Isakson & Assoc. Inc.
civil engineering land surveying

2255 Ygnacio Valley Road, Ste.C
Walnut Creek, CA 94598-3349
925-937-9333 • fax 925-937-7926

MEMO:

TO: Louis Parsons

FROM: Dave Isakson

DATE: 8/15/14

RE: Tuscany Meadows C.3
(JN 201002)

Louis,

The 2/13/13 SWCP was prepared prior to the decision to create a 5 acre park to the south of the Chevron parcel. Hence, the bioretention areas for the SWCP were sized based on the park area being developed as residential homes. Development of residential homes will create considerably more impervious surface area than development as a park. If the SWCP were to be revised to reflect a park area instead of single family homes for the 5 acre area in question, the requirements for bioretention areas would be less. Therefore, it would be conservative to continue processing the current tentative map (with the 5 acre park site below the Chevron parcel) as more than enough bioretention area will be provided for the overall development.

TUSCANY MEADOWS

SUBDIVISION 8654

CITY OF PITTSBURG
CONTRA COSTA COUNTY, CALIFORNIA

PRELIMINARY

C.3 CALCULATIONS

JANUARY 27, 2012

OWNER:
WEST COAST HOME BUILDERS, INC.
4021 PORT CHICAGO HIGHWAY
CONCORD, CALIFORNIA 94520
PH: (925) 671-7711

ENGINEER OF WORK:

ISAKSON & ASSOCIATES, INC.

2255 YGNACIO VALLEY ROAD, SUITE C
WALNUT CREEK, CALIFORNIA 94598
PH: (925) 937-9333
JOB NO. 201002

Isakson & Assoc. Inc.
civil engineering & land surveying

2255 Ygnacio Valley Road, Ste.C
Walnut Creek, CA 94598-3349
925-937-9333 • fax 925-937-7926

Preliminary C.3 Sizing

Tuscany Meadows Subdivision 8654
West Watershed - 512 Lots Total

BASIS: Mean Annual Precipitation = 14 inches
Type C soil assumed
Treatment and hydro modification required
0.04 Sizing factor (using bio retention plus vault – 8.3' rock section beneath pad 119 plus volume in adjacent detention basin for vault)
79.38 acres = Total tributary area
2.056 acres = Total onsite bio retention area (w/8.3' rock section beneath pad 119)
81.44 acres = Total tributary area plus onsite bio retention area
0.50 acres = Total offsite bio retention area (from Sky Ranch detention basin bottom)

A. Offsite "Clean" Water:

"Clean" water from 46.1 acres of upstream offsite tributary area (34.5 acres from Black Diamond Ranch and Sky Ranch and 11.6 acres from Chevron and Buchanan Rd.) will be carried through the site and discharged into the detention basin.

No Treatment or Hydro modification is required----------OK

B. Onsite Roads, Lots & Detention Basin Slopes:

79.38 acre tributary area of residential lots, roads and C.3/detention basin slopes.
Lot area = 54.97 acres
Road area = 21.46 acres
C.3/detention basin slope area = 2.95 acres

Basis for lot calculations is as follows:

1. Typical average lot = 4,460 sf (54.97 acres/512 lots)
2. Typical impervious surface area for 4,460 sf lot = 2,124 sf average (see proposed plot plans)(street areas not included)

Impervious area:

Impervious lot area = 512 lots x 2,124 sf/lot	= 1,087,488 sf (24.965 ac)
Roads area = 21.46 acres x 43,560 sf/acre	= 934,798 sf (21.46 ac)
Total Impervious Area *	2,022,286 sf (46.425 ac)

Pervious area:
Pervious lot area = 54.97 acres (total lot area) + 2.95 acres (C.3/det basin slope area) – 24.965 acres (impervious lot area) = 32.955 acres (or 1,435,520 sf)

Total Pervious Area 1,435,520 sf

(2,022,286 sf impervious area)x(1.0 impervious runoff factor) = 2,022,286 sf
(1,435,520 sf pervious area)x(0.5 type C soil runoff factor) = 717,760 sf
2,740,046 sf total area

Minimum planter bottom area required is calculated as:
(2,740,046 sf total area)x(0.04 sizing factor) = 109,602 sf req'd (2.52 acre)

2.52 acre (109,602 sf) total area required < 2.56 acre (111,353 sf) proposed[1]

Available bio retention area at park/detention basin bottom = OK

Notes:
* Total impervious area is a composite of all roof, concrete and asphalt surfaces.
[1] 111,353 sf of planter area is comprised of 89,573 sf (onsite at pad elevation 119) plus 21,780 sf (offsite at future Sky Ranch detention basin bottom)

Project Name: Tuscany Meadows - West Side - JN 201002
Project Type: Treatment and Flow Control
Location: Buchanan Rd - Pittsburg
APN: 089-150-013
Drainage Area: 3547526 sf
Mean Annual Precipitation: 14 in

IV. Areas Draining to IMPs

IMP Name: IMP1 (Soil Type: C)

IMP Type: Bioretention + Vault
Soil Type: C

DMA Name	DMA Area (sq ft)	Post-Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor	IMP Sizing			
					IMP Sizing Factor	Rain Adjust-ment Factor	Minimum Area or Volume	Proposed Area or Volume
impervious area	2,022,286	Conventional Roof	1.00	2,022,286				
pervious area	1,435,520	Landscape	0.50	717,760				
			Total	2,740,046				
				Area	0.040	1.000	109,602	111,353
				Volume	0.152	1.227	511,168	513,973
							Maximum Underdrain Flow (cfs)	2.92
							Orifice Diameter (in)	7.88

Software Tool Warnings

No warnings to report.

Report generated on 2/1/2012 12:00:00 AM by the Contra Costa Clean Water Program IMP Sizing Tool software (version 1.3.1.0).

SW.3

Isakson & Assoc. Inc.
civil engineering land surveying

2255 Ygnacio Valley Road, Ste.C
Walnut Creek, CA 94598-3349
925-937-9333 • fax 925-937-7926

Preliminary C.3 Sizing

Tuscany Meadows Subdivision 8654
East Side Watershed - 486 Lots & 375 Apts

BASIS: Mean Annual Precipitation = 14 inches
Type C soil assumed
Treatment and hydro modification required
0.04 Sizing factor (using bio retention plus vault – 6.6' rock section beneath pads 135,132 & 121 plus volume in adjacent detention basin for vault)
84.36 acres = Total tributary area
2.78 acres = Total bio retention area (w/6.6' rock section beneath pads 135,132, & 121)
87.14 acres = Total tributary area plus bio retention area

A. Offsite "Clean" Water:

"Clean" water from 39.4 acres of upstream offsite tributary area (23.8 acres from Black Diamond Ranch and 15.6 acres from Chevron and Buchanan Rd.) will be carried through the site in a separate "clean" water storm drain system and discharged directly into the detention basin outflow structure.

No Treatment or Hydromodification is required----------OK

B. Onsite Roads, Lots & Detention Basin Slopes:

84.36 acre tributary area of residential lots, roads and C.3/detention basin slopes.
Lot area = 48.22 acres
Apt area = 13.68 acres
Road area = 20.29 acres
C.3/detention basin slope area = 2.17 acres

Basis for lot calculations is as follows:

1. Typical average lot = 4,320 sf (48.22 acres/486 lots)
2. Typical impervious surface area for 4,320 sf lot = 2,124 sf average (see proposed plot plans) - (street area not included)
3. Typical apt = 1589 sf/unit (13.68 acres/375 units)
4. Typical impervious surface for 1589 sf units = 32,400 sf/acre (per Contra Costa County "Table 8 – Average Impervious Surface Amounts" (streets included) see page SW.7)

Impervious area:

Impervious lot area = 486 lots x 2,124 sf/lot	=	1,032,264 sf (23.7 ac)
Impervious apt area = 13.68 ac x 32,400 sf/ac	=	443,232 sf (10.17 ac)
Roads area = 20.29 acres x 43,560 sf/acre	=	838,832 sf (20.29 ac)
Total Impervious Area *		2,359,328 sf (54.16 ac)

Pervious area:

Pervious lot area = 48.22 acres (total lot area) + 2.17 acres (C.3/detention basin slope area) – 23.7 acres (impervious lot area) = 26.69 acres	=	1,162,616 sf (26.69 ac)
Pervious apt area = 3.51 ac (13.68 total – 10.17 impervious)	=	152,896 sf (3.51 ac)
Total Pervious Area		1,315,512 sf (30.2 ac)

(2,359,328 sf impervious area)x(1.0 impervious runoff factor)	=	2,359,328 sf
(1,315,512 sf pervious area)x(0.5 type C soil runoff factor)	=	657,756 sf
		3,017,084 sf total area

Minimum planter bottom area required is calculated as:
(3,017,084 sf total area)x(0.04 sizing factor) = 120,683 sf req'd (2.77 acre)

2.77 acre (120,683 sf) total area required < 2.78 acre (120,909 sf) proposed

Available bio retention area at park/detention basin bottoms = OK

Notes:
* Total impervious area is a composite of all roof, concrete and asphalt surfaces.

Project Name: Tuscany Meadows - East Side - JN 201002
Project Type: Treatment and Flow Control
Location: Buchanan Rd - Pittsburg
APN: 089-150-013
Drainage Area: 3795792 sf
Mean Annual Precipitation: 14 in

IV. Areas Draining to IMPs

IMP Name: IMP1 (Soil Type: C)

IMP Type: Bioretention + Vault
Soil Type: C

DMA Name	DMA Area (sq ft)	Post-Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor	IMP Sizing			
					IMP Sizing Factor	Rain Adjust-ment Factor	Minimum Area or Volume	Proposed Area or Volume
impervious area	2,359,328	Conventional Roof	1.00	2,359,328				
pervious area	1,315,512	Landscape	0.50	657,756				
			Total	3,017,084				
				Area	0.040	1.000	120,683	120,909
				Volume	0.152	1.227	562,851	563,906
							Maximum Underdrain Flow (cfs)	3.10
							Orifice Diameter (in)	8.12

Software Tool Warnings

No warnings to report.

Report generated on 2/2/2012 12:00:00 AM by the Contra Costa Clean Water Program IMP Sizing Tool software (version 1.3.1.0).

SW.6

TABLE 8 - AVERAGE IMPERVIOUS SURFACE AMOUNTS

LAND USE	IMPERVIOUS SURFACE AREA	
	Street Area Not Included	Street Areas Included
Commercial/Industrial/Downtown Offices:	41,120 square feet/acre	44,170 square feet/acre
Offices (Medium):	35,240 " "	39,380 " "
Offices (Light):	29,490 " "	33,240 " "
Multi-family Residential (Including Mobile Home Parks):		
Less than 2,500 sq. ft. of land/unit	32,400 square feet/acre	32,400 square feet/acre
2,500 to 2,999 " "	1,920 " /unit	1,920 " /unit
3,000 to 3,999 " "	2,200 " "	2,200 " "
4,000 to 4,999 " "	2,560 " "	2,560 " "
5,000 to 5,999 " "	2,930 " "	2,930 " "
6,000 to 6,999 " "	3,290 " "	3,290 " "
7,000 to 7,999 " "	3,640 " "	3,640 " "
8,000+ " "	3,820 " "	3,820 " "
Single Family Residential:		
4,000 to 4,999 sq. ft. of land/unit	2,690 square feet/unit	4,310 square feet/unit
5,000 to 5,999 " "	2,810 " "	4,490 " "
6,000 to 6,999 " "	2,930 " "	4,670 " "
7,000 to 7,999 " "	3,050 " "	4,850 " "
8,000 to 9,999 " "	3,230 " "	5,110 " "
10,000 to 13,999 " "	3,590 " "	5,630 " "
14,000 to 19,999 " "	4,190 " "	6,480 " "
20,000 to 29,999 " "	5,180 " "	7,770 " "
30,000 to 39,999 " "	6,430 " "	9,280 " "
40,000+ " "	7,710 " "	10,690 " "

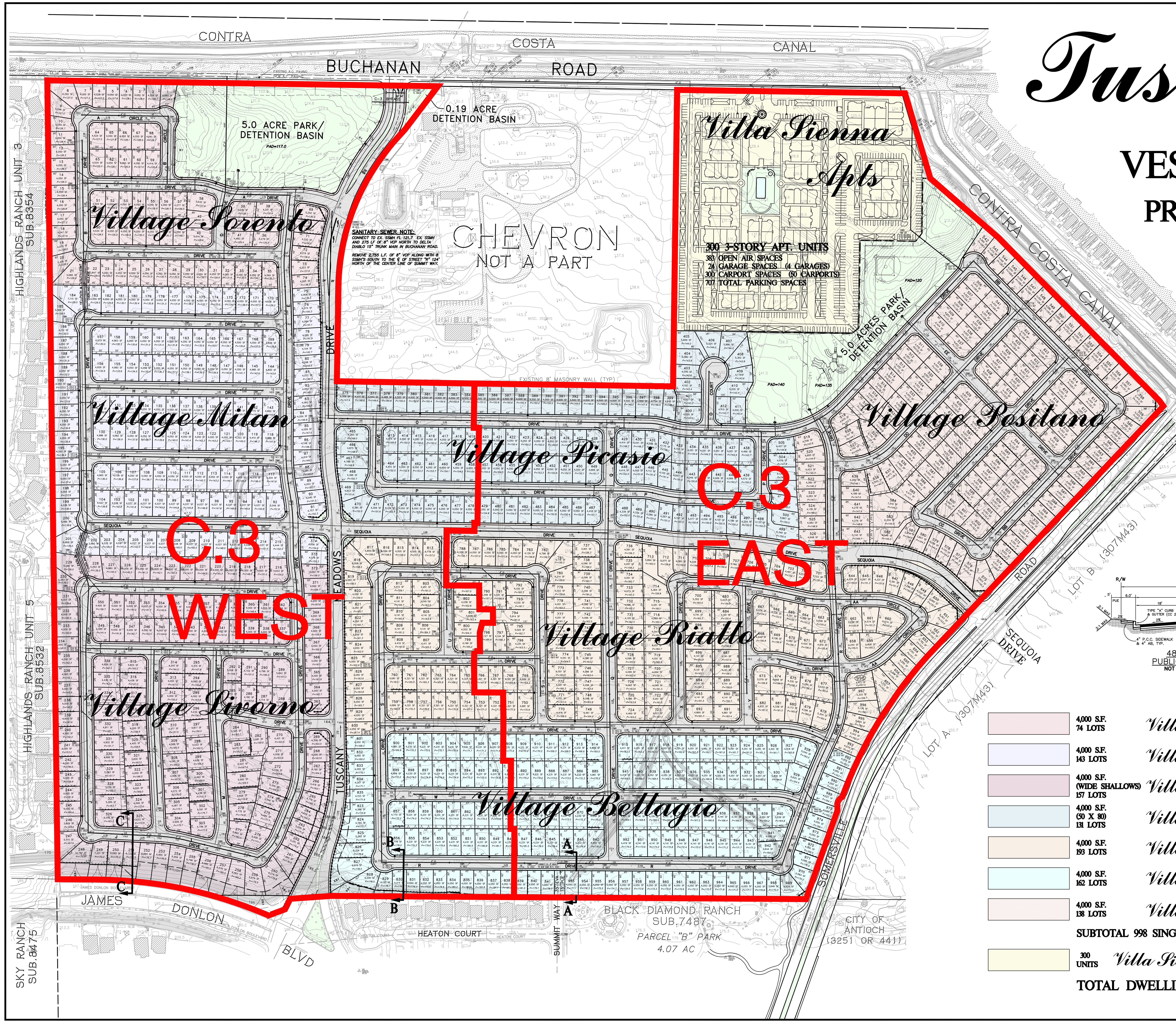
SW.7

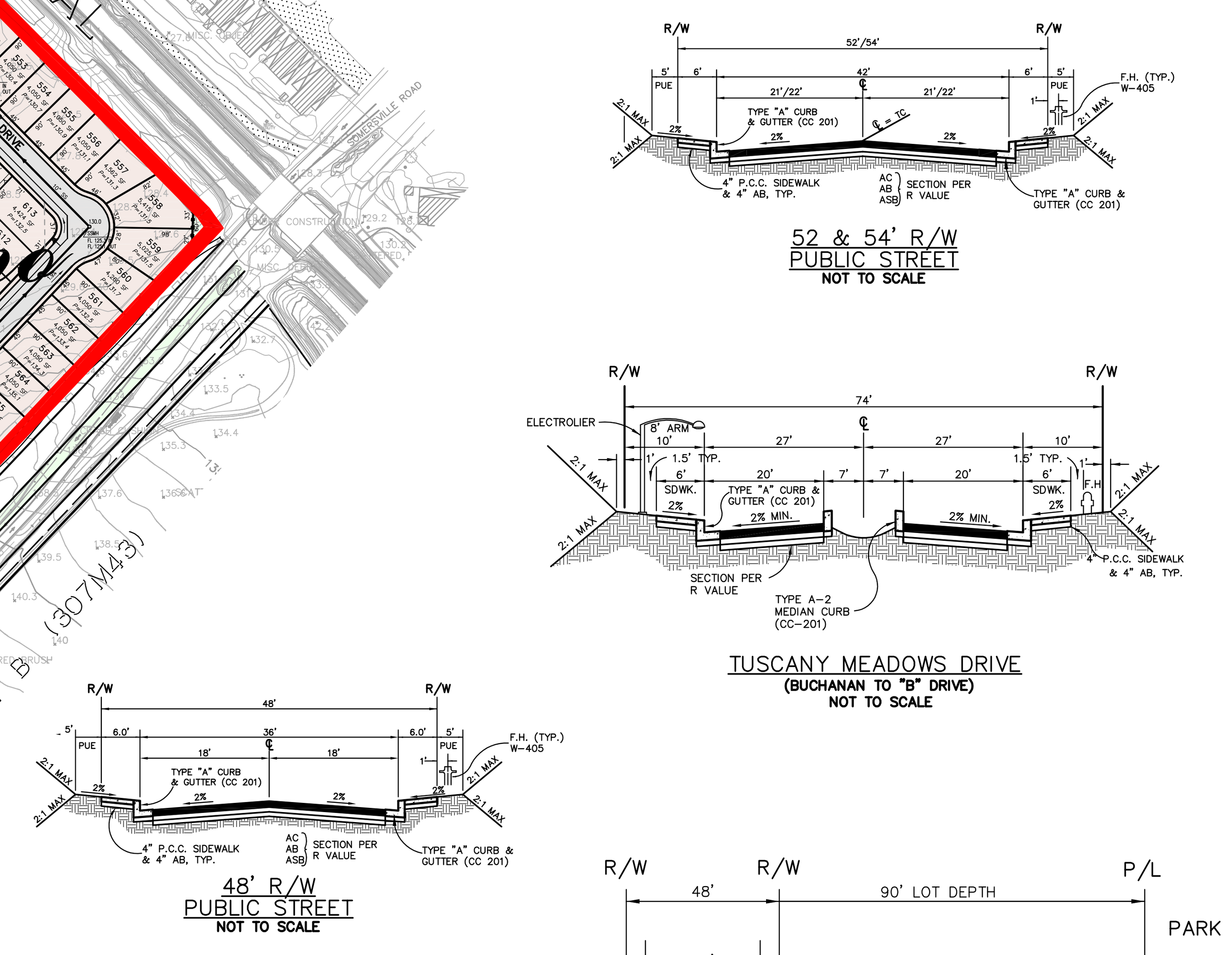
Tuscany Meadows

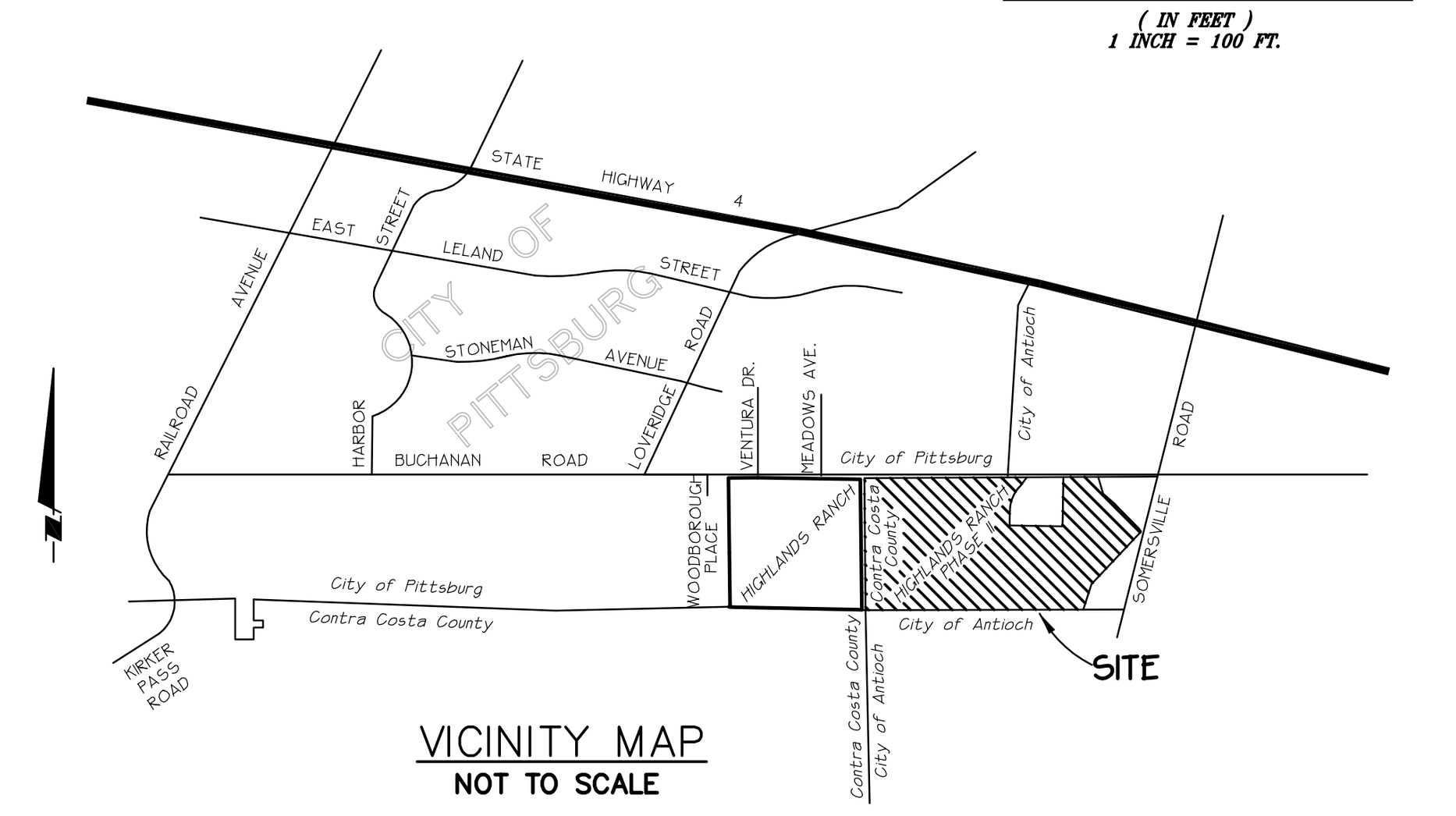
VESTING TENTATIVE MAP & PRELIMINARY GRADING PLAN

SUBDIVISION 8654

CONTRA COSTA COUNTY
JANUARY 2012



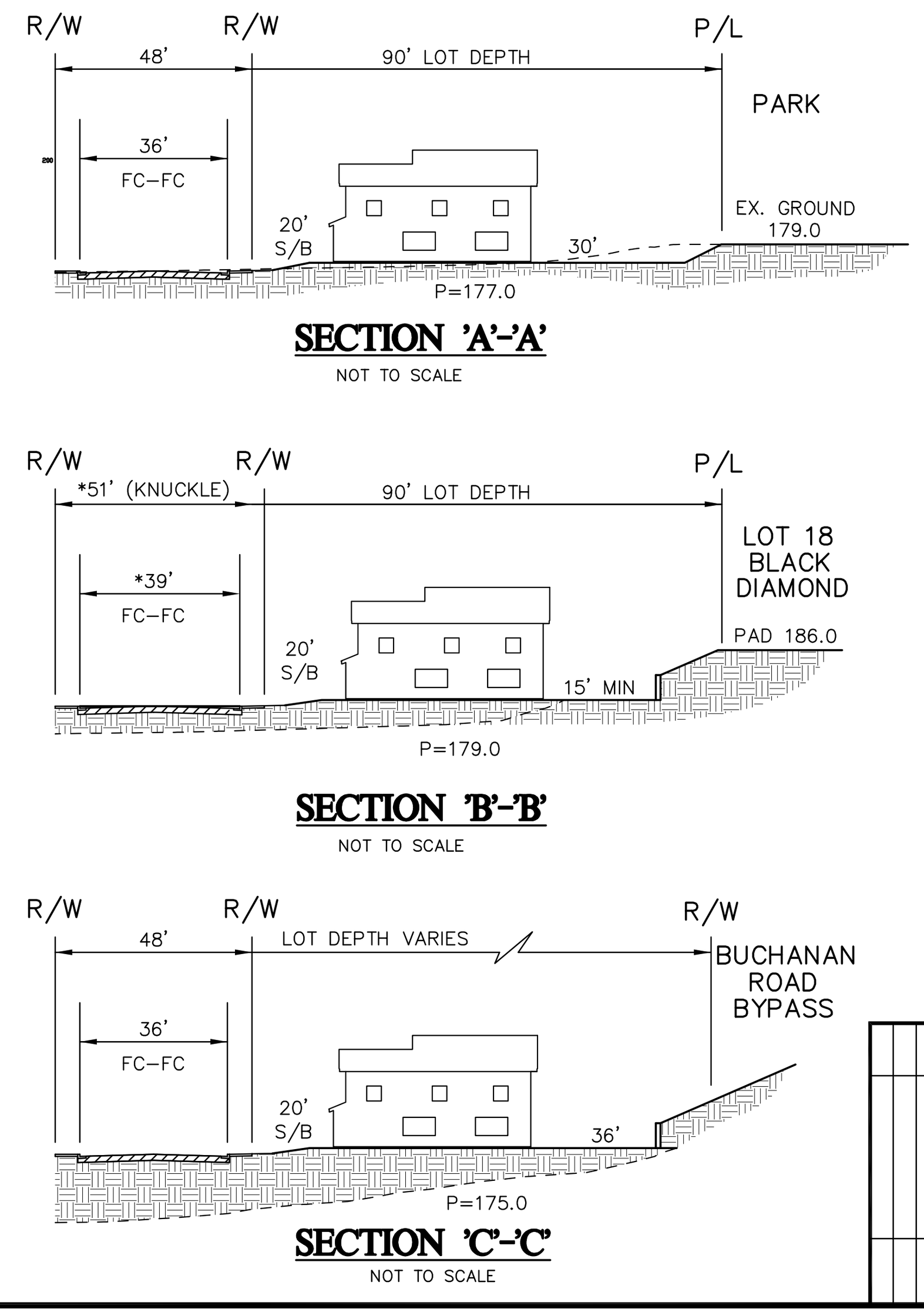




GENERAL NOTES:

1. OWNERS: WEST COAST HOME BUILDERS, INC. AND
ALBERT D. SEENO CONSTRUCTION CO. INC.
4021 PORT CHICAGO HIGHWAY
CONCORD, CA. 94524-4113
(510) 671-7711
2. CIVIL ENGINEER: ISAKSON & ASSOCIATES
2255 YGNACIO VALLEY RD SUITE "C"
WALNUT CREEK, CA 94598
(925) 937-9333
3. SOILS ENGINEER: ENGEO INC.
2401 CROW CANYON SUITE 200
SAN RAMON 94583-1545
CONCORD, CA. 94524-4113
(925) 838-1600
4. EXISTING LAND USES: VACANT
5. EXISTING GENERAL PLAN: N/A
6. PRESENT ZONING: N/A
7. WATER SUPPLY: CITY OF PITTSBURG / CONTRA COSTA WATER WITHIN ZONE 2 ASSESSMENT DIST. 1974-1
8. SEWAGE: DELTA DIABLO SEWER DISTRICT / CITY OF PITTSBURG
9. CONTOURS: 1' INTERVALS
10. ASSESSORS PARCEL: 089-150-013
11. TOTAL PROJECT AREA=167.53 ACRES
RESIDENTIAL AREA=151.90 ACRES
APARTMENT AREA=15.63 ACRES

4,000 S.F. 74 LOTS	Village Sorento
4,000 S.F. 143 LOTS	Village Milan
4,000 S.F. (WIDE SHALLOWS) 157 LOTS	Village Livorno
4,000 S.F. (50 X 80) 131 LOTS	Village Picasio
4,000 S.F. 193 LOTS	Village Rialto
4,000 S.F. 162 LOTS	Village Bellagio
4,000 S.F. 138 LOTS	Village Positano
SUBTOTAL 998 SINGLE FAMILY LOTS	
300 UNITS	Villa Sienna Apts
TOTAL DWELLING UNITS 1,298	



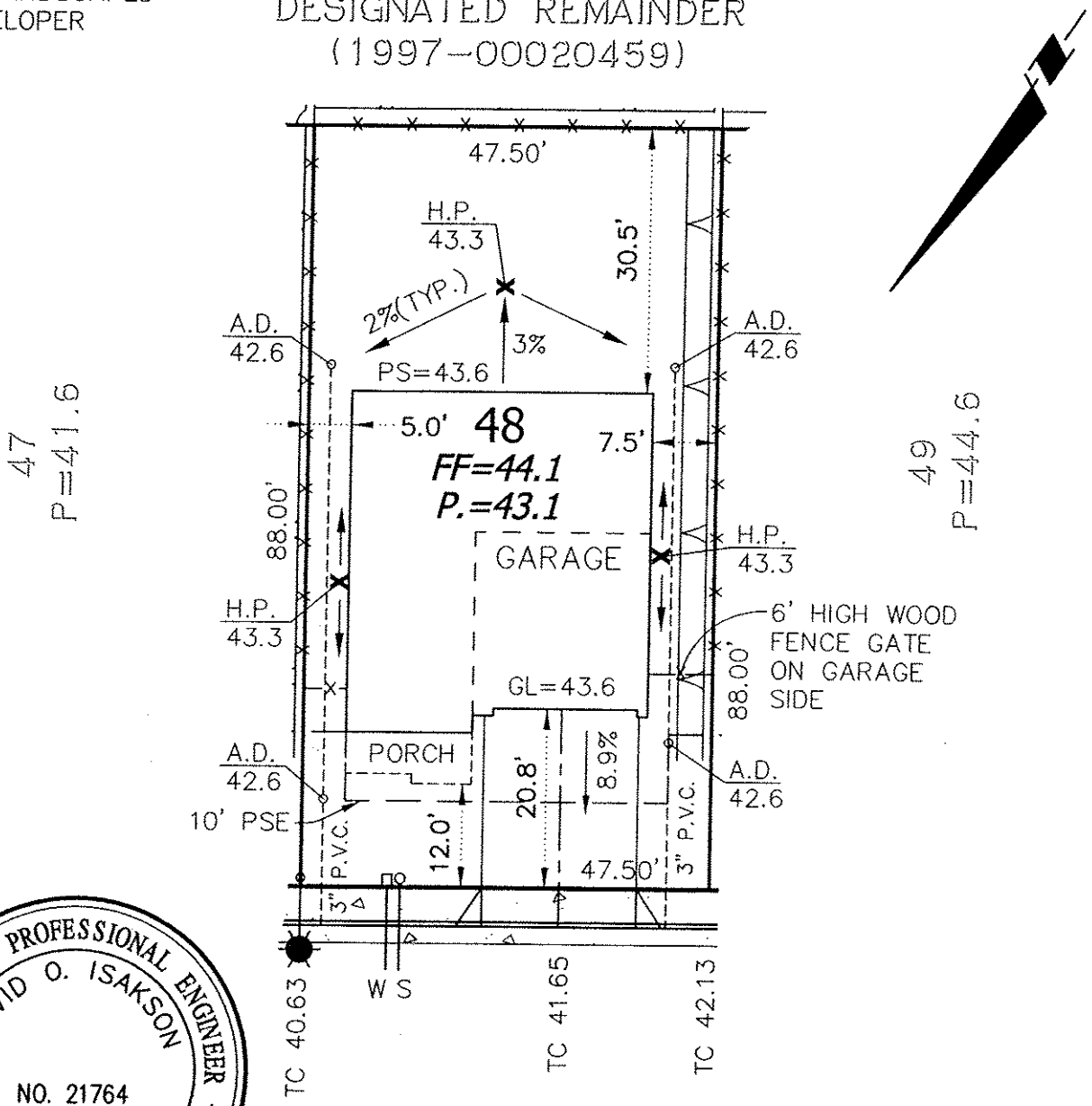
LEGEND:

PROJECT BOUNDARY
RIGHT-OF-WAY LINES
PROPERTY LINES
LOT NUMBER
LOT AREA
PAD GRADE
LOT DIMENSION
NEW SLOPE
CENTERLINE OF DITCH & DIRECTION
STREET GRADE & DIRECTION
STREET GRADE
6' MASONRY WALL
RETAINING WALL

Tuscany Meadows
SUBDIVISION 8654
Isakson & Assoc. Inc.
civil engineering
land surveying
DATE: 01-30-2012 JOB NO.: 201002 SHEET 1 OF 1

NOTE:
TO BE LANDSCAPED
BY DEVELOPER

DESIGNATED REMAINDER
(1997-00020459)



REGISTERED PROFESSIONAL ENGINEER
DAVID O. ISAKSON
NO. 21764
EXP. 9-30-11
CIVIL
STATE OF CALIFORNIA

LEGEND

-x-x- = 6' WOOD FENCE
AD = AREA DRAIN
TC = TOP OF CURB ELEV.
P = PAD ELEV.
FF = FINISH FLOOR ELEV.
GL = GARAGE LEVEL
HP = HIGH POINT
S = SANITARY SEWER LATERAL
W = WATER SERVICE
PSE = PUBLIC SERVICE ESM'T
PS = PROTECTIVE SLOPE

4539 CRIMSON CLOVER DRIVE

A.P.N.:____-____-____

Lot 48 4,180 S.F
Plan No. 2-A-4
SERENADE AT SOUTHBROOK- FAIRFIELD

ISAKSON & ASSOCIATES INC.
2255 YGNACIO VALLEY ROAD, SUITE C WALNUT CREEK, CA. 94598-3349
PHONE (925) 937-9333 FAX (925) 937-7926

PLOT PLAN	CHECKED BY: DOI	DRAWN BY: STAFF	JOB NO. 200611
Subdivision __ SD __	SCALE: 1"=20'	DATE: 12-29-2009	SHEET 1 OF 1

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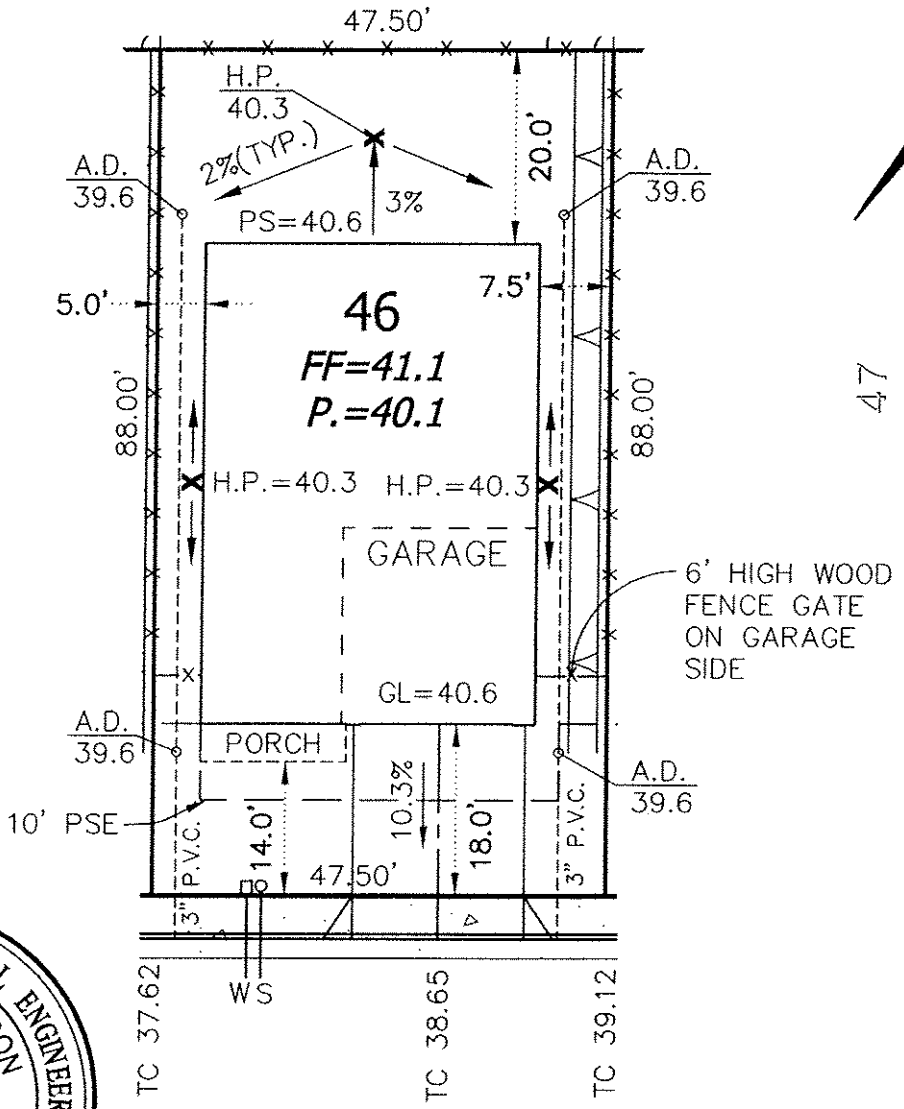
NOTE:
TO BE LANDSCAPED
BY DEVELOPER

DESIGNATED REMAINDER
(1997-00020459)



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EXP. 9-30-11
CIVIL
STATE OF CALIFORNIA

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S = SANITARY SEWER LATERAL
W = WATER SERVICE
PSE = PUBLIC SERVICE ESM'T
PS = PROTECTIVE SLOPE

4531 CRIMSON CLOVER DRIVE

A.P.N.:____-____-____

Lot 46 4,180 SF
Plan No. 4-C-2
SERENADE AT SOUTHBROOK- FAIRFIELD

ISAKSON & ASSOCIATES INC.
2255 YGNACIO VALLEY ROAD, SUITE C WALNUT CREEK, CA. 94598-3349
PHONE (925) 937-9333 FAX (925) 937-7926

PLOT PLAN	CHECKED BY: DOI	DRAWN BY: STAFF	JOB NO. 200611
Subdivision __ SD __	SCALE: 1"=20'	DATE: 12-29-2009	SHEET 1 OF 1

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NOTE:
TO BE LANDSCAPED
BY DEVELOPER

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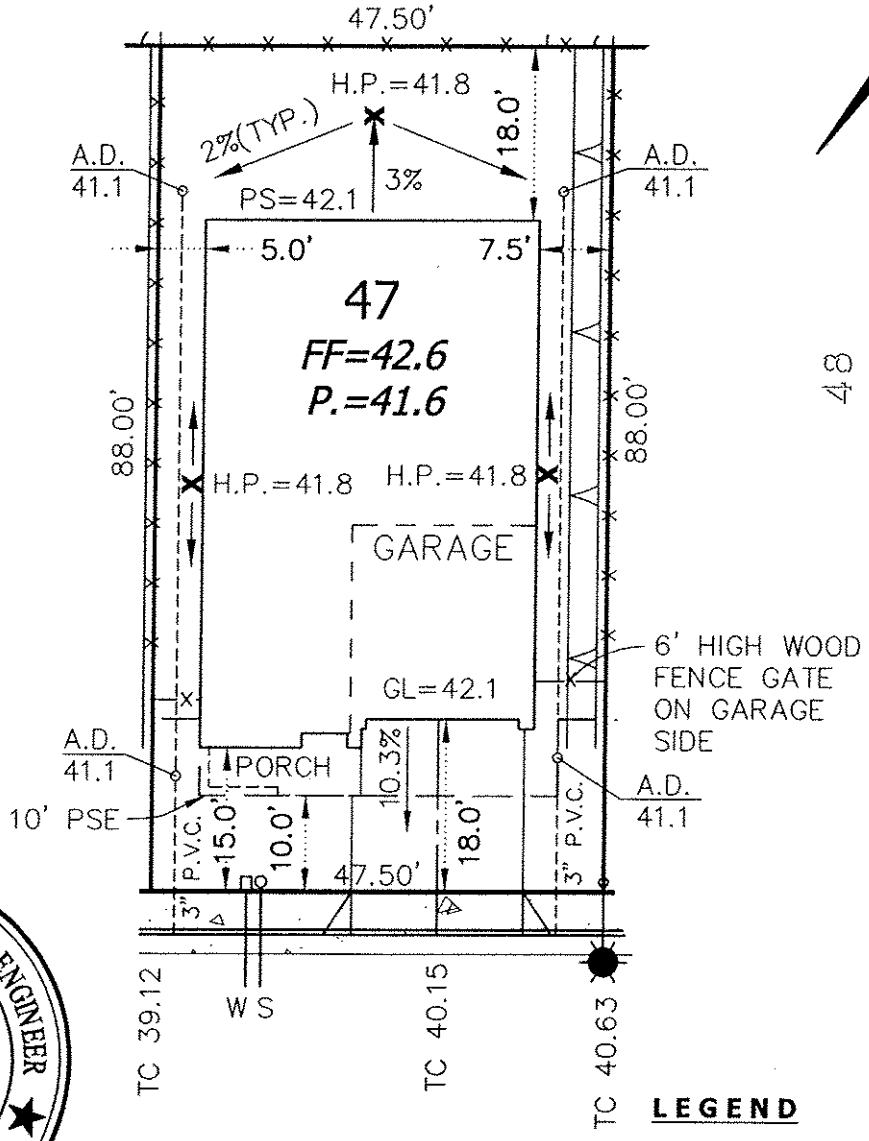
(1997-00020459)



REGISTERED PROFESSIONAL ENGINEER
DAVID O. ISAKSON
NO. 21764
EXP. 9-30-11
CIVIL
STATE OF CALIFORNIA

4535 CRIMSON CLOVER DRIVE

A.P.N.:____-____-____

Lot 47 4,180 SF
Plan No. 1-A-5
SERENADE AT SOUTHBROOK- FAIRFIELD

LEGEND

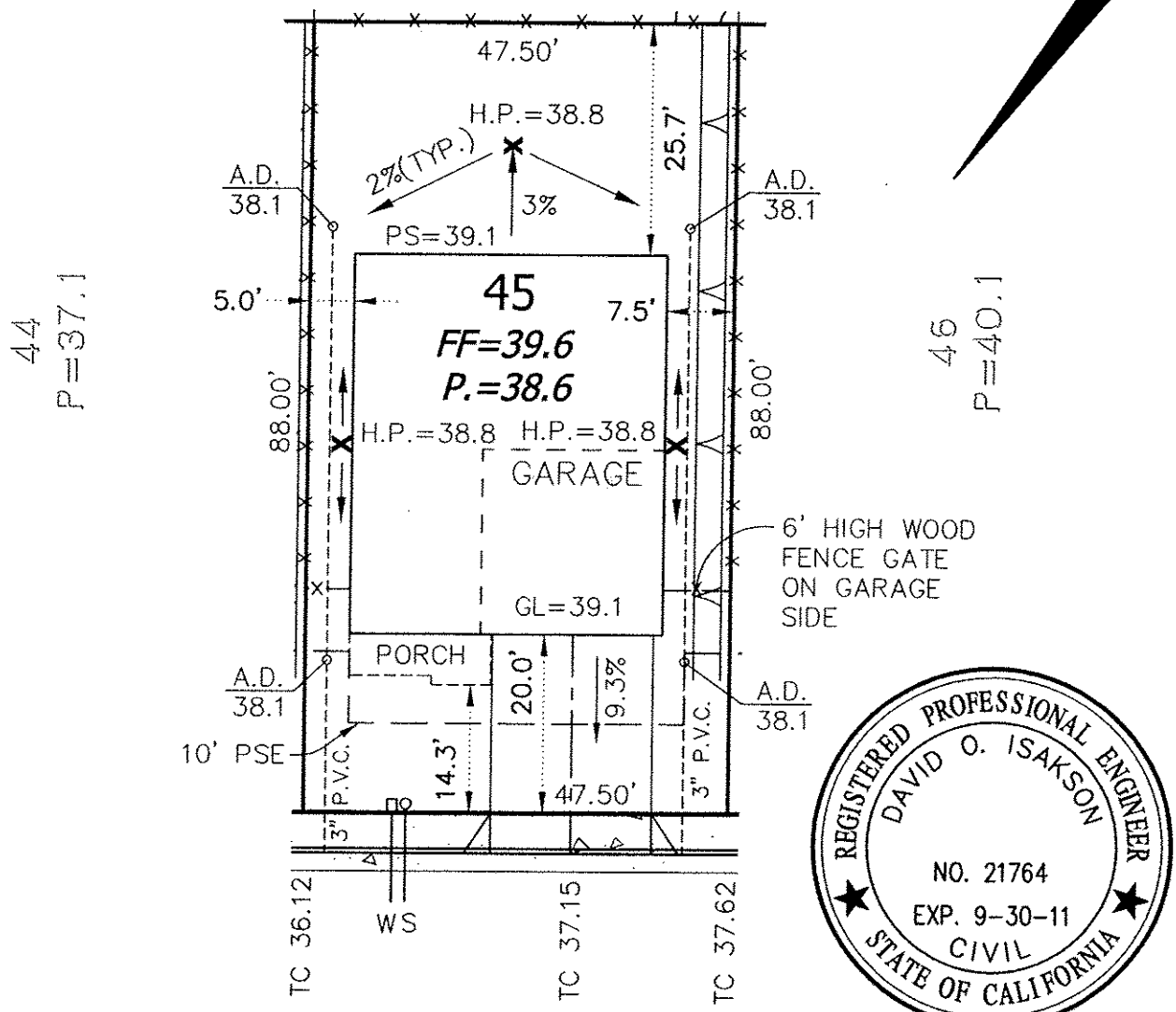
-x-x- = 6' WOOD FENCE
AD = AREA DRAIN
TC = TOP OF CURB ELEV.
P = PAD ELEV.
FF = FINISH FLOOR ELEV.
GL = GARAGE LEVEL
HP = HIGH POINT
S = SANITARY SEWER LATERAL
W = WATER SERVICE
PSE = PUBLIC SERVICE ESM'T
PS = PROTECTIVE SLOPE

ISAKSON & ASSOCIATES INC.
2255 YGNACIO VALLEY ROAD, SUITE C WALNUT CREEK, CA. 94598-3349
PHONE (925) 937-9333 FAX (925) 937-7926

PLOT PLAN	CHECKED BY: DOI	DRAWN BY: STAFF	JOB NO. 200611
Subdivision __ SD __	SCALE: 1"=20'	DATE: 12-29-2009	SHEET 1 OF 1

NOTE:
TO BE LANDSCAPED
BY DEVELOPER

DESIGNATED REMAINDER
(1997-00020459)



REGISTERED PROFESSIONAL ENGINEER
DAVID O. ISAKSON
NO. 21764
EXP. 9-30-11
CIVIL
STATE OF CALIFORNIA

LEGEND

—x—x— = 6' WOOD FENCE
AD = AREA DRAIN
TC = TOP OF CURB ELEV.
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FF = FINISH FLOOR ELEV.
GL = GARAGE LEVEL
HP = HIGH POINT
S = SANITARY SEWER LATERAL
W = WATER SERVICE
PSE = PUBLIC SERVICE ESM'T
PS = PROTECTIVE SLOPE

4527 CRIMSON CLOVER DRIVE

A.P.N.:____-____-____

Lot 45 4,180 SF
Plan No. 3-A-1
SERENADE AT SOUTHBROOK- FAIRFIELD

ISAKSON & ASSOCIATES INC.
2255 YGNACIO VALLEY ROAD, SUITE C WALNUT CREEK, CA. 94598-3349
PHONE (925) 937-9333 FAX (925) 937-7926

PLOT PLAN	CHECKED BY: DOI	DRAWN BY: STAFF	JOB NO. 200611
Subdivision __ SD __	SCALE: 1"=20'	DATE: 12-29-2009	SHEET 1 OF 1

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