

Appendix HYD

Hydrology Study and Storm Water Management Plan

Job: 2201246 CI
Dated: November 20, 2020

Sacramento Region:
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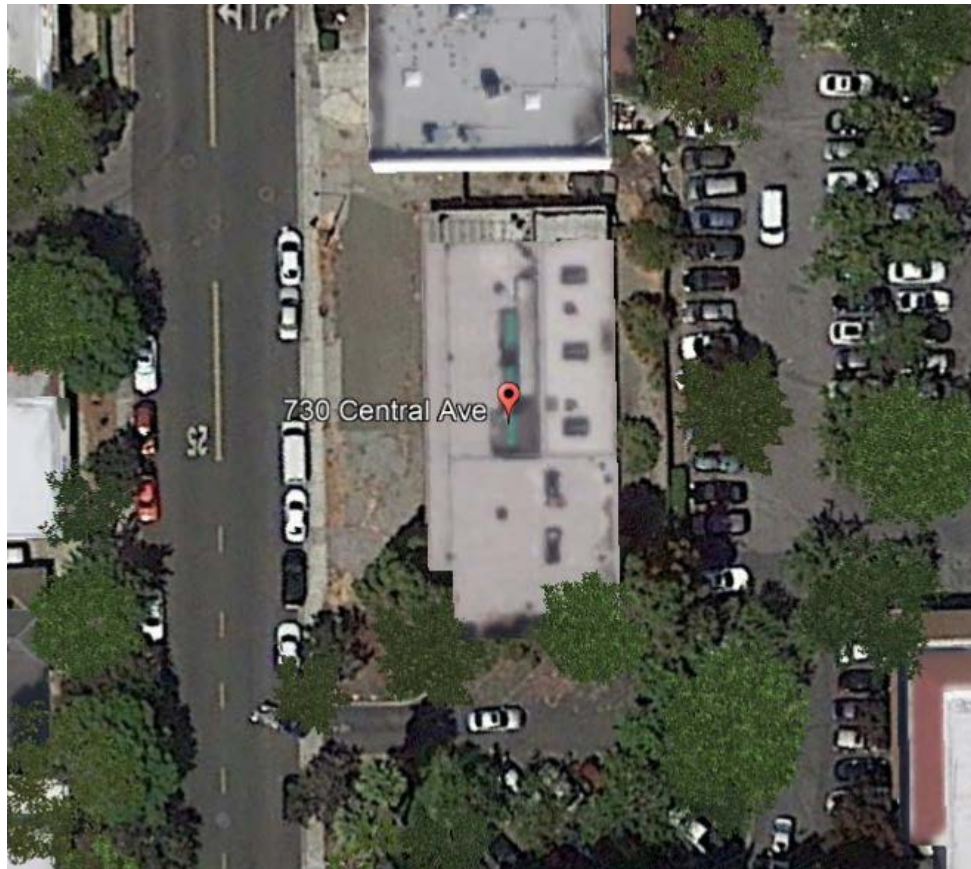
HYDROLOGY STUDY STORM WATER MANAGEMENT PLAN

**730 Central Avenue Avenue
Mountain View, California**

Planning
Division



**Received on
Jul 20, 2021**



This package includes:

- Information Sheet
- Hydrology Calculations
- Santa Clara County Precipitation Zone Map and Intensity curves

References:

- Topographic Survey by Lea & Braze Engineering, Inc.
- Grading & Drainage Plan by Lea & Braze Engineering, Inc.
- Santa Clara County Precipitation Map and Rainfall Intensity Curves

Project Location:

730 Central Avenue
 Mountain View, CA.
 APN: 158-45-001



Site Information:

Gross Lot Size:	10,480 sqft. (0.241 acre)
Existing Site Impervious Area:	10,391 sqft. (0.239 acre)
Proposed Site Impervious Area:	7,630 sqft. (0.175 acre)
Net Change of Impervious Area:	-2,761 sqft. (-0.063 acre) Net Decrease

Hydrology Information:

Study Information:	10 Year Return, 10 minute time of concentration
Mean Annual Precipitation:	16" (From Santa Clara County Precipitation Map)
Intensity (I):	1.89 In/hour (From Santa Clara County Rainfall Intensity Curve)
Runoff Coefficient (C):	0.90 for Impervious areas, 0.33 for Pervious areas

Project Introduction:

The approximately 0.24 acre site is located on the north side of Central Avenue in a residential area of the City of Mountain View. The parcel is bounded by Central Avenue to the south, a restaurant to the west, a strip mall parking lot to the north, and a multi-family residential development to the east.

The natural ground surface across the site is very flat. The frontage slopes from the front property line to Central Avenue at an average slope of less than 0.5%. The project site slopes from the front property line to the north, to the rear of the lot, at an average slope of approximately 1%. The existing site drainage can be generally characterized as uncontrolled sheet flow to the north, to the rear of the lot.

The site is currently occupied by a single-story commercial building surrounded by asphaltic concrete parking. The asphaltic concrete extends to the south into the public right-of-way, to the existing sidewalk along Central Avenue along the entire property frontage.

Lea & Braze understands that the project will demolish and remove the existing building and all asphaltic concrete. The project will construct a new four-story apartment building, with 19 residential units. Parking for the building will be provided on the ground floor below the residential units. Parking will be accessed from Central Avenue at the southeast corner of the lot. The project will also construct a new sidewalk along Central Avenue and two new entry walkways from Central Avenue.

Site Runoff Summary:

Hydrology Calculation Method: A review of the site survey and the proposed grading and drainage plans indicates that the site drainage pattern will not be significantly changed by the proposed construction.

The proposed drainage plan proposes to capture the runoff from the site in a series of swales and catch basins around the perimeter of the site. To prevent runoff from entering the neighboring property to the north, captured runoff will be directed to a new curb inlet on Central Avenue at the southeast corner of the site, and then to a new manhole where it will discharge to the existing 42” diameter city storm drain line.

With the use of the proposed on-site storm drainage system, site runoff to the neighboring properties will be either reduced or un-effected by the proposed construction. Therefore, the hydrology calculations for this project were prepared for the site as a whole.

The runoff rate for the site was calculated using the rational method for both a 10 year return storm event and a 100 year return storm event with a 10 minute time of concentration. First, the total pre-construction runoff for the site was calculated. Next, the post-construction runoff was calculated. The post-construction runoff was subtracted from the pre-construction runoff to find the change in runoff from the site to determine the effect of the proposed construction. The results are summarized below:

	Pre-Construction	Post-Construction	Net Change
10 Year Storm	Q = 0.408 cfs.	Q = 0.340 cfs.	Q = -0.068 cfs (Net Decrease)
100 Year Storm	Q = 0.559 cfs.	Q = 0.465 cfs.	Q = -0.094 cfs (Net Decrease)

The calculations indicate that the decrease in impervious surface for the proposed construction will result in a decrease in runoff for the site of approximately 20%.

Hydromodification:

Site runoff is reduced by a reduction in impervious surface on the site, and the project proposes to create / replace less than 1 acre of impervious surface. Therefore, the project not subject to hydromodification requirements per the Santa Clara Valley Urban Runoff Pollution Prevention Program C.3 Data Form. Stormwater retention and metering is not proposed for this project.

Provision C.3 Stormwater Treatment Requirements:

The Project is proposing to create or replace less than 10,000 square feet of impervious surface, and based on the requirements provided in the Santa Clara Valley Urban Runoff Pollution Prevention Program, is not a C.3 regulated project is therefore not subject to stormwater treatment requirements.

Conclusion:

Based on our calculations, Lea & Braze Engineering, Inc. believes that the on-site storm drain system is both adequate to perform its intended function, and is in conformance with the City of Mountain View stormwater drainage design requirements.



**Santa Clara Valley
Urban Runoff
Pollution Prevention Program**

PROVISION C.3 DATA FORM

Which Projects Must Comply with Stormwater Requirements?

All projects that create and/or replace **10,000 sq. ft.** or more of impervious surface on the project site must fill out this worksheet and submit it with the development project application.

All restaurants, auto service facilities, retail gasoline outlets, and uncovered parking lot projects (stand-alone or part of another development project, including the top uncovered portion of parking structures) that create and/or replace **5,000 sq. ft.** or more of impervious surface on the project site must also fill out this worksheet.

Interior remodeling projects, routine maintenance or repair projects such as re-roofing and re-paving, and single family homes that are not part of a larger plan of development are **NOT** required to complete this worksheet.

What is an Impervious Surface?

An impervious surface is a surface covering or pavement that prevents the land's natural ability to absorb and infiltrate rainfall/stormwater. Impervious surfaces include, but are not limited to rooftops, walkways, paved patios, driveways, parking lots, storage areas, impervious concrete and asphalt, and any other continuous watertight pavement or covering. Pervious pavement, underlain with pervious soil or pervious storage material (e.g., drain rock), that infiltrates rainfall at a rate equal to or greater than surrounding unpaved areas OR that stores and infiltrates the water quality design volume specified in Provision C.3.d of the Municipal Regional Stormwater Permit (MRP), is not considered an impervious surface.

For More Information

For more information regarding selection of Best Management Practices for stormwater pollution prevention or stormwater treatment contact: _____

1. Project Information

Project Name: MCZ Central LLC Apartments **APN #** 158-45-001

Project Address: 730 Central Avenue, Mountain View, CA 94043

Cross Streets: Moffett Boulevard

Applicant/Developer Name: MCZ Central LLC Attn: Zach Trailer

Project Phase(s): 1 of 1 **Engineer:** Lea & Braze Engineering, Inc.

Project Type (Check all that apply): New Development Redevelopment

Residential Commercial Industrial Mixed Use Public Institutional

Restaurant Uncovered Parking Retail Gas Outlet Auto Service (SIC code) _____

Other _____ (5013-5014, 5541, 7532-7534, 7536-7539)

Project Description: Construction of a new four-story apartment building with 19 residential living units, with parking on the ground floor below the residential units.

Project Watershed/Receiving Water (creek, river or bay): San Francisco Bay

2. Project Size

a. Total Site Area: 0.24 acre	b. Total Site Area Disturbed: 0.24 acre (including clearing, grading, or excavating)			
	Existing Area (ft²)	Proposed Area (ft²)		Total Post-Project Area (ft²)
		Replaced	New	
Impervious Area				
Roof	5,564	5,564	817	6,381
Parking Patios & Walkways	4,827	1,249	0	1,249
Sidewalks and Streets	0	0	0	0
c. Total Impervious Area	10,391	6,813	817	7,630
d. Total new and replaced impervious area		7,630		
Pervious Area				
Landscaping	89	89	2,761	2,850
Pervious Paving	0	0	0	0
Other (e.g. Green Roof)	0	0	0	0
e. Total Pervious Area	89	89	2,761	2,850
f. Percent Replacement of Impervious Area in Redevelopment Projects (Replaced Total Impervious Area ÷ Existing Total Impervious Area) x 100% = 100%				

3. State Construction General Permit Applicability:

a. Is #2.b. equal to 1 acre or more?

- Yes, applicant must obtain coverage under the State Construction General Permit (i.e., file a Notice of Intent and prepare a Stormwater Pollution Prevention Plan) (see www.swrcb.ca.gov/water_issues/programs/stormwater/construction.shtml for details).
- No, applicant does not need coverage under the State Construction General Permit.

4. MRP Provision C.3 Applicability:

a. Is #2.d. equal to **10,000** sq. ft. or more, or **5,000** sq. ft. or more for restaurants, auto service facilities, retail gas outlets, and uncovered parking?

(*Note that for public projects, the 5,000 sq. ft. threshold does not take effect until 12/1/12.)

- Yes, C.3. source control, site design and treatment requirements apply
- No, C.3. source control and site design requirements may apply – check with local agency

b. Is #2.f. equal to 50% or more?

- Yes, C.3. requirements (site design and source control, as appropriate, and stormwater treatment) apply to entire site
- No, C.3. requirements only apply to impervious area created and/or replaced

5. Hydromodification Management (HM) Applicability:

a. Does project create and/or replace one acre or more of impervious surface AND is the total post-project impervious area greater than the pre-project (existing) impervious area?

- Yes (continue) No – exempt from HM, go to page 3

b. Is the project located in an area of HM applicability (green area) on the HM Applicability Map? (www.scvurppp-w2k.com/hmp_maps.htm)

- Yes, project must implement HM requirements
- No, project is exempt from HM requirements

6. Selection of Specific Stormwater Control Measures:

Site Design Measures

- Minimize land disturbed
- Minimize impervious surfaces
- Minimum-impact street or parking lot design
- Cluster structures/pavement
- Disconnected downspouts
- Pervious pavement
- Green roof
- Microdetention in landscape
- Other self-treating area
- Self-retaining area
- Rainwater harvesting and use (e.g., rain barrel, cistern connected to roof drains)¹
- Preserved open space: _____ ac. or sq. ft.
(circle one)
- Protected riparian and wetland areas/buffers (Setback from top of bank: _____ft.)
- Other _____

Source Control Measures

- Alternative building materials
- Wash area/racks, drain to sanitary sewer²
- Covered dumpster area, drain to sanitary sewer²
- Sanitary sewer connection or accessible cleanout for swimming pool/spa/fountain²
- Beneficial landscaping (minimize irrigation, runoff, pesticides and fertilizers; promotes treatment)
- Outdoor material storage protection
- Covers, drains for loading docks, maintenance bays, fueling areas
- Maintenance (pavement sweeping, catch basin cleaning, good housekeeping)
- Storm drain labeling
- Other _____

Treatment Systems

- None (all impervious surface drains to self-retaining areas)

LID Treatment

- Rainwater harvest and use (e.g., cistern or rain barrel sized for C.3.d treatment)
- Infiltration basin
- Infiltration trench
- Exfiltration trench
- Underground detention and infiltration system (e.g. pervious pavement drain rock, large diameter conduit)

*Biotreatment*³

- Bioretention area
- Flow-through planter
- Tree box with bioretention soils
- Other _____

Other Treatment Methods

- Proprietary tree box filter⁴
- Media filter (sand, compost, or proprietary media)⁴
- Vegetated filter strip⁵
- Dry detention basin⁵
- Other _____

Flow Duration Controls for Hydromodification Management (HM)

- Detention basin
- Underground tank or vault
- Bioretention with outlet control
- Other _____

¹ Optional site design measure; does not have to be sized to comply with Provision C.3.d treatment requirements.

² Subject to sanitary sewer authority requirements.

³ Biotreatment measures are allowed only with completed feasibility analysis showing that infiltration and rainwater harvest and use are infeasible.

⁴ These treatment measures are only allowed if the project qualifies as a "Special Project".

⁵ These treatment measures are only allowed as part of a multi-step treatment process.

7. Treatment System Sizing for Projects with Treatment Requirements

Indicate the hydraulic sizing criteria used and provide the calculated design flow or volume:

Treatment System Component	Hydraulic Sizing Criteria Used ³	Design Flow or Volume (cfs or cu.ft.)

- ³Key: 1a: Volume – WEF Method
 1b: Volume – CASQA BMP Handbook Method
 2a: Flow – Factored Flood Flow Method
 2b: Flow – CASQA BMP Handbook Method
 2c: Flow – Uniform Intensity Method
 3: Combination Flow and Volume Design Basis

8. **Alternative Certification:** Was the treatment system 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 _____

9. Operation & Maintenance Information

A. Property Owner's Name _____

B. Responsible Party for Stormwater Treatment/Hydromodification Control O&M:

a. Name: _____

b. Address: _____

c. Phone/E-mail: _____

This section to be completed by Municipal staff.

O&M Responsibility Mechanism

Indicate how responsibility for O&M is assured. Check all that apply:

O&M Agreement

Other mechanism that assigns responsibility (describe below):

Reviewed:

Community Development Department

Planning Division: _____

Building Division: _____

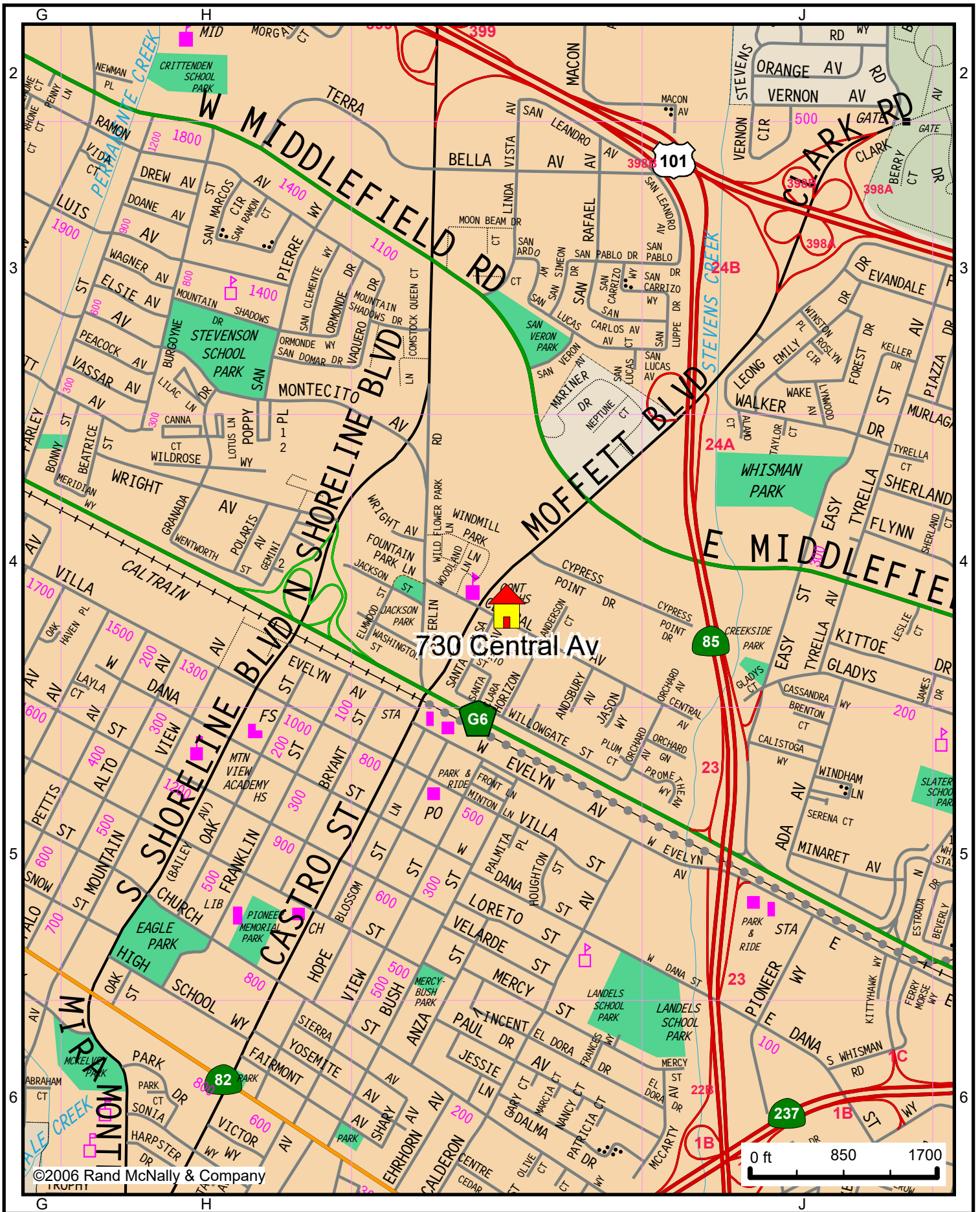
Public Works Department

Engineering: _____

Other (Specify): _____

Return form to: _____

Data entry performed by: _____



730 Central Av: Mountain View, CA 94043, 811 - J4

HMP APPLICABILITY MAP CITY OF MOUNTAIN VIEW

Legend

- Continuously Hardened Channel
- Major Creeks
- Roads and Highways
- Jurisdictional Boundary
- Catchments Draining to Hardened Channel and/or Tidal Areas
- Catchments and Subwatersheds \geq 65% Imperviousness
- Subwatersheds less than 65%
- Baylands

Date: November 2010

730 Central Avenue
Green Zone
Subwatersheds less than 65%

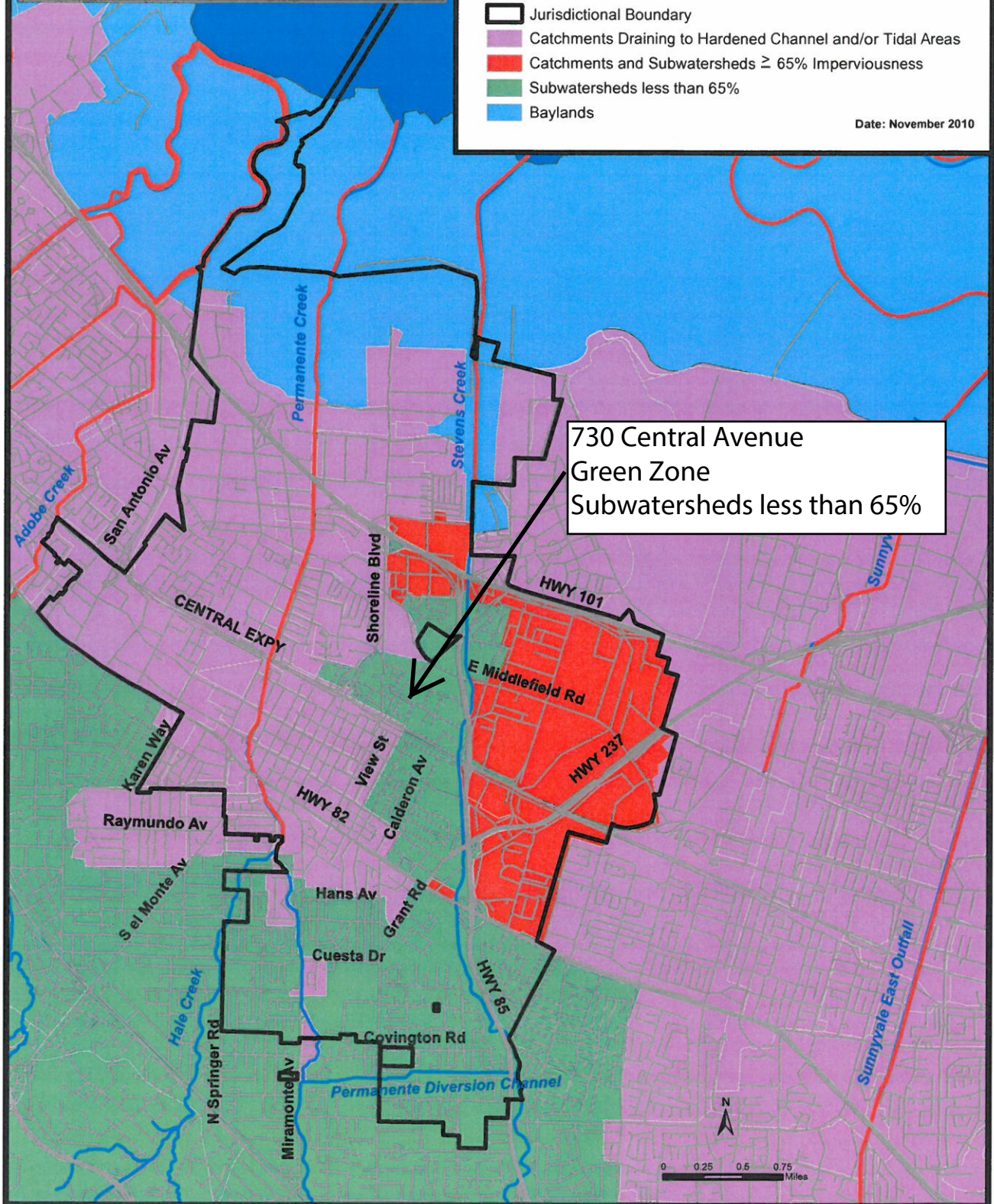
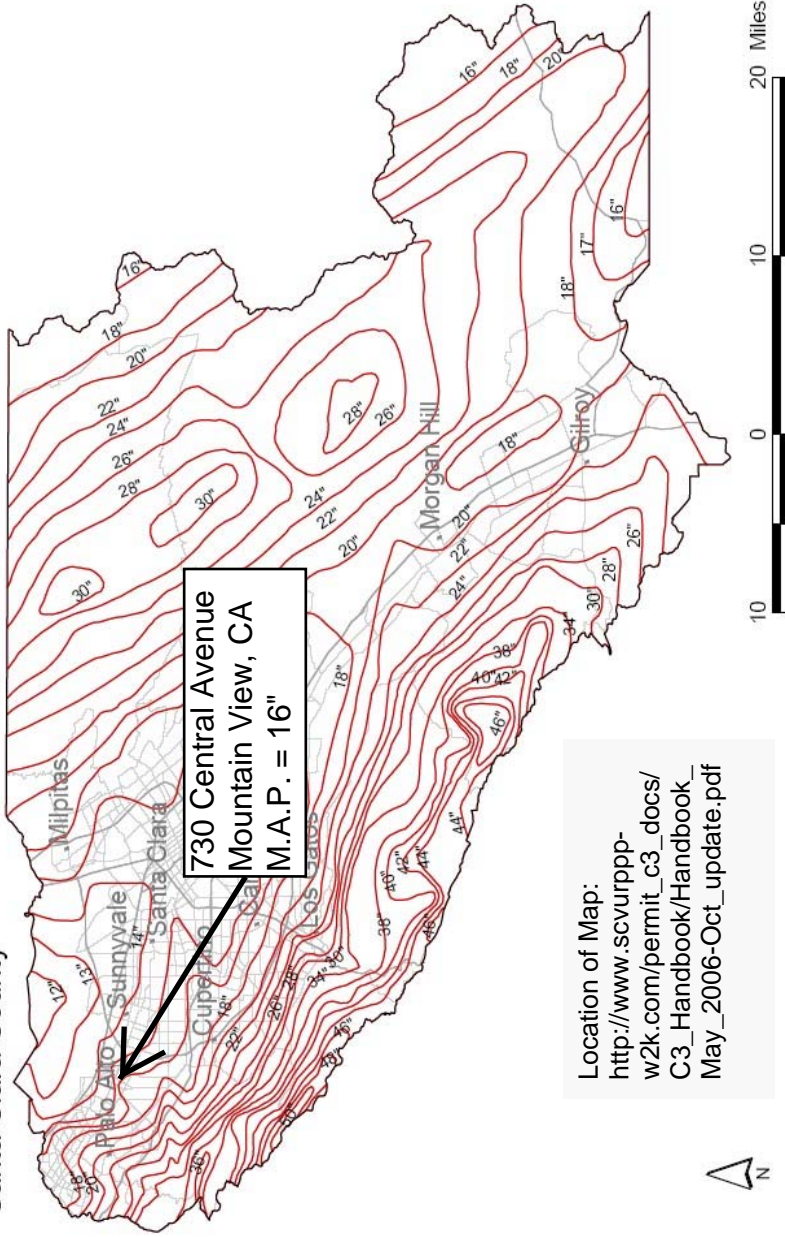




Figure A-2
Mean Annual Precipitation Map
Santa Clara County



SOURCE: Santa Clara Valley Water District, Mean Annual Precipitation Map, San Francisco & Monterey Bay Region, 1998

Figure A-2: Mean Annual Precipitation, Santa Clara County

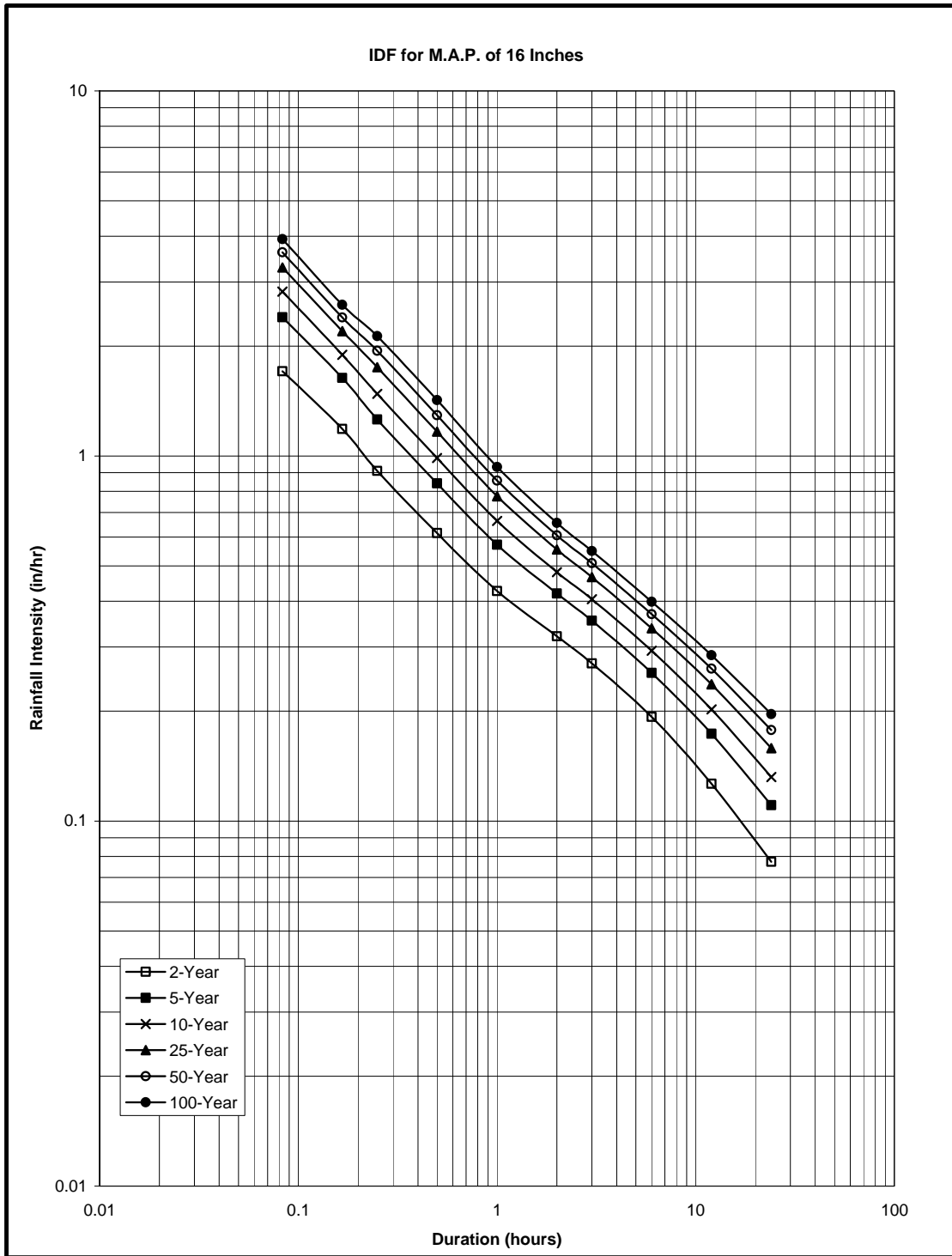


Figure B-3: IDF for M.A.P. of 16 Inches



Table B-1: Parameters $A_{T,D}$ and $B_{T,D}$ for TDS Equation

2-YR RETURN PERIOD		
5-min	0.120194	0.001385
10-min	0.166507	0.001956
15-min	0.176618	0.003181
30-min	0.212497	0.005950
1-hr	0.253885	0.010792
2-hr	0.330848	0.019418
3-hr	0.374053	0.027327
6-hr	0.425178	0.045735
12-hr	0.409397	0.069267
24-hr	0.314185	0.096343
48-hr	0.444080	0.134537
72-hr	0.447104	0.159461
5-YR RETURN PERIOD		
5-min	0.170347	0.001857
10-min	0.228482	0.002758
15-min	0.250029	0.004036
30-min	0.307588	0.007082
1-hr	0.357109	0.013400
2-hr	0.451840	0.024242
3-hr	0.512583	0.034359
6-hr	0.554937	0.060859
12-hr	0.562227	0.094871
24-hr	0.474528	0.136056
48-hr	0.692427	0.187173
72-hr	0.673277	0.224003
10-YR RETURN PERIOD		
5-min	0.201876	0.002063
10-min	0.258682	0.003569
15-min	0.294808	0.004710
30-min	0.367861	0.007879
1-hr	0.427723	0.014802
2-hr	0.522608	0.027457
3-hr	0.591660	0.038944
6-hr	0.625054	0.070715
12-hr	0.641638	0.111660
24-hr	0.567017	0.162550
48-hr	0.832445	0.221820
72-hr	0.810509	0.265469



Table B-2: Parameters $A_{T,D}$ and $B_{T,D}$ for TDS Equation

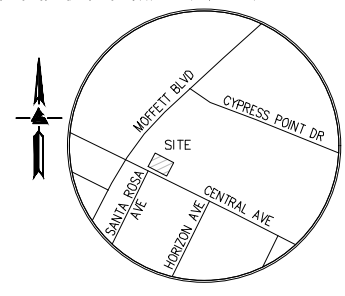
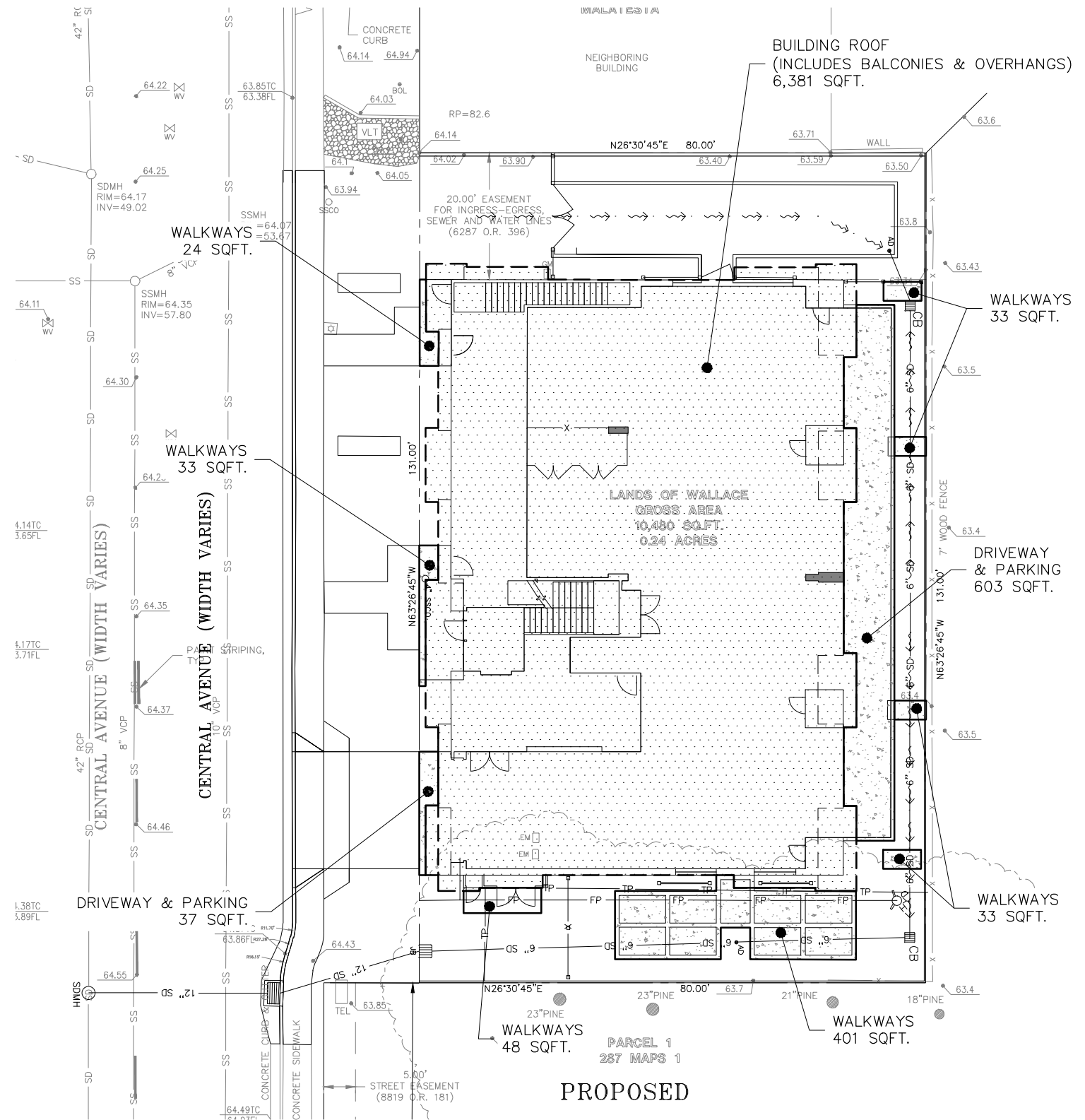
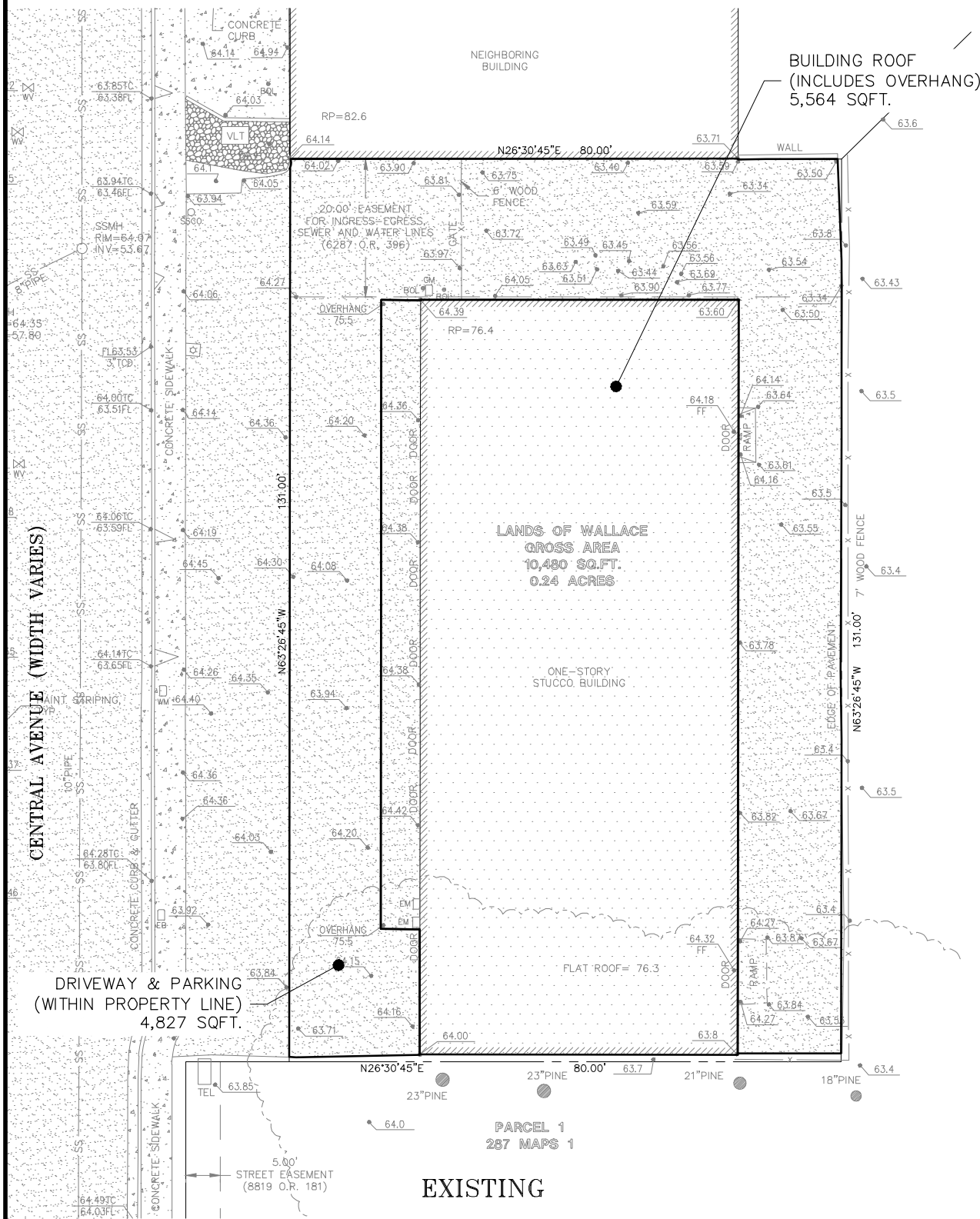
Return Period/Duration	$A_{T,D}$	$B_{T,D}$
<i>25-YR RETURN PERIOD</i>		
5-min	0.230641	0.002691
10-min	0.287566	0.004930
15-min	0.348021	0.005594
30-min	0.443761	0.008719
1-hr	0.508791	0.016680
2-hr	0.612629	0.031025
3-hr	0.689252	0.044264
6-hr	0.693566	0.083195
12-hr	0.725892	0.132326
24-hr	0.675008	0.195496
48-hr	0.989588	0.264703
72-hr	0.967854	0.316424
<i>50-YR RETURN PERIOD</i>		
5-min	0.249324	0.003241
10-min	0.300971	0.006161
15-min	0.384016	0.006315
30-min	0.496301	0.009417
1-hr	0.568345	0.017953
2-hr	0.672662	0.033694
3-hr	0.754661	0.048157
6-hr	0.740666	0.092105
12-hr	0.779967	0.147303
24-hr	0.747121	0.219673
48-hr	1.108358	0.295510
72-hr	1.075643	0.353143
<i>100-YR RETURN PERIOD</i>		
5-min	0.269993	0.003580
10-min	0.315263	0.007312
15-min	0.421360	0.006957
30-min	0.553934	0.009857
1-hr	0.626608	0.019201
2-hr	0.732944	0.036193
3-hr	0.816471	0.051981
6-hr	0.776677	0.101053
12-hr	0.821859	0.162184
24-hr	0.814046	0.243391
48-hr	1.210895	0.325943
72-hr	1.175000	0.389038



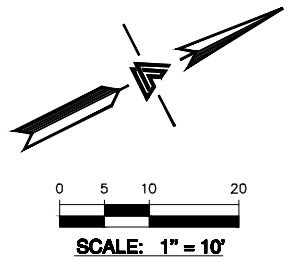
LEA & BRAZE ENGINEERING, INC.
 CIVIL ENGINEERS • LAND SURVEYORS
 MAIN OFFICE: 2745 INDUSTRIAL PKWY WEST, DUBLIN, CALIFORNIA 94545
 RESIDENTIAL OFFICES: SAN JOSE, SAN JOSE, SAN JOSE
 (510) 887-4086
 WWW.LEABRAZE.COM

MCZ CENTRAL LLC
 730 CENTRAL AVENUE
 MOUNTAIN VIEW,
 CALIFORNIA
 SANTA CLARA COUNTY APN: 158-45-001

PRELIMINARY IMPERVIOUS SURFACE EXHIBIT



VICINITY MAP
NO SCALE



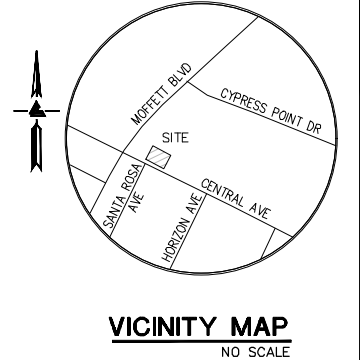
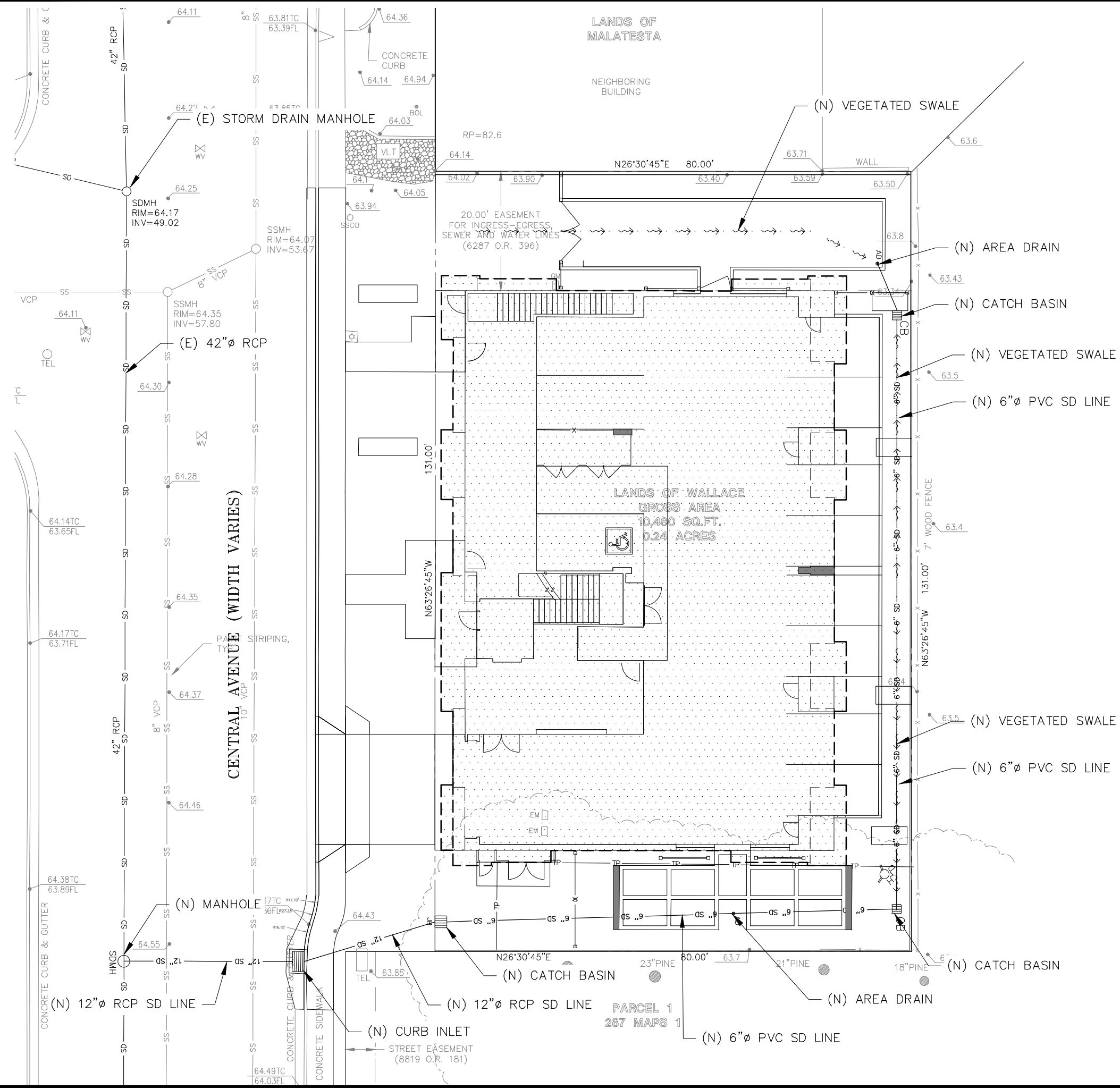
DEVELOPMENT INFORMATION

TOTAL SITE AREA	10,480 SQUARE FEET (0.241 ACRE)			
TOTAL DISTURBED AREA	10,480 SQUARE FEET (0.241 ACRE)			
DEVELOPMENT AREAS	EXISTING TOTAL S.F.	REMOVED TOTAL S.F.	NEW TOTAL S.F.	PROPOSED TOTAL S.F.
BUILDING	5,564	5,564	6,381	6,381
DRIVEWAY & PARKING	4,827	4,827	640	640
WALKWAYS	0	0	609	609
TOTAL DEVELOPED AREA	10,391	10,391	7,630	7,630
NET CHANGE IN DEVELOPED AREA	- 2,761 SQUARE FEET (NET DECREASE)			
FLOOR AREA	REFER TO THE ARCHITECTURAL PLANS FOR PROPOSED FLOOR AREA CALCULATIONS			

REVISIONS	BY

JOB NO: 2201246
 DATE: 01-06-21
 SCALE: 1"=10'
 DESIGN BY: TT
 CHECKED BY: PC

SHEET NO:
SWT-1



LEA & BRAZE ENGINEERING, INC.
 CIVIL ENGINEERS • LAND SURVEYORS
 REGISTERED PROFESSIONAL ENGINEER
 No. C79555
 STATE OF CALIFORNIA
 ORIGINAL SIGNATURES IN BLUE INK

MAIN OFFICE: 2405 INDUSTRIAL PKWY WEST, DUBLIN, CALIFORNIA 94545
 REGIONAL OFFICES: SACRAMENTO, DUBLIN, SAN JOSE
 (510) 887-4086
 WWW.LEABRAZE.COM

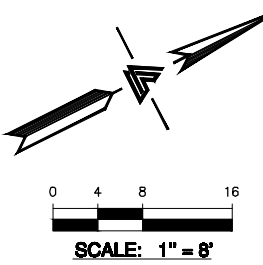
MCZ CENTRAL LLC
 730 CENTRAL AVENUE
 MOUNTAIN VIEW,
 CALIFORNIA

SANTA CLARA COUNTY APN: 158-45-001

PRELIMINARY
 STORMWATER
 CONTROL PLAN

REVISIONS	BY

JOB NO: 2201246
 DATE: 01-06-21
 SCALE: 1"=8'
 DESIGN BY: TT
 CHECKED BY: PC
 SHEET NO: **SWT-2**
 08 OF 11 SHEETS



**NOTE:
 FOR CONSTRUCTION STAKING
 SCHEDULING OR QUOTATIONS
 PLEASE CONTACT ALEX ABAYA
 AT LEA & BRAZE ENGINEERING
 (510)887-4086 EXT 116.
 aabaya@leabraze.com**

* BUILDING PAD NOTE:
 ADJUST PAD LEVEL AS
 REQUIRED. REFER TO
 STRUCTURAL PLANS
 FOR SLAB SECTION OR
 CRAWL SPACE DEPTH
 TO ESTABLISH PAD
 LEVEL.





PROJECT 730 Central Avenue	DATE November 20, 2020
JOB NO. 2201246	BY R. West

DEVELOPMENT AREA CALCULATIONS

for

730 Central Avenue Mountain View, CA

SITE AREA:	10,480 sqft.	=	0.241 acre
EXISTING AREA:			
Impervious:	10,391 sqft.	=	0.239 acre
Pervious:	89 sqft.	=	0.002 acre
PROPOSED AREA:			
Impervious:	7,630 sqft.	=	0.175 acre
Pervious:	2,850 sqft.	=	0.066 acre
NET CHANGE OF IMPERVIOUS AREA:			
	-2,761 sqft.	=	-0.063 acre <i>(NET DECREASE)</i>

BREAKDOWN OF IMPERVIOUS AREA

Existing:

Buildings	5,564 sqft.
Driveway & Parking	4,827 sqft.
Patios & Walkways	0 sqft.
Streets & Sidewalks	0 sqft.
TOTAL	10,391 sqft.

Proposed:

Buildings	6,381 sqft.
Driveway & Parking	640 sqft.
Patios & Walkways	609 sqft.
Streets & Sidewalks	0 sqft.
TOTAL	7,630 sqft.



PROJECT 730 Central Avenue	DATE November 20, 2020
JOB NO. 2201246	BY R. West

SITE RUNOFF SUMMARY
for
730 Central Avenue
Mountain View, CA

10 YEAR EVENT

Pre-Construction Run-off

TOTAL Q = 0.408 cfs.

Post-Construction Run-off Without Retention

TOTAL Q = 0.340 cfs.

Change in Run-off

$$\Delta Q = Q_{\text{POST}} - Q_{\text{PRE}}$$

$\Delta Q = -0.068 \text{ c.f.s.}$

NET DECREASE

100 YEAR EVENT

Pre-Construction Run-off

TOTAL Q = 0.559 cfs.

Post-Construction Run-off Without Retention

TOTAL Q = 0.465 cfs.

Change in Run-off

$$\Delta Q = Q_{\text{POST}} - Q_{\text{PRE}}$$

$\Delta Q = -0.094 \text{ c.f.s.}$

NET DECREASE



PROJECT 730 Central Avenue	DATE November 20, 2020
JOB NO. 2201246	BY R. West

10 YEAR STORM RUN-OFF CALCULATIONS

for

**730 Central Avenue
Mountain View, CA**

10 YEAR STORM EVENT (PRE-CONSTRUCTION)

Calculations are based on the use of the Rational Method $Q=CIA$

CALCULATION BASE VALUES

Mean Annual Percipitation at Site = 16 " (From Santa Clara Drainage Manual, Figure A-2)

Time of Concentration 10 minutes

"C" Values

Impervious Areas 0.90

Pervious Areas = 0.33

Impervious Area 10,391 sqft 0.239 acre

Pervious Area 89 sqft 0.002 acre

$A_{T,D} = 0.258682$ (From Santa Clara Drainage Manual, Table B-1)

$B_{T,D} = 0.003569$ (From Santa Clara Drainage Manual, Table B-1)

$X_{T,D} = 0.315786$ inches @ 10 minutes

$I_{T,D} = 1.89$ inches / hour

Peak Pre-Construction Runoff Rate

Impervious $Q=CIA$

$Q = 0.407$ cf/sec 182.67 gal/min

Pervious $Q=CIA$

$Q = 0.001$ cf/sec 0.45 gal/min

Total $Q_{total} = Q_{impervious} + Q_{pervious}$

$Q = 0.408$ cf/sec 183.12 gal/min



PROJECT 730 Central Avenue	DATE November 20, 2020
JOB NO. 2201246	BY R. West

10 YEAR STORM RUN-OFF CALCULATIONS

for

**730 Central Avenue
Mountain View, CA**

10 YEAR STORM EVENT (POST-CONSTRUCTION)

Calculations are based on the use of the Rational Method $Q=CIA$

CALCULATION BASE VALUES

Mean Annual Percipitation at Site = 16 " (From Santa Clara Drainage Manual, Figure A-2)
 Time of Concentration 10 minutes

"C" Values

Impervious Areas 0.90
 Pervious Areas = 0.33

Impervious Area 7,630 sqft 0.175 acre
 Pervious Area 2,850 sqft 0.065 acre

$A_{T,D} = 0.258682$ (From Santa Clara Drainage Manual, Table B-1)

$B_{T,D} = 0.003569$ (From Santa Clara Drainage Manual, Table B-1)

$X_{T,D} = 0.315786$ inches @ 10 minutes

$I_{T,D} = 1.89$ inches / hour

Peak Post-Construction Runoff Rate

Impervious $Q=CIA$
 $Q = 0.299$ cf/sec 134.20 gal/min

Pervious $Q=CIA$
 $Q = 0.041$ cf/sec 18.40 gal/min

Total $Q_{total} = Q_{impervious} + Q_{pervious}$
 $Q = 0.340$ cf/sec 152.60 gal/min



PROJECT 730 Central Avenue	DATE November 20, 2020
JOB NO. 2201246	BY R. West

100 YEAR STORM RUN-OFF CALCULATIONS

for

**730 Central Avenue
Mountain View, CA**

100 YEAR STORM EVENT (PRE-CONSTRUCTION)

Calculations are based on the use of the Rational Method $Q=CIA$

CALCULATION BASE VALUES

Mean Annual Percipitation at Site = 16 " (From Santa Clara Drainage Manual, Figure A-2)

Time of Concentration 10 minutes

"C" Values

Impervious Areas	0.90
Pervious Areas	0.33

Impervius Areas	10,391 sqft	0.24	acre
Pervious Areas	89 sqft	0.00	acre

$A_{T,D} = 0.315263$ (From Santa Clara Drainage Manual, Table B-1)

$B_{T,D} = 0.007312$ (From Santa Clara Drainage Manual, Table B-1)

$X_{T,D} = 0.432255$ inches @ 10 minutes

$I_{T,D} = 2.59$ inches / hour

Peak Pre-Construction Runoff Rate

Impervious $Q=CIA$

$Q = 0.557$ cf/sec 250.00 gal/min

Pervious $Q=CIA$

$Q = 0.002$ cf/sec 0.90 gal/min

Total $Q_{total} = Q_{impervious} + Q_{pervious}$

$Q = 0.559$ cf/sec 250.90 gal/min



PROJECT 730 Central Avenue	DATE November 20, 2020
JOB NO. 2201246	BY R. West

100 YEAR STORM RUN-OFF CALCULATIONS

for

**730 Central Avenue
Mountain View, CA**

100 YEAR STORM EVENT (POST-CONSTRUCTION)

Calculations are based on the use of the Rational Method $Q=CIA$

CALCULATION BASE VALUES

Mean Annual Percipitation at Site = 16 " (From Santa Clara Drainage Manual, Figure A-2)

Time of Concentration 10 minutes

"C" Values

Impervious Areas	0.90
Pervious Areas	0.33

Impervius Areas	7,630 sqft	0.18	acre
Pervious Areas	2,850 sqft	0.07	acre

$A_{T,D} = 0.315263$ (From Santa Clara Drainage Manual, Table B-1)

$B_{T,D} = 0.007312$ (From Santa Clara Drainage Manual, Table B-1)

$X_{T,D} = 0.432255$ inches @ 10 minutes

$I_{T,D} = 2.59$ inches / hour

Peak Post-Construction Runoff Rate

Impervious $Q=CIA$
 $Q = 0.409$ cf/sec 183.57 gal/min

Pervious $Q=CIA$
 $Q = 0.056$ cf/sec 25.13 gal/min

Total $Q_{total} = Q_{impervious} + Q_{pervious}$
 $Q = 0.465$ cf/sec 208.71 gal/min