



AS

ADAMS STREETER  
Civil Engineers

# CITY OF HERMOSA BEACH PRELIMINARY DESIGN REPORT

## PARKING LOT D IMPROVEMENTS



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ECORP Consulting, Inc.  
ENVIRONMENTAL CONSULTANTS





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### I. EXECUTIVE SUMMARY

This Preliminary Design Report (PDR) is prepared as part of the design development process to identify feasible concepts and alternatives for the re-development/renovation of the City's Parking Lot D (or Lot D) located at the southwest corner of the intersection of Manhattan Avenue and 14<sup>th</sup> Street into a multi-benefit demonstration project. This project is intended to be the first of its kind that is undertaken by the City that serves as a pilot program to gage the operations and maintenance of various installed amenities for potential future implementation at other City facilities. These amenities would also provide for educational opportunities that are beneficial to the public.

Various analysis was conducted for the derivation of viable options and layouts for the renovation of this small 0.21-acre parking lot that is defined by steep slopes and significant grade differences. The analysis performed along with derived conclusions and recommendations are summarized within this PDR. The resulting viable plan options along with proposed amenities, plant palette and corresponding preliminary costs are provided in the Appendix section of this PDR for the City's consideration.

The preferred alternative (as selected by the City) will be used as the basis for final design and incorporated into the project's construction documents for construction bidding and award.

### II. INTRODUCTION

Adams Streeter Civil Engineers in association with NUVIS Landscape Architecture, P2S Engineering, CTE and ECORP Consulting and was tasked by the City to prepare a PDR to identify viable alternatives and options for the total renovation and improvement of Parking Lot D. This PDR provides a summary of the analysis conducted during the process to develop plan options that are viable for implementation, in consideration of the various design requirements, parameters and constraints. Amenities introduced to promote area and service enhancement that also allows for public educational and demonstration opportunities include:

- Streetscape Enhancement: Parkway landscaping, on-site decorative walls, gathering spaces, street furnishing, bike corral, etc.
- Water Quality Enhancements: Storm water collection via permeable paver system, storm water treatment via a Modular Wetlands unit, storm water storage, harvesting and reuse via a cistern/pump manhole and irrigation control system, and storm water infiltration via a bio-swale demonstration planter.
- Facility Enhancements: ADA, EVCS and golf cart parking, ADA access, centralized multi-space meter, CPTED safety lighting levels & distribution, covered enclosure (trash and grease), optional carport (or single) solar photovoltaic array(s), and optional 3-phase electrical service upgrade.



### III. EXISTING CONDITIONS

The existing asphalt parking lot is bounded by 14<sup>th</sup> Street to the north, Manhattan Avenue to the east, Palm Drive to the west, and a residential dwelling to the south. The parking lot encompass approximately 0.21 acres and consist of an upper and lower section due to substantial changes in elevation within the property. There is a total of nineteen (19) parking stalls consisting of thirteen (13) angled parking at the upper section and six (6) regular parking at the lower section. The parking lot is accessed via a driveway on 14<sup>th</sup> Street with egress via Palm Drive to 14<sup>th</sup> Street. An ADA parking stall (determined to be non-compliant due to gradient) and without a defined accessible route to the public sidewalk is located at the lower section of the parking lot adjacent to 14<sup>th</sup> Street. Two trash bins and a grease storage container are located next to the ADA stall. A topographical survey was performed at the property as a basis of design for the renovation of the parking lot. Data captured by the survey is summarized by Figure III-A1 at left.

#### A. Elevation Variations



**Analysis:** Figure III-A1 illustrates the changes in elevation of various points within the parking lot in reference to the lowest point within the property at the southwest corner. Substantial differences in elevation is observed at the site of up to 14.6 feet in the east-west direction between Manhattan Avenue and Palm Drive, and up to 3.5 feet in the north-south direction between 14<sup>th</sup> Street and the southerly portion of the parking lot. Elevation “drops” are also observed at two locations within the parking lot including the dirt sloped area between the public sidewalk on Manhattan Avenue and the northerly edge of the upper parking lot section of approximately 5.5 feet to 7.4 feet, and the upper parking lot section to Palm Drive of up approximately 4 feet.

#### B. Slope Gradient



**Analysis:** Significant slope gradients are observed in the east-west direction between Manhattan Avenue and Palm Drive with the steepest gradient noted along 14<sup>th</sup> Street of about 10.8%. The parking lot’s upper section, lower section and connecting ramp also tilts towards the west at a steep



FIGURE III-A1, SUMMARY OF FIELD SURVEY

gradient of about 6.5%, 5.3% and 9.6% respectively. More gradual gradients are found on Manhattan Avenue (<0.5%) and Palm Drive (2.8%), both sloping in a southerly direction.

#### C. Site Drainage



**Analysis:** The Manhattan Avenue and 14<sup>th</sup> Street intersection represents a localized “high-point” where run-off drains away from the intersection, as indicated by the green flow arrows on Figure III-A1. The parking lot drains westerly towards Palm Drive (via surface flows only) and is directed south towards Pier Avenue thereafter. No public drainage facilities were observed along Palm Drive between 14<sup>th</sup> Street and Pier Avenue other than

private inlets within the facilities along the alleyway. Three (3) catch basins on 14<sup>th</sup> Street and one (1) catch basin on Manhattan Avenue were also observed within the vicinity of the project site as follows:

- 14<sup>th</sup> Street: Two basins located on the north and south side of the street immediately east of Hermosa Avenue and one basin located at the north side of the street immediately west of Manhattan Avenue.
- Manhattan Avenue: One basin located on the east side of the street immediately north of 14<sup>th</sup> Street.

The parking lot does not contribute any run-off to any of the above-referenced catch basins.



## IV. DESIGN CONSIDERATIONS

### A. Parking Lot Layout



**Analysis:** Various parking lot configurations were assessed in order to determine a layout that would provide the maximum number of on-site parking stalls to accommodate additional parking for electric vehicles (including golf carts), in consideration of site constraints. Based on the assessments made, it is determined that maintaining the general layout of the existing parking lot and traffic circulation pattern would result in the most efficient use of available space, yielding the highest number of parking stalls within the lot which would also require the existing angled parking stalls at the upper deck to be converted to 90-degree parking stalls and minimum standard dimensions applied to the 90-degree parking stalls and aisles for code compliance.

**Recommendations:** Maintain the existing parking lot configuration and traffic circulation pattern, and provide 90-degree parking stalls at a minimum dimension of 8.5'(W) x 18' (L) with a 25' minimum drive aisle width between the rows of parking.

### B. ADA Accessibility



**Analysis:** The City of Hermosa Beach had previously retained Creative Design Associates-Martin Brothers Construction Services (CDA-MBCS) to review various City-owned parking lots (inclusive of Parking Lot D) for compliance with applicable accessibility standards which resulted in the Hermosa Beach Citywide Disabled Parking Report, dated June 13, 2017 (DPR). The DPR identified the absence of an accessible path of travel from the existing ADA parking stall's access aisle that connects directly to an accessible route as a non-compliance item in reference to the California Building Code (CBC). CDA-MBCS recommendation is for the City to engage a licensed civil engineer/design professional to develop designs that provide compliant accessible parking.

CDA-MBCS sites three possible solutions to provide access from the parking lot to the public sidewalk, in consideration of the severe elevation issues at the site which includes:

1. Placement of accessible parking in the upper section of the parking lot and installation of a ramp from the parking lot to the public sidewalk on Manhattan Avenue (CDA-MBCS recommended solution).
2. Placement of accessible parking in the middle portion of the parking lot and providing an accessible route to the public sidewalk along 14<sup>th</sup> Street that is sloping at approximately 11%. CDA-MBCS does not recommend providing a compliant assessible route that leads to a possible unsafe condition if an alternate remediation is available, even though there are no code references that prohibit this.
3. Provide an accessible route from the lower portion of parking lot to the public sidewalk along 14<sup>th</sup> Street that is sloping at approximately 11%. Similar to the second solution sited, CDA-MBCS does not recommend providing a compliant assessible route that leads to a possible unsafe condition if an alternate remediation is available, even though there are no code references that prohibit this.

In consideration of site constraints and utilizing the general layout and traffic circulation pattern of the existing parking lot, the site was analyzed to determine the viability of the three possible solutions sited by CDA-MBCS. Results indicate that it is possible to provide accessibility parking in the upper and middle section of the parking lot. However, the lower portion of the parking lot is determined not suited for placement of ADA parking stalls due to the existing slope/gradient along Palm Avenue of approximately between 2.6% to 3.7%. Any ADA parking stalls placed at this location will exceed the code requirement for a maximum slope of 2% in any direction.

The existing parking lot has provisions for one ADA parking stall located at the lower portion of the parking lot which is currently not code-compliant. One ADA parking stall will be maintained for the renovated parking lot per CBC Section 11-B-208.2 and shall be van accessible per CBC Section 11b-

208.2.4. For code compliancy, the van accessible ADA parking stall and corresponding access aisle dimensions shall be per CBC Section 11B-502.2.

**Recommendations:** Provide alternative parking lot layouts based on placement of ADA parking stalls at the upper and middle portion of the parking lot with corresponding 48" minimum ADA path of travel/accessible route to the public sidewalk on Manhattan Avenue and 14<sup>th</sup> Street. Provide one (1) van accessible ADA parking stall at a minimum dimension of 9'(W) x 18' (L) with an 8' minimum access aisle width.

### C. Accessibility for Electric Vehicle Charging Stations (EVCS)



**Analysis:** The City of Hermosa Beach desires a minimum of two (2) EVCS to be provided for the renovated parking lot.

As summarized in the above referenced report by CDA-MBCS for other City-owned parking lots with EVCS, all EVCS will need to be made accessible. In accordance to CBC 11B-228.3.2.1, provisions for one (1) van accessible charging station will be required. Surface markings for the EVCS shall be in accordance with CBC Section 11B-812.9 and Figure 11B-812.9 provided below for reference.

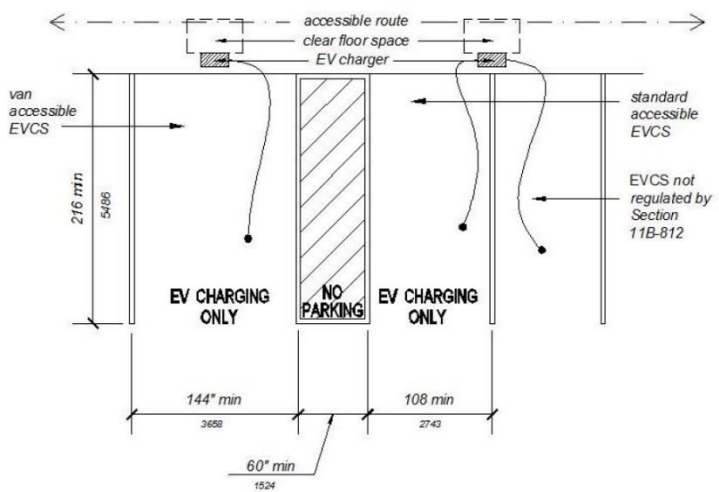


FIGURE 11B-812.9.  
SURFACE MARKING

Clear floor space will be considered for access to the operation portions of the EVCS, depending on the type of

charging equipment used in conjunction with the provisions for a minimum 48” wide accessible route behind the equipment.

**Recommendations:** Provide a 12’ (W) x 18’ (L) van accessible EVCS parking stall, a 9’ (W) x 18’ (L) regular EVCS parking stall and a corresponding 5’ (W) x 18’ (L) access aisle. Provide a 4’ wide accessible route behind the EVCS equipment with consideration for clear floor space to operate the equipment.

D. Water Quality Compliance



**Analysis:** The Standard Urban Storm Water Mitigation Plan (SUSMP) adopted by the State Regional Water Quality Control Board to address storm water pollution from new developments and redevelopment projects is applicable to this project of approximately 0.21 acres. The SUSMP is required for parking lots of 5,000 square feet (0.11 acres) or more of surface area, or with 25 or more parking spaces.

Per the SUSMP Volume & Rate Calculations (Table IV-D1) for the proposed site improvements, a mitigation storm water volume of approximately 408 cubic feet is required based on 100% capture of the 2-year storm event (or ¾” storm event).

TABLE IV-D1, Proposed Volume & Flow Rate Calculation (Based on 2-Year Storm Event)

Impervious Area (A <sub>i</sub> )	0.12 ac
Pervious Area (A <sub>p</sub> )	0.09 ac
Contributing Undeveloped Upstream Area (A <sub>u</sub> )	0.00 ac
Total Area of Development and Contributing Undeveloped Upstream Area (A <sub>total</sub> )	0.21 ac
Developed Runoff Coefficient (C <sub>d</sub> )	0.71
Undeveloped Runoff Coefficient (C <sub>u</sub> )	0.45
Rainfall Intensity (I <sub>x</sub> )	5.000 in/hr.
Peak Mitigation Flow Rate (Q <sub>pm</sub> )	0.8 cfs
Time of Concentration (T <sub>c</sub> )	5.0 min.
Mitigation Volume (V <sub>m</sub> )	408 cf

Type of Development	Parking Lot
Predominant Soil Type #	3

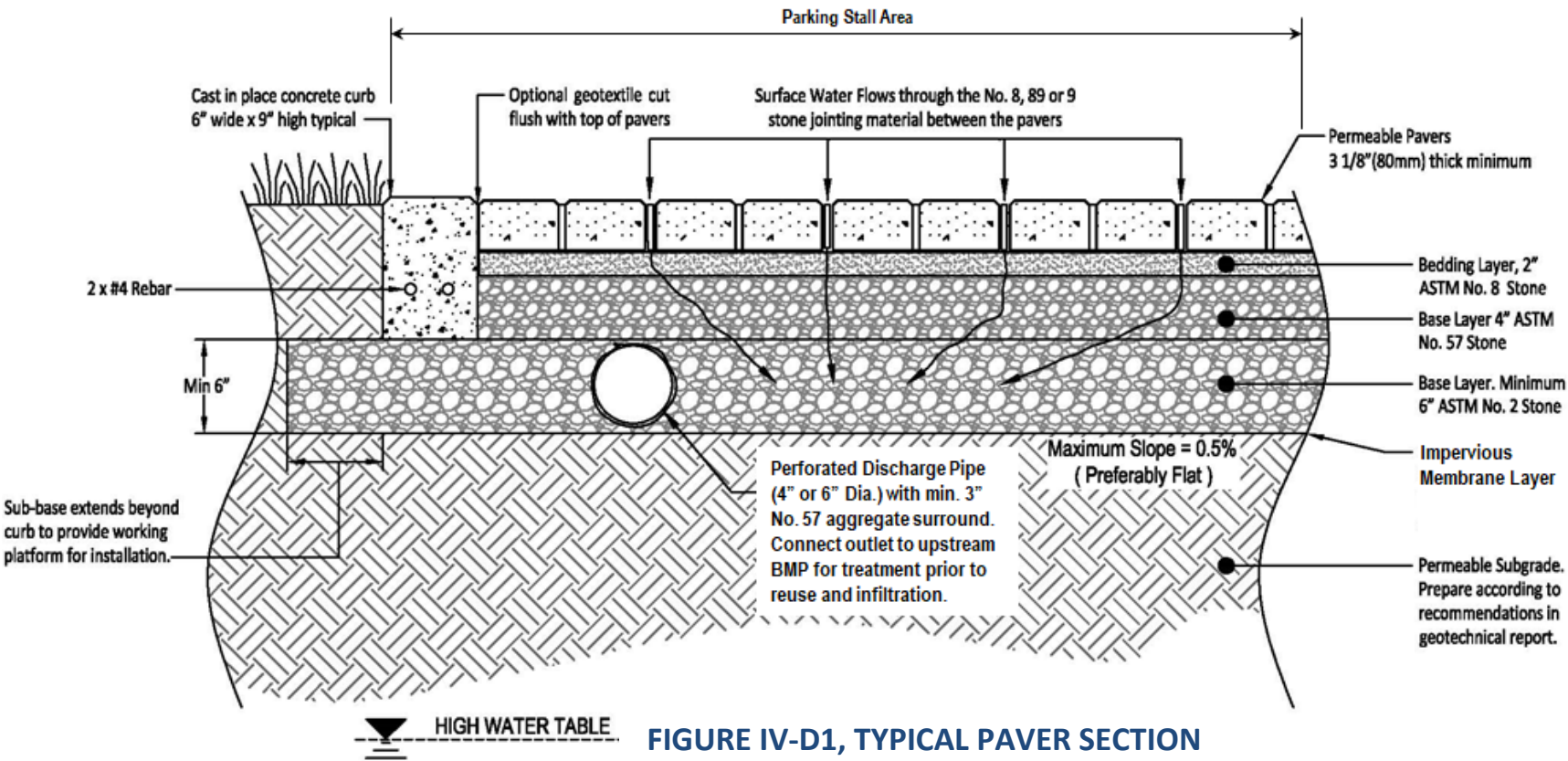
This is also consistent with the Low Impact Development (LID) ordinance which requires rainwater from a three-quarter inch rainstorm to be captured, infiltrated and/or used onsite. LID compliance is required for all development and redevelopment projects that create, add, or replace 500 square feet or more of impervious area to ensure that the projects mitigate runoff in a manner that captures rainwater at its source, while utilizing natural resources.

To comply with SUSMP and LID requirements, the use of permeable pavers is proposed for the parking lot renovation in order to promote on-site infiltration and to provide the required on-site storm water storage volume of about 453 cubic feet. Permeable pavers are typically constructed above a layer of stones with different gradations as illustrated by the Figure IV-D1. A preliminary paver design section consisting of a 2” bedding layer (comprising of No. 8, 9 or 89 stones), a 4” upper base layer (comprising of No. 57 stones), and a 6” minimum lower base layer (comprising of No. 2 stones) is utilized for analysis. Assuming pavers are

utilized at designated parking stall areas only (which equates to about 3,782 square feet), the on-site storage volume would be in excess of about 1,200 cubic feet, which exceeds the required mitigation storage volume amount of about 453 cubic feet.

To determine the permeable subgrade infiltration rate, percolation testing was performed at two locations at the upper and lower sections of the parking lot. Test results indicate an infiltration rate of 53 inches per hour and 66 inches per hour for the upper and lower parking lot sections respectively. Poorly-graded Sand (SP) were encountered at both boring locations. Based on the percolation test results, sufficient permeable soils exist on the site to allow the construction of a properly functioning infiltration facility as the infiltration rate is more than the required minimum rate of 0.5 inches per hour. However, since the infiltration rate significantly exceeds 2.4 inches per hour, runoff should be fully treated in an upstream BMP prior to infiltration to protect groundwater quality. <sup>1</sup> (REFER TO PAGE 5)

Two borings were also performed at the upper and lower sections of the existing parking lot. Groundwater was not encountered in either of the two borings that were





performed to a depth of 16.5 feet and 6.5 feet respectively below the existing pavement surface. A groundwater table distance separation of ten (10) feet depth in California presumptively poses negligible risk for storm water infiltration not associated with industrial activity or high vehicular traffic.

In compliance with hydromodification requirements, the post-project runoff flows and durations are maintained to the levels of the pre-project conditions as shown in Table IV-D2. Due to the nature of the site, peak flow calculations utilized a time of concentration of five (5) minutes.

Table IV-D2, Pre-Project and Post-Project Peak Runoff

	Pre-Project Peak Runoff (cfs)	Post-Project Peak Runoff (cfs)
Q <sub>p</sub> (25-yr)	0.45	0.44
Q <sub>p</sub> (50-yr)	0.51	0.39

**Recommendations:** Treatment of run-off prior to subgrade infiltration is required to reduce the risk of groundwater contamination. Provide an impervious membrane layer and perforated discharge pipe per Figure IV-D1 to respectively prevent run-off from infiltrating into the subgrade (prior to treatment) and to convey the run-off to an on-site structural BMP for treatment.

<sup>1</sup> County of Los Angeles Department of Public Works Storm Water Best Management Practice Design and Maintenance Manual for Publicly Maintained Storm Drain Systems.

E. Storm Water Mitigation & Harvesting System



**Analysis:** In compliance with water quality requirements and in consideration of site conditions and constraints, an appropriate system for on-site storm water collection, conveyance, treatment, storage, harvesting and reuse has been developed for the parking lot renovation. The proposed system is illustrated by Figure IV-H1 with an overview description of the system’s components provided in Table IV-H1.

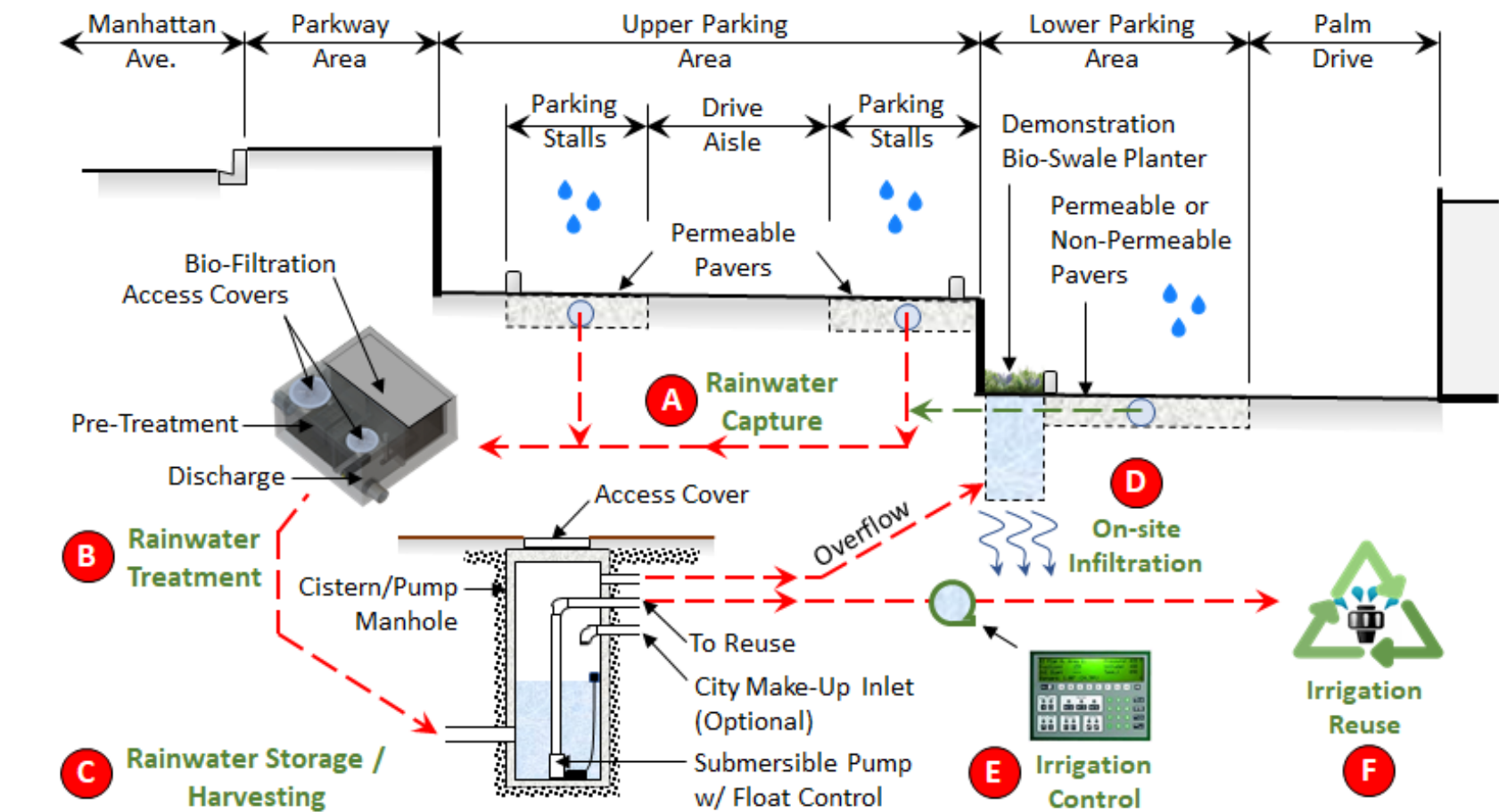


FIGURE IV-H1, STORM WATER MITIGATION AND HARVESTING SYSTEM

TABLE IV-H1	
<b>A</b>	Rainwater is captured via permeable pavers installed at parking stall areas and channeled to a bio-filtration unit for treatment. An impervious membrane layer is provided at the sub-grade level to prevent direct infiltration of run-off prior to treatment.
<b>B</b>	Rainwater is treated by an underground bio-filtration unit such as a “side-by-side” Modular Wetlands System with a compact footprint located underneath the trash enclosure’s external concrete pad.
<b>C</b>	Rainwater is directed into a cistern/pump manhole located adjacent to the bio-filtration unit for storage and harvesting purposes. The cistern is equipped with a submersible pump to facilitate irrigation reuse. Overflow beyond the cistern’s storage capacity is conveyed to the demonstration bio-swale planter area for direct infiltration via gravity flow.

<b>D</b>	The demonstration bio-swale planter area provides for direct infiltration of treated runoff.
<b>E</b>	A system of piping and valves that is integrated w/ the irrigation system and controlled by an on-site irrigation control panel which allows for automatic switching of water sources (stored water vs. City service) for site irrigation. Controls for demonstration purposes may also include manual control for water source selection and filling of the cistern utilizing City service.
<b>F</b>	Irrigation reuse is applied to on-site landscaping within the parkway and parking lot areas.

**Recommendations:** Implement the storm water mitigation and harvesting system concept as proposed. Features and options for demonstration purposes to be determined according to City direction.

## F. Site Lighting and Safety



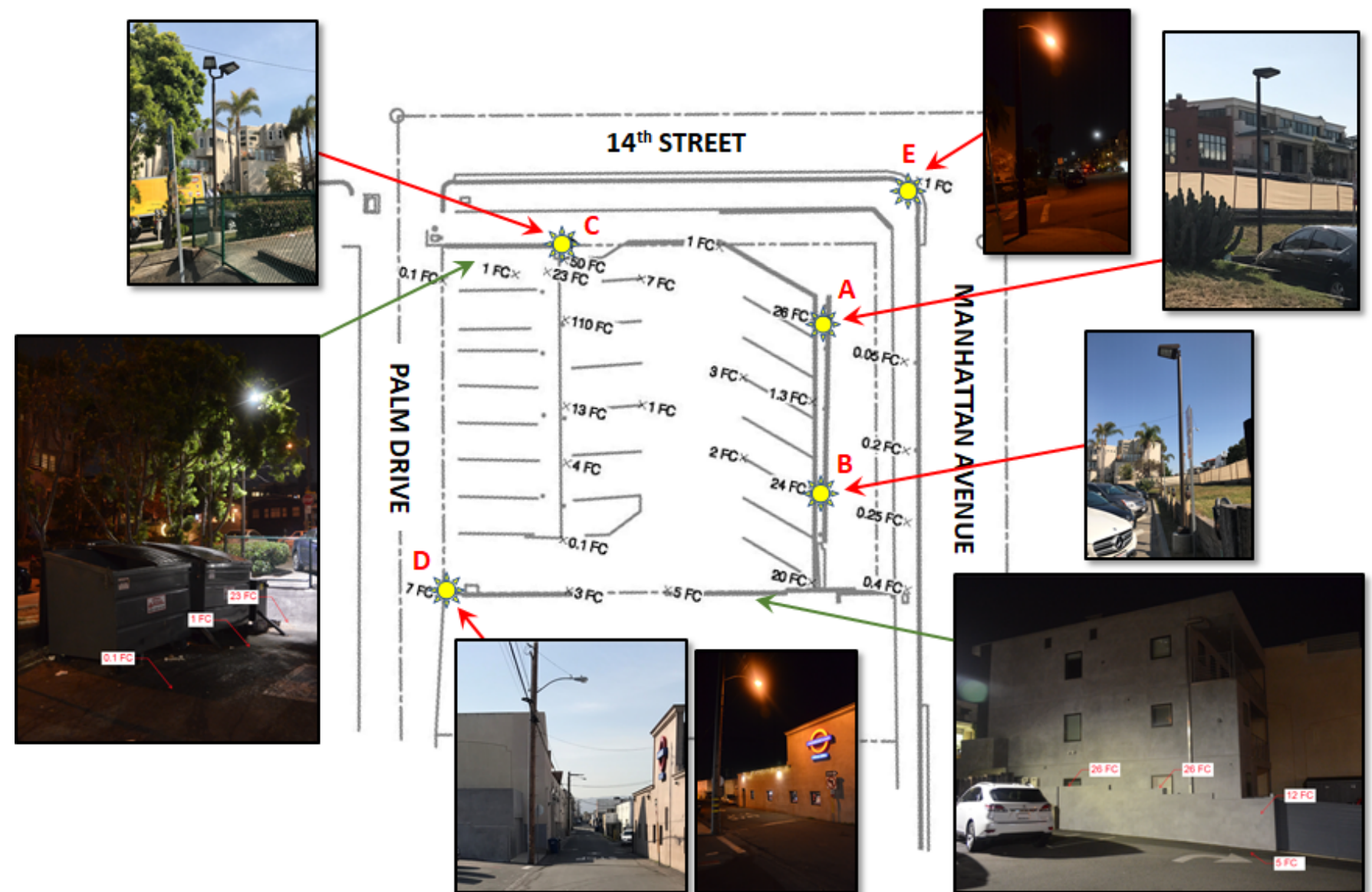
**Analysis:** The City of Hermosa Beach had previously retained Environ Architecture and Oculus Light Studio (Environ-Oculus) to prepare the Hermosa Beach Downtown Lighting Site Conditions Report (dated October 12, 2017). A Crime Prevention Through Environmental Design (CPTED) Study for the Hermosa Beach Pier, plaza and surrounding areas (dated October 23, 2017) was also prepared by Environ Architecture. Pertinent information obtained from the above-referenced reports pertaining to Parking Lot D is provided below as reference:

**Table H-1, Lighting & CPTED Study Report Excerpts**

Source	Pertinent Report Excerpts
Lighting & CPTED Report	Bright light levels at Parking Lot D are from cool white light poles.
Lighting & CPTED Report	There are taller poles in Lot B than Lot D. Each parking lot has different luminaire types.
Lighting Report	Ensure consistent lighting though out all parking lots. Updated metal halide fixtures to LED standard. Implement energy saving controls.
CPTED Report	Palm Drive (behind Abigaile and Lot D) seems like a prime area for foot traffic. Several light poles were not working at the time of survey. Working lights were dim and many blind spots were present. The study recommends providing better lighting if within budget.

Since a site lighting study for Parking Lot D was not conducted as part of the scope of work by Environ-Oculus, a site photometric evaluation was conducted separately to determine the existing lighting levels within Lot D as shown in Figure H-1. Specific lighting levels at the existing trash enclosure area and at the southerly parking lot perimeter adjacent to the residential dwelling were also measured.

Photometric evaluation of the site confirms Environ-Oculus observations of bright lighting levels at the parking lot light pole locations with readings of around 24+ foot-candles (FC)



**FIGURE IV-H1, SITE PHOTOMETRICS PAVER**

for the two (2) single-head light poles adjacent to Manhattan Avenue (Figure H-1, locations “A” and “B”) and about 50 FC for the double-head light post adjacent to 14<sup>th</sup> Street (Figure H-1, location “C”). The existing lighting is LED based and purchased a few years ago from National Lighting Solutions (NLS).

The existing two (2) street luminaires mounted on utility poles located on Palm Drive at the southwest corner of Lot D (Figure IV-H1, location “D”), and at the southwest corner of 14<sup>th</sup> Street and Manhattan Avenue intersection (Figure IV-H1, location “E”) have lower lighting levels with readings of 7 FC and 1 FC respectively.

The Illumination Engineering Society of North America (IESNA) recommends 0.5 FC as the minimum lighting level based on a 20:1 (Max:Min) ratio. In consideration of CPTED, an average lighting level of 5 FC and a minimum of 3 FC should be maintained based on a 10:1 (Max:Min) ratio.

Three primary issues were also observed with the existing site lighting; non-uniformity of lighting (over 1000:1 ratio), light pollution and glare. These issues will be addressed as part of the lighting design for the renovated parking lot while maintaining the above recommended lighting levels. Lighting amenities for the renovated parking lot will include architectural lighting such as bollards and recessed grade



lighting at seating areas, and landscape lighting to highlight features and improve safety. A light and occupancy sensor for the trash enclosure will also be provided to improve lighting and identify unauthorized use.

The existing electrical panel and photocell control unit for Lot D is mounted on an SCE utility pole located on the northeast corner of the intersection of 14<sup>th</sup> Street and Palm Drive. The existing panel (including the photocell) is anticipated to be replaced by a new 120/240V 1-Phase, 3-wire distribution panel rated at 200A with 24+ circuits that will be located within Lot D. The on-site panel may be installed as a stand-alone unit or wall mounted. The photocell unit can be mounted directly within the electrical panel.

The existing electrical service serving Lot D is a single-phase system. Although not a requirement, utilizing a 3-Phase system would enhance the system’s reliability and its ability to handle current and future demands. Upgrading to a 3-Phase system will require trenching along Palm Drive to facilitate the connection to an existing transformer that is mounted on a utility pole located approximately 120 feet north of the Lot D.



**Recommendations:** Provide uniform lighting across the site based on recommended CPTED lighting levels to enhance safety. Provide strategic placement and configuration of lighting to maximize productivity by reducing distractions such as light pollution and glare. Provide lighting to highlight points of interest, architectural and landscaping details. Upgrade the existing electrical service to a 3-Phase service.

V. SITE AMENITIES

A. Solar Photovoltaic



**Analysis:** Based on evaluation of design parameters and site constraints as detailed in this PDR, the renovated parking lot will generally retain the same configuration as the existing which consist of two (2) rows of parking on the upper section of the parking lot and one (1) row of parking on the lower section adjacent to Palm Drive.

This parking layout can potentially support 30kW carport solar arrays at locations A, B and/or C as shown in Figure V-A1 below, which could potentially generate up to about 47MWh/year.

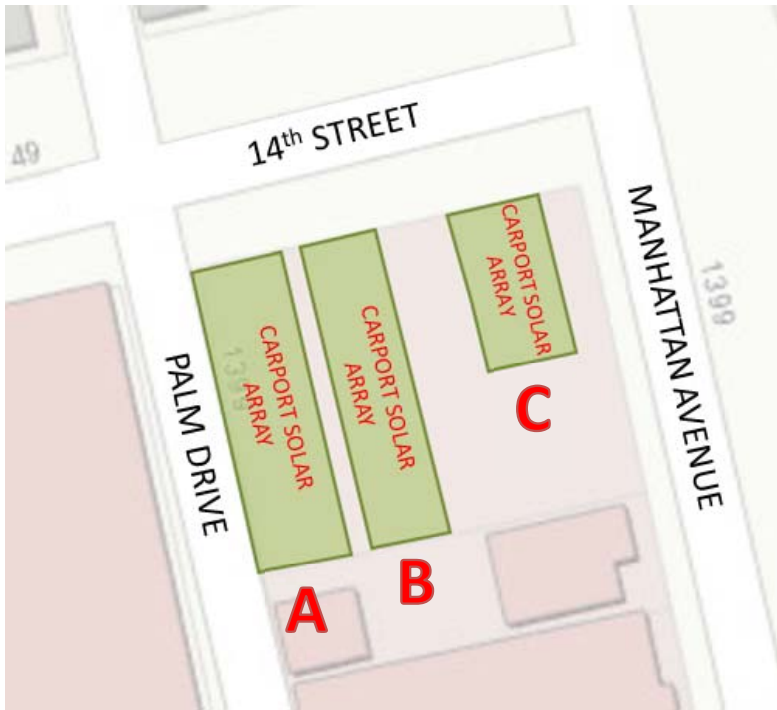


FIGURE V-A1, CARPORT SOLAR ARRAYS

Inverter options for the site include a string inverter (also known as a central inverter) or a micro-inverter. These inverters convert direct current (DC) energy generated by the solar panels into usable alternating current (AC) energy.

String inverters are the most commonly used option and is generally more cost-effective as compared to micro-inverters. However, micro-inverters are rapidly gaining

popularity and getting less expensive, and can be a viable option for this site. An overall summary of string inverters and micro-inverters are provided below (Table V-A1) as reference.

TABLE V-A1	
String (or Central) Inverters	
1.	Tried-and true technology that’s widely used and cost effective.
2.	Each string of solar panels is connected to a single inverter.
3.	Best for panels that are not shaded during the day, or where panels do not face in multiple directions.
4.	Produces as much electricity as its least productive panel within the entire string of solar panels.
Micro-Inverters	
1.	More expensive than string inverters.
2.	Best for installations where one or more panels may be shaded, or when panels are facing different directions.
2.	Inverters are installed on each individual panel within the solar energy system so there’s no need for a separate central inverter.
3.	Ability to cancel out negative impacts of partial or complete shading and eliminates any “bottleneck” when one panel’s production decreases.
4.	Allows the monitoring of performance of individual solar panels.

Solar panels are susceptible to direct and indirect lighting strikes due to their large profile and fully exposed surface areas. Catastrophic damage from lightning strikes can ruin the solar equipment and cause long term downtime. To protect the solar panels from damage, a surge protection system will also be provided.

**Recommendations:** Provide provisions for carport solar arrays for implementation, if opted by the City. Due to visual impairment from Manhattan Avenue, carport solar arrays are recommended for locations A and B (per Figure V-A1) only.



B. Electric Vehicle Charging Station (EVCS) Equipment



**Analysis:** The City of Hermosa Beach desires a minimum of two (2) EVCS to be provided for the renovated parking lot, including for golf-carts if possible. Currently, there are about ten (10) EVCS installations within the city limits, which are mostly concentrated in the heart of the downtown area within the vicinity of Pier Avenue as depicted on Figure V-B1 below.

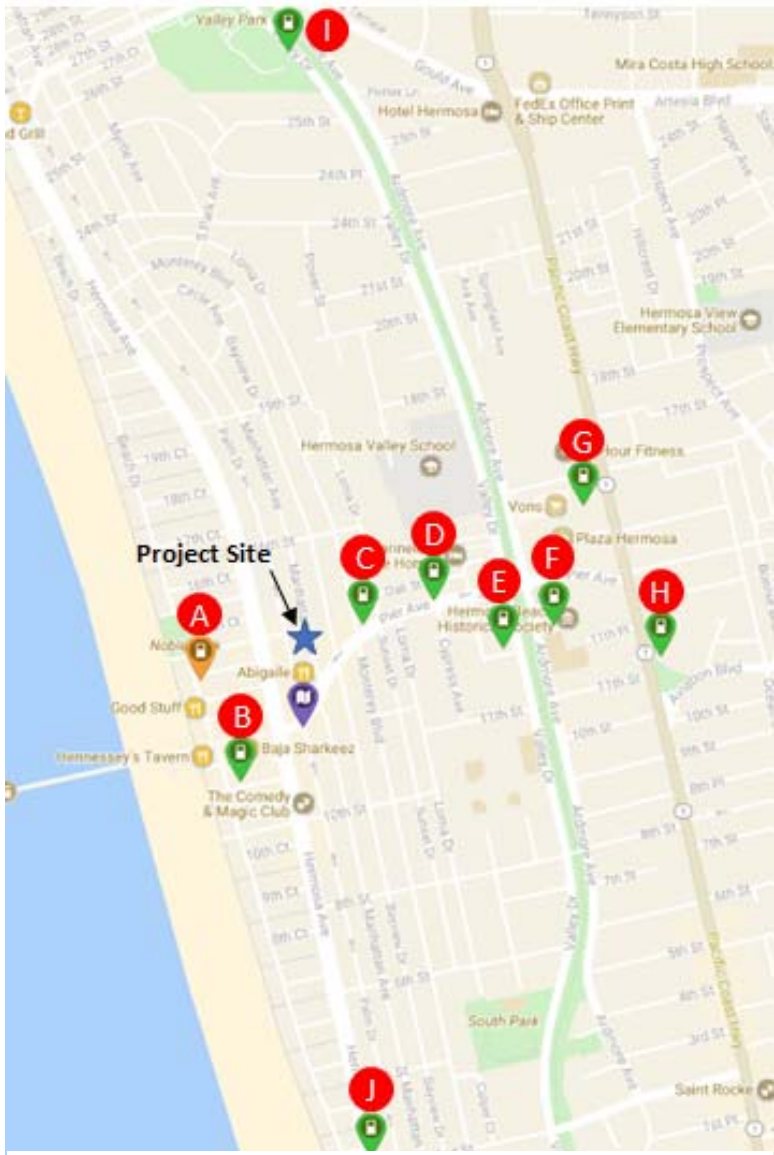


FIGURE V-B1, EVCS WITHIN CITY LIMITS

Available information regarding the EVCS installations including the system and charging connectors utilized are summarized on Table V-A1 as follows:

TABLE V-A1 EVCS Installations Within City Limits		
A	<b>Hermosa Beach Parking Structure</b> at 1301 Hermosa Avenue. Pay-parking. <a href="#">EVgo Level 2 &amp; fast charger system</a> w/ (2) CCS/SAE, (2) CHAdeMO, and (2) EV Plug.	
B	<b>Parking Lot A</b> at 17 11th Street. Two-hour limit pay-parking. <a href="#">Unknown Level 2 system</a> w/ (1) EV Plug.	
C	<b>Becker Surfboards</b> at 301 Pier Avenue. Two-hour limit, free charging/parking. <a href="#">ChargePoint Level 2 system</a> w/ (2) EV Plug.	
D	<b>Pier Ave. Parking/ Charging</b> at 505 Pier Avenue. Free parking w/ two-hour limit. <a href="#">Unknown Level 2 system</a> w/ (2) EV Plug.	
E	<b>Hermosa Beach City Hall</b> at 1315 Valley Drive. <a href="#">ChargePoint Level 2 system</a> w/ (2) EV Plug.	
F	<b>Hermosa Beach Community Center</b> at 710 Pier Avenue. Two-hour limit. <a href="#">ChargePoint* Level 2 system</a> w/ (2) EV Plug. (see also **)	
G	<b>Plaza Hermosa</b> at 715 Pier Avenue. Free parking w/ two charging stations near Vons. <a href="#">Volta Level 2 system</a> w/ EV Plug.	

H	<b>Starbucks</b> at 1100 Pacific Coast Highway. Free parking w/ two charging stations Two-hour limit. <a href="#">ChargePoint* Level 2 system</a> w/ (2) EV Plug.	
I	<b>Hermosa Kiwanis Club</b> at 2515 Valley Drive. Two-hour limit free charging w/ two charging stations. <a href="#">ChargePoint* Level 2 system</a> w/ (2) EV Plug.	
J	<b>Hermosa Avenue Parking &amp; Charging</b> at 201 Hermosa Avenue. Two-hour limit free charging w/ two charging stations. <a href="#">ChargePoint* Level 2 system</a> w/ (2) EV Plug.	

\*Requires verification \*\*Recently upgraded to supercharger.

To accommodate this request, provisions for two (2) Level 2 EVCS and one (1) Level 1 golf-cart charger, with circuit breaker spaces and conduit pathways will be incorporated for design, including for additional charging station(s) for future upgrades, if needed. If preferred, pseudo “Level 3 & 4” chargers corresponding to DC fast chargers (such as CHAdeMO chargers) or Tesla superchargers may also be considered for use. Typical charging systems for project implementation is listed on Table V-B1. Final equipment selection shall be per the City’s preference and direction.

TABLE V-B1 EVCS SYSTEM OPTIONS	
1.	ChargePoint (used at most City facilities)
2.	GE Wattstation
3.	BTC Power
4.	AeroVironment
5.	SquareD EVLink
6.	Tesla (must request to be host)



Standard connector types include the Society of Automotive Engineers (SAE) J1772 connector that was adopted by car manufacturers of post-2000 electric vehicles. SAE has also developed a Combined Charging System (CCS) with a Combo Coupler variant of the J1772 connector with additional pins to accommodate fast DC charging at 200–450 volts DC and up to 90 kW that was adopted by various car makers including Audi, BMW, Daimler, Ford, General Motors, Hyundai, Porsche, Volvo and Volkswagen. Due to its popularity and versatility to accommodate a wider range of electric vehicles such as the Chevy Volt, Nissan Leaf, Toyota Prius Plug-in, Mitsubishi i-MiEV, and Tesla (with adapter), etc., the charging stations within the renovated parking lot should utilize the SAE J1772 / CCS combined charging system connector.

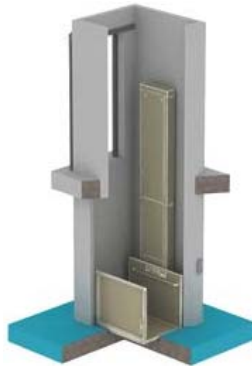
**Recommendations:** Incorporate the SAE J1772 / CCS combined charging system connector in conjunction with the EVCS system opted by the City for implementation.

C. Accessible Wheelchair Platform Lifts



**Analysis:** Accessible wheelchair lifts provide vertical "elevator-like" access for wheelchairs to levels that would be otherwise inaccessible without a ramp or a more expensive elevator.

Wheelchair lifts allow for a smaller footprint than a permanent wheelchair ramp and are often keyed for specialized use by wheelchair bound individuals only. In the case where there is significant vertical elevation to traverse, a wheelchair ramp would be a good alternative to consider in lieu of a traditional wheelchair ramp. The small space requirement and lower cost makes the wheelchair lift a viable option for implementation as part of the parking lot renovation in order to provide ADA accessibility from the parking lot to the public sidewalk on Manhattan Avenue. The small space requirement of the wheelchair lift would also allow the opportunity to implement additional site



amenities (such as landscaping, gathering space, etc.) in lieu of the wheelchair ramp.



For weather shielding and aesthetic considerations, an enclosed and self-contained wheelchair lift consisting of a drive mast, passenger platform, doors/gates and factory manufactured walls that enclose the lift is proposed. Since the unit is self-contained, construction of a hoist-way (or shaft-way) such as for an elevator unit is not required. The enclosure itself (such as the Garaventa Vertical Platform Lift depicted at left) features easy to use call stations and platform controls, an attractive

extruded aluminum frame and panels made of steel, plexiglass or safety glass with options for customization of materials, colors and graphics.

**Recommendations:** Provide an option incorporating an accessible wheelchair lift to the design to facilitate ADA accessibility from the parking lot to Manhattan Avenue.

D. Parking Metering



**Analysis:** The existing parking lot currently use single-space meters that accepts coins or credit cards for payment. In lieu of reusing the existing single-space meters, a multi-space pay station may be incorporated as part of the parking lot renovations to serve the entire lot. The multi-space pay station (or Smart Meter) offers many benefits and options above that of single-space meters which typically includes, but is not limited to the following:

- Centralized kiosk w/ large LCD screen and full alphanumeric keypad for entries, and has the ability to prompt in multiple languages.
- Pay-and-Display, Pay-by-Space, or Pay-by-License mode switching without additional new hardware.
- Payment options include credit cards, coins, bills, smart cards, pass cards (value cards, campus cards), coupons, validations and Pay-by-Phone services.
- Extend-by-Phone features for time expiration reminders and time extension via cell phone text messaging.

Smart meters also offer operator benefits which typically includes, but is not limited to the following:

- Ability to implement flexible rate structures.
- Ability to communicate public service announcements, etc., through the LCD screen.
- Real-time credit card processing to reduce processing fees and eliminate bad debt.
- Efficient enforcement through real-time reporting and alerts of time expirations. Alerts can be sent directly to field personnel.
- Efficient maintenance through real-time maintenance alert of pay station.

Assembly Bill (AB) 1625 that became effective on January 1, 2018 prevents local governments from banning parking (and ticketing) at metered spaces with broken meters or parking kiosks. Real-time monitoring of the multi-space meter with maintenance alerts will effectively minimize any loss in revenues attributed to meter downtime.

Users of the ADA parking stall will be exempt from parking meter fees if a valid handicap license plate or placard is displayed on the vehicle. EVCS parking stalls will also be exempt from parking meter fees. However, vehicle charging fees will be applied through the EVCS metering system.

**Recommendations:** Provide an ADA accessible and centralized multi-space meter (or Smart Meter) to service the parking lot in lieu of single-space meters.



VI. PARKING LOT PLAN OPTIONS

A. Grading Assessments



Preliminary grading assessments of potential alternative layouts for the site is performed in consideration of existing site constraints to ascertain the viability for implementation. Site constraints inclusive of point constraints and edge conditions applicable to site grading assessments is illustrated by Figure VI-1 below.



FIGURE VI-1, SITE CONSTRAINTS

As shown, the parking lot is constrained on all sides which severely limits the ability to re-configure and/or re-grade the site. In conjunction with the various analysis and conclusions derived per Section IV, V, and VI of this PDR, three (3) viable alternatives were developed for potential implementation. These alternatives are provided as Option 1, 2 and 3 in the Appendix section of this PDR. A tabulated summary of the options is provided on Table VI-A1 at right.

B. Site Amenities



A listing of site amenities proposed for the parking lot is summarized on Table VI-1 at right and illustrated by the Options 1, 2 and 3 exhibits provided in the Appendix section of this PDR. Parking lot amenities with variations shown within

TABLE VI-A1, SUMMARY OF PROPOSED OPTIONS					
ITEM DESCRIPTION	EXISTING CONDITION	PROPOSED CONDITION			NOTES
		OPTION 1	OPTION 2	OPTION 3	
PARKING STALLS					
A-1 Regular Parking	18	17	17	17	Existing facility non-ADA compliant (1) 12' stall, (1) 9' stall, level 2 charger. With access aisle & level 1 charger.
A-2 ADA Parking	1	1	1	1	
A-3 EVCS Parking	n/a	2	2	2	
A-4 Golf Cart Parking	n/a	1	1	1	
Total Spaces	19	21	21	21	
ACCESSIBILITY (AISLES AND PATHWAYS)					
B-1 ADA Access Aisle	Yes	Yes	Yes	Yes	8' wide (van accessible)
B-2 EVCS Access Aisle	No	Yes	Yes	Yes	5' wide
B-3 Golf Cart Access Aisle	No	Yes	Yes	Yes	
B-4 Accessible Route to Public Sidewalk	No	WC Lift to Manhattan Av.	Ramp to Manhattan	Ramp to 14th Street	
B-5 Alternate Non-ADA Route to Public Sidewalk	No	Staircase to Manhattan Av.	Same As Accessible Route	Same As Accessible Route	
SITE AMENITIES					
C-1 Covered Enclosure for Trash Bins and Grease Container	No	Yes	Yes	Yes	
C-2 Demonstration Bio-Swale Area, Decorative Wall & Interpretive Signage	No	Full Implementation	Intermediate Implementation	Basic Implementation	Level of implementation varies between options.
C-3 Demonstration Rainwater Harvesting & Reuse System	No	Yes	Yes	Yes	Inclusive of permeable paver collection system & water quality treatment unit.
C-2 Bike Corral	No	Yes	Yes	Yes	2 themed bike racks w/ 4 spaces
C-3 On-Site Landscaping	No	Minimal	Minimal	Minimal	
C-4 Parkway Landscaping	Partial, on 14th Street	14th St. & Manhattan Pkwy.	14th St. & Manhattan Pkwy.	14th St. & Manhattan Pkwy.	Manhattan Avenue parkway landscaping varies between options.
C-5 Street Furniture on Manhattan Avenue Parkway	No	Full Implementation	Partial Implementation	No	
C-6 Parking Meter	Single-Space	Multi-Space	Multi-Space	Multi-Space	
C-7 Carport Solar Arrays	No	Optional	Optional	Optional	
C-8 Site Lighting	Inconsistent Coverage	Upgraded for Coverage	Upgraded for Coverage	Upgraded for Coverage	LED lighting.

each of the design options are interchangeable and can be applied to any option as needed, depending on preference and cost considerations.

C. Planting Palette



The overall plant material proposed for Parking Lot D mirrors the planting scheme at the Hermosa Beach Community Center, specifically at the Surf Memorial on Pier Avenue. Many of the species that are taken from the Surf Memorial project palette was extensively researched for low water use, foliage color, durability, and maintenance friendly attributes. Other plant materials which lend themselves to the demonstration bio-swale planting area were also selected for coast exposure, Southern California native, durability, performance, and habitat value. Trees on the planting palette are selected from the City's approved list

and cross referenced with San Marcos Growers Nursery list for first exposure seacoast friendly plants based upon Hoyt's reliability ratings. The planting palette for the parking lot is provided in the Appendix section of this PDR.

D. Preliminary Costs



Preliminary figures to convey a rough magnitude of cost associated with the concept layouts for Options 1, 2 and 3 is provided in the Appendix section of this PDR. These cost figures are derived from concept sketches only and is therefore preliminary in nature and should not be construed as actual cost to construct the improvements. Cost associated with a preferred option will be further refined during the design phase that may be more appropriately utilized for budgeting and construction bidding purposes.





# VII. APPENDIX



- PLAN OPTIONS
- PLANT PALETTE
- PRELIMINARY COSTS





14TH STREET

D.G. AREA, TYP.

EXISTING CITY  
SIDEWALK

GOLF CART PARKING  
W/ PLUG-IN BOX

THREE (3) FLORENTINE-LIKE  
SCULPTURE WATER  
SCONCES

LIMIT OF SOLAR PANEL  
ARRAYS

DEMONSTRATION BIO-SWALE  
PLANTER AREA WITH  
ADJACENT INTERPRETIVE  
SIGNAGE

PARKING STALLS W/  
NON-PERMEABLE  
INTERLOCKING PAVERS

POURED IN PLACE  
CONCRETE WALL  
WITH PAINTED MURAL

IRRIGATION CONTROL  
PANEL AND RAINWATER  
HARVESTING SYSTEM

LOCATION OF  
UNDERGROUND WATER  
FILTRATION SYSTEM  
AND CISTERN / PUMP  
MANHOLE

PALM DRIVE.

COVERED TRASH  
AND GREASE BIN  
AREA

VINES  
ATTACHED TO BLOCK WALL, TYP.

CONCRETE  
DRIVEWAY

ACCESS AISLE

LIMIT OF SOLAR PANEL  
ARRAYS

RIVER ROCK  
STREAM BED WITH  
BOULDERS  
AND ROCKSCAPE

PARKING STALLS  
WITH PERMEABLE  
INTERLOCKING  
PAVERS

ELECTRICAL PANEL  
AND PHOTOCCELL

ASPHALT OR  
COLORED  
CONCRETE  
DRIVEWAY  
TYP.

GROUTED  
RIVER ROCK

PLANTER WITH LOW WATER SHRUBS MIDWAY  
BETWEEN SEATING AISLES AND PARKING LOT

EV PARKING  
W/ PLUG-IN BOX

EV PARKING  
W/ PLUG-IN BOX

DECORATIVE RAIL ON TOP  
OF RETAINING WALL

2 - THEMED BIKE RACKS  
W/ 4 BIKE SPACES

COLORED CONCRETE  
PAVING W/ GRID  
SCORELINES & EXPOSED  
AGGREGATE FINISH  
TEXTURE

SMART PARKING  
METER

SEATING AREA

PLANTER W/ TREE  
& LOW WATER  
SHRUBS

ENCLOSED ACCESSIBLE  
WHEELCHAIR LIFT

NATURAL COLOR  
CONCRETE  
SIDEWALK

PLANTER W/ TREE  
AND LOW WATER SHRUBS

DECORATIVE RAIL ON TOP  
OF RETAINING WALL

SEATING AREA

MANHATTAN AVE.

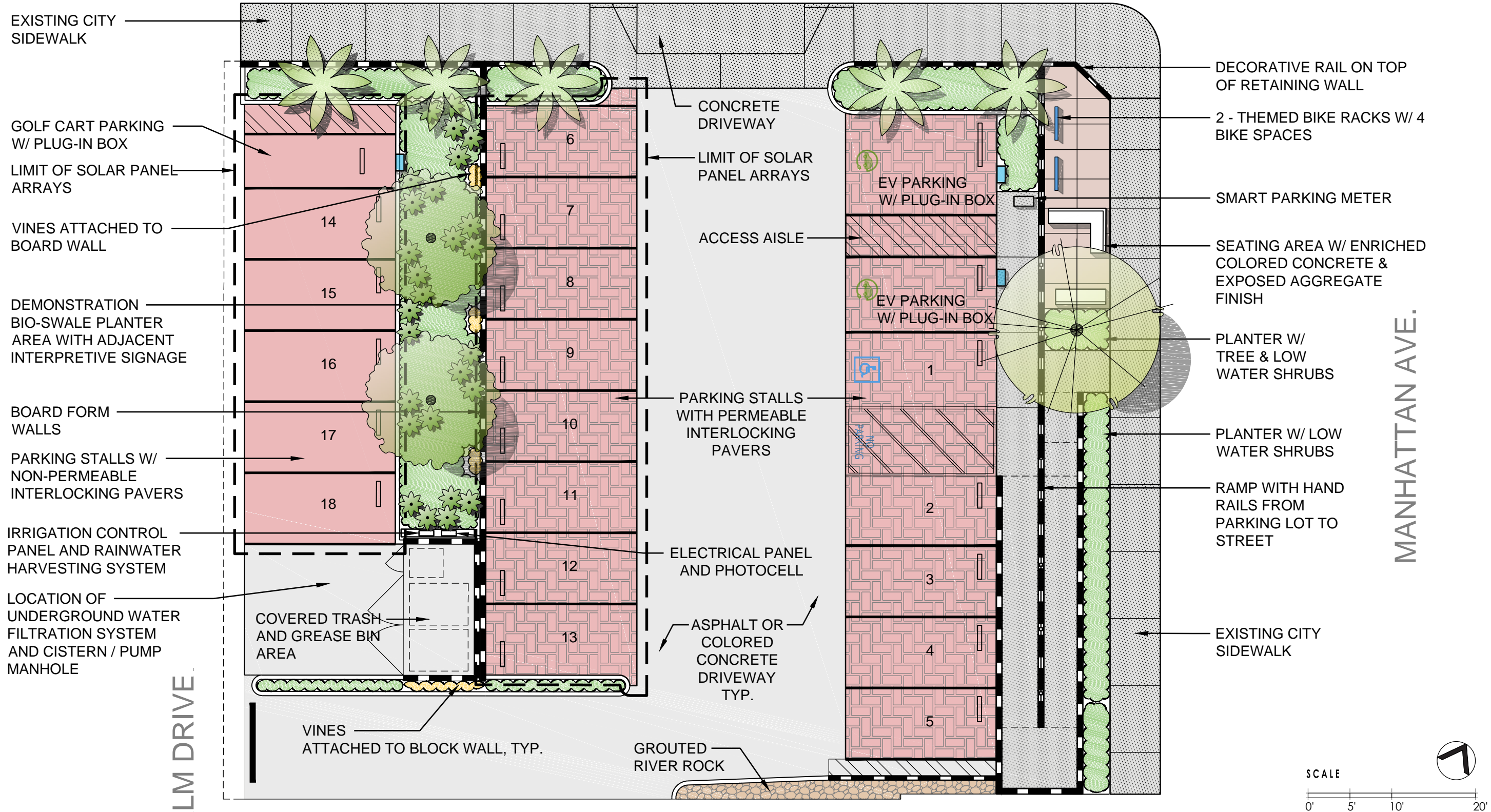
SCALE

0' 5' 10' 20'

PARKING LOT D - OPTION 1  
CITY OF HERMOSA BEACH



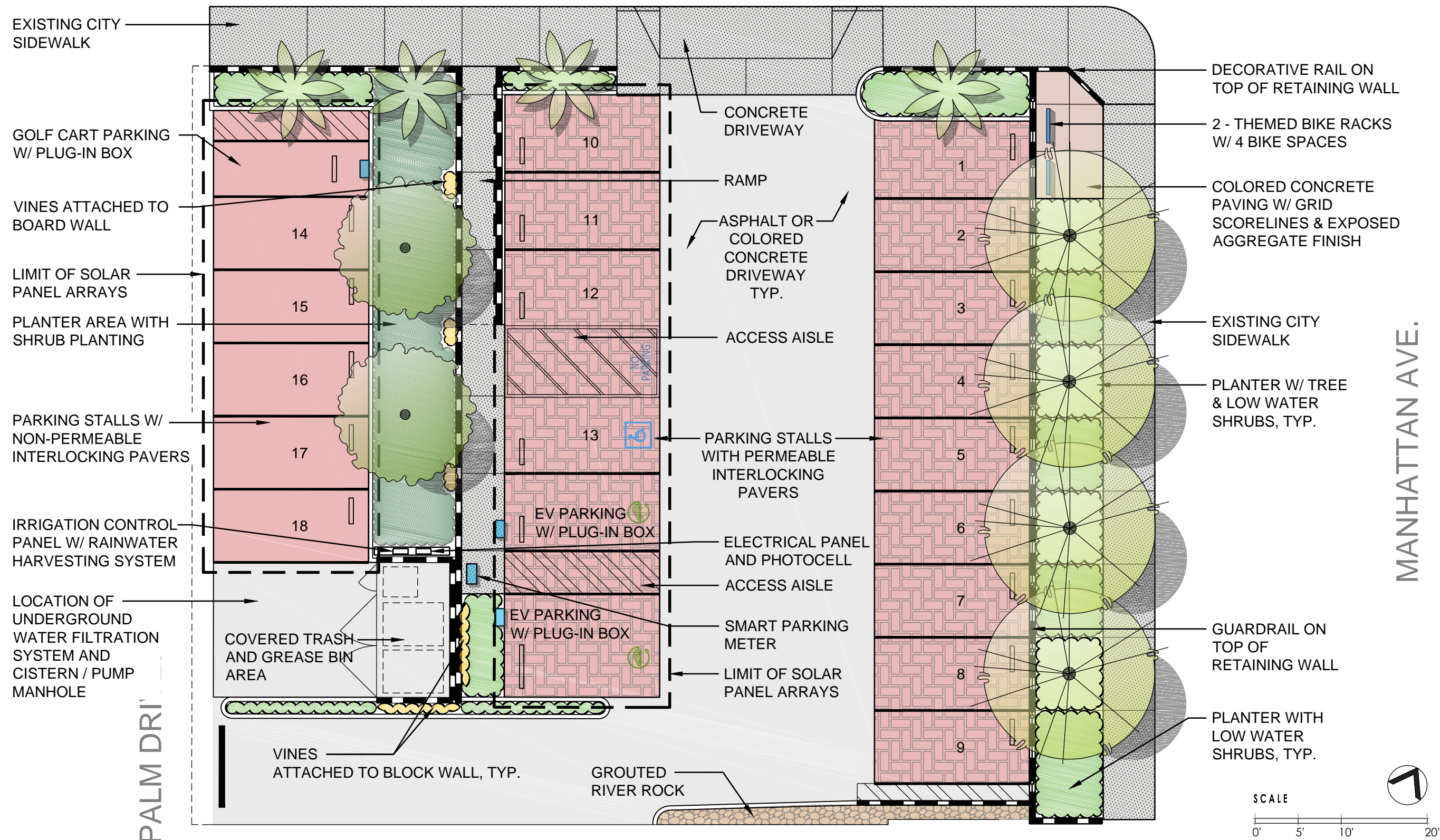
14TH STREET



PARKING LOT D - OPTION 2  
CITY OF HERMOSA BEACH



# 14TH STREET



PARKING LOT D - OPTION 3  
CITY OF HERMOSA BEACH



TREES (Zone 1 - Sea Coast Zone)



Melaleuca nesophila  
Pink Melaleuca



Melaleuca leucadendra  
Cajeput Tree



Prunus 'Newport'  
Purple Leaf Plum



Pyrus kawakamii  
Evergreen Pear

PALM (Sea Coast Zone)



Syagrus romanzoffiana  
Queen Palm

SHRUBS (Zone 1 - Sea Coast Zone)



Agave attenuate 'Variegata'  
Variegate Fox Tail Agave



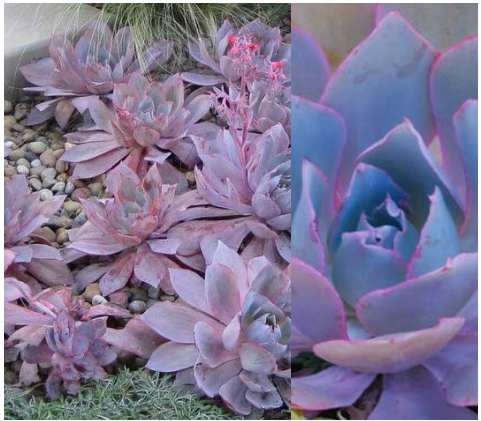
Agave vilmoriniana  
Octopus Agave



Aloe striata  
Coral Aloe



Crassula capitella 'Campfire'  
Campfire Crassula



Echeveria 'Afterglow'  
Afterglow Echeveria



Kalanchoe 'Flap Jacks'  
Paddle Plant



Limonium perezii  
Sea Lavender



Senecio vitalis  
Narrow Leaf Chalksticks

GROUNDCOVERS (Zone 1 - Sea Coast Zone)



Carissa grand. 'Green Carpet'  
Green Carpet Natal Plum



Dianella 'Clarity Blue'  
Clarity Blue Dianella

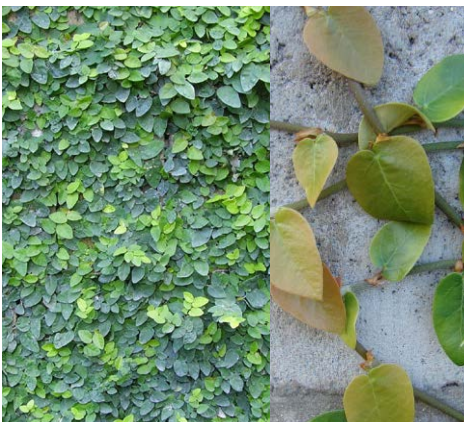
PARKING LOT D - PLANT PALETTE  
CITY OF HERMOSA BEACH



VINES (Zone 1 - Sea Coast Zone)



**Distictis buccinatoria**  
Red Trumpet Vine



**Ficus pumila**  
Creeping Fig



**Muehlenbeckia complexa**  
Wire Vine

BIOSWALE (Zone 1 - Sea Coast Zone)



**Anemopsis californica**  
Yerba Mansa



**Carex barbarae**  
Santa Barbara Sedge



**Distichlis spicata**  
Saltgrass



**Juncus patens**  
Common Rush



**Limonium californicum**  
California Sea Lavendar



**Mimulus cardinalis**  
Scarlet Monkeyflower



**Muhlenbergia rigens**  
Deer Grass



**Sisyrinchium bellum**  
Blue-eyed Grass

PARKING LOT D - PLANT PALETTE  
CITY OF HERMOSA BEACH



ITEM DESCRIPTION	UNIT COST	UNIT	OPTION 1		OPTION 2		OPTION 3	
			QUANTITY	COST	QUANTITY	COST	QUANTITY	COST
<b>A. General Items (Budgeted)</b>								
Mobilization & Demobilization (Not to Exceed 5% of Bid)	\$ 27,000.00	LS	1	\$ 27,000.00	1	\$ 27,000.00	1	\$ 27,000.00
Off-site Storage of Equipment and Materials	\$ 8,000.00	LS	1	\$ 8,000.00	1	\$ 8,000.00	1	\$ 8,000.00
Site Maintenance/SWPPP/BMPs/Erosion Control	\$ 5,000.00	LS	1	\$ 5,000.00	1	\$ 5,000.00	1	\$ 5,000.00
Const. Survey & Re-Establishing CL Ties & Monuments	\$ 6,000.00	LS	1	\$ 6,000.00	1	\$ 6,000.00	1	\$ 6,000.00
				<b>\$ 46,000.00</b>		<b>\$ 46,000.00</b>		<b>\$ 46,000.00</b>
<b>B. Site Demolition</b>								
Clearing & Grubbing	\$ 5,000.00	LS	1	\$ 5,000.00	1	\$ 5,000.00	1	\$ 5,000.00
Remove Existing Tree	\$ 400.00	EA	4	\$ 1,600.00	4	\$ 1,600.00	4	\$ 1,600.00
Remove Existing Timber Wall Posts & Headers	\$ 5,000.00	LS	1	\$ 5,000.00	1	\$ 5,000.00	1	\$ 5,000.00
Sawcut and Remove Conc. Driveway & Sidewalk	\$ 13.00	SF	204	\$ 2,652.00	204	\$ 2,652.00	201	\$ 2,613.00
Sawcut and Remove Conc. Curb & Gutter	\$ 16.00	LF	32	\$ 504.00	32	\$ 504.00	31	\$ 496.00
Sawcut & Remove Miscellaneous Concrete	\$ 1,000.00	LS	1	\$ 1,000.00	1	\$ 1,000.00	1	\$ 1,000.00
Sawcut & Remove Asphalt Paving	\$ 3.00	SF	6,864	\$ 20,592.00	6,864	\$ 20,592.00	6,864	\$ 20,592.00
Remove Existing Chain Link Fence	\$ 5.00	LF	68	\$ 340.00	68	\$ 340.00	68	\$ 340.00
Remove and Salvage Existing Light Standard	\$ 1,000.00	EA	3	\$ 3,000.00	3	\$ 3,000.00	3	\$ 3,000.00
Remove, Salvage and Reset Existing "No Parking" Sign	\$ 500.00	EA	4	\$ 2,000.00	4	\$ 2,000.00	4	\$ 2,000.00
Remove and Salvage Existing Parking Meters	\$ 200.00	EA	9	\$ 1,800.00	9	\$ 1,800.00	9	\$ 1,800.00
				<b>\$ 43,488.00</b>		<b>\$ 43,488.00</b>		<b>\$ 43,441.00</b>
<b>C. Surface Improvements</b>								
Construct 8" Concrete Driveway	\$ 13.00	SF	140	\$ 1,820.00	140	\$ 1,820.00	140	\$ 1,820.00
Construct Permeable Interlocking Pavers	\$ 17.00	SF	2,646	\$ 44,982.00	2,646	\$ 44,982.00	2,646	\$ 44,982.00
Construct Interlocking Pavers - Impervious	\$ 17.00	SF	972	\$ 16,524.00	972	\$ 16,524.00	972	\$ 16,524.00
Construct Drive Aisle Paving - Asphalt	\$ 4.00	SF	2,853	\$ 11,412.00	2,853	\$ 11,412.00	2,853	\$ 11,412.00
Construct Drive Aisle Paving - Concrete	\$ 12.00	SF	101	\$ 1,212.00	101	\$ 1,212.00	101	\$ 1,212.00
Construct 6"-18" Variable Height Concrete Curb	\$ 30.00	LF	60	\$ 1,800.00	60	\$ 1,800.00	60	\$ 1,800.00
Construct 6" Concrete Curb Only	\$ 20.00	LF	210	\$ 4,200.00	210	\$ 4,200.00	210	\$ 4,200.00
Construct 6" Concrete Curb & Gutter	\$ 25.00	LF	12	\$ 300.00	12	\$ 300.00	12	\$ 300.00
Construct 1" Concrete Curb & Gutter	\$ 20.00	LF	20	\$ 400.00	20	\$ 400.00	20	\$ 400.00
Construct 4" Concrete Sidewalk	\$ 10.00	SF	1,334	\$ 13,340.00	385	\$ 3,850.00	325	\$ 3,250.00
Construct Concrete Ramp	\$ 10.00	SF	0	\$ -	376	\$ 3,760.00	120	\$ 1,200.00
Construct 8" Trash Enclosure Concrete Apron	\$ 12.00	SF	431	\$ 5,172.00	431	\$ 5,172.00	431	\$ 5,172.00
Construct Concrete Stairway	\$ 40.00	SF	75	\$ 3,000.00	0	\$ -	0	\$ -
Construct Retaining Block Wall	\$ 60.00	LF	285	\$ 17,100.00	320	\$ 19,200.00	289	\$ 17,340.00
Furnish & Install Concrete Wheelstops	\$ 400.00	EA	21	\$ 8,400.00	21	\$ 8,400.00	21	\$ 8,400.00
Truncated Domes	\$ 10.00	SF	130	\$ 1,300.00	130	\$ 1,300.00	130	\$ 1,300.00
Construct Covered Trash Enclosure	\$ 18,000.00	LS	1	\$ 18,000.00	1	\$ 18,000.00	1	\$ 18,000.00
Striping & Markings	\$ 7,000.00	LS	1	\$ 7,000.00	1	\$ 7,000.00	1	\$ 7,000.00
Signage	\$ 3,000.00	LS	1	\$ 3,000.00	1	\$ 3,000.00	1	\$ 3,000.00
				<b>\$ 158,962.00</b>		<b>\$ 152,332.00</b>		<b>\$ 147,312.00</b>
<b>D. Site Grading</b>								
Site Preparation (Soils)	\$ 0.50	SF	9,800	\$ 4,900.00	9,800	\$ 4,900.00	9,800	\$ 4,900.00
Site Grading	\$ 18.00	CY	730	\$ 13,140.00	730	\$ 13,140.00	730	\$ 13,140.00
Earthwork Exports	\$ 20.00	CY	1,000	\$ 20,000.00	1,000	\$ 20,000.00	1,000	\$ 20,000.00
				<b>\$ 38,040.00</b>		<b>\$ 38,040.00</b>		<b>\$ 38,040.00</b>
<b>E. Storm Water Mitigation</b>								
Furnish & Install Modular Wetlands Unit	\$ 45,000.00	EA	1	\$ 45,000.00	1	\$ 45,000.00	1	\$ 45,000.00
Construct Cistern/Manhole (Contech)	\$ 10,000.00	EA	1	\$ 10,000.00	1	\$ 10,000.00	1	\$ 10,000.00
Construct Pump and Irrigation Control Panel	\$ 45,000.00	EA	1	\$ 45,000.00	1	\$ 45,000.00	1	\$ 45,000.00
Furnish & Install 6" Perforated P.V.C. Pipe (SDR-35)	\$ 30.00	LF	191	\$ 5,730.00	191	\$ 5,730.00	191	\$ 5,730.00
Furnish & Install 6" P.V.C. Pipe (SDR-35)	\$ 25.00	LF	265	\$ 6,625.00	195	\$ 4,875.00	249	\$ 6,225.00
Furnish & Install 12" NDS Area Drain Inlet	\$ 200.00	EA	12	\$ 2,400.00	7	\$ 1,400.00	10	\$ 2,000.00
				<b>\$ 114,755.00</b>		<b>\$ 112,005.00</b>		<b>\$ 113,955.00</b>
<b>F. Electrical &amp; Lighting</b>								
Site Prep., Wiring & Conduits of Amenities (Budgeted)	\$ 10,000.00	LS	1	\$ 10,000.00	1	\$ 10,000.00	1	\$ 10,000.00
Furnish & Install Electric Panel w/ Photocell	\$ 6,500.00	EA	1	\$ 6,500.00	1	\$ 6,500.00	1	\$ 6,500.00
Furnish & Install Light Standard (Pole Salvaged From E	\$ 2,700.00	EA	4	\$ 10,800.00	4	\$ 10,800.00	4	\$ 10,800.00
Seating Area Lighting	\$ 2,200.00	EA	4	\$ 8,800.00	2	\$ 4,400.00	0	\$ -
Upgrade to 3-Phase Service (Budgeted-Optional)	\$ 4,500.00	LS	1	\$ 4,500.00	1	\$ 4,500.00	1	\$ 4,500.00
				<b>\$ 40,600.00</b>		<b>\$ 36,200.00</b>		<b>\$ 31,800.00</b>

ITEM DESCRIPTION	UNIT COST	UNIT	OPTION 1		OPTION 2		OPTION 3	
			QUANTITY	COST	QUANTITY	COST	QUANTITY	COST
<b>G. Site Amenities</b>								
Decorative Guardrail	\$ 200.00	LF	54	\$ 10,800.00	54	\$ 10,800.00	27	\$ 5,400.00
Handrail	\$ 95.00	LF	72	\$ 6,840.00	90	\$ 8,550.00	34	\$ 3,230.00
Boulder - Bioswale (Installation Included)	\$ 300.00	EA	24	\$ 7,200.00	0	\$ -	0	\$ -
River Rock - Bioswale (Installation Included)	\$ 248.00	TN	2	\$ 496.00	0	\$ -	0	\$ -
Grouted River Rock - Parking Lot	\$ 16.00	SF	150	\$ 2,400.00	150	\$ 2,400.00	150	\$ 2,400.00
Decomposed Granite- 4" thick	\$ 65.00	SF	100	\$ 6,500.00		\$ -	0	\$ -
Wall Sconce	\$ 550.00	EA	3	\$ 1,650.00	0	\$ -	0	\$ -
Covered Enclosure (Trash Bins & Grease Container)	\$ 18,000.00	LS	1	\$ 18,000.00	1	\$ 18,000.00	1	\$ 18,000.00
Multi-Space Meter (Budgeted)	\$ 8,000.00	EA	1	\$ 8,000.00	1	\$ 8,000.00	1	\$ 8,000.00
Electrical Vehicle Charging Station - Level 2 (Budgeted)	\$ 10,000.00	EA	2	\$ 20,000.00	2	\$ 20,000.00	2	\$ 20,000.00
Golf Cart Charging Receptacle	\$ 1,000.00	EA	1	\$ 1,000.00	1	\$ 1,000.00	1	\$ 1,000.00
Carport Solar Arrays (TBD)	-	-	-	TBD	-	TBD	-	TBD
Wheelchair Platform Lift w/ Detailing (Budgeted)	\$ 15,000.00	EA	1	\$ 15,000.00	0	\$ -	0	\$ -
				<b>\$ 97,886.00</b>		<b>\$ 68,750.00</b>		<b>\$ 58,030.00</b>
<b>H. Site Furniture</b>								
Bike Rack - Upgraded	\$ 5,280.00	EA	2	\$ 10,560.00	0	\$ -	0	\$ -
Bike Rack	\$ 1,900.00	EA	0	\$ -	2	\$ 3,800.00	2	\$ 3,800.00
Bench	\$ 2,500.00	EA	2	\$ 5,000.00	1	\$ 2,500.00	0	\$ -
L-Shaped Bench	\$ 3,500.00	EA	2	\$ 7,000.00	1	\$ 3,500.00	0	\$ -
Trash Receptacle	\$ 1,800.00	EA	2	\$ 3,600.00	2	\$ 3,600.00	2	\$ 3,600.00
Grease Container	\$ 1,500.00	EA	1	\$ 1,500.00	1	\$ 1,500.00	1	\$ 1,500.00
Interpretive Sign with post	\$ 2,500.00	EA	2	\$ 5,000.00	2	\$ 5,000.00		\$ -
				<b>\$ 32,660.00</b>		<b>\$ 5,000.00</b>		<b>\$ 8,900.00</b>
<b>I. Irrigation</b>								
Automatic Irrigation System	\$ 5.00	SF	1,185	\$ 5,925.00	1,102	\$ 5,510.00	1,701	\$ 8,505.00
Automatic Irrigation Controller	\$ 15,000.00	EA	1	\$ 15,000.00	1	\$ 15,000.00	1	\$ 15,000.00
				<b>\$ 20,925.00</b>		<b>\$ 20,510.00</b>		<b>\$ 23,505.00</b>
<b>J. Planting</b>								
Soil Preparation and Weed Abatement	\$ 0.20	SF	1,085	\$ 217.00	1,102	\$ 220.40	1,701	\$ 340.20
3" Thick Layer of Mulch	\$ 0.50	SF	1,085	\$ 542.50	1,102	\$ 551.00	1,701	\$ 850.50
Palm Tree	\$ 3,000.00	EA	5	\$ 15,000.00	5	\$ 15,000.00	4	\$ 12,000.00
36" Box Tree	\$ 950.00	EA	4	\$ 3,800.00	3	\$ 2,850.00	6	\$ 5,700.00
15 Gallon Vine	\$ 95.00	EA	5	\$ 475.00	4	\$ 380.00	7	\$ 665.00
5 Gallon Shrub	\$ 20.00	EA	90	\$ 1,800.00	100	\$ 2,000.00	125	\$ 2,500.00
1 Gallon Shrub	\$ 10.00	EA	185	\$ 1,850.00	175	\$ 1,750.00	300	\$ 3,000.00
				<b>\$ 23,684.50</b>		<b>\$ 22,751.40</b>		<b>\$ 25,055.70</b>
<b>K. Post Installation Establishment</b>								
90-Day Post Installation Establishment	\$ 2.50	SF	1,185	\$ 3,000.00	1,102	\$ 2,800.00	1,701	\$ 4,300.00
<b>Total Cost</b>				<b>\$ 620,000.50</b>		<b>\$ 547,876.40</b>		<b>\$ 540,338.70</b>
<b>20% Contingency</b>				<b>\$ 124,000.10</b>		<b>\$ 109,575.28</b>		<b>\$ 108,067.74</b>
<b>Grand Total</b>				<b>\$ 744,000.60</b>		<b>\$ 657,451.68</b>		<b>\$ 648,406.44</b>
<b>Say</b>				<b>\$ 745,000.00</b>		<b>\$ 660,000.00</b>		<b>\$ 650,000.00</b>

PRELIMINARY COST FOR PARKING LOT D

CITY OF HERMOSA BEACH