollutant transport. Rainwater harvesting increases water collection within the landscape to use in place of or to supplement irrigation.

Small retention facilities may be used to facilitate rainwater harvesting for landscape and aesthetics. For drainage design purposes, any retention provided shall be considered ineffective due to back to back storms, lack of maintenance, discontinued use of feature, and alternative forms of positive drainage and flood protection.

Planting Pit Prior to plant installation, a planting pit shall be dug 6 inches deeper than the root extension. The planting pit shall be filled with water and allowed to drain. If the planting pit does not drain within 8 hours, then the pit shall have a 6-inch by 24-inch-deep chimney hole dug and filled with pea gravel to improve drainage. For all plants on slopes, dig two shallow depressions (4-inch deep, 12-foot wide by 4-foot or greater long) on uphill side of pits to direct rainwater to plant pit for capturing rainfall from slope. Fill depression with decorative rock (no fines) matching adjacent decorative rock.

LANDFORMS

Earthen forms, along with various rocks, boulders, decorative mulches, sculpture, and art, complete the decorative groundplane at intersections and other points of interest.

REQUIREMENTS

- Water harvesting shall be employed as a passive system of drawing natural rainfall to all plantings.
- Landforms shall be designed for large remnant parcels to provide a background for perimeter planting and aesthetic interest to the traveling public.
**REQUIREMENTS**

- Uniform slopes with boulder outcroppings, dry stack, or rammed earth wall shall be varied to create areas for landscape or sculpture.
- The top and toe slope rounding of fill slopes and undulate steepness shall be used and alternated with boulder groupings or earth walls to transition grades and increase visual interest while creating vegetation and rainwater harvesting pockets.

**FREESTANDING GABION ROCK WALLS**
Curvilinear freestanding gabion walls add interest to large remnant parcels and highlight changes in groundplane materials.

**FREESTANDING DRY STACK ROCK WALLS**
Curvilinear freestanding rock walls shall be designed as dry stack to add interest to large remnant parcels and highlight changes in groundplane materials.

**GRADE CHANGES**
Rammed earth walls allow for subtle grade changes and the display of sculpture or desert landscape. Boulder groups transition slopes naturally.
DECORATIVE ROCK
Rock mulch shall be varied and employ multiple colors, sizes, and textures. Patterns and shapes created with rock mulch can lead to a view of special features such as sculptures and accent vegetation. A homogenous palette of rock mulch can produce negative views such as glare and a monotonous driving experience. Overuse of lightly colored mulch can create sunscald on plant material.

GLASS MULCH
Glass mulch can avoid monotonous environments when used primarily as accents among rock mulch or as a groundplane feature or art piece. Large expanses of glass mulch is discouraged.

BOULDERS
Boulders can break up rock mulch areas by adding visual interest. They can also simulate a stream or linear path by drawing the eye to special site features such as a sculpture or other site accent, thus creating visual movement.

- Depth of all decorative rock mulches shall be no less than 3 inches.
- Landscape boulders shall be placed in clusters visible to motorists and pedestrians to enhance remnant parcels, fill slopes, and interchanges in focal areas.

REQUIREMENTS

Apache Gold Rock
Limestone Chat
Mojave Gold Rock
Kino Blue Rip Rap
Recycled glass colors
Recycled glass with epoxy coating can emulate water flow or water bodies
Desert Gold Boulders
Corona Brown Boulders
Kino Blue Boulders
Vegetation treatment types for the existing I-15 corridor vary from simple groundcover treatments to masses of varied vegetation. Vegetation for the Meadows Redux concept includes plant material from native Mojave specimens to diverse, regionally adapted plant material selected for color and seasonal interest.

Landscape plant material shall emulate the Meadows Redux theme with the use of grasses or grass-like plants in focal areas. Vegetation areas shall be concentrated in areas available and seen by the traveling public on I-15, US 95, and local streets. Vegetation shall be designed in coordination with groundplane treatments of rock mulches, boulders, berms, and land forms and where feasible rainwater harvesting shall be sculpted into the land.
## Section 4: Vegetation

### Recommended Plant Palette - Trees

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<th>Exposure to Sun</th>
<th>Water Requirement</th>
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<tr>
<td>Acacia greggii - Catclaw Acacia</td>
<td>15'-25' x 15'</td>
<td>Full</td>
<td>Low</td>
<td>Spring/Fall</td>
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<td>Chilopsis linearis - Desert Willow</td>
<td>20' x 15'</td>
<td>Full</td>
<td>Low to Medium</td>
<td>Spring/Fall</td>
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<td>Prosopis glandulosa - Honey Mesquite</td>
<td>25' x 35'</td>
<td>Full</td>
<td>Medium</td>
<td>Summer</td>
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<td>Yucca brevifolia - Joshua Tree</td>
<td>30' x 15'</td>
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<td>Acacia smallii - Sweet Acacia</td>
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<td>Cercidium microphyllum - Foothills Palo Verde</td>
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<td>Spring</td>
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<td>Cordia parviflora - Little Leaf Cordia</td>
<td>4' x 6'</td>
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<td>Low</td>
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<td>Parkinsonia aculeata - Mexican Palo Verde</td>
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<td>Low</td>
<td>Spring</td>
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<td>Rhus lancea - African Sumac</td>
<td>20' x 30'</td>
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<td>Low to Medium</td>
<td>Spring</td>
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<th>Regionally Adapted</th>
<th>Height x Width</th>
<th>Exposure to Sun</th>
<th>Water Requirement</th>
<th>Seasonal Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cercidium Hybrid - Desert Museum Palo Verde</td>
<td>25' x 25'</td>
<td>Full</td>
<td>Low</td>
<td>Spring</td>
</tr>
<tr>
<td>Cordia boissieri - Texas Olive</td>
<td>10' x 10'</td>
<td>Full to Partial</td>
<td>Low</td>
<td>Summer</td>
</tr>
<tr>
<td>Parkinsonia floridum - Blue Palo Verde</td>
<td>20' x 25'</td>
<td>Full</td>
<td>Low</td>
<td>Spring</td>
</tr>
</tbody>
</table>

Note: Several of the plants listed above will require establishment from seed since they are not available in containers.
### Recommended Plant Palette - Shrubs

<table>
<thead>
<tr>
<th>Plant</th>
<th>Height x Width</th>
<th>Exposure to Sun</th>
<th>Water Requirement</th>
<th>Seasonal Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammophila dumosa - White Bursage</td>
<td>2' x 3'</td>
<td>Full</td>
<td>Low</td>
<td>Fall/Spring</td>
</tr>
<tr>
<td>Atriplex canescens - Four Wing Saltbush</td>
<td>5' x 8'</td>
<td>Full</td>
<td>Low</td>
<td>Year round</td>
</tr>
<tr>
<td>Baccharis spp. - Baccharis</td>
<td>9' x 9'</td>
<td>Full to Partial</td>
<td>Low</td>
<td>Spring</td>
</tr>
<tr>
<td>Coleogyne ramossissima - Blackbrush</td>
<td>5' x 6'</td>
<td>Full</td>
<td>Low</td>
<td>Spring</td>
</tr>
<tr>
<td>Ephedra nevadensis - Mormon Tea</td>
<td>3' x 3'</td>
<td>Full</td>
<td>Low</td>
<td>Year round</td>
</tr>
<tr>
<td>Larrea tridentata - Creosote Bush</td>
<td>10' x 10'</td>
<td>Full</td>
<td>Low</td>
<td>Spring</td>
</tr>
</tbody>
</table>

### Enhanced Native

<table>
<thead>
<tr>
<th>Plant</th>
<th>Height x Width</th>
<th>Exposure to Sun</th>
<th>Water Requirement</th>
<th>Seasonal Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acacia clypeata - Knifeleaf Acacia</td>
<td>10' - 15' x 10'-15'</td>
<td>Full</td>
<td>Low</td>
<td>Spring</td>
</tr>
<tr>
<td>Cassia artemisioides - Feathery Cassia</td>
<td>6' x 6'</td>
<td>Full</td>
<td>Low</td>
<td>Spring</td>
</tr>
<tr>
<td>Cassia neomphila - Desert Cassia</td>
<td>6' x 6'</td>
<td>Full</td>
<td>Low</td>
<td>Spring</td>
</tr>
<tr>
<td>Chrysopyllum nauseosum - Rabbit Brush</td>
<td>4' x 4'</td>
<td>Full to Partial</td>
<td>Low</td>
<td>Fall</td>
</tr>
<tr>
<td>Ephedra viridis - Mormon Tea</td>
<td>3' x 3'</td>
<td>Full</td>
<td>Low</td>
<td>Year Round</td>
</tr>
<tr>
<td>Eremophila spp. - Valentine (TM)</td>
<td>4' x 4'</td>
<td>Full</td>
<td>Low to Medium</td>
<td>Winter</td>
</tr>
<tr>
<td>Ericamerica larocoides - Torpentine Bush</td>
<td>2' x 3'</td>
<td>Full</td>
<td>Low</td>
<td>Fall</td>
</tr>
<tr>
<td>Leucophyllum frutescens - Texas Ranger</td>
<td>5' x 5'</td>
<td>Full</td>
<td>Low</td>
<td>Summer</td>
</tr>
<tr>
<td>Santolina virgata - Grean Santolina</td>
<td>2' x 3'</td>
<td>Full</td>
<td>Low</td>
<td>Summer</td>
</tr>
<tr>
<td>Simmondsia chinensis - Jojoba</td>
<td>6' x 6'</td>
<td>Full</td>
<td>Low</td>
<td>Spring</td>
</tr>
</tbody>
</table>

### Regionally Adapted

<table>
<thead>
<tr>
<th>Plant</th>
<th>Height x Width</th>
<th>Exposure to Sun</th>
<th>Water Requirement</th>
<th>Seasonal Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anisacanthus quadrifidus - Mountain Flame</td>
<td>3' x 3'</td>
<td>Full to Partial</td>
<td>Low</td>
<td>Fall/Summer</td>
</tr>
<tr>
<td>Buddleia davidii - Navajo Purple Butterfly Bush</td>
<td>8' x 6'</td>
<td>Full to Partial</td>
<td>Low</td>
<td>Spring</td>
</tr>
<tr>
<td>Cassia phyllophora - Silver Leaf Senna</td>
<td>6' x 6'</td>
<td>Full</td>
<td>Low</td>
<td>Summer</td>
</tr>
<tr>
<td>Chrysothamnus mexicanus - Damiana</td>
<td>5' x 2'</td>
<td>Full</td>
<td>Low</td>
<td>Summer</td>
</tr>
<tr>
<td>Convolvulus canescens - Bush Morning Glory</td>
<td>2' x 3'</td>
<td>Full</td>
<td>Low</td>
<td>Spring/Fall</td>
</tr>
<tr>
<td>Dalea spp. - Dalea</td>
<td>4' x 5'</td>
<td>Full</td>
<td>Low</td>
<td>Fall</td>
</tr>
<tr>
<td>Dodonaea viscosa - Hopbush</td>
<td>10' x 6'</td>
<td>Full</td>
<td>Low</td>
<td>Year Round</td>
</tr>
<tr>
<td>Leucophyllum spp. - Texas Ranger</td>
<td>4' x 4'</td>
<td>Full</td>
<td>Low</td>
<td>Summer</td>
</tr>
<tr>
<td>Rhus ovata - Sugar Bush</td>
<td>10' x 10'</td>
<td>Full to Partial</td>
<td>Low</td>
<td>Spring</td>
</tr>
<tr>
<td>Salvia clevelandi - Chaparral Sage</td>
<td>4' x 6'</td>
<td>Full</td>
<td>Low</td>
<td>Spring</td>
</tr>
</tbody>
</table>
RECOMMENDED PLANT PALETTE - CACTI, PERENNIALS, AND ACCENTS

<table>
<thead>
<tr>
<th>NATIVE REVEGETATION</th>
<th>Height x Width</th>
<th>Exposure to Sun</th>
<th>Water Requirement</th>
<th>Seasonal Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baileya multiradiata - Desert Marigold</td>
<td>1’ x 1’</td>
<td>Full to Partial</td>
<td>Low</td>
<td>Spring/Summer/Fall</td>
</tr>
<tr>
<td>Echinocereus engelmannii - Hedge Hog Cactus</td>
<td>4’ x 1.25’</td>
<td>Full</td>
<td>Low</td>
<td>Year round</td>
</tr>
<tr>
<td>Encelia farinosa - Brittlebush</td>
<td>3’ x 4’</td>
<td>Full</td>
<td>Low</td>
<td>Spring</td>
</tr>
<tr>
<td>Erineuron pulchellum - Fluffgrass</td>
<td>2’ x 6’</td>
<td>Full</td>
<td>Low</td>
<td>Spring/Summer</td>
</tr>
<tr>
<td>Ferocactus acanthodes - Barrel Cactus</td>
<td>3-5’ x 1.5’</td>
<td>Full</td>
<td>Low</td>
<td>Spring/Summer</td>
</tr>
<tr>
<td>Opuntia bigelovia - Teddy Bear Cholla</td>
<td>4’ x 2’</td>
<td>Full</td>
<td>Low</td>
<td>Spring</td>
</tr>
<tr>
<td>Sphaeralcea ambigua - Desert Globemallow</td>
<td>3’ x 3’</td>
<td>Full</td>
<td>Low</td>
<td>Spring</td>
</tr>
<tr>
<td>Yucca schidigera - Mojave Yucca</td>
<td>12’ x 6’</td>
<td>Full</td>
<td>Low</td>
<td>Spring</td>
</tr>
</tbody>
</table>

| ENHANCED NATIVE                          |                |                 |                   |                         |
| Eriogonum divergens - Native Fleabane    | 1.5’ x 1’      | Full            | Low               | Summer                  |
| Ferocactus wislizenii - Fish Hook Barrel | 5’ x 2’       | Full            | Low               | Summer                  |
| Opuntia microdasys - Polka Dot Cactus    | 3’ x 3’        | Full            | Low               | Summer                  |
| Psilotrophe cooperi - Paper Flower       | 1’ x 1.5’      | Full to Partial | Low to Medium     | Spring/Summer/Fall      |
| Santolina chamaecyparissus - Lavender Cotton | 1.5’ x 3’    | Full            | Low               | Spring                  |
| Yucca spp. - Yucca                      | 10’ x 6’       | Full            | Low               | Summer                  |

| REGIONALLY ADAPTED                       |                |                 |                   |                         |
| Agave weberi - Weber’s Century Plant     | 3’ x 2’        | Full to Partial | Low               | Summer                  |
| Artemisia frigida - Wormwood             | 1’ x 1’        | Full            | Low               | Spring                  |
| Calocephalus montanous - Ground Morning Glory | 1’ x 3’   | Full to Partial | Low               | Spring/Summer           |
| Hemerocallis spp. - Daylily              | 2’ x 2’        | Full to Partial | Low               | Spring                  |
| Muhlenbergia rigens - Deer Grass         | 3’ x 4’        | Full            | Low               | Summer                  |
| Nolina europaea - Beargrass              | 4’ x 6’        | Full            | Low               | Spring                  |
| Penstemon spp. - Penstemon               | 3’ x 2’        | Full            | Low               | Spring                  |
| Tulbaghia violacea - Society Garlic      | 3’ x 3’        | Full            | Low               | Spring/Summer           |

REQUIREMENTS cont’d

- Existing plants removed shall be mitigated per the NEON-P3 Phase Technical Specifications.
- An efficient and effective low-water-use irrigation system shall be used. This system shall have an integral fertigation system that delivers controlled, organic-based fertilizer, soil amendments and conditioners, wetting agents, organic bio-stimulants, organic critter repellent, and insect control.
- The irrigation system shall be designed and constructed to tie into NDOT’s central irrigation control system located at District headquarters at Handback.
- The irrigation system shall meet water purveyor requirements.
- The Developer shall be responsible for all water and electrical service coordination, fees, and charges.
5.0 SCULPTURAL/ARTISTIC FEATURES
5.0 SCULPTURAL/ARTISTIC FEATURES

INTRODUCTION
This section addresses sculptural/artistic features that shall be used throughout the NEON-P3 Phase to enhance the Meadows Redux theme. These features shall be in the form of stand-alone features in the landscape or additions to bridges and walls.

Sculptural/artistic features are designed in scale and type and placed according to the defined hierarchy of treatment levels used as a guide throughout this document (see section Use of L&A Guidelines). Examples would include:

- **Standard** – (Base) would likely not receive sculptural/artistic features
- **Accentuated** – (areas where the traveling public will view an area and find it pleasing rather than mundane) appliqués at intervals on retaining and sound walls
- **Focal** – (areas to draw attention or will have focused attention) appliqués and sculptural features on walls, bridges, and landscape areas near ramps, stop lights, underpasses, and intersections.
- **Landmarks** – (deserving of big theme L&A treatments) Symphony Parkway, Alta Drive/Bonneville Avenue, Charleston Boulevard, NEON Gateway, and Oakey Boulevard/Wyoming Avenue

SCULPTURE
Sculptural features shall be used to accent walls, bridges, and remnant parcels in focal and landmark areas. They shall be characterized by excellence in craftsmanship, quality, and originality and shall have a minimum lifespan of 30 years.

Special attention shall be paid to the lighting of all installations so that they transform from the Meadows Redux theme during the day to a NEON Gateway theme at night. A series of lighted grass sculptures shall be installed to be seen from I-15 at bridge crossings of local streets and at the NEON Gateway. Sculptures placed as focal points in the landscape shall be lighted.

APPLIQUÉS
Appliqué art panels showing desert wildlife shall be placed on walls or bridges to add visual interest. A greater concentration of panels shall be placed where drivers travel at slower speeds. Animal appliqués shall be scaled relative to their size and in scale to each other.

REQUIREMENTS
- A series of lighted grass sculptures shall be placed at outside bridge overpass/underpass at the following locations:
  - **Oakey Blvd.** – 4 large sculptures shall be included, one at each outside bridge abutment.
  - **NEON Gateway** – 2 large sculptures, 4 medium sculptures and 6 small sculptures shall be included leading to the entrance to the bridge overpass. In addition a minimum of 2 medium or 4 small sculptures shall be placed in the median between the underpass and Grand Central Blvd.
  - **Charleston Blvd.** – 4 large sculptures shall be included, one at each outside bridge abutment.
  - **Alta Dr. / Bonneville Ave.** – 4 large sculptures shall be included, one at each outside bridge abutment.
  - **Symphony Pkwy.** – 4 large sculptures shall be included, one at each outside bridge abutment.
- The sculptures shall be of appropriate size and illumination to be visible from both the local streets below and the highway above.
- Sculptures shall be Meadows Redux theme and designed as Meadows Redux by day, NEON Gateway by night.
LIGHTED ART PANELS

The I-15 bridges spanning the NEON Gateway and Charleston Boulevard provide opportunities to showcase the day-to-night transition from the Meadows Redux to NEON Gateway themes as travelers enter and exit the Downtown Arts District and Las Vegas Government Center area. Attention shall focus on the abutment walls where as many as eight bridge structures pass overhead. Meadows Redux art panels provide a colorful texture by day then transform into a lighted NEON Gateway after dark. Lighted art panel installations shall be durable and vandal-resistant, and shall enhance the safe movement of both pedestrians and drivers under I-15 that connects Las Vegas neighborhoods and districts.

Requirements:
- The following minimums are required on the project:
  - 20 Large-size art appliques
  - 50 Medium-size art appliques
  - 45 Small-size art appliques
- The light panels shall provide at a minimum the light level required for pedestrians and shall have automatic/remote controls for color and timing.
- Lighted Art Panels shall cover a minimum of 75% of the exposed wall height for each installation.
- Lighted art panels shall cover a minimum of 33% of the total horizontal distance of each designated overpass structure.

Lighted art panels depicting a desert meadow scene shall line bridge abutment walls at the NEON Gateway and Charleston Boulevard overpasses. Lighting may include color changes or motion activation.
REQUIREMENTS

- Large-size art appliqué installations (minimum 10 feet by 12 feet) shall be placed along mainline areas as transitions between graphic murals on soundwalls and retaining walls.
- Medium-sized art appliqué installations (minimum 8 feet by 10 feet) shall be grouped with small appliqués to add visual interest to areas of significance or where driver speed is reduced. These areas include large slope-paved areas, on-ramps and off-ramps, or at bridge underpasses.
- Small-sized art appliqué installations (minimum 5 feet by 7 feet), when not used along with larger applications, shall be placed in groups of no fewer than five.
SECTION 6. COLOR PALETTE
COLOR PALETTE APPLICATION

A uniform, consistent color palette shall be used for all highway structures. The standard Department practice is to use a uniform and consistent color palette for all new and existing highway structures to complement the surrounding landscape. Base and accent stain or paint colors for all NDOT highways have been selected. To ensure accurate color references, the colors are matched to the Dunn-Edwards system (shown right).

Each highway structure shall use the selected base color and up to two of the accent colors. Roadway structures within a single landscape design segment shall use the same base color and accent color(s). As existing structures require refinishing, they shall be stained or repainted to be consistent with the selected color palette. Specific logos and transportation art are exempt from this requirement.

Accent colors shall be used to highlight structural aspects and/or details of highway structures, such as the girder of a bridge or a barrier rail. Accent color application shall logically respond to and reinforce structural features or change in materials.

Surface stain such as produced by Natina Products LLC creates a permanent natural earth tone when applied to galvanized steel. Natina shall be applied to galvanized steel surfaces including fencing, posts and gates, pedestrian light poles, signal-sign bridges and poles, and guardrails.

BASE COLOR

DE 6130
Wooded Acre

NEON-P3 SELECTED ACCENT COLORS

DE 5978
Plum Wine

DE 5914
Bossa Nova Blue

DE 5537
Woodland Walk

REQUIREMENTS

• The color palette has been selected for the Neon-P3 Phase. These colors shall be used on all landscape and aesthetic features, barriers, structural features, and groundplane treatments.

• The base color shall be used on roadway or bridge barriers and attached soundwalls to present a consistent color from top to bottom.

• Fences, sign poles, traffic light poles and bridges, and pedestrian light poles shall be treated with a Natina finish.

• Guardrails shall be galvanized and treated with a Natina finish.

• Color for sculptural/artistic features shall be chosen from the selected accent colors.

• Existing Spaghetti Bowl structures shall be painted US-95/I-15 color themes.
Section 6: Color Palette

US 95 BASE COLOR

BBB3A2 Flintstone

US 95 SELECTED ACCENT COLORS

DE 5978 Plum Wine
Appendix A. Glossary

Aesthetic The visual appearance or look of an object, view, etc.

Aesthetic Relief A unique feature in an otherwise monotonous landscape or structure.

Context Sensitive Consideration for how a proposed project will fit within its physical location and how it preserves the aesthetic, environment, and historic character of its surroundings.

Corridor A stretch of road or highway along with its associated facilities, adjacent land uses and visual character.

Corridor Plan A detailed specific plan that considers land use and transportation issues within a carefully organized, collaborative planning process between local governments, regional entities, and NDOT.

Design The process of taking ideas and producing a work of art. The drawings, models, or action of laying out structures, land activities, recreational facilities, vegetation, land cover, erosion protection, watering methods, etc.

Design Guidelines A collection of helpful, interpretive, explanatory requirements that are intended to provide a framework for design.

Design Theme A unifying concept throughout the design. A design theme provides a sense of consistency and harmony because it is created by the repetition of forms and materials throughout the design (Booth, 1999).

Earthform A raised and elongated area of earth intended to direct the flow of water, visually screen, redirect out-of-control vehicles, or reduce noise levels by shielding a receiver from the highway. (AASHTO, 1991).

Focal Point A noticeable area or spot of attention, activity, or attraction. It may be such a spot because many paths, views, rays, walls, etc. converge or it is of a different color, texture, height, width, brightness, etc.

Gateway An entrance to a city, community, valley, or other large-scale space.

Landmark A conspicuous object on land that identifies a locality, or a designated preservation site, such as a building, monument, or landscape (AASHTO, 1991).

Landscape Design Segment Areas of similar character in which the same major design theme is applied.

Massing The grouping of plant materials.

Native Plants An original species in a region, as distinguished from an invader, imported or cultured species (AASHTO, 1991).

Natural Drainage The flow of water over undisturbed existing surface topography.

Perennial A plant that persists or resprouts year to year for several or many years.

Plant Diversity The variety of plants found in a given area.

Proportion Ratio of one thing to another (Putnam, 1996).

Rainwater Harvesting Catching and holding rain where it falls for future use. It may be stored in tanks or used to recharge groundwater.

Recovery Zone A clear recovery area free of hazards along the edge of the traveled roadway.

Regionally Adapted Plant Species Species adapted to the soil conditions present on the site and in the region of the state where it will be grown.

Revegetation The replacement of plant material on a land area.

Rhythm Rhythm is achieved when the elements of a design create a feeling of motion which leads the viewer’s eye through or even beyond the designed area. Tools like color schemes, line and form can be repeated to attain rhythm in landscape design. Rhythm reduces confusion in the design (Ingram, 2006).

Right-of-Way A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to transportation or utility purposes (AASHTO, 1991).

Scale Spatial proportion. Scale refers to the size of an object or objects in relation to the surroundings. Scale refers to definite measurements while scale describes the size relationship between adjacent objects (Ingram). Items at pedestrian scale may be much smaller than those at motor vehicle scale, where speeds are much faster.

Shadow Patterns Shadow patterns in structures occur due to relief of planes and specific shadow lines and may be part of the ornament of the structure.

Shrub A plant with many stems or much branching near the ground. It is woody and forms new wood from old wood each year.