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Executive Summary
Initiation of Planning Code, Zoning Map, and General Plan Amendments
HEARING DATE: OCTOBER 21, 2010

Date:	October 14, 2010
Case No.:	**2008.0021EMTZW**
Project Address:	**Parkmerced**
Zoning:	RM-1 (Residential Mixed, Low Density), RM-4 (Residential Mixed, High Density), & RH-1(D) (Residential House, One-Family, Detached) Districts
Proposed Zoning:	Parkmerced Special Use District
Height/Bulk:	40-X & 130-D
Assessor's Blocks:	7303, 7303A, 7308 through 7311, 7309A, 7315 through 7323, 7325, 7326, 7330, 7331 (Lot 4), 7332 (Lot 4), 7333 (Lots 1 and 3), 7333A, 7333B, 7333C, 7333D, 7333E, 7334 through 7345, 7345A, 7345B, 7345C, 7356 through 7359, and 7360 through 7370
Project Sponsor:	Seth Mallen, Stellar Management 3711 19th Avenue San Francisco, California 94132 (415) 584-4561 smallen@stellarmanagement.com
Staff Contact:	Joshua Switzky – (415) 575-6815 Joshua.Switzky@sfgov.org Elizabeth Watty – (415) 558-6620 Elizabeth.Watty@sfgov.org
Recommendation:	**Initiate Amendments to the Planning Code, Zoning Map, and General Plan**

The action before the Commission is initiation of amendments to the Planning Code, Zoning Map, and General Plan, described below. Initiation does not involve a decision on the substance of the amendments; it merely begins the required 20 day notice period, after which the Commission may hold a hearing and take action on the proposed Code amendments.

PROJECT DESCRIPTION

The proposed Ordinances would**:**

(1) **Amend the Planning Code** to:

- Create Planning Code Section 249.64, the "Parkmerced Special Use District" (PMSUD), which would:
    - establish sub-district zoning categories that include Residential, Mixed-Use, School, Community, and Open Space districts; height and bulk restrictions, parking

regulations, car-share, bicycle-parking requirements; and establish a design review process for the phased development plan;
  - allow for the demolition and replacement of 1,538 rent-controlled dwelling units;
  - establish that the controls in the SUD are regulated by the *Parkmerced Design Standards and Guidelines* document as adopted and periodically amended by the Planning Commission, except for those controls specifically enumerated in the SUD; and
  - establish a process for project design review, approval and the consideration of modifications to the controls of the SUD and the *Design Standards*.
- Amend Planning Code Section 270 (Bulk Limits) to create a new Bulk District ("PM") for the proposed "Parkmerced Special Use District."

(2) **Amend the Zoning Maps** as follows:
- Amend Zoning Map SU13 to designate the project site as the proposed new "Parkmerced Special Use District;"
- Amend Zoning Map HT13 to reclassify the height limits within the project site according to the proposed project; and
- Amend Zoning Map ZN13 to delete references to existing zoning within the project site and to refer to the proposed new "Parkmerced Special Use District" zoning districts [Parkmerced Residential (PM-R), Parkmerced Mixed Use – Social Heart (PM-MU1), Parkmerced Mixed Use – Neighborhood Commons (PM-MU2), Parkmerced School (PM-S), Parkmerced Community/Fitness (PM-CF), and Parkmerced Open Space (PM-OS)].

(3) **Amend the General Plan** Urban Design Element Height Map (Map 4) to reflect the proposed heights restrictions as described in the proposed project.

The Parkmerced Development Project also necessitates approval by the Board of Supervisors of a Development Agreement, which would be accompanied by and implemented through five Plans: *the Parkmerced Vision Plan, the* Parkmerced *Design Standards and Guidelines, the Parkmerced Sustainability Plan, the Parkmerced Infrastructure Report, and the Parkmerced Transportation Plan*.

The principal land use goals of the Parkmerced Development Project are to: (i) reduce automobile use by concentrating housing close to employment, increasing the supply of housing an d providing better integrated residential and neighborhood-serving retail and office uses; (ii) maximize opportunities to use pedestrian and bicycle pathways; (iii) establish pedestrian-oriented nodes for the location of neighborhood services and amenities, open space and community services; and (iv) incorporate environmental factors such as sun, shade and wind into the design and housing materials throughout the Parkmerced site.

The proposed Project is a long-term (approximately 20-30 years) mixed-use development program to comprehensively re-plan and re-design the approximately 116-acre site (152-acres including streets). The Project proposes to increase the residential density, provide new commercial and retail services, provide new transit facilities, and improve existing utilities within the development site. Of the existing 3,221 residential units that exist on the site, approximately 1,683 units located within the 11 existing towers would remain and approximately 1,538 existing apartments would be demolished and replaced in a phased work program. As required by the proposed Development Agreement, these

replacement units would be subject to the San Francisco Rent Stabilization and Arbitration Ordinance and existing tenants in the to-be-replaced buildings would have rights to relocate into the new units at their existing rents. An additional 5,679 net new units would also be added to the Site for a project total of 8,900 units. New buildings on the site would range in height from 35 feet to 145 feet, and would not be taller than the existing towers, which will remain. Neighborhood-serving retail and office space would also be constructed as part of the proposed Project and concentrated on Crespi Drive, near the northeast part of the site and the light-rail line. The proposed new neighborhood core would be located within walking distance of all the residences within Parkmerced. Small neighborhood-serving retail establishments would be constructed outside of the neighborhood core, in close proximity to residential units throughout the site. A new elementary school (to replace an existing one on-site) and daycare facility, fitness center, and new open space uses including athletic fields, walking and biking paths, a new organic farm, and community gardens would also be provided on the Project Site. Infrastructure improvements would include the installation of renewable energy sources, such as wind turbines and photovoltaic cells. The *Sustainability Plan* details goals and implementation actions for the Project.

The proposed Project would provide 68 acres of open space in a network of publically accessible neighborhood parks, athletic fields, public plazas, greenways and an organic farm. In addition to these 68 acres of open space, the Project would provide significant additional open space in the form of private or semi-private open space areas such as outdoor courtyards, roof decks, and balconies. These private and semi-private open spaces would be required with the development of each residential building within Parkmerced. The parks and open space would be more accessible and usable than the current open spaces. Parks and open space within, and in the vicinity of, the proposed Project would continue to receive a substantial amount of sunlight during the day when use is at its highest rate. Existing coastal views from parks located to the east and north of the Project Site would be maintained with implementation of the proposed Project.

The Parkmerced Development Project will result in 5,679 new homes (852 of which are on-site affordable units), 230,000 sf of neighborhood retail space, 80,000 sf of office space, 25,000 sf of school space, 64,000 sf dedicated to a community center, and 68 acres of open space and new parks.

The transportation system modifications proposed as part of the Parkmerced Development Project, as described in the *Transportation Plan*, would include rerouting the existing MUNI Metro M Ocean View line from 19th Avenue through the development, new and re-designed public streets, and modifications to intersections and streets around the perimeter of the site. These improvements would require approval of the San Francisco Municipal Transit Authority, the California Public Utilities Commission, and Caltrans. The Transportation Plan also includes a comprehensive Transportation Demand Management (TDM) program that obligates the Developer to undertake certain programs and services, including free shuttles to Daly City BART, transit pass subsidies for all residents, a Transportation Coordinator, amongst other items. Off-street parking for the residential units will primarily, but not exclusively be in underground garages, and will be concentrated on the west side of the site (while units are concentrated toward the eastern half) to discourage casual usage. Per the proposed SUD, parking will be capped at one space per dwelling unit and generally at one space per 750 square feet of non-residential uses (with some variation for specific uses).

PARKMERCED GUIDING DOCUMENTS

There are four guiding documents (the *Design Standards and Guidelines*, the *Sustainability Plan*, the *Transportation Plan*, and *the Infrastructure Report*) that combine to create a comprehensive blueprint for guiding all future improvements at Parkmerced.

The Vision Plan lays out a conceptual framework for transforming the existing Parkmerced housing development into a "21st century model of a healthy neighborhood". (See Attached)

The Design Standards and Guidelines prescribe urban design controls for land use, open spaces, streets, blocks and individual buildings. It also outlines a process for project implementation. (See Attached)

The Sustainability Plan contains specific strategies and metrics which together address the management and conservation of energy, water and other natural resources, and also establishes goals for green building standards. (See Attached)

The Transportation Plan provides a framework and management plan for addressing transit and vehicular travel to and from the neighborhood. (See Attached)

The Infrastructure Report establishes an outline for anticipated site-wide improvements to all street and public rights-of-way, underground utilities, and grading. (See Attached)

SITE DESCRIPTION AND PRESENT USE

Parkmerced is bounded by Lake Merced Boulevard to the west, Brotherhood Way to the south, Junipero Serra Boulevard, Felix Avenue, Cambon Drive, and 19th Avenue to the east, and Holloway Avenue, Varela Avenue, Serrano Drive, Font Boulevard, Pinto Avenue, and Vidal Drive to the north; it is within the RM-1 (Residential Mixed, Low-Density), RM-4 (Residential Mixed, High-Density), and RH-1(D) (Residential House, One-Family, Detached) Districts and 40-X and 130-D Height and Bulk Districts.

The Site measures 152-acres in total (including streets), and is defined by an axial street grid with a large open space in the center and a series of "pie-shaped" residential blocks. The residential units on each of these blocks surround a central courtyard open to the sky. The development is also articulated by landscaped boulevards and secondary streets that weave around buildings, open spaces, and larger open spaces in the vicinity of the tower buildings. The Site contains 3,221 existing rental apartments in 170 two-story residential buildings (townhouses) and 11 residential tower buildings that are 13 stories tall, as well as associated parking, buildings services, a leasing/operations office and a private pre-school/day care facility. There are also about 75 acres of existing open space throughout the Project Site in a network of lawns, courtyard areas, private open space, and playgrounds.

Parking for the residential apartments in the towers is currently provided in three above-grade centralized parking garages, which accommodate a total of 1,540 parking stalls. Parking for the townhouses is provided in attached carports, which provide a total of 1,507 parking spaces. An additional 151 parking spaces used for maintenance and office parking are provided in a surface parking lot. In addition to the 3,198 total private off-street parking spaces, there are 1,591 existing public on-street parking spaces.

As noted in the submitted Historic Resource Evaluation (HRE), the Parkmerced rental complex was constructed between 1941 and 1951 as the first all-rental community in San Francisco, as a response to the continued demand for housing the United States during and after World War II. [1] The buildings and site plan at Parkmerced were designed by Leonard Schultze & Associates for the Metropolitan Life Insurance Company (MetLife), while the landscaping of the open space and interior garden courtyards were designed by Thomas Church and other landscape architects from his office.

SURROUNDING PROPERTIES AND NEIGHBORHOOD

The 152-acre Site is located in the Lakeshore Neighborhood, in the southwest corner of San Francisco. The surrounding neighborhood includes Stonestown Galleria and San Francisco State University to the north; the Lakeside and Ingleside Terrace neighborhoods to the east; the Brotherhood Way religious and scholastic institutions, San Francisco Golf Club, and a residential neighborhood to the south; and Lake Merced and the Fleming and Harding Park Golf Courses to the west.

ENVIRONMENTAL REVIEW

The Resolution to initiate amendments to the Planning Code, Zoning Maps, and General Plan would result in no physical impact on the environment. The Resolution is exempt from environmental review under Section 15378(b)(5) of the CEQA Guidelines.

On or after November 18, 2010, the Planning Commission will hear the Final Environmental Impact Report for the Parkmerced Development Project. All necessary CEQA findings and documents will be available in the Department's case reports for that hearing.

HEARING NOTIFICATION REQUIREMENTS (FOR ENTITLEMENT HEARING)

TYPE	REQUIRED PERIOD	REQUIRED NOTICE DATE	ACTUAL NOTICE DATE	ACTUAL PERIOD
Classified News Ad	20 days	October 29, 2010	October 27, 2010	22 days
Posted Notice	N/A	N/A	N/A	N/A
Mailed Notice	10 days	November 8, 2010	November 5, 2010	13 days

PUBLIC COMMENT

- While there was extensive public comment at the Draft Environmental Impact Report hearing on June 17, 2010, Planning staff has not received written comments on the entitlement applications.

ISSUES AND OTHER CONSIDERATIONS

- **RENTAL HOUSING:** To avoid displacement of the existing 1,538 residents, each resident of a unit proposed for demolition would be given the opportunity to relocate to a new unit prior to

[1] "Historic Resource Evaluation & Cultural Landscape Assessment: Parkmerced" (April 29, 2009), prepared for Turnstone Consulting by Page & Turnbull, Inc. Available by request at the San Francisco Planning Department (1650 Mission Street, Suite 400, San Francisco, CA 94103) in the Case Docket for Case No. 2008.0021E. The document is referred to as the "Parkmerced HRE."

demolition. For such relocated residents, the new unit would be rented at the same rent as the resident's existing unit and would be subject to the same rent increase restrictions as contained in the San Francisco Rent Stabilization and Arbitration Ordinance for the life of the building.

- **DEVELOPMENT AGREEMENT ("DA"):** The Parkmerced Development Project is being reviewed for approval through a Development Agreement by and between the City and County of San Francisco and Parkmerced Investors LLC. The Development Agreement is a contract between the City and the Developer, that provides greater security and flexibility to both the City and Developer, and results in greater public benefits in exchange for certainty. Development Agreements are typically used for large-scale projects with substantial infrastructure investment and multi-phase build outs. A key component of the proposed Development Agreement is the Phasing Plan, a document which lists all of the obligations of the Developer and describes how these obligations are tied to or triggered by increments of the Project's development. This list of obligations includes both Community Improvements, some of which are capital (e.g. open spaces, Muni improvements, street improvements, renewable energy project) and some of which are programmatic (e.g. shuttles, transit pass subsidies) and Mitigations identified in the EIR (e.g. street improvements). It is important to note that the actual phasing of the project is not yet determined, in the sense that there are not pre-determined geographic sub-areas of the project that will be built in any certain order or magnitude, though many of the Community Improvements and Mitigations are triggered by the amount of overall cumulative development completed at any given time. A more detailed explanation and discussion of the Development Agreement, including the Phasing Plan, will be provided when the Development Agreement is submitted to the Planning Commission for review.

- **PROCESS:** The following provides an outline of the process and timeline for the Planning Commission's review of the Parkmerced Development Project.

    - **October 14, 2010:** Planning Commission will receive a packet for the Initiation hearing, including this Executive Summary; the draft Ordinances of the proposed Planning Code, Zoning Map, and General Plan amendments; a draft Resolution to Initiate amendments to the Planning Code, Zoning Maps, and General Plan; and the five Parkmerced Plans (Vision, Design Guidelines and Standards, Sustainability, Transportation, .and Infrastructure Report).

    - **October 21, 2010:** Planning Commission will hold a hearing to Initiate amendments to the Planning Code, Zoning Maps, and General Plan. The Commission will receive a copy of the draft Development Agreement with a cover memo in their packets.

    - **October 28, 2010:** The Planning Commission will receive Comments & Responses to the DEIR in their packets.

    - **November 4, 2010:** The Planning Commission will hold an informational hearing regarding the DA for the Parkmerced Development Project. The Planning Commission will also receive a packet for the entitlement hearing, including but not limited to an

updated Executive Summary; Resolutions for Planning Code, Zoning Map, and General Plan amendments; CEQA findings; and the draft Ordinances.

- **November 18, 2010:** The Planning Commission will hold the EIR certification and entitlement hearings.

REQUIRED COMMISSION ACTION

The proposed draft Resolution is before the Commission so that it may recommend approval or disapproval of initiation of amendments to the Planning Code, Zoning Maps and General Plan.

BASIS FOR RECOMMENDATION

- The Department believes the Commission should initiate the amendments to the Planning Code, Zoning Maps and General Plan necessary to implement the Parkmerced Development Project so that it may recommend approval or disapproval of the Ordinances to the Board of Supervisors at a future hearing.

RECOMMENDATION:	**Approval to Initiate the Planning Code, Zoning Map, and General Plan Amendments**

Attachments:
Draft Resolution
Draft Ordinances
Project Sponsor Submittal:
- Parkmerced Vision Plan
- Parkmerced Design Standards and Guidelines (including height map and detailed site plans)
- Parkmerced Sustainability Plan
- Parkmerced Transportation Plan
- Parkmerced Infrastructure Report (including demolition, deconstruction, and phasing plans)

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Planning Commission Resolution No. _____

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Case No.:	**2008.0021EMTZW**
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Zoning:	RM-1 (Residential Mixed, Low Density), RM-4 (Residential Mixed, High Density), & RH-1(D) (Residential House, One-Family, Detached) Districts
Proposed Zoning:	Parkmerced Special Use District
Height/Bulk:	40-X & 130-D
Assessor's Blocks::	7303, 7303A, 7308 through 7311, 7309A, 7315 through 7323, 7325, 7326, 7330, 7331 (Lot 4), 7332 (Lot 4), 7333 (Lots 1 and 3), 7333A, 7333B, 7333C, 7333D, 7333E, 7334 through 7345, 7345A, 7345B, 7345C, 7356 through 7359, and 7360 through 7370
Project Sponsor:	Seth Mallen, Stellar Management 3711 19th Avenue San Francisco, California 94132 (415) 584-4561 smallen@stellarmanagement.com
Staff Contact:	Joshua Switzky – (415) 575-6815 Joshua.Switzky@sfgov.org Elizabeth Watty – (415) 558-6620 Elizabeth.Watty@sfgov.org
Recommendation:	**Initiate Amendments to the Planning Code, Zoning Maps, and General Plan**

INITIATING AMENDMENTS TO THE PLANNING CODE, ZONING MAPS, AND GENERAL PLAN IN ORDER TO (1) CREATE PLANNING CODE SECTION 249.64, THE "PARKMERCED SPECIAL USE DISTRICT" (PMSUD), WHICH WOULD ESTABLISH SPECIFIC USE CATEGORIES THAT INCLUDE RESIDENTIAL, MIXED-USE, SCHOOL, COMMUNITY, AND OPEN SPACE DISTRICTS; HEIGHT AND BULK RESTRICTIONS, PARKING, CAR-SHARE, BICYCLE-PARKING REQUIREMENTS; ESTABLISH A DESIGN REVIEW PROCESS FOR THE PHASED DEVELOPMENT PLAN; AND ALLOW FOR THE DEMOLITION AND REPLACEMENT OF 1,538 RENT-CONTROLLED DWELLING UNITS; (2) AMEND CODE SECTION 270 (BULK LIMITS) TO CREATE A NEW BULK DISTRICT FOR THE PROPOSED "PARKMERCED SPECIAL USE DISTRICT"; (3) AMEND ZONING MAP SHEET ZN13 TO DELETE REFERENCES TO THE EXISTING ZONING WITHIIN THE PROJECT SITE AND TO REFER TO THE PROPOSED NEW "PARKMERCED SPECIAL USE DISTRICT" ZONING DISTRICTS; (4) AMEND ZONING MAP SU13 TO DESIGNATE THE PROJECT SITE AS THE PROPOSED NEW "PARKMERCED SPECIAL USE DISTRICT"; (5) AMEND ZONING MAP HT13 TO RECLASSIFY THE HEIGHT LIMITS WITHIN THE PROJECT SITE ACCORDING TO THE PROPOSED PROJECT; AND (6) AMEND

HEIGHT MAP (MAP 4) OF THE URBAN DESIGN ELEMENT OF THE GENERAL PLAN TO REFLECT THE PROPOSED HEIGHTS RESTRICTIONS AS DESCRIBED IN THE PROPOSED DEVELOPMENT PROGRAM.

PREAMBLE

WHEREAS, the property encompassing the Parkmerced Development Project includes approximately 116 acres of privately-owned land at the southwestern corner of San Francisco, generally bounded by Lake Merced Boulevard to the west, Brotherhood Way to the south, Junipero Serra Boulevard, Felix Avenue, Cambon Drive, and 19th Avenue to the east, and Holloway Avenue, Varela Avenue, Serrano Drive, Font Boulevard, Pinto Avenue, and Vidal Drive to the north; and

WHEREAS, the Project Sponsor (Parkmerced Investors LLC) seeks to transform the existing 60-to-70-year old residential development into a pedestrian focused, socially vibrant San Francisco Neighborhood; and

WHEREAS, the Project Sponsor is seeking to increase the density at the site by approximately 5,679 dwelling-units; and

WHEREAS, the Parkmerced Development Project seeks to create new neighborhood-serving amenities, reduce the use of automobiles within the Site by concentrating housing close to employment, providing better integrated residential and neighborhood-serving retail and office uses; maximize opportunities to use pedestrian and bicycle pathways; establish pedestrian-oriented nodes for the location of neighborhood services and amenities, open space and community services; improve access to public transportation; and incorporate environmental factors such as sun, shade and wind into the design and housing materials throughout the Site; and

WHEREAS, the current zoning does not accommodate the complexity and site-specific goals of the Parkmerced Development Project, a large master-planned neighborhood under single ownership, specifically the changes to permitted heights, bulk, density, and neighborhood-serving uses; and

WHEREAS, the proposed Ordinances are intended to resolve the aforementioned issues by creating the "Parkmerced Special Use District (PMSUD)" and by modifying Zoning and General Plan maps to accommodate the proposed SUD; and

WHEREAS, the Parkmerced Development Project will be considered for approval by the Board of Supervisors through a Development Agreement by and between the City and County of San Francisco and Parkmerced Investors LLC; and

WHEREAS, the Planning Commission (hereinafter "Commission") conducted a duly noticed public hearing at a regularly scheduled meeting to consider the proposed Ordinances on October 21, 2010; and

Whereas, this Resolution to initiate amendments to the Planning Code, Zoning Maps, and General Plan has been determined to be categorically exempt from environmental review under the California Environmental Quality Act Section 15378(b)(5); and

WHEREAS, the Commission has heard and considered the testimony presented to it at the public hearing and has further considered written materials and oral testimony presented on behalf of Department staff and other interested parties; and

WHEREAS, all pertinent documents may be found in the files of the Planning Department, as the custodian of records, at 1650 Mission Street, Suite 400, San Francisco; and

WHEREAS, the Commission has reviewed the proposed Ordinances:

MOVED, that pursuant to Planning Code Section 302(b), the Planning Commission Adopts a Resolution to Initiate amendments to the Planning Code, Zoning Maps, and General Plan;

AND BE IT FURTHER RESOLVED, that pursuant to Planning Code Section 306.3, the Planning Commission authorizes the Department to provide appropriate notice for a public hearing to consider the above referenced Planning Code, Zoning Map, and General Plan amendments contained in the draft Ordinances, approved as to form by the City Attorney in **Exhibit A**, to be considered at a publicly noticed hearing on or after November 18, 2010.

I hereby certify that the foregoing Resolution was ADOPTED by the San Francisco Planning Commission on October 21, 2010.

Linda D. Avery
Commission Secretary

AYES:

NOES:

ABSENT:

[General Plan Amendment -- Parkmerced.]

Ordinance amending the San Francisco General Plan by amending the Urban Design Element Height Map with respect to the Parkmerced site; adopting findings, including environmental findings and findings of consistency with the General Plan and Planning Code Section 101.1.

NOTE: Additions are *single-underline italics Times New Roman*; deletions are ~~*strike-through italics Times New Roman*~~. Board amendment additions are double-underlined; Board amendment deletions are ~~strikethrough normal~~.

Be it ordained by the People of the City and County of San Francisco:

Section 1. Findings. The Board of Supervisors of the City and County of San Francisco hereby finds and determines that:

(a) In accordance with the actions contemplated herein, this board adopted Resolution No. _____ making findings pursuant to the California Environmental Quality Act (California Public Resources Code Section 21000 et seq.). Said Resolution is on file with the Board of Supervisors in File No. _____and is incorporated herein by reference.

(b) Pursuant to San Francisco Charter Section 4.105 and Planning Code Section 340, any amendments to the General Plan shall first be considered by the Planning Commission and thereafter recommended for approval or rejection by the Board of Supervisors. On _____, by Resolution No. _____, the Commission conducted a duly noticed public hearing on the proposed General Plan Amendments pursuant to Planning Code Section 340, adopted the General Plan Amendments, and recommended them for approval to the Board of Supervisors. A copy of Planning Commission Resolution

No. _____ is on file with the Clerk of the Board of Supervisors in File No. _____.

(c) The Board of Supervisors finds that this ordinance is in conformity with the priority policies of Planning Code Section 101.1 and consistent with the General Plan as it is proposed for amendments herein, and hereby adopts the findings set forth in Planning Commission Resolution No. _____ and incorporates such findings herein by reference.

Section 2. The Board of Supervisors hereby approves the following amendments to the Urban Design Element of the General Plan:

Height Map 4 is amended to:

(i) Delete the shaded area within the Parkmerced site;

(ii) Add a boundary line around the Parkmerced site encompassing Assessor's Blocks 7303 (Lot 1), 7303A (Lot 1), 7308 and 7309 (both Lots 1), 7309A (Lot 1), 7310 and 7311 (both Lots 1), 7315 through 7319 (all Lots 1), 7320 (Lot 3), 7321 through 7323 (all Lots 1), 7325 and 7326 (both Lots 1), 7330 (Lot 1), 7331 (Lot 4), 7332 (Lot 4), 7333 (Lots 1 and 3), 7333A (Lot 1), 7333B (Lot 1), 7333C (Lot 1), 7333D (Lot 1), 7333E (Lot 1), 7334 through 7345 (all Lots 1), 7345A (Lot 1), 7345B (Lot 1), 7345C (Lot 1), 7356 through 7370 (all Lots 1); and

(iii) Add a reference that states "See Parkmerced Special Use District, Section 249.64 of the Planning Code, and Sectional Map HT13 of the Zoning Maps."

APPROVED AS TO FORM:
DENNIS J. HERRERA, City Attorney

By: _____
MARLENA G. BYRNE
Deputy City Attorney

[Zoning Map Amendments -- Parkmerced.]

Ordinance amending the San Francisco Planning Code by amending Sectional Maps ZN13, HT13, and SU13 of the Zoning Map of the City and County of San Francisco to reflect the Parkmerced Special Use District; adopting findings, including environmental findings, Section 302 findings, and findings of consistency with the General Plan and the priority policies of Planning Code Section 101.1.

NOTE: Additions are *single-underline italics Times New Roman*; deletions are ~~*strike-through italics Times New Roman*~~. Board amendment additions are double-underlined; Board amendment deletions are ~~strikethrough normal~~.

Be it ordained by the People of the City and County of San Francisco:

Section 1. Findings. The Board of Supervisors of the City and County of San Francisco hereby finds and determines that:

(a) In accordance with the actions contemplated herein, this Board adopted Resolution No. _____ concerning findings pursuant to the California Environmental Quality Act (California Public Resources Code Section 21000 et seq.). Said Resolution is on file with the Clerk of the Board of Supervisors in File No. _____ and is incorporated herein by reference.

(b) Pursuant to Planning Code Section 302, this Board finds that these Planning Code amendments will serve the public necessity, convenience, and welfare for the reasons set forth in Planning Commission Resolution No. _____ and the Board incorporates such reasons herein by reference. A copy of Planning Commission Resolution No. _____ is on file with the Clerk of the Board of Supervisors in File No. _____.

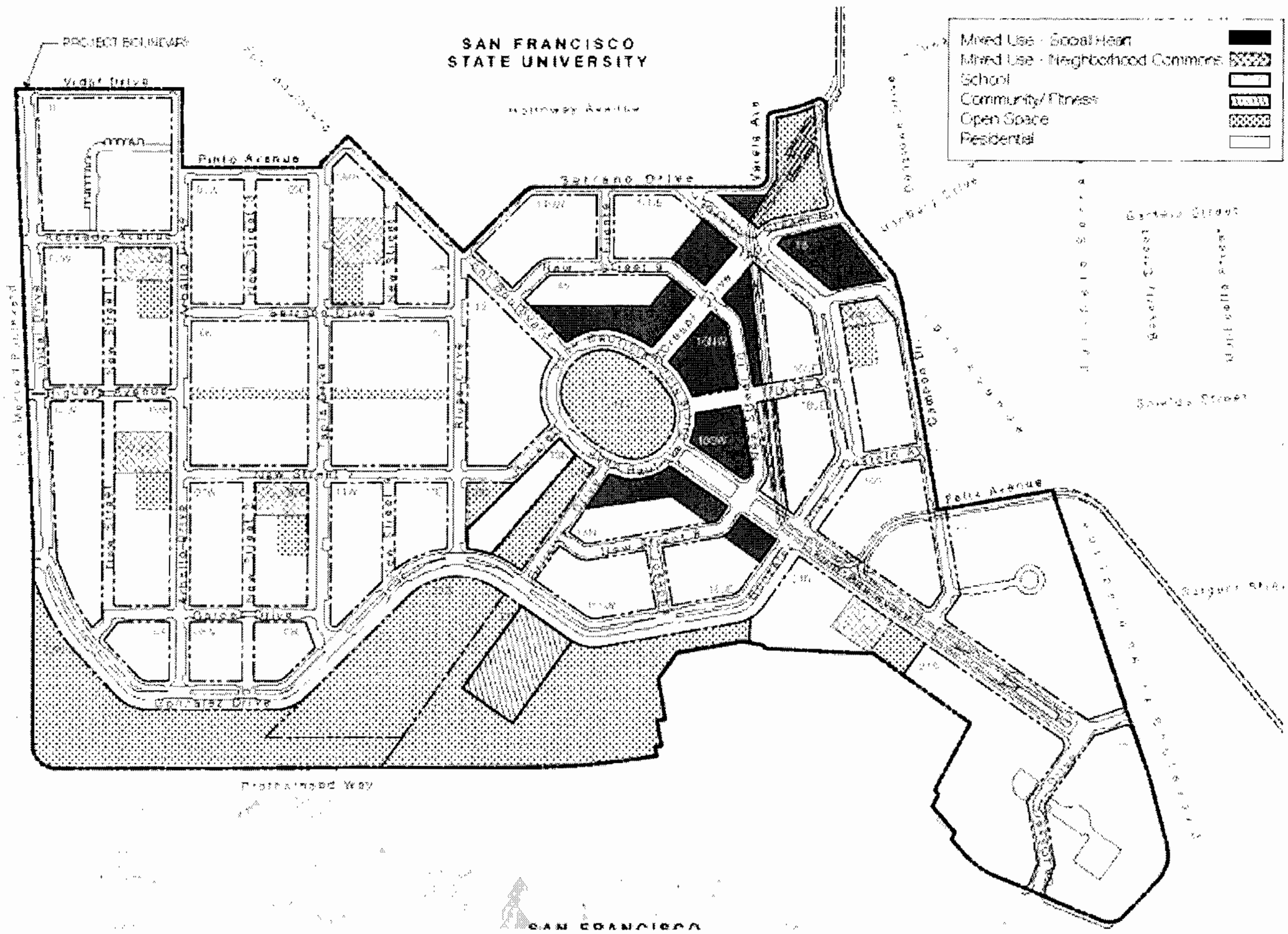
(c) These Planning Code amendments are consistent with the General Plan and with the priority policies of Planning Code Section 101.1 for the reasons set forth in Planning

Commission Resolution No. ___ and the Board hereby incorporates such reasons herein by reference.

Section 2. The San Francisco Planning Code is hereby amended by amending Sectional Map ZN13 of the Zoning Map of the City and County of San Francisco, as follows:

Description of Property	Use Districts to be Superseded	Use Districts Hereby Approved
Assessor's Blocks 7303 (Lot 1), 7303A (Lot 1), 7308 and 7309 (both Lots 1), 7309A (Lot 1), 7310 and 7311 (both Lots 1), 7315 through 7319 (all Lots 1), 7320 (Lot 3), 7321 through 7323 (all Lots 1), 7325 and 7326 (both Lots 1), 7330 (Lot 1), 7331 (Lot 4), 7332 (Lot 4), 7333 (Lots 1 and 3), 7333A (Lot 1), 7333B (Lot 1), 7333C (Lot 1), 7333D (Lot 1), 7333E (Lot 1), 7334 through 7345 (all Lots 1), 7345A (Lot 1), 7345B (Lot 1), 7345C (Lot 1), 7356 through 7370 (all Lots 1), and their successor Blocks and Lots.	RH-1(D), RM-1, and RM-4	See Figure 1, Use Districts, below, for the configuration of the following new use districts: PM-R; PM-MU1; PM-MU2; PM-S; PM-CF; and PM-OS

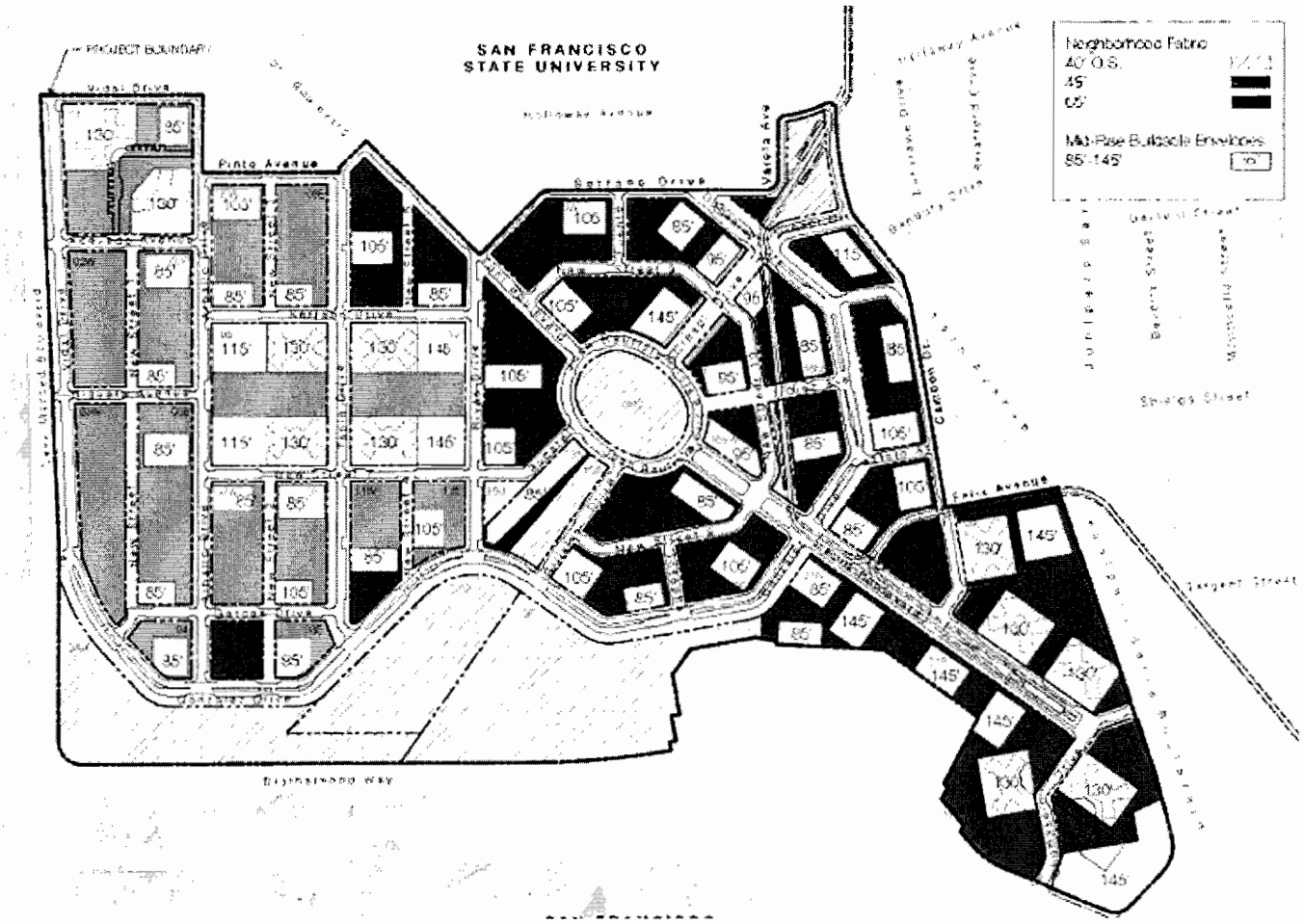
Figure 1. Use Districts.



Section 3. The San Francisco Planning Code is hereby amended by amending Sectional Map HT13 of the Zoning Map of the City and County of San Francisco, as follows:

Description of Property	Height and Bulk Districts to be Superseded	Height and Bulk Districts Hereby Approved
Assessor's Blocks 7303 (Lot 1), 7303A (Lot 1), 7308 and 7309 (both Lots 1), 7309A (Lot 1), 7310 and 7311 (both Lots 1), 7315 through 7319 (all Lots 1), 7320 (Lot 3), 7321 through 7323 (all Lots 1), 7325 and 7326 (both Lots 1), 7330 (Lot 1), 7331 (Lot 4), 7332 (Lot 4), 7333 (Lots 1 and 3), 7333A (Lot 1), 7333B (Lot 1), 7333C (Lot 1), 7333D (Lot 1), 7333E (Lot 1), 7334 through 7345 (all Lots 1), 7345A (Lot 1), 7345B (Lot 1), 7345C (Lot 1), 7356 through 7370 (all Lots 1), and their successor Blocks and Lots.	40-X and 130-D	See Figure 2, Height and Bulk Districts, below, for the configuration of the following new height and bulk districts: 40-OS-PM; 45-PM; 65-PM; 85-PM; 95-PM;105-PM; 115-PM; 130-PM; and 145-PM

Figure 2. Height and Bulk Districts.



Section 4. The San Francisco Planning Code is hereby amended by amending Sectional Map SU13 of the Zoning Map of the City and County of San Francisco, as follows:

Description of Property	Special Use District Hereby Approved
Assessor's Blocks 7303 (Lot 1), 7303A (Lot 1), 7308 and 7309 (both Lots 1), 7309A (Lot 1), 7310 and 7311 (both Lots 1), 7315 through 7319 (all Lots 1), 7320 (Lot 3), 7321 through 7323 (all Lots 1), 7325 and 7326 (both Lots 1), 7330 (Lot 1), 7331 (Lot 4), 7332 (Lot 4), 7333 (Lots 1 and 3), 7333A (Lot 1), 7333B (Lot 1), 7333C (Lot 1), 7333D (Lot 1), 7333E (Lot 1), 7334 through 7345 (all Lots 1), 7345A (Lot 1), 7345B (Lot 1), 7345C (Lot 1), 7356 through 7370 (all Lots 1), and their successor Blocks and Lots.	Parkmerced Special Use District

Section 5. The current configuration of blocks and lots will be replanned and redesigned in the future to give effect to the Development Agreement for the Parkmerced development project as envisioned in Exhibits A and B to this ordinance. This Board intends that the land use controls set forth in these Exhibits will apply to any successor blocks and lots for the above-described property.

APPROVED AS TO FORM:
DENNIS J. HERRERA, City Attorney

By: _____
MARLENA G. BYRNE
Deputy City Attorney

[Planning Code – Parkmerced Special Use District.]

Ordinance amending the San Francisco Planning Code by amending Sections 102.5 and 201 to include the Parkmerced Zoning Districts; adding Section 249.64 to establish the Parkmerced Special Use District for the property consisting of Assessor's Blocks 7303, 7303A, 7308 through 7311, 7309A, 7315 through 7323, 7325 and 7326, 7330, 7331 (Lot 4), 7332 (Lot 4), 7333 (Lots 1 and 3), 7333A, 7333B, 7333C, 7333D, 7333E, 7334 through 7345, 7345A, 7345B, 7345C, 7356 through 7359, and 7360 through 7370; amending Planning Code Section 270 to refer to the Parkmerced Special Use District; and adopting findings, including environmental findings, Planning Code Section 302 findings, and findings of consistency with the General Plan and the priority policies of Planning Code Section 101.1.

NOTE: Additions are *single-underline italics Times New Roman*; deletions are ~~*strike-through italics Times New Roman*~~. Board amendment additions are double-underlined; Board amendment deletions are ~~strikethrough normal~~.

Be it ordained by the People of the City and County of San Francisco:

Section 1. Findings. The Board of Supervisors of the City and County of San Francisco hereby finds and determines that:

(a) In accordance with the actions contemplated herein, this Board adopted Resolution No. _____ concerning findings pursuant to the California Environmental Quality Act (California Public Resources Code Section 21000 et seq.). Said Resolution is on file with the Clerk of the Board of Supervisors in File No. _____ and is incorporated herein by reference.

(b) Pursuant to Planning Code Section 302, this Board finds that these Planning Code amendments will serve the public necessity, convenience, and welfare for the reasons

set forth in Planning Commission Motion No. _____ and the Board incorporates such reasons herein by reference. A copy of Planning Commission Motion No. _____ is on file with the Clerk of the Board of Supervisors in File No. _____

(c) These Planning Code amendments are consistent with the General Plan and with the priority policies of Planning Code Section 101.1 for the reasons set forth in Planning Commission Motion No. _____ and the Board hereby incorporates such reasons herein by reference.

Section 2. The San Francisco Planning Code is hereby amended by amending Section 102.5, to read as follows:

SEC. 102.5. DISTRICT.

A portion of the territory of the City, as shown on the Zoning Map, within which certain regulations and requirements or various combinations thereof apply under the provisions of this Code. The term "district" shall include any use, special use, height and bulk, or special sign district. The term "R District" shall mean any RH-1(D), RH-1, RH-1(S), RH-2, RH-3, RM-1, RM-2, RM-3, RM-4, RTO, RTO-M, RC-1, RC-2, RC-3, RC-4 or RED District. The term "C District" shall mean any C-1, C-2, C-3, or C-M District. The term "RTO District" shall be that subset of R Districts which are the RTO and RTO-M District. The term "M District" shall mean any M-1 or M-2 District. The term "PDR District" shall mean any PDR-1-B, PDR-1-D, PDR-1-G, or PDR-2 District. The term "RH District" shall mean any RH-1(D), RH-1, RH-1(S), RH-2, or RH-3 District. The term "RM District" shall mean any RM-1, RM-2, RM-3, or RM-4 District. The term "RC District" shall mean any RC-1, RC-2, RC-3, or RC-4 District. The term "C-3 District" shall mean any C-3-O, C-3-R, C-3-G, or C-3-S District. For the purposes of Section 128 and Article 11 of this Code, the term "C-3 District" shall also include the Extended Preservation District designated on Section Map 3SU of the Zoning Map. The term "NC District" shall mean

any NC-1, NC-2, NC-3, NC-T, NC-S, and any Neighborhood Commercial District and Neighborhood Commercial Transit District identified by street or area name in Section 702.1. The term "NCT" shall mean any district listed in Section 702.1(b), including any NCT-1, NCT-2, NCT-3 and any Neighborhood Commercial Transit District identified by street or area name. The term "Mixed Use" District shall mean all Chinatown Mixed Use, South of Market Mixed Use, Eastern Neighborhoods Mixed Use, and Downtown Residential Districts. The term "Chinatown Mixed Use District" shall mean any Chinatown CB, Chinatown VR, or Chinatown R/NC District named in Section 802.1. The term "South of Market Mixed Use Districts" shall refer to all RED, RSD, SLR, SLI, or SSO Districts named in Section 802.1. The term "Eastern Neighborhoods Mixed Use Districts" shall refer to all SPD, MUG, MUO, MUR, and UMU named in Section 802.1. The term "DTR District" or "Downtown Residential District" shall refer to any Downtown Residential District identified by street or area name in Section 825, 827, 828, and 829. *The term "PM District" or "Parkmerced District" shall refer to any PM-R, PM-MU1, PM-MU2, PM-S, PM-CF, or PM-OS District named in Section 249.64.*

Section 3. The San Francisco Planning Code is hereby amended by amending Section 201, to add the following Classes of Use Districts at the end of the included Table as follows:

Park Merced Districts ***(Also see Section 249.64)***	
PM-R	*Parkmerced Residential District*
PM-MU1	*Parkmerced Mixed Use - Social Heart District*
PM-MU2	*Parkmerced Mixed Use – Neighborhood Commons*
PM-S	*Parkmerced School District*
PM-CF	*Parkmerced Community/Fitness District*

PM-OS	*Parkmerced Open Space District*

Section 4. The San Francisco Planning Code is hereby amended by adding Section 249.64, to read as follows:

SEC. 249.64 Parkmerced Special Use District

(a) Purpose. In order to give effect to the Development Agreement for the Parkmerced development project as approved by the Board of Supervisors on _____, there shall be a Parkmerced Special Use District consisting of Assessor's Blocks 7303 (Lot 1), 7303A (Lot 1), 7308 and 7309 (both Lots 1), 7309A (Lot 1), 7310 and 7311 (both Lots 1), 7315 through 7319 (all Lots 1), 7320 (Lot 3), 7321 through 7323 (all Lots 1), 7325 and 7326 (both Lots 1), 7330 (Lot 1), 7331 (Lot 4), 7332 (Lot 4), 7333 (Lots 1 and 3), 7333A (Lot 1), 7333B (Lot 1), 7333C (Lot 1), 7333D (Lot 1), 7333E (Lot 1), 7334 through 7345 (all Lots 1), 7345A (Lot 1), 7345B (Lot 1), 7345C (Lot 1), 7356 through 7370 (all Lots 1), as designated on Sectional Map SU13 of the Zoning Maps of the City and County of San Francisco.

(b) Development Controls. Development in the Parkmerced Special Use District shall be regulated by the controls contained in the Parkmerced Design Standards and Guidelines, as adopted by the Planning Commission and periodically amended, except for those controls specifically enumerated in this Section. Where not explicitly superseded by definitions established in the Parkmerced Design Standards and Guidelines, the definitions in this Code shall apply. All procedures and requirements in Article 3 shall apply to development in this Special Use District to the extent that they are not in conflict with this Special Use District or the Development Agreement, approved by the Board of Supervisors on _____. The Planning Commission may amend the Parkmerced Design Standards and Guidelines upon initiation by the Planning Department or upon application by an owner of property within Parkmerced (or his or her authorized agent) to the extent that such amendments are consistent with this Special Use District, the General Plan, and the approved Development Agreement.

(1) Zoning Designation. The applicable zoning designation shall be as set forth in Zoning Map ZN13, consisting of the following zoning districts: Parkmerced Residential (PM-R), Parkmerced Mixed Use – Social Heart (PM-MU1), Parkmerced Mixed Use – Neighborhood Commons (PM-MU2), Parkmerced School (PM-S), Parkmerced Community/Fitness (PM-CF), and Parkmerced Open Space (PM-OS).

(2) Uses.

(A) Principally Permitted Uses. The following uses are principally permitted:

(i) Parkmerced Residential (PM-R). Residential dwelling units; live/work units, provided any such live/work unit is intended for small home business; community gathering spaces such as community rooms and kitchens, business centers, recreation facilities, and art facilities; and child care facilities not larger than 5,000 occupied square feet;

(ii) Parkmerced Mixed Use – Social Heart (PM-MU1). All uses permitted in PM-R; locally serving retail and services not larger than 15,000 occupied square feet per business establishment; one full service grocery store not larger than 50,000 occupied square feet; and professional, medical and business offices, provided such professional, medical or business office use shall not exceed 10,000 occupied square feet per business if located on the ground floor of any building;

(iii) Parkmerced Mixed Use – Neighborhood Commons (PM-MU2). All uses permitted in PM-R; locally serving retail and services not larger than 5,000 occupied square feet per business establishment; and professional, medical and business offices not larger than 5,000 occupied square feet per business, provided that such use does not occupy more than 2,000 occupied square feet per business establishment on the ground floor;

(iv) Parkmerced School (PM-S). Child care facilities, pre-schools and one elementary school; all uses permitted in PM-R provided at least 25,000 square feet of school use has been constructed or approved within the district. Child care facilities, pre-schools and elementary school uses shall provide direct access to adjacent, dedicated public open spaces;

(v) Parkmerced Community/Fitness (PM-CF). Recreation facilities, spas, physical fitness facilities and other health and wellness related uses; community gathering spaces such as community rooms and kitchens, business centers, recreation facilities and art facilities; and retail intended to support health/fitness activities, provided such use does not exceed 1,000 occupied square feet per business establishment; and

(vi) Parkmerced Open Space (PM-OS). Publicly-accessible open space and other open space amenities as specifically established in the Parkmerced Design Standards and Guidelines, including: neighborhood commons; parks and passive open space; plazas; recreational space including playgrounds and sports fields; organic farms; one restaurant not exceeding 3,500 occupied square feet on Block 23 (as designated in the Parkmerced Design Standards and Guidelines); farmer's markets; and farm support uses and food sales accessory to on-site agriculture. Up to three retail kiosks are permitted on each of Juan Bautista Circle and the land designated as an organic farm on Block 23 (each as designated and described in Parkmerced Design Standards and Guidelines), provided each such kiosk does not exceed 200 square feet. Up to four retail kiosks not exceeding 500 square feet each and an aggregate total of 1,000 square feet, along with a retail bicycle shop not exceeding 3,200 square feet are permitted on Block 17 (as designated in the Parkmerced Design Standards and Guidelines and also referred to as the "Transit Plaza").

(B) Conditionally Permitted Uses. The following uses may be approved as a Conditional Use by the Planning Commission:

(i) any use that is not principally permitted in a given district and is not prohibited by Section (b)(2)(C) below;

(ii) any use in excess of the maximum occupied square footage permitted as a principally permitted use by Section (b)(2)(A); and

(iii) in the PM-S district, any use permitted in PM-R if less than 25,000 square feet of school use has been constructed or entitled.

In approving any such Conditional Use, the Planning Commission shall not use the criteria set forth in Section 303,but rather shall approve the Conditional Use if it finds that: (i) the proposed use makes a positive contribution to the neighborhood; and (ii) the proposed use is of a size and intensity that is compatible with the district in which it is located.

(C) Prohibited Uses. The following uses shall be prohibited within this Special Use District: drive-through facilities; adult entertainment; and general advertising. Notwithstanding Sections (b)(1)(A) and (b)(1)(B) above, any non-residential use posing a nuisance to surrounding residential uses shall be prohibited

(3) Density of Dwelling Units. The dwelling unit density within the Special Use District shall be governed by the controls set forth in the Parkmerced Design Standards and Guidelines and not as provided in Article 2.

(4) Building Standards.

(A) Building Height. The applicable height limits for this Special Use District shall be as set forth on Section Map HT13 of the Zoning Map of the City and County of San Francisco . Height shall be measured and regulated as provided in the Parkmerced Design Standards and Guidelines and not as provided in Article 2.5.

(B) Building Bulk. The applicable bulk limitations for this Special Use District shall be as set forth in the following Figure 1, Bulk Table:

Figure 1. Bulk Table.

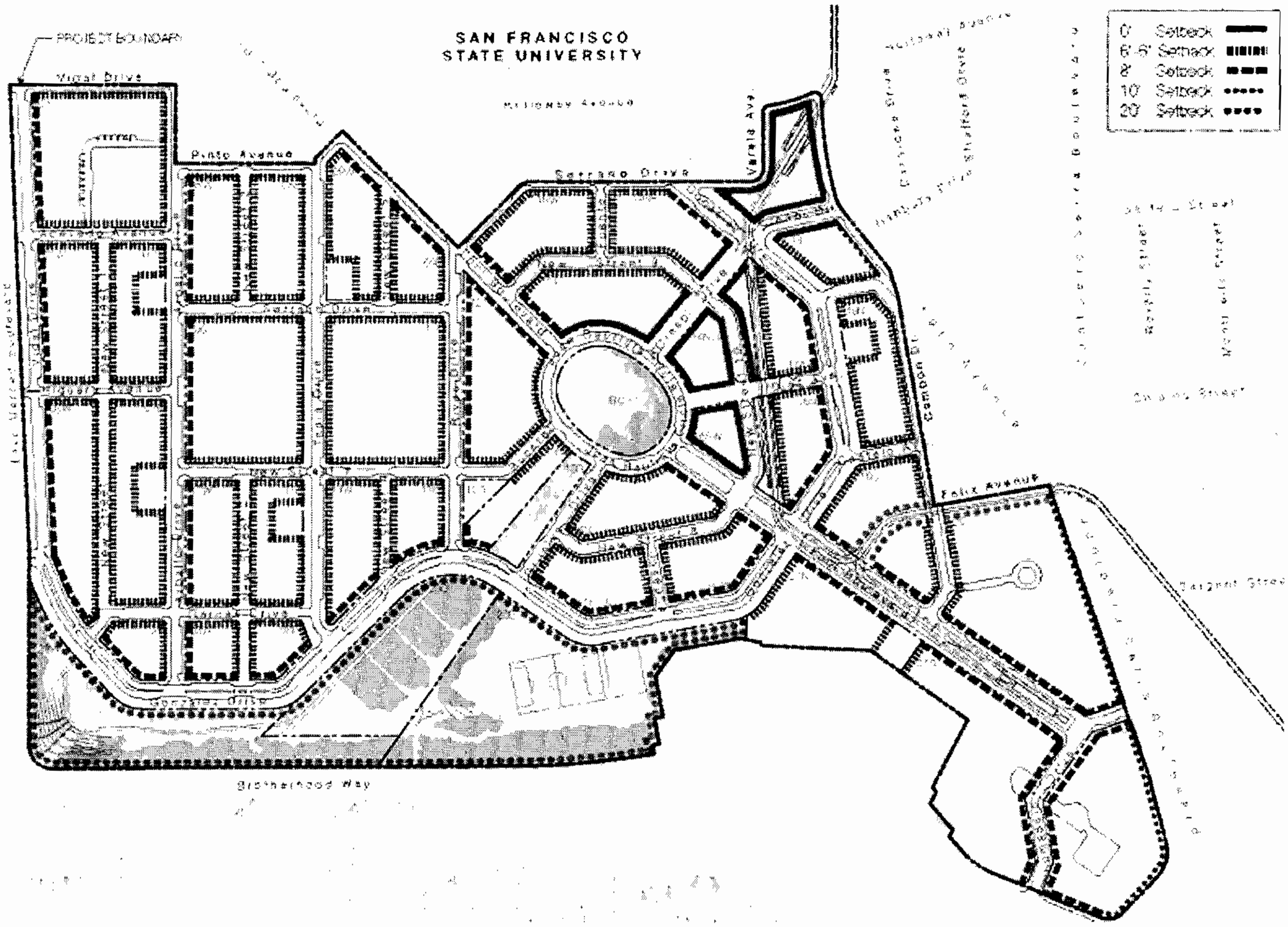
Building Height	*Max Floor Plate*	*Max Plan Length*	*Max Diagonal*	*Max Apparent Face 1*	*Max Apparent Face 2*	*Change in Apparent Face*
Up to 35'	*NA*	*NA*	*NA*	*30'*	*NA*	*Minimum 1' deep x 1' wide notch;*

						or minimum 2' offset of building massing; or major change in fenestration pattern and/or material.
36'-45'	*NA*	*NA*	*NA*	*120'*	*80'*	*Minimum 2' deep x 3' wide notch; or minimum 2' offset of building massing; or major change in fenestration pattern and/or material.*
46'-85'	*20,000 sf*	*200'*	*NA*	*80'*	*40'*	*Minimum 5' deep x 5' wide notch; or minimum 5' offset of building massing.*
86'-145'	*12,000 sf*	*140'*	*170'*	*110'*	*40'*	*Minimum 10' deep x 10' wide notch; or minimum 10'*

						offset of building massing and a major change in fenestration pattern and/or material.

(C) Building Setbacks. The applicable building setback requirements for this Special Use District shall be as set forth in the following Figure 2, Building Setbacks:

Figure 2. Building Setbacks.



(5) Off-Street Automobile Parking. There is no minimum off-street parking requirement for any use in this Special Use District. Upon completion of the Parkmerced Project, the number of off-street parking spaces within this Special Use District shall not exceed: one parking space per residential dwelling unit; one parking space per 500 square feet of occupied grocery store use; one parking space per 1,000 square feet of occupied school, fitness or community center use; and one parking space per 750 square feet of occupied space for all other non-residential uses. Because the Project will be built in phases, any off-street parking constructed that would cause the cumulative off-street parking in the Special Use District to exceed these ratios may not be used for parking and shall be physically cordoned off to preclude parking use of such spaces (including prohibition of the commercial or public rental of such spaces on a daily, weekly, monthly or annual basis) until such time as sufficient additional development is completed to bring the overall parking ratios in conformance with the applicable ratio. At Project completion, the ratio for off-street parking constructed shall not exceed the above ratios or the following total amounts, whichever is less: 8,900 residential spaces; and 550 non-residential spaces.

(6) Usable Open Space Requirements for Dwelling Units. Usable open space meeting the standards of Section 135 of this Code shall be provided for each dwelling unit in the following ratios: 36 square feet if private or 48 square feet if common. In no event shall any space in a public right-of-way, publicly-accessible "paseo" (as defined in the Parkmerced Design Standards and Guidelines), or public open space required by the Development Agreement, including Juan Bautista Circle, the Transit Plaza, the Organic Farm, the Sports Fields, Belvedere Gardens, the Neighborhood Commons or the Community Gardens (each as more specifically defined in the Parkmerced Design Standards and Guidelines), be counted in satisfaction of the requirements of this subsection.

(7) Streetscape and Public Realm Requirements. Each individual building project shall be part of an approved Development Phase Application, which shall include the design and construction of the appropriate adjacent and related street and public realm infrastructure consistent with the

Parkmerced Design Standards and Guidelines, Transportation Plan, Sustainability Plan, and other supporting documents to the Development Agreement. Implementation of such improvements shall be subject to approval and review by the Planning Department and other relevant City agencies as provided by the Development Agreement.

(c) Modifications to Building Standards. Modification of the Building Standards set forth in subsection (3) above and as outlined in the Parkmerced Design Standards and Guidelines may be approved on a project-by-project basis and according to the procedures of subsection (d).

(1) No Other Modifications or Variances Permitted. No modifications or variances are permitted for the following standards in this Special Use District: building maximum floor plates, maximum off-street auto parking ratios, and height limits. Except as explicitly provided in subsections (2) and (3) below, no other Standard set forth in this Special Use District or in the Parkmerced Design Standards and Guidelines may be modified or varied.

(2) Major Modifications. Each modification listed below in Figure 3, Major Modifications, shall be deemed to be a Major Modification. Any Major Modification shall be approved by the Planning Commission at a public hearing according to the procedures set forth in subsection (d). Except as explicitly prohibited above and notwithstanding the limitations of this subsection (c)(2), the Planning Director may, in his or her sole discretion, refer a proposed modification, even if otherwise classified as a Minor Modification, to the Planning Commission as a Major Modification if: (i) the proposed modification deviates from any numerical standard in this Special Use District or the Parkmerced Design Standards and Guidelines by more than 10 percent; or (ii) the Planning Director determines that the proposed modification does not meet the intent of the design standards as set forth in the Parkmerced Design Standards and Guidelines.

Figure 3: Major Modifications

Development Blocks and Easements. A deviation of more than 10 percent from

the dimensional standards set forth in Section 02.01.03 (Pedestrian Paseos), Section 02.01.05 (Pedestrian Walks) and Figure 02.01B (Pedestrian Paseos and Walks) of the Parkmerced Design Standards and Guidelines.
Lot Coverage and Usable Open Space. A deviation of more than 10 percent from the numerical standards set forth in this Special Use District and in Section 03.02.04 (Usable Open Space), Section 03.02.05 (Semi-Private Open Space), and Section 03.02.06 (Private Open Space) of the Parkmerced Design Standards and Guidelines.
Bulk and Massing. A deviation of more than 10 percent from the numerical standards set forth in Section (b)(4) of this Special Use District and Section 03.04 (Building Controls – Bulk + Massing) of the Parkmerced Design Standards and Guidelines.
Bicycle Parking and Car Sharing. Modification of any standard set forth in Section 04.01.01 (Bicycle Parking + Car Sharing) of the Parkmerced Design Standards and Guidelines.
Loading and Servicing. Modification of any standard set forth in Section 04.03.05 (Limited Impact) of the Parkmerced Design Standards and Guidelines.

(3) Minor Modifications. Each modification listed in Figure 4, Minor Modifications, shall be deemed to be a Minor Modification. A Minor Modification may be approved administratively by the Planning Director according to the procedures described in subsection (d).

Figure 4. Minor Modifications

Development Blocks and Easements. A deviation of 10 percent or less from the dimensional standards set forth in Section 02.01.03 (Pedestrian Paseos), Section

02.01.05 (Pedestrian Walks) and Figure 02.01B (Pedestrian Paseos and Walks) of the Parkmerced Design Standards and Guidelines.
View Corridors. Modification of the planting specifications set forth in Section 02.02.01 (Neighborhood Controls – View Corridors) of the Parkmerced Design Standards and Guidelines.
Lot Coverage and Usable Open Space. A deviation of 10 percent or less from the numerical standards set forth in Sections 03.02.04 (Usable Open Space), 03.02.05 (Semi-Private Open Space), and 03.02.06 (Private Open Space) of the Parkmerced Design Standards and Guidelines.
Bulk and Massing. A deviation of 10 percent or less from the numerical standards set forth in Section (b)(4) of this Special Use District and Section 03.04 (Building Controls – Bulk + Massing) of the Parkmerced Design Standards and Guidelines.
Setbacks. A modification of the standards set forth in Section 03.05 (Building Controls – Setback) of the Parkmerced Design Standards and Guidelines.
Streetwall. A modification of the standards set forth in Section 03.06 (Building Controls – Streetwall) of the Parkmerced Design Standards and Guidelines.
Residential Base. A modification of the standards set forth in Section 03.07 (Building Controls – Residential Base) of the Parkmerced Design Standards and Guidelines.
Commercial Base. A modification of the standards set forth in Section 03.08 (Building Controls – Commercial Base) of the Parkmerced Design Standards and Guidelines.
Façade. A modification of the standards set forth in Section 03.09 (Building Controls – Façade) of the Parkmerced Design Standards and Guidelines.

Building Top. A modification of the standards set forth in Section 03.10 (Building Controls – Building Top) of the Parkmerced Design Standards and Guidelines.
Lighting. A modification of the standards set forth in Section 03.13 (Building Controls – Lighting) of the Parkmerced Design Standards and Guidelines.
Car Parking and Storage. Modification of the standards set forth in Section 4.02 (Car Parking + Storage) of the Parkmerced Design Standards and Guidelines; notwithstanding the foregoing, modification of Sections 04.02.01 (Off-Street Parking), 04.02.02 (Parking Location) and 04.02.05 (Unbundled Parking) shall not be allowed.
Loading and Servicing. Modification of the standards set forth in Section 04.03 (Loading + Servicing), except Section 04.03.05 (Limited Impact) (modification of which shall be deemed a Major Modification), of the Parkmerced Design Standards and Guidelines.

(d) Project Review and Approval.

(1) Purpose. The design review process for Parkmerced is intended to ensure that new buildings within Parkmerced are designed to complement the aesthetic of the development, exhibit high quality architectural design and promote the purpose of this Special Use District.

(2) Applications. Applications for design review described in this Section are required for the construction, expansion or major alteration of all structures within this Special Use District. The applications for design review may be filed by the owner or authorized agent of the owner of the property for which the design review is sought. Department staff shall review the application for completeness and advise the applicant in writing of any deficiencies within 30 days after receipt of the application. If Department staff does not so advise the applicant, the application will be deemed

complete. The application shall include site plans, sections, elevations, renderings, landscape plans, and exterior material samples to illustrate the overall concept design of the proposed buildings. The application must also discuss how the design will meet the green building standards contained in the Parkmerced Sustainability Plan. If any requests for a Major Modification or Minor Modification are sought in accordance with the allowances of this Section, the application shall contain a narrative for each modification sought that describes how the proposed project meets the full intent of the Parkmerced Design Standards and Guidelines and provides architectural treatment and public benefit that are superior to strict compliance with the standards.

(3) Staff Design Review. Each application shall be subject to an administrative design review process by the Department. Prior to consideration for project approval, Department staff shall review the project to determine that it complies with this Special Use District and the Parkmerced Design Standards and Guidelines and will issue a staff report to the Planning Director or Planning Commission, as appropriate, including a recommendation regarding any modifications sought. Such staff report shall be kept on file for public review.

(4) Approvals and Public Hearings.

(A) Except for projects seeking a Major Modification, the Planning Director may approve or disapprove the project design and any Minor Modifications based on its compliance with this Special Use District and the Standards set forth in the Parkmerced Design Standards and Guidelines and the findings and recommendations of the staff report. If the project is consistent with the quantitative Standards set forth in this Special Use District and the Parkmerced Design Standards and Guidelines, the Planning Director's discretion to approve or disapprove the project shall be limited to the project's consistency with the qualitative elements of the Parkmerced Design Standards and Guidelines. Prior to making a decision, the Planning Director, in his or her sole discretion, may seek comment and guidance from the public and Planning Commission on the design of the project, including the granting of any Minor Modifications, in accordance with the procedures of subsection (B)

below. If a Minor Modification is not sought, any Planning Commission review of the project shall be limited to the project's consistency with the qualitative elements of the Parkmerced Design Standards and Guidelines.

(B) Public Hearing for Large Projects. Each project subject to the below criteria shall be presented to the Planning Commission for its review and comment prior to decision by the Planning Director under subsection (A) above. The Planning Director shall consider all comments from the public and the Planning Commission in making his or her decision to approve or disapprove the project design, including the granting of any Minor Modifications. A public hearing shall be required if:

(i) The project includes the construction of a new building greater than 65 feet in height or includes a vertical addition to an existing building resulting in a total building height greater than 65 feet; or

(ii) The project involves a net addition or new construction of more than 25,000 gross square feet; or

(iii) The project has 150 linear feet or more of contiguous street frontage on any public right-of-way.

(C) Projects Seeking Major Modifications. The Planning Commission shall hold a public hearing for all projects seeking one or more Major Modifications and for any project seeking one or more Minor Modifications that the Planning Director, in his or her sole discretion, refers to the Commission as a Major Modification. The Planning Commission shall consider all comments from the public and the recommendations of the staff report and the Planning Director in making a decision to approve or disapprove the project design, including the granting of any Major or Minor Modifications.

(D) Notice of Hearings. Notice of hearings required by subsections (B) and (C) above shall be mailed not less than 10 days prior to the date of the hearing to the project applicant, to property owners within 300 feet of the property that is the subject of the application, using for this purpose the

names and addresses as shown on the citywide Assessment Roll in the Assessor's Office, and to any person who has requested such notice. Such notice shall also be published at least once in a newspaper of general circulation at least 20 days prior to the date of the hearing. The notice shall state that the staff report, including written recommendation of the Planning Director regarding any modifications, is available for public review at the office of the Department.

(5) Design Review Approval of Community Improvements. To ensure that any Community Improvements (as defined in the Development Agreement) meet the Parkmerced Design Standards and Guidelines, an application for design review shall be submitted and design review approval granted before any separate permits consistent with Section 2.4 of the Development Agreement are obtained for the construction of any Community Improvement within or adjacent to the Special Use District. The applications for design review shall be filed by the owner or authorized agent of the owner of any proposed project that triggers the construction of a Community Improvement pursuant to the Development Agreement Phasing Plan or any project mitigation measure. The Community Improvement design review application shall include site plans, sections, elevations, renderings, and landscape plans, the purpose of which is to illustrate the overall concept design of the proposed Community Improvement.

The Planning Department shall review the proposed Community Improvement for conformance with the Parkmerced Design Standards and Guidelines, issue a preliminary approval of the design review application if it so conforms, or propose modifications to the Design Review Application that create conformance with the Parkmerced Design Standards and Guidelines. Once the Planning Department has issued a preliminary approval, it shall then circulate the design review application to the San Francisco Municipal Transportation Agency, Department of Public Works, and the San Francisco Public Utilities Commission, to the extent that construction of the Community Improvement falls within the jurisdiction of such agency or department. Each aforementioned agency or department shall review the proposed Community Improvement for conformance with the Parkmerced Design

Standards and Guidelines and the agency or department's generally-applied technical design guidelines in effect at that time (to the extent that they affect the overall concept design of the Community Improvement) and shall approve the design review application if it so conforms or propose modifications to the design review application to ensure its conformance. Any proposed modifications shall be consistent with the requirements of the Development Agreement, for so long as it is in effect.

If none of the reviewing agencies propose any modifications, the Planning Department shall issue a final approval of the Community Improvement design review application to the project sponsor. If any of the reviewing agencies propose modifications to a Community Improvement design review application that has received preliminary approval, their proposals shall be consolidated and forwarded to the project sponsor. The Planning Department shall not issue a final approval of a Community Improvement design review application until it has received a revised design review application that conforms with any reviewing agency or department comments, consistent with the requirements and limitations of the Development Agreement, for so long as it is in effect.

Nothing in this subsection 5 shall be construed as a limitation on the discretion retained by any City agency or department under the terms of the Development Agreement, including but not limited to as set forth in Section 2.4 of the Development Agreement.

(6) Building Permit Approval. Each building permit application submitted to the Department of Building Inspection shall be forwarded to the Planning Department. Planning Department staff shall review the building permit application for consistency with the authorizations granted pursuant to this Section. No building permit may be issued for work within this Special Use District unless Planning Department staff determines such permit is consistent with the standards set forth in the Parkmerced Design Standards and Guidelines and the metrics set forth in the Parkmerced Sustainability Plan, in each case, only to the extent such standards or metrics regulate building design.

(7) Discretionary Review. No requests for discretionary review shall be accepted by the Planning Department or heard by the Planning Commission for projects subject to this Section.

(8) Demolition of Dwelling Units. No mandatory discretionary review or Conditional Use authorization pursuant to Section 317 shall be required for the demolition of any residential dwelling unit within the Parkmerced Special Use District.

(9) Appeal and Decision on Appeal. The decision of the Planning Director to grant or deny any project, including any Minor Modification, and of the Planning Commission to grant or deny of any Major Modification, may be appealed to the Board of Appeals by any person aggrieved within 15 days after the date of the decision by filing a written notice of appeal with that body. Such notice must set forth the alleged error in the interpretation of the provisions of this Code or the Parkmerced Design Standards and Guidelines or the alleged abuse of discretion on the part of the Planning Director or Planning Commission, which error or abuse is the basis for the appeal. Upon the hearing of an appeal, the Board of Appeals may, subject to the same limitations placed on the Planning Commission or Planning Director by Charter, this Code, and the Development Agreement, approve, disapprove or modify the appealed decision by a vote of four of its members. Notwithstanding anything to the contrary in the Business and Tax Regulations Code, if the determination of the Board differs from that of the Planning Director or Planning Commission, the Board of Appeals shall, in a written decision, make findings specifying the error of interpretation or abuse of discretion on the part of the Planning Director or Planning Commission, and the specific facts relied upon, that are the basis for the Board's determination.

Section 5. The San Francisco Planning Code is hereby amended by amending Section 270, to read as follows:

SEC. 270. BULK LIMITS; MEASUREMENT.

(a) The limits upon the bulk of buildings and structures shall be as stated in this Section and in Sections 271 and 272. The terms "height," "plan dimensions," "length" and "diagonal dimensions" shall be as defined in this Code. In each height and bulk district, the

maximum plan dimensions shall be as specified in the following table, at all horizontal cross-sections above the height indicated.

Table 270

Bulk Limits

District Symbol on Zoning Map	Height Above Which Maximum Dimensions Apply (in feet)	Maximum Plan Dimensions (in feet)	
		Length	Diagonal Dimension
A	40	110	125
B	50	V	125
C	80	110	125
D	40	110	140
E	65	110	140
F	80	110	140
G	80	170	200
H	100	170	200
I	150	170	200
J	40	250	300
K	60	250	300
L	80	250	300
M	100	250	300
N	40	50	100
R	This table not applicable. But see Section 270(e).		

R-2	This table not applicable. But see Section 270(f).		
V		110	140
V	* At setback height established pursuant to Section 253.2.		
OS	See Section 290		
S	This table not applicable. But see Section 270(d).		
T	At setback height established pursuant to Section 132.2, but no higher than 80 feet.	110	125
X	This table not applicable. But see Section 260(a)(3).		
TB	This table not applicable. But see Section 263.18.		
CP	This table not applicable. But see Section 263.24.		
HP	This table not applicable. But see Section 263.25.		
PM	*This table not applicable. But see Section 249.46 Parkmerced Special Use District.*		

(b) These limits shall not apply to the buildings, structures and equipment listed in Section 260(b)(2) (K), (L), (M) and (N) of this Code, subject to the limitations expressed therein.

(c) Maximum plan lengths and diagonal dimensions do not apply to cornices or other decorative projections.

(d) The bulk limits contained in this subsection shall apply in S Bulk Districts as designated on Sectional Map Nos. 1H, 2H and 7H of the Zoning Map.

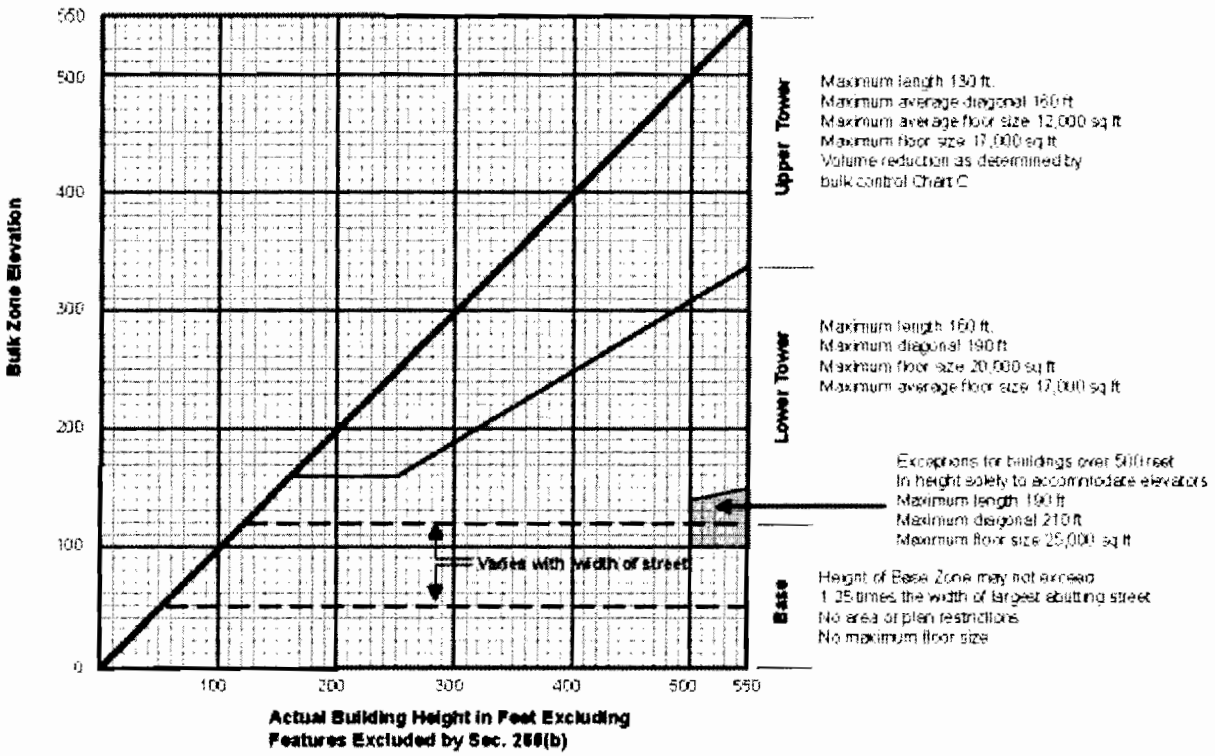
(1) Base. The base is the lowest portion of the building extending vertically to a streetwall height up to 1.25 times the width of the widest abutting street or 50 feet, whichever is more. There are no length or diagonal dimension limitations applicable to the base. The

building base shall be delineated from the lower and upper tower and related to abutting buildings by a setback, cornice line or equivalent projection or other appropriate means.

(2) Lower Tower.

(A) Dimensions. Bulk controls for the lower tower apply to that portion of the building height above the base as shown on Chart B. For buildings of less than 160 feet in height, the lower tower controls are the only bulk controls above the base of the building. The bulk controls for the lower tower are a maximum length of 160 feet, a maximum floor size of 20,000 square feet, and a maximum diagonal dimension of 190 feet.

CHART B
BULK LIMITS



(B) Additional Bulk for Elevators. Solely in order to accommodate additional elevators required by tall buildings the lower portion (up to the height shown on Chart B) of the lower tower of a building 500 feet tall or taller may be enlarged up to a maximum length of 190 feet, a maximum diagonal dimension of 230 feet and a maximum floor size of up to 25,000 square feet without a corresponding reduction in upper floor size.

(3) Upper Tower.

(A) Dimensions. Upper tower bulk controls apply to buildings taller than 160 feet. They apply to the upper tower portion of a building up to the height shown on Chart B, which height excludes the vertical attachment and other features exempted by Section 260 and excludes the extended upper tower height exceptions provided for in Section 263.7 of this Code. The bulk controls for the upper tower are: a maximum length of 130 feet; a maximum average floor size of 12,000 square feet; a maximum floor size for any floor of 17,000 square feet; and a maximum average diagonal measure of 160 feet. In determining the average floor size of the upper tower, areas with a cross-sectional area of less than 4,000 square feet may not be counted and sculptured architectural forms that contain large volumes of space but no usable floors shall be included in average floor size calculation by computing the cross section at 12.5-foot intervals.

(B) Volume Reduction. When the average floor size of the lower tower exceeds 5,000 square feet, the volume of the upper tower shall be reduced to a percentage of the volume that would occur if the average floor size of the lower tower were extended to the proposed building height. The percentage varies with the bulk of the lower tower and with whether or not a height extension is employed pursuant to Section 263.7 and is shown on Chart C. In achieving the required volume reduction, a setback or change in profile at a specific elevation is not required.

(C) Extensions. Extension of the upper tower above the otherwise allowable height limits may be permitted as provided in Section 263.9.

(D) Termination of the Tower. The top of the tower shall be massed in a manner that will create a visually distinctive roof or other termination of the building facade. Modifications to a proposed project may be required, in the manner provided in Section 309, to achieve this purpose.

(e) Rincon Hill and South Beach. In Bulk District R (Rincon Hill and South Beach DTR Districts), bulk limitations are as follows:

(1) There are no bulk limits below the podium height as described in Section 263.19, except for the lot coverage limitations and setback requirements described in Sections 825 and 827.

(2) Tower Bulk and Spacing. All portions of structures above the podium height as described in Section 263.19 shall meet the following bulk limitations, as illustrated in Chart C.

(A) Buildings between the podium height limit and 240 feet in height may not exceed a plan length of 90 feet and a diagonal dimension of 120 square feet.

(B) Buildings between 241 and 300 feet in height may not exceed a plan length of 100 feet and a diagonal dimension of 125 feet, and may not exceed a maximum average floor area of 8,500 gross square feet.

(C) Buildings between 301 and 350 feet in height may not exceed a plan length of 115 feet and a diagonal dimension of 145 feet. They may not exceed a maximum average floor are of 9,000 toss square feet.

(D) Buildings between 351 and 550 feet in height may not exceed a plan length of 115 feet and a diagonal dimension of 145 feet. They may not exceed a maximum average floor area of 10,000 gross square feet.

(E) To allow variety in the articulation of towers, the floor plates of individual floors may exceed the maximums described above by as much as 5 percent, provided the maximum average floor plate is met.

(F) To encourage tower sculpting, the gross floor area of the top one-third of the tower shall be reduced by 10 percent from the maximum floor plates described in (A)—(D) above, unless the overall tower floor plate is reduced by an equal or greater volume.

(G) In order to provide adequate sunlight and air to streets and open spaces, a minimum distance of 115 feet must be preserved between all structures above 110 feet in height at all levels above 110 feet in height. Spacing shall be measured horizontally from the outside surface of the exterior wall of the subject building to the nearest point on the closest structure above 110 feet in height. Any project that is permitted pursuant to the exception described in Section 270(e)(3) shall not be considered for the purposes of measuring tower spacing pursuant to this Section.

(H) The procedures for granting special exceptions to bulk limits described in Section 271 shall not apply; exceptions may be granted pursuant to Sections 270(e)(3) and 270(e)(4).

(I) Additional setback, lot coverage, and design requirements for the DTR Districts are described in Sections 825 and 827.

(3) Exceptions to tower spacing and upper tower sculpting requirements in Rincon Hill DTR. An exception to the 115 feet tower spacing requirement and the upper tower sculpting requirement described in (F) and (G) above may be granted to a project only on Block 3747 on a lot formed by the merger of part or all of Lots 001E, 002 and 006, pursuant to the procedures described in 309.1 of this Code provided that projects meet the following criteria:

(i) Applications for environmental review and conditional use related to a building above 85 feet in height on the subject lot have been filed with the Department prior to March 1, 2003 and February 1, 2005, respectively;

(ii) Given the 115 tower spacing requirement described in (F) above, the existence of an adjacent building greater than 85 feet in height precludes the development of a tower on the subject lot;

(iii) The subject lot has a total area of no less than 35,000 square feet;

(iv) The proposed project is primarily residential and has an area of no more than 528,000 gross square feet;

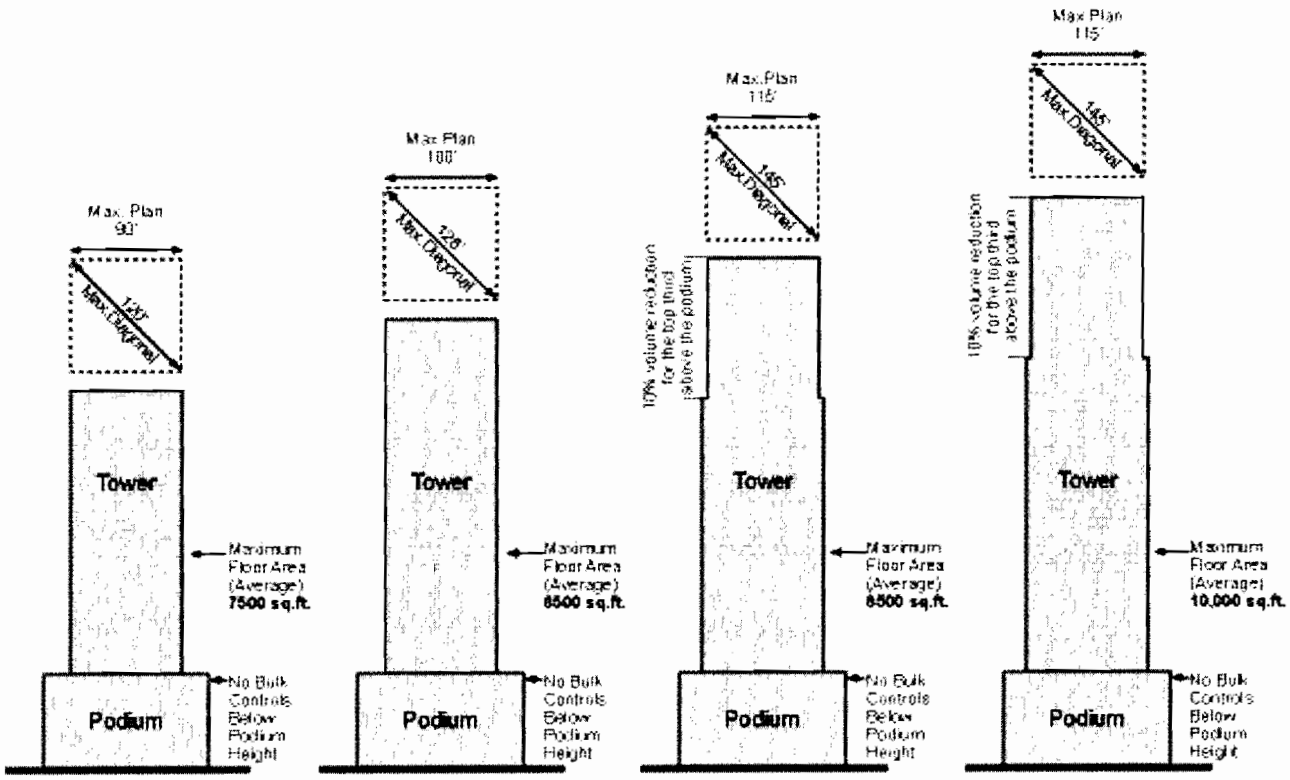
(v) The proposed project conforms to all other controls described or referenced in Section 827 and any other controls in this Code related to the Rincon Hill DTR District.

(vi) For the purposes of subsection (iv) above, the term "gross square feet" shall be the sum of the gross areas of all floors of a building or buildings above street grade measured from the exterior faces of exterior walls or from the center lines of walls separating two buildings, excluding area below street grade. Where columns are outside and separated from an exterior wall (curtain wall) which encloses the building space or are otherwise so arranged that the curtain wall is clearly separated from the structural members, the exterior face of the curtain wall shall be the line of measurement, and the area of the columns themselves at each floor shall also be counted.

(4) Allowance for limited reduction in spacing from existing towers in Rincon Hill DTR. To allow limited variation in tower placement from towers for which a certificate of occupancy has been issued prior to February 1, 2005, a reduction in tower spacing described in (G) above may be granted pursuant to the procedures described in 309.1 of this Code if all the following criteria are met:

(i) For every percent reduction from the maximum average floor area as described in (2) above, an equal percent reduction in tower separation may be granted subject to the following limits:

(ii) Up to a height of one-and-one-half times the maximum permitted podium height, tower spacing described in (G) above may be reduced by not more than 15 percent; (iii) up to a height of 180 feet, tower spacing described in (G) above may be reduced by not more than 10 percent; and (iv) all floors above 180 feet achieve the full 115-foot minimum tower spacing requirement described in (G) above. A project may average the tower separation of all floors below 180 feet so long as the requirements of (iii) and (iv) are satisfied.

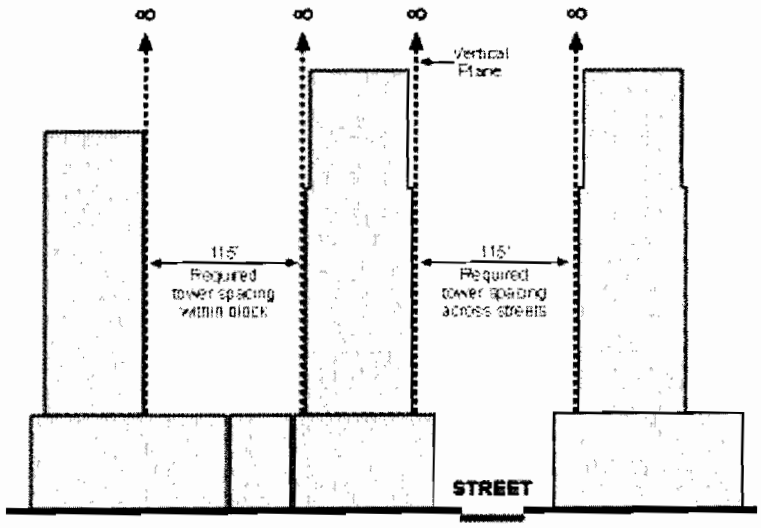


"R" BULK CONTROLS
85' - 240'

"R" BULK CONTROLS
241' - 300'

"R" BULK CONTROLS
301' - 350'

"R" BULK CONTROLS
351' - 550'



REQUIRED TOWER SPACING
IN "R" BULK DISTRICTS

(f) Van Ness and Market Downtown Residential Special Use District. In Bulk District R-2 (Van Ness and Market Downtown Special Use District), bulk limitations are as follows:

(1) Tower Bulk and Spacing. In height districts 120/200-R-2, 120/300-R-2, 120/320-R-2, and 120/400-R-2, there are no bulk limitations below 120 feet in 7 height, and structures above 120 feet in height shall meet the bulk limitations described in subsection (e)(2)(A)-(F). In height district 85/250-R-2 there are no bulk limitations below 85 feet in height, and structures above 85 feet in height shall meet the bulk limitations described in subsections (e)(2)(A)—(F).

(2) In order to provide adequate sunlight and air to streets and open spaces, a minimum distance of 115 feet must be preserved between all structures above 120 feet in height at all levels above 120 feet in height. Spacing shall be measured horizontally from the outside surface of the exterior wall of the subject building to the nearest point on the closest structure above 120 feet in height.

(3) No exceptions shall be permitted. The procedures for granting special exceptions to bulk limits described in Section 272 shall not apply.

APPROVED AS TO FORM:
DENNIS J. HERRERA, City Attorney

By: _____
MARLENA G. BYRNE
Deputy City Attorney


parkmerced
vision plan
10.14.10
DRAFT

The Parkmerced Vision Plan lays out a conceptual framework for transforming the existing Parkmerced housing development into a 21st century model of a healthy neighborhood. Based on the vision set forth, the accompanying Design Standards and Guidelines, Sustainability Plan, Transportation Plan, and Infrastructure Report combine to create a comprehensive blueprint for guiding all future improvements to Parkmerced.

- The Design Standards and Guidelines prescribe urban design controls for land use, open spaces, streets, blocks and individual buildings. It also outlines a process for project implementation.
- The Sustainability Plan contains specific strategies and metrics which together address the management and conservation of energy, water and other natural resources, as well as establish goals for green building standards.
- The Transportation Plan provides a framework and management plan for addressing transit and vehicular travel to and from the neighborhood.
- The Infrastructure Report establishes an outline for anticipated site-wide improvements to all streets and public rights-of-way, underground utilities, and grading.

The vision has been developed through a collaborative process with input from community members, local agencies and departments, public advocacy organizations and design and engineering experts.

DRAFT

parkmerced

vision plan

DRAFT

vision

01

re-invent the urban environment

The Parkmerced Vision Plan will transform the existing 60- to 70-year old 3,221 dwelling units from a development of resource consumptive buildings and landscapes into a vital neighborhood rooted in forward-thinking urban ecology. The re-imagined Parkmerced will offer its residents and neighbors a diversity of housing opportunities, a range of new open spaces, and convenient neighborhood services and amenities. The main goal in re-inventing Parkmerced will be to craft a vibrant, pedestrian focused neighborhood where public spaces and buildings frame a comfortable public realm and make a positive contribution to the ecological and social health of the region and the city.

As a part of this effort, a variety of new alternative transit opportunities are proposed to help reduce this portion of the city's over-reliance on cars. The M-Ocean View light rail Muni line is intended to travel through the heart of Parkmerced, car and bike share pods are meant to dot the neighborhood, and a low-emissions shuttle is proposed to provide reliable service between Parkmerced and the nearby Daly City BART Station.

In the process, the neighborhood hydrology will be repaired by day-lighting the flow of rainwater runoff as it passes through Parkmerced, allowing it to follow a more natural process. This will in turn help increase habitat and enhance the biodiversity of the neighborhood that was built over when Parkmerced was first constructed.

The Parkmerced Vision Plan is intended to provide a conceptual framework that inspires innovation and high quality in each specific project within the neighborhood. The Parkmerced design and planning team, in close collaboration with the San Francisco Planning Department, has crafted the Parkmerced Vision Plan to include the following:

- Urban design principles and goals that set out an insightful vision for the future of Parkmerced;
- The ecological and social imperative for why Parkmerced should be re-invented; and
- Strategies that support the stated ecological, social and urban design principles and goals.

"First life, then spaces, then buildings – the other way around never works."

Jan Gehl

principles

With input from residents, interested community members, relevant City and State agencies and departments, planning experts and public advocacy groups, the following planning principles have been established in order to guide Parkmerced into the future.

Convenient, local-serving amenities, a diverse mix of housing and a variety of outdoor activities will enliven the public realm and promote a **socially vibrant neighborhood** where people are the most important ingredient.

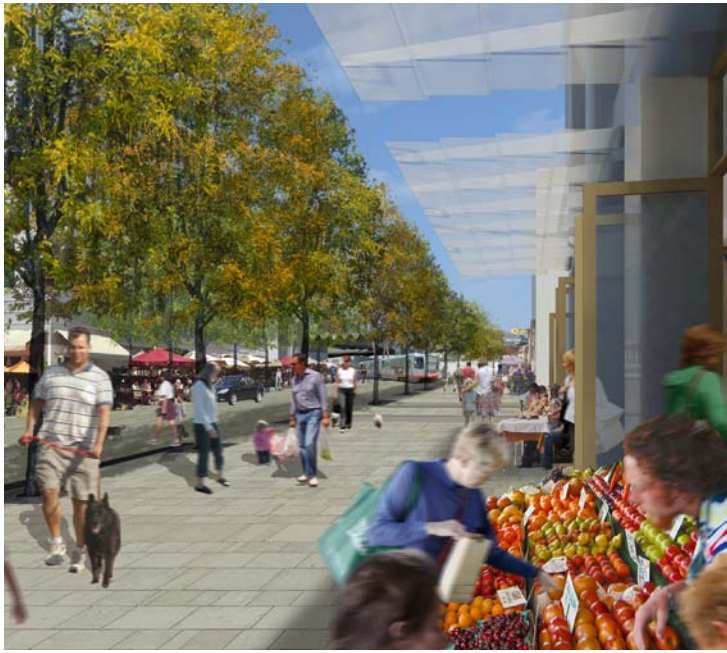
The presence of a regenerative network comprised of deeply **interconnected urban and natural systems** will establish an ecologically healthy neighborhood.

Focused growth integrated with access to viable alternative transit options will encourage walking, biking and other forms of **green mobility**.

Open spaces, streets and buildings that are designed to be **pedestrian focused** will provide a comfortable and aesthetically rich environment.

goals

The goals below provide a description of the specific objectives that are intended to be achieved at Parkmerced and represent best practices in sustainable urban design.



establish a common attitude towards healthy neighborhoods and ecologically sustainable design as a starting point to create a cohesive, yet aesthetically rich environment, where urban and ecological systems are deeply interconnected and mutually supportive.

provide a wide variety of housing types, including rental and for-sale housing, located within a convenient distance from transit and neighborhood services.

reinvent Parkmerced as a neighborhood with diverse and engaging public spaces woven together to encourage walking and outdoor activity and to promote a socially vibrant neighborhood.

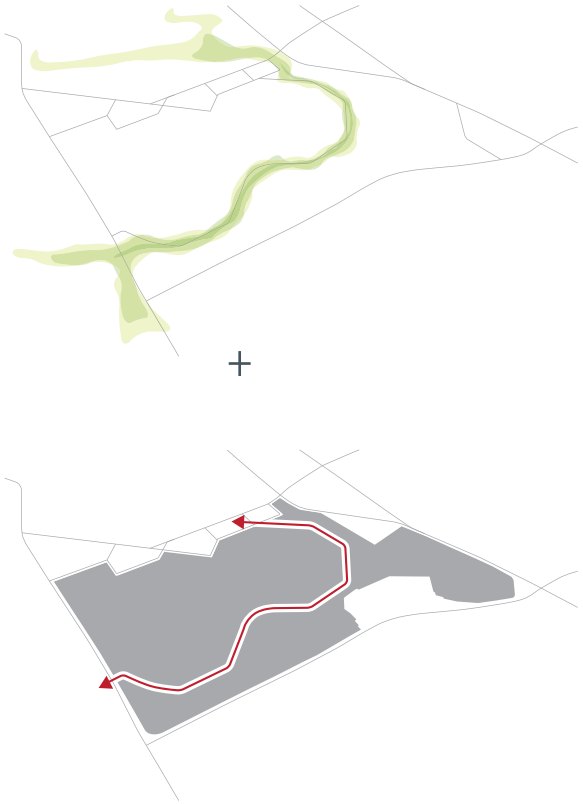
cultivate a visually appealing landscape that celebrates the neighborhood's hydrology, creates natural habitat, and promotes the efficient use of resources, while meeting the community's needs for recreation, open space, and local food production.

foster a neighborhood character and scale that will create a pedestrian focused environment, while encouraging a diverse and unique identity for each block and building.

design buildings that reinforce an understanding and respond to specific urban conditions that exist within Parkmerced, such as the park edges, Neighborhood Commons, the 'social heart' and a variety of street types.

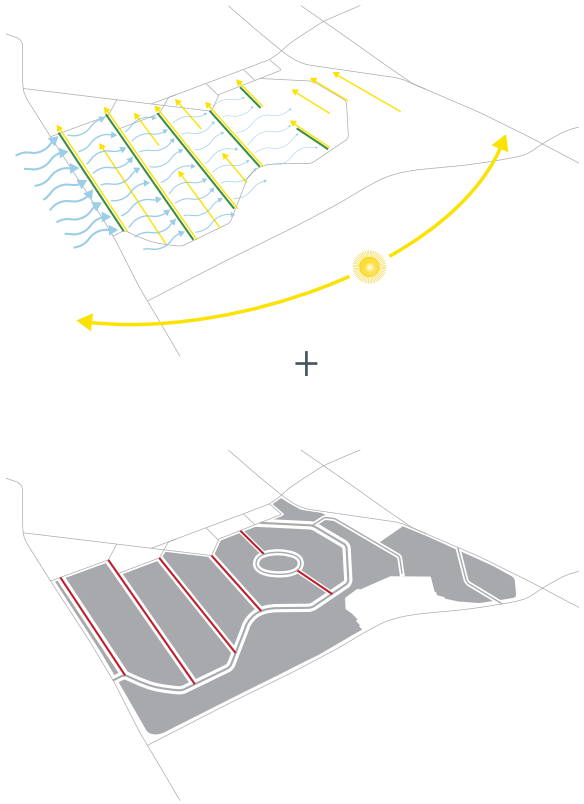
strategies

Together the following 12 interconnected urban and ecological design strategies illustrate how specific ecological strategies enhance urban strategies and form the framework for the neighborhood.



bio-corridor + neighborhood access

Transform Gonzalez Drive into an easily navigable boulevard connecting the neighborhood to the surrounding community, as well as the Lake Merced ecosystem.

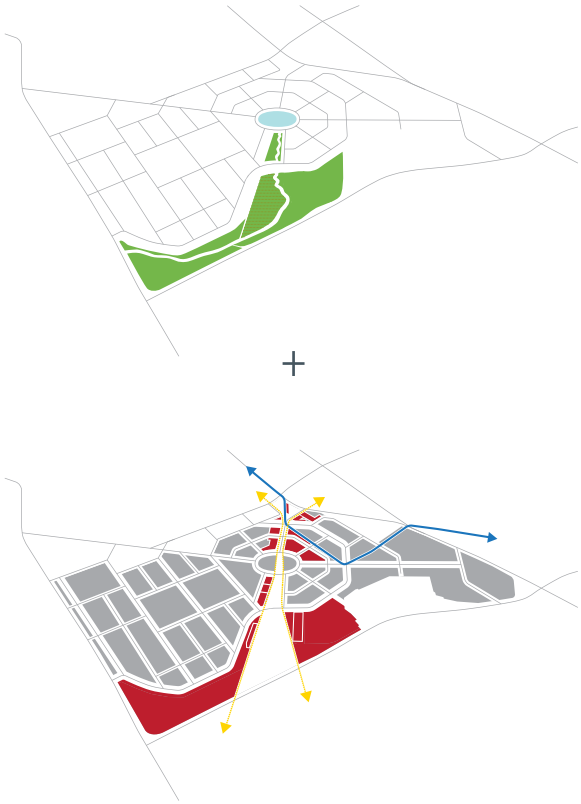


hedgerows + primary linkages

Buffer against prevailing westerly winds and maximize daylight penetration with a primary north-south orientation, while focusing neighborhood access onto these streets via their connection to Gonzalez Drive.

rainwater + neighborhood streets

Create a fine grained street pattern and drainage network that maximizes bio-filtration and offers a variety of engaging pedestrian routes through the neighborhood.



stream corridor + social heart

Focus neighborhood services and social amenities at the center of Parkmerced along a stream corridor that cleans rainwater runoff and provides new habitat for native plants and animals.

open space + building form

Encourage community interaction with gardens, parks and recreation spaces set in public open spaces, Neighborhood Commons and semi-private courtyards, defined by the adjacent building edges.

ecological network + pedestrian walkways

Link all open spaces into an ecologically interconnected and interdependent network with a system of pedestrian connections that lead to the neighborhood's social heart.

context

02

create a healthy neighborhood

Located within Lake Merced's historic watershed, Parkmerced occupies the transition zone between the city and the natural realm. At the time of Parkmerced's original construction, planning strategies neither understood nor attended to the natural function of existing ecological systems that passed through the site. While the street pattern layout and land use organization represented a new vision of how neighborhoods should be planned at that time, the original Parkmerced was a suburban vision for a single-use neighborhood where cars dominated as the primary mode of transportation for residents to meet their daily needs. Over time this original strategy led to Parkmerced's isolation from the surrounding Westside community and the rest of San Francisco both physically and in terms of its neighborhood character.

Parkmerced is symptomatic of settlement patterns which have resulted in suburban sprawl across the region. This trend towards sprawl has: led to a loss of natural and agricultural lands, impairing the region's ecological function; created longer commutes, resulting in lost work productivity and a lower quality of life; and required greater resource consumption, increasing each person's carbon footprint. Additionally, this has resulted in an increased burden to regional roadways and city streets, which must manage the increase of pass-through traffic due to the daily influx of commuters and their cars.

"The most important issue of the 21st century will be the condition of the global environment."

Ian Mcharg

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PARKMERCED OCCUPIES THE TRANSITION ZONE

BETWEEN THE CITY AND THE NATURAL REALM.

DRAFT

watershed habitat

"Once a remote and rural corner of the City, the lake environs have become increasingly urbanized over the decades, and the lake has had to endure the consequences, including a shrinking watershed, increased stormwater runoff, decreased groundwater recharge, increased demand for recreation, and increased wear and tear on facilities and the natural environment."

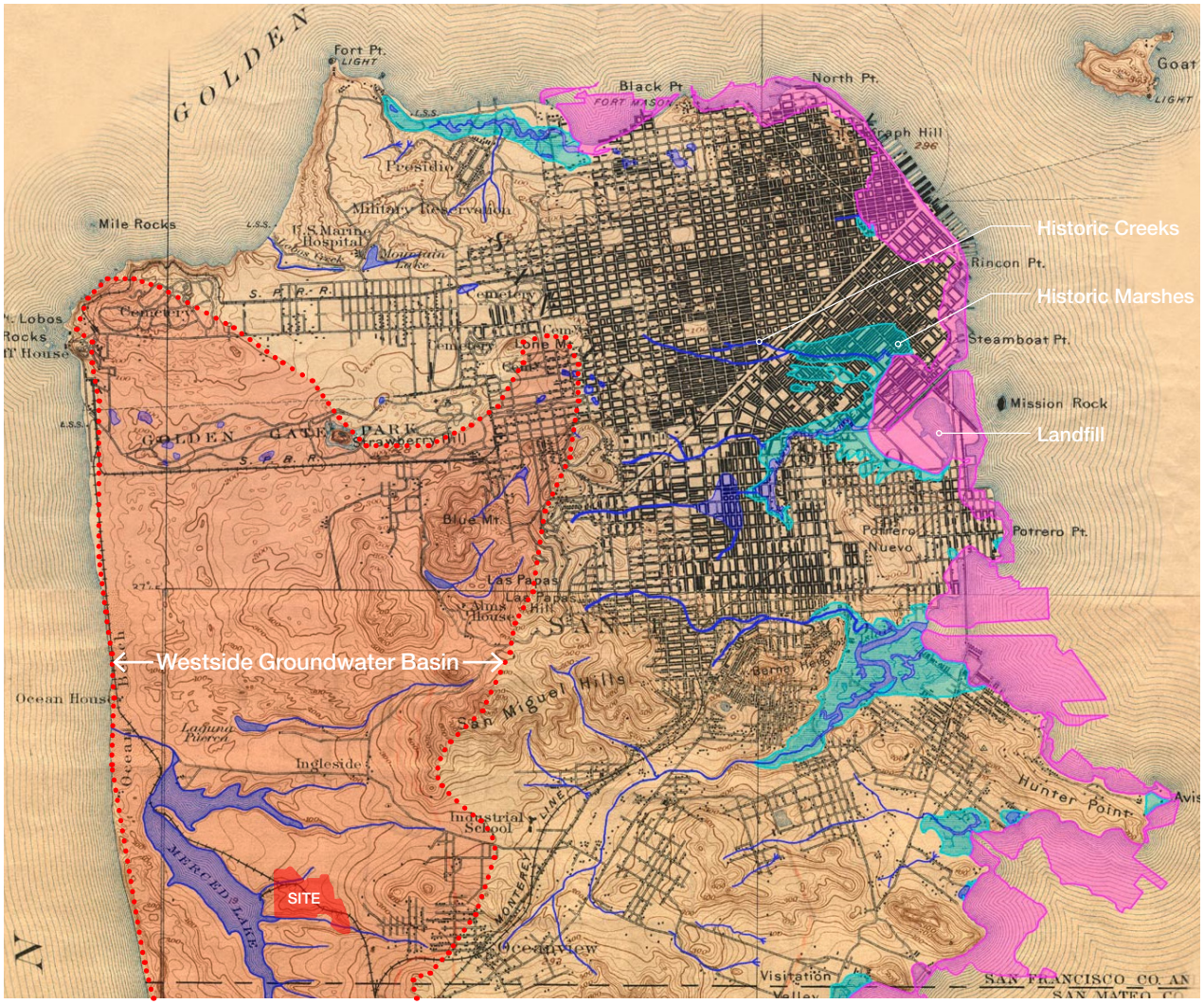
SFPUC, Draft Lake Merced Watershed Report, 2010

Characterized as a Franciscan biological region, Lake Merced is one of the last remnants of this native habitat. Protecting the ecology of Lake Merced is critical to ensure the natural watershed habitat is capable of sustaining native wildlife and preserving Lake Merced as a crucial nesting site for waterfowl and shorebirds along the Pacific Coast flyway (San Francisco Recreation & Parks).

Parkmerced is located within the watershed that feeds and nourishes Lake Merced. Historically, rainwater in this natural drainage basin flowed towards Lake Merced to the west, with surface water runoff cleansed and absorbed by a healthy riparian habitat which was characterized by a vegetative cover of coastal shrubs and plant life. The rainwater also infiltrated the highly permeable sand and gravel soils, recharging the Westside Basin Aquifer which stretches from Golden Gate Park to the City of South San Francisco.

In 1905, renowned American architect and planner Daniel Burnham presented his master plan for San Francisco. At that time, Lake Merced, owned by Spring Valley Water Company, was still the City's potable water source. In response to this condition, Burnham proposed a great open space preserve (larger than Golden Gate Park) to protect the Lake Merced watershed, including the lands currently occupied by Parkmerced.

However, after the 1906 earthquake, San Francisco built the Hetch Hetchy water system, originating high in the Sierra Mountains, in order to develop an independent and secure potable water source.



Historic San Francisco creeks and wetlands, circa 1890

Lake Merced, 1929

Lake Merced, 1953

Lake Merced, present

Burnham master plan, 1905

Once this happened, the City quickly began to develop over Lake Merced's watershed. The natural water conveyance system was severely altered, and replaced by the establishment of a completely separate, underground sewer and rainwater conveyance system, leading out to the City's Oceanside Wastewater Treatment Facility. Large swaths of impermeable surfaces, consisting of city streets, surface parking lots and building roofs, have further impaired the natural watershed function by severely limiting the amount of rainwater infiltration and recharge to the underground aquifer. Diverted surface runoff increases the burden on San Francisco's combined sewer-stormwater system and the potential for overflows into the ocean at the nearby treatment facility (Pezzetti et al. 1998, CDM 1999).

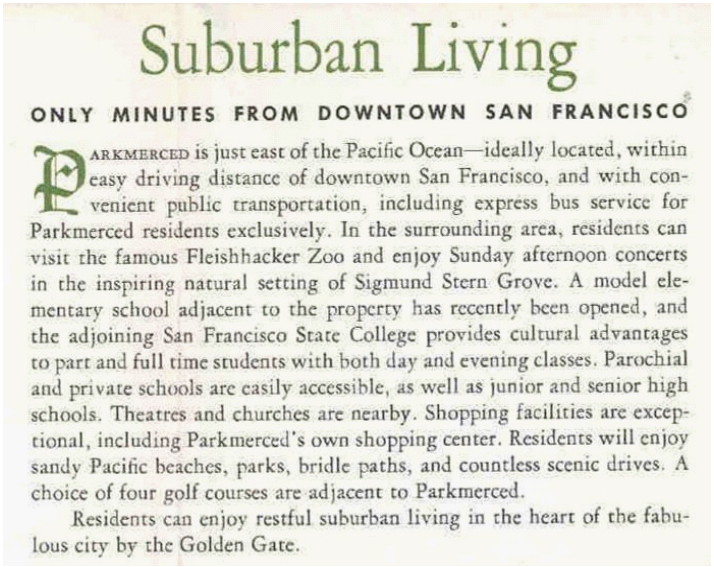
When the site was initially developed in the 1940's, wide-scale grading radically transformed the site's natural topography into a generally flat table top, tilted slightly toward the west. Soils filled the original drainage ways, and an underground system replaced the natural watershed, so that rainwater was quickly put into pipes and moved off-site to the City's treatment facility. This deprived the site, the lake and the underground aquifer of much of its annual rainfall.

The vast areas of planted lawn, which was typical of the landscape fashion of that time, require approximately 55 million gallons of potable city water for irrigation. Large quantities of chemical fertilizers are also necessary to maintain the expansive lawn areas and non-indigenous plant species. Each year some of this fertilizer runs off into surrounding streams and Lake Merced and has been identified as a potential cause of algae blooms in the Lake due to nutrient overload (Friends of Lake Merced, 2000). These practices can no longer be sustained.

parkmerced then...

Constructed between 1941 and 1951, Metropolitan Life Insurance Company (MetLife) built the original Parkmerced residential complex as a response to the surging population and the associated demand for housing in the Bay Area, resulting from war preparedness efforts and continuing through the end of World War II. MetLife hired Leonard Schultze & Associates of New York to design the street grid, open spaces, and buildings at Parkmerced as one in a series of planned residential communities located throughout the country, including Park La Brea in Los Angeles, Parkfairfax in Virginia, Parkchester in New York and Peter Cooper Village / Stuyvesant Town in New York City. Thomas Church and Robert Royston developed the landscape design for Parkmerced. The original property contained 47 residential blocks, totaling 192 acres, including associated service buildings and open spaces.

Based on urban planning principles of the time and a growing reliance on the automobile as a major transportation mode, Parkmerced was conceived of and marketed as 'suburban living in the city'. This desire for suburban-style living led to the creation of an auto-oriented neighborhood with: large-scale blocks; roundabouts; and long distances to services and amenities. This plan locked future generations of residents into daily life patterns that are almost wholly dependent upon the car, isolating Parkmerced residents from the mixed-use, transit-based lifestyle that is enjoyed by most San Franciscans.



Suburban Living

ONLY MINUTES FROM DOWNTOWN SAN FRANCISCO

PARKMERCED is just east of the Pacific Ocean—ideally located, within easy driving distance of downtown San Francisco, and with convenient public transportation, including express bus service for Parkmerced residents exclusively. In the surrounding area, residents can visit the famous Fleishhacker Zoo and enjoy Sunday afternoon concerts in the inspiring natural setting of Sigmund Stern Grove. A model elementary school adjacent to the property has recently been opened, and the adjoining San Francisco State College provides cultural advantages to part and full time students with both day and evening classes. Parochial and private schools are easily accessible, as well as junior and senior high schools. Theatres and churches are nearby. Shopping facilities are exceptional, including Parkmerced's own shopping center. Residents will enjoy sandy Pacific beaches, parks, bridle paths, and countless scenic drives. A choice of four golf courses are adjacent to Parkmerced.

Residents can enjoy restful suburban living in the heart of the fabulous city by the Golden Gate.

1950's Marketing Materials

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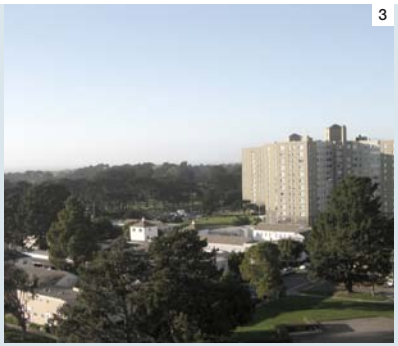
...parkmerced now



Supporting land uses, such as a small retail center, playing fields, a school and undeveloped open space were in distant and disparate locations along the edges of the site. Their viability became untenable over the years as residents drove their cars to more easily accessible and convenient services and amenities. After MetLife sold the property, a subsequent owner sold off these parcels to others as a means to reduce overhead and maximize profitability. The current ownership group took over the property in October 2005. The neighborhood currently encompasses 152 acres, approximately 80 percent of the original Parkmerced property and contains 3,221 existing rental apartments in 170 two-story residential buildings (referred to as “garden apartments”) and 11 13-story residential mid-rise buildings. The property also contains associated parking, building services, a leasing/operations office, and a recently constructed private pre-school/day care facility.

Parkmerced remains an example of a highly resource consumptive planning model. Residential trip surveys performed in 2006 indicate an average of over 6 non-work related vehicle trips per unit per day to other neighborhoods for basic services, shopping and amenities. Parkmerced’s landscapes consume over 55 million gallons of potable water per year for maintenance and irrigation. By the completion of the Parkmerced plan the garden apartments will be approximately eighty years old; they are un-insulated and have poor ventilation due to the construction methodology employed during war-time material shortages. In addition, these buildings do not provide barrier-free access and socially turn their back on the street, greatly reducing the vibrancy and sense of security of the public realm.

imperative for the city

"We cannot afford another generation of sprawl. Businesses suffer from higher costs, loss in worker productivity and underutilized investments in older communities."

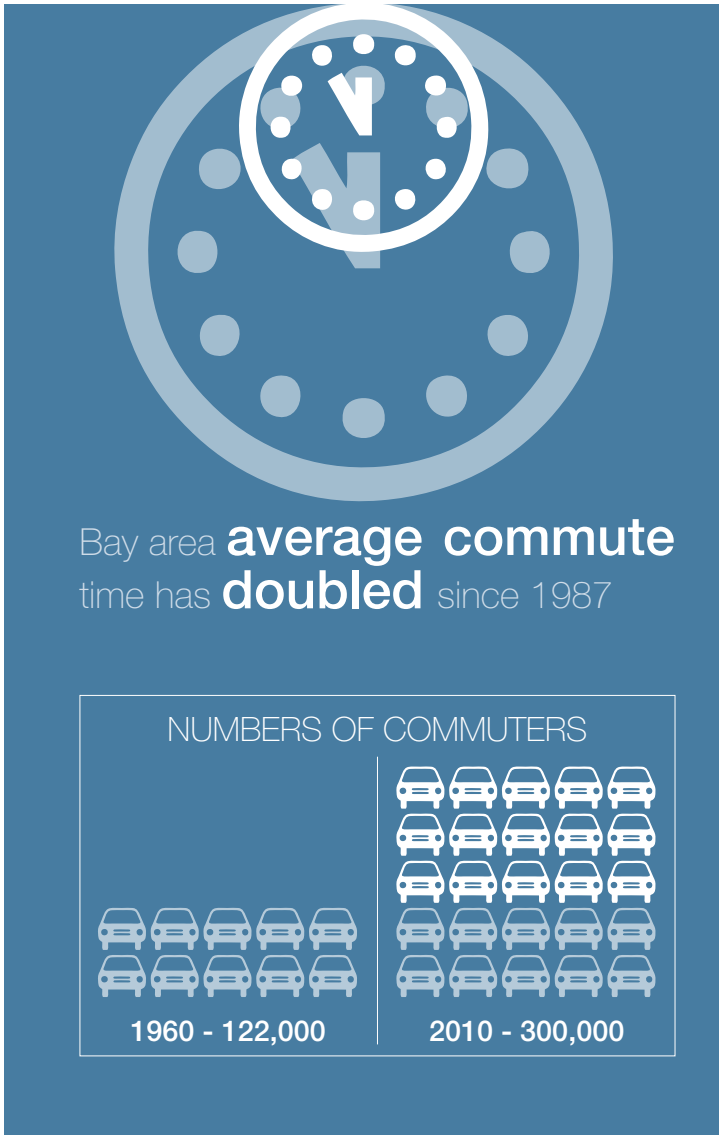
Bank of America, et.al., Beyond Sprawl, Web 1996.

According to the Association of Bay Area Governments, the San Francisco Bay Area population is set to increase by 2 million residents over the next 25 years. Increasing housing opportunities within existing urban centers is imperative to help address the region's current unsustainable settlement patterns. The human, economic and ecological health of the region is at stake.

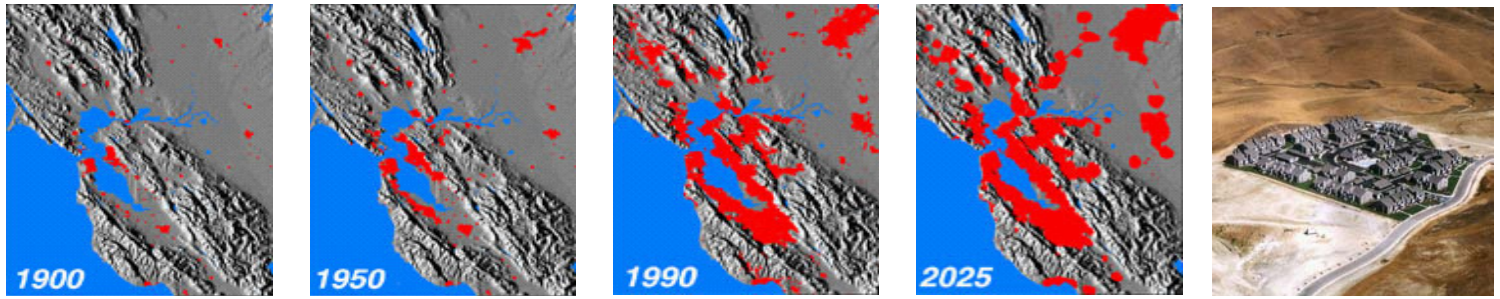
With 41.2% of California's total GHG emissions coming from transportation, auto-dependant land use patterns are one of the single largest contributors to the regions annual CO2 emissions of roughly 12 tons per person (Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2002 Update, California Energy Commission, 2005). Lack of affordable housing opportunities in close proximity to public transit and existing job centers is forcing more and more Bay Area residents to commute longer distances, stuck behind the steering wheel of a car rather than at work or at home with their families. Inundating our region's highways with daily commuters, the economic impact of traffic congestion costs the region nearly $3 billion a year in extra fuel costs and wasted time due to lost productivity (the U.S. Department of Transportation and Caltrans).

GHG emissions are also a major contributor to global and local ecological degradation, resulting in an increase in surface air temperature and "killer" heat waves, rising sea levels, increased flooding, decreased air quality, and a reduction of wildlife habitat[1].

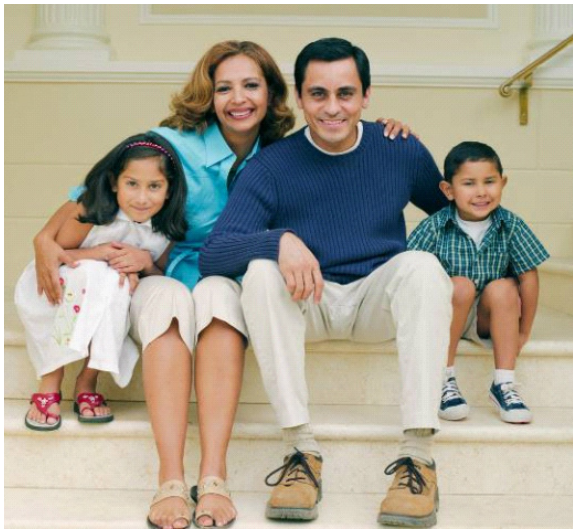
The design and scale of the future Parkmerced will substantially reduce miles traveled by car and contribute towards achieving regional economic and environmental goals for increasing resource efficiency. The Parkmerced vision is a once in a lifetime opportunity to transform a large, aging housing complex into a vibrant, model of an ecologically sustainable, walkable community. Transforming Parkmerced will directly result in a reduction in resource consumption and waste production while at the same time increasing the quality of life for its residents. Parkmerced is one of the most important, long-range redevelopment projects in the nation and will set the bar for this century's sustainable communities.

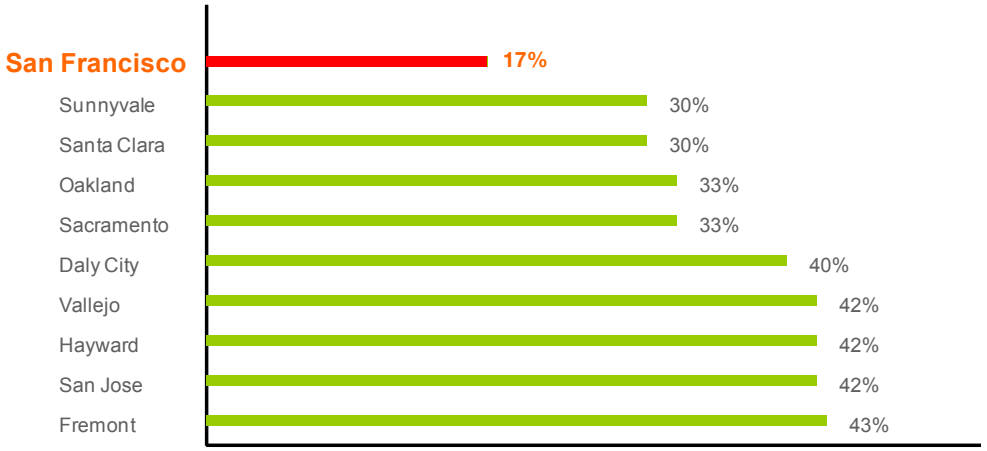


[1] Kattenberg, A., F. Giorgi, H. Grassel, G.A. Meehl, J.F.B. Mitchell, R.J. Stouffer, T. Tokioka, A.J. Weaver, and T.M.L. Wigley, 1996. Climate models - projections of future climate. In Climate Change 1995: The Science of Climate Change, 285-357, (Eds J.T. Houghton, L.G.M. Filho, B.A. Callander, N. Harris, A. Kattenberg, and K. Maskell) Cambridge University Press, Cambridge, U.K.



Tens of thousands of housing units are being built annually in the Bay Area's greenbelt, in new auto-dependent suburbs.





Percentage of households with children

frameworks

03

ecological living

'Ecological living' is the conceptual heart of a healthy neighborhood. The following planning frameworks will function in unison to promote ecological living and reduce natural resource consumption while at the same time increasing social livability and encouraging an economically vibrant neighborhood. By doing so Parkmerced is set to shift towards a renewable energy-based, pedestrian-focused neighborhood, linked to the rest of the city through a diverse public realm network and a system of alternative transit, and therefore, bringing the community more in balance with the natural ecology of the site.

Parkmerced's vision for a 21st century healthy neighborhood includes:

- Healing the community's relationship to the land upon which it sits;
- Providing a range of housing opportunities for a diverse population;
- Creating a variety of recreational and passive open spaces;
- Offering a lifestyle not dependent upon automobiles;
- Establishing a more efficient use of resources; and
- Reducing residents' contributions to carbon production.

"The ballet of the good city...never repeats itself from place to place, and in any one place is always replete with new improvisations."

Jane Jacobs

socially vibrant neighborhood land use

A mixed-use social heart located at the center of the plan transforms Parkmerced into a pedestrian-oriented neighborhood.

The re-imagined Parkmerced neighborhood will include a variety of neighborhood services and amenities, giving residents the choice of fulfilling their daily needs without getting in their cars. With these services and amenities located within comfortable walking distance, residents will be able to walk their children to school on their way to the train in the morning or stop at the market to pick up groceries on their way home in the evening.

The central neighborhood serving retail will be located along and near Crespi Drive. Similar to other San Francisco neighborhood retail streets, Crespi Drive will be Parkmerced's 'social heart', providing a place where residents can meet their everyday needs and socialize with their neighbors. To further increase Parkmerced's social livability and ecological sustainability, a network of smaller, social gathering places (known as "Neighborhood Commons") will fall within a two-minute walk of most residents and is intended to consist of small retail shops, business centers, neighborhood amenities and bicycle / carshare pods, all anchored by a major neighborhood park.

To encourage and promote the art of 'well-being', Parkmerced will seamlessly weave together fitness, food production and positive social interaction. Located along the project's southern edge, the Community Center will offer residents a variety of uses and programs relating to fitness, learning and wellness. Immediately to the east, outdoor flexible recreational spaces will provide opportunities for soccer, softball or other similar activities. As a critical component of any healthy neighborhood, the pre-school / K-5 location just south of the social heart will make Parkmerced a perfect place for families to call home.

Located immediately west of the Community Center, an organic farm of approximately 2- to 3- acres in area will act as a source for local food production, providing fruits and vegetables for sale at the neighborhood grocery store, local farmer's markets or in local restaurants.

Shop, Work and Support

Introducing a new variety of uses into Parkmerced increases the livability of the neighborhood, as well as reduces the impacts residents currently have on local and global ecological systems.

Social Heart

Retail on the ground floor with professional offices above, the Parkmerced social heart will include a neighborhood serving market and other retail, making it convenient for Parkmerced neighbors to walk or ride a bike for daily errands.

Neighborhood Commons

Evenly distributed throughout Parkmerced, neighborhood commons will be social gathering places anchored by small retail shops, business centers for work at home, outdoor activities, bike and car share pods, etc.

Education + Well-Being

To increase the social vibrancy and importance of the social heart, the school site is centrally located and accessible to all Parkmerced residents. Living well and being well are critical not only to sustain life, but for life to thrive. A Community and Fitness Center will provide opportunities for recreation and social interaction.

- MIXED USE SOCIAL HEART
- MIXED USE NEIGHBORHOOD COMMONS
- ORGANIC FARM / RESTAURANT
- SCHOOL / DAY CARE
- COMMUNITY/ FITNESS CENTER

DRAFT

urban + natural systems
open space

Parkmerced will embrace a new paradigm, where open spaces are meant to provide benefits for both people and the functioning of ecological systems.

Redefining the relationship between the built and natural environments, the neighborhood's open spaces and street network will be transformed into a biologically diverse and interconnected network of riparian zones, major new parks, an organic urban farm, recreational playing fields, intimately-scaled neighborhood courtyards, pedestrian trails and bike pathways. Parkmerced's landscapes will reinvigorate the site's hydrology, reestablish biodiversity and reconnect to Lake Merced, while offering a comfortable setting for the community's outdoor activities.

The Parkmerced landscape will create a varied series of neighborhood open spaces that support structured and unstructured recreation for groups as well as individuals. From the semi-private courtyards that encourage neighbors to interact with each other to the public parks and plazas that provide places for the neighborhood to gather, Parkmerced will provide a range of outdoor experiences that enrich the social life of the neighborhood.

The Vision Plan builds on ideas to regenerate the underlying watershed and site ecology while supporting a socially sustainable neighborhood. The stream corridor will be the backbone of the habitat restoration with it's resource rich environment attracting an array of native wildlife. Only native, acclimated or wildlife friendly plant species will be used on site, both to minimize water consumption and to attract native wildlife. Finally, in order to protect biodiversity and public health, landscape maintenance will follow integrated pest management and organic farming methods. The landscape will create a variety of other ecological zones including wetlands, coastal woodlands, and meadows.

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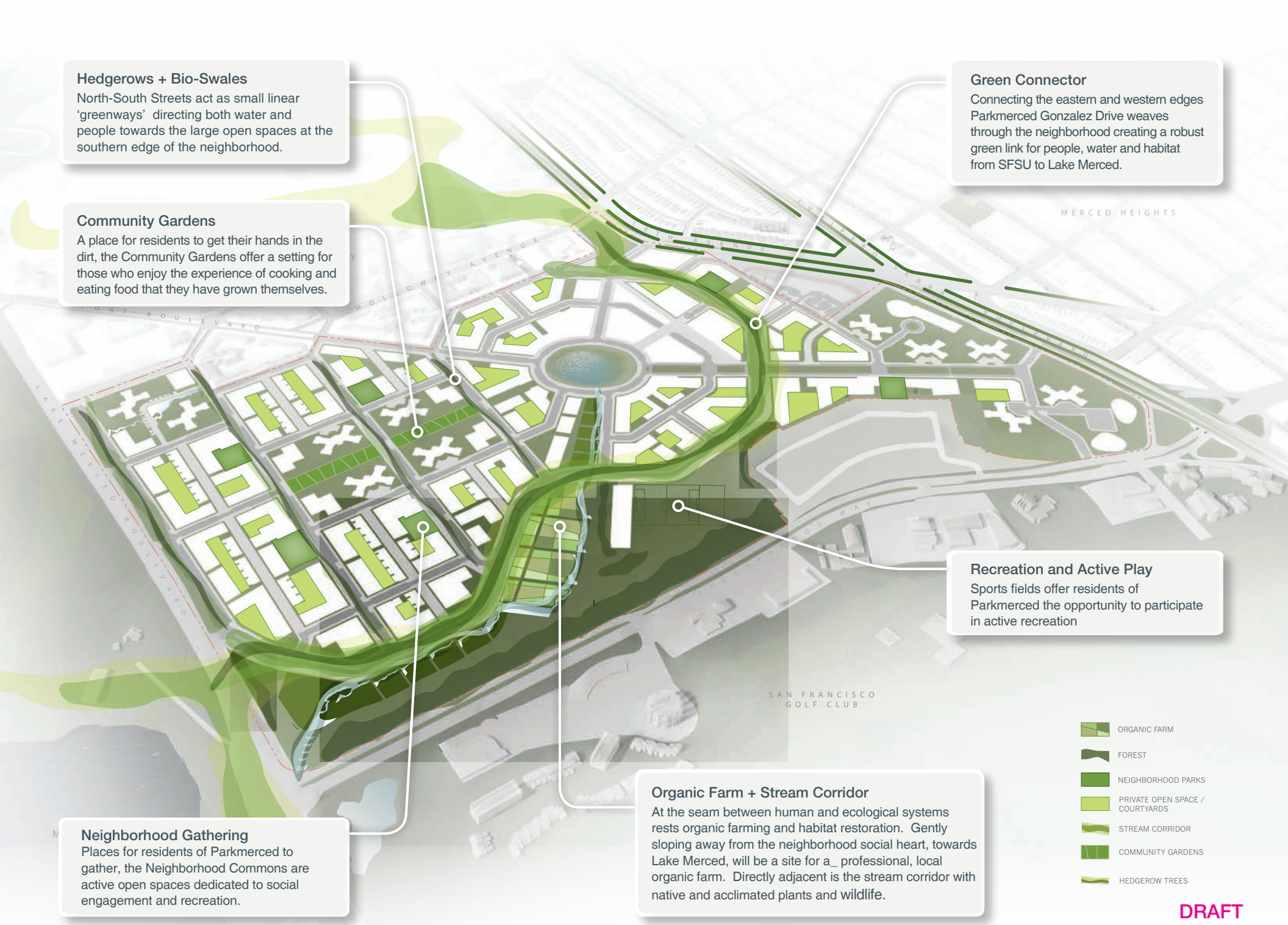

Hedgerows + Bio-Swales

North-South Streets act as small linear 'greenways' directing both water and people towards the large open spaces at the southern edge of the neighborhood.

Community Gardens

A place for residents to get their hands in the dirt, the Community Gardens offer a setting for those who enjoy the experience of cooking and eating food that they have grown themselves.

Green Connector

Connecting the eastern and western edges Parkmerced Gonzalez Drive weaves through the neighborhood creating a robust green link for people, water and habitat from SFSU to Lake Merced.

Recreation and Active Play

Sports fields offer residents of Parkmerced the opportunity to participate in active recreation

Organic Farm + Stream Corridor

At the seam between human and ecological systems rests organic farming and habitat restoration. Gently sloping away from the neighborhood social heart, towards Lake Merced, will be a site for a_ professional, local organic farm. Directly adjacent is the stream corridor with native and acclimated plants and wildlife.

Neighborhood Gathering

Places for residents of Parkmerced to gather, the Neighborhood Commons are active open spaces dedicated to social engagement and recreation.

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pedestrian focused
street pattern

Parkmerced reinvents the street as a social and ecological connector, providing an effective framework for movement throughout the neighborhood.

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The Vision Plan conceives the streets at Parkmerced as a collection of outdoor living rooms, providing a comfortable backdrop for the public life of the neighborhood. Reflecting an emerging understanding of the negative impacts cars have on the ecological and social health of our communities, Parkmerced will transform the street by reducing the amount of roadway dedicated to cars and increasing the space given to people and underlying ecological systems. Streets at Parkmerced will weave together social and ecological project benefits through a network of functions like: sitting, walking and bicycling; and gathering, retaining and cleansing rainwater.

Creative and straightforward street designs will translate into a variety of simple and functional streetscapes. Gonzalez Drive and other secondary streets will help orient people as they move through the neighborhood. Hedgerow streets will be planted with wind buffering trees to address persistent cold winds from the west. Alley Ways will include bio-gutters to help convey rainwater after a storm and pervious paving to allow rainwater to infiltrate into the ground.

Neighborhood Retail

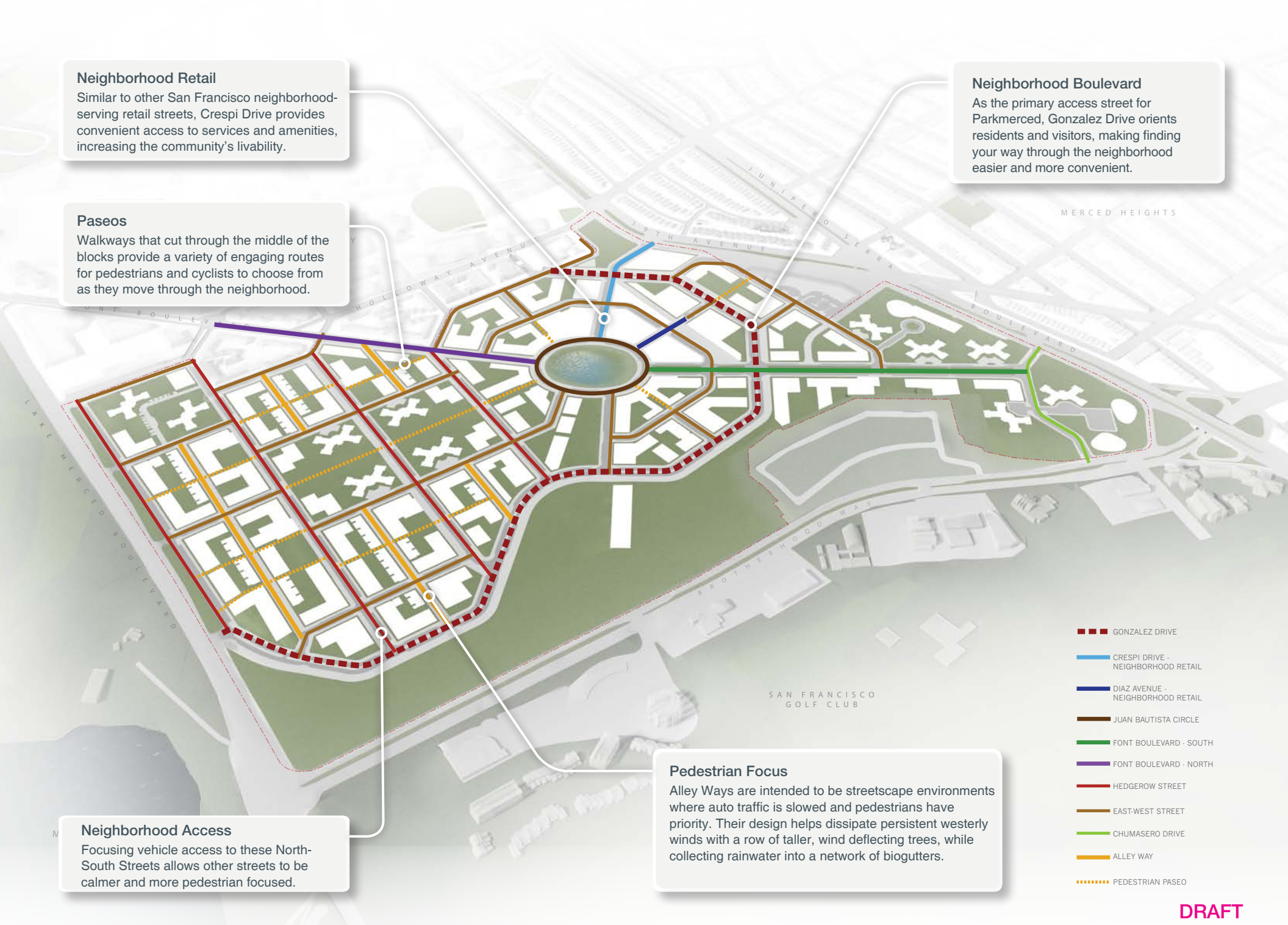
Similar to other San Francisco neighborhood-serving retail streets, Crespi Drive provides convenient access to services and amenities, increasing the community's livability.

Paseos

Walkways that cut through the middle of the blocks provide a variety of engaging routes for pedestrians and cyclists to choose from as they move through the neighborhood.

Neighborhood Boulevard

As the primary access street for Parkmerced, Gonzalez Drive orients residents and visitors, making finding your way through the neighborhood easier and more convenient.



Pedestrian Focus

Alley Ways are intended to be streetscape environments where auto traffic is slowed and pedestrians have priority. Their design helps dissipate persistent westerly winds with a row of taller, wind deflecting trees, while collecting rainwater into a network of biogutters.

Neighborhood Access

Focusing vehicle access to these North-South Streets allows other streets to be calmer and more pedestrian focused.

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Street Pattern

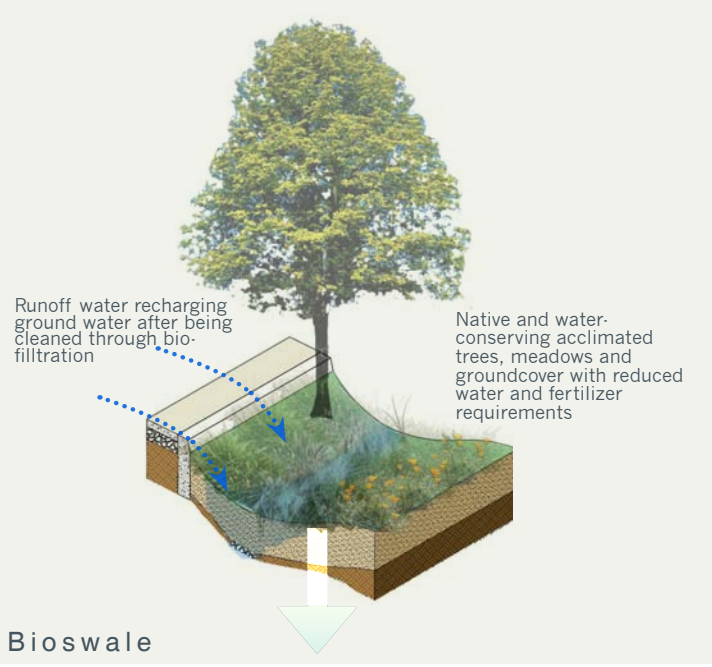
urban + natural systems
site hydrology

The future hydrology goals for the Parkmerced neighborhood focus on conserving every drop of water and putting it to use in regenerating a landscape naturally in balance with the climate and rainfall.

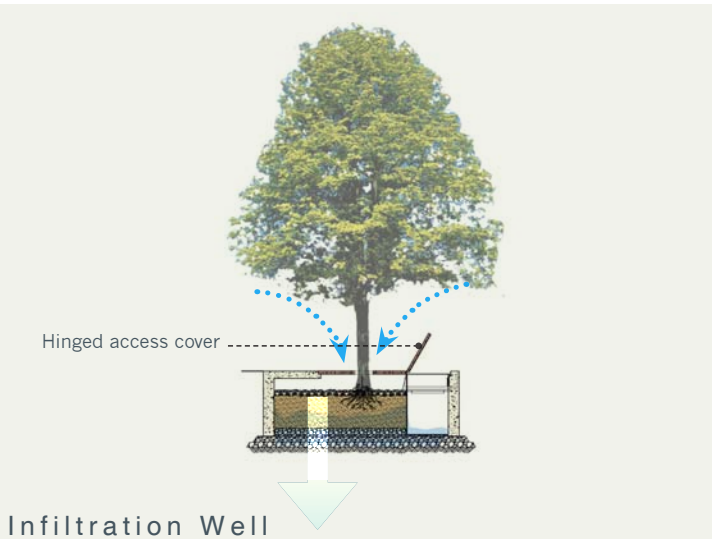
The proposed topography has been carefully designed to create a more natural hydrological system, where rainwater flows will recharge Lake Merced and underground aquifers while significantly increasing urban biodiversity.

The redefined landscapes at Parkmerced will feature rainwater runoff treatment as a prominent design feature. A series of landscape elements including: biogutters; bioswales; a new stream corridor; and ponds and wetlands will filter and clean rainwater before discharging cleansed water into Lake Merced. The armature for this water movement will be a new branch-like network, leading from rooftops all the way to Lake Merced. Rainwater is intended to travel from roof downspouts to biogutters, into a large series of bioswales, and then into a seasonal stream with a “laddered” series of ponds and check dams, leading to a terminal wetland / pond which finally outflows to Lake Merced. Permeable paving, installed at the alley streets and courtyards, will allow rainwater to infiltrate the ground.

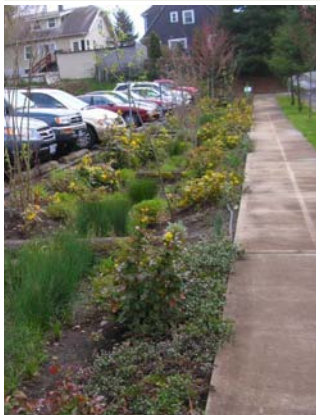
Since water will be more efficiently distributed to the landscape and native or ecologically sensitive plants will be used, irrigation water needs will be reduced by 50%.



Bioswale



Infiltration Well

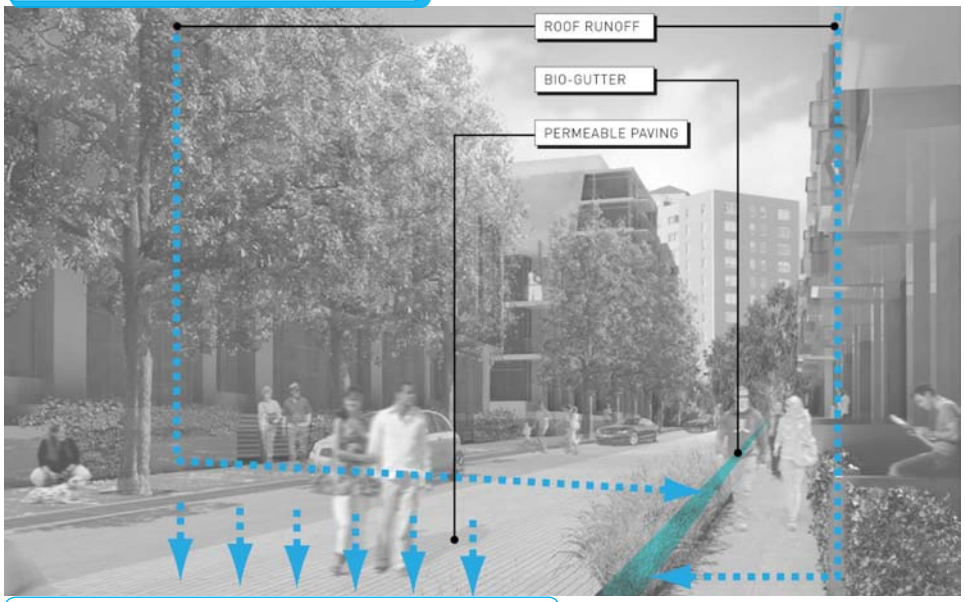


DRAFT

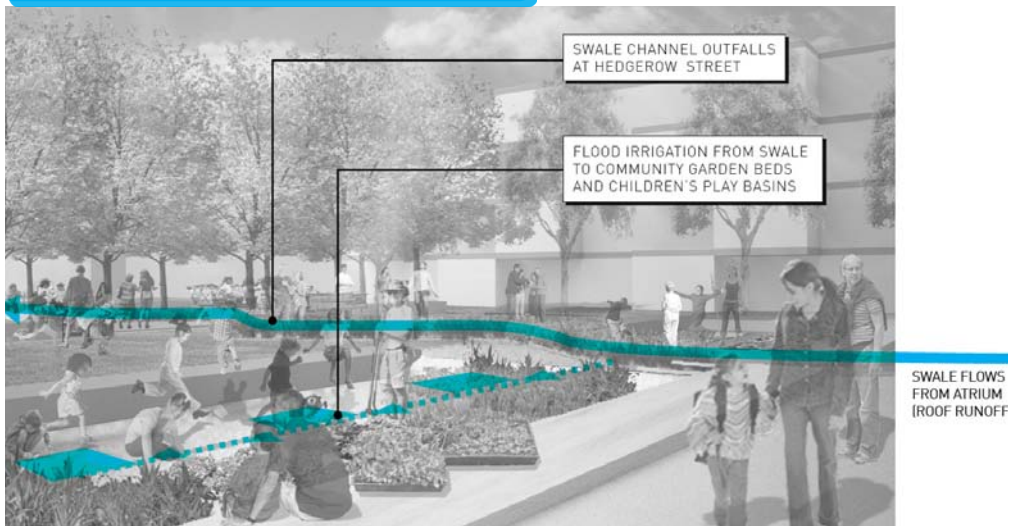
Site Hydrology

urban + natural systems - site hydrology

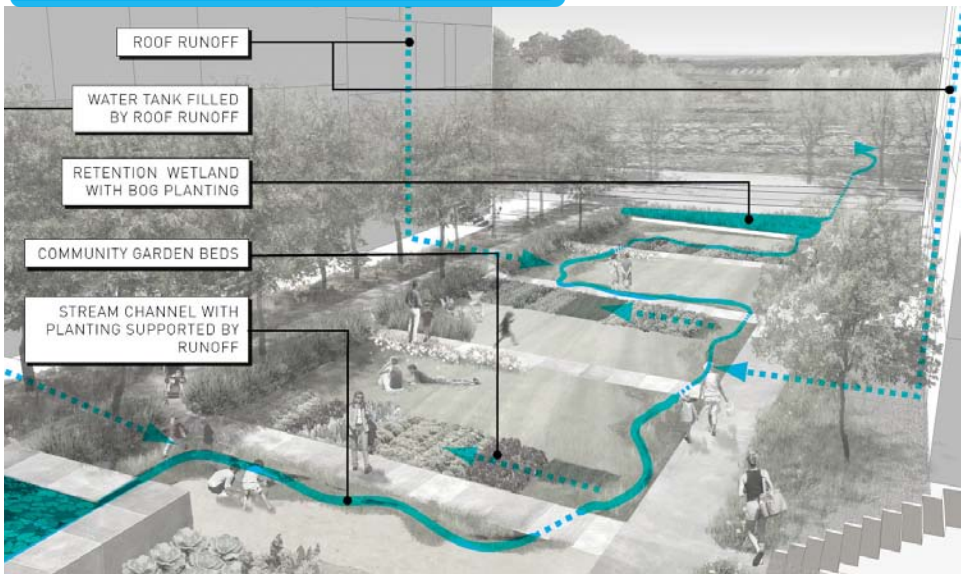
BIOGUTTER AT ALLEY WAY



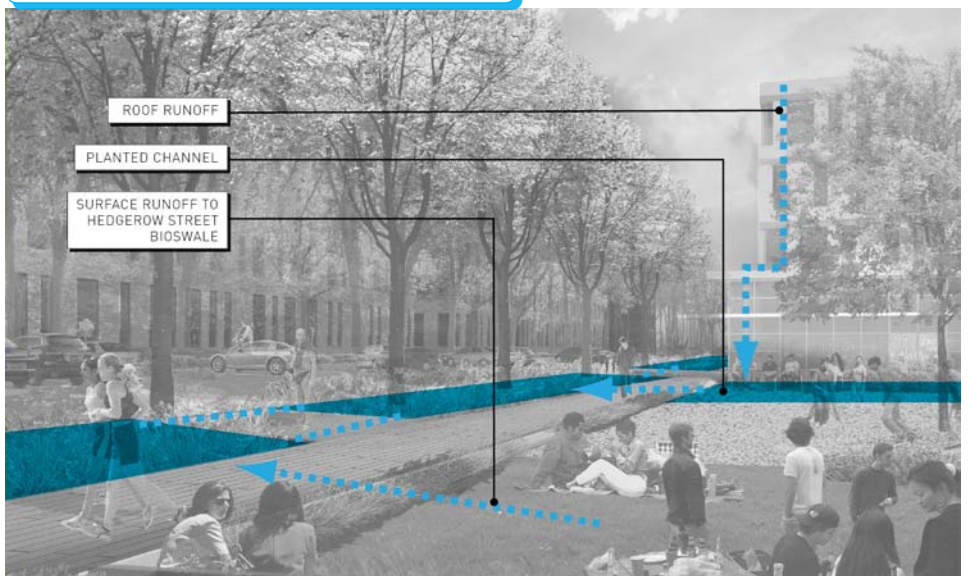
SWALE CHANNEL AT COURTYARD



STREAM CHANNEL AT COURTYARD



BIOSWALE AT PARK



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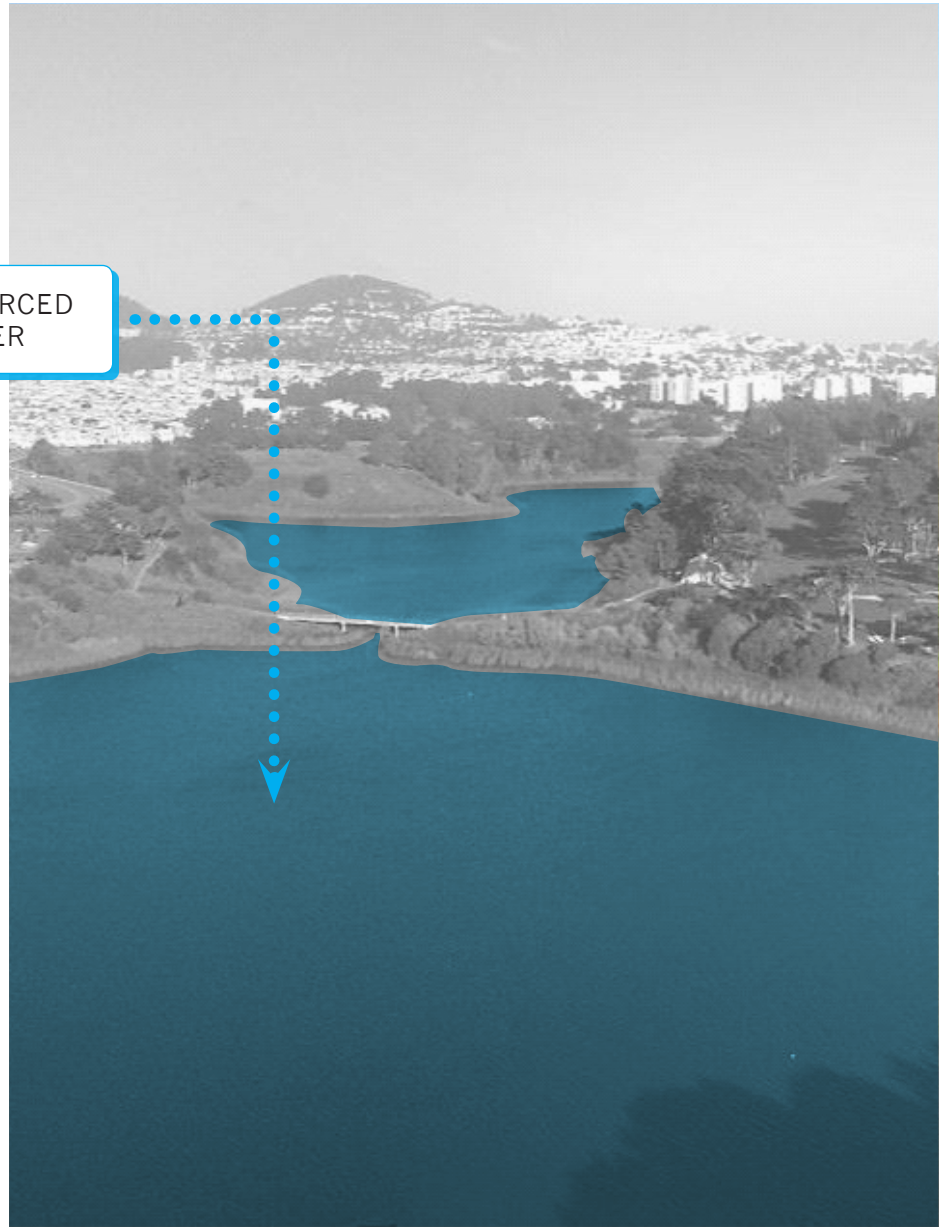
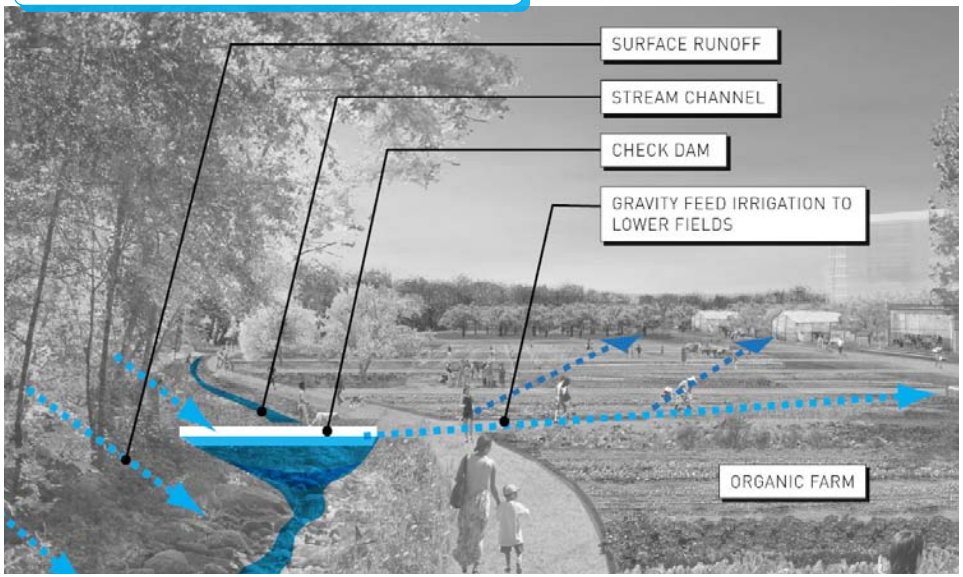
CISTERN AT SPORTS FIELD

LAKE MERCED & AQUIFER



STREAM AT RIPARIAN CORRIDOR



urban + natural systems
urban forest

The Parkmerced micro-climate is the dominating factor in guiding tree selection. The frequent cold, salt-laden wind determines what will succeed and where.

Parkmerced's proximity to the ocean, with the accompanying fog, wind, and sea spray, poses a challenging microclimate for plant selection. The plant palette is further limited by the desire to use only native or acclimated species, ones which will require little or no irrigation once established.

The recommended plant list, as described in the landscape design guidelines, was developed in collaboration with one of the most respected horticulturists in the Bay Area, Barrie Coate, who carefully selected species to meet both the sustainable and aesthetic needs of the project. Species were considered based on the following categories: aesthetics, scale, micro-climate, water-conserving, native, water and wind tolerance, density, and transparency.

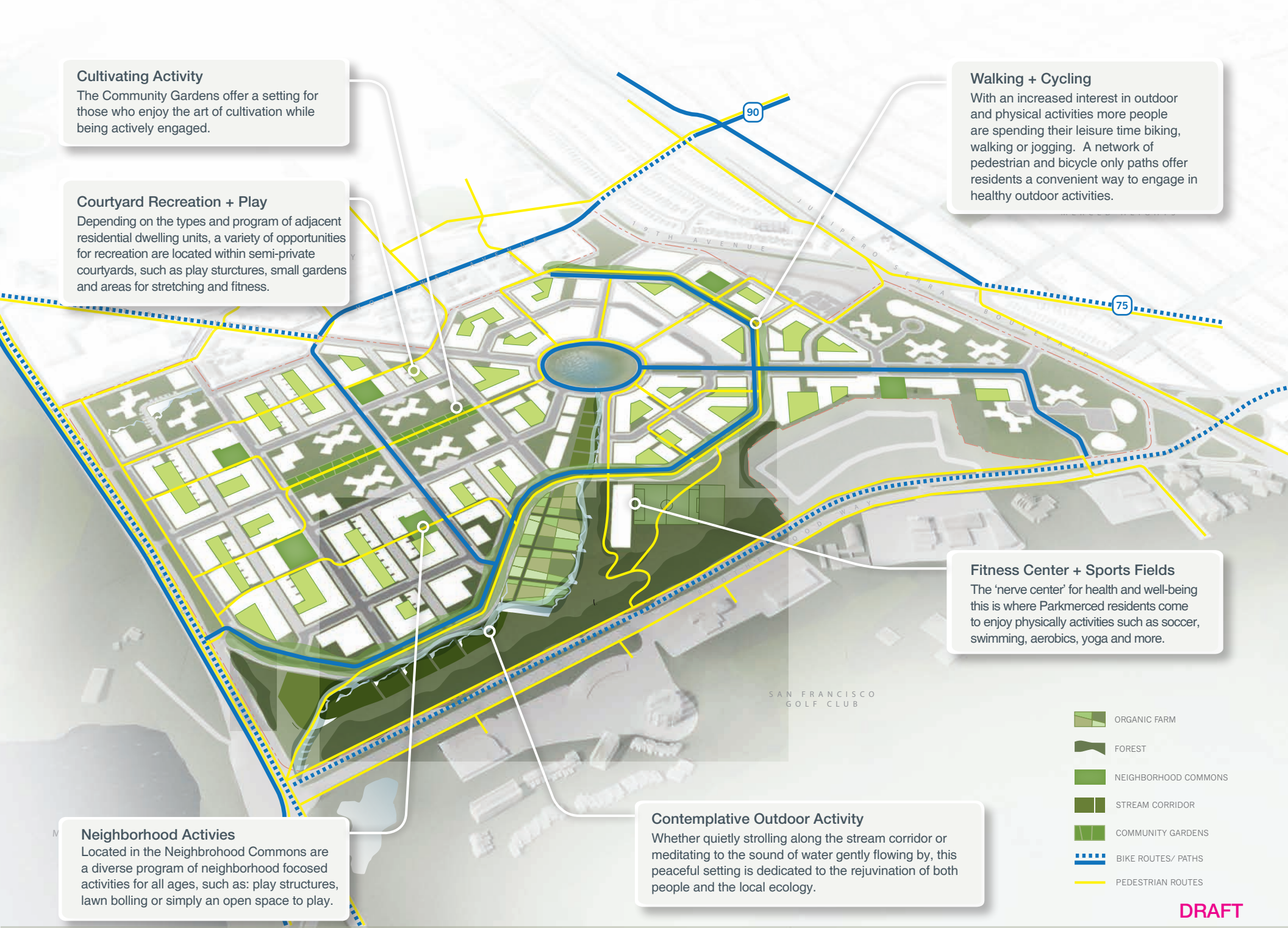
DRAFT

Urban Forest

socially vibrant neighborhood
recreation

Weaving recreation and outdoor activities throughout the public realm will help enliven the neighborhood by encouraging more people to spend more time outside, while promoting healthier life styles.

As people's awareness of the benefits of a healthy, active life style has increased so have people's interests in walking, biking, jogging and other recreational activities. By providing a wide range of opportunities for residents to engage in recreational activities, Parkmerced is meant to be a neighborhood where people of all ages and abilities are encouraged to participate in some form of healthy, physical activity. As the nerve center for a network of recreational and outdoor activities, the Community and Fitness Center is a place dedicated to social interaction, health and well-being. Located at the southern edge of the 'social heart' the Community and Fitness Center will include a gym, swimming pools, sports fields and other spaces and services focused on recreation and healing. Adjacent to the Community and Fitness Center is the 'stream corridor', providing a beautiful and rejuvenating setting for those residents that are drawn to quieter, slower paced forms of physical recreation, such as strolling or meditation. Community gardens provide an opportunity for those who enjoy the art of cultivation and getting their hands dirty while being physically engaged. Filling out the network is a robust system of bicycle and pedestrian paths, linking these vital spaces together and connecting them to places such as Lake Merced and a larger fabric of citywide opportunities for recreation and outdoor activity.



DRAFT

Recreation

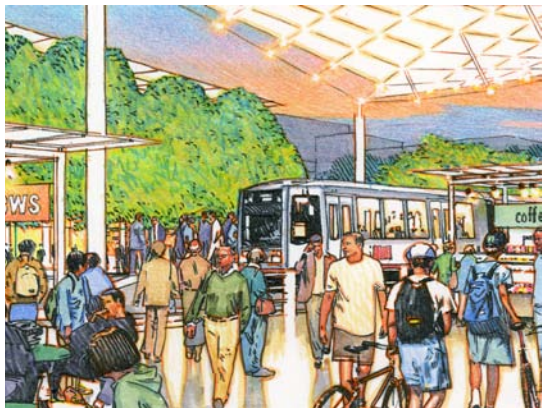
green mobility
light rail

Like many other San Francisco neighborhoods, Parkmerced will be a transit oriented neighborhood, connected to the rest of the city by Muni.

Each Parkmerced resident currently generates an average of 6 vehicle trips per day, while 40% of San Francisco residents still commute alone to work in their own cars. Parkmerced proposes to provide a convenient transit alternative and tie the neighborhood to the rest of the city, by rerouting the M-Ocean View Muni line from 19th Avenue, between Holloway Avenue and Junipero Serra Boulevard, into the heart of neighborhood and then back to its current alignment.

Associated with this new section of the M-Muni line would be three new Muni stations. At the northeastern edge of the Parkmerced 'social heart' a new transit plaza is intended to include: a new Muni light rail station; bus stops; coffee and news stands; and comfortable, sheltered areas to wait. An additional station adjacent to the new grocery store is centrally located within the 'social heart'. The terminal station at Font and Chumasero will provide convenient access to residents in the southern-most part of the site and will also allow for a future Muni connection to BART or accommodate MTA's TEP J-Line re-routing to this area.

Development intensity is meant to be greatest around these new stations, capitalizing on the level of activity that they would bring to the neighborhood. Making mass transit a more viable and convenient option for Parkmerced residents the new Muni stops are intended to be within a comfortable 10-minute walk for all residents.



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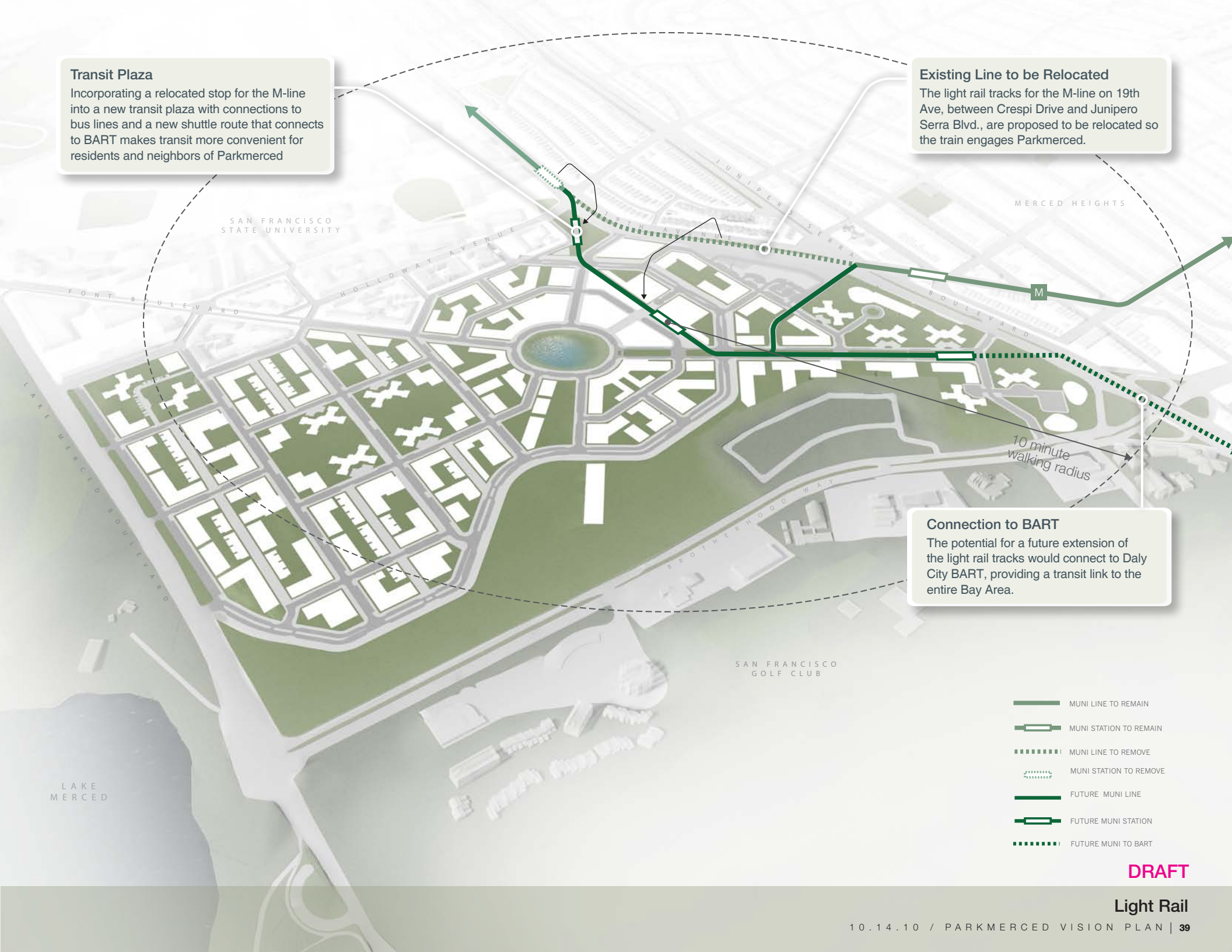

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Light Rail

green mobility
bus + shuttle

Providing viable transit options at Parkmerced will make getting out of the car more convenient.

The Vision Plan proposes that a number of city bus lines pass through and stop at Parkmerced, making transit more convenient for residents of Parkmerced. The existing 17-line is intended to be rerouted along Font Boulevard to replace the 18-line and would connect Parkmerced to Lakeshore Plaza, Daly City BART and the Westlake Shopping Center in Daly City. Making connections to Muni more convenient and efficient the 28, 28L, 29 and 91A are intended to all stop at the new transit plaza located at the northeastern end of Crespi Drive.

Helping to reduce the number of Parkmerced residents that currently drive to BART, a low-emissions shuttle is meant to travel between Parkmerced and the Daly City BART Station during peak commuting hours. The shuttle would also act as a shopper shuttle to Stonestown and Westlake. Shuttle stations are intended to be located conveniently throughout Parkmerced with well lit, sheltered waiting areas.

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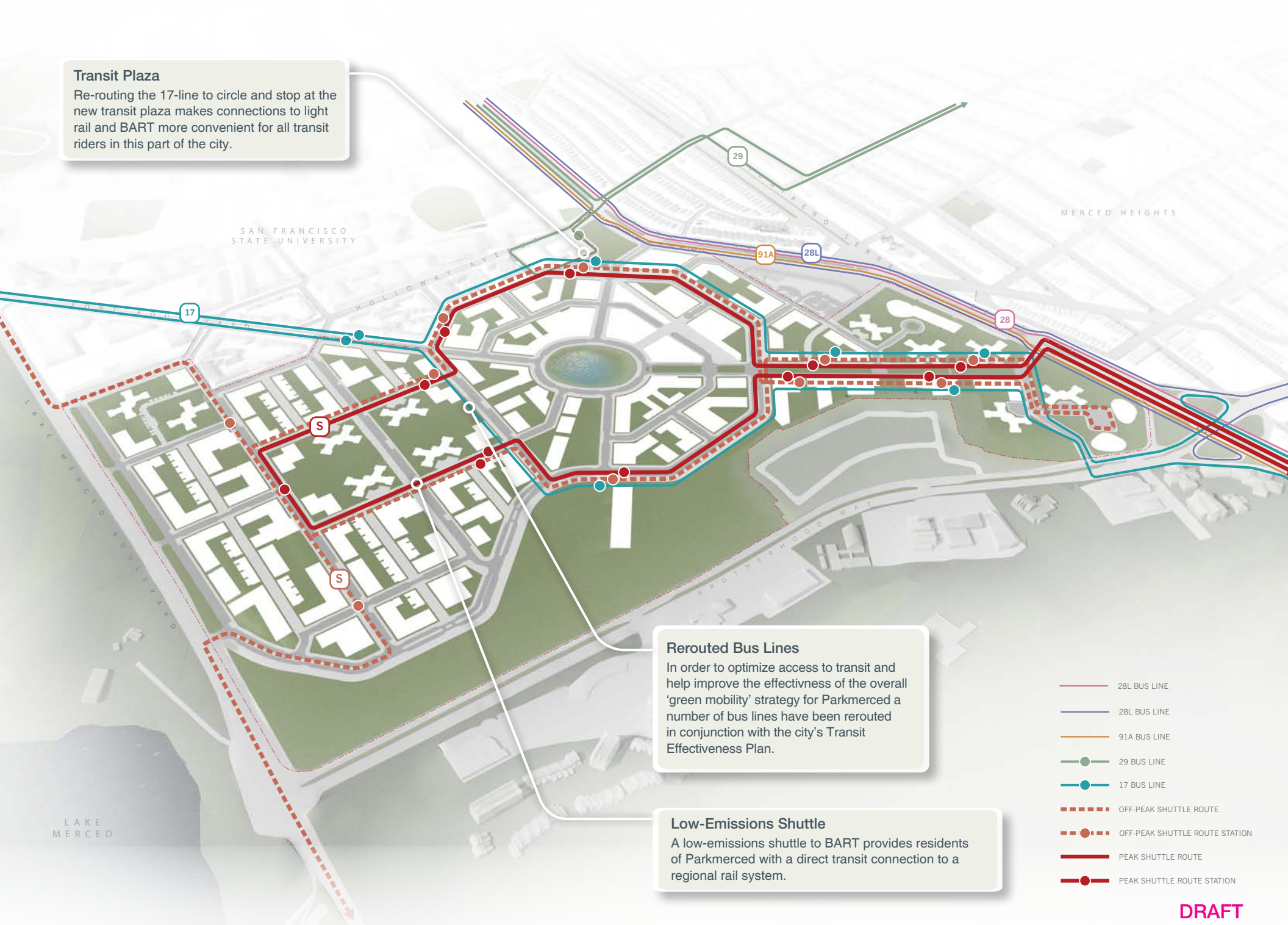

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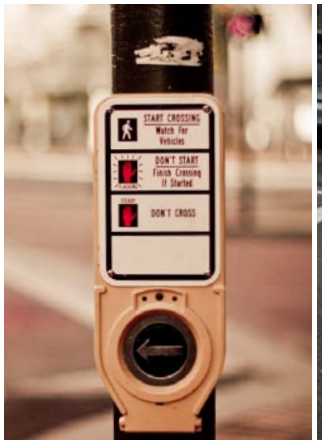
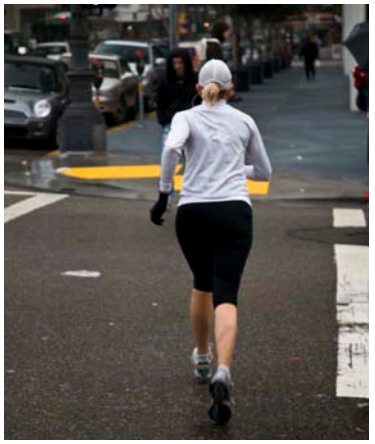
Bus + Shuttle



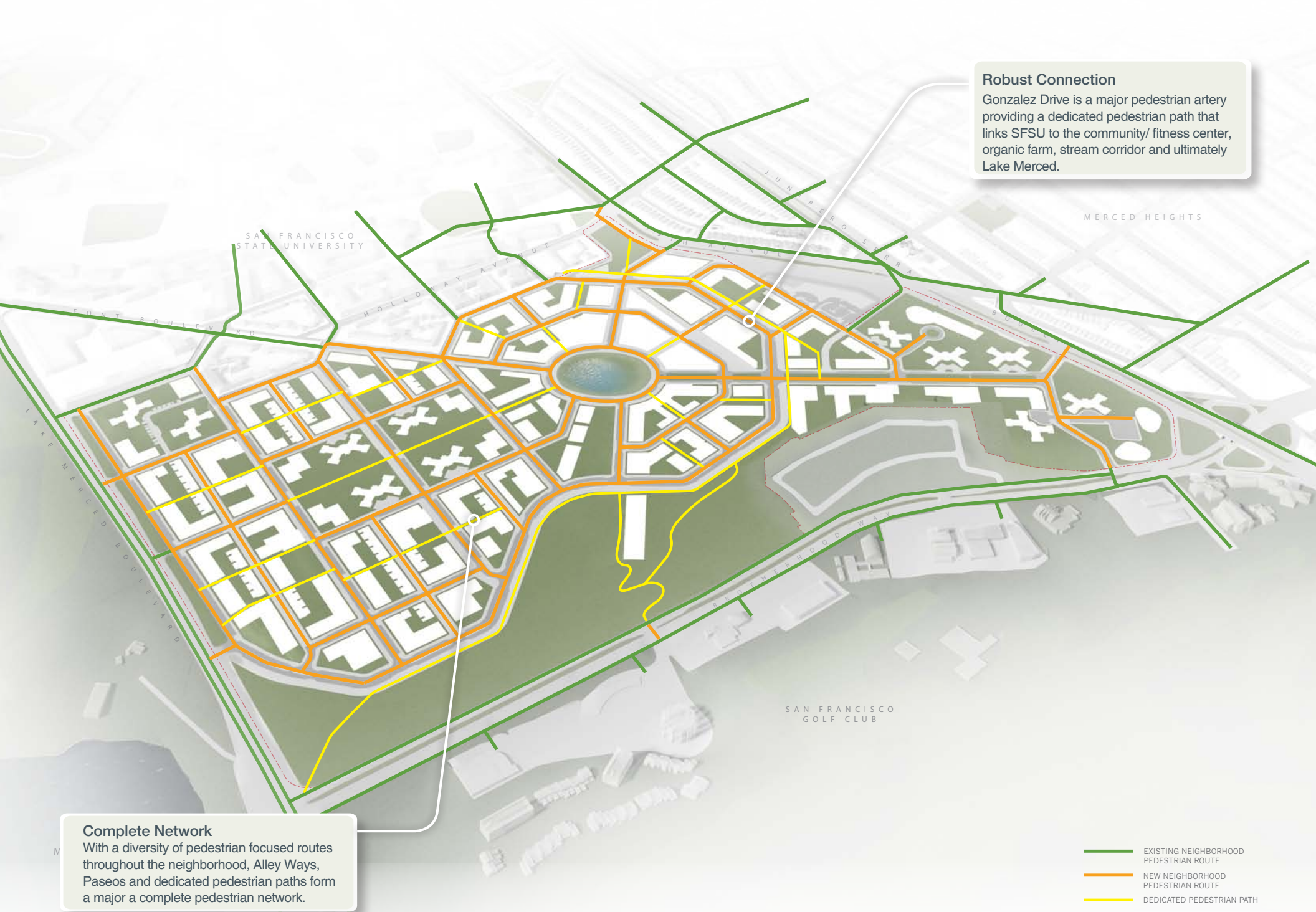


green mobility
pedestrian

Streets at Parkmerced will be for people first.

Short block dimensions, frequent intersections and a variety of engaging pedestrian routes, form a neighborhood pattern of streets and blocks that encourages walking. Streets will be designed to provide a sheltered environment, buffered against persistent cold winds from the west, while ample sidewalks will allow residents to comfortably walk through the neighborhood alone or in groups. Narrower curb-to-curb dimensions and other methods of reducing crossing distances will increase pedestrian safety and in turn increase the likelihood that people will choose walking as a primary mode of mobility.

A robust network of alleys, paseos and walks will allow people to meander through the Parkmerced neighborhood and enjoy a landscape where the priority of cars has been greatly diminished. Walking is widely recognized to be beneficial for human health. Walkers have a lower incidence of cancer, heart disease, stroke, diabetes and other diseases. They live longer, receive mental health and spiritual benefits and are more likely to be actively engaged in their communities. It is safe to state that an increase in neighborhood walkability will have a direct impact on the overall health, well-being and social vitality of a neighborhood.



Robust Connection

Gonzalez Drive is a major pedestrian artery providing a dedicated pedestrian path that links SFSU to the community/ fitness center, organic farm, stream corridor and ultimately Lake Merced.

Complete Network

With a diversity of pedestrian focused routes throughout the neighborhood, Alley Ways, Paseos and dedicated pedestrian paths form a major a complete pedestrian network.

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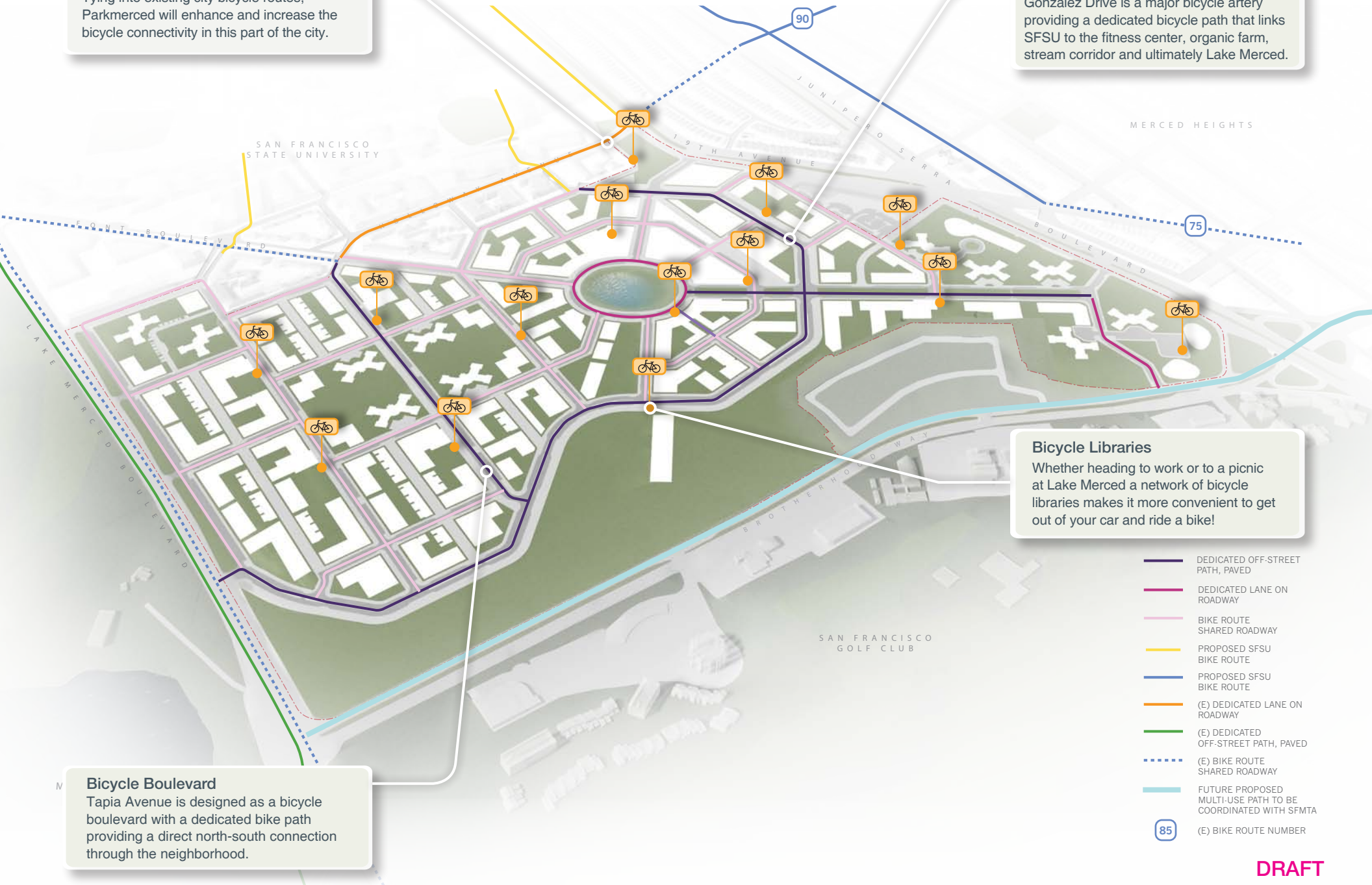
green mobility
bicycle

Linking into San Francisco's existing bicycle network will increase the connectivity between Parkmerced and the rest of the city and offer residents a viable option for bicycling to meet their daily needs.

With a combination of off-street bike paths and dedicated bike lanes on neighborhood roadways, Parkmerced will tie into San Francisco City Bike Routes number 90 and 85. An off-street bike path will follow Gonzalez Drive through the entire neighborhood. This paved, secure path will not only benefits residents of Parkmerced, but will also create a strong bicycle connection to Lake Merced from Muni, San Francisco State University, as well as the residential neighborhoods to the east of Parkmerced. The roadway design for Tapia Avenue will also include a dedicated bike path, providing a direct north-south connection through Parkmerced. A number of bike share centers are intended to be distributed throughout Parkmerced, offering opportunities to borrow bicycles either for commuters on their way to and/or from work or for a leisurely ride through the park on the weekends. There may be a future opportunity to tie into a larger citywide bike share system, which the City is currently exploring.


Connected Network
Tying into existing city bicycle routes, Parkmerced will enhance and increase the bicycle connectivity in this part of the city.
Robust Connection
Gonzalez Drive is a major bicycle artery providing a dedicated bicycle path that links SFSU to the fitness center, organic farm, stream corridor and ultimately Lake Merced.
Bicycle Libraries
Whether heading to work or to a picnic at Lake Merced a network of bicycle libraries makes it more convenient to get out of your car and ride a bike!
Bicycle Boulevard
Tapia Avenue is designed as a bicycle boulevard with a dedicated bike path providing a direct north-south connection through the neighborhood.
SAN FRANCISCO STATE UNIVERSITY
MERCED HEIGHTS
SAN FRANCISCO GOLF CLUB
LAKE MERCED BOULEVARD
90
75
DEDICATED OFF-STREET PATH, PAVED
DEDICATED LANE ON ROADWAY
BIKE ROUTE SHARED ROADWAY
PROPOSED SFSU BIKE ROUTE
PROPOSED SFSU BIKE ROUTE
(E) DEDICATED LANE ON ROADWAY
(E) DEDICATED OFF-STREET PATH, PAVED
(E) BIKE ROUTE SHARED ROADWAY
FUTURE PROPOSED MULTI-USE PATH TO BE COORDINATED WITH SFMTA
85
(E) BIKE ROUTE NUMBER

DRAFT

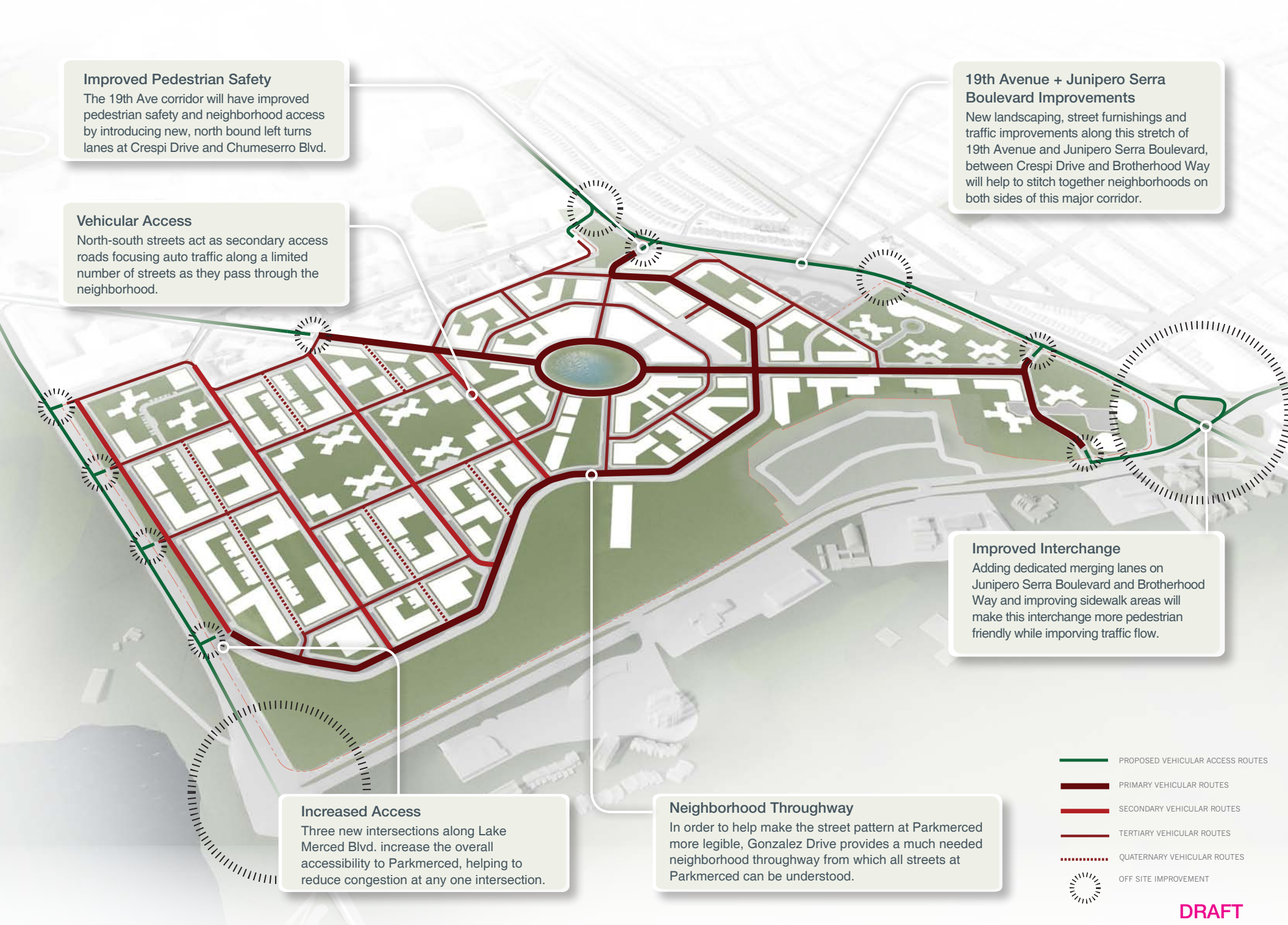
green mobility
vehicle

Streets at Parkmerced will help ease vehicular movement through the neighborhood by increasing access to the site and providing a clear hierarchy between primary access and neighborhood streets.

Vehicular access to the neighborhood will be increased through new off-site improvements and a series of new access points into Parkmerced. New left turn lanes at Crespi and Chumasero Drive will provide a comfortable entrance to Parkmerced for vehicles driving north along 19th Ave. Three new access points will be added along Lake Merced Blvd. helping disperse auto traffic on the west edge of the neighborhood.

Gonzalez Drive and Font Blvd. will be primary vehicular streets, providing two clear paths for vehicles to access the neighborhood. Giving residents a direct route within the neighborhood is a structure of secondary access streets branching off of Gonzalez Drive and Font Blvd. With significantly lower volumes of vehicular movement, neighborhood and alley ways are intended to provide localized access and typically are no longer than a few blocks. Preferred garage entry locations are along the neighborhood streets; while the Alley Ways are intended to be pedestrian focused, shared streets, where cars must slow down to share the road with pedestrians.

Distributed throughout Parkmerced, car share hubs will provide easy access to a variety of different car types, which will offer a convenient alternative to car ownership.


Improved Pedestrian Safety
The 19th Ave corridor will have improved pedestrian safety and neighborhood access by introducing new, north bound left turns lanes at Crespi Drive and Chumeserro Blvd.
Vehicular Access
North-south streets act as secondary access roads focusing auto traffic along a limited number of streets as they pass through the neighborhood.
19th Avenue + Junipero Serra Boulevard Improvements
New landscaping, street furnishings and traffic improvements along this stretch of 19th Avenue and Junipero Serra Boulevard, between Crespi Drive and Brotherhood Way will help to stitch together neighborhoods on both sides of this major corridor.
Improved Interchange
Adding dedicated merging lanes on Junipero Serra Boulevard and Brotherhood Way and improving sidewalk areas will make this interchange more pedestrian friendly while imporving traffic flow.
Increased Access
Three new intersections along Lake Merced Blvd. increase the overall accessibility to Parkmerced, helping to reduce congestion at any one intersection.
Neighborhood Throughway
In order to help make the street pattern at Parkmerced more legible, Gonzalez Drive provides a much needed neighborhood throughway from which all streets at Parkmerced can be understood.
PROPOSED VEHICULAR ACCESS ROUTES
PRIMARY VEHICULAR ROUTES
SECONDARY VEHICULAR ROUTES
TERTIARY VEHICULAR ROUTES
QUATERNARY VEHICULAR ROUTES
OFF SITE IMPROVEMENT

DRAFT

green mobility
parking + garage storage

The parking strategy at Parkmerced is intended to reduce the visual impact of parked cars on the pedestrian environment while simultaneously encourage the use of other forms of mobility.

Parked cars and parking structures have cluttered urban landscapes for decades. A disproportionate area of urbanized land is dedicated to one form of parking or another. As society's fascination with cars wanes, new approaches to where cars are parked have begun to emerge. In order to create a public realm, including streetscapes that are primarily dominated by people and landscape, most parked cars will be below grade, freeing up on grade space for courtyards, Neighborhood Commons and other outdoor spaces. This will help to further establish a healthy relationship between the inside of buildings and the outdoors. When cars are parked above grade they will be screened behind active, socially engaging spaces such as commercial or housing.

This aggressive parking strategy will allow residents to treat parking as 'car storage', encouraging those residents that live in the center of the neighborhood to use transit and other forms of 'green mobility' in order to meet daily needs. All off-street parking at Parkmerced will be 'unbundled' from the rental or purchase fees for residential units, eliminating a financial burden for those that choose not to own a car. The neighborhood is divided into four parking zones:

1. Areas where no parking is allowed.
2. Areas with one level of below grade parking.
3. Areas with two levels of below grade parking.
4. Areas with above grade parking.

To support those residents that choose not to own a car, car share facilities will be strategically located throughout the neighborhood to further increase access to a variety of mobility opportunities for residents of Parkmerced. These facilities are generally located adjacent to Neighborhood Commons or the 'social heart' to help capitalize on the comings and goings of people as they utilize these neighborhood services.

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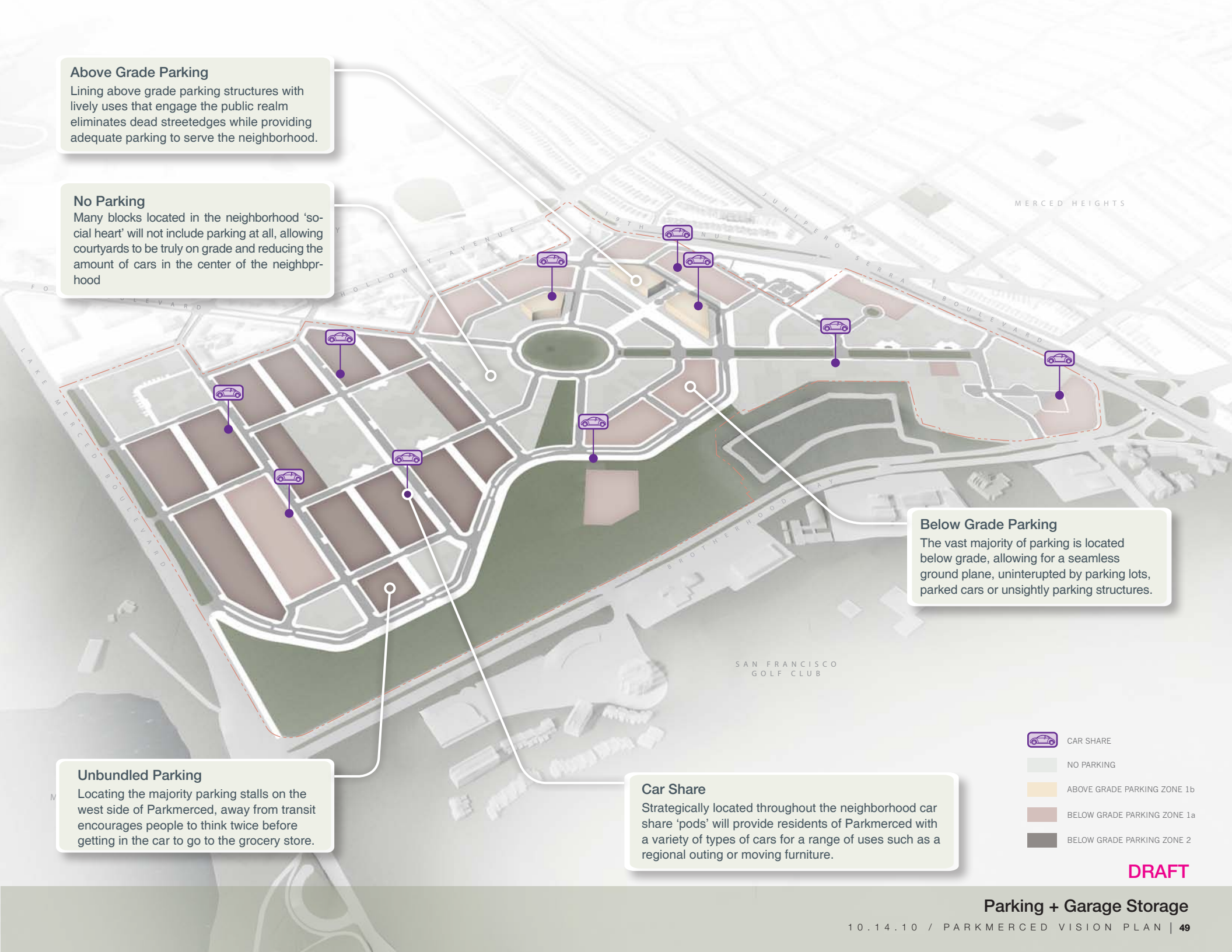


Above Grade Parking

Lining above grade parking structures with lively uses that engage the public realm eliminates dead streetedges while providing adequate parking to serve the neighborhood.

No Parking

Many blocks located in the neighborhood 'social heart' will not include parking at all, allowing courtyards to be truly on grade and reducing the amount of cars in the center of the neighbprhood

Below Grade Parking

The vast majority of parking is located below grade, allowing for a seamless ground plane, uninterupted by parking lots, parked cars or unsightly parking structures.

Unbundled Parking

Locating the majority parking stalls on the west side of Parkmerced, away from transit encourages people to think twice before getting in the car to go to the grocery store.

Car Share

Strategically located throughout the neighborhood car share 'pods' will provide residents of Parkmerced with a variety of types of cars for a range of uses such as a regional outing or moving furniture.

DRAFT

Parking + Garage Storage

urban + natural systems
green infrastructure

Infrastructure at Parkmerced will be created as an interconnected and mutually supportive network of urban and natural systems intended to reduce overall resource consumption.

This network of green infrastructure is intended to establish a healthy neighborhood, more in balance with local and global ecologies, reduces natural resource consumption and establishes human environments that are attractive and meaningful. A critical component to the implementation of the Parkmerced infrastructure will be to provide flexibility in the future to incorporate the best, new and emerging technologies as they become available. As a complete neighborhood plan Parkmerced offers a unique opportunity to employ green infrastructure elements at a district scale, increasing the effectiveness of each strategy.

Energy

To reduce greenhouse gas emissions and energy consumed by buildings, Parkmerced will deploy a comprehensive energy strategy. Parkmerced will utilize creative, yet practical solutions to help offset the anticipated energy demands of future residents, including: high-performance building envelopes; passive solar design; installation of renewable energy systems; and integrated district energy systems.

Renewable energy systems such as photovoltaic solar collectors and wind turbines will produce a percentage of Parkmerced's energy, reducing the need for off-site energy supplies. Cogeneration facilities will act as micro-power plants for the neighborhood and are capable of functioning from a wide variety of primary energy sources, including natural gas and biomass. Tying this entire system together would be a potential district energy loop, efficiently distributing electricity and hot water throughout the neighborhood.

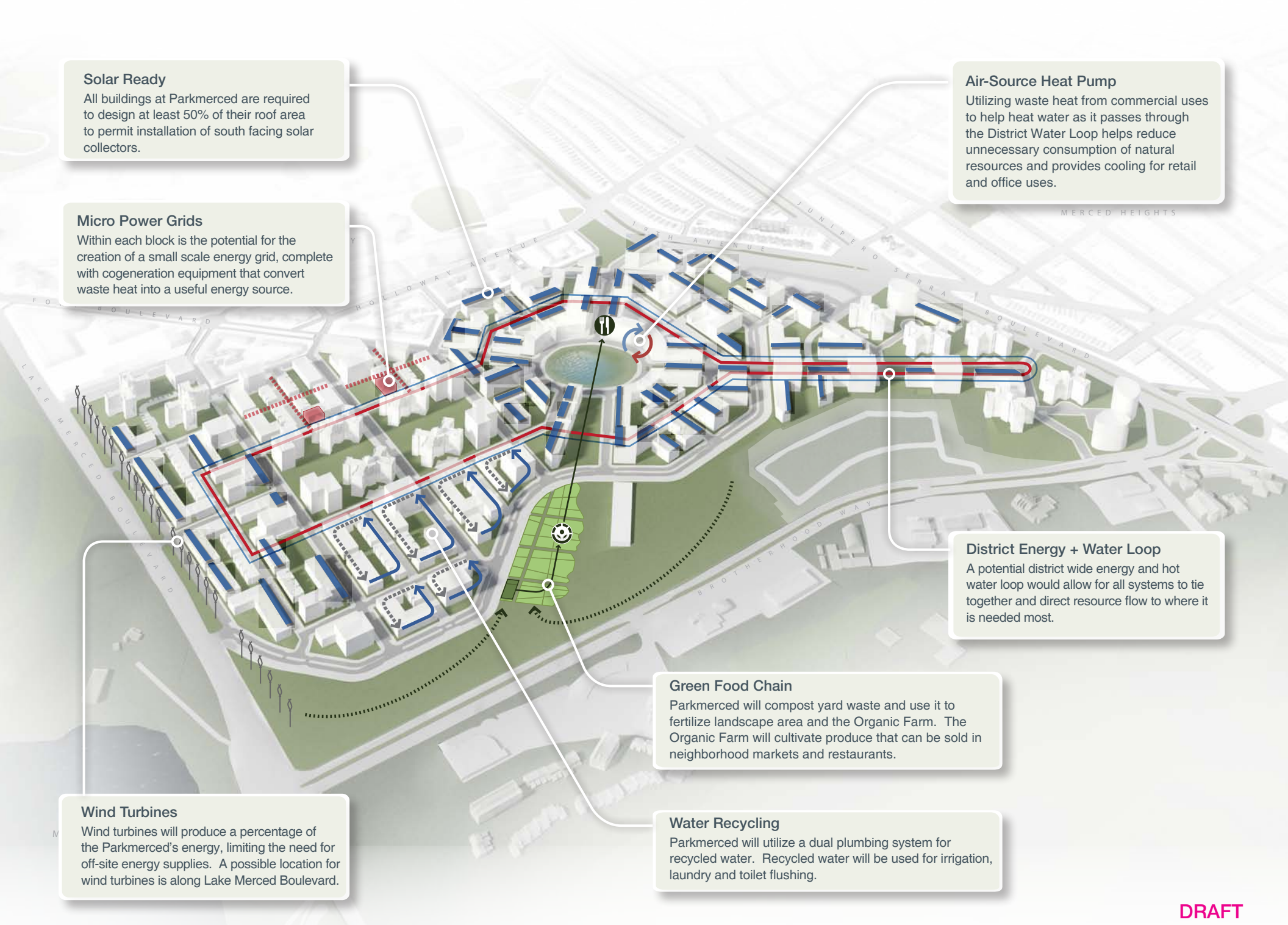
Water

By utilizing the combined sewer system for household sanitary sewage only, rainwater at Parkmerced can be treated as a resource. Collecting rainwater runoff through a combination of low impact development techniques including bioswales and other bio-filtration systems will help restore the natural hydrology of the site. The annual volume of water for irrigation, for approximately the same number of acres of open space, is expected to decrease from roughly 55 million gallons of potable water per year (MG/yr) to just over 30 MG/yr of recycled and/or grey water.

Through installation of efficient fixtures for low flow toilets, sinks, showers, and laundry machines in both new and existing units and the use of recycled and/or grey water, the average residential water use at Parkmerced is targeted to be reduced to 38 gallons per capita per day. This will result in less flow to San Francisco's Oceanside Wastewater Treatment Facility, which translates to less chemical use, lower energy usage, and a reduction in overflows of effluent into the Pacific Ocean.

Waste

Supporting San Francisco's ambitious goal for "Zero waste to landfill by 2020", Parkmerced will make zero waste practices easier for residents, keep construction waste directed to landfill to a minimum, and implement simple, yet effective maintenance practices in order to reduce unnecessary collection of yard waste. Reducing the amount of waste directed to landfill will also reduce the vehicle trips needed to haul solid waste from the site. This in turn will help to reduce the overall GHG emissions for the entire neighborhood. Establishing an on-site, 'green food chain', Parkmerced will compost yard waste and use it to fertilize landscape areas.



Solar Ready

All buildings at Parkmerced are required to design at least 50% of their roof area to permit installation of south facing solar collectors.

Micro Power Grids

Within each block is the potential for the creation of a small scale energy grid, complete with cogeneration equipment that convert waste heat into a useful energy source.

Air-Source Heat Pump

Utilizing waste heat from commercial uses to help heat water as it passes through the District Water Loop helps reduce unnecessary consumption of natural resources and provides cooling for retail and office uses.

District Energy + Water Loop

A potential district wide energy and hot water loop would allow for all systems to tie together and direct resource flow to where it is needed most.

Green Food Chain

Parkmerced will compost yard waste and use it to fertilize landscape area and the Organic Farm. The Organic Farm will cultivate produce that can be sold in neighborhood markets and restaurants.

Water Recycling

Parkmerced will utilize a dual plumbing system for recycled water. Recycled water will be used for irrigation, laundry and toilet flushing.

Wind Turbines

Wind turbines will produce a percentage of the Parkmerced's energy, limiting the need for off-site energy supplies. A possible location for wind turbines is along Lake Merced Boulevard.

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socially vibrant neighborhood
urban form

With a range of living options, access to affordable housing, and varied and visually attractive building designs, Parkmerced will be a diverse and vibrant urban neighborhood.

Reflecting this diversity, Parkmerced will be a place for families with children, couples, singles, and seniors from all walks of life. A predominantly low-rise neighborhood, punctuated by taller and medium-size residential buildings, the Parkmerced's urban form of will focus the greatest development intensity in and around the social heart of the neighborhood and the new Muni Stations. Following the natural topography of the site, overall building massing and heights are generally lower in the western portions of the neighborhood.

With a variety of townhome units, walk-ups, live/work flex spaces, flats and other types of residential dwelling units, and a range of studios, one-, two- and three-bedroom units, Parkmerced will also offer for-sale or rental living options that will be necessary in fostering a diverse resident population. Increasing the number of homes within Parkmerced will help increase the social vibrancy of this corner of San Francisco; minimize the number of car trips that are clogging local streets; increase the viability of neighborhood retail services and amenities; and play an important role in reducing the impacts of human settlement on local and global ecological systems.

New townhomes and walk-ups: 3 Stories
At 35' in height, towhhomes and walk-ups will be located primarily in the western portion of Parkmerced, creating a fine-grained residential character and reducing the overall neighborhood massing as it gets closer to Lake Merced.

New neighborhood fabric buildings: 4-6 Stories
Four-to six-story residential buildings, ranging from 45'-65', make up the primary character of Parkmerced and are evenly distributed throughout the entire community.

New mid-rise buildings: 8-10 Stories
Located at key points throughout the neighborhood are eight- to 10-story residential buildings ranging in height from 85'-105'. These medium-size buildings will occur in key locations to help accent and define the character of the Parkmerced while focusing residential density near neighborhood services and amenities and Neighborhood Commons.

Existing tall buildings: 13 Stories
The plan will retain the 11 existing 13-story, 130' high residential buildings, which will undergo phased upgrades.

New tall buildings: 11-14 Stories
New 11- to 14-story residential buildings will be carefully located near the existing taller residential buildings, in order to limit their impact on existing neighborhood viewsheds. These residential buildings provide a large number of homes in an extremely efficient use of land area, helping to focus density and create valuable open space for all residents and neighbors.

Mid-Rise Buildings

Evenly distributed throughout the western half of Parkmerced, mid-rise buildings provide residential density focused on neighborhood gathering places within an articulated massing that responds to the pedestrian environment.

Taller Buildings

Taller buildings are located around the neighborhood social heart providing a large number of homes in an extremely efficient use of land area, focusing density near transit and amenities.

Tallest Buildings

In order to respect existing viewsheds the tallest buildings at Parkmerced have been clustered around existing tall buildings.

Townhomes + Walk-Ups

Throughout the neighborhood small scale buildings, including townhomes and walk-ups, define the pedestrian environment. In general smaller buildings are intended to be located along smaller rights-of-ways such as Alley Streets.

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"It is a moral obligation to do whatever we can to confront the problem of climate change"

Craig Hartman

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parkmerced
design standards + guidelines
10.14.10
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The Parkmerced Design Standards and Guidelines provide a complete design framework for how to transform Parkmerced into a pedestrian focused, socially vibrant San Francisco neighborhood. The Design Standards and Guidelines, along with the Parkmerced Vision Plan, Sustainability Plan, Transportation Plan and Infrastructure Report documents will establish a carefully crafted model for ecological living in the 21st century.

- The Vision Plan lays out the vision and conceptual frameworks for all proposed improvements at Parkmerced.
- The Sustainability Plan contains specific strategies and metrics which together address the management and conservation of energy, water and other natural resources, as well as establish goals for green building standards.
- The Transportation Plan provides a framework and management plan for addressing transit and vehicular travel to and from the neighborhood.
- The Infrastructure Report establishes an outline for anticipated site-wide improvements to all streets and public rights-of-way, underground utilities, and grading.

The vision has been developed through a collaborative process with input from community members, local agencies and departments, public advocacy organizations and design and engineering experts.

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parkmerced vision plan

design standards + guidelines

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land use

01

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land use

San Francisco is a city of vibrant neighborhoods. Most neighborhoods in San Francisco have their own unique character and offer residents a variety of neighborhood services and amenities with easy access to public transit and a comfortable, attractive pedestrian environment.

In order to create a pedestrian focused, San Francisco neighborhood, Parkmerced will include a variety of social amenities and services including a grocery store, small-scale retail and office spaces, a school and a fitness center. The land use strategy for Parkmerced focuses social interaction around key neighborhood spaces. Within a comfortable walking distance of all residents, these spaces are meant to encourage people to engage and inhabit the public realm and enjoy neighborhood serving amenities and services without needing to use their cars.

01.01 land use

The land use designations contained in this chapter are intended to create a complete neighborhood that offers services and amenities to residents and visitors that are convenient and pedestrian focused. The land use designations are further intended to promote a variety of social amenities, including a grocery store, small-scale retail, commercial, business centers, a school and fitness centers. The result will be a 21st century model of a healthy, vibrant and complete neighborhood.

Standards

01.01 .01 **Focused Development** The location of land use districts are shown on the Parkmerced Land Use Plan (Figure 01.01.A). The land use districts within Parkmerced are:

- Residential
- Mixed Use - Social Heart
- Mixed Use - Neighborhood Commons
- School
- Community / Fitness
- Open Space

01.01.02 **Principally Permitted Uses** The principally permitted land uses within each of the land use districts are described in Table 1 - Use Categories + Permitted Uses (pages 8-9).

01.01.03 **Conditional Uses** Any land use that is not principally permitted or prohibited may be approved with conditional use authorization upon the finding that:

- The proposed use makes a positive contribution to the neighborhood.
- The proposed use is of a size and intensity that is compatible with the district in which it is located.

Furthermore, provided the findings above are made, the following uses may also be approved with conditional use authorization: 1) any use in excess of the maximum occupied square footage permitted as a principally permitted use, and 2) in the school use district, any use permitted in the residential use district, if less than 25,000 square feet of school use has been contructed or entitled.

01.01.04 **Prohibited Uses** Excluded uses, as listed below and defined in Appendix A - Definition of Terms, are uses that might have fit within a broad category of permitted or conditionally permitted uses but are expressly prohibited:

- Drive-through facilities
- Adult entertainment
- General Advertising

01.01.05 **Neighborhood Compatibility** Non-residential uses must not pose a nuisance to surrounding residential users with regard to incompatible hours of operation, noise, light pollution, smell, reduced air quality or construction related activities or else they are prohibited.

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FIGURE 01.01.A / Land Use Plan

01.01 land use

Table 1 - Use Categories + Permitted Uses

USE CATEGORY	PERMITTED USES
Residential Uses within this category are intended to include a range of dwelling unit types in order to encourage a diversity of households within Parkmerced. Non-residential uses within this use category are intended to support and serve the surrounding residential population with small-scale, non-commercial, community oriented spaces and services.	• Rental or for-sale residential dwelling units. • Work / Live spaces intended for small home business. • Community gathering spaces such as: community rooms and kitchens; business centers; and recreation and arts facilities. • Child care facilities no greater than 5,000 occupied square feet.
Mixed Use - Social Heart To create a vibrant neighborhood commercial center, projects within this use category are intended to include both residential and commercial uses. Residential uses within this use category should support the use of transit. Non-residential uses are intended to support and serve the entire Parkmerced neighborhood with locally serving commercial and service related uses.	• All uses permitted in the Residential Land Use category. • Locally serving retail and services that meet the daily needs of the neighborhood and are no greater than 15,000 occupied square feet per business. • One (1) full service grocery store no greater than 50,000 occupied square feet. • Professional, medical and business offices. Ground floor area may not exceed 10,000 occupied square feet per business.
Mixed Use - Neighborhood Commons This use category is intended to support the creation of smaller community gathering places. Projects within this use category are meant to include a range of residential dwelling options, as well as small scale, locally serving commercial and non-commercial uses meant to support and serve the daily needs of the immediate neighbors.	• All uses permitted in the Residential Land Use category. • Locally serving retail and services that meet the daily needs of immediate neighborhoods and are no greater than 5,000 occupied square feet per business. • Professional, medical and business offices. Ground floor area may not exceed 2,000 occupied square feet per business.

School To encourage families with young children to live at Parkmerced, this use category is intended to lead to the creation of a child care facility, pre-school or K-5 elementary school. Located within close proximity to major public open spaces, school facilities are permitted to use these public open spaces in order to meet open space requirements mandated by relevant licensing bodies.

- Child care facilities, pre-schools and one (1) elementary school. These uses must provide direct access to adjacent, dedicated public open spaces.
- All uses permitted in the residential use district provided at least 25,000 square feet of school use has been constructed or entitled within the school land use district.

Community / Fitness This use category is meant to create a hub of activity and social engagement at Parkmerced specifically focused on health and well-being. Located adjacent to Gonzalez Drive, the organic farm, the stream corridor and sports fields, community and fitness facilities should foster a strong relationship between the interior of buildings and the outdoors.

- Recreation facilities, spas, physical fitness facilities and other health and wellness related uses.
- Community gathering spaces such as: community rooms and kitchens; business centers; and recreation and arts facilities.
- Retail intended to support health / fitness activities such as cafes or sports shops, no greater than 1,000 occupied square feet per business.

Open Space A major component of the neighborhood, this land use category weaves through the entire project providing a wide variety of outdoor spaces. As a setting for the Parkmerced community to gather and enjoy the outdoors, these spaces are intended to be areas of recreation, rejuvenation, food production and ecological regeneration.

- Open Space, including: Neighborhood Commons, parks and passive open space.
- Recreational spaces, including: Playgrounds and Sports fields.
- Organic farm, food sales and associated farm support uses.
- One restaurant, no greater than 3,500 square feet as well as small retail kiosks in certain designated areas.

public realm

02

public realm

The standards and guidelines contained in this section provide controls and recommendations for the design and construction of both public and private open spaces, right-of-ways, easements and walks at Parkmerced. The neighborhood has been designed in a pattern of small blocks and many intersections providing a variety of engaging pedestrian focused streets, alleys and pedestrian paseos that encourage walking and biking. The open space plan for Parkmerced offers opportunities for a wide array of outdoor activities, encourages social interaction among residents in the public realm, and provides a landscape that is visually rich and varied, while at the same time meeting the goals of the Parkmerced Sustainability Plan.

Open spaces range from smaller, semi-private residential courtyards, to Neighborhood Commons, to larger neighborhood parks, all linked together by a network of pedestrian focused, tree-lined streets, alleys, and pedestrian paseos.

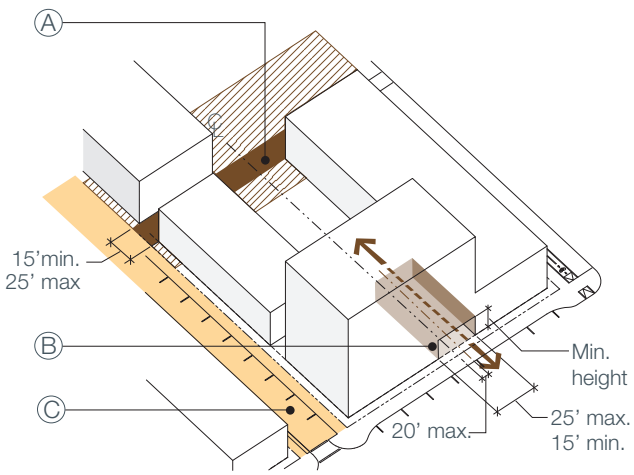
Water plays an important role in shaping the neighborhood. The intricate rainwater network which transports rain water from rooftops, through courtyards to bioswales, and finally to the stream corridor informs the design of all the specific landscape elements at Parkmerced.

The following section is divided into 6 parts:

- Neighborhood Controls
- Streets
- Open spaces
- Materials and site furnishings
- Lighting
- Off-Site Improvements

02.01 neighborhood controls - easements + walks

The neighborhood pattern of streets and blocks at Parkmerced is intended to encourage walking and biking. Forming a fine grain network of connected rights-of-ways and easements encourages walking by giving people a variety of engaging routes from which to choose. The Easements and Walks Plan (Fig. 02.01.B) identifies the approximate location of public rights-of-ways, easements and walks referenced in the standards and guidelines that follow. Permitted dimensions of each of these features, for each block in Parkmerced, are shown in Appendix A - Regulating Plan.



Ⓐ Pedestrian Paseo Zone + Pedestrian Paseo
Ⓑ Pedestrian Walk
Ⓒ Alley Way

Figure 02.01.A: Pedestrian Paseos + Walks

Standards

02.01.01 **Easements** The easements described in this section are located on the Easements and Walks Plan (Fig. 02.01.B) and in Appendix A - Regulating Plan. Easements at Parkmerced include:

- Neighborhood Commons
- Alley ways
- Pedestrian paseos
- Muni easement

02.01.02 **Public Accessibility** Intended to serve as public areas, Neighborhood Commons, alley ways and pedestrian paseos must be open to the sky and publicly accessible at all times, subject to reasonable maintenance, operations, repair and security rights (Fig 02.01.B).

02.01.03 **Neighborhood Commons** The size and location of Neighborhood Commons are shown on the Easements and Walks Plan (Fig 02.01.B) and in Appendix A - Regulating Plan. One Neighborhood Common is required on Blocks 02E, 03E, 07E, 09W, 19N and 21N. For detailed design standards and guidelines refer to section 02.24 Open Space – Neighborhood Commons.

02.01.04 **Alley Ways** The locations of alley ways are shown on the Easements and Walks Plan (Fig 02.01.B) and in Appendix A - Regulating Plan. For detailed design standards and guidelines refer to section 02.15 Streets – Alley Way.

02.01.05 **Pedestrian Paseos** Pedestrian Paseo Zones are shown on the Easements and Walks Plan (Fig 02.01.B) and in Appendix A - Regulating Plan. A pedestrian paseo is permitted anywhere and in any configuration within a Pedestrian Paseo Zone, so long as it provides a connection between a public right-of-way or alley way at both ends. Pedestrian paseos must be a minimum 15 feet and a maximum 25 feet wide and provide a direct line of sight to both ends of an individual block (Fig. 02.01.A). One pedestrian paseo is required, within the Pedestrian Paseo Zone, on blocks 02W, 02E, 05W, 05E, 07W, 07E, 09W, 09E, 11W, 12, 14S, 15N, and 19N. Two pedestrian paseos are required on blocks 03W, 03E, 06 and 10. For detailed design standards and guidelines refer to section 02.15 Streets – Pedestrian Paseo.

02.01.06 **Muni Easement** A Muni Easement is identified on the Easements and Walks Plan (Fig. 02.01.B) and in Appendix A - Regulating Plan. The Muni easement are to provide access to tracks, platforms, and equipment for transit service, operations, maintenance and repair.

Guidelines

02.01.07 **Pedestrian Walks** Pedestrian walks are intended to serve as throughways that should be publicly accessible at a minimum during daytime hours, subject to reasonable maintenance, operations, repair and security rights. Pedestrian walks should be open for a minimum of 1 story above back of sidewalk grade when passing below a building for a distance of less than 60 feet and a minimum of 2 stories above back of sidewalk grade when passing below a building for a distance equal to or greater than 60 feet. Pedestrian walks may be open to the sky. The center line of pedestrian walks must be located within 20 feet of the center line of the development block on which it is located and must be a minimum 15 feet and a maximum 25 feet wide (Fig. 02.01.A). Blocks 01, 02W, 02E, 05W, 05E, 07W, 07E, 14NW, 14NE, 15SW and 15SE should provide a north-south pedestrian walk connecting public rights-of-ways at both ends of an individual development block (Fig. 02.01.B).

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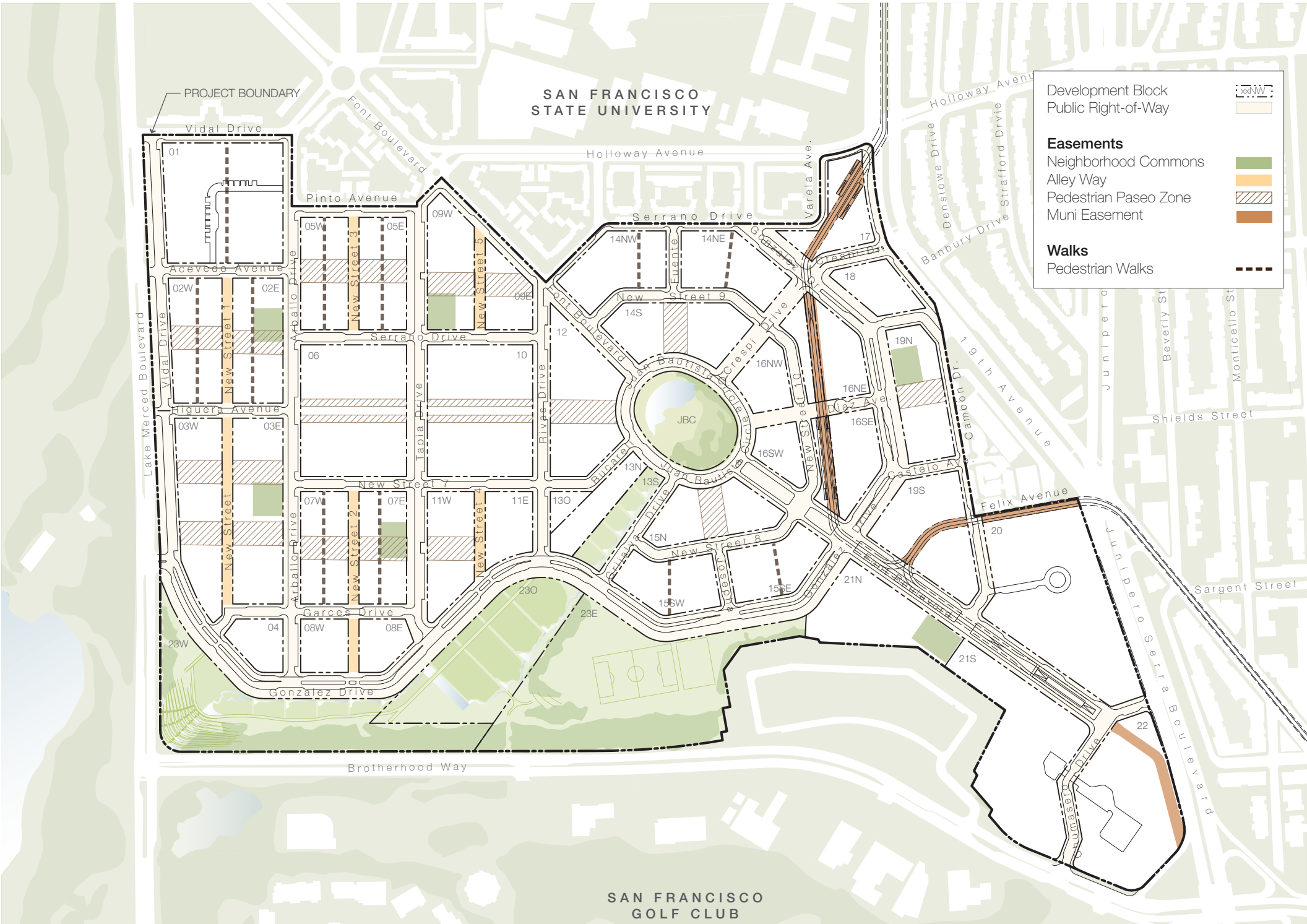

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FIGURE 02.01.B / Easements + Walks Plan

02.02 neighborhood controls - view corridors

Perched above Brotherhood Way and Lake Merced Boulevard, Parkmerced commands magnificent views of: Twin Peaks to the northeast; the San Bruno Mountains to the southeast; and Lake Merced and the Pacific Ocean to the west and southwest. The location and orientation of streets and open spaces has been carefully designed to take full advantage of the beauty of the landscape that surrounds the neighborhood by carefully preserving and enhancing existing vistas. View corridors are intended to ensure visual connectivity and vistas to surrounding natural landmarks helping to create a unique sense of place, scale, orientation, and identity for Parkmerced.

Standards

02.02.01 **Neighborhood Vistas** View corridors are illustrated in the View Corridor Plan (Fig. 02.02.A). Dimensions and specific locations of the view corridors are shown in Appendix A - Regulating Plan. The following shall not be permitted in the view corridor:

- Permanent building structures, except overhead shelters within the transit plaza which do not impede pedestrian views as described in guideline 02.18.08.
- Shrubs and hedges taller than 6 feet.
- Dense evergreen trees.
- New trees measured to centerline of their trunks, excluding the proposed orchard specifically located within the Organic Farm (See Section 02.21 - Organic Farm).

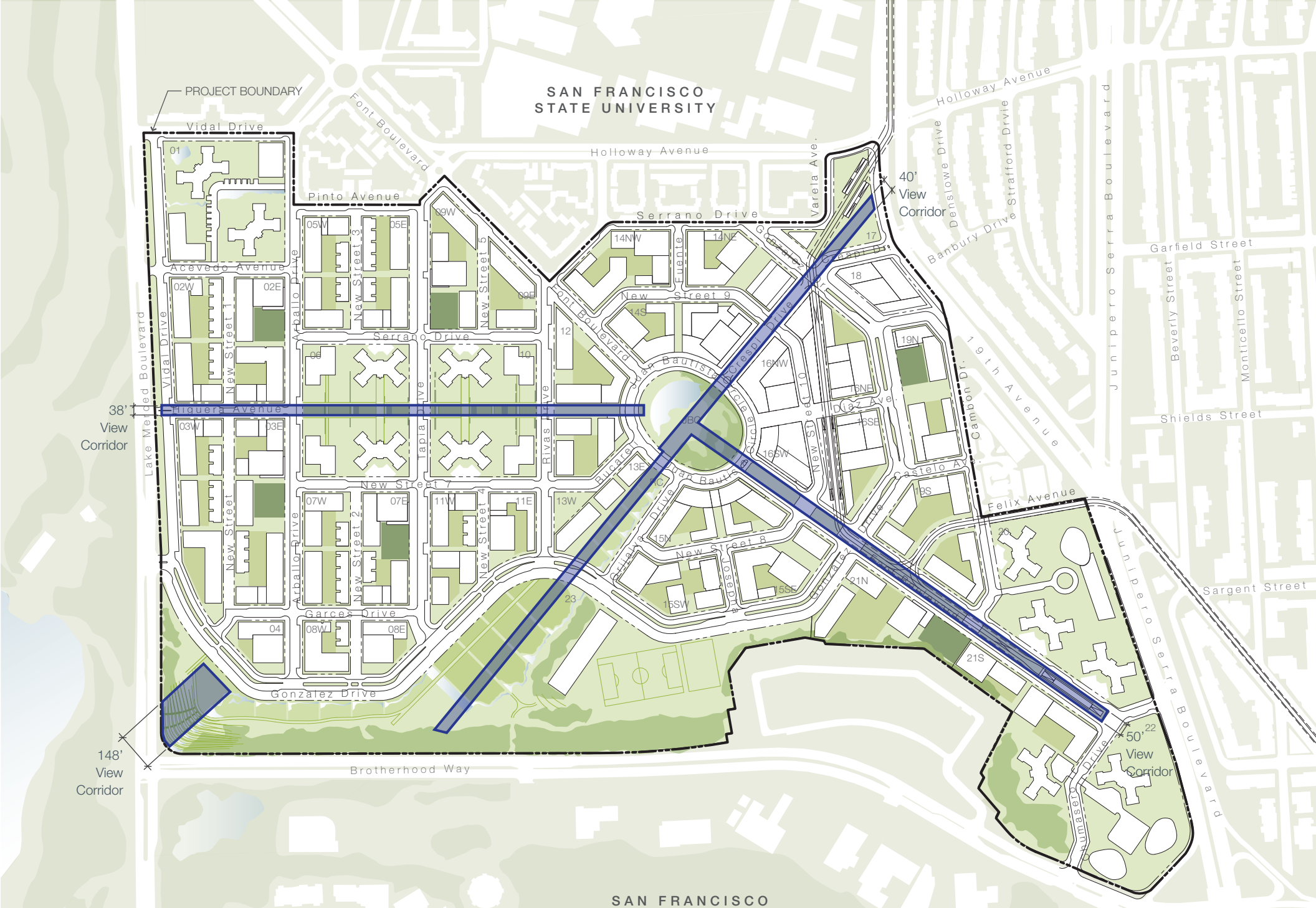

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FIGURE 02.02.A / View Corridor Plan

02.03 neighborhood controls - hydrology

The proposed storm drain system will be designed to convey storm water via bioswales, biogutters, ponds, tree wells, and the stream corridor. Rainwater runoff will flow on the surface of the ground eliminating the need for a conventional, piped storm drain system while increasing bio-filtration and infiltration. The storm drain system is also meant to include a series of detention ponds located throughout the site to provide storage and reduce the peak rate of discharge from the site.

One of the goals of the storm drain system is to infiltrate runoff from small storm events into the Westside Basin Aquifer below Parkmerced. Permeable surfaces will be installed where possible in order to help increase infiltration. These surfaces include pedestrian walkways, parking areas and other low-traffic areas.

At the southern end of the site, a stream corridor is meant to carry flows from the site to a terminal pond at the southwest corner. Check dams along the stream create ponds which help store runoff and slow down the discharge rate. The terminal pond is intended to connect, via pipe, to the existing storm drain system on the south side of Brotherhood Way, allowing the cleaned runoff to eventually make its way to Lake Merced.

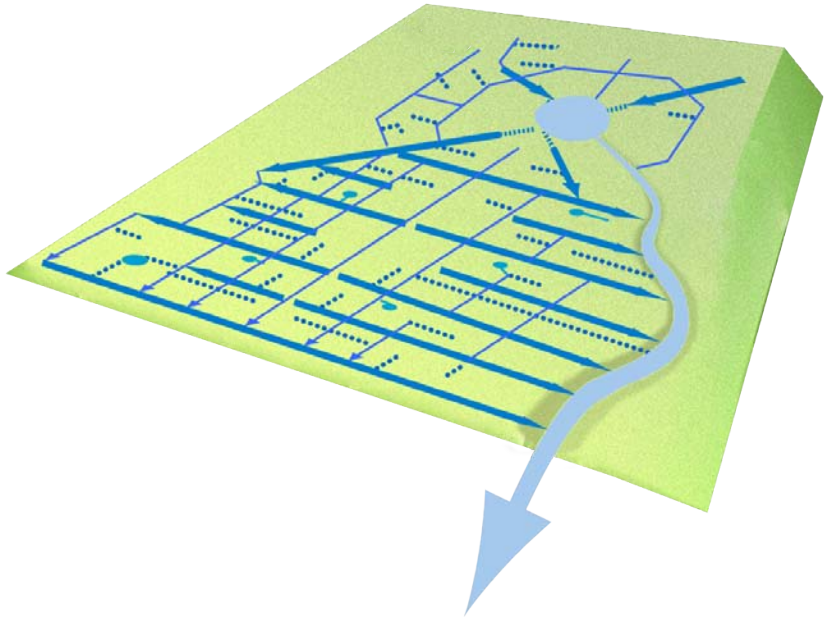

Figure 02.03.A - Drainage Network

Standards

02.03.01 **Low-Impact Development** The storm drainage network of bioswales, biogutters, tree wells, pervious paving, ponds, cisterns, and stream corridor shall meet the requirements of the Parkmerced Infrastructure Report and be in accordance with all applicable City Codes and Ordinances.

Guidelines

02.03.02 **Flow Lines** All rainwater up to a 5-year 3-hour design storm should be fed and connected into the overall site hydrology system as illustrated in Figure 02.03.B - Hydrology Plan.

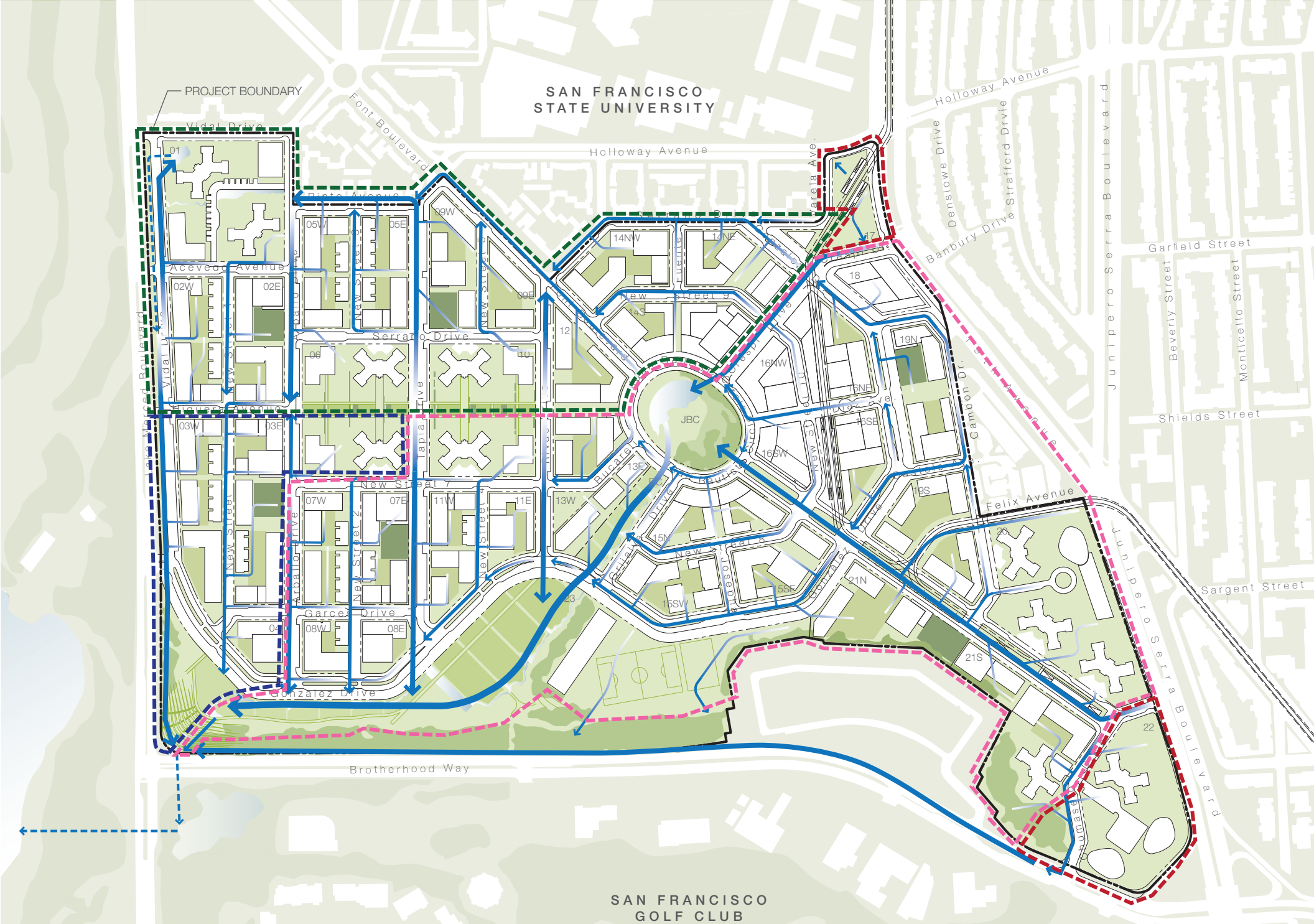

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FIGURE 02.03.B / Hydrology Plan

02.04 neighborhood controls - on-site tree management

Successful management of existing and new trees is critical to the sustainability and design goals for Parkmerced. During the process of phased construction, existing trees will be evaluated, and any tree removal will be balanced with sufficient tree replacement during the same phase of construction. Impacted trees that are deemed significant and highly suitable for transplantation will be relocated whenever possible, while sufficient habitat for bird populations is maintained during the entire phased construction process (Figure 02.04.A).

Standards

02.04.01 **Tree Care** Removal, transplantation and preservation of existing trees shall be evaluated on a block-by-block basis during phased construction. Tree removal must be balanced with an equal or greater number of replacement trees during the same phase of construction.

Guidelines

02.04.02 **Construction Impact** A certified arborist should evaluate the condition and suitability for preservation of any existing, significant trees impacted by construction. Evaluation of suitability for preservation should include the following factors: tree health; structural integrity; species response; tree age and longevity; and species invasiveness.

02.04.03 **Bird Habitat** A robust tree canopy area should be maintained throughout the phased construction process, in order to ensure sufficient habitat for the bird population.

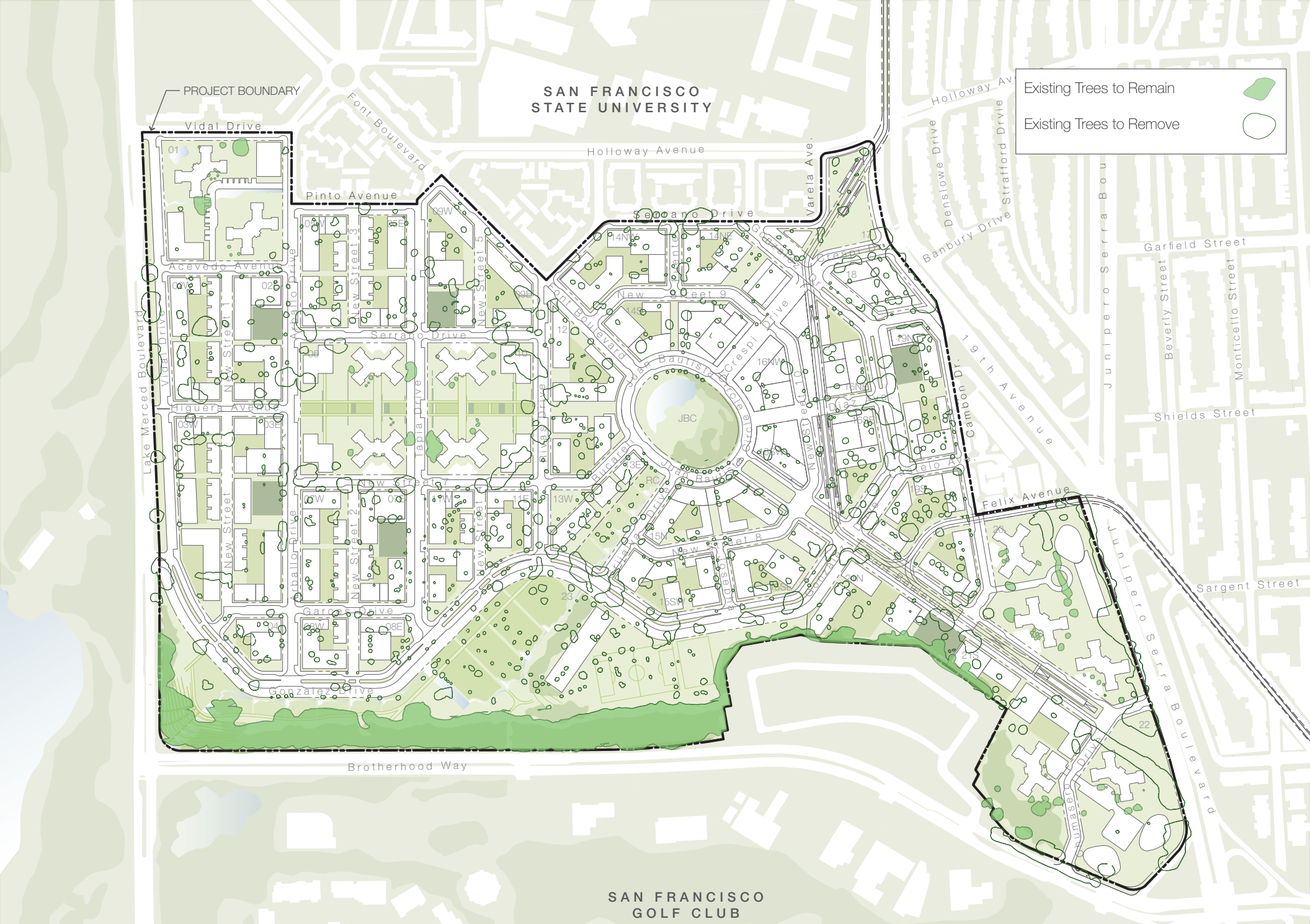

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FIGURE 02.04.A / Tree Management Plan

02.05 street network

Streetscapes at Parkmerced are intended to create a pedestrian focused environment that is aesthetically pleasing, unified and visually legible as a way-finding system. Intended to encourage social interaction among residents, streets should provide ample space for walking, sitting and gathering. In conjunction with overall sustainability goals for the neighborhood, an integral part of the streetscape is a network of biogutters and bioswales that help direct and clean rainwater runoff. Accessibility and pedestrian safety are a priority for public realm improvements in the neighborhood. Helping to promote a healthy life style and contribute to the reduction of CO2 and auto-traffic, street designs are intended to support walking, the use of bicycles and public transportation. Proposed bicycle and pedestrian pathways connect Parkmerced to surrounding neighborhoods, as well as the citywide network of bicycle and pedestrian routes.

Where possible, the neighborhood streets are designed with the minimum travel lane dimension to help enhance the pedestrian scale. Travel lanes are widened only on streets designated as Muni bus routes, primary loading truck routes, or to meet Fire Department standards. The street cross sections illustrate typical conditions for each street type. Specific roadway configurations are subject to the Vesting Tentative Map.

Standards

02.05.01 **Requirements** Street designs shall adhere to the standards and guidelines contained within this section for specific, individual street types illustrated in Figure 02.05.A – Street Type Plan.

02.05.02 **Public Rights-of-Way** Streets at Parkmerced, excluding alley ways and pedestrian paseos, must be open to the sky and publicly accessible at all times, subject to reasonable maintenance, operations, repair and security rights (Fig 02.05.A).

02.05.03 **Signage and Markings** All intersections shall be in compliance with City of San Francisco standards for signage and street markings.

02.05.04 **Permeable Paving** Where feasible, on-street parking stalls shall be paved with permeable materials as indicated in the Parkmerced Infrastructure Report.

02.05.05 **Connectivity** Bicycle and pedestrian pathways must connect Parkmerced to surrounding neighborhoods, and to the citywide network of bicycle and pedestrian routes.

Guidelines

02.05.06 **Flexible Active Use Zones** Bulb-outs at entrances to define special neighborhood areas such as: the intersection of Gonzalez Drive and Crespi Drive; Gonzalez Drive and the hedgerow streets; Crespi Drive and Juan Bautista Circle; and at the intersection of the alley ways and all crossing streets, must include Flexible Active Use Zones. These zones are intended to create a more vibrant street life and visually mark the entry into key neighborhood areas. These zones may include multiple public amenities such as seating, public art, trash and recycling bins, or news racks. Planting within Flexible Active Use Zones is intended to support these public amenities and shall be limited. These elements should be located in the Flexible Active Use Zones described in each street type section.

Guidelines

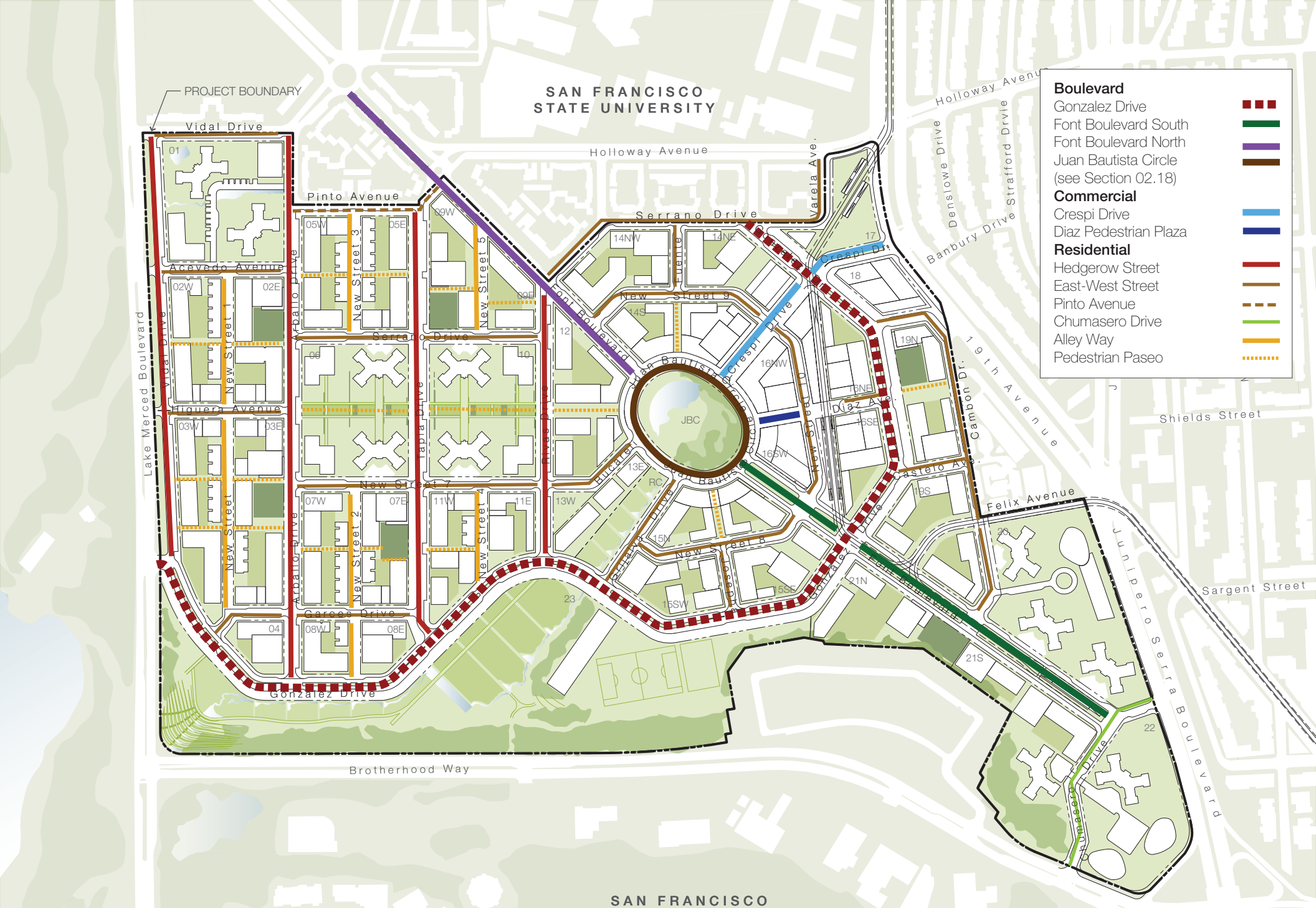
02.05.07 **Pedestrian Safety** In order to increase pedestrian safety, corner bulb-outs, generous sidewalks and other traffic calming elements should be incorporated into streetscape designs, wherever feasible.

02.05.08 **Bicycle Parking** Bike racks should be located at access points to open spaces and building entries. Bike racks must not interfere with access ramps and should minimize conflicts with parked cars.

02.05.09 **Utilities** All utilities should be placed below grade where feasible. Otherwise, utilities should not be visible from the public realm. Their location should not interfere with tree spacing.

02.05.10 **Appropriate Trees** Streets are encouraged to use native and acclimated trees and plants that require minimum irrigation after 2 years of their initial planting.

02.05.11 **Alternative Plant Species** Plant species not included in the Proposed Shrubs and Ground Covers list for each specific street type should be selected by a horticulturist. The selection of plant species should comply with the Parkmerced Infrastructure Report for soil saturation levels at each street type.



Boulevard
- Gonzalez Drive
- Font Boulevard South
- Font Boulevard North
- Juan Bautista Circle (see Section 02.18)

Commercial
- Crespi Drive
- Diaz Pedestrian Plaza

Residential
- Hedgerow Street
- East-West Street
- Pinto Avenue
- Chumasero Drive
- Alley Way
- Pedestrian Paseo

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FIGURE 02.05.A / Street Type Plan

02.06 street trees

A list of preferred street trees for each street type has been assembled with the help of an expert team of arborists, using the following criteria:

- Aesthetics
- Scale
- Micro-climate, especially the frequent periodic cold and salt-laden wind and fog
- Native and acclimated species that are water conserving
- Moisture tolerance to adapt to specific conditions, such as bioswale or tree well infiltration system
- Density
- Urban performance
- Soils
- Management
- Visibility guidelines

Standards

02.06.01 **Visibility** At intersections, trees shall be planted in accordance with the Department of Public Works Director's Order 169,946; or a minimum of 25 feet on the approach side, and 5 feet from the crosswalk on the far side. Trees and plants shall not obscure traffic signals, signs or street lights.

02.06.02 **Alternative Tree Species** Street tree species not included in the proposed tree species list for each specific street type shall be selected by a certified arborist. The selection of tree species must comply with the Parkmerced Infrastructure Plan for soil saturation levels and must follow the street tree characteristics listed in Figure 02.06.A - Street Tree Character for each particular street type.

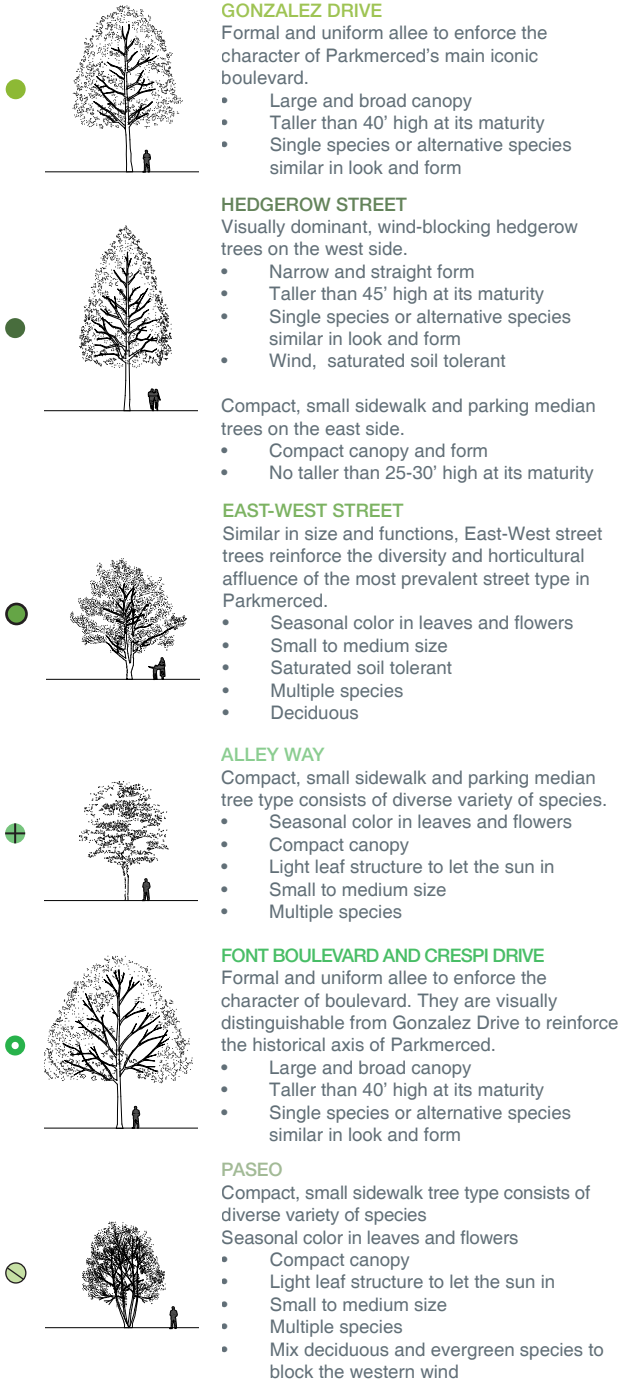
02.06.03 **Tree wells** Tree wells must be a minimum of 4 feet wide by 4 feet long unless otherwise specified.

Guidelines

02.06.04 **Optimal Growth** Tree planting should follow the optimal growth of each tree species chosen and defined by a certified arborist at the time of planting.

02.06.05 **Pedestrian Comfort** In order to provide a physically comfortable streetscape environment, street trees should be used to buffer against strong winds, while still allowing sun to reach the pedestrian realm.

02.06.06 **Structural Soil** Beneficial to the success of street trees in tight urban conditions, structural soil should be used wherever soil openings are confined. Structural soil should be used under adjacent paving to improve tree growth and reduce the possiblity of heaving of pavement.



GONZALEZ DRIVE
Formal and uniform allee to enforce the character of Parkmerced's main iconic boulevard.
- Large and broad canopy
- Taller than 40' high at its maturity
- Single species or alternative species similar in look and form

HEDGEROW STREET
Visually dominant, wind-blocking hedgerow trees on the west side.
- Narrow and straight form
- Taller than 45' high at its maturity
- Single species or alternative species similar in look and form
- Wind, saturated soil tolerant

Compact, small sidewalk and parking median trees on the east side.
- Compact canopy and form
- No taller than 25-30' high at its maturity

EAST-WEST STREET
Similar in size and functions, East-West street trees reinforce the diversity and horticultural affluence of the most prevalent street type in Parkmerced.
- Seasonal color in leaves and flowers
- Small to medium size
- Saturated soil tolerant
- Multiple species
- Deciduous

ALLEY WAY
Compact, small sidewalk and parking median tree type consists of diverse variety of species.
- Seasonal color in leaves and flowers
- Compact canopy
- Light leaf structure to let the sun in
- Small to medium size
- Multiple species

FONT BOULEVARD AND CRESPI DRIVE
Formal and uniform allee to enforce the character of boulevard. They are visually distinguishable from Gonzalez Drive to reinforce the historical axis of Parkmerced.
- Large and broad canopy
- Taller than 40' high at its maturity
- Single species or alternative species similar in look and form

PASEO
Compact, small sidewalk tree type consists of diverse variety of species
Seasonal color in leaves and flowers
- Compact canopy
- Light leaf structure to let the sun in
- Small to medium size
- Multiple species
- Mix deciduous and evergreen species to block the western wind

Legend - Proposed Street Tree Plan

Figure 02.06.A - Street Tree Character

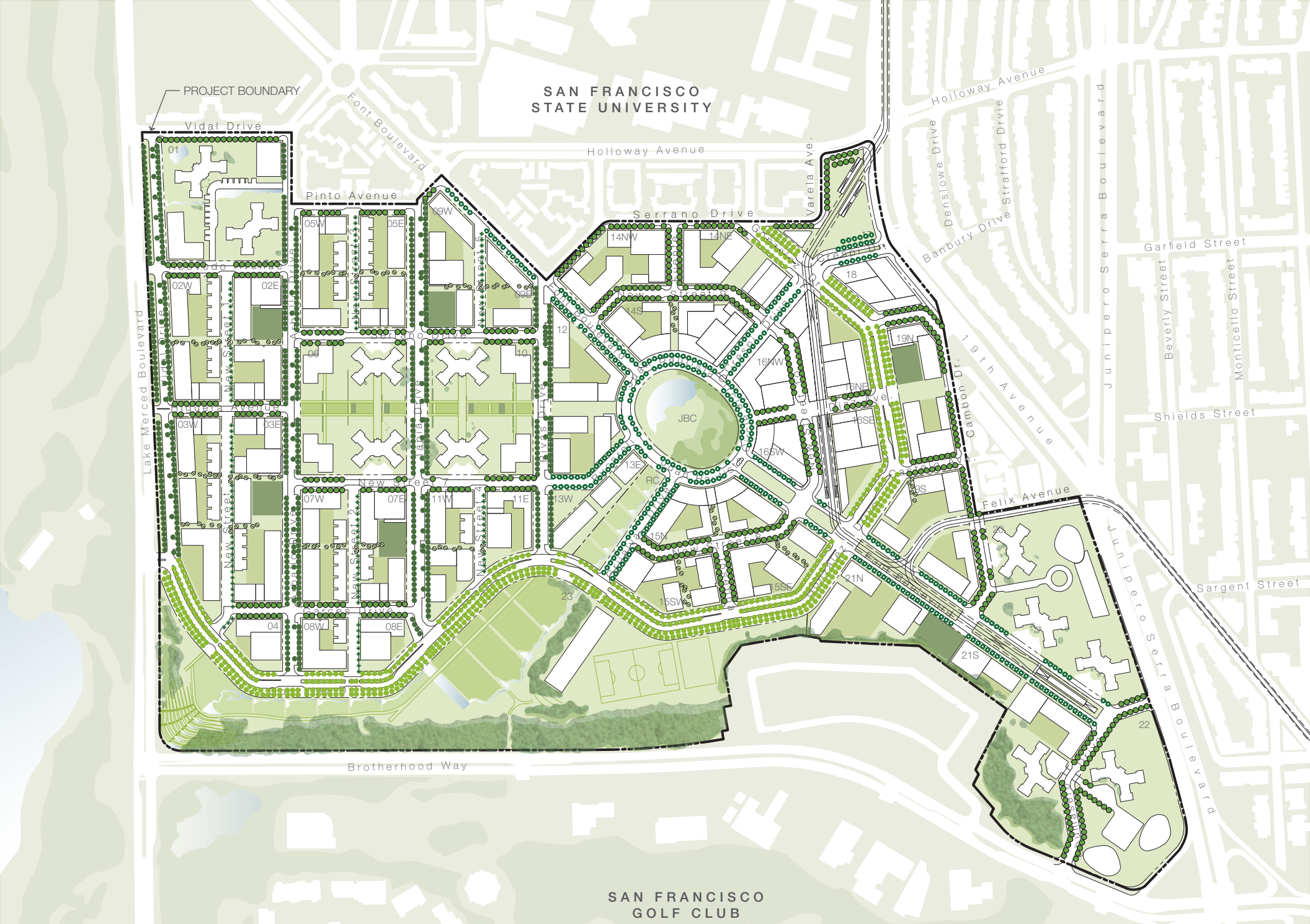


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FIGURE 02.06.B / Street Tree Plan

02.07 streets -gonzalez drive

KEY PLAN

Gonzalez Drive is a grand, iconic boulevard that connects the east and west ends of the neighborhood. With a large bioswale in the median, four rows of street trees and a dedicated bike path, Gonzalez Drive links residents to various neighborhood amenities, such as the transit plaza, the neighborhood social heart, play fields, the stream corridor, the organic farm and Lake Merced. Ample sidewalks, corners and bulb-outs provide opportunities for seating, information kiosks, signage, plants or public art. Understory and bioswale plants are intended to create a natural and informal character. Planted with woodsy shrubs, a large bioswale along Gonzales Drive will collect and convey surface runoff that eventually merges with the stream at the Belvedere Garden.

Standards

02.07.01 **Requirements** Street dimensions and design elements shall comply with Figure 02.07.A - Gonzalez Drive Illustrative Plan and Figure 02.07.B - Gonzalez Drive Typical Section.

02.07.02 **Trees** Street trees along Gonzalez Drive shall provide a unified and consistent character. The four rows of street trees have been divided into two categories, each with a different spacing and tree species (Fig. 02.07.A & 02.07.B). The two categories are:

- **Urban Edge:** Trees in this category shall provide a large canopy, with an average minimum height of approximately 40 feet. Once chosen, only one tree species from the list of proposed trees (Fig. 02.07.C) may be used for the entire length of Gonzalez Drive, in order to provide a consistent horticultural theme, except if this tree species becomes commercially unavailable or is not recommended by a certified arborist.
- **Park Edge:** Planted in areas adjacent to park edges and within the planted bioswale median, trees in this category shall provide a large canopy, with an average minimum height of approximately 45 feet. A maximum of one tree species from the list of proposed trees (Fig. 02.07.C) may be used for the entire length of Gonzalez Drive, in order to provide a consistent horticultural theme, except if this tree species becomes commercially unavailable or is not recommended by a certified arborist.

02.07.03 **Tree Alignment** Where feasible, street trees shall be aligned across the street and with the on-street parking stall layout, as shown in Figure 02.07.A - Gonzalez Drive Illustrative Plan, with a maximum street tree spacing of no greater than 30 feet on center.

02.07.04 **Seasonal Inundation** Street trees at the bioswale median must be able to tolerate saturated soil conditions.

02.07.05 **Ground Plane** Sidewalk paving material, finish and color shall be consistent at all locations.

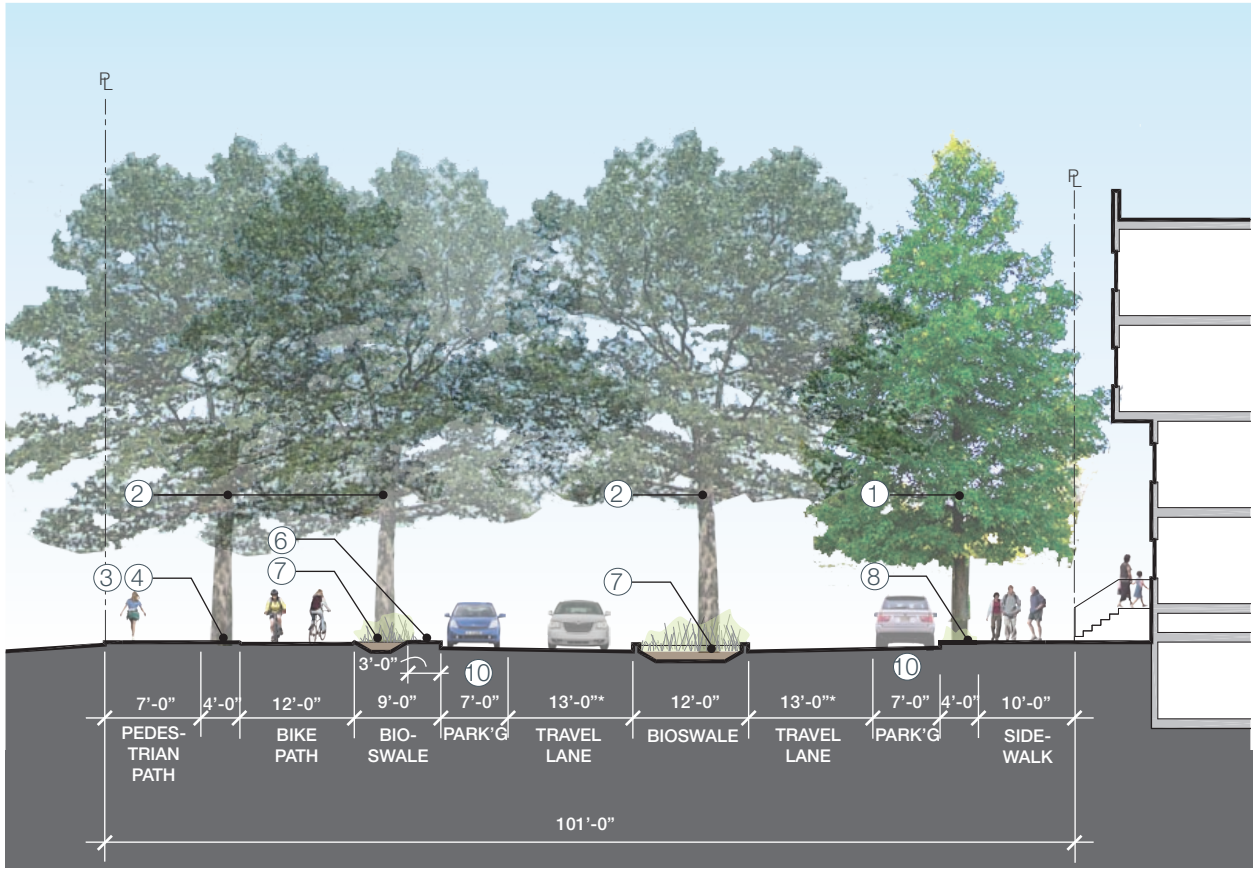
Guidelines

02.07.06 **Plants** Proposed understory plant alternatives are listed in Figure 02.07.C – Proposed Shrubs and Ground Covers.

02.07.07 **Seating** Areas with seating should be provided along the Park edge between street trees, at approximately 1 seating area per 100 LF (Fig.02.07.A).

Figure 02.07.A - Gonzalez Drive Illustrative Plan

Figure 02.07.B - Gonzalez Drive Typical Section



Gonzalez Drive Design Features

1. Street tree type -urban edge
2. Street tree type -park edge
3. Seating zone
4. Planted median
5. Perforated pedestrian bridge -min. 6" but preferabley 12" clearance from the bottom of swale to ensure the flow.
6. Paved pedetrian zone along parking
7. Planted bioswale
8. Tree grate
9. Concrete sidewalk
10. Permeable paving in parking zone

0 20' 40'

*Lane width established for a WB-50 design vehicle.

Figure 02.07.C Proposed Trees * California native

Species / Common Name

Urban edge

Platanus acerfolia 'Columbia'

Pyrus calleryana "Holford'

Tristania conferta/ Brisbane Box

Park edge

Liquidamber styraciflua / American Sweet Gum

Platanus racemosa / California Sycamore *

Platanus acerfolia 'Columbia'

Proposed Shrubs and Ground Covers * California native

Species / Common Name

Biofiltering plants

Carex Divulsa

Cornus Sericea/ Hedgerow Gold

Cornus Sericea Flaviramea/ Yellow Twig Dogwood

Juncus Carmans Japonese

Sisyrinchium Bellum Grass*

Sisyrinchium californicum*

Planted median

Carex Divulsa

Calamagrostis x acutiflora 'Karl Foerster' / Feather Reed Grass

Dietes bicolor/ortnight Lily

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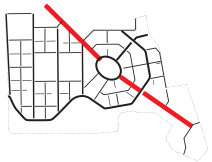
02.08 streets -font boulevard

KEY PLAN



Accommodating pedestrians, Muni light rail and vehicular circulation all in the same right-of-way, Font Boulevard is a neighborhood connector linking the northwest and southeast corners of Parkmerced. Font Boulevard is also a view corridor which provides distant views of Ocean Beach and the San Bruno Mountains. The rows of street trees that frame the boulevard are intended to have a grand, formal character and be planted in bio-filtration tree wells that are meant to collect and percolate surface rainwater runoff through a filtering medium in order to clean the water before slowly releasing it into the ground. Water conserving, lawn alternative plants incorporated with turf blocks are planted between Muni tracks on the median in the southeast segment of Font Boulevard.

Standards

02.08.01 **Requirements** Street dimensions and design elements shall comply with Figure 02.08.A - Font Boulevard North Illustrative Plan, Figure 02.08.B – Font Boulevard North Typical Section, Figure 02.08.D - Font Boulevard South Illustrative Plan and Figure 02.08.E - Font Boulevard South Typical Section in locations illustrated in Figure 02.05.A / Street Type Plan.

02.08.02 **Trees** Street trees shall be consistent in size, height and canopy form. Trees must be large with an average minimum height of approximately 45 feet and form a continuous, generous canopy. Trees must be planted in a minimum 4 foot x 6 foot bio-infiltration tree well or in a continuous bioswale. Street trees planted in bio-infiltration tree wells must be able to tolerate confined space for roots. Once chosen, only one tree species from the list of proposed trees (Fig. 02.08.C) may be used for the entire length of Font Boulevard in order to provide a consistent horticultural theme, except if this tree species becomes commercially unavailable or is not recommended by a certified arborist.

02.08.03 **Tree Alignment** Where feasible, street trees shall be aligned across the street and with the on-street parking stall layout, as shown in Figure 02.08.A – Font Boulevard North Illustrative Plan, with a maximum street tree spacing of no greater than 30 feet on center.

02.08.04 **Seasonal Inundation** Street trees planted in bio-infiltration tree wells and bioswales must be able to tolerate saturated soil conditions.

02.08.05 **Bioswale Bridges** Pedestrian crossing bridges over a bioswale shall be located at regular intervals to accommodate people stepping out of parked cars and at building entries. They shall not obstruct the flow of water along bioswales.

02.08.06 **Ground Plane** Sidewalk paving material, finish and color shall be consistent at all locations.

Guidelines

02.08.07 **Plants** Proposed understory plant alternatives are listed in Figure 02.08.C – Proposed Shrubs and Ground Covers.

Figure 02.08.A - Font Boulevard North Illustrative Plan

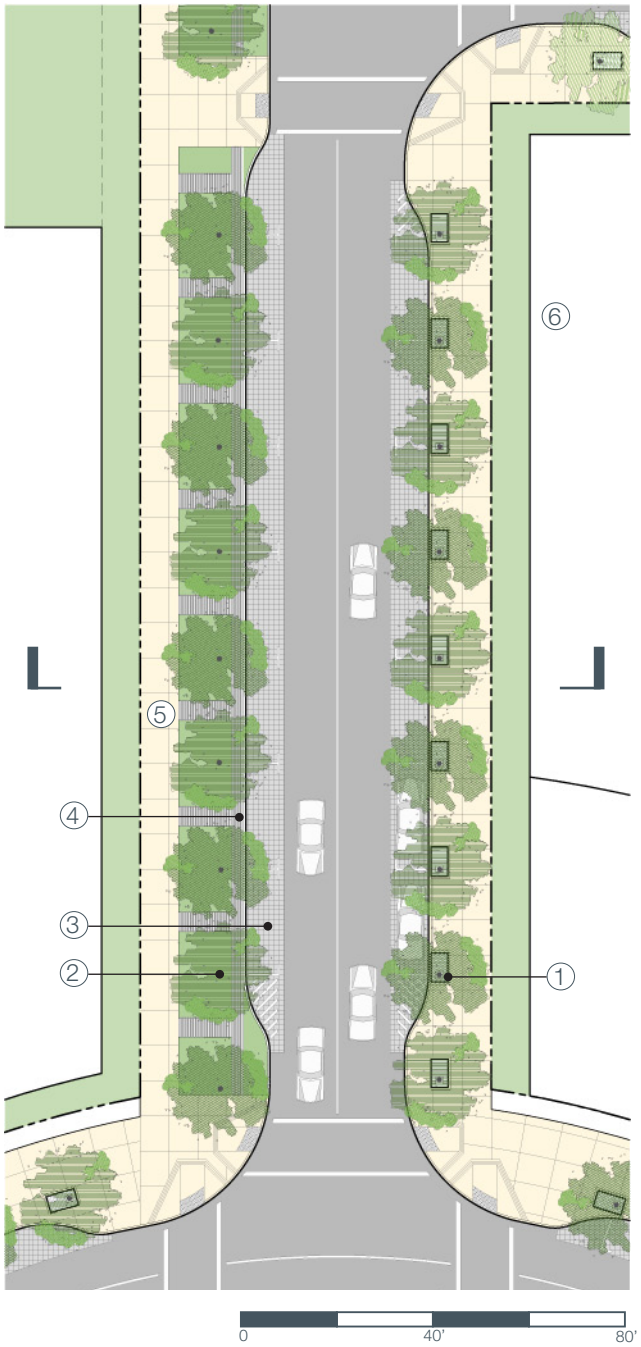
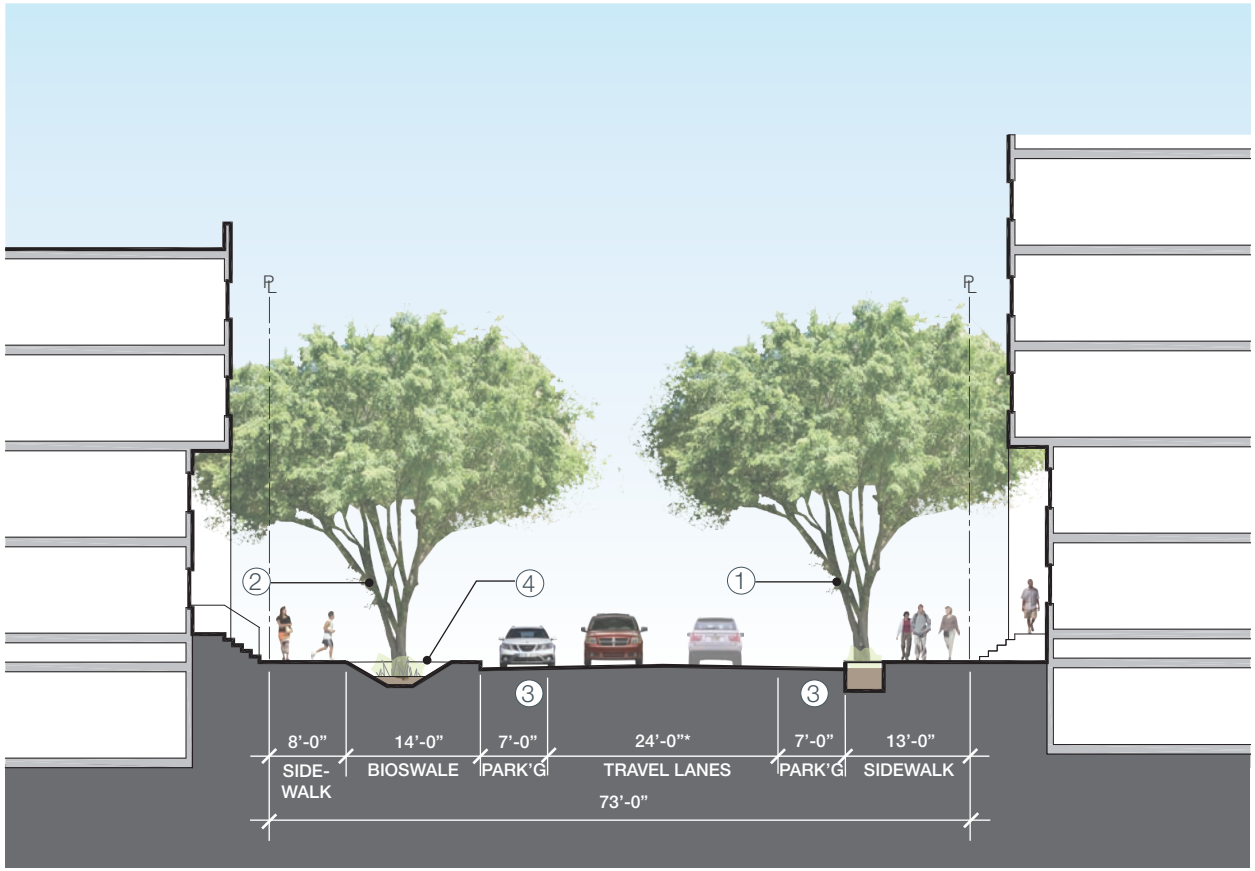


Figure 02.08.B - Font Boulevard North Typical Section



Font Boulevard Design Features

1. Street tree in infiltration tree well 4'x6' min.
2. Street tree in bio-swale
3. Permable paving in parking zone
4. Perforated pedestrian bridge -min. 6" but preferabley 12" clearance from the bottom of swale to ensure the flow
5. Concrete sidewalk
6. East side of street does not apply north of Serrano Drive

*12' wide travel lanes to allow Muni buses to pass in opposing directions.

Figure 02.08.C Proposed Trees

Species / Common Name

Fraxinus Americana 'Autumn Purple' / Autumn Purple White Ash

Quercus Virginiana/ Southern Live Oak

Tristania conferta/Brisbane Box

Ulmus parvifolia 'Allee'/ Allee Chinese Elm

Ulmus parvifolia 'Dynasty'/ Chinese Elm

Ulmus X 'Frontier'/ Frontier Elm

**All produce vigorous shallow roots

Proposed Shrubs and Ground Covers * California native

Species / Common Name

Biofiltering plants

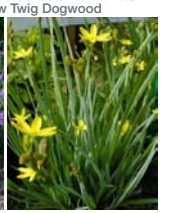
Carex Divulsa

Cornus Sericea/ Hedgerow Gold

Cornus Sericea Flaviramea/ Yellow Twig Dogwood

Juncus Carmans Japonese

Sisyrinchium Bellum Grass*



Sisyrinchium californicum*

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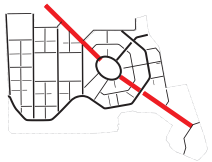
02.08 streets -font boulevard

KEY PLAN



Guidelines (continued)

02.08.08 **Understory Plants** Tree wells should have understory plants that are a minimum 12 inches tall.

02.08.09 **Green Median** Muni tracks should be planted with low maintenance, acclimated lawn alternative species on turf blocks or equivalent. Continuous shrub edges which do not exceed 2 feet in height should be located between the Muni light rail tracks and the travel lane as a buffer zone (Fig.02.08.D).

02.08.10 **Seating** Areas with seating should be provided along the both sides of Font Boulevard between street trees, at approximately 1 seating area per 100 LF (Fig.02.08.D).

Figure 02.08.D - Font Boulevard South Illustrative Plan

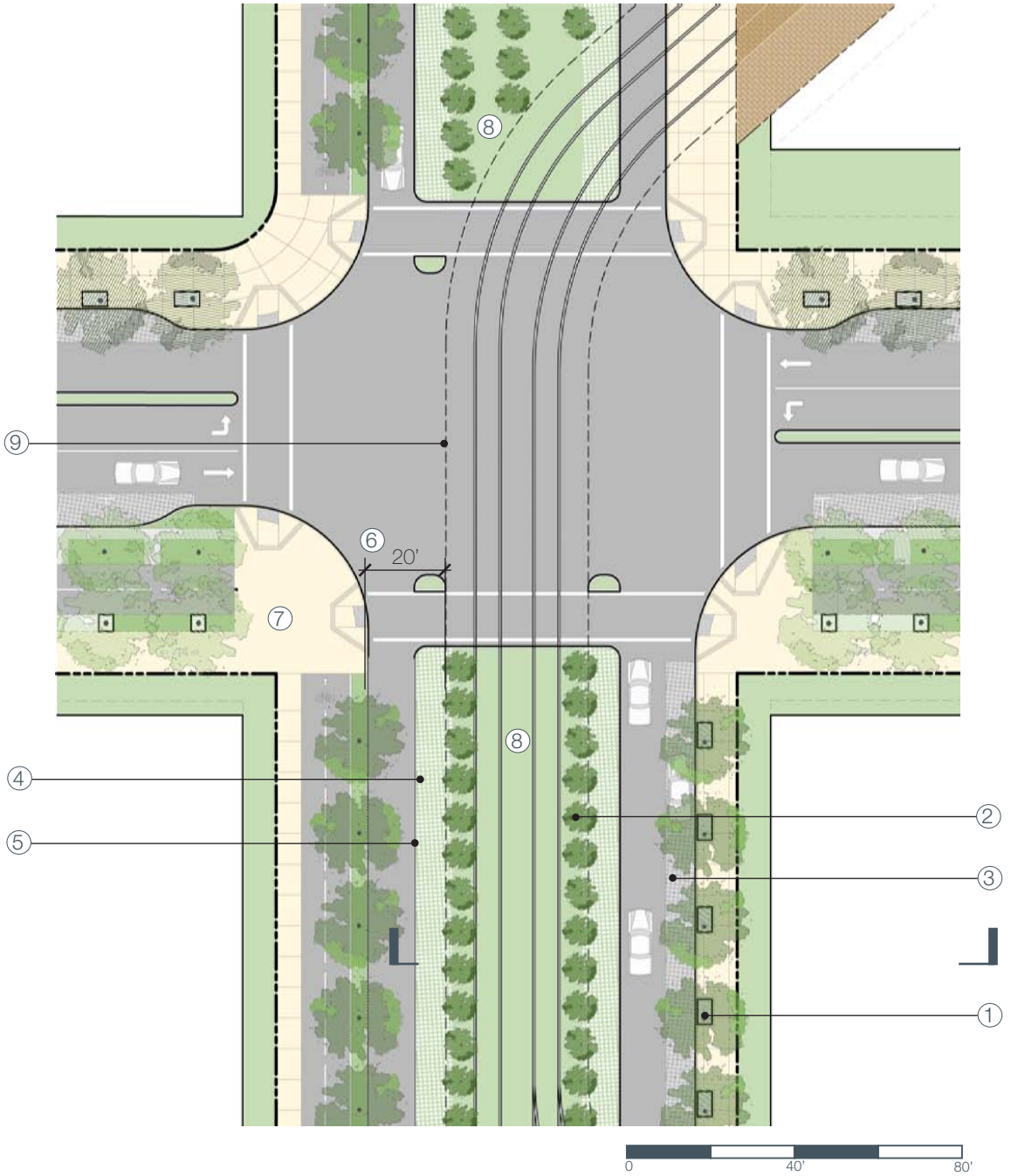
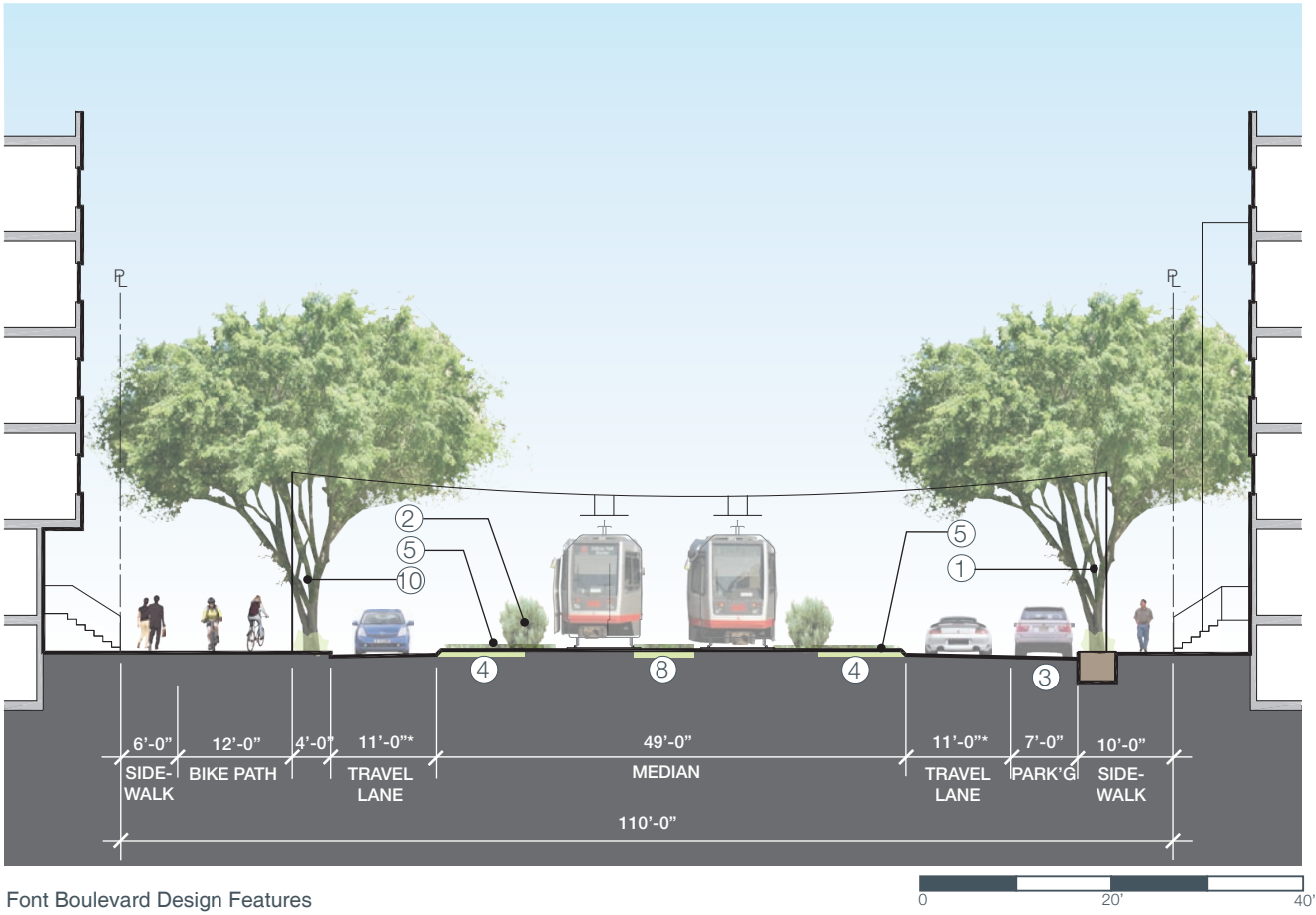


Figure 02.08.E - Font Boulevard South Typical Section



Font Boulevard Design Features

1. Street tree in infiltration tree well 4'x6' min.
2. Small tree or shrub -Muni median
3. Permeable paving in parking zone
4. Driveable ground cover (turf block or equivalent)
5. Mountable curb for firetruck access
6. Firetruck zone
7. Concrete sidewalk
8. Planted median
9. Muni right-of-way
10. Street tree

*11' wide travel lanes to allow for Muni buses.

Figure 02.08.C Proposed Trees

Species / Common Name

Fraxinus Americana 'Autumn Purple' / Autumn Purple White Ash

Quercus Virginiana/ Southern Live Oak

Tristania conferta/Brisbane Box

Ulmus parvifolia 'Allee'/ Allee Chinese Elm

Ulmus parvifolia 'Dynasty'/ Chinese Elm

Ulmus X 'Frontier'/ Frontier Elm

**All produce vigorous shallow roots

Proposed Shrubs and Ground Covers * California native

Species / Common Name

Planted median shrub

Ceanothus griseus horizontalis Yankee Point/ Ceanothus ankee Point

Escallonia bifidia

Ilex Vomitoria Nana

Planted median ground cover between Muni tracks -lawn alternative

Achillea Millefolium

Escallonia bifidia

Dymondia Margaretae

Phyla Nondiflora/ Lippia Grass

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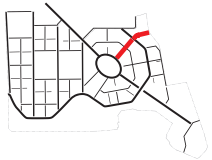
02.09 streets -crespi drive

KEY PLAN



Crespi Drive is the neighborhood commercial street that anchors the social heart of Parkmerced and connects Juan Bautista Circle past the transit plaza and up a gently sloping hill to 19th Avenue. Robust commercial and social activities, including outdoor dining and street side shopping along Crespi Drive, are accommodated by generous sidewalks. Crespi Drive is intended to have a consistent curbless surface treatment from building face to building face with distinct paving patterns distinguishing the roadway from the sidewalk. Biogutter planting areas provide a buffer zone between the pedestrian realm and the roadway, making this boulevard an enjoyable place for people to sit, stroll and gather.

Standards

02.09.01 **Requirements** Street dimensions and design elements shall comply with Figure 02.09.A - Crespi Drive Illustrative Plan and Figure 02.09.B – Crespi Drive Typical Section.

02.09.02 **Trees** Street trees must be large with an average minimum height of approximately 45 feet and form a wide, horizontal canopy. Once chosen, only one tree species from the list of proposed trees (Fig. 02.09.C) may be used for the entire length of Crespi Drive in order to provide a consistent horticultural theme, except if this tree species becomes commercially unavailable or is not recommended by a certified arborist.

02.09.03 **Tree Alignment** Where feasible, street trees shall be aligned across the street and with the on-street parking stall layout, as shown in Figure 02.09.A – Crespi Drive Illustrative Plan, with a maximum street tree spacing of no greater than 30 feet on center.

02.09.04 **Biogutters** A grate or perforated surface must cover biogutters to ensure that the excess rainwater will be collected and drained into them, while providing a reasonable degree of pedestrian safety. Grates or perforated surfaces must allow robust plants to grow through them.

02.09.05 **Ground Plane** Paving must be flush across the entire right-of-way with no curbs separating pedestrian zones from vehicular zones. Paving material, color and finish shall be coordinated between pedestrian and vehicular zones to show differentiation while maintaining a cohesive surface. Treatments for single-level pedestrian-oriented alleys will be consistent with standards developed for Shared Public Ways by SFMTA, DPW and MOD to address the safety concerns of the disabled.

02.09.06 **Increased Vibrancy** Flexible Active Use Zones are required at the intersections of Crespi Drive and Gonzalez Drive and Crespi Drive and Juan Bautista Circle, as illustrated in Figure 02.09.A - Crespi Drive Illustration. In addition to those public amenities listed in standard 02.05.06 - Flexible Active Use Zones, retail kiosks with a plan area of 75 square feet or less are permitted within the Flexible Active Use Zones along Crespi Drive.

Guidelines

02.09.07 **Plants** Proposed understory plant alternatives are listed in Figure 02.09.C – Proposed Shrubs and Ground Covers.

02.09.08 **Understory Plants** Tree wells should have understory plants.

02.09.09 **Biogutter Plants** Biogutters should have a filtration medium and planting soil and should be planted with tall grassy water loving plants that grow through biogutter covers.

Figure 02.09.A - Crespi Drive Illustrative Plan

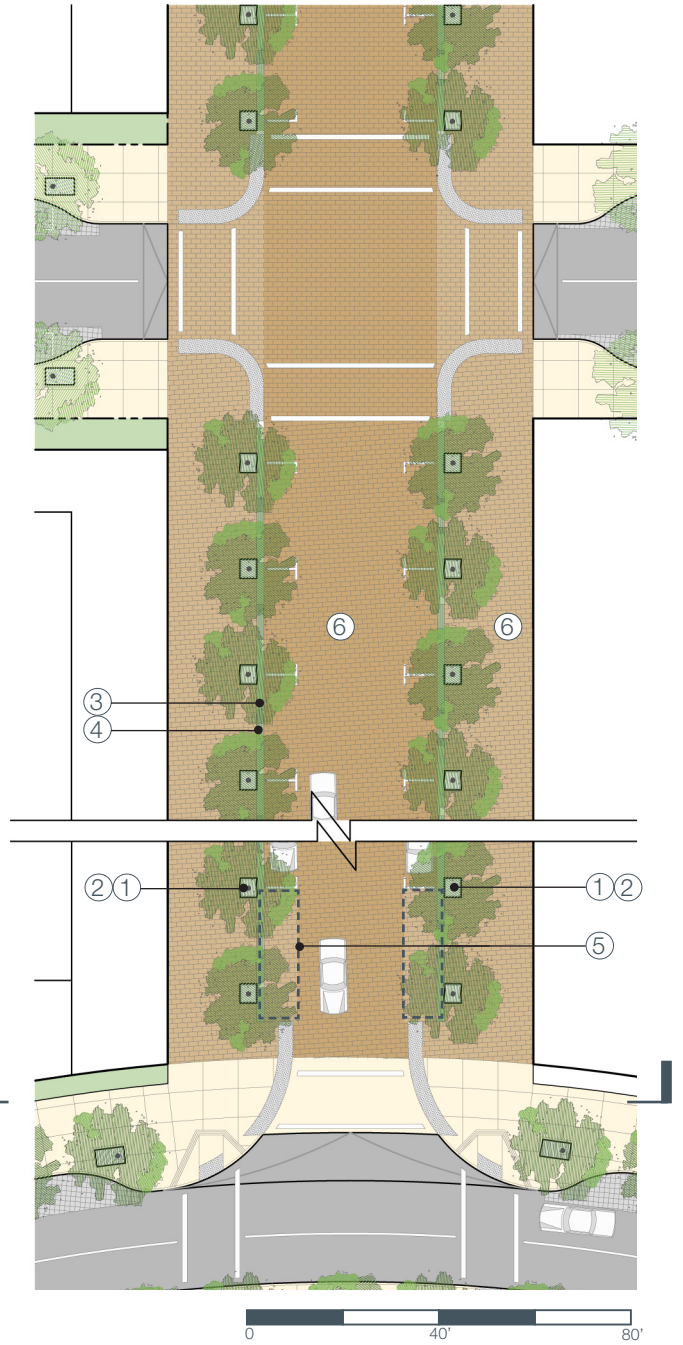


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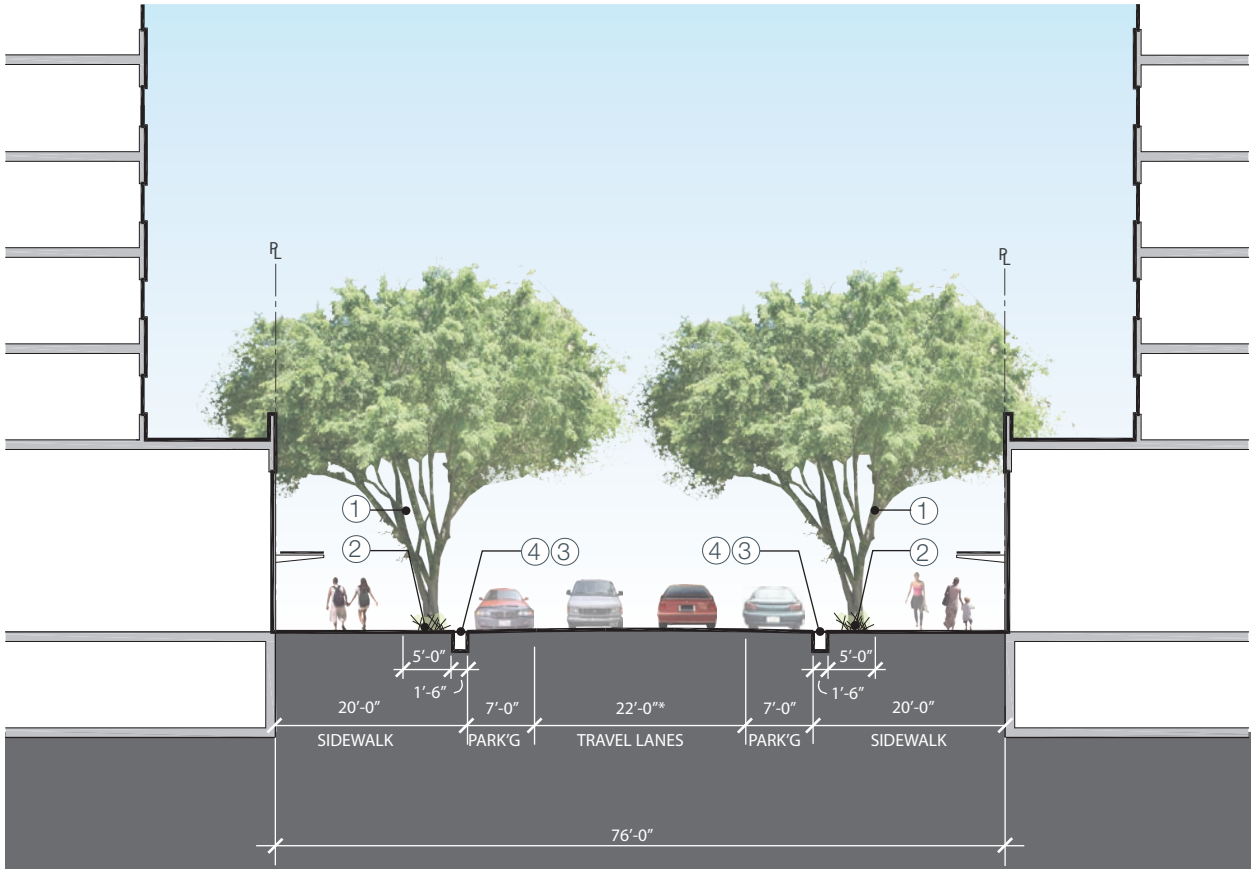
Figure 02.09.B - Crespi Drive Typical Section



02.09.10 **Seating** Areas with seating should be provided at regular intervals as illustrated in Crespi Drive Illustrative Plan Fig.02.09.A.

02.09.11 **Unique Identity** Crespi Drive should be paved with pervious unit pavers or stone (Fig. 02.09.A).

Crespi Drive Design Features

1. Street tree
2. Planted tree well
3. Biogutter
4. Perforated metal grate
5. Flexible active use zone
6. Permeable Paving

0 20' 40'

*11' wide travel lanes to allow for adequate fire truck turning.

Figure 02.09.C Proposed Trees

Species / Common Name

Fraxinus Americana 'Autumn Purple' / Autumn Purple White Ash

Quercus Virginiana/ Southern Live Oak

Tristania conferta/ Brisbane Box

Ulmus parvifolia 'Allee'/ Allee Chinese Elm

Ulmus parvifolia 'Dynasty'/ Chinese Elm

Ulmus X 'Frontier'/ Frontier Elm

**All produce vigorous shallow roots

Proposed Shrubs and Ground Covers * California native

Species / Common Name

Bio-gutter

Carex Flacca/ Blue Sedge

Juncus patens/ Wire Grass

Sesleria autumnalis/ Autumn Moor Grass

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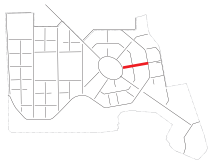
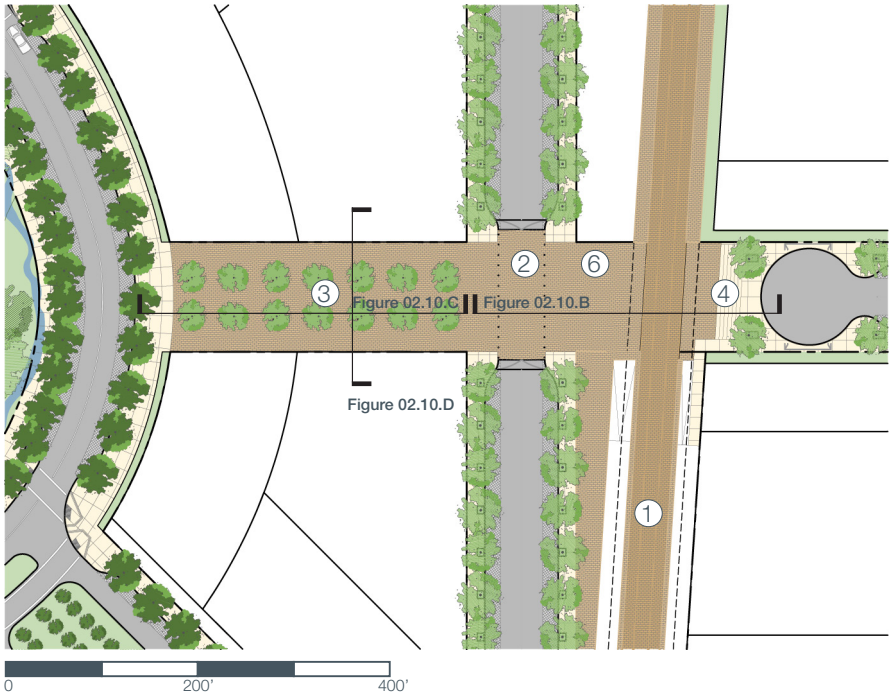
02.10 streets -diaz pedestrian plaza

KEY PLAN



Diaz Pedestrian Plaza, between New Street 10 and Juan Bautista Circle, is intended to extend the vibrancy of the 'social heart' into a pedestrian-only environment. The design of Diaz Pedestrian Plaza is intended to physically and visually link a new Muni light rail stop to Juan Bautista Circle to the west. Increasing the sense of vibrancy along the pedestrian plaza, ground floor uses are intended to incorporate areas for outdoor cafes, seating and retail areas along the building edges and encourage indoor spaces to 'spill into' the public realm.

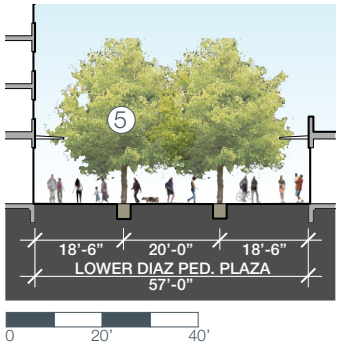
02.10.A - Diaz Pedestrian Plaza Illustrative Plan



Pedestrian Plaza Design Features

1. Muni light rail stop and Easement
2. Raised pedestrian crossing
3. Pedestrian Plaza
4. Plaza Stairs
5. Street tree
6. Permeable paving

Figure 02.10.B - Lower Diaz Pedestrian Plaza Cross Section



Standards

02.10.01 **Requirements** Street dimensions and design elements shall comply with with Figure 02.10.A - Diaz Pedestrian Plaza Illustrative Plan, Figure 02.10.B – Lower Diaz Pedestrian Plaza Cross Section, Figure 02.10.C - Upper Diaz Pedestrian Plaza Section. and Figure 02.10.D - Lower Diaz Pedestrian Plaza Section.

02.10.02 **Trees** Street trees shall be consistent in size, height and canopy form. They must be small to medium sized and change colors seasonally. Trees must be consistent with an average height of approximately 30 feet and have light, transparent canopies. Once chosen from the list of proposed trees (Fig. 02.12.C) only one tree species may be used Along the Diaz Pedestrian Plaza in order to provide a consistent horticultural theme, except if this tree species becomes commercially unavailable or is not recommended by a certified arborist.

02.10.03 **Vehicular Access** Those sections of Diaz Avenue with vehicular access shall comply with section 02.12 - East-West Streets.

02.10.04 **Pedestrian Only** Diaz Pedestrian Plaza shall be a dedicated pedestrian area. To ensure pedestrian safety auto and bicycle traffic is not permitted.

02.10.05 **Ground Plane** Paving material, finish and color shall be coordinated at all locations along Diaz Pedestrian Plaza and shall include enhanced concrete paving, concrete pavers or stone.

02.10.06 **Pedestrian Crossing** The Diaz Avenue pedestrian crossing at New Street 10 shall be raised and include enhanced concrete paving, concrete pavers or stone to match the remainder of Diaz Pedestrian Plaza.

02.10.07 **Pedestrian Furnishing** Public space amenities shall be provided and be carefully integrated into the overall design of the pedestrian plaza. Public space amenities include, but are not limited to: trees, seating, lighting, bicycle parking, and trash and recycling bins.

02.10.08 **Muni** Pedestrian access to the Muni light rail stop is required from both the north and south ends.

Guidelines

02.10.09 **Unique Identity** Diaz Pedestrian Plaza should be paved with pervious unit pavers or stone.

02.10.10 **Seating** Areas with seating within the plaza should be located to offer sunny, wind protected places to sit and gather.

02.10.11 **Increased Vibrancy** Ground floor active uses are encouraged to open onto and occupy parts of the pedestrian plaza adjacent to buildings with outdoor spaces, as described in standard 03.06.06 - Active Ground Floors.

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Figure 02.10.C - Upper Diaz Pedestrian Plaza Section

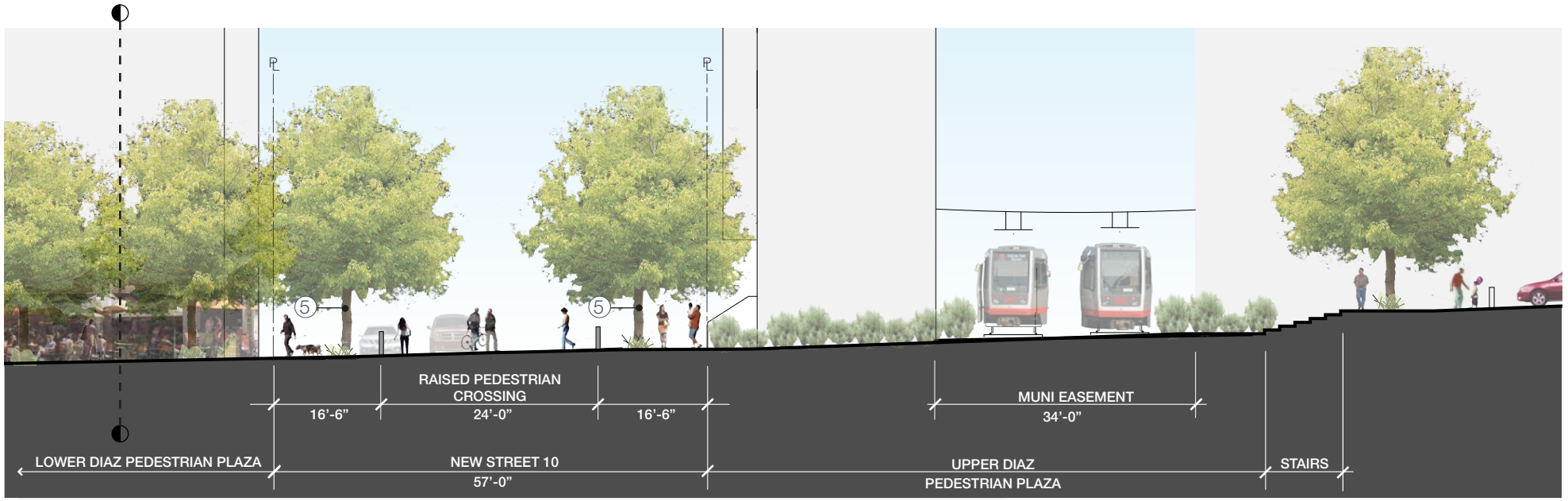

Figure 02.10.D - Lower Diaz Pedestrian Plaza Section

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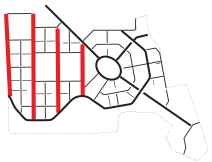
02.11 streets -hedgerow street

KEY PLAN



The Hedgerow Streets, lined with tall trees on the west side, are oriented in the north-south direction to block the salt-laden westerly winds. On the west side of the street, a continuous bioswale collects, conveys and cleans rainwater runoff. The Hedgerow Street bioswale also collects some excess rainwater from Neighborhood Commons. A tall row of wind-blocking trees, planted in the bioswale on the west side of the street, are intended to be visually prominent, accentuating the north-south direction of the street. On the east side of the street, trees are planted in tree wells adjacent to narrow sidewalks and in parking medians and are intended to be compact and suitable for the urban conditions.

Standards

02.11.01 **Requirements** Street dimensions and design elements for Tapia Street shall comply with Figure 02.11.A -Tapia Street with Bike Lane Illustrative Plan and Figure 02.11.B Tapia Street with Bike Lane Typical Section. Street dimensions and design elements for all other hedgerow streets shall comply with Figure 02.11.D - Hedgerow Street Typical Illustrative Plan and Figure 02.11.E Hedgerow Street Typical Section.

02.11.02 **Trees** Street trees shall be consistent in size, height and canopy form. Street trees have been divided into two categories, each with a different spacing and tree species (Fig. 02.11.A & 02.11.D). The two categories are:

- **Wind-Blocking Side:** Planted in a continuous planting zone along the west side of the hedgerow streets, trees in this category must provide a tall, upright and consistent wind-blocking hedgerow. Hedgerow trees must reach approximately 50 to 60 feet in height at maturity. Tree species must be able to tolerate salt-laden wind and fog. A maximum of one tree species from the list of proposed trees (Fig. 02.11.C) may be used for the entire length of a hedgerow street in order to provide a consistent horticultural theme, except if this tree species becomes commercially unavailable or is not recommended by a certified arborist. Alternate species may be used on different hedgerow streets.
- **Parking Side:** Located on the east side of the hedgerow streets, trees in this category must not have aggressive roots and shall tolerate various urban conditions, such as heavy foot traffic and occasional impacts from automobiles. A maximum of three tree species from the list of proposed trees (Fig. 02.11.C) may be used for the entire length of a hedgerow street. However, one tree species shall be used per block in order to provide a consistent horticultural theme, except if this tree species becomes commercially unavailable or is not recommended by a certified arborist.

02.11.03 **Tree Alignment** The west side of the street shall have a maximum street tree spacing of no greater than 30 feet on center. On the east side of the street, street trees shall be planted in a minimum of every tenth parking stall within the perpendicular parking area and shall have a maximum street tree spacing of no greater than 30 feet on center, for street trees located between the perpendicular parking area and the sidewalk, as shown in Figure 02.11.A – Tapia Street with Bike Lane Illustrative Plan and Figure 02.11.D – Hedgerow Street Typical Illustrative Plan.

02.11.04 **Seasonal Inundation** Street trees at the bioswale must be able to tolerate saturated soil conditions.

Figure 02.11.A -Tapia Street with Bike Lane Illustrative Plan

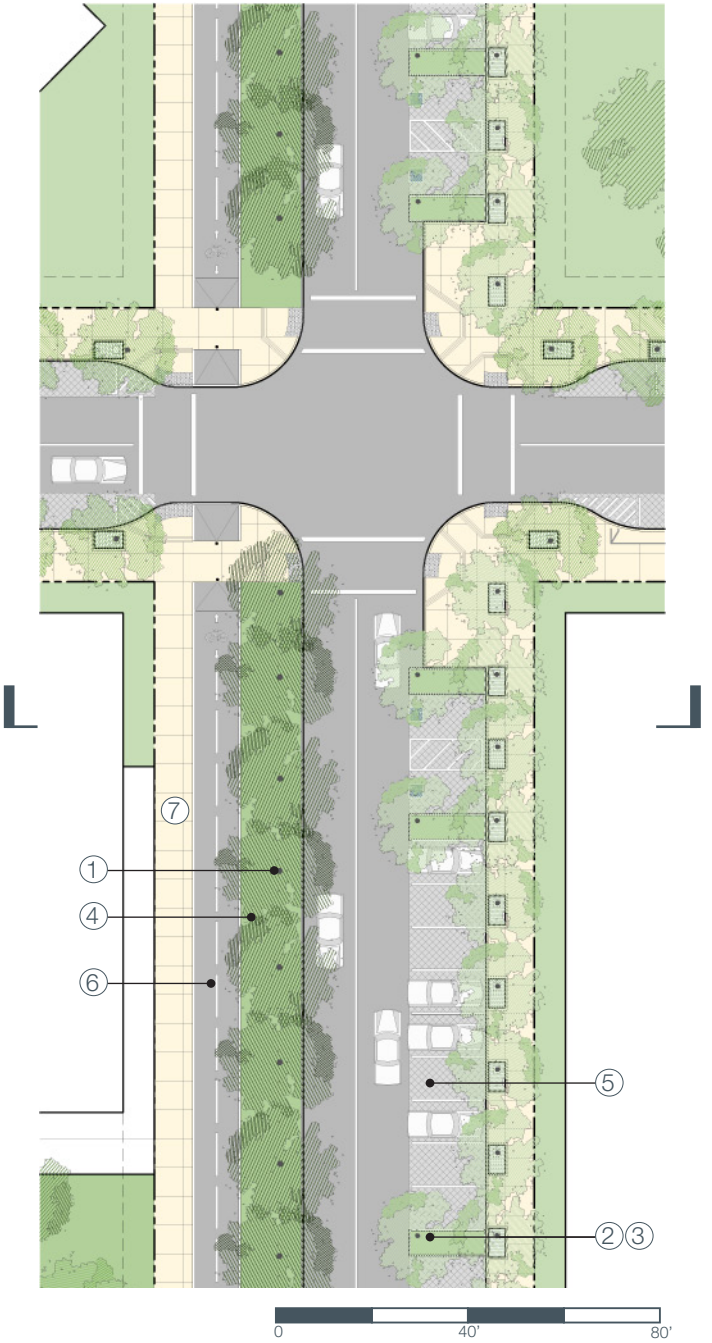


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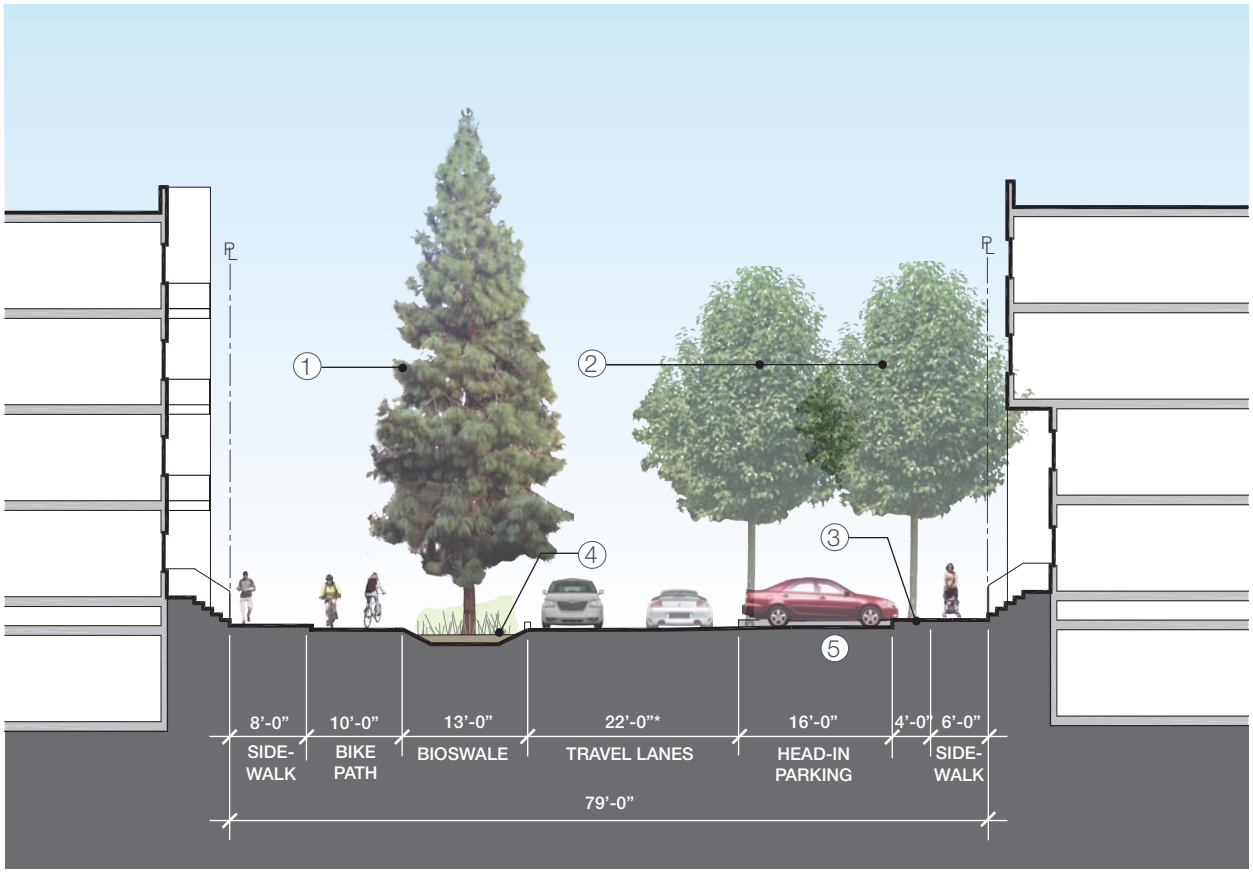
Figure 02.11.B - Tapia Street with Bike Lane Typical Section



Hedgerow Street Design Features

1. Street tree west side type
2. Street tree east side type
3. Planted tree well
4. Bioswale planting
5. Permable paving in parking zone
6. Bike path
7. Concrete sidewalk

0 20' 40'

*11' wide travel lanes to allow for adequate fire truck turning.

Figure 02.11.C Proposed Trees

Species / Common Name

Wind blocking side

Alnus glutinosa/ Black Alder

Alnus rubra/ Red Alder *

Pinus canariensis/ Canary Island Pine

Parking side

Arbutus marina /Strawberry Tree *

Callistsemon viminalis /Weeping Bottlebrush

Crataegus lavallei /English Hawthorn

Proposed Shrubs and Ground Covers * California native

Species / Common Name

Biofiltering plants

Carex Divulsa

Calycanthus Occidentalis/ / Western Spicebush

Cornus Sericea Flaviramea/ Yellow Twig Dogwood

Cornus Sericea/ Hedgerow Gold

Juncus Carmans Japonese

Juncus Patens*

Restio Tetraphyllus

Sisyrinchium Bellum Grass*

Sisyrinchium californicum*

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02.11 streets -hedgerow street

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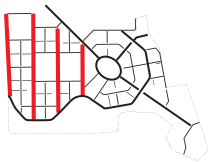


Standards (continued)

02.11.05 **Ground Plane** Sidewalk paving material, finish and color shall be consistent at all locations.

Guidelines

02.11.06 **Plants** Proposed understory plant alternatives are listed in Figure 02.11.C – Proposed Shrubs and Ground Covers.

02.11.07 **Biogutter Plants** Bioswales should be landscaped with ornamental grasses or similar bio-filtering plant species (Fig. 02.11.C). They should be a minimum 12 inches tall at the sidewalk edge in order to discourage the public from entering the bioswale.

Figure 02.11.D - Hedgerow Street Typical Illustrative Plan

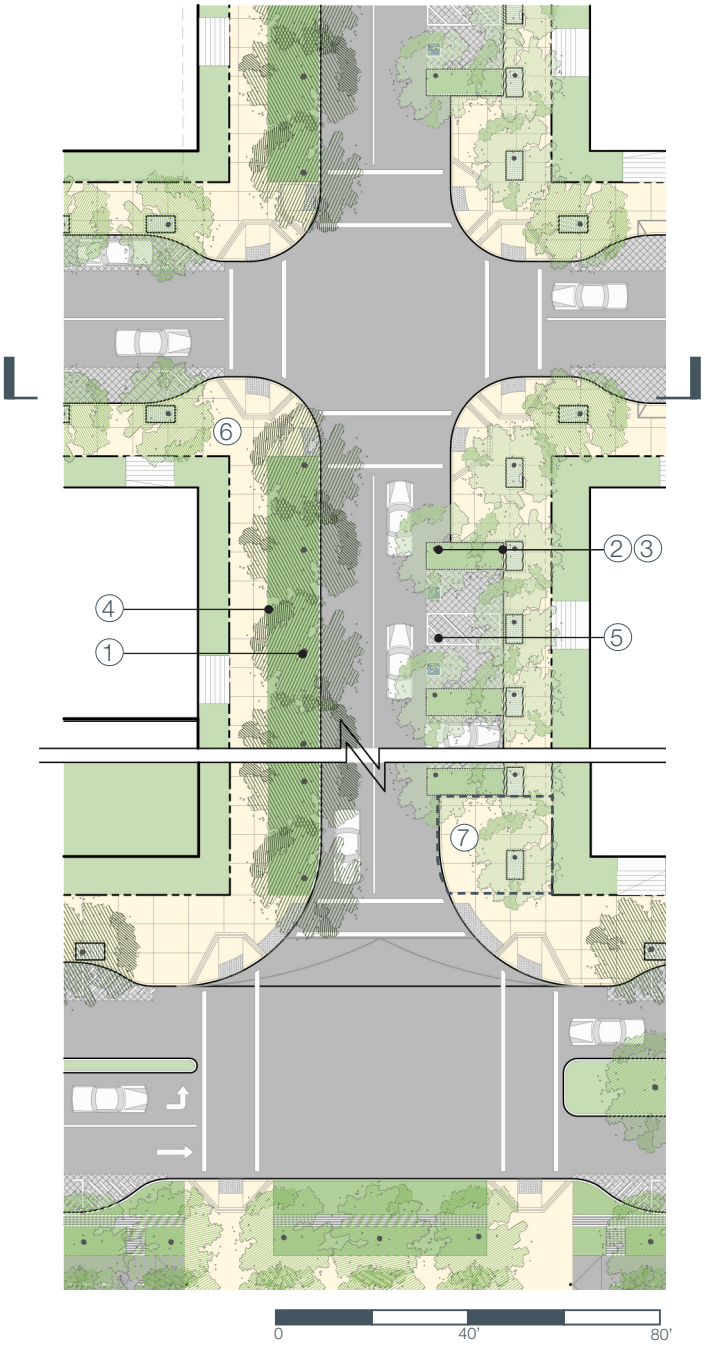
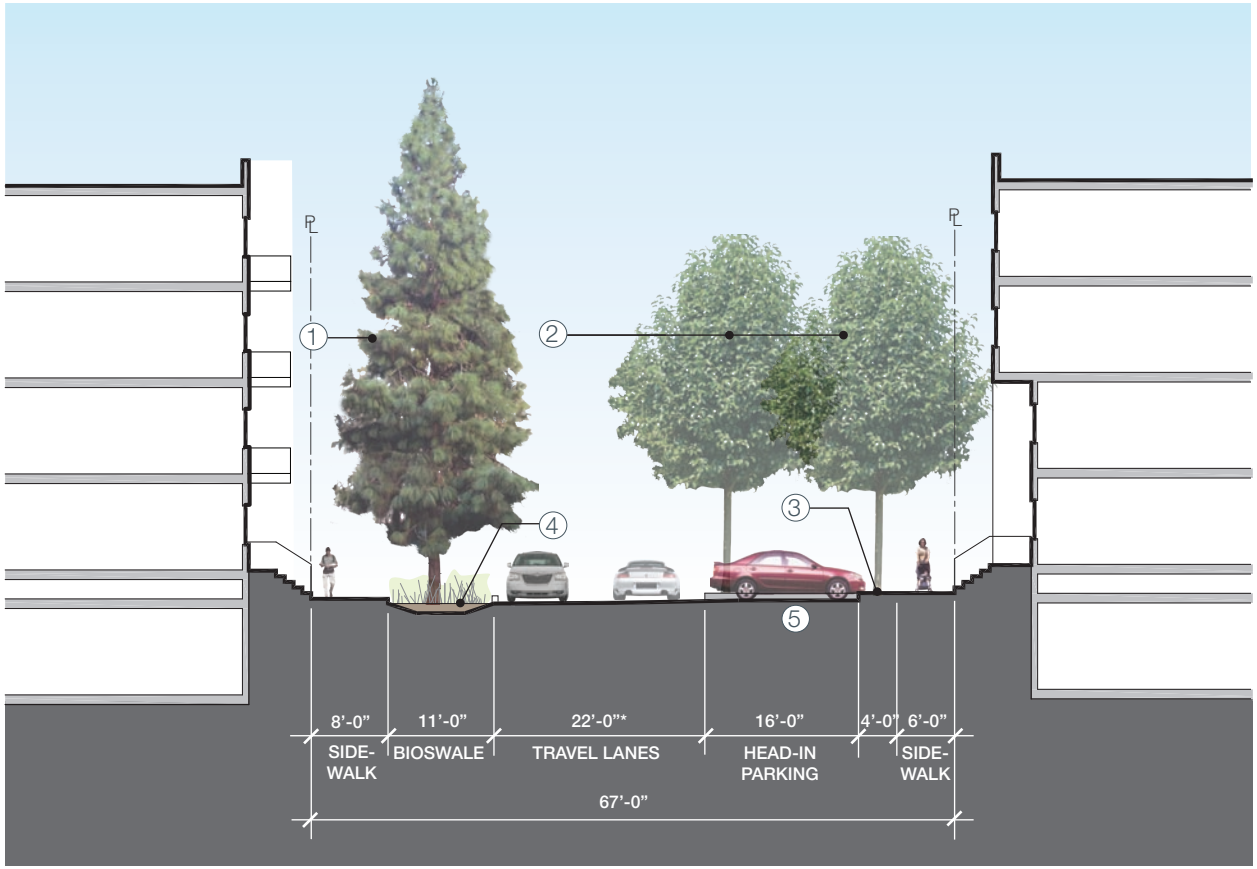


Figure 02.11.E - Hedgerow Street Typical Section



Hedgerow Street Design Features
1. Street tree west side type
2. Street tree east side type
3. Planted tree well
4. Bioswale planting
5. Permable paving in parking zone
6. Concrete sidewalk
7. Flexible Active Use Zone

*11' wide travel lanes to allow for adequate fire truck turning.

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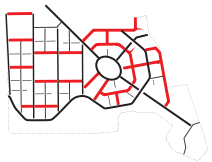
02.12 streets -east-west street

KEY PLAN



The East-West Streets are secondary connectors throughout most of the neighborhood except at Chumasero Drive. Both sides of the street will have street trees planted in bio-filtration tree wells, which will collect the rainwater runoff and the filtered water will then slowly percolate back to the ground.

Standards

02.12.01 **Requirements** Street dimensions and design elements shall comply with Figure 02.12.A - East-West Street Illustrative Plan and Figure 02.12.B – East-West Street Typical Section.

02.12.02 **Trees** Street trees shall be consistent in size, height and canopy form. Trees must be planted in a minimum 4 foot x 6 foot bio-infiltration tree well. Street trees planted in bio-infiltration tree wells must be able to tolerate confined space for roots. They must be small to medium sized and change colors seasonally. Trees must be consistent with an average height of approximately 30 feet and have light, transparent canopies. A maximum of five tree species from the list of proposed trees (Fig. 02.12.C) may be used for all east-west streets in order to provide an opportunity for a diverse street character. Varying tree types may be used within a single block, except on Chumasero Drive where a single tree species shall be used for the entire length, in order to provide a consistent horticultural theme, except if this tree species becomes commercially unavailable or is not recommended by a certified arborist.

02.12.03 **Tree Alignment** Where feasible, street trees shall be aligned across the street and with the on-street parking stall layout, as shown in Figure 02.12.A – East-West Illustrative Plan, with a maximum street tree spacing of no greater than 30 feet on center.

02.12.04 **Seasonal Inundation** Street trees planted in bio-infiltration tree wells must be able to tolerate saturated soil conditions.

02.12.05 **Ground Plane** Sidewalk paving material, finish and color shall be consistent at all locations.

Guidelines

02.12.06 **Plants** Proposed understory plant alternatives are listed in Figure 02.12.C – Proposed Shrubs and Ground Covers.

Figure 02.12.A - East-West Street Illustrative Plan

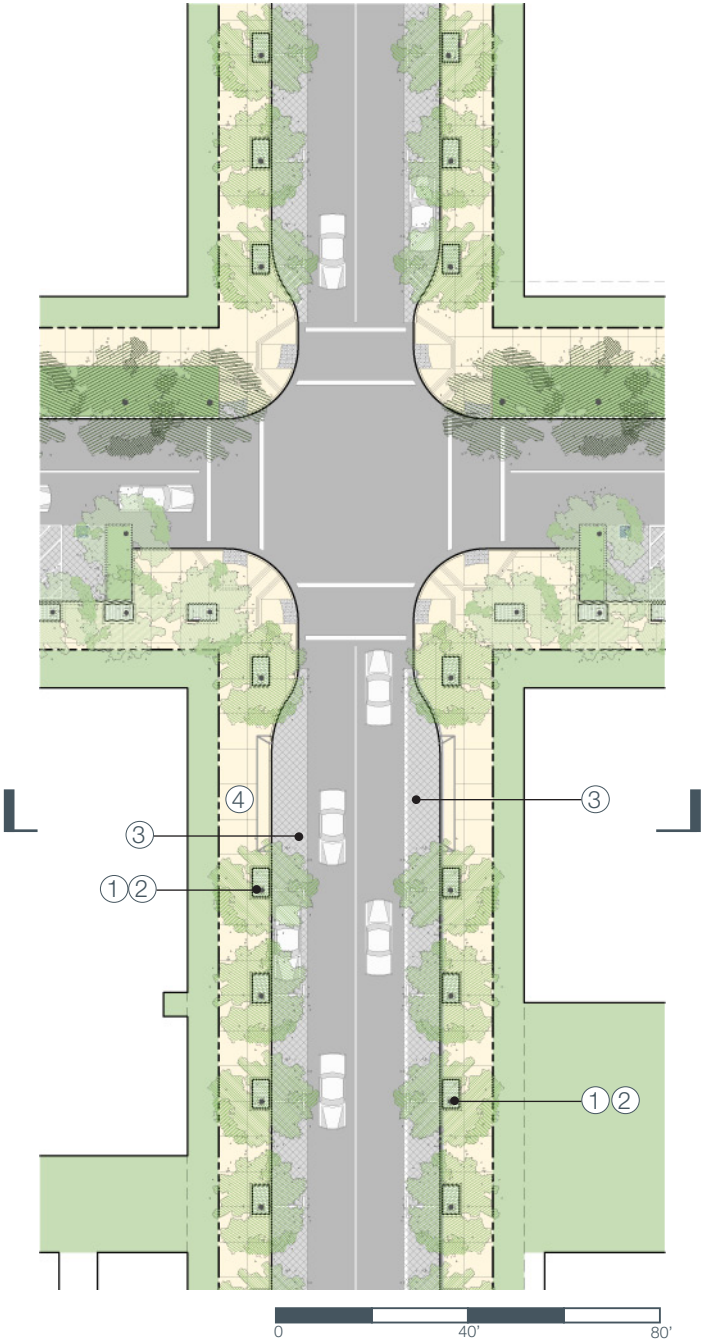
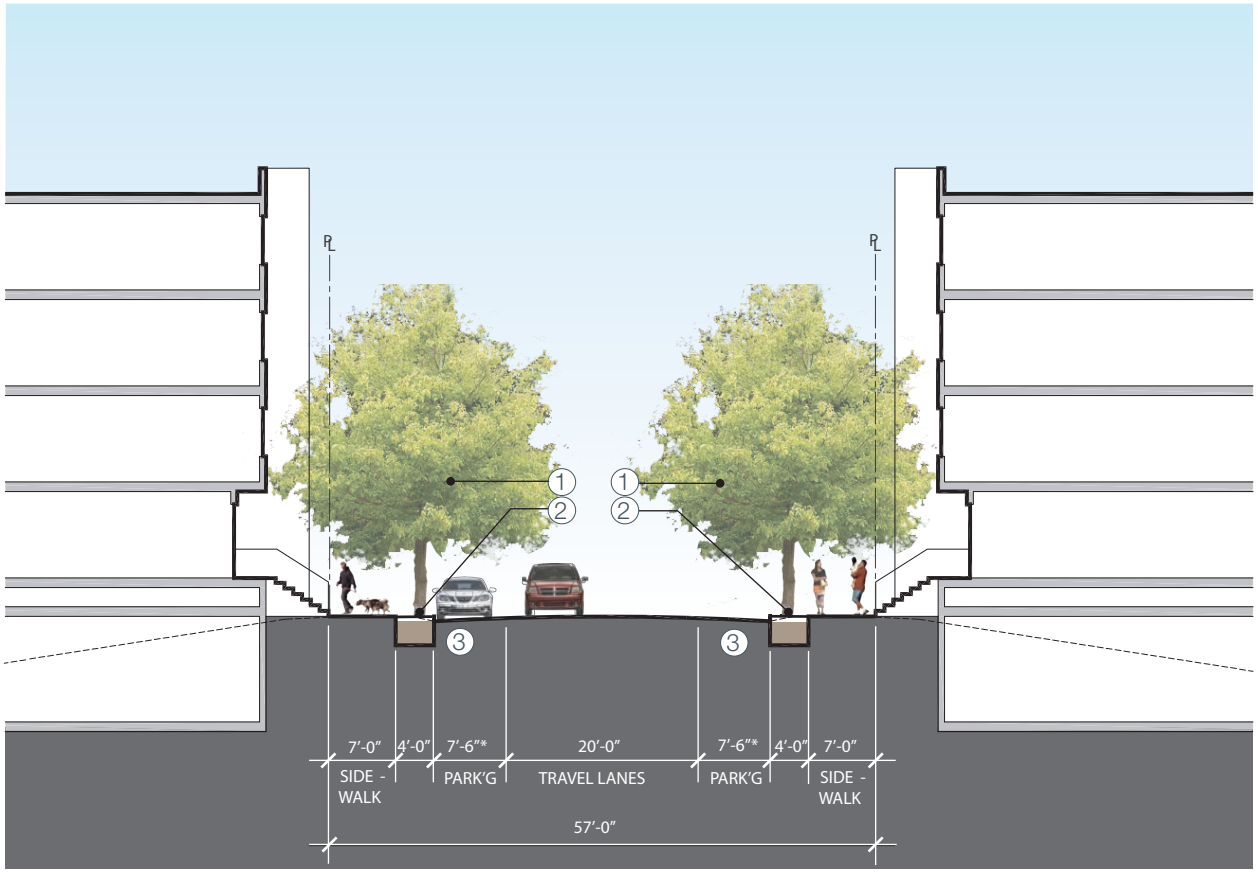


Figure 02.12.B - East-West Street Typical Section



East-West Street Design Features

1. Street tree
2. 4' x 6' min. wide tree well bio-infiltration system (see Figure 02.12.D)
3. Permable paving in parking zone
4. Concrete sidewalk
5. Tree well boardwalk cover
6. Hinged access tree well cover to match boardwalk
7. Curb inlet

* 7'-6" wide parking zone to accommodate fire truck turning at intersections.

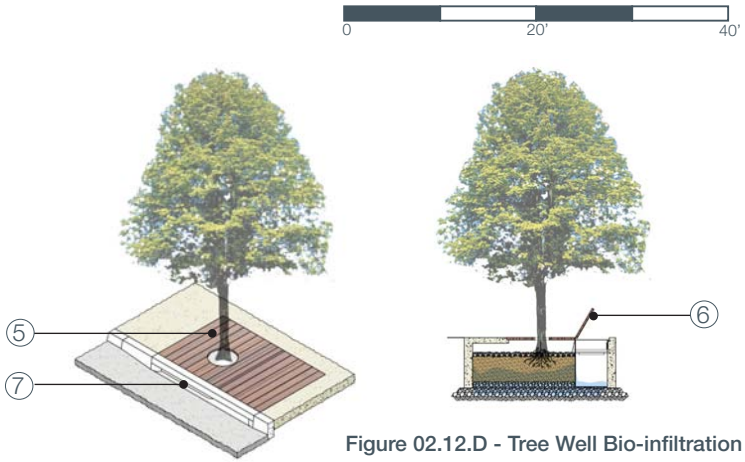


Figure 02.12.D - Tree Well Bio-infiltration System

Figure 02.12.C Proposed Trees

Species / Common Name

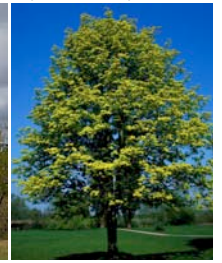
Acer negundo 'Sensation'

Acer macrophyllum/ Big Leaf Maple*

Fraxinus Americana 'Autumn Purple' / Autumn Purple White Ash

Liquidamber styraciflua 'Festival'/ Festival American Sweet Gum

Platanus pennsylvanica 'Marshall'/ Marshall Ash



Platanus wrightii/ Arizona Sycamore

Proposed Shrubs and Ground Covers * California native

Species / Common Name

Sesleria autumnalis/ Autumn Moor Grass

Sisyrinchium bellum/ Blue-eyed Grass *

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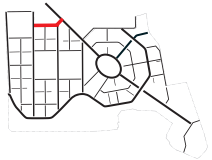
02.13 streets -pinto avenue

KEY PLAN



Pinto Avenue is located at the edge between Parkmerced and San Francisco State University to the north. The south side of the street will have a continuous bioswale that collects, conveys and cleans the rainwater runoff depositing water in a terminal pond at the northwest corner of the site. Street trees planted in the bioswale will also line the south side of the street to visually reduce the perceived width of the paved surface along the site's perimeter.

Standards

02.13.01 **Requirements** Street dimensions and design elements shall comply with Figure 02.13.A - Pinto Avenue Illustrative Plan and Figure 02.13.B – Pinto Avenue Typical Section.

02.13.02 **Trees** Street trees shall be consistent in size, height and canopy form. Street trees must be planted in a continuous bioswale, trees in this category shall provide a large canopy, with an average minimum height of approximately 45 feet. Once chosen from the list of proposed trees (Fig. 02.13.C) , only one tree species may be used, ideally the same tree species as the bio-infiltration tree, for the entire length of Pinto Avenue, in order to provide a consistent horticultural theme, except if this tree species becomes commercially unavailable or is not recommended by a certified arborist.

02.13.03 **Tree Alignment** Where feasible, street trees shall be aligned across the street and with the on-street parking stall layout, as shown in Figure 02.13.A – Pinto Avenue Illustrative Plan, with a maximum street tree spacing of no greater than 30 feet on center.

02.13.04 **Seasonal Inundation** Street trees planted in bioswales must be able to tolerate saturated soil conditions.

02.13.05 **Bioswale Bridges** Pedestrian crossing bridges over a bioswale shall be located at regular intervals to accommodate people stepping out of parked cars and at building entries. They shall not obstruct the flow of water along bioswales.

02.13.06 **Ground Plane** Sidewalk paving material, finish and color shall be consistent at all locations.

Guidelines

02.13.07 **Plants** Proposed understory plant alternatives are listed in Figure 02.13.C – Proposed Shrubs and Ground Covers.

Figure 02.13.A - Pinto Avenue Illustrative Plan

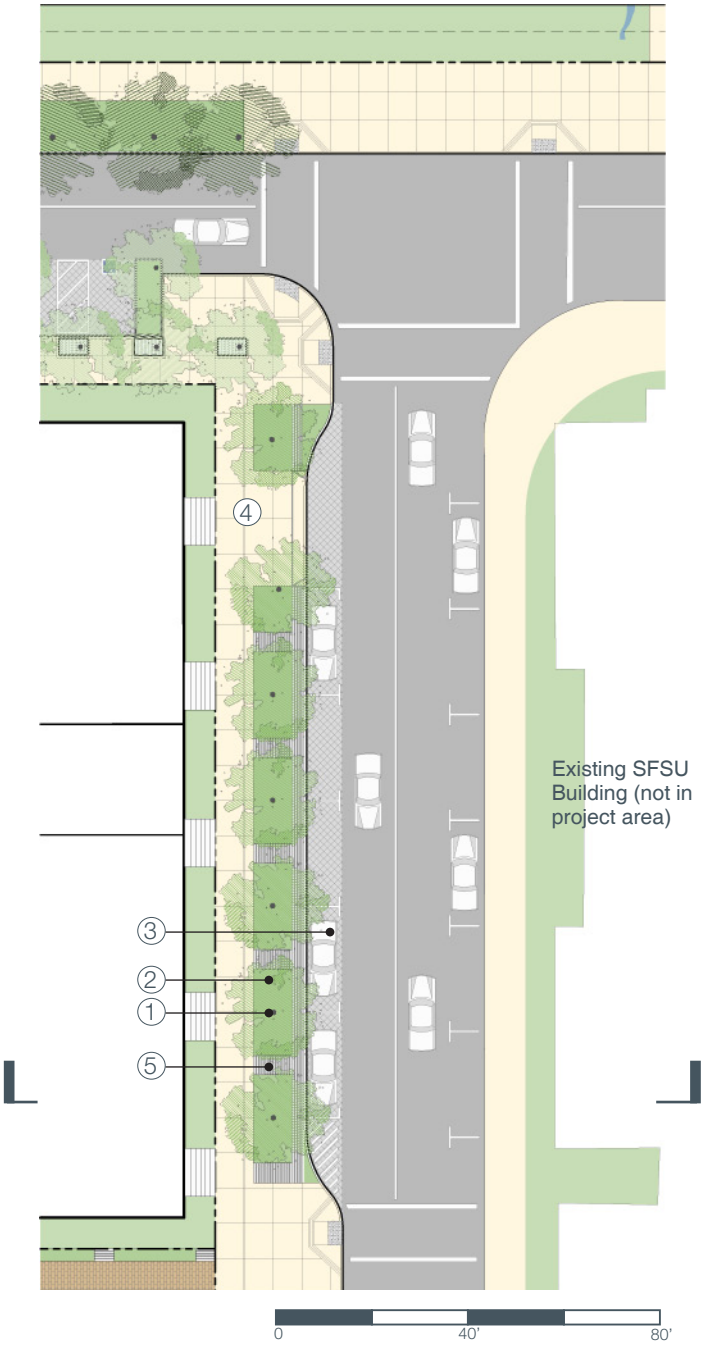
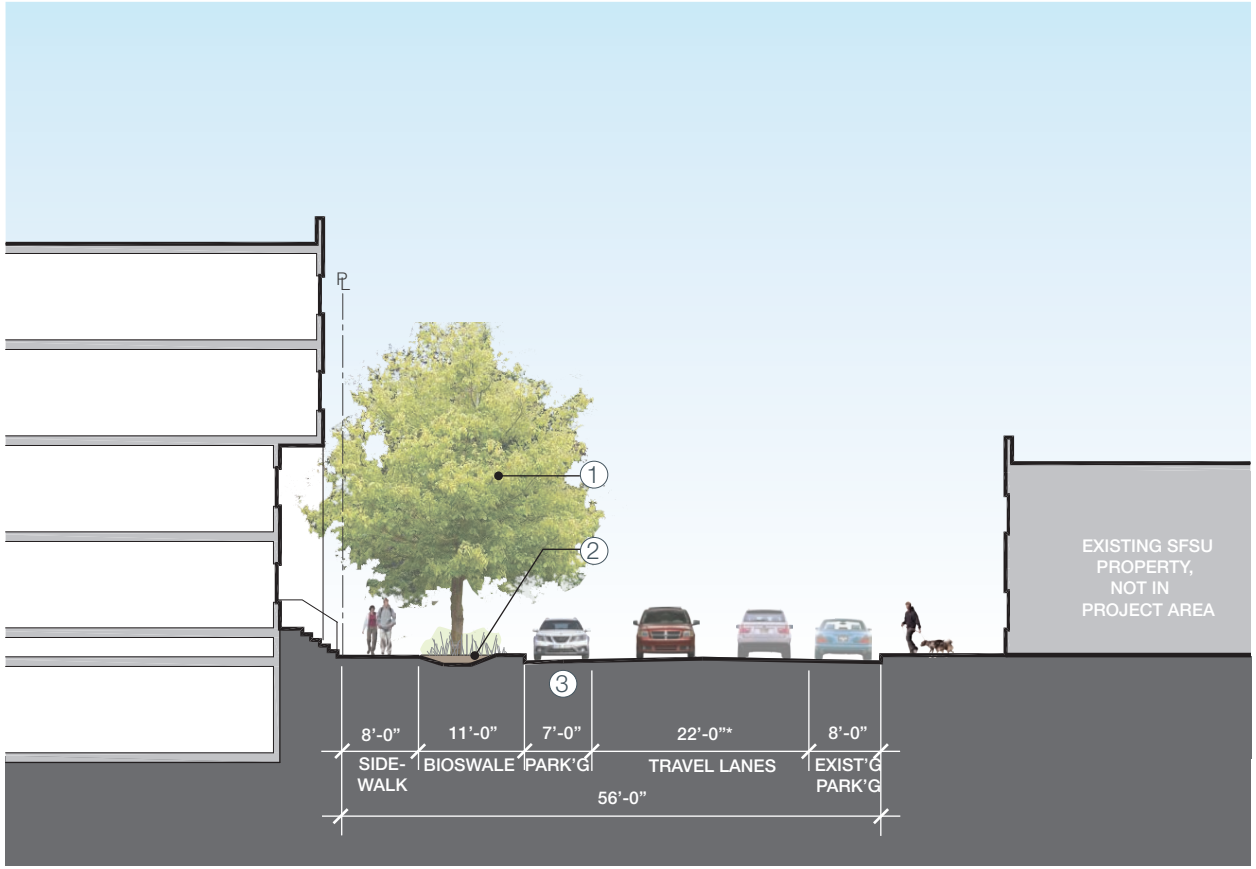


Figure 02.13.B - Pinto Avenue Typical Section



Pinto Avenue Design Features

1. Street tree type -bio-swale
2. Bioswale planting
3. Permable paving in parking zone
4. Concrete sidewalk
5. Perforated pedestrian bridge -min 6" but preferably 12" clearance from the bottom of swale to ensure the flow

0 20' 40'

*11' wide travel lanes to maintain the existing R.O.W from the street centerline.

Figure 02.13.C Proposed Trees

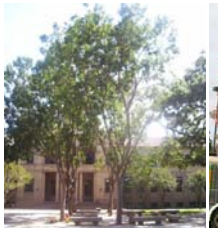
Species / Common Name

Fraxinus Americana 'Autumn Purple' / Autumn Purple White Ash

Quercus Virginiana/ Southern Live Oak

Tristania conferta/Brisbane Box

Ulmus parvifolia 'Allee'/ Allee Chinese Elm



Ulmus parvifolia 'Dynasty'/ Chinese Elm

Ulmus X 'Frontier'/ Frontier Elm

**All produce vigorous shallow roots

Proposed Shrubs and Ground Covers * California native

Species / Common Name

Biofiltering plants

Carex Divulsa

Cornus Sericea/ Hedgerow Gold

Cornus Sericea Flaviramea/ Yellow Twig Dogwood

Juncus Carmans Japonese

Sisyrinchium Bellum Grass*

Sisyrinchium californicum*

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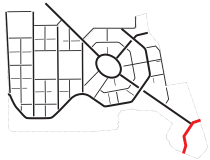
02.14 streets -chumasero drive

KEY PLAN



Chumasero Drive is an important entry to Parkmerced and bike lanes will connect Brotherhood Way to both the internal bike network as well as through to San Francisco State University. Both sides of the street will have street trees planted in bio-filtration tree wells, which will collect the rainwater runoff and the filtered water will then slowly percolate back to the ground.

Standards

02.14.01 **Requirements** Street dimensions and design elements shall comply with Figure 02.14.A - Chumasero Drive Illustrative Plan and Figure 02.14.B – Chumasero Typical Section.

02.14.02 **Trees** Street trees shall be consistent in size, height and canopy form. Trees must be planted in a minimum 4 foot x 6 foot bio-infiltration tree well. Street trees planted in bio-infiltration tree wells must be able to tolerate confined space for roots. They must be small to medium sized and change colors seasonally. Trees must be consistent with an average height of approximately 30 feet and have light, transparent canopies. A single tree species chosen from the list of proposed trees (Fig. 02.14.C) shall be used for the entire length, in order to provide a consistent horticultural theme, except if this tree species becomes commercially unavailable or is not recommended by a certified arborist.

02.14.03 **Tree Alignment** Where feasible, street trees shall be aligned across the street and with the on-street parking stall layout, as shown in Figure 02.14.A – Chumasero Drive Illustrative Plan, with a maximum street tree spacing of no greater than 30 feet on center.

02.14.04 **Seasonal Inundation** Street trees planted in bio-infiltration tree wells must be able to tolerate saturated soil conditions.

02.14.05 **Ground Plane** Sidewalk paving material, finish and color shall be consistent at all locations.

Guidelines

02.14.06 **Plants** Proposed understory plant alternatives are listed in Figure 02.14.C – Proposed Shrubs and Ground Covers.

Figure 02.14.A - Chumasero Drive Illustrative Plan

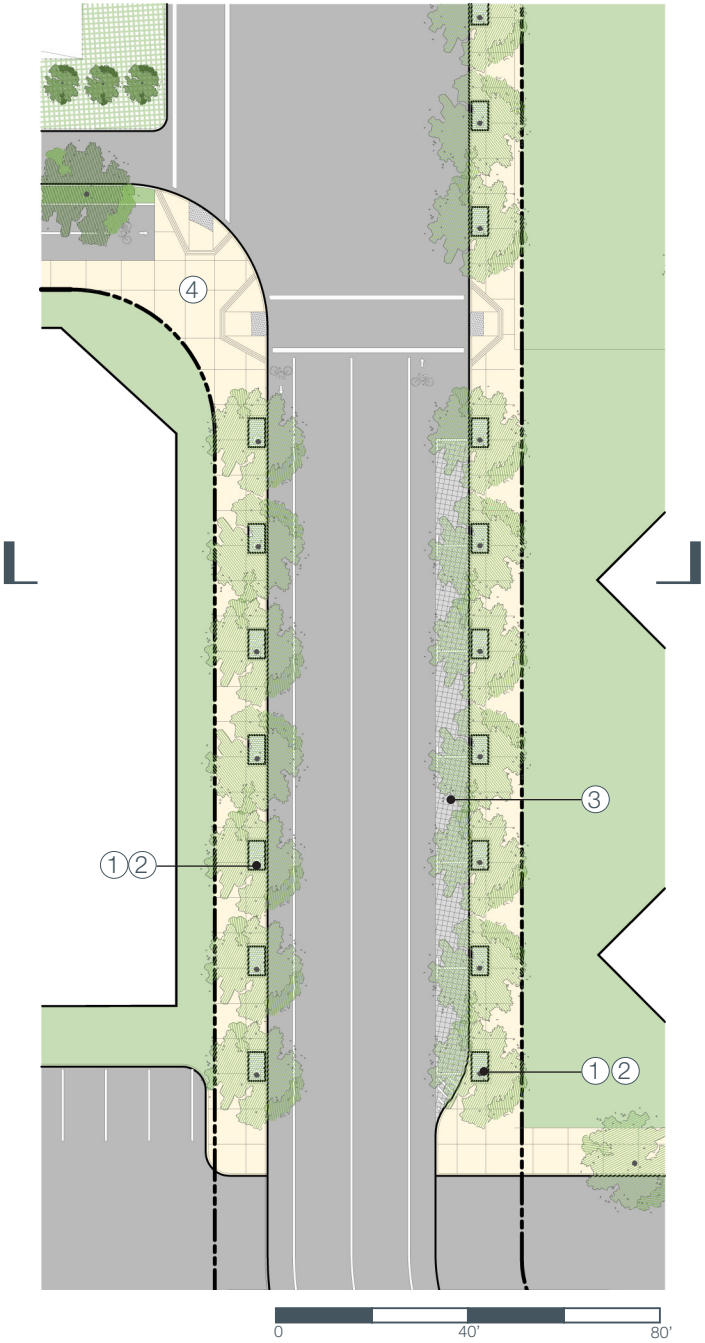
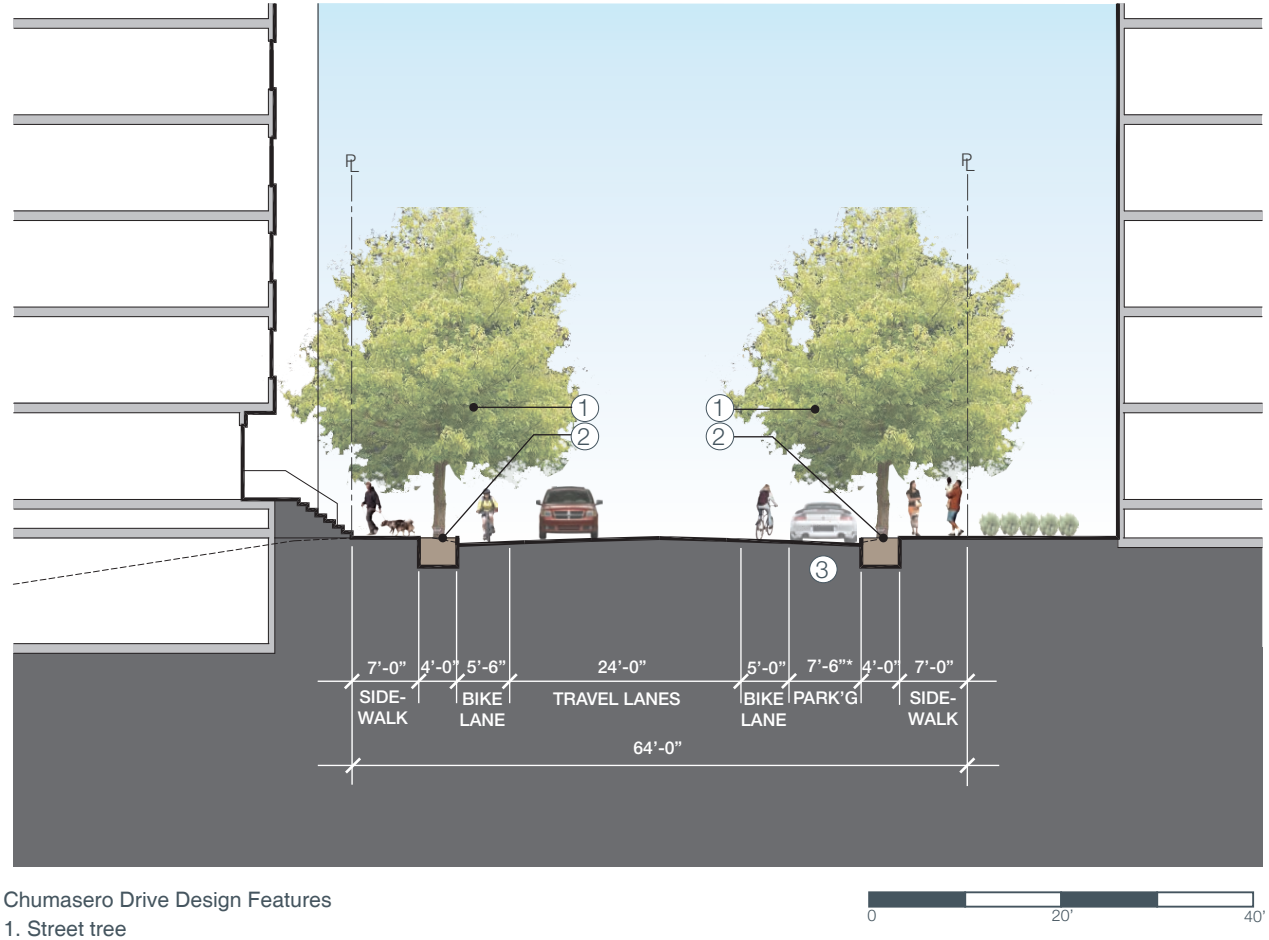


Figure 02.14.B - Chumasero Drive Typical Section



Chumasero Drive Design Features

1. Street tree
2. 4' x 6' min. wide tree well bio-infiltration system (see Figure 02.12.D)
3. Permable paving in parking zone
4. Concrete sidewalk

* 7'-6" wide parking zone to provide a buffer for the adjacent bike lane.

Figure 02.14.C Proposed Trees

Species / Common Name

Acer negundo 'Sensation'

Acer macrophyllum/ Big Leaf Maple*

Fraxinus Americana 'Autumn Purple' / Autumn Purple White Ash

Liquidamber styraciflua 'Festival'/ Festival American Sweet Gum

Platanus pennsylvanica 'Marshall'/ Marshall Ash

Platanus wrightii/ Arizona Sycamore

Proposed Shrubs and Ground Covers * California native

Species / Common Name

Sesleria autumnalis/ Autumn Moor Grass

Sisyrinchium bellum/ Blue-eyed Grass *

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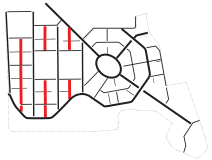
02.15 streets -alley way

KEY PLAN



Alley ways are intended to be pedestrian focused, shared streets. Modeled after the Woonerf, these streets are intended as small scale, neighborhood streets. Primarily pedestrian, with limited vehicle access, these residential, intimately scaled streets are paved with permeable surfaces and have no curbs. A biogutter located on the west side of the street captures rainwater runoff. The biogutters are intended to include robust plants to help demarcate sidewalk areas as well as clean rainwater runoff.

Standards

02.15.01 **Requirements** Street dimensions and design elements shall comply with Figure 02.15.A - Alley Way Illustrative Plan and Figure 02.15.B - Alley Way Typical Section.

02.15.02 **Trees** Street trees shall be consistent in size, height and canopy form. They must be small to medium sized and change colors seasonally. Trees must be consistent with an average height of approximately 20 to 25 feet and allow ample sun light to reach the pedestrian realm. A maximum of five tree species from the list of proposed trees (Fig. 02.15.C) may be used for all alley ways in order to provide an opportunity for a diverse street character. Varying tree types may be used within a single block

02.15.03 **Tree Alignment** Where feasible, street trees shall be aligned across the street and with the on-street parking stall layout, as shown in Figure 02.15.A – Alley Way Illustrative Plan, with a maximum street tree spacing of no greater than 30 feet on center.

02.15.04 **Biogutters** A grate or perforated surface must cover biogutters to ensure that the excess rainwater will be collected and drained into them, while providing a reasonable degree of pedestrian safety. Grates or perforated surfaces must allow robust plants to grow through them.

02.15.05 **Water Barrier** A 6 inch tall curb must be located along the property line as shown in Figure 02.15.B - Alley Way Typical Section, in order to help prevent water from entering into buildings if biogutters reach their maximum capacity.

02.15.06 **Ground Plane** Paving must be flush across the entire right-of-way with no curbs separating pedestrian zones from vehicular zones. Paving material, color and finish shall be coordinated between pedestrian and vehicular zones to show differentiation while maintaining a cohesive surface.

02.15.07 **Pinch Points** Where Alley Ways intersect with Paseos, pedestrian crossings shall have a planted landscape area within the parallel parking area (Fig.02.15.A), which includes a tree species described in Section 02.16 – Pedestrian Paseo.

Guidelines

02.15.08 **Plants** Proposed understory plant alternatives are listed in Figure 02.15.C – Proposed Shrubs and Ground Covers.

02.15.09 **Understory Plants** Tree wells should have understory plants.

02.15.10 **Biogutter Plants** Biogutters should have a filtration medium and planting soil and should be planted with tall grassy water loving plants that grow through biogutter covers.

02.15.11 **Unique Identity** Alley ways should be paved with pervious unit pavers or stone (Fig. 02.15.A).

Figure 02.15.A - Alley Way Illustrative Plan

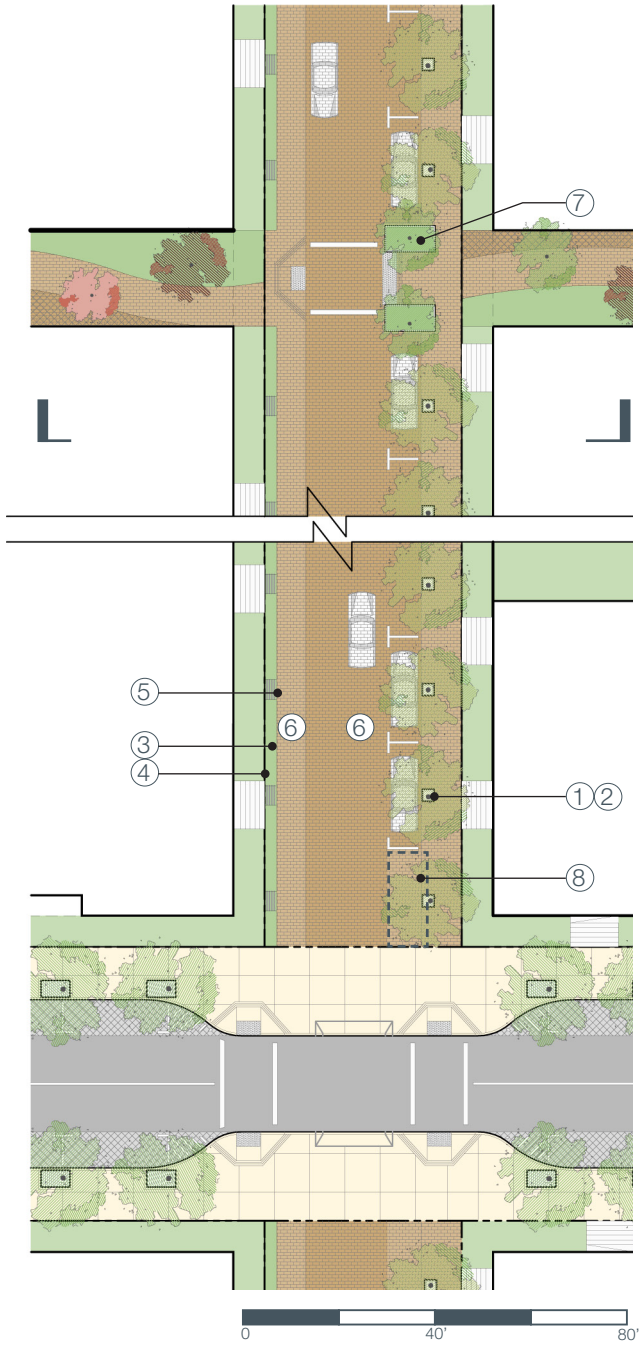
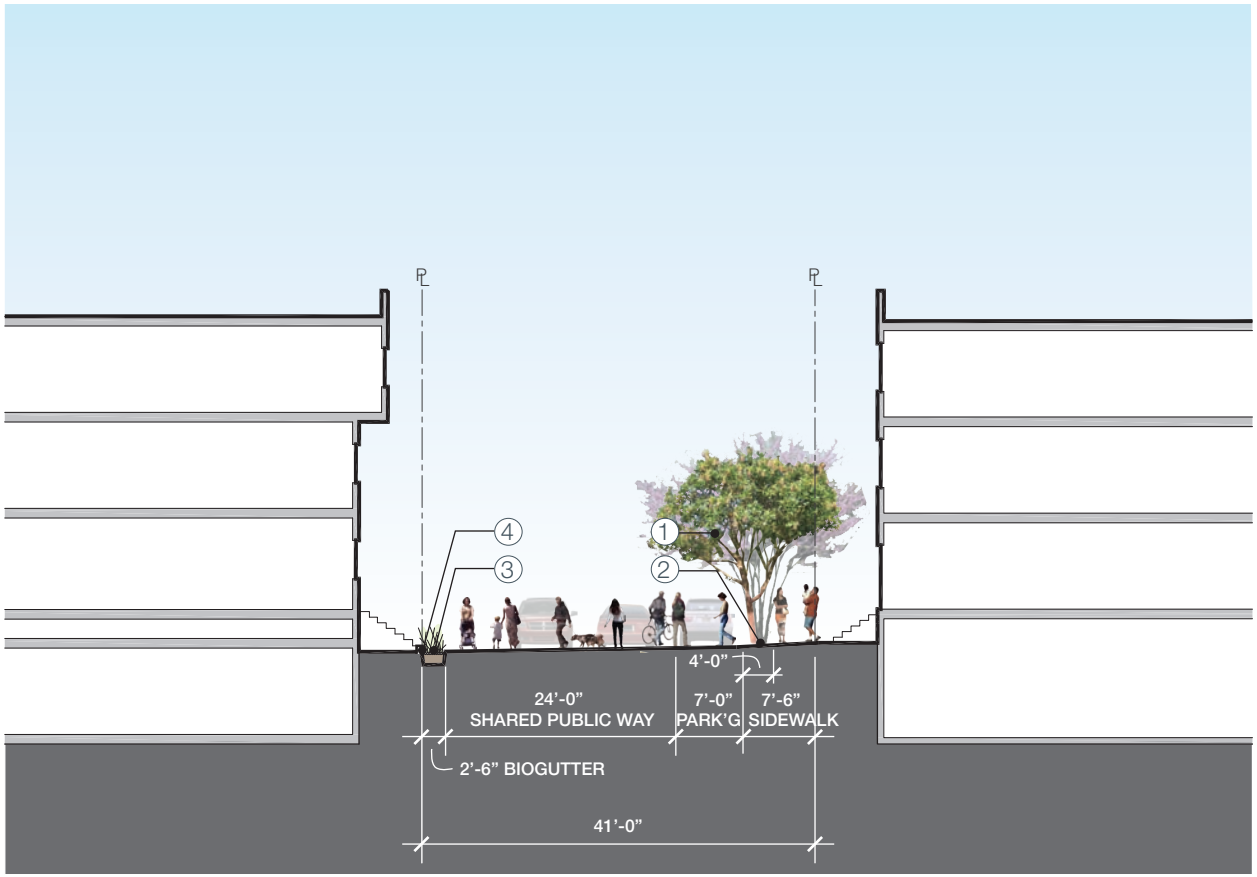


Figure 02.15.B - Alley Way Typical Section



Alley Way Design Features

1. Street tree
2. 3' wide min. permeable paver material or planting over tree well.
3. Continuous bio-gutter with metal grate and biofiltering plants.
4. 6" tall continuous curb for flood protection
5. Perforated metal grate pedestrian bridge
6. Flush paving materials
7. Planted landscape area at crossing
8. Flexible Active Use Zone

*24' wide Shared Public Way per City standard.

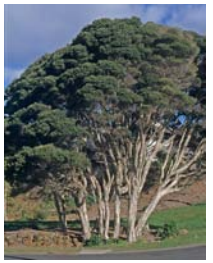
Figure 02.15.C Proposed Trees

Species / Common Name

Acer negundo 'Sensation'

Arbutus marina/ Strawberry Tree

Cercis Canadensis/Canadian Redbud



Melaleuca ericifolia/ Swamp Paperbark

Proposed Shrubs and Ground Covers * California native

Species / Common Name

Biofiltering plants for bio-gutter

Carex Divulsa

Juncus Patens*

Juncus Carmans Japonese

Restio Tetraphyllus

Sisyrinchium Bellum Grass*

Sisyrinchium californicum*

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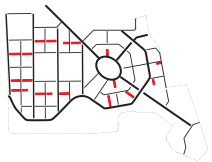
02.16 streets -pedestrian paseo

KEY PLAN



Paseos are intended as pedestrian throughways. With residential entries, stairs and balconies defining their edges, Paseos are meant to be an extension of the living spaces that line them. They are small, informal and are spaces for improvisational uses. A staggered, informal pattern of trees is meant to help buffer against strong, westerly winds by preventing gusts from reaching the pedestrian realm.

Standards

02.16.01 **Requirements** Street dimensions and design elements shall comply with Figure 02.16.A - Paseo Illustrative Plan and Figure 02.16.B – Paseo Typical Section. A continuous path of 6 feet in width must be maintained for the entire length of the paseo.

02.16.02 **Trees** Paseo trees must be planted in an informal pattern, while providing the minimum widths for pedestrian paths. They must be small to medium sized, but not impede a person's line of sight between an adjacent public right-of-way or alley way. Tree canopies must be a minimum of 7 feet above grade. Trees must be consistent with an average height of approximately 20 to 25 feet and allow ample sun light to reach the pedestrian realm. Tree species must be wind tolerant, change colors seasonally, and have a transparent and narrow canopy that allows sun light to penetrate. A maximum of five tree species from the list of proposed trees (Fig. 02.16.C) may be used for all alley ways in order to provide an opportunity for a diverse street character. Varying tree types may be used within a single block.

02.16.03 **Ground Plane** Paseo paving material, finish and color shall be coordinated at all locations within a development block.

Guidelines

02.16.04 **Plants** Proposed understory plant alternatives are listed in Figure 02.16.C – Proposed Shrubs and Ground Covers.

02.16.05 **Unique Identity** Paseos should be paved with pervious unit pavers or stone (Fig. 02.16.A).

Figure 02.16.A - Paseo Illustrative Plan

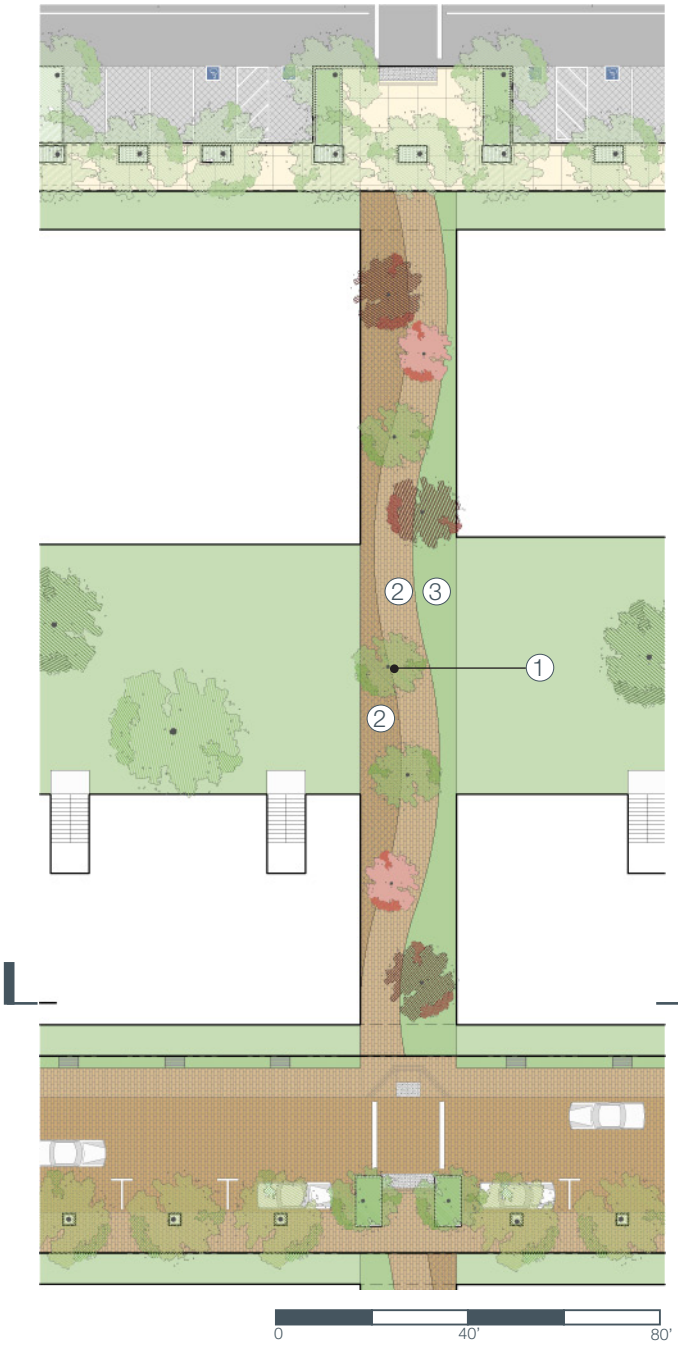
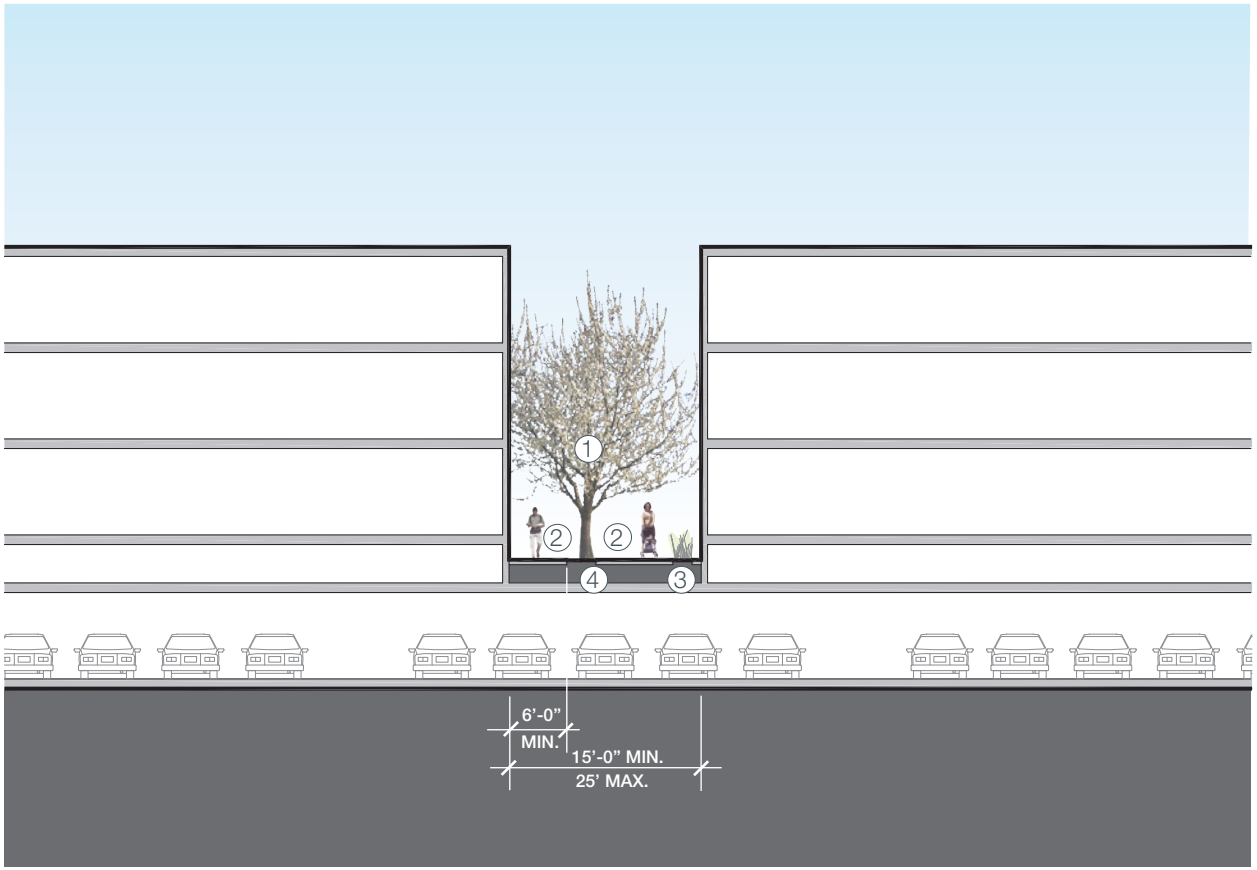


Figure 02.16.B - Paseo Typical Section



Paseo Design Features

1. Paseo tree

2. 6' min. Pedestrian path

3. Planting zone

4. 3' min. planting depth required

Figure 02.16.C Proposed Trees

Species / Common Name

Cercis canadensis – Canadian Redbud

Arbutus marina /Strawberry Tree

Feijoa sellowiana/ pineapple guava

Abutilon hybridum white parasol / White Parasol Flowering Maple

Calamagrostis x acutiflora 'Karl Foerster' / Feather Reed Grass

Carpenteria californica/ Bush Anemone

Epilobium septentrionalis 'Mattole River'/ Mattole River California Fuchsia

Festuca idahoensis 'Siskiyou Blue' /'Siskiyou Blue' Idaho Fescue Grass

Verbena bonariensis/ Verbena

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02.17 open space network

The open space network is intended to provide a range of outdoor spaces that support recreational activities, encourage social interaction among residents, and provide an ecologically sustainable landscape that is visually pleasing. In an effort to create a healthy neighborhood, open space at Parkmerced is intended to provide opportunities for both active and passive recreation such as sports courts, playgrounds, outdoor dining areas, and places for quite reflection. As a whole, the open space network is meant to provide recreation spaces that allow residents of all ages and abilities to enjoy them and respect the needs of uses that are directly adjacent. A hierarchy of neighborhood open spaces provides a framework to support the various scales of community needs, providing a range of outdoor experiences that enrich the social life of the neighborhood: including semi-private courtyards that encourage interaction at a building scale, Neighborhood Commons that encourage interaction at a block scale, and parks and plazas that encourage interaction at a neighborhood scale.

In addition to maximizing the use of rainwater runoff and using acclimated plant species, the open space network provides a substantial increase in wildlife-friendly habitat areas for the neighborhood. The Stream Corridor, which runs through the center of the neighborhood, is the backbone of the habitat creation strategy. The stream is intended to support native vegetation and wildlife typically found in local streams and includes a trail system that allows residents to meander alongside Lake Merced. Encouraging the community to actively participate in local food production, a community based, organic farm is located in the heart of the neighborhood. Along with the Organic Farm are a series of community gardens located throughout Parkmerced to provide educational and social opportunities for residents who enjoy the art of actively growing vegetables.

Standards

02.17.01 **Requirements** Open space designs shall adhere to the standards and guidelines, contained within this section, for specific, open space types illustrated in Figure 02.17.A – Open Space Plan and comply with the SFPUC's Water Efficient Irrigation Ordinance and accompanying rules and regulations.

02.17.02 **Publicly Accessible Open Space** Areas designated as publicly accessible open space at Parkmerced are illustrated in the Open Space Plan – Figure 02.17.A. Publicly Accessible Open Space at Parkmerced, excluding tower areas and courtyards, must be publicly accessible at all times, subject to reasonable maintenance, operations, and repair and security rights.

02.17.03 **Dedicated Open Space** Building structures are not permitted within areas designated as Dedicated Open Space in Appendix A – Regulating Plan, except public restrooms no greater than 500 square feet and open air park pavilions. Retail kiosks are permitted within the Transit Plaza, Juan Bautista Circle and the Organic Farm in accordance with relevant standards and guidelines for each of these spaces.

02.17.04 **Alternative Tree Species** Street tree species not included in the proposed tree species list for each specific street type shall be selected by a certified arborist. The selection of tree species must comply with the Parkmerced Infrastructure Report for soil saturation levels and must follow the street tree characteristics for listed in Figure 02.06.A - Street Tree Character for each particular street type.

Guidelines

02.17.05 **Variety of Uses** The open space network should provide a wide range of activities including, but not limited to: active recreation areas such as sports courts and playgrounds; social activity and gathering areas such as outdoor dining and seating areas; food production areas such as community gardens and the organic farm; and natural settings such as the stream corridor.

02.17.06 **Alternative Plant Species** Plant species not included in the Proposed Shrubs and Ground Covers list for each specific street type should be selected by a horticulturist. The selection of plant species should comply with the Parkmerced Infrastructure Report for soil saturation levels at each street type and should be non-invasive and in compliance with Section F - Water Efficient Irrigation of the "Rules and Regulations Governing Water Service to Customers" by SFPUC.

02.17.07 **Optimal Growth** Tree planting should follow the optimal growth of each tree species chosen and defined by a certified arborist at the time of planting.

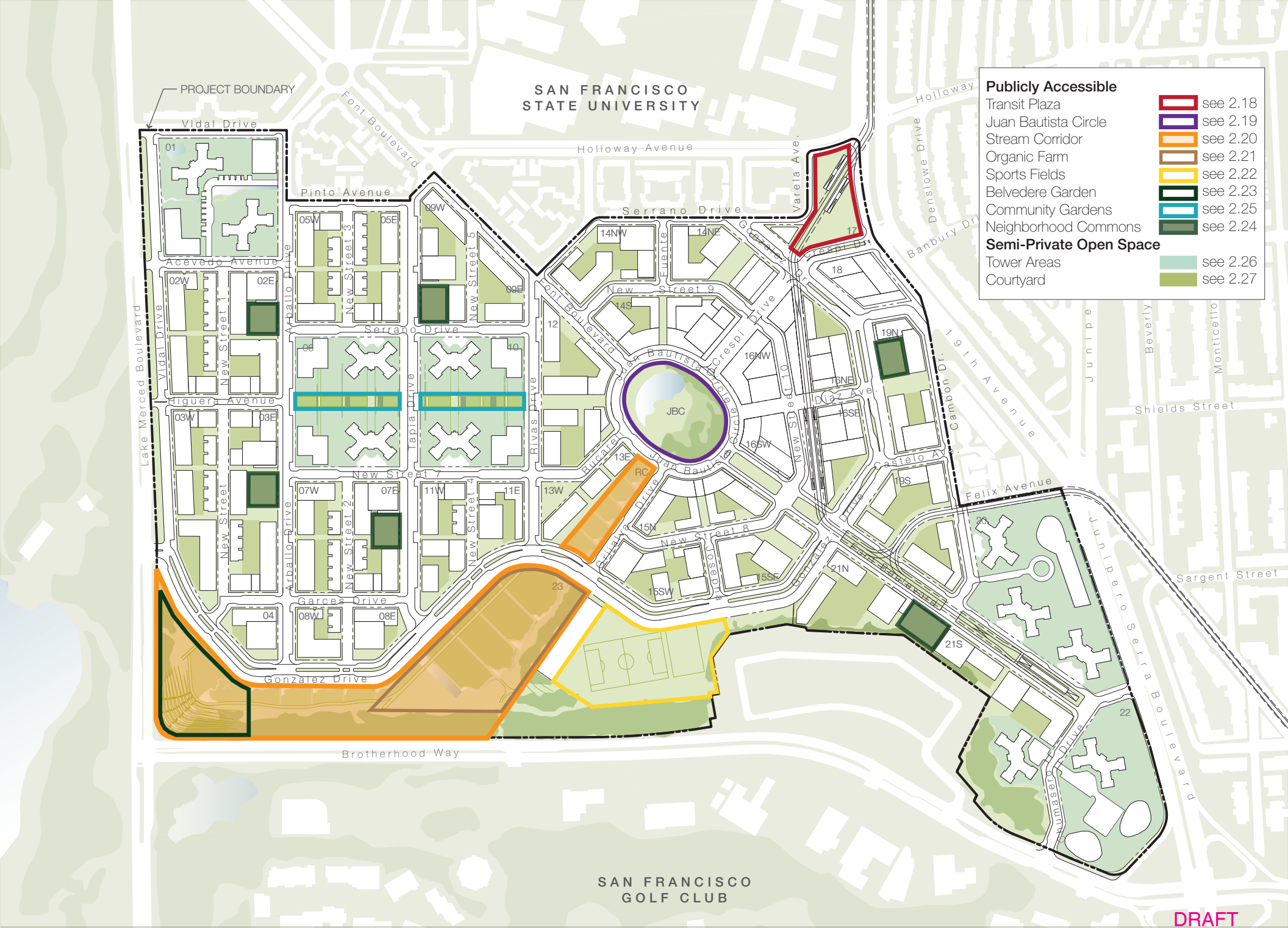

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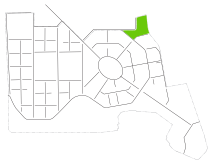
FIGURE 02.17.A / Open Space Plan

02.18 open space -transit plaza

KEY PLAN



The Transit Plaza is located at the southwest corner of 19th and Holloway Avenue and is intended to be a new multimodel transit station for Parkmerced, SFSU and adjacent neighborhoods. As a primary entry point to Parkmerced, the Transit Plaza is meant to provide a strong sense of arrival and help orient visitors to the neighborhood. An area within the transit plaza is conceived of as an event space to accomodate small scale community gatherings and festivities. A small commercial building, along with news and coffee kiosks are intended to increase the vibrancy of the transit plaza while providing convenient services and amenities for daily commuters.

Standards

02.18.01 **Requirements** Open space dimensions and design elements shall comply with Figure 02.18.A - Transit Plaza Illustrative Plan.

02.18.02 **Transit** A Muni light rail stop shall be accomodated within the plaza. Bus shelters shall be accomodated along the perimiter of the plaza, where needed.

02.18.03 **Pedestrian Only** The Transit Plaza shall be a dedicated pedestrian area. To ensure pedestrian safety auto and bicycle traffic is not permitted.

02.18.04 **Public Space Amenities** Multiple public space amenities shall be provided and be carefully integrated into the overall design of the Transit Plaza. Public space amenities include, but are not limited to: trees, seating, public art, lighting, bicycle parking, and trash and recycling bins, or news racks.

02.18.05 **Increased Vibrancy** To provide convenient services and amenities to daily commuters, up to four retail kiosks are permitted in the transit plaza for a total aggregate of 1000 square feet. Each kiosk may be up to 500 square feet with a minimum horizontal separation of 10 feet. In addition, a retail bicycle shop not exceeding 3,200 square feet is permitted on the transit plaza.

02.18.06 **Trees** Proposed tree species shall be selected from the list of proposed trees in Figure 02.18.C – Proposed Trees and Proposed Shrubs and Groundcovers.

Guidelines

02.18.07 **Transit Node** The Transit Plaza should support pedestrian movements between the various adjacent uses, the Muni light rail stop, bus stops and other modes of transportation.

02.18.08 **Overhead Shelter** In order to provide protection from rain and to the extent possible help to buffer against prevailing winds, overhead shelter should be provided throughout the plaza. Overhead structures within the View Corridor illustrated in Figure 02.02.A - View Corridor Plan must not impede pedestrian views from and through the Transit Plaza.

02.18.09 **Community Gatherings** A space for small community events, gatherings and temporary stands or booths should be provided within the transit plaza. Areas with tree plantings may be included in this space.

02.18.10 **Unique Identity** The Transit Plaza should be paved with pervious unit pavers or stone (Fig. 02.18.A).

02.18.11 **Seating** Areas with seating within the plaza should be located to offer sunny, wind protected places to sit and gather.

02.18.12 **Increased Vibrancy** Ground floor active uses are encouraged to open onto and occupy parts of the pedestrian plaza adjacent to buildings with outdoor spaces, as described in standard 03.06.06 - Active Ground Floors.

02.18.13 **Rainwater Runoff** The Transit Plaza should be designed to capture rainwater runoff unsing biogutters, swales and permeable paving and if possible feed into the neighborhood hydrology system.

02.18.14 **Plants** Proposed plant species should be selected from the list of proposed shrubs and ground covers in Figure 02.18.C – Proposed Trees and Proposed Shrubs and Groundcovers.

Figure 02.18.A - Transit Plaza Illustrative Plan

Figure 02.18.C Proposed Trees

Species / Common Name

Fraxinus Americana 'Autumn Purple' / Autumn Purple White Ash

Quercus Virginiana/ Southern Live Oak

Tristania conferta/ Brisbane Box

Ulmus parvifolia 'Allee'/ Allee Chinese Elm

Ulmus parvifolia 'Dynasty'/ Chinese Elm

Ulmus X 'Frontier'/ Frontier Elm

**All produce vigorous shallow roots

Proposed Shrubs and Ground Covers * California native

Species / Common Name

Bio-gutter

Carex Flacca/ Blue Sedge

Juncus patens/ Wire Grass

Sesleria autumnalis/ Autumn Moor Grass

Transit Plaza Design Features

1. Muni light rail stop
2. Paved plaza
3. Small retail building
4. Pavement demarcation
5. View corridor
6. Muni Right-of-Way & Easement

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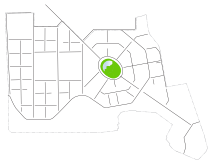
02.19 open space -juan bautista circle

KEY PLAN



Juan Bautista Circle is a major neighborhood gathering place, located in the center of the Parkmerced 'social heart'. Juan Bautista Circle is intended to be transformed into a demonstration of the sustainable and low-impact design principles that are at the core of the effort to re-invent Parkmerced. Bounded by a double row of street trees, the historic oval includes a pond edged with wetland planting, surrounded by a large recreational lawn area for community activities and gatherings. The pond, which will act as a rainwater detention area, is located above a subterranean cistern which will pulse water year-round into the stream corridor to the southwest. Harvested water, stored in the subterranean cistern, is intended to be used to irrigate the Organic Farm.

Standards

02.19.01 **Requirements** Open space dimensions and design elements shall comply with Figure 02.19.A - Juan Bautista Circle Illustrative Plan and Figure 02.19.B - Juan Bautista Circle Section.

02.19.02 **Rainwater Capture** Juan Bautista Circle shall include a rainwater detention pond, fed by rainwater runoff from adjacent streets.

02.19.03 **Cistern** A subterranean cistern shall be located beneath Juan Bautista Circle in order to store water for the pond and stream system during the dry season. The cistern must be underground and hidden from sight.

02.19.04 **Overland Flows** In order to allow overland flows of rainwater from the street to the detention pond Juan Bautista Circle shall be curbless. Bollards or other visually attractive barriers must be incorporated to separate and define vehicle and pedestrian zones.

02.19.05 **Increased Vibrancy** Three retail kiosks, each up to 200 square feet, are permitted within the Juan Bautista Circle. Kiosks must have a minimum horizontal separation of 10 feet.

02.19.06 **Trees** Proposed tree species shall be selected from the list of proposed trees in Figure 02.19.C – Proposed Trees and Proposed Shrubs and Groundcovers

02.19.07 **Street Trees** Along Juan Bautista Circle, on both sides of the street, trees shall be selected per standard 02.08.02 - Trees.

Guidelines

02.19.08 **Neighborhood Green** The multi-purpose lawn should be planted with low maintenance, acclimated lawn alternative species which have low water needs.

02.19.09 **Community Gatherings** A space for community events, gatherings and festivities such as farmer's markets or outdoor concerts should be provided within Juan Batista Circle. Areas with tree plantings may be included in this space.

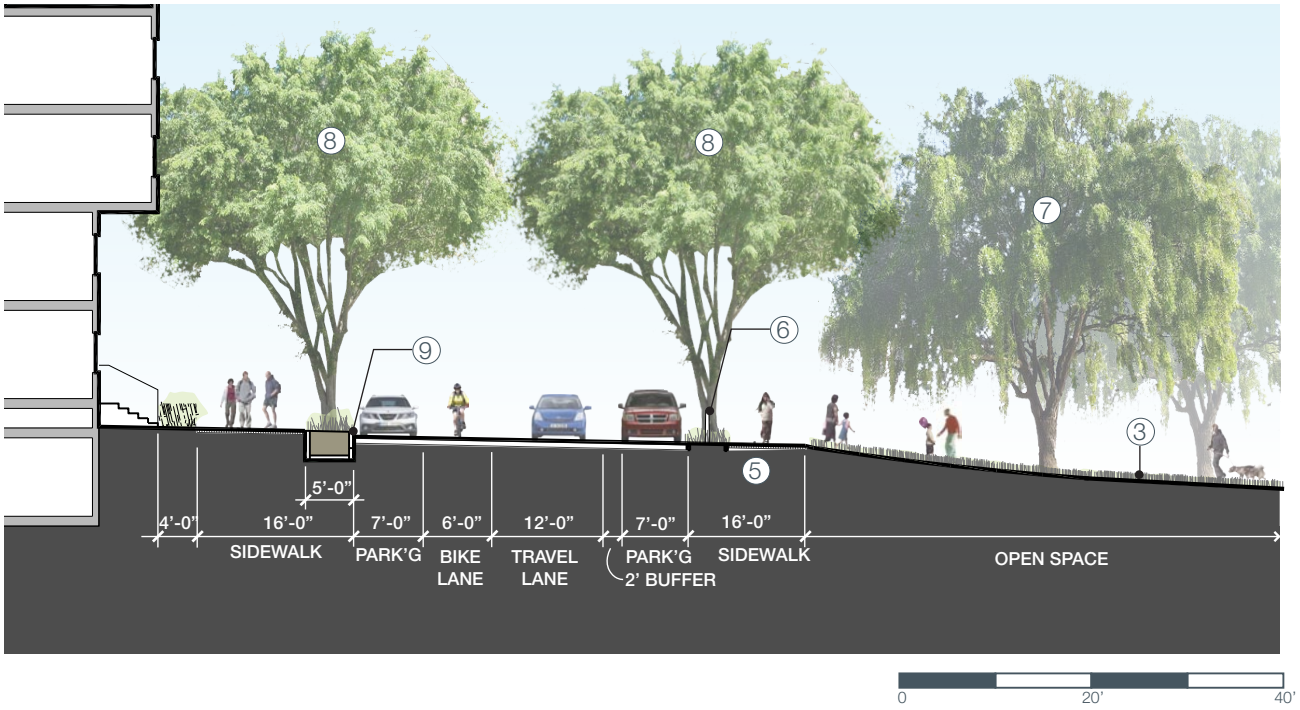
02.19.10 **Seating** Areas with seating should be provided and be carefully integrated into the overall design of Juan Bautista Circle.

02.19.11 **Bike Lane** The bike lane along Juan Bautista Circle should be paved with pervious unit pavers.

02.19.12 **Plants** Juan Bautista Circle should be planted with native or acclimated plant species, as listed in Figure 02.19.C – Proposed Trees and Proposed Shrubs and Groundcovers.

Figure 02.19 .A - Juan Bautista Circle Illustrative Plan

Figure 02.19.B - Juan Bautista Circle Section



Juan Bautista Circle Design Features

1. Pond with cistern
2. Wetland
3. Multi-purpose lawn
4. Location for overlook terrace
5. Curbless sidewalk with special paving for safety
6. Bollards at pedestrian crossing
7. Trees with distinctive looks for shade and beauty
8. Font Boulevard Trees -see 02.08
9. Tree-well bio-infiltration -see 02.08 Font Boulevard.

Figure 02.19.C Proposed Trees

Species / Common Name

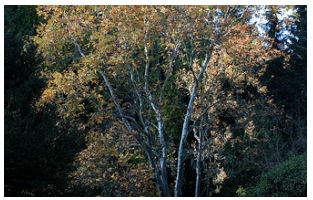
Open Area Trees

Maytenus boaria. /Green Showers

Cercis Canadensis. /Canadian Redbud

Street Trees

The same as Font Boulevard - see 02.08.C

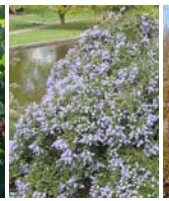


Platanus racemosa /California Sycamore

Proposed Shrubs and Ground Covers * California native

Species / Common Name

Calycanthus ccidentalis /Spice ush



Ceanothus 'Joyce Coulter'

Cornus Sericea Flaviramea/ Yellow Twig

Salvia sonomensis

Wetland plants

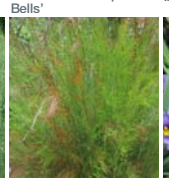
Calycanthus ccidentalis /Spice ush

Iris ensata/ 'Temple Bells'

Iris sibirica 'Silver Edge'

Juncus Pallidus

Juncus 'Corman's Japanese'



Restio tetraphyllus

Sisyrinchium bellum/ H Bar H White

Sisyrinchium californicum/ Yellow-eyed Grass

Lawn area

Armeria maritama/ Common Thrift

Sporobolus airoides / Sacaton

Sporobolus heterolepsis/ Prairie dropseed

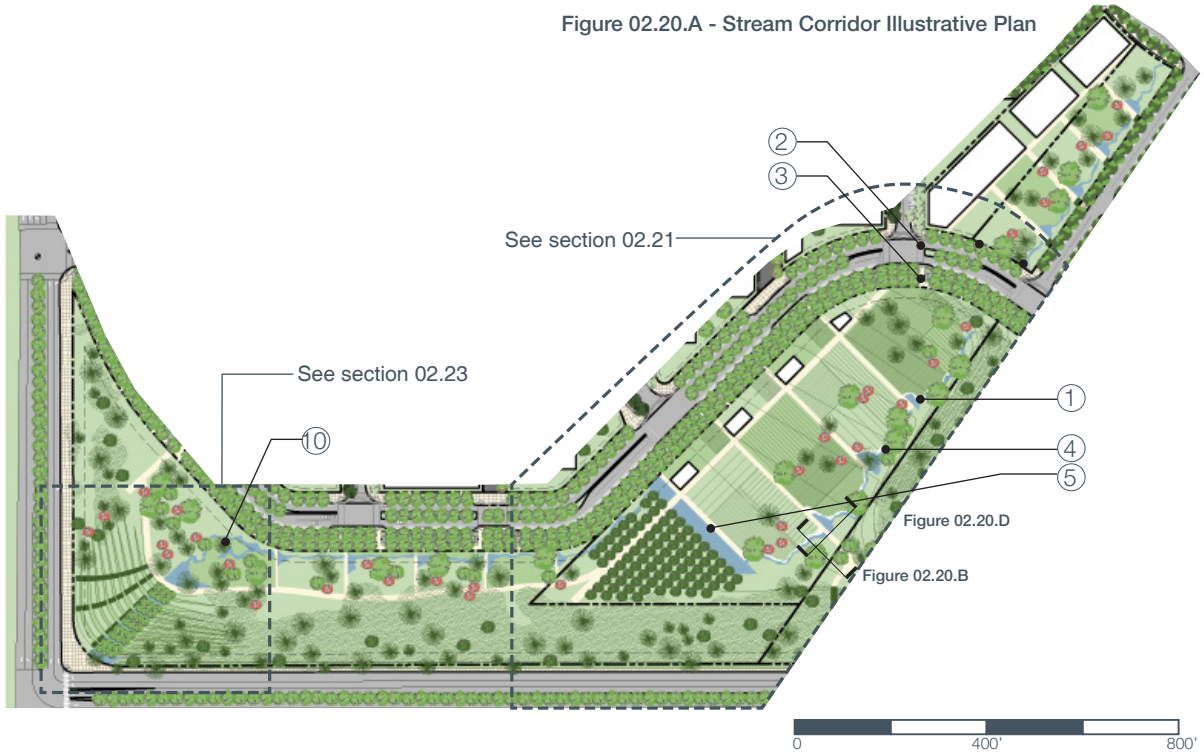
02.20 open space -stream corridor

KEY PLAN

The Stream Corridor is the backbone of an innovative, low-impact rainwater treatment system. A unique, natural setting for residents of Parkmerced, the Stream Corridor is intended to convey water from the pond at Juan Bautista Circle, alongside the Organic Farm and on to the Belvedere Garden, at the south-west corner.

The corridor, consisting of a meandering, seasonal stream lined with acclimated planting tolerant of seasonal inundation is meant to provide the community with wildlife-friendly habitat, as well as a quiet, recreational amenity for residents. Native wildlife and a variety of birds and small animals should find ample cover and habitat in the stream corridor as it develops over time. A meandering trail along the edge of the stream allows residents to experience and enjoy the canopied space created by trees above, watch for birds, and provide an opportunity for residents of all ages and abilities to come to the water's edge.

Figure 02.20.A - Stream Corridor Illustrative Plan



Standards

02.20.01 **Requirements** Open space dimensions and design elements shall comply with Figure 02.20.A - Stream Corridor Illustrative Plan, Figure 02.20.B - Stream Cross Section and 02.20.C - Stream longitudinal section.

02.20.02 **Check Dams** The Stream Corridor shall include a series of check dams, at appropriate locations, that will help store rainwater runoff and slow down the discharge rate as illustrated in Figures 02.20.A - Stream Corridor Illustrative Plan and 02.20.C - Stream longitudinal section.

02.20.03 **Erosion Control** Where necessary, the Stream Corridor shall be lined to reduce erosion and protect the existing slope south of the stream.

02.20.04 **Terminal Pond** At the Belvedere Garden, the Stream Corridor shall end at a terminal pond, which is intended to help in the removal of pollutants.

02.20.05 **Pedestrian Path** A continuous 6 foot pedestrian path must follow the flow line of the stream corridor, connecting Juan Bautista Circle to Belvedere garden. A clear system of wayfinding devices must be incorporated into the design of the path, especially at intersections with streets.

02.20.06 **Stream Buffer** The edge of streets must be a minimum of 20 feet from the edge of the stream. An adequately sized, piped connection must be provided where the stream passes below a street or an intersection.

02.20.07 **Trees** Proposed tree species shall be selected from the list of proposed trees in Figure 02.20.D – Proposed Trees and Proposed Shrubs and Groundcovers.

Guidelines

02.20.08 **Meander** The stream is intended to have a natural look, with a meandering channel.

02.20.09 **Irrigation and Maintanance** Once established, stream corridor vegetation should not require irrigation and have should require only minimal maintenance.

02.20.10 **Plants**The Stream Corridor should be planted with native or acclimated tree and plant species typically found in local streams, as listed in Figure 02.20.D – Proposed Trees and Proposed Shrubs and Groundcovers.

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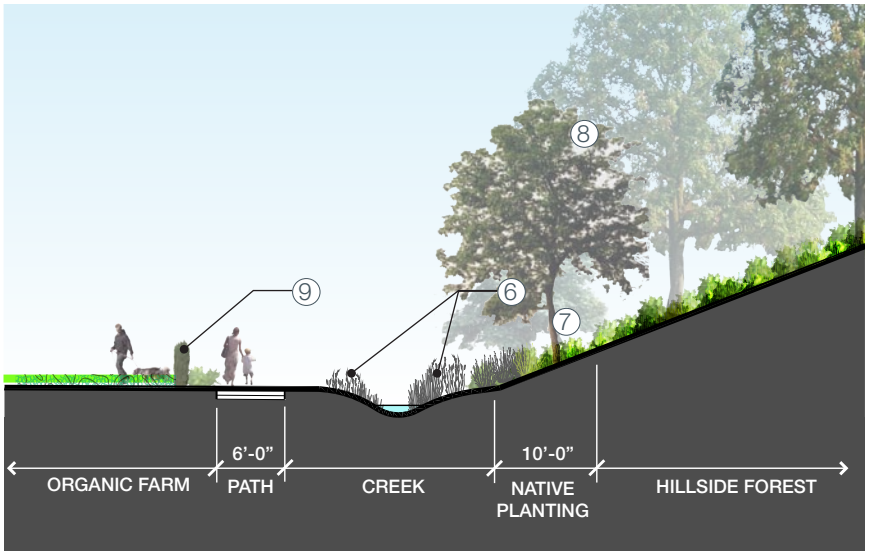
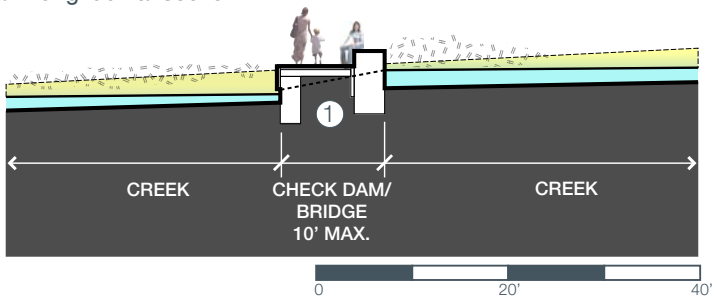
Figure 02.20.B - Stream Cross Section



Stream Corridor Design Features

1. Check dam
2. Gonzalez Drive crossing
3. Stairs
4. Stream edge path
5. Canal to convey water to street side
6. Plants tolerant of seasonal inundation
7. Forest understory
8. Forest for wildlife habitat
9. Fence or wall
10. Terminal Pond

02.20.C - Stream longitudinal section



View of Stream Corridor adjacent to the Farm

Figure 02.20.D Proposed Trees

Species / Common Name

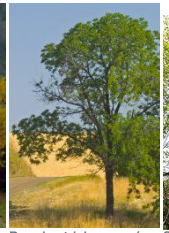

Aesculus californica/ California Buckeye*

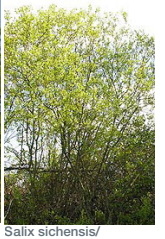

Alnus rubra/ Red Adler


Alnus rhombifolia/ White Alder


Jugland hindsii/ Black Walnut*


Populus fremontii/ Fremont


Populus trichocarpa/ Black Cottonwood


Salix sichensis/ Sitka Willow*

Proposed Shrubs and Ground Covers * California native

Species / Common Name

Woodsy plants


Rhus Ovata/ Sugar Bush


Rhus integrifolia /Lemonade Berry

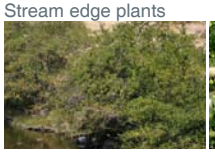
Ferns


Blechnum spicant/ Deer Fern


Polystichum munitum/ Sword Fern


Woodwardia fimbriata/ Giant Chain Fern

Stream edge plants


Alnus sinuata/ Sitka Alder


Cephalanthus Occidentalis Californicus *


Salix 'Tioga'/ Sierra Willow


Salix triandra/ Basket Willow

Emergent plants


Carex Pansa/ California meadow sedge


Eleocharis montevidensis /Giant Hairgrass


Lysichiton americanum/ Western skunk cabbage

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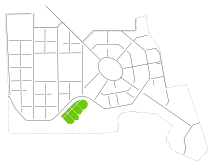
02.21 open space -organic farm

KEY PLAN



The Organic Farm and Orchard is intended to be a productive landscape dedicated to the growing of vegetables and fruit for the Parkmerced community. Located just south of Gonzalez Drive and directly adjacent to the Stream Corridor, the farm is meant to supply local restaurants and markets with produce. A potential location for a restaurant has been designated directly adjacent to the Organic Farm, offering a unique farm-to-table experience within Parkmerced. Compost created from yard waste generated at Parkmerced will provide organic fertilizer, helping reduce the amount of waste trucked out of the neighborhood. The most prominent feature of an extensive network of food production spread throughout the neighborhood, the farm is meant to be highly visible and provide opportunities for community engagement and education.

Figure 02.21.A - Organic Farm Illustrative Plan

Organic Farm Design Features

1. Farm related program building zone with service access
2. Farm Terraces
3. Orchard

– – – Publicly accessible path

Standards

02.21.01 **Requirements** Open space dimensions and design elements shall comply with Figure 02.21.A - Organic Farm Illustrative Plan and Figure 02.21.B - Organic Farm Section.

02.21.02 **Farm Parcel** The Organic Farm shall be located on a 2+ acres site, adjacent to the Stream Corridor as indicated in Figure 02.21.A – Organic Farm Illustrative Plan.

02.21.03 **Public Accesibility** The Organic Farm may restrict public accessibility to along paths indicated in Figure 02.21.A - Organic Farm Illustrative Plan during daytime hours, subject to reasonable maintenance, operations, repair and security rights. Public access must not interfere with the daily operation of the Organic Farm, and fences up to 4'-6" tall surrounding fields are permitted. Chainlink and concrete block barriers are not permitted.

02.21.04 **Organic** The Organic Farm shall comply with the USDA National Organic Program.

02.21.05 **Farm Buildings** Structures related to the functioning of the organic farm shall not be located in areas designated as Dedicated Open Space, as defined in standard 02.17.03 Dedicated Open Space and illustrated in Appendix A - Regulating Plan. 6,000 square feet of developable footprint area is limited to farm related and restaurant uses, including one restaurant not exceeding 3,500 occupied square feet.

02.21.05 **Increased Vibrancy** Three retail kiosks, each up to 200 square feet are permitted within the Organic Farm, including but not limited to within any Dedicated Open Space. Kiosks must have a minimum horizontal separation of 10 feet.

Guidelines

02.21.06 **Professional Farm** The Organic Farm is intended to be professionally managed by an experienced farmer.

02.21.07 **Terracing** Farm fields should have no more than an approximately 2% cross slope or maximum productivity. Terracing should be incorporated in order to accommodate the slope.

02.21.08 **Fencing** Farm storage and equipment areas may be fenced for security and safety purposes. Fenced areas should be kept to a minimum.

02.20.10 **Plants and Trees** The proposed planting list (Fig. 02.21.C) is for reference only. Farmers are encouraged to grow any vegetables and fruits suitable to the climate.

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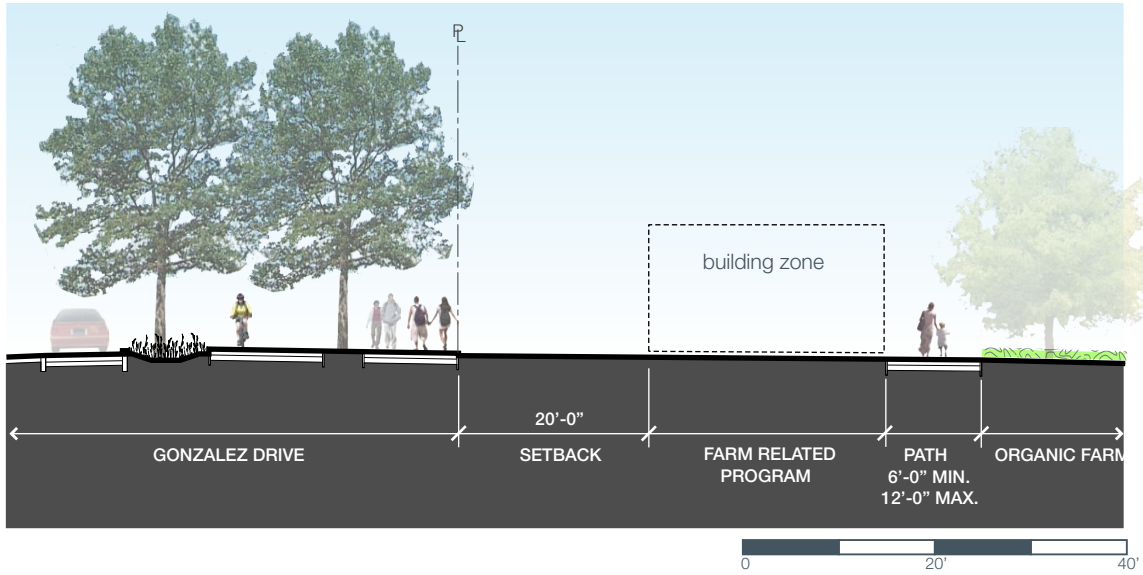
Figure 02.21.B - Organic Farm Section



View of farm

Figure 02.21.C Proposed Trees

Species / Common Name

Citrus x Meyeri / Meyer Lemon

Diospyros sp. / Persimmon

Feijoa sellowiana / Pineapple Guava

Malus spp. Apple

Pyrus pyrifolia /Asian Pear

Recommended Apple varieties:
Hudcous Golden Gem Ripens- mid-late October
Egremont Russet- Ripens mid-early October
NY75414-1- ripens early-mid October
Greensleeves- ripens mid-late September
All will require knowledgeable annual pruning
Recommended Pear varieties:
- Rescue- ripens in September
- Orcas- Ripens in early September
- Patomac- Ripens in early September

Recommended Cherries (Must have pollinator):
Emperor Francis (only on Gisela 5 rootstock)
White gold
Recommended Asian Pears (reasonably disease resistant):
- Yoinashi
- Seuri
- Ichiban

Proposed Shrubs and Ground Covers * California native

Species / Common Name

Malus spp. Apple Artichokes

Brussel Sprouts

Cabbage

Cauliflower

Lettuce

Radichio

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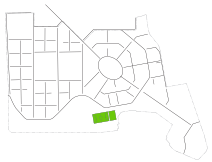
02.22 open space -sports fields

KEY PLAN



Located directly adjacent to the Community / Fitness Center, the sports fields are an integral part of the recreational framework for Parkmerced. The sports fields provide a setting for Parkmerced residents to enjoy outdoor physical activities such as soccer, baseball or other field sports, while enjoying views towards the south and Lake Merced to the west. The sports fields are intended to be utilized by the nearby school for active recreation needs as well as for athletic teams and clubs. The area can be divided into two soccer fields, a baseball field, or left open for informal pick-up games, depending on the needs of the community. Where space allows, the fields are meant to be bordered by meadow grasses and perennials to provide additional habitat and the hillside below are designated to be forested with Monterey Cypress trees.

Standards

02.22.01 **Requirements** Open space dimensions and design elements shall comply with Figure 02.22.A - Sports Fields Illustrative Plan.

02.22.02 **Variety of Uses** The sports fields shall accommodate a variety of sports including, but not limited to, soccer and other field sports.

02.22.03 **Connection** A new stairway shall provide access to the sports fields from Brotherhood Way.

02.22.04 **Restroom Facilities** Restroom facilities shall be provided in a convenient location for users of the sports fields and may be incorporated into the community/ fitness center.

02.22.05 **Water** Drinking fountains shall be located at all sports fields.

Figure 02.22.A - Sports Fields Illustrative Plan

Sports Fields Design Features

1. Multi-purpose sports fields

2. Meadows

3. Stairway with access to Brotherhood Way

Guidelines

02.22.06 **Fields** Sports fields should be planted with low maintenance, acclimated sod or turf grass which has low water needs.

02.22.07 **Meadow** To form an informal meadow that may also function as habitat, the edges of the sports fields should be softened by native and/ or acclimated ornamental grasses and perennial species, as listed in Figure 02.22.B – Proposed Shrubs and Groundcovers.

02.22.08 **Exercise Network** The Sports Fields should be linked to a network of running and cycling paths that thread throughout the neighborhood.

02.22.09 **Cistern** A rainwater collection system, or cistern, may be installed below the sports fields, reducing the need for supplemental irrigation during dry periods. If feasible, harvested storm water shall be passively up-taken by the grass, via capillary action.

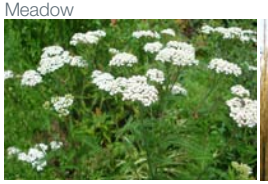
View of sports fields

Figure 02.22.B

Proposed Shrubs and Ground Covers * California native

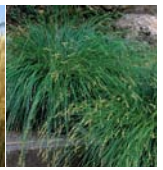
Species / Common Name

Meadow



Achillea tormentosa /Wooly Yellow

Calamagrostis acutiflora



Carex Divulsa

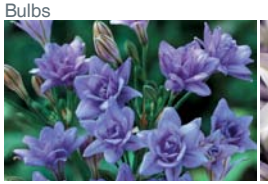
Chondropetalum elephantium

Eschscholzia californica maritina/ Seaside California Poppy *

Sisrinchium Bellum/ Blue-eyed Grass*

Stipa Gigantea

Bulbs



Brodiaea Laxa *

Gladiolus tristis “moonlight”

Lillium “Corratitos Hybrids” *

Suggested Sprots Turf

Dwarf tall fescue or equivalent drought tolerant grass

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02.23 open space -belvedere garden

KEY PLAN

The Belvedere Garden, located at the southwest corner of Parkmerced, marks both the end of the stream corridor and a new access point to the neighborhood. A series of stairs and terraced overlooks step down from Parkmerced, towards the southwest, providing pedestrian access to and from Lake Merced below. The garden's terminal pond is the final collection point for the rainwater network before it discharges clean water to the lake and is intended to be the focal point of the Belvedere Garden. A series of small open spaces adjacent to the stream, as it flows into the terminal pond, provide places for residents to play, relax, enjoy the view, and appreciate the natural setting of the stream corridor.

Standards

02.23.01 **Requirements** Open space dimensions and design elements shall comply with Figure 02.23.A - Belvedere Garden Illustrative Plan, Figure 02.23.B - Section A: Belvedere to Brotherhood Way and Figure 02.23.C - Section B: Cascading Stairs.

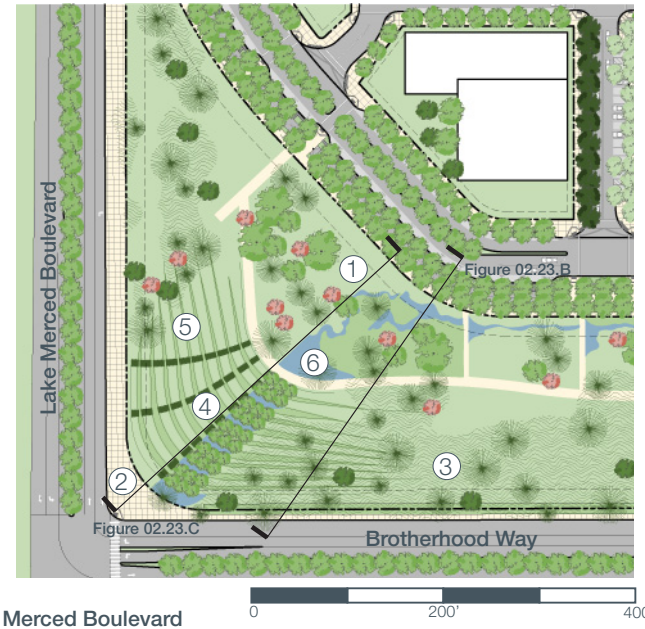
Guidelines

02.23.02 **Celebrate Water** The terminal pond should be designed to celebrate the innovative, low-impact rainwater treatment system for Parkmerced neighborhood. Vibrant wetland planting around the pond is encouraged along with other potential plant and tree species listed in Figure 02.23.D – Proposed Trees and Proposed Shrubs and Groundcovers.

02.23.03 **Connection** A pedestrian connection between Lake Merced Boulevard and the terminal pond is strongly encouraged. The connection is intended to include stairs accompanied by a formal water feature that directs the water down the slope into a pond at the bottom. From this pond, the water should be piped under the Brotherhood Way and drained to the existing wetland area identified in the Infrastructure Report.

02.23.04 **Tree Removal** In order to create a view corridor, clear pedestrian connection and potential water features at the Belvedere Garden some existing trees in this zone should be removed.

Figure 02.23.A - Belvedere Garden Illustrative Plan



View of Belvedere Garden cascading stairs from Lake Merced Boulevard

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Figure 02.23.B - Section A: Belvedere to Brotherhood Way

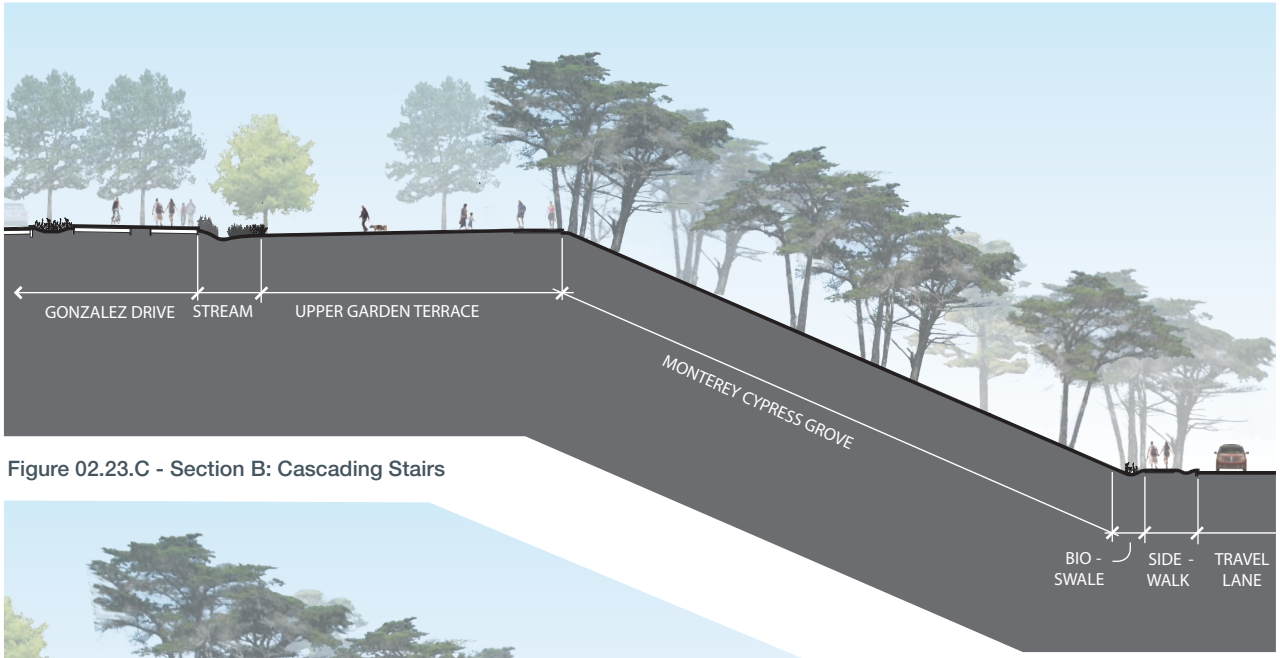
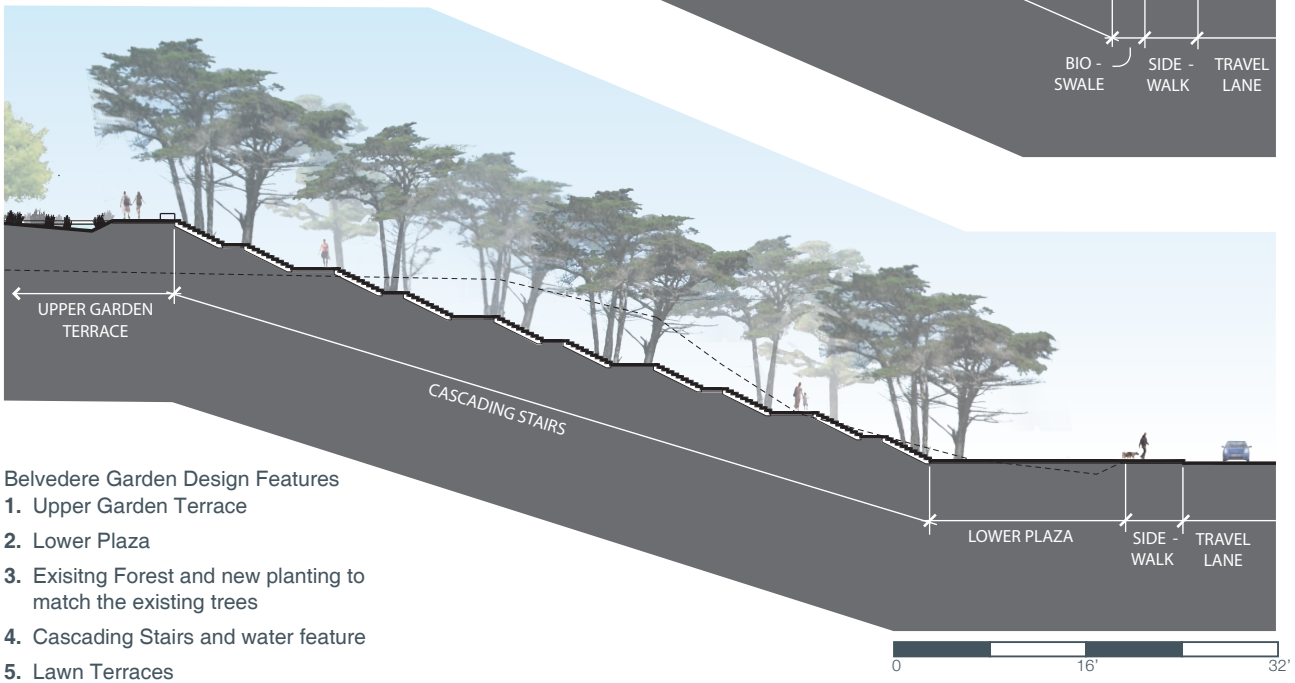


Figure 02.23.C - Section B: Cascading Stairs



Belvedere Garden Design Features

1. Upper Garden Terrace
2. Lower Plaza
3. Exisitng Forest and new planting to match the existing trees
4. Cascading Stairs and water feature
5. Lawn Terraces
6. Terminal Pond

Figure 02.23.D Proposed Trees

Species / Common Name

Upper Garden Terrace

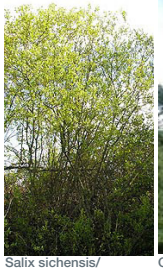
Betula occidentalis/ Western Birch*

Cephalanthus occidentalis / California Button Bush *

Prunus lyonii/ Catalina Cherry*

Forest area

Salix lasiolepis/ Arroyo Willow*



Salix sichensis/ Sitka Willow*

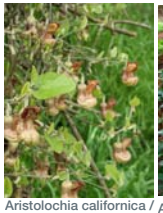
Cupressus macrocarpa/ Montery Cypress *

Proposed Shrubs and Ground Covers

Species / Common Name

Forest understory

Adiantum jordanii/ Five-fingured Fern *



Aristolochia californica / Calironia pipevine *

Asarum caudatum/ Wild ginger *

Upper garden terrace planting

Heuchera spp. /Coral bells *

Iris douglasiana /Douglas iris *

Mimulus aurantiacus /Sticky Monkey Flower *

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02.24 open space -neighborhood commons

KEY PLAN

Evenly distributed throughout Parkmerced, the Neighborhood Commons are intended to be active open spaces dedicated to social engagement for neighborhood residents. As centers of activity at a neighborhood scale, Neighborhood Commons are meant to include opportunities for both passive and active recreation and leisure. These spaces should allow for activities such as: sitting, walking, gathering, gardening; play and contemplation. Many of the Neighborhood Commons will be located along Hedgerow Streets and incorporate water features that directly link rainwater runoff from roofs of adjacent buildings to the neighborhood, low-impact rainwater treatment system.

Standards

02.24.01 **Requirements** Open space design elements shall comply with Figure 02.24.A - Neighborhood Commons Illustrative Plan Example.

02.24.02 **Active Play** A minimum of four of the neighborhood commons (Fig.02.17.A - Open Space Plan) must incorporate an active or structured recreational component such as, but not limited to, a playground, community gardens or bocce court.

02.24.03 **Soil Depth** If a below grade parking structure is incorporated into the design of the Neighborhood Commons, sufficient soil depth must be provided to ensure the success and health of plants and trees. Irrigation and sub-drainage must be provided for all planting.

Guidelines

02.24.04 **Community Gatherings** An open area, either paved or lawn, should be provided in each Neighborhood Commons to accommodate social gatherings, informal play and sitting.

02.24.05 **Programed Play** Neighborhood Commons should include clearly defined areas for programmed activities such as, but not limited to, a picnic area, a community garden, a bocce ball court, a mini soccer field, basketball or tennis court, a playground or an outdoor dining area.

02.24.06 **Trees and Plants** Neighborhood Commons should be planted with native or acclimated tree and plant species, as listed in Figure 02.24.B – Proposed Trees and Proposed Shrubs and Groundcovers.

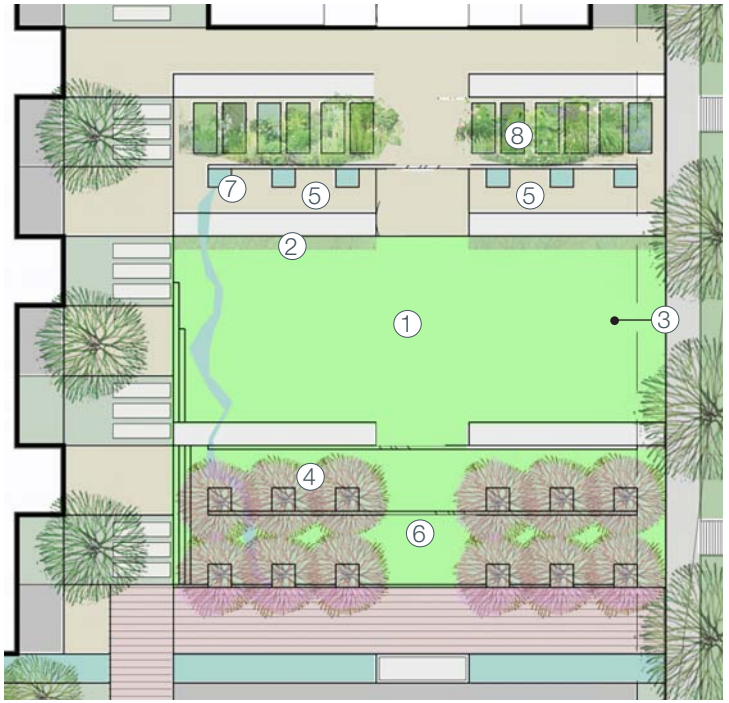
02.24.07 **Diversity of Planting** Separately defined areas within the Neighborhood Commons should be defined by distinct planting schemes.

02.24.08 **Increased Vibrancy** Ground floor active uses are encouraged to open onto and occupy parts of the Neighborhood Commons adjacent to buildings with outdoor spaces, as described in standard 03.06.06 - Active Ground Floors.

02.24.09 **Seating** Neighborhood Commons should include ample seating. Trees should provide maximum wind protection, and seating should be located to offer sunny, wind protected places to sit and gather.

02.24.10 **Celebrate Water** Rainwater detention areas should incorporate a water feature as an amenity for residents.

Figure 02.24.A - Neighborhood Commons Illustrative Plan Example



Neighborhood Commons Design Features

1. Multi-purpose surface
2. Planted edge
3. On grade access from street
4. Trees
5. Seating area
6. Area for structured activities
7. Water feature

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View of typical neighborhood commons adjacent to hedgerow street

Figure 02.24.B Proposed Trees

Species / Common Name

Betula occidentalis/ Western Birch*

Ceanothus arboreus/ Catalina Ceanothus *

Cornus nuttalli /Pacific Dogwood

Prunus lyonii/ Catalina Cherry*'

Salix lasiolepis/ Arroyo Willow*

Sophora japonica/ Japanese pagoda tree

Proposed Shrubs and Ground Covers * California native

Species / Common Name

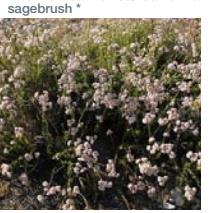
Abelia Grandiflora "Sherwoodii"

Agastache aurantiaca / Orange Hummingbird mint *

Artemisia caflironica/ California sagebrush *

Coprosma Repens/ Mirror Plant

Echium candicans/ Pride of Madeira



Erigonum fasciculatum/ California buckwheat *

Escallonia Bifide/ White Escallonia

Ilex Vomitoria Nana

Mahonia Aquifolium Compacta

Myrica Californica/ Wax Myrtle *

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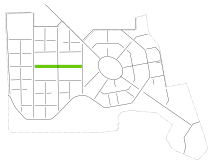
02.25 open space -community garden

KEY PLAN



Community gardens, located between the existing four towers on Blocks 06 and 10 provide residents an opportunity for gardening and cultivating. Community gardens are intended to be integrated into the design of a series of terraces that step down towards the west, providing views of Lake Merced and the Pacific Ocean beyond. Pervious paths connect the terraces, while wider paved walks link the towers together. Planted edges are meant to provide wind protection in order to make these spaces more comfortable for people and increase the viability of crops that are grown in the community gardens.

Standards

02.25.01 **Requirements** Open space dimensions and design elements shall comply with Figure 02.25.A - Community Garden Illustrative Plan.

Guidelines

02.25.02 **Terracing** Areas designated for community gardening should have a maximum slope of approximately 2%. Terracing and other stepping strategies should be employed in order to accommodate slopes greater than approximately 2%.

02.25.03 **Pedestrian Path** Paths should be paved with pervious unit pavers, stone or decomposed granite (Fig. 02.25.A).

02.25.04 **Wind-Break** Rows of shrubs planted in the north-south direction are intended to formally delineate the community garden terraces as well as provide a wind-break to protect the sensitive garden beds. Potential plant species are listed in Figure 02.25.C – Proposed Shrubs and Groundcovers.

02.25.05 **Limited Access** Vehicular access roads are discouraged in the community gardens.

Figure 02.25.A - Community Garden Illustrative Plan

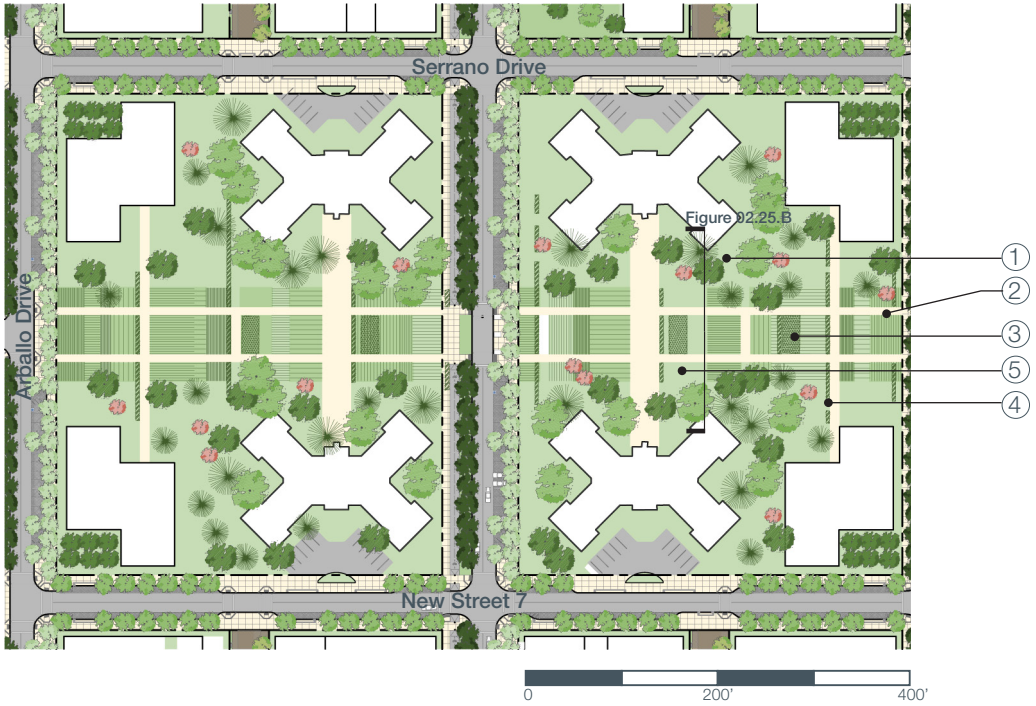


Figure 02.25.B - Community Garden Section

Belvedere Garden Design Features

1. Coniferous grove around towers (see Section 02.26)

2. Pedestrian path

3. Garden terrace

4. Planted edge for wind protection

5. Flexible open space

Figure 02.25.C Proposed Trees
Species / Common Name

See 02.25 Towers

Proposed Shrubs and Ground Covers * California native
Species / Common Name

Wind blocking hedge


Escallonia bifida/ White Escallonia


Griselinia littoralis


Myrica californica /Pacific Wax Myrtle *


Neruim Oleander 'Petite Pink' and 'Petite Salmon' /Oleander


Pittosporum tenuifolium 'Buddy Gorman' and 'Mrs. Gorman'


Rhamnus californica 'Mound San Bruno' or 'Eve Case' / Coffeeberry *

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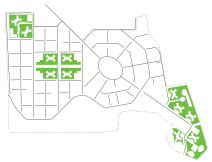
02.26 open space -tower areas

KEY PLAN



Forest-like clusters of wind blocking Alaskan Red Cedar, Monterey Cypress, and Canary Island Pine around the bases of the towers are intended to help visually anchor the tall structures to the site. Where appropriate and protected from the wind, orchard trees that change colors seasonally are intended to mark formal entries, break up expanses of parking and be a productive landscape. At the northwest towers on Block 01, the existing central drop-off area between the two towers is meant to be converted into a park-like open space that includes an area for rain water detention.

Figure 02.26.A - Towers Illustrative Plan

Standards

02.26.01 **Requirements** Open space dimensions and design elements shall comply with Figure 02.26.A - Towers Illustrative Plan and Figure 02.26.B - Towers Section.

02.26.02 **Detention Pond** A rainwater detention pond shall be included at the northwest towers on Block 01 (Figure 02.26.A).

Guidelines

02.26.03 **Trees + Plants** To provide wind protection and a uniform appearance, coniferous groves of Monterey Cypress and others trees should be planted at the base of towers, as listed in Figure 02.26.C – Proposed Trees and Proposed Shrubs and Groundcovers. Alternative species not listed should be selected by a licensed arborist and should be compatible with soil saturation levels.

02.26.04 **Celebrate Water** The reconfiguration of the existing central parking area on Block 01 and the integration of a rainwater detention pond is encouraged, in order to reduce the visual impact of cars on this part of the neighborhood and make the low-impact rainwater treatment system an integral part of this open space.

02.26.05 **Celebrate Water** The rainwater detention area should incorporate a water feature as an amenity for residents.

02.26.06 **Increased Vibrancy** The area around the base of the towers should include seating, bike racks trash and recycling bins, where appropriate.

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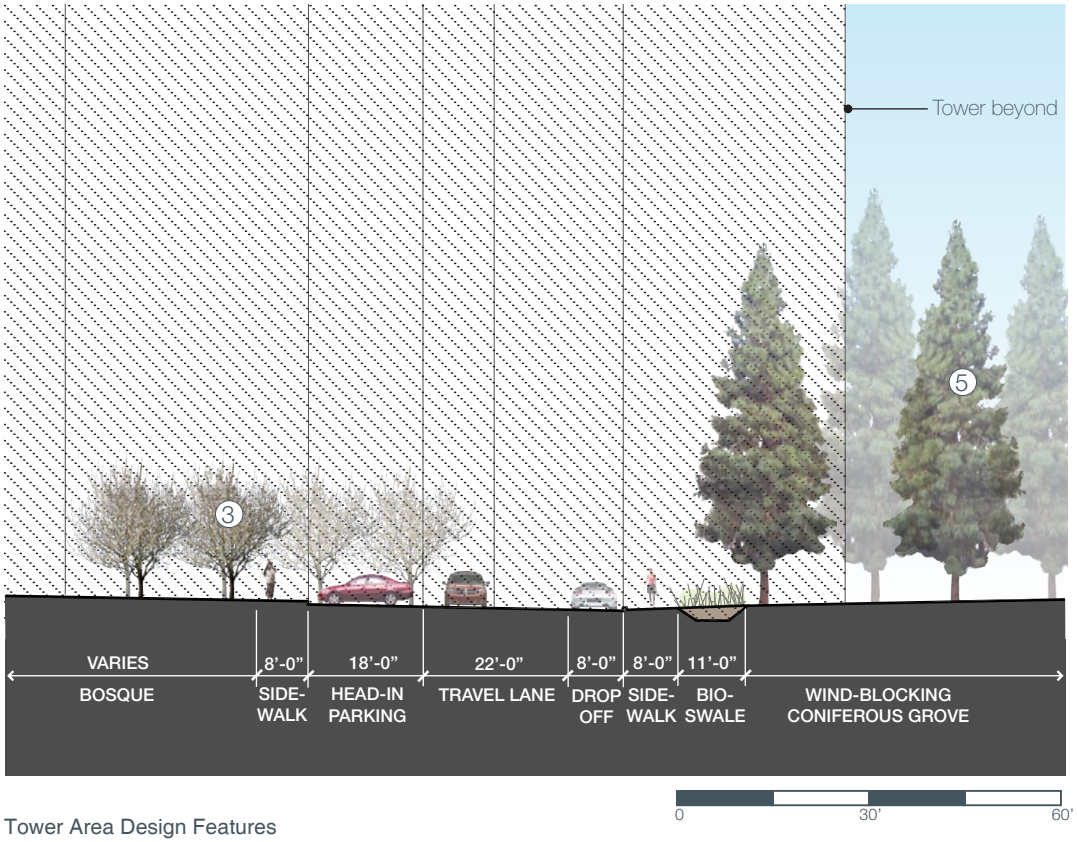
Figure 02.26.B - Towers Section



Tower Area Design Features

1. Detention pond water feature

2. Seasonal stream

3. Bosque of trees

4. Flexible Lawn

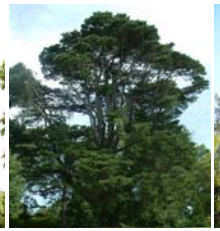
5. Coniferous Grove around towers and on the windy side

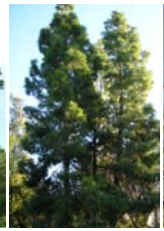
Figure 02.26.C Proposed Trees

Species / Common Name

Coniferous Grove 'Aptos Blue' on east side of buildings *Calocedrus decurrens


Chamaecyparis lawsoniana / Lawson Cypress


Cupressus macrocarpa/ Montery Cypress*


Pinus canariensis/ Canary Island Pine


Sequoia sempervirens/ Coast Redwood *

Bosque


Olea europaea 'Swan Hill'/ Swan Hill olive tree


Prunus avium 'Emperor Francis' / Emperor Francis Blush Sweet Cherry


Pyrus communis / Rescue pear

Proposed Shrubs and Ground Covers * California native

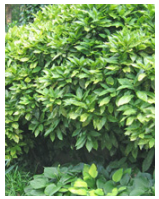
Species / Common Name

For Wind Protected Sides


Abutilon 'Halo


Abutilon 'White Parasol'


Abutilon megapotanicum 'Teardrops'


Aucuba japonica 'Picturata'


Fatsia japonica


Loropetalum Chinese / Chinese Fringe Flower


Osmanthus delavayi

For Windy Sides


Griselinia littoralis


Mahonia aquifolium


Nandina domestica 'Firepower'


Nandina domestica 'Gulf Stream'

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02.27 open space -courtyard

KEY PLAN

Courtyards are semi-private open spaces within blocks that are intended to be social gathering places on a building scale. As an intermediately scaled open spaces, courtyards act as a transition zone from the residents' private patios to the surrounding neighborhood streets and open spaces. Many of the courtyards are intended to be built on top of below grade parking structures, stepping down through a series of terraces in order to accommodate changes in grade and connect to the neighborhood streets and the Paseos. Courtyard planting is encouraged to be large, informal and attract birds and butterflies, while at the same time provide an appropriate buffer for private patios. While respecting the privacy of patios, the communal areas of courtyards are intended to incorporate designated spaces for programmed activities. Courtyards are meant to incorporate rainwater detention features, such as temporal streams fed by rainwater runoff that outfall into the bioswale network. Private open spaces are considered to be included in the design of individual buildings and as such standards and guidelines related to these spaces are located in Chapter 03 - Building Design.

Standards

02.27.01 **Rainwater Capture** Courtyards must include a rainwater detention area for roof runoff. Rainwater detention areas should incorporate a water feature as an amenity for residents.

02.27.02 **Soil Depth** If a below grade parking structure is incorporated into the design of the courtyards, sufficient soil depth must be provided to ensure the success and health of plants and trees. Irrigation and sub-drainage must be provided for all planting.

02.27.03 **Softscape** Courtyards shall have 65 percent softscape including planted areas and water elements.

02.27.04 **Tree Base** Trees shall not be planted in boxes or planters greater than 18 inches high.

Guidelines

02.27.05 **Courtyard Amenities** Courtyards should include seating, bike racks, trash and recycling bins where needed.

02.27.06 **Gatherings** An open area, either paved or lawn, should be provided in each courtyard to accommodate social gatherings, informal play and sitting.

02.27.07 **Butterfly Gardens** Courtyard planting is encouraged to be large, informal and attract birds and butterflies and provide an appropriate buffer for private patios.

02.27.08 **Linked Open Space** Where feasible, semi-private open space in Courtyards should be directly linked to private terraces of ground floor units by pathway or stairs.

02.27.09 **Pathways** Pedestrian paths and throughways in courtyards should be no greater than 4 feet wide and paved with a material comparable to decomposed granite paving.

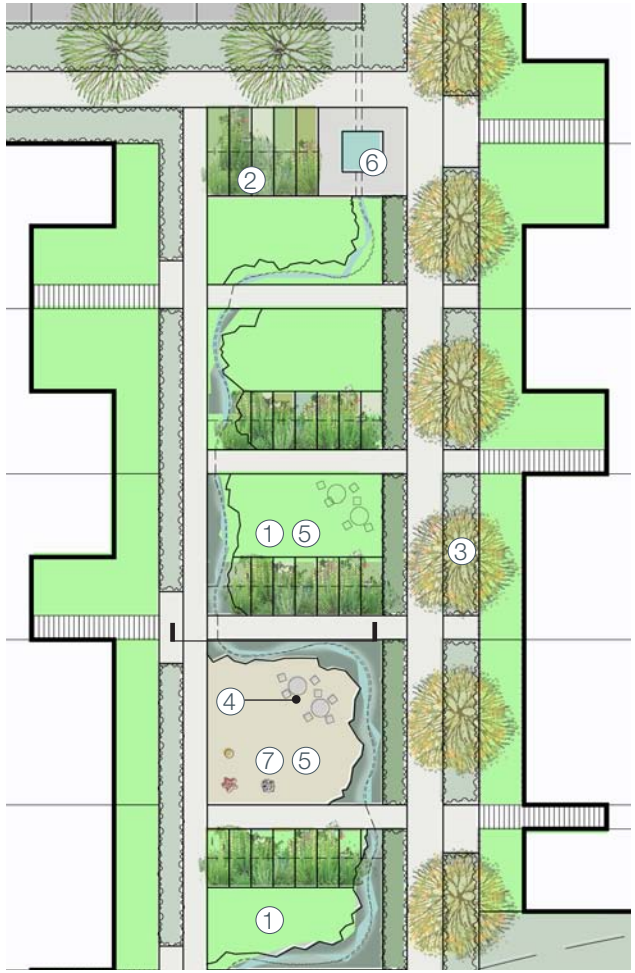
02.27.10 **Programmed Play** Courtyards should include clearly defined areas for programmed activities such as, but not limited to, a picnic area, a community garden, a bocce ball court, a mini soccer field, a structured playground or an outdoor dining area.

02.27.11 **Planting** Separately defined areas within courtyards should be defined by distinct planting schemes.

02.27.12 **Active Uses** Ground floor active uses may open onto and occupy parts of courtyards with outdoor spaces, adjacent to buildings.

02.27.13 **Seating** Courtyards should include ample seating. Trees should provide maximum wind protection, and seating should be located to offer sunny, wind protected places to sit and gather.

Figure 02.27.A - Courtyard Illustrative Plan Example



Courtyard Design Features

1. Multi-purpose surface

2. Planted edge

3. Trees

4. Seating area

5. Area for structured activities

6. Water feature

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Courtyard illustrative example with a stream

Figure 02.27.B Proposed Trees

Species / Common Name

Acer negundo 'Sensation'

Ceanothus arboreus/ Catalina Ceanothus*

Cercis Canadensis. /Canadian Redbud

Cornus glabrata / Creek Dogwood

Cornus nuttalli /Pacific Dogwood

Prunus lyonii/ Catalina Cherry *

Salix scouleriana /Scouler Willow

Proposed Shrubs and Ground Covers * California native

Species / Common Name

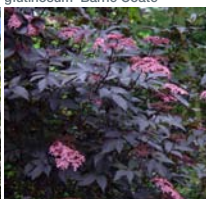
Ceanothus 'Concha' / Concha wild lilac

Griselinia littoralis

Ribes sanguineum var. glutinosum 'Barrie Coate'

Salvia spathacea/ Hummingbird sage

Sambucus caerulea/ Blue elderberry *



Sambucus nigra 'Black Beauty' / Balck Beauty elderberry

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02.28 materials + site furnishings

The Standards and Guidelines for materials and site furnishings offer design recommendations for a general aesthetic approach that is consistent with the overall design of streets and open spaces. Materials, site furnishings and other public amenities described in this section are intended to support the design and function of streets and open spaces, while aesthetically enhancing the public character of Parkmerced as a pedestrian focused neighborhood. Some site furnishings, such as benches, bike racks and moveable furniture are divided into commercial and residential character zones as shown in Figure 02.28.A - Site Furnishing Plan, in order to visually and functionally accommodate the different level of activities prescribed in each zones. Bollards and trash and recycling bins are intended to have a consistent design vocabulary throughout the neighborhood.

Guidelines

02.28.01 **Durability** Site furnishings should be chosen to convey longevity and simplicity. Examples are shown in Figure 02.28.B.

02.28.02 **Aesthetic** Site furnishings should be modern, minimal and urbane in character and should not include historic replications.

02.28.03 **Character** Site furnishings should be consistent at each respective zone, in order to provide a cohesive character to the neighborhood, with a consistent spacing, materials, a color scheme and patterns.

02.28.04 **Standards** Site furnishings at Parkmerced should be selected from or meet the standards of, the Department of Public Works list of approved street furnishings.

02.28.05 **Design Vocabulary** Once chosen, trash and recycling receptacles and bollards should use a consistent design vocabulary throughout the neighborhood.

02.28.06 **Materials** Site furnishings for benches, bike racks, moveable tables and chairs should reflect and support either a commercial or residential character, depending on the zone in which they are located. The commercial zone is encouraged to use site furnishings made of durable and vandal-resistant materials such as stainless steel or other heavy duty materials where appropriate. The residential zone is encouraged to use materials that convey a more residential character, such as wood.

02.28.07 **Location** Location of site furnishings should avoid conflicts with parked cars.

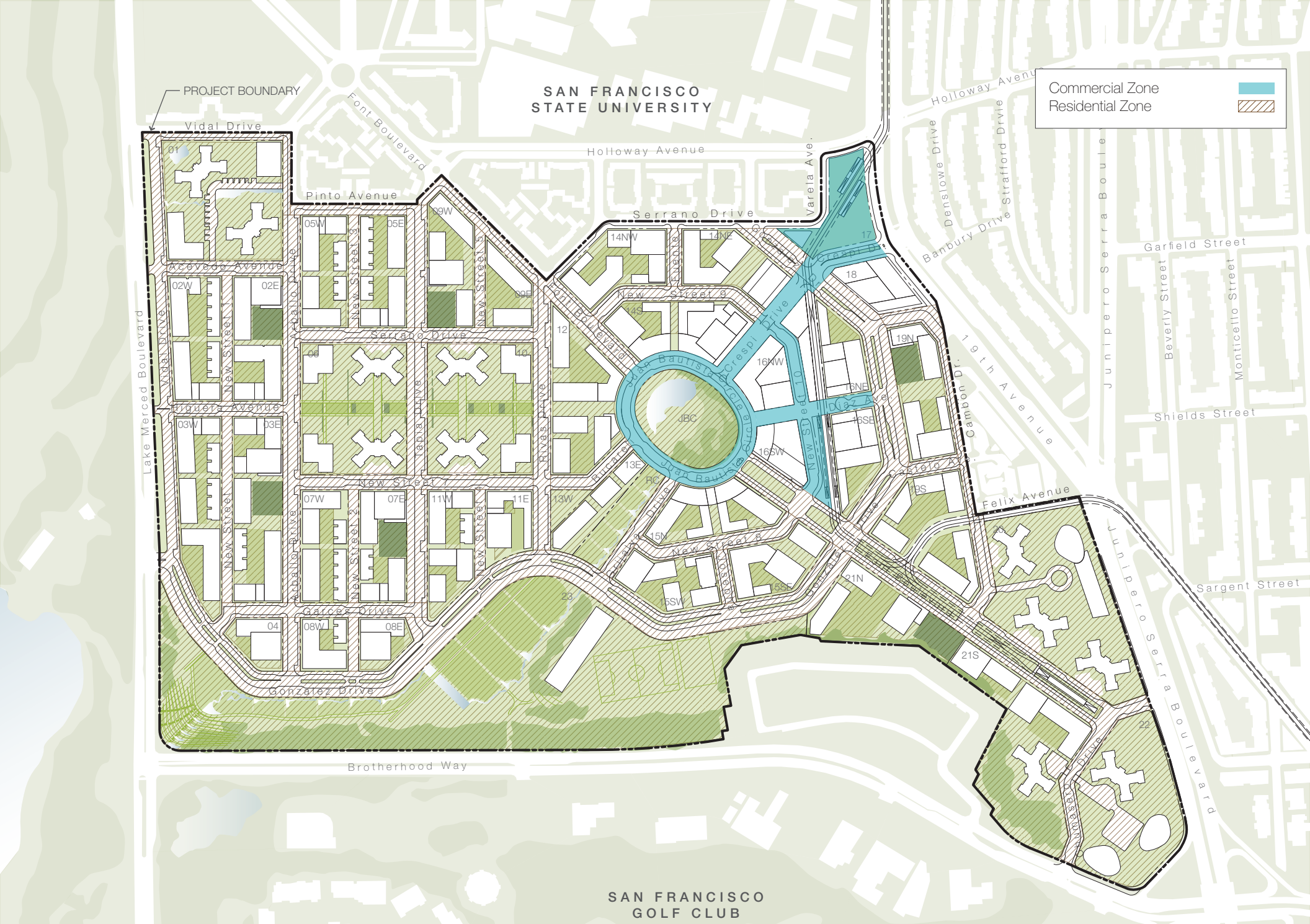

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FIGURE 02.28.A / Site Furnishings Zone Plan

Figure 02.28.B

Examples of Commercial Zone Site Furnishings Design Family

Benches


Bike racks



Examples of Residential Zone Site Furnishings Design Family

Benches


Bike racks



Examples of Common Site Furnishings Design Family

Trash and recycling receptacles

Bollards


Tables and chairs


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02.29 paving

The ground plane within the public realm plays a critical role in both maximizing site permeability as well as enhancing the character of Parkmerced as a pedestrian focused neighborhood. In order to encourage a modern, simple neighborhood aesthetic, the paving palette is intended to be limited to a small range of textures and colors. The use of recycled or renewable materials, when possible, is encouraged and permeable paving is meant to be an integral part of both street and open space designs.

Standards

02.29.01 **Permeable Paving** Permeable paving zones shall be consistent with the Infrastructure Report. Examples are shown in Figure 02.29.A - Examples Of Suggested Pervious Pavement Design Family.

Guidelines

02.29.02 **Color** Alternative sidewalk paving is encouraged and should include a pigmented concrete, matching dark gray -pantone color #455 with sandblasted finish and saw-cut joints. Once chosen, sidewalk material should be consistent throughout.

02.29.03 **Edging** Decomposed granite or other loose pavement materials are encouraged to have a metal edging at all sides when not adjacent to solid pavers or walls.

Figure 02.29.A - Examples Of Suggested Pervious Pavement Design Family


Porous concrete


Porous asphalt


Wood


Cobbles


Turf block


Grass block paving


Decomposed granite


Permeable unit paver


High albedo paver

Sidewalk Color and Saw Cut Joints

Scofield CHROMIX® Admixtures for Color-Conditioned® Concrete C-34 Dark Gray or equivalent to match color

02.30 recreational amenities

In an effort to create a healthy neighborhood environment, the open space at Parkmerced is meant to incorporate opportunities for both active and passive recreation such as sports courts, playgrounds, outdoor dining areas, and areas for quite reflection. The open space network at Parkmerced is intended to provide recreation spaces suited to diverse groups of people and multiple types of activities.

The concept images included in this section are meant to provide a visual sampling of potential recreation amenities consistent with the overall design approach of Parkmerced.

Guidelines

02.30.01 **Aesthetic** The design, color, and material of play and recreation equipment should relate to the overall modern design aesthetic of the specific space in which it is located. Examples are shown in Figures 02.30.A - Play Equipment and 02.30.B - Fitness Equipment.

02.30.02 **Play Areas** Separate play areas should be provided for toddlers (2-5 year old) and older children (5-12 year old). Play equipment that allows for multiple uses and encourages free-play is desirable.

02.30.03 **Drinking Fountains** Drinking fountains should be provided at all active recreation areas.

02.30.04 **Lighting** Lighting should be provided in some of the active recreation areas to allow for evening use.

02.30.05 **Outdoor Dining** Outdoor dining areas should be located in sunny, wind-protected locations. Outdoor cooking facilities are encouraged.

Figure 02.30.A - Play Equipment

Examples of suggested toddler play equipment design family

Examples of suggested school age play equipment design family

Ground Markings

Figure 02.30.B - Fitness Equipment

Suggested Outdoor Fitness Equipment and Sport Courts Examples

Climbing Wall

Skateboarding

Volleyball

Lawn Bowling

Basketball

Racquetball

Fitness Equipment

Tennis

02.31 lighting

Lighting is intended to be attractive and visually engaging, while providing public safety and enhancing the character of Parkmerced as a pedestrian focused neighborhood. Lighting designs are meant to be modern and simple. All lighting shown in this section are conceptual only, and critical analysis and photometric studies are required to specify the exact light fixture, lamping, wattage and fixture spacing. Night sky pollution is meant to be minimized while still providing safe lighting levels. Certain areas of the Parkmerced neighborhood are intended to have lower lighting levels, such as the stream corridor, where it is important to minimize light pollution so as not to disturb wildlife and maintain a natural setting.

Standards

02.31.01 **Lighting Types** Four lighting zones which reflect the different characters of their area's uses have been established for Parkmerced and are located in Figure 02.31.A - Lighting Plan. These include commercial, residential, active open spaces, and passive open spaces.

02.31.02 **Boulevard/ Commercial Lighting Zone** The commerical lighting zone shall include a tall height fixture to illuminate the roadway and a low height lighting fixture to illuminate sidewalks and retail frontage. Luminaires shall minimize light trespass, reduce sky-glow (Fig. 02.31.C). Fixtures shall be selected from, or meet the standards of, the City Department's list of approved lighting fixtures.

02.31.03 **Residential Lighting Zone** The residential lighting zone shall include only a low height lighting fixture to illuminate sidewalks. Luminaires shall minimize light trespass and reduce sky-glow (Fig. 02.31.D). Fixtures shall be selected from, or meet the standards of, the City Department's list of approved lighting fixtures.

02.31.04 **Active Open Space Lighting Zone** The active open space lighting zone is defined as the public and semi-private open space areas, pedestrian paths and walkways lit. Luminaires within this zone shall minimize light tresspass and skyglow. It is intended to accommodate lighting to support evening outdoor activities compatible with adjacent uses.

02.31.05 **Passive Open Space Lighting Zone** The passive open space lighting zone shall utilize luminaires with the minimum allowable lighting levels to reduce sky-glow and avoid light trespass.

Design Guidelines

02.31.06 **Aesthetic** Lighting types should be modern, minimal and urbane in character and should not include historic replications.

02.31.07 **Commercial Alignment** Street lights in the commercial zone as indicated in Figure 02.31.A - Lighting Plan, should be aligned across the street in order to create a consistent, formal rhythm. Stainless steel luminaries are encouraged for their durability.

02.31.08 **Residential Alignment** Street lights in residential zone should be staggered to allow for fewer street lights to be used.

02.31.09 **Appropriate Light Levels** Lighting needs at the open space areas vary across the neighborhood, requiring a range of lighting solutions. Lighting levels and fixture types should be selected according to the use of each open space and the adjacent uses. For instance, bollards and other light fixtures that illuminate the ground plane but do not allow light trespass into adjacent residential units should be considered in courtyards and Neighborhood Commons. Additional open space lighting options include, but are not limited to, recessed wall lighting and step lighting where applicable.

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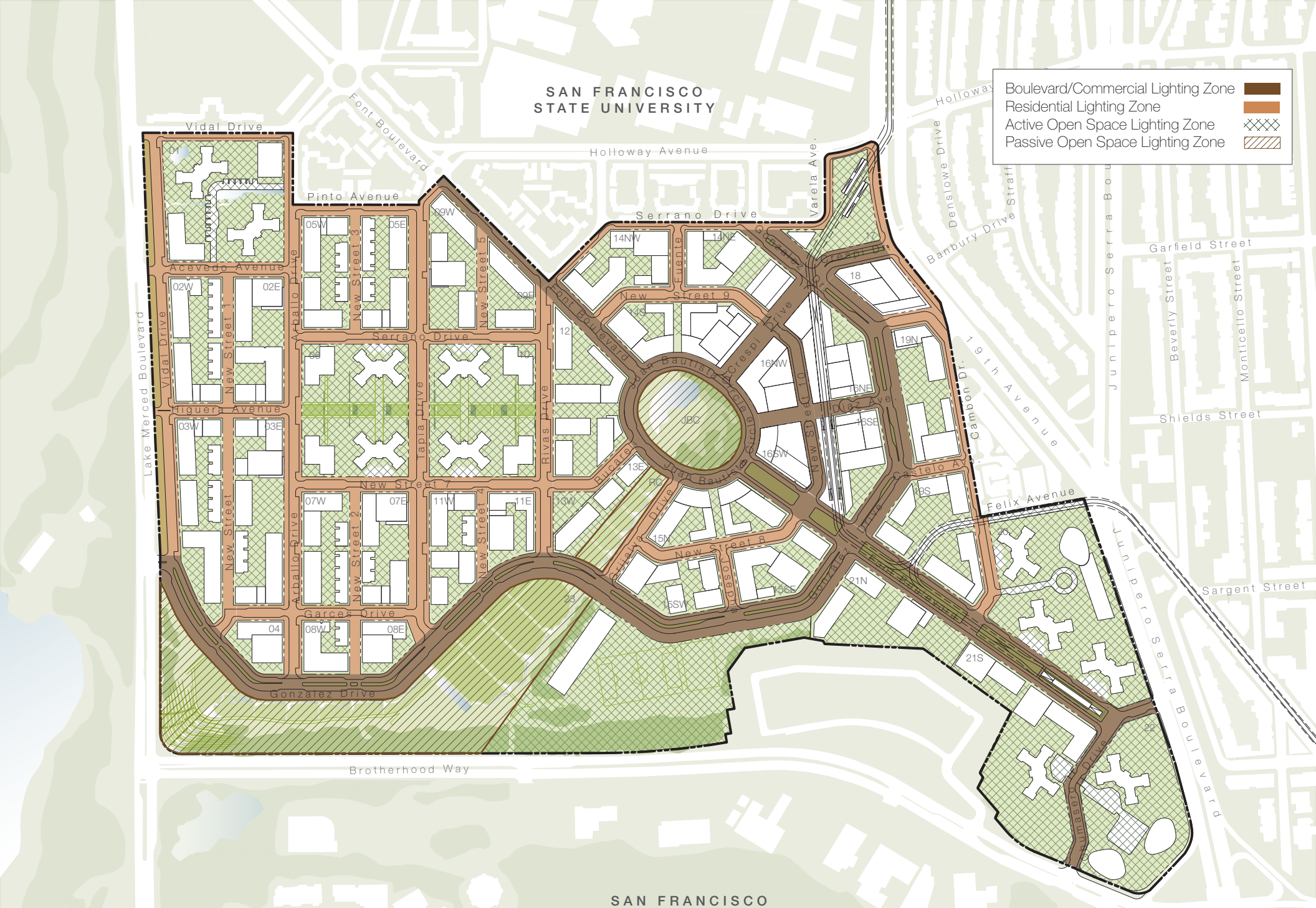

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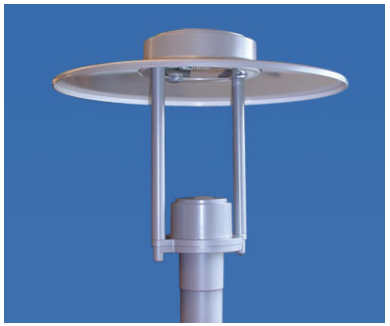
FIGURE 02.31.A / Lighting Plan

Figure 02.31.B - Luminaires

Examples of suggested Luminaires

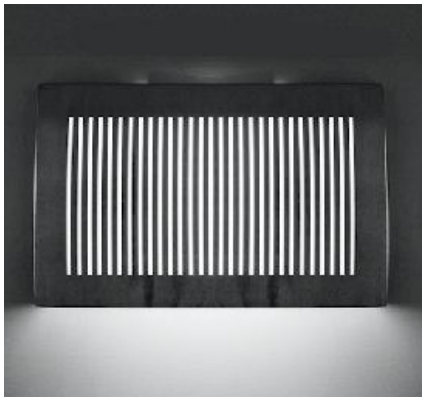
Commercial Area Luminaires

Residential Area Luminaires



Bollards

Recessed Wall Lighting



Step Lighting

Athletic Field Luminaires

Figure 02.31.C - Commercial Lighting Typical Section

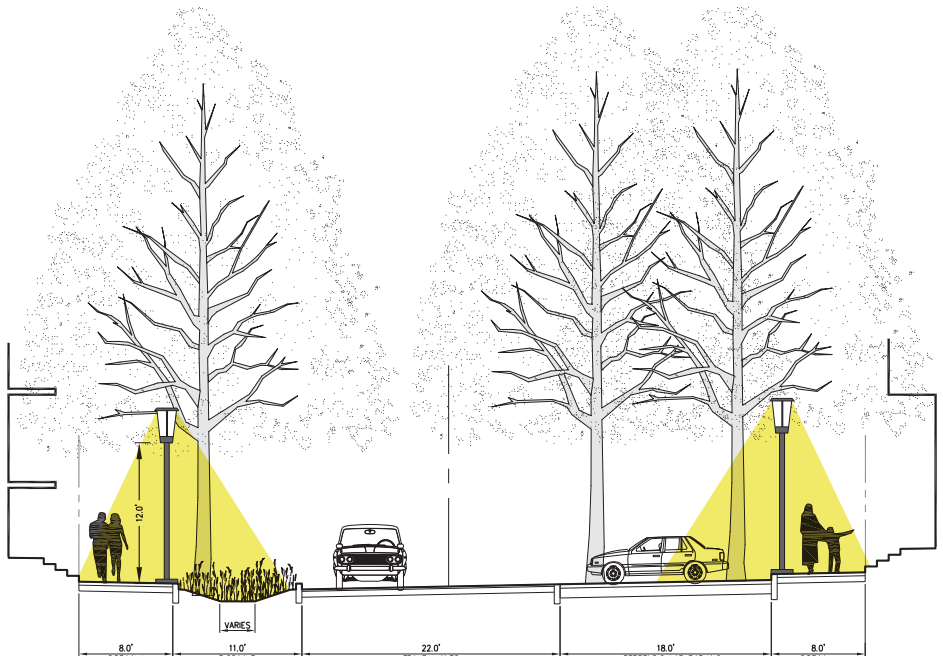


Figure 02.31.D - Residential Lighting Typical Section

02.32 off-site improvements

The success of the Parkmerced neighborhood as a sustainable, pedestrian-oriented community ultimately depends on how the community is situated and linked with the larger context of the city. Anticipating the future growth of the Parkmerced neighborhood, adjacent streets and roadways are required to efficiently accommodate the increased volume of and is intended to improve the safety and ease of movement for all modes of travel, including pedestrian, bicycle and vehicular traffic. The following section focuses on how neighboring streets and intersections adjacent to the property shown in the Off-Site Improvements Plan, Fig. 02.32.A, benefit from a series of future improvements through:

- an increased number of access points into Parkmerced
- improved pedestrian safety and convenience
- reconfiguration of existing intersections for better traffic flow to aid transit and vehicle travel
- quality landscape interventions for attractive streetscape that functions as a civic gateway to San Francisco
- implementation of the citywide network of bicycle and pedestrian routes, connected to the existing and proposed bicycle and pedestrian pathways in the internal streets of Parkmerced

While the plan recognizes that accessibility and pedestrian safety in the surrounding streets should be a priority as part of public realm improvements in this neighborhood, it also emphasizes the importance of a coherent design framework that is consistent with the Parkmerced Design Standards and Guidelines as well as Better Streets Plan.

Standards

02.32.01 **Standards** Off-Site Improvements shall adhere to the standards and guidelines contained within this section for specific individual street types illustrated in Figure 02.31.A, Off-Site Improvements Plan.

02.32.02 **Intersections** All intersections shall be in compliance with City of San Francisco standards for signage and street markings.

Guidelines

02.32.03 **Character** Each street should have consistent and distinctive characters to work as a cohesive whole with a consistent street tree inventory and spacing, a planting scheme, a color scheme, paving materials and patterns, furnishings, and lighting.

02.32.04 **Utilities** All utilities should be hidden from sight lines at corners and put below grade when possible. Their locations should not interfere with tree spacing.

02.32.05 **Pedestrian Refuge** Reconfiguration of medians should include areas of pedestrian refuge, and pedestrian bulb-outs are encouraged at crosswalks where feasible.

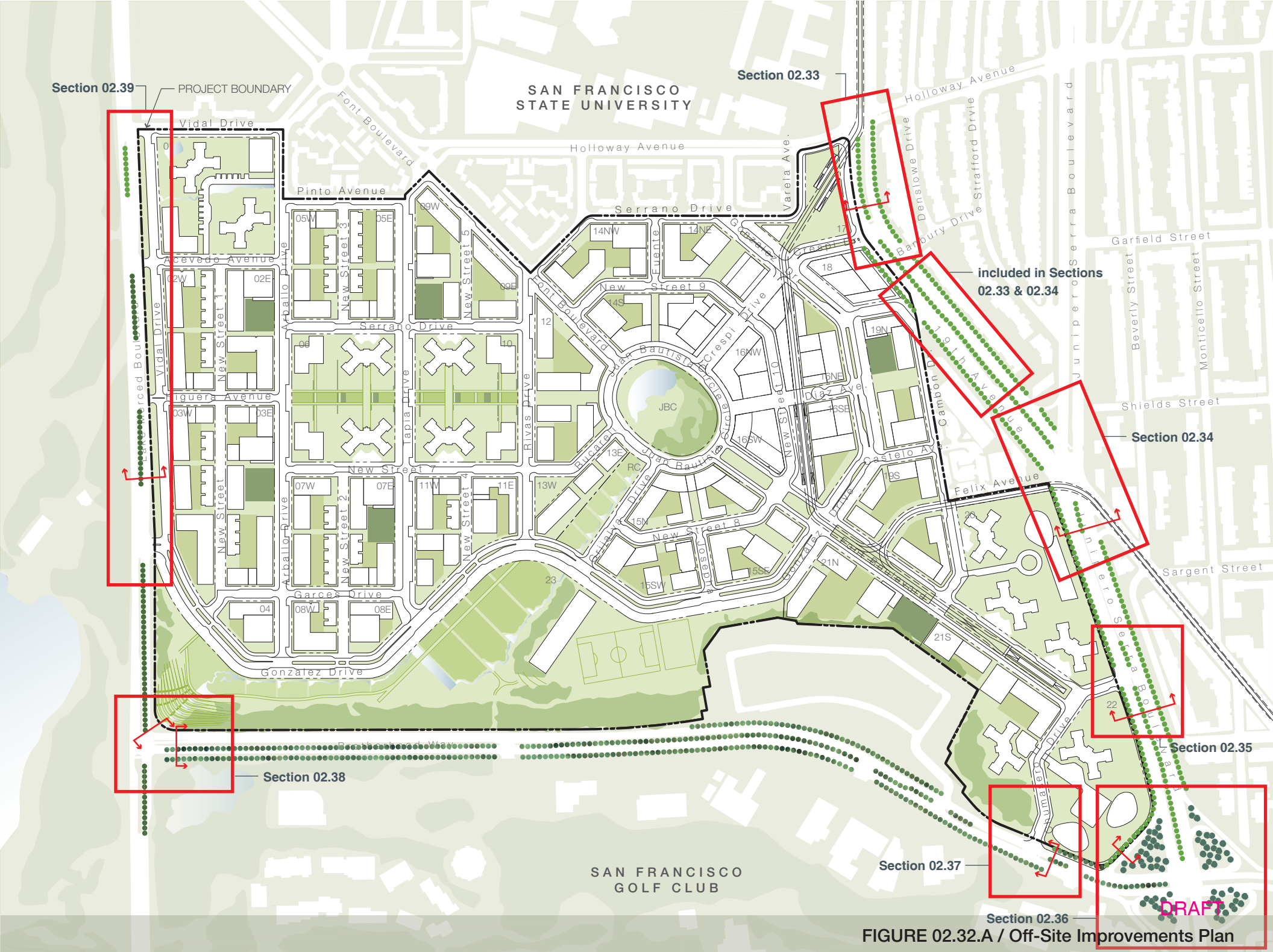
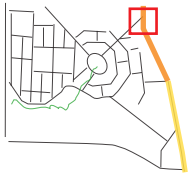


FIGURE 02.32.A / Off-Site Improvements Plan

02.33 off-site -holloway, crespi & 19th avenue

KEY PLAN



The realignment of Crespi Drive to the south and the addition of a dedicated left-turn pocket from northbound 19th Avenue will provide a new access point into Parkmerced from points south, plus new crosswalks with pedestrian signals. The intersection of 19th Avenue and Holloway will be modified to provide additional capacity in the southbound 19th Avenue direction, which will also be widened to allow a fourth travel lane (which may be a regular mixed-flow travel lane or a High Occupancy/ Toll HOT lane) to improve traffic flow, especially during the evening commute period. A new multimodal station and transit plaza will be provided at the southwest corner of the intersection as well with wide platforms, multiple access points, and connections to other transit lines to allow for Muni to be realigned off 19th Avenue and into Parkmerced, helping to increase traffic flow and improve pedestrian safety. Per the View Corridor Plan, Fig.02.02.A, the west side of 19th Avenue, adjacent to the Muni transit center shall not have any street trees in order to preserve the view.

Standards

02.33.01 **Requirements** Intersection improvements shall be in compliance with Figure 02.33.A - 19th Avenue Illustrative Plan.

02.33.02 **Dimensions** Sidewalk and planting zone dimensions for 19th Avenue shall be per Figure 02.33.B -19th Avenue Typical Section.

02.33.03 **Trees** Street trees shall be consistent in size, height and canopy form.

02.33.04 **Tree Alignment** Tree spacing shall be regular and consistent. Trees shall follow the existing tree spacing on site.

02.33.05 **Tree Spacing** The siting of all new tree planting shall be in accordance with City of San Francisco guidelines (Department of Public Works, Ordinance No.169,946) regarding tree setbacks and utility/ signal visibility. On the approach and far sides of any intersection, trees shall be no closer than 25 and 10 feet, respectively, from the corner of the property line. Additionally, trees and other plantings in the sidewalk area shall be located so that visibility of traffic signals or lights will be assured at all times.

02.33.06 **Ground Plane** Sidewalk paving material, finish and color shall be consistent at all locations and shall follow city standards.

Guidelines

02.33.07 **Tree Species** Street tree species on 19th Avenue should match existing, believed to be Callistemon citrinus. Existing tree type should be verified by an arborist.

02.33.08 **Median Trees** Where the median is wide enough, trees should be planted to match the street trees.

02.33.09 **Median Plants** Narrow portions of the median should be planted with taller shrubs to provide seasonal color and variation in texture.

02.33.10 **Plants** Proposed understory planting alternatives are listed in Fig.02.33.D – proposed shrubs and groundcovers. Alternative species not listed should be selected by a licensed arborist.

Figure 02.33.A - 19th Avenue Illustrative Plan

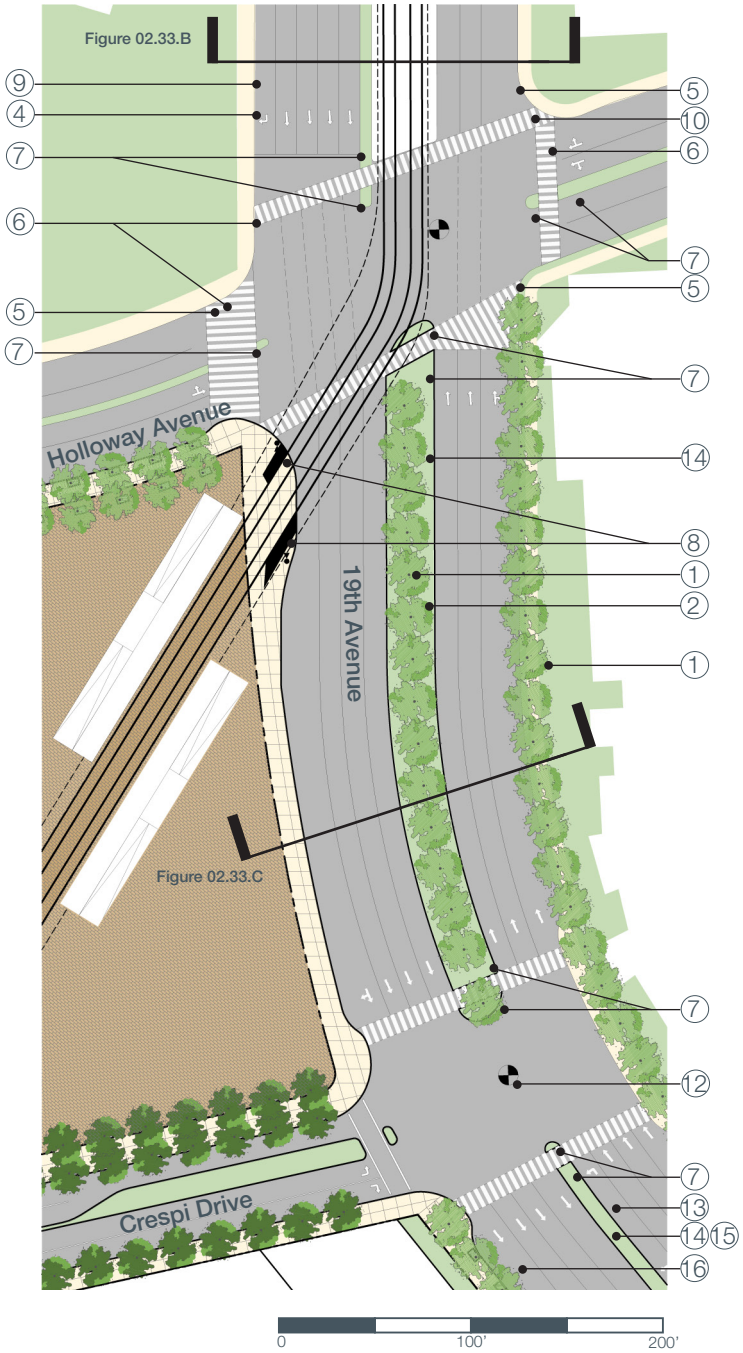


Figure 02.33.B - 19th Avenue Typical Section

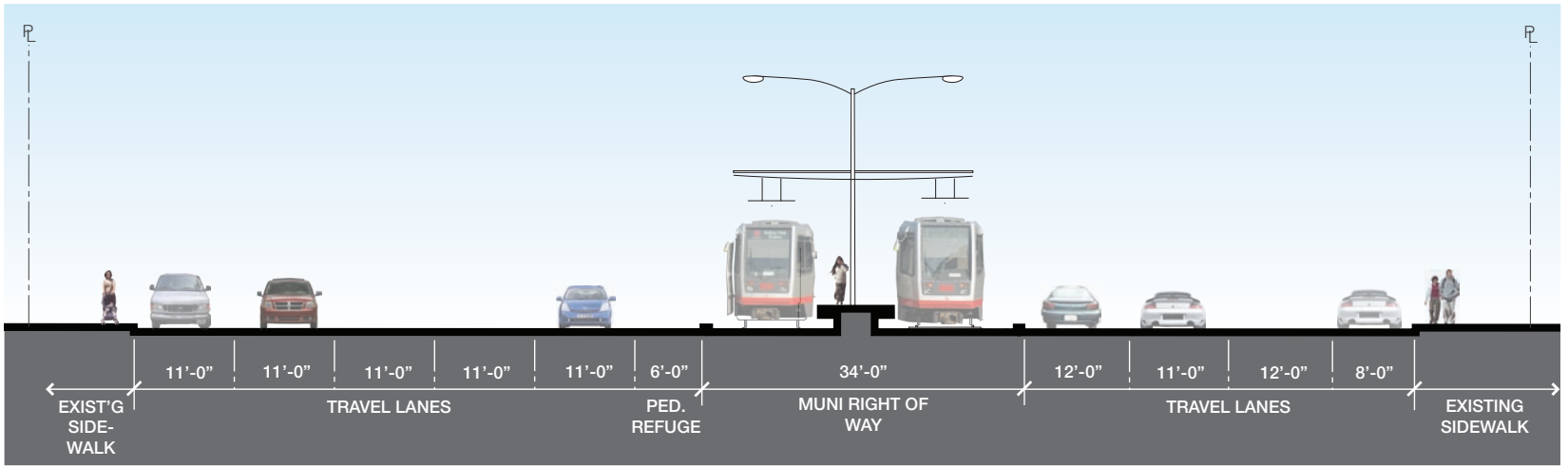


Figure 02.33.C - 19th Avenue Typical Section

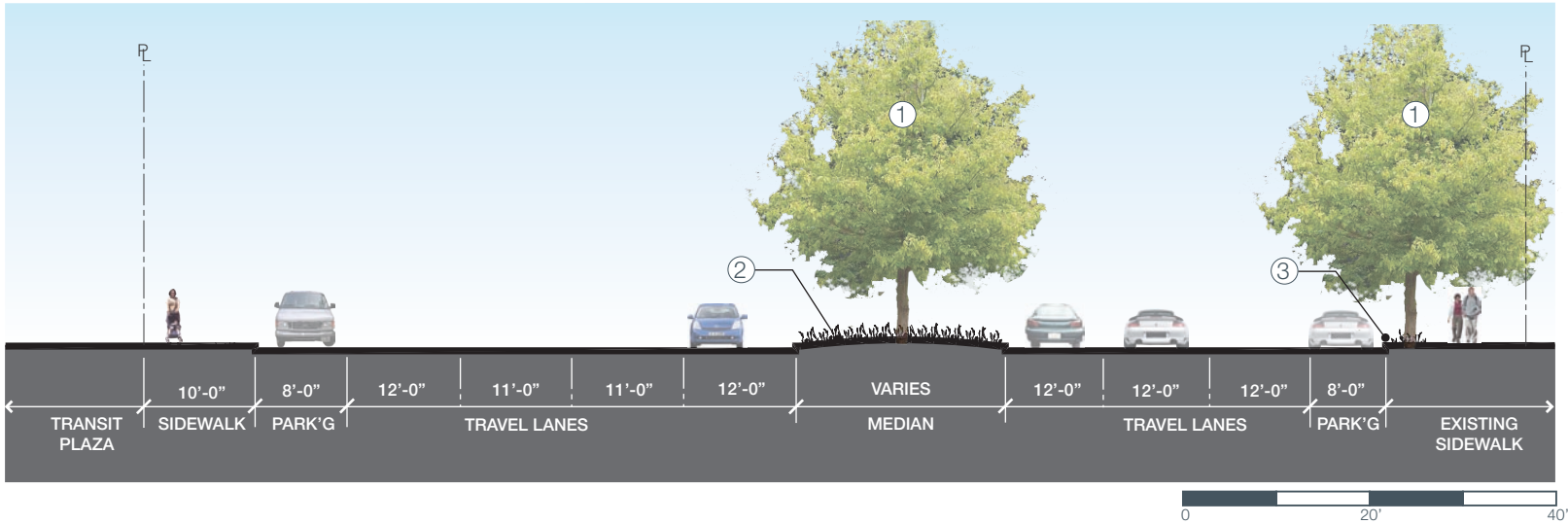


Figure 02.33.D Proposed Trees

Species / Common Name

Callistemon citrinus

Proposed Shrubs and Ground Covers * California native

Species / Common Name

Sesleria autumnalis/ Autumn Moor Grass

Sisyrinchium bellum/ Blue-eyed Grass *

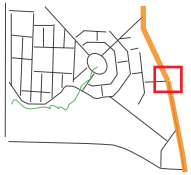
19th Avenue Design Features

1. Street tree
2. Median planting
3. Continuous understory planting
4. Existing bus stop to be re-configured
5. New curb return to shorten pedestrian crosswalks
6. Realign crosswalks
7. Modify median and provide pedestrian refuge
8. Install pavement demarcation
9. Widen street for 400' long - full 8' widening for 220' for deceleration lane, widen street for 100' long <8' for the approach taper, and widen street for 80' long <8' for the lane addition
10. Remove existing island
11. New pedestrian bulb-out to shorten pedestrian crosswalk
12. New traffic signal
13. Create a northbound left-turn pocket*
14. Remove existing Muni tracks
15. Narrow median to accommodate left-turn pocket
16. Create fourth southbound travel lane

* Mitigation Measure Alternative TR-2A: Eliminate left-turn pocket/ median width will be increased with removal of pocket

02.34 off-site -junipero serra boulevard & 19th avenue

KEY PLAN



With the re-routing of Muni through Parkmerced, the light rail tracks will be re-configured to cross the intersection of Junipero Serra and 19th Avenue diagonally and re-connect to the existing tracks south east of the intersection. Also included in the improvements to this intersection are the creation of an additional northbound Junipero Serra left-turn lane and the elimination of the northbound 19th Avenue left-turn movement to improve traffic flow a capacity as well as increased safety. Stop signs will be implemented at the channelized right-turn movements to improve pedestrian crossings.

Standards

02.34.01 **Requirements** Intersection improvements shall be in compliance with Figure 02.34.A - Junipero Serra Illustrative Plan.

02.34.02 **Dimensions** Sidewalk and planting zone dimensions for Junipero Serra shall be per Fig. 02.34.B Junipero Serra Typical Section.

02.34.03 **Trees** Street trees shall be consistent in size, height and canopy form.

02.34.04 **Tree Alignment** Tree spacing shall be regular and consistent. Trees shall follow the existing tree spacing on site.

02.34.05 **Tree Spacing** The siting of all new tree planting shall be in accordance with City of San Francisco guidelines (Department of Public Works, Ordinance No. 169,946) regarding tree setbacks and utility/ signal visibility. On the approach and far sides of any intersection, trees shall be no closer than 25 and 10 feet, respectively, from the corner of the property line. Additionally, trees and other plantings located in the sidewalk area shall be located so that visibility of traffic signals or lights will be assured at all times.

Figure 02.34.A - Junipero Serra Illustrative Plan

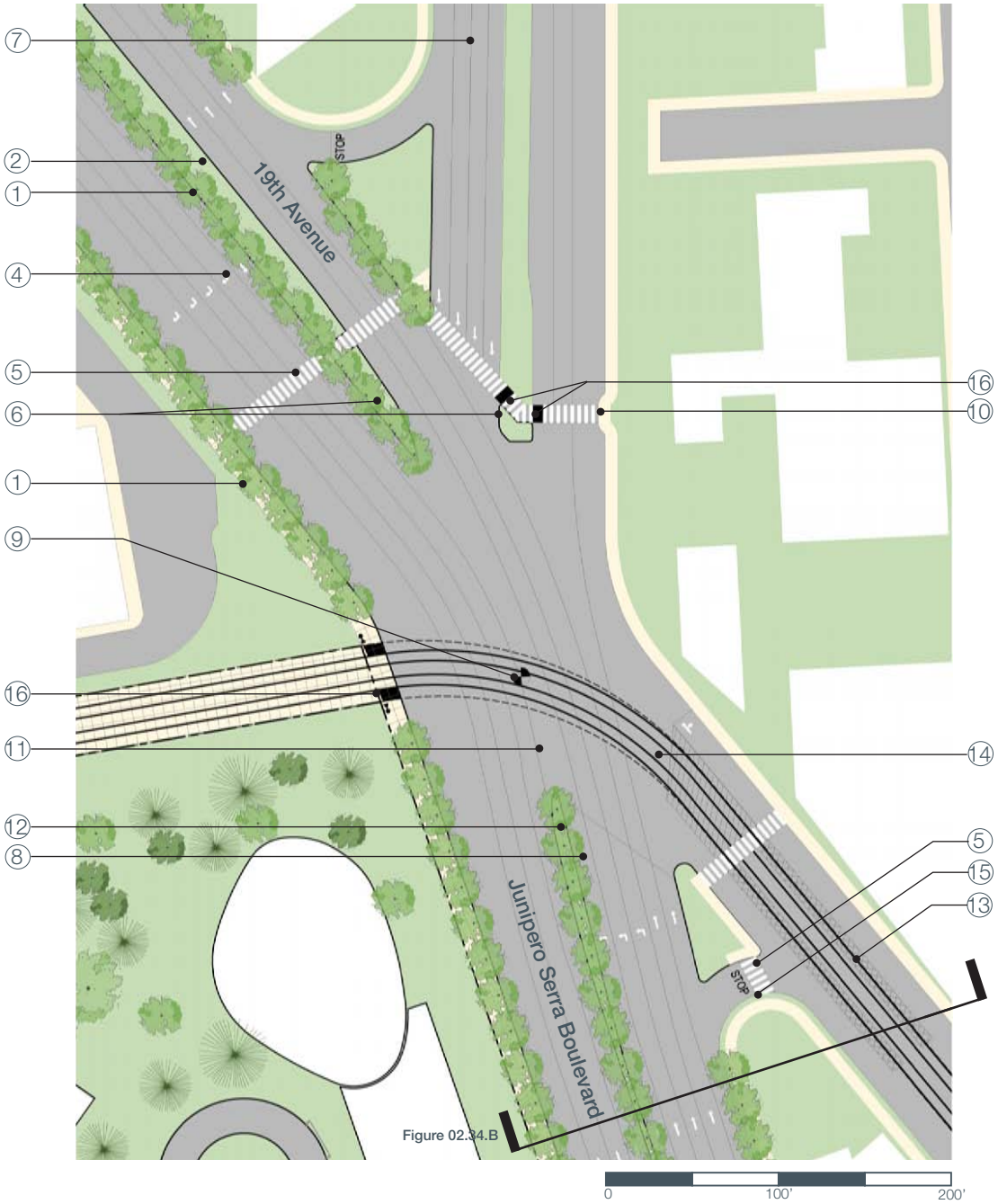
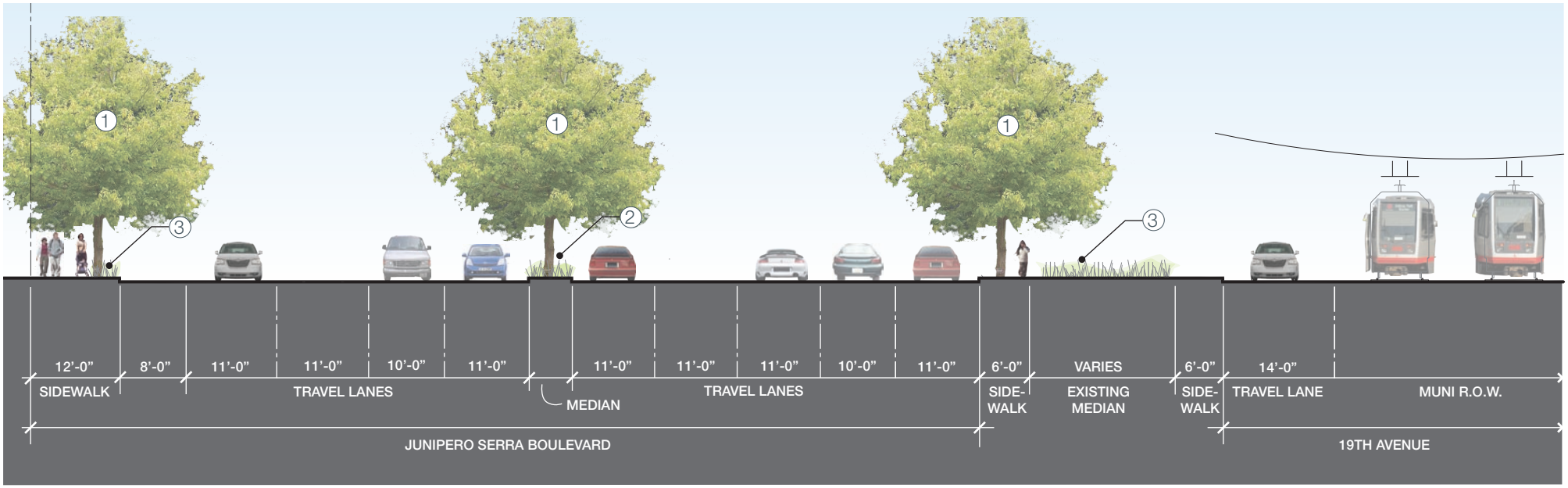


Figure 02.34.B

Figure 02.34.B - Junipero Serra & 19th Avenue Section



Junipero Serra & 19th Avenue Design Features

1. Street tree
2. Median planting
3. Continuous understory planting
4. New right-turn lane
5. New crosswalk
6. Modify median and 4'x4' min. pedestrian refuge
7. New striping
8. New left-turn lane
9. Traffic signals modifications
10. New pedestrian bulb-out
11. Remove existing median
12. Modify existing median
13. New Striped Median & 20' mountable curb for LRT loading
14. Eliminate left-turn pocket
15. New curb return and stop sign
16. Install pavement demarcation

02.34.06 **Ground Plane** Sidewalk paving material, finish and color shall be consistent at all locations and shall follow city standards.

Guidelines

02.34.07 **Tree Species** Street tree species on Junipero Serra should match existing, believed to be Callistemon citrinus. Existing tree type should be verified by an arborist.

02.34.08 **Median Trees** Where the median is wide enough, trees should be planted to match the street trees.

02.34.09 **Median Plants** Narrow portions of the median should be planted with taller shrubs to provide seasonal color and variation in texture.

02.34.10 **Plants** Proposed understory planting alternatives are listed in Fig.02.34.C –proposed shrubs and groundcovers. Alternative species not listed should be selected by a licensed horticulturalist.

Figure 02.34.C Proposed Trees
Species / Common Name

Callistemon citrinus

Proposed Shrubs and Ground Covers * California native
Species / Common Name

Sesleria autumnalis/ Autumn Moor Grass

Sisyrinchium bellum/ Blue-eyed Grass *

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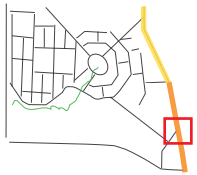
02.35 off-site -chumasero drive & junipero serra

KEY PLAN



Junipero Serra Boulevard forms the Southeast edge of Parkmerced. The Font intersection with Junipero Serra will be replaced with a new intersection with Chumasero Drive, including a new northbound left-turn pocket and a new traffic signal to provide another access point into Parkmerced for vehicles coming from the south which will help to reduce the amount of traffic in adjacent neighborhoods. New crosswalks with pedestrian signals and refuge areas are intended to introduce a new, safer and more convenient crossing of 19th Avenue. Approaching Parkmerced from the south on Highway 280, Junipero Serra Boulevard and onto 19th Avenue currently feel like an extension of the highway. The design of the streetscape and intersection at Chumasero Drive and Junipero Serra Boulevard is intended to visually and physically make this section of the 19th Avenue and Junipero Serra Boulevard corridor a more integrated part of the city and not an extension of the highway. A planted median, tree-lined sidewalks, additional buffer planting zone at the edge of travel lanes and pedestrian refuges are intended to slow down vehicular traffic and to make Junipero Serra Boulevard a safe and comfortable place for pedestrians.

Standards

02.35.01 **Requirements** Intersection improvements shall be in compliance with Figure 02.35.A - Junipero Serra & Chumasero Illustrative Plan.

02.35.02 **Dimensions** Sidewalk and planting zone dimensions for Junipero Serra Boulevard shall be per Fig. 02.35.B - Junipero Serra Boulevard Typical Section.

02.35.03 **Trees** Street trees shall be consistent in size, height and canopy form.

02.35.04 **Tree Alignment** Tree spacing shall be regular and consistent. Trees shall follow the existing tree spacing on site.

02.35.05 **Tree Spacing** The siting of all new tree planting shall be in accordance with City of San Francisco guidelines (Department of Public Works, Ordinance No. 169,946) regarding tree setbacks and utility/ signal visibility. On the approach and far sides of any intersection, trees shall be no closer than 25 and 10 feet, respectively, from the corner of the property line. Additionally, trees and other plantings located in the sidewalk area shall be located so that visibility of traffic signals or lights will be assured at all times.

02.35.06 **Ground Plane** Sidewalk paving material, finish and color shall be consistent at all locations and shall follow city standards.

Guidelines

02.35.07 **Tree Species** Street tree species on Junipero Serra Boulevard should match existing, believed to be Callistemon citrinus. Existing tree type should be verified by an arborist.

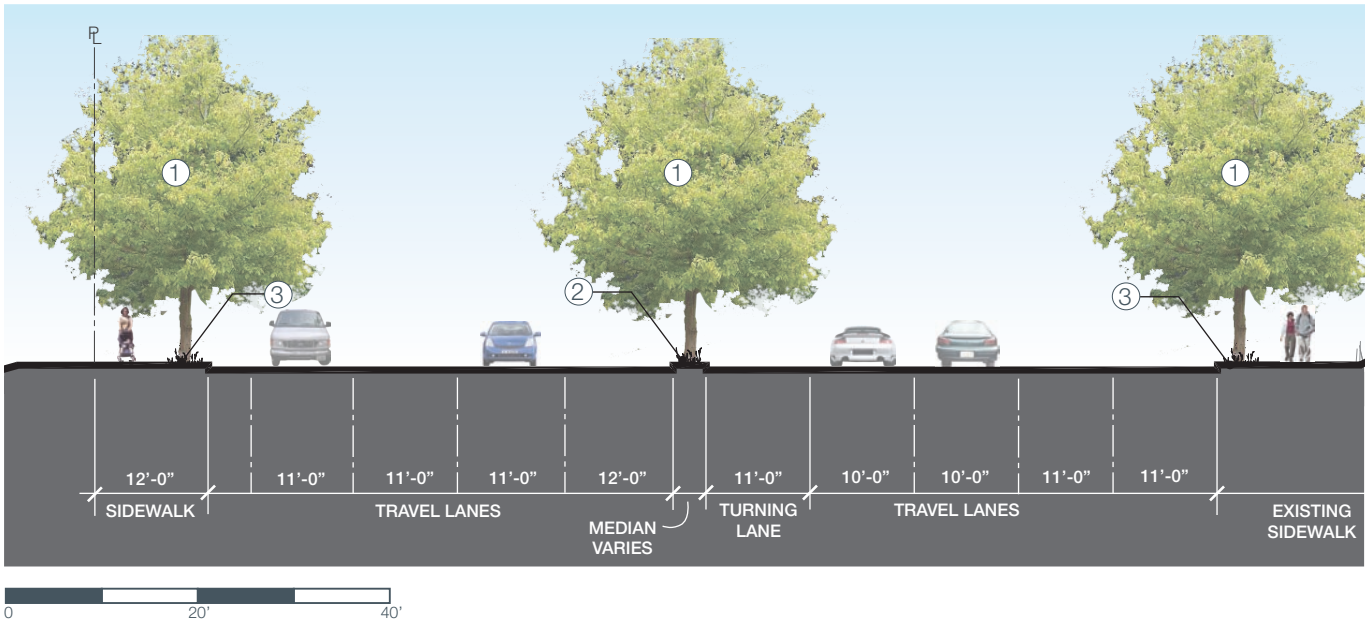
02.35.08 **Median Trees** Where the median is wide enough, trees should be planted to match the street trees.

02.35.09 **Median Plants** Narrow portions of the median should be planted with taller shrubs to provide seasonal color and variation in texture.

02.35.10 **Plants** Proposed understory planting alternatives are listed in Fig.02.35.C –proposed shrubs and groundcovers. Alternative species not listed should be selected by a licensed arborist.

Figure 02.35.A - Junipero Serra & Chumasero Illustrative Plan

Figure 02.35.B - Junipero Serra Typical Section



Junipero Serra Design Features

1. Street tree type -urban edge
2. Median planting
3. Understory planting at tree well
4. Modify Existing Median
5. New crosswalk
6. New traffic signal
7. New median for pedestrian refuge
8. New left-turn lane
9. Remove median concrete barrier

Figure 02.35.C Proposed Trees

Species / Common Name

Callistemon citrinus

Proposed Shrubs and Ground Covers * California native

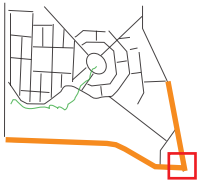
Species / Common Name

Sesleria autumnalis/ Autumn Moor Grass

Sisyrinchium bellum/ Blue-eyed Grass *

02.36 off-site -brotherhood way & junipero serra

KEY PLAN



The overpass at the intersection of Brotherhood Way and Junipero Serra Boulevard form a clearly defined gateway into the City of San Francisco. Re-landscaping this intersection is intended to improve both driver and pedestrian safety, as well as enhance the character of this major access point to the city. Landscape areas located within the on- and off-ramps are meant to have the character of an urban forest, with heavily planted, large trees accentuating the special nature of this place. Provision for a third travel lane on westbound Brotherhood Way from the northbound Junipero Serra off-ramp to Chumasero will improve the merge/diverge movements at the on- and off-ramps and will provide additional capacity for vehicles destined to Parkmerced via Chumasero. A third eastbound Brotherhood Way lane between the off-ramp and on-ramp will also improve merge/diverge movements. Space along the northern edge of Brotherhood Way will be reserved for the proposed long term bike lane improvement per the June 26, 2009 San Francisco Bicycle Plan.

Standards

02.36.01 **Requirements** Intersection improvements shall be in compliance with Figure 02.36.A - Brotherhood Way & Junipero Serra Illustrative Plan.

02.36.02 **Trees** Street trees shall be consistent in size, height and canopy form and match Junipero Serra Boulevard.

02.36.03 **Tree Alignment** Street tree spacing shall be regular and consistent to match Junipero Serra Boulevard.

02.36.04 **Tree Spacing** The siting of all new tree planting shall be in accordance with City of San Francisco guidelines (Department of Public Works, Ordinance No. 169,946) regarding tree setbacks and utility/ signal visibility. On the approach and far sides of any intersection, trees shall be no

Figure 02.36.A - Brotherhood Way & Junipero Serra Illustrative Plan

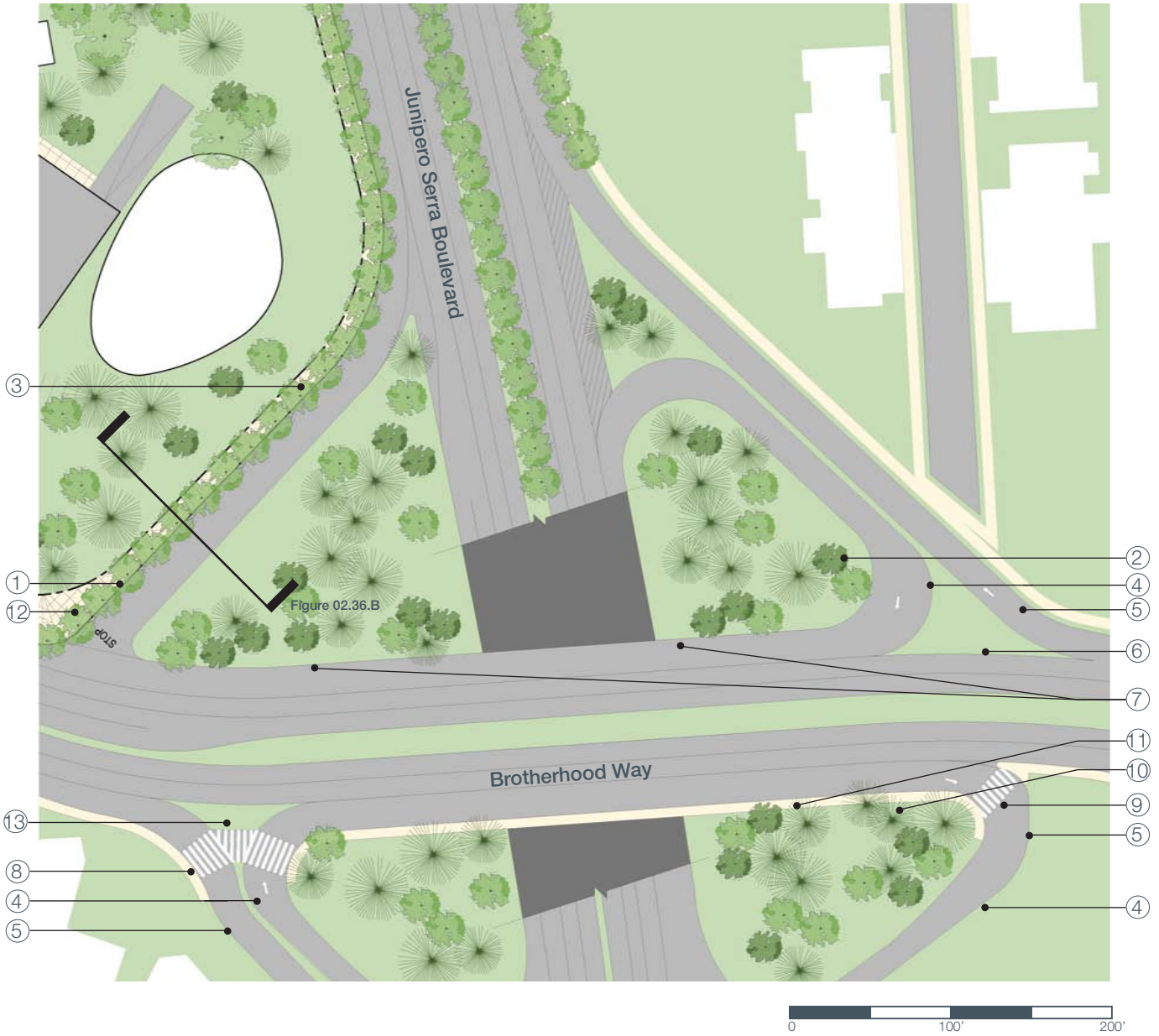
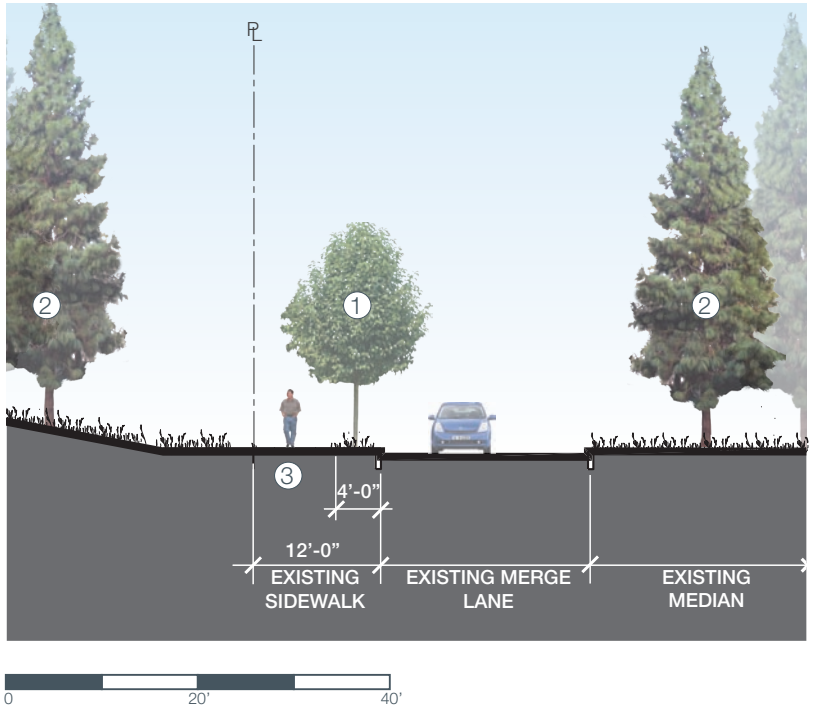


Figure 02.36.B - Brotherhood Way Section at Interchange



Brotherhood Way Interchange Design Features

1. Street tree to match Junipero Serra Boulevard tree type
2. Tree to match tower areas type
3. Pedestrian planting- sidewalk and street separation
4. Modify/remove existing ramp
5. Modify existing curb
6. Modify median
7. Widen roadway 14' for third lane and for the proposed long term improvement bike lane per the June 26, 2009 San Francisco Bicycle Plan
8. Re-align and re-stripe crosswalk
9. Install new crosswalk
10. Install new sidewalk
11. Widen roadway 14' for eastbound merge/diverge lane
12. Re-configure off-ramp
13. New median island and pedestrian refuge

closer than 25 and 10 feet, respectively, from the corner of the property line. Additionally, trees and other plantings located in the sidewalk area shall be located so that visibility of traffic signals or lights will be assured at all times.

02.36.05 **Ground Plane** Sidewalk paving material, finish and color shall be consistent at all locations and shall follow city standards.

Guidelines

02.36.06 **Tree Species** Street tree species on the southeast corner should match Junipero Serra Boulevard street tree species.

02.36.07 **Median Trees** Trees in the clover leaf open space areas should match the redwood forest in Towers area, shown in 02.36.C proposed trees list.

Figure 02.36.C Proposed Trees
Species / Common Name

Towers trees -Coniferous Grove


Chamaecyparis lawsoniana / Lawson Cypress


Cupressus macrocarpa/ Montery Cypress*


Pinus canariensis/ Canary Island Pine


Sequoia sempervirens/ Coast Redwood *

street tree -to match 19th avenue and junipero serra boulevard


Callistemon citrinus

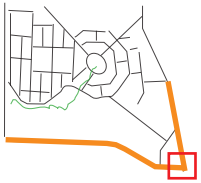
Proposed Shrubs and Ground Covers * California native
Species / Common Name


Sesleria autumnalis/ Autumn Moor Grass


Sisyrinchium bellum/ Blue-eyed Grass *

02.36 off-site -brotherhood way & junipero serra - mitigation

KEY PLAN



The overpass at the intersection of Brotherhood Way and Junipero Serra Boulevard form a clearly defined gateway into the City of San Francisco. Re-landscaping this intersection is intended to improve both driver and pedestrian safety, as well as enhance the character of this major access point to the city. Landscape areas located within the on- and off-ramps are meant to have the character of an urban forest, with heavily planted, large trees accentuating the special nature of this place. Provision for a third travel lane on westbound Brotherhood Way from the northbound Junipero Serra off-ramp to Chumasero will improve the merge/diverge movements at the on- and off-ramps and will provide additional capacity for vehicles destined to Parkmerced via Chumasero. A third eastbound Brotherhood Way lane between the off-ramp and on-ramp will also improve merge/diverge movements. Space along the northern edge of Brotherhood Way will be reserved for the proposed long term bike lane improvement per the June 26, 2009 San Francisco Bicycle Plan.

Standards

02.36.01 **Requirements** Intersection improvements shall be in compliance with Figure 02.36.A - Brotherhood Way & Junipero Serra Illustrative Plan.

02.36.02 **Trees** Street trees shall be consistent in size, height and canopy form and match Junipero Serra Boulevard.

02.36.03 **Tree Alignment** Street tree spacing shall be regular and consistent to match Junipero Serra Boulevard.

02.36.04 **Tree Spacing** The siting of all new tree planting shall be in accordance with City of San Francisco guidelines (Department of Public Works, Ordinance No. 169,946) regarding tree setbacks and utility/ signal visibility. On the approach and far sides of any intersection, trees shall be no

Figure 02.36.A - Brotherhood Way & Junipero Serra Illustrative Plan

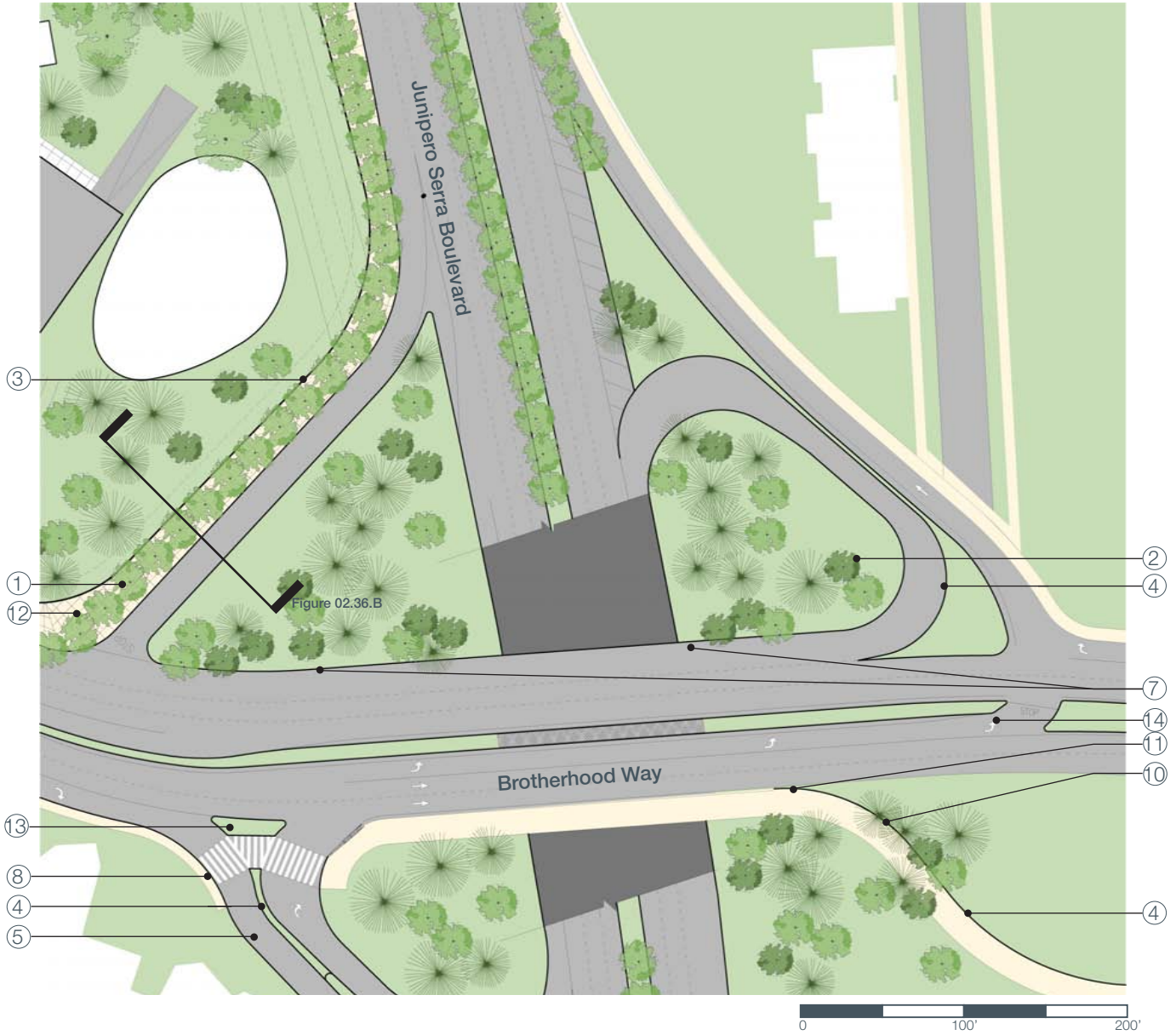
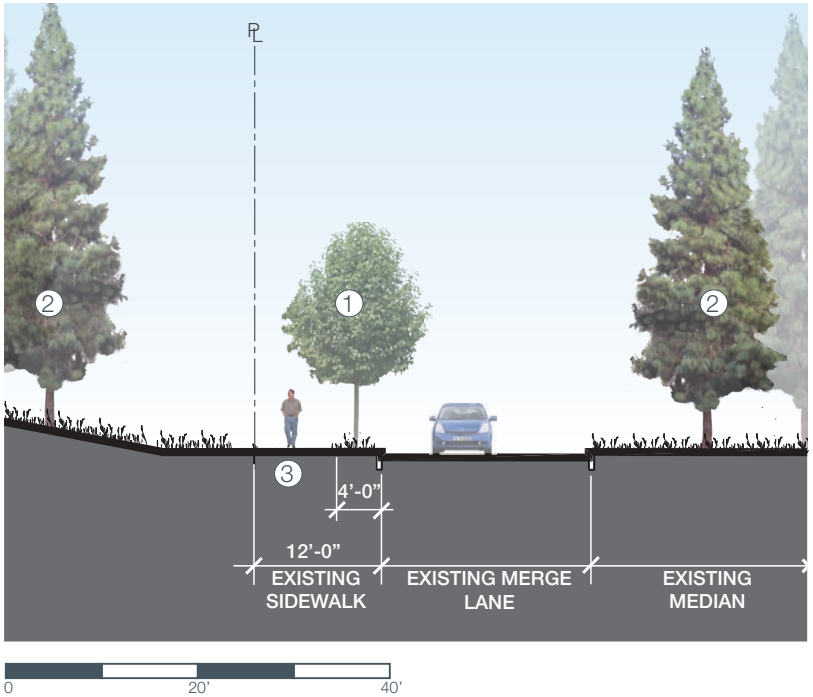


Figure 02.36.B - Brotherhood Way Section at Interchange



Brotherhood Way Interchange Design Features

1. Street tree to match Junipero Serra Boulevard tree type
2. Tree to match tower areas type
3. Pedestrian planting- sidewalk and street separation
4. Modify/remove existing ramp
5. Modify existing curb
6. Modify median
7. Widen roadway 14' for third lane and for the proposed long term improvement bike lane per the June 26, 2009 San Francisco Bicycle Plan
8. Re-align and re-stripe crosswalk
9. Install new crosswalk
10. Install new sidewalk
11. Widen roadway 14' for eastbound merge/diverge lane
12. Re-configure off-ramp
13. New median island and pedestrian refuge
14. Left turn lane

closer than 25 and 10 feet, respectively, from the corner of the property line. Additionally, trees and other plantings located in the sidewalk area shall be located so that visibility of traffic signals or lights will be assured at all times.

02.36.05 **Ground Plane** Sidewalk paving material, finish and color shall be consistent at all locations and shall follow city standards.

Guidelines

02.36.06 **Tree Species** Street tree species on the southeast corner should match Junipero Serra Boulevard street tree species.

02.36.07 **Median Trees** Trees in the clover leaf open space areas should match the redwood forest in Towers area, shown in 02.36.C proposed trees list.

Figure 02.36.C Proposed Trees
Species / Common Name

Towers trees -Coniferous Grove


Chamaecyparis lawsoniana / Lawson Cypress


Cupressus macrocarpa/ Montery Cypress*


Pinus canariensis/ Canary Island Pine


Sequoia sempervirens/ Coast Redwood *

street tree -to match 19th avenue and junipero serra boulevard


Callistemon citrinus

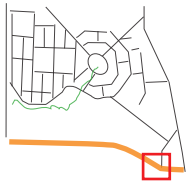
Proposed Shrubs and Ground Covers * California native
Species / Common Name


Sesleria autumnalis/ Autumn Moor Grass


Sisyrinchium bellum/ Blue-eyed Grass *

02.37 off-site -chumasero drive & brotherhood way

KEY PLAN



Brotherhood Way forms the south edge of Parkmerced. It is an eastern approach to Parkmerced from the north on Highway 280. The design for the realigned Chumasero Drive and a new 'T' intersection with Brotherhood Way is intended to simplify vehicular movements with adjacent Thomas More Drive to reduce the current traffic congestion in the area and to provide a new at-grade pedestrian crossing location.

Brotherhood Way is a wide boulevard that bisects the Monterey cypress forest located on the southern slope of the neighborhood and the San Francisco Golf Club. The cypress trees should be continued as both street trees and median planting, helping to connect the forest that is located on both sides of Brotherhood Way. Similar to the 19th Avenue and Junipero Serra Boulevard corridor, the design of the section of Brotherhood Way, including additional planting, a new sidewalk and pedestrian crossing, is intended to create a pedestrian-friendly environment by additional planting, a new sidewalk and a pedestrian crossing, connecting the south neighborhood to a future sports fields on top of the slope.

Standards

02.37.01 **Requirements** Intersection improvements shall be in compliance with Figure 02.37.A - Brotherhood Way & Chumasero Illustrative Plan.

02.37.02 **Dimensions** Sidewalk and planting zone dimensions for Brotherhood Way shall be per Fig. 02.37.B - Brotherhood Way Typical Section.

02.37.03 **Trees** Street trees shall be consistent in size, height and canopy form.

02.37.04 **Tree Alignment** Tree spacing shall be regular and consistent.

02.37.05 **Tree Spacing** The siting of all new tree planting shall be in accordance with City of San Francisco guidelines (Department of Public Works, Ordinance No. 169,946) regarding tree setbacks and utility/ signal visibility. On the approach and far sides of any intersection, trees shall be no closer than 25 and 10 feet, respectively, from the corner of the property line. Additionally, trees and other plantings located in the sidewalk area shall be located so that visibility of traffic signals or lights will be assured at all times.

02.37.06 **Ground Plane** Sidewalk paving material, finish and color shall be consistent at all locations and shall follow city standards.

Guidelines

02.37.07 **Tree Species** Tree species along Brotherhood Way should use Monterey cypress to match the existing forest planting on the south slope along Brotherhood Way.

02.37.08 **Plants** Proposed understory planting alternatives are listed in Fig.02.37.C –proposed shrubs and groundcovers. Alternative species not listed should be selected by a licensed arborist.

Figure 02.37.A - Brotherhood Way & Chumasero Illustrative Plan

Figure 02.37.B

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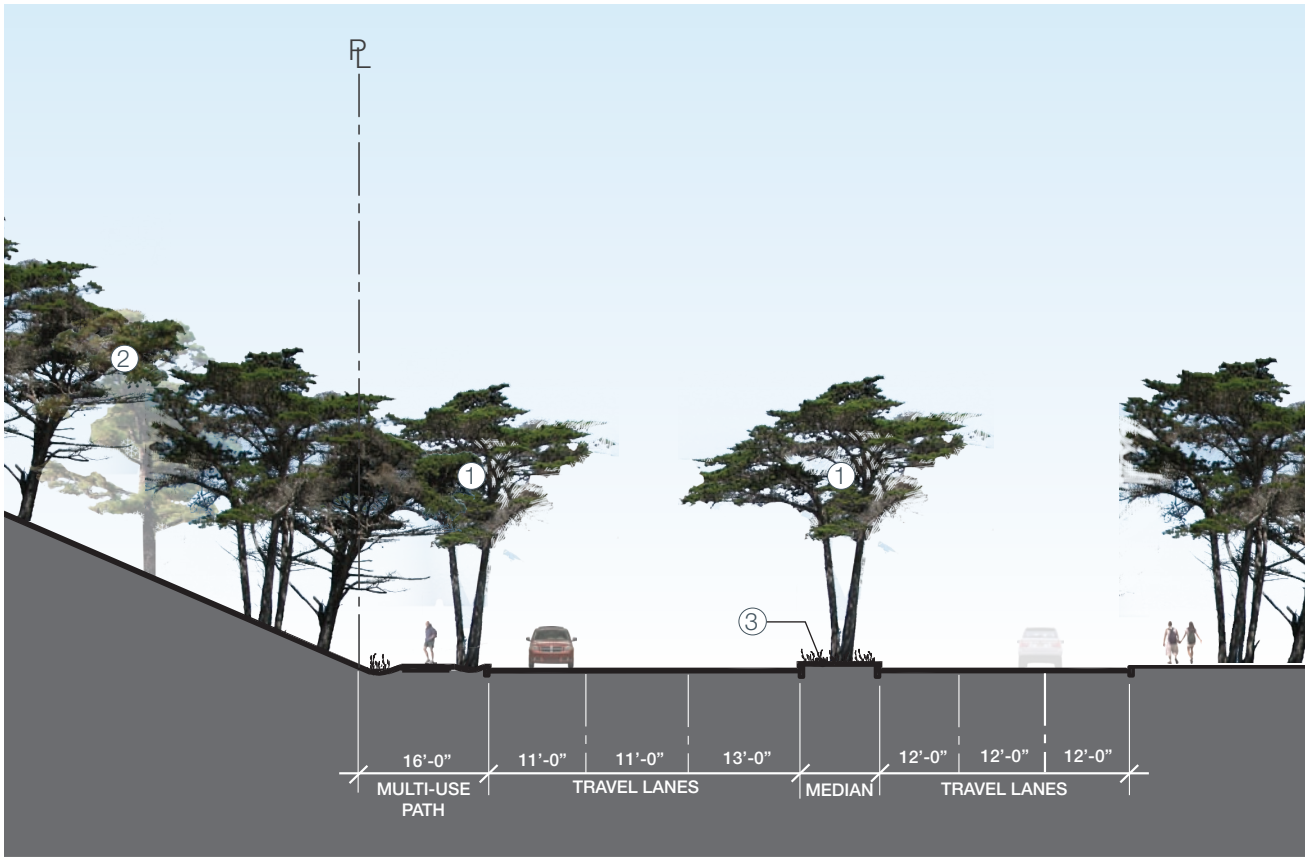
Figure 02.37.B - Brotherhood Way Typical Section



Brotherhood Way Design Features

1. Street tree with understory planting
2. Existing tree
3. Median planting
4. Sidewalk and proposed long term improvement bike lane per the June 26, 2009 San Francisco Bicycle Plan
5. New median
6. Modify existing signal
7. Extend pedestrian overcrossing
8. New median for pedestrian refuge
9. New pedestrian bulb-out
10. New traffic signal
11. Lengthen left-turn lane
12. New pedestrian crosswalk

Figure 02.37.C Proposed Trees
Species / Common Name

Cupressus macrocarpa/ Monterey Cypress

Proposed Shrubs and Ground Covers • California native
Species / Common Name

Sisyrinchium Bellum Grass

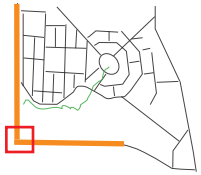
Restio Tetraphyllus

Juncus Patens

Carex Divulsa

02.38 off-site -lake merced boulevard & brotherhood way

KEY PLAN



Modifications to the intersection of Brotherhood Way and Lake Merced Boulevard will improve traffic flow between Brotherhood Way and the northern segment of Lake Merced Boulevard and will eliminate the free-right turn to improve pedestrian conditions. By reducing the curb radii at the corner, a generous new pedestrian plaza can be created with opportunity for signage as well as an additional pedestrian crossing to Lake Merced. The existing Monterey cypress forest will open up at the corner to mark the park side entry, connecting Lake Merced to the terraced, formal Belvedere Garden.

Standards

02.38.01 **Requirements** Intersection improvements shall be in compliance with Figure 02.38.A - Lake Merced & Brotherhood Illustrative Plan.

02.38.02 **Ground Plane** Sidewalk paving material, finish and color shall be consistent at all locations and shall follow city standards.

Guidelines

02.38.03 **Pedestrian Access** Cascading stairs from the Belvedere garden should be connected to the south pedestrian crossing.

02.38.04 **Plants** Proposed understory planting alternatives are listed in Figure 02.38.C - proposed shrubs and groundcovers. Where there is enough space, additional understory planting, continued from the Belvedere Garden is encouraged without obstructing signage or visibility for vehicles.

Figure 02.38.A - Lake Merced & Brotherhood Illustrative Plan

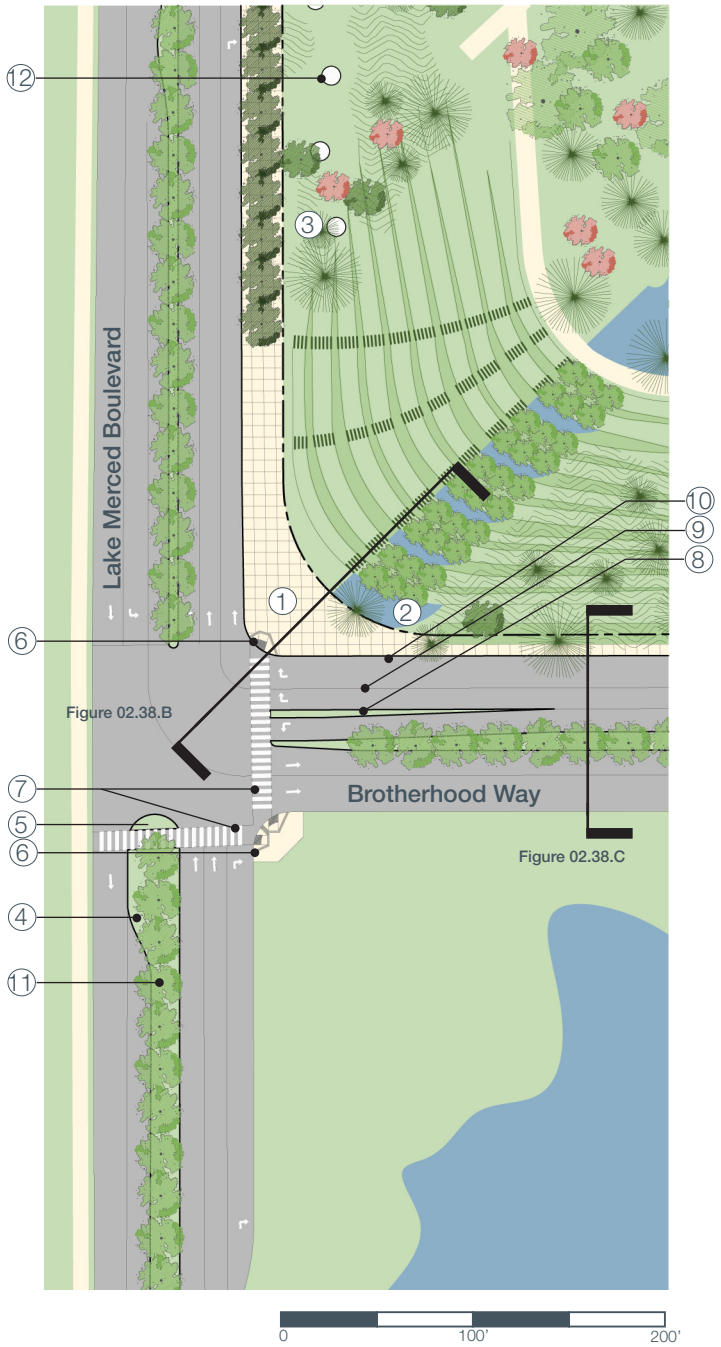


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Figure 02.38.B - Brotherhood Way Section at Lake Merced Boulevard

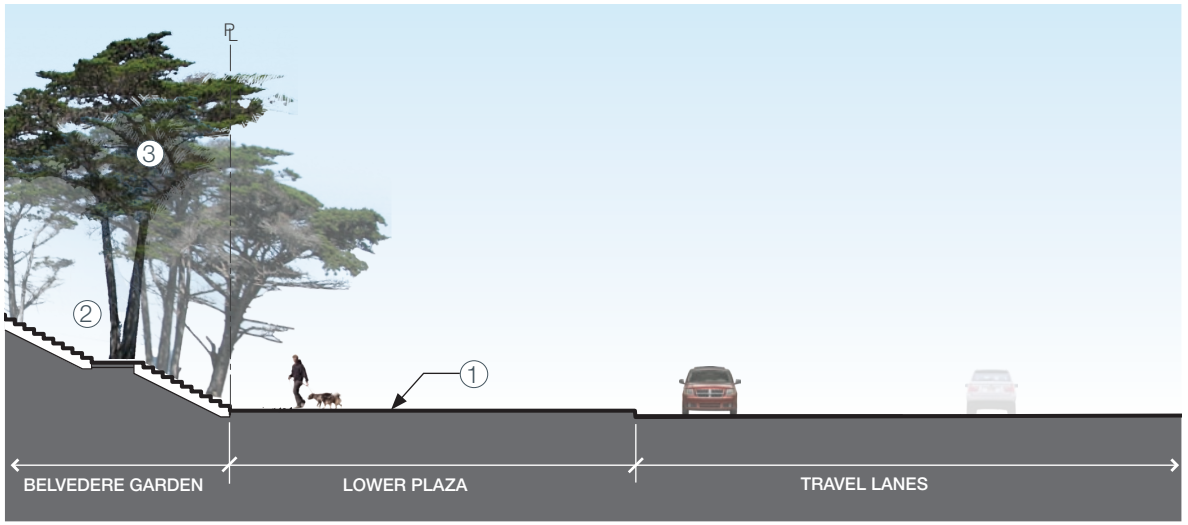
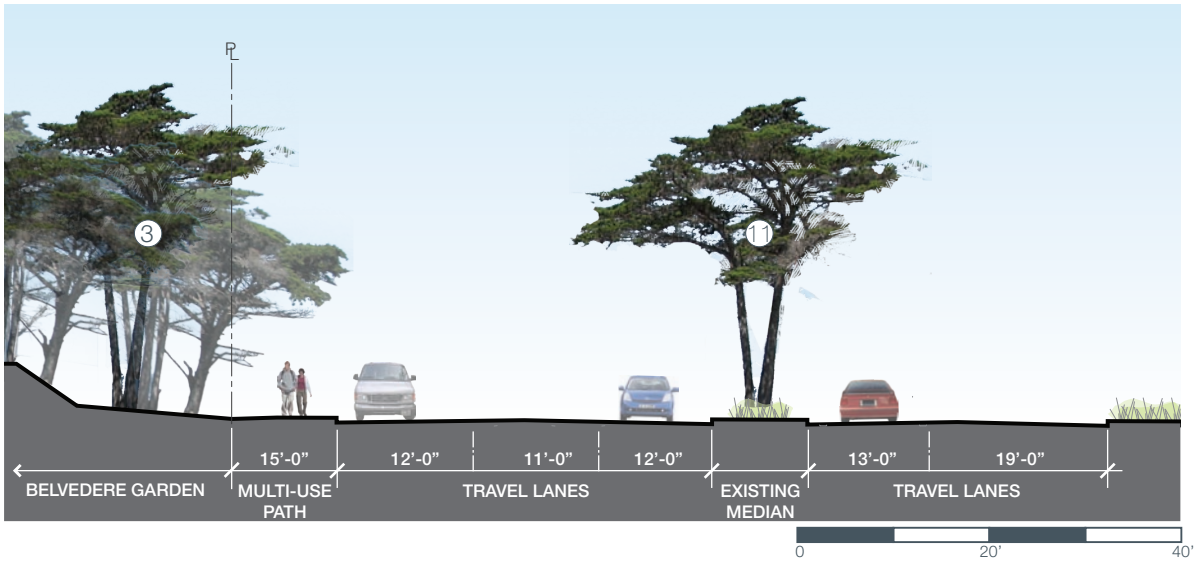


Figure 02.38.C - Brotherhood Way Section



Brotherhood Way Design Features

1. Lower plaza paved area- signage opportunities
2. Terraced water features at Belvedere garden
3. Existing forest
4. Modified median
5. New median for pedestrian refuge
6. Re-construct curb return & reduce radii
7. New crosswalk
8. New striped median to accomodate left turns for bikes
9. Stripe additional right-turn lane
10. Proposed long term improvement bike lane per the June 26, 2009 San Francisco Bicycle Plan
11. Street tree with median planting
12. Potential wind turbine

Figure 02.38.D Proposed Trees
Species / Common Name

Cupressus macrocarpa/ Monterey Cypress

Proposed Shrubs and Ground Covers • California native
Species / Common Name

Sisyrinchium Bellum Grass

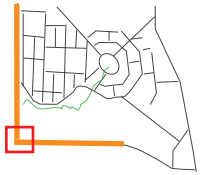
Restio Tetraphyllus

Juncus Patens

Carex Divulsa

02.38 off-site -lake merced boulevard & brotherhood way - mitigation

KEY PLAN



Modifications to the intersection of Brotherhood Way and Lake Merced Boulevard will improve traffic flow between Brotherhood Way and the northern segment of Lake Merced Boulevard and will eliminate the free-right turn to improve pedestrian conditions. By reducing the curb radii at the corner, a generous new pedestrian plaza can be created with opportunity for signage as well as an additional pedestrian crossing to Lake Merced. The existing Monterey cypress forest will open up at the corner to mark the park side entry, connecting Lake Merced to the terraced, formal Belvedere Garden.

Standards

02.38.01 **Requirements** Intersection improvements shall be in compliance with Figure 02.38.A - Lake Merced & Brotherhood Illustrative Plan.

02.38.02 **Ground Plane** Sidewalk paving material, finish and color shall be consistent at all locations and shall follow city standards.

Guidelines

02.38.03 **Pedestrian Access** Cascading stairs from the Belvedere Garden should be connected to the south pedestrian crossing.

02.38.04 **Plants** Proposed understory planting alternatives are listed in Figure 02.38.C - proposed shrubs and groundcovers. Where there is enough space, additional understory planting, continued from the Belvedere garden is encouraged without obstructing signage or visibility for vehicles.

Figure 02.38.A - Lake Merced & Brotherhood Illustrative Plan

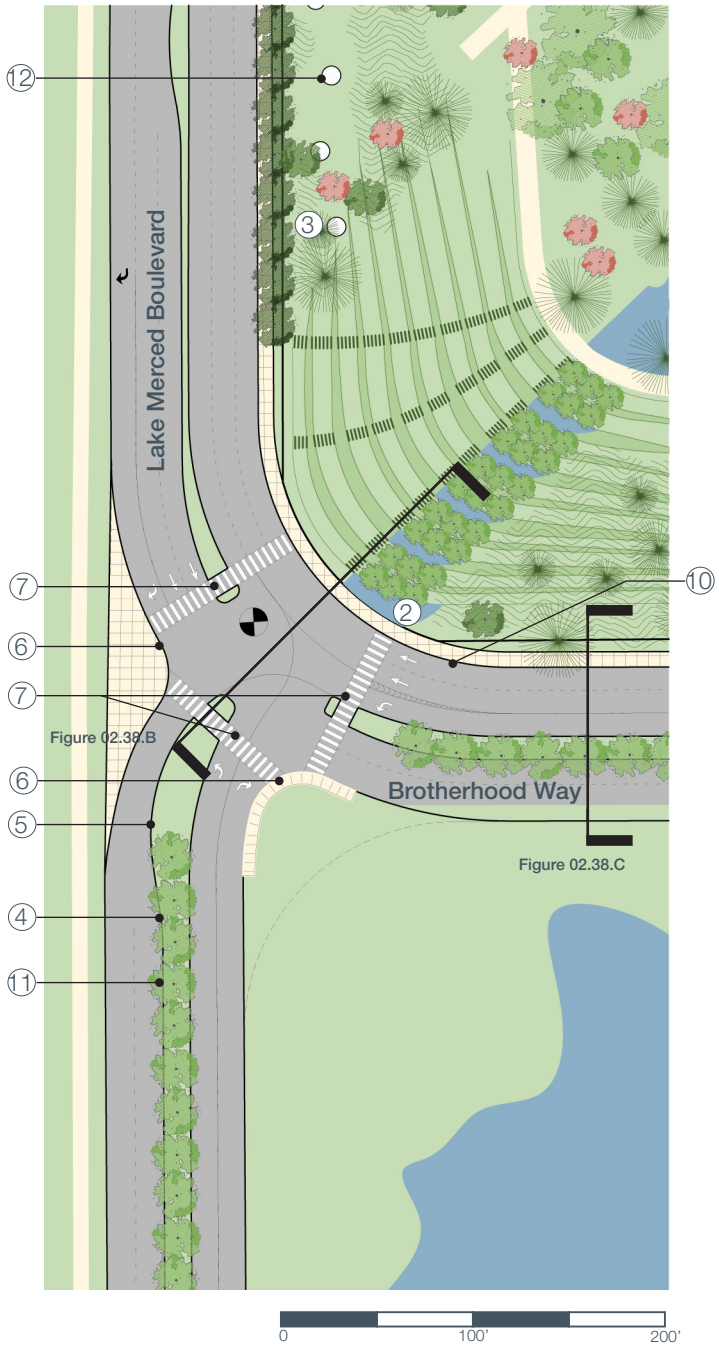


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Figure 02.38.B - Brotherhood Way Section at Lake Merced Boulevard

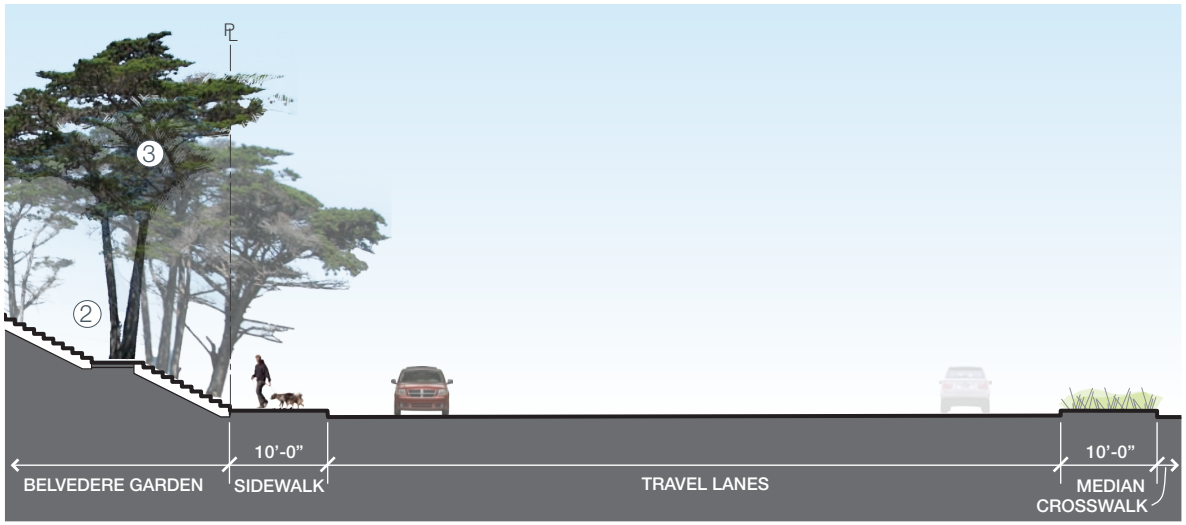
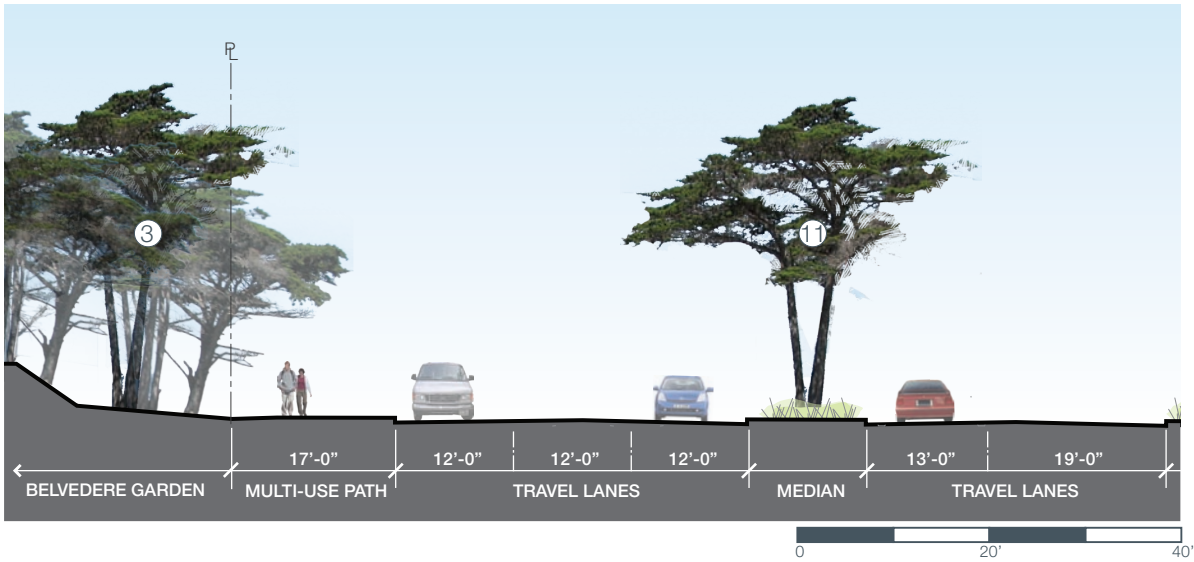


Figure 02.38.C - Brotherhood Way Section



Brotherhood Way Design Features

1. Lower plaza paved area- signage opportunities
2. Terraced water features at Belvedere garden
3. Existing forest
4. Modified median
5. New median for pedestrian refuge
6. Re-construct curb return & reduce radii
7. New crosswalk
8. New striped median to accomodate left turns for bikes
9. Stripe additional right-turn lane
10. Proposed long term improvement bike lane per the June 26, 2009 San Francisco Bicycle Plan
11. Street tree with median planting
12. Potential wind turbine

Figure 02.38.D Proposed Trees
Species / Common Name

Cupressus macrocarpa/ Monterey Cypress

Proposed Shrubs and Ground Covers • California native
Species / Common Name

Sisyrinchium Bellum Grass

Restio Tetraphyllus

Juncus Patens

Carex Divulsa

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02.39 improvements -lake merced boulevard

KEY PLAN

Lake Merced Boulevard runs along the west side of Parkmerced and is bordered to the east by Vidal Drive. New access points will better distribute vehicles by reducing the current traffic congestion at Higuera and provide additional pedestrian crossings. The re-configured median between the two streets will function as the most westward Hedgerow street and buffer the strong western wind from the neighborhood. One type of a wind blocking tree species to match the Hedgerow Street tree is planted in the median, providing a sense of aesthetic continuity of Vidal Drive. While blocking the wind at the pedestrian level, wind will be caputured above the tree line by wind turbines.

Standards

02.39.01 **Requirements** Intersection improvements shall be in compliance with Figure 02.39.A - Lake Merced Boulevard Illustrative Plan and typical of all intersections along Lake Merced Boulevard between Vidal Drive and Brotherhood Way.

02.39.02 **Dimensions** Sidewalk and planting zone dimensions for Lake Merced Boulevard shall be per Fig. 02.39.B - Lake Merced Boulevard Typical Section.

02.39.03 **Trees** Street trees shall be consistent in size, height and canopy form.

02.39.04 **Tree Alignment** Tree spacing shall be regular and consistent. Trees shall match the wind-blocking tree species in the Hedgerow street type. See 02.11. Hedgerow Street.

02.39.05 **Tree Spacing** The siting of all new tree planting shall be in accordance with City of San Francisco guidelines (Department of Public Works, Ordinance No. 169,946) regarding tree setbacks and utility/ signal visibility. On the approach and far sides of any intersection, trees shall be no closer than 25 and 10 feet, respectively, from the corner of the property line. Additionally, trees and other plantings located in the sidewalk area shall be located so that visibility of traffic signals or lights will be assured at all times.

02.39.06 **Ground Plane** Sidewalk paving material, finish and color shall be consistent at all locations and shall follow city standards.

Guidelines

02.39.07 **Tree Species** Wind blocking trees should provide a tall, upright and consistent wind blocking hedgerow. Hedgerow trees could reach 50 -60 feet high at their mature form. They should tolerate wind, fog and saturated soils. Once chosen, only one or two tree species should be used in the entire duration of the hedgerow so as to keep a consistent horticultural theme.

02.39.08 **Median Trees** Where the median is wide enough, trees should be planted to match the street trees.

02.39.09 **Median Plants** Narrow portions of the median should be planted with ornamental grasses to provide seasonal color and variation in texture.

02.39.10 **Plants** Proposed understory planting alternatives are listed in Fig.02.39.C –proposed shrubs and groundcovers. Alternative species not listed should be selected by a licensed arborist.

Figure 02.39.A - Lake Merced Boulevard Illustrative Plan

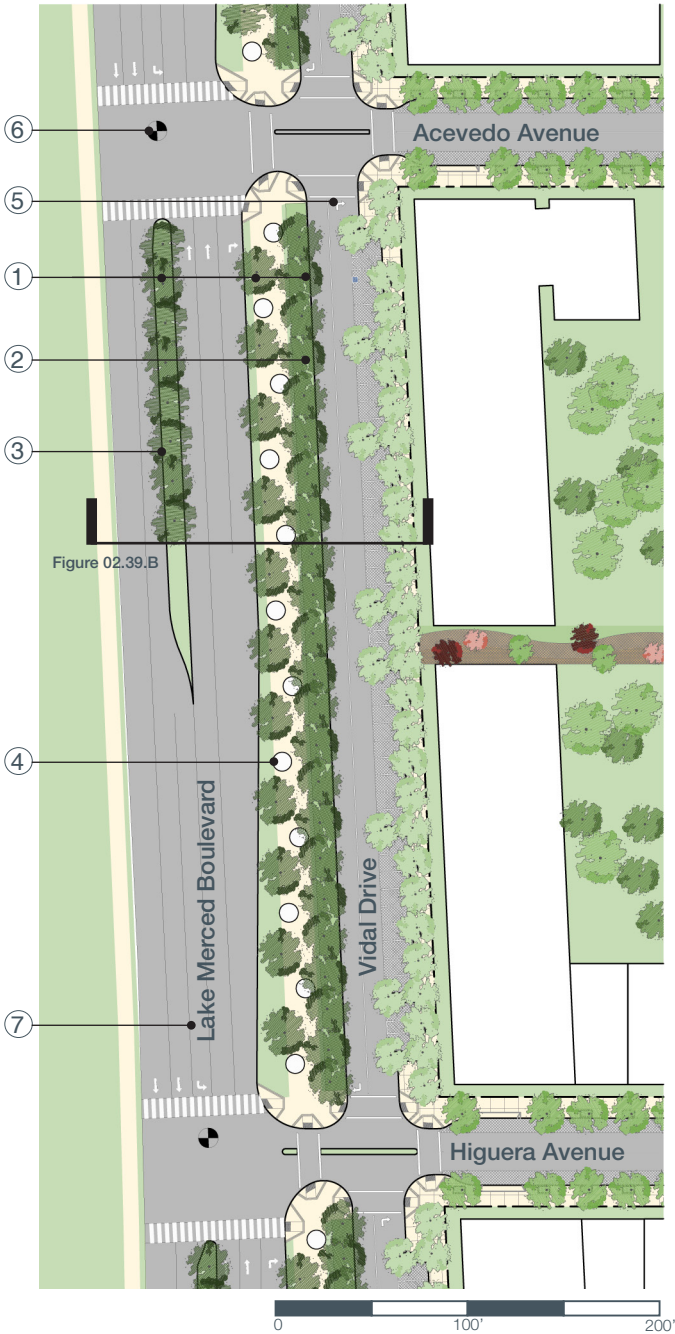
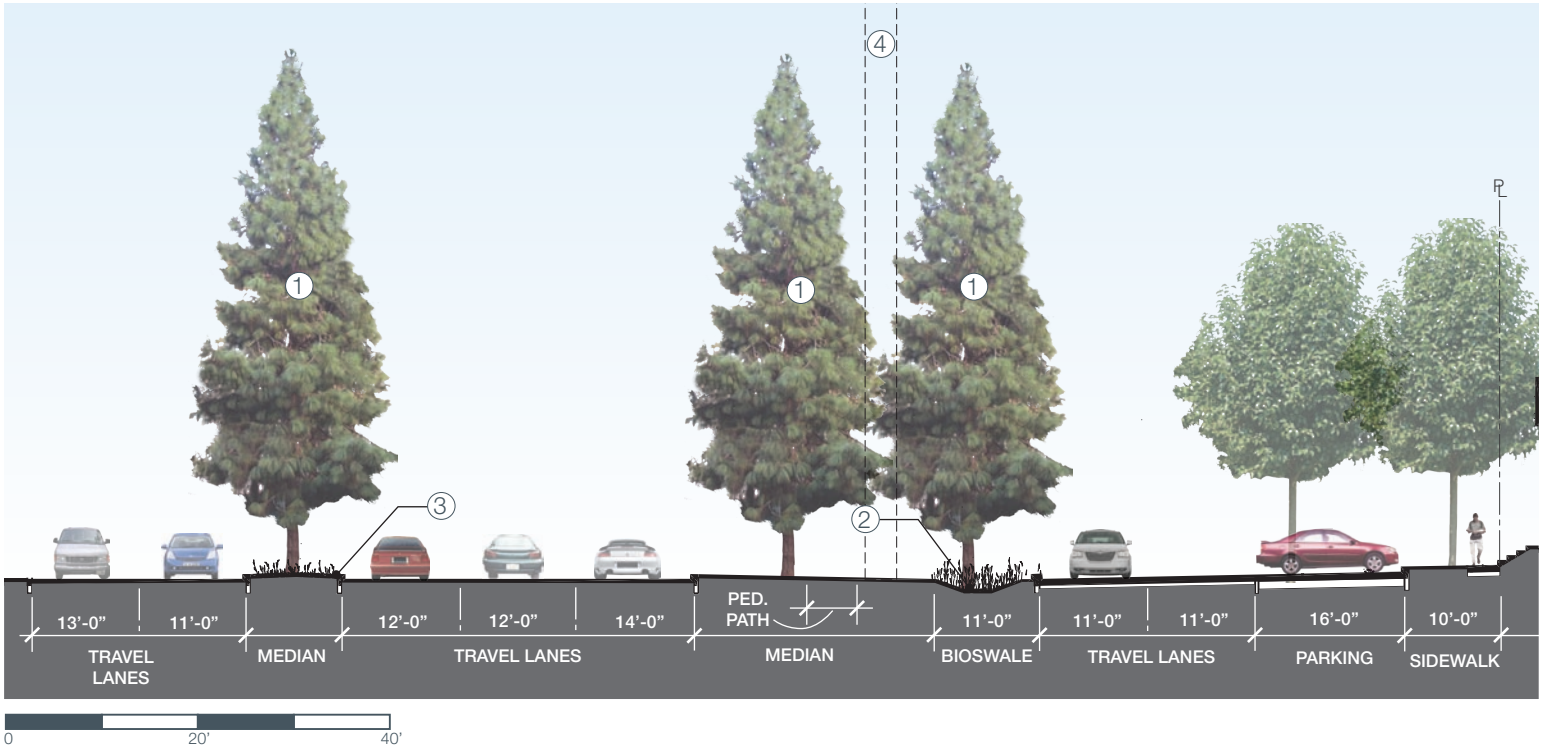


Figure 02.39.B - Lake Merced Boulevard Typical Section



Lake Merced Boulevard Design Features

1. Street tree
2. Bioswale
3. Median planting
4. Potential wind turbine
5. New right-turn pocket
6. New signal
7. Dedicated left-turn pockets at each intersection with new inter-connected traffic signals to facilitate movements and minimize effec to through traffic.

Figure 02.39.C Proposed Trees

Species / Common Name

Alnus rubra/ Red Alder

Alnus glutinosa/ Black Alder

Pinus canariensis/ Canary Island Pine

Proposed Shrubs and Ground Covers * California native

Species / Common Name

Sisyrinchium Bellum Grass

Restio Tetraphyllus

Juncus Patens

Carex Divulsa

DRAFT

building design

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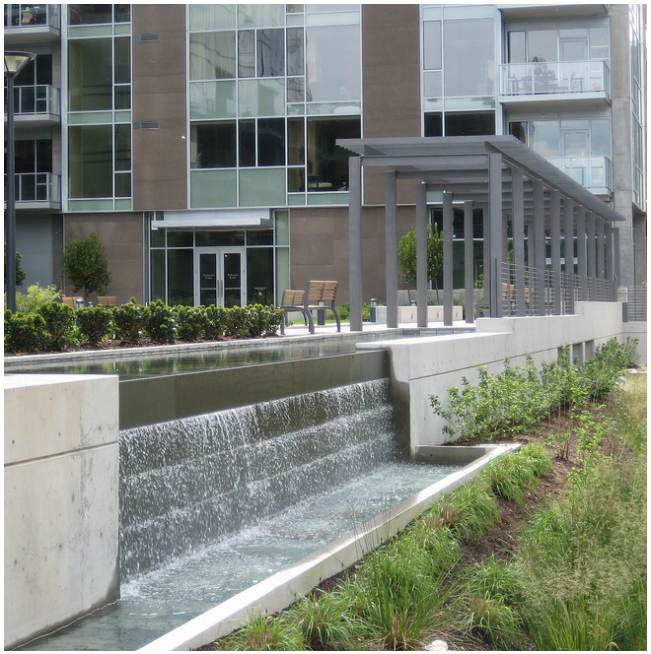
03

building design

Parkmerced is intended to be a neighborhood of buildings that are architecturally interesting, well proportioned, and that engage people in the public realm. Buildings are meant to have well-defined street edges that frame the public realm, and convey a sense of activity and liveliness, reinforcing Parkmerced as a pedestrian focused neighborhood. A transition zone between buildings and public rights-of-ways is created by the design controls in order to invite residents to engage and inhabit the public realm. Residential courtyards are expected to be more intimate, semi-private zones that are visually and physically linked to the public realm, buffered from the wind and capture sunlight.

In order to produce a varied and visually stimulating urban form, a range of building types is encouraged at Parkmerced. Building massing is intended to focus density near transit, services and amenities, while creating places that are appropriately scaled, and protect neighborhood viewsheds.

03.01 sustainability



All new buildings at Parkmerced are intended to be constructed using ecologically sustainable materials and technologies in order to contribute to the reduction of natural resource consumption and waste production. The Parkmerced Sustainability Plan provides goals and strategies for building energy and water use, construction activities, and the selection of building materials, utilities and appliances. Buildings constructed in a manner consistent with the Parkmerced Sustainability Plan will contribute to the ecological sustainability and human health of the neighborhood.

Standards

03.01.01 **Sustainability Performance** All buildings shall meet or exceed the requirements of the Parkmerced Sustainability Plan.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03.02 building controls - lot coverage + usable open space

Lot coverage requirements are intended to create at grade, usable, semi-private open spaces, by controlling the ratio of building footprint area to the overall development block. This provides residents of each block with a common outdoor space where they can meet, talk, linger and play. Semi-private open spaces are intended to be both physically and visually connected to the public realm in order to provide a sense of connectivity and permeability. The Lot Coverage Plan (Fig. 03.02.A) illustrates the approximate lot coverage percentages for all development blocks at Parkmerced. Exact lot coverage requirements for all development blocks at Parkmerced are listed in Appendix A - Regulating Plan.

Standards

03.02.01 **Lot Coverage** Lot coverage is calculated for each development block and is specifically listed in Appendix A - Regulating Plan.

03.02.02 **Lot Coverage Calculation** Percentage of lot coverage is defined as the total enclosed building footprint area divided by the total development block area. Designated public open spaces, such as Neighborhood Commons, are excluded from lot coverage calculations. Building encroachments, projections and obstructions as defined in Section 03.05 Building Controls - Setback are not included in the total enclosed building footprint area calculation. However, those portions of a pedestrian paseo that pass below occupied building area must be included in the total building footprint area.

03.02.03 **Usable Open Space** Usable open space is defined as an outdoor area or areas designed for outdoor living, recreation or landscaping, including such areas on the ground and on decks, balconies, porches and roofs, which are safe and suitably surfaced and screened, and are on the same lot as the dwelling units they serve. Private open space is defined as an area or areas private to and designed for use by only one dwelling unit. Common open space, or semi-private open space, shall mean an area or areas designed for use jointly by two or more dwelling units. Usable open space requirements shall either be met by providing semi-private open space or private open space for each dwelling unit at the ratios listed below:

- Semi-Private Open Space
  Courtyards and rooftop terraces shall count towards the provision of usable open space, and shall be provided at a ratio of 48 square feet per dwelling unit with a minimum dimension of 6 feet in any direction. Semi-private open space shall be easily and independently accessible from each dwelling unit or common area of the building or lot.
- Private Open Space Private
  Setback areas, balconies and decks shall count towards the provision of usable open space, and shall be provided at a ratio of 36 square feet per dwelling unit with a minimum dimension of 6 feet in any direction. Private open space shall be directly accessible from the dwelling unit it serves.

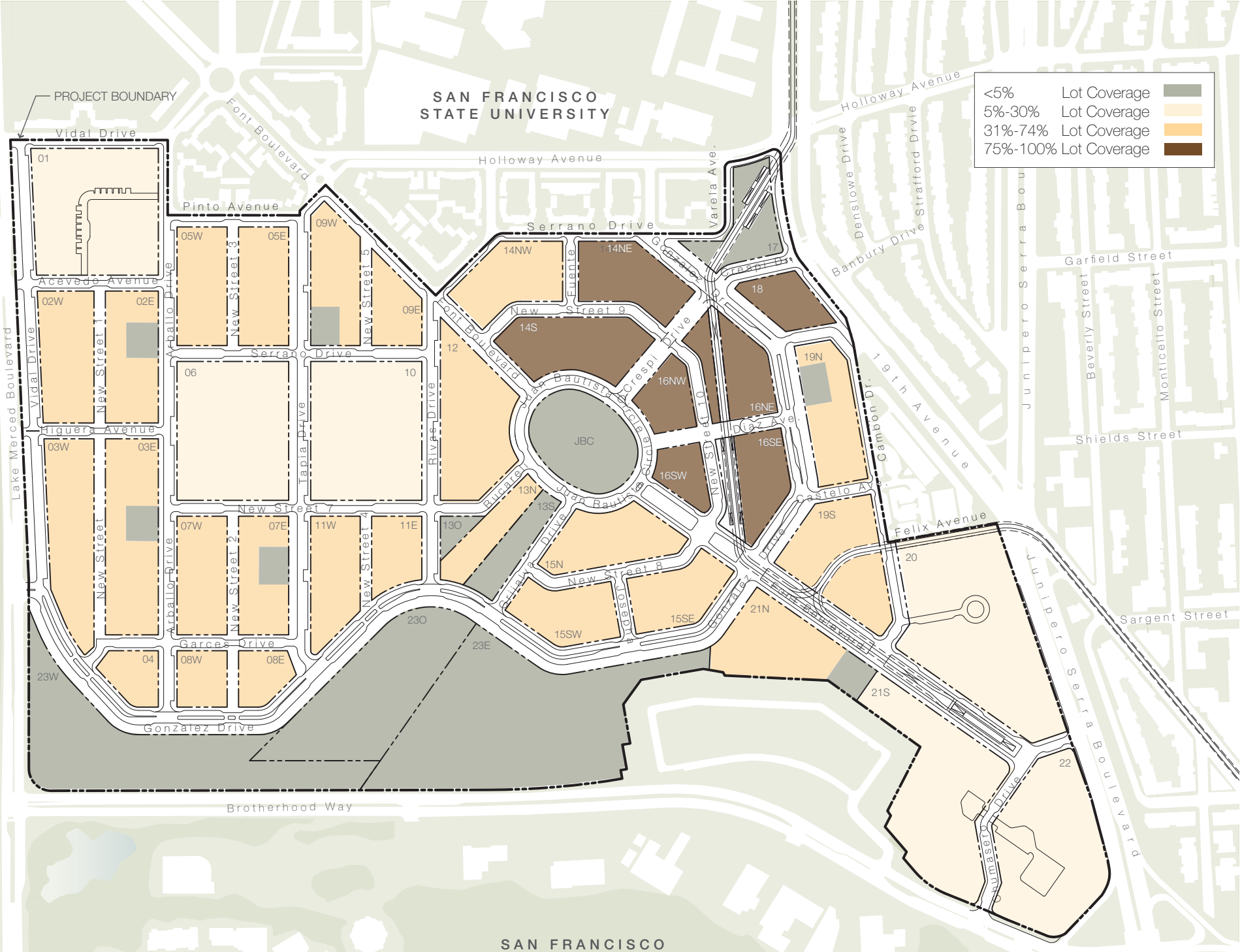


FIGURE 03.02.A / Lot Coverage Plan

03.03 building controls - maximum height

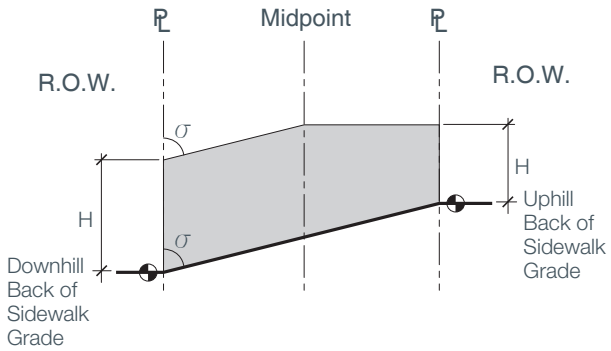


Figure 03.03.A: Height Measurement

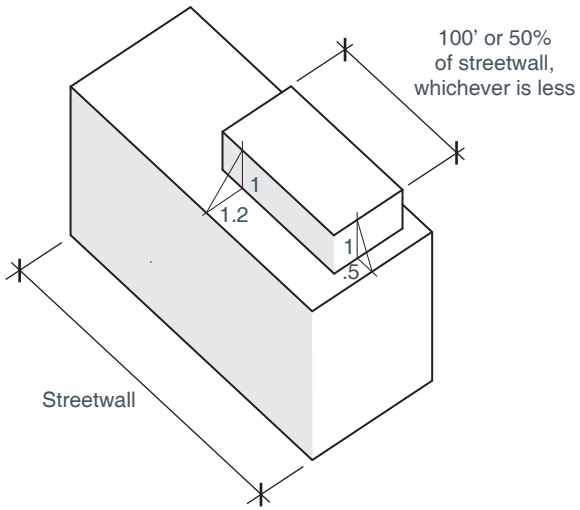


Figure 03.03.B: Active Roofs

Maximum height limits establish a predominant low-rise, neighborhood fabric and the location of taller buildings. Height zones at Parkmerced focus the greatest density near transit, provide a comfortable pedestrian environment that is visually and socially engaging, and protect views for adjacent uphill neighbors to the east. Height zones describe the three-dimensional maximum height envelopes without defining specific locations, numbers or shapes of buildings or parcels. Mid-rise buildable envelopes locate areas where taller buildings than the neighborhood fabric height limit are allowed. The exact shape and orientation of the building footprint within the buildable envelope, however, is not defined.

Standards

03.03.01 **Maximum Height** The height of structures shall not exceed the applicable maximum height as shown on the Maximum Height Plan (Fig. 03.03.C). The allowable developable footprint area for a specific maximum height is indicated for each development block in Appendix A - Regulating Plan.

03.03.02 **Measuring Height** Height limits are to be measured from the back of sidewalk grade, at the center line of the predominant building face, to the roof of the top occupied floor of each building. Height limits on sloped sites are to extend into the site horizontally from the uphill property line to the mid-point of the development block and extend from the downhill property line at an angle equal to the slope of the grade (Fig.03.03.A).

03.03.03 **Sloped Roofs** Sloped roofs, in excess of 30 degrees from the horizontal, are to be measured to the midpoint of the vertical dimension of the roof.

03.03.04 **Appropriate Scale** In order to ensure that smaller scale buildings are located along smaller scale streets, residential buildings that are no greater than 35 feet in height must be located along a public right-of-way or easement that is no more than 45 feet in width.

03.03.05 **Sustainability** Photovoltaic and thermal solar collectors, rain water and fog collecting equipment, wind turbines and other sustainability components may project above the maximum height limit.

03.03.06 **Projections** Those portions of a building that may project above the maximum height limit are:

- Parapets up to 4 feet in height.
- Mechanical enclosures and other rooftop support facilities that occupy less than 20% of the roof area up to 10 feet in height.
- For buildings taller than 125 feet wall planes extensions such as those used for screening of mechanical equipment that are either 50% physically and visibly permeable or translucent, up to 10 feet in height.

03.03.07 **Active Roofs** For buildings no taller than 65 feet residential common areas are permitted to project 12 feet above the maximum height limit. Residential, active uses include, but are not limited to: community rooms and kitchens; recreational facilities; and greenhouses. Those portions of a building that do project above the height limit must step-back at a minimum ratio of 1.2 feet in a horizontal dimension, from the exterior building wall facing a right-of-way, for every 1 foot above the maximum height limit. All other sides of that projection must step-back at a minimum ratio of 0.5 feet in a horizontal dimension, from the exterior wall of the habitable floor below, for every 1 foot above the maximum height limit. Those portions of a building that exceed the indicated maximum height limit shall be no longer than 50% of building length, in segments no greater than 100 linear feet or 50% of the streetwall, whichever is less. Railings, planters and visually permeable building elements no greater than 42 inches above the roof are exempt from step-back requirements (Fig.03.03.B).

03.03.08 **Park Structures** Temporary structures to remain in place 6 months or less, structures with a plan area of 500 square feet or less, sculptural structures that have a positive contribution to the visual quality of the public realm are exempt from the indicated 40 feet O.S. height limit with discretionary approval.

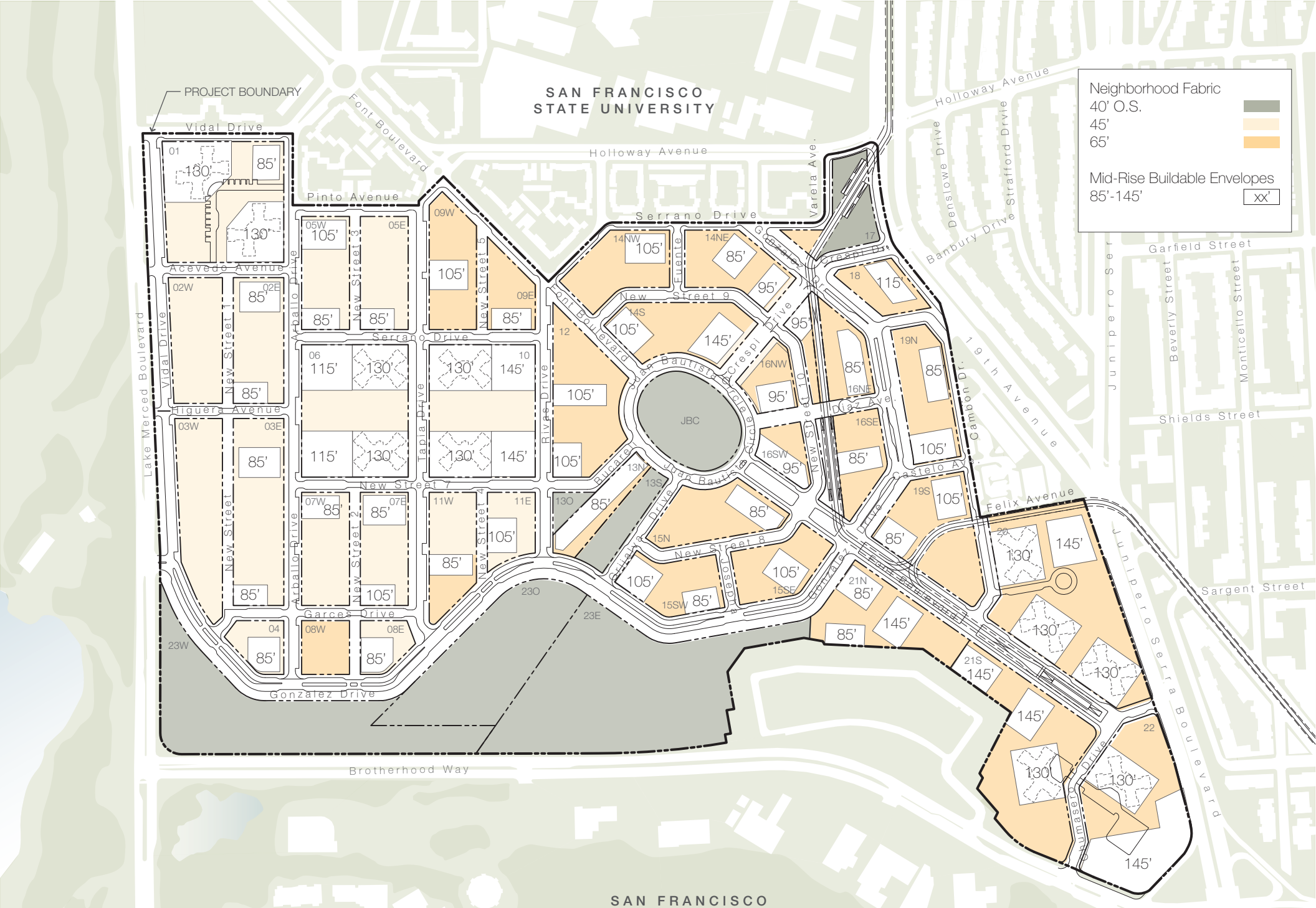


FIGURE 03.03.C / Maximum Height Plan

03.04 building controls - bulk + massing

BUILDING HEIGHT	MAX FLOOR PLATE	MAX PLAN LENGTH	MAX DIAGONAL	MAX APPARENT FACE 1	MAX APPARENT FACE 2	CHANGE IN APPARENT FACE
UP TO 35’	NA	NA	NA	30’	NA	Minimum 1’ deep x 1’ wide notch. or Minimum 2’ offset of building massing.
36’ - 45’	NA	NA	NA	120’	80’	Minimum 2’ deep x 3’ wide notch. or Minimum 2’ offset of building massing.
46’ - 85’	20,000 sf	200’	NA	80’	40’	Minimum 5’ deep x 5’ wide notch. or Minimum 5’ offset of building massing.
86’ - 145’	12,000 sf	140’	170’	110’	40’	Minimum 10’ deep x 10’ wide notch. or Minimum 10’ offset of building massing.

Table 2 - Bulk + Massing Control Matrix

The following standards and guidelines on bulk and massing are intended to support the creation of well proportioned buildings that contribute to the formation of a fine grain, residential neighborhood character. Buildings at Parkmerced are meant to reinforce a pedestrian focused environment that is visually engaging by controlling: maximum floor plates; maximum plan lengths; maximum diagonals; maximum apparent face; and building design elements that constitute a change in apparent face.

Standards

03.04.01 **Requirements** All buildings shall comply with the bulk and massing requirements for their specific building height listed in Table 2 - Bulk + Massing Control Matrix.

03.04.02 **Maximum Plan Dimension** The maximum plan dimension as described in Table 2 - Bulk + Massing Control Matrix is defined as the maximum linear horizontal dimension of a building or structure, at a given level, between the outside surfaces of its exterior walls. The maximum plan dimension of a building or structure is the greatest plan dimension parallel to the long axis of the building as shown in Figure 03.04.A - Maximum Plan Length and Diagonal.

03.04.03 **Maximum Diagonal** The maximum diagonal as described in Table 2 - Bulk + Massing Control Matrix is defined as the maximum linear diagonal dimension of a building or structure, at a given level, between the outside surfaces of its exterior walls. The maximum diagonal of a building or structure is the greatest distance connecting two opposing points of the building as shown in Figure 03.04.A - Maximum Plan Length and Diagonal.

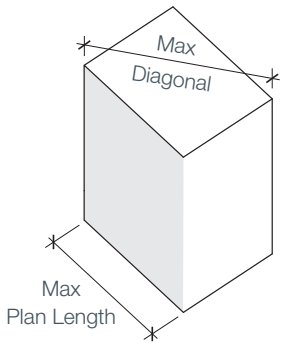


Figure 03.04.A: Maximum Plan Length and Diagonal

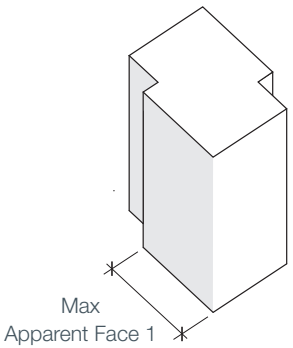


Figure 03.04.B: Maximum Apparent Face 1

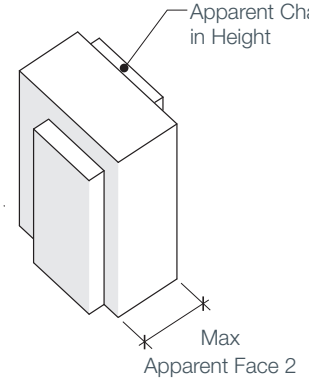


Figure 03.04.C: Maximum Apparent Face 2 and Apparent Change in Height

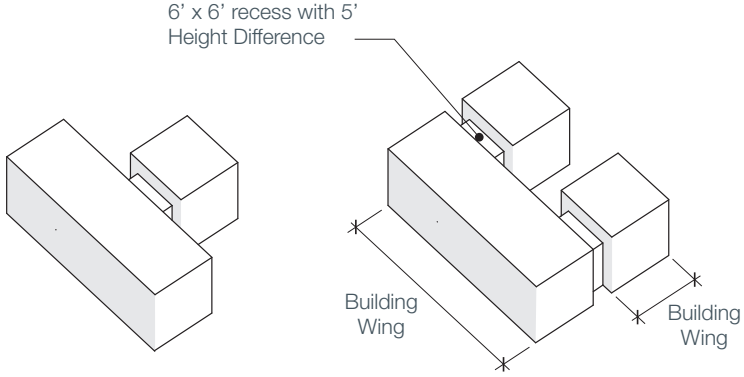


Figure 03.04.D: Compound Shapes

03.04.04 **Maximum Apparent Face 1** The maximum apparent face width for a building face parallel to the long axis of the building or a building wing is limited as described in Table 2 - Bulk + Massing Control Matrix and Figure 03.04.B - Maximum Apparent Face 1.

03.04.05 **Maximum Apparent Face 2** To further reduce apparent building mass, the maximum apparent face width for a building face parallel to the short axis of the building or a building wing is limited as described in Table 2 - Bulk + Massing Control Matrix and Figure 03.04.C - Maximum Apparent Face 2 and Apparent Change in Height.

03.04.06 **Apparent Change in Height** All buildings taller than 85 feet shall include a minimum change in height of 10 feet between the distinct building masses or faces generated by Standard 03.04.05 - Maximum Apparent Face 2, as shown in Figure 03.04.C - Maximum Apparent Face 2 and Apparent Change in Height.

03.04.07 **Compound Shape** Compound shaped buildings comprised of building wings (Fig. 03.04.B) including, but not limited to, 'L', 'T', 'U' or 'E' shaped plans shall be articulated into a series of smaller, simple discrete volumes in order to reduce their apparent mass. Articulation must include a minimum 6 foot by 6 foot recess at the intersection of two discrete volumes, accompanied by a minimum 5 foot difference in height between the roof of each building wing and the recessed portion of the building as shown in Figure 03.04.D - Compound Shapes.

03.04.08 **Tower Separation** Buildings taller than 105 feet shall maintain a minimum distance of 45 feet clear from any portion of another building taller than the 105 feet.

03.05 building controls - setback

Setbacks have been established to provide a comfortable buffer between the street and the interior of ground floor residences. As a transition between the public and private realm, the design of setbacks is intended to encourage people to occupy and enliven them and help define the physical and social character of the neighborhood. Residential setbacks are intended to include stairs, stoops, private gardens and patios that will foster use and thus social interaction among neighbors. Non-residential setbacks are encouraged to incorporate terraces, retail stands, outdoor seating and dining areas that will help activate the edge of the public realm.

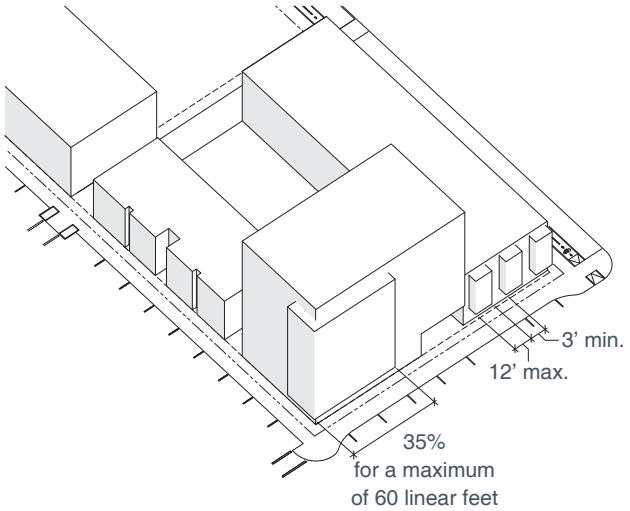


Figure 03.05.A: Occupied Building Area

Standards

03.05.01 **Setback Plan** Parcels will be developed in accordance with the setbacks illustrated on the Setback Plan (Fig. 03.05.B).

03.05.02 **Setback** The extent of the setback of each building or structure shall be taken as the horizontal distance, measured perpendicularly, from the property line to the predominant building wall closest to such property line, excluding permitted projections.

03.05.03 **Common vs. Private** Building setbacks are divided into common and private setback areas (Fig. 03.05.C). Private setback areas are intended for use by adjacent individual residential dwelling units. Common setback areas must be treated as a unified, planted landscape buffer area that is required to be implemented and maintained by the building owner or homeowner's association. Stairs and stoops are excluded from the common area requirement and may extend into the common area as indicated in Figure 03.05.C - Setback Control Sections. Setback dimensions are as follows:

- 0' Setback / no common setback area
- 6'-6" Setback / 1'-6" common setback area
- 8' Setback / 2' common setback area
- 10' Setback / 3' common setback area
- 20' Setback / 10' common setback area

03.05.04 **Occupied Building Area** Occupied building area may encroach into the public right-of-way and project into the setback, only above 12 feet from grade, as indicated in Figure 03.05.C - Setback Control Sections. Occupied building encroachments and projections may extend into the public right-of-way and setback, respectively, for a maximum of 55% of the length of the street frontage. Up to 35% of the building face area may encroach into the public right-of-way and/or project into the setback for a maximum of 60 linear feet parallel to the street frontage. The remaining 20% is limited to segments no greater than 12 feet in width. Individual encroachments/projections must have a minimum horizontal separation of 3 feet parallel to the street frontage (Fig. 03.05.A - Occupied Building Area).

03.05.05 **Active Use Projection** Where active uses occur, building massing is permitted to project into the entire setback at the ground floor as an extension of the adjacent active use. Active uses include, but are not limit to: locally serving retail and services; community rooms and kitchens; and recreational and arts facilities. Lobbies greater than 20 feet in face width are not included as active use. Usable open space must be created on the roof of that projection at the second habitable floor. Commercial Base Requirements - Section 03.08 will apply.

03.05.06 **Encroachements + Projections** Awnings, canopies, marquees, signs, shading devices, cornices and lighting may encroach into the public right-of-way and project into the setback above a minimum height of 10 feet from sidewalk grade, as indicated in Figure 03.05.C – Setback Control Sections.

03.05.07 **Permitted Obstructions** Walls, fences, lighting, elevated private outdoor space, stairs leading to residential entries, guardrails, handrails and other similar building and landscape elements are permitted obstructions within the setback as indicated in Figure 03.05.C – Setback Control Sections.

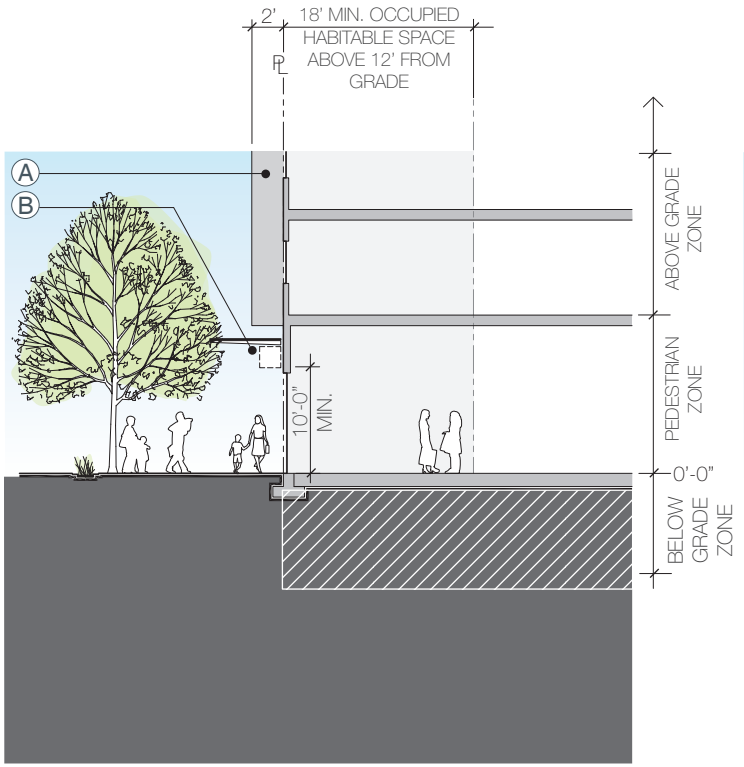
03.05.08 **Basement Levels** Basement levels of buildings are permitted to project into the setback as indicated in Figure 03.05.C – Setback Control Sections; however, projections must be a minimum of 3 feet below grade to allow for a minimum planting depth.

FIGURE 03.05.B / Setback Plan

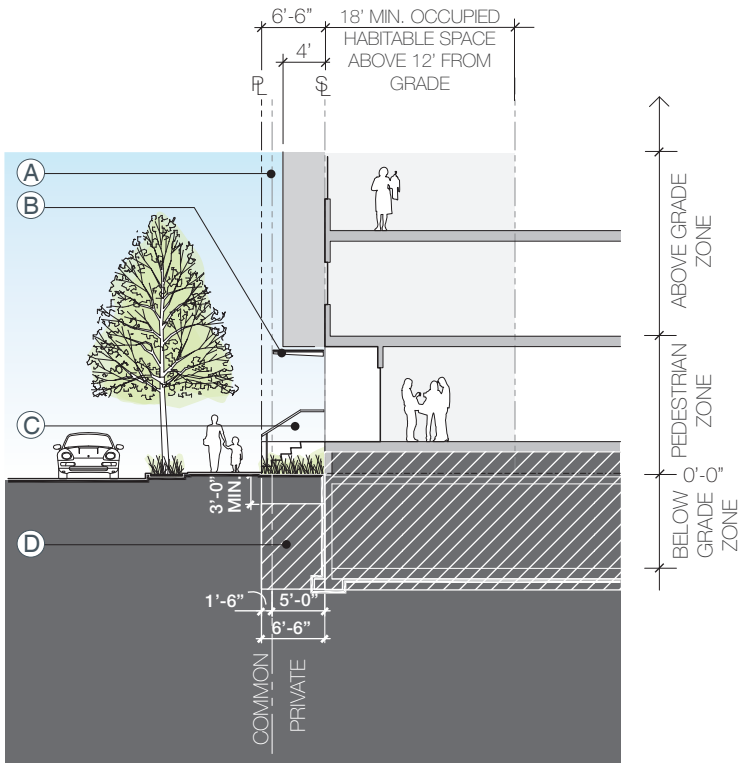
03.05 building controls - setback

Figure 03.05.C: Setback Control Sections

- Ⓐ Enclosed Building Area 12’ above grade
- Ⓑ Signage, canopies, awnings, shading devices, lighting above 10’ from grade
- Ⓒ Stoops, terraces, stairs, patios, yards, fences, guardrails, walls, on grade signage and lighting up to 60” high from grade
- Ⓓ Below grade garages can project into setback zone if a 3’ min. soil depth is maintained from grade to top of structure
- ℄ Property Line
- ℄ Setback Line



0’-0” SETBACK



6’-6” SETBACK

	Allowable	Setback Projections	Right-of-Way Encroachments
ABOVE GRADE ZONE	Enclosed Building Area	-	2’
	Unenclosed Building Area	-	2’
	Architectural Elements	-	2’
	Signage	-	4’
	Lighting	-	4’
PEDESTRIAN ZONE	Canopies & Awnings	-	*10’
	Stairs, Stoops	-	NA
	Patios, Yards, Terraces	-	NA
	Fences (up to 42” from grade)	-	NA
	Signage (above 10’)	-	6’
	Lighting (above 10’)	-	6’
BELOW GRADE ZONE	Garages, Basements		NP

* At Diaz Avenue, Awnings may encroach 20’ into the right-of-way

	Allowable	Setback Projections	Right-of-Way Encroachments
ABOVE GRADE ZONE	Enclosed Building Area	4’	-
	Unenclosed Building Area	4’	-
	Architectural Elements	2’	-
	Signage	4’	-
	Lighting	4’	-
PEDESTRIAN ZONE	Canopies & Awnings	P	2’ from curb line
	Stairs, Stoops	6’	-
	Patios, Yards, Terraces	5’	-
	Fences (up to 42” from grade)	5’	-
	Signage	4’	-
	Lighting	4’	-
BELOW GRADE ZONE	Garages, Basements	6’-6”	NA

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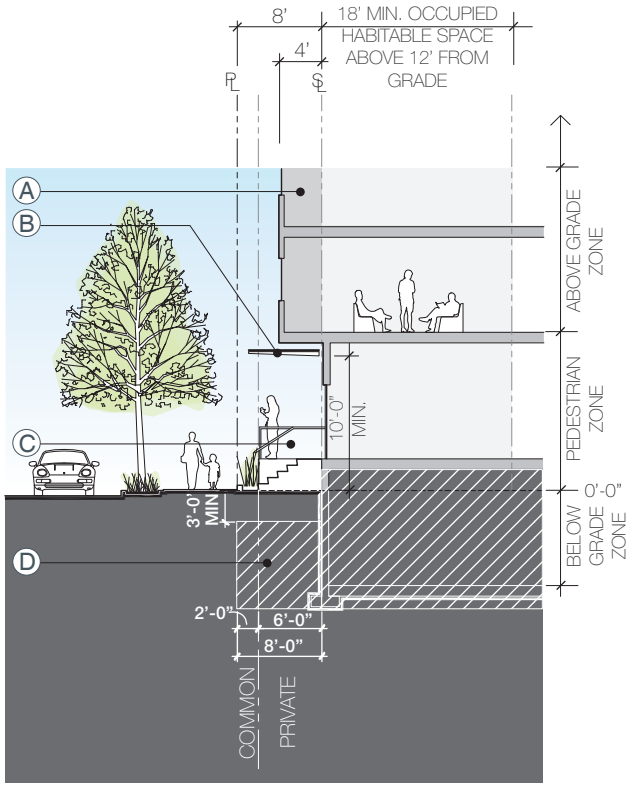
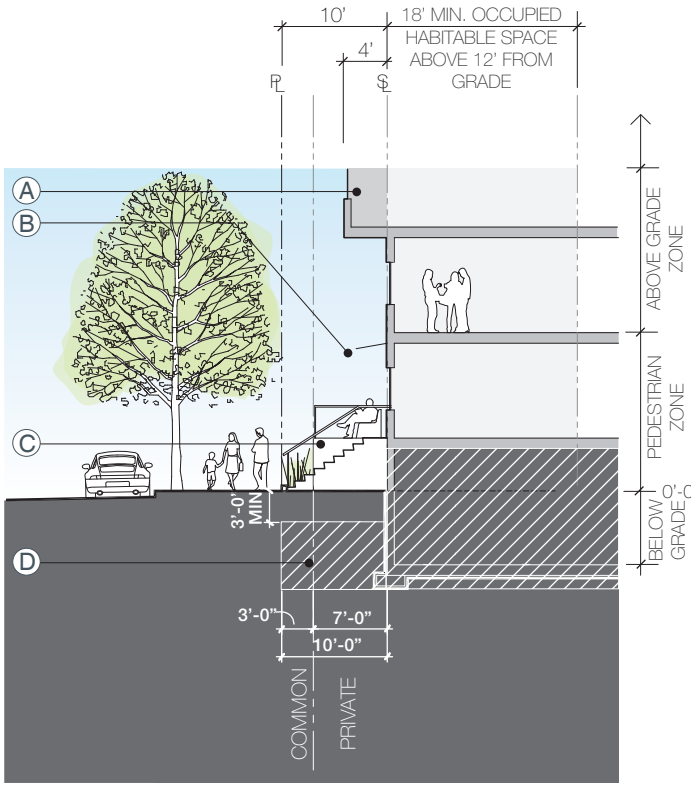


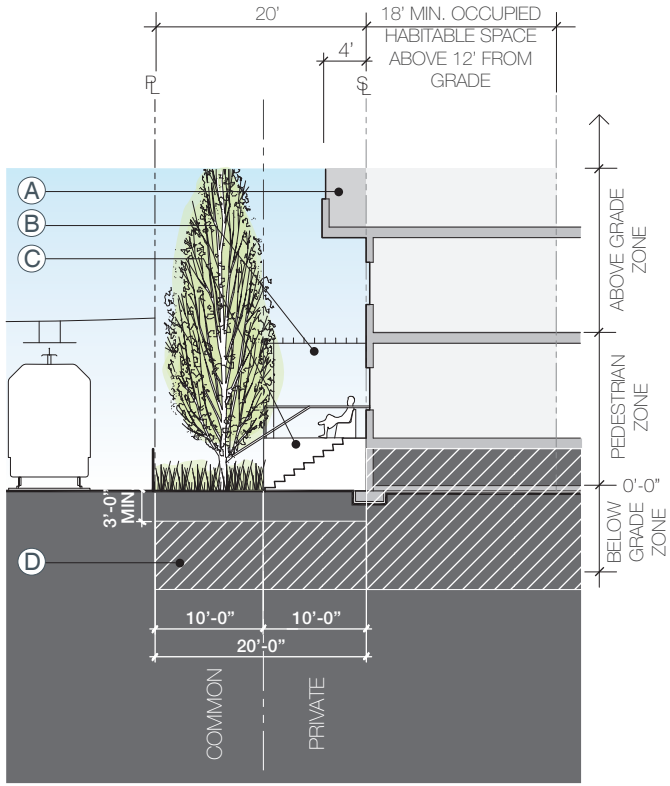
8'-0" SETBACK

	Allowable	Setback Projections	Right-of-Way Encroachments
ABOVE GRADE ZONE	Enclosed Building Area	4'	-
	Unenclosed Building Area	4'	-
	Architectural Elements	2'	-
	Signage	4'	-
	Lighting	4'	-
PEDESTRIAN ZONE	Canopies & Awnings	P	2' from curb line
	Stairs, Stoops	8'	-
	Patios, Yards, Terraces	6'	-
	Fences (up to 42" from grade)	6'	-
	Signage	4'	-
	Lighting	4'	-
BELOW GRADE ZONE	Garages, Basements	8'	NA



10'-0" SETBACK

	Allowable	Setback Projections	Right-of-Way Encroachments
ABOVE GRADE ZONE	Enclosed Building Area	4'	-
	Unenclosed Building Area	5'	-
	Architectural Elements	2'	-
	Signage	4'	-
	Lighting	4'	-
PEDESTRIAN ZONE	Canopies & Awnings	P	2' from curb line
	Stairs, Stoops	10'	-
	Patios, Yards, Terraces	7'	-
	Fences (up to 42" from grade)	7'	-
	Signage	4'	-
	Lighting	4'	-
BELOW GRADE ZONE	Garages, Basements	10'	NA



20'-0" SETBACK

	Allowable	Setback Projections	Right-of-Way Encroachments
ABOVE GRADE ZONE	Enclosed Building Area	4'	-
	Unenclosed Building Area	5'	-
	Architectural Elements	2'	-
	Signage	4'	-
	Lighting	4'	-
PEDESTRIAN ZONE	Canopies & Awnings	P	2' from curb line
	Stairs, Stoops	10'	-
	Patios, Yards, Terraces	7'	-
	Fences (up to 42" from grade)	7'	-
	Signage	4'	-
	Lighting	4'	-
BELOW GRADE ZONE	Garages, Basements	10'	NA

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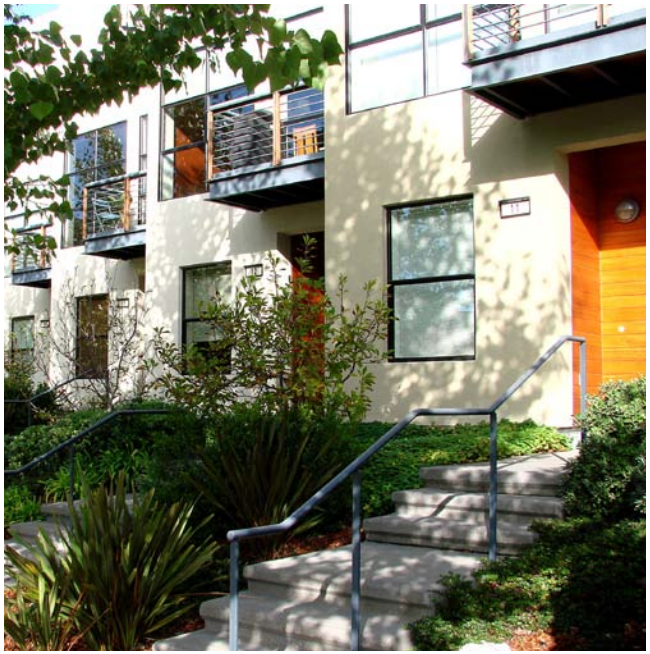
03.05 building controls - setback



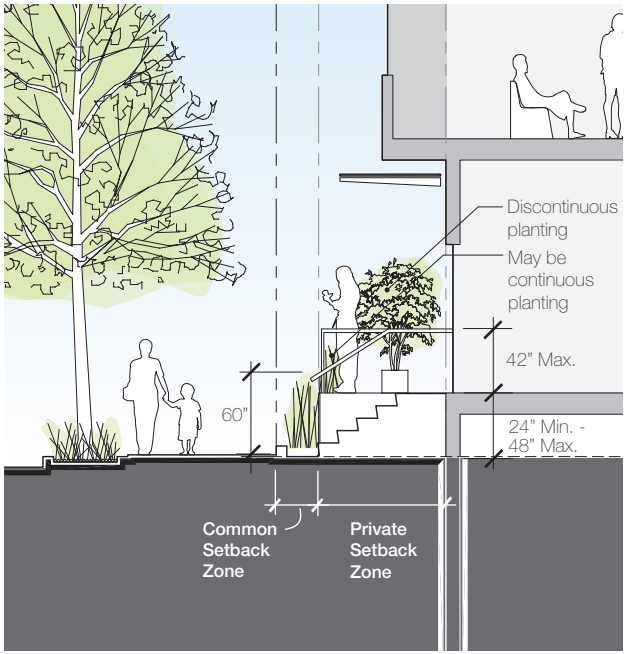


Figure 03.05.D: Setback Zone

In order to nurture a vibrant, pedestrian focused neighborhood, buildings are intended to provide opportunities for residents to occupy and inhabit the transition zone between the public and private realm. Intended to be visually appealing, socially engaging and interconnected with ecological systems within the public realm, the transition zone includes private or semi-private outdoor spaces and setback areas directly adjacent to a building. Semi-private courtyards are intended to play a role in the overall open space system of Parkmerced and are regulated in Section 02.26 Open Space – Courtyard.

Standards (continued)

03.05.09 **Transition** All buildings shall activate the transition zone between private living spaces and public rights-of-ways, easements and semi-private courtyards with private yards, porches, and primary living spaces.

03.05.10 **Planting** Regionally appropriate vegetation must be used for landscaping in transition zones. Regional appropriate planting is drought tolerant, resistant to local pests and is well suited to the specific temperature and humidity of the marine micro-climate at Parkmerced.

03.05.11 **Buffer Planting** The height of plants and trees within common setback areas or shall not exceed 60 inches in height from back of sidewalk grade. Within private setback areas, or other private outdoor spaces, planters containing foliage and trees more than 42 inches in height as measured from the first habitable floor, are limited to 50% of the street frontage in segments no greater than 15 feet in length (Fig. 03.05.D).

03.05.12 **Common Boundary Structures** Walls, fences and other boundary structures taller than 36 inches are not permitted within the common setback area.

03.05.13 **Private Boundary Structures** Walls, fences and other boundary structures within the private setback area facing a public right-of-way shall not exceed 48 inches from sidewalk or courtyard grade. Along a sloped street frontage, walls, fences and other boundary structures are permitted up to 5 feet in height from back of sidewalk grade for 50% of the associated streetwall, in segments no greater than 15 feet. Guardrails and handrails within the private setback area may exceed 5 feet in height from sidewalk grade, if they are more than 70% physically and visually permeable. Glass panels are not permitted at the ground floor (Fig. 03.05.D).

Guidelines

03.05.14 **Architectural Elements** Elements such as stairs, railings, low walls and planters should integrate similar materials and details as are employed in the individual building vocabulary.

03.05.15 **Access** Private outdoor spaces should feature operable gates or doors to enable resident access to directly adjacent courtyards.

03.06 building controls - streetwall

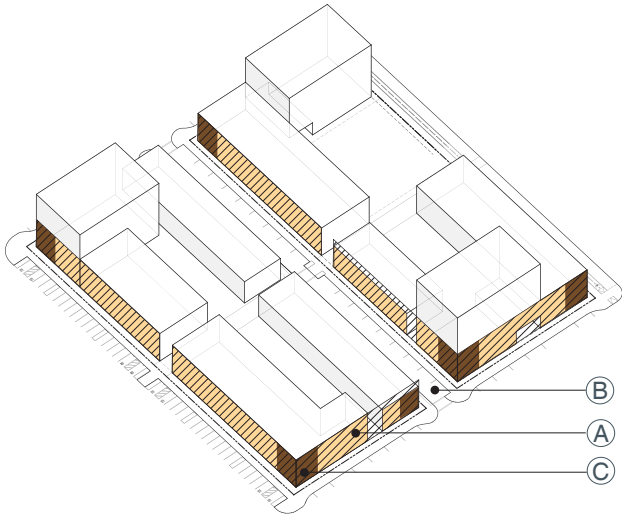


Figure 03.06.A: Streetwall + Corner Zone

Ⓐ Streetwall
Ⓑ Exempt Easement
Ⓒ Corner Zone

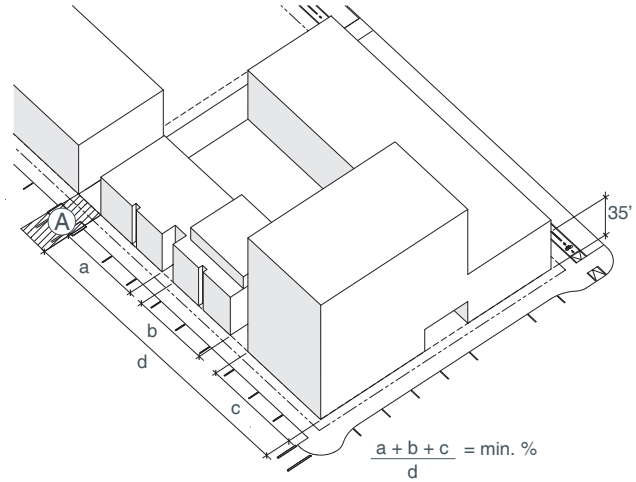
The individual character of various street types and open spaces is influenced by the streetwall that is created by adjacent buildings. Streetwall requirements contained in this section ensure buildings create clearly defined edges to the public realm and help differentiate between mixed use and residential areas of the neighborhood.

Standards

03.06.01 Predominant Building Face The streetwall is defined as that portion of the building massing, directly fronting onto either a public right-of-way or easement, that is constructed to meet the setback line. Figure 03.06.D - Streetwall Plan indicates the minimum percentages of building massing that must be constructed to meet the setback line. The streetwall percentage of a project for a given street frontage is calculated by dividing the sum of the length of all building faces built up to the setback line on that block frontage by the total length of the project lot on that block frontage. Certain minor variations of the building face are allowed to be counted toward the numerator per 03.06.04 - Minor Variations, and certain required breaks in the block face are excluded from the denominator per 03.06.02 - Streeetwall Exclusions. The minimum percentage of building massing must also be constructed to a minimum height of 35 feet above sidewalk grade as indicated in Fig. 03.06.B.

03.06.02 Streetwall Exclusions Pedestrian paseos, as indicated on the Easements + Walks Plan (Fig. 02.01.B), are excluded from streetwall calculations.

03.06.03 Corner Zones In order to create strong building corners, a 100% streetwall for a minimum of 30 feet from the corner of the building and a minimum of 35 feet high (Fig. 03.06.C) is required within the Corner Zones illustrated on Figure 03.06.D. Minor variations are permitted as defined in Standard 03.06.04 - Minor Variations.



Ⓐ Pedestrian paseos are excluded from streetwall calculation

Figure 03.06.B: Streetwall Calculation

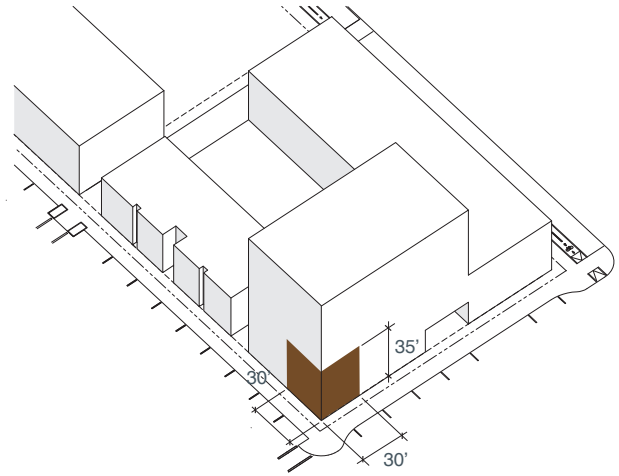


Figure 03.06.C: Corner Zone

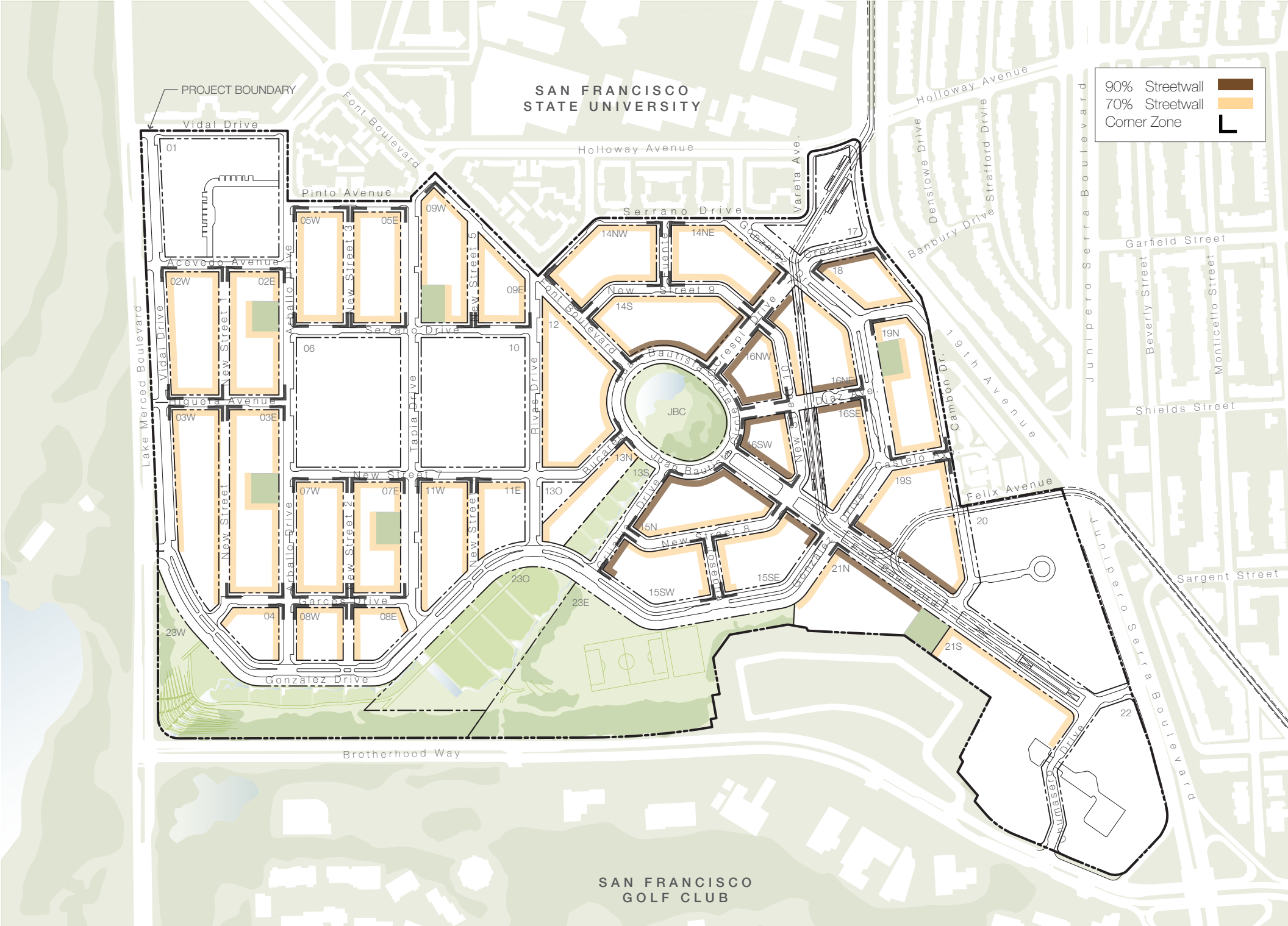


FIGURE 03.06.D / Streetwall Plan

03.06 building controls - streetwall

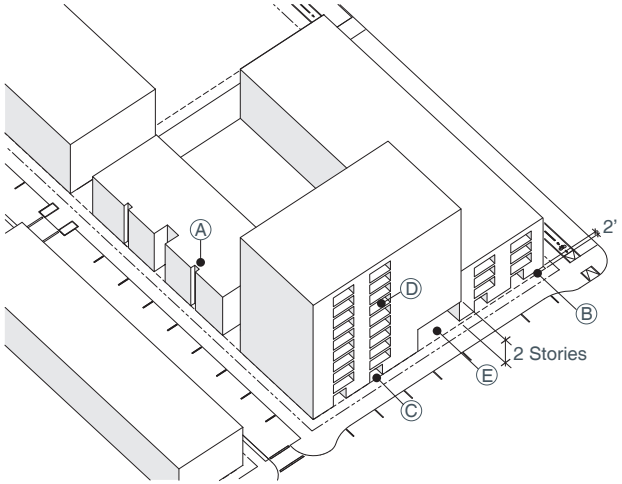


Figure 03.06.E: Minor Variations
Ⓐ Vertical recesses no greater than 3 feet deep x 4 feet wide
Ⓑ Minor setback from predominant building face no greater 2 feet
Ⓒ Recessed ground floor entry
Ⓓ Recessed balconies
Ⓔ Covered pass-throughs up to 2 stories

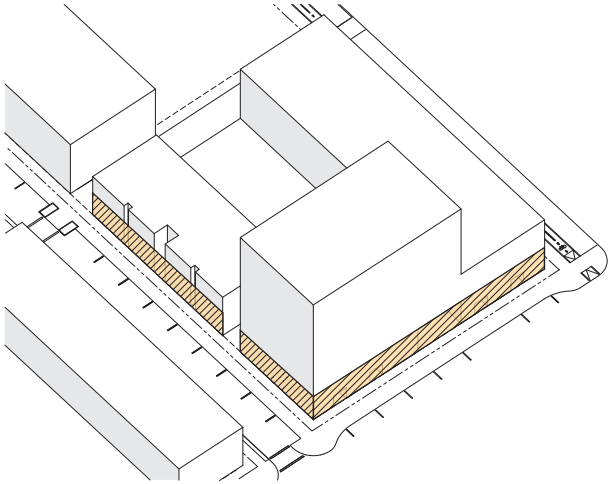


Figure 03.06.F: Base Articulation

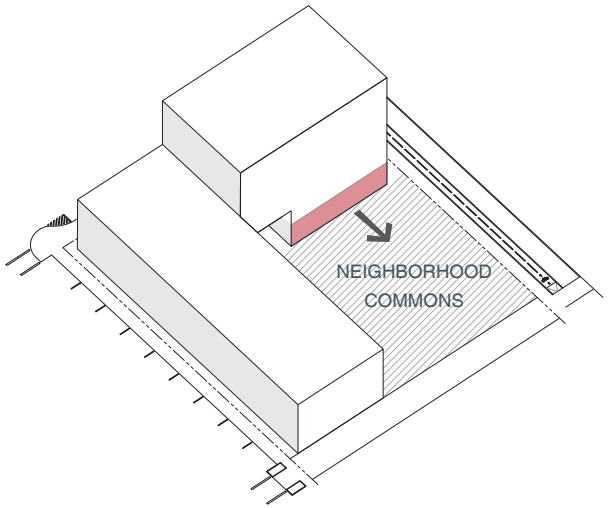


Figure 03.06.G: Active Ground Floors

Standards (continued)

03.06.04 **Minor Variations** Minor variations along the streetwall (including within Corner Zones) are allowed and count towards the overall streetwall requirements. Minor variations include: covered pass-throughs up to 2 habitable floors in height; recessed building entries less than 2 habitable floors in height; recessed balconies; vertical recesses up to 3 feet deep and 4 feet wide; and minor setbacks from the streetwall no greater than 2 feet from the setback line for any given length to allow architectural articulation of the facade (Fig. 03.06.E).

03.06.05 **Building Base Articulation** At a minimum, all buildings must articulate the first habitable floor with a finer grain of architectural detailing to enhance the pedestrian experience. Buildings taller than 50 feet must articulate the first two habitable floors with a finer grain of architectural detailing. This may include, but is not limited to, architectural elements such as canopies, awnings, overhangs, projections, recesses, greater dimensional depth of facade elements, and material and surface change and texture (Fig. 03.06.F).

03.06.06 **Active Ground Floors** Buildings taller than 65 feet and adjacent to Neighborhood Commons must include active ground floor uses that are visible from and oriented towards the neighborhood commons (Fig. 03.06.G). Active uses include, but are not limit to: locally serving retail and services; community rooms and kitchens; and recreational and arts facilities. Lobbies greater than 20 feet in face width are not included as active use.

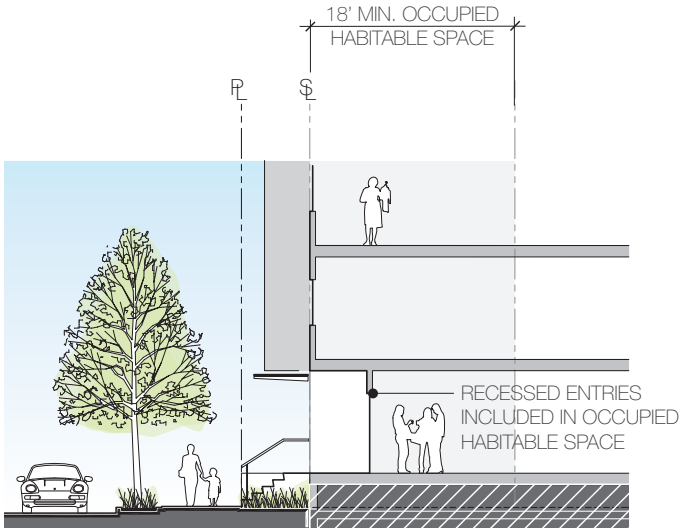


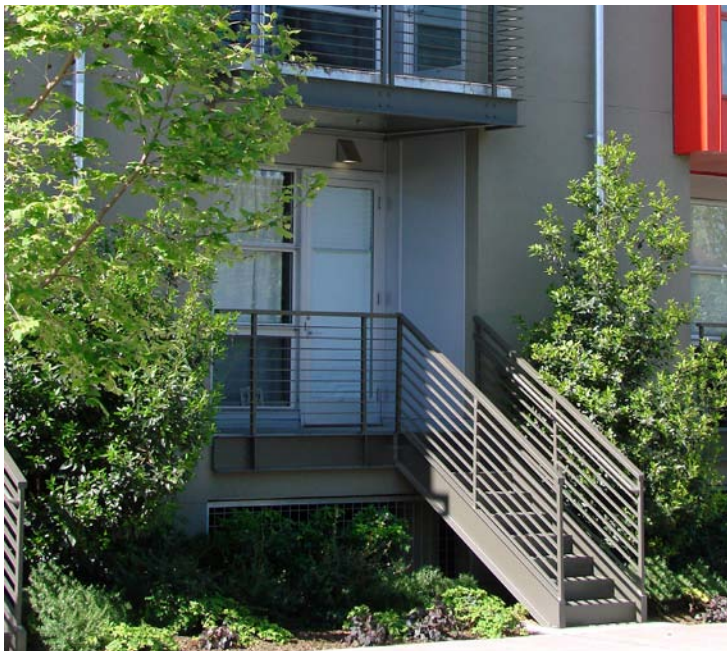
Figure 03.06.H: Occupied Habitable Space

03.06.07 **Occupied Habitable Space** All buildings must include 18 feet of occupied habitable space, measured perpendicularly, from the streetwall and paseos and includes the ground floor. Recessed entries may be included in occupied habitable space (Fig 03.06.H). Garage entries, loading and sevice entries, transformer rooms, exit stairs and elevators are exempt for 20% of the building perimeter or 60 LF, whichever is less. Buildings that occupy an entire block, except on blocks 04, 08W, 08E, 16SW, 16NW and 18, are exempt for 100 LF. These elements must be incorporated into the overall architectural expression of the building.

Guidelines

03.06.08 **Streetscape** Building facades should be articulated to differentiate individual residential units. Ground floor units should be designed to emphasize a fine grain rhythm that is typical in San Francisco's neighborhoods.

03.07 design controls - residential base



To foster a pedestrian focused neighborhood, building bases should convey a sense of activity and liveliness. These controls are intended to bring building life to the pedestrian level and into the public realm by requiring inviting individual residential entries, a high degree of transparency at the ground floor, and a comfortable buffer between the street and the interior of residential units. Residential buildings should make every effort to activate and enliven the building base as the interface between the public and private realm.

Standards

03.07.01 **Residential Unit Entries** Each ground floor residential unit must have an individual entry door directly from an adjacent courtyard, dedicated open space, public right-of-way or easement.

03.07.02 **Residential Rhythm** Where ground floor residential units face a public right-of-way or easement residential entries must occur at a minimum average of 1 door per 35 linear feet of building frontage.

03.07.03 **Recessed Entries** Residential entries must be sheltered from the rain and wind and provide an entry light. Ground floor residential unit entries must be recessed a minimum of 18 inches from the streetwall.

03.07.04 **Residential Openness** At least 50% of the ground floor facade of residential buildings shall be devoted to transparent windows and doors to allow maximum visual interaction between sidewalk areas and the interior of residential units. The use of dark or mirrored glass is not permitted.

03.07.05 **Floor-to-Floor Heights** Ground floor residential units must have a minimum floor to floor height of 10 feet.

03.07.06 **Elevated Residential Units** A 24 to 48 inch elevation change must be provided between the first habitable floor of ground floor residential dwelling units and the sidewalk grade in order to provide adequate separation between the interior of residential units and the public realm, while maintaining visual connection. Along a sloped street frontage, elevation change between the first habitable floor of the ground floor residential dwelling unit and the back of sidewalk grade are permitted to be up to 5 feet in height for 50% of the streetwall, in segments no greater than 15 feet.

Guidelines

03.07.07 **Residential Lobbies** Residential lobbies should be limited to no greater than approximately 30 feet wide along the street frontage.

03.08 design controls - commercial base

Ground floor, active use frontages should define a comfortable and interesting pedestrian environment and support lively and attractive ground floor uses that will contribute to a vibrant neighborhood. Active uses at Parkmerced include, but are not limit to: locally serving retail and services; community rooms and kitchens; professional offices; and recreational and arts facilities. In order to ensure that active uses reflect a similar pedestrian focused character and scale as other neighborhoods throughout San Francisco the following standards and guidelines control; orientation of entries; vertical and horizontal scale; depth of facade; and visibility. Active use frontages should be designed in a manner that promotes a sense of vitality and liveliness in order to focus social activity at Parkmerced.

Standards

03.08.01 **Accessibility** All primary retail entrances must meet the sidewalk at grade.

03.08.02 **Floor-to-Floor Heights** Active use ground floors must have a minimum floor-to-floor height of 15 feet with a minimum of 12 foot ceilings.

03.08.03 **Scale** Active use spaces shall be expressed with facade treatments that are scaled to human activity on the street. Lower levels of the building shall include changes in materials or changes in fenestration scaled to create a comfortable pedestrian zone.

03.08.04 **Exposure** Ground floor retail and other commercial uses must be physically and visually oriented towards a public right-of-way or easement, such as a Neighborhood Common or Paseo.

03.08.05 **Openness** At least 80% of the length of the ground floor facade between the height of 2 and 12 feet shall be devoted to transparent windows and doors or visually open, to allow maximum visual interaction between sidewalk areas and the interior of active use spaces. The use of dark or mirrored glass is not permitted.

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03.08.06 **Variety** In order to allow for multiple storefronts, retail bays shall be no greater than 35 feet wide, measured along the street frontage, even if initial retail tenants occupy more than one bay.

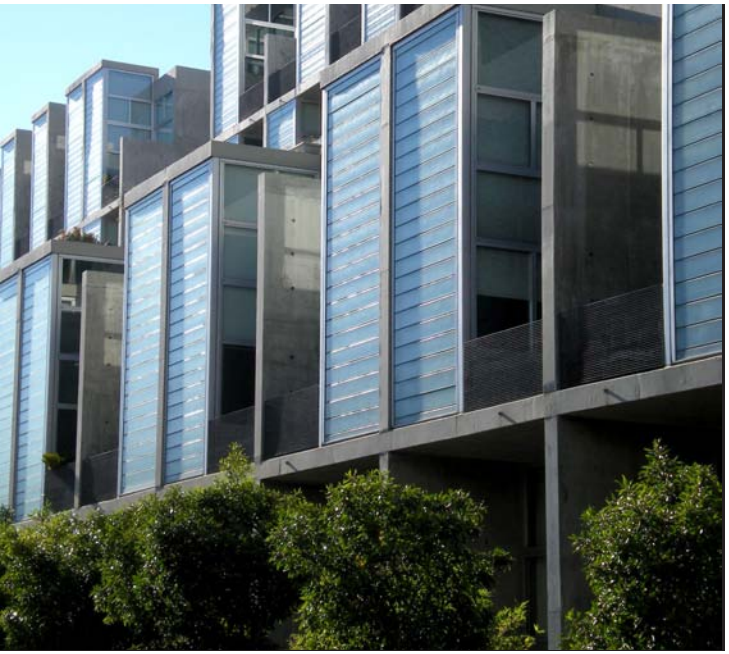
03.08.07 **Visibility** Tenant improvements of retail spaces must maintain the transparency of the storefront; this may be achieved with the placement of public areas of the proposed use adjacent to the facade and by avoiding the use of shades, curtains or displays that compromise visibility into the space.

03.08.08 **Sidewalk Throughway** When commercial ground floor uses incorporate outdoor seating and dining, a minimum sidewalk throughway dimension of 6 feet must be maintained.

Guidelines

03.08.09 **Retail Entries** Commercial and storefront entrances should be easily identifiable and distinguishable from residential entrances. Recessed doorways, awnings, transparencies, changes in color or materials are encouraged to identify and enhance retail entrances.

03.09 design controls - facade



Residential buildings should convey a sense of vibrancy and life by providing an opportunity for residents to inhabit and enliven the exterior walls. Accommodation of balconies will encourage a greater connection between the private and public realm while at the same time expressing a more recognizable human scale and residential character.

Standards

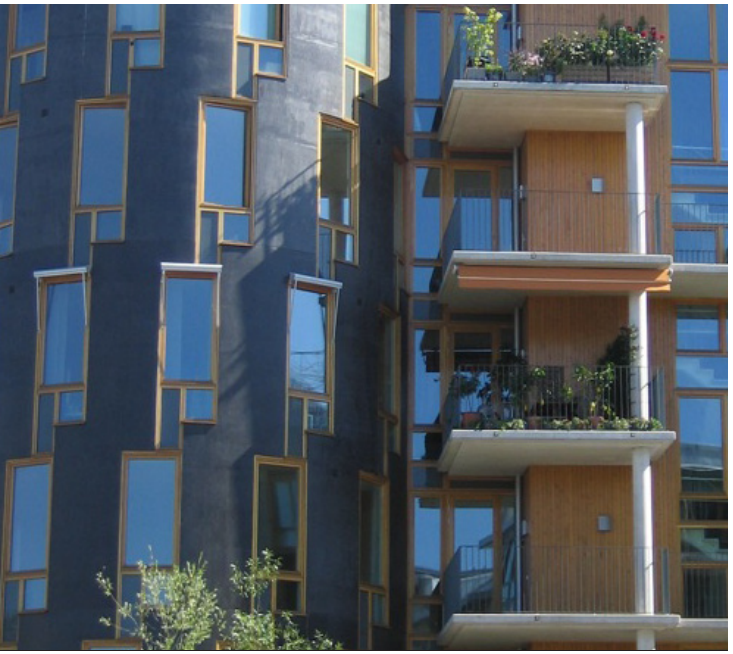
03.09.01 **Projected Windows** Enclosed building area which encroaches into the right-of-way or projects into the setback must comprise of at least 55% glazing on a minimum of two separate faces.

03.09.02 **Balconies** 10% of all units above the first habitable floor must have an open balcony or terrace of a minimum of 36 square feet. Balconies and terraces shall not have a dimension of less than 6 feet in any direction. Buildings must include a minimum of 2 balconies or terraces per floor, located on opposing faces of the building to reduce the apparent building mass from any viewing angle.

03.09.03 **Glazing** Glazing must be of low reflectance (12% of visible exterior light).

03.09.04 **Mechanical Equipment** Space for the location of ducts, exhaust pipes and other appurtenances associated with commercial and residential uses must be integrated into the building design. Ducts or exhaust pipes must not be located adjacent to areas designated for courtyards or Neighborhood Commons.

03.09.05 **Solid Waste** All garbage, recycling and composting facilities must be placed fully within the building and shall not be visible from the public right-of-way.



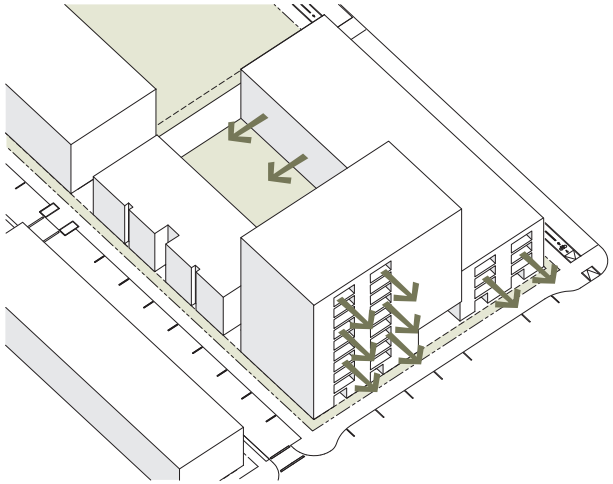


Figure 03.09.A: Active Facades

Guidelines

03.09.06 **Aesthetic** All new buildings at Parkmerced should use a high quality, contemporary design vocabulary to provide the neighborhood with an overall modern aesthetic.

03.09.07 **Design** Building designs should incorporate modulation and articulation such as massing reveals, changes of textures, materials, and/or colors, or shifts of the facade plane in order to create a pedestrian scaled facade.

03.09.08 **Recessed Windows** Punched windows in a predominantly solid wall should be recessed a minimum of 2 inches in order to give building facades a sense of substance and depth.

03.09.09 **Active Facades** Residential units must be designed to maximize opportunities for residents to enjoy a more seamless connection between indoor and outdoor spaces. This may be reflected in the design of the building facade by including terraces, decks, balconies and roof gardens (Fig. 03.09.A).

03.09.10 **Living Facades** Where appropriate, buildings should accommodate planting on facades in order to accentuate the connection between the building and the surrounding landscape.

03.09.11 **Blank Walls** Blank walls of more than 12 feet in length are discouraged.

03.09.12 **Service Frontages** Frontages used for utilities, storage, and services should be minimized and integrated into the overall articulation and fenestration of the facade by continuing design elements across these areas and therefore enhancing the visual interest of the service areas for pedestrians.

03.10 design controls - building top

The tops of buildings at Parkmerced should be designed to support stated goals of sustainability by: providing space for alternative energy production; incorporating vegetated roof covers; addressing rainwater run-off; and allowing residents to inhabit them. Taller buildings are encouraged to celebrate the building top in order to enhance the role of the building as a landmark for the Parkmerced neighborhood.

Standards

03.10.01 **Screening** Mechanical equipment located on top of buildings must be screened from public view and from neighboring buildings with enclosures, parapets, setbacks, landscaping, or other means. Any enclosure or screening used must be designed as a logical extension of the building, using similar materials and detailing as the rest of the building's surfaces.

03.10.02 **Solar Panels** 50% of roof area must be designed to permit installation of south oriented solar panels.

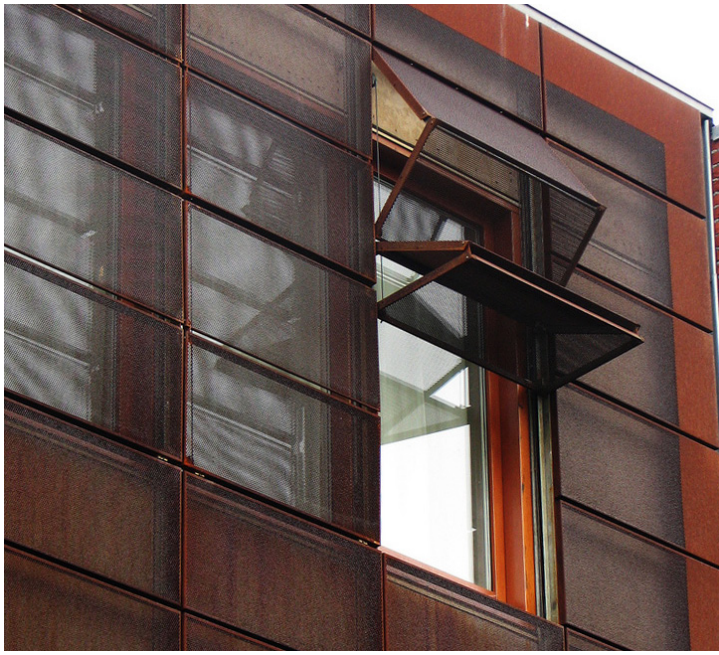
Guidelines

03.10.03 Active Roofs Buildings should provide usable rooftop and/ or terraced open spaces such as rooftop gardens and decks accessible to all units in the building.

03.10.04 Living Roofs Where feasible, roof designs should include systems such as vegetated roof covers, with growing media and plants which minimize heat island effect and stormwater run-off and improve thermal envelope performance. Living roofs must incorporate regionally appropriate plant species to minimize water consumption requirements.

03.11.05 Building Tops New buildings that are taller than 105 feet in height should articulate their top in a manner that provides visual interest and recognizes their visibility from outside the project area.

03.11 design controls - materials + color

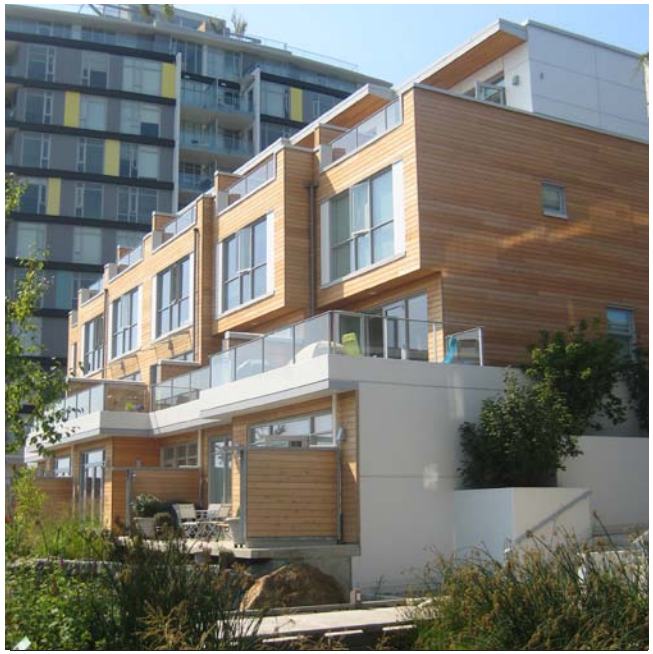


The use of materials and colors help to define the quality and nature of a place. Individual buildings at Parkmerced are encouraged to use a variety of material and color palettes, weaving together a vibrant neighborhood tapestry that celebrates the richness and diversity that exists throughout San Francisco.

Guidelines

03.11.01 **Materials** Exterior finish materials should express their natural quality. Transparent finishes are encouraged where practical.

03.11.02 **Durability** Materials should have qualities of permanence and durability. Materials should be low maintenance and well suited to the specific temperature and humidity of the marine micro-climate at Parkmerced.



03.11.03 **Color** The exterior surfaces of buildings should be predominantly light in color and warm in tone. The use of highly reflective surface materials is discouraged.

03.12.04 **Building Organization** Materials and colors should be applied in coordination with the expression of the building's organization.

03.12 design controls - signage

Signage helps to highlight the identity of businesses while enhancing the appearance of the streetscape and should be of a creative and engaging nature at Parkmerced.

Standards

03.12.01 **Restrictions** No billboards, roof signs, back-lit box signs, flashing, moving or video signs are permitted. Where possible, exposed junction boxes, lamps, tubing, conduits, or raceways are not permitted.

03.12.02 **Pedestrian Level** Signage is intended to address the pedestrian level and no portion of any sign may extend more than 25 feet above sidewalk grade.

03.12.03 **Calculating Sign Area** Sign area is defined as the area of a sign that is used for display purposes excluding small supports. Sign area shall be computed on the basis of a rectangle large enough to frame the display or text.

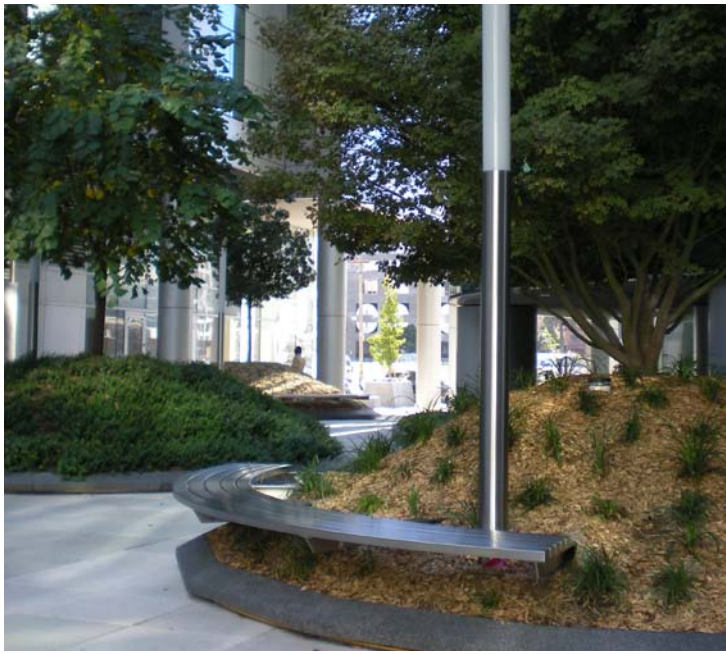
03.12.04 **Permitted Sign Area** Retail wall signs on buildings shall not exceed 3 square feet per linear foot of retail frontage or 45 square feet, whichever is lower, for each street frontage. Wall signs related to a full service grocery store may be up to 150 square feet per building face along a public right-of-way.

03.12.05 Projecting Signs One projecting sign per every 30 linear feet of retail is permitted. Each primary projecting sign for retail tenants shall not exceed 24 square feet in area, and if a single tenant maintains more than 30 linear feet of street frontage, each additional sign shall not exceed 10 square feet. Corner businesses are allowed one primary projecting sign per street frontage. Three-dimensional projecting signs shall not exceed 48 cubic feet in volume. Parking directional signs shall not exceed an area of 15 square feet.

03.12.06 Awnings Signage on awnings is permitted in lieu of projecting signs and must not exceed 30 square feet of sign area.

03.12.07 Residential Signage Residential wall signs shall not exceed 20 square feet. Residential projects may utilize signage on awnings over the primary multi-unit entryway. Copy areas on awnings shall not exceed 30 square feet.

03.13 design controls - lighting



Building designs are encouraged to use lighting in innovative and engaging ways with the aim of making Parkmerced more attractive and more secure, both during the day and at night.

Standards

03.13.01 **Energy Efficiency** Designers shall use energy efficient bulbs and fixtures.

03.13.02 **Luminaires** Traditional "glowtop" luminaries shall not be used, as they are a significant source of light pollution. Instead, luminaires which direct light downward and towards the intended use are to be employed.

03.13.03 **Light Pollution** All lighting must be shielded to prevent glare to private and public uses, especially residential units. The angle of maximum candela from each interior luminaire as located in the building shall intersect opaque building interior surfaces and not exit out through the windows.

Guidelines

03.13.04 **Appropriate Security** Security should primarily be provided through lighting and increased visibility, in place of armoring of windows and doorways.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parking + loading

04

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parking + loading

Parkmerced is intended to be a pedestrian focused neighborhood. Reducing the presence of cars in the public realm will help to make streets more comfortable for pedestrians and bicyclists. Adequate space for parking, loading and servicing has been provided in order to accommodate expected demand in a manner that will reduce presence of cars and improve the quality of the public realm. In order to further support and serve residents at Parkmerced a variety of green mobility strategies, such as bike and car share pods, will be deployed across the neighborhood.

04.01 bike parking + car sharing

In order to encourage the use of alternative mobility networks, bike libraries and car share pods will be located throughout Parkmerced. To accommodate these facilities the following standards and guidelines provide controls that regulate the amount of parking area dedicated to these activities, their locations and other required support facilities.

TABLE 3 - Minimum Bicycle Parking*

LAND USE	MINIMUM PARKING RATES	ESTIMATED SUPPLY	SHOWER FACILITY
Residential	1 / 2 Units	4,450	NA
Grocery	1 / 2,000 gsf	21	1 / 30,000 sf
Retail / Office / Professional Services	0 - 10,000 gsf = 2 10,001 - 20,000 gsf = 4 20,001 - 40,000 gsf = 6 > 40,000 = 12	66	1 / 30,000 sf
School	1 / 4,000 gsf	7	1 / 30,000 sf
Fitness / Community Center	1 / 4,000 gsf	14	1 / 30,000 sf

TABLE 4 - Minimum Car-Share Parking

LAND USE	MINIMUM CAR-SHARE SPACES
Residential	0 - 49 du = 0 car-share spaces
	50 - 200 du = 1 car-share space
	> 201 or more du = 2 carshare spaces, plus 1 car-share space for every 200 du over 200 du
Non-Residential	0 - 24 parking spaces = 0 carshare spaces 25 – 49 parking spaces = 1 carshare space
	> 49 parking spaces = 1 carshare spaces, plus 1 car-share space for every 50 parking spaces over 50 parking space

Standards

04.01.01 **Bicycle Parking** Off-street bicycle parking must be provided for new buildings in the minimum quantities listed in Table 3 - Minimum Bicycle Parking, or quantities listed in the San Francisco Planning Code, whichever is greater. Residential, retail, office, institutional and educational uses must provide Class I bicycle parking for residents and employees. All other commercial uses and all visitor bicycle parking may be provided as Class II bicycle parking.

04.01.02 **Support Biking** The number of shower and changing facilities must meet the sum of the requirements listed in Table 3 - Minimum Bicycle Parking. Shower and changing facilities in buildings within 600 feet of retail or commercial building entrances can be used to fulfill this requirement.

04.01.03 **Car-Share** Provide car-share vehicle parking in the amount listed in Table 4 - Minimum Car Share Parking. Signage indicating such parking spaces must be provided, and the parking spaces must be within 200 feet of entrances to the buildings served. Car-share vehicles must be located at unstaffed, self-service locations (other than any incidental garage valet service), and generally be available for pick-up by members 24 hours per day. Car-share parking spaces must be dedicated for current or future use by a certified car-share organization through a deed restriction, condition of approval or license agreement. Such deed restriction, condition of approval or license agreement must grant priority use to any certified car-share organization that can make use of the space, although such spaces may be occupied by other vehicles so long as no certified car-share organization can make use of the dedicated car-share spaces. Any off-street car-share parking space provided under this Section must be provided as an independently accessible parking space. In new parking facilities that do not provide any independently accessible spaces other than those spaces required for disabled parking, off-street car-share parking may be provided on vehicle lifts so long as the parking space is easily accessible on a self-service basis 24 hours per day to members of the certified car-share organization. Property owners may enact reasonable security measures to ensure such 24-hour access does not jeopardize the safety and security of the larger parking facility where the car-share parking space is located so long as such security measures do not prevent practical and ready access to the off-street car-share parking spaces.

Guidelines

04.01.04 **Bicycle Parking** Buildings should provide a safe and convenient location for the storage of resident, employee and visitor bicycles, accessible from a public right-of-way or easement. They should be served with night lighting, and be situated to avoid, as much as possible, damage from nearby vehicles. If the building has multiple main entries, bicycle racks should be proportionally dispersed within 100 feet of each.

04.01.05 **Bicycle Libraries** Libraries providing shared bicycles are recommended in the locations shown in the Bike and Car-Share Plan (Fig. 04.01.A).

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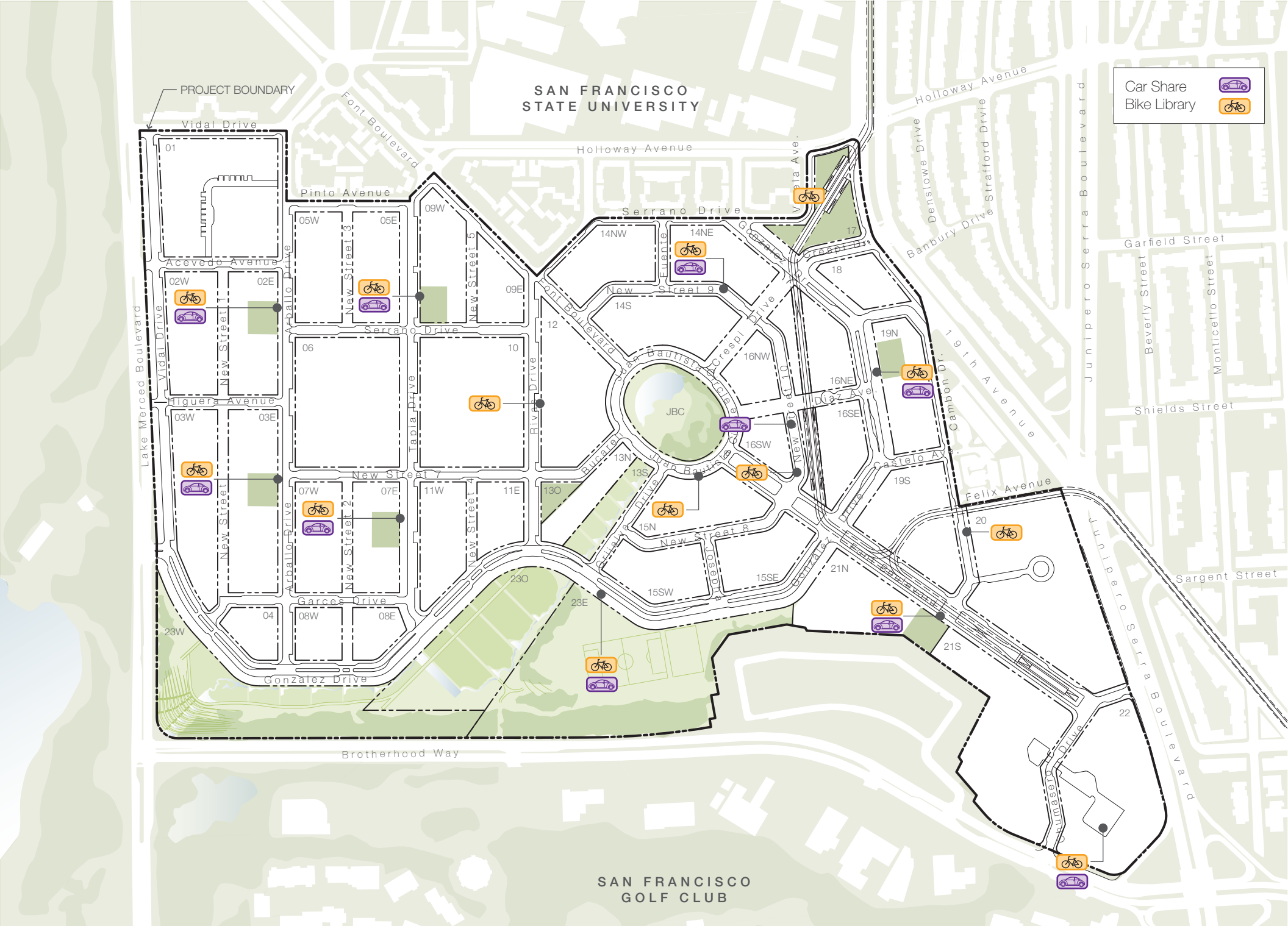

FIGURE 04.01.A / Bike + Car Share Plan

04.02 car parking + storage

Parking strategies at Parkmerced are intended to accommodate expected demand, while fostering a pedestrian focused, transit-oriented neighborhood. In order to encourage walking and transit use a greater number of parking spaces have been located further from transit. Visibility of parking structures and light emitted from them is restricted to reduce the visual and physical presence and impact of parking facilities on the pedestrian environment. The Parking Plan (Fig. 04.02.A) identifies the location of parking structures at Parkmerced.

TABLE 5 - Parking Zones

ZONE	MAXIMUM PARKING SPACES
Zone 1	2,349 spaces
Zone 1a	201 spaces
Zone 2	5,766 spaces
Zone 2 - Overlay	25 spaces
Existing Parking	1,109 spaces
Total Parking	9,450 spaces

TABLE 6 - Off-Street Parking

LAND USE	MAXIMUM PARKING SPACES
Residential	1 / du
Grocery Store	1 / 500 sf
Commercial / Retail	1 / 750 sf
Community / Fitness / School	1 / 1000 sf

Standards

04.02.01 **Parking Location** Off-street parking may be located only where indicated on the Parking Plan (Fig. 04.02.A). All off-street parking shall be below grade except where permitted to be above grade as indicated in the Parking Plan (Fig. 04.02.A). The number of new parking spaces in the each specific parking zone shall not exceed the maximums indicated in Table 5 - Parking Zones. Parking zones are defined as the following:

Zone 1: Below grade only

Zone 1a: Above grade permitted to the allowance of spaces listed in Table 5, plus below grade parking where number of spaces within both Zone 1 and Zone 1a does not exceed the number of spaces listed for Zone 1

Zone 2: Below grade only

Zone 2 - Overlay: Above grade parking only

04.02.02 **Off-Street Parking** Off-street parking shall not be required for any use. The number of off-street parking spaces shall not exceed the maximums listed in Table 6 - Off-Street Parking.

04.02.03 **Parking Spaces** Parking spaces may be either independently accessible or space-efficient, except as required elsewhere in the Building Code for spaces specifically designated for persons with physical disabilities. Space-efficient parking is parking in which vehicles are stored and accessed by valet, mechanical stackers or lifts, certain tandem spaces, or other space-efficient means. Off-street parking spaces may be located either on the same development block as the building served, or off-site within the Development Plan Area.

04.02.04 **Unbundled Parking** All off-street parking spaces for residential uses shall be leased or sold separately from and in addition to the rental or purchase fees for dwelling units for the life of the dwelling units. A minimum of one (1) separate, dedicated pedestrian entrance, visible and accessible from a public right-of-way or easement, shall be provided for the users of each individual off-street parking facility (Fig. 04.02.A).

04.02.05 **Parking Entrances** Vehicular entrances and exits to parking facilities shall have a maximum linear width of 11 feet parallel to the street if accommodating one direction of travel, and maximum linear width of 22 feet parallel to the street if accommodating both an exit and entrance at one opening. Entrances and/or exits that are shared with loading and service access may be 12 feet wide when accommodating one-way traffic and 24 feet wide when accommodating two-way traffic.

04.02.06 **Above Grade Parking** Above grade parking structures must be lined with a minimum of 18 feet of occupied habitable space facing public rights-of-way, dedicated open spaces, semi-private open spaces, and easements, excluding the MUNI Easement. All other frontages must visually screen the interior from the exterior under daylighting and night lighting conditions.

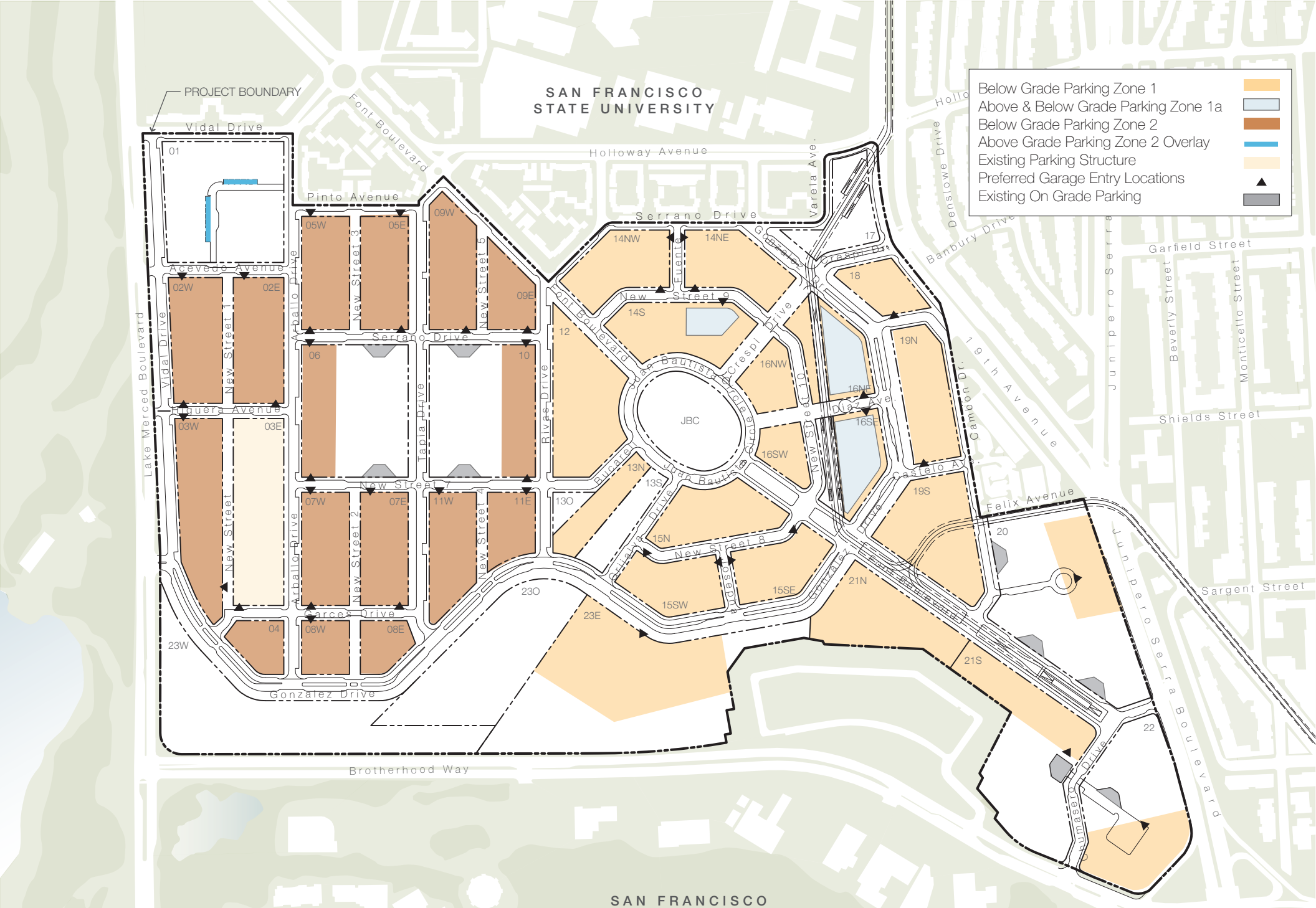

FIGURE 04.02.A / Parking Plan

04.02 car parking + storage

Standards (continued)

04.02.07 **Exposed Parking Decks** Parking decks that are exposed and open to the sky shall use paving materials with a solar reflectance index of at least 29 and one of the following strategies for 50% of the exposed parking deck.

- Provide shade from open structures, such as those supporting solar photovoltaic panels, canopied walkways, and vine pergolas, all with a solar reflectance index of at least 29.
- Provide shade from tree canopy (within ten years of landscape installation).

04.02.08 **Light Trespass** Parapet edges of the parking trays, including the roof, must be higher than vehicle headlights in order to screen adjacent properties. All lighting for parking areas must have a low cut-off angle in order to prevent light from casting beyond the parking area boundary.

Guidelines

04.02.09 **Shared Facilities** Multiple buildings within the same development block should share off-street parking garages and loading facilities in order to limit the amount of garage and service entries along the street frontage.

04.02.10 **Public Impact** Mechanical vents and utilities related to parking should minimize visual and noise impacts on public streets as much as possible and be integrated into the overall architectural expression of the form, language and materiality of the building.

04.02.11 **Entries** The number and dimension of vehicle entrances and exits to parking facilities should be minimized, as much as reasonably possible, to reduce their impact on the pedestrian environment.

04.02.12 **Access** The design of parking structures should promote the use of public sidewalks and mid-block connections. Pathways and stairways linking parking structures to public ways should be attractive and well lit.

04.02.13 **Exiting** Exit door alcoves adjacent to the sidewalk are discouraged unless they are integrated with active spaces, such as primary entrances or non-residential community uses.

04.03 loading + servicing

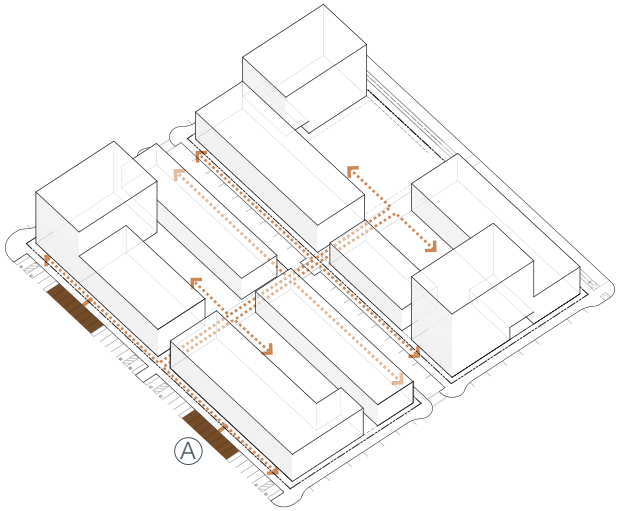

Figure 04.03.A: Loading + Servicing

Ⓐ Loading & Services Zone

TABLE 7 - Required Loading Spaces

LAND USE	ON-STREET LOADING	OFF-STREET LOADING
Residential	1 space / building (between 0 and 199 units)	0
	2 spaces / building (over 200 du)	Service vehicle spaces should be provided within garages
Grocery Store	2 spaces	2 spaces
Retail / Office / Professional Services	1 space / building	0

Every reasonable effort must be made to reduce the adverse impact of loading and servicing facilities on the quality of the pedestrian environment. The Truck Routes and Loading Plan (Fig. 04.03.B) identifies permitted locations and routes for loading facilities.

Standards

04.03.01 **Loading** Preferred on-street loading spaces and permitted routes related to specific loading vehicles are indicated on the Truck Routes and Loading Plan (Fig. 04.03.B). All streets have been designed for SU-30 vehicles.

04.03.02 **Loading Spaces** The maximum number of loading spaces by use is listed in Table 7 - Required Loading Spaces. Residential loading spaces are provided on-street and are specifically identified on the Truck Routes and Loading Plan (Fig. 04.03.B).

- On-street loading spaces may be used as regular vehicular parking spaces and scheduled for loading.
- On-street loading spaces must be sized to accommodate vehicles up to those identified for each specific street on the Truck Routes and Loading Plan (Fig. 04.03.B).

04.03.03 **Off-Street Loading Spaces** Individual off-street loading spaces shall have a maximum width of 10 feet and a maximum vertical clearance of 16 feet.

04.03.04 **Loading Access** Off-street loading access is not permitted along Juan Bautista Circle, Crespi Drive, Font Boulevard and Gonzalez Drive.

04.03.05 **Limited Impact** A maximum of one curb cut for loading and service is permitted every 250 LF of street frontage.

04.03.06 **Loading Entrances** Off-street loading entrances are restricted to a maximum linear width of 24 feet for combined entrance and exit areas.

04.03.07 **Visual Impact** Loading and service areas must include either opaque or translucent garage door panels. Exterior wall finishes and architectural treatments must extend a minimum of 30 inches into the loading and service entries beyond the garage door. Loading entries must be well lit at night and obscure views into loading areas under daylight and night light conditions.

Guidelines

04.03.08 **Shared Facilities** Multiple buildings within the same block should share off-street loading facilities and service areas.

04.03.09 **Combined Entries** Where reasonably feasible off-street loading entrances and exits should be combined with automobile parking access.

FIGURE 04.03.B / Truck Routes + Loading Plan

appendix

appendix

APPENDIX A regulating plan - block matrix

		BLOCK 01 Total Developable Footprint	BLOCK 02	BLOCK 03	BLOCK 04	BLOCK 05	BLOCK 06	BLOCK 07	BLOCK 08	BLOCK 09	BLOCK 10	BLOCK 11	BLOCK JBC
HEIGHT ZONES	**T145**	145'											
	FOOTPRINT AREA AT T145	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	24,000 sf	0 sf	0 sf
	T115	115'											
	FOOTPRINT AREA AT T115	0 sf	0 sf	0 sf	0 sf	0 sf	24,000 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf
	MR105	105'											
	FOOTPRINT AREA AT MR105	0 sf	0 sf	0 sf	0 sf	12,000 sf	0 sf	6,900 sf	0 sf	12,000 sf	0 sf	12,000 sf	0 sf
	MR85	85'											
	FOOTPRINT AREA AT MR85	12,000 sf	19,200 sf	19,200 sf	12,000 sf	16,300 sf	0 sf	21,400 sf	12,000 sf	9,500 sf	0 sf	12,000 sf	0 sf
	LR65	65'											
	FOOTPRINT AREA AT LR65	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	20,300 sf	35,500 sf	0 sf	9,400 sf	0 sf
	LR45	45'											
	FOOTPRINT AREA AT LR45	15,500 sf	72,800 sf	95,500 sf	9,100 sf	43,200 sf	0 sf	42,000 sf	8,900 sf	6,800 sf	0 sf	34,000 sf	0 sf
	LR35	35'											
	FOOTPRINT AREA AT LR35	0 sf	17,200 sf	22,500 sf	0 sf	22,400 sf	0 sf	19,400 sf	4,200 sf	0 sf	0 sf	5,500 sf	0 sf
	LR15	15'											
	FOOTPRINT AREA AT LR15	0 sf	1,600 sf	1,400 sf	0 sf	0 sf	0 sf	1,600 sf	0 sf	800 sf	0 sf	0 sf	0 sf
TOTAL DEVELOPABLE FOOTPRINT		27,500 sf	110,800 sf	138,600 sf	21,100 sf	93,900 sf	24,000 sf	91,300 sf	45,400 sf	64,600 sf	24,000 sf	72,900 sf	0 sf
LOT COVERAGE + OPEN SPACE	Existing Building Area	29,557 sf					29,557 sf				29,557 sf		
	Dedicated Open Space		15,000 sf	15,000 sf				15,000 sf		15,000 sf			106,359 sf
	Total Parcel Area	203,898 sf	200,889	276,151	34,082 sf	170,826 sf	200,099 sf	170,826 sf	77,725 sf	144,838 sf	199,101 sf	134,180 sf	106,359 sf

BLOCK 12	BLOCK 13	BLOCK 14	BLOCK 15	BLOCK 16	BLOCK 17	BLOCK 18	BLOCK 19	BLOCK 20	BLOCK 21	BLOCK 22	BLOCK 23	TOTALS PARKMERCED NEIGHBORHOOD
												T145
0 sf	0 sf	12,000 sf	0 sf	0 sf	0 sf	0 sf	0 sf	12,000 sf	36,000 sf	24,000 sf	0 sf	108,000 sf
												T115
0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	12,000 sf	0 sf	0 sf	0 sf	0 sf	0 sf	36,000 sf
												MR105
12,000 sf	0 sf	34,700 sf	24,000 sf	20,100 sf	0 sf	0 sf	24,000 sf	0 sf	0 sf	0 sf	0 sf	157,700 sf
												MR85
0 sf	20,000 sf	16,100 sf	12,000 sf	24,200 sf	0 sf	0 sf	19,200 sf	0 sf	9,800 sf	0 sf	0 sf	234,900 sf
												LR65
30,800 sf	6,700 sf	70,700 sf	79,400 sf	41,900 sf	0 sf	15,000 sf	56,400 sf	14,600 sf	38,800 sf	0 sf	0 sf	419,500 sf
												LR45
23,800 sf	0 sf	22,200 sf	18,900 sf	17,700 sf	0 sf	0 sf	4,400 sf	0 sf	0 sf	0 sf	0 sf	414,800 sf
												LR35
0 sf	0 sf	25,300 sf	0 sf	1,900 sf	3,200 sf	0 sf	0 sf	0 sf	0 sf	0 sf	27,400 sf	121,600 sf
												LR15
0 sf	0 sf	0 sf	1,200 sf	52,500 sf	0 sf	11,000 sf	1,500 sf	0 sf	2,600 sf	0 sf	6,000 sf	74,200 sf
66,600 sf	26,700 sf	181,000 sf	135,500 sf	158,300 sf	3,200 sf	38,000 sf	105,500 sf	26,600 sf	87,200 sf	24,000 sf	33,400 sf	1,566,700 sf
								44,336 sf	14,779 sf	14,779 sf		162,564 sf
	55,527 sf				37,600 sf		15,000 sf		15,000 sf			289,486 sf
130,147 sf	101,724 sf	261,056 sf	219,191 sf	236,677 sf	65,614 sf	43,741 sf	213,668 sf	281,642 sf	321,751 sf	192,525 sf	862,804 sf	3,165,331 sf

APPENDIX A regulating plan - block 01

		BLOCK 01
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	0 sf
	MR85	
	FOOTPRINT AREA AT MR85	**12,000 sf**
	LR65	
	FOOTPRINT AREA AT LR65	0 sf
	LR45	
	FOOTPRINT AREA AT LR45	**15,500 sf**
	LR35	
	FOOTPRINT AREA AT LR35	0 sf
	LR15	
	FOOTPRINT AREA AT LR15	0 sf
TOTAL DEVELOPABLE FOOTPRINT		**27,500 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	**29,557 sf**
	Dedicated Open Space	
	Total Parcel Area	**203,898 sf**

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

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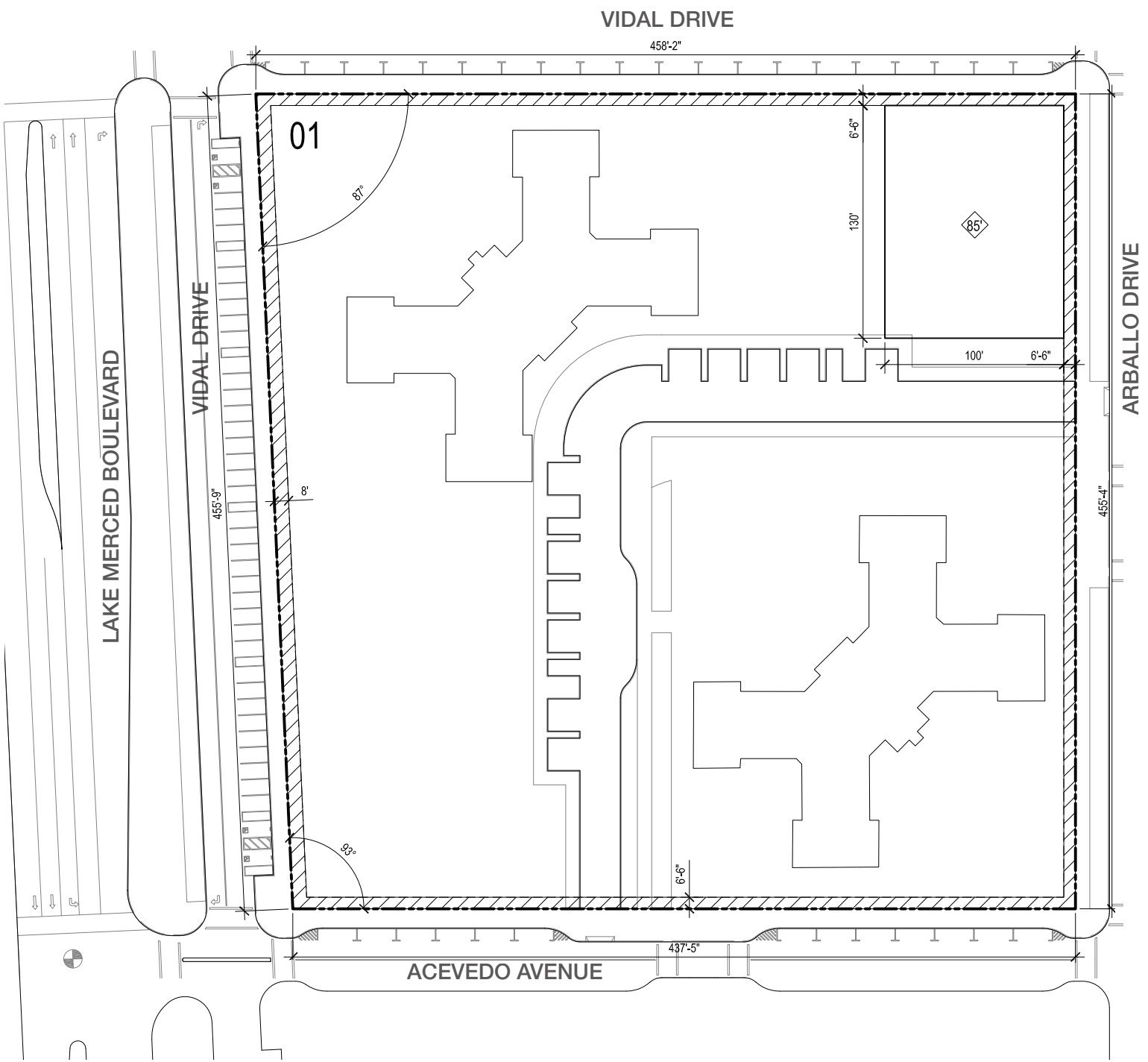

VIDAL DRIVE
458'-2"
01
87°
6'-6"
130'
85'
100'
6'-6"
ARBALLO DRIVE
LAKE MERCED BOULEVARD
VIDAL DRIVE
455'-9"
8'
455'-4"
93°
6'-6"
437'-5"
ACEVEDO AVENUE
N
0
80'
160'

APPENDIX A regulating plan - block 02

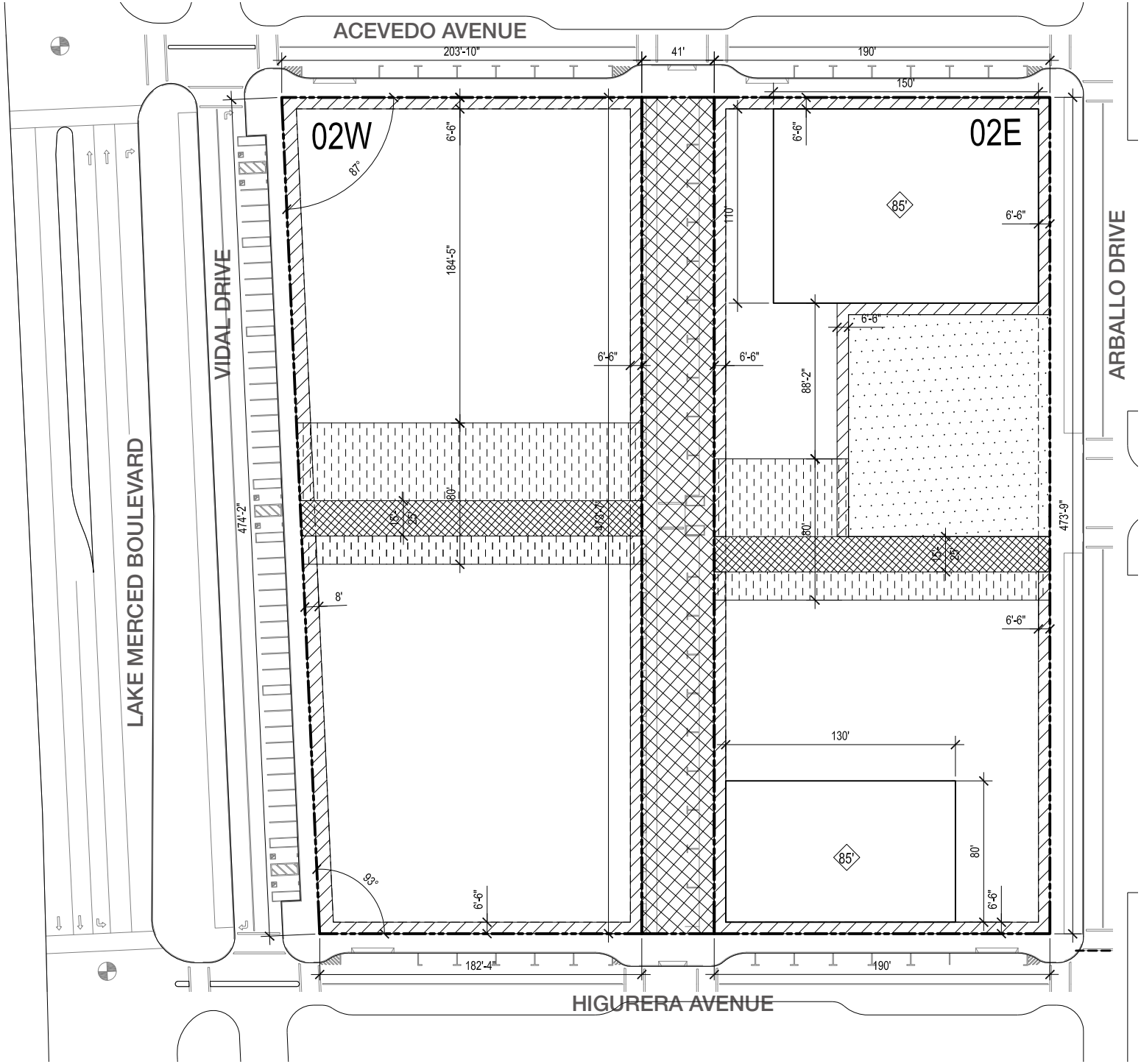
		BLOCK 02
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	0 sf
	MR85	
	FOOTPRINT AREA AT MR85	**19,200 sf**
	LR65	
	FOOTPRINT AREA AT LR65	0 sf
	LR45	
	FOOTPRINT AREA AT LR45	**72,800 sf**
	LR35	
	FOOTPRINT AREA AT LR35	**17,200 sf**
	LR15	
	FOOTPRINT AREA AT LR15	**1,600 sf**
TOTAL DEVELOPABLE FOOTPRINT		**110,800 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	
	Dedicated Open Space	**15,000 sf**
	Total Parcel Area	**200,889 sf**

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

block 02



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APPENDIX A regulating plan - block 03

		BLOCK 03
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	0 sf
	MR85	
	FOOTPRINT AREA AT MR85	**19,200 sf**
	LR65	
	FOOTPRINT AREA AT LR65	0 sf
	LR45	
	FOOTPRINT AREA AT LR45	**95,500 sf**
	LR35	
	FOOTPRINT AREA AT LR35	**22,500 sf**
	LR15	
	FOOTPRINT AREA AT LR15	**1,400 sf**
TOTAL DEVELOPABLE FOOTPRINT		**138,600 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	
	Dedicated Open Space	**15,000 sf**
	Total Parcel Area	**276,151 sf**

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

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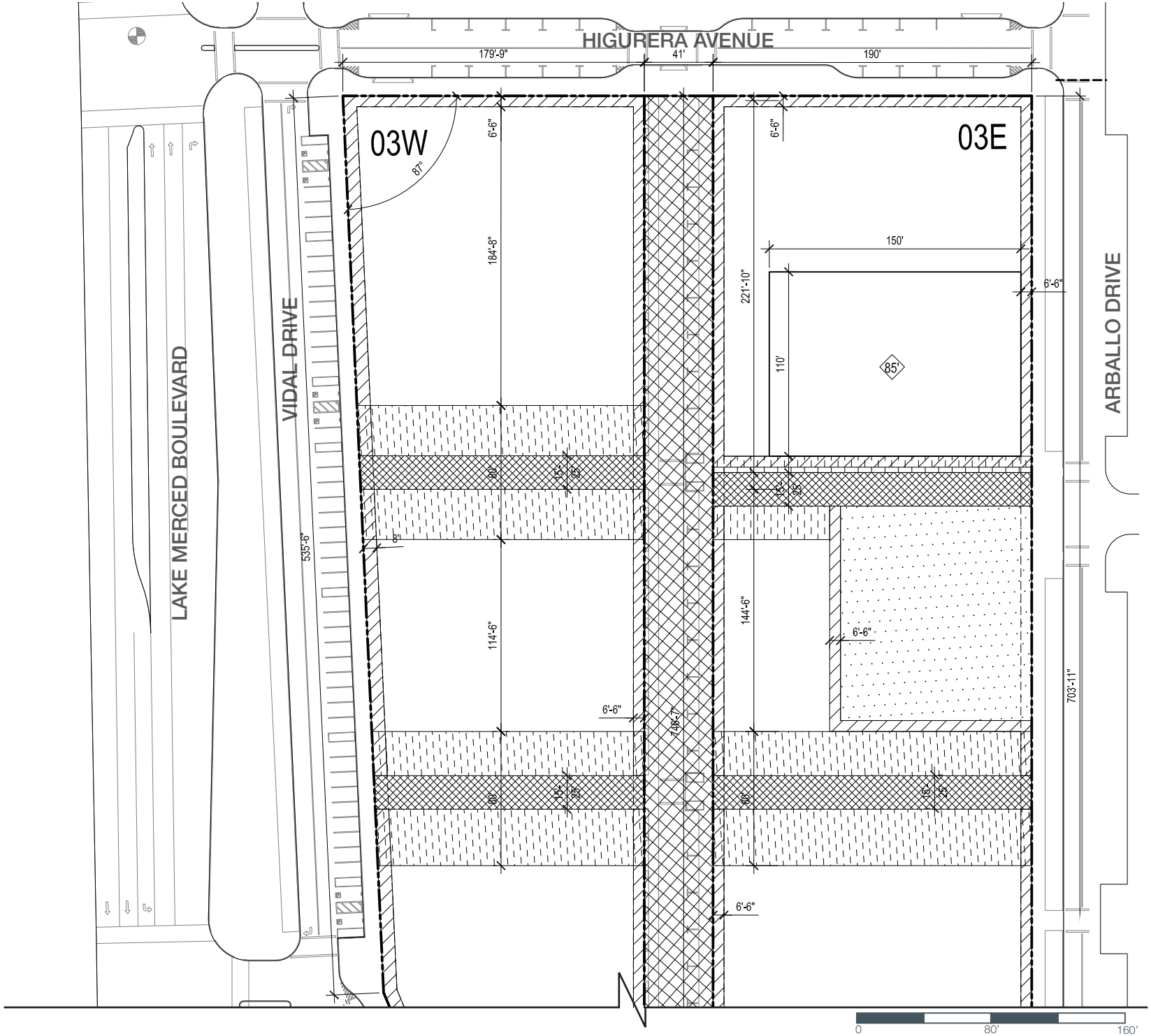
block 03



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APPENDIX A regulating plan - block 03

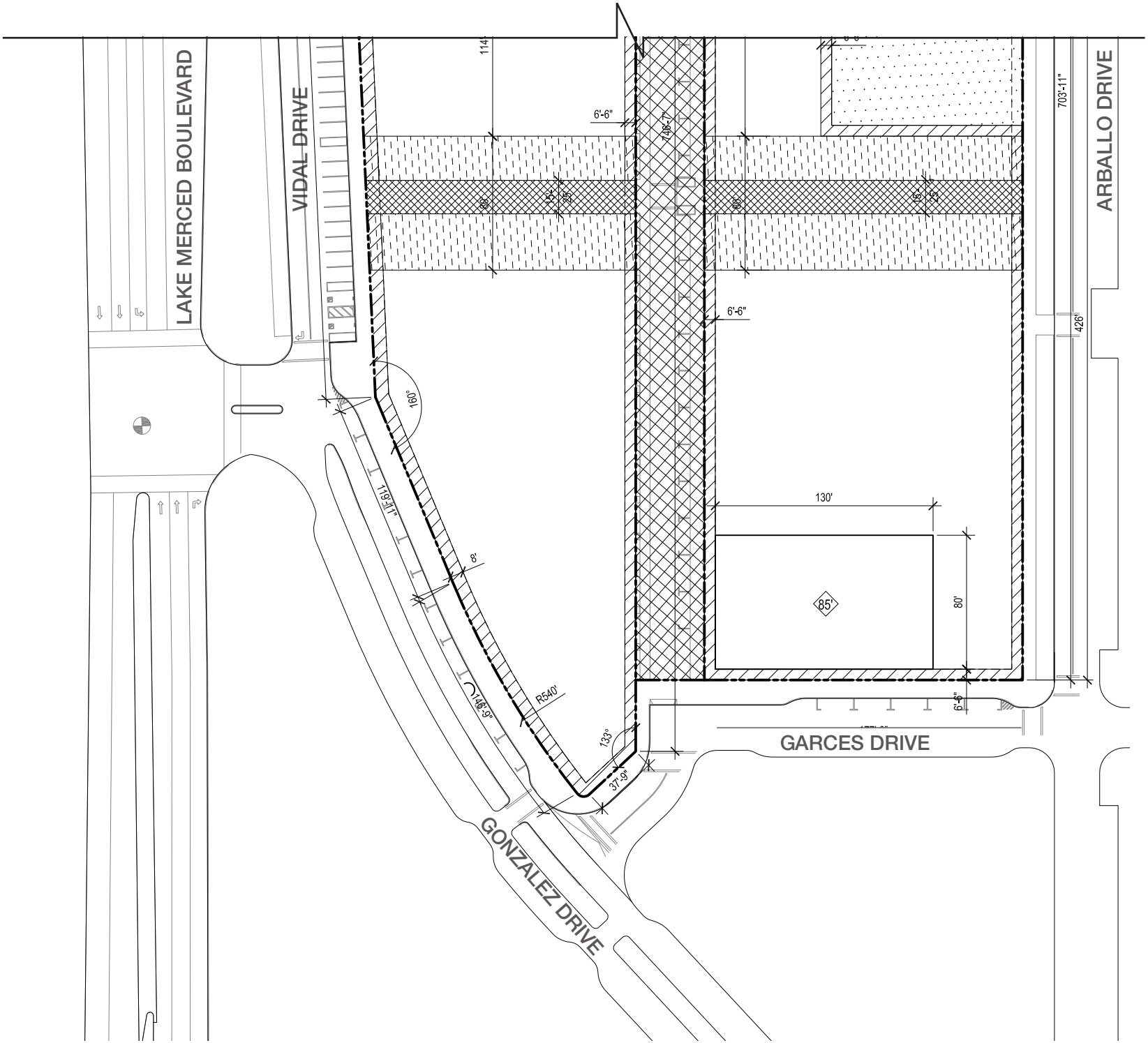
		BLOCK 03
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	0 sf
	MR85	
	FOOTPRINT AREA AT MR85	**19,200 sf**
	LR65	
	FOOTPRINT AREA AT LR65	0 sf
	LR45	
	FOOTPRINT AREA AT LR45	**95,500 sf**
	LR35	
	FOOTPRINT AREA AT LR35	**22,500 sf**
	LR15	
	FOOTPRINT AREA AT LR15	**1,400 sf**
TOTAL DEVELOPABLE FOOTPRINT		**138,600 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	
	Dedicated Open Space	**15,000 sf**
	Total Parcel Area	**276,151 sf**

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

block 03



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APPENDIX A regulating plan - block 04

		BLOCK 04
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	0 sf
	MR85	
	FOOTPRINT AREA AT MR85	**12,000 sf**
	LR65	
	FOOTPRINT AREA AT LR65	0 sf
	LR45	
	FOOTPRINT AREA AT LR45	**9,100 sf**
	LR35	
	FOOTPRINT AREA AT LR35	0 sf
	LR15	
	FOOTPRINT AREA AT LR15	0 sf
TOTAL DEVELOPABLE FOOTPRINT		**21,100 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	
	Dedicated Open Space	
	Total Parcel Area	**34,082 sf**

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

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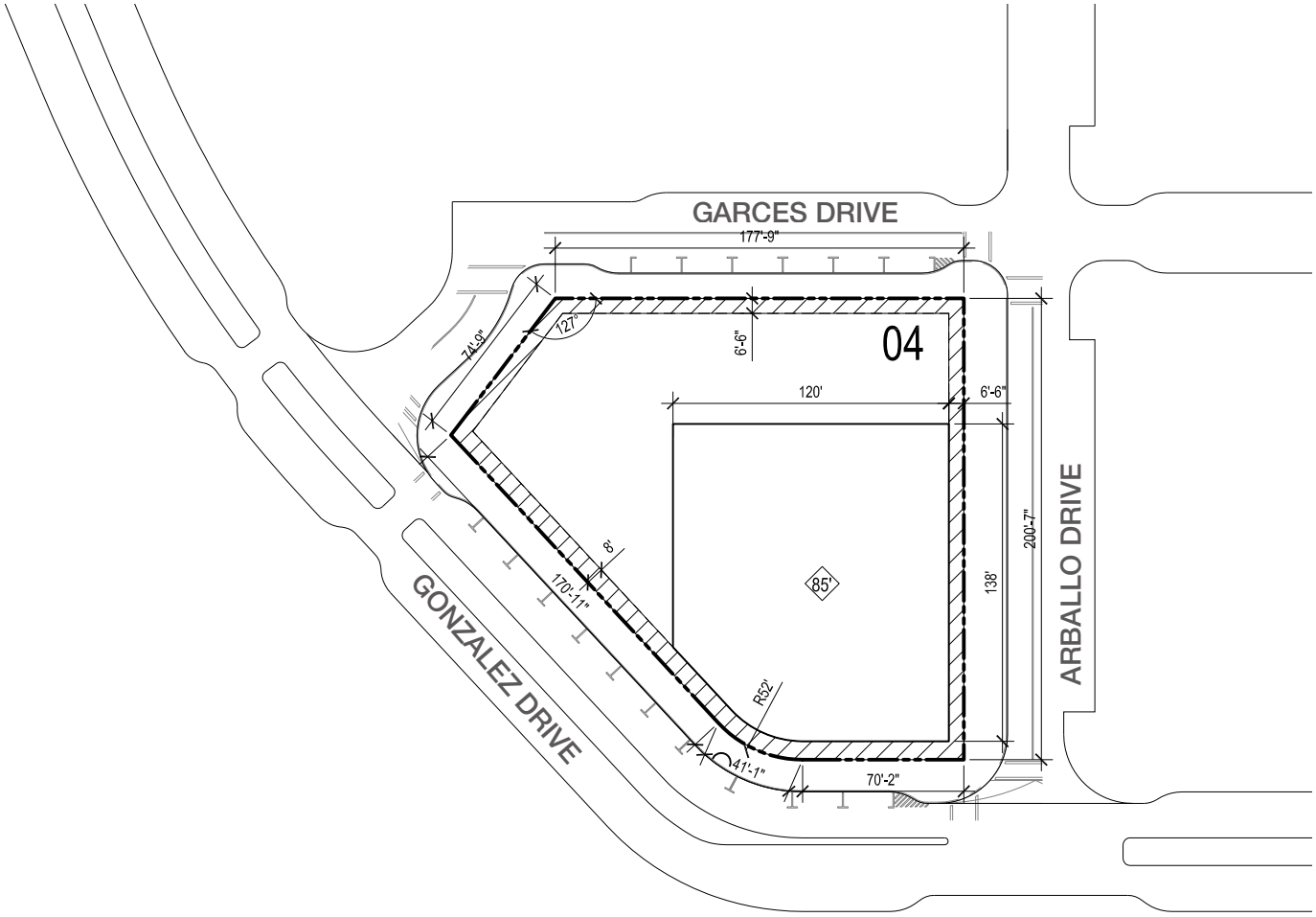
block 04



N

0 80' 160'

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APPENDIX A regulating plan - block 05

		BLOCK 05
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	**12,000 sf**
	MR85	
	FOOTPRINT AREA AT MR85	**16,300 sf**
	LR65	
	FOOTPRINT AREA AT LR65	0 sf
	LR45	
	FOOTPRINT AREA AT LR45	**43,200 sf**
	LR35	
	FOOTPRINT AREA AT LR35	**22,400 sf**
	LR15	
	FOOTPRINT AREA AT LR15	0 sf
TOTAL DEVELOPABLE FOOTPRINT		**93,900 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	
	Dedicated Open Space	
	Total Parcel Area	**170,826 sf**

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

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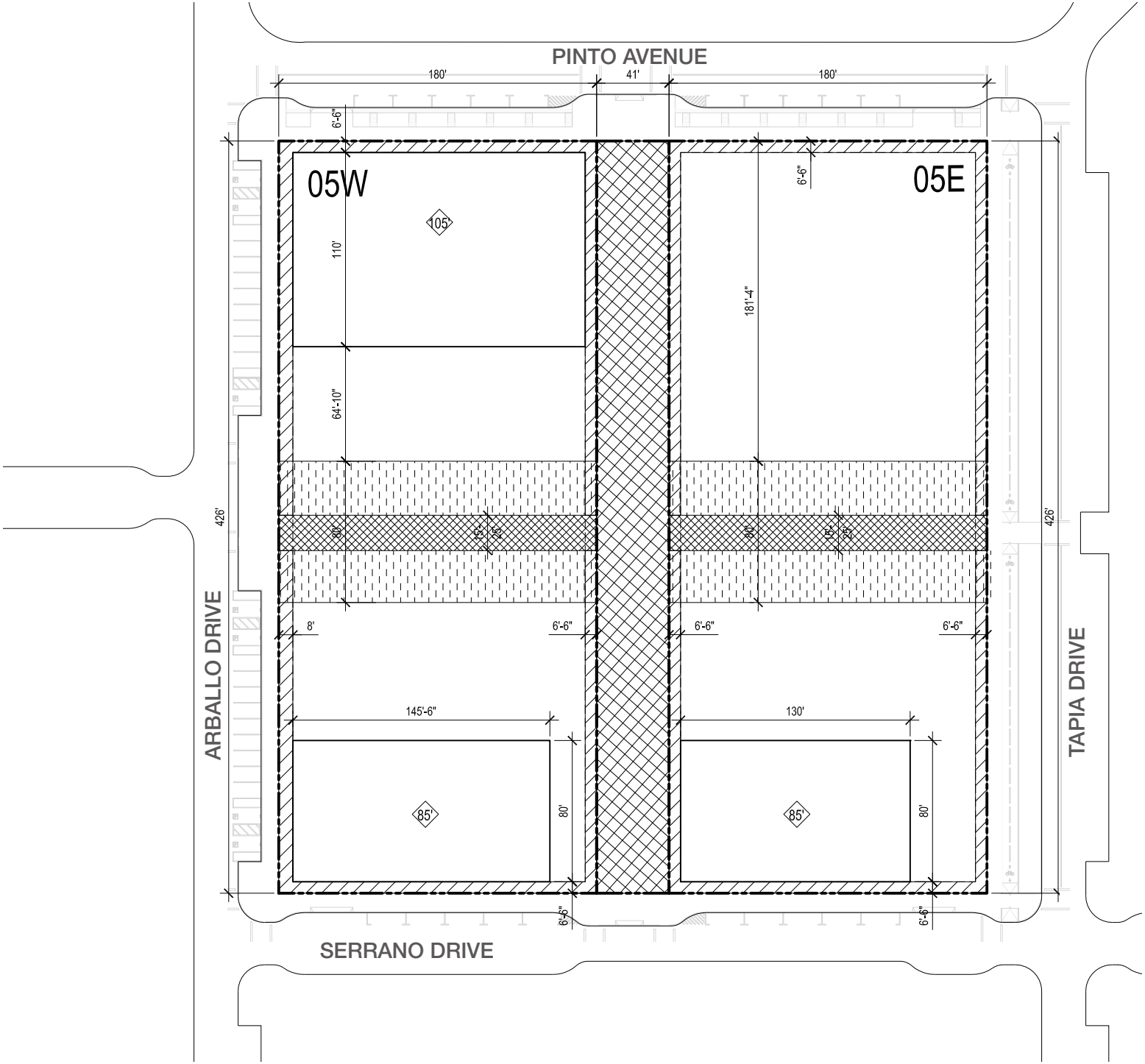
block 05



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APPENDIX A regulating plan - block 06

		BLOCK 06
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	**24,000 sf**
	MR105	
	FOOTPRINT AREA AT MR105	0 sf
	MR85	
	FOOTPRINT AREA AT MR85	0 sf
	LR65	
	FOOTPRINT AREA AT LR65	0 sf
	LR45	
	FOOTPRINT AREA AT LR45	0 sf
	LR35	
	FOOTPRINT AREA AT LR35	0 sf
	LR15	
	FOOTPRINT AREA AT LR15	0 sf
TOTAL DEVELOPABLE FOOTPRINT		**24,000 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	**29,557 sf**
	Dedicated Open Space	
	Total Parcel Area	**200,099 sf**

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

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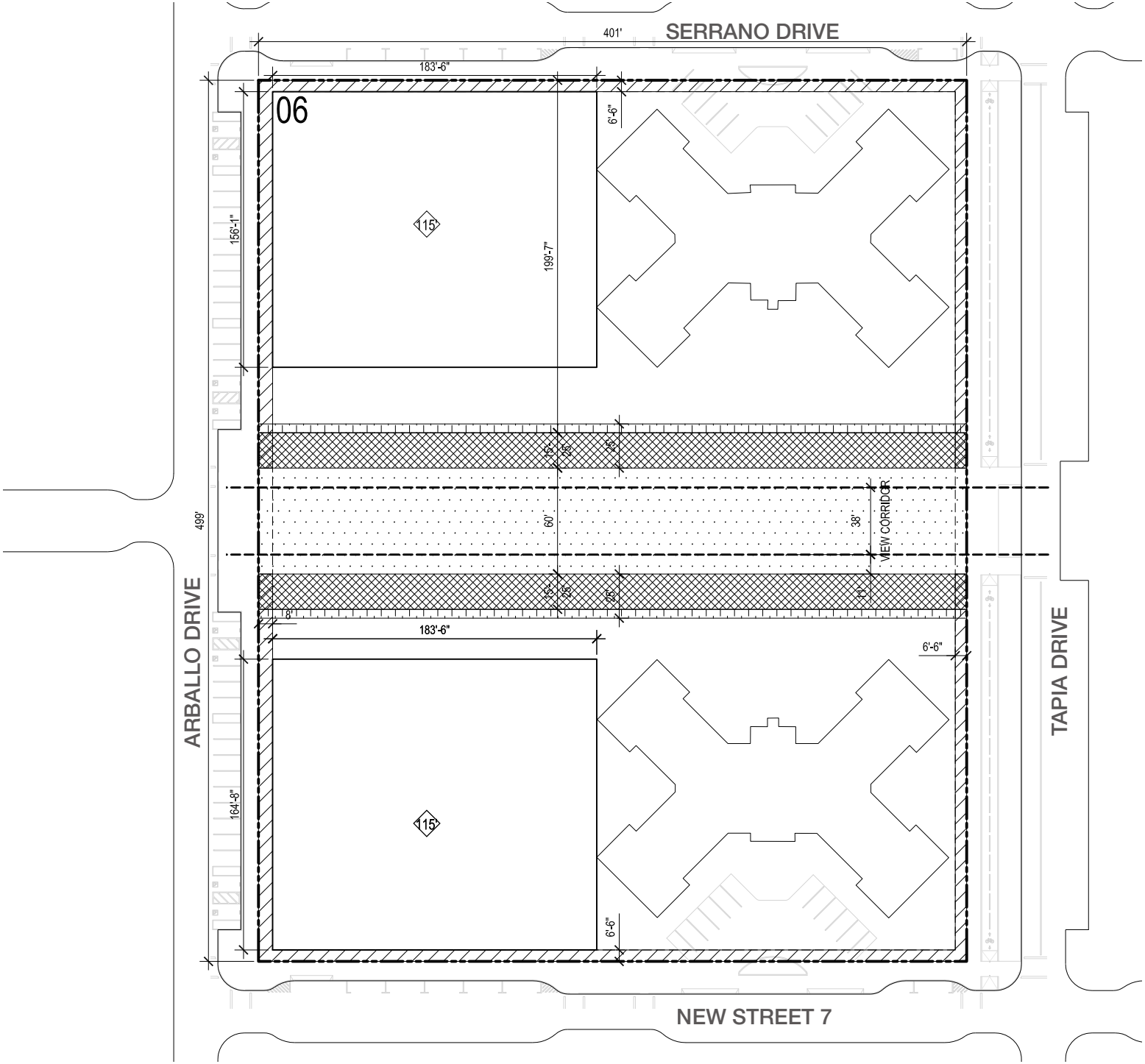
block 06



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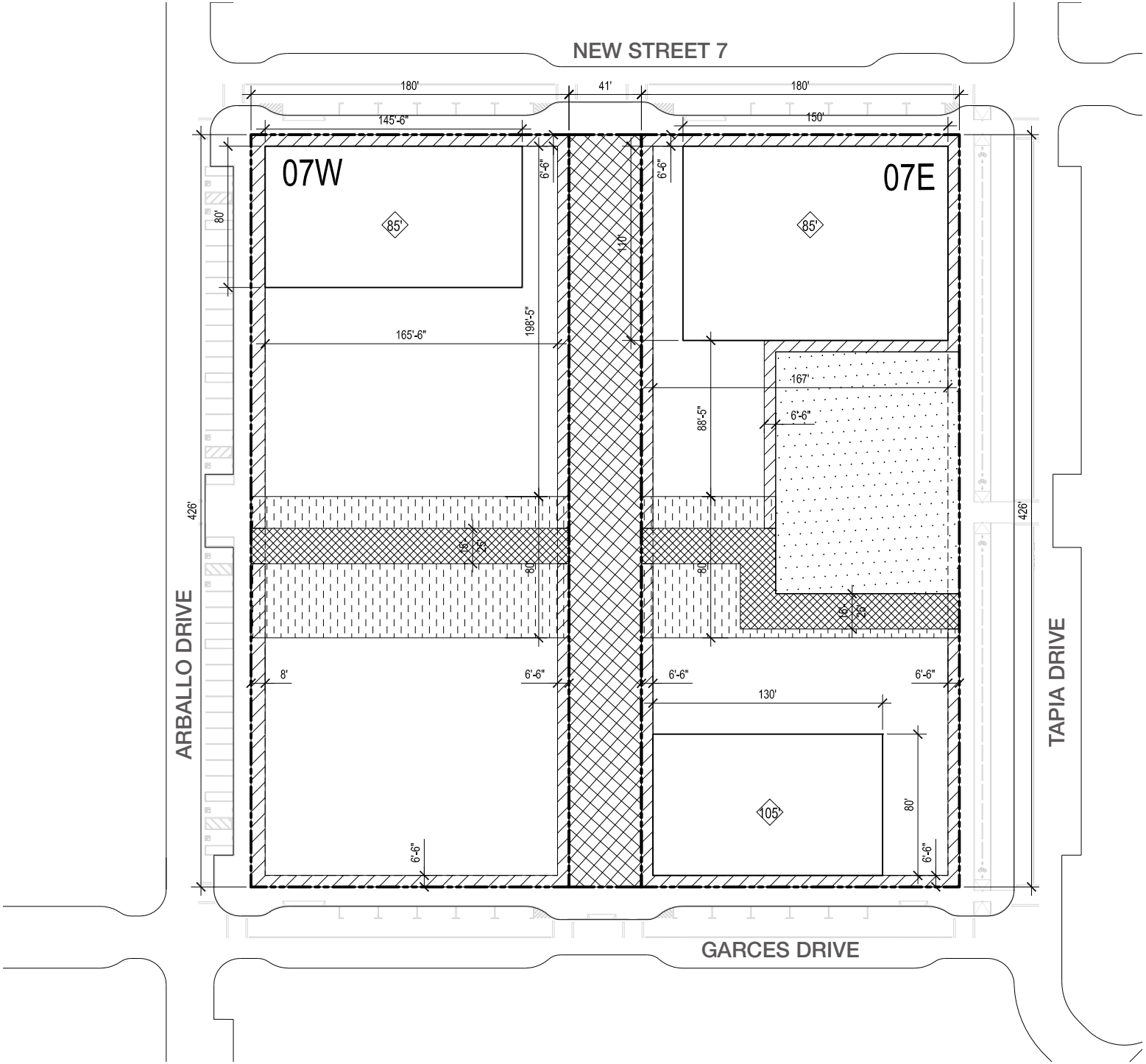
APPENDIX A regulating plan - block 07

		BLOCK 07
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	**6,900 sf**
	MR85	
	FOOTPRINT AREA AT MR85	**21,400 sf**
	LR65	
	FOOTPRINT AREA AT LR65	0 sf
	LR45	
	FOOTPRINT AREA AT LR45	**42,000 sf**
	LR35	
	FOOTPRINT AREA AT LR35	**19,400 sf**
	LR15	
	FOOTPRINT AREA AT LR15	**1,600 sf**
TOTAL DEVELOPABLE FOOTPRINT		**91,300 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	
	Dedicated Open Space	**15,000 sf**
	Total Parcel Area	**170,826 sf**

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit


NEW STREET 7
GARCES DRIVE
ARBALLO DRIVE
TAPIA DRIVE
07W
07E
105
85'
180'
41'
180'
145'-6"
150'
6'-6"
6'-6"
80'
110'
198'-5"
165'-6"
167'
88'-5"
6'-6"
426'
426'
55'
25'
80'
80'
45'
25'
8'
6'-6"
6'-6"
6'-6"
130'
80'
6'-6"
6'-6"
N
0
80'
160'

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APPENDIX A regulating plan - block 08

		BLOCK 08
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	0 sf
	MR85	
	FOOTPRINT AREA AT MR85	**12,000 sf**
	LR65	
	FOOTPRINT AREA AT LR65	**20,300 sf**
	LR45	
	FOOTPRINT AREA AT LR45	**8,900 sf**
	LR35	
	FOOTPRINT AREA AT LR35	**4,200 sf**
	LR15	
	FOOTPRINT AREA AT LR15	0 sf
TOTAL DEVELOPABLE FOOTPRINT		**45,400 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	
	Dedicated Open Space	
	Total Parcel Area	**77,725 sf**

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

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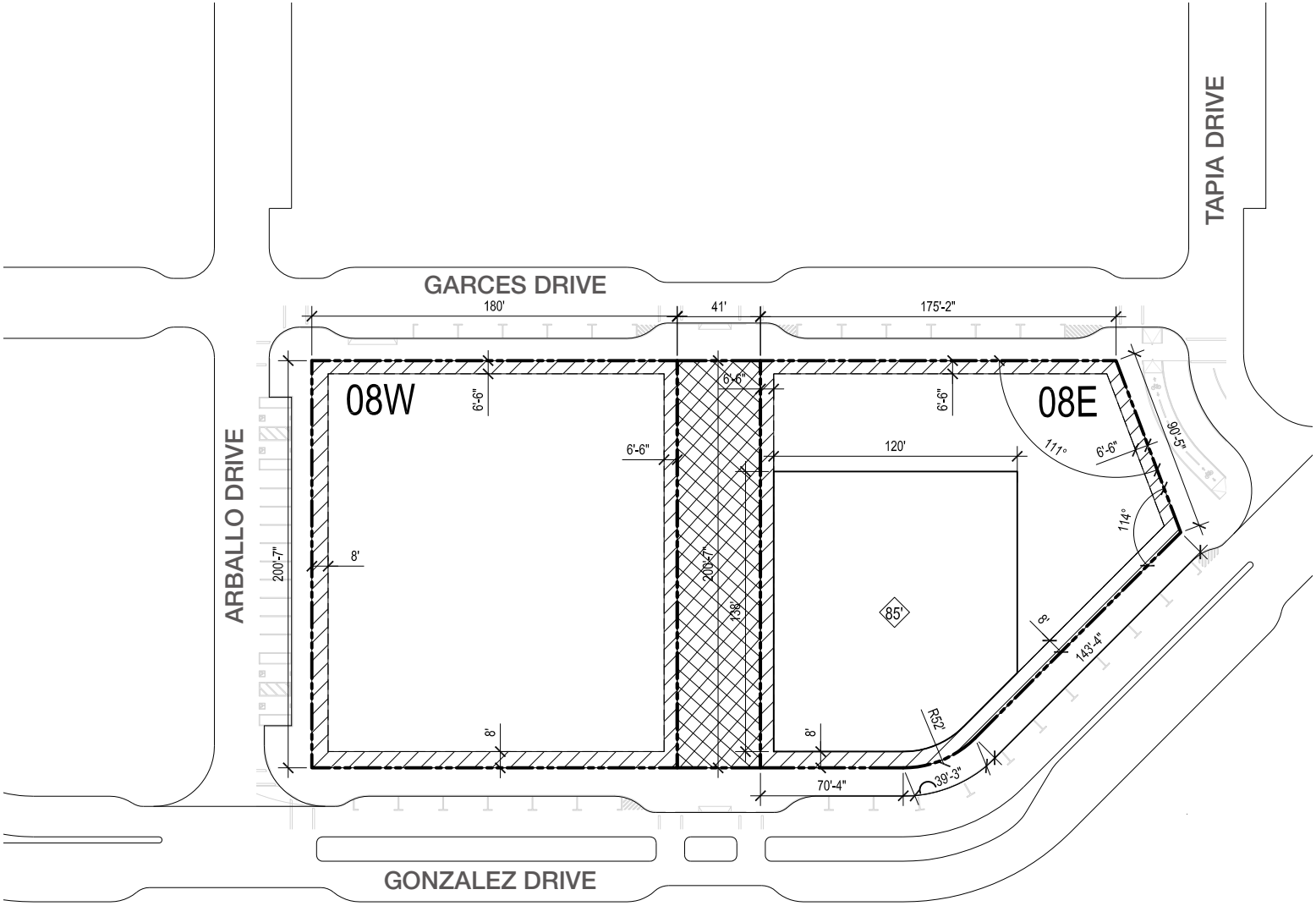
block 08


GARCES DRIVE
TAPIA DRIVE
ARBALLO DRIVE
GONZALEZ DRIVE
08W
08E
180'
41'
175'-2"
6'-6"
120'
111°
90'-5"
114°
200'-7"
8'
85'
143'-4"
R52'
39°-3"
70'-4"

APPENDIX A regulating plan - block 09

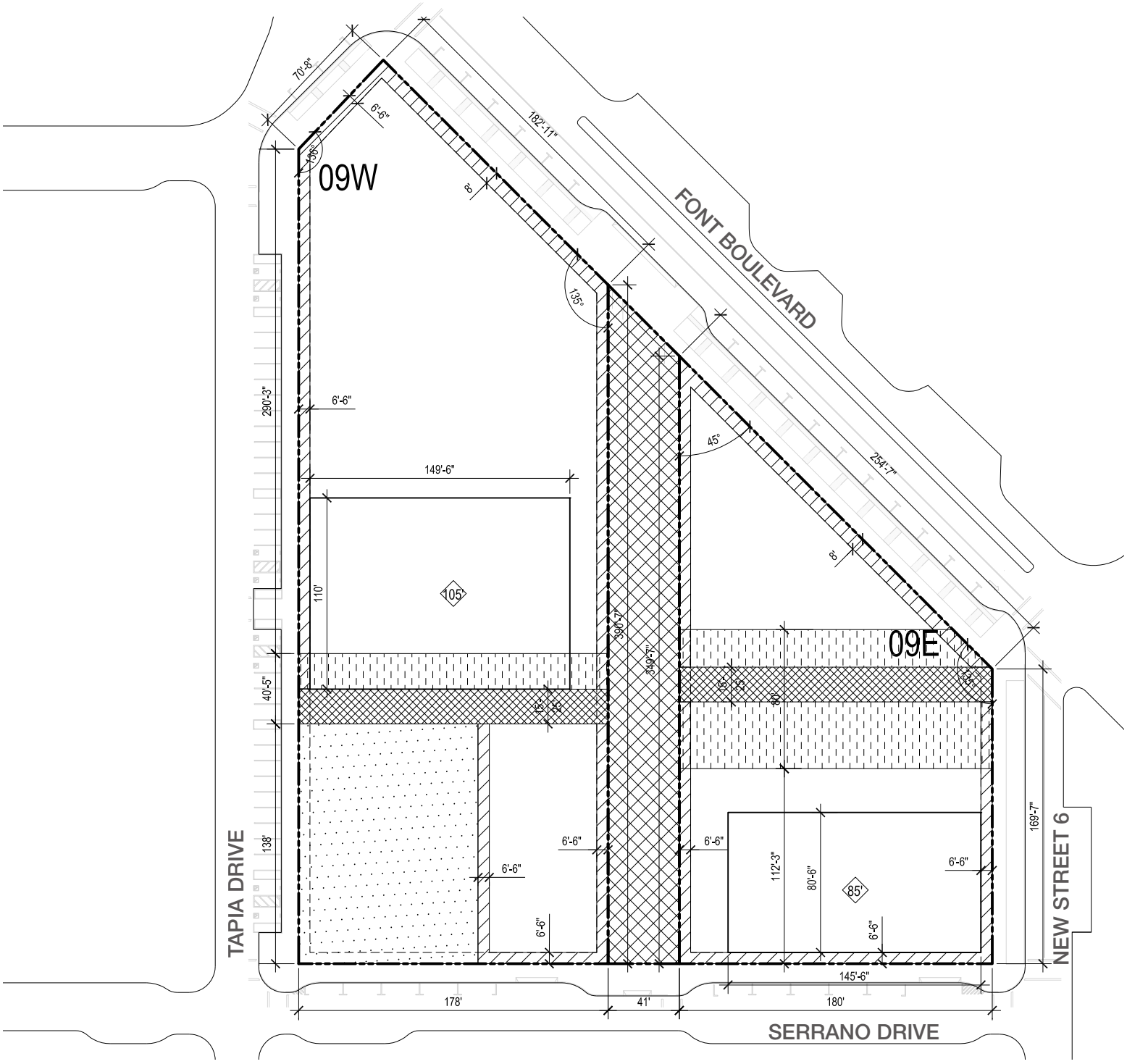
		BLOCK 09
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	**12,000 sf**
	MR85	
	FOOTPRINT AREA AT MR85	**9,500 sf**
	LR65	
	FOOTPRINT AREA AT LR65	**35,500 sf**
	LR45	
	FOOTPRINT AREA AT LR45	**6,800 sf**
	LR35	
	FOOTPRINT AREA AT LR35	0 sf
	LR15	
	FOOTPRINT AREA AT LR15	**800 sf**
TOTAL DEVELOPABLE FOOTPRINT		**64,600 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	
	Dedicated Open Space	**15,000 sf**
	Total Parcel Area	**144,838 sf**

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

block 09



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APPENDIX A regulating plan - block 10

		BLOCK 10
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	**24,000 sf**
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	0 sf
	MR85	
	FOOTPRINT AREA AT MR85	0 sf
	LR65	
	FOOTPRINT AREA AT LR65	0 sf
	LR45	
	FOOTPRINT AREA AT LR45	0 sf
	LR35	
	FOOTPRINT AREA AT LR35	0 sf
	LR15	
	FOOTPRINT AREA AT LR15	0 sf
TOTAL DEVELOPABLE FOOTPRINT		**24,000 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	**29,557 sf**
	Dedicated Open Space	
	Total Parcel Area	**199,101 sf**

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

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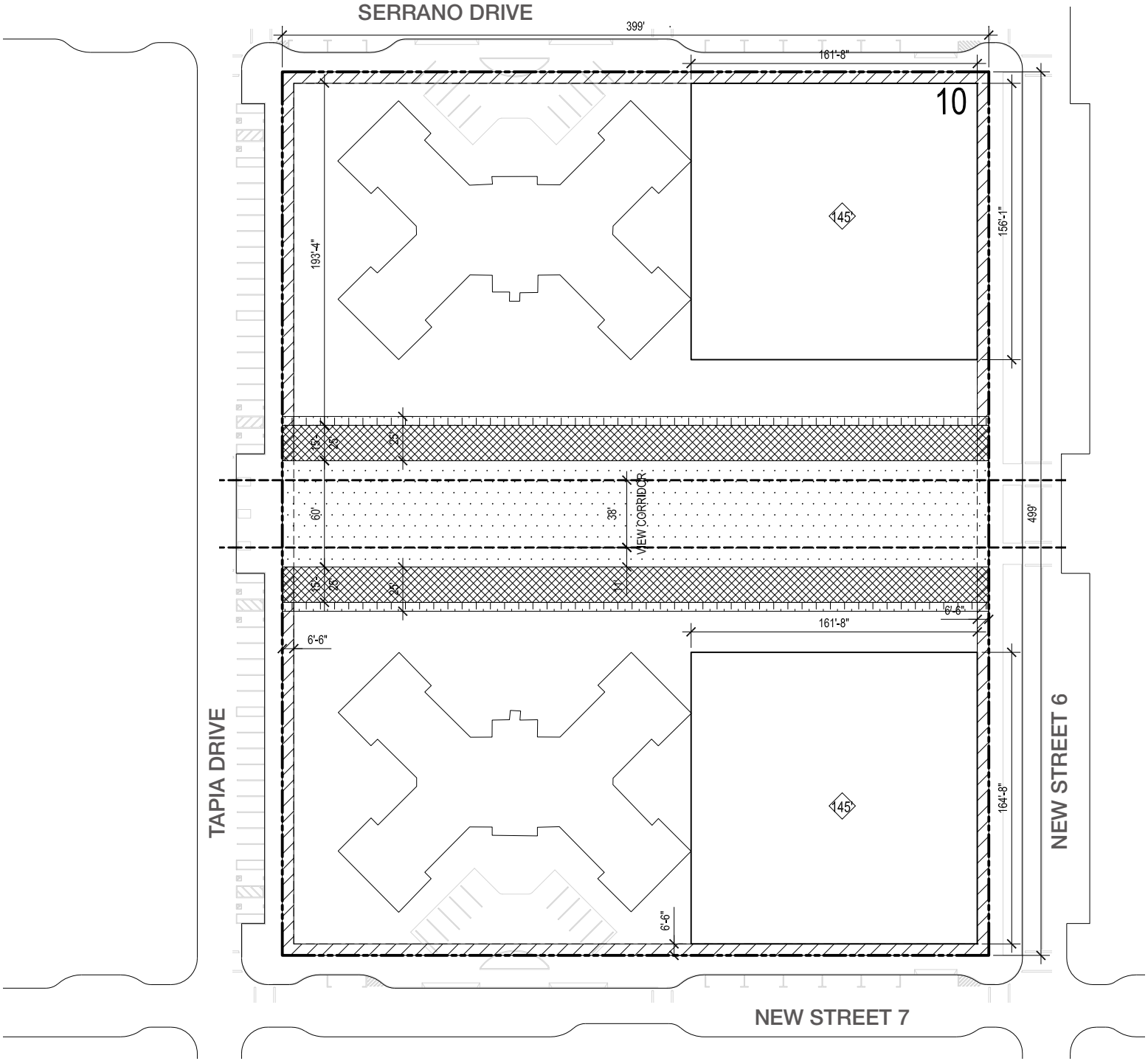
block 10



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APPENDIX A regulating plan - block 11

		BLOCK 11
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	**12,000 sf**
	MR85	
	FOOTPRINT AREA AT MR85	**12,000 sf**
	LR65	
	FOOTPRINT AREA AT LR65	**9,400 sf**
	LR45	
	FOOTPRINT AREA AT LR45	**34,000 sf**
	LR35	
	FOOTPRINT AREA AT LR35	**5,500 sf**
	LR15	
	FOOTPRINT AREA AT LR15	0 sf
TOTAL DEVELOPABLE FOOTPRINT		**72,900 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	
	Dedicated Open Space	
	Total Parcel Area	**134,180 sf**

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

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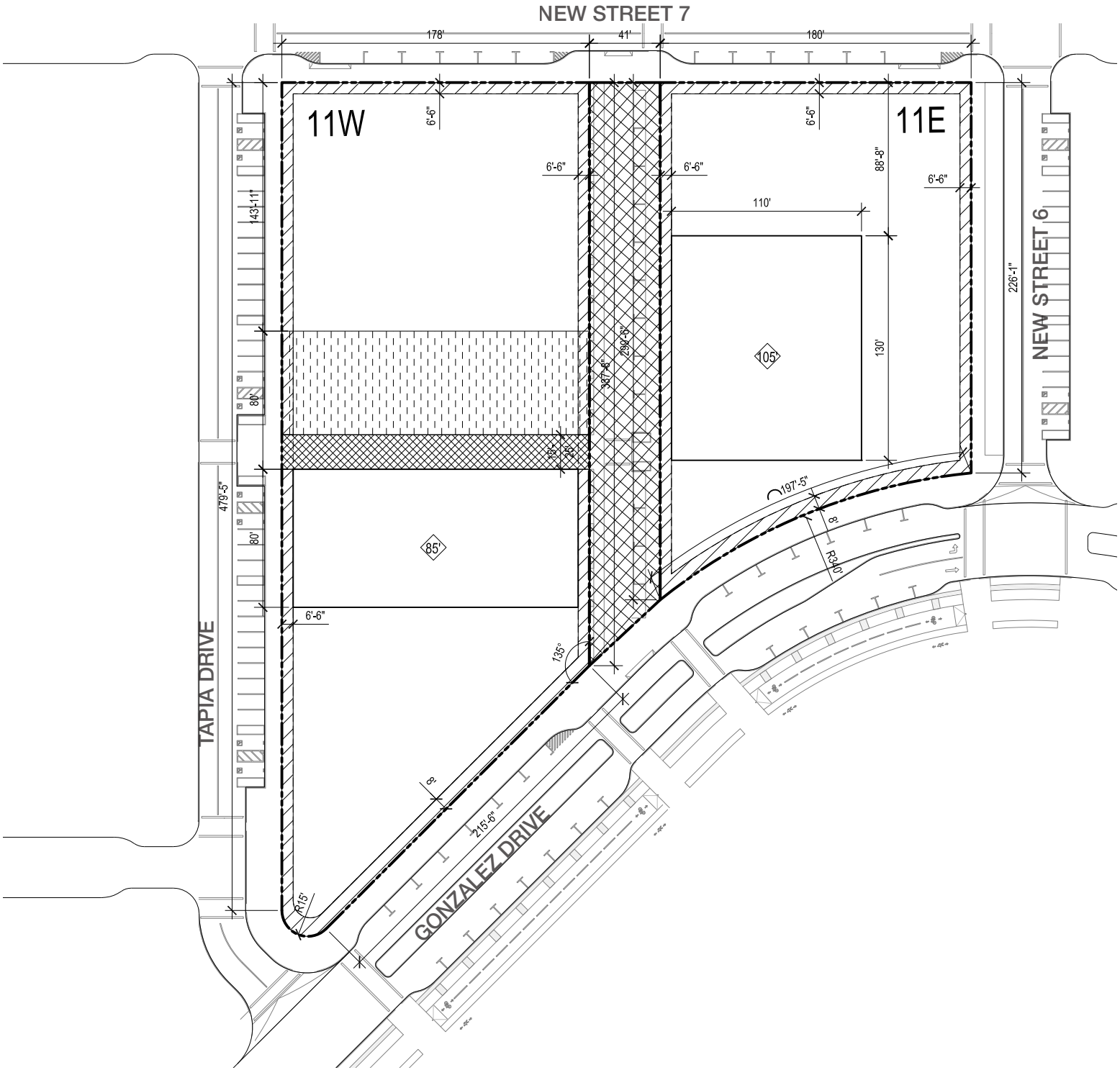
NEW STREET 7
178'
41'
180'
11W
11E
6'-6"
110'
88'-8"
143'-11"
226'-1"
NEW STREET 6
130'
105'
85'
80'
479'-5"
TAPIA DRIVE
197'-5"
R310'
135°
215'-6"
GONZALEZ DRIVE
R15'
0
80'
160'
N

DRAFT

APPENDIX A regulating plan - block 12

		BLOCK 12
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	**12,000 sf**
	MR85	
	FOOTPRINT AREA AT MR85	0 sf
	LR65	
	FOOTPRINT AREA AT LR65	**30,800 sf**
	LR45	
	FOOTPRINT AREA AT LR45	**23,800 sf**
	LR35	
	FOOTPRINT AREA AT LR35	0 sf
	LR15	
	FOOTPRINT AREA AT LR15	0 sf
TOTAL DEVELOPABLE FOOTPRINT		**66,600 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	
	Dedicated Open Space	
	Total Parcel Area	**130,147 sf**

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

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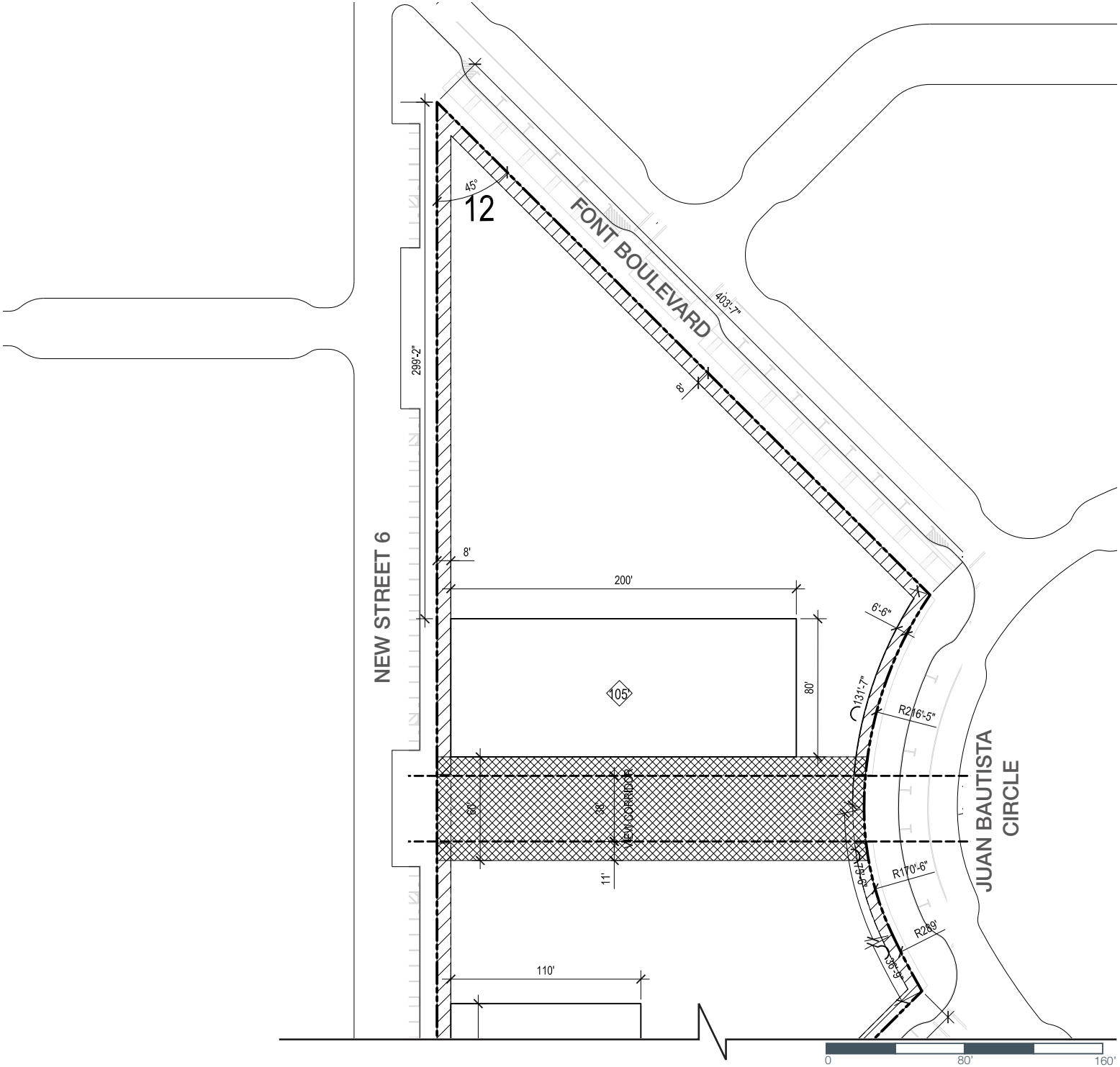
block 12



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APPENDIX A regulating plan - block 12

		BLOCK 12
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	**12,000 sf**
	MR85	
	FOOTPRINT AREA AT MR85	0 sf
	LR65	
	FOOTPRINT AREA AT LR65	**30,800 sf**
	LR45	
	FOOTPRINT AREA AT LR45	**23,800 sf**
	LR35	
	FOOTPRINT AREA AT LR35	0 sf
	LR15	
	FOOTPRINT AREA AT LR15	0 sf
TOTAL DEVELOPABLE FOOTPRINT		**66,600 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	
	Dedicated Open Space	
	Total Parcel Area	**130,147 sf**

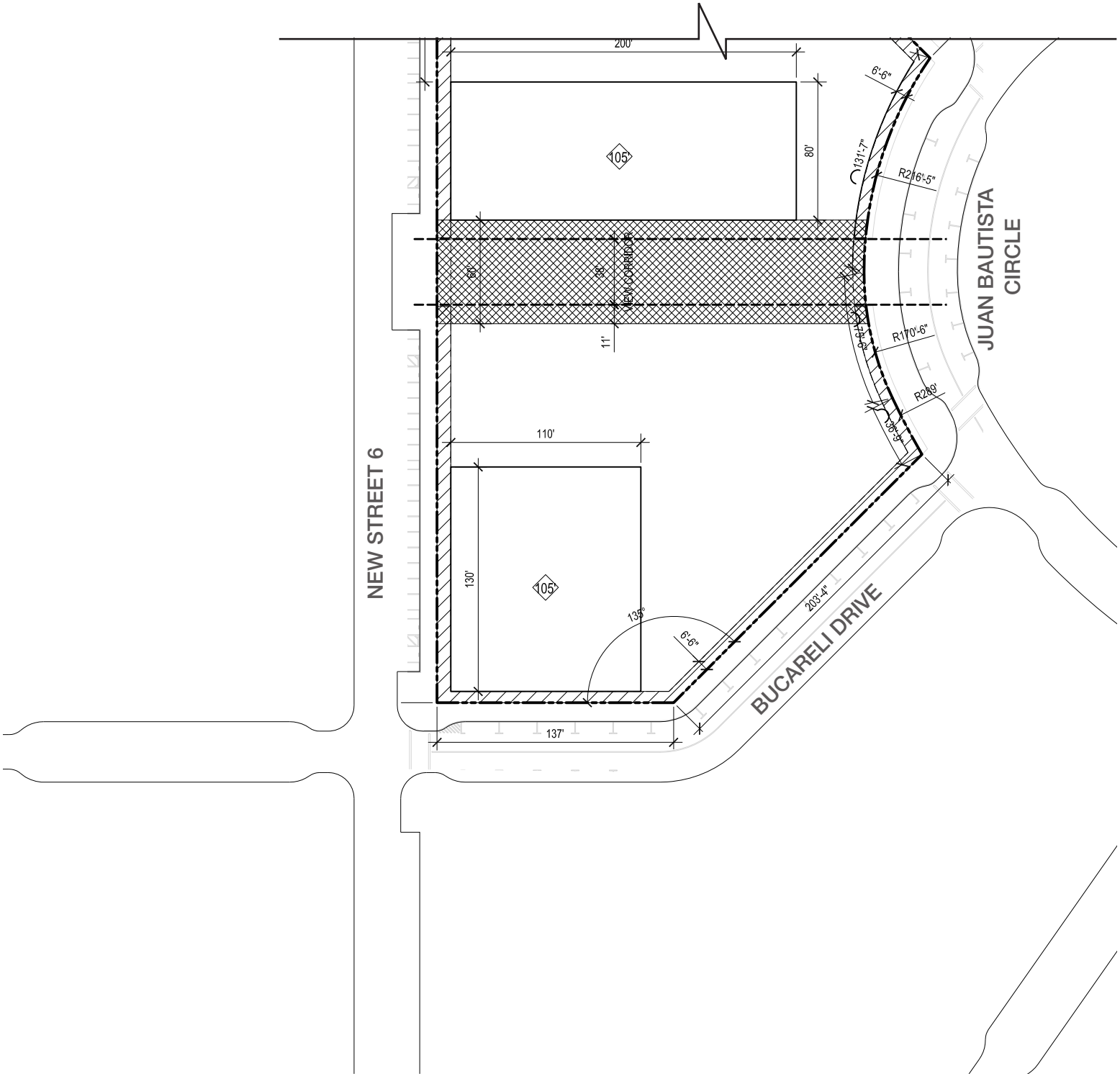
NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

DRAFT

block 12



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APPENDIX A regulating plan - block 13

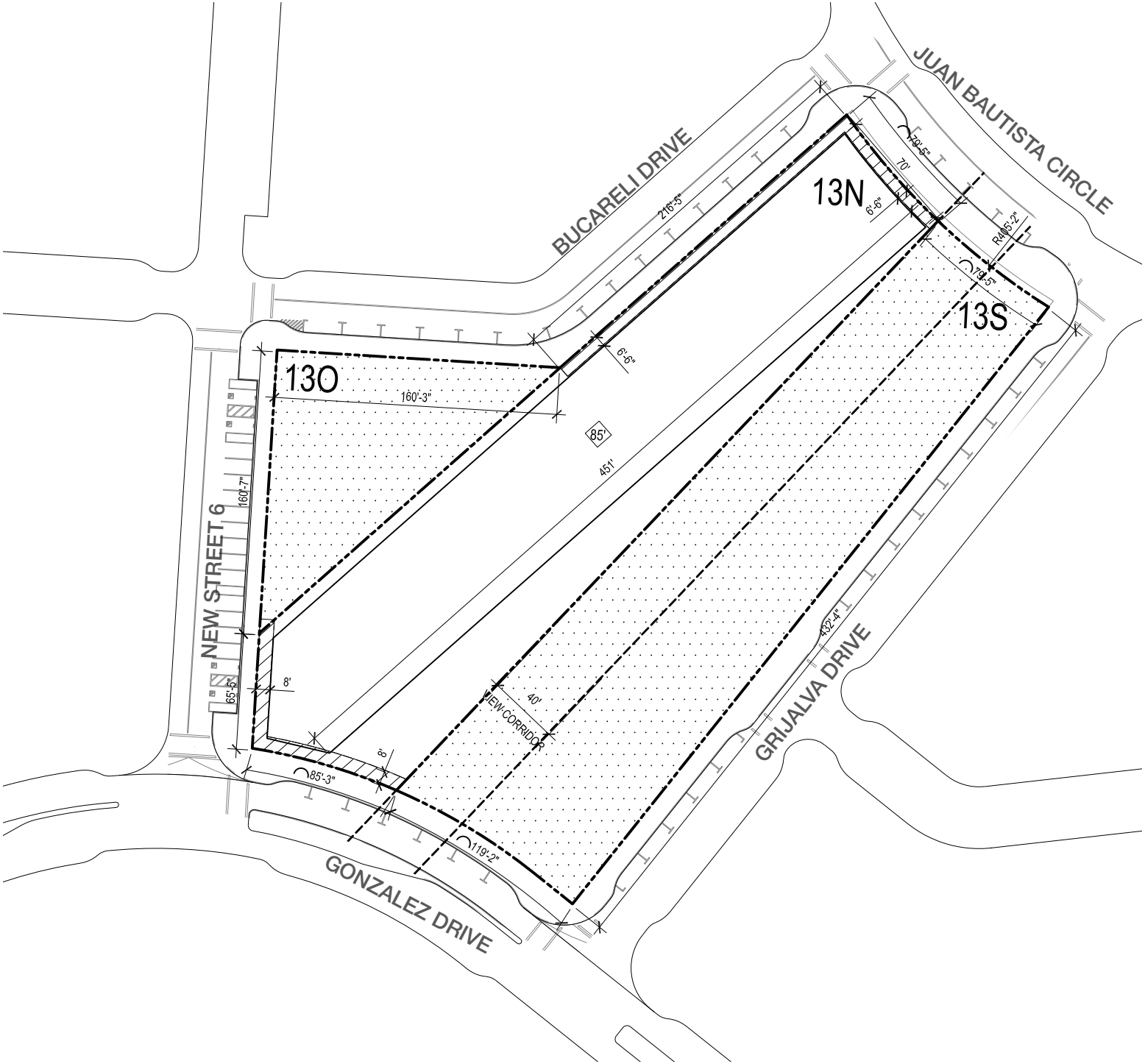
		BLOCK 13	13-N	13-S	13-0
HEIGHT ZONES	**T145**				
	FOOTPRINT AREA AT T145	0 sf	0 sf	0 sf	0 sf
	T115				
	FOOTPRINT AREA AT T115	0 sf	0 sf	0 sf	0 sf
	MR105				
	FOOTPRINT AREA AT MR105	0 sf	0 sf	0 sf	0 sf
	MR85				
	FOOTPRINT AREA AT MR85	**20,000 sf**	**20,000 sf**	0 sf	0 sf
	LR65				
	FOOTPRINT AREA AT LR65	**6,700 sf**	**6,700 sf**	0 sf	0 sf
	LR45				
	FOOTPRINT AREA AT LR45	0 sf	0 sf	0 sf	0 sf
	LR35				
	FOOTPRINT AREA AT LR35	0 sf	0 sf	0 sf	0 sf
	LR15				
	FOOTPRINT AREA AT LR15	0 sf	0 sf	0 sf	0 sf
TOTAL DEVELOPABLE FOOTPRINT		**26,700 sf**	**26,700 sf**	**0**	0 sf
LOT COVERAGE + OPEN SPACE	Existing Building Area				
	Dedicated Open Space Parcel	**55,527 sf**		**42,633 sf**	**12,893 sf**
	Total Parcel Area	**101,724 sf**	**46,198 sf**	**42,633 sf**	**12,893 sf**

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

block 13



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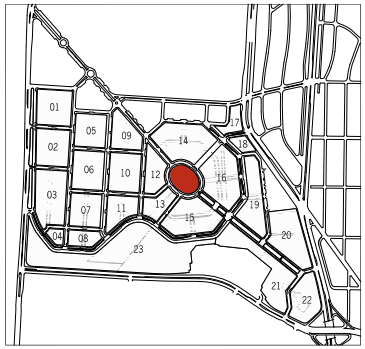
APPENDIX A regulating plan - block JBC

		BLOCK JBC
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	0 sf
	MR85	
	FOOTPRINT AREA AT MR85	0 sf
	LR65	
	FOOTPRINT AREA AT LR65	0 sf
	LR45	
	FOOTPRINT AREA AT LR45	0 sf
	LR35	
	FOOTPRINT AREA AT LR35	0 sf
	LR15	
	FOOTPRINT AREA AT LR15	0 sf
TOTAL DEVELOPABLE FOOTPRINT		**0 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	
	Dedicated Open Space	**106,359 sf**
	Total Parcel Area	**106,359 sf**

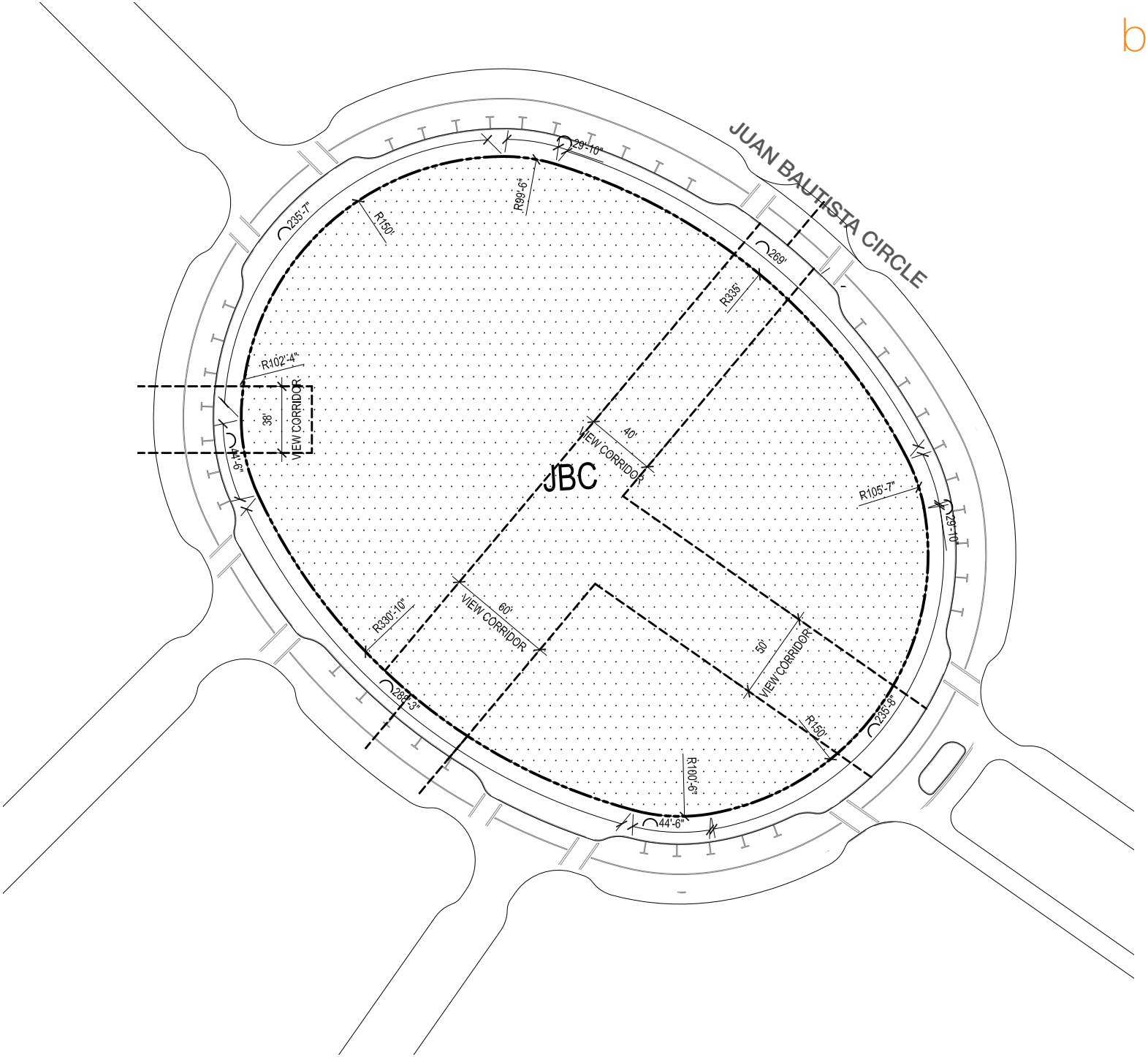


NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

block JBC



0 80' 160'

N

DRAFT

APPENDIX A regulating plan - block 14

		BLOCK 14
HEIGHT ZONES	T145	
	FOOTPRINT AREA AT T145	12,000 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	34,700 sf
	MR85	
	FOOTPRINT AREA AT MR85	16,100 sf
	LR65	
	FOOTPRINT AREA AT LR65	70,700 sf
	LR45	
	FOOTPRINT AREA AT LR45	22,200 sf
	LR35	
	FOOTPRINT AREA AT LR35	25,300 sf
	LR15	
	FOOTPRINT AREA AT LR15	0 sf
TOTAL DEVELOPABLE FOOTPRINT		181,000 sf
LOT COVERAGE + OPEN SPACE	Existing Building Area	
	Dedicated Open Space	
	Total Parcel Area	261,056 sf

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

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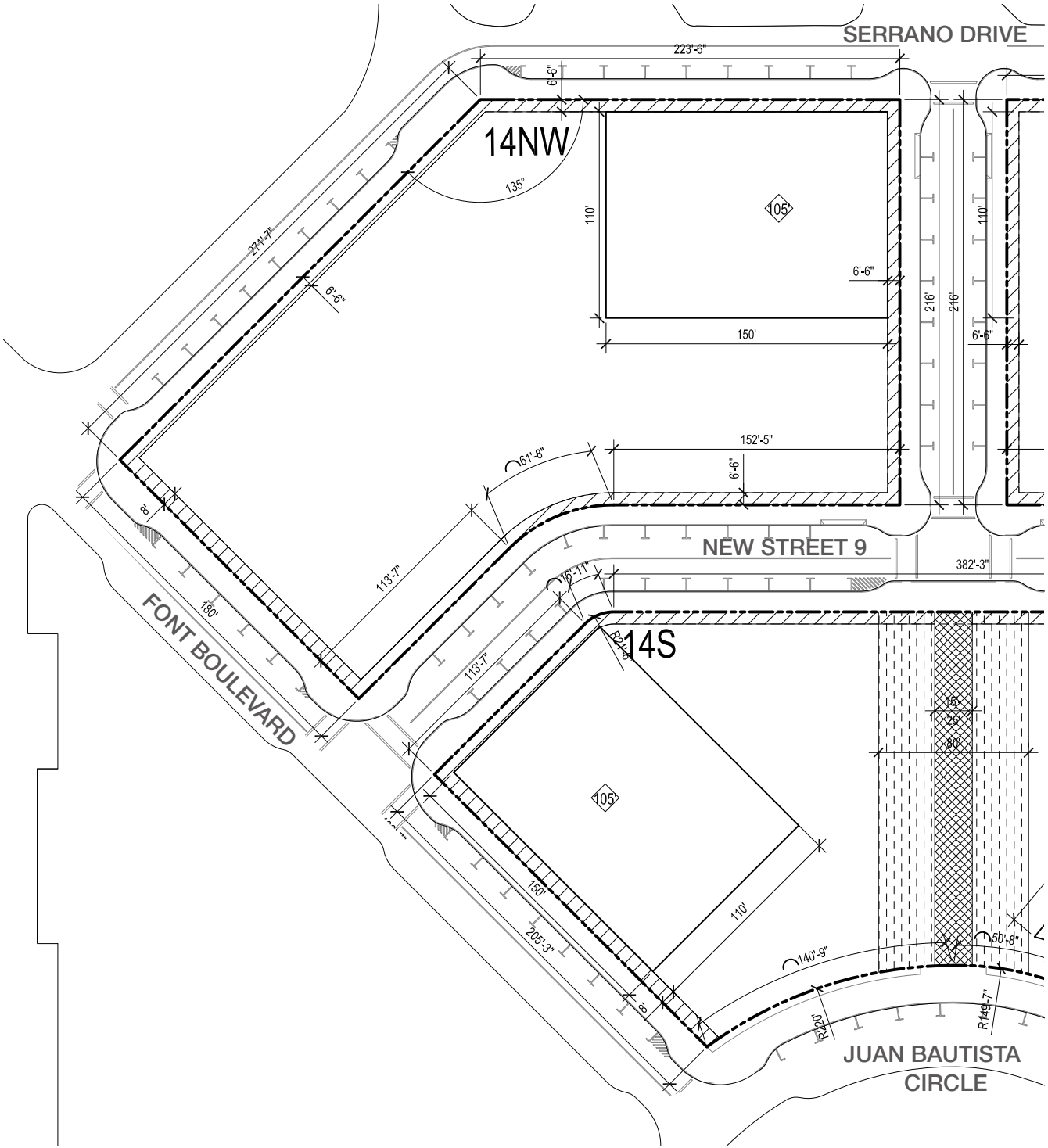
block 14



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APPENDIX A regulating plan - block 14

		BLOCK 14
HEIGHT ZONES	T145	
	FOOTPRINT AREA AT T145	12,000 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	34,700 sf
	MR85	
	FOOTPRINT AREA AT MR85	16,100 sf
	LR65	
	FOOTPRINT AREA AT LR65	70,700 sf
	LR45	
	FOOTPRINT AREA AT LR45	22,200 sf
	LR35	
	FOOTPRINT AREA AT LR35	25,300 sf
	LR15	
	FOOTPRINT AREA AT LR15	0 sf
TOTAL DEVELOPABLE FOOTPRINT		181,000 sf
LOT COVERAGE + OPEN SPACE	Existing Building Area	
	Dedicated Open Space	
	Total Parcel Area	261,056 sf

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

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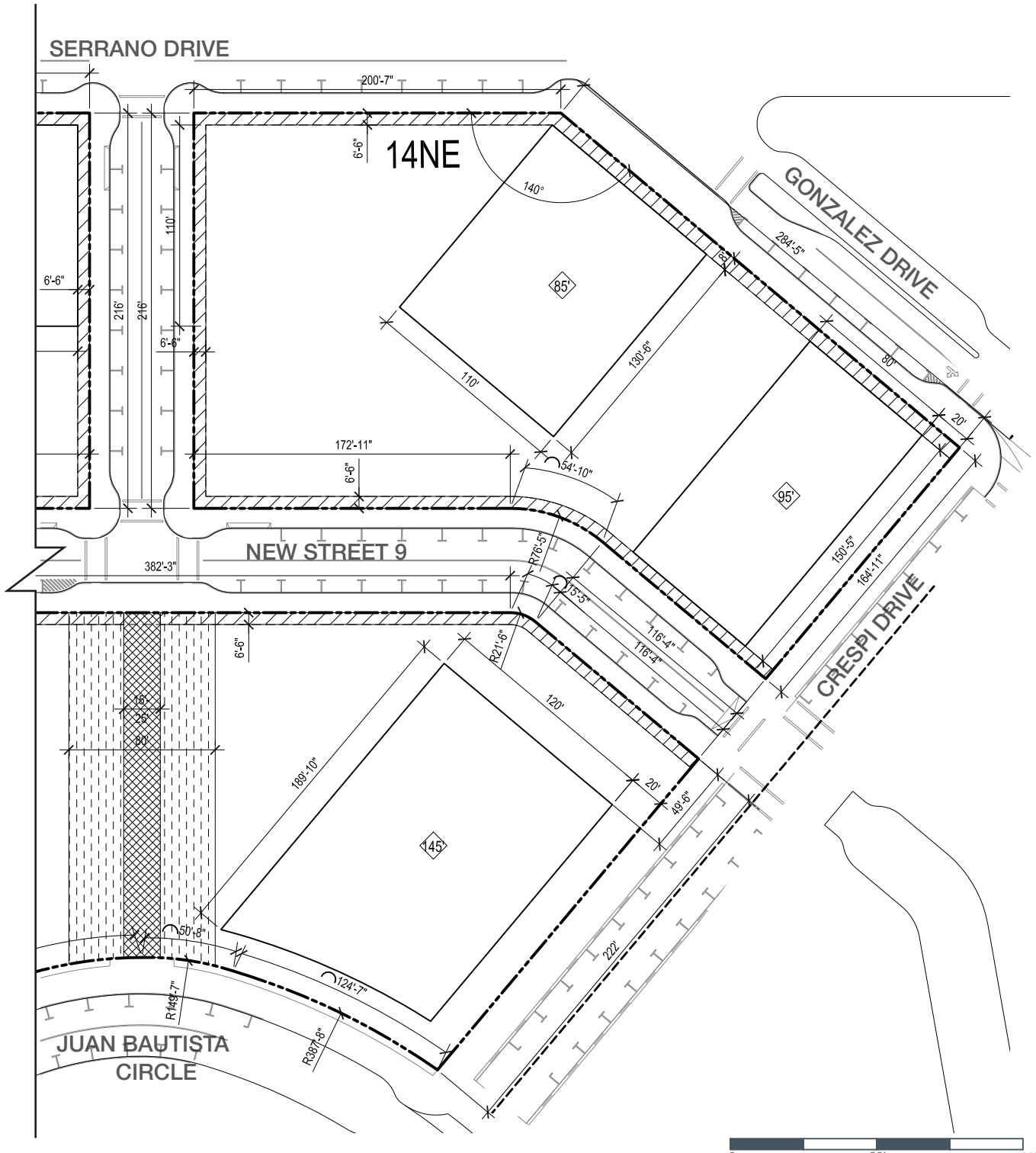

SERRANO DRIVE
200'-7"
6'-6"
14NE
140°
110'
6'-6"
216'
216'
6'-6"
85'
284'-5"
GONZALEZ DRIVE
80'
20'
110'
130'-6"
172'-11"
6'-6"
54'-10"
95'
NEW STREET 9
382'-3"
R76'-5"
15'-5"
150'-5"
164'-11"
116'-4"
116'-4"
6'-6"
R21'-6"
CRESPI DRIVE
120'
15'
25'
80'
189'-10"
20'
49'-6"
145'
50'-8"
124'-7"
222'
R449'-7"
R387'-8"
JUAN BAUTISTA
CIRCLE
0
80'
160'
N

DRAFT

APPENDIX A regulating plan - block 15

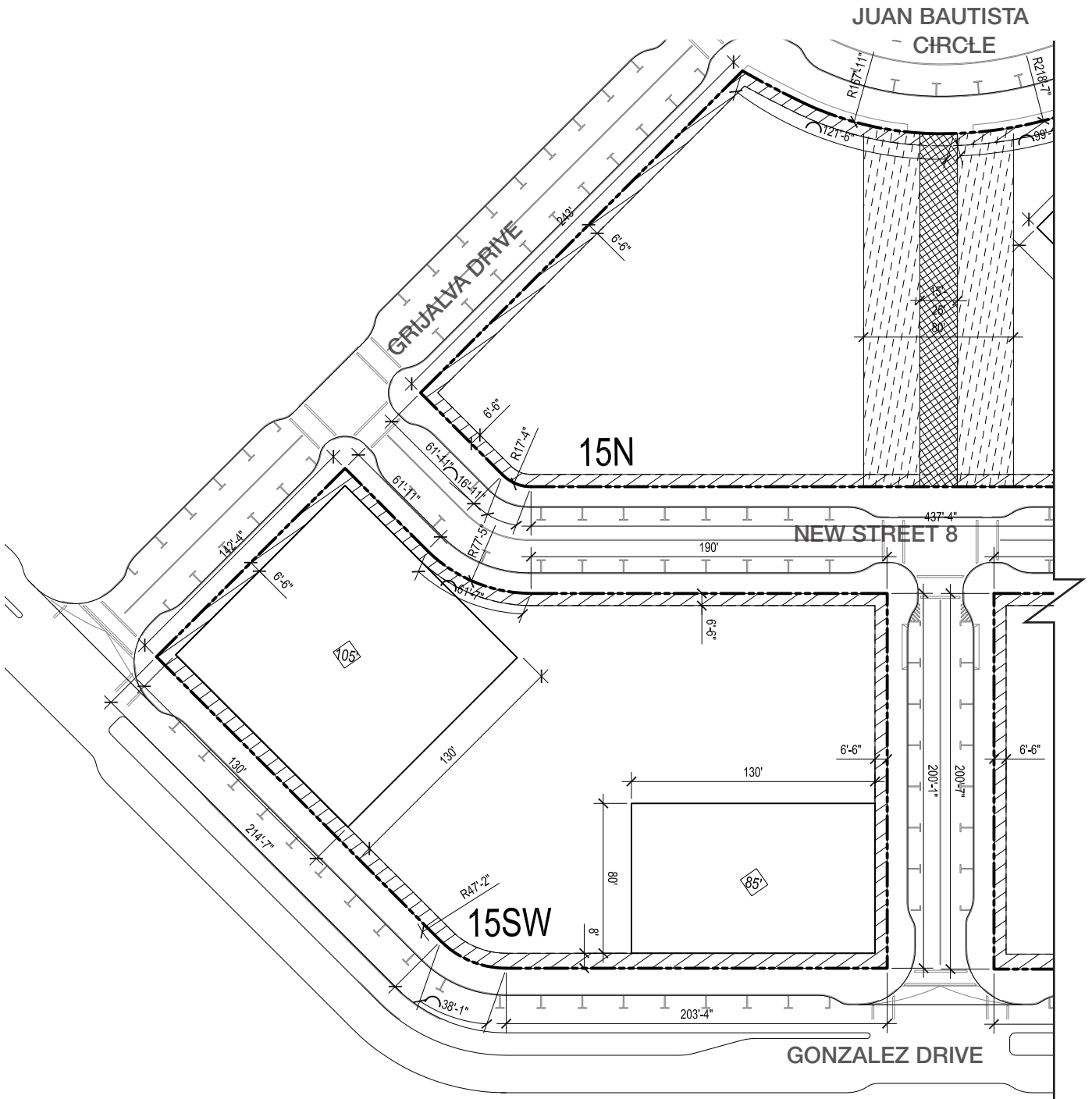
		BLOCK 15
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	**24,000 sf**
	MR85	
	FOOTPRINT AREA AT MR85	**12,000 sf**
	LR65	
	FOOTPRINT AREA AT LR65	**79,400 sf**
	LR45	
	FOOTPRINT AREA AT LR45	**18,900 sf**
	LR35	
	FOOTPRINT AREA AT LR35	0 sf
	LR15	
	FOOTPRINT AREA AT LR15	**1,200 sf**
TOTAL DEVELOPABLE FOOTPRINT		**135,500 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	
	Dedicated Open Space	
	Total Parcel Area	**219,191 sf**

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

block 15



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APPENDIX A regulating plan - block 15

		BLOCK 15
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	**24,000 sf**
	MR85	
	FOOTPRINT AREA AT MR85	**12,000 sf**
	LR65	
	FOOTPRINT AREA AT LR65	**79,400 sf**
	LR45	
	FOOTPRINT AREA AT LR45	**18,900 sf**
	LR35	
	FOOTPRINT AREA AT LR35	0 sf
	LR15	
	FOOTPRINT AREA AT LR15	**1,200 sf**
TOTAL DEVELOPABLE FOOTPRINT		**135,500 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	
	Dedicated Open Space	
	Total Parcel Area	**219,191 sf**

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

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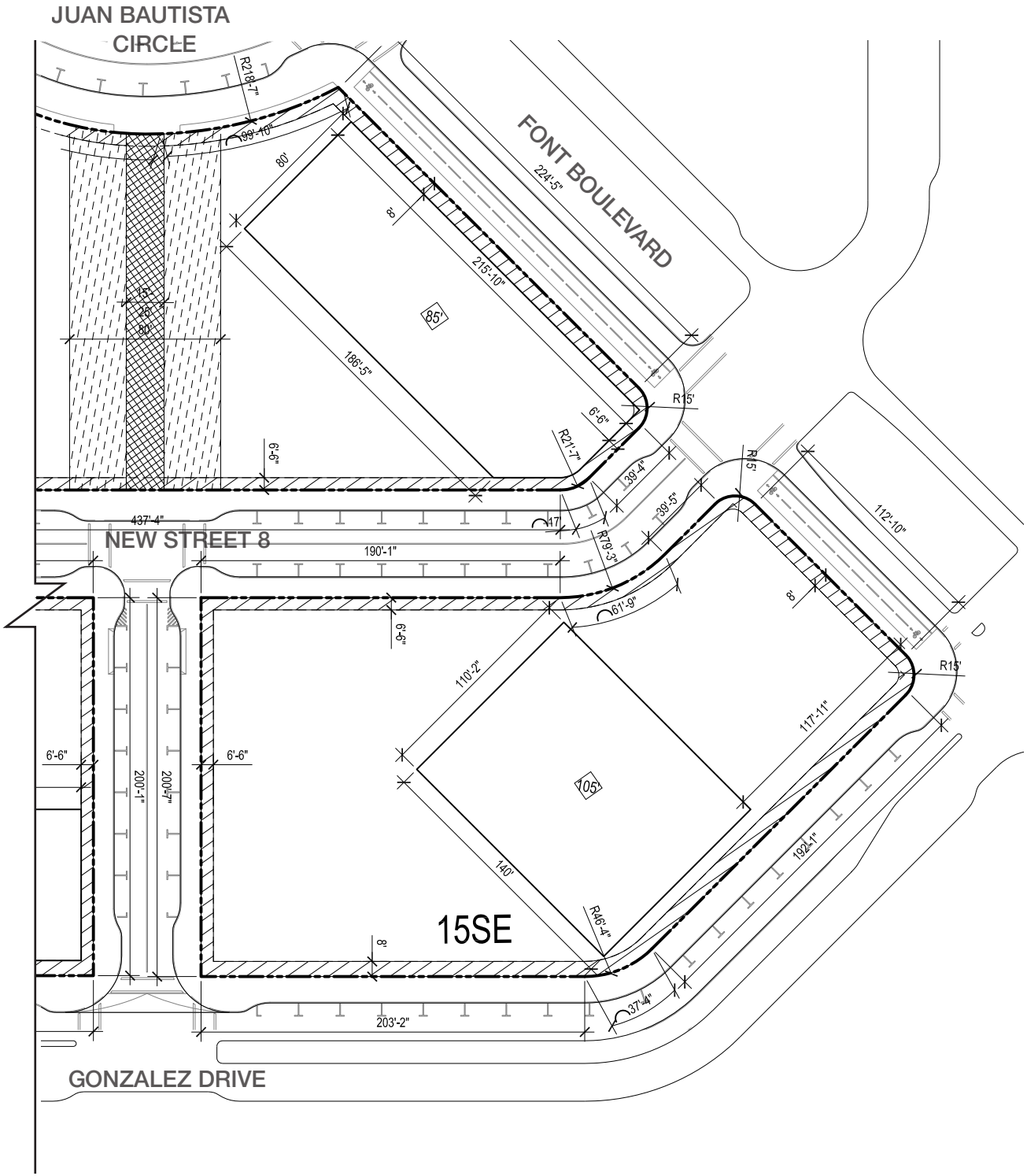
block 15



0 80' 160'

N

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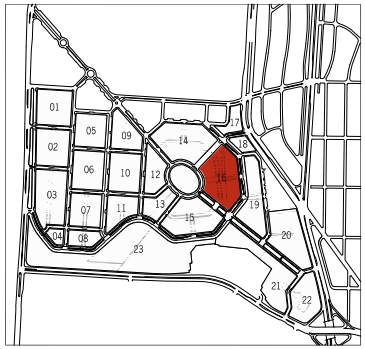
APPENDIX A regulating plan - block 16

		BLOCK 16
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	**20,100 sf**
	MR85	
	FOOTPRINT AREA AT MR85	**24,200 sf**
	LR65	
	FOOTPRINT AREA AT LR65	**41,900 sf**
	LR45	
	FOOTPRINT AREA AT LR45	**17,700 sf**
	LR35	
	FOOTPRINT AREA AT LR35	**1,900 sf**
	LR15	
	FOOTPRINT AREA AT LR15	**52,500 sf**
TOTAL DEVELOPABLE FOOTPRINT		**158,300 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	
	Dedicated Open Space	
	Total Parcel Area	**236,677 sf**

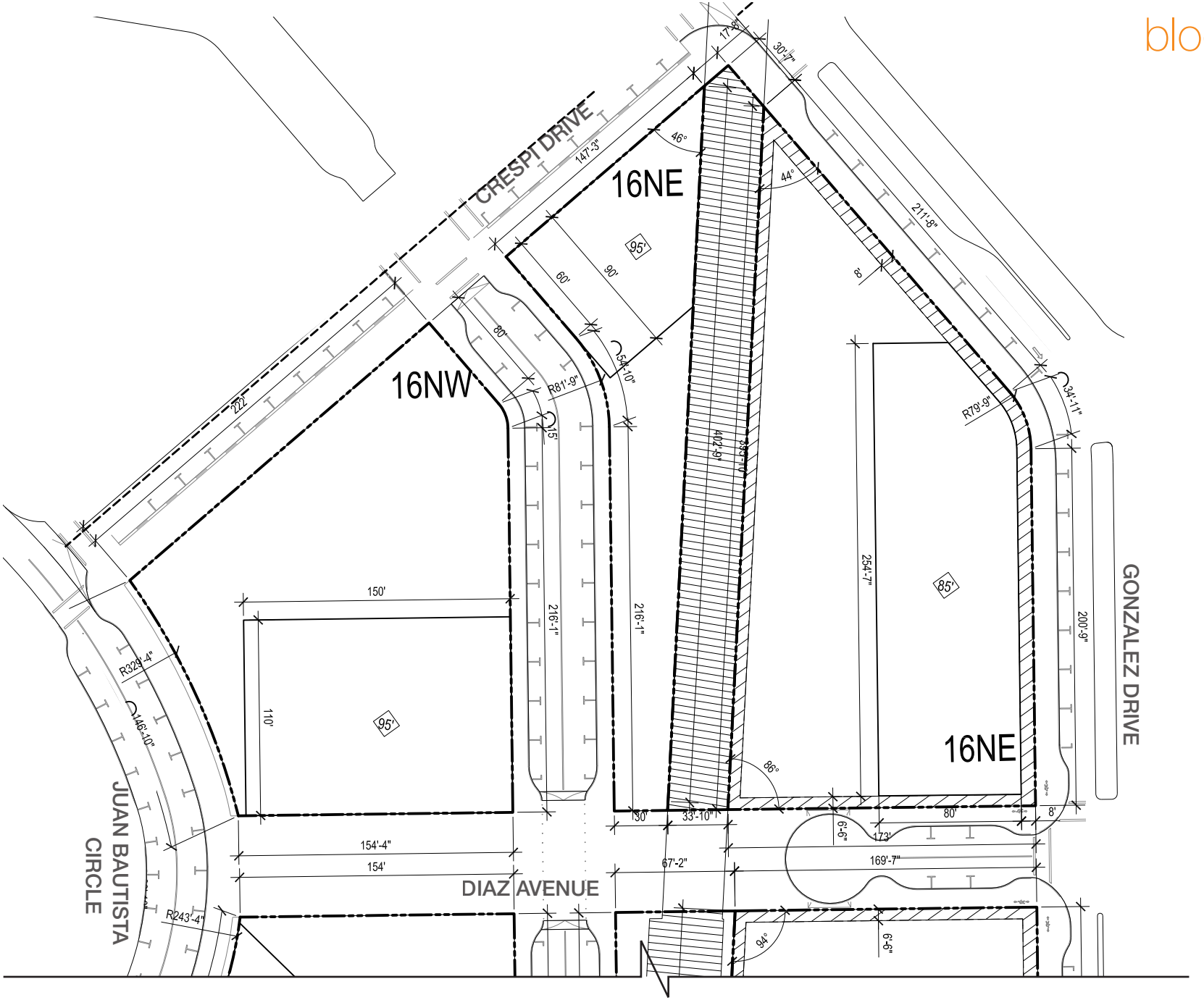


NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

block 16



0 80' 160'

N

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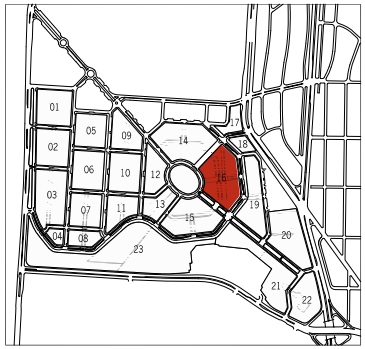
APPENDIX A regulating plan - block 16

		BLOCK 16
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	**20,100 sf**
	MR85	
	FOOTPRINT AREA AT MR85	**24,200 sf**
	LR65	
	FOOTPRINT AREA AT LR65	**41,900 sf**
	LR45	
	FOOTPRINT AREA AT LR45	**17,700 sf**
	LR35	
	FOOTPRINT AREA AT LR35	**1,900 sf**
	LR15	
	FOOTPRINT AREA AT LR15	**52,500 sf**
TOTAL DEVELOPABLE FOOTPRINT		**158,300 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	
	Dedicated Open Space	
	Total Parcel Area	**236,677 sf**



NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

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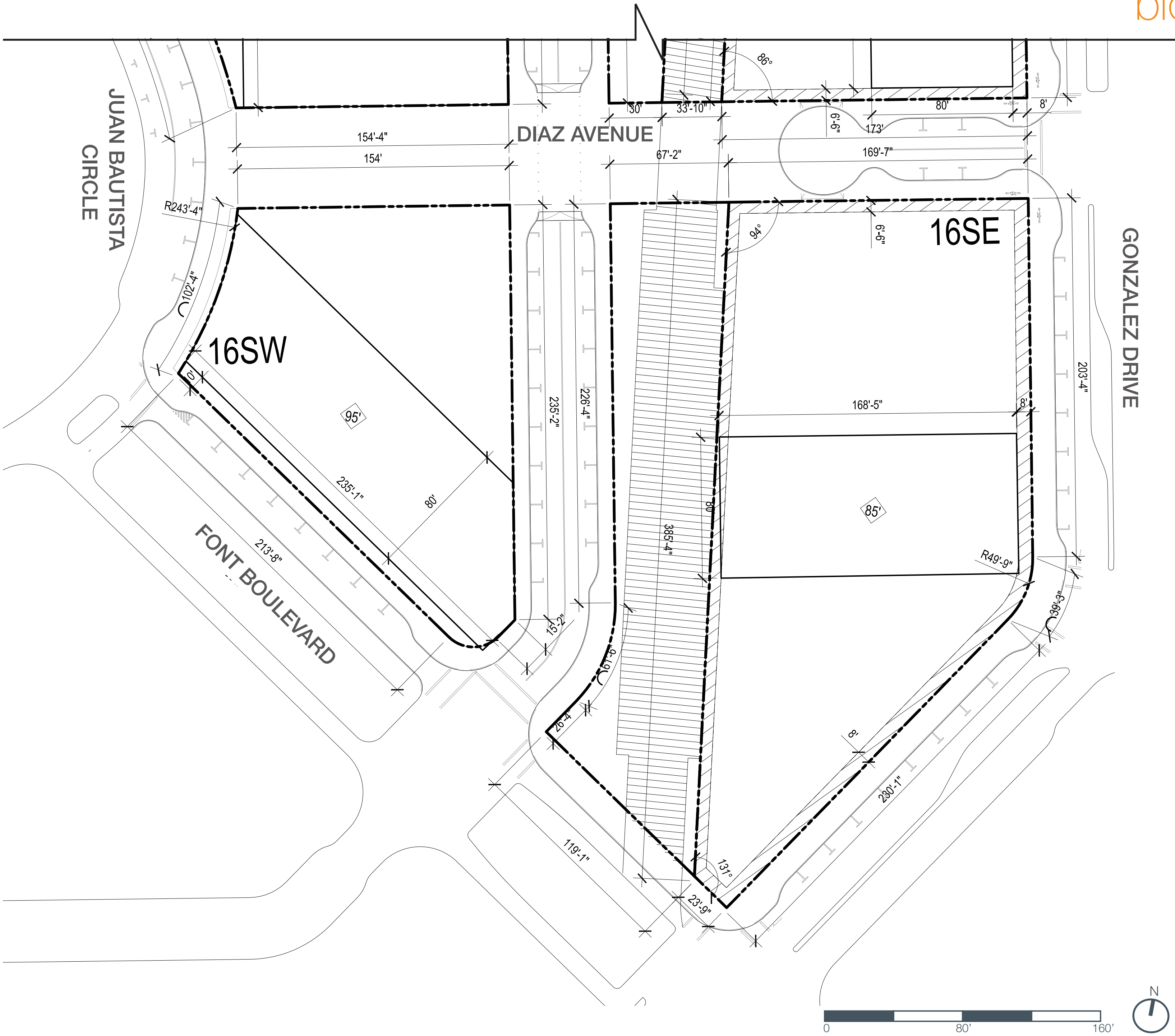

DIAZ AVENUE
JUAN BAUTISTA CIRCLE
GONZALEZ DRIVE
FONT BOULEVARD
16SW
16SE
154'-4"
154'
67'-2"
169'-7"
173'
80'
8'
30'
33'-10"
86°
94°
6'-6"
R243'-4"
102'-4"
95'
235'-1"
80'
213'-8"
235'-2"
226'-4"
15'-2"
61'-6"
26'-4"
385'-4"
119'-1"
23'-9"
131°
168'-5"
85'
R49'-9"
203'-4"
39'-3"
230'-1"
0
80'
160'
N

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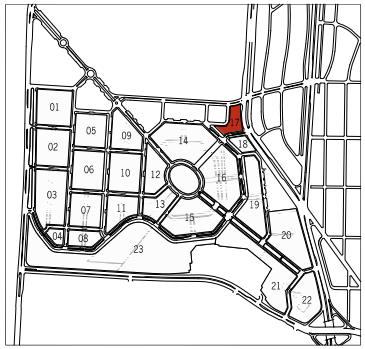
APPENDIX A regulating plan - block 17

		BLOCK 17
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	0 sf
	MR85	
	FOOTPRINT AREA AT MR85	0 sf
	LR65	
	FOOTPRINT AREA AT LR65	0 sf
	LR45	
	FOOTPRINT AREA AT LR45	0 sf
	LR35	
	FOOTPRINT AREA AT LR35	**3,200 sf**
	LR15	
	FOOTPRINT AREA AT LR15	0 sf
TOTAL DEVELOPABLE FOOTPRINT		**3,200 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	
	Dedicated Open Space	**37,600 sf**
	Total Parcel Area	**65,614 sf**

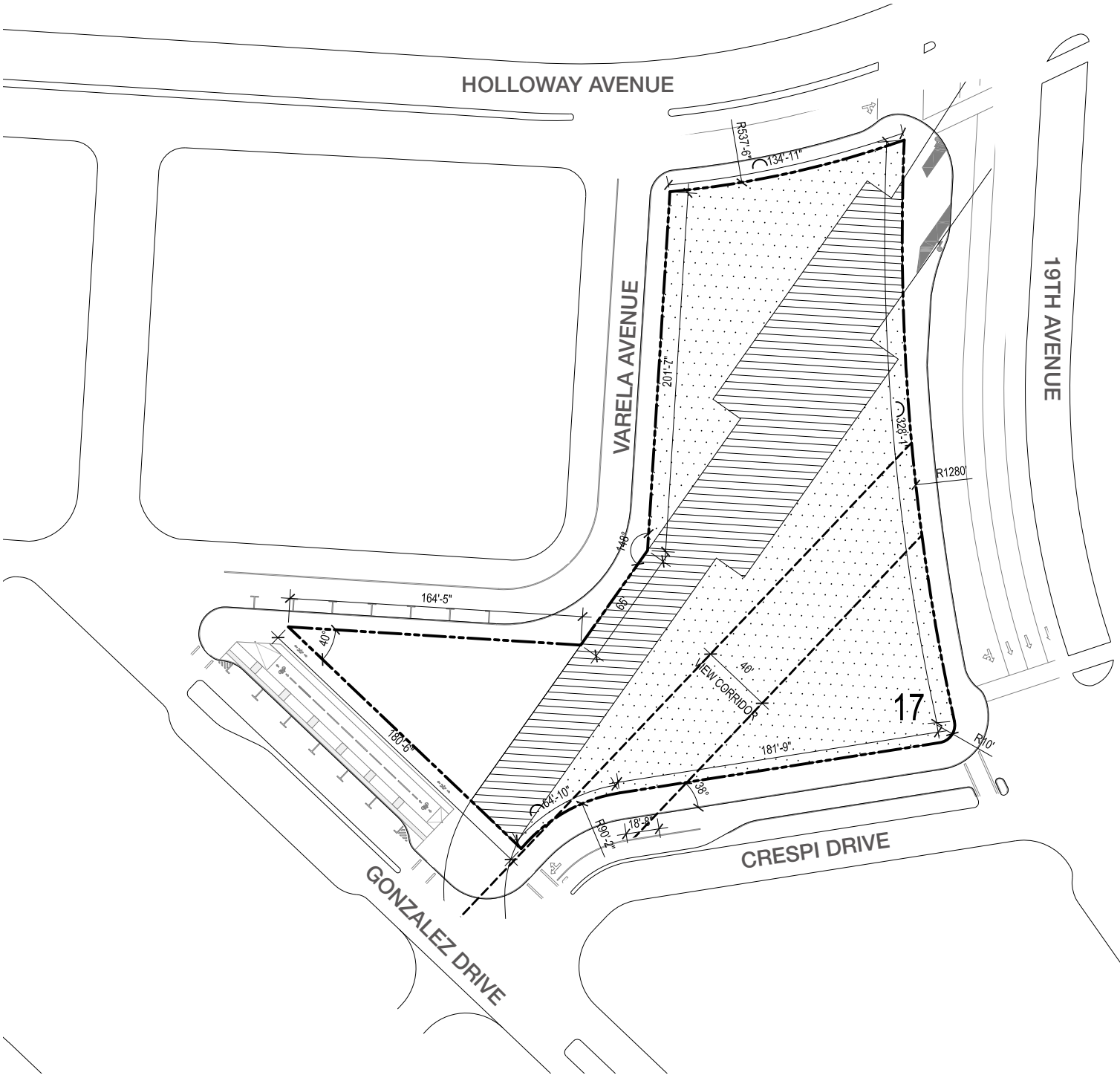


NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

block 17



0 80' 160'

N

DRAFT

APPENDIX A regulating plan - block 18

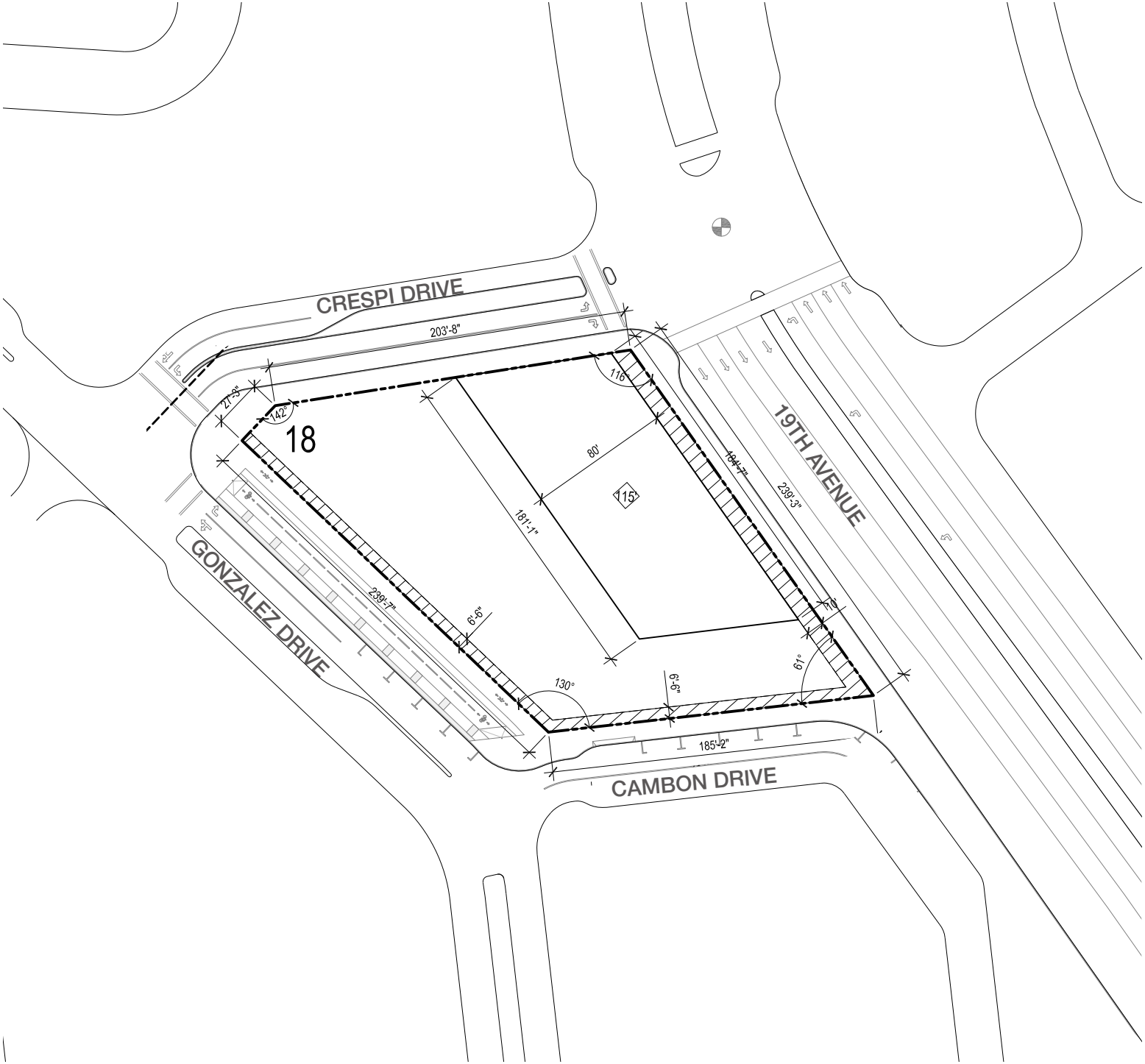
		BLOCK 18
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	**12,000 sf**
	MR105	
	FOOTPRINT AREA AT MR105	0 sf
	MR85	
	FOOTPRINT AREA AT MR85	0 sf
	LR65	
	FOOTPRINT AREA AT LR65	**15,000 sf**
	LR45	
	FOOTPRINT AREA AT LR45	0 sf
	LR35	
	FOOTPRINT AREA AT LR35	0 sf
	LR15	
	FOOTPRINT AREA AT LR15	**11,000 sf**
TOTAL DEVELOPABLE FOOTPRINT		**38,000 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	
	Dedicated Open Space	
	Total Parcel Area	**43,741 sf**

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

block 18



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APPENDIX A regulating plan - block 19N

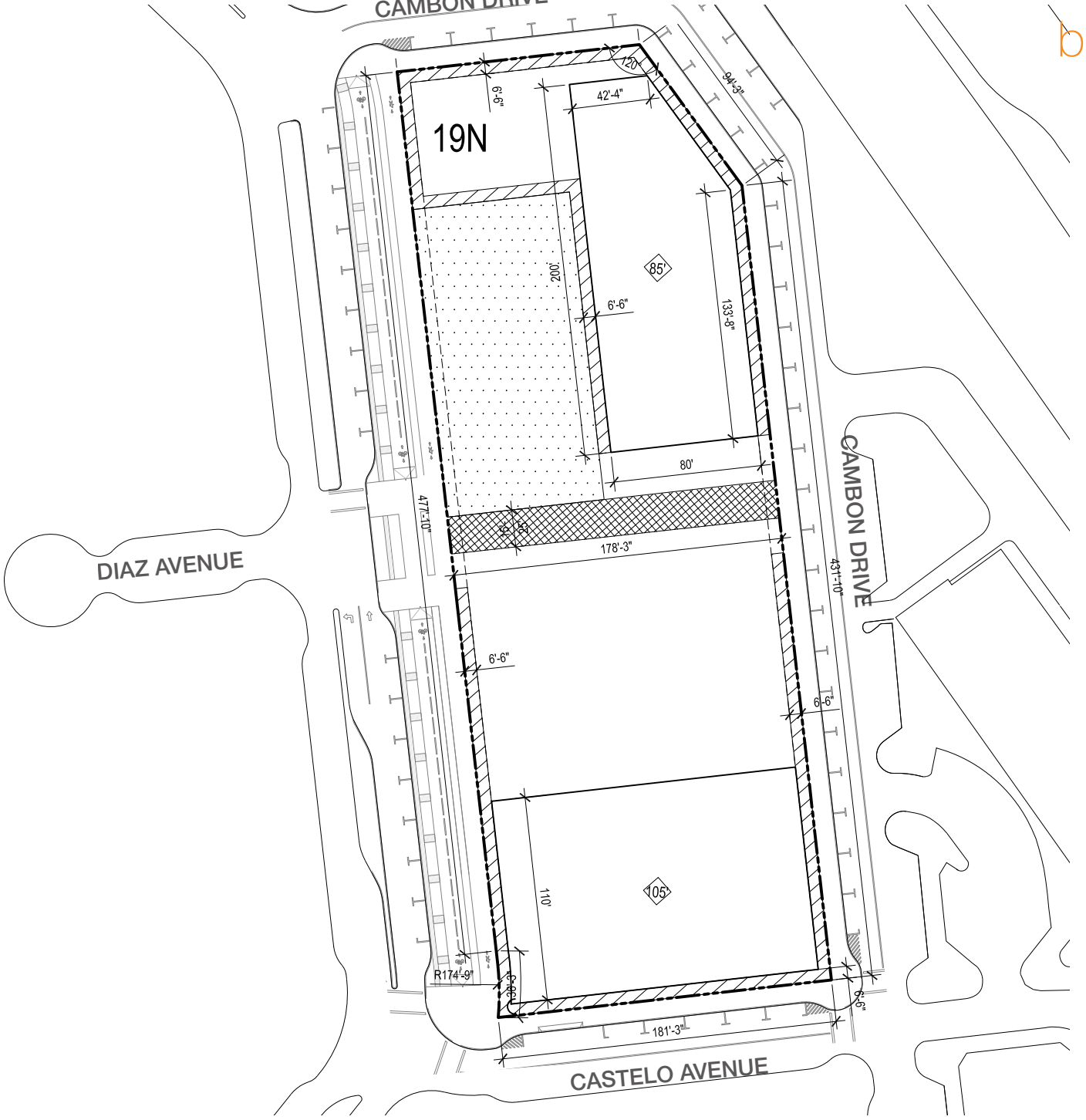
		BLOCK 19
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	**24,000 sf**
	MR85	
	FOOTPRINT AREA AT MR85	**19,200 sf**
	LR65	
	FOOTPRINT AREA AT LR65	**56,400 sf**
	LR45	
	FOOTPRINT AREA AT LR45	**4,400 sf**
	LR35	
	FOOTPRINT AREA AT LR35	0 sf
	LR15	
	FOOTPRINT AREA AT LR15	**1,500 sf**
TOTAL DEVELOPABLE FOOTPRINT		**105,500 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	
	Dedicated Open Space	**15,000 sf**
	Total Parcel Area	**213,668 sf**

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

block 19N



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APPENDIX A regulating plan - block 19S

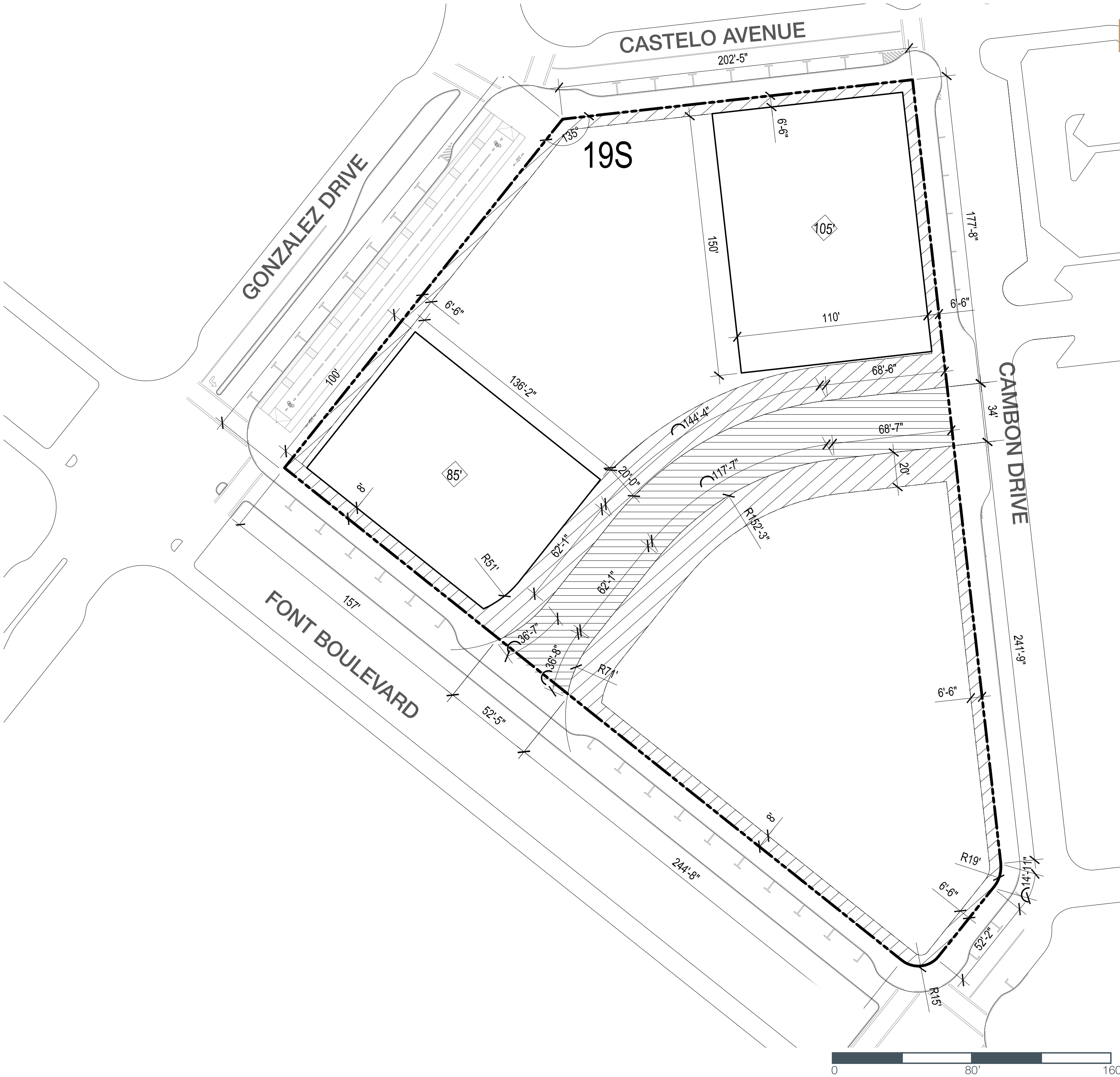
		BLOCK 19
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	**24,000 sf**
	MR85	
	FOOTPRINT AREA AT MR85	**19,200 sf**
	LR65	
	FOOTPRINT AREA AT LR65	**56,400 sf**
	LR45	
	FOOTPRINT AREA AT LR45	**4,400 sf**
	LR35	
	FOOTPRINT AREA AT LR35	0 sf
	LR15	
	FOOTPRINT AREA AT LR15	**1,500 sf**
TOTAL DEVELOPABLE FOOTPRINT		**105,500 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	
	Dedicated Open Space	**15,000 sf**
	Total Parcel Area	**213,668 sf**

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

block 19S



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APPENDIX A regulating plan - block 20

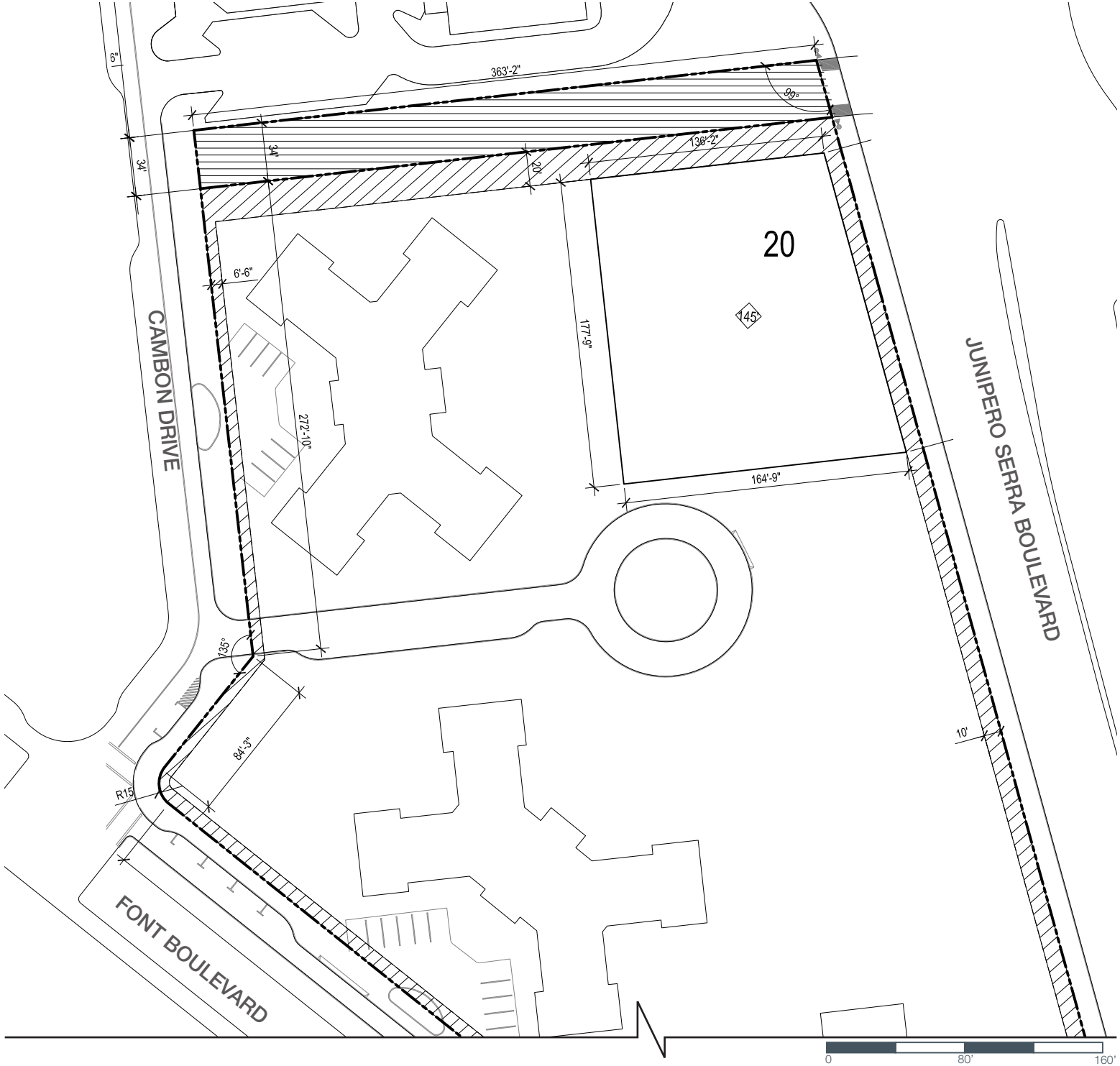
		BLOCK 20
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	**12,000 sf**
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	0 sf
	MR85	
	FOOTPRINT AREA AT MR85	0 sf
	LR65	
	FOOTPRINT AREA AT LR65	**14,600 sf**
	LR45	
	FOOTPRINT AREA AT LR45	0 sf
	LR35	
	FOOTPRINT AREA AT LR35	0 sf
	LR15	
	FOOTPRINT AREA AT LR15	0 sf
TOTAL DEVELOPABLE FOOTPRINT		**26,600 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	**44,336 sf**
	Dedicated Open Space	
	Total Parcel Area	**281,642 sf**

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

block 20



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APPENDIX A regulating plan - block 20

		BLOCK 20
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	**12,000 sf**
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	0 sf
	MR85	
	FOOTPRINT AREA AT MR85	0 sf
	LR65	
	FOOTPRINT AREA AT LR65	**14,600 sf**
	LR45	
	FOOTPRINT AREA AT LR45	0 sf
	LR35	
	FOOTPRINT AREA AT LR35	0 sf
	LR15	
	FOOTPRINT AREA AT LR15	0 sf
TOTAL DEVELOPABLE FOOTPRINT		**26,600 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	**44,336 sf**
	Dedicated Open Space	
	Total Parcel Area	**281,642 sf**

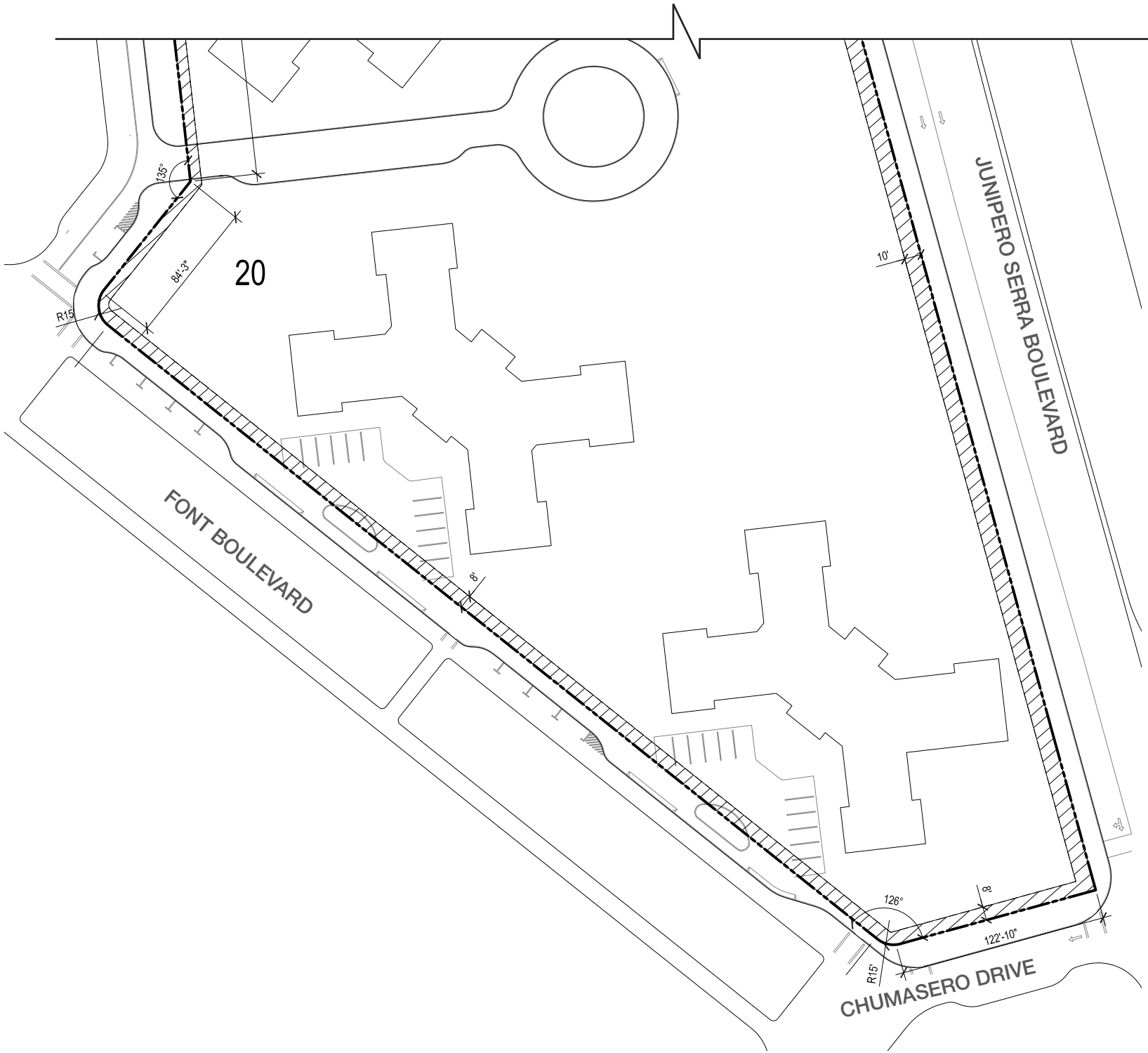
NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

DRAFT

block 20



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APPENDIX A regulating plan - block 21

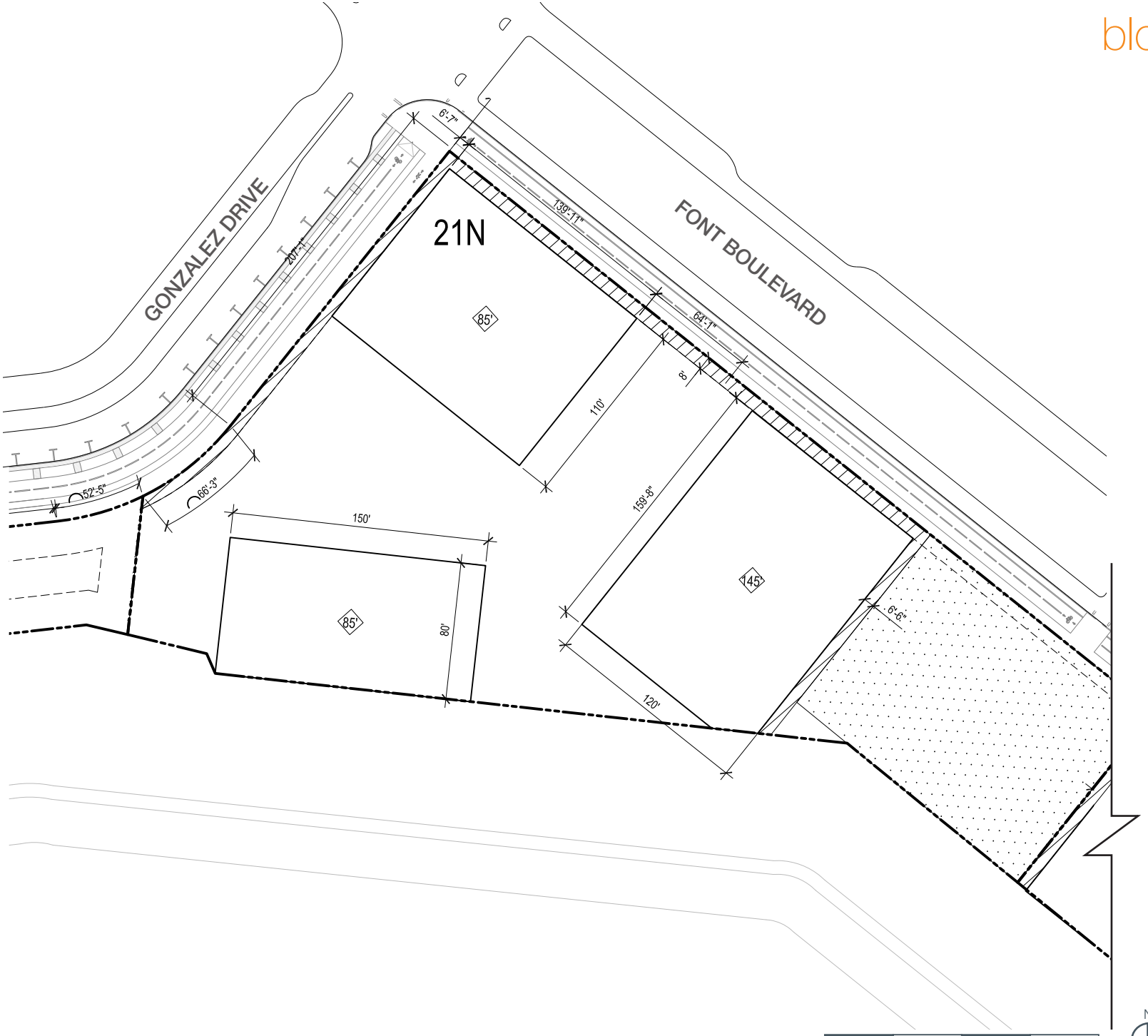
		BLOCK 21
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	**36,000 sf**
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	0 sf
	MR85	
	FOOTPRINT AREA AT MR85	**9,800 sf**
	LR65	
	FOOTPRINT AREA AT LR65	**38,800 sf**
	LR45	
	FOOTPRINT AREA AT LR45	0 sf
	LR35	
	FOOTPRINT AREA AT LR35	0 sf
	LR15	
	FOOTPRINT AREA AT LR15	**2,600 sf**
TOTAL DEVELOPABLE FOOTPRINT		**87,200 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	**14,779 sf**
	Dedicated Open Space	**15,000 sf**
	Total Parcel Area	**321,751 sf**

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

block 21N



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APPENDIX A regulating plan - block 21

		BLOCK 21
HEIGHT ZONES	T145	
	FOOTPRINT AREA AT T145	36,000 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	0 sf
	MR85	
	FOOTPRINT AREA AT MR85	9,800 sf
	LR65	
	FOOTPRINT AREA AT LR65	38,800 sf
	LR45	
	FOOTPRINT AREA AT LR45	0 sf
	LR35	
	FOOTPRINT AREA AT LR35	0 sf
	LR15	
	FOOTPRINT AREA AT LR15	2,600 sf
TOTAL DEVELOPABLE FOOTPRINT		87,200 sf
LOT COVERAGE + OPEN SPACE	Existing Building Area	14,779 sf
	Dedicated Open Space	15,000 sf
	Total Parcel Area	321,751 sf

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

block 21S

DRAFT

APPENDIX A regulating plan - block 21

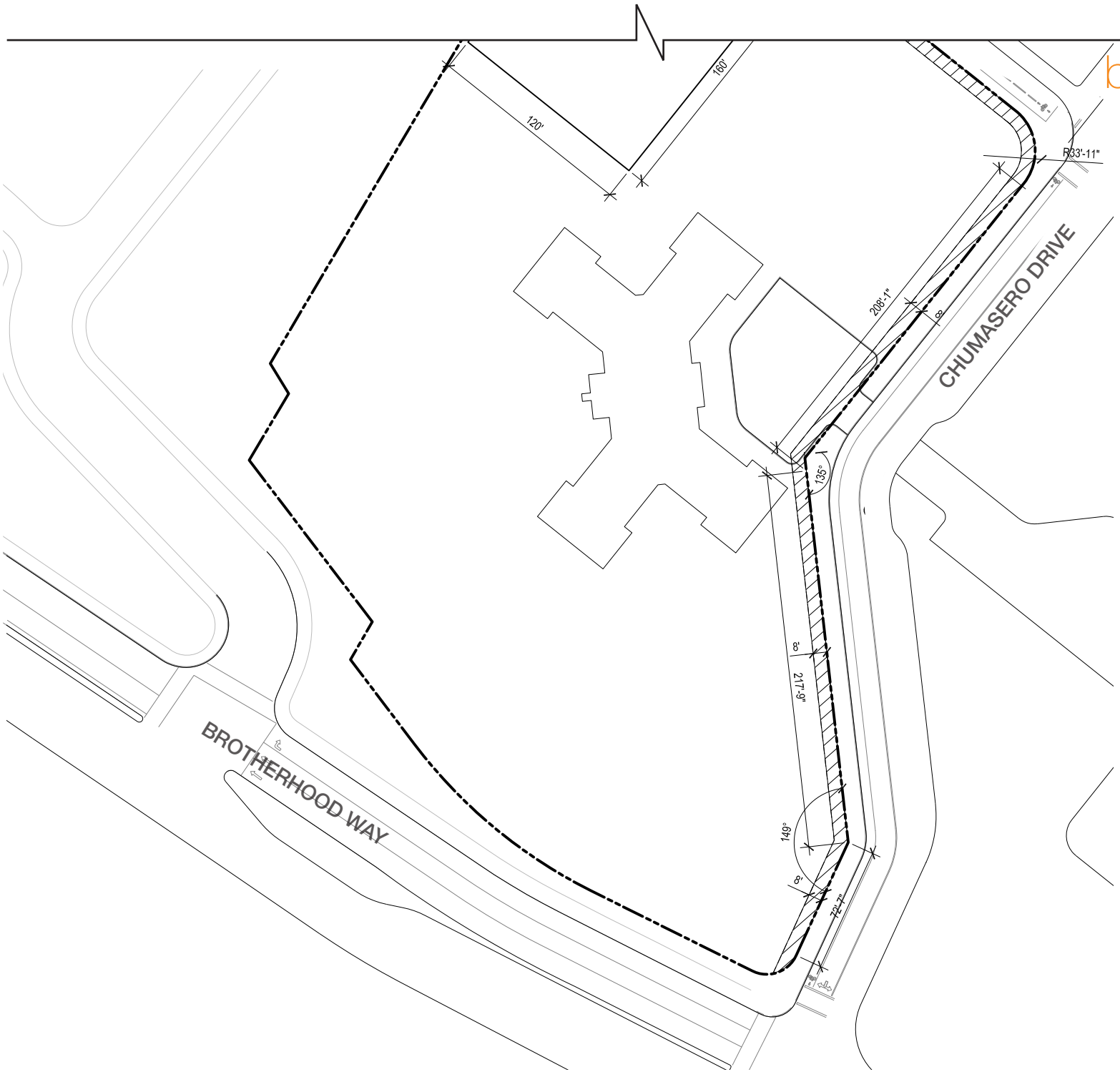
		BLOCK 21
HEIGHT ZONES	T145	
	FOOTPRINT AREA AT T145	36,000 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	0 sf
	MR85	
	FOOTPRINT AREA AT MR85	9,800 sf
	LR65	
	FOOTPRINT AREA AT LR65	38,800 sf
	LR45	
	FOOTPRINT AREA AT LR45	0 sf
	LR35	
	FOOTPRINT AREA AT LR35	0 sf
	LR15	
	FOOTPRINT AREA AT LR15	2,600 sf
TOTAL DEVELOPABLE FOOTPRINT		87,200 sf
LOT COVERAGE + OPEN SPACE	Existing Building Area	14,779 sf
	Dedicated Open Space	15,000 sf
	Total Parcel Area	321,751 sf

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

block 21S



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APPENDIX A regulating plan - block 22

		BLOCK 22
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	**24,000 sf**
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	0 sf
	MR85	
	FOOTPRINT AREA AT MR85	0 sf
	LR65	
	FOOTPRINT AREA AT LR65	0 sf
	LR45	
	FOOTPRINT AREA AT LR45	0 sf
	LR35	
	FOOTPRINT AREA AT LR35	0 sf
	LR15	
	FOOTPRINT AREA AT LR15	0 sf
TOTAL DEVELOPABLE FOOTPRINT		**24,000 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	**14,779 sf**
	Dedicated Open Space	
	Total Parcel Area	**192,525 sf**

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

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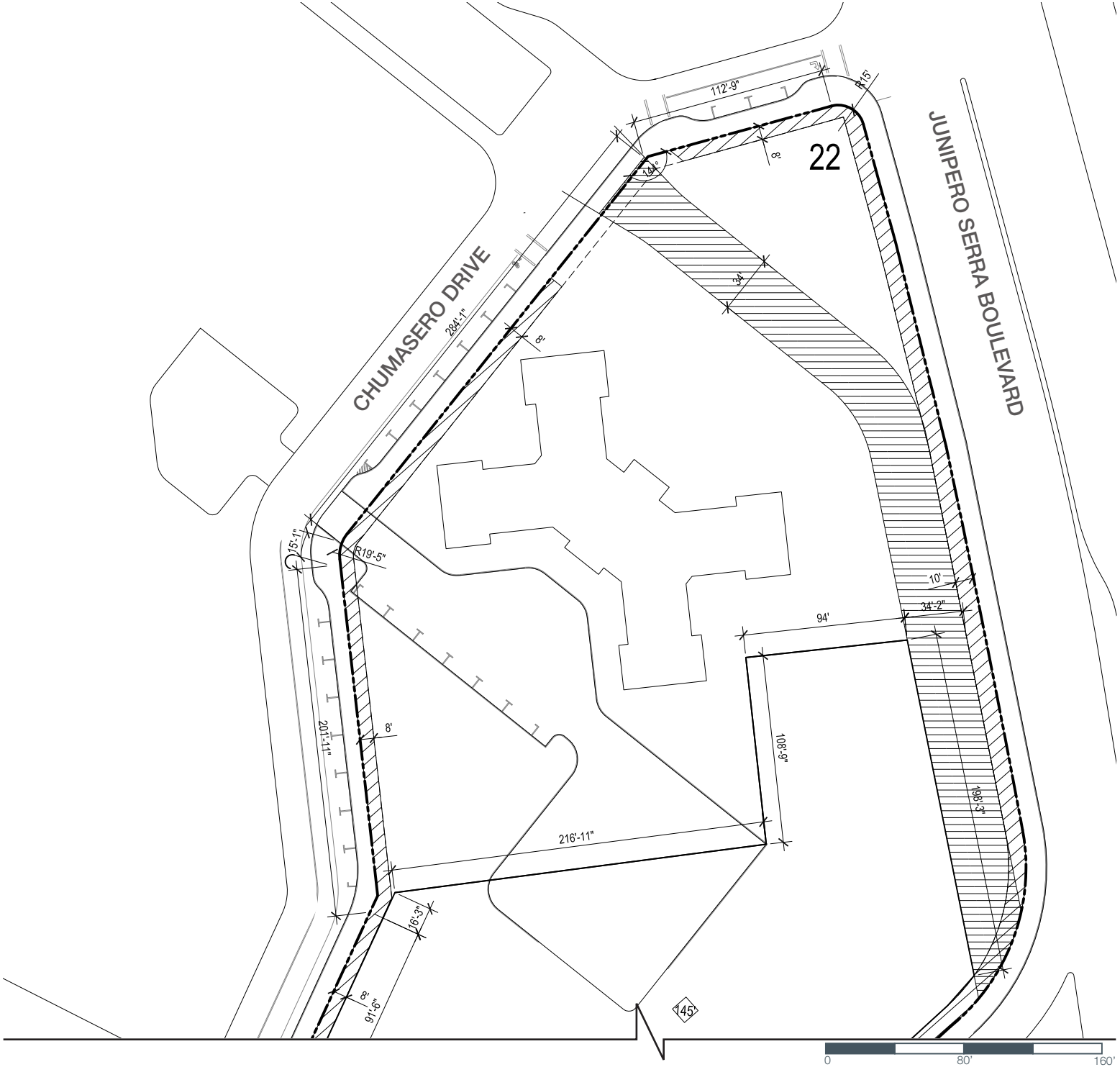
block 22



DRAFT

APPENDIX A regulating plan - block 22

		BLOCK 22
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	**24,000 sf**
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	0 sf
	MR85	
	FOOTPRINT AREA AT MR85	0 sf
	LR65	
	FOOTPRINT AREA AT LR65	0 sf
	LR45	
	FOOTPRINT AREA AT LR45	0 sf
	LR35	
	FOOTPRINT AREA AT LR35	0 sf
	LR15	
	FOOTPRINT AREA AT LR15	0 sf
TOTAL DEVELOPABLE FOOTPRINT		**24,000 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	**14,779 sf**
	Dedicated Open Space	
	Total Parcel Area	**192,525 sf**

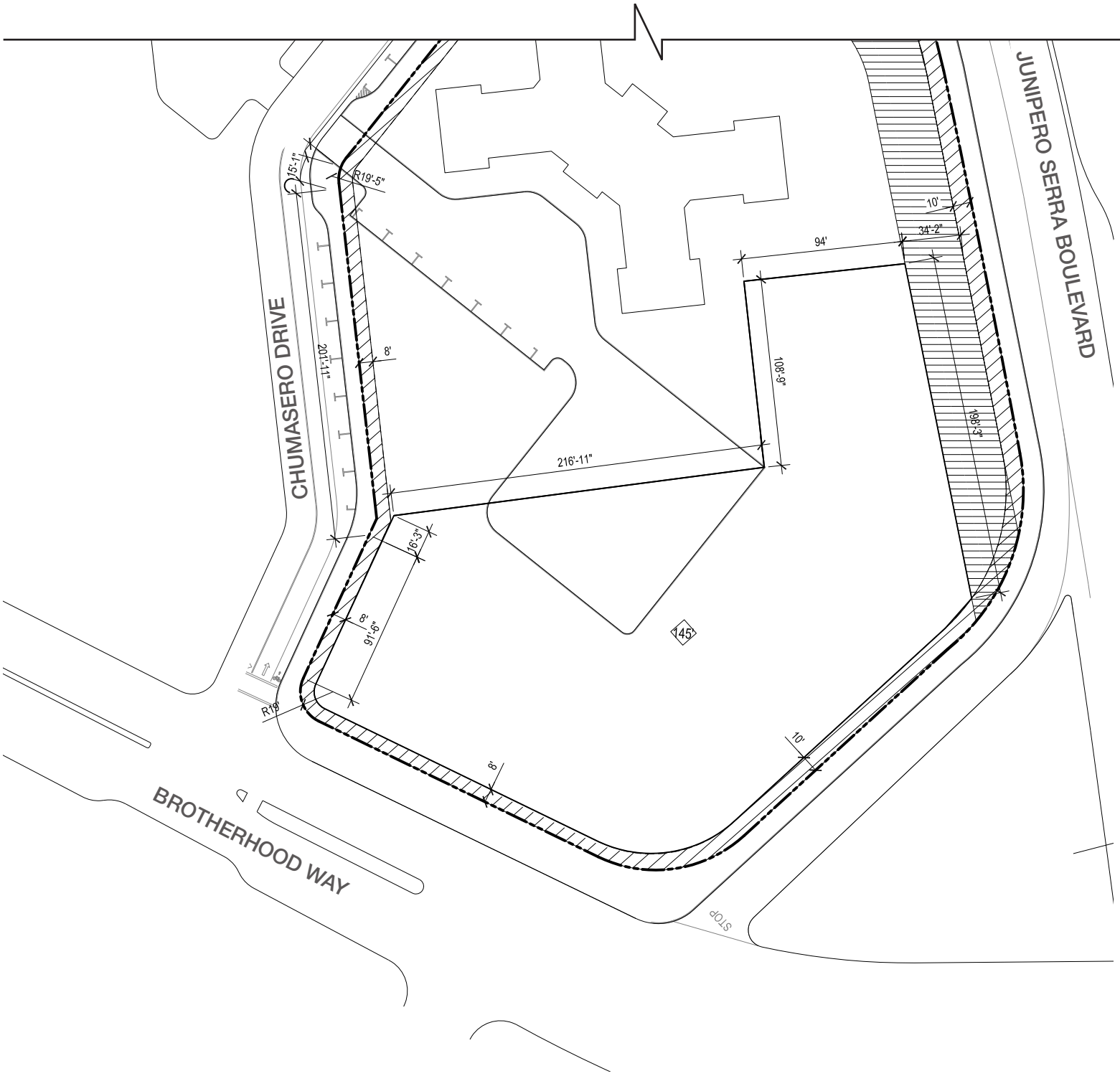
NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

DRAFT

block 22



DRAFT

APPENDIX A regulating plan - block 23

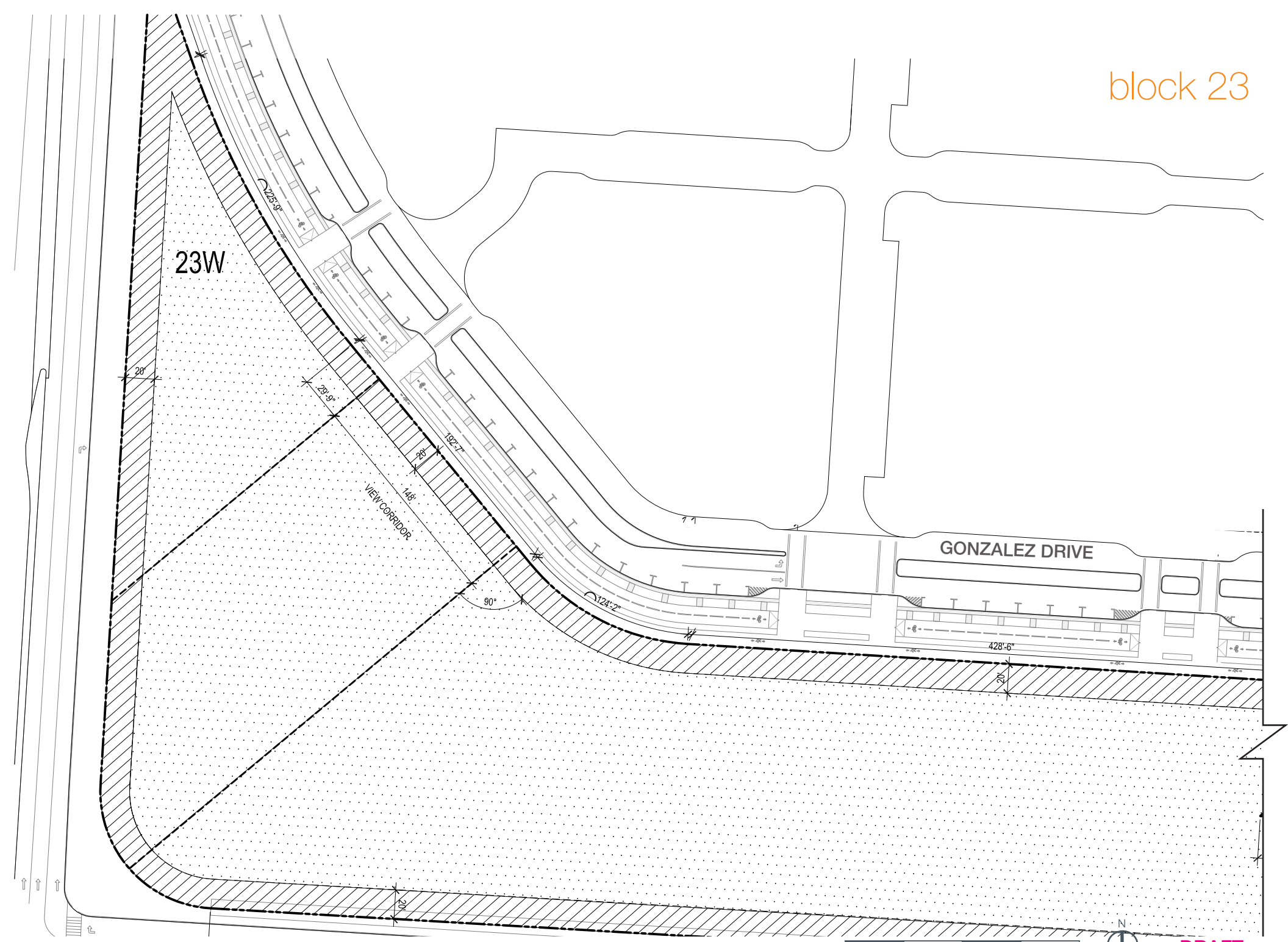
		BLOCK 23
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	0 sf
	MR85	
	FOOTPRINT AREA AT MR85	0 sf
	LR65	
	FOOTPRINT AREA AT LR65	0 sf
	LR45	
	FOOTPRINT AREA AT LR45	0 sf
	LR35	
	FOOTPRINT AREA AT LR35	**27,400 sf**
	LR15	
	FOOTPRINT AREA AT LR15	**6,000 sf**
TOTAL DEVELOPABLE FOOTPRINT		**33,400 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	**0 sf**
	Dedicated Open Space	
	Total Parcel Area	**862,804 sf**

NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

block 23



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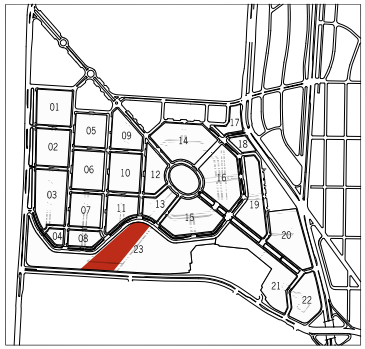
APPENDIX A regulating plan - block 23

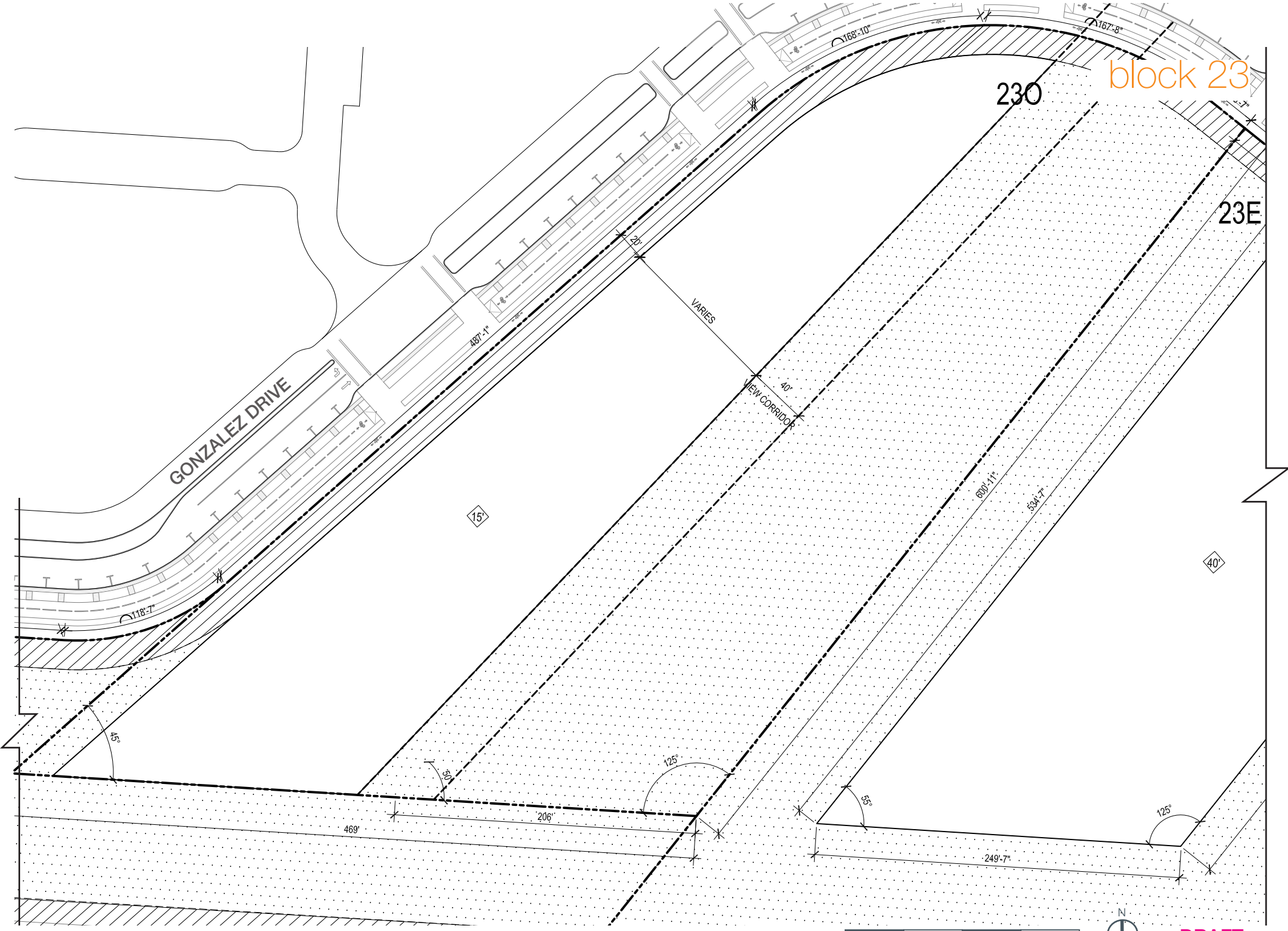
		BLOCK 23
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	0 sf
	MR85	
	FOOTPRINT AREA AT MR85	0 sf
	LR65	
	FOOTPRINT AREA AT LR65	0 sf
	LR45	
	FOOTPRINT AREA AT LR45	0 sf
	LR35	
	FOOTPRINT AREA AT LR35	**27,400 sf**
	LR15	
	FOOTPRINT AREA AT LR15	**6,000 sf**
TOTAL DEVELOPABLE FOOTPRINT		**33,400 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	**0 sf**
	Dedicated Open Space	
	Total Parcel Area	**862,804 sf**



NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit


block 23
23O
23E
GONZALEZ DRIVE
VIEW CORRIDOR
VARIES
20'
40'
15'
40'
118'-7"
487'-1"
168'-10"
167'-8"
600'-11"
534'-7"
45°
50'
125°
206'
469'
55°
125°
249'-7"
0
80'
160'
N

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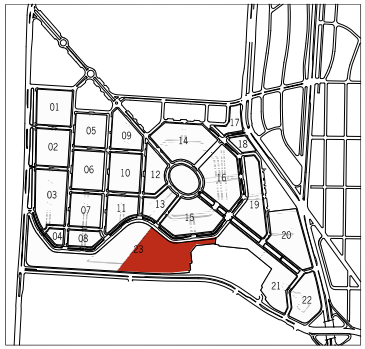
APPENDIX A regulating plan - block 23

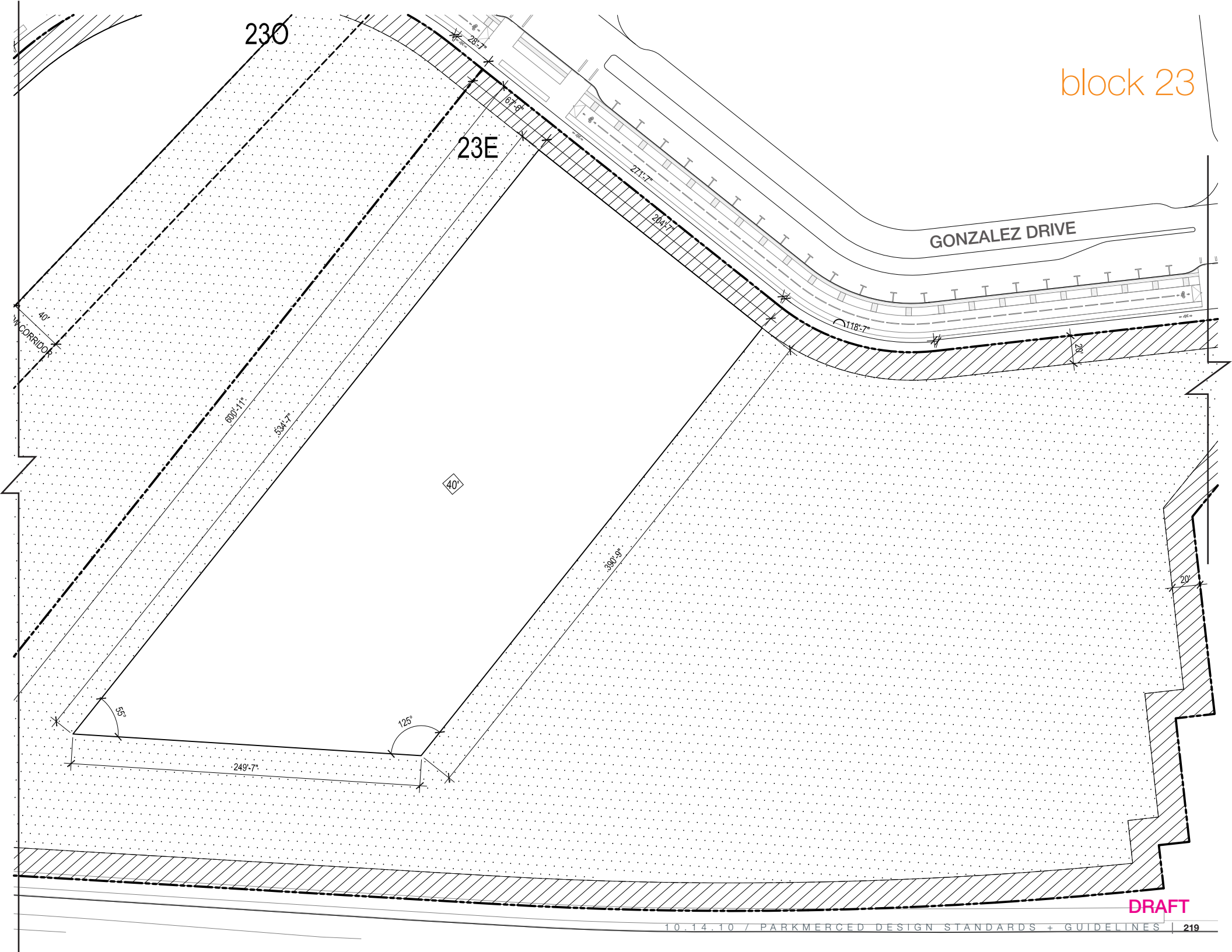
		BLOCK 23
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	0 sf
	MR85	
	FOOTPRINT AREA AT MR85	0 sf
	LR65	
	FOOTPRINT AREA AT LR65	0 sf
	LR45	
	FOOTPRINT AREA AT LR45	0 sf
	LR35	
	FOOTPRINT AREA AT LR35	**27,400 sf**
	LR15	
	FOOTPRINT AREA AT LR15	**6,000 sf**
TOTAL DEVELOPABLE FOOTPRINT		**33,400 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	**0 sf**
	Dedicated Open Space	
	Total Parcel Area	**862,804 sf**



NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit


23O
23E
GONZALEZ DRIVE
28'-7"
61'-6"
271'-7"
304'-7"
118'-7"
20'
40'
W CORRIDOR
600'-11"
534'-7"
40'
390'-9"
20'
55°
125°
249'-7"

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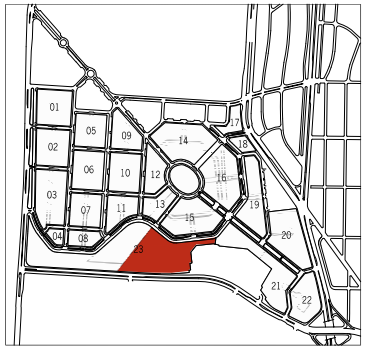
APPENDIX A regulating plan - block 23

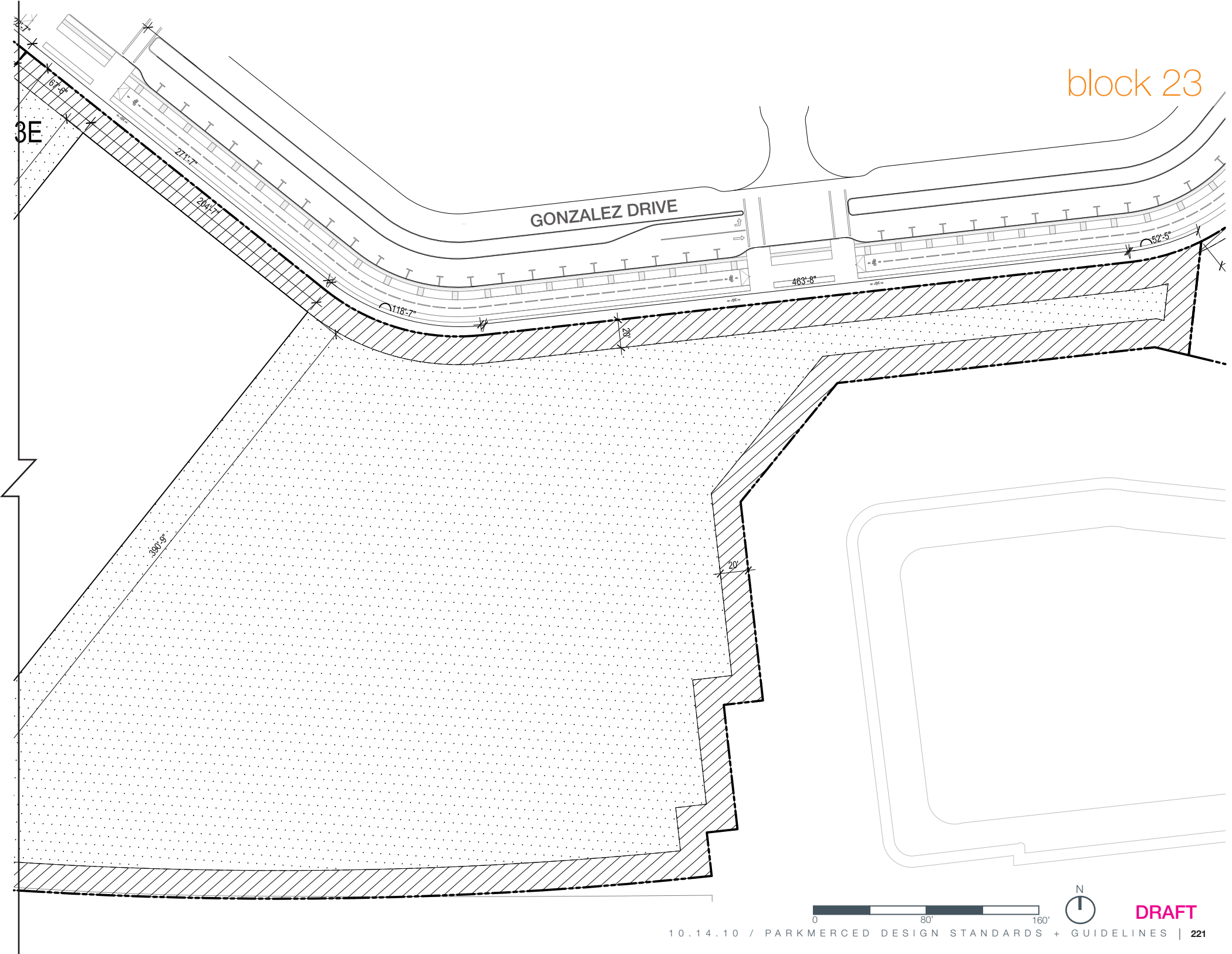
		BLOCK 23
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	0 sf
	MR85	
	FOOTPRINT AREA AT MR85	0 sf
	LR65	
	FOOTPRINT AREA AT LR65	0 sf
	LR45	
	FOOTPRINT AREA AT LR45	0 sf
	LR35	
	FOOTPRINT AREA AT LR35	**27,400 sf**
	LR15	
	FOOTPRINT AREA AT LR15	**6,000 sf**
TOTAL DEVELOPABLE FOOTPRINT		**33,400 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	**0 sf**
	Dedicated Open Space	
	Total Parcel Area	**862,804 sf**



NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit



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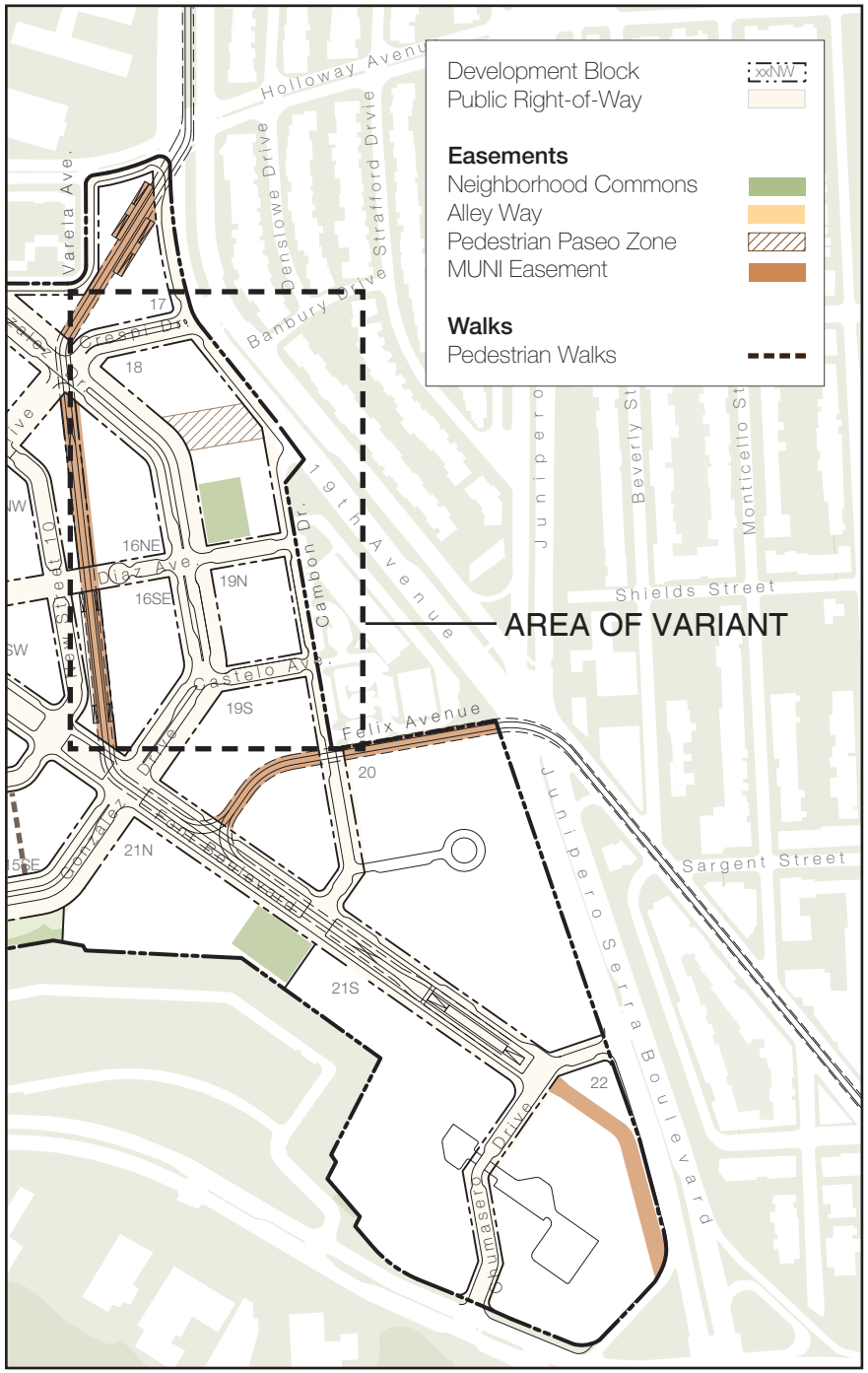
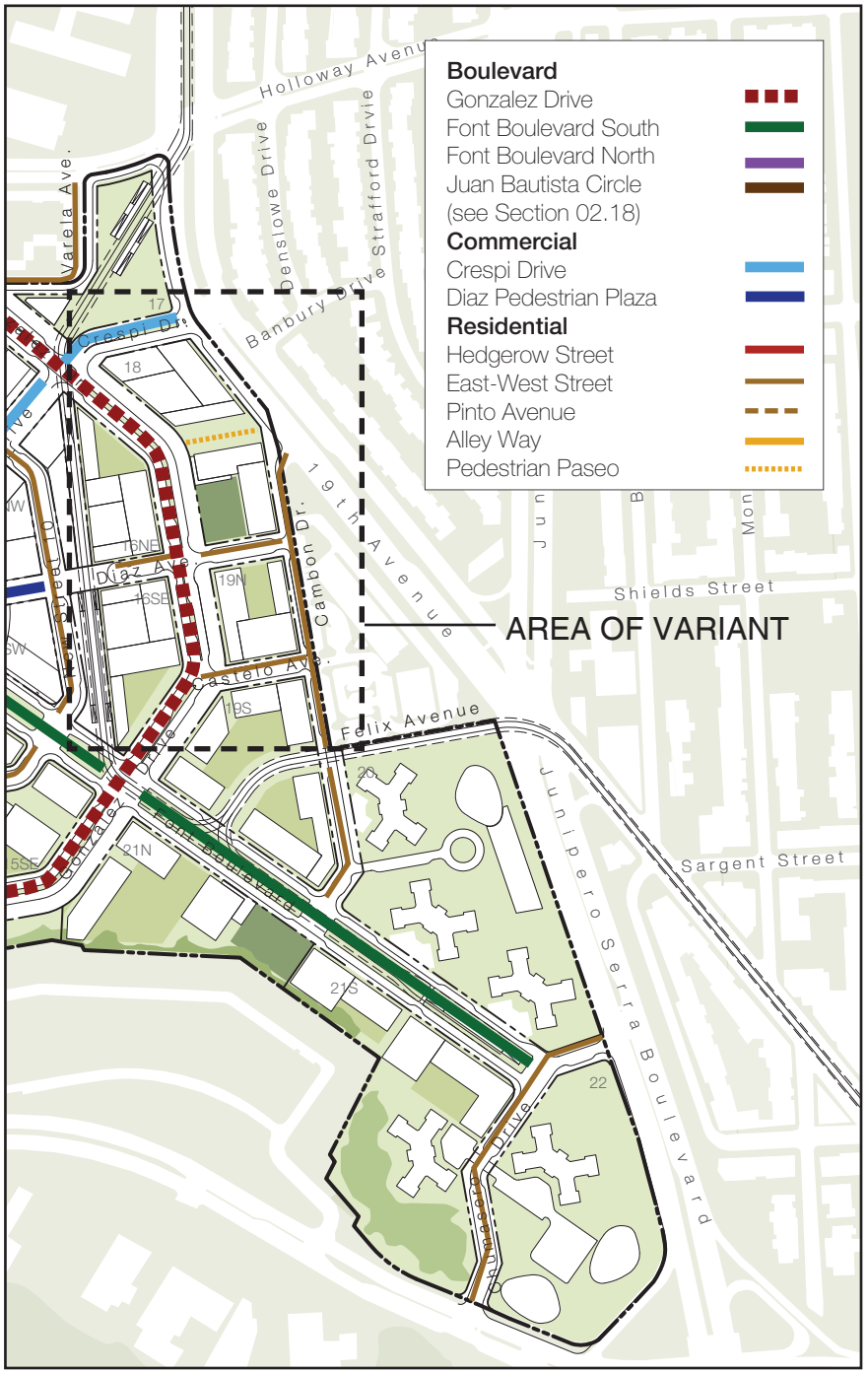
APPENDIX B project variant - connect cambon to 19th avenue

The project variant connects Cambon Drive to 19th Avenue by providing right turn in and right turn out access only. Diaz Avenue connects Cambon to Gonzalez Drive and links the existing retail center on Cambon to Parkmerced's social heart.


Development Block
xxNW
Public Right-of-Way
Easements
Neighborhood Commons
Alley Way
Pedestrian Paseo Zone
MUNI Easement
Walks
Pedestrian Walks
AREA OF VARIANT
Holloway Avenue
Varela Ave.
Denslowe Drive
Strafford Drvie
Banbury Drive
Crespi Dr.
Juniper
Beverly St
Monticello St
19th Avenue
Cambon Dr.
Shields Street
Diaz Ave
Castelo Ave.
Felix Avenue
Font Boulevard
Sargent Street
Juniper Serra Boulevard
Arballo Drive
17
18
16NE
16SE
19N
19S
20
21N
21S
22


Boulevard
Gonzalez Drive
Font Boulevard South
Font Boulevard North
Juan Bautista Circle
(see Section 02.18)
Commercial
Crespi Drive
Diaz Pedestrian Plaza
Residential
Hedgerow Street
East-West Street
Pinto Avenue
Alley Way
Pedestrian Paseo
AREA OF VARIANT
Holloway Avenue
Varela Ave.
Denslowe Drive
Strafford Drvie
Banbury Drive
Crespi Dr.
19th Avenue
Cambon Dr.
Shields Street
Diaz Ave
Castelo Ave.
Felix Avenue
Font Boulevard
Sargent Street
Juniper Serra Boulevard
Arballo Drive
17
18
16NE
19N
19S
20
21N
21S
22

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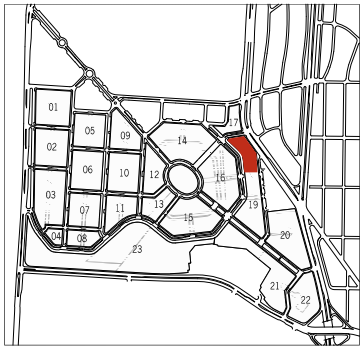
APPENDIX B block 18 - variant

		BLOCK 18
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	**12,000 sf**
	MR105	
	FOOTPRINT AREA AT MR105	0 sf
	MR85	
	FOOTPRINT AREA AT MR85	**10,700 sf**
	LR65	
	FOOTPRINT AREA AT LR65	**22,600 sf**
	LR45	
	FOOTPRINT AREA AT LR45	0 sf
	LR35	
	FOOTPRINT AREA AT LR35	0 sf
	LR15	
	FOOTPRINT AREA AT LR15	**12,500 sf**
TOTAL DEVELOPABLE FOOTPRINT		**57,800 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	
	Dedicated Open Space	**15,000 sf**
	Total Parcel Area	**94,178 sf**



NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

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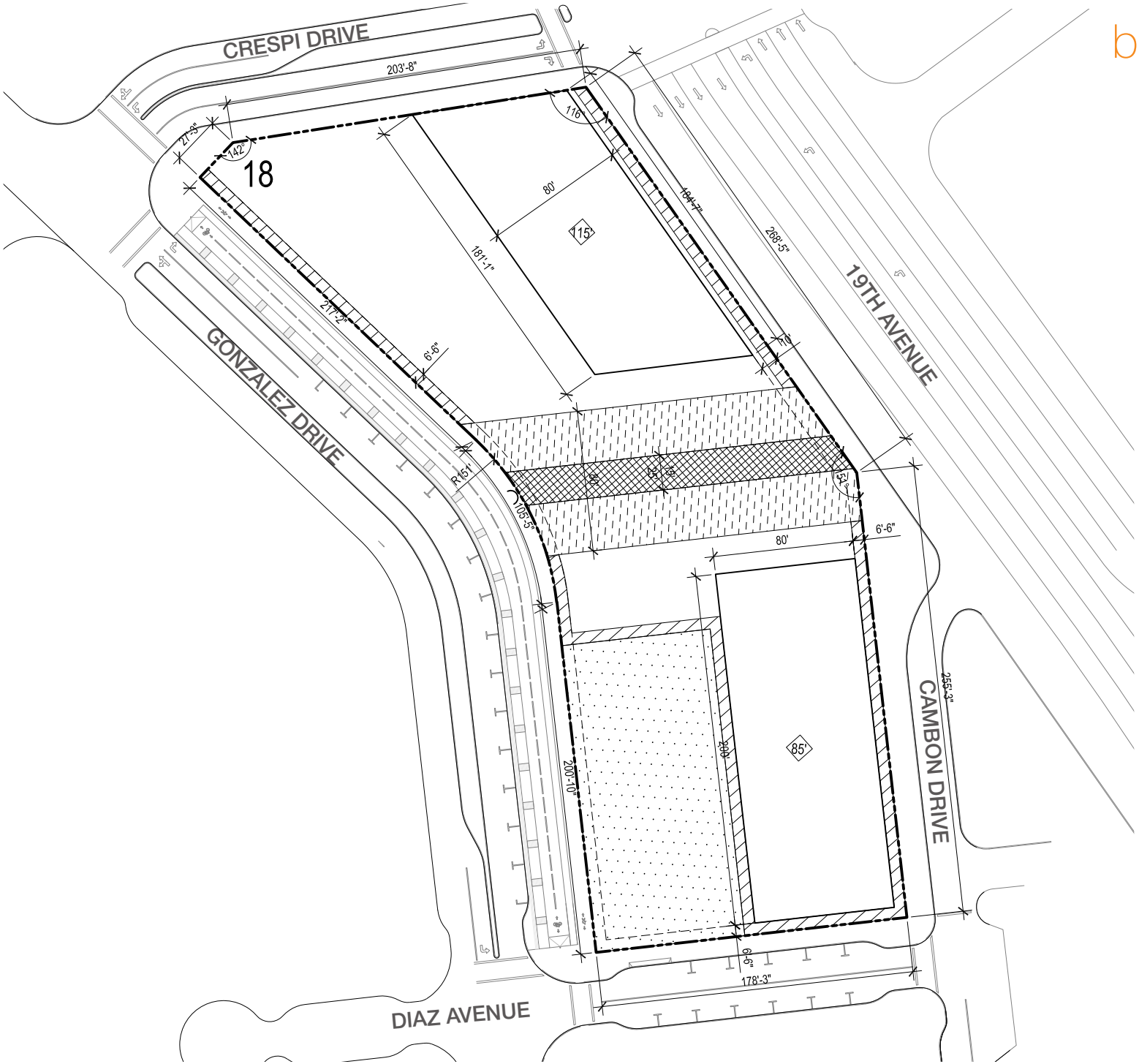
block 18-V



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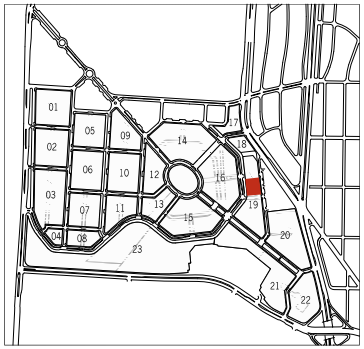
APPENDIX B block 19N - variant

		BLOCK 19
HEIGHT ZONES	**T145**	
	FOOTPRINT AREA AT T145	0 sf
	T115	
	FOOTPRINT AREA AT T115	0 sf
	MR105	
	FOOTPRINT AREA AT MR105	**24,000 sf**
	MR85	
	FOOTPRINT AREA AT MR85	**8,600 sf**
	LR65	
	FOOTPRINT AREA AT LR65	**48,800 sf**
	LR45	
	FOOTPRINT AREA AT LR45	**4,400 sf**
	LR35	
	FOOTPRINT AREA AT LR35	0 sf
	LR15	
	FOOTPRINT AREA AT LR15	0 sf
TOTAL DEVELOPABLE FOOTPRINT		**85,800 sf**
LOT COVERAGE + OPEN SPACE	Existing Building Area	
	Dedicated Open Space	
	Total Parcel Area	**166,483 sf**



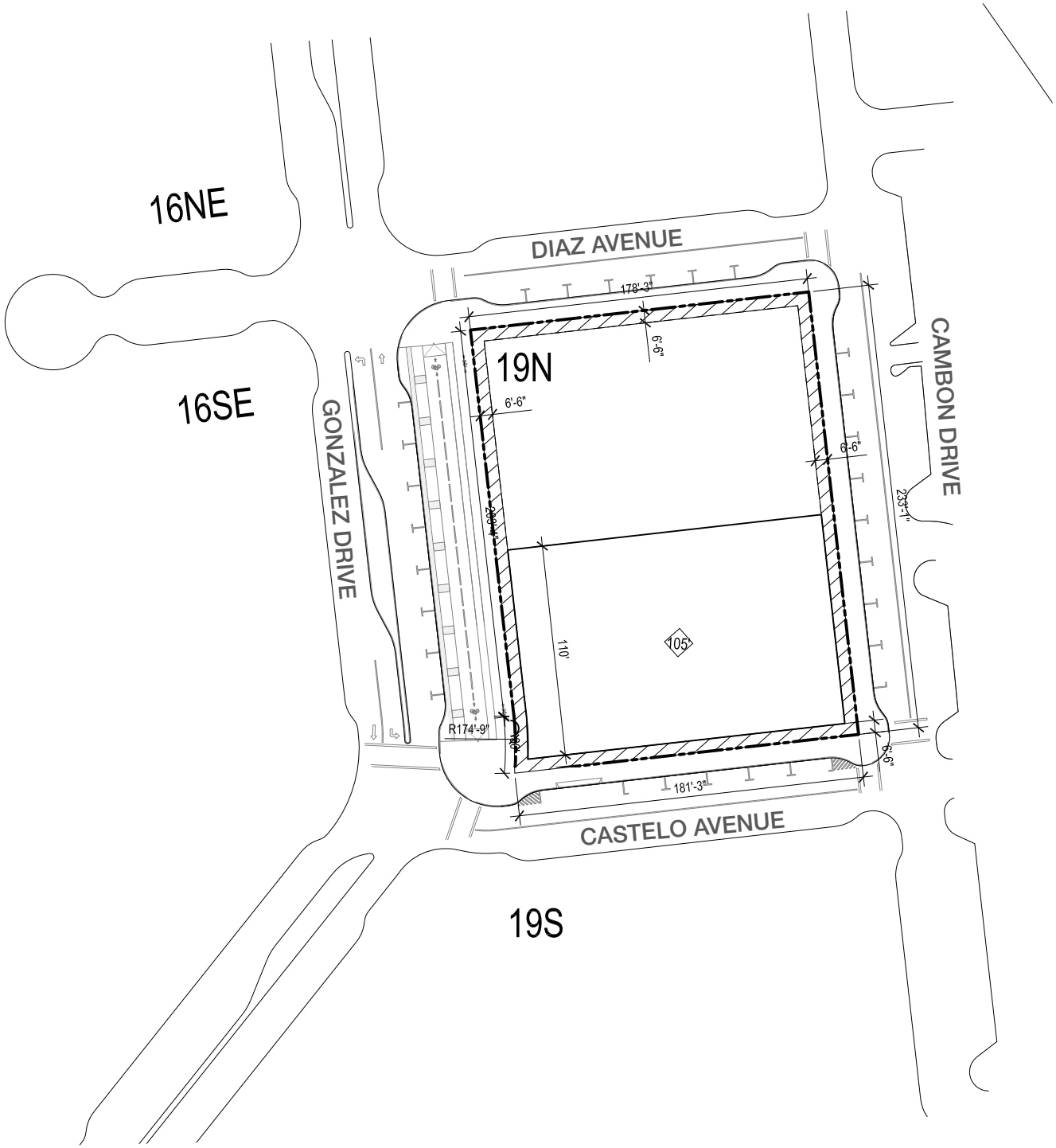
NOTES

Please refer to relevant Urban Design Controls and Guidelines for further information. All dimensions are subject to change by the final Tentative Map.

- Property Line
- Street Frontage Setback
- Dedicated Open Space
- Shared Public Way Easement
- Paseo Easement
- Paseo Easement Zone
- MUNI Easement
- View Corridor
- 85' Building Height Limit

DRAFT

block 19N-V



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APPENDIX C definition of terms

The following definitions apply to certain terms used in these Design Standards and Guidelines.

Planning Commission The governing body of the Planning Department of the City and County of San Francisco.

Acclimated Species Plants that are not native but are adapted to the Northern California coastal climate and soil conditions and do not require irrigation two years after their initial installation.

Active Uses Uses that include locally serving retail and services, community rooms and kitchens, and recreational and arts facilities.

Articulation Minor variations in the massing, setback, height, fenestration, or entrances to a building, which express a change across the elevation or facades of a building. Articulation may be expressed, among other things, as bay windows, porches, building modules, entrances, or eaves.

Awning A light roof-like structure, supported entirely by the exterior wall of a building, consisting of a movable frame covered with approved cloth, plastic or metal, extending over doors and windows, with the purpose of providing protection from sun and rain and embellishment of the facade.

Back of Sidewalk The point of measurement located at the edge between the sidewalk and the property line.

Bio-Corridor A strip of habitat connecting wildlife populations that have been separated by human activities.

Bio-Filtration A process to remove and biologically degrade pollutants from stormwater runoff by filtering the water through a planted medium.

Bio-Infiltration A process to remove and biologically degrade pollutants from stormwater runoff by slowly absorbing and infiltrating in shallow, planted depressions. This process also reduces the volume of runoff while cleaning up pollutants. Stormwater flows into the bioinfiltration area, ponds on the surface, and gradually infiltrates into the soil bed. Filtered runoff is infiltrated into the surrounding soils via an absorption basin or trench. Excess water can be collected by an underdrain system and discharged to the storm sewer system or directly into receiving waters.

Bosque Formal grid of trees.

Building Envelope The exterior dimensions—dictating the maximum dimensions of width, depth, height and bulk—within which a building may exist on a given site.

Canopy A light roof-like structure, supported by the exterior of a building consisting of a fixed or frame covered with approved cloth, plastic or metal, with the purpose of providing protection from sun and rain and embellishment of the facade.

Certified Arborist An individual who has a certificate or a registration from the following institutions: ISA Certified Arborist (International Society of Arboriculture), ASCA Registered Consulting Arborist (American Society of Consulting Arborists)

Curb Cut A break in the street curb to provide vehicular access from the street surface to private or public property across a continuous sidewalk.

Curb Return Driveway A break in the sidewalk to provide vehicular access from the street to private or public property. This requires a pedestrian to step down from the sidewalk onto the vehicular surface.

Design for Development A document that establishes conceptual frameworks for land use, urban form, streets and public spaces in the Project Area.

Design Guidelines Suggestions for building features or qualities to be considered in project designs, often requiring subjective analysis.

Design Standards Mandatory and measurable design specifications applicable to all new construction.

Development Block Bounded areas defined for the purpose of site organization, establishing standards and guidelines and guiding physical development.

Exception A relaxation of certain development controls when a set of specific design guidelines are met.

Facade The exterior surface of a building. For many parcels, the facade of interest is that surface that serves as the front of that building and faces a building's primary street. Buildings on the corner of two streets or a street and an alley present two public facades. Structures taller than neighboring buildings present multiple facades. All visible surfaces must be considered important for the urban design of the building. The roofscape can also be considered a facade.

Fenestration Area of a building facade occupied by windows and doors.

Fin Sign A sign projecting from the building wall over the sidewalk, visible from the street, also known as blade sign, that directs attention to a business, service or retail activity.

Freestanding Sign A sign in no part supported by a building.

Grade The elevation of the ground around a building.

Hardscape The coverage of ground surfaces with constructed materials such as paving, walls, steps, decks, or furnishings.

Hedgerow A row of bushes, shrubs and/or trees that help define a place, act as shelterbelts from prevailing winds, and add to biodiversity.

Horticulturist An individual who has a degree from university in ornamental horticulture, arboriculture, forestry, or urban forestry and a minimum of five years experience in ornamental horticulture.

Impervious Surfaces An impermeable material, which prevents moisture percolation into the ground, and therefore sheds rainwater and residues onto streets and into stormwater sewers.

Liner Retail Small retail spaces located along the perimeter of large retail areas.

Lot Frontage The dimension of a lot along a primary street.

Mid-Rise A building over 70' tall with special design constraints applying to life/safety measures, structural support, wind, sunlight, and skyline impacts.

Marquee A permanent roofed structure attached to and supported entirely by a building; including any object or

decoration attached to or part of said marquee; no part of which shall be used for occupancy or storage; with the purpose of providing protection from the sun and rain or embellishment of the facade.

Massing The exterior shape of a building or structure.

Modulation Major variation in the massing, height, or setback of a building.

Name Plate A small plaque or sign affixed flat to a wall of a building serving to designate the name and/or professional services of the occupant of space in the building.

Native Species Plants that have evolved over geologic time in response to physical and biotic processes characteristic of a region: the climate, soils, timing of rainfall, drought and interactions with the other species inhabiting the local community. They are uniquely adapted to local conditions, providing a practical and ecologically valuable alternative for landscaping, conservation and restoration projects, and as wildlife food source.

Neighborhood District A grouping of Development Blocks that share a number of similar characteristics.

Pervious Surface Landscaping materials that allow a percentage of rainwater to percolate into the ground rather than run off into the stormwater system.

Regulating Plan A section of the Design Standards and Guidelines that defines the allowable volumetric envelope and other quantitative characteristics that effect the form of each Development Block.

Photometric Study Scientific measurements of different intensity levels of light.

Public Open Space Open space that has been designated to be publicly available and accessible.

Riparian Corridor Narrow strip of land, centered on a stream, that includes the floodplain as well as related riparian habitats adjacent to the floodplain.

Roof Sign A sign, or portion thereof, erected or painted on or over the roof of a building.

Semi-Private Courtyard or Open Space Open space that is required by the Regulating Plan, available and accessible to residents or tenants of the adjacent buildings but is not necessarily required to be publicly accessible.

Setback Open space provided between the property line and the primary built structure creating an expanded area along the sidewalk providing a transition between the street and private uses on the property. Setbacks may be required to be dedicated for public use or remain as private space between the public right-of-way and the building mass.

Softscape Landscaped areas dedicated to planted materials such as ground cover, annuals, perennials, shrubs and trees.

Stoop An outdoor entryway into residential units raised above the sidewalk level. Stoops may include steps leading to a small porch or landing at the level of the first floor of the unit.

Storefront The facade of a retail space between the street grade and the ceiling of the first floor.

Street A Right-of-Way permanently dedicated to common and general use by the public, as described in the Rights-of-Way+Easement Plan.

Streetwall A continuous facade of a building and/or buildings along a street frontage.

Structural Soil Designed growing medium made up of crushed stone, clay loam, and a hydrogel stabilizing agent, which can meet or exceed pavement sub-base design and compaction requirements while remaining root penetrable and supportive of tree growth. The small voids in structural soil provide space for healthy root growth at deeper levels and serve to prevent surface heaving of pavement much more effectively than root barriers.

Transparency A characteristic of clear facade materials, such as glass, that provide an unhindered visual connection between the sidewalk and internal areas of the building.

Tower A building over 90' tall with special design constraints applying to life/safety measures, structural support, wind, sunlight, and skyline impacts.

Tower Extension The portion of a tower above the roof of the highest occupied floor used to screen rooftop elements and to enhance the tower design.

Wall Sign A sign painted directly on the wall or fixed flat against a facade of a building, parallel to the building wall and not projecting out from the facade more than the thickness of the sign cabinet.

Wildlife Friendly Habitat A habitat that provides food, water, shelter and nesting areas in order to support, protect and restore native plants and animals.

APPENDIX D photo credits

text here

parkmerced

sustainability plan

10.14.10

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The Parkmerced Sustainability Plan establishes specific goals, strategies and targets that will be incorporated into the transformation of Parkmerced into a model 21st century healthy neighborhood. The Plan addresses the conservation and management of energy, water and other natural resources. In addition, it establishes goals for green building standards, solid waste management and sustainable construction strategies. Together with the accompanying Vision Plan, Design Standards and Guidelines, Transportation Plan, and Infrastructure Report, The Parkmerced Sustainabilty Plan provides a comprehensive vision for all future improvements at Parkmerced.

- The Vision Plan lays out the vision and conceptual frameworks for all proposed improvements at Parkmerced.

- The Design Standards and Guidelines prescribe urban design controls for land use, open spaces, streets, blocks and individual buildings. It also outlines a process for project implementation.

- The Transportation Plan provides a framework and management plan for addressing transit and vehicular travel to and from the neighborhood.

- The Infrastructure Report establishes an outline for anticipated site-wide improvements to all streets and public rights of way, underground utilities and site grading.

This vision for Parkmerced has been developed through a collaborative process with input from community members, local agencies and departments, public advocacy organizations and design and engineering experts.

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parkmerced

sustainability plan

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a new vision

parkmerced sustainability plan: addressing urban sustainability at the neighborhood scale

The new vision for Parkmerced represents a bold and unparalleled opportunity to transform an entire WWII-era San Francisco neighborhood into an international model for a sustainable 21st-century green community. The goal of a regenerated Parkmerced will be to create a vibrant, verdant and sustainable neighborhood. Parkmerced will be a neighborhood with an increased number of residential units and commercial/retail services and an increased amount of open space dedicated to natural ecological systems and recreational uses, all while reducing the per capita impact on our environment. A key goal to this sustainability-focused neighborhood is targeting a project-wide net-zero increase in greenhouse gas production from buildings while providing for more homes. A regenerated Parkmerced will contribute towards San Francisco's stated goal to be among the world's most sustainable cities.

The Parkmerced Sustainability Plan is able to address some of the most critical environmental issues of our time including climate change, resource overconsumption and reinvigoration of ecosystems at the critical scale of an entire neighborhood, allowing the community as a whole to accomplish more than a single parcel or building could on its own. This Plan has been developed to address these issues while working within the framework and specific conditions of Parkmerced's location, microclimate, topography, ecosystems and historical and design circumstances.

The Parkmerced Sustainability Plan establishes the goals, strategies and targets that will lead to a substantial decrease by each household in energy and water consumption, waste production, and automobile dependence, and will focus on state-of-the-art sustainable building materials systems and strategies. Parkmerced's environmental focus will also be enhanced by a renewed urbanism that will provide and integrate open spaces and natural ecosystems into the neighborhood in unique, sustainable and regenerative ways. The final result will ultimately be the incremental replacement of a development based on the consumptive, suburban, car-centric approaches of the past with a neighborhood built around the principles of a productive, socially active, walkable community.

Craig W Hartman, FAIA

August 2010

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unique opportunity

Parkmerced's large scale, single ownership and location within the City of San Francisco, with close proximity to public transit, make this a once-in-a-lifetime opportunity to create the prototype for a 21st century eco-neighborhood. It offers a chance to counter prior, obsolete, car-centric urban planning principles, high maintenance landscapes, and inefficient buildings consumptive of natural resources.

Parkmerced is one of eight large-scale, planned community developments built by Metropolitan Life throughout the country around the time of WWII. These communities were designed to introduce what was then considered to be a highly desirable, suburban lifestyle into some of the nation's most densely settled urban areas. It was close to the cultural amenities of the City while offering wide open spaces and room to spread out. Parkmerced was noted for its innovative garden apartment blocks built around shared courtyard green spaces that gave residents the feel of enjoying their own suburban green backyards.

Parkmerced was able to provide considerable open space with residences removed from the City's density and public transportation because the planning strategy of the time favored automobiles as a primary mode of transportation. The automobile allowed an escape from the City and represented independence. However, our dependence on the automobile has been a key component of our society's ecological footprint exceeding our environment's carrying capacity and sustainability. Suburbs and communities removed from the city center have faced increased social challenges with many people spending more time alone in a vehicle than engaging with other people in their community.

Similarly, Parkmerced has seen diminished activity and social engagement in its public realm. Services and amenities originally intended to support the residents of Parkmerced such as playing fields, a school, and retail space have either been sold off by previous owners or closed, because they were not positioned to be an integral part of the community. This is further compounded by the design of the garden apartments which are configured with primary living spaces opening inward towards semi-private courtyards, with only hallways and bathrooms facing the public right-of-way. This has created a condition of insufficient 'eyes on the street' and a general sense of a lack of security.

Redeveloping Parkmerced offers a chance to change these unintended social effects of past planning principles, and in their place foster a vital community. The uninsulated garden apartments, which now contain inefficient fixtures and appliances and cannot accommodate the people with disabilities, can be replaced with accessible buildings that not only consume less, but also produce renewable energy.

Perhaps most importantly, Parkmerced's location within San Francisco makes this development a unique opportunity to address the current environmental pressures of our increasing greenhouse gas emissions. By reversing its current land use and transportation trends, Parkmerced can become a community fully connected with the City through public transportation and engaged with its surrounding neighborhoods through pedestrian and bicycle networks, offering San Francisco the ability to showcase forward thinking urban planning and sustainable development for the 21st century.

Suburban Living

ONLY MINUTES FROM DOWNTOWN SAN FRANCISCO

PARKMERCED is just east of the Pacific Ocean—ideally located, within easy driving distance of downtown San Francisco, and with convenient public transportation, including express bus service for Parkmerced residents exclusively. In the surrounding area, residents can visit the famous Fleishhacker Zoo and enjoy Sunday afternoon concerts in the inspiring natural setting of Sigmund Stern Grove. A model elementary school adjacent to the property has recently been opened, and the adjoining San Francisco State College provides cultural advantages to part and full time students with both day and evening classes. Parochial and private schools are easily accessible, as well as junior and senior high schools. Theatres and churches are nearby. Shopping facilities are exceptional, including Parkmerced's own shopping center. Residents will enjoy sandy Pacific beaches, parks, bridle paths, and countless scenic drives. A choice of four golf courses are adjacent to Parkmerced.

Residents can enjoy restful suburban living in the heart of the fabu-

approach

Ecological Urbanism: integrating the built and natural environments into a single interrelated system which is mutually beneficial and supportive, and nurtures a vibrant self-sustaining neighborhood.

The transformed Parkmerced will be built on a strategy of ecological urbanism, which can be defined as the re-thinking and re-structuring of the built environment in response to and in collaboration with the natural environment. Urban development and natural ecosystems need not be mutually exclusive, nor are people and their activities separate from nature. To support our increasing population and the inevitable growth of our cities, it has become more and more critical to manage and sustain the ecological systems that are the backbone of the cities and places we inhabit. The conservation of our natural resources has become the highest priority in order to provide for ourselves and future generations.

Parkmerced is modifying its relationship with its natural ecosystems by restoring original watersheds and replenishing a diminishing Lake Merced, rebuilding local wildlife habitats, and integrating agriculture into the urban environment. The buildings and infrastructure will be carefully designed to function in tandem with nature to capture sunlight, mitigate strong winds, allow rainwater infiltration and conveyance, and reduce waste. The landscape will include usable green spaces for gathering and recreation while supporting food production and the management of micro-ecosystems for indigenous wildlife, and the buildings will not only conserve resources, but also have the potential to produce renewable clean energy.

By constructing new housing within an existing urban environment, Parkmerced will decrease the demand for new, sprawling, suburban development and the destruction of natural habitats associated with those developments. Parkmerced residents will be able to rely on the existing urban infrastructure, including the City's public transportation system, and as a result will produce fewer GREENHOUSE GAS emissions than their suburban counterparts. Moreover, because Parkmerced will contain mixed-use and multi-family buildings and will connect to existing utility networks, the project will require fewer building materials than would a new suburban development project providing the same number of dwelling units.

strategies

connection of built and natural infrastructure

The neighborhood street network at Parkmerced will work in conjunction with the topography and natural watershed. Streets will not only convey vehicles and people, but also collect and transport stormwater through a system of bioswales, streams and ponds. This interlacing of urban and ecological systems will reinforce Parkmerced's connection to nature and regenerate the neighborhood's underlying watershed.

neighborhood street alignment

The primary streets into the neighborhood will be oriented north-south in order to capture as much sunlight as possible. East-west streets will be staggered to help block the winds coming off the Pacific Ocean from the West. Hedgerows planted on the West side of the streets will provide protection from the wind. Careful consideration will be given to working with nature to provide the most comfortable environment to promote increased social activity within the community.

usable open space

Green spaces will offer a variety of scales and uses and will be strategically positioned to bring people together. A vibrant, concentrated urban fabric will support the active use of open spaces including individual terraces and balconies, semi-private courtyards, neighborhood commons, community oriented recreational fields, community gardens, and unprogrammed open space.

social heart

A retail and services ‘social heart’, concentrated close to public transportation, will link Parkmerced to the City and will nurture a strong sense of community and identity.

socially and ecologically dynamic buildings

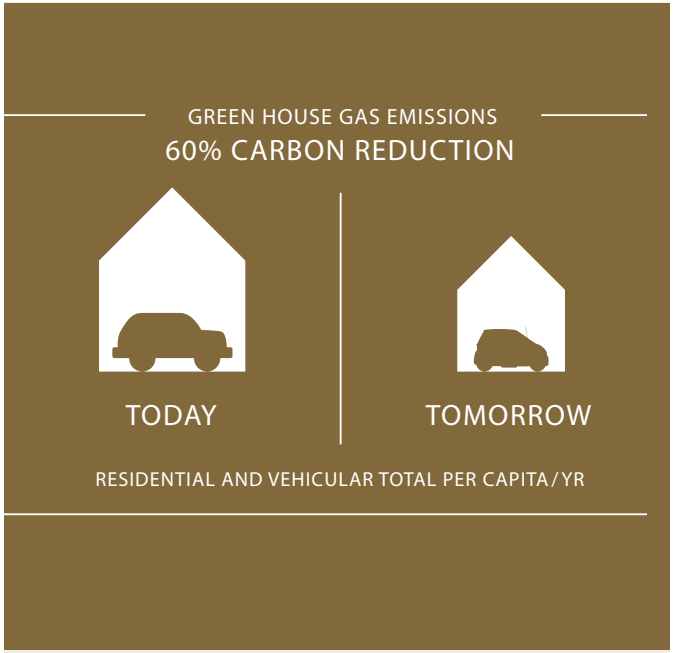
Buildings will be socially dynamic with areas for communal gathering, places of commerce, and gardens for food production, while also collecting rainwater, conserving resources, and producing energy through the use of wind turbines, photovoltaics and cogeneration.

conservation of resources and reuse

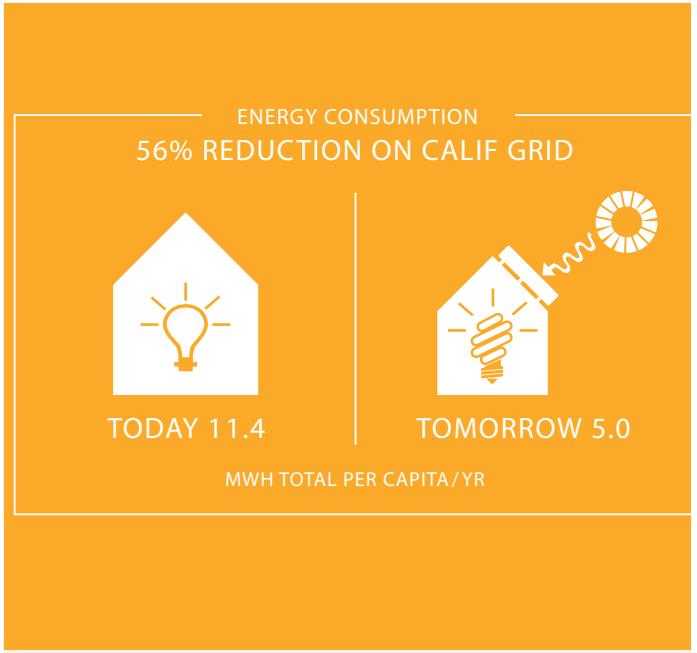
By constructing high performance buildings, many natural resources will be conserved. Existing building materials, which can be reclaimed and reused, will also help to lessen the impact of Parkmerced on local and global ecologies.

goals
more homes, less consumption

One of the key benefits of creating a pedestrian-focused neighborhood that is well served by local transit is that it provides an opportunity for Parkmerced residents to reduce their impact on local and global ecologies. Utilizing sustainable design strategies in conjunction with those of compatible urban design, the re-invented Parkmerced will nearly triple the number of dwelling units with virtually no change to the neighborhood's natural resource consumption. This will translate into a reduced ecological impact for all Parkmerced residents while making a significant contribution to San Francisco's objective of reducing its overall carbon footprint.



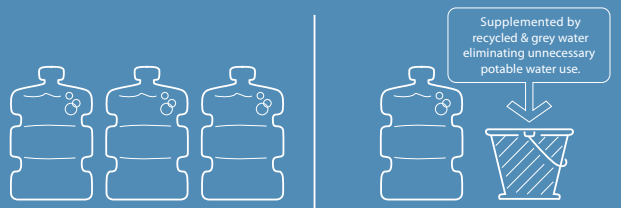
With a goal of reducing the average per capita carbon footprint by approximately 60%, Parkmerced is targeting to only increase its project-wide annual carbon footprint by approximately 18% while nearly tripling the number of residents. This represents a significant reduction of the annual carbon footprint associated with housing and transportation for each Parkmerced resident.



One of Parkmerced's goals is to achieve net-zero new energy consumption from the grid. If one were to build the same number of new homes in a suburban setting, these new homes, when combined with the existing 3,221 Parkmerced units, would consume 200% more energy than this project is designed to consume.

POTABLE WATER CONSUMPTION

60% REDUCTION



TODAY 30,000

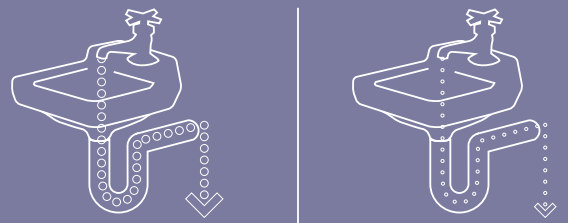
TOMORROW 12,000

TOTAL GALLONS PER CAPITA / YR

Through a combination of strategies, including the use of recycled water, an estimated per capita 60% reduction in potable water usage represents a significant reduction of potable water usage, dramatically reducing demand on the City and State's taxed water supply systems.

WASTE WATER

60% REDUCTION



TODAY 27,000

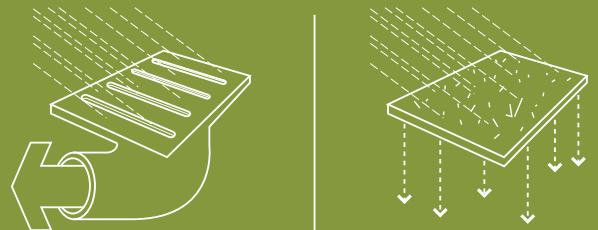
TOMORROW 11,000

TOTAL GALLONS PER CAPITA / YR

Parkmerced plans to reduce wastewater by approximately 60% per person while increasing project-wide wastewater generation by approximately 2%.

STORM WATER

100% REDUCTION



TODAY 100%

TOMORROW 0%

STORMWATER TO COMBINED SEWER SYSTEM

Treating stormwater runoff on-site, using a combination of bioswales, biogutters, ponds and streams rather than diverting it to the combined sewer system, would result in an estimated 20 million gallon average annual decrease in combined sewer discharges to Ocean Beach (a 6% reduction).

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Neighborhood Design

ND

Reduce auto emissions and dependence on fossil fuels by providing conveniently located neighborhood services and amenities as well as by designing public streets to encourage people to walk and ride transit

"The Climate Action Plan for San Francisco" reports that 50% of the city's greenhouse gas emissions are from transportation, and 24% are attributed to road vehicles in the city. In 2000, road vehicles emitted 2.23 million tons of CO_2e, and it is predicted that by 2012 the emissions will rise to 2.41 million tons.[1] While commuting to work accounts for many of these trips, a significant percentage are attributed to services and amenities. Parkmerced conducted a transportation survey of its residents and discovered that an average of 6 daily car trips per unit were for non-work related activities and of those trips 34% were to supermarkets and 18% to schools.

Residents' carbon footprints can be drastically reduced by providing daily services within walking distance and close to public transportation, eliminating the need for these vehicle trips. Careful urban planning not only will reduce traffic and lower greenhouse gas emissions, but it will also foster a greater sense of community and augment local economies by activating the pedestrian public realm.

[1] Climate Action Plan for San Francisco. September 2004. San Francisco Department of the Environment, San Francisco Public Utilities Commission.

ND.01
existing conditions

When it was first proposed in the late 1930's, Parkmerced was conceived of and marketed as 'suburban living in the city'. The desire for suburban-style living within the urban boundaries of San Francisco led to the creation of an auto-oriented neighborhood. With services and amenities pushed to the perimeter, large block sizes, roundabouts, and segregated zoning shaped daily life patterns of Parkmerced residents, making them almost wholly dependent upon the car to meet their daily needs. At the same time, residents living in other areas of the city such as Russian Hill, Cow Hollow, Laurel Heights, and West Portal enjoy mixed-use, transit-rich lifestyles served by centrally-located commercial centers, schools, and other neighborhood services within walking distance. Once in their cars, most residents of Parkmerced travel to competing services and amenities, further reducing the viability of what few services and amenities still remain at the periphery of the neighborhood. Previous owners sold off and lost control of those parcels as residents drove their cars to more easily accessible and comprehensive services and amenities outside the neighborhood. Over the years, this pattern of daily life simply reinforced the residents' increasing dependence on cars.

As a low-density neighborhood, Parkmerced is predominantly comprised of two-story buildings and mid-rise towers with virtually identical architectural facades throughout that create a maze of undifferentiated buildings and streets. Further complicating movement through the neighborhood is a radial street configuration where streets wind and bend while maintaining the same name. These factors contribute to the lack of orientation and hierarchy within the neighborhood. Residential buildings with units that have living spaces oriented towards the interior courtyards turn their backs on the streets leading to limited social activity in the public realm and a greatly reduced sense of security. In addition, Parkmerced has few direct access points, isolating residents from surrounding neighborhoods and disconnecting Parkmerced from the greater city urban fabric.


Residential
Retail
Administration
School
Playing Fields
Undeveloped
Service
Parcels Sold Off

DRAFT

ND.02 land use + community

goal Provide a broad mix of environmentally, economically, and socially sustainable land use options at Parkmerced to enable a complete and vital community that promotes diversity and supports local businesses and agriculture.

strategies

diverse uses

A variety of convenient land uses within walking distance of all residences will encourage social vibrancy, including:

- 8,900 new or existing homes
- 230,000 square feet of retail use
- 80,000 square feet of commercial use
- 64,000 square feet of fitness/community center use
- 25,000 square feet of pre-school/school/day care use

The concentrated neighborhood 'social heart' is intended to include a grocery store, coffee and sandwich shops, restaurants, dry cleaners, and other small businesses to meet the daily needs of Parkmerced residents. The 'social heart' will also include office space for professional services, such as medical and dental practices, that offer residents additional access to services and the possibility of working within walking distance of their homes. Parkmerced will strive to include eleven different uses from Table 1 – Diverse Uses, with a minimum of one use from each category.

Additionally, each of the six Neighborhood Commons, distributed throughout the neighborhood, will contain neighborhood serving retail and amenities and take advantage of adjacency to open space for cafe seating or other gathering spaces.

create a compact walkable community

Introducing neighborhood services and amenities within walking distance of all residents helps to reduce dependence on cars and encourage people to walk or bike to meet their daily needs. This strategy plays a major role in reducing fossil fuel consumption, and therefore the overall carbon footprint of each individual and the neighborhood as a whole.

In keeping with the walkable community design, a child care facility, pre-school or elementary school will be sited within a 1/2-mile walk of all residents. Currently, a number of existing middle and high schools are within a mile walk of the neighborhood.

vibrant neighborhood

Increasing the number of dwelling units at Parkmerced to a total of 8,900 units over the next 20 to 30 years will increase the neighborhood population, which in turn will help improve the viability of supporting services and amenities. These services and amenities are located on or around Crespi Drive creating a vibrant 'social heart' adjacent to public transit stops and accessible to surrounding neighborhoods. The 'social heart' will be within no more than a ten-minute walk of all residences and a five-minute walk of approximately half the residences.

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implementation actions and metrics

- Comply with the requirements of Chapter 01 (Land Use) of the “Parkmerced Design Standards + Guidelines”.
- Provide a farmer’s or local business market that operates weekly for five months annually with firm commitments from vendors to sell only items grown within 150 miles of the neighborhood.

TABLE 1 - Diverse Uses

CATEGORY	USE
Food Retail	• Supermarket • Other food store with produce
Community-Serving Retail	• Clothing store • Convenience store • Farmer’s market • Hardware store • Pharmacy • Other retail
Services	• Bank • Gym, health club, exercise studio • Hair care • Laundry, dry cleaner • Restaurant, café, diner (excluding establishments with drive-throughs)
Civic + Community Facilities	• Adult or senior care (licensed) • Child care (licensed) • Community or recreation center • Cultural arts facility (museum, performing arts) • Educational facility (including K–12 school, university, adult education center, vocational school, community college) • Family entertainment venue (theater, sports) • Government office that serves public on-site. • Place of worship • Medical clinic or office that treats patients. • Police or fire station • Post office • Public library • Public park • Social services center

ND.03 site design

goal Promote walkability and vitality by designing an appropriately-scaled, pedestrian-focused, safe, and environmentally comfortable neighborhood that will encourage the building of community.

strategies

fine grain
Small blocks with frequent intersections provide a number of routes for pedestrians and bikes, making walking a more attractive and viable mode of transportation. Existing blocks at Parkmerced will be reduced in size by introducing a series of new, pedestrian-focused streets, alleys and paseos.

street orientation
In order to provide a comfortable environment for residents to enjoy the outdoor amenities and to encourage walking, the primary neighborhood linkages will be oriented north-south to capture the most sunlight and break the gusty westerly winds with tall, densely foliated trees.

sidewalks
To encourage pedestrian activity and help Parkmerced build a sense of community, generous sidewalks will be designed to provide a greater area of the public right-of-way for pedestrians rather than vehicles. Shared streets will give priority to pedestrians and help to calm traffic for a safer neighborhood. Seating and planted areas are planned along sidewalks to provide areas for gathering.

street trees
Designing streets to include planted areas and street tree species chosen specifically to thrive in Parkmerced's microclimate will enhance the visual quality of the urban environment while helping to mitigate wind, maximize sunlight penetration, and manage stormwater run-off. Only native or acclimated street trees will be planted.

intuitive way finding
A clear hierarchy of street types with differentiated street configurations, street trees and planting will aid in intuitive way finding. It will help establish clear traffic patterns to dissipate congestion and slow traffic speeds, making for a safer pedestrian environment. A richness in neighborhood character will develop as the diversity encourages local identities to emerge.

integrated fabric
With few direct access points to surrounding neighborhoods, Parkmerced currently resembles a gated community. This condition breeds a sense of isolation for Parkmerced residents, presents a barrier to surrounding neighborhoods and discourages walking. A number of new and reconfigured access points would transform Parkmerced into a more integrated part of the City and increase connectivity with adjacent neighborhoods.

socially engaging buildings
When Parkmerced was first designed, the social activities of the buildings were oriented away from the public realm toward semi-private courtyards. This led to the design of residences that effectively turned their backs on the street, leaving bathroom windows, stairwells and blank facades fronting the streetwall, depriving the public realm of critical "eyes on the street" and thereby reducing the sense of security. To re-establish relationships between private and public areas, and to create a more comfortable pedestrian environment, the "Parkmerced Design Standards + Guidelines" Building Design chapter provides a framework (including requirements for stoops, individual entries and balconies) for having buildings re-engage the social life of the street.

pedestrian scale
To create a visually stimulating pedestrian environment, building facade heights will be in complementary proportion to public right-of-way widths and adjacent facades. By incorporating variations in facade lengths and depths, the buildings will relate to the scale of a person. Including front porches or creating a rhythm of small architectural bays will reinforce the pedestrian realm as a place for people. By providing a pedestrian scaled environment, the site design will encourage walking as a primary mode of transportation.

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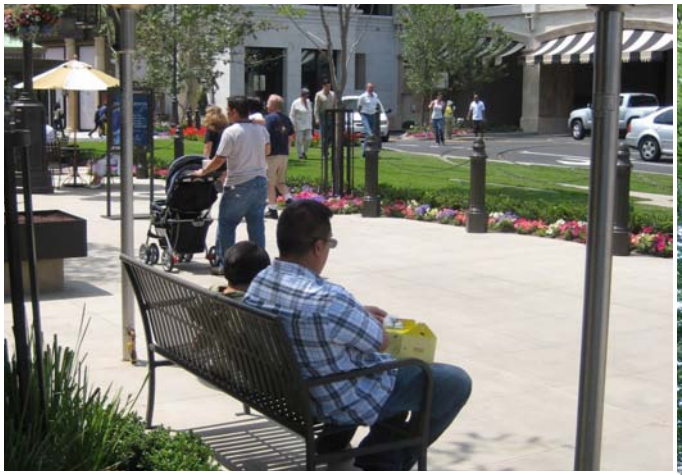
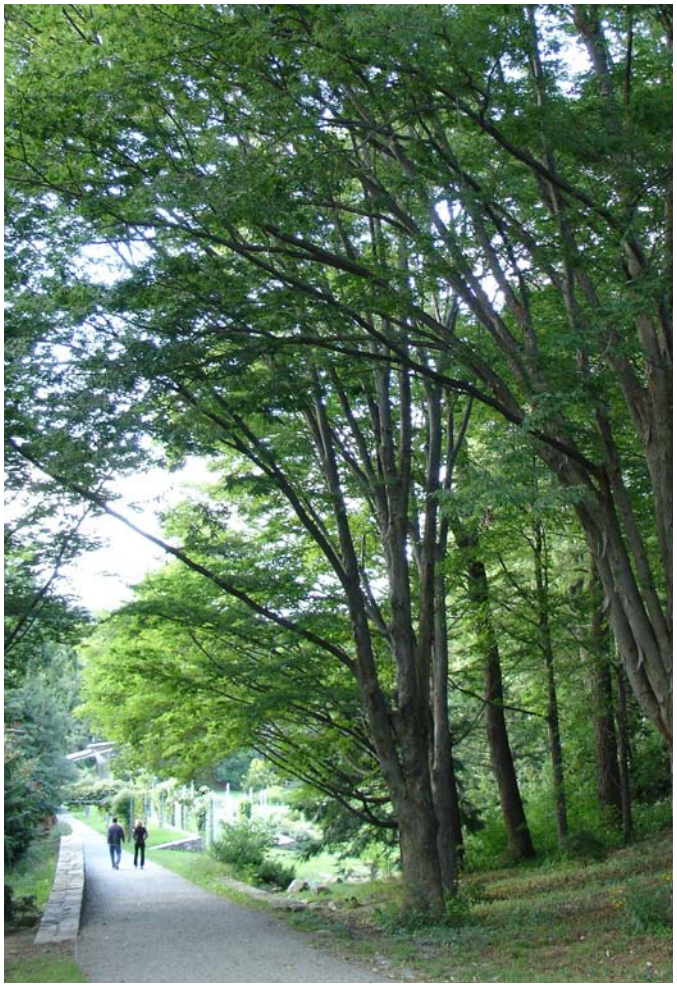
implementation actions and metrics

- Meet the requirements of Chapters 02.01 through 02.15 (Neighborhood Controls and Streets) of the “Parkmerced Design Standards + Guidelines.” The requirements set forth in these chapters have been crafted to encourage walking by creating a pedestrian-scaled, socially vibrant streetscape that provides a high degree of human comfort.
- Meet the requirements of Chapters 02.31 through 02.38 (Off-Site Improvements) of the “Parkmerced Design Standards + Guidelines”.

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ND.04 transportation

goal Reduce auto trips by promoting sustainable alternative means of transportation to lower the dependence on fossil fuels and further Parkmerced in achieving greenhouse gas neutrality, while creating a more vital, connected sense of community.

The "Parkmerced Transportation Plan" sets forth the strategies to be used to achieve the above goal. This chapter provides an overview only of such strategies. The "Parkmerced Transportation Plan" should be referenced for greater detail regarding the proposed transportation improvements and programs.

strategies

improve access to public transit

Parkmerced will encourage the use of public transit alternatives by modifying the existing Muni light rail route to better link the neighborhood to the remainder of the City and by focusing development intensity around new and existing stops. Parkmerced plans to work with the City and Caltrans to re-route the M-Oceanview light rail line into the neighborhood to increase accessibility. A new transit plaza station is planned at the southwest corner of the intersection of 19th Avenue and Holloway Avenue adjacent to both San Francisco State University and the north end of the neighborhood 'social heart'. The transit plaza will also serve a number of local-serving bus lines for convenient transfers. Additional new transit stops will be located on Diaz Avenue adjacent to the south end of the retail core and further south on Font Boulevard. Information technology will relay real-time arrival information to riders at all transit stops within Parkmerced.

TDM strategies

To further increase the attractiveness and convenience of public transit, Parkmerced will provide a state-of-the-art Transportation Demand Management (TDM) Plan. A full-time transportation coordinator will provide commute planning services to help integrate transit into the daily lives of residents and visitors. Parkmerced residents will meet with the Transportation Coordinator to review multiple, sustainable non-auto commute options, including the relative

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costs and schedules for various transit modes. The Transit Coordinator will also implement and administer the various TDM Plan elements and coordinate with the City, transit agencies, and transportation companies. As one of Parkmerced's transit-related amenities, residents may purchase a discounted pass to all Muni transit systems serving the site. Additional TDM Plan elements are described in the "Parkmerced Transportation Plan".

neighborhood shuttle with access to BART

Free, low-emissions shuttle services will connect Parkmerced residents to regional transit options and local shopping destinations. With multiple stops within the neighborhood, the BART shuttle will provide direct, frequent, peak time service to the Daly City BART station and M-Oceanview stations. An off-peak shopper shuttle will provide service to the Stonestown Galleria and Westlake shopping centers. By enabling access to regional destinations and transit hubs, Parkmerced's shuttle services will help reduce the number of car trips taken, minimizing the neighborhood's overall carbon footprint.

bicycle network + bike share

Sustainable transportation at Parkmerced will rely on a network of bicycle routes, with parking and other amenities for cyclists provided throughout the site. A comprehensive wayfinding signage program supporting the network will include a map highlighting all bike routes and parking spaces. Each of Parkmerced's new buildings will house secure bicycle parking. On-street bicycle parking racks will be available at major destinations, and loaner bicycles will be available at bikeshare stations located throughout the site. Non-residential buildings with over 30,000 square feet of space will provide showers and changing areas for the convenience of bike commuters. This internal bicycle network will be integrated into the existing San Francisco Bike Route System.

unbundled parking

Parking strategies at Parkmerced are intended to accommodate expected demand while fostering a pedestrian-focused, transit-oriented neighborhood. In order to encourage walking and transit use, a large number of parking spaces will be located further from transit, functioning more as 'car storage' than a typical garage. Residents must lease or purchase all off-street parking spaces separately from the rental or purchase price of their dwelling units.

car share

Parkmerced's Transportation Coordinator will work with local car-sharing organizations to provide a network of vehicles available throughout the site.

electric vehicle infrastructure

To promote the use of electric passenger vehicles, a minimum of 1% of off-street residential parking spaces will be constructed with electric wiring conduits to permit wiring and hook-up of an electric vehicle charger. In addition, at least one publicly accessible fast-charge station will be installed at Parkmerced.

implementation actions and metrics

- Meet the requirements of the "Parkmerced Transportation Plan".
- Meet the requirements of Chapter 04 (Parking, Loading + Servicing) of the "Parkmerced Design Standards + Guidelines".

Landscape + Biodiversity

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Develop a captivating landscape that re-establishes biodiversity and natural habitats, promotes the conservation and efficient use of natural resources and meets community needs for recreation, open space, and local food production.

Depletion of natural resources worldwide and an increasing water shortage threatening California make conservation efforts an imperative. As the population continues to grow, development must be planned to protect and manage limited natural resources. The development of land must meet human needs while preserving ecosystems and their resources to provide not only for the present, but also for many future generations to come. In order to re-integrate the natural and urban environments at Parkmerced, restoring the site's original hydrology patterns will allow for the re-establishment of local habitats supporting biodiversity and an ecosystem reconnected to Lake Merced. This landscape will not only create an environment for plants and animals to flourish, but also will support recreational activities, provide enjoyment of the open spaces, and encourage the building of community among residents.

LN.01 existing conditions

When Parkmerced was initially developed in the 1940's, the site's natural topography was graded into a flat table top that tilted slightly toward the west. The natural drainage system was filled in and replaced by an underground system that transferred stormwater off-site through the City's combined sewer-stormwater system to the waste water treatment facility. As a result, during storm events, the site, Lake Merced, and the underground aquifer are deprived of much of the annual rainfall. In addition, 74 acres of manicured, non-native grasses within the open space replaced the natural habitats of indigenous plants and animals. These planted lawns require approximately 55 million gallons of potable water per year for irrigation, adding a significant demand to the City's water supply system.

ORIGINAL

A natural drainage system allowed for the infiltration and filtering of rainwater, channeling runoff into Lake Merced.

EXISTING

The site was graded into a flat tabletop for development in the 1940s. Currently all stormwater is piped off-site to treatment facilities or overflows into the bay.

PROPOSED

A proposed drainage system of rain gardens, bioswales and biogutters will mimic the natural system. Water is channeled to the new stream corridor, and a riparian corridor filters water and restores a connection to Lake Merced.

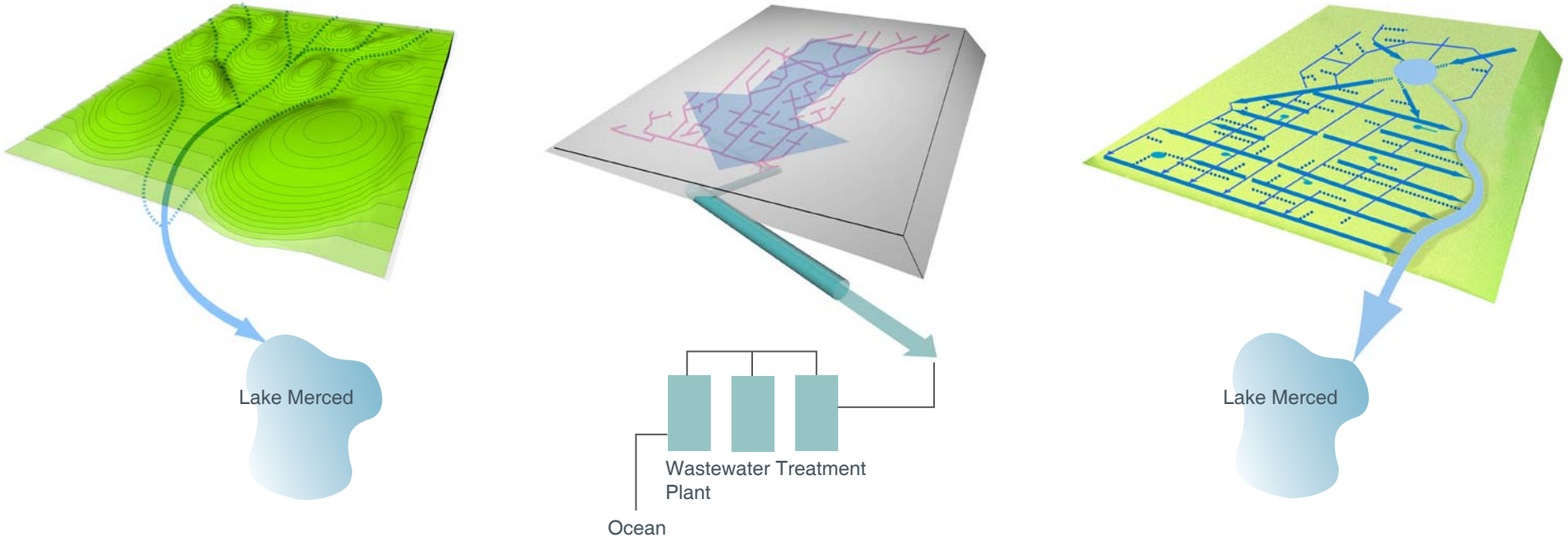
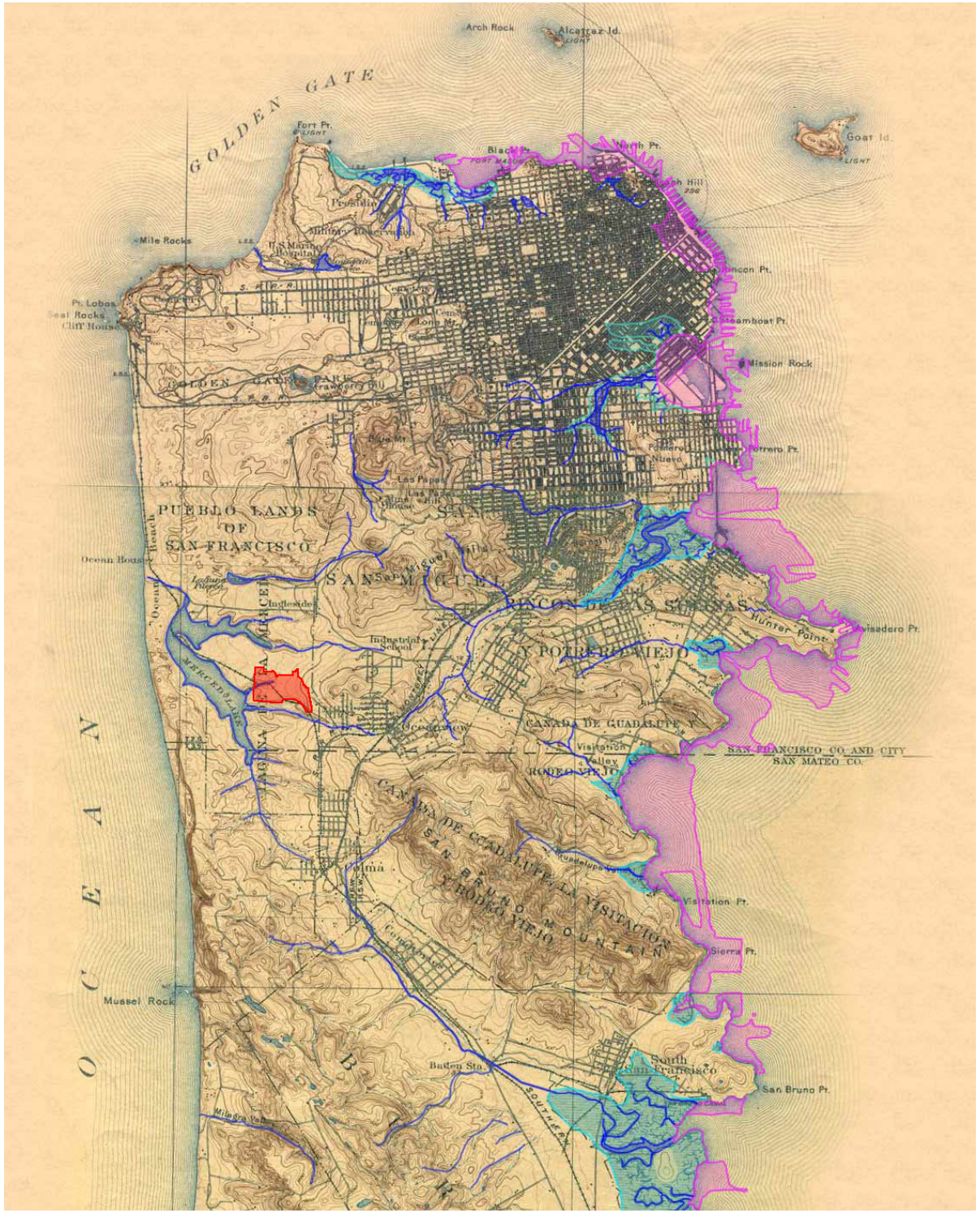


Figure LN.01.01: Parkmerced Drainage Systems
Source: Tom Leader Studio



LEGEND

- Modern Landfill
- Original Marshes
- Original Creeks

Figure LN.01.02: Historic San Francisco Creeks and Wetlands
Source: San Francisco Bay Area Historic Topographic Quadrangles, UC Berkeley Library

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LN.02 hydrology

goal Restore the natural watershed, replenish Lake Merced, reduce the impact on the City's waste water treatment plants, prevent erosion and provide local habitats.

strategies

stormwater collection

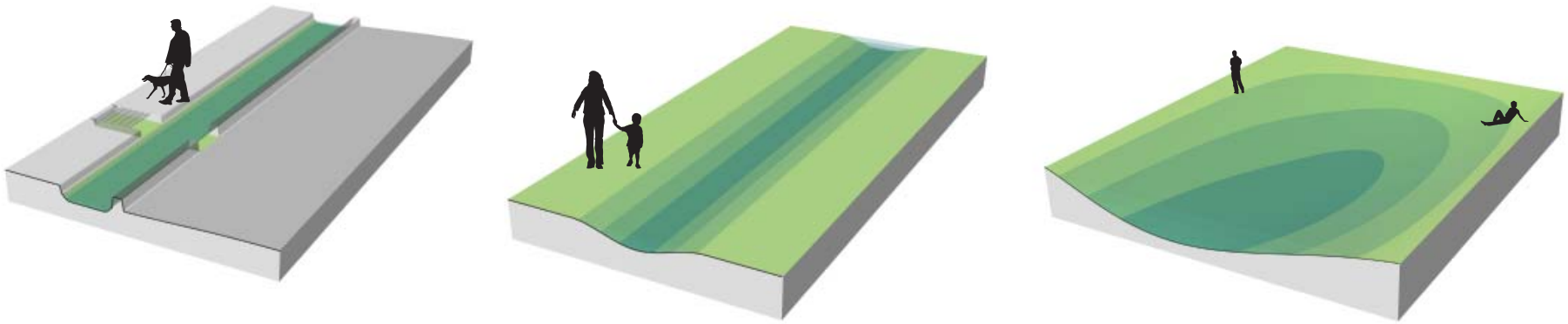
Currently, the San Francisco Code dictates that the pipes of the combined stormwater/sewer system be sized to convey the peak flow from a 5-year storm. Rather than using these traditional pipes and pumps to convey this flow, Parkmerced will incorporate green infrastructure consisting of bioswales and other low impact measures that will retain, detain, and convey runoff to the underlying aquifer and to Lake Merced. The bioswales will be natural amenities that increase biodiversity, improve air quality, and enhance community spaces while simultaneously managing runoff and reducing the potential for flooding. Hardscape infrastructure, such as pipes and drain inlets, will only be necessary to convey flow beneath intersections to the next downstream swale. The reduction in piping will also decrease the amount of infrastructure that must be manufactured, installed, and maintained.

The phasing of construction of the LID measures will be such that the most upstream, parcel-level measures will be sized to satisfy the Stormwater Design Guidelines (SDG) requirements of individual buildings as included in the Parkmerced Infrastructure Plan. The Right of Way (ROW) LID measures will be constructed simultaneously with the street improvements or construction of new streets. The site-wide LID measures will be constructed as the overall site work is completed. If the ROW LID measures downstream of a parcel have yet to be constructed, the parcel runoff will be temporarily direct to the combined sewer, and the requirements of the SDG in combined sewer areas will be met. If the ROW LID measures downstream of a parcel have been constructed, the requirements of the SDG in separated sewer areas will be met. However, as each segment of the bioswale network is completed, the adjacent buildings will be required to tie into the Parkmerced stormwater collection system and sever the buildings' temporary connection to the City's combined sewer-stormwater system.

cistern capture

In addition to infiltration through green infrastructure, a cistern will be installed at the Juan Bautista pond to maintain its moisture levels during the dry season. This rainwater collection will help to establish a healthy ecosystem to support native plants and animals within the pond.

BIOGUTTER → BIOSWALE → POND



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implementation actions and metrics

- Design each building to divert, upon completion of the hydrology system, 100% of stormwater for at least a 5-year storm event with a duration of 3 hours to the Parkmerced hydrology system without discharge to the City's combined sewer-stormwater system.
- Install a cistern that is designed to provide moisture to Juan Bautista pond throughout the year (approximately 100,000 gallons in total capacity).
- Comply with the requirements of the San Francisco Building Code Chapter 13C (Green Building Requirements).
- Comply with the requirements of the Stormwater Management Ordinance (Ordinance 83-10; File No. 100102).

restore wetlands

The hydrology system at Parkmerced will include the restoration of an original wetland at the southeast corner of Lake Merced Boulevard and Brotherhood Way. Utilizing this low area as part of stormwater management will help clean the rainwater runoff before it reaches Lake Merced. This wetland along with the stream corridor will also provide important habitat for local flora and fauna.

permeable paving and tree-well infiltration

Permeable paving will be installed in Crespi Drive, alleys, on-street parking lanes and dedicated pedestrian paths to accept stormwater and help re-charge the aquifer. In addition, tree wells will be designed to infiltrate water. These systems will help prevent excess storm water from entering the City's combined sewer-storm water system during large storm and flood events.

STREAM CORRIDOR → WETLAND → LAKE MERCED & AQUIFER

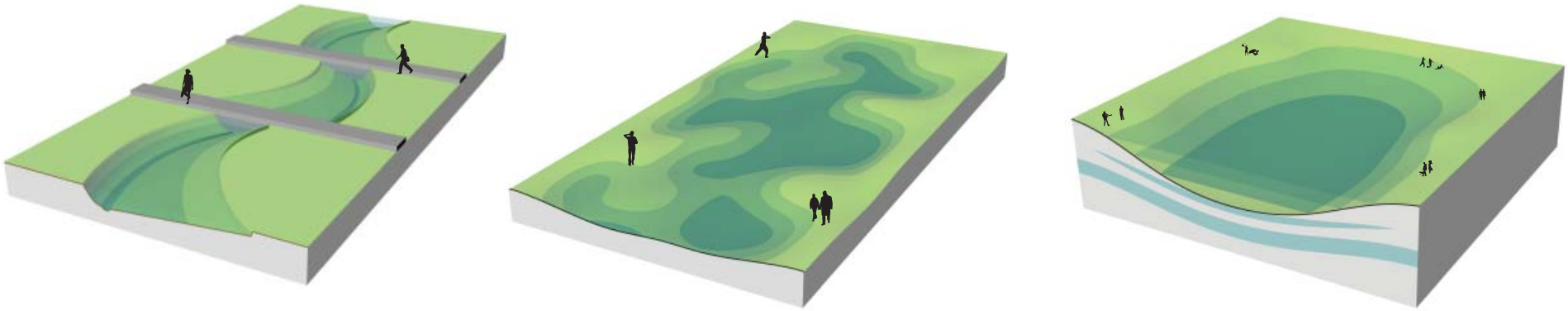


Figure LN.02.01: Parkmerced Green Infrastructure
Source: Tom Leader Studio

LN.03 habitat

goal Extend and create local habitats to encourage biodiversity, support a self-sustaining ecosystem, and increase environmental awareness

implementation actions and metrics

- Meet the requirements of Chapters 02.16 through 02.26 (Open Space) of the "Parkmerced Design Standards + Guidelines".
- All operations and maintenance of stormwater control facilities will be in compliance with the Operation and Maintenance requirements described in the Stormwater Design Guidelines (SDG).

strategies

a diverse stream corridor

Parkmerced will include a stream corridor intended not only to treat stormwater before its final deposit into the underlying aquifer and Lake Merced, but also to help attract native wildlife to the site, including amphibians, insects and birds. By installing a series of check dams along the stream, a steady and slow water flow rate is intended to maintain micro ecosystems and provide beautiful stopping points along a trail system that increases residents' awareness and appreciation for nature.

habitat management plan

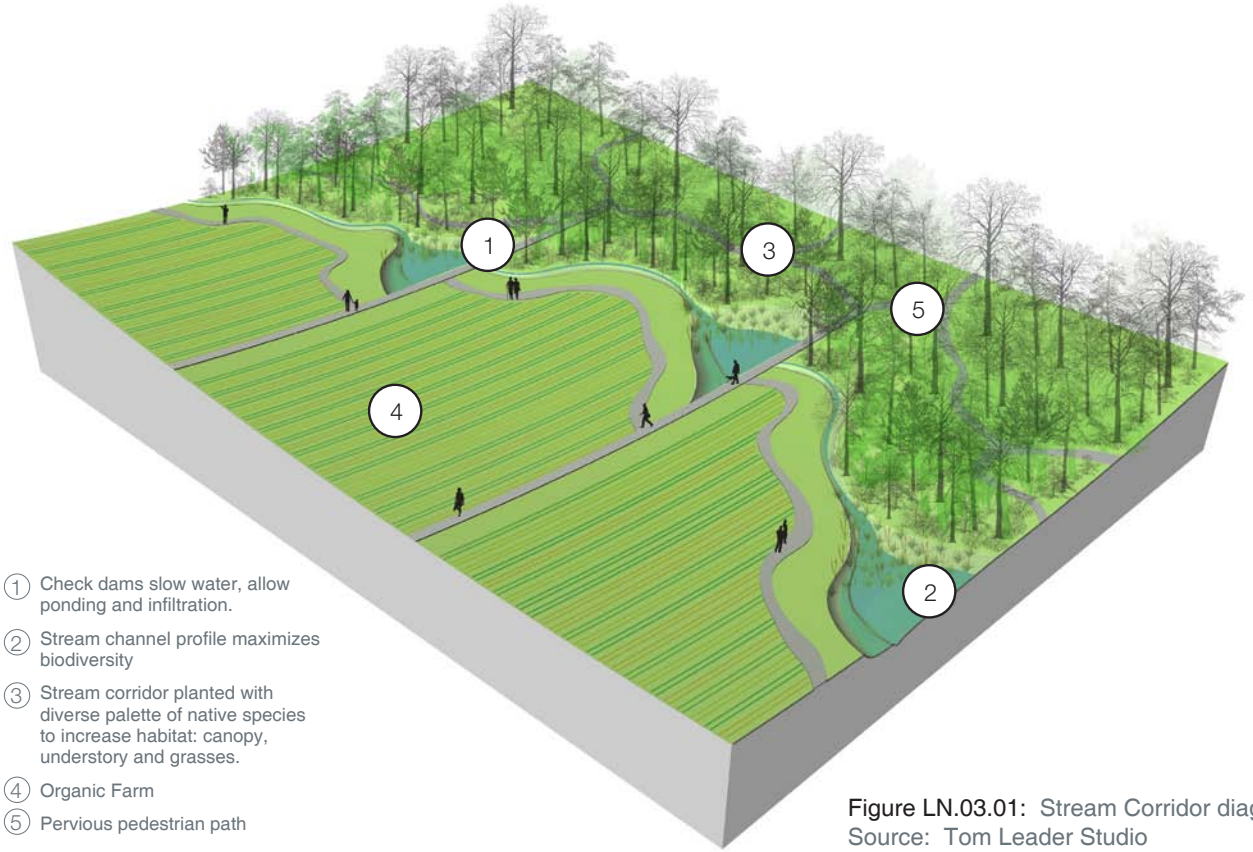
A habitat management plan will be developed to maintain ecological areas within the stream corridor and investigate threats that the project poses for habitat and/or water resources within these areas, such as the introduction of exotic species or destruction through human impact.

native or regionally appropriate species

Native and regionally appropriate species help to maintain healthy and rich ecosystems without using unnecessary amounts of natural resources. Drought tolerant species will be planted at Parkmerced to reduce the need for irrigation and help conserve potable water. Invasive species that out-compete native and acclimated species, and therefore pose a threat to the ecosystems, will be prohibited in order to prevent unhealthy competition amongst species and to allow the success of all plants and animals dependent on the native and acclimated habitat.

education

The natural habitats created along the stream corridor could provide educational opportunities for both children and adults to learn about conservation and the local ecosystem. The proposed school use site is located adjacent to the stream corridor to offer the opportunity for direct access to the stream corridor as an educational resource.



1. Check dams slow water, allow ponding and infiltration.
2. Stream channel profile maximizes biodiversity
3. Stream corridor planted with diverse palette of native species to increase habitat: canopy, understory and grasses.
4. Organic Farm
5. Pervious pedestrian path

Figure LN.03.01: Stream Corridor diagram
Source: Tom Leader Studio

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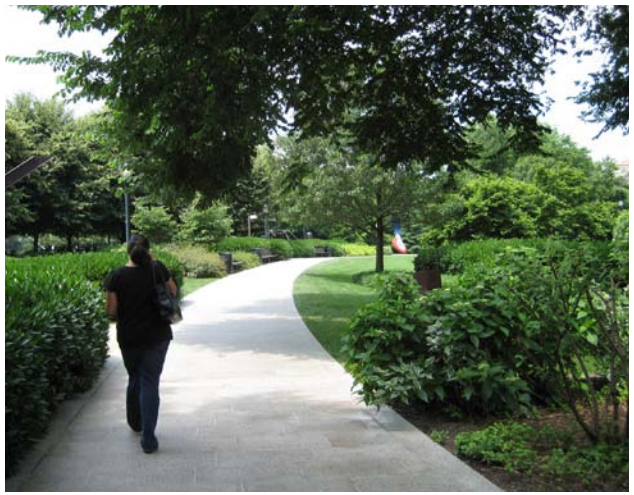
LN.04 open space

goal Integrate a network of positive open spaces within comfortable walking distance of all residents that support a variety of activities to promote a healthy, active lifestyle at Parkmerced, create productive landscapes, and enrich the social life of the neighborhood.

strategies

diversity of open spaces

The Parkmerced Vision Plan and Design Standards + Guidelines include a hierarchy of community recreational and open spaces created at various scales to support a variety of recreational activities for groups and individuals. Private open space for individual units will be provided through elements such as a generous setback zone, which transitions into semi-private courtyards to foster community building amongst neighbors bordering the courtyard. Neighborhood Commons will be conveniently located within a short walk of all residences to provide places for people to gather such as cafes and neighborhood-serving retailers, playgrounds and/or flexible spaces for recreation or gatherings. Larger dedicated public open spaces will offer opportunities for a variety of recreational activities including playing fields, cycling and nature paths.



a unique farm-to-table experience

Completing Parkmerced's regeneration, approximately 2+ acres of open space will be reserved for an organic urban farm and orchard bound by the stream corridor and Gonzalez Drive. The farm should produce vegetables and fruit that are well-suited to the site's microclimate. Compost created from green waste generated throughout the neighborhood could provide organic fertilizer and reduce the amount of waste trucked out of Parkmerced. The farm may be professionally managed and operated.

community gardens

In addition to the farm, the neighborhood will provide a variety of opportunities for residents to cultivate plants and vegetables in small individual plots, community herb gardens, terrace planters, and greenhouses on the roofs of some buildings.

connection to pedestrian network

Pedestrian paseos and paths will weave together the various open spaces at Parkmerced, encouraging residents to actively use these dedicated open spaces. A widened pedestrian path along Gonzalez Boulevard will provide additional recreation opportunities and connect the stream corridor amenities to the organic farm and fitness center. This pedestrian network is intended to allow residents to easily and quickly integrate outdoor activities into their daily lives.

implementation actions and metrics

- Design the site such that all Parkmerced residents live within a quarter-mile walk of open spaces such as parks, community gardens, Neighborhood Commons and plazas.
- Provide outdoor and indoor recreational facilities such as play fields, a fitness center, 'tot-lots', and other similar facilities, within a quarter-mile walk of all residents at Parkmerced, as more particularly described in the "Parkmerced Design Standards + Guidelines".
- Reserve a 2+ acres site for an organic farm.

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LN.05 operations + maintenance

goal Ensure the proper functioning of the hydrological system to manage stormwater volumes successfully and support dependent ecosystems, as well as provide adequate maintenance of public open spaces.

implementation actions and metrics

- Comply with San Francisco's IPM Ordinance (Environment Code, Chapter 3) (City Ordinance 171-03, File No. 030422) for all pest management activities.

strategies

open space management plan

An open space management plan will regulate maintenance of all public spaces and the proper functioning of the hydrology system at Parkmerced. It will provide for regular inspections of the infiltration rates of bioswales, water levels of the seasonal stream and pond, monitoring of the irrigation system for leaks, integration of a pest management plan, facilitating composting efforts and mulching, and general landscaping procedures.

pest control

An integrated pest management (IPM) plan will furnish a knowledgeable and environmentally sound approach to control pests by studying plant morphology, resistance levels, infestation thresholds, and pest biology. Pest damage levels and environmental risks will be assessed and mitigated without using highly toxic chemicals posing serious health concerns for residents, employees, and visitors.

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Water

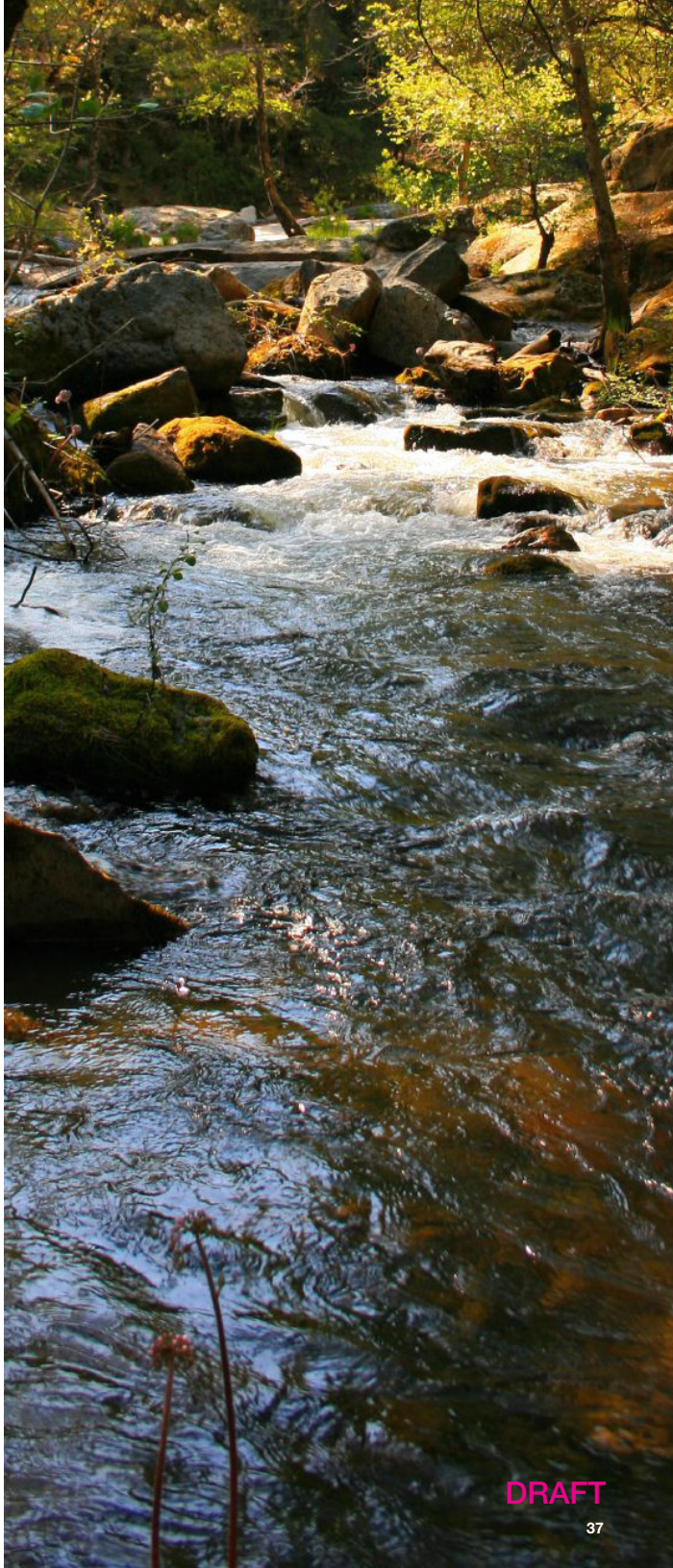
WA

Conserve potable water and reduce energy demand on treating wastewater

Most of San Francisco's potable water is supplied by the Hetch Hetchy reservoir in the Sierra Nevada Mountains, charged by springtime snow melt. Global warming poses a serious threat to the amount of snow melt the Sierra Nevada produces each year. As temperatures rise, more winter precipitation in the mountains reaches the ground as rain rather than snow. Winter rainwater that fills the Hetch Hetchy reservoir must be released for flood control and cannot be stored for the summer and fall seasons. Due to this dramatic shift in when precipitation is available for capture, combined with less water released in the springtime from a lack of snow melt, the Bay Area faces potential water shortages during the dry summer and fall seasons. It has been projected that by the middle of this century the snow pack in the Sierra Nevada will have declined 25-40%.[1]

The dwindling Sierra Nevada snow cap combined with an expected 400,000 more people per year moving to California make it imperative to implement smart planning and design techniques that are focused on conservation of potable water and that pursue strategies for identifying and capitalizing on alternative sources of water.

[1] Sierra Climate Change Toolkit, Planning Ahead to Protect Sierra Natural Resources and Rural Communities. 2007. Sierra Nevada Alliance.



WA.01 existing conditions

San Francisco faces a diminishing supply of potable water from the Hetch Hetchy reservoir and is taking measures to reduce both the consumption of potable water through more stringent code requirements for lower flow fixtures, as well as the use of alternative water sources for the City's irrigation of park and recreation land. The City has a combined sewer system which accepts stormwater in addition to wastewater for treatment. This means that during strong storm events, sewage is being let into the bay and ocean due to overflow.

Parkmerced, with its vast lawns, outdated construction, and inefficient fixtures and plumbing, draws a significant amount of the City's potable water, and therefore releases a high quantity of wastewater back into the combined sewer. According to Parkmerced billing records, irrigation with potable water alone consumed approximately 55 million gallons per year from 2005 to 2006, and individual residents consumed 89 gallons per day from 2006 to 2007, whereas the average consumption of an average U.S. citizen is 56 gallons per day.

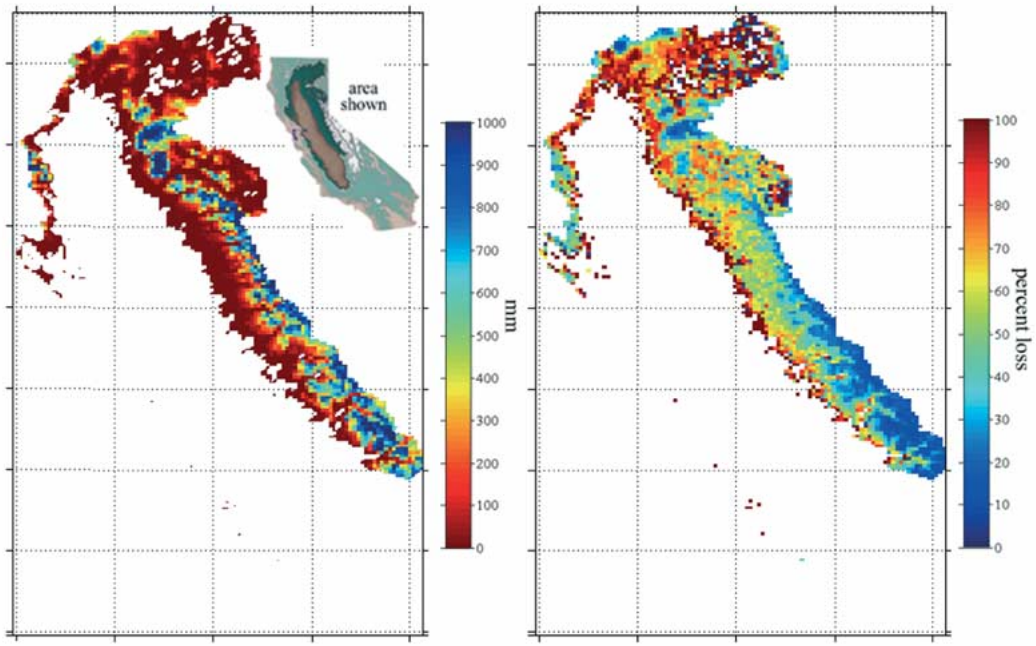


Figure WA.01.01 Projected 2060 snow pack changes in the Bay-Delta watershed resulting from climate warming. Left: Present-day April snow water equivalent in mm. Right: Percent SWE lost by 2060.

Source: Elevation Dependence of Projected Hydrologic Changes in the San Francisco Estuary and Watershed, N Knowles and D. Cayan, 2004

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WA.02 water supply

goal Minimize water use and only use potable water where absolutely necessary to conserve diminishing regional water supplies

strategies

utilize low-flow fixtures and appliances

The use of high-performance water fixtures will reduce water consumption and lower the demand on the water supply. Through the installation of low-flow water fixtures in appliances such as toilets, sinks, and showers in both new and existing units, the average daily residential water use at Parkmerced is projected to decrease to 38 gallons of potable and non-potable water per capita per day compared to the San Francisco average of 57 gallons per capita per day.

recycled water

Recycled water, or reclaimed water, is former wastewater that has been treated to remove solids and impurities through multiple stages of treatment. In California, recycled water must also meet the stringent health standards of Title 22 relating to tertiary recycled water, developed by the California Department of Public Health.

The Parkmerced project is located in a designated recycled water use area as defined in the City of San Francisco's Recycled Water Ordinances (effective November 7, 1991, and amended in 1994). The ordinances require property owners to install dual-plumbing systems for recycled water uses (including irrigation, commercial toilet flushing, air-conditioning and laundry facilities) within the designated water use areas for new or remodeled construction over 40,000 gross square feet. On November 18, 2009, the Building Standards Commission unanimously voted to approve the California Dual Plumbing Code that establishes statewide standards for installing both potable and recycled water plumbing systems in commercial, retail, and office buildings, theaters, auditoriums, condominiums, schools, hotels, apartments, barracks, dormitories, jails, prisons, and reformatories. The new code is effective Jan. 11, 2011. Website address: http://www.water.ca.gov/recycling/DualPlumbingCode/

grey water

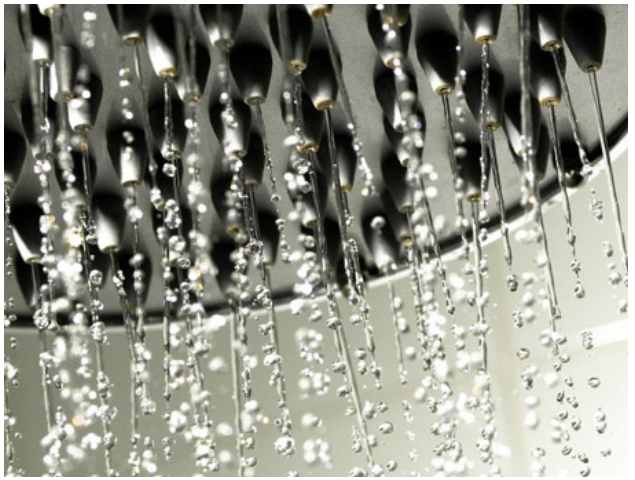
Wastewater generated from domestic sources such as sinks, showers, and laundry machines compose 50-80% of all wastewater produced. Under-the-counter systems could be installed to direct wastewater from bathroom sinks to adjacent toilets for flushing. Laundry facilities using non-toxic biodegradable detergents could also be connected to cisterns for irrigation.

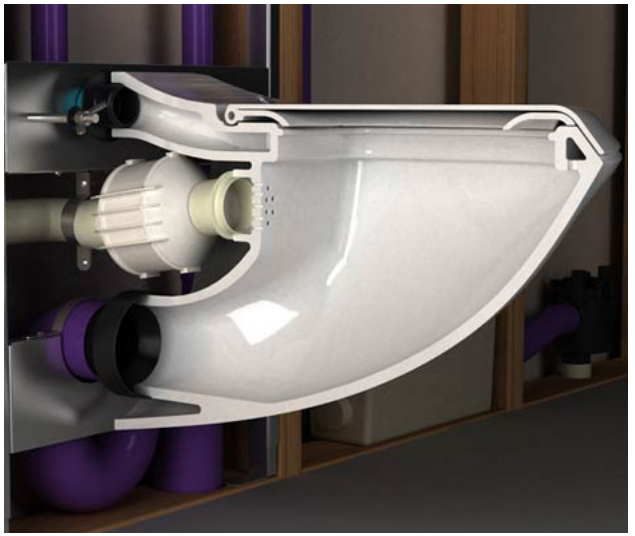
rain water

Rainwater at Parkmerced will be captured in a cistern to supply moisture to Juan Bautista pond during the dry summer and fall seasons.

fog catchers

Fog catchers are synthetic mesh nets that can be stretched like sails on tower rooftops to capture moisture from the fog, allowing condensation to occur in the mesh. This water then drips into collection basins and can be piped to a rainwater collection cistern to contribute to irrigation water supply. Parkmerced may consider installing fog catchers in the future.





implementation actions and metrics

- If a recycled water source is made available to Parkmerced from a municipal source in quantities sufficient for irrigation, toilet flushing and laundry, design new buildings to have 60% less designed demand for potable water as compared to existing buildings.
- If a recycled water source is made available to Parkmerced from a municipal source in quantities sufficient for such purposes, use 100% recycled water for irrigation.
- Install low-flow water fixtures in all new residential and on-residential buildings that meet or exceed the following efficiency standards:

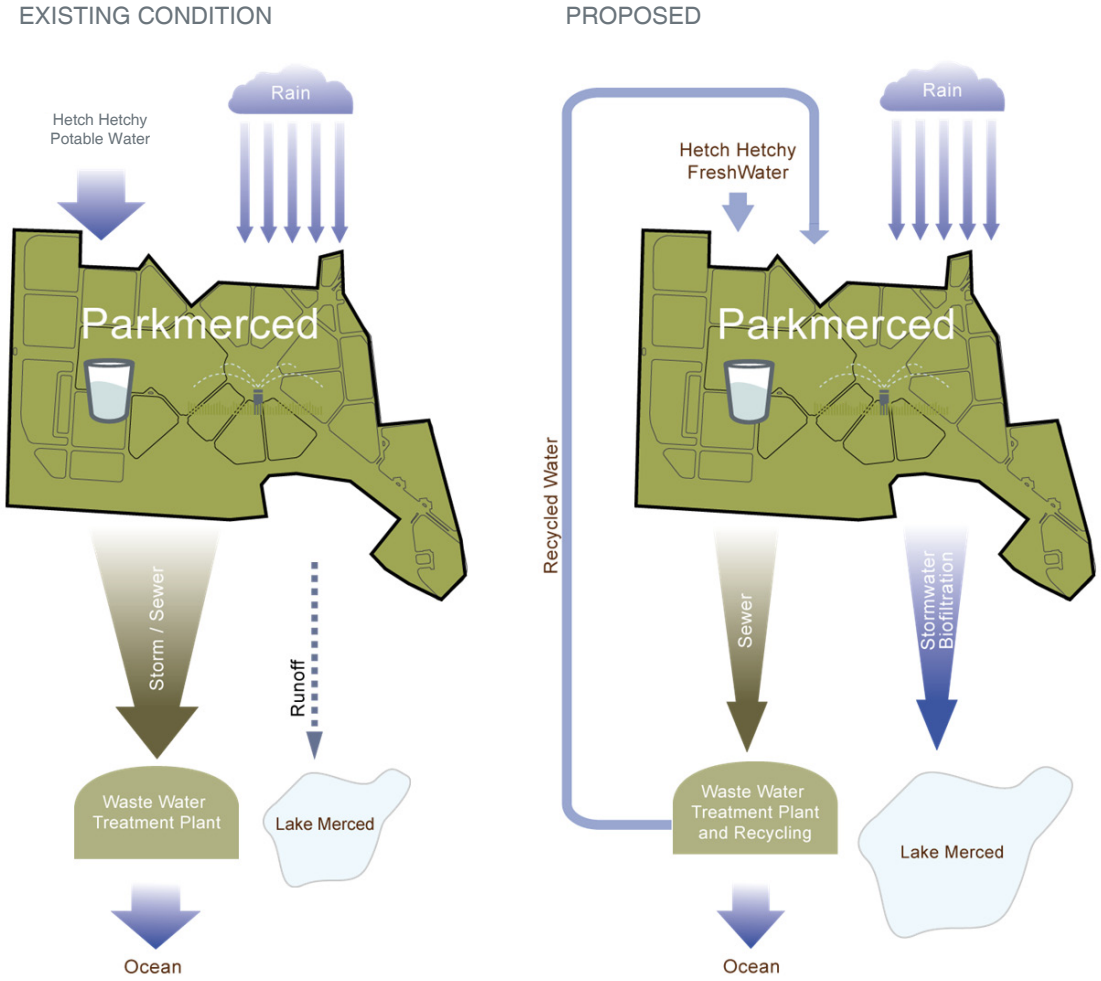


Figure WA.02.01: Existing vs. Proposed Water Flows
Source: Hydroconsult Engineers Inc.

WA.03 wastewater

goal Reduce energy to treat wastewater and help neutralize Parkmerced's carbon footprint

strategies

reduce wastewater

By treating all stormwater on-site and by installing low-flow fixtures which reduce the volume of water consumed, Parkmerced will reduce the amount of wastewater entering the combined sewer system.

disconnect from combined system

Sewer separation allows stormwater to be treated as a resource rather than as a waste product. Parkmerced will collect stormwater runoff from roofs and streets through a combination of low impact development (LID) techniques such as bioswales, ponds, rain-gardens, and other biofiltration systems. This implementation will help to reduce wastewater flows to the Oceanside treatment plant. Removing Parkmerced's stormwater from the City's combined sewer system will help reduce surges that periodically overwhelm the system's capacity and discharge to Ocean Beach.

The phasing of construction of the LID measures will be such that the most upstream, parcel-level measures will be sized to satisfy the Stormwater Design Guidelines (SDG) requirements of individual buildings as included in the Parkmerced Infrastructure Plan. The Right of Way (ROW) LID measures will be constructed simultaneously with the street improvements or construction of new streets. The site-wide LID measures will be constructed as the overall site work is completed. If the ROW LID measures downstream of a parcel have yet to be constructed, the parcel runoff will be temporarily direct to the combined sewer, and the requirements of the SDG in combined sewer areas will be met. If the ROW LID measures downstream of a parcel have been constructed, the requirements of the SDG in separated sewer areas will be met.However, as each segment of the bioswale network is completed, the adjacent buildings will be required to tie into the Parkmerced stormwater collection system and sever the buildings' temporary connection to the City's combined stormwater/sewer system

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implementation actions and metrics

- Upon completion of the hydrology system, divert 100% of stormwater deposited within Parkmerced from at least a 5-year storm event with a duration of 3 hours from the City's combined stormwater/sewer system.

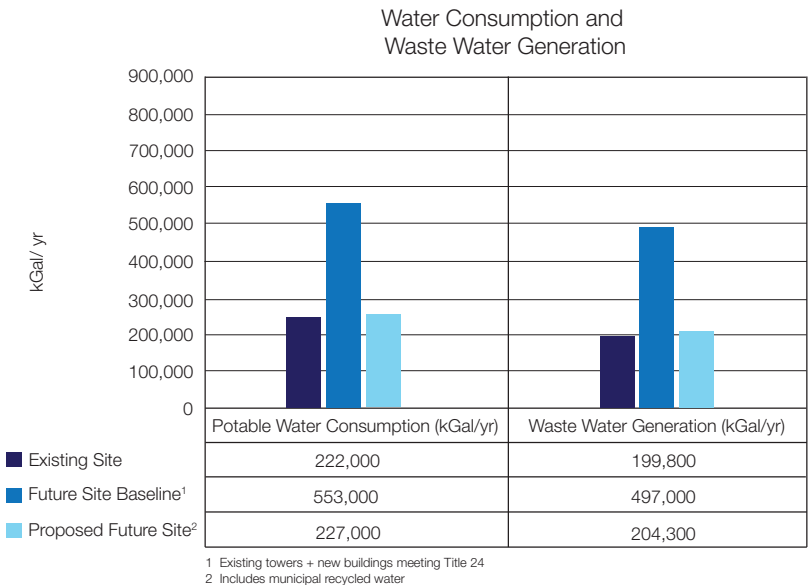

Figure WA.03.01: Water Consumption and Waste Water Generation

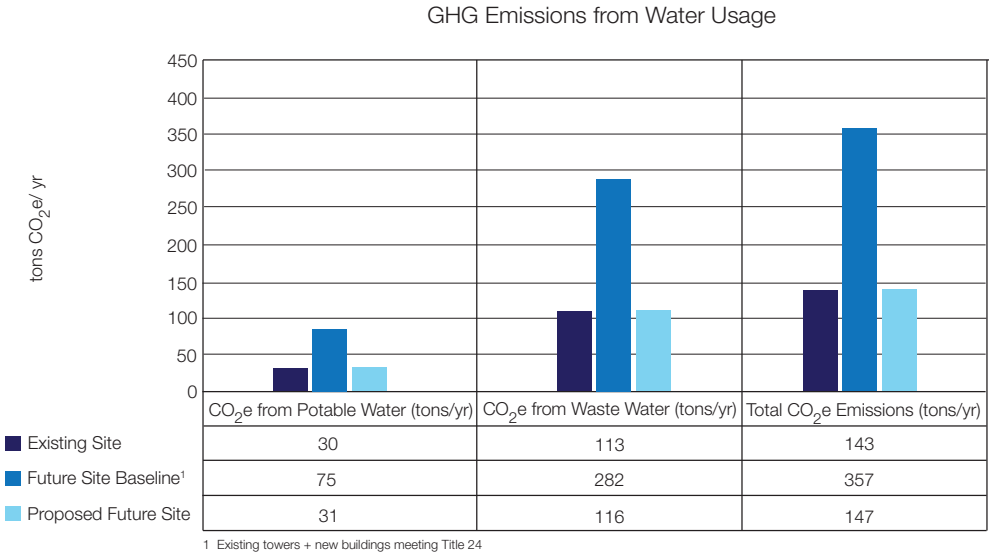

Figure WA.03.02: Greenhouse Gas Emissions Associated with Water Usage

Energy

EN

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Reduce energy consumption, promote renewable energy production, and adapt to future energy sources to achieve greenhouse gas neutrality

San Francisco has put in place the 2 Ton Challenge to reduce its greenhouse gas emissions 20% below 1990 levels by 2012 and join the other world-leading cities to set an example of how to achieve the lowest carbon footprint possible.1 Parkmerced can greatly advance the City's challenge by designing a community that will enable residents to live within much smaller carbon footprints than other San Francisco neighborhoods, save money on energy bills, and reduce their reliance on resources from local to global levels. Over the coming years, as energy resources evolve, adaptability will become an increasingly important value. Parkmerced's ongoing goal of energy efficiency will thus enable it to accept and adapt to those changes.

[1] Climate Action Plan for San Francisco. September 2004. San Francisco Department of the Environment, San Francisco Public Utilities Commission.

EN.01 existing conditions

Energy used to construct and maintain the world's infrastructure has been responsible for over one-third of global greenhouse gas emissions. At Parkmerced, this factor has led to a focus on energy reduction strategies and associated greenhouse gas emission reductions. It is a focus directed at improving the energy efficiency of existing buildings and at the same time developing high-performance new residential and commercial structures.

Unfortunately, Parkmerced's existing garden apartments are approaching the end of their lifespan. Therefore, demolishing the garden apartments and constructing new units in their place is more energy efficient, reducing long term energy consumption and greenhouse gas emissions.

Heat
With outdated construction techniques and technologies, Parkmerced's existing buildings are inherently inefficient by current standards. Both the existing garden apartments and towers have no insulation. Attic insulation is provided in a minority of garden apartments, and no additional wall or roof insulation is present on site. The original single-pane windows have been replaced with aluminum framed double-pane glass, which only has modest insulating value particularly when compared with today's higher performance windows.

In Parkmerced's garden apartments, heating is currently provided by individual gas furnaces. The majority of these are the original furnaces, circa 1950, that have been maintained with no major upgrades. In tower apartments, heat is provided to the residential units via steam radiators from a central boiler. Steam systems are inherently inefficient, prone to heat loss from pipes and leaking steam traps. In recent years, the original boilers have been rebuilt with new burners, firetubes, and controls. Efforts have also been made to eliminate leaks in the system with the implementation of an improved maintenance program.

Hot Water
Currently, domestic hot water is provided from central water heaters for both garden apartments and towers. Gas heated water and steam heat is commonly metered, which means that there is no economic incentive for residents to conserve. The plumbing, which affects the delivery of hot water, contains a mixture of new and old fixtures throughout Parkmerced. Although some of these fixtures have been retrofitted, they are typically only of moderate efficiency.

Lighting
Lighting in Parkmerced's common areas has already been replaced with more energy-conserving fixtures. In residential suites, permanent lighting fixtures are provided only in the bathrooms, kitchens and halls. Approximately 5% of units have had kitchen and bath upgrades that include lighting.

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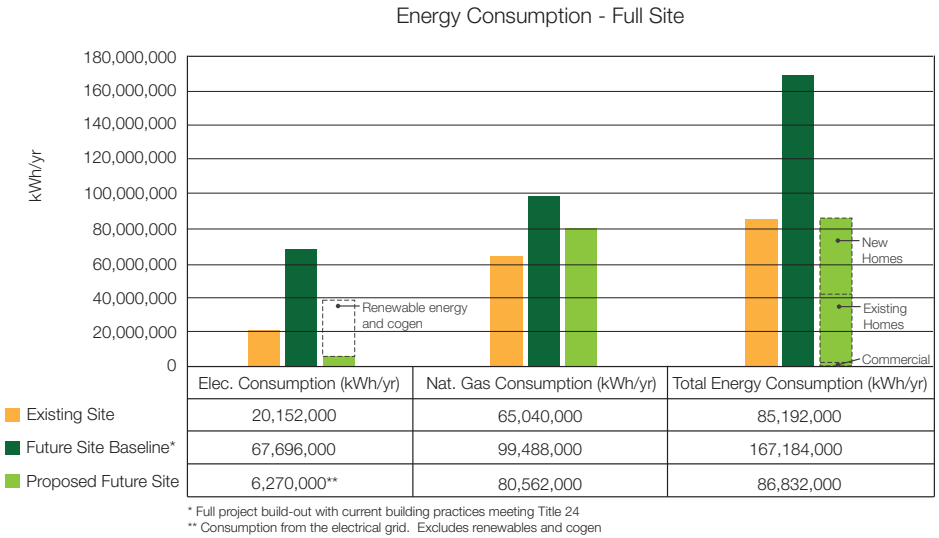
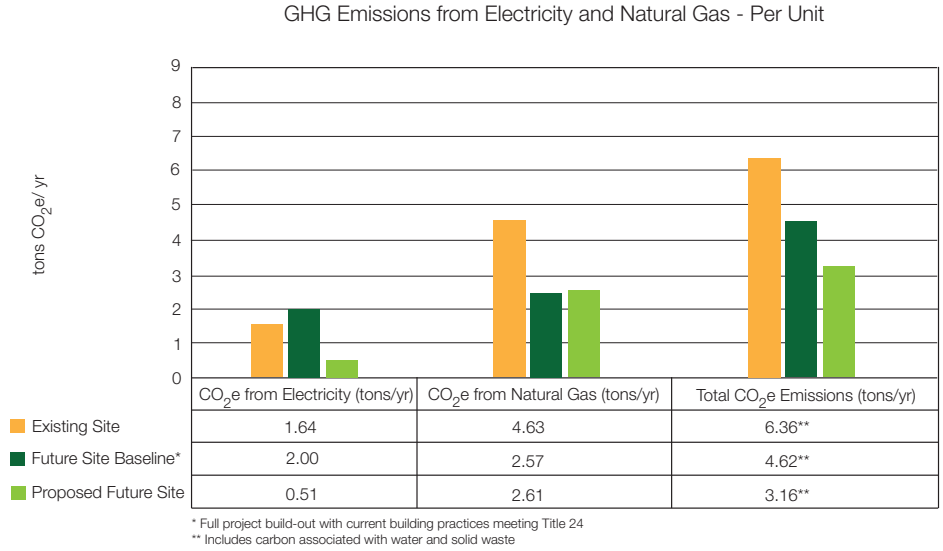


	Elec. Consumption (kWh/yr)	Nat. Gas Consumption (kWh/yr)	Total Energy Consumption (kWh/yr)
Existing Site	20,152,000	65,040,000	85,192,000
Future Site Baseline*	67,696,000	99,488,000	167,184,000
Proposed Future Site	6,270,000**	80,562,000	86,832,000

* Full project build-out with current building practices meeting Title 24
** Consumption from the electrical grid. Excludes renewables and cogen

Figure EN.01.01: Electrical and Natural Gas Consumption



	CO_2e from Electricity (tons/yr)	CO_2e from Natural Gas (tons/yr)	Total CO_2e Emissions (tons/yr)
Existing Site	1.64	4.63	6.36**
Future Site Baseline*	2.00	2.57	4.62**
Proposed Future Site	0.51	2.61	3.16**

* Full project build-out with current building practices meeting Title 24
** Includes carbon associated with water and solid waste

Figure EN.01.02: Greenhouse Gas Emissions from Electricity and Natural Gas

The graphs to the left show both energy consumption and GHG emissions associated with electrical and natural gas for the existing site, the future site baseline (meeting Title 24 with current building practices) and the proposed future site.

Current Parkmerced residential units use approximately 40% more energy than a new unit meeting Title 24 would. New residential units are expected to be 60% more efficient than Title 24 with 18% of new residential energy being provided through renewables and cogen. Thus new units will consume approximately 76% less energy from the City grid than exising units.

Future Parkmerced units will emit 42% less carbon than the average San Francisco household. Carbon emissions from the residential units at Parkmerced will be approximately 3.2 tons CO_2e per household compared to 5.5 tons CO_2e for the average San Francisco household.

EN.02 energy reduction + consumption

goal Reduce energy consumption to preserve finite energy sources and achieve greenhouse gas neutrality

strategies

heating and cooling systems

Due to the unique microclimate at Parkmerced, the predominant year round energy demand of residential units is for space heating. In order to meet or exceed Title 24 (2008), radiant wall panel systems or radiant in-floor heating could be installed.

high performance building envelopes

To help meet or exceed Title 24 (2008) evolutionary standards for both new residential and commercial buildings, the design and construction of high-performance building envelopes is critical. Walls, roofs and floors will be insulated to exceed the requirements of California Code of Regulations, Title 24 (2008). There must be a maximum of 40% glazing, and additional glazing in excess of this allowance must be compensated by improved glazing and wall performance. Clear, insulated glazing and low-conductivity window frames are especially useful in admitting sunlight while minimizing heat loss. High performance building envelopes are capable of saving nearly 50% of heating energy relative to code requirements for residential buildings.

energy dashboards

Increasing awareness of energy consumption is the first step towards conservation. Energy dashboards are encouraged to be installed in individual units to help occupants monitor their electrical and natural gas usage in real time and allow them to see exactly how much they are spending each month on utilities.

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vampire power switches

Vampire power is the electric power appliances consume when they are in standby mode and plugged into a socket but not actually in use. Vampire power switches provide an easy way to cut power usage while still being in control of when the power is cut.

appliance efficiency

A minimum of Tier 1 energy-efficient appliances will be installed in new construction as well as in the retrofitted existing towers at Parkmerced.

lighting efficiency

Because natural daylight is the most efficient lighting strategy, new buildings will be constructed to maximize daylight exposure in both private and commons areas. Though the latter makes up only a small fraction of the building's total area, common areas are typically responsible for using nearly half of the building's lighting energy because the lights are on at all times. Common area lighting controls will respond to daylight and human occupancy to ensure that artificial lighting is used only when needed. Permanent high-efficiency lighting fixtures could also be installed in all rooms, including residences. In existing buildings, installation of ceiling-mounted lights (which are more efficient than switched outlets) and upgrading lighting fixtures as new technologies become available will be possible as the rental units turn over.

heat recovery ventilation

Considerable energy savings may be achieved with heat recovery in the central ventilation systems of both new residential and commercial buildings. Rather than venting warm exhaust air outside, heat in the exhaust stream could be captured and used to preheat incoming air.

air source heat pumps

Commercial buildings can benefit by implementing air source heat pumps that take outside air and use it either as a heat source or a heat sink by transferring the temperature to the heating or cooling system in the building. These pumps should be considered as they are recommended over traditional condensing boilers and chiller plants because they significantly reduce energy consumption and associated greenhouse gas emissions.

exterior lighting

Exterior lighting efficiency at Parkmerced will be improved by upgrading the existing exterior building lighting to either light emitting diodes (LED)), high pressure sodium (HPS), or other energy-efficient technology.

on-going measurement + verification

In order to establish efficient performance of a building's energy systems, a measurement and verification plan could be implemented to install and use metering equipment to track and compare actual building performance against its targeted performance.

implementation actions and metrics

- Design new residential building envelopes to perform a minimum of 15% more efficiently than current Title 24 (2008) standards and all other buildings and building components to exceed current Title 24 (2008) standards by a minimum of 10%. In the future and as technology continues to advance, the Project Sponsor will endeavor to improve upon updated Title 24 standards.
- Design renovations to existing buildings so that the renovations meet or exceed the then-applicable Title 24 standards.
- Design all new infrastructure installed and maintained by Parkmerced including, but not limited to, common area lighting and water and wastewater pumps, to achieve an annual energy reduction of at least 10% below the current Title 24 (2008) minimum efficiency standards. In the future and as technology continues to advance, the Project Sponsor will endeavor to improve upon updated Title 24 standards. To the extent that such infrastructure is installed by the City, Parkmerced will encourage the City to meet this metric.
- Install one vampire outlet per room controlled by one master switch near the front door to the dwelling unit.
- Install Tier 1 or better appliances in residential units.

EN.03 energy production + distribution

goal Reduce the demand for finite energy resources and peak grid-source energy with high emissions to help the local power company supply cleaner energy and help Parkmerced achieve greenhouse gas neutrality

strategies

photovoltaics

Photovoltaic panels (PV) utilize the sun's energy to produce electricity and could generate a substantial portion of the site's overall electrical demand if installed either on-site on the roof's of new and existing buildings at Parkmerced or off-site within the City. While PG&E has a relatively clean energy profile compared to other power companies in terms of greenhouse gas emissions, on- or off-site renewable energy like PV produces no carbon and reduces line loss caused by lengthy distribution lines. Parkmerced anticipates achieving 10% of the total estimated site electrical consumption through renewables (which could include PV, wind turbines (as described below) or other renewable technology). With current technologies, the ability to produce renewable energy at Parkmerced is limited given the nature of the site's specific micro-climate and significant fog cover, making 20% on-site renewable energy production currently not achievable. It may be possible to explore an off-site alternative solution. wind turbines

wind turbines

Wind turbines are rotating machines that enable the conversion of the kinetic energy of wind into mechanical energy, which then in turn is converted to electricity. There are two types of wind turbines: Horizontal Axis and Vertical Axis Wind Turbines. Vertical Axis (VAWT) turbines should be considered at Parkmerced because their revolution is unidirectional, which allows for operation on sites where the wind flow is volatile and better protects against bird strikes.

cogeneration

Domestic hot water could be heated from cogeneration: a process in which heat is produced as a by-product from an engine creating electricity. It is an effective strategy to reduce electrical consumption from the grid and ultimately reduces overall greenhouse gas emissions. Fueled by natural gas, cogeneration systems can generate electricity more cleanly than the conventional power plants providing electricity to the grid. Another benefit of using cogeneration is that it generates electricity during peak times of use, which will help address California's need for more and cleaner power during these periods. Cogeneration presents opportunities in the future to switch to alternative fuel sources as they become more viable. While various types of small cogeneration units could be used to supply each building individually, a centralized cogeneration option is best suited to a district heating approach. Heat generated by the cogeneration system could be used for space heating, heating domestic hot water and heating non-base building loads, such as the swimming pool at the Fitness/Community Center. Parkmerced anticipates achieving 10% of the total estimated site electrical consumption through co-generation based on a heat load following co-generation strategy.

district energy system

The benefit of installing a district energy system at Parkmerced is that it establishes a slightly more efficient infrastructure for space heating and domestic hot water that will help further reduce green house gas emissions and provide opportunities to implement centrally-located, innovative new energy saving technologies at various points in the future. While a district energy system fed by natural gas fired boilers has minimal energy savings and greenhouse gas emission reductions, those savings and reductions are further improved when alternative thermal systems such as cogeneration are connected to the district energy system. There are three configuration alternatives that could be considered for district energy at Parkmerced, including an energy loop with either one centralized plant or a number of decentralized plants located throughout the neighborhood, or micro-centralized plants within individual buildings or blocks.

carbon offsets

Photovoltaics, cogeneration and other energy generation strategies could create excess electricity during peak hours, when consumption on-site is low. This electricity could be sold back to the power company for carbon offsets, helping to supply more renewable energy to the grid for other users during peak demands.

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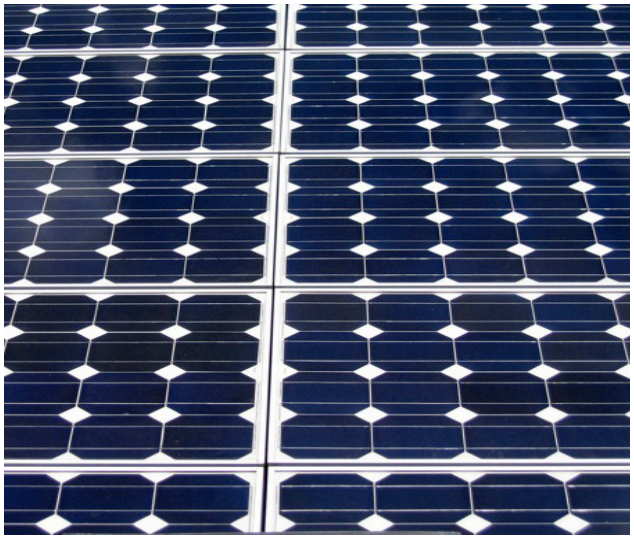


implementation actions and metrics

- At full build-out, provide, either on- or off-site, non-polluting renewable energy generation systems, such as solar, wind, small-scale or micro-hydroelectric, and/or biomass, with production capacity of at least 10% of the project's estimated annual energy consumption. These systems will be in addition to the provision of non-polluting renewable energy generation by Pacific Gas & Electric or the San Francisco Public Utilities Commission.
- At full build-out, generate 10% of the project's estimated electrical demand through a cogeneration system sized on a thermal load following model.

Solid Waste

SW

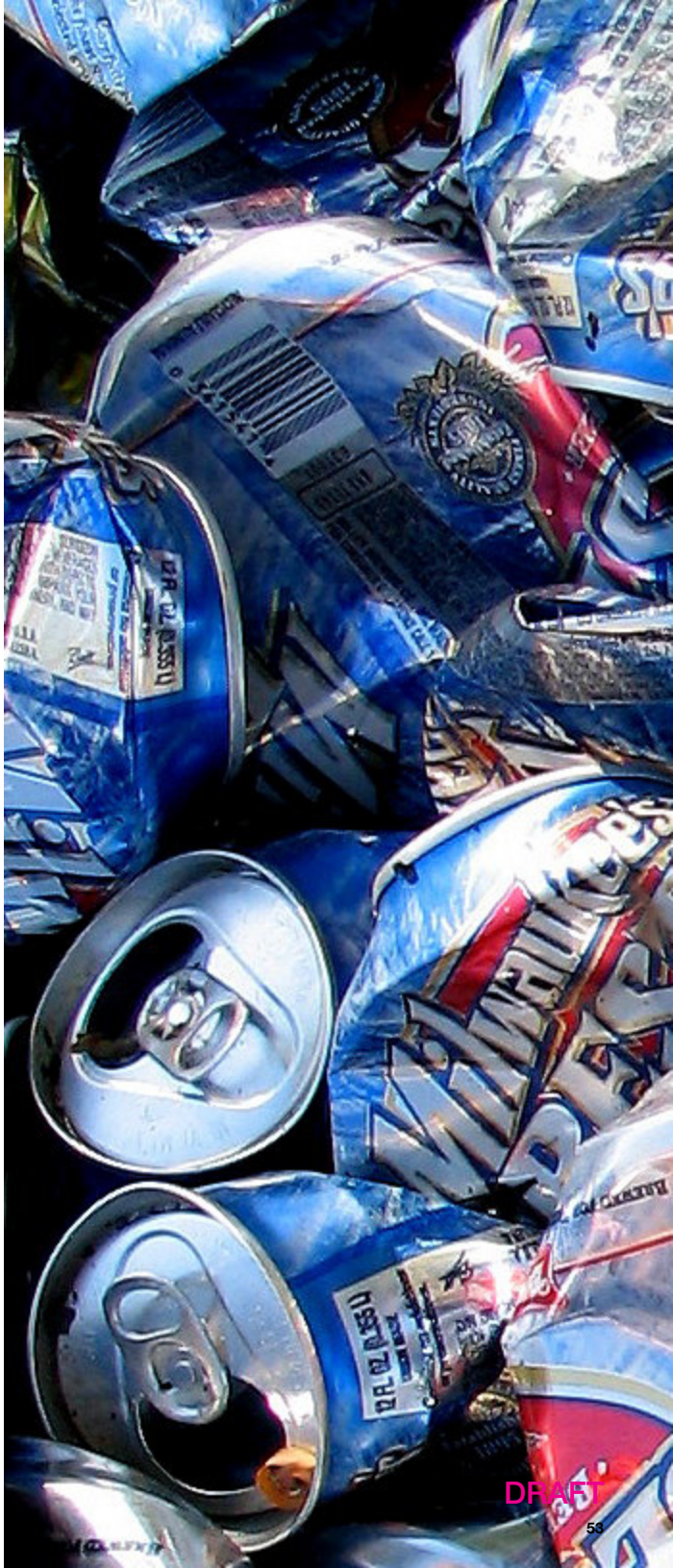
Become a model sustainable San Francisco residential community by minimizing the amount of solid waste sent to landfills and maximizing the reuse of organic waste

In addition to facing a space shortfall crisis for landfills as increasing volumes of waste is generated, landfills also produce environmentally damaging emissions that off-gas into the atmosphere and leach into the soils and waterways. These gases and toxins accumulate as the waste breaks down, and therefore must be trapped and sealed to prevent contamination of soils and ground water. It can take landfill waste hundreds of years to decompose and stop off-gasing.

The United States is one of the greatest contributors to landfill. According to the Environmental Protection Agency, the average American produces 4.5 pounds of garbage a day, or 1,600 pounds per year.1 While San Francisco is well under the American average, diverting 70% of its waste from landfills, the city still hauls away 1,800 tons of garbage to landfill each day.2 San Francisco has made it a goal to send "zero waste to landfill by 2020" in order to eliminate the City's impact on local landfills and reduce its carbon footprint. Through innovative waste collection systems and by educating residents to separate waste, compost and recyclables, Parkmerced can be a key contributor in helping the City achieve its ambitious goal.

[1] Municipal Solid Waste Generation, Recycling and Disposal in the United States: Facts and Figures for 2008. 2008. Environmental Protection Agency.

[2] Municipal Solid Waste Generation, Recycling and Disposal in the United States: Facts and Figures for 2008. 2008. San Francisco Department of the Environment, San Francisco Public Utilities Commission.



SW.01
existing conditions

Currently, 28% of solid waste at Parkmerced is diverted from landfill, which falls short of the goal of "Zero Waste to Landfill by 2020." The current solid waste collection system at Parkmerced consists of residential garbage and recycling collection and transport to off-site facilities. Overall, Parkmerced currently generates a total of approximately 3,920 tons of solid waste per year: 2830 tons that are directed to landfills; 840 tons of recyclables; and Parkmerced's landscaping generates 250 tons of organic matter, or green waste, per year. This equates to 0.88 tons of solid waste directed to landfills and 0.26 tons of recyclables per housing unit per year.

Parkmerced's waste composition breakdown numbers are actually typical of many California communities. This is true for both types and amounts of waste, according to the results of studies done by the California Integrated Waste Management Board's Statewide Waste Characterization Study prepared in December 2004 by the Cascadia Consulting Group, Inc.

The same study showed that transport of solid waste from Parkmerced in 2007 required 550 vehicle trips to collect garbage and recyclables for transport to a transfer station, and then on to a landfill. Each trip averaged 1.5 tons of waste collected and hauled off-site. That same year, ninety-nine vehicle trips were required to collect green waste, and each trip for compostable green waste averaged 2.54 tons collected and hauled off-site. This translates to a total of 134 tons of CO_2e produced from waste transportation.

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COMPOST

SW.02 waste reduction

goal Reduce waste and divert as much material from landfill as possible to help conserve resources, achieve greenhouse gas neutrality and preserve natural ecosystems

strategies

waste separation
A rigorous recycling and composting system for Parkmerced will encourage diversion of as much waste from landfills as possible. Separate receptacles for recyclables and compost will be provided at all collection locations.

centralized waste collection
Centralized waste, recycling and compost pick-up locations will reduce truck traffic throughout the neighborhood and reduce truck idling time, as trucks will be required to make fewer stops within Parkmerced to pick up waste. This reduction in truck traffic and idling will likely reduce the project's carbon footprint. As an alternative to multiple pick-up locations, an automated waste collection system could also be installed that pneumatically transports waste, recycling and compost from multiple drop-off locations to one or more centralized pick-up location.

mulching
Mulching and leaving grass clippings where they fall returns nutrients to the soil and reduces irrigation and fertilizer requirements. Implementing this strategy, along with an on-site composting program, will help eliminate approximately ninety-nine vehicle trips per year, reducing overall transportation-generated greenhouse gas emissions.

organic farm composting
Collecting and directing "green waste" to an on-site organic farm composting facility will significantly reduce overall transportation-generated greenhouse gas emissions. The matured compost will fertilize organic farm crops and community garden plots at Parkmerced, creating an on-site, closed-loop green recycling system.

hazardous waste drop-off
To promote proper disposal of potentially hazardous waste, an on-site drop-off location will be provided for residents to dispose of materials such as paints, solvents, oil, and batteries.

green operations
To further reduce the amount of waste produced at Parkmerced, the apartment leasing office will send communications and maintain records electronically to the extent feasible. Local business will be encouraged to do the same. For those operations requiring printing, recycled paper will be used.

neighborhood re-use box
Establishing a neighborhood re-use box will give residents an opportunity to salvage discarded items before they are sent to landfill.

education + awareness program
An education and awareness program will inform Parkmerced residents of the neighborhood's recycling and composting programs. Residents will be instructed to use all waste receptacles to increase awareness of the importance of separating waste.

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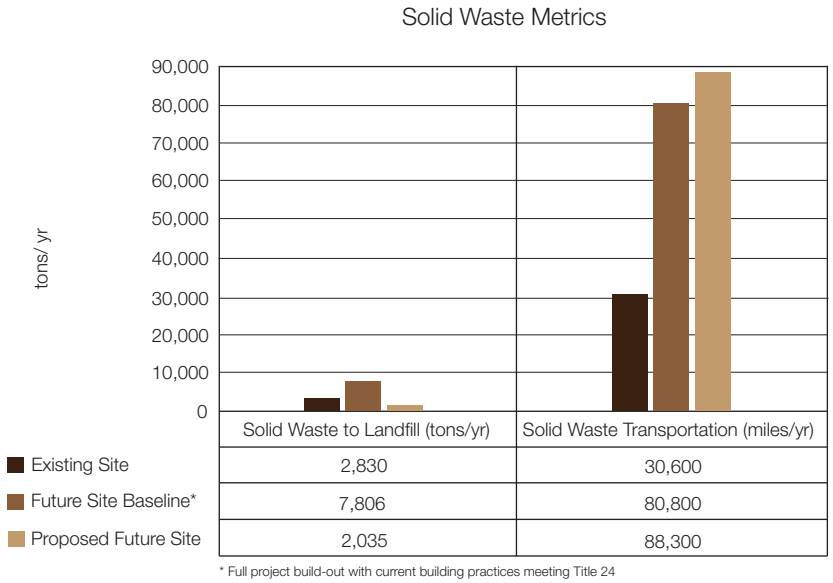
implementation actions and metrics

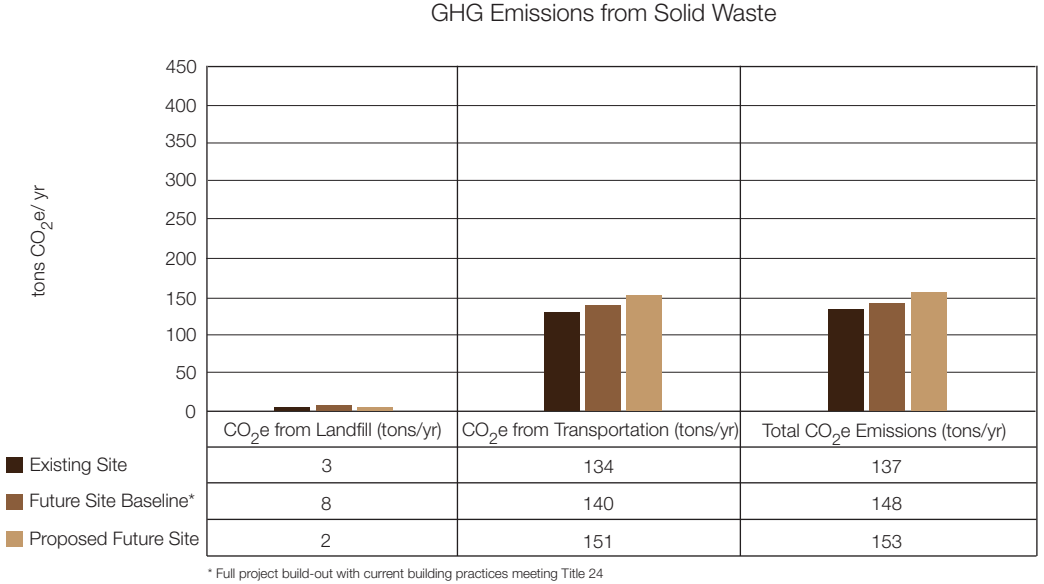
- Meet the requirements of the City's Mandatory Recycling and Compost Ordinance (Ordinance No. 100-09, File No. 081404).
- Provide a minimum of one centralized waste pick-up location on each block.
- Provide one hazardous waste drop-off location within each Neighborhood Commons.



	Solid Waste to Landfill (tons/yr)	Solid Waste Transportation (miles/yr)
Existing Site	2,830	30,600
Future Site Baseline*	7,806	80,800
Proposed Future Site	2,035	88,300

* Full project build-out with current building practices meeting Title 24

Figure SW.02.01
Solid Waste to Landfill and Associated Transportation



	CO_2e from Landfill (tons/yr)	CO_2e from Transportation (tons/yr)	Total CO_2e Emissions (tons/yr)
Existing Site	3	134	137
Future Site Baseline*	8	140	148
Proposed Future Site	2	151	153

* Full project build-out with current building practices meeting Title 24

Figure SW.02.02
Greenhouse Gas Emissions Associated with Solid Waste

Materials + Construction

MC

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Use sustainable materials and construction techniques to reduce the consumption of natural resources and slow climate change

Harvesting and manufacturing materials for building construction affects both the quality and regeneration of natural ecosystems as well as energy consumption associated with extraction, manufacturing and transportation. There are two categories of this consumption, or embodied energy: initial and recurring. Initial embodied energy is defined as the non-renewable energy consumed in the acquisition of raw materials, their processing and manufacturing into building products, and their subsequent transportation to the job site. Recurring embodied energy is the non-renewable energy consumed to maintain, repair, refurbish or replace the material. Therefore, the total energy consumption and associated carbon emissions of a building material are evaluated by a life-cycle analysis, which takes into account both the building's initial and recurring embodied energy to determine its environmental consequences.

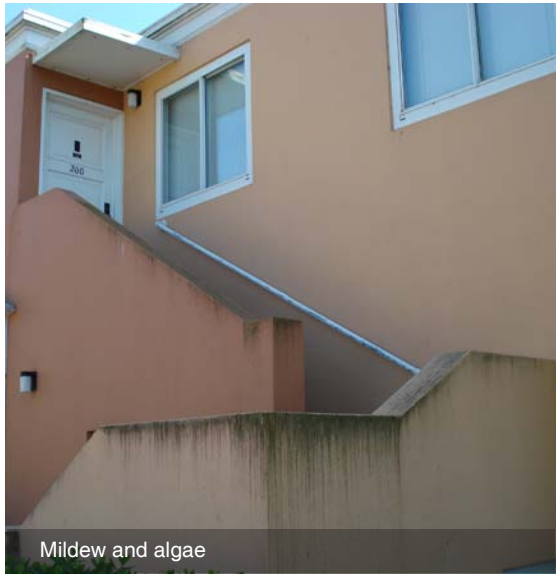
Parkmerced's goal to minimally impact the natural environment and lower greenhouse gas emissions takes the total life-cycle analysis of materials into consideration by reusing existing materials in new construction where feasible. This not only leads to less extraction of virgin material, but also extends the embodied energy by re-purposing. In addition to reusing materials, Parkmerced is committed to choosing rapidly renewable resources or those with high recycled content.

The construction process also plays a significant role in energy consumption and greenhouse gas emissions. A sustainable construction process includes proper staging, appropriate phasing, responsible choices of materials, indoor air quality management, waste disposal and recycling. Construction practices will have a significant impact on the health of the existing residents and local environment during construction and will also determine if the building is able to achieve its long-term sustainability goals.

MC.01 existing conditions

The majority of Parkmerced's buildings were constructed in the 1940's using standard wood stud construction. Due to the scarcity of materials and the urgency and high demand for housing during wartime, Parkmerced was built quickly. Insulation or flashing was not installed during initial construction on a majority of the buildings, so today the buildings suffer from water infiltration, mold, and dry rot due to their poor construction and Parkmerced's damp marine climate. In order to keep the existing garden apartments for another 60+ years, the required maintenance and repairs would increase the recurring embodied energy beyond the total embodied energy consumed with their demolition and new construction.

The mid-rise towers, however, were built with concrete and better structural materials making their renovation viable. By keeping the mid-rises, and either reusing or recycling much of the existing garden apartment materials in the new construction, Parkmerced intends to achieve a lower carbon footprint than the current existing site.


Mildew and algae


Framing repairs


Dry rot and leaky windows


Chipped and crumbling stucco

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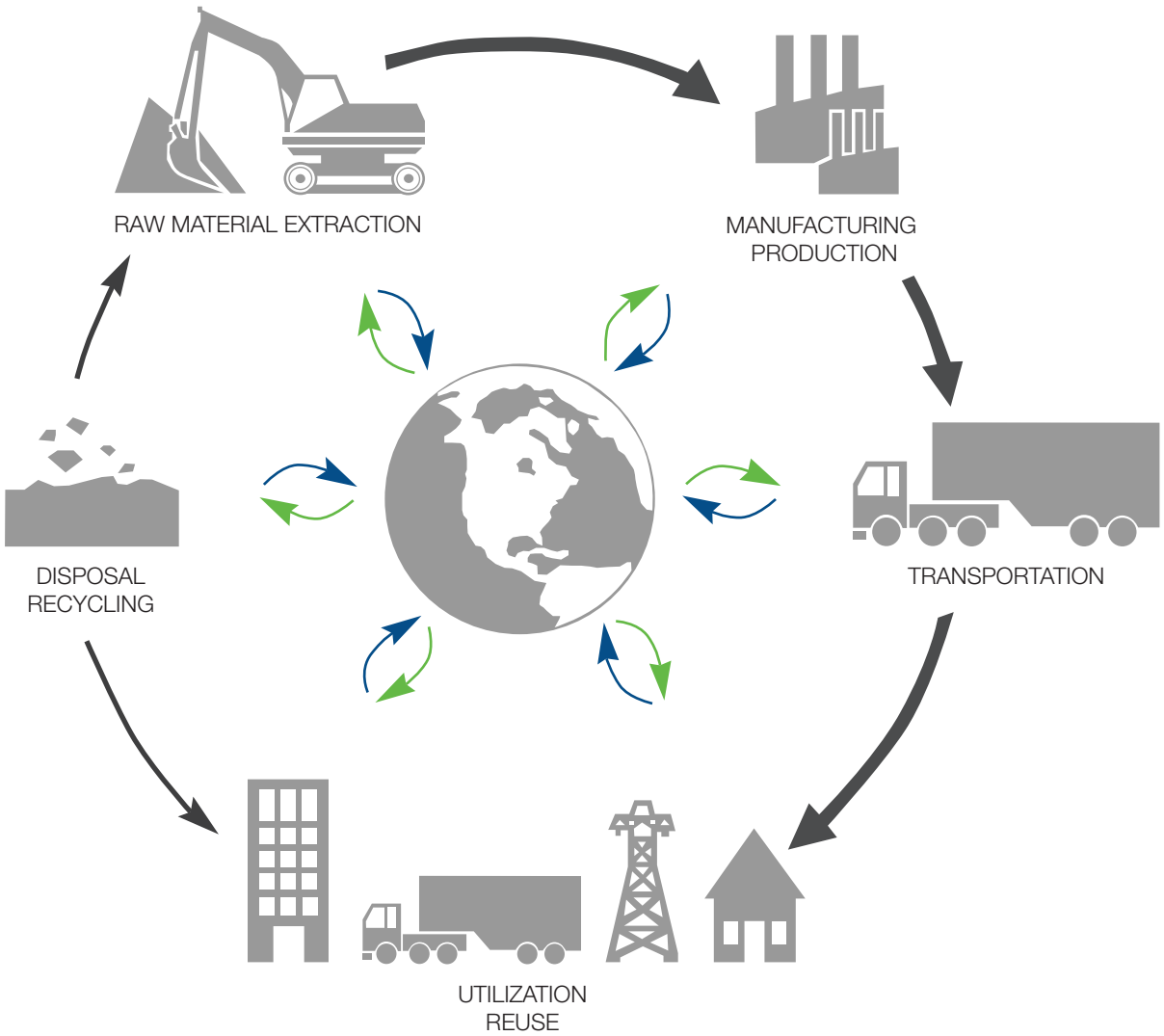

Figure MC.01.01: Life-Cycle Analysis

life-cycle analysis (LCA)

Life-cycle assessment or more commonly referred to as "LCA" is the process of evaluating the effects that a material, product or system has on the environment over the entire period of its life thereby increasing resource-use efficiency and decreasing negative environmental impacts. LCA can be used to study the environmental impact of either a material or the function the material is designed to perform. The goal of LCA is to compare the full range of environmental and social damages assignable to products and services, to be able to choose the least burdensome one. For example, in some cases materials that fall outside the LEED standard 500-mile regional boundary may technically have a larger initial embodied GHG impact, however, in comparison may have greater longevity and increased use-phase thereby reducing replacement frequency and cutting GHG over time.

MC.02 materials

goal Eliminate material extraction from mature ecosystems, use materials with reduced embodied energy, minimize toxins and improve the quality of interior environments for occupants

strategies

materials reuse

Reusing existing building materials at Parkmerced to the greatest extent feasible is intended to reduce the need to extract virgin material, helping both the global environment as well as the project's carbon footprint. Additionally, reusing materials will support local reuse businesses, and a reduction in demolition waste transported from the property will contribute to a lower overall project carbon footprint.

recycled content

Incorporating recycled content in building materials will reduce the need to extract virgin material, not only lowering Parkmerced's carbon footprint, but also helping to reduce demand for virgin materials. Recycled content will include both post-consumer material (waste material generated by households or commercial activity) and pre-consumer material (material that is diverted from the waste stream during the manufacturing process). In addition to using recycled content in building materials, recycled materials will be used where feasible for roadways, sidewalks, unit paving, water retention tanks, and piping for water, sanitary sewer, and steam energy distribution.

regional materials

Much of the greenhouse gas emissions associated with building materials is due to the burning of fuel during transportation to its suppliers and then to the job site. Using locally extracted and supplied materials limits greenhouse gas emissions. To the extent practicable, materials will be extracted and manufactured no more than 500 miles from the job site.

certified wood

Using certified wood supports and encourages environmentally responsible forest management and helps ensure that virgin resources remain available for generations to come. To the extent practicable, wood-based materials used for construction will be certified in accordance with the Forest Stewardship Council's (FSC) Principles and Criteria. These products may be used for structural framing, flooring, sub-flooring, doors, and many finish applications, where feasible.

rapidly renewable materials

Incorporating rapidly renewable materials helps to encourage environmentally responsible management of finite raw materials. Using products made from plants that are typically harvested within a ten-year cycle or shorter helps to preserve old growth forests. Such materials include bamboo, wool, cotton insulation, agrifiber, linoleum wheatboard, strawboards, and cork. To the extent practicable, rapidly renewable materials will be used.

low VOC's

Volatile Organic Compounds (VOC) in materials off-gas toxic, odorous contaminants that potentially harm and irritate building occupants. To ensure the health and safety at Parkmerced, paints and coatings will meet the VOC levels of the Green Seal Standards, all adhesives will comply with South Coast Air Quality Management District (SCAQMD) Rule #1168, all carpet will meet the requirements of the Carpet and Rug Institute's Green Label Plus program, and composite wood and agrifiber materials will contain no added urea formaldehyde resins.

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CO2e capture in concrete

Innovative technologies are currently being developed to capture massive volumes of CO_2e and other gases like SOx, acid gases and mercury from coal plants and convert them into calcium and bicarbonate minerals used to make aggregate for concrete. This process actually produces a negative carbon footprint as CO_2e will be recaptured and turned into clean water and aggregate. As this technology becomes more readily available, using this concrete could help Parkmerced achieve carbon neutrality and may actually facilitate a negative carbon footprint for the entire site.

Renewable materials


Rapidly renewable materials

implementation actions and metrics

- Use materials for new infrastructure with a goal that the sum of post consumer recycled content, in-place reclaimed materials, and one-half of the pre-consumer recycled content constitutes at least 50% of the total mass of infrastructure materials. Count materials in all of the following infrastructure items as applicable to the project:
  - Roadways, parking lots, sidewalks, unit paving, and curbs.
  - Water retention tanks and vaults.
  - Base and subbase materials for the above.
  - Stormwater, sanitary sewer, steam energy distribution, and water piping.
- Recycled content is defined in accordance with ISO IEC 14021, Environmental labels and declaration, Self-declared environmental claims (Type II environmental labeling).
- Buildings will generally use a minimum 5% salvaged, refurbished or reused materials, based on cost, of the total value of materials on the project.
- Buildings will generally use materials with recycled content such that the sum of post-consumer recycled content plus 1/2 of the pre-consumer content constitutes at least 10%, based on cost, of the total value of the materials in the project.

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MC.03 construction

goal Practice responsible construction management to protect surrounding natural habitat, respect existing residents, and ensure the health and safety of construction employees. Divert as much construction waste from landfill as possible and lower the impact on greenhouse gas emissions

strategies

erosion and sedimentation control plan

Reducing construction related pollution is especially important at Parkmerced as construction will be continuous for over 20 years and will include stockpiling of excavated soil which could lead to increased dust. Damage done to the local watershed could also be significant if an erosion and sedimentation control plan is not put in place. Techniques to stabilize soils may include seeding, mulching, filter socks, stabilized site entrances, and the preservation of existing vegetation.

reduce construction noise

Agreed upon working hours will be diligently adhered to in order to ensure a livable neighborhood for existing residents during construction. Limiting construction site access to controlled points of entry and establishing truck routes will help to manage noise as will maintaining an organized construction schedule to use equipment and group tasks efficiently.

reuse excavated soils for fill

Parkmerced will store and reuse excavated soils on site for fill during construction, as feasible. This will greatly reduce the number of truck trips needed for off-haul, which will help to reduce impacts to air quality and the project's carbon footprint. For unavoidable off-haul, local soil recipients will be given priority to shorten all truck trips.

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salvage and recycle construction waste

By salvaging and recycling construction waste, a significant amount of debris will be diverted from landfills and will support local reuse businesses. This will help both the global environment and the project's carbon footprint. A portion of the material will be redirected back to the manufacturing process or will be donated to other building sites. Salvageable or recyclable materials may include cardboard, metal, brick, acoustical tile, concrete, plastic, clean wood, glass, gypsum wallboard, carpet, insulation, doors, windows, trim materials, fixtures and hardware.

prefabrication

Fabricating construction installations and welding steel in the controlled environment of a shop and delivering complete systems to the construction site helps to reduce the amount of equipment and number of construction vehicles needed, therefore reducing emissions. Prefabrication also allows more material reuse and generates less waste, aiding in lowering the carbon footprint associated with construction.

maintain and test indoor air quality

For the benefit of the health and well-being of both construction workers and building occupants, an indoor air quality management plan should be implemented during construction. Installed absorptive materials should be protected from moisture damage, and permanently installed air handlers should not be used for temporary heating and cooling during construction. If this is not possible, filtration media with a Minimum Efficiency Reporting Value (MERV) of 8 should be used at each return air grille.

implementation actions and metrics

- Create and implement an erosion and sedimentation control plan for all new construction activities associated with the project. The plan should incorporate practices such as phasing, seeding, grading, mulching, filter socks, stabilized site entrances, preservation of existing vegetation, and other best management practices (BMPs) to control erosion and sedimentation in runoff from the entire project site during construction. The plan should list the BMPs employed and describe how they accomplish the following objectives:
  - Prevent loss of soil during construction by stormwater runoff and/or wind erosion, including but not limited to stockpiling of topsoil for reuse.
  - Prevent sedimentation of any affected stormwater conveyance systems or receiving streams.
  - Prevent polluting the air with dust and particulate matter.
- Recycle or salvage a minimum of 50% of construction waste by identifying materials to be diverted from disposal and whether the materials will be sorted on-site or co-mingled. Calculations can be done by weight or volume, but must be consistent throughout.
- Meet the requirements of the San Francisco Building Code Chapter 13C (Green Building Requirements).

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Measurement + Verification

Goals + Strategies

MV

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Measure and verify performance of building systems and materials to ensure accountability

Parkmerced's Sustainability Plan aims to incorporate the most rigorous and innovative methods for reducing consumption of natural resources and to making a significant contribution to stabilizing climate change. It is imperative that building systems and materials continue to be evaluated and improved during the course of the project's 20 to 30 year build-out. As technologies advance, better methodologies will be implemented at Parkmerced to ensure it continues to reduce its environmental impact and is a model for sustainable urban design.

MV.01 performance

goal Ensure sustainable measures are successfully employed and are achieving optimal results

strategies

participatory design process

Engaging all local stakeholders and eliciting their concerns and suggestions at every stage of design helps to create a neighborhood that reflects the hopes and desires of all community members. The Parkmerced Vision Plan was developed over the course of many years and has greatly evolved due to the participatory process that was engaged. The design and development team met with all local stakeholders to solicit and document their input on the proposed project prior to commencing and during the entire design process. Communication between the project owner and the community will continue throughout the remainder of the design process, into construction phases, and during the post-construction phase.

healthy development tool

The Healthy Development Tool by the San Francisco Department of Public Health is a list of sustainable measures used to evaluate how the developed urban environment can improve human health. The measures are broken down into the following eight categories: environmental stewardship, sustainable and safe transportation, social cohesion, public infrastructure/access to goods and services, adequate and healthy housing, healthy economy, demographics, and health outcomes.

on-going measurement + verification

An on-going measurement and verification plan could be implemented to evaluate both building and energy systems to make sure they are performing according to specification and to guarantee the indoor environment is satisfactory for the occupants. The plan could also include the evaluation of building materials and systems during the project's construction to ensure the most sustainable and energy saving systems and materials are installed throughout the project build-out.

adaptation

While the sustainable strategies presented in this plan are the most innovative for today's building practices, many improvements will be made throughout the project's 20-30 year build-out. It is important that the building technologies installed at Parkmerced continue to evolve and improve during the build-out.

evaluation

Parkmerced should biannually evaluate any improvements made to building material embodied energy calculations or the energy performance of buildings systems implemented at Parkmerced.

establish Air Quality Index

Parkmerced intends to work with the Bay Area Air Quality Management District (BAAQMD) to develop a long range air quality plan to ensure that the project is in compliance with BAAQMD's Clean Air Plan (CAP), the San Francisco Health Code, and the California Environmental Quality Act (CEQA).

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nework Plan

appendix

AP

appendix

definition of terms

The following definitions apply to certain terms used in the Sustainability Plan.

5-Year Storm Event A storm event having a 20% probability of being equaled or exceeded in any one given year. It is the design storm San Francisco uses to size stormwater pipes, their minimum and maximum depths, and how full the pipes can flow.

Air Source Heat Pump A heat exchanger over which outside air is blown, and the heat is extracted from the air and transferred into a hot water tank or heating system.

Aquifer An underground layer of permeable rock that holds groundwater.

Bay Area Air Quality Management District (BAAQMD) A public agency entrusted with regulating stationary sources of air pollution in the counties surrounding San Francisco Bay: San Francisco, Alameda, Contra Costa, Marin, Napa, San Mateo, Santa Clara, southwestern Solano, and southern Sonoma.

Biodiversity The variety of plant and animal life in a particular habitat or ecosystem.

Biogas Gas produced by the breakdown of organic matter without oxygen.

Biogutter A narrow channel containing water tolerant vegetation to collect and clean stormwater.

Biomass Organic material or waste burnt as a fuel source.

Bioswale A low depression in the ground with water tolerant vegetation to collect and clean stormwater.

California Environmental Quality Act (CEQA) A California statute passed in 1970 to institute a statewide policy of environmental protection.

Carbon An organic compound present in the molecule carbon dioxide, which affects the ozone layer of the atmosphere.

Carbon Footprint The collection of greenhouse gas emissions associated with either a person, an organization, a process or a material.

Carbon Offset A financial trade-off for reducing greenhouse gas emissions and is measured in metric tons of carbon dioxide-equivalent (CO_2e). One carbon offset equals the reduction of one metric ton of CO_2e.

Certified Wood Wood used for building construction that is harvested using sustainable forestry practices, and protecting trees, wildlife habitats, soils and streams.

Cistern A waterproof vessel used for storing liquids.

Clean Air Plan (CAP) A control strategy prepared by the Bay Area Air Quality Management District to reduce emissions and decrease ambient concentrations of harmful pollutants to safeguard public health.

Cogeneration (Cogen) An engine or powerstation that generates electricity and produces waste heat which is captured for either domestic, commercial or industrial heating purposes.

Compost The decomposition of organic material primarily without oxygen to create nutrient-rich soil.

Condensing Boiler A boiler that extracts heat from the flue gases to preheat the water in the boiler increasing its efficiency.

District Energy A large heating and cooling system that distributes either hot or cold water to multiple buildings from either a central plant or collection of plants.

Ecology The environment as it relates to living organisms.

Ecological Urbanism Integrating the built and natural environments into a single interrelated system which is mutually beneficial and supportive of a self-sustaining neighborhood.

Embodied Energy Energy associated with the manufacturing of a material.

Energy Star International standard for the efficiency of consumer products.

Environmental Protection Agency (EPA) A government agency that enforces regulations protecting the health of human beings and the environment.

Forest Stewardship Council (FSC) An international non-profit that sets standards for responsible management of forests and independently certifies and labels forest products.

Geothermal Heat from the interior of the earth.

Green Seal Standards The metrics that must be met by the non-profit eco-labeling organization, Green Seal, which standardizes and certifies consumer products that meet EPA standards.

Greenhouse Gas Emissions (GHG) Gases in the atmosphere that absorb and emit radiation and effect the temperature of the Earth.

Greywater Wastewater generated from sinks, showers and laundry facilities that can be recycled and used for irrigation.

Habitat A natural environment in which an organism lives.

Hazardous Waste Waste that poses a substantial threat to public health due to its tendency to ignite, corrode, or be reactive or toxic.

Heat Recovery Ventillator A heat exchanger that takes heat from the exhaust stream and uses it to preheat incoming air.

Hedgerow A line of closely planted trees to form a barrier or to block wind.

High Pressure Sodium A lighting lamp technology which uses both sodium and mercury in an excited state to produce light. The addition of mercury gives the lamp a better color rendering than low pressure sodium which does not include mercury.

Horizontal Axis Wind Turbine A rotating device capturing energy from the wind and converting it into electricity with horizontally rotating blades.

Hydrology The study of the movement, distribution and character of water.

Initial Embodied Energy The non-renewable energy consumed in the acquisition of raw materials, their processing, manufacturing and transport to the job site.

Life-Cycle Analysis (LCA) The assessment of a material's embodied energy as it passes through the various phases and stages of construction. This includes the associated energy and carbon in the extraction of raw materials used in its construction, that associated with its manufacturing, its transportation to the job site, and its disposal or recycling to its reuse.

Low-Flow Fixtures Plumbing products that meet the water efficiency standard of the Energy Policy Act of 1992 and use less water than standard fixtures without compromising on performance.

Mercury Vapor A gas discharge lamp that uses mercury in an excited state to produce light.

Microclimate A local atmospheric zone that has a different climate from the surrounding area.

Minimum Efficiency Reporting Value (MERV) A measurement scale developed by ASHRAE to rate the effectiveness of air filters.

Net Zero The portion of a tower above the roof of the highest occupied floor used to screen rooftop elements and to enhance the tower design.

Non-Native Species A species living outside its native distributional range that has been introduced by human activity. These species tend to compete aggressively with those that are native.

Organic Produced without the use of pesticides, insecticides, herbicides, or products that have not been genetically modified.

Paseo A path dedicated solely to pedestrians.

Permeable Paving A paving material that allows water to infiltrate.

Photovoltaic Array A linked collection of cells that convert solar energy into direct current electricity. An inverter then converts the DC power into alternating current, or AC electricity.

Post-Consumer Waste material from households or commercial, industrial, and/ or institutional facilities that can no longer be used for its intended purpose.

Potable Uncontaminated water suitable for drinking.

Pre-Consumer Material that is diverted from the waste stream during the manufacturing process.

Prefabrication The assembly of building components in a factory rather than on the job site which are then transported to the site for quick and more efficient assembly.

Recurring Embodied Energy The non-renewable energy consumed to maintain, repair, refurbish or replace material.

Sheet Metal and Air Conditioning Contractors National Association (SMACNA) Offers members of the association professional assistance in labor relations, legislative assistance, research and technical standards development, safety as well as other industry issues.

Social Heart A neighborhood concentration of commercial and retail uses connected to public transit.

Solar Thermal Collector A device that absorbs heat from sunlight in a collecting fluid (either water or an antifreeze mixture) which is then used to heat domestic hot water.

South Coast Air Quality Management District (SCAQMD) Rule #1168 Regulations on the VOC content and limits for adhesives, adhesive bonding primers, or any other primer.

Stream Corridor A seasonal stream and its supported habitats originating in Juan Bautista Pond and terminating at Lake Merced Boulevard and Brotherhood Way.

Sustainability Development that does not deplete natural resources or undermine its physical or social systems of support, but instead allows resources and ecologies to continue to renew.

Tier 1 The energy efficiency standards established by the California Energy Commission to become effective on January 1, 2011.

Title 24 (2008) Energy efficiency standards for residential and nonresidential buildings in response to a legislative mandate to reduce California's energy consumption.

Transportation Demand Management (TDM) Strategies and policies to reduce the demand for single-occupancy private vehicles or to redistribute the demand over a time period.

Vampire Power Power that is consumed by electronic appliances when they are operating in standby mode or are switched off.

Vertical Axis Wind Turbine A rotating device capturing energy from the wind and converting it into electricity with vertically rotating blades.

Volatile Organic Compounds (VOC) Organic chemical compounds that have significant vapor pressures and can affect the environment and human health.


Parkmerced | SOM

parkmerced

transportation plan

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The Parkmerced Transportation Plan establishes specific goals, strategies and targets that will be incorporated into the transformation of Parkmerced into a model 21st century neighborhood. The Plan provides a framework and management plan for addressing transit and vehicular travel to and from the neighborhood. Together with the accompanying Vision Plan, Design Standards and Guidelines, Sustainability Plan, and Infrastructure Report, the Parkmerced Transportation Plan provides a comprehensive vision for all future improvements at Parkmerced.

- The Vision Plan lays out the vision and conceptual frameworks for all proposed improvements at Parkmerced.
- The Design Standards and Guidelines prescribe urban design controls for land use, open spaces, streets, blocks and individual buildings. It also outlines a process for project implementation.
- The Sustainability Plan contains specific strategies and metrics which together address the management and conservation of energy, water and other natural resources, as well as establish goals for green building standards.
- The Infrastructure Report establishes an outline for anticipated site-wide improvements to all streets and public rights-of-way, underground utilities, and grading.

The vision has been developed through a collaborative process with input from community members, local agencies and departments, public advocacy organizations and design and engineering experts.

parkmerced vision plan

transportation plan

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introduction

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The Parkmerced Transportation Plan (herein referred to as the “Plan”) envisions the transformation of the existing automobile-oriented community into an international example of sustainable living. Current levels of private vehicle use at Parkmerced are not sustainable; as such, this Plan lays out a series of strategies that emphasize transportation alternatives.

The seamless integration of land use and transportation is a fundamental principle of the proposed land use plan and urban form goals for Parkmerced. The proposed neighborhood design facilitates convenient access to all areas on foot, by bicycle, and via transit, and is designed to reduce single-occupant auto trips. The land use plan features a sustainable and compact development pattern focused around a mixed-use center adjacent to transit stations.

By providing a structure that allows for safe and convenient travel by non-automobile modes, the paradigm of the overall neighborhood design can be shifted away from the standard automobile-focus. This can be achieved through the implementation of programs to reduce the attractiveness of private automobile use, such as limits to off-street parking and requiring market-rate parking costs. In addition, to support this vision for Parkmerced, dedicated policies and programs have been developed to promote the use of non-automobile modes, thereby facilitating their use and attractiveness.

This document presents the goals, principles and strategies that have been developed to facilitate the travel demand needs of an emerging mixed-use, urban eco-community in southwest San Francisco. Incorporating innovative practices and sustainable development principles, this Plan will provide residents, employees and visitors with highest-quality multimodal transportation infrastructure and services.

introduction

Challenges and Implementation

The Plan recognizes the mobility challenges facing Parkmerced. Originally designed as an automobile-oriented community, the Plan envisions a greater role for transit, bicycle and pedestrian travel. The opportunity to access services and conduct business within the larger community that are currently unavailable within the neighborhood, will be introduced. Regional connections, now weak or strained, will be facilitated and strengthened.

The Plan represents a significant investment in transportation on a scale not seen on the west side of San Francisco in several decades. Reflecting its impact and importance, the Plan has been developed with the participation of existing residents and neighboring communities, as well as city, county and state agencies. All programs and improvements detailed in the Plan will be implemented by Parkmerced, and Parkmerced will be responsible for all required design, approval and construction activities, under supervision and guidance from the appropriate city, county and state agencies and departments.

The Plan also recognizes the close relationship between land use and transportation, and embodies the *Parkmerced Vision Plan* and *Parkmerced Design Standards and Guidelines*. The goals, principles and strategies in this Plan are supported by a mixed-use development approach, as well as an impressive investment in infrastructure and services.

Principles

- Transportation infrastructure will be designed around walking and biking as primary modes, consistent with the San Francisco *Better Streets Plan*;
- Automobile use will be discouraged through traffic calming, parking management, and access management policies; and,
- Transportation demand measures will be implemented to encourage transit, pedestrian and bicycle travel and will be directed at residents, employees and visitors.

Goals

- Reduce the need for private vehicles for work and non-work trips;
- Enhance the attractiveness and affordability of alternative modes of transportation;
- Internalize discretionary trips; and,
- Minimize increases in peak hour vehicle trips outside the site.

Strategies

The Parkmerced project aims to create a self-sufficient community with a broad range of neighborhood-serving services, and serve as a world-class model of sustainable development and transportation. As a result, the future community design incorporates a development pattern centered around a mixed-use core, with strong transit, bicycle and pedestrian connections.

The Plan's elements prioritize walking, bicycling and transit travel, making these attractive and practical transportation options, while discouraging private automobile trips. These elements include the integration of land-use and transportation, new and improved transit options, and required roadway improvements.

To support the proposed major infrastructure and development, a series of programs and policies have also been developed. Implementation of these elements will be critical to the success of the Plan, as they provide the direction and assistance for all travel modes, plus design requirements that reinforce the nature of the development.

It is acknowledged, however, that any development within Parkmerced will continue to generate trips by private vehicles, which will strain the local and regional facilities that are already at or near capacity. Therefore, improvements to the surrounding intersections and roadways are included as an integral component of the Plan. These planned improvements would be enhanced by a future, broader, regional transportation solution to the area. The Parkmerced project (sponsors) will participate in any such area-wide transportation planning effort.

The following are the key strategies of the plan:

- Components of the Plan will be implemented at the earliest stages of development, and measures and services will be adopted concurrent with phasing;
- The internal street network has been designed to emphasize walking and bicycling and to reduce vehicular speeds, providing a positive experience for non-automobile travel;
- The Muni M-Ocean View light rail line is proposed to be rerouted directly through Parkmerced, with the provision of one relocated station, two new stations, and no reduction in the number of existing stops serving adjacent neighborhoods;
- Enhanced transit service to and from Parkmerced will operate throughout the day, evening, and weekends to provide convenient connections to employment activity centers and the regional transit network;
- Pedestrian and bicycle facilities will be provided throughout the site to facilitate walking and biking as modes of travel for internal and external trips;
- Intersections and roadways on the outside of Parkmerced will be redesigned and improved to reduce congestion and to increase mobility;
- Free, low-emission shuttles will be operated to the Bay Area Rapid Transit (BART) Daly City station (hereinafter referred to as the Daly City BART Station) and nearby shopping centers;

- A parking management plan will be implemented to increase the competitiveness of transit and to manage demand throughout the neighborhood;
- Residential parking will be unbundled from individual units, with lower supply provided near transit stations and the mixed-use center, and higher supply provided at peripheral locations to maximize the use of “car storage”;
- Carshare vehicle hubs and bikeshare stations will be established at strategic locations throughout the project site;
- A smart card will be introduced, allowing residents to pay for parking or access bikeshare station bicycles using a single pay system; and,
- A full-time transportation coordinator will be employed to manage the real-time transportation needs of residents.

The major elements of the Plan are highlighted in **Figure 1.**

As the overall Parkmerced project will evolve throughout its design, approval and implementation process, it is anticipated that this Plan will be a living document, in that the proposed infrastructure improvements, programs and policies may need to be modified commensurate with any changes to the project.

The remainder of this document provides the detailed approach of the Plan and is separated into the following sections:

- Chapter 2 presents the existing transportation conditions in and around Parkmerced, including some of the current constraint and problem locations;
- Chapter 3 highlights the major development and infrastructure proposals;
- Chapter 4 develops the extensive programs and policies;
- Chapter 5 outlines the implementation and phasing strategies; and,
- Chapter 6 presents the Plan conclusions.

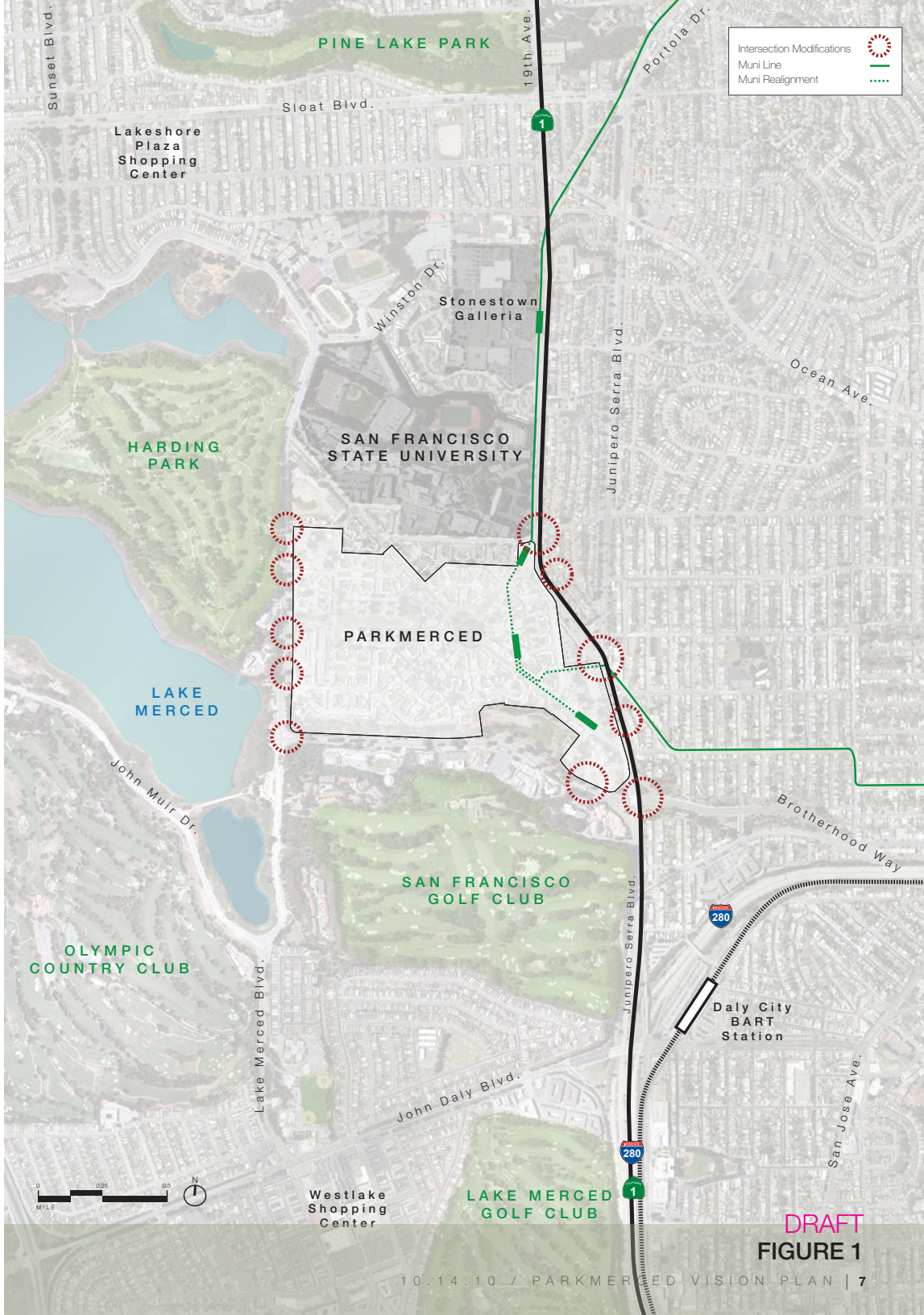

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FIGURE 1

existing transportation conditions

02

existing transportation conditions

Parkmerced is located in the southwestern portion of San Francisco and adjacent to Highway 1 (19th Avenue and Junipero Serra Boulevard). **Figure 2** shows the location of Parkmerced within southwestern San Francisco. In general, the southwest corner of San Francisco is primarily residential. However, directly north of Parkmerced are two major destinations: San Francisco State University (SFSU) and Stonestown Galleria, a regional shopping center. In addition to the regional traffic that uses Highway 1 to travel north and south of San Francisco, the high volume of activity at these two destinations dictate the existing transportation conditions in the area.

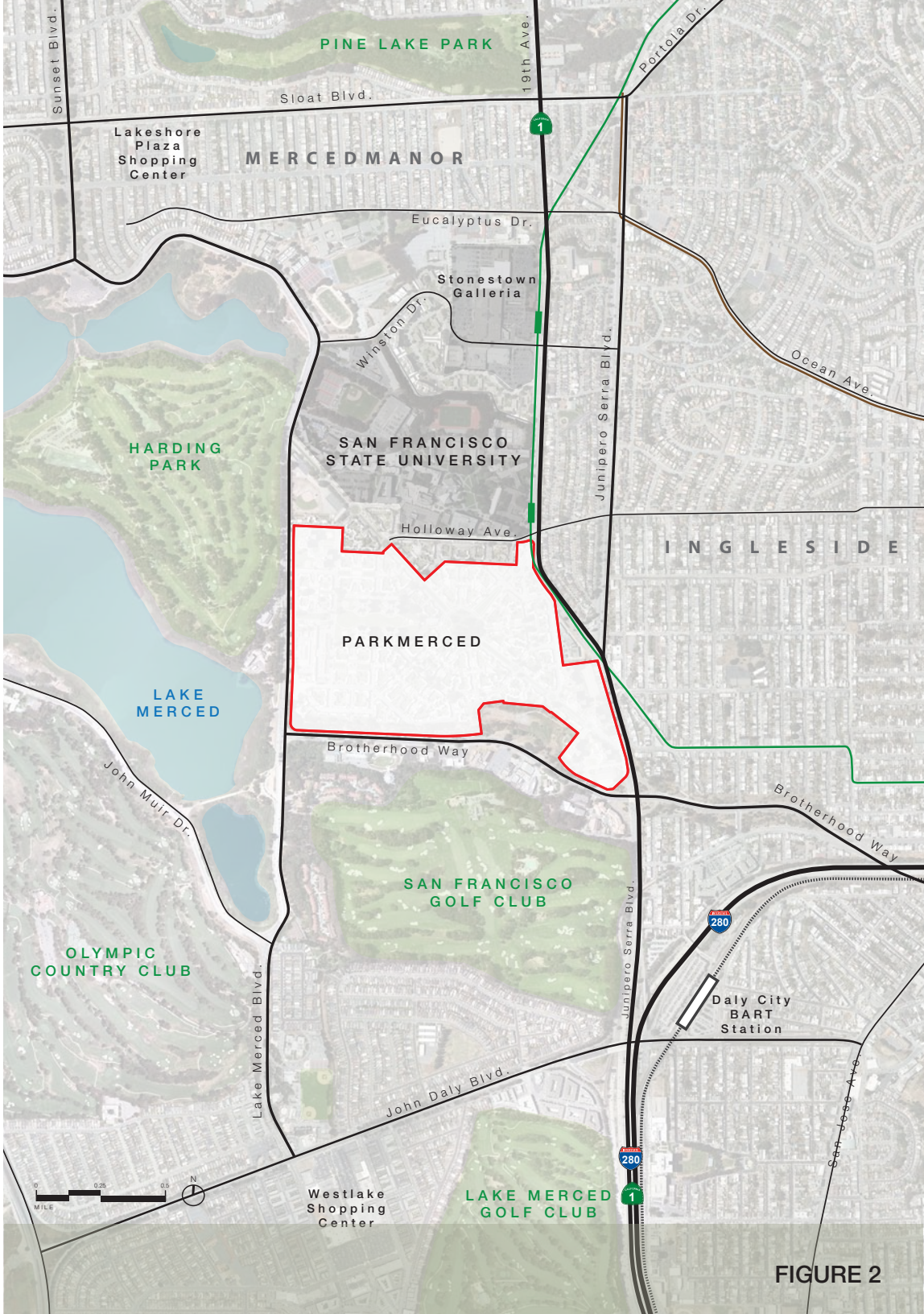

FIGURE 2

2.1 / existing street network

The overall Parkmerced site is bounded to the east by Highway 1 (19th Avenue and Junipero Serra Boulevard), which is one of the City's most heavily trafficked arterials. The site is bounded by two other major arterials, Lake Merced Boulevard to the west and Brotherhood Way to the south. Junipero Serra Boulevard and Brotherhood Way provide access to I-280, which is less than one mile from the project. The existing regional roadway network is shown in **Figure 3**.

Regional access to Parkmerced is provided by Highway 1, which also carries traffic to SFSU and Stonestown Galleria. These two activity centers located immediately north of the project site, like Parkmerced itself, were conceived in a suburban planning approach that emphasized access by automobiles. Convenience for cars was built-in, while the needs of transit riders, cyclists and pedestrians were given less consideration.

In addition, Junipero Serra Boulevard and 19th Avenue serve as the spine connecting all of the neighborhoods in western San Francisco and carries regional traffic passing through San Francisco between the Peninsula and the North Bay. With the built-out nature of the western San Francisco neighborhoods, there have been minimal increases in local vehicular activity. As a result, the majority of this traffic growth is due to the increase in activity for regional trips. Over the last thirty years, average daily traffic volumes on Highway 1 have increased by about 75 percent, according to Caltrans data. However, no corresponding improvements have been made to 19th Avenue's functionality or capacity. All told, the roadway is functionally oversubscribed and carries higher levels of traffic than it was designed to carry.

The major intersections along this section of 19th Avenue – at Sloat Boulevard, Ocean Avenue, Winston Drive, and Holloway Avenue – and along this section of Junipero Serra Boulevard – at 19th Avenue and Brotherhood Way – experience substantial congestion during peak periods. In addition, the Highway 1 / I-280 interchange south of the site forms a bottleneck during peak hours.

Therefore, the key objectives of this Plan are to minimize the number of peak hour vehicle trips generated by Parkmerced, and to reduce the project's contribution of additional traffic on 19th Avenue and Junipero Serra Boulevard and the intersecting arterials, while improving conditions to the 19th Avenue corridor.

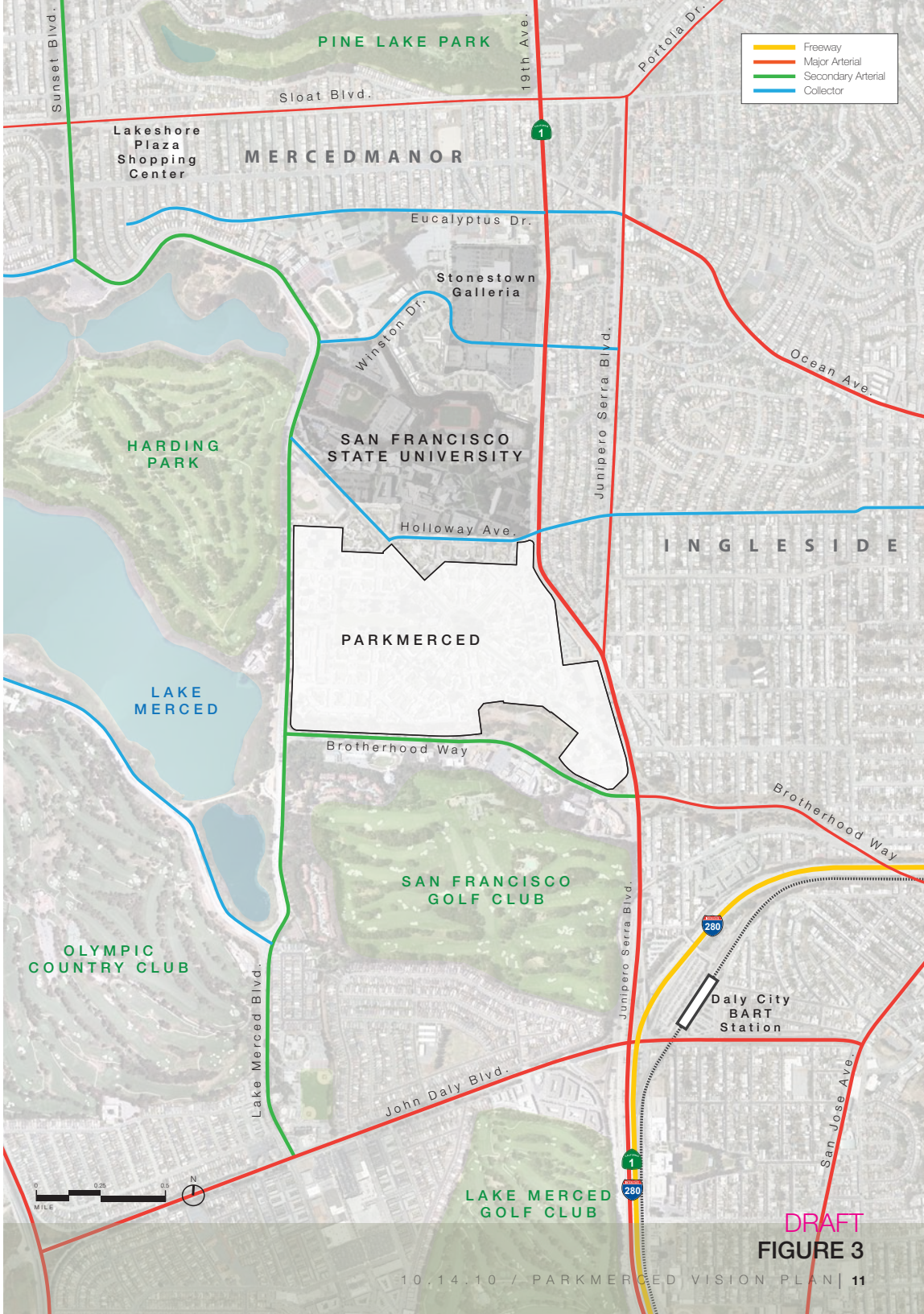

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FIGURE 3

2.2 / existing transit services

As shown on **Figure 4**, six Muni lines currently serve the project area: the M-Ocean View light rail line and the 17-Parkmerced, 18-46th Avenue, 28/28L-19th Avenue / 19th Avenue Limited, and 29-Sunset bus lines. Three of these directly enter the neighborhood.

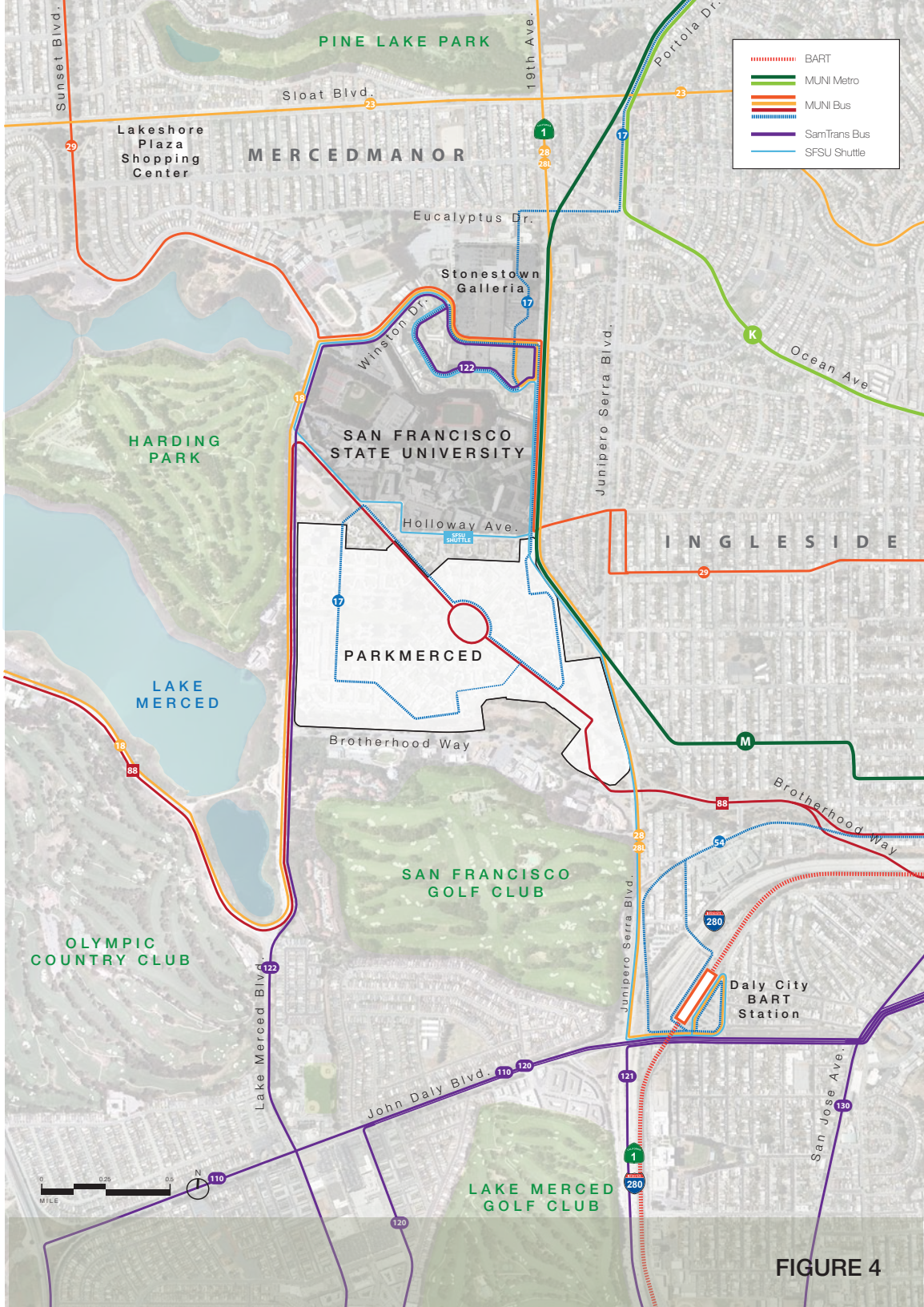

FIGURE 4

In addition, BART has a nearby station at Daly City and SamTrans operates Route 122 along the western edge of Parkmerced with stops on Lake Merced Boulevard. San Francisco State University also operates a shuttle to BART, which is for students and faculty/staff only.

This nearby transit service also provides connections to the regional transit network at the Civic Center BART Station (M-Ocean View), the Balboa Park BART Station (M-Ocean View and 29-Sunset), and the Daly City BART Station (28/28L-19th Avenue / 19th Avenue Limited).

A key issue of concern is the effect of automobile congestion on transit operating speeds. Due to the heavy vehicular traffic along Junipero Serra Boulevard and 19th Avenue and the limited capacity of intersections along the 19th Avenue corridor, substantial queuing and congestion often occurs during peak periods. This queuing results in delays to transit service on 19th Avenue—particularly the 28-19th Avenue, 28L-19th Avenue Limited and 29-Sunset—and makes it difficult for transit vehicles to merge into traffic after departing stops or to enter turn lanes. In addition, congested conditions can affect Muni operations (by increasing travel times) and service reliability.

Light rail station capacity and pedestrian access are also issues of concern. In general, platform widths at the adjacent M-Ocean View station at 19th Avenue / Holloway Avenue are inadequate to handle current passenger flows during peak hours. This station is particularly problematic as it is the primary stop for passengers bound to and from the SFSU campus and Parkmerced, which makes it one of the busiest stops along the line. During the morning period (at the start of the school day), there is a large surge of passengers with each southbound train arrival, while during the afternoon period there is a steady buildup of passengers waiting for a northbound train. In addition, passengers coming to and from the train must cross three to four lanes of moving traffic and one set of light rail tracks. Due to insufficient space between the two sets of light rail tracks, there is limited queuing area for passengers waiting to cross away from the station, who often queue up along the sloped walkway up to the platform or wait within the light rail tracks. At the other nearby M-Ocean View stop at the intersection of 19th Avenue / Junipero Serra Boulevard, no passenger amenities or areas to safely board and alight trains are provided.

2.3 / existing bicycle and pedestrian network

Pedestrian facilities are provided along almost every street in and around Parkmerced, and crosswalks and pedestrian signals are provided at major signalized intersections. According to the *San Francisco General Plan*, the following nearby streets are designated as Neighborhood Commercial Streets: 19th Avenue between Sloat Boulevard and Junipero Serra Boulevard, and Holloway Avenue between 19th Avenue and Miramar Avenue.

In general, pedestrian volumes are at their highest near SFSU, where the M-Ocean View light rail stop is provided (at the 19th Avenue / Holloway Avenue intersection), and are low throughout most streets within Parkmerced.

Pedestrian access into and out of the Parkmerced neighborhood is very limited on 19th Avenue / Junipero Serra Boulevard, Brotherhood Way and Lake Merced Boulevard. Along 19th Avenue, four pedestrian access points are provided in succession at Holloway Avenue, Crespi Drive, Cardenas Avenue, and 200 feet south of Cardenas Avenue, but the next access point is not provided until Font Boulevard, about 2,000 feet to the south. In addition, pedestrians can only cross 19th Avenue at Holloway Drive and Junipero Serra Boulevard. Along Brotherhood Way, a pedestrian bridge is provided across Brotherhood Way at Chumasero Drive, but no other connections are provided. Along Lake Merced Boulevard, pedestrian access is provided only at Higuera Avenue and at two points along Vidal Drive. As a result, connections to nearby uses and the surrounding neighborhoods are fairly limited and can be substantially improved.

Throughout the area, bicycle facilities consisting of bike paths (Class I), bike lanes (Class II), wide curb lane bike routes, and bike routes (Class III) are provided. These routes are interconnected to the Citywide Bicycle Network and provide access between the Parkmerced area and other locations throughout San Francisco. Bike paths are separated from the roadway with dedicated paths for bicyclists. Bike lanes include a dedicated lane on the street

adjacent to the curb lane for bicyclists' use. Wide curb lane bike routes are designated on wider roadways, where bicyclists may be able to ride outside the path of motor vehicle travel. Bike routes are signed routes only, where bicyclists share travel lanes with vehicles. The existing major bicycle facilities in the area are illustrated in **Figure 5** and consist of the following:

- Route 50 is a bike route that runs eastbound-westbound along Sloat Boulevard.
- Route 60 is a wide curb lane bike route that runs eastbound-westbound along Vicente Street.
- Route 75 runs northbound-southbound from the Daly City BART station as a bike route on roadway east of Junipero Serra Boulevard (i.e., St. Charles Avenue, 19th Avenue, Beverly Street, Junipero Serra Boulevard frontage), runs through SFSU and Stonestown Galleria as a bike route, and runs along 20th Avenue as a wide curb lane bike route north toward Golden Gate Park.
- Route 84 is a bike route that runs eastbound-westbound along Ocean Avenue.
- Route 85 is a wide curb lane bike route that runs northbound-southbound along 34th Avenue and Lake Merced Boulevard.
- Route 86 circles Lake Merced as a bike path, extends east along Winston Drive as a bike lane and a bike route, and continues along Cerritos Avenue as a wide curb lane bike route to Ocean Avenue, where it terminates.
- Route 90 runs eastbound-westbound along Holloway Avenue as a bike route, bike lane, and a wide curb lane bike route for various segments.
- Route 91 is a bike route that runs northbound-southbound along Skyline Boulevard and John Muir Drive.
- Route 95 is a bike route that runs northbound-southbound along Skyline Boulevard.

In addition, as part of the new *San Francisco Bicycle Plan* (which was recently approved in the *2009 San Francisco Bicycle Plan Environmental Impact Report*) new bicycle lanes and bicycle routes are proposed on streets surrounding the neighborhood, which would facilitate bicycle access to and from Parkmerced. These include:

- New bicycle lanes on Sagamore Street and Sickles Avenue generally between Plymouth Avenue and Orizaba Avenue;
- New bicycle lanes on Portola Avenue between Sloat Boulevard and O'Shaughnessy Boulevard;

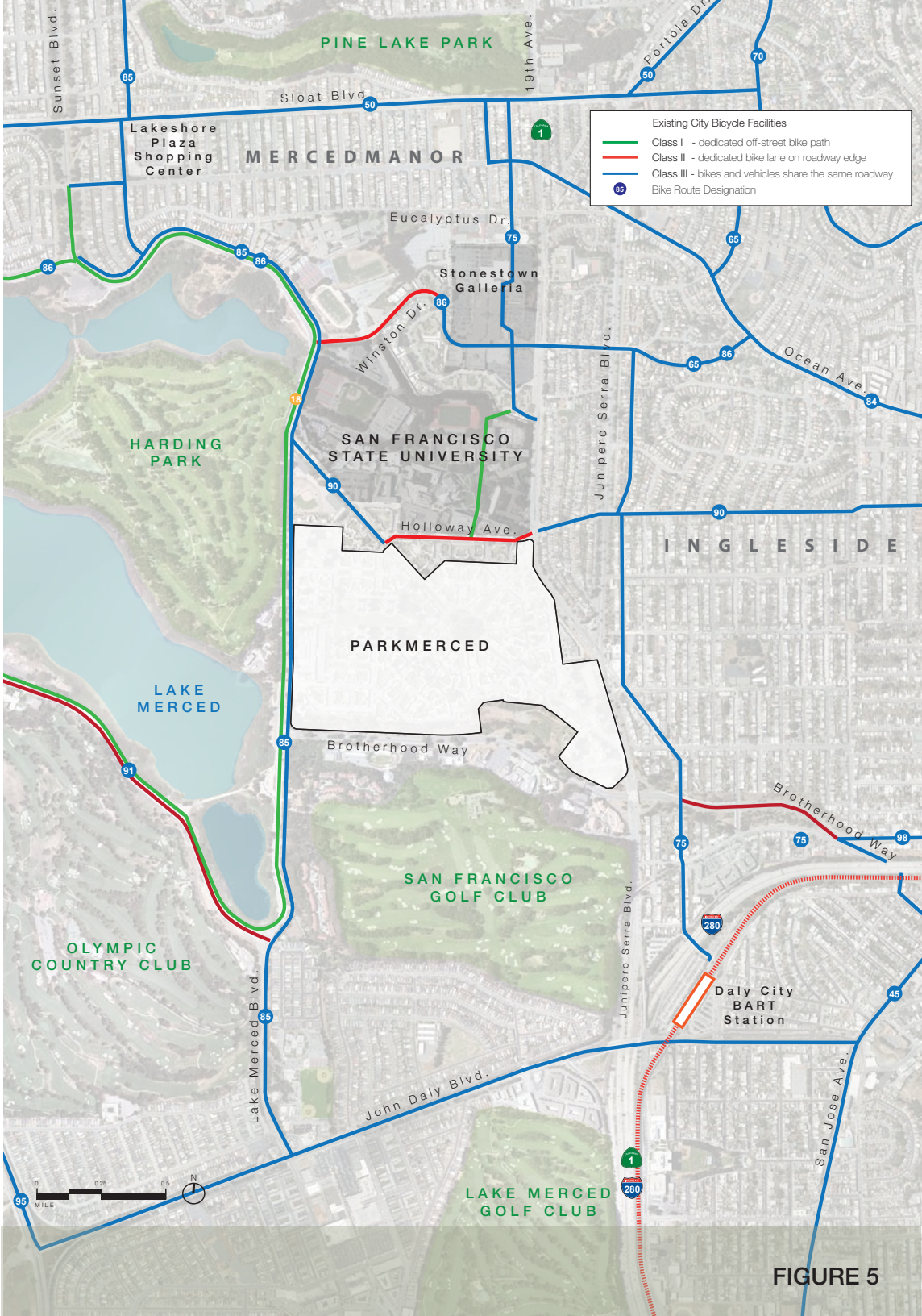

FIGURE 5

- New bicycle lanes on Buckingham Way to the west of 19th Avenue;
- New bicycle lanes on Holloway Avenue between Varela Way and Junipero Serra Boulevard;
- New bicycle lanes on John Muir Drive between Lake Merced Boulevard and Skyline Drive; and
- Long-term improvements on Brotherhood Way between Arch Street and Lake Merced Boulevard, and on Holloway Avenue between Junipero Serra Boulevard and Harold Avenue (note that these projects were not assessed in the environmental review document).

As with pedestrian conditions, bicycle volumes were relatively low along the established bicycle routes in the area, specifically near 19th Avenue. However, high bicycle volumes were observed near destinations like Stonestown and SFSU.

Similar to pedestrians, bicycle access into and out of the Parkmerced neighborhood is limited, with few connections available along 19th Avenue, Junipero Serra Boulevard, Brotherhood Way, and Lake Merced Boulevard. In addition, Parkmerced does not directly connect to any of the major existing on-street bicycle facilities except those on Lake Merced Boulevard and Holloway Avenue, and no citywide bicycle routes are provided or proposed internal to Parkmerced. As a result, connections to nearby uses and the surrounding neighborhoods are fairly limited and can be substantially improved.

2.4 / existing parking

On-street parking is provided throughout Parkmerced, including approximately 1,600 parking spaces. All on-street spaces are under the San Francisco Municipal Transportation Agency's (SFMTA) residential parking permit district "E", which allows residents to park throughout the day, but restricts non-permit holders to one- or two-hour parking.

In general, on-street parking within Parkmerced and the nearby areas is generally available throughout the day and overnight, except when SFSU is in session. Throughout the SFSU school year, on-street parking on all nearby streets is almost fully occupied. With the current one-hour and two-hour time limits, students are able to park for one or two classes. As a result, it is difficult for Parkmerced residents and visitors to find parking during these times.

2.5 / existing travel characteristics

In September of 2007, a survey was issued to people living in Parkmerced and the nearby residential neighborhoods to determine travel patterns and behaviors and to obtain input on important transportation issues. In total, about 16,000 surveys were distributed and about 1,300 surveys were returned, for approximately an 8 percent response rate.

The survey was separated into two sections. The first half provided space for up to three respondents to identify individually where they work, their means of getting to and from work, and details regarding other trips made throughout the day. Additional questions were asked to determine why respondents did not utilize transit as their primary mode. The second half of the survey was to be completed on a household basis and asked questions regarding the existing transportation conditions in the vicinity, including listing major concerns about different travel modes.

The following are the general findings and conclusions developed from the survey results:

- Over 85 percent of respondents worked in San Francisco, and another 10 percent worked in the Peninsula/ South Bay area;
- Approximately 55 percent of respondents drive alone to and from work, 31 percent take transit, and the remainder use other modes (like carpool, bicycle, walk or others);
- Of those using transit to/from work, close to 80 percent use Muni bus or light rail and close to 20 percent use BART (the remainder use Caltrain or SamTrans);
- About 20 percent of the transit riders drove to and from transit – primarily those riding BART;
- Respondents who did not take transit to/from work did not do so primarily because of long travel times, the need for transfers and the need for a car for work or for trips before and after work;
- The average household takes approximately six round trips per day for non-work purposes, such as for grocery shopping (35 percent), entertainment (23 percent), school (18 percent), and retail shopping (15 percent); and
- With regards to areawide transportation issues, the top concerns were: infrequent and unreliable transit service, difficult pedestrian and bicycle crossings due to dangerous vehicle speeds and high volumes, and high levels of traffic congestion.

Overall, the survey identified a high level of transit use by Parkmerced residents for their trips to and from work. However, those using BART end up driving to and from the BART station, which adds unnecessary traffic to the roadway network. In addition, of the daily non-work trips made by residents, a substantial portion of the trips were to destinations like grocery shopping or general retail that could be accommodated within Parkmerced if the appropriate land use program were developed.

These results were used in developing the recommendations, programs and policies presented in the Plan.

2.6 / existing circulation and access issues

In addition, the travel survey asked respondents to identify locations where they had concerns about transportation conditions, be it unsafe pedestrian crossings or high volumes of cut-through traffic. **Figure 6** illustrates the key circulation and access issues with Parkmerced today, as developed through extensive review of current conditions and through information obtained from the survey.

In addition, the following are some of the major circulation and access issues with the current Parkmerced neighborhood:

- Because its street pattern does not match the surrounding grid, Parkmerced is confusing to navigate.
- Movements in and out of Parkmerced are concentrated at a limited number of entrances/exits, shown by red arrows in Figure 6. For instance, left-turns are generally not permitted along Highway 1. As such, vehicles destined to Parkmerced from points south can only enter the site via Brotherhood Way and Chumasero Drive at the southeast corner, or travel through the adjacent neighborhood to make a left turn only at Holloway Avenue.
- No access points are provided along Brotherhood Way (except at Chumasero Drive) and only one access point is provided along Lake Merced Boulevard. It should be noted, however, that the northern edge of Parkmerced directly connects with SFSU and blocks of off-campus housing. Overall, Parkmerced has relatively poor connectivity to the adjacent residential neighborhoods.
- As pedestrian safety is a concern throughout the 19th Avenue corridor, 19th Avenue and Junipero Serra Boulevard form a barrier between the neighborhoods on either side, especially at the locations marked by blue bars in **Figure 6.**
- The overall automobile-focused orientation encourages speeding, which is a particular problem on Font Boulevard and Brotherhood Way, shown by the dashed yellow lines in the figure.
- Most of the pedestrian crossings into and out of Parkmerced have noticeable constraints, including pedestrians needing to cross dangerous channelized right-turns at Lake Merced Boulevard / Brotherhood Way, missing crosswalks and high vehicular travel speeds at Junipero Serra Boulevard / Brotherhood Way, Junipero Serra Boulevard / Font Boulevard and 19th Avenue / Junipero Serra Boulevard, and heavy pedestrian volumes at 19th Avenue / Holloway Avenue. In addition, crosswalks across 19th Avenue are only provided at Holloway Avenue and Junipero Serra Boulevard.

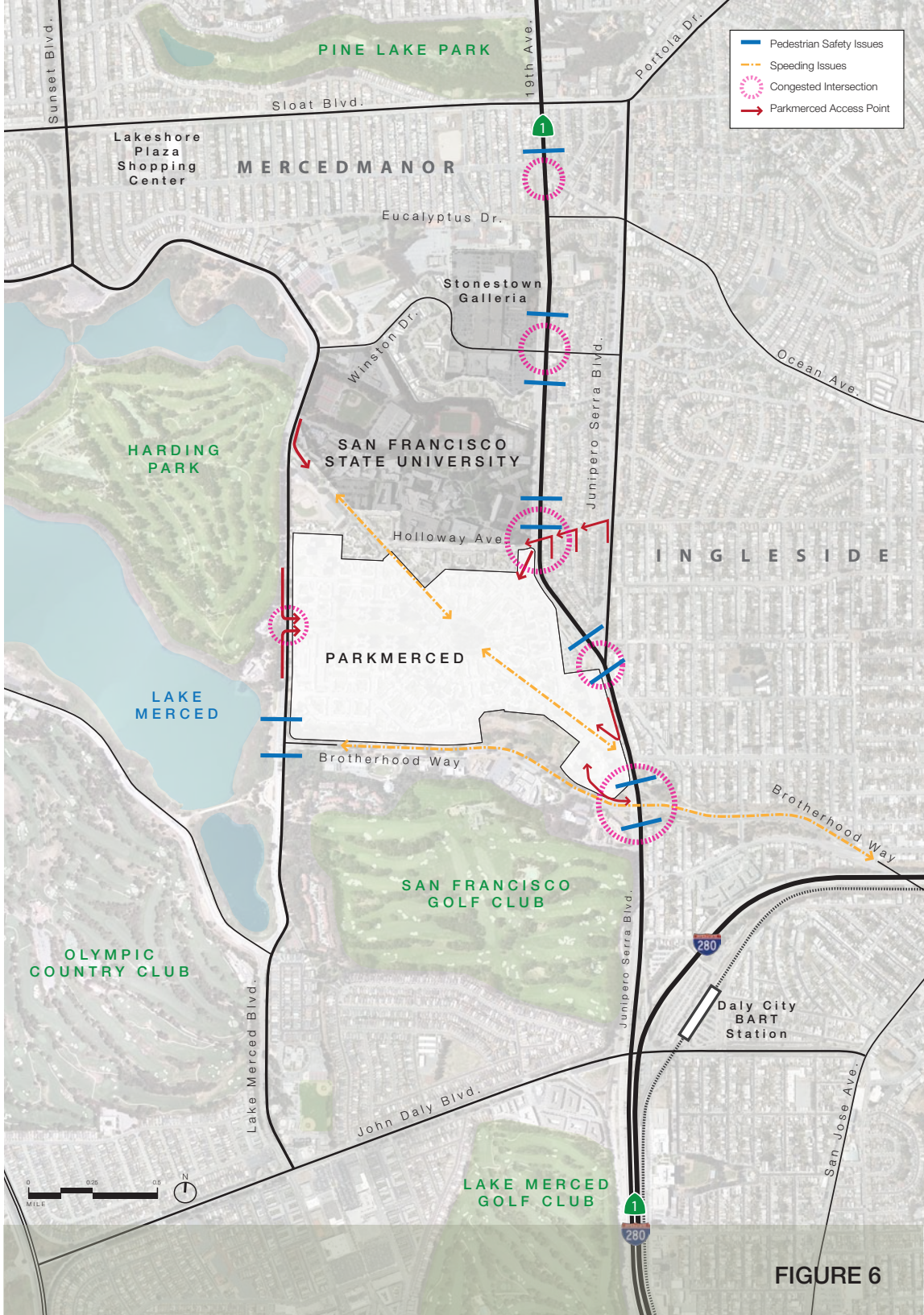

FIGURE 6

proposed development and infrastructure

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The success of transforming Parkmerced into a vibrant transit-, walk- and bike-oriented neighborhood will depend upon implementation of the correct development and urban form designs, plus the infrastructure and circulation projects to support the goals and objectives. This chapter outlines the land use and physical roadway improvements that will be implemented to facilitate transit, pedestrian and bicycle circulation, both inside Parkmerced and through the surrounding area. In addition, modifications and enhancements to internal and external intersections and streets are included to accommodate the projected increase in vehicular traffic, while maintaining a positive environment for non-vehicular users.

3.1 / land use program

The foundation for any successful mixed-use development is the provision of an appropriate spectrum of land uses. The land use program for Parkmerced is particularly important as the project seeks to promote the establishment of a strong residential community and to provide the right mix of uses to keep discretionary trips within the neighborhood.

To this end, the proposed Parkmerced land use program includes approximately 8,900 residential units, 230,000 square feet of community-serving retail space, 80,000 square feet of professional office space, 25,000 square feet of daycare and school space and 64,000 square feet of recreation and amenity space. The locations of the project's proposed land uses are shown in **Figure 7.**

The total of about 8,900 homes will include keeping 1,683 existing units and the construction of 7,217 new units.

The retail and professional office center will serve as the community's social heart and will be centrally located. It will include a variety of uses such as a grocery store, coffee and sandwich shops, hardware store, restaurants, a dry cleaner, banks, and other businesses to meet the everyday needs of residents. The office space will house professional services to meet basic needs, such as medical and dental practices, accountants and travel agencies.

Six smaller neighborhood retail centers will be located throughout the neighborhood within a short walking distance of all residences. Parkmerced will also have a preschool, day care center and/or K-5 school to meet resident needs, a community and fitness center, and athletic fields on-site.

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FIGURE 7

3.2 / internal street network

To support the capture of trips internal to Parkmerced and to promote the use of non-automobile modes, substantial improvements to the internal street network are needed. By accommodating all modes of travel, these streets will provide the needed connections between the various land use elements, the transit options, and the parking facilities. Although the streets will continue to service vehicular activities, emphasis will be placed on enhancing the streets for pedestrians and bicyclists.

As noted earlier, Parkmerced occupies a site in southwestern San Francisco bounded by major arterial streets. The prevailing street grid of surrounding neighborhoods does not continue on the site; instead, the existing streets form a radial pattern focused on Juan Bautista Circle, the neighborhood's central green space. This existing street pattern results in very large car-oriented blocks that make short trips difficult and reduce the attractiveness for walk and bicycle activity.

The addition of new homes and services to the existing community justifies the provision of additional streets and a finer grain of street classifications. Existing streets will be modified and new streets will be designed to emphasize non-auto travel and to moderate the speed of auto traffic where required, thereby providing a safe and comfortable environment for pedestrians and bicycles while still maintaining adequate vehicular circulation.

Figure 8 provides an overview of the street network proposed for Parkmerced. The design requirements for each street type are included in the *Parkmerced Design Standards + Guidelines*. In general, the internal street network builds upon the ideas and principles of the San Francisco *Better Streets Plan*, which lays out a comprehensive set of guidelines to improve the streets and streetscape within the City. The *Better Streets Plan* focuses on making streets more compatible with and accommodating of all modes. The existing traffic circles, which do not require vehicles to stop for pedestrians, will be removed from Font Boulevard, which transects the site from northwest to southeast. Midway through the site, Font Boulevard is interrupted by Juan Bautista Circle (JBC), which surrounds a central green. Crespi Drive, connecting Juan Bautista Circle to 19th Avenue, will lose its broad median and be newly configured as a neighborhood retail street. Gonzalez Drive, which currently loops around the east and south sides of Juan Bautista Circle, will be extended to reach Lake Merced Boulevard and form the southern boundary of the community. Within this framework, new streets will be introduced to provide connectivity, better circulation, and to facilitate walking and biking.

Figure 9 illustrates several of the street typologies that are proposed within Parkmerced, including typical north/south streets, east/west streets, boulevards, alleyways, retail streets, and pedestrian paseos. Controls governing the design of each of these street types are included the *Parkmerced Design Standards + Guidelines*. In general, these streets have one to four travel lanes for vehicles, bicycle paths or lanes, sidewalks, crosswalks and corner bulbs, and parallel or perpendicular on-street parking. All streets have been designed to maintain acceptable vehicular movements while providing enhanced facilities for all users. As such, pedestrians and bicyclists will be comfortable traveling along all streets within the neighborhood, thereby promoting and encouraging use for non-vehicle modes.

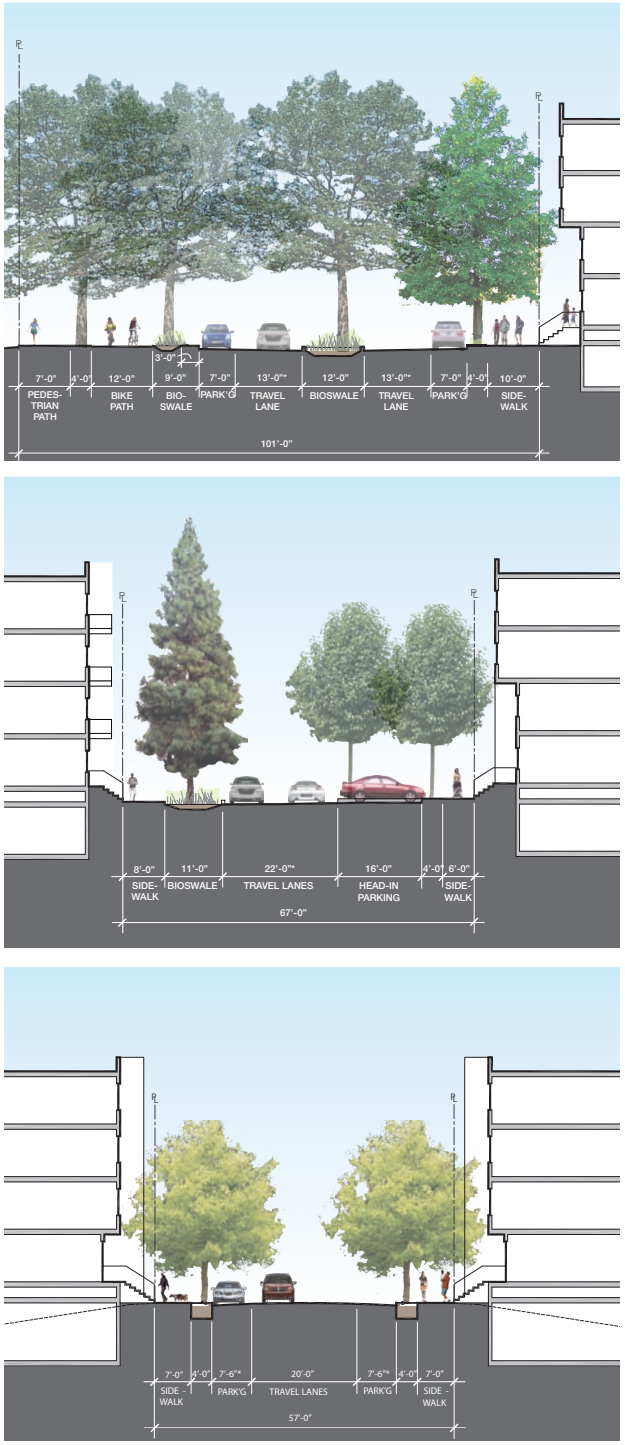

FIGURE 9

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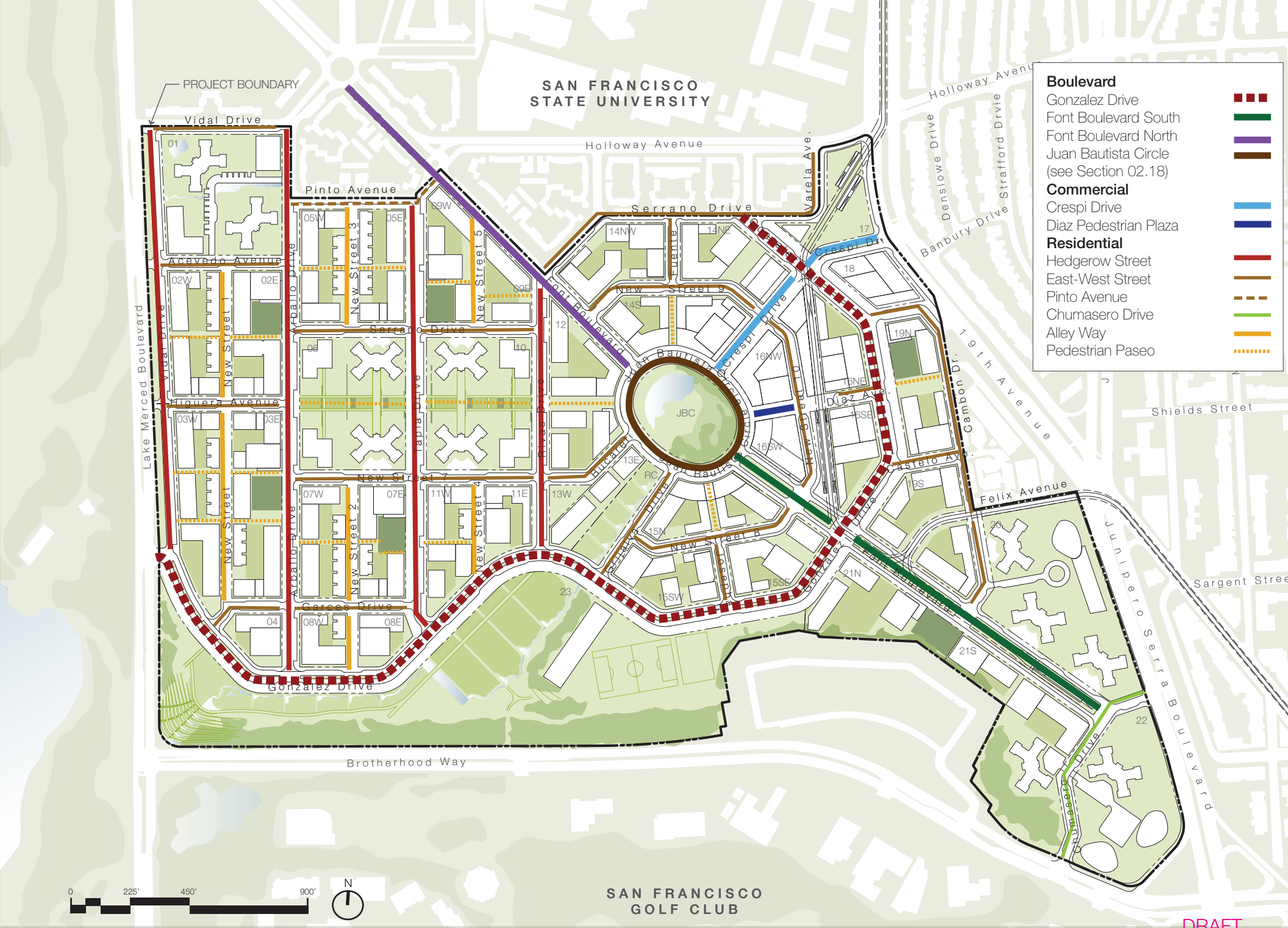

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FIGURE 8

3.3 / external intersection and roadway improvements

Although the Parkmerced project would reduce the use of private vehicles by residents on a per capita usage, the overall number of automobile trips would increase due to the proposed increase in residential, commercial and community uses. Several roadways and intersections that surround Parkmerced already operate at or near capacity, conditions that will be worsened in the future with the anticipated growth along the 19th Avenue corridor and the regional growth impacts.

The planned reconfiguration of the M-Ocean View light rail line, as described later in Section 3.4, would require revisions to the 19th Avenue / Holloway Avenue and Junipero Serra Boulevard / 19th Avenue intersections that would reduce their capacity to process vehicles. As a result, operations at these intersections could substantially worsen, leading to increases in congestion and delays to vehicular and transit travel times.

In addition, as documented in Section 2.6, there are numerous existing transportation and circulation issues in and around Parkmerced (such as a lack of connection points and difficult pedestrian crossings), conditions that would be magnified with the increase in activity associated with the new development.

To address these issues and provide pedestrian safety improvements, modifications to the adjacent streets and intersections would be needed. At each affected location around Parkmerced, the project team created a summary of the existing and future issues and developed a series of solutions to address each issue. These conceptual plans were reviewed with the local and state agencies (including San Francisco Planning Department, SFMTA, San Francisco County Transportation Authority, and Caltrans). Based on comments and feedback, modifications and refinements were made, and final conceptual plans were prepared and acknowledged by the agencies.

Overall, these proposed modifications to the adjacent streets and intersections would allow for preexisting conditions to be improved, for the new land uses to be implemented without substantially worsening problem locations, and for secondary transportation impacts to be addressed. In addition, these changes to the roadway facilities would allow for substantial improvement to the pedestrian environment, which would enhance pedestrian circulation, pedestrian safety and access to the surrounding neighborhoods.

All proposed intersection and street modifications were developed in conjunction with the above referenced agencies and are shown in **Figure 10** and described as follows:

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FIGURE 10

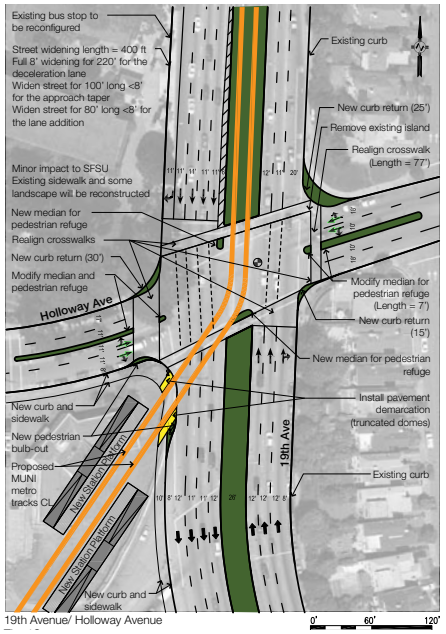
- 19th Avenue / Holloway Avenue: The intersection would be modified to provide a fourth southbound lane along 19th Avenue to mitigate the effects of the new M-Ocean View light rail crossing. This lane would be provided by narrowing the existing lanes and widening the street to the west. To improve pedestrian conditions, the free right-turn movements would be eliminated and sidewalks and crosswalks would be improved.

- 19th Avenue / Crespi Drive: Crespi Drive would be realigned to the south to provide sufficient space for the proposed transit plaza at the southwest corner of 19th Avenue / Holloway Drive, and a dedicated left-turn pocket from northbound 19th Avenue would be established in the existing light rail median to provide a new access point into Parkmerced from the south (thereby reducing the need to circulate through the adjacent residential neighborhood). In addition, new crosswalks with pedestrian signals would be created.

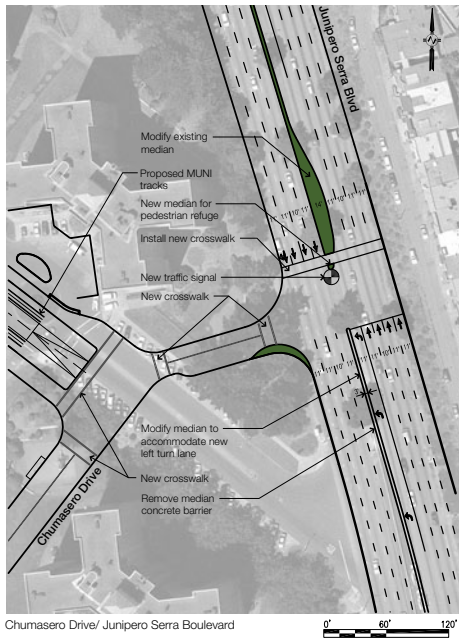
- 19th Avenue: From just north of Holloway Avenue to Junipero Serra Boulevard, 19th Avenue would be reconfigured (by utilizing the space in the existing light rail median) to provide a fourth southbound through travel lane to improve traffic flow, especially during the evening commute period. (Note that a High Occupancy/Toll (HOT) lane was studied for the additional lane but was rejected due to its short length). With the exception of the section to the north of Holloway Avenue, this widening would occur within the existing light rail median and not increase the curb-to-curb width of the street.

- Junipero Serra Boulevard / 19th Avenue: This intersection would be modified to improve vehicular traffic flow throughput, including providing additional capacity on northbound Junipero Serra Boulevard (via an additional left-turn pocket), eliminating the conflicting northbound 19th Avenue left-turn movement, and providing additional capacity on southbound 19th Avenue (through an additional right-turn lane to southbound Junipero Serra Boulevard) to address existing traffic flow and to mitigate the effects of the new M-Ocean View light rail crossing. In addition, STOP signs would be established at the channelized right-turn movements to improve pedestrian crossings, as well as other sidewalk and crosswalk treatments.

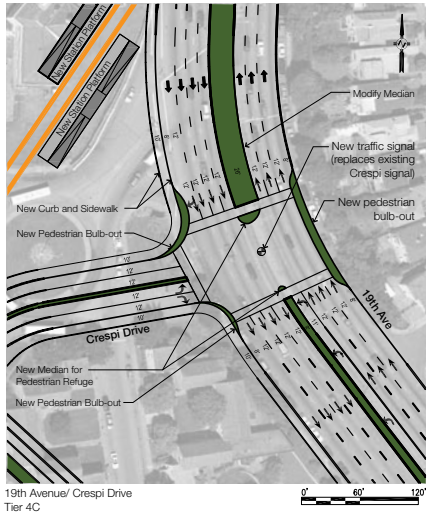
- Junipero Serra Boulevard / Font Avenue: The Font Avenue approach to this intersection would be replaced with an extension of Chumasero Drive, including a new northbound left-turn pocket from Junipero Serra Boulevard and a new traffic signal to provide a new access point into Parkmerced from points south. In addition, a new crosswalk with a pedestrian-activated signal would be created.



19th Avenue/ Holloway Avenue



Chumasero Drive/ Junipero Serra Boulevard



19th Avenue/ Crespi Drive
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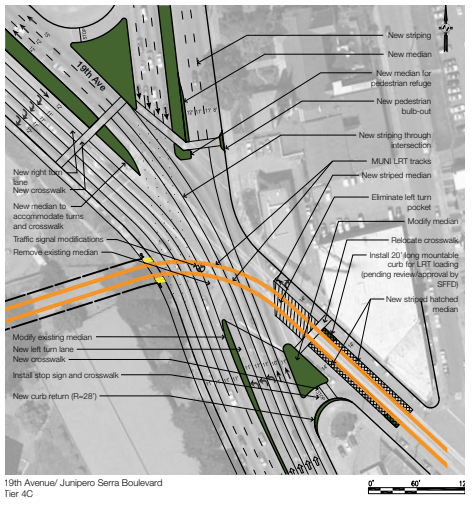
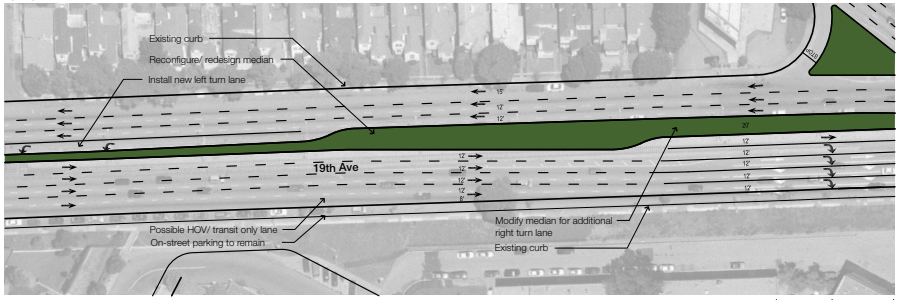


19th Avenue/ Junipero Serra Boulevard
Tier 4C



19th Avenue Between Crespi Drive and Junipero Serra Boulevard
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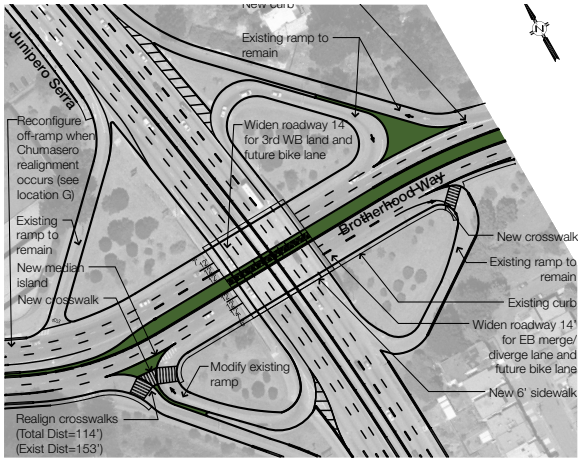
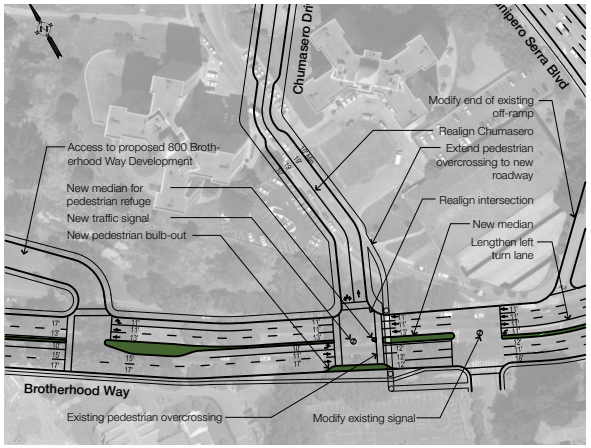
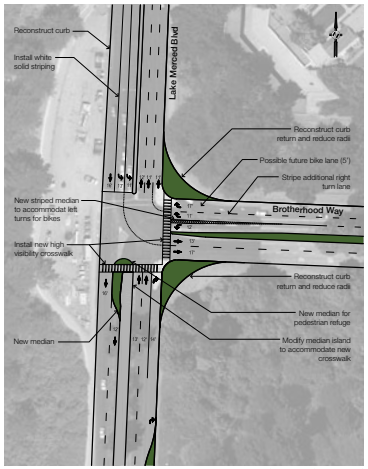


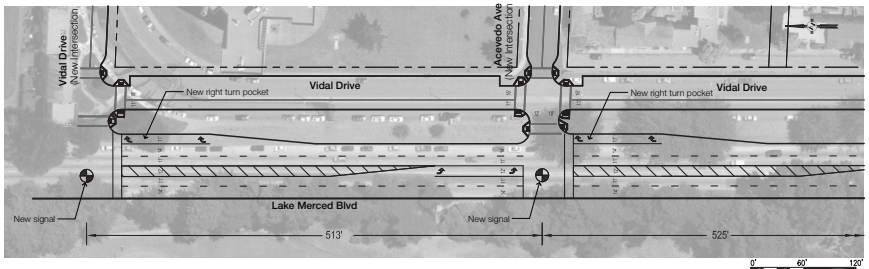
Junipero Serra Boulevard/ Brotherhood Way

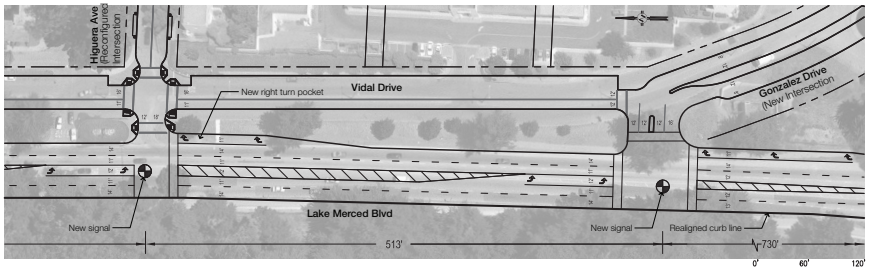


Chumasero Drive/ Brotherhood Way



Lake Merced Boulevard/ Brotherhood Way





- Junipero Serra Boulevard / Brotherhood Way: To improve the merge/diverge movements at the on- and off-ramps and to provide additional capacity for vehicles destined to Parkmerced via Chumasero Drive, a third travel lane would be provided on westbound Brotherhood Way from the northbound Junipero Serra Boulevard off-ramp to Chumasero Drive. In addition, new pedestrian crosswalks and sidewalks would be created to facilitate pedestrian circulation through this challenging interchange.

- Brotherhood Way / Chumasero Drive: Chumasero Drive would be realigned to the west and a new "T" intersection with Brotherhood Way would be created to simplify movements with the adjacent Thomas More Way, thereby reducing the current traffic congestion in the area. This intersection reconfiguration would also allow for a new at-grade pedestrian crossing location to be established. (Currently, pedestrians are required to use an inconvenient pedestrian overcrossing.)

- Lake Merced Boulevard / Brotherhood Way: This intersection would be modified to improve traffic flow between Brotherhood Way and the north segment of Lake Merced Boulevard, which would address existing traffic congestion and accommodate the anticipated vehicular increase with the Parkmerced project. To improve pedestrian conditions, the free right-turn movements would be eliminated and pedestrian sidewalk and crosswalk improvements would be made.

- Lake Merced Boulevard at Vidal Drive, Acevedo Avenue, Higuera Avenue, and Gonzalez Drive: To better distribute vehicles along Lake Merced Boulevard, thereby reducing the current traffic congestion at Higuera Avenue, additional access points for Parkmerced would be established. At each location, dedicated right-turn and left-turn pockets would be created, with new interconnected traffic signals to facilitate movements, to minimize the effect to through traffic. In addition, these new access points would improve pedestrian circulation by providing additional crossing locations to Lake Merced Boulevard; each location would include new crosswalks and sidewalks.

Combined, these improvements would lead to significant modifications to the intersections and roadways surrounding Parkmerced, and would help the streets accommodate the projected increase in vehicular travel associated with the proposed land use plan. In addition, these elements would reduce some of the current barriers to access into and out of Parkmerced, and would enhance the attractiveness of non-auto modes as viable alternatives to driving.

In addition to facilitating vehicular movements and improving currently-constrained locations, these proposed roadway and intersection modifications were designed to enhance the pedestrian and bicycle experience. For example, the elimination of channelized right-turn movements would improve pedestrian conditions by requiring all vehicles to come to a complete stop prior to crossing the crosswalks and entering intersections. Furthermore, modifications to the intersections will shorten pedestrian walk distances, increase visibility (such as with the provision of corner bulbs and median islands), and allow for additional safe crossing locations (such as with the provision of new crosswalks and automatic pedestrian signals). The following are the typical pedestrian-scale improvements that have been proposed at these locations:

- Roadway travel lanes would be narrowed to reduce travel speeds and shorten the crossing distances for pedestrians;
- Corners at the intersection would be tightened to provide additional space for pedestrians and to reduce excessive speeds of vehicles making turns;
- Bulb-outs would be installed at corners to improve pedestrian visibility and shorten walk distances;
- Crosswalks would be realigned to allow for more direct crossings;
- Medians would be extended to provide refuge areas for pedestrians crossing the streets;
- New crosswalks would be created at locations where new traffic signals are provided; and,
- Automatic pedestrian signals would be included as part of the overall traffic signal schemes and sufficient pedestrian crossing times would be provided to allow for safe crossings.

It should be noted that the proposed intersection and roadway modifications (including the changes to 19th Avenue and Junipero Serra Boulevard, the new access points, and the improved pedestrian facilities) will require the approval of Caltrans, SFMTA, SFCTA, the San Francisco Department of Public Works (SFDPW), and the California Public Utilities Commission (CPUC). Parkmerced will continue to work with these agencies to advance the design, environmental clearance, approvals, and implementation of each proposed intersection and roadway improvement. Parkmerced will conduct the required design, approval and construction activities, under supervision and guidance from the appropriate city, county and state agencies.

3.4 / transit modifications

To reduce the amount of private automobile use and to maximize the utility of the existing capacity available on the nearby transit lines, improvements and enhancements to transit service will be needed. Although local (in terms of Muni light rail and bus) and regional (in terms of SamTrans bus and BART commuter rail) transit service is provided in and around Parkmerced, there are notable limitations to their usability and usefulness. Successful implementation of the Parkmerced land use plan and urban form requires the integration of the neighborhood with all travel modes, with transit as the backbone.

As a result, the following modifications to existing and future transit routes are proposed to be implemented by Parkmerced, working in conjunction with SFMTA and other agencies, as shown in **Figure 11.** Several of these elements continue the themes and goals of SFMTA's recent Transit Effectiveness Project (TEP), which is focused on improving the operations and reliability of transit service throughout the city.

M-Ocean view light rail line elements

The M-Ocean View currently operates in the median of 19th Avenue adjacent to Parkmerced. The train enters an exclusive median to the north at Eucalyptus Street, traveling south with stations at Winston Drive (for Stonestown) and Holloway Avenue (for SFSU and Parkmerced). After the train passes through the intersection of 19th Avenue / Junipero Serra Boulevard, it heads south on 19th Avenue and east on Randolph Street in a shared right-of-way (as the line continues east, it operates in mixed-flow with regular vehicular traffic).

As previously discussed, this median configuration of the M-Ocean View line results in several functional and practical issues, in particular at the 19th Avenue / Holloway Avenue station, including: station overcrowding, insufficient waiting areas, difficult pedestrian crossings, and inaccessibility for a substantial portion of Parkmerced residents. In addition, the train operating in the median of a heavily trafficked highway does not support transit-oriented communities or strong mixed-use neighborhoods, which does not promote the use of transit as a convenient and viable alternative to private automobiles.

The following modifications to the M-Ocean View line are being proposed by Parkmerced to address these issues and to allow for the new Parkmerced neighborhood to be fully integrated with transit.

- Immediately south of 19th Avenue / Holloway Avenue, the M-Ocean View would be rerouted into Parkmerced;
- A new multimodal station and Transit Plaza would be provided at the southwest corner of the intersection to replace the existing station in the middle of 19th Avenue. The new multimodal station would include wide platforms, multiple access points, and connections to other transit lines;
- The train would continue south along an exclusive alignment to a new station that would directly serve retail and office center located at the heart of Parkmerced;
- After this station, the train would travel southeast in the median of Font Boulevard;
- Near the intersection of Font Boulevard / Felix Avenue, the M-Ocean View line would split, with approximately half the

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FIGURE 11

service continuing south on Font Boulevard and terminating at Chumasero Drive, and approximately half the service exiting Parkmerced along Felix Avenue and returning to the current alignment at 19th Avenue / Junipero Serra Boulevard;

- A new end-of-the line terminal station would be provided at the intersection of Font Boulevard / Chumasero Drive; and

- Transit signal priority would be established for all signalized intersections within Parkmerced where the trains interact with vehicles and pedestrians.

This proposed reconfiguration of the M-Ocean View line would include one relocated station and two new stations. Combined, these three stations would be located within a convenient walking distance (less than 10 minutes) of all Parkmerced residents.

- The first station would be relocated from the median of 19th Avenue to a new station located within a transit plaza at the southwest corner of 19th Avenue / Holloway Avenue. Since the majority of the users of this station, SFSU students and Parkmerced residents, come from the western side of 19th Avenue, this relocation would substantially improve pedestrian conditions by reducing walking distances and conflicts with crossing 19th Avenue.

- A new station would be located at the heart of the neighborhood at the retail and office center. This location would allow users to fully integrate their daily shopping, services, and business needs as part of their regular commute trip without necessitating use of a private automobile.

- A new station and new terminal facility would be constructed at the southeast corner of the site where a grouping of mid-rise towers are proposed. The terminal facility would include required functions for Muni operations (such as operator facilities). The end of the line for the tracks would also be designed to facilitate the potential extension of service to the Daly City BART Station (as noted later in this chapter). Parkmerced will work with the SFCTA, Caltrans, and other local and regional organizations to coordinate this potential project and other related area-wide transportation planning efforts.

In addition, the current M-Ocean View light rail stop at the southeast corner of 19th Avenue / Junipero Serra Boulevard are proposed to be enhanced by new high-visibility crosswalks, revised platform locations, and dedicated boarding and alighting areas.

It should be noted that the proposed realignment of the M-Ocean View light rail line (including the new track, new stations, and modifications to existing facilities) will require the approval of Caltrans, SFMTA, SFCTA, and CPUC. Parkmerced will conduct the required design, approval and construction activities, under supervision and guidance from the appropriate city, county and state agencies.

It should also be noted that SFMTA, as part of their TEP, has proposed to reconfigure the light rail service in this portion of the City, with the M-Ocean View line terminating at the SFSU/Parkmerced station at 19th Avenue / Holloway Avenue and the J-Church line extending from its current terminus at Balboa Park to cover the southern portion of the M-Ocean View line. This proposed rerouting of the M-Ocean View line detailed in this Plan would not preclude future changes to the M-Ocean View and J-Church operating plans.

Except for the relocated station at 19th Avenue / Holloway Avenue, no other stations or stops for the M-Ocean View would be eliminated. As a result, there would be no loss in transit accessibility by the adjacent residential neighborhoods. In fact, access for these neighborhoods would be improved with the project, as residents and visitors would be able to take advantage of the convenient retail, services and professional offices provided within Parkmerced.

This transit approach is the foundation for the land use and urban design plan of Parkmerced. The higher density residential and commercial uses will be clustered around these new stations, thereby creating robust nodes of activity and place-making. Additional support services will also be provided at these stations to further enhance the walkability and bikeability for Parkmerced residents, visitors and workers. Further details of these programs are included in Chapter 4.

Bus elements

The following are the proposed modifications to the Muni bus lines that operate in the vicinity of Parkmerced which were previously shown in Figure 11. In general, these changes would help improve access to the lines, allow for improved transfers between lines, or are necessitated by the reconfiguration of the roadway network within Parkmerced. The routes are substantially consistent with SFMTA's proposed TEP routes, except where altered to conform to the proposed improvements to the Parkmerced street grid or to better serve new Parkmerced land uses. Reconfiguration of the lines would help reduce delays in service at some key problem locations, which should help Muni improve service reliability and efficiency.

- The route of the 17-Parkmerced bus line would be modified within Parkmerced to improve connections to the major centers within the neighborhood (such as the transit plaza, community center and the pre-school/day care/elementary school site). These changes would allow for increased use by Parkmerced residents, workers, and visitors, and will also strengthen the connections to the nearby residential neighborhoods to the north and south of Parkmerced.

- The 19th Avenue / Holloway Avenue stop location for the 28/28L-19th Avenue/19th Avenue Limited bus lines would be relocated from the north side of the intersection to the south side of the intersection, adjacent to the proposed new M-Ocean View station. This relocation of the bus stop would increase the ability for riders to transfer between lines, thereby increasing the functionality of the transit system.

- The 29-Sunset bus line currently travels through a portion of Parkmerced to connect between southbound 19th Avenue and eastbound Holloway Avenue. Since left-turns are not permitted at this intersection, buses need to continue on 19th Avenue past Holloway Avenue, loop around Crespi Drive, turn left onto northbound 19th Avenue, and finally turn right onto eastbound Holloway Avenue. This routing can cause delays to bus operations, as the northbound and southbound through

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FIGURE 12

movements on 19th Avenue often encounter congestion during peak times. Instead, the 29-Sunset would be re-routed to a loop off Holloway Avenue, where operating conditions are better than 19th Avenue. In addition, a new stop location will be provided on the west side of the proposed new M-Ocean View transit station.

It should be noted that any modifications to existing and future Muni bus routes to better serve the future Parkmerced land uses or to account for revised street patterns will be approved and implemented by SFMTA.

3.5 / pedestrian and bicycle circulation

One of the key goals of the Plan is to promote walking and bicycling as viable alternative modes to driving. Pedestrian and bicycle access to the new transit options (such as the M-Ocean View stations or the proposed BART shuttle) will be critical to their success. The proposed residential parking program and "car storage" concepts (as discussed in Chapter 4) will also likely increase the amount of pedestrian and bicycle activity.

The density and arrangement of land uses in the Parkmerced land use plan are designed to actively encourage the use of walking and bicycling as primary travel modes within the community. The Parkmerced land use plan is more particularly described in the *Parkmerced Design Standards + Guidelines*.

Currently, there are no designated bike routes or bicycle lanes within Parkmerced. Nearby off-site bicycle facilities include a dedicated off-street bike path along the west side of Lake Merced Boulevard and dedicated bike lanes on Holloway Avenue west of 19th Avenue. Bike routes are designated on Holloway Avenue east of 19th Avenue, on Font Boulevard north of Holloway Avenue, on Lake Merced Boulevard, and on sections of Beverly Street, 19th Avenue and Saint Charles Avenue connecting to the Daly City BART Station. In addition, as part of the new *San Francisco Bicycle Plan*, new bicycle lanes and bicycle routes are proposed on sections of Holloway Avenue, Lake Merced Boulevard and Portola Drive, and long-term improvements are being considered for Holloway Avenue and Brotherhood Way, which would facilitate bicycle access to and from Parkmerced.

The proposed Parkmerced bicycle and pedestrian route networks are illustrated in **Figure 12.** The design requirements for each street typology are included in the *Parkmerced Design Standards and Guidelines*. The following are the general design principals used to develop the specific proposed improvements contained in the document.

Street network elements

- Streets have been designed for slow vehicular travel, creating an environment that is attractive and safe for walking and bicycling;
- Designated trucks routes have been developed to minimize oversized vehicles on neighborhood streets and the extent to which oversized vehicles cross pedestrian and bicycle pathways;
- Curb cuts and driveways have been minimized to improve pedestrian and cyclist safety and to reduce the potential for conflicts with vehicles; and
- Traffic calming devices have been designed throughout the site, including curb extensions, raised crosswalks, tight corner radii, street trees, narrow lanes, and short blocks.

Bicycle elements

- A complete bike route system has been introduced that fully serves the neighborhood and is a natural extension of and integrated into the City's and SFSU's network;
- New dedicated off-street bike paths, consistent with the City's current guidelines and the *San Francisco Bicycle Plan*, have been included along Gonzalez Drive and Tapia Drive (additional bike lanes on the southern portion of Font Boulevard and Chumasero Drive are being explored with SFMTA);
- Space for a bike shop has been reserved with Block 17 (Transit Plaza), which could include bicycle sales and drop-off repairs;
- Throughout the neighborhood, bikeshare stations offering bikes on loan shall be provided (additional details and limitations regarding the proposed bikeshare program are included in Chapter 4); and
- Safe and secure off-street bicycle parking shall be provided for each residential building and within the retail center (also described in Chapter 4).

Pedestrian elements

- All new traffic signals have been designed to provide pedestrian signals and allow for adequate crossing times for all pedestrians;

- Intersections surrounding the site are proposed to be modified to provide crosswalks and design treatments to improve pedestrian conditions;

- All residences shall be within a two-minute walk of one of the neighborhood centers, which will offer retail, business centers, carsharing hubs, and bike stations; within a five-minute walk of a shuttle or bus stop; and within a ten-minute walk of a Muni light rail station;

- Off-street pedestrian paths (paseos) have been included to connect through certain blocks surrounding Juan Bautista Circle, and to form east-west axes through certain western blocks of Parkmerced to provide direct routes to the community's mixed-use center;

- A pedestrian path has been included to provide access through the southern portion of the site, starting from Juan Bautista Circle, connecting through the open space on the south, and ending at the Lake Merced Boulevard / Brotherhood Way intersection; and

- A pedestrian path has been included from the Community Center southward to Brotherhood Way to provide access between Parkmerced and the schools and institutions along Brotherhood Way.

3.6 / possible long-term projects

In addition to these transportation network improvements proposed as part of the Parkmerced project, several "big picture" roadway and transit improvements have been identified, which may be implemented by others. These projects, although not currently funded or included in any published plans or programs, could substantially improve future conditions in the area and along the 19th Avenue corridor. Parkmerced shall continue to coordinate with the appropriate city, county and state agencies regarding future implementation of these projects:

- Traffic calming on Brotherhood Way;

- Improving 19th Avenue operations on the intersecting east/west streets, such as Ocean Avenue, Eucalyptus Drive and Winston Drive, through configuration improvements and signal upgrades;

- Providing real-time signal coordination with advanced controllers along 19th Avenue and Junipero Serra Boulevard to increase the capacity of the roadway;

- Creating signal pre-emption or signal priority for buses and trains along 19th Avenue;

- Installation of transit-only or High Occupancy/Toll (HOT) lanes on 19th Avenue and Junipero Serra Boulevard;

- Reconfiguring the I-280 / Junipero Serra Boulevard / Alemany Boulevard interchange to eliminate congestion points;

- Upgrading stops and platforms for the M-Ocean View to facilitate passenger boarding and alighting;

- Installing traffic signals along the mixed-flow segments of the M-Ocean View line, with transit signal pre-emption or signal priority;

- Shifting the light rail tracks from the median to the west side of the 19th Avenue, with new west side stations;

- Grade separation of light rail crossings;

- Extension of the M-Ocean View line to the Daly City BART Station; and

- A direct connection from I-280 southbound to Junipero Serra Boulevard.

Parkmerced is committed to working with city, county and state agencies to promote, refine and develop these concepts, as they would address congestion in the 19th Avenue corridor, improve transit access and operations, and enhance pedestrian and bicycle conditions. It should be noted that none of the proposed improvements in and around Parkmerced (each as described in this Plan) would preclude these from being implemented.

proposed transportation program and policies

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Currently, the majority of automobile trips in the southwest quadrant of San Francisco are focused on Highway 1, which results in considerable congestion at peak times and substantial delays to vehicle and transit operations. To minimize the new auto trips generated by the proposed land use plan, thereby reducing the contribution to the local and regional roadway network, the Plan targets a substantial redistribution of trips from auto to transit and non-motorized modes. The following sections outline the specific policies and programs designed to encourage the use of modes other than the private automobile. Parkmerced is committed to implementing the proposed transportation programs and policies, in accordance with the Development Agreement between Parkmerced Investors LLC and the City and County of San Francisco (Development Agreement) and as warranted by project-generated demand. An overview of this phasing plan is provided in Chapter 5.

4.1 / strategies

4.1.1 Maximize internal trip capture

Aside from San Francisco State University and Stonestown Galleria, which are located to the north, and Westlake Shopping Center approximately one mile to the south, Parkmerced is not adjacent to existing employment, shopping and activity centers, making travel to them on foot or by bike impractical. The establishment of neighborhood-serving retail and office uses to meet the needs of residents will greatly reduce demand for auto and transit trips to destinations external to the Parkmerced. New jobs will be provided at Parkmerced as well, and these will have the potential to capture trips within the site. Since internally-captured trips would be of shorter length, they would mostly shift from auto to non-auto modes.

Internal trip capture will be maximized by the following strategies:

- The land use program shall include uses and services required for daily activities, such as a grocery store and a bank. As such, non-work trips outside the site will be lessened. Commercial and retail uses have been located in a manner that minimizes the need for auto trips within the neighborhood;
- Site design elements such as the configuration of buildings and streets shall be planned with considerations to sun and wind to provide a better environment for pedestrians and bicyclists;
- A shuttle system, as described below, shall be implemented to provide convenient connections between major destinations, and be located a short walk from every resident; and,
- Opportunities for residents to work from home shall be encouraged through the presence of business centers in each neighborhood center.

4.1.2 Provide low-emission shuttle system

To reduce the number of auto trips taken, the project will provide two free shuttle services – one to the Daly City BART Station and the other to local shopping destinations – for Parkmerced residents and employees of the on-site commercial and service uses. In addition to connecting riders to BART and the shopping destinations, the shuttle will also provide circulation within Parkmerced and connect residents to the Mixed Use – Social Heart area of Parkmerced and the Muni lines operating on the eastern side of the project. Each shuttle will be a low-emission vehicle and will have the capacity to transport at least 25 passengers.

The Transportation Coordinator (TC) (described below) will provide a non-transferable shuttle pass to each Parkmerced resident and employee of the on-site commercial and service uses, which will allow the holder to board and ride the shuttle at no cost.

The shuttle service will be implemented upon occupancy of the first residential development phase.

BART Shuttle

As noted in Chapter 2, a substantial portion of Parkmerced transit trips originate or have a destination on the BART system. The majority of Parkmerced residents that take BART drive to the Daly City BART Station, as inexpensive off-street parking is provided at this location (between a $2.00 and $3.00 daily fee) and access by transit is relatively limited or slow (the Muni 28/28L-19th Avenue / 19th Avenue Limited serve the Daly City BART Station and the 29-Sunset and M-Ocean View serve the Balboa Park BART station, the nearest stop for each line is at 19th Avenue / Holloway Avenue).

To accommodate this demand for service, a dedicated shuttle service from Parkmerced to the Daly City BART Station shall be implemented.

The proposed routing of a Parkmerced–Daly City BART Station shuttle is shown on **Figure 13**. Shuttles would enter Parkmerced via Chumasero Drive and circulate through the neighborhood, with stops near major destinations (such as the retail center) and high-density residential areas.

The BART shuttle will operate between 6:00 AM and 10:00 PM on weekdays and between 8:00 AM and 10:00 PM on weekends and holidays.

Shopper Shuttle

During midday and evening periods, a "shopper shuttle" shall be provided to Stonestown Galleria and Westlake Shopping Center via Lake Merced Boulevard, as shown by the dashed red line in **Figure 13.** The shopper shuttle will operate between 9:00 AM and 4:30 PM, and between 7:00 PM and 10:00 PM, on weekdays, and between 10:00 AM and 9:00 PM on weekends and holidays.

Service Levels

Demand for shuttle services is expected to increase as additional development phases are completed. To accommodate increasing demand, Parkmerced will reduce headways and/or utilize larger capacity shuttles as additional residential development phases are occupied.

Tables 1 and 2 set forth estimated headways based on shuttle size for each shuttle service. Service for the BART shuttle and the shopper shuttle will be provided at the estimated headways set forth below that corresponds to the shuttle passenger capacity and the number of net-new units occupied. If the Parkmerced shuttle fleet is comprised of more than one type of shuttle, the average capacity of the fleet will determine the applicable estimated headway.

To ensure that shuttle service levels reflect demand, the TDM committee (described below) will evaluate

ridership rates at least once per year. If the TDM committee determines, based on actual ridership rates, that the estimated headways exceed those necessitated by demand, the TDM committee may recommend to Parkmerced that headways be increased and Parkmerced may so increase. In no event, however, shall headways be increased by more than 25 percent over the applicable Estimated Headways. Prior to the time the TDM committee is formed, Parkmerced shall perform the obligations set forth in this chapter.

TABLE 1: Estimated Headways for BART Shuttle

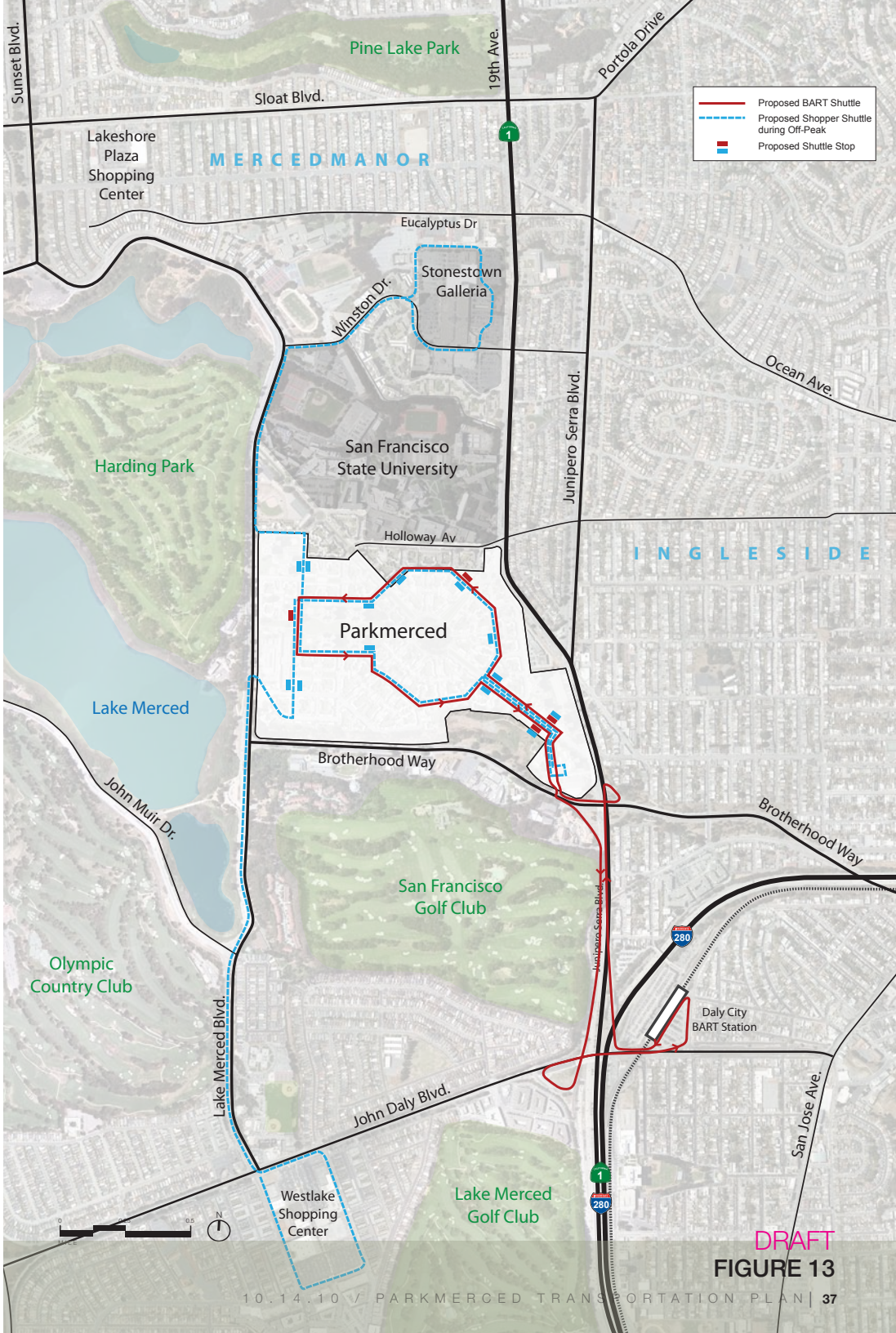
Shuttle Vehicle Size	Between 1 and 479PM peak hour inbound vehicle trips	Between 480 and 1,014PM peak hour inbound vehicle trip	Between 1,015 and 1,623PM peak hour inbound vehicle trips	Between 1,624 and 2,483PM peak hour inbound vehicle trips	Between 2,484 and 3,101PM peak hour inbound vehicle trips
25-passenger shuttle	7 min.	5 min.	5 min.	4 min.	4 min.
30-passenger shuttle	8 min.	7 min.	6 min.	5 min.	5 min.
35-passenger shuttle	10 min.	8 min.	7 min.	6 min.	5 min.
40-passenger shuttle	11 min.	9 min.	8 min.	7 min.	6 min.
45-passenger shuttle	12 min.	10 min.	9 min.	8 min.	7 min.
50-passenger shuttle	14 min.	11 min.	10 min.	9 min.	8 min.

Source: AECOM – March 2010

TABLE 2: Estimated Headways for Shopper Shuttle

Shuttle Vehicle Size	Between 1 and 479PM peak hour inbound vehicle trips	Between 480 and 1,014PM peak hour inbound vehicle trip	Between 1,015 and 1,623PM peak hour inbound vehicle trips	Between 1,624 and 2,483PM peak hour inbound vehicle trips	Between 2,484 and 3,101PM peak hour inbound vehicle trips
25-passenger shuttle	20 min.	20 min.	20 min.	15 min.	15 min.
30-passenger shuttle	20 min.	20 min.	20 min.	15 min.	15 min.
35-passenger shuttle	20 min.	20 min.	20 min.	15 min.	15 min.
40-passenger shuttle	20 min.	20 min.	20 min.	15 min.	15 min.
45-passenger shuttle	20 min.	20 min.	20 min.	15 min.	15 min.
50-passenger shuttle	20 min.	20 min.	20 min.	15 min.	15 min.

Source: AECOM – March 2010



4.1.3 Maximize usefulness of walking and bicycling

Parkmerced will be served by a fine-grained network of pedestrian and bicycle routes, and parking and amenities for cyclists will be provided. The following measures are proposed to encourage use of the pedestrian and bicycle network:

- A wayfinding signage program shall be prepared to guide residents and visitors along routes and paths;
- Maps highlighting all pedestrian and bicycle routes and bicycle parking spaces shall be prepared by the TC, who will ensure that they are included on the Parkmerced website and posted at transit kiosks;
- Safe and secure bicycle parking shall be provided within each residential, retail and commercial building, and supplemental on-street bicycle parking racks shall be provided near major destinations (as discussed later in Section 4.1.7);
- Efforts to attract a bicycle shop tenant providing repair services and bike-related retail to the location illustrated in **Figure 14** shall be made;
- As discussed in Section 4.1.6, efforts shall be made to contract with a bikeshare company to install and operate bikeshare stations at the locations shown in **Figure 14,** or at other locations deemed appropriate by Parkmerced and the bikeshare company; and,
- Streets shall be designed as required by the *Parkmerced Design Standards and Guidelines* to maximize sunlight and mitigate wind for improved pedestrian and bicycle comfort.

4.1.4 Improve transit services

The Plan seeks to maximize the effectiveness and convenience of transit service to, from and within the project site. In addition to the improved transit services described previously, the following elements will support and encourage transit ridership:

- If the proposed M-Ocean View light rail line is re-routed through Parkmerced, transit plazas shall be created around the relocated SFSU / Parkmerced station and at the retail center station and include rider services and amenities, such as maps, wayfinding devices, and interactive informational and transfer kiosks. SFMTA will be encouraged to install ticket/pass sales machines;
- Infrastructure to support SFMTA's real-time transit arrival information (using NextBus or other similar technology) and passenger shelters shall be provided at all bus stops and at the Muni light rail stations;
- All bus stops shall be clearly marked on the pavement of all newly built or reconstructed streets, and will include either bus bulbs or bus pull-outs as requested by the transit operators;
- Passenger drop-off/pick-up areas shall be established at the transit plaza to be located on Block 17 at the corner of 19th Avenue and Holloway Avenue; and,
- Transit maps, schedules, opportunities to purchase passes on-line, real-time arrival information and internet links (each to the extent such service or information is provided by the relevant transit agency) shall be provided on the Parkmerced website for all transit operators serving Parkmerced.

The current SFMTA Fast Pass does not include travel to or from the Daly City BART Station. As such, riders at this station need to purchase individual BART tickets. Expansion of the Fast Pass coverage to include Daly City BART Station shall be explored by Parkmerced with the appropriate transit agencies.

4.1.5 Implement transportation demand management plan

An effective Transportation Demand Management (TDM) plan reduces the amount of auto use and encourages residents, employees and visitors to use alternative modes of travel, such as transit, walking and bicycling. In addition, a TDM plan provides measures to reduce the demand for travel by all modes during peak times.

Given the phased development of Parkmerced, elements of the TDM plan will be introduced as additional dwelling units are occupied, in accordance with the Development Agreement Phasing Plan described in Chapter 5.

The TDM Plan for Parkmerced is consistent with the policies of the various City agencies, and works seamlessly with similar programs at neighboring San Francisco State University. The TDM Plan targets residents, employees and visitors, and includes implementation of the strategies described in the following sections. In addition, the TDM Plan relies upon parking policies and programs, which are described in more detail in Section 4.1.8.

Transportation coordinator

An on-site Transportation Coordinator (TC) shall be employed, whose job will be to educate residents, employers, employees and visitors about the range of transportation alternatives available to them.

The TC shall implement and administer the various TDM Plan elements described below, and shall coordinate with the City and other neighboring entities as required to implement the TDM Plan. The TC will be in regular communication with the transit agencies and will coordinate with them to monitor transit usage and will recommend transit service changes where appropriate to meet demand.

All carpool/vanpool, carshare, transit and bicycle users will be requested to register with the TC to allow for easier implementation of TDM Plan elements, such as the sale of subsidized transit passes. This registration could be done through the Parkmerced website or at the TC's office, and will require proof of residence or employment at Parkmerced.

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FIGURE 14

The TC will conduct a personalized consultation with all new residents and employees, advising them of the various transportation alternatives available for the trips that they make. Custom trip planning, maps and schedules will be provided. The TC will continue to be available for subsequent consultations and will keep residents, employees and employers apprised of non-auto travel incentives or changes to non-auto travel options. In addition, the TC's services will also be available to visitors and groups holding large events on the project site.

The TC will institute a TDM committee composed of the TC, three residents, one retail/commercial business owner or employee, one representative of SFMTA and one representative of the Planning Department. The resident and business owner/employee members of the committee will be elected. The representatives from SFMTA and the Planning Department will be appointed by the Director of the SFMTA and the Director of the Planning Department, respectively. The TC will be the chairperson of the committee. All actions of the committee will require a majority vote of the committee. The committee will participate in setting TDM goals and developing programs, giving residents and employees a greater stake in its success. The TDM committee shall establish performance goals upon occupancy of each phase of development. Goals might include a decrease in single-occupant vehicle mode split or a reduction in peak hour traffic volumes at driveways. Challenges between different areas of Parkmerced could be established, with prizes for the lowest parking demand, auto use or other TDM metrics.

Each year, the TC will be responsible for conducting surveys of residents, employees and visitors to assess the current mode split (percentage of trips made by driving alone, carpooling, riding transit, walking or bicycling) and gather demographic information (such as location of work and travel time to and from work). This information will be used to improve the effectiveness of the TDM programs. All annual surveys and assessments will be submitted to the City and reviewed by the City's representative on the TDM committee.

Additional responsibilities of the TC shall include the following:

- Conducting annual shuttle ridership surveys, and working with the TDM committee to adjust service levels to meet demand, if necessary;
- Conducting annual assessments to determine the market price for parking, and make adjustments accordingly;
- Conducting (in conjunction with the operators) annual surveys of carshare and bikeshare use to determine the need for additional spaces and equipment;
- Managing the carpooling/vanpooling database and Guaranteed Ride Home (described below) program;
- Coordinating the offerings of carsharing organizations on the project site;
- Monitoring bikeshare station usage and reporting maintenance issues; and
- Developing and maintaining a master schedule for commercial deliveries.

The TC's salary shall be paid jointly by the landlord(s) of the rental residential units, the landlord(s) of the commercial/retail spaces, and the homeowners associations governing the for-sale residential units.

Online transportation information

The TC shall also be responsible for operating and maintaining transportation-related data and real-time transit information on the Parkmerced transportation website, which could include:

- Transit route maps, schedules and fees;
- Bicycle route maps and bikeshare station locations;
- Real-time carshare availability; and,
- Real-time transit arrival information.

Commercial use TDM programs

Transit usage and carpools/vanpools need to be supported on both ends of a trip to be successful. There is a higher incentive to use transit if free parking is not provided at the workplace. The TC will work to coordinate with major employers of Parkmerced residents in San Francisco and the Peninsula to aide in the development of employer-based TDM measures. For example, employers could offer alternative work hours or telecommuting programs and Parkmerced housing could be marketed to new employees at major employers that can be conveniently reached from Parkmerced by transit.

In addition, the TDM Plan includes programs designed to assist the commercial uses on the site to improve the use of transit and facilitate walking and bicycling by their employees. All employers within Parkmerced will be required to participate in TDM programs, and the TC will coordinate with employers to monitor progress and provide support. Each employer will be required to designate a single contact to work with the TC.

In addition, each building tenant or employer with over 15,000 gross square feet of space shall be required to provide or participate in the following, in coordination with the TC:

- Provide carpool and vanpool ridematching services, with participation in the Guaranteed Ride Home program for registered carpool and vanpool riders in limited emergency situations (as described below);
- Provide access to employees to the Parkmerced transportation website to obtain information regarding transit routes and schedules, carpooling and vanpooling, and bicycle routes and facilities;
- Provide alternative commute subsidies (such as the Commuter Check program) to employees using transit or alternative modes;
- Provide opportunities to employees to purchase commuter checks, Muni/BART Fast Passes and Clipper cards (or other current pass type);
- Provide information to customers on alternative

travel options (such as directions to the business using transit) on the business's website (if one is provided);

- Permit compressed work week and flextime to employees, permitting employees to adjust their work schedule to reduce vehicle trips to the worksite, where compatible with the employer or tenant's business model; and,
- Provide telecommuting options where compatible with the employer or tenant's business model.

The TC will coordinate with employers to ensure that employees are kept fully informed of the available programs and promotions, and will be available to assist with new employee orientation.

Carpool / Vanpool elements

Carpool and vanpool ridematching services will be offered through the TDM program, and designated spaces in parking facilities will be provided free to vanpool vehicles. Carpool and vanpool measures shall include the following:

- A database of carpool/vanpool participants will be collected and maintained by the TC;
- A carpool matching feature will be provided on the Parkmerced website and managed by the TC;
- Vehicles will be provided for vanpools to be formed by residents with a maximum of 10 vehicles. Trip destinations and resident participation will be coordinated and approved by the TC.;
- Vanpools to area schools will be established with a maximum of 6 vans, with trip destinations and resident participation approved by the TC.;
- Casual carpool pick-up points will be designated; and,
- Guaranteed Ride Home Program: Registered carpoolers and vanpoolers will be guaranteed a ride home (via reimbursement of cab fare from their place of employment to Parkmerced) in limited emergency situations and up to two times per calendar year, subject to approval by the TC.

Subsidized Transit Pass Program

To encourage the use of transit by residents for their daily trips, residents will be able to purchase monthly SFMTA transit passes from the TC. For residents of rental units, one transit pass per household will be subsidized in the amount of $20 by the landlord (acting through the TC). For residents of ownership units, the household's homeowners association (acting through the TC) will provide the $20 subsidy.

Additional elements and implementation strategies

Additional TDM measures shall include the following:

- Work with internet providers to establish reduced cost (through agreements with providers) internet access to encourage telecommuting and online shopping;
- Establish business centers equipped with computers capable of videoconferencing and printers, in each neighborhood center;
- Schedule deliveries to the grocery store and other high-volume commercial uses to avoid peak commute periods; retailers would be encouraged to receive deliveries on behalf of residents to encourage and facilitate telecommuting;
- Lease space to a car rental company (at commercially reasonable rates), if any such company wishes to establish a location at Parkmerced, which would cater to long-term car rental needs or to those who do not have a carshare membership; and
- If the City establishes a compatible parking card, offer a "smart card" that allows users to pay for parking meters or borrow bikeshare bicycles using one card.

4.1.6 Provide carshare and bikeshare programs

Carshare elements

Carsharing provides an effective incentive for participants to forego car ownership and rely on transit as a primary mode of travel because they know that a car is readily available when they need one. The growth and success of these programs in the Bay Area and in other urban areas throughout the country has shown their effectiveness in reducing auto dependency. Members pay based on how much they drive, thus reducing the fixed costs associated with private automobile ownership. Typically, carshare members are able to reserve a car by phone or online on an as-needed basis, and pick-up and drop-off the vehicle at each established carshare hub.

The TC will work with local carsharing organizations to establish a network of carshare vehicles parked in hubs located throughout Parkmerced. The carshare

TABLE 3: Required Carshare Parking Spaces (per *San Francisco Planning Code)*

Land Use	Required Carshare Spaces
Residential	0 – 49 units = 0 carshare spaces
	50 – 200 units = 1 carshare space
	201 or more units = 2 carshare spaces, plus 1 carshare space for every 200 units over 200 units
Non-Residential	0 – 24 parking spaces = 0 carshare spaces
	25 – 49 parking spaces = 1 carshare space
	50 or more parking spaces = 1 carshare space, plus 1 carshare space for every 50 parking spaces over 50 parking spaces

Source: AECOM – March 2010


Proposed Car Share Hub
PROJECT BOUNDARY
SAN FRANCISCO STATE UNIVERSITY
SAN FRANCISCO GOLF CLUB
Vidal Drive
Holloway Avenue
Font Boulevard
Pinto Avenue
Serrano Drive
Varela Ave.
Gonzalez Drive
Acevedo Avenue
Arballo Drive
New Street 1
New Street 3
New Street 5
New Street 9
Fuente
Crespi Dr.
Banbury Drive
Denslowe Drive
Stratford Drvie
Garfield Street
Beverly Street
Monticello Street
Junipero Serra Boulevard
Lake Merced Boulevard
Higuera Avenue
Tapia Drive
Rivas Drive
Juan Bautista Circle
Crespi Drive
New Street 10
Diaz Ave.
19th Avenue
Cambon Dr.
Shields Street
Castelo Ave.
Felix Avenue
Bucareli Drive
New Street 7
New Street 2
New Street 4
Cardenas Drive
New Street 8
Josepha
Gonzalez Drive
Sargent Street
Garces Drive
Gonzalez Drive
Brotherhood Way
Chumasero Drive
JBC
RC
01
02W
02E
03W
03E
04
05W
05E
06
07W
07E
08W
08E
09W
09E
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11W
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16SE
16SW
17
18
19N
19S
20
21N
21S
22
23
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0
225'
450'
900'
N

FIGURE 15

operators will determine the appropriate number and distribution of cars to be located at each location. In general, the carshare facilities have limited physical infrastructure and therefore can be modified as needed to meet changes in future demand. It is anticipated that these hubs will be centralized at gathering areas, and therefore will serve multiple buildings and uses (accommodating between 5 and 15 vehicles at each location). **Figure 15** identifies the proposed locations of the ten carshare hubs.

Section 166 of the *San Francisco Planning Code* (as presented below in **Table 3**) lists the requirements for the provision of carshare parking spaces based on the number of residential units (for residential uses) and the number of off-street automobile parking spaces (for commercial uses), which Parkmerced is committed to meeting at each phase of development. In addition, additional carshare spaces will be provided if warranted by demand (as determined by the TC). In addition, in the event that the City at a later date adopts car sharing requirements that require a greater number of carshare spaces than shown in the table below, that later requirement shall apply to all new construction at Parkmerced.

Proposed carshare measures shall include the following:

- The TC will encourage carshare providers to offer reduced membership fees or incentives for residents and employees;
- Long-term contracts with carshare operators will be established to ensure continuity and reduce costs;
- The TC will encourage carshare providers to offer reduced fees for long-term carshare use. This would reduce the need for private vehicle ownership for vacations or weekend trips;
- The availability of carsharing and information on the various carshare operators will be included in all rental and leasing information and in real-time on the Parkmerced website (to the extent such information is provided on the carshare operators' websites); and
- Carshare hub locations will be clearly identified by directional signage.

Bikeshare elements

Similar to carsharing, bikesharing (also referred to as "bicycle libraries") is a program that allows users to rent a bicycle for a given period of time. Bicycles are "checked out" at one station and returned at any other station within the system. Members pay based on the length of time they use the bicycle, thus reducing the costs associated with personal bicycle ownership. Typically, bikeshare members are able to identify the location of the nearest bicycle by phone or online.

With stations located all over Parkmerced, these bicycles are meant to be used for short time periods only, and checked in and checked out at the start and end of each trip. Bikeshare programs are currently being implemented in the Bay Area and in other urban areas throughout the country, in Canada and in Europe, and have been gaining popularity in providing non-bicycle owners the opportunity to use bicycling for work, shopping or recreation trips.

Parkmerced will work to attract a bikeshare company to install and operate bikeshare stations throughout Parkmerced. (Although Parkmerced may contract with an independent operator, efforts will be made to coordinate with City-sponsored bikeshare operators or programs, if any.) It is anticipated that these will be a series of small facilities (accommodating up to five bicycles at most locations), with larger stations (accommodating up to 10 bicycles) provided at the transit stations and the retail center. Figure 14 identifies the proposed locations of the 14 bikeshare centers, however alternate locations may be used if deemed appropriate by Parkmerced and the bikeshare operator.

TABLE 4: Proposed Minimum Off-Street Bicycle Parking Supply

Land Use	Minimum Bicycle Parking Rates
Residential	1 space per 2 units
Grocery	1 space per 2,000 gsf
Retail / Office / Professional Services	0-10,000 gsf = 2 spaces 10,001 - 20,000 gsf = 4 spaces 20,001 - 40,000 gsf = 6 spaces > 40,000 gsf = 12 spaces
School	1 space per 4,000 gsf
Fitness / Community Center	1 space per 4,000 gsf

Source: AECOM – March 2010
Notes: gsf = gross square feet; bicycle parking for the newly-constructed residential units only (existing units currently have bicycle parking facilities).

The bikeshare operator will determine the appropriate number and distribution of bicycles to be located at each location. Typically, bikeshare stations are modular, and can be expanded to provide additional bicycle parking spaces. In addition, the bikeshare operator will be responsible for redistributing the bicycles throughout Parkmerced on a daily basis, or as needed based on parking locations.

Proposed carshare measures shall include the following:

- The TC will encourage the bikeshare operator to offer:
  - Reduced membership fees or incentives for residents and employees; and
  - Separate fees for residents and employees at Parkmerced versus visitors;
- Where feasible, the TC shall establish a long-term contract with the bicycle operator in order to ensure continuity of service and minimize costs to bikeshare users;
- The availability of bike sharing and information on the various bikeshare operators will be included in all rental and leasing information and in real-time on the Parkmerced website (to the extent such information is available on the bikeshare operators' websites);
- Bikeshare center locations will be clearly identified by directional signage; and,
- At full buildout of Parkmerced, a guaranteed minimum number of bicycles and bikeshare spaces will be provided (80 bicycles), with more to be added as warranted by demand as determined by the bikeshare operator.

4.1.7 Improve bicycle facilities

To encourage the use of the bicycle as an everyday means of transportation, off-street bike parking will be incorporated in the renovation of existing buildings and included into new construction. Bicycle parking areas will be located on the ground floors of buildings, close to activity to provide convenience and increase security.

The required off-street bicycle parking supply for the various new land uses proposed within Parkmerced is presented in **Table 4**, which meet or exceed the requirements listed in Section 155 of the *San Francisco Planning Code* and is consistent with the policy modifications proposed as part of the *San Francisco Bicycle Plan*. In the event that the City at a later date adopts bicycle parking requirements that require a greater number or different type of bicycle parking spaces than shown in the table below, those later requirements shall apply to all new construction at Parkmerced. It should be noted that for the retail and office uses, the amount of bicycle parking spaces to be provided will be based on the total square footage of the individual building, and not based on the size of individual tenants. Also, all existing residential units that will be retained currently provide bicycle parking; as such, no additional facilities for the retained residential buildings are required as part of this Plan.

A combination of Class I and Class II spaces should be provided to meet this bicycle parking supply requirements. Class I bicycle parking facilities provide secure long-term bicycle storage by protecting the entire bicycle, including its components and accessories, against theft and inclement weather. Examples include lockers, check-in facilities, monitored bicycle parking, restricted access bicycle parking and personal storage. Class II bicycle parking facilities provide short-term bicycle parking and include bicycle racks that permit the locking of a bicycle frame and one wheel and support the bicycle in a stable position without damage to wheels, frame or components.

Class I bicycle parking is required be provided at residential buildings, and a combination of Class I and Class II parking is required to be provided at retail and professional services uses, at the school and at the fitness/community center.

Off-street bicycle parking will be augmented by on-street parking provided by racks and posts throughout Parkmerced.

4.1.8 Establish automobile parking program

The parking program is designed to control the overall usage of private automobiles through pricing, limitations to supply, new technology, and effective monitoring efforts. The following sections outline some of the key elements of the parking program.

Off-street residential automobile parking strategies
Residential parking will be based on a "parking storage" concept: many residents will not use their cars every day, and thus a resident's parking space will not necessarily be adjacent to his or her unit. This approach will help reduce the amount of "convenience driving" and encourage residents to walk, bike or take the shuttle to access local destinations. Overall, less parking will be provided in the eastern half of the site, which will have enhanced transit service and high levels of walk/bike accessibility. In addition, this will help divert traffic away from Highway 1, and raise the competitiveness of walking, biking and transit in this high density residential area relative to driving. Residents choosing to live on the east side of Parkmerced can take advantage of easy proximity to the mixed-use center and its concentration of transit service, and therefore will not need to drive as often. As shown in **Figure 17,** this goal is accomplished by generally providing two levels of basement parking under the western blocks and one level under the eastern blocks of Parkmerced.

The specific residential parking strategies shall include:

- Residential parking will be unbundled from the units (e.g., each unit will not be sold or leased with a parking space);
- Each parking space will be sold or leased separately to individual units;
- Residential parking rates will be set to fair market

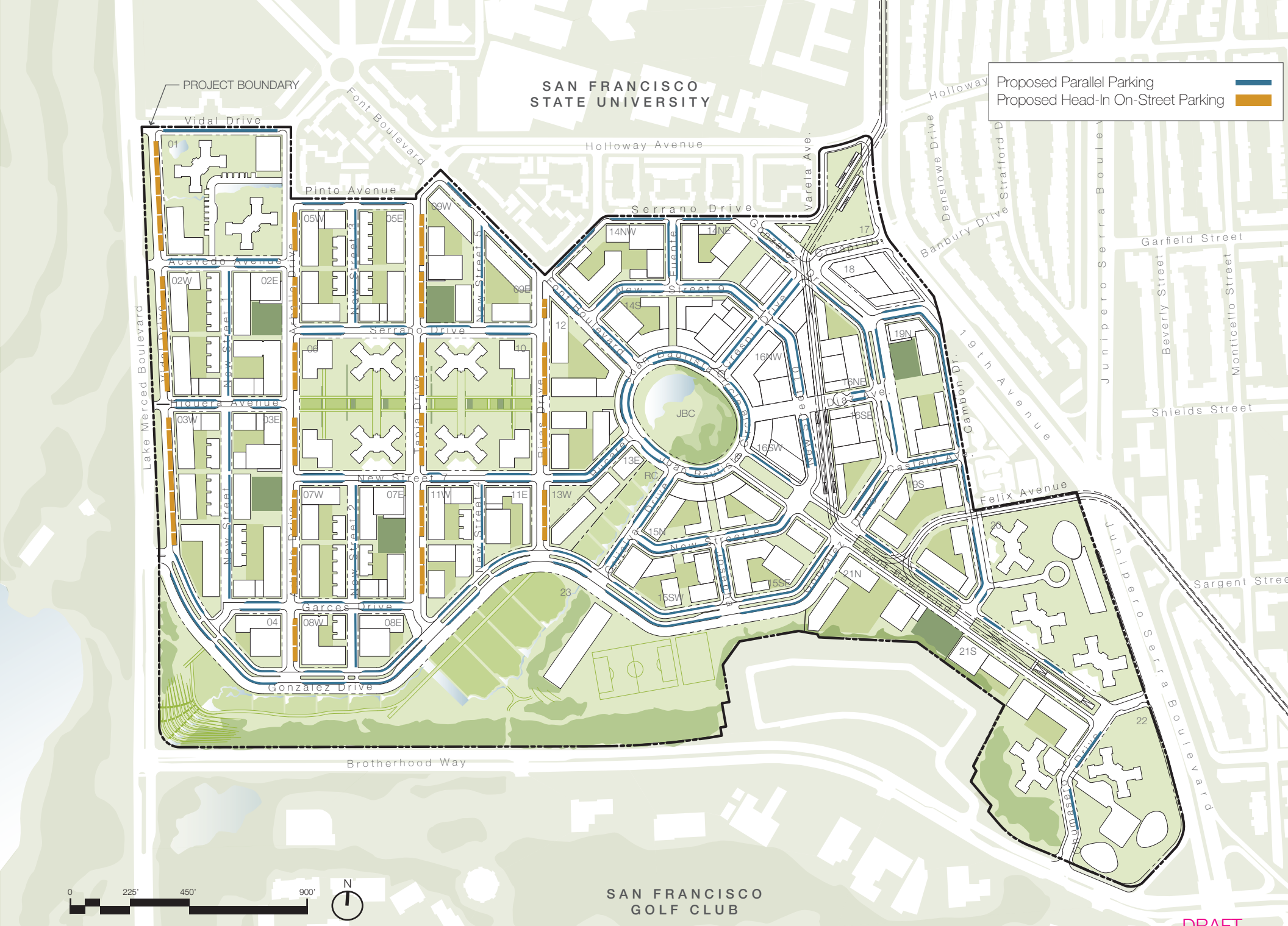

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FIGURE 16

value (to be updated annually, based on surveys conducted by the TC); and

- At full build-out of Parkmerced, parking will be provided at overall maximum rate of one space per residential unit.

Off-street commercial automobile parking strategies
Off-street commercial parking will be provided within the retail center area to support the proposed new retail, restaurant, office, and business services spaces. The off-street facilities will be unbundled and designed to promote shared parking uses. In other words, parking spaces would not be designated for certain uses or businesses so that all commercial spaces may be used by any commercial patron, provided, however, that approximately half of the grocery store-permitted spaces will be reserved for grocery store use only during normal grocery store business hours. All commercial spaces will be paid spaces, with rates that discourage long-term use.

The specific commercial parking strategies shall include:

- All parking will be unbundled and designed to serve all commercial uses, with the exception of the spaces designed for exclusive use of the proposed grocery store (during store hours of operation only);
- Where shared parking opportunities exist (e.g., where parking supports service uses during the day and a restaurant during the evening), parking requirements will be reduced;
- All off-street parking will be paid parking, and will be charged at hourly rates;
- Parking rates will be set equivalent to fair market value (to be updated annually, based on surveys conducted by the TC) and will not be subsidized by tenants or building operators; and
- Discounts will not be allowed for "early bird" or "in-by / out-by" long-term parking, and discounted monthly parking passes will not be offered.

On-street automobile parking controls
Currently, on-street parking within Parkmerced and the surrounding residential neighborhoods is generally available, except when SFSU is in session. During these times, on-street parking is nearly fully occupied, making it difficult for Parkmerced residents and visitors to find parking. To improve these conditions, future on-street parking throughout Parkmerced shall be under control of parking meters, time limits and/or residential permit districts, as follows:

- All on-street parking in the retail center and near major destinations will be paid parking. The City has indicated they will install "smart meters" that accept electronic payment methods.
- Two options for the remainder of the on-street parking spaces are proposed:
  - Improved permit districts: Parkmerced is currently under the "E" permit parking zone, which allows for one- or two-hour parking for non-residents or residents without permits. Under this option, the time limits would be eliminated or reduced to 30-minutes by the City, meaning that the vast majority of the on-street parkers would need to have permits. To accommodate visitors to Parkmerced, residents could obtain short-duration (one or two days) visitor permit passes for their guests, and multiple guest on-street parking spaces could be provided on each block. The establishment of such passes would need to be approved by the City. Passes would be distributed by the TC. Or,
  - Meters: All on-street parking spaces could be metered spaces, utilizing the City's smart meters to help manage parking demand and to improve enforcement. If approved by the City, these smart meters could allow for reduced parking rates to be paid by Parkmerced residents and guests to help improve their parking conditions.

Parkmerced will work with the surrounding communities prior to implementing any changes to the on-street parking controls, and will work with SFMTA to improve enforcement of time limits and meter periods to ensure the proper utilization of the on-street parking spaces.

Automobile parking supply
The redesign of Parkmerced's street network will result in approximately 1,680 on-street parking spaces, an increase of about 90 over the existing total. On-street parking will consist of approximately 520 "head-in" spaces, marked in orange in **Figure 16** and approximately 1,160 parallel spaces, marked in blue.

TABLE 5: Maximum Automobile Off-Street Parking Supply at Full Build-Out

Land Use	Maximum Automobile Parking Rates
Residential	1 space per dwelling unit
Grocery Store	1 space per 500 gsf
Retail / Office / Professional Services	1 space per 750 gsf
School	1 space per 1,000 gsf
Fitness / Community Center	1 space per 1,000 gsf

Source: AECOM – March 2010
Notes: gsf = gross square feet

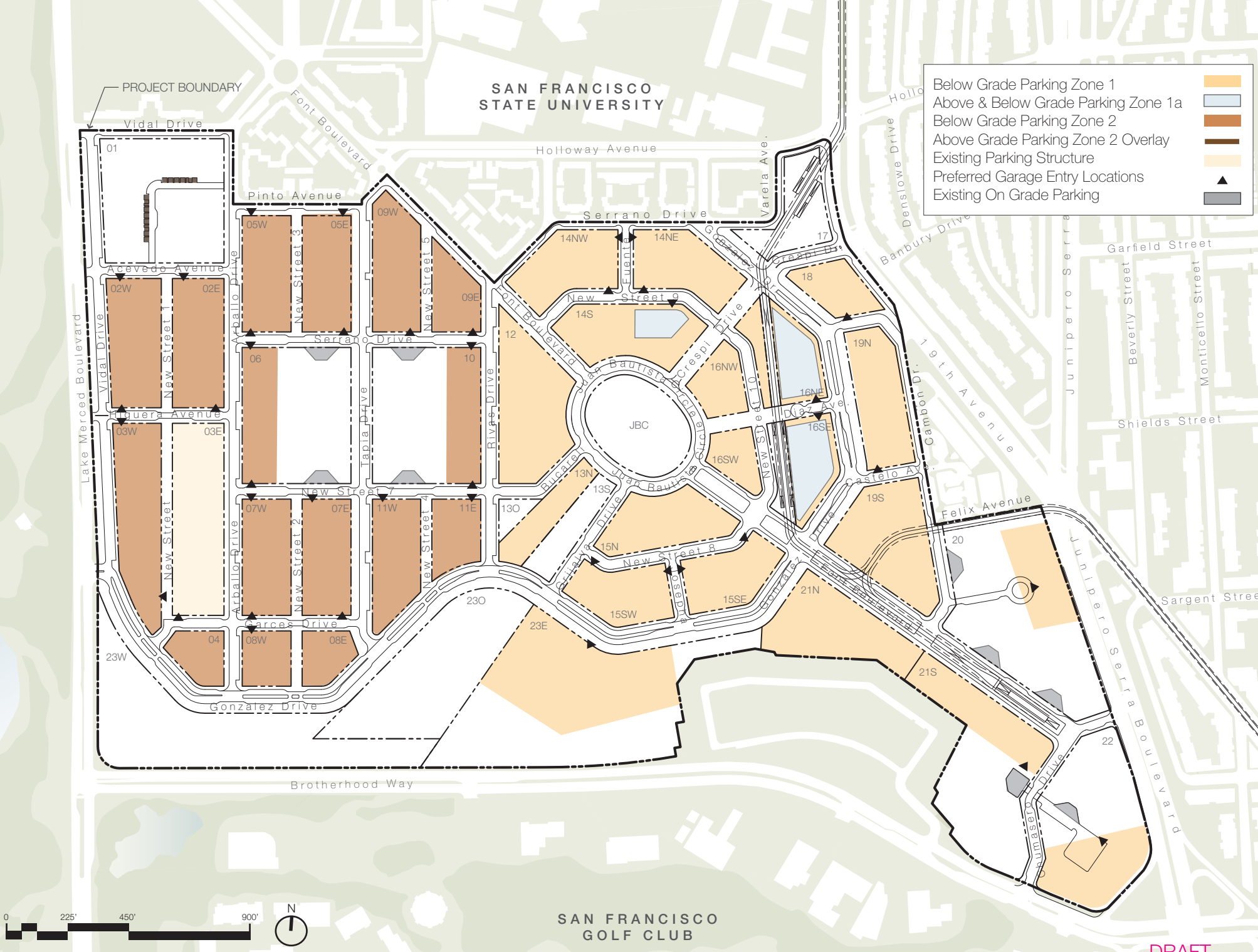

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FIGURE 17

Separate off-street parking supplies shall be provided for the residential and commercial uses. **Figure 17** illustrates the proposed off-street parking locations throughout Parkmerced.

The allowable maximum off-street parking supply for the various land uses proposed within Parkmerced is presented in **Table 5.** It should be noted that for the retail and office uses, the amount of parking spaces to be provided will be based on the total square footage of the building, and not based on the size of individual tenants.

As shown in **Table 5**, a total of one off-street parking space will be permitted for each residential unit. As noted earlier, all residential parking will be unbundled from the units, so that residents have the option to lease no spaces or multiple spaces, depending on their needs. In addition, off-street parking spaces will be permitted for the non-residential uses. All parking for the retail/office uses in Parkmerced's mixed-use center will be housed in adjacent structures and basement parking levels. No off-street parking will be permitted for the smaller neighborhood-serving retail hubs that would be distributed throughout the area. In addition, off-street parking will be permitted at the school and at the fitness/community center.

Due to the phased nature of construction within Parkmerced, the concentration of parking in certain areas of the neighborhood, and the fact that each garage will serve multiple buildings, the ratio of constructed parking spaces to uses may exceed these maximums set forth in **Table 3** temporarily.

Electric vehicle parking
To promote the use of electric passenger vehicles, a minimum of 1 percent of off-street residential parking spaces will be constructed with electric wiring conduits to permit wiring and hook-up of an electric vehicle charger.

4.1.9 Establish loading program

The loading program is designed to facilitate access required by freight vehicles (commercial delivery and moving trucks), service vehicles (regular sized commercial passenger cars, trucks and vans for service calls and deliveries) and passenger vehicles (private vehicles, vans and shuttles), while reducing the negative impacts that loading and unloading activities might have on pedestrians and cyclists. The following sections outline the key elements of the loading plan, as shown in **Figure 18.**

On-street loading
On-street passenger loading spaces are designed to facilitate short-term parking near building entrances to meet the needs of disabled individuals and as a general convenience for the pick-up and drop-off of residents and guests. They also allow package and other commercial deliveries to be made. Loading spaces can facilitate traffic flow by reducing the incidence of double-parking. However, even the frequent movements of vehicles in and out of loading spaces can hinder traffic flow, particularly on streets with transit service.

The following guidelines apply to the location and management of on-street loading spaces:

- Short-term loading zones shall be located as near to building entrances as possible;
- Loading spaces are discouraged on the block faces of local streets that have dedicated bike lanes;
- Loading spaces are encouraged on the block faces of local street that have perpendicular (head-in) parking; and
- Loading spaces are discouraged on streets with light rail operations; the loading needs of blocks adjacent to such streets will be accommodated on other block faces where possible.

Off-street loading
To provide access from the street, off-street loading spaces require curb cuts and driveways, which can be intrusive to the bicycling and pedestrian environment. In addition, the turning movements of vehicles leaving or entering the street can impede the flow of traffic, which is of particular concern with regard to transit vehicles. The following guidelines will apply to the location and design of any off-street loading spaces provided within Parkmerced:

- A maximum of one curb cut is permitted every 250 linear feet of street;
- Individual buildings are limited to one opening of up to 10 feet in width to provide access to off-street loading;
- Shared openings for parking and loading are encouraged when both are provided along the same building frontage, with a maximum width of 24 feet;
- Where possible, curb cuts and driveways providing access to off-street loading spaces will be consolidated into a single location on any block face;
- No curb cuts accessing off-street loading are permitted on streets with light rail operations or on the local streets with bike lanes, where alternative frontages are available;
- Off-street driveways to accommodate passenger loading or unloading (porte-cochères) are permitted only at high-density residential towers and may remain where currently existing;
- Individual buildings would be limited to one opening of up to 12 feet in width to provide access to off-street loading. Shared openings for parking and loading would be encouraged, with a maximum width of 24 feet; and
- Loading spaces shall be designed to serve all

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FIGURE 18

commercial land uses. Where opportunities to share loading spaces exist (e.g., loading area for the grocery store with a peak of morning deliveries and restaurants with afternoon deliveries), the off-street loading requirements will be reduced accordingly.

The required on-street and off-street loading supply for the various land uses proposed within Parkmerced is presented in **Table 6.** It should be noted that for the retail and office uses, the amount of loading spaces to be provided will be based on the total square footage of the building, and not based on the size of individual tenants.

In general, the residential buildings are not required to provide off-street loading spaces. However, to accommodate short-term loading requirements (such as for service calls), service vehicles spaces shall be included in the residential garages. As service vehicles are sized equivalent to standard passenger cars, trucks and vans, spaces may be provided where garages have a minimum ceiling height clearance of at least eight feet, two inches. These spaces should be located on the first level of the garage, with convenient access to a residential elevator. Two on-street loading spaces shall be provided per block, as shown in **Figure 18**. These spaces could be used by pick-ups/drop-offs, or by delivery/service vehicles that would not fit within the residential garages.

Move-ins and move-outs may be accommodated either through the service vehicles spaces within the residential garages, or through the on-street loading spaces. If moving vehicles cannot fit in either location (for instance, a semi-tractor trailer), special arrangements with the Parkmerced management team shall be required. Residents needing accommodations for longer moving vehicles will be required to contact the management team the Friday prior to the move-in/move-out day. Each Monday, the management team will then coordinate with the appropriate agencies (SFMTA and the San Francisco Police Department) to temporarily reserve a section of on-street parking spaces for move-in/move-out use.

For the planned grocery store, at least two off-street freight loading spaces are required to accommodate the anticipated demand for the daily delivery of produce and goods. Also, two on-street loading spaces are required to accommodate pick-ups/drop-offs and taxis. In addition, the individual grocery store operator shall be required to develop a loading program to minimize disruptions to local streets and to limit the number of trucks during peak commute times.

No off-street loading supply is required for the proposed office and business service land use. In general, these uses have a minimal demand for loading, usually limited to short-term deliveries or service calls. As such, all loading will be accommodated through on-street loading spaces which must be located at either the front or rear of the building.

TABLE 6: Proposed on-street and off-street freight loading space supply

Land Use	Required On-Street Loading Supply	Required Off-Street Loading Supply
Residential	1 space per block (between 0 and 199 units) 2 spaces per block (over 200 units)	None required Service vehicle spaces should be provided within garages
Grocery Store	2 spaces	2 spaces
Retail / Office / Professional Services	1 space per building	None required

Source: AECOM – March 2010
Notes: sqft = square feet

implementation and phasing

05

Implementation and Phasing

The elements of this Plan will be implemented in phases during the development period. Due to the flexible nature of the Parkmerced development phasing program, it is critical that implementation of the Plan also afford flexibility as to the location and timing of improvements. Thus, rather than establishing a rigid implementation order and timeline, the project will use an innovative "trip allowance" implementation plan. Under this plan, the number of net new units supported by various elements of the Plan are set forth in a "menu". The number of net-new units constructed in any phase of development cannot exceed the sum of the net new units supported by the Plan elements to be constructed and/or implemented in that development phase. The current transportation network can support 1,391 net new units, therefore no elements identified on the menu will be required until this net new unit threshold is exceeded.

The "menu" and further details regarding the phasing of the Plan are set forth in, and governed by, the Development Agreement.

conclusion

06

Conclusion

The Parkmerced Vision sets a standard for sustainable living for residents and the surrounding community, and will become a model development. Parkmerced's transportation needs will be met with high-quality infrastructure and services that prioritize walking, bicycling and transit travel, and discourage use of private automobiles. Despite the addition of new homes, businesses and community amenities, the Plan targets minimal increases in peak hour vehicle trips to reduce the potential for impacts on the surrounding roadway network which is already congested during peak times.

Future residents will forego "convenience driving" and walk to stores and services within Parkmerced. Bicycling will not only be a recreational activity within the community's new green spaces, but also will be a viable transportation option both within Parkmerced and to outside destinations. Multiple transit options will bring residents to employment, school and activities elsewhere in the City and throughout the Bay Area. Demand management strategies will ensure a sustainable balance among transportation modes. By providing the required infrastructure, plans/policies, and programs, use of alternative travels modes will be encouraged and promoted.

To support the new development, an innovative phasing plan has been developed, that will allow for the construction of a given number of units provided that commensurate physical or program elements have been implemented. This approach will allow for the flexibility needed to realize this project, while ensuring that the infrastructure is in place to support the new travel demand generated.

Parkmerced will create a new gateway to San Francisco from the south, symbolizing the City's ambition to be one of the world's premier "green" cities. Parkmerced will serve as San Francisco's proving ground for the most advanced techniques to achieve sustainability and increase livability. This Transportation Plan, along with the Sustainability Plan and the other project documents, will guide Parkmerced through its transition from an insular, suburban community to a world-class model of integrated urbanism.


Parkmerced

parkmerced

infrastructure report

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PARKMERCED
INFRASTRUCTURE REPORT

DRAFT

OCTOBER 14, 2010

ENGINEERS / SURVEYORS / PLANNERS

BKF ENGINEERS
255 SHORELINE DRIVE, SUITE 200
REDWOOD CITY, CA 94065

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APPENDICES

1. INTRODUCTION

This report documents the proposed utility infrastructure for the Parkmerced development located in the southwest corner of San Francisco. The report details the general approach and strategy for the design and construction of the infrastructure necessary to support the proposed project.

The project consists of existing residential towers, new residential buildings, commercial buildings, public services and public open spaces.

The infrastructure report will address:

- Demolition and Deconstruction
- Site Grading
- Water System
- Wastewater System
- Recycled Water System
- Storm Drain System
- Dry Utilities (e.g., gas, electric, telecommunications)
- Central Plant

Other documents have been prepared to address transportation and sustainability goals for the project.

- "Parkmerced Standards and Guidelines" prepared by SOM
- "Parkmerced Vision Plan" prepared by SOM
- "Parkmerced Transportation Plan" prepared by AECOM
- "Parkmerced Sustainability Plan" prepared by SOM et al.

Project Description

Parkmerced is a 152 acre residential neighborhood located in the southwest corner of San Francisco. The neighborhood was built from 1941 to 1951 and has 3,221 residential units. The existing buildings consist of 170 two-story townhome buildings and 11 towers that are 13 stories tall.

Over 20-30 years the project will replace the 170 two-story buildings with new residential buildings, neighborhood serving retail and commercial spaces, fitness center, elementary school and maintenance facilities. The new residential buildings will be constructed in a diversity of housing types ranging from 35-foot tall low-rise townhomes to 145-foot tall towers. Some of the new buildings will be constructed on one to two-level below-grade parking garages. The 11 existing towers will be refurbished and retrofitted with energy-efficient appliances, building materials and plumbing fixtures. At project completion, there will be a total of 8,900 residential units, a net increase of 5,679 units.

Much of the existing street system will be maintained. However, the streets will be reconstructed to be consistent with the concepts of the city's Better Street Plan. Most street cross sections will be widened to improve pedestrian and bike travels and provide additional width to accommodate storm water control and treatment measures. The public space allotted to pedestrians has been increased and dedicated bike lanes have been provided on select streets. With all of these improvements the street alignments will generally be the same, which helps the future phased reconstruction. Intersections will be designed with bulbouts to create pedestrian friendly crossings. Main streets will have dedicated bike lanes that are adjacent to the sidewalks. Several new streets will be constructed to help reduce the apparent block size and improve pedestrian and traffic navigation through the site, while working to improve the general environment. East-West streets will be off-set to aid in the blocking of the westerly winds and North-South streets are kept continuous to allow better penetration of sunlight. North-South streets will also be planted with hedgerows of trees to further help reduce the westerly winds.

Phasing

The development for the project will be constructed in four major phases over a 20-30 year period. The four major phases will consist of several smaller phases that will be constructed over approximately 12 to 18 months. Each phase includes the construction of the associated utility and street infrastructure to serve the newly constructed buildings. The new infrastructure will be designed and constructed consistent with this report, the current SFPUC and the City of San Francisco Department of Public Works (SFDPW) requirements.

During the initial phases, the existing utility systems will be evaluated and upgraded as needed to serve the new and existing buildings and in an effort to minimize disruption of service while maximizing the construction efficiency. The existing buildings may continue to utilize the existing utility systems with temporary connections to the new utility systems until the existing buildings are removed or be connected to the new systems depending upon phasing of the new infrastructure. At the completion of the development program, the majority of the existing utility systems (with the exception of the sewer system) will be replaced and all users will be connected to the new systems. The existing sewer system will be inspected and repaired as necessary.

Project Variant

The infrastructure report describes a project variant at the intersection of Cambon Drive and 19th Avenue. With the base option, as shown on Figure 3.2, Cambon Drive does not connect to 19th Avenue. The variant option shows a new intersection at Cambon Drive and 19th Avenue. The intersection would be a right-turn only into the project from southbound 19th Avenue. Cardenas Avenue would be removed and Diaz Avenue would continue east to a new intersection with Cambon Drive. The report documents the changes to the major sewer and water utilities due to the variant.

2. DEMOLITION AND DECONSTRUCTION

The Infrastructure Report includes the deconstruction and removal of existing buildings and infrastructure including streets and pavements, retaining walls, utilities, trees and landscape elements.

The existing buildings slated for deconstruction and removal are primarily wood framed and stucco residential structures. To the extent practical, existing structures will be "deconstructed", allowing for maximum re-use or recycling of materials. The feasibility of materials reused or recycled may be limited by the requirements for abatement of hazardous materials and the potential value of the recycled material.

Building deconstruction and removal will start with the abatement of hazardous materials including lead paint, asbestos and other materials identified as part of a building survey. Hazardous materials will be removed pursuant to federal, state and local regulations. In addition to hazardous material removal, appropriate methods of vector control will be used to mitigate any possible vermin infestations from the existing buildings.

Existing pavements, underground utilities (except the combined sewer system), and overhead utilities in the demolition and deconstruction areas will be replaced or re-worked as appropriate with new infrastructure and phasing plan. All removal work and installation of new infrastructure will be phased to provide uninterrupted utility service to new and existing buildings, as best possible.

Where possible, concrete and asphalt pavements will be recycled and used on site or made available for use elsewhere. This could be accomplished by setting up a concrete/asphalt crushing plant operation during demolition. The location of the plant will consider the need for efficiency throughout the construction phases and the need to minimize the impact on existing residents and business. The recycled concrete/asphalt materials could be used for pavement and structural slab sub-base material, utility trench backfill, and where feasible, concrete and asphalt mixes.

Utility materials, primarily metals, will be recycled as feasible. Where transite pipe (asbestos-cement pipe) is encountered, appropriate abatement methods will be used to satisfy applicable regulatory agency requirements.

The majority of the existing trees will be removed or relocated during the course of demolition. The location of the existing trees and other plant material will be identified in an Arborist Report and necessary wildlife surveys will be completed prior to the start of removal. The Arborist Report will identify the trees and plants to be removed and those of significance to remain. The trees and plants not in conflict with the proposed plans will remain in place. All existing trees and plants to remain will be appropriately protected throughout the adjacent construction. All trees and plants to be removed could be recycled by composting for on-site uses associated with replanting and erosion control to the extent feasible.

Phases of Removal/Deconstruction

The proposed Removal/Deconstruction will occur in approximately 20 phases in conjunction with the construction phases. Each phase of removal will be further separated into smaller areas to better tailor the removal/deconstruction process within the area required for the individual building sites within each phase. The removal of smaller areas will allow the existing utility services, vehicular access areas, and vegetation to remain in place as long as possible in order to reduce disruption of existing uses around Parkmerced.

3. SITE GRADING AND DRAINAGE

Site Grading

The existing street slopes throughout the Parkmerced development are fairly flat and gentle. Along the westerly, southerly and easterly edges of the site, there are several retaining walls and relatively steep slopes from the site to the existing roadways. The ground elevations range from approximately 40' in the southwest corner of the site to approximately 200' near the southeast corner (all elevations in this plan are based on San Francisco datum). Figure 3.1 shows the existing elevations and approximate street slopes around the site.

With the proposed plan, several below grade parking garages will be constructed. Each parking garage excavation will generate large quantities of fill material. The main objective of the proposed grading plan is to reduce the amount of offhaul from the project and maximize the amount of fill on-site.

The proposed grading plan will raise site and street elevations in order to limit the amount of offhaul for the project. However, the new street elevations will be carefully designed and accounting the location and elevations of existing building entries, driveways, drainage patterns, traffic and pedestrian safety and constructability.

Several different grading scenarios have been studied throughout the extensive conceptual design process. The first and most straight-forward scenario would be to not raise street elevations and offhaul all excavated material from the site. While this solves many of the grading transition problems, it is not in line with the project's environmental and sustainability goals.

Another scenario would be to raise street elevations by approximately 8 feet. This scenario would almost create a balanced site in terms of earthwork. However, this creates many challenges with vehicular and pedestrian transitions. It would be almost impossible to maintain to existing driveways and buildings and transitions between reconstructed and existing areas would be impractical. Additionally, most of the existing utility lines in the streets cannot support an additional 8 feet of fill. It was determined this scenario is not technically feasible or practical.

The proposed grading scenario presented in this report will maximize the depth of fill over the existing streets, but also maintain safe and practical vehicular and pedestrian access through site during construction. This will be accomplished by:

- The proposed street elevations will be an average of 3' to 5' higher than existing elevations to provide locations to place material. The 3' to 5' change in street elevation provides the maximum depth to place fill and still allow temporary grading transitions at phase boundaries, existing building entrances and sidewalks.
- Proposed buildings that do not have below-grade parking garages will be constructed on 3' to 5' of fill material.

- The below-grade parking garages will be designed to minimize the floor-to-floor heights thus reducing the depth of excavation.
- Exterior courtyards will be constructed on top of the below grade parking garages. On-site fill material will be used in the courtyards for planters, under walks and stream water features.

Figure 3.2 shows the proposed elevations and street slopes. The proposed grading plan will generally follow the existing drainage pattern of the site. Street slopes will generally follow the existing direction to help maintain drainage areas and patterns.

Cut/Fill Quantities
The combination of below-grade parking garage excavations and the proposed site elevations will create approximately 687,000 cubic yards of offhaul.

Cut and fill quantities have been estimated for the entire project. Figure 3.3 shows a cut and fill map of the site that indicates the approximate depth of cut and fill across the site. The quantities have been further broken down by proposed block. These quantities are estimated based on the conceptual site grading plan and the conceptual architectural plan for the below-grade parking garages. Several assumptions have been made about the depth, floor-to-floor height and structural design of the parking garages. During the course of construction, a stockpile of fill will be created to stage material excavated during parking garage construction for future use as site fill.

The following table summarizes the total estimated cut and fill quantities.

Cut (cy)	Fill (cy)	Net (cy)
1,249,000	507,000	-687,000

Temporary Grading Transitions
This proposed grading approach does create challenges at the construction phase boundaries. The boundaries of the construction phases will typically follow an existing street alignment. Raising street elevations by 3’ to 5’ complicates access to existing buildings and parking areas, maintaining traffic lanes and maintaining pedestrian access through the site during construction. Careful consideration must be given to develop temporary grading transitions at the construction phase boundaries. With the current phasing plan, it is likely these transitions could be in place for several years.

Three concepts have been developed to illustrate how these grading transitions can be accomplished. As the detailed construction plans are developed, each transition must be reviewed to determine which option works for each condition. Figure 3.4 shows a schematic diagram to help illustrate these transitions.

- **Maintain the Existing Street** – This approach would generally maintain the existing street elevations after the new building is constructed. Since the new building entrances will generally be 5’-7’ above the existing sidewalk elevations,

temporary pedestrian and vehicle access improvements would be constructed to provide access to the new building. Vehicular and pedestrian access would be maintained to the existing buildings on the other side of the street. The existing utilities would remain operational in the street. New street utilities would be constructed concurrently with the new street during a later phase.

- **Construct Half the New Street** – With this concept, half of the new street and sidewalk will be constructed creating a split-level street. The other half of the street and sidewalk will remain at existing elevations, maintaining access to existing buildings. New utilities will be installed within the new street section, and possibly within the existing section depending on the location within the site. At street intersections, the new street elevations will conform to the existing street to create a smooth transition through the intersection.

- **Construct the Entire New Street** – This concept is similar to the one described above, however with this concept, the entire width of the new street will be constructed. The existing sidewalk on one side of the street will remain in order to maintain building access. Depending on the difference in elevations, there will either be a vertical or sloped transition at the edge of the new street and the existing sidewalk. This concept will allow all the new utilities to be installed in the street. Smooth transitions through street intersections will need to be provided.

Along with the grading challenges, the phasing and installation of new utility systems must also be carefully analyzed. Since street grades will be generally raised 3' to 5', most utility systems will need to be installed concurrently or after the final road elevation is constructed. In the few areas where the proposed grade is lower than existing grade, some existing utilities lines may need to be relocated prior to establishing the final road elevations.

The design of the stormwater treatment measures must also be considered when phasing the construction of the streets. Since each section of newly constructed street must meet the city's stormwater design guidelines, the required stormwater treatment infrastructure must also be constructed at the same time.

Retaining Walls

Existing retaining walls typically consist of cast-in-place concrete walls. Based on a visual inspection, most retaining walls appear to be in a serviceable condition, while some existing concrete walls show evidence of past water seepage at the face, indicating that they may be nearing the end of their design life.

It is anticipated that several of the existing retaining walls within the proposed project will be modified or rebuilt due to grade changes and road realignment. The condition of retaining walls proposed to remain in place will be evaluated on a case-by-case basis during final design. These walls may be seismically retrofitted or replaced to comply with City and County of San Francisco and CBC codes and the design-level geotechnical report.

There will be several new retaining walls constructed. The type of wall construction will be dependent on the location of the wall, height and whether the wall is in a cut or fill condition.

4. WATER SYSTEM

Existing Water System

The existing water system in Parkmerced is privately owned and maintained. The system was built in the 1940s with the original development. Existing pipes range in size from 6-inch to 16-inch in diameter. The pipe material is unknown, but likely a mix of cast iron, ductile iron and copper. There are no water storage facilities within the project. Figure 4.1 shows the existing water distribution system.

An existing San Francisco Water Department (SFPUC) distribution main runs through the site. It is 36-inch diameter line called San Andreas No. 3. Some sections of this line will need to be relocated around proposed buildings and into new street alignments.

The water system is fed from two connections to the SFPUC system. One connection is located at 1201 Junipero Serra Boulevard and the other off of Lake Merced Boulevard, 801 Font Boulevard. The 1201 Junipero Serra Blvd connection has four 8-inch turnouts. Each turnout has its own water meter that is connected in parallel that feed into a 16-inch water main. The 16-inch water main runs northwesterly in Font Boulevard. Smaller pipes branch off the 16-inch line to feed the outer perimeter of the project.

The 801 Font Boulevard connection has an 8-inch and a 10-inch turnout. Each turnout has its own water meter that is connected in parallel to feed a 12-inch water main that runs southeasterly in Font Boulevard and connects to the 16-inch water main described above. These two water mains provide the backbone of the existing water system.

The system provides domestic, irrigation and fire water. SFPUC reads the master meters at the points of connection on Junipero Serra Blvd and Font Blvd. Select blocks owned by San Francisco State University and irrigation services within the project also have their own deduct meters read by SFPUC. Since the master meters read both domestic and irrigation use, SFPUC subtracts the irrigation meter readings from the master meter readings to determine the domestic use for the project.

System static pressures within the project range from 76 psi to 99 psi, depending on the site elevation. Fire hydrant flow tests were performed by the San Francisco Fire Department in 2009 to estimate the available fire flow for the project.

- Font Boulevard and Lake Merced Boulevard
  Static Pressure = 99 psi
  Residual Pressure = 88 psi
  Observed Flow = 1,400 gpm
  Available Flow at 20 psi = 4,060 gpm

- Font Boulevard and Junipero Serra Boulevard
  Static Pressure = 76 psi
  Residual Pressure = 70 psi
  Observed Flow = 1,200 gpm
  Available Flow at 20 psi = 4,010 gpm

Proposed Domestic Water Demand
The Sustainability Report documents the proposed domestic water demand for the project for various scenarios. Different scenarios were analyzed for different types of water fixtures or varying efficiency. The "Existing" and "Full Buildout" scenarios assume standard water fixtures. The table below provides a summary.

Existing	Potable (mgd)	Non-Potable (mgd)	Total (mgd)
Residential	0.55	-	0.55
Non-residential	-	-	-
Irrigation	0.16	-	0.16
Total	**0.71**	**-**	**0.71**
Full Buildout			
Residential	0.74	0.14	0.88
Non-residential	0.03	-	0.03
Irrigation	-	0.09	0.09
Total	**0.78**	**0.22**	**1.00**
Full Buildout with efficient fixtures			
Residential	0.62	0.23	0.86
Non-residential	0.02	0.01	0.03
Irrigation	-	0.09	0.09
Total	**0.65**	**0.33**	**0.98**
Full Buildout with high-efficient fixtures			
Residential	0.51	0.18	0.69
Non-residential	0.02	0.01	0.03
Irrigation	-	0.09	0.09
Total	**0.54**	**0.27**	**0.81**

The Sustainability Plan provides the estimated domestic water demand for the project. Even with an increase of 5,679 units, the proposed use of high efficiency water fixtures; retrofitting existing units with high efficiency fixtures; and the use of recycled water for non-potable fixtures, the total domestic water demand use for the project will not significantly increase from existing uses. Therefore this report assumes the domestic water demand will not be a significant impact to the design of the new water system.

An Administrative Draft Water Supply Assessment, dated October 2009, has been prepared for the project. The WSA demonstrates the existing water system can provide an adequate and reliable supply of water for the project.

Proposed Domestic Water System
The proposed water system will be constructed in phases that coincide with the 20 construction phases. The existing buildings will continue to utilize the existing water distribution system with possible temporary connections to the new system and

temporary water infrastructure where required to maintain the existing uses until they are demolished or permanent connections can be made. At construction phase boundaries, the existing building water services will be connected to the newly installed water main in the street. All new buildings will be connected to a newly installed water main, unless phasing and constructability requires otherwise. At the completion of the project all buildings will be connected to the newly installed water mains throughout the project site.

During the construction of the new water system, Parkmerced will be responsible for maintenance of the intermingled water system, consisting of old and new pipes. When all of the new water system is installed, ownership and maintenance responsibility will be transferred to the SFPUC. The proposed water system is shown in Figure 4.2.

The system will consist of ductile iron pipes per SFPUC standards that will range in size from 6-inch to 16-inch in diameter. Domestic, fire and irrigation services will be fed by the new water system. New water meters will be provided for each building domestic service and each irrigation service. At the end of the project, the master meters will be abandoned and SFPUC will read each building and irrigation meter. Fire services will not be metered. New hydrants will be installed and spaced in accordance with current fire code and fire department requirements.

Another water service from the SFPUC transmission main in either Junipero Serra Blvd or Lake Merced Blvd may be required for the project. While the two existing services can provide an adequate water supply, another feed will provide an added level of redundancy and reduce the demand on the existing service at 1201 Junipero Serra Blvd.

During normal operations of the water system, the Junipero Serra Blvd transmission main provides the water for the site via the 16-inch main across Junipero Serra Blvd. The existing Lake Merced Blvd service only provides water to the site when the Junipero Serra Blvd service is closed for maintenance or testing. Since the Lake Merced Blvd main is at the low end of the site, the water system experiences lower pressures and reduced available flows when the Junipero Serra Blvd service is closed and water is provided via the Lake Merced Blvd service.

Conceptual Hydraulic Analysis of Water System

A conceptual hydraulic analysis has been performed of the proposed water distribution system using a computer modeling program. The preliminary analysis was performed to demonstrate the water system can provide a minimum fire flow and domestic flow simultaneously.

The California Code of Regulations, Title 22, requires that the water distribution system be capable of delivering the maximum daily demand coincident with the required fire flow. Based on the preliminary water demand calculations described above, the average day demand is approximately 0.78 mgd (542 gpm). The maximum day demand is equal to twice the average day demand, or 2 x 542 gpm = 1,084 gpm.

For this analysis, it was assumed the minimum design fire flow is 1,750 gpm with a minimum residual pressure of 20 pounds per square inch at the fire hydrants.

The analysis demonstrates that each node included in the model can provide a minimum fire flow of 1,750 gpm while simultaneously providing a maximum day demand of 1,084 gpm at a residual pressure of 20 psi. The results of the analysis are presented in Appendix A.

Recycled Water System

The project is planning for the installation of a recycled water system that will be used for irrigation and non-potable water uses in buildings. At this time, the source of the recycled water is not known. There is a possible source from the Daly City Waste Water Treatment Plant or the San Francisco Oceanside Water Treatment Plant. An application has been submitted on behalf of the project to the SFPUC for recycled water. The City is installing a recycled water main in Lake Merced Boulevard from the Daly City treatment plant to serve Harding Park Golf Course. Depending on the available capacity from this pipe, several points of connection from Lake Merced Boulevard could be installed to serve the project. As the project moves into the design phase, the project applicant will continue to work with the PUC to determine a feasible source for recycled water.

This report provides the basic layout of the recycled water system in the streets. Figure 4.3 shows a conceptual layout for a recycled water system. Depending on the source of recycled water, the design and layout of the system could be modified. The source of the recycled water must be determined prior to finalizing the layout of the system.

Auxiliary Water Supply System (AWSS)

Parkmerced does not currently have an AWSS system for fire protection. An AWSS system provides an emergency supply of water for fire protection that is distributed via dedicated fire hydrants. The project is planning for a future installation of an AWSS as a backup fire protection system in the unlikely event of an extended total disruption of water supply. The exact nature of the AWSS will be discussed with the San Francisco Fire Department.

A dedicated underground piping system for the AWSS will be planned for throughout the project as shown on Figure 4.4. The AWSS is not planned to be installed on every street. The layout of the AWSS will be looped around two or three block areas. Separate AWSS fire hydrants will be located along the route of the piping at street corners.

5. SANITARY SEWER SYSTEM

Existing Sanitary Sewer System
The existing sanitary sewer system in Parkmerced is a combined system that conveys both sewage and storm drain flows. The system consists of 12-inch diameter pipes to 3'x5' horseshoe sewers. Pipe materials include vitrified clay pipe and concrete box culverts. Figure 5.1 shows the layout of the existing sewer system.

The sewer system is split into two systems with separate outfalls. Sewer flows from the majority of the project are conveyed to the southwest corner of the site where the system connects to a 60" pipe in Lake Merced Boulevard and then to the Lake Merced Tunnel sewer. The Tunnel Sewer is a deep tunnel under Parkmerced that conveys flows from a larger tributary drainage area north of the project. The Tunnel Sewer eventually conveys flows to the Oceanside Treatment Plant.

Sewer flows from a small portion of the southeast corner of the site drain to a 54-inch diameter sewer in Brotherhood Way. The 54-inch sewer flows westerly and connects to the Tunnel Sewer, connecting to the Oceanside Treatment Plant, as well.

At the start of the design phase, the physical condition and capacity of the existing sanitary sewer system will be evaluated. Recommendations will be provided at that time to either upgrade or make repairs to the system that is intended to remain in service for the project.

Proposed Sanitary Sewer System
The existing combined sewer system will be used for the sanitary sewer system for the project. For most areas of the site, the new storm drainage system will convey the 5-year flows on the ground surface and will not require a below-grade system. Therefore only sanitary sewer flows from the project will be conveyed via the existing system to the treatment plant. Since the existing combined system was sized to convey both storm and sewer flows, there will be adequate capacity to convey only the sewer flows at the project completion even with the increase in total units.

The proposed sewer infrastructure is shown on Figure 5.2. Since most of the street alignments will be maintained, there will be only minor improvements to the existing sewer system. With the realignment of streets in some locations, new sewer infrastructure will need to be installed. A new sewer system will also be installed in all new streets. New sewer infrastructure will be installed per current SFDPW standards.

With each phase of construction, the existing sewer system should be inspected to determine if the pipes are in good condition. The system should be televised to determine if the pipes are cracked, joints are leaking or roots have clogged the pipes. Depending on their condition, some pipes may need in-situ repairs. These repairs could range from relining the pipes, slip-lining or pipe-bursting the smaller clay pipes.

Proposed Sanitary Sewer Generation

As discussed in Section 4, the increase in domestic water demand will be minimal from existing demands. Typically sanitary sewer demand is estimated to be approximately 90%-95% of the domestic water demand. Therefore, the increase in sanitary sewer demand will also be minimal.

	Indoor Water Demand			Sewer Generation (mgd)
Existing	**Potable (mgd)**	**Non-Potable (mgd)**	**Total (mgd)**	
Residential	0.55	-	0.55	
Non-residential	-	-	-	
Total	**0.55**	**-**	**0.55**	**0.52**
Full Buildout				
Residential	0.74	0.14	0.88	
Non-residential	0.03	-	0.03	
Total	**0.77**	**0.14**	**0.91**	**0.86**
Full Buildout with efficient fixtures				
Residential	0.62	0.23	0.86	
Non-residential	0.02	0.01	0.03	
Total	**0.64**	**0.24**	**0.89**	**0.84**
Full Buildout with high-efficient fixtures				
Residential	0.51	0.18	0.69	
Non-residential	0.02	0.01	0.03	
Total	**0.53**	**0.19**	**0.72**	**0.68**

Conceptual Hydraulic Analysis of Sewer System

A conceptual hydraulic analysis has been performed of the proposed sanitary sewer system. The analysis demonstrates the sewer system has capacity to convey the increased sewer flows from the project. The hydraulic performance of the system was also be analyzed to determine the pipe velocities within the system are at a minimum velocity of 2 feet/second. This minimal velocity provides a “cleaning” velocity to keep the pipes clear.

The results of the analysis are presented in Appendix B.

6. STORM DRAIN SYSTEM

Existing Storm Drain System
As discussed in Section 5, the existing combined system conveys both sewage and storm drain flows. The combined system is a gravity system. There are no pump stations within Parkmerced. Storm water is conveyed to the waste water treatment plant where it is treated and discharged to the ocean.

The existing system was likely designed to convey the 5-year storm event. As with most areas in San Francisco, larger storm events typically overwhelm the system. Flows from large storm events, such as up to the 100-year event, are conveyed in the streets. Most of the 100-year storm flows within Parkmerced are conveyed to the southwest corner and discharge down the slope to Lake Merced Boulevard.

Proposed Storm Drain System
The existing combined system will be converted to a sewer-only system in phases that correspond to the proposed development program. At full build-out only sewer laterals from the buildings will be connected to the existing combined system. However, several parcels north of the project (previously part of the original Parkmerced development) still drain both sewer and storm flows to the combined system that flows south through the project. These connections will be maintained after project completion.

The proposed storm drain system will be designed to convey the 5-year, 90 minute design storm event via bio-swales, streams, ponds, shallow pipes and trench drains. The storm drain system will also treat the 2-year, 24 hour design storm. At some locations, pipes will be required to convey flows through intersections and across streets. The bio-swales, streams and ponds will convey most of the runoff on the ground surface, eliminating the need for a piped storm drain system. The storm drain system will also have a series detention ponds located throughout the site to provide storage and reduce the peak rate of discharge from the site.

One of the design goals of the storm drain system is to infiltrate most runoff from small storm events into the groundwater aquifer. The Upper Westside groundwater basin is located under Parkmerced. Permeable surfaces will be installed where possible and applicable to help increase infiltration. Permeable surfaces are being considered for some pedestrian walkways, parking areas and other low-traffic areas.

At the southern end of the site, a stream system will be constructed that will carry flows from the majority of the site to a terminal pond at the southwest corner. Check dams along the stream will create ponds to help store runoff and slow down the discharge rate. At the lower end of the system, the stream will be lined to reduce erosion and protect the existing slope south of the stream.

The terminal pond will have a discharge pipe down the existing slope at the intersection of Lake Merced Boulevard and Brotherhood Way. Downstream of the terminal pond there are three different outfall options being studied.

- Option 1 – A new storm drain pipe will be installed under Brotherhood Way to carry flows from the discharge pipe to an existing storm drain system on the south side of Brotherhood Way. The existing storm drain system discharges to Lake Merced.
- Option 2 – Outfall directly to Lake Merced via an existing pipe under Lake Merced Boulevard; or install a new pipe that outfalls to Lake Merced.
- Option 3 – Maximize the on-site detention and infiltration of storm water on-site then connect directly the combined sewer system in Brotherhood Way that conveys flows to the treatment plant.

During the design phase, the project applicant will investigate the existing outfalls to assess their condition and make recommendations for repairs, if necessary. Since these outfalls are within a public street, they will be owned and maintained by the city.

Flows from a storm event larger than a 5-year storm will be convey by overland flow through the streets of the project towards the perimeter of the project. Most of the overland flow will flow to the west towards Lake Merced Boulevard, consistent with the existing drainage patterns of the site.

The removal of storm water from the existing combined system will be completed concurrent with the construction phasing and the other utility system replacement. Areas of the site that are not directly connected to a swale system will continue to drain storm water to the combined system. Temporary pipes and/or inlets (connected to the existing combined sewer system) in swales will be installed as necessary to provide an adequate storm drain system during construction or until the necessary downstream bioswales or streams are constructed. As the construction of the swale system expands, the temporary storm drain systems and inlets will be removed.

Since most bio-swales are located along streets that are adjacent to buildings, the design of the building foundations and below-grade parking garages must take into account the groundwater infiltration that will occur next to the buildings. Water proofing details, wall drainage and foundation systems will need to be carefully designed to protect the buildings from groundwater intrusion.

Overland Flows

The street cross sections will be designed to convey the 100-year flows and maintain the water level below the top of curb elevation. For streets that do not have curbs, the overland flow will be contained within the street right-of-way. Figure 6.2 shows the proposed overland flow path for each street. There will be several overland release points for the project. Most of the overland flow will release out to Lake Merced Boulevard, near the intersection with Brotherhood Way. A few small drainage areas on the east side of the site will release to Brotherhood Way or Holloway Avenue.

Proposed Storm Water Treatment System

The project will be required to complete a Stormwater Control Plan (SCP) to address storm water treatment prior to discharge to Lake Merced. The SCP will be developed in

coordination with the SFPUC, and will comply with the requirements outlined in the Draft San Francisco Stormwater Design Guidelines. The SCP will also meet water quality requirements in the SFPUC's NPDES permit and the goals of the San Francisco Bay Regional Water Quality Control Board's (RWQCB) San Francisco Bay Basin Plan.

Stormwater treatment will occur through bio-filtration and infiltration. A detailed water quality model will be prepared to demonstrate the effectiveness of the treatment system and show how the system meets the pollutant removal requirements of the SFPUC, Army Corps of Engineers and the Regional Water Quality Control Board.

Appendix C

Street Intersection Drainage

Street intersections create unique challenges to convey stormwater from one bio-swale to another bio-swale through the intersection. Since the bio-swales are fairly shallow (around 12" to 24" deep), the storm drainage infrastructure at intersections must also be shallow.

Figures 6.3 and 6.4 show different drainage concepts for a typical intersection. One concept is to install a trench drain across the intersection to connect one bio-swale to another. The trench drain will be shallow to match the depth of the bio-swales and sized to convey the 5-year flows. This concept will generally apply to the north-south streets.

The second concept would be to install a storm drain pipe with 30" minimum cover (as required by the city) to connect the bio-swales through the intersection. The invert of the storm drain pipe will be lower than the invert of the downstream bio-swale. This will create a "bubble-up" condition on the downstream end of the pipe. Runoff will bubble up out of an inlet and continue to flow down the bio-swale.

Each of these concepts requires routine maintenance to maintain their performance. Regular cleaning of the trench drains and "bubble-up" inlets would be necessary. The trench drain concept presents an added complication when the streets need to be overlaid with new asphalt.

7. DRY UTILITY SYSTEM

Existing Dry Utility System
Existing dry utilities in Parkmerced include electrical, natural gas and telecommunications. All dry utilities are below grade. There are no overhead lines in Parkmerced.

The electric and gas systems are owned and maintained by PG&E. The electrical system consists of a 4kV looped system throughout the project. Typically each building has its own subsurface transformer to step down the voltage.

The gas system in Parkmerced is fed from a 16" gas main in 19th Avenue. There is a 6" gas service from the 16" main near the intersection of Crespi Drive and 19th Avenue that serves the site. Smaller 4" and 2" gas pipes run throughout the site to serve each building. Each existing tower building has two gas meters and each block of garden apartments shares a common meter with individual meters for each garden apartment.

Existing telephone, cable television and street lighting services are below-grade. It is assumed this are located in a common joint trench throughout the site.

Proposed Dry Utility System
The proposed improvements include the construction of a new joint trench to replace all of the electrical, gas and telecommunication facilities. In addition, the joint trench will also include conduits and conductors for street lighting and fire/police communications.

The electrical and gas system will be designed by PG&E. The joint trench will be installed under the new sidewalks. Below-grade vaults and junction boxes will also be installed in the sidewalk area. New transformers, either above-grade or below-grade, and gas meters will be installed for each building.

The existing telecommunication and cable television facilities in Parkmerced will also be replaced. This report anticipates the telecommunication and cable TV distribution network for Parkmerced will be included in the joint trench facility. The final design of these facilities will be coordinated with the providers in this area.

8. OTHER SYSTEMS

Proposed Automated Waste Management System
Figure 8.1 shows a conceptual layout for an automated waste management system. The project is planning for this system that will collect waste and trash from locations around the site and convey it to a central collection plant via steel tubes located mainly in the streets. The collection plant acts like a large vacuum to collect waste and trash. The size of the steel pipes will likely range from 20 to 24 inches in diameter.

Co-Generation Piping
The project is also planning for a co-generation system to generate electricity and provide hot water for heating the buildings. The street cross sections are designed to allow room for the hydronic piping from the co-generation plant(s) to the buildings. Several different co-generation systems are being considered ranging from a central distribution plant to a block-based system. The hydronic piping system varies with type of system. Figure 8.2 shows a conceptual layout of the hydronic piping system based on the assumption that the system will be required in all streets.

9. STREET UTILITY CROSS SECTIONS

Typical street cross sections have been developed for the various street types. The dimensional layout and material design of the street types is described in the Design Guidelines and Standards and Vision documents. This report focuses on the utility layout within the street cross sections. Typical street utility cross sections are shown on Figures 8.3 and 8.4.

Street Utility Cross Sections

Conceptual street utility cross sections have been prepared to show the proposed utility layout for each typical street. The cross sections show the utility layout based on the minimum required spacing between each utility. Except for the alley ways, all utility systems have been planned for in each street. It should be noted that it is unlikely every utility system will be installed in every street.

Spacing Requirements

- Spacing between sanitary sewer and domestic water must be 10-feet clear per California Title 22 requirements.
- Spacing between domestic water and recycled water piping must be 4-feet clear per California Title 22 requirements.
- Spacing between PG&E facilities and other utilities must be 3-feet clear per PG&E requirements.
- Minimum spacing between hydronic piping, automated waste management piping and other utilities will be based on industry standards and constructability requirements.

FIGURES

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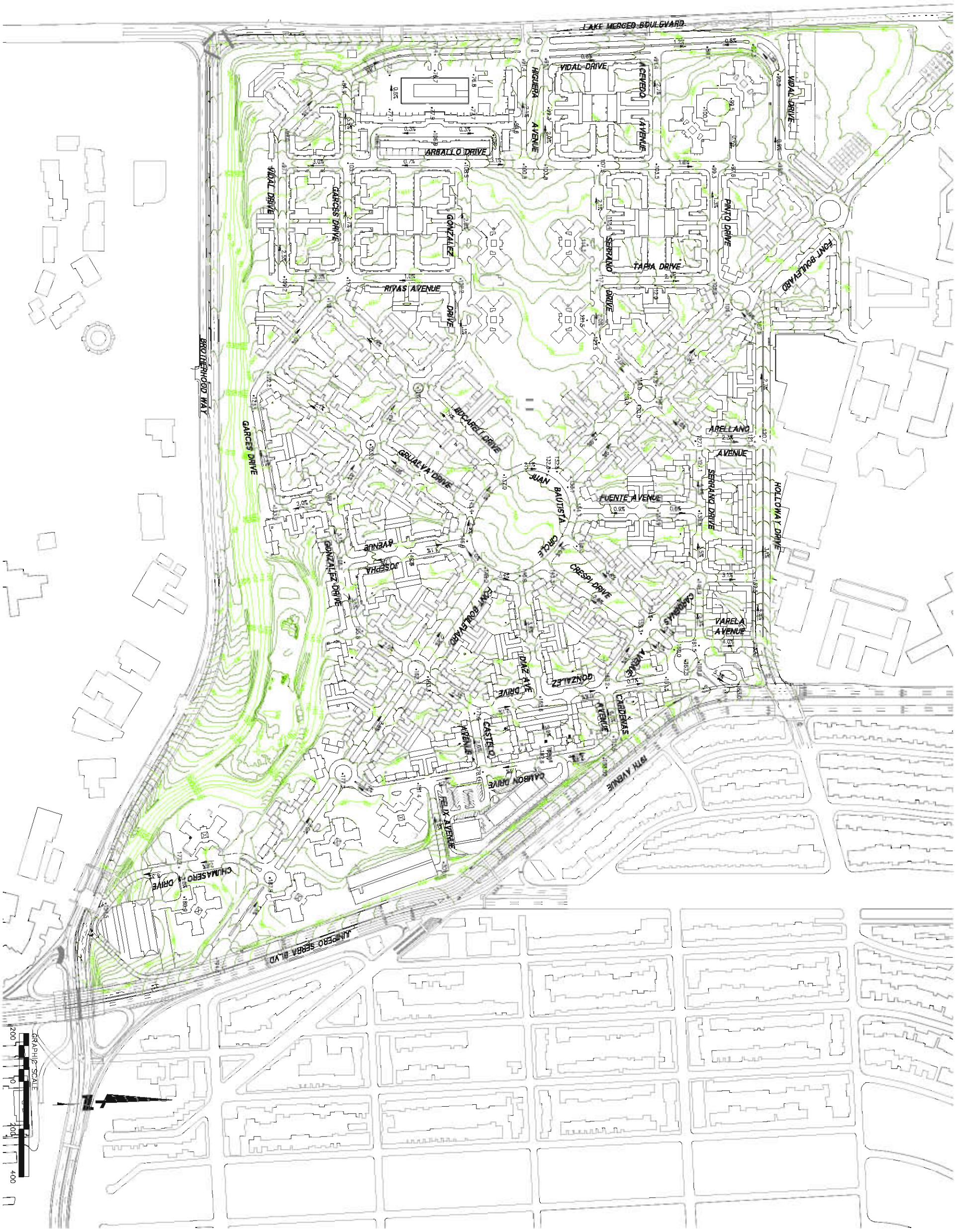

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FIG 3.1
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Scale: 1" = 400'			
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PARKMERCED
INFRASTRUCTURE REPORT
EXISTING SITE CONDITIONS

SAN FRANCISCO SAN FRANCISCO COUNTY CALIFORNIA

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DRAWING NAME: J:\Eng09\090086\DWG\Exhibits\Infrastructure Report\IR 3_01 GD.dwg (02)
PLOT TIME: 10-12-10 11:21am PLOTTED BY: shar

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	Approved: JO		
	Job No: 20090086		

PARKMERCED
INFRASTRUCTURE REPORT
PROPOSED GRADING PLAN

SAN FRANCISCO SAN FRANCISCO COUNTY CALIFORNIA

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NOTE:

1. EARTHWORK QUANTITIES SHOWN ARE IN CUBIC YARDS.
2. NUMBERS INCLUDE AN ESTIMATED 3' AVERAGE FILL IN PLAZA AREAS (OPEN SPACE ABOVE GARAGES)

EARTHWORK SUMMARY

BLOCK	CUT	FILL	COURTYARD AREA FILL	NET
1	3,315	11,028	0	7,713 (F)
2	149,947	5,431	8,889	135,627 (C)
3A	48,700	15,966	6359	26,375 (C)
3B	4,588	33,302	0	28,714 (F)
4	17	6,927	0	6,910 (F)
5	153,170	854	6,778	145,538 (C)
6A	66,622	5,522	3,696	57,404 (C)
6B	755	15,715	0	14,960 (F)
7	160,572	1,449	7,052	152,071 (C)
8	23,081	1,639	1,444	19,998 (C)
9	132,884	790	7,481	124,613 (C)
10	59,252	21,287	2,867	35,098 (C)
11	132,994	1,257	6,000	125,137 (C)
12	1	38,091	0	38,090 (F)
13	453	17,195	0	16,742 (F)
14	87,700	29,191	1,863	56,646 (C)
15	54,890	32,555	381	21,954 (C)
16	65	52,077	0	52,012 (F)
17	734	98	0	636 (C)
18	22,761	1,833	726	20,202 (C)
19	50,836	25,054	400	25,382 (C)
20	23,456	20,871	667	1,918 (C)
21A	338	16,193	0	15,855 (F)
21B	20,472	3,876	0	16,596 (C)
21C	6,549	4,243	0	2,306 (C)
22	10,421	14,171	0	3,750 (F)
23 – FITNESS	13,203	72,307	0	59,104 (F)
24 – STREAM	19,720	1,314	0	18,406 (C)
25 – STREAM	1,836	21,228	0	19,392 (F)
26 – JUAN BAUTISTA	0	35,383	0	35,383 (F)
TOTAL	1,249,000	507,000	55,000	687,000 (C)

CUT / FILL DATA

Color	Range Beg.	Range End	Percent	Area (SF)
	-30.00	-25.00	6.9	441030.86
	-25.00	-20.00	5.4	341423.24
	-20.00	-15.00	5.2	328388.93
	-15.00	-10.00	5.9	377402.87
	-10.00	-5.00	4.4	280293.35
	-5.00	-1.00	9.5	605953.07
	-1.00	0.00	6.8	435332.18
	0.00	1.00	10.5	667391.47
	1.00	5.00	30.5	1944764.62
	5.00	10.00	12.6	800125.23
	10.00	15.00	1.6	100442.98
	15.00	20.00	0.5	34184.36
	20.00	25.00	0.2	15482.06

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INFRASTRUCTURE REPORT
PROPOSED CUT AND FILL MAP

SAN FRANCISCO COUNTY CALIFORNIA

SAN FRANCISCO

No.	Revisions

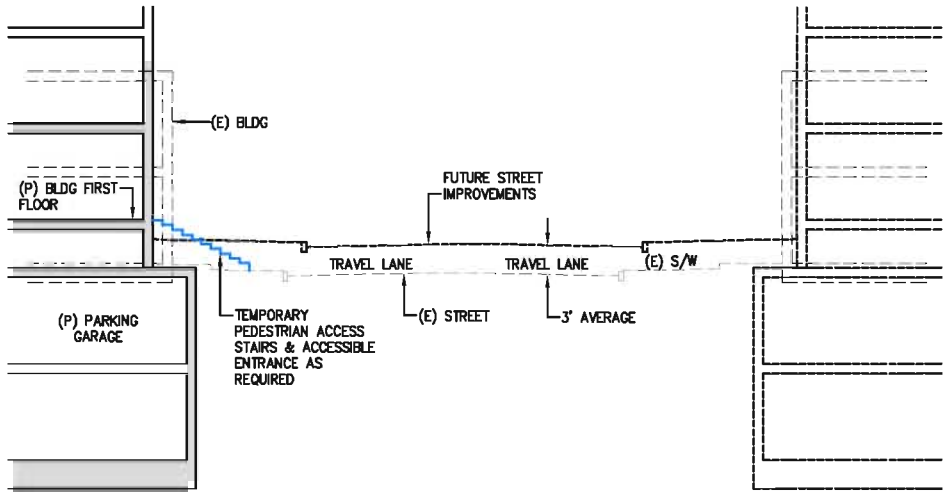
Date: 10/14/10
Scale: 1" = 400'
Design: BS
Drawn: MS
Approved: JD
Job No: 20090086

Drawing Number:

FIG 3.3

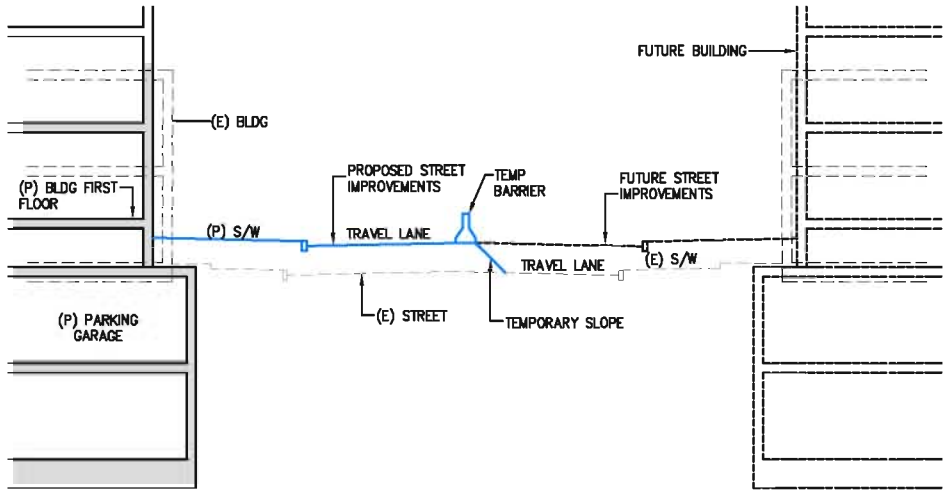
DRAWING NAME: J:\Eng09\090086\DWG\Exhibits\Infrastructure Report\IR 3_01 GD.dwg (03)
PLOT TIME: 10-12-10 11:23am
PLOTTED BY: shar

MAINTAIN THE EXISTING STREET
- MAINTAIN THE EXISTING STREET AFTER NEW BUILDING IS CONSTRUCTED
- POSSIBLY ELIMINATE PARKING ON ONE SIDE OF EXISTING STREET
- PROVIDE TEMPORARY PEDESTRIAN & VEHICLE ACCESS TO NEW BUILDINGS
- EXISTING UTILITIES TO REMAIN OPERATIONAL IN THE STREET
- INSTALL NEW UTILITIES WITH THE NEW STREET DURING A LATER PHASE



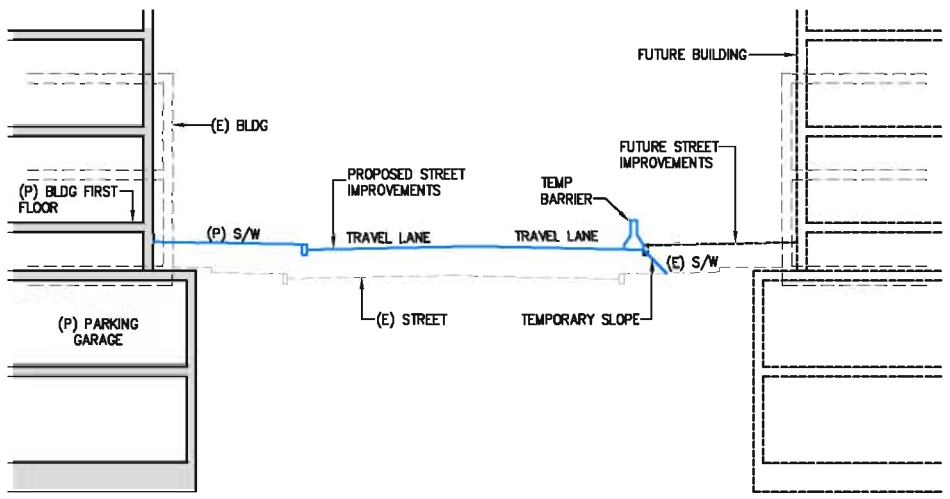
SECTION A-A
SCALE: 1" = 20'

CONSTRUCT HALF THE NEW STREET
- CONSTRUCT HALF THE NEW STREET & SIDEWALK AND MAINTAIN THE OTHER HALF OF THE EXISTING STREET & SIDEWALK TO PROVIDE ACCESS TO EXISTING BUILDINGS
- INSTALL NEW UTILITIES WITHIN NEW STREET SECTION
- AT STREET INTERSECTIONS, NEW STREET TO CONFORM TO EXISTING STREET THROUGH SMOOTH TRANSITION



SECTION B-B
SCALE: 1" = 20'

CONSTRUCT THE ENTIRE NEW STREET
- CONSTRUCT ENTIRE WIDTH OF THE NEW STREET & SIDEWALK WITH TRANSITION TO EXISTING SIDEWALK
- EXISTING SIDEWALK TO REMAIN ON ONE SIDE OF THE STREET TO PROVIDE ACCESS TO EXISTING BUILDINGS
- INSTALL NEW UTILITIES IN THE NEW STREET
- AT STREET INTERSECTIONS, NEW STREET TO CONFORM TO EXISTING STREET THROUGH SMOOTH TRANSITION



SECTION C-C
SCALE: 1" = 20'

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INFRASTRUCTURE REPORT
TEMPORARY GRADING TRANSITIONS
SAN FRANCISCO COUNTY CALIFORNIA
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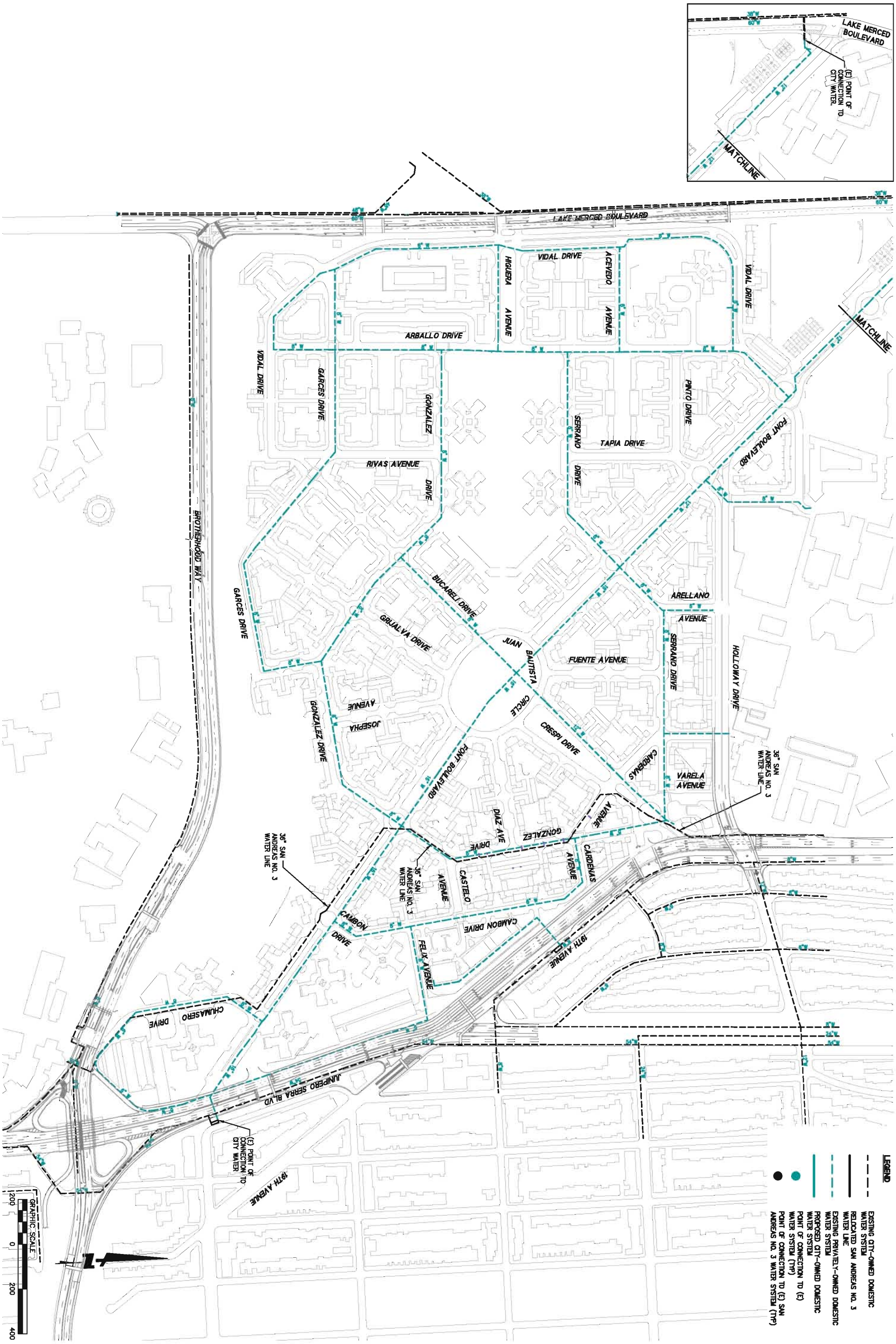
No.	Revisions

Date: 10/14/10
Scale: 1" = 20'
Design: BS
Drawn: MS
Approved: JO
Job No: 20090086

Drawing Number:
FIG 3.4

DRAWING NAME: J:\Eng09\090086\DWG\Exhibits\Infrastructure Report\IR 3_04 GD.dwg (01)
PLOT TIME: 10-12-10 11:25am PLOTTED BY: shar

DRAWING NAME: J:\Eng09\090086\DWG\Exhibits\Infrastructure Report\IR 4_01 WD.dwg (01)
PLOT TIME: 10-12-10 11:26am PLOTTED BY: shar



DRAFT 10/14/10

FIG 4.1 Drawing Number:

	Date: 10/14/10	No.	Revisions
	Scale: 1" = 400'		
	Design: BS		
	Drawn: MS		
	Approved: JO		
	Job No: 20090086		

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INFRASTRUCTURE REPORT
EXISTING WATER SYSTEM

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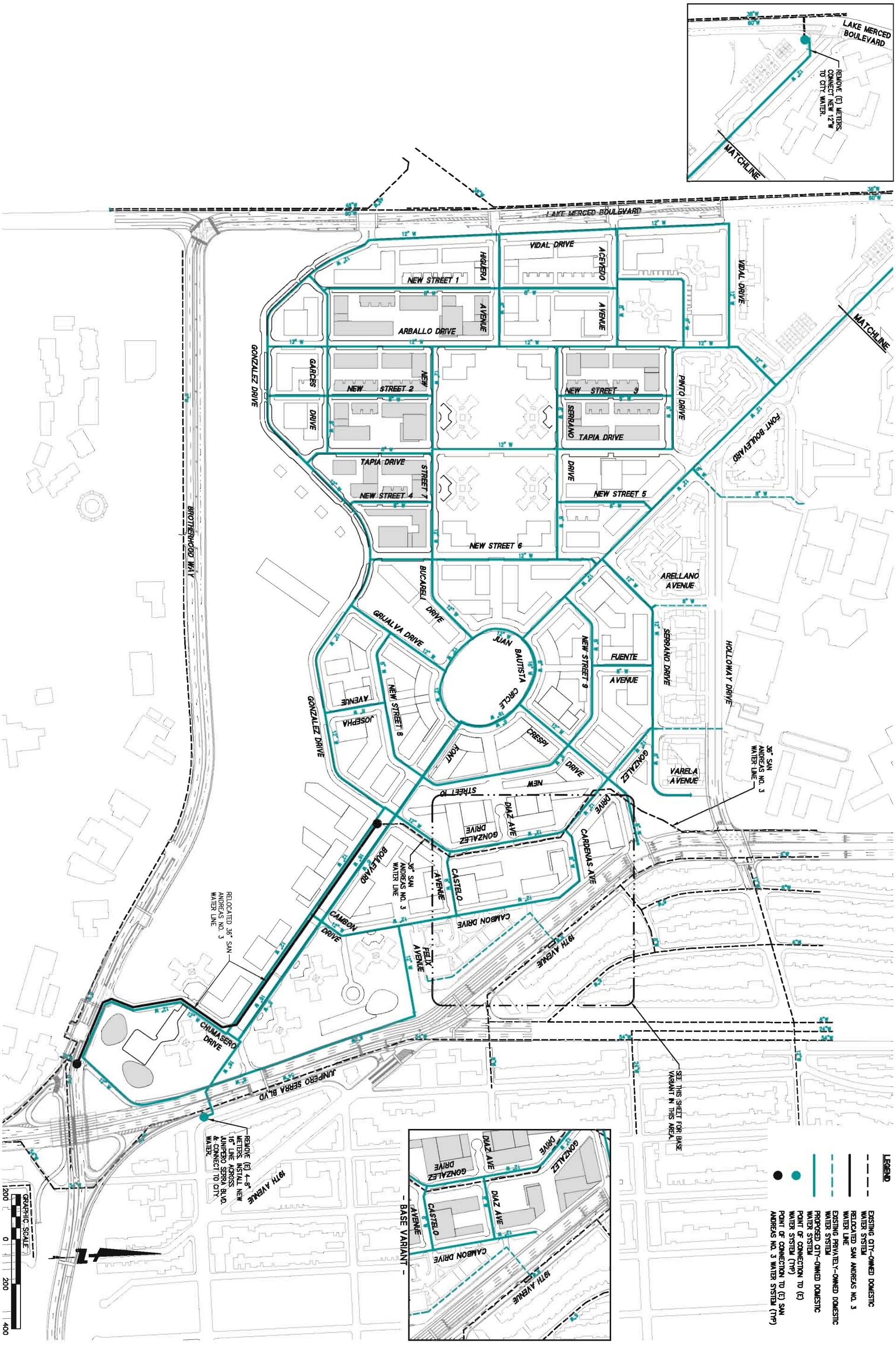
DRAWING NAME: J:\Eng09\090086\DWG\Exhibits\Infrastructure Report\IR 4_01 WD.dwg (02)
PLOT TIME: 10-12-10 12:04pm PLOTTED BY: shar



DRAFT 10/14/10

FIG 4.2 Drawing Number:

Date: 10/14/10	No.	Revisions
Scale: 1" = 400'		
Design: BS		
Drawn: MS		
Approved: JO		
Job No: 20090086		

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INFRASTRUCTURE REPORT
PROPOSED WATER SYSTEM

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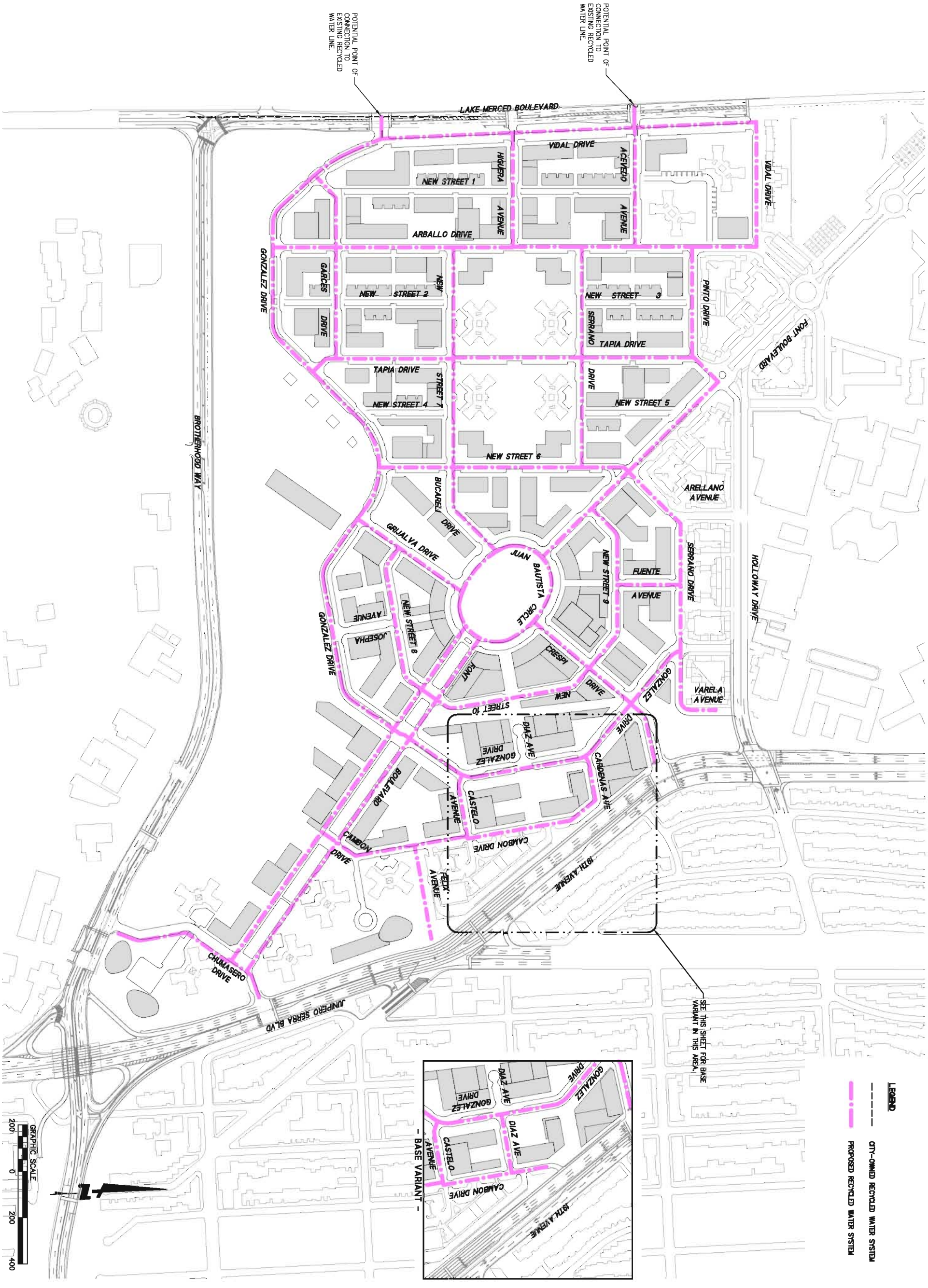
DRAWING NAME: J:\Eng09\090086\DWG\Exhibits\Infrastructure Report\IR 4_03 RW.dwg (01)
PLOT TIME: 10-12-10 11:36am PLOTTED BY: shar



DRAFT 10/14/10

Date: 10/14/10	No.	Revisions	
Scale: 1" = 400'			
Design: BS			
Drawn: MS			
Approved: JO			
Job No: 20090086			

Drawing Number: FIG 4.3

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INFRASTRUCTURE REPORT
PROPOSED RECYCLED WATER SYSTEM

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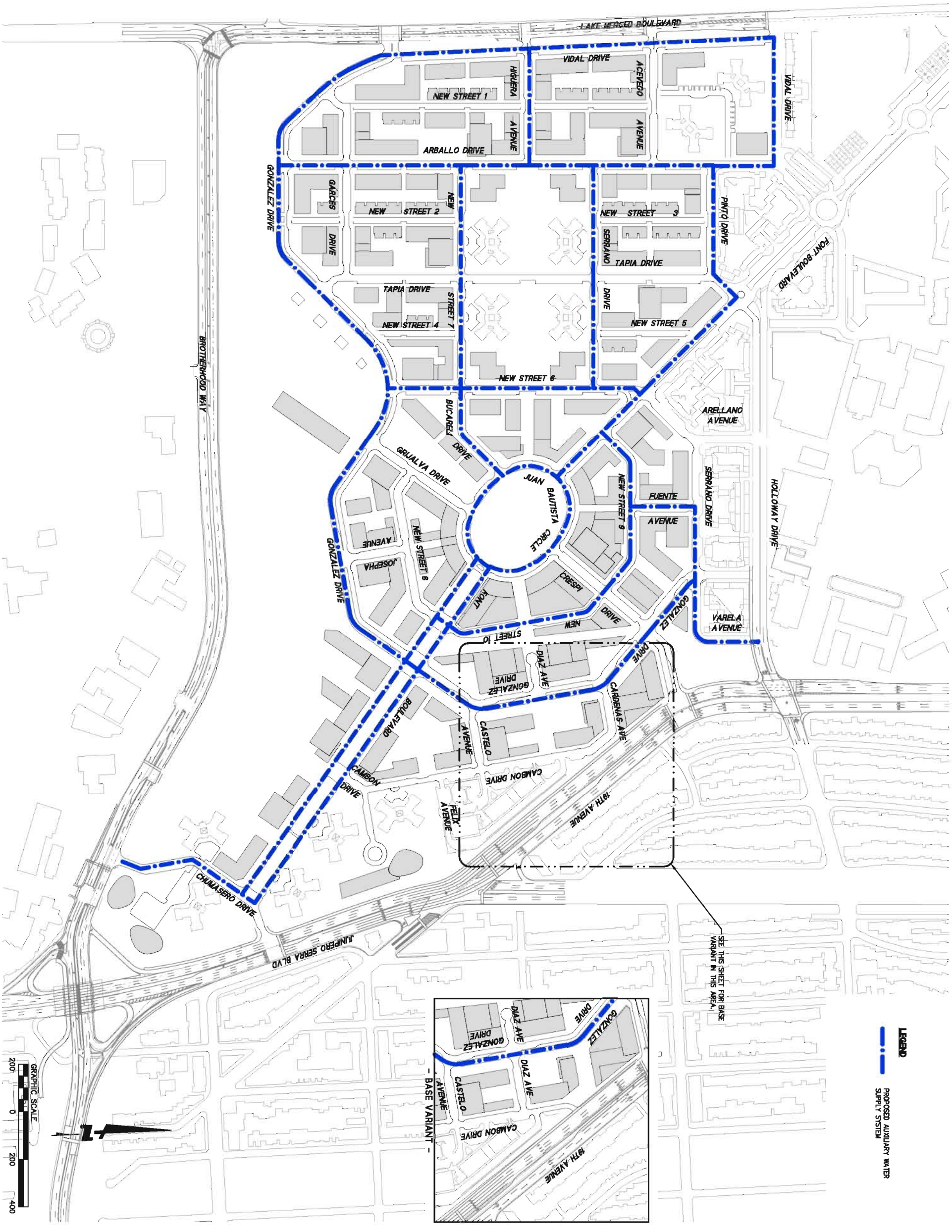
DRAWING NAME: J:\Eng09\090086\DWG\Exhibits\Infrastructure Report\IR 4_04 AWSS.dwg (01)
PLOT TIME: 10-12-10 11:31am PLOTTED BY: shar



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Date: 10/14/10	No.	Revisions	
Scale: 1" = 400'			
Design: BS			
Drawn: MS			
Approved: JO			
Job No: 20090086			

Drawing Number: FIG 4.4

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PROPOSED AUXILIARY WATER SUPPLY SYSTEM

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DRAWING NAME: J:\Eng09\090086\DWG\Exhibits\Infrastructure Report\IR 5_01 SS.dwg (01)
PLOT TIME: 10-12-10 11:38am PLOTTED BY: shar

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FIG 5.1 Drawing Number:

Date: 10/14/10		No.	Revisions
Scale: 1" = 400'			
Design: BS			
Drawn: MS			
Approved: JO			
Job No: 20090086			

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INFRASTRUCTURE REPORT
EXISTING SEWER SYSTEM

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DRAWING NAME: J:\Eng09\090086\DWG\Exhibits\Infrastructure Report\IR 5_01 SS.dwg (02)
PLOT TIME: 10-12-10 11:41am PLOTTED BY: shar

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FIG 5.2 Drawing Number:

Date: 10/14/10	No.	Revisions
Scale: 1" = 400'		
Design: BS		
Drawn: MS		
Approved: JO		
Job No: 20090086		

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INFRASTRUCTURE REPORT
PROPOSED SEWER SYSTEM

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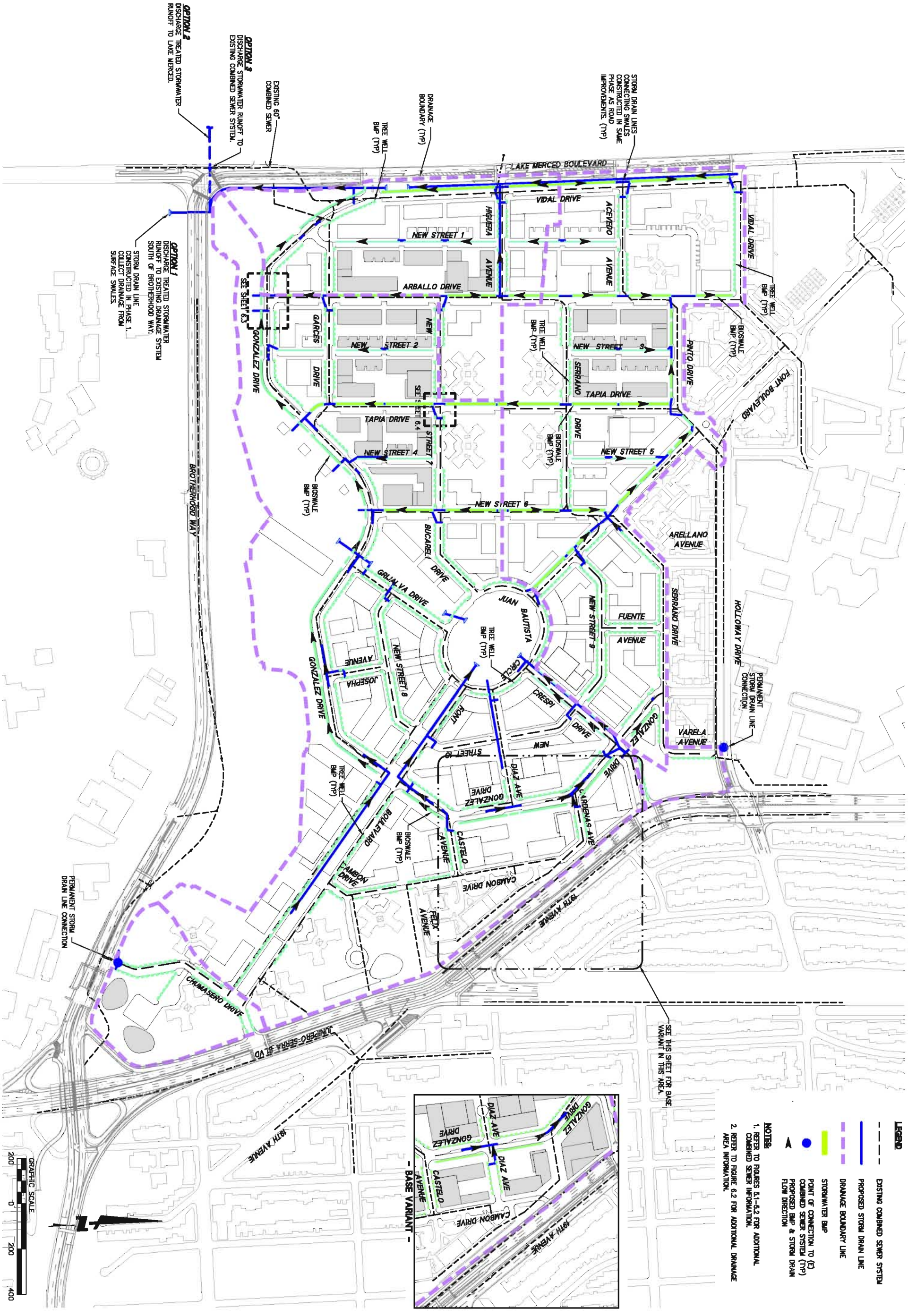
DRAWING NAME: J:\Eng09\090086\DWG\Exhibits\Infrastructure Report\IR 6_01 SD.dwg (01)
PLOT TIME: 10-12-10 11:49am PLOTTED BY: shar



DRAFT 10/14/10

FIG 6.1 Drawing Number:

Date: 10/14/10	No.	Revisions	
Scale: 1" = 400'			
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Drawn: MS			
Approved: JO			
Job No: 20090086			

PARKMERCED
INFRASTRUCTURE REPORT
PROPOSED STORM DRAIN SYSTEM

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DRAWING NAME: J:\Eng09\090086\DWG\Exhibits\Infrastructure Report\IR 6_02 SD.dwg (01)
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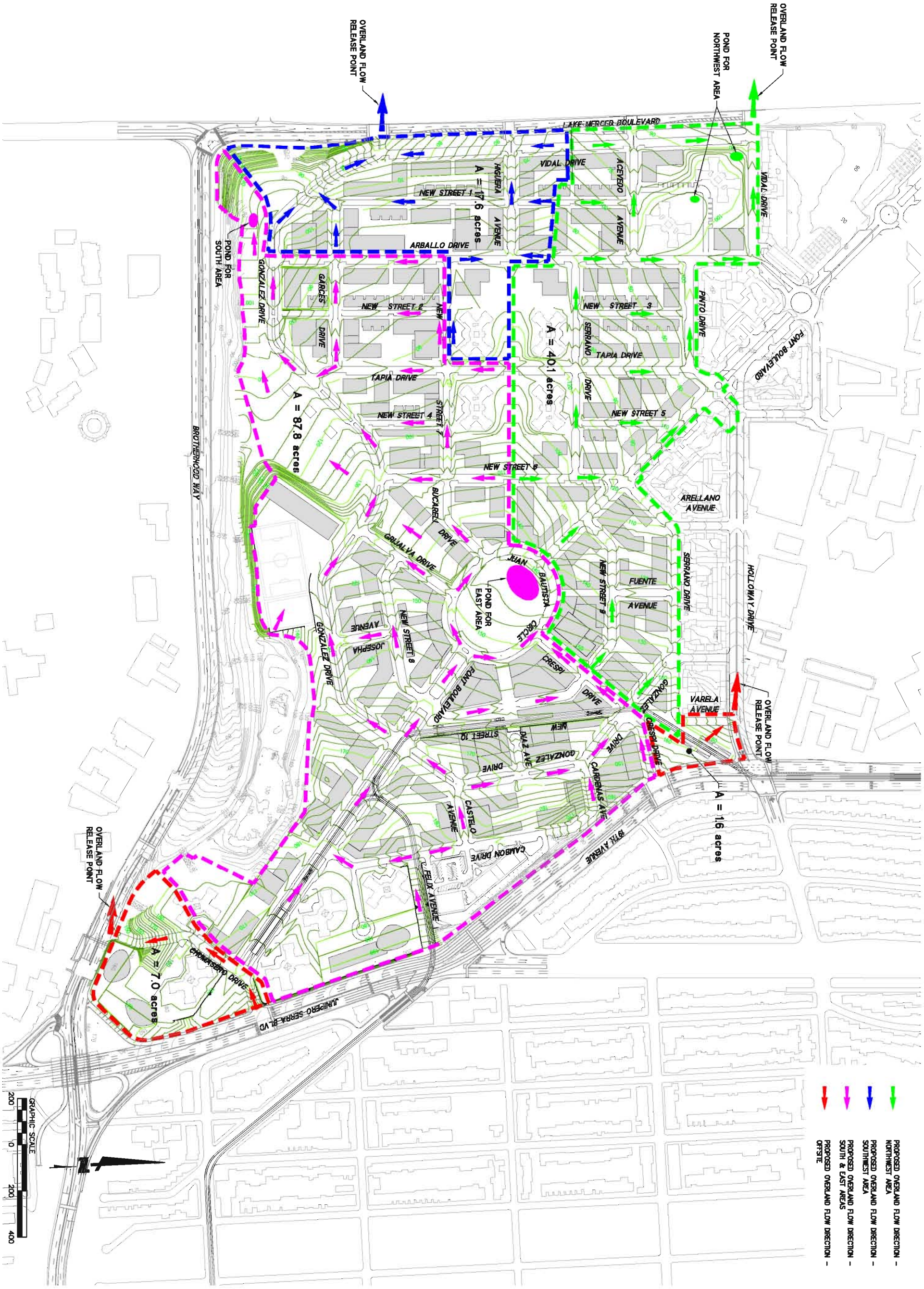

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FIG 6.2

Drawing Number:

Date: 10/14/10	No.	Revisions
Scale: 1" = 400'		
Design: BS		
Drawn: MS		
Approved: JO		
Job No: 20090086		

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INFRASTRUCTURE REPORT
PROPOSED OVERLAND FLOW

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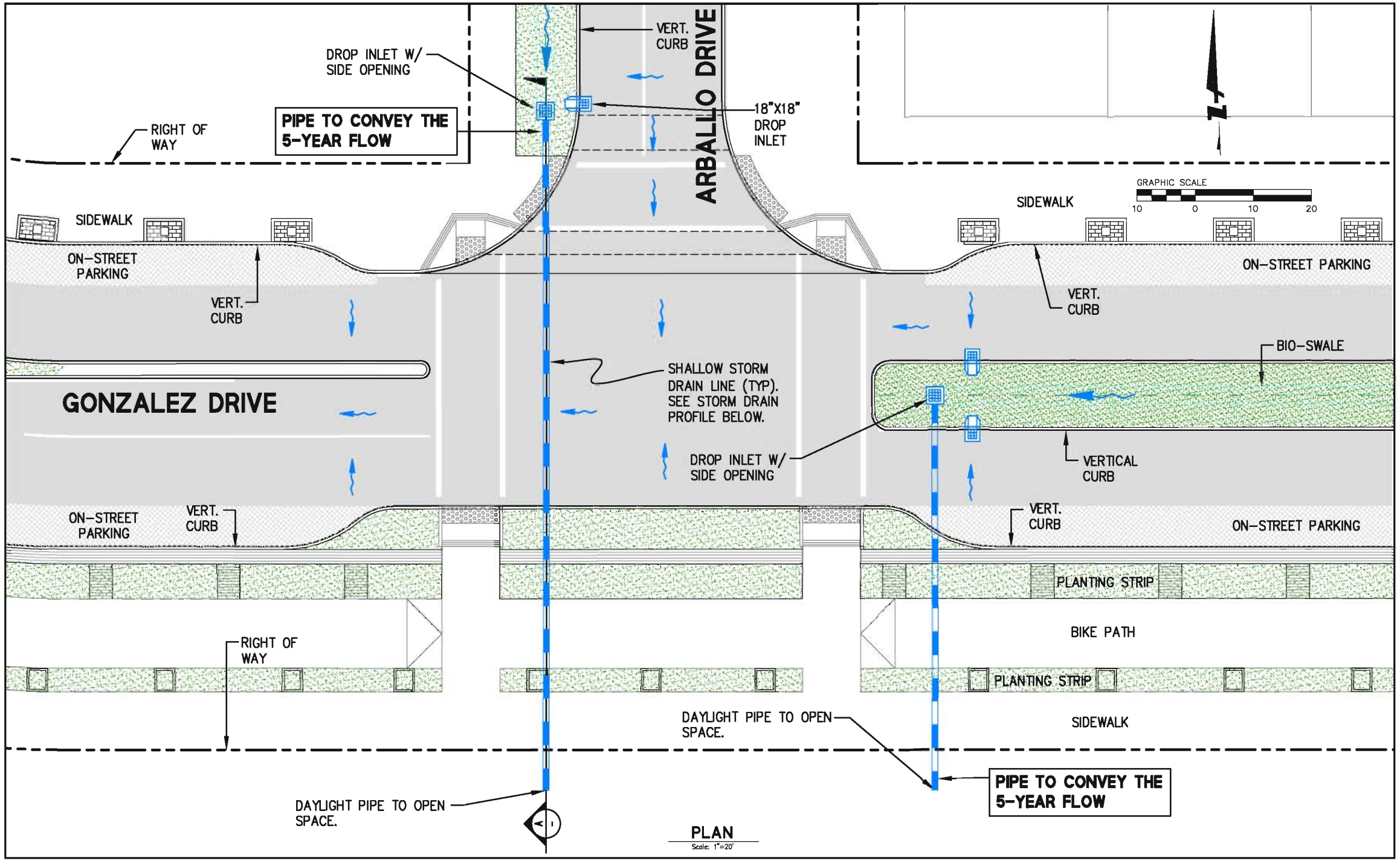
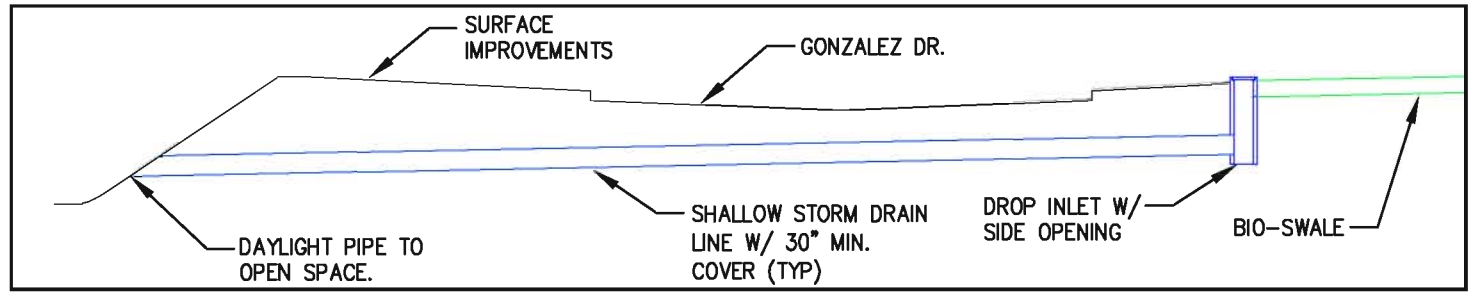
NOTES:
1. STORM DRAIN LINES CROSSING INTERSECTIONS HAVE A MINIMUM COVER OF 30".
2. BIO-SWALES, BIO-GUTTERS, SHALLOW STORMWATER INLETS AND BUBBLE-UP STRUCTURES CONVEY THE 5-YEAR STORM EVENT.
3. FOR STREETS WITH CURBS, 100-YEAR STORM EVENT IS CONTAINED WITHIN THE TOP OF CURBS. FOR STREETS WITHOUT CURBS, 100-YEAR STORM EVENT IS CONTAINED WITHIN RIGHT-OF-WAY.



PLAN
Scale: 1"=20'



A/— STORM DRAIN PROFILE
Scale: 1"=20' Hor.
1"=10' Ver.

DRAFT 10/14/10

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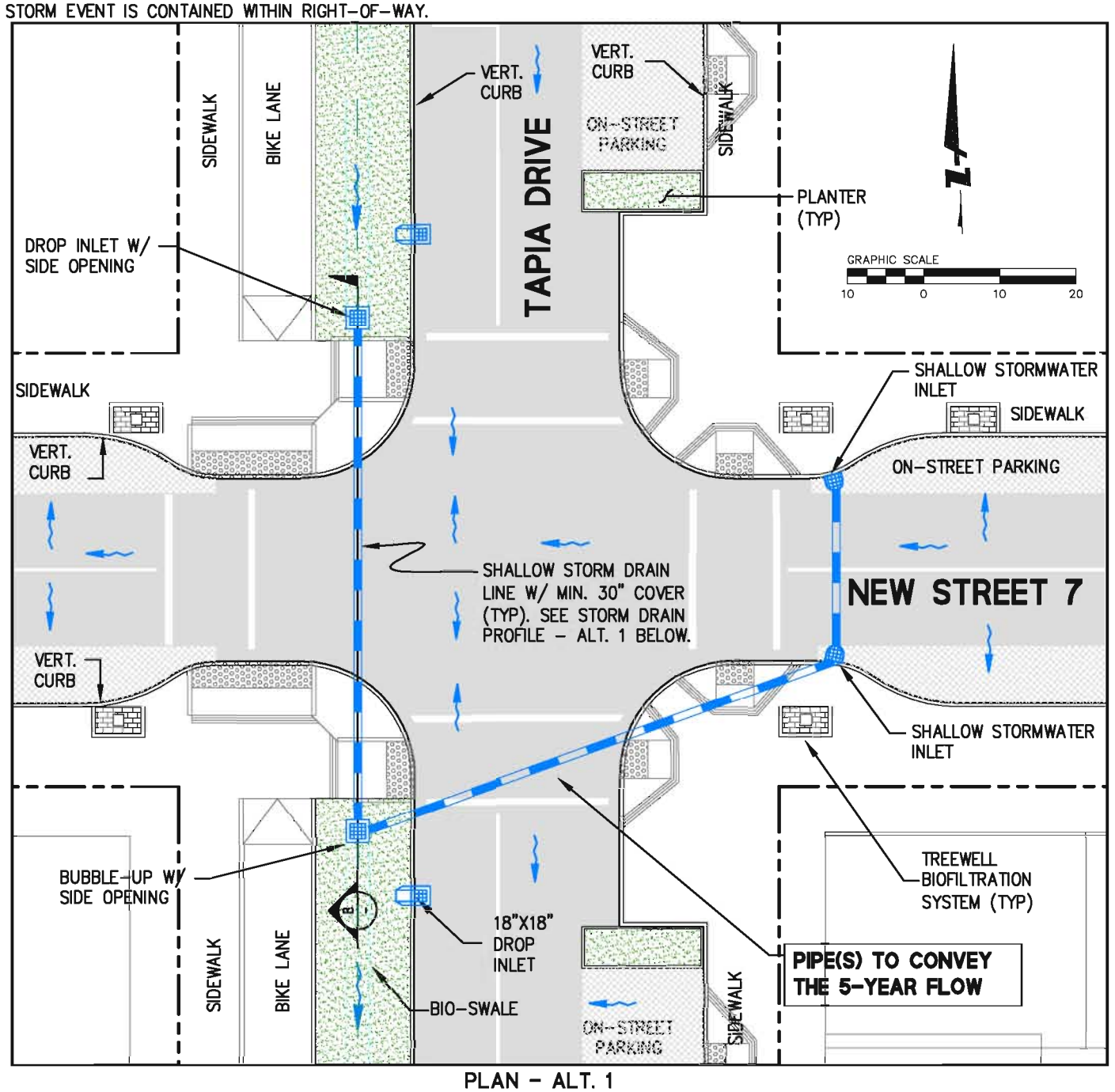
Revisions | No.

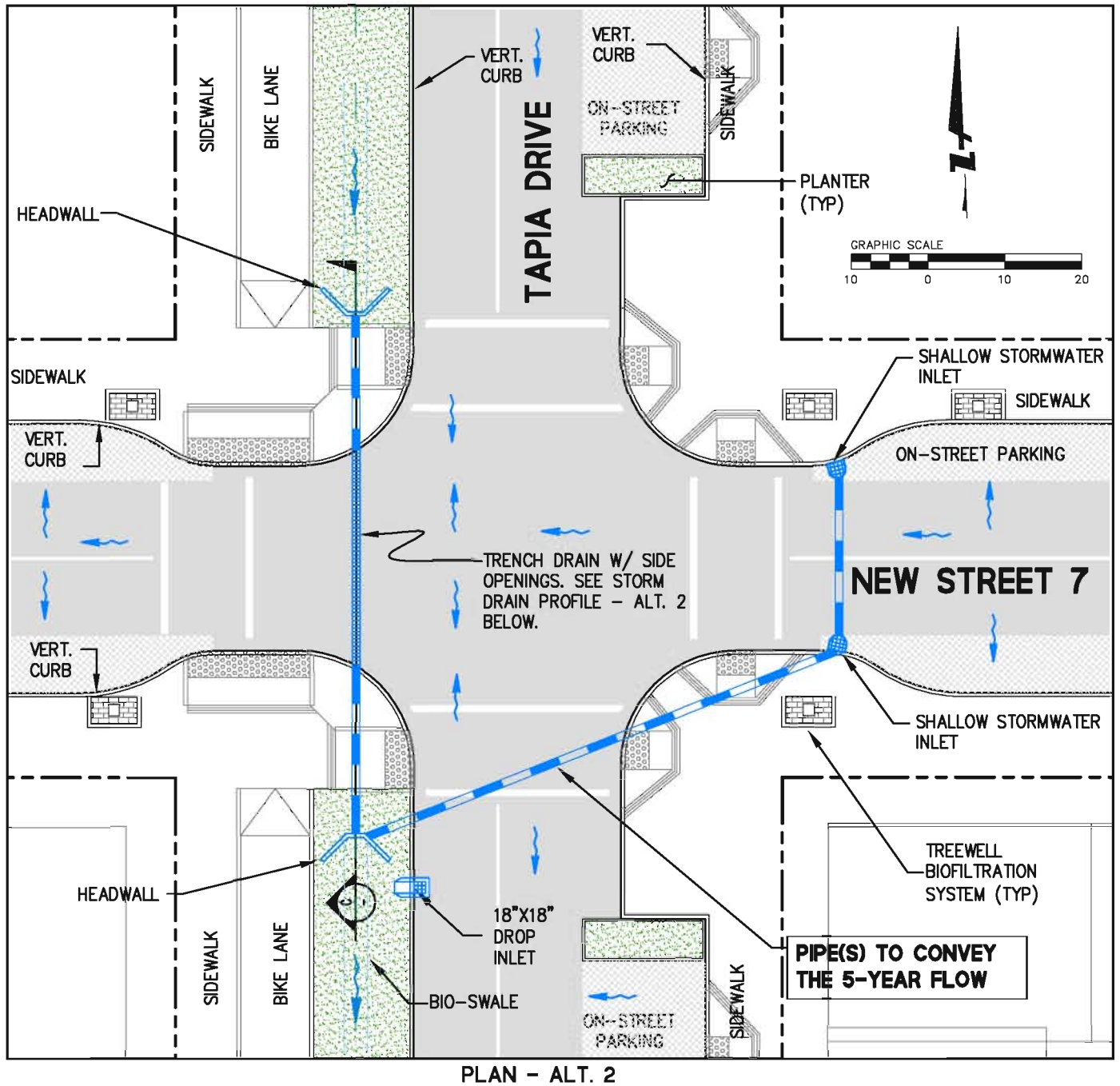
Date: 10/14/10
Scale: AS SHOWN
Design: BS
Drawn: MS
Approved: JO
Job No: 20090086

Drawing Number:
FIG 6.3

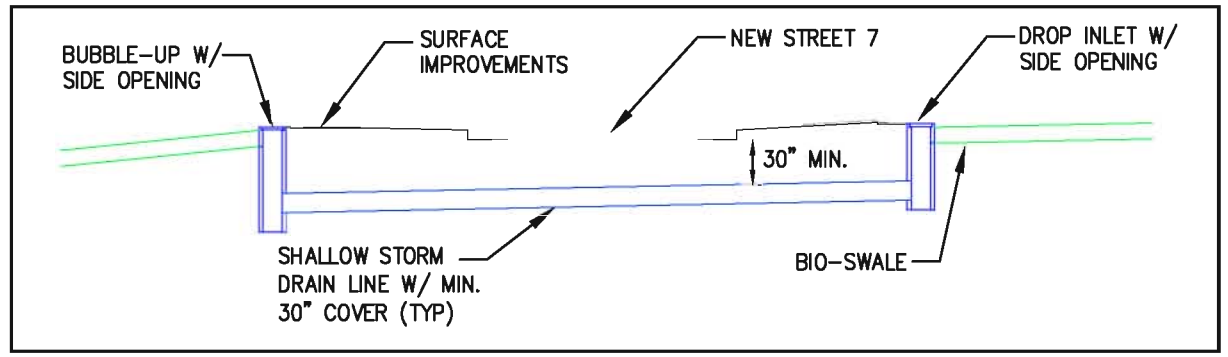
NOTES:
1. STORM DRAIN LINES CROSSING INTERSECTIONS HAVE A MINIMUM COVER OF 30".
2. BIO-SWALES, BIO-GUTTERS, SHALLOW STORMWATER INLETS AND BUBBLE-UP STRUCTURES CONVEY THE 5-YEAR STORM EVENT.
3. FOR STREETS WITH CURBS, 100-YEAR STORM EVENT IS CONTAINED WITHIN THE TOP OF CURBS. FOR STREETS WITHOUT CURBS, 100-YEAR STORM EVENT IS CONTAINED WITHIN RIGHT-OF-WAY.



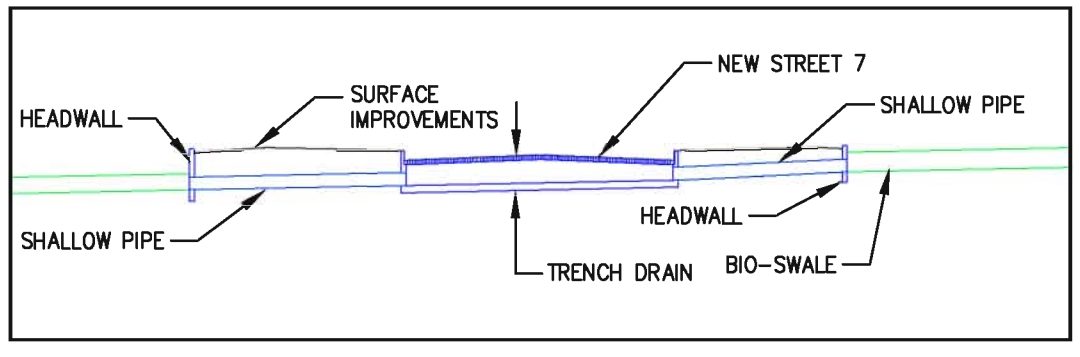
PLAN - ALT. 1
Scale: 1"=20'



PLAN - ALT. 2
Scale: 1"=20'



B — STORM DRAIN PROFILE - ALT. 1
Scale: 1"=20' Hor.
1"=10' Ver.



C — STORM DRAIN PROFILE - ALT. 2
Scale: 1"=20' Hor.
1"=10' Ver.

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INTERSECTION GRADING CONCEPT
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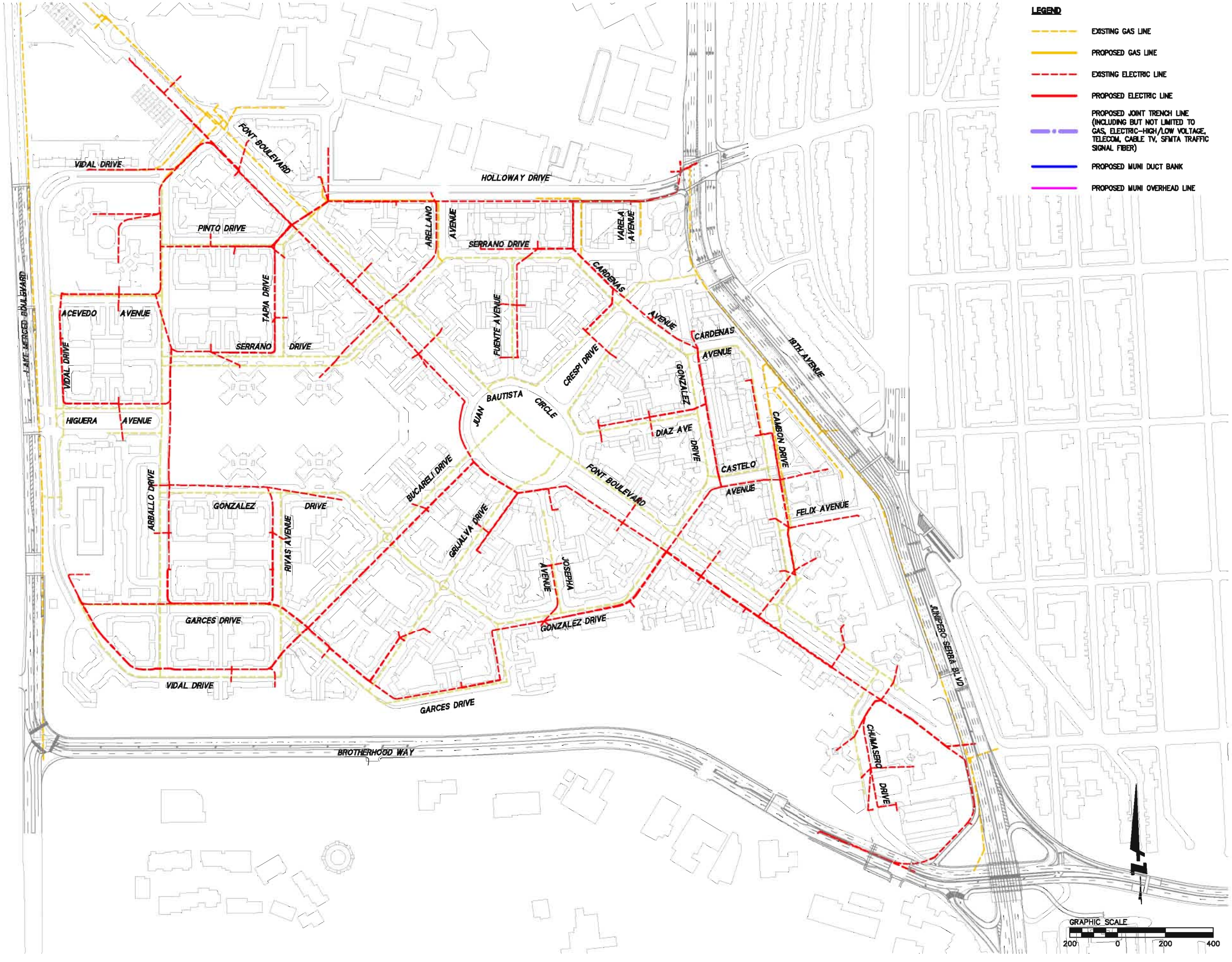
Revisions | No.

Date: 10/14/10
Scale: AS SHOWN
Design: BS
Drawn: MS
Approved: JO
Job No: 20090086

Drawing Number:
FIG 6.4

DRAWING NAME: J:\Eng09\090086\DWG\Exhibits\Infrastructure Report\IR 6_03 SD.dwg (02)
PLOT TIME: 10-12-10 11:52am
PLOTTED BY: shar



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PARKMERCED INFRASTRUCTURE REPORT EXISTING DRY UTILITY SYSTEM

SAN FRANCISCO COUNTY CALIFORNIA

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No.	Revisions

Date: 10/14/10
Scale: 1" = 400'
Design: BS
Drawn: MS
Approved: JO
Job No: 20090086

Drawing Number:

FIG 7.1

DRAWING NAME: J:\Env09\090086\DWG\Exhibits\Infrastructure Report\IR 7_01 JT.dwg (01)
PLOT TIME: 10-12-10 11:54am
PLOTTED BY: shar

DRAWING NAME: J:\Eng09\090086\DWG\Exhibits\Infrastructure Report\IR 7_01 JT.dwg (02)
PLOT TIME: 10-12-10 11:56am PLOTTED BY: shar

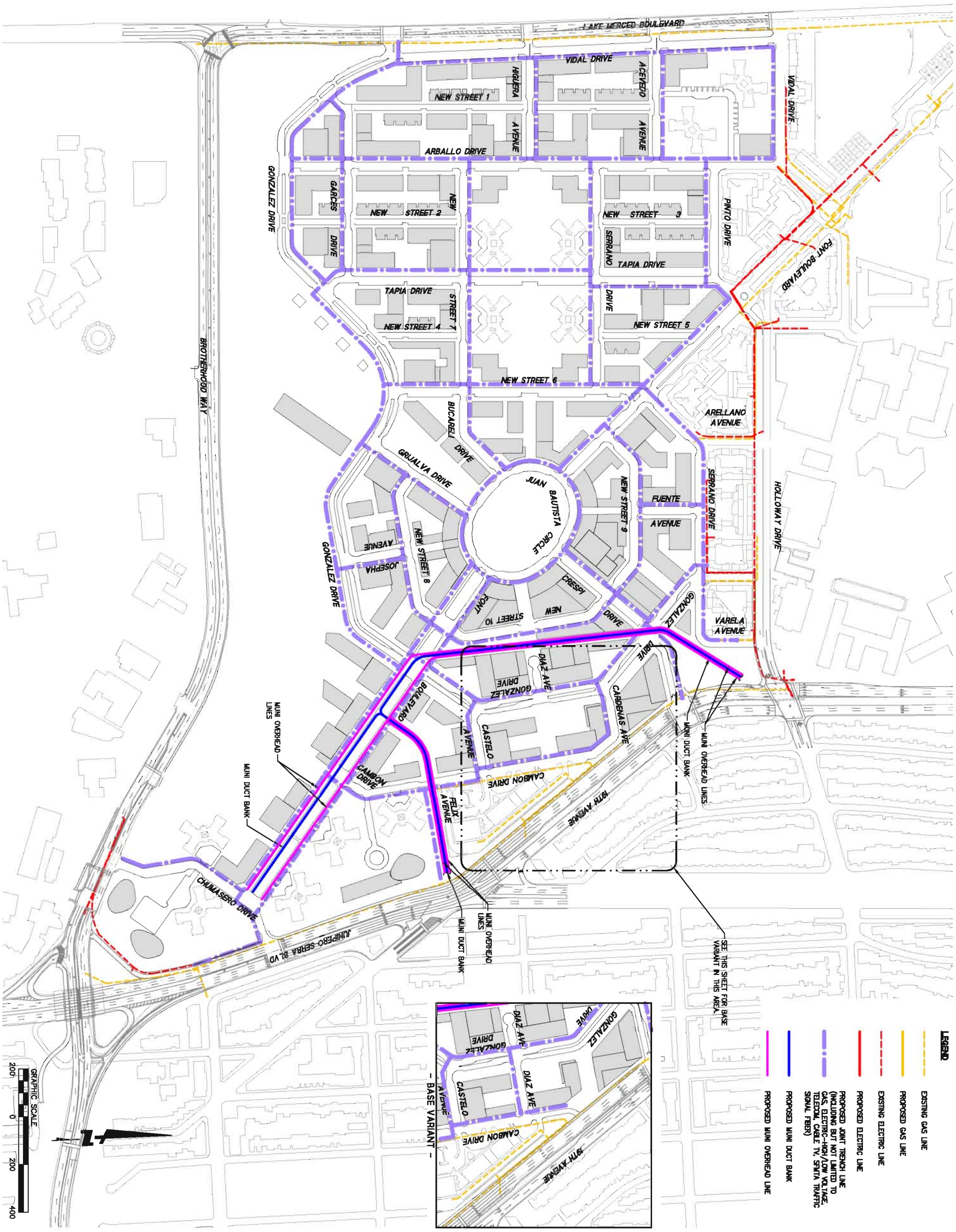

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FIG 7.2 Drawing Number:

Date: 10/14/10	No.	Revisions	
Scale: 1" = 400'			
Design: BS			
Drawn: MS			
Approved: JO			
Job No: 20090086			

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INFRASTRUCTURE REPORT
PROPOSED DRY UTILITY SYSTEM

SAN FRANCISCO SAN FRANCISCO COUNTY CALIFORNIA

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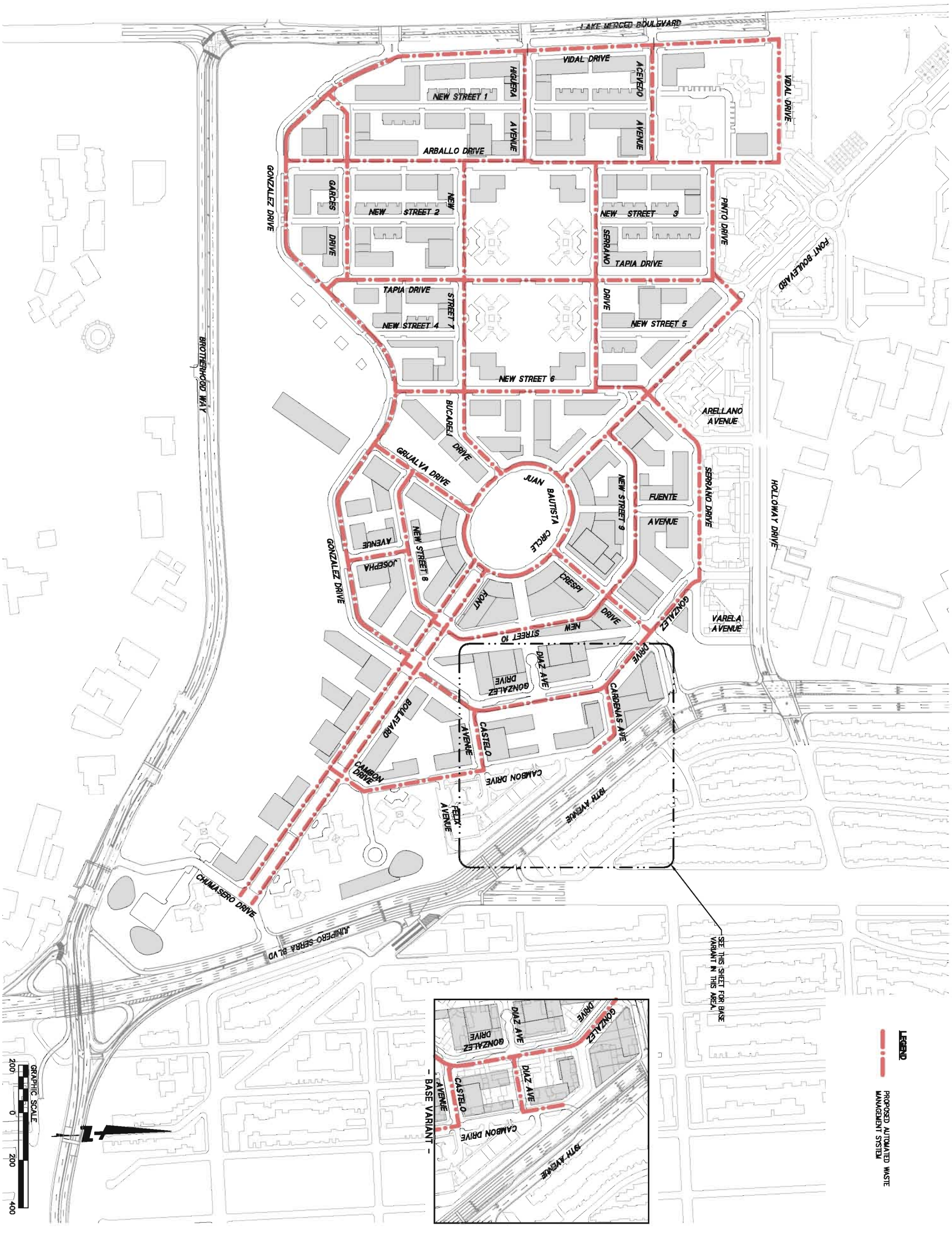
DRAWING NAME: J:\Eng09\090086\DWG\Exhibits\Infrastructure Report\IR 8_01 AWMS.dwg (01)
PLOT TIME: 10-12-10 11:58am PLOTTED BY: shar



DRAFT 10/14/10

Drawing Number: FIG 8.1

Date: 10/14/10	No.	Revisions	
Scale: 1" = 400'			
Design: BS			
Drawn: MS			
Approved: JO			
Job No: 20090086			

PARKMERCED
INFRASTRUCTURE REPORT
PROPOSED AUTOMATED WASTE MANAGEMENT SYSTEM

SAN FRANCISCO SAN FRANCISCO COUNTY CALIFORNIA

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DRAWING NAME: J:\Eng09\090086\DWG\Exhibits\Infrastructure Report\IR 8_02 COGN.dwg (01)
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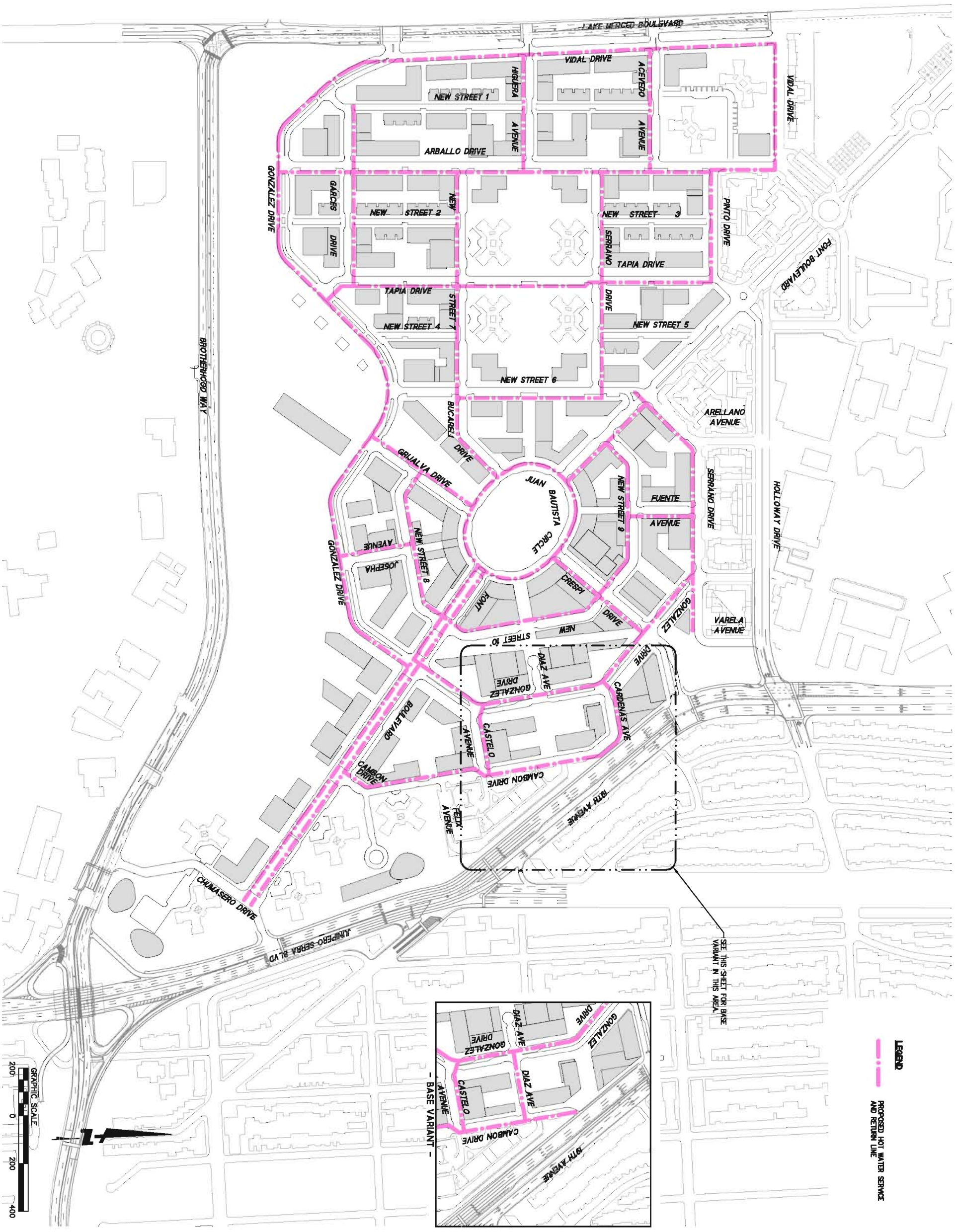

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FIG 8.2 Drawing Number:

Date: 10/14/10	No.	Revisions
Scale: 1" = 400'		
Design: BS		
Drawn: MS		
Approved: JO		
Job No: 20090086		

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INFRASTRUCTURE REPORT
PROPOSED CO-GEN SITE PIPING

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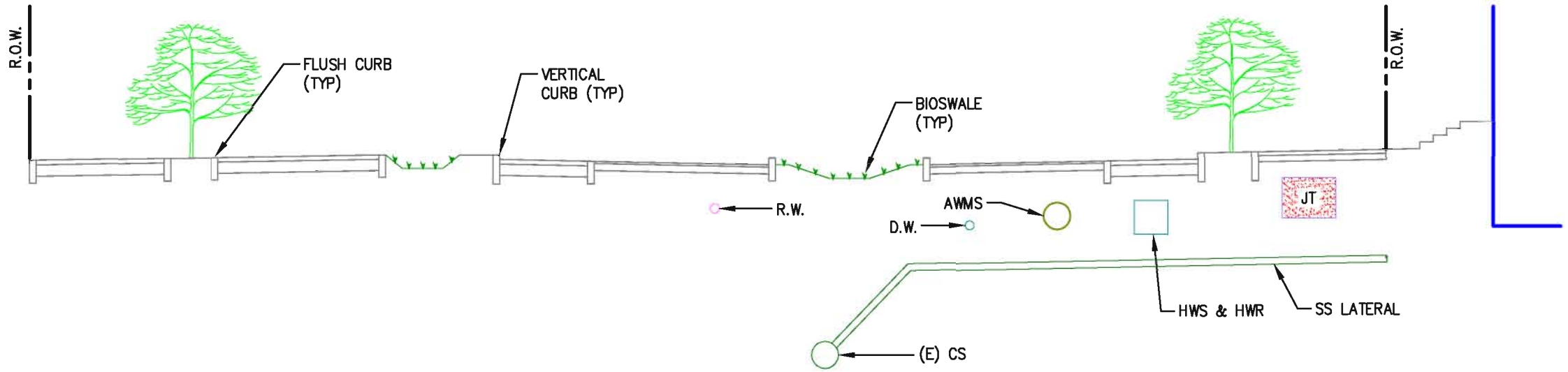
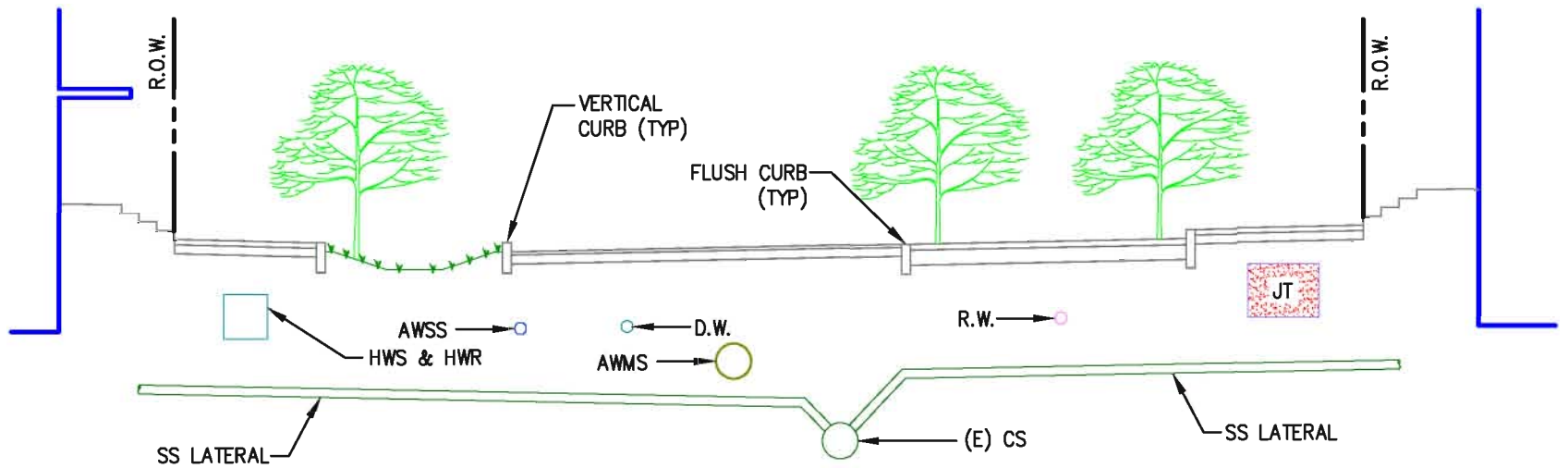
650-482-6399 (FAX)

ABBREVIATIONS

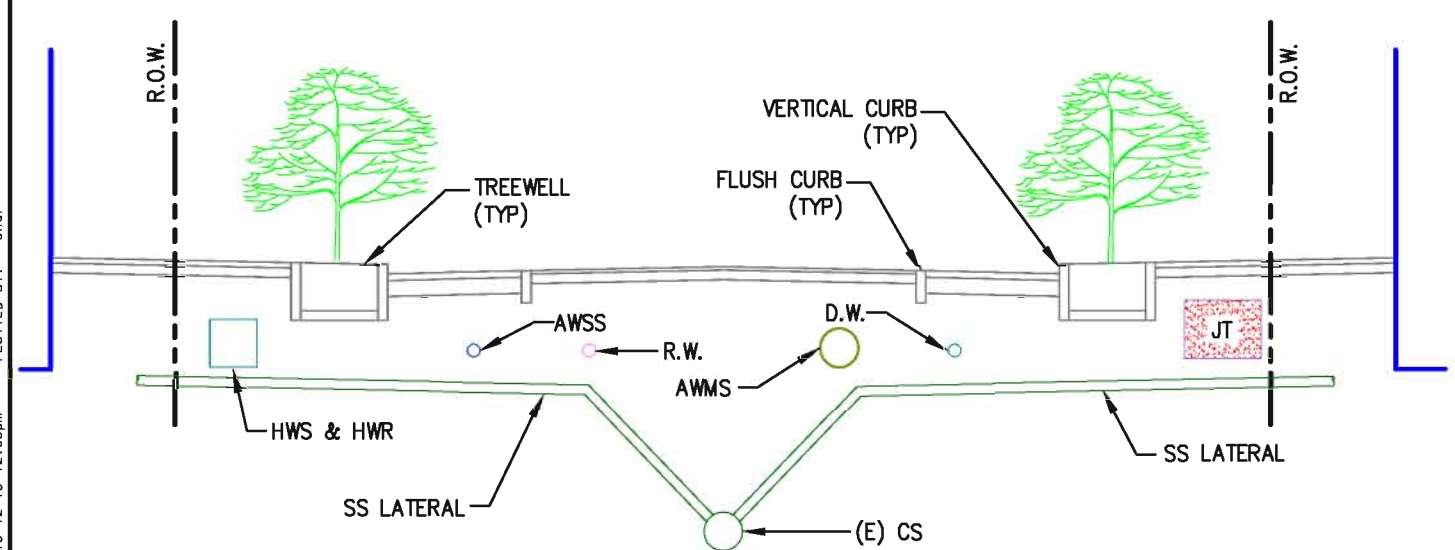
SYMBOL	DESCRIPTION
AWMS	AUTOMATED WASTE MANAGEMENT SYSTEM
AWSS	AUXILIARY WATER SUPPLY SYSTEM
CS	COMBINED SEWER
D.W.	DOMESTIC WATER
G	GAS
HWR	HOT WATER RETURN
HWS	HOT WATER SERVICE
JT	JOINT TRENCH
R.O.W.	RIGHT-OF-WAY
R.W.	RECYCLED WATER
SL	STREET LIGHTING
SS	SANITARY SEWER



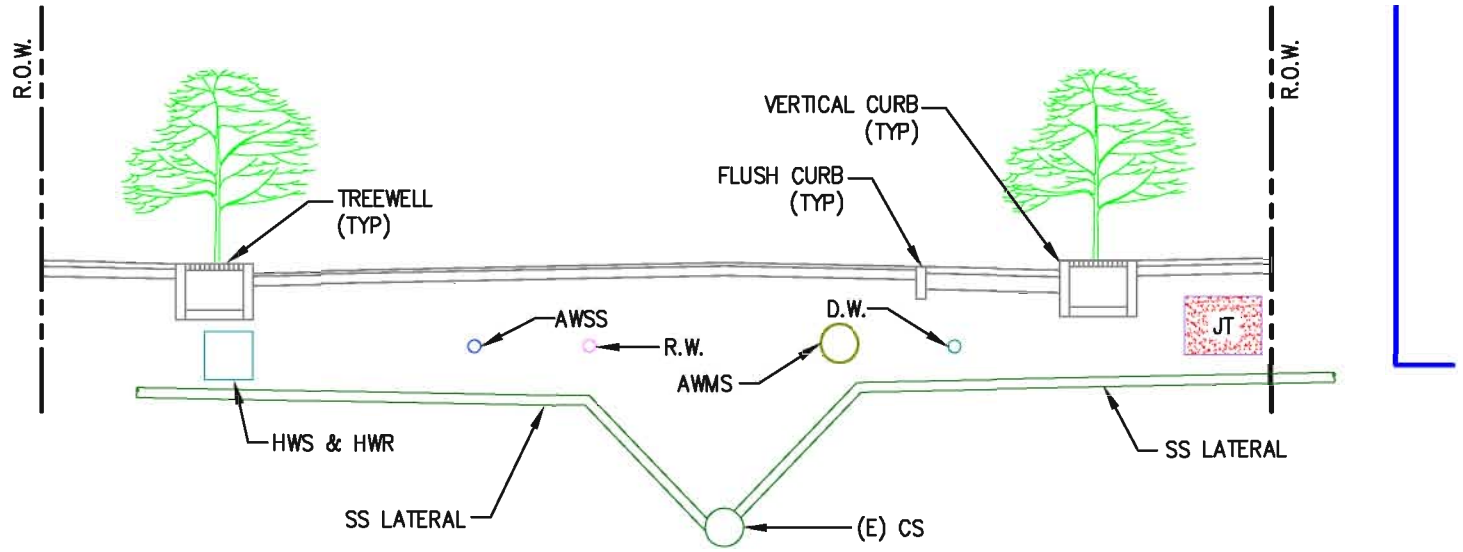
Street Type 1
- Gonzales Dr. -



Street Type 2
- Hedgerow St. -



Street Type 3
- East West St. -



Street Type 3 - Modified
- Chumasero Dr.-

DRAFT 10/14/10

BKF
ENGINEERS / SURVEYORS / PLANNERS
255 SHORELINE DR
SUITE 200
REDWOOD CITY, CA 94065
650-482-6300
650-482-6399 (FAX)

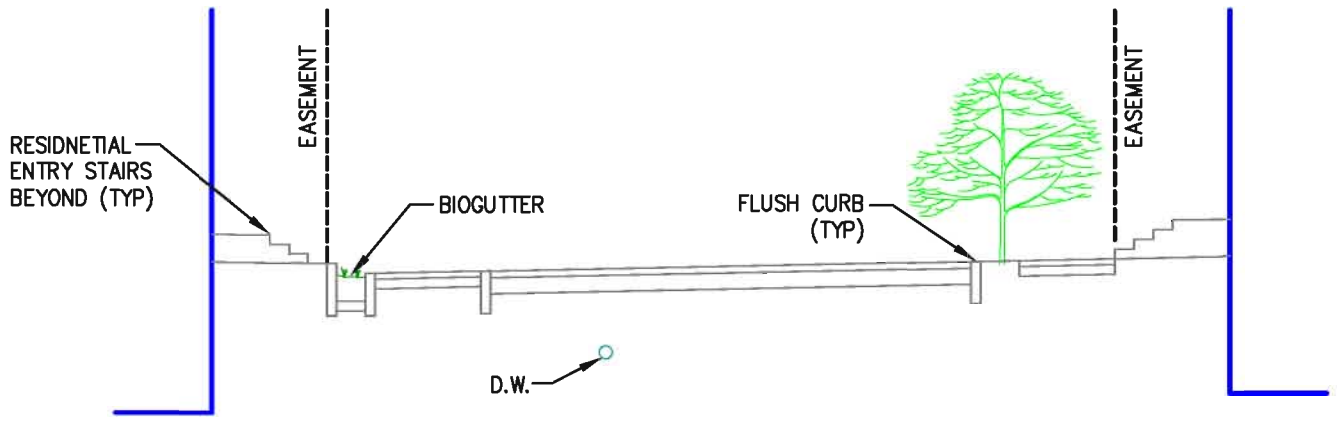
PARKMERCED
INFRASTRUCTURE REPORT
TYPICAL STREET UTILITY CROSS SECTIONS
SAN FRANCISCO CALIFORNIA
SAN FRANCISCO COUNTY

No.	Revisions

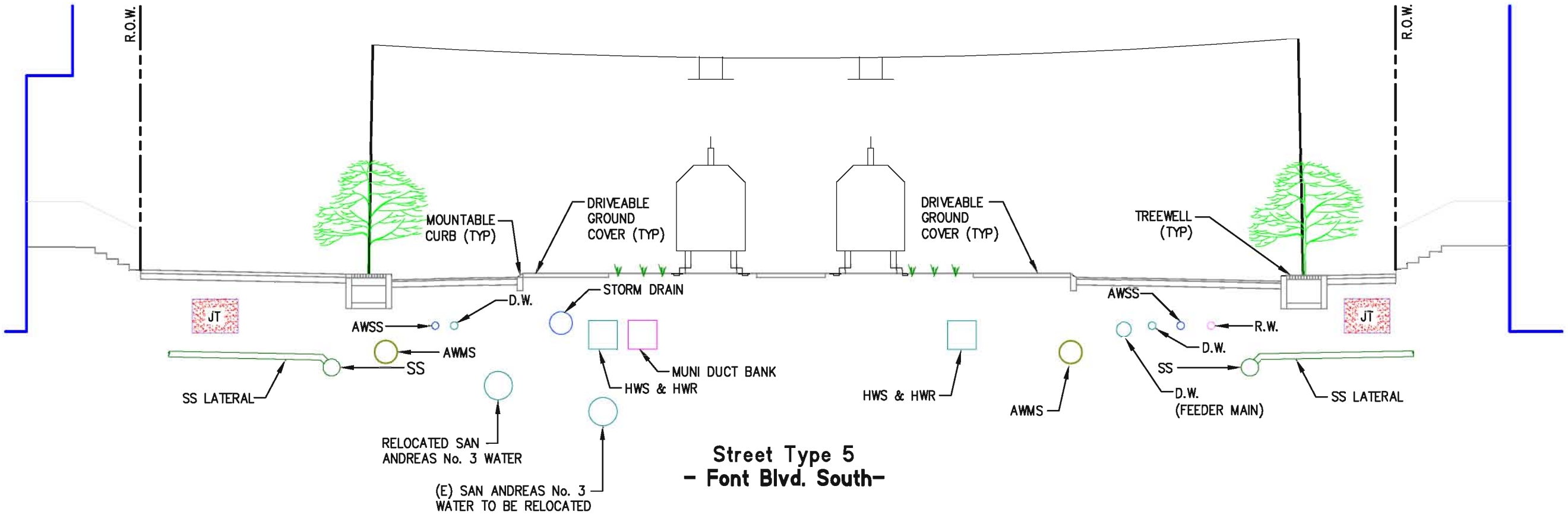
Date: 10/14/10
Scale: 1" = 10'
Design: BS
Drawn: MS
Approved: JO
Job No: 20990086

Drawing Number:
FIG 8.3

DRAWING NAME: J:\Eng09\090086\DWG\Exhibits\Infrastructure Report\IR 8_03 XS.dwg (01)
PLOT TIME: 10-12-10 12:06pm
PLOTTED BY: ashor



Street Type 4
- Alley Way -



Street Type 5
- Font Blvd. South-

DRAFT 10/14/10

BKF
ENGINEERS / SURVEYORS / PLANNERS
255 SHORELINE DR
SUITE 200
REDWOOD CITY, CA 94065
650-482-6300
650-482-6399 (FAX)

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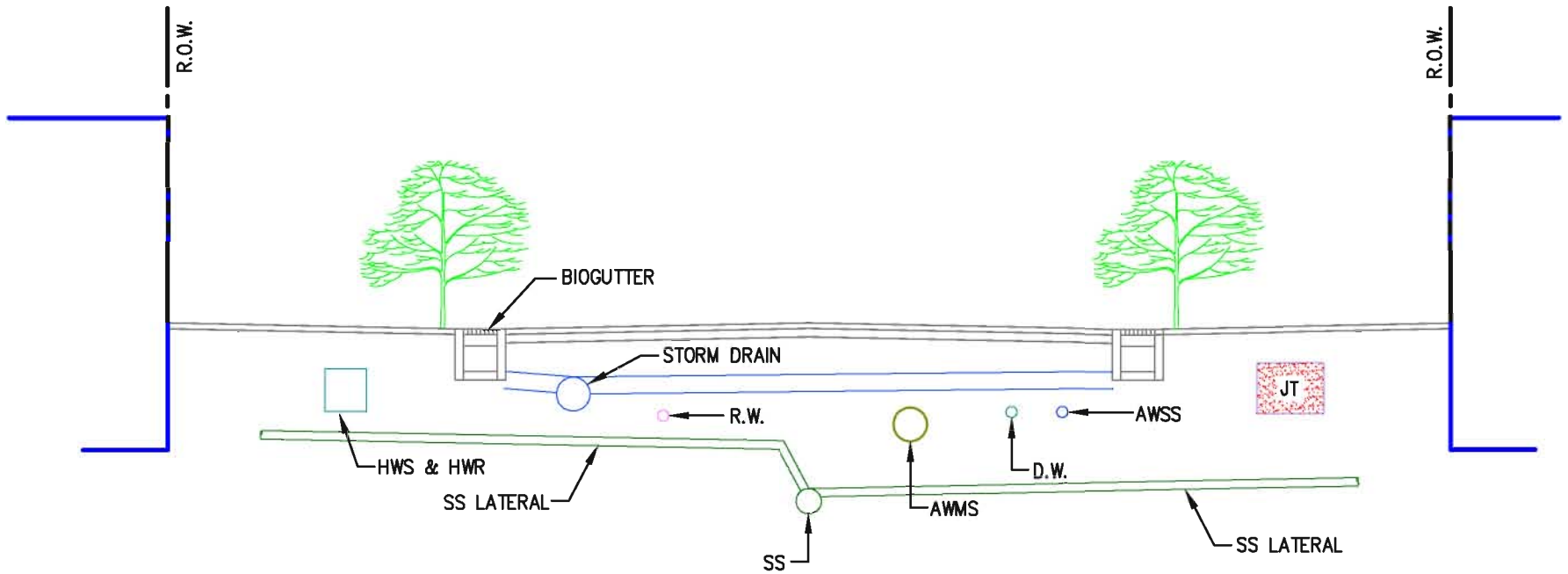
INFRASTRUCTURE REPORT
TYPICAL STREET UTILITY CROSS SECTIONS
SAN FRANCISCO
SAN FRANCISCO COUNTY
CALIFORNIA

No.	Revisions

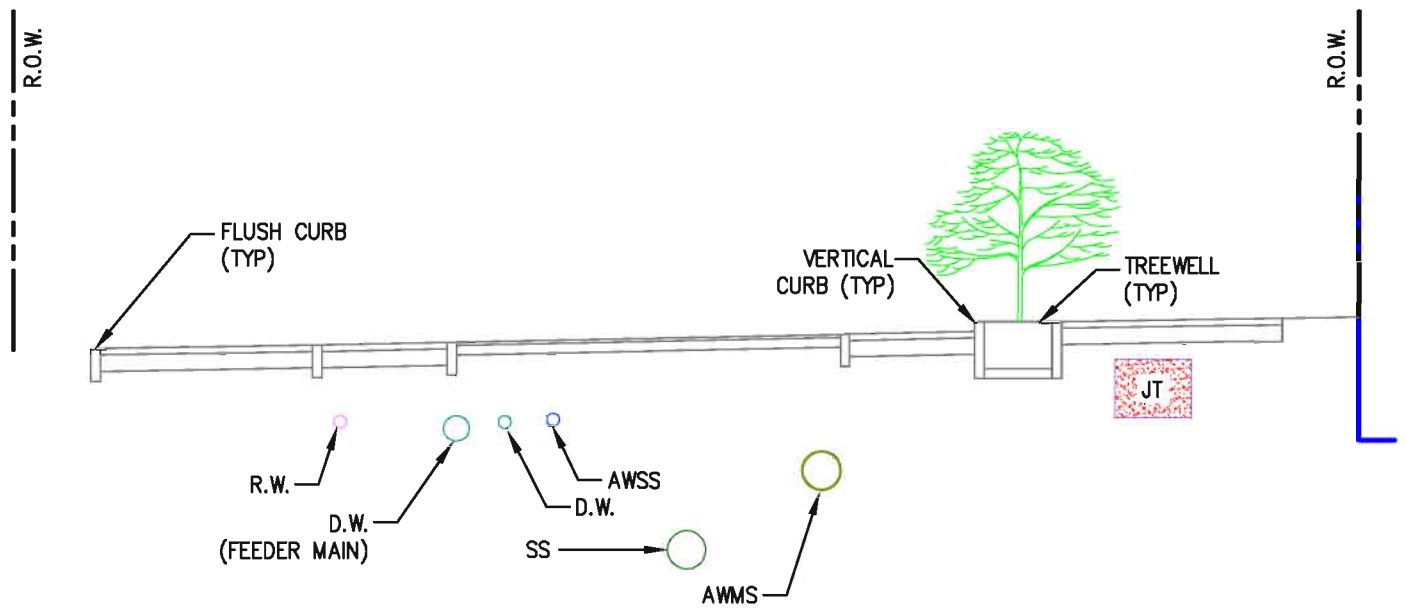
Date: 10/14/10
Scale: 1" = 10'
Design: BS
Drawn: MS
Approved: JO
Job No: 20090086

Drawing Number:
FIG 8.4

DRAWING NAME: J:\Eng09\090086\DWG\Exhibits\Infrastructure Report\IR 8_03 XS.dwg (02)
PLOT TIME: 10-12-10 12:06pm
PLOTTED BY: shar



Street Type 6
– Crespi Dr. –



Street Type 7
– Juan Bautista Circle –

DRAFT 10/14/10

BKF
ENGINEERS / SURVEYORS / PLANNERS
255 SHORELINE DR
SUITE 200
REDWOOD CITY, CA 94065
650-482-6300
650-482-6399 (FAX)

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INFRASTRUCTURE REPORT
TYPICAL STREET UTILITY CROSS SECTIONS
SAN FRANCISCO
SAN FRANCISCO COUNTY
CALIFORNIA

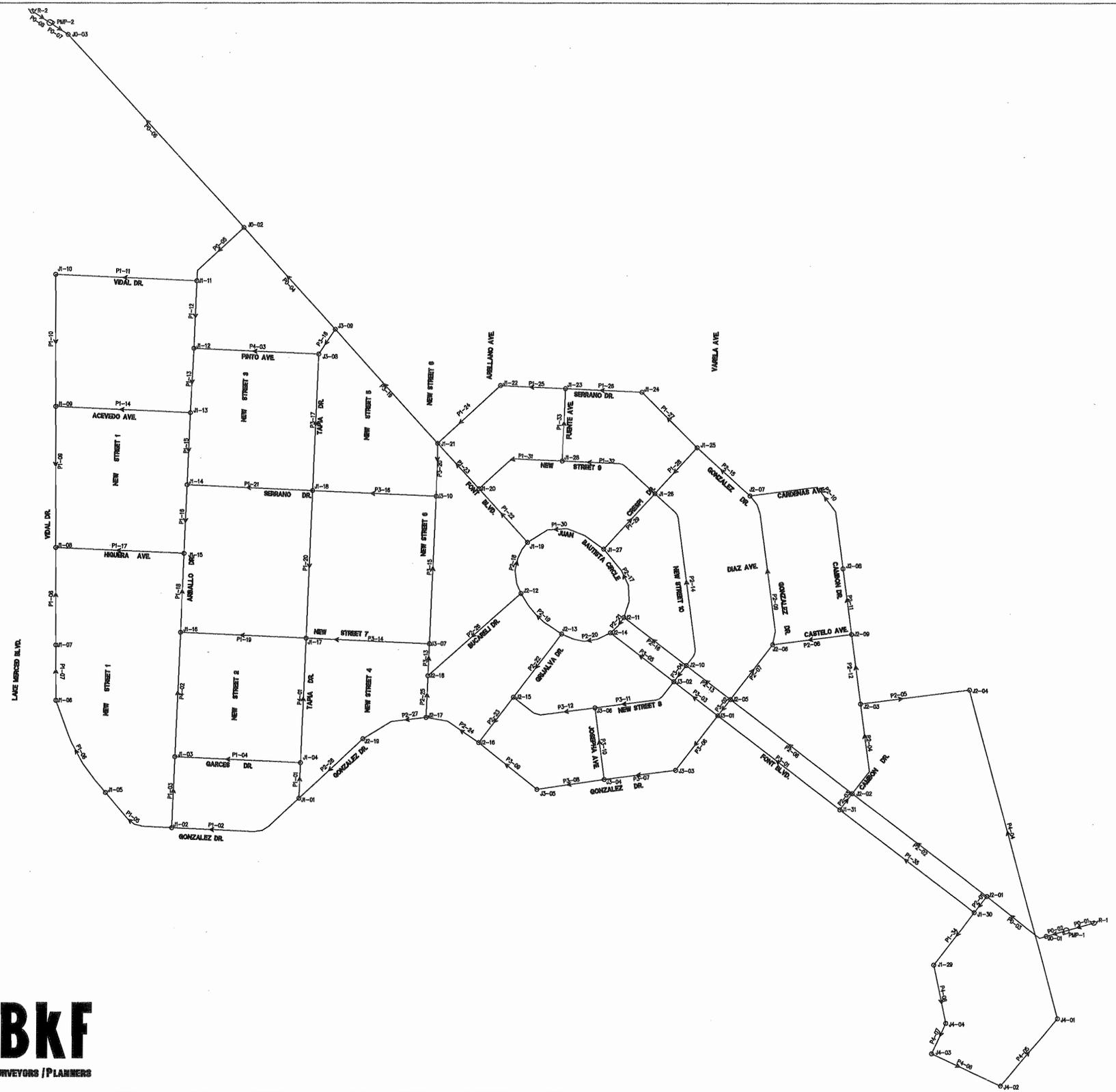
No.	Revisions

Date: 10/14/10
Scale: 1" = 10'
Design: BS
Drawn: MS
Approved: JO
Job No: 20090086

Drawing Number:
FIG 8.5

DRAWING NAME: J:\Eng09\090086\DWG\Exhibits\Infrastructure Report\IR 8_03 XS.dwg (03)
PLOT TIME: 10-12-10 12:07pm PLOTTED BY: ashar

Appendix A



BkF
ENGINEERS / SURVEYORS / PLANNERS

DRAWING NAME: J:\Eng09\0900080\DWG\WaterCAD\WaterCAD_Layout_Proposed.dwg
PLOT TIME: 09-23-10
PLOTTED BY: chua

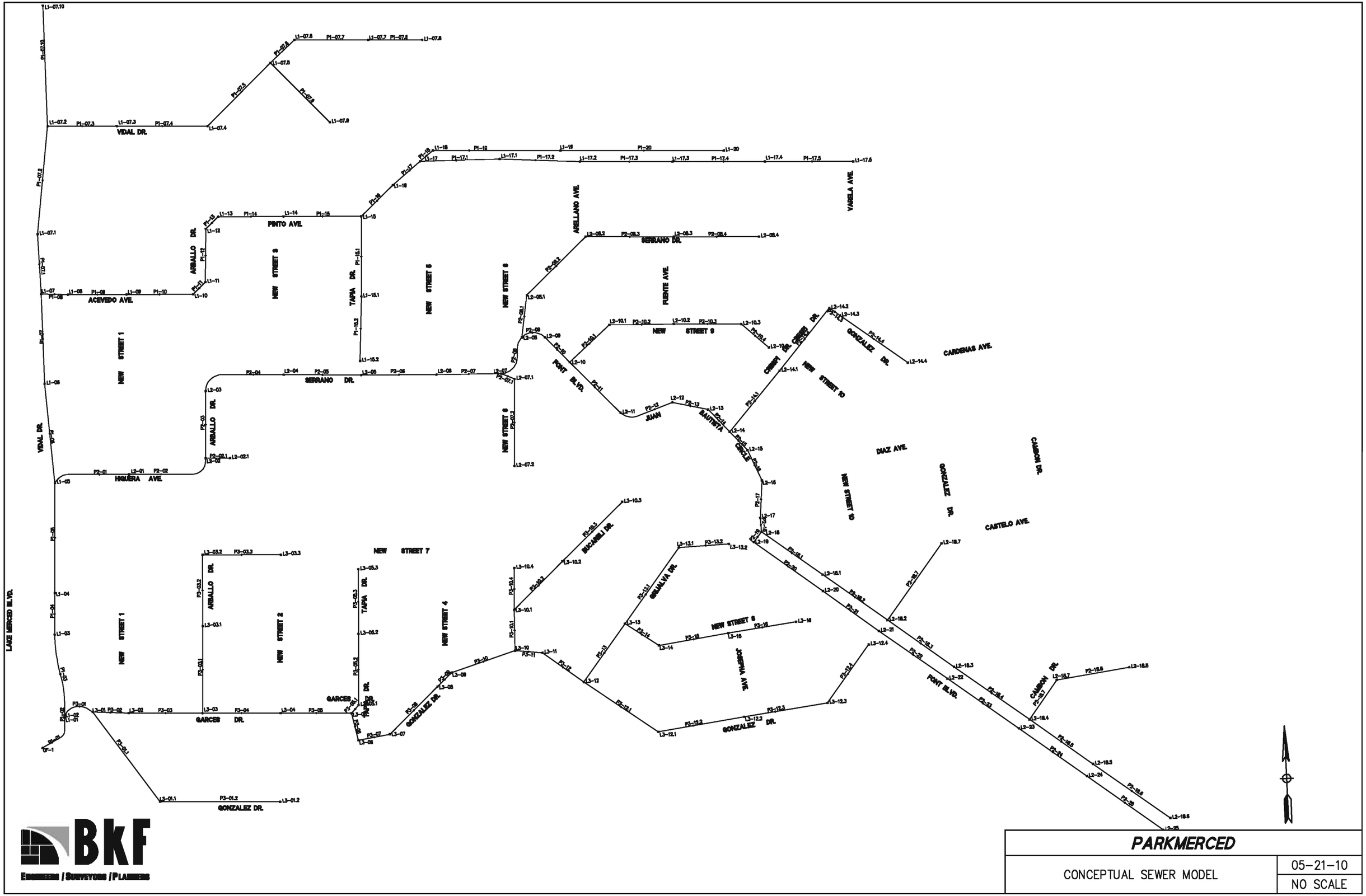
PARKMERCED

CONCEPTUAL WATERCAD MODEL

09-22-10
NO SCALE

Label	Satisfies Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/Minimum Pressure (System)	Pipe w/Maximum Velocity	Velocity of Maximum Pipe (ft/s)
J0-01	TRUE	1750	4177	1750	4177	25	34.90	J2-04	P0-06	4.2
J0-02	TRUE	1750	4270	1753	4273	25	76.30	J2-04	P0-03	5.3
J0-03	TRUE	1750	4663	1750	4663	25	77.60	J2-04	P0-06	7.6
J1-01	TRUE	1750	4185	1755	4191	25	69.10	J2-04	P0-03	5.3
J1-02	TRUE	1750	4198	1755	4202	25	72.10	J2-04	P0-03	5.3
J1-03	TRUE	1750	4199	1762	4212	25	71.20	J2-04	P1-03	5.5
J1-04	TRUE	1750	4188	1761	4199	25	59.20	J2-04	P1-01	6.3
J1-05	TRUE	1750	4203	1755	4209	25	74.90	J2-04	P1-05	7.7
J1-06	TRUE	1750	4208	1755	4213	25	84.20	J2-04	P1-05	6.3
J1-07	TRUE	1750	4210	1754	4213	25	80.90	J2-04	P1-08	6.3
J1-08	TRUE	1750	4213	1761	4223	25	76.30	J2-04	P1-17	5.7
J1-09	TRUE	1750	4217	1759	4226	25	75.80	J2-04	P1-14	5.4
J1-10	TRUE	1750	4221	1760	4231	25	75.60	J2-04	P1-11	6.9
J1-11	TRUE	1750	4231	1758	4239	25	75.80	J2-04	P0-05	6.3
J1-12	TRUE	1750	4221	1758	4229	25	72.90	J2-04	P1-12	5.7
J1-13	TRUE	1750	4218	1768	4236	25	71.40	J2-04	P1-13	5.6
J1-14	TRUE	1750	4213	1761	4224	25	70.10	J2-04	P0-03	5.3
J1-15	TRUE	1750	4209	1773	4232	25	73.10	J2-04	P1-16	5.5
J1-16	TRUE	1750	4205	1757	4212	25	68.80	J2-04	P0-03	5.3
J1-17	TRUE	1750	4191	1782	4223	25	65.90	J2-04	P0-03	5.3
J1-18	TRUE	1750	4199	1777	4226	25	66.00	J2-04	P0-03	5.3
J1-19	TRUE	1750	4151	1778	4179	25	58.70	J2-04	P0-03	5.3
J1-20	TRUE	1750	4159	1760	4169	25	62.20	J2-04	P1-22	5.6
J1-21	TRUE	1750	4166	1756	4172	25	66.20	J2-04	P0-03	5.3
J1-22	TRUE	1750	4158	1752	4160	25	61.40	J2-04	P1-24	6.5
J1-23	TRUE	1750	4153	1772	4175	25	58.10	J2-04	P0-03	5.3
J1-24	TRUE	1750	4147	1755	4151	25	52.90	J2-04	P1-27	6.6
J1-25	TRUE	1750	4139	1763	4152	25	48.60	J2-04	P0-03	5.3
J1-26	TRUE	1750	4146	1752	4148	25	52.50	J2-04	P0-03	5.3
J1-27	TRUE	1750	4149	1778	4178	25	54.20	J2-04	P0-03	5.3
J1-28	TRUE	1750	4153	1761	4164	25	55.60	J2-04	P1-33	9.7
J1-29	TRUE	1750	4137	1760	4147	25	39.70	J2-04	P1-34	10.4
J1-30	TRUE	1750	4149	1766	4165	25	35.60	J2-04	P2-01	5.7
J1-31	TRUE	1750	4133	1775	4158	25	41.60	J2-04	P2-03	6.4
J2-01	TRUE	1750	4151	1760	4161	25	35.30	J2-04	P0-03	5.4
J2-02	TRUE	1750	4129	1770	4149	25	41.80	J2-04	P0-03	5.3
J2-03	TRUE	1750	4010	1760	4021	25	39.20	J2-04	P2-04	6.1
J2-04	TRUE	1750	3742	1762	3753	25	25.00	J2-01	P2-05	8.8
J2-05	TRUE	1750	4140	1756	4146	25	49.00	J2-04	P0-03	5.3
J2-06	TRUE	1750	4126	1759	4135	25	44.90	J2-04	P2-07	6.4
J2-07	TRUE	1750	4122	1765	4137	25	48.60	J2-04	P0-03	5.3
J2-08	TRUE	1750	4084	1750	4084	25	39.20	J2-04	P2-11	6.5
J2-09	TRUE	1750	4061	1767	4079	25	41.00	J2-04	P2-12	5.6
J2-10	TRUE	1750	4144	1750	4144	25	50.10	J2-04	P0-03	5.3
J2-11	TRUE	1750	4148	1757	4155	25	50.00	J2-04	P0-03	5.3
J2-12	TRUE	1750	4152	1756	4157	25	57.20	J2-04	P0-03	5.3
J2-13	TRUE	1750	4150	1766	4166	25	52.90	J2-04	P0-03	5.3
J2-14	TRUE	1750	4148	1750	4148	25	50.00	J2-04	P0-03	5.3
J2-15	TRUE	1750	4152	1760	4162	25	52.50	J2-04	P2-22	5.3
J2-16	TRUE	1750	4156	1750	4156	25	60.90	J2-04	P0-03	5.3
J2-17	TRUE	1750	4165	1750	4165	25	62.10	J2-04	P0-03	5.3
J2-18	TRUE	1750	4166	1760	4176	25	61.40	J2-04	P0-03	5.3
J2-19	TRUE	1750	4172	1751	4173	25	64.80	J2-04	P2-27	6.9
J3-01	TRUE	1750	4141	1763	4154	25	49.20	J2-04	P0-03	5.3
J3-02	TRUE	1750	4144	1753	4148	25	50.00	J2-04	P0-03	5.3
J3-03	TRUE	1750	4145	1759	4154	25	49.40	J2-04	P3-06	7.2
J3-04	TRUE	1750	4147	1754	4152	25	52.60	J2-04	P0-03	5.3
J3-05	TRUE	1750	4150	1762	4162	25	58.20	J2-04	P3-09	6.4
J3-06	TRUE	1750	4148	1762	4160	25	45.70	J2-04	P3-10	9.3
J3-07	TRUE	1750	4168	1772	4191	25	60.00	J2-04	P3-13	7.4
J3-08	TRUE	1750	4210	1762	4222	25	72.30	J2-04	P3-18	6.8
J3-09	TRUE	1750	4210	1759	4219	25	73.10	J2-04	P0-03	5.3
J3-10	TRUE	1750	4172	1765	4188	25	60.70	J2-04	P3-20	8.7
J4-01	TRUE	1750	4100	1757	4108	25	32.60	J2-04	P1-34	8.8
J4-02	TRUE	1750	4112	1750	4112	25	45.5	J2-04	P1-34	9.2
J4-03	TRUE	1750	4123	1750	4123	25	51.4	J2-04	P1-34	9.7
J4-04	TRUE	1750	4128	1757	4135	25	41.8	J2-04	P1-34	9.9

APPENDIX B



BkF
ENGINEERS / SURVEYORS / PLANNERS

DRAWING NAME: J:\Eng08\08008\Utils\Hydrology\SanitarySewer_StormCAD_Layout.dwg
PLOT TIME: 05-21-10
PLOTTED BY: chua

PARKMERCED

CONCEPTUAL SEWER MODEL

05-21-10

NO SCALE

Parkmerced

(P) Sanitary Sewer System Study

Table A1 - Catch Basin

Label	Downstream Conduit	System Flow Time (min)	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Hydraulic Grade (Out) (ft)	Is Flooded	Velocity (Out) (ft/s)	Flow (Total Out) (gal/day)	Flow (Total Out) (ft^3/s)
L1-01	P1-01	26.48	65.00	55.9	56.51	FALSE	3.7	3042354	4.71
L1-02	P1-02	26.47	65.00	56.6	56.93	FALSE	3.5	3042354	4.71
L1-03	P1-03	25.45	69.00	59.0	59.32	FALSE	3.2	2342218	3.62
L1-04	P1-04	25.05	80.00	62.0	62.32	FALSE	3.2	2342218	3.62
L1-05	P1-05	23.94	90.10	67.7	68.04	FALSE	3.4	2308315	3.57
L1-06	P1-06	14.57	94.50	69.1	69.33	FALSE	2.6	1148649	1.78
L1-07	P1-07	12.81	92.00	70.4	70.64	FALSE	2.6	1132345	1.75
L1-07.1	P1-07.1	10.88	89.00	71.9	72.09	FALSE	2.3	574032	0.89
L1-07.10	P1-07.10	0.00	85.00	75.5	75.78	FALSE	2.3	343170	0.53
L1-07.2	P1-07.2	8.12	92.00	73.2	73.4	FALSE	2.0	560833	0.87
L1-07.3	P1-07.3	7.25	93.00	80.8	81.01	FALSE	2.1	217663	0.34
L1-07.4	P1-07.4	5.40	96.20	83.7	83.88	FALSE	2.0	176725	0.27
L1-07.5	P1-07.5	3.53	95.00	86.5	86.68	FALSE	2.0	156280	0.24
L1-07.6	P1-07.6	2.68	95.60	87.6	87.73	FALSE	1.7	62811	0.10
L1-07.7	P1-07.7	1.14	100.00	92.0	92.13	FALSE	1.7	62811	0.10
L1-07.8	P1-07.8	0.00	103.00	95.0	95.13	FALSE	1.7	62811	0.10
L1-07.9	P1-07.9	0.00	99.80	90.0	90.16	FALSE	1.9	93469	0.14
L1-08	P1-08	12.64	94.10	81.3	81.57	FALSE	2.7	558313	0.86
L1-09	P1-09	11.92	97.00	84.3	84.62	FALSE	2.7	544079	0.84
L1-10	P1-10	11.02	102.90	87.2	87.51	FALSE	2.6	536315	0.83
L1-11	P1-11	10.77	102.20	87.8	88.1	FALSE	2.6	509540	0.79
L1-12	P1-12	9.98	99.40	89.6	89.91	FALSE	2.6	509540	0.79
L1-13	P1-13	9.71	98.90	90.2	90.47	FALSE	2.5	434441	0.67
L1-14	P1-14	8.66	102.00	92.2	92.51	FALSE	2.5	434441	0.67
L1-15	P1-15	7.41	105.60	94.6	94.91	FALSE	2.5	434441	0.67
L1-15.1	P1-15.1	1.64	112.00	97.1	97.25	FALSE	1.8	64818	0.10
L1-15.2	P1-15.2	0.00	118.00	103.1	103.17	FALSE	1.3	16046	0.02
L1-16	P1-16	6.66	104.20	96.0	96.25	FALSE	2.4	352801	0.55
L1-17	P1-17	6.29	108.00	100.0	100.29	FALSE	2.6	352801	0.55
L1-17.1	P1-17.1	5.29	115.10	107.0	107.24	FALSE	2.3	214765	0.33
L1-17.2	P1-17.2	4.23	121.30	113.0	113.24	FALSE	2.3	214765	0.33
L1-17.3	P1-17.3	2.90	130.30	122.0	122.18	FALSE	2.0	120944	0.19
L1-17.4	P1-17.4	1.60	139.50	131.6	131.78	FALSE	2.0	120944	0.19
L1-17.5	P1-17.5	0.00	152.20	144.3	144.4	FALSE	1.5	36831	0.06
L1-18	P1-18	5.09	111.00	103.6	103.79	FALSE	2.1	138036	0.21
L1-19	P1-19	3.07	120.50	112.0	112.19	FALSE	2.1	138036	0.21
L1-20	P1-20	0.00	136.10	128.0	128.11	FALSE	1.6	49489	0.08
L2-01	P2-01	23.34	99.00	86.1	86.33	FALSE	2.8	1139480	1.76
L2-02	P2-02	22.39	108.00	92.9	93.12	FALSE	2.8	1102990	1.71
L2-03	P2-03	21.64	108.00	97.9	98.09	FALSE	2.8	1102990	1.71
L2-04	P2-04	20.39	113.60	101.1	101.32	FALSE	2.8	1049419	1.62
L2-05	P2-05	19.29	119.00	104.0	104.2	FALSE	2.7	1032080	1.60
L2-06	P2-06	18.19	124.30	106.7	106.91	FALSE	2.7	991142	1.53
L2-07	P2-07	17.36	123.00	110.6	110.78	FALSE	2.7	939593	1.45
L2-07.1	P2-07.1	2.09	129.90	111.0	111.15	FALSE	1.8	83591	0.13
L2-07.2	P2-07.2	0.00	138.00	113.7	113.84	FALSE	1.8	83591	0.13
L2-08	P2-08	16.61	126.00	112.0	112.19	FALSE	2.6	831675	1.29
L2-08.1	P2-08.1	4.38	122.00	112.4	112.55	FALSE	1.3	79062	0.12
L2-08.2	P2-08.2	2.95	128.00	120.0	120.13	FALSE	1.7	79062	0.12
L2-08.3	P2-08.3	1.53	138.70	129.0	129.14	FALSE	1.8	79062	0.12
L2-08.4	P2-08.4	0.00	149.00	138.0	138.12	FALSE	1.6	52924	0.08
L2-09	P2-09	16.32	124.00	114.9	115.07	FALSE	2.5	752613	1.16
L2-10	P2-10	15.86	128.80	117.0	117.22	FALSE	2.7	752613	1.16
L2-10.1	P2-10.1	4.45	133.50	123.0	123.11	FALSE	1.6	50810	0.08
L2-10.2	P2-10.2	2.36	135.70	127.0	127.06	FALSE	1.2	11732	0.02
L2-10.3	P2-10.3	0.75	147.00	137.0	137.06	FALSE	1.2	11732	0.02
L2-10.4	P2-10.4	0.00	155.00	145.0	145.06	FALSE	1.2	11732	0.02
L2-11	P2-11	15.03	132.30	123.5	123.71	FALSE	2.6	701803	1.09
L2-12	P2-12	14.23	135.10	126.0	126.21	FALSE	2.6	701803	1.09

Label	Downstream Conduit	System Flow Time (min)	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Hydraulic Grade (Out) (ft)	Is Flooded	Velocity (Out) (ft/s)	Flow (Total Out) (gal/day)	Flow (Total Out) (ft^3/s)
L2-13	P2-13	13.81	137.10	129.5	129.71	FALSE	2.6	701803	1.09
L2-14	P2-14	13.43	140.00	132.0	132.15	FALSE	2.5	624515	0.97
L2-14.1	P2-14.1	2.78	146.50	138.0	138.15	FALSE	1.8	106113	0.16
L2-14.2	P2-14.2	1.42	154.00	144.0	144.16	FALSE	1.9	106113	0.16
L2-14.3	P2-14.3	1.27	155.30	147.0	147.16	FALSE	1.9	106113	0.16
L2-14.4	P2-14.4	0.00	162.60	154.9	155.06	FALSE	1.9	106113	0.16
L2-15	P2-15	13.08	143.00	134.0	134.17	FALSE	2.3	518402	0.80
L2-16	P2-16	12.66	146.00	137.5	137.67	FALSE	2.3	518402	0.80
L2-17	P2-17	12.06	148.00	139.5	139.66	FALSE	2.3	459354	0.71
L2-18	P2-18	11.82	149.10	140.0	140.16	FALSE	2.3	459354	0.71
L2-18.1	P2-18.1	6.61	155.50	147.0	147.3	FALSE	2.6	338755	0.52
L2-18.2	P2-18.2	5.76	162.80	154.5	154.8	FALSE	2.6	338755	0.52
L2-18.3	P2-18.3	4.76	170.40	162.0	162.24	FALSE	2.3	212693	0.33
L2-18.4	P2-18.4	3.56	177.30	169.3	169.54	FALSE	2.3	212693	0.33
L2-18.5	P2-18.5	2.18	182.00	175.0	175.15	FALSE	1.8	81876	0.13
L2-18.6	P2-18.6	0.00	188.00	181.0	181.1	FALSE	1.5	40938	0.06
L2-18.7	P2-18.7	0.00	170.30	162.3	162.48	FALSE	2.0	126062	0.20
L2-18.7	P2-18.7	1.18	180.00	172.0	172.17	FALSE	1.9	122669	0.19
L2-18.8	P2-18.8	0.00	192.30	184.3	184.41	FALSE	1.5	45030	0.07
L2-19	P2-19	11.51	148.00	140.4	140.55	FALSE	1.8	120599	0.19
L2-20	P2-20	9.69	157.00	143.0	143.2	FALSE	2.0	120599	0.19
L2-21	P2-21	8.22	163.00	145.1	145.32	FALSE	2.0	120599	0.19
L2-22	P2-22	6.42	170.90	147.7	147.9	FALSE	2.0	120599	0.19
L2-23	P2-23	4.55	177.00	150.4	150.59	FALSE	2.0	120599	0.19
L2-24	P2-24	2.40	182.00	153.0	153.11	FALSE	1.7	65217	0.10
L2-25	P2-25	0.00	187.00	160.2	160.28	FALSE	1.3	23033	0.04
L3-01	P3-01	14.14	86.46	68.8	68.98	FALSE	2.6	700136	1.08
L3-01.1	P3-01.1	3.63	99.30	84.5	84.59	FALSE	1.4	36749	0.06
L3-01.2	P3-01.2	0.00	111.50	93.0	93.06	FALSE	1.2	15269	0.02
L3-02	P3-02	13.87	95.50	83.0	83.2	FALSE	2.6	663387	1.03
L3-03	P3-03	13.17	105.00	96.5	96.7	FALSE	2.6	663387	1.03
L3-03.1	P3-03.1	3.21	107.70	100.2	100.35	FALSE	1.8	103826	0.16
L3-03.2	P3-03.2	1.59	110.00	102.4	102.56	FALSE	1.9	98391	0.15
L3-03.3	P3-03.3	0.00	115.90	107.0	107.13	FALSE	1.7	69147	0.11
L3-04	P3-04	12.09	111.80	102.2	102.37	FALSE	2.3	516949	0.80
L3-05	P3-05	10.80	118.00	104.5	104.67	FALSE	2.3	498574	0.77
L3-05.1	P3-05.1	2.90	118.55	106.1	106.25	FALSE	1.9	118835	0.18
L3-05.2	P3-05.2	1.54	120.70	109.5	109.67	FALSE	1.9	118835	0.18
L3-05.3	P3-05.3	0.00	122.69	111.5	111.65	FALSE	1.8	85192	0.13
L3-06	P3-06	10.38	117.54	107.1	107.18	FALSE	2.1	344235	0.53
L3-07	P3-07	10.01	119.00	110.0	110.25	FALSE	2.4	344235	0.53
L3-08	P3-08	9.08	122.70	113.9	114.11	FALSE	2.4	344235	0.53
L3-09	P3-09	8.80	124.00	115.0	115.25	FALSE	2.4	344235	0.53
L3-10	P3-10	7.97	132.40	120.3	120.57	FALSE	2.4	344235	0.53
L3-10.1	P3-10.1	3.33	135.00	121.8	121.89	FALSE	1.8	113099	0.17
L3-10.2	P3-10.2	1.67	137.02	124.0	124.14	FALSE	1.7	72986	0.11
L3-10.3	P3-10.3	0.00	145.00	129.0	129.14	FALSE	1.7	72986	0.11
L3-10.4	P3-10.4	0.00	137.35	125.0	125.11	FALSE	1.6	40113	0.06
L3-11	P3-11	7.59	135.00	122.5	122.71	FALSE	2.2	231136	0.36
L3-12	P3-12	6.77	144.40	125.0	125.21	FALSE	2.2	231136	0.36
L3-12.1	P3-12.1	4.53	146.73	128.5	128.62	FALSE	1.6	67286	0.10
L3-12.2	P3-12.2	2.90	151.50	137.6	137.71	FALSE	1.5	49947	0.08
L3-12.3	P3-12.3	1.14	160.20	144.0	144.11	FALSE	1.6	49947	0.08
L3-12.4	P3-12.4	0.00	165.00	159.0	159.11	FALSE	1.6	49947	0.08
L3-13	P3-13	3.49	148.60	129.9	130.05	FALSE	2.1	163850	0.25
L3-13.1	P3-13.1	1.13	148.80	135.8	135.93	FALSE	1.7	64027	0.10
L3-13.2	P3-13.2	0.00	152.00	139.0	139.13	FALSE	1.7	64027	0.10
L3-14	P3-14	2.99	155.75	136.7	136.84	FALSE	1.9	99823	0.15
L3-15	P3-15	1.72	163.30	143.2	143.34	FALSE	1.7	60227	0.09
L3-16	P3-16	0.00	163.40	145.3	145.48	FALSE	1.8	60227	0.09

Parkmerced
(P) Sanitary Sewer System Study
Table A2 - Pipe

Label	Flow (ft^3/s)	Pipe Capacity (ft^3/s)	Diam. (in)	Length (ft)	Slope (ft/ft)	Upstream Invert (ft)	Downstream Invert (ft)	Upstream Ground Elevation (ft)	Downstream Ground Elevation (ft)	Average Cover (ft)	Upstream HGL (ft)	Downstream HGL (ft)	Velocity (ft/s)	Freeboard (ft)
P1-01	4.71	638.80	54	130	0.106	55.90	42.18	65.0	53.8	5.9	56.51	42.46	11.8	8.5
P1-02	4.71	583.09	12	9	0.072	56.55	55.90	65.0	65.0	3.5	56.93	56.51	8.5	8.1
P1-03	3.62	214.36	12	251	0.010	59.00	56.55	69.0	65.0	4.0	59.32	56.94	4.1	9.7
P1-04	3.62	330.87	12	129	0.023	62.00	59.00	80.0	69.0	8.8	62.32	59.33	5.4	17.7
P1-05	3.57	186.08	12	340	0.017	67.69	62.00	90.1	80.0	15.7	68.04	62.23	5.1	22.1
P1-06	1.78	97.32	12	308	0.005	69.10	67.69	94.5	90.1	19.4	69.33	68.05	2.6	25.2
P1-07	1.75	99.11	12	278	0.005	70.42	69.10	92.0	94.5	19.0	70.64	69.33	2.6	21.4
P1-07.1	0.89	79.91	12	185	0.008	71.93	70.42	89.0	92.0	15.6	72.09	70.64	2.6	16.9
P1-07.10	0.53	16.00	24	460	0.005	75.53	73.23	85.0	92.0	12.1	75.78	73.48	2.3	9.2
P1-07.2	0.87	55.10	12	335	0.004	73.23	71.93	92.0	89.0	14.2	73.40	72.09	2.0	18.6
P1-07.3	0.34	29.80	21	214	0.035	80.80	73.23	93.0	92.0	13.7	81.01	73.36	4.1	12.0
P1-07.4	0.27	16.10	21	281	0.010	83.70	80.80	96.2	93.0	10.6	83.88	81.01	2.5	12.3
P1-07.5	0.24	10.58	18	276	0.010	86.50	83.70	95.0	96.2	9.0	86.68	83.89	2.5	8.3
P1-07.6	0.10	3.68	12	103	0.011	87.60	86.50	95.6	95.0	7.3	87.73	86.69	2.0	7.9
P1-07.7	0.10	4.94	12	229	0.019	92.00	87.60	100.0	95.6	7.0	92.13	87.74	2.5	7.9
P1-07.8	0.10	4.79	12	166	0.018	95.00	92.00	103.0	100.0	7.0	95.13	92.13	2.4	7.9
P1-07.9	0.14	4.14	12	259	0.014	90.00	86.50	99.8	95.0	8.2	90.16	86.69	2.5	9.6
P1-08	0.86	81.22	24	84	0.129	81.25	70.42	94.1	92.0	15.2	81.57	70.57	8.5	12.5
P1-09	0.84	29.45	24	180	0.017	84.30	81.25	97.0	94.1	10.8	84.62	81.57	4.1	12.4
P1-10	0.83	26.77	24	207	0.014	87.20	84.30	102.9	97.0	12.2	87.51	84.62	3.9	15.4
P1-11	0.79	23.87	24	53	0.011	87.79	87.20	102.2	102.9	13.1	88.10	87.53	3.5	14.1
P1-12	0.79	23.76	24	164	0.011	89.60	87.79	99.4	102.2	10.1	89.91	88.12	3.5	9.5
P1-13	0.67	23.64	24	54	0.011	90.19	89.60	98.9	99.4	7.3	90.47	89.92	3.3	8.4
P1-14	0.67	22.68	24	203	0.010	92.23	90.19	102.0	98.9	7.2	92.51	90.49	3.2	9.5
P1-15	0.67	22.62	24	240	0.010	94.63	92.23	105.6	102.0	8.4	94.91	92.51	3.2	10.7
P1-15.1	0.10	1.21	8	248	0.010	97.11	94.63	112.0	105.6	12.3	97.25	94.91	2.1	14.8
P1-15.2	0.02	2.10	8	199	0.030	103.10	97.11	118.0	112.0	14.2	103.17	97.26	2.0	14.8
P1-16	0.55	22.62	24	137	0.010	96.00	94.63	104.2	105.6	7.6	96.25	94.93	3.0	8.0
P1-17	0.55	12.26	15	111	0.036	100.00	96.00	108.0	104.2	6.9	100.29	96.18	5.0	7.7
P1-17.1	0.33	6.01	12	246	0.028	107.00	100.00	115.1	108.0	7.1	107.24	100.31	4.1	7.9
P1-17.2	0.33	5.54	12	248	0.024	113.00	107.00	121.3	115.1	7.2	113.24	107.25	3.9	8.1
P1-17.3	0.19	6.32	12	286	0.031	122.00	113.00	130.3	121.3	7.3	122.18	113.24	3.6	8.1
P1-17.4	0.19	6.53	12	286	0.034	131.60	122.00	139.5	130.3	7.1	131.78	122.18	3.7	7.7
P1-17.5	0.06	7.68	12	273	0.047	144.30	131.60	152.2	139.5	6.9	144.40	131.78	2.9	7.8
P1-18	0.21	9.37	12	52	0.069	103.60	100.00	111.0	108.0	6.7	103.79	100.30	4.9	7.2
P1-19	0.21	5.20	12	394	0.021	112.00	103.60	120.5	111.0	7.0	112.19	103.81	3.3	8.3
P1-20	0.08	6.34	12	505	0.032	128.00	112.00	136.1	120.5	7.3	128.11	112.19	2.7	8.0
P2-01	1.76	244.85	12	240	0.077	86.08	67.69	99.0	90.1	13.9	86.33	68.05	6.7	12.7

Label	Flow (ft^3/s)	Pipe Capacity (ft^3/s)	Diam. (in)	Length (ft)	Slope (ft/ft)	Upstream Invert (ft)	Downstream Invert (ft)	Upstream Ground Elevation (ft)	Downstream Ground Elevation (ft)	Average Cover (ft)	Upstream HGL (ft)	Downstream HGL (ft)	Velocity (ft/s)	Freeboard (ft)
P2-02	1.71	140.90	12	268	0.025	92.88	86.08	108.0	99.0	10.3	93.12	86.33	4.7	14.9
P2-03	1.71	137.06	12	207	0.024	97.85	92.88	108.0	108.0	8.9	98.09	93.13	4.6	9.9
P2-04	1.62	96.57	12	271	0.012	101.08	97.85	113.6	108.0	7.6	101.32	98.11	3.6	12.3
P2-05	1.60	97.07	12	240	0.012	103.97	101.08	119.0	113.6	10.0	104.20	101.32	3.6	14.8
P2-06	1.53	95.60	12	232	0.012	106.68	103.97	124.3	119.0	12.6	106.91	104.20	3.5	17.4
P2-07	1.45	122.90	12	201	0.019	110.56	106.68	123.0	124.3	11.3	110.78	106.91	4.1	12.2
P2-07.1	0.13	3.56	12	44	0.010	111.00	110.56	129.9	123.0	14.7	111.15	110.79	2.2	18.8
P2-07.2	0.13	3.56	12	269	0.010	113.69	111.00	138.0	129.9	20.6	113.84	111.16	2.2	24.2
P2-08	1.29	88.46	12	143	0.010	111.99	110.56	126.0	123.0	9.5	112.19	110.79	3.2	13.8
P2-08.1	0.12	5.88	18	131	0.003	112.40	111.99	122.0	126.0	10.3	112.55	112.20	1.3	9.5
P2-08.2	0.12	11.11	15	257	0.030	120.00	112.40	128.0	122.0	7.6	120.13	112.55	3.0	7.9
P2-08.3	0.12	6.47	12	273	0.033	129.00	120.00	138.7	128.0	7.8	129.14	120.10	3.2	9.6
P2-08.4	0.08	6.59	12	263	0.034	138.00	129.00	149.0	138.7	9.3	138.12	129.15	2.9	10.9
P2-09	1.16	169.18	12	79	0.037	114.88	111.99	124.0	126.0	7.8	115.07	112.20	4.5	8.9
P2-10	1.16	67.73	12	110	0.019	117.00	114.88	128.8	124.0	7.5	117.22	115.03	4.0	11.6
P2-10.1	0.08	6.73	12	168	0.036	123.00	117.00	133.5	128.8	10.2	123.11	117.22	2.9	10.4
P2-10.2	0.02	1.71	8	199	0.020	127.00	123.00	135.7	133.5	8.9	127.06	123.12	1.6	8.6
P2-10.3	0.02	2.64	8	209	0.048	137.00	127.00	147.0	135.7	8.7	137.06	127.06	2.2	9.9
P2-10.4	0.02	3.23	8	112	0.071	145.00	137.00	155.0	147.0	9.3	145.06	137.06	2.5	9.9
P2-11	1.09	83.48	12	222	0.029	123.50	117.00	132.3	128.8	7.3	123.71	117.22	4.5	8.6
P2-12	1.09	58.82	12	172	0.015	126.00	123.50	135.1	132.3	6.0	126.21	123.72	3.6	8.9
P2-13	1.09	85.86	12	113	0.031	129.50	126.00	137.1	135.1	5.3	129.71	126.22	4.5	7.4
P2-14	0.97	78.51	12	95	0.026	131.96	129.50	140.0	137.1	4.8	132.15	129.72	4.1	7.8
P2-14.1	0.16	16.53	18	244	0.025	138.00	131.96	146.5	140.0	6.8	138.15	132.16	3.0	8.3
P2-14.2	0.16	10.05	15	248	0.024	144.00	138.00	154.0	146.5	8.0	144.16	138.11	3.1	9.8
P2-14.3	0.16	17.69	15	40	0.075	147.00	144.00	155.3	154.0	7.9	147.16	144.17	4.5	8.1
P2-14.4	0.16	11.37	15	255	0.031	154.90	147.00	162.6	155.3	6.8	155.06	147.16	3.3	7.5
P2-15	0.80	78.40	12	79	0.026	134.00	131.96	143.0	140.0	5.5	134.17	132.16	3.8	8.8
P2-16	0.80	89.50	12	104	0.034	137.50	134.00	146.0	143.0	5.8	137.67	134.18	4.1	8.3
P2-17	0.71	64.06	12	116	0.017	139.50	137.50	148.0	146.0	5.5	139.66	137.68	3.2	8.3
P2-18	0.71	53.23	12	42	0.012	140.00	139.50	149.1	148.0	5.8	140.16	139.66	2.9	8.9
P2-18.1	0.52	6.20	12	231	0.030	147.00	140.00	155.5	149.1	7.8	147.30	140.20	4.8	8.2
P2-18.2	0.52	6.23	12	245	0.031	154.50	147.00	162.8	155.5	7.4	154.80	147.31	4.8	8.0
P2-18.3	0.33	6.16	12	251	0.030	162.00	154.50	170.4	162.8	7.4	162.24	154.82	4.2	8.2
P2-18.4	0.33	5.71	12	284	0.026	169.30	162.00	177.3	170.4	7.2	169.54	162.24	4.0	7.8
P2-18.5	0.13	5.49	12	240	0.024	175.00	169.30	182.0	177.3	6.5	175.15	169.55	2.9	6.8
P2-18.6	0.06	5.12	12	291	0.021	181.00	175.00	188.0	182.0	6.0	181.10	175.08	2.2	6.9
P2-18.7	0.19	8.72	15	148	0.018	172.00	169.30	180.0	177.3	6.8	172.17	169.55	2.9	7.8
P2-18.7	0.20	5.84	12	290	0.027	162.30	154.50	170.3	162.8	7.2	162.48	154.81	3.4	7.8
P2-18.8	0.07	8.27	12	228	0.054	184.30	172.00	192.3	180.0	7.0	184.41	172.18	3.2	7.9
P2-19	0.19	22.62	24	40	0.010	140.40	140.00	148.0	149.1	6.3	140.55	140.16	2.2	7.4
P2-20	0.19	3.56	12	262	0.010	143.02	140.40	157.0	148.0	9.8	143.20	140.56	2.4	13.8
P2-21	0.19	3.56	12	212	0.010	145.14	143.02	163.0	157.0	14.9	145.32	143.20	2.4	17.7

Label	Flow (ft^3/s)	Pipe Capacity (ft^3/s)	Diam. (in)	Length (ft)	Slope (ft/ft)	Upstream Invert (ft)	Downstream Invert (ft)	Upstream Ground Elevation (ft)	Downstream Ground Elevation (ft)	Average Cover (ft)	Upstream HGL (ft)	Downstream HGL (ft)	Velocity (ft/s)	Freeboard (ft)
P2-22	0.19	3.56	12	258	0.010	147.72	145.14	170.9	163.0	19.5	147.90	145.32	2.4	23.0
P2-23	0.19	3.56	12	269	0.010	150.41	147.72	177.0	170.9	23.9	150.59	147.88	2.4	26.4
P2-24	0.10	3.56	12	257	0.010	152.98	150.41	182.0	177.0	26.8	153.11	150.59	2.0	28.9
P2-25	0.04	5.64	12	288	0.025	160.20	152.98	187.0	182.0	26.9	160.28	153.04	2.0	26.7
P3-01	1.08	169.70	12	101	0.121	68.77	56.55	86.5	65.0	10.1	68.98	56.94	6.9	17.5
P3-01.1	0.06	13.75	15	347	0.045	84.50	68.77	99.3	86.5	15.0	84.59	68.99	2.7	14.7
P3-01.2	0.02	5.39	12	372	0.023	93.00	84.50	111.5	99.3	15.7	93.06	84.59	1.7	18.4
P3-02	1.03	174.68	12	111	0.128	83.00	68.77	95.5	86.5	12.1	83.20	68.99	6.9	12.3
P3-03	1.03	118.45	12	229	0.059	96.50	83.00	105.0	95.5	7.5	96.70	83.20	5.4	8.3
P3-03.1	0.16	7.58	15	269	0.014	100.20	96.50	107.7	105.0	6.8	100.35	96.70	2.5	7.4
P3-03.2	0.15	3.56	12	220	0.010	102.40	100.20	110.0	107.7	6.6	102.56	100.34	2.3	7.4
P3-03.3	0.11	4.91	12	242	0.019	107.00	102.40	115.9	110.0	7.3	107.13	102.58	2.5	8.8
P3-04	0.80	75.03	12	241	0.024	102.20	96.50	111.8	105.0	6.1	102.37	96.70	3.7	9.4
P3-05	0.77	50.00	12	219	0.011	104.50	102.20	118.0	111.8	8.6	104.67	102.37	2.8	13.3
P3-05.1	0.18	14.13	15	33	0.048	106.08	104.50	118.6	118.0	11.7	106.25	104.67	4.0	12.3
P3-05.2	0.18	8.05	15	220	0.016	109.50	106.08	120.7	118.6	10.6	109.67	106.26	2.7	11.0
P3-05.3	0.13	3.56	12	200	0.010	111.50	109.50	122.7	120.7	10.2	111.65	109.67	2.2	11.0
P3-06	0.53	84.01	12	86	0.030	107.05	104.50	117.5	118.0	9.0	107.18	104.67	3.4	10.4
P3-07	0.53	39.05	24	99	0.030	110.00	107.05	119.0	117.5	7.7	110.25	107.21	4.4	8.8
P3-08	0.53	30.82	24	208	0.019	113.86	110.00	122.7	119.0	6.9	114.11	110.26	3.7	8.6
P3-09	0.53	30.92	24	61	0.019	115.00	113.86	124.0	122.7	6.9	115.25	114.11	3.7	8.8
P3-10	0.53	36.18	24	208	0.026	120.32	115.00	132.4	124.0	8.5	120.57	115.26	4.2	11.8
P3-10.1	0.17	24.10	24	126	0.011	121.75	120.32	135.0	132.4	10.7	121.89	120.58	2.2	13.1
P3-10.2	0.11	3.68	12	211	0.011	124.00	121.75	137.0	135.0	12.1	124.14	121.90	2.1	12.9
P3-10.3	0.11	4.94	12	260	0.019	129.00	124.00	145.0	137.0	13.5	129.14	124.14	2.6	15.9
P3-10.4	0.06	1.92	8	129	0.025	125.00	121.75	137.4	135.0	12.1	125.11	121.89	2.5	12.2
P3-11	0.36	25.37	21	85	0.026	122.50	120.32	135.0	132.4	10.5	122.71	120.58	3.8	12.3
P3-12	0.36	19.99	21	157	0.016	125.00	122.50	144.4	135.0	14.2	125.21	122.72	3.2	19.2
P3-12.1	0.10	11.81	18	277	0.013	128.50	125.00	146.7	144.4	17.3	128.62	125.22	2.1	18.1
P3-12.2	0.08	11.92	15	267	0.034	137.60	128.50	151.5	146.7	14.8	137.71	128.62	2.7	13.8
P3-12.3	0.08	5.54	12	265	0.024	144.00	137.60	160.2	151.5	14.1	144.11	137.68	2.5	16.1
P3-12.4	0.08	8.91	12	240	0.063	159.00	144.00	165.0	160.2	10.1	159.11	144.12	3.5	5.9
P3-13	0.25	9.58	15	221	0.022	129.86	125.00	148.6	144.4	17.8	130.05	125.22	3.4	18.6
P3-13.1	0.10	5.01	12	300	0.020	135.80	129.86	148.8	148.6	14.9	135.93	130.06	2.5	12.9
P3-13.2	0.10	4.92	12	168	0.019	139.00	135.80	152.0	148.8	12.0	139.13	135.94	2.5	12.9
P3-14	0.15	8.35	12	124	0.055	136.68	129.86	155.8	148.6	17.9	136.84	130.06	4.1	18.9
P3-15	0.09	6.17	12	218	0.030	143.22	136.68	163.3	155.8	18.6	143.34	136.85	2.9	20.0
P3-16	0.09	1.21	8	212	0.010	145.34	143.22	163.4	163.3	18.4	145.48	143.35	2.1	17.9

APPENDIX C

Subject:	**Preliminary Approach to Stormwater Management**
Project:	Parkmerced
Prepared By:	Beth Goldstein, P.E., LEED AP, and Nick Birth, EIT
Reviewed By:	Chris Phanartzis, P.E.
Date:	September 21, 2010
Reference:	070010

D R A F T

Contents

Executive Summary

The preliminary plan for stormwater management at Parkmerced is to use Low Impact Design (LID) to manage runoff. The design rainfall event is a 5-year, 3-hour storm, as required by San Francisco City regulations. Examples of LID measures proposed for the site include bioswales, biogutters, permeable paving, wet ponds, wetlands, and a stream. The combined LID network will also achieve the requirements of the recently passed Stormwater Management Ordinance requiring compliance with the Stormwater Design Guidelines. Based on LEED NC credits 6.1 and 6.2, this ordinance requires a 25% reduction in both peak flow and volume during the 2-year, 24-hour storm and capture and treatment of 90% of the annual average rainfall.

Runoff in excess of the design storm, up to the 100 year storm, will flow off site above ground, as specified in the San Francisco Subdivision Regulations, to a combined sewer if capacity exists, or to Lake Merced. Hardscape infrastructure such as pipes and drain inlets will only be needed to convey flow beneath street and intersections, as necessary.

The benefits of using LID to manage runoff rather than using the combined sewer include: recharge of Lake Merced aquifer, creation of green space amenities, potential reduction in potable water use, reduction in wastewater treatment fees and costs, replenishment of Lake Merced and potential reduction in combined sewer overflows.

Infiltration of stormwater runoff will be maximized—approximately **95**% of the annual runoff will be retained onsite of which **68%** will recharge the underlying aquifer and, indirectly, Lake Merced. Where rainfall exceeds the site infiltration rates, vegetated swales will collect the flow. The swales will provide additional infiltration, and convey runoff to the next LID measure in the treatment train.

One or more cisterns will detain sufficient runoff volume to provide makeup water for the pond through the summer months, to irrigate the playing fields and possibly the farm. Three cistern configurations are under consideration: a single cistern to provide pond make up water, a second cistern to provide playing field irrigation, or a second cistern sized for both playing field and farm irrigation. The playing field turf will be planted in an engineered sand layer, enabling additional stormwater storage, as well as high efficiency sub-surface irrigation. Model results presented below and in Section 7 assume the third cistern option.

Overflows from the LID measures and the central pond will be directed toward a stream. The stream will treat and reduce runoff while simultaneously conveying flow from about 2/3 of the site to a series of terminal ponds in the southwest corner. From there, runoff from the stream will be directed towards Lake Merced via one of five outfall options, described in Section 4. There will be a similar set of terminal ponds in the northwest corner of the site, which will treat runoff from the remaining 1/3 of the site.

In addition, permeable paving will be installed in pedestrian walkways, parking lanes, and other low-traffic areas to allow water to infiltrate at these hardscape areas. The courtyards, with underground parking below, will function similarly to ecoroofs—temporary storage will be provided in the soil, with pollutant removal provided as excess flows pass over the vegetated areas towards the bioswales and biogutters. Many courtyards will also be designed with a small stream/pond system to further increase detention times.

A detailed stormwater model was created using XP-SWMM to validate earlier conceptual planning efforts and confirm that the LID network is sized adequately to replace the combined sewer's drainage function as planned. The model was also used to calculate annual volumes of runoff that

will infiltrate to the groundwater table, be treated by ponds and wetlands, or overflow to Lake Merced to verify compliance with the Stormwater Management Ordinance. Finally, in future efforts detailed pollutant removal calculations will be made using the same model.

Model Results for Annual Average Runoff

	Average Annual Runoff (MG)	
Reused		
Farm Irrigation	2.07	3%
Playing Field Irrigation	0.83	1%
Pond Make-up	0.10	0%
Infiltrated		
Runoff Layer (pp, parks, treewells)	32.41	47%
Hydraulics Layer (swales)	14.74	21%
Evaporated		
from runoff surfaces (cisterns, swales)	5.83	8%
from network (ponds, cisterns, swales)	2.57	4%
Evapotranspired From Courtyards	6.78	10%
Discharged to Lake (volume through terminal pipe)	3.55	5%
Total	68.88	100%

Model Results for 2 Year 24 Hour Storm

	Peak Flow (cfs)	Total Volume (CF)
Pre-Development	115.7	2,168,000
Post-Development	70.64	1,175,000
% Decrease	39%	46%

Note: the pre-development model results were derived from the City-wide Infoworks model as provided by DPW/BOE/Hydraulics.

Model results for the 2 year/24 hour, 5 year/3 hour, and 100 year/3 hour storms are presented in Section 7.

1. Purpose

The purpose of this TM is to describe the proposed approach to stormwater management for Parkmerced. A hydrologic/hydraulic model of the site was created to validate preliminary sizing of conveyance and treatment elements. Each element in the stormwater network will be identified and described, with a discussion of how each element is modeled. Block by block routing, infiltration, and detention calculations have been performed using this model. The model will also be used in subsequent efforts to examine the proposed stormwater management strategy's effect on lake water quality.

2. Stormwater Model Development

2.1 Scope and Purpose of Model

A detailed stormwater model was created to validate earlier conceptual planning efforts, and provide additional detail as plans for Parkmerced progress. This section will describe the model, its development, and sources of data. Several assumptions and recommendations will be presented.

XP-SWMM is a hydrologic and hydraulic modeling package which was used to build and run the model. It is based on the industry standard EPA-SWMM "Storm Water Management Model". Several additional features are provided by XP-SWMM, including database connections, GIS and CAD integration, and pollutant generation/transport modeling. The SWMM model is recommended by EPA for analyzing pre- vs. post-development hydrology and has dynamic hydraulic capabilities as well.

The model is used for several purposes. First, the initial sizing of the LID network was checked to ensure that it can replace the combined sewer's drainage function as planned. The model is also being used to calculate annual volumes of runoff that will infiltrate to the groundwater table, be treated by ponds and wetlands, or overflow to Lake Merced. It will be used to verify compliance with the Stormwater Management Ordinance, which requires peak and volume reduction of 25% during the 2-year, 24-hour storm (LEED NC credit 6.1) and capture and treatment of 90% of the annual average rainfall (LEED NC credit 6.2). Finally, in future efforts detailed pollutant removal calculations will be made using the same model.

All land within Parkmerced property was included in the model. Some of the supporting data extends beyond these boundaries, such as the proposed grading plan. There are also some areas within the property that will not contribute runoff to the proposed LID system—for example, the southeast corner of the site. These areas have all been accounted for, and their runoff excluded from the network.

CAD site plan drawings provided by the project architects SOM were used as a starting point in building the model. The network was laid out in project coordinates, so that background files can be easily overlaid for review or presentation. These drawings also were used to make detailed runoff area calculations at the building level. Updated files were checked against the existing model to review any conflicts.

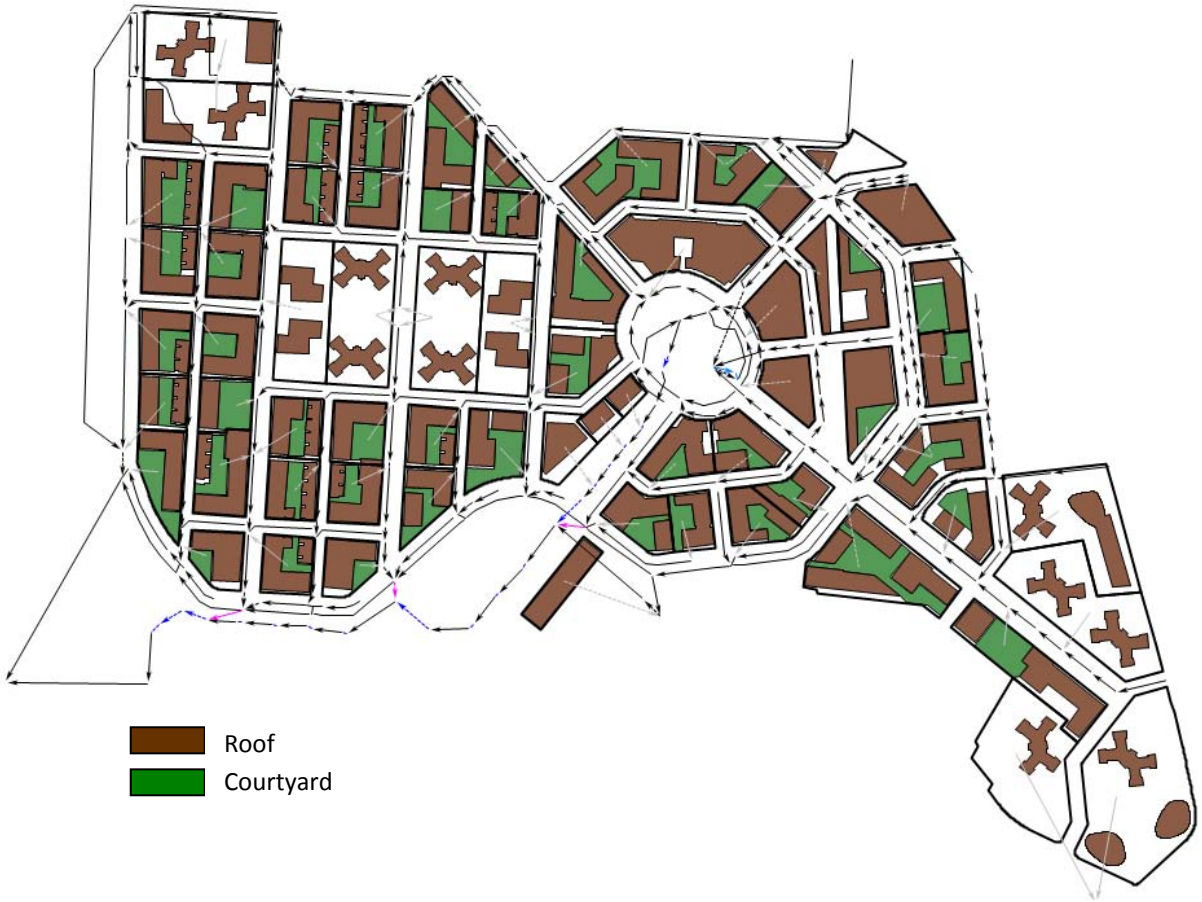
Contributing areas and volumes within the right of way were calculated in a spreadsheet, based on street lengths derived from the CAD files. Detailed cross sections provided by the site civil engineer

BkF were used to model overland flow on the street surface and biofiltration treewells, and their connection to the network of biogutters and swales.

2.2 Model Inputs

The following basic inputs were used in the model:

- 5-minute rainfall intensities for the 5-year 3-hour storm, the 100-year 3-hour storm, the 2-year 24-hour storm, and the typical year.
- Infiltration rates provided by Treadwell & Rollo
- Evapotranspiration rates based on WUCOLSIII (ET_0 Zone 1)
- Evaporation rates based on previous studies by Gus Yates
- Street sections and slopes provided by SOM and BkF
- Land use and areas provided by SOM and Tom Leader Studios



Stormwater Model Network

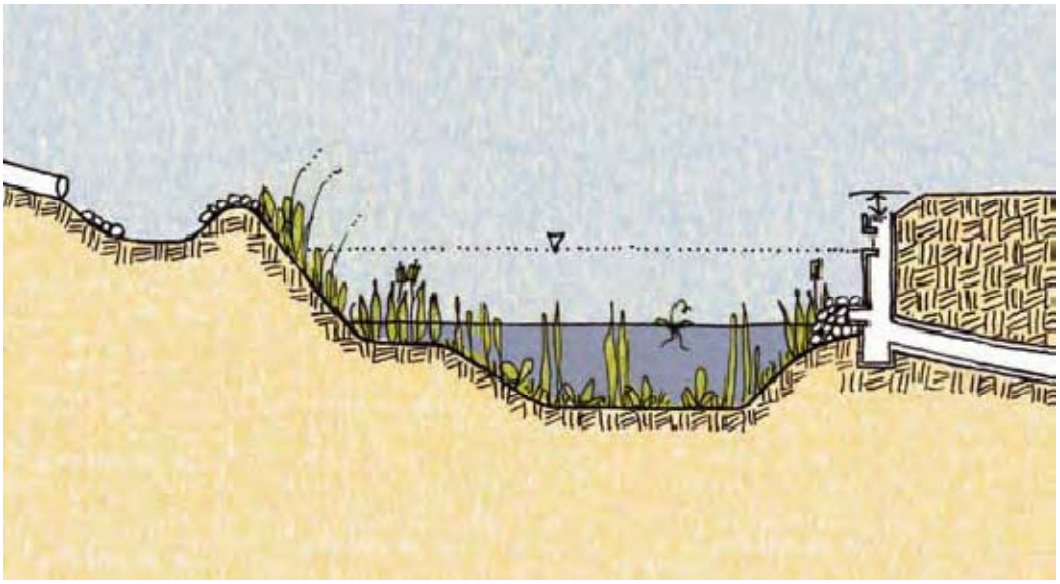

Land Cover as Modeled
Courtyards
PermPavement
Grass
Sidewalk
PermPavers
Planters
Roofs
StreetDirectToSwale
StreetToPermPavmt
SwaleArea
N
Feet
0 200 400 600 800
DRAFT 9-21-2010
HYDROCONSULT ENGINEERS, INC.
PARKMERCED
PRELIMINARY SWMM
MODEL RESULTS
Land Cover as Modeled

3. Description of LID Network

The LID network conveys, treats, and discharges stormwater runoff that would usually drain to the City's combined sewer. The network consists of many different above and below ground elements, which together convey the design rainfall event, as well as provide pollutant removal so the water is of acceptable quality to be discharged to the adjacent Lake Merced. Each element is described in the sections following.

3.1 Ponds and Wetlands

Ponds and wetlands will detain and treat stormwater at several locations. A wet detention pond in the center of Parkmerced provides a year-round water feature. Terminal pools at the northwest and southwest corners of the site create treatment wetlands that provides final polishing before discharging to Lake Merced.



Typical Wetpond Section (source: SF Stormwater Design Guidelines)

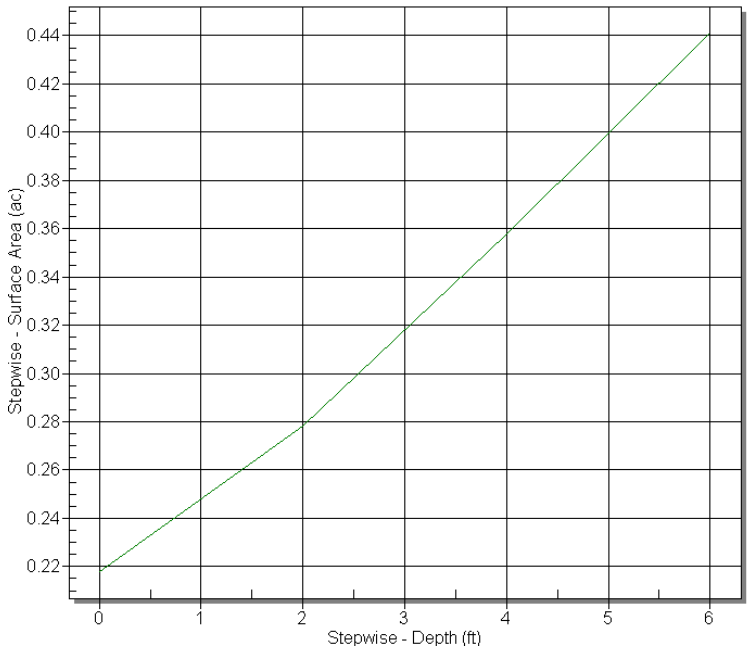
Each pond was modeled using a storage node. The ponds are expected to become lined with silt removed by the treatment process, so infiltration was neglected. Each storage node has a stage-volume calculation, which is used to keep track of the detention volume. In future water quality studies, the ponds may be converted to BMP nodes, to simulate pollutant removal rates. Each pond has a weir and orifice. The weir is designed to safely pass the design storm flow, while the orifice is sized to drain the pond within the recommended draw down time.

While the detailed configuration of each pond was not modeled, there should be a provision for sedimentation accumulation at points that can be easily accessed by maintenance equipment. For example, a forebay is often used at the head end of a constructed wetland as shown in the section above, so that most of the deposited sediment accumulates in one place and can be easily removed when it significantly reduces the volume of the pond.

Locations of Wetlands and Wet Ponds

3.1.1. *Juan Bautista Circle Wetpond/Wetland*

This pond may be coupled with a cistern to provide underground storage. Sized as a wet pond to detain runoff less than the 5-year storm, it would cover approximately 0.44 acres when full in the winter, with a permanent pool of approximately 0.36 acres through the summer. The average pond depth will be 4 feet and the maximum pond depth will be 6 feet. The pond is designed to draw down to the permanent pool in 48 hours and will overflow to the stream.



Assumed Stage-Area relationship in Juan Bautista Circle Wet Pond

3.1.2. *Terminal Wetponds/Wetlands in the Southwestern corner*

These ponds will be sized to add additional nutrient removal, as necessary, as a final polishing to the runoff flowing to Lake Merced. A constructed wetland functions similarly to a wet pond, but is typically shallower and has more vegetation which increases the rate of nutrient removal.

3.1.3. *Terminal Wetponds/Wetlands in the Northwestern corner*

These ponds will function similarly to the southwestern terminal ponds. They will provide the final treatment to all runoff from the northern 1/3 of the site, before it reaches Lake Merced. These ponds will or share an outfall with the southwestern terminal ponds. The various outfall options are listed in section 4 of this TM.

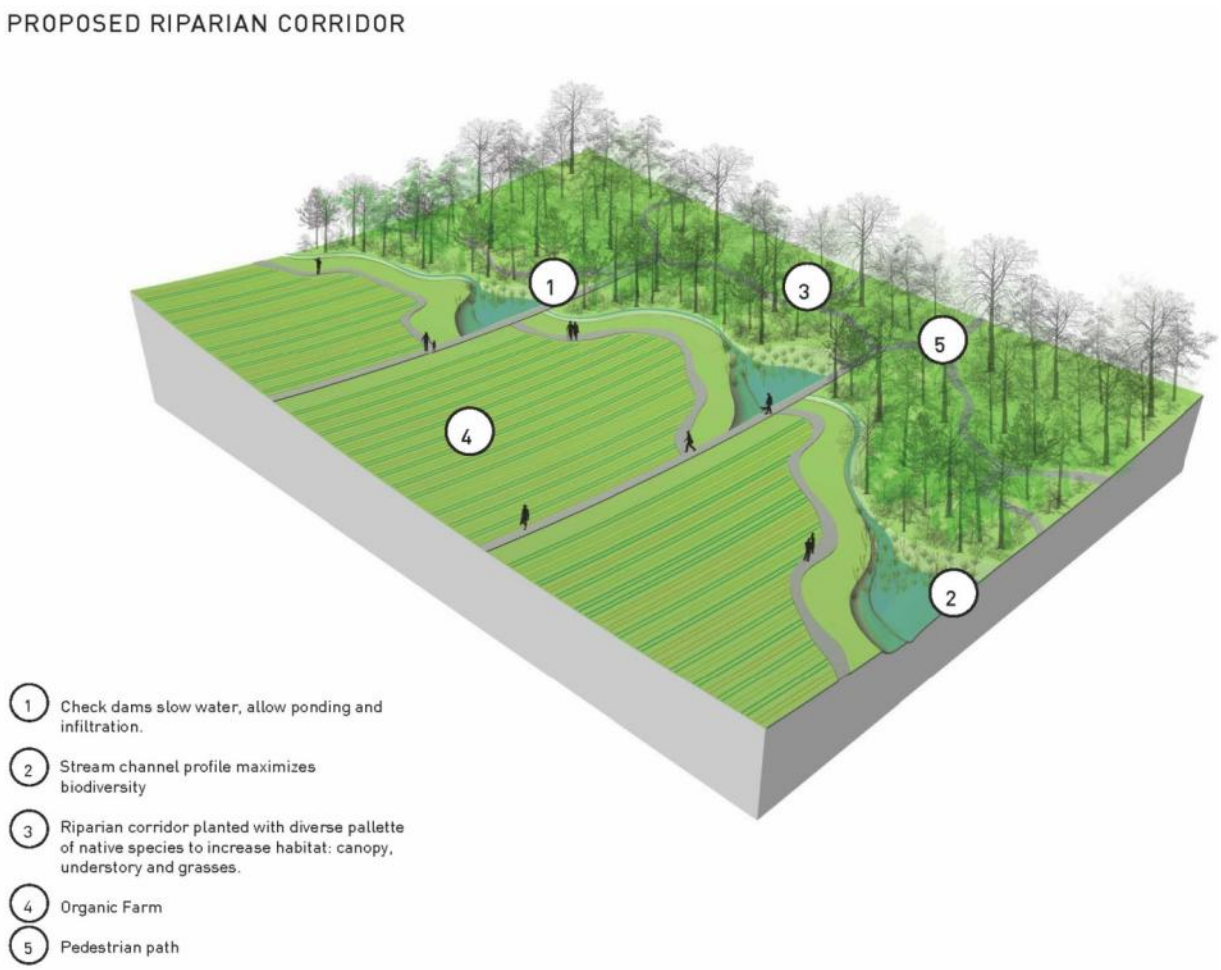
3.2 Stream/Riparian Corridor

A stream connects the central detention/treatment pond to the terminal ponds. It will have a series of cascading pools held back by low weirs, as it winds its way through a riparian corridor and organic farm.

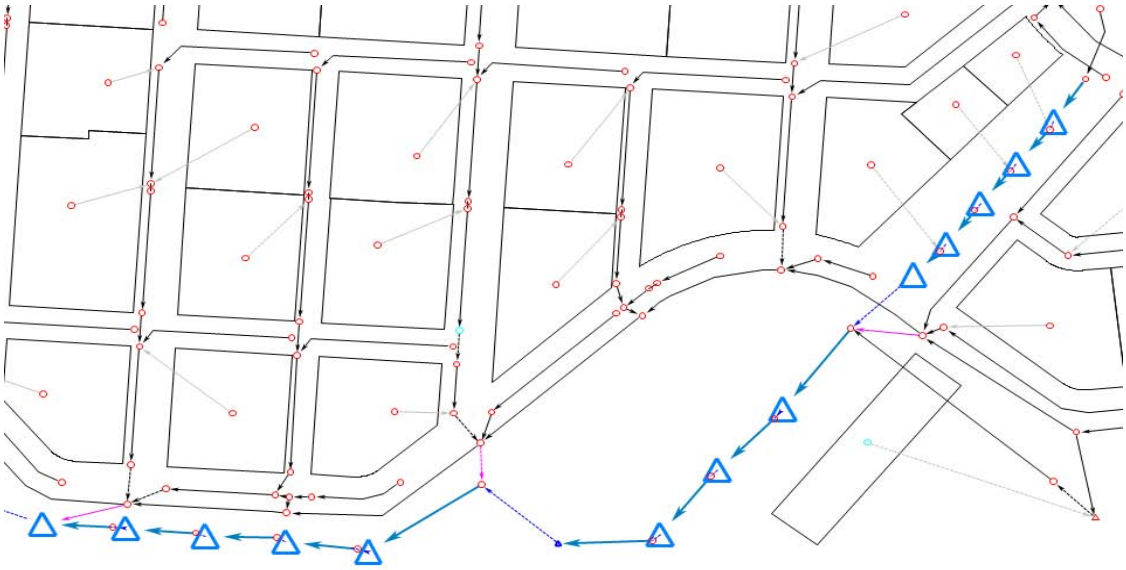
A schematic of the riparian corridor is shown in the figure on the following page. The stream in the riparian corridor is approximately 2,000 feet long and will convey overflow from the Juan Bautista pond and from the swales and biogutters in the Hedgerow Streets, Alley Ways and Gonzalez Drive.

The pond, swales, and biogutters will serve as pre-treatment for the stream by removing sediment. The stream will include check dams to force ponding at approximately 12 locations which will provide storage for stormwater runoff. Each ponded area will cover approximately 900 square feet and pollutant removal will occur along the entire length of the stream. The riparian corridor will not be supplemented with additional fresh water during the summer months.

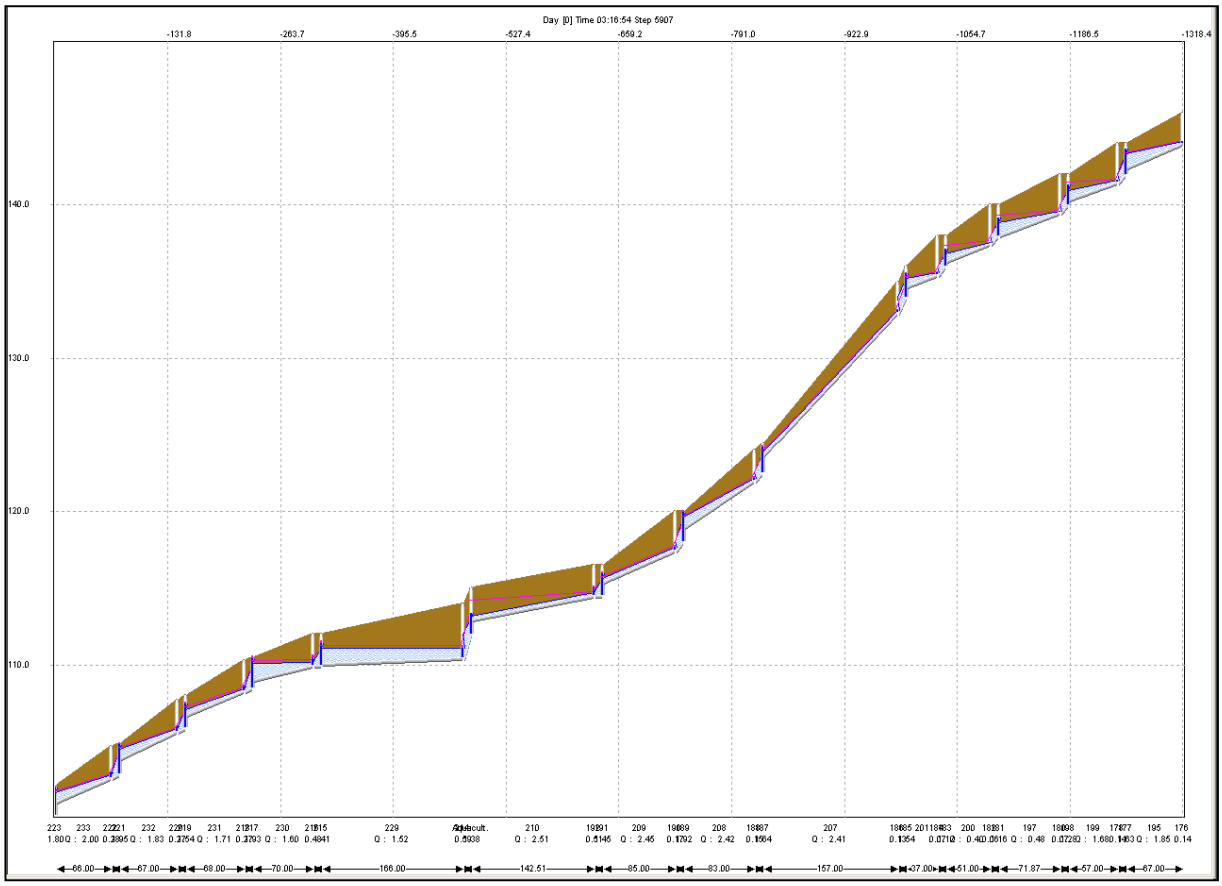
The stream was modeled as a shallow channel. At the end of each section, the triangular storage nodes represent the cascading pools. The storage nodes have stage-volume calculation, and are used to keep track of the detention volume. Each pool has an overflow weir connected to the downstream section of stream, and a small orifice that drains the pool to provide live storage volume for the next storm. Because of the proximity of the stream to the steep slope along the south of the property, infiltration is not proposed for the stream.



Source: Tom Leader Studios



Locations of Stream and Cascading Ponds in Model



Elevation Profile along Stream section above (Juan Bautista Circle to Terminal Ponds)

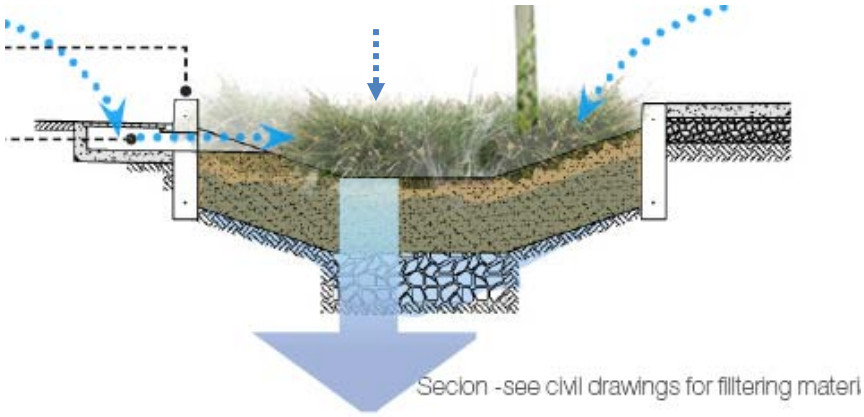
3.3 Bioswales

There will be bioswales in two general locations—the Hedgerow streets and Gonzalez Drive. There may also be a swale along Brotherhood Way from Chumasero Drive to Lake Merced Boulevard, although this is not on Parkmerced property.

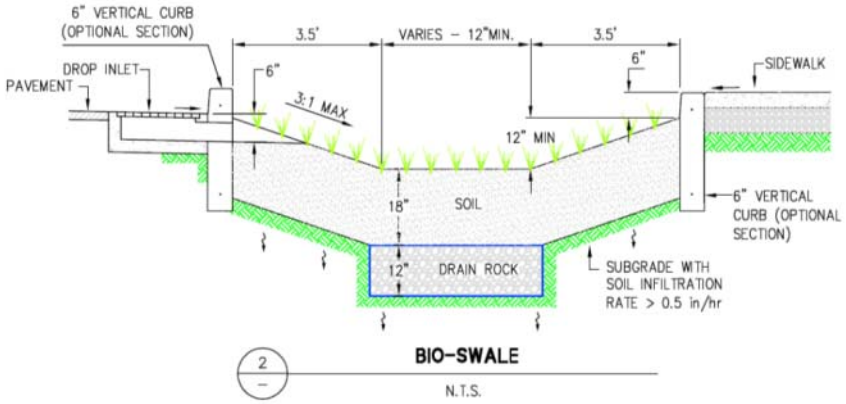
All of the bioswales will be unlined, encouraging infiltration. The bioswales are not designed to provide storage. Rather, they convey, treat, and infiltrate flows.

The swales on each block will be connected to the next block by underground culverts. The details of these culverts are yet to be determined, but the swale and culvert combination is sized to convey the 5-year design storm along the entire street. At the end of the street, the swales connect to the stream, which ultimately directs flows to the terminal ponds and Lake Merced.

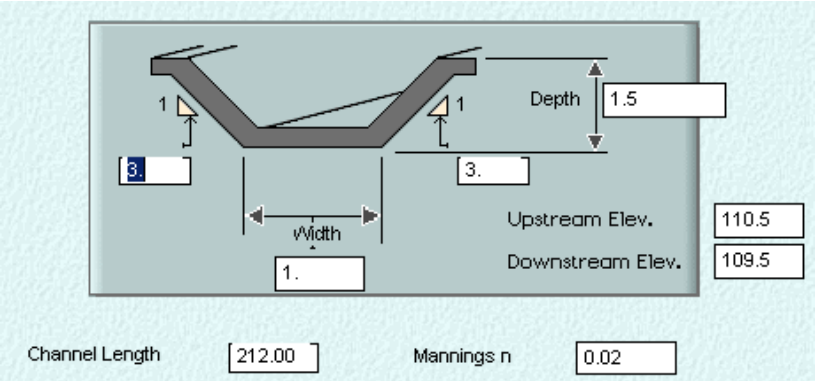
Bioswales are vegetated channels used for collection ,infiltration and conveyance. Each proposed bioswale was modeled as a trapezoidal open channel, with exact dimensions provided by the site civil engineer. The swales take the place of storm sewers, and were sized to convey the standard municipal design storm (5-year, 3-hour). Infiltration rates were calculated based on the plan area of each swale.



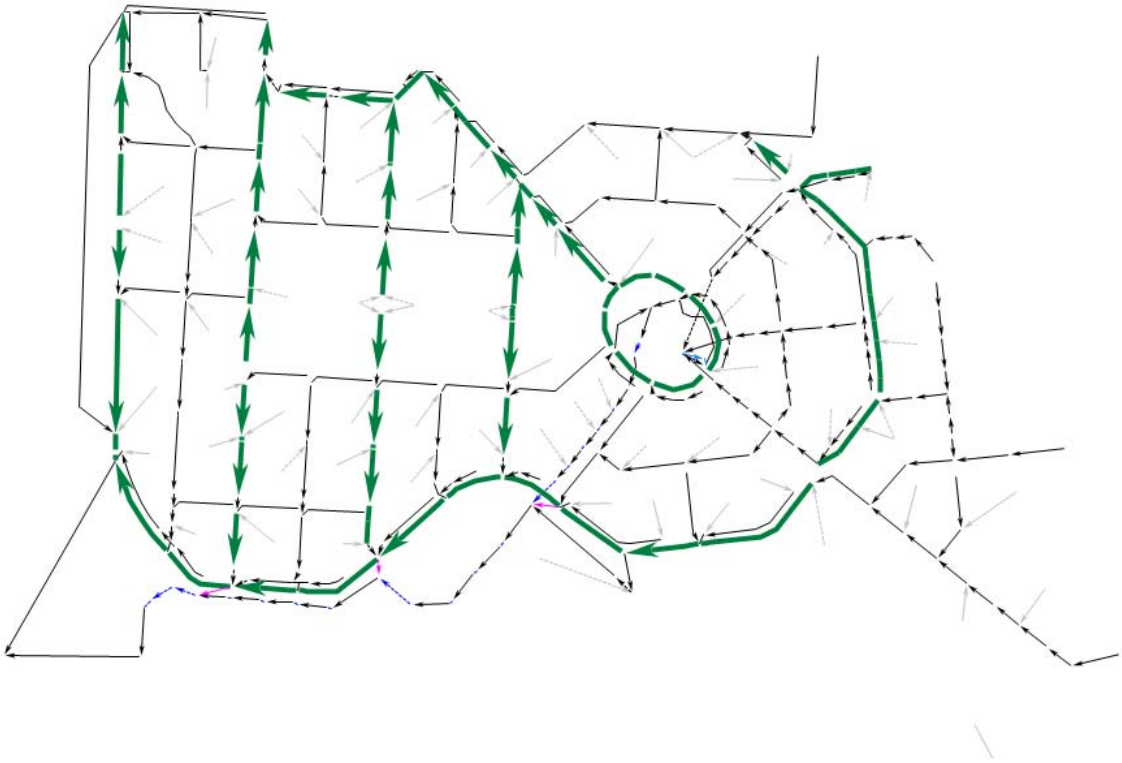
Bioswale Schematic (source: SOM)



Bioswale Section (source: BkF, 2-1-2010)



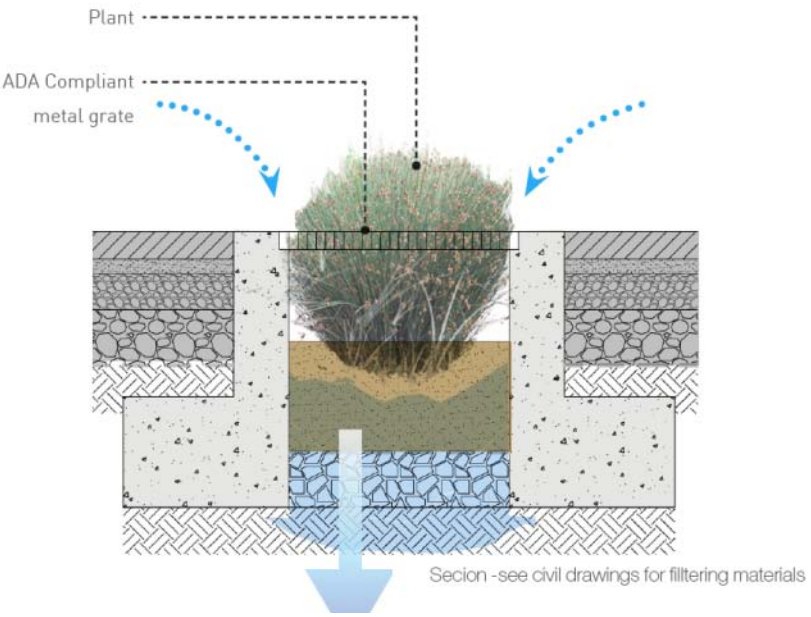
Bioswale Section as Modeled



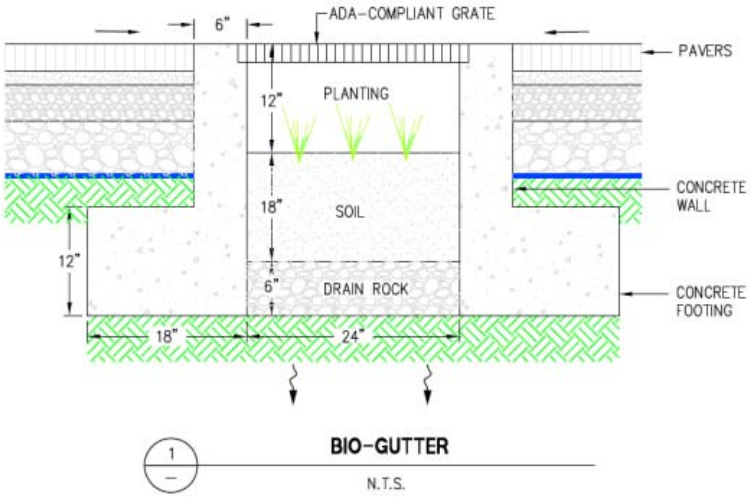
Locations of Bioswales in Model

3.4 Biogutters

Biogutters are small vegetated channels that collect and infiltrate runoff from smaller catchments and will be used on narrower streets, such as the Alley Ways, where space for a swale is not available. A thick layer of bioretention soil mix increases the infiltration rate, and provides some treatment. The biogutters are also sized to replace the typically required storm sewers.

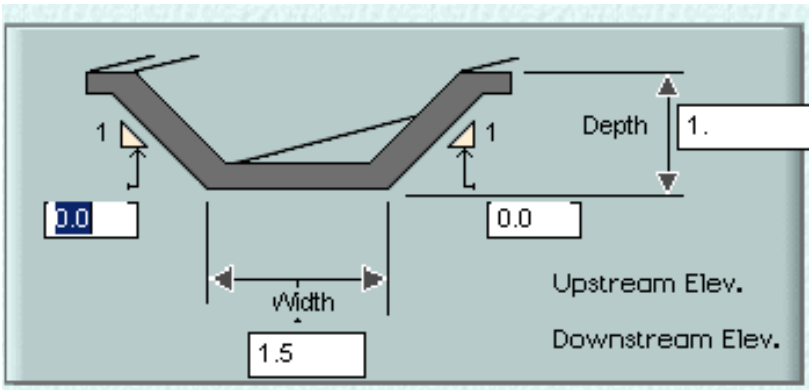


Biogutter Schematic (Source: SOM)



Biogutter Section (Source: BKF, 2-1-2010)

Each biogutter is modeled as a rectangular open channel link. Weighted infiltration rates were calculated and applied to the runoff node loading each biogutter.

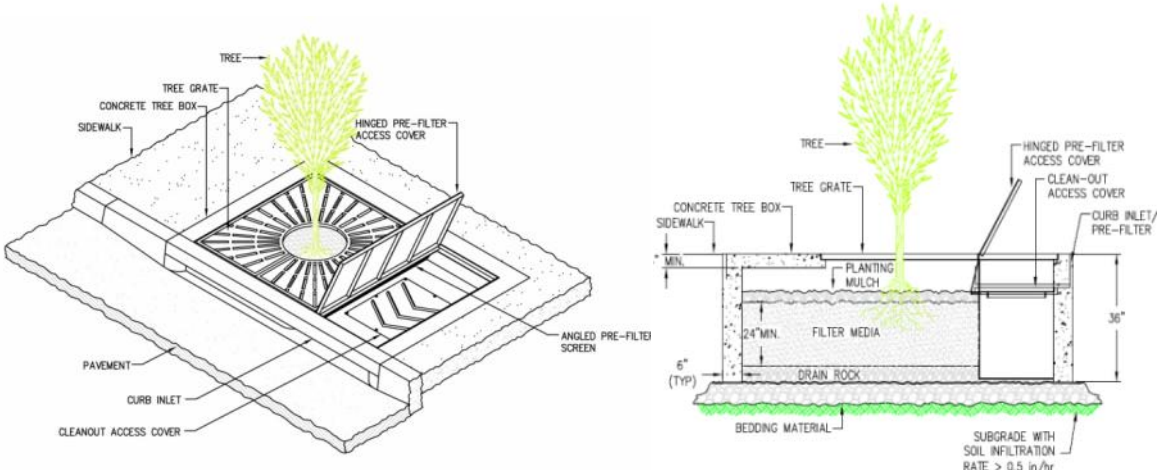


Biogutter Section as modeled

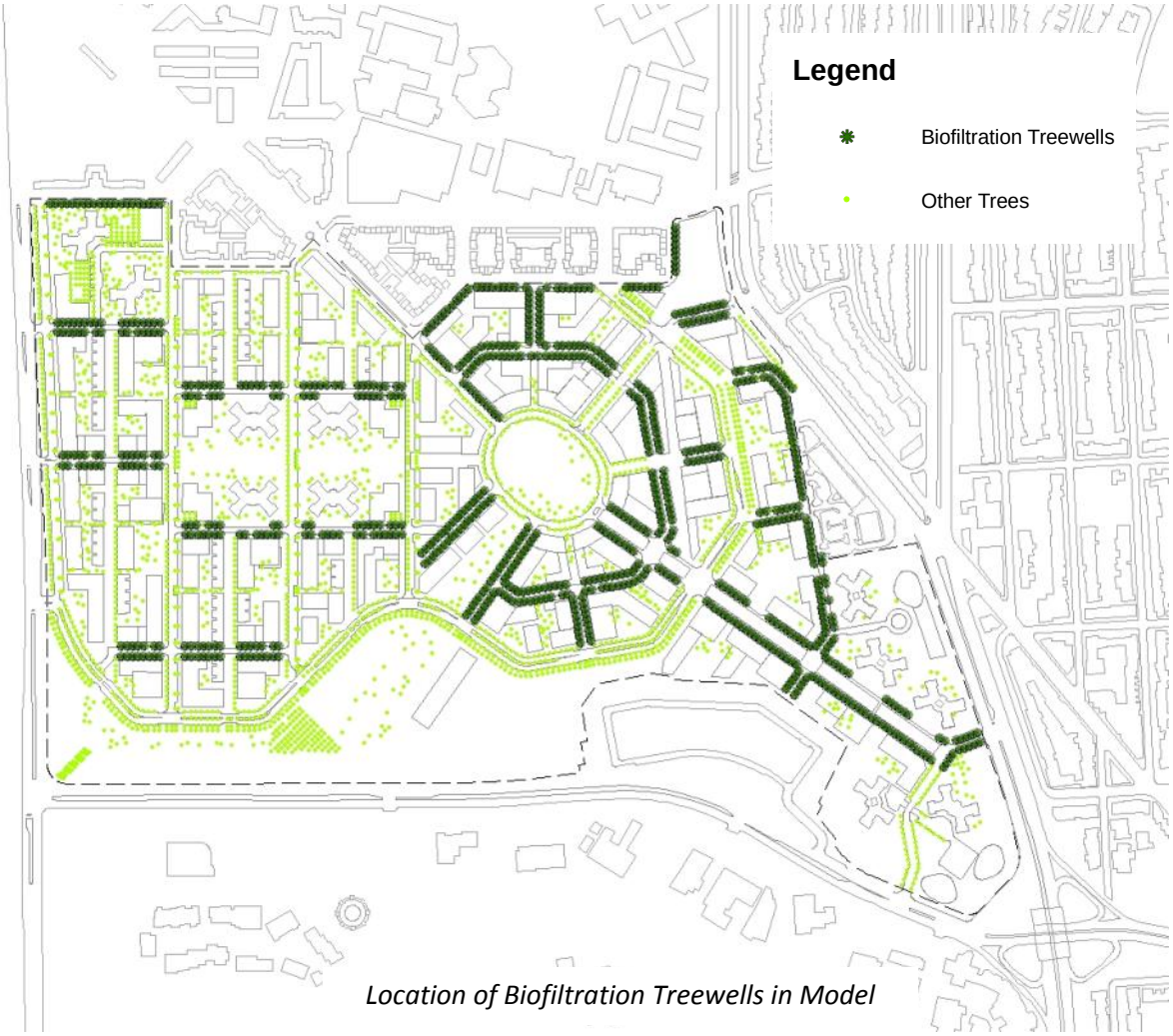
Locations of Biogutters in Model

3.5 Biofiltration Treewells

Treewells are provided to temporarily store and infiltrate runoff. A weighted infiltration rate was developed for a typical treewell. Then the number of treewells within the contributing area of each runoff node was counted using GIS software. This count was then used to develop a separate subcatchment in each runoff node, representing only the treewells.



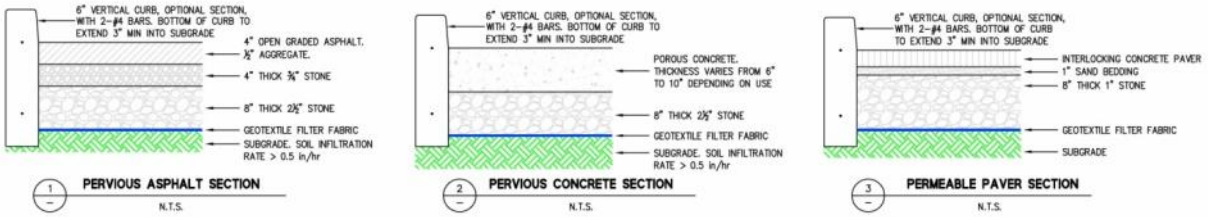
Biofiltration Treewell Schematic (Source: BKF, 11-25-09)



Location of Biofiltration Treewells in Model

3.6 Permeable Pavements

Permeable paving will be installed in pedestrian walkways, parking lanes, and other low-traffic areas to allow water to infiltrate at these hardscape areas. The permeable paving may take the form of permeable asphalt, permeable concrete, or permeable pavers. As modeled, the permeable surfaces were assigned the infiltration rate of the underlying soils.



Permeable Pavement Options (Source: BKF, 11-25-09)

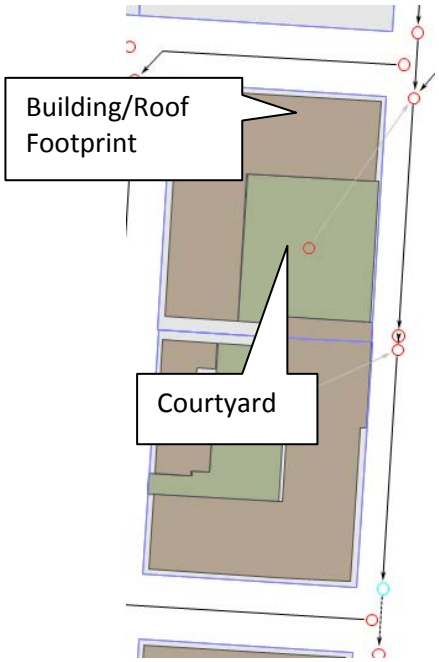
3.7 Eco-Roofs in Courtyards

Most blocks in Parkmerced will have a central courtyard, surrounded by buildings. The courtyards will be located on top of parking structures, and function as eco-roofs. They will collect runoff from adjacent roofs, providing temporary storage in the soil layer, and removing pollutants as excess flows pass over the vegetated areas towards the bioswales and biogutters. The Parkmerced Design Standards + Guidelines outline a typical courtyard layout, including a stream and pond, as shown in the figure below.

Typical Courtyard Layout (Source: SOM)

Across all of Parkmerced, a total of 25.7 acres of roof will drain to 13.3 acres of courtyards. 15.5 acres of roof will drain directly to the swale network, on blocks where there are no courtyards. Each

courtyard eco-roof was modeled as a runoff node, with several separate subcatchments to represent the roof runoff, the pervious courtyard surfaces and the impervious courtyard surfaces. Runoff redirection was used to model the effect of roof runoff flowing onto the courtyard. Each courtyard could have a small pond or cistern, represented in the model with a storage node.

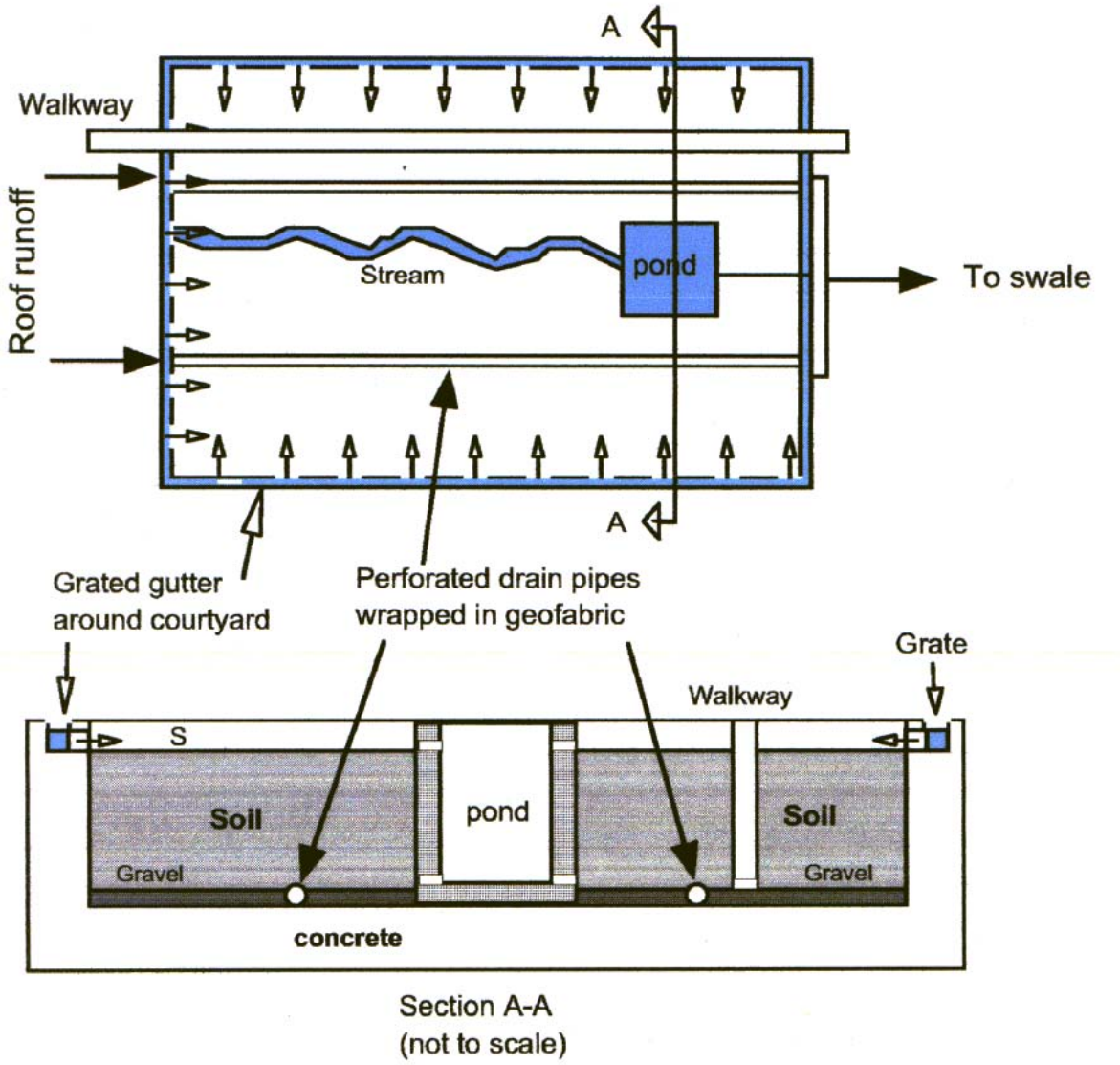


Typical Courtyard layout

Locations of Courtyards

The courtyards will be built on a 3 foot thick layer of soil, and the average courtyard covers about 12,000 square feet. With a typical available pore space of 10%, the soil layer in an average courtyard will provide about 3600 cubic feet of storage. A system of underdrains will be needed, as shown in the figure on the following page. The underdrains will prevent the soil from becoming waterlogged, as well as draw down the storage volume so it is available for subsequent storms.

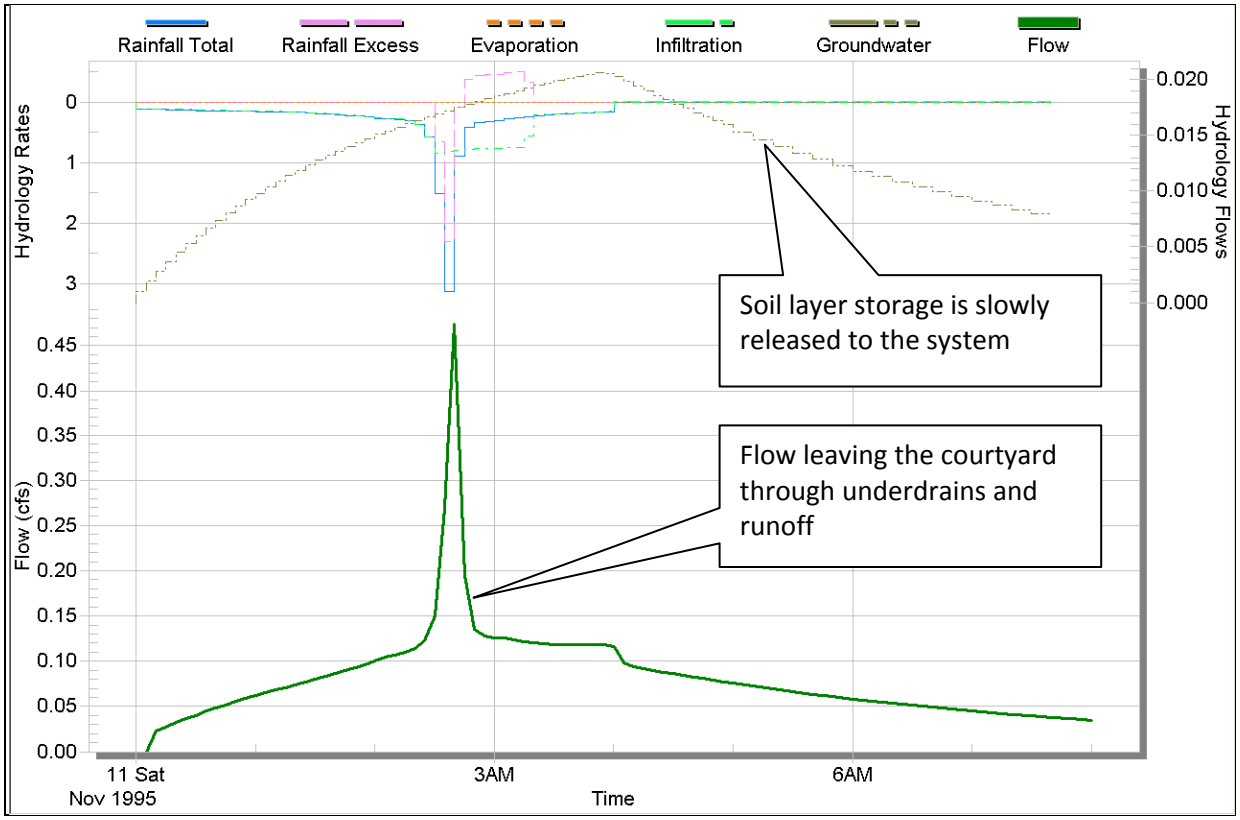
Additional temporary stormwater storage will be provided on the courtyard surface in the small ponds and streams. These features will provide additional storage on the order of 500 cubic feet for a typical courtyard. The ponds must be designed such that they drain in 48 hours to be ready for the next storm. Roof runoff must be added to the courtyards at distributed points for better distribution over the soil.



Conceptual Courtyard Schematic

The combined runoff from the roofs and courtyards will infiltrate into the soil layer, but since the courtyards are on top of parking garages the flow does not leave the system through deep percolation. The groundwater option in the runoff node was used to keep track of this flow.

Normally, in the groundwater data, runoff infiltrates to a user defined groundwater table, and then percolates elsewhere based on hydraulic conductivity settings. Groundwater can be "lost" from the system, or a specific node can be defined as the outlet. For the eco-roofs an outlet node was defined, so that the groundwater is slowly released back to the system as though through under-drains.



Courtyard model results, illustrating assumed soil-storage detention behavior

3.8 Cisterns

There will potentially be two cisterns collecting stormwater for reuse. Cisterns will be used to supply irrigation water in areas where people may come in contact with the water, including the playing fields and farm. Other irrigated areas will use recycled water.

The first cistern, with a volume of 100,000 gallons, was modeled underground next to the pond in Juan Bautista Circle. This cistern is sized to provide make-up water to the pond during the summer months, so that it does not dry out from evaporation and leakage through the pond liner.

The second cistern, with a volume of between 0.55 and 1.5 million gallons, will supply irrigation water to either the playing fields only, or both the playing fields and the farm. This cistern was modeled underneath part of the playing field. At this location, the cistern can have considerable depth, and still allow irrigation of the farm area by gravity. It is large enough that a cast-in-place concrete vault may be cost effective. Alternatively, there may be space for a subsurface plastic chamber system, such as the StormTech detention/retention system.

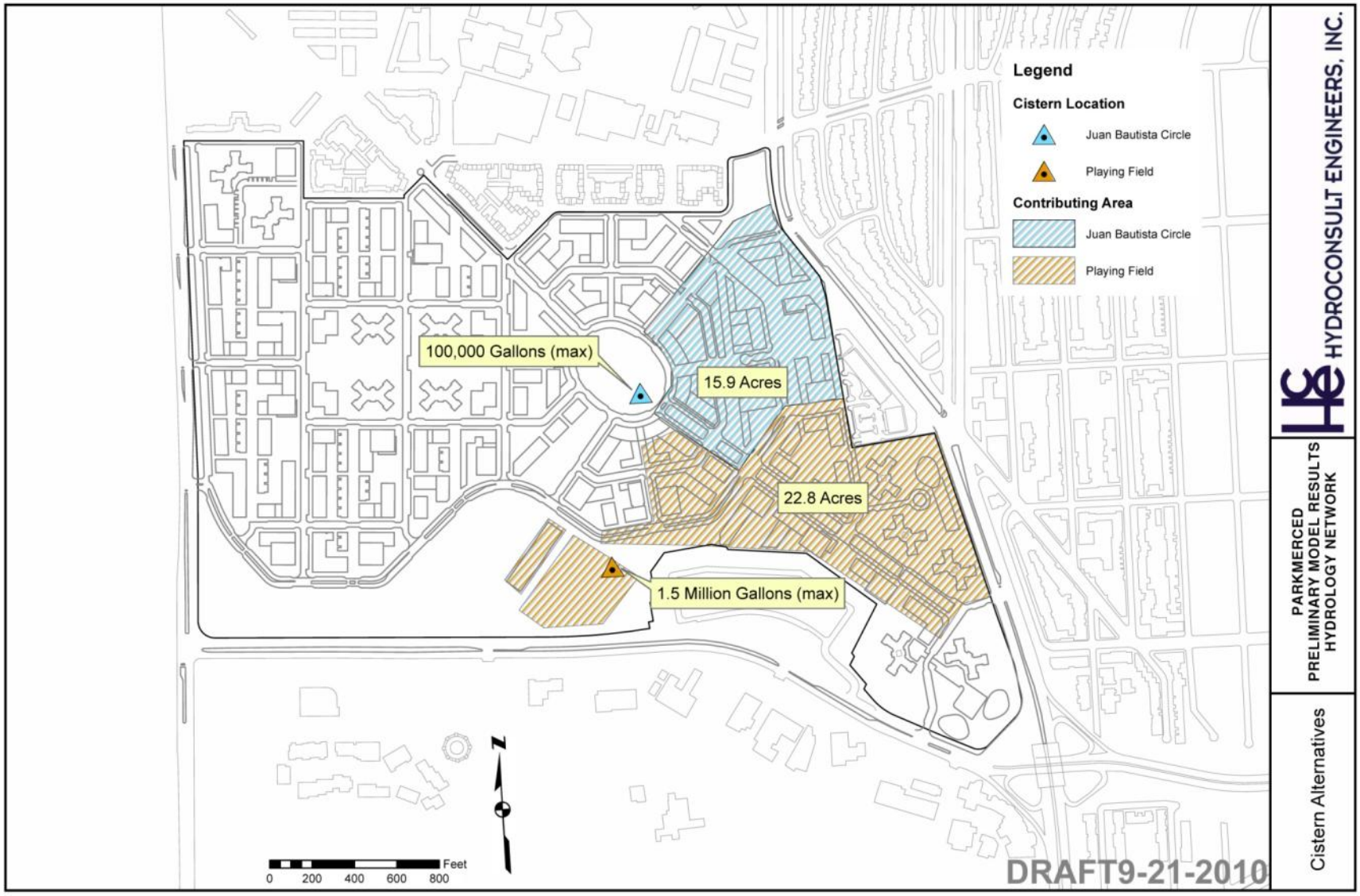
StormTech Subsurface Chambers

On top of this cistern, the playing field turf could be planted in an engineered sand layer. This layer provides additional stormwater storage, as well as allowing high efficiency sub-surface irrigation. The unique drainage design eliminates surface runoff and the need for a crowned field.

The sand layer developed by Rehbein Environmental Solutions, or similar product, has been used in a number of playing field applications. The trays in the figure below are filled with a 2 inch layer of fine gravel which, along with the semicircular reservoir, stores and drains water. The gravel and reservoir are then covered with 11 inches of washed sand, in which the turf is planted. The sand layer allows the grass to self-water via capillary action. This general concept is often used in golf courses, and results in deep-rooted, uniform grass which should be well suited to the playing field. In large applications like this field, an EPDM liner may be used instead of the trays

Rehbein EPIC Tray System

The size, location, and design of the cisterns are not final, pending a value engineering study to determine the most cost effective approach for stormwater storage. The two potential locations, and their corresponding contributing areas are shown in the figure on the following page.


Legend
Cistern Location
Juan Bautista Circle
Playing Field
Contributing Area
Juan Bautista Circle
Playing Field
100,000 Gallons (max)
15.9 Acres
22.8 Acres
1.5 Million Gallons (max)
N
0 200 400 600 800
Feet
DRAFT9-21-2010
HYDROCONSULT ENGINEERS, INC.
PARKMERCED
PRELIMINARY MODEL RESULTS
HYDROLOGY NETWORK
Cistern Alternatives

4. Outfall Options

The following four options are being considered for discharge of stormwater runoff from the site to Lake Merced. As described previously, approximately 95% of the annual average runoff will be infiltrated or re-used onsite with approximately 5%, or roughly 3.6 million gallons per year on average flowing directly to Lake Merced. Based on the model, this flow can be accommodated by a 36" diameter pipe connecting to the existing 48" diameter culvert. Further studies will examine the potential impact of this inflow to lake water quality. Figures depicting each option are shown on the following pages.

Pending the results of future water quality modeling, it may be necessary to provide additional treatment under options 1-3. This treatment would likely be provided by a subsurface organic media filter at the upstream end of the culvert discharging to Lake Merced.

Media filters have adsorptive and ion-exchange capabilities and are effective at removing dissolved pollutants and organics. The media will be selected to target specific pollutant removal (e.g., nutrients of concern to Lake Merced). The media filters will be a below-ground unit set in a concrete vault at least 1.5 feet deep.

Option 1—In this option, stormwater would flow from Parkmerced to Lake Merced via the existing 30" diameter corrugated iron pipe culvert which originates around the location of the abandoned pump station at Vidal Drive and Garces Drive.

Option 2—In this option, stormwater would flow from Parkmerced in a new culvert underneath Brotherhood Way to a depression just south of Brotherhood Way, east of Lake Merced Boulevard. This depression has historically been a pond (see Appendix A, drawing #3), and appears to have been connected to Lake Merced before construction of Lake Merced Boulevard. The depression would be allowed to fill, with overflow to the Lake via the existing 48" corrugated metal pipe culvert.

Option 3—This option is similar to Option 2 but with flows bypassing the depression and flowing directly to the existing 48" corrugated metal pipe culvert. A new culvert would pass beneath Brotherhood Way to connect to the existing culvert.

Option 4—In this option, all stormwater runoff up to the 5-year storm would be detained on site. The surface storage would remain the same as the previous options with the addition of stormwater drainage wells, the locations of which have not yet been determined. Siting of the stormwater drainage wells would consider proximity to drinking water wells and provide adequate depth to the drinking water aquifer.

Option 5—In this option, excess runoff from Parkmerced from up to the 5year storm would be discharged directly to the existing combined sewer pipes that flow to the Oceanside Water Pollution Control Plant.

Options 2 and 3 were modeled as described in the following section. Option 1 was not modeled because it is unlikely the existing pipe will be located. Options 4 and 5 are considered project variants and were not modeled.

4.1 Terminal Pipe as Modeled (Outfall Options 2 and 3)

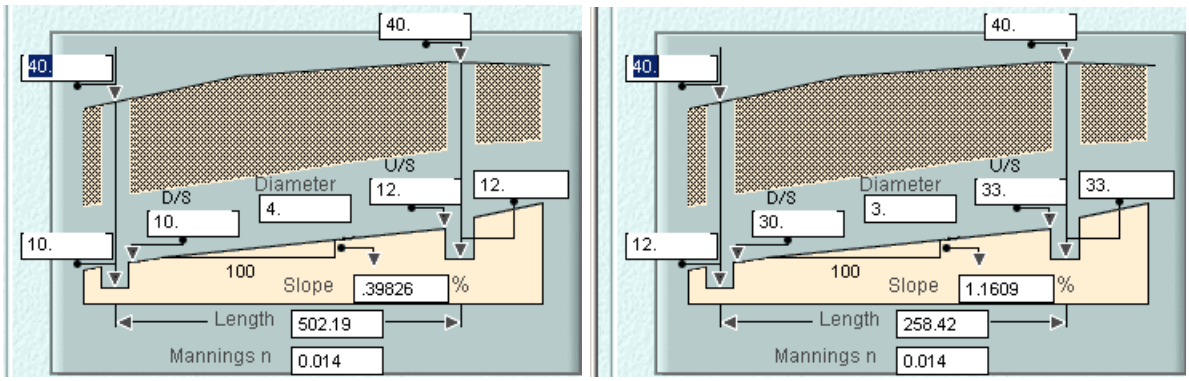
An existing 48" CMP (Corrugated Metal Pipe) culvert under Lake Merced Blvd was modeled as a starting point to size the required outlet pipe for Parkmerced. This culvert starts on the East side of the road in a deep overgrown depression South of Brotherhood way. It leads under the road to Lake Merced according to available documents below, although this should be field verified.

A fixed backwater outfall control was assumed at 14.9 feet, City Datum. This control elevation was selected after reviewing "Conceptualization of the Lake-Aquifer System – Westside Ground-Water Basin", a hydro-geological report on the history of Lake Merced and the surrounding groundwater basin.

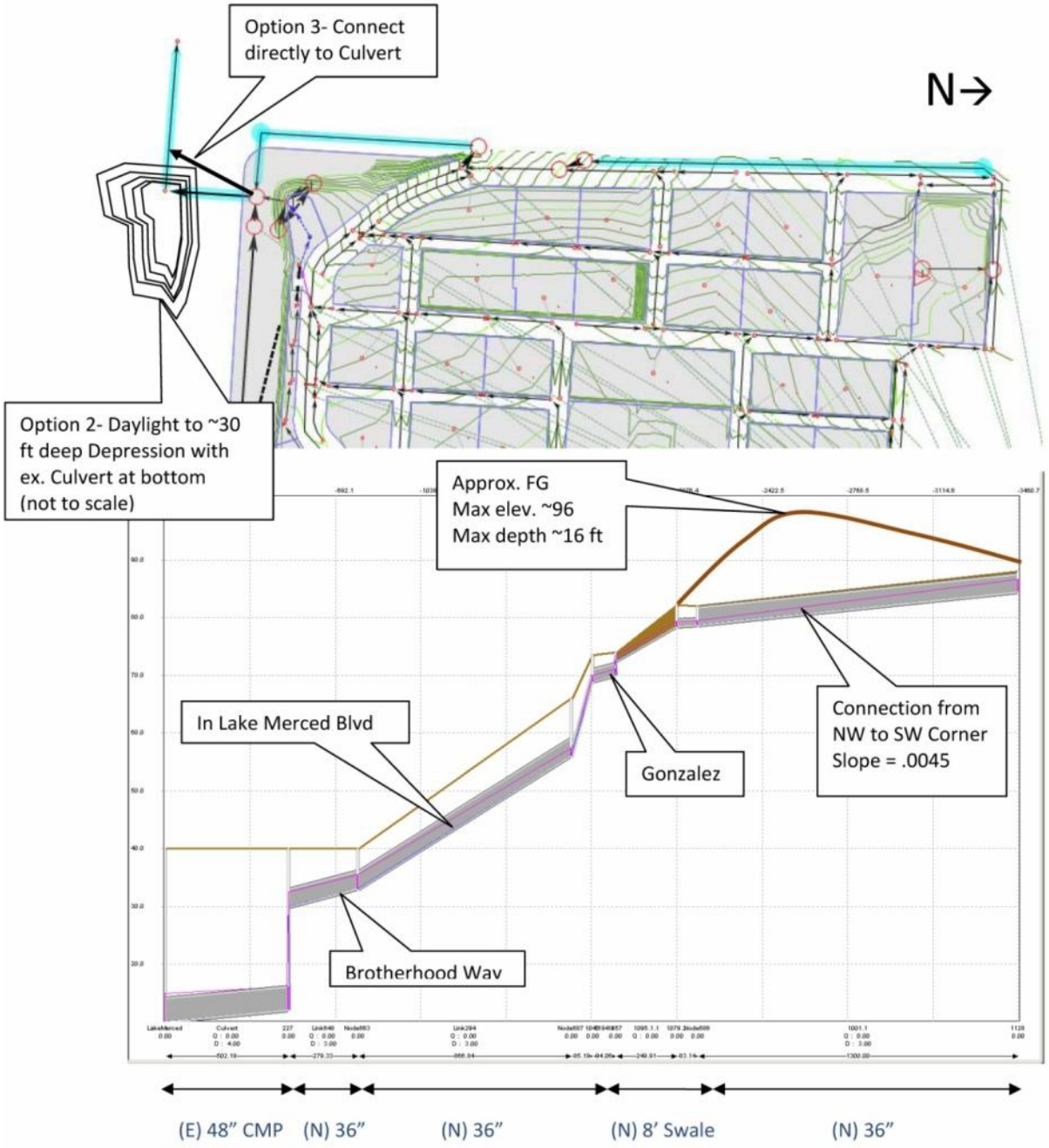
According to this report, the highest recorded elevation was 23.5 feet above mean sea level, when the lake last overflowed to the ocean. This level was converted to CCSF datum per BOE file LL-15330.2, to arrive at the control elevation of 14.9 feet. This elevation submerges the downstream end of the culvert completely.

The culvert was modified during construction of a sewer tunnel, introducing a sump where a section of the culvert was lowered to allow the tunnel to cross over it. This change was represented in the model with an entrance loss coefficient.

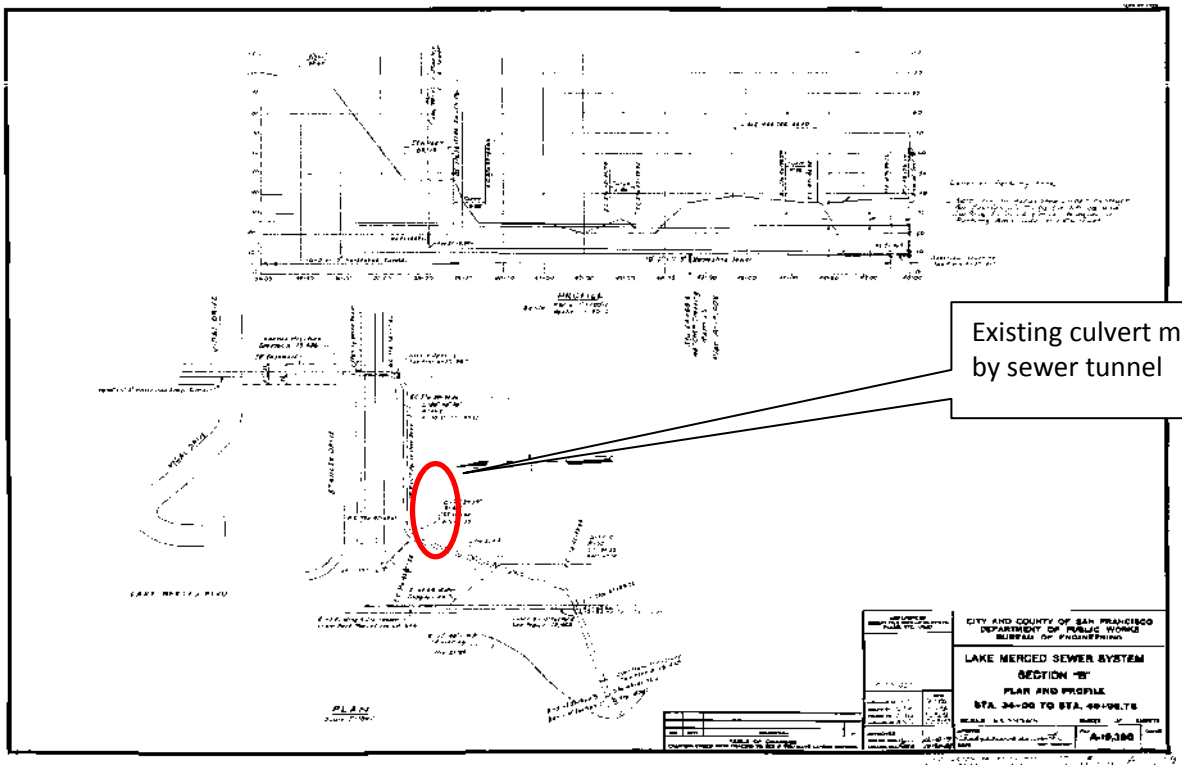
A proposed culvert of 36" was modeled to cross Brotherhood Way and connect Parkmerced to the above mentioned 48" CMP culvert. Ground elevations were assumed to be 40 ft, which is the elevation at the intersection. There is a large elevation drop between Parkmerced and the 48" culvert. If there is a problem with the exact elevations assumed, the large elevation difference should allow a work-around to be easily found.

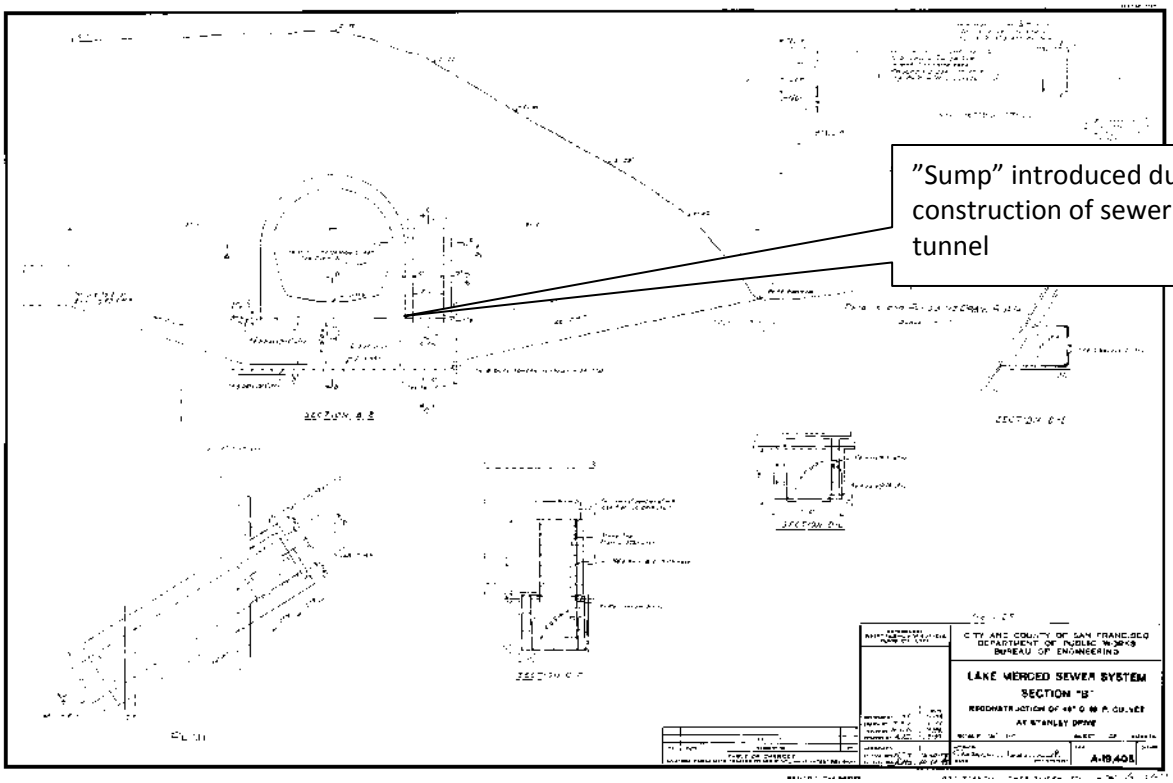


Pipe Details: Existing 48" CMP (left), Proposed 36" culvert (right)



Profiles: Outfall Options 2 and 3

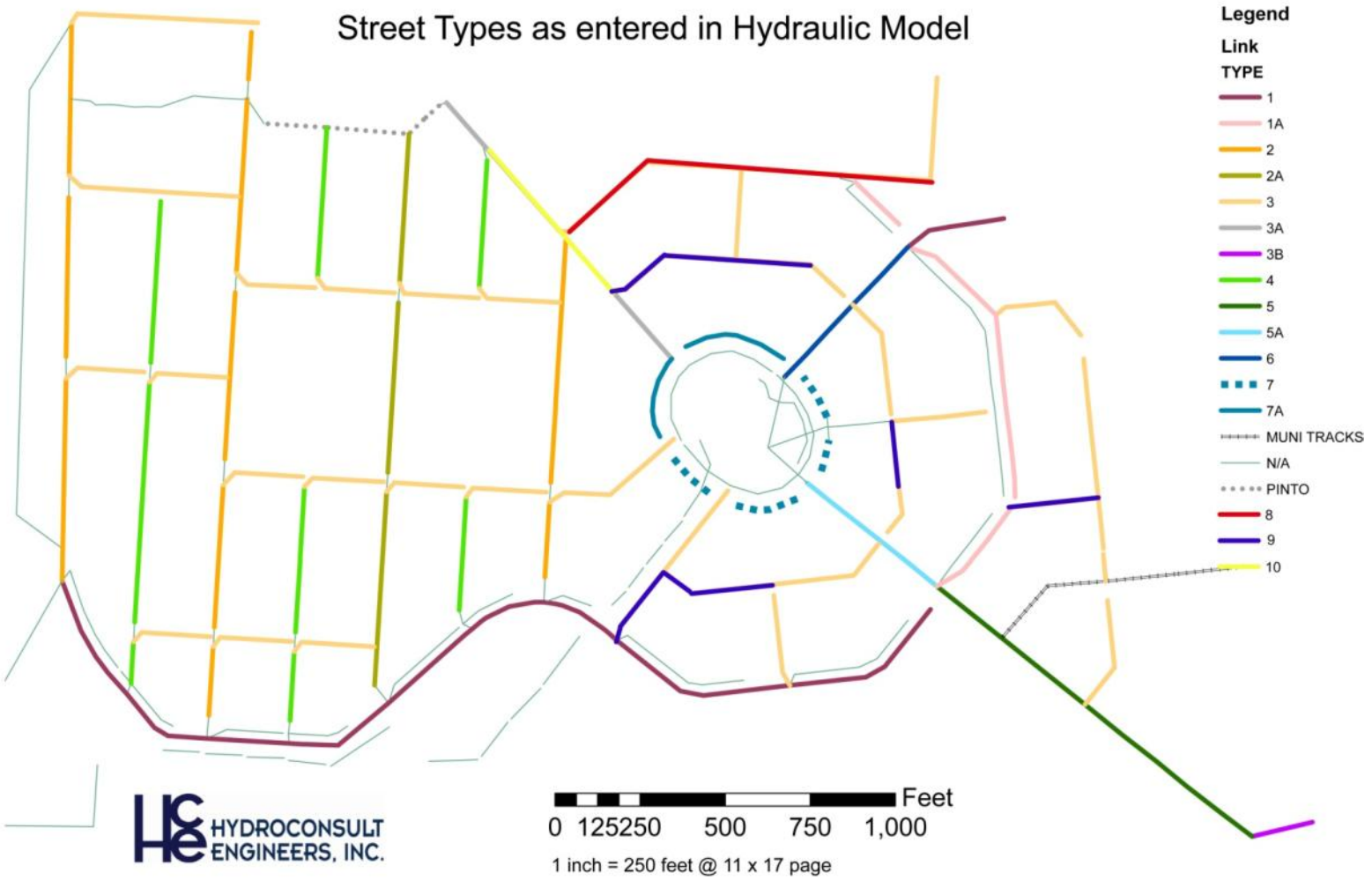




As-built Drawings of Terminal Pipe

5. Street Typologies

Cross-sections for each street type are provided below, with an explanation of how each street type was modeled. A map showing the location of each street type is shown below.



5.1 Gonzalez Drive (Type 1 and 1a)

The bioswale in the center of Gonzalez Drive will convey and treat runoff collected from the road surface as well as adjacent buildings. Sidewalk runoff will be captured and infiltrated by permeable pavement located in the parking lane, and will overflow to the bioswale. The bioswale will be 11 feet wide sides sloped 3:1, and a 12" bottom width.

A second bioswale will be located on the South side of Gonzalez Drive, with dimensions as shown in the cross section below. This swale is located at the crown of the street, so it will not receive any runoff from the street directly. However, at various points along Gonzalez Drive, it will collect flows from other swales and pipes, including the swale in the center median of Gonzalez. It will have a net width of 8 feet, 3:1 side slopes and will be 12" deep.

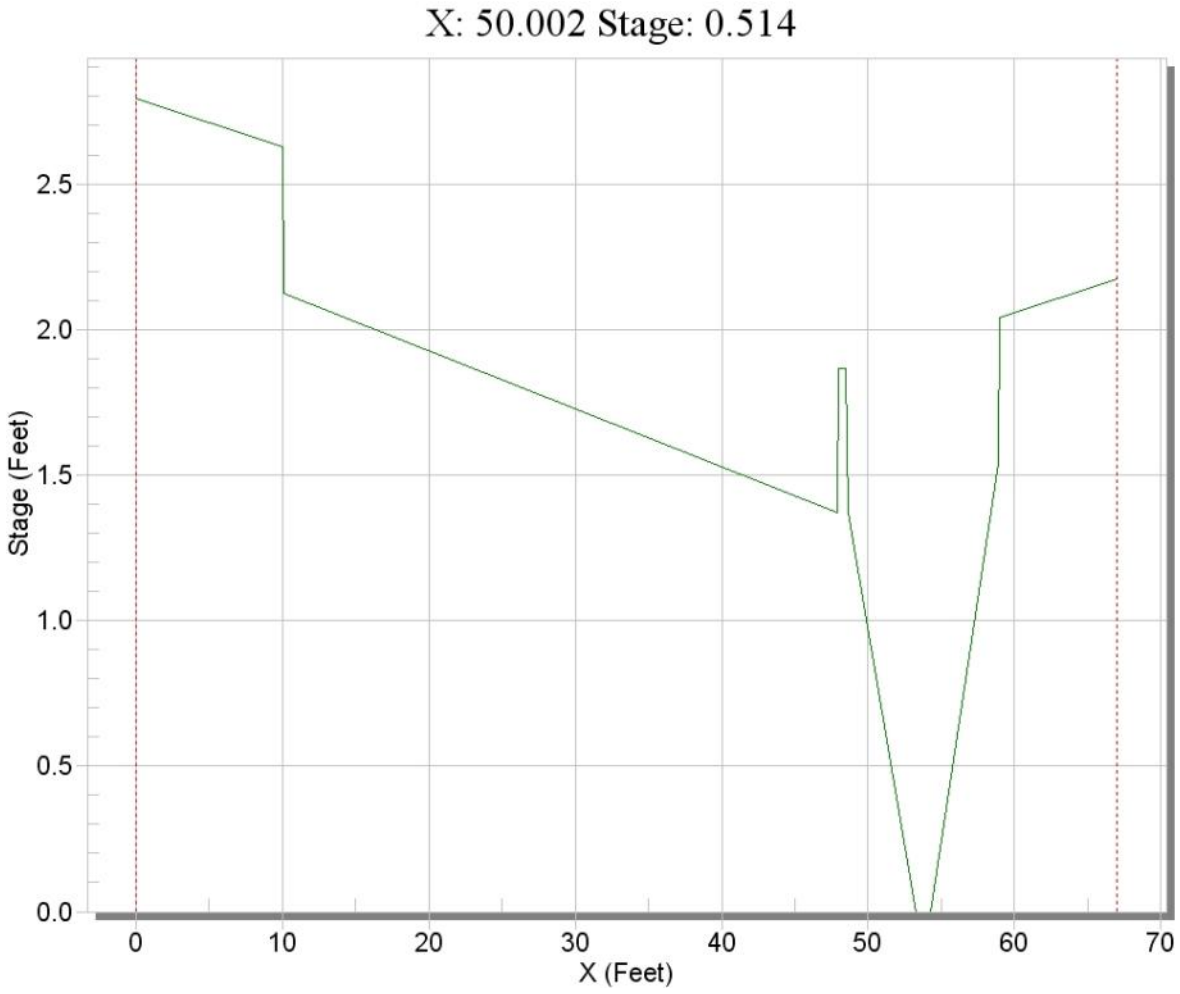
At several other points, the swale on the south side will overflow or discharge to other features. First, it will discharge to the cistern located under the playing field. At several points after that, it will connect to the stream.

In between the bike path and the sidewalk on the south side of the street will be a continuous planter with trees which will collect and infiltrate excess flow from the bike path. Gonzalez was modeled as multiple conduits.

5.2 Hedgerow Streets (Type 2 and 2a)

The Hedgerow streets run north to south and will include bioswales. The bioswale on the west side of the Hedgerow Streets will capture runoff from the street and the rooftops on the west side of the road. Runoff from the roofs on the east side of the road will be directed to the ecoroof above the central courtyard. Sidewalk runoff will be captured and infiltrated by permeable pavement located in the perpendicular parking spaces. Overflow from the permeable pavement and the courtyards will be directed to the swales.

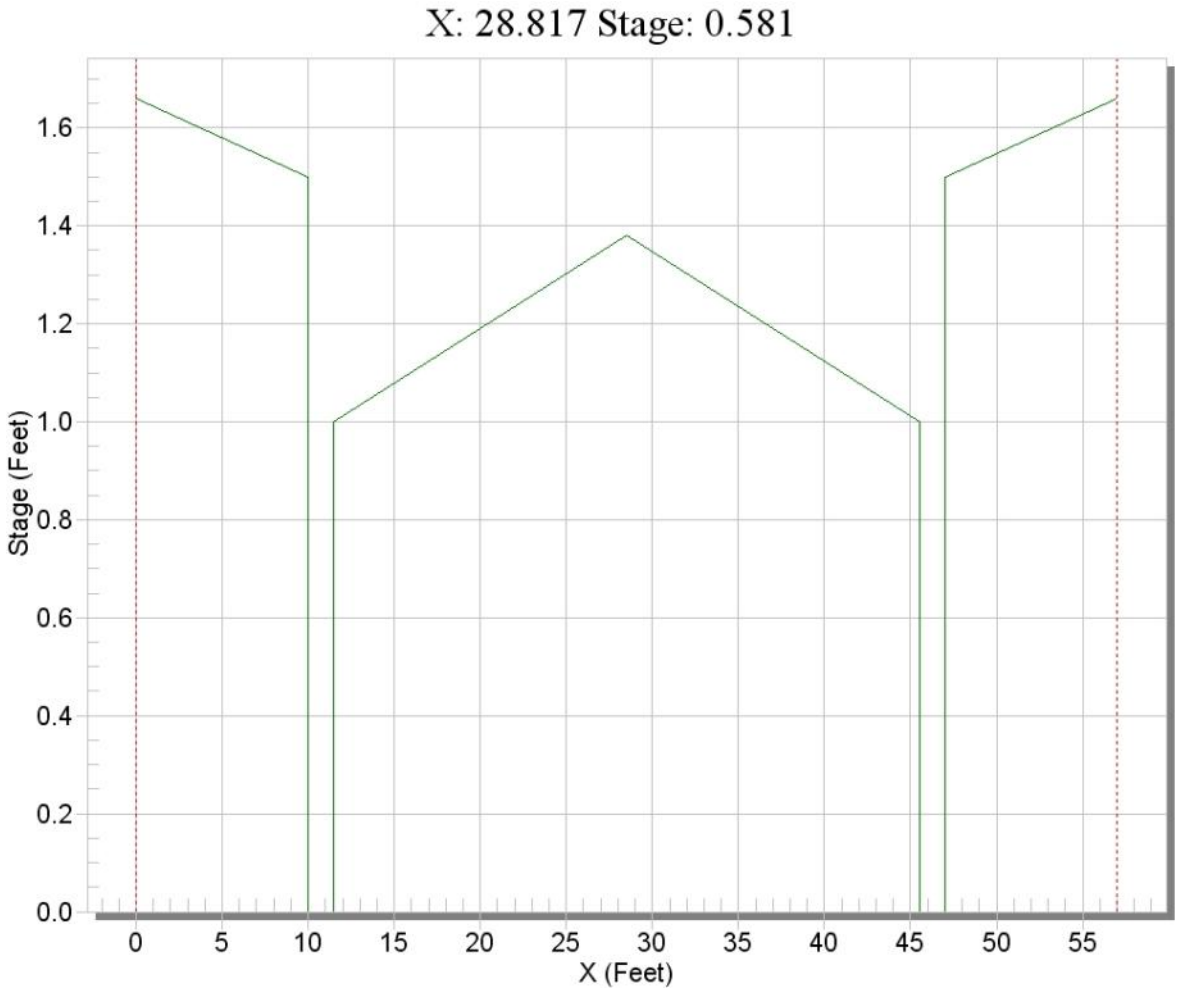
The bioswales on the hedgerow streets will have a total width of 10-12 feet and a depth of about 1.5 feet. The minimum bottom width is 1 foot, with 3:1 grass side slope. There will be a 6 inch wide curb on either side, for a total width of 11-13 feet.



Modeled Street Cross Section Type 2/2A

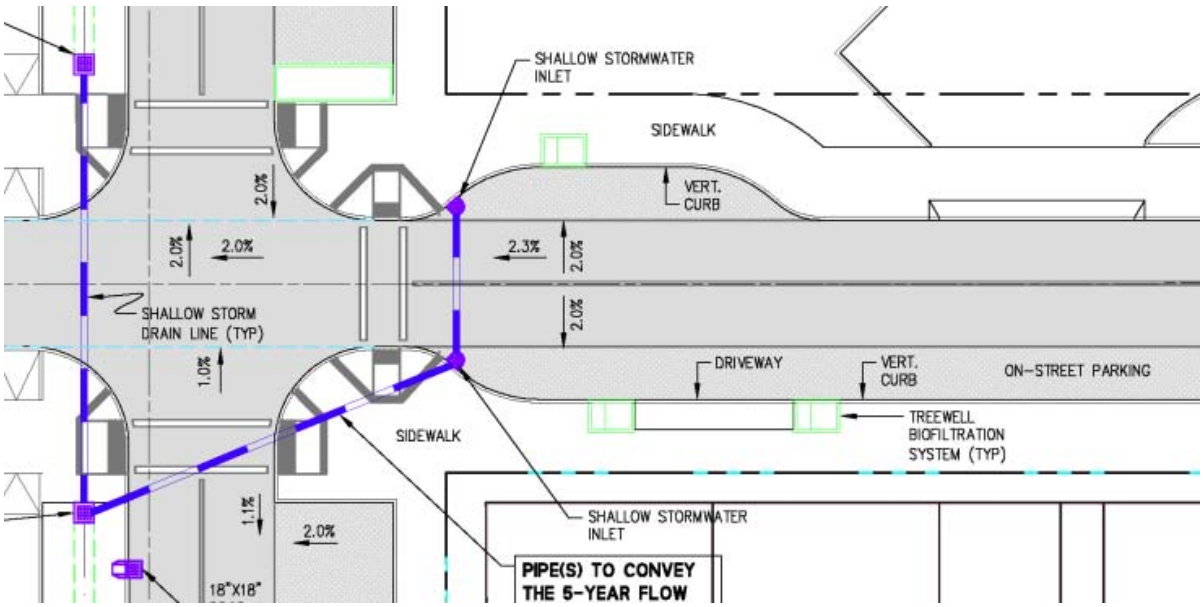
5.3 Treewell Streets (Type 3 and 3B)

These two street types do not have a bioswale, but have biofiltration treewells instead. Each biofiltration treewell is a precast concrete box with separate sections for stormwater pre-treatment and treewell planting medium. Located next to the curb every 20 feet, the treewells provide temporary storage and infiltration. Street and sidewalk runoff is collected by permeable pavement in the parking lanes. The permeable pavement overflows to the treewells.



Modeled Street Cross Section Type 3/3B

Any flow in excess of the infiltration and storage capacity of the treewell will flow along the gutter. At the end of the block, storm drains and culverts will convey the flow to the nearest swale, as shown in this preliminary intersection layout.



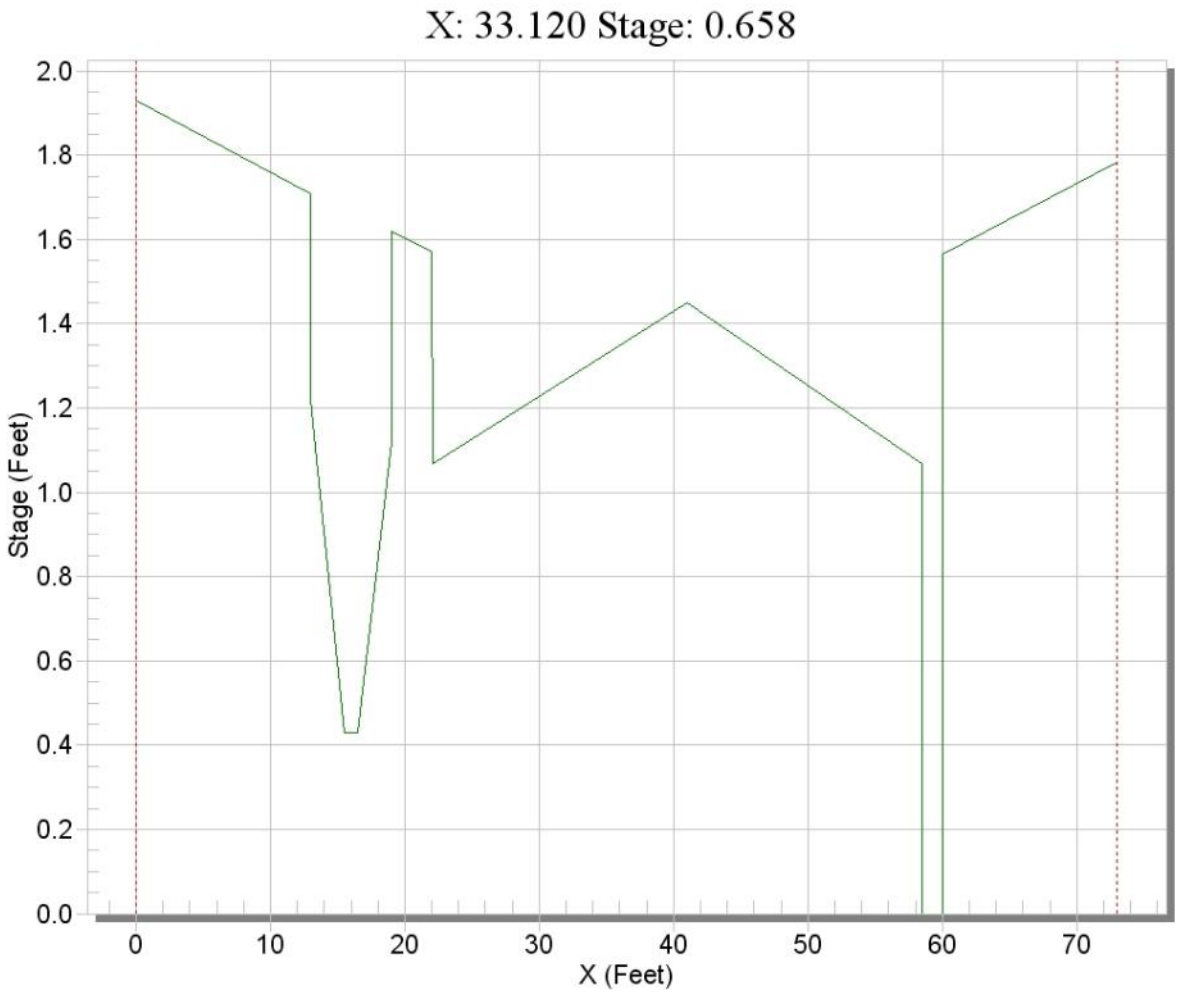
Source: BKF, 9-22-2009

The exact treewell specifications are not finalized. Where there are several type 3 streets in a row, the depth of flow in the gutter on the downstream blocks will approach the sidewalk and street crown level. On these blocks, a larger treewell should be used, or a biogutter or underground pipe should be added to connect to the nearest swale. These blocks are highlighted in red below.

5.4 Treewell plus Swale Streets (Type 3A)

Type 3A is on Font Blvd extending from Juan Bautista Circle in a northwest direction to the northern project boundary. The east side of the street from the crown to the Right of Way (R.O.W.) has biofiltration treewells and behaves similar to types 3 and 3B.

The west side of the street has an 8 foot wide swale which receives runoff directly from the sidewalk on the west. Street runoff flows to a permeable pavement (pp) and infiltrates, partly or totally, depending on pp infiltration. Excess flow, if any, discharges to the swale.

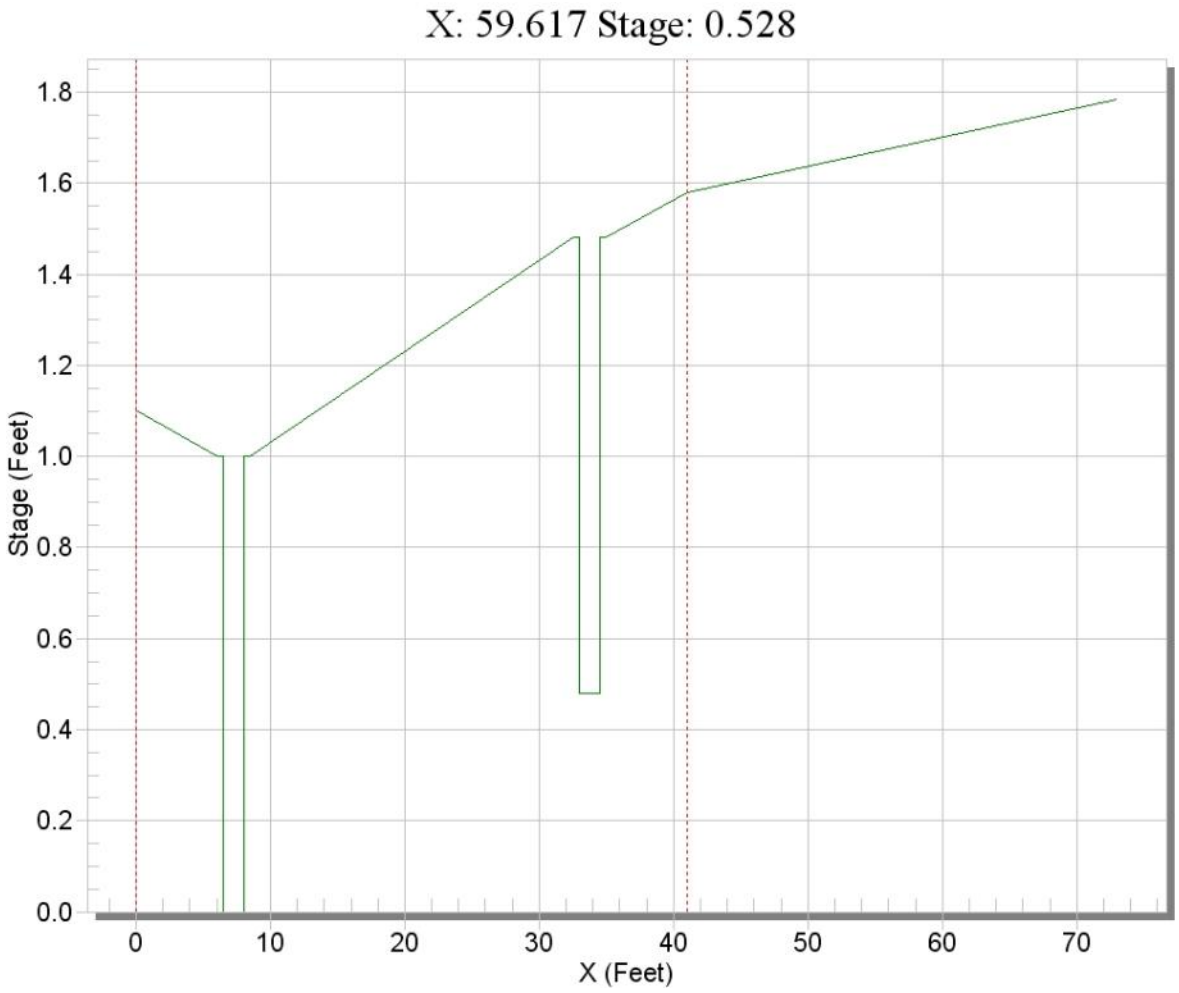


Modeled Street Cross Section Type 3A

5.5 Alley Ways (Type 4)

The biogutters run north to south and function similarly to the bioswales but have vertical side walls thus providing less vegetation, and are narrower thus providing less infiltration. The biogutter on the west side of the Alley Ways will capture runoff from the roofs on the west side of the road. Sidewalk runoff will be captured and infiltrated by permeable pavement located in the street travel lane. Runoff from the rooftops on the east side of the road is directed to the ecoroof above the central courtyard. Overflow from the permeable pavement and the courtyards will be directed to the biogutters.

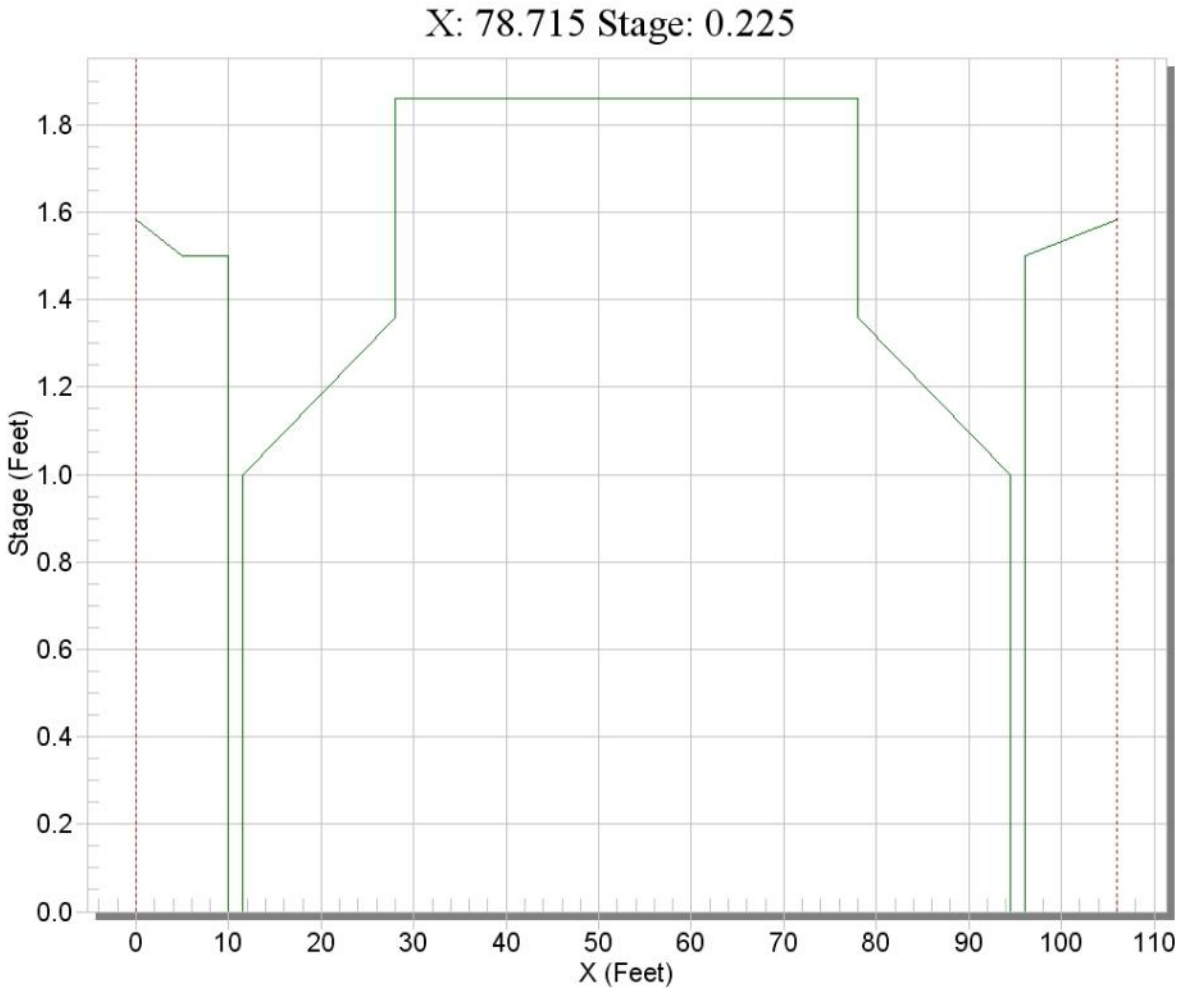
Biogutters in the Alley Ways are 1.5 feet wide with vertical sidewalls and a total depth of 1 foot, above a 2 foot deep layer of bioretention soil and drain rock.



Modeled Street Cross Section Type 4

5.6 Font Boulevard (Type 5)

Font Blvd from Chumasero Drive to Gonzalez Drive is another street where there is no swale, and biofiltration treewells are used instead. Contrary to street types 3 and 3B discussed above, treewells in type 5 receive flow from sidewalks and streets, both 100% impervious, plus overland flow, if any, from the 50 feet wide Muni strip, assumed to be 100% pervious. Considering that treewells in this case are less effective to dispose of runoff and the several blocks that gutter flow has to traverse before discharging to a swale, an additional 24" biogutter to connect the treewells is recommended.



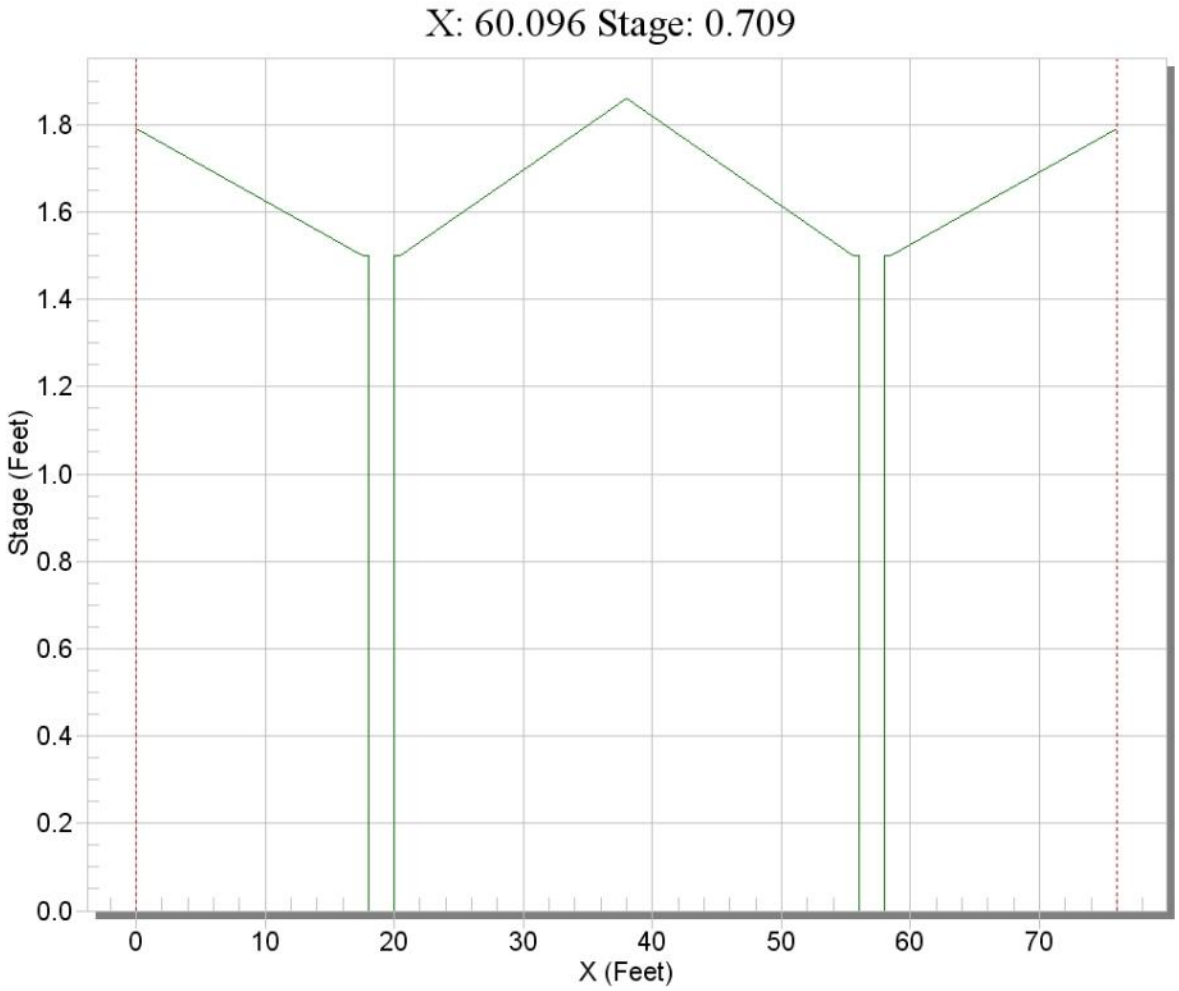
Modeled Street Cross Section Type 5/5A

5.7 Font Boulevard (Type 5A)

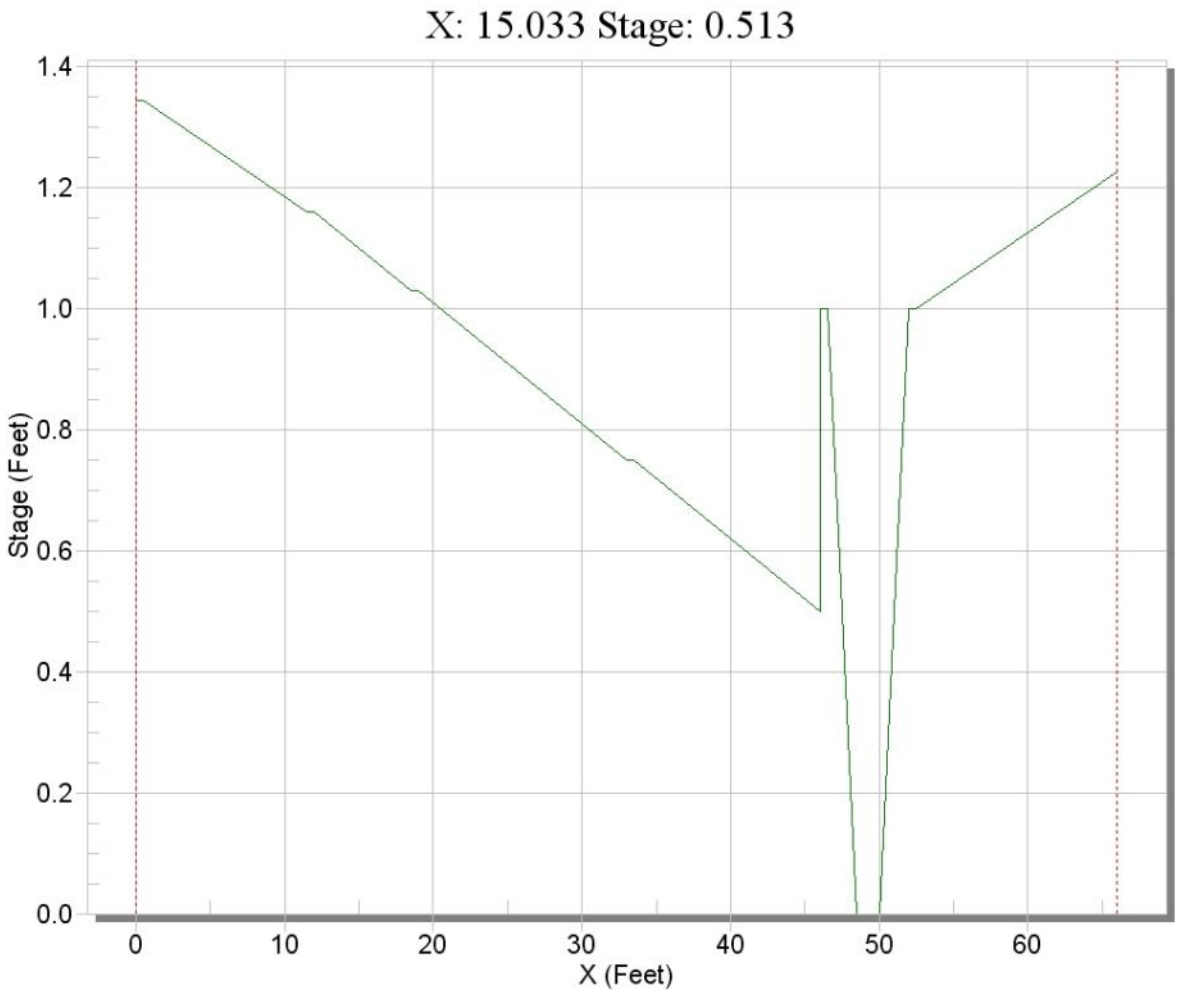
Type 5A is along Font Blvd and extends from Gonzalez Drive to Juan Bautista Circle. The street cross section is identical to that of Type 5 but the 50 feet wide strip in the middle of the street has no Muni tracks. Hydrologically and hydraulically the two types are essentially identical, except the lack of Muni tracks on this segment means less runoff and a smaller, 18" additional biogutter.

5.8 Other (Type 6, 7, 7A, Pinto Ave)

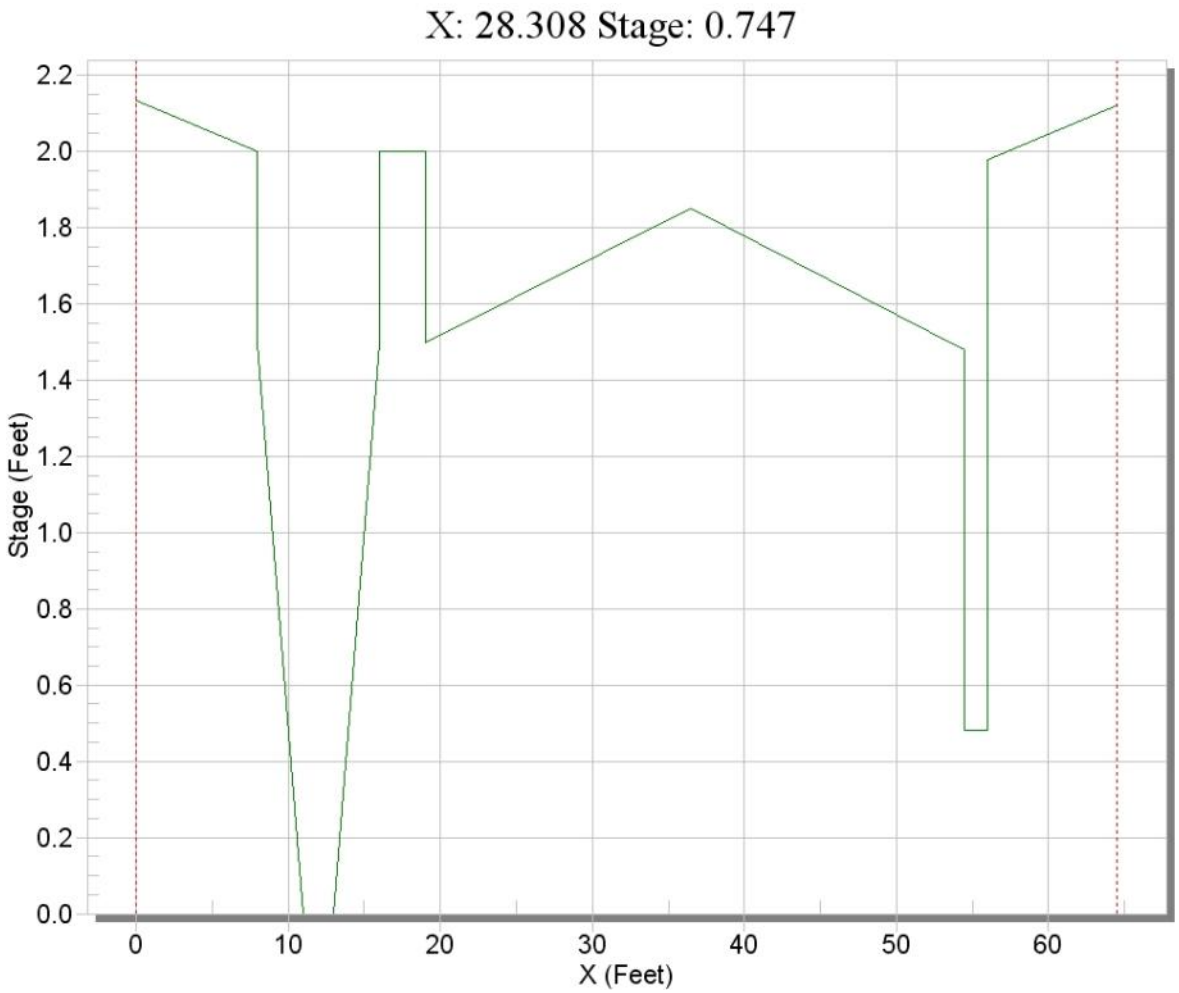
There are several remaining swale configurations, as shown in the following cross sections. They were all entered in the hydraulic model with the dimensions shown. Type 7a was assumed to drain away from the pond and ultimately towards the Northwest. Type 7 was assumed to drain towards the pond.



Modeled Street Cross Section Type 6



Modeled Street Cross Section Type 7/7A

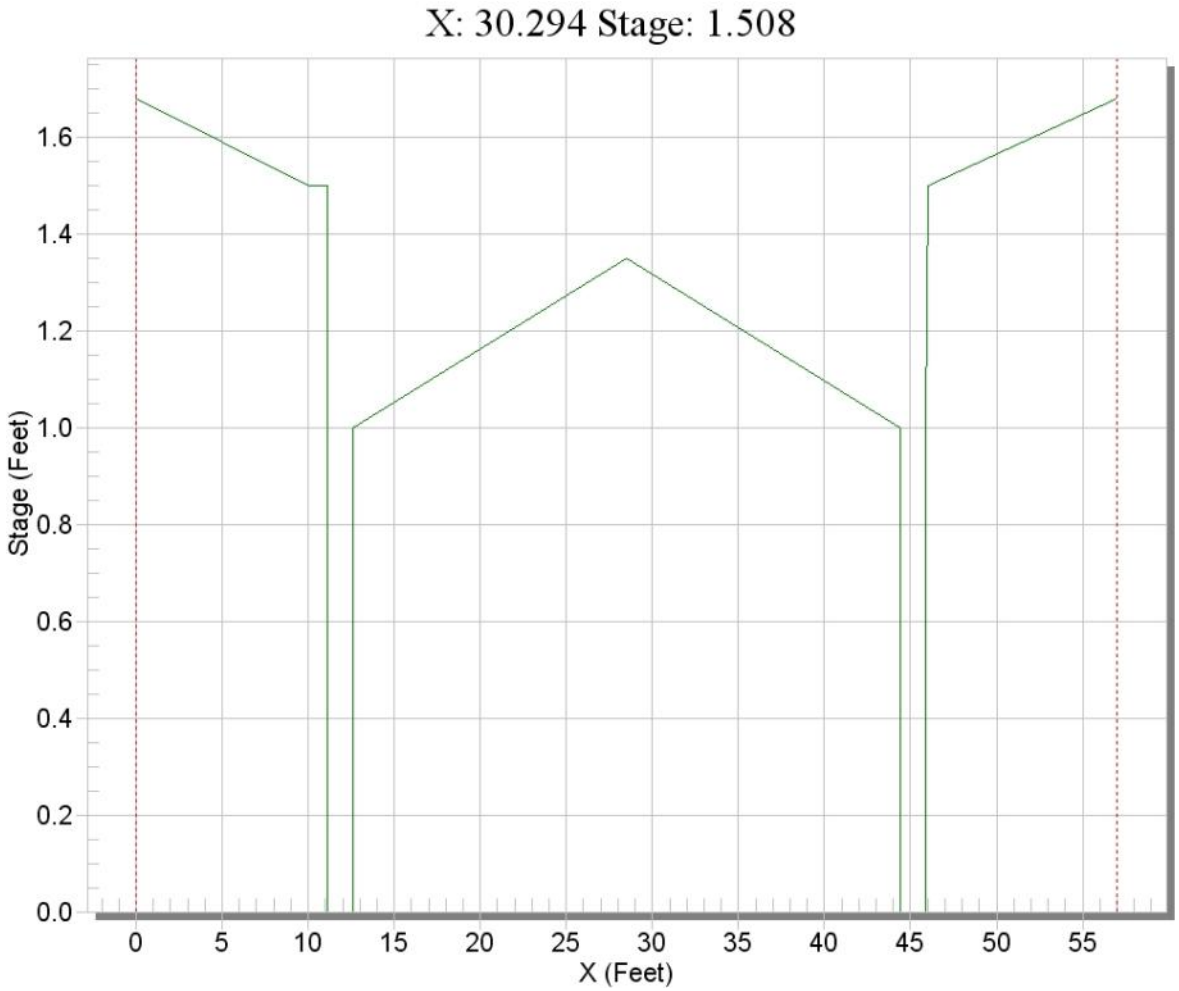


Modeled Street Cross Section Pinto

5.9 Other (Type 8, 9, 10)

Type 8: Treewells along South side of street only with an 18" biogutter along north side.

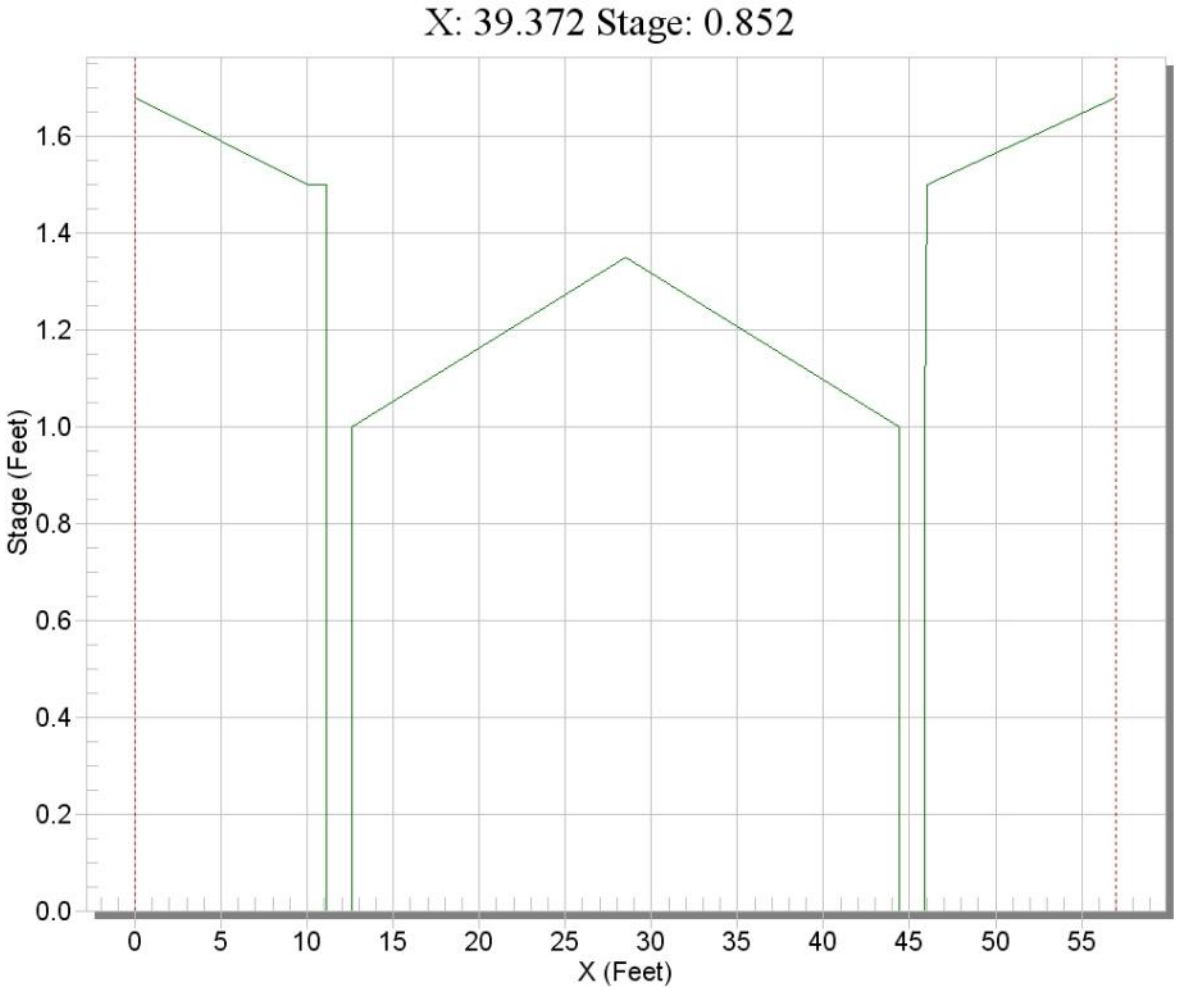
- Serrano Drive from Varela Avenue to Font Boulevard



Modeled Street Cross Section Type 8

Type 9: Treewells along both sides of street, with an 18" biogutter on either side.

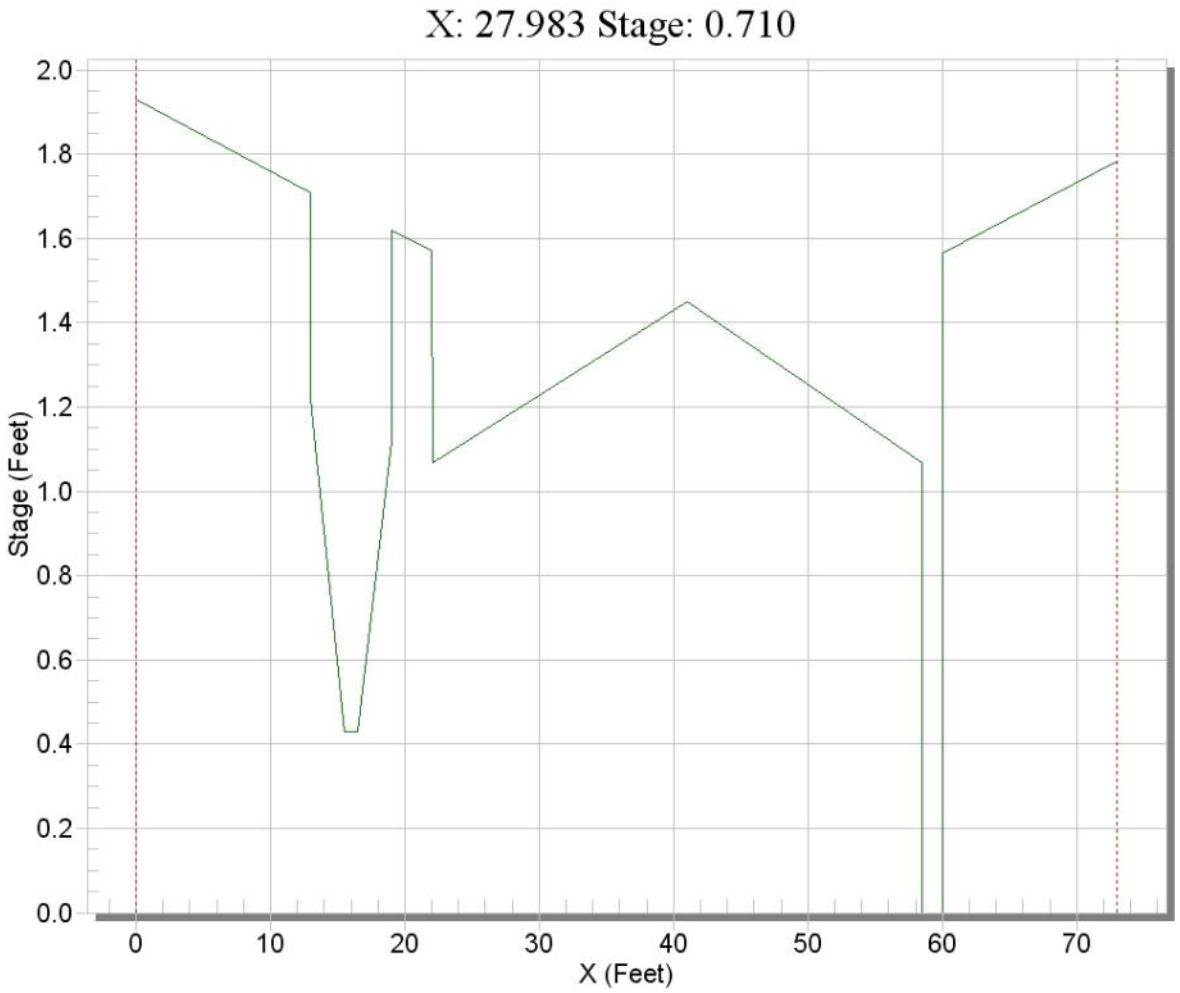
- New Street from Diaz southward;
- Castelo from Cambon to Gonzalez;
- New Street from Josepha to Grijalva;
- Grijalva from New Street to Gonzalez; and
- New Street from Fuentes to Font



Modeled Street Cross Section Type 9

Type 10: Treewells along east side of street, add 18" biogutter on east side of street

- Font Boulevard from New Street to New Street



Modeled Street Cross Section Type 10

5.10 Brotherhood Way (Not Shown in Cross Sections)

Runoff from the southeastern corner of the site and from the steep slope along the southern boundary of the site will flow off site towards Brotherhood Way. While not currently designed or included in this project, it is envisioned that Brotherhood Way could be redesigned to narrow the existing wide lanes of vehicular traffic enough to accommodate a bioswale. Details of this potential bioswale are under development and will be coordinate with the City, but it will likely resemble the bioswale on Gonzalez Drive, and connect at the downstream end to the outfall to Lake Merced.

6. Maintenance of LID Network

The following typical maintenance activities were adapted from the San Francisco Stormwater Design Guidelines, Appendix A Fact Sheets.

6.1 Wetponds/Wetlands

Seasonal or as needed:

- Clean and remove debris from inlet and outlet structures
- Mow or trim side slopes if vegetated
- Repair undercut or eroded areas
- Stock permanent pool area with mosquitofish (Gambusia spp.)

Every 5 to 7 years:

- Remove sediment from forebay area
- Replant vegetation in forebay or pond as necessary

Every 20 to 50 years:

- Remove sediment from permanent pool when volume has significantly decreased, or if the pond/wetland becomes eutrophic
- May need to re-grade or raise wetland berms over time as sediment and root mass accumulates

6.2 Stream/Riparian Corridor

Seasonal or as needed:

- Clean and remove debris from inlet and outlet structures
- Mow or trim side slopes if vegetated
- Repair undercut or eroded areas

Every 5 to 7 years:

- Remove sediment from pools behind check dams
- Replant vegetation as necessary
-

6.3 Bioswales/ Biogutters

As needed (frequent, seasonally):

- Mow grass to maintain a height of 3–4 inches. Remove litter prior to mowing. Compost clippings.
- Irrigate swale/biogutter during dry season (April through October) or when necessary to maintain the vegetation.
- Provide weed control, if necessary, to control invasive species

Semi-annual (beginning and end of wet season):

- Inspect for erosion, damage to vegetation, channelization of flow, debris and litter, and sediment accumulation.
- Additional inspections after periods of heavy runoff are desirable.
- Remove litter, branches, rocks, blockages, and other debris and dispose of properly.
- Repair any damaged areas within a channel identified during inspections. Correct erosion rills or gullies and re-plant bare areas as necessary.

Annual:

- Inspect check dams and overflow grates for clogging and correct as necessary.
- Based on inspection, plant alternative vegetation if original vegetation has not been successfully established. Reseed and apply mulch to damaged areas.

As needed (infrequent):

- Rototill or cultivate the surface of the soil bed if the swale does not draw down within 48 hours.
- Remove sediment build-up within the bottom of the swale once it has accumulated to 10% of the original design volume.

6.4 Cisterns

Annual (end of dry season, when cistern is empty):

Remove sediment build-up from inside the cistern by flushing or sweeping.

7. Conclusions

The results of the model can be used to draw several conclusions:

- The swales and biogutters are adequate as sized to convey the 5 year, 3 hour design storm.
- The street cross sections, as presented in Section 5, are able to convey the 100 year 3 hour storm curb to curb.
- The existing 48" diameter corrugated metal pipe crossing Lake Merced Boulevard will be adequate to convey the 5 year peak flows from Parkmerced.
- As modeled (assuming total cistern volume of 1.5 MG), 95% annual average runoff is being retained on-site, as follows:

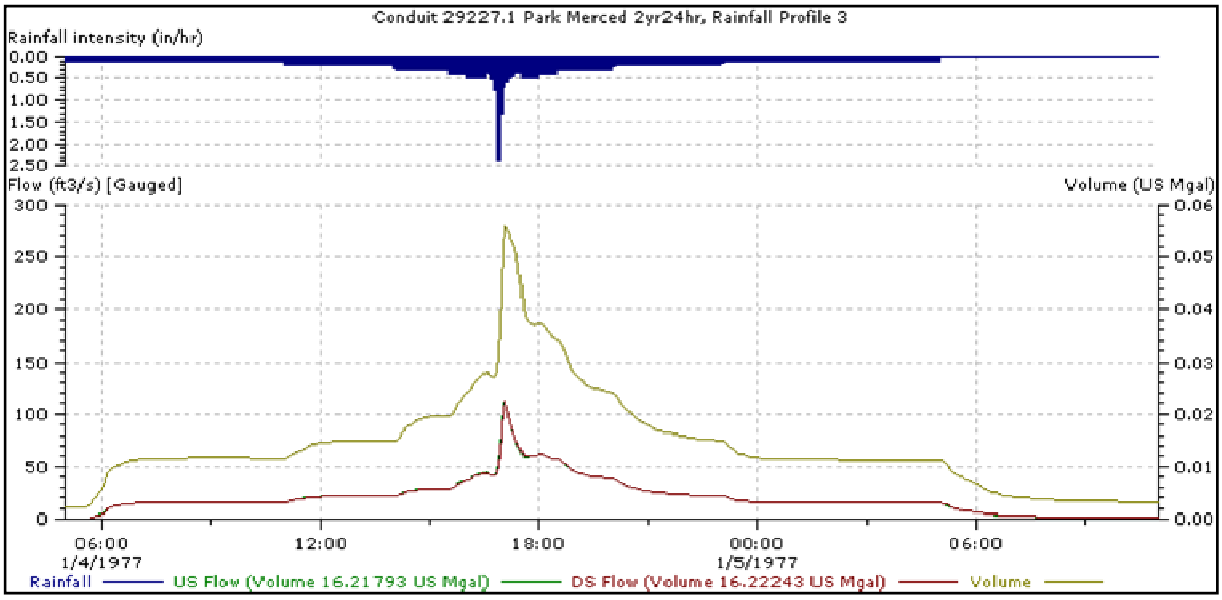
	Average Annual Runoff (MG)	
Reused		
Farm Irrigation	2.07	3%
Playing Field Irrigation	0.83	1%
Pond Make-up	0.10	0%
Infiltrated		
Runoff Layer (pp, parks, treewells)	32.41	47%
Hydraulics Layer (swales)	14.74	21%
Evaporated		
from runoff surfaces (cisterns, swales)	5.83	8%
from network (ponds, cisterns, swales)	2.57	4%
Evapotranspired From Courtyards	6.78	10%
Discharged to Lake (volume through terminal pipe)	3.55	5%
Total	68.88	100%

- Preliminary model results for the 2 year, 24 hour storm show a decrease in both volume and peak flow as follows:

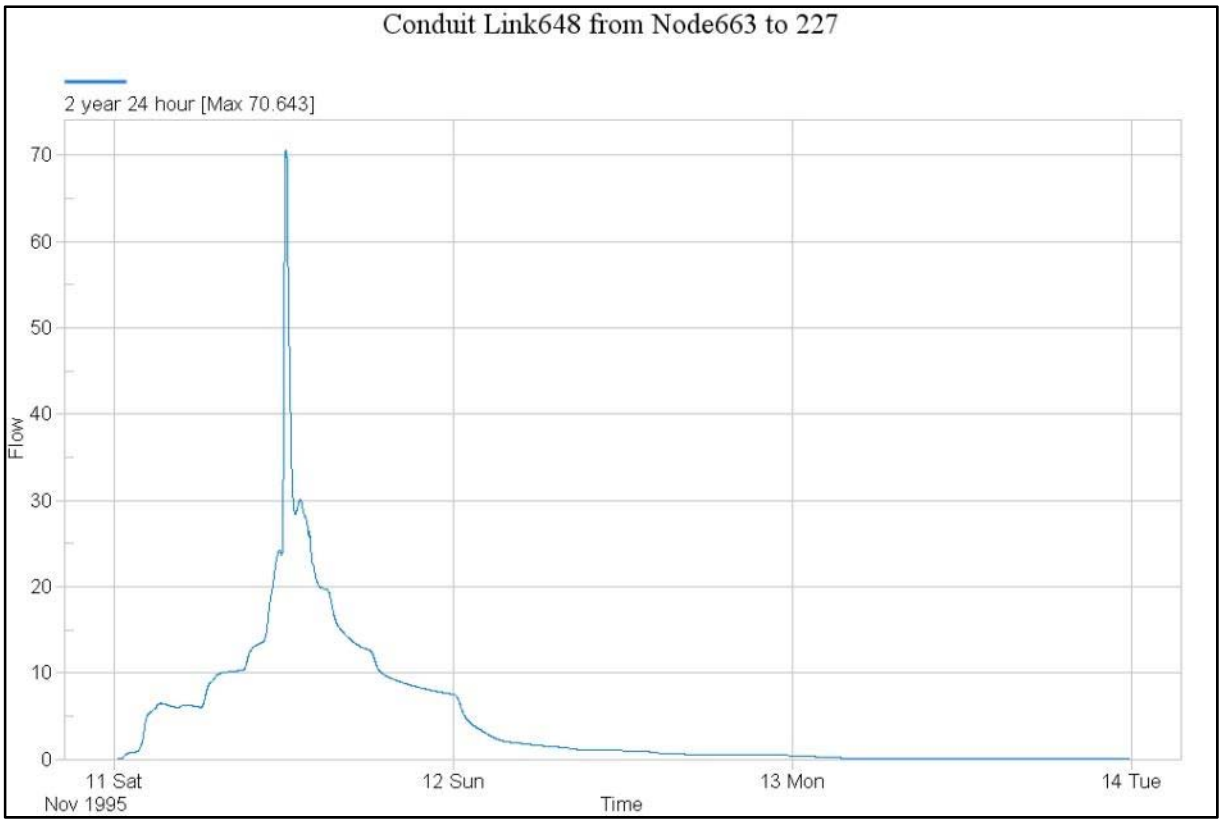
	Peak Flow (cfs)	Total Volume (CF)
Pre-Development	115.7	2,168,000
Post-Development	70.64	1,175,000
% Decrease	39%	46%

Note: the pre-development model results were derived from the City-wide Infoworks model as provided by DPW/BOE/Hydraulics.

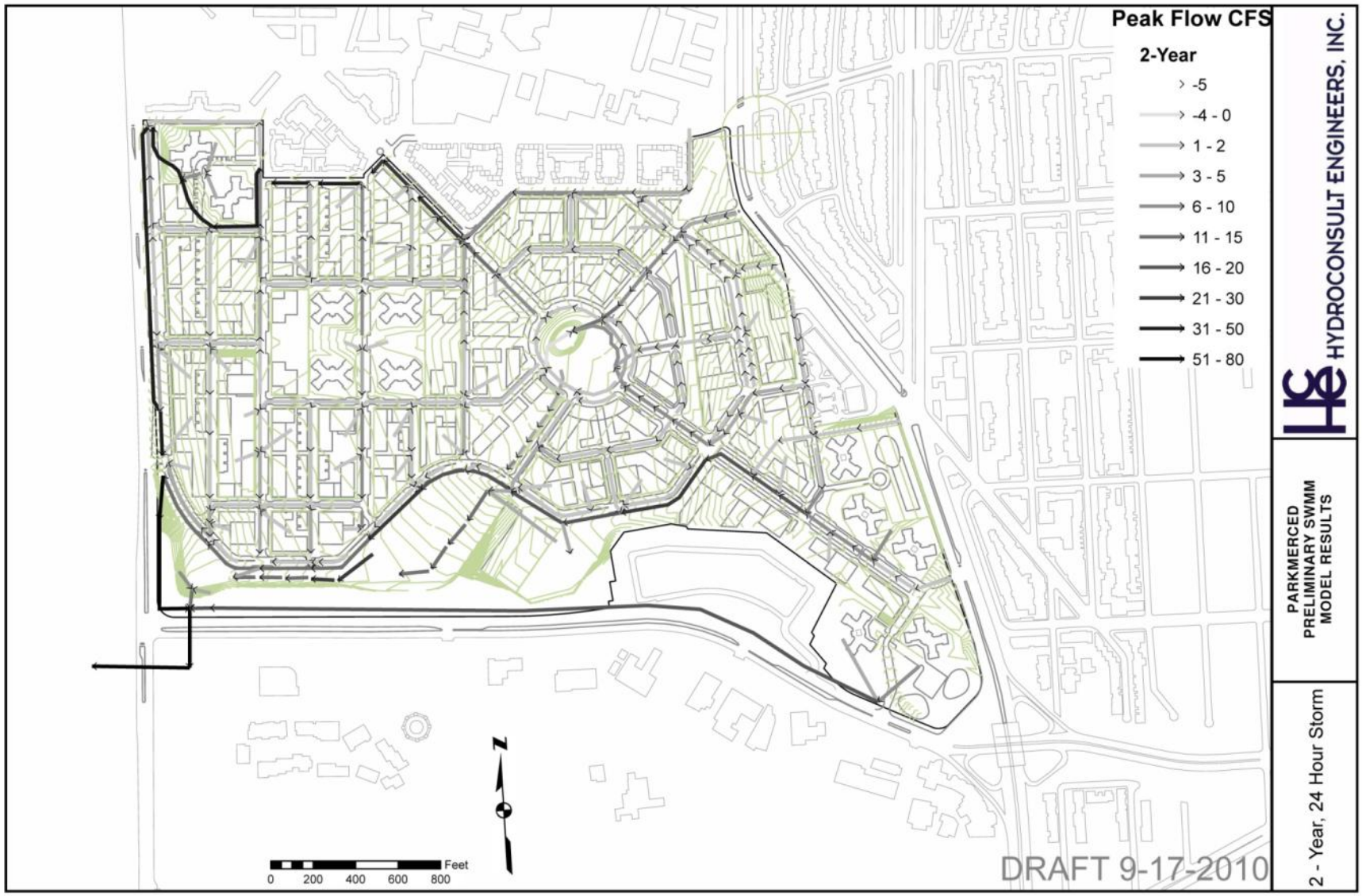
Model output for pre- and post-development and peak design flow rates through the LID stormwater network for the 2- and 5-year storms are presented in the figures below:



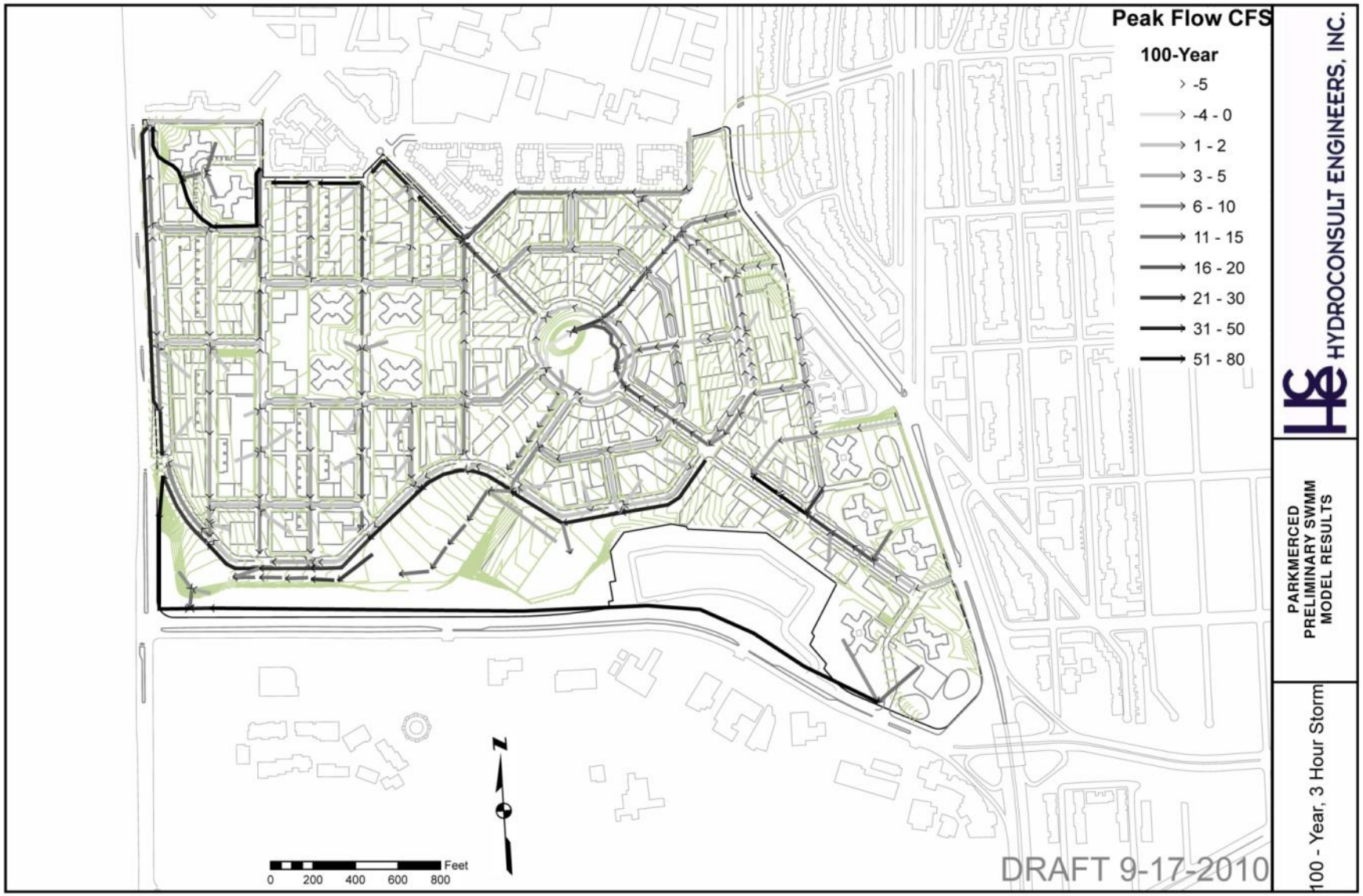
Pre-Development 2 year, 24 hour Peak Flowrates



Post-Development 2 year, 24 hour Peak Flowrates


Peak Flow CFS
2-Year
-5
-4 - 0
1 - 2
3 - 5
6 - 10
11 - 15
16 - 20
21 - 30
31 - 50
51 - 80
N
Feet
0 200 400 600 800
DRAFT 9-17-2010
HYDROCONSULT ENGINEERS, INC.
PARKMERCED
PRELIMINARY SWMM
MODEL RESULTS
2 - Year, 24 Hour Storm


Peak Flow CFS
5-Year
-5
-4 - 0
1 - 2
3 - 5
6 - 10
11 - 15
16 - 20
21 - 30
31 - 50
51 - 80
N
Feet
0 200 400 600 800
DRAFT 9-17-2010
HYDROCONSULT ENGINEERS, INC.
PARKMERCED
PRELIMINARY SWMM
MODEL RESULTS
5 - Year, 3 Hour Storm


Peak Flow CFS
100-Year
-5
-4 - 0
1 - 2
3 - 5
6 - 10
11 - 15
16 - 20
21 - 30
31 - 50
51 - 80
N
Feet
0 200 400 600 800
DRAFT 9-17-2010
HYDROCONSULT ENGINEERS, INC.
PARKMERCED
PRELIMINARY SWMM
MODEL RESULTS
100 - Year, 3 Hour Storm

8. Additional Design and Work - Post Entitlements

The dynamic hydraulic model used to verify and improve the stormwater network can be used to quickly and easily complete several additional tasks:

Water Quality Modeling—using the built-in capabilities of XP-SWMM, water quality influent concentrations and removal rates can be entered into the model, and water quality concentrations can be calculated for the excess runoff proposed for discharge to Lake Merced.

Stormwater Control Plan (compliance with SF Stormwater Ordinance and Stormwater Design Guidelines)—the information presented in this TM and in the infrastructure plan will provide input to the required submittals under the San Francisco Stormwater Ordinance.

100 Year Overland Flow Study—the preliminary results from the existing model will be used to develop a more detailed design report indicating block by block routing of overland flow for the 100 year/3 hour design storm as required by the San Francisco Subdivision Regulations.

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APPENDIX D

Treadwell&Rollo

MEMORANDUM

TO: Mr. Seth Mallen – Stellar Management

FROM: Maria G. Flessas / Frank L. Rollo

DATE: 27 March 2008

PROJECT: Parkmerced
San Francisco, California

PROJECT NO. 4596.02

SUBJECT: Preliminary Geotechnical Evaluation
Subsurface Conditions and Foundation Types

Number of Pages: 3

Per your request, this memorandum presents our preliminary geotechnical evaluation regarding subsurface conditions at the Parkmerced site and presents probable foundation types for the planned development.

PROJECT DESCRIPTION

Parkmerced is an approximately 116-acre site in the southwestern portion of San Francisco, adjacent to Lake Merced. It is bound by Font Boulevard, Pinto Avenue and Serrano Drive to the north; 19th Avenue and Junipero Serra Boulevard to the east, Brotherhood Way to the south, and Lake Merced Boulevard to the west.

Parkmerced is a residential community with 170 two-story buildings, and 10 thirteen-story towers. It includes associated parking, building services, and a private day care facility.

The planned development includes demolishing and removing the two-story residential buildings, and replacing them with 1- to 14-story structures (mix of rental and sale units) over a period of 15 to 30 years. The new structures may include one- to two-levels of below grade parking. The existing thirteen-story towers will remain on the site. The project also includes the construction of a new neighborhood core with retail and office space and new open space uses, including athletic fields, walking and biking paths; and community gardens and associated traffic and infrastructure improvements.

SUBSURFACE CONDITIONS

Our understanding of the subsurface conditions at Parkmerced is based on our review of the available subsurface information at the site and its vicinity.

Geology and Subsurface Conditions – The Parkmerced site is generally underlain by Colma Formation. The Colma Formation consists of medium dense to very dense sand with minor silt and clay that was deposited in an estuarine and coastal environment. The Colma Formation overlies marine sediments of the Merced Formation, which consist of sand, silt, and clay deposited in a shallow marine environment.

The available subsurface information indicates the site is underlain primarily by medium dense to dense sand, except in three areas where deep fill is anticipated. The deep fill areas are discussed below:

- Lobes off Lake Merced – Available geology maps indicate two lobes off Lake Merced extended into the westernmost section of the site. The old channels have been filled with mostly fine- to medium-grained sand. Logs of borings drilled in 1948 for the thirteen-story buildings indicate the channel fill is up to 50 feet deep.

- Sewer Tunnel – Available drawings from 1949 for the Lake Merced Sewer System indicate the presence of a horseshoe sewer tunnel (10 feet by 11 feet) mostly along Arballo Drive, and partially beneath existing structures, in the western portion of the site. The tunnel is about sixty feet below the existing ground surface. The tunnel was likely installed using an open cut excavation. Therefore, the material placed above the top of the tunnel is fill. Historically, the fill was placed without any compaction effort.

- Existing and New Waterline – The new, 4.4-mile-long, San Andreas Pipeline No. 3 will cross the easternmost section of Parkmerced. This pipeline will replace the Baden-Merced pipeline, which is out of service. The depth of fill placed over the existing pipeline and the pipe alignment within the site are not known at this time.

Groundwater – The groundwater beneath the site is from the Westside Basin Aquifer, the major groundwater basin that stretches from Golden Gate Park to the City of South San Francisco. Available subsurface information indicates the groundwater is approximately 20 to 30 feet below ground surface (bgs) on the northeast portion of the site and as deep as 80 feet bgs towards Lake Merced. The groundwater level has been affected by ongoing pumping of the Westside Basin Aquifer.

FEASIBLE FOUNDATION TYPES

Three of the ten existing thirteen-story towers that will remain on the site are supported on pile foundations. The pile-supported structures are in the cluster of the four, 13-story towers, near Lake Merced. Foundation types for the support of the new buildings should be evaluated based on the results of site specific subsurface exploration. In general, we anticipate new tall buildings over areas of deep fill will likely require deep foundations. Outside the deep fill areas, shallow foundations can likely be used for building support. We do not anticipate groundwater will be encountered during excavation for the below grade parking levels. However, perched groundwater, where present will require dewatering.

Foundation Types for Planned Structures

On the basis of the available subsurface information we conclude, in areas outside the deep fill, spread footings can be used for the 1- to 5-story wood-frame construction with two below-grade levels. For wood-frame, 1- to 5-story buildings in deep fill areas, with one level of basement, mat foundations supported on several feet of compacted fill may be feasible provided the buildings have short footprints, and they can accommodate some differential settlement.

Outside deep fill areas, it is likely that mat foundations can be used for the support of the 6- to 14-story towers with two below-grade levels. Where only one below-grade level is planned, the taller buildings may require ground improvement and a mat foundation. Alternatively, shallow end-bearing piles may be more economical. Appropriate foundation types should be confirmed with site specific exploration for each building.

Proposed tall buildings in deep fill areas will require special consideration. Excavation for the basement level(s) will remove some of the fill. The remaining fill will not be satisfactory for foundation support and should be improved or ignored. If ignored, drilled, jet-grouted or driven piles may be appropriate.

Buildings over Old/New Utility Lines

The depth and location of the existing Baden-Merced pipeline has not been evaluated; however, the pipeline will be removed where it occurs beneath the proposed buildings. The new water line will be installed near the eastern edge of the site. The planned location of the pipeline should be coordinated with the planned Parkmerced development to avoid its installation beneath new building sites.

If you have any questions, please call.

45960201.MGF

Treadwell&Rollo

25 March 2010
Project No. 4596.02

Mr. Seth Mallen
Director of Construction
Stellar Management
West Coast Operations
3711 Nineteenth Avenue
San Francisco, California 94132

Subject: Percolation Tests
Parkmerced Development
San Francisco, California

Dear Mr. Mallen:

This letter presents the results of the percolation tests we performed at the Parkmerced project in San Francisco, California. We performed percolation tests in December 2009, and February 2010, as discussed in the following sections. Previously, we presented our findings and conclusions related to the geologic, geotechnical and seismic conditions at the Parkmerced site in a report dated 8 May 2008.

December 2009 Percolation Tests

In December 2009, we performed two percolation tests (PT-1 and PT-2) at the Parkmerced site and presented the results in a letter dated 16 December 2009 (test locations included on Figure 1). PT-1 was performed in an area where native soil is likely present at shallow depths below the existing ground surface (bgs). Test TP-2 was performed in a deep fill area, within one of the historic channels off Lake Merced. The results of the December 2009 percolation tests are presented in Table 1. Pre-soaking consisted of filling the test holes with water and allowing it to dissipate prior to performing the tests.

TABLE 1
December 2009 Percolation Test Results

Test No.	Test Area	Rate (inches/hour)	Fines Content (%)
PT-1	Historic channel	4.00	6
PT-2	Outside historic channels	0.75	7

The soil excavated from the test locations consisted of sand with clay; fines content (percent passing the No. 200 sieve) for the soil excavated from each test location is included in Table 1.

February 2010 Percolation Tests

On 25, 26 and 27 February 2010, we performed three percolation tests (PT-3, PT-4 and PT-5) at the locations shown on Figure 1. Test locations were selected by Hydroconsultant Engineers, Inc., the project hydrologists. Two of the tests, PT-3 and PT-5 were performed in areas where native soil is likely present at shallow depths below the existing ground surface. Test TP-4 was performed in an area of deep fill, within the historic channels off Lake Merced.

The tests were performed in six-inch-diameter holes, excavated with a post-hole digger to a depth of approximately 30 inches below the existing ground surface. To perform the tests we used a survey lath with one inch measurement increments marked along its face, and a watch. The tests were performed in grass areas; the grass section at each test location was carefully removed before the tests, and placed back upon completion of the tests.

We performed the tests by filling the excavations with water and timing the water level dissipation. Each location was pre-soaked for at least 12 hours prior to monitoring the water dissipation rate. During the pre-soak period we maintained the water level at the top of each excavation. After the 12-hour pre-soak period, the measuring lath was firmly placed in each excavation. Subsequently, the water level was topped off in the excavations until it was at least 12 inches deep, and it reached a measurement mark on the lath. In each test location, we recorded the time for the water level to drop one inch, over a six-inch depth. The percolation test was performed twice in each hole. We used the second set of water dissipation measurements to calculate the percolation rate (inches per hour) at each test location. The percolation test results are presented in Table 2.

TABLE 2
February 2010 Percolation Test Results

Test No.	Test Area	Rate (inches/hour)	Fines Content (%)
PT-3	Outside historic channels	0.75	9
PT-4	Historic channel	9.12	10
PT-5	Outside historic channels	0.43	10

The soil excavated from the test locations consisted of orange brown and dark brown sand with silt. We submitted representative soil samples from each test location to a laboratory to determine the sand gradation and fines content (percent passing the No. 200 sieve). The gradation test results are presented on Figure 2; the amount of fines at each location is included in Table 1.

CONCLUSIONS

The test results indicate the percolation rate for the tests performed within the historic channel areas (PT-1 and PT-4) varies from 4.0 to 9.1 inches per minute. The percolation rate for the tests performed outside the historic channel areas (PT-2, PT-3 and PT-5) varies from 0.43 to 0.75 inch per minute. The duration of the pre-soaking period does not appear to affect the percolation rates.

Please call if you have any questions regarding the percolation tests.

Sincerely yours,
TREADWELL & ROLLO, INC.

Garrett Harris

Garrett Harris, PE
Project Engineer

Maria G. Flessas, GE
Principal

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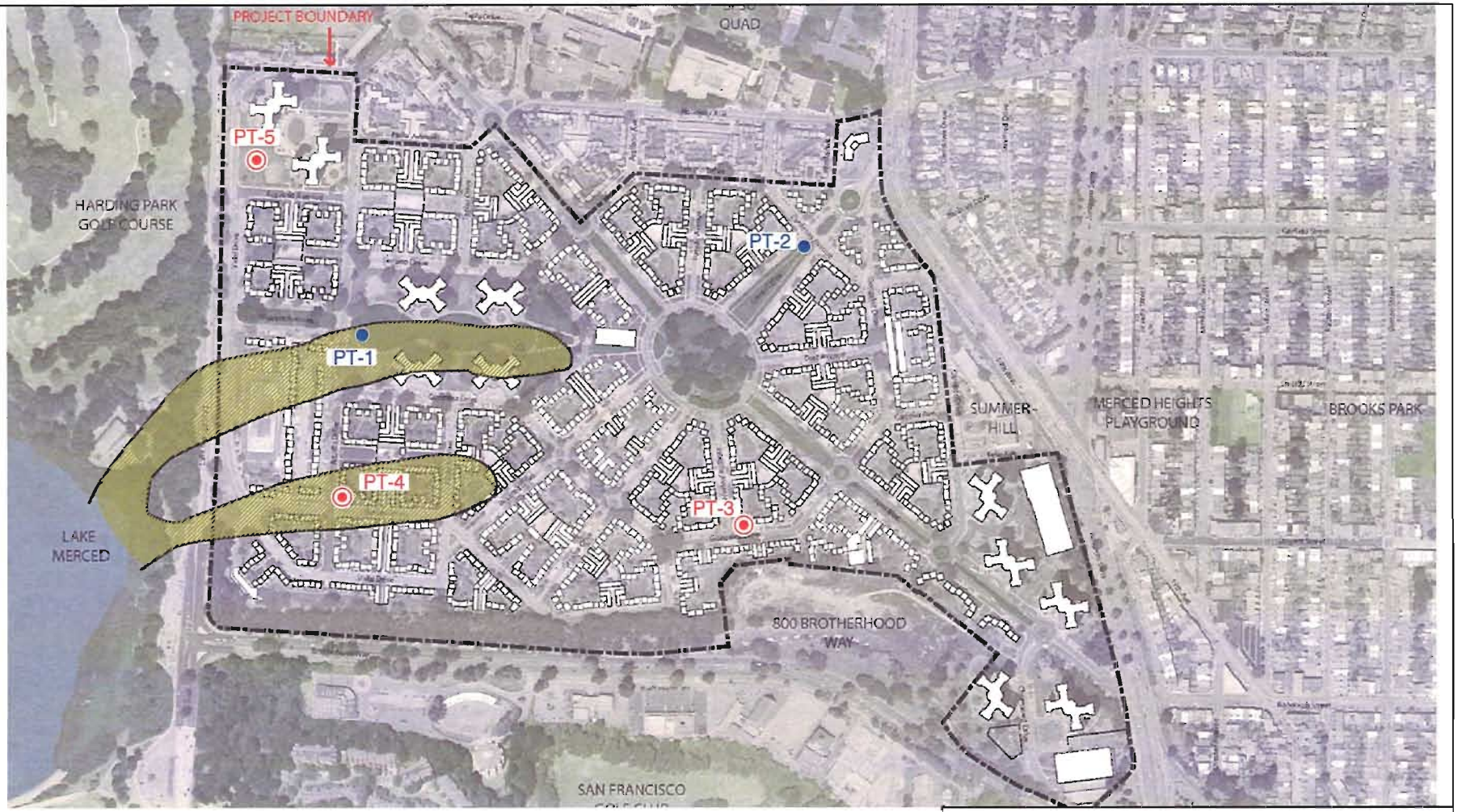
Attachments: Figure 1 – Percolation Test Locations
Figure 2 – Particle Size Analyses



EXPLANATION

PT-3 ◉ Approximate Percolation Test Location, February 2010

PT-1 ● Approximate Percolation Test Location, December 2009

Project Boundary

Historic Channel off Lake Merced

Reference: Base map from a drawing titled "Existing Site Plan, Sheet ASK-156", by Parkmerced Investors LLC, dated 13 June 2008.

N

0 600 Feet

Approximate Scale

PARKMERCED DEVELOPMENT
San Francisco, California

PERCOLATION TEST LOCATIONS

Date 03/25/10	Project No. 4596.02	Figure 1

Treadwell&Rollo

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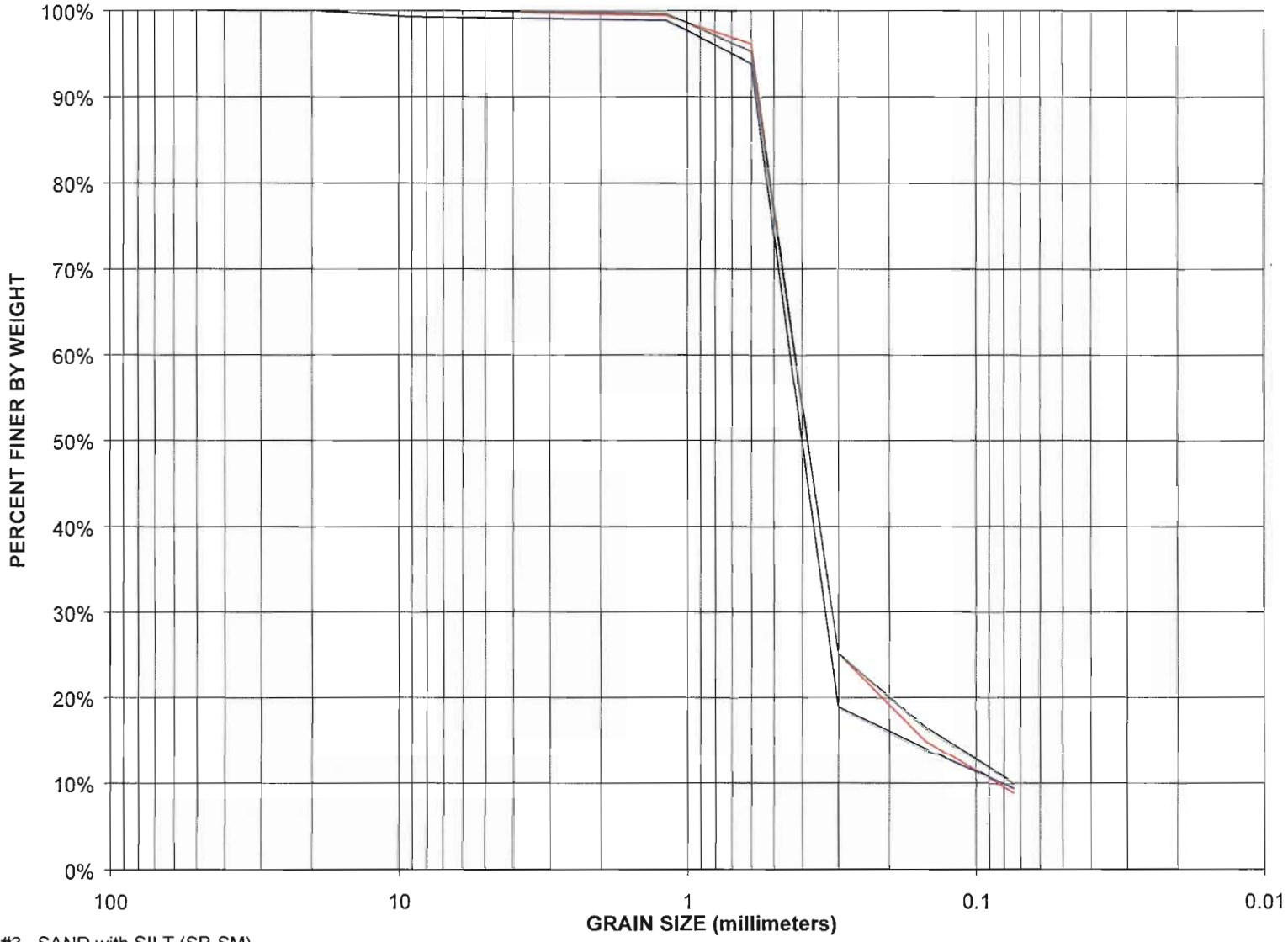

PT #3 SAND with SILT (SP-SM) orange brown, with some clay

PT #4 SAND with SILT (SP-SM) dark brown

PT #5 SAND with SILT (SP-SM) dark brown

PARKMERCED
San Francisco, California

PARTICLE SIZE ANALYSES

Treadwell&Rollo

Date 03/25/10	Project No. 4596.02	Figure 2

Treadwell&Rollo

16 December 2009
Project No. 4596.02

Seth Mallen
Director of Construction
Stellar Management
West Coast Operations
3711 Nineteenth Avenue
San Francisco, California 94132

Subject: Percolation Tests
Parkmerced Development
San Francisco, California

Dear Mr. Mallen:

This letter presents the results of the percolation tests we performed at the Park Merced project in San Francisco, California. On 2 December 2009, our field engineer performed two percolation tests (PT-1 and PT-2) at the locations shown on the attached Figure 1. The test locations were selected by Hydroconsultant Engineers, Inc., the project hydrologists; and Treadwell & Rollo. Inc. The tests were performed in holes excavated with a post-hole digger to a depth of approximately 30 inches below the existing ground surface. Each hole was approximately six inches in diameter. The tests included the use of a survey lathe with one inch measurement increments marked along its face and a watch.

We performed the tests by filling the excavations with water and timing the water level dissipation. After the water initially placed in the hole dissipated, the measuring lath was firmly placed in the excavation, to reduce potential lath movement during the test. Subsequently, water was placed in the excavations until it was about 12 inches deep, and it reached a measurement mark on the lathe. The time was recorded for the water level to drop per inch over a 12 inch depth. The test with lath measurements was performed twice in each hole. The results were recorded and the percolation rate (in inches per hour) was calculated using the second set of measurements of water dissipation with time. The calculated percolation rates are listed in Table 1.

TABLE 1
Percolation Test Results

Test No.	Rate (inches/hour)	Fines Content (%)
PT-1	4.00	6.1
PT-2	0.75	7.3

The soil from Percolation Test Excavation PT-1 consisted of orange brown, dense, moist, clayey sand. The soil from Percolation Test Excavation PT-2 consisted of dark brown, dense, moist, clayey sand. Representative soil samples from each location were submitted to a laboratory to measure the amount of fines (percent passing the No. 200 sieve); the amount of fines measured at each location is included in Table 1. The tests were performed in grass areas; the grass section at each test location was carefully removed before the tests, and placed back upon completion of the tests.

Please call if you have any questions regarding the percolation tests.

Sincerely yours,
TREADWELL & ROLLO, INC.

Garrett Harris, PE
Project Engineer

Maria G. Flessas, GE
Principal

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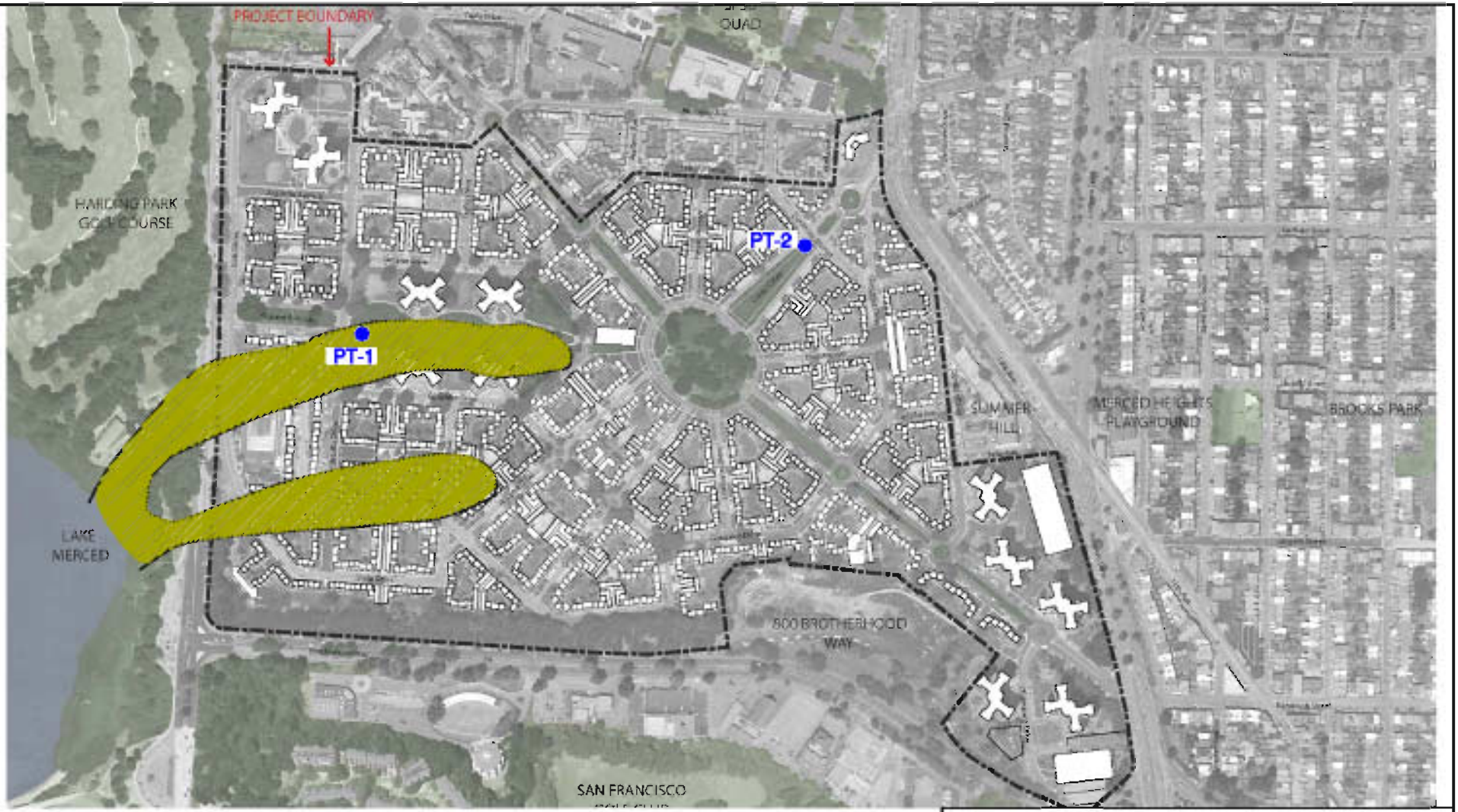

EXPLANATION

PT-1 ● Approximate Percolation Test Location

Project Boundary

Approximate Alluvium Channel

0 600 Feet

Approximate Scale

Reference: Base map from a drawing titled "Existing Site Plan, Sheet ASK-156", by Parkmerced Investors LLC, dated 13 June 2008.

PARKMERCED DEVELOPMENT
San Francisco, California

PERCOLATION TEST LOCATIONS

Date 12/10/09	Project No. 4596.02	Figure 1

Treadwell&Rollo

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