URBAN DESIGN ADVANCEMENT
BASIS OF DESIGN REPORT

November 2012

SOUTH BAY BUS RAPID TRANSIT
EAST PALOMAR STREET GUIDEWAY (OLEANDER AVENUE TO OLYMPIC PARKWAY)

Prepared For:

San Diego Association of Governments
401 B Street, Suite 800
San Diego, CA 92101

Prepared By:

Kimley-Horn and Associates, Inc.
401 B Street, Suite 600
San Diego, California 92101

095721401
November 2012

Kimley-Horn
and Associates, Inc.

TABLE OF CONTENTS

1 EXECUTIVE SUMMARY

1.1 Project Overview and Objective

The San Diego Association of Governments (SANDAG), in coordination with the Metropolitan Transit System (MTS), City of Chula Vista, and City of San Diego, will implement the South Bay Bus Rapid Transit (BRT) project providing transit service between the proposed Intermodal Transportation Center (ITC) at the Otay Mesa Port of Entry, Otay Ranch Communities, the City of Chula Vista, and downtown San Diego. From the ITC, the BRT will travel north via SR-905 and SR-125 to Otay Ranch Communities, proceed east through Chula Vista along East Palomar Street, then travel north on I-805 and SR-94 until the route terminates in downtown San Diego [Figure 1].

Figure 1. South Bay Bus Rapid Transit Route

BRT is a transit service intended to emulate rail service by providing faster travel times, higher passenger capacity, enhanced stations, and modern vehicles without the need for fixed rail and specialized structures and systems. The SBBRT will operate in a combination of mixed-flow lanes (BRT buses operating in lanes with general auto traffic) and exclusive transit-only guideways.

The purpose of this project is to complete the planning and design for the East Palomar Street guideway between Oleander Avenue and Olympic Parkway [Figure 1 – "Study Area"]. Within this four mile segment of East Palomar Street there are two distinct roadway cross sections. The eastern segment, between Heritage Road and Olympic Parkway, currently has a 29- to 51-foot landscaped median which was constructed with future transit in mind. The proposed BRT guideway can be achieved in this segment with limited roadway reconstruction. The western segment between

Oleander Avenue and Heritage Road will require roadway widening in order to accommodate the proposed BRT guideway median. The existing median in the western section varies between 4 feet and 16 feet.

1.2 Urban Design Advancement

The objective of this report is to document the Urban Design Advancement decision making process for the stations along the East Palomar Street corridor as well as those elements relating to the corridor itself. This decision making process included the following interagency coordination meetings:

- Five SANDAG and MTS staff meetings which focused on station design and operations,
- Two SANDAG and MTS staff meetings which focused on station security, communications and electrical design,
- Two SANDAG, MTS, and CALTRANS staff meetings which focused on data communication infrastructure,
- One SANDAG and South Bay Expressway (SBX) staff meeting which focused on data communication infrastructure,
- One City of Chula Vista staff meeting which focused on data communication infrastructure,
- Two MTS staff meetings which focused on station landscaping, irrigation and maintenance,
- Five City of Chula Vista Staff meetings which focused on corridor landscaping and irrigation,
- One formal SANDAG Senior Management presentation, and
- One formal MTS Senior Management presentation.

KHA reviewed and analyzed the urban design components within the design framework of the proposed roadway, traffic signals, stormwater management, and utility infrastructure improvements. These components respond to both the functional aspects of the corridor (i.e. Guideway Bus Station operations, fare collection, safety) and the aesthetic character of the corridor (i.e. the architectural and natural community character). With the guideway stations serving as the focal point, these components fell into three distinct design element categories:

1. Streetscape elements (station design, signage, pedestrian paving, site furnishings, lighting)
    - Conceptual design for the four Chula Vista BRT stations within the corridor study area [Figure 2 and 3]
2. Landscape elements (plant material – both existing and proposed),
    - Landscape within the guideway stations intended to enhance the parkways, medians, and miscellaneous slope areas from Oleander Avenue to Olympic Parkway.
3. Irrigations elements (irrigation systems – both existing and proposed).
    - New irrigation systems and existing irrigation systems incorporated into the design to provide adequate water supply to the proposed and existing landscape.

During the process it was determined by MTS that the stations would not operate initially as a paid fare zone, which places the responsibility of fare collection on the bus operators. However, MTS directed that all stations be designed to function as a paid fare zone at a future time to be determined. As a part of this, a number of platform elements were space planned but will not be included in the construction the stations. They are as follows:

Elements Included:

- Platform Shelter
- Station Signage
- Landscaping/irrigation
- Bicycle storage
- VMS signage
- Benches
- Trash Receptacles
- Lighting
- Fencing
- Special Paving
- Pay Phones (by Others)
- Security Cameras (by MTS)
- Public Address System (by MTS)

Elements planned for the future:

- Fare validation
- Ticket Vending Machines (TVM)n Devices (PCID)
- Vending Machines

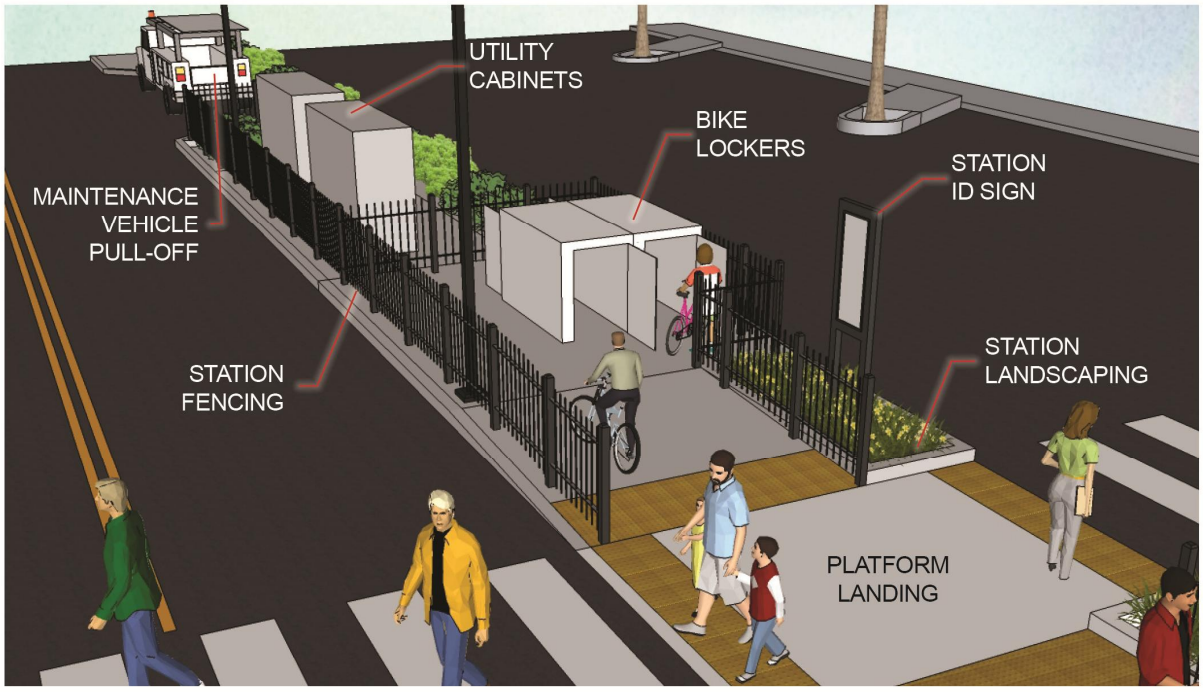


Figure 2. Typical Platform Bicycle Storage and Utility/Maintenance Area

Figure 3. Typical Platform Passenger Loading Area

2 URBAN DESIGN

2.1 Guideway Stations

As part of the design advancement process, typical BRT station designs were developed to meet the aesthetic, functional, and operational requirements of a basic station [Appendix 7.1, Exhibit UD.02]. Each station within the Study Area is comprised of two platforms – a northbound platform and a southbound platform. Each platform was then divided into four separate functional zones, each with its own design elements:

1. **Passenger entrance and orientation zone:**

   This zone is composed of entry landscaping, station identification signage, pedestrian entry/crosswalk landings, lighting, ramp access to platform and bicycle storage facilities, and station variable message signs and fare validation devices (PCID).

2. **Passenger waiting and comfort facilities zone:**

   This zone is composed of shelters, palm trees, ticket vending machines, fare validation devices (PCID), security cameras, vending machines, trash receptacles, seating, informational signage, pay phones, and lighting.

3. **Passenger mobility and orientation zone:**

   This zone is composed of interior station crosswalk access between platforms, lighting, ramp access to platforms, and station variable message signs and PCID devices.

4. **Station utility and maintenance zone:**

   This zone is composed of station utility cabinets for electrical and data communications point of connections, lighting, and MTS maintenance personnel/vehicle access. This zone was located at the exit end of one of the platforms to limit passenger access and to provide improved visibility of the utility cabinets and of the maintenance crews by bus drivers exiting the station.

This basic layout was applied to each of the four station locations within the study area as a set of design parameters to inform the final layout design [Appendix 7.1, exhibits UD.05-UD.08]. In three of the four stations the "basic" configuration layout was followed with minor modifications to pedestrian access, bicycle storage, utility cabinet locations and maintenance access to meet site specific design requirements. The fourth station, Heritage Station, was modified as a "far side" configuration where the platforms were offset with the guideway crosswalk separating the platforms. This offset layout is typical of a standard bus stop that passes through an intersection to stop on the "far" side of the intersection. This allowed passengers to cross behind parked buses, much like an intersection crosswalk creating a safer environment for the pedestrian while not impeding bus traffic.

The platform height was set at 10" above the guideway paving for "near level" boarding by passengers. A rubberized wheel bumper will be applied to the curb face to aid drivers in the approach to the platform. No special door loading areas will be designated in order to provide flexibility for future bus operations.

2.2 Platform Components

- **Platform Shelter:**
  - The preferred alternative Platform Shelter shall be Option C – a hybrid concept using roofing material similar to the Downtown/I-15 BRT shelter design in a cantilevered roof/column

configuration similar to the Blue Line LRT Shelter [Appendix 7.1, Exhibits UD.18-UD.20]. Column bases will be a stone veneer with precast concrete caps to accent the stone veneer and match the local architectural character. An integrated lean rail will be included where applicable. Option C was selected because the cantilevered style provided for a more open platform for pedestrians. In addition, Option C utilized the same roof components as the Downtown, I-15, and Super Loop BRT shelters. This allows MTS to maintain a smaller stock of customized roof panels, thereby, reducing long term maintenance costs.

- BRT pylons like those to be used in the Downtown San Diego corridor will not be utilized at the Palomar Street stations.

- **Paving:**

  The preferred alternative platform pavers consist of the following conditions [Appendix 7.1, Exhibit UD.15]:

  - Platform access ramps and landings are currently proposed to be a "buff" colored broom-finished concrete with tactile dome paver edging (color to be determined) as required by ADA regulations.
  - Platform areas will be concrete unit pavers on a concrete base with tactile dome paver edging (color to be determined) as required by ADA regulations. Basis of design pavers shall be 8"x8" "cream/brown" colored pavers by Angelus Paving or approved equal.
  - Shelter areas will consist of concrete unit pavers on a concrete base with tactile dome paver edging as required by ADA regulations. Basis of design pavers shall be 8"x8" "charcoal" colored pavers for borders and fields, 4"x8" "Red/Brown/Charcoal" colored paver bands, and 4"x8" "cream/brown" colored pavers for fields. Basis of design pavers will be colored pavers by Angelus Paving or approved equal.

  Due to current MTS maintenance operations and cleaning procedures, pavers are not to be sealed.

- **Platform Fencing:**

  Platform fencing will match to the typical 48" high ornamental fence utilized by MTS throughout their system. Fence will be painted black. The proposed fencing will provide an enclosed station area for passenger safety. An additional fence will connect to the platform fencing and run along the guideway travel lane side of the utility cabinets to not allow a person to hide between the cabinets and dart out into bus traffic as the bus exits the station.

- **Station Signage:**

  - Platform signage will adhere to the current MTS *San Diego Trolley Station Sign Program Design Guidelines Manual.*

    - A Type 1 Station ID sign will be located in the parkway areas along the sidewalks at the crosswalks to the station.
    - A Type 2 Station ID sign will be located on each crosswalk entry into the station/guideway.
    - One Type 45 Kiosk sign will be located on each platform.

  - One Type 30 ADA Platform sign at each shelter/bus loading zone (two per platform).

- **Site Furnishings - Amenities:**
  - Bench will be Steelsites RB-28 (4 seat, Silver) by Victor Stanley to match other benches in the MTS system. One bench per shelter.
  - Trash Receptacles will be Ironsites SD-42 (Black) by Victor Stanley to match other trash receptacles in the MTS system. Two trash receptacles will be provided per platform.
  - Bike Lockers will be eLOCKER by Bike Link to match other bike lockers in the MTS system. Three lockers will be provided per station. Electrical power and data communications service will be provided to each locker.
  - Vending machines: a plumbed pad site will be provided for refreshment vending machines to be located by MTS at a later date. One vending machine location will be provided per platform.
  - Telephone: a plumbed pad site will be provided for a pay phone to be located by MTS at a later date. One pay phone location will be provided per platform.
  - Newspaper vending racks: no newspaper vending racks will be provided at the proposed stations.
  - Advertising Space: no advertising space will be provided at the proposed stations.
- **Site Furnishings - Operations:**
  - Variable message signs (VMS) shall be DS 128 x 40 x 05 (7.62 MM Pitch) by DATA Display to match other variable message signs in the MTS Bus system. Two per platform.
  - Utility cabinets shall be one 3 Bay MTS Standard Communications Cabinet and one CALTRANS Type III-C (Modified) Service Equipment Enclosure per station. Station irrigation controllers shall be located in association with these two primary utility cabinets.

  Fare collection services will be provided on the buses during boarding by bus drivers initially. MTS, however, wants to preserve the option of "paid fare zones" in the future. The proposed stations will have the required utility infrastructure installed with this project to allow for future "paid fare zone" operations. Conduit will be run to utility pull boxes positioned at designated locations on the platform to allow MTS to install the following:

  - Ticket vending machine: a plumbed pad site will be provided for ticket vending machines to be located by MTS at a later date. One per platform located under a platform shelter.
  - Fare Validators (PCID): a plumbed pad site will be provided for PCID readers to be located by MTS at a later date. Three per platform.
- **Security Camera – Locations:**
  - Each platform will have four Avigilon Security cameras (to be provided/installed by MTS) to provide the required 100% camera coverage. One or two of the cameras on each platform will have pan-tilt-zoom (PTZ) capabilities (to be determined by MTS at a later date). One camera will be mounted on top of each VMS sign and cover the end of the platforms while

one camera will be mounted on each of the two center platform light poles and cover the center of the platform.

- In addition, all shelter columns and light poles will have the conduit provided to allow future flexibility for mounting additional cameras or adjusting camera coverage.
- Camera coverage at the park and ride facility at the Otay Ranch Town Center will be coordinated by the City of Chula Vista with MTS during final design.
- All camera heights to be 13' above the platform finish grade.

2.3 Corridor Local Bus Stops

All existing local bus stops to remain in service and that are affected by new construction shall be replaced per MTS standards for local bus stops. All bus turnouts will be removed in the Oleander Avenue to Heritage Road segment of the corridor due to R.O.W. constraints.

3 TREE INVENTORY

3.1 Arborist Report

Kimley-Horn and Associates worked with the project's certified arborist, Rappoport Development Consulting Services LLC (RDCS), to complete an inventory and assessment of the street trees within the project limits. This inventory/assessment will supplement the tree survey which located all trees within the existing rights-of-way (ROW) and those within the first eight feet outside of the existing ROW. The inventory was performed in conjunction with the project supplemental field survey. All trees within the project limits were field labeled with a metal tree tag assigning an inventory number to the physical location. Each tree was then assessed for the following:

- Trunk diameter at breast height (DBH)
- Palm tree brown trunk height (BTH)
- Tree condition
- Planting location
- Specific health issues
- Maintenance needs
- Feasibility of preservation of existing palms
- Feasibility of relocating existing palms within the corridor

In addition to this assessment the arborist provided recommendations on improving the health of the existing trees as well as recommendations for the use of other tree species appropriate to the corridor aesthetic character and planting environment. This information will be utilized to guide the final landscape design parameters.

Within the project limits along the Palomar Street corridor there exists 1,553 deciduous/evergreen trees and palms. The most dominant tree species are the Pyrus calleryana – Bradford Pear (918 trees) and the Washingtonia robusta – Mexican Fan Palm (453 palms). These two tree species represent approximately 88% of the trees within the project corridor. Approximately 88% of the overall 1,553 trees within the corridor are in good condition. The remaining 12% vary from fair to poor condition or are dead. See Appendix 7.2 for the detailed information contained in the arborist report.

In addition to this inventory and assessment the project arborist will work with the design team during the final design phase to provide design support for tree preservation measures and palm tree relocation procedures where they may be necessary due to new guideway construction.

4 LANDSCAPING AND IRRIGATION

4.1 Existing Conditions

As part of the preliminary design advancement and in coordination with City of Chula Vista staff, the existing as-built conditions and maintenance district maps were reviewed for the corridor. It was determined that within the project area four City landscape and irrigation maintenance districts currently exist [Appendix 7.3]:

- D98: From Oleander to Hedencamp Elementary School
- D99: From Hedencamp Elementary School to Heritage Road
- D97: From Heritage Road to Santa Flora Road
- D97(2): From Santa Flora Road to Olympic Parkway

Within these maintenance districts the City assesses the residents a fee for the maintenance of the existing landscaping and irrigation systems. As part of the Final Design, the City staff will evaluate the proposed design against the current levels of plant material and maintenance costs. The goal being to have a "net neutral" final design to ensure that the residents do not have an increase in maintenance fees.

The existing landscaping and irrigation along the Study Area from Oleander Avenue to Olympic Parkway will be impacted in a variety of ways by the proposed South Bay BRT bus guideway, station construction, and roadway improvements:

- From Oleander Avenue to Heritage Road:
  - This segment will be the most impacted and will require the removal of landscape material within the existing rights-of –way (ROW). Final impacts to be determined during Final Design.
  - In addition, several steep slope conditions exist along the back of sidewalks outside of the ROW and will be impacted due to grading operations. Each grading conflict will be evaluated on a case-by-case basis with input from the project arborist and landscape architect to minimize impacts to the existing trees. In conjunction with the possible use of short retaining walls to minimize grading impacts, the arborist will make recommendations for tree preservation measures to be included in the final design package.
- From Heritage Road to Olympic Parkway:
  - Within this segment of the project, existing landscape impacts to the existing ROW will be limited to the existing median conversion to a bus guideway. These will impacts will result in the removal of all existing pear trees due to grading and paving impacts to the critical root zones as well as tree canopy conflicts with vehicles within the guideway. However, due to the natural habitat and height of the Mexican Fan palm canopy, the existing palm trees will be preserved either in place or relocated within the guideway.

In addition to the impacts on the existing plants within the corridor, the irrigation system along the corridor will be impacted. The following are possible conditions and resolutions for the irrigation systems within the corridor:

- Condition 1: Complete removal of irrigation system components (sprinkler heads, piping, valves, controllers, backflow preventers, wiring, etc.). This condition primarily occurs in the existing median and parkway areas within the corridor.
- Condition 2: Partial removal of irrigation zone components (sprinkler heads, piping, valves, wiring, etc.). This condition may exist in places where control valves and zone connections exist in the existing parkway and the existing irrigation zones extend beyond the back of sidewalk into landscaped areas to remain. In this case, impacts due to the reconstruction of the parkway will require temporary irrigation measures to be implemented to maintain irrigation coverage to the remaining plant material until the final system can be brought back online.
- Condition 3: Improvements to existing irrigation components to remain for improved water conservation and/or efficiency of the system. These improvements will be considered on a case by case basis as part of the Final Design process.

4.2 Proposed Corridor Landscape and Irrigation

The proposed plant material for this project will be coordinated with the City of Chula Vista landscape architectural staff to meet the City water conservation ordinances and requirements of the existing maintenance districts. The final street tree selection will be evaluated to maintain the current character of the street corridor. The replacement of the existing parkway turf grass from Oleander Avenue to Heritage Road with drought tolerant groundcovers will also be evaluated with input from the City staff in conjunction with stormwater management plant material to be utilized in the parkway areas.

The existing irrigation system within the corridor is a reclaimed water line. As part of the approval process, the proposed system will be approved by the Otay Water District and by the Department of Environmental Health. In addition to the approval of the plans, these same agencies will be required to inspect and approve the installation of the systems prior to their use for irrigation. Until that approval has been received the contractor will be required to maintain the plant material within the zones affected or new zones.

4.3 Proposed Station Landscape and Irrigation

The four proposed stations will serve as urbanized transit nodes along the landscaped corridor. Comprised mostly of hardscape materials associated with the operations of the platform and guideway, the stations will have minimal landscaping in order to maximize safety and operations while maintaining the character of the corridor. The platform landscaping will consist of the relocation into a tree grate planter of existing Mexican Fan palms displaced by other project related construction. At the crosswalks, the platform landings will be recessed five feet off the travel ways in order to improve visibility of the pedestrians to the approaching automobiles. In these areas, beds of low growing daylilies will accent these crossings while at the same time maintaining the current character of the landscape in this section of the corridor. These palms and daylilies represent the only landscape plant material within the fenced platform area and will be on a separate metered irrigations system from the guideway medians and corridor parkways.

4.4 Future Maintenance Agreements

In addition to the approval of the "net neutral" construction impact calculations to the maintenance districts, the City, SANDAG, and MTS will be required to define a maintenance agreement for the corridor to include areas of responsibility and levels of service. These agreements will be developed during the Final Design process.

5 STATION COMMUNICATIONS AND ELECTRICAL DESIGN

5.1 Electrical Power

Electrical power at each station will consist of a single 200 Amp, 240 V, single phase electrical service from the Utility Company. SDG&E power will enter a meter pedestal located at one end of the station platform. Each pedestal will have internal breakers and photo cell to serve the platform devices and lighting. The electrical power will consist of tin-plated copper panel boards in NEMA 3R construction and copper conductors. At each end of the station platform an in grade SDG&E 3314 electrical box will be provided to allow conduit connection and pull locations for conductors. Each device will be provided with a minimum of one 2" conduit for power. All equipment proposed and future will be provided with conduit stub ups. Proposed and future equipment on the platform includes the following:

- Platform and Shelter Lighting
- Bike Lockers
- Variable Message Signs (VMS)
- Fare Validation (PCID)
- Ticket Vending Machines
- Vending Machines for food/drinks
- Pay Phone
- CCTV Cameras
- Public Address System

5.2 Communications

Communication systems at each station will consist of 3-bay communication cabinet tied into the communication backbone through the South Bay BRT project. The backbone consists of three 4" communication conduits along the guideway. The conduits will enter the communication cabinet and tie the fiber optic lines into existing SANDAG facilities (to be determined). The communication cabinet located at the end of the platform will distribute conduit and cable to all the required equipment. At each end of the station platform an in-grade SDG&E 3314 communication box will be provided to allow conduit connection and pull locations for cable. Each proposed and future device will be provided with a minimum of one 2" conduit for communications. All equipment proposed and future will be provided with conduit stub ups. Proposed and future equipment on the platform includes the following:

- Platform and Shelter Lighting
- Bike Lockers
- Variable Message Signs
- Fare Validation (PCID)
- Ticket Vending Machines
- Vending Machines for food/drinks
- Pay Phone
- CCTV Cameras
- Public Address System

6 STATION LIGHTING STUDY

6.1 Station Lighting

The station lighting consists of two different types of light fixtures: pole mounted light fixtures and canopy mounted light fixtures. The pole mounted fixtures are 150 watt metal halide fixtures mounted on 15' poles located throughout the platform for even light distribution to follow MTS and SANDAG standards for pole mounted fixtures. The shelter canopy mounted light fixtures are Light Emitting Diode (LED) fixtures, and shall be mounted to the shelter canopy for additional lighting under the station shelters to supplement the pole mounted fixtures. The fixtures shall be vandal resistant and not be spaced further than 60' per SANDAG requirements.

6.2 Luminaires

- **Pole Fixture:**

  Metal halide shall be Gardco luminaries manufactured by Phillips Lighting or an approved equal pending final I-15 BRT fixture installation. Each luminaire shall consist of 150 watt metal halide with a 19" box square head, 240V, 4000K on a 15' square pole. Luminaires shall be mounted as shown in the plans and in accordance with the manufacturer's recommendations. Each pole shall be provided with 2" conduit for communications and 2" conduit for power to allow for security cameras, general use receptacles, and future equipment.

- **Shelter Canopy:**

  LED strips shall be Lumencove luminaires manufactured by Lumenpulse, or approved equal. Each luminaire shall consist of white LEDs, Regular Output (RO), 24" long, 120V, and 4000K with a frosted lens. Luminaire shall be mounted as shown in the plans in accordance with the manufacturer's recommendations.

Lighting levels and photometric analysis are referenced in section 6.3.

6.3 Lighting Photometric Calculation Study

A photometric analysis was performed on the station's typical layout based on the fixtures identified in Section 6.2. The following analysis was done to determine the minimal and average lighting levels as required per Illuminating Engineer's Society (IES) and SANDAG standards.

- **Platform lighting levels:**

  Per IES and SANDAG standards, an average of 5 foot-candles shall be provided on the platform. The photometric analysis conducted for the platform indicates an average of 6 foot-candles.

- **Guideway lighting levels:**

  Per IES and SANDAG standards, an average of 2 foot-candles shall be provided on the guideway within the station. The photometric analysis conducted for the guideway indicates an average of 6 foot-candles.

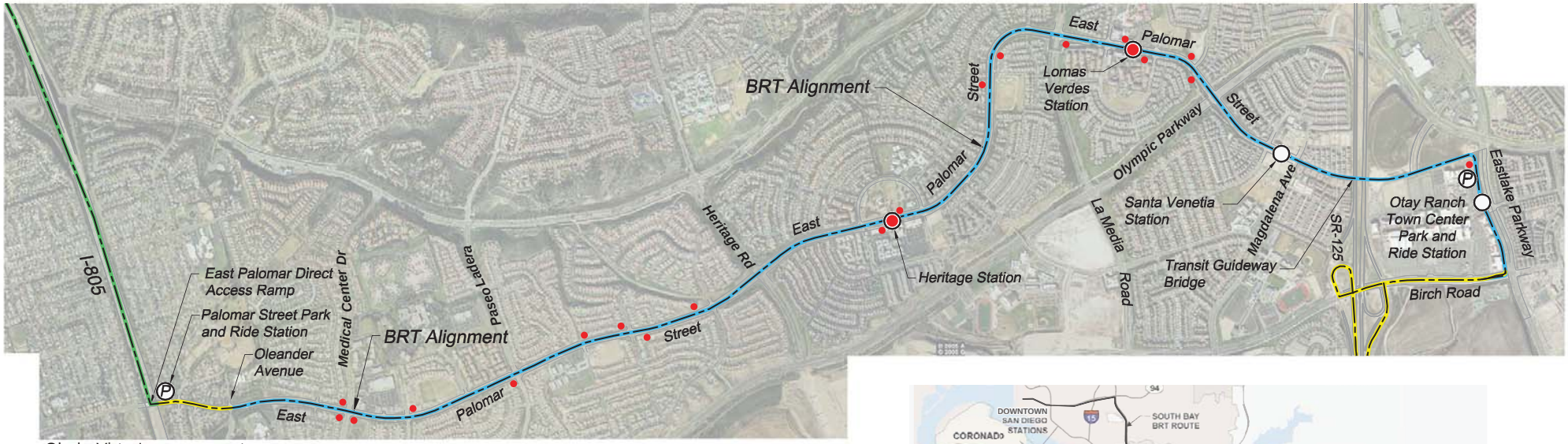
- **Crosswalk lighting levels:**

  Per IES and SANDAG standards, an average of 5 foot-candles shall be provided on the crosswalks. The photometric analysis conducted for the crosswalk indicates an average of 6 foot-candles.

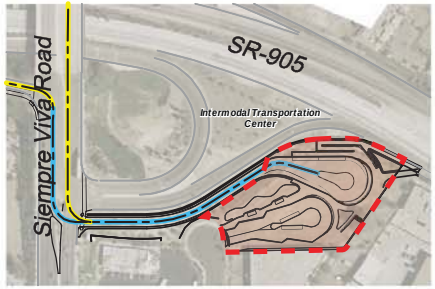
The photometric analysis also included lighting levels at the utility cabinets which per IES and SANDAG standards, 5 foot candle average shall be provided on the yard equipment enclosures. The photometric analysis conducted for the utility cabinets indicates an average of 6 foot-candles.

7 APPENDIX

7.1 Urban Design Exhibits



Chula Vista Improvements

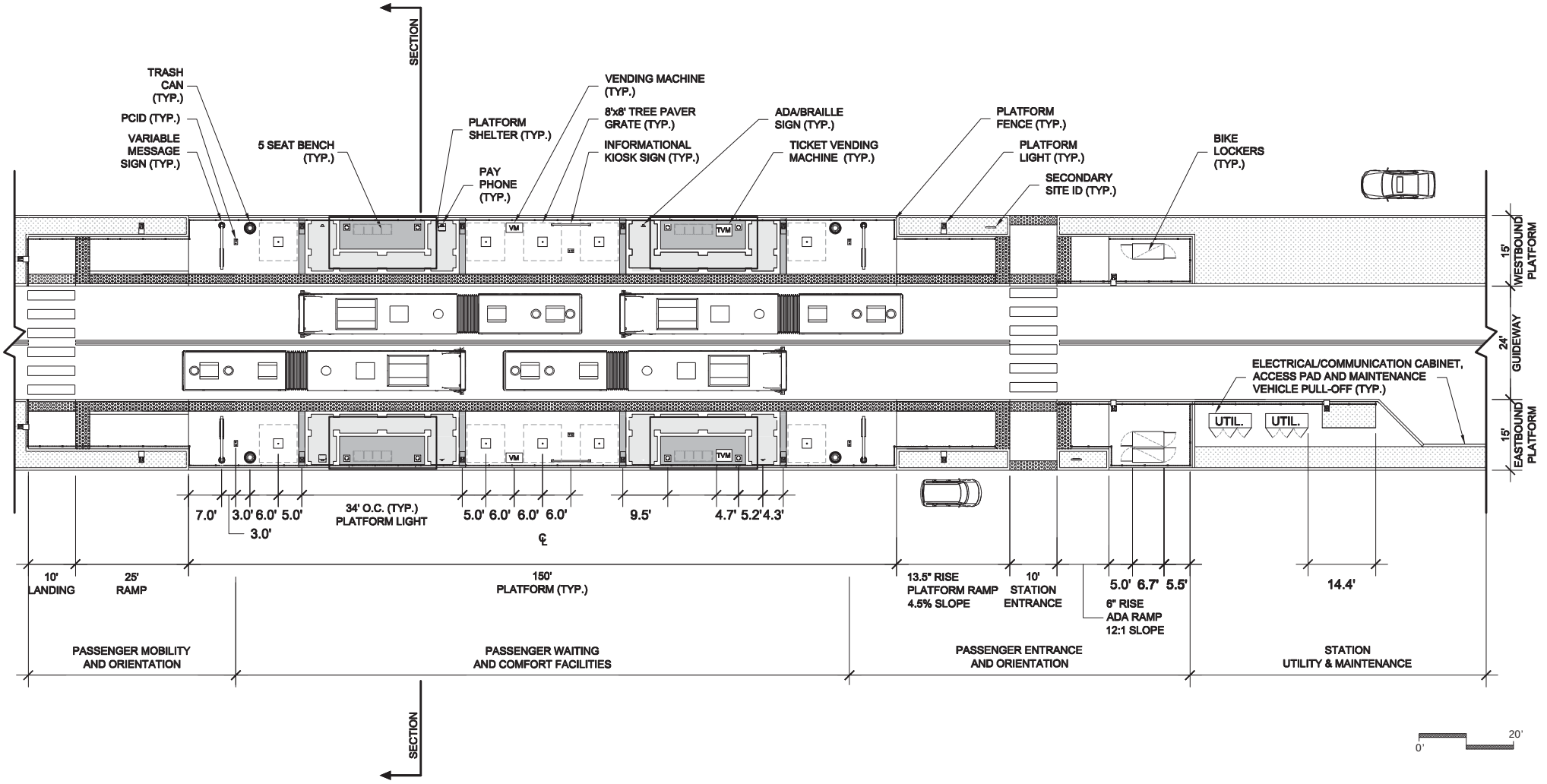


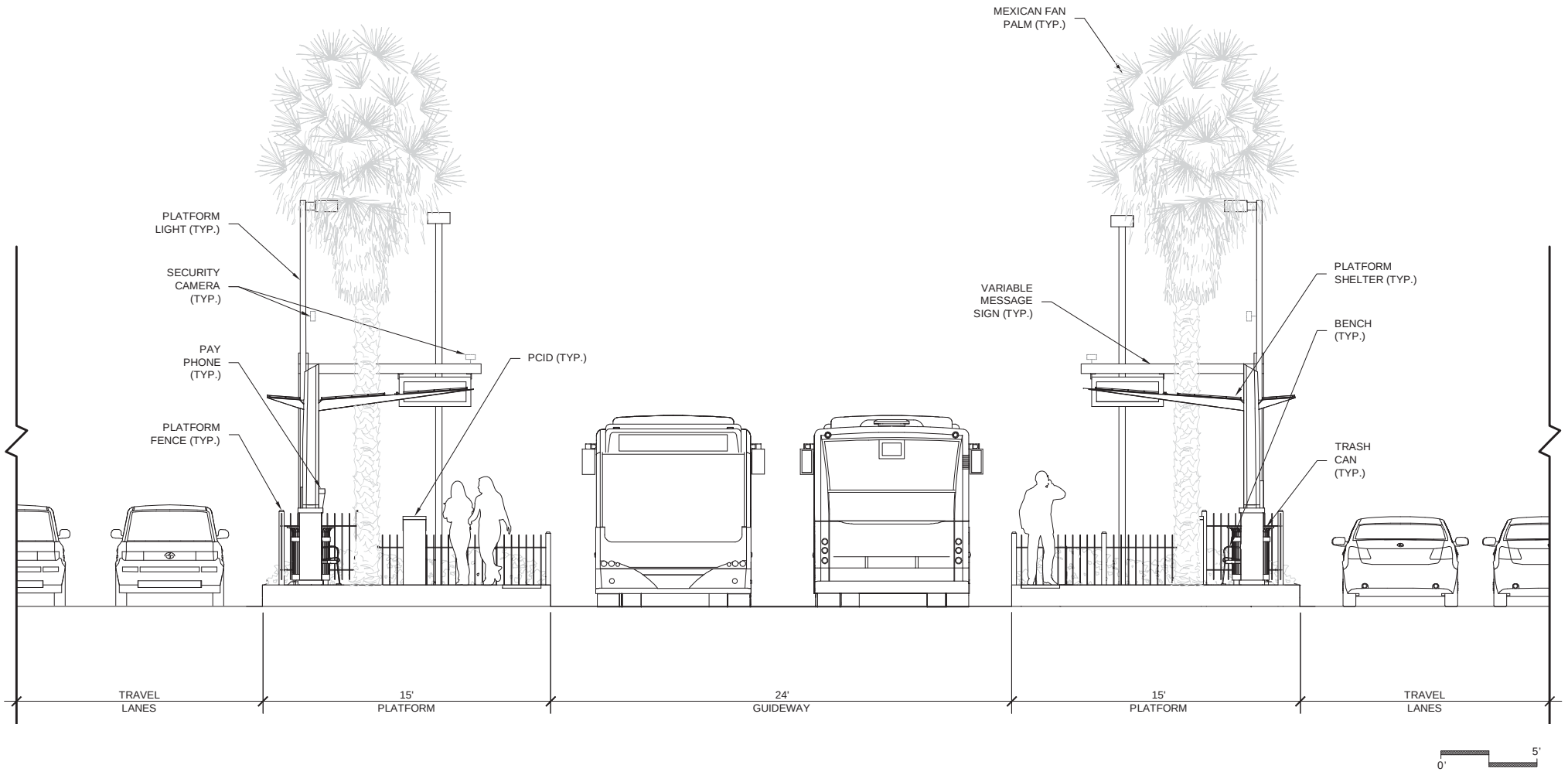
Otay Mesa ITC Improvements

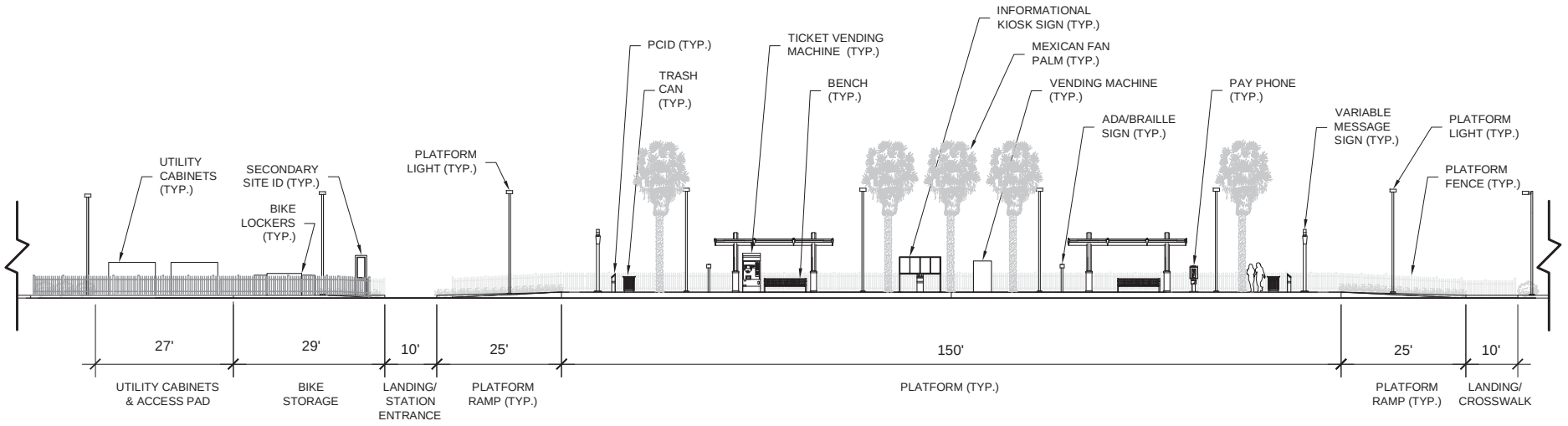
KEY MAP
NOT TO SCALE

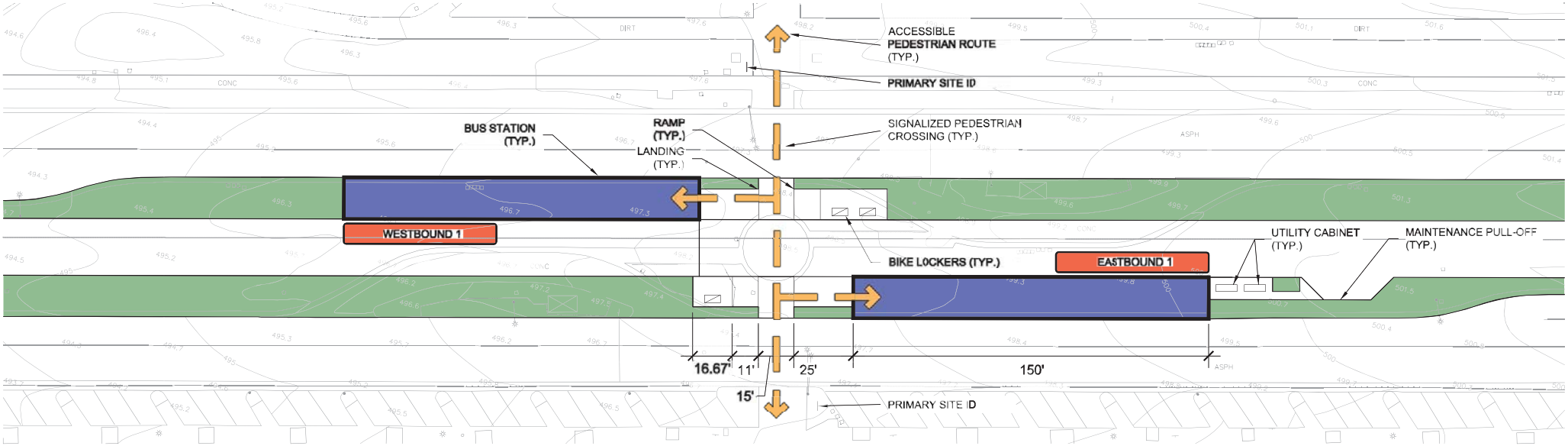
Legend

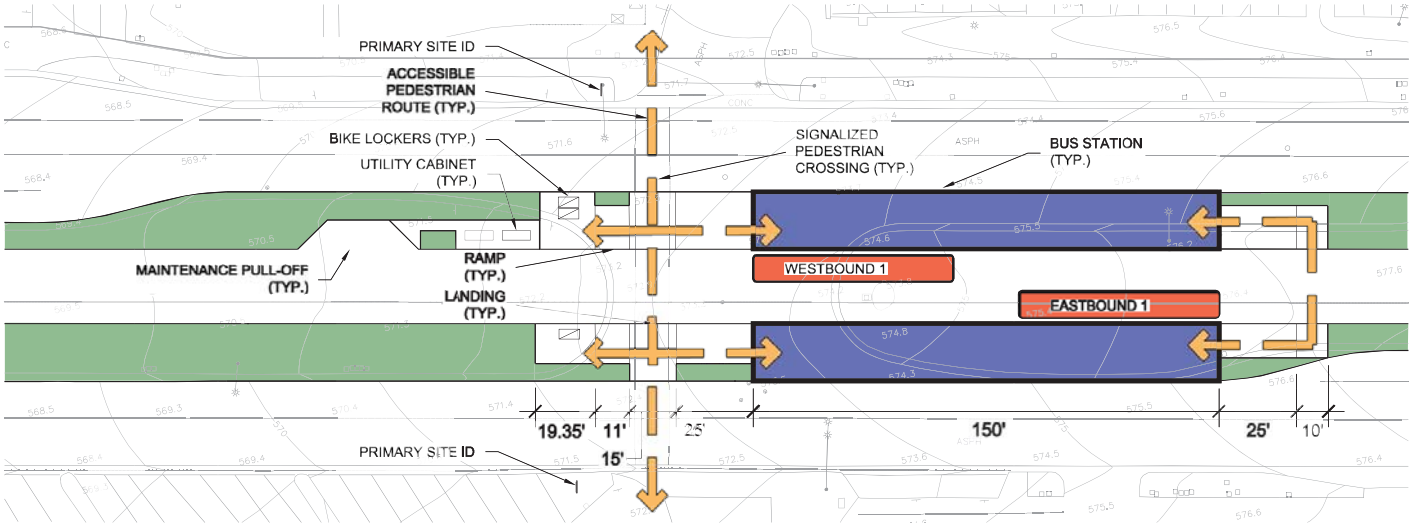
- BRT Alignment/Transit Lanes
- Guideway
- HOV
- Mixed Flow
- BRT Station
- BRT Station with Passenger Drop-off
- Transit Park and Ride
- Local Bus Stop


SECTION
TRASH CAN (TYP.)
PCID (TYP.)
VARIABLE MESSAGE SIGN (TYP.)
5 SEAT BENCH (TYP.)
PLATFORM SHELTER (TYP.)
PAY PHONE (TYP.)
VENDING MACHINE (TYP.)
8'x8' TREE PAVER GRATE (TYP.)
INFORMATIONAL KIOSK SIGN (TYP.)
ADA/BRAILLE SIGN (TYP.)
TICKET VENDING MACHINE (TYP.)
PLATFORM FENCE (TYP.)
PLATFORM LIGHT (TYP.)
SECONDARY SITE ID (TYP.)
BIKE LOCKERS (TYP.)
VM
TVM
15' WESTBOUND PLATFORM
24' GUIDEWAY
15' EASTBOUND PLATFORM
ELECTRICAL/COMMUNICATION CABINET, ACCESS PAD AND MAINTENANCE VEHICLE PULL-OFF (TYP.)
UTIL.
UTIL.
7.0' 3.0' 6.0' 5.0' 3.0'
34' O.C. (TYP.) PLATFORM LIGHT
5.0' 6.0' 6.0' 6.0'
℄
9.5'
4.7' 5.2' 4.3'
10' LANDING
25' RAMP
150' PLATFORM (TYP.)
13.5" RISE PLATFORM RAMP 4.5% SLOPE
10' STATION ENTRANCE
5.0' 6.7' 5.5'
6" RISE ADA RAMP 12:1 SLOPE
14.4'
PASSENGER MOBILITY AND ORIENTATION
PASSENGER WAITING AND COMFORT FACILITIES
PASSENGER ENTRANCE AND ORIENTATION
STATION UTILITY & MAINTENANCE
SECTION
0'
20'

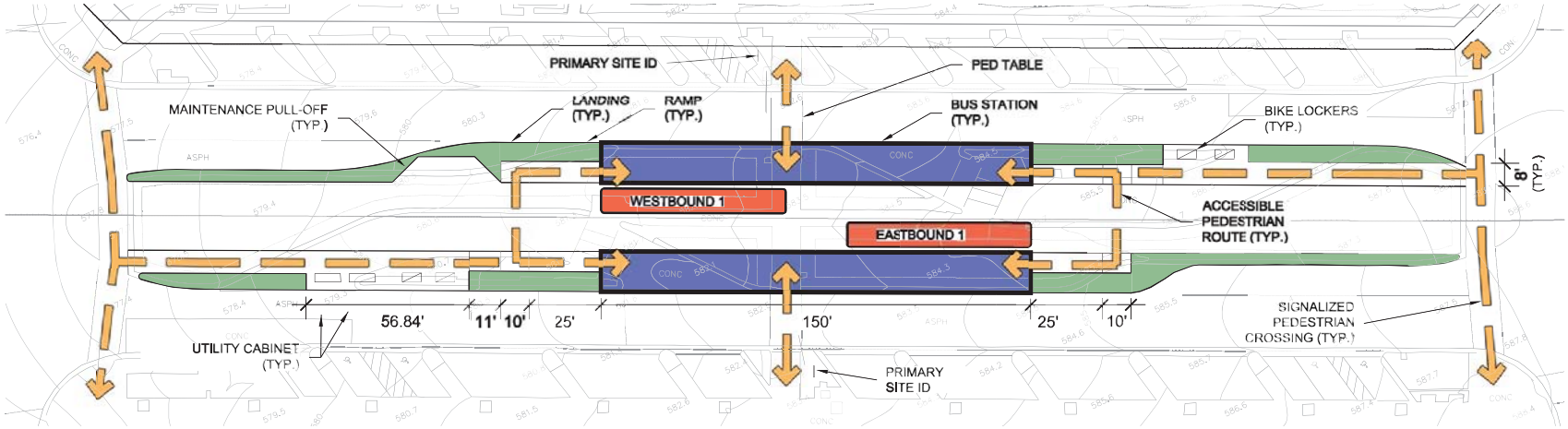

MEXICAN FAN PALM (TYP.)
PLATFORM LIGHT (TYP.)
SECURITY CAMERA (TYP.)
PAY PHONE (TYP.)
PLATFORM FENCE (TYP.)
PCID (TYP.)
VARIABLE MESSAGE SIGN (TYP.)
PLATFORM SHELTER (TYP.)
BENCH (TYP.)
TRASH CAN (TYP.)
TRAVEL LANES
15' PLATFORM
24' GUIDEWAY
15' PLATFORM
TRAVEL LANES
0'
5'


UTILITY CABINETS (TYP.)
SECONDARY SITE ID (TYP.)
BIKE LOCKERS (TYP.)
PLATFORM LIGHT (TYP.)
PCID (TYP.)
TRASH CAN (TYP.)
TICKET VENDING MACHINE (TYP.)
BENCH (TYP.)
INFORMATIONAL KIOSK SIGN (TYP.)
MEXICAN FAN PALM (TYP.)
VENDING MACHINE (TYP.)
ADA/BRAILLE SIGN (TYP.)
PAY PHONE (TYP.)
VARIABLE MESSAGE SIGN (TYP.)
PLATFORM LIGHT (TYP.)
PLATFORM FENCE (TYP.)
27'
29'
10'
25'
150'
25'
10'
UTILITY CABINETS & ACCESS PAD
BIKE STORAGE
LANDING/ STATION ENTRANCE
PLATFORM RAMP (TYP.)
PLATFORM (TYP.)
PLATFORM RAMP (TYP.)
LANDING/ CROSSWALK
0'
20'

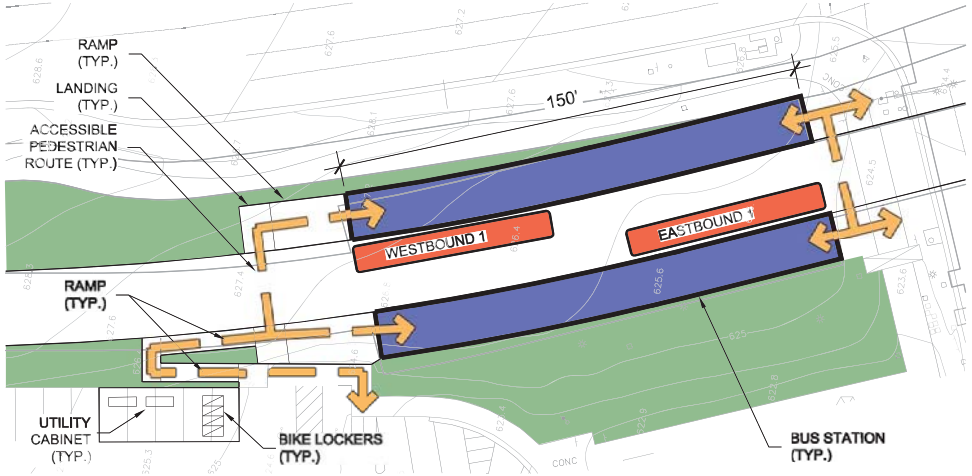

ACCESSIBLE
PEDESTRIAN ROUTE
(TYP.)
PRIMARY SITE ID
BUS STATION
(TYP.)
RAMP
(TYP.)
LANDING
(TYP.)
SIGNALIZED PEDESTRIAN
CROSSING (TYP.)
WESTBOUND 1
BIKE LOCKERS (TYP.)
EASTBOUND 1
UTILITY CABINET
(TYP.)
MAINTENANCE PULL-OFF
(TYP.)
16.67'
11'
25'
150'
15'
PRIMARY SITE ID
0'
40'


PRIMARY SITE ID
ACCESSIBLE PEDESTRIAN ROUTE (TYP.)
BIKE LOCKERS (TYP.)
UTILITY CABINET (TYP.)
SIGNALIZED PEDESTRIAN CROSSING (TYP.)
BUS STATION (TYP.)
MAINTENANCE PULL-OFF (TYP.)
RAMP (TYP.)
LANDING (TYP.)
WESTBOUND 1
EASTBOUND 1
19.35'
11'
25'
150'
25'
10'
15'
PRIMARY SITE ID

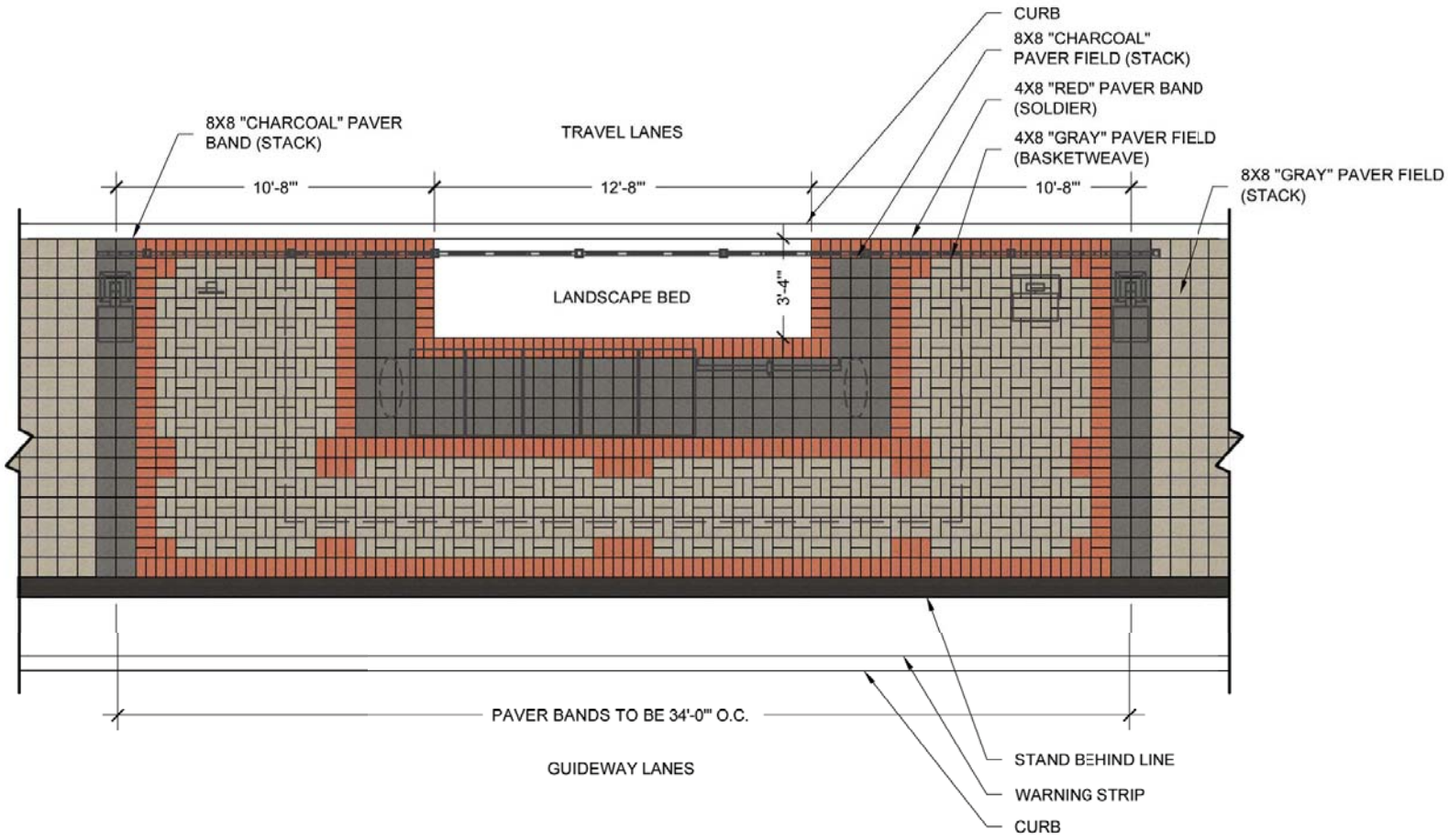
0' 40'

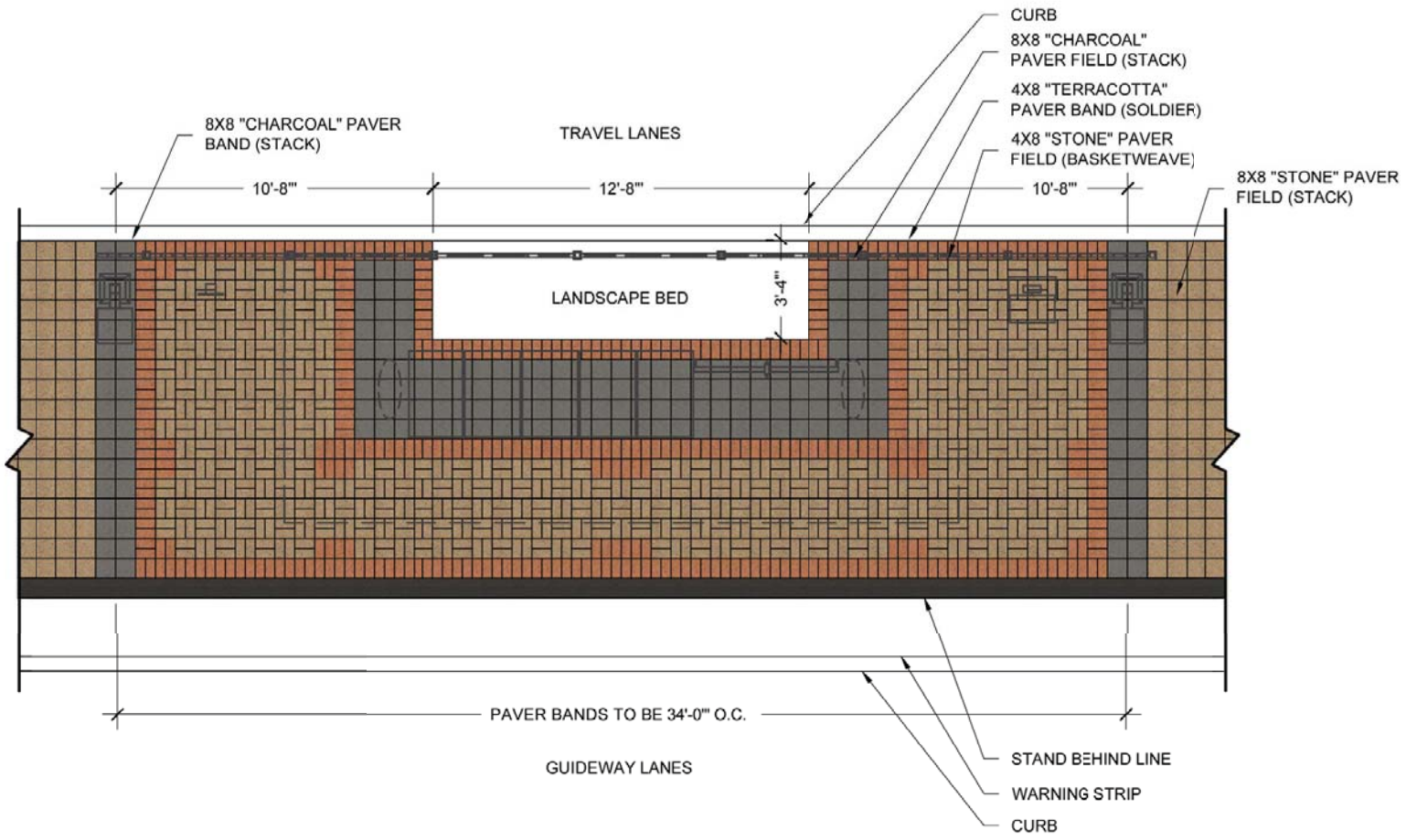

PRIMARY SITE ID
PED TABLE
MAINTENANCE PULL-OFF (TYP.)
LANDING (TYP.)
RAMP (TYP.)
BUS STATION (TYP.)
BIKE LOCKERS (TYP.)
8' (TYP.)
WESTBOUND 1
EASTBOUND 1
ACCESSIBLE PEDESTRIAN ROUTE (TYP.)
56.84'
11'
10'
25'
150'
25'
10'
SIGNALIZED PEDESTRIAN CROSSING (TYP.)
UTILITY CABINET (TYP.)
PRIMARY SITE ID
0'
40'

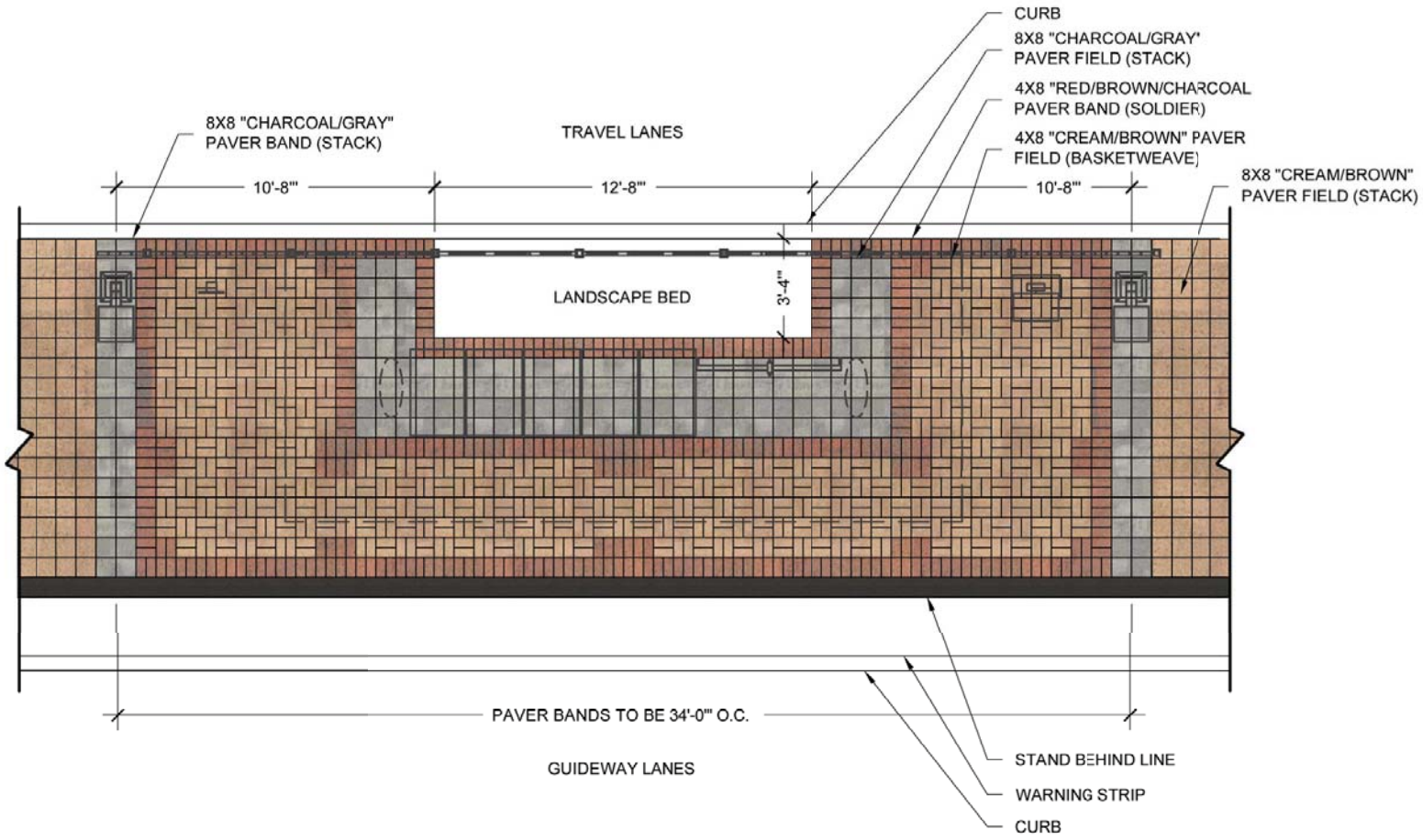
NOTE:
STATION SIGNAGE TO BE DETERMINED AND COORDINATED WITH OTAY RANCH TOWN CENTER AND MTS

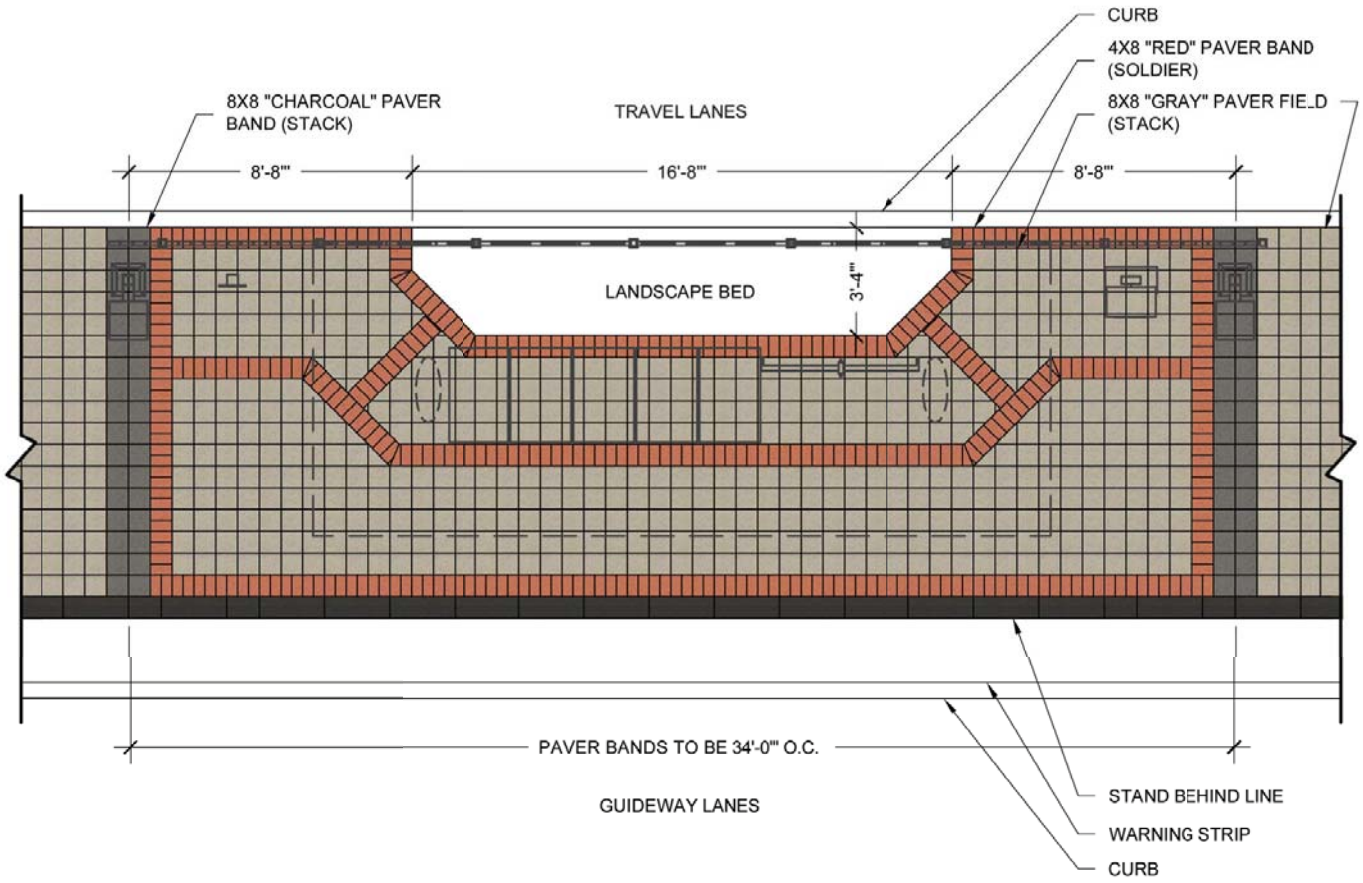


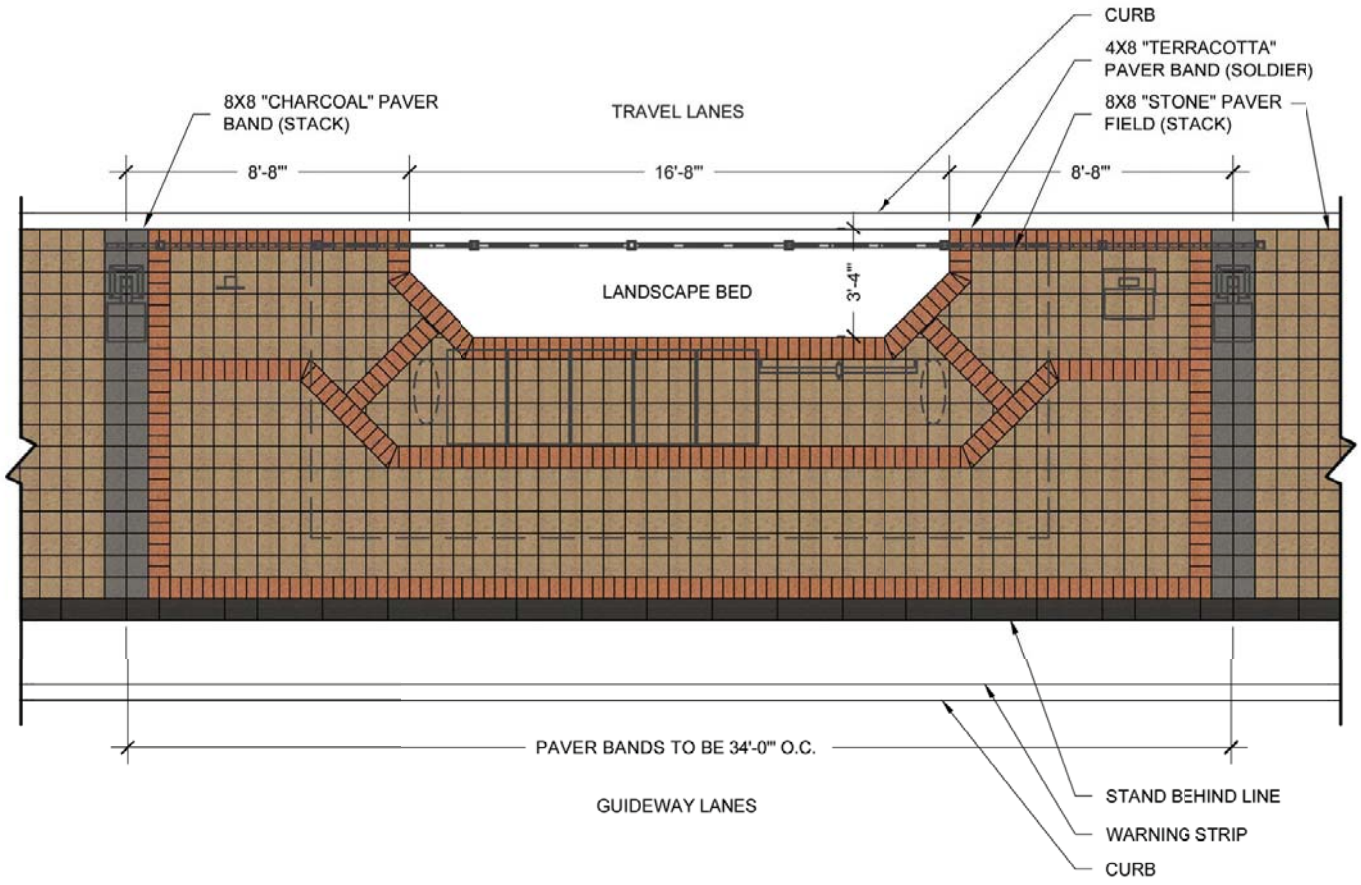
0' 40'

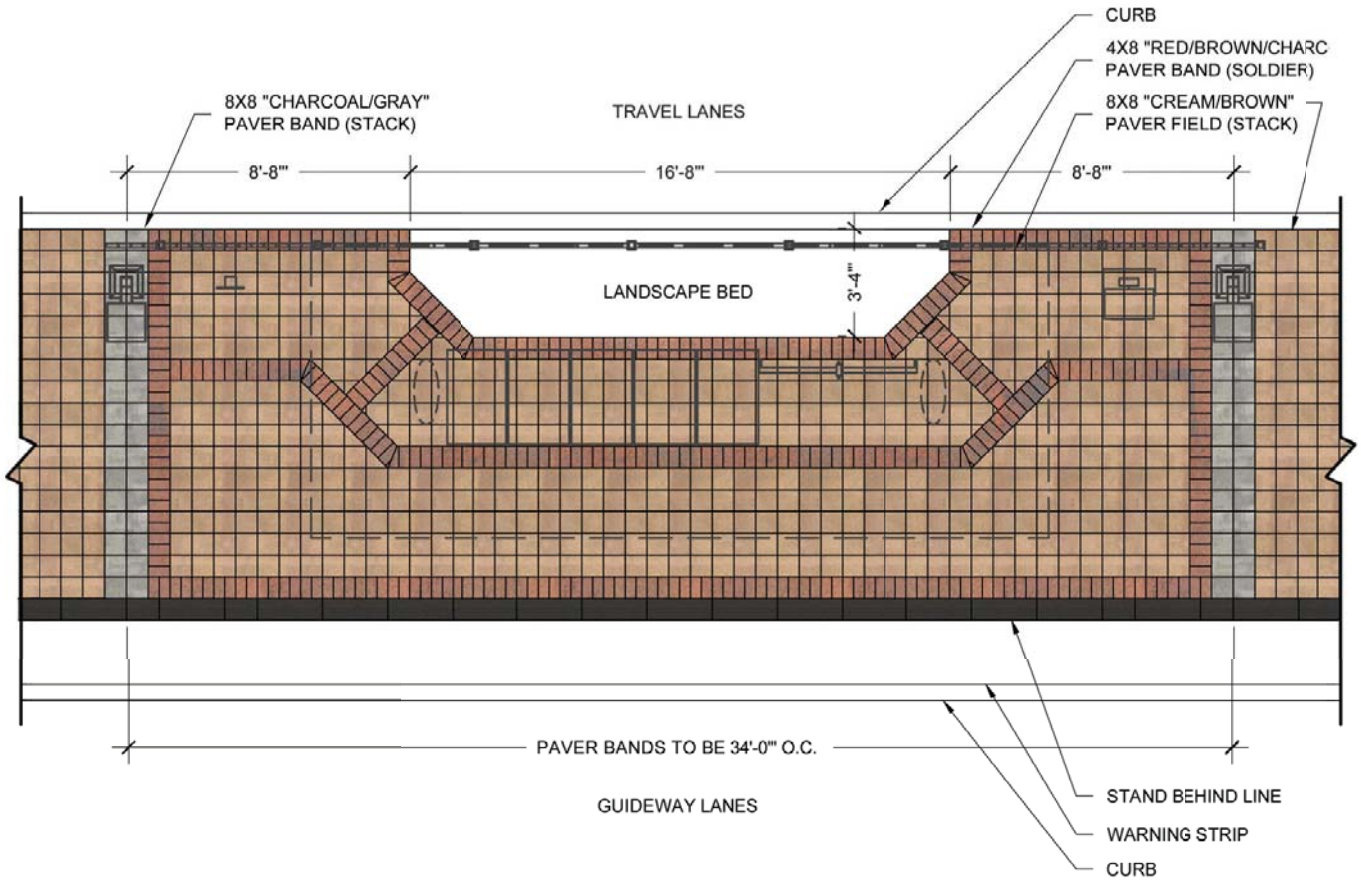

CURB
8X8 "CHARCOAL" PAVER FIELD (STACK)
4X8 "RED" PAVER BAND (SOLDIER)
4X8 "GRAY" PAVER FIELD (BASKETWEAVE)
8X8 "GRAY" PAVER FIELD (STACK)
8X8 "CHARCOAL" PAVER BAND (STACK)
TRAVEL LANES
10'-8"
12'-8"
10'-8"
LANDSCAPE BED
3'-4"
PAVER BANDS TO BE 34'-0" O.C.
GUIDEWAY LANES
STAND BEHIND LINE
WARNING STRIP
CURB

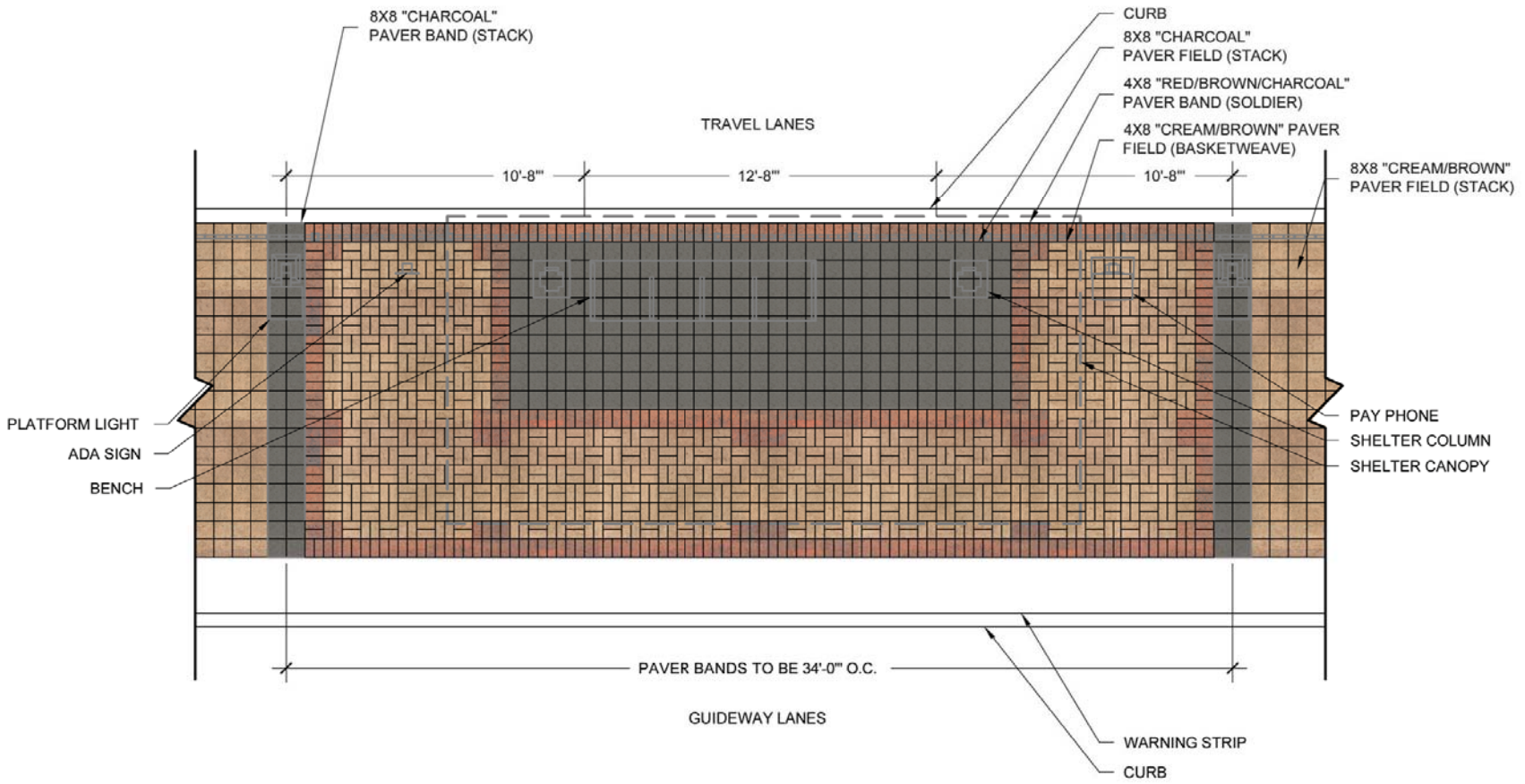

CURB
8X8 "CHARCOAL" PAVER FIELD (STACK)
4X8 "TERRACOTTA" PAVER BAND (SOLDIER)
4X8 "STONE" PAVER FIELD (BASKETWEAVE)
8X8 "STONE" PAVER FIELD (STACK)
8X8 "CHARCOAL" PAVER BAND (STACK)
TRAVEL LANES
10'-8"
12'-8"
10'-8"
LANDSCAPE BED
3'-4"
PAVER BANDS TO BE 34'-0" O.C.
GUIDEWAY LANES
STAND BEHIND LINE
WARNING STRIP
CURB


CURB
8X8 "CHARCOAL/GRAY" PAVER FIELD (STACK)
4X8 "RED/BROWN/CHARCOAL PAVER BAND (SOLDIER)
4X8 "CREAM/BROWN" PAVER FIELD (BASKETWEAVE)
8X8 "CREAM/BROWN" PAVER FIELD (STACK)
8X8 "CHARCOAL/GRAY" PAVER BAND (STACK)
TRAVEL LANES
10'-8"
12'-8"
10'-8"
LANDSCAPE BED
3'-4"
PAVER BANDS TO BE 34'-0" O.C.
GUIDEWAY LANES
STAND BEHIND LINE
WARNING STRIP
CURB


CURB
4X8 "RED" PAVER BAND (SOLDIER)
8X8 "GRAY" PAVER FIELD (STACK)
8X8 "CHARCOAL" PAVER BAND (STACK)
TRAVEL LANES
8'-8"
16'-8"
8'-8"
LANDSCAPE BED
3'-4"
PAVER BANDS TO BE 34'-0" O.C.
GUIDEWAY LANES
STAND BEHIND LINE
WARNING STRIP
CURB


CURB
4X8 "TERRACOTTA" PAVER BAND (SOLDIER)
8X8 "STONE" PAVER FIELD (STACK)
8X8 "CHARCOAL" PAVER BAND (STACK)
TRAVEL LANES
8'-8"'
16'-8"'
8'-8"'
LANDSCAPE BED
3'-4"'
PAVER BANDS TO BE 34'-0"' O.C.
GUIDEWAY LANES
STAND BEHIND LINE
WARNING STRIP
CURB


CURB
4X8 "RED/BROWN/CHARC
PAVER BAND (SOLDIER)
8X8 "CREAM/BROWN"
PAVER FIELD (STACK)
8X8 "CHARCOAL/GRAY"
PAVER BAND (STACK)
TRAVEL LANES
8'-8"
16'-8"
8'-8"
LANDSCAPE BED
3'-4"
PAVER BANDS TO BE 34'-0" O.C.
GUIDEWAY LANES
STAND BEHIND LINE
WARNING STRIP
CURB


8X8 "CHARCOAL"
PAVER BAND (STACK)
CURB
8X8 "CHARCOAL"
PAVER FIELD (STACK)
4X8 "RED/BROWN/CHARCOAL"
PAVER BAND (SOLDIER)
4X8 "CREAM/BROWN" PAVER
FIELD (BASKETWEAVE)
TRAVEL LANES
10'-8"
12'-8"
10'-8"
8X8 "CREAM/BROWN"
PAVER FIELD (STACK)
PLATFORM LIGHT
ADA SIGN
BENCH
PAY PHONE
SHELTER COLUMN
SHELTER CANOPY
PAVER BANDS TO BE 34'-0" O.C.
GUIDEWAY LANES
WARNING STRIP
CURB

SITE PHOTO INSPIRATION:

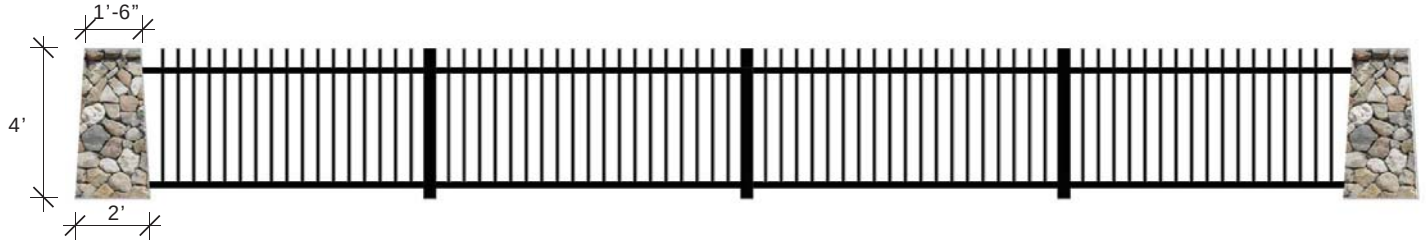
E. Palomar St & Heritage Park Median Turnout

Heritage Park Community Center

E. Palomar St & Monarche Drive

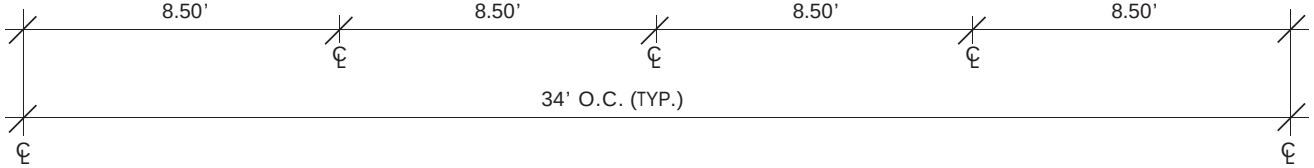
PROPOSED FENCE STYLES:

STYLE A: METAL POST RAILING (Metal Color: Black) **PREFERRED ALTERNATIVE**



STYLE B: STONE VENEER COLUMN AND RAILING (Metal Color: Black)

STYLE C: CMU BLOCK COLUMN, LOW WALL AND RAILING (Metal Color: Black)



STYLE B: STONE VENEER


Cognac Country Rubble


Honey Wheat Natural


Sequoia Rustic Ledge

STYLE C: CMU BLOCK


Red Brick Split-Face


Dusty Brown Split-Face


Merlot Split-Face


Red Brick Precision


Dusty Brown Precision


Merlot Precision

ELEVATION

SECTION

OPTION A: Downtown/I-15 Shelter

ELEVATION

SECTION

OPTION B: Blue Line Trolley Shelter

PREFERRED ALTERNATIVE

ELEVATION

SECTION

OPTION C: Chula Vista Hybrid Shelter

BENCH OPT1- LANDSCAPE FORMS - *PRESIDIO*

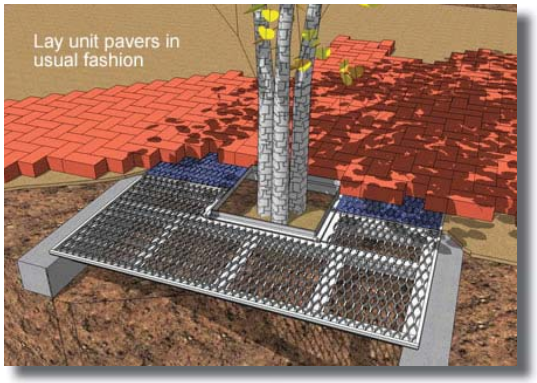
BENCH OPT2-VICTOR STANLEY - *STEELSITES RB-28*

PREFERRED ALTERNATIVE

TRASH CAN - VICTOR-STANLEY - *IRONSITES SD-42*

BIKE LOCKERS - BIKE LINK - *eLOCKER*

LIGHT POLE AND FIXTURE - GARDCO - SQUARE 10



PAVER GRATE - IRONSMITH

**PLATFORM EDGE AND
YELLOW TACTILE DOME**

TICKET VENDING MACHINE

P.C.I.D.

VARIABLE MESSAGE SIGN

PAYPHONE

VENDING MACHINE

TYPE 1: Primary Site ID-16' Ht.
(Outside of Guideway)

TYPE 1:
ADA Plaque

TYPE 2:
ADA Plaque

TYPE 2: Secondary Site ID-8' Ht.
(At Platform Entry in Guideway)

TYPE 18: Pedestrian
Information Sign

TYPE 8: Directional Kiosk

TYPE 51: Small Vehicular Restrictive Sign

TYPE 51: Large Vehicular Restrictive Sign

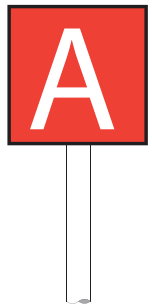
TYPE 10: Station Identification
(On Shelter Canopy)

TYPE 12: Station Identification
(On Light Pole)

TYPE 15: Destination
(On Light Pole)

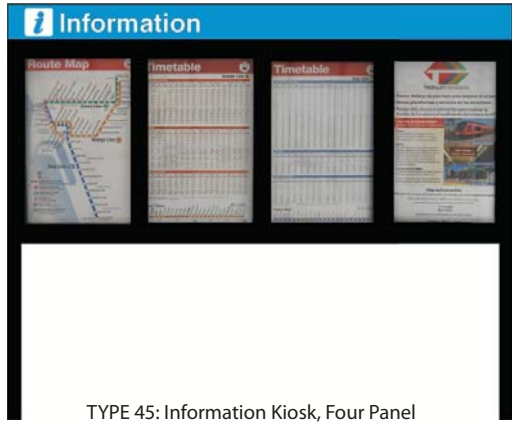
TYPE 30: ADA Platform
(Free Standing)

TYPE 51: Restrictive Sign
(On Light Pole)



TYPE 19: Bus Bay Cube
(Free Standing)

TYPE 17: Small Information Accesible Route
(On Light Pole)



TYPE 45: Information Kiosk, Four Panel
(Free Standing)


MTS
Lomas
Verdes
Station
BRT
Station
RAPID



WASHINGTONIA ROBUSTA - **MEXICAN FAN PALM**

H. MULTIFLORA

H. FULVA ROSEA

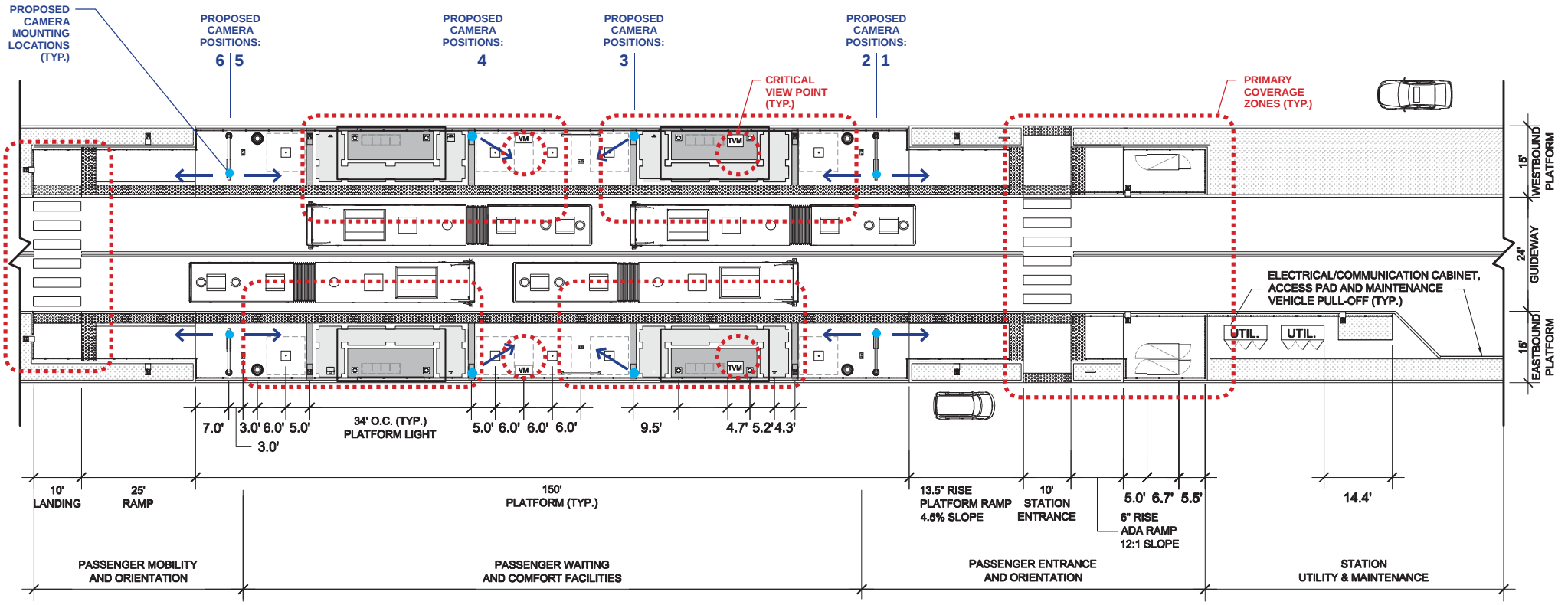
H. HAKUNENSIS

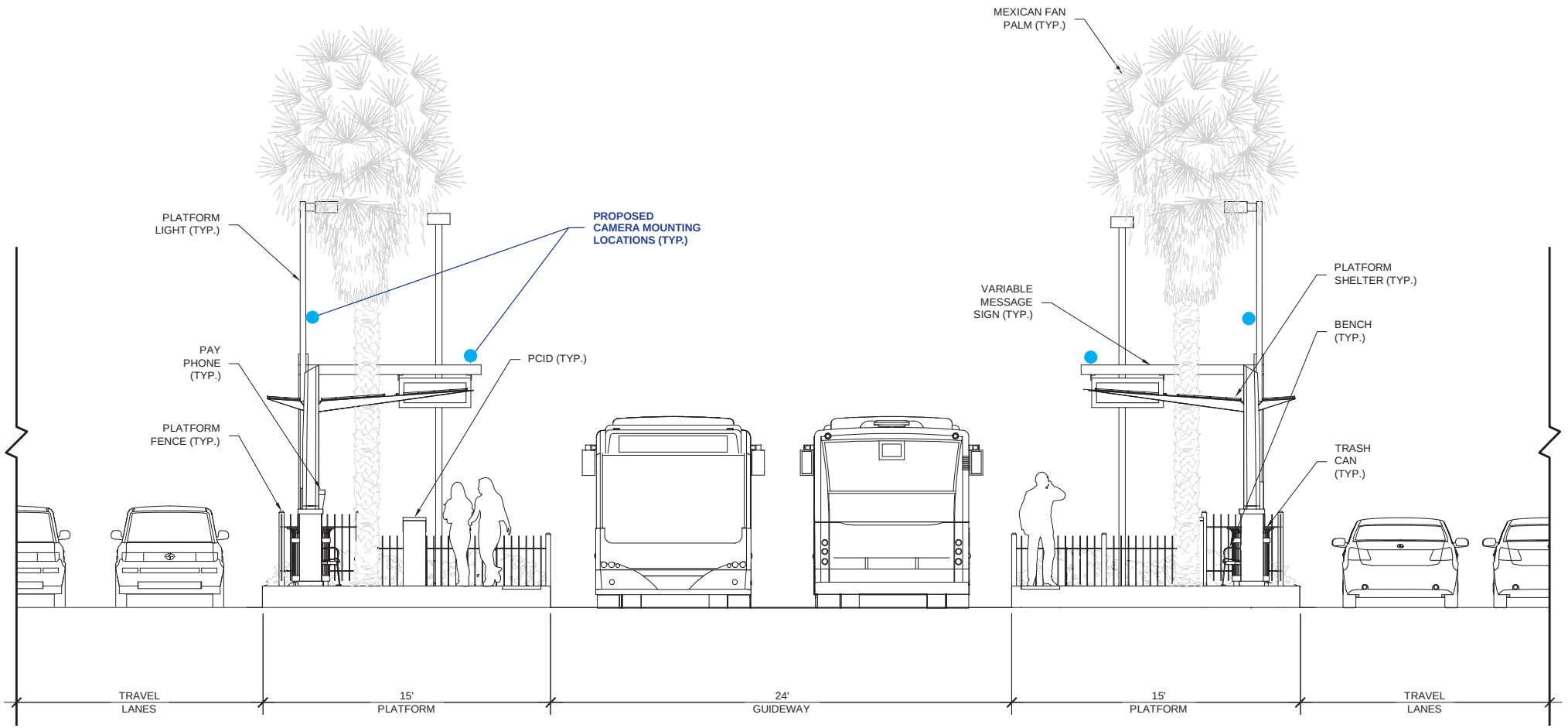
H. FULVA

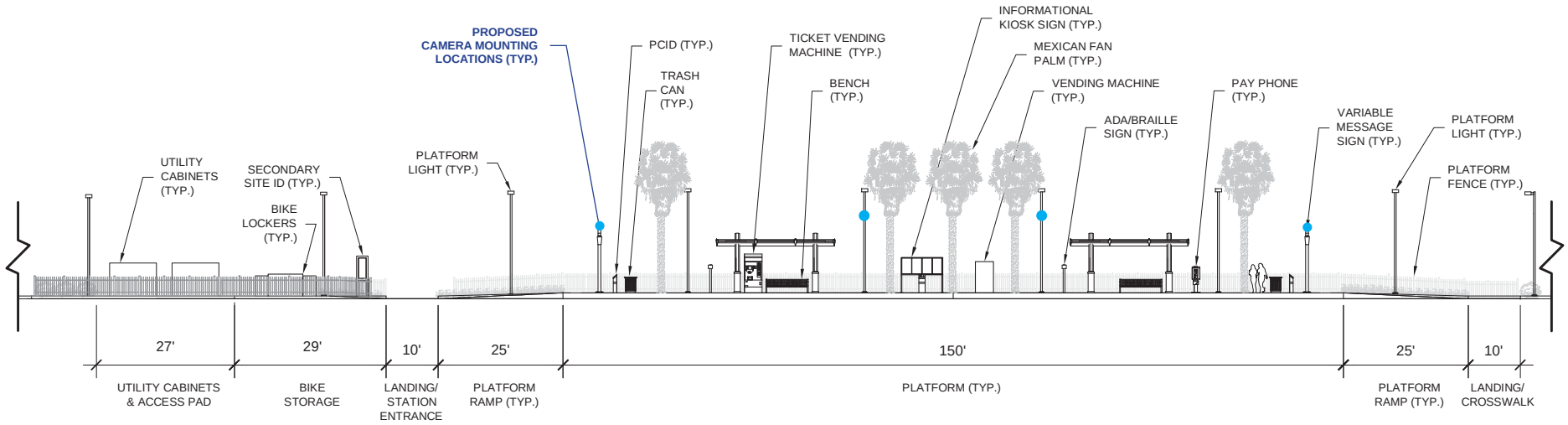
HEMEROCALLIS - **DAY LILY**

Community Transit – Snohomish County, Washington
(Near-Level Boarding with 10-inch Curb)

RTC Rapid – Reno, Nevada (Level Boarding)


PROPOSED CAMERA MOUNTING LOCATIONS (TYP.)
PROPOSED CAMERA POSITIONS: 6 5
PROPOSED CAMERA POSITIONS: 4
PROPOSED CAMERA POSITIONS: 3
PROPOSED CAMERA POSITIONS: 2 1
CRITICAL VIEW POINT (TYP.)
PRIMARY COVERAGE ZONES (TYP.)
ELECTRICAL/COMMUNICATION CABINET, ACCESS PAD AND MAINTENANCE VEHICLE PULL-OFF (TYP.)
UTIL.
UTIL.
VM
TVM
15' WESTBOUND PLATFORM
24' GUIDEWAY
15' EASTBOUND PLATFORM
7.0' 3.0' 6.0' 5.0' 3.0'
34' O.C. (TYP.) PLATFORM LIGHT
5.0' 6.0' 6.0' 6.0'
9.5'
4.7' 5.2' 4.3'
10' LANDING
25' RAMP
150' PLATFORM (TYP.)
13.5" RISE PLATFORM RAMP 4.5% SLOPE
10' STATION ENTRANCE
5.0' 6.7' 5.5'
6" RISE ADA RAMP 12:1 SLOPE
14.4'
PASSENGER MOBILITY AND ORIENTATION
PASSENGER WAITING AND COMFORT FACILITIES
PASSENGER ENTRANCE AND ORIENTATION
STATION UTILITY & MAINTENANCE
0'
20'


MEXICAN FAN PALM (TYP.)
PLATFORM LIGHT (TYP.)
PROPOSED CAMERA MOUNTING LOCATIONS (TYP.)
PAY PHONE (TYP.)
PCID (TYP.)
PLATFORM FENCE (TYP.)
VARIABLE MESSAGE SIGN (TYP.)
PLATFORM SHELTER (TYP.)
BENCH (TYP.)
TRASH CAN (TYP.)
TRAVEL LANES
15' PLATFORM
24' GUIDEWAY
15' PLATFORM
TRAVEL LANES
0'
5'


PROPOSED CAMERA MOUNTING LOCATIONS (TYP.)
PCID (TYP.)
TRASH CAN (TYP.)
TICKET VENDING MACHINE (TYP.)
BENCH (TYP.)
INFORMATIONAL KIOSK SIGN (TYP.)
MEXICAN FAN PALM (TYP.)
VENDING MACHINE (TYP.)
ADA/BRAILLE SIGN (TYP.)
PAY PHONE (TYP.)
VARIABLE MESSAGE SIGN (TYP.)
PLATFORM LIGHT (TYP.)
PLATFORM FENCE (TYP.)
UTILITY CABINETS (TYP.)
SECONDARY SITE ID (TYP.)
BIKE LOCKERS (TYP.)
PLATFORM LIGHT (TYP.)
27'
29'
10'
25'
150'
25'
10'
UTILITY CABINETS & ACCESS PAD
BIKE STORAGE
LANDING/ STATION ENTRANCE
PLATFORM RAMP (TYP.)
PLATFORM (TYP.)
PLATFORM RAMP (TYP.)
LANDING/ CROSSWALK
0'
20'

NORTH END

C1: on VMS pole at 13' height looking north.

C2: on VMS pole at 13' height looking south.

C3: on light pole at 14' height looking south.

C4: on light pole at 14' height looking north.

C5: on VMS pole at 13' height looking north.

C6: on VMS pole at 13' height looking south.

SOUTH END

NORTH END

C1: on VMS pole at 13’ height looking north.

C2: on VMS pole at 13’ height looking south.

C3: on light pole at 14’ height looking north.

C4: on light pole at 14’ height looking south.

C5: on VMS pole at 13’ height looking north.

C6: on VMS pole at 13’ height looking south.

SOUTH END

7.2 South Bay BRT Arborist Report

South Bay BRT Arborist Report

Client: Kimley-Horn and Associates
401 B Street, Suite 600
San Diego, CA. 92101

Prepared by: Mr. Jeremy Rappoport
Rappoport Development Consulting Services LLC
1286 University Ave. #807
San Diego, CA. 92103

RAPPOPORT
Development Consulting Services LLC

Table of Contents

RAPPOPORT
Development Consulting Services LLC

Executive Summary

Rappoport Development Consulting Services LLC (RDCS) was contracted to develop a tree inventory for the existing street trees within the medians and right of ways of East Palomar Street from Oleander Avenue east to Heritage Road and existing trees located in the median of East Palomar Street from Heritage Road east to Olympic Parkway for the development of the South Bay BRT guideway within the existing medians of East Palomar Road. The assignment also required RDCS to provide recommendations for a new street tree options that would be appropriate for the corridor based upon the environmental conditions and the observed maintenance practices.

The street tree inventory required extensive field inspection and utilized visual observation as the basis for the tree assessment. Tree data was documented on an excel spreadsheet that identified 1,553 woody trees and palm trees within the project limits. The two dominant trees are *Pyrus calleryana* (Bradford Pear) and *Washingtonia robusta*, (Mexican Fan Palm). The subject trees were identified and field labeled using ¾" aluminum tree tag stapled to the tree trunk. The inventory also assigned a location number to each tree, assessed the tree trunk diameter at breast height (DBH), palm tree brown trunk height (BTH), tree condition, planting location, specific health issues and maintenance needs.

During this process, the City of Chula Vista determined the following additional criteria:

1. All woody trees impacted by new construction that cannot be preserved in place will be removed.
2. All existing Mexican Fan Palms between Heritage Road and Olympic Parkway will be preserved in place or relocated/reused within the project corridor if feasible.

Based on the local climate and environment, RDCS concluded that an informal, drought tolerant Mediterranean street tree theme re-using existing Mexican Fan Palms supplemented with new and additional palm trees and flowering evergreen trees would be an appropriate street tree theme. Tree selection was based on tree size at maturity fitting into a restricted planter width, the tree form, growth characteristics and cultural requirements, drought tolerance, aesthetics and maintenance needs. Recommendations include reducing or eliminating turf grass as a ground cover, planting trees in shrub planters, using inorganic ground covers and drip irrigation.

RAPPOPORT
Development Consulting Services LLC

Introduction

RDCS was contacted by Kimley-Horn and Associates (KHA) in March of 2012. KHA requested a proposal resulting in a sub-consultant contract established between KHA and Rappoport Development Consulting Services LLC (RDCS) for arborist consulting services for a SANDAG project called the South Bay Bus Rapid Transit (SBBRT) located in San Diego and Chula Vista, California.

The SBBRT project includes the design and construction of BRT bus guideway in the median of East Palomar Street from Oleander Avenue east to Olympic Parkway (The Study Area). Due to expected construction impacts to the existing street trees along the 3.8 mile stretch of East Palomar Street, KHA contracted with RDCS for an arborist consulting services including a tree inventory, analysis, and an arborist report including new street theme and tree palette recommendations.

The purpose of this arborist report is to identify, inventory and analyze the existing median and parkway street tree health and location relative to the future bus lane improvements. Within the Study Area, RDCS will determine which trees can be relocated, re-used or abandoned and develop recommendations for a new street tree program based on City of Chula Vista approved street trees and street tree theme options.

Assignment:

1. Conduct a street tree field inspection and create a tree inventory for East Palomar Street – From Oleander Avenue east to Heritage Road.
    a. Include all trees located in the existing median.
    b. Include all trees in the city Right of Way (from back of walk to back of walk).
    c. Include all trees in the zone from the back of each walk to a dimension of 8’-0” offset outside of each Right of Way line.
2. Conduct a street tree field inspection and create a tree inventory for East Palomar Street – From Heritage Road east to Olympic Parkway.
    a. Include all trees located in the medians only.
3. Perform tree tagging, identification, data collection, and photographic documentation, and develop an inventory spreadsheet.
4. Create an arborist report containing the tree inventory, analysis and recommendations for a new street tree theme and a tree planting palette.

RAPPOPORT
Development Consulting Services LLC

Limit of the Assignment

This assignment was limited to:

1. Visual observation of the plant material.
2. Trees and palm trees observed from ground level.
3. Inventory performed by walking the Study Area.
4. Trunk DBH and palm BTH are approximate estimates.
5. The tree inspection and analysis did not include tree risk assessment.
6. Soil and tissue sampling and testing were not included in the assignment.
7. Work will be limited to the Study Area only.

Purpose and Use of the Report

The purpose of this report is to make recommendations for the existing parkway and median trees on East Palomar Street affected by the proposed BRT bus guideway design and construction. This report should be used by KHA, SANDAG and project stakeholders to make tree related decisions to retain, move, relocate or abandon trees within Study Area. The tree inventory will identify, quantify and assess the health condition of the subject trees. This report recommends trees to retain, reuse, relocate or abandon based on current BRT bus guideway design options by KHA and recommends a new street tree theme with a recommended plant palette.

RAPPOPORT
Development Consulting Services LLC

Observations

The SBBRT project involves a 3.8-mile stretch of East Palomar Street in Chula Vista, California. East Palomar Street is an arterial road with an east – west orientation. This report and inspections considered tree located in the median, north and south parkways of East Palomar Street from Oleander Avenue east to Heritage Road and trees located in the median from Heritage Road east to Olympic Parkway (the Study Area).

Investigation Methods:

Visual observation was used for inspecting all of the trees. The tree trunk measurement to determine the *diameter at breast height*, *(DBH)* and the palm tree *brown trunk height, (BTH)* are based on visual observation. Independent tape measurements were employed throughout daily inspections to cross verify estimated trunk diameters.

Visual observation and estimation was employed to determine palm tree brown trunk height (BTH). Using an Apple IPAD with a height and distance measuring application called *Too Big Too Far*, digital measurements cross-verified estimated brown trunk height measurements on random palm trees.

Trees were photo-documented using a Canon S95 digital camera.

The inventory process began with labeling each tree within the project scope of work. Each ¾" x 31/2" aluminum cardboard backed tree tag was engraved with the tree ID number and date. The label was stapled onto tree trunks greater than 3" in diameter or tied onto a tree branch if the trunk was less than 3" in diameter.

Trees were labeled as M (median), NP (north parkway) or SP (south parkway) starting at the intersection of Oleander Avenue and continued consecutively easterly to the terminus at Olympic Parkway.

Following tree labeling, site inspections utilized visual observation to assess the tree condition:

- The *tree crown* was observed from fifteen (15') feet, evaluating foliage color, density, limb, branch and twigs, and
- A 360-degree inspection of the tree trunk, *root crown* and visible surface roots was completed.

Field collected data was entered into an Excel spreadsheet on an Apple IPAD.

Site Conditions:

The stretch of East Palomar Street examined from Oleander Avenue east to Olympic Parkway consists of three traffic lanes in each direction. From Oleander Avenue east to Heritage Road, there are several discontinuous median strips from block to block. The medians contain trees, turf and shrubs. From Heritage Road east to Olympic Parkway, the median strip is wide and planted primarily with turf, Mexican Fan Palms and Pear trees.

The road topography is level with minor vertical grades. The north and south parkways each contain wide sidewalks, discontinuous from the curb, thereby creating a planter strip between the curb and sidewalk and a planter behind sidewalk extending to a masonry residential sub-division screening wall or to a bottom of slope that represented a subdivision property line.

Both parkway planter areas between the curb and sidewalk were planted with trees and palms surrounded by turf grass, certain areas were planted with shrubs and shredded bark ground cover. Parkway planter areas extending eight feet behind the sidewalk were planted with trees and palms, shrubs and shredded bark ground cover, turf was not planted behind the sidewalk.

The median planter from Oleander Avenue to Heritage Blvd consists of trees with shrubs and shredded bark ground cover. The median planter from Heritage Road east to Olympic Parkway is dominated by trees and palms planted in turf strips behind the median curb or in wider turf areas that exist in portions of the median from Heritage Road to Olympic Parkway.

Both the median and parkways receive automatic overhead spray irrigation. Tree located in turf areas are irrigated by turf pop-up spray heads. Old flood bubbler heads in four-inch drainage pipe sleeves were observed in several tree wells. Trees located in shrub planters received irrigation from the overhead pop-up heads or spray heads on risers.

Throughout the course of the inventory inspection, landscape maintenance operations were observed in the median and parkways including turf mowing, edging and string trimming, minor shrub pruning and weeding. Trees located in turf areas displayed root crown and lower trunk damage consistent with string trimming injuries. In many areas, turf over-irrigation was reflected in the tree condition.

Subject Trees:

The Callery or Bradford Pear (*Pyrus calleryana)* and the Mexican Fan Palm (*Washingtonia robusta)* dominate the median and parkway planters. Additional street tree species include the Chinese Flame Tree (*Koelreutaria bipinnata),* the Red Flowering Gum (*Corymbia ficifolia)*, a few Fern Pine (*Podocarpus gracilior)*, Aleppo Pine, (*Pinus halepensis)*, Evergreen Pear *(Pyrus kawakamii)*, African sumac (*Rhus lancea)*, and Lemonade Berry (*Rhus integrifolia).*

The Callery or Bradford Pear is a medium sized deciduous tree native to Japan and Korea. At maturity, the tree may reach 40 feet in height with a third of the spread. The tree has a rapid growth rate, requires full sun, is tolerant of hot, dry conditions and is fairly adaptable to many conditions. The Bradford Pear is susceptible to fireblight, a bacterial infection that enters through the swelling buds of the pear and causes foliage blackening, leaf, twig and stem dieback. In severe cases, the entire crown may become infected. Certain Bradford Pear cultivars are fireblight resistant.

The Bradford Pear has deep green foliage summer foliage that gives way to orange, red and purple foliage during the colder fall and winter months. In late April through May, the tree produces a massive profusion of white flowers that cluster in 3" diameter corymbs. The appearance is extremely attractive although the flowers may be malodorous.

A showy flower display, fall color, fast grower and moderately sized tree, the Bradford Pear is popular, used as a street tree, mass and hedge effect, small residential tree, and accent flowering specimen tree. Drawbacks include a genetic predisposition to grow very dense, tight *crotch angles* that over time result in tree limb breakage caused by weight, mechanical damage, storm, wind, rain or other environmental conditions. Regular crown *cleaning* and *reduction* pruning is required to minimize poorly formed crotch angles and resultant tree damage.

In general, the Bradford Pear has been heavily overused in the landscape, resulting in less diverse plant communities and monospecies. It's dense, rigid form, may appear unnatural in drought tolerant, native, or Mediterranean themed landscape plantings.

The Mexican Fan Palm (*Washingtonia robusta)* is native to Mexico and has naturalized throughout Southern California. The palm may grow to 85 feet, has a vigorous growth rate and few pests or diseases. The palm grows a single trunk that is larger at the base then narrows to 10-12" wide approaching the crown. Very heat and somewhat salt tolerant, the palm is cold tolerant to approximately 18 degrees F.

Large, dark green palmate leaves that droop at the leaflet tips form a symmetrical rounded crown. The palm fronds may grow up to five feet long and four feet wide on three -foot long orange colored stems that are lined with saw-toothed spines. In the summer, the palm produces light beige colored *inflorescence*s the extend beyond the palm fronds reaching 10' long that yield small white flowers that mature into black seeds or berries that easily germinate.

As palm fronds die, they droop against the trunk of the palm tree forming a dense matting of dead fronds that may contain rats and other climbing rodents. Heavy accumulation of dead fronds and inflorescences increase tree hazard and risk, especially during weather events. Annual palm pruning should be performed to minimize risk by removing dead fronds and inflorescences.

Due to the fast growth rate, salt tolerance and unique architectural form, the Mexican Fan Palm is used in street tree groupings, mass and linear plantings and large groves.

The inventory inspection and assessment examined and determined:

- Tree species
- Tree trunk diameter at breast height
- Palm tree brown trunk height
- Tree health rating
- Tree conditions
- Tree location relative to curbs, sidewalks and planter obstructions
- Presence of turf
- Maintenance needs

Subject Pests:

The scope of the assignment did not include tree health inspection for disease and pest identification, prevention and eradication. During the course of the inspection, ants and snails were the dominant pest noted on many of the tree species. A small percentage of Pyrus trees exhibited varying degree of fireblight infestation.

Information from Other Sources:

KHA provided RDCS the following exhibits for this report:

1. Typical Sections, Heritage to Olympic, see Appendix F
2. Option 4, Typical Sections, Oleander Ave. to Heritage Road, see Appendix D.
3. Option 4A, Typical Sections, Oleander Ave. to Heritage Road, see Appendix E.
4. City of Chula Vista Recommended Plant Palette, see Appendix C.

RAPPOPORT
Development Consulting Services LLC

Testing and Analysis

The onsite assessment occurred during the months of August and September of 2012.

Tree labeling began in August of 2012. The labeling noted:

1. Tree ID # M, SP or NP consecutively numbered from Oleander to Olympic
2. Tree Code: KP, PC, WR, etc.
3. Date: Various dates in August

The labels were stapled to tree trunks greater than 3" in diameter, tied around a tree branch for trunks under 3" in diameter. To reduce vandalism, the labels were placed away from pedestrian sidewalks and at the bottom of the palm tree trunks.

Following tree labeling, the tree assessment and inventory began.

Tree Inventory Spreadsheet:

The full tree inventory is located in Appendix G.

The tree inventory spreadsheet contains six categories, with specific category information contained in separate columns

1. Tree Information: Contains pertinent tree identification and size data.

    a. Photo #: The individual digital photograph number of the tree. The photograph numbers are NOT in a numeric sequence.

    b. Tree ID #: The trees are identified as M representing the median tree, SP representing the south parkway trees, and NP representing the north parkway trees.

    c. Tree Code: The tree code is an abbreviation for the tree genus and species.

    d. DBH: DBH stands for diameter at breast height. This is a measure of the tree trunk diameter at approximately 4.5' above finish grade.

    e. BTH: BTH stands for brown trunk height and is a standard for measuring the trunk height of palm trees from finish grade to the bottom of the crown.

2. Tree Condition: The tree condition rates the overall health condition of the tree:
    a. The letter G: Represents a tree in good condition, vigorous growth, good color, few or minor defects not affecting tree health.

    b. The letter F: Represents a tree in fair condition, crown, trunk, root injuries, disease or maintenance practices reducing tree vigor and health.

    c. The letter P: Represents a tree in poor condition, crown dieback, disease, root and trunk injuries have affected the tree to the point of removal.

    d. The letter D: Represents a dead tree that should be removed.

3. Planting Location: This code assesses the tree location relative to hardscape improvements or in a sidewalk cutout planter:

    a. Swik: Tree is located in a sidewalk planter cutout.

    b. <3': The tree is located less than three feet from hardscape obstruction possibly limiting root growth.

    c. >3': The tree is located greater than 3' from a hardscape obstruction and has greater area for root growth.

    d. Lwn: The tree is surrounded by turf. Turf irrigation may cause overwatering, turf maintenance may cause root and trunk injury.

4. Conditions: This category describes individual tree factors affecting tree health:

    a. Weak fork: Poorly formed branch or crotch angles that present areas of mechanical weakness through *co-dominant* branches and *included bark.*

    b. Root damage: This notes any physical root damage visible at the soil surface and root crown.

    c. Trunk damage: This notes injuries to the trunk and main *scaffold branches.*

    d. Crown decline: This notes any decline in crown appearance including off color foliage, thinning foliage, foliage, twig and stem dieback and foliage disease.

e. Rot / Cav: This stands for rot, decay or cavity and assesses whether the tree has a systemic rot within the trunk and or existing cavities caused by injury, rot or other factors.

5. Maintenance Needs: This describes whether the tree requires remedial forms of pruning for tree health and or safety reasons:

   a. Clean: A form of pruning that only removes dead twigs, stems and branches typically under 2-3" in diameter.

   b. Raise: A pruning technique used to gain vertical clearance from finish grade to the lowest permanent tree branch. It is used to gain pedestrian and vehicular clearance under tree limbs.

   c. Red: Represents reduction, a pruning technique used to lower the height and or spread of a tree by removing live branches up to six inches in diameter.

   d. Rem: This represents remove the tree from the landscape.

6. Comments: This category contains site related observations that may be affecting tree health or a sign of impending tree issue:

   a. Overwatered: This was a common condition observed for trees planted within turf grass areas.

   b. Trk girdled: The tree trunk is girdled, a term used when the cambium and tree bark is damaged 360 degrees around the trunk.

   c. Ants and snails were noted for trees with major infestations.

   d. Miscellaneous comments concern whether the tree has a significant lean, the presence of a *conk* at the *root crown*, fireblight foliage disease or other tree risk factors.

Tree Inventory Data:

The tree inventory data summarizing the tree name, tree code and total quantity is summarized in Table 1.

Scientific Name	Code	Quantity
*Eucalyptus ficifolia	EF	29
Koelreutaria bipinnata	KB	133
Pyrus calleryana	PC	918

Pyrus kawakamii	PK	5
Podocarpus gracilior	PG	8
Pinus halepensis	PH	2
Rhus lancea	RL	2
Rhus integrifolia	RI	3
Washingtonia robusta	WR	453
Total:		1553

Table 1: Tree Inventory Data Summary
*Previously known as Eucalyptus ficifolia, now classified as Corymbia ficifolia.

The tree condition for all the project trees is summarized in Table 2.

Tree Condition	Actual #	% of Population
Good	1370	88%
Fair	142	9%
Poor	27	2%
Dead	14	1%

Table 2: Project Tree Condition

Specific health conditions assess injuries or structural deficiencies that affect trees, the conditions are summarized in Table 3.

Health Conditions	Actual #	% of Population
Weak Fork	7	0%
Root Injury / damage	119	8%
Trunk Injury / damage	305	20%
Crown decline	54	3%
Rot / Cavity	15	1%

Table 3: Health Conditions

The planting location describes how close the tree is growing to a sidewalk, curb or other hardscape element that impedes root growth. Trees planted in turf grass are noted because of the possible negative effects of turf irrigation and maintenance practices. The planting location is summarized in Table 4.

Planting Location	Actual #	% of Population
Sidewalk (in cut out)	0	0%
<3' (less than 3' from edge of hardscape)	456	29%
>3' (greater than 3' from edge of hardscape	1096	71%
Planted in Turf-grass	1130	73%

Table 4: Planting Location

East Palomar Street receives regular maintenance service. Most of the woody trees have been pruned within the last one to two years. Majority of the palms require frond cleaning. Maintenance needs are summarized in Table 5.

Maintenance Needs	Actual #	% of Population
Safety / clean	458	29%
Crown raise	7	0%
Crown reduction	0	0%
Removal	30	2%
Overwatered	34	2%
Fully Girdled trunk	22	1%

Table 5: Maintenance Needs

South Bay BRT Typical Section Design Options:

The future BRT bus guideway is being designed to fit within the existing medians of East Palomar Street. East Palomar Street from Oleander Avenue to Heritage Road did not account for a BRT bus guideway when designed and built decades ago. Plans call for the demolition of medians and right of ways, inclusive of all trees except Mexican Fan Palms (which may be relocated within the study area if feasible). The north right of way requires a low retaining wall built along property line to accommodate the street improvements.

From Heritage Road to Olympic Parkway, the existing median in East Palomar Street was designed and constructed anticipating the future BRT bus guideway within the existing median. Therefore, the existing median width and much of the tree planting conforms to the new BRT bus guideway alignment and relocation of certain Mexican Fan palms rather than complete demolition is anticipated.

RAPPOPORT
Development Consulting Services LLC

Discussion

General Health Conditions:

From Oleander Avenue east to Olympic Parkway, the project has 1,553 trees yet with a very few minor exceptions, only the Mexican Fan palms require frond cleaning. The landscape medians and parkways of East Palomar Street are well maintained, with 1,370 trees, or 88% of the project tree population rated in good condition.

The Bradford Pear tree comprises two thirds of the tree population, visual inspection confirmed the trees have been regularly pruned and structured for several years. The Bradford Pear grows dense, heavy, poorly angled branch crotches that overtime tend to bread apart during weather events or with age. Regular pruning is required to keep this tree properly raised above pedestrian and vehicular traffic and thinned of co-dominant branches and included bark. There are a handful of pear trees that have severe fireblight symptoms as well as occasional dead branches on trees scattered throughout the population.

The Mexican Fan Palms, which comprises almost a third of the trees, are in good condition. Only frond and *inflorescences* required removal at the time of inspection.

Trees planted in turf areas exhibited a much higher degree of root and trunk injury than the same trees in shrub planters. Typical lower trunk damage included bark injury consistent with string trimmer maintenance. Root injuries were consistent with mechanical injury from a lawnmower or string trimmer.

Generally, the higher volume turf irrigation in certain areas resulted in standing water in tree wells in turf areas resulting in smaller trees in poorer health condition. Similar trees located in shrub planters were typically larger and more vigorous.

Trees that were greater than 3’ from hardscape generally grew larger than trees located less than 3’ from hardscape although the Mexican Fan palms appeared relatively unaffected if located within 3’ of sidewalk.

1. Tree Selection:

1.1. Preliminary Street Sections:

KHA provided RDCS preliminary street sections (Option 4 and Option 4A) for Oleander Avenue to Heritage Road and a preliminary BRT bus guideway section for Heritage Road to Olympic Parkway (see Appendices D, E and F). The primary features Options 4 and 4A are summarized in Table 6.

Planter Widths	Option 4	Option 4A
6’ width median planters, no trees	X	
12’ width ROW planters w/trees	X	
7’ width ROW planters @ lft turn w/trees	X	
11’ width median planters, no trees		X
7’ width ROW planters w/trees		X
7’ width ROW planters @ lft turn w/trees		X

Table 6: Preliminary Street Sections Planter Dimensions

1.2. Bus Lane Options and Construction Impacts:

From Oleander Avenue to Heritage Road, the preliminary street sections present varying planter widths for trees located within each right of way of 12’ and 7’ respectively.

A tree centered in a 7’ wide planter would have a 3.5’ for horizontal branch growth before it trespassed into a sidewalk or street. With the exception of the Mexican Fan palms, almost all of the existing woody trees on East Palomar Street have growth characteristics that would be unsuitable to locate within a 7’ planter width.

Since the new preliminary street sections require reconstruction of the median and both parkways of East Palomar Street from Oleander Avenue to Heritage Road, all of the trees within the street right of ways will be removed. KHA informed RDCS the City of Chula Vista does not anticipate re-use of the Pyrus or other woody trees with the exception of the Mexican Fan Palm.

Options 4 and 4A both include a retaining wall constructed on the north right of way property line. Construction impacts to existing trees located within a few feet of the right of way property line may be expected. Prior to construction, trees located in this “edge” condition should be identified and best management practices should be employed to protect the tree in place. If the tree cannot be adequately protected, relocation or replanting a new tree in a different location should be considered.

1.3 Tree Selection: Option Preference

RDCS was tasked to make street tree recommendations that would work within the parameters of the preliminary street sections using the City of Chula Vista Recommended Plant Palette list (see Appendix C). Appropriate tree selection considered street tree theme, plant size at maturity, growth characteristics, cultural requirements, aesthetics and maintenance.

The preliminary street sections contain either a 12' or 7' planter width that effectively reduces tree selection to conical shaped woody trees or palm trees. Over time, trees centered in 7' width parkways will encounter some degree of root restriction; however the continuous planter length would benefit root growth.

The 12' wide planter affords a greater choice of trees to select and sufficient area for small to medium sized woody trees and palms to establish and flourish. As trees mature, they can be raised for horizontal and vertical clearance as needed without sacrificing or destroying the natural form of the tree.

1.4 Tree Selection: Theme and Aesthetics

The current theme from Oleander Avenue to Heritage Road on East Palomar Street uses deciduous flowering trees such as the Pyrus and Koelreutaria planted in turf grass. Throughout the winter, the trees are bare, leaving a stark appearance for a very busy street. The trees are planted on center with a strong linear emphasis creating a formal theme. This theme may be outdated and no longer applicable based on new water conservation regulations.

East Palomar Street is located in inland Chula Vista, where summer temperatures approach triple digits. Existing native terrain consisted of California Coastal Scrub on the rolling interior hillsides of Chula Vista. Development has replaced drought tolerant California native plants with heavily irrigated turf grass and non-native ornamental trees and shrubs. The results provide street after street with similar formal, repetitious tree plantings surrounded by high water consuming turf grass.

RDCS LLC believes a drought tolerant, Mediterranean themed tree planting is consistent with water regulation guidelines and well suited for the environmental, climatic and geographic location of East Palomar Street. The theme incorporates existing Mexican Fan Palms on East Palomar Street augmented with additional palm species and small to medium sized flowering evergreen trees. The evergreen trees are drought tolerant, possess slow to moderate growth rates, and will fit within a 12' width planter (with appropriate pruning), and will provide annual color or distinguishing characteristics.

This is an appropriate, attractive theme for East Palomar Street. It re-uses a third of the existing trees (Mexican Fan Palm) currently existing on East Palomar Street and reinforces a Chula Vista iconic tree. The Mediterranean theme is drought tolerant and will have much lower water use and maintenance costs.

1.5 Tree Selection: Growth Characteristics and Cultural Requirements

The preliminary street sections place horizontal growth restrictions on trees grown within a 7' or 12' wide planter. The 7' width planter combined with vehicular and pedestrian traffic requires trees conically shaped, with a very narrow growth form or a palm tree form plant. The 12' wide planter increases the potential tree palette as small to medium size trees may be fit within this width planter. Avoid broad headed canopies and encourage smaller pyramidal, conical, elliptical shaped tree crown that will conform to the planter width.

Tree height at maturity should vary from the tallest Mexican Fan Palm to the lowest clumping palm type. Slower to medium size growth rate is preferred for reduced maintenance, sustainability and longevity. The trees should require full sun exposure, tolerate heat and light frosts, and have drought tolerant characteristics. Well drained soils with drip or low volume irrigation system provide optimum conditions for drought tolerant trees to flourish. Turf grass should be avoided as a ground cover with drought tolerant trees.

1.6 *Legal and Maintenance Considerations:*

Owner liability for a tree related accident that might cause injury to the public or property damage should be considered during the selection process. Trees requiring directional or one-sided pruning, constantly cleared or raised for horizontal or vertical clearance should be avoided as this practice destroys the natural form and possibly the structural integrity of the tree. Increased pruning wounds are entry points for insects and pathogens that cause decay and rot, creating cavities and structural weakness and increased risk of a whole tree or tree part failure. Tree hazards increase over time, thereby increasing the risk of injury to people and property. Maintenance costs increase with increased pruning, disposal and repairs.

1.7 Tree Selection: Conceptual Tree Choices:

Woody trees that fit within a 7' planter width include the Italian Cypress (*Cupressus sempervirens*). The Canary Island Pine, (*Pinus canariensis*) and the New Zealand Christmas tree, (*Metrosiders excelsa*) may be considered, however both trees would require increased maintenance inspections and pruning events to ensure they remain with the 7' planter confines and not create vehicular and pedestrian obstructions.

Palm trees are the most appropriate fit for a 7' wide planter. Although the crown of many palms will exceed 7' in width, the canopy should be sufficient height to not pose an obstruction to vehicles or pedestrians. There are many existing Mexican Fan Palms within the medians and parkways of East Palomar Street, many in confined spaced that have adapted and grown well. Other palm trees that would perform well included the Guadalupe palm (Brahea edulis) the Windmill palm, (*Trachycarpus fortunei)* and others.

Trees selected that fit based on size at maturity are summarized in Table 7.

Scientific Name	Common Name	7' width	12' width
Brachychiton populneus	Bottle Tree		X
Brahea armata	Mexican Blue Palm	X	X
Brahea edulis	Guadalupe Palm	X	X
Butia capitata	Pindo Pam	X	X
Cassia leptophylla	Gold Medallion tree		X
Chamaerops humilis	Mediterranean Fan palm		X
Cupressus sempervirens	Italian Cypress	X	
Metrosideros excelsa	New Zealand Xmas tree	X	X
Pinus canariensis	Canary Island Pine tree	X	
Podocarpus gracilior	Yew Pine		X
*Podocarpus henkelii	Long Leafed Yew		X
*Rhus lancea	African Sumac		X
Trachycarpus fortunei	Windmill Palm	X	X
Tristania conferta	Brisbane Box		X
Washingtonia robusta	Mexican Fan Palm	X	X

Table 7: Tree Choices Based on Planter Width

*Tree not on the City of Chula Vista Recommended Tree List

Using the Mediterranean tree theme combined with trees that fit in the 7' and 12' planter width, **Table 8 summarizes a Mediterranean themed landscape and is the recommended street tree palette**.

Scientific Name	Common Name	7' width	12' width
Brachychiton populneus	Bottle tree		X
Brahea armata	Mexican Blue Palm	X	X
Brahea edulis	Guadalupe Palm	X	X
Butia capitata	Pindo Pam	X	X
Cassia leptophylla	Gold Medallion tree		X
Chamaerops humilis	Mediterranean Fan palm	X	X
Chamaerops humilus 'cerifera'	Blue Mediterranean Fan palm	X	X
Metrosideros excelsa	New Zealand Xmas tree	X	X
*Podocarpus henkelii	Long Leafed Yew		X
*Rhus lancea	African Sumac		X
Trachycarpus fortunei	Windmill Palm	X	X
Washingtonia robusta	Mexican Fan Palm	X	X

Table 8: Recommended Street Tree Palette

The new palm tree types, frond, form, color and height at maturity are summarized in Table 9.

Tree:	Single Trunk	Fan	Feature	Clumping	Green	Gray/Blue	Ht.'
Brahea armata	X	X		X		X	30-40
Brahea edulis	X	X			X		20-30
Butia capitata	X		X		X		15-20
Chamaerops humilis		X		X	X		10-20
Chamaerops humilis "cerifera"		X		X		X	10-20
Trachycarpus fortunei	X	X			X		25-35
Washingtonia robusta	X	X			X		50-80

Table 9: Palm Trees Categorized by Trunk, Frond, Form, Color and Size

The flowering evergreen trees contain growth characteristics and features summarized in Table 10.

Tree:	Ht' x W'	Flowers	Distinguishing characteristic	Clearance pruning needed
Brachychiton populneus	45' x 25'	White Inconspicuous	Trunk	Yes
Cassia leptophylla	25' x 15'	Showy yellow in summer	Flowers	minor
Metrosideros excels	30' x 20'	Showy red spring-summer	Flowers, foliage	minor
Podocarpus henkelli	40' x 15'	Inconspicuous	Foliage	minor
Rhus lancea	25' x 18'	Inconspicuous	Trunk, foliage	minor

Table 10: Characteristics of Flowering Evergreen Trees

RAPPOPORT
Development Consulting Services LLC

Conclusions

Selecting a Mediterranean, drought-tolerant tree palette will increase the number and diversity of the palm trees to bolster the theme, while introducing small to medium sized flowering evergreen trees to create diversity and interest, while conforming to the planter width size restricted conditions.

The palette seeks to emphasize the palm theme by introducing several types of single trunk trees and clumping palms forms. Used in combination, the unique forms, texture and colors will create a striking street tree theme. Interspersing planting zones with drought tolerant flowering evergreen trees adds the cooling effect of shade, flower color, and distinctive trunk and foliage characteristics.

This palette will perform well in a 12' wide planter area. Where the 12' width planter reduces to 7' width, palm trees should be used. The recommended tree palette uses City of Chula Vista recommended trees, reuses existing Mexican Fan Palms, creates a drought tolerant, colorful, sustainable informal street tree planting that is environment and climate appropriate with fewer maintenance issues and lower maintenance costs than the existing turf and street tree theme.

The existing Mexican Fan Palms may require one of three forms of action depending on their existing location relative to the bus lane improvements.

1. Protect in place.
2. Provide minor horizontal relocation within four feet of existing location.
3. Box, or ball and burlap, possible offsite storage for re-installation at a new location.

Once the preliminary street section is finalized and the planter configurations are determined, best management practices (BMP's) for tree protection, moving, and relocation shall be designed and specified.

The shrub palette selections should supplement and augment the Mediterranean street tree theme. Shrubs with dramatic architectural form such as Flax, Agave and other forms will enhance the street tree theme, reduce water consumption and have lower maintenance requirements. Using colored, stabilized decomposed granite, rounded pea sized gravel, and shredded bark are all excellent ground cover choices that do not require irrigation, and are easily maintained and replenished.

RAPPOPORT
Development Consulting Services LLC

Recommendations

1. Remove all of the existing street trees in the median and right of way planters with the exception of the Mexican Fan Palm.

2. Preserve the Mexican Fan Palms for reuse in the landscape.

3. Select an informal drought tolerant Mediterranean theme landscape appropriate for local Chula Vista climate and environment and particularly for the topography and use of East Palomar Street.

4. Reduce or eliminate turf, use only for functional purposes.

5. Avoid planting trees in turf.

6. If turf must be used, install trees in planter areas separate from turf zones.

7. The Mexican Fan Palm may be planted in a formal on center planting or variable.

8. Supplemental palm plantings should be in grouped in drifts and clusters to simulate a natural appearance.

9. Use a drip or low volume irrigation system; avoid overhead spray irrigation except where turf is located.

10. Create improved drainage for all tree plantings through soil amending, grading, and local tree pit drainage devices.

11. Supplement the Mediterranean tree theme with appropriate drought tolerant compatible shrub understory planting.

12. Consider using colored stabilized decomposed granite, small rounded natural colored gravels and shredded bark products for ground cover planting.

13. Avoid selecting trees that have a growth form inconsistent with the restricted planter area widths.

14. Do not overwater drought tolerant trees and shrubs.

RAPPOPORT
Development Consulting Services LLC

Glossary

Brown trunk Height (BTH)	Term used to measure the height of palm trees from finish grade to the bottom of the canopy.
Cavity:	A hole or hollow formed in a tree trunk caused by an injury resulting in decay. Trees compartmentalize around wounds leaving a cavity.
Clean:	Pruning technique that removes dead and diseased branches to 2" in diameter.
Co-dominant:	A tree trunk with two equal sized trunks, neither trunk is dominant. Co-dominant trunks may have poor crotch angle and included bark.
Conk:	A fruiting body associated with a fungal pathogen. Conks typically signal an infection or decay.
Crotch angle:	Angle created where two trunks or limbs meet.
Crown:	The leaves, twigs, branches, and limbs form the tree crown.
Decay:	The process of wood cellulose tissue dying from disease in a tree usually caused by a pathogen.
Diameter at Breast Height (DBH)	Term used to measure a tree trunk diameter at 4.5' above finish grade.
Included bark:	The bark from two co-dominant trunks is forced inward created a weakened structural crotch angle.
Inflorescence:	The flowering stalk on a Mexican Fan Palm.
Reduction:	A pruning technique that removes live branches up to 6" in diameter, used to lower tree height or spread.
Root Collar:	The portion of a tree where the tree trunk and root system meet at the bottom of the tree.
Scaffold branch:	Main structural limbs attached to the tree trunk.

Tree Inventory:	A method for collecting, assessing, counting and cataloging tree asset information into a database.
Turf grass:	Ornamental ground cover known as grass or lawn.
Visual Observation:	Technique used to observe and inspect trees.

RAPPOPORT
Development Consulting Services LLC

Appendix A – Assumptions and Limiting Conditions

1. Any legal description, easement condition, boundaries lines, property lines, maps, field survey and documents provided to the consultant are assumed to be correct.

2. Good faith efforts and attempts were taken to obtain information and data from reliable sources. However, the consultant can neither guarantee nor be responsible for the accuracy of the information provided by others or lack thereof.

3. Loss or alteration of any part of this report invalidates the entire report.

4. Possession of this report or a copy thereof does not imply the right of publication or use for any purpose outside of this proceeding without expressed written consent of the consultant.

5. No part of the contents of this report or copy shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales or other media, without prior expressed written or verbal consent of the consultant particularly as to risk conclusions, identity of the consultant or any reference to any professional society or institute or to any initialed designation conferred upon the consultant as stated in his qualifications.

6. This report and values expressed herein represent the opinion of the consultant, and the consultant's fee is no way contingent upon the reporting of a specific value, stipulated results, and the occurrence of a subsequent event or other preconceived notion, value or figure.

7. Sketches, diagrams, charts and photographs in this report are intended as visual aids and are not drawn to scale and should not be construed as engineering or architectural reports or surveys.

8. Unless expressed otherwise: (1) information contained in this report covers only those items that were examined and reflects the condition of those items at the *time of the inspection*: and (2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing or coring, unless otherwise specified.

9. The tree inventory and recommendations are based on the quantities and condition of the trees inspected in August and September of 2012. There is no warranty or guarantee, expressed or implied that the tree recommendations will survive and flourish without consultant involvement throughout the design, construction and project maintenance.

RAPPOPORT
Development Consulting Services LLC

Appendix B – Certificate of Performance

I, Jeremy Rappoport, certify that:

I have personally inspected the tree(s) and property referred to in this report and have stated my findings accurately, the extent of the inspection services is stated in the attached report and the scope of the assignment.

I have no current or prospective interest in the trees or the property that is the subject of this report and no personal interest or bias with respect to the parties involved.

The analysis, opinions, and conclusions stated herein are my own and based on current scientific procedures, facts and industry accepted inventory techniques.

My analysis, opinions, and conclusions were developed and this report has been prepared according to commonly accepted arboriculture industry practices.

No one provided significant professional assistance to me.

My compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party nor upon the attainment of stipulated results, or the occurrences of any subsequent events.

I further certify that I am a good standing member of the International Society of Arboriculture (ISA), the Western Chapter of the ISA, the American Society of Consulting Arborists (ASCA), the Professional Tree Care Association of San Diego (PTCA), and the California Landscape Contractors Association (CLCA).

I have been involved in the field of Arboriculture, Horticulture and Landscape contracting and construction for over three decades.

_____
Jeremy Rappoport, President

_____
Date: November 14, 2012

Appendix C – City of Chula Vista Recommended Plant List

Appendix "A"

Recommended Plant Palette

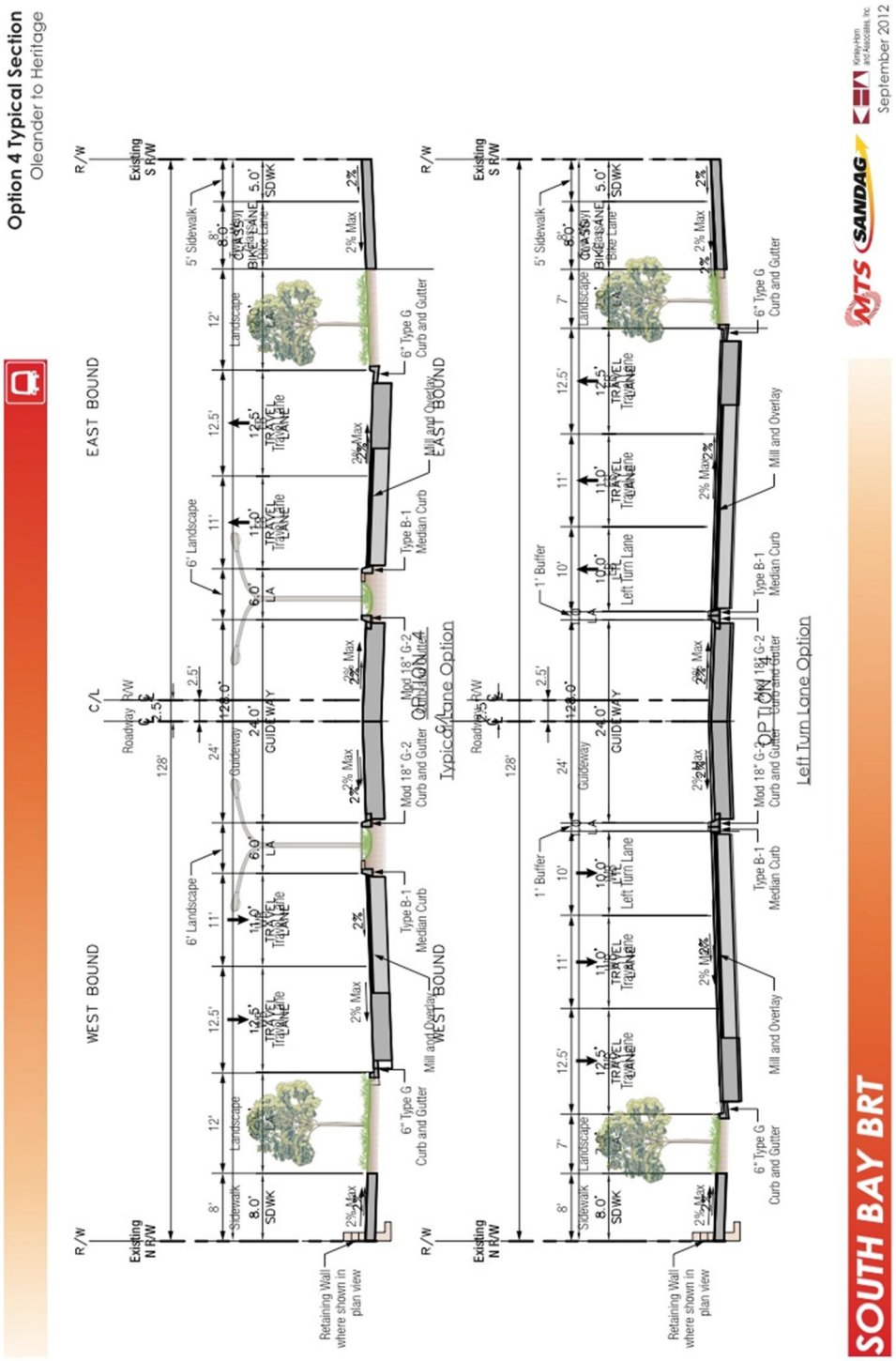
	Botanical Name	Common Name
TREES:		
	Acacia baileyana	Bailey's Acacia
	Aesculus californica	California Buckeye
	Albizia julibrissen	Silk Tree
	Alnus rhombifolia	White Alder
	Araucaria heterophylla	Norfolk Island Pine
	Arbutus unedo	Strawberry Tree
	Bauhinia variegata	Purple Orchid Tree
	Brachychiton populneus	Bottle Tree
	Callistemon viminalis	Weeping Bottlebrush
	Calocedrus decurrens	Incense Cedar
	Cassia leptophylla	Gold Medallion Tree
	Cedrus atlantica 'Glauca'	Atlas Cedar
	Cedrus deodora	Deodar Cedar
	Ceratonia siliqua	Carob Tree
	Cercidium floridum	Blue Palo Verde
	Cercis occidentalis	Western Red Bud
	Cinnamomum camphora	Camphor Tree
	Cupaniopsis anacardioides	Carrotwood
	Cupressus:	
	forbesii	Tecate Cypress
	sempervirens	Italian Cypress
	stephensonii	Cuyamaca Cypress
	Erythrina coralloides	Naked Coral Tree
	Eucalyptus:	
	citriodora	Lemon-Scented Gum
	ficifolia	Red-Flowering Gum
	lehmannii	Bushy Yate
	nicholii	Nichol's Willow-Leafed Peppermint
	polyanthemos	Silver Dollar Gum
	rudis	Desert Gum
	sideroxylon 'Rosea'	Red Ironbark
	Feijoa sellowiana	Pineapple Guava
	Ficus rubiginosa	Rustyleaf Fig
	Fraxinus oxycarpa 'Raywood'	Raywood Ash
	Geijera parviflora	Australian Willow
	Hymenosporum flavum	Sweetshade
	Jacaranda acutifolia	Jacaranda
	Juglans californica	California Walnut
	Koelreuteria:	
	bipinnata	Chinese Flame Tree
	paniculata	Goldenrain Tree
	Ligustrum lucidum	Glossy Privet
	Liquidambar styraciflua	Sweet Gum
	Lithocarpus densiflora	Tan-Oak

Botanical Name	Common Name
Lyonothamnus floribundus 'asplenifolius'	Fernleaf Catalina Ironwood
Magnolia grandiflora	Southern Magnolia
Melaleuca:	
linarifolia	Flaxleaf Paperbark
quinquenervia	Cajeput Tree
Metrosideros excelsus	New Zealand Christmas Tree
Olea europaea 'Fruitless'	Olive
Parkinsonia aculeata	Mexican Palo Verde
Pinus:	
canariensis	Canary Island Pine
halepensis	Aleppo Pine
pinea	Italian Stone Pine
torreyana	Torrey Pine
Pittosporum:	
rhombifolium	Queensland Pittosporum
undulatum	Victorian Box
Platanus:	
acerifolia	London Plane Tree
racemosa	California Sycamore
Podocarpus gracilior	Fern Pine
Populus fremontii	Fremont Cottonwood
Prunus:	
cerasifera 'Krauter Vesuvius'	Purple Leaf Plum
lyonii	Catalina Cherry
Psidium littorale	Strawberry Guava
Pyrus:	
calleryana'Bradford'	Ornamental Pear
kawakamii	Evergreen Pear
Quercus:	
agrifolia	Coast Live Oak
chrysolepis	Canyon Live Oak
engelmannii	Engelman Oak
ilex	Holly Oak
suber	Cork Oak
tomentella	Island Oak
Salix:	
gooddingii	Black Willow
hindsiana	Sandbar Willow
lasiolepis	Arroyo Willow
Sambucus mexicana	Mexican Elderberry
Schinus molle	California Pepper
Sequoia sempervirens	Coast Redwood
Tabebuia chrysotricha	Golden Trumpet Tree
Tipuana tipu	Tipu Tree
Tristania conferta	Brisbane Box
Umbellularia californica	California Laurel

	Botanical Name	Common Name
PALMS:		
	Archontophoenix cunninghamiana	King Palm
	Arecastrum romanzoffianum	Queen Palm
	Beaucarnea recurvata	Bottle Palm
	Brahea armata	Mexican Blue Palm
	Brahea edulis	Guadalupe Palm
	Butia capitata	Pindo Palm
	Chamaerops humilus	Mediterranean Fan Palm
	Cycas revoluta	Sago Palm
	Dracena draco	Dragon Tree
	Jubaea chilensis	Chilean Wine Palm
	Livistona chinensis	Chinese Fountain Palm
	Phoenix:	
	canariensis	Canary Island Date Palm
	dactylifera	Date Palm
	reclinata	Senegal Date Palm
	roebellenii	Pygmy Date Palm
	Trachycarpus fortuneii	Windmill Fan Palm
	Washingtonia:	
	filifera	California Fan Palm
	robusta	Mexican Fan Palm

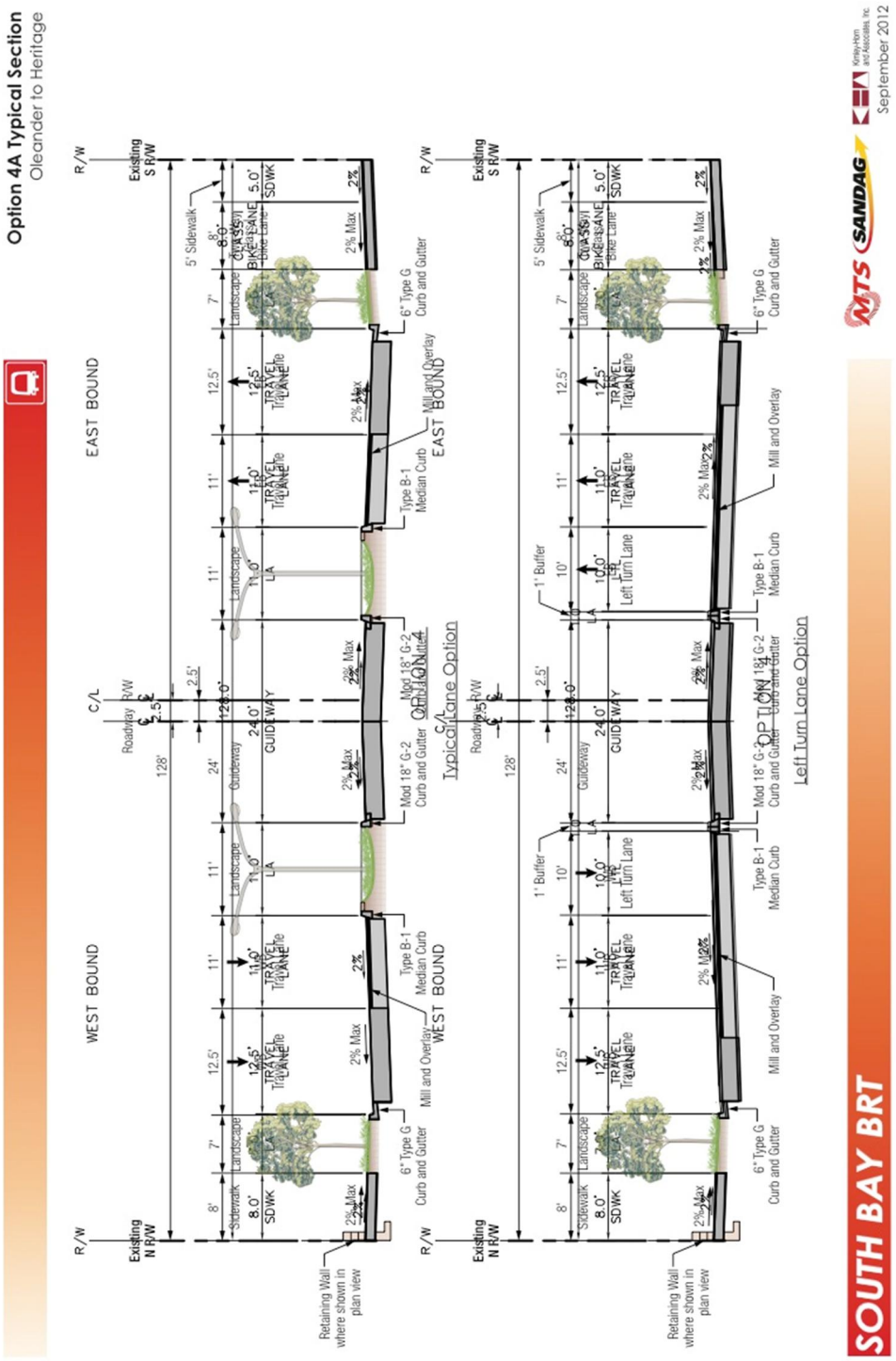
RAPPOPORT
Development Consulting Services LLC

Appendix D – Option 4, Typical Section Oleander to Heritage



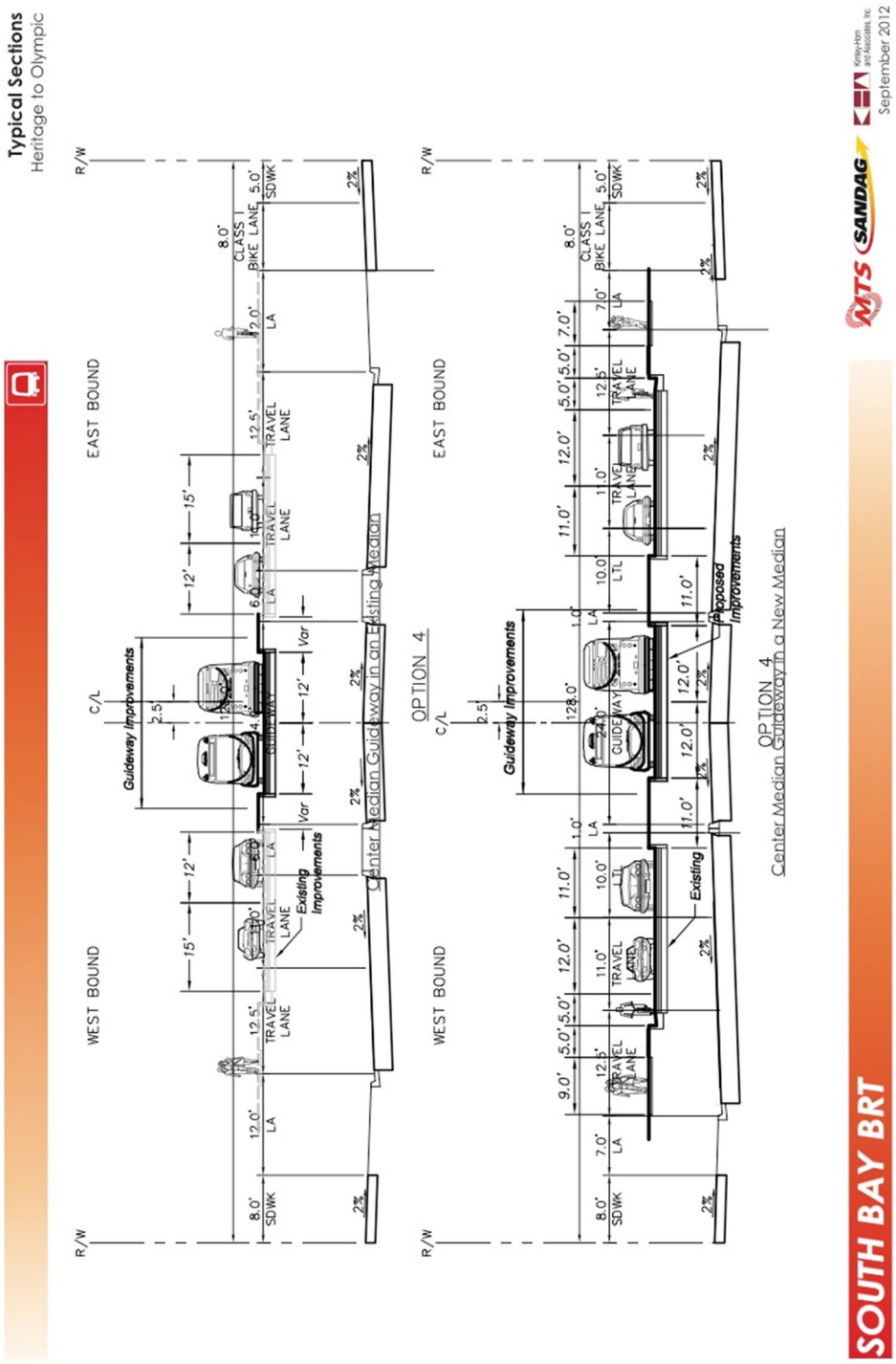
RAPPOPORT
Development Consulting Services LLC

Appendix E – Option 4A, Typical Section Oleander to Heritage



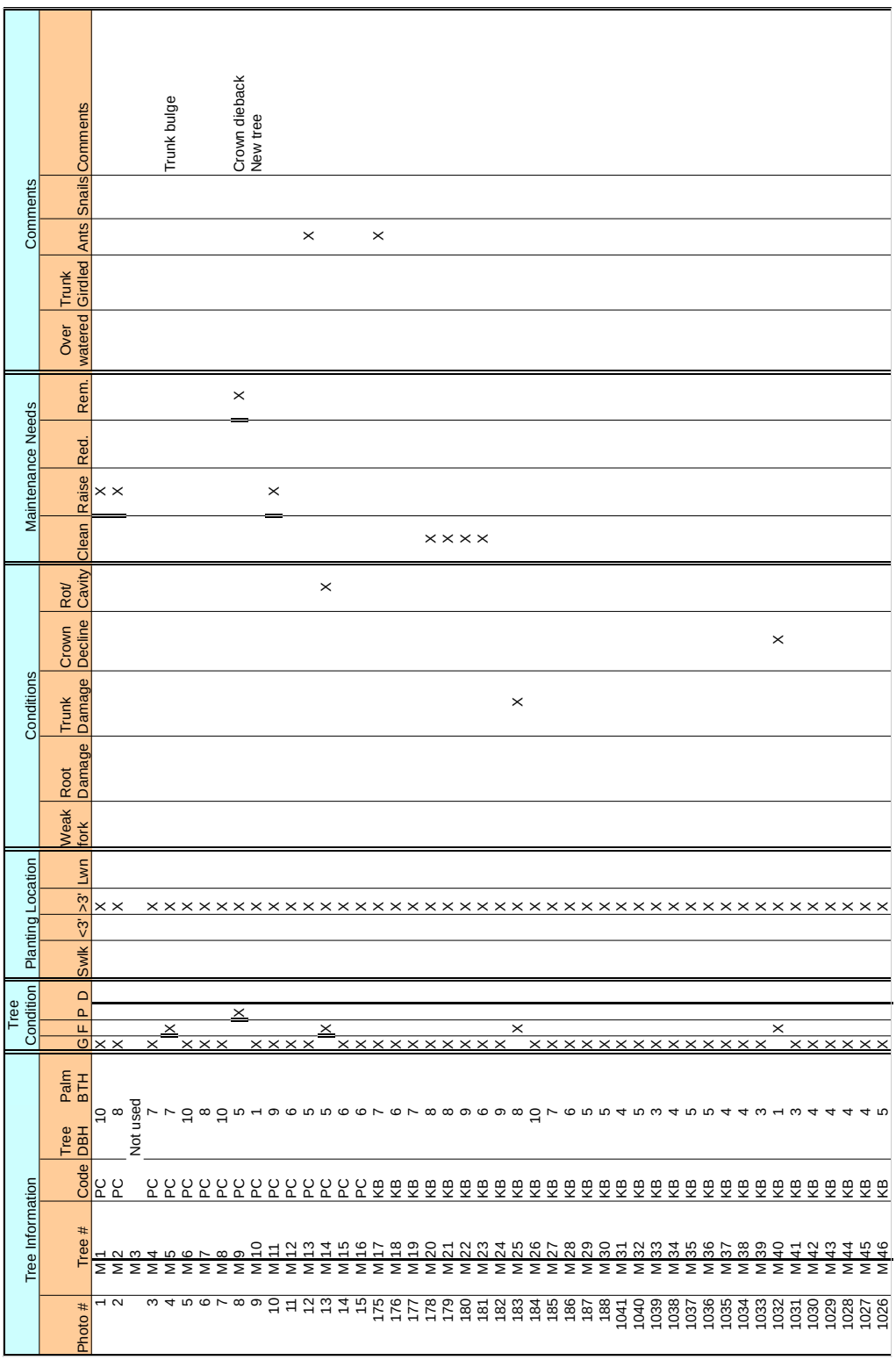
RAPPOPORT
Development Consulting Services LLC

Appendix F – Typical Section, Heritage Road to Olympic Parkway



RAPPOPORT
Development Consulting Services LLC

Appendix G – Palomar Tree Inventory



RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

2
11/14/12

Tree Information					Tree Condition			Planting Location			Conditions					Maintenance Needs				Comments			
Photo #	Tree #	Code	Tree DBH	Palm BTH	G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
1025	M 47	KB	5		X						X															
1024	M 48	KB	1			X					X			X	X											
1023	M 49	KB	6		X						X															
1022	M 50	KB	4		X						X															
1021	M 51	KB	5		X						X															
1020	M 52	KB	7		X						X															
1019	M 53	EF	7		X						X															
1018	M 54	EF	11		X						X															Lean
1017	M 55	EF	8		X						X															
1016	M 56	EF	7		X						X															
1015	M 57	EF	8		X						X															
1014	M 58	EF	1		X						X															
1013	M 59	EF	8		X						X															
1012	M 60	EF	7		X						X															
1011	M 61	EF	10		X						X															
1010	M 62	EF	1			X					X															
1009	M 63	EF	9		X						X															
1008	M 64	EF	10		X						X															
1007	M 65	EF	4		X						X															
1006	M 66	EF	12		X						X															
1005	M 67	EF	1		X						X															
1004	M 68		Not Used																							
1003	M 69	EF	8		X						X															
1002	M 70	EF	10		X						X															
1001	M 71	EF	14		X						X															
1000	M 72	EF	3		X						X															
999	M 73	EF	10		X						X															
991	M 74	EF	10		X						X															
992	M 75	EF	7			X					X											X				Lean, with cabling
993	M 76	EF	4			X					X											X				
994	M 77	EF	9		X						X											X				
995	M 78	EF	5			X					X					X						X				
996	M 79	EF	3			X					X					X						X				
997	M 80	EF	6			X					X			X		X						X				
998	M 81	EF	2			X					X					X						X				
945	M 82	EF	5			X					X			X		X						X				
944	M 83	PC	9		X						X					X						X				
943	M 84	PC	9		X						X					X						X				
942	M 85	PC	5		X						X					X						X				
941	M 86	PC	6		X						X					X						X				
940	M 87	PC	6		X						X					X						X				
946	M 88	PC	7		X						X					X						X				
947	M 89	WR	20		X					X		X						X								
948	M 90	PC	4		X					X		X			X									X		
949	M 91	WR	22		X					X		X						X								
	M 92	PC	6		X					X		X			X											

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

3
11/14/12

Photo #	Tree #	Code	Tree DBH	Palm BTH	Tree Condition G	F	P	D	Planting Location Swlk	<3'	>3'	Lwn	Conditions Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Maintenance Needs Clean	Raise	Red.	Rem.	Comments Over watered	Trunk Girdled	Ants	Snails	Comments
950	M 93	WR		22	X					X		X						X								
950	M 94	PC	6		X					X		X		X				X						X		
951	M 95	WR		23	X					X		X						X								
952	M 96	PC	3		X					X		X			X			X								
953	M 97	WR		23	X					X		X						X								
954	M 98	PC	3		X					X		X			X			X								
955	M 99	WR		21	X					X		X						X								
956	M 100	PC	1		X					X		X			X			X								
957	M 101	WR		22	X					X		X			Y			X								
958	M 102	PC	8		X					X		X						X						X		
959	M 103	WR		23	X					X		X						X								
960	M 104	WR		25	X					X		X						X								
961	M 105	PC	6		X					X		X			X			X								
962	M 106	WR		23	X					X		X						X								
963	M 107	PC	7		X					X		X						X						X		
964	M 108	WR		22	X					X		X						X								
965	M 109	PC	8		X					X		X						X						X		
966	M 110	WR		22	X					X		X						X								
967	M 111	PC	8		X					X		X			X			X								
968	M 112	WR		19	X					X		X						X								
969	M 113	PC	6		X					X		X			X			X								
970	M 114	WR		13	X					X		X						X								
971	M 115	PC	7		X					X		X						X						X		
972	M 116	WR		24	X					X		X						X								
973	M 117	PC	3			X				X		X		X	X			X								
974	M 118	WR		19	X					X		X						X								
975	M 119	WR		23	X					X		X						X								
976	M 120	PC	7		X					X		X						X						X		
977	M 121	WR		19	X					X		X						X								
978	M 122	PC	6		X					X		X						X								
979	M 123	WR		24	X					X		X						X								
980	M 124	PC	7		X					X		X			X		X	X								
981	M 125	WR		18	X					X		X						X								
982	M 126	PC	8		X					X		X			X			X						X		
983	M 127	WR		19	X					X		X						X								
984	M 128	PC	6		X					X		X						X								
985	M 129	WR		23	X					X		X						X								
986	M 130	PC	7		X					X		X			X			X								
987	M 131	WR		21	X					X		X						X								
988	M 132	PC	6		X					X		X			X			X								
989	M 133	WR		24	X					X		X						X								
990	M 134	WR		23	X					X		X						X								
816	M 135	PC	7		X					X		X			X		X	X						X		
817	M 136	WR		21	X					X		X						X								
818	M 137	PC	6		X					X		X			X			X								
819	M 138	WR		22	X					X		X						X								

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

4
11/14/12

Tree Information					Tree Condition			Planting Location				Conditions						Maintenance Needs				Comments			
Photo #	Tree #	Code	Tree DBH	Palm BTH	G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
820	M 139	PC		5	X					X		X			X			X						X		
821	M 140	WR		21	X					X		X						X								
822	M 141	PC			X					X		X						X								
823	M 142	WR	7	19	X					X		X						X								
824	M 143	PC			X					X		X						X								
825	M 144	WR	5		X					X		X						X								
826	M 145	PC		21	X					X		X						X								
827	M 146	WR	5		X					X		X						X								
828	M 147	PC		20	X					X		X						X								
829	M 148	WR	5		X					X		X			X			X						X		
830	M 149	PC		20	X					X		X						X								
831	M 150	WR	6		X					X		X						X								
832	M 151	PC	20		X					X		X						X								
833	M 152	WR	6		X					X		X						X								
834	M 153	PC		21	X					X		X						X								
835	M 154	WR	5		X					X		X			X			X								
836	M 155	PC		21	X					X		X						X								
837	M 156	WR	6		X					X		X						X								
838	M 157	PC		21	X					X		X			X			X						X		
839	M 158	WR	6		X					X		X						X								
840	M 159	PC		21	X					X		X						X								
841	M 160	WR	4		X					X		X			X			X						X		
842	M 161	PC		18	X					X		X						X								
843	M 162	WR	3		X		X			X		X			X			X						X		
844	M 163	PC		20	X					X		X						X								
845	M 164	WR	5		X					X		X			X			X						X		
846	M 165	PC		21	X					X		X						X								
847	M 166	WR	6		X					X		X			X			X						X		
848	M 167	PC		22	X					X		X						X								
849	M 168	WR	5		X					X		X			X			X						X		
850	M 169	PC		24	X					X		X						X								
851	M 170	WR	4		X					X		X						X								
852	M 171	PC		20	X					X		X						X								
853	M 172	WR	7		X					X		X						X								
854	M 173	PC		22	X					X		X						X								
855	M 174	PC	5			X				X		X			X			X						X		
856	M 175	WR	6		X					X		X						X								
857	M 176	PC		23	X					X		X			X			X						X		
858	M 177	WR	2		X					X		X						X								
859	M 178	PC		18		X				X		X						X								
860	M 179	WR	2		X					X		X						X								
861	M 180	PC		17	X					X		X			X			X								
862	M 181	WR	6		X					X		X						X								
863	M 182	PC		21	X					X		X						X								
864	M 183	WR	1		X					X		X						X								
865	M 184	PC	8	20	X					X		X						X						X		

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

5
11/14/12

Tree Information					Tree Condition			Planting Location			Conditions					Maintenance Needs				Comments			
Photo #	Tree #	Code	Tree DBH	Palm BTH	G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
866	M185	WR		18	X					X		X						X								
867	M186	PC	5		X					X		X						X						X		
868	M187	WR		21	X					X		X						X								
869	M188	PC	5		X					X		X						X						X		
870	M189	WR		22	X					X		X						X								
871	M190	PC	5		X					X		X						X								
872	M191	WR		23	X					X		X						X								
873	M192	PC	6		X					X		X			X			X								
874	M193	WR		23	X					X		X						X								
875	M194	PC	6		X					X		X						X						X		
876	M195	WR		24	X					X		X						X								
877	M196	PC	5		X					X		X						X								
878	M197	WR		21	X					X		X						X								
879	M198	PC	5		X					X		X			X			X								
880	M199	WR		23	X					X		X						X								
881	M200	PC	5		X					X		X						X								
882	M201	WR		17	X					X		X						X								
883	M202	PC	6		X					X		X						X						X		
884	M203	WR		20	X					X		X						X								
885	M204	PC	7		X					X		X						X								
886	M205	WR		24	X					X		X						X								
887	M206	PC	7		X					X		X						X						X		
888	M207	WR		20	X					X		X						X								
889	M208	PC	5		X					X		X			X			X								
890	M209	WR		18	X					X		X						X								
891	M210	PC	7		X					X		X			X			X						X		
892	M211	WR		21	X					X		X						X								
893	M212	PC	6		X					X		X			X			X								
894	M213	WR		21	X					X		X						X								
895	M214	PC	2		X					X		X			X			X								
896	M215	WR		21	X					X		X						X								
897	M216	PC	7		X					X		X						X						X		
898	M217	WR		17	X					X		X						X								
899	M218	PC	5		X					X		X			X			X						X		
900	M219	WR		21	X					X		X						X								
901	M220	PC	8		X					X		X			X			X						X		
902	M221	WR		22	X					X		X						X								
903	M222	WR		23	X					X		X						X								
904	M223	PC	5		X					X		X		X	X			X						X		
905	M224	WR		22	X					X		X						X								
906	M225	PC	5		X		X			X		X		X	X			X						X		
907	M226	WR		20	X					X		X						X								
908	M227	PC	7		X					X		X			X			X						X		
909	M228	WR		21	X					X		X						X								
910	M229	PC	7		X					X		X			X			X						X		
911	M230	WR		20	X					X		X						X								

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

6
11/14/12

Tree Information						Tree Condition				Planting Location				Conditions					Maintenance Needs				Comments				
Photo #	Tree #	Code	Tree DBH	Palm BTH		G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
912	M 231	PC	6			X					X		X						X						X		
913	M 232	WR		20		X					X		X						X						X		
914	M 233	PC					X				X		X		X	X											
915	M 234	WR		22		X					X		X						X						X		
916	M 235	PC	3			X					X		X						X						X		
917	M 236	WR		20		X					X		X						X								
918	M 237	WR		24		X					X		X						X								
919	M 238	PC	9			X					X		X						X						X		
920	M 239	WR		18		X					X		X						X						X		
921	M 240	PC	8			X					X		X						X						X		
922	M 241	WR		23		X					X		X						X								
923	M 242	PC	9			X					X		X						X						X		
924	M 243	WR		23		X					X		X						X								
925	M 244	PC	8			X					X		X						X								
926	M 245	WR		19		X					X		X						X								
927	M 246	PC	7			X					X		X						X						X		
928	M 247	WR		23		X					X		X						X								
929	M 248	PC	2			X					X		X			X			X								
930	M 249	WR		23		X					X		X						X								
931	M 250	PC	9			X					X		X						X	X							
932	M 251	WR		20		X					X		X						X								
933	M 252	WR		26		X					X		X						X								
934	M 253	PC	6						X				X						X			X					
935	M 254	WR		23		X					X		X						X								
936	M 255	PC	7			X					X		X			X			X						X		
937	M 256	WR		23		X					X		X						X								
938	M 257	PC	3			X					X		X			X			X						X		
939	M 258	WR		25		X					X		X						X								
1042	M 259	WR		20		X						X	X						X								
1043	M 260	PC	7				X					X	X				X		X								
1044	M 261	WR		21		X						X	X						X								
1045	M 262	PC	4			X						X	X			X			X								
1046	M 263	WR		23		X						X	X						X								
1047	M 264	PC	1			X						X	X						X								
1048	M 265	WR		23		X						X	X						X								
1049	M 266	PC	6			X						X	X			X			X								
1050	M 267	WR		19		X						X	X						X								
1051	M 268	PC	5			X						X	X			X			X								
1052	M 269	WR		23		X						X	X						X								
1053	M 270	PC	8			X						X	X						X								
1054	M 271	WR		22		X						X	X						X								
1055	M 272	PC	6			X						X	X			X			X								
1056	M 273	WR		22		X						X	X						X								
1057	M 274	PC	2			X						X	X						X								
1058	M 275	WR		20		X						X	X						X								
1059	M 276	PC	7			X						X	X						X								

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

7
11/14/12

Tree Information					Tree Condition				Planting Location				Conditions					Maintenance Needs				Comments				
Photo #	Tree #	Code	Tree DBH	Palm BTH	G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
1060	M277	WR		20	X					X		X						X								
1061	M278	PC	8		X					X		X														
1062	M279	WR		24	X					X		X						X								
1063	M280	PC	5			X				X		X			X	X										
1064	M281	WR		17	X					X		X						X								
1065	M282	PC	5		X					X																
1066	M283	PC	5		X					X																
1067	M284	PC	5		X					X																
1068	M285	WR		25	X					X		X						X								
1069	M285A	WR		23	x					x		x						x								
1070	M286	PC	10		X					X		X						X								
1071	M287	WR		23	X					X		X						X								
1072	M288	PC	6		X					X		X			X											
1073	M289	WR		21	X					X		X						X								
1074	M290	PC	6		X					X		X														
1075	M291	WR		24	X					X		X						X								
1076	M292	PC	7		X					X		X			X											
1077	M293	WR		18	X						X	X						X								
1078	M294	PC	8		X						X	X						X								
1079	M295	WR		21	X						X	X														
1080	M296	PC	7		X						X	X						X								
1081	M297	WR		23	X						X	X						X								
1082	M298	WR		26	X						X	X						X								
1083	M299	PC	7		X						X	X														
1084	M300	WR		25	X						X	X						X								
1085	M301	PC	5			X					X	X				X										
1086	M302	WR		24	X						X	X						X								
1087	M303	PC	5			X					X	X			X											
1088	M304	WR		23	X						X	X						X								
1089	M305	PC	2		X						X	X			X											
1090	M306	WR		23	X						X	X						X								
1091	M307	WR		26	X						X	X						X								
1092	M308	PC	6			X					X	X			X											
1093	M309	WR		26	X						X	X						X								
1094	M310	PC	7		X						X	X														
1095	M311	WR		25	X						X	X						X								
1096	M312	PC	7		X						X	X														
1097	M313	WR		24	X						X	X						X								
1098	M314	PC	7		X						X	X			X											
1099	M315	WR		20	X						X	X						X								
1100	M316	PC	8			X					X	X														
1101	M317	WR		19	X						X	X						X								
1102	M318	PC	2		X						X	X						X								
1103	M319	WR		23	X						X	X						X								
1104	M320	PC	7		X						X	X			X											
1105	M321	WR		22	X						X	X						X								

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

8
11/14/12

Tree Information					Tree Condition			Planting Location				Conditions					Maintenance Needs				Comments				
Photo #	Tree #	Code	Tree DBH	Palm BTH	G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
1106	M 322	PC	3		X					X		X						X								
1107	M 323	WR		22	X					X		X														
1108	M 324	PC	6			X				X		X			X	X		X								
1109	M 325	WR		25	X					X		X														
1110	M 326	PC	8			X				X		X				X		X								
1111	M 327	WR		23	X					X		X														Lean
1112	M 328	PC	4			X				X		X		X				X								
1113	M 329	WR		17	X					X		X						X								
1114	M 330	PC	6		X					X																
1115	M 331	PC	7		X					X																
1116	M 332	PC	6		X					X																
1117	M 333	WR		26	X					X		X						X								
1118	M 334	WR		26	X					X		X						X								
1119	M 335	PC	6			X				X		X			X											
1120	M 336	WR		23	X					X		X						X								
1121	M 337	PC	4		X					X		X						X								
1122	M 338	WR		21	X					X		X						X								
1123	M 339	PC	8			X				X		X														
1124	M 340	WR		18	X					X		X						X								
1125	M 341	PC	7		X					X		X			X											
1126	M 342	WR		21	X					X		X						X								
1127	M 343	PC	6		X						X	X														Conk at base
1128	M 344	WR		23	X						X	X						X								
1129	M 345	PC	7		X						X	X						X								
1130	M 346	WR		21	X						X	X						X								
1131	M 347	PC	7			X					X	X						X								
1132	M 348	WR		18	X						X	X						X								
1133	M 349	WR		26	X						X	X						X								
1134	M 350	PC	5		X						X	X			X											
1135	M 351	WR		24	X						X	X						X								
1136	M 352	PC	7		X						X	X						X								
1137	M 353	WR		21	X						X	X						X								
1138	M 354	PC	7		X						X	X						X								
1139	M 355	WR		21	X						X	X						X								
1175	M 356	WR		18	X						X	X						X								
1176	M 357	PC	6			X					X	X				X								X		
1177	M 358	WR		16		X					X	X						X								
1178	M 359	PC	2		X						X	X			X			X								
1179	M 360	WR		18	X						X	X						X								
1180	M 361	PC	7		X						X	X						X								
1181	M 362	WR		18	X						X	X						X								
1182	M 363	PC	8		X						X	X						X								
1183	M 364	WR		20	X						X	X						X								
1184	M 365	PC	6		X						X	X						X								
1185	M 366	WR		17	X						X	X						X								
1186	M 367	PC	7		X						X	X						X								

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

9
11/14/12

Tree Information					Tree Condition			Planting Location				Conditions					Maintenance Needs				Comments				
Photo #	Tree #	Code	Tree DBH	Palm BTH	G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
1187	M368	WR		20	X						X	X						X								
1188	M369	WR		17	X					X		X						X								
1189	M370	PC	7		X					X		X			X											
1190	M371	WR		19	X					X		X						X								
1191	M372	PC	3		X					X		X														
1192	M373	WR		21	X					X		X						X								Conk at base
1193	M374	PC	5				X			X		X		X	X	X										
1194	M375	WR		21	X					X		X						X								
1195	M376	PC	1		X					X		X			X											
1196	M377	WR		19	X					X		X						X								
1197	M378	PC	7		X					X		X														
1198	M379	WR		18	X					X		X						X								
1199	M380	PC	8		X					X		X			X											
1200	M381	WR		22	X					X		X						X								
1201	M382	PC	6		X					X		X														
1202	M383	WR		22	X					X		X						X								
1203	M384	WR		19	X					X		X						X								
1204	M385	PC	6		X					X		X														
1205	M386	WR		24	X					X		X						X								
1206	M387	PC	5				X			X		X														
1207	M388	WR		24	X				X			X						X								
1208	M389	PC	4		X				X			X														
1209	M390	WR		23	X				X			X						X								
1140	M391	WR		20	X				X			X						X								
1141	M392	PC	7				X		X			X			X											
1142	M393	WR		18	X				X			X						X								
1143	M394	PC	7		X				X			X												X		
1144	M395	WR		17	X				X			X						X								
1145	M396	PC	6				X		X			X		X		X										Conk at base
1146	M397	WR		19	X				X			X						X								
1147	M398	PC	8		X				X			X														
1148	M399	WR		20	X				X			X						X								
1149	M400	PC	7		X				X			X														
1150	M401	WR		19	X				X			X						X								
1151	M402	PC	5		X				X			X														
1152	M403	WR		20	X				X			X						X								
1153	M404	PC	6		X				X			X			X											
1154	M405	WR		17	X				X			X						X								
1155	M406	WR		20	X				X			X						X								
1156	M407	PC	3		X				X			X			X											
1157	M408	WR		21	X				X			X						X								
1158	M409	PC	8		X				X			X			X											
1159	M410	WR		16	X				X			X						X								
1160	M411	PC	6		X				X			X														
1161	M412	WR		17	X				X		X	X						X								
1162	M413	PC	4		X		X				X	X		X		X										

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

10
11/14/12

Tree Information					Tree Condition			Planting Location				Conditions					Maintenance Needs				Comments				
Photo #	Tree #	Code	Tree DBH	Palm BTH	G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
1163	M 414	WR		19	X					X	X	X						X								
1164	M 415	PC			X					X	X	X														
1165	M 416	WR	5		X					X	X	X						X								
1166	M 417	PC		19	X					X	X	X														
1167	M 418	WR	5		X					X	X	X						X								
1168	M 419	PC		22	X					X		X						X								
1169	M 420	WR	8		X					X		X						X								
1170	M 421	WR		23	X					X		X						X								
1171	M 422	PC		24	X					X		X						X								
1172	M 423	PC	9		X					X		X						X								
1173	M 424	PC		17	X					X		X														
1174	M 425	WR	6		X					X		X						X								
1290	M 426	WR		19	X					X	X	X						X								
1291	M 427	PC		20	X					X		X						X								
1292	M 428	WR	6		X					X		X		X												
1293	M 429	PC		17	X					X		X						X								
1294	M 430	WR	6		X					X		X						X								
1295	M 431	PC		17	X					X		X														
1296	M 432	WR	7		X					X		X			X			X								
1297	M 433	PC		22	X					X		X						X								
1298	M 434	WR	5		X					X		X						X								
1299	M 435	PC		23	X					X		X						X								
1300	M 436	WR	6		X					X		X						X								
1301	M 437	PC		22	X					X		X						X								
1302	M 438	WR	6		X					X		X						X								
1303	M 439	PC		24	X					X		X						X								
1304	M 440	WR	7		X					X		X						X								
1305	M 441	WR		21	X					X		X						X								
1306	M 442	PC		25	X					X		X						X								
1307	M 443	WR	6		X					X		X						X								
1308	M 444	PC		19	X					X		X						X								
1309	M 445	WR	6		X					X		X						X								
1310	M 446	PC		21	X					X		X						X								
1311	M 447	WR	7		X					X		X						X								
1312	M 448	PC		20	X					X		X						X								
1313	M 449	WR	6		X					X		X						X								
1314	M 450	PC		23	X					X		X						X								
1315	M 451	WR	7		X					X		X						X								
1316	M 452	PC		23	X					X		X						X								
1317	M 453	WR	7		X					X		X						X								
1318	M 454	PC		23	X					X		X						X								
1319	M 455	WR	5		X					X		X						X								
1320	M 456	WR		22	X					X		X						X								
1321	M 457	PC		22	X					X		X						X								
1322	M 458	WR	6		X					X		X						X								
1323	M 459	PC	5	19	X					X		X						X								

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

11
11/14/12

Tree Information						Tree Condition			Planting Location				Conditions					Maintenance Needs				Comments			
Photo #	Tree #	Code	Tree DBH	Palm BTH	G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
1324	M 460	WR		23	X					X		X						X								
1325	M 461	PC	5		X					X		X			X											
1326	M 462	WR		22	X					X		X						X								
1327	M 463	PC	5		X					X		X		X	X											
1328	M 464	WR		20	X					X		X						X								
1329	M 465	PC	9		X					X		X						X								
1330	M 466	WR		20	X					X		X						X								
1331	M 467	PC	5		X					X		X						X								
1332	M 468	WR		24	X					X		X						X								
1333	M 469	PC	7		X					X		X			X			X								
1334	M 470	WR		20	X					X		X						X								
1335	M 471	WR		26	X					X		X						X								
1336	M 472	PC	7		X					X		X			X											
1337	M 473	WR		23	X					X		X						X								
1338	M 474	PC	8		X					X		X			X			X								
1339	M 475	WR		23	X					X		X						X								
1340	M 476	PC	6		X					X		X			X			X								
1341	M 477	WR		20	X					X		X						X								
1342	M 478	PC	4		X		X			X		X			X			X								
1343	M 479	WR		23	X					X		X						X								
1344	M 480	PC	7		X					X		X			X			X								
1345	M 481	WR		21	X					X		X						X								
1346	M 482	PC	8		X		X			X		X						X								
1347	M 483	WR		20	X					X		X						X								
1348	M 484	PC	7		X					X		X						X								
1349	M 485	WR		26	X					X		X						X								
1350	M 486	WR		25	X					X		X						X								
1351	M 487	PC	5				X			X		X			X											
1352	M 488	WR		23	X					X		X						X								
1353	M 489	PC	4				X			X		X														
1354	M 490	WR		21	X					X		X						X								
1355	M 491	PC	4				X			X		X			X											
1356	M 492	WR		24	X					X		X						X								
1357	M 493	PC	5		X					X		X						X								
1358	M 494	WR		21	X					X		X						X								
1359	M 495	PC	5		X					X		X						X								
1360	M 496	WR		23	X					X		X						X								
1361	M 497	PC	6		X					X		X			X			X								
1362	M 498	WR		22	X					X		X						X								
1363	M 499	PC	5		X					X		X						X								
1364	M 500	WR		23	X					X		X						X								
1365	M 501	WR		22	X					X		X						X								
1366	M 502	PC	7		X						X	X						X								
1367	M 503	WR		19	X						X	X						X								
1368	M 504	PC	5		X						X	X						X								
1369	M 505	WR		23	X						X	X						X								

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

12
11/14/12

Tree Information				Tree Condition			Planting Location				Conditions					Maintenance Needs				Comments				
Photo #	Tree #	Code	Tree DBH	Palm BTH	G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
1210	M 506	WR		21	X					X	X	X						X								
1211	M 507	PC	7		X					X	X	X						X								
1212	M 508	WR		21	X						X	X						X								
1213	M 509	PC	7		X						X	X						X								
1214	M 510	WR		23	X					X		X						X								
1215	M 511	PC	6		X					X		X			X											
1216	M 512	WR		22	X					X		X						X								
1217	M 513	PC	6		X					X		X						X								
1218	M 514	WR		23	X					X		X						X								
1219	M 515	PC	5		X					X		X						X								
1220	M 516	WR		21	X					X		X						X								
1221	M 517	PC	5		X					X		X						X								
1222	M 518	WR		23	X					X		X						X								
1223	M 519	WR		19	X					X		X						X								
1224	M 520	PC	6		X					X		X						X								
1225	M 521	WR		19	X					X		X						X								
1226	M 522	PC	5		X		X			X		X			X	X		X								
1227	M 523	WR		19	X					X		X						X								
1228	M 524	PC	6		X					X		X						X								
1229	M 525	WR		20	X					X		X						X								
1230	M 526	PC	7		X					X		X			X			X								
1231	M 527	WR		21	X					X		X						X								
1232	M 528	PC	6		X					X		X						X								
1233	M 529	WR		22	X					X		X						X								
1234	M 530	PC	6		X					X		X			X			X								
1235	M 531	WR		20	X					X		X						X								
1236	M 532	PC	6		X					X		X						X								
1237	M 533	WR		22	X					X		X						X								
1238	M 534	WR		23	X					X		X						X								
1239	M 535	PC	7		X					X		X						X						X		
1240	M 536	WR		22	X					X		X						X								
1241	M 537	PC	4		X					X		X			X			X								
1242	M 538	WR		23	X					X		X						X								
1243	M 539	PC	9		X					X		X						X						X		
1244	M 540	WR		19	X					X		X						X								
1245	M 541	PC	6		X					X		X						X								
1246	M 542	WR		22	X					X		X						X								
1247	M 543	PC	6		X					X		X			X			X								
1248	M 544	WR		21	X					X		X						X								
1249	M 545	PC	5		X		X			X		X						X								
1250	M 546	WR		21	X					X		X						X								
1251	M 547	PC	5		X		X			X		X			X			X								
1252	M 548	WR		22	X					X		X						X								
1253	M 549	WR		23	X					X		X						X								
1254	M 550	PC	8		X					X		X		X				X						X		
1255	M 551	WR		21	X					X		X						X								

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

13
11/14/12

Tree Information					Tree Condition			Planting Location				Conditions				Maintenance Needs				Comments			
Photo #	Tree #	Code	Tree DBH	Palm BTH	G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
1256	M 552	PC		6	X					X		X					X									
1257	M 553	WR		21	X					X		X						X								
1258	M 554	PC			X					X		X														
1259	M 555	WR		6	X					X		X						X								
1260	M 556	PC		21	X					X		X														
1261	M 557	WR		5	X					X		X			X			X								
1262	M 558	PC		22	X					X		X														
1263	M 559	WR		5	X					X		X						X								
1264	M 560	PC		20	X					X		X														
1265	M 561	WR		6	X					X		X						X								
1266	M 562	PC		23	X					X		X														
1267	M 563	WR		6	X					X		X			X			X								
1268	M 564	WR		22	X					X		X						X								
1269	M 565	PC		22	X					X		X						X								
1270	M 566	WR		6	X					X		X						X								
1271	M 567	PC		20	X					X		X														
1272	M 568	WR		5	X					X		X						X								
1273	M 569	PC		20	X					X		X														
1274	M 570	WR		6	X					X		X			X			X								
1275	M 571	PC		19	X					X		X														
1276	M 572	WR		6	X					X		X			X			X								
1277	M 573	PC		22	X					X		X														
1278	M 574	WR		8	X					X		X						X								
1279	M 575	PC		23	X					X		X						X								
1280	M 576	WR		7	X					X		X		X	X			X								
1281	M 577	PC			X					X		X														
1282	M 578	WR		23	X					X		X						X								
1283	M 579	WR		24	X					X		X						X								
1284	M 580	PC		7	X					X		X														
1285	M 581	WR		21	X					X		X						X								
1286	M 582	PC		8	X					X		X						X								
1287	M 583	WR		19	X					X		X						X								
1288	M 584	PC		1	X					X		X			X											
1289	M 585	WR		21	X					X		X						X								
1370	M 586	WR		22	X					X		X						X								
1371	M 587	PC		9	X					X		X														
1372	M 588	WR		21	X					X		X						X								
1373	M 589	PC		7	X					X		X														
1374	M 590	WR		24	X					X		X				X		X								
1375	M 591	PC			X		X			X		X			X											
1376	M 592	WR		24	X					X		X				X		X								
1377	M 593	PC		6	X		X			X		X		X												
1378	M 594	WR		23	X					X		XI						X								
1379	M 595	PC		8	X					X		X			X											
1380	M 596	WR		22	X					X		X						X								
1381	M 597	PC		7	X						X	X			X											

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

14
11/14/12

Tree Information					Tree Condition			Planting Location				Conditions					Maintenance Needs				Comments				
Photo #	Tree #	Code	Tree DBH	Palm BTH	G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
1382	M 598	WR		25	X						X	X						X								
1383	M 599	PC	5		X					X	X	X			X			X								Trk damage at base
1384	M 600	WR		24	X					X		X			X			X								
1385	M 601	PC	6		X					X		X			X			X								
1386	M 602	WR		25	X					X		X						X								
1387	M 603	WR		25	X					X		X						X								
1388	M 604	PC	7		X					X		X						X								
1389	M 605	WR		25	X					X		X						X								
1390	M 606	PC	6		X					X		X						X								
1391	M 607	WR		23	X					X		X						X								
1392	M 608	PC	6		X					X		X						X								
1393	M 609	WR		22	X					X		X						X								
1394	M 610	PC	5		X					X		X						X								
1395	M 611	WR		22	X					X		X						X								
1396	M 612	PC	5		X					X		X			X			X								
1397	M 613	WR		24	X					X		X						X								
1398	M 614	PC	4		X						X	X		X				X								
1399	M 615	WR		25	X						X	X						X								
1400	M 616	WR		24	X						X	X						X								
1401	M 617	PC	3		X						X	X			X			X								
1402	M 618	WR		23	X						X	X						X								
1403	M 619	PC	7		X						X	X			X			X								
1404	M 620	WR		21	X						X	X						X								
1405	M 621	PC	6		X		X				X	X			X			X								
1406	M 622	WR		26	X						X	X				X		X								
1407	M 623	WR		26	X						X	X						X								
1408	M 624	PC	8		X		X				X	X			X			X								
1409	M 625	WR		23	X						X	X						X								
1410	M 626	PC	7		X						X	X						X						X		
1411	M 627	WR		19	X						X	X						X								
1412	M 628	PC	4		X						X	X														
1413	M 629	PC	8		X		X				X	X				X		X								
1414	M 630	WR		24	X						X	X						X								
1415	M 631	PC	5		X						X	X			X			X								
1416	M 632	WR		24	X						X	X						X								
1417	M 633	PC	7		X		X				X	X			X			X								
1418	M 634	WR		25	X						X	X						X								
1419	M 635	PC	3		X		X				X	X			X			X								
1420	M 636	WR		24	X						X	X				X		X								
1421	M 637	PC	8		X		X				X	X			X			X								
1422	M 638	WR		25	X						X	X						X								
1423	M 639	PC	6		X						X	X			X			X								
1424	M 640	WR		26	X						X	X						X								
1425	M 641	WR		26	X						X	X						X								
1426	M 642	PC	9		X						X	X			X			X								
1427	M 643	WR		24	X						X	X						X								

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

15
11/14/12

Tree Information					Tree Condition			Planting Location				Conditions					Maintenance Needs				Comments				
Photo #	Tree #	Code	Tree DBH	Palm BTH	G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
1428	M 644	PC		7	X						X	X			X			X								
1429	M 645	WR		24	X						X	X														
1430	M 646	PC	5			X					X	X			X	X										
1431	M 647	PC	4			X					X	X			X	X										
1432	M 648	WR		25	X						X	X						X								
1433	M 649	PC	6			X					X	X			X											
1434	M 650	WR		24	X						X	X						X								
1435	M 651	PC	7			X					X	X		X	X											Conks at base
1436	M 652	WR		23	X						X	X						X								
1437	M 653	PC	1			X					X	X														Thin trk, planted high
1438	M 654	WR		18		X					X	X			X			X								
1439	M 655	PC	4			X					X	X			X											
1440	M 656	WR		25	X						X	X						X								
1441	M 657	PC	4			X					X	X			X											
1442	M 658	WR		24	X						X	X						X								
1443	M 659	PC	8			X					X	X														
1444	M 660	WR		25	X						X	X						X								
1445	M 661	PC	10			X					X	X														
1446	M 662	WR		24	X						X	X						X								
1447	M 663	PC	10			X					X	X														
1448	M 664	WR		27	X						X	X						X								
1449	M 665	PC	7			X					X	X			X											
1450	M 666	PC	8			X					X	X			X											
1451	M 667	WR		23	X						X	X						X								
1452	M 668	PC	1			X					X	X														
1453	M 669	WR		21	X						X	X						X								
1454	M 670	PC	7			X					X	X			X	X										
1455	M 671	WR		23	X						X	X						X								
1456	M 672	PC	9			X					X	X														
1457	M 673	WR		21	X						X	X						X								
1458	M 674	PC	8			X					X	X														
1459	M 675	WR		26	X						X	X						X								
1460	M 676	PC	6			X					X	X			X											
1461	M 677	WR		25	X						X	X						X								
1462	M 678	PC	8			X					X	X														
1463	M 679	WR		23	X						X	X						X								
1464	M 680	PC	8			X					X	X														
1465	M 681	WR		23	X						X	X						X								
1466	M 682	PC	7			X					X	X			X											
1467	M 683	WR		26	X						X	X						X								
1468	M 684	PC	6			X				X		X			X											
1469	M 685	WR		21	X					X		X						X								
1470	M 686	PC	4			X				X		X			X											
1471	M 687	WR		26	X					X		X						X								
1472	M 688	WR		27	X					X		X						X								
1473	M 689	PC	2		X					X		X			X											

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

16
11/14/12

Tree Information					Tree Condition			Planting Location				Conditions					Maintenance Needs				Comments				
Photo #	Tree #	Code	Tree DBH	Palm BTH	G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
1474	M 690	WR		23	X					X		X						X								
1475	M 691	PC	6		X					X		X						X								
1476	M 692	WR		23	X					X		X						X								
1477	M 693	PC	6		X					X		X						X								
1478	M 694	WR		24	X					X		X						X								
1479	M 695	PC	4				X				X	X		X	X	X		X								
1480	M 696	WR		27	X						X	X						X								
1481	M 697	PC	6			X					X	X						X								
1482	M 698	WR		25	X						X	X						X								
1483	M 699	PC	8		X						X	X						X								
1484	M 700	WR		23	X						X	X						X								
1485	M 701	WR		18	X					X		X						X								
1486	M 702	PC	6		X					X		X		X				X								
1487	M 703	WR		23	X					X		X						X								
1488	M 704	PC	6		X					X		X			X			X								
1489	M 705	WR		20	X					X		X						X								
1490	M 706	PC	6			X				X		X		X	X			X								
1491	M 707	WR		22	X					X		X						X								
1492	M 708	PC	6		X					X		X						X								
1493	M 709	WR		26	X					X		X	X					X								
1494	M 710	WR		23	X						X	X						X								
1495	M 711	WR		25	X						X	X						X								
1496	M 712	WR		24	X						X	X						X								
1497	M 713	WR		24	X						X	X						X								
1498	M 714	WR		25	X						X	X						X								
1499	M 715	WR		24	X						X	X						X								
1500	M 716	WR		25	X						X	X						X								
1501	M 717	WR		21	X						X	X						X								
1502	M 718	WR		25	X						X	X						X								
1503	M 719	WR		21	X						X	X						X								
1504	M 720	WR		21	X						X	X						X								
1505	M 721	WR		24	X						X	X						X								
1506	M 722	WR		22	X						X	X						X								
1507	M 723	WR		24	X						X	X						X								
1508	M 724	WR		23	X						X	X						X								
1509	M 725	WR		20	X						X	X						X								
1510	M 726	WR		23	X						X	X						X								
1511	M 727	WR		21	X						X	X						X								
1512	M 728	WR		24	X						X	X						X								
1513	M 729	WR		24	X						X	X						X								
1514	M 730	WR		21	X						X	X						X								
1515	M 731	WR		25	X						X	X						X								
1516	M 732	WR		25	X						X	X			X			X								
1517	M 733	WR		24	X						X	X						X								
1518	M 734	WR		26	X						X	X						X								
1519	M 735	WR		25	X						X	X						X								

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

17
11/14/12

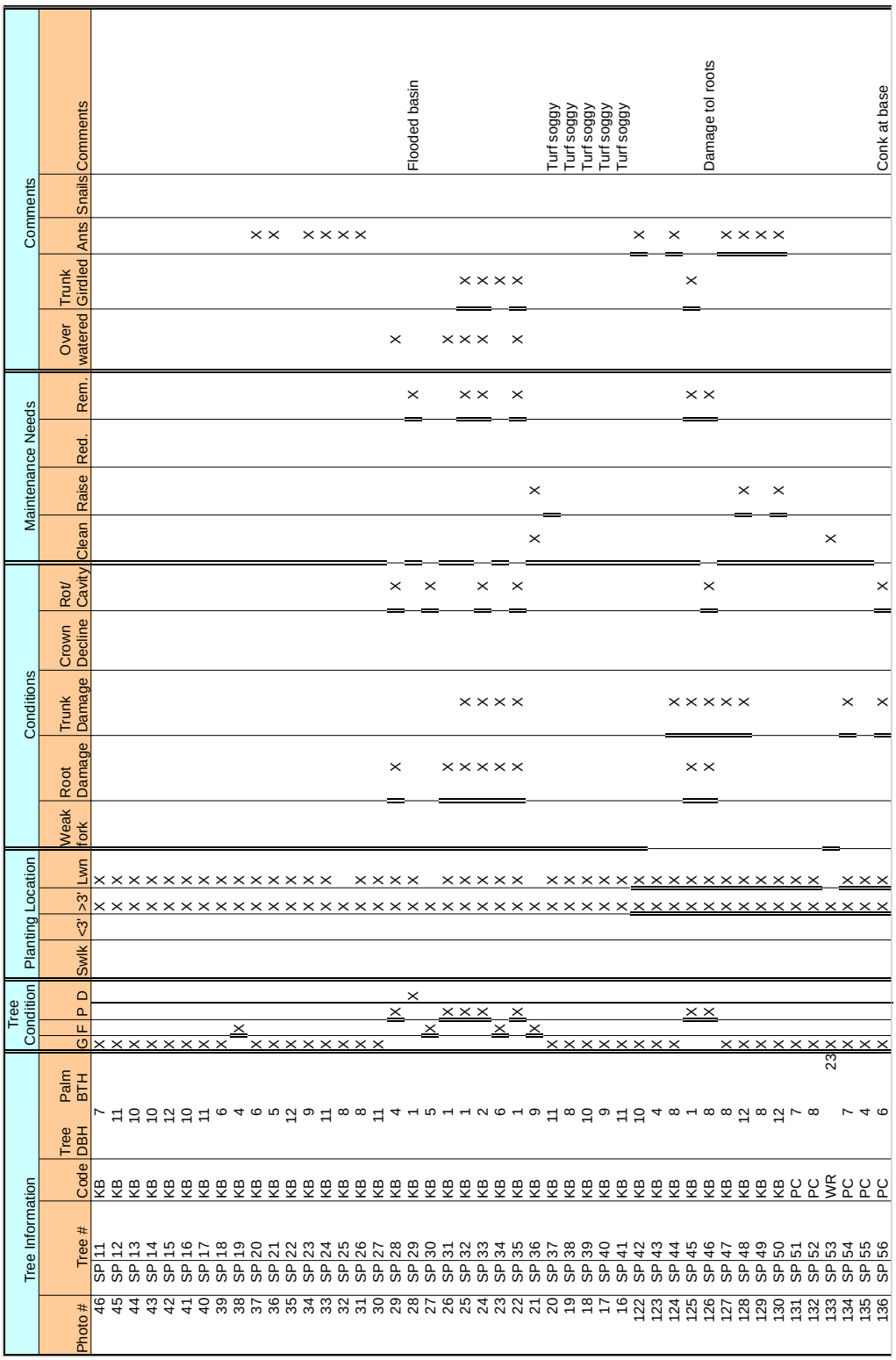
Tree Information					Tree Condition			Planting Location				Conditions					Maintenance Needs				Comments			
Photo #	Tree #	Code	Tree DBH	Palm BTH	G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
1520	M 736	WR		25	X						X	X						X								
1521	M 737	WR		25	X						X	X						X								
1522	M 738	WR		25	X						X	X						X								
1523	M 739	WR		21	X						X	X						X								
1524	M 740	WR		22	X						X	X						X								
1525	M 741	WR		23	X						X	X						X								
1526	M 742	WR		25	X						X	X						X								
1527	M 743	WR		19	X						X	X						X								
1528	M 744	WR		21	X						X	X						X								
1529	M 745	WR		26	X						X	X						X								
1530	M 746	WR		27	X						X	X						X								
1531	M 747	WR		27	X						X	X						X								
1532	M 748	WR		26	X						X	X						X								
1533	M 749	WR		23	X						X	X						X								
1534	M 750	WR		22	X						X	X						X								
1535	M 751	WR		21	X						X	X						X								
1536	M 752	WR		25	X						X	X						X								
1537	M 753	WR		21	X						X	X						X								
1538	M 754	WR		21	X						X	X						X								
1539	M 755	WR		21	X						X	X						X								
1540	M 756	WR		22	X						X	X						X								
1541	M 757	WR		21	X						X	X						X								
1542	M 758	WR		21	X						X	X						X								
1543	M 759	WR		20	X						X	X						X								
1544	M 760	WR		21	X						X	X						X								
1545	M 761	WR		20	X						X	X						X								
1546	M 762	WR		23	X						X	X						X								
1547	M 763	WR		23	X						X	X						X								
1548	M 764	WR		24	X						X	X						X								
1549	M 765	WR		27	X						X	X						X								
1550	M 766	WR		21	X						X	X						X								
1551	M 767	WR		23	X						X	X						X								
1552	M 768	WR		26	X						X	X						X								
1553	M 769	WR		26	X						X	X						X								
1554	M 770	WR		25	X						X	X						X								
56	SP 1	KB	8		X						X	X										1557				
55	SP 2	KB	7		X						X	X														
54	SP 3	KB	5		X						X	X												X		
53	SP 4	KB	4		X						X	X												X		
52	SP 5	KB	5		X						X	X														
51	SP 6	KB	6		X						X	X														
50	SP 7	KB	7		X						X	X														
49	SP 8	KB	3				X				X	X				X					X					
48	SP 9	KB	8				X				X	X					X									
47	SP 10	KB	7		X						X	X														

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

18
11/14/12



RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

19
11/14/12

Tree Information					Tree Condition			Planting Location					Conditions					Maintenance Needs				Comments				
Photo #	Tree #	Code	Tree DBH	Palm BTH	G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
137	SP 57	PC		2		X					X	X						X						X		
138	SP 58	WR	25		X						X	X														
139	SP 59	PC	5				X				X	X		X												Tree lean not correcting
140	SP 60	PC	7		X						X	X														
141	SP 61	PC	4				X				X	X		X	X											
142	SP 62	WR	23		X						X	X						X								
143	SP 63	PC	5								X	X														
144	SP 64	PC	6					X			X	X									X					Conk at base
145	SP 65	PC	3		X						X	X														
146	SP 66	PC	5		X						X	X														
147	SP 67	WR	23		X						X	X						X								
148	SP 68	PC	7		X						X	X														
149	SP 69	PC	8		X						X	X														
150	SP 70	PC	2		X						X	X			X											
151	SP 71	WR	23		X						X	X						X								
152	SP 72	PC	6		X						X	X														
153	SP 73	PC	5				X				X	X		X	X		X									Conk at base
154	SP 74	PC	7		X						X	X						X								
155	SP 75	WR	22		X						X	X														
156	SP 76	PC	7		X						X	X						X								
157	SP 77	PC	6		X						X	X														
158	SP 78	PC	3		X						X	X														
159	SP 79	WR	24		X						X	X						X								
160	SP 80	PC	7		X						X	X														
161	SP 81	PC	7		X						X	X														
229	SP 82	PC	3		X						X	X						X								
230	SP 83	PC	8		X						X	X														
231	SP 84	WR	23		X						X	X						X								
232	SP 85	PC	8		X						X	X														
233	SP 86	PC	8		X						X	X														
234	SP 87	WR	22		X						X	X						X								
235	SP 88	PC	8		X						X	X														
236	SP 89	PC	9		X						X	X														
237	SP 90	PC	6		X						X	X				X										
238	SP 91	WR	23		X						X	X						X								
239	SP 92	PC	5		X						X	X														
240	SP 93	PC	8		X						X	X														
241	SP 94	PC	8		X						X	X														
242	SP 95	WR	22		X						X	X						X								
243	SP 96	PC	7		X						X	X														
244	SP 97	PC	7		X						X	X														
245	SP 98	PC	8		X						X	X														
246	SP 99	WR	25		X						X	X						X								
247	SP 100	PC	6		X						X	X		X	X											Conks at base
248	SP 101	PC	8		X						X	X														
249	SP 102	PC	8		X						X	X														

Tree Information						Tree Condition				Planting Location				Conditions					Maintenance Needs				Comments				
Photo #	Tree #	Code	Tree DBH	Palm BTH		G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
250	SP 103	WR		24		X						X							X								
251	SP 104	PC	7			X						X	X														Conk at base
252	SP 105	PC	10			X						X	X														
253	SP 106	PC	9			X						X	X														
254	SP 107	WR		23		X						X							X								
255	SP 108	PC	9			X						X	X														
256	SP 109	PC	7			X						X	X														
257	SP 110	PC	8			X						X	X														
258	SP 111	PC	8			X						X	X														
259	SP 112	PC	8			X						X	X														
260	SP 113	PC	7			X						X	X														
261	SP 114	WR		22		X						X							X								
262	SP 115	PC	7			X						X	X														
263	SP 116	PC	7			X						X	X														
264	SP 117	PC	5			X						X	X			X										X	
265	SP 118	PC	1				X					X	X			X						X		X			
266	SP 119	WR		24		X						X							X								
267	SP 120	WR		26		X						X							X								
269	SP 121	PC	4			X						X	X														
270	SP 122	PC	1			X						X	X														
271	SP 123	WR	25			X						X							X								
272	SP 124	PC	6			X						X	X														
273	SP 125	PC	3					X				X	X		X	X	X					X					
274	SP 126	PC	4				X					X	X														Topped
275	SP 127	WR		24		X						X							X								
276	SP 128	PC	3			X						X	X														
277	SP 129	PC	4			X						X	X			X											
278	SP 130	PC	2			X						X	X														
279	SP 131	WR		24		X						X							X								
280	SP 132	PC	3			X						X	X			X											
281	SP 133	PC	3			X						X	X														
282	SP 134	PC	3				X					X	X			X											
283	SP 135	WR		25		X						X							X								
284	SP 136	PC	2				X					X	X			X	X										
285	SP 137	PC	2					X				X	X			X						X		X			
286	SP 138	PC	3				X					X	X			X											
287	SP 139	WR		22		X						X							X								
288	SP 140	PC	6			X						X	X														
289	SP 141	PC	4				X					X	X		X	X											Lean
290	SP 142	PC	2					X				X	X		X	X											Lean
291	SP 143	WR		23		X						X							X								
292	SP 144	PC	5			X						X	X														
293	SP 145	PC	6			X						X	X														
294	SP 146	PC	5			X						X	X														
295	SP 147	WR		23		X						X							X								
296	SP 148	PC	5			X						X	X			X											

1286 University Ave. #807 San Diego, CA. 92103

858-205-4748

www.landscapeexpertwitness.com

RAPPORT
Development Consulting Services LLC

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

21
11/14/12

Tree Information					Planting Location				Conditions					Maintenance Needs				Comments			
Photo #	Tree #	Code	Tree DBH	Palm BTH	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
297	SP 149	PC	1				X	X			X			X			X		X			
418	SP 147B	PG	8				X	X														
419	SP 148B	PG	10				X	X														
420	SP 150A	PC	4				X	X			X											
421	SP 150	PC	7				X	X														
422	SP 151	PC	7				X	X														
423	SP 152	WR		17			X	X						X								
424	SP 153	PC	4				X	X			X											
425	SP 154A	PC	5				X	X									X					
426	SP 154	PC	6				X	X														
427	SP 155	WR		17			X	X						X								
428	SP 156	PC	5				X	X														
429	SP 157	PC	2				X	X			X								X			
430	SP 158	PC	3				X	X			X								X			
431	SP 159	WR		15			X	X				X		X								
432	SP 160	PC	1				X	X														
433	SP 161	PC	1				X	X			X											
434	SP 162	PC	1				X	X			X											
435	SP 163	WR		18			X	X						X								
436	SP 164	PC	5				X	X														
437	SP 165	PC	5				X	X			X											
438	SP 166	PC	5				X	X														
439	SP 167	WR		24			X	X						X								
440	SP 168	PC	7				X	X														
441	SP 169	PC	3				X	X			X		X				X					
442	SP 170	PC	4				X	X			X			X						X		
443	SP 171	WR		20			X	X														
444	SP 172	PC	1				X	X			X			X								
445	SP 173	PC	1				X	X			X								X			
446	SP 174	PC	1				X	X			X								X			
447	SP 175	WR		21			X	X						X								
448	SP 176	PC	6				X	X														
449	SP 177	PC	4				X	X														
450	SP 178	PC	3				X	X														
451	SP 179	WR		21			X	X			X			X								
452	SP 180	PC	6				X	X														
453	SP 181	PC	6				X	X														
454	SP 182	PC	7				X	X														
455	SP 183	WR		23			X	X						X								
456	SP 184	PC	3				X	X														
457	SP 185	PC	3				X	X														
458	SP 186	PC	6				X	X			X											
459	SP 187	PC	6				X	X			X											
460	SP 188	PC	2				X	X			X											
461	SP 189	PC	1				X	X														
	SP 190		Not used																			

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

22
11/12/12

Tree Information					Tree Condition			Planting Location				Conditions						Maintenance Needs				Comments				
Photo #	Tree #	Code	Tree DBH	Palm BTH	G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
	SP 191		Not used																							
	SP 192		Not used																							
	SP 193		Not used																							
	SP 194		Not used																							
	SP 195		Not used																							
	SP 196		Not used																							
	SP 197		Not used																							
462	SP 200	PC	5		X						X	X												X		
463	SP 201	PC	6		X						X	X														
464	SP 202	PC	3		X						X														X	
465	SP 203	PC	4		X						X															
466	SP 204	PC	5		X						X	X														
467	SP 205	PC	2		X						X															
468	SP 206	PC	5		X						X	X														
469	SP 207	PC	6		X						X	X			X											
470	SP 208	PC	1		X						X															
471	SP 209	PC	4		X						X	X														Lean
472	SP 210	PC	4		X						X	X												X		
473	SP 211	PC	6		X						X	X														
474	SP 212	PC	4		X						X													X		
475	SP 213	PC	4		X						X	X														
476	SP 214	PC	6		X						X	X			X											
477	SP 215	PC	6		X						X	X														
478	SP 216	PC	3			X					X	X		X												
479	SP 217	PC	3		X						X															
480	SP 218	PC	5		X						X	X			X											
481	SP 219	PC	6		X						X	X														
482	SP 220	PC	3		X						X	X			X											Lean
483	SP 221	PC	3		X						X	X												X		
484	SP 222	PC	5		X						X															
485	SP 223	PC	7		X						X	X														
486	SP 224	PC	1		X						X													X		
487	SP 225	PC	5		X						X													X		
488	SP 226	PC	5			X					X	X		X									X			Basin flooded
489	SP 227	PC	5		X						X	X														
490	SP 228	PC	4		X						X															Lean
491	SP 229	PC	1		X						X															
492	SP 230	PC	5			X					X	X		X	X											Lean,
493	SP 231	PC	7		X						X	X														
494	SP 232	PC	3		X						X	X			X											
495	SP 233	PC	2		X						X	X														
496	SP 234	PC	5		X						X	X														
497	SP 235	PC	3		X						X	X														
498	SP 236	PC	6		X						X	X			X											
499	SP 237	PC	5		X						X	X														
500	SP 238	PC	1		X						X													X		

Tree Information						Tree Condition				Planting Location				Conditions					Maintenance Needs				Comments				
Photo #	Tree #	Code	Tree DBH	Palm BTH		G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
501	SP 239	PC	2			X						X														X	
502	SP 240	PC	1			X						X															
503	SP 241	PC	6			X						X	X			X											
504	SP 242	PC	5			X						X	X												X		
505	SP 243	PC	2			X						X													M		
506	SP 244	PC	2			X						X															
507	SP 245	PC	5			X						X	X														
508	SP 246	PC	4			X						X	X														
509	SP 247	PC	3			X						X															
510	SP 248	PC	1			X						X															
511	SP 249	PC	7			X						X	X												X		
512	SP 250	PC	1			X						X															
598	SP 251	PC	7			X						X															
599	SP 252	PC	1			X						X															
600	SP 253	PC	5			X						X															
601	SP 254	PC	1			X						X															
602	SP 255	PC	6			X						X															
603	SP 256	PC	5			X						X															
604	SP 257	PC	5			X						X															
605	SP 258	PC	5			X						X															
606	SP 259	PC	6				X					X	X			X											
607	SP 260	PC	6			X						X	X														
608	SP 261	PC	7			X						X	X														
609	SP 262	PC	1			X						X															
610	SP 263	PC	1			X						X															
611	SP 264	PC	6			X						X	X														
612	SP 265	PC	6			X						X	X														
613	SP 266	PC	1			X						X															
614	SP 267	PC	4			X						X															
615	SP 268	PC	6			X						X	X														
616	SP 269	PC	6			X						X	X														
617	SP 270	PC	5			X						X															
618	SP 271	PC	1			X						X															
619	SP 272	PC	5			X						X	X		X												
620	SP 273	PC	5			X						X	X														
621	SP 274	PC	1			X						X															
622	SP 275	PC	5			X						X				X											
623	SP 276	PC	5			X						X	X														
624	SP 277	PC	4			X						X	X														
625	SP 278	PC	1			X						X															
626	SP 279	PC	6			X						X															
627	SP 280	PC	5			X						X	X														
628	SP 281	PC	4			X						X	X		X	X											
629	SP 282	PC	4			X						X													X		
630	SP 283	PC	4			X						X													X		
631	SP 284	PC	5			X						X	X		X	X											

1286 University Ave. #807 San Diego, CA. 92103

858-205-4748

www.landscapeexpertwitness.com

RAPPORT
Development Consulting Services LLC

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

24
11/12/12

Photo #	Tree Information: Tree #	Code	Tree DBH	Palm BTH	Tree Condition: G	F	P	D	Planting Location: Swlk	<3'	>3'	Lwn	Conditions: Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Maintenance Needs: Clean	Raise	Red.	Rem.	Comments: Over watered	Trunk Girdled	Ants	Snails	Comments
632	SP 285	PC	3		X					X	X	X												X		
633	SP 286	PC	3		X					X	X	X												X		
634	SP 287	PC	5		X					X	X													X		
635	SP 288	PC	5		X					X	X													X		
636	SP 289	PC	7		X					X	X	X			X										X	
637	SP 290	PC	6		X					X	X															
638	SP 291	PC	1		X					X	X													X		
639	SP 292	PC	1		X					X	X													X	X	
640	SP 293	PC	7		X					X	X	X			X											
641	SP 294	PC	7		X					X	X	X			X											
642	SP 295	PC	2		X					X	X													X		
643	SP 296	PC	4		X					X	X													X		
644	SP 297	PC	5		X		X			X	X	X		X	X									X		
645	SP 298	PC	8		X					X	X	X												X		
646	SP 299	PC	4		X					X	X													X		
647	SP 300	PC	6		X					X	X	X												X		
648	SP 301	PC	5		X					X	X													X		
649	SP 302	PC	4		X		X			X	X			X	X	X								X		
650	SP 303	PC	5		X					X	X	X												X		
651	SP 304	PC	5		X					X	X	X												X		
652	SP 305	PC	5		X					X	X													X		
653	SP 306	PC	8		X					X	X	X												X		
654	SP 307	PC	8		X					X	X	X												X		
655	SP 308	PC	8		X					X	X													X		
656	SP 309	PC	7		X					X	X													X		
657	SP 310	PC	5		X					X	X													X		
658	SP 311	PC	8		X					X	X	X												X		
659	SP 312	PC	6		X					X	X	X												X		
660	SP 313	PC	1		X					X	X			X										X		
661	SP 314	PC	Removed		X		X			X	X	X									X			X		
662	SP 315	PC	1		X		X			X	X													X		
663	SP 316	PC	1		X					X	X	X												X		
664	SP 317	PC	7		X					X	X	X												X		
665	SP 318	PC	5		X					X	X				X									X		Mushrooms
666	SP 319	PC	5		X					X	X													X		
667	SP 320	PC	1		X					X	X				X	X								X		
668	SP 321	PC	5		X		X			X	X	X			X	X								X		
669	SP 322	PC	5		X					X	X	X			X	X								X		
670	SP 323	PC	5		X					X	X													X		
671	SP 324	PC	5		X		X			X	X	X			X									X		
672	SP 325	PC	6		X					X	X	X			X	X								X		
673	SP 326	PC	1		X		X			X	X					X								X		
674	SP 327	PC	4		X					X	X													X		
675	SP 328	PC	6		X					X	X	X												X		
676	SP 329	PC	5		X					X	X	X												X		
677	SP 330	PC	5		X					X	X				X									X		Fireblight

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

25
11/12/12

Photo #	Tree #	Code	Tree DBH	Palm BTH	Tree Condition G	F	P	D	Planting Location Swlk	<3'	>3'	Lwn	Conditions Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Maintenance Needs Clean	Raise	Red.	Rem.	Comments Over watered	Trunk Girdled	Ants	Snails	Comments
678	SP 331	PC	4		X						X			X												Lean over sidewalk
679	SP 332	PC	8		X						X	X			X											
680	SP 333	PC	7		X						X	X														
681	SP 334	PC	5		X						X				X											
682	SP 335	PC	5		X						X															
683	SP 336	PC	8		X						X	X														
684	SP 337	PC	7		X						X	X														
685	SP 338	PC	5		X						X															
686	SP 339	PC	6		X						X													X		
687	SP 340	PC	7		X						X	X														
688	SP 341	PC	5			X					X	X		X												Conk at base
689	SP 342	PC	7		X						X															
690	SP 343	PC	1		X						X	X														
691	SP 344	PC	7		X						X				X											
	SP 345		Not used																							
692	SP 346	PC	5		X						X															
693	SP 347	PC	8		X						X	X														
694	SP 348	PC	5		X						X	X														
695	SP 349	PC	7		X						X	X														
696	SP 350	PC	9		X						X	X														
697	SP 351	PC	6		X						X	X														
698	SP 352	PC	6		X						X	X														
699	SP 353	PC	6		X						X	X														
700	SP 354	PC	6		X						X	X														
701	SP 355	PC	5		X						X	X														
702	SP 356	PC	5		X						X	X			X											
703	SP 357	PC	1		X						X	X			X									X		Standing water
704	SP 358	PC	1		X						X	X			X									X		Standing water
705	SP 359	PC	5		X						X	X			X											
706	SP 360	PC	Removed		X			X			X	X														
707	SP 361	PC	7		X						X	X									X					Algae on ground
708	SP 362	PC	5			X					X	X			X						X					Standing water
709	SP 363	PC	6		X						X	X														
710	SP 364	PC	Removed					X			X	X														
711	SP 365	PC	7		X						X	X		X												Algae on ground
712	SP 366	PC	4			X					X	X														Standing water
713	SP 367	PC	2		X						X	X														
714	SP 368	PC	6		X						X	X														
715	SP 369	PC	4		X						X	X														
716	SP 370	PC	6		X						X	X														
717	SP 371	PC	5		X						X	X														
718	SP 372	PC	1		X						X	X														
719	SP 373	PC	4		X						X	X			X						X					Standing water
720	SP 374	PC	5		X						X	X														
721	SP 375	PC	5		X						X	X														
722	SP 376	PC	1		X						X	X														

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

26
11/12/12

Tree Information					Tree Condition			Planting Location				Conditions						Maintenance Needs				Comments				
Photo #	Tree #	Code	Tree DBH	Palm BTH	G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
723	SP 377	PC	3			X					X	X			X											Lean
724	SP 378	PC	5		X						X	X			X											
725	SP 379	PC	5		X						X											X				Standing water
726	SP 380	PC	3		X						X	X			X											
727	SP 381	PC	2			X					X				X											
728	SP 382	PC	6		X						X															
729	SP 383	PC	4		X						X															Standing water
730	SP 384	PC	8		X						X													X		
731	SP 385	PC	6		X						X													X		
732	SP 386	PC	6		X						X															
733	SP 387	PC	7					X			X										X					
734	SP 388	PC	7		X						X				X									X		
735	SP 389	PC	6		X						X															
736	SP 390	PC	5		X						X															
737	SP 391	PC	10		X						X															
738	SP 392	PC	6		X						X															
739	SP 393	PC	1		X						X				X											
740	SP 394	PC	5		X						X															
741	SP 395	PC	6		X						X															
742	SP 396	PC	2			X					X											X				Standing water
743	SP 397	PC	6		X						X													X		
744	SP 398	PC	5		X						X															
745	SP 399	PC	5		X						X				X											
746	SP 400	PC	5			X					X					X										Fireblight
747	SP 401	PC	1		X						X			X												
748	SP 402	PC	Removed					X			X					X										Fireblight
749	SP 403	PC	6			X					X															Fireblight
750	SP 404	PC	5			X					X															
751	SP 405	PC	5			X					X														X	
752	SP 406	PC	1				X				X															Fireblight
753	SP 407	PC	5		X						X													X		
754	SP 408	PC	5			X					X															Fireblight
755	SP 409	PC	5		X						X													X		
756	SP 410	PC	1		X						X															
58	NP 1	KB	5		X						X	X		X				X				X				
59	NP 2	KB	6		X						X	X		X	X							X	X			
60	NP 3	KB	3			X					X	X		X	X	X						X	X			Crossing limbs
61	NP 4	KB	2			X					X	X			X							X	X			Lean, root/soil failure
62	NP 5	KB	3		X						X	X			X											
63	NP 6	KB	3		X						X	X														Structure questionable
64	NP 7	KB	4			X					X	X	X	X								X	X			
65	NP 8	KB	3			X					X	X		X	X							X	X			
66	NP 9	KB	1		X						X	X			X						X					
67	NP 10	KB	4		X						X	X			X							X	X			

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

27
11/12/12

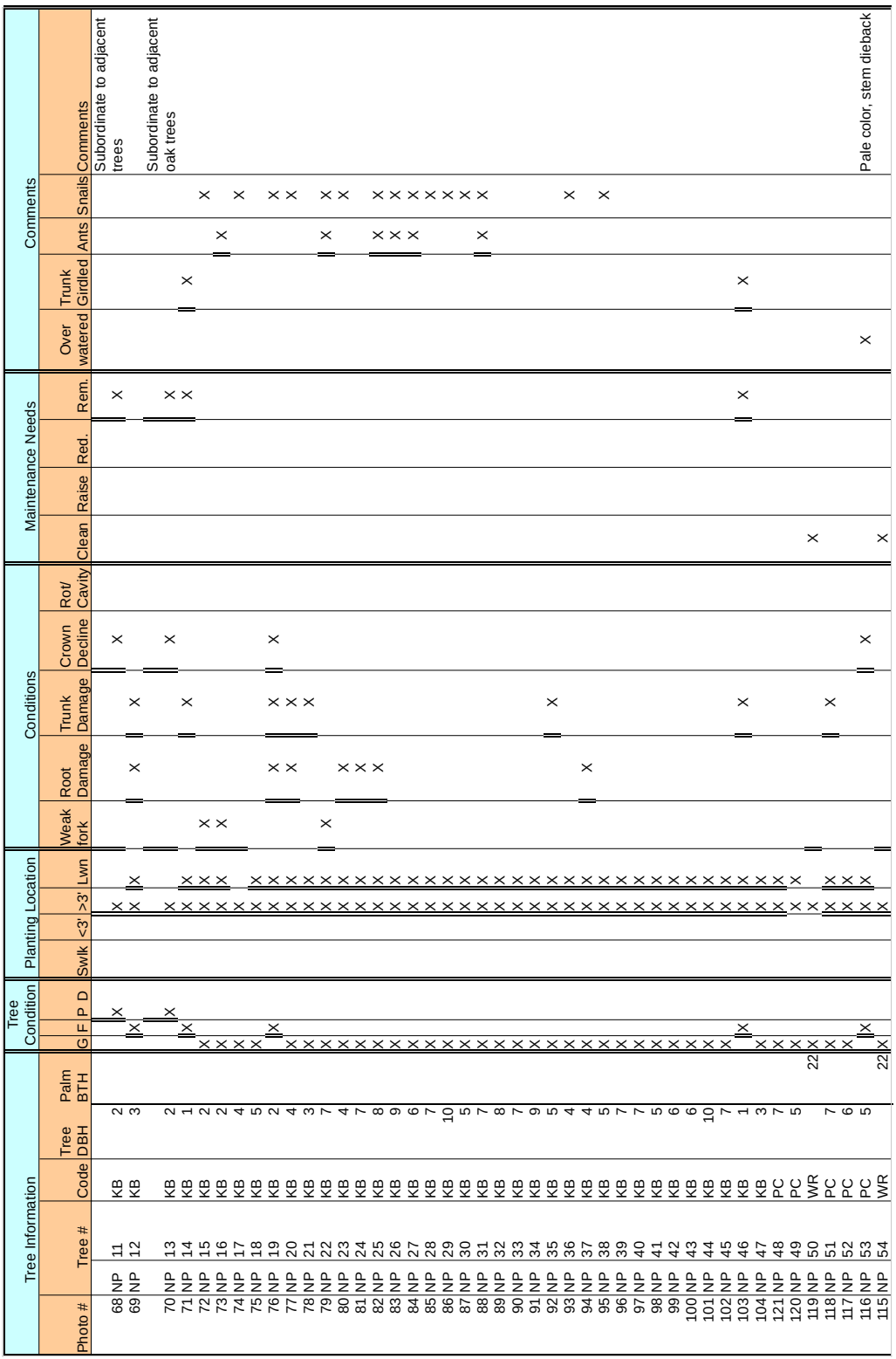


Photo #	Tree #	Code	Tree DBH	Palm BTH	Tree Condition G	F	P	D	Planting Location Swlk	<3'	>3'	Lwn	Conditions Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Maintenance Needs Clean	Raise	Red.	Rem.	Comments Over watered	Trunk Girdled	Ants	Snails	Comments
68 NP	11	KB	2			X				X	X			X		X					X					Subordinate to adjacent trees
69 NP	12	KB	3			X				X	X	X		X	X											
70 NP	13	KB	2				X				X					X					X					Subordinate to adjacent oak trees
71 NP	14	KB	1			X				X	X	X			X						X					
72 NP	15	KB	2		X					X	X	X	X								X			X		
73 NP	16	KB	2		X					X	X	X	X										X			
74 NP	17	KB	4		X					X	X															
75 NP	18	KB	5		X					X	X	X													X	
76 NP	19	KB	2			X				X	X	X		X	X	X									X	
77 NP	20	KB	4		X					X	X	X		X	X										X	
78 NP	21	KB	3		X					X	X	X			X										X	
79 NP	22	KB	7		X					X	X	X	X		X											
80 NP	23	KB	4		X					X	X	X		X												
81 NP	24	KB	7		X					X	X	X		X												
82 NP	25	KB	8		X					X	X	X		X												
83 NP	26	KB	9		X					X	X	X														
84 NP	27	KB	6		X					X	X	X														
85 NP	28	KB	7		X					X	X	X														
86 NP	29	KB	10		X					X	X	X														
87 NP	30	KB	5		X					X	X	X														
88 NP	31	KB	7		X					X	X	X														
89 NP	32	KB	8		X					X	X	X														
90 NP	33	KB	7		X					X	X	X														
91 NP	34	KB	9		X					X	X	X														
92 NP	35	KB	5		X					X	X	X			X											
93 NP	36	KB	4		X					X	X	X														
94 NP	37	KB	4		X					X	X	X		X												
95 NP	38	KB	5		X					X	X	X														
96 NP	39	KB	7		X					X	X	X														
97 NP	40	KB	7		X					X	X	X														
98 NP	41	KB	5		X					X	X	X														
99 NP	42	KB	6		X					X	X	X														
100 NP	43	KB	6		X					X	X	X														
101 NP	44	KB	10		X					X	X	X														
102 NP	45	KB	7		X					X	X	X														
103 NP	46	KB	1			X				X	X	X			X						X					
104 NP	47	KB	3		X					X	X	X														
121 NP	48	PC	7		X					X	X	X														
120 NP	49	PC	5		X					X	X	X														
119 NP	50	WR		22	X					X	X	X						X								
118 NP	51	PC	7		X					X	X	X			X											
117 NP	52	PC	6		X					X	X	X														
116 NP	53	PC	5			X				X	X	X				X						X				Pale color, stem dieback
115 NP	54	WR		22	X					X	X	X						X								

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

28
11/12/12

Tree Information						Tree Condition			Planting Location				Conditions						Maintenance Needs					Comments				
Photo #	Tree #	Code	Tree DBH	Palm BTH		G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
114	NP 55	PC	6			X						X	X			X	X						X				Pale color, stem dieback
113	NP 56	PC	5			X						X	X				X						X				
112	NP 57	PC	9				X					X	X														
111	NP 58	WR		22		X						X							X								
110	NP 59	PC	4			X						X	X			X							X				
109	NP 60	PC	8			X						X	X			X							X				Partial girdle
108	NP 61	PC	4			X						X	X			X							X				Conks at base
107	NP 62	PC	5			X						X	X														
106	NP 63	WR		22		X						X							X								
105	NP 64	PC	6			X						X	X										X				
162	NP 65	PC				X						X	X														
163	NP 66	WR		20		X						X							X								
164	NP 67	PC	4				X					X	X			X							X				
165	NP 68	WR		20		X						X							X								
166	NP 69	PK	6			X						X	X			X							X				
167	NP 70	WR		20		X						X							X								
168	NP 71	PK	5				X				X		X		X				X								
169	NP 72	WR		23		X					X		X			X			X								
170	NP 73	PK	4				X				X		X			X	X		X								
171	NP 74	WR		23		X					X		X						X								
172	NP 75	PK	4				X				X		X		X	X	X		X								
173	NP 76	WR		23		X					X								X								
174	NP 77	PK	5			X					X		X														
189	NP 78	PC	4			X					X		X			X								X			
190	NP 79	RL	6			X						X	X														
191	NP 80	PC	4			X					X		X			X											
192	NP 81	PC	5			X					X		X			X											
193	NP 82	WR		24		X						X							X								
194	NP 83	PC	5			X					X		X			X											
195	NP 84	PC	4			X					X		X			X											
196	NP 85	RL	2			X						X	X														
197	NP 86	PC	5			X					X		X														
199	NP 87	PC	4			X					X		X														
200	NP 88	WR		21		X						X							X								
201	NP 89	PC	5			X					X		X			X											
202	NP 90	PC	4			X					X		X			X											
203	NP 91	PC	3			X					X		X			X											
204	NP 92	PC	4			X					X		X			X											
205	NP 93	WR		21		X						X							X								
206	NP 94	PC	4			X					X		X			X											
207	NP 95	PC	4			X					X		X			X											
208	NP 96	WR		24		X						X							X								
209	NP 97	PC	4			X					X		X														
210	NP 98	PC	5			X					X		X														
211	NP 99	PC	5			X					X		X														
212	NP 100	PC	5			X					X		X			X											

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

29
11/12/12

Tree Information						Tree Condition			Planting Location				Conditions						Maintenance Needs				Comments				
Photo #	Tree #	Code	Tree DBH	Palm BTH		G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
213	NP 101	WR		22		X						X							X								
214	NP 102	PC	5			X					X		X		X	X											
215	NP 103	PC	4				X				X		X		X	X											
216	NP 104	PH	7			X					X																
217	NP 105	WR		21		X						X							X								
218	NP 106	PC	5			X					X		X			X											
219	NP 107	PC	5			X					X		X			X											
220	NP 108	PH	5			X						X															
221	NP 109	PC	5			X					X		X			X											
222	NP 110	PC	5			X					X		X			X											
223	NP 111	PC	5			X					X		X			X											
224	NP 112	RI	3			X						X															
225	NP 113	RI	3			X						X															
226	NP 114	PC	5			X					X		X			X											
227	NP 115	PC	5			X					X		X			X											
228	NP 116	RI	3			X						X															
298	NP 117	PG	8			X						X															
299	NP 118	PG	8			X						X															
300	NP 119	PC	5			X						X				X											
301	NP 120	WR	26			X						X															
302	NP 121	PC	6			X						X				X											
303	NP 122	PC	6			X						X															
304	NP 123	PC	5			X						X															
305	NP 124	WR		30		X						X															
306	NP 125	PC	6			X						X															
307	NP 126	PC	6			X						X															
308	NP 127	PC	8			X						X															
309	NP 128	WR		27		X						X															
310	NP 129	WR		22		X						X															
311	NP 130	PC	7			X						X				X								X			
312	NP 131	PC	6			X						X															
313	NP 132	PC	6			X						X															
314	NP 133	WR		30		X						X															
315	NP 134	PC	6			X						X															
316	NP 135	PC	5			X						X															
317	NP 136	WR		27		X						X															
318	NP 137	PC	5			X			X			X		X		X	X						X				Crown destroyed
319	NP 138	PC	5			X						X															
320	NP 139	PC	1				X					X				X								X			
321	NP 140	WR		26		X						X															
322	NP 141	PG	12			X						X															
323	NP 142	PG	6			X						X															
375	NP 143	PC	6			X						X															
376	NP 144	PC	3			X						X				X											
377	NP 145	PC	1				X					X															
378	NP 146	WR		21		X						X							X								

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

30
11/12/12

Tree Information					Tree Condition			Planting Location				Conditions					Maintenance Needs				Comments				
Photo #	Tree #	Code	Tree DBH	Palm BTH	G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
379	NP 147	PC	5		X						X	X			X									X		
380	NP 148	PC	7		X						X	X												X	X	
381	NP 149	PC	5			X					X	X		X										X		Lean, root damage
382	NP 150	WR	21		X						X	X						X								
383	NP 151	PC	4		X						X	X														
384	NP 152	PC	6		X						X	X												X		
385	NP 153	PC	6		X						X	X														
386	NP 154	WR		20		X					X	X			8			X								
387	NP 155	PC	5			X					X	X		X												
388	NP 156	PC	5				X				X	X						X								Lean, to root damage
389	NP 157	WR		17							X	X														
390	NP 158	PC	5		X						X	X		X												
391	NP 159	PC	5		X						X	X		X												
392	NP 160	PC	7		X						X	X			X											
393	NP 161	WR		21	X						X	X						X								
394	NP 162	PC	6		X						X	X		X												
395	NP 163	PC	5		X						X	X						X						X		
396	NP 164	WR		20	X						X	X														
397	NP 165	PC	7		X						X	X						X								
398	NP 166	PC	5		X						X	X			X											
399	NP 167	PC	1			X					X	X			X								X			
400	NP 168	WR		22	X						X	X						X								
401	NP 169	PC	6		X						X	X														
402	NP 170	PC	6		X						X	X			8											
403	NP 171	PC	7		X						X	X						X								
404	NP 172	WR		16	X						X	X														
405	NP 173	PC	5		X						X	X												X		Conks at base
406	NP 174	PC	4			X					X	X			X		X									
407	NP 175	PC	6		X						X	X			X											
408	NP 176	WR		18	X						X	X						X								
409	NP 177	PC	5		X						X	X			X											
410	NP 178	PC	4			X					X	X			X											
411	NP 179	PC	6		X						X	X						X								
412	NP 180	WR		18	X						X	X														
413	NP 181	PC	3			X					X	X			X											
414	NP 182	PC	6		X						X	X						X								
415	NP 183	PC	5		X						X	X			X											
416	NP 184	PG	7		X						X	X						X								
417	NP 185	PG	8		X						X	X														
324	NP 186	PC	1		X						X	X														
325	NP 187	PC	1		X						X	X														
326	NP 188	PC	5		X						X	X														
327	NP 189	PC	2			X					X	X			X											
328	NP 190	PC	1			X					X	X			X											
329	NP 191	PC	1				X				X	X			X								X			
330	NP 192	PC	3		X						X	X														

Tree Information						Tree Condition				Planting Location				Conditions					Maintenance Needs				Comments				
Photo #	Tree #		Code	Tree DBH	Palm BTH	G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
331	NP	193	PC	7		X						X	X														
332	NP	194	PC	7		X						X	X		X												
333	NP	195	PC	6		X						X	X			X											
334	NP	196	PC	4		X						X															
335	NP	197	PC	5		X						X															
336	NP	198	PC	1		X						X	X														
337	NP	199	PC	1			X					X	X			X											
338	NP	200	PC	5		X						X															
339	NP	201	PC	5		X						X															
340	NP	202	PC	7		X						X	X														
341	NP	203	PC	7		X						X	X		X												
342	NP	204	PC	4		X						X													X		
343	NP	205	PC	4		X						X															
344	NP	206	PC	6		X						X	X		X												
345	NP	207	PC	6		X						X	X		X										X		Trk splits
346	NP	208	PC	5		X						X															
347	NP	209	PC	5		X						X													X		
348	NP	210	PC	7		X						X	X		X										X		
349	NP	211	PC	5		X						X	X												X		
350	NP	212	PC	4		X						X													X		
351	NP	213	PC	4		X						X															
352	NP	214	PC	7		X						X	X		X										X		
353	NP	215	PC	8		X						X	X														
354	NP	216	PC	1		X						X															
355	NP	217	PC	1		X						X															
356	NP	218	PC	6		X						X	X													X	
357	NP	219	PC	5		X						X	X			X											
358	NP	220	PC	4		X						X															
359	NP	221	PC	5		X						X				X											
360	NP	222	PC	7		X						X	X														
361	NP	223	PC	5		X						X	X		X	X											
362	NP	224	PC	4		X						X															
363	NP	225	PC	5		X						X				X											
364	NP	226	PC	7		X						X	X														
365	NP	227	PC	6		X						X	X														
366	NP	228	PC	5		X						X															
367	NP	229	PC	5		X						X															
368	NP	230	PC	6		X						X	X														
369	NP	231	PC	3			X					X	X														
370	NP	232	PC	5		X						X															
371	NP	233	PC	5		X						X															
372	NP	234	PC	5		X						X	X		X												
373	NP	235	PC	4		X						X	X												X		
374	NP	236	PC	4		X						X															
513	NP	237	PC	5			X					X															
514	NP	238	PC	7		X						X															

1286 University Ave. #807 San Diego, CA. 92103

858-205-4748

www.landscapeexpertwitness.com

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

32
11/12/12

Tree Information					Tree Condition			Planting Location				Conditions						Maintenance Needs				Comments			
Photo #	Tree #	Code	Tree DBH	Palm BTH	G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
515	NP 239	PC	4		X						X													X	X	
516	NP 240	PC	7		X						X													X	X	
517	NP 241	PC	6		X						X													X	X	
518	NP 242	PC	3		X						X													X	X	
519	NP 243	PC	6		X						X													X	X	
520	NP 244	PC	3			X					X													X	X	
521	NP 245	PC	7		X						X	X		X	X									X	X	
522	NP 246	PC	4		X						X													X	X	
523	NP 247	PC	3		X						X	X												X	X	
524	NP 248	PC	6		X						X				X									X	X	
525	NP 249	PC	6		X						X	X		X										X	X	
	NP 250	PC	Removed								X	X														
526	NP 251	PC	7		X						X			X	X										X	
527	NP 252	PC	2		X						X			X											X	
528	NP 253	PC	1		X						X													X	X	
529	NP 254	PC	6		X						X	X												X	X	
530	NP 255	PC	7		X						X													X	X	
531	NP 256	PC	1		X						X				X										X	
532	NP 257	PC	1		X						X													X	X	
533	NP 258	PC	6		X						X	X												X	X	
534	NP 259	PC	7		X						X	X												X	X	
535	NP 260	PC	4		X						X													X	X	
536	NP 261	PC	3		X						X													X	X	
537	NP 262	PC	7		X						X													X	X	
538	NP 263	PC	5		X						X	X												X	X	
539	NP 264	PC	1		X						X	X												X	X	
540	NP 265	PC	6				X	X			X	X		X	X	X					X			X	X	Severe fireblight
541	NP 266	PC	6				X	X			X	X			X	X					X				X	Severe fireblight
542	NP 267	PC	1				X				X				X	X								X	X	Fireblight
543	NP 268	PC	3			X					X													X	X	
544	NP 269	PC	5		X						X	X			X										X	
545	NP 270	PC	6		X						X	X			X									X	X	
546	NP 271	PC	7		X						X	X			X									X	X	
547	NP 272	PC	2		X						X				X									X	X	
548	NP 273	PC	1		X						X				X										X	
549	NP 274	PC	8		X						X	X												X	X	
550	NP 275	PC	6		X						X	X												X	X	
551	NP 276	PC	4		X						X													X	X	
552	NP 277	PC	2		X						X														X	
553	NP 278	PC	5		X						X	X												X	X	
554	NP 279	PC	6		X						X	X												X	X	
555	NP 280	PC	3		X						X													X	X	
556	NP 281	PC	4		X						X													X	X	
557	NP 282	PC	8		X						X	X												X	X	
558	NP 283	PC	8		X						X	X												X	X	
559	NP 284	PC	5		X						X													X	X	

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

33
11/12/12

Tree Information					Tree Condition			Planting Location				Conditions						Maintenance Needs				Comments			
Photo #	Tree #	Code	Tree DBH	Palm BTH	G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
560	NP 285	PC	5		X						X													X	X	
561	NP 286	PC	8		X						X	X												X	X	
562	NP 287	PC	5		X						X													X	X	
563	NP 288	PC	4		X						X													X	X	
564	NP 289	PC	5		X						X	X												X		
565	NP 290	PC	8		X						X	X												X		
566	NP 291	PC	4		X						X													X	X	
567	NP 292	PC	5		X						X													X	X	
568	NP 293	PC	8		X						X	X												X		
569	NP 294	PC	7		X						X													X		
570	NP 295	PC	1		X						X	X												X		
571	NP 296	PC	4		X						X													X	X	
572	NP 297	PC	6		X						X													X	X	
573	NP 298	PC	6		X						X	X			X									X		
574	NP 299	PC	4		X						X				X									X		
575	NP 300	PC	4		X						X	X												X		
576	NP 301	PC	7		X						X	X		X												
577	NP 302	PC	3		X						X	X												X		
578	NP 303	PC	3		X						X															
	NP 304		Not used																							
579	NP 305	PC	7		X						X	X												X	X	
580	NP 306	PC	4		X						X													X	X	
581	NP 307	PC	4		X						X	X												X	X	
582	NP 308	PC	6		X						X													X	X	
583	NP 309	PC	7		X						X	X												X		Leaking bubbler
584	NP 310	PC	4		X						X													X	X	
585	NP 311	PC	4		X						X													X		
586	NP 312	PC	6		X						X	X												X		
587	NP 313	PC	7		X						X	X												X		
588	NP 314	PC	4		X						X													X	X	
589	NP 315	PC	5		X						X													X	X	
590	NP 316	PC	7		X						X	X												X		
591	NP 317	PC	7		X						X	X												X		
592	NP 318	PC	4		X						X													X	X	
593	NP 319	PC	5		X						X													X	X	
594	NP 320	PC	5		X						X													X	X	
595	NP 321	PC	3		X						X													X	X	
596	NP 322	PC	1		X						X													X	X	
597	NP 323	PC	1				X				X					X										
757	NP 324	PC	4		X						X	X		X												
758	NP 325	PC	5		X						X				X			X						X	X	
759	NP 326	PC	5		X						X													X	X	
760	NP 327	PC	3		X						X													X	X	
761	NP 328	PC	3		X						X													X	X	
762	NP 329	PC	6		X						X	X												X	X	
763	NP 330	PC	3		X						X													X	X	

RAPPOPORT
Development Consulting Services LLC

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

34
11/12/12

Tree Information					Tree Condition			Planting Location				Conditions					Maintenance Needs				Comments			
Photo #	Tree #	Code	Tree DBH	Palm BTH	G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
764	NP 331	PC	1		X						X	X			X									X		
765	NP 332	PC	5		X						X													X		
766	NP 333	PC	4			X					X	X				X										
767	NP 334	PC	3		X						X	X														
768	NP 335	PC	3		X						X	X		X												
769	NP 336	PC	6		X						X															
770	NP 337	PC	6		X						X															
771	NP 338	PC	3		X						X	X														
772	NP 339	PC	3		X						X	X														
773	NP 340	PC	5		X			X			X					X					X					
774	NP 341	PC	1					X			X										X					
775	NP 342	PC	3		X						X	X														
776	NP 343	PC	5		X						X													X		
777	NP 344	PC	5		X						X													X		
778	NP 345	PC	3		X						X	X														
779	NP 346	PC	6		X						X													X		
780	NP 347	PC	8		X						X													X		
781	NP 348	PC	2		X						X	X		X	X									X		
782	NP 349	PC	3		X						X	X												X		
783	NP 350	PC	7		X						X													X	X	
784	NP 351	PC	6		X						X													X		
785	NP 352	PC	5		X						X													X		
786	NP 353	PC	7		X						X	X												X		
787	NP 354	PC	1		X						X	X			X									X	X	
788	NP 355	PC	5				X				X	X												X		
789	NP 356	PC	5		X						X													X		
790	NP 357	PC	5				X				X	X			X			X						X		
791	NP 358	PC	4		X						X	X							X					X		
792	NP 359	PC	5		X						X													X		
793	NP 360	PC	6		X						X													X		
794	NP 361	PC	2		X						X	X			X									X		
795	NP 362	PC	7				X				X	X												X		
796	NP 363	PC	8		X						X	X												X		
797	NP 364	PC	3		X						X													X		
798	NP 365	PC	6		X						X													X	X	
799	NP 366	PC	8		X						X	X												X		
800	NP 367	PC	4		X						X	X												X		
801	NP 368	PC	6		X						X													X	X	
802	NP 369	PC	10		X						X	X												X		
803	NP 370	PC	5		X						X													X		
804	NP 371	PC	6		X						X													X	X	
805	NP 372	PC	9		X						X	X					X							X	X	
806	NP 373	PC	5		X						X													X	X	
807	NP 374	PC	8		X						X													X		
808	NP 375	PC	7		X						X													X	X	
809	NP 376	PC	7		X						X													X		

RAPPOPORT
Development Consulting Services LLC

35
11/12/12

Project: SANDAG SBBRT

Tree Inventory East Palomar Street

Tree Information					Tree Condition			Planting Location				Conditions					Maintenance Needs				Comments			
Photo #	Tree #	Code	Tree DBH	Palm BTH	G	F	P	D	Swlk	<3'	>3'	Lwn	Weak fork	Root Damage	Trunk Damage	Crown Decline	Rot/ Cavity	Clean	Raise	Red.	Rem.	Over watered	Trunk Girdled	Ants	Snails	Comments
810	NP																									
811	377	PC		8	X						X									X					
812	378	PC		7	X						X													X	
813	379	PC		4	X						X													X	
814	380	PC		6	X						X													X	
815	381	PC		6	X						X													X	
	382																								

RAPPOPORT
Development Consulting Services LLC

Appendix H – Data Results

Summary of the Resutls for the Community of:				*East Palomar Street*		
				Chula Vista, CA.		
Number of Trees Inventoried:			*1553*			
# of Trees /Mile:			*409*			
Average DBH:			*5.45*			
Tree Condition				**Planting Location**		
	Actual #	% of Pop.			Actual #	% of Pop.
Good	*1370*	*88%*		Sidewalk	*0*	*0%*
Fair	*142*	*9%*		<3'	*456*	*29%*
Poor	*27*	*2%*		>3'	*1096*	*71%*
Dead	*14*	*1%*		Lawn	*1130*	*73%*
Conditions				**Maintenance Needs**		
	Actual #	% of Pop.			Actual #	% of Pop.
Weak Fork	*7*	*0%*		Safety/clean	*458*	*29%*
Root Injury	*119*	*8%*		Crown raise	*7*	*0%*
Trunk Injury	*306*	*20%*		Crown reduction	*0*	*0%*
Crown Decline	*54*	*3%*		Overwatered	*34*	*2%*
Rot / Cavity	*15*	*1%*		Removal	*30*	*2%*
				Girdled trunk	*22*	*1%*

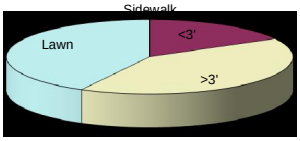
RAPPOPORT
Development Consulting Services LLC

Appendix I – Data Graph

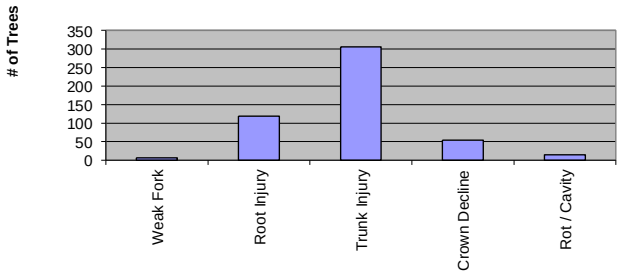
SANDAG SBBRT Graphs of Tree Data

Overall Condition

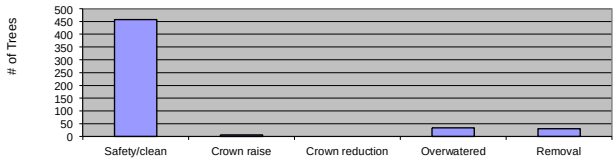
Planting Location



Conditions



Maintenance Needs



Type of Work Needed

RAPPOPORT
Development Consulting Services LLC

Appendix J – Species List

SANDAG SBBRT List of Tree Species and Tree Codes

Code	Species	Actual Number of Trees	Percentage of Trees
EF	Eucalyptus ficifolia	29	2%
KB	Koelruetaria bipinnata	133	9%
PK	Pyrus kawakami	5	0%
PC	Pyrus calleryana	918	59%
PG	Podocarpus gracilior	8	1%
PH	Pinus halepensis	2	0%
RI	Rhus integrifolia	3	0%
RL	Rhus lancea	2	0%
WR	Washingtonia robusta	453	29%

Genus	Actual Number of Trees	Percentage of Trees
Eucalyptus	29	2%
Pyrus	923	59%
Koelruetaria	133	9%
Pinus	2	0%
Podocarpus	8	1%
Rhus	5	0%
Washingtonia	453	29%

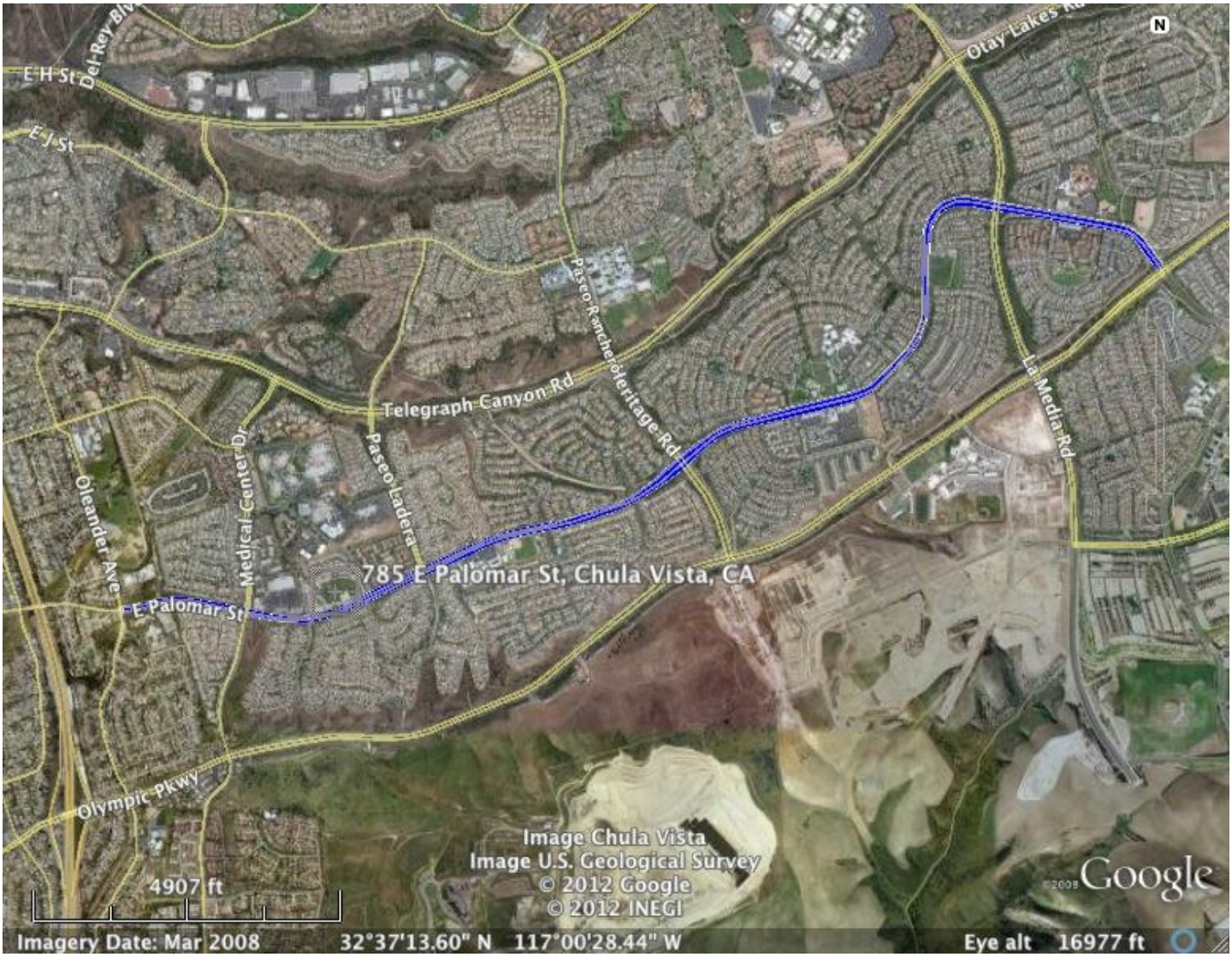
RAPPOPORT
Development Consulting Services LLC

Appendix K – RDCS Recommended Tree Palette

Scientific Name	Common Name	7’ width	12’ width
Brachychiton populneus	Bottle tree		X
Brahea armata	Mexican Blue Palm	X	X
Brahea edulis	Guadalupe Palm	X	X
Butia capitata	Pindo Pam	X	X
Cassia leptophylla	Gold Medallion tree		X
Chamaerops humilis	Mediterranean Fan palm	X	X
Chamaerops humilus ‘cerifera’	Blue Mediterranean Fan palm	X	X
Metrosideros excelsa	New Zealand Xmas tree	X	X
*Podocarpus henkelii	Long Leafed Yew		X
*Rhus lancea	African Sumac		X
Trachycarpus fortunei	Windmill Palm	X	X
Washingtonia robusta	Mexican Fan Palm	X	X

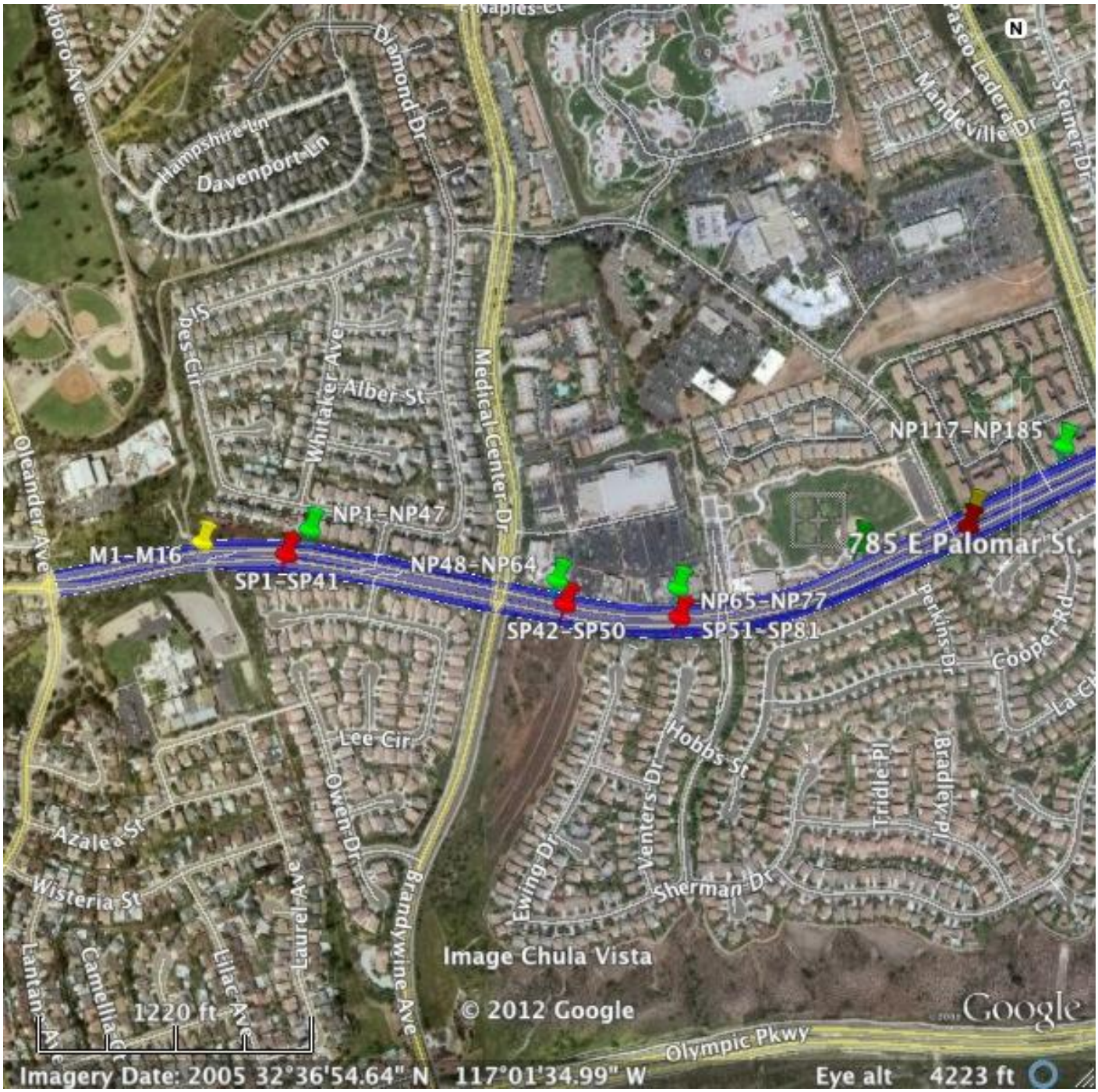
RAPPOPORT
Development Consulting Services LLC

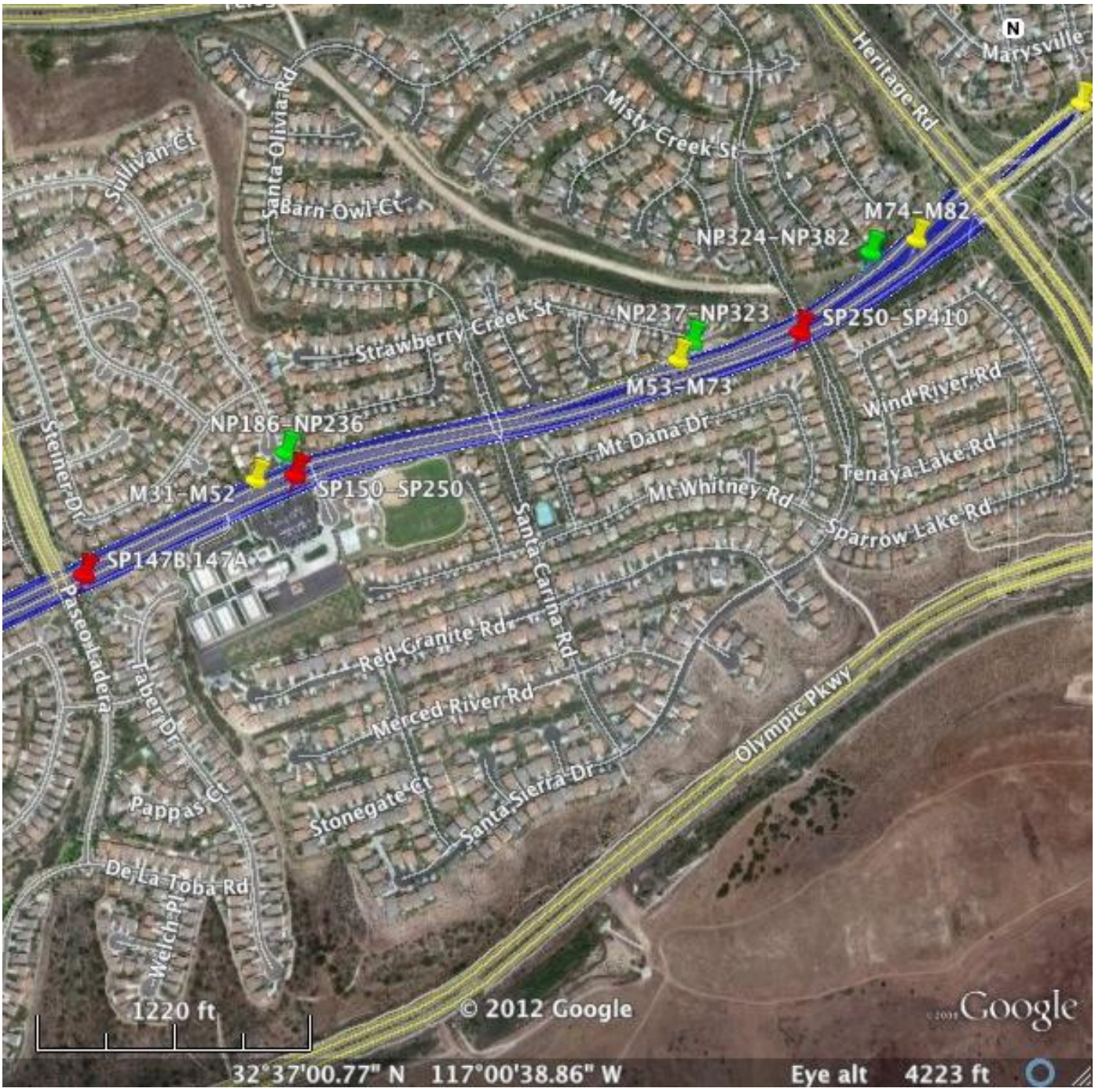
Appendix L – Study Area Site Exhibit

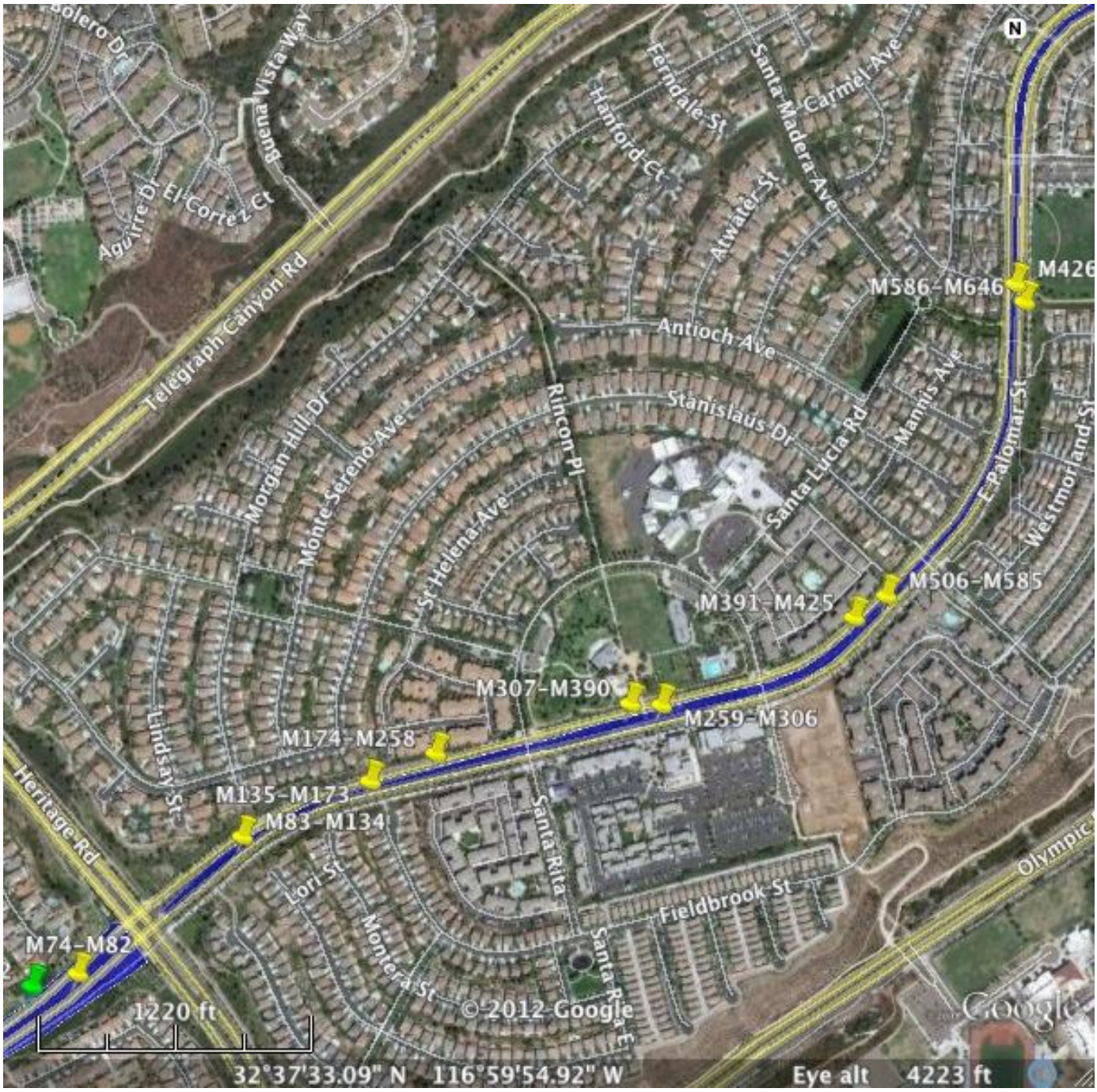


RAPPOPORT
Development Consulting Services LLC

Appendix M – Median and Parkway Tree Location Exhibit

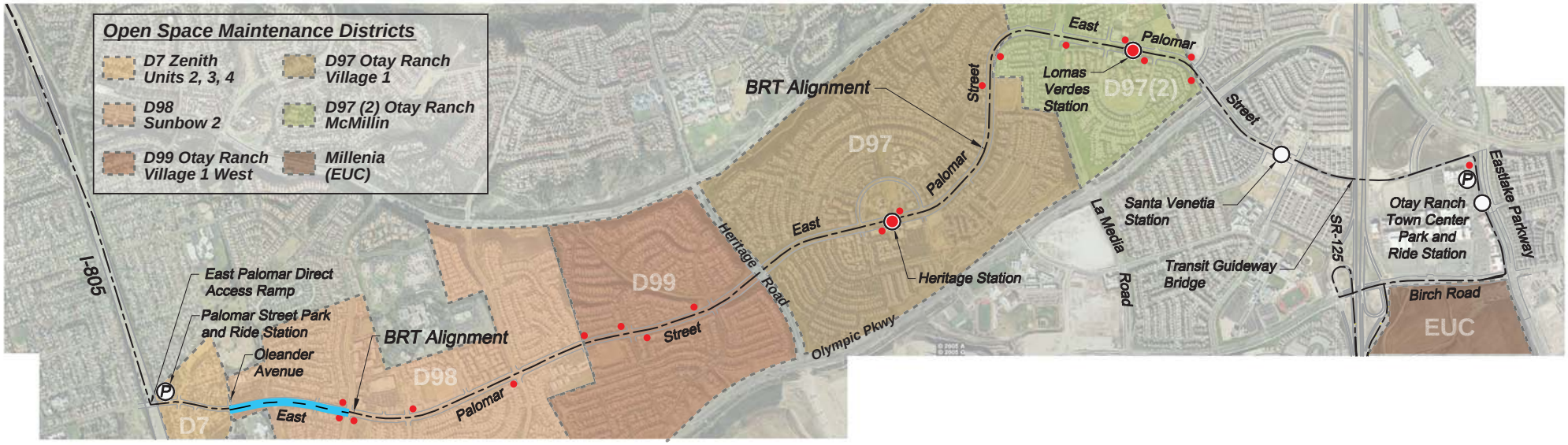



N
Marysville
Heritage Rd
Misty Creek St
Sullivan Ct
Santa Olivia Rd
Barn Owl Ct
M74-M82
NP324-NP382
NP237-NP323
SP250-SP410
Strawberry Creek St
M53-M73
Wind River Rd
Mt Dana Dr
NP186-NP236
Steiner Dr
M31-M52
SP150-SP250
Tenaya Lake Rd
Mt Whitney Rd
Sparrow Lake Rd
Santa Carina Rd
SP147B,147A
Paseo Ladera
Red Granite Rd
Faber Dr
Merced River Rd
Olympic Pkwy
Pappas Ct
Stonegate Ct
Santa Sierra Dr
De La Toba Rd
Welch Pl
1220 ft
© 2012 Google
Google
32°37'00.77" N 117°00'38.86" W
Eye alt 4223 ft


Bolero Dr
Buena Vista Way
Aguirre Dr
El Cortez Ct
Telegraph Canyon Rd
Hanford Ct
Ferndale St
Santa Madera Ave
Carmel Ave
Atwater St
Antioch Ave
Stanislaus Dr
Santa Lucia Rd
Mannis Ave
E Paloma St
Westmorland St
Rincon Pl
Morgan Hill Dr
Monte Sereno Ave
St Helena Ave
Lindsay St
Heritage Rd
Lori St
Montera St
Santa Rita
Fieldbrook St
Olympic
M426
M586-M646
M506-M585
M391-M425
M307-M390
M259-M306
M174-M258
M135-M173
M83-M134
M74-M82
1220 ft
©2012 Google
Google
32°37'33.09" N 116°59'54.92" W
Eye alt 4223 ft

RAPPOPORT
Development Consulting Services LLC

7.3 Landscape and Irrigation Exhibits

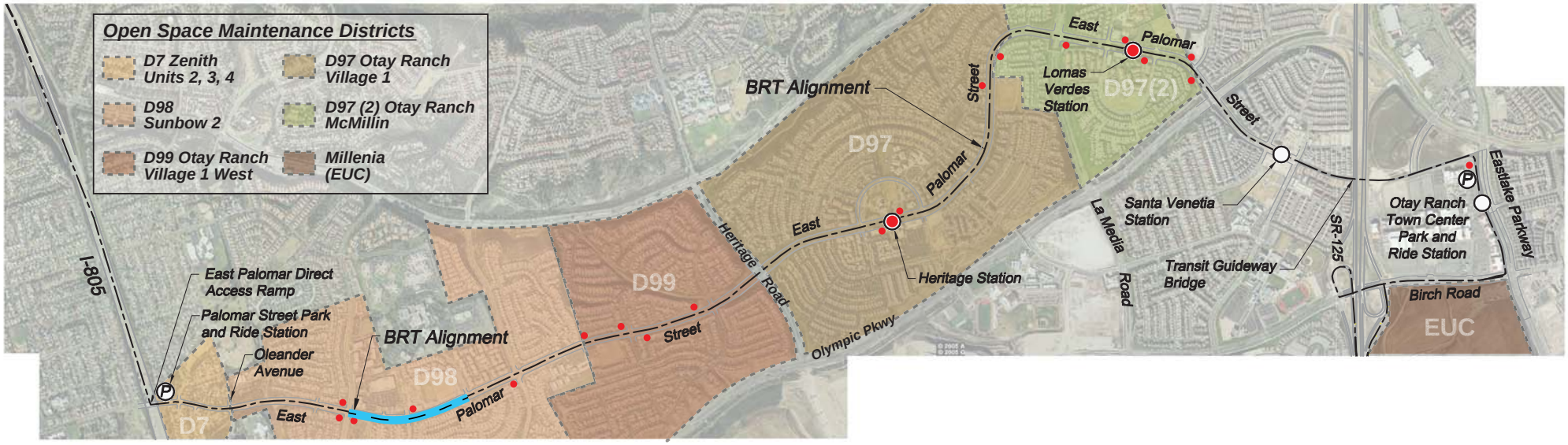


OLEANDER AVE. TO MEDICAL CENTER DR.

Legend

- BRT Alignment/Transit Lanes
- BRT Station
- BRT Station with Passenger Drop-off
- Transit Park and Ride
- Local Bus Stop
- Landscape Block

	BEHIND BACK OF WALK	PARKWAY	MEDIAN
TREES:	Chinese Flame Tree - *Koelreutaria Bipinnata* Victorian Box - *Pittosporum Undulatum* Sycamore - *Platanus Racemosa* Aristocrat Pear - *Pyrus Calleryana* Mexican Fan Palm - *Washingtonia Robusta*	Aristocrat Pear - *Pyrus Calleryana*	Aristocrat Pear - *Pyrus Calleryana*
SHRUBS:	Wax Leaf Privet - *Ligustrum Japonicum 'Texum'* Dwarf Oleander - *Nerium Oleander 'Petite Pink'* Indian Hawthorne - *Raphiolepsis Indica 'Clara'* Bird of Paradise - *Strelitzia Reginae* Viburnum - *Viburnum Japonicum*		Wax Leaf Privet - *Ligustrum Japonicum 'Texum'* Dwarf Oleander - *Nerium Oleander 'Petite Pink'*
GROUNDCOVERS:	Rosea Ice Plant - *Drosanthemum Floribundum* Trailing Ice Plant - *Lampranthus Spectabilis*		Rosea Ice Plant - *Drosanthemum Floribundum*

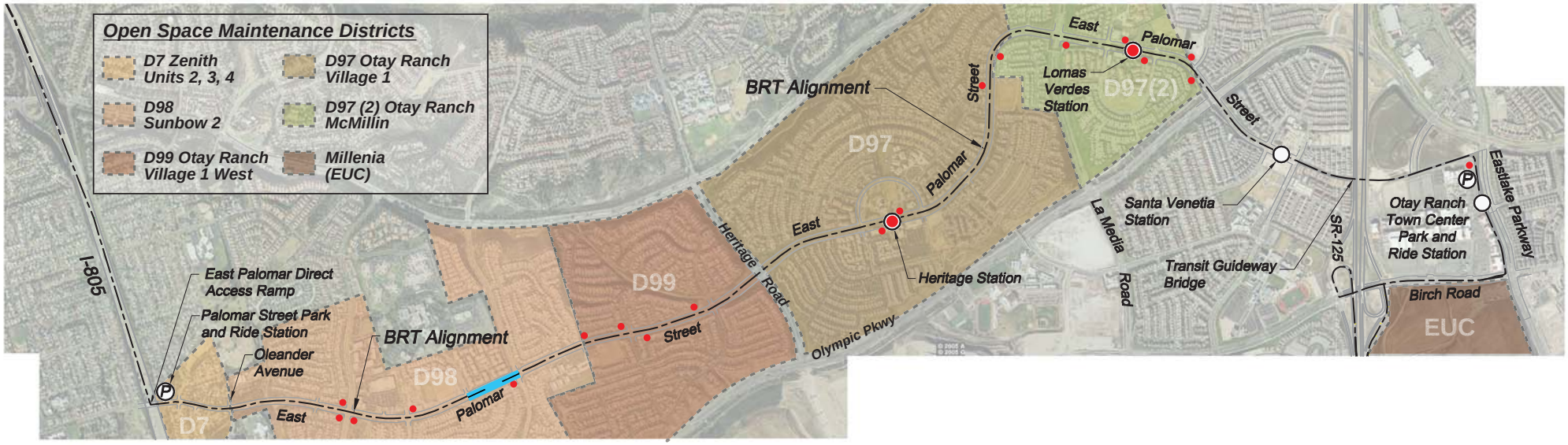


MEDICAL CENTER DR. TO MEDICAL CENTER CT.

	BEHIND BACK OF WALK	PARKWAY	MEDIAN
TREES:	Mexican Fan Palm - *Washingtonia Robusta*	Aristocrat Pear - *Pyrus Calleryana*	Chinese Flame Tree - *Koelreutaria Bipinnata*
SHRUBS:	Wax Leaf Privet - *Ligustrum Japonicum 'Texum'* Bird of Paradise - *Strelitzia Reginae* Viburnum - *Viburnum Japonicum*		Dwarf Oleander - *Nerium Oleander 'Petite Pink'*
GROUNDCOVERS:	Rosea Ice Plant - *Drosanthemum Floribundum* Trailing Ice Plant - *Lampranthus Spectabilis*		Rosea Ice Plant - *Drosanthemum Floribundum* Trailing Ice Plant - *Lampranthus Spectabilis*

Legend

- BRT Alignment/Transit Lanes
- BRT Station
- BRT Station with Passenger Drop-off
- Transit Park and Ride
- Local Bus Stop
- Landscape Block

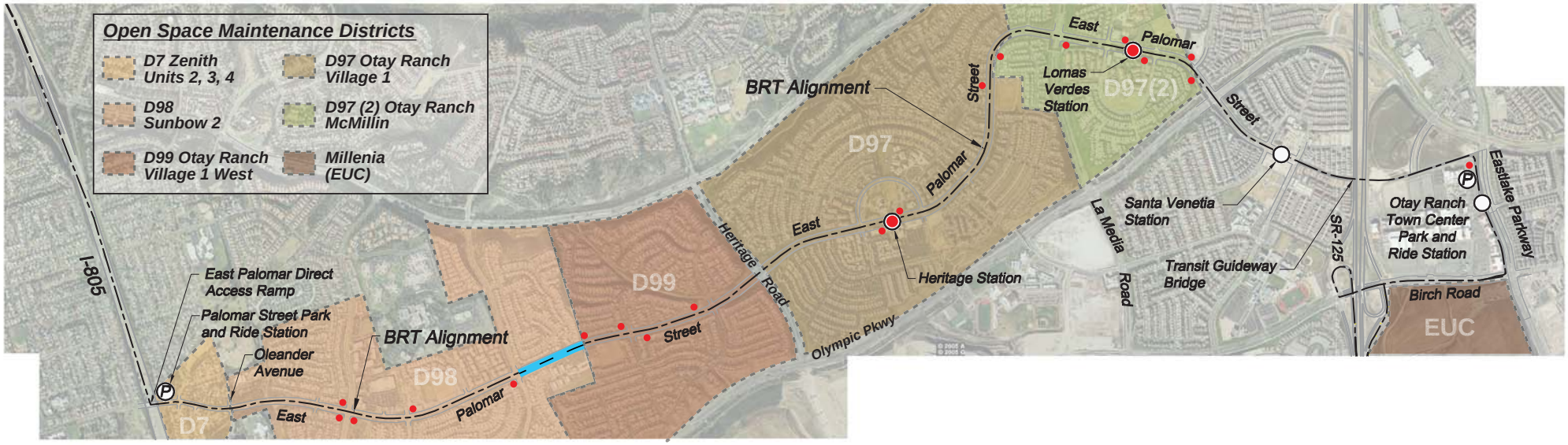


MEDICAL CENTER CT. TO PASEO LADERA

	BEHIND BACK OF WALK	PARKWAY	MEDIAN
TREES:	Victorian Box - *Pittosporum Undulatum* Mexican Fan Palm - *Washingtonia Robusta*	Aristocrat Pear - *Pyrus Calleryana*	Chinese Flame Tree - *Koelreutaria Bipinnata*
SHRUBS:	Wax Leaf Privet - *Ligustrum Japonicum 'Texum'* Indian Hawthorne - *Raphiolepsis Indica 'Clara'* Bird of Paradise - *Strelitzia Reginae* Viburnum - *Viburnum Japonicum*		Indian Hawthorne - *Raphiolepsis Indica 'Clara'* Dwarf Oleander - *Nerium Oleander 'Petite Pink'*
GROUNDCOVERS:	Rosea Ice Plant - *Drosanthemum Floribundum* Trailing Ice Plant - *Lampranthus Spectabilis*		Rosea Ice Plant - *Drosanthemum Floribundum* Trailing Ice Plant - *Lampranthus Spectabilis*

Legend

- BRT Alignment/Transit Lanes
- BRT Station
- BRT Station with Passenger Drop-off
- Transit Park and Ride
- Local Bus Stop
- Landscape Block

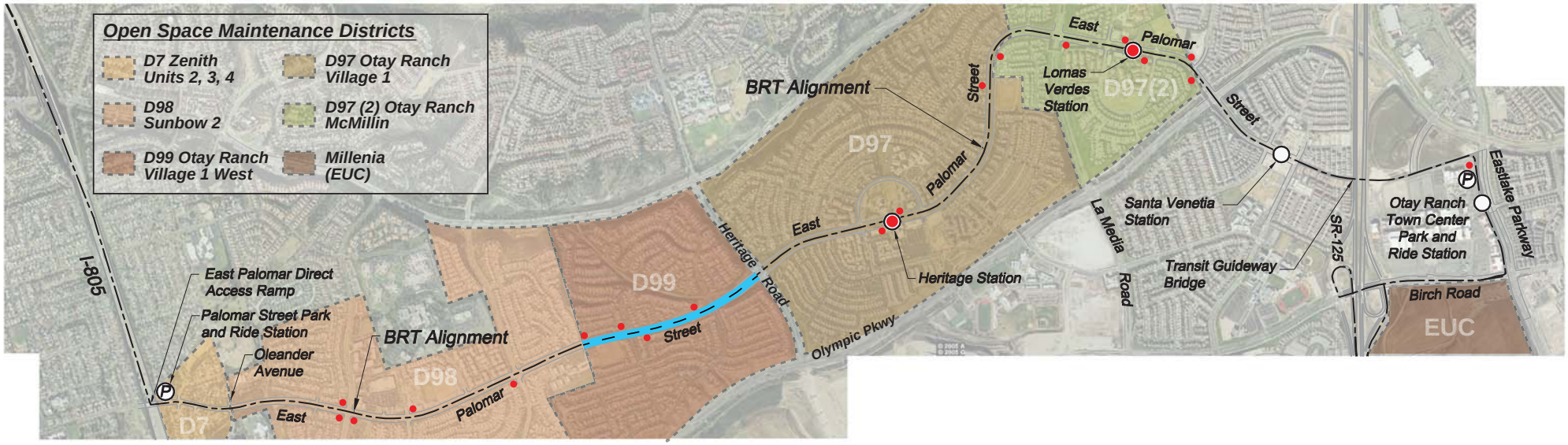


PASEO LADERA TO BRASHEAR PL.

	BEHIND BACK OF WALK	PARKWAY	MEDIAN
TREES:	Mexican Fan Palm - *Washingtonia Robusta*	Aristocrat Pear - *Pyrus Calleryana*	Chinese Flame Tree - *Koelreutaria Bipinnata*
SHRUBS:	Wax Leaf Privet - *Ligustrum Japonicum 'Texum'* Bird of Paradise - *Strelitzia Reginae* Viburnum - *Viburnum Japonicum*		Wax Leaf Privet - *Ligustrum Japonicum 'Texum'* Dwarf Oleander - *Nerium Oleander 'Petite Pink'*
GROUNDCOVERS:	Rosea Ice Plant - *Drosanthemum Floribundum* Trailing Ice Plant - *Lampranthus Spectabilis*		Rosea Ice Plant - *Drosanthemum Floribundum* Trailing Ice Plant - *Lampranthus Spectabilis*

Legend

- BRT Alignment/Transit Lanes
- BRT Station
- BRT Station with Passenger Drop-off
- Transit Park and Ride
- Local Bus Stop
- Landscape Block

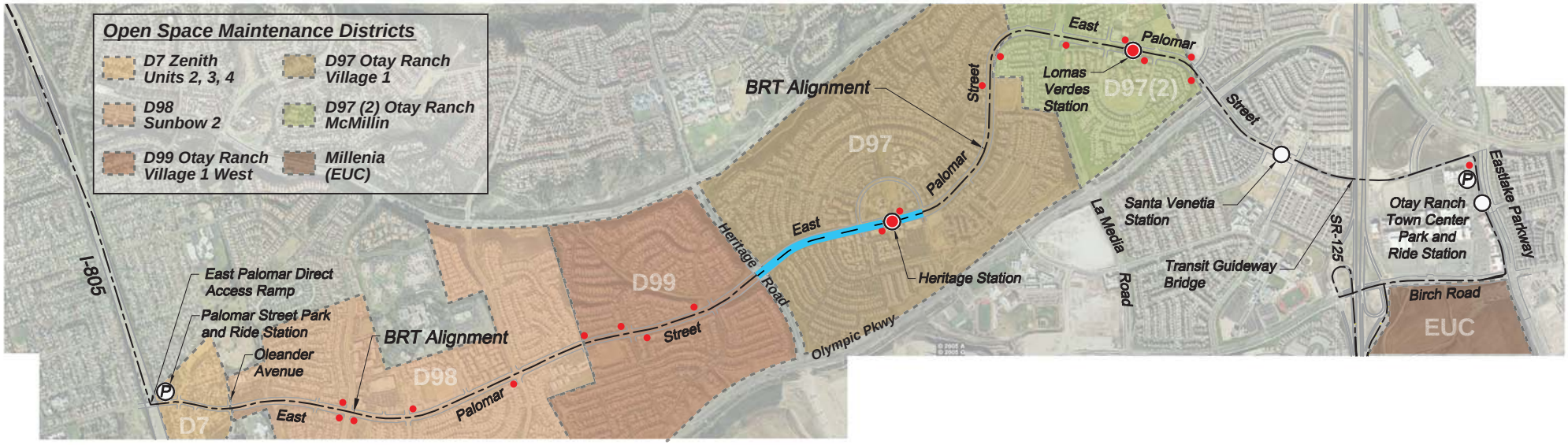


BRASHEAR PL. TO HERITAGE RD.

Legend

- BRT Alignment/Transit Lanes
- BRT Station
- BRT Station with Passenger Drop-off
- Transit Park and Ride
- Local Bus Stop
- Landscape Block

	BEHIND BACK OF WALK	PARKWAY	MEDIAN
TREES:	Crape Myrtle - *Lagerstroemia Indica* Brisbane Box - *Tristania Conferta* Aristocrat Pear - *Pyrus Calleryana*	Aristocrat Pear - *Pyrus Calleryana*	Chinese Flame Tree - *Koelreutaria Bipinnata* Red Flowering Gum - *Eucalyptus Ficifolia*
SHRUBS:	Myoporum - *myoporum Pacificum 'South Coast'* Society Garlic - *Tulbaghia Violacea* Viburnum - *Viburnum Japonicum*		Indian Hawthorne - *Raphiolepsis Indica 'Clara'* Daylily - *Hemerocallis Hybrids 'Yellow'*
GROUNDCOVERS:	Rosea Ice Plant - *Drosanthemum Floribundum*		Rosea Ice Plant - *Drosanthemum Floribundum*

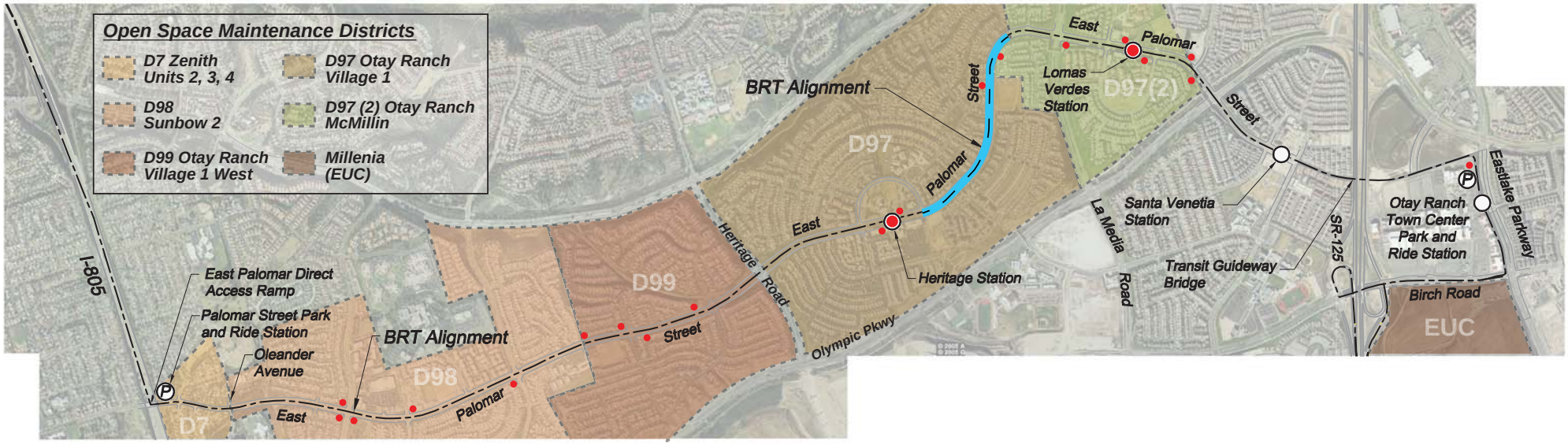


HERITAGE RD. TO SANTA ANDREA ST.

	BEHIND BACK OF WALK	PARKWAY	MEDIAN
TREES:	Aristocrat Pear - *Pyrus Calleryana* Mexican Fan Palm - *Washingtonia Robusta*	Aristocrat Pear - *Pyrus Calleryana* Mexican Fan Palm - *Washingtonia Robusta* Canary Date Palm - *Phoenix Canariensis*	Aristocrat Pear - *Pyrus Calleryana* Mexican Fan Palm - *Washingtonia Robusta*
SHRUBS:	Myoporum - *Myoporum Pacificum 'South Coast'*	Indian Hawthorne - *Raphiolepsis Indica 'Clara'* Star Jasmine - *Trachelospermum Jasminoides*	Indian Hawthorne - *Raphiolepsis Indica 'Clara'* Daylily - *Hemerocallis Hybrids 'Yellow'*
GROUNDCOVERS:			

Legend

- BRT Alignment/Transit Lanes
- BRT Station
- BRT Station with Passenger Drop-off
- Transit Park and Ride
- Local Bus Stop
- Landscape Block

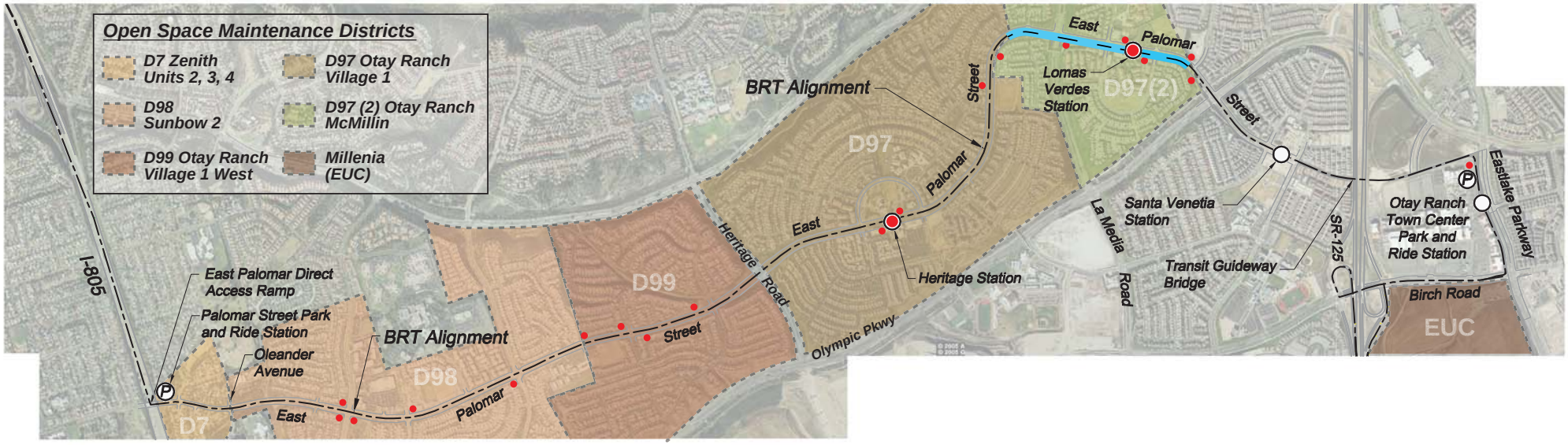


SANTA ANDREA ST. TO SANTA FLORA RD. + 800 FT.

	BEHIND BACK OF WALK	PARKWAY	MEDIAN
TREES:	Aristocrat Pear - *Pyrus Calleryana* Mexican Fan Palm - *Washingtonia Robusta*	Aristocrat Pear - *Pyrus Calleryana* Mexican Fan Palm - *Washingtonia Robusta*	Aristocrat Pear - *Pyrus Calleryana* Mexican Fan Palm - *Washingtonia Robusta*
SHRUBS:	Myoporum - *Myoporum Pacificum 'South Coast'* Indian Hawthorne - *Raphiolepsis Indica 'Enchantress'*	Indian Hawthorne - *Raphiolepsis Indica 'Clara'* Star Jasmine - *Trachelospermum Jasminoides*	Indian Hawthorne - *Raphiolepsis Indica 'Clara'* Daylily - *Hemerocallis Hybrids 'Yellow'*
GROUNDCOVERS:			

Legend

- BRT Alignment/Transit Lanes
- BRT Station
- BRT Station with Passenger Drop-off
- Transit Park and Ride
- Local Bus Stop
- Landscape Block

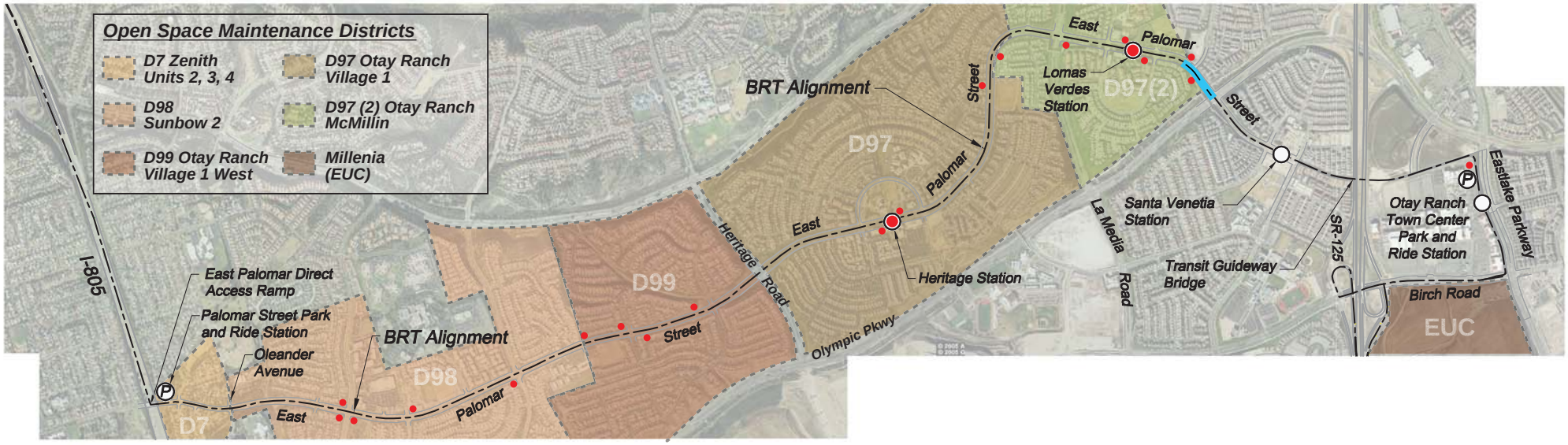


SANTA FLORA RD. + 800 FT. TO SANTA ROSA DR.

	BEHIND BACK OF WALK	PARKWAY	MEDIAN
TREES:	Aristocrat Pear - *Pyrus Calleryana* Mexican Fan Palm - *Washingtonia Robusta*	Aristocrat Pear - *Pyrus Calleryana* Mexican Fan Palm - *Washingtonia Robusta* Cherry Plum - *Prunus Blireana*	Aristocrat Pear - *Pyrus Calleryana* Mexican Fan Palm - *Washingtonia Robusta*
SHRUBS:	Myoporum - *Myoporum Pacificum 'South Coast'*	Indian Hawthorne - *Raphiolepsis Indica 'Clara'*	Indian Hawthorne - *Raphiolepsis Indica 'Clara'* Daylily - *Hemerocallis Hybrids 'Yellow'*
GROUNDCOVERS:			Rosemary - *Rosmarinus Officinalis*

Legend

- BRT Alignment/Transit Lanes
- BRT Station
- BRT Station with Passenger Drop-off
- Transit Park and Ride
- Local Bus Stop
- Landscape Block



SANTA ROSA DR. TO OLYMPIC PKWY.

	BEHIND BACK OF WALK	PARKWAY	MEDIAN
TREES:	Aristocrat Pear - *Pyrus Calleryana* Mexican Fan Palm - *Washingtonia Robusta* Flowering Plum - *Prunus Blireiana*	Aristocrat Pear - *Pyrus Calleryana* Mexican Fan Palm - *Washingtonia Robusta* Flowering Plum - Prunus Blireiana	Mexican Fan Palm - *Washingtonia Robusta*
SHRUBS:	Myoporum - *Myoporum Pacificum 'South Coast'*		Indian Hawthorne - *Raphiolepsis Indica 'Clara'* Daylily - *Hemerocallis Hybrids 'Yellow'*
GROUNDCOVERS:			Rosemary - *Rosmarinus Officinalis*

Legend

- BRT Alignment/Transit Lanes
- BRT Station
- BRT Station with Passenger Drop-off
- Transit Park and Ride
- Local Bus Stop
- Landscape Block

Preliminary Landscape Removal by District

Maintenance District D.98

Oleander to Gould
6 - *Pyrus Calleryana 'Aristocrat'* - Flowering Pear Tree
8 - *Koelreutaria Bipinnata* - Chinese Flame Tree
26,700 SF - Turf Area
20,300 SF - Shrub Area

Gould to Medical Center Drive
18 - *Koelreutaria Bipinnata* - Chinese Flame Tree
14,100 SF - Turf Area

Medical Center Drive to Davies
44 - *Pyrus Calleryana 'Aristocrat'* - Flowering Pear Tree
6 - *Pittosporum Undulatum* - Victorian Box
17 - *Washingtonia Robusta* - Mexican Fan Palm
19,100 SF - Turf Area
6,200 SF - Shrub Area

Davies to Medical Center Court
55 - *Pyrus Calleryana 'Aristocrat'* - Flowering Pear Tree
9 - *Pittosporum Undulatum* - Victorian Box
25 - *Washingtonia Robusta* - Mexican Fan Palm
21,900 SF - Turf Area
5,500 SF - Shrub Area

Medical Center Court to Paseo Ladera
40 - *Pyrus Calleryana 'Aristocrat'* - Flowering Pear Tree
9 - *Pittosporum Undulatum* - Victorian Box
17 - *Washingtonia Robusta* - Mexican Fan Palm
4 - *Koelreutaria Bipinnata* - Chinese Flame Tree
20,500 SF - Turf Area
4,200 SF - Shrub Area

Paseo Ladera to Hedenkamp Elementary
56 - *Pyrus Calleryana 'Aristocrat'* - Flowering Pear Tree
6 - *Pittosporum Undulatum* - Victorian Box
27 - *Washingtonia Robusta* - Mexican Fan Palm
17 - *Koelreutaria Bipinnata* - Chinese Flame Tree
29,800 SF - Turf Area
13,200 SF - Shrub Area

District Totals
201 - *Pyrus Calleryana 'Aristocrat'* - Flowering Pear Tree
29 - *Pittosporum Undulatum* - Victorian Box
86 - *Washingtonia Robusta* - Mexican Fan Palm
47 - *Koelreutaria Bipinnata* - Chinese Flame Tree
132,100 SF - Turf Area
49,400 SF - Shrub Area

Maintenance District D.99

Hedenkamp Elementary to Santa Olivia
108 - *Pyrus Calleryana 'Aristocrat'* - Flowering Pear Tree
4 - *Koelreutaria Bipinnata* - Chinese Flame Tree
10,200 SF - Turf Area
12,400 SF - Shrub Area

Santa Olivia to Santa Sierra
190 - *Pyrus Calleryana 'Aristocrat'* - Flowering Pear Tree
20 - *Eucalyptus Ficifolia* - Red Flowering Gum
18,300 SF - Turf Area
25,300 SF - Shrub Area

Santa Sierra to Heritage
130 - *Pyrus Calleryana 'Aristocrat'* - Flowering Pear Tree
10 - *Eucalyptus Ficifolia* - Red Flowering Gum
11,800 SF - Turf Area
28,300 SF - Shrub Area

District Totals
428 - *Pyrus Calleryana 'Aristocrat'* - Flowering Pear Tree
30 - *Eucalyptus Ficifolia* - Red Flowering Gum
4 - *Koelreutaria Bipinnata* - Chinese Flame Tree
40,300 SF - Turf Area
66,000 SF - Shrub Area

Preliminary Landscape Removal by District

Maintenance District D.97

- Heritage to Santa Rita

78 - *Pyrus Calleryana 'Aristocrat'* - Flowering Pear Tree
26/88(T) - *Washingtonia Robusta* - Mexican Fan Palm
10,900 SF - Turf Area
59,500 SF - Shrub Area

- Santa Rita to Santa Andrea

48 - *Pyrus Calleryana 'Aristocrat'* - Flowering Pear Tree
10/50(T) - *Washingtonia Robusta* - Mexican Fan Palm
16,800 SF - Turf Area
24,400 SF - Shrub Area

- Santa Andrea to Santa Alicia

32 - *Pyrus Calleryana 'Aristocrat'* - Flowering Pear Tree
0/38(T) - *Washingtonia Robusta* - Mexican Fan Palm
12,900 SF - Turf Area
21,000 SF - Shrub Area

- Santa Alicia to Santa Flora

74 - *Pyrus Calleryana 'Aristocrat'* - Flowering Pear Tree
12/86(T) - *Washingtonia Robusta* - Mexican Fan Palm
11,400 SF - Turf Area
49,000 SF - Shrub Area

- Santa Flora to Santa Delphina

41 - *Pyrus Calleryana 'Aristocrat'* - Flowering Pear Tree
26/46(T) - *Washingtonia Robusta* - Mexican Fan Palm
6,300 SF - Turf Area
27,900 SF - Shrub Area

- District Totals

273 - *Pyrus Calleryana 'Aristocrat'* - Flowering Pear Tree
74/308(T) - *Washingtonia Robusta* - Mexican Fan Palm
58,300 SF - Turf Area
181,800 SF - Shrub Area

Maintenance District D.97.2

- Santa Delphina to La Media

19 - *Pyrus Calleryana 'Aristocrat'* - Flowering Pear Tree
4/18(T) - *Washingtonia Robusta* - Mexican Fan Palm
2,400 SF - Turf Area
11,500 SF - Shrub Area

- La Media to Santa Cora

0/20(T) - *Washingtonia Robusta* - Mexican Fan Palm
4,600 SF - Turf Area
26,500 SF - Shrub Area

- Santa Cora to Vista Sonrisa

0/18(T) - *Washingtonia Robusta* - Mexican Fan Palm
21,400 SF - Turf Area
11,600 SF - Shrub Area

- Vista Sonrisa to Santa Rosa

0/14(T) - *Washingtonia Robusta* - Mexican Fan Palm
3,800 SF - Turf Area
24,300 SF - Shrub Area

- Santa Rosa to Olympic

4/9(T) - *Washingtonia Robusta* - Mexican Fan Palm
2,900 SF - Turf Area
10,800 SF - Shrub Area

- District Totals

19 - *Pyrus Calleryana 'Aristocrat'* - Flowering Pear Tree
8/79(T) - *Washingtonia Robusta* - Mexican Fan Palm
35,100 SF - Turf Area
84,700 SF - Shrub Area

Primary Street Tree Species

Flowering Pear
Pyrus Calleryana 'Arisocrat'

Chinese Flame Tree
Koelreutaria Bipinnata

Mexican Fan Palm
Washingtonia Robusta

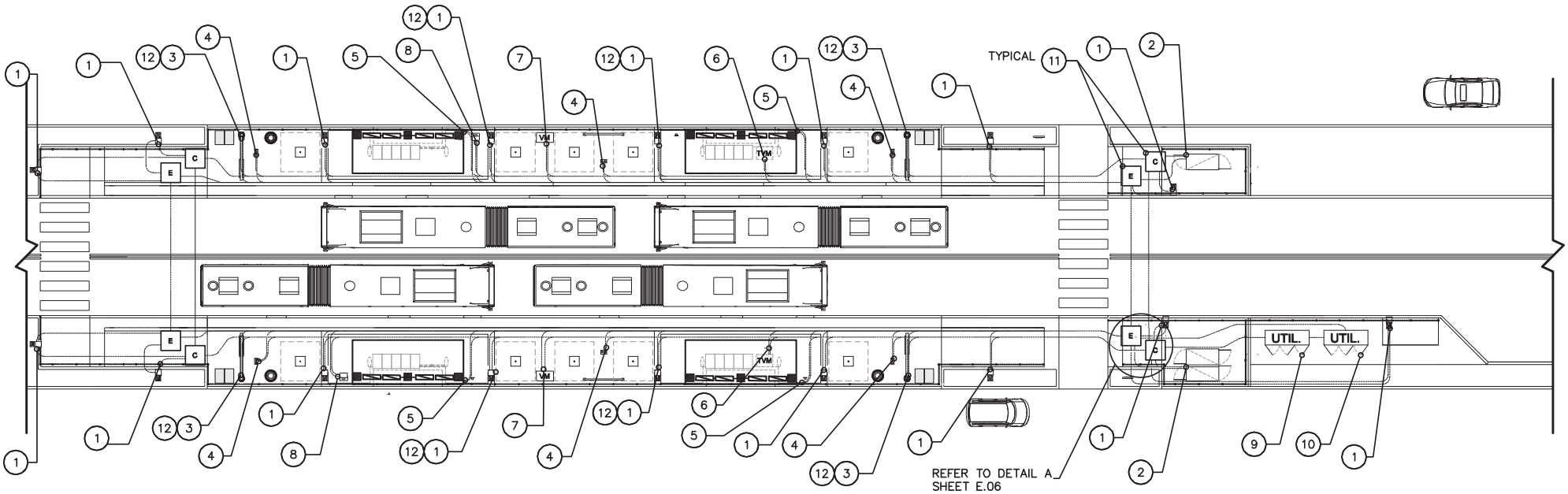
Possible Street Tree Species

Fern Pine
Podocarpus Gracillor

New Zealand Christmas Tree
Metrosideros Excelsus

Brisbane Box
Tristania Conferta

7.4 Station Communications and Electrical Exhibits

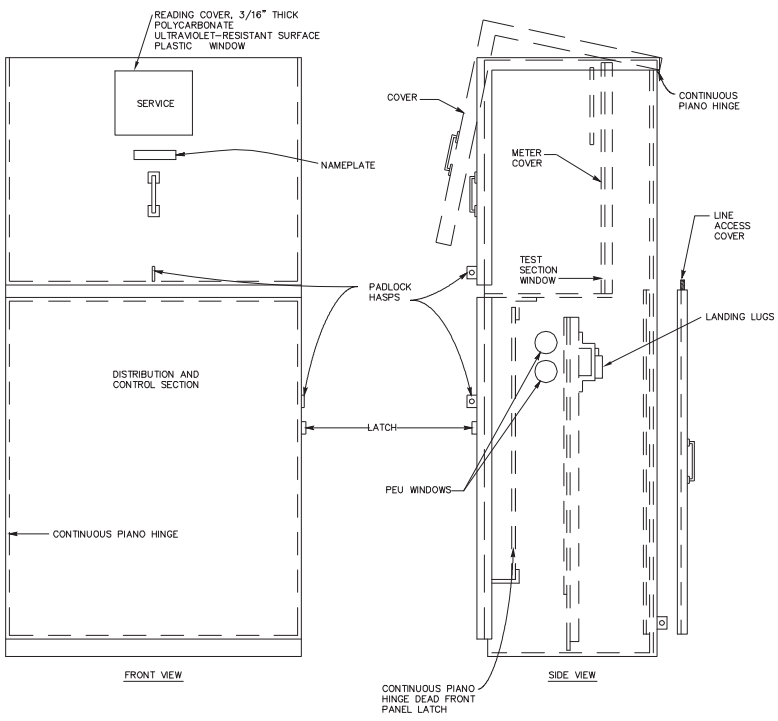


LEGEND

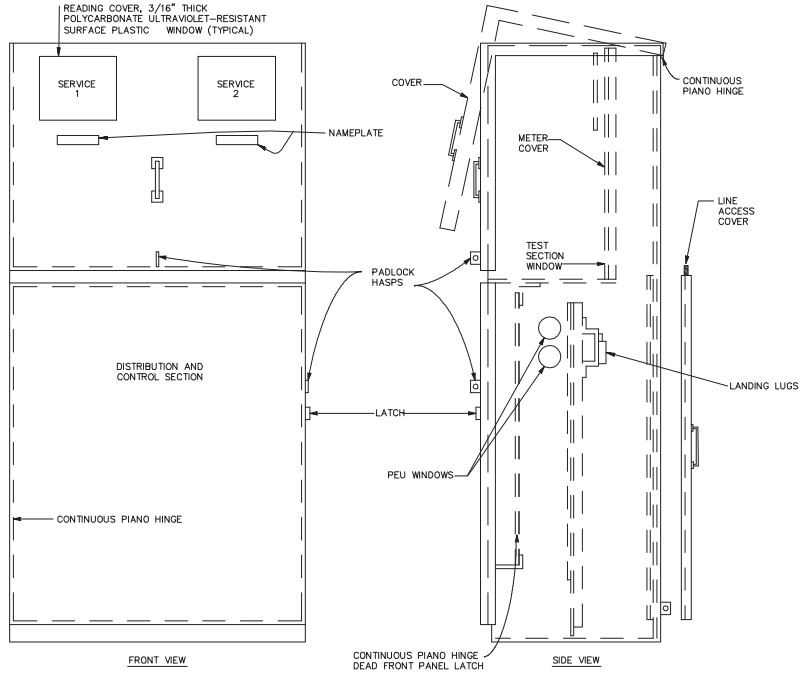
UNDERGROUND CONDUIT	VENDING MACHINE
ELECTRICAL PULL BOX	BIKE LOCKER
COMMUNICATIONS PULL BOX	PAY PHONE
PLATFORM LIGHT	TYPE 1 SITE IDENTIFICATION SIGN
SHELTER LIGHT	CCTV CAMERA
VMS AND CCTV POLE	PUBLIC ADDRESS SYSTEM
PCID	UTILITIES
TICKET VENDING MACHINE	

ELECTRICAL SHEET NOTES

1. PROVIDE (1)2" CONDUIT FOR POWER AND (1)2" CONDUIT FOR COMMUNICATION TO SERVE PLATFORM LIGHT.
2. PROVIDE (1)2" CONDUIT FOR POWER AND (1)2" CONDUIT FOR COMMUNICATION TO SERVE BIKE LOCKER.
3. PROVIDE (1)2" CONDUIT FOR POWER AND (1)2" CONDUIT FOR COMMUNICATION TO SERVE VARIBLE MESSAGE SIGN.
4. PROVIDE (1)2" CONDUIT FOR POWER AND (1)2" CONDUIT FOR COMMUNICATION TO SERVE PCID.
5. PROVIDE (1)2" CONDUIT FOR POWER AND (1)2" CONDUIT FOR COMMUNICATION TO SERVE PLATFORM SHELTER LIGHTS.
6. PROVIDE (1)2" CONDUIT FOR POWER AND (1)2" CONDUIT FOR COMMUNICATION TO SERVE TICKET VENDING MACHINE.
7. PROVIDE (1)2" CONDUIT FOR POWER AND (1)2" CONDUIT FOR COMMUNICATION TO SERVE VENDING MACHINE.
8. PROVIDE (1)2" CONDUIT FOR POWER AND (1)2" CONDUIT FOR COMMUNICATION TO SERVE PAY PHONE.
9. PROVIDE UTILITY CABINET WITH 200AMP 120/240V, 1PH SERVICE, METER, AND PANEL. REFER TO DETAILS FOR ADDITIONAL INFORMATION.
10. PROVIDE 3-CABINET COMMUNICATION RACK. REFER TO DETAILS FOR ADDITIONAL INFORMATION.
11. PROVIDE IN GRADE CALTRANS NO. 6 (T) STANDARD PULL BOX. ONE DESIGNATED COMMUNICATION AND ONE DESIGNATED ELECTRICAL.
12. CCTV CAMERA MOUNTED TO POLE. REFER TO ELEVATIONS FOR MOUNTING HEIGHT AND DIRECTIONS.



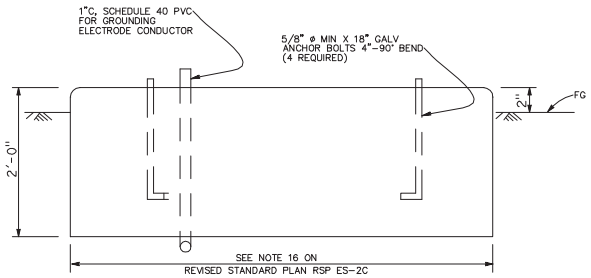
TYPE III-C (MODIFIED) SERVICE EQUIPMENT ENCLOSURE WITH PROVISIONS FOR ONE 200 A METER AND PANEL



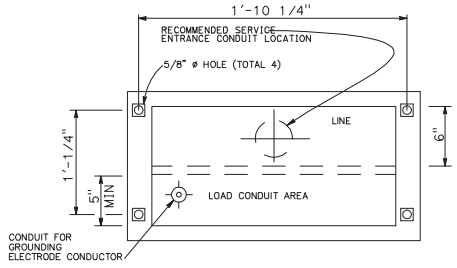
TYPE III-C (MODIFIED) SERVICE EQUIPMENT ENCLOSURE WITH PROVISIONS FOR ONE 200 A METER AND MAIN BREAKER AND ONE 100 A METER AND MAIN BREAKER

NOTES: (FOR SERVICE EQUIPMENT ENCLOSURE)

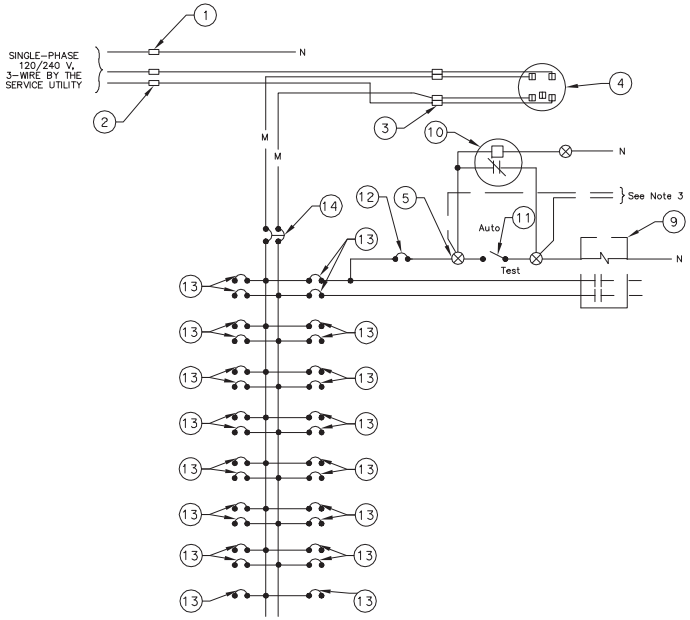
1. VOLTAGE RATINGS OF SERVICE EQUIPMENT SHALL CONFORM TO THE SERVICE VOLTAGES INDICATED ON THE PLANS.
2. UNLESS OTHERWISE INDICATED ON THE PLANS, SERVICE EQUIPMENT ITEMS SHALL BE PROVIDED FOR EACH SERVICE EQUIPMENT ENCLOSURE AS SHOWN.
3. CONNECT TO REMOTE TEST SWITCH MOUNTED ON LIGHTING STANDARDS, SIGN POST OR STRUCTURE WHEN REQUIRED.
4. NOT USED
5. METER SOCKETS SHALL BE 5 CLIP TYPE.
6. THE LANDING LUG SHALL BE SUITABLE FOR MULTIPLE CONDUCTORS.
7. TYPE II PHOTOELECTRIC CONTROL SHALL BE USED UNLESS OTHERWISE INDICATED ON THE PLANS.
8. FOR ADDITIONAL NOTES, SEE REVISED CALTRANS STANDARD PLANS RSP ES-2C. RATINGS SHALL BE AS INDICATED ON THE PLANS AND AS REQUIRED BY SDG&E.



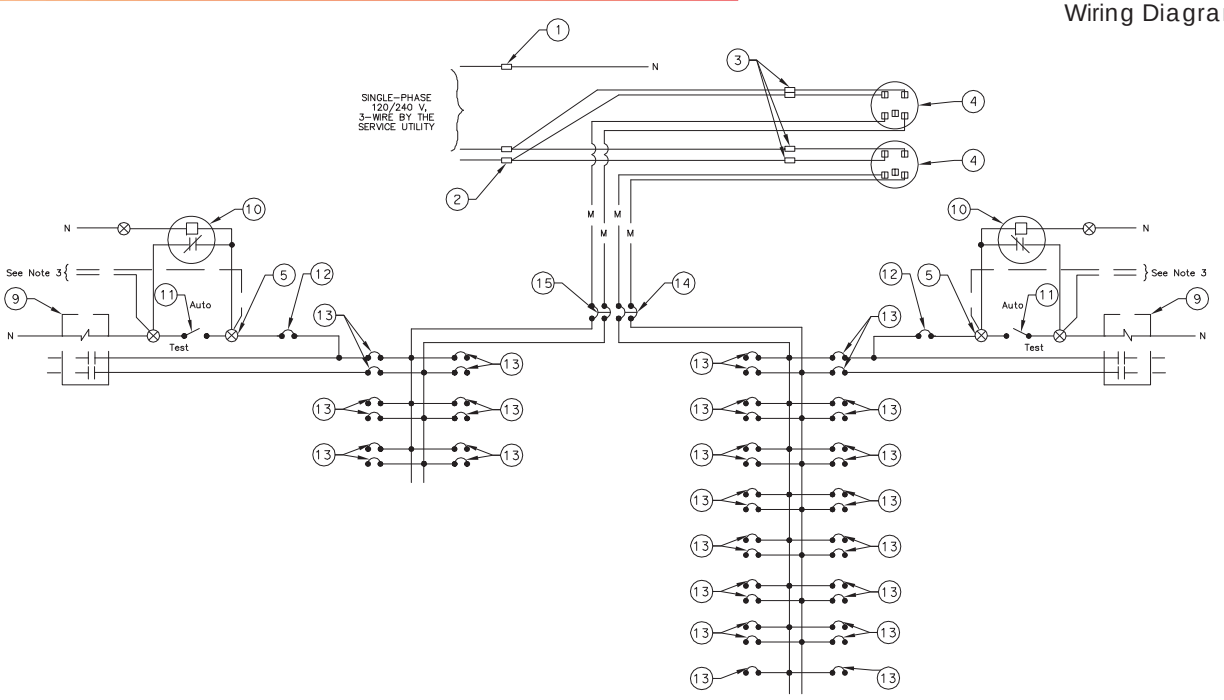
FOUNDATION DETAIL



BASE FOR TYPE III-C (MODIFIED) SERVICE EQUIPMENT ENCLOSURE



TYPICAL SINGLE METER SERVICE EQUIPMENT ENCLOSURE WIRING DIAGRAM



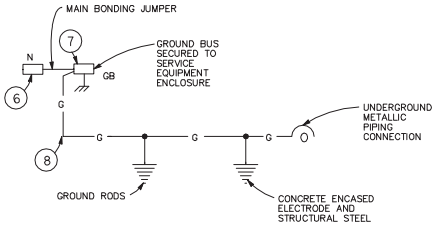
TYPICAL DUAL METER SERVICE EQUIPMENT ENCLOSURE WIRING DIAGRAM

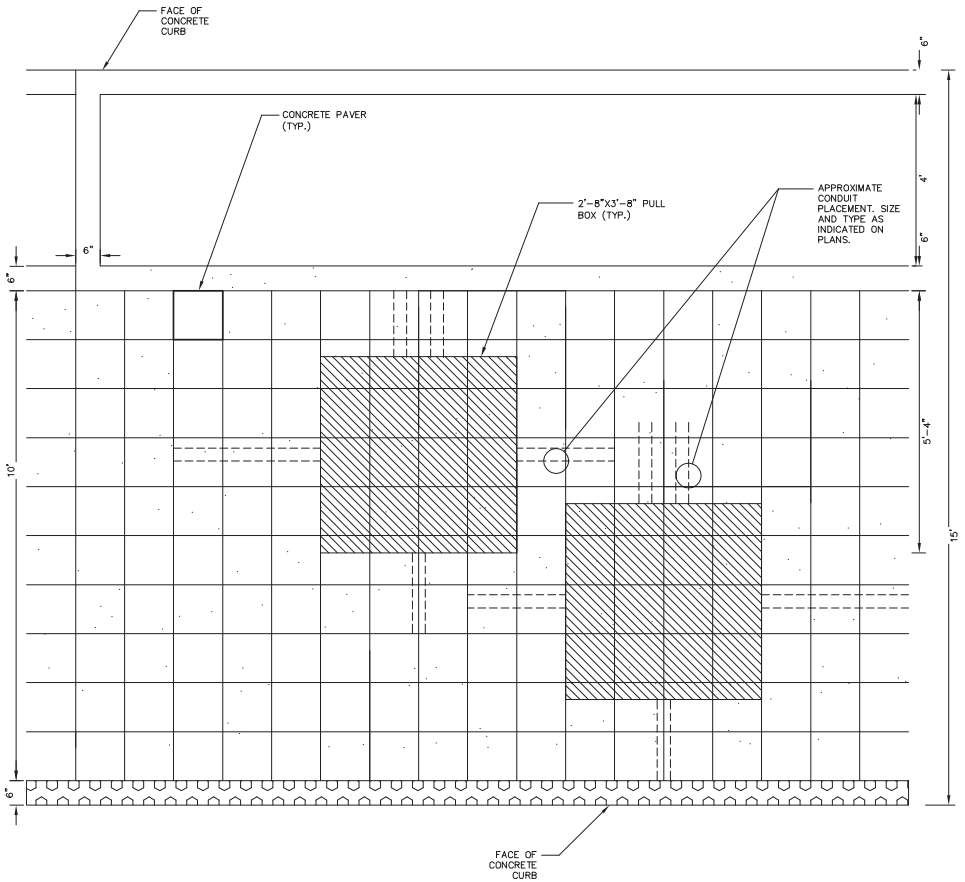
120/240 V SERVICE WIRING DIAGRAM

TYPE III-C SERVICE (120/240 V) EQUIPMENT LEGEND					
ITEM No.	COMPONENT	NAMEPLATE DESCRIPTION	ITEM No.	COMPONENT	NAMEPLATE DESCRIPTION
(1)	NEUTRAL LUG		(14)	200 A, 240 V, 2P, CB	MAIN BREAKER A
(2)	LANDING LUG (NOTE 6)		(15)	100 A, 240 V, 2P, CB	MAIN BREAKER B
(3)	TEST BYPASS FACILITY				
(4)	METER SOCKET AND SUPPORT				
(5)	TERMINAL BLOCKS				
(6)	NEUTRAL BUS (N)				
(7)	GROUND BUS (GB)				
(8)	GROUNDING ELECTRODE SYSTEM				
(9)	40 A, 2P, NO CONTACTOR	(NOTE 10)			
(10)	PHOTOELECTRIC UNIT (NOTE 7)				
(11)	15 A, 1P, TEST SWITCH	ILLUMINATION TEST SWITCH			
(12)	15 A, 120 V, 1P, CB	ILLUMINATION CONTROL			
(13)	CIRCUIT BREAKER	(NOTE 9)			

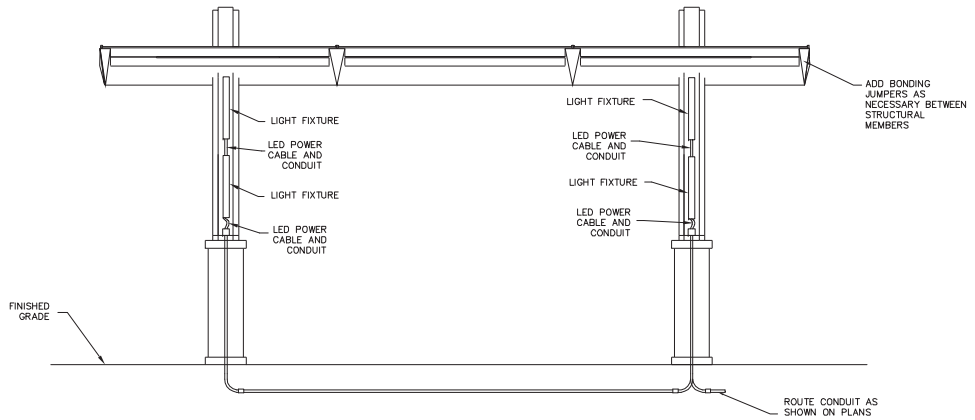
NOTES: (FOR SERVICE EQUIPMENT ENCLOSURE)

1. VOLTAGE RATINGS OF SERVICE EQUIPMENT SHALL CONFORM TO THE SERVICE VOLTAGES INDICATED ON THE PLANS.
2. UNLESS OTHERWISE INDICATED ON THE PLANS, SERVICE EQUIPMENT ITEMS SHALL BE PROVIDED FOR EACH SERVICE EQUIPMENT ENCLOSURE AS SHOWN.
3. CONNECT TO REMOTE TEST SWITCH MOUNTED ON LIGHTING STANDARDS, SIGN POST OR STRUCTURE WHEN REQUIRED.
4. ITEMS NO. (1) AND (6) SHALL BE ISOLATED FROM THE SERVICE EQUIPMENT ENCLOSURE.
5. METER SOCKETS SHALL BE 5 CLIP TYPE.
6. THE LANDING LUG SHALL BE SUITABLE FOR MULTIPLE CONDUCTORS.
7. TYPE II PHOTOELECTRIC CONTROL SHALL BE USED.
8. FOR ADDITIONAL NOTES, SEE REVISED CALTRANS STANDARD PLANS RSP ES-2C. RATINGS SHALL BE AS INDICATED ON THE PLANS AND AS REQUIRED BY SDG&E.
9. REFER TO PANEL SCHEDULES FOR CIRCUIT BREAKER SIZES AND DESCRIPTIONS.
10. CONTACTOR SHALL BE INSTALLED FOR ALL LIGHTING CIRCUITS.

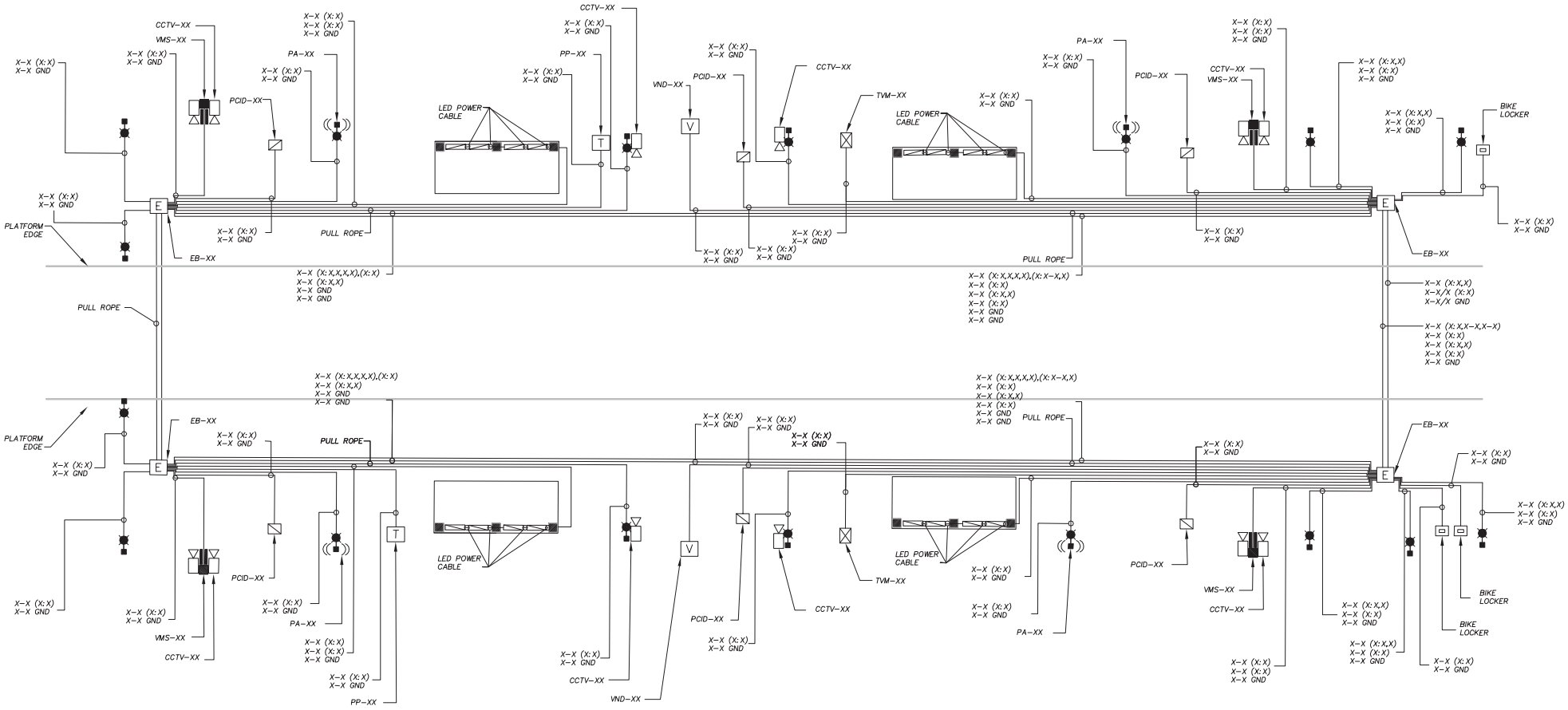




A TYPICAL ON-PLATFORM PULL BOX LAYOUT
NOT TO SCALE



B TYPICAL SHELTER CONDUIT ROUTING
NOT TO SCALE



CONDUCTOR CALL-OUT LEGEND

XX–#YY (V:Z/Z,Z/Z,T–UPS,T–CPS,T–AMP)

- NUMBER OF CIRCUITS FED FROM AMP
- NUMBER OF CIRCUITS FED FROM CPS
- NUMBER OF CIRCUITS FED FROM UPS
- PANEL BRANCH CIRCUIT NUMBER
- PANEL DESIGNATION
- CONDUCTOR SIZE IN AWG/CABLE TYPE
- QUANTITY OF CONDUCTORS

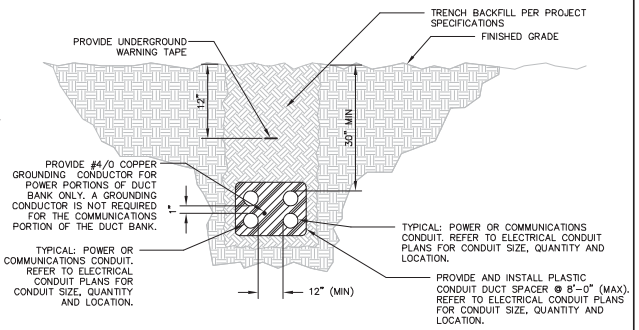
ELECTRICAL WIRING DIAGRAM

ELECTRICAL WIRING ABBREVIATIONS

CPS	CAMERA POWER SUPPLY, 24VDC, 2–#10 BLACK AND RED
UPS	UNINTERRUPTED POWER SUPPLY, 240V, 2–#10 BLUE AND WHITE
AMP	AUDIO AMPLIFIER
PA	AUDIO SPEAKER CABLE (70V)

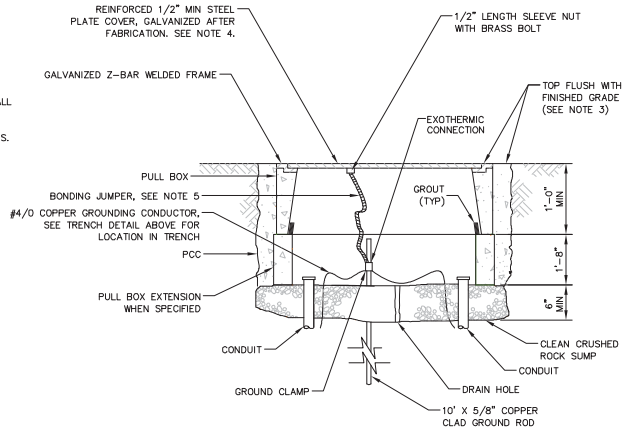
A CONDUIT DUCT BANK TRENCH DETAIL
NOT TO SCALE

NOTE:
1. SEPARATION BETWEEN POWER AND COMMUNICATIONS CONDUIT SHALL BE 12" MINIMUM.
2. A BED OF FINE SOIL OR SAND A MINIMUM OF 2" THICK SHALL BE PLACED IN THE TRENCH BEFORE PLACING THE CONDUIT. A MINIMUM OF 4" OF THE SAME TYPE OF MATERIAL SHALL BE PLACED OVER THE CONDUIT BEFORE ADDITIONAL BACKFILL MATERIAL IS PLACED.



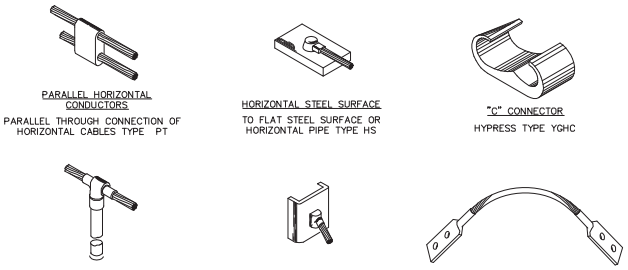
NOTES ON PULL BOXES:

1. TRAFFIC PULL BOX SHALL BE PROVIDED WITH STEEL COVER AND SPECIAL CONCRETE FOOTING. STEEL COVER SHALL HAVE EMBOSSED NON-SKID PATTERN.
2. STEEL REINFORCING SHALL BE AS REGULARLY USED IN THE STANDARD PRODUCTS OF THE RESPECTIVE MANUFACTURER.
3. TOP OF PULL BOXES SHALL BE FLUSH WITH SURROUNDING GRADE OR TOP OF ADJACENT CURB, EXCEPT THAT IN UNPAVED AREAS WHERE PULL BOX IS NOT IMMEDIATELY ADJACENT TO AND PROTECTED BY A CONCRETE FOUNDATION, POLE OR OTHER PROTECTIVE CONSTRUCTION, THE BOX SHALL BE PLACED WITH ITS TOP 1½" ABOVE SURROUNDING GRADE. WHERE PRACTICABLE, PULL BOXES SHOWN IN THE VICINITY OF CURBS SHALL BE PLACED ADJACENT TO THE BACK OF CURB, AND PULL BOXES SHOWN ADJACENT TO STANDARDS SHALL BE PLACED ON SIDE OF FOUNDATION FACING AWAY FROM TRAFFIC, UNLESS OTHERWISE NOTED. WHEN PULL BOX IS INSTALLED IN SIDEWALK AREA, THE DEPTH OF THE PULL BOX SHALL BE ADJUSTED SO THAT THE TOP OF THE PULL BOX IS FLUSH WITH THE SIDEWALK.
4. PULL BOX COVERS SHALL BE MARKED "ELECTRICAL" OR "COMMUNICATIONS" AS INDICATED ON PLANS.
5. BONDING JUMPER FOR METAL COVERS SHALL BE 3' LONG, MINIMUM.
6. THE NOMINAL DIMENSIONS OF THE OPENING IN WHICH THE COVER SETS SHALL BE THE SAME AS THE COVER DIMENSIONS EXCEPT THE LENGTH AND WIDTH DIMENSIONS SHALL BE ⅛" GREATER.
7. COVERS AND BOXES SHALL BE INTERSHANGEABLE WITH CALIFORNIA STANDARD MALE AND FEMALE GAGES. WHEN INTERCHANGED WITH A STANDARD MALE OR FEMALE GAGE, THE TOP SURFACES SHALL BE FLUSH WITHIN ⅛". TOP OUTSIDE EDGE OF CONCRETE COVERS AND PULL BOXES SHALL HAVE A ¾" MINIMUM RADIUS.
8. PULL BOXES SHALL NOT BE INSTALLED WITHIN THE BOUNDARIES OF NEW OR EXISTING CURB RAMPS.
9. PULL BOXES FOR ELECTROLIERS, POST AND SIGNAL STANDARDS SHALL BE LOCATED +/- 5'-0" FROM THE STATION OF THE ADJACENT ELECTROLIER, POST OR SIGNAL STANDARD. PULL BOXES SHALL BE PLACED ADJACENT TO BACK OF CURB OR EDGE OF SHOULDER EXCEPT WHERE THIS IS IMPRACTICAL, A BOX MAY BE PLACED IN ANOTHER SUITABLE PROTECTED AND ACCESSIBLE LOCATION.

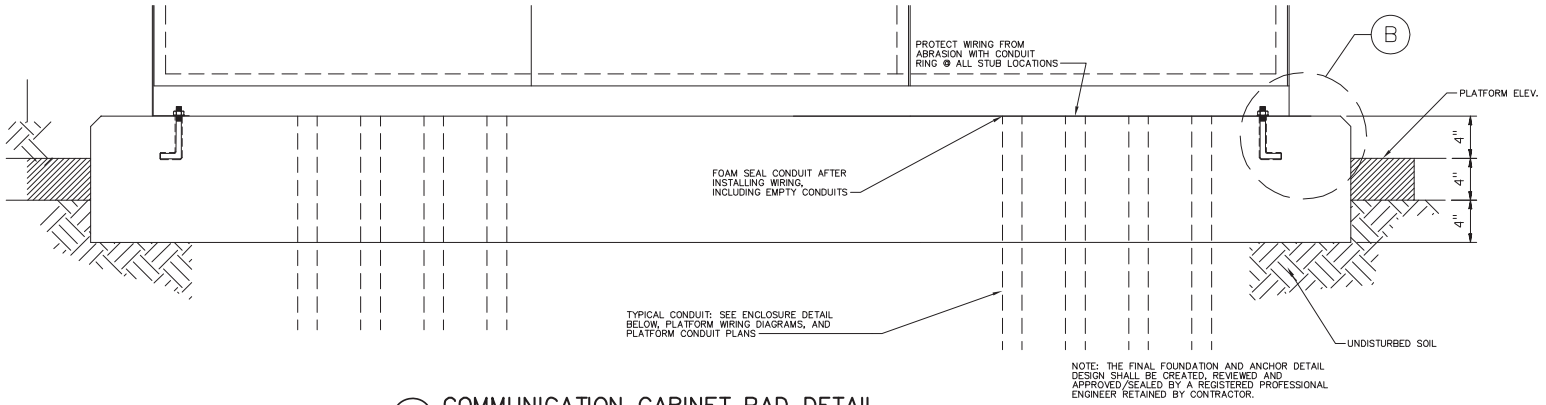


B MODIFIED CALTRANS NO. 6(T) TRAFFIC RATED PULL BOX W/ EXT.
NOT TO SCALE

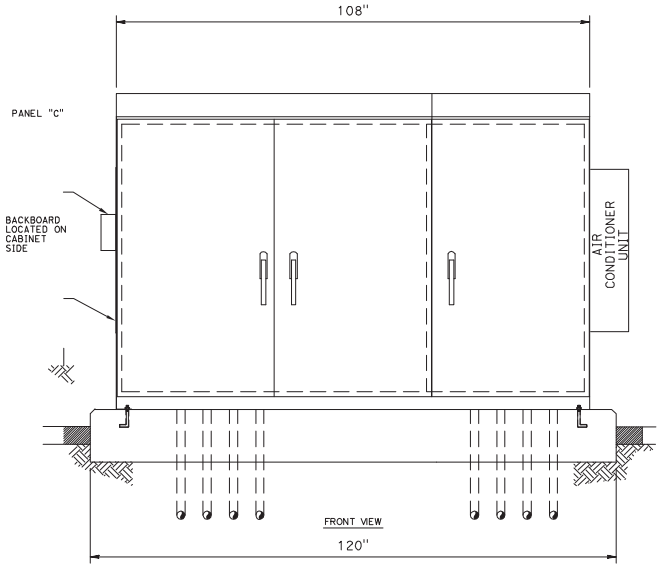
* NOTE: GROUNDING SYSTEM ONLY REQUIRED IN ELECTRICAL PULL BOXES.

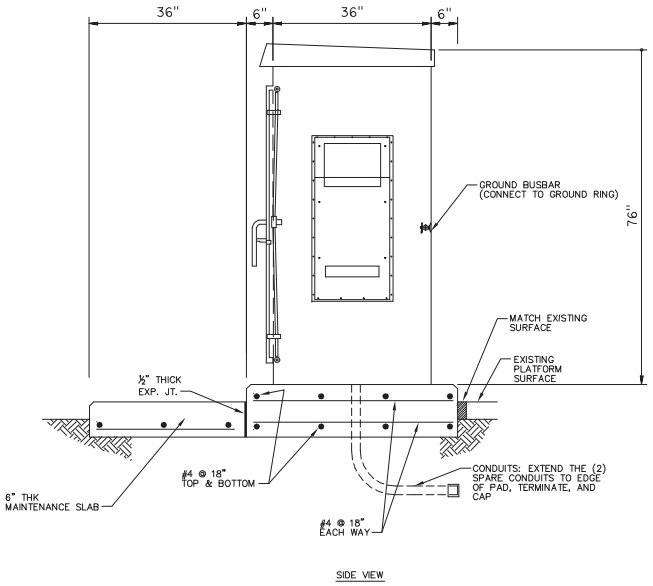


C TYPICAL WELDING CONNECTIONS
NOT TO SCALE

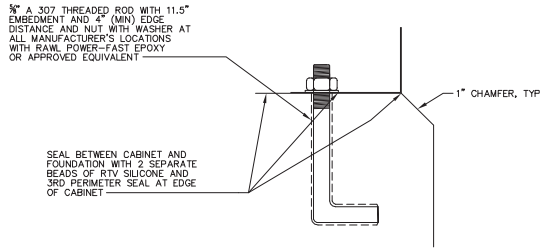


A COMMUNICATION CABINET PAD DETAIL
NOT TO SCALE





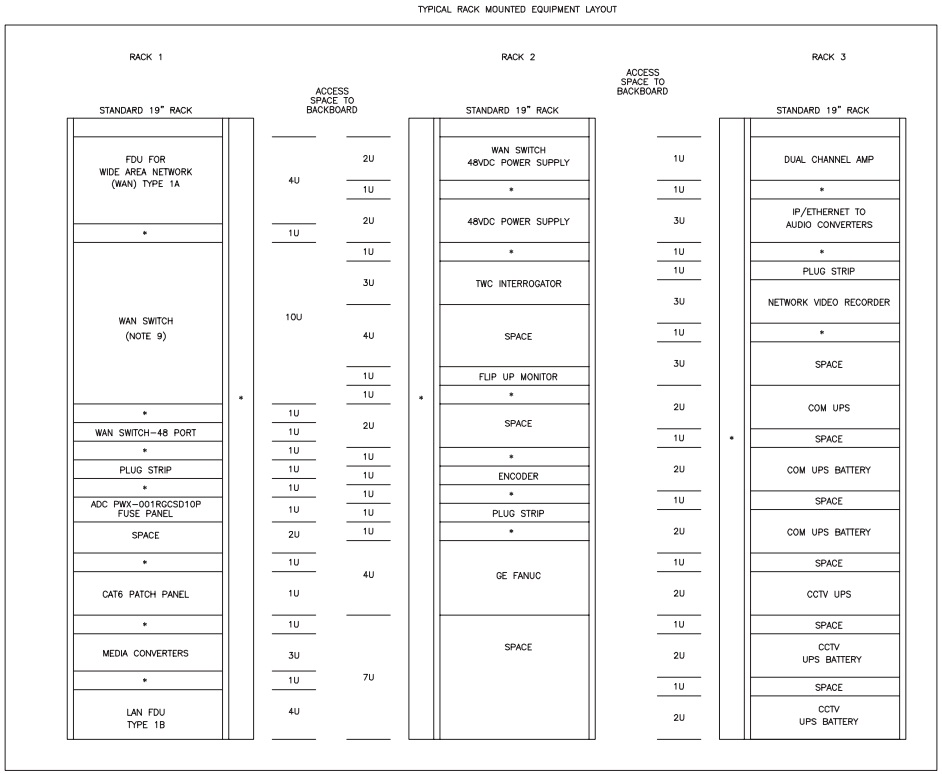
COMMUNICATIONS CABINET ELEVATION VIEWS
NOT TO SCALE

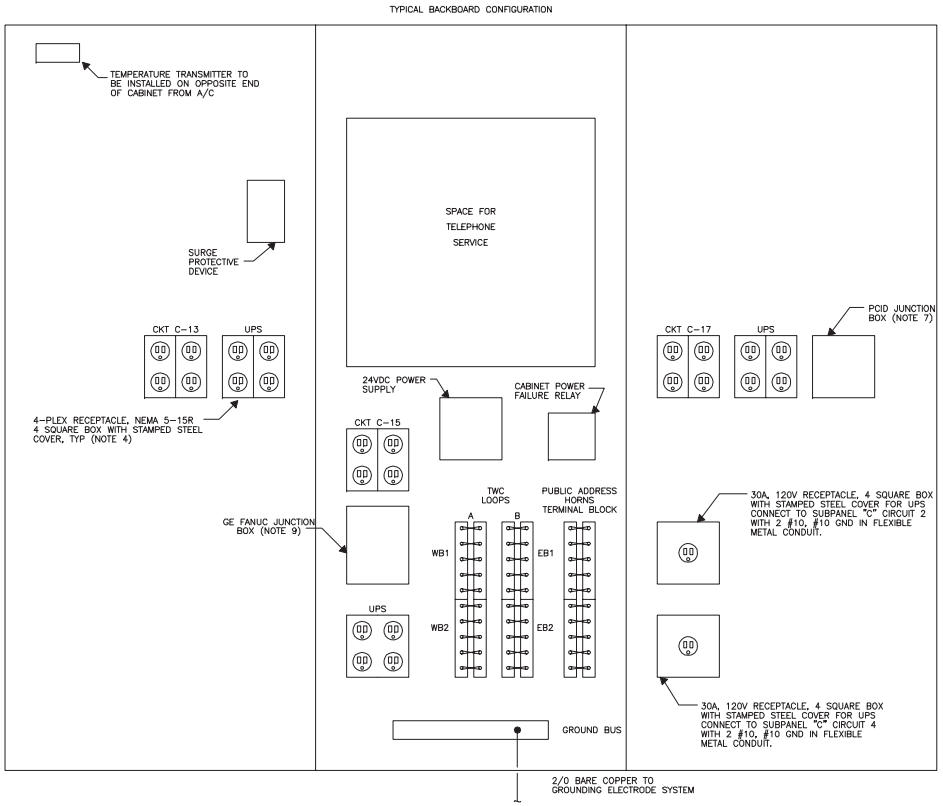


B ANCHOR BOLT DETAIL
NOT TO SCALE

NOTES:

1. CONTRACTOR SHALL MANDREL ALL CONDUITS JUST PRIOR TO CABLE INSTALLATION.
2. CABINET PAD DIMENSIONS SHALL BE DETERMINED ON SITE SPECIFIC LOCATIONS. FINAL PAD DIMENSIONS SHALL BE 6" WIDER ON SIDES AND BACK ALL 4 SIDES OF CABINET AND 36" IN FRONT OF CABINET, IF NOT ON PLATFORM.





(A) TYPICAL RACK MOUNTED EQUIPMENT LAYOUT
NOT TO SCALE

NOTES:

Ⓐ CAT6 PATCH CABLE WITH RJ-45 MALE CONNECTORS ON BOTH ENDS.

Ⓑ SINGLE MODE FIBER OPTIC PATCH CABLE WITH SC DUPLEX CONNECTORS ON BOTH ENDS.

Ⓒ TERMINATE CABLE TO BACK SIDE.

Ⓓ OUTDOOR RATED CAT6 (COMSCOPE 6NF4+ OR APPROVED EQUIVALENT) WITH RJ-45 MALE CONNECTORS TO DEVICE AND PUNCHED DOWN TO CAT6 PATCH PANEL.

GENERAL NOTES:

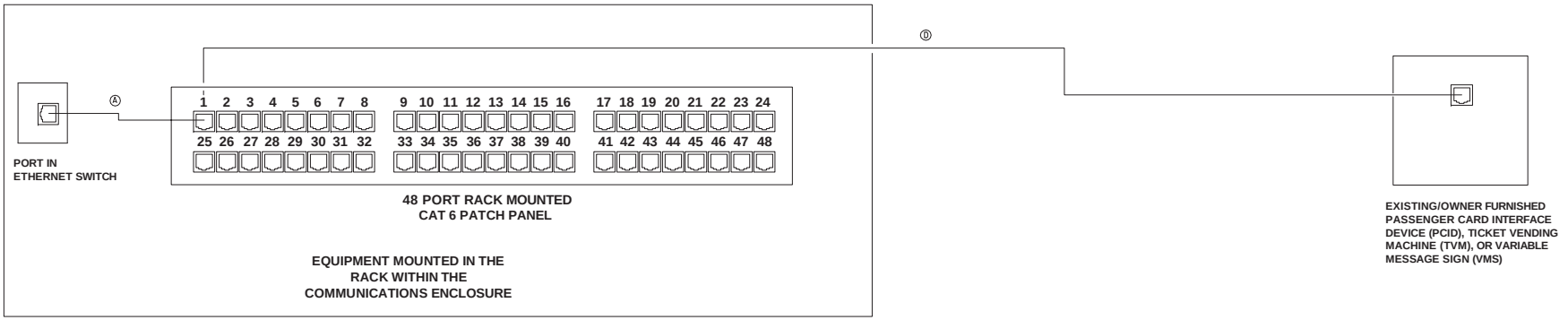
1. SEE PATCH CABLE SCHEDULE AND EQUIPMENT PORT DESIGNATION SHEET FOR WIRING CONFIGURATION INFORMATION REQUIRED TO CONNECT FIELD DEVICES TO NETWORK EQUIPMENT. THE TYPICAL ARRANGEMENTS SHOWN BELOW ONLY PROVIDE A CONCEPTUAL REPRESENTATION AND DO NOT REFLECT ACTUAL EQUIPMENT PORTS TO BE USED.
2. ALL EQUIPMENT SHOWN ON THIS SHEET SHALL BE NEW EXCEPT WHERE NOTED OTHERWISE.
3. ALL CABLES AND PATCH CORDS SHALL BE LABELED AT BOTH ENDS WITH FROM AND TO DEVICE DESCRIPTIONS AND TEMINATION PORTS INFORMATION.

LEGEND:

X FUSION SPLICE IN SPLICE TRAY

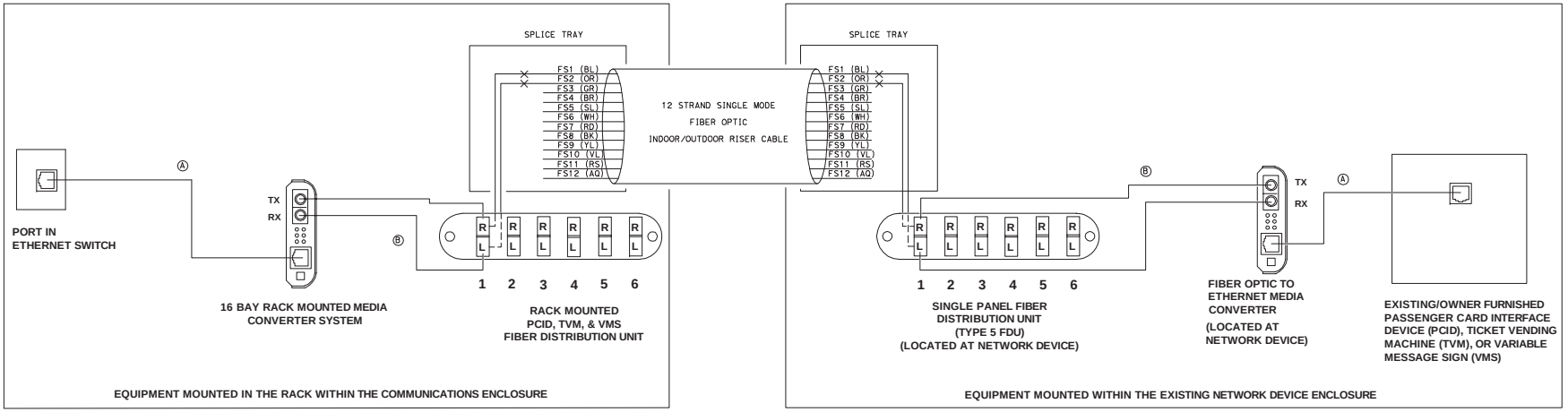
TYPICAL DEVICE CONNECTIONS VIA CATEGORY 6 CABLING

(TOTAL CABLE LENGTH FROM NETWORK SWITCH TO DEVICE SHALL NOT EXCEED 330 FEET)



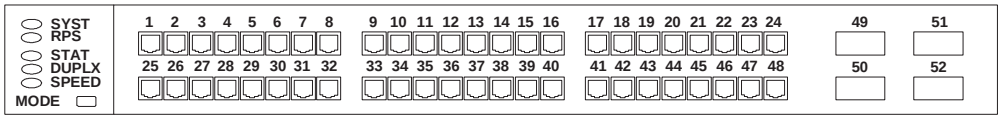
TYPICAL DEVICE NETWORK CONNECTION VIA SINGLE MODE FIBER OPTIC CABLE AND MEDIA CONVERTERS

(SINGLE MODE FIBER OPTIC CABLE SHALL BE USED TO CONNECT THE DEVICE TO THE NETWORK WHEN CABLE DISTANCE BETWEEN DEVICE AND THE NETWORK SWITCH EXCEEDS 330 FEET)



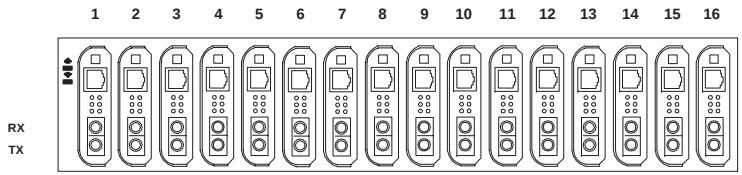
Ⓐ NETWORK COMMUNICATIONS DEVICE CONNECTIONS
NOT TO SCALE

RACK MOUNTED LAN ETHERNET SWITCH



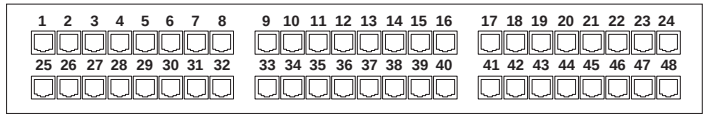
NETWORK SWITCH CARD DESIGNATIONS:
- VARIABLE MESSAGE SIGNS (VMS) - PORTS 1 THRU 15 ODD
- PASSENGER CARD INTERFACE DEVICES (PCIDs) - PORTS 17 THRU 31 ODD
- TICKET VENDING MACHINES (TVMs) - PORTS 33 THRU 47 ODD
- UNASSIGNED - 2 THRU 48 EVEN

16 BAY RACK MOUNTED MEDIA CONVERTER SYSTEM



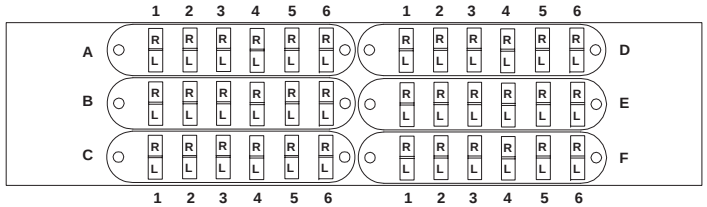
TYPICAL 16 BAY MEDIA CONVERTER DESIGNATIONS:
- VARIABLE MESSAGE SIGNS (VMS) - CONVERTERS 1 THRU 4
- PASSENGER CARD INTERFACE DEVICES (PCIDs) - CONVERTERS 5 THRU 8
- TICKET VENDING MACHINES (TVMs) - CONVERTERS 9 & 10
- VIDEO SURVEILLANCE - CONVERTERS 11 THRU 14
- UNASSIGNED - 15 & 16

48 PORT RACK MOUNTED CAT 6 PATCH PANEL



TYPICAL PORT DESIGNATIONS FOR CAT6 PATCH PANEL:
- VARIABLE MESSAGE SIGNS (VMS) - PORTS 1 THRU 8
- PASSENGER CARD INTERFACE DEVICES (PCIDs) - PORTS 9 THRU 16
- TICKET VENDING MACHINES (TVMs) - PORTS 17 THRU 24
- VIDEO SURVEILLANCE - PORTS 25 THRU 40
- UNASSIGNED - 41 THRU 48

RACK MOUNTED PCID, TVM, & VMS FIBER DISTRIBUTION UNIT

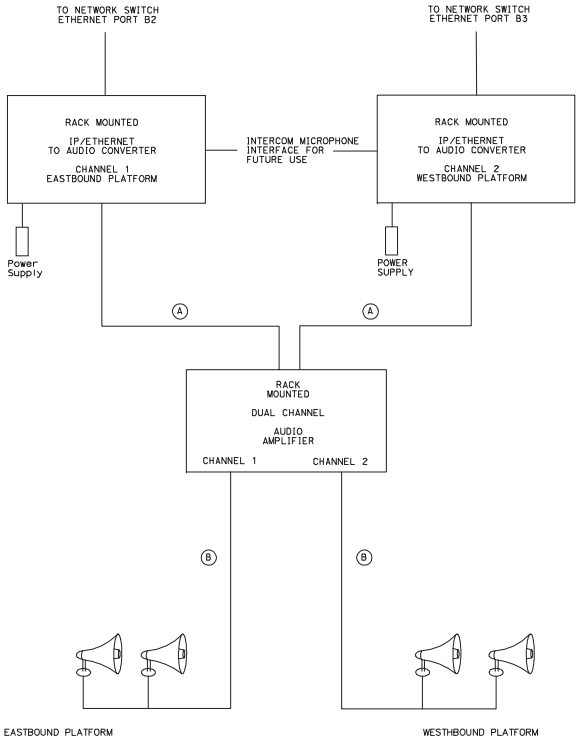


TYPICAL PCID, TVM, & VMS FIBER DISTRIBUTION UNIT (FDU):
- VARIABLE MESSAGE SIGNS (VMS) - A1 THRU A6 AND B1 THRU B6
- PASSENGER CARD INTERFACE DEVICES (PCIDs) - C1 THRU C6
- TICKET VENDING MACHINES (TVMs) - D1 THRU D6
- VIDEO SURVEILLANCE - E1 THRU E6
- UNASSIGNED - F1 THRU F6

A NETWORK EQUIPMENT PORT DESIGNATIONS
NOT TO SCALE

PUBLIC ADDRESS SYSTEM-

RACK MOUNTED INTERCOM AND PAGING SYSTEM



NOTES:

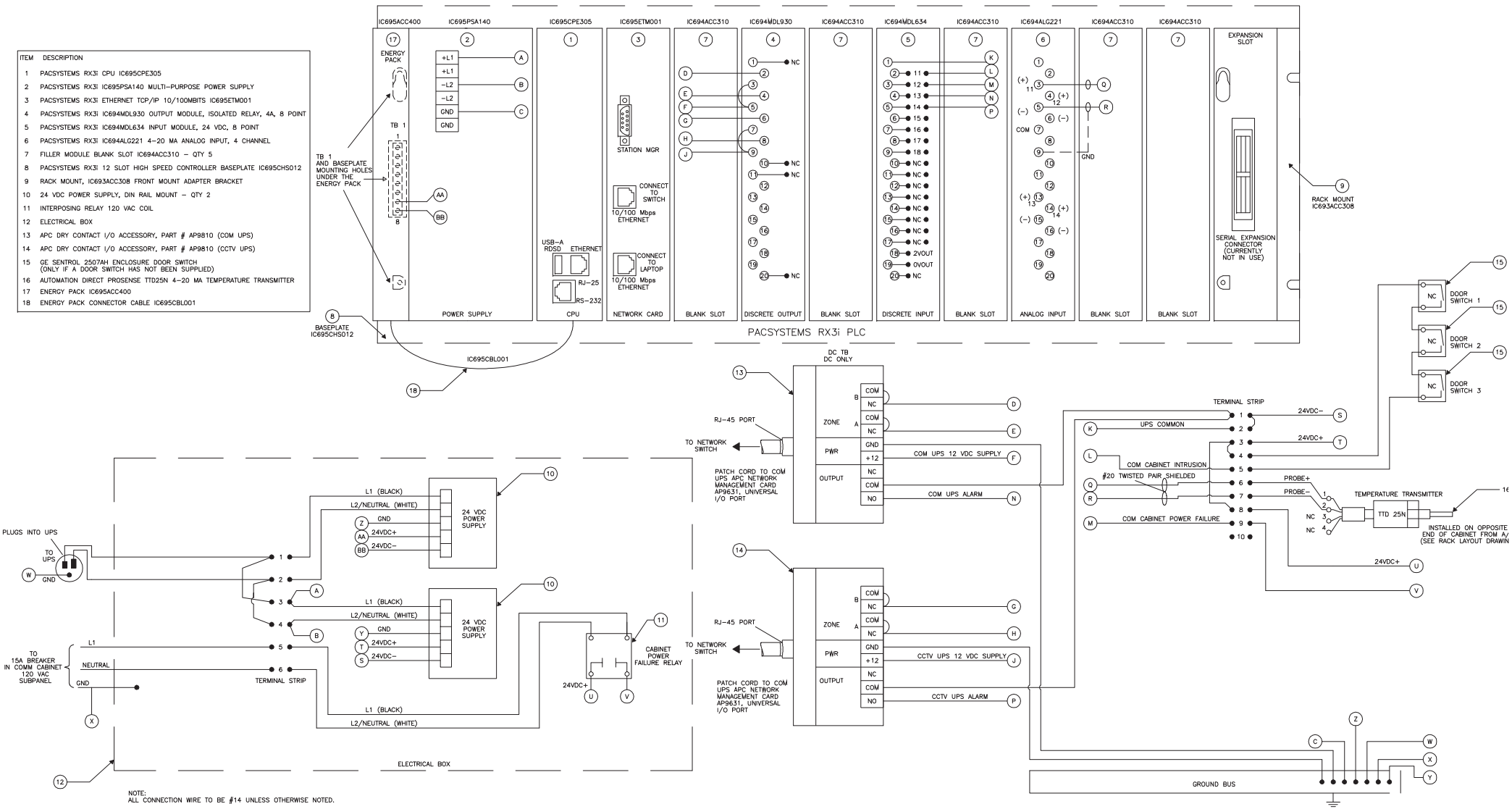
(A) FOUR FEET LONG SHIELDED TWISTED PAIR STRANDED 16 AWG WIRE FROM CONVERTER AUDIO OUTPUT TO RACK MOUNTED AMPLIFIER (GROUND SHIELD TO AMPLIFIER).

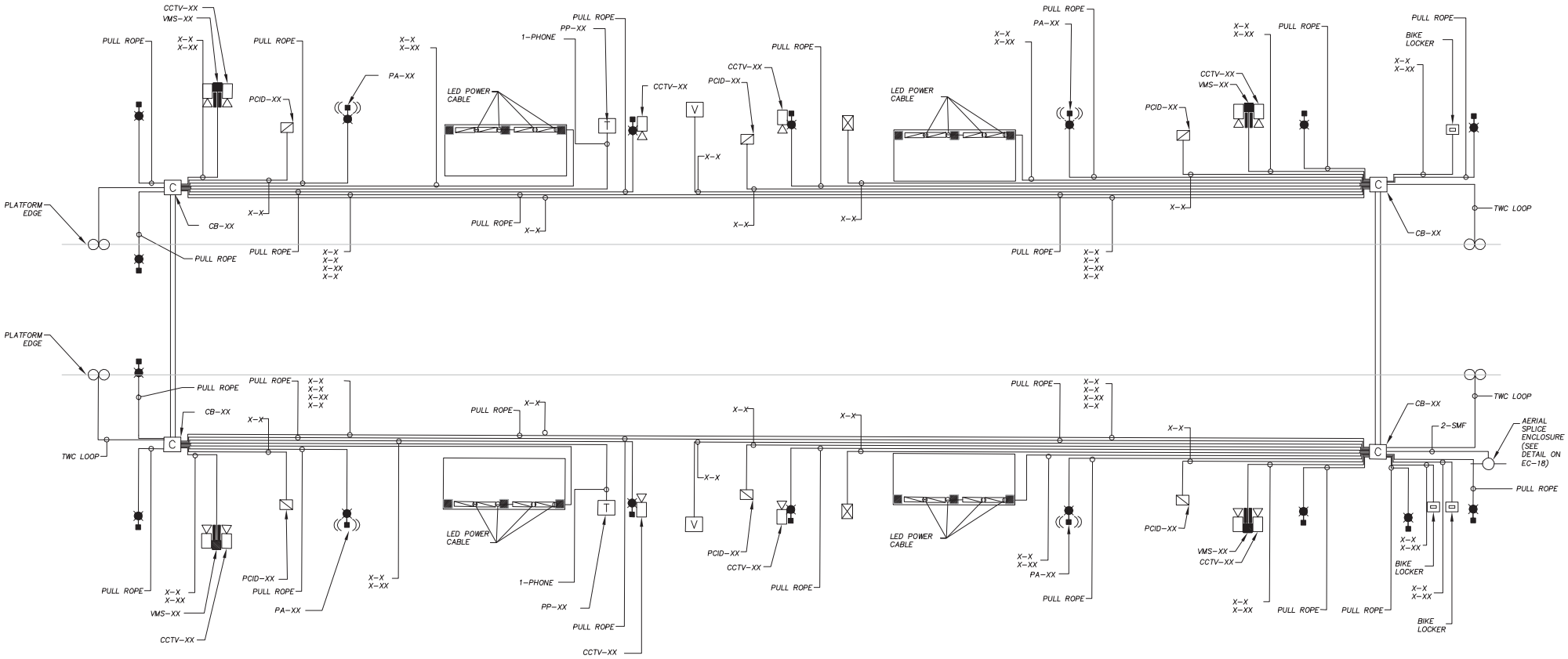
(B) 12AWG STRANDED COPPER OUTDOOR RATED SPEAKER WIRE WITH TINNED OR CRIMPED SLEAVED ENDS.

LEGEND:

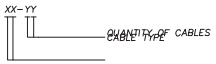
70 VOLT
30 WATT HORN

(A) PUBLIC ADDRESS SYSTEM CONFIGURATION
NOT TO SCALE


ITEM DESCRIPTION
1 PACSYSTEMS RX3i CPU IC695CPE305
2 PACSYSTEMS RX3i IC695PSA140 MULTI-PURPOSE POWER SUPPLY
3 PACSYSTEMS RX3i ETHERNET TCP/IP 10/100MBITS IC695ETM001
4 PACSYSTEMS RX3i IC694MDL930 OUTPUT MODULE, ISOLATED RELAY, 4A, 8 POINT
5 PACSYSTEMS RX3i IC694MDL634 INPUT MODULE, 24 VDC, 8 POINT
6 PACSYSTEMS RX3i IC694ALG221 4-20 MA ANALOG INPUT, 4 CHANNEL
7 FILLER MODULE BLANK SLOT IC694ACC310 - QTY 5
8 PACSYSTEMS RX3i 12 SLOT HIGH SPEED CONTROLLER BASEPLATE IC695CHS012
9 RACK MOUNT, IC693ACC308 FRONT MOUNT ADAPTER BRACKET
10 24 VDC POWER SUPPLY, DIN RAIL MOUNT - QTY 2
11 INTERPOSING RELAY 120 VAC COIL
12 ELECTRICAL BOX
13 APC DRY CONTACT I/O ACCESSORY, PART # AP9810 (COM UPS)
14 APC DRY CONTACT I/O ACCESSORY, PART # AP9810 (CCTV UPS)
15 GE SENTROL 2507AH ENCLOSURE DOOR SWITCH (ONLY IF A DOOR SWITCH HAS NOT BEEN SUPPLIED)
16 AUTOMATION DIRECT PROSENSE TTD25N 4-20 MA TEMPERATURE TRANSMITTER
17 ENERGY PACK IC695ACC400
18 ENERGY PACK CONNECTOR CABLE IC695CBL001
IC695ACC400
IC695PSA140
IC695CPE305
IC695ETM001
IC694ACC310
IC694MDL930
IC694ACC310
IC694MDL634
IC694ACC310
IC694ALG221
IC694ACC310
IC694ACC310
ENERGY PACK
TB 1
TB 1 AND BASEPLATE MOUNTING HOLES UNDER THE ENERGY PACK
+L1
+L1
-L2
-L2
GND
GND
POWER SUPPLY
USB-A
RDSD
ETHERNET
RJ-45
RS-232
CPU
STATION MGR
CONNECT TO SWITCH
10/100 Mbps ETHERNET
CONNECT TO LAPTOP
10/100 Mbps ETHERNET
NETWORK CARD
BLANK SLOT
DISCRETE OUTPUT
BLANK SLOT
DISCRETE INPUT
2VOUT
0VOUT
BLANK SLOT
ANALOG INPUT
BLANK SLOT
BLANK SLOT
EXPANSION SLOT
SERIAL EXPANSION CONNECTOR (CURRENTLY NOT IN USE)
RACK MOUNT IC693ACC308
BASEPLATE IC695CHS012
IC695CBL001
PACSYSTEMS RX3i PLC
DC TB
DC ONLY
RJ-45 PORT
TO NETWORK SWITCH
PATCH CORD TO COM UPS APC NETWORK MANAGEMENT CARD AP9631, UNIVERSAL I/O PORT
ZONE
PWR
OUTPUT
COM UPS 12 VDC SUPPLY
COM UPS ALARM
CCTV UPS 12 VDC SUPPLY
CCTV UPS ALARM
TERMINAL STRIP
UPS COMMON
COM CABINET INTRUSION
#20 TWISTED PAIR SHIELDED
COM CABINET POWER FAILURE
24VDC-
24VDC+
PROBE+
PROBE-
TEMPERATURE TRANSMITTER
TTD 25N
INSTALLED ON OPPOSITE END OF CABINET FROM A/ (SEE RACK LAYOUT DRAWIN
DOOR SWITCH 1
DOOR SWITCH 2
DOOR SWITCH 3
PLUGS INTO UPS
TO UPS
GND
L1 (BLACK)
L2/NEUTRAL (WHITE)
24 VDC POWER SUPPLY
TO 15A BREAKER IN COMM CABINET 120 VAC SUBPANEL
L1
NEUTRAL
GND
TERMINAL STRIP
CABINET POWER FAILURE RELAY
24VDC+
ELECTRICAL BOX
GROUND BUS
NOTE:
ALL CONNECTION WIRE TO BE #14 UNLESS OTHERWISE NOTED.



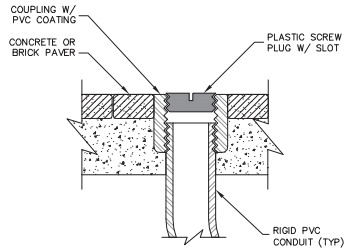
CABLE CALL-OUT LEGEND



COMMUNICATIONS WIRING DIAGRAM

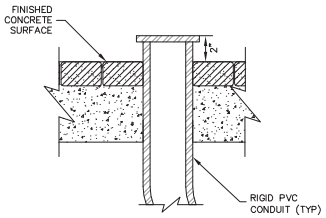
COMMUNICATIONS WIRING ABBREVIATIONS

SMF	12–STRAND SINGLE MODE FIBER OPTIC CABLE
CTS	TWC LOOP CONNECTOR CABLE (CONDUCTOR TWISTED SHIELDED)
PHONE	TELEPHONE CABLE
CAT6	CATEGORY 6 CABLE



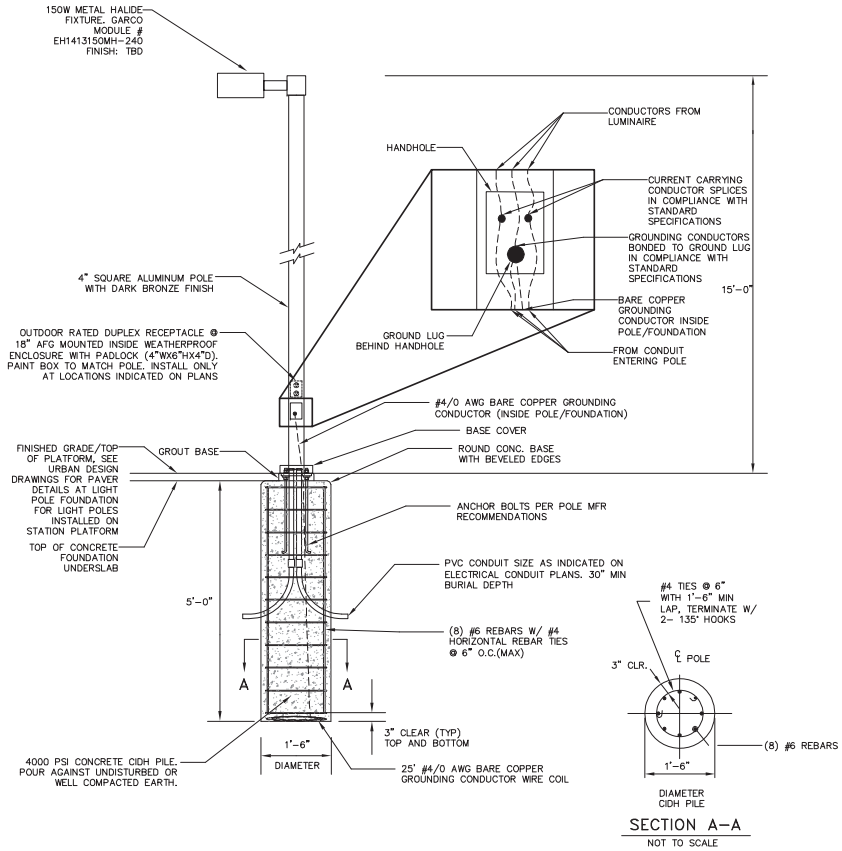
A TYPICAL SPARE CONDUIT STUB
NOT TO SCALE

NOTES:
1. SEE CIVIL PLANS FOR STATION SPECIFIC PLATFORM GRADES.
2. PROVIDE SPARE CONDUIT STUB(S) AT THE LOCATIONS SHOWN IN THE PLANS.



B CONDUIT STUB-OUT DETAIL
NOT TO SCALE

NOTES:
1. SEE CIVIL PLANS FOR STATION SPECIFIC PLATFORM GRADES.
2. DETAIL APPLIES TO TICKET VENDING MACHINES, PCID'S, AND BIKE LOCKERS.



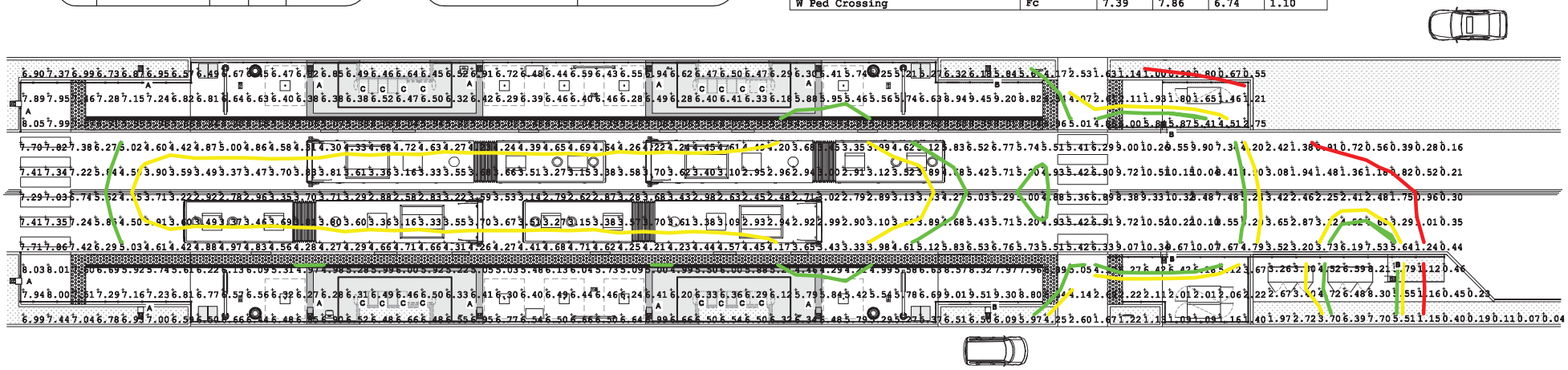
C PLATFORM LIGHT DETAIL
NOT TO SCALE

7.5 Station Lighting Exhibits

LIGHT FIXTURE SCHEDULE				
LABEL	MANUFACTURER	WATT	TYPE	DISTRIBUTION
A	Gardco Lighting EH14-1-3-150PSMH	150W	MH	Type III
B	Gardco Lighting EH14-1-FM-150PSMH	150W	MH	Type IV
C	Lumenpulse	32W	LED	N/A

ISOLINE LEGEND	
ISOLINE	VALUE
GREEN	5.0 fc and above
YELLOW	4.99 fc to 1.01 fc
RED	1.0 fc and below

Calculation Summary					
Label	Units	Avg	Max	Min	Avg/Min
Guideway	Fc	4.51	10.52	0.16	28.19
N Station	Fc	5.81	9.45	0.55	10.56
S Station	Fc	5.87	9.51	1.09	5.39
Utility Area	Fc	3.32	8.30	0.04	83.00
E Ped Crossing	Fc	6.04	6.91	5.36	1.13
W Ped Crossing	Fc	7.39	7.86	6.74	1.10



Job:
Type:
Notes:

Featuring CosmoPolis and MasterColor Elite Electronic HID Systems

Form 10 Square

EH / H Arm Mount

Page 1 of 3

PHILIPS GARDCO

Featuring CosmoPolis and MasterColor Elite Electronic HID Systems

Form 10 Square

EH / H Arm Mount

Page 2 of 3

FINISH

OPTIONS

DIMENSIONS AND EPA

PHILIPS GARDCO

SPECIFICATION SHEET

lumenfacade™

Client:
Project name:
Order #:
Type:
Qty:

FEATURES AND BENEFITS

Physical :

Performance :

Electrical :

lumenpulse
Sustainable architectural LED lighting systems

SPECIFICATION SHEET

lumenfacade™

HOW TO ORDER

LOG

Housing:

Voltage:

Length:

Colors and Color temperatures:

Optics:

Mounting Option:

Finish:

Dimming:

Option:

lumenpulse
Sustainable architectural LED lighting systems