BROADWAY PLAZA, Redwood City, CA

Resubmittal- October 30, 2017
Revised- March 8, 2018
Revised- June 21, 2018
Revised- August 17, 2018
Revised- March 15, 2019

TABLE OF CONTENTS

The SOBRATO Organization

MidPen HOUSING

Architects • Engineers • Parking Planners
WATRY DESIGN, INC.

KIER & WRIGHT

Form 4

THE GUZZARDO PARTNERSHIP INC.
Landscape Architects · Land Planners
181 Greenwich Street
San Francisco, CA 94111
T 415 433 4672
F 415 433 5003
www.tgp-inc.com

STUDIO T SQUARE

VICINITY MAP

PROJECT INFORMATION

BROADWAY SITE
Site Address:
1401 Broadway, Redwood City, CA
Current Use: Commercial Retail
Zoning: Mixed-Use Corridor Zoning District
Site Area: 11.2 acres
(excl. Denny's and Jack-in-the-Box)

Proposed Mix of Uses:
400 apartment units
120 affordable units
420,000 sf office space
10,000 sf retail
11,000 sf childcare
Proposed Intensity:
47 du/ac and 0.86 FAR
Building Height:
up to 85-ft

Parking:
subterranean garage
Open Space:
mid-block public access
park and corner plaza

BAY ROAD SITE
Site Address:
2201 Bay Road, Redwood City, CA
Current Use: Commercial
Zoning: Light Industrial Incubator District
Site Area: 4.1 acres
Proposed: 15,000 sf retail (CVS)
Building Height: up to 30-ft
Parking: Parking Lot

PROJECT DESCRIPTION

The project is a mixed-use development consisting of residential, office, and commercial/retail uses on two sites, Broadway Site and Bay Road Site. Development of the Broadway Site would consist of demolishing the existing commercial/retail buildings and constructing 120 affordable residential units, 400 market-rate residential units, 420,000 SF of office space, 11,000 SF of commercial/retail, and 10,000 SF of childcare facilities.

The affordable residential units would be in a standalone building and the market-rate residential consists of two buildings with the commercial/retail and childcare located on the ground level. The affordable residential would be 5-stories and the market-rate residential would be 6-stories tall. Both have a courtyard amenity for residents on top of the parking podium, 17 ft above sidewalk level. The office consists of three buildings and are separated from the residential by a 1.6-acre public open space. The office height would vary between 4-5 stories. Under Article 53.7.B.3 of the Redwood City Zoning Code, the maximum height in the MUC-GB zoning is 6 stories/85 feet if the project provides a public benefit, such as ground floor retail or public open space.

Residential parking would be in a two-level parking structure, with one level above grade screened by buildings and residential stoop units, and a second level subterranean garage. The garage would be connected on the second subterranean level to the adjacent underground office parking garage to allow shared parking between these complementary uses.

On a 1.9-acre portion of the Bay Road Site, a new surface parked 15,000 SF standalone CVS Pharmacy would be constructed on the northeast corner of Bay Road and Woodside Road. A retail use is allowed under the current Light Industrial Incubator Overlay (LI-IO) zoning with a conditional use permit and would not require a General Plan Amendment (GPA) or a Zoning Amendment.

The project will also include site remediation activities to address soil and groundwater contamination on the Broadway site. A cleanup program is in place and is overseen by the Regional Water Quality Control Board, District 2.

PROJECT TEAM

CLIENT
The Sobrato Organization
Peter Tsai, Vice President
Real Estate Development
10600 N. De Anza Blvd., Suite 200
Cupertino, CA 95014
(408) 446-0700
ptsai@sobrato.com

CLIENT (AFFORDABLE RESIDENTIAL)
MidPen Housing Corporation
Matt Lewis, Project Manager
303 Vintage Park Dr., Suite 250
Foster City, CA 94404
(650) 356-2900
www.midpen-housing.org

ARCHITECT (RESIDENTIAL)
Studio T-SQ., Inc
Chek F. Tang AIA, NCARB, Principal
304 12th Street, Suite 2A
Oakland, CA 94607
(510) 451-2850
www.studiot-sq.com

CIVIL ENGINEER
Kier & Wright
Mark A. Knudsen, P.E. QSD, Principal
3350 Scott Blvd., #22
Santa Clara, CA 95054
(408) 727-6665
www.kierwright.com

LANDSCAPE ARCHITECT
The Guzzardo Partnership, Inc
Paul Lettieri, ASLA, Principal
181 Greenwich Street
San Francisco CA 94111
(415) 433-4672
www.tgp-inc.com

ARCHITECT (OFFICE)
Form 4 Architecture
John Marx AIA, Design Principal
126 Post Street 3rd floor
San Francisco, CA 94108
(415) 215-6601
www.form4inc.com

PARKING CONSULTANT
Watry Design, Inc.
David N. LoCoco
2099 Gateway Pl, #550
San Jose, CA 95110
(408) 392-7900
www.watrydesign.com

OVERALL SITE CALCULATION:

BROADWAY SITE (West of Woodside Rd)	**11.2 ac**	**487,872 sf**
Market Rate Residential	3.7 ac	161,172 sf
Affordable Residential	1.1 ac	47,916 sf
Office	4.8 ac	209,088 sf
Public Open Space	1.6 ac	69,696 sf
BAY ROAD SITE (East of Woodside Rd)	**4.1 ac**	**179,03 sf**
CVS	1.9 ac	82,764 sf
Undeveloped Land	2.2 ac	97,139 sf

(NOTE: Not a part of proposed project)

BROADWAY SITE GROSS AREA

AFFORDABLE RESIDENTIAL (BUILDING 3)

		GROSS AREA
BUILDING 3	Level 1/Street Level	15,220
	Level 2	23,860
	Level 3	23,860
	Level 4	23,860
	Level 5	21,741
	TOTAL	**108,541**

MARKET-RATE RESIDENTIAL (BUILDING 1 & 2)

		GROSS AREA
BUILDING 1 Incl. retail and childcare	Level 1/Street Level	42,001
	Level 2	46,223
	Level 3	46,157
	Level 4	46,157
	Level 5	46,157
	Level 6	41,770
	TOTAL	**268,465**
BUILDING 2	Level 1/Street Level	18,009
	Level 2	38,478
	Level 3	37,956
	Level 4	37,956
	Level 5	37,956
	Level 6	34,827
	TOTAL	**205,182**
	BUILDING 1 & 2	**473,647**

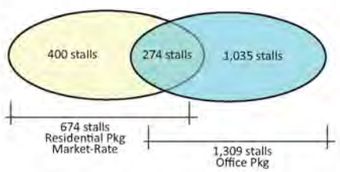
OFFICE GROSS AREA and F.A.R. (BULIDING A, B & C)

		GROSS AREA
OFFICE	TOTAL Building A	110,000
	TOTAL Building B	110,000
	TOTAL Building C	200,000
	Total Office	**420,000**
	F.A.R.	**0.86**

LOT COVERAGE

		GROSS AREA
BUILDING FOOTPRINT	Affordable Residential	37,720
	Market Rate Residential	139,155
	BLDG A - Office	27,500
	BLDG B - Office	27,500
	BLDG C - Office	40,000
	TOTAL	**271,875**
	LOT COVERAGE	**56%**

COMBINED PARKING STRATEGY



BAY ROAD LOT COVERAGE

		GROSS AREA
CVS RETAIL	**Total sf - retail**	**15,000**
	F.A.R. / Lot Coverage	**0.18**

BROADWAY SITE

AFFORDABLE RESIDENTIAL (BUILDING 3) — 11 du/ac gross

UNITS (AFFORDABLE)	Quantity	sf	Unit Mix	Rentable sf	Pkg Ratio	Pkg Stalls Required
Studio Units	17	384	14%	6,528	1.0	17
1-bedroom units	67	562	56%	37,654	1.0	67
2-bedroom units	24	765	20%	18,360	1.0	24
3-bedroom units	12	1,071	10%	12,852	2.0	24
Parking Total Required	**120**	**628**	**100%**	**75,394**		**132**
Property Management / Amenity				6,700	0	4
Affordable Pkg Required Total				**82,094**		**136**

PARKING PROVIDED for Affordable Residential	EV Stalls	ADA Pkg	Tandem	Standard	Pkg Stalls Provided
Parking on-grade (L1)	2	3	6	41	52
Parking in subterranean garage (B1)*	3	2	30	49	84
Parking Total Provided	**5**	**5**	**36**	**90**	**136**
Bicycle Parking (class I) (1 bike / 3 units)					40
Motorcycle Parking (5% of provided vehicle parking)					8

MARKET RATE RESIDENTIAL (BUILDINGS 1 & 2) — 36 du/ac gross

UNITS (MARKET RATE)	Quantity	sf	Unit Mix	Rentable sf	Pkg Ratio	Pkg Stalls Required
Studio Units	20	625	5%	12,500	1.5	30
1-bedroom units	255	726	64%	185,130	1.5	383
2-bedroom units	125	1,152	31%	144,000	2.0	250
Parking Total Required	**400**	**854**	**100%**	**341,630**		**663**
Property Management / Amenity				12,900		0
Market Rate Pkg Required Total				**354,530**		**663**

PARKING PROVIDED for Market Rate Residential	EV Stalls	ADA Pkg	Tandem	Standard	Pkg Stalls Provided
Parking on-grade (L1)	9	4	46	66	125
Parking in subterranean garage (B1)*	11	17	42	205	275
Dedicated Market Rate Residential Parking	20	21	88	271	400
Shared Subterranean Parking	0	0	0	274	274
Parking Total Provided	**20**	**21**	**88**	**271**	**674**
Bicycle Parking (class I) (5% of provided vehicle parking)					134
Motorcycle Parking (5% of provided vehicle parking)					38

RETAIL AND CHILDCARE

USE	# floors	sf per floor	Total sf	Pkg Ratio	Pkg Stalls Required
Retail	1	11,000	11,000	5.0 / 1,000	55
Childcare	1	10,000	10,000	3.3 / 1,000	33
Parking Total Required					**88**

PARKING PROVIDED for Retail and Childcare	EV Stalls	ADA Pkg	Tandem	Standard	Pkg Stalls Provided
Parking on-grade (L1)	6	5	0	77	88
Parking Total Provided	**6**	**5**	**0**	**77**	**88**
Bicycle Parking (class I) (5% of provided vehicle parking)					4
Motorcycle Parking (5% of provided vehicle parking)					4

COMMERCIAL OFFICE (BUILDINGS A, B, C) — 0.86 F.A.R.

OFFICE	# floors	sf per floor	Total sf	Pkg Ratio	Pkg Stalls Required
Building A	4	27,500	110,000		
Building B	4	27,500	110,000		
Building C	5	40,000	200,000		
Parking Total Required/Proposed			**420,000**	**3.1 / 1,000**	**1,309**

PARKING PROVIDED for Office	EV Stalls	ADA Pkg	Standard	Pkg Stalls Provided
Parking in subterranean garage (B1)	34	20	451	505
Parking in subterranean garage (B2)	34	0	485	519
Subterranean Office Parking Total Provided	*68*	*20*	*936*	*1,024*
Shared Subterranean Parking	0	0	274	274
Surface Parking at Office Auto Court	0	1	10	11
Parking Total Provided	**68**	**21**	**1,220**	**1,309**
Bicycle Parking (class I) (5% of provided vehicle parking)				66
Motorcycle Parking (5% of provided vehicle parking)				66

PARKING ALLOCATION

PARKING ALLOCATION	Pkg Stalls Provided
Dedicated Affordable Residential Parking (Structure)	136
Dedicated Market Rate Residential Parking (Structure)	400
Dedicated Retail/Childcare Parking (Structure)	88
Dedicated Office Parking (Structure)	1,024
Shared Parking (Structure)	274
Surface Parking at Office Auto Court	11
Surface Easement Parking Behind Denny's	20
Total Parking Provided	**1,953**

1,309

TOTAL COMBINED PARKING

TOTAL PARKING PROVIDED	EV Stalls	ADA Pkg	Tandem	Standard	Pkg Stalls Provided
Parking on-grade (L1)	17	12	52	184	265
Parking in subterranean garage (B1)	48	39	72	979	1,138
Parking in subterranean garage (B2)	34	0	0	485	519
Total Structure Parking	*99*	*51*	*124*	*1,648*	*1,922*
Surface Office Parking	0	1	0	10	11
Surface Easement Parking Behind Denny's	0	0	0	20	20
Total Project Parking Provided	**99**	**52**	**124**	**1,678**	**1,953**
Parallel Parking Stall on Bay Road (not part of Project)					15

BAY ROAD SITE (CVS)

BAY ROAD SITE (CVS)

CVS	Pkg Ratio	EV	ADA	Standard	Total
Total sf (CVS)					15,000
Parking Provided	5.7 / 1,000	6	4	75	85
Bicycle Parking (class II) (5% of provided vehicle parking)					4
Motorcycle Parking (5% of provided vehicle parking)					4

**HC stalls per Ch 11B Table 11B 208.2*

STUDIO T SQUARE
: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

The Sobrato Organization &
MidPen Housing Corporation

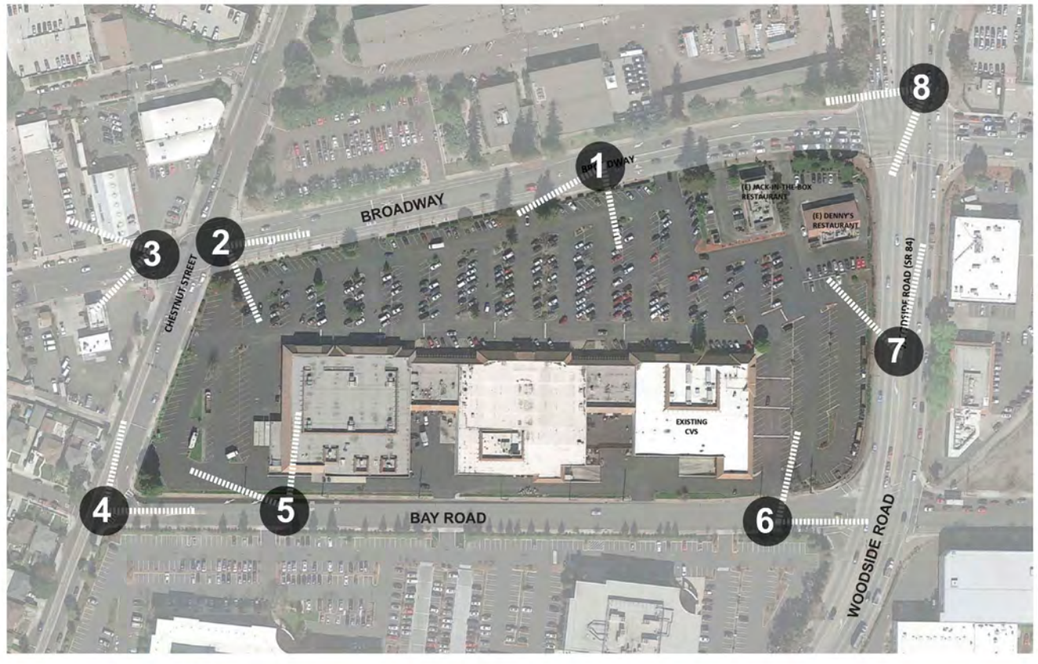
Sheet Title:

PROJECT SUMMARY

Job No. 14023
Date: 03/15/2019
Scale: N.T.S.
Drawn By:

Sheet No:

G 0.0



STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

The Sobrato Organization & MidPen Housing Corporation

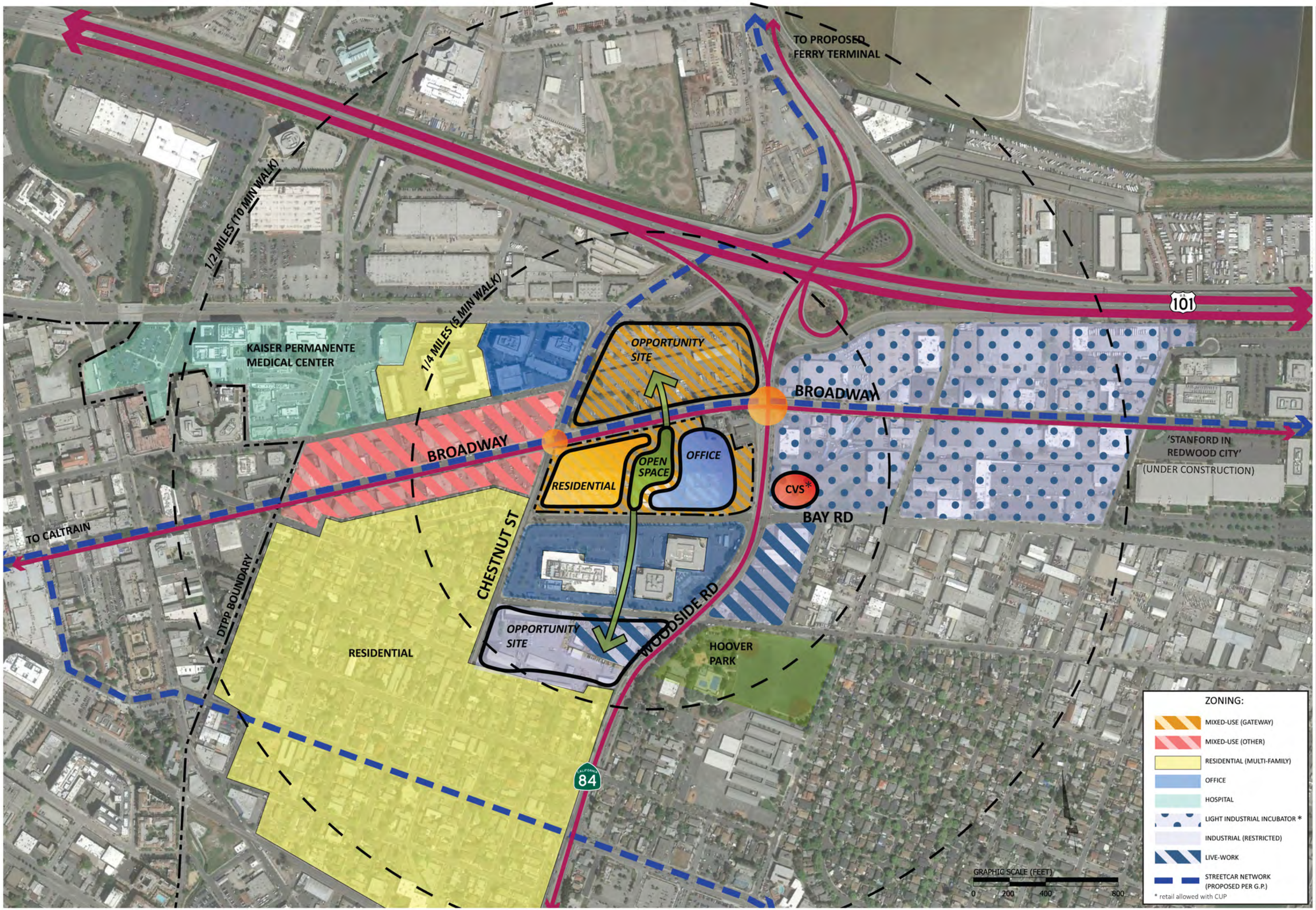
Sheet Title:

EXISTING SITE PHOTOS

Job No. 14023
Date: 03/15/2019
Scale: N.T.S.
Drawn By:

Sheet No:

G 1.0



STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

The Sobrato Organization & MidPen Housing Corporation

Sheet Title:

CONTEXT/ NEIGHBORHOOD PLAN

Job No. 14023
Date: 03/15/2019
Scale: N.T.S.
Drawn By:

Sheet No:

SP 1.0

STUDIO
T SQUARE

: Architecture
: Planning
: Urban Design

Form 4
Architecture

Broadway Plaza
Redwood City, CA

The Sobrato Organization &
MidPen Housing Corporation

Sheet Title:

SITE CIRCULATION
DIAGRAM

Job No. 14023
Date: 03/15/2019
Scale: N.T.S.
Drawn By:

Sheet No:

SP 2.0

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

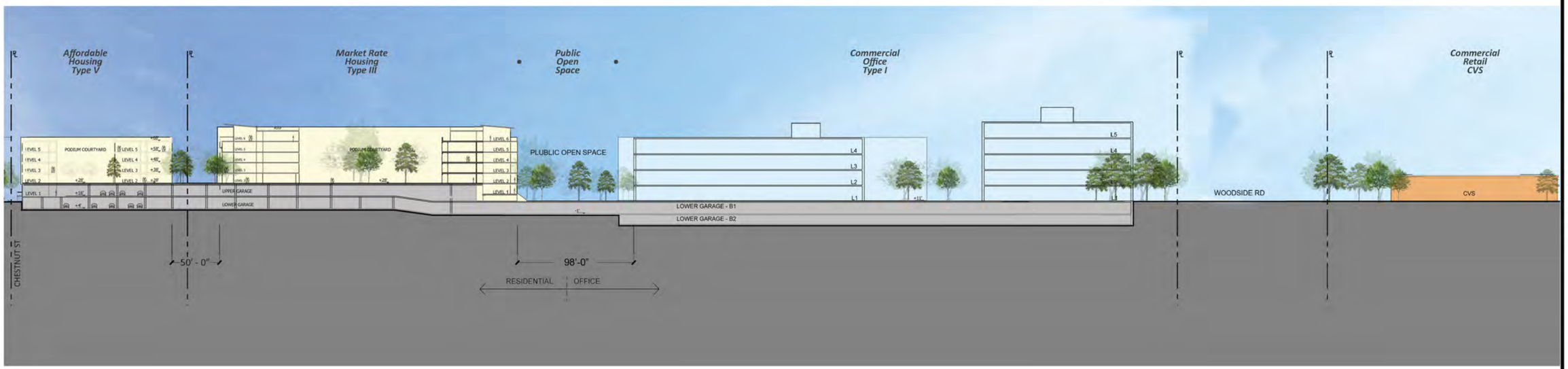
The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
ILLUSTRATIVE SITE PLAN

Job No. 14023
Date: 03/15/2019
Scale: 1" = 80'
Drawn By:

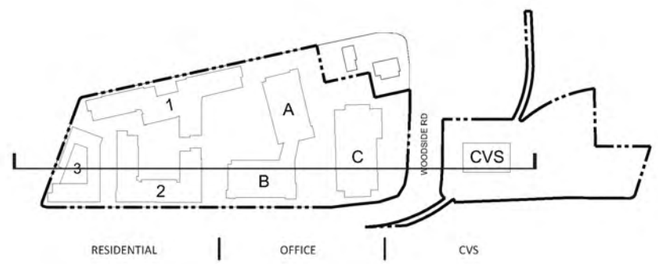
Sheet No:

SP 3.0



PHASING

- PHASE 1 - CVS
- PHASE 2 - PARKING GARAGE
- PHASE 3 - RESIDENTIAL
- PHASE 4 - OFFICE



STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

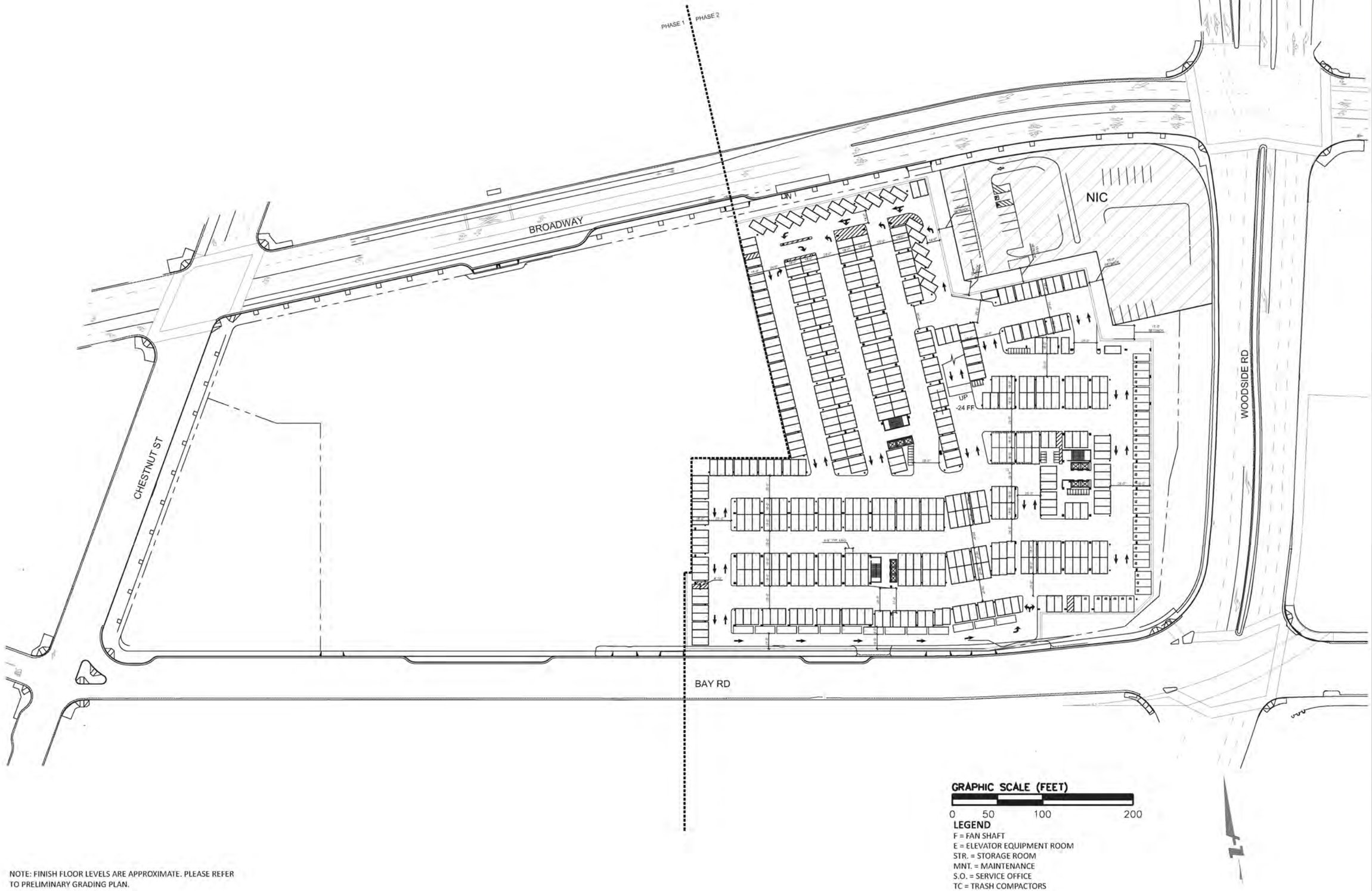
Broadway Plaza
Redwood City, CA

The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
SITE SECTION

Job No. 14023
Date: 03/15/2019
Scale: 1"=50'
Drawn By:

Sheet No:
SP 4.0



NOTE: FINISH FLOOR LEVELS ARE APPROXIMATE. PLEASE REFER TO PRELIMINARY GRADING PLAN.

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

The Sobrato Organization & MidPen Housing Corporation

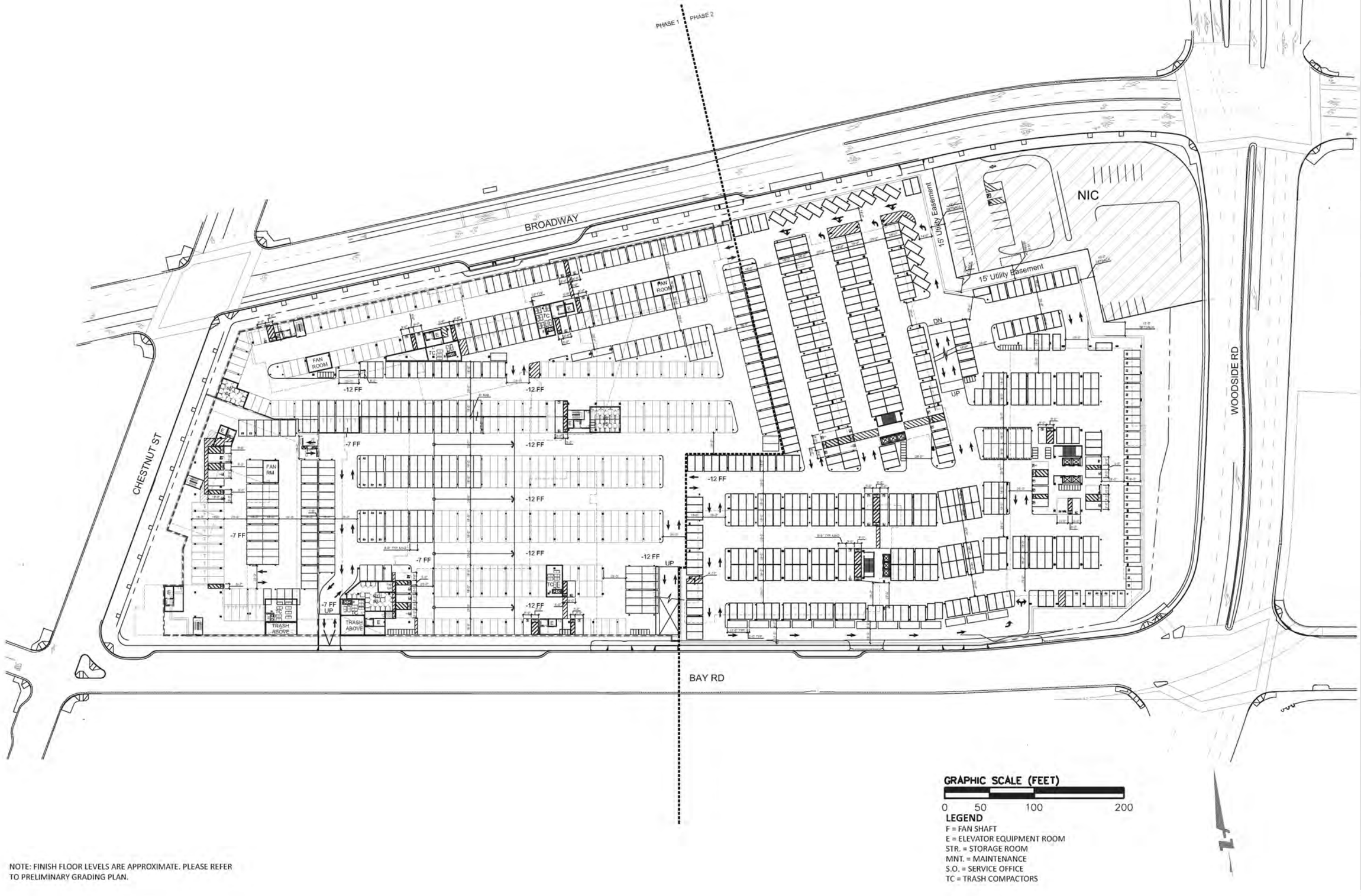
Sheet Title:

LEVEL B2 PLAN / SUBTERRANEAN GARAGE

Job No. 14023
Date: 03/15/2019
Scale: 1"=50'
Drawn By:

Sheet No:

A 0.0



NOTE: FINISH FLOOR LEVELS ARE APPROXIMATE. PLEASE REFER TO PRELIMINARY GRADING PLAN.

GRAPHIC SCALE (FEET)

0 50 100 200

LEGEND

F = FAN SHAFT
E = ELEVATOR EQUIPMENT ROOM
STR. = STORAGE ROOM
MNT. = MAINTENANCE
S.O. = SERVICE OFFICE
TC = TRASH COMPACTORS

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

The Sobrato Organization & MidPen Housing Corporation

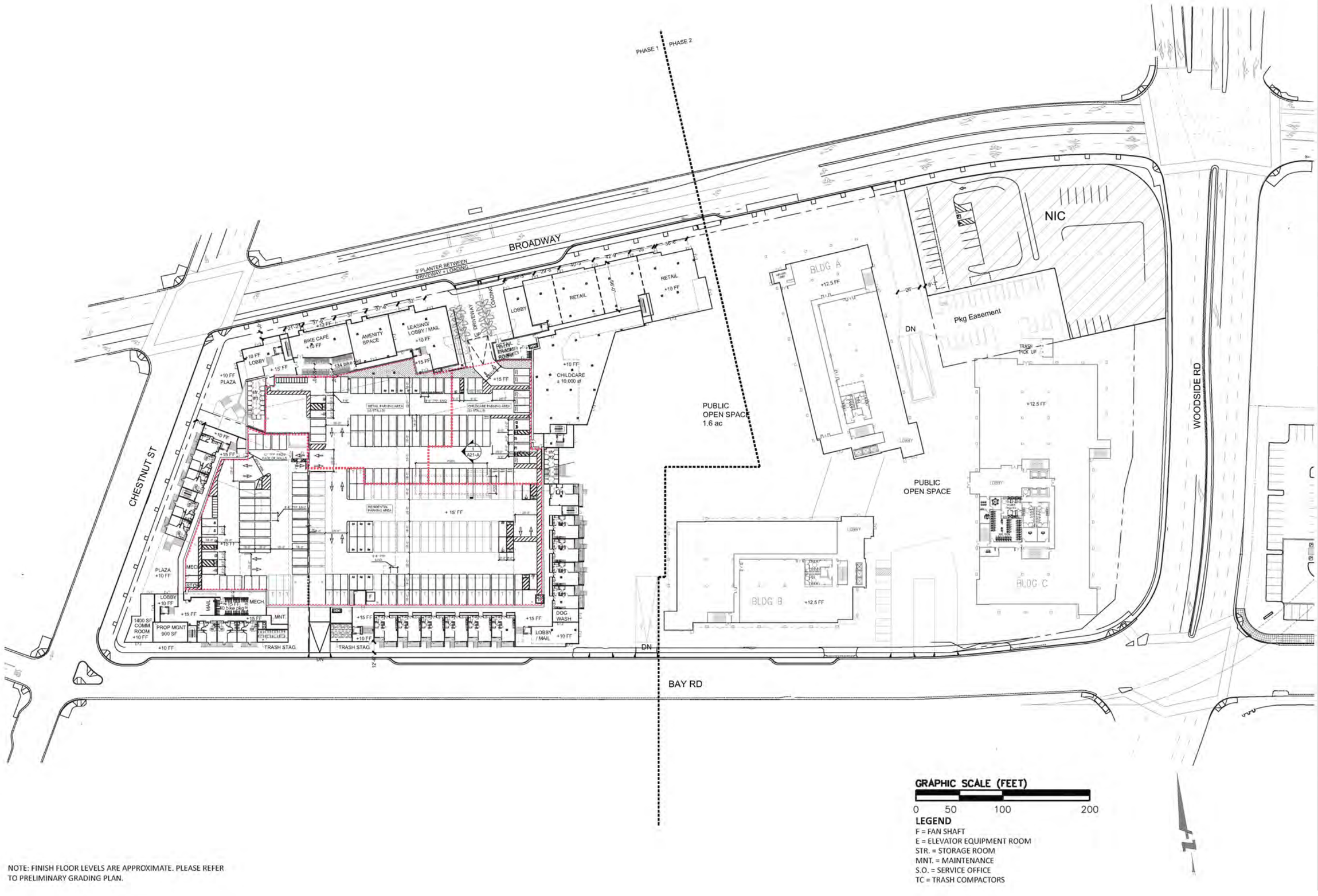
Sheet Title:

LEVEL B1 PLAN / SUBTERRANEAN GARAGE

Job No. 14023
Date: 03/15/2019
Scale: 1"=50'
Drawn By:

Sheet No:

A 1.0



GRAPHIC SCALE (FEET)

0 50 100 200

LEGEND

F = FAN SHAFT
E = ELEVATOR EQUIPMENT ROOM
STR. = STORAGE ROOM
MNT. = MAINTENANCE
S.O. = SERVICE OFFICE
TC = TRASH COMPACTORS

NOTE: FINISH FLOOR LEVELS ARE APPROXIMATE. PLEASE REFER TO PRELIMINARY GRADING PLAN.

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

The Sobrato Organization & MidPen Housing Corporation

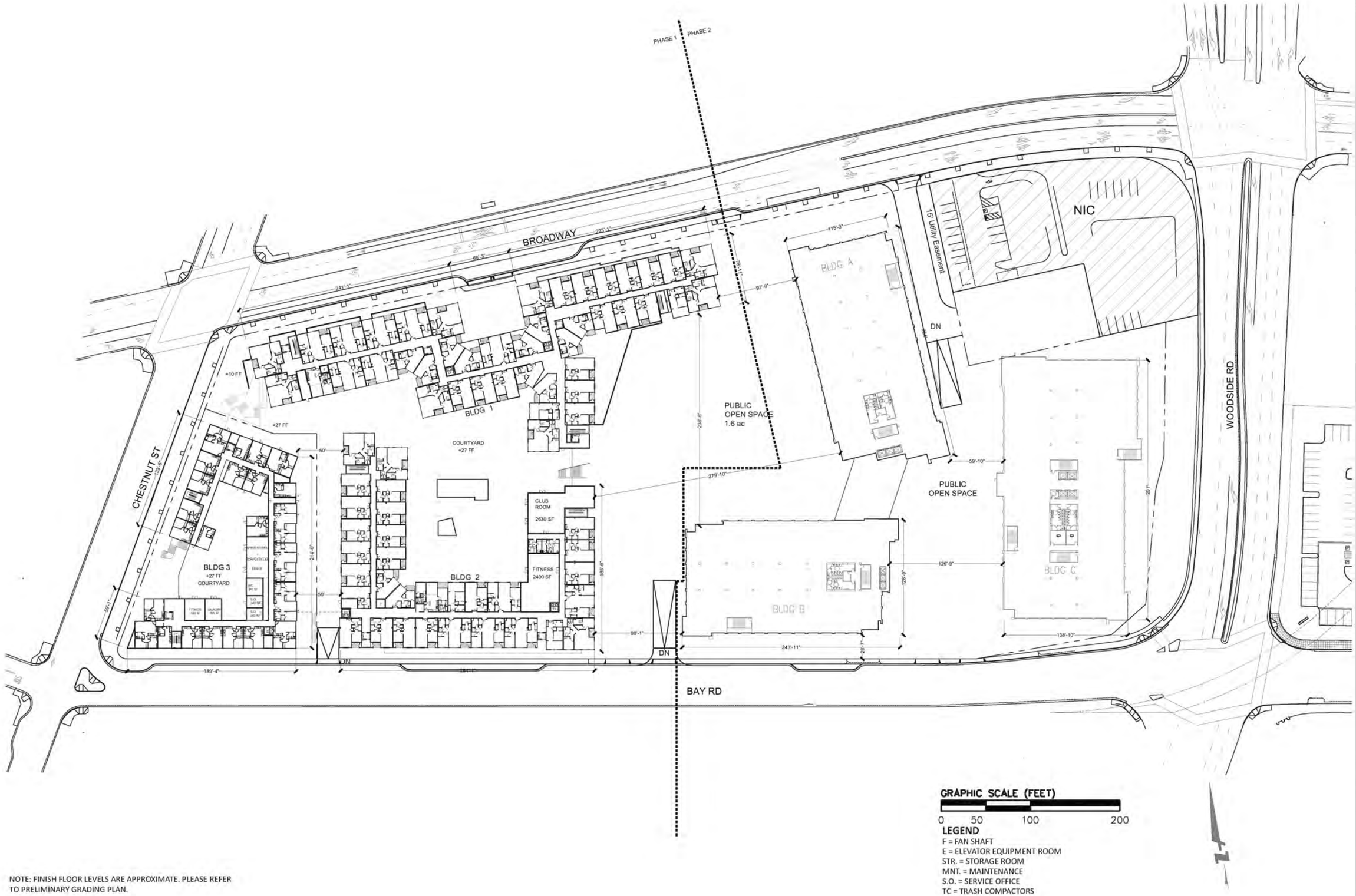
Sheet Title:

LEVEL 1
PLAN /
STREET LEVEL

Job No. 14023
Date: 03/15/2019
Scale: 1"=50'
Drawn By:

Sheet No:

A 1.1



GRAPHIC SCALE (FEET)

0 50 100 200

LEGEND

F = FAN SHAFT
E = ELEVATOR EQUIPMENT ROOM
STR. = STORAGE ROOM
MNT. = MAINTENANCE
S.O. = SERVICE OFFICE
TC = TRASH COMPACTORS

NOTE: FINISH FLOOR LEVELS ARE APPROXIMATE. PLEASE REFER TO PRELIMINARY GRADING PLAN.

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

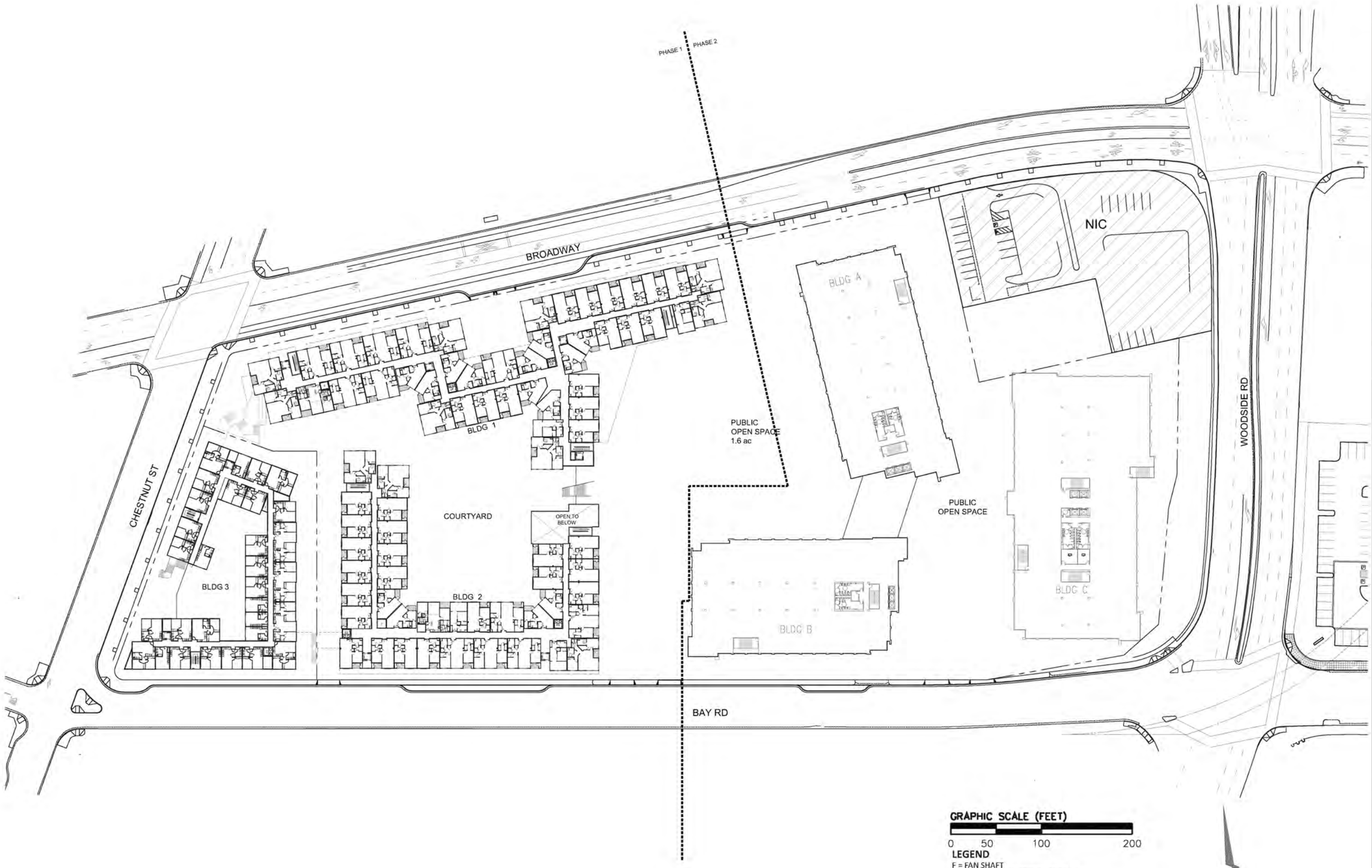
Broadway Plaza
Redwood City, CA

The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
LEVEL 2 PLAN

Job No. 14023
Date: 03/15/2019
Scale: 1"=50'
Drawn By:

Sheet No:
A1.2



GRAPHIC SCALE (FEET)

0 50 100 200

LEGEND

F = FAN SHAFT
E = ELEVATOR EQUIPMENT ROOM
STR. = STORAGE ROOM
MNT. = MAINTENANCE
S.O. = SERVICE OFFICE
TC = TRASH COMPACTORS

NOTE: FINISH FLOOR LEVELS ARE APPROXIMATE. PLEASE REFER TO PRELIMINARY GRADING PLAN.

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

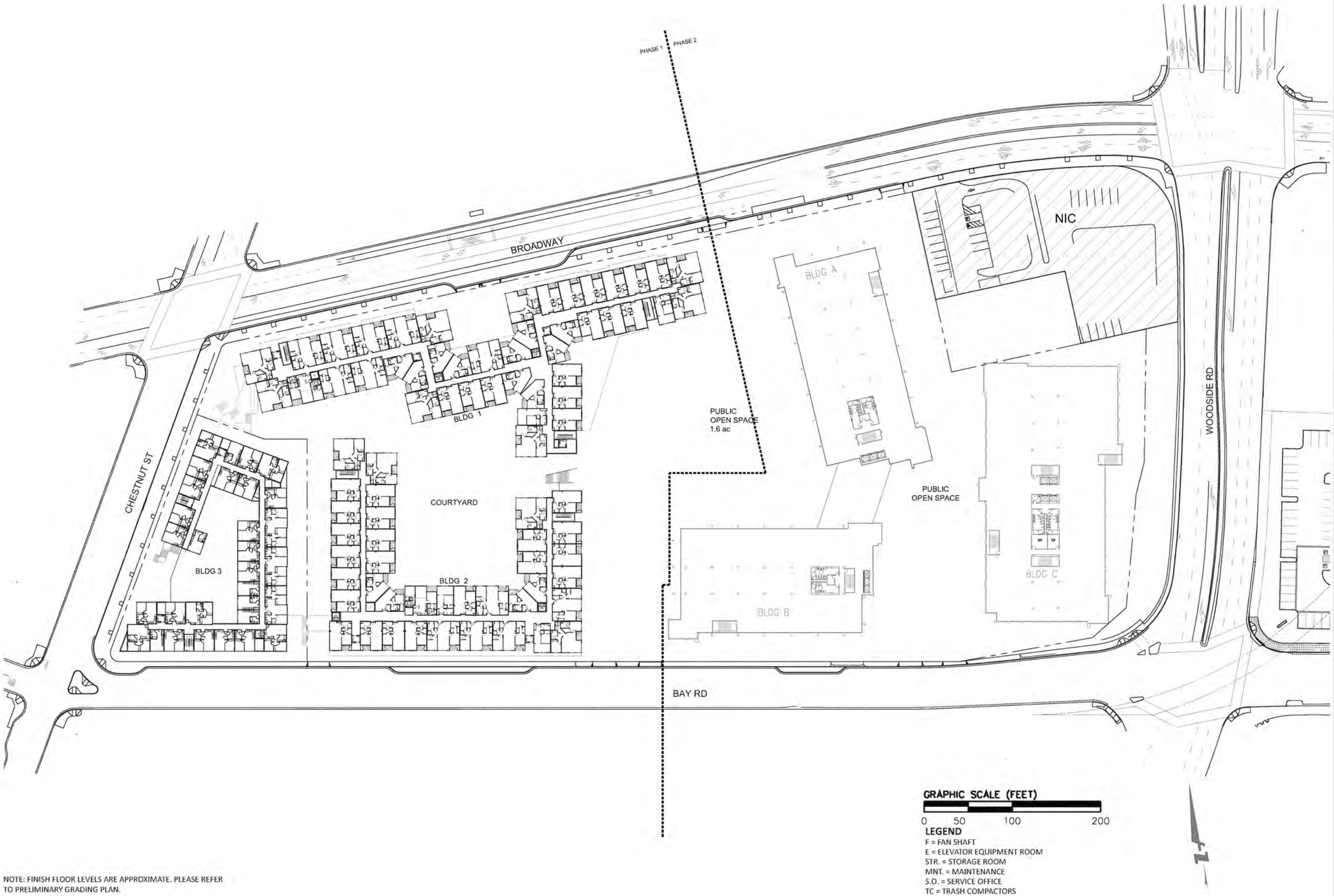
Broadway Plaza
Redwood City, CA

The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
LEVEL 3 PLAN

Job No. 14023
Date: 03/15/2019
Scale: 1"=50'
Drawn By:

Sheet No:
A1.3



GRAPHIC SCALE (FEET)

0 50 100 200

LEGEND

F = FAN SHAFT
E = ELEVATOR EQUIPMENT ROOM
STR. = STORAGE ROOM
MNT. = MAINTENANCE
S.O. = SERVICE OFFICE
TC = TRASH COMPACTORS

NOTE: FINISH FLOOR LEVELS ARE APPROXIMATE. PLEASE REFER TO PRELIMINARY GRADING PLAN.

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

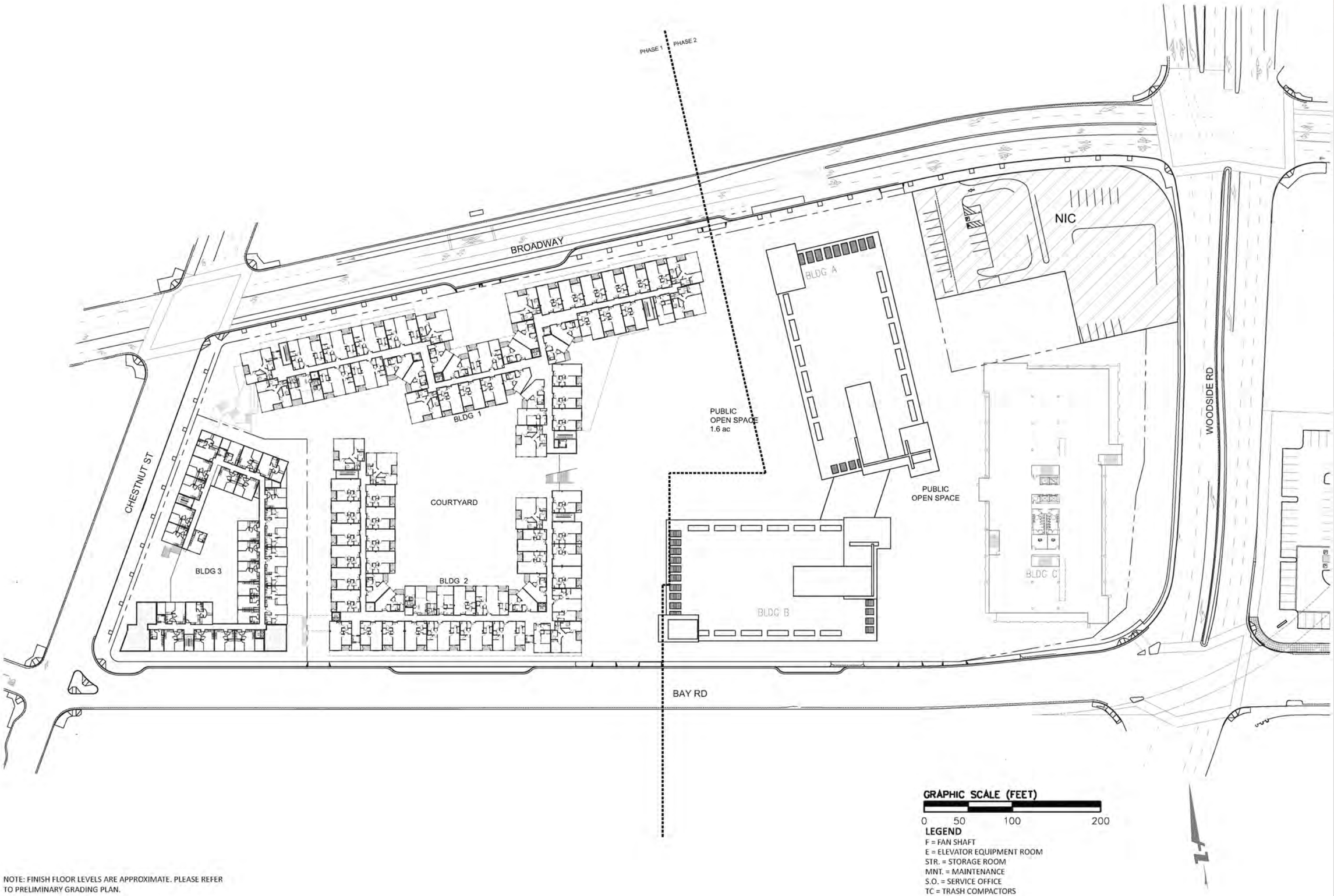
Broadway Plaza
Redwood City, CA

The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
LEVEL 4 PLAN

Job No. 14023
Date: 03/15/2019
Scale: 1"=50'
Drawn By:

Sheet No:
A1.4



GRAPHIC SCALE (FEET)

0 50 100 200

LEGEND

F = FAN SHAFT
E = ELEVATOR EQUIPMENT ROOM
STR. = STORAGE ROOM
MNT. = MAINTENANCE
S.O. = SERVICE OFFICE
TC = TRASH COMPACTORS

NOTE: FINISH FLOOR LEVELS ARE APPROXIMATE. PLEASE REFER TO PRELIMINARY GRADING PLAN.

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

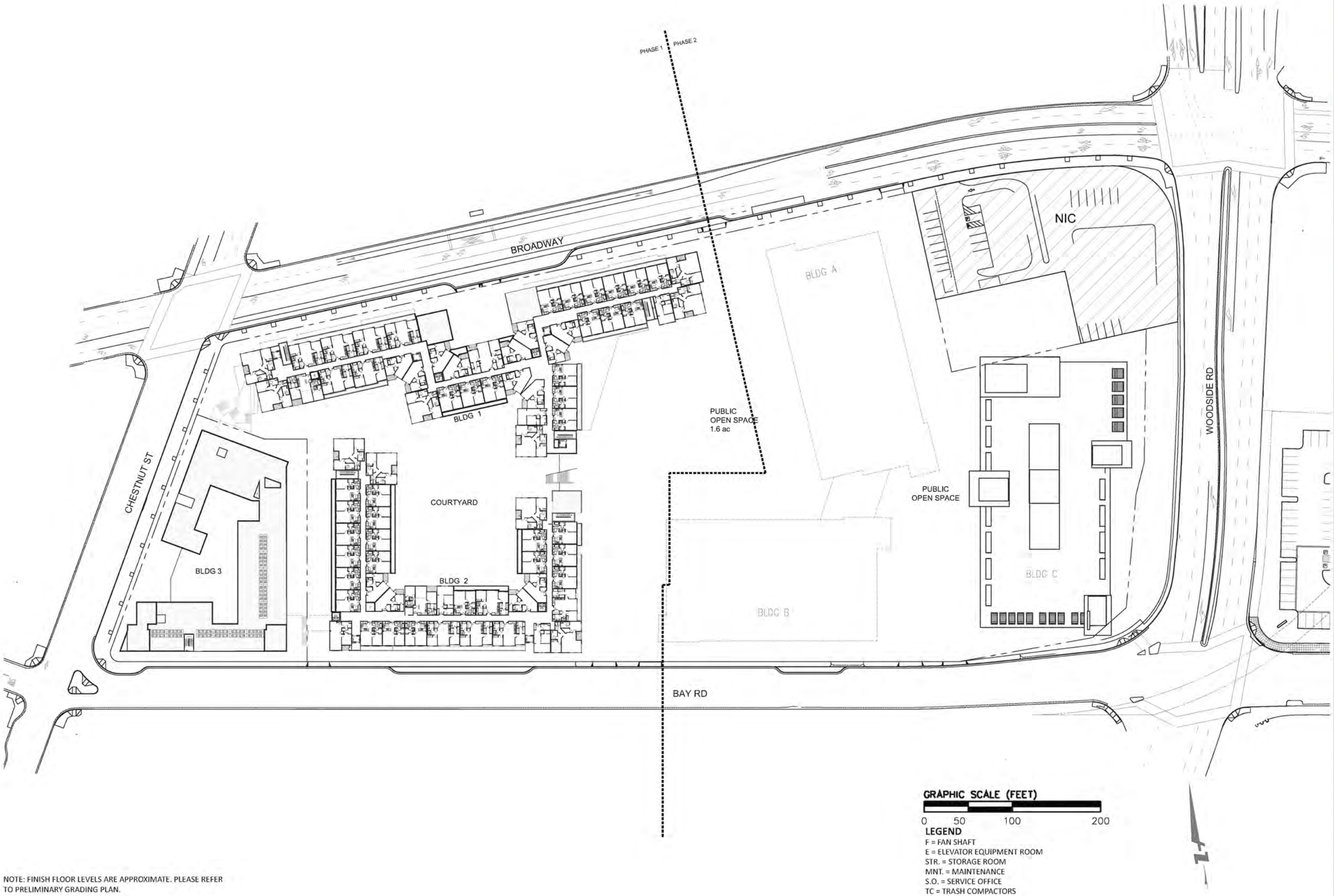
Broadway Plaza
Redwood City, CA

The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
LEVEL 5 PLAN

Job No. 14023
Date: 03/15/2019
Scale: 1"=50'
Drawn By:

Sheet No:
A1.5



GRAPHIC SCALE (FEET)

0 50 100 200

LEGEND

F = FAN SHAFT
E = ELEVATOR EQUIPMENT ROOM
STR. = STORAGE ROOM
MNT. = MAINTENANCE
S.O. = SERVICE OFFICE
TC = TRASH COMPACTORS

NOTE: FINISH FLOOR LEVELS ARE APPROXIMATE. PLEASE REFER TO PRELIMINARY GRADING PLAN.

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

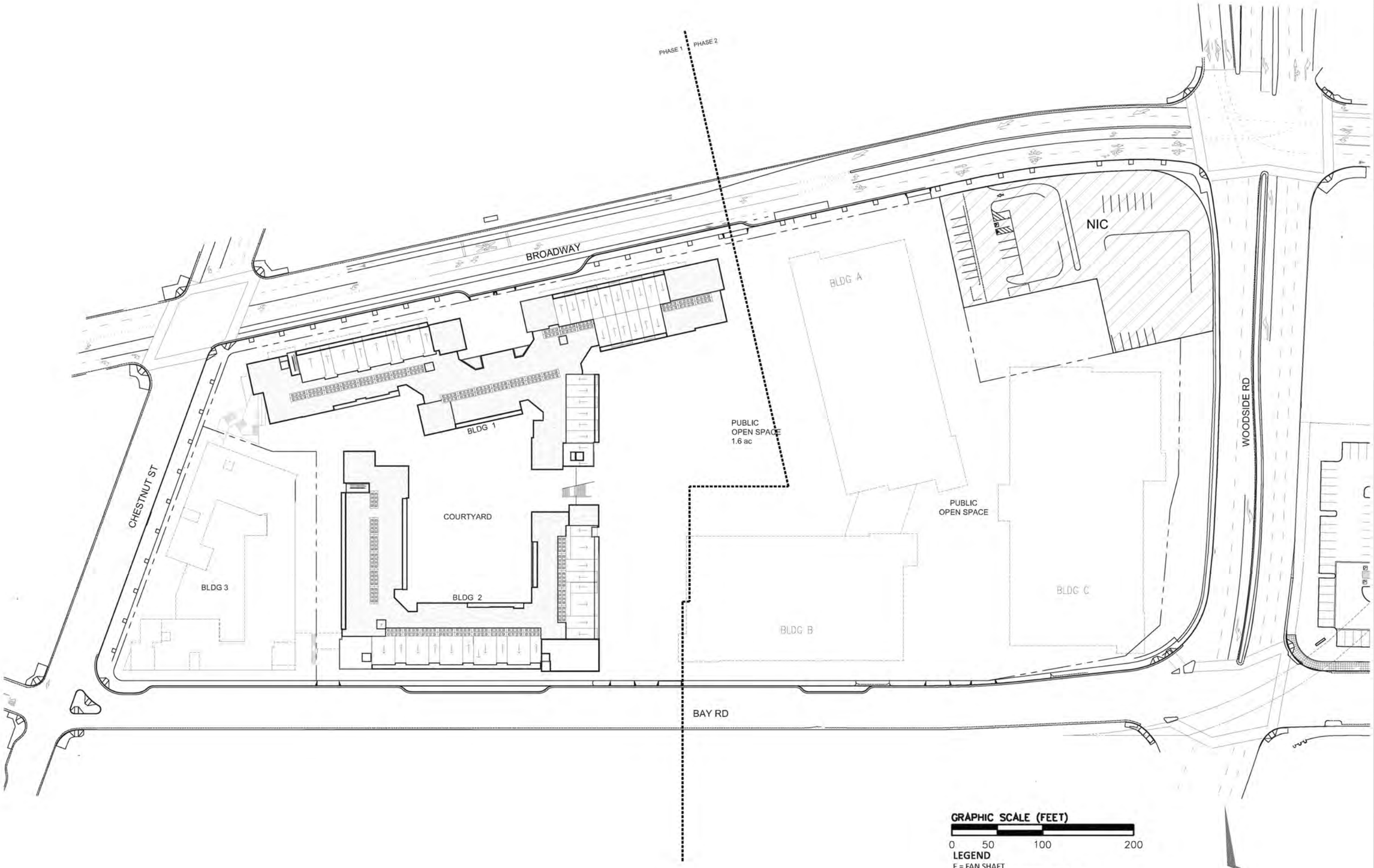
The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
LEVEL 6
PLAN /
ROOF PLAN

Job No. 14023
Date: 03/15/2019
Scale: 1"=50'
Drawn By:

Sheet No:

A1.6



GRAPHIC SCALE (FEET)

0 50 100 200

LEGEND

F = FAN SHAFT
E = ELEVATOR EQUIPMENT ROOM
STR. = STORAGE ROOM
MNT. = MAINTENANCE
S.O. = SERVICE OFFICE
TC = TRASH COMPACTORS

NOTE: FINISH FLOOR LEVELS ARE APPROXIMATE. PLEASE REFER TO PRELIMINARY GRADING PLAN.

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

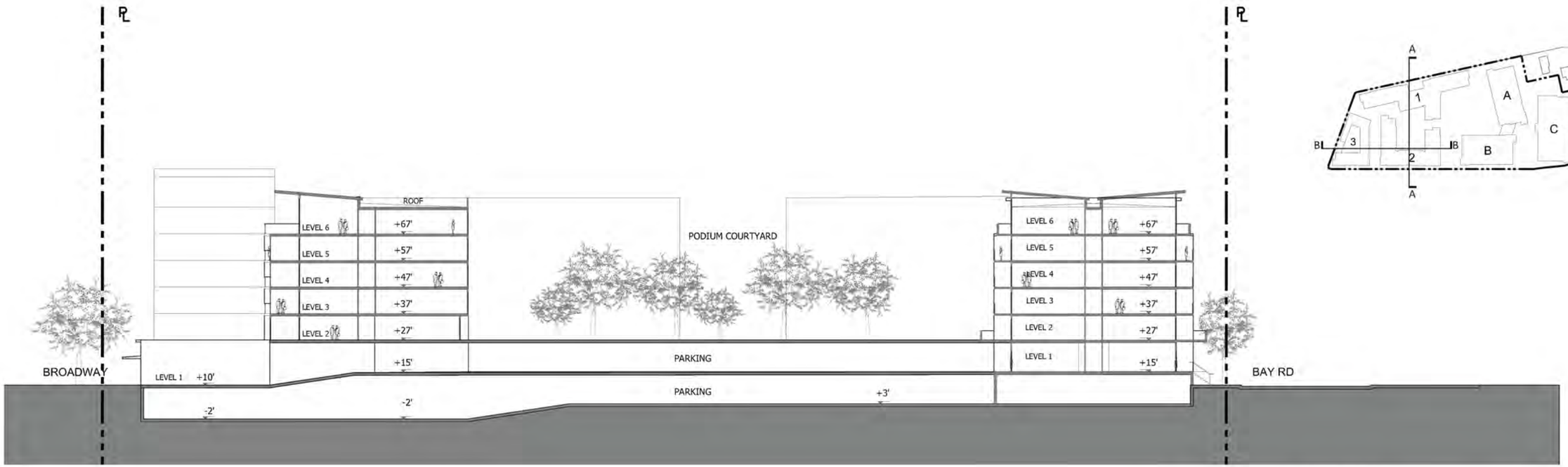
Broadway Plaza
Redwood City, CA

The Sobrato Organization &
MidPen Housing Corporation

Sheet Title:
ROOF PLAN

Job No. 14023
Date: 03/15/2019
Scale: 1"=50'
Drawn By:

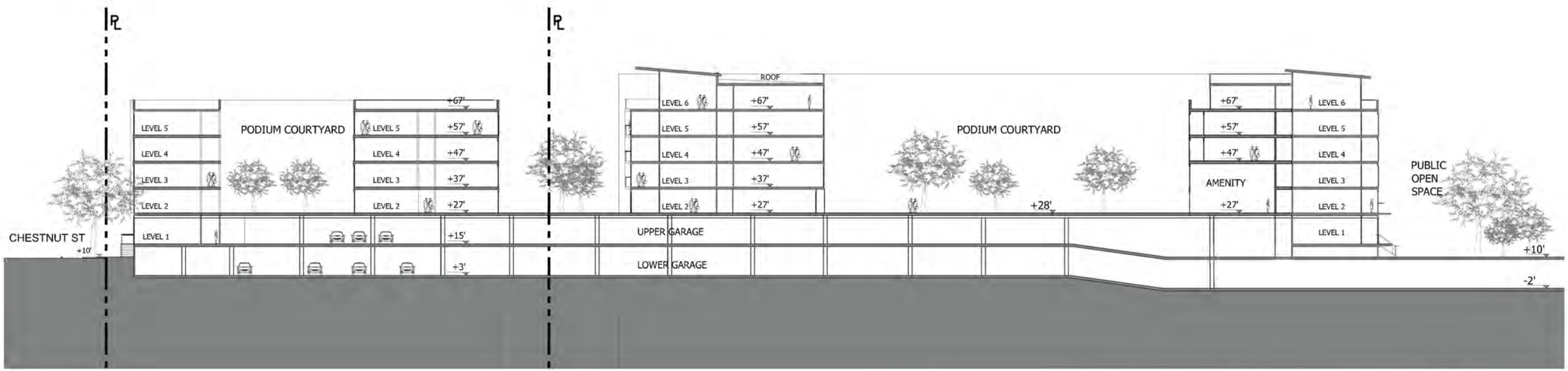
Sheet No:
A1.7



RESIDENTIAL SECTION

SCALE: 1" = 20' - 0"

A



RESIDENTIAL BUILDING SECTION

SCALE: 1" = 20' - 0"

B

NOTE: FINISH FLOOR LEVELS ARE APPROXIMATE. PLEASE REFER TO PRELIMINARY GRADING PLAN.

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

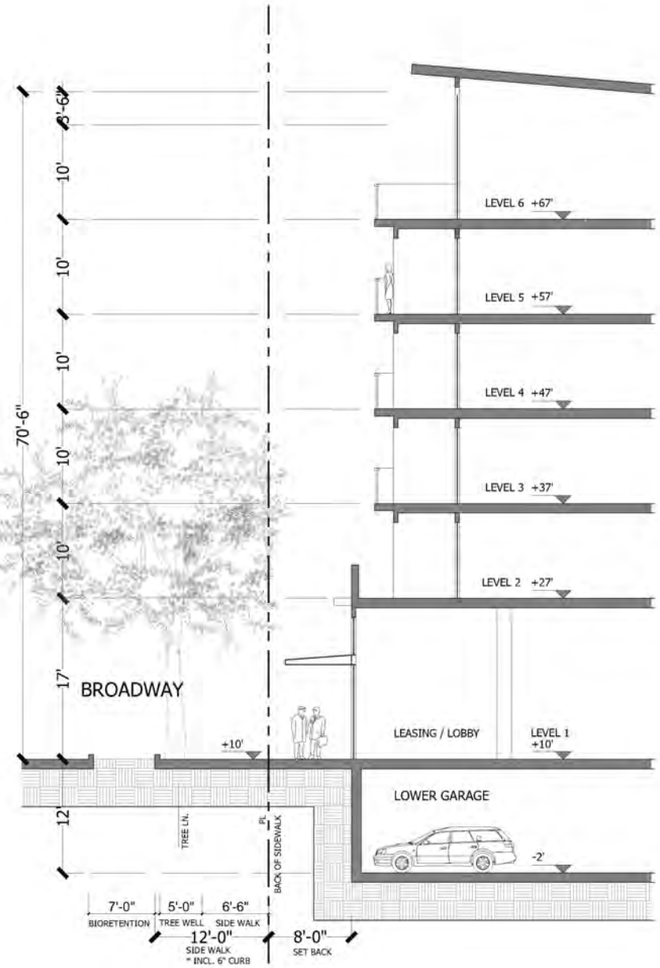
The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
BUILDING SECTIONS (RESIDENTIAL)

Job No. 14023
Date: 03/15/2019
Scale: 1" = 20'
Drawn By:

Sheet No:

A2.1

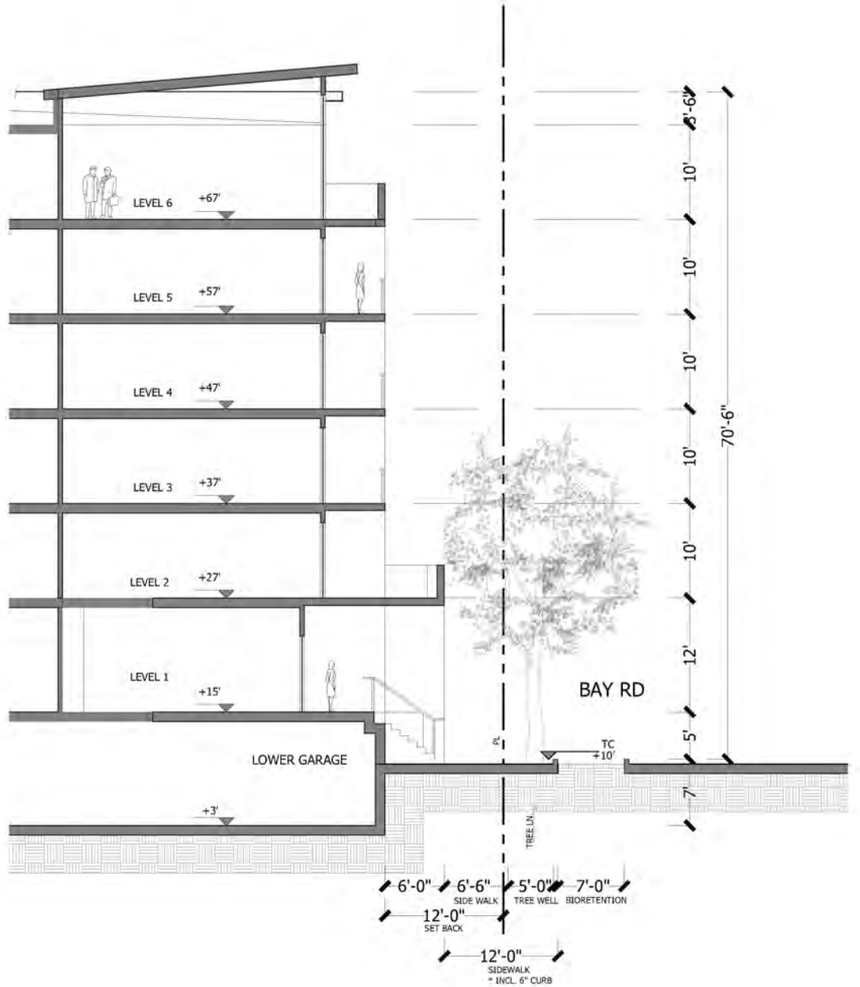


MARKET RATE

Broadway - Wall Section

SCALE: 1/8" = 1'-0"

A



MARKET RATE

Bay Rd - Wall Section

SCALE: 1/8" = 1'-0"

A

NOTE: FINISH FLOOR LEVELS ARE APPROXIMATE. PLEASE REFER TO PRELIMINARY GRADING PLAN.

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

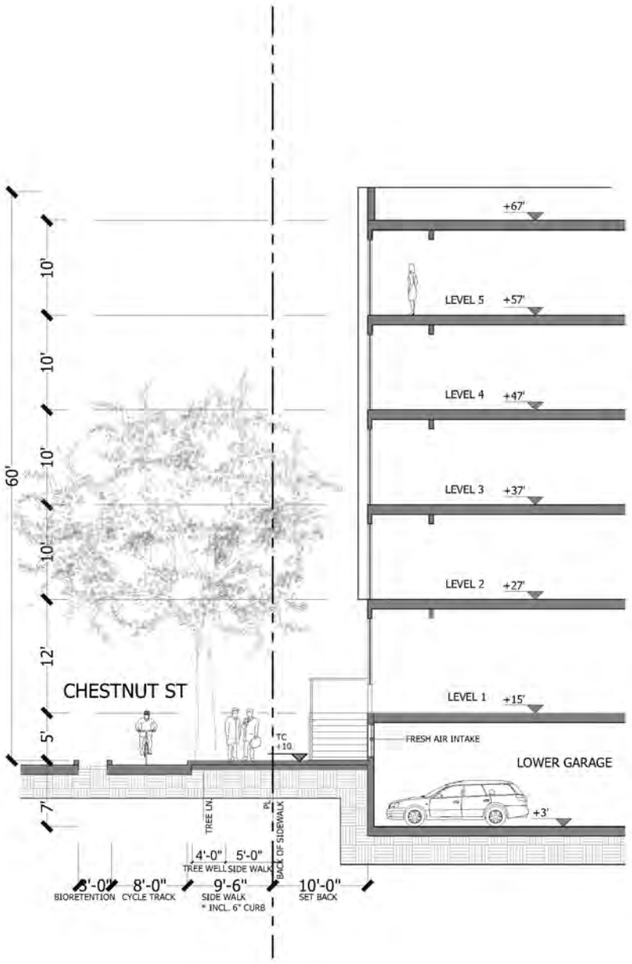
The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
WALL SECTIONS (RESIDENTIAL)

Job No. 14023
Date: 03/15/2019
Scale: 1/8" = 1' - 0"
Drawn By:

Sheet No:

A2.2

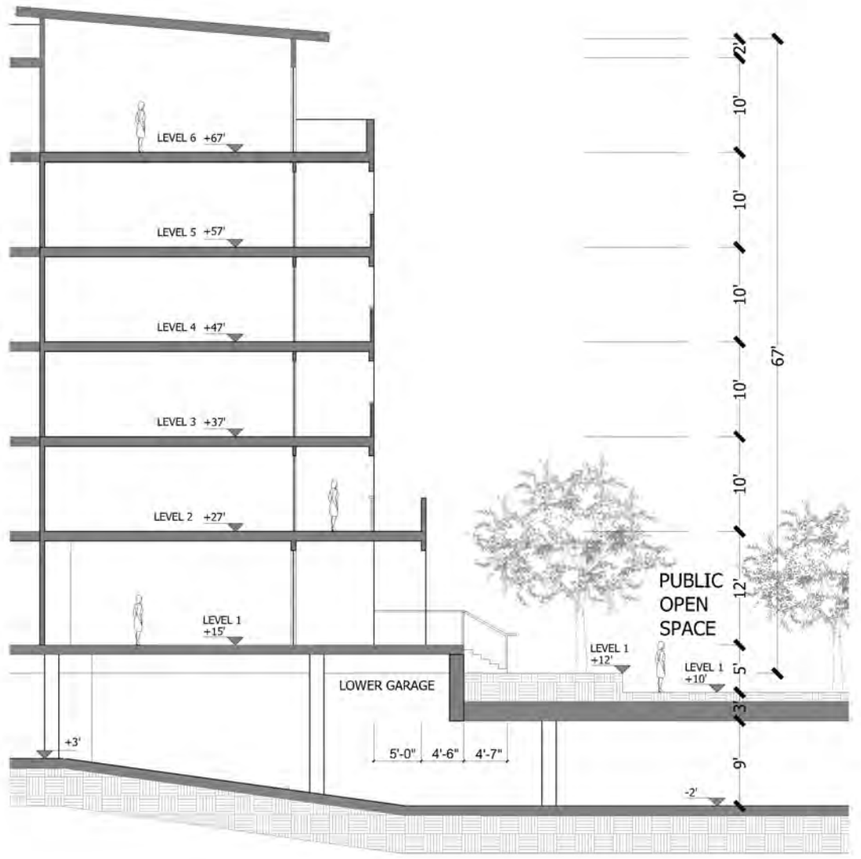


AFFORDABLE

Chestnut St - Wall Section

B

SCALE: 1/8" = 1'-0"



MARKET RATE

Public Open Space - Wall Section

B

SCALE: 1/8" = 1'-0"

NOTE: FINISH FLOOR LEVELS ARE APPROXIMATE. PLEASE REFER TO PRELIMINARY GRADING PLAN.

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

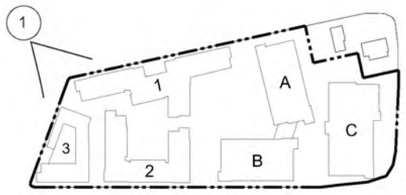
The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
WALL SECTIONS (RESIDENTIAL)

Job No. 14023
Date: 03/15/2019
Scale: 1/8" = 1' - 0"
Drawn By:

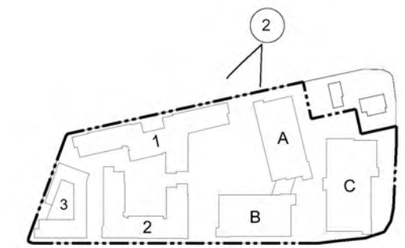
Sheet No:

A2.3



BLDG 1 | PUBLIC PLAZA AT BROADWAY AND CHESTNUT ST | BLDG 3 - AFFORDABLE

VIEW OF PLAZA AT CHESTNUT ST AND BROADWAY 1



BLDG A | PUBLIC OPEN SPACE | BLDG 1

VIEW OF BROADWAY 2

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

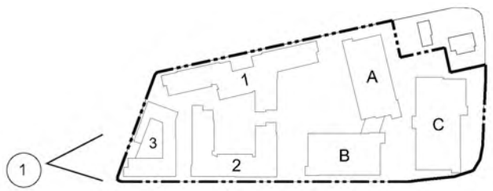
Broadway Plaza
Redwood City, CA

The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
BUILDING PERSPECTIVES (RESIDENTIAL)

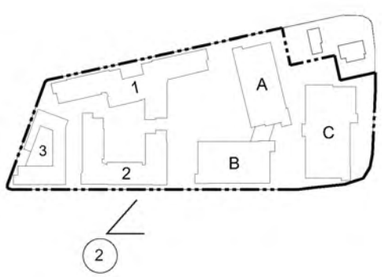
Job No. 14023
Date: 03/15/2019
Scale:
Drawn By:

Sheet No:
A3.1



BLDG 1 | BLDG 3 - AFFORDABLE | BAY RD

VIEW OF CHESTNUT ST AND BAY RD 1



BLDG 2 | PUBLIC OPEN SPACE | BLDG B

VIEW OF BAY RD 2

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
BUILDING PERSPECTIVES (RESIDENTIAL)

Job No. 14023
Date: 03/15/2019
Scale:
Drawn By:

Sheet No:
A3.2

PUBLIC OPEN SPACE | BLDG 1 (EAST SIDE) | ENTRY COURT

NORTH ELEVATION (A)

SCALE: 1/16" = 1' - 0"

RESIDENTIAL BLDG 1 - MARKET RATE (A)

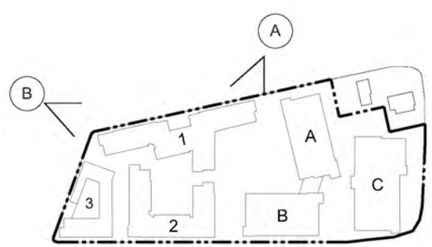
ENTRY COURT | BLDG 1 (WEST SIDE)

NORTH ELEVATION (B)

SCALE: 1/16" = 1' - 0"

RESIDENTIAL BLDG 1 - MARKET RATE (B)

1. STUCCO COLOR 1
2. STUCCO COLOR 2
3. STUCCO COLOR 3
4. STUCCO COLOR 4
5. DETAIL COLOR
6. CEMENT BOARD PANELS
7. CEMENT BOARD SIDING
8. CORRUGATED METAL SIDING
9. PORCELAIN TILE
10. VINYL WINDOW
11. STORE FRONT WINDOW SYSTEM
12. METAL RAILING
13. BRICK VENEER
14. SMOOTH TROWEL PLASTER



STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
COLORS AND MATERIALS BUILDING 1

Job No.	14023
Date:	03/15/2019
Scale:	1/16" = 1' - 0"
Drawn By:	

Sheet No:

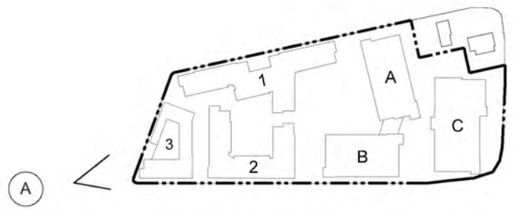
A 4.1

WEST ELEVATION (A)

SCALE: 1/16" = 1' - 0"

RESIDENTIAL BLDG 3 - AFFORDABLE (A)

1. STUCCO COLOR 1
2. STUCCO COLOR 2
3. STUCCO COLOR 3
4. STUCCO COLOR 4
5. DETAIL COLOR
6. CEMENT BOARD PANELS
7. CEMENT BOARD SIDING
8. CORRUGATED METAL SIDING
9. PORCELAIN TILE
10. VINYL WINDOW
11. STORE FRONT WINDOW SYSTEM
12. METAL RAILING
13. BRICK VENEER
14. SMOOTH TROWEL PLASTER



STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
COLORS AND MATERIALS BUILDING 3

Job No. 14023
Date: 03/15/2019
Scale: 1/16" = 1' - 0"
Drawn By:

Sheet No:

A 4.2

(A) RESIDENTIAL BLDG 3 - AFFORDABLE

CHESTNUT ST | BLDG 3 - AFFORDABLE

SOUTH ELEVATION (A)

SCALE: 1/16" = 1' - 0"

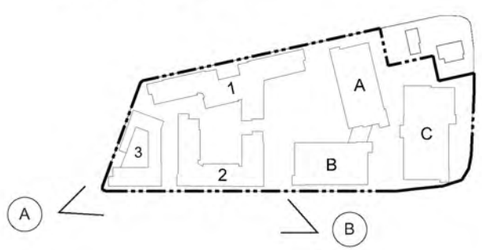
(B) RESIDENTIAL BLDG 2 - MARKET RATE

PKG ENTRY | BLDG 2 | PUB. OPEN SPACE

SOUTH ELEVATION (B)

SCALE: 1/16" = 1' - 0"

1 STUCCO COLOR 1
2 STUCCO COLOR 2
3 STUCCO COLOR 3
4 STUCCO COLOR 4
5 DETAIL COLOR
6 CEMENT BOARD PANELS
7 CEMENT BOARD SIDING
8 CORRUGATED METAL SIDING
9 PORCELAIN TILE
10 VINYL WINDOW
11 STORE FRONT WINDOW SYSTEM
12 METAL RAILING
13 BRICK VENEER
14 SMOOTH TROWEL PLASTER



STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
COLORS AND MATERIALS BUILDING 2 + 3

Job No. 14023
Date: 03/15/2019
Scale: 1/16" = 1' - 0"
Drawn By:

Sheet No:

A 4.3

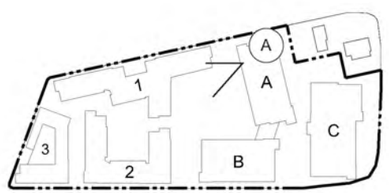
BAY RD | BLDG 2 | PODIUM | BLDG 1 - GROUND FLOOR CHILDCARE | GROUND FLOOR RETAIL

EAST ELEVATION A

SCALE: 1/16" = 1' - 0"

RESIDENTIAL BLDG 2 and BLDG 1 - MARKET RATE (A)

1. STUCCO COLOR 1
2. STUCCO COLOR 2
3. STUCCO COLOR 3
4. STUCCO COLOR 4
5. DETAIL COLOR
6. CEMENT BOARD PANELS
7. CEMENT BOARD SIDING
8. CORRUGATED METAL SIDING
9. PORCELAIN TILE
10. VINYL WINDOW
11. STORE FRONT WINDOW SYSTEM
12. METAL RAILING
13. BRICK VENEER
14. SMOOTH TROWEL PLASTER



STUDIO T SQUARE
: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

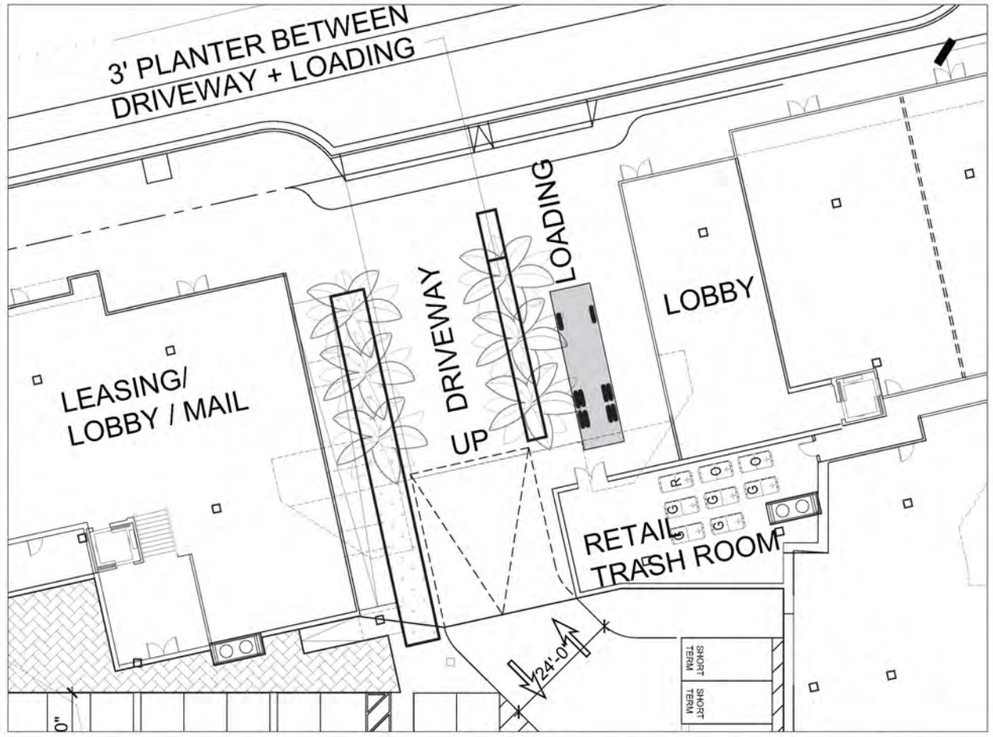
The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
COLORS AND MATERIALS BUILDING 1 + 2

Job No.	14023
Date:	03/15/2019
Scale:	1/16" = 1' - 0"
Drawn By:	

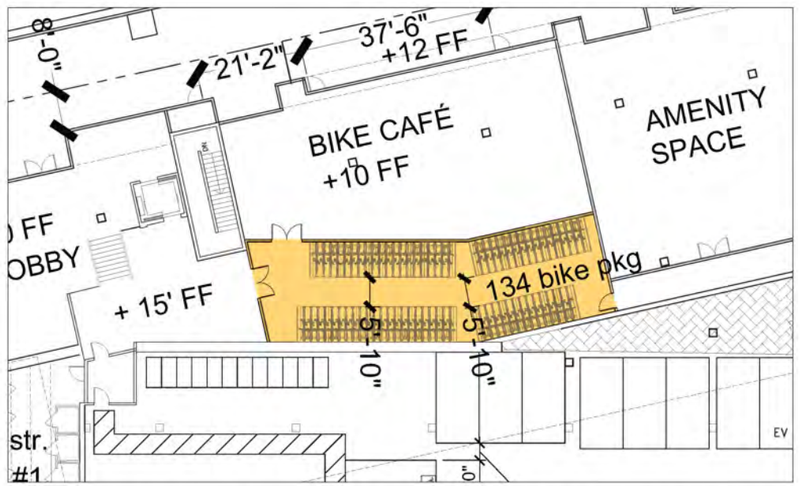
Sheet No:

A 4.4

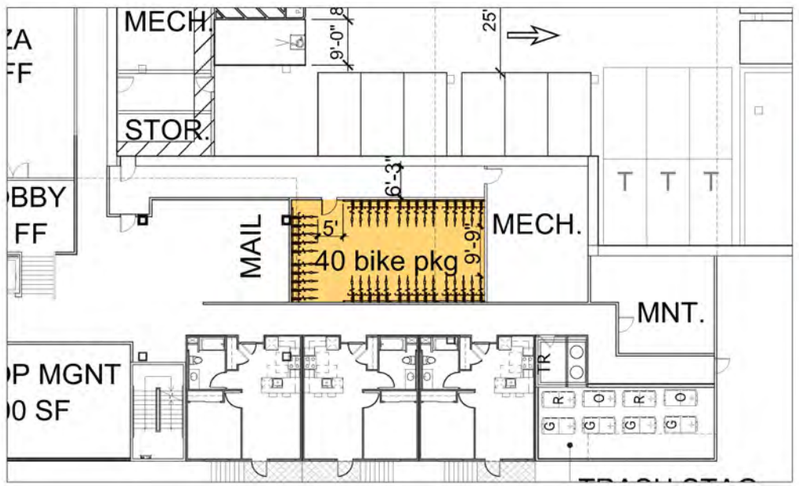


DRIVEWAY / LOADING ZONE ON BROADWAY WITH 3 FT RAISED PLANTER

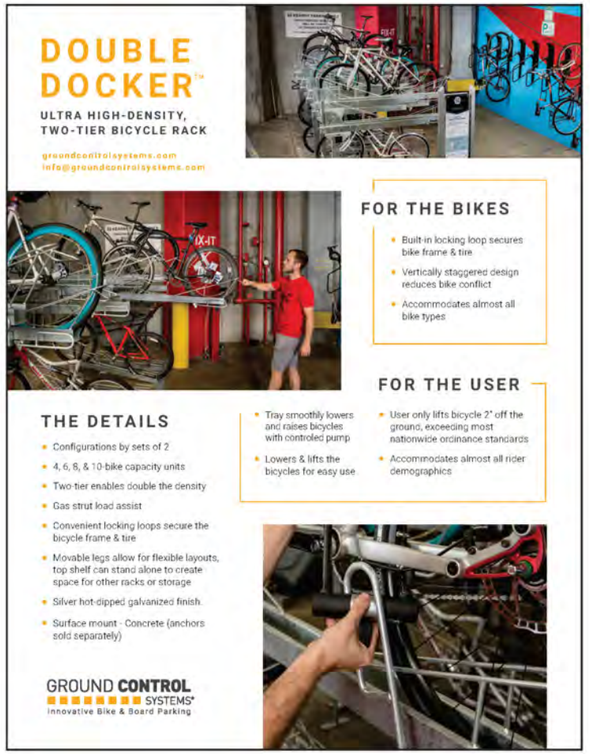
PERSPECTIVE VIEW OF PROPOSED LOADING / DRIVEWAY ON BROADWAY



BICYCLE PARKING FOR MARKET-RATE RESIDENTIAL



BICYCLE PARKING FOR AFFORDABLE RESIDENTIAL



STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

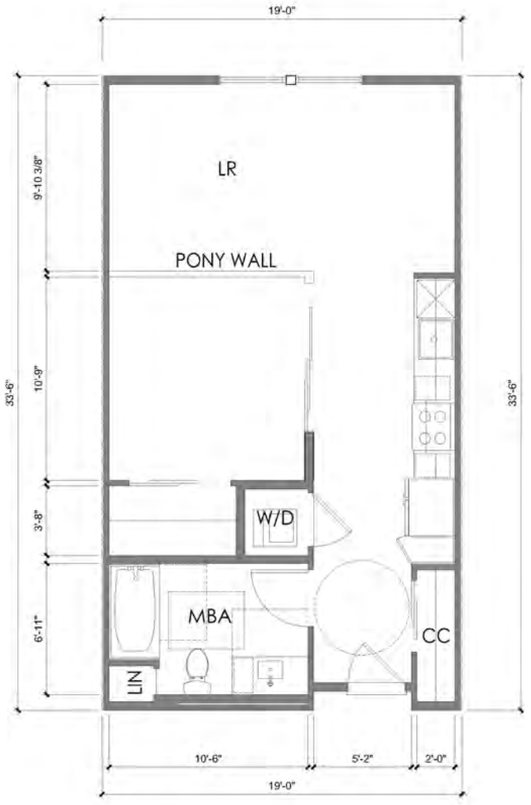
Broadway Plaza
Redwood City, CA

The Sobrato Organization & MidPen Housing Corporation

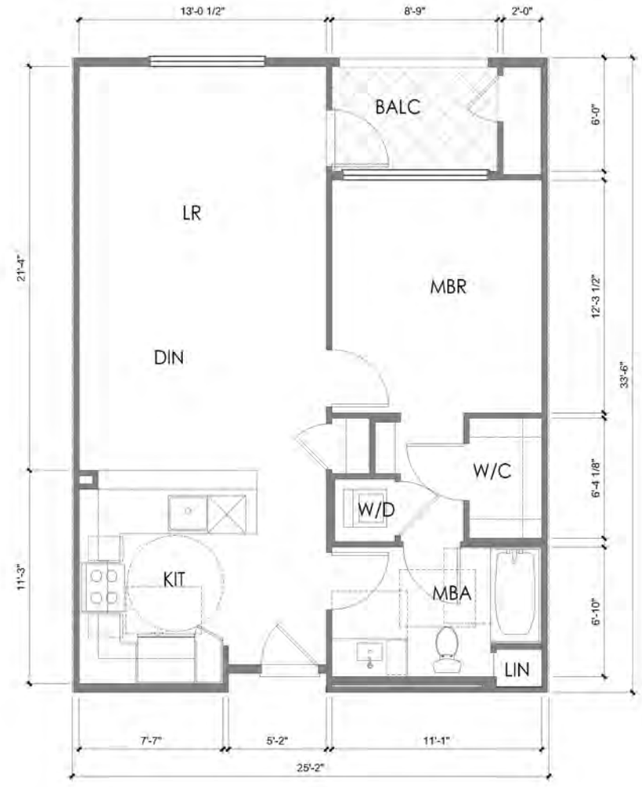
Sheet Title:
LOADING + BICYCLE ROOM EXHIBIT

Job No. 14023
Date: 03/15/2019
Scale: 1" = 30' - 0"
Drawn By:

Sheet No:
A 4.5



S (Typical Studio)
Net Rentable: 585 s.f.



1B (Typical 1 BR)
Net Rentable: 718 s.f.

STUDIO
T SQUARE

: Architecture
: Planning
: Urban Design

Form 4
Architecture

Broadway Plaza
Redwood City, CA

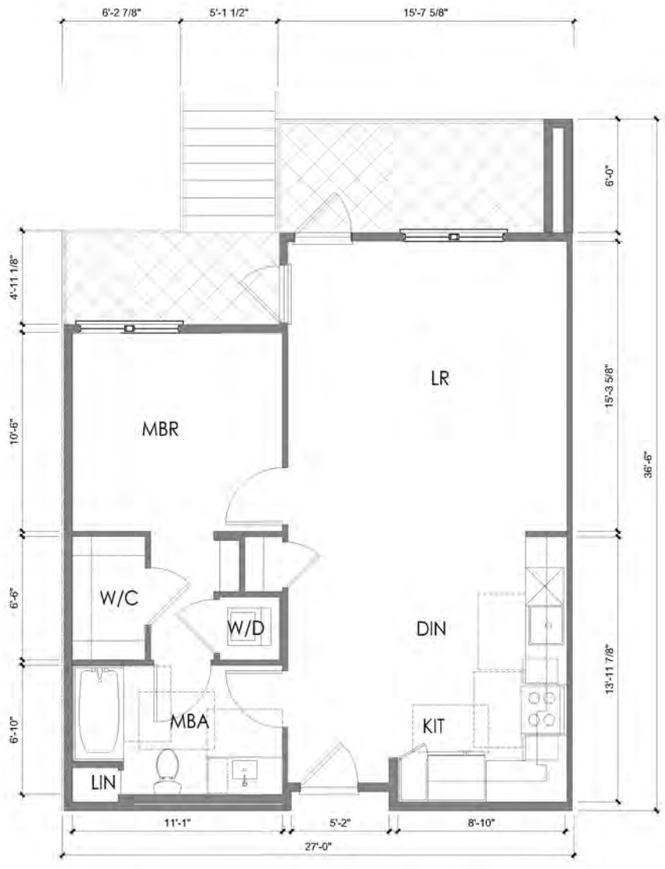
The Sobrato Organization &
MidPen Housing Corporation

Sheet Title:
TYPICAL UNIT PLANS (MARKET RATE)

Job No. 14023
Date: 03/15/2019
Scale: 1/4" = 1' - 0"
Drawn By:

Sheet No:

A 4.6



1A (Typical Stoop Unit)
Net Rentable: 707 s.f.

2A (Typical 2 BR)
Net Rentable: 1,100 s.f.

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

The Sobrato Organization & MidPen Housing Corporation

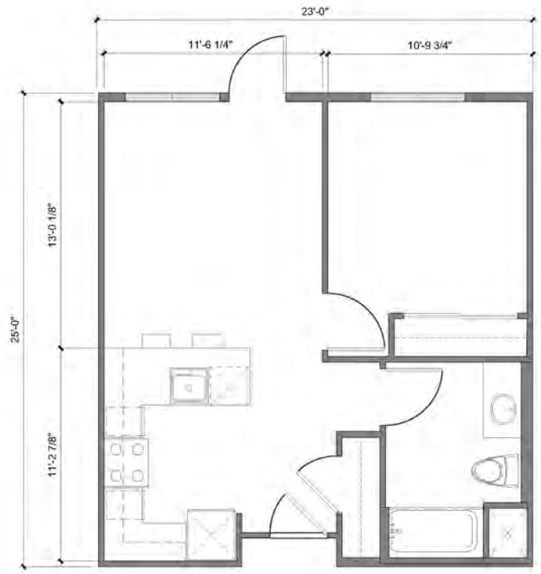
Sheet Title:
TYPICAL UNIT PLANS (MARKET RATE)

Job No. 14023
Date: 03/15/2019
Scale: 1/4" = 1' - 0"
Drawn By:

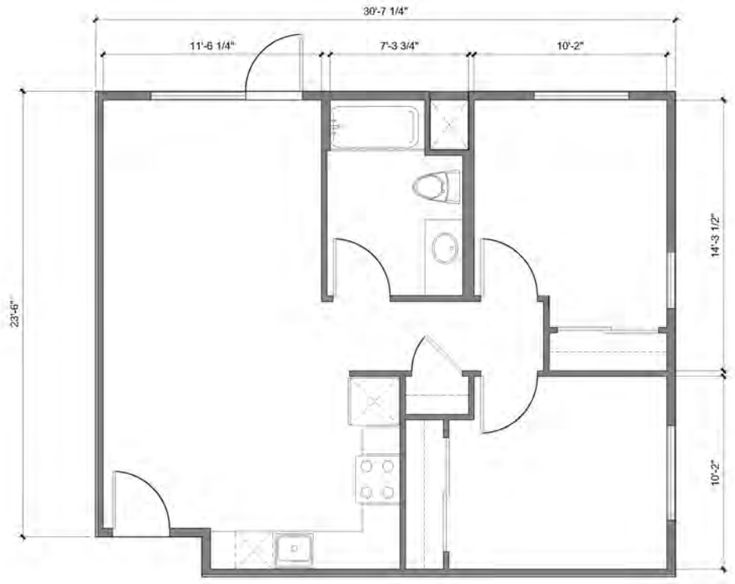
Sheet No:

A 4.7

S (Typical Studio)
Net Rentable: 384 s.f.



1A (Typical 1 BR)
Net Rentable: 562 s.f.



2A (Typical 2 BR)
Net Rentable: 765 s.f.

3A (Typical 3 BR)
Net Rentable: 1071 s.f.

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

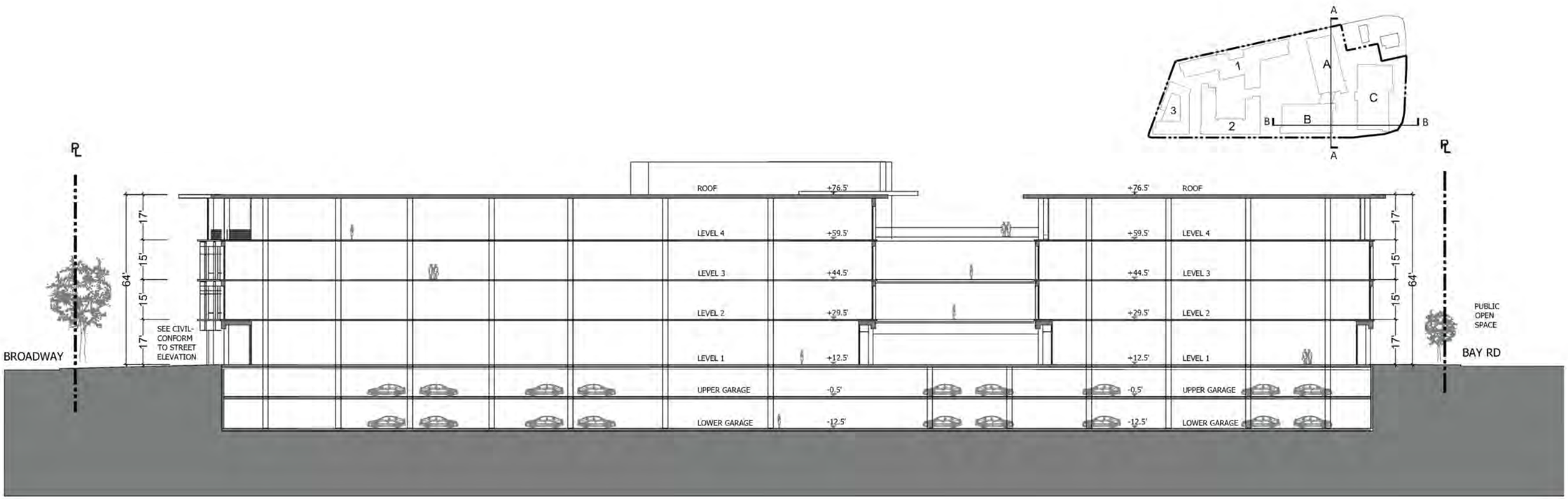
The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
TYPICAL UNIT PLAN (AFFORDABLE)

Job No. 14023
Date: 03/15/2019
Scale: 1/4" = 1'- 0"
Drawn By:

Sheet No:

A 4.8



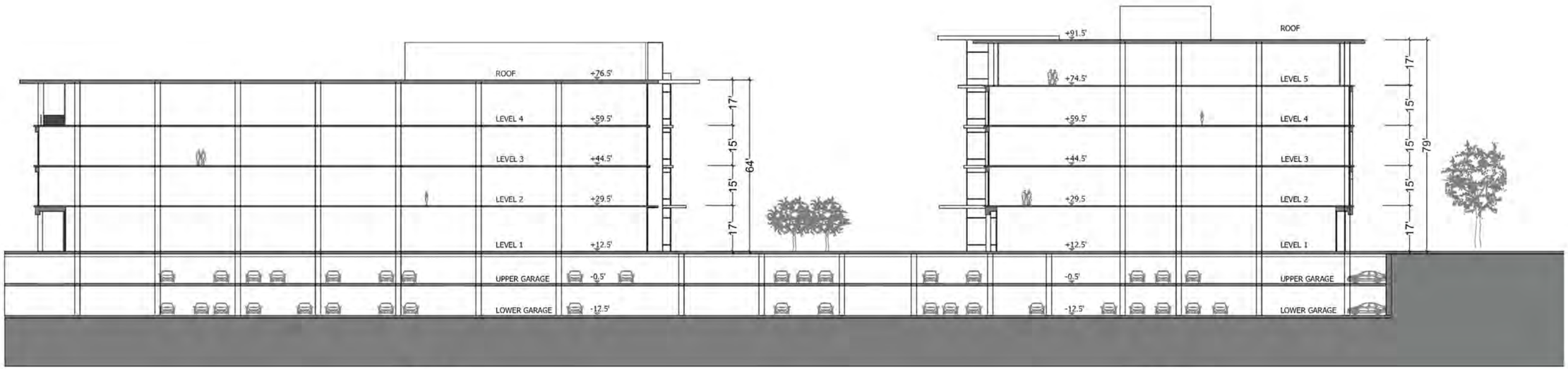
BLDG A

BLDG B

OFFICE BUILDING SECTION A

SCALE: 1" = 20' - 0"

A



BLDG B

BLDG C

OFFICE BUILDING SECTION B

SCALE: 1" = 20' - 0"

B

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

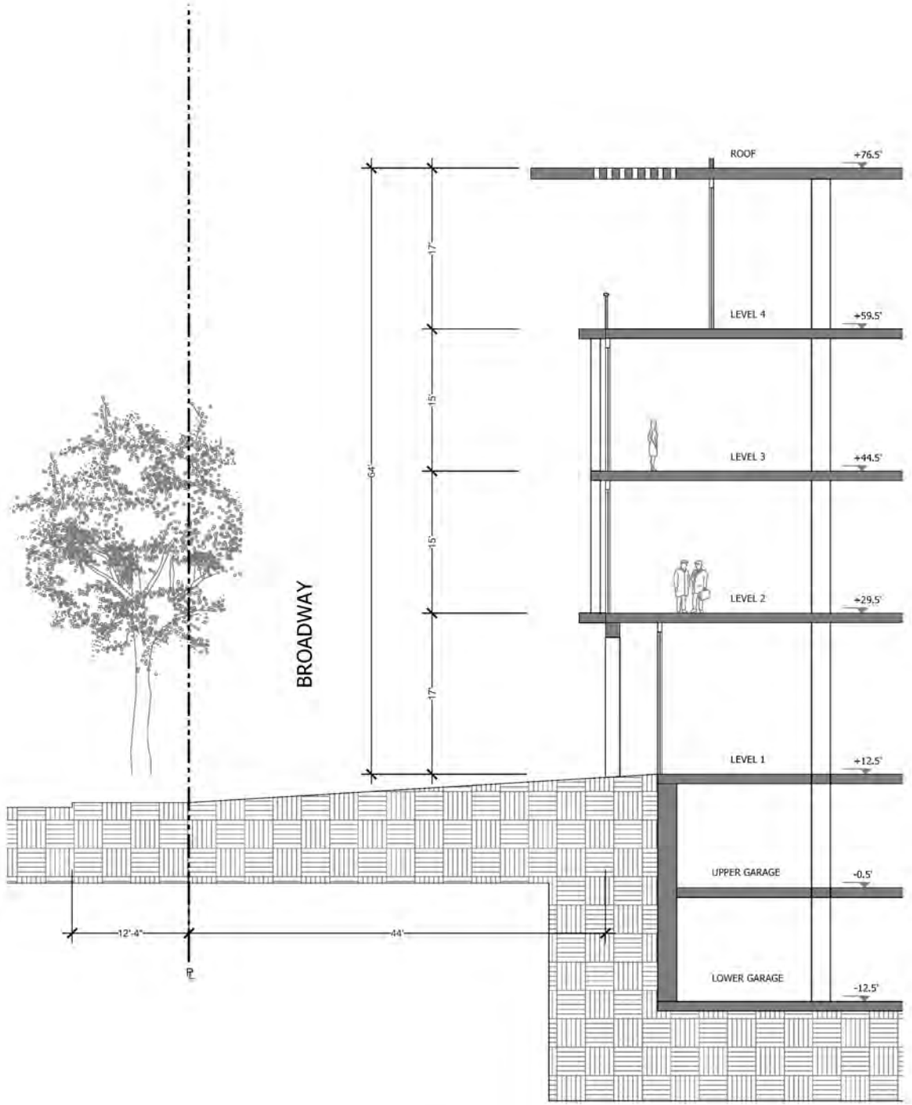
The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
BUILDING SECTIONS (OFFICE)

Job No. 14023
Date: 03/15/2019
Scale: 1" = 20' - 0"
Drawn By:

Sheet No:

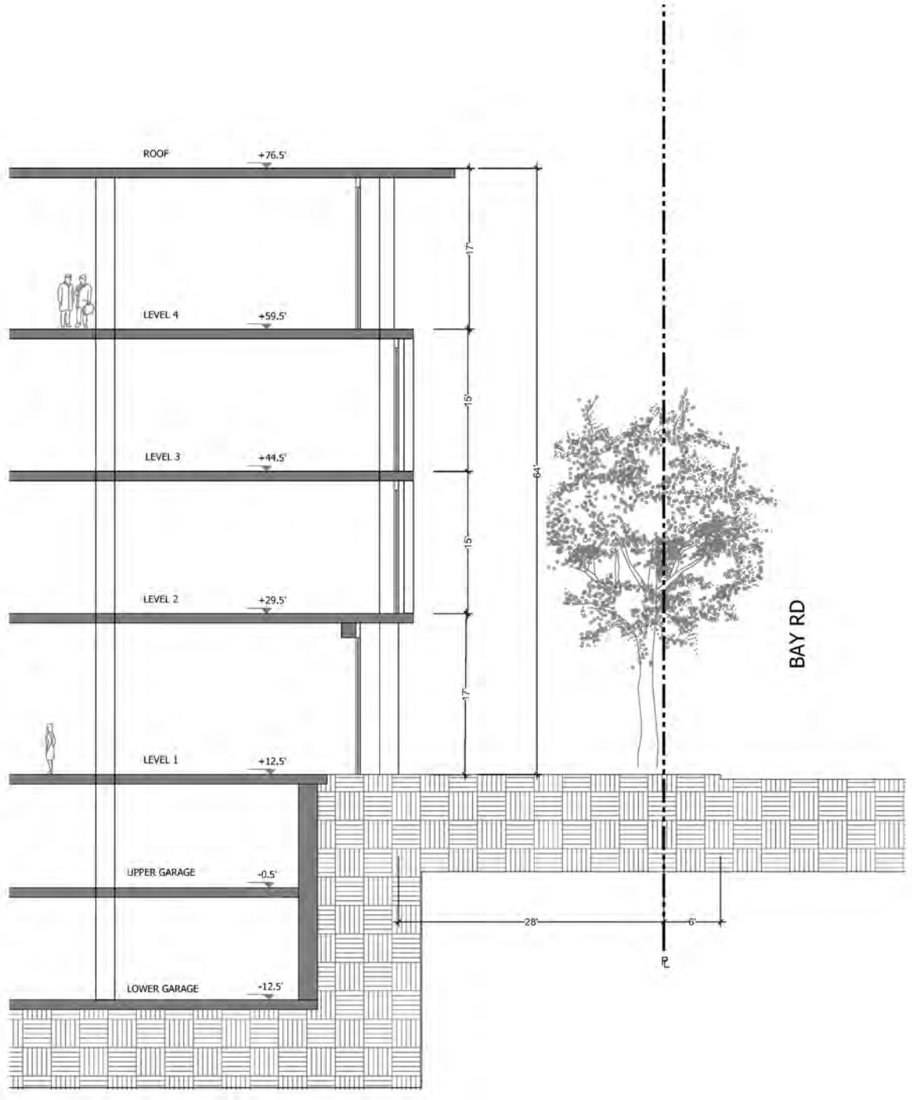
A 5.1



Broadway Rd - Wall Section

SCALE: 1/8" = 1'-0"

A



Bay Rd - Wall Section

SCALE: 1/8" = 1'-0"

B

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

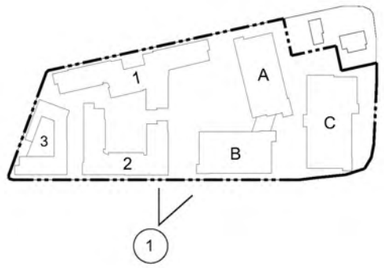
The Sobrato Organization &
MidPen Housing Corporation

Sheet Title:
WALL SECTIONS (OFFICE)

Job No. 14023
Date: 03/15/2019
Scale: 1" = 20' - 0"
Drawn By:

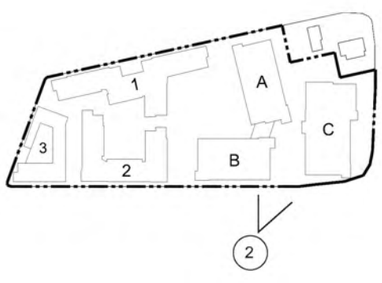
Sheet No:

A 5.2



BLDG 2 | PUBLIC OPEN SPACE | BLDG B

VIEW LOOKING THROUGH PARK AT BAY ENTRANCE (1)



BLDG B | BLDG A | BLDG C

VIEW OF OFFICES FROM BAY RD (2)

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

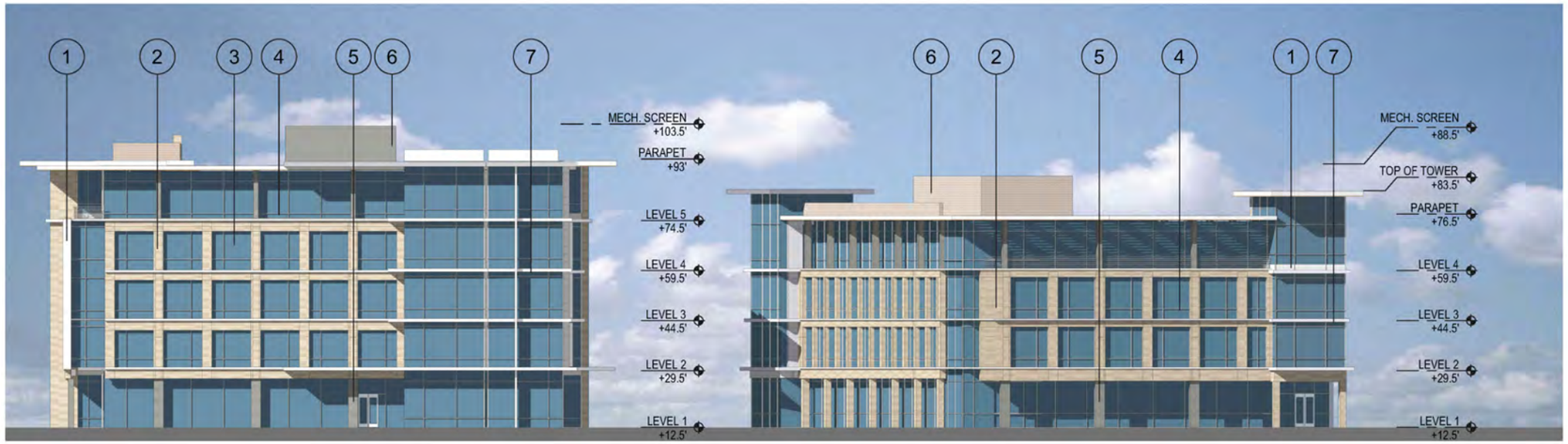
Broadway Plaza
Redwood City, CA

The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
BUILDING PERSPECTIVES (OFFICE)

Job No. 14023
Date: 03/15/2019
Scale: N.T.S.
Drawn By:

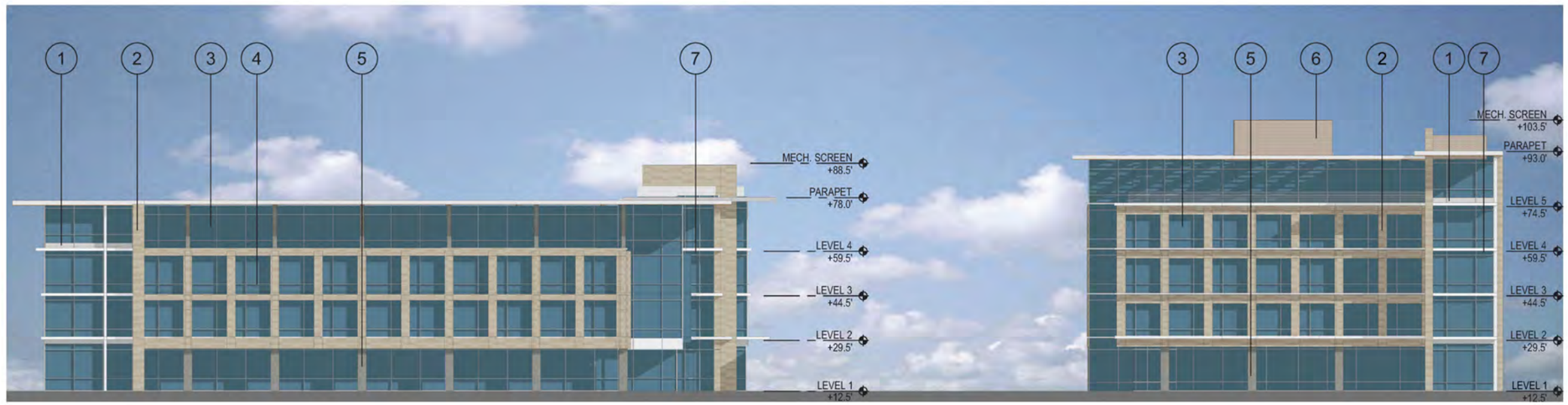
Sheet No:
A 6.1



NORTH ELEVATION

SCALE: 3/64" = 1' - 0"

A

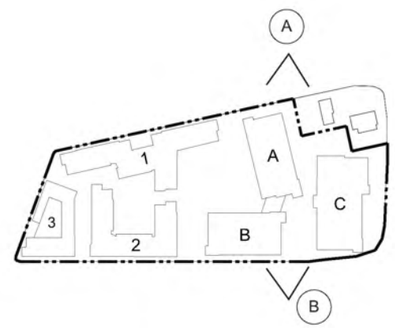


SOUTH ELEVATION

SCALE: 3/64" = 1' - 0"

B

1. PAINTED METAL (WHITE)
2. GFRC (BEIGE)
3. GLASS
4. ALUMINUM WINDOW (SILVER)
5. GFRC (MED GREY)
6. PAINTED STUCCO (MED GREY)
7. PAINTED METAL TRIM (WHITE)



STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

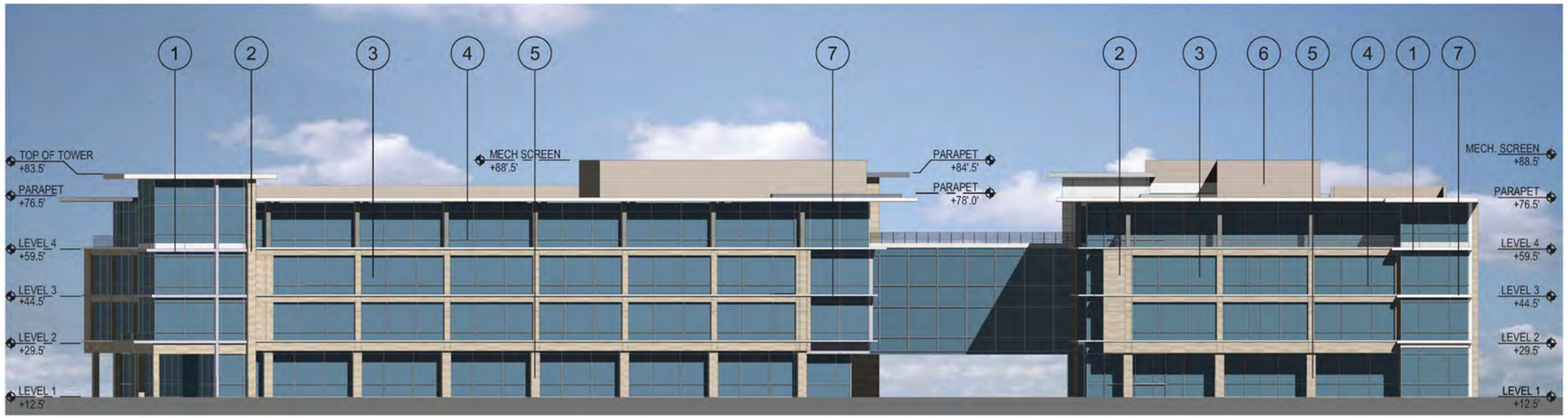
The Sobrato Organization &
MidPen Housing Corporation

Sheet Title:
COLORS
AND MATERIALS
(OFFICE)

Job No. 14023
Date: 03/15/2019
Scale:
Drawn By:

Sheet No:

A 7.1



WEST ELEVATION

SCALE: 3/64" = 1' - 0"

A

EAST ELEVATION

SCALE: 3/64" = 1' - 0"

B

(1) PAINTED METAL (WHITE)

(2) GFRC (BEIGE)

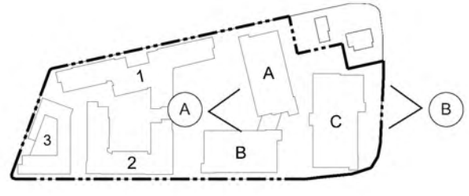
(3) GLASS

(4) ALUMINUM WINDOW (SILVER)

(5) GFRC (MED GREY)

(6) PAINTED STUCOO (MED GREY)

(7) PAINTED METAL TRIM (WHITE)



STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
COLORS AND MATERIALS (OFFICE)

Job No. 14023
Date: 03/15/2019
Scale:
Drawn By:

Sheet No:

A7.2

VARSITY® BIKE DOCK

ORGANIZED, HIGH-DENSITY BIKE PARKING

groundcontrolsystems.com
info@groundcontrolsystems.com

FOR THE BIKES

- No slipping & falling with wheels resting in docks
- Smart Guards® protect bike frames from damage
- Offset handlebars prevent bicycle conflict

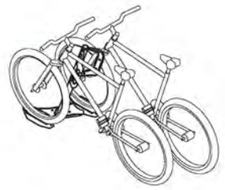
FOR THE USER

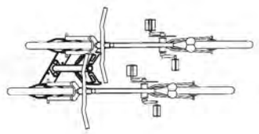
- No more bicycle conflict, bikes have designated, easy to use parking spaces
- QR tag links to helpful Smart & Safe Bicycle Parking video
- High-security design allows user to lock the bike frame and tire to the Varsity®

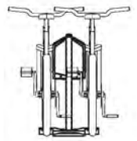
THE DETAILS

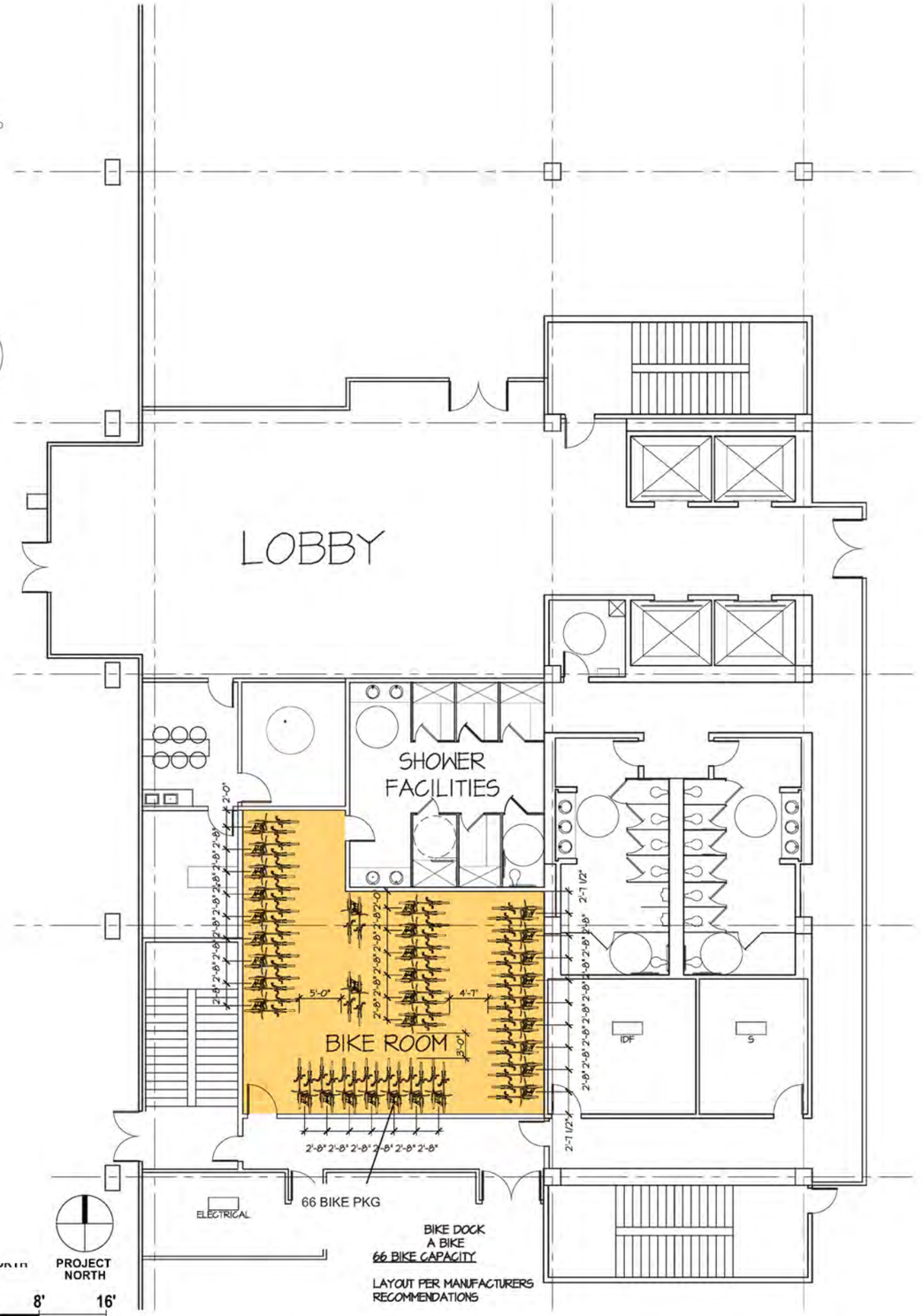
- 2 bicycles secured
- Black injection molded urethane Smart Guards® protect bike frames from metal-to-metal contact
- Steel locking loops for higher security
- Wheel pockets keeps bicycles upright
- PC/ABS injection molded cap
- QR tag links to Smart & Safe Bicycle Parking info
- 20-year warranty DuraPlas® black finisih, or 10-year warranty silver hot dipped galvanized finish available
- Elevated Deck allows for easy removal of debris and reduces corrosion

GROUND CONTROL SYSTEMS®
Innovative Bike & Board Parking



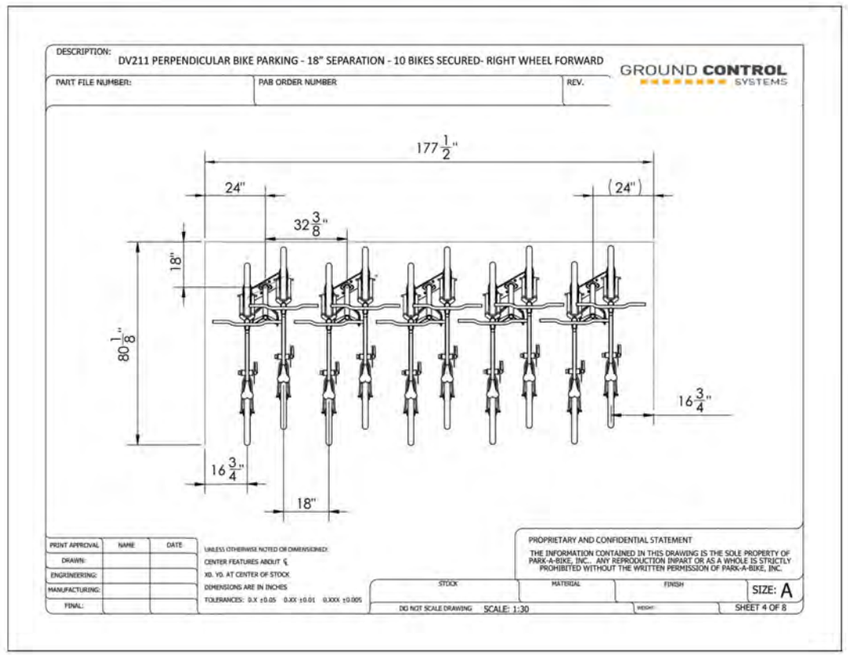






FIRST LEVEL BUILDING C - ENLARGED FLOOR PLAN (1)

SCALE : 1/16" = 1'-0"



STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

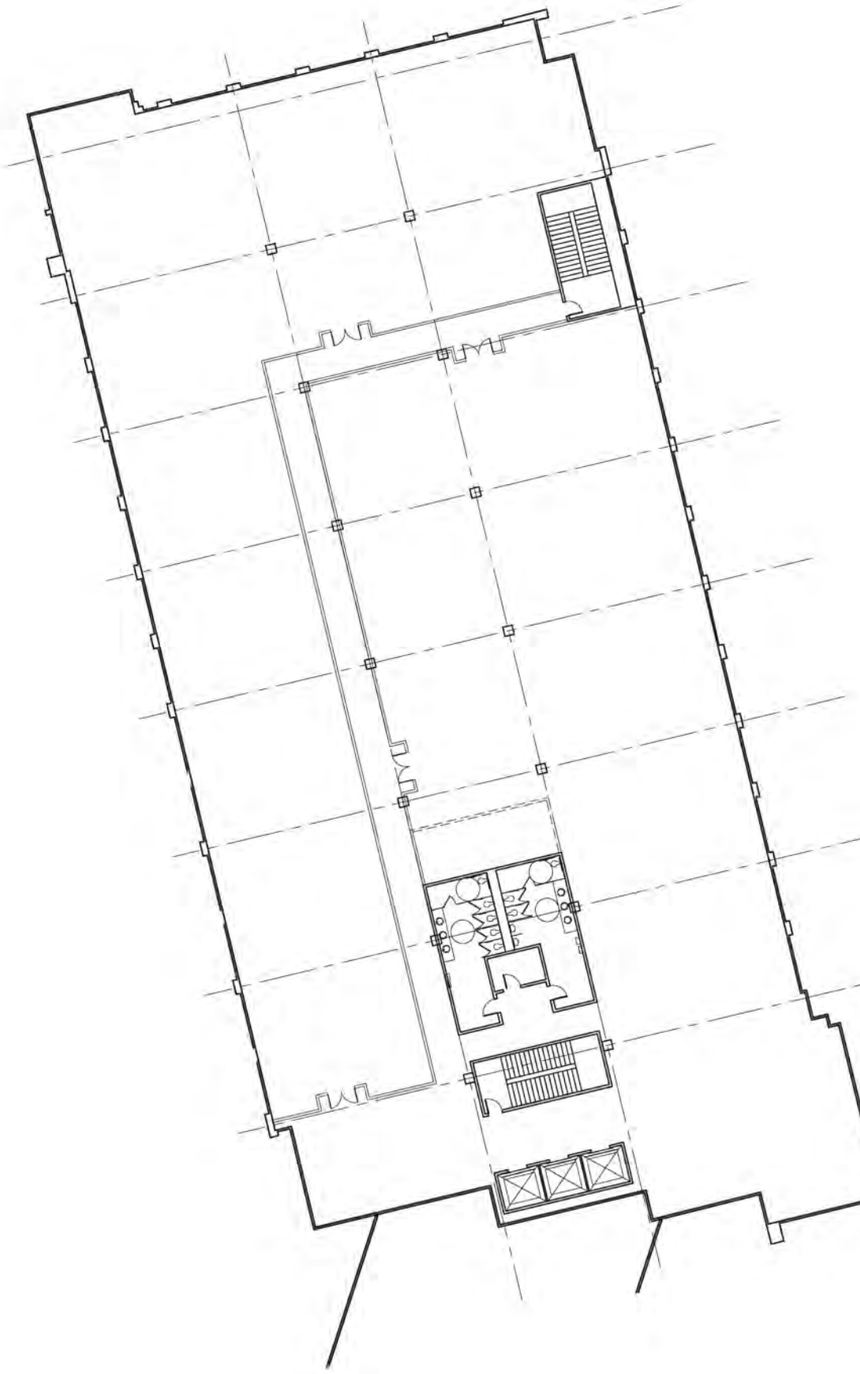
The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
OFFICE
BUILDING C
BIKE ROOM

Job No. 14023
Date: 03/15/2019
Scale:
Drawn By:

Sheet No:

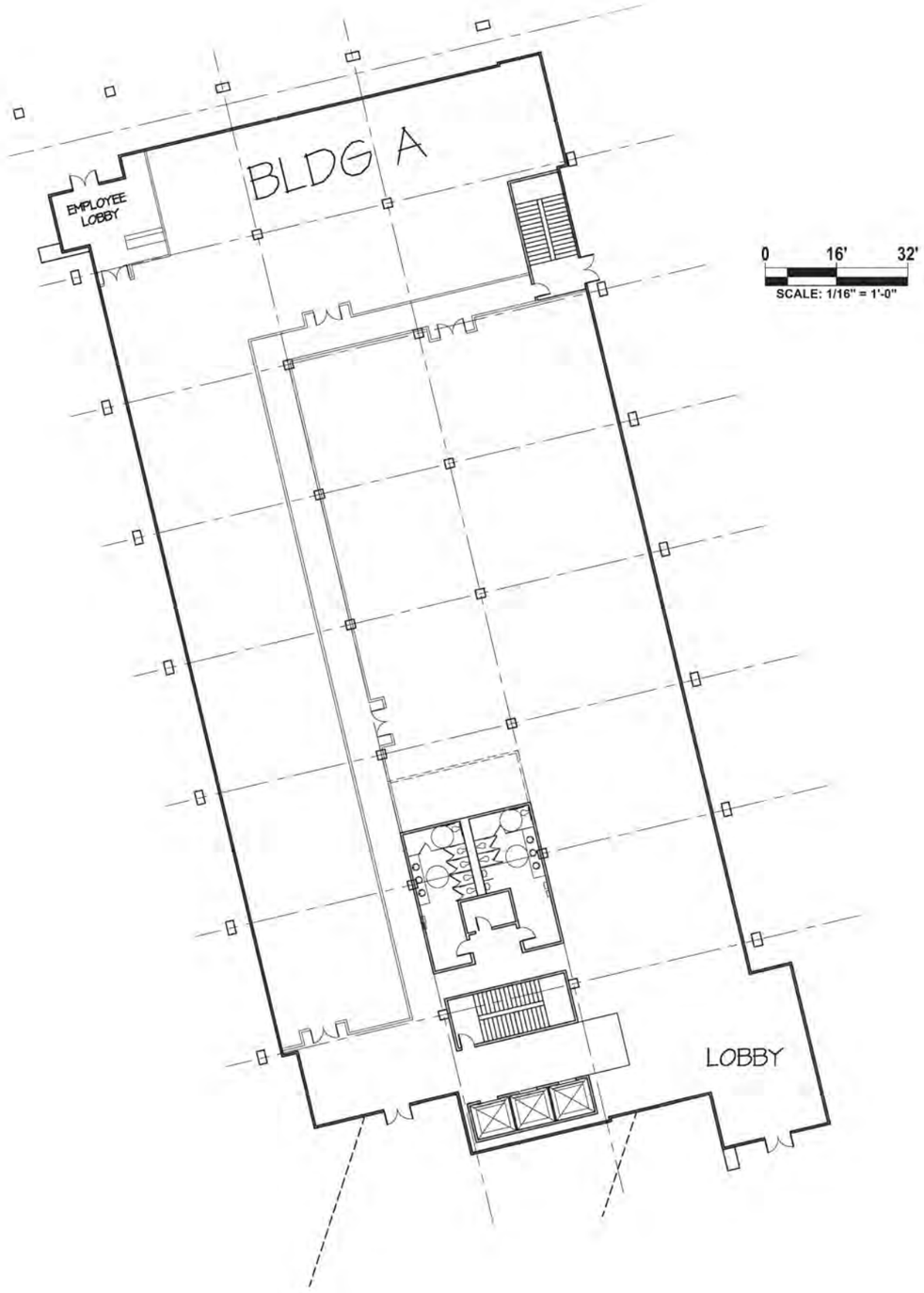
A 7.3



SECOND LEVEL BUILDING A FLOOR PLAN

SCALE : 1/16" = 1'-0"

2



FIRST LEVEL BUILDING A FLOOR PLAN

SCALE : 1/16" = 1'-0"

1

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

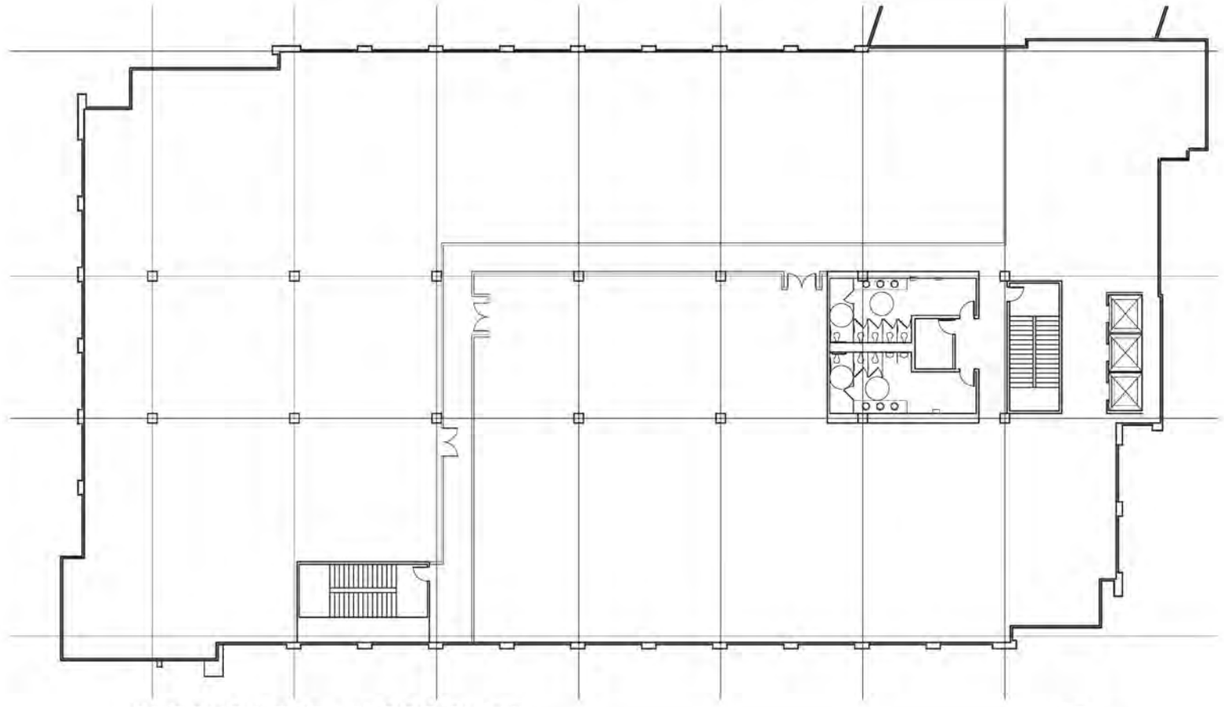
The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
BUILDING A
LEVEL 1 & 2
(OFFICE)

Job No. 14023
Date: 03/15/2019
Scale:
Drawn By:

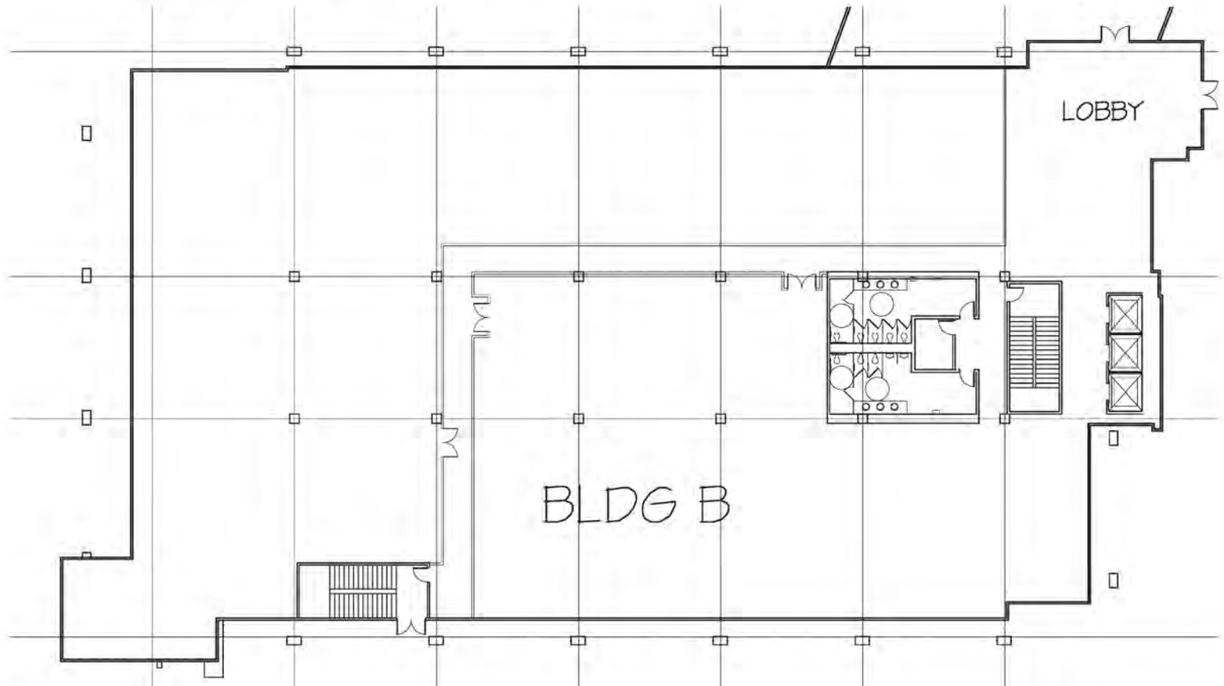
Sheet No:

A 7.4



SECOND LEVEL FLOOR PLAN 2

SCALE : 1/16" = 1'-0"



FIRST LEVEL FLOOR PLAN 1

SCALE : 1/16" = 1'-0"

0 16' 32'

SCALE: 1/16" = 1'-0"

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

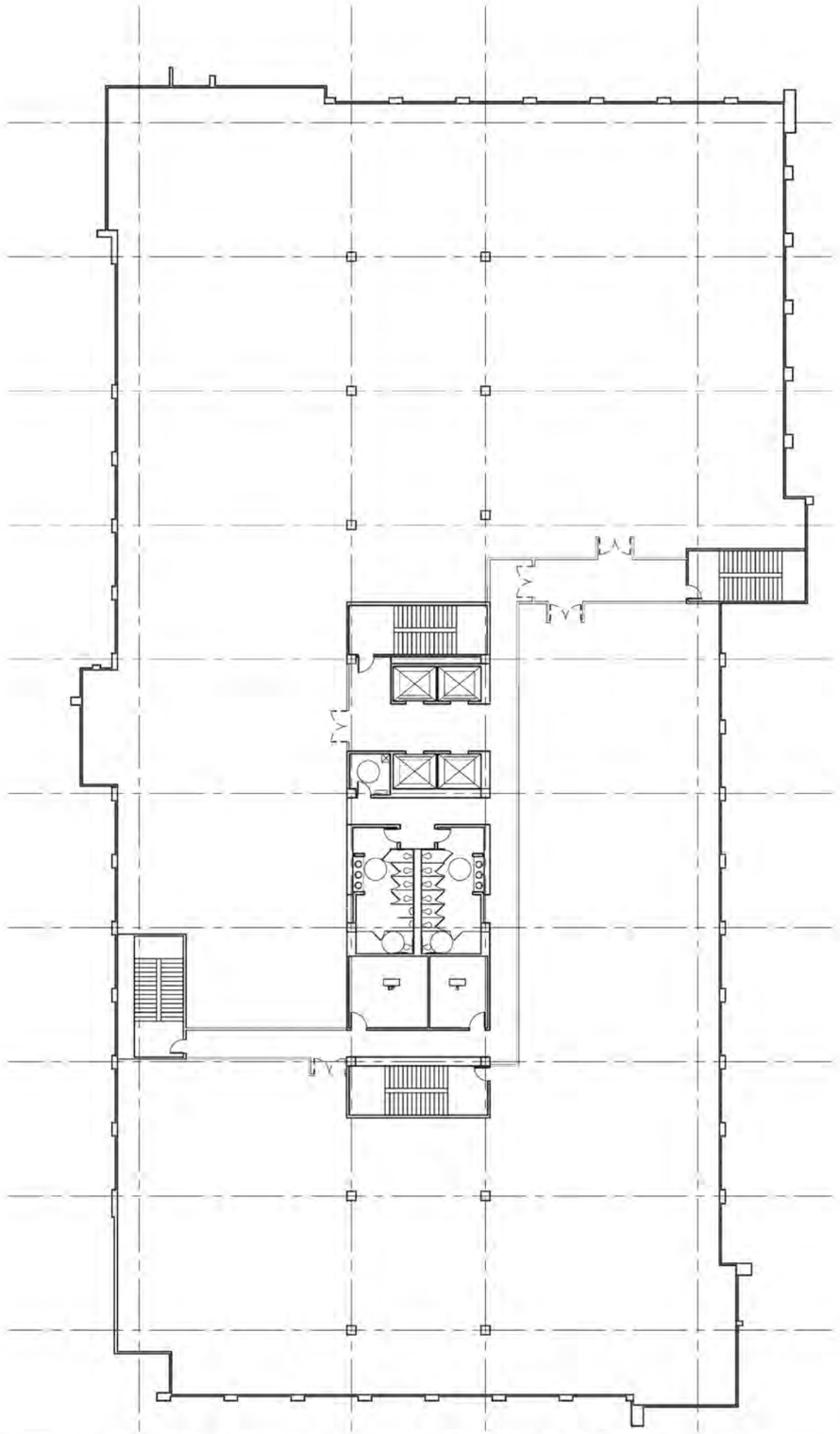
The Sobrato Organization & MidPen Housing Corporation

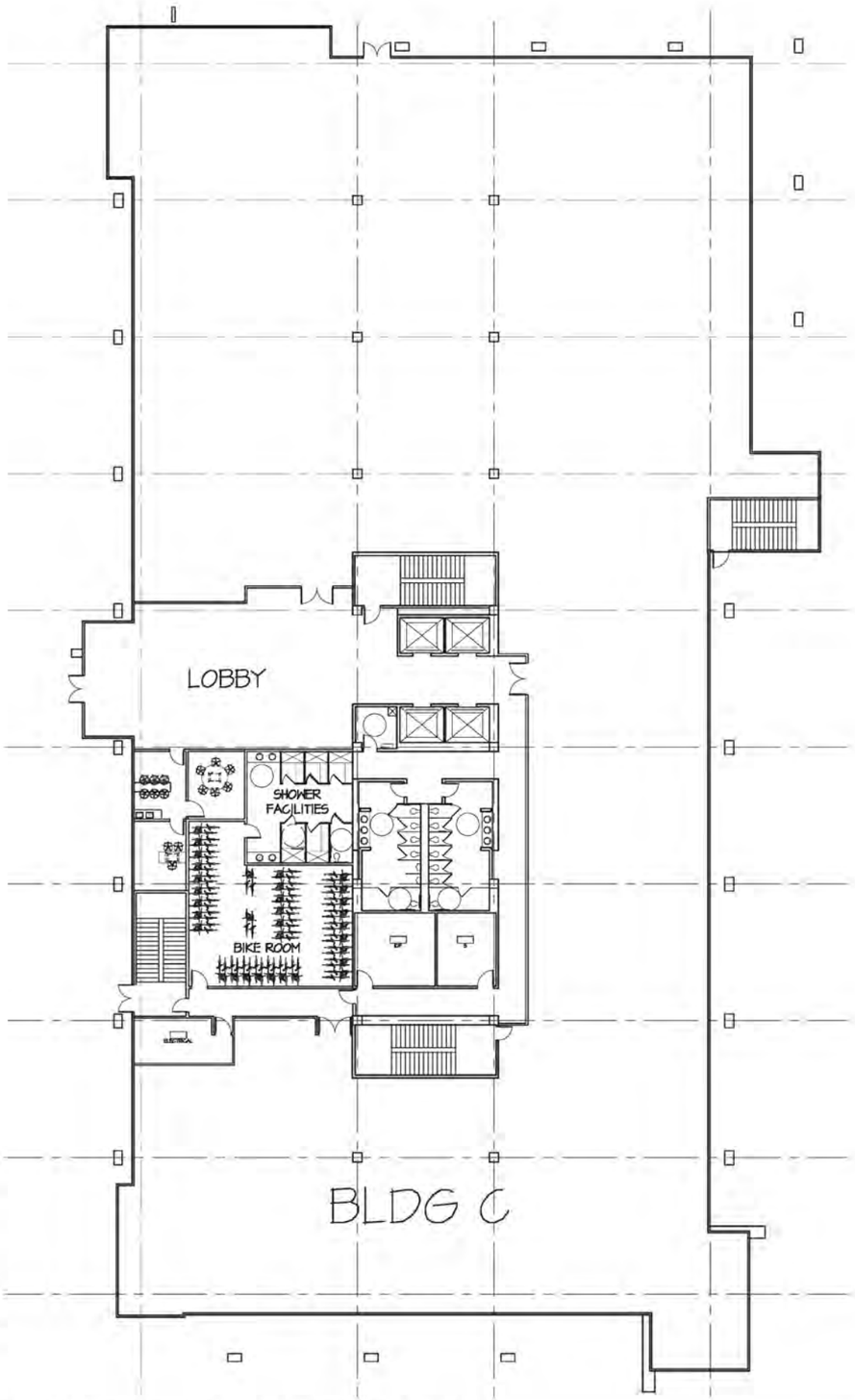
Sheet Title:
BUILDING B
LEVEL 1 & 2
(OFFICE)

Job No. 14023
Date: 03/15/2019
Scale:
Drawn By:

Sheet No:

A 7.5





0 16 32
SCALE: 1/16" = 1'-0"

SECOND, THIRD & FOURTH LEVEL BUILDING C FLOOR PLAN (2)
SCALE : 1/16" = 1'-0"

FIRST LEVEL BUILDING C FLOOR PLAN (1)
SCALE : 1/16" = 1'-0"

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

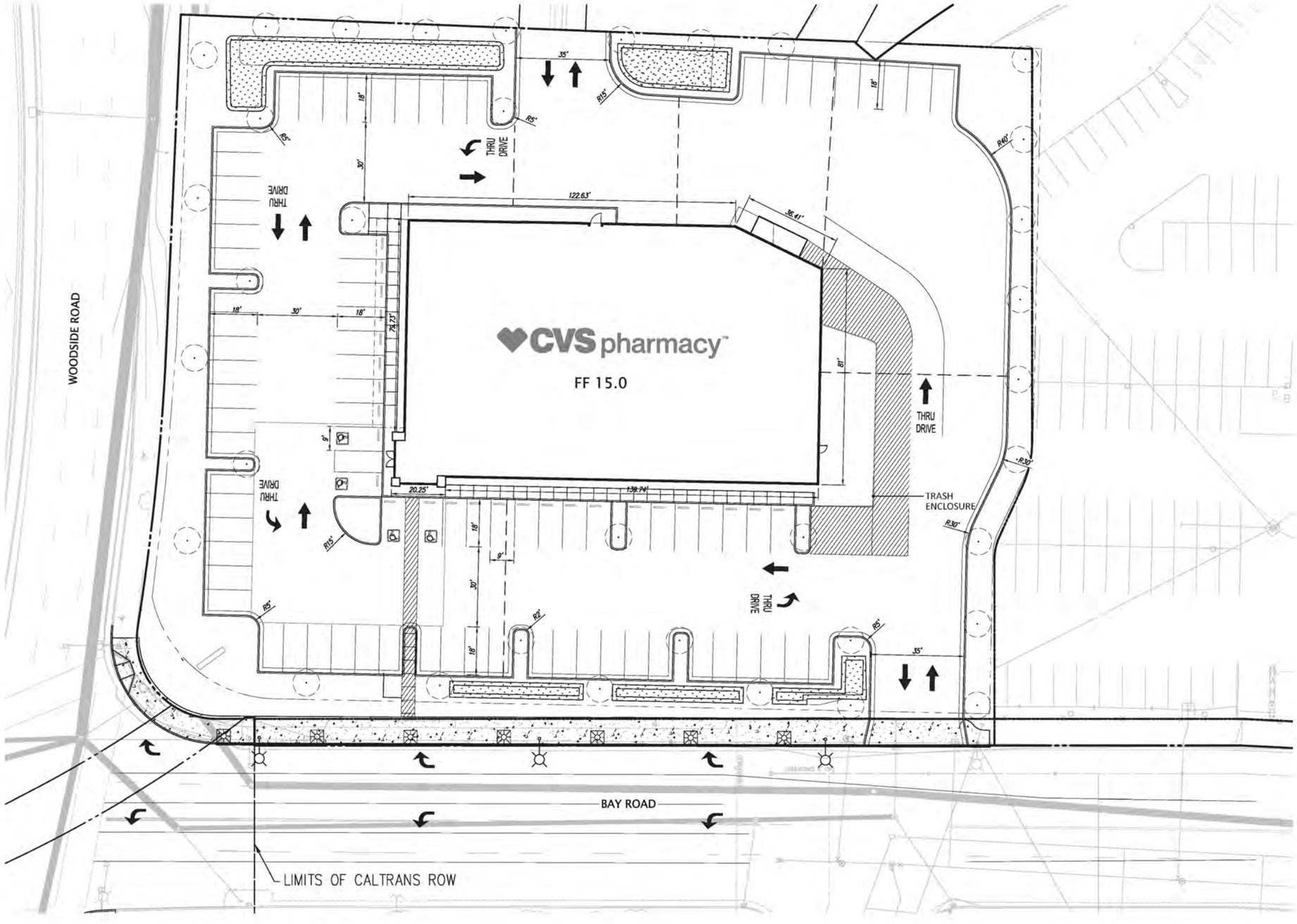
Broadway Plaza
Redwood City, CA

The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
BUILDING C
LEVEL 1 & 2
(OFFICE)

Job No. 14023
Date: 03/15/2019
Scale:
Drawn By:

Sheet No:
A7.6



STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

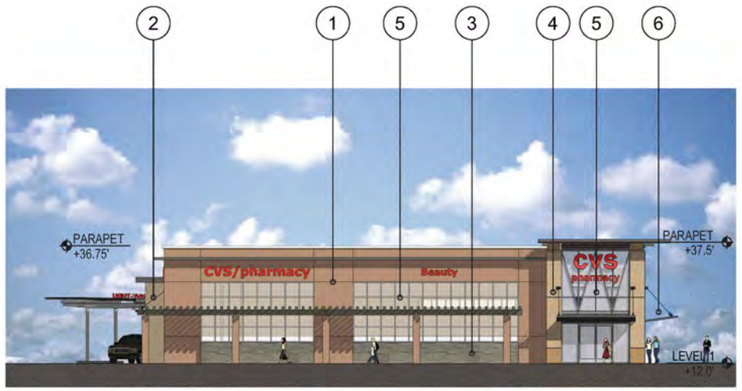
The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
SITE PLAN
(CVS BUILDING)

Job No. 14023
Date: 03/15/2019
Scale: 1" = 20'-0"
Drawn By:

Sheet No:

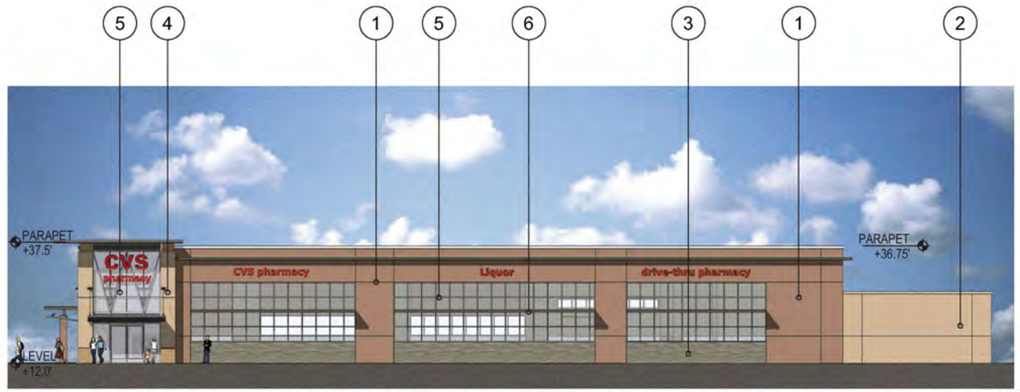
A 8.0



+/- 40.7 % GLASS AREA ON WEST ELEVATION

WEST ELEVATION 1

SCALE: 1/16" = 1' - 0"



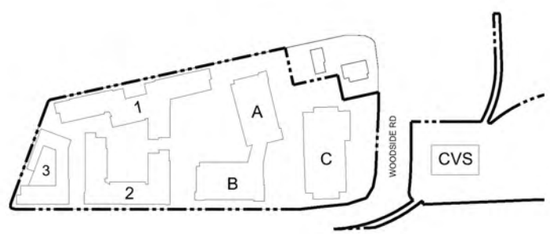
+/- 40.3 % GLASS AREA ON SOUTH ELEVATION

SOUTH ELEVATION 2

SCALE: 1/16" = 1' - 0"

VIEW OF CVS FROM WOODSIDE RD (A)

1. STUCCO COLOR 1
2. STUCCO COLOR 2
3. TILE 1
4. TILE 2
5. STORE FRONT
6. METAL AWNING



STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

Form 4 Architecture

Broadway Plaza
Redwood City, CA

The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
BUILDING PERSPECTIVES (CVS BUILDING)

Job No.	14023
Date:	03/15/2019
Scale:	1/16"=1'-0"
Drawn By:	

Sheet No:

A 8.1

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

: 304 12th Street, Suite 2A
: Oakland, California 94607
: (510) 451 - 2850

THE GUZZARDO PARTNERSHIP INC.
Landscape Architects · Land Planners
181 Greenwich Street
San Francisco, CA 94111
T 415 433 4672
F 415 433 5003

Broadway and Woodside Master Plan
1401 Broadway, Redwood City, CA

The Sobrato Organization
10600 N De Anza Blvd. #200
Cupertino, California

Sheet Title:
CONCEPTUAL LANDSCAPE PLAN

Job No. 14023
Date: 03/15/2019
Scale:
Drawn By:

Sheet No:
L1.0

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

: 304 12th Street, Suite 2A
: Oakland, California 94607
: (510) 451 - 2850

THE GUZZARDO PARTNERSHIP INC.
Landscape Architects · Land Planners
181 Greenwich Street
San Francisco, CA 94111
T 415 433 4672
F 415 433 5003

Broadway and Woodside Master Plan
1401 Broadway, Redwood City, CA

The Sobrato Organization
10600 N De Anza Blvd. #200
Cupertino, California

Sheet Title:
PUBLIC OPEN SPACE CONCEPTUAL PLAN

Job No. 14023
Date: 03/15/2019
Scale:
Drawn By:

Sheet No:
L1.1

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

: 304 12th Street, Suite 2A
: Oakland, California 94607
: (510) 451 - 2850

THE GUZZARDO PARTNERSHIP INC.
Landscape Architects · Land Planners
181 Greenwich Street
San Francisco, CA 94111
T 415 433 4672
F 415 433 5003

Broadway and Woodside Master Plan
1401 Broadway, Redwood City, CA

The Sobrato Organization
10600 N De Anza Blvd. #200
Cupertino, California

Sheet Title:
RESIDENTIAL COURTYARD CONCEPTUAL PLAN

Job No. 14023
Date: 03/15/2019
Scale:
Drawn By:

Sheet No:
L1.2

STUDIO
T SQUARE

: Architecture
: Planning
: Urban Design

: 304 12th Street, Suite 2A
: Oakland, California 94607
: (510) 451 - 2850

THE
GUZZARDO
PARTNERSHIP INC.
Landscape Architects · Land Planners
181 Greenwich Street
San Francisco, CA 94111
T 415 433 4672
F 415 433 5003

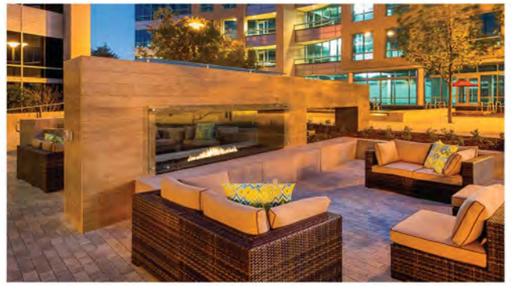
Broadway and Woodside Master Plan
1401 Broadway, Redwood City, CA

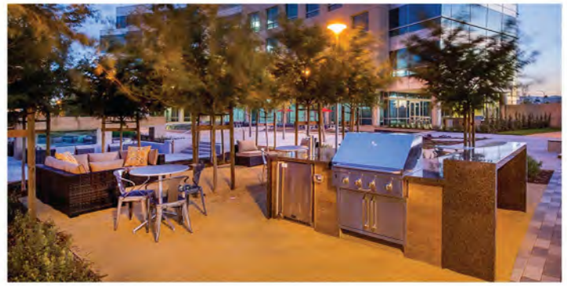
The Sobrato Organization
10600 N De Anza Blvd. #200
Cupertino, California

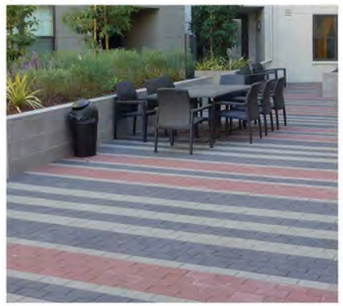
Sheet Title:
CONCEPTUAL CVS
LANDSCAPE PLAN

Job No. 14023
Date: 03/15/2019
Scale:
Drawn By:

Sheet No:
L1.3







STUDIO
T SQUARE

: Architecture
: Planning
: Urban Design

: 304 12th Street, Suite 2A
: Oakland, California 94607
: (510) 451 - 2850

THE
**GUZZARDO
PARTNERSHIP**INC.
Landscape Architects • Land Planners
181 Greenwich Street
San Francisco, CA 94111
T 415 433 4672
F 415 433 5003

Broadway and Woodside Master Plan
1401 Broadway, Redwood City, CA

The Sobrato Organization
10600 N De Anza Blvd. #200
Cupertino, California

Sheet Title:
CONCEPTUAL
LANDSCAPE
IMAGERY

Job No. 14023
Date: 03/15/2019
Scale:
Drawn By:

Sheet No:
L2.0

OPEN SPACE SUMMARY

RESIDENTIAL COURTYARD	41,110 sf	0.94 ac
OFFICE AMENITY AREAS	12,500 sf	0.28 ac
CHILDCARE AMENITY AREAS	4,100 sf	0.09 ac
PUBLICLY ACCESSIBLE OPEN SPACE	92,150 sf	2.11 ac
PRIVATE OPEN SPACE APARTMENT PATIOS AND BALCONIES (NOT SHOWN)	26,300 sf	0.60 ac
TOTAL OPEN SPACE	176,160 sf	4.04 ac

STUDIO T SQUARE

: Architecture
: Planning
: Urban Design

: 304 12th Street, Suite 2A
: Oakland, California 94607
: (510) 451 - 2850

THE GUZZARDO PARTNERSHIP INC.
Landscape Architects · Land Planners
181 Greenwich Street
San Francisco, CA 94111
T 415 433 4672
F 415 433 5003

Broadway and Woodside Master Plan
1401 Broadway, Redwood City, CA

The Sobrato Organization
10600 N De Anza Blvd. #200
Cupertino, California

Sheet Title:
OPEN SPACE DIAGRAM

Job No. 14023
Date: 03/15/2019
Scale:
Drawn By:

Sheet No:
L3.0

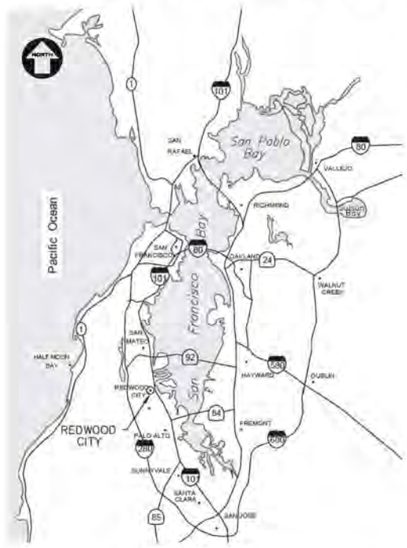
VESTING TENTATIVE MAP
FOR
1401 BROADWAY AND BAY ROAD
REDWOOD CITY, CALIFORNIA
FOR
THE SOBRATO ORGANIZATION

LEGEND

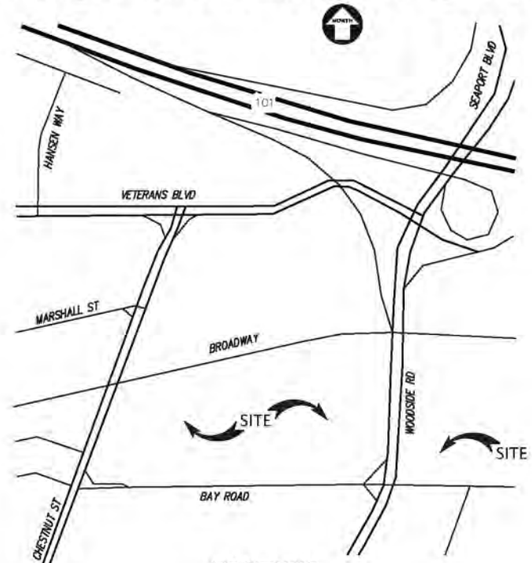
PROPOSED	EXISTING	
		ASPHALT BERM
		BLOCK/RETAINING WALL
		BUILDING LINE
		CENTER LINE
		CONCRETE CURB
		CONCRETE CURB CUT
		CONCRETE CURB & GUTTER
		CONTOUR LINE
		DRIVEWAY
		EDGE OF PAVEMENT
		ELECTRIC LINE
		FIRE SERVICE & VALVE
		FIBER OPTICS LINE
		FLUSH CONCRETE CURB
		FENCE LINE
		GAS LINE-VALVE & METER
		GRADE BREAK LINE
		GUARD RAIL
		JOINT TRENCH LINE
		LOT LINE
		MONUMENT/MONUMENT LINE
		OVERHEAD POWER LINE
		PERFORATED STORM DRAIN PIPE
		PROPERTY LINE
		RAINWATER LEADER
		RIDGE LINE
		SANITARY SEWER-MANHOLE & CLEANOUT
		SIDEWALK
		STORM DRAIN-MANHOLE & CATCH BASIN
		TELEPHONE LINE
		THRU CURB DRAIN
		WATER LINE & VALVE
		BACKFLOW PREVENTION DEVICE
		ELECTROLIER
		FIRE HYDRANT
		POST INDICATOR VALVE
		POWER POLE/JOINT POLE
		SPOT ELEVATION
		TRANSFORMER
		TRAFFIC SIGN
		TRAFFIC SIGN
		TREE
		UTILITY BOX

ABBREVIATIONS

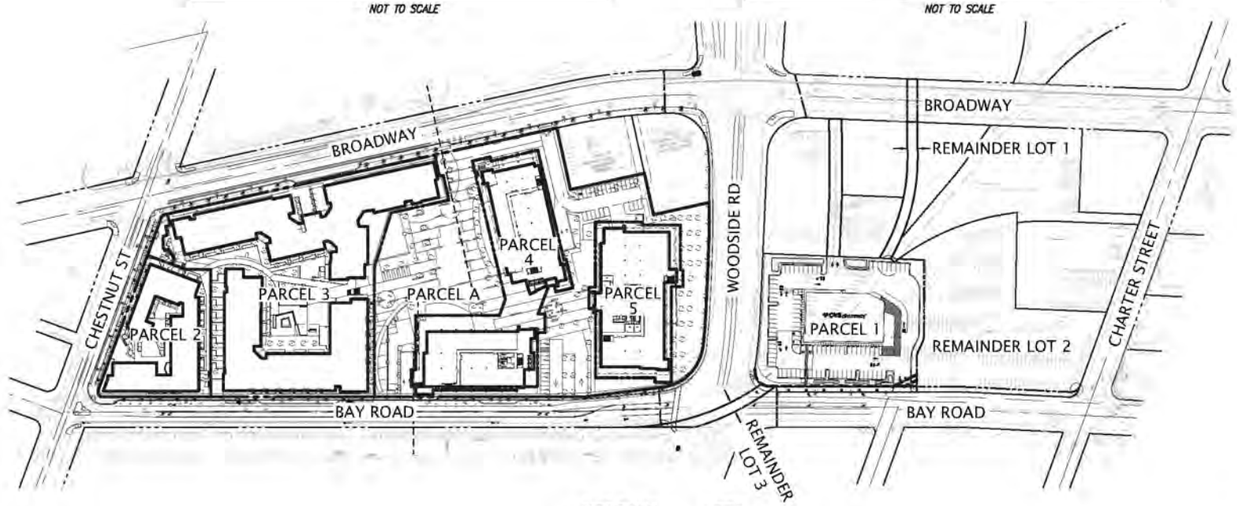
PROPOSED	EXISTING	
AD		AREA DRAIN
ARV		AIR RELEASE VALVE
ASR		AUTOMATIC SPRINKLER RISER
AVP		AIR VALVE POST
BFPD		BACKFLOW PREVENTION DEVICE
BW		BACK OF WALK
BOV		BLOWOFF VALVE
BLDG		BUILDING
BL		BUILDING LINE
CB		CATCH BASIN
CATVB		CABLE TELEVISION BOX
CTB		CALTRANS BOX
COTG		CLEANOUT TO GRADE
C		CONCRETE
DDCV		DOUBLE DETECTOR CHECK VALVE
DR		DOOR
DS		DOWN SPOUT
DIP		DUCTILE IRON PIPE
EB		ELECTRIC BOX
ETS		ELECTROLYSIS TEST STATION
ESMT		EASEMENT
EW		EDGE OF WALK
FB		FACE OF BERM
FC		FACE OF CURB
FW		FACE OF WALL
FF		FINISHED FLOOR
FL		FLOW LINE
FH		FIRE HYDRANT
FOM		FIBER OPTICS MARKER
GLM		GAS LINE MARKER
GM		GAS METER
GV		GAS VALVE
GB		GRADE BREAK
GA		GUY ANCHOR
HP		HIGH POINT
IE		INVERT ELEVATION
IB		IRRIGATION BOX
JP		JOINT POWER POLE
LT		LIGHT
LP		LOW POINT
LT		LIGHT
NIC		NOT IN CONTRACT
OF		OVERFLOW
OD		OVERFLOW DRAIN
PBMH		PAC BELL MANHOLE
PV		PAVEMENT
POC		POINT OF CONNECTION
PIV		POST INDICATOR VALVE
PP		POWER POLE
RWL		RAINWATER LEADER
RVP		RELEASE VALVE POST
R		RIDGE
RE		RIM ELEVATION
RD		ROOF DRAIN
SSCO		SANITARY SEWER CLEANOUT
SSMH		SANITARY SEWER MANHOLE
SMH		SPRINT MANHOLE
SM		SPRINT MARKER
SL		STREET LIGHT
SLB		STREET LIGHT BOX
SDJB		STORM DRAIN JUNCTION BOX
SDMH		STORM DRAIN MANHOLE
SWL		SWALE
TB		TELEPHONE BOX
TMH		TELEPHONE MANHOLE
TSB		TRAFFIC SIGNAL BOX
TSP		TRAFFIC SIGNAL POLE
TB		TOP OF BERM
TC		TOP OF CURB
TW		TOP OF WALL
T		TRANSFORMER
TE		TRASH ENCLOSURE
WB		WATER BOX
WM		WATER METER
WV		WATER VALVE



LOCATION MAP
NOT TO SCALE



VICINITY MAP
NOT TO SCALE



SITE PLAN
1" = 150'

PROJECT SUMMARY

1.	PROPERTY ADDRESSES:	1401 BROADWAY, 1155 BROADWAY, 2201 BAY ROAD
2.	RECORD OWNERS:	SI XX, LLC & SI 14, LLC
3.	DEVELOPER:	THE SOBRATO ORGANIZATION 10600 N. DE ANZA BOULEVARD, SUITE 200 CUPERTINO, CA 95014 (408) 446-0700 CONTACT: PETER TSAI, VICE PRESIDENT
4.	ENGINEER:	KIER & WRIGHT CIVIL ENGINEERS & SURVEYORS, INC. 3350 SCOTT BOULEVARD, BUILDING 22 SANTA CLARA, CA 95054 CONTACT: NEKTARIOS MATHEOU (408) 727.6665
5.	ARCHITECT: (RESIDENTIAL AND URBAN DESIGN)	STUDIO T-SQ, INC. 304 12TH STREET, SUITE 2A OAKLAND, CA 94607 (510) 451.2850 CONTACT: CHEK F. TANG AIA, NCARB, PRINCIPAL
6.	ARCHITECT: (OFFICE DESIGN)	FORM 4 ARCHITECTURE 126 POST STREET, #3 SAN FRANCISCO, CA 94108 (415) 215.6601 CONTACT: JOHN MARX AIA, DESIGN PRINCIPAL
7.	LANDSCAPE:	THE GUZZARDO PARTNERSHIP 181 GREENWICH STREET SAN FRANCISCO, CA 94111 (415) 433.4672 CONTACT: PAUL LETTIERI ASLA, PRINCIPAL
8.	ASSESSORS'S PARCEL NOS.:	052-012-120, -130, -140, -150, -160, -170 054-022-070, -150, -160, -170 & 200
9.	TOTAL AREA:	BROADWAY: 488,595 SQ. FT. (11.2± AC) BAY ROAD: 185,403 SQ. FT. (4.3± AC) (GROSS)
10.	EXISTING ZONING:	BROADWAY: MUC-GB – MIXED USE CORRIDOR; GATEWAY BROADWAY BAY ROAD: LM-S – LIGHT INDUSTRIAL INCUBATOR DISTRICT, EMERGENCY SHELTER (COMBINING DISTRICT)
11.	EXISTING LAND USE:	COMMERCIAL/RETAIL
12.	PROPOSED ZONING:	MUC-GB – MIXED USE CORRIDOR; GATEWAY BROADWAY
13.	PROPOSED LAND USE:	BROADWAY: 520 APARTMENT UNITS 420,000 S.F. OFFICE SPACE 11,000 S.F. RETAIL 10,000 S.F. CHILDCARE BAY ROAD: 15,000 S.F. RETAIL
14.	PROPOSED NUMBER OF LOTS:	6 + 3 REMAINDER LOTS
15.	ALL DISTANCES ARE APPROXIMATE.	
16.	NO NEW STREET NAMES PROPOSED.	
17.	BENCHMARK: REDWOOD CITY BENCHMARK 51: BROADWAY AT WOODSIDE EXPRESSWAY, BRASS DISK ON TOP OF CURB, NORTH SIDE OF INTERSECTION OF BROADWAY AND WOODSIDE EXPRESSWAY, ON BROADWAY, EAST SIDE OF STREET, 10' FROM TRAFFIC LIGHT ELEVATION: 10.62 (NAVD 88 DATUM)	
18.	BASIS OF BEARINGS: THE BEARING OF NORTH 79°55'29" WEST TAKEN ON THE CENTERLINE OF BAY ROAD AS SHOWN ON THAT CERTAIN MAP ENTITLED "REDWOOD PLAZA SHOPPING CENTER SUBDIVISION" FILED FOR RECORD ON JULY 5, 1972 IN VOLUME 75 OF MAPS AT PAGES 44 & 45, SAN MATEO COUNTY RECORDS WAS TAKEN AS THE BASIS OF ALL BEARINGS SHOWN HEREON.	
19.	ADDITIONAL EASEMENTS MAY BE NECESSARY, ANY ADDITIONAL EASEMENT REQUIREMENTS WILL BE DETERMINED AS THE PROJECT EVOLVES.	
20.	UTILITIES: WATER SUPPLY: FIRE PROTECTION: SANITARY SEWER: STORM DRAIN: GAS & ELECTRIC: TELEPHONE: CABLE TELEVISION:	 CITY OF REDWOOD CITY REDWOOD CITY FIRE DEPARTMENT CITY OF REDWOOD CITY CITY OF REDWOOD CITY PACIFIC GAS & ELECTRIC AT&T COMCAST

SHEET INDEX

ENGINEER'S STATEMENT

THIS TENTATIVE MAP HAS BEEN PREPARED BY ME OR UNDER MY DIRECTION IN ACCORDANCE WITH STANDARD ENGINEERING PRACTICE.

08/17/18
NEKTARIOS MATHEOU DATE
P.E. 71236 EXP. 6/30/2019

STUDIO T SQUARE

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
3350 Scott Boulevard, Building 22
Santa Clara, California 95054
(408) 727.6665
Fax (408) 727.5641

Broadway Plaza
Redwood City, CA

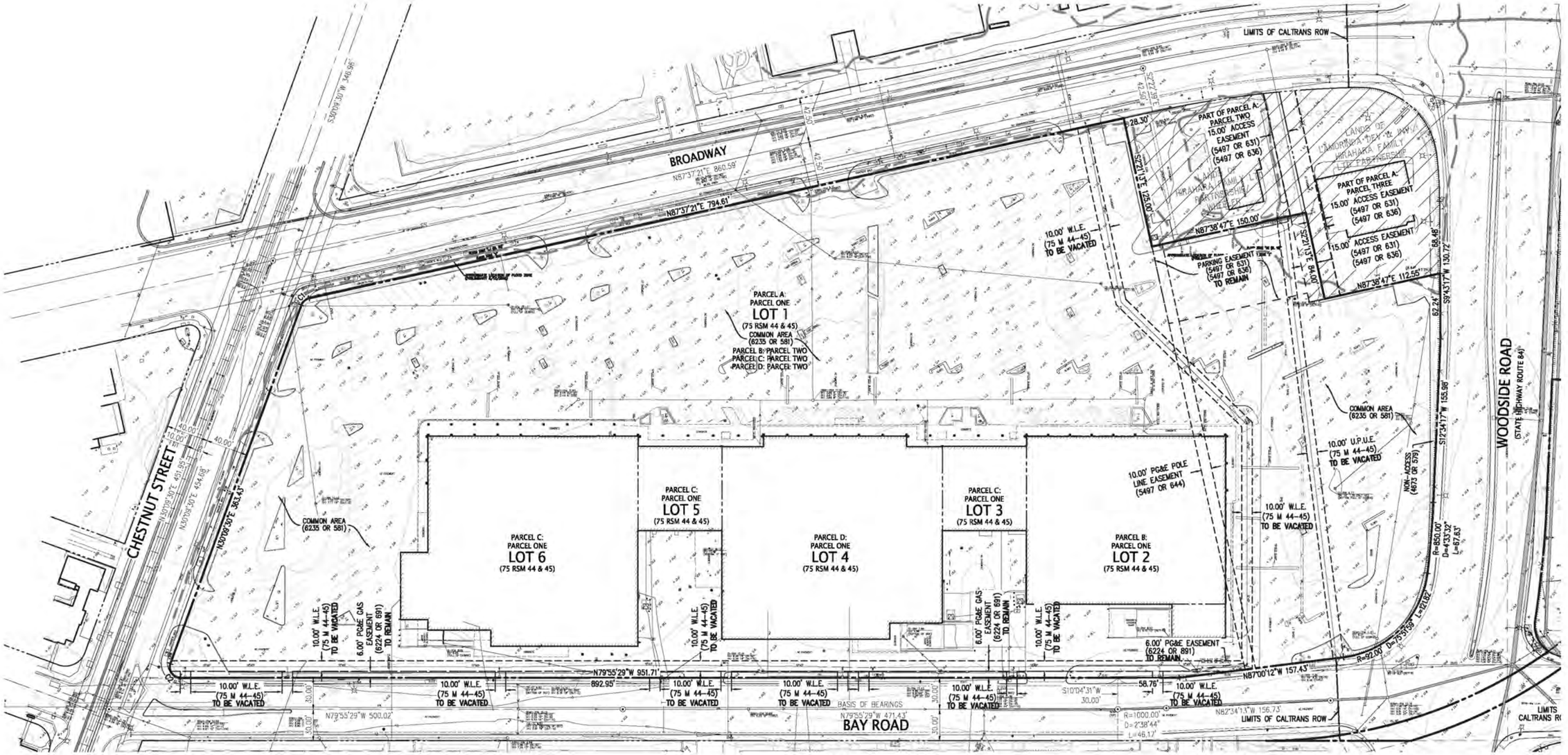
The Sobrato Organization &
MidPen Housing Corporation

Sheet Title:
COVER SHEET

Job No.	A14075
Date:	03/15/2019
Scale:	AS SHOWN
Drawn By:	NM/HR

Sheet No: 1

TM-1



NOTES

1. THIS TENTATIVE MAP WAS PREPARED FROM INFORMATION FURNISHED IN THE PRELIMINARY TITLE REPORT PREPARED BY FIRST AMERICAN TITLE INSURANCE COMPANY, DATED MARCH 14, 2014, AMENDED APRIL 16, 2014, ORDER NO. NCS-649936-SC. NO LIABILITY IS ASSUMED FOR MATTERS OF RECORD NOT STATED IN SAID PRELIMINARY TITLE REPORT THAT MAY AFFECT THE BOUNDARY LINES, EXCEPTIONS, OR EASEMENTS AFFECTING THE PROPERTY.

2. FLOOD ZONE NOTE:
THIS SITE IS IN FLOOD ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN. PER FLOOD INSURANCE RATE MAP COMMUNITY NO. 060352 0302 E DATED OCTOBER 16, 2012.

   FUTURE FLOOD ZONE:
THIS SITE IS PARTIALLY IN FLOOD ZONE "X", AREAS OF 0.2% ANNUAL CHANCE FLOOD HAZARD, AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS LESS THAN ONE FOOT WITH DRAINAGE AREAS OF LESS THAN ONE SQUARE MILE; FLOOD ZONE "X", AREAS OF MINIMAL FLOOD HAZARD; AND FLOOD ZONE AE (EL 10), SPECIAL FLOOD HAZARD AREA WITH BASE FLOOD ELEVATION (EL 10). PER PRELIMINARY FLOOD INSURANCE RATE MAP COMMUNITY NUMBER 060325 0302 F DATED 8/13/2015.

3. BENCHMARK:
REDWOOD CITY BENCHMARK 51; BROADWAY AT WOODSIDE EXPRESSWAY, BRASS DISK ON TOP OF CURB, NORTH SIDE OF INTERSECTION OF BROADWAY AND WOODSIDE EXPRESSWAY, ON BROADWAY, EAST SIDE OF STREET, 10' FROM TRAFFIC LIGHT
ELEVATION: 10.62 (NAVD 88 DATUM)

4. BASIS OF BEARINGS:
THE BEARING OF NORTH 79°55'29" WEST TAKEN ON THE CENTERLINE OF BAY ROAD AS SHOWN ON THAT CERTAIN MAP ENTITLED "REDWOOD PLAZA SHOPPING CENTER SUBDIVISION" FILED FOR RECORD ON JULY 5, 1972 IN VOLUME 75 OF MAPS AT PAGES 44 & 45, SAN MATEO COUNTY RECORDS WAS TAKEN AS THE BASIS OF ALL BEARINGS SHOWN HEREON.

5. EASEMENT NOTE:
10' PG&E EASEMENT RECORDED OCTOBER 24, 1972 AS INSTRUMENT NO. 70592AF IN BOOK 6257, PAGE 81 OF OFFICIAL RECORDS
(LOCATION CANNOT BE DETERMINED.)

6. CORNER RECORD NOTE:
THE DEVELOPER AND/OR CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREPARATION AND FILING OF PRE-CONSTRUCTION AND POST-CONSTRUCTION CORNER RECORDS FOR ANY MONUMENTS OR PROPERTY CORNERS SHOWN HEREON THAT MAY BE DESTROYED DURING IMPROVEMENTS TO THE SUBJECT PROPERTY AS DEFINED IN SECTION 8771(B) OF THE PROFESSIONAL LAND SURVEYORS ACT.

ABBREVIATIONS

OR	OFFICIAL RECORDS
RSM	RECORD SUBDIVISION MAP
S.W.E.	SIDEWALK EASEMENT
U.P.U.E.	UNDERGROUND PUBLIC UTILITY EASEMENT
W.L.E.	WATER LINE EASEMENT

CURVE TABLE			
CURVE #	RADIUS	DELTA	LENGTH
C1	10.00'	57°27'51"	10.03'
C2	10.00'	110°04'59"	19.21'

NORTH

0 25 50 100 150

Scale 1" = 50 ft

STUDIO T SQUARE

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
3350 Scott Boulevard, Building 22
Santa Clara, California 95054
(408) 727-6665
Fax (408) 727 5641

Broadway Plaza
Redwood City, CA

The Sobrato Organization &
MidPen Housing Corporation

Sheet Title:
TOPOGRAPHIC SURVEY PLAN - BROADWAY

Job No. A14075
Date: 03/15/2019
Scale: AS SHOWN
Drawn By: NM/HR

Sheet No: 2

TM-2.1

NOTES

1. THIS TENTATIVE MAP WAS PREPARED FROM INFORMATION FURNISHED IN THE PRELIMINARY TITLE REPORTS PREPARED BY FIRST AMERICAN TITLE INSURANCE COMPANY, DATED SEPTEMBER 23, 2015, AMENDED NOVEMBER 11, 2015, ORDER NO. NCS-753171-SC, DATED DECEMBER 10, 2015, AMENDED 11/13/2016, ORDER NO. NCS-558617-SC AND COMMITMENT FOR TITLE INSURANCE PREPARED BY FIDELITY NATIONAL TITLE INSURANCE COMPANY, DATED SEPTEMBER 17, 2015, ORDER NO. 891-23071129-SLO. NO LIABILITY IS ASSUMED FOR MATTERS OF RECORD NOT STATED IN SAID PRELIMINARY TITLE REPORT THAT MAY AFFECT THE BOUNDARY LINES, EXCEPTIONS, OR EASEMENTS AFFECTING THE PROPERTY.

2. FLOOD ZONE NOTE:
THIS SITE IS IN FLOOD ZONE "X", AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS OF PROTECTED LEVEES FROM 1% ANNUAL CHANCE FLOOD. PER FLOOD INSURANCE RATE MAP COMMUNITY NO. 060352 0302 E DATED OCTOBER 16, 2012.

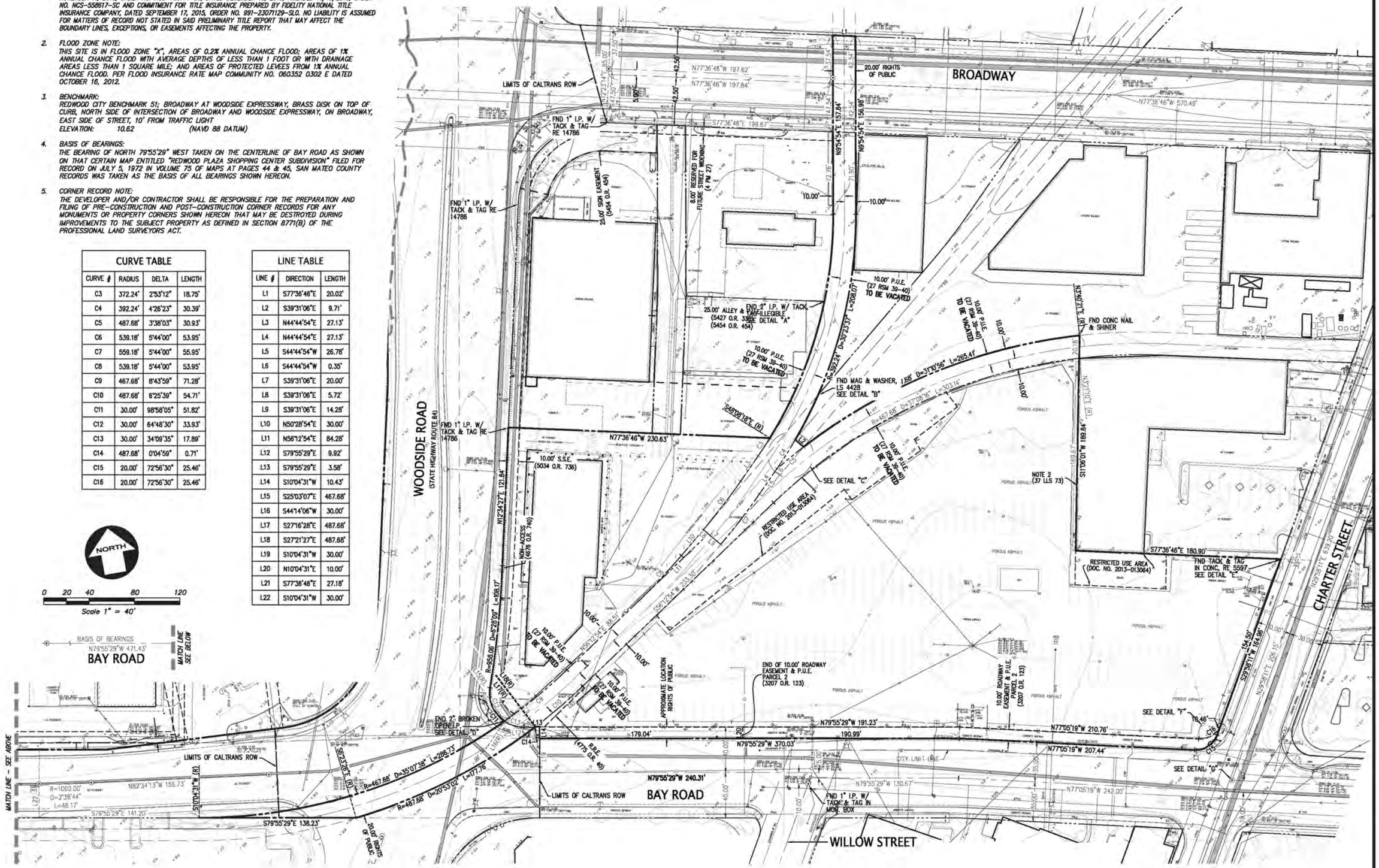
3. BENCHMARK:
REDWOOD CITY BENCHMARK 51; BROADWAY AT WOODSIDE EXPRESSWAY, BRASS DISK ON TOP OF CURB, NORTH SIDE OF INTERSECTION OF BROADWAY AND WOODSIDE EXPRESSWAY, ON BROADWAY, EAST SIDE OF STREET, 10' FROM TRAFFIC LIGHT
ELEVATION: 10.62 (NAVD 88 DATUM)

4. BASIS OF BEARINGS:
THE BEARING OF NORTH 79°55'29" WEST TAKEN ON THE CENTERLINE OF BAY ROAD AS SHOWN ON THAT CERTAIN MAP ENTITLED "REDWOOD PLAZA SHOPPING CENTER SUBDIVISION" FILED FOR RECORD ON JULY 5, 1972 IN VOLUME 75 OF MAPS AT PAGES 44 & 45, SAN MATEO COUNTY RECORDS WAS TAKEN AS THE BASIS OF ALL BEARINGS SHOWN HEREON.

5. CORNER RECORD NOTE:
THE DEVELOPER AND/OR CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREPARATION AND FILING OF PRE-CONSTRUCTION AND POST-CONSTRUCTION CORNER RECORDS FOR ANY MONUMENTS OR PROPERTY CORNERS SHOWN HEREON THAT MAY BE DESTROYED DURING IMPROVEMENTS TO THE SUBJECT PROPERTY AS DEFINED IN SECTION 8771(B) OF THE PROFESSIONAL LAND SURVEYORS ACT.

CURVE TABLE			
CURVE #	RADIUS	DELTA	LENGTH
C3	372.24'	2°53'12"	18.75'
C4	392.24'	4°26'23"	30.39'
C5	487.68'	3°38'03"	30.93'
C6	539.18'	5°44'00"	53.95'
C7	559.18'	5°44'00"	55.95'
C8	539.18'	5°44'00"	53.95'
C9	467.68'	8°43'59"	71.28'
C10	487.68'	6°25'39"	54.71'
C11	30.00'	98°58'05"	51.82'
C12	30.00'	64°48'30"	33.93'
C13	30.00'	34°09'35"	17.89'
C14	487.68'	0°04'59"	0.71'
C15	20.00'	72°56'30"	25.46'
C16	20.00'	72°56'30"	25.46'

LINE TABLE		
LINE #	DIRECTION	LENGTH
L1	S77°36'46"E	20.02'
L2	S39°31'06"E	9.71'
L3	N44°44'54"E	27.13'
L4	N44°44'54"E	27.13'
L5	S44°44'54"W	26.78'
L6	S44°44'54"W	0.35'
L7	S39°31'06"E	20.00'
L8	S39°31'06"E	5.72'
L9	S39°31'06"E	14.28'
L10	N50°28'54"E	30.00'
L11	N56°12'54"E	84.28'
L12	S79°55'29"E	9.92'
L13	S79°55'29"E	3.58'
L14	S10°04'31"W	10.43'
L15	S25°03'07"E	467.68'
L16	S44°14'06"W	30.00'
L17	S27°16'28"E	487.68'
L18	S27°21'27"E	487.68'
L19	S10°04'31"W	30.00'
L20	N10°04'31"E	10.00'
L21	S77°36'46"E	27.18'
L22	S10°04'31"W	30.00'



STUDIO T SQUARE

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
3350 Scott Boulevard, Building 22
Santa Clara, California 95054
(408) 727-6665
Fax (408) 727-5641

Broadway Plaza
Redwood City, CA

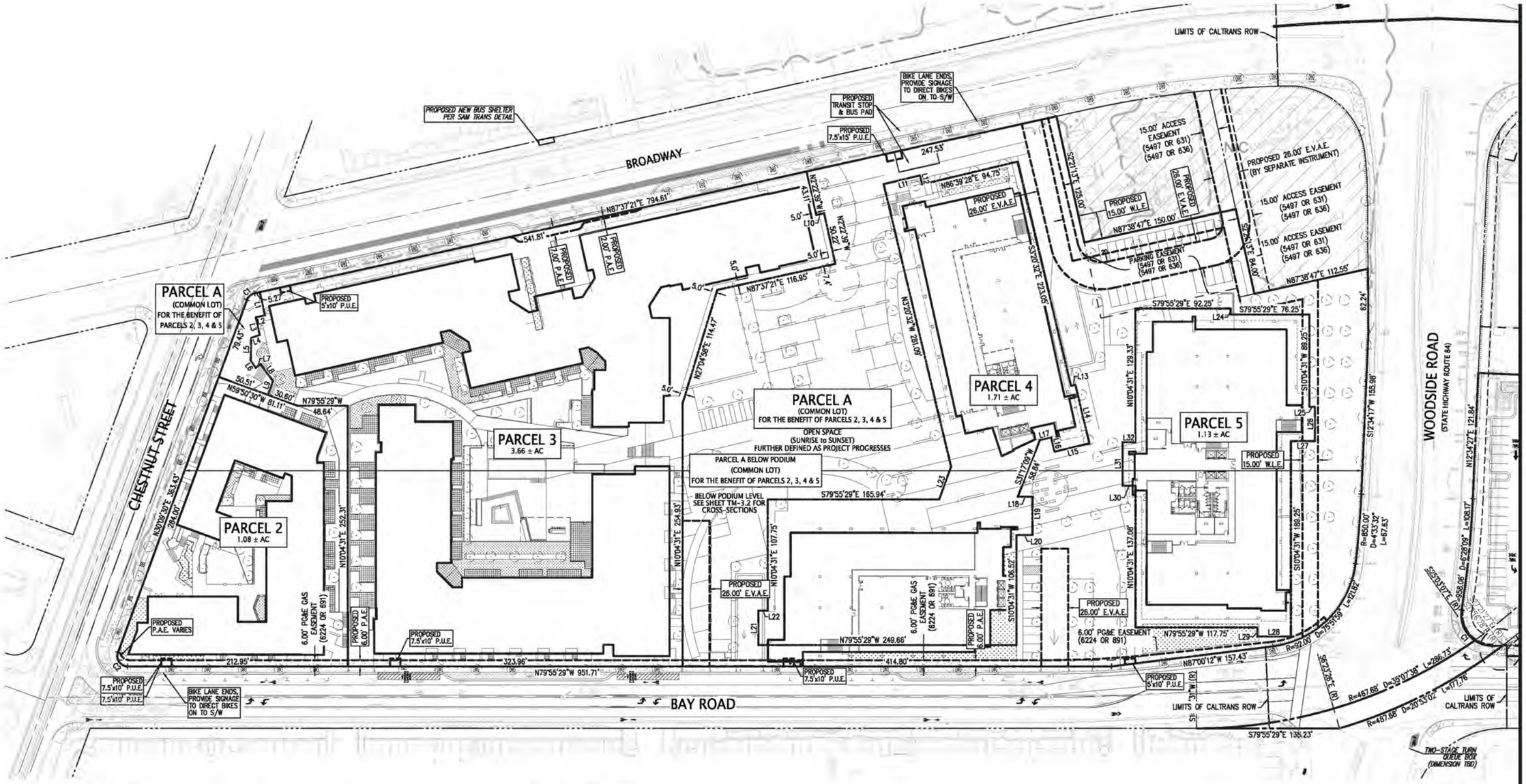
The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
TOPOGRAPHIC SURVEY PLAN - BAY ROAD

Job No. A14075
Date: 03/15/2019
Scale: AS SHOWN
Drawn By: NM/HR

Sheet No: 3

TM-2.2



(FOR THIS SHEET ONLY)

LINE TABLE		
LINE #	DIRECTION	LENGTH
L1	N2°22'39"W	23.08'
L2	N87°37'21"E	9.00'
L3	N2°22'39"W	17.44'
L4	N80°42'33"E	8.84'
L5	S11°11'49"W	22.00'
L6	S24°43'34"E	8.23'
L7	S65°16'26"W	6.13'
L8	S25°53'09"E	20.12'
L9	S30°18'46"W	14.32'
L10	S87°37'21"W	7.80'
L11	N86°39'28"E	36.25'
L12	S3°20'32"E	8.90'
L13	N86°39'28"E	4.38'

LINE TABLE		
LINE #	DIRECTION	LENGTH
L14	S3°20'32"E	58.35'
L15	S86°39'28"W	34.63'
L16	N3°20'32"W	14.30'
L17	S86°39'28"W	11.24'
L18	N79°55'29"W	14.16'
L19	S10°04'31"W	37.12'
L20	N79°55'29"W	15.43'
L21	N10°04'31"E	33.26'
L22	S79°55'29"E	8.92'
L23	N29°56'30"E	33.77'
L24	N10°04'31"E	5.83'
L25	S79°55'29"E	5.33'
L26	S10°04'31"W	33.25'

LINE TABLE		
LINE #	DIRECTION	LENGTH
L27	N79°55'29"W	23.25'
L28	N79°55'29"W	32.58'
L29	N10°04'31"E	8.92'
L30	N79°55'29"W	12.58'
L31	N10°04'31"E	42.25'
L32	S79°55'29"E	12.33'

(FOR THIS SHEET ONLY)

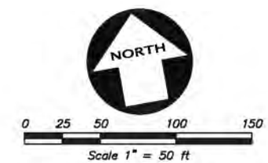
CURVE TABLE			
CURVE #	RADIUS	DELTA	LENGTH
C1	10.00'	57°27'51"	10.03'
C2	10.00'	110°04'59"	19.21'

ABBREVIATIONS

E.V.A.E.	EMERGENCY VEHICLE ACCESS EASEMENT
W.L.E.	WATER LINE EASEMENT
P.A.E.	PUBLIC ACCESS EASEMENT
P.U.E.	PUBLIC UTILITY EASEMENT

NOTE

APPLICABLE TO ALL PARCELS:
DEVELOPMENT ON PARCELS A AND PARCELS 2-5 MUST BE CONSISTENT WITH THE DEVELOPMENT STANDARDS CONTAINED IN THE PLANNED DEVELOPMENT (PD) PERMIT APPROVED BY THE CITY OF REDWOOD CITY ON _____, 2018, AS SUCH PERMIT MAY BE AMENDED. THE REQUIREMENT THAT DEVELOPMENT BE CONSISTENT WITH THE PD PERMIT, AS IT MAY BE AMENDED, SHALL BE A COVENANT RUNNING WITH THE LAND AND SHALL BIND FUTURE OWNERS OF THESE PARCELS.



STUDIO T SQUARE
KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
3350 Scott Boulevard, Building 22
Santa Clara, California 95054
(408) 727 6665
Fax (408) 727 5641

Broadway Plaza
Redwood City, CA

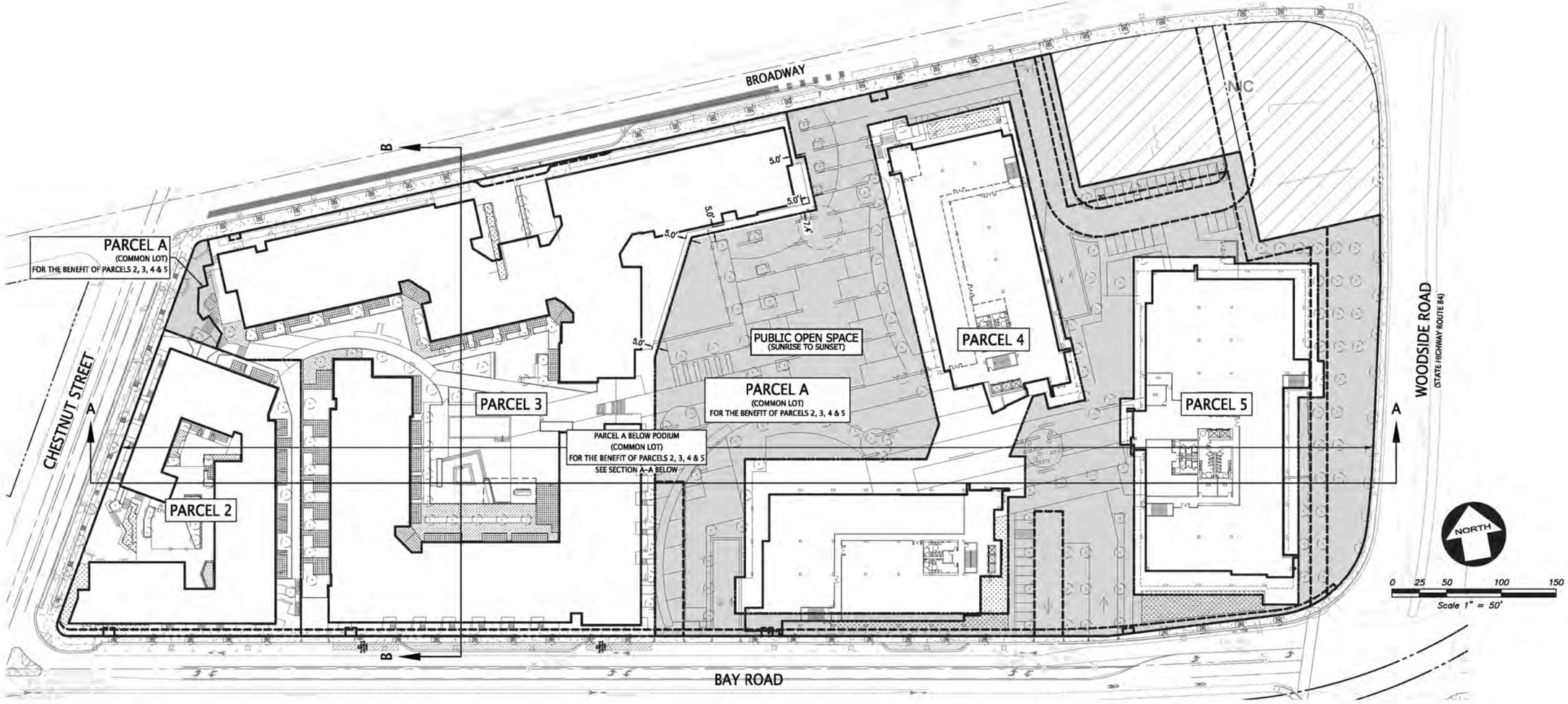
The Sobrato Organization &
MidPen Housing Corporation

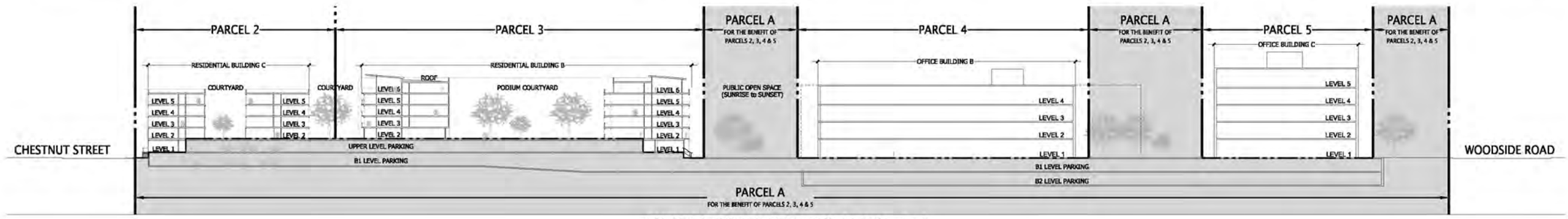
Sheet Title:
PROPOSED CONDITIONS – BROADWAY

Job No. A14075
Date: 03/15/2019
Scale: AS SHOWN
Drawn By: NM/HR

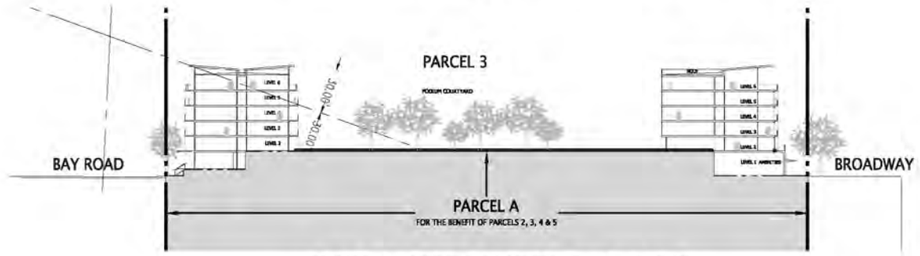
Sheet No: 4

TM-3.1





TYPICAL CROSS SECTION ALONG A-A
NOT TO SCALE



TYPICAL CROSS SECTION ALONG B-B
NOT TO SCALE

STUDIO T SQUARE

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
3350 Scott Boulevard, Building 22
Santa Clara, California 95054
(408) 727 6665
Fax (408) 727 5641

Broadway Plaza
Redwood City, CA

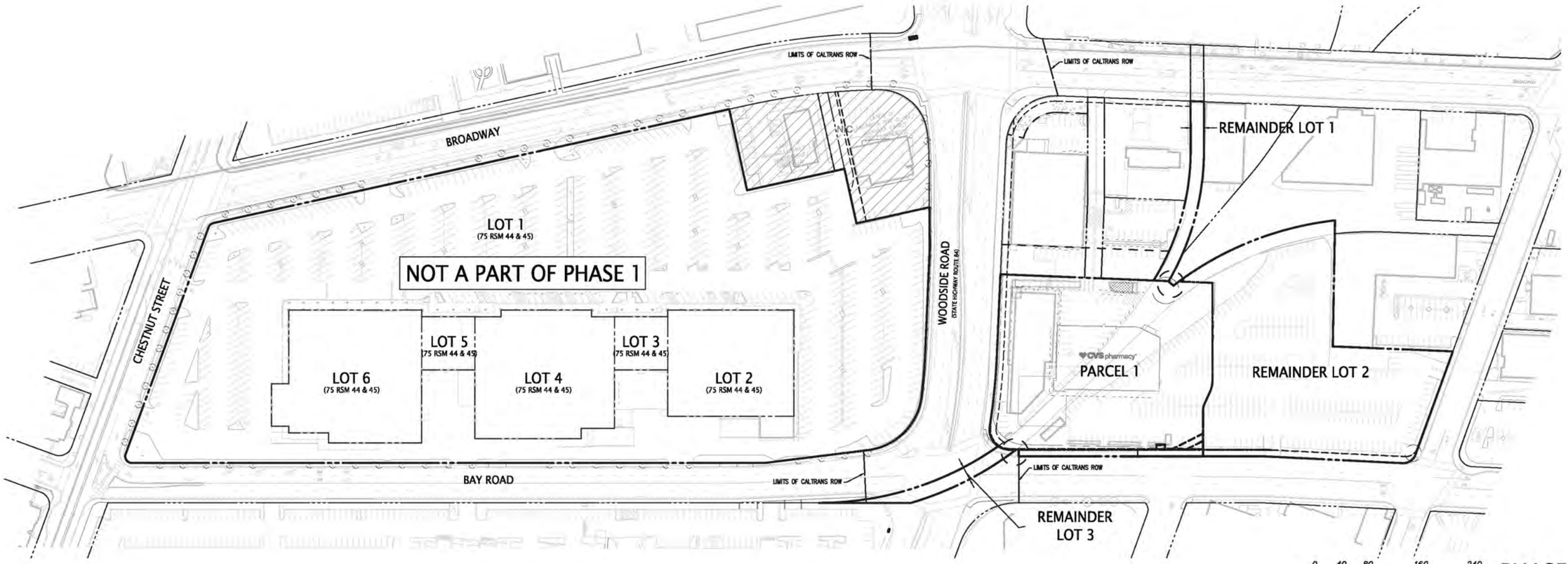
The Sobrato Organization &
MidPen Housing Corporation

Sheet Title:
PARCEL
ELEVATION PLAN -
BROADWAY

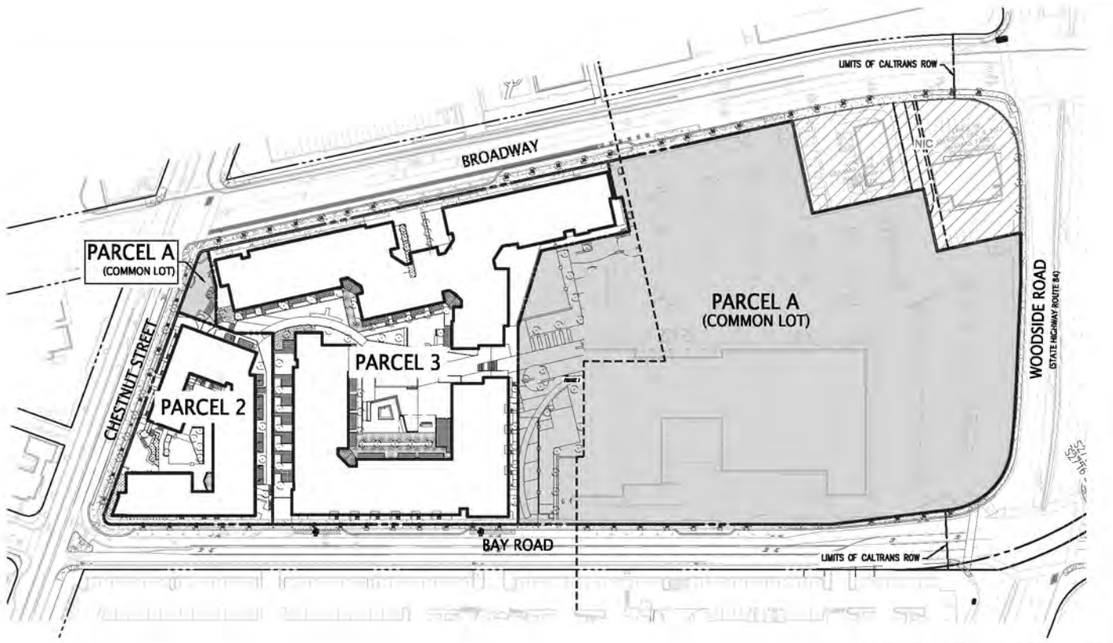
Job No. A14075
Date: 03/15/2019
Scale: AS SHOWN
Drawn By: NM/HR

Sheet No: 5

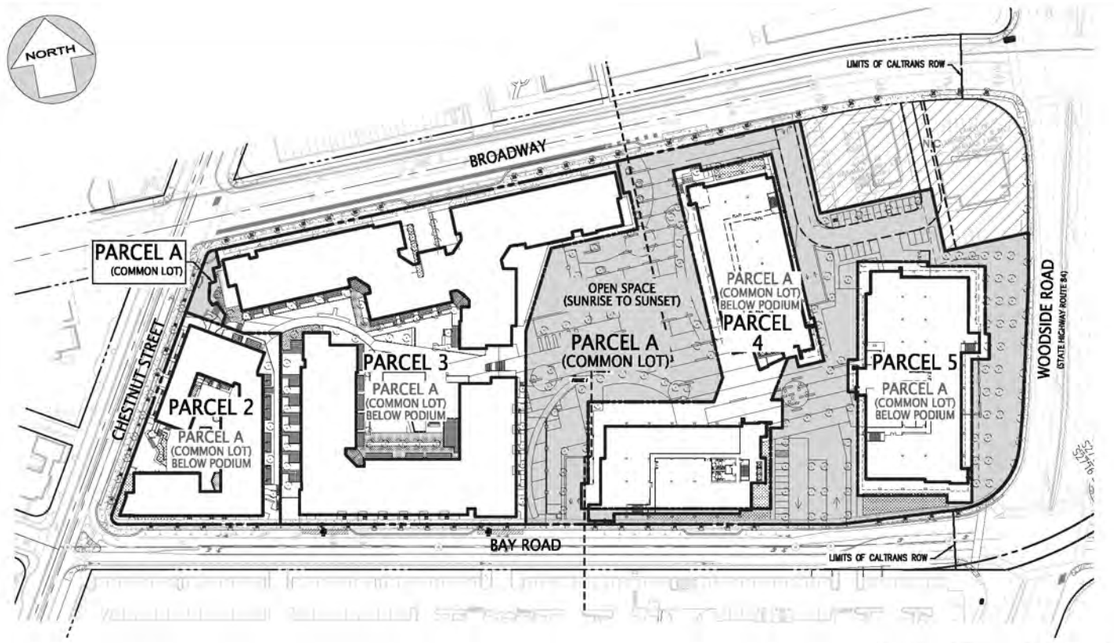
TM-3.2



PHASE 1



PHASE 2



PHASE 3

STUDIO T SQUARE

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
3350 Scott Boulevard, Building 22
Santa Clara, California 95054
(408) 727 6665
Fax (408) 727 5641

Broadway Plaza
Redwood City, CA

The Sobrato Organization &
MidPen Housing Corporation

Sheet Title:
PARCEL MAP
PHASING PLAN -
BROADWAY

Job No.	A14075
Date:	03/15/2019
Scale:	AS SHOWN
Drawn By:	NM/HR

Sheet No: 6

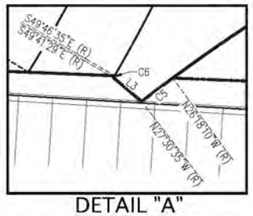
TM-3.3

LEGEND

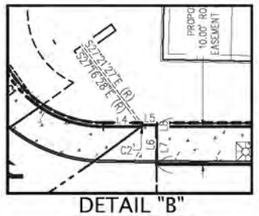
- PROPERTY LINE
- ADJACENT PROPERTY LINE
- PROPOSED PROPERTY LINE
- PROPERTY LINE TO BE REMOVED
- CENTERLINE
- NON-ACCESS
- EASEMENT
- PROPOSED EASEMENT
- BUILDING LINE WITH DOOR
- BUILDING OVERHANG
- FOUND MONUMENT AS NOTED
- LIGHT
- STREET LIGHT
- TRAFFIC SIGNAL ARM / POST
- TRANSFORMER
- FIRE HYDRANT
- STORM DRAIN MANHOLE
- MANHOLE
- CLEAN OUT
- GAS METER
- UTILITY POLE W/ GUY WIRE
- VALVE
- CATCH BASIN / DROP INLET
- WATER METER
- FIRE DEPARTMENT CONNECTION
- BACK FLOW PREVENTER
- POST INDICATOR VALVE
- UTILITY BOX (SIZE VARIES)
- SIGN
- BOLLARD
- TREE W/ SIZE & ELEVATION
- SPOT ELEVATION
- AERIAL SPOT ELEVATION
- CONTOUR
- INDEX CONTOUR
- CURB
- CURB & GUTTER
- CONCRETE
- FENCE
- RETAINING WALL
- EDGE OF PAVEMENT
- SINGLE TREE
- TREES AND BRUSH
- SANITARY SEWER
- STORM DRAIN
- WATER
- GAS
- UNDERGROUND ELECTRIC
- TELEPHONE
- OVERHEAD
- JOINT TRENCH
- LIGHTING CONDUIT
- FIBER OPTIC CABLE

ABBREVIATIONS

OR	OFFICIAL RECORDS
P.U.E.	PUBLIC UTILITY EASEMENT
R.R.E.	RAILROAD EASEMENT
RSM	RECORD SUBDIVISION MAP
S.D.E.	STORM DRAIN EASEMENT
S.S.E.	SANITARY SEWER EASEMENT
BOV	BLOW OFF VALVE
RW	RECLAIMED WATER



DETAIL "A"
NOT TO SCALE



DETAIL "B"
NOT TO SCALE

(FOR THIS SHEET ONLY)

CURVE TABLE

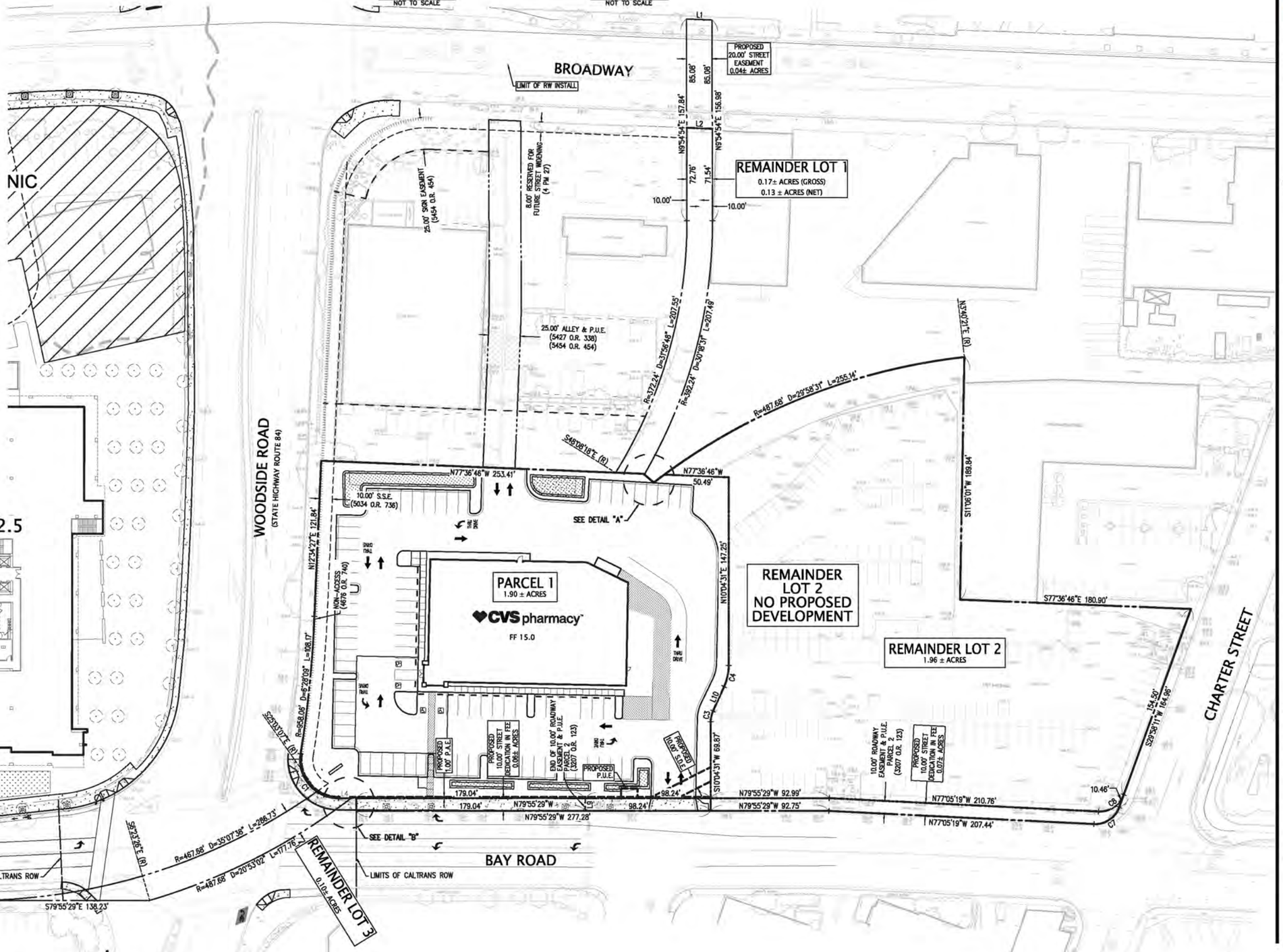
CURVE #	RADIUS	DELTA	LENGTH
C1	30.00'	98°58'05"	51.82'
C2	487.68'	0°04'59"	0.71'
C3	20.00'	24°30'02"	8.55'
C4	40.00'	24°30'02"	17.10'
C5	487.68'	1°12'25"	10.27'
C6	392.24'	0°05'06"	0.58'
C7	20.00'	72°56'30"	25.46'
C8	20.00'	72°56'30"	25.46'

(FOR THIS SHEET ONLY)

LINE TABLE

LINE #	DIRECTION	LENGTH
L1	S77°36'46"E	20.02'
L2	S77°36'46"E	20.02'
L3	S39°31'06"E	9.71'
L4	S79°55'29"E	9.92'
L5	S79°55'29"E	3.58'
L6	N11°12'23"E	10.43'
L7	S10°04'31"W	10.00'
L8	S10°04'31"W	0.43'
L9	N10°04'31"E	10.00'
L10	N34°34'33"E	20.98'

0 20 40 80 120
Scale 1" = 40'



STUDIO T SQUARE

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
3350 Scott Boulevard, Building 22
Santa Clara, California 95054
(408) 727-6665
Fax (408) 727-5641

Broadway Plaza
Redwood City, CA

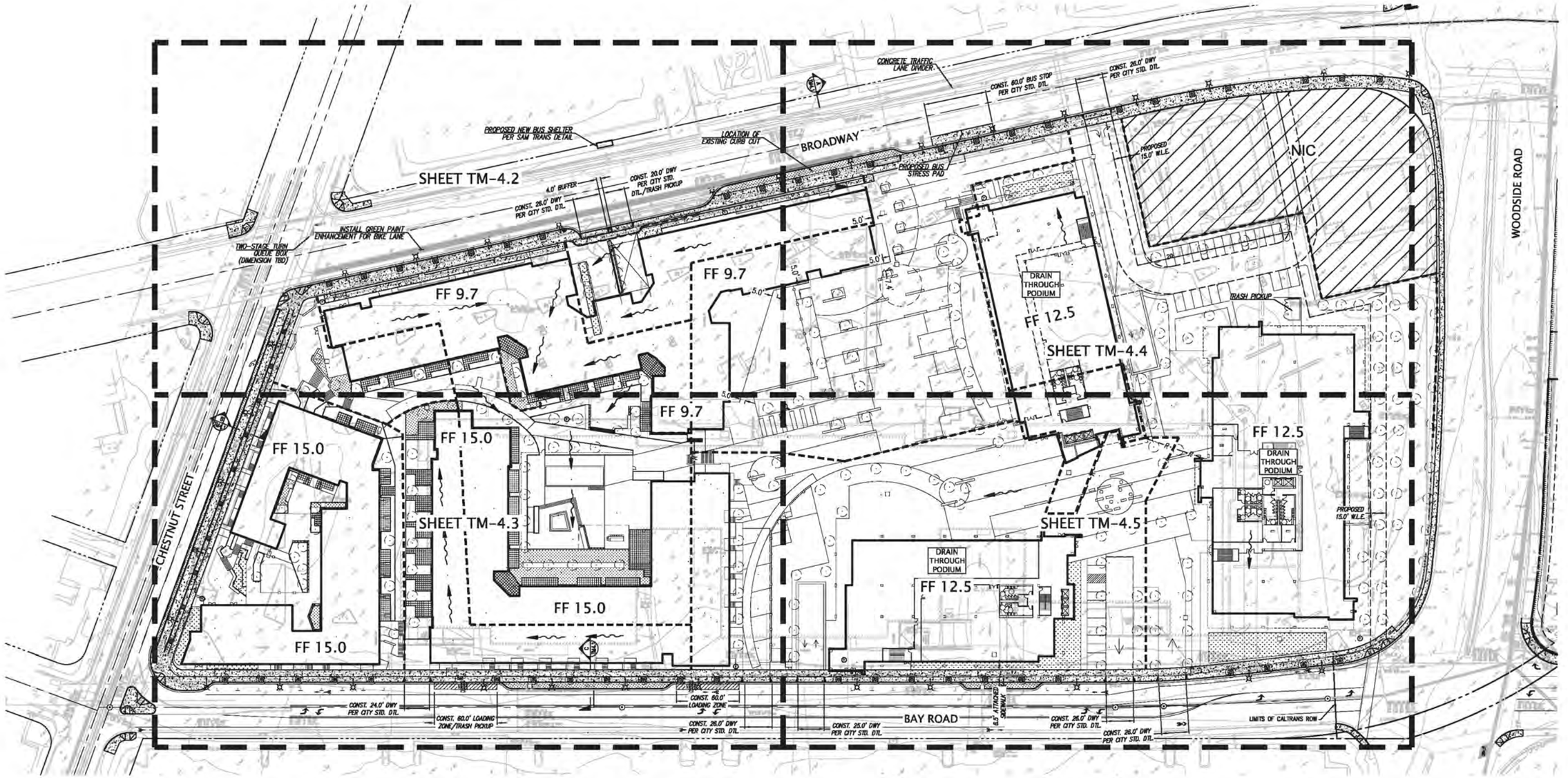
The Sobrato Organization &
MidPen Housing Corporation

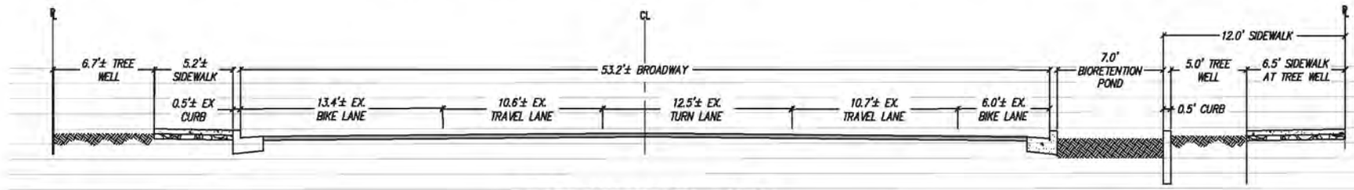
Sheet Title:
PROPOSED CONDITIONS - BAY ROAD

Job No. A14075
Date: 03/15/2019
Scale: AS SHOWN
Drawn By: NM/HR

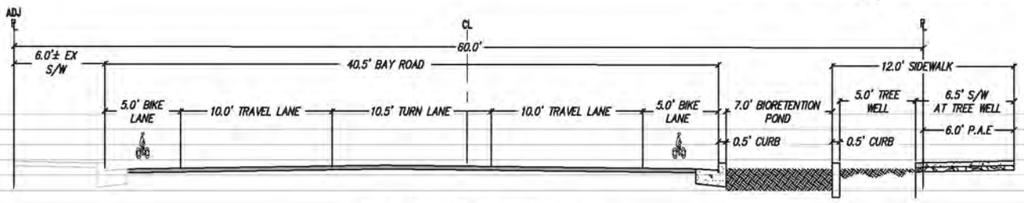
Sheet No: 7

TM-3.4

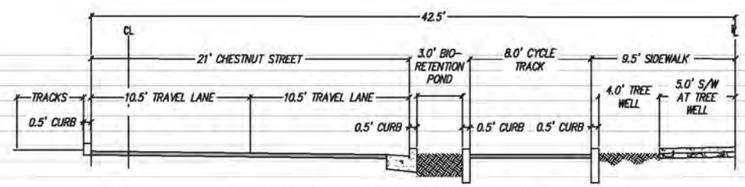




BROADWAY (SECTION A)
1" = 5'



BAY ROAD (SECTION C)
1" = 5'



CHESTNUT STREET (SECTION B)
1" = 5'

NOTES

1. ALL UNUSED UTILITY LATERALS SHALL BE ABANDONED IN PLACE PER CITY STANDARDS.
2. WOODSIDE ROAD OFFSITE DESIGN WILL CONFORM WITH 101/84 INTERCHANGE DESIGN.

PARKING

1. 15 STALLS PROPOSED ALONG BAY ROAD.

NORTH

0 25 50 100 150

Scale 1" = 50 ft

STUDIO T SQUARE

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
3350 Scott Boulevard, Building 22
Santa Clara, California 95054
(408) 727 6665
Fax (408) 727 5641

Broadway Plaza
Redwood City, CA

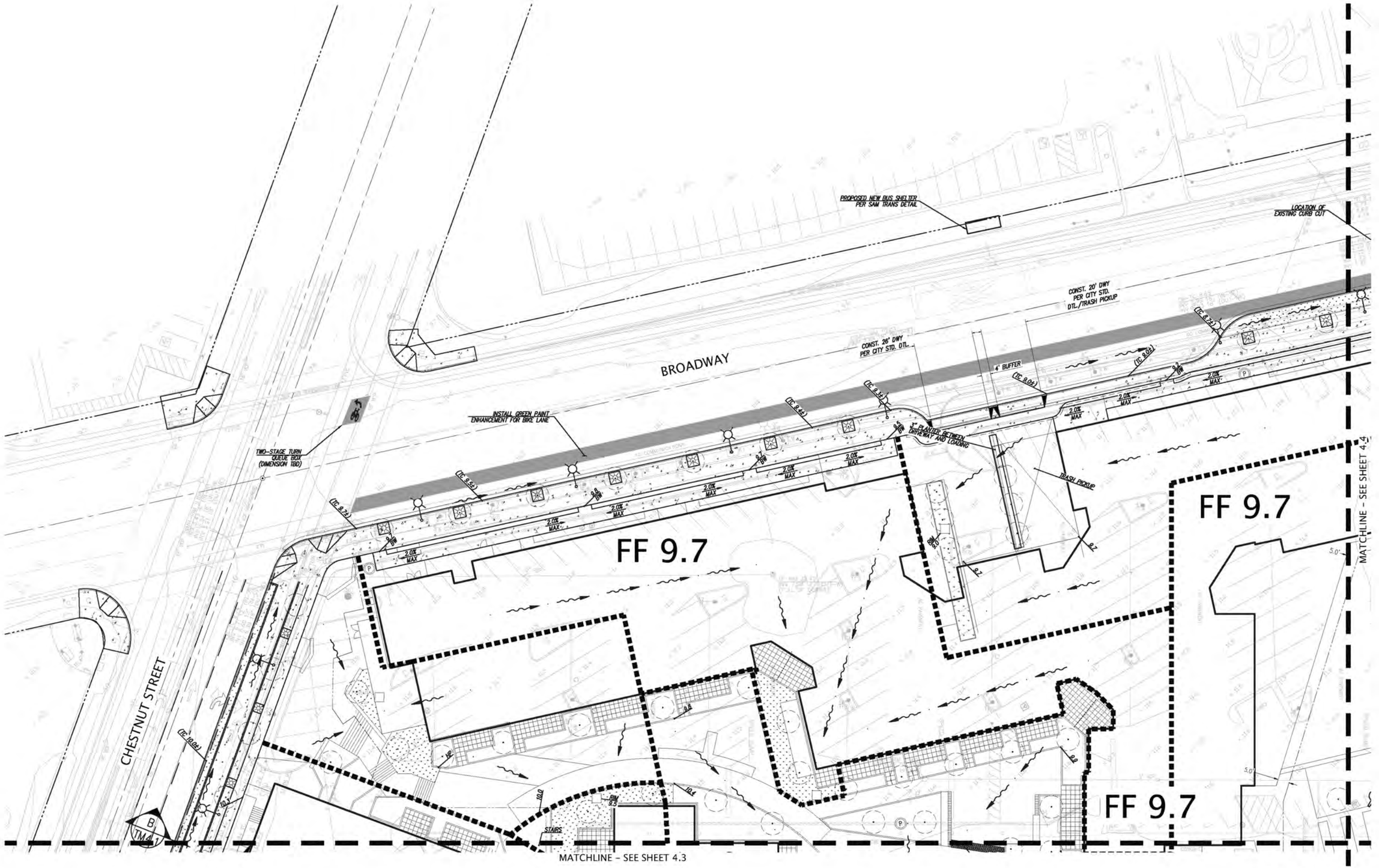
The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
PRELIMINARY GRADING PLAN - BROADWAY

Job No. A14075
Date: 03/15/2019
Scale: AS SHOWN
Drawn By: NM/HR

Sheet No: 8

TM-4.1



NORTH

0 10 20 40 60

Scale 1" = 20 ft

STUDIO T SQUARE

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
3350 Scott Boulevard, Building 22
Santa Clara, California 95054
(408) 727 6665
Fax (408) 727 5641

Broadway Plaza
Redwood City, CA

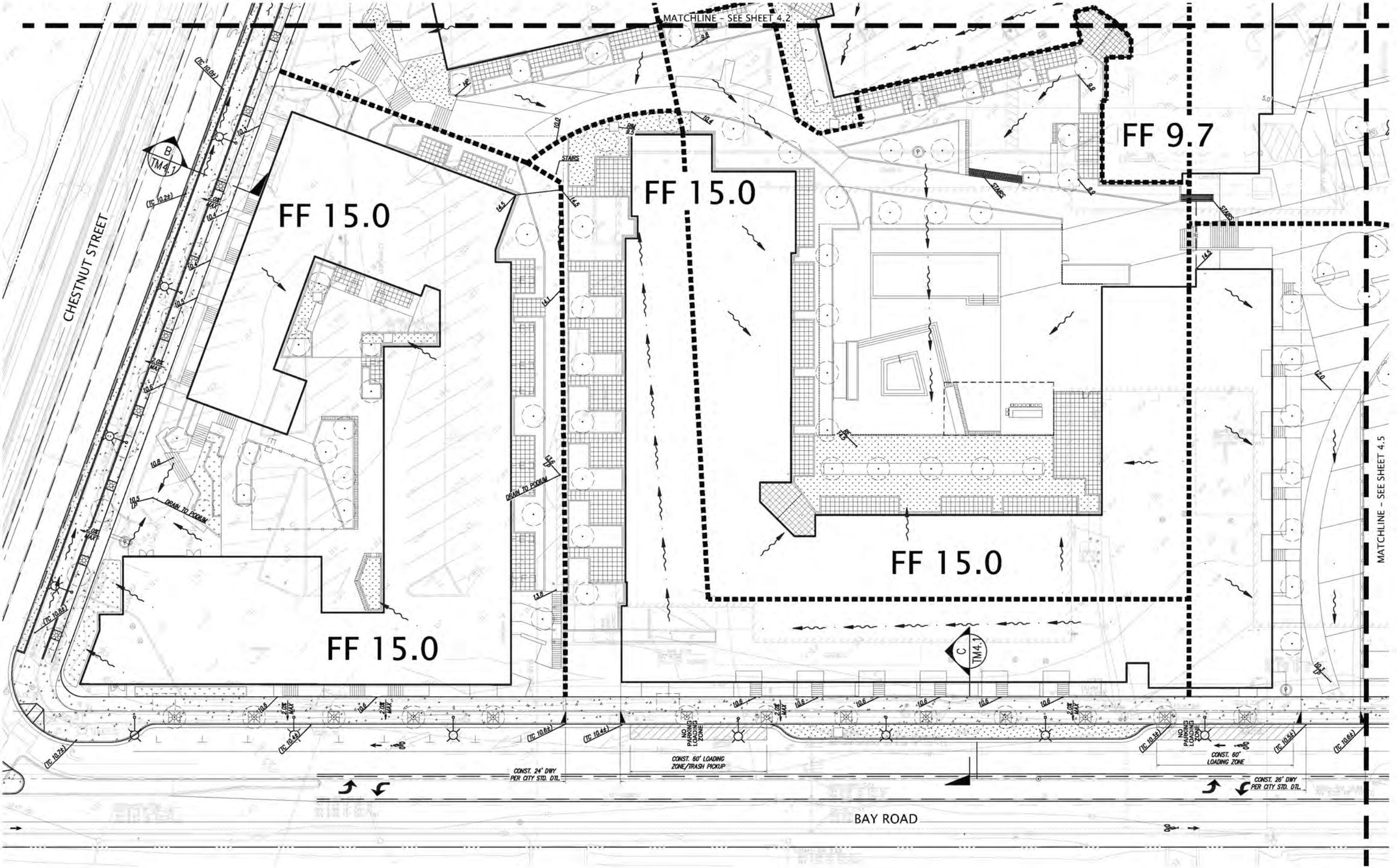
The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
PRELIMINARY GRADING PLAN - BROADWAY

Job No. A14075
Date: 03/15/2019
Scale: AS SHOWN
Drawn By: NM/HR

Sheet No: 9

TM-4.2



STUDIO T SQUARE

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
3350 Scott Boulevard, Building 22
Santa Clara, California 95054
(408) 727-6665
Fax (408) 727-5641

Broadway Plaza
Redwood City, CA

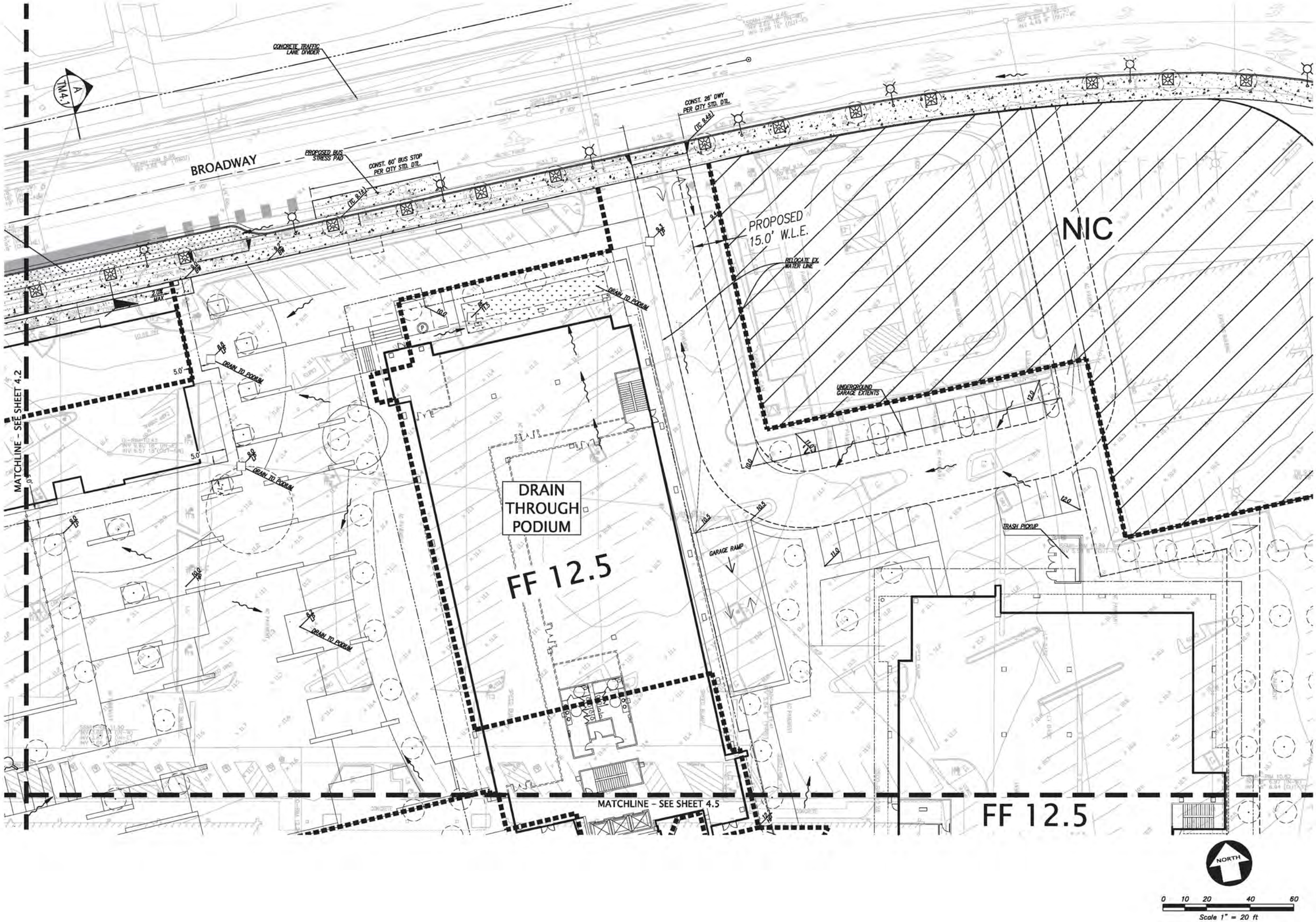
The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
PRELIMINARY GRADING PLAN - BROADWAY

Job No. A14075
Date: 03/15/2019
Scale: AS SHOWN
Drawn By: NM/HR

Sheet No: 10

TM-4.3



STUDIO T SQUARE

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
3350 Scott Boulevard, Building 22
Santa Clara, California 95054
(408) 727 6665
Fax (408) 727 5641

Broadway Plaza
Redwood City, CA

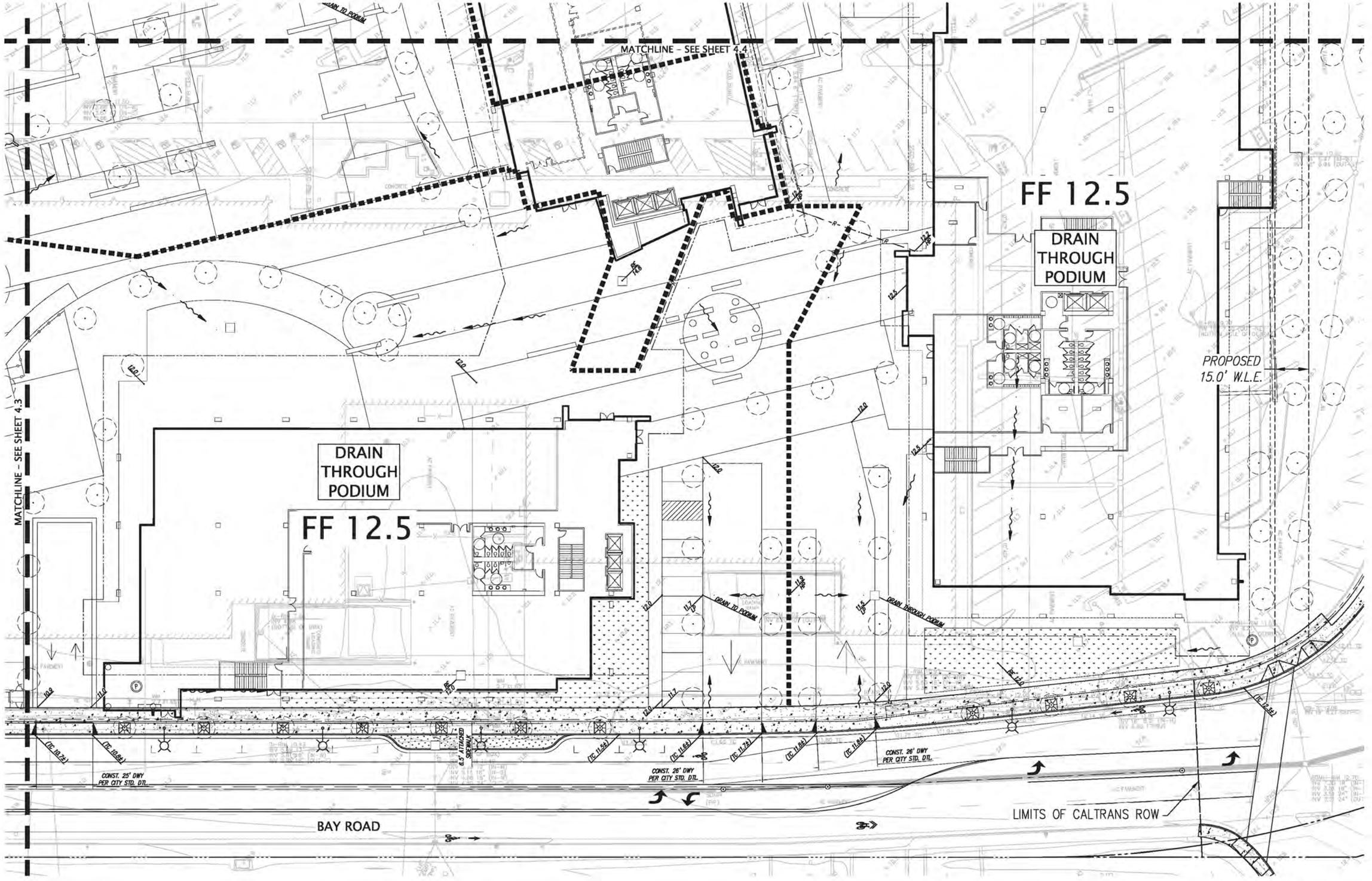
The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
PRELIMINARY GRADING PLAN - BROADWAY

Job No.	A14075
Date:	03/15/2019
Scale:	AS SHOWN
Drawn By:	NM/HR

Sheet No: 11

TM-4.4



STUDIO T SQUARE

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
3350 Scott Boulevard, Building 22
Santa Clara, California 95054
(408) 727 6665
Fax (408) 727 5641

Broadway Plaza
Redwood City, CA

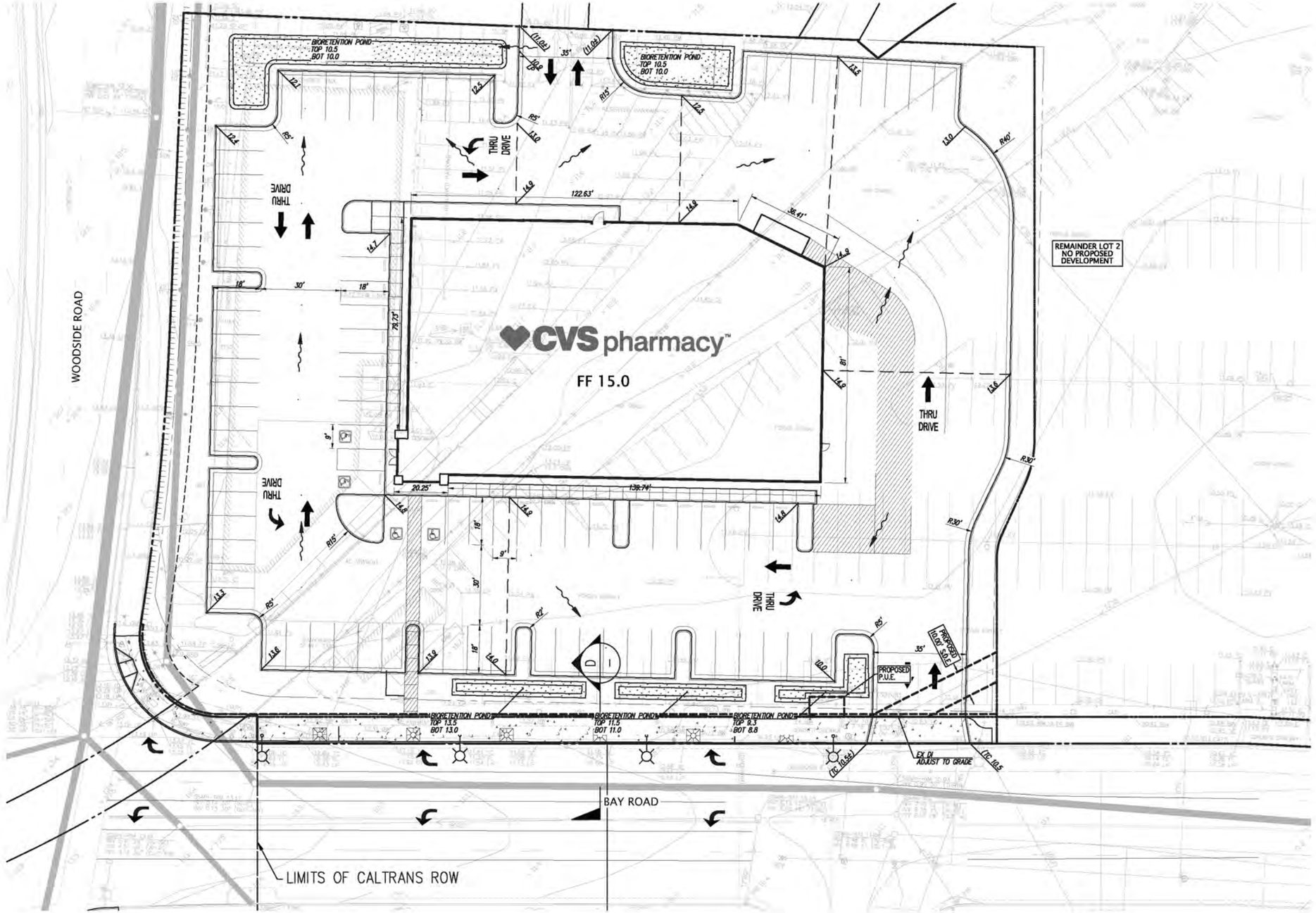
The Sobrato Organization &
MidPen Housing Corporation

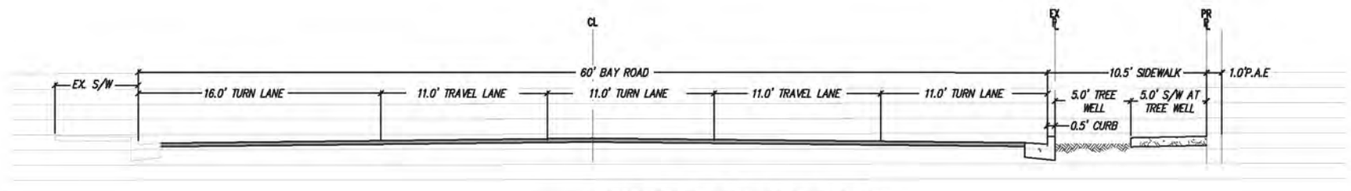
Sheet Title:
PRELIMINARY GRADING PLAN – BROADWAY

Job No.	A14075
Date:	03/15/2019
Scale:	AS SHOWN
Drawn By:	NM/HR

Sheet No: 12

TM-4.5





BAY ROAD CVS (SECTION D)
1" = 5'

NOTES

1. ALL UNUSED UTILITY LATERALS SHALL BE ABANDONED IN PLACE PER CITY STANDARDS.
2. UNDERGROUND OVERHEAD UTILITIES ON BAY ROAD TO NEXT OFFSITE POLE.

NORTH

0 10 20 40 60

Scale 1" = 20 ft

STUDIO T SQUARE

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
3350 Scott Boulevard, Building 22
Santa Clara, California 95054
(408) 727 6665
Fax (408) 727 5641

Broadway Plaza
Redwood City, CA

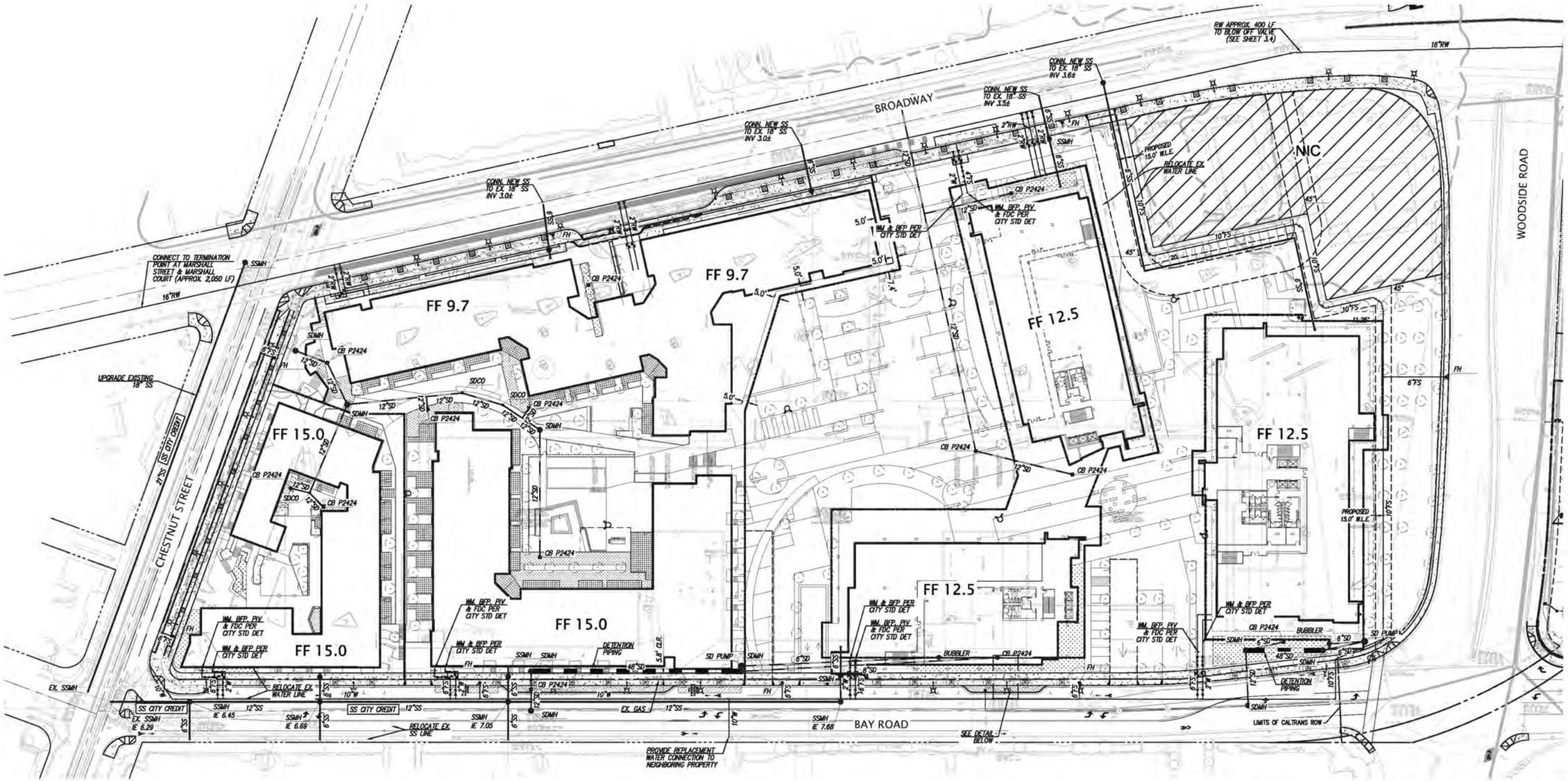
The Sobrato Organization &
MidPen Housing Corporation

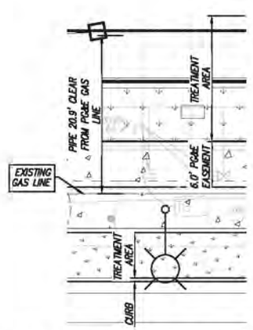
Sheet Title:
PRELIMINARY GRADING PLAN – BAY ROAD

Job No. A14075
Date: 03/15/2019
Scale: AS SHOWN
Drawn By: NM/HR

Sheet No: 13

TM-4.6

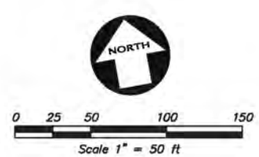




PG&E EASEMENT DETAIL BLOWUP
1" = 10'

NOTES

1. ALL UNUSED UTILITY LATERALS SHALL BE ABANDONED IN PLACE PER CITY STANDARDS.
2. STORM DRAIN IN THE PUBLIC RIGHT OF WAY SHALL BE RCP.
3. RECYCLED WATER MAIN SHALL BE HDPE.
4. PROPOSED WATER MAINS WITHIN THE EASEMENT SHALL BE HDPE.
5. WATER MAINS OUTSIDE OF THE EASEMENT SHALL BE HDPE OR FULLY RESTRAINED PVC.
6. EXISTING POWER LINES ON PROPERTY FRONTAGE OF BAY ROAD SHALL BE UNDERGROUNDED TO THE NEXT OFFSITE POLE.
7. ALL GARAGE WATER, AND ANY OTHER INTERIOR DRAINS TO BE DIRECTED TO SANITARY SEWER



STUDIO T SQUARE

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
3350 Scott Boulevard, Building 22
Santa Clara, California 95054
(408) 727-6665
Fax (408) 727-5641

Broadway Plaza
Redwood City, CA

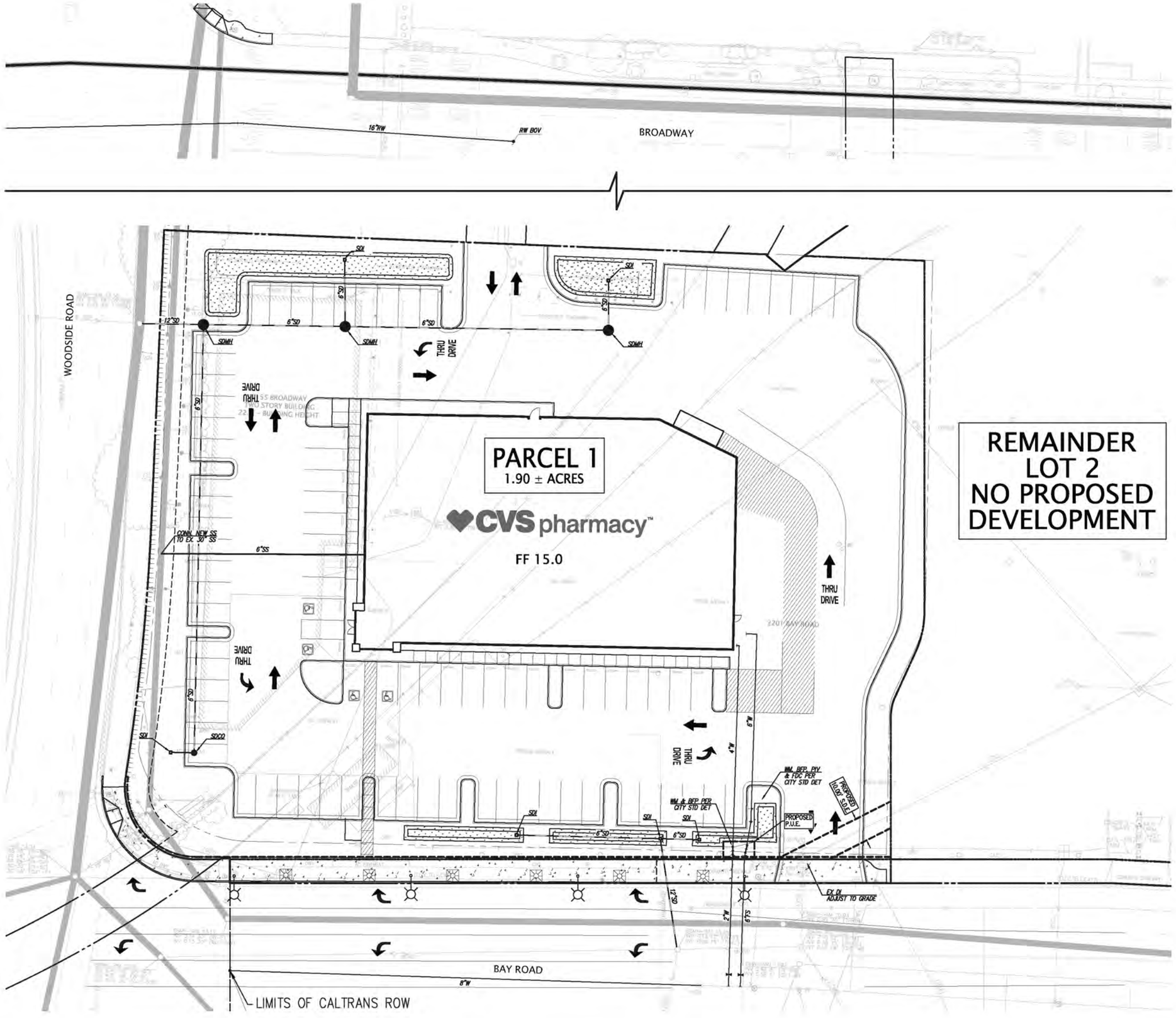
The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
PRELIMINARY UTILITY PLAN - BROADWAY

Job No. A14075
Date: 03/15/2019
Scale: AS SHOWN
Drawn By: NM/HR

Sheet No: 14

TM-5.1



NOTES

1. ALL UNUSED UTILITY LATERALS SHALL BE ABANDONED IN PLACE PER CITY STANDARDS.
2. STORM DRAIN IN THE PUBLIC RIGHT OF WAY SHALL BE RCP.
3. RECYCLED WATER MAIN SHALL BE HDPE.
4. ALL GARAGE AND INTERIOR DRAINAGE SHALL BE PLUMBED TO SANITARY SEWER.
5. EXISTING POWER LINES ON PROPERTY FRONTAGE OF BAY ROAD SHALL BE UNDERGROUNDED TO THE NEXT OFFSITE POLE.

NORTH

0 10 20 40 60

Scale 1" = 20 ft

STUDIO T SQUARE

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
3350 Scott Boulevard, Building 22
Santa Clara, California 95054
(408) 727 6665
Fax (408) 727 5641

Broadway Plaza
Redwood City, CA

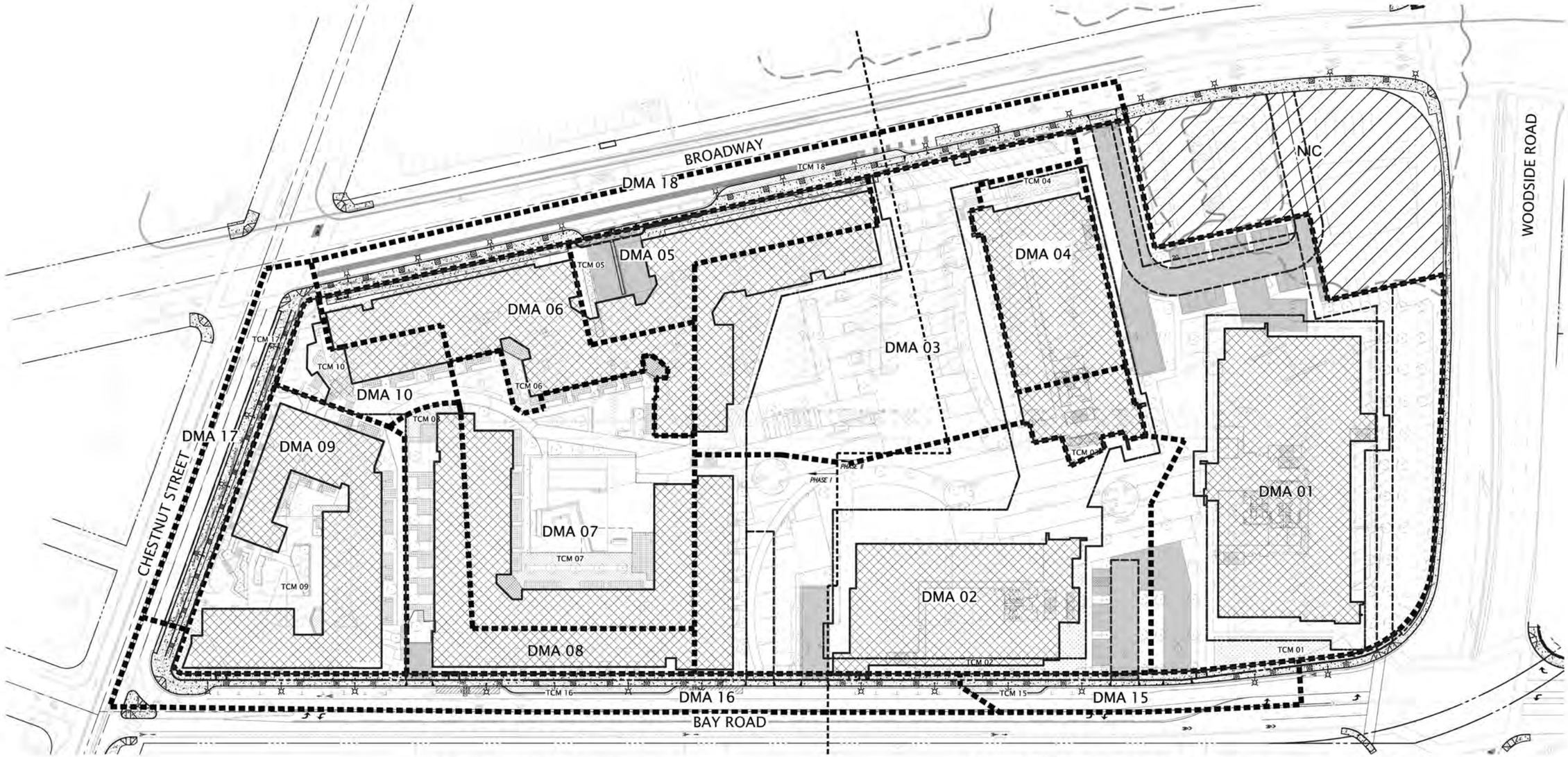
The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
PRELIMINARY UTILITY PLAN – BAY ROAD

Job No. A14075
Date: 03/15/2019
Scale: AS SHOWN
Drawn By: NM/HR

Sheet No: 15

TM-5.2



BIOTREATMENT SUMMARY TABLE

AREA	TCM	TREATMENT TYPE	TOTAL AREA (SQ. FT.)	IMPERVIOUS AREA (SQ. FT.)	TREATMENT AREA REQ. (SQ. FT.)	TREATMENT AREA PROVIDED (SQ. FT.)	PONDING DEPTH (IN.)
**DMA 01	01	BIOTREATMENT POND	113,611	71,697	2,248	2,518	6
**DMA 02	02	BIOTREATMENT POND	92,385	72,846	2,251	2,772	6
**DMA 03	03	BIOTREATMENT POND	76,331	60,394	1,803	1,954	6
**DMA 04	04	BIOTREATMENT POND	22,103	18,084	537	889	6
**DMA 05	05	BIOTREATMENT POND	19,071	17,880	480	487	8
**DMA 06	06	BIOTREATMENT POND	27,142	25,955	758	779	6
**DMA 07	07	BIOTREATMENT POND	49,884	40,179	1,197	2,642	6
**DMA 08	08	BIOTREATMENT POND	23,959	17,592	578	633	6
**DMA 09	09	BIOTREATMENT POND	45,092	39,295	1,199	1,270	6
**DMA 10	10	BIOTREATMENT POND	11,793	10,405	306	341	6
**DMA15	15	BIOTREATMENT POND	12,082	11,662	340	420	6
**DMA 16	16	BIOTREATMENT POND	31,418	30,357	886	1,060	6
**DMA 17	17	FLOW THROUGH PLANTERS	15,824	15,294	446	530	6
*DMA 18	18	BIOTREATMENT POND	29,687	28,488	1,187	1,199	6

*BIOTREATMENT SIZING BASED ON UNIFORM FLOW METHOD (4%).
**BIOTREATMENT SIZING BASED ON COMBINATION FLOW AND VOLUME METHOD.

SOURCE CONTROL MEASURES IMPLEMENTED

SD-10: SITE DESIGN & LANDSCAPE PLANNING

- MAXIMIZED TREES AND PLANTING WITHIN HARDSCAPE AND LANDSCAPE AREAS.
- VEGETATED SLOPES FOR ALL LANDSCAPE SLOPES LESS THAN 1:5 SLOPE.

SD-11: EFFICIENT IRRIGATION

- RAIN-TRIGGERED SHUTOFF DEVICES TO PREVENT IRRIGATION AFTER PRECIPITATION.
- SYSTEM DESIGNED TO SITE-SPECIFIC WATER DEMANDS AND PLANTING REQUIREMENTS.

SD-13: STORM DRAIN SIGNAGE

- ALL CATCH BASINS TO BE STENCILED WITH PROHIBITIVE LANGUAGE PER CITY STANDARDS.

Table I.B.1 Impervious[4] and Pervious Surfaces

Type of Impervious Surface	I.B.1.a PRE-PROJECT IMPERVIOUS SURFACE (SQ.FT.)	I.B.1.b EXISTING IMPERVIOUS SURFACE TO BE RETAINED (SQ.FT.)	I.B.1.c EXISTING IMPERVIOUS SURFACE TO BE REPLACED (SQ.FT.)	I.B.1.d NEW IMPERVIOUS SURFACE TO BE CREATED (SQ.FT.)	I.B.1.e POST-PROJECT IMPERVIOUS SURFACE (SQ.FT.)(= B+C-D)
Roof area(s)	138,890	0	138890	82583	221473
Impervious[5] sidew alks, patios, paths, drivew ays, streets	32989	0	32989	115025	148014
Impervious[5] uncovered parking[7]	354715	0	76717	0	76717
Totals	526594	0	248596	197608	446204
I.B.1.f - Total Impervious Surface Replaced and Created: *(sum of totals for columns I.B.1.c and I.B.1.d):*			**446204**		

Type of Pervious Surface	Pre-Project Pervious Surface (sq.ft.)			Post-project Pervious Surface(sq.ft.)
Landscaping	42125			122515
Pervious Paving	0		I.B.1.e.1	0
Green Roof	0			0
Totals	42125			122515
Total Site Area (Total Impervious + Total Pervious)	568719			568719

PLAN LEGEND

- TREATMENT AREA LIMITS
- DMA — DRAINAGE MANAGEMENT AREA
- TCM — TREATMENT CONTROL MEASURE
- IMPERVIOUS ROOFTOP DRAINING TO BIO-SWALE
- IMPERVIOUS PAVEMENT DRAINING TO BIO-SWALE
- CONCRETE AREA
- BIORETENTION POND
- FLOW THROUGH PLANTER

NORTH

0 25 50 100 150

Scale 1" = 50 ft

STUDIO T SQUARE

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
3350 Scott Boulevard, Building 22
Santa Clara, California 95054
(408) 727 6665
Fax (408) 727 5641

Broadway Plaza
Redwood City, CA

The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
STORMWATER CONTROL PLAN – BROADWAY

Job No. A14075
Date: 03/15/2019
Scale: AS SHOWN
Drawn By: NM/HR

Sheet No: 16

TM-6.1

Worksheet for Calculating the Combination Flow and Volume Method

1.0 Project Information

1-1	Project Name:	Broadway and Woodside
1-2	City application ID:	Redwood City
1-3	Site Address or APN:	1401 Broadway
1-4	Tract or Parcel Map No:	-
1-5	Site Mean Annual Precip. (MAP)[1]	14.6 Inches
1-6	Applicable Rain Gauge[2]	Palo Alto (SMCWPPP)

These calculations are based on the combination flow and volume hydraulic sizing method presented in the Alameda, San Mateo, and Santa Clara County C.3 Technical Guidance Manuals. The steps presented below are explained in Chapter 5, Section 5.1 of the guidance manuals.

Click here for map

Refer to the Mean Annual Precipitation Map in Appendix D of the C.3 Technical Guidance to determine the MAP, in inches, for the site.

MAP adjustment factor is automatically calculated as: 1.00

(The "Site Mean Annual Precipitation (MAP)" is divided by the MAP for the applicable rain gauge, shown in Table 5.2, below.)

2.0 Calculate Percentage of Impervious Surface for Drainage Management Area (DMA)

2-1 Name of DMA: DMA 1

For items 2-2 and 2-3, enter the areas in square feet for each type of surface within the DMA.

	Type of Surface	Area of surface type within DMA (Sq. Ft)	Adjust Pervious Surface	Effective Impervious Area
2-2	Impervious Surface	73,084	1.0	73,084
2-3	Pervious Surface*	41,964	0.1	4,196
	Total DMA Area (square feet) =	115,048		

**Self-Treating and Self-Retaining (no credit)*

2-4 *Total Effective Impervious Area (EIA)* 77,280 Square feet

3.0 Calculate Unit Basin Storage Volume in Inches

Table 5.2: Unit Basin Storage Volumes (in inches) for 80 Percent Capture Using 48-Hour Drawdowns

Applicable Rain Gauge	Mean Annual Precipitation (in)	Unit Basin Storage Volume (in) for Applicable Runoff Coefficients (Calculated for 100% Imperviousness)
San Jose Airport (SCVURPPP)	12.9	0.55
Palo Alto (SCVURPPP)	13.7	0.62
Palo Alto (SMCWPPP)	14.6	0.64
Gilroy (SCVURPPP)	18.7	1.00
Morgan Hill (SCVURPPP)	19.5	1.00
Boulder Creek (SMCWPPP)	55.9	2.04
La Honda (SMCWPPP)	24.4	0.86
Half Moon Bay (SMCWPPP)	25.65	0.82
San Francisco (SMCWPPP)	21	0.73
San Francisco Airport (SMCWPPP)	20.1	0.65
San Francisco Oceanside (SMCWPPP)	19.3	0.72
Oakland Airport (OWPAC)	18.35	1.00

3-1 *Unit basin storage volume from Table 5.2:* 0.64 Inches

(The coefficient for this method is 1.00, due to the conversion of any landscaping to effective impervious area)

3-2 *Adjusted unit basin storage volume:* 0.64 Inches

(The unit basin storage volume is adjusted by applying the MAP adjustment factor.)

3-3 *Required Capture Volume (in cubic feet):* 4,122 Cubic feet

(The adjusted unit basin sizing volume (inches) is multiplied by the size of the DMA and converted to feet)

4.0 Calculate the Duration of the Rain Event

4-1 Rainfall intensity: 0.2 Inches per hour

4-2 Divide Item 3-2 by Item 4-1: 3.20 Hours of Rain Event Duration

5.0 Preliminary Estimate of Surface Area of Treatment Measure

5-1 4% of DMA impervious surface: 3,091 Square feet

5-2 3% of DMA impervious surface: 2,318 Square feet

5-3 Volume of treated runoff for area in Item 5-2: 3,091 Cubic feet (Item 5-2 * 5 inches per hour * 1/12 * Item 4-2)

6.0 Initial Adjustment of Depth of Surface Ponding Area

6-1 Subtract Item 5-3 from Item 3-3: 1,030 Cubic feet (Amount of runoff to be stored in ponding area)

6-2 Divide Item 6-1 by Item 5-2: 0.4 Feet (Depth of stored runoff in surface ponding area)

6-3 Convert Item 6-2 from ft to inches: 5.3 Inches (Depth of stored runoff in surface ponding area)

6-4 If ponding depth in Item 6-3 meets your target depth of 6"-12", then Item 7-1 is equal to Item 5-2. If not, continue to Step 7-1.

7.0 Optimize Size of Treatment Measure

7-1 Enter an area larger or smaller than Item 5-2 based off plans: 2248 Sq.ft. (enter larger area if you need less ponding depth; smaller for more depth.)

7-2 Volume of treated runoff for area in Item 7-1: 2,997 Cubic feet (Item 7-1 * 5 inches per hour * 1/12 * Item 4-2)

7-3 Subtract Item 7-2 from Item 3-3: 1,124 Cubic feet (Amount of runoff to be stored in ponding area)

7-4 Divide Item 7-3 by Item 7-1: 0.50 Feet (Depth of stored runoff in surface ponding area)

7-5 Convert Item 7-4 from feet to inches: 6.0 Inches (Depth of stored runoff in surface ponding area)

If the ponding depth in Item 7-5 meets target, stop here. If not, repeat Steps 7-1 through 7-5 until you obtain target depth. If the slope of the drainage area > 1%,

7-6 then 11" will be the max ponding depth (slopes >1% will increase the ponding depth by 0.2 inches).

Worksheet for Calculating the Combination Flow and Volume Method

1.0 Project Information

1-1	Project Name:	Broadway and Woodside
1-2	City application ID:	Redwood City
1-3	Site Address or APN:	1401 Broadway
1-4	Tract or Parcel Map No:	-
1-5	Site Mean Annual Precip. (MAP)[1]	14.6 Inches
1-6	Applicable Rain Gauge[2]	Palo Alto (SMCWPPP)

These calculations are based on the combination flow and volume hydraulic sizing method presented in the Alameda, San Mateo, and Santa Clara County C.3 Technical Guidance Manuals. The steps presented below are explained in Chapter 5, Section 5.1 of the guidance manuals.

Click here for map

Refer to the Mean Annual Precipitation Map in Appendix D of the C.3 Technical Guidance to determine the MAP, in inches, for the site.

MAP adjustment factor is automatically calculated as: 1.00

(The "Site Mean Annual Precipitation (MAP)" is divided by the MAP for the applicable rain gauge, shown in Table 5.2, below.)

2.0 Calculate Percentage of Impervious Surface for Drainage Management Area (DMA)

2-1 Name of DMA: DMA 3

For items 2-2 and 2-3, enter the areas in square feet for each type of surface within the DMA.

	Type of Surface	Area of surface type within DMA (Sq. Ft)	Adjust Pervious Surface	Effective Impervious Area
2-2	Impervious Surface	60,394	1.0	60,394
2-3	Pervious Surface	16,076	0.1	1,608
	Total DMA Area (square feet) =	76,470		

2-4 *Total Effective Impervious Area (EIA)* 62,002 Square feet

3.0 Calculate Unit Basin Storage Volume in Inches

Table 5.2: Unit Basin Storage Volumes (in inches) for 80 Percent Capture Using 48-Hour Drawdowns

Applicable Rain Gauge	Mean Annual Precipitation (in)	Unit Basin Storage Volume (in) for Applicable Runoff Coefficients (Calculated for 100% Imperviousness)
San Jose Airport (SCVURPPP)	12.9	0.55
Palo Alto (SCVURPPP)	13.7	0.62
Palo Alto (SMCWPPP)	14.6	0.64
Gilroy (SCVURPPP)	18.7	1.00
Morgan Hill (SCVURPPP)	19.5	1.00
Boulder Creek (SMCWPPP)	55.9	2.04
La Honda (SMCWPPP)	24.4	0.86
Half Moon Bay (SMCWPPP)	25.65	0.82
San Francisco (SMCWPPP)	21	0.73
San Francisco Airport (SMCWPPP)	20.1	0.65
San Francisco Oceanside (SMCWPPP)	19.3	0.72
Oakland Airport (OWPAC)	18.35	1.00

3-1 *Unit basin storage volume from Table 5.2:* 0.64 Inches

(The coefficient for this method is 1.00, due to the conversion of any landscaping to effective impervious area)

3-2 *Adjusted unit basin storage volume:* 0.64 Inches

(The unit basin storage volume is adjusted by applying the MAP adjustment factor.)

3-3 *Required Capture Volume (in cubic feet):* 3,307 Cubic feet

(The adjusted unit basin sizing volume (inches) is multiplied by the size of the DMA and converted to feet)

4.0 Calculate the Duration of the Rain Event

4-1 Rainfall intensity: 0.2 Inches per hour

4-2 Divide Item 3-2 by Item 4-1: 3.20 Hours of Rain Event Duration

5.0 Preliminary Estimate of Surface Area of Treatment Measure

5-1 4% of DMA impervious surface: 2,480 Square feet

5-2 3% of DMA impervious surface: 1,860 Square feet

5-3 Volume of treated runoff for area in Item 5-2: 2,480 Cubic feet (Item 5-2 * 5 inches per hour * 1/12 * Item 4-2)

6.0 Initial Adjustment of Depth of Surface Ponding Area

6-1 Subtract Item 5-3 from Item 3-3: 827 Cubic feet (Amount of runoff to be stored in ponding area)

6-2 Divide Item 6-1 by Item 5-2: 0.4 Feet (Depth of stored runoff in surface ponding area)

6-3 Convert Item 6-2 from ft to inches: 5.3 Inches (Depth of stored runoff in surface ponding area)

6-4 If ponding depth in Item 6-3 meets your target depth of 6"-12", then Item 7-1 is equal to Item 5-2. If not, continue to Step 7-1.

7.0 Optimize Size of Treatment M 25

7-1 Enter an area larger or smaller than Item 5-2: 1803 Sq.ft. (enter larger area if you need less ponding depth; smaller for more depth.)

7-2 Volume of treated runoff for area in Item 7-1: 2,404 Cubic feet (Item 7-1 * 5 inches per hour * 1/12 * Item 4-2)

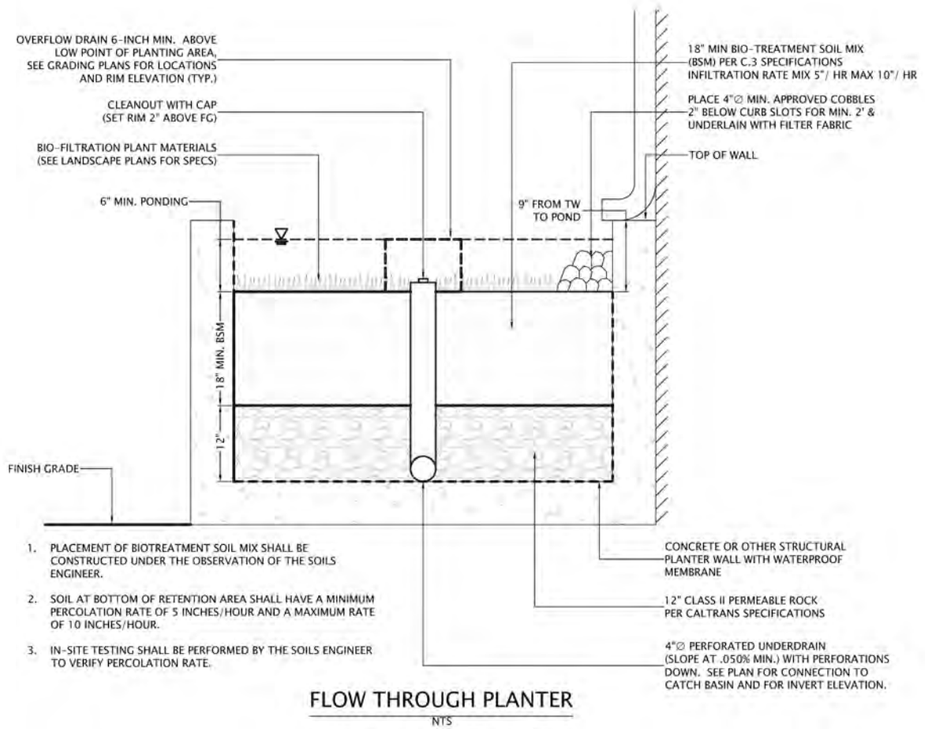
7-3 Subtract Item 7-2 from Item 3-3: 903 Cubic feet (Amount of runoff to be stored in ponding area)

7-4 Divide Item 7-3 by Item 7-1: 0.50 Feet (Depth of stored runoff in surface ponding area)

7-5 Convert Item 7-4 from feet to inches: 6.0 Inches (Depth of stored runoff in surface ponding area)

If the ponding depth in Item 7-5 meets target, stop here. If not, repeat Steps 7-1 through 7-5 until you obtain target depth. If the slope of the drainage area > 1%,

7-6 then 11" will be the max ponding depth (slopes >1% will increase the ponding depth by 0.2 inches).



1. PLACEMENT OF BIOTREATMENT SOIL MIX SHALL BE CONSTRUCTED UNDER THE OBSERVATION OF THE SOILS ENGINEER.
2. SOIL AT BOTTOM OF RETENTION AREA SHALL HAVE A MINIMUM PERCOLATION RATE OF 5 INCHES/HOUR AND A MAXIMUM RATE OF 10 INCHES/HOUR.
3. IN-SITE TESTING SHALL BE PERFORMED BY THE SOILS ENGINEER TO VERIFY PERCOLATION RATE.

FLOW THROUGH PLANTER

NTS

Worksheet for Calculating the Combination Flow and Volume Method

1.0 Project Information

1-1	Project Name:	Broadway and Woodside
1-2	City application ID:	Redwood City
1-3	Site Address or APN:	1401 Broadway
1-4	Tract or Parcel Map No:	-
1-5	Site Mean Annual Precip. (MAP)[1]	14.6 Inches
1-6	Applicable Rain Gauge[2]	Palo Alto (SMCWPPP)

These calculations are based on the combination flow and volume hydraulic sizing method presented in the Alameda, San Mateo, and Santa Clara County C.3 Technical Guidance Manuals. The steps presented below are explained in Chapter 5, Section 5.1 of the guidance manuals.

Click here for map

Refer to the Mean Annual Precipitation Map in Appendix D of the C.3 Technical Guidance to determine the MAP, in inches, for the site.

MAP adjustment factor is automatically calculated as: 1.00

(The "Site Mean Annual Precipitation (MAP)" is divided by the MAP for the applicable rain gauge, shown in Table 5.2, below.)

2.0 Calculate Percentage of Impervious Surface for Drainage Management Area (DMA)

2-1 Name of DMA: DMA 2

For items 2-2 and 2-3, enter the areas in square feet for each type of surface within the DMA.

	Type of Surface	Area of surface type within DMA (Sq. Ft)	Adjust Pervious Surface	Effective Impervious Area
2-2	Impervious Surface	75,461	1.0	75,461
2-3	Pervious Surface	19,490	0.1	1,949
	Total DMA Area (square feet) =	94,951		

2-4 *Total Effective Impervious Area (EIA)* 77,410 Square feet

3.0 Calculate Unit Basin Storage Volume in Inches

Table 5.2: Unit Basin Storage Volumes (in inches) for 80 Percent Capture Using 48-Hour Drawdowns

Applicable Rain Gauge	Mean Annual Precipitation (in)	Unit Basin Storage Volume (in) for Applicable Runoff Coefficients (Calculated for 100% Imperviousness)
San Jose Airport (SCVURPPP)	12.9	0.55
Palo Alto (SCVURPPP)	13.7	0.62
Palo Alto (SMCWPPP)	14.6	0.64
Gilroy (SCVURPPP)	18.7	1.00
Morgan Hill (SCVURPPP)	19.5	1.00
Boulder Creek (SMCWPPP)	55.9	2.04
La Honda (SMCWPPP)	24.4	0.86
Half Moon Bay (SMCWPPP)	25.65	0.82
San Francisco (SMCWPPP)	21	0.73
San Francisco Airport (SMCWPPP)	20.1	0.65
San Francisco Oceanside (SMCWPPP)	19.3	0.72
Oakland Airport (OWPAC)	18.35	1.00

3-1 *Unit basin storage volume from Table 5.2:* 0.64 Inches

(The coefficient for this method is 1.00, due to the conversion of any landscaping to effective impervious area)

3-2 *Adjusted unit basin storage volume:* 0.64 Inches

(The unit basin storage volume is adjusted by applying the MAP adjustment factor.)

3-3 *Required Capture Volume (in cubic feet):* 4,129 Cubic feet

(The adjusted unit basin sizing volume (inches) is multiplied by the size of the DMA and converted to feet)

4.0 Calculate the Duration of the Rain Event

4-1 Rainfall intensity: 0.2 Inches per hour

4-2 Divide Item 3-2 by Item 4-1: 3.20 Hours of Rain Event Duration

5.0 Preliminary Estimate of Surface Area of Treatment Measure

5-1 4% of DMA impervious surface: 3,096 Square feet

5-2 3% of DMA impervious surface: 2,322 Square feet

5-3 Volume of treated runoff for area in Item 5-2: 3,096 Cubic feet (Item 5-2 * 5 inches per hour * 1/12 * Item 4-2)

6.0 Initial Adjustment of Depth of Surface Ponding Area

6-1 Subtract Item 5-3 from Item 3-3: 1,032 Cubic feet (Amount of runoff to be stored in ponding area)

6-2 Divide Item 6-1 by Item 5-2: 0.4 Feet (Depth of stored runoff in surface ponding area)

6-3 Convert Item 6-2 from ft to inches: 5.3 Inches (Depth of stored runoff in surface ponding area)

6-4 If ponding depth in Item 6-3 meets your target depth of 6"-12", then Item 7-1 is equal to Item 5-2. If not, continue to Step 7-1.

7.0 Optimize Size of Treatment M 25

7-1 Enter an area larger or smaller than Item 5-2: 2251 Sq.ft. (enter larger area if you need less ponding depth; smaller for more depth.)

7-2 Volume of treated runoff for area in Item 7-1: 3,001 Cubic feet (Item 7-1 * 5 inches per hour * 1/12 * Item 4-2)

7-3 Subtract Item 7-2 from Item 3-3: 1,127 Cubic feet (Amount of runoff to be stored in ponding area)

7-4 Divide Item 7-3 by Item 7-1: 0.50 Feet (Depth of stored runoff in surface ponding area)

7-5 Convert Item 7-4 from feet to inches: 6.0 Inches (Depth of stored runoff in surface ponding area)

If the ponding depth in Item 7-5 meets target, stop here. If not, repeat Steps 7-1 through 7-5 until you obtain target depth. If the slope of the drainage area > 1%,

7-6 then 11" will be the max ponding depth (slopes >1% will increase the ponding depth by 0.2 inches).

Worksheet for Calculating the Combination Flow and Volume Method

1.0 Project Information

1-1	Project Name:	Broadway and Woodside
1-2	City application ID:	Redwood City
1-3	Site Address or APN:	1401 Broadway
1-4	Tract or Parcel Map No:	-
1-5	Site Mean Annual Precip. (MAP)[1]	14.6 Inches
1-6	Applicable Rain Gauge[2]	Palo Alto (SMCWPPP)

These calculations are based on the combination flow and volume hydraulic sizing method presented in the Alameda, San Mateo, and Santa Clara County C.3 Technical Guidance Manuals. The steps presented below are explained in Chapter 5, Section 5.1 of the guidance manuals.

Click here for map

Refer to the Mean Annual Precipitation Map in Appendix D of the C.3 Technical Guidance to determine the MAP, in inches, for the site.

MAP adjustment factor is automatically calculated as: 1.00

(The "Site Mean Annual Precipitation (MAP)" is divided by the MAP for the applicable rain gauge, shown in Table 5.2, below.)

2.0 Calculate Percentage of Impervious Surface for Drainage Management Area (DMA)

2-1 Name of DMA: DMA 4

For items 2-2 and 2-3, enter the areas in square feet for each type of surface within the DMA.

	Type of Surface	Area of surface type within DMA (Sq. Ft)	Adjust Pervious Surface	Effective Impervious Area
2-2	Impervious Surface	18,084	1.0	18,084
2-3	Pervious Surface	4,028	0.1	403
	Total DMA Area (square feet) =	22,112		

2-4 *Total Effective Impervious Area (EIA)* 18,487 Square feet

3.0 Calculate Unit Basin Storage Volume in Inches

Table 5.2: Unit Basin Storage Volumes (in inches) for 80 Percent Capture Using 48-Hour Drawdowns

Applicable Rain Gauge	Mean Annual Precipitation (in)	Unit Basin Storage Volume (in) for Applicable Runoff Coefficients (Calculated for 100% Imperviousness)
San Jose Airport (SCVURPPP)	12.9	0.55
Palo Alto (SCVURPPP)	13.7	0.62
Palo Alto (SMCWPPP)	14.6	0.64
Gilroy (SCVURPPP)	18.7	1.00
Morgan Hill (SCVURPPP)	19.5	1.00
Boulder Creek (SMCWPPP)	55.9	2.04
La Honda (SMCWPPP)	24.4	0.86
Half Moon Bay (SMCWPPP)	25.65	0.82
San Francisco (SMCWPPP)	21	0.73
San Francisco Airport (SMCWPPP)	20.1	0.65
San Francisco Oceanside (SMCWPPP)	19.3	0.72
Oakland Airport (OWPAC)	18.35	1.00

3-1 *Unit basin storage volume from Table 5.2:* 0.64 Inches

(The coefficient for this method is 1.00, due to the conversion of any landscaping to effective impervious area)

3-2 *Adjusted unit basin storage volume:* 0.64 Inches

(The unit basin storage volume is adjusted by applying the MAP adjustment factor.)

3-3 *Required Capture Volume (in cubic feet):* 986 Cubic feet

(The adjusted unit basin sizing volume (inches) is multiplied by the size of the DMA and converted to feet)

4.0 Calculate the Duration of the Rain Event

4-1 Rainfall intensity: 0.2 Inches per hour

4-2 Divide Item 3-2 by Item 4-1: 3.20 Hours of Rain Event Duration

5.0 Preliminary Estimate of Surface Area of Treatment Measure

5-1 4% of DMA impervious surface: 739 Square feet

5-2 3% of DMA impervious surface: 555 Square feet

5-3 Volume of treated runoff for area in Item 5-2: 739 Cubic feet (Item 5-2 * 5 inches per hour * 1/12 * Item 4-2)

6.0 Initial Adjustment of Depth of Surface Ponding Area

6-1 Subtract Item 5-3 from Item 3-3: 246 Cubic feet (Amount of runoff to be stored in ponding area)

6-2 Divide Item 6-1 by Item 5-2: 0.4 Feet (Depth of stored runoff in surface ponding area)

6-3 Convert Item 6-2 from ft to inches: 5.3 Inches (Depth of stored runoff in surface ponding area)

6-4 If ponding depth in Item 6-3 meets your target depth of 6"-12", then Item 7-1 is equal to Item 5-2. If not, continue to Step 7-1.

7.0 Optimize Size of Treatment M 25

7-1 Enter an area larger or smaller than Item 5-2: 537 Sq.ft. (enter larger area if you need less ponding depth, smaller for more depth.)

7-2 Volume of treated runoff for area in Item 7-1: 716 Cubic feet (Item 7-1 * 5 inches per hour * 1/12 * Item 4-2)

7-3 Subtract Item 7-2 from Item 3-3: 270 Cubic feet (Amount of runoff to be stored in ponding area)

7-4 Divide Item 7-3 by Item 7-1: 0.50 Feet (Depth of stored runoff in surface ponding area)

7-5 Convert Item 7-4 from feet to inches: 6.0 Inches (Depth of stored runoff in surface ponding area)

If the ponding depth in Item 7-5 meets target, stop here. If not, repeat Steps 7-1 through 7-5 until you obtain target depth. If the slope of the drainage area > 1%,

7-6 then 11" will be the max ponding depth (slopes >1% will increase the ponding depth by 0.2 inches).

Worksheet for Calculating the Combination Flow and Volume Method

1.0 Project Information

1-1	Project Name:	Broadway and Woodside
1-2	City application ID:	Redwood City
1-3	Site Address or APN:	1401 Broadway
1-4	Tract or Parcel Map No:	-
1-5	Site Mean Annual Precip. (MAP)[1]	14.6 Inches
1-6	Applicable Rain Gauge[2]	Palo Alto (SMCWPPP)

These calculations are based on the combination flow and volume hydraulic sizing method presented in the Alameda, San Mateo, and Santa Clara County C.3 Technical Guidance Manuals. The steps presented below are explained in Chapter 5, Section 5.1 of the guidance manuals.

Click here for map

Refer to the Mean Annual Precipitation Map in Appendix D of the C.3 Technical Guidance to determine the MAP, in inches, for the site.

MAP adjustment factor is automatically calculated as: 1.00

(The "Site Mean Annual Precipitation (MAP)" is divided by the MAP for the applicable rain gauge, shown in Table 5.2, below.)

2.0 Calculate Percentage of Impervious Surface for Drainage Management Area (DMA)

2-1 Name of DMA: DMA 5

For items 2-2 and 2-3, enter the areas in square feet for each type of surface within the DMA.

	Type of Surface	Area of surface type within DMA (Sq. Ft)	Adjust Pervious Surface	Effective Impervious Area
2-2	Impervious Surface	17,880	1.0	17,880
2-3	Pervious Surface	1,195	0.1	120
	Total DMA Area (square feet) =	19,075		

2-4 *Total Effective Impervious Area (EIA)* 18,000 Square feet

3.0 Calculate Unit Basin Storage Volume in Inches

Table 5.2: Unit Basin Storage Volumes (in inches) for 80 Percent Capture Using 48-Hour Drawdowns

Applicable Rain Gauge	Mean Annual Precipitation (in)	Unit Basin Storage Volume (in) for Applicable Runoff Coefficients (Calculated for 100% Imperviousness)
San Jose Airport (SCVURPPP)	12.9	0.55
Palo Alto (SCVURPPP)	13.7	0.62
Palo Alto (SMCWPPP)	14.6	0.64
Gilroy (SCVURPPP)	18.7	1.00
Morgan Hill (SCVURPPP)	19.5	1.00
Boulder Creek (SMCWPPP)	55.9	2.04
La Honda (SMCWPPP)	24.4	0.86
Half Moon Bay (SMCWPPP)	25.65	0.82
San Francisco (SMCWPPP)	21	0.73
San Francisco Airport (SMCWPPP)	20.1	0.65
San Francisco Oceanside (SMCWPPP)	19.3	0.72
Oakland Airport (OWPAC)	18.35	1.00

3-1 *Unit basin storage volume from Table 5.2:* 0.64 Inches

(The coefficient for this method is 1.00, due to the conversion of any landscaping to effective impervious area)

3-2 *Adjusted unit basin storage volume:* 0.64 Inches

(The unit basin storage volume is adjusted by applying the MAP adjustment factor.)

3-3 *Required Capture Volume (in cubic feet):* 960 Cubic feet

(The adjusted unit basin sizing volume (inches) is multiplied by the size of the DMA and converted to feet)

4.0 Calculate the Duration of the Rain Event

4-1 Rainfall intensity: 0.2 Inches per hour

4-2 Divide Item 3-2 by Item 4-1: 3.20 Hours of Rain Event Duration

5.0 Preliminary Estimate of Surface Area of Treatment Measure

5-1 4% of DMA impervious surface: 720 Square feet

5-2 3% of DMA impervious surface: 540 Square feet

5-3 Volume of treated runoff for area in Item 5-2: 720 Cubic feet (Item 5-3 * 5 inches per hour * 1/12 * Item 4-2)

6.0 Initial Adjustment of Depth of Surface Ponding Area

6-1 Subtract Item 5-3 from Item 3-3: 240 Cubic feet (Amount of runoff to be stored in ponding area)

6-2 Divide Item 6-1 by Item 5-2: 0.4 Feet (Depth of stored runoff in surface ponding area)

6-3 Convert Item 6-2 from ft to inches: 5.3 Inches (Depth of stored runoff in surface ponding area)

6-4 If ponding depth in Item 6-3 meets your target depth of 6"-12", then Item 7-1 is equal to Item 5-2. If not, continue to Step 7-1.

7.0 Optimize Size of Treatment M 25

7-1 Enter an area larger or smaller than Item 5-2: 480 Sq.ft. (enter larger area if you need less ponding depth; smaller for more depth.)

7-2 Volume of treated runoff for area in Item 7-1: 640 Cubic feet (Item 7-1 * 5 inches per hour * 1/12 * Item 4-2)

7-3 Subtract Item 7-2 from Item 3-3: 320 Cubic feet (Amount of runoff to be stored in ponding area)

7-4 Divide Item 7-3 by Item 7-1: 0.67 Feet (Depth of stored runoff in surface ponding area)

7-5 Convert Item 7-4 from feet to inches: 8.0 Inches (Depth of stored runoff in surface ponding area)

If the ponding depth in Item 7-5 meets target, stop here. If not, repeat Steps 7-1 through 7-5 until you obtain target depth. If the slope of the drainage area > 1%,

7-6 then 11" will be the max ponding depth (slopes >1% will increase the ponding depth by 0.2 inches).

Worksheet for Calculating the Combination Flow and Volume Method

1.0 Project Information

1-1	Project Name:	Broadway and Woodside
1-2	City application ID:	Redwood City
1-3	Site Address or APN:	1401 Broadway
1-4	Tract or Parcel Map No:	-
1-5	Site Mean Annual Precip. (MAP)[1]	14.6 Inches
1-6	Applicable Rain Gauge[2]	Palo Alto (SMCWPPP)

These calculations are based on the combination flow and volume hydraulic sizing method presented in the Alameda, San Mateo, and Santa Clara County C.3 Technical Guidance Manuals. The steps presented below are explained in Chapter 5, Section 5.1 of the guidance manuals.

Click here for map

Refer to the Mean Annual Precipitation Map in Appendix D of the C.3 Technical Guidance to determine the MAP, in inches, for the site.

MAP adjustment factor is automatically calculated as: 1.00

(The "Site Mean Annual Precipitation (MAP)" is divided by the MAP for the applicable rain gauge, shown in Table 5.2, below.)

2.0 Calculate Percentage of Impervious Surface for Drainage Management Area (DMA)

2-1 Name of DMA: DMA 6

For items 2-2 and 2-3, enter the areas in square feet for each type of surface within the DMA.

	Type of Surface	Area of surface type within DMA (Sq. Ft)	Adjust Pervious Surface	Effective Impervious Area
2-2	Impervious Surface	25,955	1.0	25,955
2-3	Pervious Surface	1,206	0.1	121
	Total DMA Area (square feet) =	27,161		

2-4 *Total Effective Impervious Area (EIA)* 26,076 Square feet

3.0 Calculate Unit Basin Storage Volume in Inches

Table 5.2: Unit Basin Storage Volumes (in inches) for 80 Percent Capture Using 48-Hour Drawdowns

Applicable Rain Gauge	Mean Annual Precipitation (in)	Unit Basin Storage Volume (in) for Applicable Runoff Coefficients (Calculated for 100% Imperviousness)
San Jose Airport (SCVURPPP)	12.9	0.55
Palo Alto (SCVURPPP)	13.7	0.62
Palo Alto (SMCWPPP)	14.6	0.64
Gilroy (SCVURPPP)	18.7	1.00
Morgan Hill (SCVURPPP)	19.5	1.00
Boulder Creek (SMCWPPP)	55.9	2.04
La Honda (SMCWPPP)	24.4	0.86
Half Moon Bay (SMCWPPP)	25.65	0.82
San Francisco (SMCWPPP)	21	0.73
San Francisco Airport (SMCWPPP)	20.1	0.65
San Francisco Oceanside (SMCWPPP)	19.3	0.72
Oakland Airport (OWPAC)	18.35	1.00

3-1 *Unit basin storage volume from Table 5.2:* 0.64 Inches

(The coefficient for this method is 1.00, due to the conversion of any landscaping to effective impervious area)

3-2 *Adjusted unit basin storage volume:* 0.64 Inches

(The unit basin storage volume is adjusted by applying the MAP adjustment factor.)

3-3 *Required Capture Volume (in cubic feet):* 1,391 Cubic feet

(The adjusted unit basin sizing volume (inches) is multiplied by the size of the DMA and converted to feet)

4.0 Calculate the Duration of the Rain Event

4-1 Rainfall intensity: 0.2 Inches per hour

4-2 Divide Item 3-2 by Item 4-1: 3.20 Hours of Rain Event Duration

5.0 Preliminary Estimate of Surface Area of Treatment Measure

5-1 4% of DMA impervious surface: 1,043 Square feet

5-2 3% of DMA impervious surface: 782 Square feet

5-3 Volume of treated runoff for area in Item 5-2: 1,043 Cubic feet (Item 5-3 * 5 inches per hour * 1/12 * Item 4-2)

6.0 Initial Adjustment of Depth of Surface Ponding Area

6-1 Subtract Item 5-3 from Item 3-3: 348 Cubic feet (Amount of runoff to be stored in ponding area)

6-2 Divide Item 6-1 by Item 5-2: 0.4 Feet (Depth of stored runoff in surface ponding area)

6-3 Convert Item 6-2 from ft to inches: 5.3 Inches (Depth of stored runoff in surface ponding area)

6-4 If ponding depth in Item 6-3 meets your target depth of 6"-12", then Item 7-1 is equal to Item 5-2. If not, continue to Step 7-1.

7.0 Optimize Size of Treatment M 25

7-1 Enter an area larger or smaller than Item 5-2: 758 Sq.ft. (enter larger area if you need less ponding depth; smaller for more depth.)

7-2 Volume of treated runoff for area in Item 7-1: 1,011 Cubic feet (Item 7-1 * 5 inches per hour * 1/12 * Item 4-2)

7-3 Subtract Item 7-2 from Item 3-3: 380 Cubic feet (Amount of runoff to be stored in ponding area)

7-4 Divide Item 7-3 by Item 7-1: 0.50 Feet (Depth of stored runoff in surface ponding area)

7-5 Convert Item 7-4 from feet to inches: 6.0 Inches (Depth of stored runoff in surface ponding area)

If the ponding depth in Item 7-5 meets target, stop here. If not, repeat Steps 7-1 through 7-5 until you obtain target depth. If the slope of the drainage area > 1%,

7-6 then 11" will be the max ponding depth (slopes >1% will increase the ponding depth by 0.2 inches).

STUDIO T SQUARE

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
3350 Scott Boulevard, Building 22
Santa Clara, California 95054
(408) 727 6665
Fax (408) 727 5641

Broadway Plaza
Redwood City, CA

The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
STORM WATER DETAILS & CALCULATIONS - BROADWAY

Job No. A14075
Date: 03/15/2019
Scale: AS SHOWN
Drawn By: NM/HR

Sheet No: 17

TM-6.2

Worksheet for Calculating the Combination Flow and Volume Method

1.0 Project Information

These calculations are based on the combination flow and volume hydraulic sizing method provided in the Alameda, San Mateo, and Santa Clara County C.3 Technical Guidance Manuals. The steps presented below are explained in Chapter 5, Section 5.1 of the guidance manuals.

- 1-1 Project Name: **Broadway and Woodside**
- 1-2 City application ID: **Redwood City**
- 1-3 Site Address or APN: **1401 Broadway**
- 1-4 Tract or Parcel Map No: -
- 1-5 Site Mean Annual Precip. (MAP)[1] **14.6** Inches

Refer to the Mean Annual Precipitation Map in Appendix D of the C.3 Technical Guidance to determine the MAP, in inches, for the site. Click here for map

- 1-6 Applicable Rain Gauge[2] **Palo Alto (SMCWPPP)**

MAP adjustment factor is automatically calculated as: **1.00**

(The "Site Mean Annual Precipitation (MAP)" is divided by the MAP for the applicable rain gauge, shown in Table 5.2, below.)

2.0 Calculate Percentage of Impervious Surface for Drainage Management Area (DMA)

2-1 Name of DMA: **DMA 7**

For items 2-2 and 2-3, enter the areas in square feet for each type of surface within the DMA.

	Type of Surface	Area of surface type within DMA (Sq. Ft)	Adjust Pervious Surface	Effective Impervious Area
2-2	Impervious Surface	40,179	1.0	40,179
2-3	Pervious Surface	9,751	0.1	975
	Total DMA Area (square feet) =	49,930		

2-4 ***Total Effective Impervious Area (EIA)*** **41,154** Square feet

3.0 Calculate Unit Basin Storage Volume in Inches

Table 5-2: Unit Basin Storage Volumes (in inches) for 80 Percent Capture Using 48-Hour Drawdowns		
		Unit Basin Storage Volume (in) for Applicable Runoff Coefficients
Applicable Rain Gauge	Mean Annual Precipitation (in)	(Calculated for 100% imperviousness)
San Jose Airport (SCVURPPP)	13.9	0.56
Palo Alto (SCVURPPP)	13.7	0.62
Palo Alto (SMCWPPP)	14.6	0.64
Gilroy (SCVURPPP)	18.2	1.00
Morgan Hill (SCVURPPP)	19.5	1.00
Boulder Creek (SMCWPPP)	55.9	2.04
La Honda (SMCWPPP)	24.4	0.86
Half Moon Bay (SMCWPPP)	25.92	0.82
San Francisco (SMCWPPP)	21	0.73
San Francisco Airport (SMCWPPP)	20.1	0.85
San Francisco Oceanside (SMCWPPP)	19.3	0.72
Oakland Airport (OWPAC)	18.35	1.00

3-1 ***Unit basin storage volume from Table 5.2:*** **0.64** Inches
(The coefficient for this method is 1.00, due to the conversion of any landscaping to effective impervious area)

3-2 ***Adjusted unit basin storage volume:*** **0.64** Inches
(The unit basin storage volume is adjusted by applying the MAP adjustment factor.)

3-3 ***Required Capture Volume (in cubic feet):*** **2,195** Cubic feet
(The adjusted unit basin sizing volume [inches] is multiplied by the size of the DMA and converted to feet)

4.0 Calculate the Duration of the Rain Event

- 4-1 Rainfall intensity **0.2** Inches per hour
- 4-2 Divide Item 3-2 by Item 4-1 **3.20** Hours of Rain Event Duration

5.0 Preliminary Estimate of Surface Area of Treatment Measure

- 5-1 4% of DMA impervious surface **1,646** Square feet
- 5-2 3% of DMA impervious surface **1,235** Square feet
- 5-3 Volume of treated runoff for area in Item 5-2 **1,646** Cubic feet (Item 5-2 * 5 inches per hour * 1/12 * Item 4-2)

6.0 Initial Adjustment of Depth of Surface Ponding Area

- 6-1 Subtract Item 5-3 from Item 3-3 **549** Cubic feet (Amount of runoff to be stored in ponding area)
- 6-2 Divide Item 6-1 by Item 5-2 **0.4** Feet (Depth of stored runoff in surface ponding area)
- 6-3 Convert Item 6-2 from ft to inches **5.3** Inches (Depth of stored runoff in surface ponding area)
- 6-4 If ponding depth in Item 6-3 meets your target depth of 6"-12", then Item 7-1 is equal to Item 5-2. If not, continue to Step 7-1.

7.0 Optimize Size of Treatment M 25

- 7-1 Enter an area larger or smaller than Item 5-2 **1197** Sq.ft. (enter larger area if you need less ponding depth; smaller for more depth.)
- 7-2 Volume of treated runoff for area in Item 7-1 **1,596** Cubic feet (Item 7-1 * 5 inches per hour * 1/12 * Item 4-2)
- 7-3 Subtract Item 7-2 from Item 3-3 **599** Cubic feet (Amount of runoff to be stored in ponding area)
- 7-4 Divide Item 7-3 by Item 7-1 **0.50** Feet (Depth of stored runoff in surface ponding area)
- 7-5 Convert Item 7-4 from feet to inches **6.0** Inches (Depth of stored runoff in surface ponding area)

If the ponding depth in Item 7-5 meets target, stop here. If not, repeat Steps 7-1 through 7-5 until you obtain target depth. If the slope of the drainage area > 1%,
7-6 then 11" will be the max ponding depth (slopes >1% will increase the ponding depth by 0.2 inches).

Worksheet for Calculating the Combination Flow and Volume Method

1.0 Project Information

These calculations are based on the combination flow and volume hydraulic sizing method provided in the Alameda, San Mateo, and Santa Clara County C.3 Technical Guidance Manuals. The steps presented below are explained in Chapter 5, Section 5.1 of the guidance manuals.

- 1-1 Project Name: **Broadway and Woodside**
- 1-2 City application ID: **Redwood City**
- 1-3 Site Address or APN: **1401 Broadway**
- 1-4 Tract or Parcel Map No: -
- 1-5 Site Mean Annual Precip. (MAP)[1] **14.6** Inches

Refer to the Mean Annual Precipitation Map in Appendix D of the C.3 Technical Guidance to determine the MAP, in inches, for the site. Click here for map

- 1-6 Applicable Rain Gauge[2] **Palo Alto (SMCWPPP)**

MAP adjustment factor is automatically calculated as: **1.00**

(The "Site Mean Annual Precipitation (MAP)" is divided by the MAP for the applicable rain gauge, shown in Table 5.2, below.)

2.0 Calculate Percentage of Impervious Surface for Drainage Management Area (DMA)

2-1 Name of DMA: **DMA 9**

For items 2-2 and 2-3, enter the areas in square feet for each type of surface within the DMA.

	Type of Surface	Area of surface type within DMA (Sq. Ft)	Adjust Pervious Surface	Effective Impervious Area
2-2	Impervious Surface	40,658	1.0	40,658
2-3	Pervious Surface	5,806	0.1	581
	Total DMA Area (square feet) =	46,464		

2-4 ***Total Effective Impervious Area (EIA)*** **41,239** Square feet

3.0 Calculate Unit Basin Storage Volume in Inches

Table 5-2: Unit Basin Storage Volumes (in inches) for 80 Percent Capture Using 48-Hour Drawdowns		
		Unit Basin Storage Volume (in) for Applicable Runoff Coefficients
Applicable Rain Gauge	Mean Annual Precipitation (in)	(Calculated for 100% imperviousness)
San Jose Airport (SCVURPPP)	13.9	0.56
Palo Alto (SCVURPPP)	13.7	0.62
Palo Alto (SMCWPPP)	14.6	0.64
Gilroy (SCVURPPP)	18.2	1.00
Morgan Hill (SCVURPPP)	19.5	1.00
Boulder Creek (SMCWPPP)	55.9	2.04
La Honda (SMCWPPP)	24.4	0.86
Half Moon Bay (SMCWPPP)	25.92	0.82
San Francisco (SMCWPPP)	21	0.73
San Francisco Airport (SMCWPPP)	20.1	0.85
San Francisco Oceanside (SMCWPPP)	19.3	0.72
Oakland Airport (OWPAC)	18.35	1.00

3-1 ***Unit basin storage volume from Table 5.2:*** **0.64** Inches
(The coefficient for this method is 1.00, due to the conversion of any landscaping to effective impervious area)

3-2 ***Adjusted unit basin storage volume:*** **0.64** Inches
(The unit basin storage volume is adjusted by applying the MAP adjustment factor.)

3-3 ***Required Capture Volume (in cubic feet):*** **2,199** Cubic feet
(The adjusted unit basin sizing volume [inches] is multiplied by the size of the DMA and converted to feet)

4.0 Calculate the Duration of the Rain Event

- 4-1 Rainfall intensity **0.2** Inches per hour
- 4-2 Divide Item 3-2 by Item 4-1 **3.20** Hours of Rain Event Duration

5.0 Preliminary Estimate of Surface Area of Treatment Measure

- 5-1 4% of DMA impervious surface **1,650** Square feet
- 5-2 3% of DMA impervious surface **1,237** Square feet
- 5-3 Volume of treated runoff for area in Item 5-2 **1,650** Cubic feet (Item 5-2 * 5 inches per hour * 1/12 * Item 4-2)

6.0 Initial Adjustment of Depth of Surface Ponding Area

- 6-1 Subtract Item 5-3 from Item 3-3 **550** Cubic feet (Amount of runoff to be stored in ponding area)
- 6-2 Divide Item 6-1 by Item 5-2 **0.4** Feet (Depth of stored runoff in surface ponding area)
- 6-3 Convert Item 6-2 from ft to inches **5.3** Inches (Depth of stored runoff in surface ponding area)
- 6-4 If ponding depth in Item 6-3 meets your target depth of 6"-12", then Item 7-1 is equal to Item 5-2. If not, continue to Step 7-1.

7.0 Optimize Size of Treatment M 25

- 7-1 Enter an area larger or smaller than Item 5-2 **1199** Sq.ft. (enter larger area if you need less ponding depth; smaller for more depth.)
- 7-2 Volume of treated runoff for area in Item 7-1 **1,599** Cubic feet (Item 7-1 * 5 inches per hour * 1/12 * Item 4-2)
- 7-3 Subtract Item 7-2 from Item 3-3 **601** Cubic feet (Amount of runoff to be stored in ponding area)
- 7-4 Divide Item 7-3 by Item 7-1 **0.50** Feet (Depth of stored runoff in surface ponding area)
- 7-5 Convert Item 7-4 from feet to inches **6.0** Inches (Depth of stored runoff in surface ponding area)

If the ponding depth in Item 7-5 meets target, stop here. If not, repeat Steps 7-1 through 7-5 until you obtain target depth. If the slope of the drainage area > 1%,
7-6 then 11" will be the max ponding depth (slopes >1% will increase the ponding depth by 0.2 inches).

Worksheet for Calculating the Combination Flow and Volume Method

1.0 Project Information

These calculations are based on the combination flow and volume hydraulic sizing method provided in the Alameda, San Mateo, and Santa Clara County C.3 Technical Guidance Manuals. The steps presented below are explained in Chapter 5, Section 5.1 of the guidance manuals.

- 1-1 Project Name: **Broadway and Woodside**
- 1-2 City application ID: **Redwood City**
- 1-3 Site Address or APN: **1401 Broadway**
- 1-4 Tract or Parcel Map No: -
- 1-5 Site Mean Annual Precip. (MAP)[1] **14.6** Inches

Refer to the Mean Annual Precipitation Map in Appendix D of the C.3 Technical Guidance to determine the MAP, in inches, for the site. Click here for map

- 1-6 Applicable Rain Gauge[2] **Palo Alto (SMCWPPP)**

MAP adjustment factor is automatically calculated as: **1.00**

(The "Site Mean Annual Precipitation (MAP)" is divided by the MAP for the applicable rain gauge, shown in Table 5.2, below.)

2.0 Calculate Percentage of Impervious Surface for Drainage Management Area (DMA)

2-1 Name of DMA: **15**

For items 2-2 and 2-3, enter the areas in square feet for each type of surface within the DMA.

	Type of Surface	Area of surface type within DMA (Sq. Ft)	Adjust Pervious Surface	Effective Impervious Area
2-2	Impervious Surface	11,662	1.0	11,662
2-3	Pervious Surface	420	0.1	42
	Total DMA Area (square feet) =	12,082		

2-4 ***Total Effective Impervious Area (EIA)*** **11,704** Square feet

3.0 Calculate Unit Basin Storage Volume in Inches

Table 5-2: Unit Basin Storage Volumes (in inches) for 80 Percent Capture Using 48-Hour Drawdowns		
		Unit Basin Storage Volume (in) for Applicable Runoff Coefficients
Applicable Rain Gauge	Mean Annual Precipitation (in)	(Calculated for 100% imperviousness)
San Jose Airport (SCVURPPP)	13.9	0.56
Palo Alto (SCVURPPP)	13.7	0.62
Palo Alto (SMCWPPP)	14.6	0.64
Gilroy (SCVURPPP)	18.2	1.00
Morgan Hill (SCVURPPP)	19.5	1.00
Boulder Creek (SMCWPPP)	55.9	2.04
La Honda (SMCWPPP)	24.4	0.86
Half Moon Bay (SMCWPPP)	25.92	0.82
San Francisco (SMCWPPP)	21	0.73
San Francisco Airport (SMCWPPP)	20.1	0.85
San Francisco Oceanside (SMCWPPP)	19.3	0.72
Oakland Airport (OWPAC)	18.35	1.00

3-1 ***Unit basin storage volume from Table 5.2:*** **0.64** Inches
(The coefficient for this method is 1.00, due to the conversion of any landscaping to effective impervious area)

3-2 ***Adjusted unit basin storage volume:*** **0.64** Inches
(The unit basin storage volume is adjusted by applying the MAP adjustment factor.)

3-3 ***Required Capture Volume (in cubic feet):*** **624** Cubic feet
(The adjusted unit basin sizing volume [inches] is multiplied by the size of the DMA and converted to feet)

4.0 Calculate the Duration of the Rain Event

- 4-1 Rainfall intensity **0.2** Inches per hour
- 4-2 Divide Item 3-2 by Item 4-1 **3.20** Hours of Rain Event Duration

5.0 Preliminary Estimate of Surface Area of Treatment Measure

- 5-1 4% of DMA impervious surface **468** Square feet
- 5-2 3% of DMA impervious surface **351** Square feet
- 5-3 Volume of treated runoff for area in Item 5-2 **468** Cubic feet (Item 5-2 * 5 inches per hour * 1/12 * Item 4-2)

6.0 Initial Adjustment of Depth of Surface Ponding Area

- 6-1 Subtract Item 5-3 from Item 3-3 **156** Cubic feet (Amount of runoff to be stored in ponding area)
- 6-2 Divide Item 6-1 by Item 5-2 **0.4** Feet (Depth of stored runoff in surface ponding area)
- 6-3 Convert Item 6-2 from ft to inches **5.3** Inches (Depth of stored runoff in surface ponding area)
- 6-4 If ponding depth in Item 6-3 meets your target depth of 6"-12", then Item 7-1 is equal to Item 5-2. If not, continue to Step 7-1.

7.0 Optimize Size of Treatment M 25

- 7-1 Enter an area larger or smaller than Item 5-2 **340** Sq.ft. (enter larger area if you need less ponding depth; smaller for more depth.)
- 7-2 Volume of treated runoff for area in Item 7-1 **453** Cubic feet (Item 7-1 * 5 inches per hour * 1/12 * Item 4-2)
- 7-3 Subtract Item 7-2 from Item 3-3 **171** Cubic feet (Amount of runoff to be stored in ponding area)
- 7-4 Divide Item 7-3 by Item 7-1 **0.50** Feet (Depth of stored runoff in surface ponding area)
- 7-5 Convert Item 7-4 from feet to inches **6.0** Inches (Depth of stored runoff in surface ponding area)

If the ponding depth in Item 7-5 meets target, stop here. If not, repeat Steps 7-1 through 7-5 until you obtain target depth. If the slope of the drainage area > 1%,
7-6 then 11" will be the max ponding depth (slopes >1% will increase the ponding depth by 0.2 inches).

Worksheet for Calculating the Combination Flow and Volume Method

1.0 Project Information

These calculations are based on the combination flow and volume hydraulic sizing method provided in the Alameda, San Mateo, and Santa Clara County C.3 Technical Guidance Manuals. The steps presented below are explained in Chapter 5, Section 5.1 of the guidance manuals.

- 1-1 Project Name: **Broadway and Woodside**
- 1-2 City application ID: **Redwood City**
- 1-3 Site Address or APN: **1401 Broadway**
- 1-4 Tract or Parcel Map No: -
- 1-5 Site Mean Annual Precip. (MAP)[1] **14.6** Inches

Refer to the Mean Annual Precipitation Map in Appendix D of the C.3 Technical Guidance to determine the MAP, in inches, for the site. Click here for map

- 1-6 Applicable Rain Gauge[2] **Palo Alto (SMCWPPP)**

MAP adjustment factor is automatically calculated as: **1.00**

(The "Site Mean Annual Precipitation (MAP)" is divided by the MAP for the applicable rain gauge, shown in Table 5.2, below.)

2.0 Calculate Percentage of Impervious Surface for Drainage Management Area (DMA)

2-1 Name of DMA: **DMA 17**

For items 2-2 and 2-3, enter the areas in square feet for each type of surface within the DMA.

	Type of Surface	Area of surface type within DMA (Sq. Ft)	Adjust Pervious Surface	Effective Impervious Area
2-2	Impervious Surface	15,294	1.0	15,294
2-3	Pervious Surface	530	0.1	53
	Total DMA Area (square feet) =	15,824		

2-4 ***Total Effective Impervious Area (EIA)*** **15,347** Square feet

3.0 Calculate Unit Basin Storage Volume in Inches

Table 5-2: Unit Basin Storage Volumes (in inches) for 80 Percent Capture Using 48-Hour Drawdowns		
		Unit Basin Storage Volume (in) for Applicable Runoff Coefficients
Applicable Rain Gauge	Mean Annual Precipitation (in)	(Calculated for 100% imperviousness)
San Jose Airport (SCVURPPP)	13.9	0.56
Palo Alto (SCVURPPP)	13.7	0.62
Palo Alto (SMCWPPP)	14.6	0.64
Gilroy (SCVURPPP)	18.2	1.00
Morgan Hill (SCVURPPP)	19.5	1.00
Boulder Creek (SMCWPPP)	55.9	2.04
La Honda (SMCWPPP)	24.4	0.86
Half Moon Bay (SMCWPPP)	25.92	0.82
San Francisco (SMCWPPP)	21	0.73
San Francisco Airport (SMCWPPP)	20.1	0.85
San Francisco Oceanside (SMCWPPP)	19.3	0.72
Oakland Airport (OWPAC)	18.35	1.00

3-1 ***Unit basin storage volume from Table 5.2:*** **0.64** Inches
(The coefficient for this method is 1.00, due to the conversion of any landscaping to effective impervious area)

3-2 ***Adjusted unit basin storage volume:*** **0.64** Inches
(The unit basin storage volume is adjusted by applying the MAP adjustment factor.)

3-3 ***Required Capture Volume (in cubic feet):*** **819** Cubic feet
(The adjusted unit basin sizing volume [inches] is multiplied by the size of the DMA and converted to feet)

4.0 Calculate the Duration of the Rain Event

- 4-1 Rainfall intensity **0.2** Inches per hour
- 4-2 Divide Item 3-2 by Item 4-1 **3.20** Hours of Rain Event Duration

5.0 Preliminary Estimate of Surface Area of Treatment Measure

- 5-1 4% of DMA impervious surface **614** Square feet
- 5-2 3% of DMA impervious surface **460** Square feet
- 5-3 Volume of treated runoff for area in Item 5-2 **614** Cubic feet (Item 5-2 * 5 inches per hour * 1/12 * Item 4-2)

6.0 Initial Adjustment of Depth of Surface Ponding Area

- 6-1 Subtract Item 5-3 from Item 3-3 **205** Cubic feet (Amount of runoff to be stored in ponding area)
- 6-2 Divide Item 6-1 by Item 5-2 **0.4** Feet (Depth of stored runoff in surface ponding area)
- 6-3 Convert Item 6-2 from ft to inches **5.3** Inches (Depth of stored runoff in surface ponding area)
- 6-4 If ponding depth in Item 6-3 meets your target depth of 6"-12", then Item 7-1 is equal to Item 5-2. If not, continue to Step 7-1.

7.0 Optimize Size of Treatment M 25

- 7-1 Enter an area larger or smaller than Item 5-2 **446** Sq.ft. (enter larger area if you need less ponding depth; smaller for more depth.)
- 7-2 Volume of treated runoff for area in Item 7-1 **595** Cubic feet (Item 7-1 * 5 inches per hour * 1/12 * Item 4-2)
- 7-3 Subtract Item 7-2 from Item 3-3 **224** Cubic feet (Amount of runoff to be stored in ponding area)
- 7-4 Divide Item 7-3 by Item 7-1 **0.50** Feet (Depth of stored runoff in surface ponding area)
- 7-5 Convert Item 7-4 from feet to inches **6.0** Inches (Depth of stored runoff in surface ponding area)

If the ponding depth in Item 7-5 meets target, stop here. If not, repeat Steps 7-1 through 7-5 until you obtain target depth. If the slope of the drainage area > 1%,
7-6 then 11" will be the max ponding depth (slopes >1% will increase the ponding depth by 0.2 inches).

Worksheet for Calculating the Combination Flow and Volume Method

1.0 Project Information

These calculations are based on the combination flow and volume hydraulic sizing method provided in the Alameda, San Mateo, and Santa Clara County C.3 Technical Guidance Manuals. The steps presented below are explained in Chapter 5, Section 5.1 of the guidance manuals.

- 1-1 Project Name: **Broadway and Woodside**
- 1-2 City application ID: **Redwood City**
- 1-3 Site Address or APN: **1401 Broadway**
- 1-4 Tract or Parcel Map No: -
- 1-5 Site Mean Annual Precip. (MAP)[1] **14.6** Inches

Refer to the Mean Annual Precipitation Map in Appendix D of the C.3 Technical Guidance to determine the MAP, in inches, for the site. Click here for map

- 1-6 Applicable Rain Gauge[2] **Palo Alto (SMCWPPP)**

MAP adjustment factor is automatically calculated as: **1.00**

(The "Site Mean Annual Precipitation (MAP)" is divided by the MAP for the applicable rain gauge, shown in Table 5.2, below.)

2.0 Calculate Percentage of Impervious Surface for Drainage Management Area (DMA)

2-1 Name of DMA: **DMA 8**

For items 2-2 and 2-3, enter the areas in square feet for each type of surface within the DMA.

	Type of Surface	Area of surface type within DMA (Sq. Ft)	Adjust Pervious Surface	Effective Impervious Area
2-2	Impervious Surface	19,238	1.0	19,238
2-3	Pervious Surface	6,508	0.1	651
	Total DMA Area (square feet) =	25,746		

2-4 ***Total Effective Impervious Area (EIA)*** **19,889** Square feet

3.0 Calculate Unit Basin Storage Volume in Inches

Table 5-2: Unit Basin Storage Volumes (in inches) for 80 Percent Capture Using 48-Hour Drawdowns		
		Unit Basin Storage Volume (in) for Applicable Runoff Coefficients
Applicable Rain Gauge	Mean Annual Precipitation (in)	(Calculated for 100% imperviousness)
San Jose Airport (SCVURPPP)	13.9	0.56
Palo Alto (SCVURPPP)	13.7	0.62
Palo Alto (SMCWPPP)	14.6	0.64
Gilroy (SCVURPPP)	18.2	1.00
Morgan Hill (SCVURPPP)	19.5	1.00
Boulder Creek (SMCWPPP)	55.9	2.04
La Honda (SMCWPPP)	24.4	0.86
Half Moon Bay (SMCWPPP)	25.92	0.82
San Francisco (SMCWPPP)	21	0.73
San Francisco Airport (SMCWPPP)	20.1	0.85
San Francisco Oceanside (SMCWPPP)	19.3	0.72
Oakland Airport (OWPAC)	18.35	1.00

3-1 ***Unit basin storage volume from Table 5.2:*** **0.64** Inches
(The coefficient for this method is 1.00, due to the conversion of any landscaping to effective impervious area)

3-2 ***Adjusted unit basin storage volume:*** **0.64** Inches
(The unit basin storage volume is adjusted by applying the MAP adjustment factor.)

3-3 ***Required Capture Volume (in cubic feet):*** **1,061** Cubic feet
(The adjusted unit basin sizing volume [inches] is multiplied by the size of the DMA and converted to feet)

4.0 Calculate the Duration of the Rain Event

- 4-1 Rainfall intensity **0.2** Inches per hour
- 4-2 Divide Item 3-2 by Item 4-1 **3.20** Hours of Rain Event Duration

5.0 Preliminary Estimate of Surface Area of Treatment Measure

- 5-1 4% of DMA impervious surface **796** Square feet
- 5-2 3% of DMA impervious surface **597** Square feet
- 5-3 Volume of treated runoff for area in Item 5-2 **796** Cubic feet (Item 5-2 * 5 inches per hour * 1/12 * Item 4-2)

6.0 Initial Adjustment of Depth of Surface Ponding Area

- 6-1 Subtract Item 5-3 from Item 3-3 **265** Cubic feet (Amount of runoff to be stored in ponding area)
- 6-2 Divide Item 6-1 by Item 5-2 **0.4** Feet (Depth of stored runoff in surface ponding area)
- 6-3 Convert Item 6-2 from ft to inches **5.3** Inches (Depth of stored runoff in surface ponding area)
- 6-4 If ponding depth in Item 6-3 meets your target depth of 6"-12", then Item 7-1 is equal to Item 5-2. If not, continue to Step 7-1.

7.0 Optimize Size of Treatment M 25

- 7-1 Enter an area larger or smaller than Item 5-2 **578** Sq.ft. (enter larger area if you need less ponding depth; smaller for more depth.)
- 7-2 Volume of treated runoff for area in Item 7-1 **771** Cubic feet (Item 7-1 * 5 inches per hour * 1/12 * Item 4-2)
- 7-3 Subtract Item 7-2 from Item 3-3 **290** Cubic feet (Amount of runoff to be stored in ponding area)
- 7-4 Divide Item 7-3 by Item 7-1 **0.50** Feet (Depth of stored runoff in surface ponding area)
- 7-5 Convert Item 7-4 from feet to inches **6.0** Inches (Depth of stored runoff in surface ponding area)

If the ponding depth in Item 7-5 meets target, stop here. If not, repeat Steps 7-1 through 7-5 until you obtain target depth. If the slope of the drainage area > 1%,
7-6 then 11" will be the max ponding depth (slopes >1% will increase the ponding depth by 0.2 inches).

Worksheet for Calculating the Combination Flow and Volume Method

1.0 Project Information

These calculations are based on the combination flow and volume hydraulic sizing method provided in the Alameda, San Mateo, and Santa Clara County C.3 Technical Guidance Manuals. The steps presented below are explained in Chapter 5, Section 5.1 of the guidance manuals.

- 1-1 Project Name: **Broadway and Woodside**
- 1-2 City application ID: **Redwood City**
- 1-3 Site Address or APN: **1401 Broadway**
- 1-4 Tract or Parcel Map No: -
- 1-5 Site Mean Annual Precip. (MAP)[1] **14.6** Inches

Refer to the Mean Annual Precipitation Map in Appendix D of the C.3 Technical Guidance to determine the MAP, in inches, for the site. Click here for map

- 1-6 Applicable Rain Gauge[2] **Palo Alto (SMCWPPP)**

MAP adjustment factor is automatically calculated as: **1.00**

(The "Site Mean Annual Precipitation (MAP)" is divided by the MAP for the applicable rain gauge, shown in Table 5.2, below.)

2.0 Calculate Percentage of Impervious Surface for Drainage Management Area (DMA)

2-1 Name of DMA: **DMA 10**

For items 2-2 and 2-3, enter the areas in square feet for each type of surface within the DMA.

	Type of Surface	Area of surface type within DMA (Sq. Ft)	Adjust Pervious Surface	Effective Impervious Area
2-2	Impervious Surface	10,405	1.0	10,405
2-3	Pervious Surface	1,233	0.1	123
	Total DMA Area (square feet) =	11,638		

2-4 ***Total Effective Impervious Area (EIA)*** **10,528** Square feet

3.0 Calculate Unit Basin Storage Volume in Inches

Table 5-2: Unit Basin Storage Volumes (in inches) for 80 Percent Capture Using 48-Hour Drawdowns		
		Unit Basin Storage Volume (in) for Applicable Runoff Coefficients
Applicable Rain Gauge	Mean Annual Precipitation (in)	(Calculated for 100% imperviousness)
San Jose Airport (SCVURPPP)	13.9	0.56
Palo Alto (SCVURPPP)	13.7	0.62
Palo Alto (SMCWPPP)	14.6	0.64
Gilroy (SCVURPPP)	18.2	1.00
Morgan Hill (SCVURPPP)	19.5	1.00
Boulder Creek (SMCWPPP)	55.9	2.04
La Honda (SMCWPPP)	24.4	0.86
Half Moon Bay (SMCWPPP)	25.92	0.82
San Francisco (SMCWPPP)	21	0.73
San Francisco Airport (SMCWPPP)	20.1	0.85
San Francisco Oceanside (SMCWPPP)	19.3	0.72
Oakland Airport (OWPAC)	18.35	1.00

3-1 ***Unit basin storage volume from Table 5.2:*** **0.64** Inches
(The coefficient for this method is 1.00, due to the conversion of any landscaping to effective impervious area)

3-2 ***Adjusted unit basin storage volume:*** **0.64** Inches
(The unit basin storage volume is adjusted by applying the MAP adjustment factor.)

3-3 ***Required Capture Volume (in cubic feet):*** **562** Cubic feet
(The adjusted unit basin sizing volume [inches] is multiplied by the size of the DMA and converted to feet)

4.0 Calculate the Duration of the Rain Event

- 4-1 Rainfall intensity **0.2** Inches per hour
- 4-2 Divide Item 3-2 by Item 4-1 **3.20** Hours of Rain Event Duration

5.0 Preliminary Estimate of Surface Area of Treatment Measure

- 5-1 4% of DMA impervious surface **421** Square feet
- 5-2 3% of DMA impervious surface **316** Square feet
- 5-3 Volume of treated runoff for area in Item 5-2 **421** Cubic feet (Item 5-2 * 5 inches per hour * 1/12 * Item 4-2)

6.0 Initial Adjustment of Depth of Surface Ponding Area

- 6-1 Subtract Item 5-3 from Item 3-3 **140** Cubic feet (Amount of runoff to be stored in ponding area)
- 6-2 Divide Item 6-1 by Item 5-2 **0.4** Feet (Depth of stored runoff in surface ponding area)
- 6-3 Convert Item 6-2 from ft to inches **5.3** Inches (Depth of stored runoff in surface ponding area)
- 6-4 If ponding depth in Item 6-3 meets your target depth of 6"-12", then Item 7-1 is equal to Item 5-2. If not, continue to Step 7-1.

7.0 Optimize Size of Treatment M 25

- 7-1 Enter an area larger or smaller than Item 5-2 **306** Sq.ft. (enter larger area if you need less ponding depth; smaller for more depth.)
- 7-2 Volume of treated runoff for area in Item 7-1 **408** Cubic feet (Item 7-1 * 5 inches per hour * 1/12 * Item 4-2)
- 7-3 Subtract Item 7-2 from Item 3-3 **154** Cubic feet (Amount of runoff to be stored in ponding area)
- 7-4 Divide Item 7-3 by Item 7-1 **0.50** Feet (Depth of stored runoff in surface ponding area)
- 7-5 Convert Item 7-4 from feet to inches **6.0** Inches (Depth of stored runoff in surface ponding area)

If the ponding depth in Item 7-5 meets target, stop here. If not, repeat Steps 7-1 through 7-5 until you obtain target depth. If the slope of the drainage area > 1%,
7-6 then 11" will be the max ponding depth (slopes >1% will increase the ponding depth by 0.2 inches).

Worksheet for Calculating the Combination Flow and Volume Method

1.0 Project Information

These calculations are based on the combination flow and volume hydraulic sizing method provided in the Alameda, San Mateo, and Santa Clara County C.3 Technical Guidance Manuals. The steps presented below are explained in Chapter 5, Section 5.1 of the guidance manuals.

- 1-1 Project Name: **Broadway and Woodside**
- 1-2 City application ID: **Redwood City**
- 1-3 Site Address or APN: **1401 Broadway**
- 1-4 Tract or Parcel Map No: -
- 1-5 Site Mean Annual Precip. (MAP)[1] **14.6** Inches

Refer to the Mean Annual Precipitation Map in Appendix D of the C.3 Technical Guidance to determine the MAP, in inches, for the site. Click here for map

- 1-6 Applicable Rain Gauge[2] **Palo Alto (SMCWPPP)**

MAP adjustment factor is automatically calculated as: **1.00**

(The "Site Mean Annual Precipitation (MAP)" is divided by the MAP for the applicable rain gauge, shown in Table 5.2, below.)

2.0 Calculate Percentage of Impervious Surface for Drainage Management Area (DMA)

2-1 Name of DMA: **DMA 16**

For items 2-2 and 2-3, enter the areas in square feet for each type of surface within the DMA.

	Type of Surface	Area of surface type within DMA (Sq. Ft)	Adjust Pervious Surface	Effective Impervious Area
2-2	Impervious Surface	30,357	1.0	30,357
2-3	Pervious Surface	1,061	0.1	106
	Total DMA Area (square feet) =	31,418		

2-4 ***Total Effective Impervious Area (EIA)*** **30,463** Square feet

3.0 Calculate Unit Basin Storage Volume in Inches

Table 5-2: Unit Basin Storage Volumes (in inches) for 80 Percent Capture Using 48-Hour Drawdowns		
		Unit Basin Storage Volume (in) for Applicable Runoff Coefficients
Applicable Rain Gauge	Mean Annual Precipitation (in)	(Calculated for 100% imperviousness)
San Jose Airport (SCVURPPP)	13.9	0.56
Palo Alto (SCVURPPP)	13.7	0.62
Palo Alto (SMCWPPP)	14.6	0.64
Gilroy (SCVURPPP)	18.2	1.00
Morgan Hill (SCVURPPP)	19.5	1.00
Boulder Creek (SMCWPPP)	55.9	2.04
La Honda (SMCWPPP)	24.4	0.86
Half Moon Bay (SMCWPPP)	25.92	0.82
San Francisco (SMCWPPP)	21	0.73
San Francisco Airport (SMCWPPP)	20.1	0.85
San Francisco Oceanside (SMCWPPP)	19.3	0.72
Oakland Airport (OWPAC)	18.35	1.00

3-1 ***Unit basin storage volume from Table 5.2:*** **0.64** Inches
(The coefficient for this method is 1.00, due to the conversion of any landscaping to effective impervious area)

3-2 ***Adjusted unit basin storage volume:*** **0.64** Inches
(The unit basin storage volume is adjusted by applying the MAP adjustment factor.)

3-3 ***Required Capture Volume (in cubic feet):*** **1,625** Cubic feet
(The adjusted unit basin sizing volume [inches] is multiplied by the size of the DMA and converted to feet)

4.0 Calculate the Duration of the Rain Event

- 4-1 Rainfall intensity **0.2** Inches per hour
- 4-2 Divide Item 3-2 by Item 4-1 **3.20** Hours of Rain Event Duration

5.0 Preliminary Estimate of Surface Area of Treatment Measure

- 5-1 4% of DMA impervious surface **1,219** Square feet
- 5-2 3% of DMA impervious surface **914** Square feet
- 5-3 Volume of treated runoff for area in Item 5-2 **1,219** Cubic feet (Item 5-2 * 5 inches per hour * 1/12 * Item 4-2)

6.0 Initial Adjustment of Depth of Surface Ponding Area

- 6-1 Subtract Item 5-3 from Item 3-3 **406** Cubic feet (Amount of runoff to be stored in ponding area)
- 6-2 Divide Item 6-1 by Item 5-2 **0.4** Feet (Depth of stored runoff in surface ponding area)
- 6-3 Convert Item 6-2 from ft to inches **5.3** Inches (Depth of stored runoff in surface ponding area)
- 6-4 If ponding depth in Item 6-3 meets your target depth of 6"-12", then Item 7-1 is equal to Item 5-2. If not, continue to Step 7-1.

7.0 Optimize Size of Treatment M 25

- 7-1 Enter an area larger or smaller than Item 5-2 **886** Sq.ft. (enter larger area if you need less ponding depth; smaller for more depth.)
- 7-2 Volume of treated runoff for area in Item 7-1 **1,181** Cubic feet (Item 7-1 * 5 inches per hour * 1/12 * Item 4-2)
- 7-3 Subtract Item 7-2 from Item 3-3 **443** Cubic feet (Amount of runoff to be stored in ponding area)
- 7-4 Divide Item 7-3 by Item 7-1 **0.50** Feet (Depth of stored runoff in surface ponding area)
- 7-5 Convert Item 7-4 from feet to inches **6.0** Inches (Depth of stored runoff in surface ponding area)

If the ponding depth in Item 7-5 meets target, stop here. If not, repeat Steps 7-1 through 7-5 until you obtain target depth. If the slope of the drainage area > 1%,
7-6 then 11" will be the max ponding depth (slopes >1% will increase the ponding depth by 0.2 inches).

STUDIO T SQUARE

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
3350 Scott Boulevard, Building 22
Santa Clara, California 95054
(408) 727 6665
Fax (408) 727 5641

Broadway Plaza
Redwood City, CA

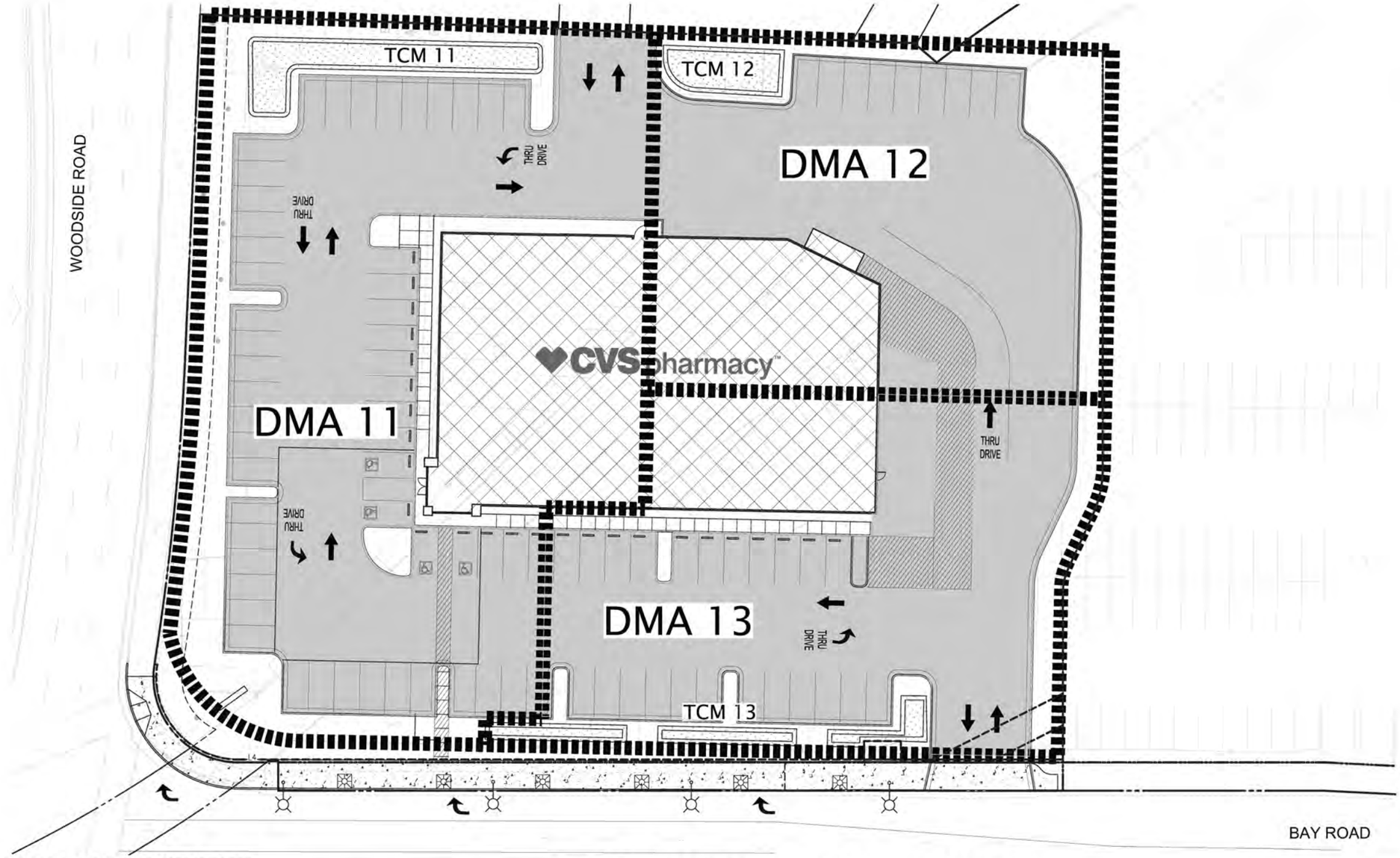
The Sobrato Organization &
MidPen Housing Corporation

Sheet Title:
STORM WATER CALCULATIONS - BROADWAY

Job No. A14075
Date: 03/15/2019
Scale: AS SHOWN
Drawn By: NM/HR

Sheet No: 18

TM-6.3



BIOTREATMENT SUMMARY TABLE

AREA	TCM	TREATMENT TYPE	TOTAL AREA (SQ. FT.)	IMPERVIOUS AREA (SQ. FT.)	TREATMENT AREA REQ. (SQ. FT.)	TREATMENT AREA PROVIDED (SQ. FT.)	PONDING DEPTH (IN.)
*DMA 11	11	BIOTREATMENT POND	31,496	29,355	1,176	1,176	6
*DMA 12	12	BIOTREATMENT POND	20,136	16,505	660	660	6
*DMA 13	13	BIOTREATMENT POND	22,491	18,075	723	723	6

*BIOTREATMENT SIZING BASED ON UNIFORM FLOW METHOD (4%).

Table I.B.1 Impervious[6] and Pervious Surfaces

Type of Impervious Surface	I.B.1.a PRE-PROJECT IMPERVIOUS SURFACE (SQ.FT.)	I.B.1.b EXISTING IMPERVIOUS SURFACE TO BE RETAINED (SQ.FT.)	I.B.1.c EXISTING IMPERVIOUS SURFACE TO BE REPLACED (SQ.FT.)	I.B.1.d NEW IMPERVIOUS SURFACE TO BE CREATED (SQ.FT.)	I.B.1.e POST- PROJECT IMPERVIOUS SURFACE (SQ.FT.) (c + (b - c) + d)
Roof area(s)	138,890	0	138890	82583	221473
Impervious[6] sidewalks, patios, paths, driveways, streets	32989	0	32989	115025	148014
Impervious[6] uncovered parking[7]	354715	0	76717	0	76717
Totals:	526594	0	248596	197608	446204

I.B.1.f - Total Impervious Surface Replaced and Created: ***(sum of totals for columns I.B.1.c and I.B.1.d):*** **446204**

Type of Pervious Surface	Pre-Project Pervious Surface (sq.ft.)			Post-project Pervious Surface(sq.ft.)
Landscaping	42125			122515
Pervious Paving	0		I.B.1.e.1	0
Green Roof	0			0
Totals:	42125			122515
Total Site Area (Total Impervious + Total Pervious)	568719			568719

SOURCE CONTROL MEASURES IMPLEMENTED

SD-10: SITE DESIGN & LANDSCAPE PLANNING

- MAXIMIZED TREES AND PLANTING WITHIN HARDSCAPE AND LANDSCAPE AREAS.
- PARKING LOT ISLANDS WITH TREES AND PLANTING.
- VEGETATED SLOPES FOR ALL LANDSCAPE SLOPES LESS THAN 1:5 SLOPE.

SD-11: EFFICIENT IRRIGATION

- RAIN-TRIGGERED SHUTOFF DEVICES TO PREVENT IRRIGATION AFTER PRECIPITATION.
- SYSTEM DESIGNED TO SITE-SPECIFIC WATER DEMANDS AND PLANTING REQUIREMENTS.

SD-13: STORM DRAIN SIGNAGE

- ALL CATCH BASINS TO BE STENCILED WITH PROHIBITIVE LANGUAGE PER CITY STANDARDS.

PLAN LEGEND

- TREATMENT AREA LIMITS
- DMA — DRAINAGE MANAGEMENT AREA
- TCM — TREATMENT CONTROL MEASURE
- IMPERVIOUS ROOFTOP DRAINING TO BIORETENTION
- IMPERVIOUS PAVEMENT DRAINING TO BIORETENTION
- CONCRETE AREA
- BIORETENTION POND
- FLOW THROUGH PLANTER

NORTH

0 10 20 40 60

Scale 1" = 20 ft

STUDIO T SQUARE

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
3350 Scott Boulevard, Building 22
Santa Clara, California 95054
(408) 727 6665
Fax (408) 727 5641

Broadway Plaza
Redwood City, CA

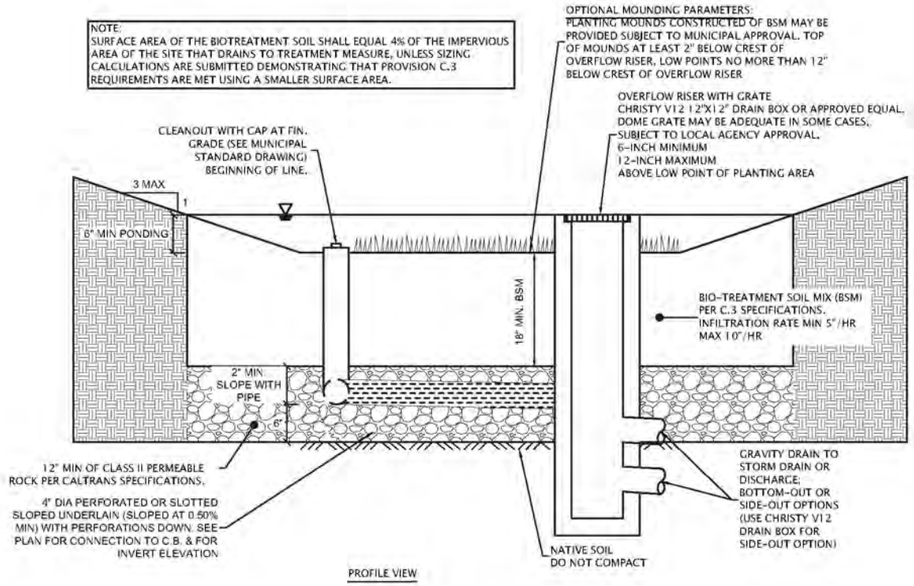
The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
STORMWATER CONTROL PLAN - BAY ROAD

Job No. A14075
Date: 03/15/2019
Scale: AS SHOWN
Drawn By: NM/HR

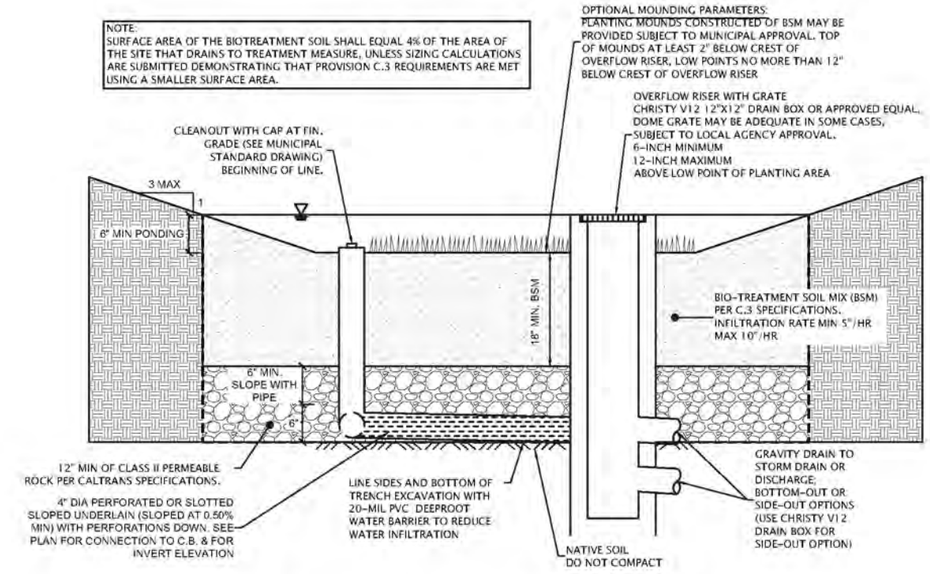
Sheet No: 19

TM-6.4



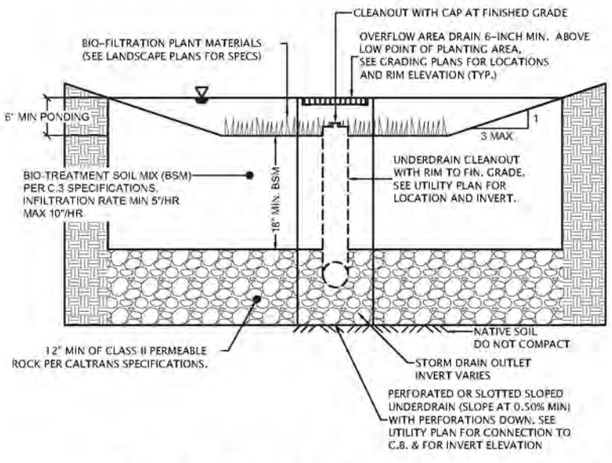
BIOTREATMENT POND (UNLINED) PROFILE VIEW

NOT TO SCALE



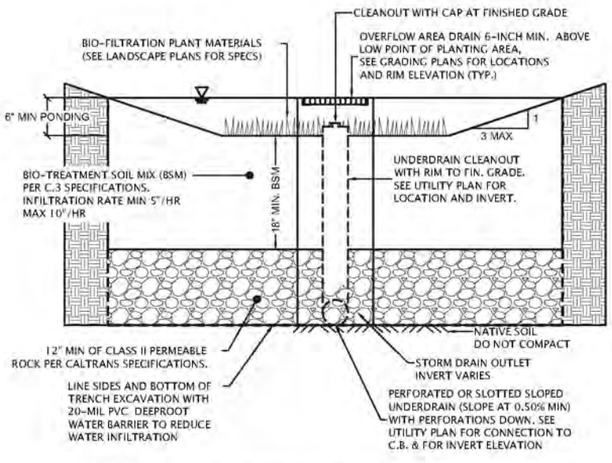
BIOTREATMENT POND (LINED) PROFILE VIEW

NOT TO SCALE



BIOTREATMENT POND (UNLINED) SECTION VIEW

NOT TO SCALE



BIOTREATMENT POND (LINED) SECTION VIEW

NOT TO SCALE

STUDIO T SQUARE

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
3350 Scott Boulevard, Building 22
Santa Clara, California 95054
(408) 727-6665
Fax (408) 727-5641

Broadway Plaza
Redwood City, CA

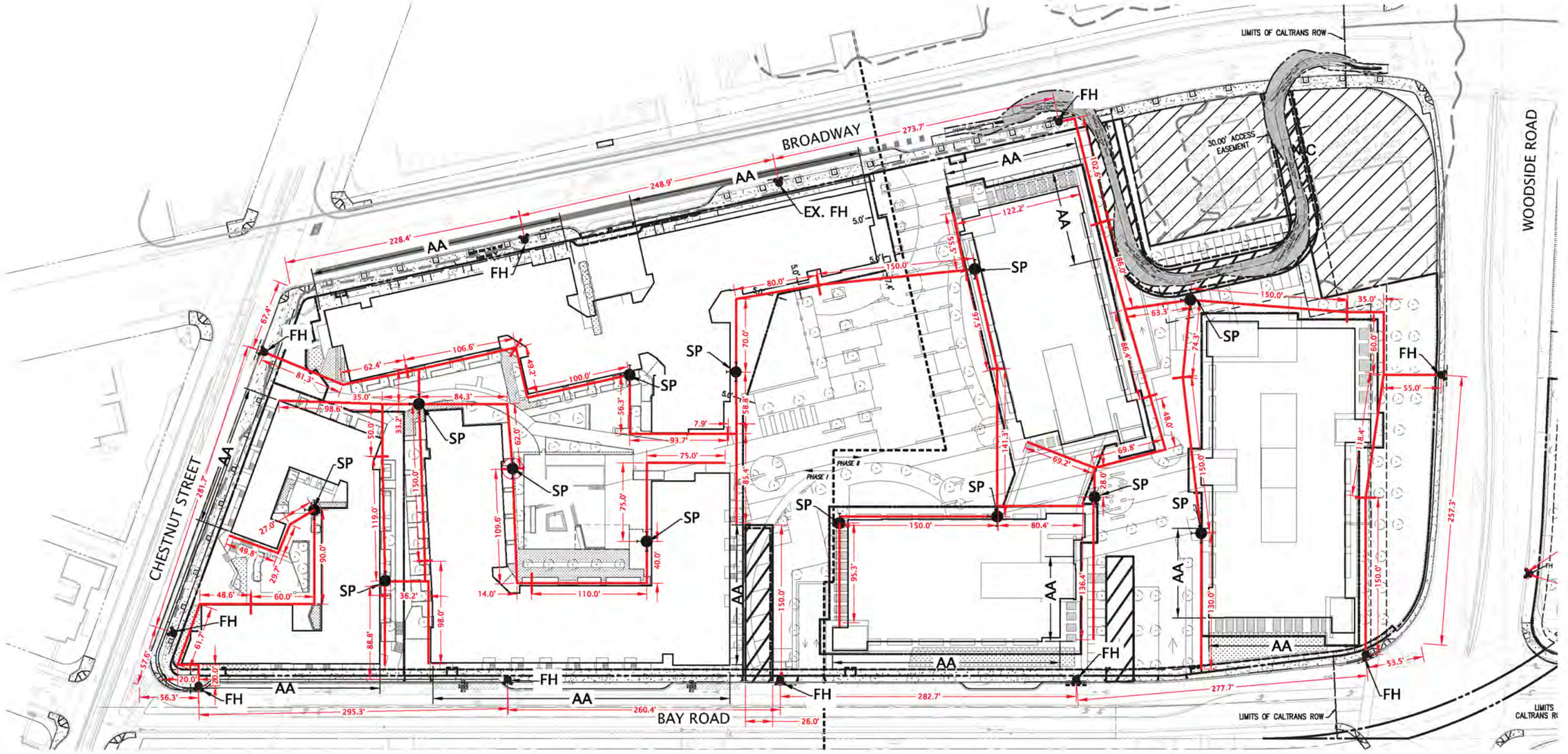
The Sobrato Organization & MidPen Housing Corporation

Sheet Title:
STORM WATER DETAILS - BAY ROAD

Job No. A14075
Date: 03/15/2019
Scale: AS SHOWN
Drawn By: NM/HR

Sheet No: 20

TM-6.5



May 08, 2018

Gareth Harris
755 Marshall Street
Redwood City, CA 94063

Dear Gareth,

Here are our responses to the comments received from the Fire Department.

- Emergency Responder Radio Communications System - This project is required to have an Emergency Responder Radio Communications System (ERRCS) installed in accordance with CFC 510.
  Duly noted, accepted as condition.

- Fire Department Knox Building Access - Knox Key boxes are required as part of this project to allow emergency access for firefighters to all buildings. Indicate on the plans that Knox Key boxes will be provided at the entrances to all buildings at locations approved by the fire department. Recessed key boxes shall be installed at all buildings five to six feet above finished grade CFC 506.
  Duly noted, accepted as condition.

- Fire Apparatus Turn Arounds -Are required at the end of all Fire Access Lanes in excess of 150 feet. These turn arounds shall meet the City of Redwood City engineering standards. The fire apparatus turn around indicated on the plans does not meet the required specifications CFC D 103.4.
  See updated Fire Access Plan (TM-7.1). For aerial access on the east side of building A, the site owns a 30' wide easement for access back to Broadway between the two buildings to remain (Jack in the Box & Denny's).

- Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be surfaced so as to provide all weather driving capabilities 503.2.3. Grass pave does not meet this requirement.
  See updated landscaping drawings for removal of reference to Grass pave. Fire department approved material shall be used for access.

- At least one of the required aerial fire apparatus access routes meeting this condition shall be located within a minimum of 15 feet and a maximum of 30 feet from each building and shall be positioned parallel to one entire side of the building as per 2016 CFC D105.3.
  Duly noted, accepted as condition and shown on Sheet TM-7.1.

- The plans indicate a number of Emergency Vehicle Access Easements. One of them is located on the East side of Building "A" adjacent to the building. The location does not have access into it that is compliant with turn radius for the fire department to be able to utilize it.
  See updated Fire Access Plan (TM-7.1). For aerial access on the east side of building A, the site owns a 30' wide easement for access back to Broadway between the two buildings to remain (Jack in the Box & Denny's).

- The plans indicate a number of Red Curb fire lane designations. In addition to red curbs, appropriate Fire Lane No Parking signs are required as per Appendix D of the CFC.
  Duly noted, accepted as condition.

- The plans indicate a three-story Atrium in one of the buildings. Provide engineered plans and air handling calculations for the required smoke removal system for the Atrium.
  Duly noted, accepted as condition.

- Available Water Supply to Project Site - Provide current fire flow information from the water purveyor to indicate the maximum available water flow in gallons per minute (GPM) at a minimum of 20 pound s per square inch (psi) residual pressure. This information must be dated and indicate the information is the most current information available from the water purveyor.
  Development
  Broadway - 5743 GPM @ 20 PSI (03/06/18)
  Bay – 2852 GPM @20 PSI (05/01/18)

  CVS Parcel – 1975 GPM @20 PSI (04/04/17)

- Automatic Fire Sprinkler / Standpipe Systems Required -As the proposed buildings are four or more stories in height all of the buildings and garage areas are required to be equipped with standpipe / fire sprinkler systems. Provide plans and hydraulic calculations for the design of these systems. The plans shall also indicate on-sight exterior standpipe connections and interior standpipe connections in all of the buildings stairwells that need to be included in the hydraulic calculations.
  Duly noted, accepted as condition.

- Fire Department Connections - FDC's to the fire sprinkler / standpipe systems shall be located at the fire access side of all buildings within 50 feet of a Fire Hydrant.
  Duly noted, accepted as condition.

- Fire Alarm Systems Required - UL Central Station fully addressable fire alarm systems are required in all buildings meeting NFPA 72. Provide plans and voltage drop calculations for the design of these systems.
  Duly noted, accepted as condition.

- Emergency Escape and Rescue Openings -All sleeping rooms must all be provided with emergency escape and rescue openings in accordance with CBC 1030. Confirm the design of the project includes compliant openings and those openings have ladder access for use by the fire department in an emergency. Show the point of ladder access on the fire department access plans.
  Duly noted, accepted as condition.

- Premises Identification (Address Numbers) - Indicate on the plans where the premises identification (address) will be located and the size (minimum 12") in a contrasting background facing the street from which the building takes the address CFC 505.
  Duly noted, accepted as condition.

- Gurney Accommodating Elevator Requirement - Elevators in buildings that are four stories or more shall provide for fire department emergency access to all floors. At least one elevator car in each building shall be of such a size and arrangement to accommodate an ambulance gurney 24 inches by 84 inches with not less than 6-inch radius corners, in the horizontal, open position and shall be identified by the international symbol for emergency medical service. The symbol shall not be less than 3 inches high and shall be placed inside on both sides of the hoist-way door frame CBC 3002.4.
  Duly noted, accepted as condition.

- Portable Fire Extinguishers Required - Portable fire extinguishers, with a minimum classification of 2A:10BC are required to be permanently installed in all buildings within75 feet of travel from all portions of the building in compliance with NFPA I 0 and CFC 906.
  Duly noted, accepted as condition.

Please let me know if further information is necessary or if you have any questions about our responses.

Sincerely,

Nektarios Matheou, P.E.
Senior Engineer
nmatheou@kierwright.com
www.kierwright.com

APPROVED
REDWOOD CITY / SAN CARLOS
FIRE DEPARTMENT
PLANS ARE IN COMPLIANCE WITH APPLICABLE BUILDING STANDARDS CODES INCLUDING BUILDING AND FIRE CODES AS WELL AS ANY APPLICABLE NFPA AND / OR OTHER APPLICABLE LOCAL DESIGN STANDARDS. PLAN REVIEW COMPLIANCE DOES NOT AUTHORIZE CONSTRUCTION OR AUTHORIZE THE CONTRACTOR TO PROCEED IN VIOLATION OF ANY FEDERAL, STATE, OR LOCAL REGULATIONS. ALL APPROVALS ARE SUBJECT TO VERIFICATION OF COMPLIANCE WITH ANY WRITTEN CONDITIONS AND ARE SUBJECT TO FIELD INSPECTION FOR COMPLIANCE.
BY: _____ DATE: 06/11/2018

PLAN LEGEND

AA	AERIAL ACCESS
EX	EXISTING
FH	FIRE HYDRANT
R	RADIUS
TYP	TYPICAL
	FIRE HYDRANT
	(SP) STANDPIPE
	FIRE ACCESS (LIMIT 150' BACKUP)
	STREET PARKING STRIPE
	PAINTED RED CURB WITH WHITE LETTERING READING "NO PARKING - FIRE LANE" TEXT SHALL BE A MINIMUM OF FOUR INCHES TALL AND SHALL BE PLACED EVERY 30 FEET OR PORTION THEREOF, ON TOP OF DESIGNATED CURBING.

NORTH

0 25 50 100 150
Scale 1" = 50 ft

NOTES

1. AT THE BUILDING PERMIT STAGE, THE FIRE DEPARTMENT SHALL REQUIRE 150' FIRE HOSE ACCESS FROM ENGINE PLACEMENT AND STANDPIPE CONNECTIONS AROUND ALL BUILDINGS UTILIZING THE HOSE PULL PATHWAYS.

STUDIO T SQUARE

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
3350 Scott Boulevard, Building 22
Santa Clara, California 95054
(408) 727 6665
Fax (408) 727 5641

Broadway Plaza
Redwood City, CA

The Sobrato Organization &
MidPen Housing Corporation

Sheet Title:
FIRE ACCESS PLAN – BROADWAY

Job No. A14075
Date: 08/17/2018
Scale: AS SHOWN
Drawn By: NM/HR

Sheet No: 21

TM-7.1

PLAN LEGEND

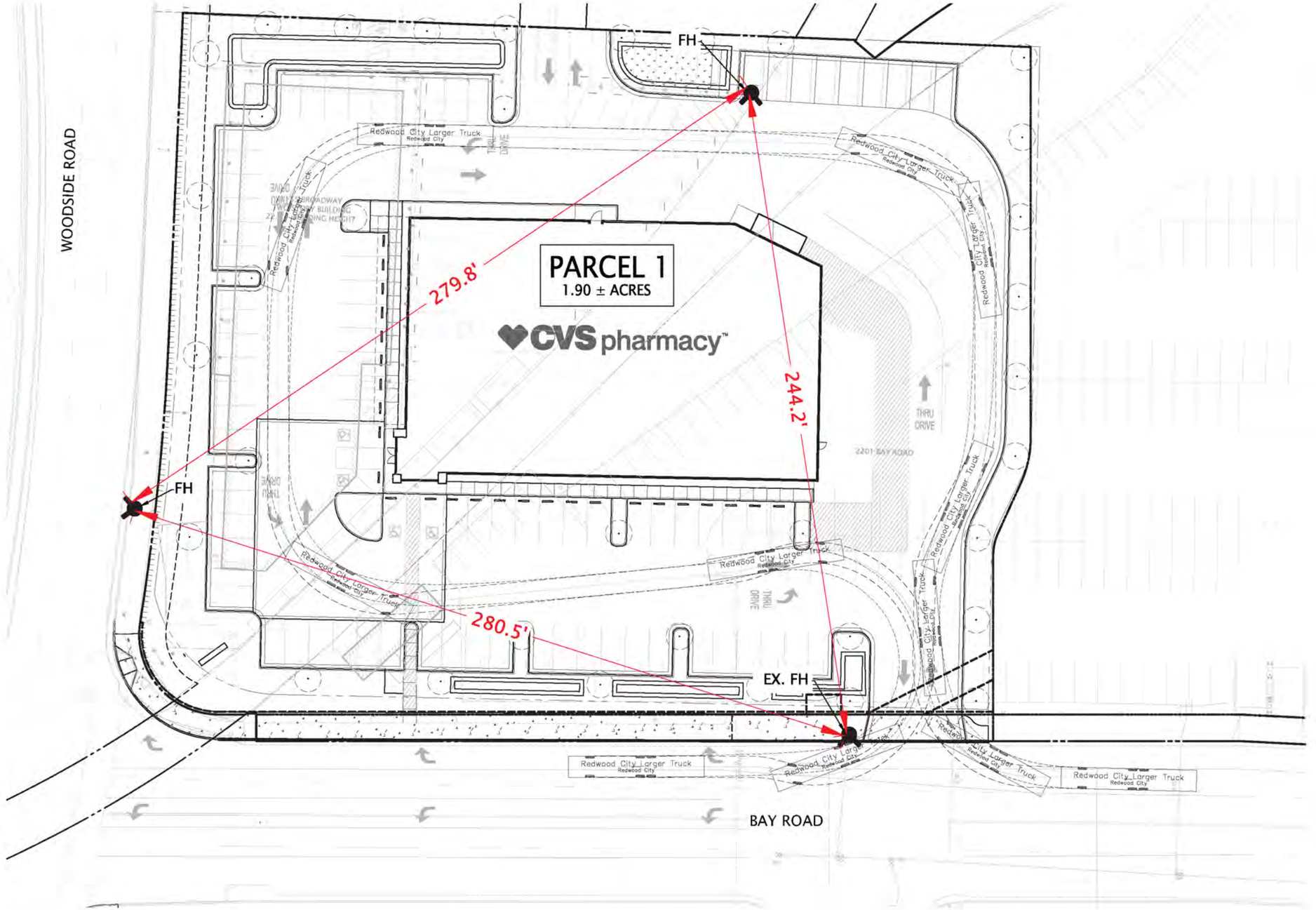
AA	AERIAL ACCESS
EX	EXISTING
FH	FIRE HYDRANT
R	RADIUS
TYP	TYPICAL
	FIRE HYDRANT
	(SP) STANDPIPE
	FIRE ACCESS (LIMIT 150' BACKUP)

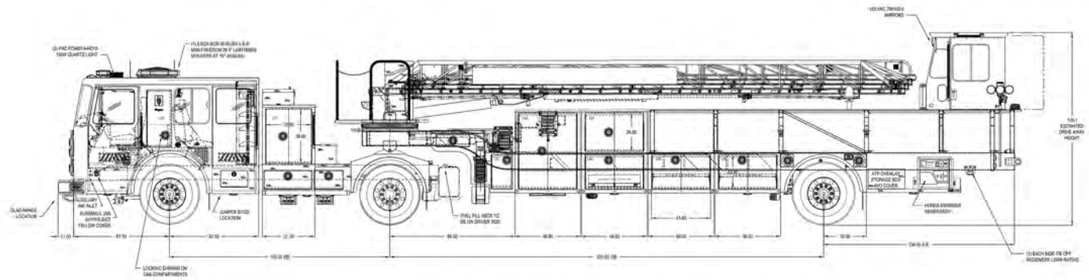
APPROVED

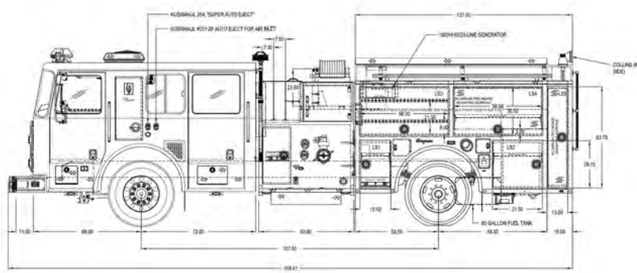
REDWOOD CITY / SAN CARLOS
FIRE DEPARTMENT

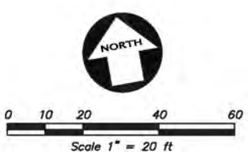
PLANS ARE IN COMPLIANCE WITH APPLICABLE BUILDING STANDARD'S CODES INCLUDING BUILDING AND FIRE CODES AS WELL AS ANY APPLICABLE NFPA AND / OR OTHER APPLICABLE LOCAL DESIGN STANDARDS. PLAN REVIEW COMPLIANCE DOES NOT AUTHORIZE CONSTRUCTION OR AUTHORIZE THE CONTRACTOR TO PROCEDE IN VIOLATION OF ANY FEDERAL, STATE, OR LOCAL REGULATIONS. ALL APPROVALS ARE SUBJECT TO VERIFICATION OF COMPLIANCE WITH ANY WRITEN CONDITIONS AND ARE SUBJECT TO FIELD INSPECTION FOR COMPLIANCE.

BY: _____ DATE: 08/21/2018









STUDIO T SQUARE

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
3350 Scott Boulevard, Building 22
Santa Clara, California 95054
(408) 727 6665
Fax (408) 727 5641

Broadway Plaza
Redwood City, CA

The Sobrato Organization &
MidPen Housing Corporation

Sheet Title:
FIRE ACCESS PLAN - BAY ROAD

Job No. A14075
Date: 08/17/2018
Scale: AS SHOWN
Drawn By: NM/HR

Sheet No: 22

TM-7.2