COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT A

San Mateo County

1301/1311 Woodside Rd, Redwood City



0.04 0 0.02 0.04 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere

© Latitude Geographics Group Ltd.

1: 1,128

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT B

1301-1311 WOODSIDE ROAD, REDWOOD CITY, CA
PROPOSED RESIDENTIAL DEVELOPEMENT



FRONT VIEW FROM WOODSIDE ROAD

1301-1311
WOODSIDE RD
REDWOOD CITY, CA

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& ASSOCIATES
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OAKLAND
CALIFORNIA 94612
TEL.510.893.8300
FAX.510.893.8305

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Planning Rev
DEC 29,2020
UPDATE FEB 11,2021

G 0.0

1301-1311 WOODSIDE ROAD, REDWOOD CITY, CA
PROPOSED RESIDENTIAL DEVELOPEMENT



EXTERIOR VIEW FROM WOODSIDE ROAD

PROJECT INFORMATION

PROPOSED ZONING: R-3/S-3

BUILDING OCCUPANCY GROUPS: R-2

TYPE OF CONSTRUCTION:
TYPE V 1 HOUR

APPLICABLE CODES:

* 2019 CALIFORNIA BUILDING CODE
* 2019 CALIFORNIA RESIDENTIAL CODE
* 2019 CALIFORNIA MECHANICAL CODE
* 2019 CALIFORNIA PLUMBING CODE
* 2019 ELECTRICAL CODE
* 2019 CALIFORNIA ENERGY CODE
* 2019 CALIGREEN CODE

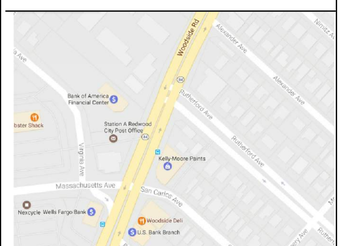
PROJECT DATA

LOT AREA	13,225 SF
LOT COVERAGE (SEE G0.2)	5,282 SF= 39.93%
1ST FLOOR (EXCL GARAGE, PORCH)	2,870 SF
2ND FLOOR	4,525 SF
3RD FLOOR	4,450 SF
TOTAL FLOOR AREA	18,550 SF
TOTAL RESIDENTIAL FLOOR AREA	11,850 SF
F.A.R.	0.89
TOTAL NO. OF RESIDENCES	6

SCOPE OF WORK

THE PROPOSED DEVELOPMENT CONSISTS OF THREE STORY, SIX UNITS RESIDENTIAL TOWN HOMES.

VICINITY MAP



DRAWING INDEX

G0	PRELIMINARY VIEW – COLOR
G0.1	PROJECT INFORMATION, LOCATION MAP, DRAWING INDEX
G0.2	LOT COVERAGE DIAGRAM
A1.1	PROPOSED SITE/FIRST FLOOR PLAN
A1.2	PROPOSED SECOND FLOOR PLAN
A1.3	PROPOSED THIRD FLOOR PLAN
A2.0	PROPOSED ELEVATIONS
A2.1	PROPOSED ELEVATION & SCHEMATIC SECTION
A2.2	PROPOSED ELEVATIONS
S1	SURVEY
TM	WESTING TENTATIVE MAP
C1	CIVIL COVER SHEET
C2	GRADING PLAN
C3	UTILITY PLAN
C4	STORM WATER MANAGEMENT PLAN
C5	EROSION CONTROL PLAN
C6	EROSION CONTROL DETAILS
C7	EROSION CONTROL DETAILS
C8	EROSION CONTROL DETAILS
C9	CONSTRUCTION BMPS
L1	PRELIMINARY PLANTING PLAN
L2	LANDSCAPING SPECS & DETAILS
L3	HYDROZONE PLAN
L4	IRRIGATION PLAN
L5	IRRIGATION DETAILS
L6	IRRIGATION NOTES

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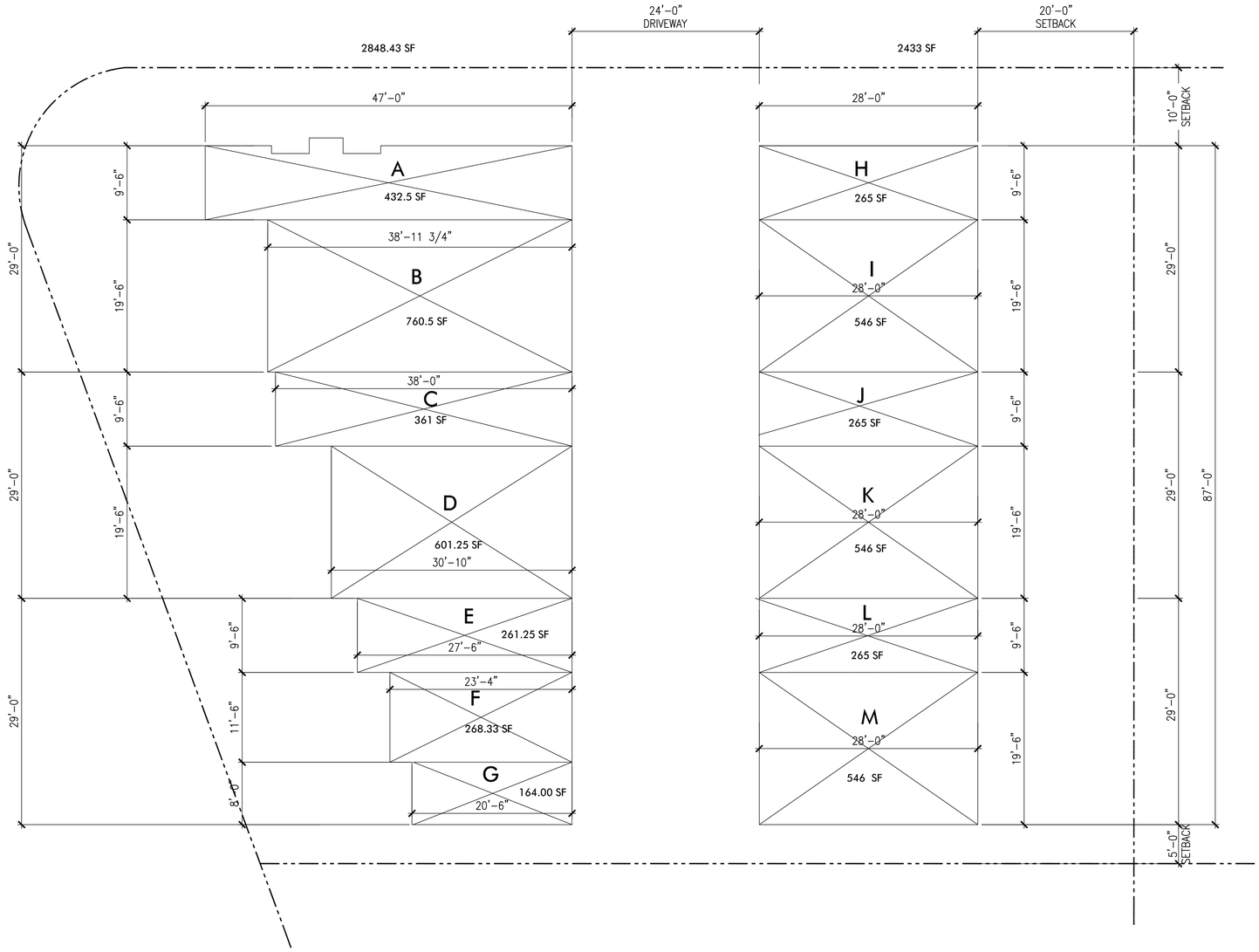
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G 0.1

LOT COVERAGE TABLE

LOT AREA	13,225 SF
A	432.5 SF
B	760.5 SF
C	361 SF
D	601.25 SF
E	261.25 SF
F	268.33 SF
G	164.0 SF
H	265 SF
I	546 SF
J	265 SF
K	546 SF
L	265 SF
M	546 SF
TOTAL LOT COVERAGE	5,281.83 SF



LOT COVERAGE DIAGRAM

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

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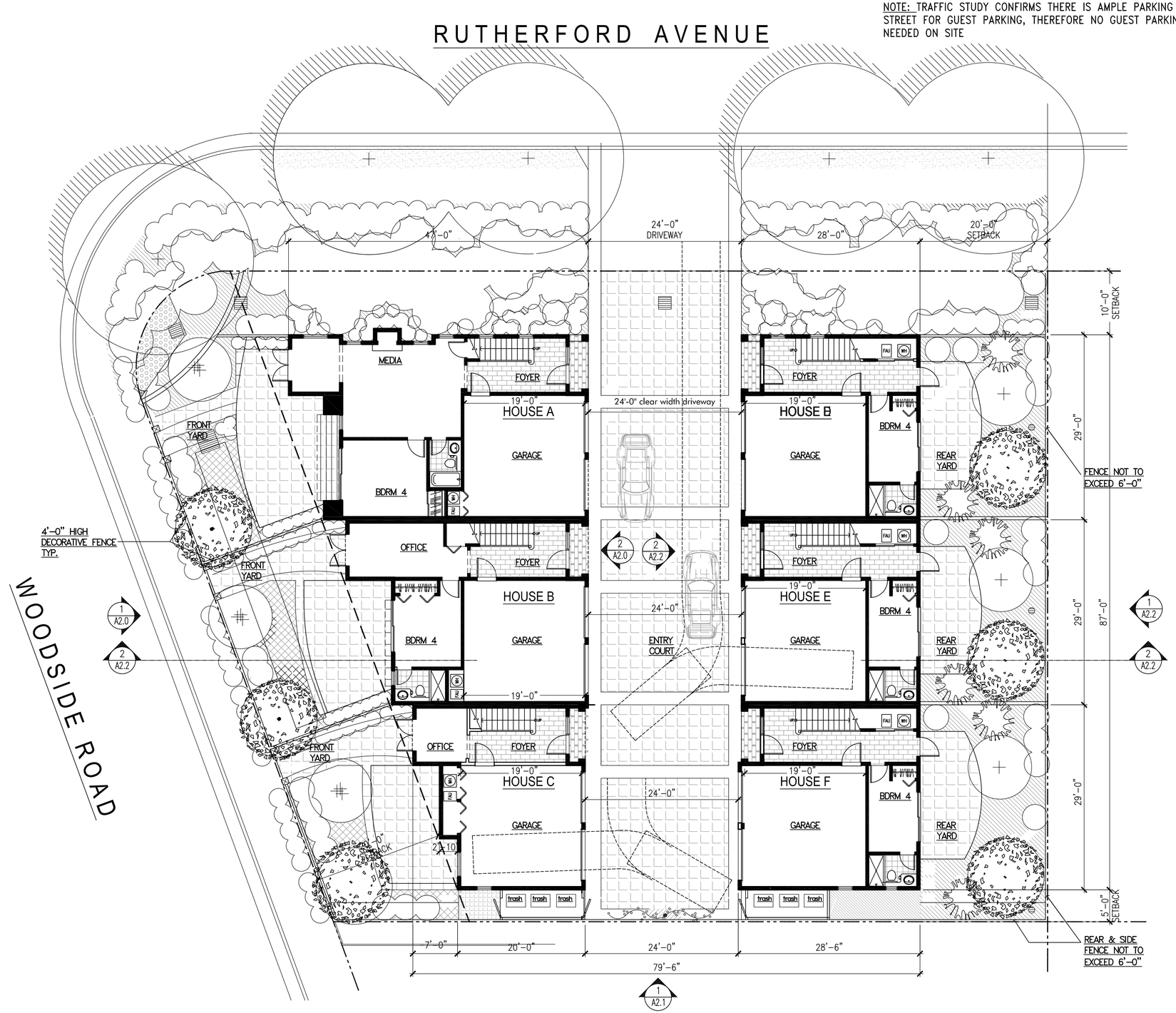
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PROJECT NORTH

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G0.2

NOTE: TRAFFIC STUDY CONFIRMS THERE IS AMPLE PARKING ON STREET FOR GUEST PARKING, THEREFORE NO GUEST PARKING NEEDED ON SITE



GROUND FLOOR PLAN

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

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PROJECT NORTH

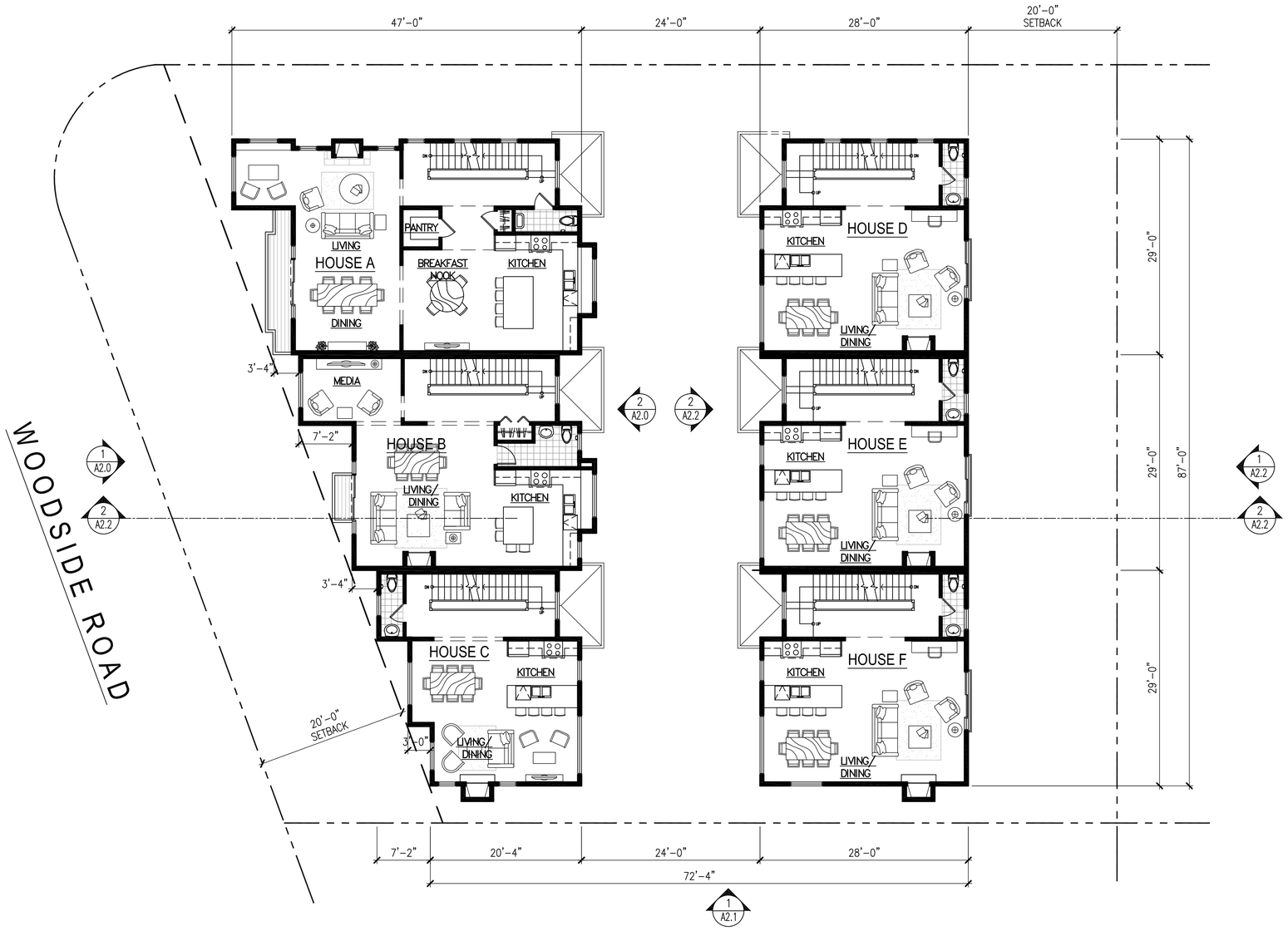
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A1.1

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RUTHERFORD AVENUE



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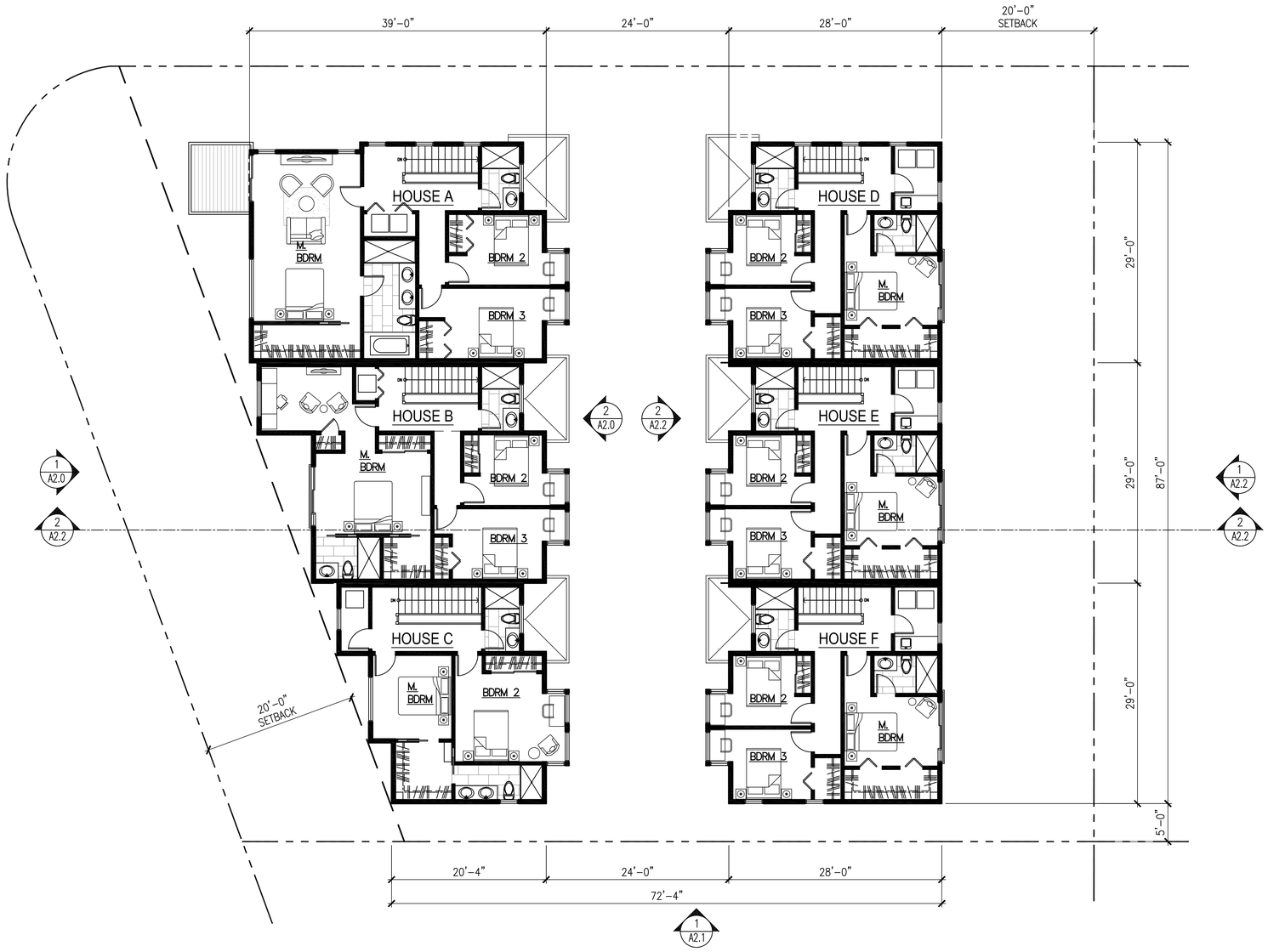
PROJECT NORTH

Planning Rev
DEC 29,2020
UPDATE FEB 11,2021

SECOND LEVEL PLAN

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

A 1.2



THIRD LEVEL PLAN

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

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A 1.3



EAST ELEVATION - COURTYARD



WEST ELEVATION - WOODSIDE ROAD

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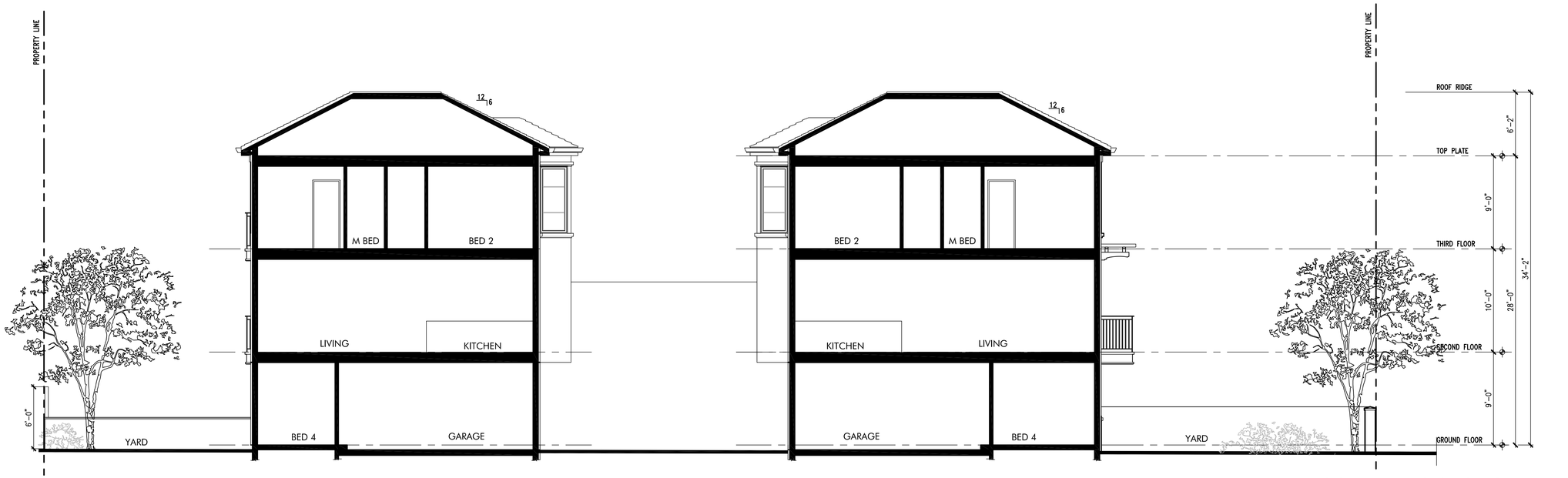
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EXTERIOR ELEVATION

SCALE: 3/16" = 1'-0"

Planning Rev
June 15,2020

A 2.0



SCHEMATIC SECTION AA

SCALE: 3/16" = 1'-0"



NORTH ELEVATION - RUTHERFORD AVENUE

EXTERIOR ELEVATION

SCALE: 3/16" = 1'-0"

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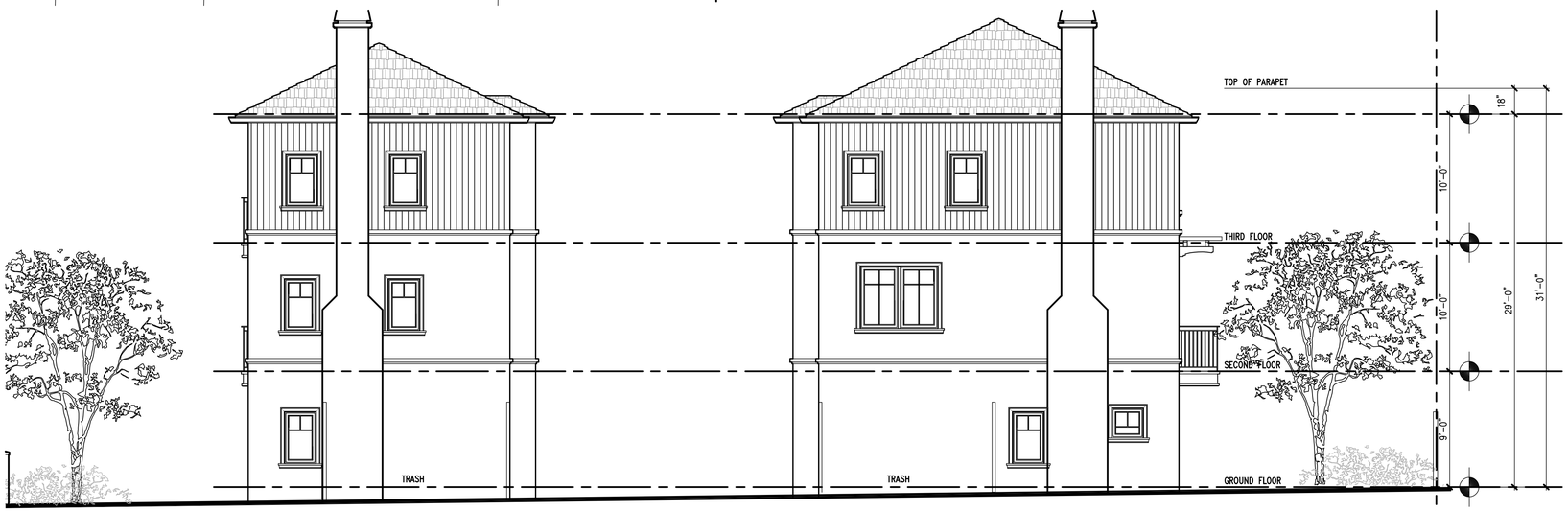
NOT FOR CONSTRUCTION

Planning Rev
DEC 29,2020

A 2.1



WEST ELEVATION - COURTYARD



SOUTH ELEVATION



EAST ELEVATION

EXTERIOR ELEVATION

SCALE: 3/16" = 1'-0"

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Planning Rev
DEC 29,2020

A 2.2

VESTING TENTATIVE MAP

SEVEN (7) LOT SUBDIVISION

SIX (6) RESIDENTIAL TOWNHOUSES AND ONE (1) COMMON LOT

1301 AND 1311 WOODSIDE ROAD, REDWOOD CITY, CA 94061
APN: 069-311-340 AND 069-311-250

TOW (2) EXIST. PARCELS TO BE MERGED VIA TRACT MAP

BEING A RE-SUBDIVISION OF PORTION OF LOT 1, AND ALL OF LOTS 2, 3 AND 4 IN BLOCK 1, (2 SFR PARCELS TO BE MERGED) AS SHOWN ON THAT CERTAIN MAP ENTITLED MAP OF THE SEQUOIA TRACT, SAN MATEO COUNTY, CALIFORNIA, FIELD WITH OFFICE OF RECORDER OF SAN MATEO COUNTY, CALIFORNIA, ON JUNE 26, 1911 IN BOOK OF 7 OF MAPS, PAGE(S) 44.

SAN MATEO COUNTY — CALIFORNIA
SCALE: 1"= 10' — FEBRUARY 2021

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LEGEND

- BOUNDARY LINE
- PROPOSED LOT LINE
- CALTRANS RIGHT-OF-WAY
- EASEMENT LINE
- EXISTING LOT LINES
- ORIGINAL LOT LINES
- LOT LINE TO BE REMOVED

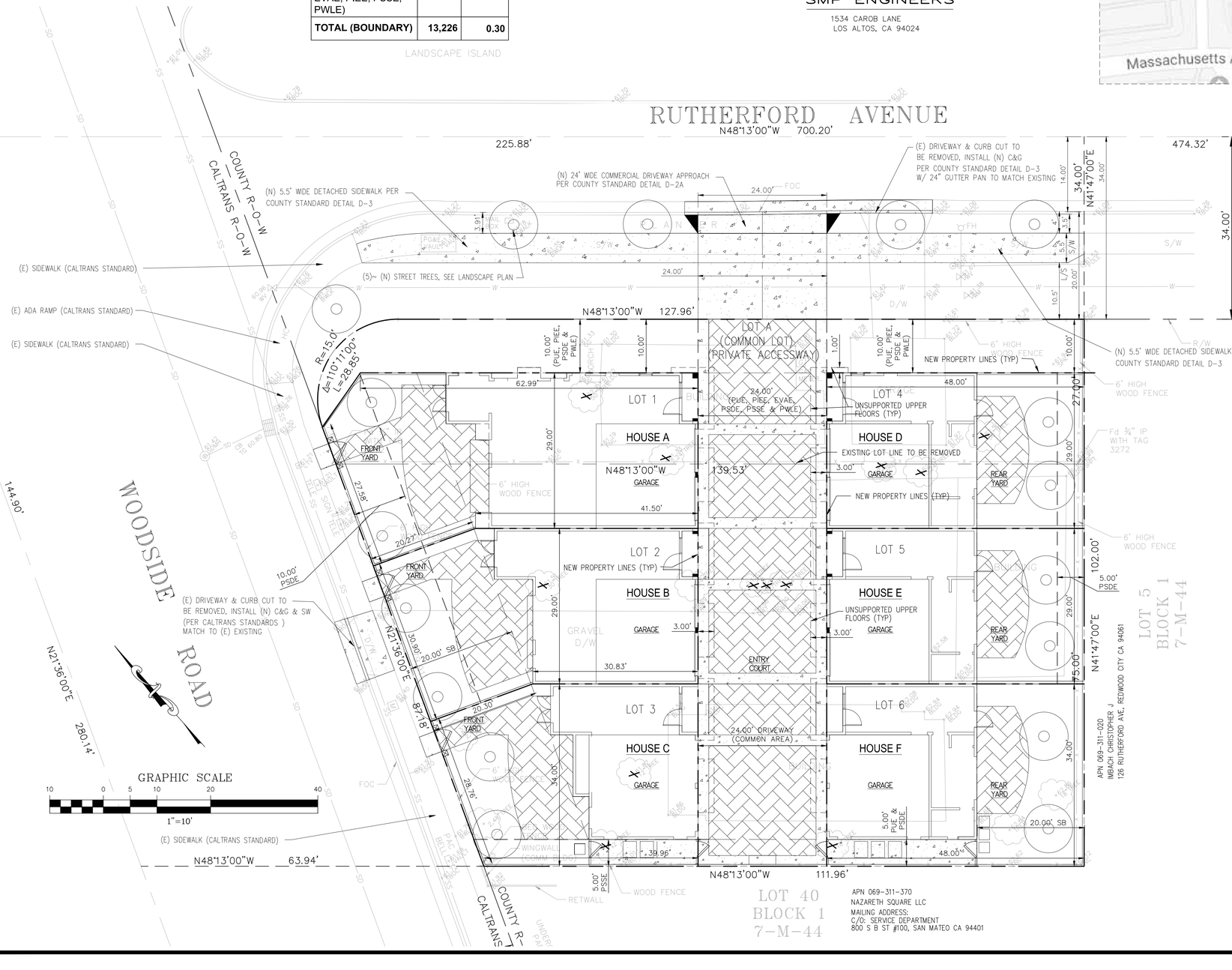
EASEMENT ABBREVIATIONS:

PUE	PUBLIC UTILITY EASEMENT
EVAE	EMERGENCY VEHICLE ACCESS EASEMENT
PIEE	PRIVATE INGRESS EGRESS EASEMENT
PSDE	PRIVATE STORM DRAIN EASEMENT
PSSE	PRIVATE SANITARY SEWER EASEMENT
PWLE	PRIVATE WATER LINE EASEMENT

LOT AREA TABLE		
DESCRIPTION	**AREA (SQFT.)**	**AREA (ACRES)**
LOT 1	2,006	0.05
LOT 2	1,676	0.04
LOT 3	1,495	0.03
LOT 4	1,392	0.03
LOT 5	1,392	0.03
LOT 6	1,632	0.04
LOT A (COMMON LOT) (PRIVATE ACCESSWAY) (PUE, EVAE, PIEE, PSSE, PWLE)	3,633	0.08
TOTAL (BOUNDARY)	**13,226**	**0.30**



LOCATION MAP
N.T.S.



BASIS OF ELEVATION

TOP OF THE RIM OF SANITARY SEWER MANHOLE AT INTERSECTION OF HILLSIDE DRIVE AND ALTA MESA ROAD. TBM ELEVATION: 113.85'

LEGAL DESCRIPTION

LOT 6 AND 7 IN BLOCK 11, AS DESIGNATED UPON THAT CERTAIN MAP ENTITLED, "WOODSIDE GLENS MAP NO. 2, SAN MATEO COUNTY, CALIFORNIA", FILED FOR RECORD IN THE OFFICE OF THE COUNTY RECORDER OF SAN MATEO, STATE OF CALIFORNIA, ON MAY 19, 1929 IN BOOK 17 OF MAPS, PAGES 36 AND 37.

BASIS OF BEARING

NORTHEASTERLY RIGHT OF WAY LINE OF HILLSIDE DRIVE N53°08'00"W AS SHOWN UPON CERTAIN SUBDIVISION MAP ENTITLED, "WOODSIDE GLENS MAP NO. 2", FILED FOR RECORD IN THE OFFICE OF THE COUNTY RECORDER OF SAN MATEO, STATE OF CALIFORNIA IN BOOK 17 IN MAPS PAGES 36 & 37 WAS TAKEN AS BASIS OF BEARING ON THIS MAP.

GENERAL NOTES

1. OWNERS/DEVELOPERS:
   Mounir Kardosh
   Mailing Address:
   Nazareth Enterprises, INC
   ICO: Mr. Mounir Kardosh
   800 S. B Street, Suite 100
   San Mateo, CA 94401
   Email: mounir@nazarethenterprises.com
2. CIVIL ENGINEER
   SAEID RAZAVI, RCE 44620
   EXPIRES: DECEMBER 31, 2020
   SMP ENGINEERS
   1534 CAROB LN.
   LOS ALTOS, CA 94024
   TEL: (650) 941-8055
   FAX: (650) 941-8755
3. EXISTING ZONING: R10006
4. EXISTING APN: 069-311-340 AND 069-311-250 (TO BE MERGED VIA TRACT MAP)
5. EXISTING USE: SINGLE FAMILY RESIDENTIAL
6. PROPOSED USE: SIX (6) RESIDENTIAL TOWNHOUSES AND A COMMON LOT.
7. FLOOD ZONE: ZONE X
8. EXISTING WELLS: NONE
9. STREETS: ALL PROPOSED STREET MODIFICATIONS WILL BE IMPROVED TO THE SATISFACTION OF THE DIRECTOR OF PUBLIC WORKS
10. EXISTING USE OF ADJACENT PROPERTIES: RESIDENTIAL & COMMERCIAL
11. WATER: SAN MATEO COUNTY
12. FIRE PROTECTION: CITY MATEO COUNTY
13. STORM AND SANITARY SEWER: SAN MATEO COUNTY
14. POWER AND GAS: PACIFIC GAS AND ELECTRIC
15. TELEPHONE: AT&T
16. STREET TREES: ANY NEW STREET TREES IN PUBLIC RIGHT-OF-WAY TO BE PLANTED IN ACCORDANCE WITH THE PUBLIC WORKS ORDINANCES.
17. STREET NAME: NO NEW STREET NAME PROPOSED.
18. IF REQUIRED NEW EASEMENTS FOR INGRESS AND EGRESS, PRIVATE UTILITIES, PRIVATE SANITARY SEWER, PRIVATE WATER AND EMERGENCY ACCESS SHALL BE DESIGNATED ON THE FINAL MAP.
19. CONTOUR ELEVATION: LOCAL DATUM AND MONUMENTS.
20. ALL DIMENSIONS ARE IN FEET AND DECIMALS THEREOF.
21. ALL EXISTING STRUCTURES ON THE SITE ARE TEMPORARY AND WILL REMOVED.
22. NO NEW PRIVATE STREET IS PROPOSED AT THIS TIME.

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FAX: (650) 941-8755

OWNERS/DEVELOPERS:
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Mailing Address:
Nazareth Enterprises, INC
ICO: Mr. Mounir Kardosh
800 S. B Street, Suite 100
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Email: mounir@nazarethenterprises.com

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VESTING TENTATIVE MAP
SEVEN (7) LOT SUBDIVISION
SIX (6) TOWNHOUSE AND A COMMON LOT
1301 AND 1311 WOODSIDE ROAD, REDWOOD CITY, CA
APN: 069-311-340 AND 069-311-250

VESTING TENTATIVE MAP

Revisions:

REGISTERED PROFESSIONAL ENGINEER SAEID RAZAVI No. C52724 CIVIL STATE OF CALIFORNIA

Date: 2/22/2021
Scale: 1" = 10'
Prepared by: V.G.
Checked by: S.R.
Job #: 219018

Sheet: 1 of 1

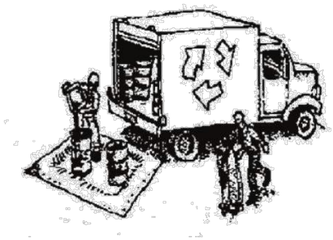
TM-1

SAN MATEO COUNTYWIDE
Water Pollution Prevention Program
Clean Water. Healthy Community.

Construction Best Management Practices (BMPs)

Construction projects are required to implement the stormwater best management practices (BMP) on this page, as they apply to your project, all year long.

Materials & Waste Management



Non-Hazardous Materials

- ❑ Berm and cover stockpiles of sand, dirt or other construction material with tarps when rain is forecast or if not actively being used within 14 days.
- ❑ Use (but don't overuse) reclaimed water for dust control.

Hazardous Materials

- ❑ Label all hazardous materials and hazardous wastes (such as pesticides, paints, thinners, solvents, fuel, oil, and antifreeze) in accordance with city, county, state and federal regulations.
- ❑ Store hazardous materials and wastes in water tight containers, store in appropriate secondary containment, and cover them at the end of every work day or during wet weather or when rain is forecast.
- ❑ Follow manufacturer's application instructions for hazardous materials and be careful not to use more than necessary. Do not apply chemicals outdoors when rain is forecast within 24 hours.
- ❑ Arrange for appropriate disposal of all hazardous wastes.

Waste Management

- ❑ Cover waste disposal containers securely with tarps at the end of every work day and during wet weather.
- ❑ Check waste disposal containers frequently for leaks and to make sure they are not overfilled. Never hose down a dumpster on the construction site.
- ❑ Clean or replace portable toilets, and inspect them frequently for leaks and spills.
- ❑ Dispose of all wastes and debris properly. Recycle materials and wastes that can be recycled (such as asphalt, concrete, aggregate base materials, wood, gyp board, pipe, etc.)
- ❑ Dispose of liquid residues from paints, thinners, solvents, glues, and cleaning fluids as hazardous waste.

Construction Entrances and Perimeter

- ❑ Establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from site and tracking off site.
- ❑ Sweep or vacuum any street tracking immediately and secure sediment source to prevent further tracking. Never hose down streets to clean up tracking.

Equipment Management & Spill Control



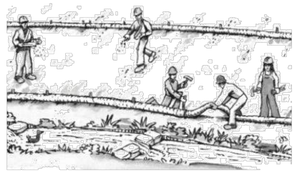
Maintenance and Parking

- ❑ Designate an area, fitted with appropriate BMPs, for vehicle and equipment parking and storage.
- ❑ Perform major maintenance, repair jobs, and vehicle and equipment washing off site.
- ❑ If refueling or vehicle maintenance must be done onsite, work in a bermed area away from storm drains and over a drip pan or drop cloths big enough to collect fluids. Recycle or dispose of fluids as hazardous waste.
- ❑ If vehicle or equipment cleaning must be done onsite, clean with water only in a bermed area that will not allow rinse water to run into gutters, streets, storm drains, or surface waters.
- ❑ Do not clean vehicle or equipment onsite using soaps, solvents, degreasers, or steam cleaning equipment.

Spill Prevention and Control

- ❑ Keep spill cleanup materials (e.g., rags, absorbents and cat litter) available at the construction site at all times.
- ❑ Inspect vehicles and equipment frequently for and repair leaks promptly. Use drip pans to catch leaks until repairs are made.
- ❑ Clean up spills or leaks immediately and dispose of cleanup materials properly.
- ❑ Do not hose down surfaces where fluids have spilled. Use dry cleanup methods (absorbent materials, cat litter, and/or rags).
- ❑ Sweep up spilled dry materials immediately. Do not try to wash them away with water, or bury them.
- ❑ Clean up spills on dirt areas by digging up and properly disposing of contaminated soil.
- ❑ Report significant spills immediately. You are required by law to report all significant releases of hazardous materials, including oil. To report a spill: 1) Dial 911 or your local emergency response number, 2) Call the Governor's Office of Emergency Services Warning Center, (800) 852-7550 (24 hours).

Earthmoving



- ❑ Schedule grading and excavation work during dry weather.
- ❑ Stabilize all denuded areas, install and maintain temporary erosion controls (such as erosion control fabric or bonded fiber matrix) until vegetation is established.
- ❑ Remove existing vegetation only when absolutely necessary, and seed or plant vegetation for erosion control on slopes or where construction is not immediately planned.
- ❑ Prevent sediment from migrating offsite and protect storm drain inlets, gutters, ditches, and drainage courses by installing and maintaining appropriate BMPs, such as fiber rolls, silt fences, sediment basins, gravel bags, berms, etc.
- ❑ Keep excavated soil on site and transfer it to dump trucks on site, not in the streets.

Contaminated Soils

- ❑ If any of the following conditions are observed, test for contamination and contact the Regional Water Quality Control Board:
  - Unusual soil conditions, discoloration, or odor.
  - Abandoned underground tanks.
  - Abandoned wells
  - Buried barrels, debris, or trash.

Paving/Asphalt Work



- ❑ Avoid paving and seal coating in wet weather or when rain is forecast, to prevent materials that have not cured from contacting stormwater runoff.
- ❑ Cover storm drain inlets and manholes when applying seal coat, tack coat, slurry seal, fog seal, etc.
- ❑ Collect and recycle or appropriately dispose of excess abrasive gravel or sand. Do NOT sweep or wash it into gutters.
- ❑ Do not use water to wash down fresh asphalt concrete pavement.

Sawcutting & Asphalt/Concrete Removal

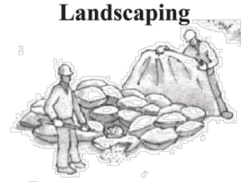
- ❑ Protect nearby storm drain inlets when saw cutting. Use filter fabric, catch basin inlet filters, or gravel bags to keep slurry out of the storm drain system.
- ❑ Shovel, abosorb, or vacuum saw-cut slurry and dispose of all waste as soon as you are finished in one location or at the end of each work day (whichever is sooner!).
- ❑ If sawcut slurry enters a catch basin, clean it up immediately.

Concrete, Grout & Mortar Application



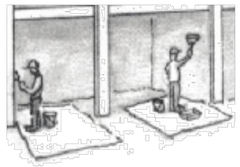
- ❑ Store concrete, grout, and mortar away from storm drains or waterways, and on pallets under cover to protect them from rain, runoff, and wind.
- ❑ Wash out concrete equipment/trucks offsite or in a designated washout area, where the water will flow into a temporary waste pit, and in a manner that will prevent leaching into the underlying soil or onto surrounding areas. Let concrete harden and dispose of as garbage.
- ❑ When washing exposed aggregate, prevent washwater from entering storm drains. Block any inlets and vacuum gutters, hose washwater onto dirt areas, or drain onto a bermed surface to be pumped and disposed of properly.

Landscaping



- ❑ Protect stockpiled landscaping materials from wind and rain by storing them under tarps all year-round.
- ❑ Stack bagged material on pallets and under cover.
- ❑ Discontinue application of any erodible landscape material within 2 days before a forecast rain event or during wet weather.

Painting & Paint Removal



Painting Cleanup and Removal

- ❑ Never clean brushes or rinse paint containers into a street, gutter, storm drain, or stream.
- ❑ For water-based paints, paint out brushes to the extent possible, and rinse into a drain that goes to the sanitary sewer. Never pour paint down a storm drain.
- ❑ For oil-based paints, paint out brushes to the extent possible and clean with thinner or solvent in a proper container. Filter and reuse thinners and solvents. Dispose of excess liquids as hazardous waste.
- ❑ Paint chips and dust from non-hazardous dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash.
- ❑ Chemical paint stripping residue and chips and dust from marine paints or paints containing lead, mercury, or tributyltin must be disposed of as hazardous waste. Lead based paint removal requires a state-certified contractor.

Dewatering



- ❑ Discharges of groundwater or captured runoff from dewatering operations must be properly managed and disposed. When possible send dewatering discharge to landscaped area or sanitary sewer. If discharging to the sanitary sewer call your local wastewater treatment plant.
- ❑ Divert run-on water from offsite away from all disturbed areas.
- ❑ When dewatering, notify and obtain approval from the local municipality before discharging water to a street gutter or storm drain. Filtration or diversion through a basin, tank, or sediment trap may be required.
- ❑ In areas of known or suspected contamination, call your local agency to determine whether the ground water must be tested. Pumped groundwater may need to be collected and hauled off-site for treatment and proper disposal.

Storm drain polluters may be liable for fines of up to $10,000 per day!

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FAX: (650) 941-8755

OWNER:

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PRELIMINARY GRADING AND DRAINAGE PLANS
SEVEN (7) LOT SUBDIVISION
SIX (6) TOWNHOUSE AND A COMMON LOT
1301 AND 1311 WOODSIDE ROAD, REDWOOD CITY, CA
APN: 069-311-250 AND 069-311-340

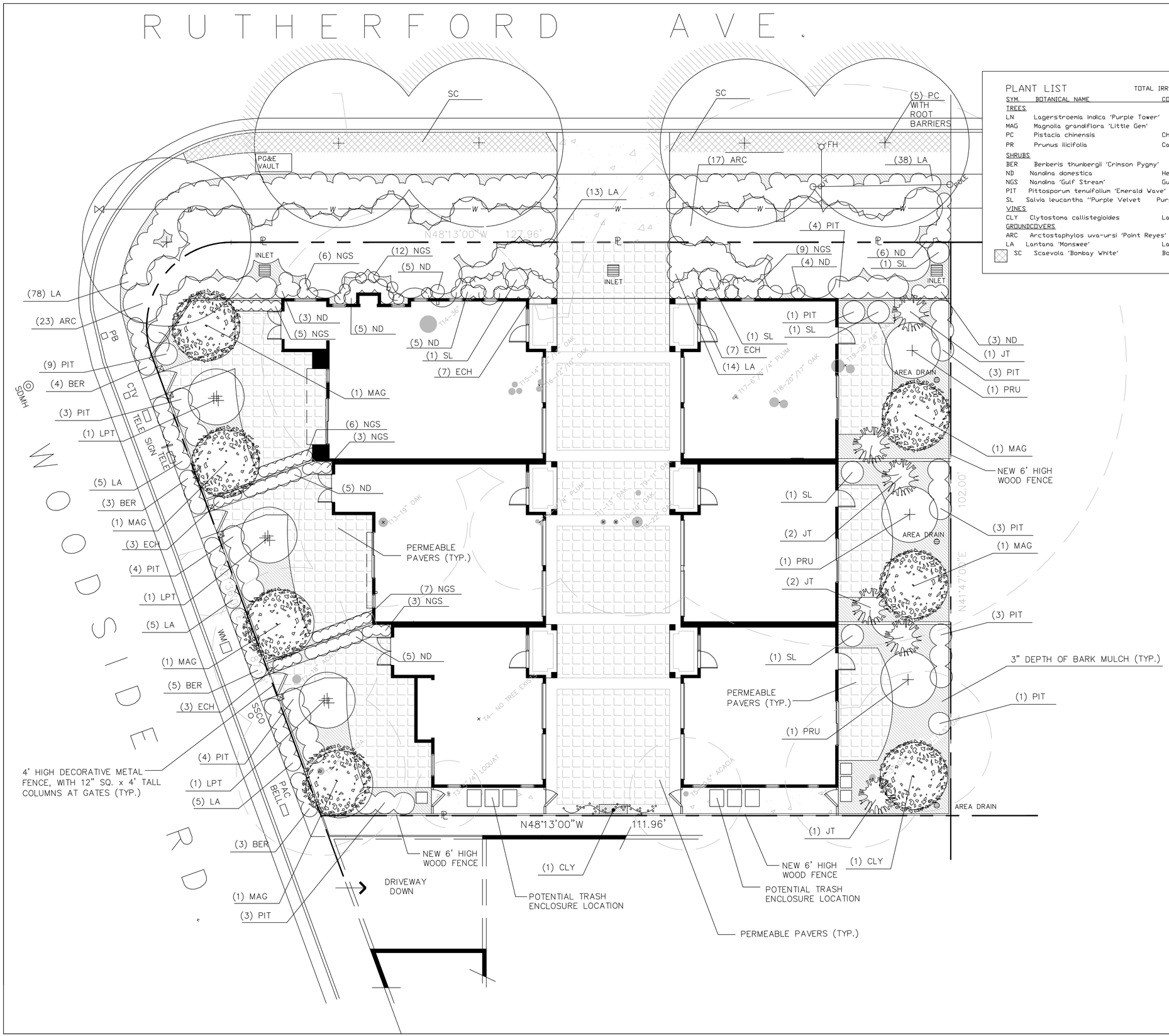
BEST MANAGEMENT PRACTICES

Revisions:

REGISTERED PROFESSIONAL ENGINEER
SAEED RAZAVI
No. C52724
CIVIL
STATE OF CALIFORNIA

Date: 12/3/2020
Scale: NTS
Prepared by: V.G.
Checked by: S.R.
Job #: 219018

Sheet: C-9
OF 11 SHEETS



PLANT LIST

TOTAL IRRIGATED LANDSCAPE AREA = APPROX. 22,580 SF

SYM.	BOTANICAL NAME	COMMON NAME	WUCOLS	SIZE	QTY	HEIGHT x SPREAD
TREES						
LN	Lagerstroemia indica 'Purple Tower'	Purple Tower Crape Myrtle	L	24" box multi	3	
MAG	Magnolia grandiflora 'Little Gem'	Little Gem Magnolia	M	24" box	7	
PC	Pistacia chinensis	Chinese Pistache	L	24" box	5	
PR	Prunus ilicifolia	Catalina Cherry	L	15 gal.	3	
SHRUBS						
BER	Berberis thunbergii 'Crimson Pygmy'	Crimson Pygmy Barberry	M	5 gal.	15	
ND	Nandina domestica	Heavenly Bamboo	L	5 gal.	38	
NGS	Nandina 'Gulf Stream'	Gulf Stream Heavenly Bamboo	(not rated)	2 gal.	51	
PIT	Pittosporum tenuifolium 'Emerald Wave'	Emerald Wave Kohuhu	M	5 gal.	38	
SL	Salvia leucantha "Purple Velvet	Purple Velvet Mexican Bush Sage	L	5 gal.	6	
VINES						
CLY	Clytostoma callistegioides	Lavender Trumpet Vine	M	5 gal.	1	
GROUNDCOVERS						
ARC	Arctostaphylos uva-ursi 'Point Reyes'	Point Reyes Manzanita	L	5 gal	40	
LA	Lantana 'Monswee'	Lavender Swirl Lantana	L	1 gal.	158	
SC	Scaevola 'Bombay White'	Bombay White Fan Flower	L	4" pots @ 12" o.c. to cover		

QUANTITIES OF SHRUBS, ANNUALS & GROUNDCOVERS SHOWN IN PLANT LIST ARE FOR CONVENIENCE ONLY. IN CASE OF DISCREPANCIES, QUANTITIES SHOWN ON THE PLANS TAKE PRECEDENCE OVER NUMBERS SHOWN IN PLANT LIST.

LICENSED LANDSCAPE ARCHITECT
CHRISTOPHER M. TIGH, MLA 2427
Signature 1/31/20
Renewal Date 9/23/19
Date
STATE OF CALIFORNIA

PLANTING PLAN

5′ 15′
0′ 10′ 20′
SCALE: 1" = 8'-0"
WHEN PRINTED ON 24" x 36"

NORTH

Christopher Tigh, Landscape Architect, expressly reserves common law copyright and other property rights in these plans. These plans are not to be reproduced, changed or copied in any form or manner whatsoever, nor are they to be assigned to any third party without permission and consent from the Landscape Architect. In the event of unauthorized re-use of these plans by a third party, the Landscape Architect shall be held harmless.

REVISIONS	BY

Christopher Tigh
Landscape Architect
CA. Lic. No. 2627
516 S. Shoreline Blvd., Mountain View, CA 94041
Tel. (650) 254-1415 Fax. (650) 254-1414

1301 - 1311 WOODSIDE RD., REDWOOD CITY, CA 94061
PLANTING PLAN

PLANNING REVIEW

DATE: 9/23/19

SHEET
L -1

VESTING TENTATIVE MAP

SEVEN (7) LOT SUBDIVISION

1301 AND 1311 WOODSIDE ROAD, REDWOOD CITY, CA 94061
APN: 069-311-340 AND 069-311-250

TOW (2) EXIST. PARCELS TO BE MERGED VIA TRACT MAP

BEING A RE-SUBDIVISION OF PORTION OF LOT 1, AND ALL OF LOTS 2, 3 AND 4 IN BLOCK 1, (2 SFR PARCELS TO BE MERGED) AS SHOWN ON THAT CERTAIN MAP ENTITLED MAP OF THE SEQUOIA TRACT, SAN MATEO COUNTY, CALIFORNIA, FIELD WITH OFFICE OF RECORDER OF SAN MATEO COUNTY, CALIFORNIA, ON JUNE 26, 1911 IN BOOK OF 7 OF MAPS, PAGE(S) 44.

SAN MATEO COUNTY — CALIFORNIA
SCALE: 1"= 10' — DECEMBER 2020

SMP ENGINEERS
1534 CAROB LANE
LOS ALTOS, CA 94024

LEGEND

- BOUNDARY LINE
- PROPOSED LOT LINE
- CALTRANS RIGHT-OF-WAY
- EASEMENT LINE
- EXISTING LOT LINES
- ORIGINAL LOT LINES
- LOT LINE TO BE REMOVED

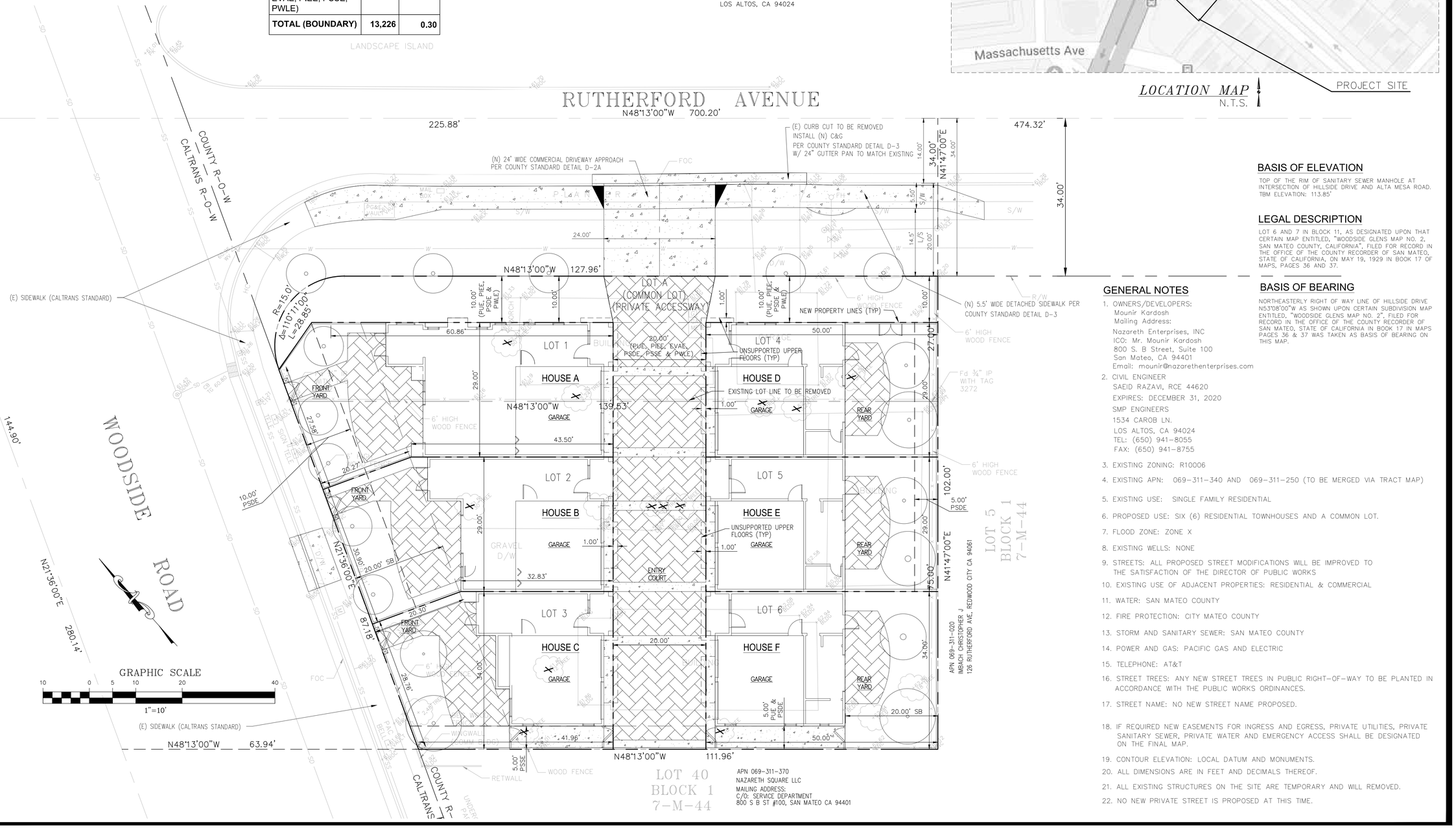
EASEMENT ABBREVIATIONS:

PUE	PUBLIC UTILITY EASEMENT
EVAE	EMERGENCY VEHICLE ACCESS EASEMENT
PIEE	PRIVATE INGRESS EGRESS EASEMENT
PSDE	PRIVATE STORM DRAIN EASEMENT
PSSE	PRIVATE SANITARY SEWER EASEMENT
PWLE	PRIVATE WATER LINE EASEMENT

LOT AREA TABLE		
DESCRIPTION	**AREA (SQFT.)**	**AREA (ACRES)**
LOT 1	2,064	0.05
LOT 2	1,734	0.04
LOT 3	1,563	0.04
LOT 4	1,450	0.03
LOT 5	1,450	0.03
LOT 6	1,700	0.04
LOT A (COMMON LOT) (PRIVATE ACCESSWAY) (PUE, EVAE, PIEE, PSSE, PWLE)	3,265	0.08
TOTAL (BOUNDARY)	**13,226**	**0.30**



LOCATION MAP
N.T.S.



BASIS OF ELEVATION

TOP OF THE RIM OF SANITARY SEWER MANHOLE AT INTERSECTION OF HILLSIDE DRIVE AND ALTA MESA ROAD. TBM ELEVATION: 113.85'

LEGAL DESCRIPTION

LOT 6 AND 7 IN BLOCK 11, AS DESIGNATED UPON THAT CERTAIN MAP ENTITLED, "WOODSIDE GLENS MAP NO. 2, SAN MATEO COUNTY, CALIFORNIA", FILED FOR RECORD IN THE OFFICE OF THE COUNTY RECORDER OF SAN MATEO, STATE OF CALIFORNIA, ON MAY 19, 1929 IN BOOK 17 OF MAPS, PAGES 36 AND 37.

BASIS OF BEARING

NORTHEASTERLY RIGHT OF WAY LINE OF HILLSIDE DRIVE N53°08'00"W AS SHOWN UPON CERTAIN SUBDIVISION MAP ENTITLED, "WOODSIDE GLENS MAP NO. 2", FILED FOR RECORD IN THE OFFICE OF THE COUNTY RECORDER OF SAN MATEO, STATE OF CALIFORNIA IN BOOK 17 IN MAPS PAGES 36 & 37 WAS TAKEN AS BASIS OF BEARING ON THIS MAP.

GENERAL NOTES

1. OWNERS/DEVELOPERS:
   Mounir Kardosh
   Mailing Address:
   Nazareth Enterprises, INC
   ICO: Mr. Mounir Kardosh
   800 S. B Street, Suite 100
   San Mateo, CA 94401
   Email: mounir@nazarethenterprises.com
2. CIVIL ENGINEER
   SAEID RAZAVI, RCE 44620
   EXPIRES: DECEMBER 31, 2020
   SMP ENGINEERS
   1534 CAROB LN.
   LOS ALTOS, CA 94024
   TEL: (650) 941-8055
   FAX: (650) 941-8755
3. EXISTING ZONING: R10006
4. EXISTING APN: 069-311-340 AND 069-311-250 (TO BE MERGED VIA TRACT MAP)
5. EXISTING USE: SINGLE FAMILY RESIDENTIAL
6. PROPOSED USE: SIX (6) RESIDENTIAL TOWNHOUSES AND A COMMON LOT.
7. FLOOD ZONE: ZONE X
8. EXISTING WELLS: NONE
9. STREETS: ALL PROPOSED STREET MODIFICATIONS WILL BE IMPROVED TO THE SATISFACTION OF THE DIRECTOR OF PUBLIC WORKS
10. EXISTING USE OF ADJACENT PROPERTIES: RESIDENTIAL & COMMERCIAL
11. WATER: SAN MATEO COUNTY
12. FIRE PROTECTION: CITY MATEO COUNTY
13. STORM AND SANITARY SEWER: SAN MATEO COUNTY
14. POWER AND GAS: PACIFIC GAS AND ELECTRIC
15. TELEPHONE: AT&T
16. STREET TREES: ANY NEW STREET TREES IN PUBLIC RIGHT-OF-WAY TO BE PLANTED IN ACCORDANCE WITH THE PUBLIC WORKS ORDINANCES.
17. STREET NAME: NO NEW STREET NAME PROPOSED.
18. IF REQUIRED NEW EASEMENTS FOR INGRESS AND EGRESS, PRIVATE UTILITIES, PRIVATE SANITARY SEWER, PRIVATE WATER AND EMERGENCY ACCESS SHALL BE DESIGNATED ON THE FINAL MAP.
19. CONTOUR ELEVATION: LOCAL DATUM AND MONUMENTS.
20. ALL DIMENSIONS ARE IN FEET AND DECIMALS THEREOF.
21. ALL EXISTING STRUCTURES ON THE SITE ARE TEMPORARY AND WILL REMOVED.
22. NO NEW PRIVATE STREET IS PROPOSED AT THIS TIME.

SMP
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CIVIL ENGINEERS

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LOS ALTOS, CA 94024
TEL: (650) 941-8055
FAX: (650) 941-8755

OWNERS/DEVELOPERS:
Mounir Kardosh
Mailing Address:
Nazareth Enterprises, INC
ICO: Mr. Mounir Kardosh
800 S. B Street, Suite 100
San Mateo, CA 94401
Email: mounir
@nazarethenterprises.com

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VESTING TENTATIVE MAP
SEVEN (7) LOT SUBDIVISION
SIX (6) TOWNHOUSE AND A COMMON LOT
1301 AND 1311 WOODSIDE ROAD, REDWOOD CITY, CA
APN: 069-311-340 AND 069-311-250

VESTING TENTATIVE MAP

Revisions:

REGISTERED PROFESSIONAL ENGINEER
SAEID RAZAVI
No. C52724
CIVIL
STATE OF CALIFORNIA

Date: 12/3/2020
Scale: 1" = 10'
Prepared by: V.G.
Checked by: S.R.
Job #: 219018

Sheet: 1 of 1

TM-1

PRELIMINARY GRADING AND DRAINAGE PLANS
SEVEN (7) LOT SUBDIVISION
SIX (6) TOWNHOUSE AND A COMMON LOT
1301 AND 1311 WOODSIDE ROAD, REDWOOD CITY, CA
APN: 069-311-340 AND 069-311-250

ABBREVIATIONS

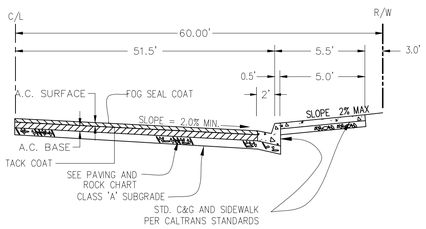
	DESCRIPTION		DESCRIPTION
AB	AGGREGATE BASE	LND'G	LANDING
AC	ASPHALT CONCRETE	LP	LOW POINT
AD	AREA DRAIN	L/S	LANDSCAPE
BC	BACK OF CURB	MON	MONUMENT
BFL	BACKFLOW PREVENTOR	(N)	NEW
BW	BOTTOM OF WALL	OLR	OVER LAND RELEASE
C&G	CURB AND GUTTER	PB	PULL BOX
℄,C/L	CENTERLINE	PGEV	PG&E VAULT
CLSW	CENTERLINE SWALE	℗,P/L	PROPERTY LINE
CO	CLEANOUT	PP	POWER POLE
CP	CONTROL POINT	PPP	PLASTIC PERFORATED PIPE
DI	DROP INLET	PSE	PUBLIC SERVICE EASEMENT
D-S	DOWN-SPOUT	PVC	POLYVINYL CHLORIDE
DTL	DETAIL	R/W	RIGHT OF WAY
DWY	DRIVEWAY	RCP	REINFORCED CONCRETE PIPE
ELCT	ELECTRIC	SB	SETBACK
EP	EDGE OF PAVEMENT ELEVATION	SD	STORM DRAIN
EUC	EUCALYPTUS TREE	SDMH	STORM DRAIN MANHOLE
(E),EX	EXISTING	STD	STANDARD
FF	FINISH FLOOR	SS	SANITARY SEWER
FG	FINISH GRADE	SSMH	SANITARY SEWER MANHOLE
FH	FIRE HYDRANT	SW	SIDEWALK
FL	FLOWLINE	TC	TOP OF CURB
FNC	FENCE	TF	TOP OF FOUNDATION
FOC	FACE OF CURB	TG	TOP OF GRATE
GB	GRADE BREAK	TOS	TOP OF SLAB
GUY	GUY WIRE	TP	TOP OF PAVEMENT
HP	HIGH POINT	TW	TOP OF WALL
DIP	DUCTILE IRON PIPE	(TYP)	TYPICAL
INV	INVERT	VCP	VITRIFIED CLAY PIPE
JP	JOINT POLE	WL	WHITE LINE STRIPE
JB	JUNCTION BOX (UTILITY)	WLK	WALKWAY
LIP	LIP OF GUTTER	WM	WATER METER
		WV	WATER VALVE

EASEMENT ABBREVIATIONS:

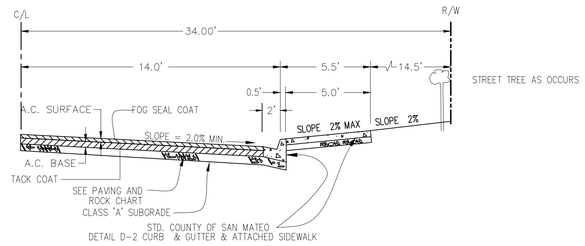
PUE	PUBLIC UTILITY EASEMENT
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PIEE	PRIVATE INGRESS EGRESS EASEMENT
PSDE	PRIVATE STORM DRAIN EASEMENT
PSSE	PRIVATE SANITARY SEWER EASEMENT
PWLE	PRIVATE WATER LINE EASEMENT

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		STREET CENTER LINE
		DISTINCTIVE BORDER LINE
		EASEMENT LINE
		LOT LINE
		BUILDING FOOTPRINT
F	F	FILL AREA LIMIT
C	C	CUT AREA LIMIT
102	102	CONTOUR
W	W	WATER LINE
SD	SD	STORM DRAIN PIPE (SOLID)
SS	SS	SANITARY SEWER PIPE
SUD	SUD	SUBDRAIN PIPE (PERFORATED)
OH e,T,TV	OH e,T,TV	OVERHEAD UTILITIES WITH POLE
G	G	GAS LINE
E	E	ELECTRIC LINE (UNDERGROUND)
JT	JT	JOINT TRENCH (UNDERGROUND)
SLV	SLV	STREET LIGHT VAULT
SSCO	SSCO	SANITARY SEWER CLEANOUT
SSMH	SSMH	SANITARY SEWER MANHOLE
SDMH	SDMH	STORM DRAIN MANHOLE
		SURVEY CITY MONUMENT
		ELECTROLIER
WM	WM	WATER METER
		TREE WITH TRUNK
		STREET TREE
x x	x x	6' WOODEN FENCE
x102.23	102.23	SPOT ELEVATION
		TREE PROTECTION FENCE
		EARTHSWALE
		CONCRETE SWALE
		INLET/ JUNCTION BOX
		AREA DRAIN
		OVERLAND RELEASE PATH
		DRAINAGE PATH
		(E) TREE TO BE REMOVE
		DOWN-SPOUT



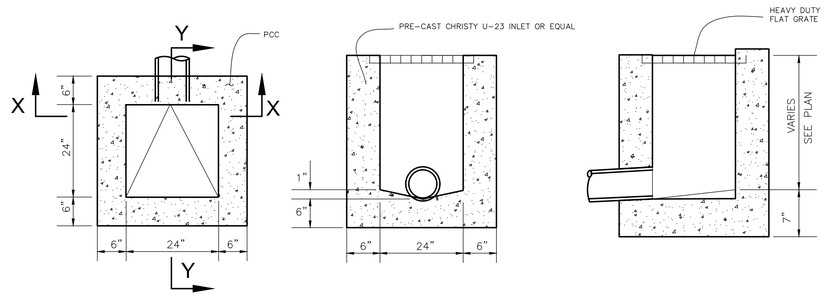
TYPICAL WOODSIDE RD. HALF STREET SECTION
N.T.S.



TYPICAL RUTHERFORD AVE. HALF STREET SECTION
N.T.S.

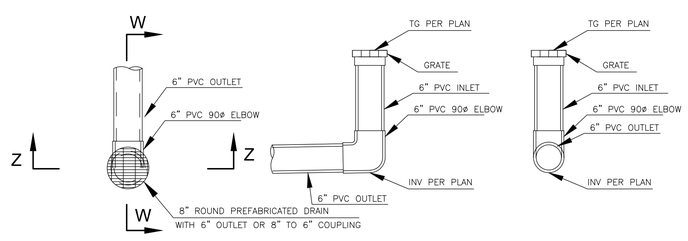
STORM DRAINS LABEL NOTE:

ALL INLETS AND AREA DRAINS SHALL BE LABELED IN STENCIL "NO DUMPING, FOLLOWS TO BAY", OR EQUAL, IN ACCORDANCE WITH COUNTY OF SAN MATEO SPECIFICATION.



PLAN | SECTION X-X | SECTION Y-Y

STORM DRAIN INLET
NTS



PLAN | SECTION W-W | SECTION Z-Z

STORM DRAIN AREA DRAIN
NTS



LOCATION MAP
N.T.S.

SHEET INDEX:

C-1 COVER SHEET, NOTES
C-2.1 PRELIMINARY GRADING AND DRAINAGE PLAN
C-2.2 DETAILS, DRIVEWAY PROFILE
C-2.3 STANDARD DETAILS
C-3 PRELIMINARY UTILITY PLAN
C-4 STORMWATER MANAGEMENT PLAN
C-5 EROSION CONTROL PLAN
C-6 EROSION CONTROL STANDARD DETAILS
C-7 EROSION CONTROL STANDARD DETAILS
C-8 EROSION CONTROL STANDARD DETAILS
C-9 BEST MANAGEMENT PRACTICES

GEOTECHNICAL ENGINEER OF RECORD

THIS PLAN HAS BEEN REVIEWED AND FOUND TO BE IN GENERAL CONFORMANCE WITH THE INTENT AND PURPOSE OF THE GEOTECHNICAL REPORT

PREPARED BY _____

DATE OF REPORT _____ FILE NO. _____

BY G.E. # _____ DATE _____

BASIS OF ELEVATION

TOP OF THE RIM OF SANITARY SEWER MANHOLE AT INTERSECTION OF HILLSIDE DRIVE AND ALTA MESA ROAD. TBM ELEVATION: 113.85'

LEGAL DESCRIPTION

LOT 6 AND 7 IN BLOCK 11, AS DESIGNATED UPON THAT CERTAIN MAP ENTITLED, "WOODSIDE GLENS MAP NO. 2, SAN MATEO COUNTY, CALIFORNIA", FILED FOR RECORD IN THE OFFICE OF THE COUNTY RECORDER OF SAN MATEO, STATE OF CALIFORNIA, ON MAY 19, 1929 IN BOOK 17 OF MAPS, PAGES 36 AND 37.

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EARTHWORK TABLE

	FILL (CY)	CUT (CY)	IMPORT (CY)	EXPORT (CY)
BUILDING PADS	0	160		
DRIVEWAY	40	0		
SITE	20	60		
TOTAL	60	220	0	160

NOTE:

1. EARTHWORK QUANTITIES ON THIS TABLE ARE FOR INFORMATION ONLY. CONTRACTORS ARE TO PERFORM THEIR OWN QUANTITY TAKE OFFS.

SMP
ENGINEERS
CIVIL ENGINEERS
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LOS ALTOS, CA 94024
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OWNER:

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PRELIMINARY GRADING AND DRAINAGE PLANS
SEVEN (7) LOT SUBDIVISION
SIX (6) TOWNHOUSE AND A COMMON LOT
1301 AND 1311 WOODSIDE ROAD, REDWOOD CITY, CA
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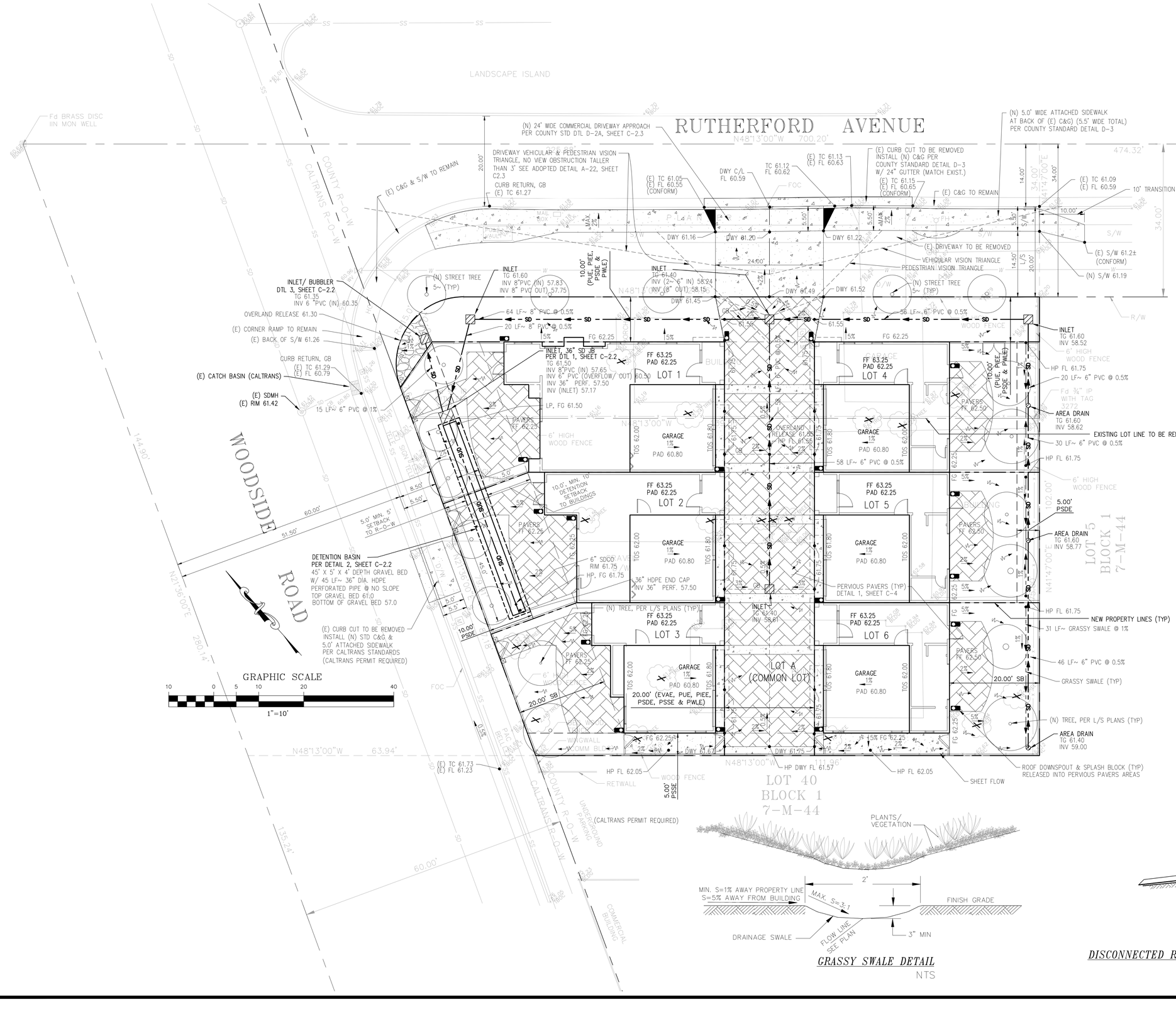
COVER SHEET

Revisions:

REGISTERED PROFESSIONAL ENGINEER
SAEID RAZAVI
No. C52724
CIVIL
STATE OF CALIFORNIA

Date: 12/3/2020
Scale: NTS
Prepared by: V.G.
Checked by: S.R.
Job #: 219018

Sheet: C-1
OF 11 SHEETS



PLANTS/ VEGETATION
2'
MIN. S=1% AWAY PROPERTY LINE
S=5% AWAY FROM BUILDING
MAX. S=3:1
FINISH GRADE
DRAINAGE SWALE
FLOW LINE SEE PLAN
3" MIN

GRASSY SWALE DETAIL
NTS

ROOF DOWNSPOUT
FOUNDATION
PRE-CAST SPLASH BLOCK MIN. 24" LONG
COMPACTED AND SCARIFIED NATIVE OR IMPORTED FILL

DISCONNECTED ROOF DOWN-SPOUT DETAIL
NTS

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PRELIMINARY GRADING AND DRAINAGE PLANS
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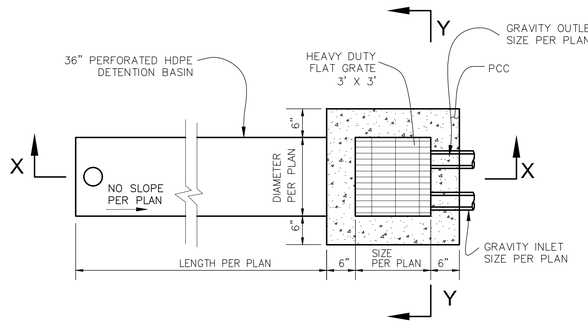
GRADING AND DRAINAGE PLAN

Revisions:

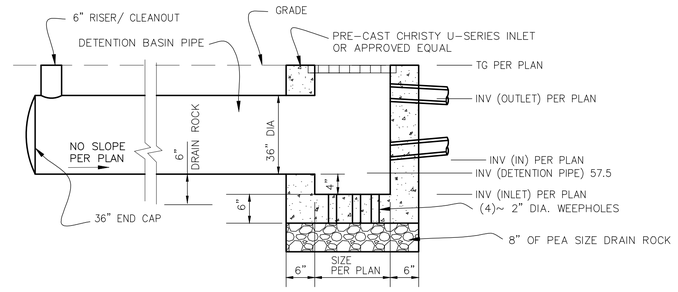
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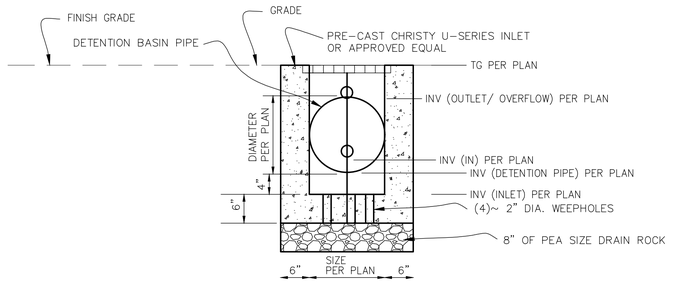
Sheet: C-2.1
OF 11 SHEETS



PLAN

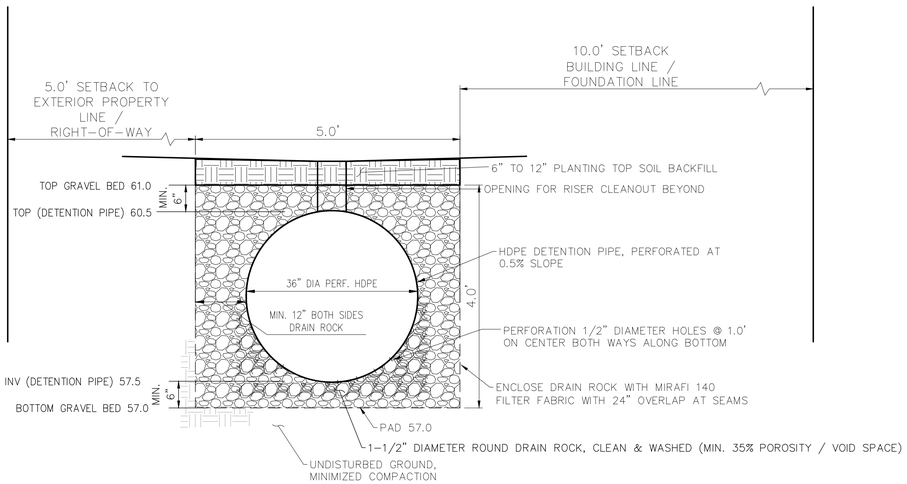


SECTION X-X



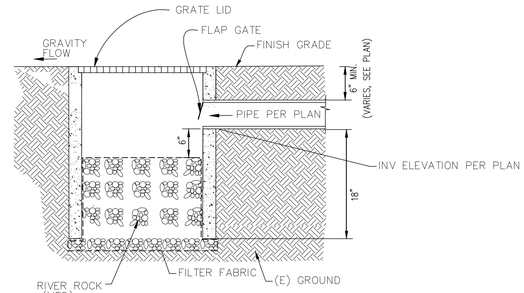
DETAIL 1, SDJB & DETENTION PIPE CONNECTION

NTS



DETAIL 2, STORM DRAIN DETENTION PIPE AND BASIN

ELEVATION VIEW NTS

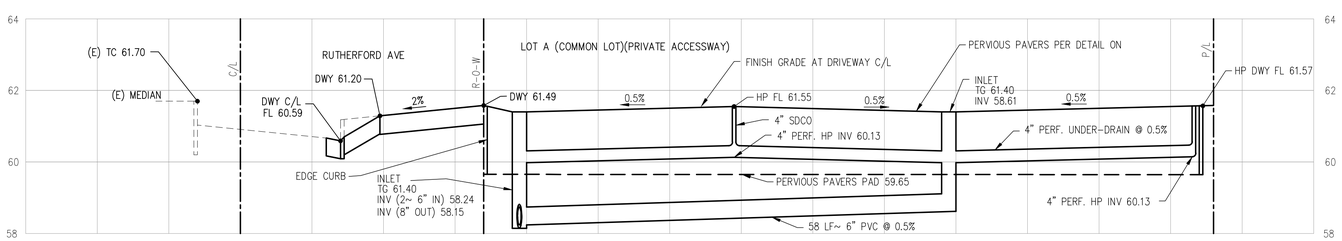


NOTES:

1. 1. RIGID PLASTIC, A.C., C.I., OR STEEL PIPE ALLOWED TO BOX FROM PUMP.
2. BOX SHALL BE SET WITH ADJACENT GRADES SLOPING AWAY TO PREVENT RAINWATER & LANDSCAPE WATER FROM ENTERING.
3. BOX SHALL BE SET IN LANDSCAPE AREA TO FACILITATE PERCOLATION.
4. BOX SHALL NOT HAVE CONCRETE BOTTOM TO FACILITATE PERCOLATION.
5. BOX MUST BE LOCATED AT LEAST 10 FEET FROM BACK OF SIDEWALK AND 3 FEET MIN. AWAY FROM FRONT PROPERTY LINES AND LOCATED IN SWALE, VEGETATED OR RETENTION AREA.

DETAIL 3, BUBBLER BOX DETAIL

N.T.S.



DRIVEWAY PROFILE

SCALE HORIZONTAL: 1" = 10', SCALE VERTICAL: 1" = 2'

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OWNER:

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PRELIMINARY GRADING AND DRAINAGE PLANS
SEVEN (7) LOT SUBDIVISION
SIX (6) TOWNHOUSE AND A COMMON LOT
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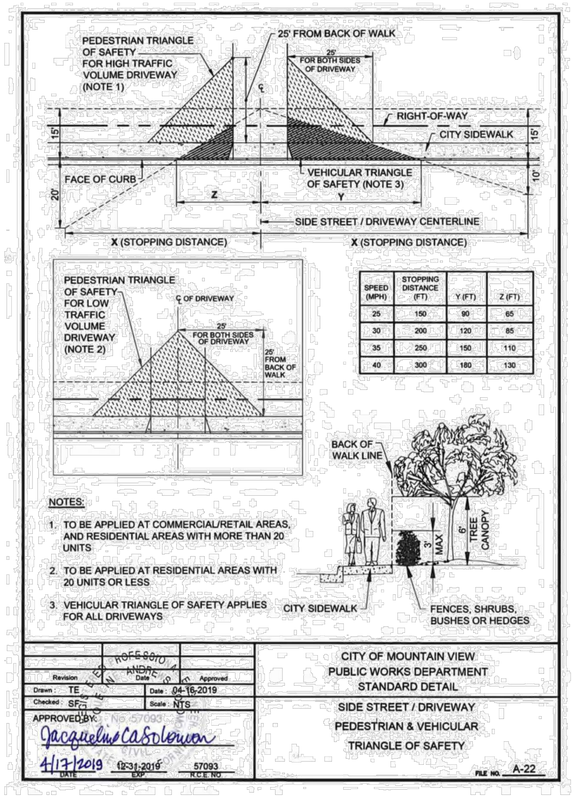
DETAILS, DRIVEWAY PROFILE

Revisions:

REGISTERED PROFESSIONAL ENGINEER
SAEID RAZAVI
No. C52724
CIVIL
STATE OF CALIFORNIA

Date: 12/3/2020
Scale: AS NOTED
Prepared by: V.G.
Checked by: S.R.
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Sheet: C-2.2
OF 11 SHEETS



ADOPTED DETAIL A-22

DRIVEWAY VISION TRIANGLE OF SAFETY

DESIGN SPEED LIMIT = 25 MPH

STOPPING SIGHT DISTANCE = 150 FT

TRIANGLE OF SAFETY INTERSECT AT F.O.C, TO C/L OF DRIVEWAY =

DOWNSTREAM OF TRAFFIC: 90' (Y)

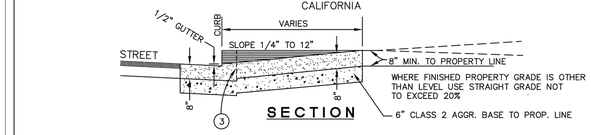
UPSTREAM OF TRAFFIC: 65' (Z)

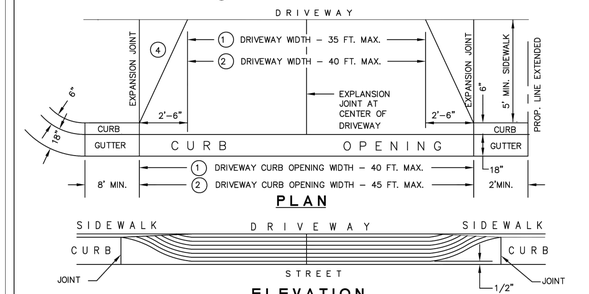
SAN MATEO COUNTY DEPARTMENT OF PUBLIC WORKS

REDWOOD CITY CALIFORNIA

DRAWN BY: D.P.
CHECK BY: J.A.L.
APPROVED BY: N.R.C.

SCALE: NONE
DATE:
REVISED:





NOTES

1. SPEED LIMIT OF 35 MPH OR LESS ALONG FRONTAGE STREET
2. SPEED LIMIT OF 40 MPH OR MORE ALONG FRONTAGE STREET
3. CONSTRUCT MONOLITHIC CURB, GUTTER, DRIVEWAY AND APRON
4. USE NO.4 REINFORCING BAR DOWELS AS SHOWN ON STANDARD CURB, GUTTER & SIDEWALK DETAIL
5. FOR MORE THAN ONE DRIVEWAY
   - (A) 23 FT. OR MULTIPLES OF 23 FT. BETWEEN CURB OPENINGS
   - (B) TOTAL DRIVEWAY WIDTH---FRONTAGE

70% OF FRONTAGE	100 FT. OR LESS
60% OF FRONTAGE	MORE THAN 100 FT.

STANDARD STRUCTURES
DRIVEWAY WIDTHS AND CURB OPENINGS FOR COMMERCIAL AND INDUSTRIAL HWY. FRONTAGE

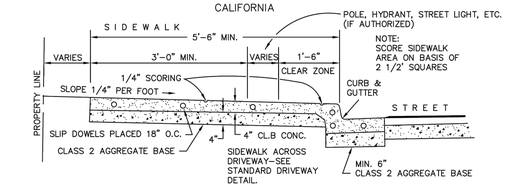
D-2A

SAN MATEO COUNTY DEPARTMENT OF PUBLIC WORKS

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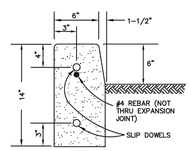
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APPROVED BY: N.R.C.

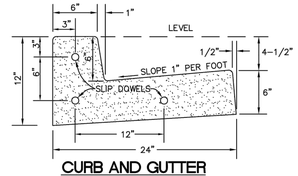
SCALE: NONE
DATE: 6/95
REVISED: 4/97



TYPICAL SECTION
URBAN CURB, GUTTER AND SIDEWALK

NOTE: OBSTRUCTIONS SUCH AS POLES, HYDRANTS, STREET SIGNS, UTILITY BOXES, STREET LIGHTS, ETC. SHALL BE LOCATED BEHIND THE SIDEWALK, UNLESS OTHERWISE SPECIFICALLY AUTHORIZED BY THE DIRECTOR OF PUBLIC WORKS. A CLEAR ZONE ALONG THE CURB AND SIDEWALK 18 INCHES IN WIDTH (MEASURED FROM THE FACE OF THE CURB) SHALL BE KEPT CLEAR AND OPEN FROM ALL OBSTRUCTIONS. IN ADDITION, AN AREA 3 FEET IN WIDTH ALONG THE SIDEWALK, EXCLUSIVE OF THE CURB WIDTH, SHALL BE KEPT CLEAR AND OPEN FROM ALL OBSTRUCTIONS IN COMPLIANCE WITH THE STATE BUILDING CODE (PART 2, TITLE 24, C.A.C.).





TYPICAL SECTIONS

NOTES:

1. ALL CONCRETE TO BE CLASS B CONCRETE.
2. MINIMUM SIDEWALK THICKNESS = 4 INCHES PCC.
3. PLACE 1/2" DIAMETER X 18" LONG DOWELS AT EXPANSION JOINTS AS SHOWN.
4. PLACE 1/2" THICK EXPANSION JOINTS FULL WIDTH 20' ON CENTER.
5. CONSTRUCT MONOLITHIC CURB, GUTTER AND SIDEWALK UNLESS OTHERWISE SPECIFICALLY AUTHORIZED BY THE DIRECTOR OF PUBLIC WORKS.
6. SUB-BASE MATERIALS WITHIN 30" OF SUBGRADE SHALL BE COMPACTED TO 95%.

D-3

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PRELIMINARY GRADING AND DRAINAGE PLANS
SEVEN (7) LOT SUBDIVISION
SIX (6) TOWNHOUSE AND A COMMON LOT
1301 AND 1311 WOODSIDE ROAD, REDWOOD CITY, CA
APN: 069-311-340 AND 069-311-250

STANDARD DETAILS

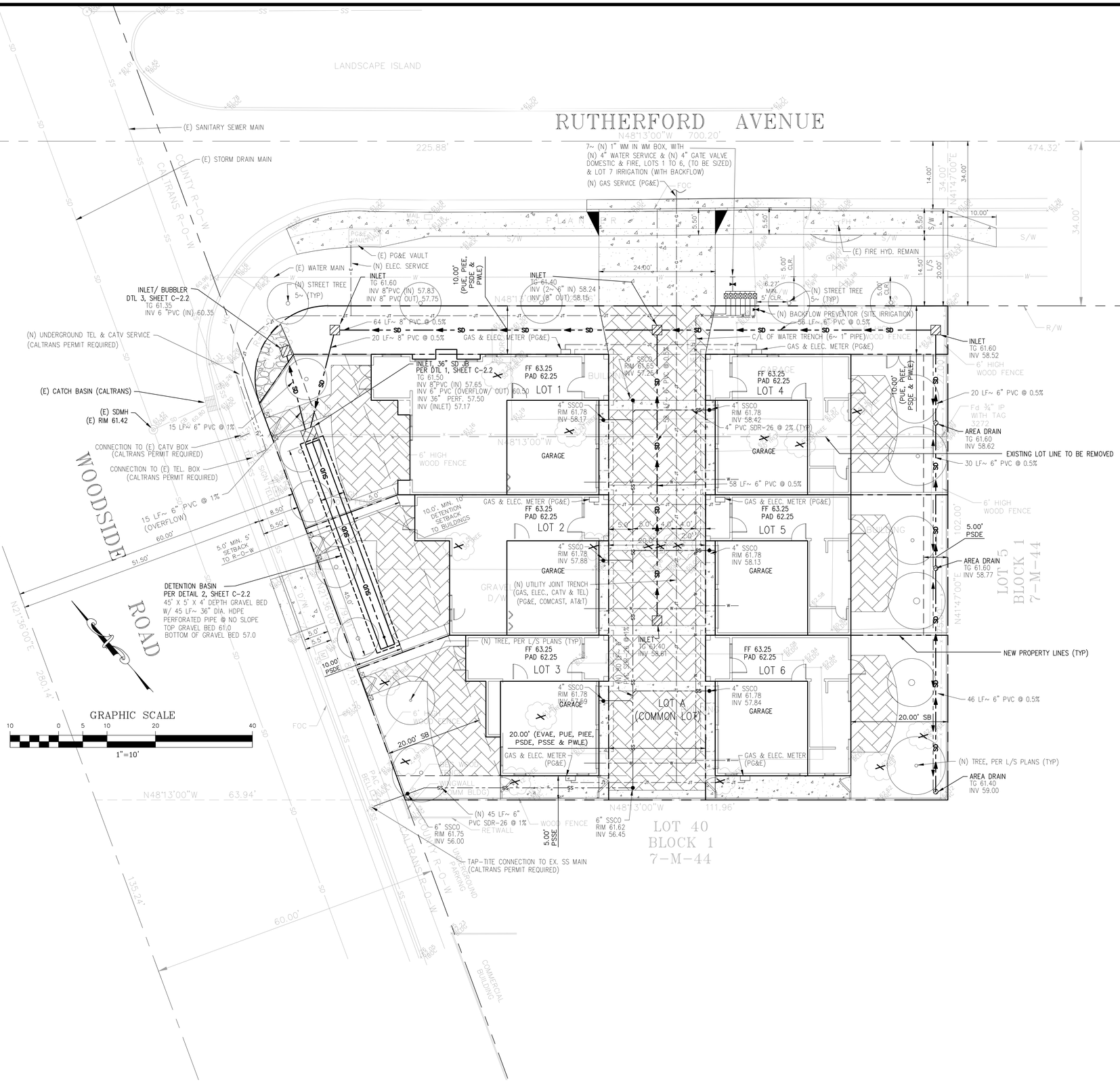
Revisions:

REGISTERED PROFESSIONAL ENGINEER
SAEED RAZAVI
No. C52724
CIVIL
STATE OF CALIFORNIA

Date: 12/3/2020
Scale: NTS
Prepared by: V.G.
Checked by: S.R.
Job #: 219018

Sheet: C-2.3

OF 11 SHEETS



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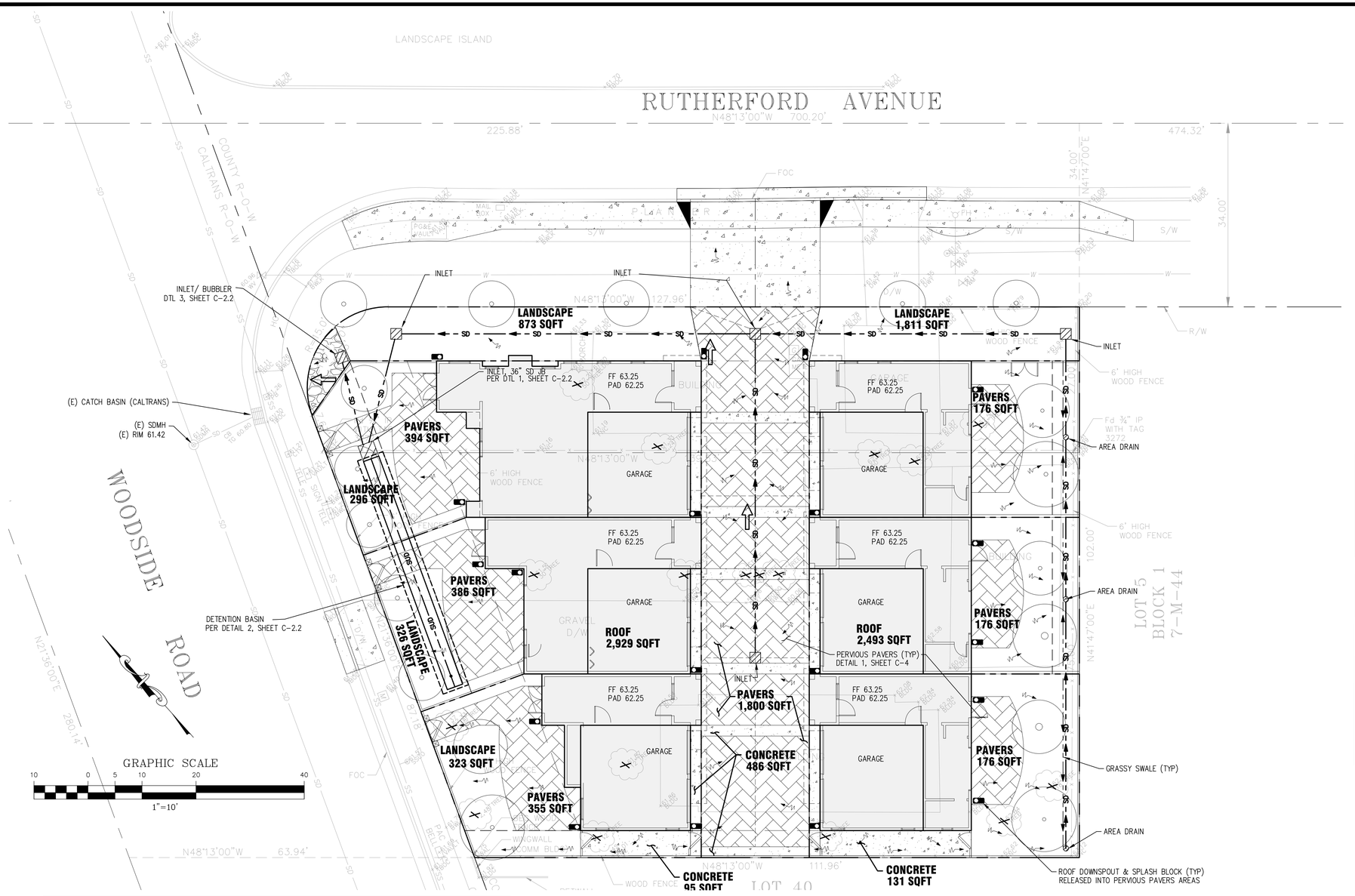
UTILITY PLAN

Revisions:

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STATE OF CALIFORNIA

Date: 12/3/2020
Scale: 1" = 10'
Prepared by: V.G.
Checked by: S.R.
Job #: 219018

Sheet: C-3
OF 11 SHEETS



Compliance with NPDES Permit Provision C.3:

The San Francisco Bay Regional Water Quality Control Board (SFRWQCB) incorporated updated requirements into Santa Clara County's National Pollution Discharge Elimination System (NPDES) Permit in August 06. These updated stormwater quality control requirements are predominantly in the category of new development discharge controls. The Permit requires that permanent, post-construction stormwater quality control measures be implemented as part of development projects.

Updated stormwater quality control measures include:
- Source Control Measures
- Site Design Measures
- Treatment Control Measures

Beginning August 15, 2006, all projects creating or replacing 10,000 sq. ft. or more of impervious surface area must design and install a permanent post-construction stormwater treatment facility on the site. The system must be design and installed according to numeric sizing criteria.

All projects, regardless of size that create or replace impervious surface may be required to install stormwater quality controls to the maximum extent practicable.

This project proposes to implement appropriate source control and site design measures. The project creates/replaces LESS THAN 10,000 SQFT of impervious surface area, therefore, it is EXEMPT to provide stormwater treatment facilities based on numeric sizing criteria. However, the project proposes to implement stormwater design measures to maximize the removal of pollutants to the maximum extent practicable.

1 Source Control Measures:

2 Site Design Measures:

3 Stormwater Treatment Measures:
NOT APPLICABLE

SOURCE CONTROL MEASURES:

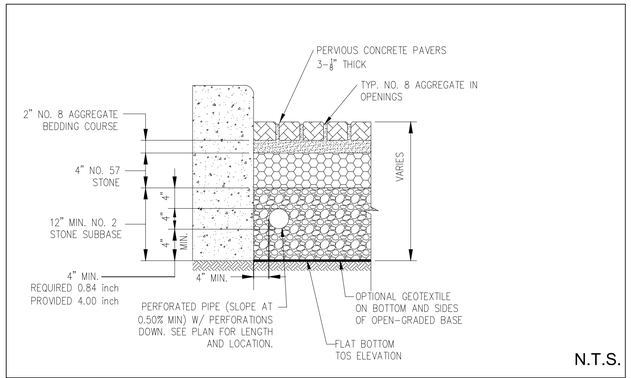
1. BENEFICIAL LANDSCAPING.
2. USE OF WATER EFFICIENT IRRIGATION SYSTEMS.
3. MAINTENANCE (PAVEMENT SWEEPING, GOOD HOUSEKEEPING).
4. DESIGN FOR DISCHARGE OF FIRE SPRINKLER TEST WATER TO LANDSCAPE OR SANITARY SEWER.
5. STORM DRAIN LABELING. Mark on-site inlets with the words "No Dumping! Flows to Bay"

SITE DESIGN MEASURES:

1. PRESERVE OPEN SPACE AND NATURAL DRAINAGE PATTERNS.
2. CREATE NEW PERVIOUS AREAS:
   a. LANDSCAPING
   b. WOODEN DECK
3. DIRECT RUNOFF FROM ROOFS, SIDEWALKS, PATIOS TO LANDSCAPED AREAS.
4. CLUSTER STRUCTURES/PAVEMENT.
5. PLANT TREES ADJACENT TO AND IN PARKING AREAS AND ADJACENT TO OTHER IMPERVIOUS AREAS.
6. PARKING:
   a. NOT PROVIDED IN EXCESS OF CODE.

HATCH KEY

IMPERVIOUS		PERVIOUS	
	CONCRETE PAVEMENT		PERVIOUS PAVERS PER LANDSCAPE PLANS
	BUILDING ROOF		LANDSCAPE (NO HATCH)



1 PERVIOUS PAVEMENT (SELF RETAINING)

EXISTING IMPERVOIUS AREA TABLE (ALL TO BE REMOVED)			
LOCATION/ DESCRIPTION	AREA (SQFT)	AREA (ACRES)	MATERIAL
BUILDINGS	2,911	0.07	ROOF
DRIVEWAY	62	0.00	CONC.
TOTAL IMPERVIOUS	**2,973**	**0.07**	**IMPERVIOUS**
LANDSCAPE/ GROUND	7,967	0.18	
GRAVEL DRIVEWAY	2,286	0.05	
TOTAL PERVIOUS	**10,253**	**0.24**	**PERVIOUS**
TOTAL PROJECT AREA	**13,226**	**0.30**	

PROPOSED IMPERVIOUS AREA TABLE			
LOCATION/ DESCRIPTION	AREA (SQFT)	AREA (ACRES)	MATERIAL
BUILDINGS	5,422	0.12	ROOF
DRIVEWAY/ WALKWAY	712	0.02	CONCRETE
TOTAL IMPERVIOUS	**6,134**	**0.14**	**IMPERVIOUS**
PERVIOUS PAVERS	3,463	0.08	PAVERS
LANDSCAPE	3,629	0.08	LANDSCAPE
TOTAL PERVIOUS	**7,092**	**0.16**	**PERVIOUS**
TOTAL PROJECT AREA	**13,226**	**0.30**	

Table I.B.1 Impervious[5] and Pervious Surfaces

Type of Impervious[5] Surface	I.B.1.a Pre-Project Impervious[5] Surface (sq.ft.)	I.B.1.b Existing Impervious[5] Surface to be Retained[6] (sq.ft.)	I.B.1.c Existing Impervious[5] Surface to be Replaced[6] (sq.ft.)	I.B.1.d New Impervious[5] Surface to be Created[6] (sq.ft.)	I.B.1.e Post-Project Impervious[5] Surface (sq.ft.) (=b+c+d)
Roof area(s)	2911	0	1232	4190	5422
Impervious[5] sidewalks, patios, paths, driveways, streets	62	0	108	604	712
Impervious[5] uncovered parking[7]	0	0	0	0	0
Totals of Impervious Surfaces:	2973	0	1340	4794	6134
I.B.1.f - Total Impervious[5] Surface Replaced and Created *(sum of totals for columns I.B.1.c and I.B.1.d)*:				6134	

Type of Pervious Surface	Pre-Project Pervious Surface (sq.ft.)		Post-project Pervious Surface (sq.ft.)
Landscaping	7967		3629
Pervious Paving	2286	**I.B.1.e.1:**	3463
Green Roof	0		0
Totals of Pervious Surfaces:	10253		7092
Total Site Area (Total Impervious[5]+Total Pervious=**I.A.2**)	13226		13226

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STORMWATER MANAGEMENT PLAN

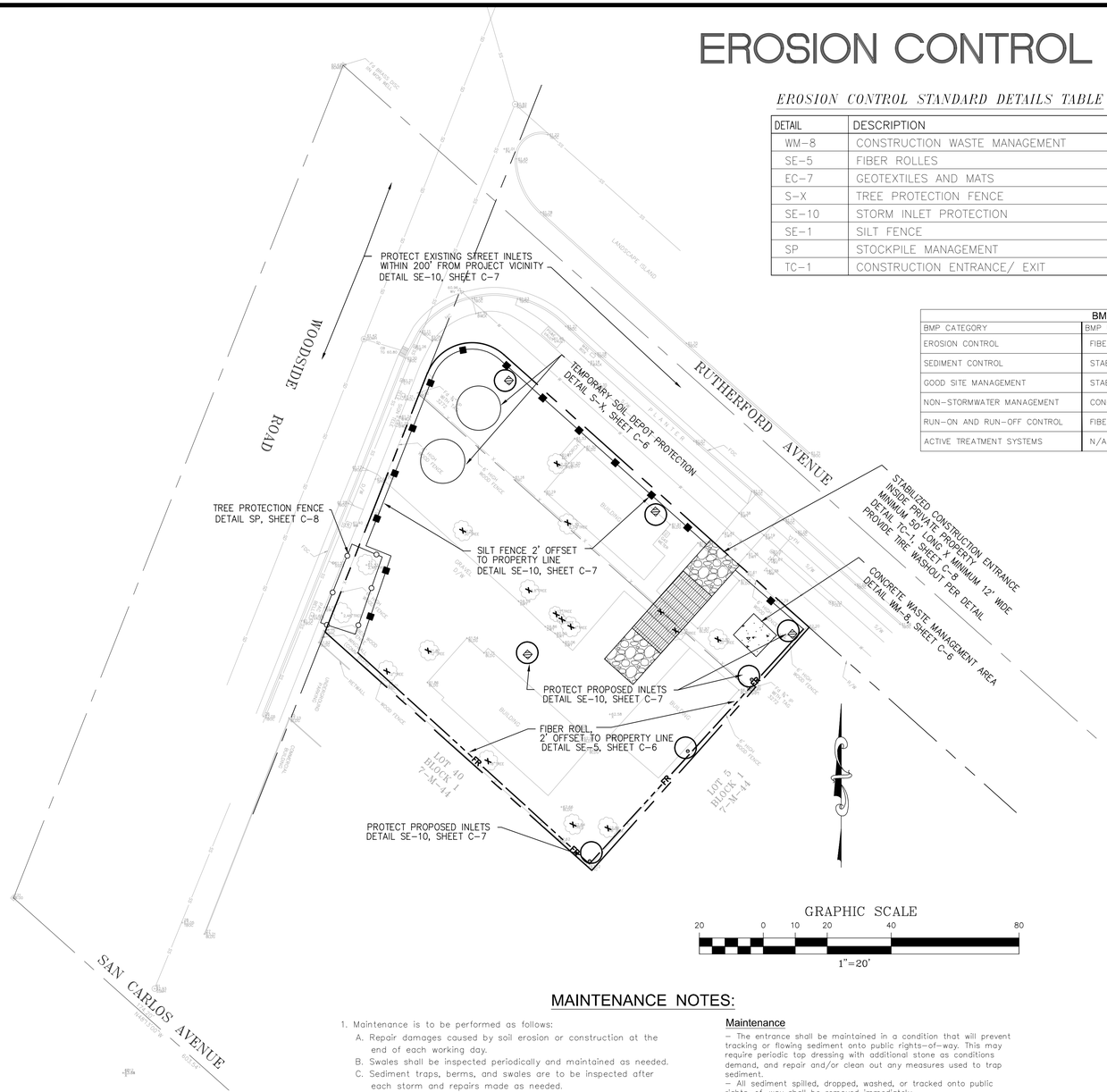
Revisions:

REGISTERED PROFESSIONAL ENGINEER
SAEID RAZAVI
No. C52724
CIVIL
STATE OF CALIFORNIA

Date: 12/3/2020
Scale: NTS
Prepared by: V.G.
Checked by: S.R.
Job #: 219018

Sheet: C-4
OF 11 SHEETS

EROSION CONTROL PLAN



EROSION CONTROL STANDARD DETAILS TABLE

DETAIL	DESCRIPTION	FIND DTL ON SHEET
WM-8	CONSTRUCTION WASTE MANAGEMENT	C-6
SE-5	FIBER ROLLES	C-6
EC-7	GEOTEXTILES AND MATS	C-6
S-X	TREE PROTECTION FENCE	C-6
SE-10	STORM INLET PROTECTION	C-7
SE-1	SILT FENCE	C-7
SP	STOCKPILE MANAGEMENT	C-8
TC-1	CONSTRUCTION ENTRANCE/ EXIT	C-8

BMP SUMMARY TABLE

BMP CATEGORY	BMP USED
EROSION CONTROL	FIBER ROLL, TEMPORARY STOCK PILE COVER, HYDRO SEED EXPOSED CUT AND FILL
SEDIMENT CONTROL	STABILIZED CONSTRUCTION ENTRANCE, INLET PROTECTION
GOOD SITE MANAGEMENT	STABILIZED CONSTRUCTION ENTRANCE
NON-STORMWATER MANAGEMENT	CONCRETE WASHOUT AREA
RUN-ON AND RUN-OFF CONTROL	FIBER ROLL, SILT FENCE
ACTIVE TREATMENT SYSTEMS	N/A

OWNER/ RESPONSIBLE PARTY

Mounir Kardosh
Mailing Address:
Nazareth Enterprises, INC
ICO: Mr. Mounir Kardosh
800 S. B Street, Suite 100
San Mateo, CA 94401
Email: mounir@nazarethenterprises.com

EROSION CONTROL POINT OF CONTACT

Project Manager:
Michael Ohayon
Email: michael.o@nazarethenterprises.com
Cell: (415) 209-3645
Tel: (650) 347-9500
Fax: (650) 347-9400
Website: www.nazarethenterprises.com
800 South B Street, Suite 100
San Mateo, CA 94401

MAINTENANCE NOTES:

1. Maintenance is to be performed as follows:
   - A. Repair damages caused by soil erosion or construction at the end of each working day.
   - B. Swales shall be inspected periodically and maintained as needed.
   - C. Sediment traps, berms, and swales are to be inspected after each storm and repairs made as needed.
   - D. Sediment shall be removed and sediment traps restored to its original dimensions when sediment has accumulated to a depth of one foot.
   - E. Sediment removed from trap shall be deposited in a suitable area and in such a manner that it will not erode.
   - F. Rills and gullies must be repaired.
2. All existing drainage inlets on Street within the limit of the project, shall be protected with Rock bags during construction. See detail. Rock bag inlet protection shall be cleaned out whenever sediment depth is one half the height of one Rock bag.
3. Existing concrete ditch sediment trap shall be cleaned out routinely during construction.

Maintenance

– The entrance shall be maintained in a condition that will prevent tracking or flowing sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand, and repair and/or clean out any measures used to trap sediment.
– All sediment spilled, dropped, washed, or tracked onto public rights-of-way shall be removed immediately.
– When necessary, wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. This shall be done at an area stabilized with crushed stone, which drains into an approved sediment trap or sediment basin.

STABILIZED CONSTRUCTION ENTRANCE
(TO BE MAINTAINED)

Maintenance

– Slit fence and Fiber rolls shall be inspected during and immediately after each rainfall, and at least daily during prolonged rainfall. Any required repairs shall be made immediately.
– Should the fabric on a slit fence or Fiber rolls decompose or become ineffective during the time the fence or barrier is still necessary, the fabric shall be replaced promptly.
– Sediment deposits shall be removed when deposits reach approximately one– third the height of the barrier.
– Any sediment deposits remaining in place after the slit fence or Fiber rolls is no longer required shall be dressed to conform with the existing grade, prepared, and seeded.
– Slit buildups must be removed when bulges develop in the fence regardless of depth of deposition.

Slit fence / Fiber roll Maintenance
(TO BE MAINTAINED)

EROSION CONTROL PLAN LEGEND

EXISTING	DESCRIPTION
	PROPERTY LINE
	EXISTING LOT LINE TO BE REMOVED
20"Ø	TREE WITH TRUNK DIAMETER
	6' WOODEN FENCE
	AREA DRAIN/ INLET
x102.23	SPOT ELEVATION
PROPOSED	
	TREE PROTECTION FENCE
20"Ø	EXISTING TREE TO BE REMOVED
	SILT FENCE
FR	FIBER ROLL
	CONSTRUCTION ENTRANCE/ EXIT WITH TIRE WASH
	AREA DRAIN/ INLET PROTECTION
	CONCRETE WASTE MANAGEMENT

EROSION AND SEDIMENT CONTROL NOTES AND MEASURES

1. The facilities shown on this Plan are designed to control Erosion and sediment during the rainy season, October 1st to April 30th. Facilities are to be operable prior to October 1 of any year. Grading operations during the rainy season, which leave denuded slopes shall be protected with erosion control measures immediately following grading on the slopes.
2. This plan covers only the first winter following grading with assumed site conditions as shown on the Erosion Control Plan. Prior to September 15, the completion of site improvement shall be evaluated and revisions made to this plan as necessary with the approval of the COUNTY engineer. Plans are to be resubmitted for COUNTY approval prior to September 1 of each subsequent year until site improvements are accepted by the COUNTY.
3. Construction entrances shall be installed prior to commencement of grading. All construction traffic entering onto the paved roads must cross the stabilized construction entranceways.
4. Contractor shall maintain stabilized entrance at each vehicle access point to existing paved streets. Any mud or debris tracked onto public streets shall be removed daily and as required by the COUNTY.
5. If hydroseeding is not used or or is not effectively 10/10, then other immediate methods shall be implemented, such as Erosion control blankets, or a three-step application of: 1) seed, mulch, fertilizer 2) blown straw 3) tackifier and mulch.
6. Inlet protection shall be installed at open inlets to prevent sediment from entering the storm drain system. Inlets not used in conjunction with erosion control are to be blocked to prevent entry of sediment.
7. Lots with houses under construction will not be hydroseeded Erosion protection for each lot with a house under construction shall confirm to the Typical Lot Erosion Control Detail shown on this sheet.
8. This erosion and sediment control plan may not cover all the situations that may arise during construction due to unanticipated field conditions. Variations and additions may be made to this plan in the field. Notify the COUNTY representative of any field changes.
9. This plan is intended to be used for interim erosion and sediment control only and is not to be used for final elevations or permanent improvements.
10. Contractor shall be responsible for monitoring erosion and sediment control prior, during, and after storm events.
11. Reasonable care shall be taken when hauling any earth, sand, gravel, stone, debris, paper or any other substance over any public street, alley or other public place. Should any blow, spill, or track over and upon said public or adjacent private property, immediately remedy shall occur.
12. Sanitary facilities shall be maintained on the site.
13. During the rainy season, all paved areas shall be kept clear of earth material and debris. The site shall be maintained so as to minimize sediment laden runoff to any storm drainage systems, including existing drainage swales and water courses.
14. Construction operations shall be carried out in such a manner that erosion and water pollution will be minimized. State and local laws concerning pollution abatement shall be complied with.
15. Contractors shall provide dust control as required by the appropriate federal, state, and local agency requirements.
16. With the approval of the COUNTY inspector, erosion and sediment controls maybe removed after areas above them have been stabilized.

SITE CONSTRUCTION MANAGEMENT NOTES:

- Construction site shall be enclosed by 6' opaque fence with dust control fiber mesh at all times during construction.
- No Construction material, equipment, portable toilets, trash containers, or debris shall be placed in the public right-of-way.
- A trash container shall be maintained on site at all times and debris on site which could otherwise blow away, shall be regularly collected and placed in container.
- All construction debris (wood scraps and other debris, which cannot blow away) shall be piled within the property lines of the project in a neat and safe manner
- The project shall have a sign viewable from the public street that indicates the hours of construction as: Mon– Fri from 8 am to 6 PM, Saturdays from 9am to 5pm.

CONSTRUCTION SITE CONTROL NOTES:

- Owner shall implement construction site inspection and control to prevent construction site discharges of pollutants into the storm drains per approved Erosion Control Plan.
- The San Mateo County requires the construction sites to maintain year-round effective erosion control, run-on and run-off control, sediment control, good site management, and non-storm water management through all phases of construction (including, but not limited to, site grading, building, and finishing of lots) until the site is fully stabilized by landscaping or the installation of permanent erosion control measures.
- The San Mateo County will conduct inspections to determine compliance and determine the effectiveness of the BMPs in preventing the discharge of construction pollutants into the storm drain. Owner shall be required to timely correct all actual and potential discharges observed.

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EROSION CONTROL PLAN

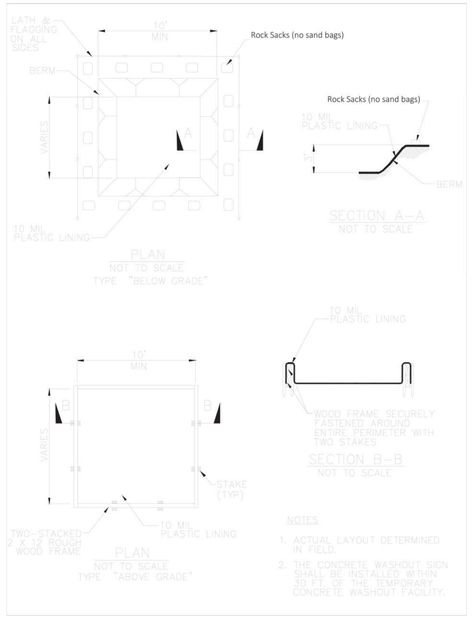
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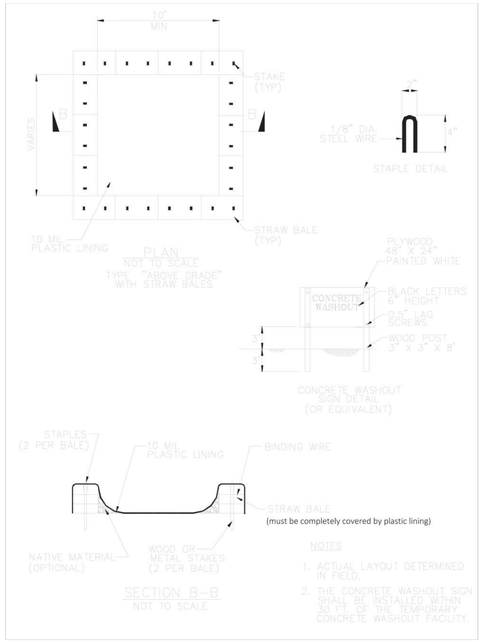
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Prepared by: V.G.
Checked by: S.R.
Job #: 219018

Sheet: C-5
OF 11 SHEETS

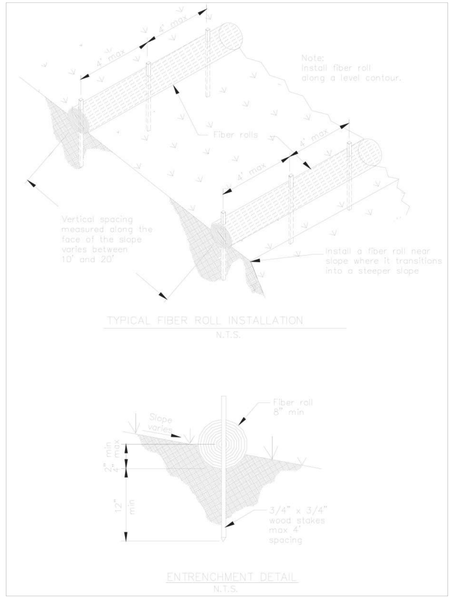
Concrete Waste Management WM-8



Concrete Waste Management WM-8

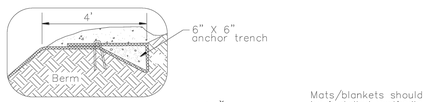


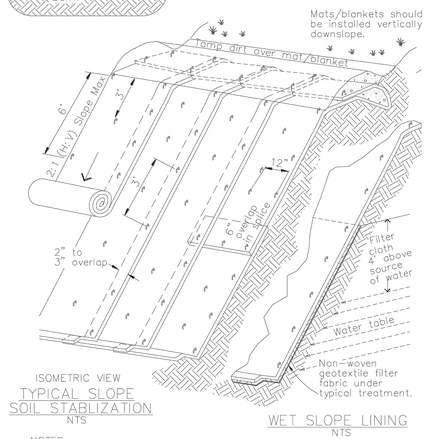
Fiber Rolls SE-5



NOTES:
If more than one fiber roll is placed in a row, the rolls must be overlapped, not abutted.
Turn the ends of the fiber roll up-slope to prevent runoff from going around the roll.

Geotextiles and Mats EC-7

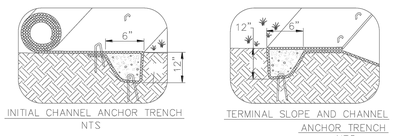


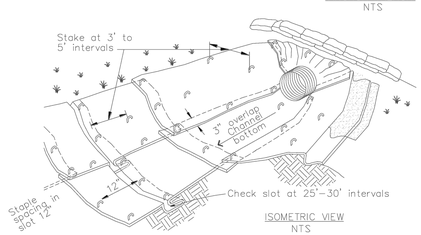


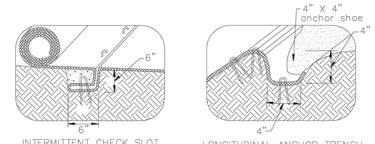
NOTES:
1. Slope surface shall be free of rocks, clods, sticks and grass. Mats/blankets shall have good soil contact.
2. Lay blankets loosely and stake or staple to maintain direct contact with the soil. Do not stretch.
3. Install per manufacturer's recommendations

TYPICAL INSTALLATION DETAIL

Geotextiles and Mats EC-7

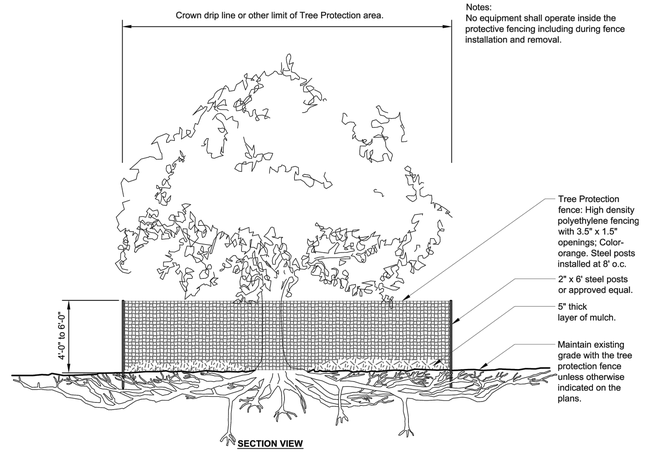






NOTES:
1. Check slots to be constructed per manufacturers specifications.
2. Staking or stapling layout per manufacturers specifications.
3. Install per manufacturer's recommendations

TYPICAL INSTALLATION DETAIL



S-X TREE PROTECTION

URBAN TREE FOUNDATION © 2014
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PRELIMINARY GRADING AND DRAINAGE PLANS
SEVEN (7) LOT SUBDIVISION
SIX (6) TOWNHOUSE AND A COMMON LOT
1301 AND 1311 WOODSIDE ROAD, REDWOOD CITY, CA
APN: 069-311-340 AND 069-311-250

EROSION CONTROL DETAILS

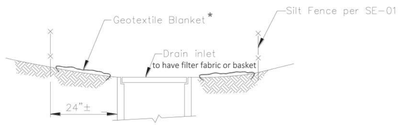
Revisions:

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SAEID RAZAVI
No. C52724
CIVIL
STATE OF CALIFORNIA

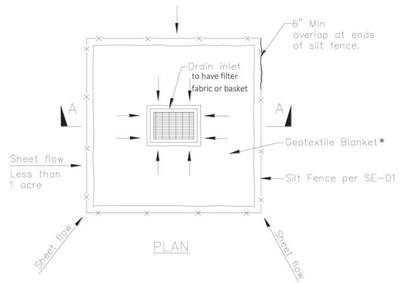
Date: 12/3/2020
Scale: NTS
Prepared by: V.G.
Checked by: S.R.
Job #: 219018

Sheet: C-6
OF 11 SHEETS

Storm Drain Inlet Protection SE-10



SECTION A–A



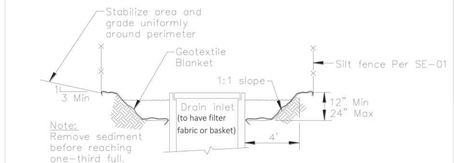
PLAN

DI PROTECTION TYPE 1
NOT TO SCALE

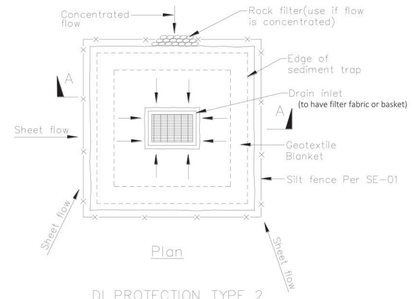
NOTES:

1. For use in areas where grading has been completed and final soil stabilization and seeding are pending.
2. Not applicable in paved areas.
3. Not applicable with concentrated flows.

Storm Drain Inlet Protection SE-10



Section A–A

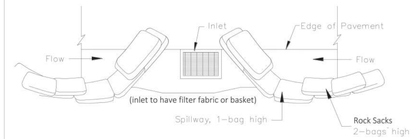


Plan

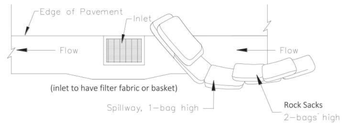
DI PROTECTION TYPE 2
NOT TO SCALE

Notes
1. For use in cleared and grubbed and in graded areas.
2. Shape basin so that longest inflow area faces longest length of trap.
3. For concentrated flows, shape basin in 2:1 ratio with length oriented towards direction of flow.

Storm Drain Inlet Protection SE-10



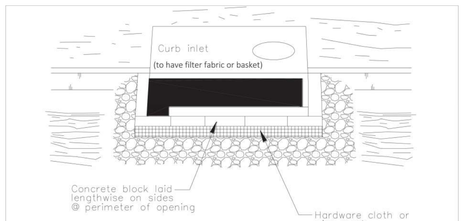
TYPICAL PROTECTION FOR INLET ON SUMP



TYPICAL PROTECTION FOR INLET ON GRADE

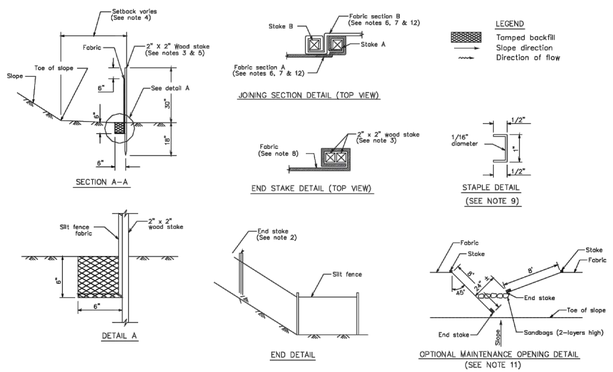
NOTES:
1. Intended for short–term use.
2. Use to inhibit non–storm water flow.
3. Allow for proper maintenance and cleanup.
4. Bags must be removed after adjacent operation is completed
5. Not applicable in areas with high silts and clays without filter fabric.
6. Protection can be effective even if it is not immediately adjacent to the inlet provided that the inlet is protected from potential sources of pollution.

Storm Drain Inlet Protection SE-10

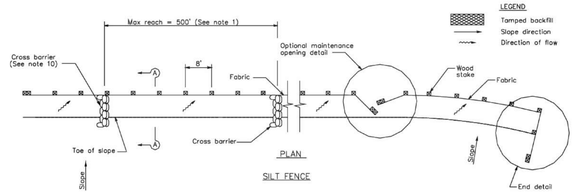


DI PROTECTION – TYPE 4
NOT TO SCALE

SE-1 Silt Fence

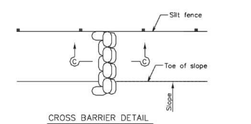


Silt Fence SE-1

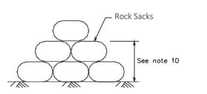


NOTES

1. Construct the length of each reach so that the change in base elevation along the reach does not exceed 1/3 the height of the linear barrier, in no case shall the reach length exceed 500'.
2. The last 8'–0" of fence shall be turned up slope.
3. Stake dimensions are nominal.
4. Dimension may vary to fit field condition.
5. Stakes shall be spaced at 8'–0" maximum and shall be positioned on downstream side of fence.
6. Stakes to overlap and fence fabric to fold around each stake one full turn. Secure fabric to stake with 4 staples.
7. Stakes shall be driven tightly together to prevent potential flow–through of sediment at joint. The tops of the stakes shall be secured with wire.
8. For end stake, fence fabric shall be folded around two stakes one full turn and secured with 4 staples.
9. Minimum 4 staples per stake. Dimensions shown are typical.
10. Cross barriers shall be a minimum of 1/3 and a maximum of 1/2 the height of the linear barrier.
11. Maintenance openings shall be constructed in a manner to ensure sediment remains behind silt fence.
12. Joining sections shall not be placed at sump locations.
13. Sandbag rows and layers shall be offset to eliminate gaps.



CROSS BARRIER DETAIL



SECTION C–C

SE-1 Silt Fence

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SEVEN (7) LOT SUBDIVISION
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APN: 069–311–340 AND 069–311–250

EROSION CONTROL DETAILS

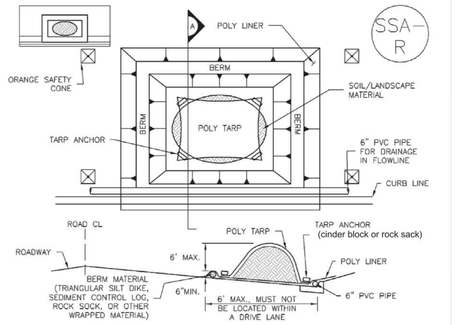
Revisions:

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SAEID RAZAVI
No. C52724
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STATE OF CALIFORNIA

Date: 12/3/2020
Scale: NTS
Prepared by: V.G.
Checked by: S.R.
Job #: 219018

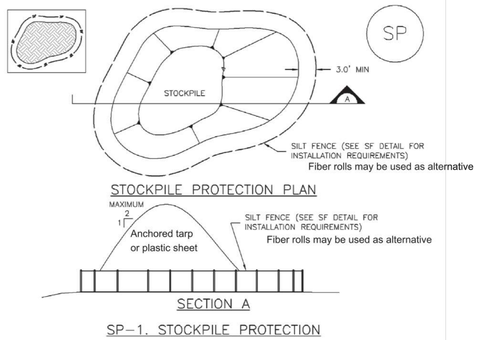
Sheet: C–7
OF 11 SHEETS

Stockpile Management (SP)



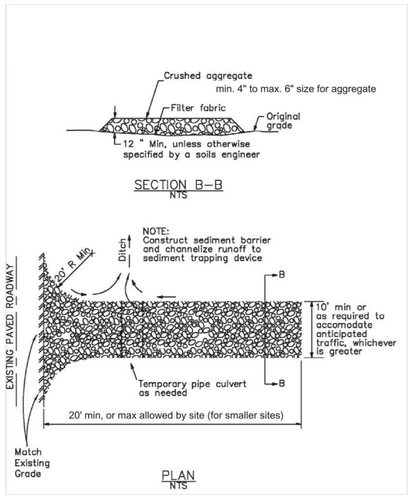
SP-2. MATERIALS STAGING IN ROADWAY

Stockpile Management (SP)

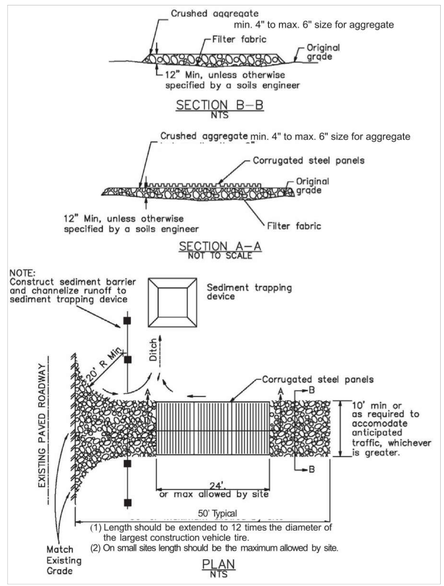


SP-1. STOCKPILE PROTECTION

Stabilized Construction Entrance/Exit TC-1



Stabilized Construction Entrance/Exit TC-1



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EROSION CONTROL DETAILS

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Date: 12/3/2020
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Prepared by: V.G.
Checked by: S.R.
Job #: 219018

Sheet: C-8
OF 11 SHEETS

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RUTHERFORD AVE.

PLANT LIST

TOTAL IRRIGATED LANDSCAPE AREA = APPROX. 22,580 SF

SYM.	BOTANICAL NAME	COMMON NAME	WUCOLS	SIZE	QTY
TREES					
JT	Juniperus virginiana 'Taylor'	Taylor Juniper	L	24" box	6
LPT	Lagerstroemia indica 'Purple Tower'	Purple Tower Crape Myrtle	L	24" box multi	3
MAG	Magnolia grandiflora 'Little Gem'	Little Gem Magnolia	M	24" box	7
PC	Pistacia chinensis	Chinese Pistache	L	24" box	5
PR	Prunus illicifolia	Catalina Cherry	L	15 gal.	3
SHRUBS					
BER	Berberis thunbergii 'Crimson Pygny'	Crimson Pygny Barberry	M	5 gal.	15
ND	Nandina domestica	Heavenly Bamboo	L	5 gal.	38
NGS	Nandina 'Gulf Stream'	Gulf Stream Heavenly Bamboo	(not rated)	2 gal.	51
PIT*	Pittosporum tenuifolium 'Emerald Wave'	Emerald Wave Kohuhu	M	5 gal.	38
SL	Salvia leucantha "Purple Velvet	Purple Velvet Mexican Bush Sage	L	5 gal.	6
VINES					
CLY	Clytostoma callistegioides	Lavender Trumpet Vine	M	5 gal.	1
GROUNDCOVERS					
ARC*	Arctostaphylos uva-ursi 'Point Reyes'	Point Reyes Manzanita	L	5 gal	40
LA	Lantana 'Monswee'	Lavender Swirl Lantana	L	1 gal.	158
SC	Scaevola 'Bombay White'	Bombay White Fan Flower	L	4" pots @ 12" o.c. to cover	

COBBLES - 3" -4" DIA. COBBLES, TO BE SELECTED, FOR BUBBLER INLET DRAINAGE AREA

BARK MULCH, SEE PLANTING SPECIFICATIONS

DECORATIVE GRAVEL FOR PARKWAY STRIP BETWEEN CURB & SIDEWALK - TO BE SELECTED

* INDICATES PLANTS THAT ARE LISTED AS APPROPRIATE FOR USE IN BIORETENTION ZONES IN THE SAN MATEO COUNTY C.3 REGULATED PROJECT GUIDE

QUANTITIES OF SHRUBS, ANNUALS & GROUNDCOVERS SHOWN IN PLANT LIST ARE FOR CONVENIENCE ONLY. IN CASE OF DISCREPANCIES, QUANTITIES SHOWN ON THE PLANS TAKE PRECEDENCE OVER NUMBERS SHOWN IN PLANT LIST.

I AGREE TO COMPLY WITH THE REQUIREMENTS OF THE WATER EFFICIENT LANDSCAPE ORDINANCE AND SUBMIT A COMPLETE LANDSCAPE DOCUMENTATION PACKAGE.

SIGNED: _____ DATE: 3/2/20

* * * * *

A MINIMUM 3-INCH LAYER OF MULCH SHALL BE APPLIED ON ALL EXPOSED SOIL SURFACES OF PLANTING AREAS EXCEPT TURF AREAS, CREEPING OR ROOTING GROUNDCOVERS, OR DIRECT SEEDING APPLICATIONS WHERE MULCH IS CONTRAINDICATED.

FOR SOILS LESS THAN 6% ORGNIC MATTER IN THE TOP 6 INCHES OF SOIL, COMPOST AT A RATE OF A MINIMUM OF FOUR CUBIC YARDS PER 1000 SQUARE FEET OF PERMEABLE AREA SHALL BE INCORPORATED TO A DEPTH OF SIX INCHES INTO THE SOIL.

* * * * *

I HAVE COMPLIED WITH THE CRITERIA OF THE ORDINANCE AND APPLIED THEM FOR THE EFFICIENT USE OF WATER IN THE LANDSCAPE DESIGN PLANS.

A DIAGRAM OF THE IRRIGATION PLAN SHOWING HYDROZONES SHALL BE KEPT WITH THE IRRIGATION CONTROLLER FOR SUBSEQUENT MANAGEMENT PURPOSES.

A CERTIFICATE OF COMPLETION SHALL BE FILLED OUT AND CERTIFID BY EITHER THE DESIGNER OF THE LANDSCAPE PLANS, IRRIGATION PLANS, OR THE LICENSED LANDSCAPE CONTRACTOR FOR THE PROJECT.

AN IRRIGATION AUDIT REPORT SHALL BE COMPLETED AT THE TIME OF THE FINAL INSPECTION.

THE IRRIGATION AUDIT REPORT IS TO BE PROVIDED BY THE LANDSCAPE CONTRACTOR, AND PERFORMED BY A CERTIFIED IRRIGATION AUDITOR.

SOIL PREPARATION
CONTRACTOR SHALL FOLLOW ALL RECOMMENDATIONS OF THE SOILS ANALYSIS AND MANAGEMENT REPORT FOR SOIL PREPARATION PRIOR TO PLANTING. SEE SHEET L-2.1.

LICENSED LANDSCAPE ARCHITECT — CHRISTOPHER M. TIGH — NO. 2627 — STATE OF CALIFORNIA
Signature
1/31/22
Renewal Date
2/22/21
Date

PLANTING PLAN

5' 15' / 0' 10' 20'
SCALE: 1" = 8'-0"
WHEN PRINTED ON 24" x 36"

NORTH

REVISIONS	BY
3 2/22/21	CT

Christopher Tigh
Landscape Architect
516 S. Shoreline Blvd., Mountain View, CA. 94041
Tel. (650) 254-1415 Fax. (650) 254-1414
CA. Lic. No. 2627

1301 - 1311 WOODSIDE RD., REDWOOD CITY, CA 94061
PLANTING PLAN

PLANNING REVIEW

DATE: 7/7/20

SHEET
L -1

PLANTING SPECIFICATIONS

SECTION 02920
SOIL PREPARATION AND LANDSCAPE FINISHED GRADING

PART 1 - GENERAL

1.1 PROTECTION

A. Protect landscaping and other features remaining as final work.
B. Protect existing structures, fences, roads, sidewalks, paving, curbs, trees and shrubs.
C. Exercise extreme care in excavating and working near existing utilities. Verify the location and condition of all utilities. Repair any damage to existing utilities or adjacent properties caused by or during the performance of work at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 MATERIALS
A. Imported topsoil: Friable loam "Colma Sand" or equal, free of subsoil, roots, grass, excessive amount of weeds, stone, and foreign matter; acidity range (pH) of 5.5 to 7.5 containing a minimum of four (4) percent and a maximum of 25 percent organic matter obtained from one source.

Provide analysis report including recommendations (from an approved soils laboratory) of imported topsoil to Landscape Architect for approval prior to delivery of any imported topsoil to the site.

B. Soil amendments for backfill mix using existing on-site soil from stockpile shall be as specified in the Soils Analysis and Management Report, sheet L-2.1.

C. Soil amendments for backfill mix using imported topsoil shall be as specified in the approved Soils Analysis Report for imported topsoil.

PART 3 - EXECUTION

3.1 INSPECTION

A. Verify site conditions and note irregularities affecting work of this Section. Notify Landscape Architect in writing of any irregularities before beginning work.
B. Beginning work of this Section means acceptance of existing conditions.

C. In the event of conflict between these Specifications and the recommendations of either the Soils Analysis and Management Report on sheet L-2.1, or the approved Soils Anaylysis Report for Imported Topsoil, the recommendations of the soils reports shall govern.

3.2 SUBSOIL PREPARATION FOR AREAS TO RECEIVE IMPORTED TOPSOIL OR AMENDED EXISTING TOPSOIL FROM STOCKPILE

A. Eliminate uneven areas and low spots. Remove debris, roots, branches, and stones in excess of 1 (one) inch in size. Remove subsoil contaminated with petroleum products.
B. Scarify subgrade to depth of 6" where topsoil is scheduled. Scarify in areas where equipment used for hauling and spreading topsoil has compacted subsoil.

3.3 PLACING TOPSOIL

A. Place topsoil as required to bring elevations to finish grade.
B. Use topsoil in relatively dry state. Place during dry weather.
C. Fine grade topsoil eliminating rough or low areas.
D. Remove stone, roots, grass, weeds, debris and foreign material while spreading.
E. Remove surplus topsoil from site.

3.4 AMENDMENT OF EXISTING TOPSOIL IN PLACE

A. Grade of topsoil after amendment shall match existing grade prior to cultivation and amendment. Thoroughly mix amendment materials into the top six inches of topsoil by hand-cultivating.
B. Amend existing topsoil in relatively dry state.
C. Fine grade topsoil eliminating rough or low areas.
D. Remove stones, roots, grass, weeds, debris and foreign material while incorporating amendments.

3.5 TOLERANCES

A. Top of Amended Topsoil: Shrub and Groundcover beds: Min. 1" below adjacent paved areas and header boards.

END OF SECTION

SECTION 02950
PLANTING

PART 1- GENERAL

1.1 SECTION INCLUDES:

A. Trees, shrubs, vines and groundcover.
B. Mulch and slow-release fertilizer tablets.
C. Wood headers.

1.2 RELATED SECTIONS:

A. Section 02920 - Soil Preparation and Landscape Finish Grading

1.3 REFERENCES:

A. ANSI Z60.1 - Nursery Stock, true to type and name.
B. Applicable standards:
1. An Annotated Checklist of Woody Ornamental Plants of California, Oregon & Washington, latest edition, Univ. of Ca., Div. of Agricultural Sciences.
2. USA Standard for Nursery Stock, latest edition, American Association of Nurserymen

1.4 DEFINITIONS

A. Weeds: includes Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lamdsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy, Ragwort, Bermuda Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Johnson Grass, Perrenial Sorrel, and Brome Grass.

B. Plants: Living trees, shrubs, vines and groundcover specified in this Section and described in ANSI Z60.1

1.5 QUALITY ASSURANCE:

A. Nursery: Company specializing in growing and cultivating the plants specified in this Section, with minimum ten (10) years documented experience.

B. Installer: Company specializing in installing and planting the plants specified in this Section, with minimum five (5) years documented experience. Retain qualified English-literate planting foreman on the job whenever planting is in progress.

1.6 REGULATORY REQUIREMENTS:

A. Comply with regulatory requirements for fertilizer and herbicide composition.
B. Plant Materials: Certified by CA State Department of Agriculture. Described by ANSI Z60.1, free of disease or hazardous insects.
C. Comply with all applicable Federal, State, and local codes and regulations pertaining to use, storage, and disposal of herbicides, pesticides, and other toxic substances.
D. Inspection Certificates required by law shall accompany each shipment of plants and **shall be delivered to the Landscape Architect.**

1.7 DELIVERY, STORAGE AND HANDLING:

A. Protect plants from sun and wind during transport and on site until planted.
B. Deliver live plant materials immediately prior to placement.
C. Keep plants moist.
D. Deliver plants with legible, waterproof indentification labels, stating plant name and size.

1.8 SEQUENCING AND SCHEDULING:

A. Coordinate the work of this Section with installation of underground irrigation system and utilities, and with the work of other trades.

B. Within 30 days after award of Contract, submit documentation that all plant materials have been ordered.

1.9 WARRANTY:

A. Provide a warranty, including coverage from death or unhealthy conditions, on all plants one-gallon size and larger, for a minimum of one year, including one continuous growing season.
B. Any delay in completion of the planting operations which extends the planting into more than one planting season shall extend the Warranty Period correspondingly.
C. Warranty shall commence on date identified in the Certificate of Substantial Completion, to be provided by the Landscape Architect.
D. Replacements: plants of same size and species as specified, with a new warranty commencing on date of replacement.

Part 2 - PRODUCTS

2.1 SUBSTITUTIONS:

A. Substitutions will not be permitted, except as follows: If proof is submitted to the Landscape Architect that any plant specified is not available, a proposal will be considered for use of nearest equivalent size or variety with an equitable adjustment of Contract price. Such proof shall be substantiated and submitted in writing by the Contractor within 30 days after effective date of Notice to Proceed. These provisions shall not relieve Contractor of the responsibility of obtaining specified materials in advance if special growing conditions or other arrangements must be made in order to supply specified materials.

2.2 PLANT MATERIALS

A. Quantities given for plant materials are shown for convenience only. Provide plants shown on the Drawings.
B. Trees, shrubs, vines and groundcovers shall be species and size identified in plant schedule, nursery grown in climatic conditions similar to those in locality of the Work as shown on the Drawings.
C. Plants shall be typical of their species or variety, showing normal habits of growth, and be sound, healthy and vigorous, well-branched and densely foliated when in leaf, free of disease, insect pests, eggs or larvae, and have healthy, well-developed root systems.
D. Trees shall have straight trunks with the leader intact, undamaged and uncut. Trees with damaged or crooked leaders, or multiple leaders, unless specified, will be rejected. Trees with abrasions of the bark, sunscalds, disfiguring knots, or fresh cuts of limbs over ¾" which have not completely calloused over will be rejected.
E. Measure all trees and shrubs when their branches are in their normal position. Height and spread dimensions when specified refer to main body of the plant, not to branch or root tip to tip.
F. Do not prune plants prior to Preliminary Inspection and Approval.
G. Container Stock: Grown in containers in which delivered for minimum of six months but not over two years. Samples must be shown to prove that no rootbound condition exists. Any plants which are removed from their containers prior to planting for the purpose of establishing occurence of rootbound conditions shall be replaced at no additional cost to the Owner.
H. Furnish quantities necessary to complete the Work shown on the Drawings. Quantities on the Plant List, if shown, are given only for the convenience of the Contractor. Any discrepancy in the quantities given in the Plant List shall not entitle the Contractor to additional renumeration.

2.3 BACKFILL MATERIALS:

A. Slow-release Fertilizer Tablets shall be AGRI-FORM PLANT TABS, placed in the plant pits at the following rates:
1 gallon plants - 1 tablet
5 gallon plants - 2 tablets
15 gallon & 24" box trees - 4 tablets
B. Backfill Mix for all plant materials shall be two parts existing soil from plant pit (including amended topsoil), free of rocks, clods or lumpy material, and one part organic wood residual material **(or as specified in the Soils Analysis Report).**
C. Organic Material: Nitrogen-fortified wood residual as follows:
Min. 95% passing 4 mesh screen
Min. 80% passing 8 mesh screen
Nitrogen content: 0.5% based on dry weight for redwood sawdust
0.7% based on dry weight for fir sawdust
1.0% based on dry weight for fir or pine bark
(Pine sawdust is not acceptable)
D. Water: Clean, fresh and free of substances or matter which could inhibit vigorous growth of plants.

2.4 MULCH MATERIALS:

A. Bark Mulch: 3" depth of 3/4" to 1-1/2" redwood bark mulch, free of growth- or germination-inhibiting ingredients. Shredded bark ("gorilla hair") is not acceptable.

2.5 ACCESSORIES:

A. Stakes, ties, wood headers, tree grates and root barriers shall be as shown on the Drawings.

2.6 SOURCE QUALTIY CONTROL:

A.. Inspect plant material at source to verify acceptability.

2.7 CERTIFICATION:

A. Provide certification of inspection by County or other authorities having jurisdiction for approval of plants supplied.

Part 3 - EXECUTION

3.1 EXAMINATION:

A. Verify that existing conditions are satisfactory for work of this Section to begin. Beginning installation means acceptance of existing conditions.

3.2 PLANTING:

A. Locate plants as shown on the Drawings for review and final placement by the Landscape Architect prior to digging plant pits. **Provide seven days advance written notice to Landscape Architect prior to delivery and placement of plants, for material inspection and field adjustments.**
B. Set plants vertical.
C. Excavate plant pits with vertical sides as shown on the Drawings.
D. Loosen edges of rootball without disturbing roots before setting plants in pits. Plants shall be subject to inspection by the Landscape Architect at any time prior to Final Acceptance to verify that rootball edges have been loosened, Any plants shown to be planted improperly shall be replaced.
E. Planting Backfill Mix shall be as specified above in PART 2.
F. Mix all planting backfill mixtures on site and stockpile for use.
G. Set plants in center of pits, plumb and straight, with root crown at such elevation that after settlement, plant crown shall be one inch above surrounding finish grade elevation.
H. When plants are set, tamp backfill mix around base of rootball to fill all voids.
I. When plant pits have been backfilled approximately ⅔ their depth, water thoroughly before installing remainder of backfill mix to top of pit. Avoid creating air pockets.
J. Form earth berm for watering basin at outside edge of rootball.
K. Groundcover Planting: Lightly cultivate groundcover areas and plant plants at spacing specified. Water thoroughly immediately following planting, taking care to avoid erosion.
L. When planting areas are dry enough to walk on, apply pre-emergent herbicide, in accordance with manufacturer's instructions.
M. Immediately after planting operations are complete, mulch all planting areas to depth of two inches.

3.3 INSTALLATION OF ACCESSORIES:

A. Install wood headers, stakes, tree grates, ties and root barriers as shown on the Drawings.

3.4 PLANT SUPPORT:

A. Set plants vertically with tree stakes or guys as shown on the Drawings. Loop tree ties sufficiently large, and provide guys sufficiently long, to allow for two years' growth of tree. Stake and guy immediately after planting.

3.5 PRELIMINARY INSPECTION AND APPROVAL:

A. Request a preliminary inspection of all planting upon completion of work. **Notify the Landscape Architect at least 2 days prior to inspection date.** No partial approvals will be given. Completed work must be to the satisfaction of the Landscape Architect.
B. Perform any work requiring corrective action in the judgement of the Landscape Architect within fourteen days after the Preliminary Inspection, in accordance with the Drawings and Specifications, and at no additional cost to the Owner.

3.7 FINAL INSPECTION:

A. Inspection of planting and related work shall be made at the Contractor's request upon completion of all work.
B. Notify the Landscape Architect at least 2 days prior to inspection date.
Inspection and approval of the completed work establishes the beginning of the Warranty Period.

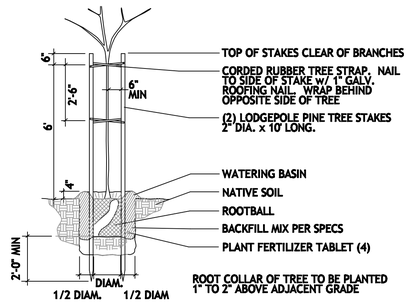
3.8 FINAL ACCEPTANCE:

A. The work under this Contract will be accepted by the Owner and the Landscape Architect upon the satisfactory completion of all work, exclusive of the warranty replacement of plant materials.

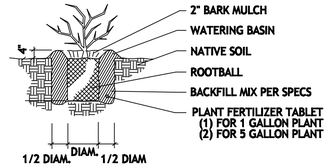
3.9 CLEAN-UP:

A. Perform the Work under this Section so as to keep affected portions of the site neat, clean and orderly at all times. Upon completion of the Work of this Section, remove immediately all surplus materials, rubbish, and equipment associated with or used in the performance of this Work.

END OF SECTION

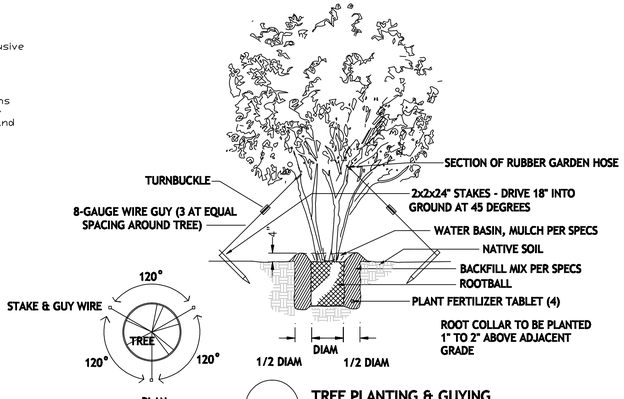


TREE PLANTING & STAKING

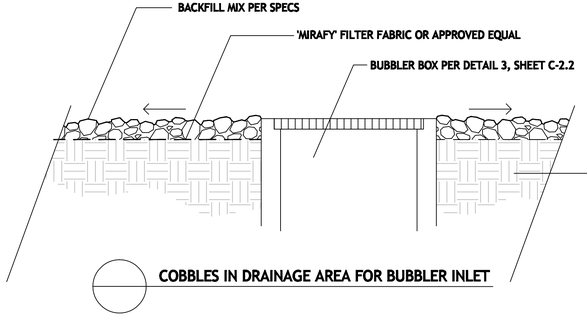


ROOT COLLAR OF SHRUB TO BE PLANTED
1" TO 2" ABOVE ADJACENT GRADE

SHRUB PLANTING



TREE PLANTING & GUYING
FOR ALL MULTI-STEM AND CONIFERS



COBBLES IN DRAINAGE AREA FOR BUBBLER INLET

LICENSED LANDSCAPE ARCHITECT
CHRISTOPHER M. TIGH, No. 2427
Signature
7/31/20
Renewal Date
2/22/21
Date
STATE OF CALIFORNIA

1301-1311 WOODSIDE RD.
REDWOOD CITY, CA 94061
PLANTING SPECIFICATIONS & DETAILS

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REVISIONS	BY
2/22/21	CT

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1301 - 1311 WOODSIDE RD., REDWOOD CITY, CA 94061
PLANTING SPECIFICATIONS & DETAILS

Planning Review
DATE: 7/7/20
SHEET
L 2.0

Lucchesi Plant & Soil CONSULTING

Report 20-176-0017
July 1, 2020

Christopher Tigh Landscape Architect
516 S. Shoreline Blvd.
Mountain View, CA 94041

Attn: Chris Tigh, Mounir Kardosh

RE: 1301 and 1311 Woodside Road, Redwood City

Background

Two composite site soil samples were collected by the undersigned on June 22, 2020 from areas where new landscaping is scheduled for installation. Both conventional and organic fertilizer and amendment recommendations were requested. A plant list was provided. The samples were analyzed for horticultural suitability, fertility and physical characteristics by Waypoint Analytical on report 20-176-0017. The results of the analyses are attached.

Analytical Results and Comments

1301 Woodside Road
The reaction of the sample is moderately acidic at a pH of 5.9. This is within the range preferred for most plants including the plants on the provided list. Salinity (ECe), sodium and boron are safely low. The SAR indicates that sodium is adequately balanced by soluble calcium and magnesium; this balance is important for soil structure quality, which relates to the rate at which water infiltrates the soil.

According to the USDA Soil Classification, the texture of the less than 2mm fraction of the sample is classified as sandy clay loam. The 53% gravel present classifies this material as **very gravelly**. This reflects both mineral and coarse organic content. Organic content is abundant at 7.2% dry weight. The organic matter content also reflects the presence of a large amount of fine bark mulch in the subsample areas. Based on this information the estimated infiltration rate is a moderately slow 0.17 inch per hour. Infiltration rates may vary due to differences in compaction across the site after the material has been laid to final grade.

In terms of fertility, nitrogen and sulfate are low and phosphorus is fair. All of the other major nutrients are sufficient for proper plant nutrition at this time. Of the micronutrients; copper, zinc, manganese and iron are all sufficient.

1311 Woodside Road
The reaction of the sample is moderately acidic at a pH of 5.9. This is within the range preferred for most plants including the plants on the provided list. Salinity (ECe), sodium and boron are safely low. The SAR indicates that sodium is adequately balanced by soluble calcium and magnesium.

According to the USDA Soil Classification, the texture of the less than 2mm fraction of the sample is classified as sandy clay loam. The 31% gravel present classifies this material as gravelly. Organic content is favorable at 6.3% dry weight. This partly reflects the presence of both fine bark mulch and existing tree roots in the

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Report 20-176-0017

subsample areas. Based on this information the estimated infiltration rate is a moderate 0.23 inch per hour. Infiltration rates may vary due to differences in compaction across the site after the material has been laid to final grade.

In terms of fertility, nitrogen and sulfate are low. All of the other major nutrients are sufficient for proper plant nutrition at this time. Of the micronutrients; copper, zinc and iron are all sufficient and manganese is low.

Recommendations

If these soils will be stockpiled for reuse in new landscaping installation, then nitrogen, phosphorus and sulfate fertilizers are recommended and should be incorporated at the time of planting. Incorporation of a nitrogen stabilized organic amendment or composted greenwaste product is also recommended in order to help improve soil nutrient holding capacity and porosity. If a composted greenwaste amendment is selected, this should also provide supplemental phosphorus and potassium as well as additional micronutrients, product depending.

The primary symptom of manganese deficiencies is a general yellowing of leaves with veins remaining green. In severe cases, leaves may become pale yellow or whitish, but veins remain green. Brown spots may develop between veins and leaf margins may turn brown. Manganese deficiency symptoms appear first on younger leaves. If these symptoms are present after plant installation they may be treated with an application of a chelated micronutrient product at the manufacturer's recommended rate. Incorporation of a composted greenwaste amendment would also provide additional micronutrients and may be sufficient to negate any deficiency, product depending.

To Prepare for Mass Planting:
Drainage of the root zone should be improved by first loosening the top 10 inches of any undisturbed or compacted soil. The following materials should then be evenly spread and thoroughly blended with the top 6 inches of soil to form a homogenous layer after the material has been laid to final grade:

Amount per 1000 Square Feet Conventional

3 cubic yards	Nitrogen Stabilized Organic Amendment* **Both Sample Areas**
7 pounds	Ammonium Sulfate (21-0-0) **Both Sample Areas**
2 pounds	Triple Superphosphate (0-45-0)* **1301 Area Only**

OR

Amount per 1000 Square Feet Organic

3 cubic yards	Composted Greenwaste Amendment* **Both Sample Areas**
6 pounds	Blood Meal (12-0-0) **Both Sample Areas**
14 pounds	Feather Meal (12-0-0) **Both Sample Areas**
5 pounds	Steamed Bone Meal (3-15-0)* **1301 Area Only**
10 pounds	Gypsum (Calcium Sulfate) **Both Sample Areas**

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P.O. Box 320401, Los Gatos CA 95032-0401 · 408-337-2575

Lucchesi Plant & Soil CONSULTING

Report 20-176-0017

* The rate may change based on the analysis of the chosen organic amendment. This rate is based on 270 lbs. of dry weight of organic matter per cubic yard of amendment. If a composted greenwaste amendment is selected that contains a significant amount of phosphorus, the triple superphosphate or steamed bone meal should be decreased or omitted accordingly.

To Prepare Backfill For Trees and Shrubs:

- Excavate planting pits at least twice as wide as the diameter of the rootball.
- Soil immediately below the root ball should be left undisturbed to provide support but the sides and the bottom around the side should be cultivated to improve porosity.
- The top of the rootball should be at or slightly above final grade.
- The top 12 inches of backfill around the sides of the rootball of trees and shrubs may consist of the above amended soil or may be prepared as follows:

5 parts	Stockpiled Site Soil **Both Sample Areas**
1 part	Nitrogen Stabilized Organic Amendment*

Uniformly blended with:

Amount per Cubic Yard of Backfill **Conventional**

1/3 pound	Ammonium Sulfate (21-0-0) **Both Sample Areas**
1/8 pound	Triple Superphosphate (0-45-0)* **1301 Area Only**

OR

5 parts	Stockpiled Site Soil **Both Sample Areas**
1 part	Composted Greenwaste Amendment*

Uniformly blended with:

Amount per Cubic Yard of Backfill **Organic**

1/3 pound	Blood Meal (12-0-0) **Both Sample Areas**
3/4 pound	Feather Meal (12-0-0) **Both Sample Areas**
1/4 pound	Steamed Bone Meal (3-15-0)* **1301 Area Only**
1/2 pound	Gypsum (Calcium Sulfate) **Both Sample Areas**

- Backfill below 12 inches required for 24 inch box or larger material should not contain the organic amendment, ammonium sulfate, blood meal or feather meal but should still contain the triple superphosphate or steamed bone meal and gypsum at the recommended rates.
- Ideally a weed and turf free zone should be maintained just beyond the diameter of the planting hole.
- A 2-4 inch deep layer of coarse mulch can be placed around the tree or shrub. Mulch should be kept a minimum 4 inches from the trunk.
- Irrigation of new plantings should take into consideration the differing texture of the rootball substrate and surrounding soil matrix to maintain adequate moisture during this critical period of establishment.

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Report 20-176-0017

Maintenance

Maintenance fertilization for conventionally planted areas should rely primarily on a nitrogen only program supplemented with a complete fertilizer in the fall and spring. Beginning 45-60 days after planting, ammonium sulfate (21-0-0) should be applied at a rate of 5 pounds per 1000 square feet with reapplication every 45-60 days. Alternatively, slow release Sulfur-coated Urea (43-0-0) may be applied at 6 pounds per 1000 square feet every 90 days. Once plants are performing satisfactorily, the frequency of fertilization may be decreased depending on color and rate of growth desired. In the winter for a quick greening effect, calcium nitrate (15.5-0-0) may be applied at a 6 pound rate if applicable. Early fall and spring, substitute a complete fertilizer such as 15-15-15 to help insure continuing adequate phosphorus and potassium.

Alternatively, Blood Meal (12-0-0) provides available nitrogen fairly rapidly while materials such as Feather Meal (12-0-0), Soybean or Cotton Seed Meal (7-1-1) are slower to provide available nitrogen, but they extend the length of time they make this contribution. In order to provide a good supply of nitrogen for a 3-4 month time frame a good combination would be 6 pounds Blood Meal and 14 pounds Feather Meal per 1000 square feet. In the fall and spring, substitute a complete organic fertilizer such as 5-5-5 applied at the manufacturer's label rate. Or, nutrient rich composted greenwaste may be spread in a 1 to 2 inch layer, which generally carries enough nutrition to boost complete nutrition though a source of nitrogen might also be added at a half rate to assure adequate nitrogen availability.

If we can be of any further assistance, please feel free to contact us.

Annmarie Lucchesi
annmarie@lucchesiconsulting.com

Emailed 5 Pages: cmango2014@aol.com, mounir@nazarethenterprises.com

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Waypoint ANALYTICAL

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Anaheim, CA 92807
Main 714-282-8777 ° Fax 714-282-8575
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Project : 1301/1311 Woodside Road - Redwood City

Report No : **20-176-0017**
Purchase Order : 20-176-0017
Date Recd : 06/24/2020
Date Printed : 07/01/2020
Page : 1 of 1

COMPREHENSIVE SOIL ANALYSIS

Sample Description - Sample ID	Half Sat %	pH	ECe dS/m	NO_3-N ppm	NH_4-N ppm	PO_4-P ppm	K ppm	Ca ppm	Mg ppm	Cu ppm	Zn ppm	Mn ppm	Fe ppm	Organic % dry wt.	Lab No.
	TEC	Qual Lime		Sufficiency Factors											
1301 Site Soil	24	5.9	0.5	2	16	20	238	3850	833	2.9	14.6	14	84	7.23	16199
	261	None		0.4		0.7	0.9	1.1	1.9	1.1	1.4	0.6	0.8		
1311 Site Soil	23	5.9	0.4	13	15	30	257	3310	634	2.9	23.6	5	49	6.27	16200
	220	None		0.6		1.1	1.1	1.1	1.6	1.2	2.6	0.3	0.6		

Saturation Extract Values						SAR	Gravel %		Percent of Sample Passing 2 mm Screen					USDA Soil Classification	Lab No.
									Sand						
Ca meq/L	Mg meq/L	Na meq/L	K meq/L	B ppm	SO_4 meq/L		Coarse 5 - 12	Fine 2 - 5	Very Coarse 1 - 2	Coarse 0.5 - 1	Med. to Very Fine 0.05 - 0.5	Silt .002-.05	Clay 0-.002		
5.8	3.2	0.6	0.3	0.22	1.1	0.3	24.2	28.8	25.2	15.8	23.5	15.2	20.2	Very Gravelly Sandy Clay Loam	16199
4.1	2.0	0.6	0.4	0.25	0.7	0.3	16.8	13.8	7.6	11.8	33.1	19.2	28.2	Gravelly Sandy Clay Loam	16200

Sufficiency factor (1.0=sufficient for average crop) below each nutrient value. N factor based on 200 ppm constant feed. SAR = Sodium adsorption ratio. Half Saturation %=approx field moisture capacity. Nitrogen(N), Potassium(K), Calcium(Ca) and Magnesium(Mg) by sodium chloride extraction. Phosphorus(P) by sodium bicarbonate extraction. Copper(Cu), Zinc(Zn), Manganese(Mn) & Iron(Fe) by DTPA extraction. Sat. ext. method for salinity (ECe as dS/m),Boron (B), Sulfate(SO_4), Sodium(Na). Gravel fraction expressed as percent by weight of oven-dried sample passing a 12mm(1/2 inch) sieve. Particle sizes in millimeters. Organic percentage determined by Walkley-Black or Loss on ignition.

* LOW , SUFFICIENT , HIGH

SOIL PREPARATION
CONTRACTOR SHALL FOLLOW ALL RECOMMENDATIONS OF THE SOILS ANALYSIS AND MANAGEMENT REPORT ON THIS SHEET FOR SOIL PREPARATION PRIOR TO PLANTING.

LICENSED LANDSCAPE ARCHITECT
CHRISTOPHER M. TIGH, NO. 2627
STATE OF CALIFORNIA
Signature
1/31/22
Renewal Date
2/22/21
Date

1301-1311 WOODSIDE RD.
REDWOOD CITY, CA 94061
SOILS ANALYSIS & MANAGEMENT REPORT
for EXISTING ON-SITE SOIL

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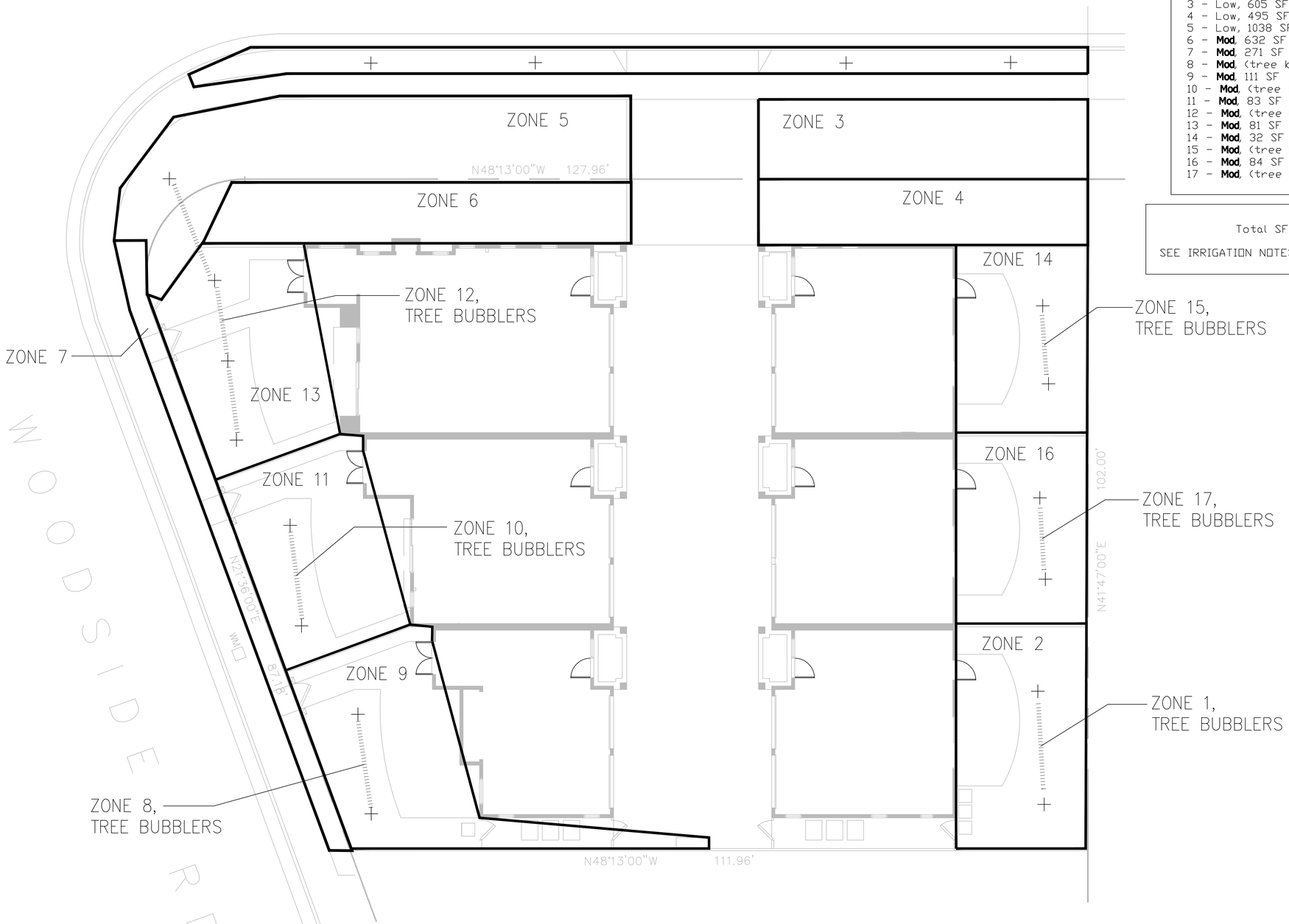
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2/22/21	CT

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1301 - 1311 WOODSIDE RD., REDWOOD CITY, CA 94061
SOILS ANALYSIS & MANAGEMENT REPORT
for EXISTING ON-SITE SOIL

Planning Review
DATE: 7/7/20

SHEET
L 2.1



PLANT WATER USE CLASSIFICATION (WUCOLS), BY VALVE ZONE:

1 - **Mod**, (tree bubblers) 32 SF
2 - **Mod**, 84 SF
3 - Low, 605 SF
4 - Low, 495 SF
5 - Low, 1038 SF
6 - **Mod**, 632 SF
7 - **Mod**, 271 SF
8 - **Mod**, (tree bubblers) 32 SF
9 - **Mod**, 111 SF
10 - **Mod**, (tree bubblers) 32 SF
11 - **Mod**, 83 SF
12 - **Mod**, (tree bubblers) 48 SF
13 - **Mod**, 81 SF
14 - **Mod**, 32 SF
15 - **Mod**, (tree bubblers) 84 SF
16 - **Mod**, 84 SF
17 - **Mod**, (tree bubblers) 32 SF

Total SF of irrigated landscape = 3776 SF

SEE IRRIGATION NOTES, SHEET L-6, FOR WATER BUDGET CALCULATIONS

LICENSED LANDSCAPE ARCHITECT
CHRISTOPHER M. TIGH, NO. 2627
Signature
1/31/21
Renewal Date
2/22/21
Date
STATE OF CALIFORNIA

HYDROZONE PLAN
1301-1311 WOODSIDE RD.
REDWOOD CITY, CA 94061

5' 15'
0' 10' 20'
SCALE: 1" = 8'-0"
WHEN PRINTED ON 24" x 36"

NORTH

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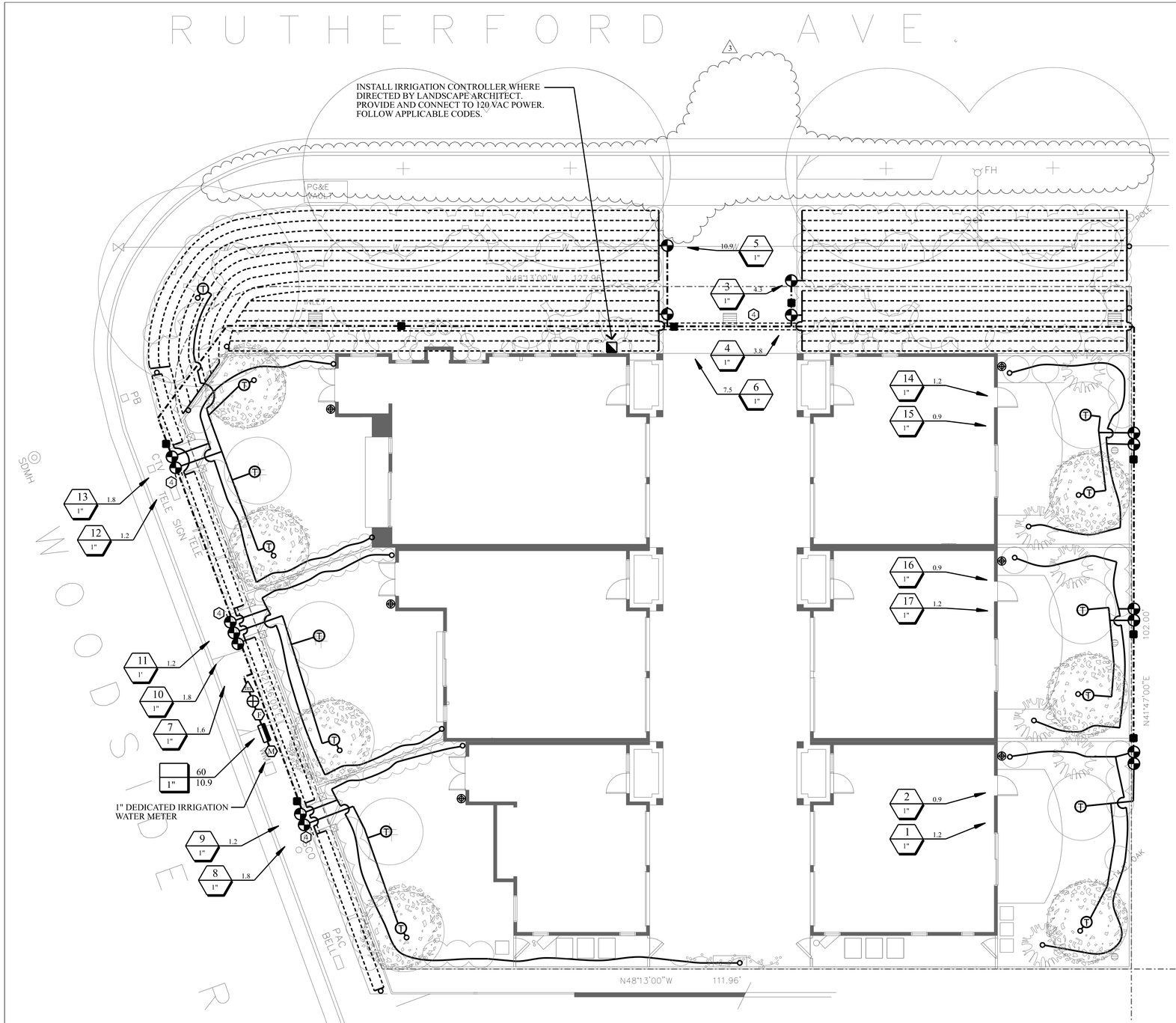
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3 2/22/21	CT

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1301 - 1311 WOODSIDE RD., REDWOOD CITY, CA 94061
HYDROZONE PLAN

Planning Review
DATE: 7/7/20
SHEET
L 3



IRRIGATION LEGEND

Description	MANUF.	Item Number	Misc. Info.	GPM
Tree Emitter Layout		See details		
Root Watering System	Rainbird	RWS (see tree emitter detail)	18", PCT-10 Emitter	
Emitter	Rainbird	PC-05PC	see tree emitter detail	5 gph
Emitter	Rainbird	PC-18PC	see tree emitter detail	18 gph
Emitter	Rainbird	XB206	multi outlet emitter/ 2 gph per outlet	2 gph
Controller	Hunter	PRO-HC	w/ Hydrawise Software	
Rain Sensor	Hunter	Mini-Clik	Connect to Controller	
Flow Sensor	CST	FDI-T10-001	1" Flow Meter, connect to controller	0.86-52
Backflow Preventer	Wilkins	975XL2U	1"	
Filter	Amiad	Super 1"		
Control Zone Kit	Rainbird	XCZ-100-PRB-COM	Zones between 5 and 15 gpm.	
Control Zone Kit	Rainbird	XCZ-75-PRF	Zones under 5 gpm	
Master Valve	Griswold	2000 Series	Normally Closed, line size	
Quick Coupling Valve	Rainbird	44NP		
Emitter Flush Valve	Netafim		Automatic Flush	
Emitter Air Relief Valve	Netafim		At all high points of emitter zones	
Emitter Pop-up Indicator	Rainbird	OPERIND	One at end of each zone	
Main Line Pipe		Schedule 40		
Lateral Line Pipe		Schedule 40		
Emitter Line Pipe		AR Flexible PVC	1"	
In Line Emitter Tubing	Rainbird	XFS-09-12 Sub-Surface Dripline w/ copper shield	12" pipe spacing - Scavoela area only	0.9 GPH
In Line Emitter Tubing	Rainbird	XFS-09-18 Sub-Surface Dripline w/ copper shield	18" pipe spacing	0.9 GPH
Drip Line Header	Rainbird	XQF-10 Dripline Header		
Sleeve		Schedule 40	w/ size	
Controller / Station No.				
GPM / Zone				
Valve Size				
Existing Pressure				
Min. Design Pressure				
Max. System GPM				
Backflow Size				
Hose Bib		See Note #6 this sheet		

Notes:
1. Pressure regulating devices are required if water pressure is below or exceeds the recommended pressure of the specified irrigation devices.
2. Check valves or anti-drain valves are required on all sprinkler heads where low point drainage could occur.
3. Install a diagram of the irrigation plan showing hydrozones with the irrigation controller for subsequent management purposes.
4. Fill out a Certificate of Completion and certify by the licensed landscape contractor for the project.
5. Complete and provide an irrigation audit report at the time of final inspection. Audit to be performed by Certified Irrigation Auditor.
6. Hose bibs will be provided for all units, at the buildings, on domestic water lines, to be shown on Plumbing plans for Building Permit application.

LICENSED LANDSCAPE ARCHITECT
CHRISTOPHER M. TIGH, NO. 2627
Signature
1/31/21
Renewal Date
2/22/21
Date
STATE OF CALIFORNIA

5′ 15′
0′ 10′ 20′
SCALE: 1" = 8'-0"
WHEN PRINTED ON 24" x 36"
NORTH

REVISIONS	BY
6/22/2020	
7/7/20	
3 2/22/21	

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Tel. (650) 254-1415

1301 - 1311 WOODSIDE RD., REDWOOD CITY, CA 94061
IRRIGATION PLAN

PLANNING REVIEW

DATE: 3/2/20

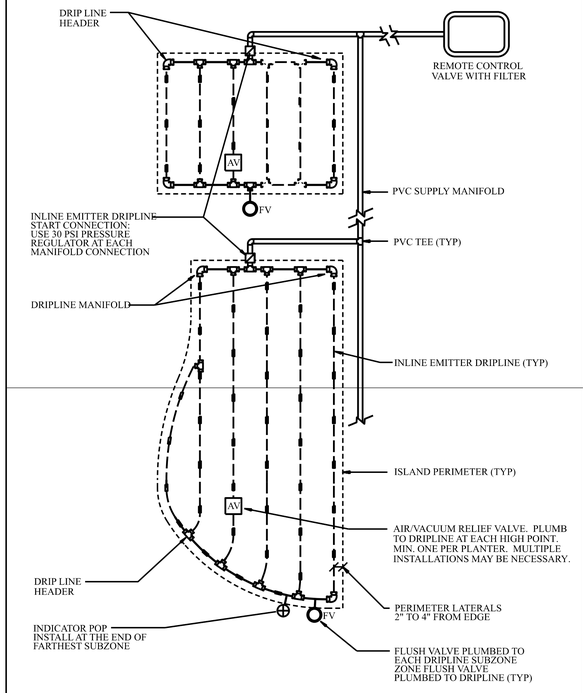
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L -4

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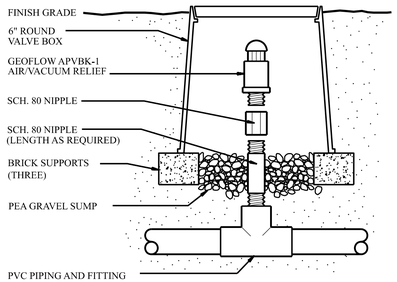
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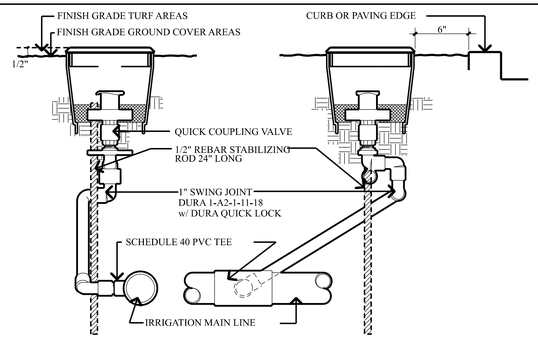
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M INLINE EMITTER ISLAND LAYOUT

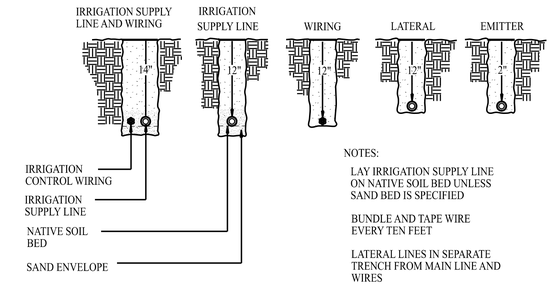


I 1" AIR/VACUUM RELIEF

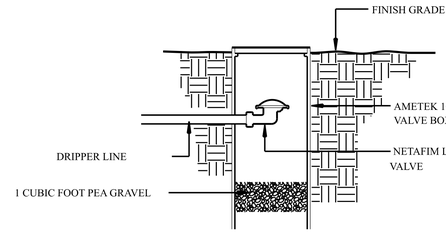


E QUICK COUPLING VALVE

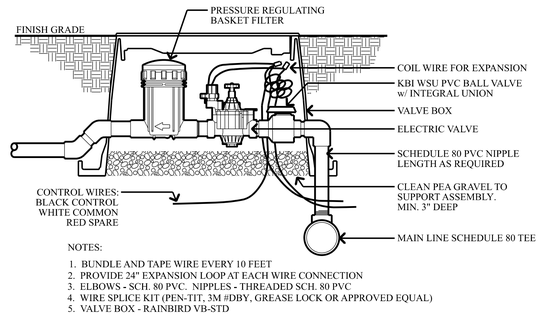
NTS



A TRENCHING AND INSTALLATION



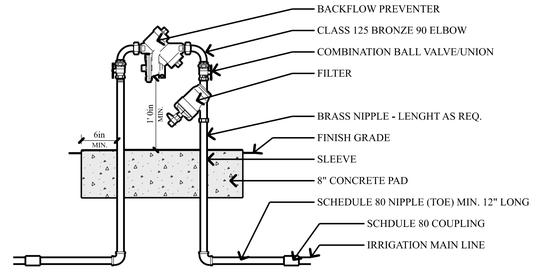
J LINE FLUSHING VALVE



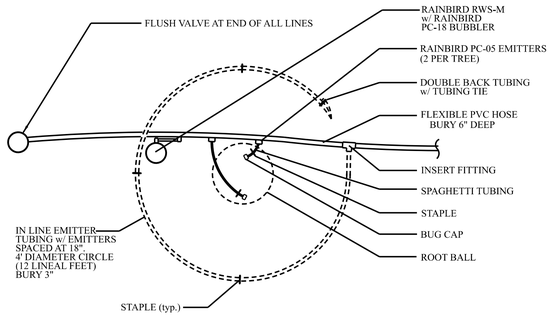
NOTES:

1. BUNDLE AND TAPE WIRE EVERY 10 FEET
2. PROVIDE 24" EXPANSION LOOP AT EACH WIRE CONNECTION
3. ELBOWS - SCH. 80 PVC. NIPPLES - THREADED SCH. 80 PVC
4. WIRE SPLICE KIT (PEN-TIT, 3M #DBY, GREASE LOCK OR APPROVED EQUAL)
5. VALVE BOX - RAINBIRD VB-STD

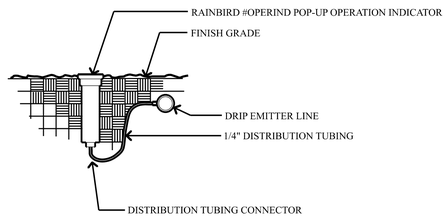
F EMITTER REMOTE CONTROL VALVE



B REDUCED PRESSURE BACKFLOW PREVENTER



N TREE EMITTER LAYOUT (36 gph)

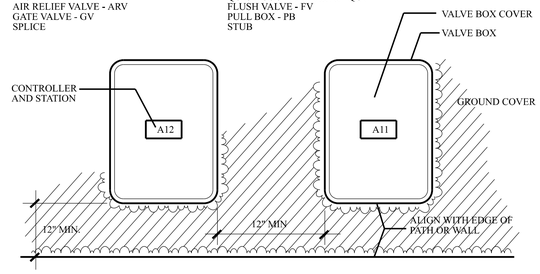


K EMITTER LINE POP-UP OPERATION INDICATOR

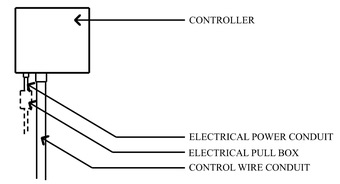
IDENTIFY ALL VALVES - PERMANENTLY MARK VALVE BOX LID WITH 2" MARKINGS
UTILIZING DREMEL (OR EQ.) ROTATING MARKING TOOL OR SOLDERING IRON AS FOLLOWS:

REMOTE CONTROL VALVE - A1, A2, B1, etc.
FLOW METER - FM
AIR RELIEF VALVE - ARV
GATE VALVE - GV
SPLICE

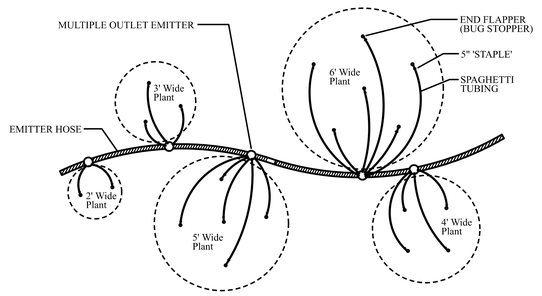
MASTER VALVE - MV
QUICK COUPLER VALVE - QCV
FLUSH VALVE - FV
PULL BOX - PB
STUB



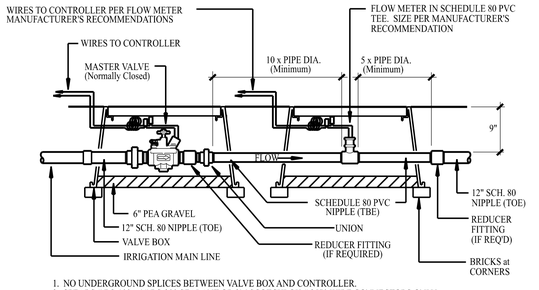
G VALVE BOXES



C WALL MOUNT CONTROLLER



L MULTIPLE OUTLET EMITTER



1. NO UNDERGROUND SPLICES BETWEEN VALVE BOX AND CONTROLLER.
2. SPEARS # DS-100 w/ # DS-300 SEALANT OR 3M SCOTCHLOK # 3570 WIRE CONNECTORS ONLY
3. INSTALL IN MANNER TO ALLOW PROPER DRAINAGE OF ANY WATER THAT ACCUMULATES IN VALVE BOX. FLOW METER SHOULD NEVER BE SUBMERGED UNDERWATER.

H MASTER VALVE & FLOWMETER RUN

LICENSED LANDSCAPE ARCHITECT
CHRISTOPHER M. TIGH, No. 2627
Signature
1/31/21
Renewal Date
2/22/21
Date
STATE OF CALIFORNIA

IRRIGATION DETAILS

REVISIONS	BY
6/22/2020	
7/7/20	
2/22/21	

Christopher Tigh
Landscape Architect
CA. Lic. No. 2627
516 S. Shoreline Blvd., Mountain View, CA 94041
Tel. (650) 254-1415

1301 - 1311 WOODSIDE RD., REDWOOD CITY, CA 94061

IRRIGATION PLAN

PLANNING REVIEW

DATE: 3/2/20

SHEET L-5

Maximum Applied Water Allowance (MAWA)

(Eto)(0.62)[(0.45 x LA(Landscape Area))+(0.55 x SLA(Special Landscape Area))] = 55,110

Eto = 42.8

Factor = 0.62

LA = 3,776

SLA = 0

Water Use Percentage of Area

No Water Area	0	0.0%
Low Water Area	0	0.0%
Mod. Water Area	0	0.0%
High Water Area	0	0.0%
Total Area	3,776	

No and Low water area = 0.0%

Estimated Total Water Use (ETWU)

(Eto)(0.62)((PFxHA/IE)+SLA)= 45,858

Hydrozone Type	Valve Number	Irrigation Method	Plant Water Use Type	Hydrozone Area (HA)	Percent of Landscape	Plant Factor (PF)	Special Landscape Area (SLA)	Irrigation Efficiency (IE)	PF x HA	ETWU	MAWA	Over/ Under MAWA	App. Rate In./Hr.	Operating Pressure PSI
Trees	1	Drip	Mod	32	0.8%	0.3	0	0.81	10	315	467	153	1.76	30
Shrubs	2	Drip	Low	84	2.2%	0.3	0	0.81	25	826	1,226	400	1.76	30
Shrubs	3	Drip	Low	605	16.0%	0.3	0	0.81	182	5,946	8,830	2,884	1.76	30
Shrubs	4	Drip	Low	495	13.1%	0.3	0	0.81	149	4,865	7,224	2,359	1.76	30
Shrubs	5	Drip	Low	1,038	27.5%	0.3	0	0.81	311	10,202	15,149	4,948	1.76	30
Shrubs	6	Drip	Low	632	16.7%	0.3	0	0.81	190	6,211	9,224	3,013	1.76	30
Shrubs	7	Drip	Mod	271	7.2%	0.6	0	0.81	163	5,327	3,955	1,372	1.76	30
Trees	8	Drip	Mod	32	0.8%	0.6	0	0.81	19	629	467	162	1.76	30
Shrubs	9	Drip	Mod	111	2.9%	0.6	0	0.81	67	2,182	1,620	562	1.76	30
Trees	10	Drip	Mod	32	0.8%	0.6	0	0.81	19	629	467	162	1.76	30
Shrubs	11	Drip	Mod	83	2.2%	0.6	0	0.81	50	1,631	1,211	420	1.76	30
Trees	12	Drip	Mod	48	1.3%	0.6	0	0.81	29	944	701	243	1.76	30
Shrubs	13	Drip	Mod	81	2.1%	0.6	0	0.81	49	1,592	1,182	410	1.76	30
Trees	14	Drip	Mod	32	0.8%	0.6	0	0.81	19	629	467	162	1.76	30
Shrubs	15	Drip	Mod	84	2.2%	0.6	0	0.81	50	1,651	1,226	425	1.76	30
Shrubs	16	Drip	Mod	84	2.2%	0.6	0	0.81	50	1,651	1,226	425	1.76	30
Trees	17	Drip	Mod	32	0.8%	0.6	0	0.81	19	629	467	162	1.76	30
				3,776			0			45,858	55,110	9,252		

IRRIGATION NOTES

1. LOCATE AND CLUSTER VALVES NEXT TO PATHWAYS WHERE POSSIBLE, SO THAT REPAIRS CAN BE MADE FROM THE PAVED SURFACE. OBTAIN APPROVAL OF LOCATION FROM LANDSCAPE ARCHITECT
2. VALVE BOX COVERS IN VALVE BOXES TO BE BLACK IN COLOR.
3. INSTALL CONTROLLERS WHERE DIRECTED BY LANDSCAPE ARCHITECT
4. MAP EACH ZONE AND GRAPHICALLY SHOW THE LOCATION OF EACH ZONE ON A PLASTIC ENCLOSED 8" X 11" CARD.
5. MAKE WIRE SPLICES WITH 3M DRY SPLICE KITS.
6. USE 14GAUGE WIRE BETWEEN CONTROLLER AND VALVES. TAG EACH WIRE AT CONTROLLER WITH VALVE NUMBER.
7. WIRE COLOR AS FOLLOWS:

   COMMON-WHITE CONTROLLER 'A' – RED

8. INSTALL ONE (1) SPARE CONTROLLER WIRE FOR EACH VALVE CLUSTER ALONG THE ENTIRE MAINLINE. SPARE WIRES SHALL BE THE SAME COLOR WITH A WHITE STRIPE AND OF A DIFFERENT COLOR THAN OTHER CONTROLLER WIRES. LOOP 36 " EXCESS WIRE INTO EACH STAND ALONE VALVE BOX.
9. INSTALL METALLIC PURPLE LOCATOR TAPE OVER MAINLINES NO LESS THAN 12 INCHES BELOW FINISH GRADE.
10. INSTALL MAINLINE PVC PIPE USING HEAVY BODIED GRAY PVC GLUE, IPS CORP. 2711 OR APPROVED EQUAL, AND PREPARE WITH PURPLE PRIMER.
11. INSTALL 1/2 INCH MESH GALVANIZED WIRE BELOW EACH VALVE BOX, INCLUDING THOSE FOR QUICK COUPLING VALVES, MASTER VALVE, FLOW SENSOR AND WIRE SPLICES. ENCIRCLE THE VALVE BOX WITH WIRE MESH SO THAT IT CANNOT BE FILLED WITH DIRT BY GOPHERS.
12. VERIFY WORKING WATER PRESSURE. REPORT FINDINGS TO OWNER AND RECEIVE WRITTEN PERMISSION TO PROCEED, BEFORE BEGINNING CONSTRUCTION.
13. CONNECT CONTROLLER TO IRRIGATION SYSTEM. PROVIDE ALL EQUIPMENT, PARTS AND CONNECTIONS NECESSARY FOR COMPLETE CONNECTION TO CONTROLLER.
14. BORE UNDER EXISTING SIDEWALKS. INSTALL SLEEVES FOR IRRIGATION PIPING AND WIRES. DO NOT REMOVE EXISTING PAVING UNLESS OTHERWISE SPECIFIED.
15. PERFORM BACKFLOW TEST BY CERTIFIED CALIFORNIA NEVADA SECTION (A WWA) BACKFLOW PREVENTION TESTER AND PROVIDE DOCUMENTATION TO OWNER.

16. INSTALL WIRE FROM CONTROLLER TO FLOW SENSOR AND MASTER VALVE IN CONDUIT.

LICENSED LANDSCAPE ARCHITECT
CHRISTOPHER M. TIGH, No. 2627
Signature
1/31/21
Renewal Date
2/22/21
Date
STATE OF CALIFORNIA

IRRIGATION NOTES

REVISIONS	BY
7/7/20	
2/22/21	

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IRRIGATION PLAN

PLANNING REVIEW

DATE: 3/2/20

SHEET
L-6

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COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT C

ARBORLOGIC
CONSULTING ARBORISTS

ARBORIST REPORT

September 23, 2019

Arborist Development Impact Report

1301-1311 Woodside Road, Redwood City CA

A.P.N. 069-311-340 and 069311-250

Prepared for:
San Mateo County
Community Development: Planning Department

Prepared by:
ArborLogic Consulting Arborists
James Lascot, Principal Consulting Arborist
James Reed Consulting Arborist
236 West Portal Ave. #311,
San Francisco, CA 94127
415.753.5022
jlascot@arborlogic.com

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APPENDIX A - INDIVIDUAL TREE INVENTORY	*2 Pages*
TREE REMOVAL PLAN SHEET T1	*ATTACHMENT*

ARBORIST ASSIGNMENT

Generally, a 'Tree Resource Evaluation and Construction Impact Assessment' is used to aid in planning and plan review, for the identification/location of trees on the site during the design of the project, placement of structures, driveways, utilities, and construction activities.

It also is used to identify trees of designated size and species that are protected under the municipal or county code that is applicable for the site location. And if required by the governing agency, can be used to establish monetary values and responsibility for potential loss of tree resources for the property owner and the community. Bonding for a percentage of the appraised tree value is sometimes required.

The report shall inventory all trees that are on site to include trees to be removed, relocated and retained on the property. This may include trees on neighboring properties that overhang the project site and/or have root zones extending into the property of the project site, and all street or park trees in the public right-of-way adjacent to the project site.

ArborLogic Consulting Arborists have been contracted to inspect existing trees on this property, to provide an inventory with condition assessment, to determine potential negative impact from proposed construction activity, and to recommend impact mitigation measures to be considered on 'Significant' trees as defined by the San Mateo County tree preservation ordinance.

Consulting arborists, James Lascot and James Reed, performed an initial site visit and visual tree inspections.

SUMMARY

This site is a developed lot. The subject trees consist of existing protected trees within the vicinity of the proposed development and included within the Topographic Survey as shown on the Vesting Tentative Map TM-1. The Subject trees total eighteen (18) individuals consisting of six species. There is one tree (T4) that is shown on the Vesting Tentative Map TM-1 that cannot be found on current site and there is no current evidence that it existed on site There appears to be no neighboring trees close enough to the proposed development to require inclusion within this report.

It is our understanding that, although this site is within the Redwood City, the jurisdiction for these trees will fall under County of San Mateo Planning and Building Division Significant Tree Ordinance.

We have found that twelve (12) Significant size trees and five (5) unprotected size trees will require removal for the proposed development. One unprotected size tree (T17) is within the development footprint but is, currently, in such poor health we do not expect it to survive and have designated to be removed (dying). Two subject trees are protected mature native coast live oak trees (T6 and T7) that will require removal due to grading requirements and constraints.

There will be no protected (Significant) or non-protected trees on the site due to development constraints, so this report is without tree protection mitigation.

Two acacias are designated as Significant and protected due to their trunk size but Acacia species, green wattle (*Acacia decurrens*), are considered a highly flammable species within 'Pyrophytic vs. Fire Resistant Plants' University of California Cooperative Extension (Svihra/Moritz 1998) and may be designated as removals to reduce fire hazards by the Fire Marshall but are also designated as removals for the proposed development. However they are designated by San Mateo, they are not a desirable species, create a fire hazard, and are given a very low preservation rating within this report.

Individual tree recommendations are described within the Individual Tree Inventory – Appendix A of this report and on the Tree Removal Plan Sheet T-1.

SUBJECT TREE SUMMARY

TOTAL SUBJECT TREES: 18 Trees

TREE REMOVAL FOR PROPOSED DEVELOPMENT:

'SIGNIFICANT' size trees: Total = 10

9 Coast live oak (*Quercus agrifolia*) – T6, T7, T8, T11, T13, T15, T16, T18, and T19

1 Italian stone pine (*Pinus pinea*) – T14

'UNPROTECTED' size trees: Total = 5

2 Coast live oak (*Quercus agrifolia*) – T9 and T10

1 American plum (*Prunus americana*) – T12

1 Loquat (*Eriobotrya japonica*) – T3

1 Bailey's acacia (*Acacia baileyana*) – T5

TREE REMOVAL (DEAD, DISEASED, HAZARDOUS, FALLEN, AND FLAMMABLE):

'SIGNIFICANT' size trees: Total = 2

DEAD: NONE

FALLEN: NONE

DISEASED: NONE

HAZARDOUS: NONE

FLAMMABLE:

2 Green wattle acacias (*Acacia decurrens*) T1 and T2

'UNPROTECTED' size trees: Total = 1

DEAD: NONE

1 American plum (*Prunus americana*) – T17

FALLEN: NONE

DISEASED: NONE

HAZARDOUS: NONE

FLAMMABLE: Total = 1

SPECIES LIST

Total subject trees = 18 trees

11 Coast live oak (*Quercus agrifolia*) – T6*, T7*, T8*, T9, T10, T11*, T13*, T15*, T16*, T18*, and T19*
2 Green wattle acacias (*Acacia decurrens*) T1* and T2*
2 American plum (*Prunus americana*) – T12 and T17
1 Italian stone pine (*Pinus pinea*) – T14
1 Bailey's acacia (*Acacia baileyana*) – T5
1 Loquat (*Eriobotrya japonica*) – T3

*=SIGNFICANT (PROTECTED) SIZE TREE

RESOURCES

All information within this report is based on currently submitted plans and revisions as of the date of this report.
Resources are as follows:

- Vesting Tentative Map TM-1 (2/11/19) Provided by SMP Engineering, Los Altos, California
- County of San Mateo: Planning and Building Division Chapter 12: Significant Tree Ordinance

ROOT INTRUSION ZONES (RIZ)

The above ground portions of trees can easily be seen and protected but what is often overlooked, within the construction setting, is the importance of protecting the root crown and underground roots of the tree to preserve structural integrity and physiological health. Most roots are located within the topsoil that may only be 6"-18" in depth. Cutting of roots, grade changes, soil compaction and chemical spills or dumping can negatively affect tree health, stability, and survival, and should be avoided.

A "Root Intrusion Zone", abbreviated as RIZ, is based on the industry standard Matheny / Clark tree protection zone designation of an area surrounding an individual tree that is provided as protection for the tree trunk, structural roots and root zone. A Root Intrusion Zone is a radius, in feet, from a tree trunk location formulated from tree trunk diameter, age, and species tolerance to construction impacts. An individual or group of Root Intrusion Zones are designated by a fenced protection area that we call a "Tree Protection Area" (TPA).

Tree protection shall include the location of fencing of tree protection area (TPA) to protect tree roots, foliar canopy, limbs, and may include the armoring of the tree trunk and/or scaffold limbs with barriers to prevent mechanical damage.

Once the TPA is delineated and fenced (prior to any site work, equipment and materials move in), construction activities are only to be permitted within the TPA if allowed for and specified by the project arborist. Restrictions and guidelines apply to the tree protection zones delineated within

this report and trees protections plan (See the Tree Protection Plan Sheet T1 for Tree Protection recommendations).

CRITICAL ROOT ZONES (CRZ)

Critical Root Zone (CRZ) is the area of soil around the trunk of a tree where roots are located that provide critical stability, uptake of water and nutrients required for a tree's survival. The CRZ is the minimum distance from the trunk that trenching that requires root cutting should occur and can be calculated as three to the five times the trunk Diameter at Breast Height (DBH). For example, if a tree is one foot in trunk diameter than the CRZ is three to five feet from the trunk location. We will often average this as four times the trunk diameter or 1ft. DBH = 4ft. CRZ (Smiley, E.T., Fraedrich, B. and Hendrickson, N. 2007).

PROJECT ARBORIST DUTIES

The project arborist is the person(s) responsible for carrying out technical tree inspections, assessment, arborist report preparation, consultation with designers and municipal planners, specifying tree protection measures, monitoring, progress reports and final inspection.

A qualified project arborist (or firm) should be designated, retained, and assigned to facilitate and insure tree removal practices. He/she/they should perform the following inspections:

PROJECT ARBORIST INSPECTION SCHEDULE

- Inspection of site: Prior to Equipment and Materials Move In, Site Work, Demolition and Tree Removal: The Project Arborist will meet with the General Contractor, Architect / Engineer, and Owner or their representative to review tree preservation measures, designate tree removals and provide any necessary recommendations.

REMOVED TREES REPLACEMENT PROGRAM

Protected trees have been designated for removal to accommodate the property improvements. Any new trees planted within the scope of site development may be reviewed by the planning department.

TREE WORK STANDARDS AND QUALIFICATIONS

All tree work, removal, pruning, planting, shall be performed using industry standards as established by the International Society of Arboriculture. Contractor must have a State of California Contractors License for Tree Service (C61-D49) or Landscaping (C-27) with general liability, worker's compensation, and commercial auto/equipment insurance.
Contractor standards of workmanship shall adhere to current Best Management Practices of the International Society of Arboriculture (ISA) and the American National Standards Institute (ANSI) for tree pruning, fertilization and safety (ANSI A300 and Z133.1).

COUNTY OF SAN MATEO: PLANNING AND BUILDING DIVISION
THE SIGNIFICANT TREE ORDINANCE OF SAN MATEO COUNTY
(Part Three of Division VIII of the San Mateo County Ordinance Code)
CHAPTER 1. FINDINGS, INTENT AND PURPOSE
SECTION 12,000. FINDINGS. The Board of Supervisors finds and declares that the existing and future trees and tree communities located within the County of San Mateo are a valuable and distinctive natural resource. The trees and tree communities of the County augment the economic base through provision of resources for forest products, encouragement of tourism, and enhancement of the living environment. These resources are a major component of both the highly-localized and area-wide environment. The following environmental consequences are among those which could result from the indiscriminate removal or destruction of trees and tree communities in San Mateo County:

(a) Modification of microclimates.
(b) Change or elimination of animal habitat, possibly including habitats of endangered species.
(c) Change in soil conditions, resulting in modified biological activity and erosion of soils.
(d) Creation of increased susceptibility of flood hazards.
(e) Increased risk of landslides.
(f) Increased cost of construction and maintenance of drainage system through increased flow and diversion of surface waters.
(g) Degradation of the human habitat.
(h) Loss of environmental benefits of trees in neighborhoods, such as noise reduction, oxygen replacement, carbon dioxide reduction, interception of particulates, aesthetic qualities.
(i) Potential for irreparable wind damage to adjacent trees.

SECTION 12,001. INTENT. The Board of Supervisors further finds and declares that it has already passed legislation to regulate the commercial harvesting of forest products in this County and that it does not intend by this enactment to affect those other ordinances regulating tree cutting, but that it is the intent of this Board to control and supervise in a reasonable manner the cutting of significant trees and tree communities within the unincorporated area of the County as herein described. It is further found and declared that the preservation and replacement of significant tree communities on private and public property is necessary to protect the natural beauty of the area, protect property values, and prevent undesirable changes in the environment.

SECTION 12,002. PURPOSE. The Board of Supervisors further finds and declares that it is necessary to enact this ordinance for the above reasons and to promote the public health, safety, general welfare and prosperity of the County, while respecting and recognizing individual rights to develop, maintain and enjoy private property to the fullest possible extent, consistent with the public interest, convenience and necessity.

SECTION 12,003. TITLE. This ordinance shall be known as the “Significant Tree Ordinance.”

CHAPTER 2. DEFINITIONS
For the purposes of this part, the following words shall have the meaning ascribed to them in this chapter.

SECTION 12,010. “PERSON” shall mean an individual, public agency, including the County and its departments, firm, association and corporation, and their employees, agents or representatives.

SECTION 12,011. “COUNTY” shall mean the County of San Mateo acting by and through its authorized representatives.

SECTION 12,012. “SIGNIFICANT TREE” shall mean any live woody plant rising above the ground with a single stem or trunk of a circumference of thirty-eight inches (38") or more measured at four and one half feet (4 1/2') vertically above the ground or immediately below the lowest branch, whichever is lower, and having the inherent capacity of naturally producing one main axis continuing to grow more vigorously than the lateral axes.

SECTION 12,012.1. In the RH/DR Zone Districts the definition of significant tree shall include all trees in excess of nineteen inches (19") in circumference.

SECTION 12,013. “PRIVATE PROPERTY” shall mean all property not owned by the County of San Mateo or any other public agency.

SECTION 12.014. “PUBLIC PROPERTY” shall mean all property owned by the County of San Mateo, any other city, county, city and county, special district or other public agency in the unincorporated area of San Mateo County.

SECTION 12,015. “PLANNING DIRECTOR” shall mean the Planning Director of the County of San Mateo, including his authorized or appointed representatives. For the purpose of this ordinance, the Planning Director shall authorize or appoint a representative qualified in the field of forestry, ornamental horticulture, or tree ecology to provide the necessary technical assistance in the administration hereof.

SECTION 12,016. “COMMUNITY OF TREES” shall mean a group of trees of any size which are ecologically or aesthetically related to each other such that loss of several of them would cause a significant ecological, aesthetic, or environmental impact in the immediate area.

SECTION 12,017. “INDIGENOUS TREE” shall mean a tree known to be a native San Mateo County tree. The term may be narrowed in its meaning to include only those trees known to occur naturally in a certain portion of the County. In the Emerald Lake Hills Community Plan area, indigenous tree shall include the following species of trees: Salix coulteri, Salix lasiolepis, Salix lasiandra (all native willows); Acer negundo californica (box elder); Aesculus californica (buckeye); Arbutus menziesii (madrone); Quercus agrifolia

(coast live oak); Quercus lobata (valley oak); Quercus douglasii (blue oak); and Umbellularia californica (California bay laurel). This list may be amended to include indigenous trees not currently known to occur naturally upon confirmation by a reputable authority on native trees of San Mateo County.

SECTION 12,018. "EXOTIC TREE" shall mean any tree known not to be a native indigenous tree, hence any tree which has been planted or has escaped from cultivation.

SECTION 12,019. "TRIM" means the cutting of or removal of any limbs or branches of trees which will not seriously impair the health of trees. For the purposes of this Part, the definition of trim shall not apply to any tree being grown as an orchard tree or other fruit or non-indigenous ornamental tree for which trimming and pruning are considered ordinary horticultural practices.

CHAPTER 3. PERMITS, CONDITIONS OF APPROVAL, POSTING, EMERGENCIES, APPEALS

SECTION 12,020. PERMIT REQUIRED. Except as provided in Section 12,020.1, below, a permit shall be required under this Part for the cutting down, removing, poisoning or otherwise killing or destroying or causing to be removed any significant tree or community of trees, whether indigenous or exotic, on any private property.

SECTION 12,020.1. EXEMPTIONS. No permits shall be required under this Part in the following circumstances:

(a) Tree cutting carried out under the provisions of Parts One (Timber Harvesting Regulations) and Two (Regulation of the Cutting of Heritage Trees) of Division VIII of the San Mateo County Ordinance Code.
(b) Tree cutting in the Resource Management (RM or RM/CZ), Timberland Production Zone (TPZ or TPZ/CZ), and Planned Agricultural (PAD) districts, except within 100 feet of any County or State scenic road or highway, as identified in the San Mateo County General Plan, provided that any tree cutting in the RM, RM/CZ or PAD districts shall be subject to Section 12,020.3.
(c) Tree cutting to remove a hazard to life and personal property as determined by the Planning Director, Director of Public Works, or Officer of the California Department of Forestry and Fire Protection.
(d) Tree cutting where there is a unique area with a tree management program.
(e) Tree cutting which has been authorized by the Planning Commission, Design Review Committee, or Planning Director as part of a permit approval process in which the provisions of this Part have been considered and applied.

SECTION 12,020.2. TRIMMING IN THE RH/DR DISTRICT. A permit shall be required in the RH/DR district for the trimming of significant indigenous trees where the cut results in the removal of a branch or cutting of the trunk which is 19 inches or greater in circumference at the point of the cut. Exempt from the provisions of this paragraph are instances where, as determined by the Planning Director, "limb break" or other natural occurrences cause the loss of the crown or limb of a tree and such loss requires additional

corrective cutting. Under such circumstances, appropriate tree surgery may be required, but no permit is needed.

SECTION 12,020.3. TREE CUTTING IN THE RM, RM/CZ, AND PAD DISTRICTS.
(a) Within the Resource Management (RM or RM/CZ) district, the criteria of Sections 6324 through 6326.4 shall apply and any permit issued for such area shall constitute a Certificate of Compliance as required by Section 6461 of the San Mateo County Zoning Regulations.
(b) Within the Planned Agricultural (PAD) district, the criteria of Sections 6324 through 6326.4 shall apply, in addition to the requirements, if any, of a Coastal Development Permit.

SECTION 12,021. PERMIT APPLICATIONS. Any person desiring to cut down, remove, destroy or cause to be removed any tree regulated herein shall apply to the San Mateo County Planning Division for a Tree Cutting Permit on forms provided. Said application shall be accompanied by such drawings, written material, photographs and other information as are necessary to provide data concerning trees within the affected area, which shall include:

(a) The diameter and height of the tree.
(b) The type of trees (e.g., coniferous, evergreen hardwood and deciduous hardwood).
(c) A map or accurate sketch of location and trees proposed to be cut (show other significant trees, shrubs, buildings or proposed buildings within 25 feet of any trees proposed to be cut including any off the parcel; photographs may be used to show the area).
(d) Method for marking the tree proposed to be trimmed, cut down, removed or destroyed.
(e) Description of method to be used in removing or trimming the tree.
(f) Description of tree planting or replacement program, including detailed plans for an irrigation program, if required.
(g) Reasons for proposing removal or trimming of the tree.
(h) Street address where tree is located.
(i) General health of tree to be trimmed, cut down or removed, as documented by a licensed tree surgeon or arborist.
(j) Other pertinent information which the Planning Director may require.

SECTION 12,021.1. FEES. The application for a tree cutting permit shall be accompanied by a fee as set by resolution of the Board of Supervisors.

SECTION 12,021.2. POSTING NOTICE OF APPLICATION. The applicant shall cause a notice of application on a form provided by the San Mateo County Planning Division to be posted on each tree for which a permit is required and in at least two conspicuous locations clearly visible to the public, preferably on the roadside at eye level, on or close to the property affected indicating the date, a brief description of the application, the identification of the subject property, the address to which comments may be directed and from which further information may be obtained, and the final date for receipt of comments. The applicant shall indicate on the application his or her affidavit that this notice will be

posted for at least ten (10) calendar days after the submission of the completed application.

SECTION 12,022. ACTION ON PERMIT. The Planning Director shall review the application and, if necessary, inspect the site and shall determine on the basis of the information provided, the site inspection and the criteria con tuned herein whether to grant, grant with conditions, or deny the permit. Whenever any action is taken on a permit, the Planning Director shall provide the applicant with a written statement indicating said action, and conditions imposed and the findings made in taking such action.

SECTION 12,022.1. SCENIC CORRIDORS. Any permits which involve substantial alteration of vegetation within a scenic corridor shall be acted upon by the Planning Commission. The Planning Commission may approve, conditionally approve, or deny the permit.

SECTION 12,023. CRITERIA FOR PERMIT APPROVAL. The Planning Director or any other person or body charged with determining whether to grant, conditionally grant or deny a Tree Cutting or Trimming Permit may approve a permit only if one or more of the following findings are made:

(a) The tree:

(1) is diseased;
(2) could adversely affect the general health and safety;
(3) could cause substantial damage;
(4) is a public nuisance;
(5) is in danger of falling;
(6) is too closely located to existing or proposed structures consistent with LCP Policy 8.9(a);
(7) meets standards for tree removal of Chapter 28.1 (Design Review District) of the San Mateo County zoning regulations;
(8) substantially detracts from the value of the property;
(9) interferes with utility services consistent with San Mateo County Local Coastal Program (LCP) Policy 8.9(a);
(10) acts as a host for a plant which is parasitic to another species of tree which is in danger of being infested or exterminated by the parasite;
(11) is a substantial fire hazard; or
(12) will be replaced by plantings approved by the Planning Director or Design Review Administrator, unless special conditions indicate otherwise.

(b) The required action is necessary

(1) to utilize the property in a manner which is of greater public value than any environmental degradation caused by the action; or
(2) to allow reasonable economic or other enjoyment of the property. These findings cannot be made for any property in the Coastal Zone.

SECTION 12,024. CONDITIONS OF APPROVAL. In granting any permit as provided herein, the Planning Director, Planning Commission, or Board of Supervisors may attach reasonable conditions to insure compliance with the intent and purpose of this ordinance including, but not limited to:

(a) Outside of the RH/DR district, replacement of trees removed shall be with plantings of trees acceptable to the Planning Director.

(b) In the RH/DR district, replacement shall be in a manner and quantity prescribed by the Design Review Committee but shall not exceed the following specifications:

(1) For each loss of a significant indigenous tree in the RH/DR district there shall be a replacement with three (3) or more trees, as determined by the Planning Director, of the same species using at least five (5) gallon size stock.
(2) For each loss of a significant exotic tree in the RH/DR district there shall be a replacement with three (3) or more trees, as determined by the Planning Director, from a list maintained by the Planning Director. Substitutes for trees listed by the Planning Director may be considered but only when good reason and data are provided which show that the substitute tree can survive and flourish in the regional climatic conditions.
(3) Replacement trees for trees removed in the RH/DR district shall require a surety deposit for both performance (installation of tree, staking, and providing an irrigation system) and maintenance. Maintenance shall be required for no less than two (2) and no more than five (5) years as determined by the Planning Director.
(4) Loss of any particular replacement prior to the termination of the maintenance period shall require the landowner at his/her expense to replace the lost tree or trees. Under such circumstances, the maintenance period will be automatically extended for a period of two (2) additional years.
(5) Release of either the performance or maintenance surety shall only be allowed upon the satisfactory installation or maintenance and upon inspection by the County.
(6) Where a tree or trees have been removed on undeveloped lands in the RH/DR district and no existing water system is available on the parcel, the replacement tree or trees, if required to be installed, shall be of sufficient size that watering need not be done by automatic means. Under such circumstances, water can be imported by tank or some other suitable method which would ensure tree survival in accordance with subparagraphs (4) and (5), above.
(7) Postponing the planting of replacement trees can be done if approved by the Design Review Administrator.

(c) Use of measures to effect erosion control, soil and water retention and diversion or control of increased flow of surface waters.
(d) Use of measures to insure that the contemplated action will not have adverse environmental effects relating to shade, noise buffers, protection from wind, air pollution and historic features.
(e) Removal of posting following all tree cutting activity and inspection by the County.

SECTION 12,025. PERMIT ON SITE. The approved Tree Cutting Permit shall be posted on the site at all times during the tree cutting operation and shall be available to any person for inspection. The issued permit shall be posted in a conspicuous place at eye level at a point nearest the street.

SECTION 12,026. EXPIRATION OF PERMIT. If work authorized by an approved permit is not commenced within a period of one year from the date of approval, the permit shall be considered void.

SECTION 12,027. EMERGENCIES. In case of emergency, caused by the hazardous or dangerous condition of a tree and requiring immediate action for the safety of life or property, such necessary action may be taken to remove the tree or otherwise reduce or eliminate the hazard without complying with the other provisions of this Part, except that the person responsible for the cutting or removal of the trees shall report such action to the Planning Director within five (5) working days thereafter, and the provisions regarding replacement trees in accordance with Section 12,024 of this Part shall be required.

SECTION 12,028. APPEALS. The applicant or any other person who is aggrieved by the issuance or non-issuance of the permit or any conditions thereof, or by any other action taken by the Planning Director as authorized by this Part, may appeal in the manner set forth below. A statement by the appellant shall be required indicating how the appellant is aggrieved or adversely affected by the decision. At the time the appeal is heard, the Planning Commission shall rule upon the appellant's standing as an aggrieved party. If the Planning Commission rules that the appellant is not aggrieved, all further proceedings shall be stayed except that the appellant may appeal the Planning Commission decision on standing to the Board of Supervisors as herein provided.

(a) Any action under this Part taken by the Planning Director may be appealed to the Planning Commission by filing a written notice of appeal with the Secretary of the Planning Commission within ten (10) days of the issuance or denial of said permit. The Planning Commission shall hear such appeal within thirty (30) days of the date of filing of the written protest. The Planning Commission shall render a decision on the appeal within fifteen (15) days of public hearing. The Planning Director shall notify the affected parties of said action as provided for in Section 12,022.

(b) Any action under this Part taken by the Planning Commission may be appealed to the Board of Supervisors by filing a written notice of appeal with the Secretary of the Planning Commission within (10) days from the decision of the Planning Commission. The Board of Supervisors shall hear such appeal within sixty (60) days and render a decision within fifteen (15) days following such hearing. The decision of the Board of Supervisors shall be final. The action taken by the Board of Supervisors shall be reported to the affected parties as provided for in Section 12,022 herein.

CHAPTER 4. INSPECTIONS, VIOLATIONS

SECTION 12,030. PERMISSION TO ENTER PROPOSED PERMIT AREA. Filing of an application for a Tree Cutting Permit shall constitute a grant of permission for County

personnel concerned with administering this Part to enter the subject permit area during normal working hours from the date of application to the completion of any approved action for the purpose of inspecting said area for compliance with these rules and applicable law. Such right of entry shall be granted by the landowner through the duration of any requirements to maintain replacement trees as conditions to the permit.

SECTION 12,031. INSPECTION. The Planning Department may cause sufficient inspections to be made of the permit area to assure compliance with the provisions of this part and the requirements of any applicable law. Upon completion of any inspection, the permittee shall be given a written notice of any violations observed at the time of inspection for correction thereof.

SECTION 12,032. VIOLATIONS: CEASE AND DESIST; REMEDIATION OF UNLAWFUL TREE CUTTING. If the Chief Building Official or Planning Director or their designated representative, or any officer of the San Mateo County Sheriff's Department, or any other peace officer finds any tree cutting activity for which a permit under this Part is required but not issued, or the posting as required in this Part has not been properly performed, or the tree cutting is not in substantial compliance with an issued permit or the plans and specifications relating thereto, or a valid tree cutting permit is not immediately present at the job site, an order to cease work may be issued. No further tree cutting may be done except upon approval of the Planning Director. Conditions may be imposed as necessary to protect the health, safety and welfare of the public, including the condition that corrective work be done within a designated time in accordance with the provisions of this Part, or as may be provided by law in Division VI (Zoning Regulations), San Mateo County Ordinance Code. In the event that the Planning Director determines that one or more significant trees have been cut without the required permit or permits, the following additional requirements shall be imposed:

(a) A stop work notice may be issued on all construction of any kind on the property to remain in effect until the remaining requirements of this section are satisfied.
(b) The owner of the affected property shall be required to obtain a permit in accordance with Chapter 3 of this Part, and shall pay all fees and satisfy all conditions in connection therewith.
(c) The stop work notice shall remain in effect, and no construction shall be allowed on the affected property, until the expiration of such period of time as may be prescribed by the Planning Director for the maintenance of the replacement trees in accordance with Section 12,024, as set forth hereinabove.

SECTION 12,032.2. VIOLATIONS: CITATION FOR INFRACTION. A citation, as described in Chapter 2.5 of Division I of the San Mateo County Ordinance Code, may also be issued. Any person to whom a citation is issued under the provisions of this Part shall be subject to a fine, as follows: Upon a first violation, by a fine not exceeding One Hundred Dollars ($100); for a second violation within a period of one (1) year, by a fine not exceeding Two Hundred Dollars ($200); and for any additional violation within a period of one (1) year, by a fine not exceeding Five Hundred Dollars ($500), in accordance with Section 25132 of the Government Code. If personal service of a citation is made on a tree cutting operator, a second citation for the same infraction may be personally served on the

record owner of the property. For the purposes of this Section each single tree being cut without benefit of a permit shall constitute a separate infraction, the fine being cumulative.

SECTION 12,032.3. VIOLATIONS: CUMULATIVE REMEDIES. The remedies for violations set forth in Sections 12,032 and 12,032.2 can be enforced separately or cumulatively. In addition to the penalties provided for in this Chapter, any violations may be addressed by civil action.

SECTION 12,032.4. VIOLATIONS: RECORDATION OF NOTICE OF VIOLATION. A notice of violation may be recorded in the office of the County Recorder for noncompliance with the provisions of this Part. The Planning Director shall notify by certified mail the owner of the affected real property and any other known party responsible for the violation of the recordation. If the property owner or other responsible party disagrees with the County's determination that the tree cutting violates this Part, proof may be submitted to the Planning Director, including documentation and professional tree surgeon or arborist reports that a tree cutting permit is not required. If the Planning Director determines that a tree cutting permit is required, the property owner and/or party responsible for the tree cutting work shall apply for the necessary tree cutting permit within a specified time period set by the Planning Director.

SECTION 12,032.5. NOTICE OF EXPUNGEMENT. A notice of expungement of the notice of violation shall be recorded with the office of the County Recorder when:

> (a) The Planning Director or other appellate authority determines that a tree cutting permit is not required; or
> (b) All permit conditions have been met including those conditions imposed as part of project review under any other provisions of the San Mateo County Ordinance Code for the parcel affected by the notice of violation. The meeting of any long term conditions, such as maintenance of replacement plantings is to be guaranteed by a surety deposit to run with the land and the term for which shall not be imposed as a demand for meeting these requirements for the expungement.

This Ordinance was adopted in its entirety on May 15, 1990 as Ordinance No. 3229. This action repealed and added Part Three of Division VIII, San Mateo County Ordinance Code.

LLT:kcd - LLTM0740_WKR.DOC
(5/8/02)

ASSUMPTIONS AND LIMITING CONDITIONS

ArborLogic, James Lascot / James Reed

1. **Any legal description provided to the consultant / appraiser is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is appraised or evaluated as though free and clear, under responsible ownership and competent management.**
2. **It is assumed that any property is not in violation of any applicable codes, ordinances, statutes, or other government regulations.**
3. **Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant / appraiser can neither guarantee nor be responsible for the accuracy of information provided by others.**
4. **The consultant / appraiser shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.**
5. **Unless required by law otherwise, possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without the prior expressed written or verbal consent of the consultant / appraiser.**
6. **Unless required by law otherwise, neither all nor any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales or other media, without the prior expressed written or verbal consent of the consultant / appraiser -- particularly as to value conclusions, identity of the consultant / appraiser, or any reference to any professional society or institute or to any initialed designation conferred upon the consultant / appraiser as stated in his qualifications.**
7. **This report and any values expressed herein represent the opinion of the consultant / appraiser, and the consultant's / appraiser's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.**
8. **Sketches, drawings, and photographs in this report, being intended for visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys unless expressed otherwise. The reproduction of any information generated by architects, engineers, or other consultants on any sketches, drawings, or photographs is for the express purpose of coordination and ease of reference only. Inclusion of said information on any drawings or other documents does not constitute a representation by ArborLogic and James Lascot as to the sufficiency or accuracy of said information.**
9. **Unless expressed otherwise: a) information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection; and b) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plants or property in question may not arise in the future.**
10. **Loss or alteration of any part of this report invalidates the entire report.**





James Lascot (Principal / Consulting Arborists)
ArborLogic Principal / Consulting Arborists
ISA certified arborist WE-2110

James Reed
ArborLogic Associate Consulting Arborist
ISA certified arborist WE-10237A

TREE INVENTORY

TREE	SPECIES	DBH(1)			CBH(2)	CONDITION	CANOPY(3)	SUIT(4)	RIZ(5)	CRZ(6)	LOSS(7)	RECOMMENDATION
T01	ACACIA	15			47	FAIR	30C	4	15	5	0%	REMOVE (FLAMMABLE)
	SIGNIFICANT	DESCRIPTION:				Flammable species; trunk decay.			LOCATION: Applicant's Property			
T02	ACACIA	18			57	POOR	30N	4	18	6	0%	REMOVE (FLAMMABLE)
	SIGNIFICANT	DESCRIPTION:				Flammable species; heavy trunk lean; trunk decay.			LOCATION: Applicant's Property			
T03	LOQUAT	5	4		16	POOR	12C	3	5	2	100%	REMOVE (DEVELOPMENT)
	UNPROTECTED	DESCRIPTION:				Narrow trunk attachment.			LOCATION: Applicant's Property			
T04	MISSING	N/A			N/A	N/A	N/A	N/A	N/A	N/A	N/A	MISSING
	NOT APPLICABLE	DESCRIPTION:				Missing. No evidence of a prior tree at this location.			LOCATION: Missing			
T05	ACACIA	11			33	GOOD	20C	3	8	4	100%	REMOVE (DEVELOPMENT)
	UNPROTECTED	DESCRIPTION:				Flammable species; no other apparent problems.			LOCATION: Applicant's Property			
T06	LIVE OAK	13			41	GOOD	25W	2	7	4	100%	REMOVE (DEVELOPMENT)
	SIGNIFICANT	DESCRIPTION:				No apparent problems.			LOCATION: Applicant's Property			
T07	LIVE OAK	15			46	GOOD	25C	2	7	5	100%	REMOVE (DEVELOPMENT)
	SIGNIFICANT	DESCRIPTION:				No apparent problems.			LOCATION: Applicant's Property			
T08	LIVE OAK	22			69	FAIR	20S	3	11	7	100%	REMOVE (DEVELOPMENT)
	SIGNIFICANT	DESCRIPTION:				Crowded; trunk lean.			LOCATION: Applicant's Property			
T09	LIVE OAK	11			35	FAIR	25S	3	6	4	100%	REMOVE (DEVELOPMENT)
	UNPROTECTED	DESCRIPTION:				Heavy trunk lean.			LOCATION: Applicant's Property			
T10	LIVE OAK	10			31	FAIR	20W	3	5	3	100%	REMOVE (DEVELOPMENT)
	UNPROTECTED	DESCRIPTION:				Crowded; trunk lean.			LOCATION: Applicant's Property			
T11	LIVE OAK	13			41	FAIR	30S	3	7	4	100%	REMOVE (DEVELOPMENT)
	SIGNIFICANT	DESCRIPTION:				Heavy trunk lean.			LOCATION: Applicant's Property			
T12	PLUM	8	8		24	FAIR	20W	2	6	4	100%	REMOVE (DEVELOPMENT)
	UNPROTECTED	DESCRIPTION:				Crowded; irregular trunk.			LOCATION: Applicant's Property			
T13	LIVE OAK	19			59	FAIR	30C	4	9	6	100%	REMOVE (DEVELOPMENT)
	SIGNIFICANT	DESCRIPTION:				No apparent problems.			LOCATION: Applicant's Property			

TREE	SPECIES	DBH(1)			CBH(2)	CONDITION	CANOPY(3)	SUIT(4)	RIZ(5)	CRZ(6)	LOSS(7)	RECOMMENDATION
T14	**STONE PINE**	**36**			**113**	**POOR**	**50W**	**3**	**18**	**12**	**100%**	**REMOVE (DEVELOPMENT)**
	SIGNIFICANT	DESCRIPTION:				Not maintained; heavy trunk lean; narrow trunk attachment.			LOCATION: Applicant's Property			
T15	**LIVE OAK**	**14**	**12**	**12**	**44**	**FAIR**	**30S**	**3**	**13**	**9**	**100%**	**REMOVE (DEVELOPMENT)**
	SIGNIFICANT	DESCRIPTION:				Narrow trunk attachment.			LOCATION: Applicant's Property			
T16	**LIVE OAK**	**12**	**10**		**38**	**FAIR**	**25S**	**4**	**9**	**6**	**100%**	**REMOVE (DEVELOPMENT)**
	SIGNIFICANT	DESCRIPTION:				Grirdled trunk due to wire fence; heavy trunk lean; crowded.			LOCATION: Applicant's Property			
T17	**PLUM**	**6**	**5**	**4**	**19**	**POOR**	**15S**	**3**	**5**	**4**	**100%**	**REMOVE (DYING)**
	UNPROTECTED	DESCRIPTION:				Low foliage; heavy trunk decay; dying.			LOCATION: Applicant's Property			
T18	**LIVE OAK**	**20**	**17**		**63**	**FAIR**	**40W**	**2**	**14**	**10**	**100%**	**REMOVE (DEVELOPMENT)**
	SIGNIFICANT	DESCRIPTION:				Narrow trunk attachment.			LOCATION: Applicant's Property			
T19	**LIVE OAK**	**28**	**18**		**88**	**GOOD**	**50C**	**4**	**19**	**12**	**100%**	**REMOVE (DEVELOPMENT)**
	SIGNIFICANT	DESCRIPTION:				No apparent problems.			LOCATION: Applicant's Property			

(1) Trunk Diameter at 4.5 feet (54 inches) above soil grade. Measured in inches.
(2) Trunk Circumference of largest trunk at 4.5 feet (54 inches) above soil grade. Measured in inches.
(3) Total Tree Canopy Diameter in Feet and Aspect (N = North, S = South, E = East, W = West, and C = On Center)
(4) Tree Suitability for Preservation determined by individual health, condition and species desirability. (1-Excellent. 5-Poor)
(5) Tree Root Intrusion Zone (radius in feet from trunk location). See Specifications for Root Zones in Arborist Report.
(6) Tree Critical Root Zone (radius in feet from trunk location).
(7) Expected Root Loss due to construction.

SAN MATEO COUNTYWIDE
Water Pollution
Prevention Program

COUNTY OF SAN MATEO
Planning & Building Department
455 County Center, 2nd Floor
Redwood City, CA 94063
BLD: 650-599-7311/PLN: 650-363-1825
http://planning.smcgov.org/

C.3 and C.6 Development Review Checklist

Municipal Regional Stormwater Permit (MRP)
Stormwater Controls for Development Projects

Applicants: This form should be filled out by the Project Civil Engineer, if one is associated with the project.

Project Information

I.A **Enter Project Data** *(For "C.3 Regulated Projects," data will be reported in the municipality's stormwater Annual Report.)*

Project Name: Woodside Townhomes Case Number:

Project Address & Cross St.: 1301 AND 1311 WOODSIDE ROAD, REDWOOD CITY, CA cross: Rutherford Ave.

Project APN: 069-311-340 AND 069-311-250 Project Watershed: Redwood creek

Applicant Name: Mounir Kardosh **I.A.4** Slope on Site: 1.0 %

Applicant Phone: (510) 893-8300 Applicant Email Address: mounir@nazarethenterprises.com

Development type: (check all that apply)

- ☐ Single Family Residential: A stand-alone home that is not part of a larger project.
- ☐ Single Family Residential: Two or more lot residential development.[1] # of units: ____
- ☒ Multi-Family Residential # of units: 6
- ☐ Commercial
- ☐ Industrial, Manufacturing
- ☐ Mixed-Use # of units: ____
- ☐ Streets, Roads[2], etc.
- ☒ 'Redevelopment' as defined by MRP: creating, adding and/or replacing exterior existing impervious surface on a site where past development has occurred.

I.A.1

- ☐ '**Special land use categories'** as defined by MRP: (1) auto service facilities[3], (2) retail gasoline outlets, (3) restaurants, (4) uncovered parking area (stand-alone or part of a larger project)
- ☐ Institutions: schools, libraries, jails, etc.
- ☐ Parks and trails, camp grounds, other recreational
- ☐ Agricultural, wineries
- ☐ Kennels, Ranches
- ☐ Other, Please specify____

Project Description[4]: (Also note any past or future phases of the project.) Seven (7) Lot subdivision, Merge 2 existing Lots with existing single family homes and Construct six (6) town house style homes with a common Lot.

I.A.2 Total Area of Site: 0.304 acres

I.A.3 Total Area of land disturbed during construction (include clearing, grading, excavating and stockpile area): 0.304 acres.

I.A.5 Certification:

Name of person completing the form: Saeid Razavi Title: Project Engineer

Phone number: (650) 941-8055 Email address: srazavi@smpengineers.com

☑ By checking this box, I certify that the information provided on this form is correct and acknowledge that, should the project exceed the amount of new and/or replaced impervious surface provided in this form, the as-built project may be subject to additional improvements. Initials: S.R. Date: 6/10/2019

I have attached the following: ☐ Preliminary Calculations ☐ Final Calculations ☒ A copy of site plan showing areas

[1] Common Plans of Development (subdivisions or contiguous, commonly owned lots, for the construction of two or more homes developed within 1 year of each other) are not considered single family projects by the MRP.

[2] Roadway projects creating 10,000 sq.ft. or more of contiguous impervious surface are subject to C.3 requirements if the roadway is new or being widened with additional traffic lanes.

[3] See Standard Industrial Classification (SIC) codes here

[4] Project description examples: 5-story office building, industrial warehouse, residential with five 4-story buildings for 200 condominiums, etc.

I.B Is the project a "C.3 Regulated Project" per MRP Provision C.3.b?

I.B.1 Enter the amount of impervious surface[5] Retained, Replaced and/or Created by the project:

Table I.B.1 Impervious[5] and Pervious Surfaces

Type of Impervious[5] Surface	I.B.1.a Pre-Project Impervious[5] Surface (sq.ft.)	I.B.1.b Existing Impervious[5] Surface to be Retained[6] (sq.ft.)	I.B.1.c Existing Impervious[5] Surface to be Replaced[6] (sq.ft.)	I.B.1.d New Impervious[5] Surface to be Created[6] (sq.ft.)	I.B.1.e Post-Project Impervious[5] Surface (sq.ft.) (=b+c+d)
Roof area(s)	2911	0	1232	4190	5422
Impervious[5] sidewalks, patios, paths, driveways, streets	62	0	846	1388	2234
Impervious[5] uncovered parking[7]	0	0	0	0	0
Totals of Impervious Surfaces:	2973	0	2078	5578	7656
I.B.1.f - Total Impervious[5] Surface Replaced and Created *(sum of totals for columns I.B.1.c and I.B.1.d)*:				7656	

Type of Pervious Surface	Pre-Project Pervious Surface (sq.ft.)				Post-project Pervious Surface (sq.ft.)
Landscaping	7967				4252
Pervious Paving	2286			**I.B.1.e.1:**	1318
Green Roof	0				0
Totals of Pervious Surfaces:	10253				5570
Total Site Area (Total Impervious[5]+Total Pervious=**I.A.2**)	13226				13226

I.B.2 Please review and attach additional worksheets as required below using the Total Impervious Surface (IS) Replaced and Created in cell I.B.1.f from Table I.B.1 above and other factors:

	Check all that apply:	Check One Yes	Check One No	Attach Worksheet
I.B.2.a	Does this project involve any earthwork? If YES, then Check Yes, and Complete Worksheet A. If NO, then go to I.B.2.b	☑	☐	A
I.B.2.b	Is **I.B.1.f** greater than or equal to 2,500 sq.ft? If YES, then the Project is subject to Provision C.3.i. - complete Worksheets B, C & go to I.B.2.c. If NO, then Stop here - go to I.A.5 and complete Certification.	☑	☐	B, C
I.B.2.c	Is the total Existing IS to be Replaced (column **I.B.1.c**) 50 percent or more of the total Pre-Project IS (column **I.B.1.a**)? If YES, site design, source control and treatment requirements apply to the whole site. Continue to I.B.2.d If NO, these requirements apply only to the impervious surface created and/or replaced. Continue to I.B.2.d	☑	☐	
I.B.2.d	Is this project a Special Land Use Category (**I.A.1**) and is **I.B.1.f** greater than or equal to 5,000 sq.ft? If YES, project is a Regulated Project. Fill out Worksheet D. Go to I.B.2.f. If NO, go to I.B.2.e	☐	☑	D
I.B.2.e	Is **I.B.1.f** greater than or equal to 10,000 sq.ft? If YES, project is a C.3 Regulated Project - complete Worksheet D. Then continue to I.B.2.f. If NO, then skip to I.B.2.g.	☐	☑	D
I.B.2.f	Is **I.B.1.f** greater than or equal to 43,560 sq.ft? If YES, project may be subject to Hydromodification Management requirements - complete Worksheet E then continue to I.B.2.g. If NO, then go to I.B.2.g.	☐	☑	E
I.B.2.g	Is **I.A.3** greater than or equal to 1 acre? If YES, check box, obtain coverage under the CA Const. General Permit & submit Notice of Intent to municipality - go to I.B.2.h. If NO, then go to I.B.2.h. For more information see: www.swrcb.ca.gov/water_issues/programs/stormwater/construction.shtml	☐	☑	
I.B.2.h	Is this a Special Project or does it have the potential to be a Special Project? If YES, attach completed Worksheet F - then continue to I.B.2.i. If NO, go to I.B.2.i.	☐	☑	F
I.B.2.i	Is project a ***Construction Stormwater Regulated Site (SWRS)***? 1) Sites that disturb 1 acre or more of land; 2) where the project requires a Grading Permit; 3) Sites with a) Residential new construction or a 50% or greater remodel, or b) Commercial/ Industrial construction of a new building or additions of 3,000 sq. ft. or greater, and with one or both of the following: (1) Sites where development will occur on a slope greater than or equal to 5:1 (20%), and/or (2) Sites where development will occur within 100 feet of a creek, wetland, or coastline; 4) Any public or private project involving work within a waterway; and 5) Sites within the ASBS watershed that involve soil disturbance. *If NO, then go to I.B.2.j*	☐	☑	G
I.B.2.j	For Municipal Staff Use Only: Are you using Alternative Certification for the project review? If YES, then fill out section G-1 on Worksheet G. Fill out other sections of Worksheet G as appropriate. See cell **I.B.1.e.1** above - Is the project installing 3,000 square feet or more of pervious paving? If YES, then fill out section G-3 on Worksheet G. Add to Municipal Inspection Lists (C.3.h)	☐ ☐	☐ ☐	G

[5] Per the MRP, pavement that meets the following definition of pervious pavement is NOT an impervious surface. Pervious pavement is defined as pavement that stores and infiltrates rainfall at a rate equal to immediately surrounding unpaved, landscaped areas, or that stores and infiltrates the rainfall runoff volume described in Provision C.3.

[6] "Retained" means to leave existing impervious surfaces in place, unchanged; "Replaced" means to install new impervious surface where existing impervious surface is removed anywhere on the same property; and "Created" means the amount of new impervious surface being proposed which exceeds the total existing amount of impervious surface at the property.

[7] Uncovered parking includes the top level of a parking structure.

Worksheet A

C6 – Construction Stormwater BMPs

Include the following Construction BMPs on the Erosion Control Plan:
(Applies to all projects with earthwork)

Yes	Plan Sheet	Best Management Practice (BMP) Notes
☑		Erosion Control Point of Contact. *(Provide an Erosion Control Point of Contact including name, title/qualification, email, and phone number. The EC Point of Contact will be the County's main point of contact if Erosion Control or Tree Protection corrections are required).*
☑	C-5	Perform clearing and earth-moving activities only during dry weather. Measures to ensure adequate erosion and sediment control shall be installed prior to earth-moving activities and construction.
☑	C-5	Measures to ensure adequate erosion and sediment control are required year-round. Stabilize all denuded areas and maintain erosion control measures continuously between October 1 and April 30.
☑	C-9	Store, handle, and dispose of construction materials and wastes properly, so as to prevent their contact with stormwater.
☑	C-9	Control and prevent the discharge of all potential pollutants, including pavement cutting wastes, paints, concrete, petroleum products, chemicals, wash water or sediments, and non-stormwater discharges to storm drains and watercourses.
☑	C-9	Use sediment controls or filtration to remove sediment when dewatering site and obtain Regional Water Quality Control Board (RWQCB) permit(s) as necessary.
☑	C-9	Avoid cleaning, fueling, or maintaining vehicles on-site, except in a designated area where wash water is contained and treated.
☑	C-9	Limit and time applications of pesticides and fertilizers to prevent polluted runoff.
☑	C-5	Limit construction access routes to stabilized, designated access points.
☑	C-9	Avoid tracking dirt or other materials off-site; clean off-site paved areas and sidewalks using dry sweeping methods.
☑	C-9	Train and provide instruction to all employees and subcontractors regarding the Watershed Protection Maintenance Standards and Construction Best Management Practices.
☑	C-5	Placement of erosion materials at these locations are required on weekends and during rain events: *(List locations)*
☑	C-9	The areas delineated on the plans for parking, grubbing, storage, etc., shall not be enlarged or "run over."
☑	C-5	Construction sites are required to have erosion control materials on-site during the "off-season."
☑	C-9	Dust control is required year-round.
☑	C-5	Erosion control materials shall be stored on-site.
☑	C-5	Use of plastic sheeting between October 1 and April 30 is not acceptable, unless for use on stockpiles where the stockpile is also protected with fiber rolls containing the base of the stockpile.
☑	C-5	Tree protection shall be in place before any demolition, grading, excavating or grubbing is started.

Worksheet B

C3 - Source Controls

Select appropriate source controls and identify the detail/plan sheet where these elements are shown.

Yes	Detail/Plan Sheet No., or "N/A"	Features that require source control measures	Source Control Measures (Refer to Local Source Control List for detailed requirements)
☑	C-4	Storm Drain (street/road projects)	Mark on-site inlets with the words "No Dumping! Flows to Bay" or equivalent.
☐	N/A	Floor Drains (non-residential)	Plumb interior floor drains to sanitary sewer[8] [or prohibit].
☐	N/A	Parking garage (non-single-family residential)	Plumb interior parking garage floor drains to sanitary sewer.[8]
☑	C-4	Landscaping (all project types)	▪ Retain existing vegetation as practicable. ▪ Select diverse species appropriate to the site. Include plants that are pest- and/or disease-resistant, drought-tolerant, and/or attract beneficial insects. ▪ Minimize use of pesticides and quick-release fertilizers. ▪ Use efficient irrigation system; design to minimize runoff.
☐	N/A	Pool/Spa/Fountain (all project types)	Provide connection to the sanitary sewer to facilitate draining.[8]
☐	N/A	Food Service Equipment (non-residential)	Provide sink or other area for equipment cleaning, which is: ▪ Connected to a grease interceptor prior to sanitary sewer discharge.[8] ▪ Large enough for the largest mat or piece of equipment to be cleaned. ▪ Indoors or in an outdoor roofed area designed to prevent stormwater run-on and run-off, and signed to require equipment washing in this area.
☐	N/A	Refuse Areas (non-single-family residential)	▪ Provide a roofed and enclosed area for dumpsters, recycling containers, etc., designed to prevent stormwater run-on and runoff. ▪ Connect any drains in or beneath dumpsters, compactors, and tallow bin areas serving food service facilities to the sanitary sewer.[8]
☐	N/A	Outdoor Process Activities [9] (non-residential)	Perform process activities either indoors or in roofed outdoor area, designed to prevent stormwater run-on and runoff, and to drain to the sanitary sewer.[8]
☐	N/A	Outdoor Equipment/ Materials Storage (non-residential)	▪ Cover the area or design to avoid pollutant contact with stormwater runoff. ▪ Locate area only on paved and contained areas. ▪ Roof storage areas that will contain non-hazardous liquids, drain to sanitary sewer[8], and contain by berms or similar.
☐	N/A	Vehicle/ Equipment Cleaning (non-single-family residential)	▪ Roofed, pave and berm wash area to prevent stormwater run-on and runoff, plumb to the sanitary sewer[8], and sign as a designated wash area. ▪ Commercial car wash facilities shall discharge to the sanitary sewer.[8]
☐	N/A	Vehicle/ Equipment Repair and Maintenance (non-single-family residential)	▪ Designate repair/maintenance area indoors, or an outdoors area designed to prevent stormwater run-on and runoff and provide secondary containment. Do not install drains in the secondary containment areas. ▪ No floor drains unless pretreated prior to discharge to the sanitary sewer.[8] ▪ Connect containers or sinks used for parts cleaning to the sanitary sewer.[8]
☐	N/A	Fuel Dispensing Areas (non-residential)	▪ Fueling areas shall have impermeable surface that is a) minimally graded to prevent ponding and b) separated from the rest of the site by a grade break. ▪ Canopy shall extend at least 10 ft. in each direction from each pump and drain away from fueling area.
☐	N/A	Loading Docks (non-residential)	▪ Cover and/or grade to minimize run-on to and runoff from the loading area. ▪ Position downspouts to direct stormwater away from the loading area. ▪ Drain water from loading dock areas to the sanitary sewer.[8] ▪ Install door skirts between the trailers and the building.
☑	C-4	Fire Sprinklers (all project types)	Design for discharge of fire sprinkler test water to landscape or sanitary sewer.[8]
☐		Miscellaneous Drain or Wash Water (all project types)	▪ Drain condensate of air conditioning units to landscaping. Large air conditioning units may connect to the sanitary sewer.[8] ▪ Roof drains from equipment drain to landscaped area where practicable. ▪ Drain boiler drain lines, roof top equipment, all wash water to sanitary sewer.[8]
☐		Architectural Copper Rinse Water (all project types)	▪ Drain rinse water to landscaping, discharge to sanitary sewer[8], or collect and dispose properly offsite. See flyer "Requirements for Architectural Copper."

[8] Any connection to the sanitary sewer system is subject to sanitary district approval.
[9] Businesses that may have outdoor process activities/equipment include machine shops, auto repair, industries with pretreatment facilities.

Worksheet C

Low Impact Development – Site Design Measures

Select Appropriate Site Design Measures *(Required for C.3 Regulated Projects; all other projects are encouraged to implement site design measures, which may be required at municipality discretion.) Projects that create and/or replace 2,500 – 10,000 sq.ft. of impervious surface, and stand-alone single family homes that create/replace 2,500 sq.ft. or more of impervious surface, must include* ***one of Site Design Measures a through f*** *(Provision C.3.i requirements).*[10] *Larger projects must also include applicable Site Design Measures g through i. Consult with municipal staff about requirements for your project.*

Select appropriate site design measures and Identify the Plan Sheet where these elements are shown.

Yes	Plan Sheet Number	
☐		a. Direct roof runoff into cisterns or rain barrels and use rainwater for irrigation or other non-potable use.
☑	C-4	b. Direct roof runoff onto vegetated areas.
☑	C-4	c. Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
☐		d. Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
☐		e. Construct sidewalks, walkways, and/or patios with pervious or permeable surfaces. Use the specifications in the C3 Technical Guidance (Version 4.1) downloadable at www.flowstobay.org/newdevelopment.
☐		f. Construct bike lanes, driveways, and/or uncovered parking lots with pervious surfaces. Use the specifications in the C3 Technical Guidance (Version 4.1) downloadable at www.flowstobay.org/newdevelopment.
☐		g. Limit disturbance of natural water bodies and drainage systems; minimize compaction of highly permeable soils; protect slopes and channels; and minimize impacts from stormwater and urban runoff on the biological integrity of natural drainage systems and water bodies.
☐		h. Conserve natural areas, including existing trees, other vegetation and soils.
☐		i. Minimize impervious surfaces.

Regulated Projects can also consider the following site design measures to reduce treatment system sizing:

Yes	Plan Sheet Number	
☐		j. Self-treating area (see Section 4.2 of the C.3 Technical Guidance)
☐		k. Self-retaining area (see Section 4.3 of the C.3 Technical Guidance)
☐		l. Plant or preserve interceptor trees (Section 4.1, C.3 Technical Guidance)

[10] See MRP Provision C.3.a.i.(6) for non-C.3 Regulated Projects, C.3.c.i.(2)(a) for Regulated Projects, C.3.i for projects that create/replace 2,500 to 10,000 sq.ft. of impervious surface and stand-alone single family homes that create/replace 2,500 sq.ft. or more of impervious surface.

Worksheet D

C3 Regulated Project - Stormwater Treatment Measures

Check all applicable boxes and indicate the treatment measure(s) included in the project.

Yes	
☐ Attach Worksheet F and Calculations	Is the project a **Special Project**?[11] If yes, consult with municipal staff about the need to evaluate the feasibility and infeasibility of 100% LID treatment. Indicate the type of non-LID treatment to be used, the hydraulic sizing method[12], and percentage of the amount of runoff specified in Provision C.3.d that is treated: Non-LID Treatment Measures: — Hydraulic sizing method[12] — % of C.3.d amount of runoff treated ☐ Media filter ☐2.a ☐2.b ☐2.c ____% ☐ Tree well filter ☐2.a ☐2.b ☐2.c ____%
☐	Is the project using infiltration systems? The MRP no longer requires the use or analysis of the feasibility of infiltration, but infiltration systems are encouraged and may be beneficial depending on the project. Indicate the infiltration measures to be used, and hydraulic sizing method: Infiltration Measures: — Hydraulic sizing method[12] ☐ Bioinfiltration[13] ☐1.a ☐1.b ☐2.c ☐3 ☐ Pervious Pavement ☐1.a ☐1.b ☐ Infiltration trench ☐1.a ☐1.b Other (specify):
☐	Is the project harvesting and using rainwater? The MRP no longer requires the use or analysis of the feasibility of rainwater harvesting, but it rainwater harvesting and use is encouraged and may be beneficial depending on the project." Rainwater Harvesting/Use Measures: — Hydraulic sizing method[12] ☐ Rainwater Harvesting for indoor non-potable water use ☐1.a ☐1.b ☐ Rainwater Harvesting for landscape irrigation use ☐1.a ☐1.b
☐	Is the project installing biotreatment measures? Indicate the biotreatment measures to be used, and the hydraulic sizing method: Biotreatment Measures: — Hydraulic sizing method[12] ☐ Bioretention area ☐2.c ☐3 ☐ Flow-through planter ☐2.c ☐3 ☐ Other (specify): _____

A copy of the long term Operations and Maintenance (O&M) Agreement and Plan for this project will be required. Please contact the NPDES Representative of the applicable municipality for an agreement template and consult the C.3 Technical Guidance at www.flowstobay.org for maintenance plan templates for specific facility types.

[11] Special Projects are smart growth, high density, or transit-oriented developments with the criteria defined in Provision C.3.e.ii.(2), (3) or (4) (see Worksheet F).

[12] Indicate which of the following Provision C.3.d.i hydraulic sizing methods were used. Volume based approaches: 1(a) Urban Runoff Quality Management approach, or 1(b) 80% capture approach (recommended volume-based approach). Flow-based approaches: 2(a) 10% of 50-year peak flow approach, 2(b) 2 times the 85th percentile rainfall intensity approach, or 2(c) 0.2-Inch-per-hour intensity approach (recommended flow-based approach – also known as the 4% rule). Combination flow and volume-based approach: 3.

[13] See Section 6.1 of the C.3 Technical Guidance for conditions in which bioretention areas provide bioinfiltration.

Worksheet E

Hydromodification Management

E-1 Is the project a Hydromodification Management[14] (HM) Project?

E-1.1 Is the total impervious area increased over the pre-project condition?

- ☐ Yes. Continue to E-1.2
- ☐ No. The project is NOT required to incorporate HM Measures.
  Go to Item E-1.4 and check "No."

E-1.2 Is the site located in an HM Control Area per the HM Control Areas map (Appendix H of the C.3 Technical Guidance)?

- ☐ Yes. Continue to E-1.3
- ☐ No. Attach map, indicating project location. The project is NOT required to incorporate HM Measures.
  Skip to Item E-1.3 and check "No."

E-1.3 Is the project a Hydromodification Management Project?

- ☐ Yes. The project is subject to HM requirements in Provision C.3.g of the Municipal Regional Stormwater Permit.
- ☐ No. The project is EXEMPT from HM requirements.

- If the project is subject to the HM requirements, incorporate in the project flow duration control measures designed such that post-project discharge rates and durations match pre-project discharge rates and durations.
- The Bay Area Hydrology Model (BAHM) has been developed to help size flow duration controls. See www.bayareahydrologymodel.org. Guidance is provided in Chapter 7 of the C.3 Technical Guidance.

E-2 Incorporate HM Controls (if required)

Are the applicable items provided with the Plans?

Yes	No	NA	
☐	☐	☐	Site plans with pre- and post-project impervious surface areas, surface flow directions of entire site, locations of flow duration controls and site design measures per HM site design requirement
☐	☐	☐	Soils report or other site-specific document showing soil type(s) on site
☐	☐	☐	If project uses the Bay Area Hydrology Model (BAHM), a list of model inputs and outputs.
☐	☐	☐	If project uses custom modeling, a summary of the modeling calculations with corresponding graph showing curve matching (existing, post-project, and post-project with HM controls curves), goodness of fit, and (allowable) low flow rate.
☐	☐	☐	If project uses the Impracticability Provision, a listing of all applicable costs and a brief description of the alternative HM project (name, location, date of start up, and entity responsible for maintenance).
☐	☐	☐	If the project uses alternatives to the default BAHM approach or settings, a written description and rationale.

[14] Hydromodification is the change in a site's runoff hydrograph, including increases in flows and durations that results when land is developed (made more impervious). The effects of hydromodification include, but are not limited to, increased bed and bank erosion of receiving streams, loss of habitat, increased sediment transport and/or deposition, and increased flooding. Hydromodification control measures are designed to reduce these effects.

Worksheet F
Special Projects

Complete this worksheet for projects that appear to meet the definition of "Special Project", per Provision C.3.e.ii of the Municipal Regional Stormwater Permit (MRP). The form assists in determining whether a project meets Special Project criteria, and the percentage of low impact development (LID) treatment reduction credit. Special Projects that implement less than 100% LID treatment must provide a narrative discussion of the feasibility or infeasibility of 100% LID treatment. See Appendix J of the C.3 Technical Guidance Handbook (download at www.flowstobay.org) for more information.

F.1 "Special Project" Determination *(Check the boxes to determine if the project meets any of the following categories.)*

Special Project Category "A"

Does the project have ALL of the following characteristics?

- ☐ Located in a municipality's designated central business district, downtown core area or downtown core zoning district, neighborhood business district or comparable pedestrian-oriented commercial district, or historic preservation site and/or district[15];
- ☐ Creates and/or replaces 0.5 acres or less of impervious surface;
- ☐ Includes no surface parking, except for incidental parking for emergency vehicle access, ADA access, and passenger or freight loading zones;
- ☐ Has at least 85% coverage of the entire site by permanent structures. The remaining 15% portion of the site may be used for safety access, parking structure entrances, trash and recycling service, utility access, pedestrian connections, public uses, landscaping and stormwater treatment.

☐ No (continue) ☐ Yes – Complete Section F.2 below

Special Project Category "B"

Does the project have ALL of the following characteristics?

- ☐ Located in a municipality's designated central business district, downtown core area or downtown core zoning district, neighborhood business district or comparable pedestrian-oriented commercial district, or historic preservation site and/or district[20];
- ☐ Creates and/or replaces more than 0.5 acres of impervious area and less than 2.0 acres;
- ☐ Includes no surface parking, except for incidental parking for emergency access, ADA access, and passenger or freight loading zones;
- ☐ Has at least 85% coverage of the entire site by permanent structures. The remaining 15% portion of the site may be used for safety access, parking structure entrances, trash and recycling service, utility access, pedestrian connections, public uses, landscaping and stormwater treatment;
- ☐ Minimum density of either 50 dwelling units per acre (for residential projects) or a Floor Area Ratio (FAR) of 2:1 (for commercial projects) - mixed use projects may use either criterion. **Note Change on 7/1/16[16]**

☐ No (continue) ☐ Yes – Complete Section F-2 below

Special Project Category "C"

Does the project have ALL of the following characteristics?

- ☐ At least 50% of the project area is within 1/2 mile of an existing or planned transit hub[17] or 100% within a planned Priority Development Area[18];
- ☐ The project is characterized as a non-auto-related use[19]; and
- ☐ Minimum density of either 25 dwelling units per acre (for residential projects) or a Floor Area Ratio (FAR) of 2:1 (for commercial projects) - mixed use projects may use either criterion. **Note Change on 7/1/16[16]**

☐ No (continue) ☐ Yes – Complete Section F-2 below

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[15] And built as part of a municipality's stated objective to preserve/enhance a pedestrian-oriented type of urban design.

[16] **Effective 7/1/16**, the MRP establishes definitions for "Gross Density"(GD) & FAR. GD is defined as, "the total number of residential units divided by the acreage of the entire site area, including land occupied by public right-of-ways, recreational, civic, commercial and other non-residential uses." FAR is defined as," the Ratio of the total floor area on all floors of all buildings at a project site (except structures, floors, or floor areas dedicated to parking) to the total project site area.

[17] "Transit hub" is defined as a rail, light rail, or commuter rail station, ferry terminal, or bus transfer station served by three or more bus routes. (A bus stop with no supporting services does not qualify.)

[18] A "planned Priority Development Area" is an infill development area formally designated by the Association of Bay Area Government's / Metropolitan Transportation Commission's FOCUS regional planning program.

[19] Category C specifically excludes stand-alone surface parking lots; car dealerships; auto and truck rental facilities with onsite surface storage; fast-food restaurants, banks or pharmacies with drive-through lanes; gas stations; car washes; auto repair and service facilities; or other auto-related project unrelated to the concept of transit oriented development.

F.2 LID Treatment Reduction Credit Calculation

(If more than one category applies, choose only one of the applicable categories and fill out the table for that category.)

Category	Impervious Area Created/Replaced (sq. ft.)	Site Coverage (%)	Project Density[16] or FAR[16]	Density/Criteria	Allowable Credit (%)	Applied Credit (%)
A			N.A.	N.A.	100%	
B				Res ≥ 50 DU/ac or FAR ≥ 2:1	50%	
				Res ≥ 75 DU/ac or FAR ≥ 3:1	75%	
				Res ≥ 100 DU/ac or FAR ≥ 4:1	100%	
C				**Location credit (select one)[20]:**		
				Within ¼ mile of transit hub	50%	
				Within ½ mile of transit hub	25%	
				Within a planned PDA	25%	
				Density credit (select one):		
				Res ≥ 30 DU/ac or FAR ≥ 2:1	10%	
				Res ≥ 60 DU/ac or FAR ≥ 4:1	20%	
				Res ≥ 100 DU/ac or FAR ≥ 6:1	30%	
				Parking credit (select one):		
				≤ 10% at-grade surface parking[21]	10%	
				No surface parking	20%	
				TOTAL TOD CREDIT =		

F.3 Narrative Discussion of the Feasibility/Infeasibility of 100% LID Treatment:

If project will implement less than 100% LID, prepare a discussion of the feasibility or infeasibility of 100% LID treatment, as described in Appendix K of the C.3 Technical Guidance.

F.4 Select Certified Non-LID Treatment Measures:

If the project will include non-LID treatment measures, select a treatment measure certified for "Basic" General Use Level Designation (GULD) by the Washington State Department of Ecology's Technical Assessment Protocol – Ecology (TAPE). Guidance is provided in Appendix K of the C.3 Technical Guidance (download at www.flowstobay.org).[22]

[20] To qualify for the location credit, at least 50% of the project's site must be located within the ¼ mile or ½ mile radius of an existing or planned transit hub, as defined on page 1, footnote 2. A planned transit hub is a station on the MTC's Regional Transit Expansion Program list, per MTC's Resolution 3434 (revised April 2006), which is a regional priority funding plan for future transit stations in the San Francisco Bay Area. To qualify for the PDA location credit, 100% of the project site must be located within a PDA, as defined on page 1, footnote 3.

[21] The at-grade surface parking must be treated with LID treatment measures.

[22] TAPE certification is used in order to satisfy Special Project's reporting requirements in the MRP.

Worksheet G
(For municipal staff use only)

G-1 **Alternative Certification:** Were the treatment and/or HM control sizing and design reviewed by a qualified third-party professional that is not a member of the project team or agency staff?

☐ Yes ☐ No Name of Reviewer_____

G-2 **High Priority Site:** 1) Sites that disturb 1 acre or more of land; 2) where the project requires a Grading Permit; 3) Sites with a) Residential new construction or a 50% or greater remodel, or b) Commercial/ Industrial construction of a new building or additions of 3,000 sq. ft. or greater, and with one or both of the following: (1) Sites where development will occur on a slope greater than or equal to 5:1 (20%), and/or (2) Sites where development will occur within 100 feet of a creek, wetland, or coastline; 4) Any public or private project involving work within a waterway; and 5) Sites within the ASBS watershed that involve soil disturbance. These sites are subject to monthly inspections from October 1 to April 30. See MRP Provision C.6.e.11.(2).

☐ Yes ☐ No If yes, then add site to Staff's Monthly Rainy Season Construction Site Inspection List

G-3 **Inspections of Sites with Pervious Paving: Starting 7/1/16**, Regulated projects that are installing 3,000 sq.ft. or more of pervious paving (see cell **I.B.1.e.1**) (excluding private-use patios in single family homes, townhomes, or condominiums) must have the paving system inspected by the jurisdiction upon completion of the installation and the site must be added to the jurisdiction's list of sites needing inspections at least once every five years – see provision C.3.h. Pervious pavement systems include pervious concrete, pervious asphalt, pervious pavers and grid pavers etc. and are described in the C3 Technical Guidance (Version 4.1) downloadable at: www.flowstobay.org/newdevelopment.

☐ Yes ☐ No

Operations and Maintenance (O&M) Submittals

G-4 Stormwater Treatment Measure and/HM Control Owner or Operator's Information:

Name:_____

Address:_____

Phone:_____ Email:_____

- *Applicant must call for inspection and receive inspection within 45 days of installation of treatment measures and/or hydromodification management controls.*

The following questions apply to C.3 Regulated Projects and Hydromodification Management Projects.

		Yes	No	N/A
G-4.1	Was maintenance plan submitted?	☐	☐	☐
G-4.2	Was maintenance plan approved?	☐	☐	☐
G-4.3	Was maintenance agreement submitted? (Date executed:_____)	☐	☐	☐

- *Attach the executed maintenance agreement as an appendix to this checklist.*

G-5 **Annual Operations and Maintenance (O&M) Submittals (for municipal staff use only):**

For C.3 Regulated Projects and Hydromodification Management Projects, indicate the dates on which the Applicant submitted annual reports for project O&M:

_____

G-6 **Comments (for municipal staff use only):**

_____

_____

_____

_____

G-7 NOTES (for municipal staff use only):

Section I Notes:_____

Worksheet A Notes:_____

Worksheet B Notes:_____

Worksheet C Notes:_____

Worksheet D Notes:_____

Worksheet E Notes:_____

Worksheet F Notes:_____

G-8 Project Close-Out (for municipal staff use only):

		Yes	No	NA
8.1	Were final Conditions of Approval met?	☐	☐	
8.2	Was initial inspection of the completed treatment/HM measure(s) conducted? (Date of inspection:_____)	☐	☐	☐
8.3	Was maintenance plan submitted? (Date executed:_____)	☐	☐	☐
8.4	Was project information provided to staff responsible for O&M verification inspections? (Date provided to inspection staff:_____)	☐	☐	☐

G-9 Project Close-Out (Continued -- for municipal staff use only):

Name of staff confirming project is closed out:_____

Signature:_____ Date:_____

Name of O&M staff receiving information:_____

Signature:_____ Date:_____

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT D

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM

ALAMEDA
COLUSA
CONTRA COSTA
DEL NORTE
HUMBOLDT
LAKE
MARIN
MENDOCINO
MONTEREY
NAPA
SAN BENITO
SAN FRANCISCO
SAN MATEO
SANTA CLATA
SANTA CRUZ
SOLANO
SONOMA
YOLO

Northwest Information Center
Sonoma State University
150 Professional Center Drive, Suite E
Rohnert Park, California 94928-3609
Tel: 707.588.8455
nwic@sonoma.edu
http://www.sonoma.edu/nwic

June 15, 2021 File No.:20-2476

Ruemel Panglao, Project Planner
San Mateo County Planning and Building Division
455 County Center
Redwood City, CA 94063

re: PLN2019-00252 / APN 069311250 at 1301 Woodside RD, Redwood City / Moshe Dinar

Dear Ruemel Panglao:

Records at this office were reviewed to determine if this project could adversely affect cultural resources. **Please note that use of the term cultural resources includes both archaeological sites and historical buildings and/or structures. The review for possible historic-era building/structures, however, was limited to references currently in our office and should not be considered comprehensive.**

Project Description:
Major Subdivision, General Plan Amendment, Zoning Amendment, Merger, and Grading Permit for Six 3-story townhomes (18,550 sq. ft. total). The project proposes to merge the two parcels and re-zone from R-1/S-74 to R-3/S-3 to allow for higher density housing. The project would include the removal of several significant trees.

Previous Studies:

XX This office has no record of any previous cultural resource studies for the proposed project area *(see recommendation below)*.

Archaeological and Native American Resources Recommendations:

___ The proposed project area has the possibility of containing unrecorded archaeological site(s). A study is recommended prior to commencement of project activities.

XX We recommend the lead agency contact the local Native American tribe(s) regarding traditional, cultural, and religious heritage values. For a complete listing of tribes in the vicinity of the project, please contact the Native American Heritage Commission at (916)373-3710.

XX The proposed project area has a low possibility of containing unrecorded archaeological site(s). Therefore, no further study for archaeological resources is recommended. If archaeological resources are encountered during the project, work in the immediate vicinity of the finds should be halted until a qualified archaeologist has evaluated the situation.

Built Environment Recommendations:

XX Since the Office of Historic Preservation has determined that any building or structure 45 years or older may be of historical value, if the project area contains such properties, it is recommended that prior to commencement of project activities, a qualified professional familiar with the architecture and history of San Mateo County conduct a formal CEQA evaluation.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the California Historical Resources Information System (CHRIS) Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System's (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP's regulatory authority under federal and state law.

For your reference, a list of qualified professionals in California that meet the Secretary of the Interior's Standards can be found at http://www.chrisinfo.org. If you have any questions please give us a call (707) 588-8455.

Sincerely,

Bryan Much
Coordinator

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT E

SUMMIT ENGINEERING

- General Civil Engineering.
- Land Surveying, Parcel Maps, Subdivisions.
- Storm Drain, Sanitary Sewer Design.
- Hydrology and Creek Protection Studies.
- Grading Drainage Plans.
- Soil Reports.

5855 Castle Drive
Oakland, CA 94611
Tel: (510) 842-8064
Fax: (510) 482-5848
agmasso@comcast.net

Mounir Kardosh
NAZARETH ENTERPRISES, INC.
800 South B Street, Suite 100
San Mateo, California 94401

January 25th, 2020

RE: **Geotechnical Report for the Proposed Mixed Use Building, 1301 - 1311 Woodside Road, Redwood City, California.**

Dear Sirs :

The attached geotechnical report is based on a detailed engineering study by the undersigned of the above property, where new residential buildings are planned in the future. We conclude that from a geotechnical standpoint, the land is suitable for the new construction, provided that our recommendations are implemented and good building practices are followed.

Special concerns for this site include the potential hazards of seepage, seismic shock and differential foundation movement. Therefore, we ask that this report be carefully studied and taken into account for the engineering design which is to follow.

Upon request, we will review foundation plans, and inspect earthwork construction and foundation installation on a regular basis while the work is performed. We will also discuss construction procedures, and field changes if needed in a Final Report.

Please feel free to contact us at anytime in the future if there are questions about this report, or we may be of further service.

Sincerely,

AGM

Al G. Masso
GE-2089



GEOTECHNICAL INVESTIGATION

FOR

THE PROPOSED RESIDENTIAL BUILDINGS

1301 - 1311 WOODSIDE ROAD

REDWOOD CITY, CA 94401

FOR

MOUNIR KARDOSH

NAZARETH ENTERPRISES, INC.

800 SOUTH B STREET, SUITE 100

SAN MATEO, CALIFORNIA 94401

SUMMIT ENGINEERING

5855 CASTLE DRIVE

OAKLAND, CALIFORNIA 94611

JANUARY 25, 2020

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REPORT SUMMARY

The present geotechnical study can be summarized as follows :

- The subject site is the combination of two developed parcels of land at 1301 and 1311 Woodside Road, in the town of Redwood City. It is planned to build six townhouses in replacement of the existing old structures.

- The surface deposits form part of the **Qof** unit consisting of Pleistocene , weathered, weakly consolidated, poorly sorted, silt, sand and gravel, often in a clay matrix, and with a generally low potential for seismic liquefaction.

- Ground water was not found during drilling, but it may be present during the rainy season.

- The nearest active fault is the San Andreas Fault (Type A), the nearest fault trace is 5 miles SW of the site.

- The proposed structure should have all down-spouts collected and extended to discharge on paved areas or dissipate safely on site.

- The new foundations will consist of on-grade reinforced concrete, mats or slabs.

INTRODUCTION

This report presents the results of an investigation of the soil and geologic conditions of a parcel consisting of the combination of two developed parcels at 1301 and 1311 Woodside Road, in the town of Redwood City, California. The combined land surface area is 13,225 square feet (ft2) or 0.30 acres (Figures 1, and 3).

PROPOSED CONSTRUCTION

The current owners plan to replace the existing old structures with six, two-level over garage, townhouses with sizes ranging between 1,800 ft2 and 2,200 ft2. The new foundations will consist of on-grade mats or slabs.

SCOPE

The scope of this investigation included:

1. A geologic reconnaissance of the surrounding area;
2. A review of geologic maps and reports relevant to the site;
3. The drilling of three soil borings, collecting representative soil samples; and
4. The examination and lab testing of collected soil samples and the correlation of drilling resistance with shear strength.

SITE TOPOGRAPHY AND VEGETATION

The land is at the intersection of Woodside Road and Rutherford Avenue. The site topography is basically level, sloping gently to the north. There are several old structures that will be removed and be replaced by the new six townhouses. Site vegetation consists of a number of mature oak trees and a small lawn (Figure 3).

GEOLOGY

Geologic maps covering the area (Ref. 1, Figure 2A) indicate that the subject parcel lies in an area covered by the **Qof** (Older Alluvial Fan Deposits) geologic unit, which consists of Pleistocene (Quaternary) weathered, weakly consolidated, poorly sorted, silt, sand and gravel often in a clay matrix.

The official San Mateo County map of geotechnical hazards (Figure 2B, Ref. 2) show the subject site in **Zone 3**, which generally consists of unconsolidated materials mainly older, coarse-grained, alluvial fan deposits. This zone has generally low liquefaction potential, ' good ' earthquake stability, and ' good to fair ' foundation conditions. Reference 4 locates the subject site in ' low to moderate ' liquefaction potential.

Seismicity maps (Figure 2C) show the well-known, seismically-active San Andreas Fault is located 5 miles (8 Km) SW of the site. The also seismically-active, NW-trending Seal Cove Fault is mapped 14 miles (22 Km) SW from the site. Although considered inactive, a number of geologic faults are mapped in the San Francisco peninsula. Such are the Pilarcitos and San Mateo Faults, etc. There is also a number of active faults in the East Bay. The Hayward and Calaveras Faults are located 12 miles (19 Km) NE, and 17 miles (27 Km) ENE of the site, respectively.

FIELD INVESTIGATION

Field investigation consisted of a detailed site inspection and sub-surface exploration, both conducted on January 14th, 2020. During the detailed site inspection, the site topography was examined. No signs of soil settlement or foundation distortion were noticed at or near the existing structures.

Subsurface exploration consisted of drilling three soil borings at the locations shown in Figure 3. The borings were drilled by continuous sampling. A 140-lb hammer was used to perform penetration tests using the standard 2-inch sampler. The standard ASTM blow-count **N** value was obtained as the blow-count for the last 12 inches of penetration. The 3-inch and 2.5-inch diameter Modified California Samplers also were used. Their blow-counts were converted to standard **N** values.

SOILS

Exploratory borings B-1 through B-3 encountered a 10-foot layer of Medium Stiff to Very Stiff, underlain by Very Stiff clay to the maximum explored depth of 8 feet (Figure 3). For engineering purposes, the following layers will be considered :

0 - 1 feet, fill and soft clay, its resistance will be disregarded;
1 - 4 feet, Stiff to Hard, sandy, gravelly clay;
4 - 8 feet, dense, Hard, sandy, gravelly clay, and claystone.

No groundwater was encountered during drilling. However, the groundwater table may rise, or seepage may be present during the winter. Detailed descriptions of the materials encountered in the borings are presented on the boring logs in the Appendix. The attached boring logs, and related information show subsurface conditions at the approximate locations shown on the Site Plan in Figure 3.

At the prospective building sites, surface soils are predominantly clayey in nature with **LL**=46%, **PI**=21% (classified **CL**). Native clays are classified as Low Plasticity and will probably have a moderate swelling potential. The following table shows commonly used correlations between PI values and swelling potential :

PI (%)	Swelling Potential
< 12	Nil
13-15	Low
16-25	Moderate
26-35	High
> 35	Very High

SEISMICITY

The lot is located in one of the most seismically active regions of the United States. The nearest active fault is the NW-trending San Andreas Fault, located 5 miles (8 Km) SW of the site. The active Seal Cove Fault is mapped 14 miles (22 Km) SW of the site. Although considered inactive, a number of geologic faults are mapped nearby in the peninsula. Such are the Pilarcitos and San Mateo Faults, etc. There is also a number of active faults in the East Bay. The Hayward and Calaveras Faults are located 12 miles (19 Km) NE and 17 miles (27 Km) ENE of the site, respectively (Figure 2C).

All these faults are currently exhibiting creep movements and micro-seismic activity, and are capable of producing major earthquakes with great damage potential to both man-made and natural structures. Major Bay Area earthquakes last occurred on the Hayward, San Andreas and Calaveras Faults in the year 1868, 1989 and 1861, respectively. Other small faults are mapped in the immediate area, although none are associated with any seismic activity or considered active.

Although it is not yet possible to accurately predict when and where an earthquake will occur, it is reasonable to assume that, during their useful life, the proposed structures will suffer at least one moderate to severe earthquake. During such event, the danger from fault offset thru the site is very low, but strong local shaking is likely to occur. However, foundations built on competent strata, although may suffer some damage, should perform satisfactorily during a strong event. In addition, wood-framed buildings are generally flexible enough to sustain some seismic deformations with minor or moderate structural damage. An effective surface drainage will contribute to maintaining higher shear strength, and hence stable ground.

Additional 2016 California Building Code Seismic Parameters.

The CBC requires to use the seismic ground response acceleration values for design (Ref. 13). The soil profile is classified as **D** Site type, i.e. ' Stiff Soil '. Site coordinates are 37.45774 deg N, 122.22677 deg W (NAD27) and the design parameters are shown below. The proposed building will have a **II** occupancy category, and because S1 = 0.835 g > 0.750 g, the building will also have an **E** seismic design category.

Ss = 2.045g,	Sms = 2.945g,	Sds = 1.363g
S1 = 0.835g,	Sm1 = 1.253g,	Sd1 = 0.835g

CONCLUSIONS

Based on our field and office studies, it is our opinion that from a geotechnical engineering standpoint, the site is suitable for the proposed new buildings, provided that the recommendations given in this report are incorporated into the design and construction of the proposed structures.

We recommend the new foundations to consist of properly reinforced, on-grade, concrete mats or slabs.

Ground shaking will be the major cause of earthquake damage. The controlling seismic event will be produced by the San Andreas Fault. A significant event will produce high response accelerations and therefore high shear stresses. The site may be vulnerable to seismically triggered soil displacements, particularly if a strong shaking occurs during the wet winter months. Drainage recommendations are given to this effect.

RECOMMENDATIONS

The following are recommendations for the successful completion and maintenance of the project. Because the recommendations are partly general and partly specific to certain items of concern identified above, recommendation implementation should be discussed with SUMMIT ENGINEERING, including :

- Review the foundation, grading, and drainage plans prior to construction.
- Update this report if necessary because of observed changes or delays.
- Inspect the excavation operations, particularly those for on-grade mat or slab foundations; the placement of fill and backfill materials; and the installation of surface, or area drains.
- Prepare a Final Soils Engineer's Report that indicates whether construction was done according to expected soils characteristics, or new features were encountered which required special engineering considerations.

These recommendations are contingent upon SUMMIT ENGINEERING being allowed to inspect and test the grading work, drainage work, and foundation construction. This will allow comparison of the exposed subsurface soil conditions with those assumed in preparation of this report.

A. Site Preparation and Grading

The area of the proposed improvements should be cleared and stripped to sufficient depth to remove any obstructions, debris, and all surface loose fill and vegetation. These materials should be removed from the site. If any obstructions (such as tree root systems) are removed below the planned finished grades, the resulting holes should be backfilled with approved materials that are compacted to the requirements given below.

Trees should be considered generally as contributors to ground stability and erosion protection. Some of the mature oak trees should be kept, maintained, and integrated into the project for beauty and safety. Any proposed landscape should also include native trees and bushes.

Due to soil plasticity, on site materials are not recommended for use as fill materials. Any imported fill used at the site should be a non-expansive soil with a plasticity index, **PI**, of 12 or less. Fill materials used at the site should not contain rocks or lumps greater than 6 inches in their greatest dimension, with not more than 15% larger than 2.5 inches. All fill materials should be approved by the project soils engineer.

All sub-grade surfaces that will receive fill, should be scarified to a depth of 6 inches, moisture-conditioned wet of optimum, and compacted to the requirements given below. All structural fill and backfill materials placed at the site should be compacted to at least 90% relative compaction by mechanical means only, as determined by ASTM Test Designation D1557-70.

All new fills should be keyed into compact soil materials and compacted in lifts not exceeding 8 inches in un-compacted thickness. Field densities may be measured by nuclear methods, ASTM Test Designation D2922. We recommend that any new cut slopes, and any slopes disturbed by the construction operations be heavily planted to minimize sloughing and erosion (Ref. 14). All finished grades should slope at least 2% in such a manner that surface water will not run over exposed slopes or collect against obstructions. For other grading details, the reader is referred to the CBC (Ref. 13).

B. Drainage

Particular attention must be given to both surface and subsurface drainage at this site. Plastic clay soils are vulnerable to volume expansion during the rainy season, and must be protected by a carefully planned drainage system. Runoff must not be allowed to collect and pond near the proposed buildings. Further, finished ground surfaces must be sloped 2% away from foundation walls.

Roof runoff should also be directed away from foundations to avoid foundation soil saturation. All downspouts around the buildings should have cleanouts. The solid pipes that connect them must be maintained and kept operational. If discharge by gravity is not possible for lack of topographic elevation, runoff must be collected in a sump and pumped to the paved street by a level-activated pump.

Installation and operation of automatic sprinkler systems must be conducted carefully to avoid producing excessive amounts of water. Further, irrigation either manual or automatic, should be kept to a minimum. Landscaping should be limited to drought-, fire-resistant species of trees and bushes.

C. Summary Soil Profile

The soil profile may be summarized as follows :

Table 1 - Soil Profile and Parameters

Depth (ft)	Soil Charact.	Skin Frct (psf)	Pullout Res.(psf)	Pass Res (pcf) (*)	Bearing Pres.(ksf)
0					
	Fill & Soft Soils Disregard	0	0	0	
1					
	Stiff to Hard Clay	400	200	350	
4					
	Hard Clay & Claystone	600	300	600	
8					

D. Shallow Foundations

Concrete mats or slabs must be properly reinforced. Shallow foundations may be designed for the following allowable bearing pressures :

Table 2 - Soil Parameters for Shallow Foundation Design

Footing Depth (ft)	Allowable Pressure (psf)	Friction Coefficient
1.5	1,500	0.35
2.0	2,000	0.35
2.5	2,500	0.35

The allowable pressures are valid for dead plus live loads, with a one-third increase for all loads including wind and seismic. The allowable bearing pressures are net values; therefore, the weight of the foundation can be neglected for design purposes. Minimum foundation depth below finished grade is 1.5 feet. Follow CBC guidelines for structural design for expansive clays. Use PI = 21% for design.

At least 4 inches of crushed rock or river gravel should be placed between compacted sub-grade and concrete slabs. The use of a vapor barrier under slabs is optional

depending on the nature of the use of the floor. Post-tensioned slabs may not need vapor barriers if the concrete is permanently in compression. For an efficient vapor barrier, use a 10-mil plastic membrane over the layer of gravel or crushed rock. A two-inch layer of sand must be placed over the plastic membrane before pouring in order to avoid puncturing damage and help the concrete during the curing process.

Concrete slabs must be at least 4 inches thick and reinforced prefer-ably with No. 4 re-bar as minimum reinforcement. A modulus of sub-grade reaction of 200 Tons/ft3 may be used for stress analysis. Exterior slabs, garage or carport slabs, and driveways may be free-floating and separate from foundations.

Weakened-plane contraction joints should be provided in exposed, non-structural slabs at 10- to 12-foot intervals. Reinforcing should be continuous through con-traction joints. Concrete walks should be reinforced concrete over sand or gravel. If truck traffic passes over concrete walks, they should be 8-inch reinforced slabs over 8 inches of rock. Similar concrete pads should be placed wherever a debris box or a trailer storage is anticipated.

F. Pavement

The customary driveway section consists of a 4-inch, reinforced- concrete slab as described above, or a 2-inch cover of plant-mixed asphalt. (An "engineered" R-Value design can be prepared upon request). Either pavement should be placed over at least 4 inches of CalTrans Class II Aggregate Base rock.

Install pavement according to CalTrans Standard Specifications, Sections 16, 19, 26, and 39. Compact the sub-grade to 95% relative compaction (ASTM D1557) at a moisture content of 2% over optimum, and then rock tack, and pave immediately to keep the soil from drying and subject to heave the following winter. Base rock should be CalTrans Class II aggregate, asphalt should be plant-mixed Type B. Base rock should also be compacted to 95% and tacked. Asphalt should be sealed after paving.

H. Lateral Load Resistance

Lateral loads on piers may be resisted by passive pressures acting against the sides of the piers. Equivalent passive pressures as shown on Table 1 :

Between 0 and 1 feet, use 0 pcf-efw;
Between 1 and 4 feet, use 350 pcf-efw;
Below 4 feet, use 600 pcf-efw to a max. value of 9,000 psf.

Lateral loads on shallow foundations may be resisted by friction, with a friction coefficient of 0.35 x acting vertical loads including dead weight.

LIMITATIONS

The recommendations presented herein are based on the soil conditions revealed by our test borings and laboratory procedures according to generally accepted geotechnical engineering principles and practices. This warranty is in lieu of all other warranties either expressed or implied.

It must be understood that for this report to be valid, the owner should ensure that necessary steps are taken to carry out the recommendations of the report in the field. Any added risk incurred by the choice of alternative construction methods which depart from our recommendations will be borne by the owner. Further, this report must not be construed as any guarantee or insurance against any type of soil failure.

The recommendations in this report are general in nature and are subject to adaptation or revision as construction circumstances warrant. We should be notified for supplemental recommendations should unusual situations be encountered during construction. We may be consulted for additional advice, or to provide assistance in interpretting our findings and recommendations, or to inspect various aspects of construction.

Our recommendations are valid as of the present time. However, future conditions may change due to legislation, improvement of engineering knowledge, natural processes, or man's works. Therefore, this report is subject to review and its validity may decrease with the passage of time.

Finally, careful design and construction cannot guarantee that damage will not occur if a disaster strikes. Disaster may strike in the form of a destructive, nearby earthquake. The owner alone undertakes such a risk. Therefore, the owner should obtain home insurance if available against earthquake damage.

REFERENCES

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14. ABAG, 2016, Manual of Standards for Erosion and Sediment Control Measures.

15. SUMMIT ENGINEERING (2010), Geotechnical Report for the Proposed Residential Development, 54 Ellsworth Avenue, San Mateo, California, April 19, 2010.
16. SUMMIT ENGINEERING (2013), Geotechnical Report for the Proposed New Duplex at 437 Turner Terrace, San Mateo, California, August 30th, 2013
17. SUMMIT ENGINEERING (2019), Geotechnical Report for the Proposed Building at 509 - 511 California Drive, Burlingame, California, August 5, 2019.

APPENDIX

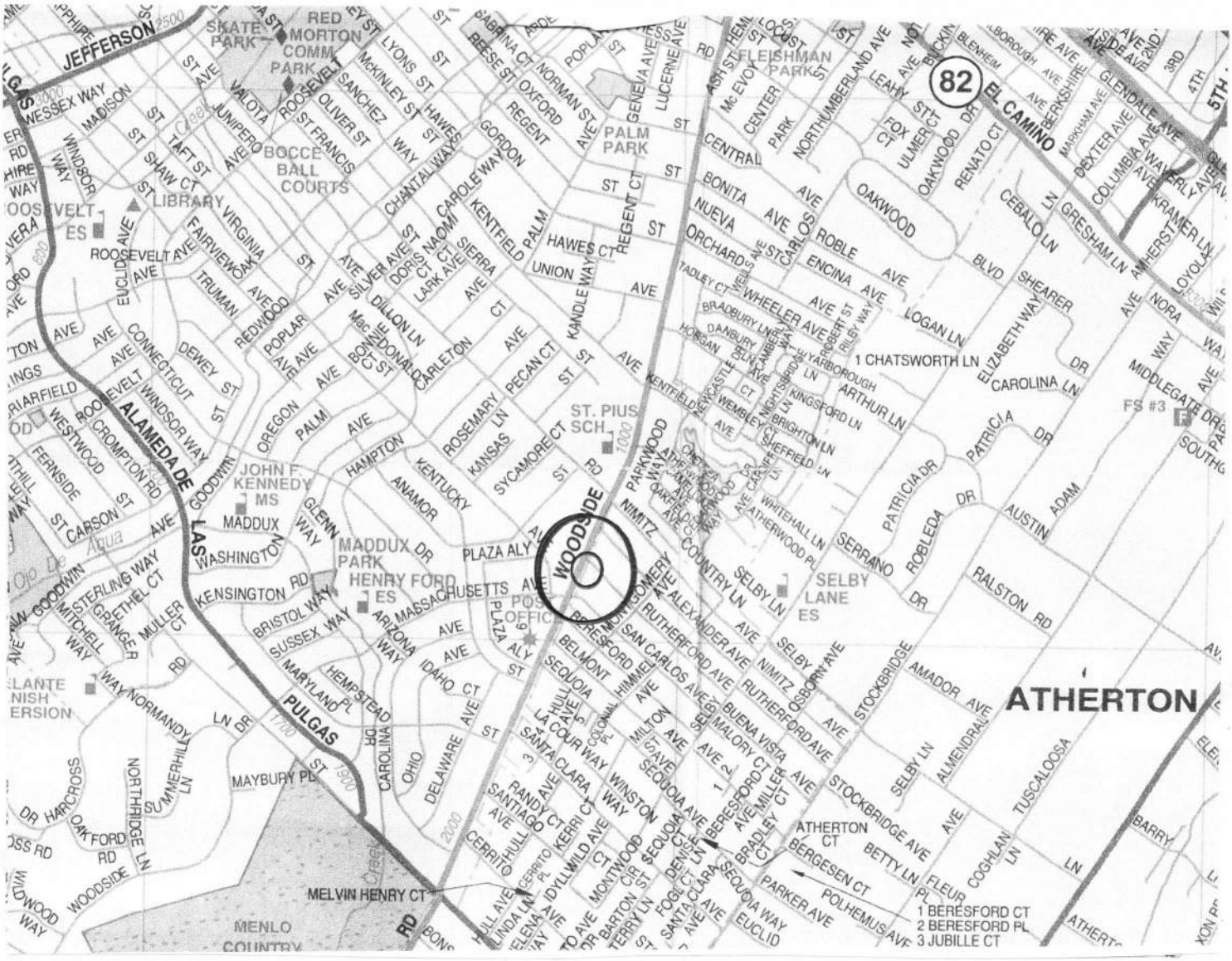
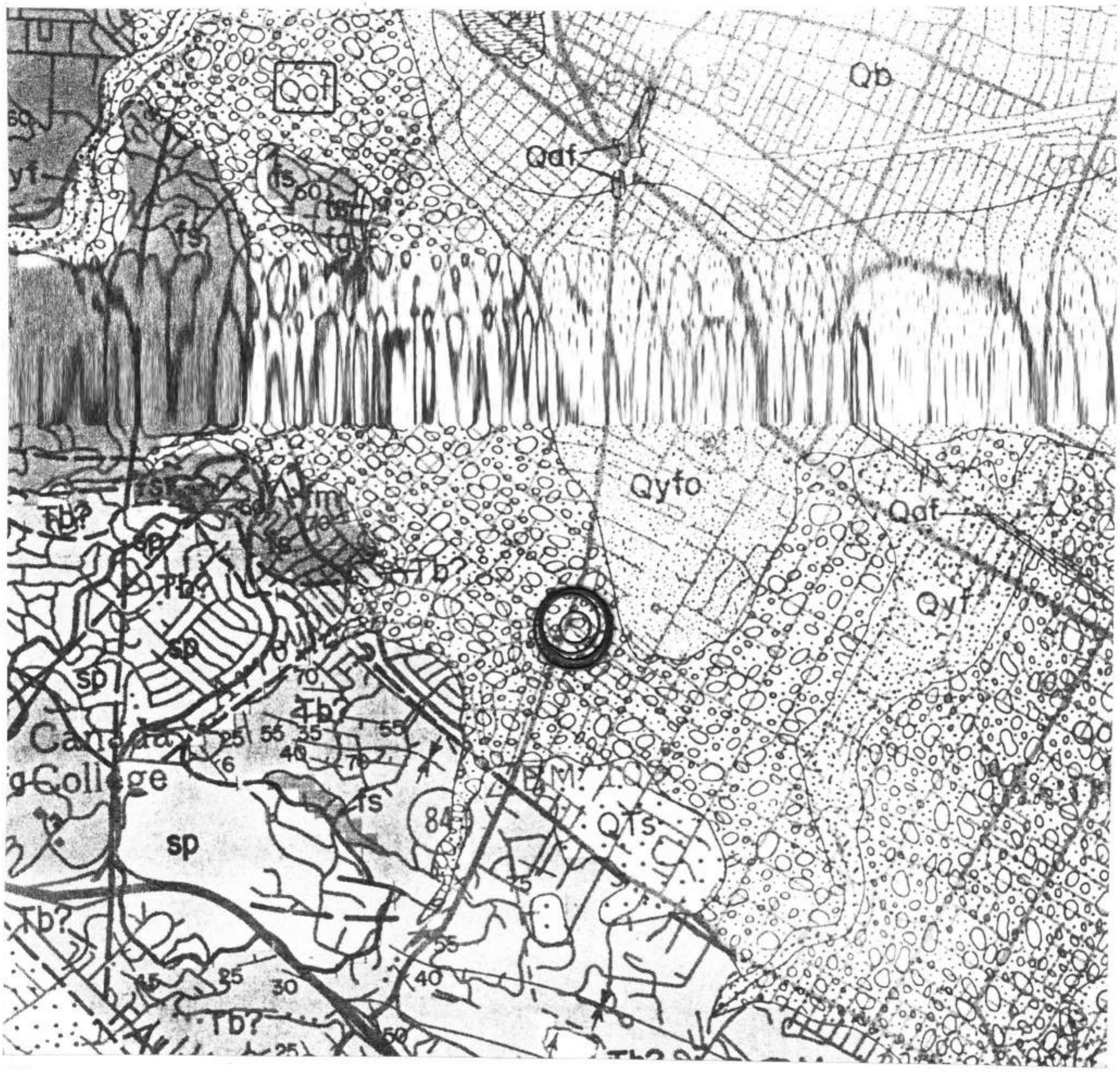
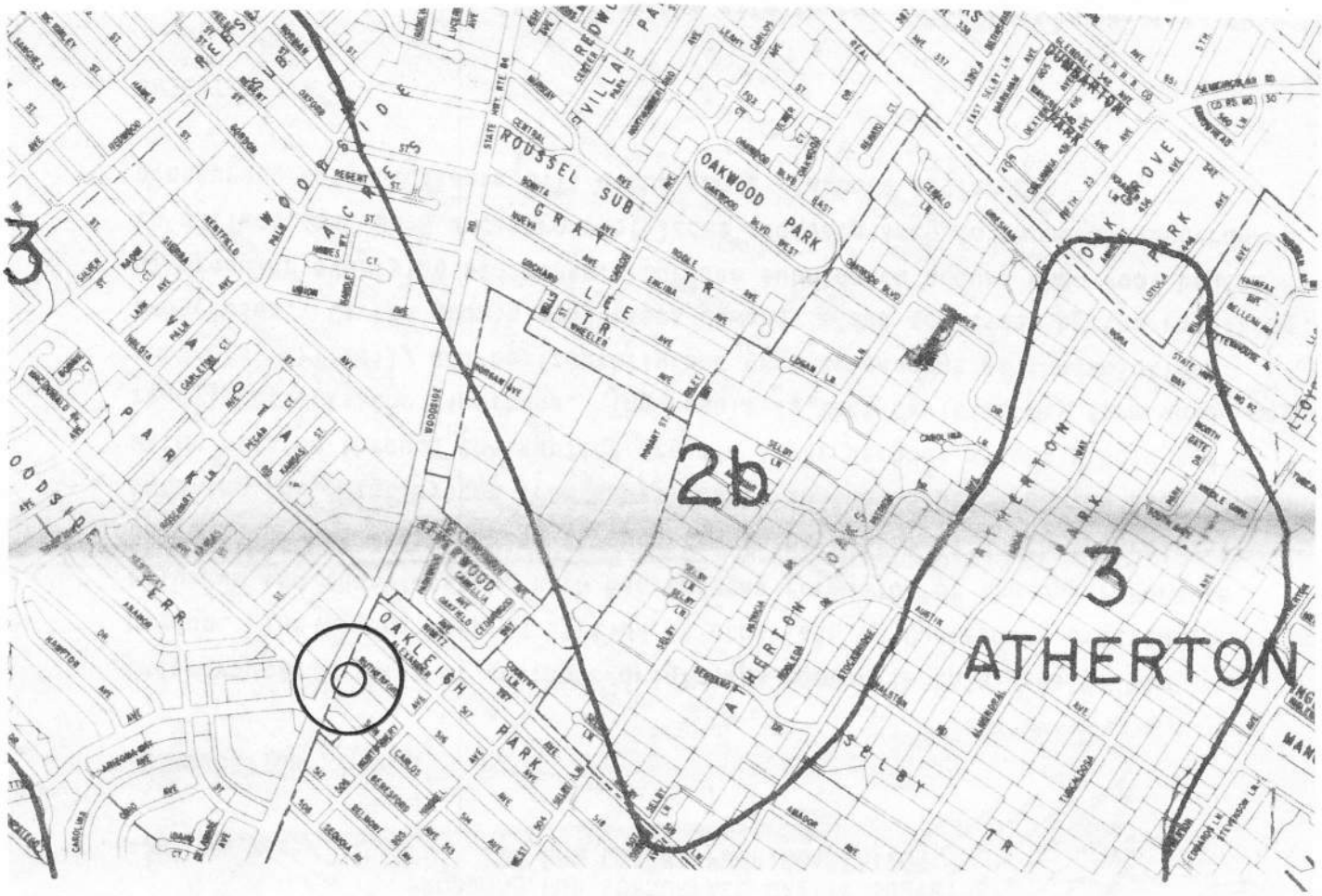


FIGURE 1 - SITE LOCATION



Ref. : USGS (Brabb and Pampeyan), 1983

FIGURE 2A - REGIONAL GEOLOGY



Ref. San Mateo County Official Map
of Geologic Hazards (1976)

FIGURE 2B - REGIONAL LAND STABILITY

SUMMIT ENGINEERING

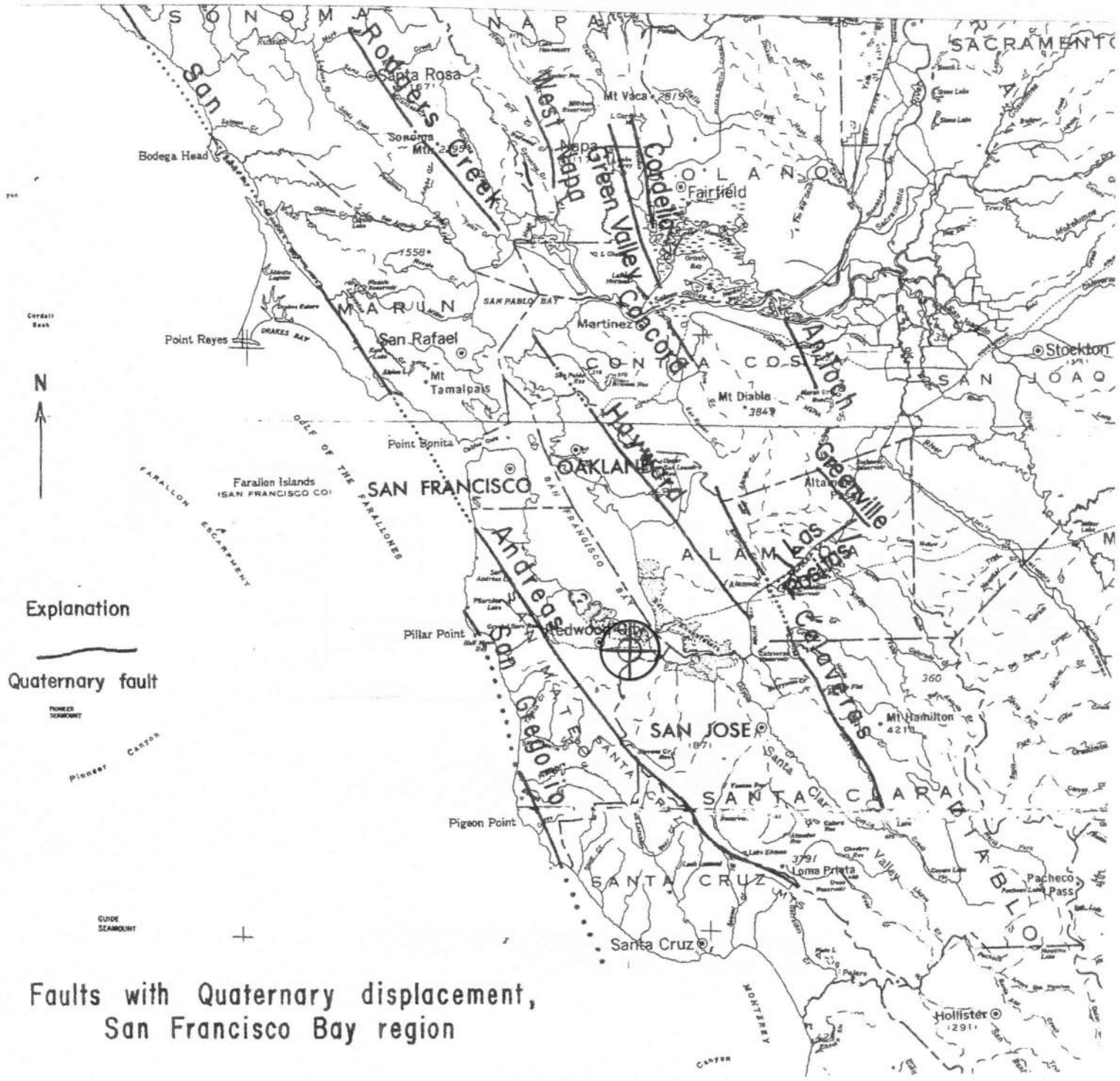
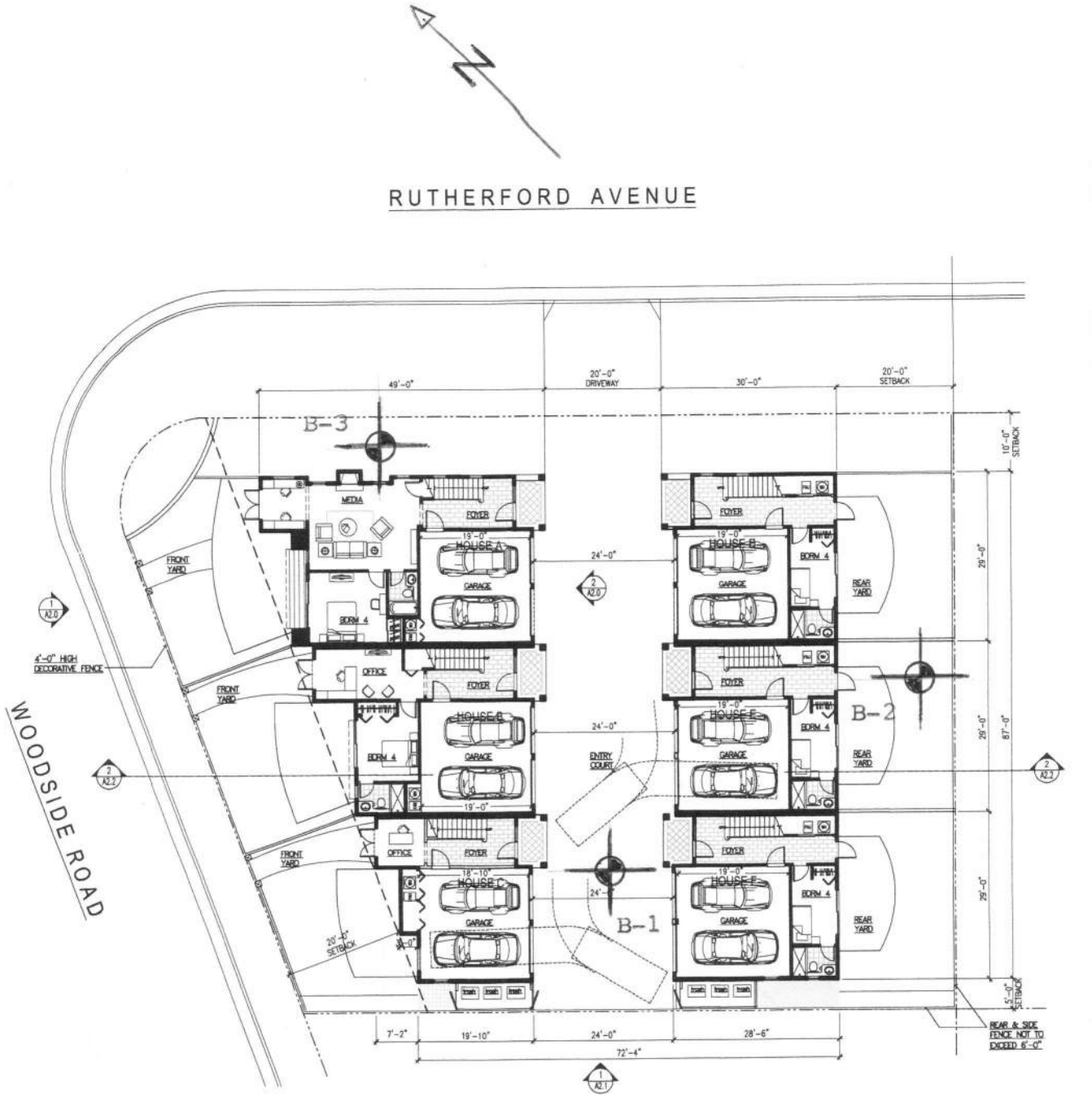


FIGURE 2C - ACTIVE FAULT ZONES

SUMMIT ENGINEERING

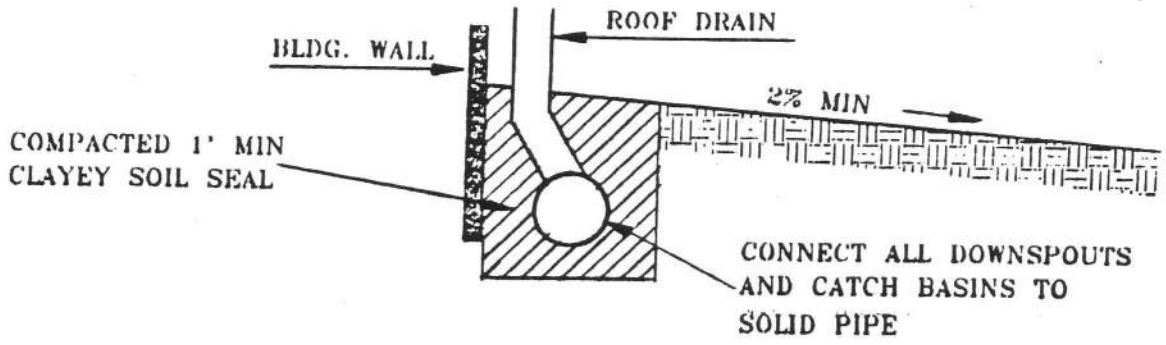


LEGEND

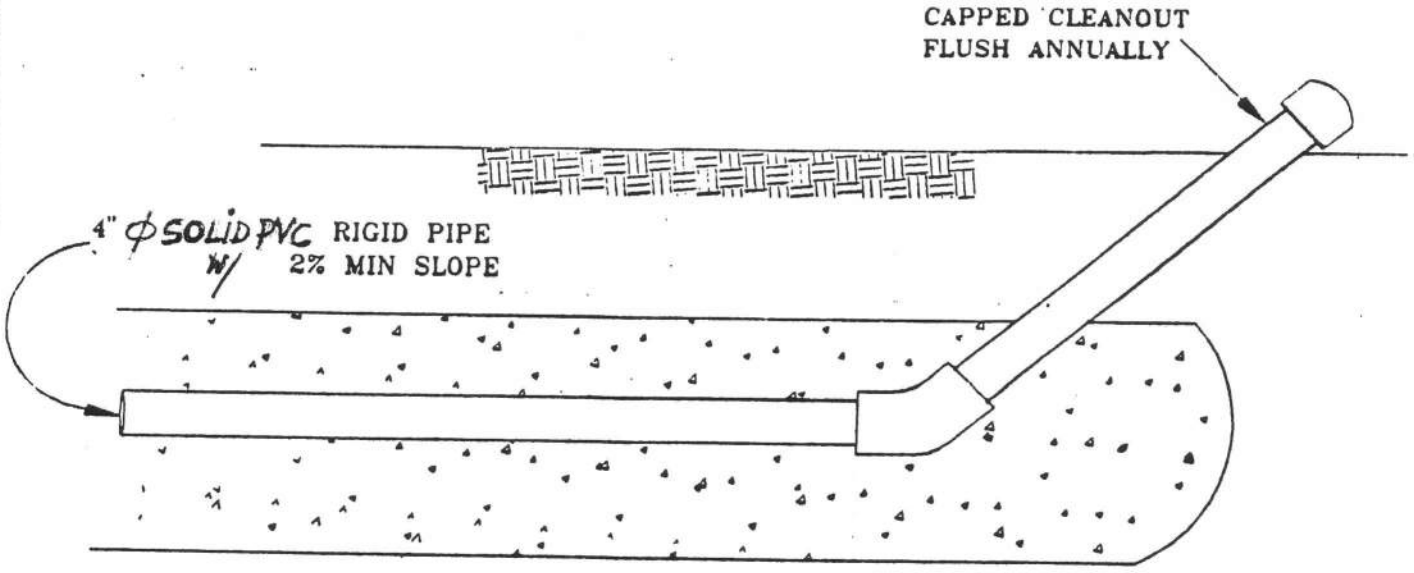
B-1 — Soil Boring Location

FIGURE 3 - SITE PLAN AND SOIL BORING LOCATIONS

SUMMIT ENGINEERING



BUILDING DRAIN (NTS)



CLEANOUT DETAIL (NTS)

FIGURE 4 – SUBDRAIN DETAILS

SUMMIT ENGINEERING

PROJECT No. 191203	**BORING No.** B-1		**DATE:** 1/14/2020
PROJECT NAME: New Residential Development			**PAGE** 1 **OF** 1
LOCATION: 1301 - 1311 Woodside Road, Redwood City CA			**GWL DEPTH:** N.E.
DRILLING METHOD: Continuous Sampling, 140-lb Hammer			**HOLE DIAM:** 3.5 in
DRILLING CONTRACTOR Access Drilling Co.			**DRILLER:** Jose

DEPTH (FT)	SAMPLE TYPE & NUMBER	BLOW/FT	SPT	MATERIAL DESCRIPTION	USCS SYMBOL	MOISTURE CONTENT %	DRY DENSITY (PCF)	SHEAR STRENGTH (PSF)
0	S-1	17	17	black, silty clay, moist Stiff, grading to V. Stiff LL = 46%, PI = 21%	CL			
2	S-2	40	40	gravel pocket. Med. Dense. Hard	GP			
4	S-3	32	32	olive-brown, sandy clay, damp Hard	CL			
6	S-4	62	62	same sandy clay as above, damp, compact, dense. Hard	CL			
8				BOH = 8 feet				
10								
12								
14								
16								
18								
20								
22								
24								

NOTES: N.E. = Not Encountered

3-in sample

SPT sample

2.5-in sample

Grab sample

SUMMIT ENGINEERING

5855 Castle Drive
Oakland, CA 94611

PROJECT No. 191203	BORING No. B-2	DATE: 1/14/2020
PROJECT NAME: New Residential Development		PAGE 1 OF 1
LOCATION: 1301 - 1311 Woodside Road, Redwood City CA		GWL DEPTH: N.E.
DRILLING METHOD: Continuous Sampling, 140-lb Hammer		HOLE DIAM: 3.5 in
DRILLING CONTRACTOR Access Drilling Co.		DRILLER: Jose

DEPTH (FT)	SAMPLE TYPE & NUMBER	BLOW/FT	SPT	MATERIAL DESCRIPTION	USCS SYMBOL	MOISTURE CONTENT %	DRY DENSITY (PCF)	SHEAR STRENGTH (PSF)
0								
	S-1	24	18	dark-gray to black, sandy clay moist. V. Stiff	CL			
2								
	S-2	30	30	same dark-gray sandy clay, moist V. Stiff to Hard	CL			
4								
	S-3	75	75	brown, sandy clay, damp, dense & compact, becomes claystone. Hard	CL			
6								
8				BOH = 6 feet				
10								
12								
14								
16								
18								
20								
22								
24								

NOTES: N.E. = Not Encountered

3-in sample

SPT sample

2.5-in sample

Grab sample

SUMMIT ENGINEERING

5855 Castle Drive
Oakland, CA 94611

PROJECT No. 191203	**BORING No.** B-3		**DATE:** 1/14/2020
PROJECT NAME: New Residential Development			**PAGE** 1 **OF** 1
LOCATION: 1301 - 1311 Woodside Road, Redwood City CA			**GWL DEPTH:** N.E.
DRILLING METHOD: Continuous Sampling, 140-lb Hammer			**HOLE DIAM:** 3.5 in
DRILLING CONTRACTOR Access Drilling Co.			**DRILLER:** Jose

DEPTH (FT)	SAMPLE TYPE & NUMBER	BLOW/FT	SPT	MATERIAL DESCRIPTION	USCS SYMBOL	MOISTURE CONTENT %	DRY DENSITY (PCF)	SHEAR STRENGTH (PSF)
0								
2	S-1	22	14	black to dark-gray clay, moist, sandy w/ occas. pea gravel. Stiff	CL			
4	S-2	34	22	same clay as above, moist, sandy V. Stiff	CL			
6	S-3	40	40	same clay as above, drk-gray, sandy, moist, compact. Hard	CL			
8	S-4	41	41	mid-brown, v. silty clay, damp, dense. Hard	CL			
10				BOH = 8 feet				
12								
14								
16								
18								
20								
22								
24								

NOTES: N.E. = Not Encountered

- 3-in sample
- SPT sample
- 2.5-in sample
- Grab sample

SUMMIT ENGINEERING

5855 Castle Drive
Oakland, CA 94611

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT F

Hydrology Report

FOR

Proposed development

Seven (7) Lot Subdivisions
Six (6) New Townhouses and a common Lot

1301 and 1311 Woodside Road, Redwood City, CA

Unincorporated area of Sam Mateo County
APN: 069-311-340 and 069-311-250

December 2020

BY
SMP ENGINEERS
1534 CAROB LANE
LOS ALTOS, CA 94024



1534 Carob Lane
Los Altos
California, 94024
650.941.8055 P
650.941.8755 F
www.smpengineers.com

Hydrology Report
Seven (7) Lot Subdivision
Six (6) New Townhouses and a common Lot
1301 and 1311 Woodside Road, Redwood City, CA
Unincorporated area of Sam Mateo County
APN: 069-311-340 and 069-311-250

Objective:

Purpose of this Hydrology report is to size Flow control devices to limit Post-development Stormwater Run-off from Site to Maximum Run-off at Pre-development condition (e.g. Un-developed Condition, C = 0.30).

ASSUMPTIONS:

Rainfall Method (Q = I. C. A.) per San Mateo County Drainage Manual to be Used.
No Credit for Existing Impervious areas on site (to be removed) is considered.
A minimum of 10 minutes Time of concentration (Tc = 10 minutes) to be calculated per Kirpitch Formula.
Since per FIMA map flood zone for site is Zone X, (areas outside the 1-percent annual chance floodplain,), calculation is done for a 10 Year Storm event.

Pre-development (Undeveloped condition) Run-off:

Watershed Table	Area (S.F.)	Area (Acres)	Material	C	C x Area
No credit for Existing Impervious areas	**0**	**0.000**		**0.9**	**0**
TOTAL OF PERVIOUS AREAS	**13,226**	**0.304**	**Ground**	**0.3**	**3,968**
TOTAL SITE AREA	**13,226**	**0.304**			**3,968**

WEIGHTED AVERAGE C=Σ(CXA)/ΣA = **0.300** **Pre-development Run-off Coefficient**

Concentration time (Tc) in minutes

C = 0.300 UNITLESS

Let longest travel path of Run-off be along diagonal of property, from Southerly property corner, Elevation 63.24, to Northerly property Corner (Right-Of-Way), return intersection, Woodside Road and Rutherford Ave. Elevation 61.24.

L =	169	FT	
HP ELEV=	63.24	FT	
LP ELEV=	61.24	FT	
ELEVATION DROP =HP - LP =	2	FT	
S = 100 X ELEVATION DROP / L1 =	1.2	%	
Tc (PRE) = [1.8 (1.1-C)√L] / ($S^{1/3}$) =	**17.7**	**minutes**	**Time of concentration, Pre-development**
IS MORE THAN Tc (MINIMUM) =	10.0	minutes	

Rainfall Intensity (I) 10 YEAR STORM

$I_{10\ Yr,\ 15\ minute}$=	1.64	inches/hr	
Per NOOA RAINFALL RUNOFF DATA, PD tabular for site location			
$I_{10\ Yr,\ 30\ minute}$=	1.14	inches/hr	
Per NOOA RAINFALL RUNOFF DATA, PD tabular for site location			
Interpolate for time of concentration, Tc =	17.17	minutes	
$I_{10\ Yr,\ 17.7\ minute}$=	1.56	inches/hr	

Peak Flow calculation, PRE DEVELOPMENT

(Rational method)

I =	1.56	inches/hr	
C =	0.300		
A =	0.304	acres	
Q = I.C.A =	**0.142**	**CFS**	**Peak flow, 10 Year, Pre-development**

Post-Development Watershed Table:

See Project STORMWATER MANAGEMENT PLAN

Watershed Table	Area (S.F.)	Area (Acres)	Material	C	C x Area
BUILDINGS	5,422	0.124	ROOF	0.9	4,880
DRIVEWAY/ WALKWAY	712	0.016	CONCRETE	0.9	641
TOTAL IMPERVIOUS	**6,134**	**0.141**	**IMPERVIOUS**		
PERVIOUS PAVERS	3,463	0.079	PAVERS	0.3	1,039
LANDSCAPE	3,629	0.083	LANDSCAPE	0.3	1,089
TOTAL PERVIOUS	**7,092**	**0.163**	**PERVIOUS**		
TOTAL PROJECT AREA	**13,226**	**0.304**			7,648

WEIGHTED AVERAGE C=Σ(CXA)/ΣA = **0.578** **Post-development Run-off Coefficient**

Concentration time (Tc) in minutes

C = 0.578

Let longest travel path of Run-off be 31 Linear FT Grassy Swale at Backyard of Lot 6, as shown on Preliminary Grading plan sheet C-2.

L =	31	FEET	
HP ELEV=	61.75	FEET	
LP ELEV=	61.44	FEET	
ELEVATION DROP =HP - LP =	0.31	FEET	
S = 100 X ELEVATION DROP / L1 =	1.0	%	
Tc (PRE) = [1.8 (1.1-C)√L] / (S1/3) =	5.2	minutes	
So lets Use Tc Minimum = 10 Minutes	**10.0**	**minutes**	**Time of concentration, Post-development**
			From Roof-top to Receiving Drainage System

Rainfall Intensity (I) 10 YEAR STORM

$I_{10\ Yr,\ 10\ Minute}$ =	2.03	inches/hr	
Per NOOA RAINFALL RUNOFF DATA, PD tabular for site location			

Peak Flow calculation, POST DEVELOPMENT (Rational method)

I =	2.03	inches/hr	
C =	0.578		
A =	0.304	acres	
Q = I.C.A =	**0.356**	**CFS**	**Peak flow, 10 Year, Post-development**

Project Site Drainage Considerations (Rational method)

San Mateo County requires that the project runoff from a 10-year 1-hr duration design storm be retained onsite.
Change in runoff: ΔQ = Project impervious x ΔC x I, and
Change in volume for 10-year design storm: ΔV = ΔQ x Duration, Minimum required volume
with Factor of Safety = FS* ΔV

$I_{10\ Yr,\ 60\ Minute}$ =	0.804	inches/hr	
Per NOOA RAINFALL RUNOFF DATA, PD tabular for site location			
Change in runoff Coefficient: ΔC =0.9 - 0.3 =	0.60	Unitless	
Area post project impervious =	0.141	acres	
Change in runoff ΔQ =	0.068	CFS	
Change in volume for 10-year design storm:			
Rain Duration =	60	minutes	
ΔV = ΔQ x Duration =	**245**	**CF**	**Change in volume**

Safety Factor:

FS=	1.2	Unitless	
Minimum required volume V (REQ.) = FS* ΔV =	**293**	**CF**	**Minimum required volume** to be retained On-site

Sizing Detention Basin/ Infiltration Device:

Lets Use and size infiltration basin with storage pipe to store and Infiltrate Additional Run-off On-site.
Project proposes 36" diameter Perforated pipe with 12" of Gravel on sides and 6" of gravel on top and bottom, Close to project Low point, R-O-W intersection return.
No Overflow connection to SD System (Caltrans R-O-W) is proposed. Overflow for Storm events larger than design storm will be safely

Estimate Depth and Area of detention basin

Try Perforated Pipe Diameter (D)	3.0	FT	
Try Gravel Bed Width (W) =	5	FT	
Try Gravel Bed Height (H) =	4	FT	
Try Length of Basins and pipe (L) =	45	FT	
Cross Section Area of Perforated pipe (A Pipe) =	7.1	SQ.FT.	
Volume Pipe = (A Pipe) x L =	**318**	**CF**	Pipe Volume Available
Cross Section Area of Gravel Bed (A Gravel) = (W x H) - A Pipe =	12.9	SQ.FT.	
Volume Gravel (A Gravel) x L =	582	CF	
Gravel Void Space Ratio:	0.35		
Volume Gravel Void space	**111**	**CF**	Gravel bed Void Volume Available
Total Detention Volume Available =	**429**	**CF**	**Total Volume Available**
Ok, Should be more than V Required:	293	CF	Required

Check Time of dewatering calculation for detention Basin:

Percolation rate (P) =	0.2	in/hr	ASSUMED for Soil Type C (SITE)
Convert Units, Percolation rate (P) =	0.0167	FT/hr	as: 1 Ft/hr = 12 in/hr
Area of Gravel beds = (L x W) =	225	SQFT	
Flow rate of detention Drainage to soils (Q out) = A gravel x P =	3.8	CF/hr	
Volume at full Capacity (V) =	429	CF	
Time of dewatering = V / (Q out x 24 hr/day)=	4.77	days	
OK, SHOULD BE LESS THAN 5 DAYS			

Check Room for a second 10-year storm within 24 hrs:

Percolation rate (P) =	0.2	in/hr	ASSUMED for Soil Type C (SITE)
Convert Units, Percolation rate (P) =	0.0167	FT/hr	as: 1 Ft/hr = 12 in/hr
Area of Gravel beds = (L x W) =	225	SQFT	
Flow rate of detention Drainage to soils (Q out) = A gravel x P =	3.8	CF/hr	
Volume Infiltrated in 24 Hours =	90	CF	
Volume Available for second Storm within 24 Hours = Total Volume Available + Infiltrated Volume - Δ V :			
Total Detention Volume Available =	**429**	**CF**	
Infiltrated Volume	90	CF	Percolated Volume During 24 Hours
ΔV =	245	CF	Detention required for a second storm
Volume Available for second Storm within 24 Hours =	**275**	**CF**	
Ok, Should be more than Change in Volume:	245	CF	

Conclusion:
Proposed detention Basin is sufficient: 45 FT long, 5 FT Wide, 4 FT Deep, with 36" Dia. Perforated pipe.

NOAA Atlas 14, Volume 6, Version 2
Location name: Redwood City, California, USA*
Latitude: 37.4576°, Longitude: -122.2267°
Elevation: 62.87 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**1.57** (1.38-1.79)	**1.93** (1.70-2.22)	**2.42** (2.14-2.78)	**2.83** (2.47-3.29)	**3.40** (2.86-4.09)	**3.84** (3.14-4.74)	**4.31** (3.43-5.46)	**4.79** (3.70-6.26)	**5.46** (4.02-7.48)	**5.99** (4.25-8.52)
10-min	**1.12** (0.990-1.28)	**1.39** (1.22-1.59)	**1.74** (1.53-2.00)	**2.03** (1.77-2.35)	**2.44** (2.04-2.93)	**2.75** (2.26-3.40)	**3.08** (2.46-3.91)	**3.43** (2.65-4.49)	**3.91** (2.89-5.36)	**4.29** (3.04-6.11)
15-min	**0.904** (0.800-1.04)	**1.12** (0.984-1.28)	**1.40** (1.23-1.61)	**1.64** (1.42-1.90)	**1.96** (1.65-2.36)	**2.22** (1.82-2.74)	**2.49** (1.98-3.15)	**2.77** (2.14-3.62)	**3.15** (2.32-4.32)	**3.46** (2.46-4.92)
30-min	**0.630** (0.556-0.722)	**0.778** (0.686-0.890)	**0.974** (0.856-1.12)	**1.14** (0.992-1.32)	**1.37** (1.15-1.65)	**1.55** (1.27-1.91)	**1.73** (1.38-2.19)	**1.92** (1.49-2.52)	**2.19** (1.62-3.01)	**2.41** (1.71-3.43)
60-min	**0.445** (0.393-0.509)	**0.549** (0.484-0.629)	**0.688** (0.605-0.791)	**0.804** (0.700-0.932)	**0.965** (0.809-1.16)	**1.09** (0.894-1.35)	**1.22** (0.974-1.55)	**1.36** (1.05-1.78)	**1.55** (1.14-2.12)	**1.70** (1.21-2.42)
2-hr	**0.325** (0.287-0.372)	**0.398** (0.352-0.456)	**0.496** (0.436-0.570)	**0.578** (0.504-0.670)	**0.691** (0.580-0.832)	**0.780** (0.638-0.962)	**0.872** (0.694-1.10)	**0.968** (0.747-1.26)	**1.10** (0.811-1.51)	**1.21** (0.855-1.72)
3-hr	**0.273** (0.241-0.312)	**0.335** (0.295-0.384)	**0.417** (0.367-0.480)	**0.486** (0.423-0.563)	**0.581** (0.487-0.700)	**0.656** (0.537-0.809)	**0.733** (0.584-0.929)	**0.814** (0.628-1.06)	**0.926** (0.683-1.27)	**1.01** (0.720-1.44)
6-hr	**0.196** (0.173-0.224)	**0.241** (0.212-0.276)	**0.302** (0.265-0.347)	**0.352** (0.307-0.409)	**0.423** (0.354-0.509)	**0.478** (0.391-0.589)	**0.535** (0.426-0.678)	**0.595** (0.460-0.778)	**0.679** (0.500-0.930)	**0.745** (0.528-1.06)
12-hr	**0.127** (0.112-0.146)	**0.159** (0.141-0.183)	**0.203** (0.178-0.233)	**0.239** (0.208-0.277)	**0.289** (0.242-0.348)	**0.328** (0.269-0.405)	**0.370** (0.295-0.469)	**0.413** (0.319-0.540)	**0.474** (0.349-0.649)	**0.522** (0.371-0.743)
24-hr	**0.077** (0.070-0.086)	**0.098** (0.089-0.110)	**0.126** (0.114-0.141)	**0.149** (0.134-0.169)	**0.182** (0.159-0.212)	**0.208** (0.179-0.247)	**0.235** (0.198-0.284)	**0.263** (0.216-0.327)	**0.303** (0.240-0.390)	**0.334** (0.257-0.444)
2-day	**0.049** (0.044-0.055)	**0.062** (0.056-0.069)	**0.080** (0.072-0.089)	**0.094** (0.085-0.107)	**0.114** (0.100-0.133)	**0.130** (0.112-0.155)	**0.147** (0.124-0.178)	**0.164** (0.135-0.204)	**0.188** (0.149-0.242)	**0.207** (0.159-0.275)
3-day	**0.037** (0.034-0.042)	**0.048** (0.043-0.053)	**0.061** (0.055-0.069)	**0.072** (0.065-0.082)	**0.087** (0.077-0.102)	**0.099** (0.085-0.118)	**0.112** (0.094-0.135)	**0.124** (0.102-0.154)	**0.142** (0.113-0.183)	**0.156** (0.120-0.207)
4-day	**0.031** (0.028-0.035)	**0.040** (0.036-0.044)	**0.051** (0.046-0.057)	**0.060** (0.054-0.068)	**0.072** (0.063-0.084)	**0.082** (0.071-0.098)	**0.092** (0.078-0.112)	**0.103** (0.084-0.128)	**0.117** (0.093-0.151)	**0.128** (0.099-0.170)
7-day	**0.022** (0.020-0.025)	**0.028** (0.026-0.032)	**0.036** (0.033-0.041)	**0.043** (0.038-0.048)	**0.051** (0.045-0.060)	**0.058** (0.050-0.069)	**0.065** (0.055-0.079)	**0.073** (0.060-0.090)	**0.082** (0.065-0.106)	**0.090** (0.069-0.120)
10-day	**0.018** (0.016-0.020)	**0.022** (0.020-0.025)	**0.029** (0.026-0.032)	**0.034** (0.030-0.038)	**0.041** (0.035-0.047)	**0.046** (0.039-0.054)	**0.051** (0.043-0.062)	**0.057** (0.047-0.071)	**0.064** (0.051-0.083)	**0.070** (0.054-0.093)
20-day	**0.011** (0.010-0.013)	**0.015** (0.013-0.016)	**0.019** (0.017-0.021)	**0.022** (0.020-0.025)	**0.026** (0.023-0.030)	**0.029** (0.025-0.035)	**0.033** (0.028-0.040)	**0.036** (0.030-0.045)	**0.040** (0.032-0.052)	**0.044** (0.034-0.058)
30-day	**0.009** (0.008-0.010)	**0.012** (0.011-0.013)	**0.015** (0.013-0.017)	**0.017** (0.016-0.020)	**0.021** (0.018-0.024)	**0.023** (0.020-0.028)	**0.026** (0.022-0.031)	**0.028** (0.023-0.035)	**0.031** (0.025-0.040)	**0.034** (0.026-0.045)
45-day	**0.007** (0.007-0.008)	**0.010** (0.009-0.011)	**0.012** (0.011-0.014)	**0.014** (0.013-0.016)	**0.017** (0.015-0.020)	**0.019** (0.016-0.022)	**0.021** (0.017-0.025)	**0.023** (0.019-0.028)	**0.025** (0.020-0.032)	**0.027** (0.021-0.035)
60-day	**0.007** (0.006-0.008)	**0.009** (0.008-0.010)	**0.011** (0.010-0.012)	**0.013** (0.011-0.014)	**0.015** (0.013-0.017)	**0.017** (0.014-0.020)	**0.018** (0.015-0.022)	**0.020** (0.016-0.025)	**0.022** (0.017-0.028)	**0.023** (0.018-0.031)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

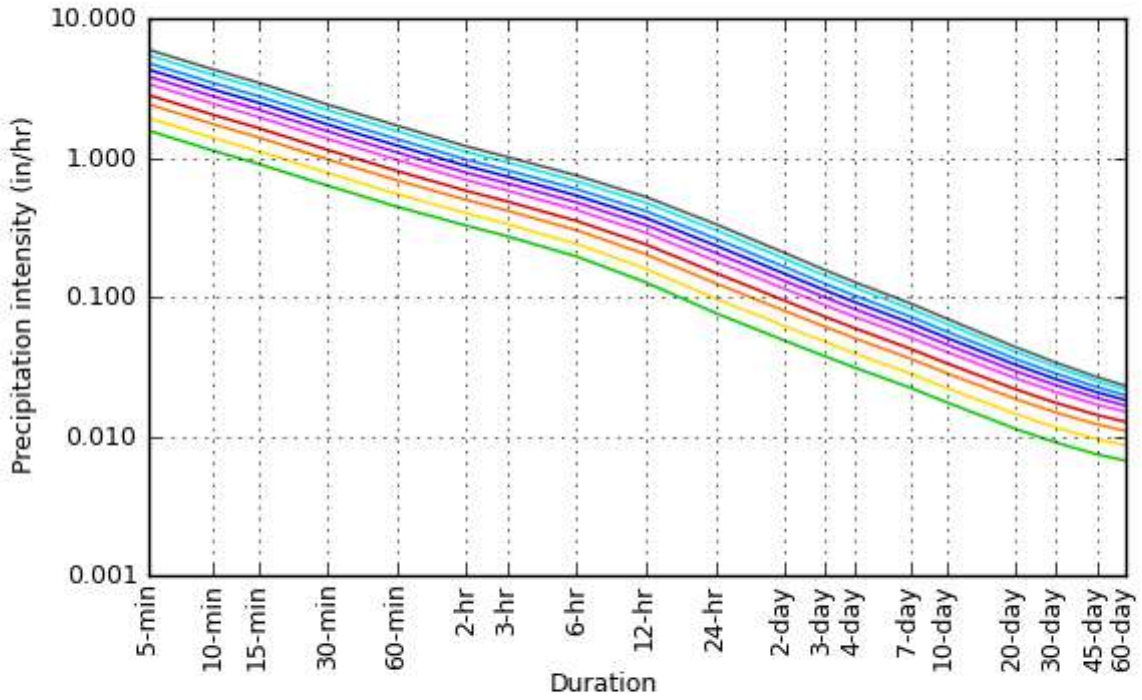
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

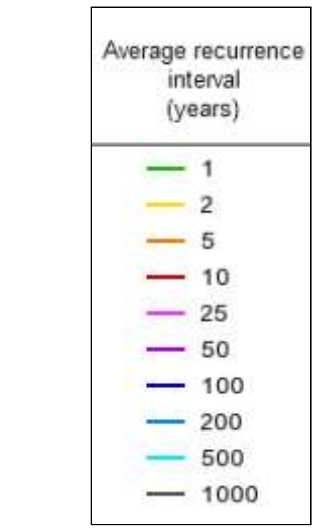
Please refer to NOAA Atlas 14 document for more information.

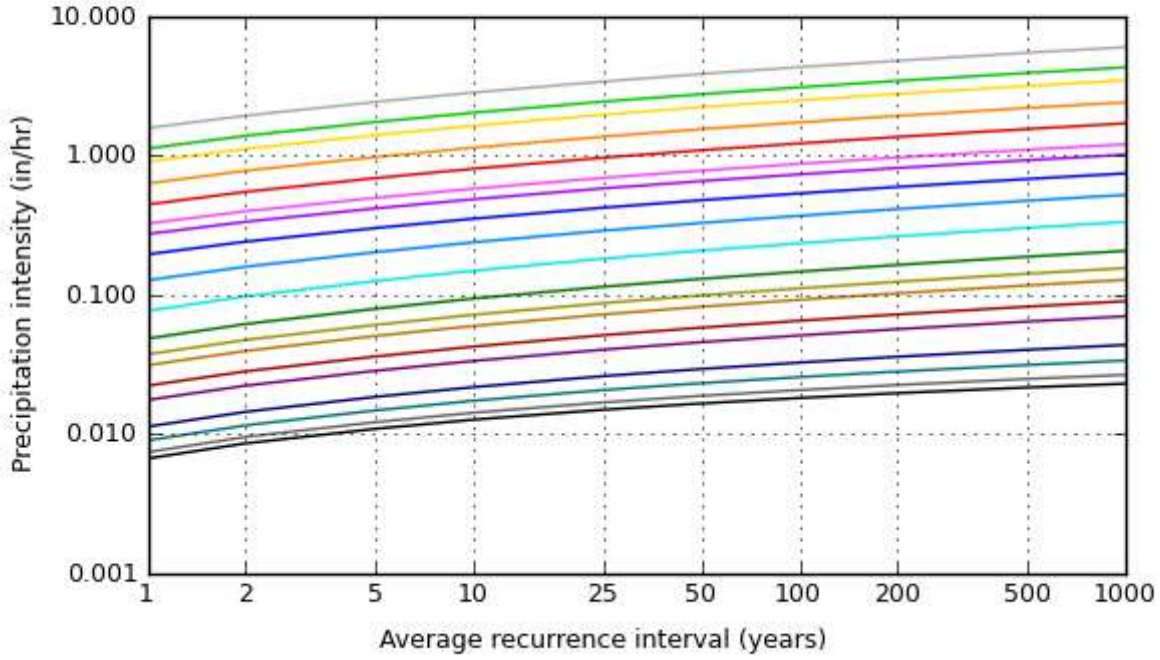
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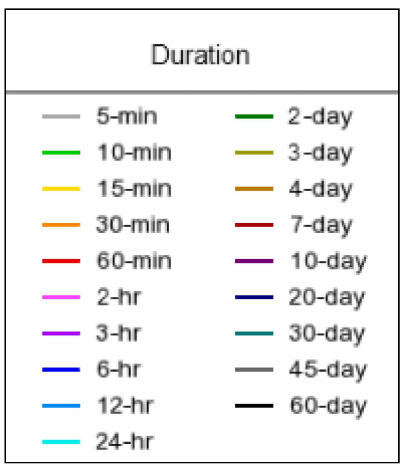
PF graphical

PDS-based intensity-duration-frequency (IDF) curves
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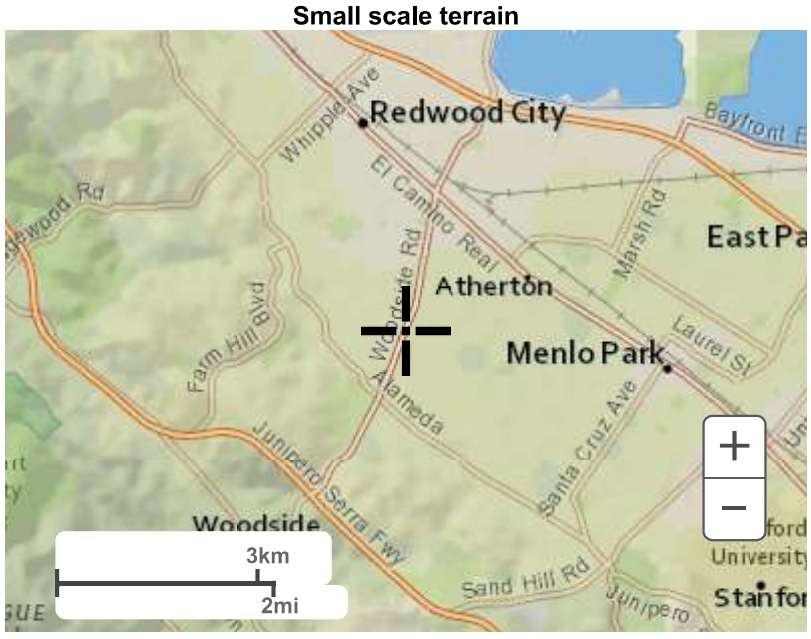


NOAA Atlas 14, Volume 6, Version 2 Created (GMT): Fri Dec 4 17:42:43 2020

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Maps & aerials

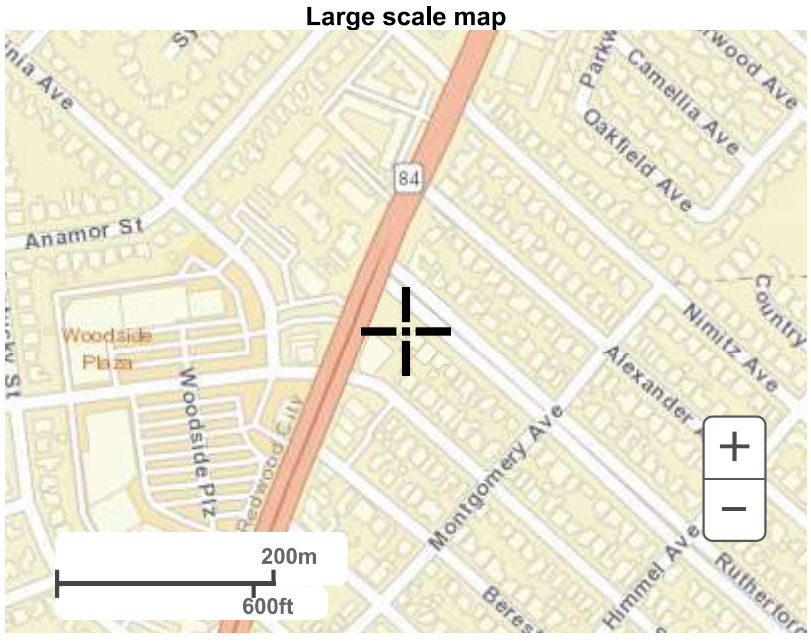
Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



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National Weather Service
National Water Center
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Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT G

EECAP DEVELOPMENT CHECKLIST

Measure		Description & Performance Criteria	Compliance			
			Complies	Does Not Comply	N/A	See Discussion
1.1	Energy Upgrade California	Participate in an energy retrofit rebate program, to achieve a minimum of 30% energy savings.				tbd
1.2	Residential Energy Efficiency Financing	Participate in a residential energy efficiency financing program, to achieve 30% energy savings.	yes			
1.3	Low-Income Weatherization	Complete weatherization, to achieve average energy savings of 25%.				tbd
1.4	Tree Planting	Tree plantings to shade new or existing homes.	yes			
1.5	Propane Switch	Switch from propane heater to more energy-efficient options, such as Energy Star furnaces or electric air-source pumps.				tbd
2.1	Commercial and Industrial Efficiency	Complete energy efficiency upgrades through third-party programs.			n/a	
2.2	Commercial Financing	Participate in commercial energy efficiency financing programs, to achieve a minimum of 30% energy savings.			n/a	
2.3	Institutional Energy Efficiency	Complete energy efficiency retrofits at large institutional facilities.			n/a	
3.1	Green Building Ordinance	Comply with the Green Building Ordinance and achieve CALGreen Tier 1 energy efficiency standards, for all construction projects subject to the Green Building Ordinance.	yes			

APPENDIX F: EECAP DEVELOPMENT CHECKLIST

Measure		Description & Performance Criteria	Compliance			
			Complies	Does Not Comply	N/A	See Discussion
3.2	Green Building Incentives	Comply with the Green Building Ordinance and achieve CALGreen Tier 1 energy efficiency standards, regardless of applicability of the Green Building Ordinance.				tbd
3.3	Urban Heat Island	Install shading, "cool" surfaces design, and/or open-grid paving to reduce hardscape through strategies such as interlocking concrete pavement, stones, or blocks.	yes			
3.6	Regional Energy Efficiency Efforts	Procure and install energy-efficient equipment, through programs such as bulk-purchasing, to achieve a minimum of 8% energy savings.				tbd
4.1	Solar PV Incentives	Install a solar photovoltaic system, using private resources and/or local or state incentives, including County incentives, and state rebates through the California Solar Initiative.	yes			
4.2	Solar Water Heater Incentives	Install solar water heaters, using private resources and/or local or state incentives, including County incentives and state rebates through the California Solar Initiative.				tbd
4.3	Pre-Wired Solar Homes	Pre-wire and pre-plumb for solar thermal or PV systems.	yes			
4.4	Pilot Solar Program	Install a solar photovoltaic system through a development project program.				tbd
4.5	Renewable Financing	Install a solar photovoltaic system or solar water heater using financing programs such as power purchase agreements or Property Assessed Clean Energy.				tbd

APPENDIX F: EECAP DEVELOPMENT CHECKLIST

Measure		Description & Performance Criteria	Compliance			
			Complies	Does Not Comply	N/A	See Discussion
4.7	Incentivize Wind Energy	Install small distributed generation wind power systems on existing development.			x	
4.9	Emissions Offset Programs	Participate in an energy offset program to purchase electricity generated from renewable sources off site.				tbd
5.1	General Plan and Zoning Updates	Provide transit-oriented, mixed-use developments.		x		
5.3	Pedestrian Design	Incorporate pedestrian design elements to enhance walkability and connectivity, while balancing impacts on vehicle congestion.	yes			
6.1	Neighborhood Retail	Provide neighborhood retail, daily service and commercial amenities in residential communities.		x		
6.2	Traffic Calming in New Construction	Incorporate appropriate traffic-calming features, such as marked crosswalks, countdown signal timers, planter strips with street trees, and curb extensions.	yes			
6.4	Expand Transit	Enhance bus and safety shelter amenities to support public transit ridership.		x		
7.1	Parking Ordinance	Provide staggered parking demand, reduced parking, or parking based on demand levels that is lower than required in the code, if supported by parking study findings or proximity to mixed-use and public transit services.	yes			
7.3	Unbundled Parking	Price parking separately from rentals or leases, using strategies such as metered parking or parking permits.			x	

APPENDIX F: EECAP DEVELOPMENT CHECKLIST

Measure		Description & Performance Criteria	Compliance			
			Complies	Does Not Comply	N/A	See Discussion
8.1	Employee Commute	Provide a Commute Trip Reduction program to discourage single-occupancy vehicle trips and encourage other modes of alternative transportation.			x	
8.2	Workplace Parking	Implement workplace parking pricing programs.			x	
8.3	Employer Transit Subsidies	Provide transit subsidies or transit passes to employees.			x	
8.4	Work Shuttles	Expand worker shuttle programs.			x	
10.1	Low Carbon Fuel Infrastructure	Install electric vehicle charging stations or provide neighborhood electric vehicle networks.	yes			
13.1	Use of Recycled Materials	Incorporate a minimum of 15% recycled materials into construction.	x			tbd
13.2	Zero Waste	Provide trash, recycling, and composting collection enclosures.				tbd
14.1	Smart Water Meters	Install smart water meters.	yes			
14.2	Water Reuse	Use grey, rain, and recycled water for landscaping or agricultural purposes.				tbd
15.1	Construction Idling	Construction equipment for new development to comply with best management practices from Bay Area Air Quality Management District guidance.	yes			
15.2	Electrification in New Homes	Provide outdoor electrical outlets for charging outdoor household equipment.	yes			

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT H

HEXAGON TRANSPORTATION CONSULTANTS, INC.

Memorandum

Date: December 16, 2019

To: Moshe Dinar, AIA Dinar & Associates

From: Kai-Ling Kuo, Jocelyn Lee

Subject: Traffic Operations Study and Vehicle Miles Traveled (VMT) Analysis for the Proposed Townhomes at 1301-1311 Woodside Road in San Mateo County

Introduction

This memorandum presents the results of the traffic operations study and vehicle miles traveled (VMT) analysis conducted for the proposed townhomes at 1301-1311 Woodside Road in San Mateo County, California. The project proposes to demolish the existing two single-family homes and construct six townhomes on the site. Access to the project site is provided via a right-turn only driveway on Rutherford Avenue. The location of the project site and the surrounding study area are shown on Figure 1. The proposed site plan is shown on Figure 2.

Scope of Study

Traffic Operations Analysis

This study was conducted for the purpose of identifying the potential traffic impacts related to the proposed development. The potential impacts of the project were evaluated in accordance with the standards set forth by the County of San Mateo and the City of Redwood City. According to the County of San Mateo *Traffic Impact Study Requirements*, a traffic impact report is generally needed if a project would generate over 500 trips per day or over 100 trips during the peak hour. Because the project would result in only a small increase in vehicle trips (3 new AM peak-hour trips and 4 new PM peak-hour trips), a regular traffic impact analysis is not required, and a traffic operations analysis was conducted to quantify the number of trips generated by the project and to identify any potential traffic operational issues that could occur as a result of the proposed project. A review of site plan was also conducted to evaluate traffic operations at the project entrance, on-site circulation, and bicycle and pedestrian access.

Traffic operating conditions were evaluated for the following two intersections in the City of Redwood City:

1. Woodside Road and San Carlos Avenue
2. Woodside Road and Rutherford Avenue (unsignalized)

Throughout this memorandum, Woodside Road is referred to as a north-south street. Traffic conditions at the study intersections were analyzed for the weekday AM and PM peak hours of traffic. In the study area, the AM peak hour typically occurs between 7:00 AM and 9:00 AM, while the PM peak hour typically occurs between 4:00 PM and 6:00 PM.

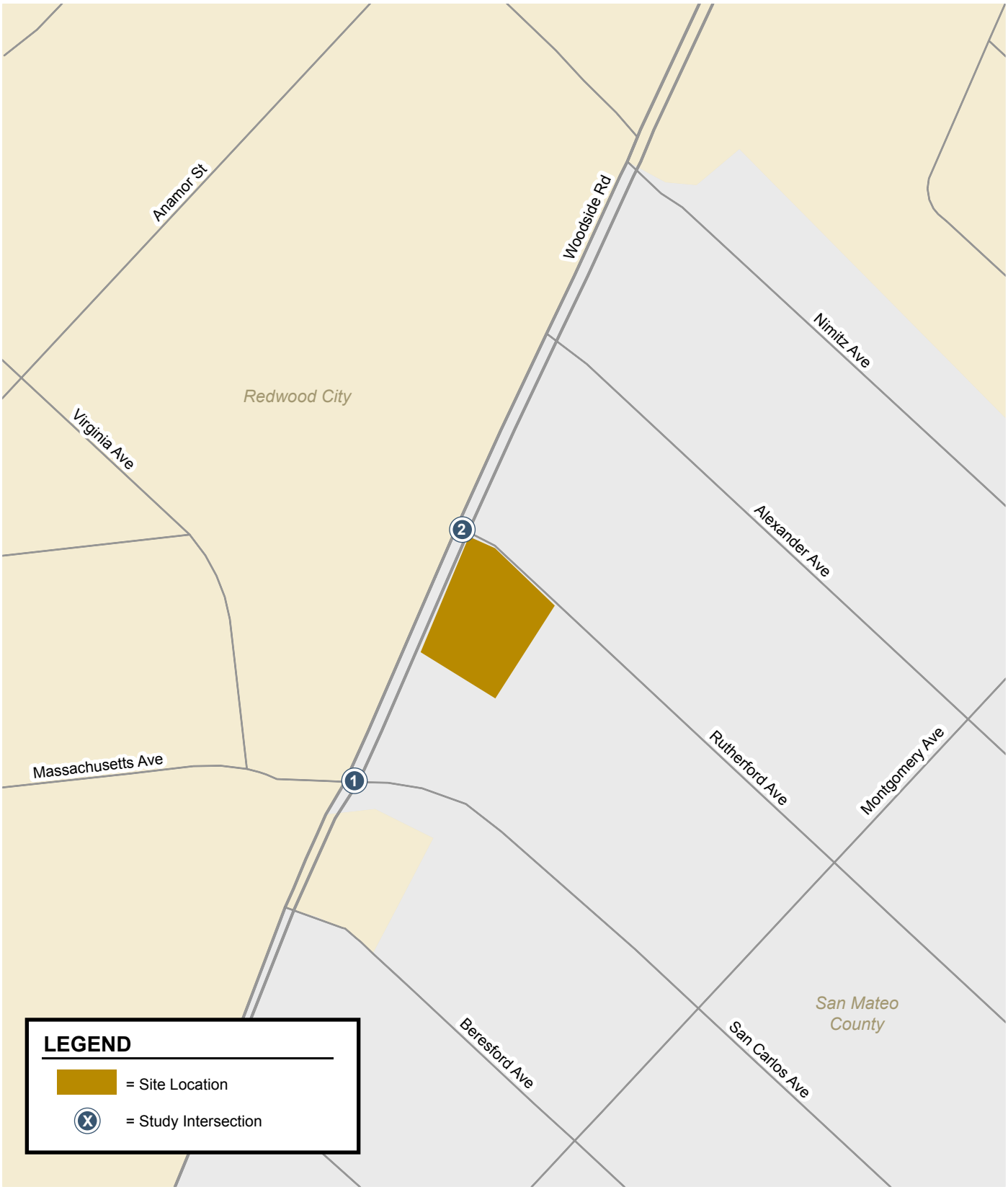


Figure 1
Site Location and Study Intersections

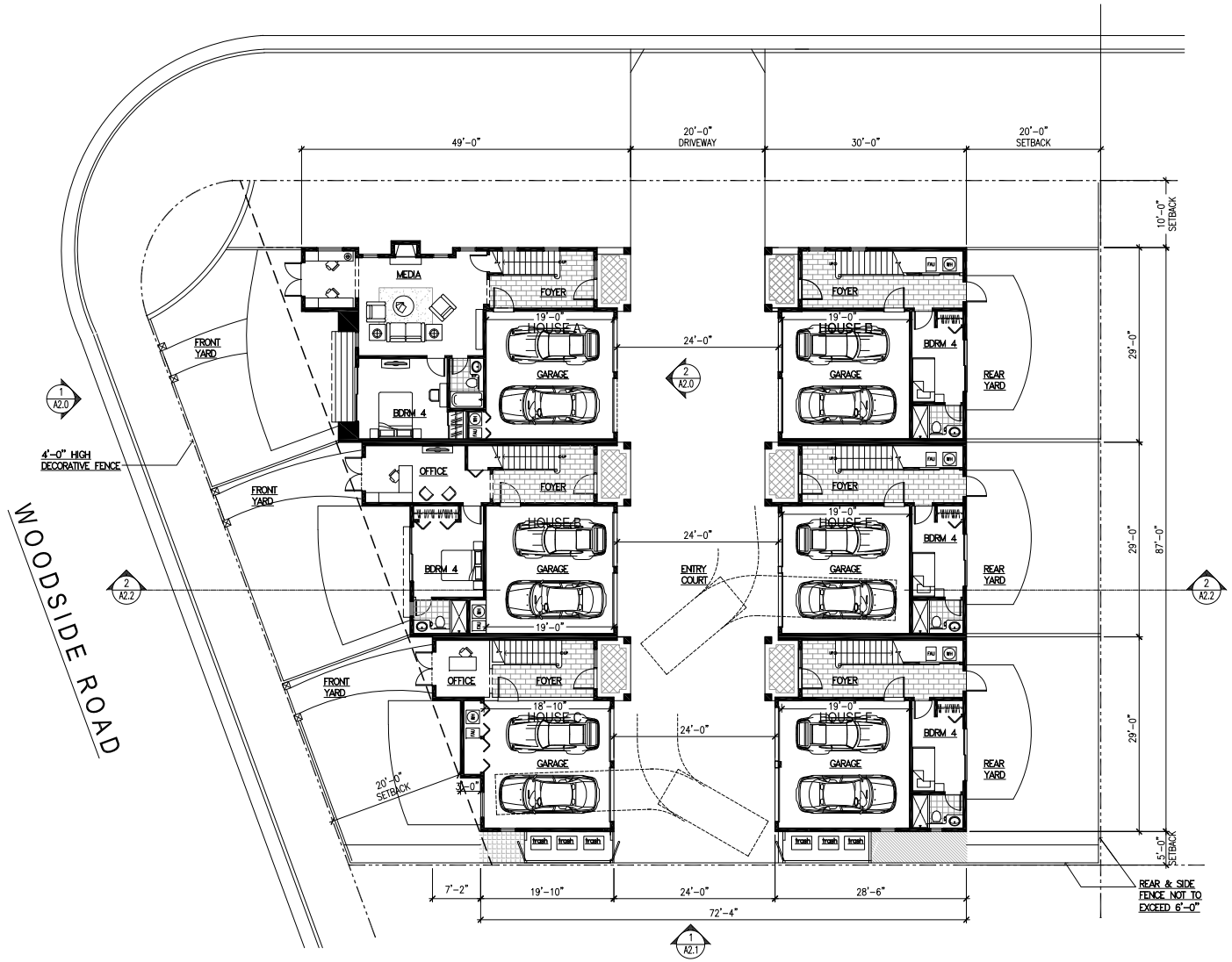


Figure 2
Site Plan

NORTH
Not to Scale

Traffic conditions were evaluated for the following scenarios:

- ***Existing Conditions.*** Existing traffic conditions reflect existing traffic volumes on the existing roadway network. Existing traffic volumes were obtained from recent traffic counts.
- ***Existing Plus Project Conditions.*** Existing plus project traffic volumes were estimated by adding to existing traffic volumes the trips associated with the proposed development. Existing plus project conditions were evaluated relative to existing conditions in order to determine the effects the project would have on the existing roadway network.

Vehicle Miles Traveled (VMT) Analysis

The updated CEQA Guidelines, effective on December 28, 2018, state that automobile delay, as measured by level of service (LOS), will no longer constitute a significant environmental impact under CEQA, and that VMT is considered the most appropriate metric to evaluate a project's transportation impacts. Local agencies have until July 2020 to adopt the new policy that establishes the thresholds and procedures for evaluating transportation impacts based on VMT. The County of San Mateo has not yet adopted any thresholds or guidelines related to VMT. However, the County has been requiring projects to study VMT for CEQA purposes based on the Governor's Office of Planning and Research (OPR)'s Technical Advisory on Evaluating Transportation Impacts in CEQA (December 2018).

Methodology

This section describes the methods used to determine the traffic conditions for each scenario described above. It includes descriptions of the data requirements, the analysis methodologies, and the applicable level of service standards.

Data Requirements

The data required for the analysis were obtained from new traffic counts and field observations. The following data were collected from these sources:

- Existing intersection volumes
- Existing lane geometries
- Signal timing and phasing

Intersection Level of Service Analysis Methodologies

Traffic conditions at the study intersections were evaluated using level of service (LOS). *Level of Service* is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays.

For the study, intersection levels of service were determined based on the methodologies described the 2010 *Highway Capacity Manual* (HCM) using the Synchro software. For signalized intersections, the HCM method evaluates intersection operations on the basis of average control delay time (measured in seconds per vehicle) for all vehicles at the intersection. This average delay can then be correlated to a level of service as shown in Table 1 for signalized intersections.

Table 1
Signalized Intersection Level of Service Definitions Based on Average Delay

Level of Service	Description	Average Control Delay Per Vehicle (sec.)
A	Signal progression is extremely favorable. Most vehicles arrive during the green phase and do not stop at all. Short cycle lengths may also contribute to the very low vehicle delay.	10.0 or less
B	Operations characterized by good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average vehicle delay.	10.1 to 20.0
C	Higher delays may result from fair signal progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, though some vehicles may still pass through the intersection without stopping.	20.1 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable signal progression, long cycle lengths, or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	This is considered to be the limit of acceptable delay. These high delay values generally indicate poor signal progression, long cycle lengths, and high volume-to-capacity (V/C) ratios. Individual cycle failures occur frequently.	55.1 to 80.0
F	This level of delay is considered unacceptable by most drivers. This condition often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes of such delay levels.	greater than 80.0

Source: Transportation Research Board, *2000 Highway Capacity Manual* (Washington, D.C., 2000), p.10-16.

For stop-controlled intersections, level of service depends on the average delay experienced by vehicles on the stop-controlled approaches. Thus, for two-way or T-intersections, operations are defined by the average control delay experienced by vehicles entering the intersection from the stop-controlled approaches on minor streets or from left-turn approaches on major streets. For all-way stop controlled intersections, level of service is determined by the average delay for all movements through the intersection. This average delay can then be correlated to a level of service as shown in Table 2 for unsignalized intersections.

Table 2
Unsignalized Intersection Level of Service Definitions Based on Delay

Level of Service	Description	Average Delay Per Vehicle (Sec.)
A	Little or no traffic delay	10.0 or less
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	Extreme traffic delays	greater than 50.0

Source: Transportation Research Board, *2000 Highway Capacity Manual* (Washington, D.C., 2000) p17-2.

Intersection Level of Service Standards

Both of the study intersections are located within the jurisdiction of the City of Redwood City. Therefore, the intersection operations were evaluated against the Redwood City level of service standards. The City of Redwood City General Plan contains the following transportation policy with respect to level of service:

> "Program BE-55 / Level of Service Policy Evaluation: Evaluate Redwood City's current Level of Service (LOS) policies for motor vehicle circulation. The evaluation shall consider the following to ensure efficient traffic flow and balance multi-modal mobility goals:
>
> Maintaining LOS D or better for motor vehicles in all areas of the city, except the Downtown area as defined by the Downtown Precise Plan. In Downtown, no minimum vehicular LOS standard will be maintained but vehicular LOS will be calculated and alternate LOS standards for other travel modes will be established."

The study intersections are located outside the Downtown area; thus, the intersections are subject to the City's LOS D standard.

Existing Conditions

Roadway Network

Roadway access to the project site is provided via Woodside Road (SR 84), San Carlos Avenue/Massachusetts Avenue, and Rutherford Avenue. Descriptions of each roadway facility are presented below.

Woodside Road (SR 84) is a north-south arterial street extending between the City of Woodside in the south and Redwood City in the north. It connects to I-280 in the south and US 101 in the north. In the vicinity of the project, Woodside Road has four lanes north of Rutherford Avenue and six lanes south of San Carlos Avenue. It has a raised, landscaped median with left-turn pockets provided at intersections. Woodside Road has sidewalks on both sides of the street and has a posted speed limit of 35 mph. On-street parking is permitted on both sides of the street in the

project vicinity. Woodside Road provides access to the project site via its intersection with Rutherford Avenue.

San Carlos Avenue is a two-lane east-west local street between West Selby Lane in the east and transitions into Massachusetts Avenue in the west. San Carlos Avenue has sidewalks on both sides of the street and has a posted speed limit of 25 mph. On-street parking is permitted on both sides of the street in the project vicinity. San Carlos Avenue/Massachusetts Avenue provides access to the project site via its intersection with Woodside Road.

Rutherford Avenue is a two-lane east-west local street extending between Woodside Road in the west and West Selby Lane in the east. It has a raised, landscaped median with openings at the intersections. Rutherford Avenue has sidewalks on both sides of the street and has a posted speed limit of 25 mph. On-street parking is permitted on both sides of the street in the project vicinity. Rutherford Avenue provides direct access to the project site via a right-turn only driveway.

Pedestrian Facilities

Pedestrian facilities consist of sidewalks and crosswalks, which are present along all study area roadways and at signalized intersections. Pedestrian signal heads and push buttons are present at the signalized study intersection of Woodside Road and San Carlos Avenue. Additionally, a crosswalk is present along the eastern leg of the unsignalized study intersection of Woodside Road and Rutherford Avenue. Within a typical walking distance (a half mile or 10 minutes), continuous pedestrian facilities are present between the site and the surrounding land uses, including restaurants, retail stores, bus stops, and the Adelante Selby Lane Elementary School.

Bicycle Facilities

The bicycle facilities that exist within one mile of the project site (see Figure 3) include striped bike lanes (Class II bikeway) and shared bike routes/boulevards (Class III bikeway). Bike lanes are lanes on roadways designated for use by bicycles with special lane markings, pavement legends, and signage. Bike routes are signed bike routes where bicyclists share a travel lane with motorists.

There are no striped bike lanes or shared bike route signs on Woodside Road or Rutherford Avenue in the project vicinity. A Class II bike lane exists along Massachusetts Avenue for the entire street and along Virginia Avenue between Massachusetts Avenue and Anamor Street and transitions into a Class III bicycle route for the remainder of the street. Class III bicycle routes exist on San Carlos Avenue for the entire street and on W. Selby Lane between Santa Clara Avenue and Selby Lane, south of Selby Lane Elementary School.

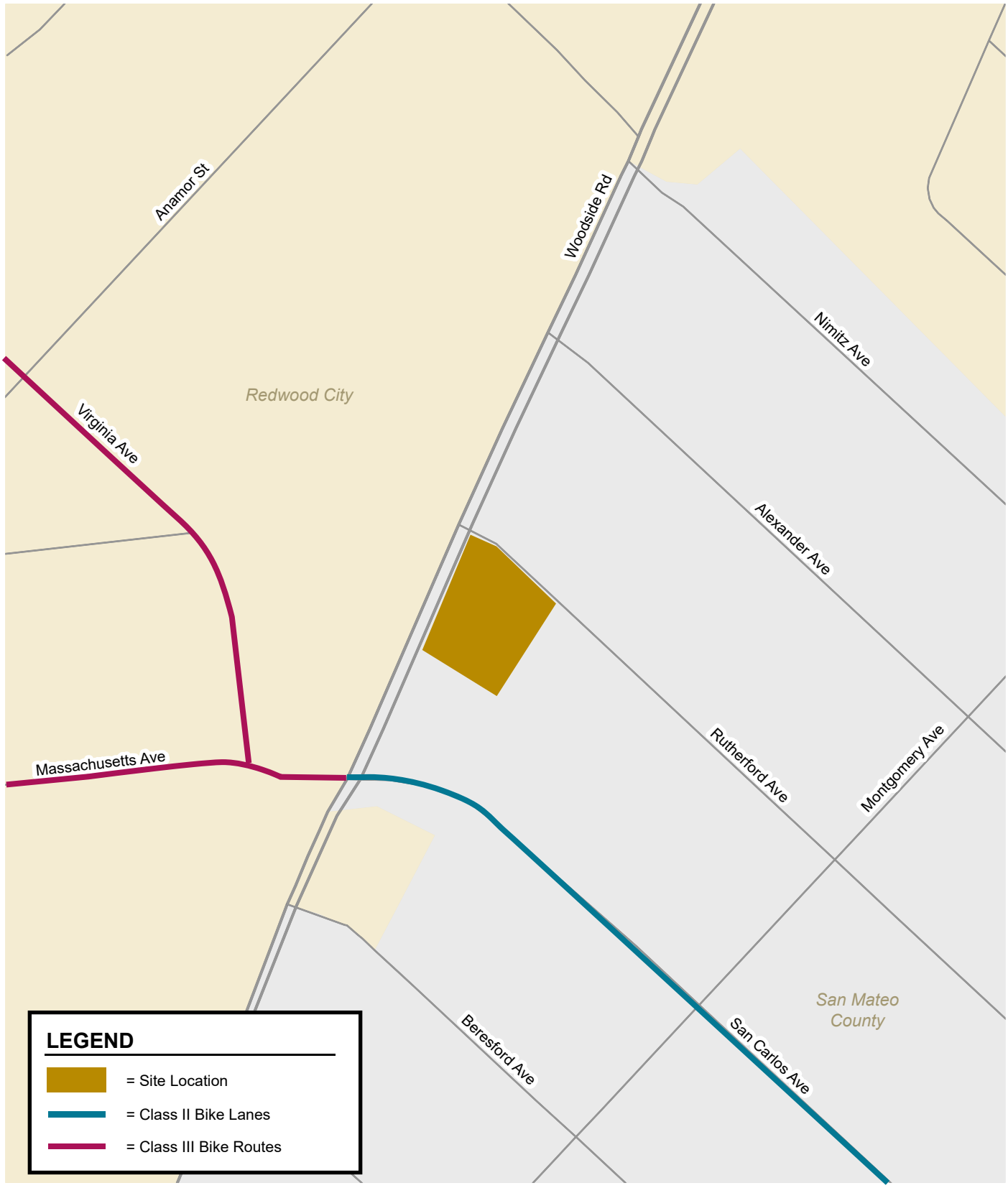


Figure 3
Existing Bicycle Facilites

Transit Service

Local and regional transit service in San Mateo is provided by the San Mateo County Transit District (SamTrans). The project area is served by SamTrans routes 72, 275, and 278 (see Table 3 and Figure 4).

Table 3
Existing Transit Facilities

Bus Route	Route Description	Closest Stop and Distance to Project Site	Weekday Hours of Operation[1]	Headway[1]
Local Bus 72*	Selby Lane School to G Street/Industrial	San Carlos Avenue & Woodside Road, 470 ft	7:50 AM - 8:00 AM, 2:40 PM - 3:50 PM	--
Local Bus 275	Alameda/Woodside to Redwood City Transit Center	Woodside Road, 250 ft	6:00 AM - 7:15 PM	28-32 mins
Local Bus 278	Redwood City Transit Center to Canada College	Woodside Road, 250 ft	6:05 AM - 10:25 PM	24-32 mins

Note:
* School day only; bus runs from 1:40-1:50 PM on Thursdays
Approximate weekday operation hours and headways during peak commute periods in the project area, as of November 2019.

Existing Intersection Levels of Service

The existing lane configurations at the study intersections were obtained from field observations. Existing traffic volumes were obtained from traffic counts conducted in November 2019. The existing lane configurations and AM and PM peak-hour intersection volumes are shown graphically on Figure 5. The intersection turning-movement counts conducted for this analysis are presented in Appendix A.

The results of the intersection level of service analysis (see Table 4) show that the westbound approach at the Woodside Road/Rutherford Avenue intersection operates at an unacceptable LOS F during the PM peak hour. However, field observations show that the delay for the westbound movement was shorter than the calculated delay. This is because the HCM level of service methodology does not account for platooning effect on Woodside Road due to the upstream and downstream signals, which create gaps for the westbound traffic to turn on Woodside Road. The level of service calculation sheets are included in the Appendix B. Field observations of traffic operations and vehicle queuing at the intersections are described below.



Figure 4
Existing Transit Services

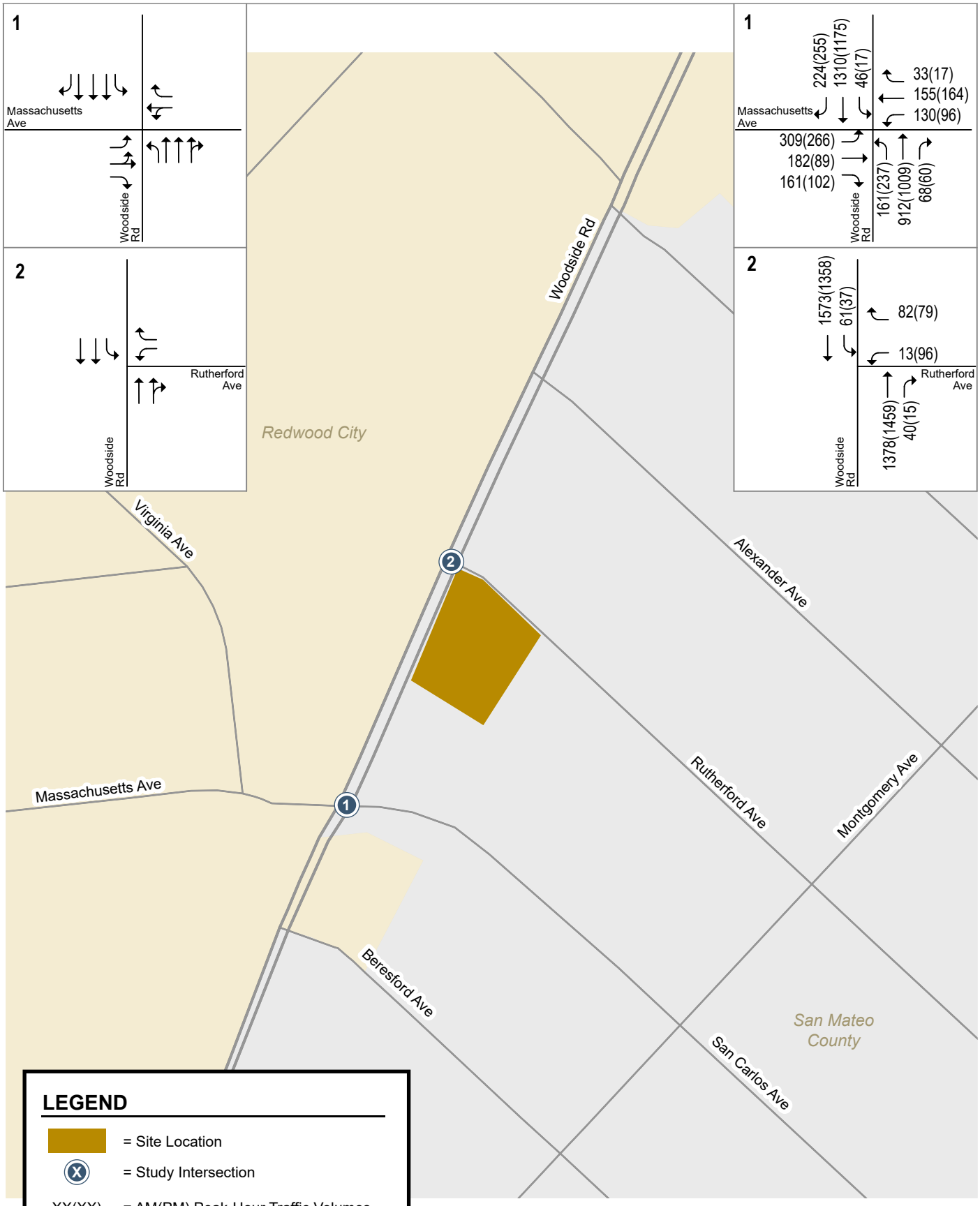


Figure 5
Existing Lane Configurations and Traffic Volumes

NORTH
Not to Scale

Table 4
Existing Intersection Levels of Service

Intersection	Control	Peak Hour	Count Date	Avg. Delay (sec)[1]	LOS
1 Woodside Road and Massachusetts Avenue/San Carlos Avenue	Signal	AM	11/07/19	41.1	D
		PM	11/07/19	33.3	C
2 Woodside Road and Rutherford Avenue	Two-Way Stop	AM	11/07/19	22.7	C
		PM	11/07/19	**95.8**	**F**

Notes:
Bold indicates a substandard level of service.
1. Average delay shown for signalized intersections. Delay of worst stop-controlled approach for two-way stop controlled intersections.

Observed Traffic Conditions

Traffic conditions were observed in the field in order to identify existing operational deficiencies and to confirm the accuracy of calculated intersection levels of service. The purpose of this effort was (1) to identify any existing traffic problems that may not be directly related to level of service, and (2) to identify any locations where the level of service analysis does not accurately reflect existing traffic conditions. Overall, the study intersections operate adequately during the weekday AM and PM peak hours. Field observations conducted in November 2019 revealed the following noteworthy operational issues.

Woodside Road and San Carlos Avenue

During the AM peak hour, the westbound movement on San Carlos Avenue had a long queue that extended past the two-way stop-controlled intersection at Montgomery Avenue due to short green times given to the westbound movement. It often took three cycles for westbound vehicles to clear the intersection. On average, each cycle cleared approximately 8 westbound left-turn and through vehicles. The southbound movement on Woodside Avenue occasionally had queues that extended to the upstream intersection at Valota Road/Nimitz Avenue. The southbound queues usually cleared within two cycles. The northbound queue at Woodside Road and Nimitz Avenue would occasionally back up to the Woodside Road and San Carlos Avenue intersection, preventing the northbound through and eastbound left-turn movements from clearing the intersection.

During the PM peak hour, the northbound left-turn movement often required two cycles to clear the intersection.

Woodside Road and Rutherford Avenue

During both the AM and PM peak hours, the westbound traffic on Rutherford Avenue was relatively low. However, the westbound movement did experience some delay waiting for gaps in the southbound and northbound traffic to make either a left or right turn onto Woodside Road. A maximum of three vehicles queued on Rutherford Avenue during both the AM and PM peak hours.

Project Trip Estimates

The magnitude of traffic produced by a new development and the locations where that traffic would appear are estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In determining project trip generation, the magnitude of traffic entering and exiting the site is estimated for the AM and PM peak hours. As part of the project trip distribution, an

estimate is made of the directions to and from which the project trips would travel. In the project trip assignment, the project trips are assigned to specific streets and intersections. These procedures are further described below.

Project Trip Generation

Through empirical research, data have been collected that quantify the amount of traffic produced by many types of land uses. The data are published in the Institute of Transportation Engineers' (ITE) manual entitled *Trip Generation*, 10th Edition (2017). The magnitude of traffic added to the roadway system by a particular development is estimated by multiplying the applicable trip generation rates by the size of the development. The trip generation rates published for "Single-Family Detached Housing" (Land Use 210) were used to estimate the trips generated by the proposed project. Although the row houses may not actually be classified as single-family homes because they will be attached, this trip generation category is the closest available. The proposed row houses would have individual garages and would comprise large units with three or four bedrooms. The project is estimated to generate a gross 4 trips during the AM peak hour (1 in and 3 out) and 6 trips during the PM peak hour (4 in and 2 out).

Because the project would replace the existing single-family homes on the site, the trips associated with the existing buildings were subtracted from the gross project traffic to derive the net project trips. Therefore, the ITE's trip generation rates for "Single-Family Detached Housing" (Land Use 210) were used to estimate the trips associated with the existing homes. Crediting the existing trip generation, the proposed project is estimated to generate a net 38 daily trips, with 3 trips (1 inbound and 2 outbound) occurring during the AM peak hour and 4 trips (3 inbound and 1 outbound) occurring during the PM peak hour (see Table 5).

Table 5
Project Trip Generation Estimates

		Daily		AM Peak Hour				PM Peak Hour			
		Trip		Pk-Hr	Trips			Pk-Hr	Trips		
Land Use	Size	Rate	Trips	Rate	In	Out	Total	Rate	In	Out	Total
Proposed Townhomes[1]	6 du	9.44	57	0.74	1	3	4	0.99	4	2	6
Existing Single-Family Housing[1]	-2 du	9.44	-19	0.74	0	-1	-1	0.99	-1	-1	-2
Net Project Trips			**38**		**1**	**2**	**3**		**3**	**1**	**4**

Source: ITE *Trip Generation Manual*, *10th Edition*, 2017.
1. Average ITE trip rates for Single-Family Detached Housing (Land Use 210) are used.

Project Trip Distribution and Assignment

The project trips were assigned to the surrounding roadway network based on existing travel patterns in the study area and the locations of complementary land uses (see Figure 6).

The peak-hour trips generated by the existing and proposed uses were assigned to the roadway system based on the directions of approach and departure, the roadway network connections, and the locations of project driveways (see Figure 6).

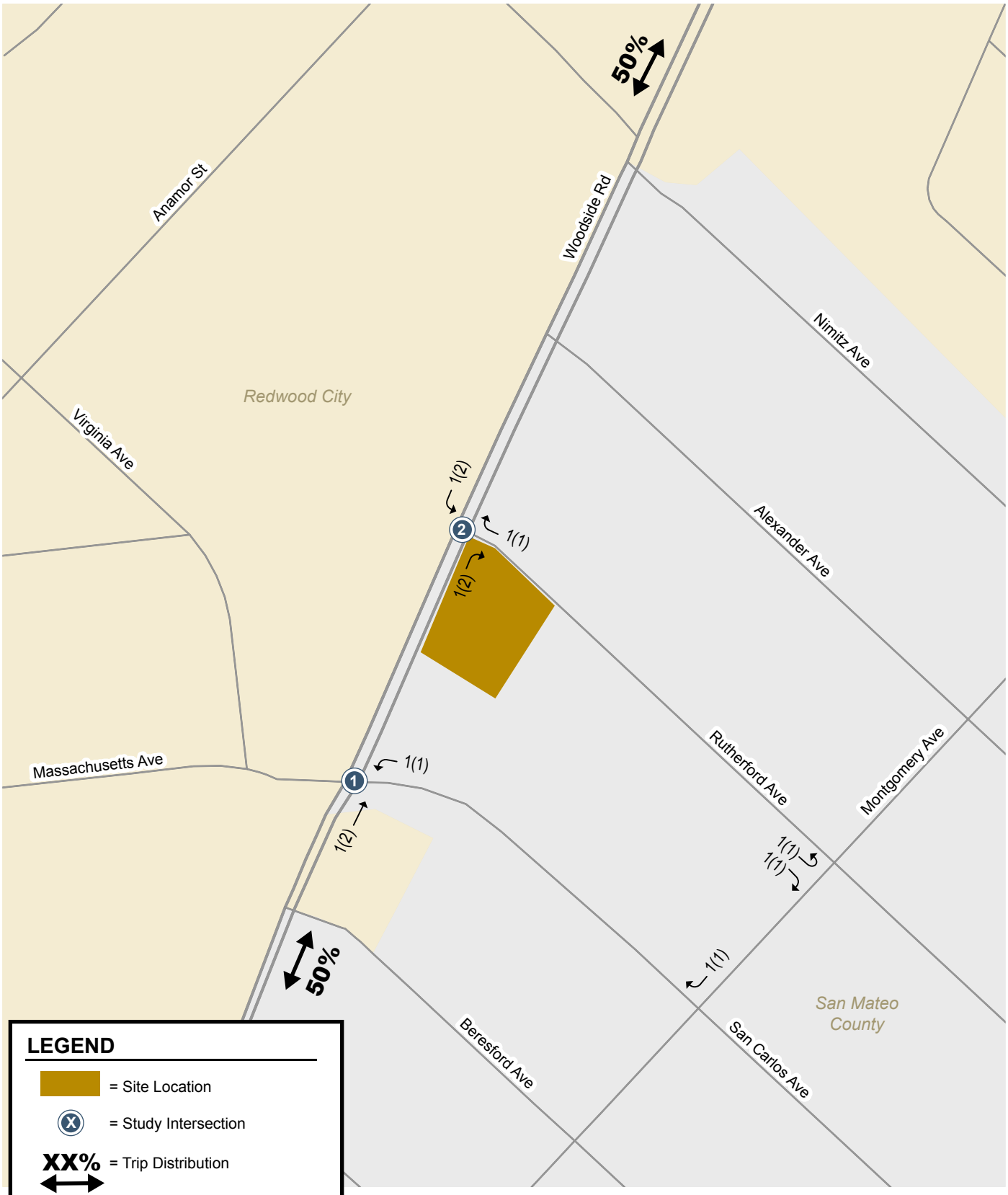


Figure 6
Project Trip Distribution and Assignment

Traffic Operations Under Existing Plus Project Conditions

The estimated net project trips were added to the existing traffic volumes to derive the project conditions traffic volumes (see Figure 7).

The results of the intersection level of service analysis under project conditions (see Table 6) show that the added project trips would not degrade the levels of service and are not expected to result in a noticeable increase in vehicle delay at the study intersections. The Woodside Road and San Carlos Avenue intersection would continue to operate at an acceptable level of service with the added project trips. The Woodside Road/Rutherford Avenue intersection would continue to operate at an unacceptable LOS F during the PM peak hour. However, the added project trips would not cause a noticeable increase in vehicle delay on the westbound stop-controlled approach.

At the Woodside Road/Rutherford Avenue intersection, the westbound movement on Rutherford Avenue often experiences some delay during the AM and PM peak hours. However, the vehicle queue length is short (no more than three vehicles). The vehicle queue length is not expected to increase because the project would add only one right-turn vehicle trip to the movement during both the AM and PM peak hours.

The Woodside Road and Rutherford Avenue intersection shows the average delay for the westbound approach under project conditions to be less than under no project conditions during the PM peak hour. The decrease in average delay can be less under project conditions because the delay is a weighted average of both left-turn and right-turn movements. The addition of project traffic to the right-turn movement with delays lower than the average approach delay can reduce the average delay for the stop-controlled approach.

Table 6
Project Intersection Levels of Service

Intersection	Control	Peak Hour	No Project Avg. Delay (sec)[1]	No Project LOS	With Project Avg. Delay (sec)[1]	With Project LOS
1 Woodside Road and Massachusetts Avenue/San Carlos Avenue	Signal	AM	41.1	D	41.1	D
		PM	33.3	C	33.4	D
2 Woodside Road and Rutherford Avenue	Two-Way Stop	AM	22.7	C	22.9	C
		PM	**95.8**	**F**	**95.4**	**F**

Notes:
Bold indicates a substandard level of service.
1. Average delay shown for signalized intersections. Delay of worst stop-controlled approach for two-way stop controlled intersections.

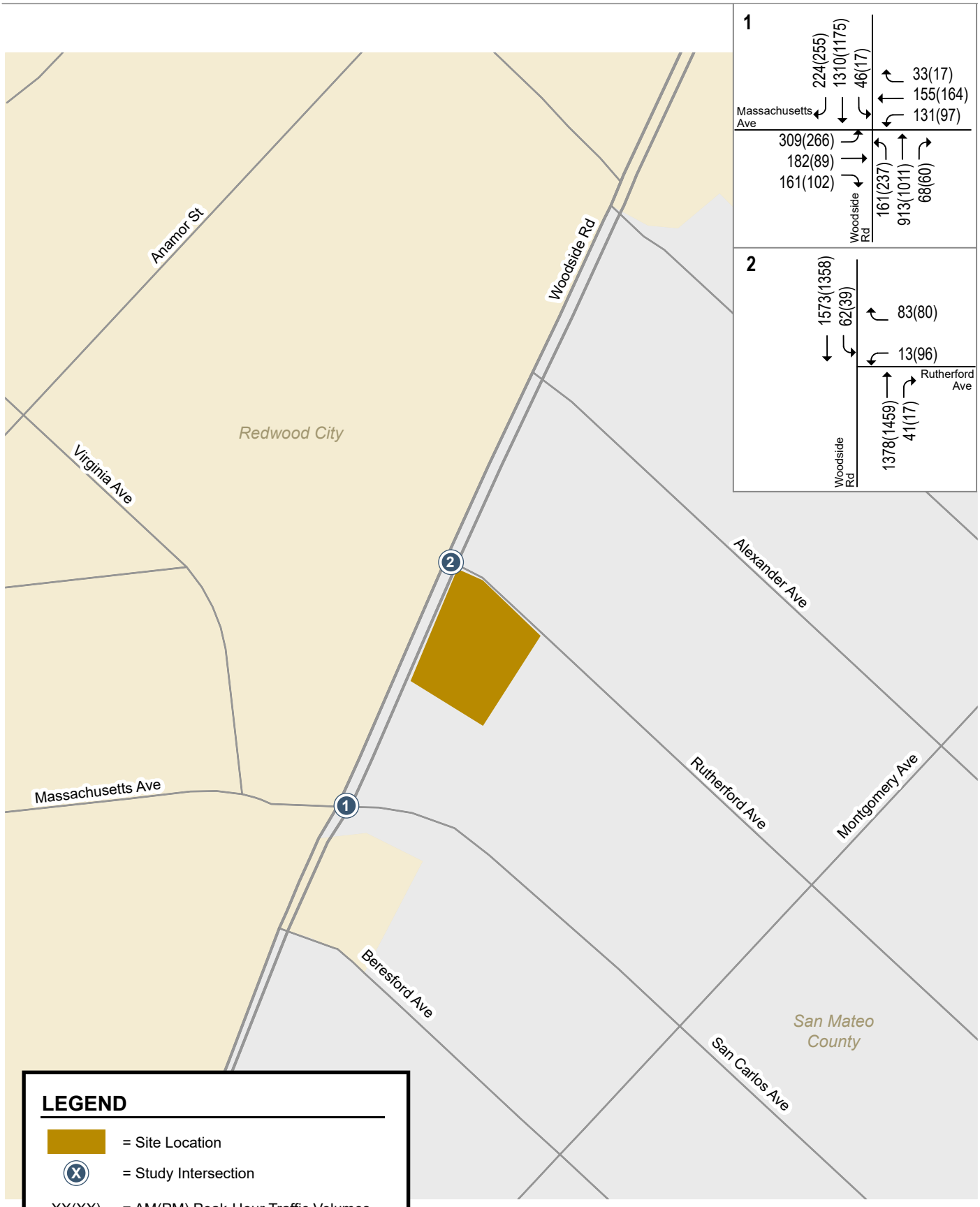


Figure 7
Existing Plus Project Traffic Volumes

VMT Analysis

The VMT impact of the project was evaluated based on the OPR's Technical Advisory on Evaluating Transportation Impacts in CEQA, which contains OPR's technical recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures. The Technical Advisory states that small land use projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than significant transportation impact. As shown in Table 5, the project would generate 57 gross daily trips and 38 net new daily trips, which are fewer than 110 daily trips. Therefore, the project would cause a less-than significant transportation impact.

Site Access and Circulation

Site access and on-site circulation were evaluated using commonly accepted traffic engineering standards. This review is based on the project site plan prepared by SMP Engineers dated September 23, 2019 (see Figure 2). The site access and circulation were evaluated to determine the adequacy of the site's entrance road with regard to traffic volumes, geometric design, and sight distance. In general, the site plan shows adequate site access at the project entrance and circulation within the site.

Vehicle Site Access

The project would replace the two existing driveways on Rutherford Avenue with one new driveway and eliminate the existing driveway on Woodside Road. The reduction in driveways would benefit circulation in the area by reducing the number of potential conflict points. Also, the reduction in driveways would represent a safety benefit for pedestrians and bicycles.

The project driveway would be approximately 20 feet wide leading to an internal road that connects to the row houses. The internal road would be approximately 24 feet wide. These widths are adequate for a low-volume, two-way driveway with adequate space for vehicles to back out of their private garages.

As shown in Table 5, there would be 1 inbound and 3 outbound trips at the project driveways during the AM peak hour, and 4 inbound and 2 outbound trips during the PM peak hour. Due to the low traffic volume and travel speed on Rutherford Avenue and characteristic of a typical residential street, the proposed project traffic is not expected to create any operational issues related to vehicle queueing at the project driveways.

In general, the project access points should be free and clear of any obstructions to optimize sight distance, thereby ensuring the exiting vehicles can see pedestrians coming from either direction on the sidewalk and other vehicles or bicycles traveling on the street. Any landscaping and signage should be located in such a way as to ensure an unobstructed view for drivers entering and exiting the site. There are no roadway curves that would obstruct the vision of exiting drivers. The landscaping features shown on the site plan is not expected to obstruct the vision of exiting drivers provided the landscaping is kept at a low level within 10 feet of the curb face on Rutherford Avenue. However, street parking is allowed on Rutherford Avenue and could obstruct the vision of exiting drivers if there were cars parked next the driveway. Therefore, approximately 15 feet of curb next to the driveway on Rutherford Avenue should be painted red to indicate no parking is allowed.

Vehicle On-Site Circulation

Within the site, a two-way internal road would provide access the private parking garages. The internal access road would be 24 feet wide, which is adequate for vehicles to maneuver in and out of the parking garages.

The access road would lead to a dead end; however, vehicles that enter the site would be accessing a private garage. Therefore, vehicles would not find themselves at the dead end.

Truck Access and Circulation

The site plan shows two trash enclosures at the end of internal access road. It is presumed that all garbage trucks would perform their operations outside of the site, at the curb along Rutherford Avenue, which is common for this type of residential-use development. It is presumed that residents would wheel trash bins out to Rutherford Avenue for garbage truck pickup and returned to the trash enclosures immediately after garbage pick-up.

Woodside Road and Rutherford Avenue would provide emergency vehicle access to the proposed row houses. Because of the small site, it is presumed that emergency response vehicles would enter and back out of the site via the project driveway.

Effects on Bicycle, Pedestrian, and Transit Facilities

The continuous network of sidewalks and crosswalks in the study area exhibits good connectivity and would provide pedestrians with safe routes to transit stops and other points of interest in the project area. Marked crosswalks are provided with pedestrian signal heads at the signalized intersections in the surrounding area. The Adelante Selby Lane Elementary School is located within a half mile from the project site with continuous of sidewalks and crosswalks between the site and school.

In the immediate project vicinity, there are bike lanes on Massachusetts Avenue and Virginia Avenue and bike routes on San Carlos Avenue. There are no striped bike lanes or shared bike route signs on Woodside Road or Rutherford Avenue in the project vicinity. Rutherford Avenue and surrounding residential streets carry low traffic volumes with low traffic speeds, which are conducive to bicyclists. However, Woodside Road is an arterial street with high traffic volumes and vehicle speed. Bicyclists need to ride with caution on this street.

The project site is served by SamTrans Bus Routes 275 and 278 on Woodside Road and Route 75 on San Carlos Avenue. The bus stops closest to the project site are located on Woodside Road near the San Carlos Avenue intersection. Because the project is only expected to generate 3 new trips in the AM peak hour and 4 new trips in the PM peak hour, any increase in new riders could be accommodated by the currently available capacity of the bus services in the study area.

Parking

The project would provide a two-car garage for each unit, for a total of 12 parking spaces.

According to the parking rates specified in the San Mateo County Zoning Regulations, Section 6119, the project is required to provide 2 spaces for each dwelling unit having 2 or more bedrooms. Therefore, the proposed parking supply would meet the County's parking requirements. However, it should be noted that the project does not provide any guest parking spaces, and guests would have to park on Rutherford Avenue or surrounding streets.

Conclusions

This study includes an analysis of traffic conditions during the AM and PM peak hours at two intersections and an VMT analysis for CEQA purposes. The study also includes a review of site access and on-site circulation, an evaluation of transit services and pedestrian and bicycle facilities, and parking.

Intersection Traffic Operations

The level of service analysis results show that the added project trips would not degrade the levels of service and are not expected to result in a noticeable increase in vehicle delay at the study intersections. The Woodside Road and San Carlos Avenue intersection would continue to operate at an acceptable level of service with the added project trips. The Woodside Road/Rutherford Avenue intersection would continue to operate at an inacceptable LOS F during the PM peak hour. However, the added project trip would not cause a noticeable increase in vehicle delay on the westbound stop-controlled approach.

VMT Analysis

The VMT impact of the project was evaluated based on the OPR's Technical Advisory on Evaluating Transportation Impacts in CEQA. The Technical Advisory states that small land use projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than significant transportation impact. The project would generate 57 gross daily trips and 38 net new daily trips, which are fewer than 110 daily trips. Therefore, the project would cause a less-than significant transportation impact.

Parking

The proposed parking supply (2 vehicle spaces per row house) would meet the County's parking requirements. However, it should be noted that the project does not provide any guest parking spaces, and guests would have to park on Rutherford Avenue or surrounding streets.

Other Transportation Issues

The site plan shows adequate site access and on-site circulation, and no significant operational issues are expected to occur as a result of the project. The project would not have an adverse effect on the existing transit, pedestrian, or bicycle facilities in the study area.

Hexagon has the following recommendation resulting from the site access and circulation evaluation.

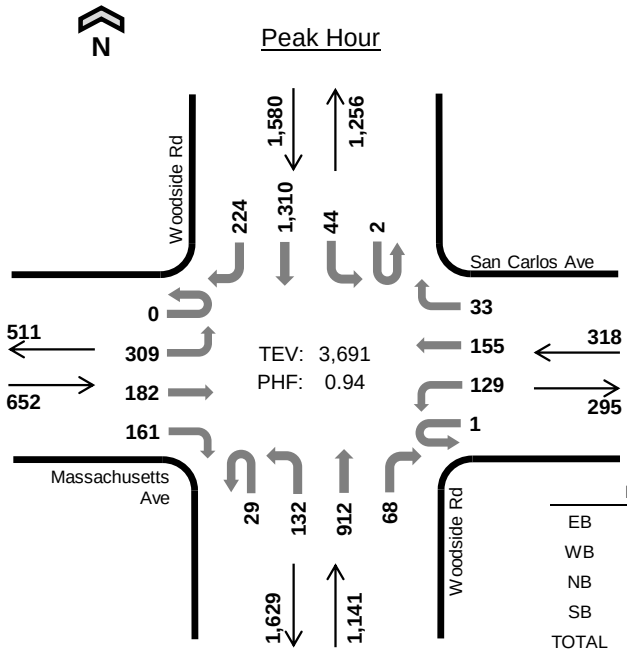
- To provide adequate sight distance, a fifteen-foot curb segment next to the driveway on Rutherford Avenue should be painted red to indicate no parking is allowed.

Appendix A

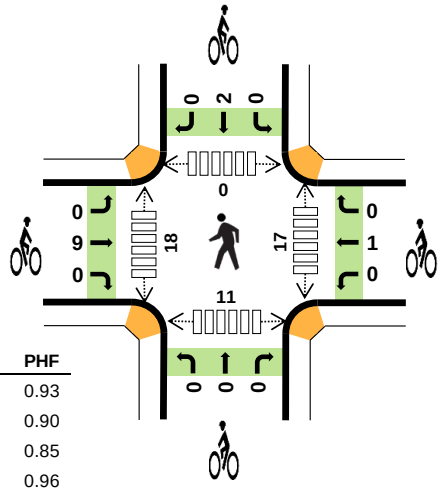
Traffic Counts

Woodside Rd
Massachusetts Ave

Date: 11-07-2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM



	HV %:	PHF
EB	1.2%	0.93
WB	1.3%	0.90
NB	2.3%	0.85
SB	3.3%	0.96
TOTAL	2.4%	0.94



Two-Hour Count Summaries

Interval Start		Massachusetts Ave Eastbound				San Carlos Ave Westbound				Woodside Rd Northbound				Woodside Rd Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	26	10	24	0	31	8	3	7	8	164	7	0	8	286	26	608	0
7:15 AM		0	53	27	30	0	27	16	5	9	13	192	13	0	6	322	39	752	0
7:30 AM		**0**	**57**	**63**	**55**	**1**	**37**	**34**	**13**	**7**	**22**	**197**	**14**	**1**	**4**	**360**	**45**	**910**	0
7:45 AM		**0**	**75**	**42**	**46**	**0**	**39**	**43**	**6**	**6**	**36**	**213**	**25**	**0**	**22**	**327**	**47**	**927**	3,197
8:00 AM		**0**	**88**	**48**	**35**	**0**	**21**	**50**	**10**	**4**	**45**	**270**	**16**	**0**	**9**	**302**	**87**	**985**	3,574
8:15 AM		**0**	**89**	**29**	**25**	**0**	**32**	**28**	**4**	**12**	**29**	**232**	**13**	**1**	**9**	**321**	**45**	**869**	**3,691**
8:30 AM		0	66	31	24	0	34	22	4	14	19	227	16	0	6	347	39	849	3,630
8:45 AM		0	47	24	32	0	25	22	4	10	24	242	19	1	7	312	28	797	3,500
Count Total		0	501	274	271	1	246	223	49	69	196	1,737	123	3	71	2,577	356	6,697	0
Peak Hour	**All**	**0**	**309**	**182**	**161**	**1**	**129**	**155**	**33**	**29**	**132**	**912**	**68**	**2**	**44**	**1,310**	**224**	**3,691**	**0**
	HV	**0**	**2**	**2**	**4**	**0**	**1**	**2**	**1**	**0**	**0**	**25**	**1**	**0**	**0**	**47**	**5**	**90**	**0**
	HV%	**-**	**1%**	**1%**	**2%**	**0%**	**1%**	**1%**	**3%**	**0%**	**0%**	**3%**	**1%**	**0%**	**0%**	**4%**	**2%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	5	7	*12*	0	0	0	0	*0*	0	0	0	1	*1*
7:15 AM	1	0	6	12	*19*	1	0	0	2	*3*	6	5	0	2	*13*
7:30 AM	**1**	**0**	**2**	**12**	***15***	**5**	**0**	**0**	**2**	***7***	**4**	**6**	**0**	**2**	*12*
7:45 AM	**1**	**0**	**7**	**15**	***23***	**1**	**0**	**0**	**0**	***1***	**6**	**5**	**0**	**4**	*15*
8:00 AM	**3**	**3**	**7**	**12**	***25***	**2**	**1**	**0**	**0**	***3***	**4**	**4**	**0**	**2**	*10*
8:15 AM	**3**	**1**	**10**	**13**	***27***	**1**	**0**	**0**	**0**	***1***	**3**	**3**	**0**	**3**	***9***
8:30 AM	3	0	8	17	*28*	3	0	0	0	*3*	1	8	0	6	*15*
8:45 AM	0	0	13	17	*30*	0	0	0	0	*0*	5	5	0	3	*13*
Count Total	12	4	58	105	*179*	13	1	0	4	*18*	29	36	0	23	*88*
Peak Hour	**8**	**4**	**26**	**52**	***90***	**9**	**1**	**0**	**2**	***12***	**17**	**18**	**0**	**11**	***46***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Massachusetts Ave				San Carlos Ave				Woodside Rd				Woodside Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	7	0	12	0
7:15 AM	0	1	0	0	0	0	0	0	0	1	5	0	0	0	11	1	19	0
7:30 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**11**	**1**	**15**	0
7:45 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**1**	**0**	**0**	**13**	**2**	**23**	69
8:00 AM	**0**	**0**	**1**	**2**	**0**	**0**	**2**	**1**	**0**	**0**	**7**	**0**	**0**	**0**	**10**	**2**	**25**	82
8:15 AM	**0**	**1**	**1**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**10**	**0**	**0**	**0**	**13**	**0**	**27**	**90**
8:30 AM	0	2	0	1	0	0	0	0	0	1	7	0	0	0	14	3	28	103
8:45 AM	0	0	0	0	0	0	0	0	0	0	13	0	0	0	16	1	30	110
Count Total	0	5	2	5	0	1	2	1	0	2	55	1	0	0	95	10	179	0
Peak Hour	**0**	**2**	**2**	**4**	**0**	**1**	**2**	**1**	**0**	**0**	**25**	**1**	**0**	**0**	**47**	**5**	**90**	**0**

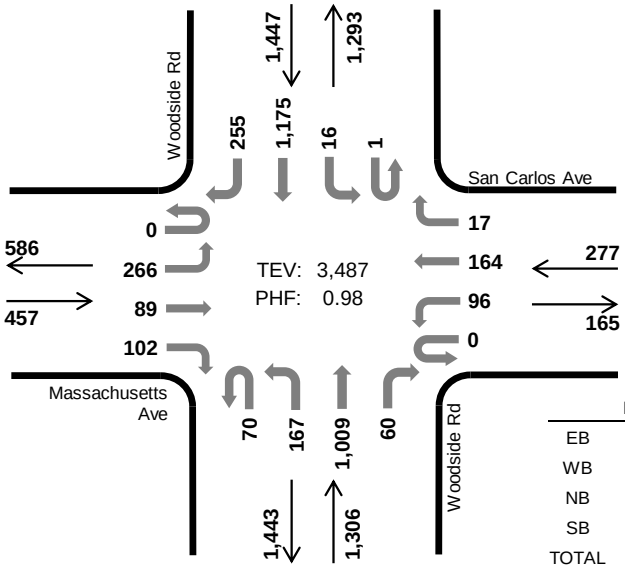
Two-Hour Count Summaries - Bikes

Interval Start	Massachusetts Ave			San Carlos Ave			Woodside Rd			Woodside Rd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	1	0	0	0	0	0	0	0	0	2	0	3	0
7:30 AM	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**7**	0
7:45 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	11
8:00 AM	**0**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	14
8:15 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**12**
8:30 AM	0	3	0	0	0	0	0	0	0	0	0	0	3	8
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Count Total	0	13	0	0	1	0	0	0	0	0	4	0	18	0
Peak Hour	**0**	**9**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**12**	**0**

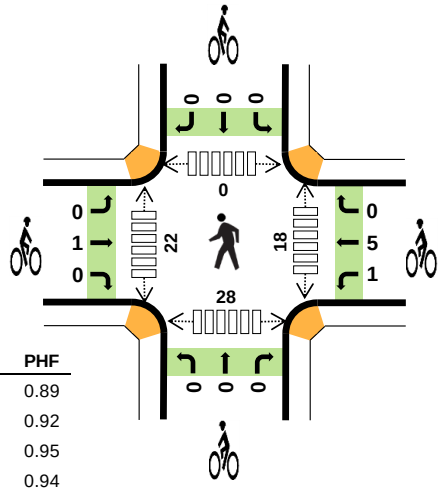
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Woodside Rd
Massachusetts Ave

Date: 11-07-2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	0.7%	0.89
WB	1.8%	0.92
NB	1.7%	0.95
SB	0.8%	0.94
TOTAL	1.2%	0.98



Two-Hour Count Summaries

Interval Start		Massachusetts Ave Eastbound				San Carlos Ave Westbound				Woodside Rd Northbound				Woodside Rd Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	47	18	18	0	26	40	4	17	28	237	6	1	10	272	60	784	0
4:15 PM		0	66	23	24	0	26	30	6	17	45	239	17	0	5	289	62	849	0
4:30 PM		**0**	**63**	**22**	**21**	**0**	**37**	**38**	**0**	**17**	**43**	**250**	**23**	**0**	**5**	**316**	**48**	**883**	0
4:45 PM		**0**	**70**	**25**	**29**	**0**	**22**	**45**	**8**	**13**	**51**	**217**	**4**	**0**	**7**	**269**	**72**	**832**	3,348
5:00 PM		**0**	**75**	**23**	**30**	**0**	**21**	**37**	**5**	**24**	**39**	**270**	**12**	**0**	**4**	**281**	**60**	**881**	3,445
5:15 PM		**0**	**58**	**19**	**22**	**0**	**16**	**44**	**4**	**16**	**34**	**272**	**21**	**1**	**0**	**309**	**75**	**891**	**3,487**
5:30 PM		0	73	30	22	0	26	44	2	11	45	238	11	1	6	222	60	791	3,395
5:45 PM		0	58	22	26	0	15	42	4	17	49	264	14	2	5	263	72	853	3,416
Count Total		0	510	182	192	0	189	320	33	132	334	1,987	108	5	42	2,221	509	6,764	0
Peak Hour	**All**	**0**	**266**	**89**	**102**	**0**	**96**	**164**	**17**	**70**	**167**	**1,009**	**60**	**1**	**16**	**1,175**	**255**	**3,487**	**0**
	HV	**0**	**3**	**0**	**0**	**0**	**2**	**2**	**1**	**1**	**0**	**21**	**0**	**0**	**0**	**10**	**1**	**41**	**0**
	HV%	**-**	**1%**	**0%**	**0%**	**-**	**2%**	**1%**	**6%**	**1%**	**0%**	**2%**	**0%**	**0%**	**0%**	**1%**	**0%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	0	4	4	*9*	1	0	0	0	*1*	6	9	0	5	*20*
4:15 PM	2	0	7	4	*13*	0	3	0	0	*3*	7	5	0	4	*16*
4:30 PM	**1**	**1**	**8**	**1**	***11***	**0**	**2**	**0**	**0**	***2***	**4**	**3**	**0**	**3**	*10*
4:45 PM	**1**	**2**	**7**	**3**	***13***	**0**	**1**	**0**	**0**	***1***	**8**	**6**	**0**	**8**	*22*
5:00 PM	**0**	**2**	**5**	**6**	***13***	**0**	**2**	**0**	**0**	***2***	**4**	**6**	**0**	**7**	*17*
5:15 PM	**1**	**0**	**2**	**1**	***4***	**1**	**1**	**0**	**0**	***2***	**2**	**7**	**0**	**10**	***19***
5:30 PM	1	1	1	0	*3*	3	2	0	0	*5*	2	2	0	4	*8*
5:45 PM	0	1	3	3	*7*	2	2	0	0	*4*	1	4	0	4	*9*
Count Total	7	7	37	22	*73*	7	13	0	0	*20*	34	42	0	45	*121*
Peak Hour	**3**	**5**	**22**	**11**	***41***	**1**	**6**	**0**	**0**	***7***	**18**	**22**	**0**	**28**	***68***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Massachusetts Ave				San Carlos Ave				Woodside Rd				Woodside Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	0	0	0	0	0	0	0	1	3	0	0	0	3	1	9	0
4:15 PM	0	1	0	1	0	0	0	0	0	0	7	0	0	0	4	0	13	0
4:30 PM	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**7**	**0**	**0**	**0**	**1**	**0**	**11**	0
4:45 PM	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**7**	**0**	**0**	**0**	**2**	**1**	**13**	46
5:00 PM	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**6**	**0**	**13**	50
5:15 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**4**	**41**
5:30 PM	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	3	33
5:45 PM	0	0	0	0	0	0	0	1	0	0	3	0	0	0	2	1	7	27
Count Total	0	5	1	1	0	2	3	2	1	1	35	0	0	0	19	3	73	0
Peak Hour	**0**	**3**	**0**	**0**	**0**	**2**	**2**	**1**	**1**	**0**	**21**	**0**	**0**	**0**	**10**	**1**	**41**	**0**

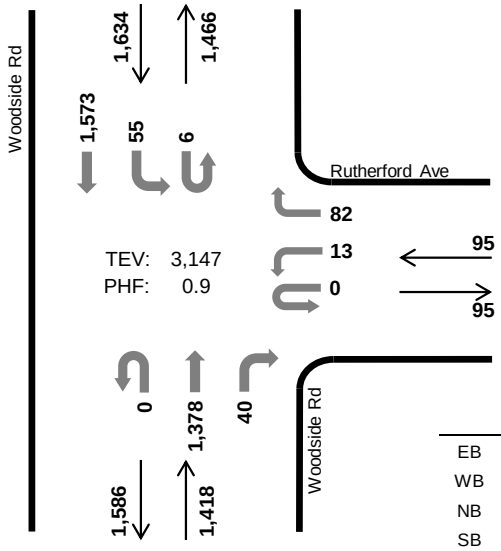
Two-Hour Count Summaries - Bikes

Interval Start	Massachusetts Ave			San Carlos Ave			Woodside Rd			Woodside Rd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	2	1	0	0	0	0	0	0	0	3	0
4:30 PM	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	0
4:45 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	7
5:00 PM	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	8
5:15 PM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**7**
5:30 PM	0	3	0	0	2	0	0	0	0	0	0	0	5	10
5:45 PM	0	2	0	0	2	0	0	0	0	0	0	0	4	13
Count Total	0	7	0	3	10	0	0	0	0	0	0	0	20	0
Peak Hour	**0**	**1**	**0**	**1**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**

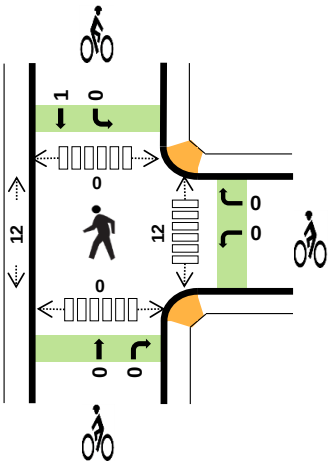
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Woodside Rd
Rutherford Ave

Date: 11-07-2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM



	HV %:	PHF
EB	-	-
WB	2.1%	0.79
NB	2.4%	0.83
SB	3.5%	0.95
TOTAL	3.0%	0.90



Two-Hour Count Summaries

Interval Start	n/a Eastbound UT	LT	TH	RT	Rutherford Ave Westbound UT	LT	TH	RT	Woodside Rd Northbound UT	LT	TH	RT	Woodside Rd Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	0	0	0	0	1	0	5	0	0	204	2	0	5	328	0	545	0
7:15 AM	0	0	0	0	0	3	0	12	0	0	263	5	1	9	361	0	654	0
7:30 AM	0	0	0	0	0	5	0	20	0	0	288	7	0	9	404	0	733	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**24**	**0**	**0**	**326**	**10**	**2**	**16**	**387**	**0**	**770**	2,702
8:00 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**21**	**0**	**0**	**412**	**17**	**3**	**15**	**410**	**0**	**879**	3,036
8:15 AM	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**23**	**0**	**0**	**333**	**7**	**1**	**12**	**374**	**0**	**757**	3,139
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**0**	**0**	**307**	**6**	**0**	**12**	**402**	**0**	**741**	**3,147**
8:45 AM	0	0	0	0	1	4	0	8	0	0	313	5	2	6	342	0	681	3,058
Count Total	0	0	0	0	1	26	0	127	0	0	2,446	59	9	84	3,008	0	5,760	0
Peak Hour All	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**82**	**0**	**0**	**1,378**	**40**	**6**	**55**	**1,573**	**0**	**3,147**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**32**	**2**	**0**	**0**	**57**	**0**	**93**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**-**	**0%**	**-**	**2%**	**-**	**-**	**2%**	**5%**	**0%**	**0%**	**4%**	**-**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	0	0	5	7	*12*	0	0	0	0	*0*	6	4	0	0	*10*
7:15 AM	0	0	5	12	*17*	0	0	0	0	*0*	5	5	0	0	*10*
7:30 AM	0	0	4	12	*16*	0	0	2	2	*4*	5	3	0	0	*8*
7:45 AM	**0**	**1**	**7**	**12**	***20***	**0**	**0**	**0**	**1**	***1***	**3**	**3**	**0**	**0**	*6*
8:00 AM	**0**	**1**	**8**	**13**	***22***	**0**	**0**	**0**	**0**	***0***	**4**	**1**	**0**	**0**	*5*
8:15 AM	**0**	**0**	**11**	**15**	***26***	**0**	**0**	**0**	**0**	***0***	**4**	**2**	**0**	**0**	*6*
8:30 AM	**0**	**0**	**8**	**17**	***25***	**0**	**0**	**0**	**0**	***0***	**1**	**6**	**0**	**0**	***7***
8:45 AM	0	0	12	17	*29*	0	0	0	0	*0*	3	0	0	0	*3*
Count Total	0	2	60	105	*167*	0	0	2	3	*5*	31	24	0	0	*55*
Peak Hr	**0**	**2**	**34**	**57**	***93***	**0**	**0**	**0**	**1**	***1***	**12**	**12**	**0**	**0**	***24***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	n/a				Rutherford Ave				Woodside Rd				Woodside Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	7	0	12	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	12	0	17	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	12	0	16	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**7**	**0**	**0**	**0**	**12**	**0**	**20**	65
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**7**	**1**	**0**	**0**	**13**	**0**	**22**	75
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**0**	**0**	**0**	**15**	**0**	**26**	84
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**1**	**0**	**0**	**17**	**0**	**25**	**93**
8:45 AM	0	0	0	0	0	0	0	0	0	0	12	0	0	0	17	0	29	102
Count Total	0	0	0	0	0	0	0	2	0	0	58	2	0	0	105	0	167	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**32**	**2**	**0**	**0**	**57**	**0**	**93**	**0**

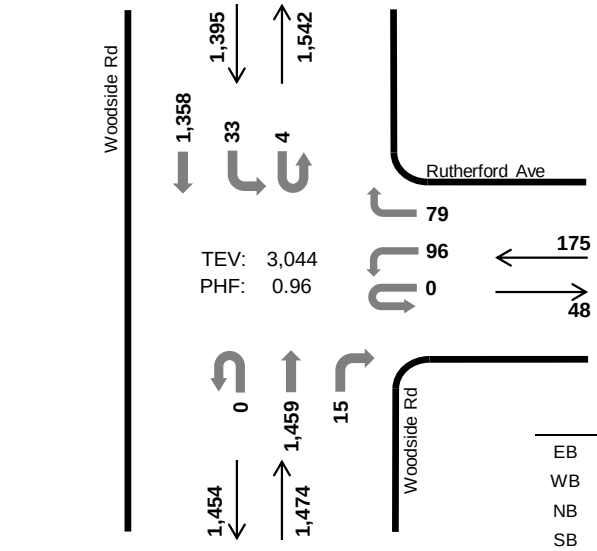
Two-Hour Count Summaries - Bikes

Interval Start	n/a			Rutherford Ave			Woodside Rd			Woodside Rd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	2	0	0	2	0	4	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	5
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	5
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	5
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	2	0	0	3	0	5	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**

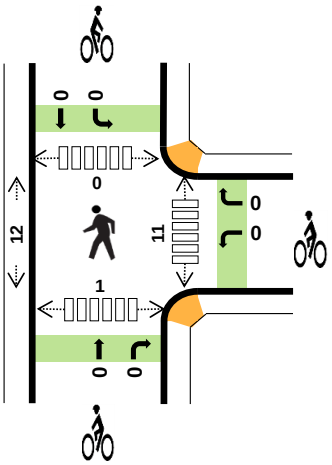
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Woodside Rd
Rutherford Ave

Date: 11-07-2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	-	-
WB	0.6%	0.77
NB	1.9%	0.90
SB	0.8%	0.97
TOTAL	1.3%	0.96



Two-Hour Count Summaries

Interval Start	n/a Eastbound UT	LT	TH	RT	Rutherford Ave Westbound UT	LT	TH	RT	Woodside Rd Northbound UT	LT	TH	RT	Woodside Rd Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	0	0	0	0	5	0	18	0	0	347	3	1	13	345	0	732	0
4:15 PM	0	0	0	0	0	9	0	24	0	0	340	5	4	13	367	0	762	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**36**	**0**	**21**	**0**	**0**	**354**	**4**	**0**	**5**	**336**	**0**	**756**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**24**	**0**	**20**	**0**	**0**	**337**	**2**	**2**	**8**	**340**	**0**	**733**	2,983
5:00 PM	**0**	**0**	**0**	**0**	**0**	**17**	**0**	**19**	**0**	**0**	**404**	**5**	**2**	**10**	**332**	**0**	**789**	3,040
5:15 PM	**0**	**0**	**0**	**0**	**0**	**19**	**0**	**19**	**0**	**0**	**364**	**4**	**0**	**10**	**350**	**0**	**766**	**3,044**
5:30 PM	0	0	0	0	0	11	0	21	0	0	354	2	2	13	302	0	705	2,993
5:45 PM	0	0	0	0	0	14	0	25	0	0	357	5	0	10	317	0	728	2,988
Count Total	0	0	0	0	0	135	0	167	0	0	2,857	30	11	82	2,689	0	5,971	0
Peak Hour All	**0**	**0**	**0**	**0**	**0**	**96**	**0**	**79**	**0**	**0**	**1,459**	**15**	**4**	**33**	**1,358**	**0**	**3,044**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**28**	**0**	**0**	**0**	**11**	**0**	**40**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**-**	**0%**	**-**	**1%**	**-**	**-**	**2%**	**0%**	**0%**	**0%**	**1%**	**-**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	0	1	5	4	*10*	0	1	0	0	*1*	1	3	0	0	*4*
4:15 PM	0	0	5	4	*9*	0	0	0	0	*0*	1	6	0	0	*7*
4:30 PM	**0**	**0**	**9**	**1**	***10***	**0**	**0**	**0**	**0**	***0***	**2**	**1**	**0**	**0**	*3*
4:45 PM	**0**	**0**	**10**	**3**	***13***	**0**	**0**	**0**	**0**	***0***	**5**	**6**	**0**	**0**	*11*
5:00 PM	**0**	**1**	**5**	**6**	***12***	**0**	**0**	**0**	**0**	***0***	**0**	**4**	**0**	**1**	*5*
5:15 PM	**0**	**0**	**4**	**1**	***5***	**0**	**0**	**0**	**0**	***0***	**4**	**1**	**0**	**0**	***5***
5:30 PM	0	0	1	0	*1*	0	0	1	1	*2*	2	1	0	0	*3*
5:45 PM	0	1	3	2	*6*	0	0	0	0	*0*	2	3	0	0	*5*
Count Total	0	3	42	21	*66*	0	1	1	1	*3*	17	25	0	1	*43*
Peak Hr	**0**	**1**	**28**	**11**	***40***	**0**	**0**	**0**	**0**	***0***	**11**	**12**	**0**	**1**	***24***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	n/a				Rutherford Ave				Woodside Rd				Woodside Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	1	0	0	0	0	5	0	0	0	4	0	10	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	4	0	9	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**1**	**0**	**10**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**0**	**0**	**0**	**3**	**0**	**13**	42
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**5**	**0**	**0**	**0**	**6**	**0**	**12**	44
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**1**	**0**	**5**	**40**
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	31
5:45 PM	0	0	0	0	0	1	0	0	0	0	3	0	0	1	1	0	6	24
Count Total	0	0	0	0	0	2	0	1	0	0	42	0	0	1	20	0	66	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**28**	**0**	**0**	**0**	**11**	**0**	**40**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	n/a			Rutherford Ave			Woodside Rd			Woodside Rd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:30 PM	0	0	0	0	0	0	0	1	0	0	1	0	2	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	0	0	0	0	1	0	1	0	0	1	0	3	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Appendix B

Level of Service Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	309	182	161	130	155	33	161	912	68	46	1310	224
Future Volume (veh/h)	309	182	161	130	155	33	161	912	68	46	1310	224
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	336	198	175	141	168	36	175	991	74	50	1424	243
Adj No. of Lanes	2	1	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	779	409	347	156	185	297	204	1944	145	64	1647	513
Arrive On Green	0.22	0.22	0.22	0.19	0.19	0.19	0.12	0.40	0.40	0.04	0.32	0.32
Sat Flow, veh/h	3548	1863	1583	831	990	1583	1774	4829	360	1774	5085	1583
Grp Volume(v), veh/h	336	198	175	309	0	36	175	695	370	50	1424	243
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1821	0	1583	1774	1695	1799	1774	1695	1583
Q Serve(g_s), s	9.5	10.8	11.3	19.4	0.0	2.2	11.3	18.0	18.0	3.3	30.7	14.3
Cycle Q Clear(g_c), s	9.5	10.8	11.3	19.4	0.0	2.2	11.3	18.0	18.0	3.3	30.7	14.3
Prop In Lane	1.00		1.00	0.46		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	779	409	347	341	0	297	204	1365	724	64	1647	513
V/C Ratio(X)	0.43	0.48	0.50	0.91	0.00	0.12	0.86	0.51	0.51	0.78	0.86	0.47
Avail Cap(c_a), veh/h	779	409	347	373	0	324	274	1380	733	152	1722	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.3	39.8	40.0	46.4	0.0	39.4	50.7	26.2	26.2	55.7	37.0	31.5
Incr Delay (d2), s/veh	1.7	4.1	5.1	23.8	0.0	0.2	17.9	0.3	0.6	17.7	4.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	6.0	5.5	12.0	0.0	1.0	6.6	8.5	9.1	1.9	15.1	6.4
LnGrp Delay(d),s/veh	41.0	43.8	45.1	70.2	0.0	39.6	68.6	26.5	26.8	73.4	41.8	32.2
LnGrp LOS	D	D	D	E		D	E	C	C	E	D	C
Approach Vol, veh/h		709			345			1240			1717	
Approach Delay, s/veh		42.8			67.0			32.5			41.3	
Approach LOS		D			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.7	51.5		30.1	17.9	42.3		26.4
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	10.0	47.5		25.6	18.0	39.5		23.9
Max Q Clear Time (g_c+I1), s	5.3	20.0		13.3	13.3	32.7		21.4
Green Ext Time (p_c), s	0.0	8.2		2.5	0.2	5.1		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	41.1
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	82	1378	40	61	1573
Future Vol, veh/h	13	82	1378	40	61	1573
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	125	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	89	1498	43	66	1710

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2507	771	0	0	1541	0
Stage 1	1520	-	-	-	-	-
Stage 2	987	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	23	343	-	-	427	-
Stage 1	167	-	-	-	-	-
Stage 2	322	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	19	343	-	-	427	-
Mov Cap-2 Maneuver	103	-	-	-	-	-
Stage 1	167	-	-	-	-	-
Stage 2	272	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.7	0	0.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	103	343	427	-
HCM Lane V/C Ratio	-	-	0.137	0.26	0.155	-
HCM Control Delay (s)	-	-	45.4	19.1	15	-
HCM Lane LOS	-	-	E	C	B	-
HCM 95th %tile Q(veh)	-	-	0.5	1	0.5	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	266	89	102	96	164	17	237	1009	60	17	1175	255
Future Volume (veh/h)	266	89	102	96	164	17	237	1009	60	17	1175	255
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	289	97	111	104	178	18	258	1097	65	18	1277	277
Adj No. of Lanes	2	1	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	402	211	179	117	200	275	290	2610	155	34	1970	613
Arrive On Green	0.11	0.11	0.11	0.17	0.17	0.17	0.16	0.53	0.53	0.02	0.39	0.39
Sat Flow, veh/h	3548	1863	1583	675	1154	1583	1774	4911	291	1774	5085	1583
Grp Volume(v), veh/h	289	97	111	282	0	18	258	757	405	18	1277	277
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1829	0	1583	1774	1695	1811	1774	1695	1583
Q Serve(g_s), s	8.7	5.4	7.4	16.7	0.0	1.1	15.8	14.9	14.9	1.1	22.8	14.4
Cycle Q Clear(g_c), s	8.7	5.4	7.4	16.7	0.0	1.1	15.8	14.9	14.9	1.1	22.8	14.4
Prop In Lane	1.00		1.00	0.37		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	402	211	179	317	0	275	290	1802	963	34	1970	613
V/C Ratio(X)	0.72	0.46	0.62	0.89	0.00	0.07	0.89	0.42	0.42	0.53	0.65	0.45
Avail Cap(c_a), veh/h	932	489	416	365	0	316	365	1802	963	306	1970	613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.4	45.9	46.8	44.7	0.0	38.3	45.4	15.6	15.7	53.8	27.8	25.2
Incr Delay (d2), s/veh	2.4	1.6	3.5	20.7	0.0	0.1	19.4	0.7	1.3	12.1	1.7	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	2.9	3.4	10.3	0.0	0.5	9.3	7.1	7.8	0.7	10.9	6.7
LnGrp Delay(d),s/veh	49.8	47.5	50.3	65.4	0.0	38.4	64.8	16.4	17.0	65.9	29.4	27.6
LnGrp LOS	D	D	D	E		D	E	B	B	E	C	C
Approach Vol, veh/h		497			300			1420			1572	
Approach Delay, s/veh		49.5			63.8			25.3			29.5	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.6	63.4		17.0	22.6	47.4		23.7
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	19.1	46.7		29.1	22.8	42.9		22.1
Max Q Clear Time (g_c+I1), s	3.1	16.9		10.7	17.8	24.8		18.7
Green Ext Time (p_c), s	0.0	9.4		1.8	0.3	9.9		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	33.3
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	5.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	96	79	1459	15	37	1358
Future Vol, veh/h	96	79	1459	15	37	1358
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	125	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	104	86	1586	16	40	1476

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2412	801	0	0	1602	0
Stage 1	1594	-	-	-	-	-
Stage 2	818	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 27	327	-	-	404	-
Stage 1	152	-	-	-	-	-
Stage 2	394	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 24	327	-	-	404	-
Mov Cap-2 Maneuver	106	-	-	-	-	-
Stage 1	152	-	-	-	-	-
Stage 2	355	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	95.8	0	0.4
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	106	327	404	-
HCM Lane V/C Ratio	-	-	0.984	0.263	0.1	-
HCM Control Delay (s)	-	-	158.2	19.9	14.9	-
HCM Lane LOS	-	-	F	C	B	-
HCM 95th %tile Q(veh)	-	-	6.2	1	0.3	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	309	182	161	131	155	33	161	913	68	46	1310	224
Future Volume (veh/h)	309	182	161	131	155	33	161	913	68	46	1310	224
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	336	198	175	142	168	36	175	992	74	50	1424	243
Adj No. of Lanes	2	1	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	778	408	347	157	185	297	204	1944	145	64	1646	512
Arrive On Green	0.22	0.22	0.22	0.19	0.19	0.19	0.12	0.40	0.40	0.04	0.32	0.32
Sat Flow, veh/h	3548	1863	1583	834	987	1583	1774	4830	360	1774	5085	1583
Grp Volume(v), veh/h	336	198	175	310	0	36	175	696	370	50	1424	243
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1821	0	1583	1774	1695	1799	1774	1695	1583
Q Serve(g_s), s	9.5	10.8	11.3	19.5	0.0	2.2	11.3	18.0	18.1	3.3	30.7	14.3
Cycle Q Clear(g_c), s	9.5	10.8	11.3	19.5	0.0	2.2	11.3	18.0	18.1	3.3	30.7	14.3
Prop In Lane	1.00		1.00	0.46		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	778	408	347	342	0	297	204	1364	724	64	1646	512
V/C Ratio(X)	0.43	0.48	0.50	0.91	0.00	0.12	0.86	0.51	0.51	0.78	0.87	0.47
Avail Cap(c_a), veh/h	778	408	347	373	0	324	273	1379	732	152	1720	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.3	39.8	40.0	46.4	0.0	39.4	50.7	26.2	26.2	55.8	37.1	31.5
Incr Delay (d2), s/veh	1.7	4.1	5.2	24.0	0.0	0.2	17.9	0.3	0.6	17.7	4.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	6.0	5.5	12.1	0.0	1.0	6.6	8.5	9.1	1.9	15.1	6.4
LnGrp Delay(d),s/veh	41.1	43.9	45.2	70.4	0.0	39.6	68.6	26.5	26.8	73.5	41.8	32.2
LnGrp LOS	D	D	D	E		D	E	C	C	E	D	C
Approach Vol, veh/h		709			346			1241			1717	
Approach Delay, s/veh		42.9			67.2			32.6			41.4	
Approach LOS		D			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.7	51.5		30.1	17.9	42.3		26.4
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	10.0	47.5		25.6	18.0	39.5		23.9
Max Q Clear Time (g_c+I1), s	5.3	20.1		13.3	13.3	32.7		21.5
Green Ext Time (p_c), s	0.0	8.2		2.5	0.2	5.1		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	41.1
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	83	1378	41	62	1573
Future Vol, veh/h	13	83	1378	41	62	1573
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	125	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	90	1498	45	67	1710

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2510	772	0	0	1543	0
Stage 1	1521	-	-	-	-	-
Stage 2	989	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	23	342	-	-	426	-
Stage 1	167	-	-	-	-	-
Stage 2	321	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	19	342	-	-	426	-
Mov Cap-2 Maneuver	102	-	-	-	-	-
Stage 1	167	-	-	-	-	-
Stage 2	271	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.9	0	0.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	102	342	426	-
HCM Lane V/C Ratio	-	-	0.139	0.264	0.158	-
HCM Control Delay (s)	-	-	45.9	19.3	15	-
HCM Lane LOS	-	-	E	C	C	-
HCM 95th %tile Q(veh)	-	-	0.5	1	0.6	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	266	89	102	97	164	17	237	1011	60	17	1175	255
Future Volume (veh/h)	266	89	102	97	164	17	237	1011	60	17	1175	255
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	289	97	111	105	178	18	258	1099	65	18	1277	277
Adj No. of Lanes	2	1	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	402	211	179	118	200	275	290	2609	154	34	1968	613
Arrive On Green	0.11	0.11	0.11	0.17	0.17	0.17	0.16	0.53	0.53	0.02	0.39	0.39
Sat Flow, veh/h	3548	1863	1583	679	1150	1583	1774	4911	290	1774	5085	1583
Grp Volume(v), veh/h	289	97	111	283	0	18	258	758	406	18	1277	277
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1829	0	1583	1774	1695	1812	1774	1695	1583
Q Serve(g_s), s	8.7	5.4	7.4	16.8	0.0	1.1	15.8	15.0	15.0	1.1	22.8	14.4
Cycle Q Clear(g_c), s	8.7	5.4	7.4	16.8	0.0	1.1	15.8	15.0	15.0	1.1	22.8	14.4
Prop In Lane	1.00		1.00	0.37		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	402	211	179	318	0	275	290	1801	962	34	1968	613
V/C Ratio(X)	0.72	0.46	0.62	0.89	0.00	0.07	0.89	0.42	0.42	0.53	0.65	0.45
Avail Cap(c_a), veh/h	931	489	416	365	0	316	365	1801	962	306	1968	613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.4	46.0	46.9	44.7	0.0	38.3	45.4	15.7	15.7	53.9	27.8	25.2
Incr Delay (d2), s/veh	2.4	1.6	3.5	20.9	0.0	0.1	19.5	0.7	1.4	12.1	1.7	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	2.9	3.4	10.3	0.0	0.5	9.3	7.1	7.8	0.7	10.9	6.7
LnGrp Delay(d),s/veh	49.9	47.5	50.3	65.6	0.0	38.4	64.9	16.4	17.0	66.0	29.5	27.6
LnGrp LOS	D	D	D	E		D	E	B	B	E	C	C
Approach Vol, veh/h		497			301			1422			1572	
Approach Delay, s/veh		49.5			64.0			25.4			29.6	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.6	63.4		17.1	22.6	47.4		23.8
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	19.1	46.7		29.1	22.8	42.9		22.1
Max Q Clear Time (g_c+I1), s	3.1	17.0		10.7	17.8	24.8		18.8
Green Ext Time (p_c), s	0.0	9.4		1.8	0.3	9.9		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	33.3
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	5.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	96	80	1459	17	39	1358
Future Vol, veh/h	96	80	1459	17	39	1358
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	125	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	104	87	1586	18	42	1476

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2417	802	0	0	1604	0
Stage 1	1595	-	-	-	-	-
Stage 2	822	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 27	327	-	-	404	-
Stage 1	152	-	-	-	-	-
Stage 2	392	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 24	327	-	-	404	-
Mov Cap-2 Maneuver	106	-	-	-	-	-
Stage 1	152	-	-	-	-	-
Stage 2	351	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	95.4	0	0.4
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	106	327	404	-
HCM Lane V/C Ratio	-	-	0.984	0.266	0.105	-
HCM Control Delay (s)	-	-	158.2	20	15	-
HCM Lane LOS	-	-	F	C	B	-
HCM 95th %tile Q(veh)	-	-	6.2	1.1	0.3	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon