RECEIVED
OCT 03 2022
CITY OF SIERRA MADRE
PLANNING & BUILDING

City of Sierra Madre
Vesting Tentative Tract/Parcel Map Application Form

232 W. Sierra Madre Blvd. Sierra Madre, CA 91024
626-355-7135 Fax: 626-355-2251

Date Received

P.C. Hearing Date

Project No. 211638

Project Address 700 North Sunnyside Ave., Sierra Madre, CA 91204

APN # 5761-002-008 **General Plan & Zoning** RL & R-1/SP

Exact Legal Description: See attached

Applicant Requests: This is a vesting tentative map application submitted pursuant to SMMC Chapter 16.52. Proposed single family residential project pursuant to the Meadows Specific Plan to subdivide approximately 17 acres into 42 single family residential lots, 6 open space lots, and 1 open space park area.

Type of Review and Fees

Vesting *Tentative Tract Map*	$ 11,852	☒
~~*Tentative Parcel Map*~~ SUBDIVISION	$ 3,367 3,425	☒
Environmental Fee	$	☒
Noticing	$ 725	☒
TOTAL	$ 18,369	

Applicant Information

Name: NUWI Sierra Madre, LLC

Address: 2001 Wilshire Blvd, Suite 401
Santa Monica, CA 90403

H:
W:
Cell: 925.708.3638
Fax:

Owner ○
Escrow ○
Lessee ○
Other ⊗

If required:

COVENANTS, CONDITIONS AND/OR RESTRICTIONS:

SIERRA MADRE MUNICIPAL CODE (Sections) (For Office Use Only)

Registered Engineer Information

Company: Fuscoe Engineering

Contact: Andrew Willrodt

Address: 600 Wilshire, Suite 1470

Phone: 213.988.8802

Los Angeles, CA 90017

Fax:

Licensed Surveyor Information

Company: Fuscoe Engineering

Contact: Andrew Willrodt

Address: 600 Wilshire, Suite 1470

Phone: 213.988.8802

Los Angeles, CA 90017

Fax:

Other Contact (If needed)

Name: Jonathan Frankel

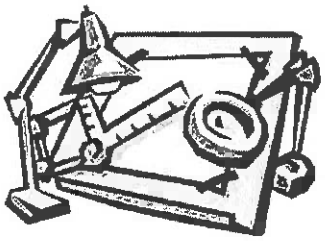
Company: Atlantis Group Land Use Consultants

Address: 2488 Historic Decatur Rd., Ste 220

Phone: 925.708.3638

San Diego, CA 92106

Fax:



Application Completeness: Only applications that include all of the required documents described on the following page will be deemed "complete." The Department of Development Services retains the right to review documents and determine that they are adequate in their ability to convey the applicant's request to the decision making body. Applicants will be notified if the application is not complete, within 30 days of filling the application and paying all required fees.

Refund: Applicants will be entitled to refunds of relevant fees only if an application has been submitted and received in error by City Staff. Fees will not be refunded to an applicant who decides not to pursue a project which has been submitted.

The City will work with one individual, or firm, who is the "applicant." It is expected that the applicant will convey all project related information to the individuals involved in the project.

Certification

I certify that I am presently the legal owner of the above described property. Further, I acknowledge the filling of this application and certify that all of the above information is true and correct. (If the undersigned is different from the legal property owner, a letter of authorization must accompany this form.)

I have read and agree to comply with the above stated conditions:

NUWI Sierra Madre, LLC

Name of Applicant **Signature**

Name of 2nd Applicant **Signature**

Witness my hand and official seal.

M. Gallagher

Signature of Notary Public

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT CIVIL CODE § 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Los Angeles

On September 29, 2022 (Date) before me, Monica Gallegos, Notary Public (Here Insert Name and Title of the Officer),

personally appeared Adam David Browning (Name(s) of Signer(s)),

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

MONICA GALLEGOS
Notary Public - California
Los Angeles County
Commission # 2399155
My Comm. Expires Mar 31, 2026

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature M. Gallegos
Signature of Notary Public

Place Notary Seal and/or Stamp Above

OPTIONAL

Completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: City of Sierra Madre Vesting Tentative Tract/Parcel Map Application Form

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____	Signer's Name: _____
☐ Corporate Officer – Title(s): _____	☐ Corporate Officer – Title(s): _____
☐ Partner – ☐ Limited ☐ General	☐ Partner – ☐ Limited ☐ General
☐ Individual ☐ Attorney in Fact	☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian of Conservator	☐ Trustee ☐ Guardian of Conservator
☐ Other: _____	☐ Other: _____
Signer is Representing: _____	Signer is Representing: _____

©2017 National Notary Association

Application Completeness

[X] VESTING TENTATIVE TRACT/PARCEL MAP APPLICATION

[X] ENVIRONMENTAL INFORMATION FORM

[X] OWNER'S AFFIDAVIT

[X] SITE PHOTOS: Include photographs of all four (4) directions (N, S, E & W) of existing site and abutting properties looking in and out. Photographs should include any walls, trees, and existing structures.

[X] VESTING TENTATIVE MAP: Four (4) blue print sized copies of the vesting tentative map showing all necessary information and details, including a vesting tentative map number which can be obtained from the L.A. County Department of Public Works (900 S. Fremont Ave., 5th Floor, Alhambra, 626-458-4930). The map must be prepared by a registered civil engineer or licensed surveyor. Consult with the City's Public Works Department on adequacy of submit-ted map(s) (See Municipal Code Section 16.12.040 for TTM/TPM requirements).

[X] SITE PLAN: The site plan must include:

1. Map number and date map prepared
2. North arrow and drawing scale
3. Division of subject property (lot lines) and square footage of each lot
4. Contours of subject property
5. Building pad of each newly created lot
6. Proposed public area
7. Vicinity Map

[X] GRANT DEED: Include a complete legal description of the subject property.

[X] ENTRY ONTO PRIVATE LAND: By submitting said form a property owner grants permission to staff and the Planning Commissioners the right to enter private property to evaluate the request.

[X] NOTIFICATION: A **300**-foot radius map (see attached example) and the names of the property owner's within a 300-foot radius. (1,000-foot-radius for maps that involve properties in the Hillside Management Zone). Submit a master ownership list and two (2) sets of typed labels of property owners.

[X] ELECTRONIC COPIES: Two (2) Electronic Copies on CD or DVD in AUTOCAD or a similar program.

[ ] VESTING TENTATIVE MAP COPIES: Fourteen (14) 11"x17" size copies of the Vesting Tentative Map and Site Plan to be sub-mitted prior to the Planning Commission meeting.

CEQA: California Environmental Quality Act

Appendix G

ENVIRONMENTAL INFORMATION FORM

(To be Completed by Applicant)

Date Filed September 28, 2022

General Information

1. Name and address of developer or project sponsor: NUWI Sierra Madre, LLC, 2001 Wilshire Blvd., Suite 401, Santa Monica, CA 90403
2. Address of project: 700 North Sunnyside Avenue, Sierra Madre, CA 91024

   Assessor's Block and Lot Number: 5761-002-008
3. Name, address, and telephone number of person to be contacted concerning this project:
   Jonathan Frankel, 2488 Historic Decatur Road, Suite 220, San Diego, CA 92106, 925.708.3638
4. Indicate number of the permit application for the project to which this form pertains: 1; application consistent with certified EIR per resolution no. 2558
5. List and describe any other related permits and other public approvals required for this project, including those required by city, regional, state and federal agencies:
   Design Review Permit, Grading Permit, underground wet utilities, building permits, and MEPs
6. Existing zoning district:: One-Family Residential/Specific Plan - R-1/SP
7. Proposed use of site (Project for which this form is filed): Single Family Residential

Project Description

8. Site size. 44.026 AC
9. Square footage. 1,917,783
10. Number of floors of construction.1 and 2-Story SFD
11. Amount of off-street parking provided. Plan 1 will have 2-car garage and plan 2s and 3s will have 3-car garage
12. Attach plans. Included with submittal
13. Proposed scheduling. TBD
14. Associated projects. Environmental impact report, specific plan, lot line adjustment, general plan amendment, zoning map amendment, approved by Resolution No. 2558 and Ordinance No. 1461
15. Anticipated incremental development. Development phases of 6 to 10 homes
16. If residential, include the number of units, schedule of unit sizes, range of sale prices or rents, and type of household size expected. 42 SFDs, ranging from 2,700 SF to 3,775 SF, for sales price TBD
17. If commercial, indicate the type, whether neighborhood, city or regionally oriented, square footage of sales area, and loading facilities. N/A
18. If industrial, indicate type, estimated employment per shift, and loading facilities. N/A

CEQA: California Environmental Quality Act

19. If institutional, indicate the major function, estimated employment per shift, estimated occupancy, loading facilities, and community benefits to be derived from the project. N/A

20. If the project involves a variance, conditional use or rezoning application, state this and indicate clearly why the application is required. N/A; This vesting tentative map application does not involve a variance, CUP, or rezoning application

Are the following items applicable to the project or its effects? Discuss below all items checked yes (attach additional sheets as necessary).

		Yes	No
21.	Change in existing features of any bays, tidelands, beaches, or hills, or substantial alteration of ground contours.	☐	☒
22.	Change in scenic views or vistas from existing residential areas or public lands or roads.	☐	☒
23.	Change in pattern, scale or character of general area of project.	☐	☒
24.	Significant amounts of solid waste or litter.	☐	☒
25.	Change in dust, ash, smoke, fumes or odors in vicinity.	☐	☒
26.	Change in ocean, bay, lake, stream or ground water quality or quantity, or alteration of existing drainage patterns.	☐	☒
27.	Substantial change in existing noise or vibration levels in the vicinity.	☐	☒
28.	Site on filled land or on slope of 10 percent or more.	☐	☒
29.	Use of disposal of potentially hazardous materials, such as toxic substances, flammables or explosives.	☐	☒
30.	Substantial change in demand for municipal services (police, fire, water, sewage, etc.).	☐	☒
31.	Substantially increase fossil fuel consumption (electricity, oil, natural gas, etc.).	☐	☒
32.	Relationship to a larger project or series of projects.	☐	☒

Environmental Setting

33. Describe the project site as it exists before the project, including information on topography, soil stability, plants and animals, and any cultural, historical or scenic aspects. Describe any existing structures on the site, and the use of the structures. Attach photographs of the site. Snapshots or polaroid photos will be accepted.
Existing undeveloped land with no structures. The project site is not currently used.

34. Describe the surrounding properties, including information on plant~ and animals and any cultural, historical or scenic aspects. Indicate the type of land use (residential, commercial, etc.), intensity of land use (one-family, apartment houses, shops, department stores, etc.), and scale of development (height, frontage, set-back, rear yard, etc.). Attach photographs of the vicinity. Snapshots or polaroid photos will be accepted.
Surrounding uses include single family residential to the west and south, mater dolorosa retreat center to the north, and Bailey Canyon debris basin to the east. See certified EIR (SCH #2020060534) for complete environmental setting and analysis of all potential impacts of the project.

Certification

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this initial evaluation to the best of my ability, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Date 9/29/2022 Signature

For NWI Sierra Madre LLC

Project Description & Analysis: Describe the proposed development of the subject property including the proposed type(s) of use(s), number of dwelling units or type of commercial development, square footage, height in feet and number of stories, and development schedule. *(Please attach additional sheets if more space is necessary)*

Proposed 42 Single Family Detached homes consisting of 1 and 2-story homes range from 2,700 to 3,775 SF. Each Plan will have up to 4 distinctive elevations (Contemporary Spanish, Modern Craftsman, Modern, and Contemporary Farmhouse). The homes will comply with the standards approved in the Specific Plan approved by City Council. Also, the project will consist of a 3 acre park.

Project Characteristics: Describe the general characteristics of the property and discuss the existing number of lot(s) and ultimate number of lots as a result of the request. *(Please attach additional sheets if more space is necessary)*

The subject property is currently a single parcel with the existing Mater Dolorosa Passionist Retreat Center located along the northern half of the site. Lot Line Adjustment No. 21-01 is to create two parcels in which the proposed residential development will occur over the southern half. The proposed Tract Map is to create 42 residential lots, 6 open space lots (A-F), and 1 open space park area. Park area consistent with the Meadows Specific Plan, approved by Ordinance No. 1461.

Total site area in square feet: 1,917,783

Is this a Condo Conversion? YES _____ NO X

Is this a New Condo Project? YES _____ NO X

Square footage of each lot:

Lot A	45,270	Lot D	3,196	Lot G	
Lot B	5,854	Lot E	2,217	Lot H	
Lot C	1,380	Lot F	2,438	Lot I	

Existing Land Use: Residential Low Density - RL

Proposed Land Use: Residential Low Density - RL

List existing street improvements (curb, gutter, sidewalk, etc.):

Existing private driveway from Sunnyside Avenue to Retreat Center. Includes curb and asphalt

Proposed street improvements:

Proposed public street extension along Sunnyside Ave. and Carter Avenue. Also 3 West to East streets within development. They will include, curb, gutter, and asphalt.

Proposed method of sewage disposal:

Connection to existing sewer system.

Proposed utility improvements:

Domestic Water, Sewer, Storm Drain, and Detention Basin (underground at Park Lot)

Any trees, shrubs, or vegetation to be removed? NO _____ YES X

If YES, please describe type and total numbers: Total of 24 protected trees with proposal to remove 14 of them. The 24 protected trees consists of 5 Arizona Cypress, 8 Deodor Cedar, 1 Western Sycamore, and 10 Coast Live Oak. There are 91 non-protected trees that will be removed as well.

Proposed Landscaping includes:
44 Park Trees, 43 Accent Trees, 65 Slope Trees, 127 Street Trees, and 83 Screening Trees. There will also be accent shrubs, vines, accent succulents and ornamental grasses, and massing shrubs. The parkways, slopes, and landscape buffer will also be landscaped.

Any existing structure(s) to be demolished? NO X YES _____

If YES, please describe structure:

Is the site on the Register of Historic Cultural Landmarks? X NO _____ YES

Is the site in the Community Redevelopment Area? X NO _____ YES

Will the site be graded? _____ NO X YES

Cubic Yards 57,601 Cut 81,330 Fill 24,733 Import _____ Export

Will a wall be constructed? _____ NO X YES

Per Approved SP Height Along PL & LL Length Slump Block Material

City of Sierra Madre

ENTRY ONTO PRIVATE LAND

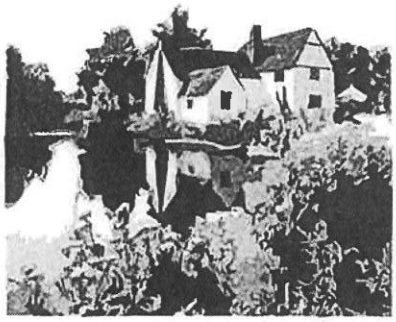
In the performance of their functions, the members of the Planning Commission and the staff of the City of Sierra Madre may enter upon my land located at 700 North Sunnyside Ave. and make examinations provided that the entries and examinations do not interfere with the use of the land by those persons lawfully entitled to the possession thereof.

Signature of Land Owner

KEITH A. ZERKIND

09/27/2022

Date



City of Sierra Madre

OWNER'S AFFIDAVIT

I am the owner of the property located at 700 North Sunnyside Ave., Sierra Madre, CA 91024.

I have read the foregoing application for the planning permits and know the contents thereof and give the City of Sierra Madre permission to process such permits.

I certify under penalty of perjury that the foregoing is true and correct.

Signature

Please print: Name KEITH A. BEKIND

Address 660 BUSSE HIGHWAY
PARK RIDGE, IL 60068

Telephone (773) 266-5795

Subscribed and sworn to me this 27TH day of SEPTEMBER, 20 22.

OFFICIAL SEAL
SUSAN R ARVANITIS
NOTARY PUBLIC - STATE OF ILLINOIS
MY COMMISSION EXPIRES:09/03/23

Susan R. Arvanitis
Notary Public

Stamp

City of Sierra Madre

OWNERSHIP LIST

I, _____, hereby certify that the attached list contains the Names, Complete Addresses, and Zip Codes of all persons to whom all property is assessed as they appear on the LATEST AVAILABLE ASSESSMENT ROLL OF THE LOS ANGELES COUNTY ASSESSOR*, within the area described and for a distance of three hundred (300) feet from the exterior boundaries of the property described as:

Legal Description: **See Attached.**

Assessor's Pin: 5761 — 002 — 008

_____ — _____ — _____

_____ — _____ — _____

Subscribed and sworn to me this _____ day of _____, 20 _____.

_____
Notary Public

Stamp

*Ownership information from other sources is not acceptable. Ownership roles may only be used for six months.

Map requirements for a Tentative Tract / Parcel Map per section 16.12.040 of the Sierra Madre Municipal Code:

1. The tentative map number;

2. Sufficient legal description of the land included on the map to define the boundaries of the tentative tract or parcel map;

3. Names, addresses and telephone numbers of the owner of record, developer, registered civil engineer preparing the map;

4. North point, scale, date and area of tract or parcel map, and the date of survey;

5. The width and approximate locations of all existing or proposed easements or rights-of-way whether for public or private roads, drainage, sewer, public utility, or flood control purposes, shown by dashed lines. Existing easements shall show the name of the easement holder, purpose of the easement, and the legal reference for the easement. If an easement is blanket or indeterminate in nature, a note to this effect shall be placed on the tentative map;

6. The actual street names of each existing street or highway shown on the tentative map;

7. The locations, widths and approximate grades of all existing and proposed highways, streets, alleys and ways, or ways within and adjacent to such tentative map. The radius of all centerline curves on highways, streets, alleys, or ways; a cross section of each street; and any planned dimensions for street widening or for any other public project in and adjacent to the land division. The lettered designation of each proposed highway or street shown on the tentative map;

8. The lot layout, the approximate dimensions of each lot, number of each lot, total area in square footage or acreage to the nearest one-tenth acre of each lot, and where pads are proposed for building sites, the approximate pad elevations. Minimum lettering height shall be one-eighth inch;

9. The locations of all areas subject to inundation or flood hazard and the locations, width, and directions of flow of all watercourses and flood control areas within and adjacent to the property involved;

10. The contour of the land at the intervals of not more than two (2) feet if the general slope of the land is more than ten percent (10%) and five (5) feet for all other areas. This shall include an area not less than one hundred (100) feet surrounding the tentative map;

11. The location and outline to scale of each building or structure within one hundred (100) feet to the division of land and the proposed disposition of such building or structure. The approximate location, height and general description of any trees with notations as to their retention, destruction or relocation;

12. The grading design of each individual lot proposed, showing the proposed and existing elevation contours;

13. The location of existing water wells, sumps, cesspools, sewers, culverts, drain pipe, underground structures or sand, gravel, or other excavations within the subdivision and within one hundred (100) feet of any portion of the subdivision noting thereon whether or not they are to be abandoned, removed or used;

14. The location of existing or proposed surface easements, ground leases, or access agreements;

15. A general location map of the area to be subdivided showing its relation to existing main thoroughfares and the distance from the nearest public street centerline to the boundary of the proposed subdivision;
16. The location of all streets, existing or contained on adjacent approved tentative maps where such streets intersect the boundary of the subdivision or where such streets intersect another street that forms a boundary of the subdivision;

17. A layout of adjoining unsubdivided property in sufficient detail to show the effect of proposed streets that may intersect such property;

18. The location of any previously filled areas within the subdivision;

19. Proposed direction of flow and rate of grade of street drainage;

20. Statement of the present use and the proposed use or uses of the property;

21. The tentative map shall clearly indicate the proposal for handling of stormwaters. In the event that such information cannot satisfactorily be shown on the tentative map, the map shall be accompanied by whatever supplemental maps or written reports are necessary to show the proposal;

22. The tentative map shall clearly show the method of sewage disposal. In the event this information cannot satisfactorily be shown on the tentative map, the map shall be accompanied by whatever supplemental maps or written reports are necessary to show the proposal;

23. The designation of all remainder parcels pursuant to Section 66424.6 of the Subdivision Map Act;

24. An affidavit signed by the owner or owners of record of the property which is the subject of the map stating that the owner or owners are aware that the map constitutes an application to subdivide the property pursuant to this title.

LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED SIERRA MADRE, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

THAT PORTION OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER AND OF LOT ONE (1) OF SAID SECTION SEVENTEEN (17) AND THAT PORTION OF LOTS NINETEEN (19) AND TWENTY (20) OF THE SIERRA MADRE TRACT, IN THE CITY OF SIERRA, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 4, PAGES 502 AND 503, MISCELLANEOUS RECORDS OF SAID COUNTY, DESCRIBED AS PARCEL 4, IN THE DEED RECORDED IN BOOK 3051 PAGE 305, OFFICIAL RECORDS.

EXCEPT ALL THAT PORTION OF SAID PARCEL 4, LYING EASTERLY AND NORTHEASTERLY OF THE WESTERLY, NORTHWESTERLY AND SOUTHWESTERLY LINE OF THE LAND DESCRIBED AS PARCEL 140, IN THE FINAL ORDER OF CONDEMNATION RECORDED IN BOOK 49004, PAGE 198, OFFICIAL RECORDS OF SAID COUNTY.

ALSO EXCEPT THAT PORTION OF SAID PARCEL 4, INCLUDED IN THE LAND DESCRIBED IN QUITCLAIM DEED TO THE CITY OF SIERRA MADRE, RECORDED ON DECEMBER 20, 1968, AS INSTRUMENT NO. 3356, IN BOOK D4230 PAGE 892 OF OFFICIAL RECORDS OF SAID COUNTY.

ALSO EXCEPTING THAT PORTION OF SAID PARCEL 4, DESCRIBED AS PARCEL NO. P-6F (FEE) IN THE DEED RECORDED FEBRUARY 15, 2001, AS INSTRUMENT NO. 01-0260705, OFFICIAL RECORDS OF SAID COUNTY.

OWNERSHIP LIST AND RADIUS MAP AFFIDAVIT

I, MICHAEL HIGGERSON, hereby certify that the attached list contains the Names, Complete Addresses, and Zip Codes of all persons to whom all property is assessed as they appear on the LATEST AVAILABLE ASSESSMENT ROLL OF THE LOS ANGELES COUNTY ASSESSOR*, within the area described and for a distance of one thousand (300) feet from the exterior boundaries of the property described as:

Legal Description:

POR OF LOTS 19 AND 20 SIERRA MADRE TR, POR SW 1/4 OF NW 1/4 OF SEC 17 T1N R11W

Assessor's Pin (APN #): 5761 002 008

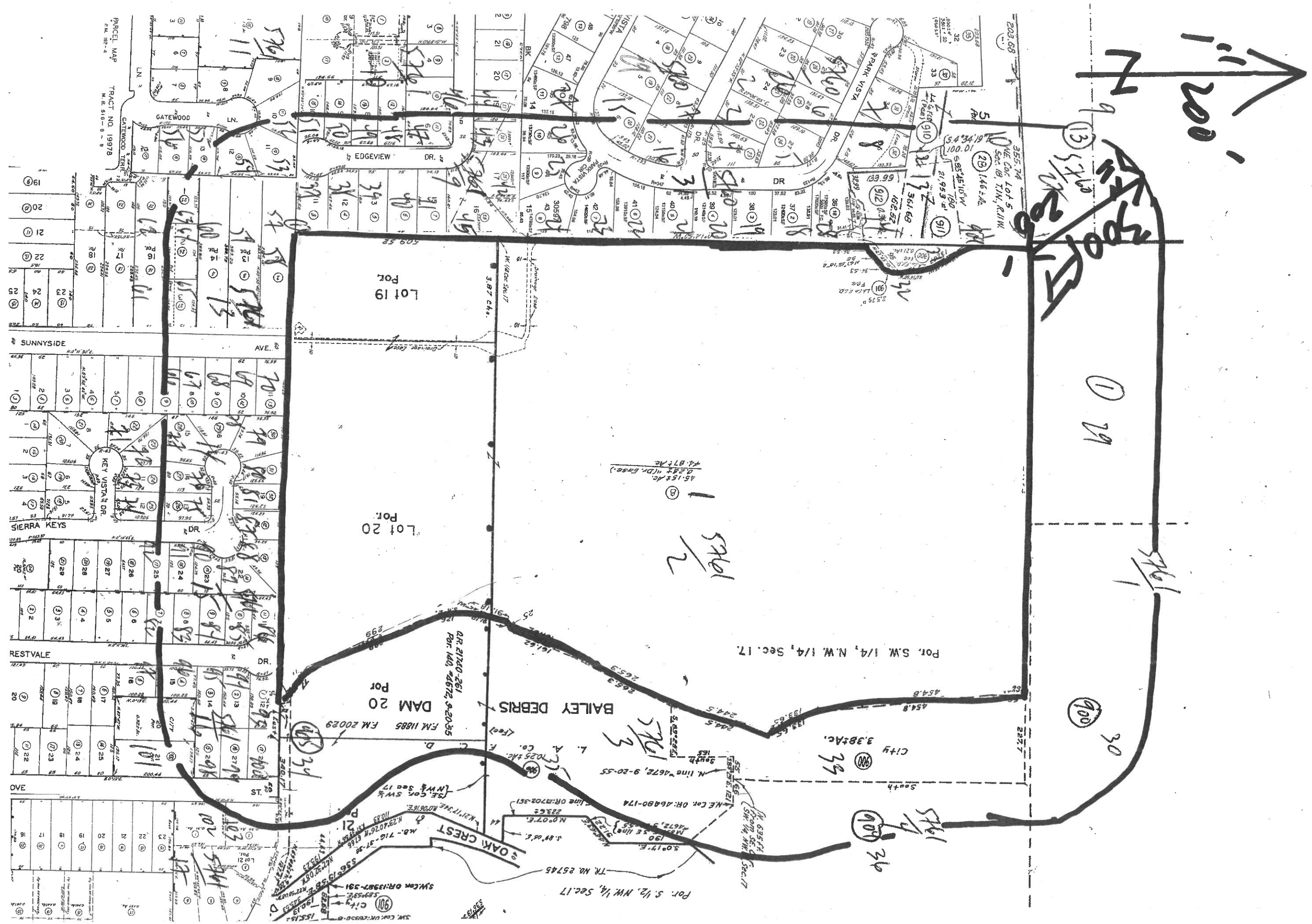
Signature

Please note: the above signature must be notarized.

	APN	NAME	ADDRESS	CITY	STATE	ZIP
1	5761-002-008	CONGREGATION OF THE PASSION MATER DOLOROSA COMMUNITY	700 N SUNNYSIDE AVE	SIERRA MADRE	CA	91024
2	5760-026-021	RALPH B & MARLENE M WEAVER	3915 SKYCREST DR	PASADENA	CA	91107
3	5760-026-022	EDWARD Y & SHIRLEY LOUIE	3923 SKYCREST DR	PASADENA	CA	91107
4	5760-026-023	ANDREW & LAURA YEGHNAZAR	3935 SKYCREST DR	PASADENA	CA	91107
5	5760-026-024	JOHN KASPARIAN	4065 PARK VISTA DR	PASADENA	CA	91107
6	5760-026-025	TOM J WALL	4077 PARK VISTA DR	PASADENA	CA	91107
7	5760-026-031	LOTFALI SHIRMOHAMMADI	4113 PARK VISTA DR	PASADENA	CA	91107
7	5760-026-031	RESIDENT	4092 PARK VISTA DR	PASADENA	CA	91107
8	5760-026-032	ZEMEN WOLDBERHAN	PO BOX 57557	SHERMAN OAKS	CA	91413
8	5760-026-032	RESIDENT	4080 PARK VISTA DR	PASADENA	CA	91107
9	5760-027-013	CONGREGATION OF THE PASSION MATER DOLOROSA COMMUNITY	700 N SUNNYSIDE AVE	SIERRA MADRE	CA	91024
10	5760-027-028	CONGREGATION OF THE PASSION MATER DOLOROSA COMMUNITY	700 N SUNNYSIDE AVE	SIERRA MADRE	CA	91024
11	5760-027-909	LA COUNTY FLOOD CONTROL DISTRICT	900 S FREMONT AVE	ALHAMBRA	CA	91803
12	5760-027-910	LA COUNTY FLOOD CONTROL DISTRICT	900 S FREMONT AVE	ALHAMBRA	CA	91803
13	5760-027-911	LA COUNTY FLOOD CONTROL DISTRICT	900 S FREMONT AVE	ALHAMBRA	CA	91803
14	5760-027-912	LA COUNTY FLOOD CONTROL DISTRICT	900 S FREMONT AVE	ALHAMBRA	CA	91803
15	5760-029-020	VARTAN H ZEITOUNISSIAN	3939 PARK VISTA DR	PASADENA	CA	91107
16	5760-029-021	MATTHEW C & PEGGY M SCHOLZ	3938 SKYCREST DR	PASADENA	CA	91107
17	5760-029-022	FRED CHING	3932 SKYCREST DR	PASADENA	CA	91107
18	5760-031-002	AFAF AJAMIAN	1641 HASTINGS HEIGHTS LN	PASADENA	CA	91107
18	5760-031-002	RESIDENT	4068 PARK VISTA DR	PASADENA	CA	91107
19	5760-031-003	CLAY S CUNNINGHAM	4044 PARK VISTA DR	PASADENA	CA	91107
20	5760-031-004	BOBBY & MINA GHOFRANIAN	4032 PARK VISTA DR	PASADENA	CA	91107
21	5760-031-005	TEDDY T & JULIA F MANG	979 FALLEN LEAF RD	ARCADIA	CA	91006
21	5760-031-005	RESIDENT	4020 PARK VISTA DR	PASADENA	CA	91107
22	5760-031-006	YURA MOVSISYAN	1035 N HILL AVE	PASADENA	CA	91104
22	5760-031-006	RESIDENT	4008 PARK VISTA DR	PASADENA	CA	91107
23	5760-031-007	DAVID M & ANNA M LEMING	3996 PARK VISTA CIR	PASADENA	CA	91107
24	5760-031-008	LJILJANA JAKOVLJEVIC/JASMINA KOPRIVICA	3984 PARK VISTA CIR	PASADENA	CA	91107
25	5760-031-009	KOKO & CEZA AWAKIMIAN	3972 PARK VISTA CIR	PASADENA	CA	91107
26	5760-031-010	BENTLY J & SUZANNE L AU	3960 PARK VISTA DR	PASADENA	CA	91107
27	5760-031-011	BABATUNDE EBOREIME	3948 PARK VISTA DR	PASADENA	CA	91107
28	5760-031-016	AFAF AJAMIAN	1641 HASTINGS HEIGHTS LN	PASADENA	CA	91107
29	5761-001-001	CONGREGATION OF THE PASSION MATER DOLOROSA COMMUNITY	700 N SUNNYSIDE AVE	SIERRA MADRE	CA	91024
30	5761-001-900	SIERRA MADRE CITY	232 W SIERRA MADRE BLVD	SIERRA MADRE	CA	91024
31	5761-002-900	LA COUNTY FLOOD CONTROL DISTRICT	900 S FREMONT AVE	ALHAMBRA	CA	91803
32	5761-002-901	LA COUNTY FLOOD CONTROL DISTRICT	900 S FREMONT AVE	ALHAMBRA	CA	91803
33	5761-003-900	SIERRA MADRE CITY	232 W SIERRA MADRE BLVD	SIERRA MADRE	CA	91024
34	5761-003-905	SIERRA MADRE CITY	232 W SIERRA MADRE BLVD	SIERRA MADRE	CA	91024

35	5761-003-906	LA COUNTY FLOOD CONTROL DISTRICT	900 S FREMONT AVE	ALHAMBRA	CA	91803
36	5761-004-904	SIERRA MADRE CITY	232 W SIERRA MADRE BLVD	SIERRA MADRE	CA	91024
37	5761-009-003	ROGER & VICTORIA RANDALL	605 EDGEVIEW DR	SIERRA MADRE	CA	91024
38	5761-009-004	DONALD L & MARY L LINGEMAN	615 EDGEVIEW DR	SIERRA MADRE	CA	91024
39	5761-009-005	KEN HUYNH	625 EDGEVIEW DR	SIERRA MADRE	CA	91024
40	5761-009-006	MATTHEW N BRYANT	635 EDGEVIEW DR	SIERRA MADRE	CA	91024
41	5761-009-007	ALEXANDER G & ARLENE M ARRIETA	645 EDGEVIEW DR	SIERRA MADRE	CA	91024
42	5761-009-025	JOSHUA MORAN/DANIELLE HARTIGAN	665 EDGEVIEW DR	SIERRA MADRE	CA	91024
43	5761-009-026	NAZARETH D JANSEZIAN	675 EDGEVIEW DR	SIERRA MADRE	CA	91024
44	5761-009-027	QINZHEN ZHU/ZICHUN ZHOU	685 EDGEVIEW DR	SIERRA MADRE	CA	91024
45	5761-009-028	TARA L BORIS/DAVID J HILL	4804 LEITHCROFT PL	FUQUAY VARINA	NC	27526
45	5761-009-028	RESIDENT	655 EDGEVIEW DR	SIERRA MADRE	CA	91024
46	5761-010-010	ALEXANDER S HENRY	684 EDGEVIEW DR	SIERRA MADRE	CA	91024
47	5761-010-011	CHERYL M CONWAY	680 EDGEVIEW DR	SIERRA MADRE	CA	91024
48	5761-010-012	JOHNNY K & LORETTA L GARZA	670 EDGEVIEW DR	SIERRA MADRE	CA	91024
49	5761-010-013	DAVID T HUGHES	660 EDGEVIEW DR	SIERRA MADRE	CA	91024
50	5761-010-014	JEREMY & JENNIFER THOMAS	650 EDGEVIEW DR	SIERRA MADRE	CA	91024
51	5761-010-015	FRANK M & KAREN S BEHEGAN	640 EDGEVIEW DR	SIERRA MADRE	CA	91024
52	5761-011-011	STEPHEN A & MARY J POTTER	495 GATEWOOD LN	SIERRA MADRE	CA	91024
53	5761-011-012	ILONA D LINDEN	500 GATEWOOD LN	SIERRA MADRE	CA	91024
54	5761-011-013	STEPHANIE ALLISON	490 GATEWOOD LN	SIERRA MADRE	CA	91024
55	5761-011-014	ANITA R LEWIS	480 GATEWOOD LN	SIERRA MADRE	CA	91024
56	5761-011-015	CLYDE F & SUSAN M STAUFF	431 MONARCH BAY DR	DANA POINT	CA	92629
57	5761-013-001	ROGER & VICTORIA RANDALL	605 EDGEVIEW DR	SIERRA MADRE	CA	91024
58	5761-013-002	DAVID J & JANA MEISENHOLDER	501 N SUNNYSIDE AVE	SIERRA MADRE	CA	91024
59	5761-013-003	IGOR & HELGA R DE KANSKY	481 N SUNNYSIDE AVE	SIERRA MADRE	CA	91024
60	5761-013-004	JEAN & ANKE BARDENHEIER	471 N SUNNYSIDE AVE	SIERRA MADRE	CA	91024
61	5761-013-016	RENE L VELLANOWETH	451 N SUNNYSIDE AVE	SIERRA MADRE	CA	91024
62	5761-013-022	DORIS K RODRIGUEZ	450 GATEWOOD TERRACE	SIERRA MADRE	CA	91024
63	5761-013-025	SUSAN M GALLAGHER	461 N SUNNYSIDE AVE	SIERRA MADRE	CA	91024
64	5761-013-026	VICTORIA S RYAN	463 N SUNNYSIDE AVE	SIERRA MADRE	CA	91024
65	5761-013-027	RICHARD & VICKI JENNELLE	465 N SUNNYSIDE AVE	SIERRA MADRE	CA	91024
66	5761-014-009	TERESA VESSELLA	460 N SUNNYSIDE AVE	SIERRA MADRE	CA	91024
67	5761-014-010	ROSE M RYLAND	470 N SUNNYSIDE AVE	SIERRA MADRE	CA	91024
68	5761-014-011	MATTHEW KELLY	480 N SUNNYSIDE AVE	SIERRA MADRE	CA	91024
69	5761-014-012	BARBARA K MCCALLON	490 N SUNNYSIDE AVE	SIERRA MADRE	CA	91024
70	5761-014-013	DAVID A LINK/YUANHUNG D LAN	500 N SUNNYSIDE AVE	SIERRA MADRE	CA	91024
71	5761-014-022	HERBERT A SCHWARZ	533 KEY VISTA DR	SIERRA MADRE	CA	91024
72	5761-014-023	JAMES PETERSON	521 KEY VISTA DR	SIERRA MADRE	CA	91024
73	5761-014-024	DANIEL BRUNINA	515 KEY VISTA DR	SIERRA MADRE	CA	91024

74	5761-014-025	ADAM & KATHY A DEFRANCE	503 KEY VISTA DR	SIERRA MADRE	CA	91024
75	5761-014-026	CARLETTE S KOLESNIK	504 SIERRA KEYS DR	SIERRA MADRE	CA	91024
76	5761-014-027	TED H & ANNETTE H LUYMES	510 SIERRA KEYS DR	SIERRA MADRE	CA	91024
77	5761-014-028	CHIANG & HARUKO YEH	516 SIERRA KEYS DR	SIERRA MADRE	CA	91024
78	5761-014-029	SARKIS & CRISTINA BALTAYIAN	522 SIERRA KEYS DR	SIERRA MADRE	CA	91024
79	5761-014-030	TENG H & KIOK G KHOE	523 SIERRA KEYS DR	SIERRA MADRE	CA	91024
80	5761-014-031	PHILIP YAO/RALPH E WEST	513 SIERRA KEYS DR	SIERRA MADRE	CA	91024
81	5761-014-032	CYNTHIA PUTMAN	507 SIERRA KEYS DR	SIERRA MADRE	CA	91024
82	5761-015-007	THOMAS G & PATRICIA A BEST	461 CRESTVALE DR	SIERRA MADRE	CA	91024
83	5761-015-008	SEAN A & VEENA L ROBINSON	471 CRESTVALE DR	SIERRA MADRE	CA	91024
84	5761-015-009	SOFIE E ERIKSSON	481 CRESTVALE DR	SIERRA MADRE	CA	91024
85	5761-015-010	JOHN PAUL & SARAH C JONES	491 CRESTVALE DR	SIERRA MADRE	CA	91024
86	5761-015-011	QUEENIE SHORE	501 CRESTVALE DR	SIERRA MADRE	CA	91024
87	5761-015-012	ADOLPH TORRES	501 SIERRA KEYS DR	SIERRA MADRE	CA	91024
88	5761-015-013	DAVID LOERA	496 SIERRA KEYS DR	SIERRA MADRE	CA	91024
89	5761-015-014	CLAUDIO & TING FANTI	490 SIERRA KEYS DR	SIERRA MADRE	CA	91024
90	5761-015-015	JENNIFER AGAJANIAN	484 SIERRA KEYS DR	SIERRA MADRE	CA	91024
91	5761-015-016	MONIQUE E HARDING	478 SIERRA KEYS DR	SIERRA MADRE	CA	91024
92	5761-015-017	MICHAEL & YVONNE FATA	472 SIERRA KEYS DR	SIERRA MADRE	CA	91024
93	5761-016-001	EILEEN C HUTTO	1020 MILAN AVE	SOUTH PASADENA	CA	91030
93	5761-016-001	RESIDENT	502 CRESTVALE DR	SIERRA MADRE	CA	91024
94	5761-016-002	BETTY J ROBINSON	492 CRESTVALE DR	SIERRA MADRE	CA	91024
95	5761-016-003	DAVID S & MINI M KAKITA	472 CRESTVALE DR	SIERRA MADRE	CA	91024
96	5761-016-004	ANDREW & CHELSIE LEE	462 CRESTVALE DR	SIERRA MADRE	CA	91024
97	5761-016-005	MELINDA A/JOHN R HOWELL	301 E COLORADO BLVD #301	PASADENA	CA	91101
97	5761-016-005	RESIDENT	452 CRESTVALE DR	SIERRA MADRE	CA	91024
98	5761-016-015	CLEMENTE & NINA BARTOLAI	481 GROVE ST	SIERRA MADRE	CA	91024
99	5761-016-016	JOHN H SHERMAN	491 GROVE ST	SIERRA MADRE	CA	91024
100	5761-016-017	JAMES Q & MICHELLE Q TRAN	2900 ALEMANY BLVD	SAN FRANCISCO	CA	94112
100	5761-016-017	RESIDENT	501 GROVE ST	SIERRA MADRE	CA	91024
101	5761-016-900	SIERRA MADRE CITY	232 W SIERRA MADRE BLVD	SIERRA MADRE	CA	91024
102	5761-017-001	KENNETH P WATERHOUSE	78500 SUNRISE MOUNTAIN VW	PALM DESERT	CA	92211
102	5761-017-001	RESIDENT	500 GROVE ST	SIERRA MADRE	CA	91024
103	5761-017-002	THEODORE & ARGIRI BRATAKOS	400 W CARTER AVE	SIERRA MADRE	CA	91024


PARCEL MAP
P.M. 192-4
TRACT NO. 19978
M.B. 516-9-9
GATEWOOD LN.
GATEWOOD TER.
EDGEVIEW DR.
SPARK VISTA DR.
SUNNYSIDE AVE.
KEY VISTA DR.
SIERRA KEYS DR.
RESTVALE DR.
OAK CREST
Lot 19 Por.
Lot 20 Por.
Por. S.W. 1/4, N.W. 1/4, Sec. 17.
BALLEY DEBRIS
DAM 20 Por
F.M. 11885
F.M. 20029
Por. S. 1/2, NW 1/4, Sec. 17
Tr. No. 25745
City 3.38 Ac.
Sec. 17
Sec. 18

OVERALL LANDSCAPE SITE PLAN

PROJECT ACREAGE: 17 ACRES

LANDSCAPING SQUARE FOOTAGE 259,612 S.F.

LANDSCAPING PERCENTAGE OF TOTAL LOT: 35

COMMUNITY PARK WILL BE APPROXIMATELY 3 ACRES.

EXISTING LANDSCAPE WILL BE REMOVED AS NOTED ON CIVIL ENGINEER'S PLAN.

THE TEN (10) IDENTIFIED EXISTING QUERCUS AGRIFOLIA - HERITAGE OAKS REMOVAL WILL BE CONSISTENT WITH THE CITY'S TREE PRESERVATION AND PROTECTION ORDINANCE OF THE SMMC, CHAPTER 12.20.

ALL PROPOSED PLANTING AREAS TO RECEIVE PERMANENT AUTOMATIC IRRIGATION SYSTEMS.

SCALE: 1"=40'-0"

NO.	REVISIONS	DATE	BY

gmp
3176 Lionshead Ave.
Suite 102
Carlsbad, CA 92010
gmplandarch.com
T 858 558 8977
LANDSCAPE ARCHITECTURE & PLANNING

LICENSED LANDSCAPE ARCHITECT
Robert J. Strezo
No. 5117
1-23-24
STATE OF CALIFORNIA

NOT FOR CONSTRUCTION

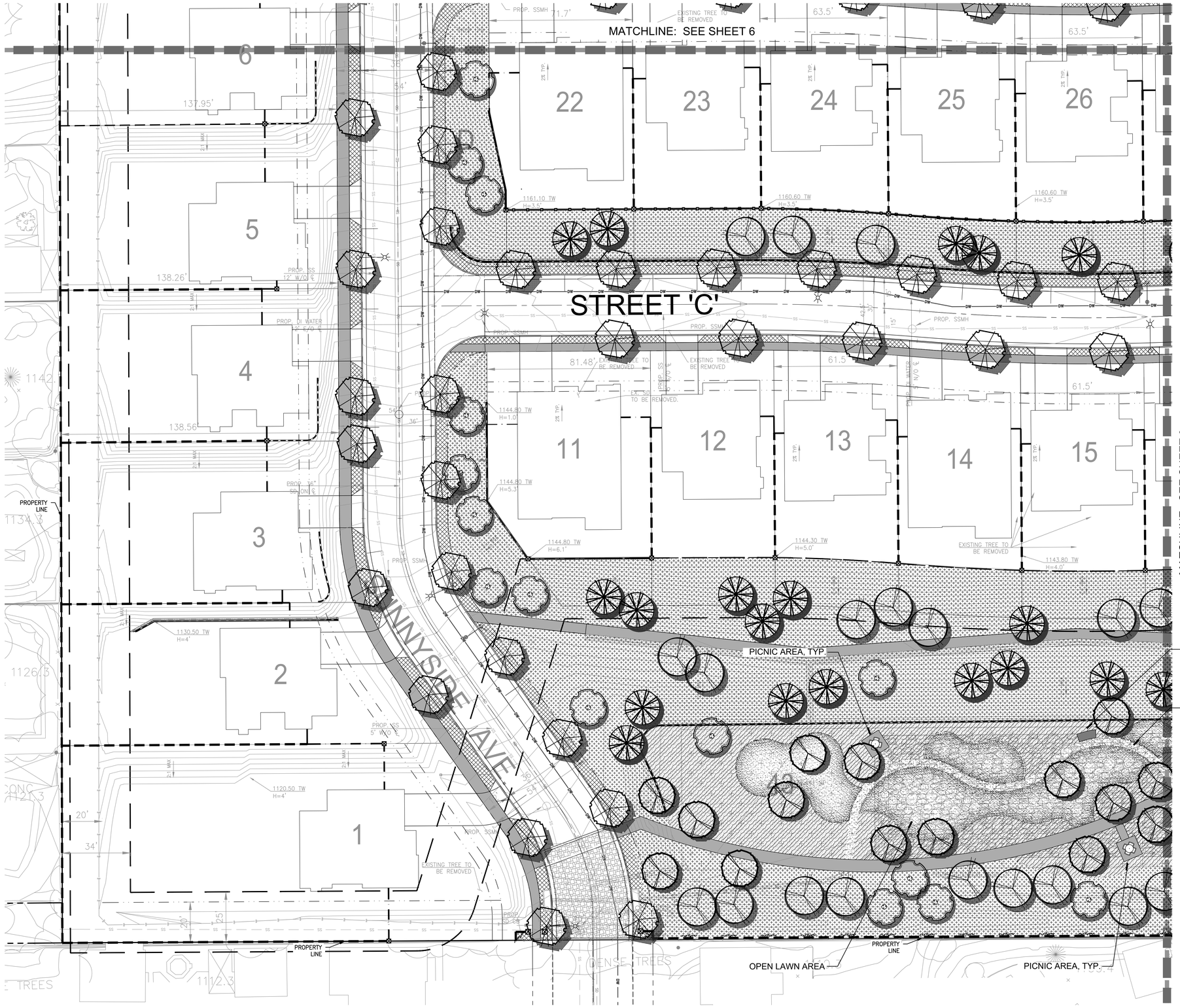
MAJOR LAND DIVISION

CONCEPTUAL LANDSCAPE RENDERING

FOR RESIDENTIAL PLANNED DEVELOPMENT PURPOSES
LOCATED IN THE CITY OF SIERRA MADRE,
IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

PLOT DATE	JOB NUMBER	
01/23/24	22-017-00	
SCALE: PER PLAN	DRAFTED BY: EC CHECKED BY: AW	SHT. 1 OF 9 SHTS.

G:\22-PROJECTS\22-017-005\LANDARCH\CONCEPT\22-017 CONCEPT PLAN.DWG (01-23-24 11:16:03AM) Plotted by: rstrezo



CONCEPT PLANT SCHEDULE

PARK TREES — 44
- ★ OLEA EUROPAEA 'WILSONII' / WILSON OLIVE
- ★ PLATANUS RACEMOSA / CALIFORNIA SYCAMORE
- ★ QUERCUS AGRIFOLIA / COAST LIVE OAK
- ★ QUERCUS VIRGINIANA / SOUTHERN LIVE OAK

ACCENT TREES — 43
- ★ CERCIS OCCIDENTALIS / WESTERN REDBUD
- CHILOPSIS LINEARIS / DESERT WILLOW
- ★ LAGERSTROEMIA INDICA / CRAPE MYRTLE
- OLEA EUROPAEA 'WILSONII' / WILSON OLIVE

SLOPE TREES — 65
- ★ ARBUTUS UNEDO / STRAWBERRY TREE SHRUB
- ★ CERCIS OCCIDENTALIS / WESTERN REDBUD
- KOELREUTERIA PANICULATA / GOLDEN RAIN TREE

STREET TREES — 131
- ★ ARBUTUS X 'MARINA' / ARBUTUS STANDARD
- ★ JACARANDA MIMOSIFOLIA / JACARANDA
- ★ KOELREUTERIA PANICULATA / GOLDEN RAIN TREE
- ★ LAGERSTROEMIA X 'TUSCARORA' / TUSCARORA CRAPE MYRTLE
- LAURUS NOBILIS / SWEET BAY
- QUERCUS ILEX / HOLLY OAK

SCREENING TREES — 83
- CHILOPSIS LINEARIS / DESERT WILLOW
- HETEROMELES ARBUTIFOLIA / TOYON
- PINUS CANARIENSIS / CANARY ISLAND PINE
- PISTACIA CHINENSIS / CHINESE PISTACHE
- PRUNUS ILICIFOLIA LYONII / CATALINA CHERRY
- RHUS LANCEA / AFRICAN SUMAC
- SAMBUCUS MEXICANA / MEXICAN ELDERBERRY
- X CHITALPA TASHKENTENSIS / CHITALPA

LARGE ACCENT SHRUBS
- ★ ALOE TONGAENSIS 'MEDUSA' / MEDUSA MOZAMBIQUE TREE ALOE
- CALLIANDRA HAEMATOCEPHALA / PINK POWDERPUFF
- ★ CEREUS PERUVIANUS / PERUVIAN APPLE CACTUS
- ★ DRACAENA DRACO / DRAGON TREE
- ★ HETEROMELES ARBUTIFOLIA / TOYON
- ★ RHUS INTEGRIFOLIA / LEMONADE BERRY
- ★ RHUS OVATA / SUGAR BUSH
- STRELITZIA NICOLAI / GIANT BIRD OF PARADISE

VINES
- ★ BOUGAINVILLEA X 'LA JOLLA' / BOUGAINVILLEA
- CLYTOSTOMA CALLISTEGIOIDES / VIOLET TRUMPET VINE
- DISTICTIS BUCCINATORIA / BLOOD RED TRUMPET VINE
- DISTICTIS X 'RIVERS' / ROYAL TRUMPET VINE
- HARDENBERGIA VIOLACEA / LILAC VINE
- PANDOREA JASMINOIDES / BOWER VINE
- PYRACANTHA X 'MOHAVE' / MOHAVE PYRACANTHA
- VIGNA CARACALLA / SNAIL VINE
- WISTERIA SINENSIS / CHINESE WISTERIA

SMALL ACCENT SUCCULENTS AND ORNAMENTAL GRASSES
- ★ AGAVE SPP. / AGAVE SPECIES
- ★ ALOE ARBORESCENS / TORCH ALOE
- ★ ALYOGYNE HUEGELII / BLUE HIBISCUS
- ★ CARISSA M. 'TOMLINSON' / TOMLINSON NATAL PLUM
- ★ CISTUS X PURPUREUS / ORCHID ROCKROSE
- CLIVIA MINIATA / BUSH LILLY
- COTONEASTER LACTEUS / RED CLUSTERBERRY COTONEASTER
- DASYLIRION WHEELERI / GREY DESERT SPOON
- ★ DIETES BICOLOR / FORTNIGHT LILY
- ★ HESPERALOE PARVIFLORA / RED YUCCA
- ★ KALANCHOE SPP. / KALANCHOE SPECIES
- ★ KNIPHOFIA UVARIA / RED HOT POKER
- ★ LEYMUS CONDENSATUS 'CANYON PRINCE' / CANYON PRINCE GIANT WILD RYE
- ★ MYOPORUM X 'PUTAH CREEK' / PUTAH CREEK MYOPRORUM
- PELARGONIUM PELTATUM / IVY GERANIUM
- ★ ROSA F. 'ICEBERG' / ICEBERG ROSE
- ★ ROSA X 'NOARE' / FLOWER CARPET RED G.C. ROSE
- ★ ROSMARINUS O. 'TUSCAN BLUE' / TUSCAN BLUE ROSEMARY

MEDIUM MASSING SHRUBS
- ★ ARBUTUS UNEDO 'COMPACTA' / COMPACT STRAWBERRY TREE
- ARCTOSTAPHYLOS MANZANITA / MANZANITA
- BACCHARIS SAROTHROIDES / DESERT BROOM
- ★ BOUGAINVILLEA X 'TORCH GLOW' / TORCH GLOW BUSH BOUGAINVILLEA
- ★ CALLISTEMON V. 'LITTLE JOHN' / DWARF WEEPING BOTTLEBRUSH
- CAMELLIA JAPONICA 'SILVER WAVES' / SILVER WAVES CAMELLIA
- ★ CEANOTHUS G. H. 'YANKEE POINT' / CALIFORNIA LILAC
- ★ LANTANA CAMARA / LANTANA
- ★ LEONOTIS LEONURUS / LION'S TAIL
- ★ LEUCOPHYLLUM SPP. / BAROMETERBUSH SPECIES
- ★ LIGUSTRUM J. 'TEXANUM' / WAX LEAF PRIVET
- ★ MELALEUCA NESOPHILA / PINK MELALEUCA
- OLEA EUROPAEA 'MONTRA' / LITTLE OLLIE® OLIVE
- ★ OPUNTIA X 'EMERALDS AND RUBIES' / EMERALDS AND RUBIES WALK IN BEAUTY™ OPUNTIA
- ★ PHLOMIS FRUTICOSA / JERUSALEM SAGE
- PITTOSPORUM T. 'MARJORIE CHANNON' / TAWHIWHI
- PITTOSPORUM TOBIRA / MOCK ORANGE
- ★ RHAMNUS CALIFORNICA / CALIFORNIA COFFEE BERRY
- ★ RHAPHIOLEPIS I. 'SPRINGTIME' / SPRINGTIME INDIAN HAWTHORNE
- ★ RHAPHIOLEPIS U. 'MINOR' / YEDDA HAWTHORN
- ★ RHUS INTEGRIFOLIA / LEMONADE BERRY
- ★ STRELITZIA REGINAE / BIRD OF PARADISE
- ★ WESTRINGIA F. 'MORNING LIGHT' / MORNING LIGHT COAST ROSEMARY
- ★ WESTRINGIA FRUTICOSA / COAST ROSEMARY

STORMWATER TREATMENT
- ★ CAREX PRAEGRACILIS / CALIFORNIA FIELD SEDGE
- ★ CHONDROPETALUM TECTORUM 'DWARF' / DWARF CAPE RUSH
- FESTUCA GLAUCA 'ELIJAH BLUE' / ELIJAH BLUE FESCUE
- ★ HELICTOTRICHON SEMPERVIRENS 'SAPPHIRE' / SAPPHIRE BLUE OAT GRASS
- JUNCUS EFFUSUS PACIFICUS / PACIFIC RUSH
- ★ LEYMUS C. 'CANYON PRINCE' / NATIVE BLUE RYE
- ★ MISCANTHUS CAPENSIS / SILVERGRASS
- ★ MUHLENBERGIA MICROSPERMA / LITTLESEED MUHLY
- ★ SESLERIA AUTUMNALIS / AUTUMN MOOR GRASS

LANDSCAPE BUFFER
- ★ ACACIA REDOLENS 'DESERT CARPET' / DESERT CARPET BANK CATCLAW
- ★ BACCHARIS PILULARIS 'PIGEON POINT' / PIGEON POINT COYOTE BRUSH
- ★ MYOPORUM PARVIFOLIUM / TRAILING MYOPORUM
- ★ ROSMARINUS OFFICINALIS 'PROSTRATUS' / DWARF ROSEMARY
- ★ SALVIA SONOMENSIS / CREEPING SAGE
- ★ SEDUM CAUTICOLA / STONECROP

PARKWAYS
- ★ CARISSA MACROCARPA 'PROSTRATA' / PROSTRATE NATAL PLUM
- ★ GAZANIA X 'BURGUNDY' / GAZANIA
- ★ ROSMARINUS OFFICINALIS 'PROSTRATUS' / DWARF ROSEMARY
- ★ SENECIO MANDRALISCAE / BLUE CHALK STICKS

SLOPES
- ★ BACCHARIS PILULARIS 'PIGEON POINT' / PIGEON POINT COYOTE BRUSH
- ★ MYOPORUM PARVIFOLIUM / TRAILING MYOPORUM
- ★ ROSMARINUS OFFICINALIS 'PROSTRATUS' / DWARF ROSEMARY

TURF
TURF MARATHON III / MARATHON III

NATURAL COBBLE AND BOULDERS
-

★ PLANT COMPATIBLE WITH LOS ANGELES COUNTY FIRE DEPARTMENT GUIDELINES FUEL MODIFICATION PLANT LIST.

SCALE: 1"=20'-0"

NO.	REVISIONS	DATE	BY

gmp
3176 Lionshead Ave.
Suite 102
Carlsbad, CA 92010
gmplandarch.com
T 858 558 8977
LANDSCAPE ARCHITECTURE & PLANNING

LICENSED LANDSCAPE ARCHITECT — Jeffrey J. Strauss — 1-23-24 — STATE OF CALIFORNIA
NOT FOR CONSTRUCTION

MAJOR LAND DIVISION

CONCEPTUAL LANDSCAPE PLAN

FOR RESIDENTIAL PLANNED DEVELOPMENT PURPOSES
LOCATED IN THE CITY OF SIERRA MADRE,
IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

PLOT DATE	JOB NUMBER	
01/23/24	22-017-00	
SCALE: PER PLAN	DRAFTED BY: EC CHECKED BY: AW	SHT. 2 OF 9 SHTS.

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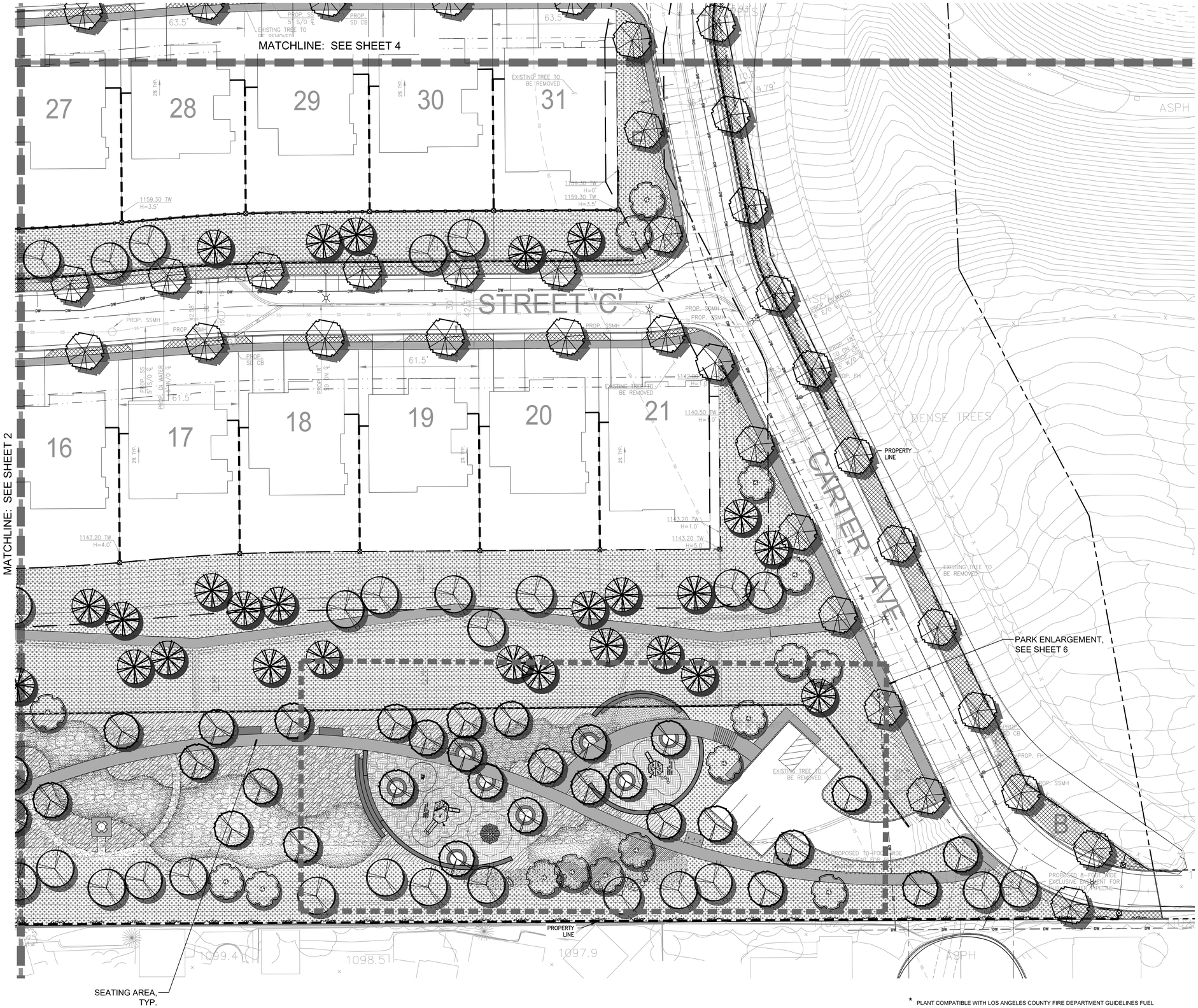

CONCEPT PLANT SCHEDULE

PARK TREES — 44
- ★ OLEA EUROPAEA 'WILSONII' / WILSON OLIVE
- ★ PLATANUS RACEMOSA / CALIFORNIA SYCAMORE
- ★ QUERCUS AGRIFOLIA / COAST LIVE OAK
- ★ QUERCUS VIRGINIANA / SOUTHERN LIVE OAK

ACCENT TREES — 43
- ★ CERCIS OCCIDENTALIS / WESTERN REDBUD
- CHILOPSIS LINEARIS / DESERT WILLOW
- ★ LAGERSTROEMIA INDICA / CRAPE MYRTLE
- OLEA EUROPAEA 'WILSONII' / WILSON OLIVE

SLOPE TREES — 65
- ★ ARBUTUS UNEDO / STRAWBERRY TREE SHRUB
- ★ CERCIS OCCIDENTALIS / WESTERN REDBUD
- KOELREUTERIA PANICULATA / GOLDEN RAIN TREE

STREET TREES — 131
- ★ ARBUTUS X 'MARINA' / ARBUTUS STANDARD
- ★ JACARANDA MIMOSIFOLIA / JACARANDA
- ★ KOELREUTERIA PANICULATA / GOLDEN RAIN TREE
- ★ LAGERSTROEMIA X 'TUSCARORA' / TUSCARORA CRAPE MYRTLE
- LAURUS NOBILIS / SWEET BAY
- QUERCUS ILEX / HOLLY OAK

SCREENING TREES — 83
- CHILOPSIS LINEARIS / DESERT WILLOW
- HETEROMELES ARBUTIFOLIA / TOYON
- PINUS CANARIENSIS / CANARY ISLAND PINE
- PISTACIA CHINENSIS / CHINESE PISTACHE
- PRUNUS ILICIFOLIA LYONII / CATALINA CHERRY
- RHUS LANCEA / AFRICAN SUMAC
- SAMBUCUS MEXICANA / MEXICAN ELDERBERRY
- X CHITALPA TASHKENTENSIS / CHITALPA

LARGE ACCENT SHRUBS
- ★ ALOE TONGAENSIS 'MEDUSA' / MEDUSA MOZAMBIQUE TREE ALOE
- CALLIANDRA HAEMATOCEPHALA / PINK POWDERPUFF
- ★ CEREUS PERUVIANUS / PERUVIAN APPLE CACTUS
- ★ DRACAENA DRACO / DRAGON TREE
- ★ HETEROMELES ARBUTIFOLIA / TOYON
- ★ RHUS INTEGRIFOLIA / LEMONADE BERRY
- ★ RHUS OVATA / SUGAR BUSH
- STRELITZIA NICOLAI / GIANT BIRD OF PARADISE

VINES
- ★ BOUGAINVILLEA X 'LA JOLLA' / BOUGAINVILLEA
- CLYTOSTOMA CALLISTEGIOIDES / VIOLET TRUMPET VINE
- DISTICTIS BUCCINATORIA / BLOOD RED TRUMPET VINE
- DISTICTIS X 'RIVERS' / ROYAL TRUMPET VINE
- HARDENBERGIA VIOLACEA / LILAC VINE
- PANDOREA JASMINOIDES / BOWER VINE
- PYRACANTHA X 'MOHAVE' / MOHAVE PYRACANTHA
- VIGNA CARACALLA / SNAIL VINE
- WISTERIA SINENSIS / CHINESE WISTERIA

SMALL ACCENT SUCCULENTS AND ORNAMENTAL GRASSES
- ★ AGAVE SPP. / AGAVE SPECIES
- ★ ALOE ARBORESCENS / TORCH ALOE
- ★ ALYOGYNE HUEGELII / BLUE HIBISCUS
- ★ CARISSA M. 'TOMLINSON' / TOMLINSON NATAL PLUM
- ★ CISTUS X PURPUREUS / ORCHID ROCKROSE
- CLIVIA MINIATA / BUSH LILLY
- COTONEASTER LACTEUS / RED CLUSTERBERRY COTONEASTER
- DASYLIRION WHEELERI / GREY DESERT SPOON
- DIETES BICOLOR / FORTNIGHT LILY
- ★ HESPERALOE PARVIFLORA / RED YUCCA
- ★ KALANCHOE SPP. / KALANCHOE SPECIES
- ★ KNIPHOFIA UVARIA / RED HOT POKER
- ★ LEYMUS CONDENSATUS 'CANYON PRINCE' / CANYON PRINCE GIANT WILD RYE
- ★ MYOPORUM X 'PUTAH CREEK' / PUTAH CREEK MYOPRORUM
- PELARGONIUM PELTATUM / IVY GERANIUM
- ★ ROSA F. 'ICEBERG' / ICEBERG ROSE
- ★ ROSA X 'NOARE' / FLOWER CARPET RED G.C. ROSE
- ★ ROSMARINUS O. 'TUSCAN BLUE' / TUSCAN BLUE ROSEMARY

MEDIUM MASSING SHRUBS
- ★ ARBUTUS UNEDO 'COMPACTA' / COMPACT STRAWBERRY TREE
- ARCTOSTAPHYLOS MANZANITA / MANZANITA
- BACCHARIS SAROTHROIDES / DESERT BROOM
- ★ BOUGAINVILLEA X 'TORCH GLOW' / TORCH GLOW BUSH BOUGAINVILLEA
- ★ CALLISTEMON V. 'LITTLE JOHN' / DWARF WEEPING BOTTLEBRUSH
- CAMELLIA JAPONICA 'SILVER WAVES' / SILVER WAVES CAMELLIA
- ★ CEANOTHUS G. H. 'YANKEE POINT' / CALIFORNIA LILAC
- ★ LANTANA CAMARA / LANTANA
- ★ LEONOTIS LEONURUS / LION'S TAIL
- ★ LEUCOPHYLLUM SPP. / BAROMETERBUSH SPECIES
- ★ LIGUSTRUM J. 'TEXANUM' / WAX LEAF PRIVET
- ★ MELALEUCA NESOPHILA / PINK MELALEUCA
- OLEA EUROPAEA 'MONTRA' / LITTLE OLIE® OLIVE
- ★ OPUNTIA X 'EMERALDS AND RUBIES' / EMERALDS AND RUBIES WALK IN BEAUTY™ OPUNTIA
- ★ PHLOMIS FRUTICOSA / JERUSALEM SAGE
- PITTOSPORUM T. 'MARJORIE CHANNON' / TAWHIWHI
- PITTOSPORUM TOBIRA / MOCK ORANGE
- ★ RHAMNUS CALIFORNICA / CALIFORNIA COFFEE BERRY
- ★ RHAPHIOLEPIS I. 'SPRINGTIME' / SPRINGTIME INDIAN HAWTHORNE
- ★ RHAPHIOLEPIS U. 'MINOR' / YEDDA HAWTHORN
- ★ RHUS INTEGRIFOLIA / LEMONADE BERRY
- ★ STRELITZIA REGINAE / BIRD OF PARADISE
- ★ WESTRINGIA F. 'MORNING LIGHT' / MORNING LIGHT COAST ROSEMARY
- ★ WESTRINGIA FRUTICOSA / COAST ROSEMARY

STORMWATER TREATMENT
- ★ CAREX PRAEGRACILIS / CALIFORNIA FIELD SEDGE
- ★ CHONDROPETALUM TECTORUM 'DWARF' / DWARF CAPE RUSH
- FESTUCA GLAUCA 'ELIJAH BLUE' / ELIJAH BLUE FESCUE
- ★ HELICTOTRICHON SEMPERVIRENS 'SAPPHIRE' / SAPPHIRE BLUE OAT GRASS
- JUNCUS EFFUSUS PACIFICUS / PACIFIC RUSH
- ★ LEYMUS C. 'CANYON PRINCE' / NATIVE BLUE RYE
- ★ MISCANTHUS CAPENSIS / SILVERGRASS
- ★ MUHLENBERGIA MICROSPERMA / LITTLESEED MUHLY
- ★ SESLERIA AUTUMNALIS / AUTUMN MOOR GRASS

LANDSCAPE BUFFER
- ★ ACACIA REDOLENS 'DESERT CARPET' / DESERT CARPET BANK CATCLAW
- ★ BACCHARIS PILULARIS 'PIGEON POINT' / PIGEON POINT COYOTE BRUSH
- ★ MYOPORUM PARVIFOLIUM / TRAILING MYOPORUM
- ★ ROSMARINUS OFFICINALIS 'PROSTRATUS' / DWARF ROSEMARY
- ★ SALVIA SONOMENSIS / CREEPING SAGE
- ★ SEDUM CAUTICOLA / STONECROP

PARKWAYS
- ★ CARISSA MACROCARPA 'PROSTRATA' / PROSTRATE NATAL PLUM
- ★ GAZANIA X 'BURGUNDY' / GAZANIA
- ★ ROSMARINUS OFFICINALIS 'PROSTRATUS' / DWARF ROSEMARY
- ★ SENECIO MANDRALISCAE / BLUE CHALK STICKS

SLOPES
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- ★ ROSMARINUS OFFICINALIS 'PROSTRATUS' / DWARF ROSEMARY

TURF
TURF MARATHON III / MARATHON III

NATURAL COBBLE AND BOULDERS
-

★ PLANT COMPATIBLE WITH LOS ANGELES COUNTY FIRE DEPARTMENT GUIDELINES FUEL MODIFICATION PLANT LIST.

20 10 0 20 40 60
SCALE: 1"=20'-0"

NO.	REVISIONS	DATE	BY

gmp
3176 Lionshead Ave.
Suite 102
Carlsbad, CA 92010
gmplandarch.com
T 858 558 8977
LANDSCAPE ARCHITECTURE & PLANNING

LICENSED LANDSCAPE ARCHITECT — Stephen J. Street — 1-23-24 — STATE OF CALIFORNIA
NOT FOR CONSTRUCTION

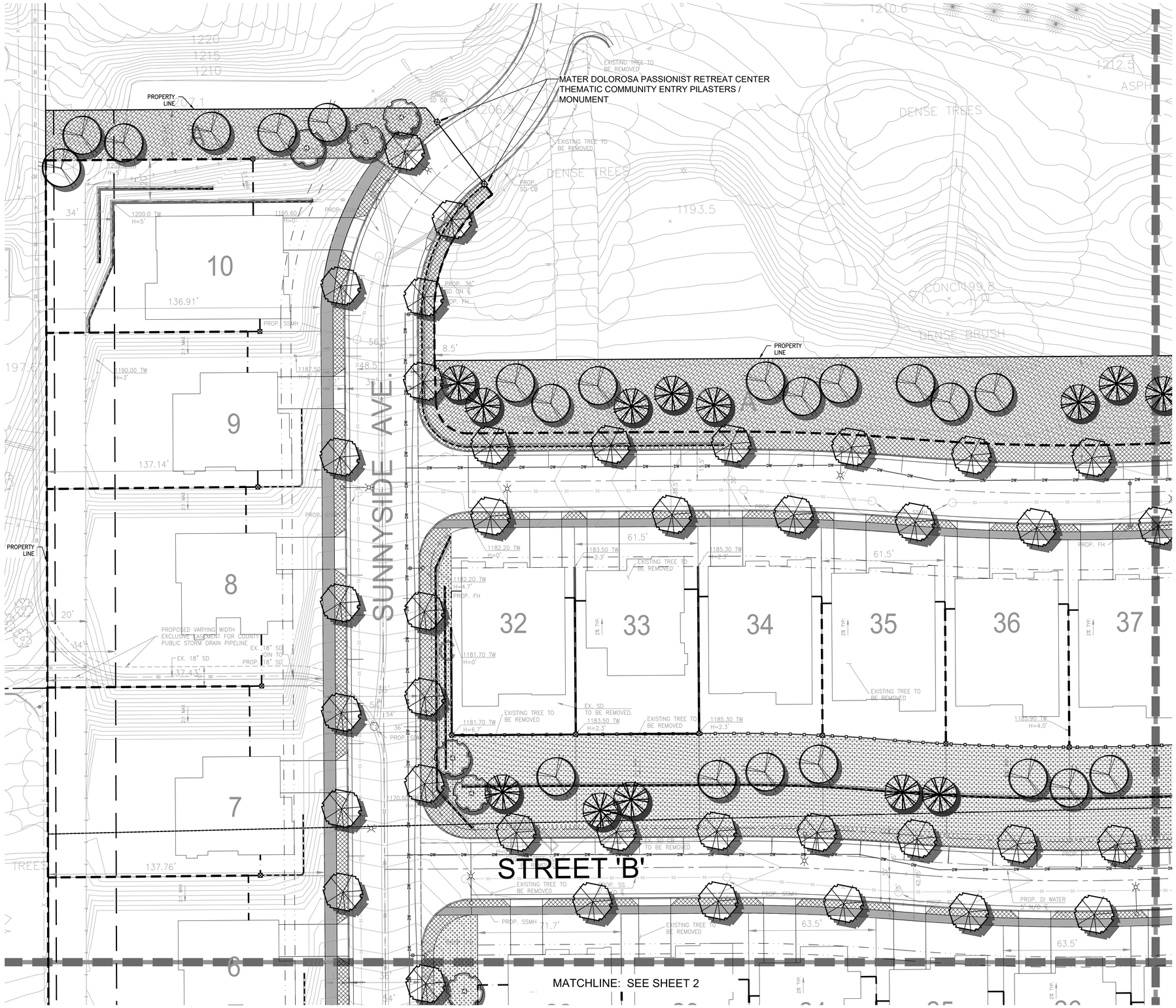
MAJOR LAND DIVISION

CONCEPTUAL LANDSCAPE PLAN

FOR RESIDENTIAL PLANNED DEVELOPMENT PURPOSES
LOCATED IN THE CITY OF SIERRA MADRE,
IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

PLOT DATE	JOB NUMBER	
01/23/24	22-017-00	
SCALE: PER PLAN	DRAFTED BY: EC CHECKED BY: AW	SHT. 3 OF 9 SHTS.

G:\22-PROJECTS\22-017-00\LANDARCH\CONCEPT\22-017 CONCEPT PLAN.DWG (01-23-24 11:16:18AM) Plotted by: rstreet



CONCEPT PLANT SCHEDULE

PARK TREES — 44
- ★ OLEA EUROPAEA 'WILSONII' / WILSON OLIVE
- ★ PLATANUS RACEMOSA / CALIFORNIA SYCAMORE
- ★ QUERCUS AGRIFOLIA / COAST LIVE OAK
- ★ QUERCUS VIRGINIANA / SOUTHERN LIVE OAK

ACCENT TREES — 43
- ★ CERCIS OCCIDENTALIS / WESTERN REDBUD
  CHILOPSIS LINEARIS / DESERT WILLOW
- ★ LAGERSTROEMIA INDICA / CRAPE MYRTLE
  OLEA EUROPAEA 'WILSONII' / WILSON OLIVE

SLOPE TREES — 65
- ★ ARBUTUS UNEDO / STRAWBERRY TREE SHRUB
- ★ CERCIS OCCIDENTALIS / WESTERN REDBUD
  KOELREUTERIA PANICULATA / GOLDEN RAIN TREE

STREET TREES — 131
- ★ ARBUTUS X 'MARINA' / ARBUTUS STANDARD
- ★ JACARANDA MIMOSIFOLIA / JACARANDA
- ★ KOELREUTERIA PANICULATA / GOLDEN RAIN TREE
- ★ LAGERSTROEMIA X 'TUSCARORA' / TUSCARORA CRAPE MYRTLE
  LAURUS NOBILIS / SWEET BAY
  QUERCUS ILEX / HOLLY OAK

SCREENING TREES — 83
- CHILOPSIS LINEARIS / DESERT WILLOW
- HETEROMELES ARBUTIFOLIA / TOYON
- PINUS CANARIENSIS / CANARY ISLAND PINE
- PISTACIA CHINENSIS / CHINESE PISTACHE
- PRUNUS ILICIFOLIA LYONII / CATALINA CHERRY
- RHUS LANCEA / AFRICAN SUMAC
- SAMBUCUS MEXICANA / MEXICAN ELDERBERRY
- X CHITALPA TASHKENTENSIS / CHITALPA

LARGE ACCENT SHRUBS
- ★ ALOE TONGAENSIS 'MEDUSA' / MEDUSA MOZAMBIQUE TREE ALOE
  CALLIANDRA HAEMATOCEPHALA / PINK POWDERPUFF
- ★ CEREUS PERUVIANUS / PERUVIAN APPLE CACTUS
- ★ DRACAENA DRACO / DRAGON TREE
- ★ HETEROMELES ARBUTIFOLIA / TOYON
- ★ RHUS INTEGRIFOLIA / LEMONADE BERRY
- ★ RHUS OVATA / SUGAR BUSH
  STRELITZIA NICOLAI / GIANT BIRD OF PARADISE

VINES
- ★ BOUGAINVILLEA X 'LA JOLLA' / BOUGAINVILLEA
  CLYTOSTOMA CALLISTEGIOIDES / VIOLET TRUMPET VINE
  DISTICTIS BUCCINATORIA / BLOOD RED TRUMPET VINE
  DISTICTIS X 'RIVERS' / ROYAL TRUMPET VINE
  HARDENBERGIA VIOLACEA / LILAC VINE
  PANDOREA JASMINOIDES / BOWER VINE
  PYRACANTHA X 'MOHAVE' / MOHAVE PYRACANTHA
  VIGNA CARACALLA / SNAIL VINE
  WISTERIA SINENSIS / CHINESE WISTERIA

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- ★ CARISSA M. 'TOMLINSON' / TOMLINSON NATAL PLUM
- ★ CISTUS X PURPUREUS / ORCHID ROCKROSE
  CLIVIA MINIATA / BUSH LILLY
  COTONEASTER LACTEUS / RED CLUSTERBERRY COTONEASTER
  DASYLIRION WHEELERI / GREY DESERT SPOON
- ★ DIETES BICOLOR / FORTNIGHT LILY
- ★ HESPERALOE PARVIFLORA / RED YUCCA
- ★ KALANCHOE SPP. / KALANCHOE SPECIES
- ★ KNIPHOFIA UVARIA / RED HOT POKER
- ★ LEYMUS CONDENSATUS 'CANYON PRINCE' / CANYON PRINCE GIANT WILD RYE
- ★ MYOPORUM X 'PUTAH CREEK' / PUTAH CREEK MYOPRORUM
  PELARGONIUM PELTATUM / IVY GERANIUM
- ★ ROSA F. 'ICEBERG' / ICEBERG ROSE
- ★ ROSA X 'NOARE' / FLOWER CARPET RED G.C. ROSE
- ★ ROSMARINUS O. 'TUSCAN BLUE' / TUSCAN BLUE ROSEMARY

MEDIUM MASSING SHRUBS
- ★ ARBUTUS UNEDO 'COMPACTA' / COMPACT STRAWBERRY TREE
  ARCTOSTAPHYLOS MANZANITA / MANZANITA
  BACCHARIS SAROTHROIDES / DESERT BROOM
- ★ BOUGAINVILLEA X 'TORCH GLOW' / TORCH GLOW BUSH BOUGAINVILLEA
- ★ CALLISTEMON V. 'LITTLE JOHN' / DWARF WEEPING BOTTLEBRUSH
  CAMELLIA JAPONICA 'SILVER WAVES' / SILVER WAVES CAMELLIA
- ★ CEANOTHUS G. H. 'YANKEE POINT' / CALIFORNIA LILAC
- ★ LANTANA CAMARA / LANTANA
- ★ LEONOTIS LEONURUS / LION'S TAIL
- ★ LEUCOPHYLLUM SPP. / BAROMETERBUSH SPECIES
- ★ LIGUSTRUM J. 'TEXANUM' / WAX LEAF PRIVET
- ★ MELALEUCA NESOPHILA / PINK MELALEUCA
  OLEA EUROPAEA 'MONTRA' / LITTLE OLLIE® OLIVE
- ★ OPUNTIA X 'EMERALDS AND RUBIES' / EMERALDS AND RUBIES WALK IN BEAUTY™ OPUNTIA
- ★ PHLOMIS FRUTICOSA / JERUSALEM SAGE
  PITTOSPORUM T. 'MARJORIE CHANNON' / TAWHIWHI
  PITTOSPORUM TOBIRA / MOCK ORANGE
- ★ RHAMNUS CALIFORNICA / CALIFORNIA COFFEE BERRY
- ★ RHAPHIOLEPIS I. 'SPRINGTIME' / SPRINGTIME INDIAN HAWTHORNE
- ★ RHAPHIOLEPIS U. 'MINOR' / YEDDA HAWTHORN
- ★ RHUS INTEGRIFOLIA / LEMONADE BERRY
- ★ STRELITZIA REGINAE / BIRD OF PARADISE
- ★ WESTRINGIA F. 'MORNING LIGHT' / MORNING LIGHT COAST ROSEMARY
- ★ WESTRINGIA FRUTICOSA / COAST ROSEMARY

STORMWATER TREATMENT
- ★ CAREX PRAEGRACILIS / CALIFORNIA FIELD SEDGE
- ★ CHONDROPETALUM TECTORUM 'DWARF' / DWARF CAPE RUSH
  FESTUCA GLAUCA 'ELIJAH BLUE' / ELIJAH BLUE FESCUE
- ★ HELICTOTRICHON SEMPERVIRENS 'SAPPHIRE' / SAPPHIRE BLUE OAT GRASS
  JUNCUS EFFUSUS PACIFICUS / PACIFIC RUSH
- ★ LEYMUS C. 'CANYON PRINCE' / NATIVE BLUE RYE
- ★ MISCANTHUS CAPENSIS / SILVERGRASS
- ★ MUHLENBERGIA MICROSPERMA / LITTLESEED MUHLY
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LANDSCAPE BUFFER
- ★ ACACIA REDOLENS 'DESERT CARPET' / DESERT CARPET BANK CATCLAW
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- ★ ROSMARINUS OFFICINALIS 'PROSTRATUS' / DWARF ROSEMARY
- ★ SALVIA SONOMENSIS / CREEPING SAGE
- ★ SEDUM CAUTICOLA / STONECROP

PARKWAYS
- ★ CARISSA MACROCARPA 'PROSTRATA' / PROSTRATE NATAL PLUM
- ★ GAZANIA X 'BURGUNDY' / GAZANIA
- ★ ROSMARINUS OFFICINALIS 'PROSTRATUS' / DWARF ROSEMARY
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- ★ ROSMARINUS OFFICINALIS 'PROSTRATUS' / DWARF ROSEMARY

TURF
TURF MARATHON III / MARATHON III

NATURAL COBBLE AND BOULDERS
-

★ PLANT COMPATIBLE WITH LOS ANGELES COUNTY FIRE DEPARTMENT GUIDELINES FUEL MODIFICATION PLANT LIST.

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

NO.	REVISIONS	DATE	BY

gmp
3176 Lionshead Ave.
Suite 102
Carlsbad, CA 92010
gmplandarch.com
T 858 558 8977
LANDSCAPE ARCHITECTURE & PLANNING

LICENSED LANDSCAPE ARCHITECT — Garrett J. Streza — 1-23-24 — STATE OF CALIFORNIA
NOT FOR CONSTRUCTION

MAJOR LAND DIVISION

CONCEPTUAL LANDSCAPE PLAN

FOR RESIDENTIAL PLANNED DEVELOPMENT PURPOSES
LOCATED IN THE CITY OF SIERRA MADRE,
IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

PLOT DATE	JOB NUMBER	
01/23/24	22–017–00	
SCALE: PER PLAN	DRAFTED BY: EC CHECKED BY: AW	SHT. 4 OF 9 SHTS.

G:\22-PROJECTS\22-017-00\LANDARCH\CONCEPT\22-017 CONCEPT PLAN.DWG (01-23-24 11:16:22AM) Plotted by: rstreza

CONCEPT PLANT SCHEDULE

PARK TREES — 44
- ★ OLEA EUROPAEA 'WILSONII' / WILSON OLIVE
- ★ PLATANUS RACEMOSA / CALIFORNIA SYCAMORE
- ★ QUERCUS AGRIFOLIA / COAST LIVE OAK
- ★ QUERCUS VIRGINIANA / SOUTHERN LIVE OAK

ACCENT TREES — 43
- ★ CERCIS OCCIDENTALIS / WESTERN REDBUD
- CHILOPSIS LINEARIS / DESERT WILLOW
- ★ LAGERSTROEMIA INDICA / CRAPE MYRTLE
- OLEA EUROPAEA 'WILSONII' / WILSON OLIVE

SLOPE TREES — 65
- ★ ARBUTUS UNEDO / STRAWBERRY TREE SHRUB
- ★ CERCIS OCCIDENTALIS / WESTERN REDBUD
- KOELREUTERIA PANICULATA / GOLDEN RAIN TREE

STREET TREES — 131
- ★ ARBUTUS X 'MARINA' / ARBUTUS STANDARD
- ★ JACARANDA MIMOSIFOLIA / JACARANDA
- ★ KOELREUTERIA PANICULATA / GOLDEN RAIN TREE
- ★ LAGERSTROEMIA X 'TUSCARORA' / TUSCARORA CRAPE MYRTLE
- LAURUS NOBLIS / SWEET BAY
- QUERCUS ILEX / HOLLY OAK

SCREENING TREES — 83
- CHILOPSIS LINEARIS / DESERT WILLOW
- HETEROMELES ARBUTIFOLIA / TOYON
- PINUS CANARIENSIS / CANARY ISLAND PINE
- PISTACIA CHINENSIS / CHINESE PISTACHE
- PRUNUS ILICIFOLIA LYONII / CATALINA CHERRY
- RHUS LANCEA / AFRICAN SUMAC
- SAMBUCUS MEXICANA / MEXICAN ELDERBERRY
- X CHITALPA TASHKENTENSIS / CHITALPA

LARGE ACCENT SHRUBS
- ★ ALOE TONGAENSIS 'MEDUSA' / MEDUSA MOZAMBIQUE TREE ALOE
- CALLIANDRA HAEMATOCEPHALA / PINK POWDERPUFF
- ★ CEREUS PERUVIANUS / PERUVIAN APPLE CACTUS
- ★ DRACAENA DRACO / DRAGON TREE
- ★ HETEROMELES ARBUTIFOLIA / TOYON
- ★ RHUS INTEGRIFOLIA / LEMONADE BERRY
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- STRELITZIA NICOLAI / GIANT BIRD OF PARADISE

VINES
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- PITTOSPORUM TOBIRA / MOCK ORANGE
- ★ RHAMNUS CALIFORNICA / CALIFORNIA COFFEE BERRY
- ★ RHAPHIOLEPIS I. 'SPRINGTIME' / SPRINGTIME INDIAN HAWTHORNE
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- ★ HELICTOTRICHON SEMPERVIRENS 'SAPPHIRE' / SAPPHIRE BLUE OAT GRASS
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NATURAL COBBLE AND BOULDERS
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★ PLANT COMPATIBLE WITH LOS ANGELES COUNTY FIRE DEPARTMENT GUIDELINES FUEL MODIFICATION PLANT LIST.

SCALE: 1"=20'-0"

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gmp
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LANDSCAPE ARCHITECTURE & PLANNING

LICENSED LANDSCAPE ARCHITECT — Robert J. Streeter — 1-23-24 — STATE OF CALIFORNIA
NOT FOR CONSTRUCTION

MAJOR LAND DIVISION

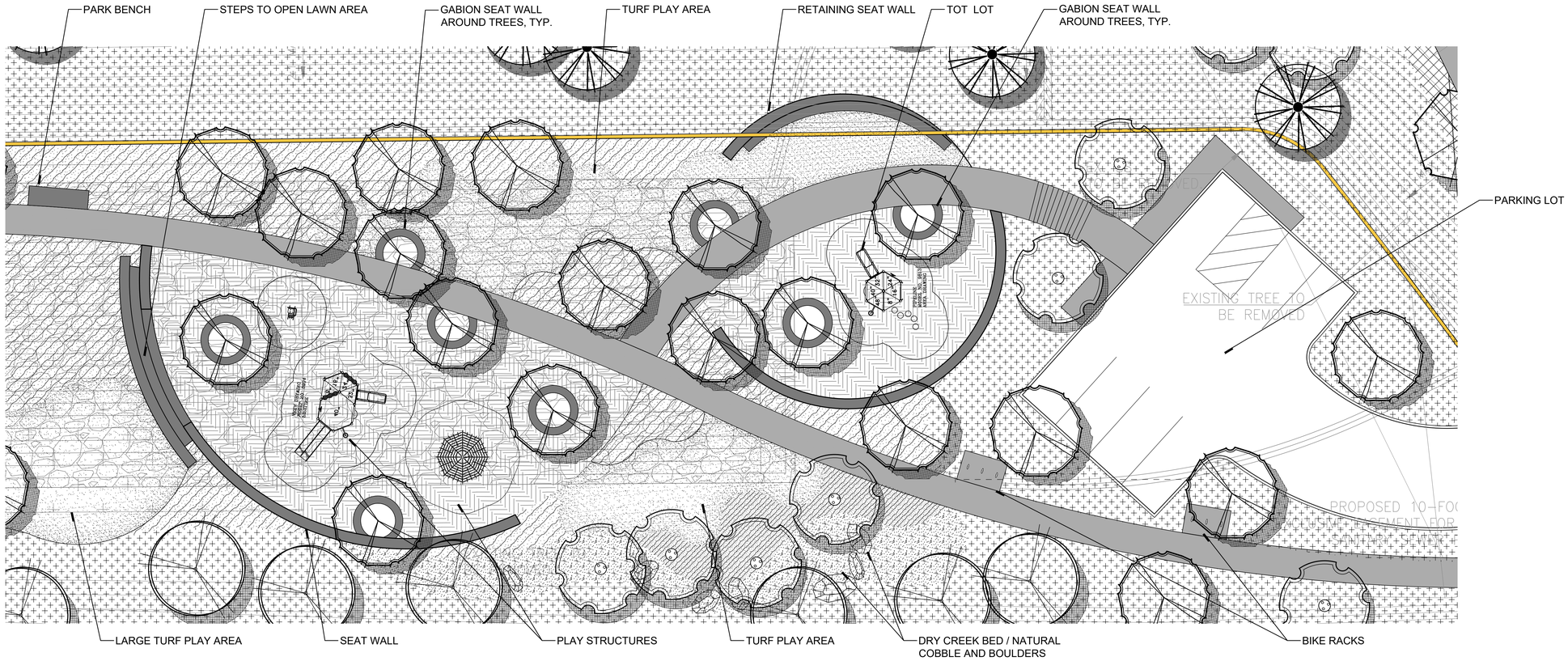
CONCEPTUAL LANDSCAPE PLAN

FOR RESIDENTIAL PLANNED DEVELOPMENT PURPOSES
LOCATED IN THE CITY OF SIERRA MADRE,
IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

PLOT DATE	JOB NUMBER
01/23/24	22-017-00

SCALE:	DRAFTED BY: EC	SHT. 5 OF 9 SHTS.
PER PLAN	CHECKED BY: AW	

G:\22-PROJECTS\22-017-00\LANDARCH\CONCEPT\22-017 CONCEPT PLAN.DWG (01-23-24 11:16:27AM) Plotted by: mineo



PARK SITE AMENITIES

TIMBER LOG SCRAMBLE

LOG STEPPERS

TIMBER LOG PLAY

TIMBER PLAY STRUCTURE

OPEN TURF PLAY AREA

BOULDERS / DRY CREEK BED

PARK BENCH

PARK BENCH

GABION BENCH SEATING AT TREE LOCATIONS

BIKE RACKS

PICNIC TABLES

SCALE: 1"=20'-0"

NO.	REVISIONS	DATE	BY

gmp
3176 Lionshead Ave.
Suite 102
Carlsbad, CA 92010
gmplandarch.com
T 858 558 8977
LANDSCAPE ARCHITECTURE & PLANNING

LICENSED LANDSCAPE ARCHITECT
Stephen J. Streza
1-23-24
STATE OF CALIFORNIA
NOT FOR CONSTRUCTION

MAJOR LAND DIVISION

CONCEPTUAL PARK SITE ENLARGEMENT

FOR RESIDENTIAL PLANNED DEVELOPMENT PURPOSES
LOCATED IN THE CITY OF SIERRA MADRE,
IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

PLOT DATE 01/23/24	JOB NUMBER 22-017-00	
SCALE: PER PLAN	DRAFTED BY: EC CHECKED BY: AW	SHT. 6 OF 9 SHTS.

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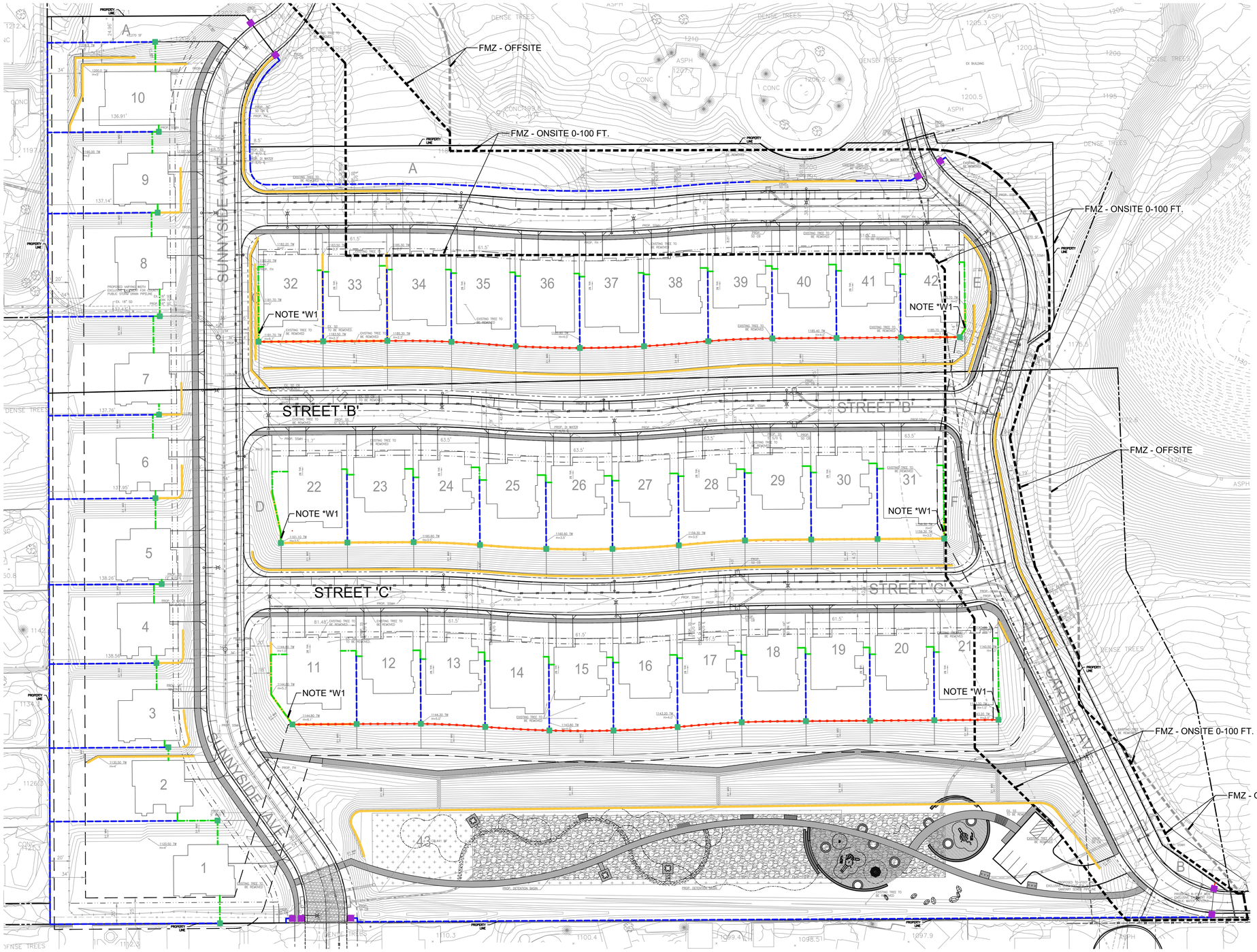
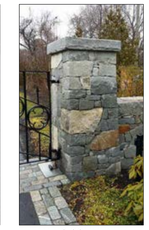


WALLS, FENCING, AND COMMUNITY PILASTERS

EXSISTING CARTER AVENUE ENTRY
NEIGHBORHOOD PILASTERS SHOULD MATCH

THEMATIC COMMUNITY
PILASTER / ENTRY
MONUMENT



THEMATIC COMMUNITY
PILASTER / ENTRY
MONUMENT

SLUMP BLOCK WALL WITH SLUMP BLOCK PILASTER
RETAINING WALLS THROUGHOUT THE PROJECT
SHOULD BE SLUMP BLOCK TO MAINTAIN UNIFORMITY.

SLUMP BLOCK WALL WITH SAC FINISH

NOTE *W1:
FIRST 1-2 PANELS AT CORNERS TO TRANSITION FROM FULL
SLUMP WALL TO COMBO FENCE WITH 2' SLUMP WALL WITH 4'
VIEW FENCE

TOP OF SLOPE VIEW FENCE
STEEL FENCE (COLOR: BLACK OR BRONZE)

SLUMPBLOCK RETAINING WALLS AT PARK

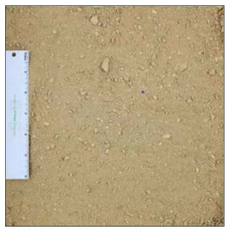
CONCEPTUAL FENCING SCHEDULE

- SLUMP BLOCK
- SLUMP BLOCK WITH SAC FINISH
- TUBULAR STEEL VIEW FENCE
- RETAINING WALL PER CIVIL PLANS
- SLUMP BLOCK PILASTER WITH SAC FINISH
- THEMATIC COMMUNITY PILASTER / MONUMENT

SITE PAVING

GREY CONCRETE WITH SANDBLAST FINISH OR
SIMILAR

PRE-CAST CONCRETE PAVERS OR
COLORED CONCRETE



CALIFORNIA GOLD D.G. OR SIMILAR

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gmp
3176 Lionshead Ave.
Suite 102
Carlsbad, CA 92010
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LANDSCAPE
ARCHITECTURE
& PLANNING

LICENSED LANDSCAPE ARCHITECT
Robert J. Streeter
NOT FOR CONSTRUCTION
STATE OF CALIFORNIA

SCALE: 1"=40'-0"

MAJOR LAND DIVISION

CONCEPTUAL LANDSCAPE FENCE PLAN

FOR RESIDENTIAL PLANNED DEVELOPMENT PURPOSES
LOCATED IN THE CITY OF SIERRA MADRE,
IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

PLOT DATE	JOB NUMBER	
01/23/24	22-017-00	
SCALE: PER PLAN	DRAFTED BY: EC CHECKED BY: AW	SHT. 7 OF 9 SHTS.

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PLANT IMAGES

Olea europaea 'Wilsoni'
Wilson Fruitless Olive

Platanus racemosa
Sycamore Tree

Quercus agrifolia
Coast Live Oak

Quercus virginiana 'Heritage'
Southern Live Oak

Cercis occidentalis
Western Redbud

Chilopsis linearis
Desert Willow

Lagerstroemia indica
Crape Myrtle

Arbutus 'Marina'
Strawberry tree

Arbutus Unedo
Strawberry tree

Jacaranda mimosifolia
Jacaranda

Koelreuteria paniculata
Golden Rain Tree

Laurus nobilis
Sweet Bay

Quercus ilex
Holly Oak

Pinus canariensis
Canary Island Pine

Pistacia chinensis
Chinese Pistache

Prunus ilicifolia ssp. Lyonii
Catalina Cherry

Rhus lancea
African Sumac

Sambucus mexicana
Mexican Elderberry

Chitalpa x tashkentensis
Chitalpa

Aloe bainesii
Tree Aloe

Calliandra haematocephala
Pink Powder Puff

Cereus peruvianus
Peruvian Apple Cactus

Dracaena draco
Dragon Tree

Heteromeles arbutifolia
Toyon

Rhus integrifolia
Lemonade Berry

Strelitzia nicolai
Giant Bird of Paradise

Arbutus unedo 'Compacta'
Compact Strawberry Tree

Arctostaphylos manzanita
Manzanita

Baccharis sarothroides
Desert Broom

Bougainvillea 'Torch Glow'
Torch Glow Bougainvillea

Callistemon 'Little John'
Little John Bottlebrush

Camellia japonica
Camellia

Ceanothus griseus horizontalis 'Yankee Point'
Yankee Point Ceanothus

Olea europaea 'Montra'
Little Ollie Olive

Pittosporum t. 'Marjorie Channon'
Marjorie Channon Pittosporum

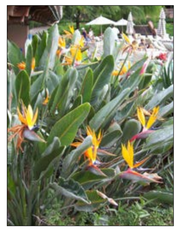
Pittosporum tobira
Mock Orange

Rhamnus californica
Coffeberry

Rhaphiolepis i. 'Springtime'
Springtime Indian Hawthorn

Rhaphiolepis u. 'Minor'
White Compact Yeddo Hawthorn

Rhus ovata
Sugar Bush


Strelitzia reginae
Bird of Paradise

Westringia f. 'Morning Light'
Morning Light Coast Rosemary

Westringia fruiticosa
Coast Rosemary

Agave attenuata
Foxtail Agave

Aloe arborescens
Torch Aloe

Alyogyne huegelii
Blue Hibiscus

NO.	REVISIONS	DATE	BY

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3176 Lionshead Ave.
Suite 102
Carlsbad, CA 92010
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T 858 558 8977
LANDSCAPE ARCHITECTURE & PLANNING

LICENSED LANDSCAPE ARCHITECT
Scott J. Streza
No. 5127
Exp. 12-31-24
STATE OF CALIFORNIA
NOT FOR CONSTRUCTION

MAJOR LAND DIVISION

CONCEPTUAL SITE IMAGERY

FOR RESIDENTIAL PLANNED DEVELOPMENT PURPOSES
LOCATED IN THE CITY OF SIERRA MADRE,
IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

PLOT DATE	JOB NUMBER	
01/23/24	22-017-00	
SCALE: PER PLAN	DRAFTED BY: EC CHECKED BY: AW	SHT. 8 OF 9 SHTS.

G:\22-PROJECTS\22-017-00\LANDARCH\CONCEPT\CONCEPT PLAN.DWG (01-23-24 11:16:38AM) Plotted by: nitreza

PLANT IMAGES (CONT.)

Aloe arborescens
Torch Aloe

Carissa macrocarpa 'Tomlinson'
Tomlinson Natal Plum

Cistus x purpureus
Orchid Rockrose

Clivia miniata
Bush Lily

Cotoneaster lacteus
Red Clusterberry Cotoneaster

Dasylirion wheeleri
Grey Desert Spoon

Dietes bicolor
Fortnight Lily

Hesperaloe parviflora
Red yucca

Kalanchoe spp.
Kalanchoe Species

Kniphofia uvaria
Red-Hot Poker

Myoporum x 'Putah Creek'
Putah Creek Myoporum

Pelargonium peltatum
Ivy Geranium

Rosa f. 'Iceberg'
Iceberg Rose

Rosa 'Flower Carpet Red'
Red Carpet Rose

Rosmarinus o. 'Tuscan Blue'
Tuscan Blue Rosemary

Ceanothus griseus horizontalis 'Yankee Point'
Yankee Point Ceanothus

Lantana c. 'New Gold'
Lantana New Gold

Leonotis leonurus
Lion's Tail

Ligustrum j. 'Texanum'
Texas Privet

Leucophyllum laevigatum
Chihuahuan Sage

Melaleuca nesophila
Pink Melaleuca

Opuntia engelmannii
Engelmann Prickly Pear

Phlomis fruticosa
Jerusalem Sage

Salvia greggii
Autumn Sage

Carex praegracilis
Western Meadow Sedge

Chondropetalum tectorum
Cape Rush

Festuca 'Elijah Blue'
Elijah Blue Fescue

Helictotrichon sempervirens
Blue Oat Grass

Juncus effusus pacificus
Pacific Rush

Leymus c. 'Canyon Prince'
Canyon Prince Wild Rye

Miscanthus capensis
Silvergrass

Muhlenbergia microsperma
Littleseed Muhly

Sesleria autumnalis
Autumn Moor Grass

Baccharis pilularis 'Pigeon Point'
Pigeon Point Coyote Bush

Myoporum parvifolium
Trailing Myoporum

Rosmarinus o. 'Prostratus'
Prostrate Rosemary

Carissa macrocarpa prostrata
Prostrate Natal Plum

Gazania x 'Burgundy'
Burgundy Gazania

Senecio mandraliscae
Blue Chalk Sticks

Turf Marathon III
Marathon III

Bougainvillea 'La Jolla'
La Jolla Bougainvillea

Clytostoma Callistegioides
Lavender Trumpet Vine

Distictis buccinatoria
Blood Red Trumpet Vine

Distictis x 'Rivers'
Royal Trumpet Vine

HARDENBERGIA VIOLACEA
LILAC VINE

Pandorea jasminoides
Bower Vine

Pyracantha x 'Mohave'
Mohave Pyracantha

Vigna caracalla
Snail Vine

Wisteria sinensis
Chinese Wisteria

NO.	REVISIONS	DATE	BY

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LANDSCAPE ARCHITECTURE & PLANNING

LICENSED LANDSCAPE ARCHITECT
Robert J. Streza
1-23-24
STATE OF CALIFORNIA
NOT FOR CONSTRUCTION

MAJOR LAND DIVISION

CONCEPTUAL LANDSCAPE PLANT IMAGERY

FOR RESIDENTIAL PLANNED DEVELOPMENT PURPOSES
LOCATED IN THE CITY OF SIERRA MADRE,
IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

PLOT DATE	JOB NUMBER
01/23/24	22-017-00

SCALE:	DRAFTED BY: EC	SHT. 9 OF 9 SHTS.
PER PLAN	CHECKED BY: AW	

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THE MEADOWS AT BAILEY CANYON

PROJECT DATA

Project Address:
700 N Sunnyside Avenue
Sierra Madre, CA 91024

Assessor's Parcel Number:
5761-002-008

PROJECT DESCRIPTION

The development includes 42 detached single-family dwellings on around nine acres of a 17 acre site. It includes public roadways, open space, a neighborhood park, grading and landscape buffers, as well as the perpetual conservation of 35 acres of open space.

PROJECT OWNER

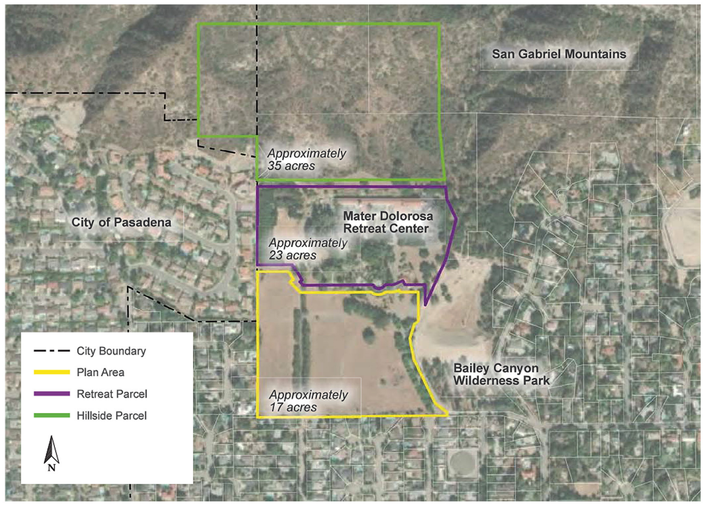
NUWI Sierra Madre, LLC

PROJECT TEAM

LCRA Architects

Robert Hidey Architects

Harvest Architecture



VICINITY MAP

Renderings are artist conception based on preliminary information, not to scale and subject to change

THE MEADOWS AT BAILEY CANYON

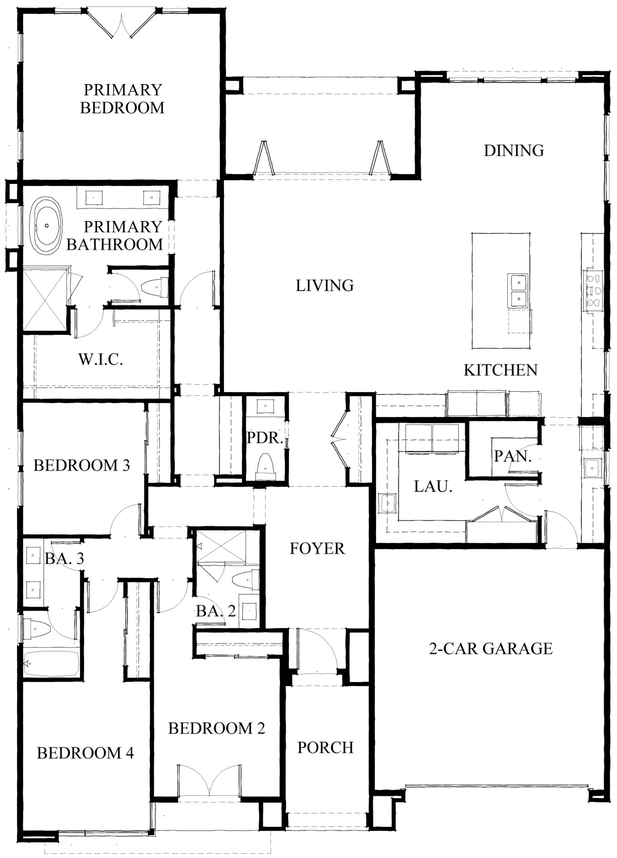
PLAN 1 - CONTEMPORARY SPANISH

1-Story
Single Family Home

2,700-2,800 SF Home Size
8,000-10,00 SF Lot Size

4 Bed / 3.5 Bath

2-Car Garage



HOME FEATURES:

- Solar with EV-Ready
- Open Concept Floorplan
- Gourmet Kitchen
- Covered Veranda with Large Backyard

RHA
ROBERT HIDEY ARCHITECTS

Floor plans, maps and renderings are artist conception based on preliminary information, not to scale and subject to change

THE MEADOWS AT BAILEY CANYON

CONTEMPORARY SPANISH

1-Story Single Family Home	2,700-2,800 SF Home Size 8,000-10,000 SF Lot Size	4 Bed / 3.5 Bath	2-Car Garage

FRONT ELEVATION

REAR ELEVATION

RHA
ROBERT HIDEY ARCHITECTS

Renderings are artist conception based on preliminary information, not to scale and subject to change

THE MEADOWS AT BAILEY CANYON

CONTEMPORARY SPANISH

1-Story Single Family Home	2,700-2,800 SF Home Size 8,000-10,000 SF Lot Size	4 Bed / 3.5 Bath	2-Car Garage

RIGHT ELEVATION

LEFT ELEVATION

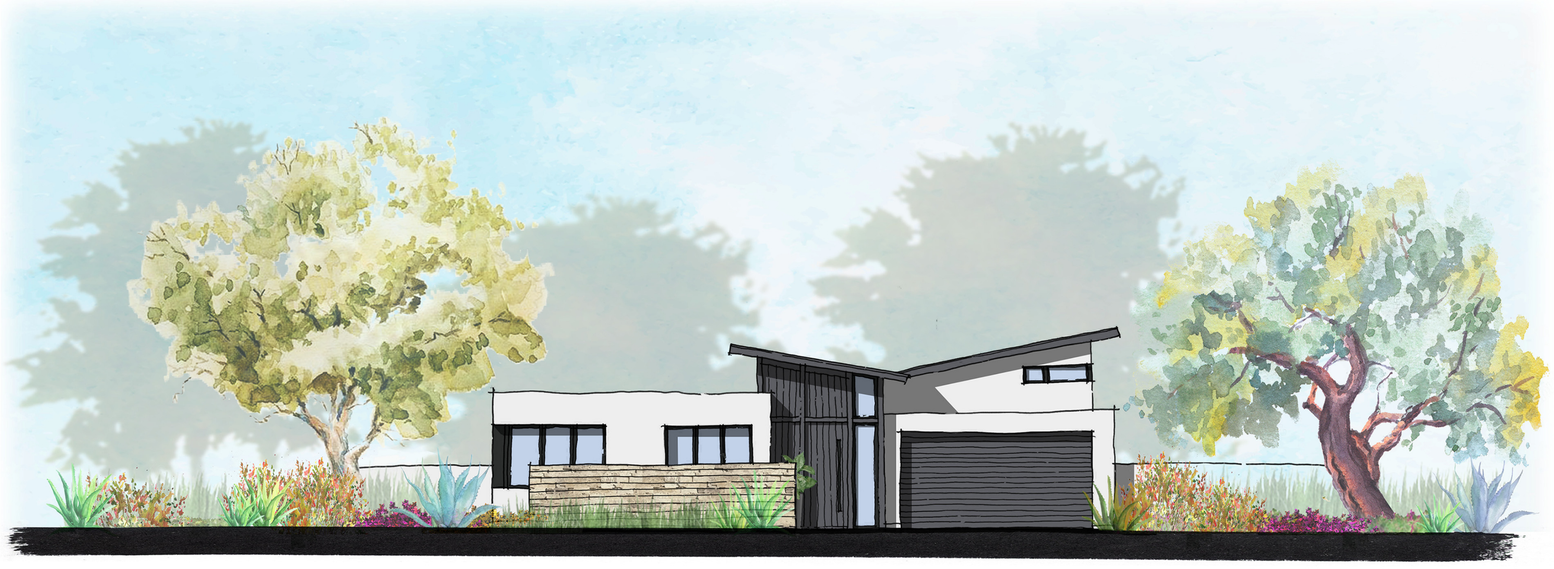
RHA
ROBERT HIDEY ARCHITECTS

Renderings are artist conception based on preliminary information, not to scale and subject to change

THE MEADOWS AT BAILEY CANYON

MODERN

1-Story Single Family Home	2,700-2,800 SF Home Size 8,000-10,000 SF Lot Size	4 Bed / 3.5 Bath	2-Car Garage



FRONT ELEVATION

REAR ELEVATION

Renderings are artist conception based on preliminary information, not to scale and subject to change

THE MEADOWS AT BAILEY CANYON

MODERN

1-Story Single Family Home	2,700-2,800 SF Home Size 8,000-10,000 SF Lot Size	4 Bed / 3.5 Bath	2-Car Garage

RIGHT ELEVATION

LEFT ELEVATION

Renderings are artist conception based on preliminary information, not to scale and subject to change

THE MEADOWS AT BAILEY CANYON

1-Story Single Family Home	2,700-2,800 SF Home Size 8,000-10,000 SF Lot Size	4 Bed / 3.5 Bath	2-Car Garage

CONTEMPORARY CRAFTSMAN

CONTEMPORARY FARMHOUSE

Renderings are artist conception based on preliminary information, not to scale and subject to change

THE MEADOWS AT BAILEY CANYON

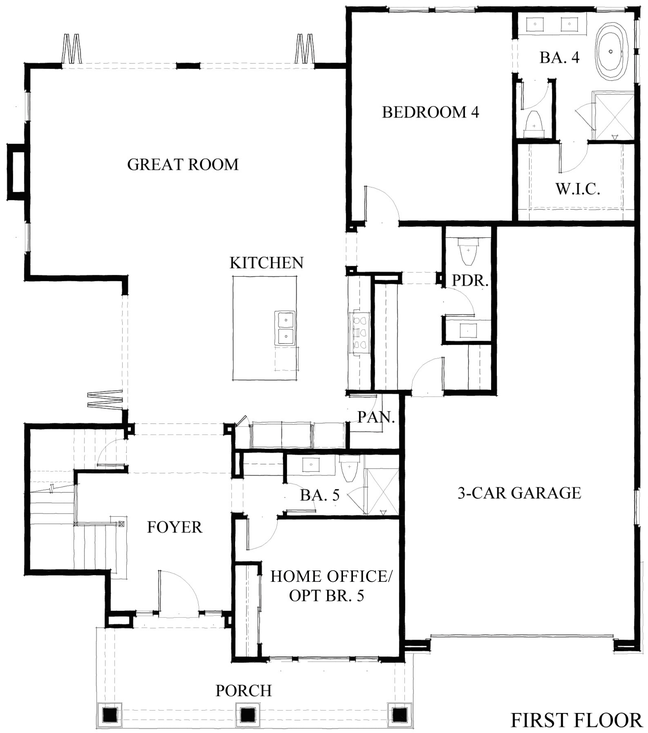
PLAN 2 - CONTEMPORARY CRAFTSMAN

2-Story
Single Family Home

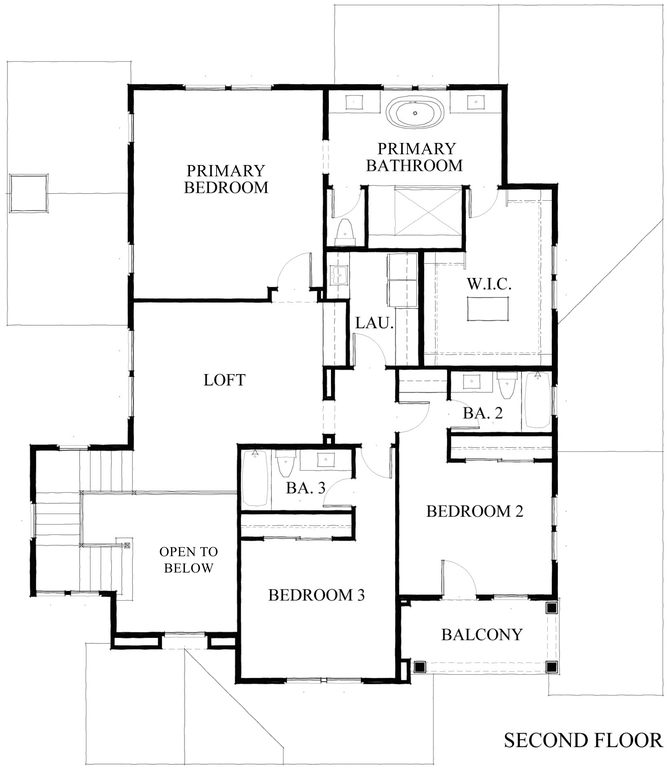
3,000-3,100 SF Home Size
8,000-10,00 SF Lot Size

5 Bed / 5.5 Bath

3-Car Garage



FIRST FLOOR



SECOND FLOOR

HOME FEATURES:

- Solar with EV-Ready
- Open Concept Floorplan
- Gourmet Kitchen
- Second Primary Down
- Home Office
- Upstairs Loft
- Side Courtyard

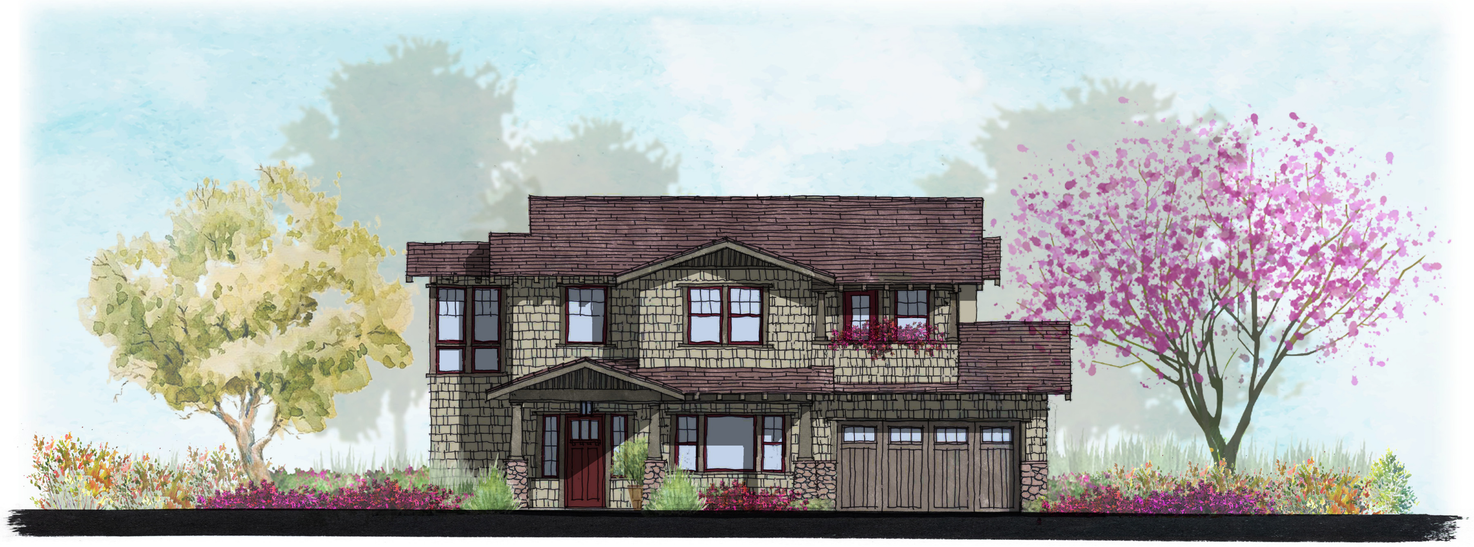
HARVEST ARCHITECTURE

Floor plans, maps and renderings are artist conception based on preliminary information, not to scale and subject to change

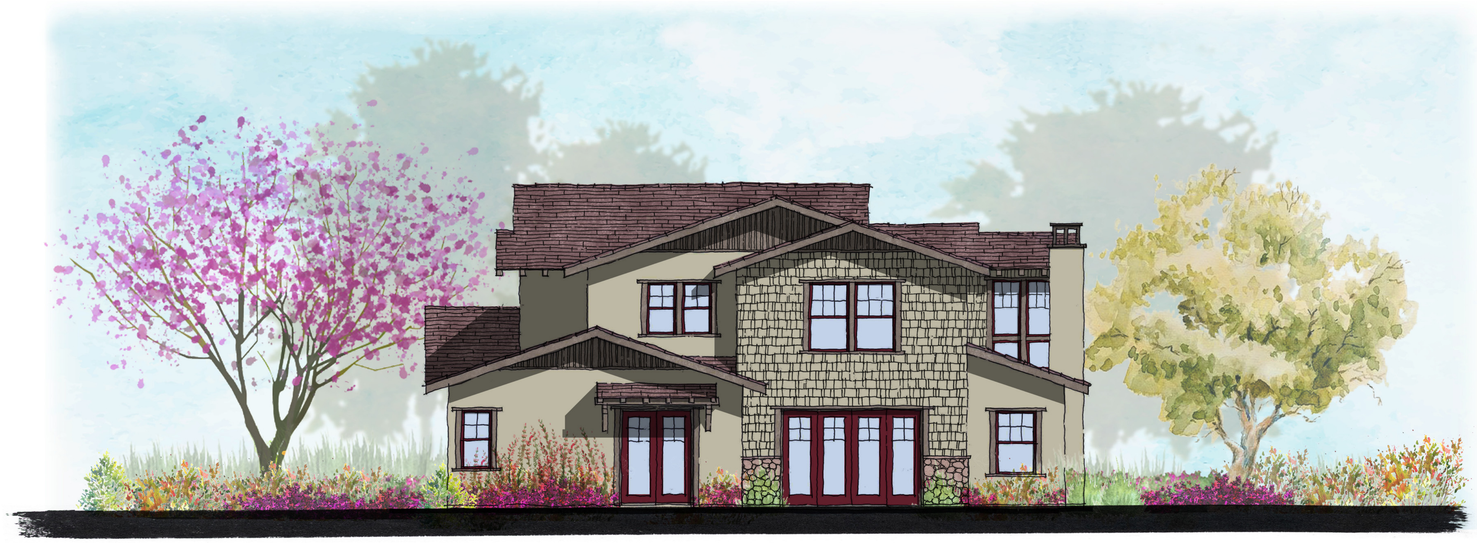
THE MEADOWS AT BAILEY CANYON

PLAN 2 - CONTEMPORARY CRAFTSMAN

2-Story Single Family Home	3,000-3,100 SF Home Size 8,000-10,000 SF Lot Size	5 Bed / 5.5 Bath	3-Car Garage



FRONT ELEVATION



REAR ELEVATION

HARVEST ARCHITECTURE

Floor plans, maps and renderings are artist conception based on preliminary information, not to scale and subject to change

THE MEADOWS AT BAILEY CANYON

PLAN 2 - CONTEMPORARY CRAFTSMAN

2-Story Single Family Home	3,000-3,100 SF Home Size 8,000-10,000 SF Lot Size	5 Bed / 5.5 Bath	3-Car Garage

RIGHT ELEVATION

LEFT ELEVATION

HARVEST ARCHITECTURE

Floor plans, maps and renderings are artist conception based on preliminary information, not to scale and subject to change

THE MEADOWS AT BAILEY CANYON

MODERN

2-Story Single Family Home	3,000-3,100 SF Home Size 8,000-10,000 SF Lot Size	5 Bed / 5.5 Bath	3-Car Garage

FRONT ELEVATION

REAR ELEVATION

Renderings are artist conception based on preliminary information, not to scale and subject to change

THE MEADOWS AT BAILEY CANYON

MODERN

2-Story Single Family Home	3,000-3,100 SF Home Size 8,000-10,000 SF Lot Size	5 Bed / 5.5 Bath	3-Car Garage

RIGHT ELEVATION

LEFT ELEVATION

Renderings are artist conception based on preliminary information, not to scale and subject to change

THE MEADOWS AT BAILEY CANYON

2-Story Single Family Home	3,000-3,100 SF Home Size 8,000-10,000 SF Lot Size	5 Bed / 5.5 Bath	3-Car Garage

CONTEMPORARY FARMHOUSE

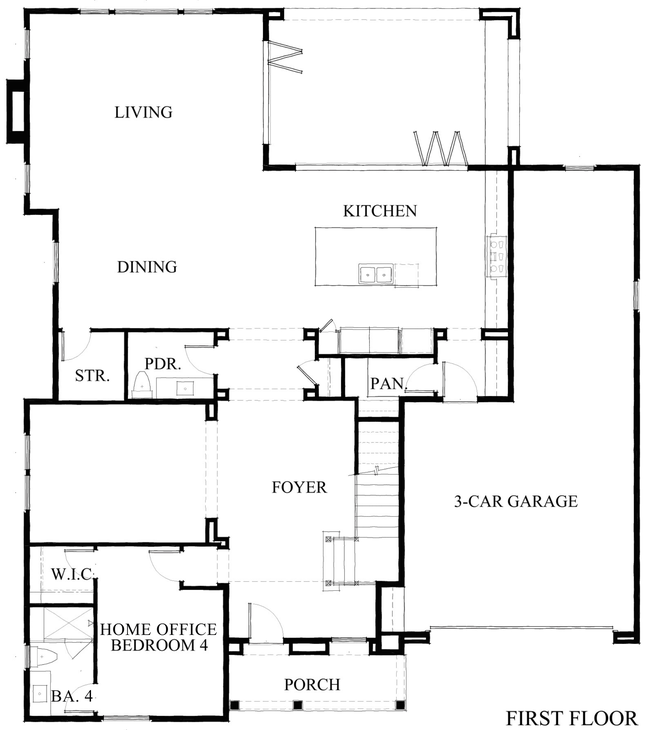
CONTEMPORARY SPANISH

Renderings are artist conception based on preliminary information, not to scale and subject to change

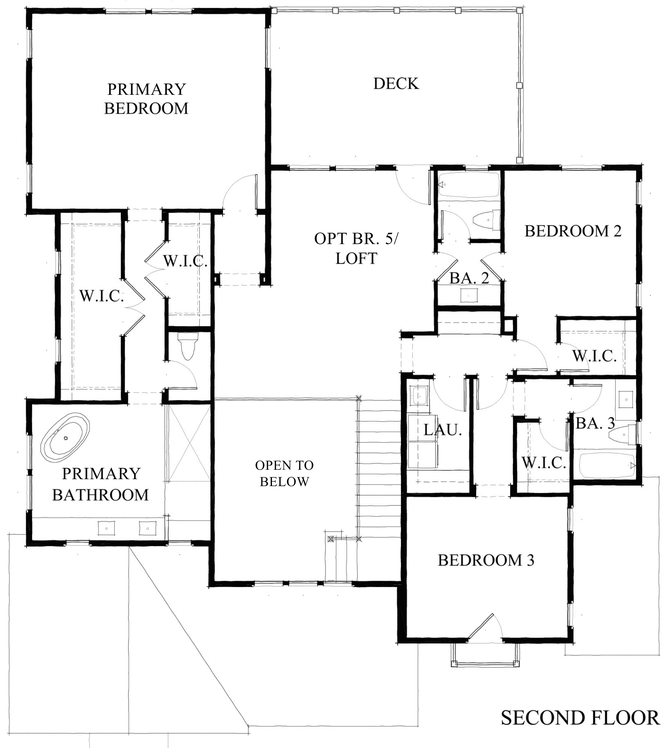
THE MEADOWS AT BAILEY CANYON

PLAN 3 - CONTEMPORARY FARMHOUSE

2-Story Single Family Home	3,100-3,200 SF Home Size 8,000-10,00 SF Lot Size	5 Bed / 4.5 Bath	3-Car Garage



FIRST FLOOR



SECOND FLOOR

HOME FEATURES:

- Solar with EV-Ready
- Open Concept Floorplan
- Gourmet Kitchen
- Home Office
- Upstairs Loft
- Covered Veranda with Large Backyard

LCRA

Floor plans, maps and renderings are artist conception based on preliminary information, not to scale and subject to change

THE MEADOWS AT BAILEY CANYON

CONTEMPORARY FARMHOUSE

2-Story Single Family Home	3,100-3,200 SF Home Size 8,000-10,000 SF Lot Size	5 Bed / 4.5 Bath	3-Car Garage

FRONT ELEVATION

REAR ELEVATION

LCRA

Renderings are artist conception based on preliminary information, not to scale and subject to change

THE MEADOWS AT BAILEY CANYON

CONTEMPORARY FARMHOUSE

2-Story Single Family Home	3,100-3,200 SF Home Size 8,000-10,000 SF Lot Size	5 Bed / 4.5 Bath	3-Car Garage

RIGHT ELEVATION

LEFT ELEVATION

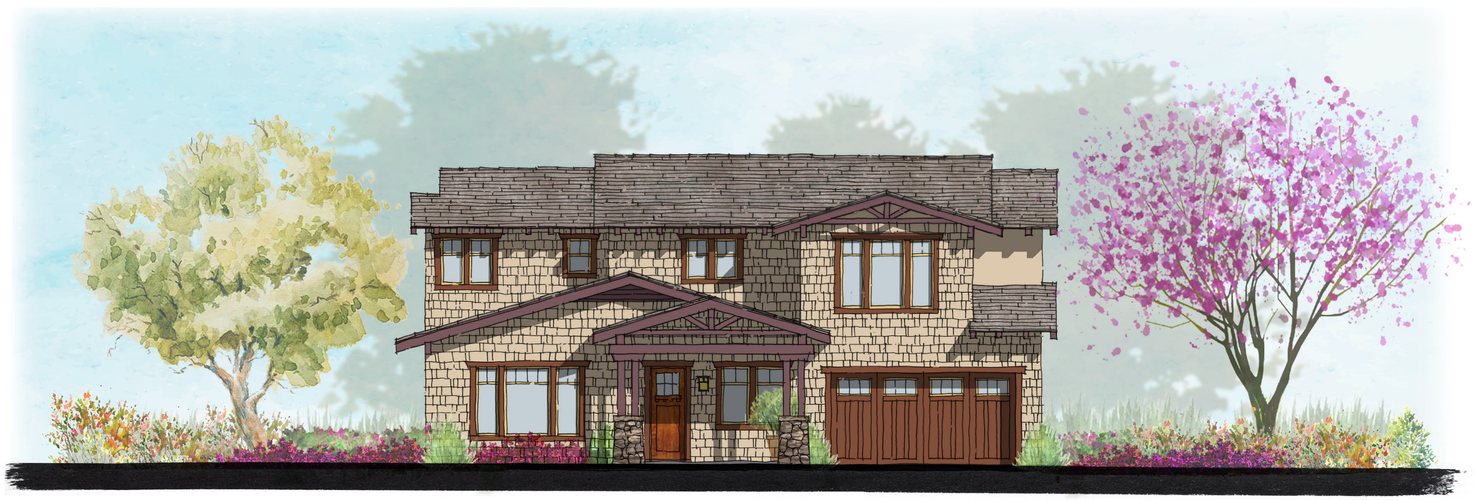
LCRA

Renderings are artist conception based on preliminary information, not to scale and subject to change

THE MEADOWS AT BAILEY CANYON

2-Story Single Family Home	3,100-3,200 SF Home Size 8,000-10,000 SF Lot Size	5 Bed / 4.5 Bath	3-Car Garage

MODERN



CONTEMPORARY CRAFTSMAN

Renderings are artist conception based on preliminary information, not to scale and subject to change

THE MEADOWS AT BAILEY CANYON

2-Story
Single Family Home

3,100-3,200 SF Home Size
8,000-10,000 SF Lot Size

5 Bed / 4.5 Bath

3-Car Garage

CONTEMPORARY SPANISH

Renderings are artist conception based on preliminary information, not to scale and subject to change

GEOLOGIC AND GEOTECHNICAL ENGINEERING REPORT,
Tentative Tract Map 83966, APN 5761-002-008,
700 North Sunnyside Avenue, Sierra Madre, California

for

NUWI Sierra Madre, LLC

September 16, 2022 W.O. 6747

MDN 23118

6634 Valjean Avenue, Van Nuys, California 91406 Phone: (818) 785-2158 Fax: (818) 785-1548

GeoSoils Consultants Inc.
GEOTECHNICAL GEOLOGIC ENVIRONMENTAL

September 16, 2022
W.O. 6747

NUWI Sierra Madre, LLC
2001 Wilshire Boulevard, Suite 401
Santa Monica, California 90403

Attention: Mr. Benny Sam

Subject: Geologic and Geotechnical Engineering Report for Tentative Tract Map 83966, 700 North Sunnyside Avenue, APN 5761-002-008, Sierra Madre, California

As requested, GeoSoils Consultants, Inc. (GSC) has performed a geologic and geotechnical engineering investigation on the subject tract. The purpose of this investigation is to provide geologic and geotechnical engineering recommendations for site grading and foundations. The report presents the results of our research, subsurface exploration, laboratory testing, site reconnaissance, and provides geotechnical engineering recommendations for site grading. Grading of the site is considered feasible from a geologic and geotechnical engineering prospective, provided the recommendations presented herein are incorporated into the design and implemented during grading.

We appreciate this opportunity to be of service to you. If you have any questions regarding this report, or if we may be of further assistance to you, please do not hesitate to contact us.

Very truly yours,

GEOSOILS CONSULTANTS, INC.

RUDY F. RUBERTI
CEG 1708

MAHAN PASDARPOUR
PE 90111

cc: (1) Addressee

MDN 23118

September 16, 2022
W.O. 6747

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 Scope of Services 1
1.2 Limitations 2
1.3 Site Description 3
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3.0 LABORATORY TESTING 4
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3.3 Expansive Soil 5
3.4 Consolidation Tests 5
3.5 Compaction Tests 5
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1.0 INTRODUCTION

The purpose of this investigation is to determine the geologic and geotechnical conditions on the site and their impact on proposed development, and to provide geologic and geotechnical engineering data and recommendations to aid in development of the subject site. The following sections provide a summary of the geologic and geotechnical engineering conditions on the site, and recommendations for site grading and stabilization, fill placement, and foundations.

This report has been prepared in accordance with generally accepted geotechnical engineering practices in the City of Sierra Madre at the time it was prepared. The report presents a brief description of the site, the geotechnical engineering characteristics of the area, the seismicity of the area, an engineering analysis of the site characteristics, conclusions, and recommendations to develop the site.

Opinions presented in this report are based on an inspection of the site, geologic mapping, a review of the regional geologic maps and seismic hazard reports subsurface exploration, review of previous consultant reports for the subject area, and our general knowledge of the geologic and soils engineering conditions in the site area. The opinions presented have been arrived at through the exercise of the generally understood standard of care for our profession and standard of engineering practice for the City of Sierra Madre, as we understand it.

1.1 Scope of Services

Our scope of services included the following:

- Site reconnaissance.
- Review of regional geologic maps, seismic hazard reports, and previous GSC reports.
- Excavated, sampled, and logged 12 hollow stem auger borings at the locations shown on Sheets 3 through 6, Geologic Maps.
- Preparation of Geologic Cross-Sections, Plates 1A and 1B.

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- Infiltration testing.
- Laboratory testing.
- Review of the tentative tract map.
- Engineering analyses.
- Preparation of this report.

1.2 Limitations

The findings and recommendations of this report were prepared in accordance with generally accepted professional geotechnical engineering principles and practice for the City of Sierra Madre at this time. We make no other warranty, either express or implied. The conclusions and recommendations contained in this report are based on-site conditions disclosed in our site investigation and the referenced reports. However, soil/rock conditions can vary significantly between borings; therefore, further refinements of our recommendations contained herein may be necessary due to changes in the building plans or what is encountered during site grading.

The recommendations provided in this report are applicable for preliminary development planning for the referenced tract provided that surface water will be kept from infiltrating into the subgrade adjacent to the house foundation systems. This may include, but not be limited to rainwater, roof water, landscape water and/or leaky plumbing. The lots are to be fine graded at the completion of construction to include positive drainage away from the structure and roof water will be collected via gutters, downspouts, and transported to the street in buried drainpipes. Home buyers should be cautioned against constructing open draining planters adjacent to the houses or obstructing the yard drainage in any way.

Since our investigation was based on the site conditions observed and engineering analyses, the conclusions and recommendations contained herein are professional opinions. Further, these opinions have been derived in accordance with standard engineering practices, and no warranty is expressed or implied.

1.3 Site Description

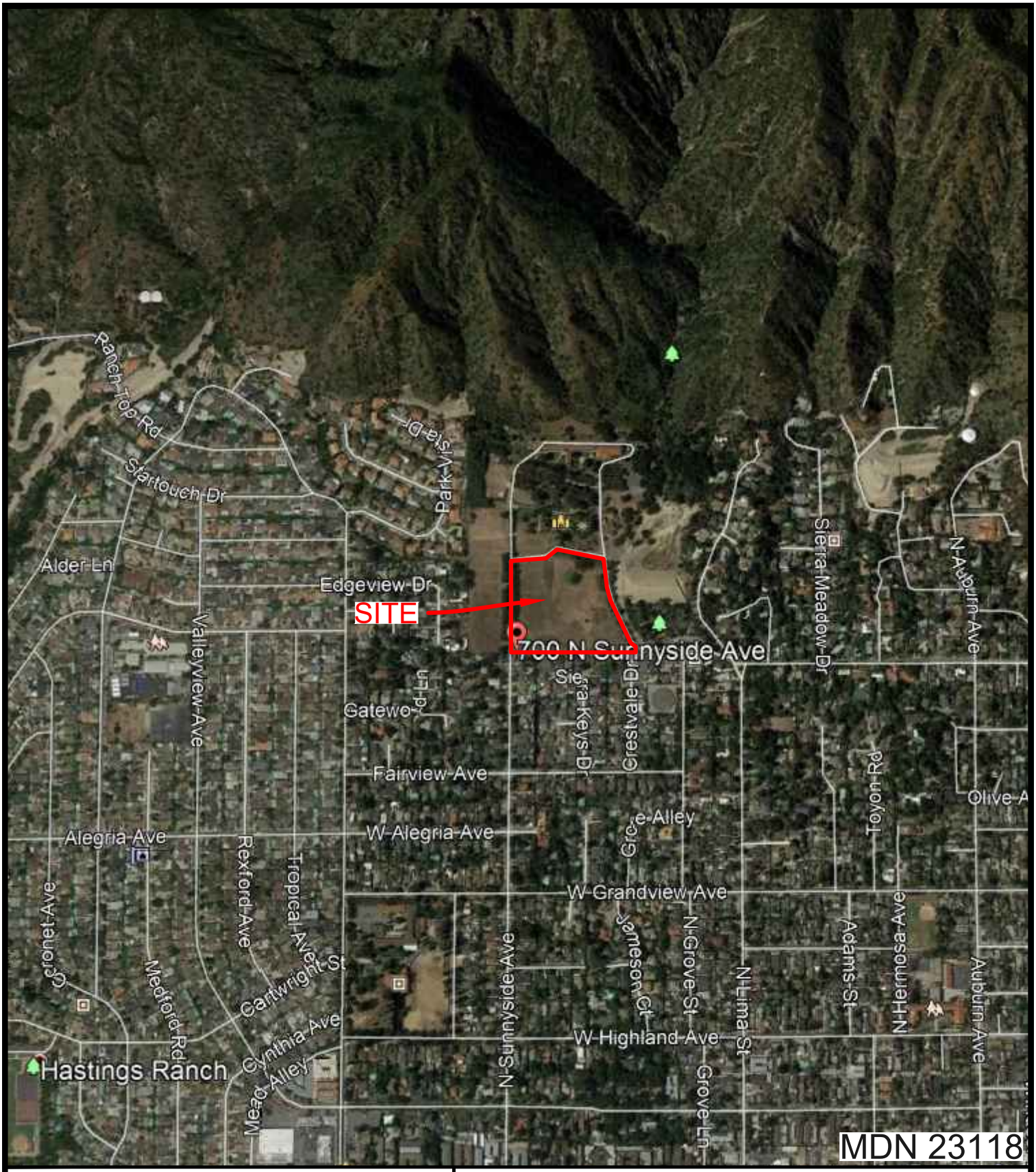
The subject site is located at 700 North Sunnyside Avenue, Sierra Madre, California (Figure 1). The legal description is APN 5761-002-008, Mater Dolorosa Passionist Retreat Center (MDPRC). The southern 16.5 acres are addressed in this report. The remaining 28.39 acres will continue to be owned and used by the MDPRC.

The southern portion of the property will be developed for single-family residential structures. Currently, the property is a vacant grass field with a paved access road traversing the western 1/3 of the site. This road provides access for the MDPRC buildings to the north. An additional access road traverses the eastern property boundary but is currently not in use. Large trees line both sides of the access roads and are also located across the northern portion of the site adjacent to another paved road that trend east west. Two graded planar pads have been created in the northwest and north-central portions of the site. The site gently tilts toward the south with a vertical elevation difference across the site of approximately 99 feet. An existing storm drain system runs through the site in a north-south direction.

1.4 Proposed Development

Proposed development consists of grading to create 42 lots for single-family residential structures, park site, and infiltration basin. The Tentative Tract Map was prepared by Fuscoe Engineering and is included as Sheets 1 through 6. Geologic Maps are included as Sheets 3 through 6. The park site and infiltration basin is proposed in the southern part of the site. Grading is anticipated to create level building areas, fill slopes retaining walls, and associated streets. The existing storm drain will be removed as part of the proposed development.

Fill slopes up to approximately 40 feet high are proposed on the site. Retaining walls to a maximum height of approximately 8 feet are proposed at the locations shown on Sheets 3 through 6. Geologic Cross-Sections are included as Plates 1A and 1B.



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SITE LOCATION MAP
TENTATIVE TRACT MAP 83966
700 NORTH SUNNYSIDE AVENUE
CITY OF SIERRA MADRE, CALIFORNIA
NUWI SIERRA MADRE, LLC

W.O. NO.:	6747
DATE:	9/2022

FIGURE 1

1.5 Previous Studies

Previous studies were performed on the site by GSC (References). Data from the previous studies was used in preparing this report.

2.0 FIELD EXPLORATION

Twelve hollow stem auger borings to a maximum depth of 30 feet were excavated on the site at the locations shown on Sheets 3 through 6. Borings B-1 through B-7 were excavated in June of 2014 and Borings B-8 through B-11 were excavated in October of 2020. Soil samples were obtained with a California ring sampler and SPT sampler. The hollow stem auger borings used the standard 140 lb. hammer with a 30-inch drop.

A representative from our firm continuously observed the borings, logged the subsurface conditions, and collected representative soil samples. All samples were stored in watertight containers and later transported to our laboratory for further visual examination and testing, as deemed necessary. After the borings were completed, the borings were backfilled with soil cuttings.

The enclosed Boring Logs (Plates A-1 to A-13) describes the vertical sequence of soils and materials encountered in the borings, based primarily on our field classifications and supported by our subsequent laboratory examination and testing.

3.0 LABORATORY TESTING

3.1 Soil Classification

Soil materials encountered within the property were classified and described in accordance with the Unified Soil Classification System and in general accordance with the current version of Test Method ASTM D 2488. The assigned group symbols are presented in the exploration logs, Appendix A.

3.2 In Situ Moisture Content and Dry Unit Weight

In-place moisture content and dry unit weight of selected, relatively undisturbed ring soil samples were determined in accordance with the current version of the Test Method ASTM D 2435 and Test Method ASTM D2216, respectively. Once the dry unit weights had been determined, in-place densities of underlying soil profile were estimated. In those cases where ring samples were obtained, the moisture content and dry unit weights are presented on Boring Log, Appendix A.

3.3 Expansive Soil

Expansion index testing was performed on selected bulk samples of the on-site soils in accordance with the current version of Test Method ASTM D4829-07. The test results are presented in Plate EI-1. Additional testing will be performed at the completion of grading. The test results indicate an expansion index of 2 (very low range).

3.4 Consolidation Tests

Ten consolidation tests were performed on selected ring samples. The samples were inundated at an approximate load of one ton per square foot to monitor the hydroconsolidation. Loads were applied to the samples in several increments in geometric progression and resulting deformations were recorded at selected time intervals. Results of the consolidation tests are presented on Plates C-1 through C-10.

3.5 Compaction Tests

Compaction tests were performed to determine to moisture density relationships of the typical surficial soils encountered on the site. The laboratory standard used was in accordance with ASTM Test Designation D-1557-12.

TABLE 1 COMPACTION TEST RESULTS			
Boring and Sample Depth	**Description**	**Maximum Dry Density (psf)**	**Optimum Moisture (%)**
B-2 @ 5-10'	Reddish brown, silty, very fine to medium SAND	118.0	10.5
B-8 @ 0-5'	Reddish brown, slightly silty, fine to coarse SAND	129.5	9.5
B-9 @ 2.5-7.5'	Brown, silty, fine to coarse SAND	130.5	90.
B-10 @ 0-5'	Brown, silty, fine to coarse SAND	131.5	8.5
B-12 @ 3-8'	Reddish brown, slightly silty, fine to coarse SAND	132.0	8.5

3.6 Chemical Tests

Chemical tests were performed on a representative sample and the onsite soil, and the results are presented in appendix B and discussed in Section 8.6.

3.7 Direct Shear Test

One remolded sample (remolded to 90 percent of the materials' maximum density) was sheared in a strain-control type Direct Shear Machine. The sample was sheared under varying confining loads in order to determine the Coulomb shear strength parameters: cohesion (c), and angle of internal friction (ϕ) for peak and residual strength conditions. The sample was tested in an artificially-saturated condition. The result is plotted and a linear approximation is drawn of the failure curve. Results are shown on the Shear Test Diagram, Plate SH-1 included in Appendix B.

4.0 GEOLOGIC ENVIRONMENT

Geologic conditions on the subject site were determined through research, field mapping, and subsurface exploration, and the results were superimposed on the Geologic Maps, Sheets 3 through 6. During grading, a geologist should be present to confirm the geologic conditions encountered on the site are consistent with those presented herein. The following sections present our findings concerning subsurface and groundwater conditions.

4.2 Regional Geologic Setting

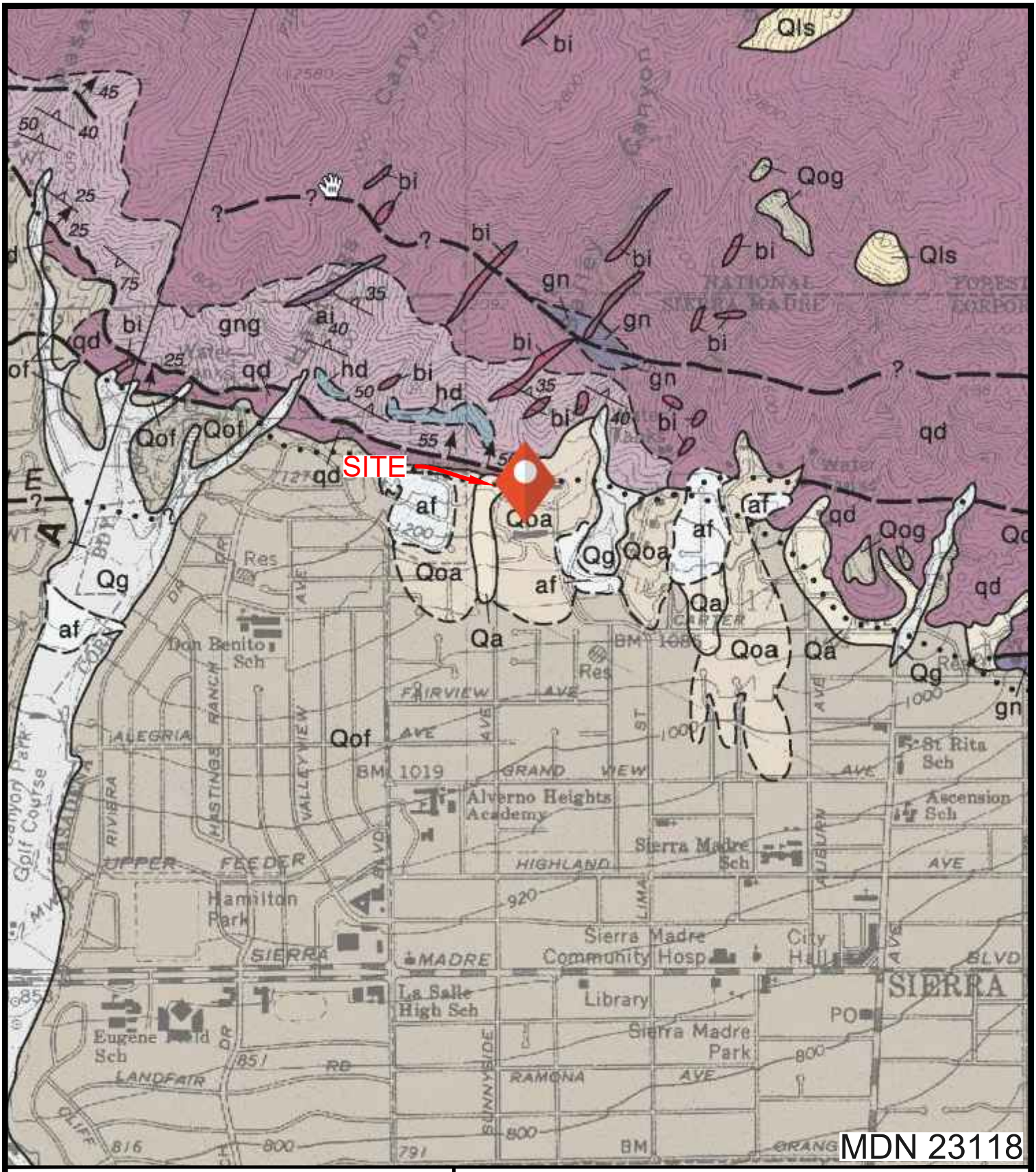
The subject property is located within the Transverse Ranges Geomorphic province of California. The Transverse Ranges consist of generally east-west trending mountains and valleys, which are in contrast to the north-northwest regional trend elsewhere in the state.

The structure of the Transverse Ranges is controlled by the effects of north-south compressive deformation (crustal shortening), which is attributed to convergence between the big bend of the San Andreas Fault north of the San Gabriel Mountains and the motion of the Pacific Plate. The valleys and mountains of the Transverse Ranges are typically bounded by a series of east west trending, generally north dipping reverse faults with left-lateral oblique movement.

The Transverse Ranges are characterized by a very thick, nearly continuous sequence of Upper Cretaceous through Quaternary sedimentary rocks that has been deformed into a series of east-west trending folds associated with thrust and reverse faults. This deformation has created intrabasin highlands and intervening lowlands. The closest such fault to the site is the Sierra Madre Fault, located approximately 700 feet north of the area of proposed development. A Regional Geologic Map is included as Figure 2.

4.3 Local Geologic Setting

The Sierra Madre Fault zone forms the boundary to the San Gabriel Mountains to the north and San Gabriel Valley to the south (Figure 3). The San Gabriel Mountains rise very abruptly from the valley and reach elevations of more than 6,000 feet at San Gabriel Peak in the northwest corner of the Mount Wilson 7.5 Minute Quadrangle. These mountains are composed of igneous and metamorphic rocks that range in age from Precambrian through Cretaceous.



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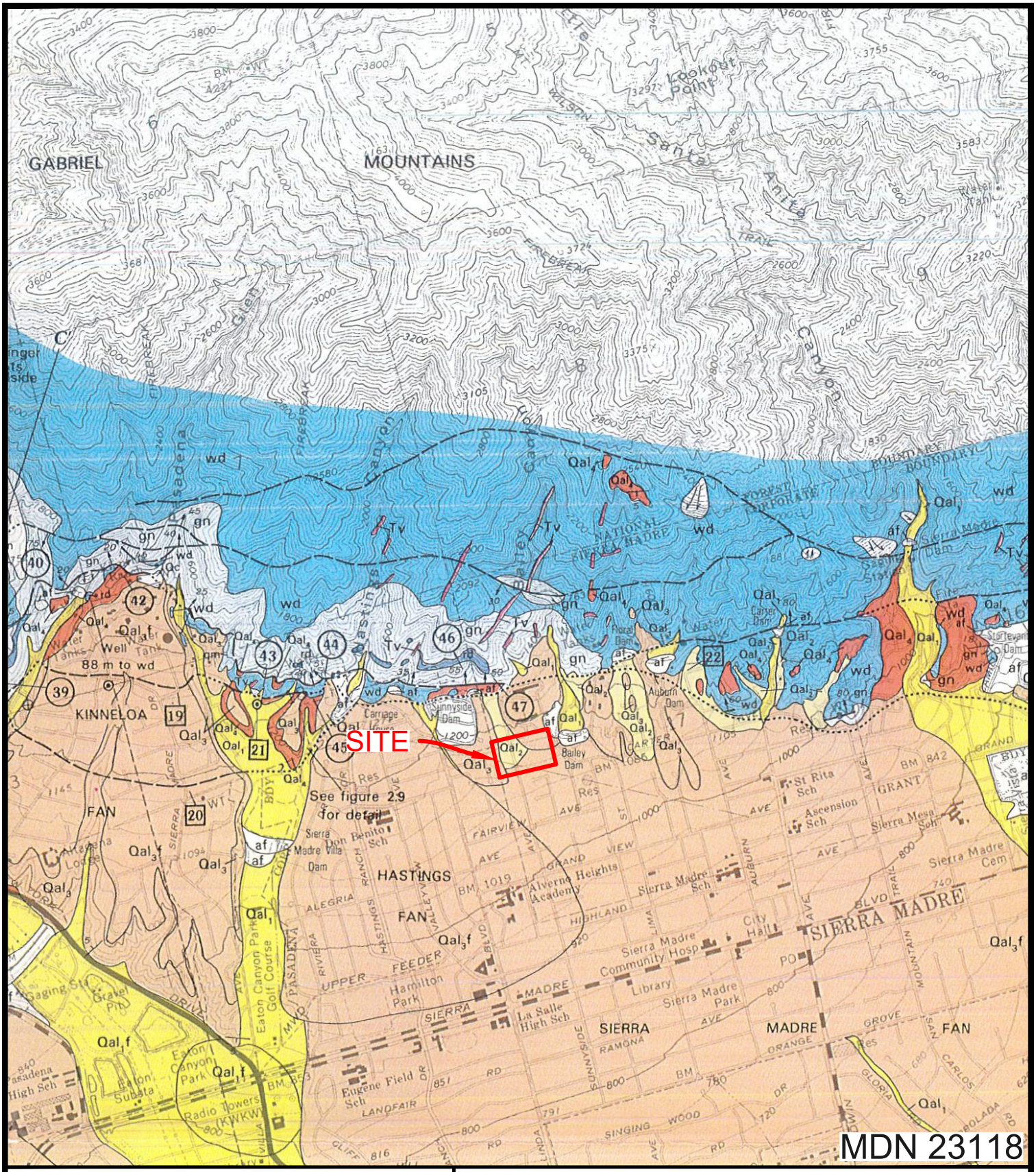
REGIONAL GEOLOGIC MAP
DIBBLEE, 1998
700 NORTH SUNNYSIDE AVENUE CITY
OF SIERRA MADRE, CALIFORNIA
NUWI SIERRA MADRE, LLC

W.O. NO.:	6747
DATE:	9/2022

FIGURE 2



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SIERRA MADRE FAULT ZONE MAP
USGS, 1997
700 NORTH SUNNYSIDE AVENUE CITY
OF SIERRA MADRE, CALIFORNIA
NUWI SIERRA MADRE, LLC

W.O. NO.:	6747
DATE:	9/2022

FIGURE 3

Streams draining from the San Gabriel Mountains have deposited several large, coalescing alluvial fans within the San Gabriel Valley and in the area of the subject site, creating a broad continuous alluvial fan deposit. Based on review of local geologic maps, the northwestern part of the site is underlain by Holocene alluvium (Qal2) with an estimated age of 1,000 to 11,000 year (Figure 3). The eastern and southern areas of the site are underlain by Pleistocene alluvial deposits (Qal3) with an estimate age of 11,000 to 200,000 years (Figure 3).

4.4 Earth Materials

Artificial Fill (af): The artificial fill consisted of brown, silty, very fine sands and fine to coarse sands that were dry to damp, and loose to medium dense. The thickness of the fill is up to 18 feet thick at the northwestern corner of the site. Additional fill is located along the alignment of the existing storm drain located in western part of the site; however, the depth of fill over the existing storm drain is unknown. The artificial fill is uncertified and unsuitable for structural support; therefore, should be removed and recompacted in areas of proposed grading. The limits of fill are poorly constrained and may vary from the limits shown on Sheets 3 through 6.

Terrace Deposits (Qt): The terrace deposits (older alluvium) consisted of reddish brown, silty/clayey, fine to coarse sands with gravels that were damp to moist, medium dense to very dense. These deposits were derived from runoff of the adjacent San Gabriel Mountains and were deposited on the valley floor. The terrace deposits extend to the maximum depth explored of 30 feet.

4.5 Groundwater

Surface water on the site is limited to precipitation falling directly on the site. Springs or seeps were not observed on the site.

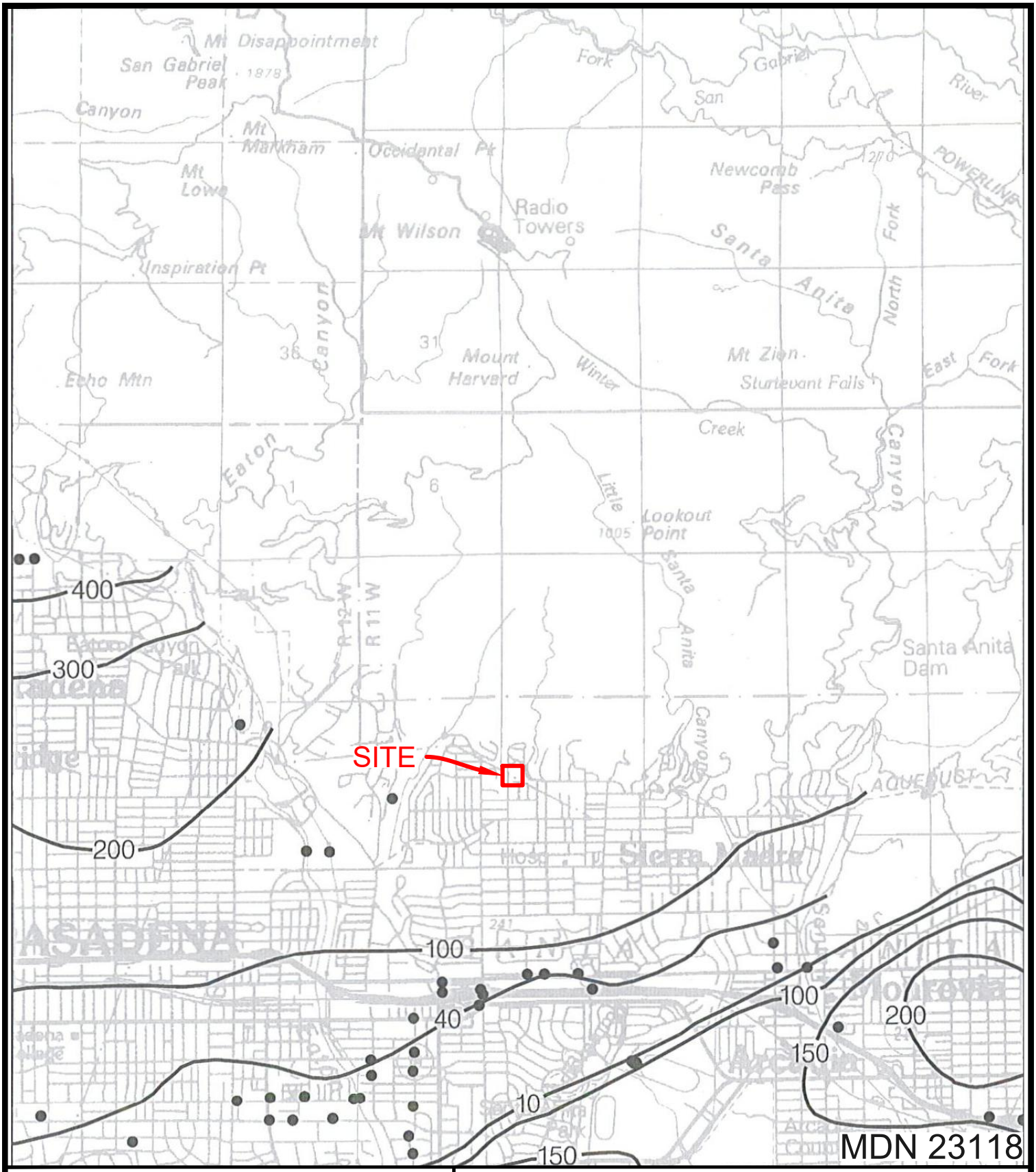
Groundwater was not encountered any of the borings. The groundwater maps from the Seismic Hazard Zone Report for the Mount Wilson 7.5 Minute Quadrangle (Figure 4) published by the California Geologic Survey indicate that the historic high groundwater is greater than 100 feet below existing ground surface.

5.0 FAULTING AND SEISMICITY

The project site is not located within an Alquist-Priolo Earthquake Fault Zone and there are no active faults on or adjacent to the property (Figure 5). Although there are no faults on or adjacent to the property, there are faults near the site that can cause moderate to intense ground shaking during the lifetime of the proposed development. Therefore, earthquake resistant design is recommended.

Earthquake Characterization: Earthquakes are characterized by magnitude, which is a quantitative measure of the earthquake strength, based on strain energy released during a seismic event. The magnitude of an earthquake is constant for any given site and is independent of the site in question.

Earthquake Intensity: The intensity of an earthquake at a random site is not constant and is subject to variations. The intensity is an indirect measurement of ground motion at a particular site and is affected by the earthquake magnitude, the distance between the site and the hypocenter (the location on the fault at depth where the energy is released), and the geologic conditions between the site and the hypocenter. Intensity, which is often measured by the Mercalli scale, generally increases with increasing magnitude and decreases with increasing distance from the hypocenter. Topography may also affect the intensity of an earthquake from one site to another. Topographic effects such as steep sided ridges or slopes may result in a higher intensity than sites located in relatively flat-lying areas.



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HISTORIC HIGH GROUNDWATER MAP
SHZR, 1998
700 NORTH SUNNYSIDE AVENUE CITY
OF SIERRA MADRE, CALIFORNIA
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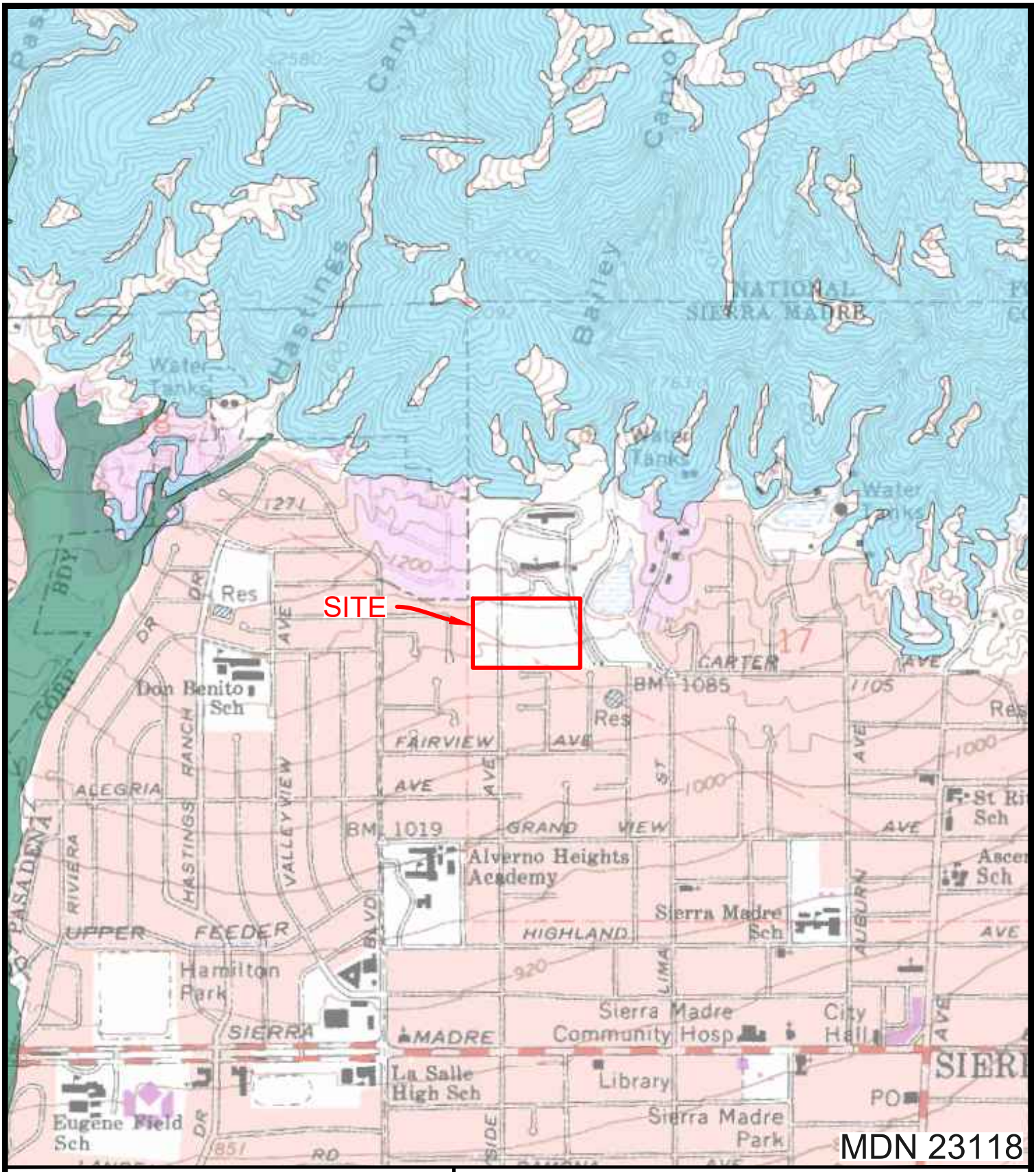
W.O. NO.:	6747
DATE:	9/2022

FIGURE 4



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SEISMIC HAZARD ZONE MAP
SHZR, 1998
700 NORTH SUNNYSIDE AVENUE CITY
OF SIERRA MADRE, CALIFORNIA
NUWI SIERRA MADRE, LLC

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DATE:	9/2022

FIGURE 5

5.1 2019 California Building Code (CBC) Seismic Design Criteria

The 2019 CBC (California Building Code) seismic coefficient criteria are provided in Table 2 for structural design consideration. Under the Earthquake Design Regulations of Chapter 16, Section 1613 of the CBC 2019, the following coefficients apply for the proposed structures at the site. Site Class D should be used for the site. The following seismic data is presented for preliminary design purposes. Ground motion parameters based on the Mapped Risk-Targeted Maximum Considered Earthquake (MCE_r) were determined and adhere to requirements discussed in ASCE 7-16 referenced by the 2019 California Building Code. The parameters include 5% critical damping for 0.2- and 1.0-second time periods. A summary of parameters is provided in the table below for a Site Class D designation. These values may only be used when the value of the seismic response coefficient C_s satisfies equations 12.8-2, 12.8-3, or 12.8-4 of the ASCE 7-16 Standard.

Table 2
2019 CBC Section 1613, Earthquake Loads

Site Class Definition	D
Mapped Spectral Response Acceleration Parameter, S_s (Table 1613.3.1 for 0.2 second)	2.006
Mapped Spectral Response Acceleration Parameter, S_1 (Table 1613.3.1 for 1.0 second)	0.75
Site Coefficient, F_a (Table 1613.3.3(1) short period)	1.0
Site Coefficient, F_v (Table 1613.3.3(2) 1-second period)	null
Adjusted Maximum Considered Earthquake Spectral Response (0.2 second), S_{MS}	2.006
Adjusted Maximum Considered Earthquake Spectral Response (1.0 second), S_{M1}	null
Design Spectral Response Acceleration Parameter, S_{DS} (Eq. 16-39)	1.337
Design Spectral Response Acceleration Parameter, S_{D1} (Eq. 16-40)	null

Notes: Location: Longitude: 34.1710, Latitude: -118.0646
1. Site Class Designation: Class D is recommended based on subsurface condition.
2. Ss, SMs, and SDs are spectral response accelerations for the period of 0.2 second.
3. S1, SM1, and SD1 are spectral response accelerations for the period of 1.0 second.
4. These values may only be utilized where the value of the seismic response coefficient, Cs, satisfies equations 12.8.3 or 12.8.4 of the ASCE Standard 7-16.

Conformance to the above criteria for seismic excitation does not constitute any kind of guarantee or assurance that significant structural damage or ground failure will not occur if a maximum level earthquake occurs. The primary goal of seismic design is to protect life and not to avoid all damage, since such design may be economically

prohibitive. Following a major earthquake, a building may be damaged beyond repair, yet not collapse.

5.2 Secondary Earthquake Effects

Ground shaking produced during an earthquake can result in a number of potentially damaging phenomena classified as secondary earthquake effects. These secondary effects include ground rupture, landslides, seiches and tsunamis, seismically induced settlement, and liquefaction. Descriptions of each of these phenomena and how it could potentially affect the proposed site are described as follows:

5.2.1 Ground Rupture

Ground rupture occurs when movement on a fault breaks through to the surface. Surface rupture usually occurs along pre-existing fault traces where zones of weakness already exist. The State has established Earthquake Fault Zones for the purpose of mitigating the hazard of fault rupture by prohibiting the location of most human occupancy structures across the traces of active faults. Earthquake fault zones are regulatory zones that encompass surface traces of active faults with a potential for future surface fault rupture.

The California Geologic Survey (CGS) establishes criteria for faults as active, potentially active or inactive. Active faults are those that show evidence of surface displacement within the last 11,000 years (Holocene age). Potentially active faults are those that demonstrate displacement within the past 1.6 million years (Quaternary age). Faults showing no evidence of displacement within the last 1.6 million years may be considered inactive for most structures, except for critical or certain life structures.

In 1972, the Alquist-Priolo Special Studies Zone Act (now known as the Alquist-Priolo Earthquake Fault Zone Act, 1994, or APEHA) was passed into law, requiring studies within 500 feet of mapped faults within a mapped Alquist-Priolo fault zone. Surface rupture caused by movement along a fault could likely result in catastrophic structural damage to buildings constructed along the fault trace.

Consequently, the State of California via the APEHA prohibits the construction of occupied "habitable" structures within the designated fault zone and it must be demonstrated that the structure does not encroach on a 50-foot setback from the fault trace. Per the Alquist-Priolo legislation, no structure for human occupancy is permitted on the trace of an active fault.

The term "structure for human occupancy" is defined as any structure used or intended for supporting or sheltering any use or occupancy, which is expected to have a human occupancy rate of more than 2,000 person-hours per year. Unless proven otherwise, an area within 50 feet of an active fault is presumed to be underlain by active branches of the fault. Local government agencies may identify additional faults, in addition to those faults mandated by the State, for which minimum construction setback requirements must be maintained.

The site is not located within an established Earthquake Fault Zone (Figure 5). The Sierra Madre Fault is mapped to the north of the site; however, this portion of the fault is not located in the Earthquake Fault Zone. This complex fault system is approximately 100 km long and runs along the southern boundary of the San Gabriel Mountains from San Fernando Pass to the west and Cajon Pass to the east.

The most recent activity along the fault system occurred at the western portion during the 1971 San Fernando Earthquake. The fault appears to be less active to the east with late quaternary displacement. The fault zone consists of numerous north-dipping thrusts at the base of the mountain front. The portion of the fault within the Mount Wilson Quadrangle has not been zoned as active by the California Geological Survey. The southernmost mapped segment of the fault is located approximately 700 feet north of the northern part of the proposed development (Figure 3). There are no other mapped faults within the limits of the property.

The site is not located within a Fault Hazard Zone and there are no known active faults on the site; therefore, the potential for ground rupture on the site is considered low.

5.2.2 Landsliding

Landslides are slope failures that occur where the horizontal seismic forces act to induce soil and/or bedrock failures. The most common affect is reactivation or movement on a pre-existing landslide. Typically, existing slides that are stable under static conditions (i.e., factor-of-safety above one) become unstable and move during strong ground shaking. The site is relatively flat and not subject to landslides.

5.2.3 Seiches and Tsunamis

A seiche is the resonant oscillation of a body of water, typically a lake or swimming pool caused by earthquake shaking (waves). The hazard exists where water can be splashed out of the body of water and impact nearby structures. No bodies of constant water are near the site, therefore, the hazards associated with seiches are considered low.

Tsunamis are seismic sea waves generated by undersea earthquakes or landslides. When the ocean floor is offset or tilted during an earthquake, a set of waves are generated similar to the concentric waves caused by an object dropped in water.

Tsunamis can have wavelengths of up to 120 miles and travel as fast as 500 miles per hour across hundreds of miles of deep Ocean. Upon reaching shallow coastal waters, the once two-foot high wave can become up to 50 feet in height causing great devastation to structures within reach. Tsunamis can generate seiches as well. Due to the distance of the site relative to the ocean, seiches and tsunamis are not considered a hazard to the site.

5.2.4 Liquefaction and Dry Sand Settlement Analysis

Dry sand settlement can occur during moderate and large earthquakes when loose, natural or fill sandy soils are densified and settle, often unevenly across a site. In order for dry sand settlement to occur, the following four factors are required: 1) Relatively dry soil or soil situated above the groundwater table; 2) undrained loading (strong ground shaking), such as by earthquake; 3) contractive soil response during shear loading, which is often the case for a soil which is initially in a loose or uncompacted state; and 4) susceptible soil type; such as clean, uniformly graded sands.

Liquefaction is a soil softening dynamic response, by which an increase in the excess pore water pressure results in partial to full loss of soil shear strength and post-liquefaction dissipation of this pore water pressure results in ground settlement shortly after the earthquake. In order for liquefaction to occur, the following four factors are required: 1) saturated soil or soil situated below the groundwater table; 2) undrained loading (strong ground shaking), such as by earthquake; 3) contractive soil response during shear loading, which is often

the case for a soil which is initially in a loose or uncompacted state; and 4) susceptible soil type; such as clean, uniformly graded sands, non-plastic silts, or gravels.

Historic high groundwater is mapped at a depth of over 100 feet below existing grade (CDMG, 1998) and therefore the site is not susceptible to liquefaction. The older alluvial soils (terrace deposits) encountered below a depth of approximately 7 feet were generally found to be dense to very dense and generally not susceptible to dry sand settlement. To be conservative and based on our engineering judgment, maximum total and differential seismic dry sand settlement on the order of about 1-inch and 0.5-inch over the horizontal span of 30 feet, respectively, should be considered for design purposes.

6.0 HYDROCOLLAPSE

Hydro-collapse is a condition where dry or moist soils undergo settlement upon being wetted. In many cases no additional surcharge load is necessary to trigger the Hydro-collapse. The potential for Hydro-collapse has been evaluated based upon observations, the results of Swell/Collapse or Consolidation tests, and moisture-density determinations for samples taken from the field. Department of Public Works, Materials Engineering Division consider potentially collapsible soils as generally having (a) low moisture contents (<8%), (b) low in-situ density(<108pcf), and (c) subject to 2 or greater collapse potential.

A total of 10 consolidation tests were performed on samples from upper 30 feet and are presented on the enclosed plates CS-1 through CS-10 in Appendix B. The material with the potential for hydro-collapse is in the upper 7 feet and will be removed and replaced as compacted fill.

7.0 CONCLUSIONS

The development of the subject site is considered feasible from a geologic and geotechnical engineering viewpoint, provided that the recommendations presented in this report are followed during grading.

8.0 RECOMMENDATIONS

8.1 Removals

The subsurface exploration and laboratory testing revealed that the upper seven feet of terrace deposits and all artificial fill should be removed from the areas of proposed grading prior to the placement of additional compacted fills. Final removal depths will be determined during grading. Removals shall extend beyond the toe of proposed fill slopes to a distance equal to the depth of removal. The existing removed materials are suitable for replacement as engineered fill, provided that way trash, debris, and large rocks are removed prior to replacement as compacted fill. All cut pads must be underlain by a minimum of 5 feet of compacted fill.

An existing storm drain is located on the site and will be removed as part of the proposed development. Any old fill associated with the storm drain backfill shall be removed as part of the grading operation.

8.2 Foundation Recommendations

The following recommendations are provided for preliminary design purposes and the final expansion index should be determined following grading. In our opinion, conventional footings with slab-on-grade or post-tensioned interior slabs should be used to support the proposed structures. As an alternative, a uniform post-tensioned mat slab may be used to support the proposed structures.

All footings should meet current slope setback requirements. Foundations should be designed for very low-expansive soil conditions. The proposed improvements should be founded into compacted fill. Under no circumstances should foundations be cast atop loose, soft, or slough, debris, existing artificial fill, topsoil, or surfaces covered by standing water. Prior to placing concrete in a foundation excavation, an inspection should be made by our representative to ensure that the foundation's subgrade is free of loose and disturbed soils and is embedded in the recommended material. We offer the following site-specific recommendations and comments for purposes of foundation design and construction.

8.2.1 Footings

The proposed structures may be supported on footings with slab-on-ground or post-tensioned interior slab. Exterior isolated pad footings may need to be connected to adjacent footings via tie beams at the discretion of the project structural engineer.

<u>Subgrade Preparation</u>

All conventional footings should be constructed on firm, unyielding certified compacted fill. All compacted fill should be compacted to at least 90 percent of the Modified Proctor maximum laboratory density, as determined by ASTM D-1557-02 compaction method. Pre-moistening of all areas to receive concrete is recommended. The moisture content of the subgrade soils should be equal to or slightly greater than optimum moisture and verified by the Geotechnical Engineer to a depth of 18 inches below adjacent grade within 24 hours of concrete placement. Footing's subgrades shall be prepared in accordance with the *Grading* section of this report.

Bearing Capacity

Continuous and isolated maximum two-story buildings footings should have a width of at least 15 and 18 inches, respectively. New footings should extend at least 12 inches below exterior grade, at least 6 inches below the bottom of concrete slabs-on-grade, at least 6 inches below crawlspace grades, whichever is deeper. Exterior isolated pad footings intended for support of roof overhangs such as decks, patio covers and similar construction should be a minimum of 24 inches square and founded at a minimum depth of 18 inches below the lowest adjacent final grade. Footings with at least above minimum dimensions may be designed for a preliminary allowable bearing pressure of 1,500 pounds per square foot (psf) for dead plus live loads, with a one-third increase allowed when considering additional short-term wind or seismic loading. The allowable bearing value may be increased by 300 pounds per square foot per foot increase in depth or width to a maximum of 2500 psf. The weight of the footings may be neglected for design purposes. All footings located adjacent to utility lines should be embedded below a 1:1 plane extending up from the bottom edge of the utility trench.

Settlement

The footings should be designed based on a very low-expansive soils condition. Thirty-year post-construction differential settlement due to static loads is not expected to exceed about 0.5-inch over 30 feet span for the proposed improvements supported on footings, provided that the foundations are designed and constructed as recommended.

The spread footings should be designed to accommodate a seismic total and differential settlement of approximately 1 and 0.5 inch over a horizontal span of 30 feet, respectively. In general, accumulative static and seismic settlements should be considered in the structural design. In our opinion,

the project structural engineer should determine how exactly static and seismic settlements or their effect on super-structure, should be combined.

Lateral Capacity

Lateral loads may be resisted by friction between the bottom of the footings and the supporting subgrade, and by passive soil pressure acting against the footings cast neat in foundation excavations or backfilled with properly compacted structural fill. A coefficient of friction of 0.4 may be assumed for design for footings supported on compacted fill. We recommend an equivalent fluid pressure of 500 pounds per cubic foot for passive soil resistance and not to exceed 2,000 pounds per cubic foot, where appropriate. The upper foot of passive soil resistance should be neglected where soil adjacent to the footing is not covered and protected by a concrete slab or pavement. When combining passive pressure and frictional resistance, the passive pressure component should be reduced by one-third. The above values given for coefficient of friction and passive soil resistance are allowable values with a factor of safety of 1.5 and the designed may choose an appropriate factor of safety based on the loadings.

General Structural Design

We recommend that foundations be reinforced with top and bottom steel, to provide structural continuity and to permit spanning of local irregularities.

8.2.2 Post-tensioned Mat Slab

As a more conservative option, proposed structures be founded on post-tensioned mat slab systems to mitigate the effect of expansive soil. The post-tensioned mat slab should be at least 8 inches thick.

Subgrade Preparation

The subgrade soils below concrete flatwork areas to a minimum depth of 8 inches should be compacted to a minimum relative compaction of 90 percent at or slightly above the optimum moisture content. Pre-saturation of the subgrade below slabs will not be required; however, prior to placing concrete, the subgrade below all dwelling and garage floor slab areas should be thoroughly moistened to achieve a moisture content that is at least equal to or no more than 6 percent greater than optimum moisture content to a minimum depth of 8 inches below the bottoms of the slabs. Mat's subgrades shall be prepared in accordance with the Grading section of this report.

Bearing Capacity

An allowable bearing capacity of 1,500 pounds per square foot may be used for contact pressure for dead plus live loads, with a one-third increase allowed when considering additional short-term wind or seismic loading. The maximum localized bearing pressures of 2,500 pounds per square foot at column or wall loads may be used for design purposes.

Settlement

The mat should be designed based on a very low-expansive soils condition. Thirty-year post-construction differential settlement due to static loads is not expected to exceed about 0.5-inch over 30 feet span for the proposed improvements supported on mat foundation, provided that the foundations are designed and constructed as recommended.

The mat foundation should be designed to accommodate a seismic total and differential settlement of approximately 1 and 0.5 inch over a horizontal span of 30 feet, respectively. In general, accumulative static and seismic settlements should be considered in the structural design. In our opinion,

the project structural engineer should determine how exactly static and seismic settlements or their effect on super-structure, should be combined.

Lateral Capacity

Lateral loads may be resisted by friction between the bottom of the footings and the supporting subgrade, and by passive soil pressure acting against the footings cast neat in foundation excavations or backfilled with properly compacted structural fill. A coefficient of friction of 0.3 may be assumed for design for footings supported on improved ground. We recommend an equivalent fluid pressure of 500 pounds per cubic foot for passive soil resistance and not to exceed 2,000 pounds per cubic foot, where appropriate. The upper foot of passive soil resistance should be neglected where soil adjacent to the footing is not covered and protected by a concrete slab or pavement. When combining passive pressure and frictional resistance, the passive pressure component should be reduced by one-third. The above values given for coefficient of friction and passive soil resistance are allowable values with a factor of safety of 1.5 and the designed may choose an appropriate factor of safety based on the loadings.

General Structural Design

The structural design of a mat foundation supported on compacted fill must evaluate the interaction between supporting soil and structure. Deepened grade beams could be designed/constructed to improve mat stiffness, as determined by the structural engineer.

Selection of a modulus of subgrade reaction, Ks, is critical in the structural design of a mat foundation. The basic value of Ks is defined as the unit applied pressure divided by the settlement of a one square foot plate acting on the subgrade surface. The values of Ks vary according to relative density,

consistency, and moisture content of the subgrade material. A modulus of subgrade reaction of 150 pounds per cubic inch (pci) may be assumed for the mat subgrade. This value is based on a 1-foot square bearing area and should be scaled to account for mat foundation size and load effects. Alternatively, based on the proposed preliminary buildings dimensions and loads, a uniform modulus of subgrade reaction (Kv) of 30 pounds per cubic inch (pci) may be assumed for the mat subgrade. A more accurate layout of modulus of subgrade reaction (Kv) beneath each building can be provided if requested by the structural engineer.

Post-Tensioned Design

Post-tensioned slabs should be designed in accordance with the recommendations of either the California Foundation Slab Method or Post-Tensioning Institute. Based on review of laboratory data for the on-site materials, the on-site materials have a very low expansion index. Deepened footings/edges around the slab perimeter must be used to minimize non-uniform surface moisture migration (from an outside source) beneath the slab. An edge depth of at least 8 inches should be considered. The bottom of the deepened footing/edge should be designed to resist tension, using cable or reinforcement per the Structural Engineer. Specific recommendations for the design of California Foundation Slab and Post Tension Institute methods are presented below.

1. **California Foundation Slab (Spanability) Method**

It is recommended that slabs be designed for a free span of 7 feet. From a soil expansion/shrinkage standpoint, a common contributing factor to distress of structures using post-tensioned slabs is fluctuation of moisture in soils underlying the perimeter of the slab, compared to the center, causing a "dishing" or "arching" of the slabs. To mitigate this possibility, a combination

of soil presaturation and construction of a perimeter "cut off" wall should be employed.

2. **Post-Tensioning Institute Method**

Post-tensioned slabs should be designed in accordance with the recommendations of Post-Tensioning Institute. Post-tensioned slabs should have sufficient stiffness to resist excessive bending due to non-uniform swell and shrinkage of subgrade soils. The differential movement can occur at the corner, edge, or center of slab. The potential for differential uplift can be evaluated using the design specifications of the Post-Tensioning Institute. The following table presents suggested minimum coefficients to be used in the Post-Tensioning Institute design method.

TABLE 3
SUGGESTED PT COEFFICIENTS

Description	Value
Thornthwaite Moisture Index	-20 in/year
Depth to Constant Soil Suction	9 feet
Constant Soil Suction (pf)	3.8

The coefficients are considered minimums and may not be adequate to represent worst case conditions such as adverse drainage, excess watering, and/or improper landscaping and maintenance. The above parameters are applicable provided structures have gutters and downspouts, yard drains, and positive drainage is maintained away from structure perimeters. Also, the values may not be adequate if the soils below the foundation become saturated or dry such that shrinkage occurs. The parameters are provided with the expectation that subgrade soils below the foundations are maintained in a relatively uniform moisture condition. Responsible irrigation of landscaping adjacent to the foundation must be practiced since over-irrigation of landscaping can cause problems. Therefore, it is important that information regarding drainage, site maintenance, settlements and effects of expansive soils be passed on to future homeowners.

Based on the above parameters, the following preliminary values were obtained from the Post Tension Institute Design manual. If a stiffer slab is desired, higher values of y_m may be warranted. Please note that we will revise the following preliminary PT slab design values after rough grading in our final compaction report upon some additional testing of the compacted fill.

TABLE 4 PRELIMINARY PT SLAB DESIGN VALUES	
Description	**Value**
Soil Subgrade Expansion Index	Very Low
e_m center lift	9 ft
e_m edge lift	4.7 ft
Y_m center lift	0.25 in
Y_m edge lift	0.45 in

Underlayment

In areas where dampness of concrete floor slabs would be undesirable, such as habitable building interior, concrete slabs should be underlain by a minimum 10 mil vapor barrier sandwiched between two (2) one-inch imported sand layers. This vapor barrier shall be lapped and sealed (especially around the utility perforations) adequately to provide a continuous waterproof barrier under the entire slab. To reduce vapor transmission up through concrete slabs, the vapor barrier should be high quality, UV-resistant conforming to the requirements of ASTM E 1745 Class A, with a water vapor transmission rate less than or equal to 0.01 perms (such as 15-mil thick “Stego Wrap Class A”). The vapor barrier should be installed in accordance with ASTM E 1643. All seams and penetrations of the vapor barrier should be sealed in accordance with manufacturer’s recommendations.

Water:Cement Ratio

The permeability of concrete is affected significantly by the water:cement ratio of the concrete mix, with lower water:cement ratios producing more damp-resistant slabs and stronger concrete. Where moisture protection is important and/or where the concrete will be placed directly on the vapor barrier, the

water:cement ratio should be 0.45 or less. To increase the workability of the concrete, mid-range plasticizers can be added to the mix. Water should not be added to the concrete mix unless the slump is less than specified and the water:cement ratio will not exceed 0.45. Other steps that may be taken to reduce moisture transmission through the concrete slabs-on-grade include moist curing for 5 to 7 days and allowing the slab to dry for a period of two months or longer prior to placing floor coverings. Also, prior to installation of the floor covering, it may be appropriate to test the slab moisture content for adherence to the manufacturer's requirements and to determine whether a longer drying time is necessary.

8.2.3 Foundation General Recommendations

The above parameters are applicable provided structures have gutters and downspouts and positive drainage is maintained away from structures. Therefore, it is important that information regarding drainage and site maintenance be passed on to future owners.

The above recommendations assume, and GeoSoils Consultants, Inc. strongly recommends, that surface water will be kept from infiltrating into the subgrade adjacent to the building foundation system. This may include, but not be limited to rainwater, roof water, landscape water and/or leaky plumbing. The lots are to be fine graded at the completion of construction to include positive drainage away from the structure and roof water will be collected via gutters, downspouts, and transported to the street in buried drainpipes. Homebuyers should be cautioned against constructing open draining planters adjacent to the houses or obstructing the yard drainage in any way.

- Utility trenches beneath the slabs should be backfilled with compacted native soil materials, free of rocks.
- Standard City of Sierra Madre structural setback guidelines are applicable, except where superseded by specific recommendations by the Project Geologist and Geotechnical Engineer.
- Setback requirements, as established by the 2019 California Building Code, require that structures (including retaining walls) constructed near the top of descending slopes or the toe of ascending slopes steeper than 3H:1V (horizontal:vertical), meet structural setbacks. The setback for a building or structure foundations (retaining walls) located near the top of a slope shall be a distance of one-third (1/3) of the vertical height of the slope, with a minimum of 5 feet and a maximum of 40 feet, measured horizontally from the slope surface to the lower edge of the footing (see *Required Slope Setback Design* diagram, Figure 8).

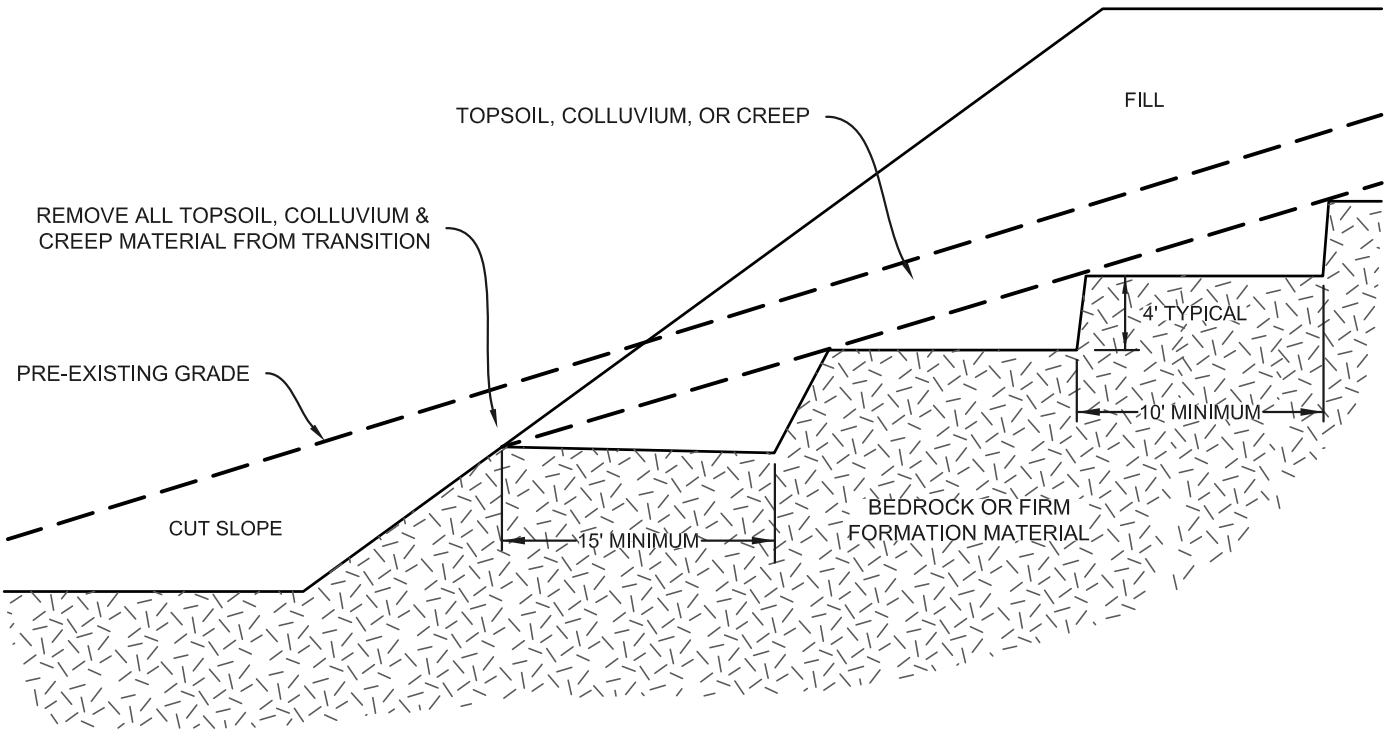
8.3 Interior Slabs

General Recommendations

Interior concrete slabs may be used along with footings. Interior slabs subgrade preparation, Underlayment, and water:cement ratio should be designed in accordance with recommendations in mat slab section. A uniform modulus of subgrade reaction (Kv) of 30 pounds per cubic inch (pci) may be assumed for slab design. We note that a uniform 8-icnh PT slab poured monolithically with deepened footings/grade beams would be considered a post-tension mat foundation with stiffening grade beams as described before. Additional recommendation for conventional and post-tensioned interior slab design is presented below.

Conventional Slab-on-ground Design

Conventional interior slabs should be at least 4 inches thick and dwelling them into the foundation system is at discretion of structural engineer.



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TYPICAL FILL OVER CUT
SLOPE DESIGN

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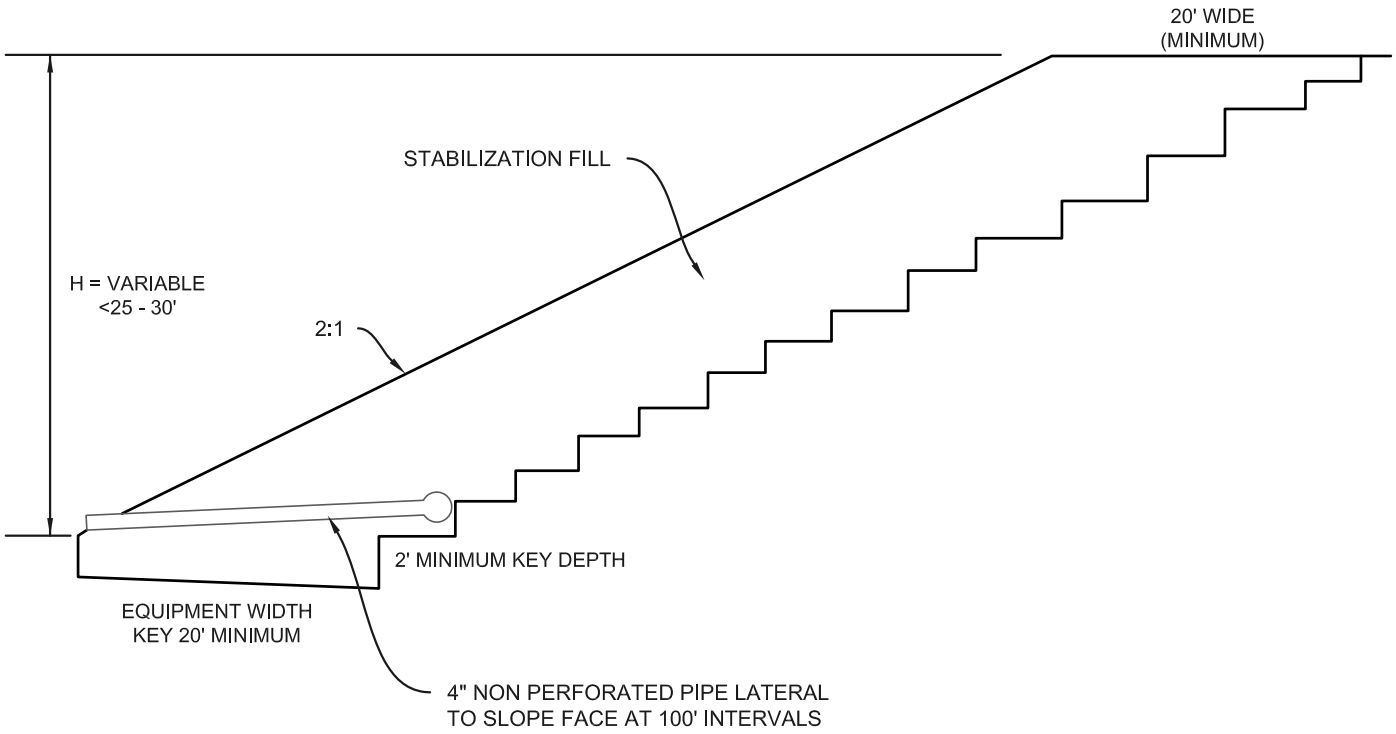
Figure 6



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TYPICAL STABILIZATION FILL DESIGN

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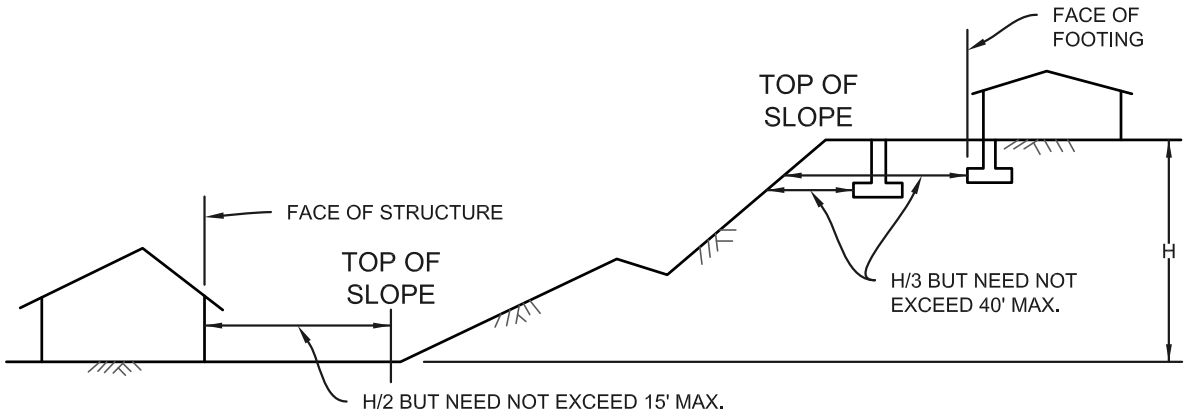
Figure 7



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REQUIRED SLOPE SETBACK DESIGN

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Figure 8

Post-Tensioned Slab Design

If Post-tensioned interior slabs with footings are selected, they should be designed in accordance with post-tensioned recommendations in mat slab section. Post-tensioned interior slabs should be at least 4 inches thick and can be poured monolithically with the footings or as a separate section.

8.4 Exterior Slabs

Subgrade Preparation

To reduce the potential for distress to exterior concrete flatwork, the subgrade soils below concrete flatwork areas to a minimum depth of 8 inches (or deeper, as either prescribed elsewhere in this report or determined in the field) should be moisture conditioned to at least equal to, or slightly greater than, the optimum moisture content and then compacted to a minimum relative compaction of 90 percent. Where concrete public roads, concrete segments of roads and/or concrete access driveways are proposed, the upper 6 inches of subgrade soil should be compacted to a minimum 95 percent relative compaction.

As a further measure to reduce the potential for concrete flatwork cracking, subgrade soils should be thoroughly moistened prior to placing concrete. The moisture content of the soils should be at least the optimum moisture content to a minimum depth of 8 inches into the subgrade. Flooding or ponding of the subgrade is not considered feasible to achieve the above moisture conditions since this method would likely require construction of numerous earth berms to contain the water. Therefore, moisture conditioning should be achieved with sprinklers or a light spray applied to the subgrade over a period of few to several days just prior to pouring concrete. Pre-watering of the soils is intended to promote uniform curing of the concrete, reduce the development of shrinkage cracks and reduce the potential for differential expansion pressure on freshly poured flatwork. A representative of the

project geotechnical consultant should observe and verify the density and moisture content of the soils, and the depth of moisture penetration prior to pouring concrete.

Drainage

Drainage from patios and other flatwork areas should be directed to local area drains and/or graded earth swales designed to carry runoff water to the adjacent streets or other approved drainage structures. The concrete flatwork should be sloped at a minimum gradient of one percent, or as prescribed by project civil engineer or local codes, away from building foundations, retaining walls, masonry garden walls and slope areas.

Thickened Edge

To improve performance, exterior slabs-on-grade may be constructed with a thickened edge to improve edge stiffness and to reduce the potential for water seepage under the edge of the slabs and into the underlying base and subgrade. In our opinion, the thickened edges should be at least 8 inches wide and ideally should extend at least 4 inches below the bottom of the underlying aggregate base layer.

8.5 Retaining Walls

We recommend the upper 7 feet of soil beneath the proposed retaining walls be removed and replaced with engineering fill. The near surface compacted fill should have a very low expansion index and should be confirmed prior to foundation construction. All grading and construction phases associated with retaining wall construction, including backcut excavations, footing trenches, installation of the subdrainage systems, and placement of backfill should be observed and tested by a representative of the project geotechnical consultant.

Allowable Bearing Values

Proposed retaining walls should be supported on spread footings using the design criteria recommended previously for building footings; however, when calculating

passive resistance, the passive earth pressure should be reduced to 200 pounds per square foot, per foot of depth, to a maximum value of 1,500 pounds per square foot.

Active and At-Rest Earth Pressures

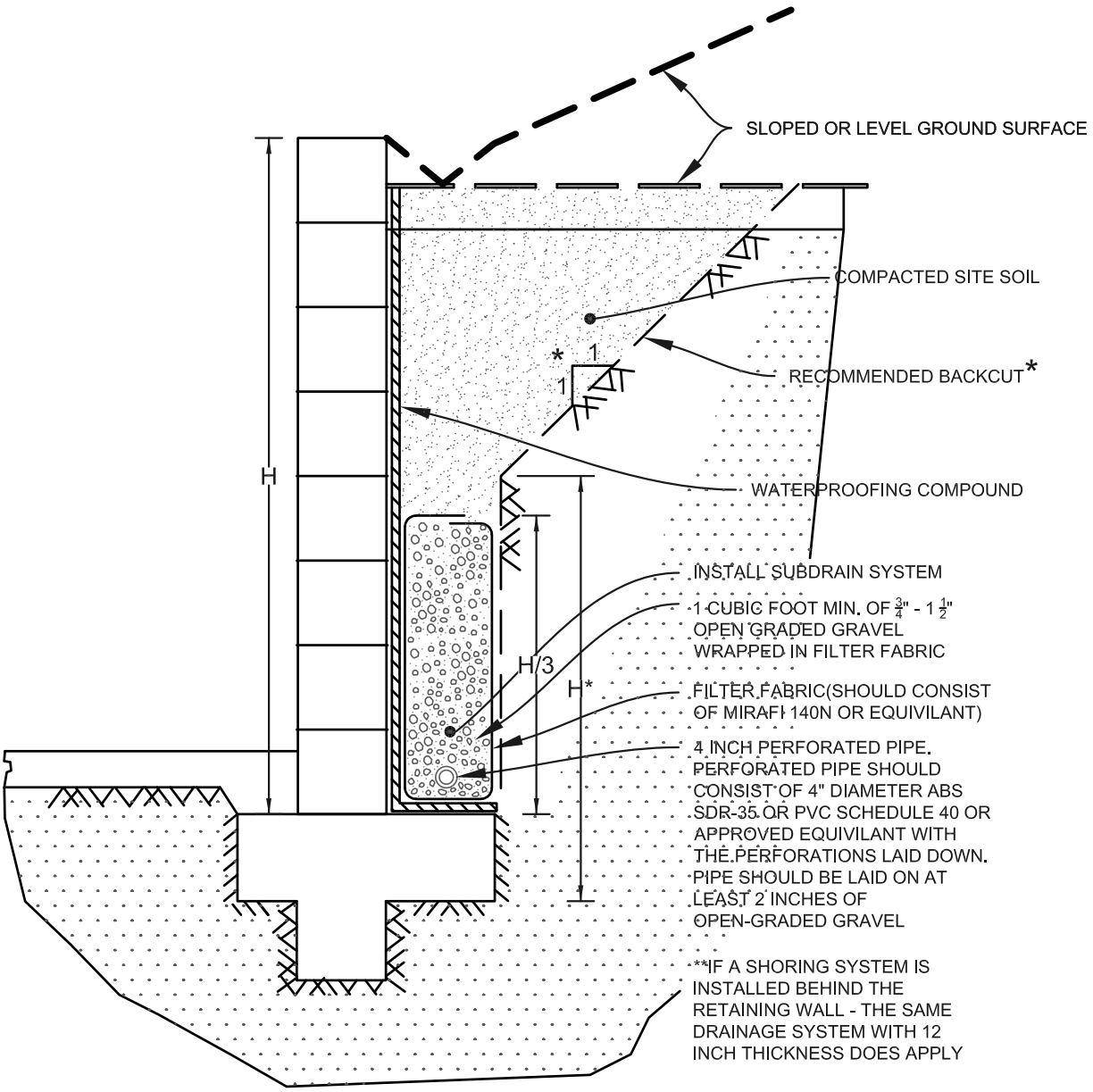
The equivalent fluid pressures recommended are based on the assumption of a uniform backfill and no build-up of hydrostatic pressure behind the wall. To prevent the build-up of lateral soil pressures in excess of the recommended design pressures, over compaction of the fill behind the wall should be avoided. This can be accomplished by placement of the backfill above a 45-degree plane projected upward from the base of the wall, in lifts not exceeding eight inches in loose depth, and compacting with a hand-operated or small, self-propelled vibrating plates.

All recommendations for active lateral earth pressures contained herein assume that the anticipated retaining structures are in tight contact with the fill soil or shoring system that they are supposed to support. Cantilever (yielding) retaining wall that are free-standing to the point that they can yield at the top at least 0.1 percent of the height of the wall, should be designed for active pressure. Retaining walls that are not free to deflect or rotate (such as any basement retaining walls) or are expected to yield at the top of the wall to less than 1/1000 the height of the wall must be designed for at rest pressure.

On-Site Soils Used for Backfill

The on-site earth materials are considered to have a very low expansion potential and are suitable for use as backfill. If these materials are used as backfill, active and at rest earth pressures equivalent to fluids having density of 40 and 55 pcf should be used for design. Walls with sloping backfill should be designed for an additional equivalent fluid pressure of 1 pound per cubic foot for every 1.25 degree of slope inclination. The above values are for retaining walls that have been supplied with a proper subdrain system (see Figures RW-1 and RW-2).

NATIVE SOIL BACKFILL



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RETAINING WALL BACKFILL AND SUBDRAIN DETAILS

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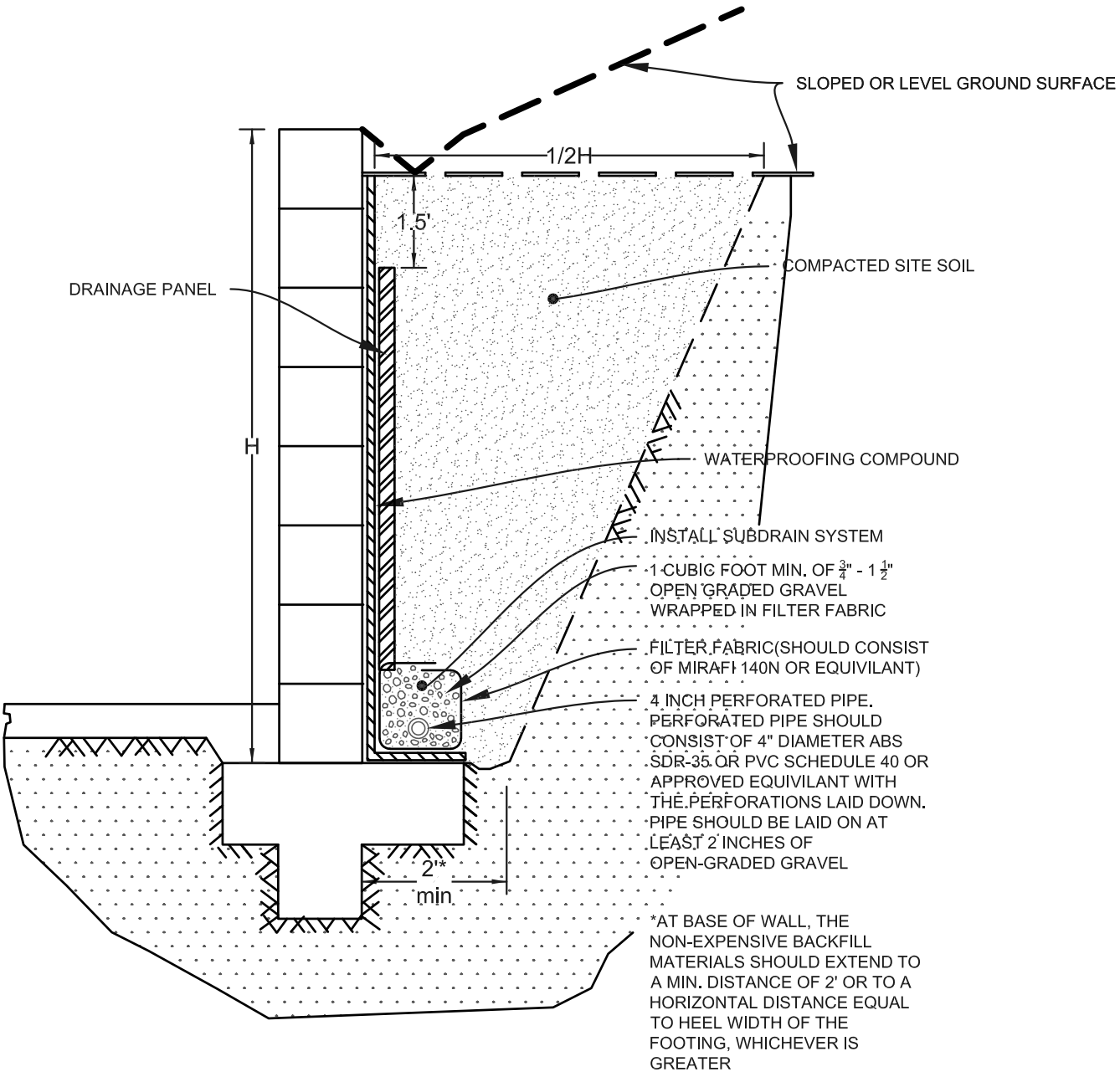
FIGURE RW-1

NATIVE SOIL BACKFILL



**REFER TO RW-1

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FIGURE RW-2

Imported Sand, Pea Gravel, or Rock Used for Wall Backfill

Imported clean sand exhibiting a sand equivalent value (SE) of 30 or greater, pea gravel, or crushed rock may be used for wall backfill to reduce the lateral earth pressures provided these granular backfill materials extend behind the walls to a minimum horizontal distance equal to one-half the wall height. In addition, the sand, pea gravel, or rock backfill materials should extend behind the walls to a minimum horizontal distance of 2 feet at the base of the wall or to a horizontal distance equal to the heel width of the footing, whichever is greater (see Figures RW-3 and RW-4). For the above conditions, active and at rest earth pressures equivalent to fluids having density of 30 and 45 pcf should be used for design. Walls with sloping backfill should be designed for an additional equivalent fluid pressure of 1 pound per cubic foot for every 1 degree of slope inclination. These values are also for retaining walls supplied with a proper subdrain system.

Earthquake Loads on Retaining Walls

Note 1 of Section 1803.5.12 of the 2019 CBC indicates that the dynamic seismic lateral earth pressures on foundation walls and retaining walls supporting more than 6 feet of backfill height due to design earthquake ground motions be determined. The following seismic design criteria must be incorporated into the design of retaining walls greater than 6 feet, the peak ground acceleration (PGA) is defined below:

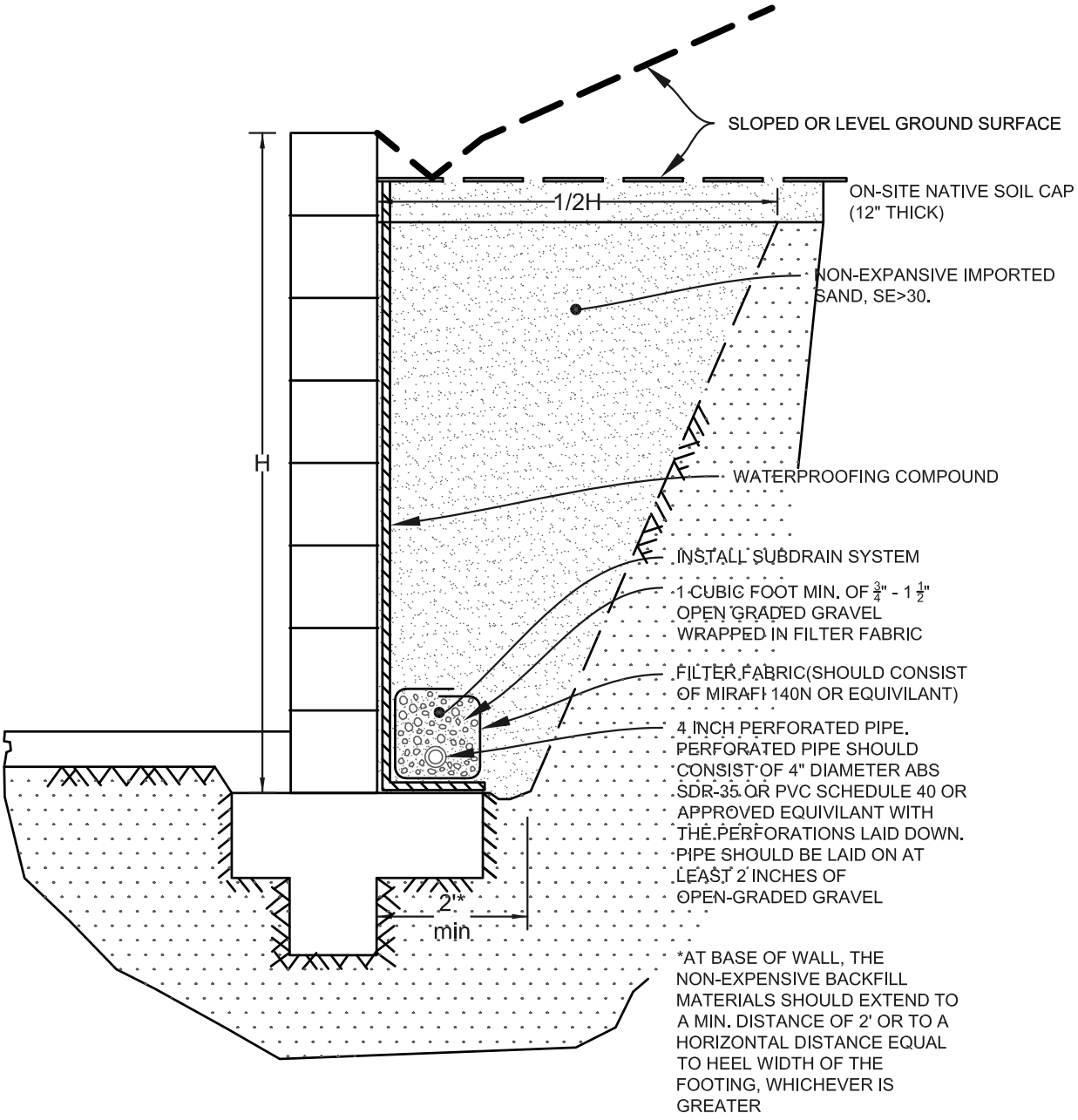
$$K_h = S_{DS}/2.5 = (1.337g/2.5) = 0.535$$

The seismic load increment is determined by the following equations for walls backfilled with engineering fill:

Cantilever (yielding) walls with level backfill:

$$\Delta P_{ae} = ½*Y*H^2*(0.42)(K_h)=1/2*120(0.42)(0.535)H^2 = 13.5H^2$$

IMPORTED SAND BACKFILL



**REFER TO RW-1

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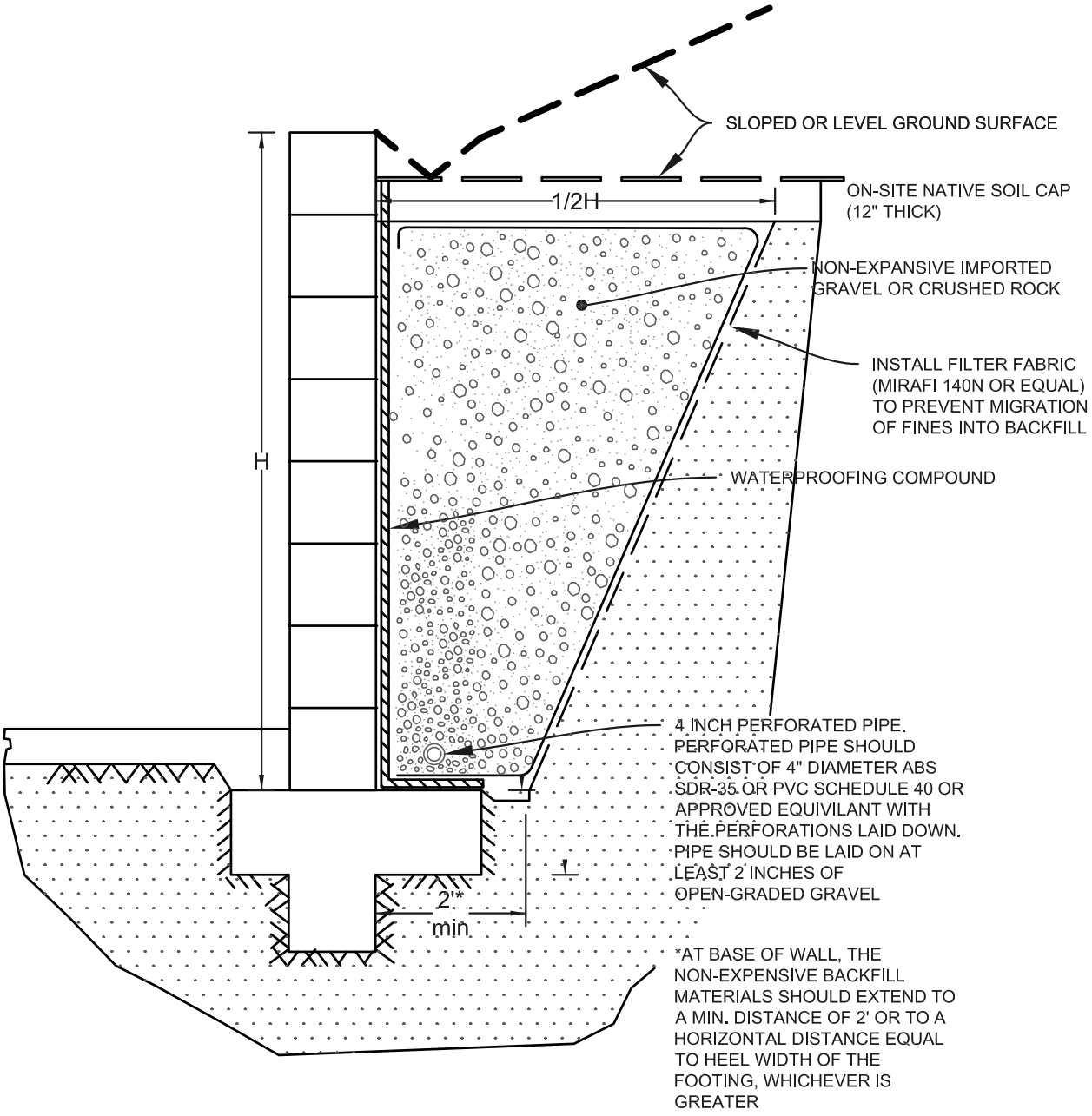
FIGURE RW-3

IMPORTED GRAVEL OR CRUSHED ROCK BACKFILL



**REFER TO RW-1

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FIGURE RW-4

None-yielding walls with level backfill:

$$\Delta P_{ae} = ½*Y*H^2*(0.56)(K_h)=1/2*120(0.56)(0.535)H^2 = 18.0H^2$$

The combined static and seismic load can be expressed using Seed and Whitman's (1970)[1] notation where Pa is the static load and ΔP_{ae} is the seismic load increment:

$$P_{ae} = P_a + \Delta P_{ae}$$

The resultant force (static and seismic loading) acts 1/3H from the base of the wall (Lew et al. 2010)[2]. Considering the difference between the on-site soil and imported engineering fill for backfill is not significant we propose the same seismic design values for retaining walls backfilled with on-site soils.

Surcharge Load

Wherever walls will be subjected to surcharge loads within a 45 degree projection upward from the wall bottom, such as from adjacent foundations, vehicle loads, or construction, the walls should be designed for an additional uniform lateral pressure equal to one-half of the surcharge loads for yielding walls and one-third of the surcharge load for none-yielding walls. A more accurate surcharge load can be provided, if requested.

Subdrainage

Perforated pipe and gravel subdrains should be installed behind all retaining walls that retains more than 2 feet to prevent entrapment of water in the backfill (see Figures RW-1 through RW-4). Perforated pipe should consist of 4-inch-minimum diameter PVC Schedule 40, or SDR-35, with the perforations laid down. The pipe should be encased in a 1-foot-wide column of ¾-inch to 1½-inch open-graded gravel. If on-site soils are used as backfill, the open-graded gravel should extend above the wall footings to a minimum height equal to one-third the wall height or drainage panels should be installed to 1.5 feet below the top of the wall backfill (see

Figures RW-1 and RW-2). If imported sand, pea gravel, or crushed rock is used as backfill, subdrain details shown on Figures RW-3 and RW-4 should be utilized. The open-graded gravel should be completely wrapped in filter fabric consisting of Mirafi 140N or equivalent. Solid outlet pipes should be connected to the subdrains and then routed to a suitable area for discharge of accumulated water.

If a limited area exists behind the walls for installation of a pipe and gravel subdrain, a drainage panels such as Mirafi Miradrain, or equivalent, can be used (see Figure RW-2). The drainage panels should extend from a depth of about 1.5 foot below the top of the wall backfill down to the drainpipe at the base of the wall. The perforated drainpipe placed at the bottom of the drainage panels should consist of 4-inch minimum diameter PVC Schedule 40 or SDR-35. A minimum 12-inch wide section of ½- to ¾- inch clean crushed rock surrounded by filter fabric should be placed around the drainpipe, as recommended previously.

We note that any wall should be constructed with weep holes near the bottom, on five-foot centers or with perforated drainpipe in a gravel envelope at the bottom and behind the wall. A concrete-lined swale is recommended behind retaining walls that can intercept surface runoff from upslope areas. The surface runoff shall be transferred to an approved drainage channel via non-erosive drainage devices.

Waterproofing

The portions of retaining walls supporting backfill should be coated with an approved waterproofing compound or covered with a similar material to inhibit infiltration of moisture through the walls.

Wall Backfill

Where the onsite soils materials or imported sand (with a Sand Equivalent of 30 or greater) are used as backfill behind the proposed retaining walls, the backfill materials should be placed in approximately 6- to 8-inch-thick maximum lifts,

watered as necessary to achieve above optimum moisture conditions, and then mechanically compacted in place to a minimum relative compaction of 90 percent. Flooding or jetting of the backfill materials should be avoided. A representative of the project geotechnical consultant should observe the backfill procedures and test the wall backfill to verify adequate compaction.

If imported pea gravel or rock is used for backfill, the gravel should be placed in approximately 2- to 3-foot-thick lifts, thoroughly wetted but not flooded, and then mechanically tamped or vibrated into place. A representative of the project geotechnical consultant should observe the backfill procedures and probe the backfill to determine that an adequate degree of compaction is achieved.

To reduce the potential for the direct infiltration of surface water into the backfill, imported sand, gravel, or rock backfill should be capped with at least 12 inches of on-site soil. Filter fabric such as Mirafi 140N or equivalent, should be placed between the soil and the imported gravel or rock to prevent fines from penetrating into the backfill.

8.6 Corrosion Characteristics of Soil

As a screening level study, limited chemical and electrical tests were performed on samples considered representative of the onsite soils to identify potential corrosive characteristics of these soils. Additional testing will be performed following the complete of grading and final recommendations will be provided in a compaction report. The common indicators that are generally associated with soil corrosivity, among other indicators, include water-soluble sulfate (a measure of soil corrosivity on concrete), water-soluble chloride (a measure of soil corrosivity on metals embedded in concrete), pH (a measure of soil acidity), and minimum electrical resistivity (a measure of corrosivity on metals embedded in soils). Test methodology and results are presented in Appendix B.

It should be noted that GeoSoils does not practice corrosion engineering; therefore, the test results, opinion and engineering judgment provided herein should be considered as general guidelines only. Additional analyses, and/or determination of other indicators, would be warranted, especially, for cases where buried metallic building materials (such as copper and cast or ductile iron pipes) in contact with site soils are planned for the project. In many cases, the project geotechnical engineer may not be informed of these choices. Therefore, for conditions where such elements are considered, we recommend that other, relevant project design professionals (e.g., the architect, landscape architect, civil and/or structural engineer, etc.) to be involved. We also recommend considering a qualified corrosion engineer to conduct additional sampling and testing of near-surface soils during the final stages of site grading to provide a complete assessment of soil corrosivity. Recommendations to mitigate the detrimental effects of corrosive soils on buried metallic and other building materials that may be exposed to corrosive soils should be provided by the corrosion engineer as deemed appropriate.

In general, a soil's water-soluble sulfate levels and pH relate to the potential for concrete degradation; water-soluble chlorides in soils impact ferrous metals embedded or encased in concrete, e.g., reinforcing steel; and electrical resistivity is a measure of a soil's corrosion potential to a variety of buried metals used in the building industry, such as copper tubing and cast or ductile iron pipes. Table 5, below, presents test results with an interpretation of current code approach and guidelines that are commonly used in building construction industry. The table includes the code-related classifications of the soils as they relate to the various tests, as well as a general recommendation for possible mitigation measures in view of the potential adverse impact of corrosive soils on various components of the proposed structures in direct contact with site soils. The guidelines provided herein should be evaluated and confirmed, or modified, in their entirety by the project structural engineer, corrosion engineer and/or the contractor responsible for concrete placement for structural concrete used in the project.

Testing for soluble sulfates was performed on three representative samples of the material concentrated within the subject site by HDR/Schiff (see Plate HDR-1 this appendix). The results indicate that the soluble sulfate content is 6 ppm within the terrace deposits; therefore, the soils will have negligible impact on the cement used at the site.

TABLE 5
SOIL CORROSIVITY SCREENING RESULTS

Test (Test Method Designation)	Test Location	Test Results	Classification	General Recommendations
Soluble Sulfate (Cal 417)	B-2 @ 5-10'	6 ppm	**S0[1] - Not Applicable**	No special recommendations
pH (Cal 643)	B-2 @ 5-10'	7.2	**Neutral** [3]	No special recommendations
Soluble Chloride (Cal 422)	B-2 @ 5-10'	1.4 ppm	**C1 – Moderate** [3]	Residence: No special recommendations; fc' should not be less than 2,500 psi.
Resistivity (Cal 643)	B-2 @ 5-10'	11,625 ohm-cm	**Mildly Corrosive** [4]	Protective wrapping/coating of buried pipes; corrosion resistant materials

Notes:
1. ACI 318-14, Section 19.3
2. f_c', 28-day unconfined compressive strength of concrete
3. ACI 318-14, Section 19.3
4. Pierre R. Roberge, "Handbook of Corrosion Engineering"

8.7 Drainage/Landscape Maintenance

In areas of residential development and outside the park area, water should not be allowed to pond or seep into the ground, or flow over slopes in a concentrated manner. Roof gutters and yard drains should be provided. Pad drainage should be directed toward the street or any approved watercourse area swale via non-erosive channel, pipe and/or dispersion devices.

The average annual rainfall in Southern California is less than 15 inches per year; however, studies have shown that the average Southern California homeowner applies at least 200 inches of equivalent rainfall to their yard each year. It is important than in addition to control of landscape watering, that pad drainage slopes away from structures. Placement of planters next to houses can also lead to increased moisture under pad areas.

8.8 Infiltration Testing

An infiltration area is proposed at the southern part of site and will consist of an area approximately seven feet deep with perforated pipe and gravel. The final design of the system should be reviewed by this office. Infiltration testing was performed in the southwestern part of the site, in the area of the proposed basin. Two 8-inch diameter borings (B-11 and B-12) were excavated to depths of 15 and 30. The lower 5 and 10 feet of the 15 and 30 borings, respectively, were provided with 2-inch diameter perforated pipe surrounded with filter gravel. Infiltration testing was performed in accordance with Los Angeles County requirements and the results are presented in Appendix C.

Consolidation tests were performed on samples obtained from Borings B-11 and B-12 and the results are presented in Appendix B. The test results indicate a low potential for hydroconsolidation of the terrace deposits due to the infiltration of stormwater in the percolation depth.

No groundwater was encountered during the excavations. Historical high groundwater map from Seismic Hazard Zone report notes the groundwater to be more than 100 feet below the ground surface. The borings were presoaked prior to the infiltration testing. The result of percolation rate without factor of safety is included in below table, and in lieu of a direction from the project civil engineer a minimum factor of safety of 3 should be considered for design purposes.

TABLE 6
PERCOLATION TEST RESULTS

TEST LOCATION	RATE (Inches per hour)
B-11	3.42
B-12	3.02
Note: This rate does not include the correction factor	

8.9 Grading

Grading of the site will consist of a cut/fill operation to create level pads. The grading will involve the removing and recompacting of existing near surface material. We offer the following recommendations and construction considerations concerning earthwork grading at the site.

8.9.1 General

Monitoring: We recommend that all earthwork (i.e., clearing, site preparation, fill placement, etc.) should be conducted with engineering control under observation and testing by the Geotechnical Engineer and in accordance with the requirements within the *Grading* section of this report.

Job Site Safety: At all times, safety should have precedence over production work. If an unsafe job condition is observed, it should be brought to the attention of the grading contractor or the developer's representative. Once this condition is noted, it should be corrected as soon as possible, or work related to the unsafe condition should be terminated.

The contractor for the project should realize that services provided by GSC do not include supervision or direction of the actual work performed by the contractor, his employees, or agents. GSC will use accepted geotechnical engineering and testing procedures; however, our testing and observations will not relieve the contractor of his primary responsibility to produce a completed project conforming to the project plans and specifications. Furthermore, our firm will not be responsible for job or site safety on this project, as this is the responsibility of the contractor.

Cut Slopes

All cut slopes shall be designed at a gradient of 2:1 or less. The current plans only show minor locations of proposed cuts at the lower part of the proposed fill slopes. The cut slopes will therefore, be replaced as fill slopes during grading as shown on the geologic map and cross-sections. Cut slopes along the north part of the side and eastern part of the southern basin may mention as planned. Figure 6 provides a typical detail for slope reconstruction and backdrains. The approximate locations of backdrains are shown on Plates 1A and 1B, Geologic Cross-Sections. Fill over cut slopes shall be constructed in accordance with Figure 7.

Observation: The Engineering Geologist should observe all cut slopes excavated in rock, lithified or formation material at vertical intervals not exceeding ten feet.

Change of Conditions: If any conditions not anticipated in the preliminary report such as perched water, seepage, lenticular or confined strata of a potentially adverse nature, unfavorably inclined bedding, joints or faults planes, or areas of unstable material are encountered during grading, these conditions should be analyzed by the Engineering Geologist and Geotechnical Engineer, and recommendations should be made to treat these problems.

Protection: Cut slopes that face in the same direction as the prevailing drainage should be protected from slopewash by a non-erosive interceptor swale placed at the top of the slope.

Criteria: Unless otherwise specified in the geotechnical and geological report, no cut slopes should be excavated higher or steeper than that allowed by the ordinances of controlling governmental agencies.

Drainage Devices: Drainage terraces should be constructed in compliance with the ordinances of controlling governmental agencies, or with the recommendations of the Geotechnical Engineer or Engineering Geologist.

Fill Slopes

All fill slopes shall be designed at a gradient of 2:1 or less. Proposed fill slopes shall be provided with a minimum toe of slope keyway of 20 feet wide and 3 feet deep as shown on the geologic map and cross-sections.

8.9.2 Site Preparation

Existing Structure Location: The General Contractor should locate all surface and subsurface structures on the site or on the approved grading plan prior to preparing the ground.

Existing Structure Removal: Any underground structures (e.g., septic tanks, wells, pipelines, foundations, utilities, etc.) that have not been located prior to grading should be removed or treated in a manner recommended by the Geotechnical Engineer.

Clearing and Stripping: The construction areas should be cleared and stripped of all vegetation, trees, bushes, sod, topsoil, artificial fill, debris, asphalt, concrete, and other deleterious material prior to fill placement.

Removals: Please refer to the *Removals* section of this report for specific recommendations for removals.

Subgrade Preparation: We recommend that the subgrade for those areas receiving any fill be prepared by scarifying the upper 12 inches and moisture conditioning, as required to obtain at least optimum moisture, but not greater than 120 percent of optimum. The scarified areas shall be compacted to at least 90 percent of the maximum laboratory density, as determined by ASTM

D-1557-12 compaction method. All areas to receive fill should be observed by the Geotechnical Engineer prior to fill placement.

Subgrade Verification and Compaction Testing: Regardless of material or location, all fill material should be placed over properly compacted subgrades in accordance with this section. The condition of all subgrades shall be verified by the Geotechnical Engineer before fill placement or earthwork grading begins. Earthwork monitoring and field density testing shall be performed during grading to provide a basis for opinions concerning the degree of soil compaction attained. The Contractor should be responsible for notifying the Geotechnical Engineer when such areas are ready for inspection. Inspection of the subgrade may also be required by the controlling governmental agency within the respective jurisdictions. Density tests should also be made on the prepared subgrade to receive fill, unless the areas are underlain by dense alluvium, as required by the Geotechnical Engineer.

8.9.3 Fill Placement

Laboratory Testing: Representative samples of materials to be utilized as compacted fill should be analyzed in a laboratory to determine their physical properties. If any material other than that previously tested is encountered during grading, the appropriate analysis of this material should be conducted.

On-Site Fill Material: The on-site soils, in our opinion, are adequate for re-use in controlled fills provided the soils do not contain any organic matter, debris, and that over-sized rocks are buried in accordance with the recommendations under *Rock Fragments*.

Rock Fragments: The alluvium on the site should be free of oversized rocks. Any rock fragments over 6 inches should be kept below a depth of 5 feet below proposed grade. Rocks greater than 6 inches in diameter should be

taken off site or placed in accordance with the recommendations of the Geotechnical Engineer. Rocks greater than 6 inches in diameter shall be kept out of all street areas to a depth below the deepest proposed utility line. Rocks shall not be placed in concentrated pockets, shall be surrounded with fine grained material, and the distribution of the rocks shall be supervised by the Geotechnical Engineer. A sufficient amount of fine-grained material shall be placed around the rocks to prevent nesting and to fill all void space. An adequate amount of water will be required to force fines into any open voids.

Fill Placement: Approved on-site material shall be evenly placed, watered, processed, and compacted in controlled horizontal layers not exceeding eight inches in loose thickness, and each layer should be thoroughly compacted with approved equipment. The fill should be placed and compacted in horizontal layers, unless otherwise recommended by the Geotechnical Engineer.

Compaction Criteria - Shallow Fills: For fills less than 40 feet in vertical thickness, each layer shall be compacted to at least 90 percent of the maximum laboratory density for material used as determined by ASTM D-1557-12. The field density shall be determined by the ASTM D-1556-07 method or equivalent. Where moisture content of the fill or density testing yields compaction results less than 90 percent, additional compaction effort and/or moisture conditioning, as necessary, shall be performed, until the fill material is in accordance with the requirements of the Geotechnical Engineer.

Fill Material - Moisture Content: All fill material placed must be moisture conditioned, as required to obtain at least optimum moisture, but not greater than 120 percent. If excessive moisture in the fill results in failing results or an unacceptable “pumping” condition, then the fill should be allowed to dry until the moisture content is within the necessary range to meet the required

compaction requirements or reworked until acceptable conditions are obtained.

Keying and Benching: All fills should be keyed and benched through all topsoil, slopewash, alluvium or colluvium or creep material into firm material where the slope receiving fill is steeper than 5:1 (Horizontal: Vertical) or as determined by Geotechnical Engineer. The standard acceptable bench height is four feet into suitable material. The key for side hill fills should be a minimum of 15 feet within compacted fill or firm materials, with a minimum toe embankment of 2 feet into compacted fill, unless otherwise specified by the Geotechnical Engineer.

Slope Face - Compaction Criteria: The Contractor should be required to obtain a minimum relative compaction of 90 percent out to the finish slope face of fill slopes. This may be achieved by either overbuilding the slope a minimum of five feet, and cutting back to the compacted core, or by direct compaction of the slope face with suitable equipment, or by any other procedure which produces the required compaction. If the method of achieving the required slope compaction selected by the Contractor fails to produce the necessary results, the Contractor should rework or rebuild such slopes until the required degree of compaction is obtained, at no additional cost to the Owner or Geotechnical Engineer. Slope testing will include testing the outer 6 inches to 3 feet of the slope face during and after placement of the fill. In addition, during grading, density tests will be taken periodically on the flat surface of the fill three to five feet horizontally from the face of the slope.

Slope Face - Contractor's Responsibility: The Contractor should prepare a written detailed description of the method or methods he would employ to obtain the required slope compaction. Such documents should be submitted to the Geotechnical Engineer for review and comments prior to the start of grading.

Slope Face - Vegetation: All fill slopes should be planted or protected from erosion by methods specified in the geotechnical report, or required by the controlling governmental agency.

Density Testing Intervals: In general, density tests should be conducted at minimum intervals of 2 feet of fill height or every 500 to 1,000 cubic yards. Due to the variability that can occur in fill placement and different fill material characteristics, a higher number of density tests may be warranted to verify that the required compaction is being achieved.

Grading Control: Earthwork monitoring and field density testing shall be performed by the Geotechnical Engineer during grading to provide a basis for opinions concerning the degree of soil compaction attained. The Contractor should receive a copy of the Geotechnical Engineer's *Daily Field Engineering Report* which will indicate the results of field density tests for that day. Where failing tests occur or other field problems arise, the Contractor shall be notified of such conditions by written communication from the Geotechnical Engineer in the form of a conference memorandum, to avoid any misunderstanding arising from oral communication.

Drainage Devices: Drainage terraces should be constructed in compliance with the ordinances of controlling governmental agencies, or with the recommendations of the Geotechnical Engineer or Engineering Geologist.

8.9.4 Construction Considerations

Erosion Control: Erosion control measures, when necessary, should be provided by the Contractor during grading and prior to the completion and construction of permanent drainage controls.

Compaction Equipment: It is also the Contractor's responsibility to have suitable and sufficient compaction equipment on the project site to handle the amount of fill being placed and the type of fill material to be compacted. If necessary, excavation equipment should be shut down to permit completion of compaction in accordance with the recommendations contained herein. Sufficient watering devices/equipment should also be provided by the Contractor to achieve optimum moisture content in the fill material.

Final Grading Considerations: Care should be taken by the Contractor during final grading to preserve any berms, drainage terraces, interceptor swales, or other devices of a permanent nature on or adjacent to the property.

8.9.5 Earthwork Adjustment Factors

Based on the results of the laboratory tests including hydro collapse, in situ density and maximum dry density, the upper 10 feet of terrace deposits may shrink by approximately 15 to 20 percent during grading. Removals below a depth of 10 feet may bulk by approximately 5 to 10 percent.

8.9.6 Temporary Excavation

Where the necessary space is available, temporary unsurcharged embankments may be sloped back without shoring. The slope should not be cut steeper than the following gradient:

TABLE 7
TEMPORARY EXCAVATION SLOPE

Height	Temporary Gradient (Horizontal:Vertical)
0 - 5'	Near Vertical
above 5'	1:1

In areas where soils with little or no binder are encountered, shoring or flatter excavation slopes shall be made. These recommended temporary excavation slopes do not preclude local ravelling or sloughing.

All applicable requirements of the California Construction and General Industry Safety Orders, the Occupational Safety and Health Act, and the Construction Safety Act should be met.

Where sloped embankments are used, the top of the slope should be barricaded to prevent equipment and heavy storage loads within five feet of the top of the slope. If the temporary construction embankments are to be maintained for long periods, berms should be constructed along the top of the slope to prevent runoff water from eroding the slope faces. The soils exposed in the temporary backcut slopes during excavation should be observed by our personnel so that modifications of the slopes can be made if variations in the soil conditions occur. The temporary excavation slopes should be supported within three weeks.

8.9.7 Excavation Observation

All footing and other excavations should be observed by an Engineering Geologist or Geotechnical Engineering prior to placement of any steel to verify that the proper foundation material has been encountered. The City Inspector should also observe the excavation.

8.9.8 Utility Trenching and Backfill

Utility Trenching: Open excavations and excavations that are shored shall conform to all applicable Federal, State, and local regulations.

Backfill Placement: Approved on-site or imported fill material shall be evenly placed, watered, processed, and compacted in controlled horizontal layers

not exceeding eight inches in loose thickness, and each layer should be thoroughly compacted with approved equipment. All fill material should be moisture conditioned, as required to obtain at least optimum moisture, but not greater than 120 percent of optimum moisture content. The fill should be placed and compacted on a horizontal plane, unless otherwise recommended by the Geotechnical Engineer.

As an alternative to on-site or imported fill material, for shallow trenches where pipe or utility lines may be damaged by mechanical compaction equipment, such as under building floor slabs, imported clean sand having a sand equivalent (SE) value of 30 or greater may be utilized. The sand backfill materials should be watered to achieve near optimum moisture conditions and then tamped into place. No specific relative compaction will be required; however, observation, probing, and if deemed necessary, testing should be performed by a representative of the project geotechnical consultant to verify an adequate degree of compaction.

Backfill Compaction Criteria: Each layer of utility trench backfill shall be compacted to at least 90 percent of the maximum laboratory density determined by ASTM D-1557-12. The field density shall be determined by the ASTM D-1556-07 method or equivalent. Where moisture content of the fill or density testing yields compaction results less than 90 percent, additional compaction effort and/or moisture conditioning, as necessary, shall be performed, until the compaction criteria is reached.

Exterior Trenches Adjacent to Footings: Exterior trenches, paralleling a footing and extending below a 1H:1V plane projected from the outside bottom edge of the footing, should be compacted to 90 percent of the laboratory standard. Sand backfill, unless it is similar to the in-place fill, should not be allowed in the trench backfill areas. Density testing, along with probing, should be accomplished to verify the desired results.

Pipe Bedding: We recommend that a minimum of 6 inches of bedding material should be placed in the bottom of the utility trench. All bedding materials shall extend at least 4 inches above the top of utilities which require protection during subsequent trench backfilling. All trenches shall be wide enough to allow for compaction around the haunches of the pipe.

Groundwater Migration: Backfilled utility trenches may act as French drains to some extent, and considerable groundwater flow along utility bedding and backfill should be expected. Wherever buried utilities, or structures which they may intersect, could be adversely affected by such drainage, provisions shall be made to collect groundwater migrating along the trench lines. These situations include where buried utilities enter buildings, particularly where they enter below grade mechanical rooms, and where buried utilities enter junction boxes or switching stations that are intended to remain dry. Mitigation measures include, but are not limited to, placement of perforated drain pipes below and continuous with bedding materials, and placement of seepage barriers such as lean mix concrete or controlled density fill (CDF).

REFERENCES

1. California Department of Conservation, Division of Mines and Geology, 1998, *Seismic Hazard Zone Report for the Mt. Wilson 7.5-minute Quadrangle, Los Angeles County, California; Seismic Hazard Report 030.*

2. California Geological Survey, Fault Evaluation Report FER 249, Treiman, Jerome, A. December 20, 2013, *The Sierra Madre Fault Zone in the Azusa Quadrangle, Los Angeles County, California*

3. Dibblee, T. W., 1998, *Geologic map of the Mt. Wilson and Azusa quadrangles Los Angeles County, California*

4. GeoSoils Consultants, Inc., dated July 7, 2014, *Geologic and Geotechnical Engineering Investigation, Mater Dolorosa Development Parcel, 700 N. Sunnyside Avenue (APN 5761-002-008), City of Sierra Madre, California*

5. GeoSoils Consultants, Inc. dated June 12, 2020, Preliminary Due Diligence Geotechnical Engineering Investigation, 700 N. Sunnyside Avenue (APN 5761-002-008), City of Sierra Madre, California

6. GeoSoils Consultants, Inc. dated November 17, 2020, Geologic Section of EIR, 700 N. Sunnyside Avenue (APN 5761-002-008), City of Sierra Madre, California

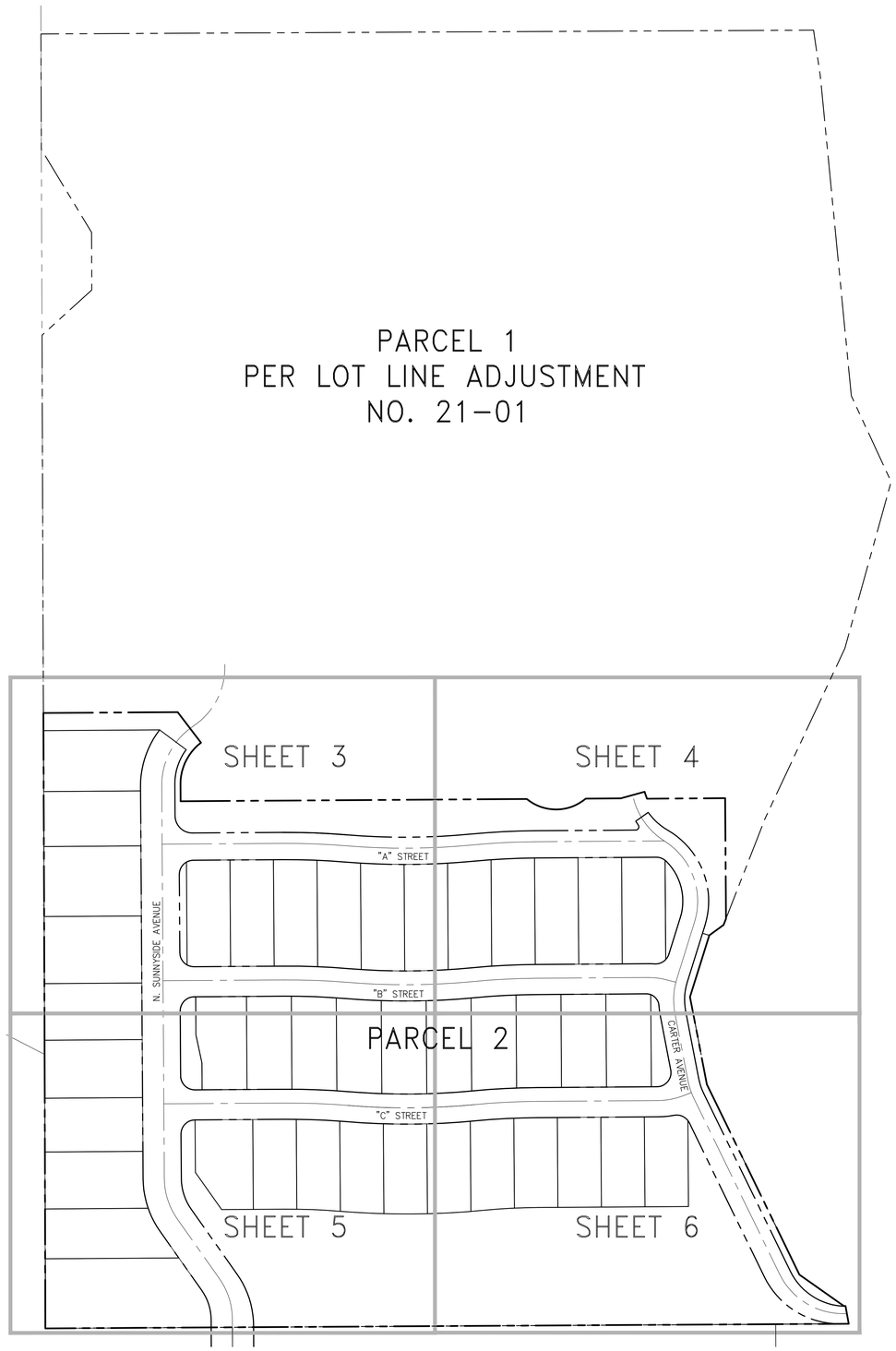
7. GeoSoils Consultants, Inc, dated November 23, 2020, Preliminary Geologic and Geotechnical Engineering Investigation, 700 N. Sunnyside Avenue (APN 5761-002-008), City of Sierra Madre, California

8. GeoSoils Consultants, Inc., dated April 6, 2021, *Response to CEQA-Level Geologic and Geotechnical Review of Proposed Congregation of the Passion Mater Dolorosa Community dated February 17, 2021, 700 North Sunnyside Avenue, Sierra Madre, California*

9. U.S. Geological Survey Professional Paper 1339, 1987, *Recent Reverse Faulting in the Transvers Ranges, California*

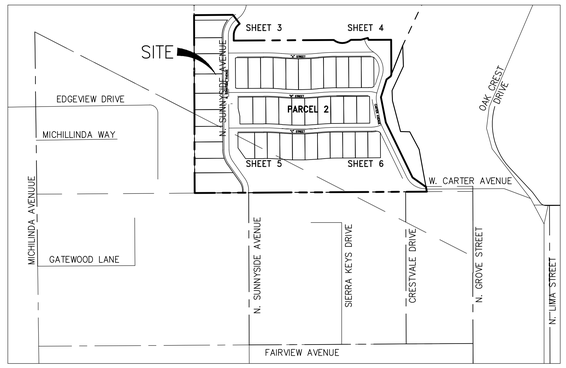
6634 Valjean Avenue, Van Nuys, California 91406 Phone: (818) 785-2158 Fax: (818) 785-1548

MAJOR LAND DIVISION
VESTING TENTATIVE TRACT NO. 83966
FOR LOT MERGER & SUBDIVISION PURPOSES LOCATED IN CITY OF SIERRA MADRE, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA



KEY MAP

80' 0' 40' 80'
SCALE: 1" = 80'



VICINITY MAP
THOMAS GUIDE PG. 566
SCALE: 1" = 300'

LOT AREA SUMMARY

LOT	LOT FRONTAGE WIDTH (FT)	LOT AREA (SF)	LOT AREA (AC)	ZONING	LAND USE
1	98.5	21,535	0.49	R-1	SFD
2	70.5	11,648	0.27	R-1	SFD
3	80.5	11,263	0.26	R-1	SFD
4	76	10,519	0.24	R-1	SFD
5	82	11,324	0.26	R-1	SFD
6	80	11,027	0.25	R-1	SFD
7	94.7	13,027	0.30	R-1	SFD
8	99	13,586	0.31	R-1	SFD
9	77.8	10,661	0.24	R-1	SFD
10	86	12,461	0.29	R-1	SFD
11	81.50	9,381	0.22	R-1	SFD
12	61.5	7,811	0.18	R-1	SFD
13	61.5	7,822	0.18	R-1	SFD
14	61.5	7,828	0.18	R-1	SFD
15	61.5	7,812	0.18	R-1	SFD
16	61.5	7,821	0.18	R-1	SFD
17	61.5	7,829	0.18	R-1	SFD
18	61.5	7,811	0.18	R-1	SFD
19	61.5	7,811	0.18	R-1	SFD
20	61.5	7,811	0.18	R-1	SFD
21	61.5	7,834	0.18	R-1	SFD
22	63.5	8,954	0.21	R-1	SFD
23	63.5	8,350	0.19	R-1	SFD
24	63.5	8,347	0.19	R-1	SFD
25	63.5	8,344	0.19	R-1	SFD
26	63.5	8,350	0.19	R-1	SFD
27	63.5	8,346	0.19	R-1	SFD
28	63.5	8,345	0.19	R-1	SFD
29	63.5	8,350	0.19	R-1	SFD
30	63.5	8,350	0.19	R-1	SFD
31	63.5	8,348	0.19	R-1	SFD
32	61.5	9,239	0.21	R-1	SFD
33	61.5	9,256	0.21	R-1	SFD
34	61.5	9,256	0.21	R-1	SFD
35	61.5	9,249	0.21	R-1	SFD
36	61.5	9,253	0.21	R-1	SFD
37	61.5	9,255	0.21	R-1	SFD
38	61.5	9,249	0.21	R-1	SFD
40	61.5	9,256	0.21	R-1	SFD
41	61.5	9,256	0.21	R-1	SFD
42	61.5	9,218	0.21	R-1	SFD
A	N/A	45,270	1.04	R-1	OPEN
B	N/A	5,854	0.13	R-1	OPEN
C	N/A	1,380	0.03	R-1	OPEN
D	N/A	3,196	0.07	R-1	OPEN
E	N/A	2,217	0.05	R-1	OPEN
F	N/A	2,438	0.06	R-1	OPEN

STREET DEDICATION SUMMARY

TOTAL PUBLIC STREET DEDICATION AREA (SF)	TOTAL PUBLIC STREET DEDICATION AREA (AC)
160,396	3.68

GENERAL NOTES

1. ALL BOUNDARY MONUMENTS SHALL BE SET PRIOR TO FILING FINAL MAP.
2. STRUCTURE DEMOLITION NOTE: ALL EXISTING STRUCTURES WITHIN PROJECT LIMIT WILL BE DEMOLISHED.
3. VEGETATION DEMOLITION NOTE: ALL EXISTING VEGETATION WITHIN GRADING LIMITS WILL BE CLEARED.
4. FIRE SPRINKLER NOTE: ALL RESIDENTIAL CONSTRUCTION WILL BE SPRINKLERED.
5. SLOPE NOTE: WHERE ROADWAYS DAYLIGHT TO EXISTING GROUND, UPSLOPES AND DOWNSLOPES WILL MATCH EXISTING SLOPE GRADIENTS AND MAY BE STEEPER THAN 2:1. ALL OTHER PROPOSED SLOPES SHALL BE 2:1.

GENERAL LOT NOTES

1. SINGLE FAMILY LOTS 1 TO 42 SHALL BE INDIVIDUAL FEE LOTS.
2. LOT 43 SHALL BE PUBLICLY ACCESSIBLE OPEN SPACE LOTS FOR RECREATIONAL PURPOSES.
3. LOTS A TO F SHALL BE PRIVATE COMMON OPEN SPACE LOTS.
4. ALL PRIVATE OPEN AREAS SHALL BE OWNED AND MAINTAINED BY THE PRIVATE HOMEOWNER'S ASSOCIATION.
5. PROPOSED PRIVATE STREETS "A", "B", & "C" ARE TO BE FIRE LANES. SEE DEPARTMENT OF REGIONAL PLANNING WAIVER AGAINST STREET FRONTAGE REQUIREMENTS.
6. LOT FRONT YARDS CONTAIN 55-59% LANDSCAPING COVERAGE.
7. ANY TRASH CONTAINERS/DUMPSTERS STORED IN ALL FRONT OR SIDE YARDS WILL BE SCREENED FROM VIEW USING CMU BLOCK WALLS.

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LOTS 38-42 A E	4
LOTS 1-6 11-16 22-26 43 D	5
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TYPICAL SECTIONS AND DETAILS	7

DEVELOPER

NUWI SIERRA MADRE, LLC.
2001 WILSHIRE BLVD., SUITE 401, SANTA MONICA, CA 90403
ATTN; JONATHAN P. FRANKEL

PROJECT ADDRESS

700 NORTH SUNNYSIDE AVENUE
SIERRA MADRE, CA, 91024

CIVIL ENGINEER

ATTN; ANDREW WILLRODT
FUSCOE ENGINEERING, INC.
600 WILSHIRE BLVD, SUITE 1470
LOS ANGELES, CA 90017

SUBDIVIDER

ATTN: MATER DOLOROSA PASSIONIST RETREAT CENTER (MDPRC)
700 NORTH SUNNYSIDE AVENUE
SIERRA MADRE, CA, 91024

RECORD OWNER

TITLE TO SAID ESTATE OR INTEREST AT THE DATE HEREOF IS VESTED IN:

THE CONGREGATION OF THE PASSION, MATER DOLOROSA COMMUNITY, A CALIFORNIA NON-PROFIT CORPORATION FORMERLY KNOWN AS PASSIONIST MATER DOLOROSA RETREAT, A CALIFORNIA CORPORATION WHO ACQUIRED TITLE AS PASSIONIST ACADEMIC INSTITUTE, A CALIFORNIA CORPORATION.

ASSESSOR PARCEL NUMBERS

5761-002-008

LAND USE DESIGNATION

INSTITUTIONAL (I)

SITE ZONING

EXISTING: INSTITUTIONAL
PROPOSED: R-1 (ONE FAMILY RESIDENTIAL 7,500 SF. MINIMUM)

RECORD BOUNDARY NOTE

THE BOUNDARY AND EASEMENT INFORMATION SHOWN HEREON HAS BEEN CONSTRUCTED FROM RECORD SOURCE DOCUMENTS (TRACT MAPS AND DEEDS) AS EVIDENCED IN THE PRELIMINARY TITLE REPORTS AN PREPARED BY CHICAGO TITLE COMPANY, ORDER NO. **00131334-021-JH5-JC**, DATED: **MAY 18, 2020**.

THE BOUNDARY IS, COMPLIED FROM RECORD MAPS AND SURVEYS AVAILABLE IN THE PUBLIC RECORD.

THERE ARE ANOMALIES IN THE MATHEMATICAL DATA BETWEEN SAID RECORDS IN THE MAGNITUDE OF 1 TO 2 FEET. A BOUNDARY DETERMINATION SURVEY FOR THE SUBJECT PROPERTY IS ADVISABLE FOR FINAL DETERMINATION OF THE PROPERTY BOUNDARIES SUBJECT TO PROPOSED FINAL MAPPING, BUILDING SETBACKS AND IMPROVEMENTS THAT MAY BE CRITICAL TO DEVELOPMENT.

BASIS OF BEARINGS

THE BEARINGS SHOWN HEREON ARE BASED ON THE BAERING N00°44'10"W OF THE CENTERLINE OF MICHILLINDA BOULEVARD AS SHOWN ON TRACT NO. 16405 FILED IN BOOK 404, PAGES 9 AND 10 OF MAPS, RECORD OF LOS ANGELES COUNTY, AND SHOWN AS N00°40'43"W ON THIS MAP.

BENCHMARK

BM NO.: HG5213 ELEV.: 892.752' (LOS ANGELES COUNTY BENCHMARK)
DATUM: NAVD 88, YEAR OF ADJUSTMENT 2013
DESCRIPTION: L&BR IN E CB 10FT S/O BCR @ SE COR SUNNYSIDE AVE & SIERRA MADRE BLVD.

EARTHWORK QUANTITIES

EARTHWORK CUT AND FILL QUANTITIES FOR ENTIRE PROJECT SITE:

TOTAL VOLUME:	PLACE HOLDER
CUT:	PLACE HOLDER
FILL:	PLACE HOLDER
NET:	PLACE HOLDER
OVER-EXCAVATION:	PLACE HOLDER
HAUL ROUTE:	PLACE HOLDER

SLOPE AREA NOTE

TOTAL AREA OF THE SLOPE: 849,760 SF (19.5 AC)

PROJECT DATA

PROJECT SITE AREA: 1,917,783 SF OR 44.026 AC.
SINGLE FAMILY RESIDENTIAL LOTS: 42
COMMON OPEN SPACE LOTS: 7
TOTAL LOTS: 49

LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED SIERRA MADRE, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

THAT PORTION OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER AND OF LOT ONE (1) OF SAID SECTION SEVENTEEN (17) AND THAT PORTION OF LOTS NINETEEN (19) AND TWENTY (20) OF THE SIERRA MADRE TRACT, IN THE CITY OF SIERRA, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 4, PAGES 502 AND 503, MISCELLANEOUS RECORDS OF SAID COUNTY, DESCRIBED AS PARCEL 4, IN THE DEED RECORDED IN BOOK 3051 PAGE 305, OFFICIAL RECORDS.

EXCEPT ALL THAT PORTION OF SAID PARCEL 4, LYING EASTERLY AND NORTHEASTERLY OF THE WESTERLY, NORTHWESTERLY AND SOUTHWESTERLY LINE OF THE LAND DESCRIBED AS PARCEL 140, IN THE FINAL ORDER OF CONDEMNATION RECORDED IN BOOK 49004, PAGE 198, OFFICIAL RECORDS OF SAID COUNTY.

ALSO EXCEPT THAT PORTION OF SAID PARCEL 4, INCLUDED IN THE LAND DESCRIBED IN QUITCLAIM DEED TO THE CITY OF SIERRA MADRE, RECORDED ON DECEMBER 20, 1968, AS INSTRUMENT NO. 3356, IN BOOK D4230 PAGE 892 OF OFFICIAL RECORDS OF SAID COUNTY.

ALSO EXCEPTING THAT PORTION OF SAID PARCEL 4, DESCRIBED AS PARCEL NO. P-6F (FEE) IN THE DEED RECORDED FEBRUARY 15, 2001, AS INSTRUMENT NO. 01-0260705, OFFICIAL RECORDS OF SAID COUNTY.

APN: 5761-002-008

PROJECT INFORMATION

THIS PROPOSED SINGLE FAMILY HOME PROJECT WILL SUBDIVIDE PORTIONS OF THE EXISTING MATER DOLOROSA IN SIERRA MADRE PER THE TENTATIVE TRACT MAP HEREON. THE PROPOSED SUBDIVISION WILL CONTAIN THE FOLLOWING LOT BREAKDOWN:

FORTY THREE (43) LOTS CONTAINING SINGLE FAMILY HOMES
SIX (6) OPEN SPACE
ONE (1) OPEN SPACE PARK AREA

PRESENT LAND USE

THE ACREAGE INSCRIBED ON THIS MAP COMPRISES THE SOUTHER 16 ACRE PORTION OF THE LARGER 44 ACRE TRACT OWNED BY MATER DOLOROSA PASSIONIST RETREAT CENTER (MDPRC). THIS PORTION OF THE TRACT CURRENTLY A GRASS FIELD AND LARGELY UNDEVELOPED.

SETBACK REQUIREMENTS

ZONE R-1 MINIMUM SETBACKS:
FRONT YARD: 25 FEET
SIDE YARDS: 5 FEET
BACK YARDS: 15 FEET
SET BACK LINE WORK IS FOR REFERENCE NOT INTENDED TO ESTABALISH NEW SET BACK

HAZARD NOTES

1. FLOOD NOTE: PER FEMA FLOOD MAP NUMBER **06037C1400F**, THE SITE IS IN MINIMAL FLOOD HAZARD AREA **X**.
2. WILDFIRE HAZARD NOTE: PROJECT IS LOCATED IN A **VERY HIGH** WILDFIRE HAZARD AREA AS OBTAINED FROM THE CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION (CAL FIRE) MAPS OF SIGNIFICANT FIRE HAZARDS.
3. EARTHQUAKE FAULT ZONE HAZARD NOTE: THIS PROJECT IS NOT WITHIN AN EARTHQUAKE FAULT ZONE.
4. LIQUEFACTION HAZARD: THIS PROJECT IS NOT WITHIN A LIQUEFACTION ZONE.
5. LANDSLIDE HAZARD: ALL OR PORTION OF THIS PROJECT LIES WITHIN A LANDSLIDE ZONE.
6. METHANE HAZARD NOTE: NOT WITHIN 300 FEET OF AN OIL OR GAS WELL OR 1,000 FEET OF A METHANE PRODUCING SITE.

PARKING INFORMATION

ZONE R-1
FLOOR AREA LESS THAN 1,000 SF – 1 PARKING SPACE
FLOOR AREA GREATER THAN 1,000 SF AND LESS THAN 3,500 SF – 2 PARKING SPACES
FLOOR AREA GREATER THAN 3,500 SF – 3 PARKING SPACES

PROTECTED TREE NOTES

1. PROJECT SITE CONTAINS 24 PROTECTED TREES OF WHICH 14 TREES ARE TO BE REMOVED AND 10 TREES ARE TO BE IMPACTED. REFER TO THE PROTECTED TREE REPORT PREPARED BY CERTIFIED ARBORIST RYAN ALLEN, DATED JANUARY 2022 FOR MORE SPECIFICS.

NO.	REVISIONS	DATE	BY

FUSCOE ENGINEERING
600 Wilshire, Suite 1470,Los Angeles, California 90017
tel 213.988.8802 ◦ fax 213.988.8803 ◦ www.fuscoe.com

Name Date

REGISTERED PROFESSIONAL ENGINEER ANDREW JEFFERSON WILLRODT No.C49881 CIVIL STATE OF CALIFORNIA

MAJOR LAND DIVISION
TITLE SHEET
VESTING TENTATIVE TRACT MAP 83966
FOR LOT MERGER & SUBDIVISION PURPOSES
LOCATED IN THE CITY OF SIERRA MADRE,
IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

DATE	JOB NUMBER
09/01/2022	1972-001

SCALE: PER PLAN
DRAFTED BY: FG
CHECKED BY: AW
SHT. 1 OF 7

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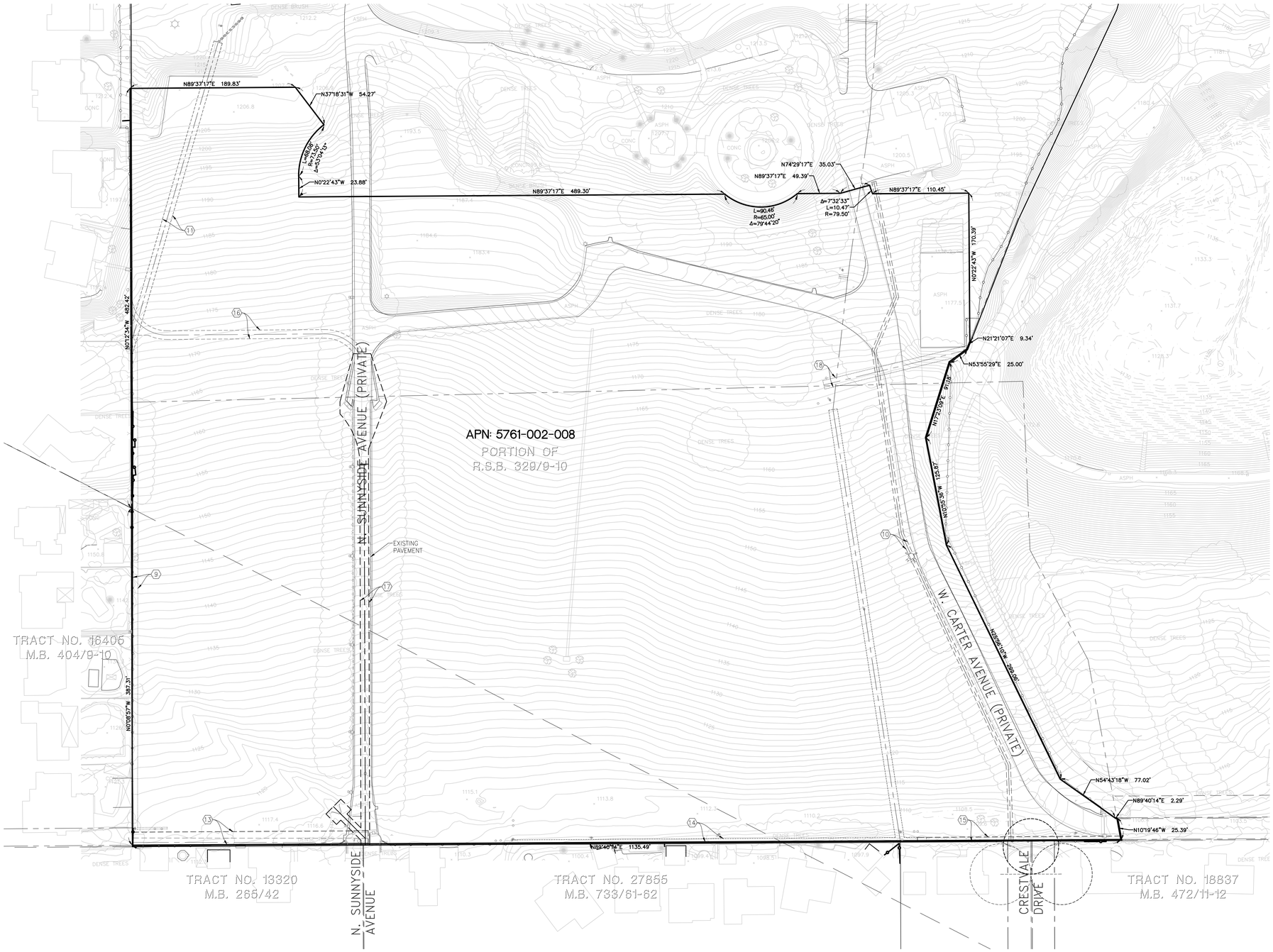

LINE LEGEND

- PROJECT PROPERTY LINES
- CENTERLINE
- ADJACENT LOTS

EXISTING EASEMENTS

THE TITLE EXCEPTIONS SHOWN ON THE PRELIMINARY TITLE REPORT BY CHICAGO TITLE COMPANY, ORDER NO. 00131334-021-JH5-JC.

(9) EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:

GRANTED TO: SOUTHERN CALIFORNIA EDISON COMPANY
PURPOSE: ELECTRIC LINES, POLES AND INCIDENTAL PURPOSES
RECORDED: IN BOOK 47585, PAGE 17, OFFICIAL RECORDS
AFFECTS: A PORTION OF SAID LAND AS MORE PARTICULARLY DESCRIBED IN SAID DOCUMENT

(10) EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:

GRANTED TO: LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
PURPOSE: TELEPHONE LINES, INGRESS AND EGRESS AND INCIDENTAL PURPOSES
RECORDING DATE: NOVEMBER 28, 1961
RECORDING NO: 4779, OFFICIAL RECORDS
AFFECTS: A PORTION OF SAID LAND AS MORE PARTICULARLY DESCRIBED IN SAID DOCUMENT

(11) EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:

GRANTED TO: CITY OF SIERRA MADRE
PURPOSE: SANITARY SEWER PURPOSES
RECORDING DATE: JULY 18, 1962
RECORDING NO: 3989, OFFICIAL RECORDS
AFFECTS: A PORTION OF SAID LAND AS MORE PARTICULARLY DESCRIBED IN SAID DOCUMENT

(13) EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:

GRANTED TO: CALIFORNIA WATER AND TELEPHONE COMPANY
PURPOSE: TELEPHONE LINE, POLES AND INCIDENTAL PURPOSES
RECORDING DATE: MAY 09, 1966
RECORDING NO: 2908, OFFICIAL RECORDS
AFFECTS: A PORTION OF SAID LAND AS MORE PARTICULARLY DESCRIBED IN SAID DOCUMENT

(14) EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:

GRANTED TO: CITY OF SIERRA MADRE
PURPOSE: STORM DRAIN AND INCIDENTAL PURPOSES
RECORDING DATE: DECEMBER 20, 1968
RECORDING NO: 3355, OFFICIAL RECORDS
AFFECTS: A PORTION OF SAID LAND AS MORE PARTICULARLY DESCRIBED IN SAID DOCUMENT

(15) EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:

GRANTED TO: LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
PURPOSE: COVERED STORM DRAIN AND INCIDENTAL PURPOSES
RECORDING DATE: JANUARY 03, 1969
RECORDING NO: 2977, OFFICIAL RECORDS
AFFECTS: A PORTION OF SAID LAND AS MORE PARTICULARLY DESCRIBED IN SAID DOCUMENT

(16) EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:

GRANTED TO: SOUTHERN CALIFORNIA EDISON COMPANY
PURPOSE: ELECTRIC LINES, POLES AND INCIDENTAL PURPOSES
RECORDING DATE: APRIL 01, 1981
RECORDING NO: 81-330992, OFFICIAL RECORDS
AFFECTS: A PORTION OF SAID LAND AS MORE PARTICULARLY DESCRIBED IN SAID DOCUMENT

(17) EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:

GRANTED TO: SOUTHERN CALIFORNIA EDISON COMPANY
PURPOSE: PUBLIC UTILITIES, CONDUITS AND INCIDENTAL PURPOSES
RECORDING DATE: AUGUST 06, 1987
RECORDING NO: 87-1256381, OFFICIAL RECORDS
AFFECTS: A PORTION OF SAID LAND AS MORE PARTICULARLY DESCRIBED IN SAID DOCUMENT

(18) EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO AS SET FORTH IN A DOCUMENT:

GRANTED TO: SOUTHERN CALIFORNIA EDISON COMPANY
PURPOSE: PUBLIC UTILITIES, CONDUITS AND INCIDENTAL PURPOSES
RECORDING DATE: MARCH 14, 2017
RECORDING NO: 2017-289425, OFFICIAL RECORDS
AFFECTS: A PORTION OF SAID LAND AS MORE PARTICULARLY DESCRIBED IN SAID DOCUMENT

** EXISTING EASEMENT ENCUMBRANCE TO BE QUITCLAIMED OR MODIFIED

N

50' 0' 25' 50'
SCALE: 1" = 50'

NO.	REVISIONS	DATE	BY

FUSCOE ENGINEERING
600 Wilshire, Suite 1470, Los Angeles, California 90017
tel 213.988.8802 ◦ fax 213.988.8803 ◦ www.fuscoe.com

Name Date

REGISTERED PROFESSIONAL ENGINEER ANDREW JEFFERSON WALDRON No.C49881 CIVIL STATE OF CALIFORNIA

MAJOR LAND DIVISION

EXISTING CONDITIONS AND EASEMENTS

VESTING TENTATIVE TRACT MAP 83966

FOR LOT MERGER & SUBDIVISION PURPOSES
LOCATED IN THE CITY OF SIERRA MADRE,
IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

DATE	JOB NUMBER
09/01/2022	1972-001

SCALE:		
PER PLAN	DRAFTED BY: FG CHECKED BY: AW	SHT. 2 OF 7

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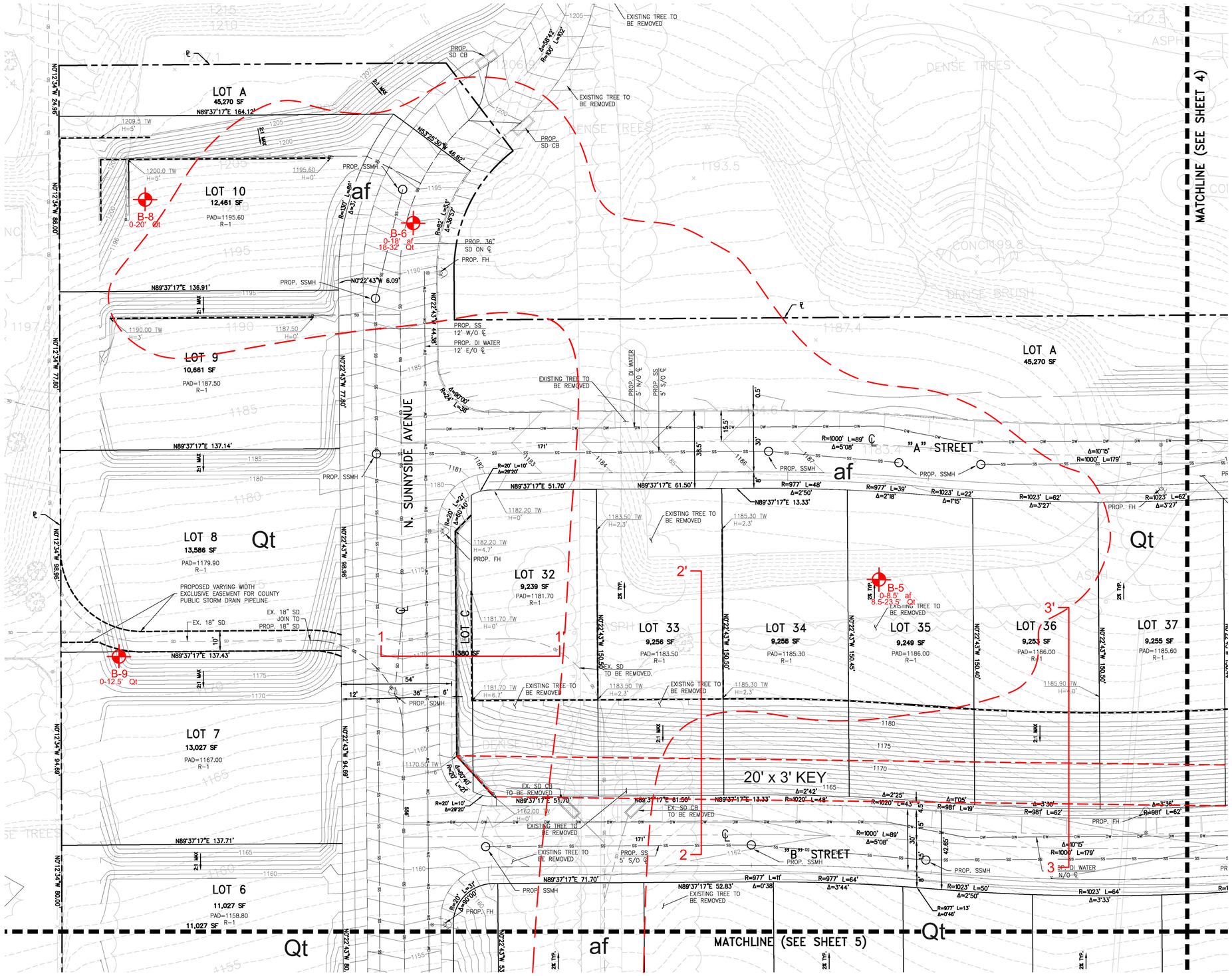

LEGEND AND ABBREVIATIONS

	PROPERTY LINE/RIGHT-OF-WAY
	CENTERLINE
	EASEMENT
	LOT LINE
	PROPOSED RETAINING WALL
100	MAJOR CONTOUR
100	MINOR CONTOUR
DW	EXISTING WATER LINE
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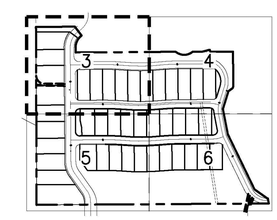

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20' 0' 10' 20'
SCALE: 1" = 20'

MDN 23118

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Van Nuys, CA 91406

GEOLOGIC MAP
LOTS 38-42 A E
VESTING TENTATIVE TRACT 83966
SIERRA MADRE, CALIFORNIA
NUWI SIERRA MADRE, LLC

WORK ORDER	DATE	SCALE
6747	9/2022	1" = 20'
REVISED	SHEET 3	

EXPLANATION

af	ARTIFICIAL FILL
Qt	TERRACE DEPOSITS
	APPROXIMATE GEOLOGIC CONTACT
B-12	APPROXIMATE LOCATION OF BORING
12 12'	LINE OF GEOLOGIC SECTION

NO.	REVISIONS	DATE	BY

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600 Wilshire, Suite 1470, Los Angeles, California 90017
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Name Date

REGISTERED PROFESSIONAL ENGINEER
ANDREW JEFFERSON WILLIAMS
No.C49881
CIVIL
STATE OF CALIFORNIA

MAJOR LAND DIVISION
LOTS 6-10 32-37 A
VESTING TENTATIVE TRACT MAP 83966
FOR LOT MERGER & SUBDIVISION PURPOSES
LOCATED IN THE CITY OF SIERRA MADRE,
IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

DATE	JOB NUMBER
09/01/2022	1972-001

SCALE:	DRAFTED BY: FG	SHT. 3 OF 7
PER PLAN	CHECKED BY: AW	

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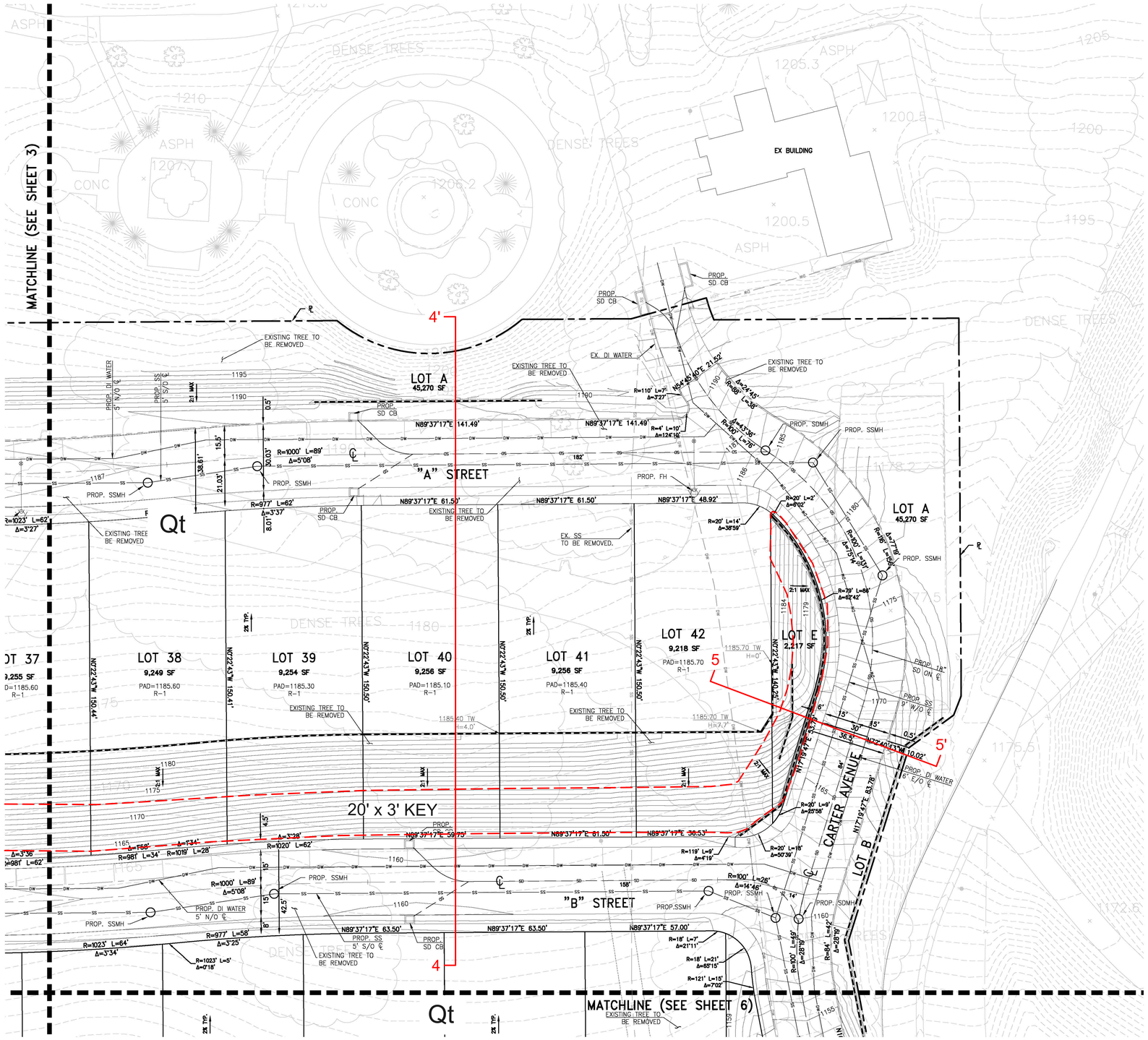

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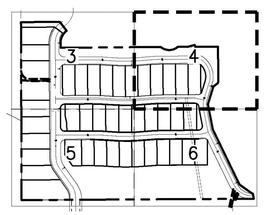

20' 0' 10' 20'
SCALE: 1" = 20'

MDN 23118

GSC GeoSoils Consultants Inc.
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6634 Valjean Avenue
Van Nuys, CA 91406

GEOLOGIC MAP
LOTS 38-42 A E
VESTING TENTATIVE TRACT 83966
SIERRA MADRE, CALIFORNIA
NUWI SIERRA MADRE, LLC

WORK ORDER	DATE	SCALE
6747	9/2022	1" = 20'

REVISED ____ ____

SHEET 4

EXPLANATION

af	ARTIFICIAL FILL
Qt	TERRACE DEPOSITS
	APPROXIMATE GEOLOGIC CONTACT
B-12	APPROXIMATE LOCATION OF BORING
12 12'	LINE OF GEOLOGIC SECTION

NO.	REVISIONS	DATE	BY

FUSCOE ENGINEERING
600 Wilshire, Suite 1470, Los Angeles, California 90017
tel 213.988.8802 ◦ fax 213.988.8803 ◦ www.fuscoe.com

Name Date

REGISTERED PROFESSIONAL ENGINEER
ANDREW JEFFERSON WILDGOSE
No.C49881
CIVIL
STATE OF CALIFORNIA

MAJOR LAND DIVISION
LOTS 38-42 A E
VESTING TENTATIVE TRACT MAP 83966
FOR LOT MERGER & SUBDIVISION PURPOSES
LOCATED IN THE CITY OF SIERRA MADRE,
IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

DATE	JOB NUMBER
09/01/2022	1972-001

SCALE:		
PER PLAN	DRAFTED BY: FG CHECKED BY: AW	SHT. 4 OF 7

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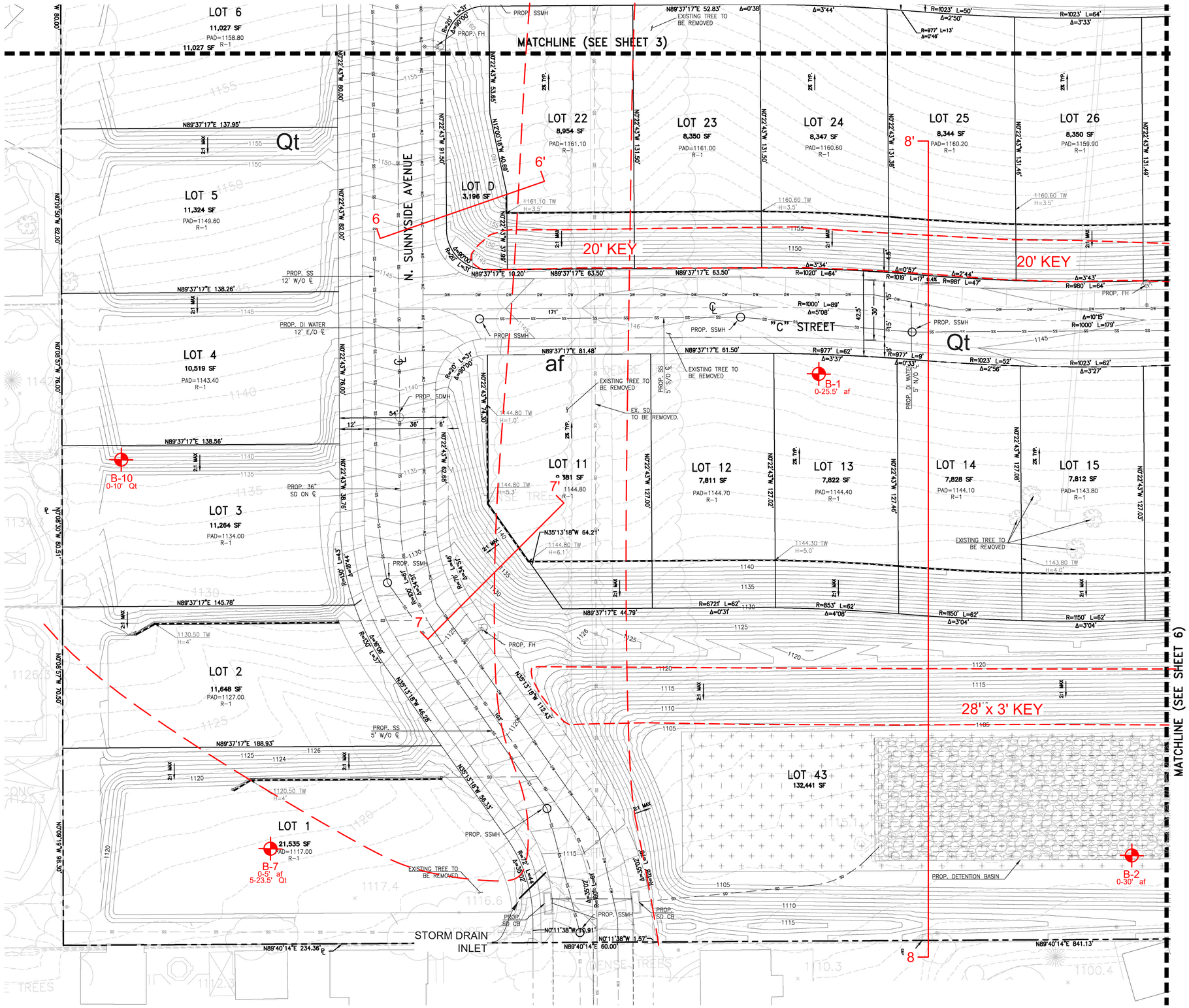

LEGEND AND ABBREVIATIONS

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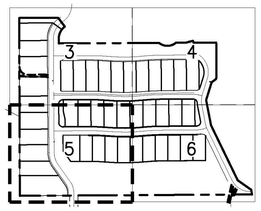

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20' 0' 10' 20'
SCALE: 1" = 20'

MDN 23118

GSC GeoSoils Consultants Inc.
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Van Nuys, CA 91406

GEOLOGIC MAP
LOTS 1-6 11-6 22-26 43 D
VESTING TENTATIVE TRACT 83966
SIERRA MADRE, CALIFORNIA
NUWI SIERRA MADRE, LLC

WORK ORDER	DATE	SCALE
6747	9/2022	1" = 20'

REVISED ____ ____ SHEET 5

EXPLANATION

af	ARTIFICIAL FILL
Qt	TERRACE DEPOSITS
	APPROXIMATE GEOLOGIC CONTACT
B-12	APPROXIMATE LOCATION OF BORING
12 12'	LINE OF GEOLOGIC SECTION

NO.	REVISIONS	DATE	BY

FUSCOE ENGINEERING
600 Wilshire, Suite 1470, Los Angeles, California 90017
tel 213.988.8802 fax 213.988.8803 www.fuscoe.com
Name Date

REGISTERED PROFESSIONAL ENGINEER ANDREW JEFFERSON WILLIAMS No.C49881 CIVIL STATE OF CALIFORNIA

MAJOR LAND DIVISION
LOTS 1-6 11-16 22-26 43 D
VESTING TENTATIVE TRACT MAP 83966
FOR LOT MERGER & SUBDIVISION PURPOSES
LOCATED IN THE CITY OF SIERRA MADRE,
IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

DATE	JOB NUMBER
09/01/2022	1972-001

SCALE:	DRAFTED BY: FG	SHT. 5 OF 7
PER PLAN	CHECKED BY: AW	

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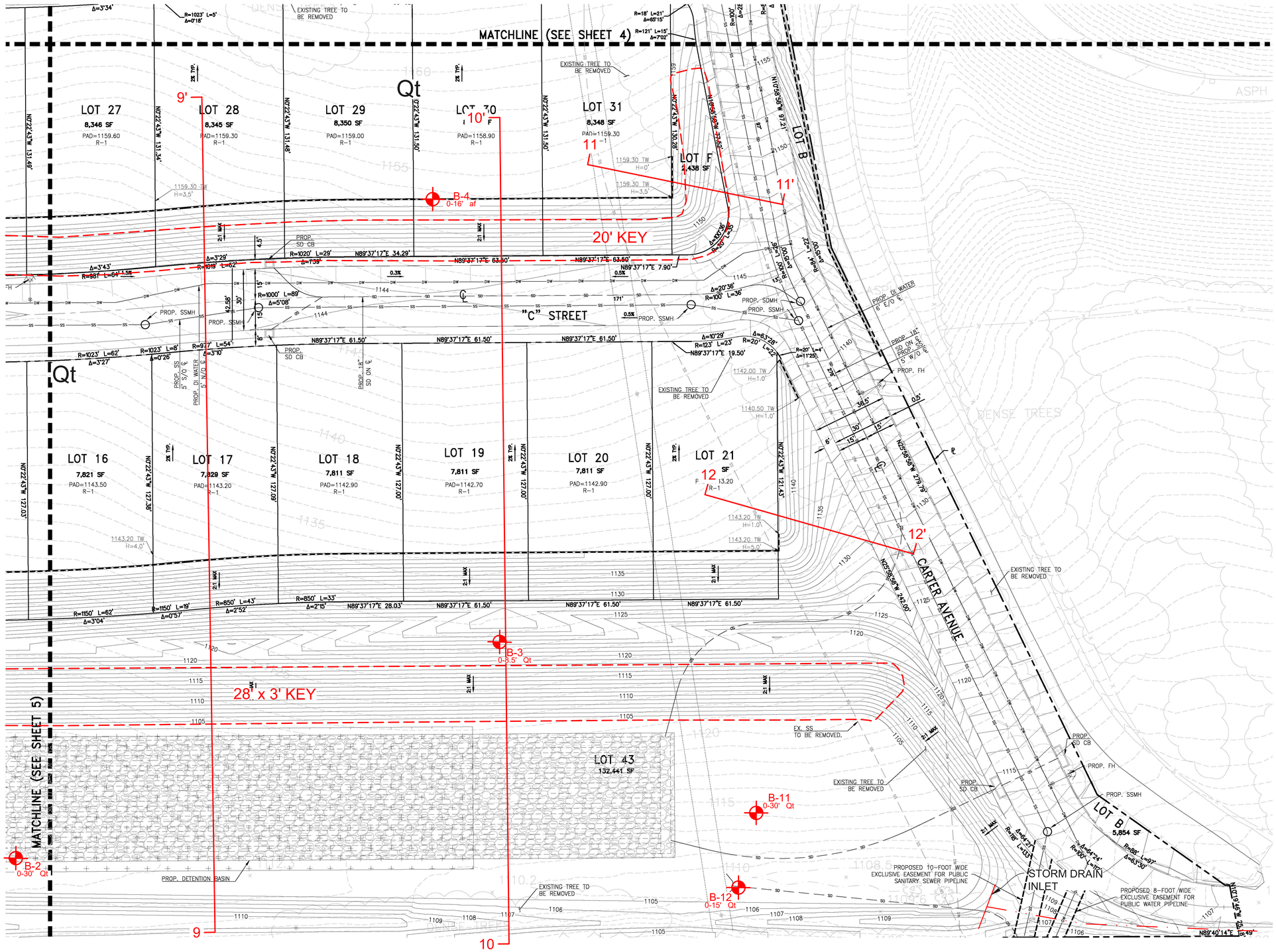

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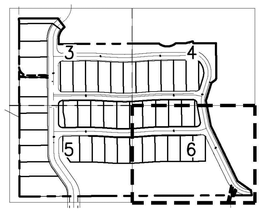

N

20' 0' 10' 20'
SCALE: 1" = 20'

MDN 23118

GSC GeoSoils Consultants Inc.
GEOTECHNICAL•GEOLOGICAL•ENVIRONMENTAL
6634 Valjean Avenue
Van Nuys, CA 91406

GEOLOGIC MAP
LOTS 16-21 27-31 43 F
VESTING TENTATIVE TRACT 83966
SIERRA MADRE, CALIFORNIA
NUWI SIERRA MADRE, LLC

WORK ORDER	DATE	SCALE
6747	9/2022	1" = 20'

REVISED ____ ____

SHEET 6

EXPLANATION

af	ARTIFICIAL FILL
Qt	TERRACE DEPOSITS
	APPROXIMATE GEOLOGIC CONTACT
B-12	APPROXIMATE LOCATION OF BORING
12 12'	LINE OF GEOLOGIC SECTION

NO.	REVISIONS	DATE	BY

FUSCOE ENGINEERING
600 Wilshire, Suite 1470, Los Angeles, California 90017
tel 213.988.8802 fax 213.988.8803 www.fuscoe.com
Name Date

REGISTERED PROFESSIONAL ENGINEER ANDREW JEFFERSON WILDER No.C49881 CIVIL STATE OF CALIFORNIA

MAJOR LAND DIVISION
LOTS 16-21 27-31 43 F
VESTING TENTATIVE TRACT MAP 83966
FOR LOT MERGER & SUBDIVISION PURPOSES
LOCATED IN THE CITY OF SIERRA MADRE,
IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

DATE	JOB NUMBER
09/01/2022	1972-001

SCALE:		
PER PLAN	DRAFTED BY: FG CHECKED BY: AW	SHT. 6 OF 7

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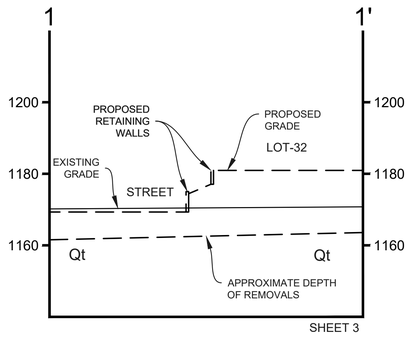

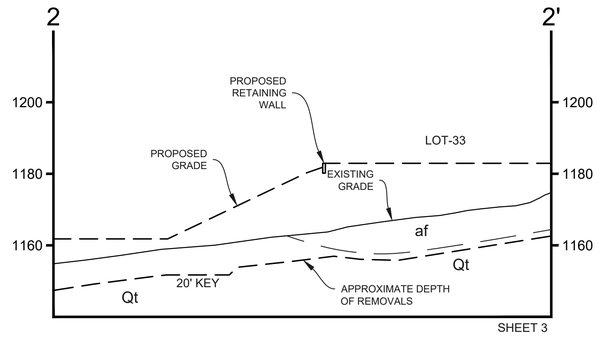

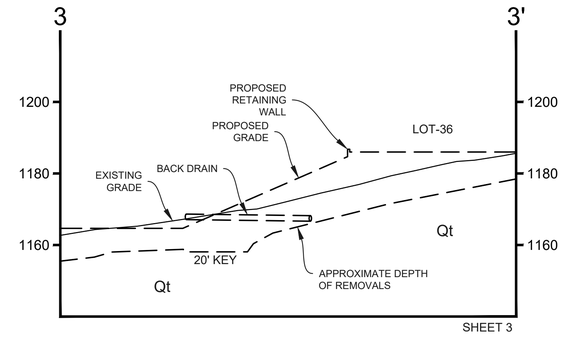

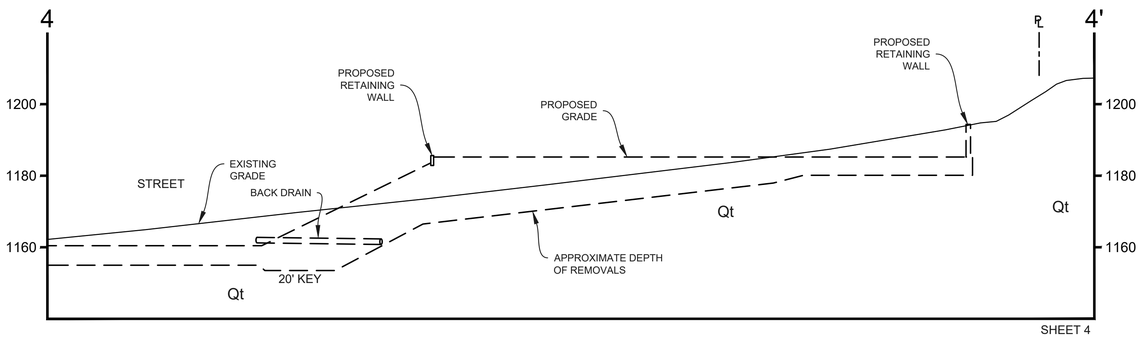

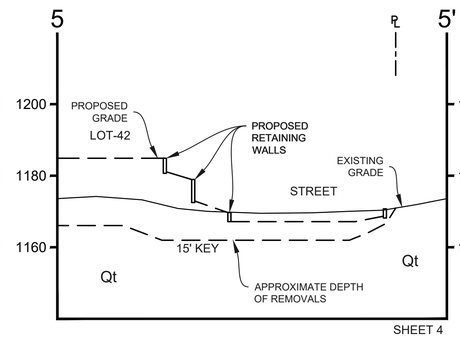

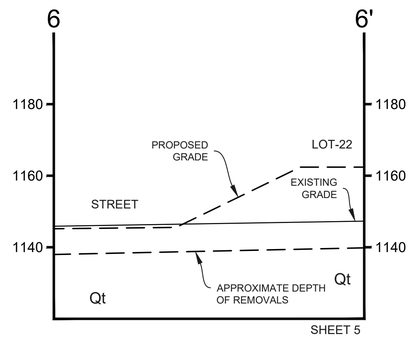

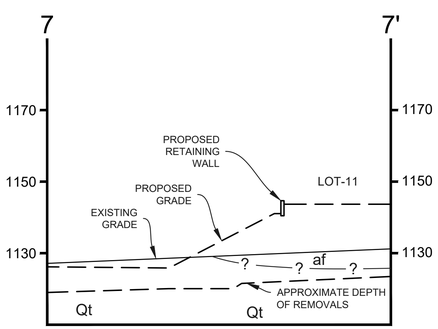

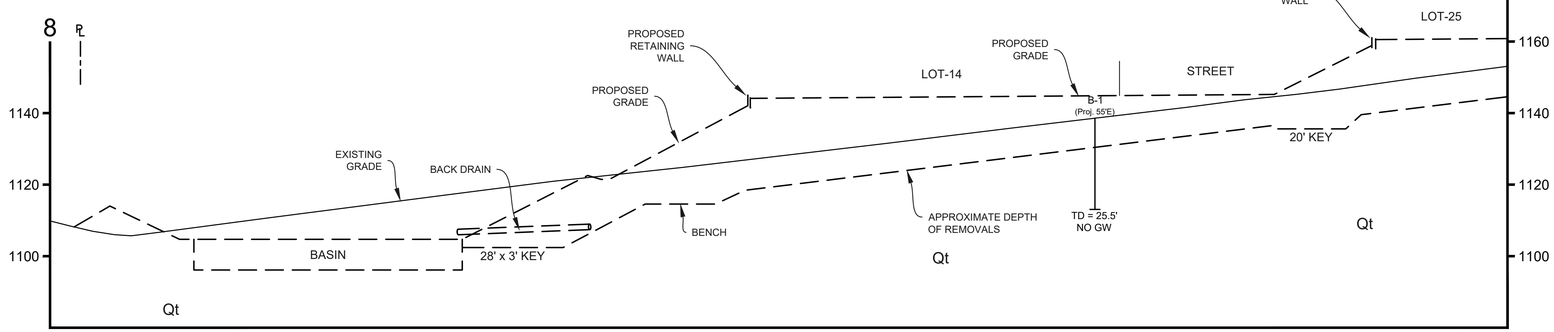

MDN 23118

GSC GeoSoils Consultants Inc.
GEOTECHNICAL•GEOLOGIC•ENVIRONMENTAL
6634 Valjean Avenue
Van Nuys, CA 91406

GEOLOGIC CROSS-SECTIONS
VESTING TENTATIVE TRACT 83966
SIERRA MADRE, CALIFORNIA
NUWI SIERRA MADRE, LLC

WORK ORDER	DATE	SCALE
6747	9/2022	1" = 20'

REVISED

PLATE 1A

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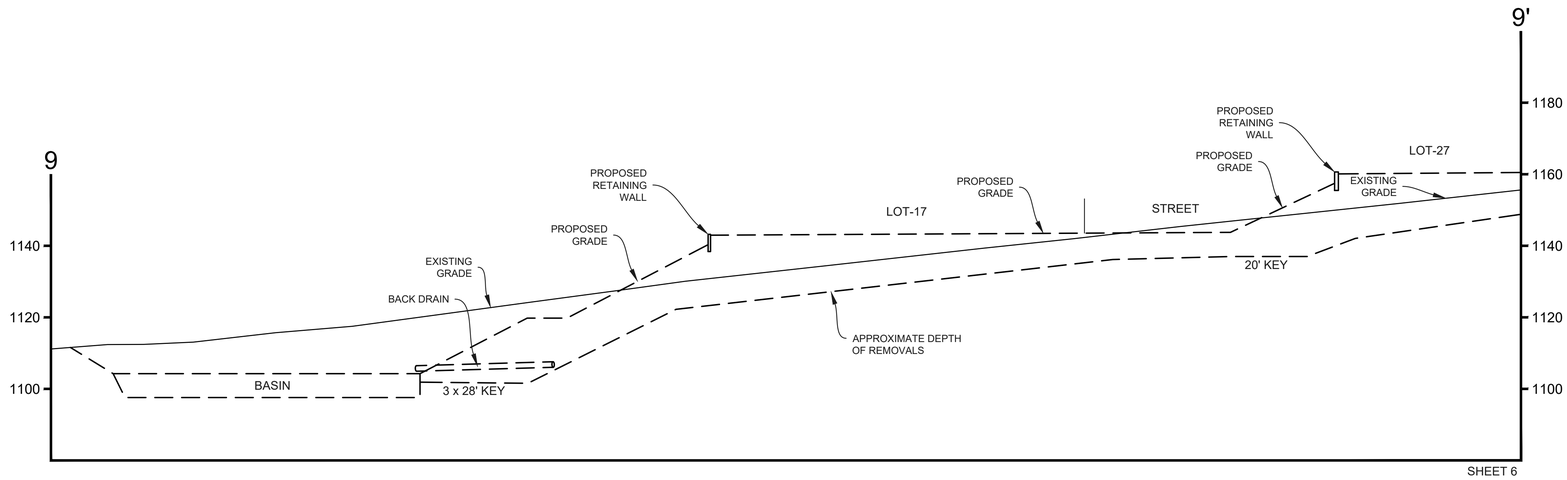
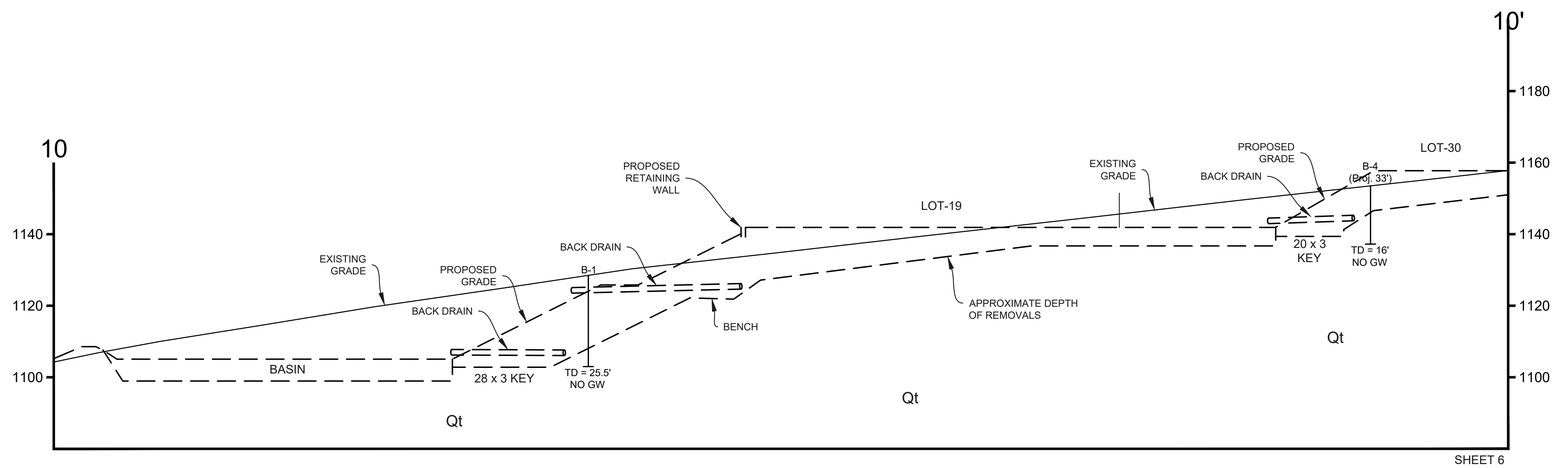
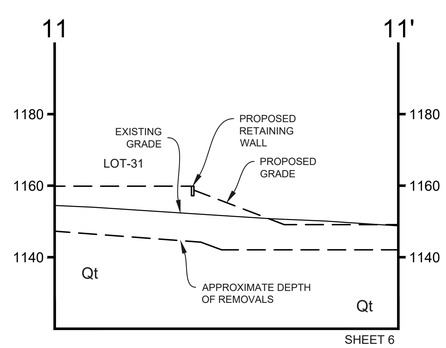
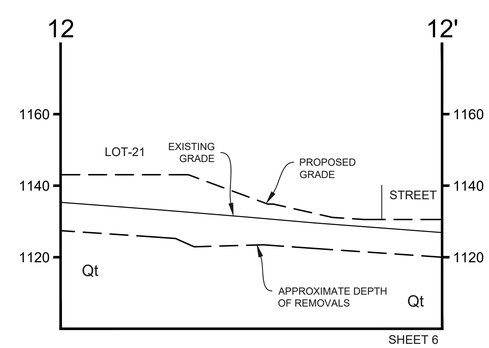








MDN 23118

GSC GeoSoils Consultants Inc.
GEOTECHNICAL • GEOLOGIC • ENVIRONMENTAL
6634 Valjean Avenue
Van Nuys, CA 91406

GEOLOGIC CROSS-SECTIONS
VESTING TENTATIVE TRACT 83966
SIERRA MADRE, CALIFORNIA
NUWI SIERRA MADRE, LLC

WORK ORDER	DATE	SCALE
6747	9/2022	1" = 20'

REVISED

PLATE 1B

X:\2001 w.o\gsc-cad\6747\8-2-23\CURRENT\GEOMAPS AND SECTIONS 9-6-22.dwg, 9/15/2022 4:18:07 PM, AutoCAD PDF (High Quality Print).pc3

September 16, 2022
W.O. 6747

APPENDIX A

FIELD EXPLORATION RESULTS

MDN 23118

6634 Valjean Avenue, Van Nuys, California 91406 Phone: (818) 785-2158 Fax: (818) 785-1548

GEOTECHNICAL BORING LOG

PROJECT NAME NUWI Sierra Madre, LLC
W.O. NO. 6747
DRILLING COMPANY Choice
DATE STARTED: 6-9-14
BORING NO. B-1
TYPE OF DRILL RIG Truck Mounted
LOGGED BY SMB
SHEET 1 OF 1
DRILLING METHOD HSA
HAMMER WEIGHT (LBS) 140
GROUND ELEVATION (FT)
DIAMETER OF HOLE 8
DROP (IN) 30
GW ELEVATION
BORING LOCATION:

DEPTH (FT)	SAMPLE TYPE	BLOWS/ 6 IN.	GEOTECHNICAL DESCRIPTION	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	OTHER TESTS
			0-25.5', TERRACE DEPOSITS (Qt) Reddish brown, silty, very fine SAND, few angular gravel, dry, loose, roots, rodent burrows			
5		12/15	@ 6', Dark reddish brown, silty, fine to medium SAND, few small angular gravels, moist, medium dense	6.4	118.6	
10		11/20	@ 10', Dark reddish brown, silty, clayey, fine to medium SAND, moist, very dense, 1/8 to 1" angular gravel fragments (igneous origin), very hard drilling	9.1	117.0	Cons
15		24/25	@ 15', Dark reddish brown, silty/clayey, fine to medium SAND, moist, very dense to hard, coarse sand in tip of sampler (adding water to aid drilling)	6.7	121.4	
20		22/35	@ 20', Dark reddish brown, silty, fine to coarse SAND, moist, hard, occasional angular gravel	10.6	124.0	
25		50	@ 25', Brown, silty, fine to coarse SAND, moist, hard, angular gravel	6.3	24.8	
			TD @ 25.5' No groundwater No caving			

LEGEND

- Standard Penetration Test
- California Ring
- Rock Core
- Bulk Sample
- Shelby Tube
- Water Seepage
- Groundwater

SIEVE: GRAIN SIZE ANALYSIS
MAX: MAXIMUM DRY DENSITY
DS: DIRECT SHEAR
CONS: CONSOLIDATION
HYDR: HYDROMETER ANALYSIS
EXPAN: EXPANSION INDEX
CHEM: CHEMICAL TESTS

PLATE A-1

GeoSoils Consultants, Inc.
GEOTECHNICAL * GEOLOGIC * ENVIRONMENTAL

GEOTECHNICAL BORING LOG

PROJECT NAME NUWI Sierra Madre, LLC
W.O. NO. 6747
DRILLING COMPANY Choice
DATE STARTED: 6-9-1 4
BORING NO. B-2
TYPE OF DRILL RIG Truck Mounted
LOGGED BY SMB
SHEET 1 OF 2
DRILLING METHOD HSA
HAMMER WEIGHT (LBS) 1 40
GROUND ELEVATION (FT)
DIAMETER OF HOLE 8
DROP (IN) 30
GW ELEVATION
BORING LOCATION:

DEPTH (FT)	SAMPLE TYPE	BLOWS/ 6 IN.	GEOTECHNICAL DESCRIPTION	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	OTHER TESTS
			0-3', ALLUVIUM (Qal) Gray brown, silty, fine to coarse SAND with gravel, loose, roots, rodent burrows			
			3-30', TERRACE DEPOSITS (Qt)			
5		14/16	@ 5', Reddish brown, silty, fine to medium SAND, moist, dense, few small gravel (angular, igneous in origin)	5.3	110.7	Cons
10		10/17	@ 10', Reddish brown, silty, fine SAND, damp, medium dense, small angular gravels	4.9	112.2	
			@ 13', Hard			
15		29/35	@ 15', Dark reddish brown, silty/clayey, fine to medium SAND, moist, hard, granitic gravel (3")	6.6	120.3	
20		16/24	@ 20', Brown, fine SAND, damp, hard	4.2	112.5	
25		50 for 4"	@ 25', Brown, fine SAND, damp, hard, gravel	4.8	110.4	
		50 for 3"	@ 29', No recovery			

LEGEND

- Standard Penetration Test
- California Ring
- Rock Core
- Bulk Sample
- Shelby Tube
- Water Seepage
- Groundwater

SIEVE: GRAIN SIZE ANALYSIS
MAX: MAXIMUM DRY DENSITY
DS: DIRECT SHEAR
CONS: CONSOLIDATION
HYDR: HYDROMETER ANALYSIS
EXPAN: EXPANSION INDEX
CHEM: CHEMICAL TESTS

PLATE A-2

GeoSoils Consultants, Inc.
GEOTECHNICAL * GEOLOGIC * ENVIRONMENTAL

GEOTECHNICAL BORING LOG

PROJECT NAME NUWI Sierra Madre, LLC
W.O. NO. 6747
DRILLING COMPANY Choice
DATE STARTED: 6-9-14
BORING NO. B-2
TYPE OF DRILL RIG Truck Mounted
LOGGED BY SMB
SHEET 2 OF 2
DRILLING METHOD HSA
HAMMER WEIGHT (LBS) 140
GROUND ELEVATION (FT)
DIAMETER OF HOLE 8
DROP (IN) 30
GW ELEVATION
BORING LOCATION:

DEPTH (FT)	SAMPLE TYPE	BLOWS/ 6 IN.	GEOTECHNICAL DESCRIPTION	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	OTHER TESTS
			TD @ 30' No groundwater No caving			
35						
40						
45						
50						
55						

LEGEND

- Standard Penetration Test
- California Ring
- Rock Core
- Bulk Sample
- Shelby Tube
- Water Seepage
- Groundwater

SIEVE: GRAIN SIZE ANALYSIS
MAX: MAXIMUM DRY DENSITY
DS: DIRECT SHEAR
CONS: CONSOLIDATION
HYDR: HYDROMETER ANALYSIS
EXPAN: EXPANSION INDEX
CHEM: CHEMICAL TESTS

PLATE A-3

GeoSoils Consultants, Inc.
GEOTECHNICAL * GEOLOGIC * ENVIRONMENTAL

GEOTECHNICAL BORING LOG

PROJECT NAME NUWI Sierra Madre, LLC
W.O. NO. 6747
DRILLING COMPANY Choice
DATE STARTED: 6-9-14
BORING NO. B-3
TYPE OF DRILL RIG Truck Mounted
LOGGED BY SMB
SHEET 1 OF 1
DRILLING METHOD HSA
HAMMER WEIGHT (LBS) 140
GROUND ELEVATION (FT)
DIAMETER OF HOLE 8
DROP (IN) 30
GW ELEVATION
BORING LOCATION:

DEPTH (FT)	SAMPLE TYPE	BLOWS/ 6 IN.	GEOTECHNICAL DESCRIPTION	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	OTHER TESTS
			0-28.5', TERRACE DEPOSITS (Qt) @ 0-2', Reddish brown, silty/clayey, fine to coarse SAND, damp, dense			
		11/17		8.1	115.2	
5						
		32/50 for 4"	@ 7.5', Reddish brown and gray, coarse SAND, gravel, damp, hard (looks like weathered d.g. decomposed granite)	2.5	120.9	
10						
		50 for 4"	@ 12.5', Reddish brown, gravelly, fine to coarse SAND, damp, hard	3.3	114.6	
15						
		42/50	@ 17.5', Reddish brown, gravelly, fine to coarse SAND, damp, dense	4.7	118.8	
20						
		50 for 5"	@ 22.5', Reddish brown, clayey/silty, gravelly, fine SAND, moist, hard	6.4	114.6	
25						
			TD @ 28.5' No groundwater No caving			

LEGEND

- Standard Penetration Test
- California Ring
- Rock Core
- Bulk Sample
- Shelby Tube
- Water Seepage
- Groundwater

SIEVE: GRAIN SIZE ANALYSIS
MAX: MAXIMUM DRY DENSITY
DS: DIRECT SHEAR
CONS: CONSOLIDATION
HYDR: HYDROMETER ANALYSIS
EXPAN: EXPANSION INDEX
CHEM: CHEMICAL TESTS

PLATE A-4

GeoSoils Consultants, Inc.
GEOTECHNICAL * GEOLOGIC * ENVIRONMENTAL

GEOTECHNICAL BORING LOG

PROJECT NAME NUWI Sierra Madre. LLC
W.O. NO. 6747
DRILLING COMPANY Choice
DATE STARTED: 6-9-14
BORING NO. B-4
TYPE OF DRILL RIG Truck Mounted
LOGGED BY SMB
SHEET 1 OF 1
DRILLING METHOD HSA
HAMMER WEIGHT (LBS) 140
GROUND ELEVATION (FT)
DIAMETER OF HOLE 8
DROP (IN) 30
GW ELEVATION
BORING LOCATION:

DEPTH (FT)	SAMPLE TYPE	BLOWS/ 6 IN.	GEOTECHNICAL DESCRIPTION	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	OTHER TESTS
			0-16', TERRACE DEPOSITS (Qt) Upper 1' brown, silty, fine SAND, dry, loose, roots, rodent burrows			
5		14/20	@ 5', Reddish, brown, slightly clayey, silty, fine SAND, damp, dense, some gravel	5.0	111.0	Cons
10		50 for 5"	@ 10', Reddish brown, silty, fine SAND, damp, hard, some gravel	4.3	106.2	
15		50 for 5"	@ 15', Gray brown, gravelly, fine to coarse SAND, damp, hard	3.2	114.7	
			TD @ 16' No groundwater No caving			
20						
25						

LEGEND

- Standard Penetration Test
- California Ring
- Rock Core
- Bulk Sample
- Shelby Tube
- Water Seepage
- Groundwater

SIEVE: GRAIN SIZE ANALYSIS
MAX: MAXIMUM DRY DENSITY
DS: DIRECT SHEAR
CONS: CONSOLIDATION
HYDR: HYDROMETER ANALYSIS
EXPAN: EXPANSION INDEX
CHEM: CHEMICAL TESTS

PLATE A-5

GeoSoils Consultants, Inc.
GEOTECHNICAL * GEOLOGIC * ENVIRONMENTAL

GEOTECHNICAL BORING LOG

PROJECT NAME NUWI Sierra Madre, LLC
W.O. NO. 6747
DRILLING COMPANY Choice
DATE STARTED: 6-9-14
BORING NO. B- 5
TYPE OF DRILL RIG Truck Mounted
LOGGED BY SMB
SHEET 1 OF 1
DRILLING METHOD HSA
HAMMER WEIGHT (LBS) 140
GROUND ELEVATION (FT)
DIAMETER OF HOLE 8
DROP (IN) 30
GW ELEVATION
BORING LOCATION:

DEPTH (FT)	SAMPLE TYPE	BLOWS/ 6 IN.	GEOTECHNICAL DESCRIPTION	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	OTHER TESTS
			0-8.5', ARTIFICIAL FILL (af)			
		11/12	@ 2.5', Brown, silty, very fine SAND, dry to damp, medium dense	3.8	114.3	
5						
		11/15	@ 7.5', Brown, silty, fine to coarse SAND, dry to damp, medium dense	3.4	112.2	
			8.5-23.5, TERRACE DEPOSITS (Qt)			
10						
		16/33	@ 12.5', Reddish brown, slightly silty, fine to coarse SAND, damp, dense, angular gravel (easily disintegrates)	4.1	114.9	
15						
		20/24	Dark reddish brown, gravelly, fine to coarse SAND, moist, dense	6.2	121.2	
20						
		18/30	@ 22.5', Dark reddish brown, clayey, fine SAND, moist, hard	16.7	115.2	
25			TD @ 23.5' No groundwater No caving			

LEGEND

- Standard Penetration Test
- California Ring
- Rock Core
- Bulk Sample
- Shelby Tube
- Water Seepage
- Groundwater

SIEVE: GRAIN SIZE ANALYSIS
MAX: MAXIMUM DRY DENSITY
DS: DIRECT SHEAR
CONS: CONSOLIDATION
HYDR: HYDROMETER ANALYSIS
EXPAN: EXPANSION INDEX
CHEM: CHEMICAL TESTS

PLATE A-6

GeoSoils Consultants, Inc.
GEOTECHNICAL * GEOLOGIC * ENVIRONMENTAL

GEOTECHNICAL BORING LOG

PROJECT NAME NUWI Sierra Madre, LLC
W.O. NO. 6747
DRILLING COMPANY Choice
DATE STARTED: 6-9-14
BORING NO. B-6
TYPE OF DRILL RIG Truck Mounted
LOGGED BY SMB
SHEET 1 OF 1
DRILLING METHOD HSA
HAMMER WEIGHT (LBS) 140
GROUND ELEVATION (FT)
DIAMETER OF HOLE 8
DROP (IN) 30
GW ELEVATION
BORING LOCATION:

DEPTH (FT)	SAMPLE TYPE	BLOWS/ 6 IN.	GEOTECHNICAL DESCRIPTION	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	OTHER TESTS
			0-18', ARTIFICIAL FILL (af) Brown, silty, very fine SAND, gravel, dry, loose			
5		12/15	@ 5', Brown, silty, fine to coarse SAND, moist	6.3	121.2	
10		26/24	@ 10', Brown, silty, fine to coarse SAND, damp, very dense	3.3	114.9	
15		10/11	@ 15', Brown, silty, fine to coarse SAND, damp, medium dense	4.6	107.5	
			18-26', TERRACE DEPOSITS (Qt) Reddish brown, silty, fine to medium SAND, moist, very dense			
20		24/30		7.8	114.7	
25		25/50 for 5"	@ 25, Reddish brown, slightly clayey, silty, fine to coarse SAND, moist, hard	7.1	124.1	
			TD @ 26' No groundwater No caving			

LEGEND

- Standard Penetration Test
- California Ring
- Rock Core
- Bulk Sample
- Shelby Tube
- Water Seepage
- Groundwater

SIEVE: GRAIN SIZE ANALYSIS
MAX: MAXIMUM DRY DENSITY
DS: DIRECT SHEAR
CONS: CONSOLIDATION
HYDR: HYDROMETER ANALYSIS
EXPAN: EXPANSION INDEX
CHEM: CHEMICAL TESTS

PLATE A-7

GeoSoils Consultants, Inc.
GEOTECHNICAL * GEOLOGIC * ENVIRONMENTAL

GEOTECHNICAL BORING LOG

PROJECT NAME N U W I Sierra Madre, LLC
DRILLING COMPANY Choice
TYPE OF DRILL RIG Truck Mounted
DRILLING METHOD HSA
DIAMETER OF HOLE 8
BORING LOCATION:

DATE STARTED: 6-9-14
LOGGED BY SMB
HAMMER WEIGHT (LBS) 140
DROP (IN) 30

W.O. NO. 6747
BORING NO. B-7
SHEET 1 OF 1
GROUND ELEVATION (FT)
GW ELEVATION

DEPTH (FT)	SAMPLE TYPE	BLOWS/ 6 IN.	GEOTECHNICAL DESCRIPTION	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	OTHER TESTS
		17/20	**0-5', ARTIFICIAL FILL (af)** Brown, very silty, very fine SAND, dry to damp, loose to medium dense, mottled	5.3	116.3	
5		10/12	**5-23.5', TERRACE DEPOSITS (Qt)** @ 7.5', Reddish brown, silty, fine SAND, damp, medium dense	4.8	119.8	Cons
10		10/11	@ 12.5', Reddish brown, silty, fine SAND, moist, medium dense	7.8	115.7	Cons
15		16/45	@ 17.5', Reddish brown, silty, fine SAND, moist, dense to hard, small angular gravels interspersed	8.3	121.2	
20		19/28	@ 22.5', Reddish brown, slightly clayey, silty, fine to coarse SAND, moist, dense	7.6	112.2	
25			TD @ 23.5' No groundwater No caving			

LEGEND

- Standard Penetration Test
- California Ring
- Rock Core
- Bulk Sample
- Shelby Tube
- Water Seepage
- Groundwater

SIEVE: GRAIN SIZE ANALYSIS
MAX: MAXIMUM DRY DENSITY
DS: DIRECT SHEAR
CONS: CONSOLIDATION
HYDR: HYDROMETER ANALYSIS
EXPAN: EXPANSION INDEX
CHEM: CHEMICAL TESTS

PLATE A-8

GeoSoils Consultants, Inc.
GEOTECHNICAL * GEOLOGIC * ENVIRONMENTAL

GEOTECHNICAL BORING LOG

PROJECT NAME	**NUWI Sierra Madre, LLC**			**W.O.**	**6747**
DRILLING COMPANY	Choice	DATE STARTED	10/16/2020	BORING NO.	B-8
TYPE OF DRILL RIG	Truck Mounted	LOGGED BY	JM	SHEET	
DRILLING METHOD	Hollow Stem	HAMMER WT (lbs)	140	GROUND ELEV.	
DIAMETER OF HOLE (IN)	8	DROP (IN)	30	GW ELEV.	

Boring Location:

Depth (ft)	Sample Type	Blows / 6"	GEOTECHNICAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	Other Tests
0			**0-20, TERRACE DEPOSITS (Qt)**			
5		12/16/23	5', Reddish brown, gravelly, silty, medium to coarse grained SAND, angular gravels of granitic origin, slightly moist, dense	6.8	117.8	
10		15/23/31	10', Reddish brown, gravelly, silty, medium to coarse grained SAND, angular gravels of granitic origin, slightly moist, dense, some clay binder	7.5	118.7	cons
15		16/24/48	15', Reddish brown, gravelly, silty, medium to coarse grained SAND, angular gravels of granitic origin, slightly moist, dense, some clay binder	8.1	128.5	
20		20/22/42	20', Reddish brown, gravelly, silty, medium to coarse grained SAND, angular gravels of granitic origin, slightly moist, dense, some clay binder			
			TD @ 20' No groundwater No caving			
25						
30						

LEGEND

- Standard Penetration Test
- California Ring
- Rock Core
- Bulk Sample

SIEVE: Grain Size Analysis
MAX: Maximum Dry Density
DS: Direct Shear
CONS: Consolidation
HYDR: Hydrometer Analysis
EXPAN: Expansion Index
CHEM: Chemical Tests

PLATE **A-9**

GeoSoils Consultants Inc.
GEOTECHNICAL · GEOLOGIC · ENVIRONMENTAL

GEOTECHNICAL BORING LOG

PROJECT NAME	**NUWI Sierra Madre, LLC**			**W.O.**	**6747**
DRILLING COMPANY	Choice	DATE STARTED	10/16/2020	BORING NO.	B-9
TYPE OF DRILL RIG	Truck Mounted	LOGGED BY	JM	SHEET	
DRILLING METHOD	Hollow Stem	HAMMER WT (lbs)	140	GROUND ELEV.	
DIAMETER OF HOLE (IN)	8	DROP (IN)	30	GW ELEV.	

Boring Location:

Depth (ft)	Sample Type	Blows / 6"	GEOTECHNICAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	Other Tests
0						
		11/11/12	2.5', Brown, gravelly, silty, medium to coarse grained SAND, slightly moist, dens	5.7	117.6	
5						
		10/12/17	7.5', Reddish brown, gravelly, silty, medium to coarse grained SAND, angular gravels of granitic origin, slightly moist	8.9	118.6	cons
10						
		15/22/38	12.5', Reddish brown, gravelly, silty, medium to coarse grained SAND, angular gravels of granitic origin, slightly moist	8	125.1	
			TD @ 12.5' No groundwater No caving			
15						
20						
25						
30						

LEGEND

- Standard Penetration Test
- California Ring
- Rock Core
- Bulk Sample

SIEVE: Grain Size Analysis
MAX: Maximum Dry Density
DS: Direct Shear
CONS: Consolidation
HYDR: Hydrometer Analysis
EXPAN: Expansion Index
CHEM: Chemical Tests

PLATE **A-10**

GeoSoils Consultants Inc.
GEOTECHNICAL · GEOLOGIC · ENVIRONMENTAL

GEOTECHNICAL BORING LOG

PROJECT NAME	**NUWI Sierra Madre, LLC**			**W.O.**	**6747**
DRILLING COMPANY	Choice	DATE STARTED	10/16/2020	BORING NO.	B-10
TYPE OF DRILL RIG	Truck Mounted	LOGGED BY	JM	SHEET	
DRILLING METHOD	Hollow Stem	HAMMER WT (lbs)	140	GROUND ELEV.	
DIAMETER OF HOLE (IN)	8	DROP (IN)	30	GW ELEV.	

Boring Location:

Depth (ft)	Sample Type	Blows / 6"	GEOTECHNICAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	Other Tests
0			**0-10', TERRACE DEPOSITS (Qt)**			
5		10/14/19	5', Orange brown, gravelly, medium to coarse grained SAND, slightly moist, den	3.7	119.2	
10		7/9/11	10', Orange brown, gravelly, medium to coarse grained SAND, slightly moist, dense	10.1	121.8	
			TD @ 10' No groundwater No caving			
15						
20						
25						
30						

LEGEND

- Standard Penetration Test
- California Ring
- Rock Core
- Bulk Sample

SIEVE: Grain Size Analysis
MAX: Maximum Dry Density
DS: Direct Shear
CONS: Consolidation
HYDR: Hydrometer Analysis
EXPAN: Expansion Index
CHEM: Chemical Tests

PLATE **A-11**

GeoSoils Consultants Inc.
GEOTECHNICAL · GEOLOGIC · ENVIRONMENTAL

GEOTECHNICAL BORING LOG

PROJECT NAME	**NUWI Sierra Madre, LLC**			**W.O.**	**6747**
DRILLING COMPANY	Choice	DATE STARTED	10/16/2020	BORING NO.	B-11
TYPE OF DRILL RIG	Truck Mounted	LOGGED BY	JM	SHEET	
DRILLING METHOD	Hollow Stem	HAMMER WT (lbs)	140	GROUND ELEV.	
DIAMETER OF HOLE (IN)	8	DROP (IN)	30	GW ELEV.	

Boring Location:

Depth (ft)	Sample Type	Blows / 6"	GEOTECHNICAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	Other Tests
0			**0-30, TERRACE DEPOSITS (Qt)**			
5						
10		25/42/50 for 5"	10', Orange brown, gravelly, medium to coarse grained SAND, slightly moist, dense, some clay binder	5	121.2	
15		39/50	15', Orange brown, gravelly, medium to coarse grained SAND, slightly moist, dense, some clay binder	5.3	123.8	
20		45/50 for 1"	20', Orange brown, gravelly, medium to coarse grained SAND, slightly moist, dense, some clay binder	6	111.5	cons
25		50 for 5"	20', Orange brown, gravelly, medium to coarse grained SAND, slightly moist, dense, some clay binder, poor recovery	4.4	129.8	
30		50 for 4"	30', Orange brown, gravelly, medium to coarse grained SAND, slightly moist, dense, some clay binder, small cobble present	4.3	117.9	cons
			TD @ 30' No groundwater No caving			

LEGEND

- Standard Penetration Test
- California Ring
- Rock Core
- Bulk Sample

SIEVE: Grain Size Analysis
MAX: Maximum Dry Density
DS: Direct Shear
CONS: Consolidation
HYDR: Hydrometer Analysis
EXPAN: Expansion Index
CHEM: Chemical Tests

PLATE **A-12**

GeoSoils Consultants Inc.
GEOTECHNICAL · GEOLOGIC · ENVIRONMENTAL

GEOTECHNICAL BORING LOG

PROJECT NAME	**NUWI Sierra Madre, LLC**			**W.O.**	**6747**
DRILLING COMPANY	Choice	DATE STARTED	10/16/2020	BORING NO.	B-12
TYPE OF DRILL RIG	Truck Mounted	LOGGED BY	JM	SHEET	
DRILLING METHOD	Hollow Stem	HAMMER WT (lbs)	140	GROUND ELEV.	
DIAMETER OF HOLE (IN)	8	DROP (IN)	30	GW ELEV.	

Boring Location:

Depth (ft)	Sample Type	Blows / 6"	GEOTECHNICAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	Other Tests
0			**0-15', TERRACE DEPOSITS (Qt)**			
5						
10		18/30/46	10', Reddish brown, gravelly, medium to coarse grained SAND, dense, some small cobble, slightly moist, some clayey pods	5.9	119.6	
15		48/50	15', Reddish brown, gravelly, medium to coarse grained SAND, dense, some small cobble, slightly moist, some clayey pods	4.0	124.5	cons
			TD @ 15' No groundwater No caving			
20						
25						
30						

LEGEND

- Standard Penetration Test
- California Ring
- Rock Core
- Bulk Sample

SIEVE: Grain Size Analysis
MAX: Maximum Dry Density
DS: Direct Shear
CONS: Consolidation
HYDR: Hydrometer Analysis
EXPAN: Expansion Index
CHEM: Chemical Tests

PLATE **A-13**

GeoSoils Consultants Inc.
GEOTECHNICAL · GEOLOGIC · ENVIRONMENTAL

September 16, 2022
W.O. 6747

APPENDIX B

LABORATORY TEST RESULTS

MDN 23118

NUWI Sierra Madre, LLC
W.O.: 6747

Date of Test: 6/14

Sample: **B-2 @ 5.0 - 10.0'**

PLATE SH-1

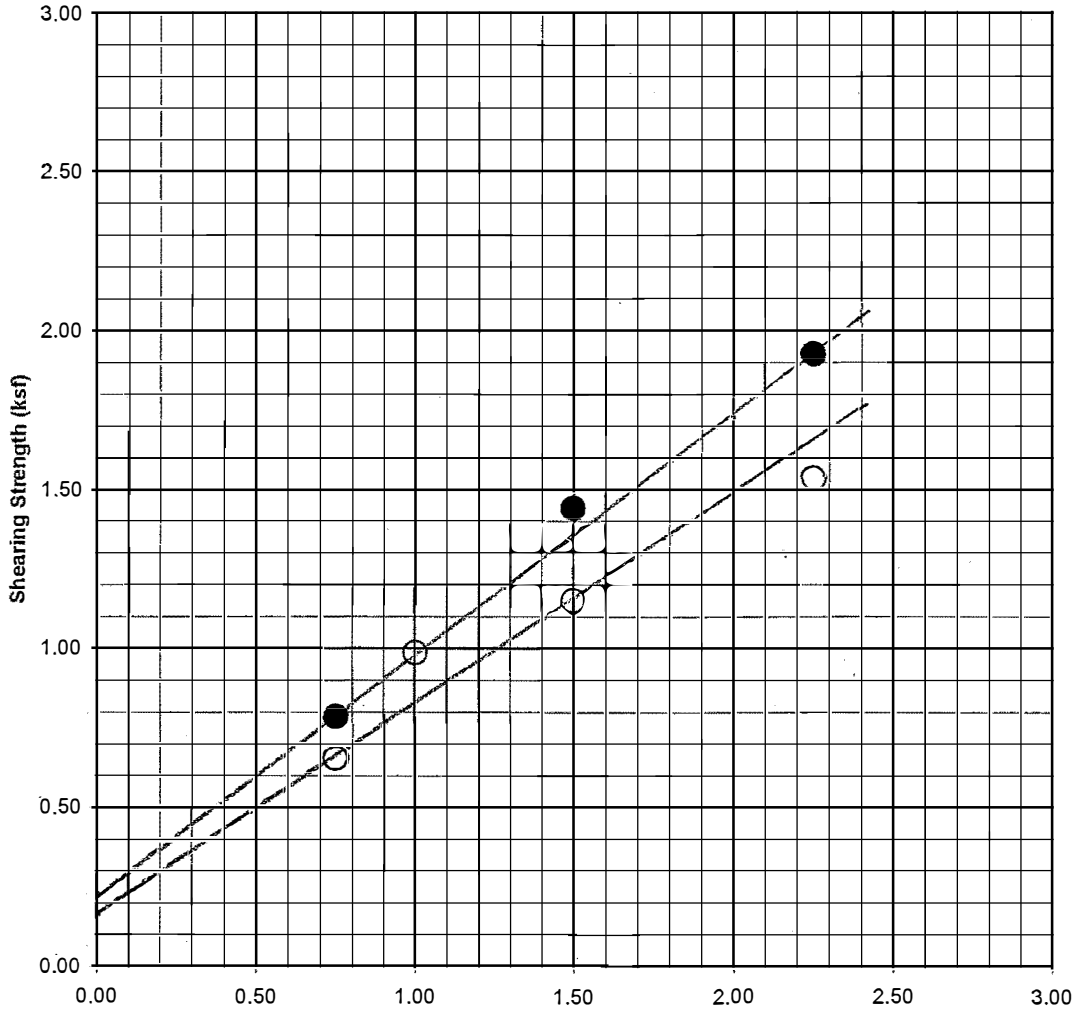
GeoSoils Consultants, Inc.

Geotechnical Engineering * Engineering Geology

Shear Test Diagram

Peak
C(psf): **220** Phi (degrees): **37.0**

Reshear
C(psf): **180** Phi (degrees): **33.0**



Direct Shear, Peak / Reshear Speed: .005 in./min.

● Peak Values O Reshear Values

Sample **Remolded** to 90% Relative Density, saturated.
Rem Dry Den = 106.2 PCF

Or-brown, clayey, very fine to fine SAND.

MAX: 118 PCF: 10.5%

17.7% Saturated Moisture Content

6747.1

NUWI Sierra Madre, LLC
W.O.:6747

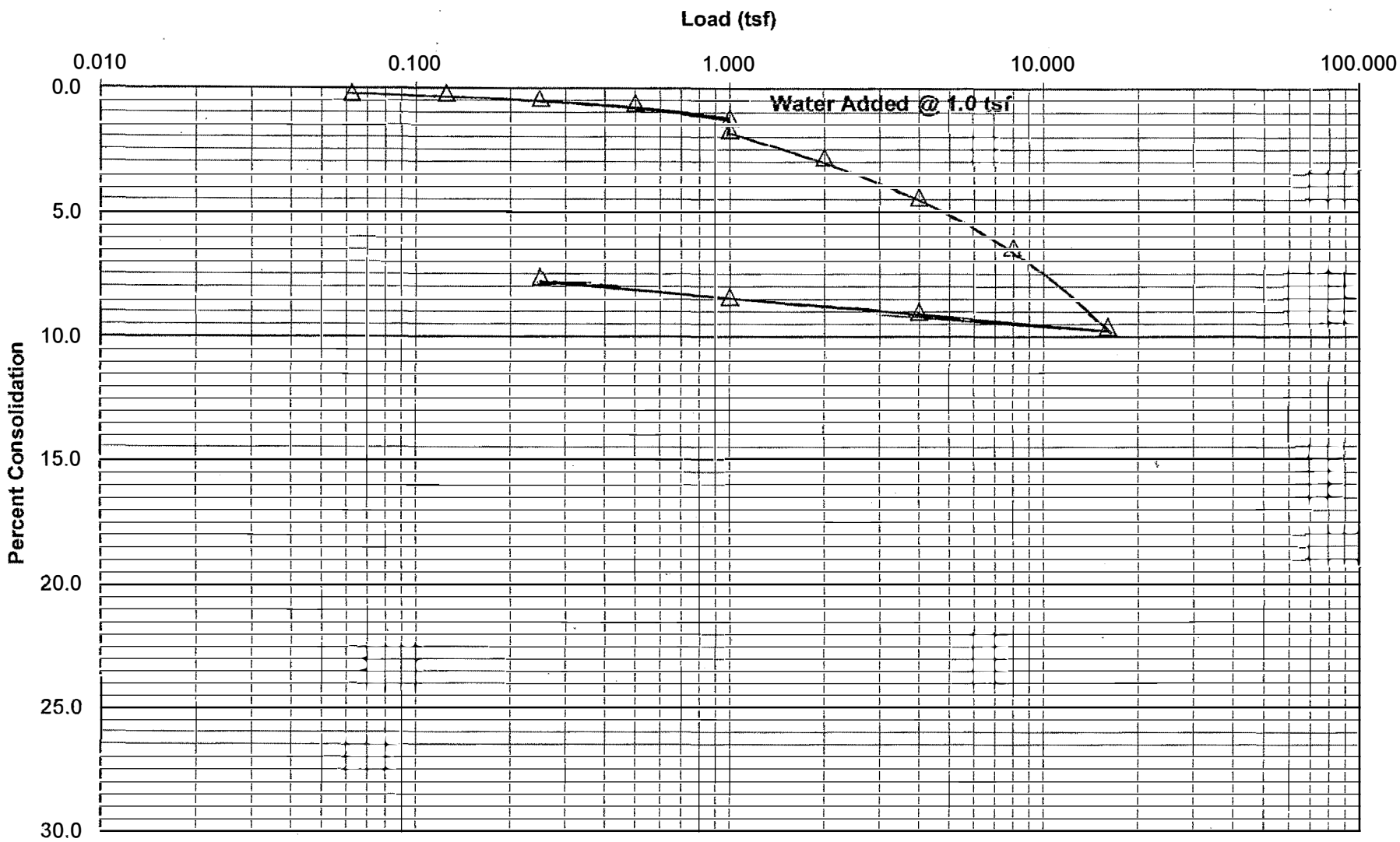
Date of Test: 6/14

GeoSoils Consultants, Inc.

Geotechnical Engineering * Engineering Geology

Moisture(%)
Before: 9.1 After: 13.7

Sample(in.)
Height: 1.00 Diameter: 2.36



B-1 @ 10.0'

Orange medium-brown, slightly clayey silty, very fine to coarse SAND, w/ some rock frag. C6747.1

Consolidation Diagram

Plate C-1

NUWI Sierra Madre, LLC
W.O.:6747

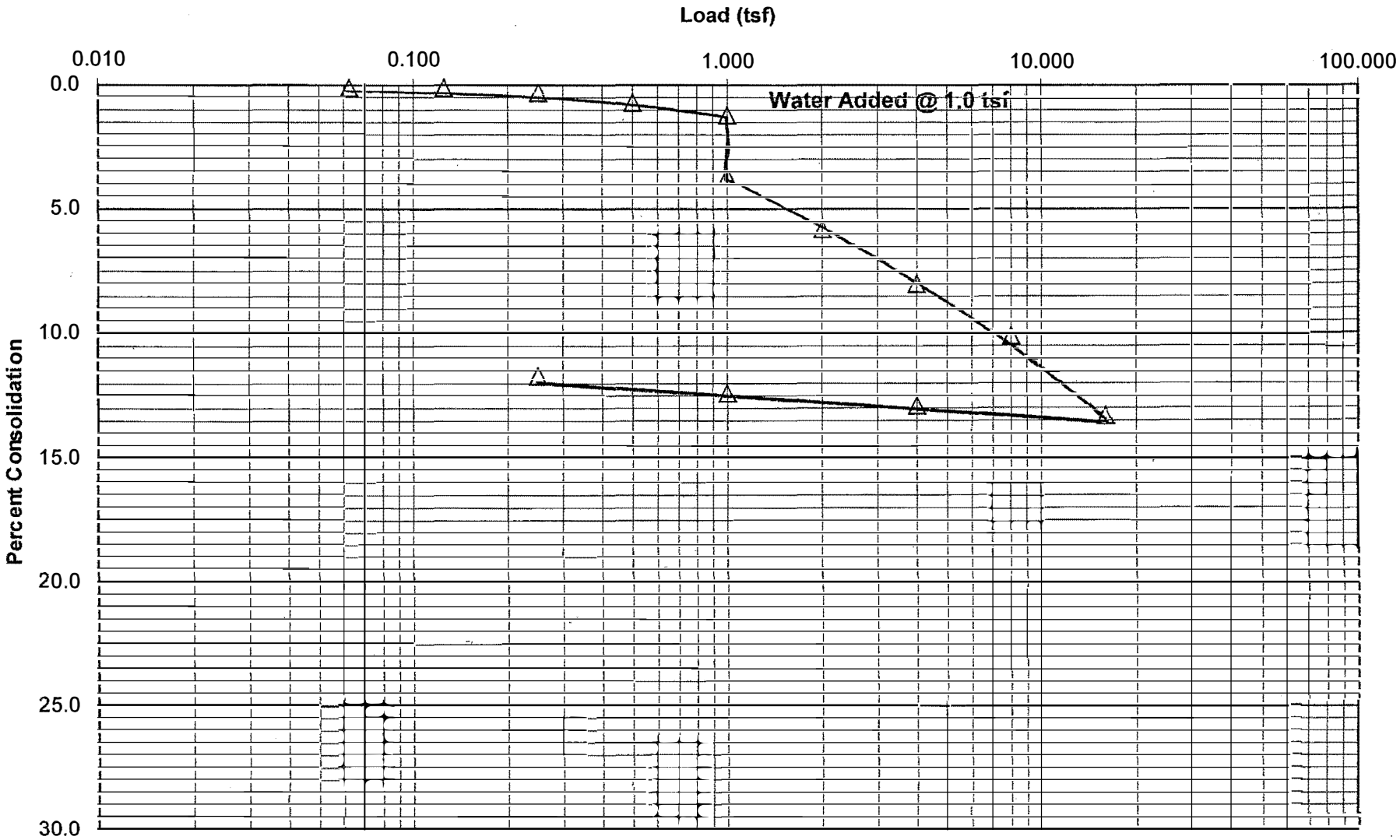
Date of Test: 6/14

GeoSoils Consultants, Inc.

Geotechnical Engineering * Engineering Geology

Moisture(%)
Before: 5.3 After: 12.7

Sample(in.)
Height: 1.00 Diameter: 2.36



B-2 @ 5.0'

Medium-brown, slightly clayey silty, very fine to coarse SAND, w/ some rock fragment. C6747.2

Consolidation Diagram

Plate C-2

NUWI Sierra Madre, LLC
W.O.:6747

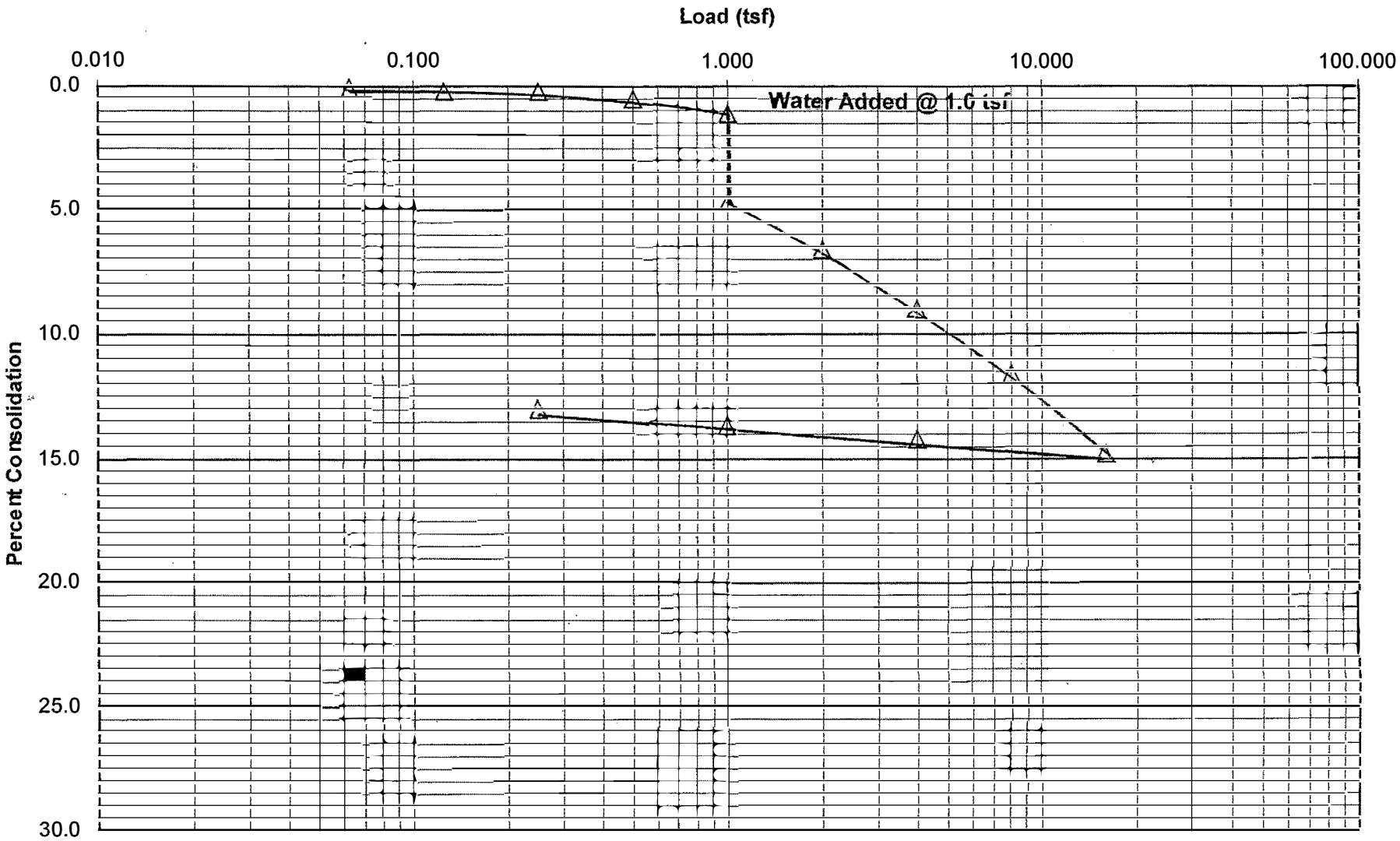
Date of Test: 6/14

GeoSoils Consultants, Inc.

Geotechnical Engineering * Engineering Geology

Moisture(%)
Before: 5.0 After: 12.4

Sample(in.)
Height: 1.00 Diameter: 2.36



B-4 @ 5.0'

Orange-brown, slightly clayey silty, very fine to coarse SAND, w/ some rock fragment. C6747.3

Consolidation Diagram

Plate C-3

NUWI Sierra Madre, LLC
W.O.:6747

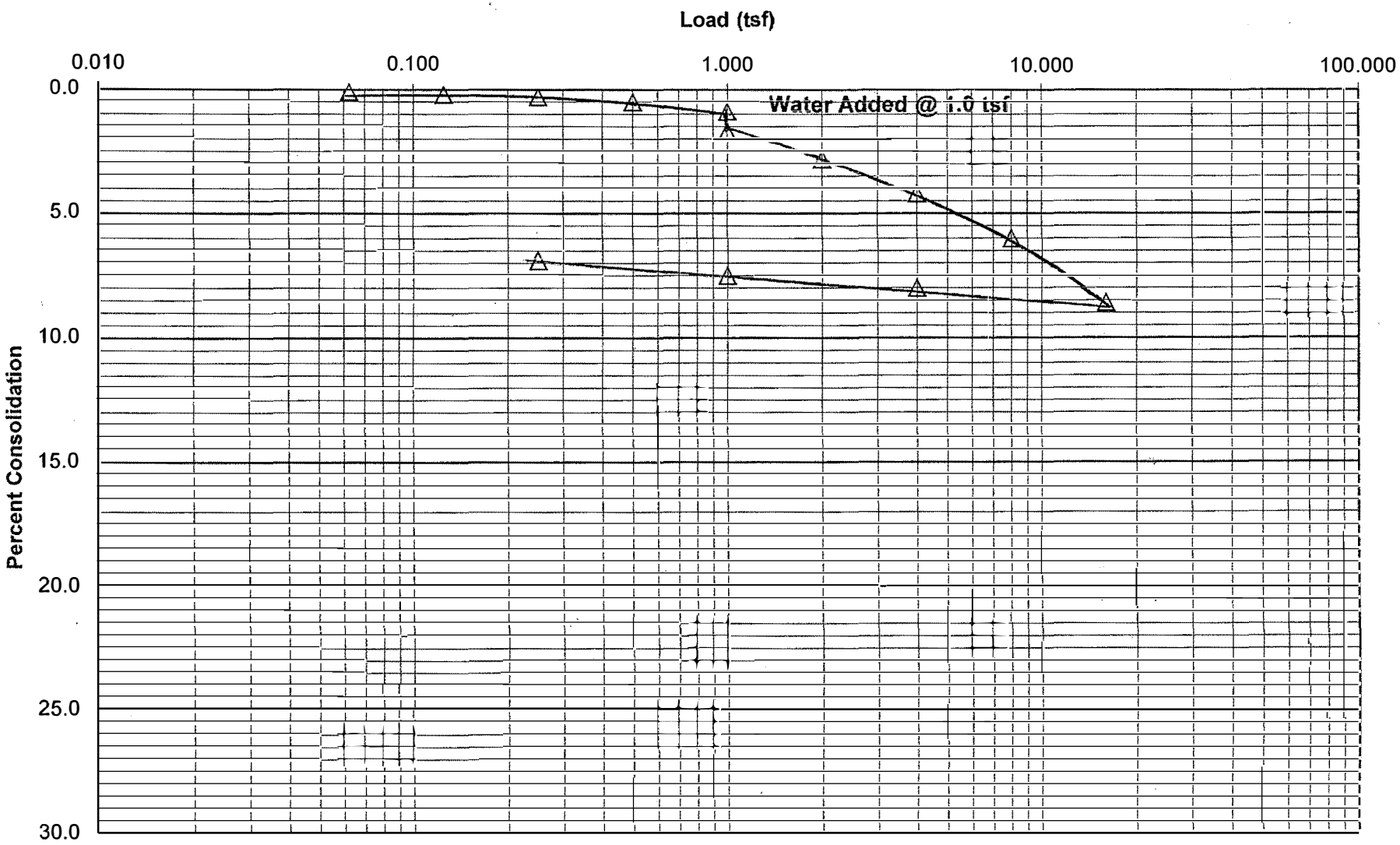
Date of Test: 6/14

GeoSoils Consultants, Inc.

Geotechnical Engineering * Engineering Geology

Moisture(%)
Before: 4.8 After: 11.8

Sample(in.)
Height: 1.00 Diameter: 2.36



B-7 @ 7.5'
Orange-brown, silty, very fine to coarse SAND, w/ rock fragment.

Consolidation Diagram

C6747.4

Plate C-4

NUWI Sierra Madre, LLC
W.O.:6747

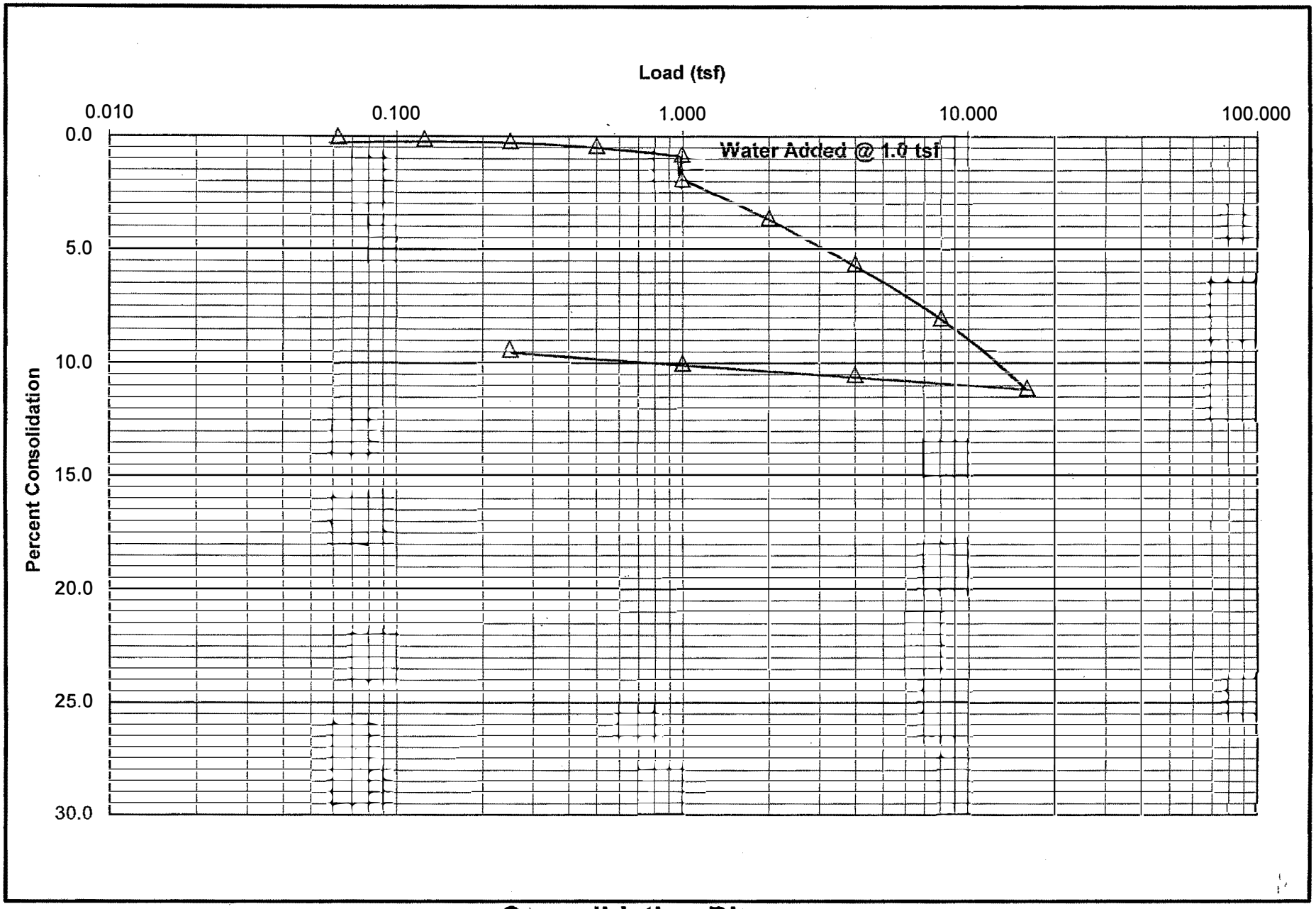
Date of Test: 6/14

GeoSoils Consultants, Inc.

Geotechnical Engineering * Engineering Geology

Moisture(%)
Before: 7.8 After: 11.6

Sample(in.)
Height: 1.00 Diameter: 2.36



B-7 @ 12.5'

Medium orange-brown, slightly clayey silty, very fine to coarse SAND, w/ rock fragment. C6747.5

Consolidation Diagram

Plate C-5

NUWI Sierra Madre, LLC
W.O.:6747

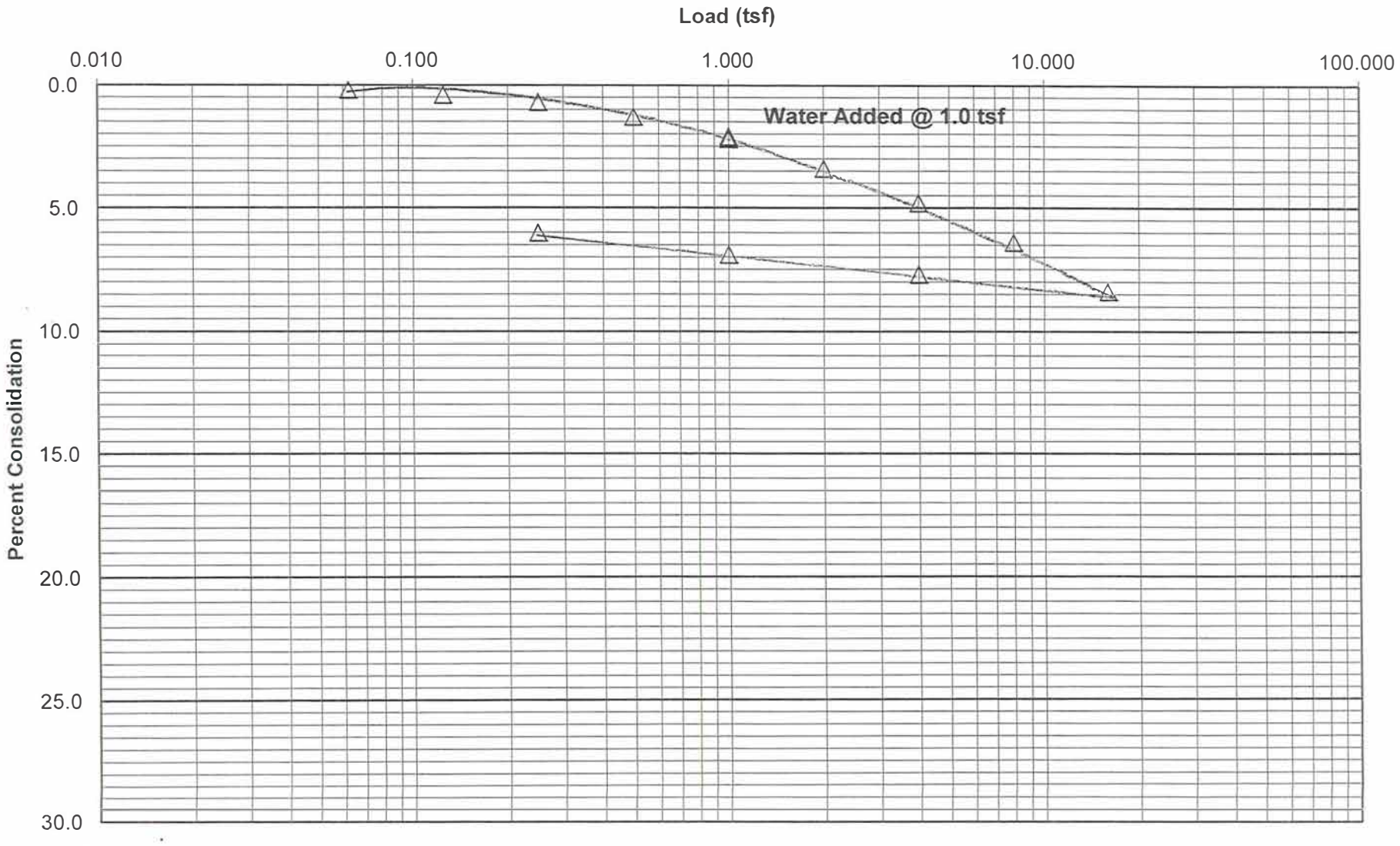
Date of Test: 10/20

GeoSoils Consultants, Inc.

Geotechnical Engineering * Engineering Geology

Moisture(%)
Before: 7.5 After: 14.5

Sample(in.)
Height: 1.00 Diameter: 2.36



B-8 @ 10.0'
Orange brown slightly clayey sandy SILT.

Consolidation Diagram

C6747.6.xls

Plate C-6

NUWI Sierra Madre, LLC
W.O.:6747

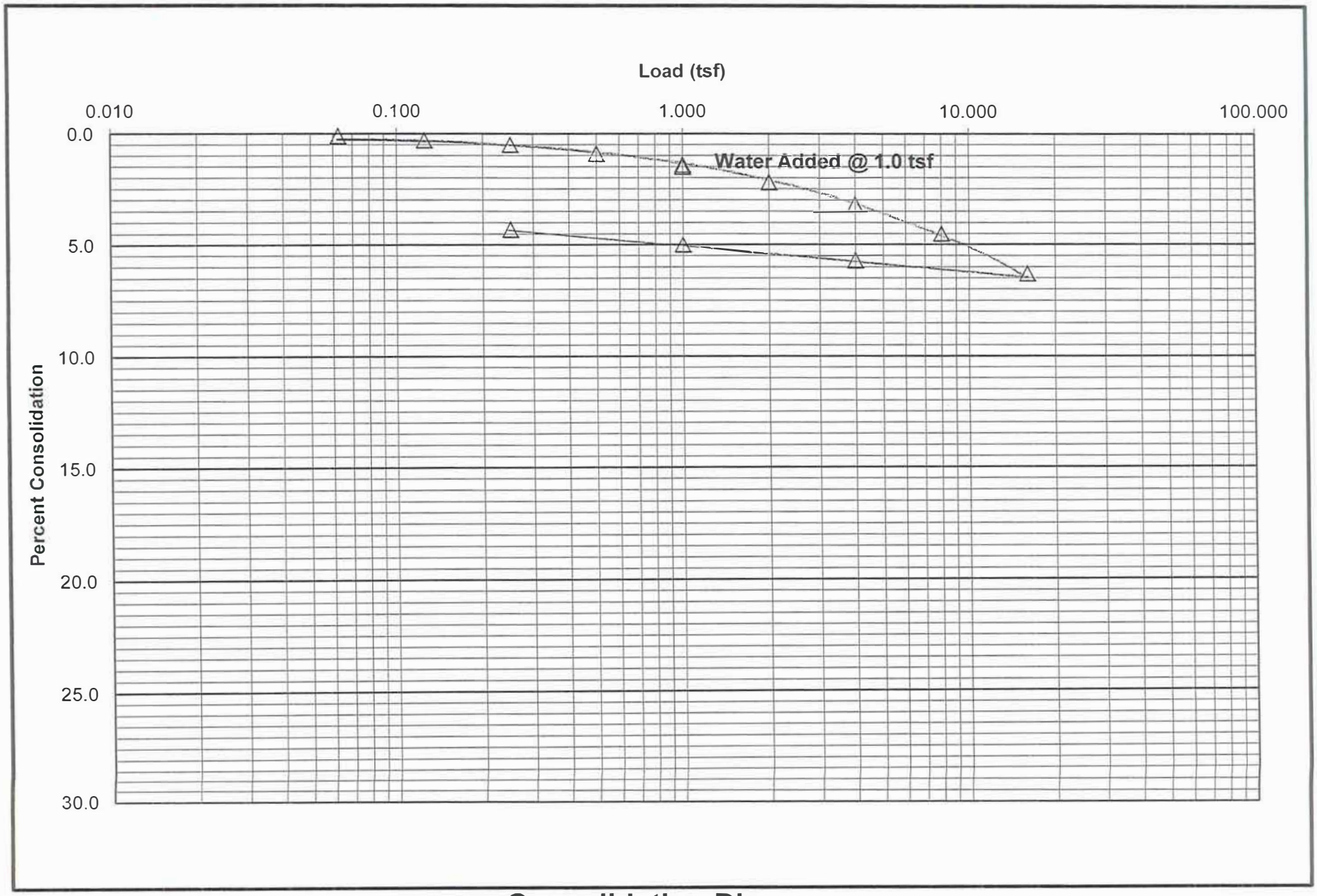
Date of Test: 10/20

GeoSoils Consultants, Inc.

Geotechnical Engineering * Engineering Geology

Moisture(%)
Before: 8.9 After: 12.4

Sample(in.)
Height: 1.00 Diameter: 2.36



B-9 @ 7.5'
Brown slightly clayey sandy SILT.

Consolidation Diagram

C6747.7.xls

Plate C-7

NUWI Sierra Madre, LLC
W.O.:6747

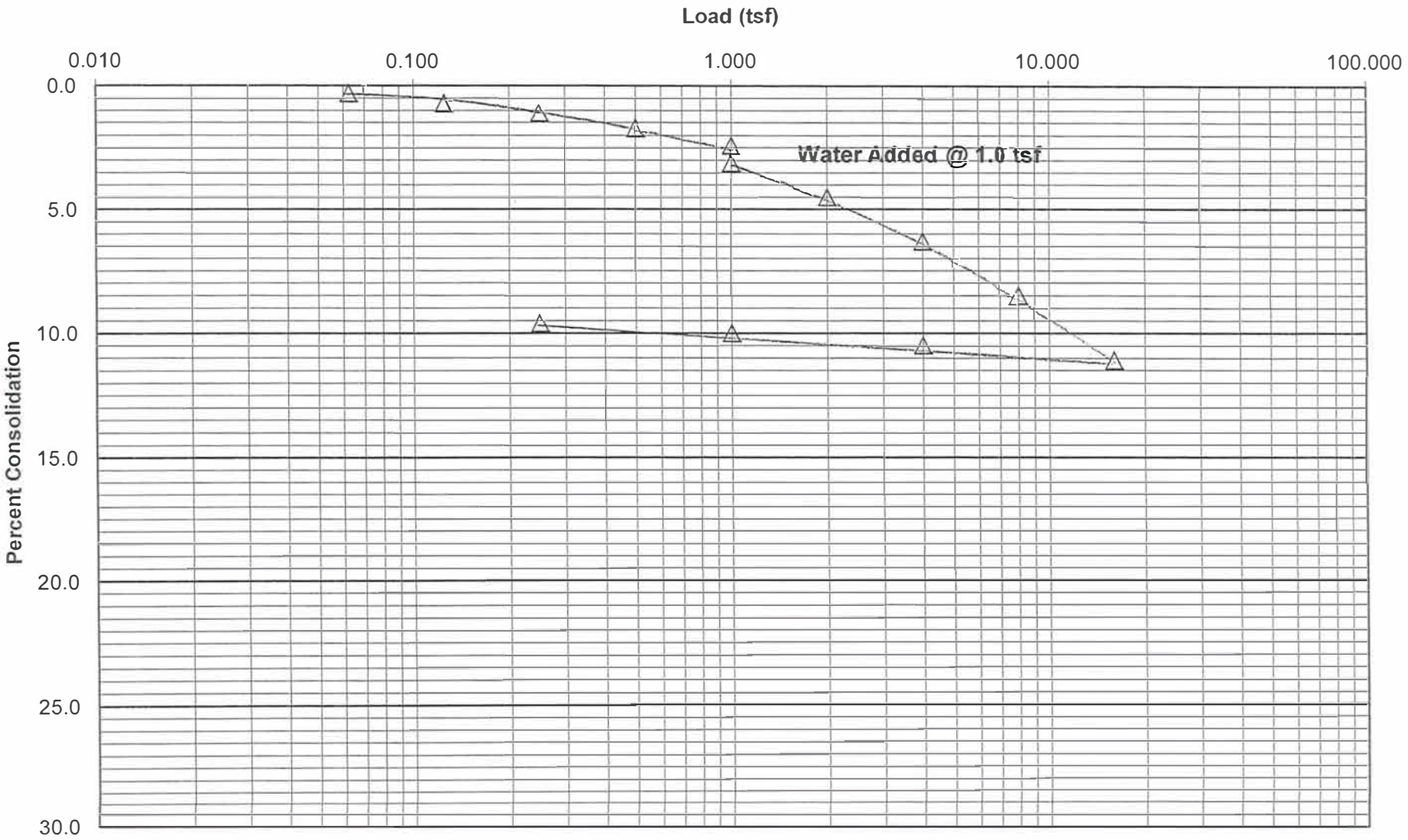
Date of Test: 10/20

GeoSoils Consultants, Inc.

Geotechnical Engineering * Engineering Geology

Moisture(%)
Before: 6.0 After: 8.6

Sample(in.)
Height: 1.00 Diameter: 2.36



B-11 @ 20.0'
Brown slightly clayey silty fine to coarse SAND with decomposed granite.

Consolidation Diagram

C6747.8.xls

Plate C-8

NUWI Sierra Madre, LLC
W.O.:6747

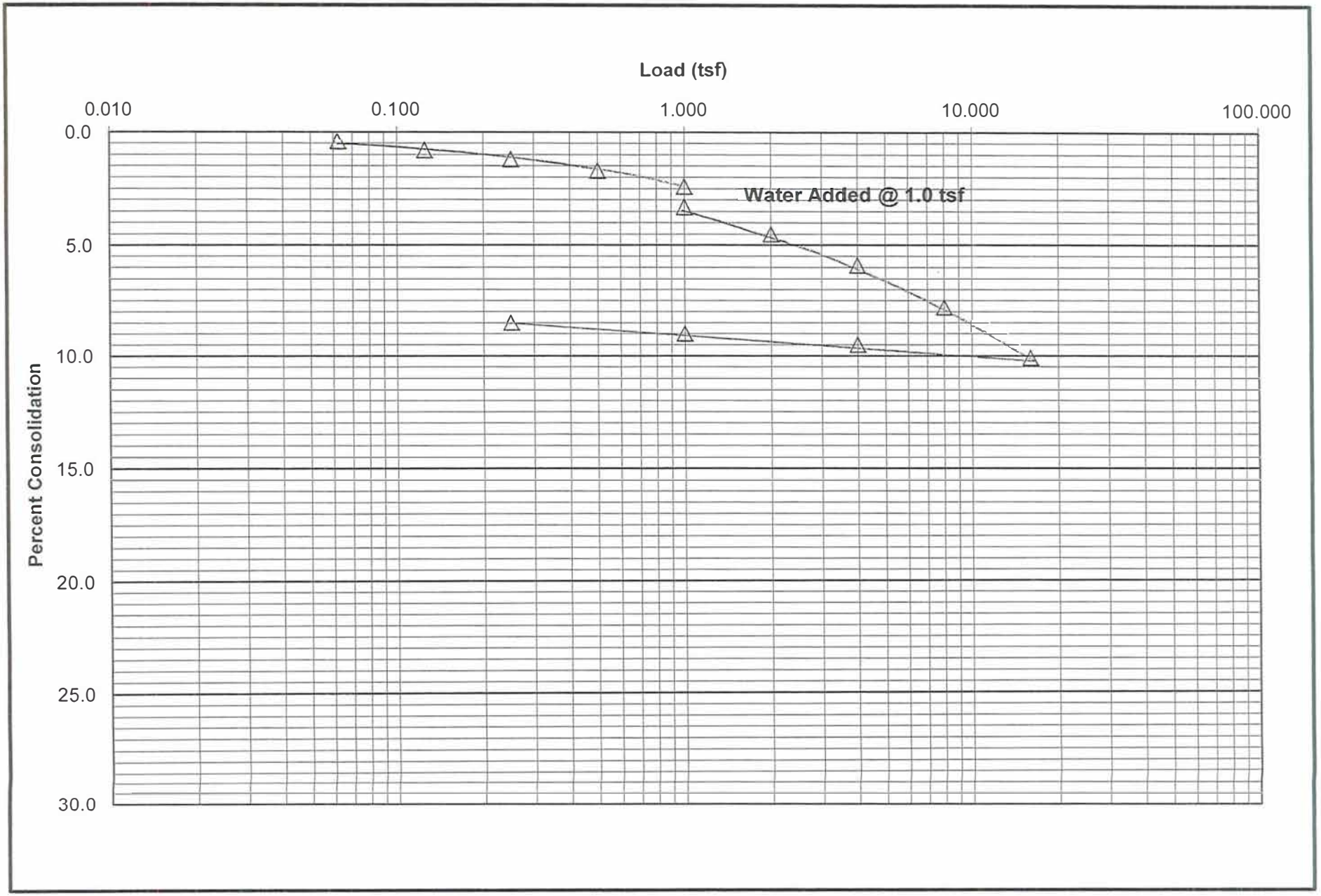
Date of Test: 10/20

GeoSoils Consultants, Inc.

Geotechnical Engineering * Engineering Geology

Moisture(%)
Before: 4.3 After: 13.7

Sample(in.)
Height: 1.00 Diameter: 2.36



B-11 @ 30.0'
Light brown to brown silty fine to coarse SAND with decomposed granite.

Consolidation Diagram

C6747.9.xls

Plate C-9

NOWI Sierra Madre, LLC
W.O.:6747

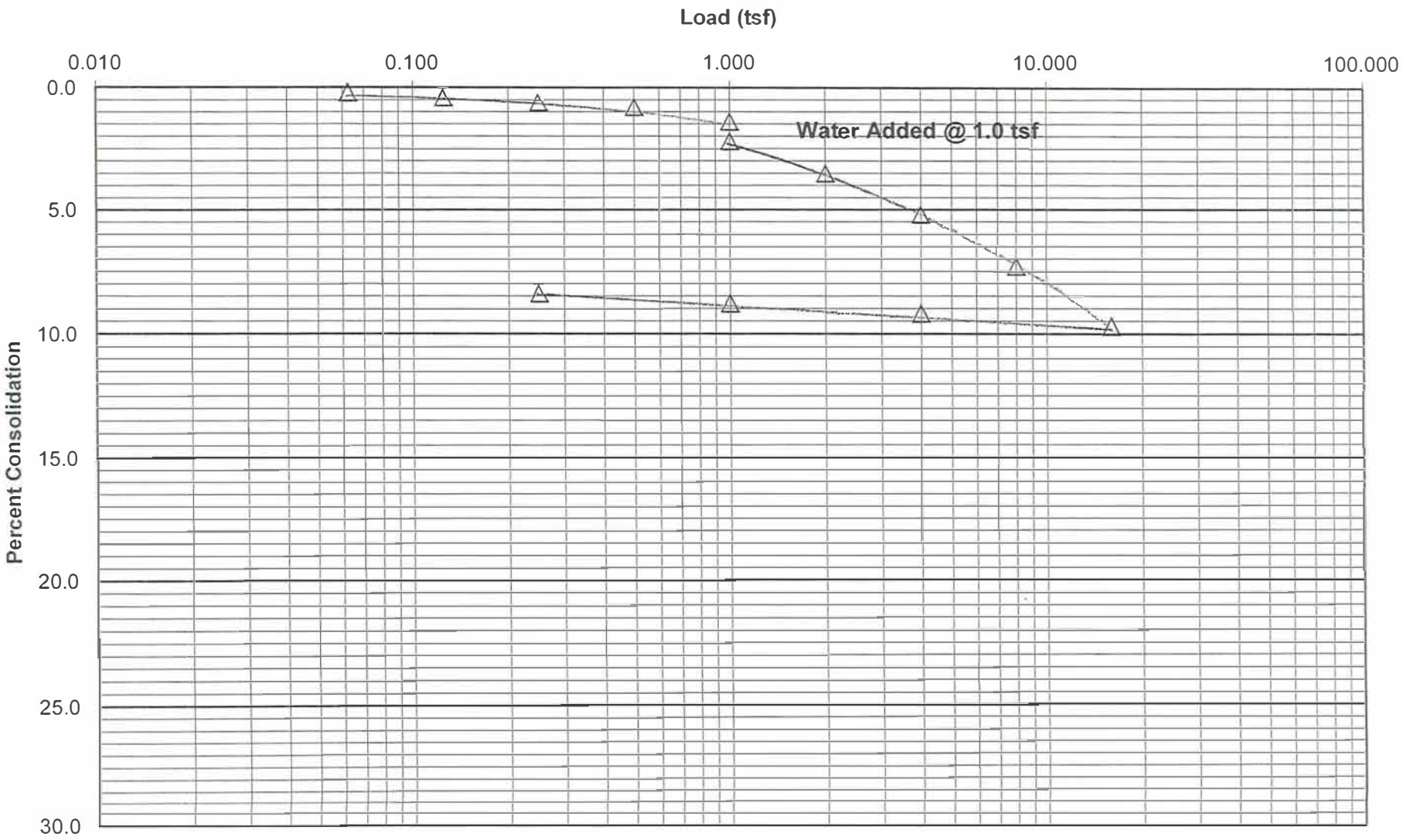
Date of Test: 10/20

GeoSoils Consultants, Inc.

Geotechnical Engineering * Engineering Geology

Moisture(%)
Before: 4.0 After: 14.5

Sample(in.)
Height: 1.00 Diameter: 2.36



B-12 @ 15.0'
Brown slightly silty fine to coarse SAND with decomposed granite.

Consolidation Diagram

C6747.10.xls

Plate C-10

Table 1 - Laboratory Tests on Soil Samples

GeoSoils Consultants, Inc.
N.U.W.
Your #6747, HDR\Schiff #14-0416LAB
12-Jun-14

Sample ID			B-2 @ 5-10'
Resistivity		**Units**	
as-received		ohm-cm	200,000
minimum		ohm-cm	11,625
pH			7.2
Electrical Conductivity		mS/cm	0.03
Chemical Analyses			
Cations			
calcium	Ca^{2+}	mg/kg	20
magnesium	Mg^{2+}	mg/kg	1.4
sodium	Na^{1+}	mg/kg	17
potassium	K^{1+}	mg/kg	7.6
Anions			
carbonate	CO_3^{2-}	mg/kg	ND
bicarbonate	HCO_3^{1-}	mg/kg	61
fluoride	F^{1-}	mg/kg	1.9
chloride	Cl^{1-}	mg/kg	1.4
sulfate	SO_4^{2-}	mg/kg	6.0
phosphate	PO_4^{3-}	mg/kg	4.5
Other Tests			
ammonium	NH_4^{1+}	mg/kg	ND
nitrate	NO_3^{1-}	mg/kg	5.9
sulfide	S^{2-}	qual	na
Redox		mV	na

Minimum resistivity per CTM 643, Chlorides per CTM 422, Sulfates per CTM 417
Electrical conductivity in millisiemens/cm and chemical analysis were made on a 1:5 soil-to-water extract.
mg/kg = milligrams per kilogram (parts per million) of dry soil.
Redox = oxidation-reduction potential in millivolts
ND = not detected
na = not analyzed

PLATE 1DR-1

EXPANSION INDEX TEST

ASTM D-4829

NUWI Sierra Madre, LLC

6747

Project Information	
Project Name:	New Urban West (Sierra Madre)
Work Order No.:	6747
Date of Test:	17-Jun-14
Tract Number:	

		Constants	
		Vol. wet soil (cf):	0.0073
Calculations		Specific Gravity:	2.70
Boring/Lot #:	**B-2**		
Depth of Test (ft):	**5.0' - 10.0'**		
Soil Classification:	Medium-orange brown, slightly clayey, very fine to fine SAND.		
Wet Weight + Ring (lbs):	1.3230		
Ring Weight (lbs):	0.4320		
Wet Weight (lbs):	0.8910		
Wet Density (pcf):	122.1		
Moisture (%):	8.7		
Dry Density (pcf):	112.3		
Saturation (%):	46.9		
Initial Reading:	0.5900		
Final Reading:	0.5930		
Expansion, H, (inches):	0.0030		
Expansion Index:	2		
Expansion Potential:	**Very Low**		
After Test			
Wet Weight (g):	434.4		
Dry Weight (g):	370.1		
Water Loss (g):	64.3		
Moisture (%):	17.4		

Expansion Index Table: **0 - 20 = Very Low**
21 - 50 = Low
51 - 90 = Medium
91 - 130 = High
130 & Up = Very High

September 16, 2022
W.O. 6747

APPENDIX C

INFILTRATION TEST RESULTS

MDN 23118

6634 Valjean Avenue, Van Nuys, California 91406 Phone: (818) 785-2158 Fax: (818) 785-1548

Percolation Test Data Sheet

Project	NUWI Sierra Madre, LLC			Project No.	6747	Date:	10/30/2020
Test Hole No.	B-11	Tested By:	JM/LP	Drilled By:	2R Drilling		
Depth of Boring, H (ft):	30	USCS Soil Classification	SM	Aggregate Correction, e (Void Ratio)			0.5
Test Hole Dimensions (inches):		Diameter,d (if round)=	8	Pipe Diameter, dp=		2	
Test-specefic Reduction	1	Site Variability Reduction	1	Long Term Reduction		1	

Trial No.	Start Time	Stop Time	Time Interval, (min.)	Initial Depth to Water (ft.)	Final Depth to Water (ft.)	Change in Water Level (ft.)	Greater than or Equal to 6"? (y/n)
1	10:00	10:25	25	20	30	10	y
2	10:30	10:55	25	20	30	10	y

Trial No.	Start Time	Stop Time	Δt, Time Interval (min.)	Hi, Initial Depth to Water (ft.)	Hf, Final Depth to Water (ft.)	ΔHw, Change in Water Level (in.)	Flow Rate (in^3/hr.)	Wet Surface Area (in^2)	Infiltration Rate (in/hr)
1	11:00	11:10	10	20	25.38	64.56	10343.88	2254.91	4.59
2	11:12	11:22	10	20	25.17	62.04	9940.12	2286.58	4.35
3	11:24	11:34	10	20	24.93	59.16	9478.69	2322.77	4.08
4	11:36	11:46	10	20	24.67	56.04	8978.80	2361.98	3.80
5	11:58	12:08	10	20	24.44	53.28	8536.59	2396.66	3.56
6	12:10	12:20	10	20	24.32	51.84	8305.87	2414.75	3.44
7	12:22	12:32	10	20	24.30	51.60	8267.42	2417.77	3.42
8	12:34	12:44	10	20	24.28	51.36	8228.96	2420.79	3.40
9									
10									

CALCULATION:

Falling Head Flow Rate= (ΔHw*((π/4)(dp)^2+e*(π/4)(d^2-dp^2))/(Δt)	Wet Surface Area* = π*d*(H-(Hi+Hf)/2)+(π/4)(d)^2
Infiltration Rate=Falling Head Flow Rate/Wet Surface Area	Percolation Rate= Infiltration Rate/Reduction Factor

Average Infiltration Rate=	3.42	in/hr	Reduction Factor**=	3

Percolation Rate=	**1.14**	in/hr

*If the bottom of boring is capped by bentonite, the west surface area will not include the term: (π/4)(d)^2

**Reduction Factor is the sumation of Test-specefic, Site Variability and Long Term Reductions

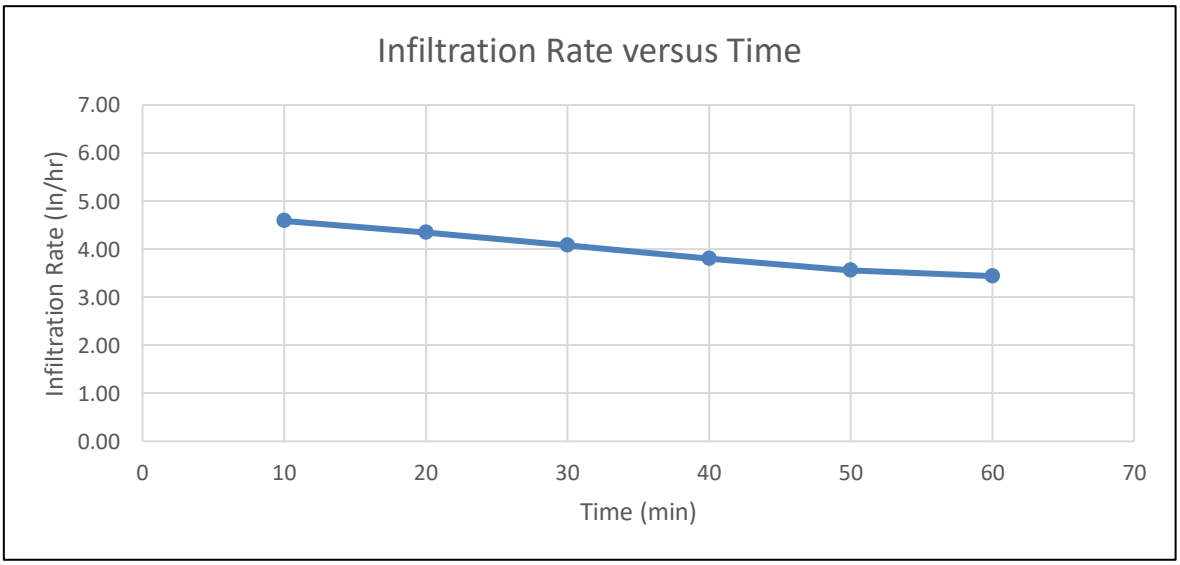


Plate P-2

Percolation Test Data Sheet

Project	NUWI Sierra Madre, LLC			Project No.	6747	Date:	10/30/2020
Test Hole No.	B-12	Tested By:	JM/LP	Drilled By:	2R Drilling		
Depth of Boring, H (ft):	15	USCS Soil Classification	SM	Aggregate Correction, e (Void Ratio)			0.5
Test Hole Dimensions (inches):		Diameter,d (if round)=	8	Pipe Diameter, dp=		2	
Test-specefic Reduction	1	Site Variability Reduction	1	Long Term Reduction		1	

Trial No.	Start Time	Stop Time	Time Interval, (min.)	Initial Depth to Water (ft.)	Final Depth to Water (ft.)	Change in Water Level (ft.)	Greater than or Equal to 6"? (y/n)
1	10:00	10:25	25	10	15	5	y
2	10:30	10:55	25	10	15	5	y

Trial No.	Start Time	Stop Time	Δt, Time Interval (min.)	Hi, Initial Depth to Water (ft.)	Hf, Final Depth to Water (ft.)	ΔHw, Change in Water Level (in.)	Flow Rate (in^3/hr.)	Wet Surface Area (in^2)	Infiltration Rate (in/hr)
1	11:05	11:15	10	10	12.6	31.20	4998.90	1166.16	4.29
2	11:17	11:27	10	10	12.27	27.24	4364.43	1215.92	3.59
3	11:29	11:39	10	10	12.2	26.40	4229.84	1226.48	3.45
4	11:41	11:51	10	10	12.12	25.44	4076.03	1238.54	3.29
5	12:03	12:13	10	10	12.08	24.96	3999.12	1244.57	3.21
6	12:15	12:25	10	10	12	24.00	3845.31	1256.64	3.06
7	12:27	12:39	10	10	11.98	23.76	3806.86	1259.65	3.02
8	12:39	12:49	10	10	11.96	23.52	3768.40	1262.67	2.98
9									
10									

CALCULATION:

Falling Head Flow Rate= (ΔHw*((π/4)(dp)^2+e*(π/4)(d^2-dp^2))/(Δt)	Wet Surface Area* = π*d*(H-(Hi+Hf)/2)+(π/4)(d)^2
Infiltration Rate=Falling Head Flow Rate/Wet Surface Area	Percolation Rate= Infiltration Rate/Reduction Factor

Average Infiltration Rate=	3.02	in/hr	Reduction Factor**=	3	

Percolation Rate=	**1.01**	in/hr

*If the bottom of boring is capped by bentonite, the west surface area will not include the term: (π/4)(d)^2

**Reduction Factor is the sumation of Test-specefic, Site Variability and Long Term Reductions

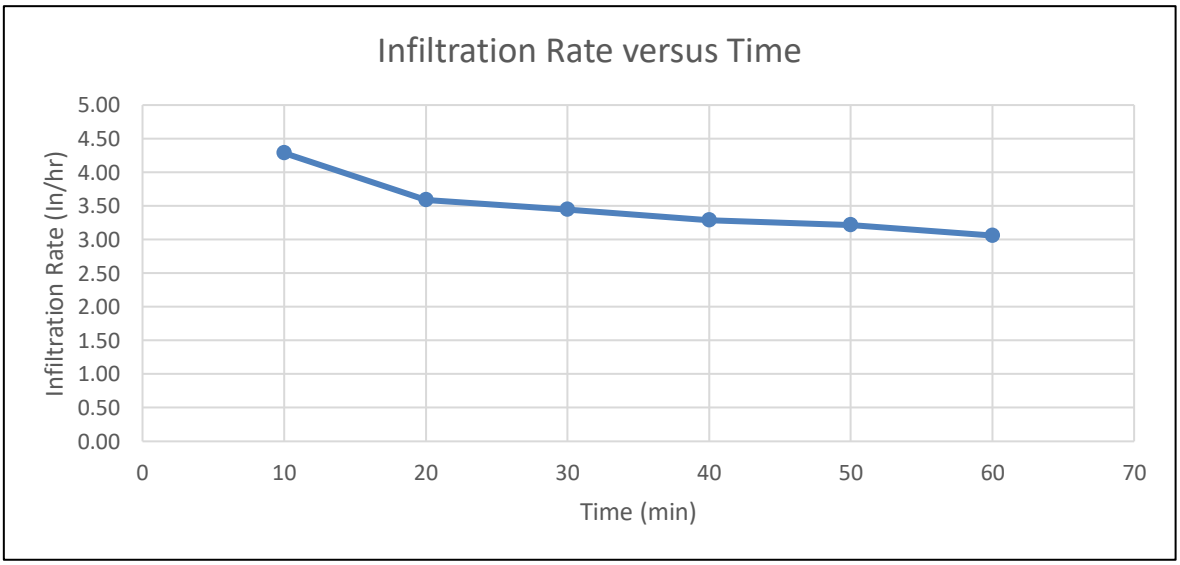


Plate P-1

PRELIMINARY HYDROLOGY REPORT

FOR
MTD 1882
THE MEADOWS AT BAILEY CANYON
Sierra Madre CA, County of Los Angeles

Prepared By
Fuscoe Engineering, Inc.
600 Wilshire Boulevard, Suite 1470
Los Angeles, CA 90017

01/26/2024

Andrew Willrodt, PE

Prepared For

New Urban West
Sierra Madre, LLC

Prepared
January 26, 2024

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1.0 INTRODUCTION

1.1 PROJECT INTRODUCTION AND BACKGROUND

The Meadows at Bailey Canyon is a proposed 17.3-acre residential project located at 700 North Sunnyside Avenue, a property that encompasses 44.7 acres, located in the city of Sierra Madre. This acreage was determined by measured boundary during the preparation of a Lot Line Adjustment (LLA) dated April 22, 2021, by Fuscoe Engineering. The project sits within the foothills of Sierra Madre and is bounded by existing single-family development to the west and south. The area northerly and northeasterly of the site is currently undeveloped open space. Adjacent to the east lies a debris basin and Bailey Canyon Park, both areas do not contribute off-site flow to the proposed site. An existing monastery is located to the north of the proposed project site and no improvements are proposed for this area. (A Vicinity Map is included in Section 1.4.)

Under existing conditions, the project site is vacant, apart from various unpaved access roads and trails that traverse the site.

The Project proposes to develop 42 single-family dwellings and associated infrastructure. The proposed development area of the project is in the southerly portion of the property within 17.3 gross acres with access provided through public street extensions of Sunnyside Ave. and Carter Ave. originating at the south of the site.

1.2 PURPOSE OF THIS REPORT

The purpose of this report is to identify and analyze the pre- and post-project drainage conditions for the entirety of the project site. The existing western portion of the site is served by the existing LA County Flood Control Facility, Project 7501 Line B, constructed in 1965. The existing eastern portion of the site was served by the City of Sierra Madre (The Lime Street Lateral Drain).

The site will now retain all water on-site up to a 50-year storm per the request of the City of Sierra Madre.

This Hydrology Report will analyze and compare a combined 10- and 50-year storm event for the existing and proposed conditions as required by LA County Flood Control District. Outcomes of the analysis will facilitate the design of the drainage system to adequately retain storm runoff throughout the entire site without adversely impacting surrounding areas, neighboring properties, and/or existing storm drain facilities.

1.3 REFERENCES

The following references were used to evaluate hydrologic conditions and water quality requirements:

- Los Angeles County Hydrology Manual (January 2006)
- HydroCalc and LAR04 hydrology software.

1.4 PROJECT SITE LOCATION MAP

The Project Site is identified in the location map shown below.

Project Address: 700 N. Sunnyside Ave
APN: 5761-002-008
Area: 44.7 Acres

2.0 EXISTING TOPOGRAPHIC & HYDROLOGIC CONDITIONS

2.1 EXISTING TOPOGRAPHY

The approximate 45-acre drainage area is characterized by steeply sloping hillsides vegetated by scrub and chaparral. Runoff from the site sheet flows in a southerly direction with slopes varying from two percent (2%) to areas as steep as 1.5:1. Elevations range from 1576 feet above mean sea level (MSL) in the northern portions of the project site, to approximately 1113 feet above MSL at the lowest point in the southern portions of the project site. Apart from a developed monastery facility located within the northerly portion of the property, the site is nearly a 100 percent pervious area.

2.2 EXISTING DRAINAGE PATTERN

The proposed development area of the project site is approximately 17.3 acres of the 44.7-acre total site, located in the southerly portion of the site. The project drainage from offsite areas to the north will be picked up by proposed onsite storm drain systems. A ridge located on the westerly side of the proposed grading divides the site into two separate drainage areas. The area west of this ridge drains to an existing LA County storm drain, project 7501-line B located in Sunnyside Ave.

The area east of the ridge flows in a south to southeasterly direction to an existing storm drain pipe that drains southerly offsite to Crestvale Drive (i.e., The Lima Street Lateral Drain). This portion of the project site will be the subject of an additional hydrology report to be done later.

2.3 EXISTING OFFSITE STORM DRAIN FACILITIES

As noted previously, the project site experiences offsite surface drainages from the north. No existing storm drain facilities are in the northerly portion of the site. To accurately document the offsite existing drainage conditions, field investigations were performed along with reviewing aerials, various historical photos, and as-built plans.

<u>Downstream Storm Drain Point of Connection</u> – A portion of the existing storm drain facility, Project 7501- Line B, traverses the westerly portion of the project site and lies within an access road to the existing monastery. This storm drain system picks up an offsite drainage area to the west of approximately 45-acres. This drainage area is mostly comprised of single-family homes with portions of undeveloped hillside areas to the north. This storm drain facility runs southerly through the site and continues offsite within Sunnyside Ave. As described in Section 2.2, this facility is publicly owned and maintained by the LA County Flood Control District. The proposed project will propose a drainage design that will not exceed the current discharge to the existing downstream facilities. Detailed storm drain information for the facilities that will be impacted by the proposed development is provided as follows, Table 2.3-1:

Table 2.3-1

Description	Type	Size	Ownership	Ex Q_D (cfs)
Storm Drain at Sunnyside Ave (Project No. 7501 – Line B)	Circular Pipe	36″ RCP	LACFCD	167.1

2.4 EXISTING ONSITE STORM DRAIN FACILITIES

There are no known onsite drainage facilities that discharge storm flows onto the project or convey storm flows through the project, except for the upstream portion of Project 7501-Line B, Drawing No. 364-7501, as mentioned above.

There are three (3) onsite storm drain facilities that will be removed within the proposed development. Two (2) 10′ catch basins that lie along side the monastery access road and an inlet structure along the south side of the site will be removed with the proposed development.

3.0 PROPOSED HYDROLOGY

3.1 STORM FREQUENCY

Per LA County Flood Control requirements, the design storm for this project is the 25-year event. However, per the City of Sierra Madre's request, a 50-year storm event will be analyzed and designed for regarding storm runoff.

Ultimately, habitable building floor elevations must be designed to be at least 1 foot above the 100-year flood water surface. The final report will include an exhibit showing the 100-year water hydraulic analysis and surface elevation.

3.2 METHODOLOGY

The site is under the jurisdiction of the City of Sierra Madre with all drainage ultimately discharging to the Los Angeles County Department of Public Works (LACDPW) Facility 7501-B.

The City of Sierra Madre accepts methodologies and practices as described in the Los Angeles County Hydrology Manual, dated January 2006.

The computer programs used for this report to perform hydrologic calculations are HydroCalc and LAR04 Software. HydroCalc, issued by LACWPD, provides peak runoff rates and time of concentration calculations. LAR04 is a modified version of the Public Work's F0601 program and is used for subarea routing. Landuse percent impervious values are assigned per Appendix D "Proportion Impervious Data" per the LA County Hydrology Manual. The Storm Rain Zone value used in the program is five times the Isohyetal found in the Mount Wilson Isohyet for the project area. These programs have been identified as acceptable software within the County of Los Angeles.

3.3 EXISTING CONDITION HYDROLOGY

Existing hydrology for Project 7501-Line B was reviewed for the existing storm drain system. In addition, existing condition hydrology was preformed using LAR04 software. Per the LAR04 study, the entire tributary area for Line B was analyzed to the point of connection for the proposed storm drain system. As noted in Section 2.3 of this report, the existing discharge to the 36" RCP (Line B) is 167.1 cfs.

3.4 DEBRIS BASINS

Per LA County Flood Control District, debris basins are required based on the burned peak flow rate entering the basin, to debulk debris laden storm flows. The project will not be located within DPA-1 per the LLA for the project area. The LLA and an exhibit showing the Debris Production Areas are included in Appendix C.

Debris basins are existing upstream of the project site to debulk the offsite drainage area flows, and no additional basins are proposed. Through a separate, but concurrent project, these existing debris basins are to be re-assessed and likely expanded to meet current county requirements.

The proposed project area where offsite storm flows must be intercepted to convey peak storm flows safely through the project will not require a debris basin based on the Army Corps of Engineers and L.A. County Flood Control District Debris methods and requirements due to the relatively small natural tributary area. The final report will include sediment basin calculations via the CASQA SE-2 RUSLE Equation.

3.5 PROPOSED CONDITION HYDROLOGY

The proposed condition consists of 42 single-family dwelling units along with neighborhood open space and related infrastructure required to accommodate the proposed project. This hydrology study analyzed a 50-year storm event for the proposed site. All onsite drainage will be directed to a proposed detention basin designed to hold said 50-year storm event runoff volume.

Hydrology calculations for the design storm event were performed and discharges determined at the downstream point of connection. Proposed condition hydrology is included in Appendix B. The Proposed Drainage Plan is in Appendix C.

4.0 PROPOSED STORM DRAIN FACILITIES

4.1 PRE- AND POST-DEVELOPMENT RUNOFF SUMMARY

The proposed onsite storm drain facilities consist of catch basins and reinforced concrete pipe storm drain system to convey peak flows for the site.

The existing 36" RCP in Sunnyside Ave was designed for an existing flow of 167.1 cfs, per the original calculations located in Appendix A. The proposed detention basin is designed to

contain the 50-year storm event volume, effectively reducing runoff into the existing County Line B to 151.1 cfs. As such, the conversion from natural land to developed will not negatively impact the capacity of the existing 36" RCP.

Basin routing will be included in the final report. Basin routing will show that the basin fully drains within 24-hours of peak flow. Per the latest geotechnical report, infiltration testing has found infiltration rates ranging from 3.02 to 3.45-inches-per-hour (See Appendix F).

Table 4.0-1 below compares predevelopment and post development hydrologic conditions at the Line B connection point in Sunnyside Ave. These discharges were determined using LAR04 and HydroCalc software.

Table 4.0-1: Hydrology Calculations Summary Table

	Project Design Existing Q_D (cfs)	Post Development Q_D (cfs)
Project 7501 Line B	167.1	151.1

4.2 STORM DRAIN HYDRAULICS

A 50-year storm hydraulic analysis for the proposed closed conduit storm drain system and catch basins will be performed at the time of final design of the proposed storm drain system. W.S.P.G software will be used for hydraulic modeling and hydraulic grade line (HGL) determination based on the design storm event. Results of the analysis, flow rates and maximum velocities, will be shown on the Storm Drain Design Report and Improvement Plans when complete. In the final report, existing HGL will be used for all existing pipe tie in points.

5.0 CONCLUSION

Given that the Project will be designed to maintain existing drainage patterns and post development runoff will not exceed the pre-development condition, the post-project site will not result in significant hydrology impacts downstream such that flooding, or erosion would occur on- or off-site.

Furthermore, based upon the mitigation measures described in the above sections of this report, the Project would not create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage facilities.

APPENDICES

Appendix A	Existing Conditions Hydrology Calculations
Appendix B	Proposed Hydrology Calculations
Appendix C	Debris Production Area and LLA Exhibits
Appendix D	Existing Hydrology Map
Appendix E	Proposed Hydrology Map
Appendix F	Excerpt From Geotechnical Report

Appendix A

Existing Conditions Hydrology Calculations

Office Use Only
☐ Sent Initials: _____
☐ Fax ☐ Email ☐ Other: _____
Date: _____ Time: _____

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN DIVISION – HYDRAULIC ANALYSIS UNIT

INFORMATION REQUEST SUMMARY

COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS DESIGN DIVISION Hydraulic Analysis Unit OFFICIAL RECORD DOCUMENT Received By: GRA Date: 10/13/2020

INFORMATION REQUESTED BY

*Requester's Name: Craig Kwasniewski
Company: Fuscoe Engineering
*Phone Number: (949) 474-1960 Fax Number: _____
*Email: ckwasniewski@fuscoe.com

Method of Contact: ☐ Walk-in ☐ Phone ☐ Fax ☒ Email ☐ Prelim. Mtg. Date: 09/29/2020

Intended Use: Allowable Q request and design storm frequency

Proposed Project Type: Residential Acreage Involved: 18.2 Acres

*Will information be used in any litigation? ☐ YES ☒ NO
Case Info. Name: _____ No: _____ Location: _____

INFORMATION REQUESTED (Attach Assessor Map)

LACFCD Facility: Name: BI 7501 - Line B
Unit: _____ Line: B Station: 15+00
City: Sierra Madre
*Street/Cross-street: 750 ft north of intersection of N Sunnyside Ave. & Fairview Ave.
*Thomas Guide: Page: 566 Grid: J-1 ☒ Site Map/Plans Submitted
Info. Requested: Allowable Q for 10-yr, 25-yr and 50-yr storms. (As deemed by County standards.)
Drainage Outlet #1

***Required Information. See Page 2 of 2 for Instructions.**

BELOW SECTION TO BE COMPLETED BY THE HYDRAULIC ANALYSIS UNIT

INFORMATION PROVIDED:
Hydrology Data, Drainage Map, Hydraulic Calc, As Built drawings

REFERENCES SEARCHED:
Project No. 7501 Line "B" Files

COMMENTS, ETC:
1. Subarea No. F Allow. Q = 2.22 cfs/acre.
2. Subarea No. G Allow. Q = 1.60 cfs/acre.
3. Subarea No. H Allow. Q = 1.60 cfs/acre.
4. Subarea No. I Allow. Q = 1.57 cfs/acre. ≈ 1.60 cfs/acre.

INFORMATION PROVIDED BY: George R. Sintak Date: 10/13/2020
INFORMATION REVIEWED BY: Date:

Print Save a Copy

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

Hydrology Calculation Sheet

Sht. 4 of 5

Issued By: GRT
Date: 10 13 80

PROJECT: 7501 - LINE B
FREQUENCY: 50-10
ISOHYETAL ZONE: M & L

CALCULATED BY: KO
CHECKED BY:
DATE: 7/12/65

	DRAINAGE AREA	Soil & Development	A Acres	I in/hr.	C	ΔQ CFS	ΣQ CFS	SLOPE	SECTION	V FPS	L FT.	T MIN.	ΣT MIN.	REMARKS
M-50	Ai	Pl - Ag	8.1	4.4	.845	30.1								
							Δ=	575	OVERLAND		L=1000	9.3		
	A	V - V	9.4	4.10	.837	32.2	30.1	.327	MTN STREAM	4.6	720	1.3	9.3	D&4 - Ai Northerly 1000' of A
							62.3	.12	33"Ø	10.3	900	1.5	10.6	@ Proposed Debris Basin
													12.1	S/E corner of Area D
M-10	B	Pl - Ag	5.5	3.45	.816	15.5	Δ=	575'	OVERLAND		L= 700'	7.6		
L-10	C	V S.F	9.0	2.95	.82	21.8	15.5	.114	18"Ø	19.2	1100	1.0	7.6	DA-4 Ai
							37.3	.043	27"Ø	9.2	700	1.3	8.6	@ Southerly end of Area C
L-10	Junct Area A-C	62.3 + 37.3	2.42 / 2.75	= 62.3	+33.4 =	95.7							9.9	@ S/E corner of Area D
	D	Pl - S.F.	13.0	2.46	.801	25.6	95.7					12.1		
							121.3	.012	30"Ø	26.1	450	.3	12.1	
M-10	E	Pl - Ag	4.5	3.45	.816	12.6							12.4	@ 40' s/o Area F in Summerside
							Δ=	400'	OVERLAND		L= 650	7.6		
	F	Pl - S.F.	14.5	2.75	.813	32.2	12.6	.159	OVER LAND	6	220	.6	7.6	DA-4 Ai
							12.6	.132	30" STREET	10	850	1.4	8.2	Summerside & Northerly RR
							44.8	.13	✓	10	140	.2	9.6	✓ & Southerly end of F
L-10 & L	Junct Area A-F	121.3 + 44.8	2.42 / 2.75	= 121.3	+39.4 =	160.7							9.8	@ 40' s/o Area F in Summerside
	G	Ag SF	4.0	2.41	.664	6.4	160.7	.057	33"Ø	27.0	380	.2	12.4	
	H	V V	4.0	2.40	.663	6.4	167.1	.091	33"Ø	28.0	330	.2	12.6	@ Southerly end of Area G
	J	V V	3.5	2.37	.662	5.5	173.5	.09	33"Ø	29.2	400	.2	12.8	✓ ✓ ✓ ✓ ✓ H
							179.0	.052	39"Ø	21.6	380	.3	13.0	Summerside & Fairview
	K	V V	4.0	2.33	.66	6.1	184.4	.0625	39"Ø	22.2	400	.3	13.3	✓ & Alameda
							190.5						13.6	✓ & Grandview
		25yr = Q_{100} = 174.9												
		50-10 = Q_{DEV} = 190.5												

9.0 hrs

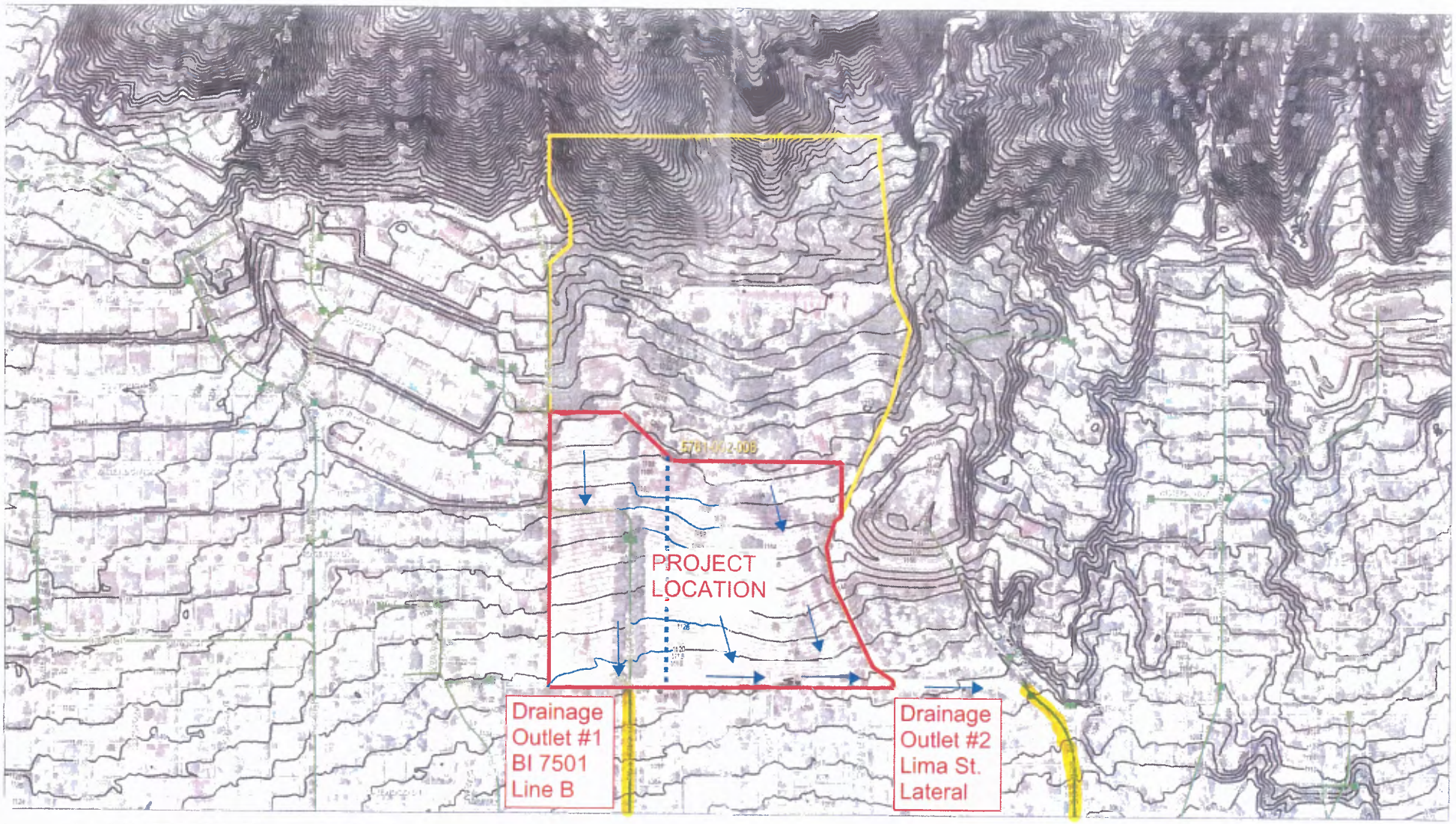
DA-2

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
DESIGN DIVISION - CALCULATION SHEET

PROJECT 7501 - Line B
REACH

SHEET 2 OF
CALC. KO DATE 5/16/
CHECK DATE
REF. 7501 - B

STA	STA	Q	n	d	$d^{8/3}$	$d^{5/2}$	S	$S^{1/2}$	Dc	Dn
1+40	2+40	184.4	.013	3	18.7	15.6	.060	.245	Pressure	Pressure
2+40	3+85	184.4		3			.090	.300		2.28
3+85	5+96	179.0		3			.060	.245		Pressure
5+96	7+16.64	179.0		3			.070	.265		2.49
7+16.31	7+80	179.0		3			.080	.283		2.34
7+80	11+00	167.1		3			.080	.283		2.19
11+00	14+96	167.1		3			.090	.30		2.10
14+96	17+00	160.7		3			.077	.278		2.16
17+00	19+76.83	160.7		3			.090	.30	Pressure	2.06
19+76.83	19+83	121.3		3			.090	.30	2.94	1.83



APN 5761-002-008

Exhibit 1

Legend

5761 | 2

LE 1" = 150'

2002

REVISED
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4-11-63
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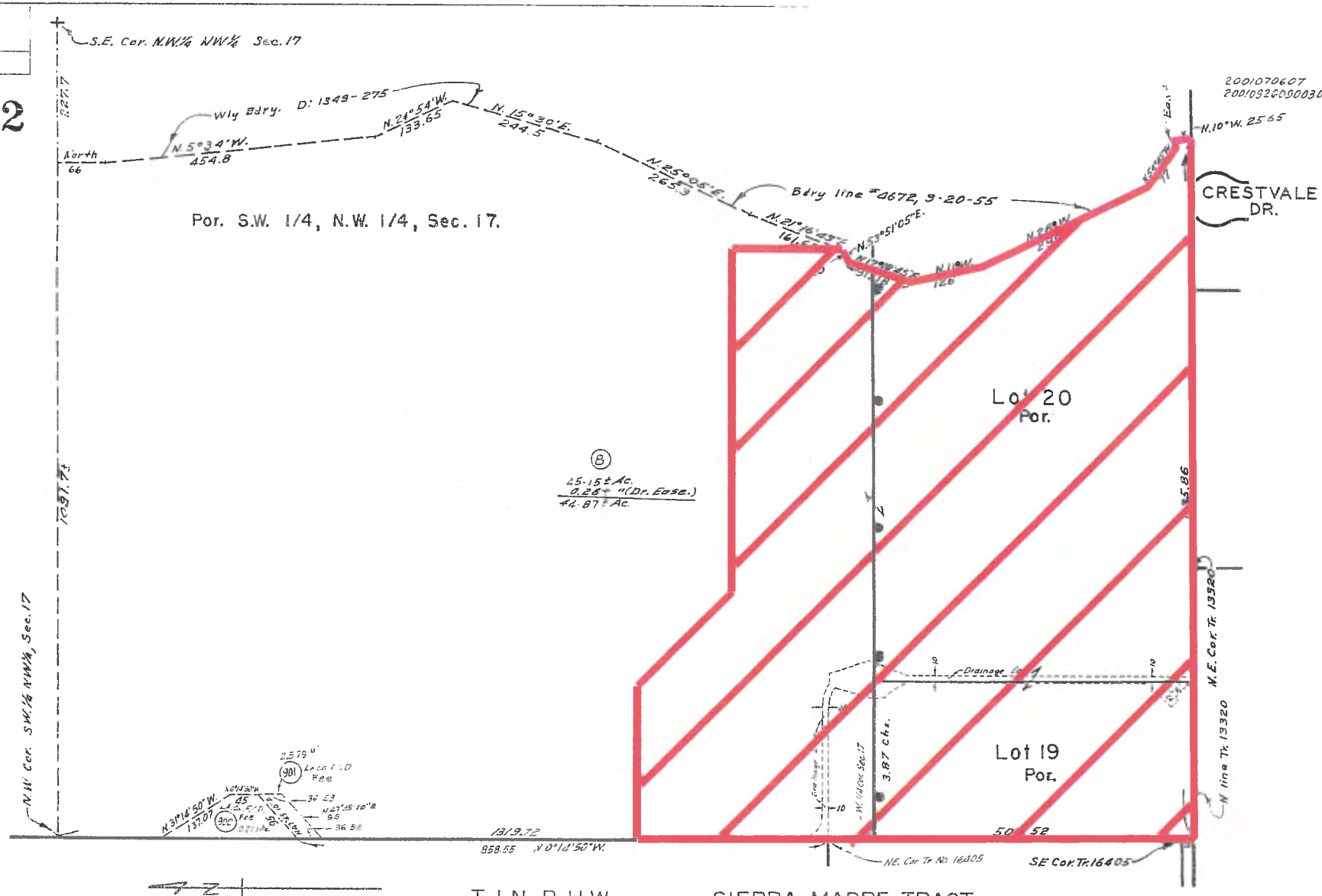
720922206
2001070607
20010926090030 01-05



700 N. Sunnyside Ave
Sierra Madre, CA 91024

FOR PREV. ASSM'T. SEE: 66 — 204 & 205

ASSESSOR'S MAP
COUNTY OF LOS ANGELES, CALIF.

Los Angeles County Storm Drain System File Geodatabase Download

Search

Layers

Info

Additional Information

View Disclaimer

View Acronyms and Definitions

Link to City of LA - Navigate LA

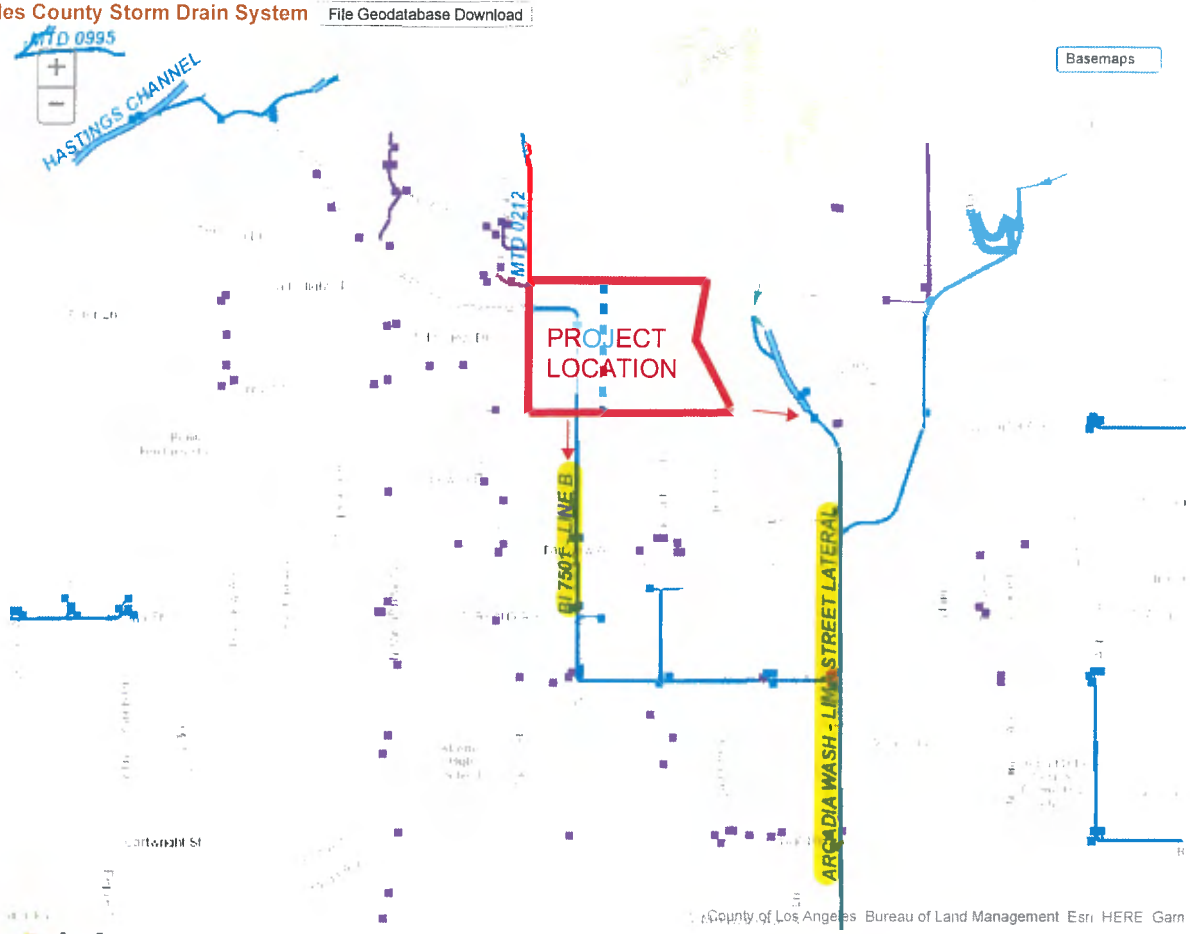
Los Angeles County GIS Data Portal

Flood Control District Website

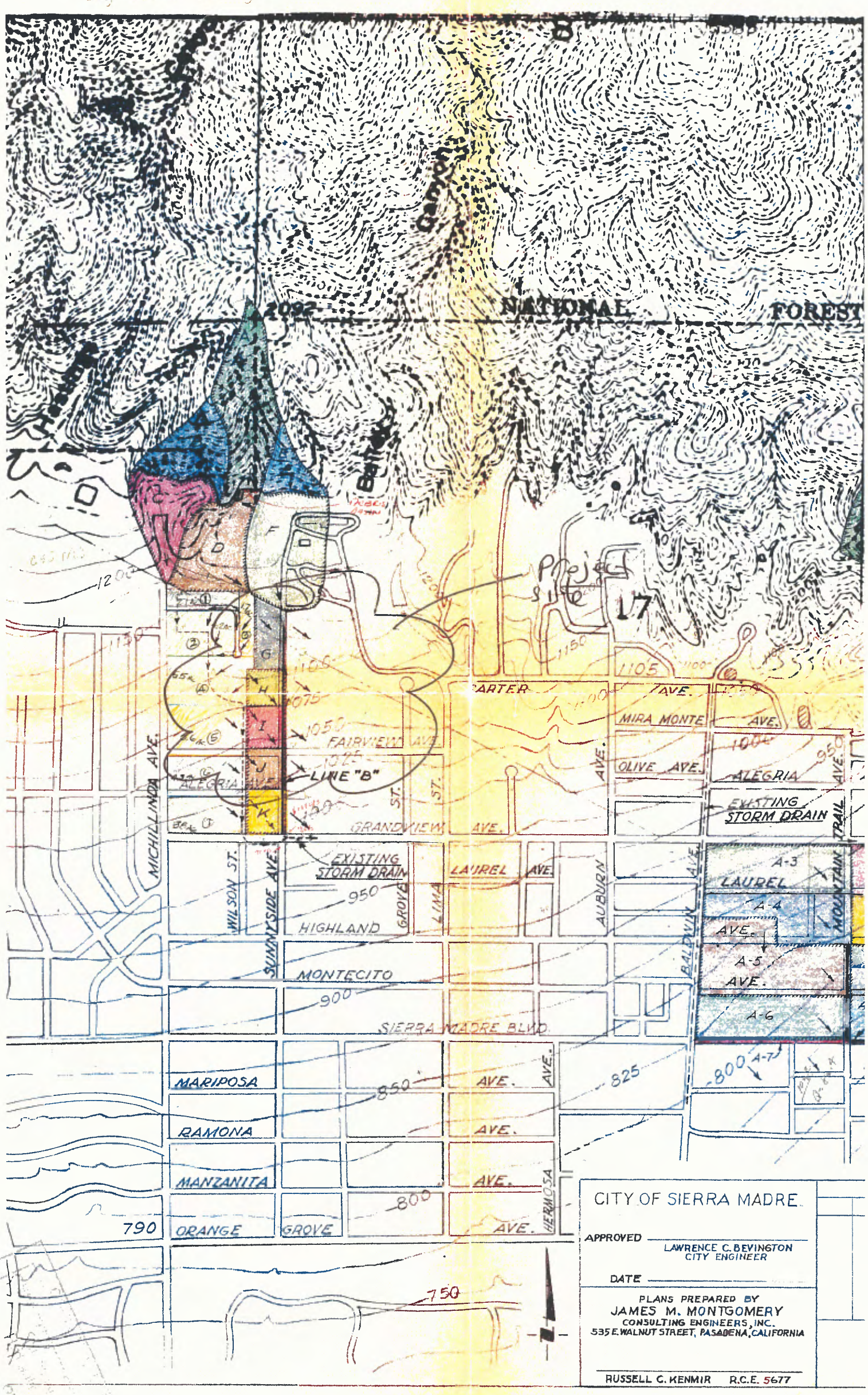
Waters of the US SYMBOLS 7-16-13 (LAKES)

Waters of the US SYMBOLS 7-16-13 (STREAMS)

Basemaps

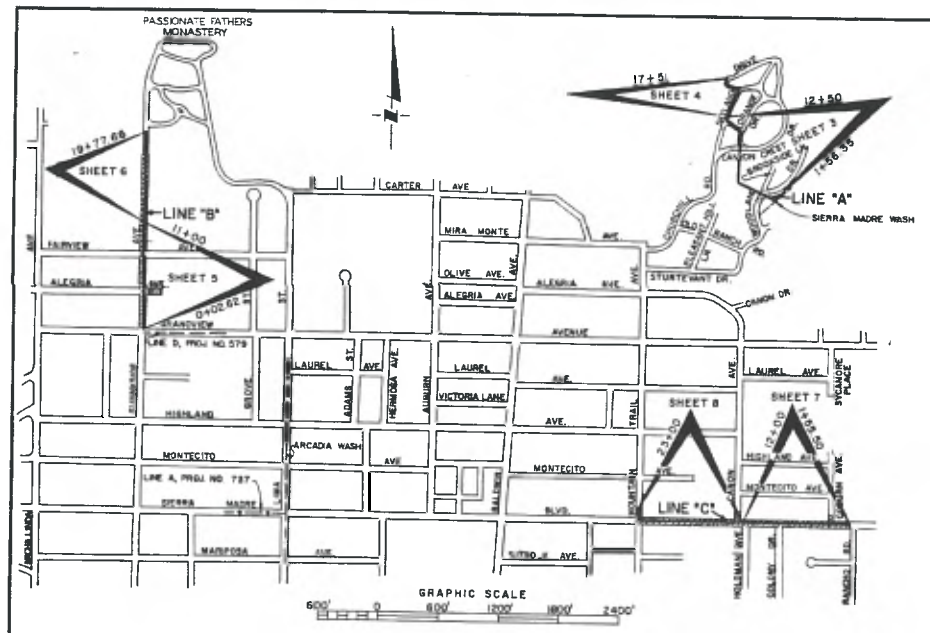


Map Tips



PROJECT NO. 7501 LINE "B"
DRAINAGE MAP

Public Services Department
Issued By: GVA
Date: 10/18/2021



VICINITY MAP

SCHEDULE OF STREET RESURFACING				
LINE	STREET	EXISTING PAVING	SYMBOL	RESURF. THICKNESS
A	WOODLAND DR. CANYON CREST DR. ORANGE DR. SKYLAND DR.	4" A.C.		5" A.C.
B	SUNNYSIDE AVE. GRANDVIEW AVE. TO FAIRVIEW AVE.	2" A.C.		3" A.C.
	SUNNYSIDE AVE. CATHOLIC RETREAT DR.	2½" A.C.		3½" A.C.
	ALEGRIA	1½" A.C.		2½" A.C.
C	SIERRA MADRE BLVD. MT. TRAIL AVE.	3" A.C.		4" A.C.
	COBURN AVE. CANON AVE.	2" A.C.		3" A.C.

LEGEND

- STORM DRAINS TO BE CONSTRUCTED
- PROPOSED DRAINS OTHER PROJECTS
- EXISTING STORM DRAINS

THE CONTRACTOR SHALL NOTE THE USE OF A VERTICAL SCALE OF 1" = 8' ON SHEETS 3 THROUGH 8

REVISIONS			
DRAWN BY L. GRAY	MARK	DATE	DESCRIPTION
CHECKED BY D. JACKSON			
DESIGNED BY S. WHITE			
SUBMITTED BY C.W.E.H.			

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

INDEX TO STANDARD DRAWINGS

DRAWING NO.	TITLE
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2-D163	CATCH BASIN NO. 3 — PLAN, SECTION AND DETAILS
2-D162	CATCH BASIN NO. 2 — PLAN, SECTION AND DETAILS
2-D249.1	CATCH BASIN NO. 6 — PLAN, SECTION AND DETAILS
2-D249.2	CATCH BASIN NO. 8 — PLAN, SECTION AND DETAILS
2-D109	CATCH BASIN NO. 6 — PLAN, SECTION AND DETAILS
2-D170	CATCH BASIN NO. 7 — PLAN, SECTION AND DETAILS
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2-D161	DETAIL OF ANGLE AND ANCHOR FOR CATCH BASINS
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2-D227	FRAME AND GRATING FOR CATCH BASINS
2-D175	REMOVABLE PROTECTION BAR FOR CATCH BASINS
2-D172	CATCH BASIN REINFORCEMENT
2-D157	CATCH BASIN REINFORCEMENT FOR ROUND MANHOLES
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	MISCELLANEOUS
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2-D188	TRANSITION STRUCTURE NO. 3 — PLAN AND SECTIONS
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2-D171	STANDARD A305 REINFORCING BARS
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2	GENERAL NOTES, ABBREVIATIONS AND LEGEND
3	LINE "A", SKYLAND DRIVE, PLAN, PROFILE AND SECTION, STA. 1+56.35 TO STA. 12+50
4	LINE "A", SKYLAND DRIVE, PLAN, PROFILE AND SECTION, STA 12+50 TO STA. 17+51
5	LINE "B", SUNNYSIDE AVENUE, PLAN, PROFILE AND SECTION, STA. 0+02.62 TO STA. 11+00
6	LINE "B", SUNNYSIDE AVENUE, PLAN, PROFILE AND SECTION, STA 11+00 TO STA 19+83
7	LINE "C", SIERRA MADRE BLVD., PLAN, PROFILE AND SECTION, STA. 1+55.50 TO STA. 12+00
8	LINE "C", SIERRA MADRE BLVD., PLAN, PROFILE AND SECTION, STA. 12+00 TO STA 23+00
9	MISCELLANEOUS DETAILS
10	LOG OF BORINGS

LOS ANGELES COUNTY ENGINEER STANDARD DRAWINGS

D67	PROTECTION BARRIER NO. 1
D72	CONCRETE PIPE ANCHORS.

■ "AS BUILT DWGS."

COUNTY OF LOS ANGELES PUBLIC WORKS
PROJECT MANAGEMENT DIVISION
HYDRAULIC ENVIRONMENT
Plan Review Unit
Issued By: GKA
Date: 10/13/02

1964 STORM DRAIN BOND ISSUE

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

PROJECT NO. 7501

SIERRA MADRE

LINES "A", "B" & "C"
VICINITY MAP AND
INDEX TO DRAWINGS

CITY OF SIERRA MADRE
APPROVED Lawrence C. Bevington
LAWRENCE C. BEVINGTON
CITY ENGINEER
DATE June 14, 1965

PLANS PREPARED BY
JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.
533 E WALNUT STREET, PASADENA, CALIFORNIA
681-1879 793-7128
Russell C. Ferrier
RUSSELL S. FERRIER R.C.E. 5677

RECOMMENDED BY C. F. Gallup
V. P. CONSULTING ENGINEER - ENGINEER
APPROVAL RECOMMENDED BY Richard K. Nelson
ASS'T CHIEF DEPUTY ENGINEER
APPROVED BY Walter J. Wood
CHIEF ENGINEER

SCALE	DATE	DWG. NO. 364-7501-D31
AS SHOWN	OCT. '66	SHEET 1 OF 10

"AS BUILT" DRAWING

GENERAL NOTES

1. NUMBERS IN CIRCLES INDICATE ITEMS UNDER WHICH PAYMENT WILL BE MADE.
2. ELEVATIONS SHOWN ARE IN FEET ABOVE THE U.S.G.S. MEAN SEA LEVEL DATUM, L.A. COUNTY, 1959 ADJUSTED.
3. STATIONS SHOWN ON DRAWINGS ARE ALONG CENTER LINE OF CONDUIT OR ON A LINE NORMAL TO CENTER LINE OF CONDUIT.
4. STATIONS AND INVERT ELEVATIONS OF PIPE INLETS SHOWN ON THE PROFILES ARE AT THE INSIDE FACE OF THE CONDUIT, UNLESS OTHERWISE SHOWN.
5. ALL PIPE IN OPEN TRENCH SHALL BE BEDDED ACCORDING TO STANDARD DRAWING 2-D 177, CASE III, EXCEPT BELL AND SPIGOT PIPE WHICH SHALL BE CASE II BEDDING, UNLESS OTHERWISE SHOWN OR MODIFIED IN THE SPECIFICATIONS.
6. WHERE REQUIRED BY STANDARD DRAWING 2-D 213.1, CONCRETE BACKFILL SHALL BE USED AROUND CONNECTOR PIPES 36" OR LESS IN DIAMETER. CONCRETE BACKFILL FOR MAIN LINE PIPE SHALL BE USED ONLY WHEN DIRECTED BY THE ENGINEER.
7. TIES FOR CATCH BASINS AS SHOWN ON THE DRAWINGS ARE FROM CURB RETURN TO CENTER LINE OF CATCH BASIN, UNLESS OTHERWISE SHOWN.
8. FOR CATCH BASINS WITHOUT LOCAL DEPRESSIONS, CURB FACE SHALL BE THAT OF THE ADJACENT CURB UNLESS OTHERWISE NOTED ON PROJECT DRAWINGS.
9. CURB FACE (C.F.) SHOWN ON THE GENERAL PLAN PERTAINS TO THE CURB FACE AT THE CATCH BASIN OPENING. UNLESS OTHERWISE SPECIFIED C.F. SHALL BE 8".
10. LOCATIONS OF CATCH BASIN CONNECTOR PIPE JUNCTIONS WITH CATCH BASIN AS SHOWN ON THE DRAWINGS ARE SCHEMATIC. IT IS INTENDED THAT SUCH JUNCTIONS BE LOCATED AT THE DOWNSTREAM ENDS OF THE CATCH BASINS, UNLESS OTHERWISE SHOWN. IN ALL CASES THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER TO MEET FIELD CONDITIONS.
11. MONOLITHIC CATCH BASIN CONNECTIONS SHALL BE CONSTRUCTED, WHERE APPLICABLE, PER STANDARD DRAWING 2-D 224.
12. THE DEPTH AT THE UPSTREAM END OF CATCH BASINS 10 FEET OR MORE IN LENGTH SHALL BE CURB FACE PLUS 12 INCHES, UNLESS OTHERWISE SHOWN.
13. "V_1" IS THE DEPTH OF INLET OF CATCH BASINS IN SERIES MEASURED FROM TOP OF CURB TO INVERT OF CONNECTOR PIPE.
14. ALL EXISTING UTILITIES SHOWN ON THE DRAWINGS ARE THE PROPERTY OF THE CITY OF SIERRA MADRE, UNLESS OTHERWISE NOTED.
15. EXISTING UTILITIES SHALL BE MAINTAINED IN PLACE BY THE CONTRACTOR, UNLESS OTHERWISE NOTED.
16. THE OPENINGS AND TOP SLABS OF ALL SIDE INLET CATCH BASINS DESIGNATED BY THE SYMBOL "☆" SHALL BE MODIFIED TO MEET THE REQUIREMENTS SHOWN ON STANDARD DRAWING 2D-232.
17. UTILITIES DESIGNATED BY THE SYMBOL "●" WILL BE ABANDONED IN PLACE AND THE OWNER WILL INSTALL A NEW SECTION OF THE AFFECTED UTILITY AT A LOCATION IN CLOSE PROXIMITY TO, BUT WHICH DOES NOT PHYSICALLY INTERFERE WITH, THE PROPOSED STORM DRAIN CONDUIT AND APPURTENANT STRUCTURES.
18. UTILITIES DESIGNATED BY THE SYMBOL "⊠" WILL BE REMOVED BY THE OWNER AND THE OWNER WILL REINSTALL A NEW SECTION OF THE AFFECTED UTILITY AT A LOCATION IN CLOSE PROXIMITY TO, BUT WHICH DOES NOT PHYSICALLY INTERFERE WITH, THE PROPOSED STORM DRAIN CONDUIT AND APPURTENANT STRUCTURES.
19. WHERE UTILITIES ARE INDICATED ON THE DRAWINGS TO BE SUPPORTED, SAID SUPPORTS SHALL BE IN ACCORDANCE WITH STANDARD DRAWING 2-D 173.1, .2, OR .3, UNLESS OTHERWISE INDICATED.
20. LOCATIONS SHOWN ON THE PLANS FOR EXISTING SANITARY SEWER HOUSE CONNECTIONS ARE APPROXIMATE ONLY.
21. SANITARY SEWER HOUSE CONNECTION RECONSTRUCTION AND RECONNECTION SHALL BE IN ACCORDANCE WITH STANDARD DRAWING 2-D 250, UNLESS OTHERWISE SHOWN.
22. SANITARY SEWERS AND HOUSE CONNECTIONS CROSSING OVER THE STORM DRAIN TRENCH SHALL BE SUPPORTED IN ACCORDANCE WITH STANDARD DRAWING 2-D 173.1 TO .3 AND ENCASED PER GENERAL NOTE 1 ON STANDARD DRAWING 2-D 173.1.
23. WHEN INDICATED ON THE DRAWINGS, SANITARY SEWERS AND HOUSE CONNECTIONS SHALL BE ENCASED OR BLANKETED IN ACCORDANCE WITH STANDARD DRAWING 2-D 251.
24. ALL OPENINGS RESULTING FROM THE CUTTING OR PARTIAL REMOVAL OF EXISTING CULVERTS, PIPES OR SIMILAR STRUCTURES SHALL BE SEALED WITH 8 INCHES OF BRICK AND MORTAR OR 6 INCHES OF CONCRETE, UNLESS OTHERWISE SHOWN.
25. ALL RESURFACING, CURBS, SIDEWALKS, DRIVEWAYS AND OTHER EXISTING IMPROVEMENTS TO BE RECONSTRUCTED SHALL BE CONSTRUCTED AT THE SAME ELEVATION AND LOCATION AS THE EXISTING IMPROVEMENTS, UNLESS OTHERWISE NOTED.
26. SOIL TEST BORINGS FOR THIS PROJECT WERE MADE IN FEB., 1959 AND IN MARCH AND APRIL, 1965.
27. CONTRACTOR SHALL NOTIFY MR. ROBERT POWELL OF THE COUNTY SANITATION DISTRICTS AT NEVADA 6-3097, 48 HOURS PRIOR TO CONSTRUCTION AROUND SANITATION DISTRICTS' FACILITIES.
28. REFER TO SHEET 9 FOR TYPICAL CATCH BASIN CONNECTOR PIPE PROFILE.
29. STREET RESURFACING PLANS ARE SHOWN ON SHEET 1.
30. PIPE CONNECTIONS TO STORM DRAINS SHALL CONFORM TO STANDARD DRAWING 2-D193 UNLESS OTHERWISE SHOWN.

ABBREVIATIONS

A.C.	ASPHALTIC CONCRETE
B.C.	BEGINNING OF CURVE
B.M.	BENCH MARK
C.B.	CATCH BASIN
C.F.	CURB FACE
C.M.P.	CORRUGATED METAL PIPE
E.C.	END OF CURVE
G.	GAS
G.M.	GAS METER
H.C.	SANITARY SEWER HOUSE CONNECTION
H.G.	HYDRAULIC GRADE
J.S.	JUNCTION STRUCTURE
L.D.	LOCAL DEPRESSION
M.H.	MANHOLE
O/S	ORIGINAL SURVEY
P.C.C.	PORTLAND CEMENT CONCRETE
P.O.C.	POINT ON CURVE
P.P.	POWER POLE
P.V.I.	POINT OF VERTICAL INTERSECTION
R.C.P.	REINFORCED CONCRETE PIPE
R/W	RIGHT OF WAY
S.D.	STORM DRAIN
S.S.	SANITARY SEWER
T.S.	TRANSITION STRUCTURE
W.	WATER
W.M.	WATER METER
V	CATCH BASIN DEPTH MEASURED FROM INVERT OF CONNECTOR PIPE TO TOP OF CURB
F.H.	FIRE HYDRANT

LEGEND

DRAWN BY	REVISIONS		
R. GRIFFIN	DATE	DATE	DESCRIPTION
CHECKED BY			
DESIGNED BY S. WHITE			
SUBMITTED BY C.W.H.			

1964 STORM DRAIN BOND ISSUE

CITY OF SIERRA MADRE
APPROVED LAWRENCE C. REVINGTON, CITY ENGINEER
DATE June 14 1965

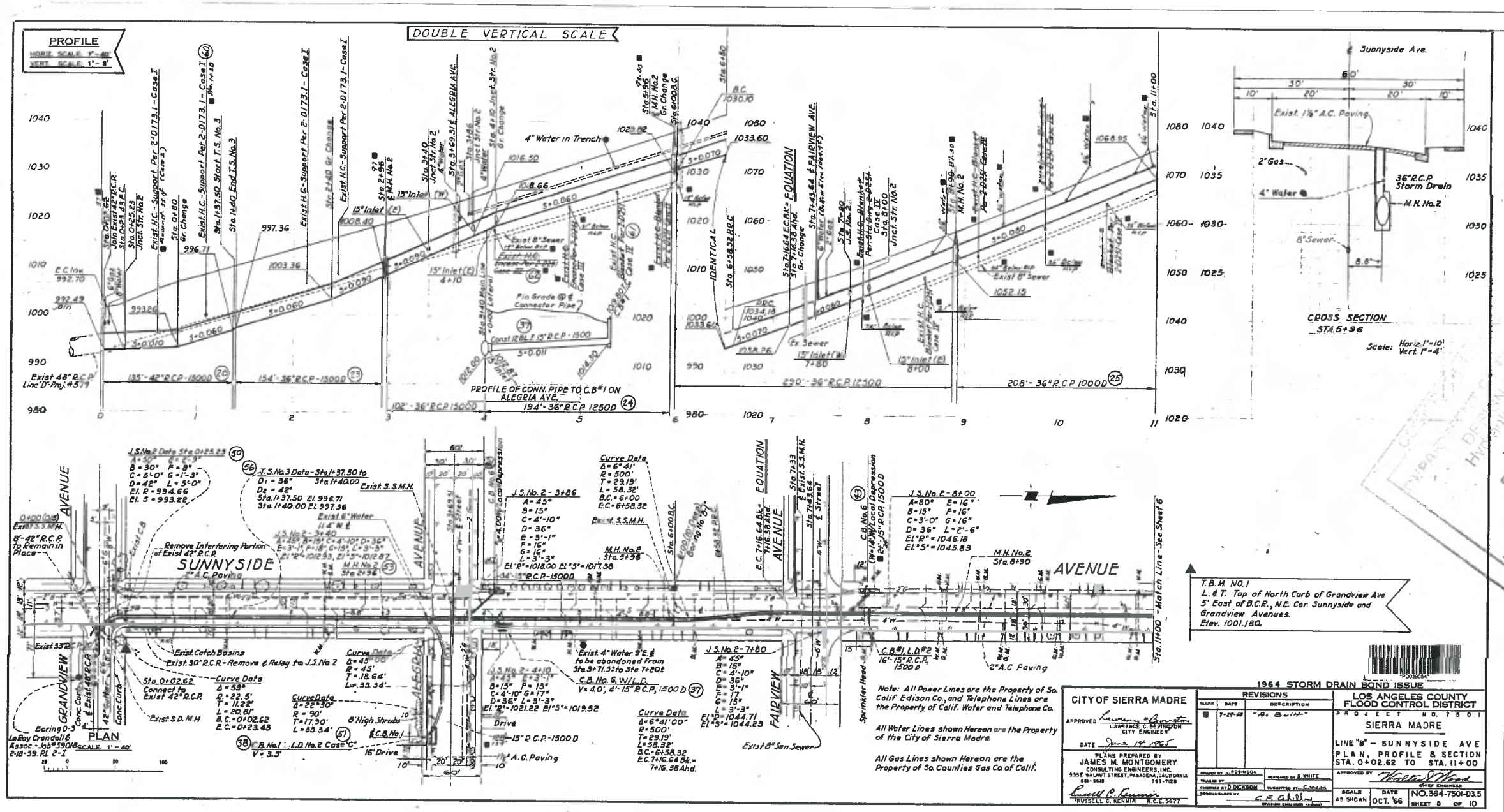
PLANS PREPARED BY
JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.
335 E. WALNUT STREET, PASADENA, CALIFORNIA
681-8119 793-7128
RUSSELL C. RENNIE R.C.E. 5877

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT
PROJECT NO. 7501
SIERRA MADRE
GENERAL NOTES
ABBREVIATIONS AND LEGEND

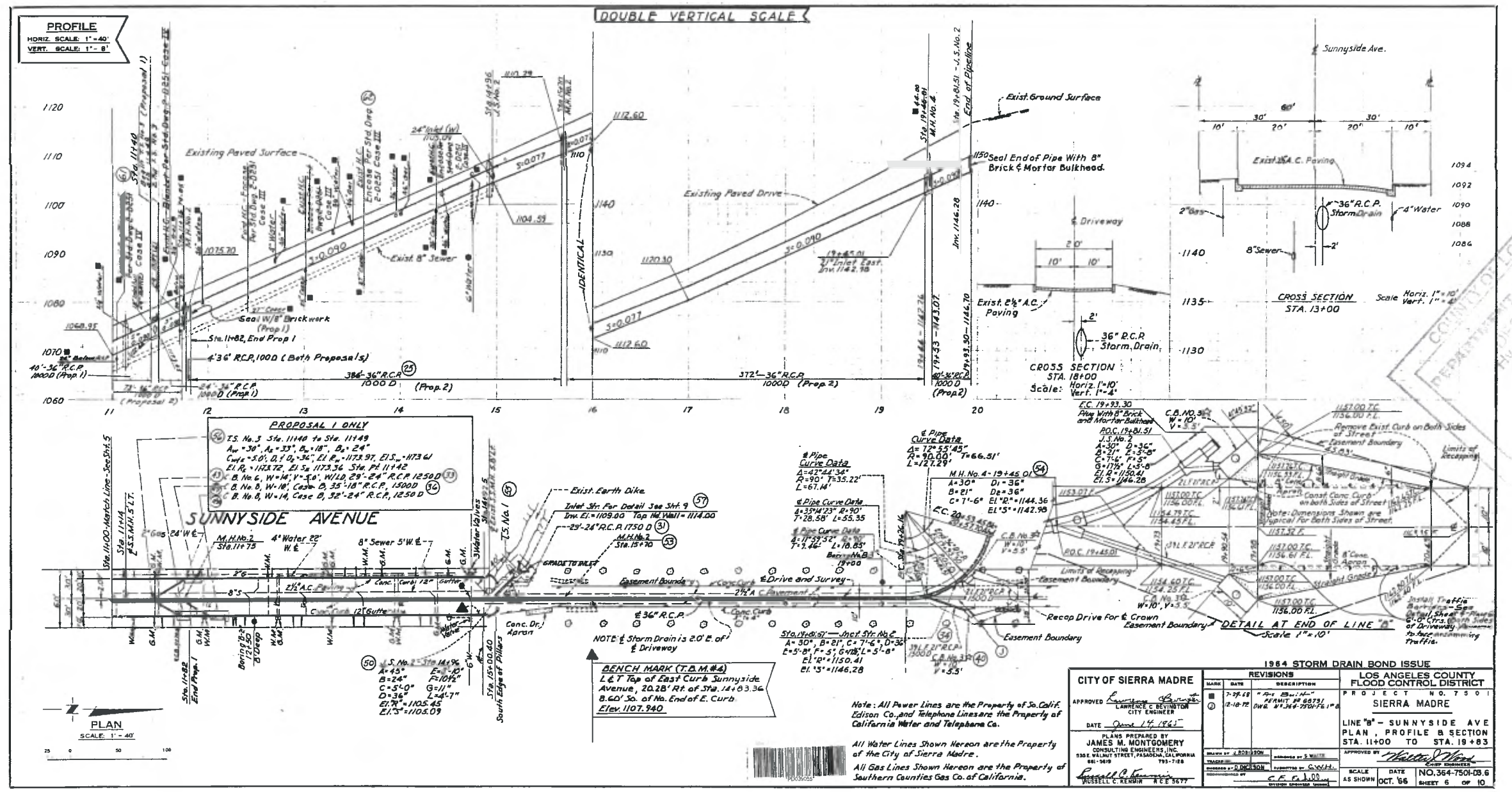
APPROVED BY
CHIEF ENGINEER

SCALE	DATE	DWG. NO. 364-7501-D5.2
NONE	OCT. '66	SHEET 2 OF 10

"AS BUILT" DRAWING



Issued By: GKM
Date: 10/13/2022
Public Service That Works


PROFILE
HORIZ. SCALE: 1" = 40'
VERT. SCALE: 1" = 8'
DOUBLE VERTICAL SCALE
Existing Paved Surface
Existing Paved Drive
Exist. Ground Surface
Seal End of Pipe With 8" Brick & Mortar Bulkhead.
Seal W/8" Brickwork (Prop 1)
Sta. 11+82, End Prop 1
4'-3'6" R.C.P. 1000 D (Both Proposals)
386'-36" R.C.P. 1000 D (Prop. 2)
372'-36" R.C.P. 1000 D (Prop. 2)
IDENTICAL
Exist. 8" Sewer
Sunnyside Ave.
CROSS SECTION STA. 13+00
Scale Horiz. 1" = 10' Vert. 1" = 4'
CROSS SECTION STA. 18+00
Scale: Horiz. 1" = 10' Vert. 1" = 4'
36" R.C.P. Storm Drain
Exist. 2½" A.C. Paving
PROPOSAL 1 ONLY
SUNNYSIDE AVENUE
Exist. Earth Dike
Inlet Str. For Detail 3 see Sht. 9
Recap Drive For ℄ Crown
Easement Boundary
DETAIL AT END OF LINE "B"
Scale 1" = 10'
Install Traffic Barrier - See Detail Sheet
Remove Exist. Curb on Both Sides of Street
Construct Conc. Curb on both Sides of Street
Note: Dimensions Shown are Typical For Both Sides of Street.
BENCH MARK (T.B.M. #4)
L.E.T. Top of East Curb Sunnyside Avenue, 20.28' Rt. of Sta. 14+83.36 8.60' So. of No. End of E. Curb.
Elev. 1107.940
PLAN
SCALE: 1" = 40'
Note: All Power Lines are the Property of So. Calif. Edison Co., and Telephone Lines are the Property of California Water and Telephone Co.
All Water Lines Shown Hereon are the Property of the City of Sierra Madre.
All Gas Lines Shown Hereon are the Property of Southern Counties Gas Co. of California.
CITY OF SIERRA MADRE
APPROVED Lawrence C. Bevington
LAWRENCE C. BEVINGTON CITY ENGINEER
DATE June 14, 1965
PLANS PREPARED BY JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC.
536 E. WALNUT STREET, PASADENA, CALIFORNIA
681-5619 793-7128
RUSSELL C. KENNIN R.C.E. 36677
REVISIONS
MARK DATE DESCRIPTION
7-29-68 "As Built"
12-10-72 PERMIT #68751 Dwg. #"A" 364-7501-76.1" ⊥
1964 STORM DRAIN BOND ISSUE
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
PROJECT NO. 7501
SIERRA MADRE
LINE "B" - SUNNYSIDE AVE
PLAN, PROFILE & SECTION
STA. 11+00 TO STA. 19+83
APPROVED BY Walter S. Wood CHIEF ENGINEER
SCALE AS SHOWN
DATE OCT. '66
NO. 364-7501-08.6
SHEET 6 OF 10
"AS BUILT" DRAWING

Peak Flow Hydrologic Analysis

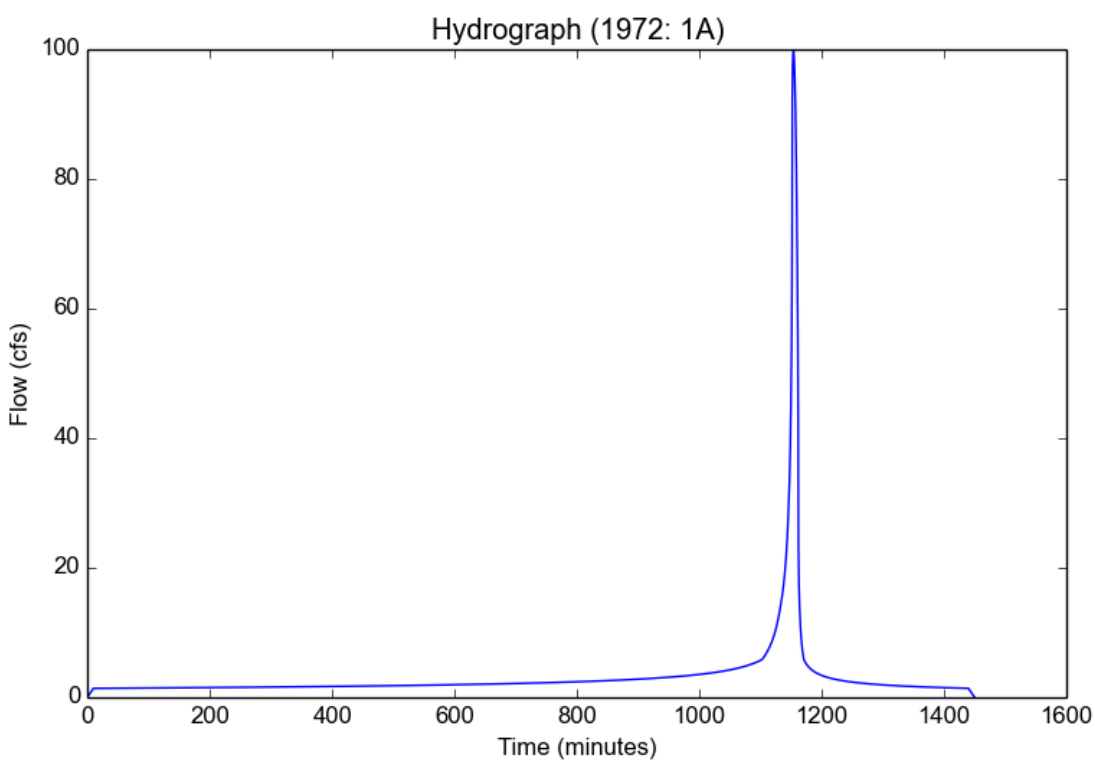
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	1A
Area (ac)	45.0
Flow Path Length (ft)	2394.44
Flow Path Slope (vft/hft)	0.36668
50-yr Rainfall Depth (in)	10.4
Percent Impervious	0.11
Soil Type	88
Design Storm Frequency	10-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	7.4256
Peak Intensity (in/hr)	3.1985
Undeveloped Runoff Coefficient (Cu)	0.6677
Developed Runoff Coefficient (Cd)	0.6932
Time of Concentration (min)	10.0
Clear Peak Flow Rate (cfs)	99.7777
Burned Peak Flow Rate (cfs)	112.2776
24-Hr Clear Runoff Volume (ac-ft)	6.5421
24-Hr Clear Runoff Volume (cu-ft)	284975.13



Peak Flow Hydrologic Analysis

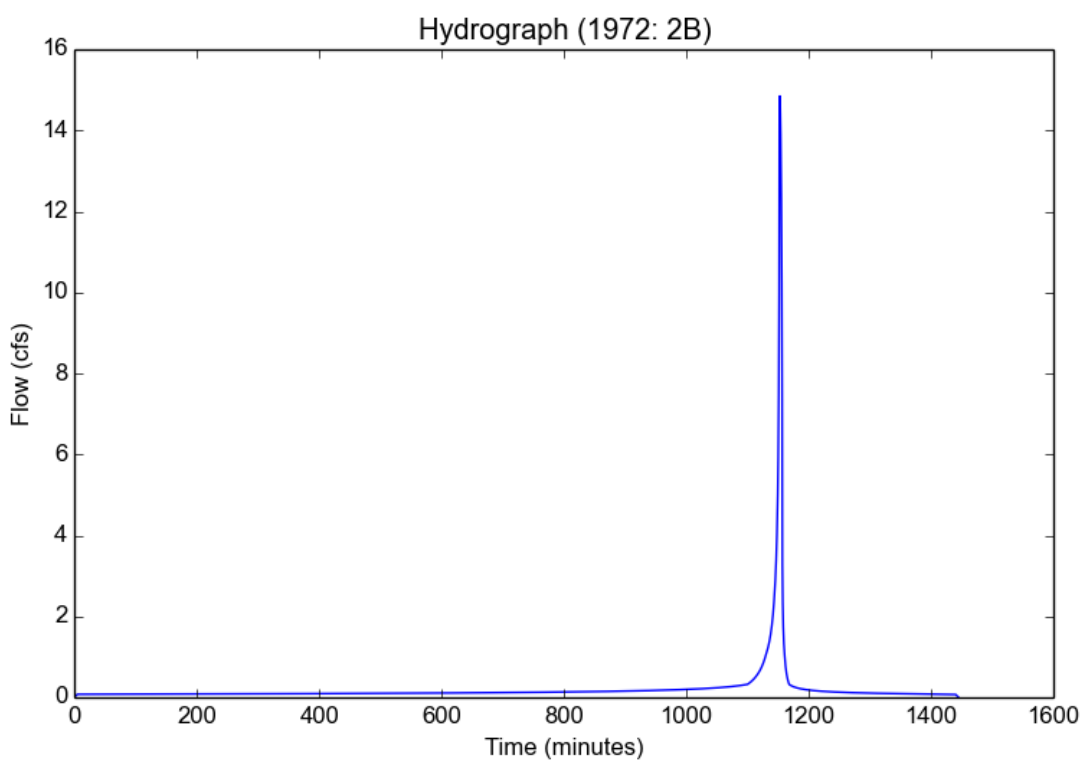
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	2B
Area (ac)	4.33
Flow Path Length (ft)	660.0
Flow Path Slope (vft/hft)	0.45152
50-yr Rainfall Depth (in)	10.4
Percent Impervious	0.01
Soil Type	88
Design Storm Frequency	10-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	7.4256
Peak Intensity (in/hr)	4.4303
Undeveloped Runoff Coefficient (Cu)	0.7727
Developed Runoff Coefficient (Cd)	0.774
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	14.8474
Burned Peak Flow Rate (cfs)	16.1353
24-Hr Clear Runoff Volume (ac-ft)	0.4371
24-Hr Clear Runoff Volume (cu-ft)	19042.1293



Peak Flow Hydrologic Analysis

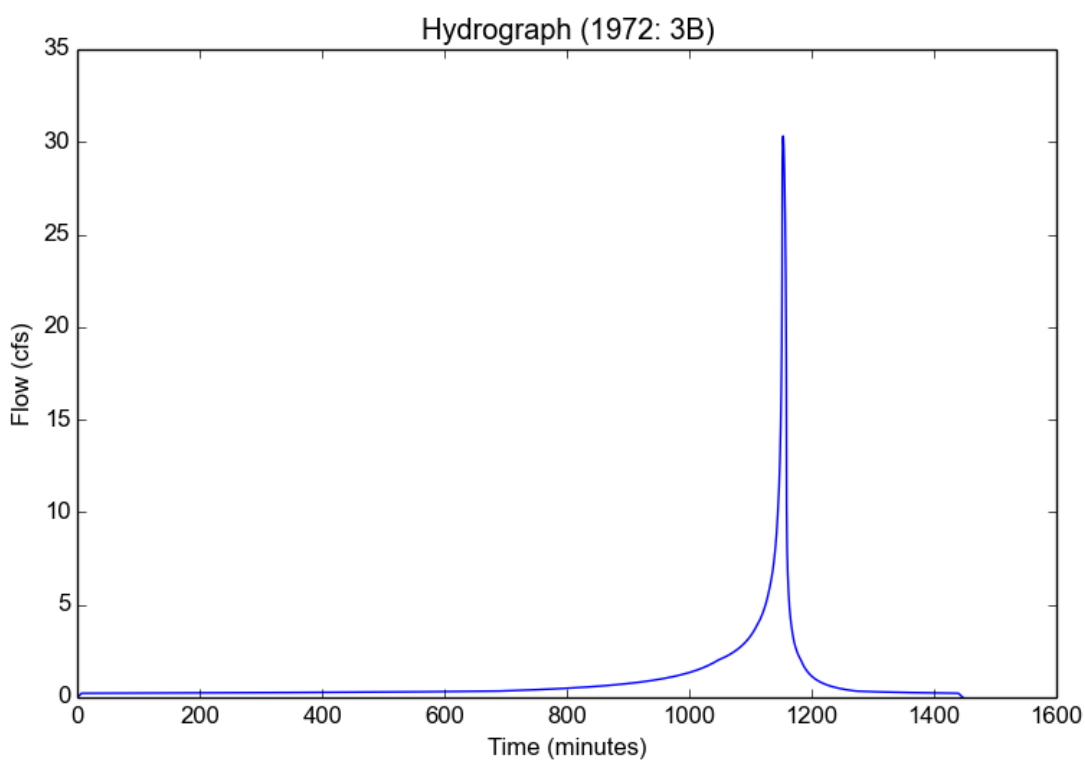
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	3B
Area (ac)	9.68
Flow Path Length (ft)	1198.0
Flow Path Slope (vft/hft)	0.13189
50-yr Rainfall Depth (in)	10.4
Percent Impervious	0.05
Soil Type	11
Design Storm Frequency	10-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	7.4256
Peak Intensity (in/hr)	3.7823
Undeveloped Runoff Coefficient (Cu)	0.8244
Developed Runoff Coefficient (Cd)	0.8281
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	30.3201
Burned Peak Flow Rate (cfs)	32.1469
24-Hr Clear Runoff Volume (ac-ft)	1.8311
24-Hr Clear Runoff Volume (cu-ft)	79761.0827



Peak Flow Hydrologic Analysis

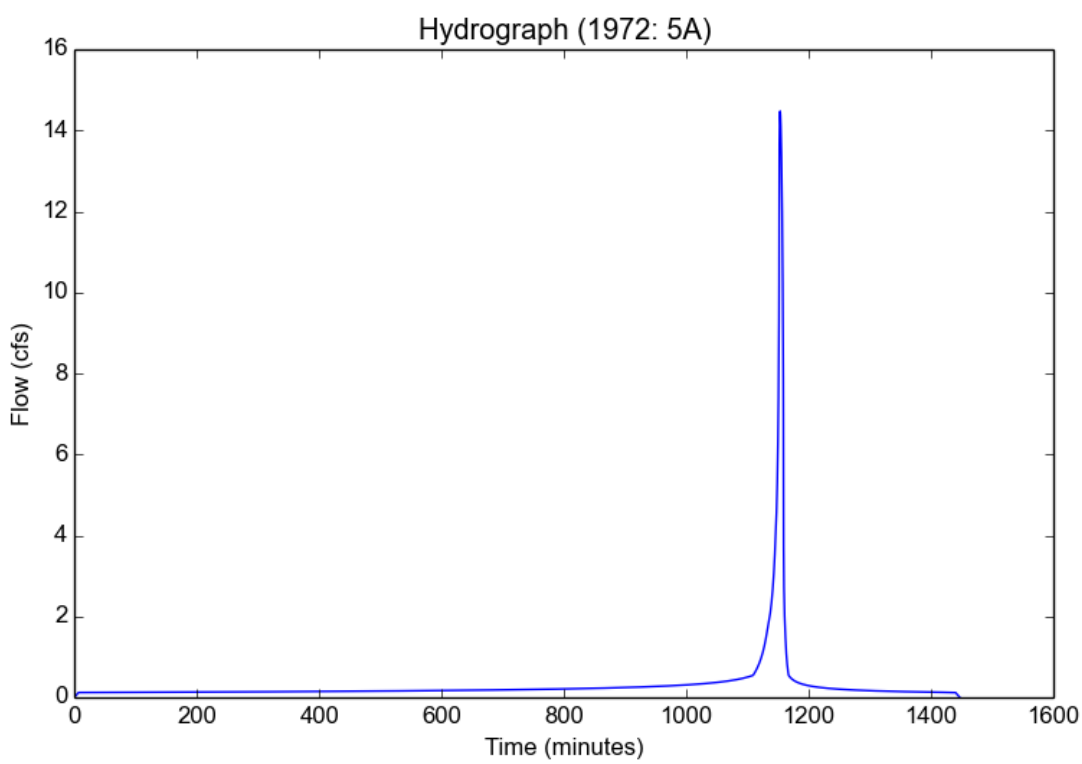
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	5A
Area (ac)	5.34
Flow Path Length (ft)	921.88
Flow Path Slope (vft/hft)	0.11498
50-yr Rainfall Depth (in)	10.2
Percent Impervious	0.05
Soil Type	7
Design Storm Frequency	10-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	7.2828
Peak Intensity (in/hr)	3.7096
Undeveloped Runoff Coefficient (Cu)	0.7218
Developed Runoff Coefficient (Cd)	0.7308
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	14.4755
Burned Peak Flow Rate (cfs)	16.0195
24-Hr Clear Runoff Volume (ac-ft)	0.631
24-Hr Clear Runoff Volume (cu-ft)	27488.1399



Peak Flow Hydrologic Analysis

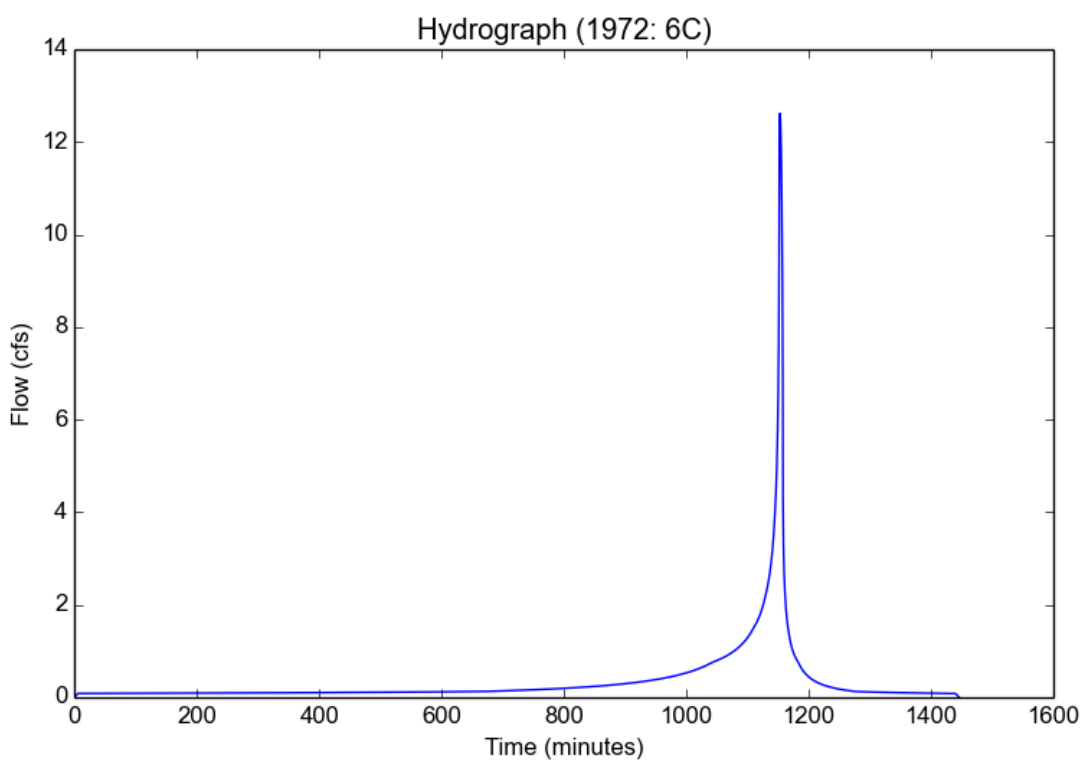
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	6C
Area (ac)	3.63
Flow Path Length (ft)	956.07
Flow Path Slope (vft/hft)	0.1161
50-yr Rainfall Depth (in)	10.6
Percent Impervious	0.05
Soil Type	11
Design Storm Frequency	10-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	7.5684
Peak Intensity (in/hr)	4.1447
Undeveloped Runoff Coefficient (Cu)	0.8352
Developed Runoff Coefficient (Cd)	0.8385
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	12.6149
Burned Peak Flow Rate (cfs)	13.33
24-Hr Clear Runoff Volume (ac-ft)	0.7085
24-Hr Clear Runoff Volume (cu-ft)	30861.7166



Peak Flow Hydrologic Analysis

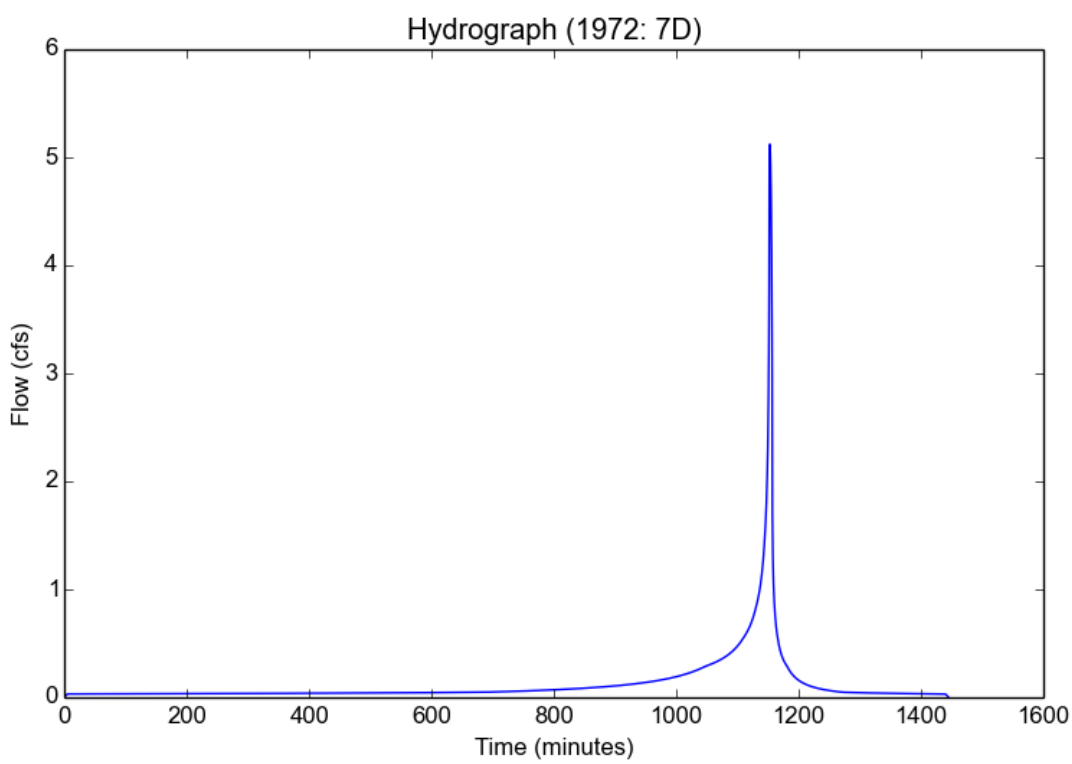
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	7D
Area (ac)	1.37
Flow Path Length (ft)	593.62
Flow Path Slope (vft/hft)	0.13561
50-yr Rainfall Depth (in)	10.4
Percent Impervious	0.05
Soil Type	11
Design Storm Frequency	10-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	7.4256
Peak Intensity (in/hr)	4.4303
Undeveloped Runoff Coefficient (Cu)	0.841
Developed Runoff Coefficient (Cd)	0.8439
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	5.1222
Burned Peak Flow Rate (cfs)	5.4036
24-Hr Clear Runoff Volume (ac-ft)	0.2593
24-Hr Clear Runoff Volume (cu-ft)	11295.308



Peak Flow Hydrologic Analysis

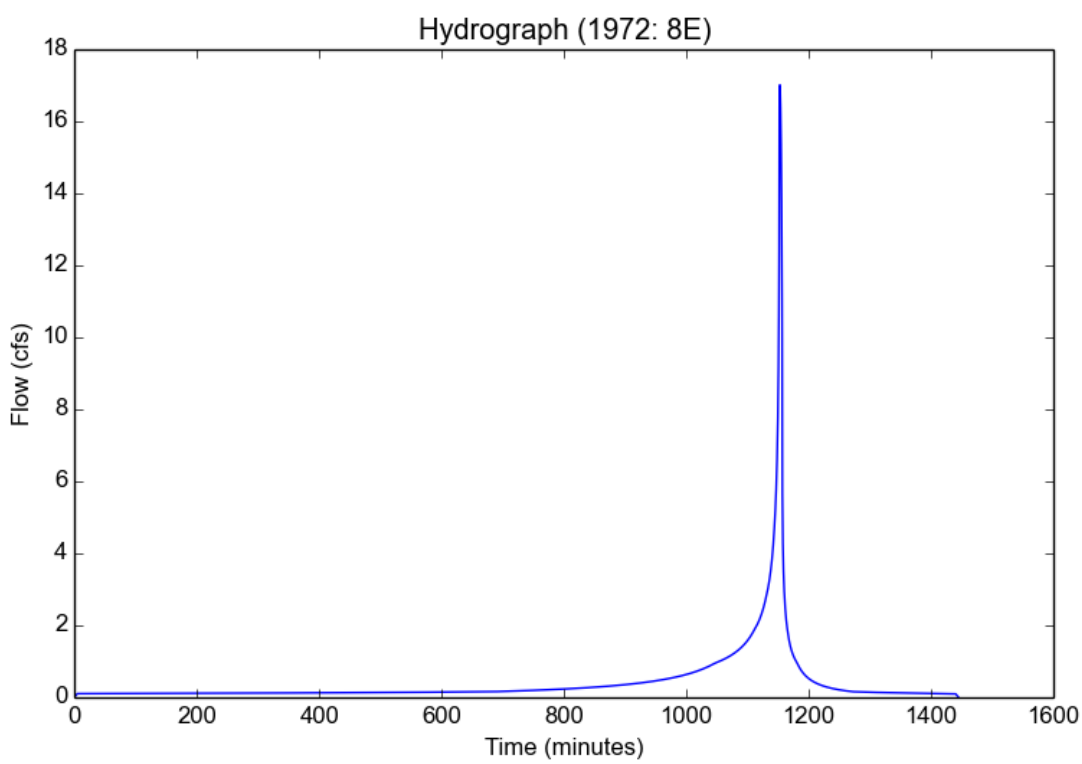
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	8E
Area (ac)	4.55
Flow Path Length (ft)	811.29
Flow Path Slope (vft/hft)	0.12573
50-yr Rainfall Depth (in)	10.4
Percent Impervious	0.05
Soil Type	11
Design Storm Frequency	10-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	7.4256
Peak Intensity (in/hr)	4.4303
Undeveloped Runoff Coefficient (Cu)	0.841
Developed Runoff Coefficient (Cd)	0.8439
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	17.0118
Burned Peak Flow Rate (cfs)	17.9464
24-Hr Clear Runoff Volume (ac-ft)	0.8612
24-Hr Clear Runoff Volume (cu-ft)	37513.614



Peak Flow Hydrologic Analysis

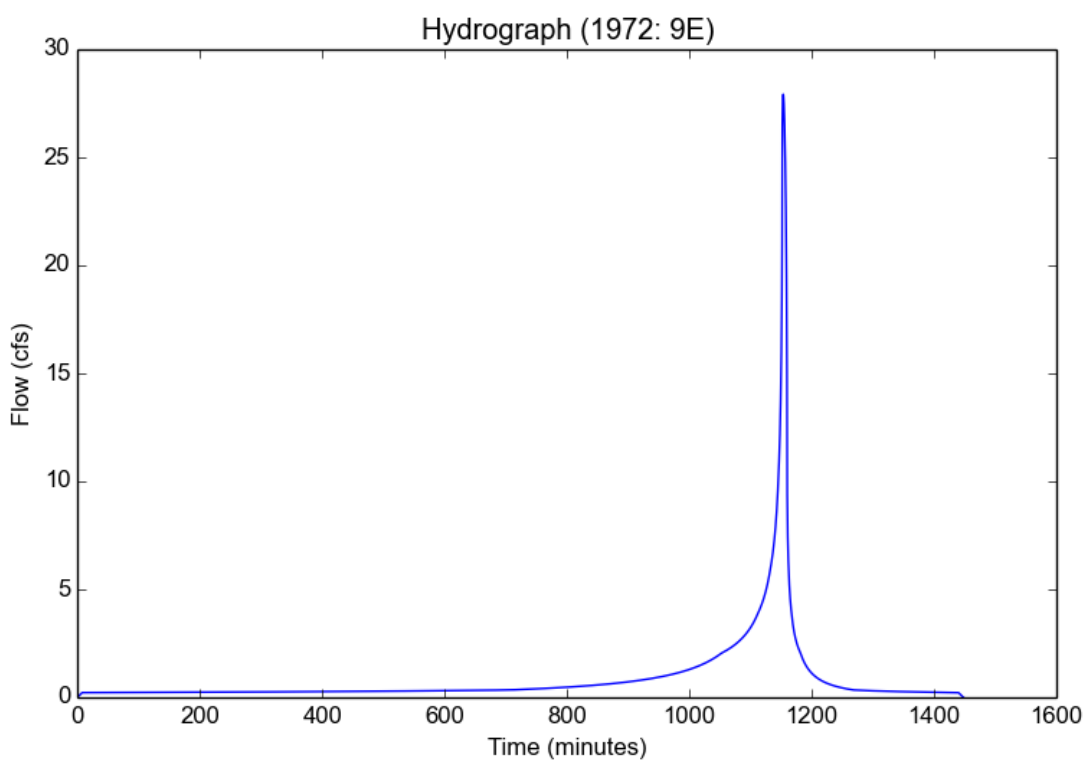
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	9E
Area (ac)	9.8
Flow Path Length (ft)	1200.11
Flow Path Slope (vft/hft)	0.05
50-yr Rainfall Depth (in)	10.2
Percent Impervious	0.05
Soil Type	11
Design Storm Frequency	10-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	7.2828
Peak Intensity (in/hr)	3.4839
Undeveloped Runoff Coefficient (Cu)	0.8134
Developed Runoff Coefficient (Cd)	0.8178
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	27.9203
Burned Peak Flow Rate (cfs)	29.7047
24-Hr Clear Runoff Volume (ac-ft)	1.7958
24-Hr Clear Runoff Volume (cu-ft)	78226.6839



Peak Flow Hydrologic Analysis

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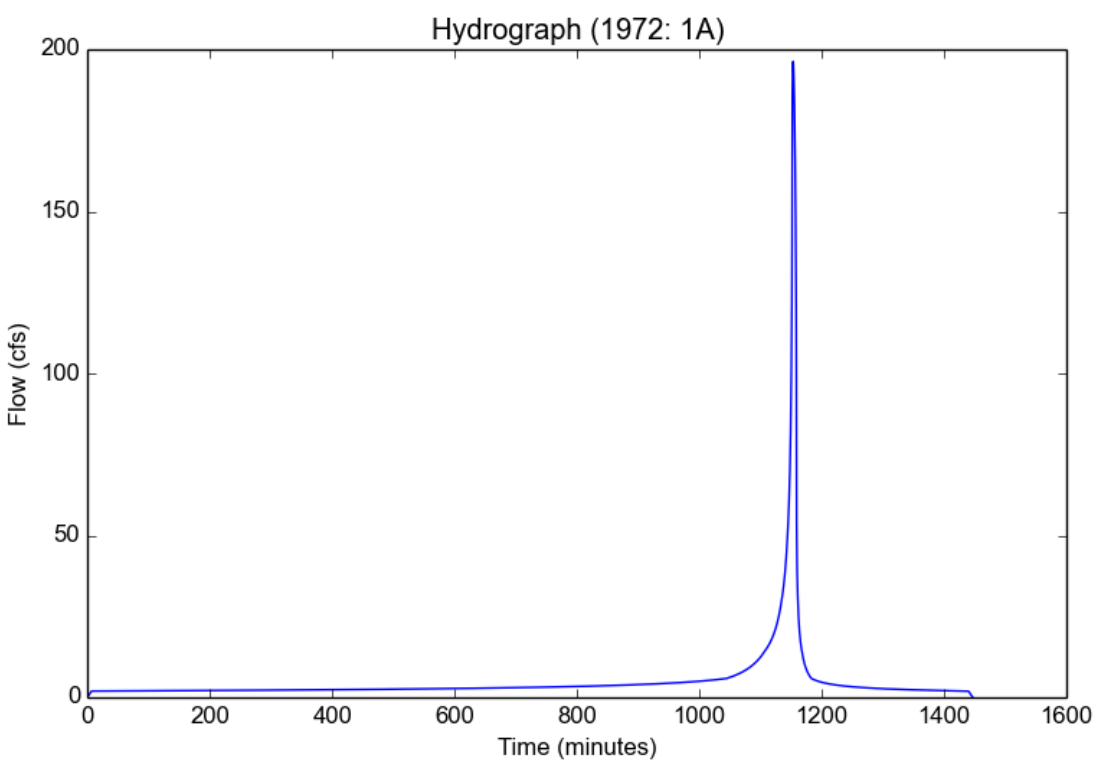
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	1A
Area (ac)	45.0
Flow Path Length (ft)	2394.44
Flow Path Slope (vft/hft)	0.36668
50-yr Rainfall Depth (in)	10.4
Percent Impervious	0.11
Soil Type	88
Design Storm Frequency	50-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	10.4
Peak Intensity (in/hr)	5.2973
Undeveloped Runoff Coefficient (Cu)	0.814
Developed Runoff Coefficient (Cd)	0.8234
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	196.2873
Burned Peak Flow Rate (cfs)	209.1043
24-Hr Clear Runoff Volume (ac-ft)	10.1675
24-Hr Clear Runoff Volume (cu-ft)	442897.3755



Peak Flow Hydrologic Analysis

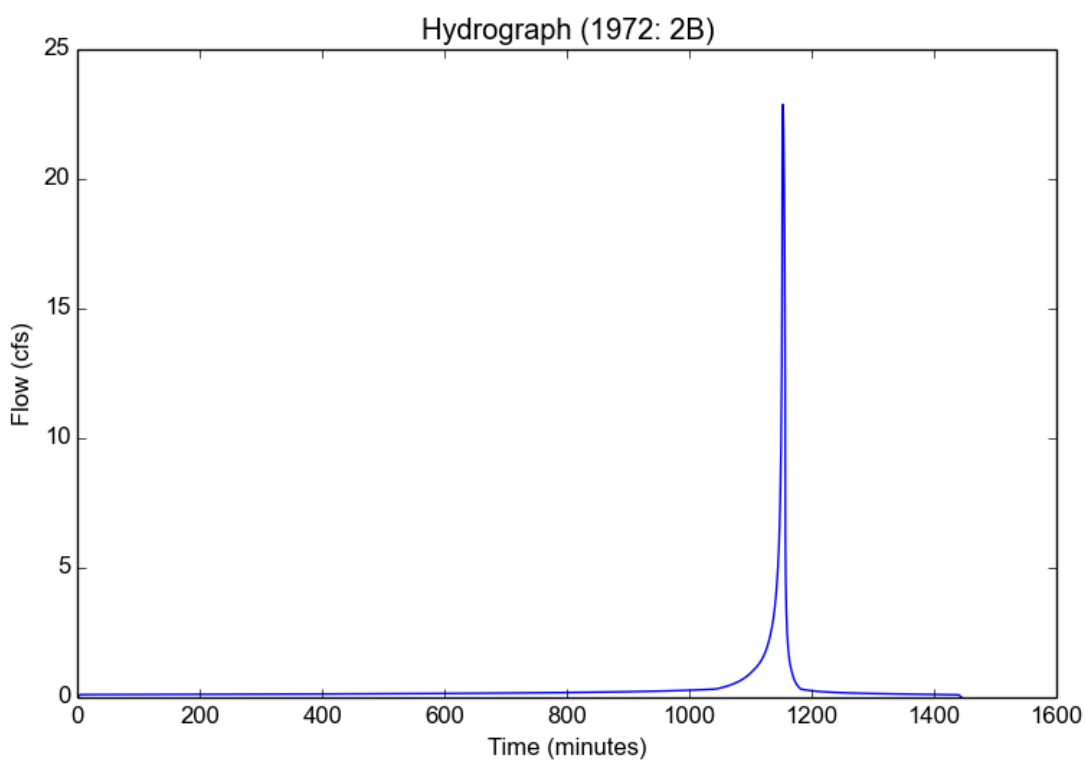
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	2B
Area (ac)	4.33
Flow Path Length (ft)	660.0
Flow Path Slope (vft/hft)	0.45152
50-yr Rainfall Depth (in)	10.4
Percent Impervious	0.01
Soil Type	88
Design Storm Frequency	50-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	10.4
Peak Intensity (in/hr)	6.2049
Undeveloped Runoff Coefficient (Cu)	0.8511
Developed Runoff Coefficient (Cd)	0.8516
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	22.8803
Burned Peak Flow Rate (cfs)	24.1202
24-Hr Clear Runoff Volume (ac-ft)	0.7135
24-Hr Clear Runoff Volume (cu-ft)	31081.4974



Peak Flow Hydrologic Analysis

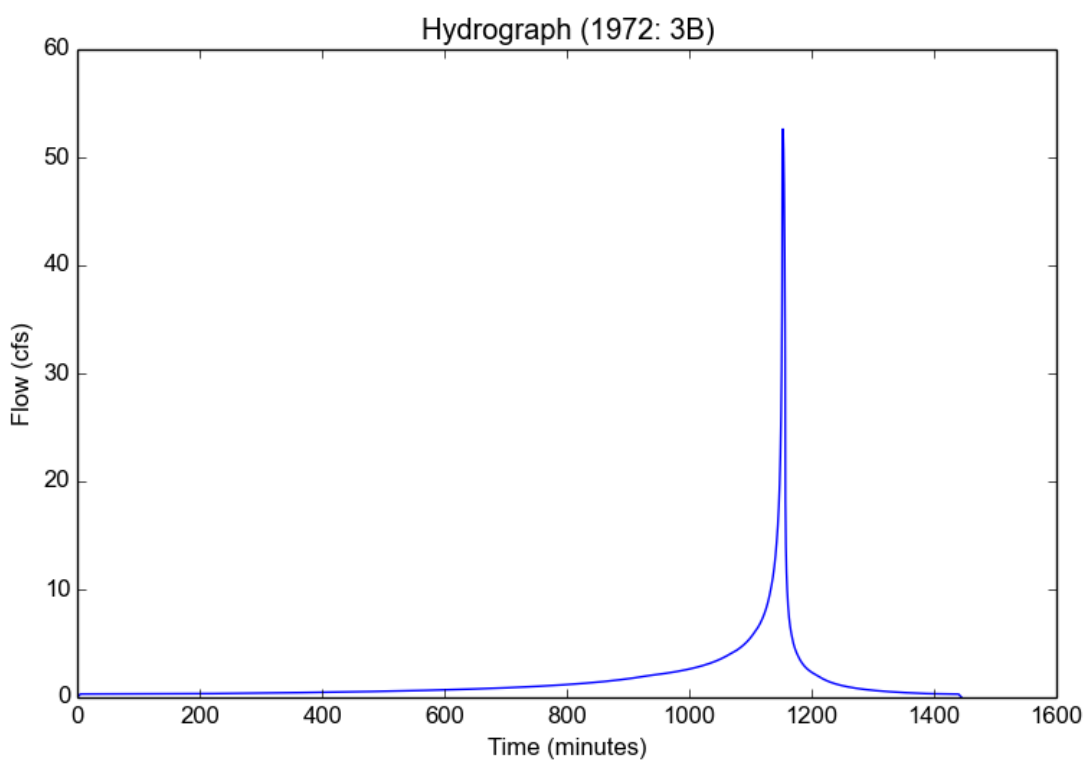
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	3B
Area (ac)	9.68
Flow Path Length (ft)	1198.0
Flow Path Slope (vft/hft)	0.13189
50-yr Rainfall Depth (in)	10.4
Percent Impervious	0.05
Soil Type	11
Design Storm Frequency	50-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	10.4
Peak Intensity (in/hr)	6.2049
Undeveloped Runoff Coefficient (Cu)	0.8748
Developed Runoff Coefficient (Cd)	0.8761
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	52.6194
Burned Peak Flow Rate (cfs)	54.9345
24-Hr Clear Runoff Volume (ac-ft)	3.2164
24-Hr Clear Runoff Volume (cu-ft)	140107.5009



Peak Flow Hydrologic Analysis

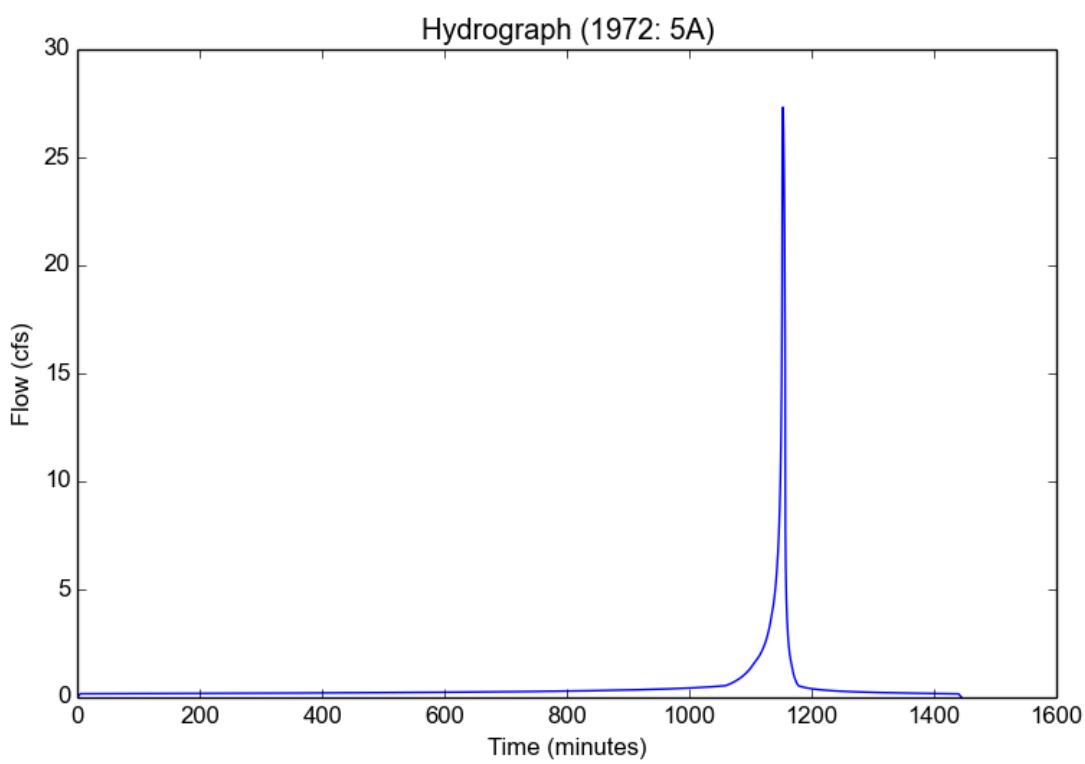
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	5A
Area (ac)	5.34
Flow Path Length (ft)	921.88
Flow Path Slope (vft/hft)	0.11498
50-yr Rainfall Depth (in)	10.2
Percent Impervious	0.05
Soil Type	7
Design Storm Frequency	50-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	10.2
Peak Intensity (in/hr)	6.0856
Undeveloped Runoff Coefficient (Cu)	0.8376
Developed Runoff Coefficient (Cd)	0.8407
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	27.3218
Burned Peak Flow Rate (cfs)	28.9271
24-Hr Clear Runoff Volume (ac-ft)	1.0104
24-Hr Clear Runoff Volume (cu-ft)	44012.3935



Peak Flow Hydrologic Analysis

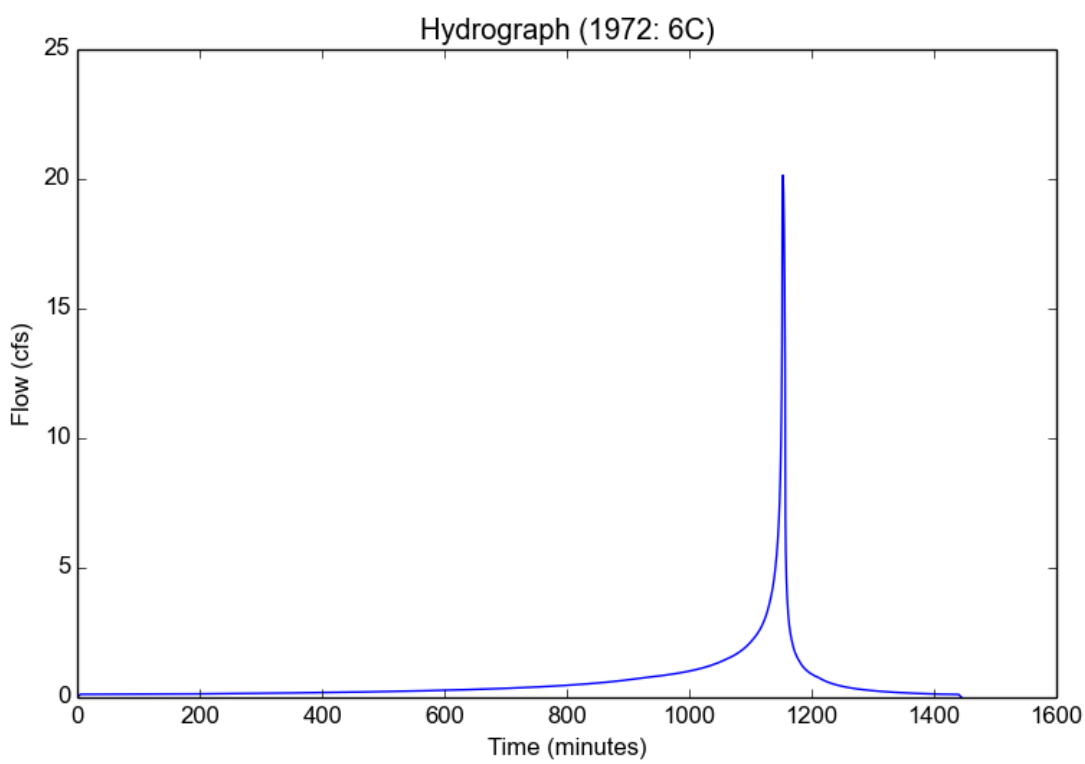
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	6C
Area (ac)	3.63
Flow Path Length (ft)	956.07
Flow Path Slope (vft/hft)	0.1161
50-yr Rainfall Depth (in)	10.6
Percent Impervious	0.05
Soil Type	11
Design Storm Frequency	50-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	10.6
Peak Intensity (in/hr)	6.3243
Undeveloped Runoff Coefficient (Cu)	0.8761
Developed Runoff Coefficient (Cd)	0.8773
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	20.14
Burned Peak Flow Rate (cfs)	21.0183
24-Hr Clear Runoff Volume (ac-ft)	1.2464
24-Hr Clear Runoff Volume (cu-ft)	54294.0002



Peak Flow Hydrologic Analysis

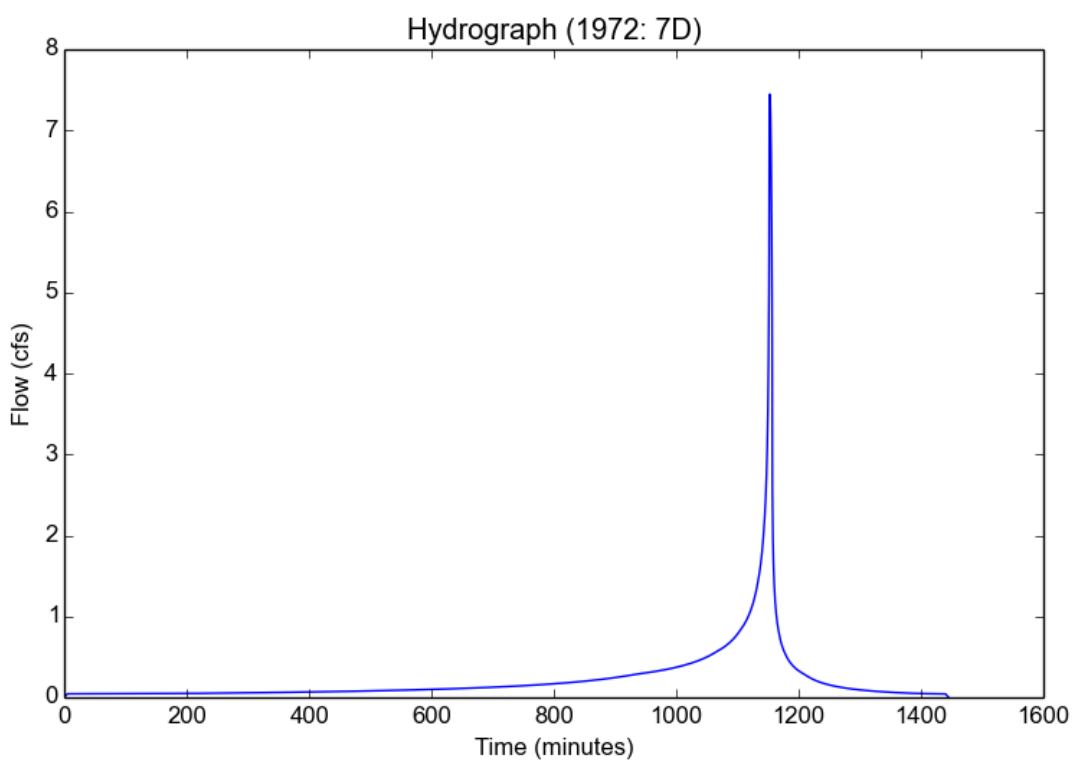
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	7D
Area (ac)	1.37
Flow Path Length (ft)	593.62
Flow Path Slope (vft/hft)	0.13561
50-yr Rainfall Depth (in)	10.4
Percent Impervious	0.05
Soil Type	11
Design Storm Frequency	50-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	10.4
Peak Intensity (in/hr)	6.2049
Undeveloped Runoff Coefficient (Cu)	0.8748
Developed Runoff Coefficient (Cd)	0.8761
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	7.4472
Burned Peak Flow Rate (cfs)	7.7748
24-Hr Clear Runoff Volume (ac-ft)	0.4552
24-Hr Clear Runoff Volume (cu-ft)	19829.2641



Peak Flow Hydrologic Analysis

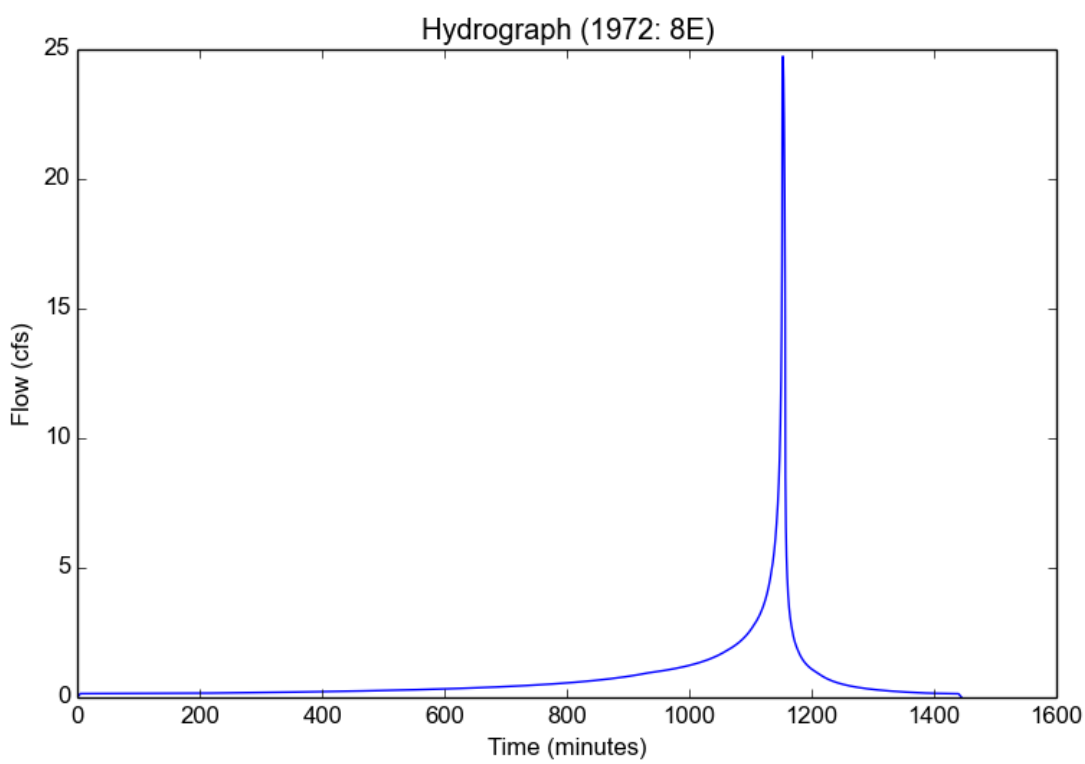
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	8E
Area (ac)	4.55
Flow Path Length (ft)	811.29
Flow Path Slope (vft/hft)	0.12573
50-yr Rainfall Depth (in)	10.4
Percent Impervious	0.05
Soil Type	11
Design Storm Frequency	50-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	10.4
Peak Intensity (in/hr)	6.2049
Undeveloped Runoff Coefficient (Cu)	0.8748
Developed Runoff Coefficient (Cd)	0.8761
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	24.7333
Burned Peak Flow Rate (cfs)	25.8215
24-Hr Clear Runoff Volume (ac-ft)	1.5119
24-Hr Clear Runoff Volume (cu-ft)	65856.315



Peak Flow Hydrologic Analysis

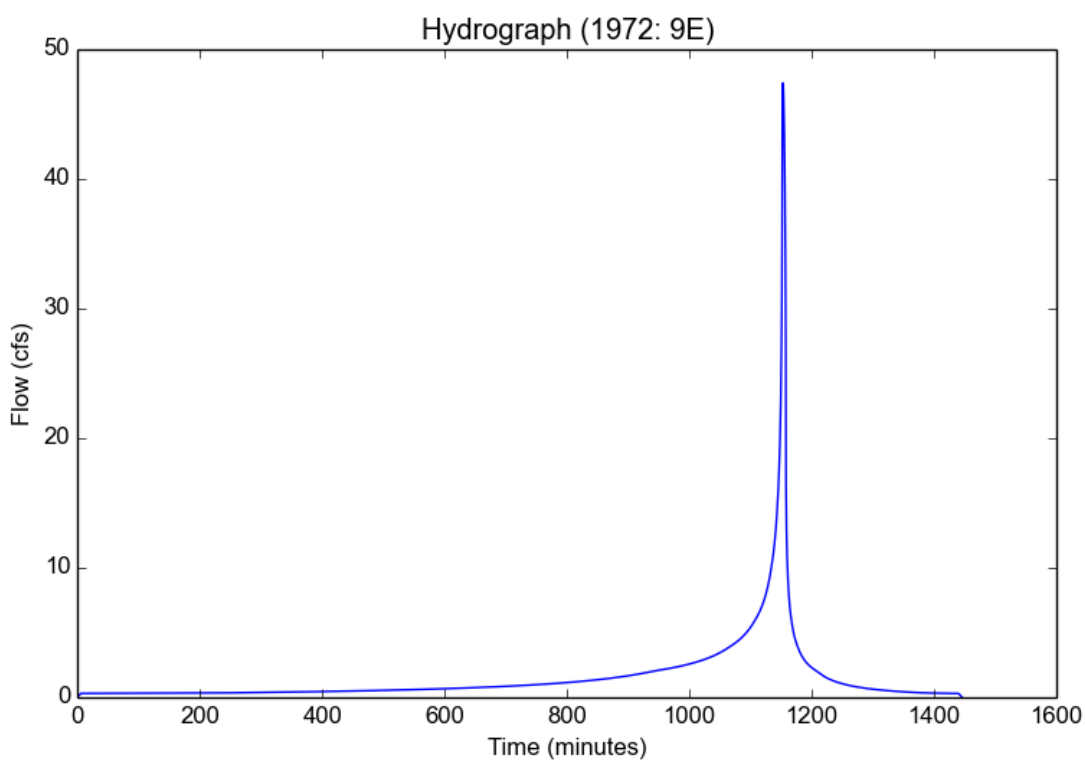
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	9E
Area (ac)	9.8
Flow Path Length (ft)	1200.11
Flow Path Slope (vft/hft)	0.05
50-yr Rainfall Depth (in)	10.2
Percent Impervious	0.05
Soil Type	11
Design Storm Frequency	50-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	10.2
Peak Intensity (in/hr)	5.5858
Undeveloped Runoff Coefficient (Cu)	0.8642
Developed Runoff Coefficient (Cd)	0.866
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	47.4072
Burned Peak Flow Rate (cfs)	49.6565
24-Hr Clear Runoff Volume (ac-ft)	3.1485
24-Hr Clear Runoff Volume (cu-ft)	137147.8949



Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild\lar_soilx_71.dat
SUNNYSIDE SIERRA MADRE - DRAINAGE STUDY STORM DAY 4

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV	
1972	1A	45.0	121.20	45.0	121.20	4	450.	.01200	2.50	.00	0.	88	15	A51	.15	(1)
1972	2B	4.3	14.70	4.3	14.70	5	923.	.12671	1.00	.00	0.	88	5	A37	.01	(2)
1972	3B	9.7	29.87	14.0	42.98	0	0.	.00000	.00	.00	0.	11	7	A37	.05	(3)
1972	4AB	14.0	42.98	59.0	163.34	4	486.	.08587	3.00	.00	0.	11	0	A36	.00	NA
1972	5A	5.3	13.97	64.3	175.85	0	0.	.00000	.00	.00	0.	7	7	A36	.05	(4)

LANDUSE
1. RURAL RESIDENTIAL HIGH DENSITY
2. VACANT UNDIFFERENTIATED
3. ACTUAL CALCULATED % IMP
4. LOW DENSITY SINGLE FAMILY

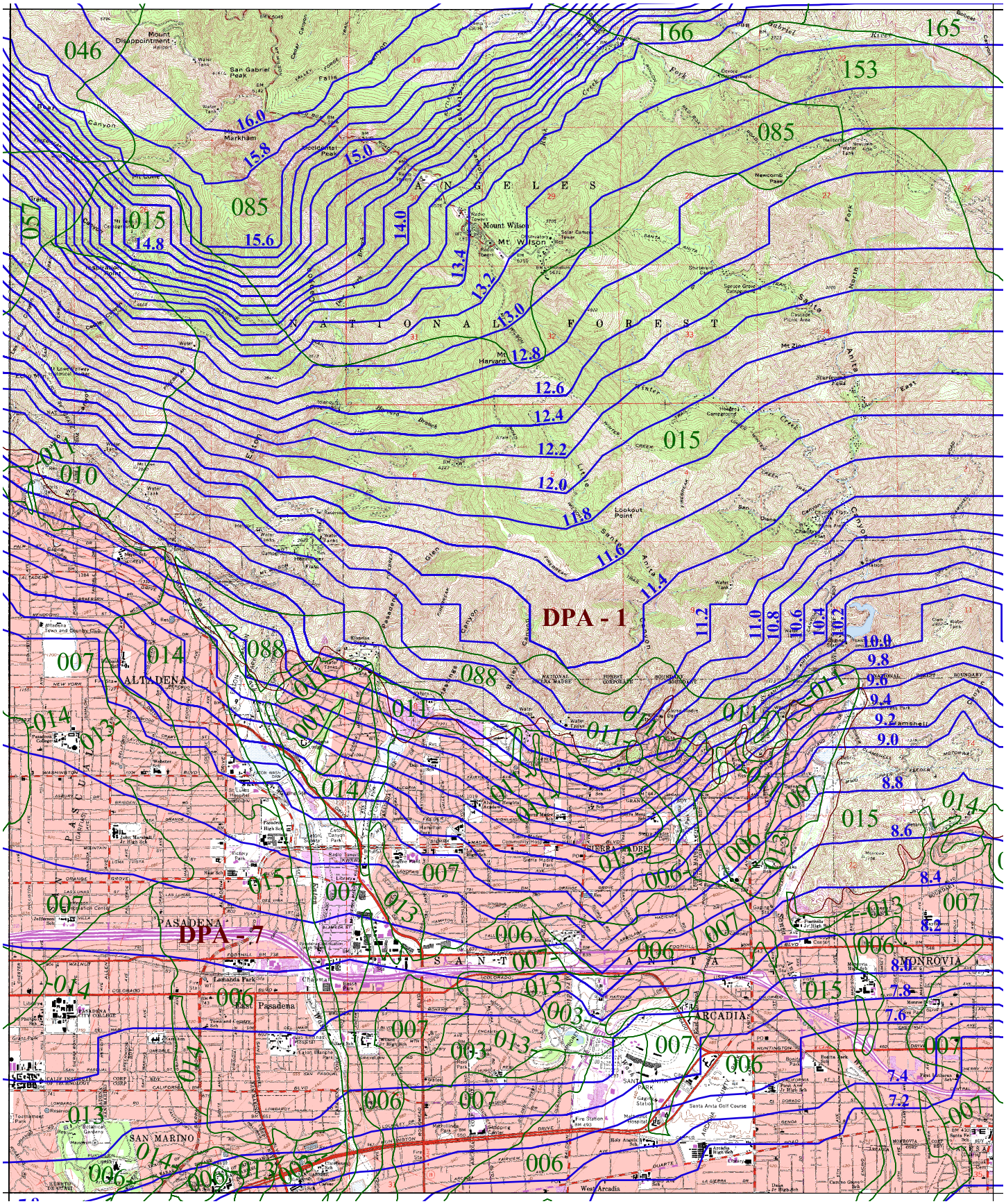
Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
EXISTING CONDITIONS
HYDROGRAPH AT 1972 5A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	2.62	200	2.74	300	2.89	400	3.04
500	3.24	600	3.58	700	3.90	800	4.43	900	5.28
1000	6.66	1050	8.55	1100	13.22	1110	17.35	1120	22.97
1130	29.72	1131	30.55	1132	31.33	1133	32.31	1134	33.44
1135	34.75	1136	36.13	1137	37.59	1138	39.01	1139	40.47
1140	41.87	1141	43.68	1142	45.93	1143	48.55	1144	51.09
1145	54.15	1146	57.94	1147	62.25	1148	66.47	1149	76.59
1150	96.18	1151	118.01	1152	139.35	1153	160.20	1154	172.98
1155	175.85	1156	170.69	1157	161.05	1158	150.57	1159	139.58
1160	128.38	1161	120.07	1162	113.67	1163	107.56	1164	98.77
1165	86.04	1166	72.33	1167	60.02	1168	50.48	1169	41.24
1170	31.98	1171	26.52	1172	23.45	1173	21.32	1174	19.59
1175	18.18	1176	17.03	1177	16.04	1178	15.17	1179	14.36
1180	13.61	1181	12.93	1182	12.30	1183	11.73	1184	11.23
1185	10.77	1186	10.33	1187	9.91	1188	9.52	1189	9.22
1190	8.99	1191	8.80	1192	8.63	1193	8.49	1194	8.35
1195	8.20	1196	8.07	1197	7.95	1198	7.85	1199	7.73
1200	7.62	1201	7.52	1202	7.42	1203	7.31	1204	7.21
1205	7.10	1206	7.00	1207	6.92	1208	6.83	1209	6.75
1210	6.70	1211	6.65	1212	6.59	1213	6.50	1214	6.43
1215	6.36	1216	6.31	1217	6.24	1218	6.17	1219	6.10
1220	6.05	1221	6.00	1222	5.93	1223	5.89	1224	5.85
1225	5.79	1226	5.72	1227	5.65	1228	5.60	1229	5.58
1230	5.55	1231	5.49	1232	5.45	1233	5.42	1234	5.39
1235	5.34	1236	5.26	1237	5.18	1238	5.15	1239	5.12
1240	5.09	1241	5.06	1242	5.01	1243	5.01	1244	4.97
1245	4.92	1246	4.88	1247	4.85	1248	4.80	1249	4.79
1250	4.75	1251	4.73	1252	4.70	1253	4.65	1254	4.62
1255	4.61	1256	4.58	1257	4.57	1258	4.52	1259	4.49
1260	4.47	1261	4.43	1262	4.40	1263	4.39	1264	4.35
1265	4.32	1266	4.31	1267	4.29	1268	4.27	1269	4.23
1270	4.19	1271	4.16	1272	4.16	1273	4.15	1274	4.13
1275	4.10	1276	4.09	1277	4.08	1278	4.06	1279	4.04
1280	4.02	1281	4.00	1282	3.99	1283	3.98	1284	3.96
1285	3.94	1286	3.93	1287	3.92	1288	3.91	1289	3.88
1290	3.86	1291	3.86	1292	3.83	1293	3.82	1294	3.81
1295	3.80	1296	3.79	1297	3.78	1298	3.77	1299	3.76
1300	3.74	1310	3.60	1320	3.51	1330	3.35	1340	3.22
1350	3.15	1360	3.09	1370	2.99	1380	2.92	1390	2.88
1400	2.83	1420	2.73	1440	2.62	1460	2.50	1500	2.50

TOTAL VOLUME THIS HYDROGRAPH = 13.47(Ac.Ft)

Appendix B

Proposed Hydrology Calculations



1 0 1 2 Miles

N
W E
S

016 SOIL CLASSIFICATION AREA

7.2 INCHES OF RAINFALL

DPA - 6 DEBRIS POTENTIAL AREA

25-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.878
10-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.714

MOUNT WILSON
50-YEAR 24-HOUR ISOHYET

1-H1.30

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

Los Angeles County Storm Drain System

File Geodatabase Download

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View Acronyms and Definitions

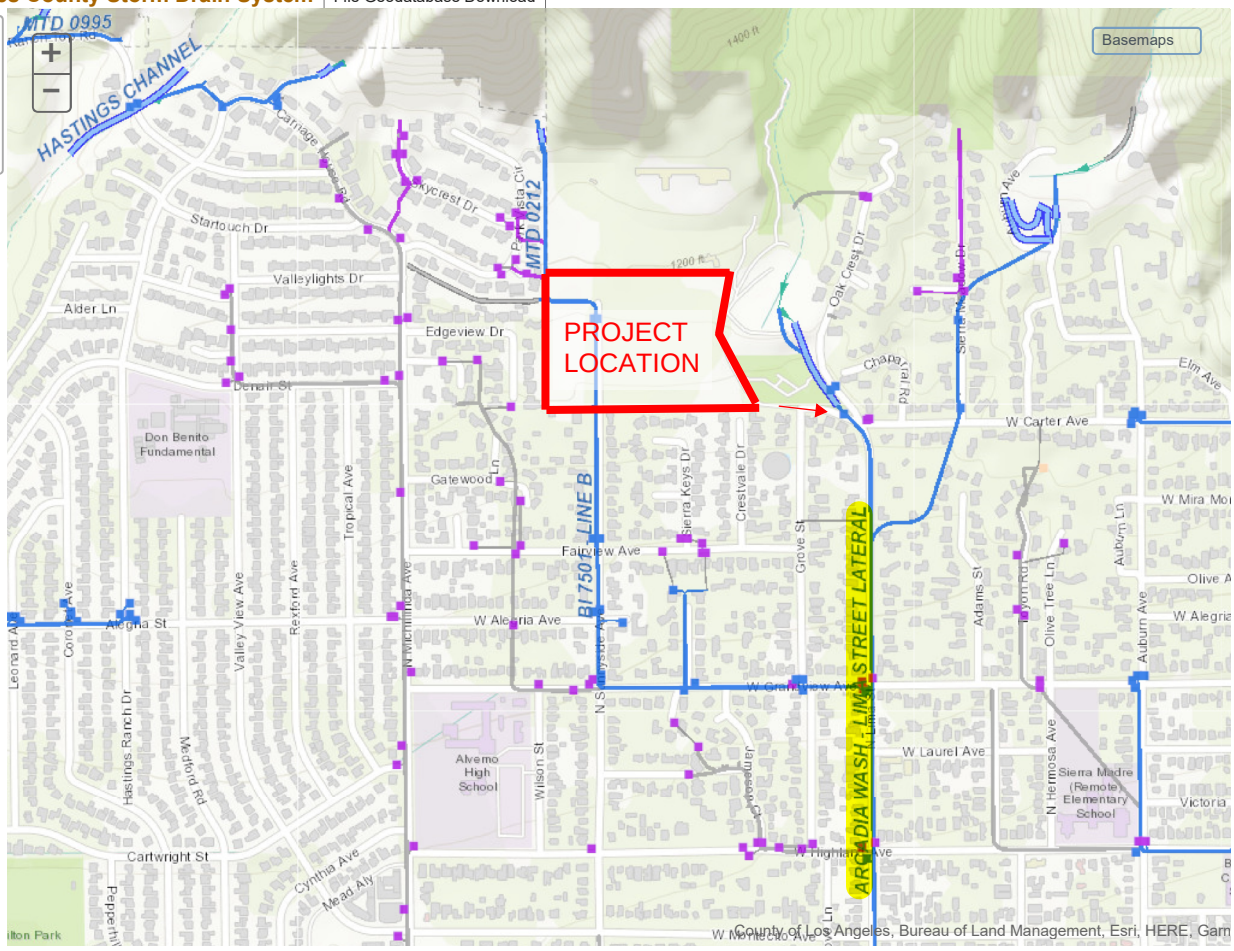
Link to City of LA - Navigate LA

Los Angeles County GIS Data Portal

Flood Control District Website

Waters of the US SYMBOLS 7-16-13 (LAKES)

Waters of the US SYMBOLS 7-16-13 (STREAMS)



Map Tips

Peak Flow Hydrologic Analysis

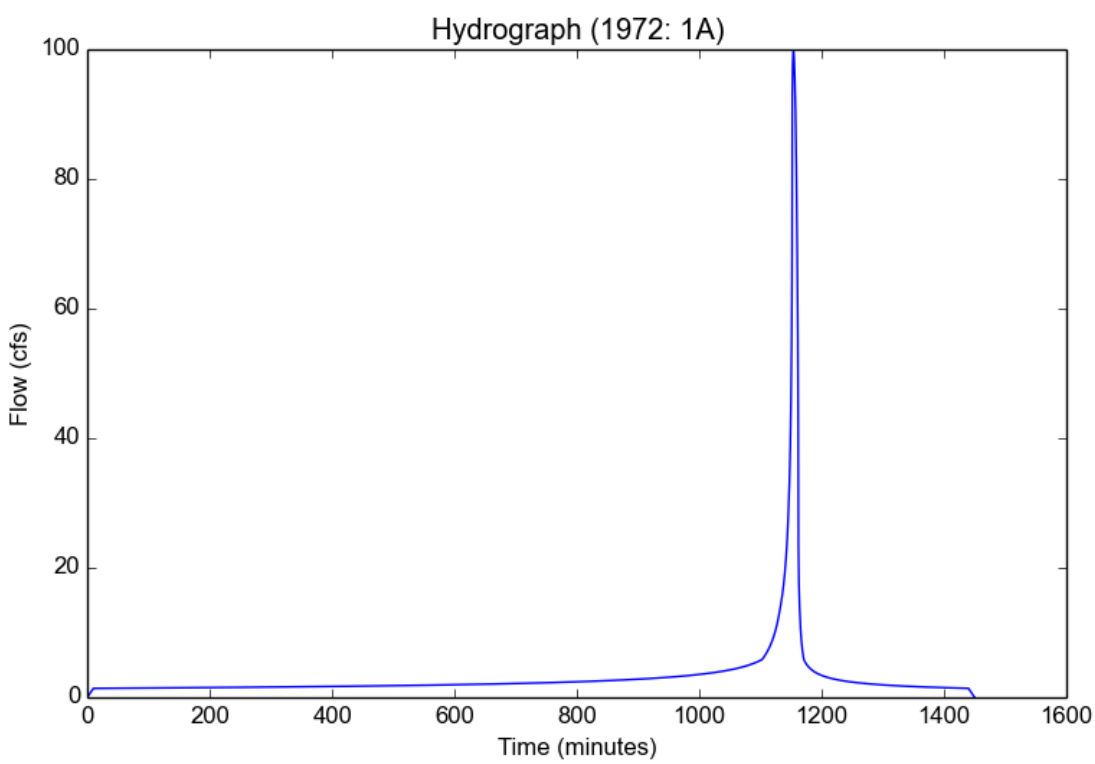
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	1A
Area (ac)	45.0
Flow Path Length (ft)	2394.44
Flow Path Slope (vft/hft)	0.36668
50-yr Rainfall Depth (in)	10.4
Percent Impervious	0.11
Soil Type	88
Design Storm Frequency	10-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	7.4256
Peak Intensity (in/hr)	3.1985
Undeveloped Runoff Coefficient (Cu)	0.6677
Developed Runoff Coefficient (Cd)	0.6932
Time of Concentration (min)	10.0
Clear Peak Flow Rate (cfs)	99.7777
Burned Peak Flow Rate (cfs)	112.2776
24-Hr Clear Runoff Volume (ac-ft)	6.5421
24-Hr Clear Runoff Volume (cu-ft)	284975.13



Peak Flow Hydrologic Analysis

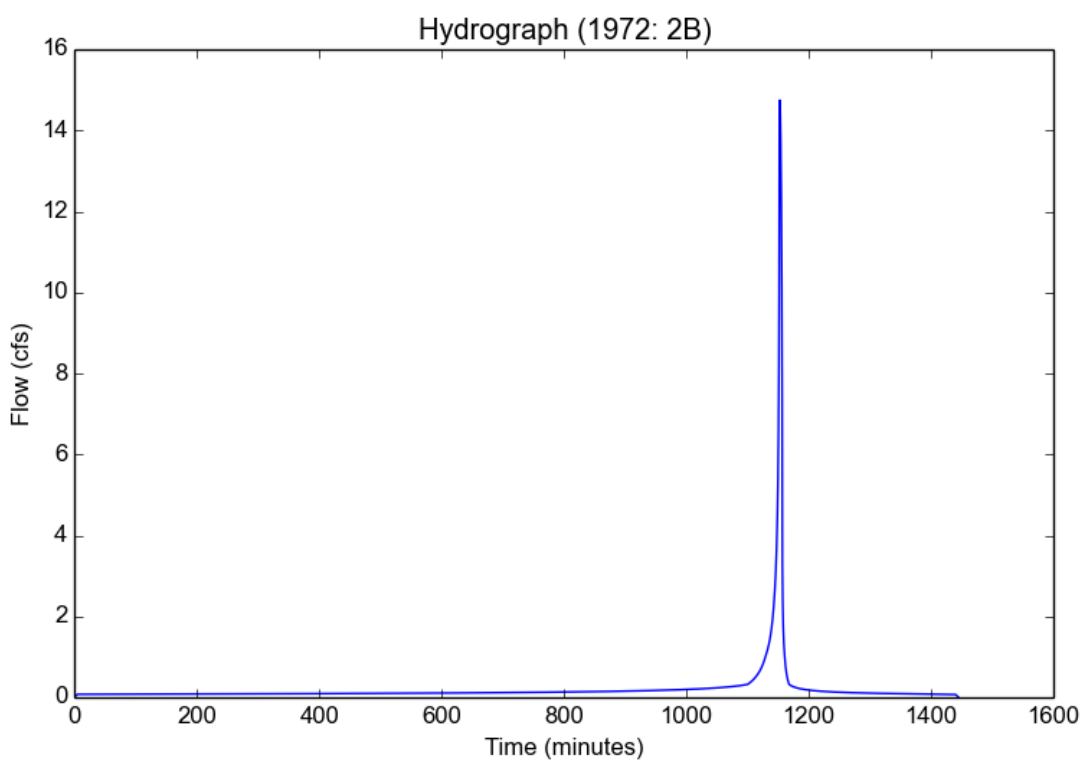
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	2B
Area (ac)	4.3
Flow Path Length (ft)	660.0
Flow Path Slope (vft/hft)	0.45152
50-yr Rainfall Depth (in)	10.4
Percent Impervious	0.01
Soil Type	88
Design Storm Frequency	10-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	7.4256
Peak Intensity (in/hr)	4.4303
Undeveloped Runoff Coefficient (Cu)	0.7727
Developed Runoff Coefficient (Cd)	0.774
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	14.7445
Burned Peak Flow Rate (cfs)	16.0235
24-Hr Clear Runoff Volume (ac-ft)	0.4341
24-Hr Clear Runoff Volume (cu-ft)	18910.1977



Peak Flow Hydrologic Analysis

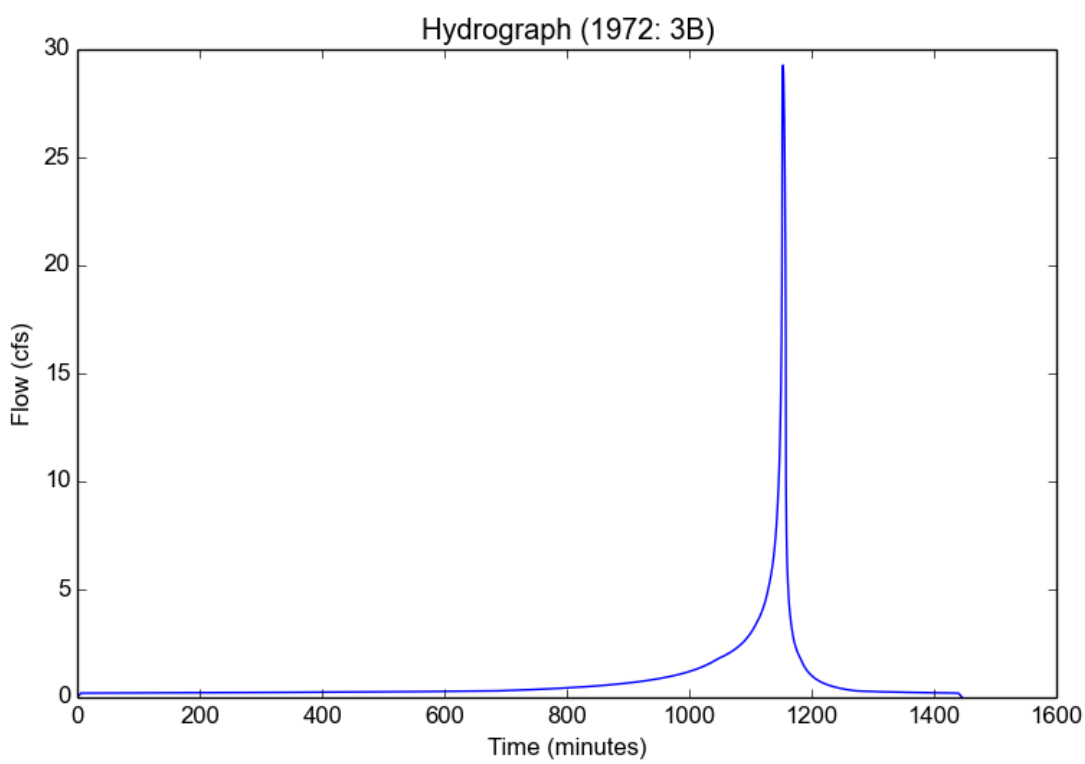
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	3B
Area (ac)	8.6
Flow Path Length (ft)	925.0
Flow Path Slope (vft/hft)	0.12757
50-yr Rainfall Depth (in)	10.4
Percent Impervious	0.05
Soil Type	11
Design Storm Frequency	10-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	7.4256
Peak Intensity (in/hr)	4.0665
Undeveloped Runoff Coefficient (Cu)	0.8337
Developed Runoff Coefficient (Cd)	0.837
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	29.2704
Burned Peak Flow Rate (cfs)	30.9432
24-Hr Clear Runoff Volume (ac-ft)	1.6275
24-Hr Clear Runoff Volume (cu-ft)	70891.7873



Peak Flow Hydrologic Analysis

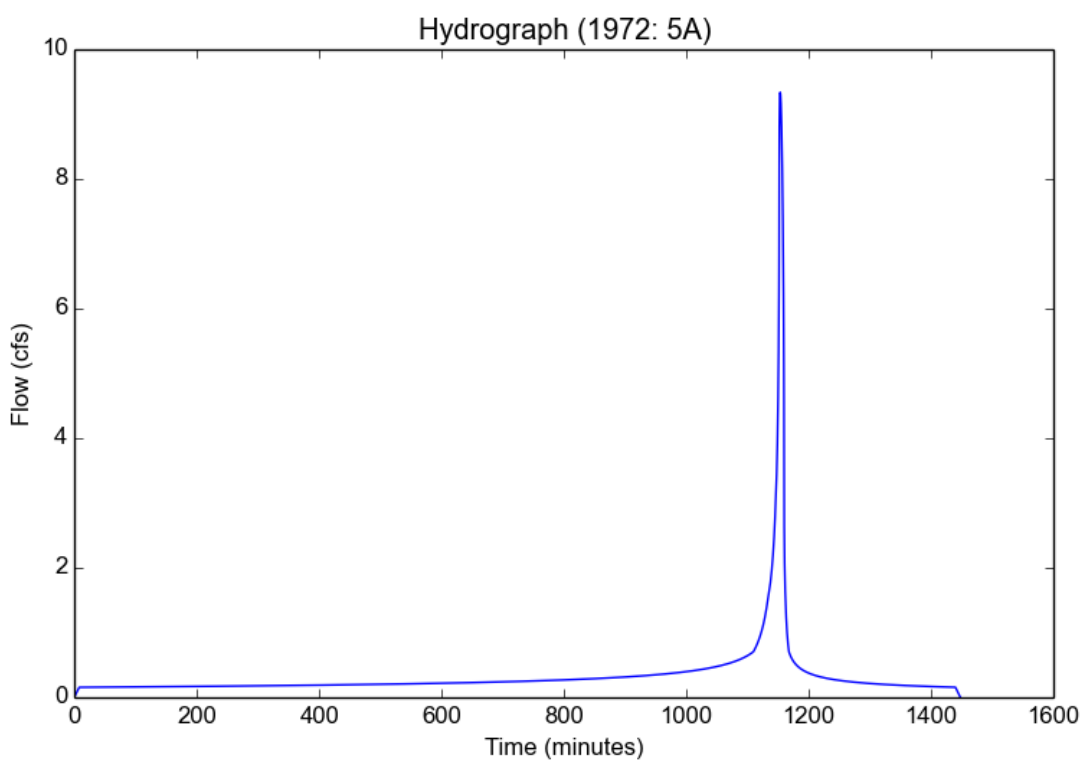
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	5A
Area (ac)	3.6
Flow Path Length (ft)	1085.0
Flow Path Slope (vft/hft)	0.08664
50-yr Rainfall Depth (in)	10.2
Percent Impervious	0.21
Soil Type	7
Design Storm Frequency	10-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	7.2828
Peak Intensity (in/hr)	3.4839
Undeveloped Runoff Coefficient (Cu)	0.7032
Developed Runoff Coefficient (Cd)	0.7445
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	9.3377
Burned Peak Flow Rate (cfs)	10.2567
24-Hr Clear Runoff Volume (ac-ft)	0.6817
24-Hr Clear Runoff Volume (cu-ft)	29692.689



Peak Flow Hydrologic Analysis

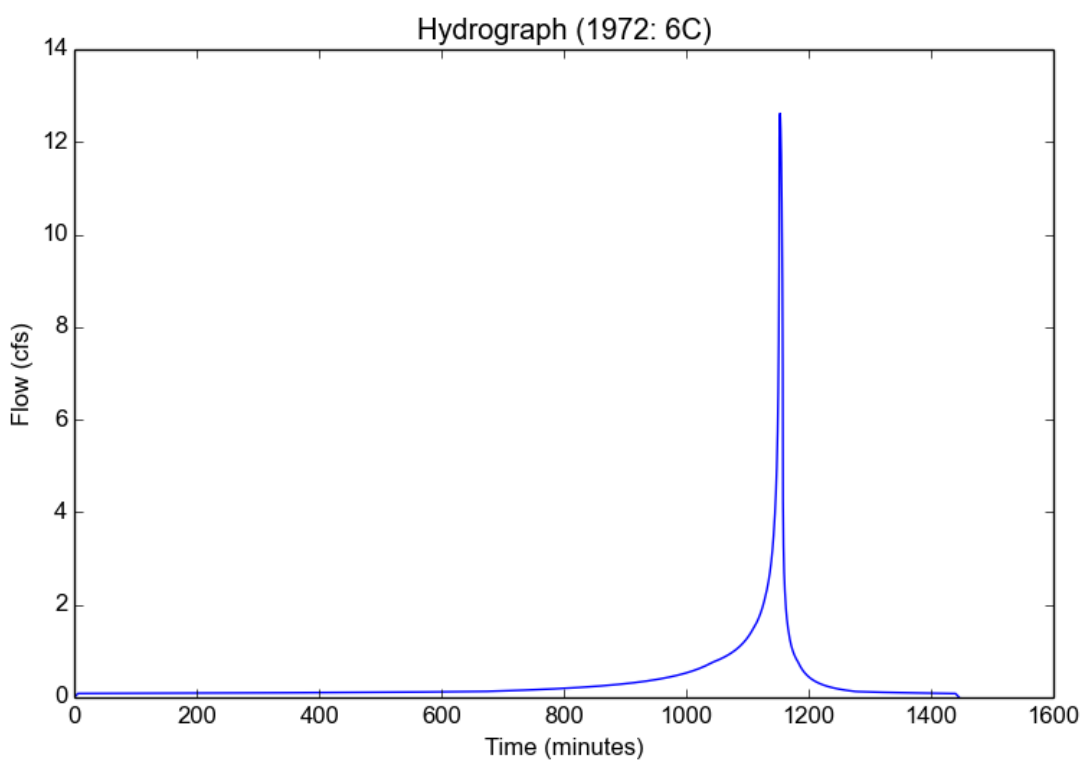
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	6C
Area (ac)	3.63
Flow Path Length (ft)	956.07
Flow Path Slope (vft/hft)	0.1161
50-yr Rainfall Depth (in)	10.6
Percent Impervious	0.05
Soil Type	11
Design Storm Frequency	10-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	7.5684
Peak Intensity (in/hr)	4.1447
Undeveloped Runoff Coefficient (Cu)	0.8352
Developed Runoff Coefficient (Cd)	0.8385
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	12.6149
Burned Peak Flow Rate (cfs)	13.33
24-Hr Clear Runoff Volume (ac-ft)	0.7085
24-Hr Clear Runoff Volume (cu-ft)	30861.7166



Peak Flow Hydrologic Analysis

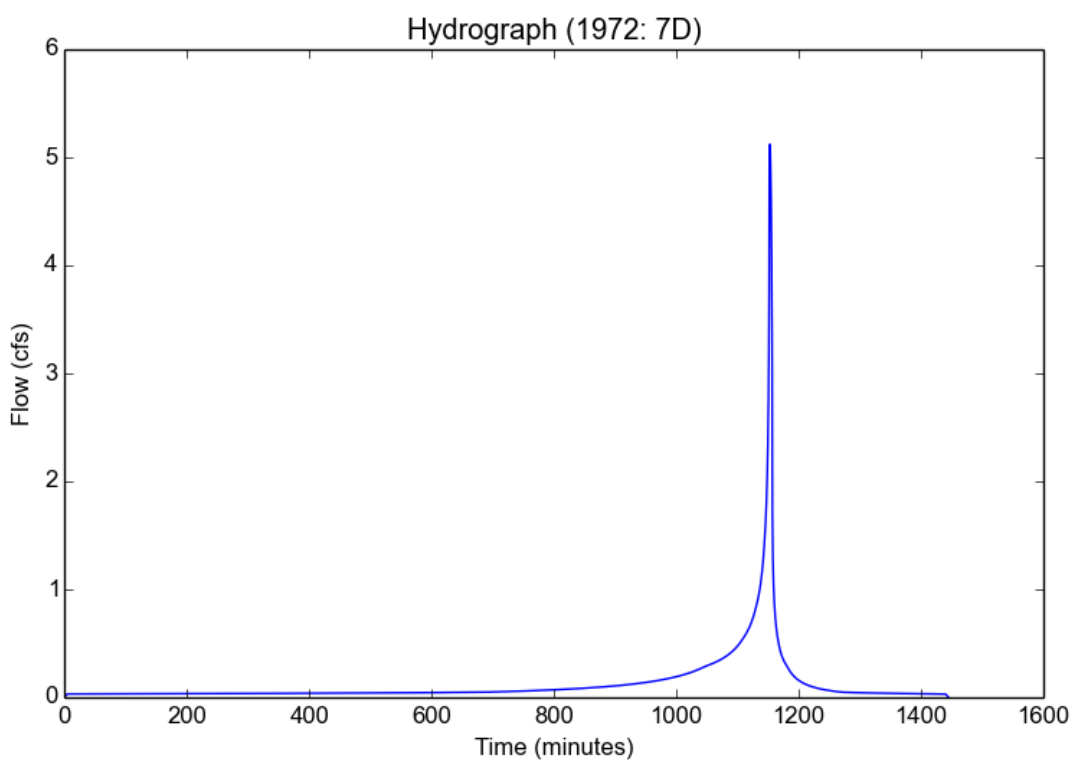
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	7D
Area (ac)	1.37
Flow Path Length (ft)	593.62
Flow Path Slope (vft/hft)	0.13561
50-yr Rainfall Depth (in)	10.4
Percent Impervious	0.05
Soil Type	11
Design Storm Frequency	10-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	7.4256
Peak Intensity (in/hr)	4.4303
Undeveloped Runoff Coefficient (Cu)	0.841
Developed Runoff Coefficient (Cd)	0.8439
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	5.1222
Burned Peak Flow Rate (cfs)	5.4036
24-Hr Clear Runoff Volume (ac-ft)	0.2593
24-Hr Clear Runoff Volume (cu-ft)	11295.308



Peak Flow Hydrologic Analysis

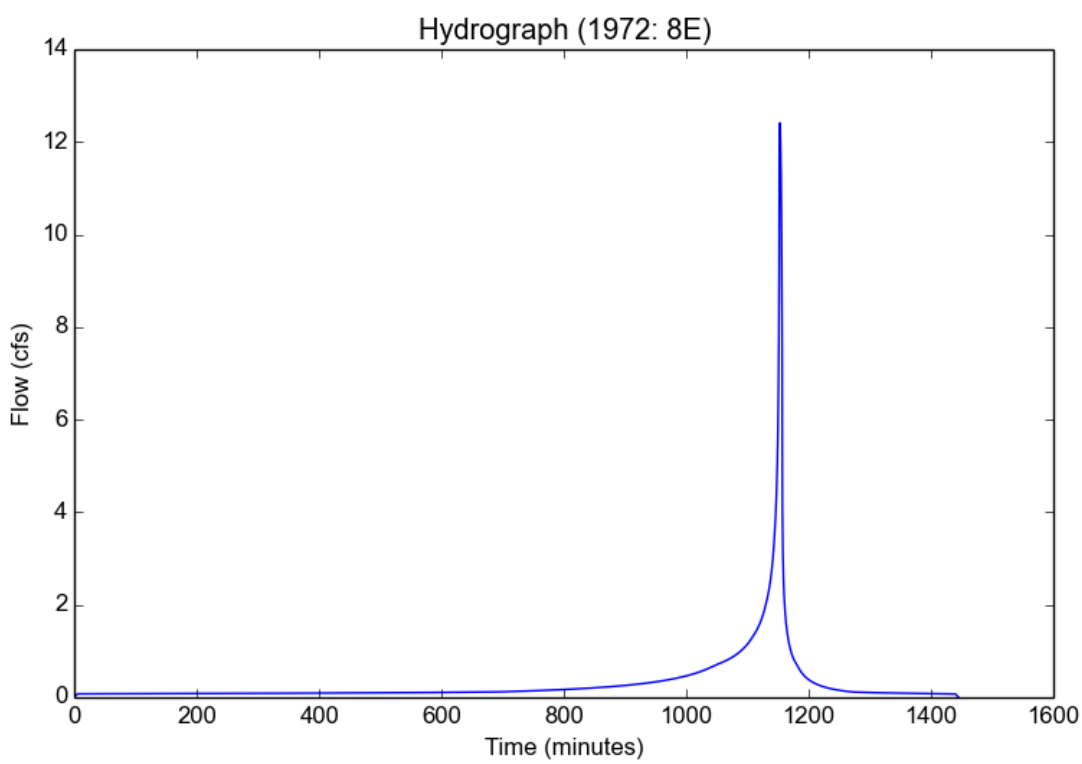
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	8E
Area (ac)	3.32
Flow Path Length (ft)	588.16
Flow Path Slope (vft/hft)	0.12752
50-yr Rainfall Depth (in)	10.4
Percent Impervious	0.05
Soil Type	11
Design Storm Frequency	10-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	7.4256
Peak Intensity (in/hr)	4.4303
Undeveloped Runoff Coefficient (Cu)	0.841
Developed Runoff Coefficient (Cd)	0.8439
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	12.413
Burned Peak Flow Rate (cfs)	13.0949
24-Hr Clear Runoff Volume (ac-ft)	0.6284
24-Hr Clear Runoff Volume (cu-ft)	27372.5711



Peak Flow Hydrologic Analysis

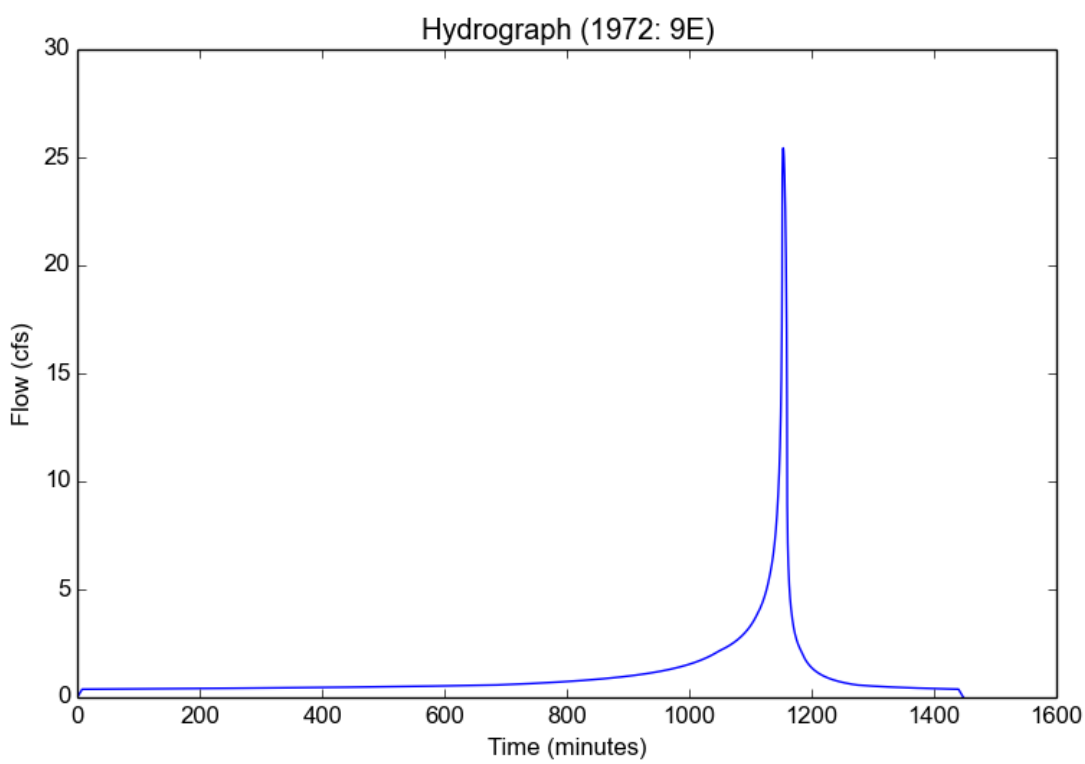
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	9E
Area (ac)	8.59
Flow Path Length (ft)	1272.44
Flow Path Slope (vft/hft)	0.06366
50-yr Rainfall Depth (in)	10.4
Percent Impervious	0.21
Soil Type	11
Design Storm Frequency	10-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	7.4256
Peak Intensity (in/hr)	3.5522
Undeveloped Runoff Coefficient (Cu)	0.8159
Developed Runoff Coefficient (Cd)	0.8336
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	25.4357
Burned Peak Flow Rate (cfs)	26.8962
24-Hr Clear Runoff Volume (ac-ft)	2.1498
24-Hr Clear Runoff Volume (cu-ft)	93645.7178



Peak Flow Hydrologic Analysis

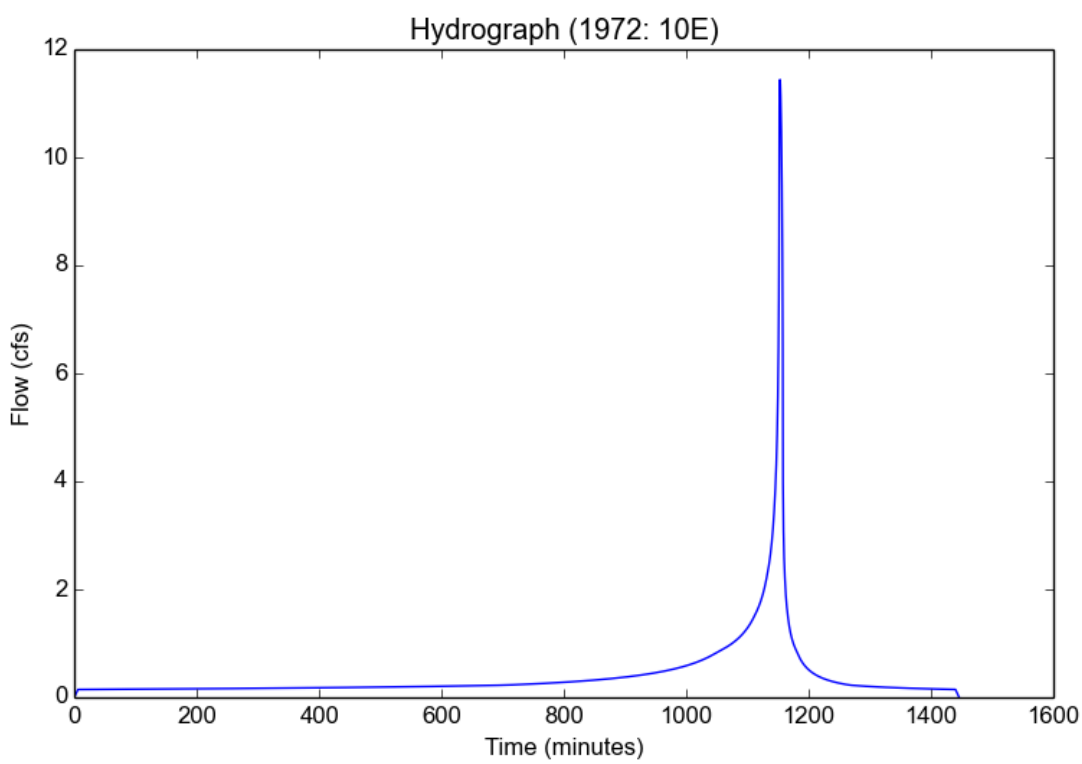
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	10E
Area (ac)	3.39
Flow Path Length (ft)	763.0
Flow Path Slope (vft/hft)	0.04522
50-yr Rainfall Depth (in)	10.2
Percent Impervious	0.21
Soil Type	11
Design Storm Frequency	10-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	7.2828
Peak Intensity (in/hr)	3.9883
Undeveloped Runoff Coefficient (Cu)	0.8319
Developed Runoff Coefficient (Cd)	0.8462
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	11.4407
Burned Peak Flow Rate (cfs)	12.0492
24-Hr Clear Runoff Volume (ac-ft)	0.8263
24-Hr Clear Runoff Volume (cu-ft)	35991.8973



Peak Flow Hydrologic Analysis

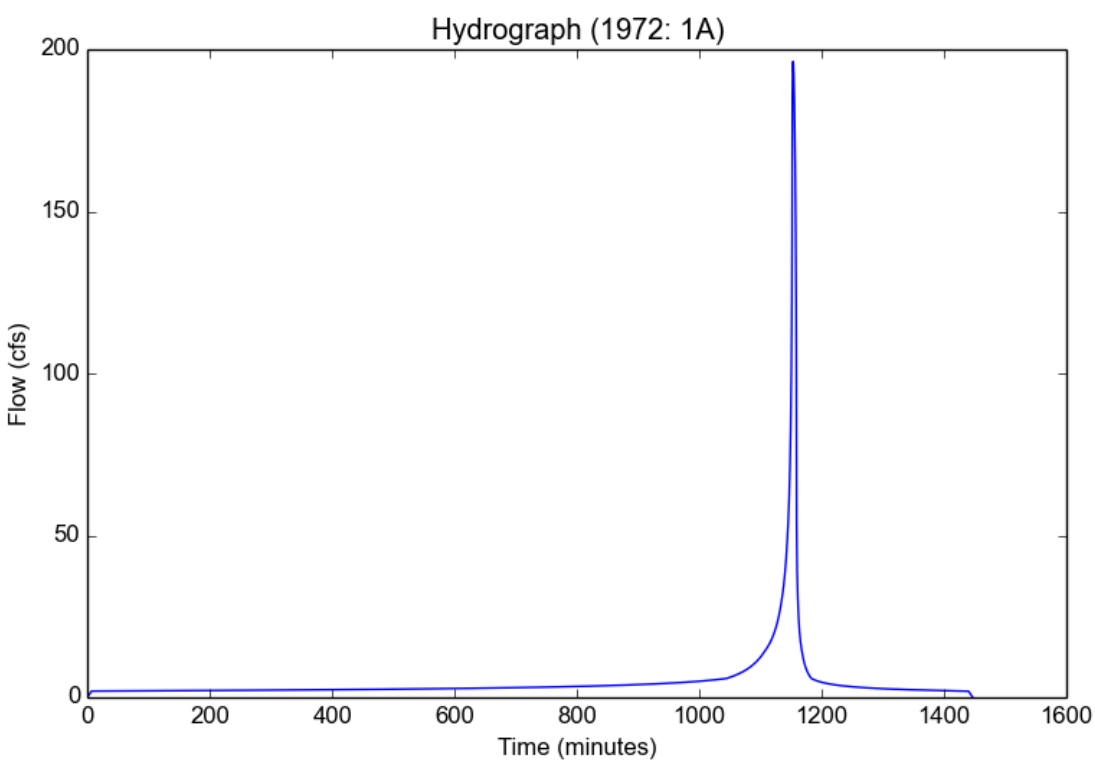
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	1A
Area (ac)	45.0
Flow Path Length (ft)	2394.44
Flow Path Slope (vft/hft)	0.36668
50-yr Rainfall Depth (in)	10.4
Percent Impervious	0.11
Soil Type	88
Design Storm Frequency	50-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	10.4
Peak Intensity (in/hr)	5.2973
Undeveloped Runoff Coefficient (Cu)	0.814
Developed Runoff Coefficient (Cd)	0.8234
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	196.2873
Burned Peak Flow Rate (cfs)	209.1043
24-Hr Clear Runoff Volume (ac-ft)	10.1675
24-Hr Clear Runoff Volume (cu-ft)	442897.3755



Peak Flow Hydrologic Analysis

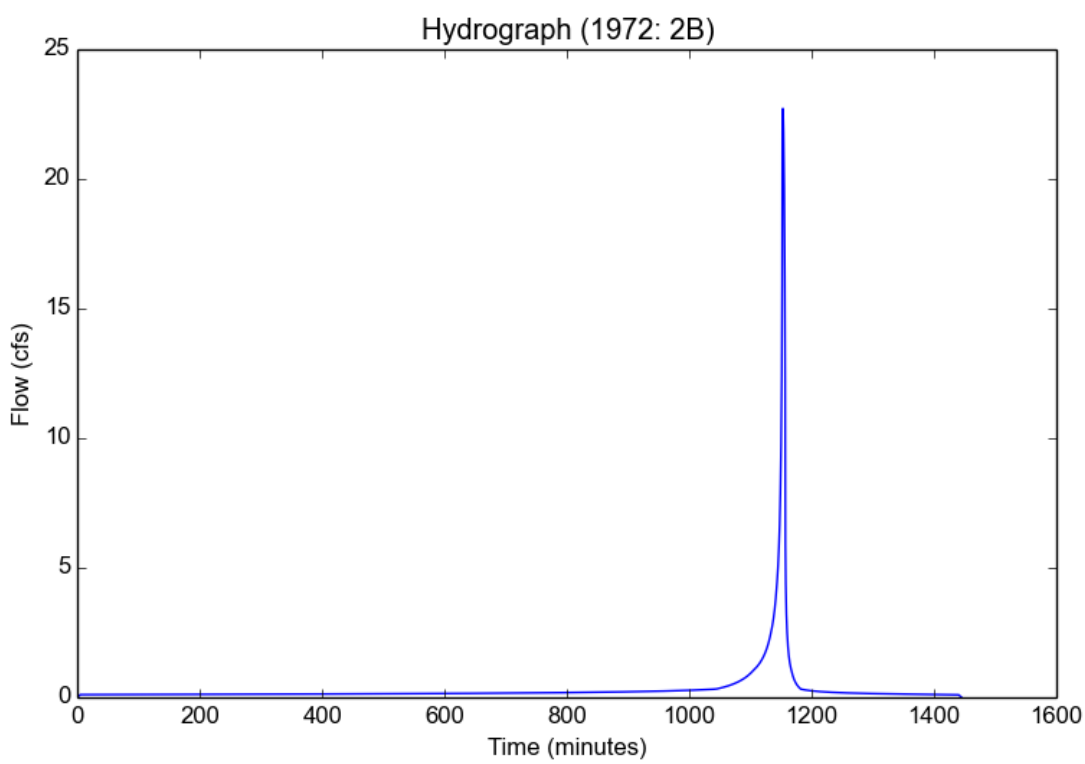
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	2B
Area (ac)	4.3
Flow Path Length (ft)	660.0
Flow Path Slope (vft/hft)	0.45152
50-yr Rainfall Depth (in)	10.4
Percent Impervious	0.01
Soil Type	88
Design Storm Frequency	50-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	10.4
Peak Intensity (in/hr)	6.2049
Undeveloped Runoff Coefficient (Cu)	0.8511
Developed Runoff Coefficient (Cd)	0.8516
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	22.7218
Burned Peak Flow Rate (cfs)	23.9531
24-Hr Clear Runoff Volume (ac-ft)	0.7086
24-Hr Clear Runoff Volume (cu-ft)	30866.1522



Peak Flow Hydrologic Analysis

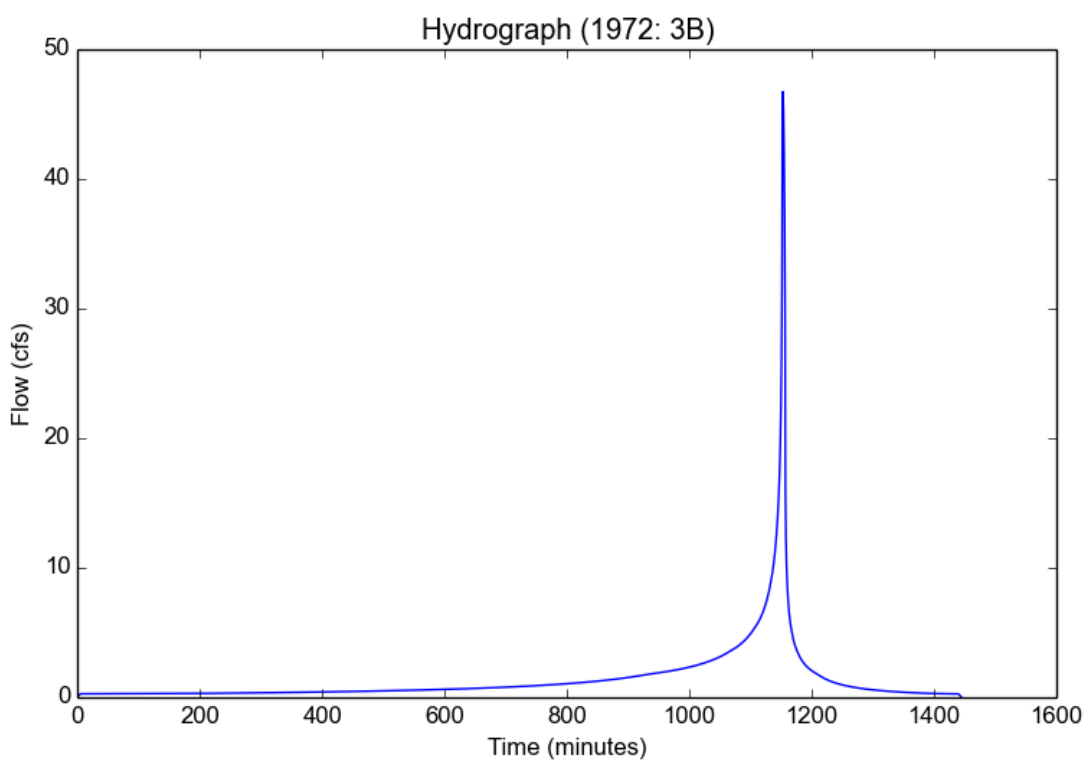
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	3B
Area (ac)	8.6
Flow Path Length (ft)	925.0
Flow Path Slope (vft/hft)	0.12757
50-yr Rainfall Depth (in)	10.4
Percent Impervious	0.05
Soil Type	11
Design Storm Frequency	50-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	10.4
Peak Intensity (in/hr)	6.2049
Undeveloped Runoff Coefficient (Cu)	0.8748
Developed Runoff Coefficient (Cd)	0.8761
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	46.7486
Burned Peak Flow Rate (cfs)	48.8054
24-Hr Clear Runoff Volume (ac-ft)	2.8576
24-Hr Clear Runoff Volume (cu-ft)	124475.6723



Peak Flow Hydrologic Analysis

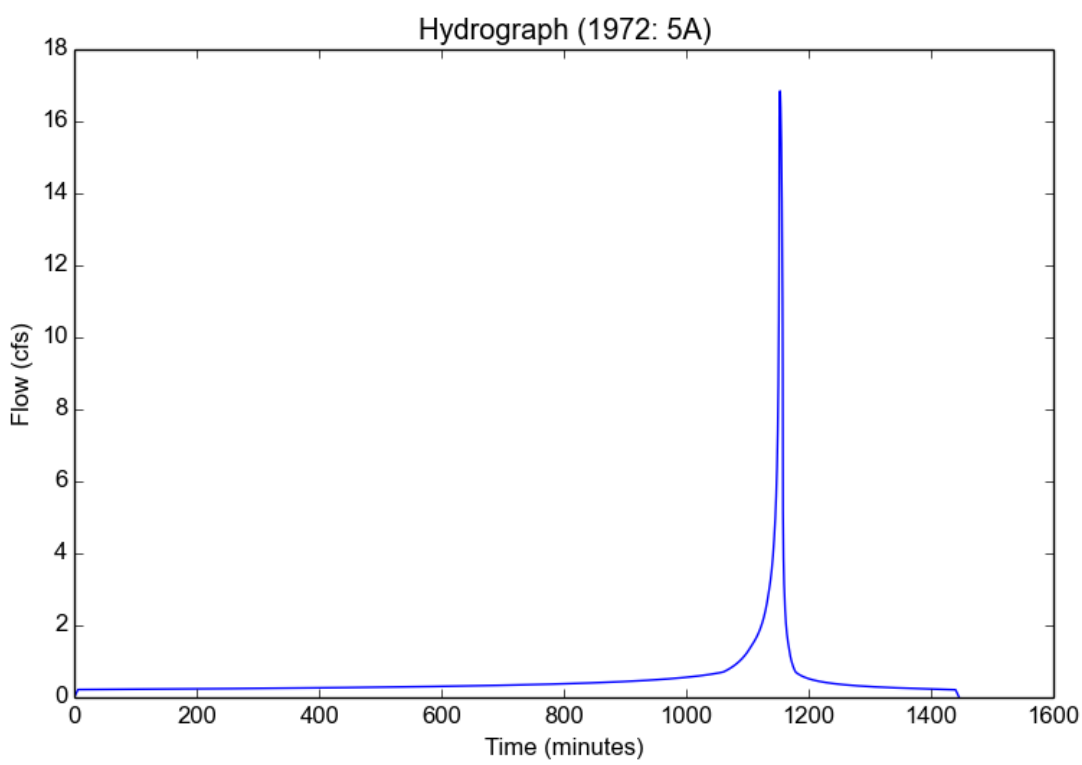
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	5A
Area (ac)	3.6
Flow Path Length (ft)	1085.0
Flow Path Slope (vft/hft)	0.08664
50-yr Rainfall Depth (in)	10.2
Percent Impervious	0.21
Soil Type	7
Design Storm Frequency	50-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	10.2
Peak Intensity (in/hr)	5.5858
Undeveloped Runoff Coefficient (Cu)	0.8211
Developed Runoff Coefficient (Cd)	0.8377
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	16.845
Burned Peak Flow Rate (cfs)	17.846
24-Hr Clear Runoff Volume (ac-ft)	1.0261
24-Hr Clear Runoff Volume (cu-ft)	44695.197



Peak Flow Hydrologic Analysis

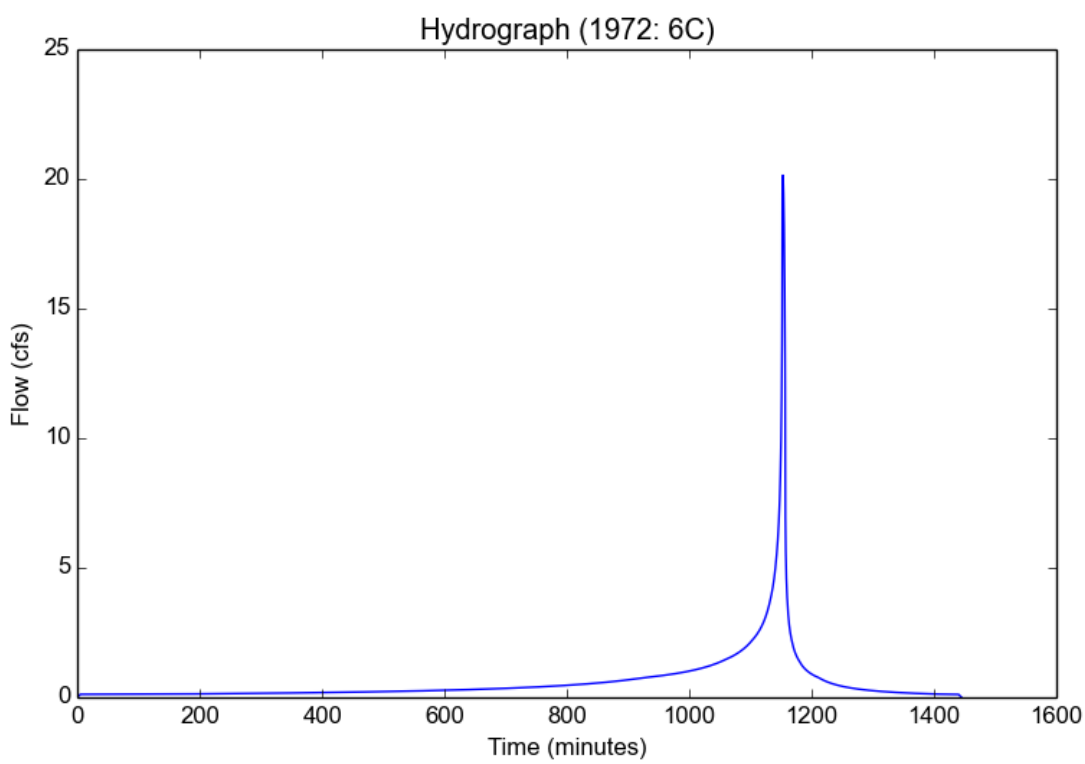
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	6C
Area (ac)	3.63
Flow Path Length (ft)	956.07
Flow Path Slope (vft/hft)	0.1161
50-yr Rainfall Depth (in)	10.6
Percent Impervious	0.05
Soil Type	11
Design Storm Frequency	50-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	10.6
Peak Intensity (in/hr)	6.3243
Undeveloped Runoff Coefficient (Cu)	0.8761
Developed Runoff Coefficient (Cd)	0.8773
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	20.14
Burned Peak Flow Rate (cfs)	21.0183
24-Hr Clear Runoff Volume (ac-ft)	1.2464
24-Hr Clear Runoff Volume (cu-ft)	54294.0002



Peak Flow Hydrologic Analysis

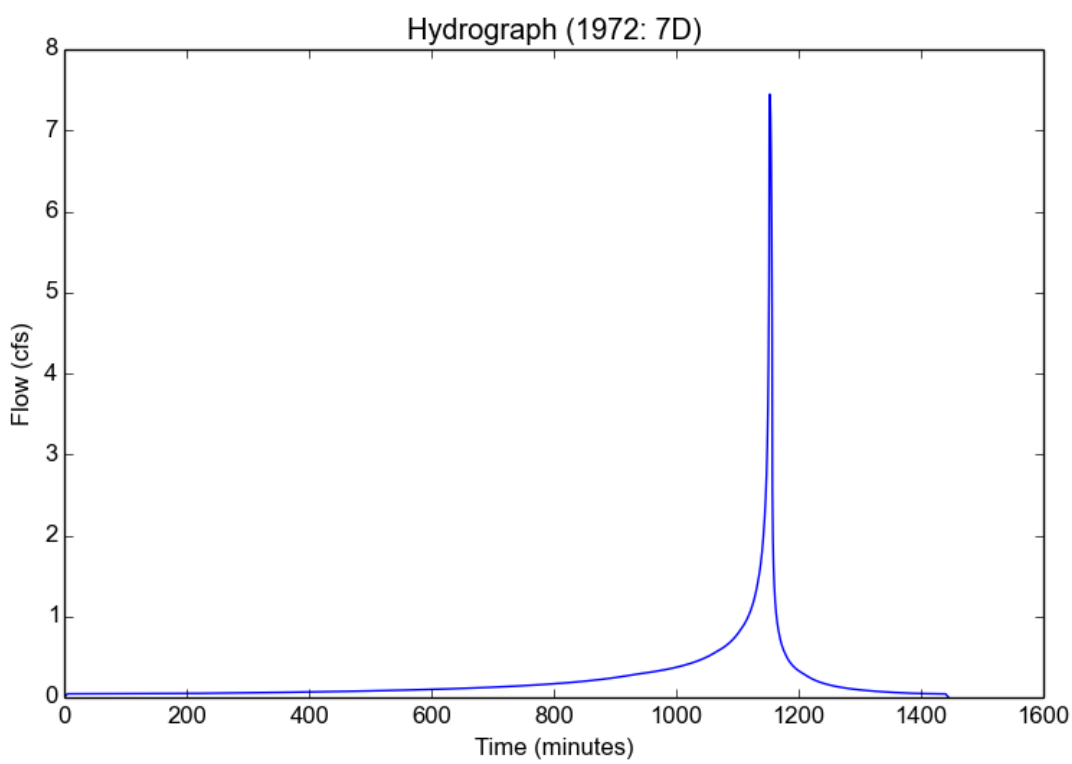
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	7D
Area (ac)	1.37
Flow Path Length (ft)	593.62
Flow Path Slope (vft/hft)	0.13561
50-yr Rainfall Depth (in)	10.4
Percent Impervious	0.05
Soil Type	11
Design Storm Frequency	50-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	10.4
Peak Intensity (in/hr)	6.2049
Undeveloped Runoff Coefficient (Cu)	0.8748
Developed Runoff Coefficient (Cd)	0.8761
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	7.4472
Burned Peak Flow Rate (cfs)	7.7748
24-Hr Clear Runoff Volume (ac-ft)	0.4552
24-Hr Clear Runoff Volume (cu-ft)	19829.2641



Peak Flow Hydrologic Analysis

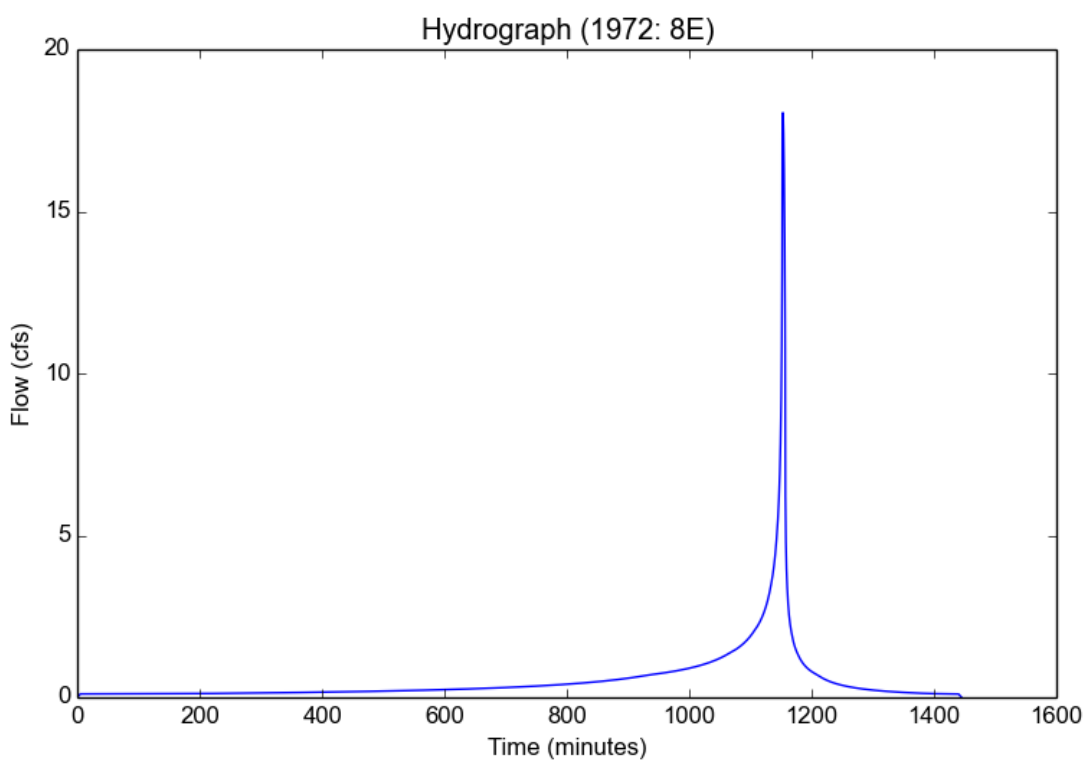
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	8E
Area (ac)	3.32
Flow Path Length (ft)	588.16
Flow Path Slope (vft/hft)	0.12752
50-yr Rainfall Depth (in)	10.4
Percent Impervious	0.05
Soil Type	11
Design Storm Frequency	50-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	10.4
Peak Intensity (in/hr)	6.2049
Undeveloped Runoff Coefficient (Cu)	0.8748
Developed Runoff Coefficient (Cd)	0.8761
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	18.0472
Burned Peak Flow Rate (cfs)	18.8412
24-Hr Clear Runoff Volume (ac-ft)	1.1032
24-Hr Clear Runoff Volume (cu-ft)	48053.3991



Peak Flow Hydrologic Analysis

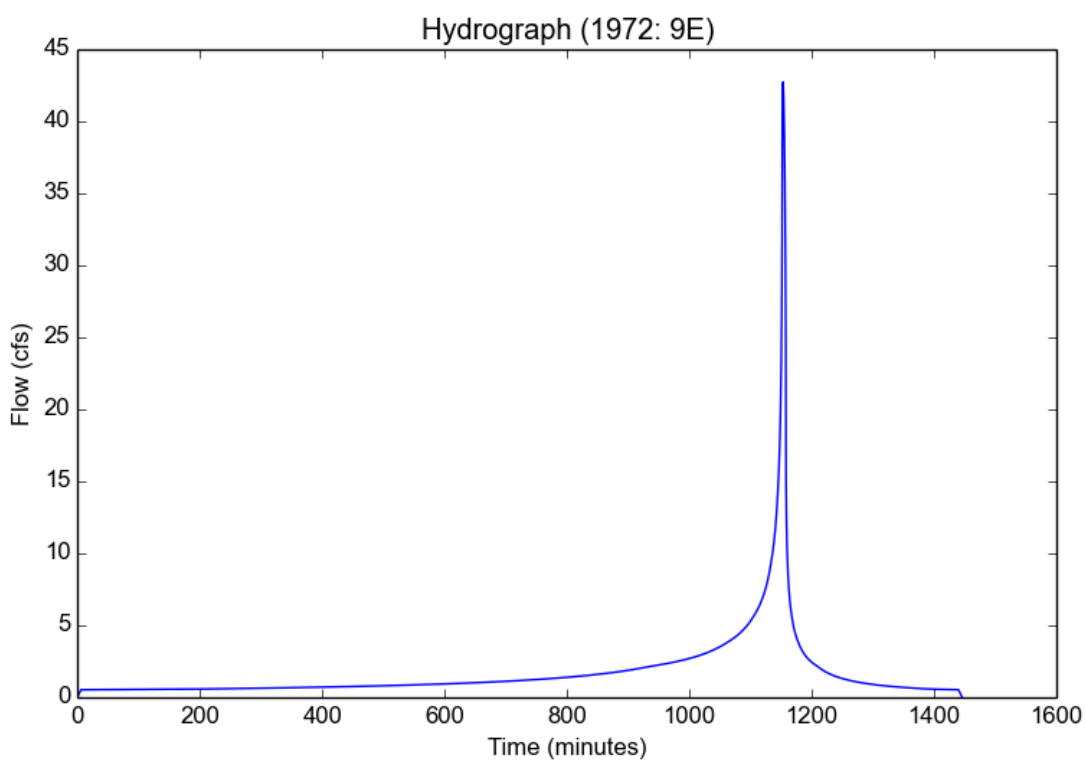
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	9E
Area (ac)	8.59
Flow Path Length (ft)	1272.44
Flow Path Slope (vft/hft)	0.06366
50-yr Rainfall Depth (in)	10.4
Percent Impervious	0.21
Soil Type	11
Design Storm Frequency	50-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	10.4
Peak Intensity (in/hr)	5.6954
Undeveloped Runoff Coefficient (Cu)	0.8664
Developed Runoff Coefficient (Cd)	0.8735
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	42.7338
Burned Peak Flow Rate (cfs)	44.6369
24-Hr Clear Runoff Volume (ac-ft)	3.492
24-Hr Clear Runoff Volume (cu-ft)	152111.5465



Peak Flow Hydrologic Analysis

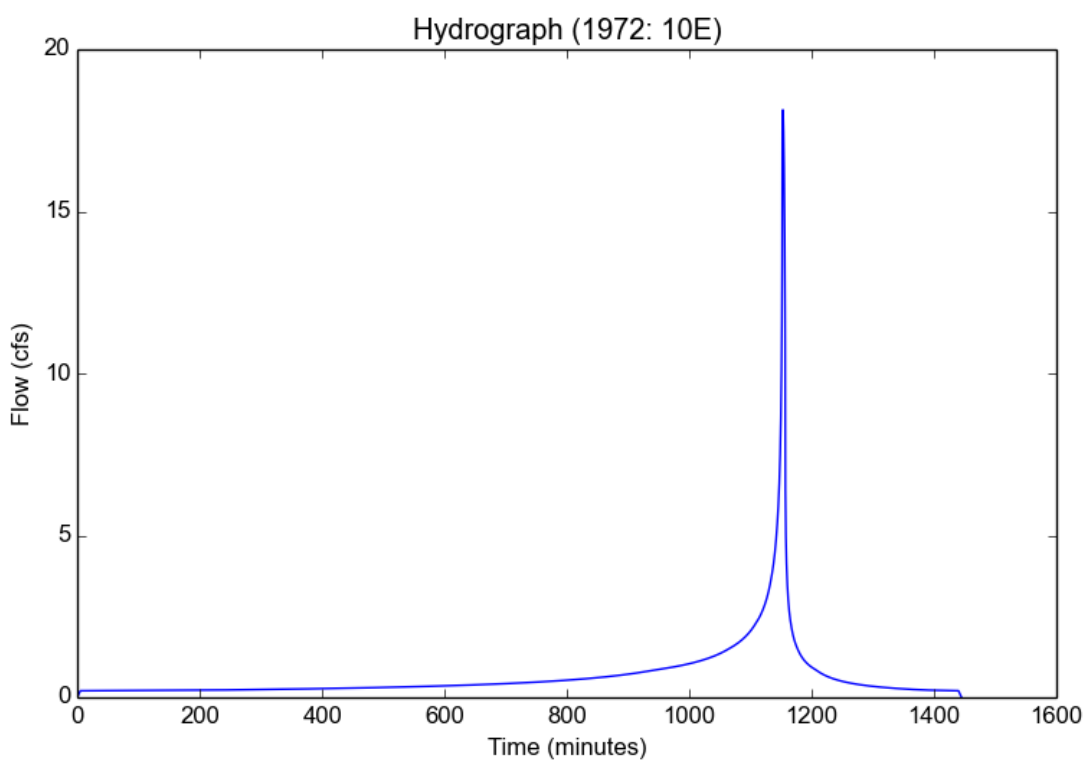
File location: F:/Projects/1972/001/_Support Files/Reports/Hydrology/Sunnyside Hydrology Report/HydroCalc/Revised_2021-10-06/1972 Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	1972
Subarea ID	10E
Area (ac)	3.39
Flow Path Length (ft)	763.0
Flow Path Slope (vft/hft)	0.04522
50-yr Rainfall Depth (in)	10.2
Percent Impervious	0.21
Soil Type	11
Design Storm Frequency	50-yr
Fire Factor	0.71
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	10.2
Peak Intensity (in/hr)	6.0856
Undeveloped Runoff Coefficient (Cu)	0.8735
Developed Runoff Coefficient (Cd)	0.8791
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	18.1353
Burned Peak Flow Rate (cfs)	18.9092
24-Hr Clear Runoff Volume (ac-ft)	1.3391
24-Hr Clear Runoff Volume (cu-ft)	58332.3588



Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild\lar_soilx_71.dat
SUNNYSIDE SIERRA MADRE - DRAINAGE STUDY

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	STORM DAY 4 RAIN ZONE	PCT IMPV	
1972	1A	45.0	121.20	45.0	121.20	4	252.	.01200	2.50	.00	0.	88	15	A51	.15	(1)
1972	2B	4.3	14.70	4.3	14.70	3	620.	.12400	.00	.00	0.	88	5	A37	.01	(2)
1972	3B	8.6	28.82	12.9	41.49	4	340.	.09400	2.00	.00	0.	11	6	A37	.05	(3)
1972	4AB	12.9	40.88	57.9	160.43	4	580.	.09200	3.00	.00	0.	11	0	A36	.00	NA
1972	5A	3.6	9.12	61.5	169.09	0	0.	.00000	.00	.00	0.	7	8	A36	.21	(4)

LANDUSE
1. RURAL RESIDENTIAL HIGH DENSITY
2. VACANT UNDIFFERENTIATED
3. ACTUAL CALCULATED % IMP
4. LOW DENSITY SINGLE FAMILY

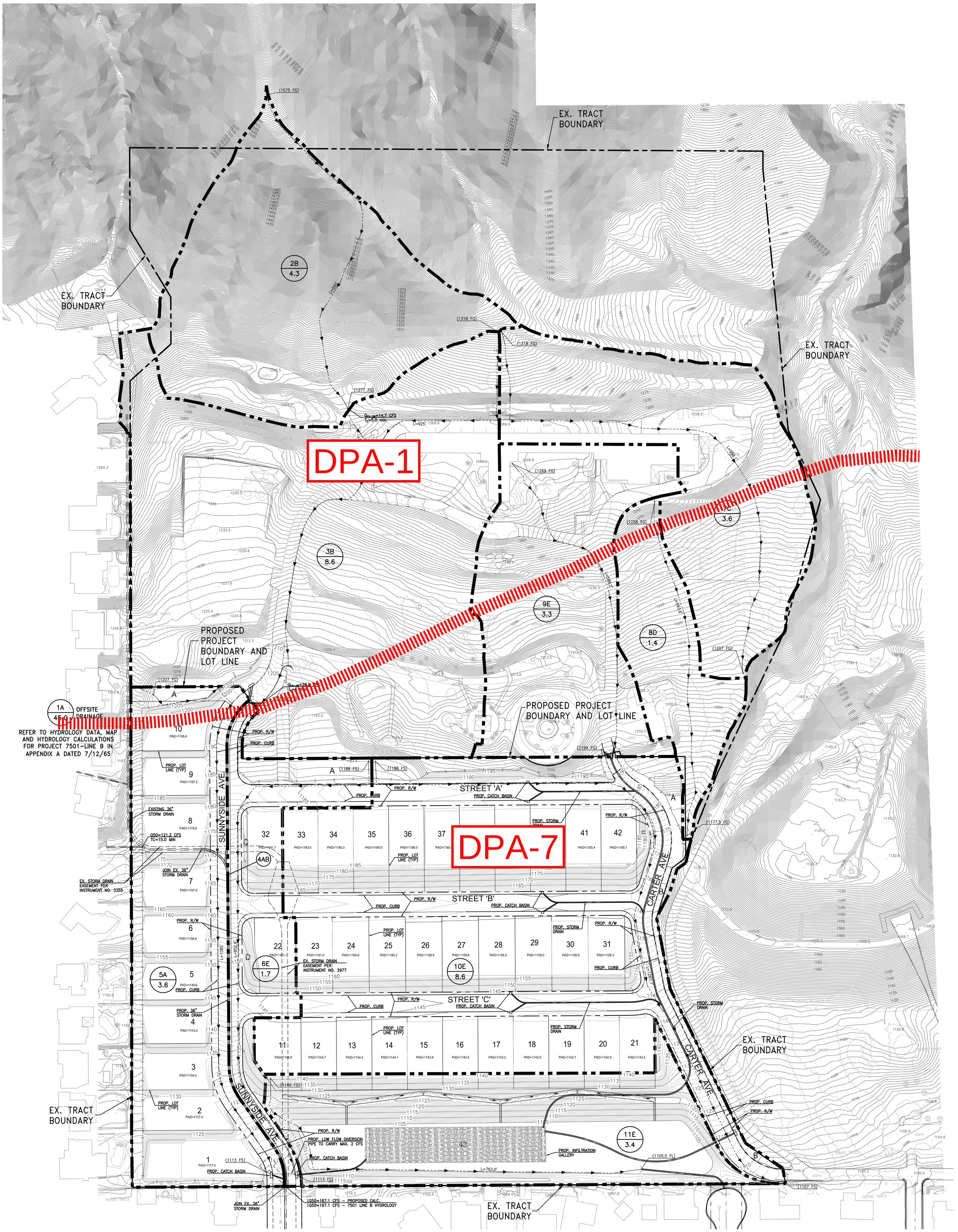
Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
PROPOSED CONDITIONS
HYDROGRAPH AT 1972 5A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	2.63	200	2.75	300	2.90	400	3.05
500	3.25	600	3.60	700	3.92	800	4.44	900	5.27
1000	6.61	1050	8.45	1100	13.07	1110	17.17	1120	22.67
1130	29.14	1131	29.94	1132	30.75	1133	31.67	1134	32.77
1135	34.08	1136	35.38	1137	36.62	1138	37.95	1139	39.41
1140	40.88	1141	42.61	1142	44.89	1143	47.47	1144	50.01
1145	52.97	1146	56.74	1147	60.95	1148	65.45	1149	75.59
1150	92.26	1151	112.07	1152	132.13	1153	152.11	1154	165.57
1155	169.09	1156	166.15	1157	158.11	1158	148.75	1159	138.86
1160	129.04	1161	120.24	1162	113.46	1163	107.19	1164	97.70
1165	84.18	1166	70.07	1167	57.70	1168	46.82	1169	36.38
1170	28.78	1171	24.86	1172	22.36	1173	20.46	1174	18.82
1175	17.52	1176	16.47	1177	15.55	1178	14.71	1179	13.93
1180	13.21	1181	12.58	1182	11.97	1183	11.41	1184	10.92
1185	10.49	1186	10.06	1187	9.64	1188	9.28	1189	9.03
1190	8.85	1191	8.68	1192	8.52	1193	8.37	1194	8.25
1195	8.12	1196	7.97	1197	7.86	1198	7.76	1199	7.64
1200	7.52	1201	7.42	1202	7.34	1203	7.25	1204	7.14
1205	7.03	1206	6.94	1207	6.86	1208	6.77	1209	6.69
1210	6.64	1211	6.59	1212	6.53	1213	6.45	1214	6.37
1215	6.31	1216	6.27	1217	6.20	1218	6.12	1219	6.06
1220	6.00	1221	5.95	1222	5.90	1223	5.86	1224	5.81
1225	5.75	1226	5.69	1227	5.64	1228	5.59	1229	5.55
1230	5.51	1231	5.45	1232	5.42	1233	5.39	1234	5.37
1235	5.32	1236	5.26	1237	5.19	1238	5.13	1239	5.10
1240	5.07	1241	5.05	1242	5.01	1243	4.98	1244	4.95
1245	4.92	1246	4.88	1247	4.83	1248	4.80	1249	4.78
1250	4.76	1251	4.73	1252	4.69	1253	4.65	1254	4.63
1255	4.61	1256	4.58	1257	4.56	1258	4.53	1259	4.50
1260	4.46	1261	4.44	1262	4.41	1263	4.39	1264	4.37
1265	4.34	1266	4.31	1267	4.28	1268	4.26	1269	4.25
1270	4.21	1271	4.18	1272	4.16	1273	4.14	1274	4.13
1275	4.11	1276	4.10	1277	4.09	1278	4.07	1279	4.05
1280	4.03	1281	4.01	1282	4.00	1283	3.99	1284	3.97
1285	3.95	1286	3.94	1287	3.93	1288	3.92	1289	3.89
1290	3.88	1291	3.86	1292	3.84	1293	3.83	1294	3.82
1295	3.81	1296	3.79	1297	3.79	1298	3.78	1299	3.76
1300	3.75	1310	3.61	1320	3.53	1330	3.44	1340	3.28
1350	3.15	1360	3.10	1370	2.99	1380	2.93	1390	2.89
1400	2.84	1420	2.73	1440	2.64	1460	2.48	1500	2.48

TOTAL VOLUME THIS HYDROGRAPH = 13.31(Ac.Ft)

Appendix C

Debris Production Area Exhibits



LEGEND

- DRAINAGE BOUNDARY
- EXISTING TRACT BOUNDARY
- PROPOSED PROJECT BOUNDARY AND LOT LINE
- 5A / 5.4 — AREA DESIGNATION / AREA (AC)
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- FLOW PATH
- 100.0 — FLOW AT POINT, Q50
- 15.0 MIN — TC AT POINT (MINUTES)
- 1000 FS — ELEVATION AT POINT
- L=1000' — LENTH OF FLOW PATH

SCALE: 1" = 60'

FUSCOE ENGINEERING
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tel 949.474.1960 ◦ fax 949.474.5315
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PROPOSED DRAINAGE PLAN

SIERRA MADRE, CA

OCTOBER 6, 2021

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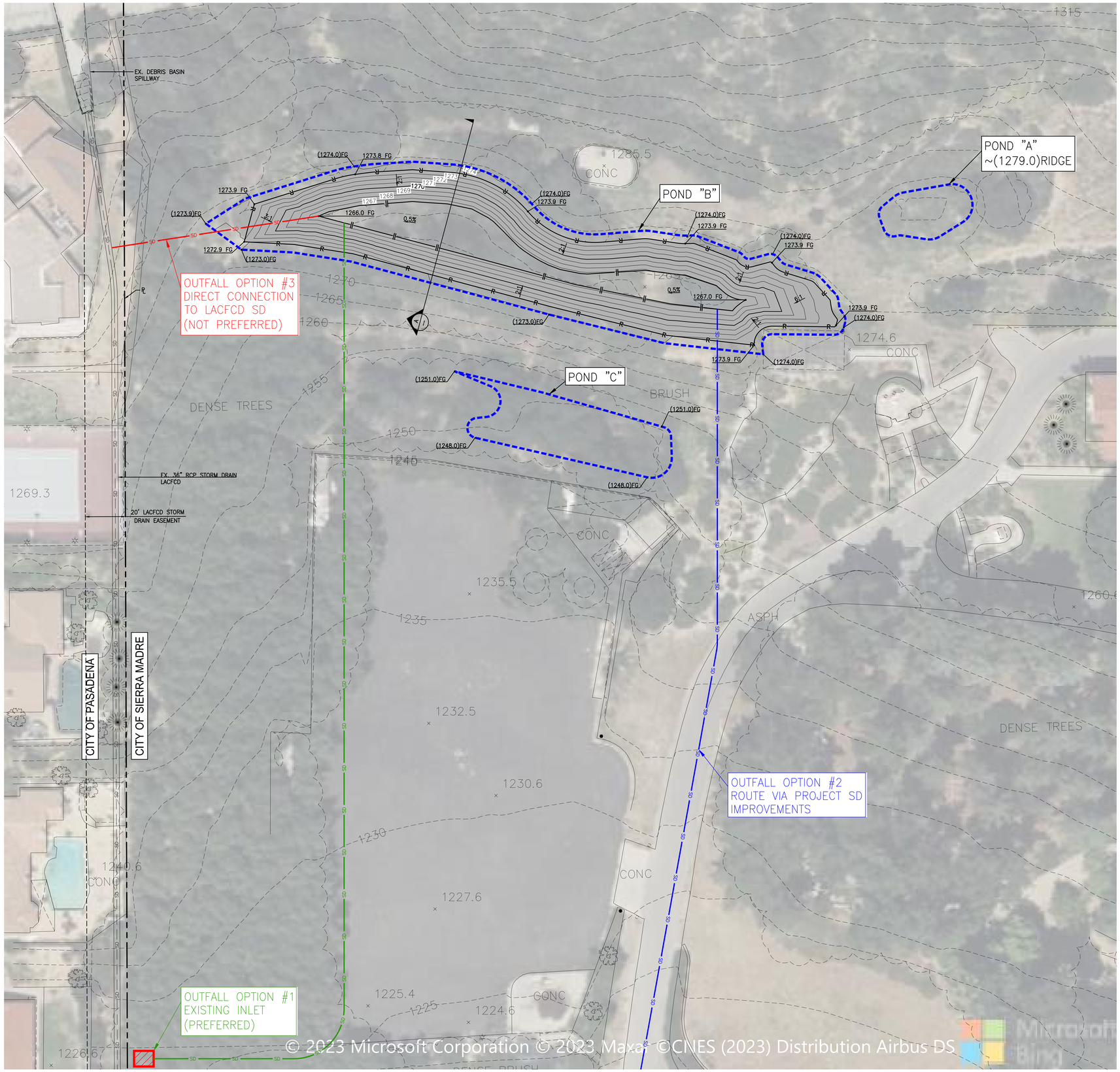


LEGEND AND ABBREVIATIONS

— — —	PROPERTY LINE
▬▬▬	GRADING DAYLIGHT LINE
—R—	RIDGE LINE
—‖—	TOE OF SLOPE
— SD —	EXISTING STORM DRAIN LINE
—SD—	PROPOSED STORM DRAIN LINE
(1274.0)FG	EXISTING SPOT GRADE
1274.0 FG	PROPOSED SPOT GRADE
2:1	PROPOSED SLOPE
FG	FINISHED GRADE
℄	PROPERTY LINE
▒	DEBRIS BASIN SIDE SLOPE AREA

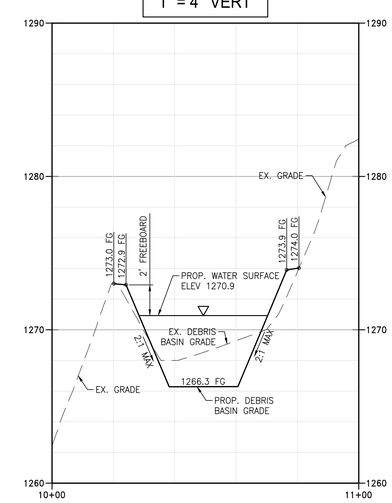
DEBRIS BASIN VOLUME SUMMARY

REQUIRED DEBRIS BASIN VOLUME:	1,608 CY
PROVIDED DEBRIS BASIN WATER VOLUME:	1,660 CY
2-FOOT FREEBOARD VOLUME:	160 CY
TOTAL DEBRIS BASIN VOLUME:	1,820 CY

CONCEPTUAL EARTHWORK VOLUME

RAW CUT:	530 CY	RAW FILL:	180 CY
15% SHRINKAGE:			30 CY
SUBTOTAL:	530 CY		210 CY
TOTAL:	+320 CY (EXPORT)		

SECTION A
1" = 20' HORIZ
1" = 4' VERT



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Los Angeles, CA 90017
213.988.8802
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CONCEPTUAL DEBRIS BASIN STUDY

SIERRA MADRE RETREAT CENTER

9/12/2023

SCALE: 1" = 20'

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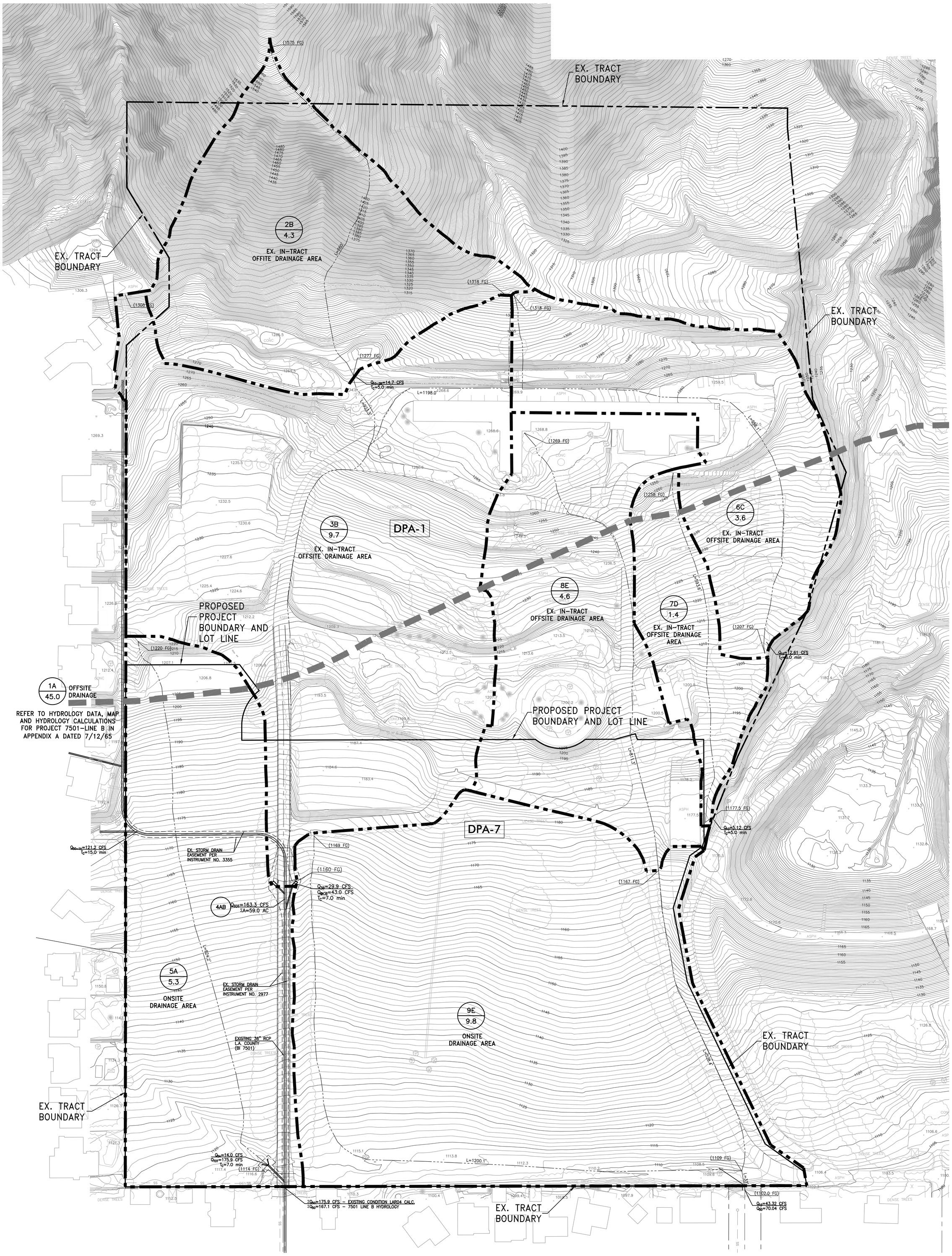
Appendix D

Existing Hydrology Map



LEGEND

	DRAINAGE BOUNDARY
	EXISTING TRACT BOUNDARY
	PROPOSED PROJECT BOUNDARY AND LOT LINE
5A / 5.4	AREA DESIGNATION / AREA (AC)
	EXISTING STORM DRAIN PIPE
	FLOW PATH
100.0	FLOW AT POINT, Q50
15.0 MIN	TC AT POINT (MINUTES)
1000 FS	ELEVATION AT POINT
L=1000'	LENTH OF FLOW PATH

N

60' 0' 30' 60'

SCALE: 1" = 60'

FUSCOE ENGINEERING

SUNNYSIDE RESIDENCES
EXISTING DRAINAGE SITE PLAN

OCTOBER 7, 2021

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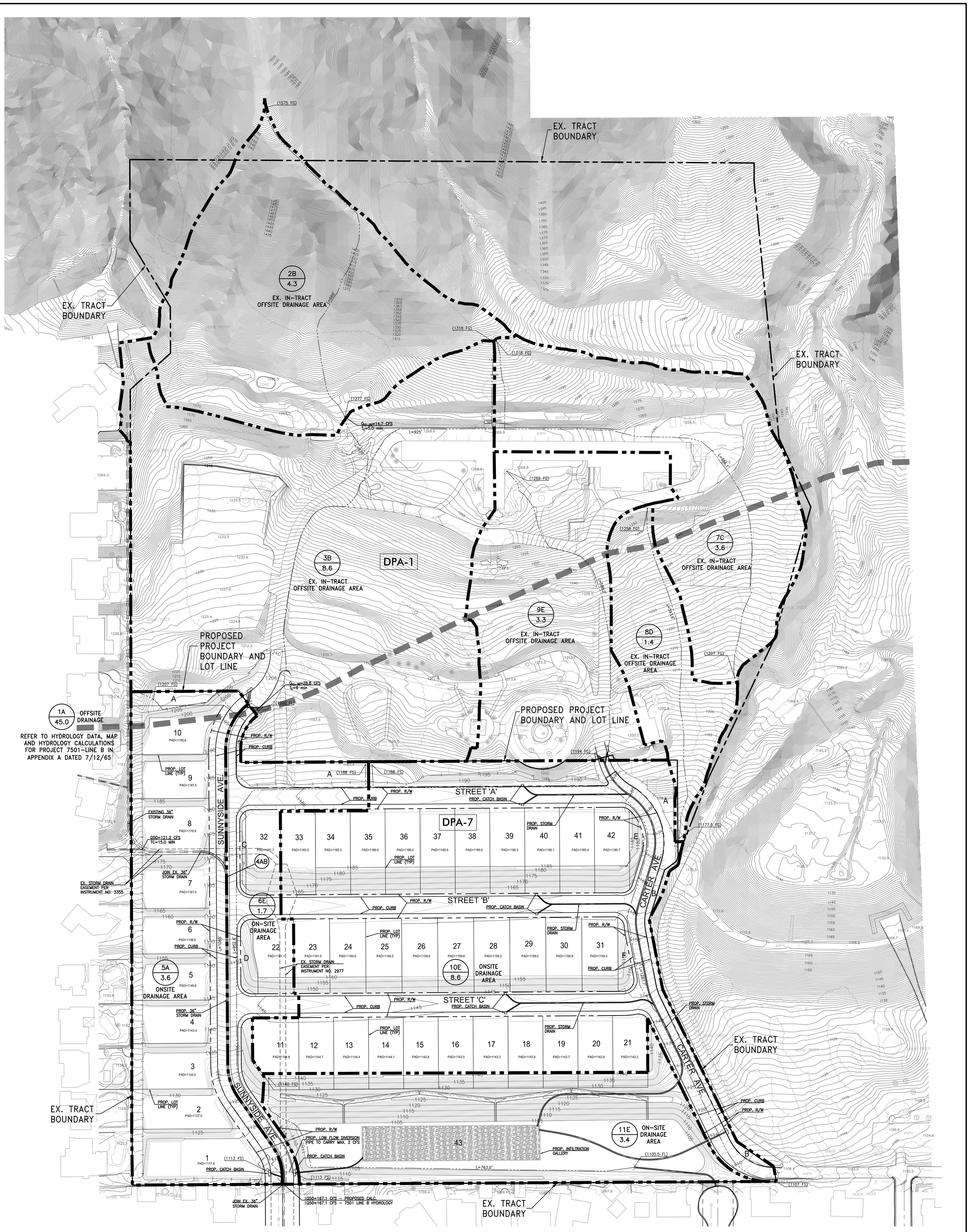
Appendix E

Proposed Hydrology Map



LEGEND

- DRAINAGE BOUNDARY
- EXISTING TRACT BOUNDARY
- PROPOSED PROJECT BOUNDARY AND LOT LINE
- 5A / 5.4 — AREA DESIGNATION / AREA (AC)
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- FLOW PATH
- 100.0 — FLOW AT POINT, Q50
- 15.0 MIN — TC AT POINT (MINUTES)
- 1000 FS — ELEVATION AT POINT
- L=1000' — LENTH OF FLOW PATH

60' 0' 30' 60'
SCALE: 1" = 60'

MTD 1882

PROPOSED DRAINAGE PLAN

SIERRA MADRE, CA

OCTOBER 7, 2021

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tel 949.474.1960 ◦ fax 949.474.5315
www.fuscoe.com

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Appendix F

Excerpt from Geotechnical Report

GEOLOGIC AND GEOTECHNICAL ENGINEERING REPORT,
Tentative Tract Map 83966, APN 5761-002-008,
700 North Sunnyside Avenue, Sierra Madre, California

for

NUWI Sierra Madre, LLC

September 16, 2022 W.O. 6747

MDN 23118

6634 Valjean Avenue, Van Nuys, California 91406 Phone: (818) 785-2158 Fax: (818) 785-1548

GeoSoils Consultants Inc.
GEOTECHNICAL GEOLOGIC ENVIRONMENTAL

September 16, 2022
W.O. 6747

NUWI Sierra Madre, LLC
2001 Wilshire Boulevard, Suite 401
Santa Monica, California 90403

Attention: Mr. Benny Sam

Subject: Geologic and Geotechnical Engineering Report for Tentative Tract Map 83966, 700 North Sunnyside Avenue, APN 5761-002-008, Sierra Madre, California

As requested, GeoSoils Consultants, Inc. (GSC) has performed a geologic and geotechnical engineering investigation on the subject tract. The purpose of this investigation is to provide geologic and geotechnical engineering recommendations for site grading and foundations. The report presents the results of our research, subsurface exploration, laboratory testing, site reconnaissance, and provides geotechnical engineering recommendations for site grading. Grading of the site is considered feasible from a geologic and geotechnical engineering prospective, provided the recommendations presented herein are incorporated into the design and implemented during grading.

We appreciate this opportunity to be of service to you. If you have any questions regarding this report, or if we may be of further assistance to you, please do not hesitate to contact us.

Very truly yours,

GEOSOILS CONSULTANTS, INC.

RUDY F. RUBERTI
CEG 1708

MAHAN PASDARPOUR
PE 90111

cc: (1) Addressee

MDN 23118

8.8 Infiltration Testing

An infiltration area is proposed at the southern part of site and will consist of an area approximately seven feet deep with perforated pipe and gravel. The final design of the system should be reviewed by this office. Infiltration testing was performed in the southwestern part of the site, in the area of the proposed basin. Two 8-inch diameter borings (B-11 and B-12) were excavated to depths of 15 and 30. The lower 5 and 10 feet of the 15 and 30 borings, respectively, were provided with 2-inch diameter perforated pipe surrounded with filter gravel. Infiltration testing was performed in accordance with Los Angeles County requirements and the results are presented in Appendix C.

Consolidation tests were performed on samples obtained from Borings B-11 and B-12 and the results are presented in Appendix B. The test results indicate a low potential for hydroconsolidation of the terrace deposits due to the infiltration of stormwater in the percolation depth.

No groundwater was encountered during the excavations. Historical high groundwater map from Seismic Hazard Zone report notes the groundwater to be more than 100 feet below the ground surface. The borings were presoaked prior to the infiltration testing. The result of percolation rate without factor of safety is included in below table, and in lieu of a direction from the project civil engineer a minimum factor of safety of 3 should be considered for design purposes.

TABLE 6
PERCOLATION TEST RESULTS

TEST LOCATION	RATE (Inches per hour)
B-11	3.42
B-12	3.02
Note: This rate does not include the correction factor	