

APPENDICES

APPENDIX A

Oak Tree Report

OAK TREE REPORT

Proposed 4-Lot Subdivision Tentative Parcel Map 80287

Between Triumph Ave. & Tannahill Ave.
Santa Clarita, Ca 91387

for

Rexhall Company

45640 23rd Street West
Lancaster, Ca 93536-7219

by

TREES, etc.

[a division of RDI & Associates, Inc.]

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RDI Project No.: 1008-1-18

Original Date: September 16, 2018

1st Revision Date: December 24, 2018

2nd Revision Date: January 15, 2021

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2020 =

Oct. 29 (review dead & dying Oaks);

Nov. 10 (re-tag Oaks).

2. As part of our field review, tree drip lines were measured on the following dates in 2018:

March 20 (#171 & #172),

April 10 (#1 to #75),

April 17 (#76 to #130, #132 to #170, #173, #174).

Field Observations

1. The trees are inventoried as to their specie, health & aesthetic considerations. This inventory was reviewed in accordance with presently accepted industry procedures, which are of macro-visual observations only. No extensive microbiological, soil-root excavations, upper crown examination, nor internal tree investigations were conducted.
2. The inventoried Protected trees had their trunks & driplines (canopy spreads) measured [the trunk(s) are measured in "diameter" inches, while the dripline(s) are measured in feet at eight [8] compass directions (north, northeast, east, southeast, south, southwest, west & northwest). If one or more sides is measured as "0" feet, this means that there is no canopy at that/those location(s)]. It should be noted that these dimensions might change in the next growing season(s) following our initial field measurements.
3. The "Protected Zone" is defined as the area at least 5' beyond the dripline or 15' from the trunk, or whichever distance is greater, when viewed from above.
4. In Santa Clarita a "Heritage Oak tree" is any live Oak tree that has one trunk that is at least 34.4" in diameter or more; or, at least two of the trunks (on a multiple-trunk tree) are each 22.9" in diameter or more. In this report we covered fourteen [14] Heritage Oak trees, they are:

#5 (23" & 25" diameter trunks),	#9 (24.6" & 25.7" diameter trunks),
#11 (25" & 27.4" diameter trunks),	#17 (5", 6", 7", 18", 20", 23" & 24" diameter trunks),
#60 (34.7" diameter trunk),	#61 (46.55" diameter trunk),
#62 (40.9" diameter trunk),	#65 (37" diameter trunk),
#95 (44.2" diameter trunk),	#97 (35.7" diameter trunk),
#113 (39" diameter trunk),	#115 (36.6 diameter trunk),
#135 (6", 15", 23", 28" & 32" diameter trunks),	#157 (43.1" diameter trunk).
5. This project's on-property trees were tagged with 1¼" diameter metal tags with numbers stamped into the. The report's inventoried off-property trees were not tagged, but are only map numbered.

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Plan Review

1. On the dates of our field review we found one-hundred seventy-three [173] Coast Live Oak (*Quercus agrifolia*) trees on this 19.97 acre property, which is proposed to be divided into four [4] parcels. Our tag numbers that were used are: #1 to #130 and #132 to #174 (tag #131 was not used!).
- 2a. There are currently eighty-seven [87] Oaks are located within Parcel 1 (4.98 acres), they are: 1-14, 59, 61-74, 86-107, 118-122, 124-130, 132-143, 159-170.
- 2b. There are currently sixty-five [65] Oaks are located within Parcel 2 (4.99 acres), they are: 15-23, 25-28, 30-34, 36, 39-58, 60, 108-117, 144-158.
- 2c. There are **NO** Oaks found on Parcel 3 (5.00 acres).
- 2d. There are currently fourteen [14] Oaks are located within Parcel 4 (4.90 acres), they are: 76-85, 171-174.
- 3a. Pursuant to the enclosed **TREE LOCATION MAP**, the following is proposed to this project's on-property Oaks:

Parcel Tree No(s). Proposed Disposition(s)

- | | | |
|---|-------|--|
| 1 | ----- | It should be noted that there may be a property boundary fences and/or walls constructed within this Parcel's Oak tree driplines and/or Protected Zones at a later date, most likely by the future property owners of this lot, between this Parcel & Parcels 2 & 4, the properties to the north, and along Tannahill Ave. |
| 1 | | SAVE = this one [1] Oak shall have a 26' wide "Proposed All Weather Access Road" installed within its drip line, no closer than 10' from its trunk. It should be noted that there may be a property boundary fences and/or walls constructed within this Oak's tree drip line at a later date, most likely by the future property owners of this lot, along Tannahill Ave. Some live wood pruning will be required for construction clearances. |
| 2 | | SAVE = this one [1] Oak's Protected Zone shall be encroached upon by this Parcel's proposed septic line, no closer than 4' from its drip line. Live wood pruning is not required to occur to this Oak. |
| 3 | | SAVES = this one [1] Oak <u>shall not be impacted</u> from this project's proposed construction. Live wood pruning is not required to this Oak. |

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<u>Parcel</u>	<u>Tree No(s).</u>	<u>Proposed Disposition(s)</u>
1	4	SAVE = this one [1] Oak may have a property boundary fence and/or wall constructed within its drip line and/or Protected Zone at a later date, by the future property owners of this lot. Some live wood pruning may be required to occur to this Oak.
	5 to 8	SAVES = these four [4] Oaks <u>shall not be impacted</u> from this project's proposed construction. Live wood pruning is not required to occur to these Oaks. It should be noted that Oak #5 is a Heritage Oak.
	9	SAVE = this one [1] Heritage Oak's Protected Zone shall be encroached upon by this Parcel's proposed septic line, no closer than 4' from its drip line. Live wood pruning is not required to occur to this Oak.
	10 to 13	SAVES = these four [4] Oaks <u>shall not be impacted</u> from this project's proposed construction. Live wood pruning is not required to occur to this tree. It should be noted that Oak #11 is a Heritage Oak.
	14	SAVE = this one [1] Oak <u>shall not be impacted</u> from this project's proposed construction. It should be noted that there may be a property boundary fence and/or wall constructed within this Oak's drip line at a later date, most likely by the future property owners of this lot. Live wood pruning may be required to occur to this Oak for a future fence and/or wall.
	59	SAVE = this one [1] Oak <u>shall not be impacted</u> from this project's proposed construction. It should be noted that there may be a property boundary fence and/or wall constructed within this Oak's drip line at a later date, most likely by the future property owners of this lot. Live wood pruning may be required to occur to this Oak for a future fence and/or wall.
	61 to 74	SAVES = these fourteen [14] Oaks <u>shall not be impacted</u> from this project's proposed construction. Live wood pruning is not required to these Oaks. It should also be noted that Oaks #61, #62 & #65 are Heritage Oaks.

Oak #72 was allowed to be pruned as noted by Robert Sartain (City Arborist) from the city of Santa Clarita approved permit (Exemption No. 20-097 // Oct. 27, 2020)).

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Parcel Tree No(s) Proposed Disposition(s)

- | | | |
|---|------------------|--|
| 1 | 61 to 74 (cont.) | Oak #74 had its 10½" diameter trunk removed in 2020 as trunk had died sometime between 2018 & 2020 (it should be noted that Robert Sartain (City Arborist) from the city of Santa Clarita approved removal of this Oak trunk (Exemption No. 20-097 // Oct. 27, 2020)). |
| | 75 | This one [1] Oak was removed in 2020 as it died sometime between 2018 & 2020. It should be noted that Robert Sartain (City Arborist) from the city of Santa Clarita approved removal of this Oak (Exemption No. 20-097 // Oct. 27, 2020). |
| | 86 & 87 | SAVES = these two [2] Oaks <u>shall not be impacted</u> from this project's proposed construction. It should be noted that there may be a property boundary fence and/or wall constructed within this Oak's drip line at a later date, most likely by the future property owners of this lot. Live wood pruning may be required to these Oaks for a future fence and/or wall. |
| | 88 to 93 | SAVES = these six [6] Oaks <u>shall not be impacted</u> from this project's proposed construction. Live wood pruning is not required to occur to these Oaks. |
| | 94 | This one [1] Oak was removed in 2020 as it died sometime between 2018 & 2020. |
| | 95 to 107 | SAVES = these thirteen [13] Oaks <u>shall not be impacted</u> from this project's proposed construction. Live wood pruning is not required to occur to these Oaks. It should be noted that Oaks #95 & #97 are Heritage Oaks. |
| | 118 to 122 | SAVES = these five [5] Oaks <u>shall not be impacted</u> from this project's proposed construction. It should be noted that there may be a property boundary fence and/or wall constructed within these Oak's drip lines at a later date, most likely by the future property owners of this lot. Live wood pruning may be required to these Oaks for a future fence and/or wall. |
| | 123 | This one [1] Oak was removed in 2020 as it died sometime between 2018 & 2020. It should be noted that Robert Sartain (City Arborist) from the city of Santa Clarita approved removal of this Oak (Exemption No. 20-097 // Oct. 27, 2020). |
| | 124 to 130 | SAVES = these seven [7] Oaks <u>shall not be impacted</u> from this project's proposed construction. Live wood pruning is not required to these Oaks. |

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131 **This tag number was not used!**

Parcel Tree No(s). Proposed Disposition(s)

- 1 132 to 140 **SAVES** = these nine [9] Oaks **shall not be impacted** from this project’s proposed construction. Live wood pruning is not required to occur to these Oaks. It should be noted that Oak #135 is a Heritage Oak.

- 141 to 143 **SAVES** = these three [3] Oaks **shall not be impacted** from this project’s proposed construction. It should be noted that there may be a property boundary fence and/or wall constructed within these Oak’s drip lines at a later date, most likely by the future property owners of this lot. Live wood pruning may be required to these Oaks for a future fence and/or wall.

- 159 **SAVE** = this one [1] Oak **shall not be impacted** from this project’s proposed construction. It should be noted that there may be a property boundary fence and/or wall constructed within this Oak’s drip line at a later date, most likely by the future property owners of this lot. Live wood pruning may be required to occur to this Oak for a future fence and/or wall.

- 160 to 170 **SAVES** = these eleven [11] Oaks **shall not be impacted** from this project’s proposed construction. Live wood pruning is not required.

- 2 ----- It should be noted that there may be a property boundary fences and/or walls constructed within this Parcel’s Oak tree driplines and/or Protected Zones at a later date, by the future property owners of this lot, between this Parcel & Parcels 1 & 3, the property to the south, and along Tannahill Ave.

- 15 **SAVE** = this one [1] Oak **shall not be impacted** from this project’s proposed construction. It should be noted that there may be a property boundary fence and/or wall constructed within this Oak’s drip line at a later date, most likely by the future property owners of this lot. Live wood pruning may be required to occur to this Oak for a future fence and/or wall.

- 16 **SAVE** = this one [1] Oak shall have a 26’ wide “Proposed All Weather Access Road” installed within its drip line, no closer than 2’ from its trunk. It should be noted that there may be a property boundary fences and/or walls constructed within this Oak’s tree drip line at a later date, most likely by the future property owners of this lot, along Tannahill Ave. Some live wood pruning will be required for construction clearances.

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<u>Parcel</u>	<u>Tree No(s).</u>	<u>Proposed Disposition(s)</u>
2	17	SAVE = this one [1] Oak <u>shall not be impacted</u> from this project's proposed construction. Live wood pruning is not required to occur to this Oak. It should be noted this Oak is a Heritage Oak.
	18	SAVE = this one [1] Oak shall have a 26' wide "Proposed All Weather Access Road" installed within its drip line, no closer than 5' from its trunk. It should be noted that there may be a property boundary fences and/or walls constructed within this Oak's tree drip line at a later date, most likely by the future property owners of this lot, along Tannahill Ave. Some live wood pruning will be required for construction clearances.
	19	SAVE = this one [1] Oak shall have a 26' wide "Proposed All Weather Access Road" installed within its drip line, no closer than 10' from its trunk. It should be noted that there may be a property boundary fences and/or walls constructed within this Oak's tree drip line at a later date, most likely by the future property owners of this lot, along Tannahill Ave. Some live wood pruning will be required for construction clearances.
	20 to 22	SAVES = these 3 Oaks <u>shall not be impacted</u> from this project's proposed construction. Live wood pruning is not required.
	23	SAVE = this one [1] Oak shall have a 26' wide "Proposed All Weather Access Road" installed within its drip line, no closer than 3' from its trunk. It should be noted that there may be a property boundary fences and/or walls constructed within this Oak's tree drip line at a later date, most likely by the future property owners of this lot, along Tannahill Ave. Some live wood pruning will be required for construction clearances.
	24	This one [1] Oak was removed in 2020 as it died sometime between 2018 & 2020. It should be noted that Robert Sartain (City Arborist) from the city of Santa Clarita approved removal of this Oak (Exemption No. 20-097 // Oct. 27, 2020).
	25	SAVE = this one [1] Oak shall have its Protected Zone encroached upon, no closer than 4' from its drip line for the construction of the proposed buildable lot for this parcel. Live wood pruning is not required to occur to this Oak.

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<u>Parcel</u>	<u>Tree No(s).</u>	<u>Proposed Disposition(s)</u>
2	26	SAVE = this one [1] Oak <u>shall not be impacted</u> from this project's proposed construction. It should be noted that there may be a property boundary fence and/or wall constructed within this Oak's drip line at a later date, most likely by the future property owners of this lot. Live wood pruning may be required to occur to this Oak for a future fence and/or wall.
	27 & 28	SAVES = these two [2] Oaks <u>shall not be impacted</u> from this project's proposed construction. Live wood pruning is not required.
	29	This one [1] Oak was removed in 2020 as it died sometime between 2017 & 2018. It should be noted that Robert Sartain (City Arborist) from the city of Santa Clarita approved removal of this Oak (Exemption No. 20-097 // Oct. 27, 2020).
	30 & 31	SAVES = these two [2] Oaks <u>shall not be impacted</u> from this project's proposed construction. Live wood pruning is not required.
	32 to 34	SAVES = these three [3] Oaks <u>shall not be impacted</u> from this project's proposed construction. It should be noted that there may be a property boundary fence and/or wall constructed within these Oak's drip lines at a later date, most likely by the future property owners of this lot. Live wood pruning may be required for a future fence and/or wall.
	35	This one [1] Oak was removed in 2020 as it died sometime between 2018 & 2020. It should be noted that Robert Sartain (City Arborist) from the city of Santa Clarita approved removal of this Oak (Exemption No. 20-097 // Oct. 27, 2020).
	36	SAVE = this one [1] Oak <u>shall not be impacted</u> from this project's proposed construction. Live wood pruning is not required.
	37 & 38	This two [2] Oaks were removed in 2020 as they died sometime between 2018 & 2020. It should be noted that Robert Sartain (City Arborist) from the city of Santa Clarita approved removal of these Oaks (Exemption No. 20-097 // Oct. 27, 2020).

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39 to 42 **SAVES** = these four [4] Oaks **shall not be impacted** from this project's proposed construction. Live wood pruning is not required.

Parcel Tree No(s). Proposed Disposition(s)

- 2 43 to 45 **SAVES** = these three [3] Oaks **shall not be impacted** from this project's proposed construction. It should be noted that there may be a property boundary fence and/or wall constructed within these Oak's drip lines at a later date, most likely by the future property owners of this lot. Live wood pruning may be required to these Oaks for a future fence and/or wall.
- 46 to 51 **SAVES** = these six [6] Oaks **shall not be impacted** from this project's proposed construction. Live wood pruning is not required.
- 52 **SAVE** = this one [1] Oak **shall not be impacted** from this project's proposed construction. It should be noted that there may be a property boundary fence and/or wall constructed within this Oak's drip line at a later date, most likely by the future property owners of this lot. Live wood pruning may be required to occur to this Oak for a future fence and/or wall.
- 53 to 58 **SAVES** = these six [6] Oaks **shall not be impacted** from this project's proposed construction. Live wood pruning is not required.
- 60 & 108 **SAVES** = these two [2] Oaks **shall not be impacted** from this project's proposed construction. It should be noted that there may be a property boundary fence and/or wall constructed within these Oak's drip lines at a later date, most likely by the future property owners of this lot. Live wood pruning may be required to occur to these Oaks for a future fence and/or wall. It should be noted that Oak #60 is a Heritage Oak.
- 109 to 115 **SAVES** = these seven [7] Oaks **shall not be impacted** from this project's proposed construction. Live wood pruning is not required to occur to these Oaks. It should be noted that Oaks #113 & #115 are Heritage Oaks.
- 116 **SAVE** = this one [1] Oak's Protected Zone shall be encroached upon by this Parcel's proposed septic line, no closer than 4' from its drip line. Live wood pruning is not required to occur to this Oak.

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117, 144-152 **SAVES** = these ten [10] Oaks **shall not be impacted** from this project's proposed construction. Live wood pruning is not required to occur to these Oaks.

153 **Previously Removed** = this "very small" one [1] Oak was inadvertently removed by mistake, during some land clearing that was done at this site. At the time of our original inventory this Oak was 2¼" in diameter.

Parcel Tree No(s). Proposed Disposition(s)

2 154-158 **SAVES** = these five [5] Oaks **shall not be impacted** from this project's proposed construction. Live wood pruning is not required to occur to these Oaks. It should be noted that Oak #157 is a Heritage Oak.

3 ----- There are **NO** Oak trees on this parcel. It should be noted that on the map there is a tree canopy symbol (made up of a non-protected California Pepper & a non-protected Elderberry) located near the southwest corner of this parcel.

4 ----- It should be noted that there may be property boundary fences and/or walls constructed within this Parcel's Oak tree driplines and/or Protected Zones at a later date, by the future property owners of this lot, between this Parcel & Parcel 1, the property to the north.

76 This one [1] Oak was **removed** in 2020 as it died sometime between 2018 & 2020. It should be noted that Robert Sartain (City Arborist) from the city of Santa Clarita approved removal of this Oak (Exemption No. 20-097 // Oct. 27, 2020).

77 & 78 **SAVES** = these two [2] Oaks **shall not be impacted** from this project's proposed construction. It should be noted that there may be a property boundary fence and/or wall constructed within these Oak's drip lines at a later date, most likely by the future property owners of this lot. Live wood pruning may be required to occur for a future fence and/or wall.

79 This one [1] Oak was **removed** in 2020 as it died sometime between 2018 & 2020. It should be noted that Robert Sartain (City Arborist) from the city of Santa Clarita approved removal of this Oak (Exemption No. 20-097 // Oct. 27, 2020).

80 **SAVE** = this one [1] Oak **shall not be impacted** from this project's proposed construction. Live wood pruning is not required.

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81 to 85 **SAVES** = these five [5] Oaks **shall not be impacted** from this project’s proposed construction. It should be noted that there may be a property boundary fence and/or wall constructed within these Oak’s drip lines at a later date, most likely by the future property owners of this lot. Live wood pruning may be required to occur for a future fence and/or wall.

Parcel Tree No(s). Proposed Disposition(s)

4 171 to 174 **SAVES** = these four [4] Oaks **shall not be impacted** from any of this project’s proposed construction. Oak #172 had its 37.7” diameter trunk removed in 2020 as trunk had died sometime between 2018 & 2020. Live wood pruning is not required to occur to these Oaks.

In summary, the following is proposed (in Parcel 1):

Total quantity of Oaks that were inventoried = 89
SAVES (with no encroachments) = 86 (in the future, some of these Oaks may be impacted by the new property owners)
SAVES (with dripline encroachments) = 1 (#1 = for the new construction of Tannahill Rd.)
SAVES (with Protected Zone encroachments) = 2 (#2 & #9)
Removals = 0

In summary, the following is proposed (in Parcel 2):

Total quantity of Oaks that were inventoried = 70
SAVES (with no encroachments) = 63 (in the future, some of these Oaks may be impacted by the new property owners)
SAVES (with dripline encroachments) = 4 (#16, #18, #19 & #22 = for the new construction of Tannahill Rd.)
SAVES (with Protected Zone encroachments) = 3 (#24, #25 & #116)
Removals = 0

In summary, the following is proposed (in Parcel 3):

Total quantity of Oaks that were inventoried = 0

In summary, the following is proposed (in Parcel 4):

Total quantity of Oaks that were inventoried = 14
SAVES (with no encroachments) = 14 (in the future, some of these Oaks may be impacted by the new property owners)
Removals = 0

3b. Pursuant to the enclosed **TREE LOCATION MAP**, the following is proposed to this project’s off-property Oak trees:

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Tree No(s). Proposed Disposition(s)

- OP-1 **SAVE** = the 26' wide "Proposed All Weather Access Road" shall be installed within this Oak's drip line, no closer than 6' from its trunk. Some "live wood" pruning may be required for roadway clearance. This tree is located off-property, northeast of Oak #1 (Parcel 1).
- OP-2 **SAVE** = it should be noted that there may be property boundary fence or wall constructed within this Oak tree dripline at a later date (from Parcel 2), by the future property owners of this lot. Some "live wood" pruning may be done at this time. This tree is located off-property, southeast of Oak #25 (Parcel 2).
- OP-3 **SAVE** = it should be noted that there may be property boundary fence or wall constructed within this Oak tree dripline at a later date (from Parcel 1), by the future property owners of this lot. Some "live wood" pruning may be done at this time. This tree is located off-property, west of Oak #92 (Parcel 1).

In summary, the following is proposed:

Total quantity of Oaks that were inventoried =	3
SAVES (with dripline encroachments) =	1 (OP-1)
SAVES (may be dripline encroachments) =	2 (OP-2 & OP-3)
Removals =	0

Specific & Overall Recommendations

1. This Consulting Arborist should be on-site during all excavations within the driplines and/or Protected Zones of the protected trees.
2. The 'saved' Oak trees within 50' from any proposed construction shall be fenced with a temporary chainlink (or similar) protective fence at their driplines or Protected Zones (or at the location of approved encroachment) prior to the start of any on-site grading/construction. A minimum of four [4] warning signs (minimum size of 2' x 2'), per fenced area or at 50' intervals, shall read:

WARNING (lettering to be red & minimum 4" tall)

THIS FENCE SHALL NOT BE REMOVED or RELOCATED WITHOUT WRITTEN AUTHORIZATION FROM THE CITY of SANTA CLARITA'S PLANNING & COMMUNITY DEVELOPMENT DEPARTMENT (lettering to be black & minimum 2" tall)

These signs shall be posted on all protective fencing. This fencing shall remain intact until this Consulting Arborist and/or the city of Santa Clarita's Planning & Community Development Department (CSCP&CDD) allows it to be removed or relocated.

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3. All footing excavations within the driplines and/or Protected Zones shall be dug by hand work only, to a maximum depth of 5' (or to a depth that CAL-OSHA, OSHA or local codes allow). If any roots are encountered, they shall be cleanly excised (& not sealed). Any excavation below the "approved" depth may be done with acceptable machinery.
4. No 'over-excavation' outside of any cut and/or fill slopes ("tops" or "toes") for the proposed construction shall occur within the dripline and/or Protected Zone of any on-site Oak trees, unless required by the project's structural engineer, and approved by the City of Santa Clarita.
5. Soil compaction within the dripline and/or root zone shall be minimized. No equipment, spoils or debris shall be stored within the dripline and/or Protected Zone of the saved tree(s). No dumping of liquids or solvents, cleaning fluids, paints, concrete washout or other harmful substances within the driplines and/or Protected Zones shall be permitted.
6. All work, to this project's native Oak trees, shall be in accordance with city of Santa Clarita 'Oak Tree Ordinance' and tree policies.
7. Prior to the completion of this project, *RDI & Associates, Inc. (dba TREES, etc.)* shall certify in a 'letter of compliance', that the 'Oak Tree Ordinance' and all concerned tree policies have been adhered to.
8. Copies of this report and the 'Oak Tree Ordinance' shall be maintained on site during all project construction.

Tree Care & Maintenance

1. No "new" landscape, irrigation lines, utility lines and/or grade changes shall be designed and/or installed within the dripline and/or Protected Zones of any on-site Oak trees, unless approved by the CSCP&CDD. If planting is necessary or the leaf litter is removed, the following is recommended:
 - A. Plant Material – only drought tolerant plantings should be used. All plantings should be compatible with the on-site native Oak trees.

If additional plants are desired around the Oak trees, then use "acceptable" natives & follow these guidelines:

1. Plant no closer than 10' from any tree trunk.
2. Plant 1-gallon specimens or smaller, as these plants will establish faster than larger containers.
3. Use only native backfill with no amendments.
4. Mulch with an insect/disease free material as needed (minimum) 2" thick, to cover the soil for better water retention, to assist in lessening compaction, and for supplying organic material.

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- B. Grade changes – of as little of 6", within the dripline, can have a negative affect to the trees. It is important that the natural drainage patterns be maintained to help prevent water from "ponding" at the base of the tree trunk. The natural trunk flare should always be visible.
 - C. Aeration – is the ventilation of the root system, which can be very beneficial in compacted areas. To alleviate a compaction problem, hand-dug holes of 6" dia. by 24" deep by 24" on-center to about 10' outside of the dripline. Fill the holes with natural organic matter (leaf litter). This material will decompose & will produce a year-around source of fertilizer for the tree.
4. Most Oaks/trees require little or no live wood pruning within their canopies. No major structural pruning shall be allowed. A qualified arborist under the review of **RDI & Associates, Inc. (dba TREES, etc.)** shall complete all dead wood removal and/or pruning.
- A. Trees do not heal the way people do. When a tree is wounded, it must grow over & compartmentalize the wound. As a result, the wound is contained within the tree forever. Small cuts do less damage than large cuts. For that reason, proper pruning or training of young trees is critical. Waiting to prune a tree until it is mature can create the need for large cuts that the tree can not easily close. Correct pruning cuts are critical to a tree's response in growth & wound closure. Pruning cuts should be made just outside of the branch collar (which contains trunk or parent branch tissues). If the cut is too large, the tree may suffer permanent internal decay from an improper pruning cut.
 - B. Dead wood pruning removal – is the removal of dead tissue, no matter the size, is an acceptable practice. All pruning should follow the standards as set forth by the International Society of Arboriculture (ISA).
 - C. Live wood pruning removal – live branches that are considered to be unsafe due to decay; branches with cavities, cracks, fire damaged, diseased or infested with insects; branches that are physically imbalanced; especially branches with the above noted problems that are over 2" in diameter should be considered for removal. All pruning should follow the standards as set forth by the ISA.
 - D. Cavities & hollows – should be kept free of loose debris, soil & plants. Some contain decayed wood, which should be treated by a qualified arborist only. Concrete or other similar materials should not be used to seal or fill in cavities or hollows. Cavities or hollows may be covered with screening to prevent debris build-up.
 - E. Wound Dressings or Sealants – it was once thought that dressings were used to accelerate wound closure, but research has found that dressings do not reduce decay or speed closure & rarely prevent insect or disease infestations. Pruning wounds should not be sealed with any type of "pruning wound sealing compounds". Over time, these materials crack & can

OAK TREE REPORT

Proposed 4-Lot Sub-Division

RDI Project No.: 1008-1-18

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create entry points for diseases and/or insects. Wounds will "heal" properly if pruned correctly.

5. Insects & Diseases

- A. Effective pest control begins with the observation by the land owner. Changes such as abnormal leaf drop, oozing sap or discolored or dying twigs or leaves typically indicate that something has changed. Land owners should be careful when using pesticides around an Oak tree. Herbicides (weed killers) should never be used within the Protected Zone of an Oak tree, unless approved & applied by a certified pesticide applicator.

6. Inspections & Reviews

- A. This site's Oak trees should be inspected on a periodic basis by this Consulting Arborist. The inspection basis should be determined by the relative hazard value of the tree. If a tree is in a "high-use" area, it should be inspected at least on a quarterly basis, whereas a tree that is located in a "low-use" area may only require a bi-annual inspection.

NOTICE of DISCLAIMER = Opinions given in this report are those of *RDI & Associates, Inc. (dba TREES, etc.)*, and are derived from current professional standards based on visual recordings at the time of inspection. This visual record does not include aerial or subterranean inspections, and therefore may not reveal existing hidden hazards. Records may not remain accurate after inspection due to changeable deterioration of the inventoried plant material. *RDI & Associates, Inc. (dba TREES, etc.)*, provides no warranty regarding errors of omission resulting from the lack of communication of facts available only to the requester of this report which are expressed or implied as to the fitness of the urban forests for safe uses. *RDI & Associates, Inc. (dba TREES, etc.)* has no past, present or future interest in this property or the subject trees. This report may not be reproduced without the expressed written permission of *RDI & Associates, Inc. (dba TREES, etc.)*. Any change or alteration to this report invalidates the entire report.

If you have any further questions, please do not hesitate to call *RDI & Associates, Inc. (dba TREES, etc.)*.

Sincerely,
RDI & Associates, Inc.
dba *TREES, etc.*



Richard Ibarra, President
CONSULTING ARBORIST
(OAK TREE CONSULTANT)

1008otr-1-20[a] // Jan. 15, 2020 (2nd Revision)

TREE CANOPY MEASUREMENTS

[eight-point driplines (north, northeast, east, southeast, south, southwest, west, & northwest), along with the minimum clearances from the existing field grades to the bottoms of the canopy at each compass point – **where possible**]

TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

		TREE NUMBER	1	2	3	4	5	6	7	8	9	10
FACTORS	POINTS											
CROWN DEVELOPMENT												
Well Balanced	5 points		X									X
Lacking Natural Symmetry	3 points			X	X	X	X	X	X	X	X	
Lacking a Full Crown	1 point											
TRUNK CONDITION												
Sound & Solid	5 points		X		X						X	X
Section of Bark Missing:												
Less Than 1/4 Around	4 points											
1/4 to 1/2 Around	3 points											
1/2 or More Around	2 points											
Stump with New Basal Growth	1 point											
Extensive Decay or Hollow Trunk	0 points			X		X	X	X	X		X	
BRANCH STRUCTURE												
No Defects	5 points											
Dieback (Limited)	4 points		X	X	X	X	X	X	X	X	X	X
Few Structurally Dead or Broken Branches	3 points											
Many Structurally Dead or Broken Branches	1 point											
TWIG GROWTH												
Typical for Species & Age	5 points		X	X	X	X	X	X	X	X	X	X
Less Than 1/2 Normal	3 points											
Growth Greatly Reduced	1 point											
FOLIAGE												
Normal Size & Color	5 points		X	X	X	X	X	X	X	X	X	X
Minor Deficiency Symptoms	3 points											
Major Deficiency Symptoms	1 point											
INSECTS & DISEASES												
No Insects or Diseases Apparent	5 points											
Few Controllable Insects/Diseases Apparent	3 points		X		X					X		X
Severe Infestation	1 point			X		X	X	X	X		X	
ROOTS												
No Root Problems Apparent	5 points		X	X	X							X
Minor Root Problems	3 points					X	X	X	X	X	X	
Severe Root Problems	1 point											
TOTAL POINTS			32	23	30	21	21	21	21	28	21	32
Aesthetic Grade			A	B	B	B	B	B	B	B	B	B

ADDITIONAL COMMENTS

20.3" x 35" (465)	21.6", 22.2", 4.8" x 30" (487)	22.2" 25.7" x 40" (461)	18" x 22" x 20" (405) Heritage	23" 25" x 30"	10", 12", 17" x 25" (397)	19", 19" x 25" (407)	13" dead stump	26.6" 3x2" 2 1/2" 3" x 35" (466) writes on trunk	25.7" 24.6" x 40" Heritage (403)	9.6" 24.8" x 35"
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TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

		TREE NUMBER	11	12	13	14	15	16	17	18	19	20
FACTORS	POINTS											
CROWN DEVELOPMENT												
Well Balanced	5 points							X		X	X	
Lacking Natural Symmetry	3 points		X	X	X	X	X		X			X
Lacking a Full Crown	1 point											
TRUNK CONDITION												
Sound & Solid	5 points			X			X	X		X	X	
Section of Bark Missing:												
Less Than 1/4 Around	4 points											
1/4 to 1/2 Around	3 points											
1/2 or More Around	2 points											
Stump with New Basal Growth	1 point											
Extensive Decay or Hollow Trunk	0 points		X		X	X			X			X
BRANCH STRUCTURE												
No Defects	5 points											
Dieback (Limited)	4 points		X	X	X	X	X	X		X	X	X
Few Structurally Dead or Broken Branches	3 points								X			
Many Structurally Dead or Broken Branches	1 point											
TWIG GROWTH												
Typical for Species & Age	5 points		X	X	X	X	X	X	X	X	X	X
Less Than 1/2 Normal	3 points											
Growth Greatly Reduced	1 point											
FOLIAGE												
Normal Size & Color	5 points		X	X	X	X	X	X	X	X	X	X
Minor Deficiency Symptoms	3 points											
Major Deficiency Symptoms	1 point											
INSECTS & DISEASES												
No Insects or Diseases Apparent	5 points											
Few Controllable Insects/Diseases Apparent	3 points			X			X	X		X	X	
Severe Infestation	1 point		X		X	X			X			X
ROOTS												
No Root Problems Apparent	5 points							X				
Minor Root Problems	3 points			X	X	X	X		X	X	X	X
Severe Root Problems	1 point		X									
TOTAL POINTS			19	28	21	21	28	32	20	30	30	21
Aesthetic Grade			B	B	B	B	B	A	C	A	B	B

ADDITIONAL COMMENTS

(409) Heritage
25.0" 27.4" x 40'
(410) leaning west
13.6" x 20'
(411)
17.9" 21.4" 1/2" 4" x 20'
(414)
13" 19" 19" 1/2" 18" 12" x 30'
(473)
12" 15" x 20'
(409)
6.5" 14.5" x 20'
(469-472) Heritage
11.5" 20" 18" 6" 23" 24" x 30'
(411)
31.8" @ 36" high x 25'
(412)
25.7" x 25'
(468)
32.1" x 20'

TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

		TREE NUMBER	21	22	23	24	25	26	27	28	29	30
FACTORS	POINTS											
CROWN DEVELOPMENT												
Well Balanced	5 points		X			X	X	X				
Lacking Natural Symmetry	3 points			X	X				X	X		X
Lacking a Full Crown	1 point										X	
TRUNK CONDITION												
Sound & Solid	5 points		X					X				X
Section of Bark Missing:												
Less Than 1/4 Around	4 points											
1/4 to 1/2 Around	3 points											
1/2 or More Around	2 points											
Stump with New Basal Growth	1 point											
Extensive Decay or Hollow Trunk	0 points			X	X	X	X		X	X	X	
BRANCH STRUCTURE												
No Defects	5 points											
Dieback (Limited)	4 points		X	X	X		X	X	X	X	X	X
Few Structurally Dead or Broken Branches	3 points											
Many Structurally Dead or Broken Branches	1 point											
TWIG GROWTH												
Typical for Species & Age	5 points		X	X	X		X	X	X	X	X	X
Less Than 1/2 Normal	3 points											
Growth Greatly Reduced	1 point											
FOLIAGE												
Normal Size & Color	5 points		X	X	X		X	X	X	X		X
Minor Deficiency Symptoms	3 points											
Major Deficiency Symptoms	1 point											
INSECTS & DISEASES												
No Insects or Diseases Apparent	5 points											
Few Controllable Insects/Diseases Apparent	3 points		X	X	X			X				X
Severe Infestation	1 point						X		X	X		
ROOTS												
No Root Problems Apparent	5 points		X	X	X		X	X	X	X		X
Minor Root Problems	3 points											
Severe Root Problems	1 point											
TOTAL POINTS			32	25	25	25	25	32	29	29	29	30
Aesthetic Grade			A	B	B	B	A	A	B	C	B	B

LIMITED PER CITY PERMIT

LIMITED PER CITY PERMIT

REMOVED PER CITY PERMIT

REMOVED PER CITY PERMIT

ADDITIONAL COMMENTS
(467) 28.2" x 30'
(466) 5" @ 32" high, 6", 15", 17" x 30'
(413) 6" 18" 2 x 20" x 35'
(464), Heritage 26" 28" 26" 9" x 30'
30.9" x 30'
28.7" x 30'
(295) 3" 10" 13" 14" 15" x 25'
(296) 9" 10" x 20'
(449) recently pruned 27" x 30'
(447) 5" 9" 12" 17" 14" x 30'

Inspection Date (Project No.) 3/16 & 19/18

TREE EVALUATIONS

3/16/18
3/19/18

TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

		TREE NUMBER	31	32	33	34	35	36	37	38	39	40
FACTORS	POINTS											
CROWN DEVELOPMENT												
Well Balanced	5 points		X									
Lacking Natural Symmetry	3 points			X							X	
Lacking a Full Crown	1 point				X	X	X	X	X	X		X
TRUNK CONDITION												
Sound & Solid	5 points		X		X	X	X	X	X	X		X
Section of Bark Missing:												
Less Than 1/4 Around	4 points											
1/4 to 1/2 Around	3 points											
1/2 or More Around	2 points											
Stump with New Basal Growth	1 point											
Extensive Decay or Hollow Trunk	0 points			X							X	
BRANCH STRUCTURE												
No Defects	5 points											
Dieback (Limited)	4 points		X	X			X	X	X		X	X
Few Structurally Dead or Broken Branches	3 points					X						
Many Structurally Dead or Broken Branches	1 point				X							
TWIG GROWTH												
Typical for Species & Age	5 points		X	X	X	X		X	X		X	X
Less Than 1/2 Normal	3 points											
Growth Greatly Reduced	1 point											
FOLIAGE												
Normal Size & Color	5 points		X	X	X	X	X	X	X	X	X	X
Minor Deficiency Symptoms	3 points											
Major Deficiency Symptoms	1 point											
INSECTS & DISEASES												
No Insects or Diseases Apparent	5 points							X	X			X
Few Controllable Insects/Diseases Apparent	3 points		X	X	X	X					X	
Severe Infestation	1 point											
ROOTS												
No Root Problems Apparent	5 points		X	X	X	X	X	X	X		X	X
Minor Root Problems	3 points											
Severe Root Problems	1 point											
TOTAL POINTS			32	25	25	27	30	30	30	29	25	30
Aesthetic Grade			A	B	C	C	REMOVED PER CITY PERMIT	C	REMOVED PER CITY PERMIT	REMOVED PER CITY PERMIT	C	C

REMOVED PER CITY PERMIT

ADDITIONAL COMMENTS

(1418) 15" 17" x 30'
(298) 10" 15" x 25'
(302) 23" x 30'
16" x 30'
Northerly Lean
15" x 25'
(306) Northerly Lean
10" x 20'
(307) Westerly Lean
11" x 20'
(311) 10" 12" x 25'
(312) 16" x 30'
(309) Easterly Lean
11" x 25'

TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

		TREE NUMBER	41	42	43	44	45	46	47	48	49	50
FACTORS	POINTS											
CROWN DEVELOPMENT												
Well Balanced	5 points							X				
Lacking Natural Symmetry	3 points		X	X	X	X	X		X	X	X	X
Lacking a Full Crown	1 point	X										
TRUNK CONDITION												
Sound & Solid	5 points	X	X	X	X	X			X	X	X	
Section of Bark Missing:												
Less Than 1/4 Around	4 points											
1/4 to 1/2 Around	3 points											
1/2 or More Around	2 points											
Stump with New Basal Growth	1 point											
Extensive Decay or Hollow Trunk	0 points							X				X
BRANCH STRUCTURE												
No Defects	5 points											
Dieback (Limited)	4 points		X	X		X			X	X		
Few Structurally Dead or Broken Branches	3 points	X			X			X			X	X
Many Structurally Dead or Broken Branches	1 point											
TWIG GROWTH												
Typical for Species & Age	5 points	X	X	X	X	X	X	X	X	X	X	X
Less Than 1/2 Normal	3 points											
Growth Greatly Reduced	1 point											
FOLIAGE												
Normal Size & Color	5 points	X	X	X	X	X	X	X	X	X	X	X
Minor Deficiency Symptoms	3 points											
Major Deficiency Symptoms	1 point											
INSECTS & DISEASES												
No Insects or Diseases Apparent	5 points											
Few Controllable Insects/Diseases Apparent	3 points	X	X	X	X	X	X	X	X	X	X	X
Severe Infestation	1 point											
ROOTS												
No Root Problems Apparent	5 points	X	X	X	X	X	X	X	X	X	X	
Minor Root Problems	3 points											X
Severe Root Problems	1 point											
TOTAL POINTS		27	30	30	29	30	26	30	30	29	22	
Aesthetic Grade		C	B	B	B	B	B	B	B	C	C	

ADDITIONAL COMMENTS

(316) 19" x 40'	(313) 21" x 40'	(316) 16" x 35'	(318) 13" x 30'	(323) 19" x 30'	(320) 27" x 40'	(321) 18" x 35'	(322) 14" x 30'	15" x 30'	(324) 10" 12" x 25'
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TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

		TREE NUMBER	51	52	53	54	55	56	57	58	59	60
FACTORS	POINTS											
CROWN DEVELOPMENT												
Well Balanced	5 points		X	X			X	X	X	X	X	X
Lacking Natural Symmetry	3 points				X	X						
Lacking a Full Crown	1 point											
TRUNK CONDITION												
Sound & Solid	5 points			X	X		X	X			X	X
Section of Bark Missing:												
Less Than 1/4 Around	4 points											
1/4 to 1/2 Around	3 points											
1/2 or More Around	2 points											
Stump with New Basal Growth	1 point											
Extensive Decay or Hollow Trunk	0 points		X			X			X	X		
BRANCH STRUCTURE												
No Defects	5 points											
Dieback (Limited)	4 points		X	X	X	X	X	X	X	X	X	X
Few Structurally Dead or Broken Branches	3 points											
Many Structurally Dead or Broken Branches	1 point											
TWIG GROWTH												
Typical for Species & Age	5 points		X	X	X	X	X	X	X	X	X	X
Less Than 1/2 Normal	3 points											
Growth Greatly Reduced	1 point											
FOLIAGE												
Normal Size & Color	5 points		X	X	X	X	X	X	X	X	X	X
Minor Deficiency Symptoms	3 points											
Major Deficiency Symptoms	1 point											
INSECTS & DISEASES												
No Insects or Diseases Apparent	5 points											
Few Controllable Insects/Diseases Apparent	3 points			X	X		X	X			X	X
Severe Infestation	1 point		X			X			X	X		
ROOTS												
No Root Problems Apparent	5 points			X	X		X	X	X	X	X	X
Minor Root Problems	3 points											
Severe Root Problems	1 point		X			X						
TOTAL POINTS			21	32	30	19	32	32	25	25	32	32
Aesthetic Grade			A	A	B	B	A	A	A	A	A	A

ADDITIONAL COMMENTS

(325) Heritage 34.6" x 40'	(327) Heritage 37.05" x 40'	(328) Beehive 18" x 20'	(329) 30.1" x 30'	(330) 31.83" x 35'	(331) 33.15" x 30'	(332) 34.2" x 30'	(438) 30.25" x 30'	(367) 29.9" x 30'	(333) 35.1" x 35'
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TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

		TREE NUMBER	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FACTORS		POINTS										
CROWN DEVELOPMENT												
Well Balanced	5 points	X	X				X			X	X	
Lacking Natural Symmetry	3 points			X				X	X			X
Lacking a Full Crown	1 point				X							
TRUNK CONDITION												
Sound & Solid	5 points			X					X	X	X	
Section of Bark Missing:												
Less Than 1/4 Around	4 points	X										
1/4 to 1/2 Around	3 points											
1/2 or More Around	2 points											
Stump with New Basal Growth	1 point											
Extensive Decay or Hollow Trunk	0 points		X		X	X	X					X
BRANCH STRUCTURE												
No Defects	5 points											
Dieback (Limited)	4 points	X		X		X	X	X	X	X	X	
Few Structurally Dead or Broken Branches	3 points		X									X
Many Structurally Dead or Broken Branches	1 point				X							
TWIG GROWTH												
Typical for Species & Age	5 points	X	X	X		X	X	X	X	X	X	X
Less Than 1/2 Normal	3 points				X							
Growth Greatly Reduced	1 point											
FOLIAGE												
Normal Size & Color	5 points	X	X	X		X	X	X	X	X	X	X
Minor Deficiency Symptoms	3 points				X							
Major Deficiency Symptoms	1 point											
INSECTS & DISEASES												
No Insects or Diseases Apparent	5 points											
Few Controllable Insects/Diseases Apparent	3 points			X					X	X	X	
Severe Infestation	1 point	X	X		X	X	X					X
ROOTS												
No Root Problems Apparent	5 points	X	X	X	X	X	X	X	X	X	X	X
Minor Root Problems	3 points											
Severe Root Problems	1 point											
TOTAL POINTS		29	24	30	14	25	23	30	32	32	22	
Aesthetic Grade		A	B	C	D	A	C	C	B	B	D	

ADDITIONAL COMMENTS

(338) Termites
46.55' x 40'; Heritage
(368); Heritage
40.9' x 35'
(365)
5 1/2' (6" x 20)
(364)
6" x 20'
(363); Heritage
37.0' x 40'
(362)
23.7' x 25'
83" 9" x 25'
Crowded by #69
2 1/2' x 15'
(361)
15" x 25'
3 1/2' 8" 11" x 25'

TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

		TREE NUMBER	71	72	73	74	75	76	77	78	79	80
FACTORS	POINTS											
CROWN DEVELOPMENT												
Well Balanced	5 points								X	X	X	X
Lacking Natural Symmetry	3 points		X	X	X	X	X	X		X		
Lacking a Full Crown	1 point											
TRUNK CONDITION												
Sound & Solid	5 points		X	X	X		X	X	X	X	X	X
Section of Bark Missing:												
Less Than 1/4 Around	4 points											
1/4 to 1/2 Around	3 points											
1/2 or More Around	2 points											
Stump with New Basal Growth	1 point											
Extensive Decay or Hollow Trunk	0 points											
BRANCH STRUCTURE												
No Defects	5 points											
Dieback (Limited)	4 points		X		X				X	X	X	X
Few Structurally Dead or Broken Branches	3 points			X			X					
Many Structurally Dead or Broken Branches	1 point											
TWIG GROWTH												
Typical for Species & Age	5 points		X	X	X		X	X	X	X	X	X
Less Than 1/2 Normal	3 points											
Growth Greatly Reduced	1 point											
FOLIAGE												
Normal Size & Color	5 points		X	X	X		X	X	X	X	X	X
Minor Deficiency Symptoms	3 points											
Major Deficiency Symptoms	1 point											
INSECTS & DISEASES												
No Insects or Diseases Apparent	5 points											
Few Controllable Insects/Diseases Apparent	3 points		X	X	X				X	X		X
Severe Infestation	1 point											
ROOTS												
No Root Problems Apparent	5 points		X	X	X		X	X	X	X	X	X
Minor Root Problems	3 points											
Severe Root Problems	1 point											
TOTAL POINTS			30	29	30				32	29		32
Aesthetic Grade			B	B	B				A	C		B

REMOVED PER CITY PERMIT (HALF OF TREE)
 REMOVED PER CITY PERMIT
 REMOVED PER CITY PERMIT
 REMOVED PER CITY PERMIT

ADDITIONAL COMMENTS

(340) wire in trunk
 21.5" x 30'
 (341)
 28.7" x 30'
 (342)
 23.05" x 30'
 (343)
 10 1/2" x 18"
 (344)
 18" x 30'
 (345)
 24.7" x 30'
 (346) Lg. Beehive
 24" x 26" x 40" (44" 62" high)
 (348)
 19" x 16" x 30'
 3 1/2" x 13'
 (357)
 27.8" x 30'

TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

		TREE NUMBER	81	82	83	84	85	86	87	88	89	90
FACTORS	POINTS											
CROWN DEVELOPMENT												
Well Balanced	5 points		X						X	X		X
Lacking Natural Symmetry	3 points		X		X	X	X	X			X	
Lacking a Full Crown	1 point											
TRUNK CONDITION												
Sound & Solid	5 points		X		X	X			X			
Section of Bark Missing:												
Less Than 1/4 Around	4 points											
1/4 to 1/2 Around	3 points											
1/2 or More Around	2 points											
Stump with New Basal Growth	1 point											
Extensive Decay or Hollow Trunk	0 points			X			X	X		X	X	X
BRANCH STRUCTURE												
No Defects	5 points											
Dieback (Limited)	4 points		X	X	X	X		X	X	X		
Few Structurally Dead or Broken Branches	3 points						X					X
Many Structurally Dead or Broken Branches	1 point										X	
TWIG GROWTH												
Typical for Species & Age	5 points		X	X	X	X	X	X	X	X		X
Less Than 1/2 Normal	3 points										X	
Growth Greatly Reduced	1 point											
FOLIAGE												
Normal Size & Color	5 points		X	X	X	X	X	X	X	X	X	X
Minor Deficiency Symptoms	3 points											
Major Deficiency Symptoms	1 point											
INSECTS & DISEASES												
No Insects or Diseases Apparent	5 points		X			X						
Few Controllable Insects/Diseases Apparent	3 points				X				X	X		
Severe Infestation	1 point			X			X	X			X	X
ROOTS												
No Root Problems Apparent	5 points		X	X	X	X	X	X	X	X	X	X
Minor Root Problems	3 points											
Severe Root Problems	1 point											
TOTAL POINTS			32	25	30	32	22	23	22	27	18	24
Aesthetic Grade			B	A	B	B	C	C	B	A	C	A

ADDITIONAL COMMENTS

crowded by #82
3" x 15'

(352), Heritage
2.6" 32" x 35'

(354) Westley lean
16" x 25'

crowded by #83
4 1/2" x 13'

(355); Woodpecker damage
3 1/2" 5' 29" x 30'

6" 5" x 15'

(356)
13", 14", 16" x 25'

(357)
31.6" x 30'

(359)
22", 23" x 30'

(358)
26.8" x 30'

TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

		TREE NUMBER	91	92	93	94	95	96	97	98	99	100
FACTORS	POINTS											
CROWN DEVELOPMENT												
Well Balanced	5 points		X	X	X		X	X	X			
Lacking Natural Symmetry	3 points									X	X	X
Lacking a Full Crown	1 point					X						
TRUNK CONDITION												
Sound & Solid	5 points		X	X					X		X	
Section of Bark Missing:												
Less Than 1/4 Around	4 points											
1/4 to 1/2 Around	3 points											
1/2 or More Around	2 points											
Stump with New Basal Growth	1 point											
Extensive Decay or Hollow Trunk	0 points				X	X	X	X		X		X
BRANCH STRUCTURE												
No Defects	5 points											
Dieback (Limited)	4 points		X	X	X		X	X	X	X	X	
Few Structurally Dead or Broken Branches	3 points					X						X
Many Structurally Dead or Broken Branches	1 point											
TWIG GROWTH												
Typical for Species & Age	5 points		X	X			X	X	X	X		
Less Than 1/2 Normal	3 points				X	X					X	X
Growth Greatly Reduced	1 point											
FOLIAGE												
Normal Size & Color	5 points		X	X	X							
Minor Deficiency Symptoms	3 points					X	X	X	X	X	X	X
Major Deficiency Symptoms	1 point											
INSECTS & DISEASES												
No Insects or Diseases Apparent	5 points											
Few Controllable Insects/Diseases Apparent	3 points		X	X			X	X	X	X	X	X
Severe Infestation	1 point				X		X	X				X
ROOTS												
No Root Problems Apparent	5 points		X	X			X	X			X	X
Minor Root Problems	3 points											
Severe Root Problems	1 point				X		X			X		
TOTAL POINTS			32	32	19		19	23	30	19	26	18
Aesthetic Grade			A	A	A		A	B	A	C	C	C

REMOVED IN 2020

ADDITIONAL COMMENTS

(378) 28.2" x 30'
 (379) Canopy in wires 25" @ 36" high x 25'
 (380) 34.3" x 30'
 19" x 25"
 (384) Heritage 44.2" x 30'
 (385) 43.8" @ 1/2" high 30.5" @ 32" high x 30'
 (381) Heritage 35.7" @ 42" high x 30'
 (382) 16" @ 18" x 30'
 (377) 2 x 13" x 25'
 (376) 3 1/2" 4" 6" 9" 4" 2 1/2" 3 1/2" 1 1/4" x 25'

TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

		TREE NUMBER	121	122	123	124	125	126	127	128	129	130
FACTORS	POINTS											
CROWN DEVELOPMENT												
Well Balanced	5 points			X				X	X			
Lacking Natural Symmetry	3 points				X	X				X	X	X
Lacking a Full Crown	1 point		X		X							
TRUNK CONDITION												
Sound & Solid	5 points		X									
Section of Bark Missing:												
Less Than 1/4 Around	4 points											
1/4 to 1/2 Around	3 points											
1/2 or More Around	2 points											
Stump with New Basal Growth	1 point											
Extensive Decay or Hollow Trunk	0 points			X		X	X	X	X	X	X	X
BRANCH STRUCTURE												
No Defects	5 points											
Dieback (Limited)	4 points		X	X		X	X		X	X		X
Few Structurally Dead or Broken Branches	3 points							X			X	
Many Structurally Dead or Broken Branches	1 point											
TWIG GROWTH												
Typical for Species & Age	5 points			X		X	X	X	X	X	X	X
Less Than 1/2 Normal	3 points		X									
Growth Greatly Reduced	1 point											
FOLIAGE												
Normal Size & Color	5 points			X		X	X		X			
Minor Deficiency Symptoms	3 points		X					X		X	X	X
Major Deficiency Symptoms	1 point				X							
INSECTS & DISEASES												
No Insects or Diseases Apparent	5 points											
Few Controllable Insects/Diseases Apparent	3 points		X	X		X						
Severe Infestation	1 point						X	X	X	X	X	X
ROOTS												
No Root Problems Apparent	5 points		X	X		X	X	X	X	X	X	X
Minor Root Problems	3 points											
Severe Root Problems	1 point											
TOTAL POINTS		24	29	10	25	23	22	25	21	20	21	
Aesthetic Grade		C	B	F	B	C	B	B	B	C	C	

REMOVED IN 2020 (PER CITY PERMIT)

ADDITIONAL COMMENTS	121	122	123	124	125	126	127	128	129	130
	8" 9" x 30'	12" 24" x 30'	(437) 3 1/4" 19" x 25" (432) 18" 14" 20" 3 1/2" 25" x 30'	2x10" 2x7" 8" 7" x 30' (35.8" @ 4 1/2" high) 22" 24" x 30'	2 1/2" x 12" x 30'	(428) 5 1/2" 12" 9" 25" 25 1/2" x 30'	(427) 18" 15" 17" 4" x 35'			22" 18" x 30'

TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

		TREE NUMBER	141	142	143	144	145	146	147	148	149	150
FACTORS	POINTS											
CROWN DEVELOPMENT												
Well Balanced	5 points				X			X	X			
Lacking Natural Symmetry	3 points	X	X	X		X	X				X	X
Lacking a Full Crown	1 point											
TRUNK CONDITION												
Sound & Solid	5 points	X	X	X	X	X	X	X	X			
Section of Bark Missing:												
Less Than 1/4 Around	4 points											
1/4 to 1/2 Around	3 points											
1/2 or More Around	2 points											
Stump with New Basal Growth	1 point											
Extensive Decay or Hollow Trunk	0 points										X	X
BRANCH STRUCTURE												
No Defects	5 points											
Dieback (Limited)	4 points	X	X	X	X	X	X	X	X	X	X	X
Few Structurally Dead or Broken Branches	3 points											
Many Structurally Dead or Broken Branches	1 point											
TWIG GROWTH												
Typical for Species & Age	5 points	X	X	X	X	X	X	X	X	X	X	X
Less Than 1/2 Normal	3 points											
Growth Greatly Reduced	1 point											
FOLIAGE												
Normal Size & Color	5 points	X	X	X	X	X	X	X	X	X	X	X
Minor Deficiency Symptoms	3 points											
Major Deficiency Symptoms	1 point											
INSECTS & DISEASES												
No Insects or Diseases Apparent	5 points											
Few Controllable Insects/Diseases Apparent	3 points	X	X	X	X	X	X	X	X	X	X	X
Severe Infestation	1 point											
ROOTS												
No Root Problems Apparent	5 points	X	X	X	X	X	X	X	X	X	X	X
Minor Root Problems	3 points											
Severe Root Problems	1 point											
TOTAL POINTS		30	30	30	32	30	30	32	32	25	25	
Aesthetic Grade		B	B	B	A	B	B	B	B	C	C	

ADDITIONAL COMMENTS

(417) Crowned by #142 27" x 30"
(418) Crowned by #141 17" x 25"
16" 18" x 30' (456) 26" x 30'
(455) Crowned by #146 14" 16" x 30' Crowned by #145 20" x 30'
(457) Crowned by #148 15" 19" x 30' (458) Crowned by #147 23" x 30'
(463); Crowned by #150/151 13" 2x12" 15" x 25" (462); Crowned by #149; #151 11" 13" x 20"

TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

		TREE NUMBER	151	152	153	154	155	156	157	158	159	160
FACTORS	POINTS											
CROWN DEVELOPMENT												
Well Balanced	5 points			X					X			
Lacking Natural Symmetry	3 points	X	X		X	X	X			X	X	X
Lacking a Full Crown	1 point											
TRUNK CONDITION												
Sound & Solid	5 points	X	X	X	X	X	X			X		X
Section of Bark Missing:												
Less Than 1/4 Around	4 points											
1/4 to 1/2 Around	3 points											
1/2 or More Around	2 points											
Stump with New Basal Growth	1 point											
Extensive Decay or Hollow Trunk	0 points								X		X	
BRANCH STRUCTURE												
No Defects	5 points											
Dieback (Limited)	4 points	X	X	X	X	X	X			X	X	X
Few Structurally Dead or Broken Branches	3 points								X			
Many Structurally Dead or Broken Branches	1 point											
TWIG GROWTH												
Typical for Species & Age	5 points	X	X	X	X	X	X	X	X	X	X	X
Less Than 1/2 Normal	3 points											
Growth Greatly Reduced	1 point											
FOLIAGE												
Normal Size & Color	5 points			X						X	X	X
Minor Deficiency Symptoms	3 points	X	X		X	X	X	X				
Major Deficiency Symptoms	1 point											
INSECTS & DISEASES												
No Insects or Diseases Apparent	5 points			X								
Few Controllable Insects/Diseases Apparent	3 points	X	X		X	X	X			X		X
Severe Infestation	1 point								X		X	
ROOTS												
No Root Problems Apparent	5 points	X	X	X	X	X	X	X	X	X	X	X
Minor Root Problems	3 points											
Severe Root Problems	1 point											
TOTAL POINTS		30	30	34	30	30	30	22	30	23	30	
Aesthetic Grade		C	B	A	B	B	C	C	B	C	B	

ADDITIONAL COMMENTS

(1461) Crowned by #147 & #150
18" x 2.5'
(454)
12" x 20'

2 1/4" x 13'
(453)
2.2" x 35'
(452)
19" x 20'

(451)
12" 16" 18" x 30'
(460) Heritage
43.1" x 25'
(459) Crowned by #157
23" x 25'

(415)
8" 16" 28" x 25'
(413)
15" 17" x 30'

TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

		TREE NUMBER	171	172	-	OP1	OP2	OP3	-	-	-	-
FACTORS	POINTS											
CROWN DEVELOPMENT												
Well Balanced	5 points					X	X	X				
Lacking Natural Symmetry	3 points	X	X									
Lacking a Full Crown	1 point											
TRUNK CONDITION												
Sound & Solid	5 points					X		X				
Section of Bark Missing:												
Less Than 1/4 Around	4 points											
1/4 to 1/2 Around	3 points											
1/2 or More Around	2 points											
Stump with New Basal Growth	1 point											
Extensive Decay or Hollow Trunk	0 points	X					X					
BRANCH STRUCTURE												
No Defects	5 points											
Dieback (Limited)	4 points	X				X	X	X				
Few Structurally Dead or Broken Branches	3 points											
Many Structurally Dead or Broken Branches	1 point											
TWIG GROWTH												
Typical for Species & Age	5 points	X				X	X	X				
Less Than 1/2 Normal	3 points											
Growth Greatly Reduced	1 point											
FOLIAGE												
Normal Size & Color	5 points	X	X			X	X	X				
Minor Deficiency Symptoms	3 points											
Major Deficiency Symptoms	1 point											
INSECTS & DISEASES												
No Insects or Diseases Apparent	5 points											
Few Controllable Insects/Diseases Apparent	3 points					X		X				
Severe Infestation	1 point	X					X					
ROOTS												
No Root Problems Apparent	5 points	X				X	X	X				
Minor Root Problems	3 points											
Severe Root Problems	1 point											
TOTAL POINTS		23				32	25	32				
Aesthetic Grade		B				A	A	A				

REMOVED PER CITY PERMIT (FALLEN HALF)

ADDITIONAL COMMENTS												
			(334) Graded by #172 32.5" x 30'									
			(335) Graded by #171 20.65", 37.7" x 35'									
						28" x 30'						
						11", 17", 18", 36" x 30'						
						24" x 30'						

TREE EVALUATIONS

[on & off property Oaks]

The inventory Health & Aesthetic Ratings of the trees are explained in the following:

The Health of the trees was visually determined from the following macroscopic inspection of signs and symptoms of disease.

- A. Excellent (31 to 35 points) - This tree is a healthy & vigorous tree characteristic of its species and free of any visible signs of disease or pest infestation.
- B. Good (26 to 30 points) - This tree is a healthy & vigorous tree. However, there are minor visible signs of disease and pest infestation.
- C. Fair (16 to 25 points) - This tree is healthy in overall appearance, but there is a normal amount of disease and/or pest infestation.
- D. Poor* (11 to 15 points) - This tree is characterized by exhibiting a greater degree of disease and/or pest infestation or structural instability than normal and appears to be in a state of decline.
- E. Very Poor* (6 to 10 points) - This tree exhibits extensive signs of dieback.
- F. Dead* (0 points) - This tree exhibits no signs of life at the time of field evaluation.

* A tree rating of "D" and lower is in low vigor and naturally a meaningful level of recovery is doubtful. Removal should be considered if it is within the proposed development.

The Aesthetic quality of the trees was visually determined from the following overall inspection of appearance.

- A. Excellent - This tree is visually symmetrical, having the ideal form and appearance for the species.
- B. Good to Fair - This tree, though non-symmetrical, has an appealing form for the species with very little dieback of foliage or twigs/branches.
- C. Poor - This tree is non-symmetrical for the species with an unappealing form and/or has much dieback of foliage and twigs/branches.
- D. Very Poor - This tree has few, if any, positive characteristics and may detract from the beauty of the landscape.

DRIPLINE MEASUREMENTS @ 8 compass points & canopy heights

Tree No.	North / Canopy Ht.	Northeast / Canopy Ht.	East / Canopy Ht.	Southeast / Canopy Ht.	South / Canopy Ht.	Southwest / Canopy Ht.	West / Canopy Ht.	Northwest / Canopy Ht.
1	30/20	25/20	20/8	30/10	30/10	25/15	20/25	20/20
2	10/5	15/10	25/10	30/10	30/10	30/10	25/10	15/10
3	30/20	30/15	25/20	30/20	30/20	30/20	30/20	30/20
4	35/10	40/15	34/10	15/10	20/20	42/15	30/20	25/20
5	20/20	13/25	30/20	38/15	39/10	30/25	27/20	30/20
6	25/15	25/20	30/15	30/10	20/10	30/10	25/20	30/15
7	20/20	20/10	24/10	25/10	24/15	20/10	14/20	20/20
8	0	0	0	30/10	30/10	30/10	25/20	0
9	30/15	30/10	25/10	25/8	20/20	10/20	30/15	30/20
10	30/15	28/15	25/8	25/8	30/10	30/6	5/15	20/20
11	30/10	15/15	10/30	30/15	30/15	30/10	30/10	27/25
12	25/10	25/4	20/7	0	0	0	20/4	20/4
13	20/6	25/7	20/10	20/6	30/6	25/8	25/8	20/10
14	30/3	36/4	30/5	30/4	30/8	30/20	39/3	39/4
15	20/6	30/6	20/8	20/8	0	0	10/8	20/10
16	14/6	15/10	16/4	17/5	16/4	16/7	13/6	16/7
17	30/20	25/20	30/4	30/20	30/20	25/7	24/15	30/15
18	12/15	22/8	26/20	31/12	16/15	5/10	5/15	7/15
19	10/20	12/20	17/20	32/8	20/10	18/5	12/7	12/20
20 PRESERVE	30/20	30/30	30/20	30/15	30/20	30/20	25/10	25/20
21	17/10	28/7	28/7	25/20	25/20	27/20	28/20	25/10
22	20/5	20/5	25/6	30/5	30/4	30/6	35/15	20/15
23	25/5	25/10	28/15	32/10	33/4	27/6	25/6	30/20
24	42/15	43/5	52/5	50/5	45/4	50/10	45/15	45/15
25	28/10	27/6	24/10	39/10	31/15	32/7	30/8	28/7

DRIPLINE MEASUREMENTS @ 8 compass points & canopy heights

Tree No.	North / Canopy Ht.	Northeast / Canopy Ht.	East / Canopy Ht.	Southeast / Canopy Ht.	South / Canopy Ht.	Southwest / Canopy Ht.	West / Canopy Ht.	Northwest / Canopy Ht.
26	28'/15'	25'/10'	25'/15'	30'/15'	30'/15'	26'/15'	20'/20'	25'/10'
27	33'/10'	20'/6'	27'/10'	25'/6'	20'/5'	25'/10'	30'/10'	38'/7'
28	0	20'/10'	20'/6'	25'/4'	25'/4'	10'/10'	0	0
29	0	0	0	10'/10'	0	0	0	0
30	17'/20'	30'/4'	28'/5'	30'/20'	33'/15'	25'/10'	35'/5'	35'/20'
31	28'/20'	28'/15'	27'/15'	25'/15'	12'/20'	15'/20'	20'/20'	25'/20'
32	15'/20'	15'/20'	20'/10'	20'/6'	15'/15'	20'/15'	20'/10'	15'/15'
33	26'/25'	25'/25'	26'/25'	10'/20'	5'/5'	20'/20'	10'/20'	25'/20'
34	20'/25'	20'/15'	10'/5'	15'/10'	10'/15'	20'/10'	20'/15'	20'/20'
35	0	28'/20'	26'/20'	3'/6'	1'/6'	1'/6'	0	0
36	0	21'/15'	0	0	0	0	0	0
37	33'/7'	15'/10'	5'/10'	0	0	0	10'/10'	15'/10'
38	0	0	0	20'/10'	25'/15'	10'/10'	0	0
39	0	20'/15'	20'/20'	25'/20'	20'/20'	20'/6'	0	0
40	0	0	0	25'/15'	25'/15'	0	0	0
41	20'/25'	0	5'/5'	5'/5'	5'/5'	5'/10'	10'/10'	25'/25'
42	35'/10'	33'/10'	33'/25'	0	0	0	0	30'/20'
43	25'/20'	25'/20'	20'/20'	20'/20'	30'/10'	0	0	0
44	0	0	0	20'/10'	25'/5'	20'/10'	0	0
45	25'/25'	25'/25'	25'/25'	25'/25'	20'/25'	25'/25'	25'/25'	25'/25'
46	20'/25'	20'/25'	20'/20'	25'/20'	25'/10'	25'/6'	25'/25'	20'/25'
47	30'/25'	35'/30'	15'/15'	0	0	0	15'/15'	25'/25'
48	8'/5'	8'/5'	5'/6'	5'/5'	5'/5'	5'/5'	5'/5'	8'/5'
49	25'/25'	0	0	0	0	0	20'/20'	25'/25'
50	15'/20'	10'/10'	10'/10'	10'/10'	20'/20'	20'/20'	15'/6'	20'/20'

DRIPLINE MEASUREMENTS @ 8 compass points & canopy heights

Tree No.	North / Canopy Ht.	Northeast / Canopy Ht.	East / Canopy Ht.	Southeast / Canopy Ht.	South / Canopy Ht.	Southwest / Canopy Ht.	West / Canopy Ht.	Northwest / Canopy Ht.
51	30/15	25/25	20/25	25/15	30/10	20/10	20/20	30/10
52	30/20	30/20	40/20	50/15	40/1	40/2	30/5	35/10
53 BEEHIVE	15/10	10/15	10/15	15/15	20/15	10/10	10/10	10/10
54	40/20	30/20	20/20	20/25	10/25	20/25	20/20	25/20
55	30/10	40/6	40/6	30/10	45/10	30/10	30/10	30/10
56	20/5	30/6	20/6	30/6	32/3	32/6	32/6	25/6
57	25/10	30/8	20/6	30/5	15/5	30/5	20/4	20/10
58	34/15	30/15	20/6	30/6	25/6	35/6	20/10	30/15
59	30/6	30/6	30/6	32/6	35/6	35/6	25/6	30/6
60	30/6	25/6	22/6	25/6	25/6	20/6	30/6	20/6
61	30/20	20/20	30/20	40/6	40/4	40/10	20/20	30/10
62	40/10	40/10	33/10	40/4	40/7	40/5	25/15	40/15
63	5/5	2/10	5/5	5/5	10/6	20/8	15/10	10/8
64	20/15	0	0	0	5/5	2/2	5/10	15/15
65	35/10	40/10	35/20	30/20	45/20	20/20	30/25	20/25
66	9/15	20/15	7/15	40/6	40/6	35/6	17/10	15/20
67	20/15	15/15	0	0	0	20/15	22/15	25/15
68	1/5	3/6	5/10	5/7	3/10	5/7	5/10	3/10
69	20/10	20/10	20/10	20/10	15/10	16/10	20/10	20/10
70	15/10	15/10	15/15	15/15	20/6	10/20	5/10	20/15
71	25/20	25/20	25/20	20/20	25/20	5/10	10/10	15/10
72	15/20	20/20	20/20	20/20	20/20	20/20	20/20	15/20
73	30/15	30/15	10/10	10/10	5/10	10/10	20/15	25/20
74	0	0	15/15	20/20	20/15	25/20	20/25	0
75	5/25	0	20/25	20/25	5/25	0	0	0

DRIPLINE MEASUREMENTS @ 8 compass points & canopy heights

Tree No.	North / Canopy Ht.	Northeast / Canopy Ht.	East / Canopy Ht.	Southeast / Canopy Ht.	South / Canopy Ht.	Southwest / Canopy Ht.	West / Canopy Ht.	Northwest / Canopy Ht.
76	22'/20'	0	0	0	0	0	23'/20'	30'/20'
BEEHIVE 77	30'/20'	25'/8'	25'/15'	25'/10'	20'/20'	25'/20'	22'/25'	30'/20'
78	5'/15'	10'/20'	20'/10'	25'/10'	20'/20'	20'/20'	15'/10'	5'/15'
79	4'/8'	3'/7'	3'/6'	3'/3'	5'/4'	10'/4'	3'/4'	3'/4'
80	10'/15'	20'/15'	30'/15'	30'/15'	30'/15'	30'/15'	30'/15'	20'/15'
82	40'/10'	35'/20'	30'/25'	35'/15'	35'/10'	30'/15'	20'/20'	25'/10'
81	3'/8'	4'/5'	4'/8'	6'/8'	8'/8'	5'/8'	0	0
84	15'/10'	10'/8'	10'/8'	0	0	10'/8'	10'/8'	10'/10'
83	0	0	0	20'/10'	20'/10'	20'/10'	15'/10'	0
85	20'/25'	20'/25'	27'/25'	25'/15'	20'/5'	30'/20'	30'/10'	30'/10'
86	10'/9'	7'/8'	6'/8'	5'/8'	12'/6'	13'/6'	14'/5'	10'/10'
87	20'/10'	25'/7'	20'/10'	30'/6'	25'/7'	20'/8'	20'/10'	25'/10'
88	23'/8'	30'/8'	25'/15'	20'/15'	20'/15'	23'/10'	25'/8'	24'/6'
89	28'/15'	30'/10'	30'/10'	20'/10'	17'/15'	20'/15'	25'/15'	30'/8'
90	40'/10'	35'/10'	30'/10'	30'/15'	30'/15'	30'/15'	37'/10'	38'/10'
91	27'/10'	30'/10'	30'/10'	28'/10'	25'/10'	25'/10'	20'/15'	25'/15'
92	18'/15'	20'/15'	26'/10'	29'/10'	28'/10'	—	—	—
93	30'/15'	35'/15'	30'/10'	35'/7'	30'/10'	25'/15'	30'/10'	30'/10'
94	0	0	0	10'/15'	20'/15'	29'/10'	20'/10'	0
95	23'/10'	30'/10'	30'/10'	25'/6'	25'/10'	25'/15'	25'/10'	25'/20'
96	30'/8'	30'/6'	22'/10'	25'/10'	25'/15'	25'/15'	22'/10'	25'/6'
97	27'/15'	30'/15'	30'/15'	25'/16'	23'/8'	25'/15'	30'/15'	30'/15'
98	20'/10'	25'/15'	25'/15'	20'/15'	15'/15'	20'/10'	9'/10'	20'/10'
99	25'/15'	20'/10'	20'/10'	23'/10'	22'/10'	20'/10'	21'/15'	20'/15'
100	30'/8'	25'/8'	20'/4'	15'/20'	22'/10'	27'/15'	22'/15'	30'/5'

DRIPLINE MEASUREMENTS @ 8 compass points & canopy heights

Tree No.	North / Canopy Ht.	Northeast / Canopy Ht.	East / Canopy Ht.	Southeast / Canopy Ht.	South / Canopy Ht.	Southwest / Canopy Ht.	West / Canopy Ht.	Northwest / Canopy Ht.
101	30'/10'	35'/10'	25'/10'	30'/10'	30'/10'	20'/10'	20'/20'	25'/15'
102	35'/15'	25'/10'	25'/10'	30'/10'	25'/10'	30'/10'	30'/10'	31'/8'
103	0	20'/20'	20'/15'	20'/15'	12'/3'	0	1'/5'	2'/10'
104	20'/10'	20'/8'	15'/20'	20'/20'	20'/15'	30'/3'	25'/15'	20'/10'
105	33'/10'	30'/15'	25'/8'	30'/8'	33'/10'	30'/15'	26'/20'	25'/15'
106	27'/15'	20'/15'	10'/20'	15'/6'	30'/15'	30'/6'	35'/10'	30'/10'
107	36'/20'	32'/10'	31'/15'	30'/15'	28'/20'	30'/15'	10'/20'	30'/20'
108	40'/8'	33'/10'	27'/15'	40'/8'	35'/8'	35'/7'	30'/10'	35'/8'
109	22'/8'	20'/10'	0	9'/10'	9'/10'	5'/10'	20'/10'	25'/7'
110	35'/15'	47'/10'	32'/10'	20'/15'	35'/20'	25'/15'	25'/15'	30'/15'
111	6'/5'	5'/16'	3'/10'	5'/7'	6'/8'	7'/10'	6'/10'	8'/10'
112	25'/20'	20'/20'	20'/8'	20'/10'	20'/15'	20'/15'	25'/20'	25'/20'
113	36'/10'	40'/15'	40'/6'	40'/5'	40'/6'	40'/6'	40'/10'	40'/7'
114	30'/6'	34'/10'	40'/4'	30'/6'	30'/6'	35'/7'	27'/20'	29'/10'
115	35'/10'	36'/10'	25'/15'	25'/10'	25'/13'	27'/15'	26'/8'	35'/10'
116	20'/10'	20'/15'	17'/6'	15'/6'	18'/8'	20'/10'	20'/10'	20'/10'
117	24'/8'	30'/8'	25'/6'	20'/6'	20'/9'	30'/8'	35'/8'	30'/8'
118	33'/10'	35'/10'	33'/8'	20'/20'	35'/15'	30'/10'	5'/20'	30'/8'
119	0	0	0	0	0	20'/20'	20'/20'	25'/20'
120	5'/8'	5'/8'	5'/8'	5'/8'	5'/8'	5'/8'	5'/8'	5'/8'
121	0	0	0	0	15'/15'	20'/15'	22'/15'	0
122	10'/15'	20'/10'	30'/5'	25'/6'	25'/6'	25'/10'	23'/20'	25'/12'
125	20'/6'	25'/16'	30'/6'	25'/6'	20'/15'	25'/6'	25'/6'	20'/6'
124	30'/10'	30'/15'	30'/10'	26'/15'	25'/20'	30'/15'	25'/10'	25'/15'
123	20'/10'	20'/10'	10'/6'	15'/6'	20'/6'	15'/7'	15'/6'	15'/6'

DRIPLINE MEASUREMENTS @ 8 compass points & canopy heights

Tree No.	North / Canopy Ht.	Northeast / Canopy Ht.	East / Canopy Ht.	Southeast / Canopy Ht.	South / Canopy Ht.	Southwest / Canopy Ht.	West / Canopy Ht.	Northwest / Canopy Ht.
126	25'/20'	20'/15'	16'/10'	20'/40'	30'/10'	25'/15'	25'/20'	25'/6'
127	10'/20'	15'/6'	20'/15'	20'/10'	17'/10'	25'/10'	20'/10'	20'/15'
128	20'/20'	30'/10'	30'/20'	35'/15'	30'/15'	35'/10'	30'/10'	30'/15'
129	35'/20'	30'/15'	30'/20'	30'/20'	25'/20'	25'/20'	25'/25'	30'/20'
130	40'/10'	30'/20'	20'/20'	30'/15'	32'/10'	30'/15'	33'/15'	35'/10'
131	-	-	-	-	-	-	-	-
132	33'/10'	31'/8'	Ø	Ø	Ø	30'/15'	28'/25'	30'/15'
133	20'/20'	30'/20'	25'/20'	30'/20'	35'/10'	35'/15'	25'/15'	20'/20'
134	26'/15'	20'/20'	17'/25'	20'/20'	25'/20'	25'/20'	20'/20'	25'/20'
135	25'/20'	35'/20'	48'/25'	50'/15'	45'/20'	45'/20'	45'/20'	40'/20'
136	25'/20'	25'/20'	25'/20'	25'/15'	25'/10'	25'/10'	30'/8'	25'/15'
137	25'/10'	28'/10'	30'/3'	30'/8'	30'/3'	30'/5'	30'/4'	30'/6'
138	3'/10'	20'/15'	20'/10'	20'/10'	21'/10'	22'/10'	25'/10'	22'/20'
139	15'/20'	25'/10'	23'/10'	27'/6'	24'/7'	25'/6'	10'/20'	15'/20'
140	15'/20'	35'/15'	40'/20'	40'/5'	35'/15'	35'/5'	26'/10'	27'/15'
141	32'/6'	35'/10'	20'/7'	5'/10'	2'/15'	5'/10'	20'/20'	30'/10'
142	Ø	15'/20'	15'/4'	15'/5'	20'/15'	30'/20'	20'/20'	25'/20'
143	25'/8'	25'/10'	30'/20'	25'/10'	25'/15'	25'/15'	30'/10'	30'/10'
144	25'/20'	20'/20'	30'/15'	25'/20'	20'/10'	25'/20'	30'/20'	25'/20'
145	30'/10'	25'/10'	20'/10'	Ø	Ø	30'/20'	35'/20'	30'/20'
146	10'/20'	25'/10'	20'/10'	20'/10'	30'/10'	25'/10'	20'/10'	10'/10'
147	20'/20'	26'/10'	20'/10'	15'/15'	10'/20'	30'/10'	30'/10'	30'/10'
148	10'/20'	15'/10'	20'/10'	20'/10'	30'/10'	30'/10'	30'/10'	20'/15'
149	25'/10'	20'/10'	15'/20'	10'/10'	22'/10'	30'/10'	30'/5'	30'/5'
150	Ø	25'/25'	30'/4'	Ø	Ø	Ø	Ø	30'/10'

DRIPLINE MEASUREMENTS @ 8 compass points & canopy heights

Tree No.	North / Canopy Ht.	Northeast / Canopy Ht.	East / Canopy Ht.	Southeast / Canopy Ht.	South / Canopy Ht.	Southwest / Canopy Ht.	West / Canopy Ht.	Northwest / Canopy Ht.
151	Ø	10/20	25/20	24/10	27/8	25/3	20/15	Ø
152	26/4	20/15	5/10	Ø	Ø	20/10	20/10	24/4
153	3/5	10/10	10/10	10/10	5/5	5/3	3/5	5/5
154	25/20	25/20	30/20	20/20	25/20	15/20	20/20	25/20
155	Ø	20/15	30/6	25/6	10/10	3/8	Ø	Ø
156	20/20	5/20	5/25	30/5	30/5	25/3	25/15	20/20
157	20/20	20/20	23/20	30/7	25/10	23/10	20/10	20/20
158	23/10	25/20	30/15	35/10	10/6	15/20	24/10	20/10
159	20/15	25/15	30/4	26/6	12/20	20/10	20/8	20/6
160	20/20	20/20	20/15	20/20	30/20	35/10	30/15	20/15
161	20/20	20/10	30/6	30/6	30/6	30/10	24/6	20/20
162	10/20	12/20	22/20	27/20	30/7	20/15	15/15	15/15
163	Ø	5/10	10/10	5/10	5/10	5/10	Ø	Ø
164	1/6	5/10	5/10	10/10	10/7	5/5	5/6	5/5
165	5/10	Ø	Ø	Ø	5/10	15/10	15/10	10/10
166	15/10	25/20	20/20	20/20	20/20	15/15	17/10	15/10
167	15/20	10/20	10/20	10/20	3/8	10/10	10/10	10/10
168	20/15	15/10	Ø	Ø	Ø	Ø	Ø	20/10
169	35/25	20/10	37/25	30/10	27/15	33/3	25/20	38/25
170	10/20	20/15	5/10	5/10	5/10	5/10	20/20	5/10

COMPATIBLE
NATIVE PLANTS
w/in or AROUND
OAK TREE
DRIPLINES

[CNPS]

Native Plants Compatible w/in or around the Oak tree driplines

<u>Scientific Name</u>	<u>Type</u>	<u>Common Name</u>
<i>Abelia grandiflora</i>	s	Glossy Abelia
<i>Acanthus mollis</i>	ph	Bear's Breach
<i>Achillea millefolium</i>	p	Common Yarrow ***
<i>Adenostoma fasciculatum</i>	s	Chamise ***
<i>Aesculus californica</i>	s	California Buckeye ***
<i>Adiantum jordani</i>	f	California Maidenhair Fern
<i>Agave deserti</i>	su	Desert Century Plant
<i>Agrostis diegoensis</i>	pg	San Diego Bent Grass
<i>Allium</i> sp.	b	Wild Onion ***
<i>Aloe</i> spp.	su	Aloe
<i>Alstroemeria ligtu</i> 'hybrids'	b	Peruvian Lily
<i>Amaryllis belladonna</i>	b	Naked Lady Lily
<i>Amelanchier pallida</i>	s	Serviceberry
<i>Amorpha californica</i>	s	False Indigo
<i>Anemone blanda</i>	b	Anemone
<i>Aquilegia</i> spp.	ph	Columine
<i>Arabis</i> spp.	ph	Rock Cress
<i>Arbutus unedo</i>	s	Dwarf Strawberry Tree
<i>Arctostaphylos densiflora</i>	s	Sonoma Manzanita ****
<i>Arctostaphylos hookeri</i>	s	Monterey Manzanita
<i>Arctostaphylos manzanita</i>	s	Manzanita ***
<i>Arctostaphylos pajaroensis</i>	s	Pajaro Manzanita *****
<i>Arctostaphylos rudis</i>	s	Shagbark Manzanita ****
<i>Aristolochia californica</i>	v	Dutchman's Pipe ****
<i>Artemisia californica</i>	s	California Sagebrush
<i>Artemisia tridentata</i>	s	Basin Sagebrush ***
<i>Arum italicum</i>	ph	Italian Arum
<i>Asarum caudatum</i>	ph	Wild Ginger
<i>Asclepias eriocarpa</i>	ph	Indian Milkweed
<i>Asclepias fascicularis</i>	ph	Narrow-Leaved Milkweed
<i>Asparagus officinalis</i>	ph	Asparagus
<i>Aspidistra elatior</i>	ph	Cast Iron Plant
<i>Athyrium felix-femina</i>	f	Western Lady Fern
<i>Babiana stricta</i>	ph	Baboon-Flower
<i>Baccharis pilularis</i> "Twin Peaks"	gc/s	Coyote Bush ***
<i>Baccharis salicifolia</i>	s	Summer Holly
<i>Berberis darwinii</i>	s	Darwin Barberry
<i>Bergenia crassifolia</i>	ph	Winter Blooming Bergenia
<i>Bloomeria crocea</i>	ph	Golden Stars
<i>Brodiaea</i> spp.	b	----- ***
<i>Bromus carinatus</i>	pg	California Brome
<i>Bromus pseudolaevipes</i>	pg	Woodland Brome
<i>Buddleia davidii</i>	s	Butterfly Bush
<i>Buxus microphylla japonica</i>	s	Japanese Boxwood
<i>Calandrina ciliata menziesii</i>	a	Red Maids
<i>Calochortus</i> spp.	b/ph	Mariposa Lily ***
<i>Calycanthus occidentalis</i>	s	Western Spicebush *
<i>Campanula</i> spp	ph	Bellflower
<i>Carpenteria californica</i>	s	Bush Anemone ****

Native Plants Compatible w/in or around the Oak tree driplines

<u>Scientific Name</u>	<u>Type</u>	<u>Common Name</u>
<i>Ceanothus</i> spp.	gc/s	Ceanothus ***
<i>Centaurea cyranus</i>	a	Bachelor's Button
<i>Centranthus rubra</i>	ph	Red Valerian
<i>Ceratostigma plumbaginoides</i>	gc	Dwarf Plumbago
<i>Cercis occidentalis</i>	s	Western Redbud ****
<i>Cercis siliquastrum</i>	s	Judas Tree
<i>Cercocarpus betuloides</i>	s	Mountain Mahogany
<i>Chlorogalum pomeridianum</i>	b	Soap Plant ***
<i>Chrysanthemum balsamita</i>	s	Costmary
<i>Cissus antarctica</i>	v	Kangaroo Ivy
<i>Cistus</i> spp.	s	Rockrose
<i>Clarkia</i> spp.	a	Farewell to Spring ***
<i>Clematis ligusticifolia</i>	s	Virgin's Bower
<i>Colchicum</i> spp.	ph	Autumn Crocus
<i>Collinsia</i> spp.	a	Chinese Houses
<i>Collomia</i> spp.	a	Collomia
<i>Comarostaphylos diversifolia</i>	s	Summer Holly ****
<i>Comus</i> spp.	s	Dogwood
<i>Convolvulus mauritanicus</i>	ph	Ground Morning Glory
<i>Coprosma kirkii</i>	gc	Creeping Coprosma
<i>Cornus stolonifera</i> var. <i>californica</i>	s	Creek Dogwood
<i>Correa</i> spp.	s	Australian Fuchsia
<i>Cotoneaster</i> spp.	gc/s	Cotoneaster
<i>Crocsmia crocosmiiflora</i>	b	Montbretia
<i>Crytomium falcatum</i>	f	Holly Fern
<i>Cyclamen</i> spp.	ph	Cyclamen
<i>Cynoglossum grande</i>	p	Neapolitan Cyclamen
<i>Daphne odorata</i>	s	Fragrant Daphne
<i>Delphinium parryi</i>	ph	Hound's Tongue, Parry's Larkspur
<i>Dendromecon rigida</i>	s	Bush Poppy ***
<i>Deschampsia caespitosa</i>	gc	Tufted Hairgrass
<i>Diplacus hybrids</i>	s	Monkey Flower
<i>Diascia</i> spp.	ph	Twinspur
<i>Dicentra formosa</i>	ph	Western Bleeding Heart
<i>Dodecatheon clevelandtii</i>	ph	Shooting Star
<i>Dryopteris</i> spp.	f	Wood Fern
<i>Dudleya</i> spp.	ph	Live-Forever ***
<i>Elaeagnus pungens</i>	s	Elaeagnus
<i>Elymus condensatus</i> "Canyon Prince"	pg	Canyon Prince Wild Rye
<i>Elymus glaucus</i>	pg	Western Rye Grass
<i>Elymus triticoides</i>	pg	Creeping Wild Rye
<i>Encelia californica</i>	s	Encelia ***
<i>Endymion non-scriptus</i>	ph	Bluebell-of-Scotland
<i>Ephedra</i> sp.	s	Morman Tea ***
<i>Erigeron glaucus</i>	ph	Seaside Daisy
<i>Eriogonum</i> spp.	ph/s	Buckwheat ***
<i>Eriophyllum lanatum</i> var. <i>arachnoideum</i>	ph	Woody Sunflower
<i>Erysimum</i> spp.	ph	Wallflower
<i>Escallonia exoniensis</i> 'Frades'	s	Frades Escallonia

Native Plants Compatible w/in or around the Oak tree driplines

<u>Scientific Name</u>	<u>Type</u>	<u>Common Name</u>
<i>Eschscholzia</i> spp.	a	Poppy ***
<i>Fallugia paradoxa</i>	s	Apache Plume ***
<i>Feijoa sellowiana</i>	s	Pineapple Guava
<i>Festuca</i> spp.	pg	Fescue ****
<i>Forestiera neo-mexicana</i>	s	Desert Olive ***
<i>Forsythia x intermedia</i>	s	Forsythia
<i>Fragaria californica</i>	ph	California Strawberry
<i>Freesia</i> 'Tecolote' hybrids	b	Freesia
<i>Fremontodendron californicum mexicanum</i>	s	Flannel Bush ***
<i>Galvezia speciosa</i>	s	Island Snapdragon
<i>Garrya</i> spp.	s	Silktassel ****
<i>Gaultheria shallon</i>	s	Lemon Leaf
<i>Gaura lindheimeri</i>	ph	Gaura
<i>Gilia achilleaefolia</i> spp. <i>multicalulis</i>	a	California Gilia
<i>Gnaphalium californicum</i>	ph	California Everlasting
<i>Grevillea rosmarinifolia</i>	s	Rosemary Grevillea
<i>Grindelia robusta</i>	ph	Gum Plant
<i>Hardenbergia violacea</i>	v	Lilac Vine
<i>Helictotrichon sempervirens</i>	pg	Blue Oat Grass
<i>Helleborus foetidus</i>	s	Corsican Hellebore
<i>Hemerocallis</i> hybrids	ph	Day Lily
<i>Heteromeles arbutifolia</i>	s	Toyon, Christmas Berry ***
<i>Heuchera maxima</i>	ph	Island Alum-Root
<i>Holodiscus discolor</i>	s	Cream Bush
<i>Ilex cornuta rotunda</i>	s	Dwarf Chinese Holly
<i>Iris douglasiana</i>	ph	Douglas Iris
<i>Isomeris arborea</i>	s	Bladderpot ***
<i>Ixia</i> spp.	ph	Ixia
<i>Juglans californica</i>	t	Southern California Black Walnut
<i>Juniperus</i> spp.	gc/s	Juniper
<i>Keckeilla cordifolia</i>	s	Honeysuckle Penstemon
<i>Kniphofia uvaria</i>	ph	Red Hot Poker Plant
<i>Koeleria cristata</i>	g	Prairie Junegrass
<i>Lasthenia chrysostoma</i>	a	Gold Fields
<i>Lathyrus laetiflorus</i>	v	Wild Sweet Pea
<i>Layia platyglossa campenstris</i>	a	Tidy Tips
<i>Lepechinia</i> spp.	s	Pitcher Sage
<i>Lilium humboldtii</i>	ph	Humbolt Lily
<i>Limonium perezii</i>	ph	Sea Lavender
<i>Linanthus androsaceus</i>	a	Common Linanthus
<i>Liriope</i> spp. & <i>Ophiopogon</i> spp.	pg	Lily Turf
<i>Lobelia laxiflora</i>	ph	Mexican Lobelia
<i>Lonicera hispidula</i>	ph	California Honeysuckle
<i>Lupinus</i> spp.	ph/s	Lupine ***
<i>Lycoris radiata</i>	ph	Spider Lily
<i>Lyonothamnus floribundus</i>	s	Santa Cruz Island Ironwood
<i>Mahonia</i> spp.	s	Oregon Grape ***
<i>Malosma laurina</i>	s	Laurel Sumac
<i>Melica imperfecta</i>	pg	Coast Range Melic Grass

Native Plants Compatible w/in or around the Oak tree driplines

<u>Scientific Name</u>	<u>Type</u>	<u>Common Name</u>
<i>Mimulus</i> spp.	s	Monkeyflower **
<i>Monardella villosa</i>	ph	Lavender Coyote Mint *****
<i>Montia perfoliata</i>	a	Miners Lettuce
<i>Muhlenbergia rigens</i>	g	Deergrass ****
<i>Muscari</i> spp.	b	Grape Hyacinth
<i>Myosotis sylvantica</i>	ph	Forget-Me-Not
<i>Myrica californica</i>	s	Pacific Wax Myrtle
<i>Myrsine africanum</i>	s	African Box
<i>Myrtus communis</i>	s	Myrtle
<i>Nandina domestica</i>	s	Heavenly Bamboo
<i>Narcissus</i> spp.	b	Daffodil
<i>Nemophila maculata</i>	a	Five-Spot ***
<i>Nemophila menziesii</i>	a	Baby-Blue-Eyes
<i>Nepeta faassenii</i>	ph	Catmint
<i>Nephrolepis cordifolia</i>	f	Southern Sword Fern
<i>Nerine</i> spp.	ph	Nerine
<i>Nerium oleander</i> 'Petite'	s	Petite Oleander
<i>Nigella damascena</i>	a	Love-in-a-Mist
<i>Nolina</i> spp.	gc	Nolina
<i>Ochna serrulata</i>	s	Mickey Mouse Plant
<i>Oenothera</i> spp.	a	Evening Primrose
<i>Orignum dictamnus</i>	ph	Dittany of Crete
<i>Ornithogalum</i> spp.	ph	Ornithogalum
<i>Orthocarpus densiflorus</i>	a	Owl's Clover
<i>Osmoronia cerasiformis</i>	s	Oso Berry
<i>Oxalis oregana</i>	ph	Redwood Sorrel
<i>Oxalis purpurea</i>	b	Pink Bulb Oxalis
<i>Pellaea mucronata</i>	f	Bird's Foot Fern
<i>Pennisetum alopecuroides</i>	g	Fountain Grass
<i>Penstemon</i> spp.	s	Penstemon **
<i>Phacelia parryi</i>	a	Phacelia
<i>Pholistoma racemosa</i>	a	Fiesta Flower
<i>Physocarpus capitatus</i>	s	Nine-Bark
<i>Pickeringia montana</i>	s	Chaparral Pea ***
<i>Pinus mugo</i>	s	Mugho Pine
<i>Pityrogramma triangularis</i>	f	California Goldback Fern
<i>Platystemon californicum</i>	a	Cream Cups
<i>Plumbago auriculata</i>	s	Cape Plumbago
<i>Polygonum capitatum</i>	gc	Pink Knotwood
<i>Polypodium</i> spp.	f	Leather Fern
<i>Polypody californicum</i>	f	California Polypody
<i>Polystichum munitum</i>	f	Western Sword Fern
<i>Potentilla glandulosa</i>	ph	Sticky Cinquefoil
<i>Prunus ilicifolia</i>	s	Hollyleaf Cherry ****
<i>Prunus lyonii</i>	s	Santa Catalina Cherry ***
<i>Punica granatum</i> 'Nana'	s	Dwarf Pomegranate
<i>Quercus agrifolia</i>	t	Coast Live Oak
<i>Quercus dumosa</i>	s	Scrub Oak
<i>Quercus durata</i>	s	Leather Oak

Native Plants Compatible w/in or around the Oak tree driplines

<u>Scientific Name</u>	<u>Type</u>	<u>Common Name</u>
<i>Quercus lobata</i>	t	Valley Oak
<i>Quercus parvula</i>	s	Santa Cruz Island Oak
<i>Quercus wizlizenii</i>	t	Interior Live Oak
<i>Ranunculus californicus</i>	ph	California Buttercup
<i>Rhamnus</i> spp.	s	Coffeeberry ****
<i>Rhododendron</i> spp.	s	Azalea
<i>Rhus</i> spp.	s	Sugar Bush ***
<i>Ribes</i> spp.	gc/s	Current, Gooseberry ****
<i>Romneya coulteri</i>	ph/s	Matilija Poppy ***
<i>Rosa californica</i>	s	California Wild Rose ****
<i>Rosemarinus officianalis</i>	gc/s	Rosemary
<i>Rubus ursinus</i>	ph	Blackberry
<i>Rumohra adiantiformis/Aspidium capensis</i>	f	Leather-Leaf Fern
<i>Ruscus aculeatus</i>	s	Butcher's Broom
<i>Salvia</i> spp.	ph/s	Salvia ***
<i>Sambucus mexicana</i>	s/t	Mexican Elderberry
<i>Santolina chamaecyparissus</i>	ph	Gray Lavender Cotton
<i>Saponaria officinalis</i>	s	Bouncing-Bet
<i>Sarcococca ruscifolia</i>	s	Fragrant Sarcococca
<i>Satureja douglasii</i>	ph	Yerba Buena
<i>Scabiosa atropurpurea</i>	a	Pincushion Flower
<i>Scaevola 'Mauve Clusters'</i>	gc	Fan Flower
<i>Scilla peruviana</i>	b	Peruvian Scilla
<i>Scophularia californica</i>	ph	California Figwort
<i>Scutellaria tuberosa</i>	ph	Skull Cap
<i>Sedum acre</i>	ph	Golden Moss Sedum
<i>Sidalcea candida</i>	ph	Dwarf Hollyhock
<i>Simmondsia chinensis</i>	s	Jojoba ***
<i>Sisyrinchium bellum</i>	ph	Blue-Eyed Grass *****
<i>Sitanion</i> spp.	pg	Squirreltail
<i>Solanum xantii</i>	ph	Purple Nightshade
<i>Sollya heterophylla</i>	s	Australian Bluebell Creeper
<i>Sparaxis</i> spp.	ph	Sparaxis
<i>Stachys bullata</i>	ph	Wood Mint
<i>Sternbergia lutea</i>	b	Fall Yellow Crocus
<i>Stipa cernua</i>	pg	Spear Grass ***
<i>Stipa lepida</i>	pg	Needlegrass ***
<i>Stipa pulchra</i>	pg	Needle Grass ***
<i>Symphoricarpos</i> spp.	s	Snowberry ****
<i>Syringia vulgaris</i>	s	Lilac
<i>Tellima grandiflora</i>	ph	Fringe Cups
<i>Teucrium fruticans</i>	s	Bush Germander
<i>Thalictrum polycarpum</i>	ph	Meadow Rue
<i>Thymus praecox arcticus</i>	ph	Mother-of-Thyme
<i>Tiarella unifoliata</i>	ph	Sugar Scoop
<i>Tolmeia menziesii</i>	ph	Piggy-Back Plant
<i>Trichostema lanatum</i>	s	Woody Blue Curls
<i>Trillium chloropetalum</i>	b	Common Trillium
<i>Tropaeolum majus</i>	a	Garden Nasturtium

Native Plants Compatible w/in or around the Oak tree driplines

<u>Scientific Name</u>	<u>Type</u>	<u>Common Name</u>
<i>Tulbaghia violacea</i>	ph	Society Garlic
<i>Umbellularia californica</i>	s	California Bay Laurel ****
<i>Vaccinium ovatum</i>	s	California Huckleberry
<i>Vancouveria planipetala</i>	ph	Inside-Out Flower
<i>Viburnum suspensum</i>	s	Sandankwa Viburnum
<i>Viguiera deltoidea</i> var. <i>parishii</i>	ph	Desert Sunflower ***
<i>Viola pedunculata</i>	a	Yellow Pansy
<i>Vitus</i> spp.	v	Wild Grape ****
<i>Whipplea modesta</i>	ph	Yerba de Selva ****
<i>Woodwardia fimbriata</i>	f	Giant Chain Fern
<i>Xylosma congestum</i>	s	Xylosma
<i>Yucca whipplei</i>	su	Yucca ***
<i>Zauschneria</i> spp.	a/s	California Fuchsia ***
<i>Zigadenus fremontii</i>	b	Star Lily

Notes:

- * Water monthly when young.
- ** Needs no summer watering, unless otherwise indicated.
- *** Full Sun (tolerates west and south exposures).
- **** Protect from afternoon Sun (partial Shade).
- ***** Full Shade or Morning Sun.

a	Annual	b	Bulb
f	Fern	gc	Groundcover
pg	Perennial Grass	ph	Perennial Herb
s	Shrub	su	Succulent
v	Vine	t	Tree

None of the above noted species should be planted within five (5) feet of the tree trunk.
 The above noted plants will do best if given a thorough deep watering 2 to 3 times during the growing season.

APPENDIX B

Air Quality/Greenhouse Gas Emissions/Energy Data

PM_80287_Rexhall Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	PM_80287_Rexhall
Construction Start Date	9/1/2023
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	19.6
Location	34.3960330643809, -118.42184937204001
County	Los Angeles-South Coast
City	Santa Clarita
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	3619
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.9

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
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Single Family Housing	4.00	Dwelling Unit	19.8	7,200	0.00	0.00	12.0	—
Road Construction	0.25	Mile	0.91	0.00	—	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-10-A	Water Exposed Surfaces
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads
Area Sources	AS-2	Use Low-VOC Paints

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.74	4.81	47.8	41.7	0.08	2.00	9.57	11.6	1.84	3.74	5.58	—	9,295	9,295	0.38	0.11	1.87	9,338
Mit.	5.74	4.81	47.8	41.7	0.08	2.00	2.76	4.76	1.84	1.04	2.87	—	9,295	9,295	0.38	0.11	1.87	9,338
% Reduced	—	—	—	—	—	—	71%	59%	—	72%	48%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.55	3.82	37.6	32.9	0.06	1.60	9.51	11.1	1.47	3.73	5.19	—	7,022	7,022	0.29	0.09	0.04	7,056
Mit.	4.55	3.82	37.6	32.9	0.06	1.60	2.69	4.29	1.47	1.02	2.49	—	7,022	7,022	0.29	0.09	0.04	7,056

% Reduced	—	—	—	—	—	—	72%	61%	—	73%	52%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.03	0.86	7.98	9.42	0.02	0.35	0.79	1.01	0.33	0.31	0.51	—	1,724	1,724	0.07	0.02	0.07	1,731
Mit.	1.03	0.86	7.98	9.42	0.02	0.35	0.23	0.45	0.33	0.09	0.33	—	1,724	1,724	0.07	0.02	0.07	1,731
% Reduced	—	—	—	—	—	—	71%	55%	—	72%	36%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.19	0.16	1.46	1.72	< 0.005	0.06	0.14	0.18	0.06	0.06	0.09	—	285	285	0.01	< 0.005	0.01	287
Mit.	0.19	0.16	1.46	1.72	< 0.005	0.06	0.04	0.08	0.06	0.02	0.06	—	285	285	0.01	< 0.005	0.01	287
% Reduced	—	—	—	—	—	—	71%	55%	—	72%	36%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	5.74	4.81	47.8	41.7	0.08	2.00	9.57	11.6	1.84	3.74	5.58	—	9,295	9,295	0.38	0.11	1.87	9,338
2024	1.45	1.21	11.2	13.2	0.02	0.50	0.02	0.52	0.46	0.01	0.46	—	2,432	2,432	0.10	0.02	0.12	2,441
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	4.55	3.82	37.6	32.9	0.06	1.60	9.51	11.1	1.47	3.73	5.19	—	7,022	7,022	0.29	0.09	0.04	7,056
2024	1.45	1.21	11.2	13.2	0.02	0.50	0.20	0.59	0.46	0.05	0.46	—	2,431	2,431	0.10	0.02	0.02	2,440
2025	1.02	2.38	7.53	10.9	0.01	0.35	0.20	0.54	0.32	0.05	0.37	—	1,708	1,708	0.07	0.02	0.02	1,716

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.63	0.53	5.18	4.89	0.01	0.22	0.79	1.01	0.21	0.31	0.51	—	1,015	1,015	0.04	0.01	0.07	1,019
2024	1.03	0.86	7.98	9.42	0.02	0.35	0.02	0.37	0.33	< 0.005	0.33	—	1,724	1,724	0.07	0.02	0.04	1,731
2025	0.04	0.16	0.28	0.41	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	61.1	61.1	< 0.005	< 0.005	0.01	61.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.12	0.10	0.95	0.89	< 0.005	0.04	0.14	0.18	0.04	0.06	0.09	—	168	168	0.01	< 0.005	0.01	169
2024	0.19	0.16	1.46	1.72	< 0.005	0.06	< 0.005	0.07	0.06	< 0.005	0.06	—	285	285	0.01	< 0.005	0.01	287
2025	0.01	0.03	0.05	0.07	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.1	10.1	< 0.005	< 0.005	< 0.005	10.2

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	5.74	4.81	47.8	41.7	0.08	2.00	2.76	4.76	1.84	1.04	2.87	—	9,295	9,295	0.38	0.11	1.87	9,338
2024	1.45	1.21	11.2	13.2	0.02	0.50	0.02	0.52	0.46	0.01	0.46	—	2,432	2,432	0.10	0.02	0.12	2,441
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	4.55	3.82	37.6	32.9	0.06	1.60	2.69	4.29	1.47	1.02	2.49	—	7,022	7,022	0.29	0.09	0.04	7,056
2024	1.45	1.21	11.2	13.2	0.02	0.50	0.20	0.59	0.46	0.05	0.46	—	2,431	2,431	0.10	0.02	0.02	2,440
2025	1.02	2.38	7.53	10.9	0.01	0.35	0.20	0.54	0.32	0.05	0.37	—	1,708	1,708	0.07	0.02	0.02	1,716
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.63	0.53	5.18	4.89	0.01	0.22	0.23	0.45	0.21	0.09	0.29	—	1,015	1,015	0.04	0.01	0.07	1,019
2024	1.03	0.86	7.98	9.42	0.02	0.35	0.02	0.37	0.33	< 0.005	0.33	—	1,724	1,724	0.07	0.02	0.04	1,731
2025	0.04	0.16	0.28	0.41	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	61.1	61.1	< 0.005	< 0.005	0.01	61.4

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.12	0.10	0.95	0.89	< 0.005	0.04	0.04	0.08	0.04	0.02	0.05	—	168	168	0.01	< 0.005	0.01	169
2024	0.19	0.16	1.46	1.72	< 0.005	0.06	< 0.005	0.07	0.06	< 0.005	0.06	—	285	285	0.01	< 0.005	0.01	287
2025	0.01	0.03	0.05	0.07	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.1	10.1	< 0.005	< 0.005	< 0.005	10.2

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.33	1.37	0.26	3.44	0.01	0.29	0.09	0.39	0.29	0.02	0.30	39.5	480	520	0.34	0.01	1.04	533
Mit.	1.33	1.37	0.26	3.44	0.01	0.29	0.09	0.39	0.29	0.02	0.30	39.5	480	520	0.34	0.01	1.04	533
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.31	1.35	0.27	3.12	0.01	0.29	0.09	0.39	0.29	0.02	0.30	39.5	468	508	0.34	0.01	0.08	520
Mit.	1.31	1.35	0.27	3.12	0.01	0.29	0.09	0.39	0.29	0.02	0.30	39.5	468	508	0.34	0.01	0.08	520
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.24	0.38	0.19	1.38	< 0.005	0.03	0.09	0.12	0.03	0.02	0.04	4.57	399	404	0.23	0.01	0.47	414
Mit.	0.24	0.38	0.19	1.38	< 0.005	0.03	0.09	0.12	0.03	0.02	0.04	4.57	399	404	0.23	0.01	0.47	414
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	0.04	0.07	0.04	0.25	< 0.005	0.01	0.02	0.02	< 0.005	< 0.005	0.01	0.76	66.1	66.8	0.04	< 0.005	0.08	68.5
Mit.	0.04	0.07	0.04	0.25	< 0.005	0.01	0.02	0.02	< 0.005	< 0.005	0.01	0.76	66.1	66.8	0.04	< 0.005	0.08	68.5
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.14	0.13	0.10	1.14	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.02	—	268	268	0.01	0.01	0.99	272
Area	1.18	1.23	0.09	2.26	0.01	0.29	—	0.29	0.28	—	0.28	37.5	72.2	110	0.11	< 0.005	—	113
Energy	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	138	138	0.01	< 0.005	—	139
Water	—	—	—	—	—	—	—	—	—	—	—	0.29	1.48	1.76	0.03	< 0.005	—	2.71
Waste	—	—	—	—	—	—	—	—	—	—	—	1.72	0.00	1.72	0.17	0.00	—	6.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Total	1.33	1.37	0.26	3.44	0.01	0.29	0.09	0.39	0.29	0.02	0.30	39.5	480	520	0.34	0.01	1.04	533
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.14	0.13	0.11	1.05	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.02	—	257	257	0.01	0.01	0.03	260
Area	1.16	1.21	0.08	2.03	0.01	0.29	—	0.29	0.28	—	0.28	37.5	71.6	109	0.11	< 0.005	—	112
Energy	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	138	138	0.01	< 0.005	—	139
Water	—	—	—	—	—	—	—	—	—	—	—	0.29	1.48	1.76	0.03	< 0.005	—	2.71
Waste	—	—	—	—	—	—	—	—	—	—	—	1.72	0.00	1.72	0.17	0.00	—	6.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Total	1.31	1.35	0.27	3.12	0.01	0.29	0.09	0.39	0.29	0.02	0.30	39.5	468	508	0.34	0.01	0.08	520

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.14	0.13	0.11	1.05	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.02	—	254	254	0.01	0.01	0.42	258
Area	0.09	0.25	0.01	0.29	< 0.005	0.02	—	0.02	0.02	—	0.02	2.57	5.32	7.89	0.01	< 0.005	—	8.11
Energy	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	138	138	0.01	< 0.005	—	139
Water	—	—	—	—	—	—	—	—	—	—	—	0.29	1.48	1.76	0.03	< 0.005	—	2.71
Waste	—	—	—	—	—	—	—	—	—	—	—	1.72	0.00	1.72	0.17	0.00	—	6.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Total	0.24	0.38	0.19	1.38	< 0.005	0.03	0.09	0.12	0.03	0.02	0.04	4.57	399	404	0.23	0.01	0.47	414
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.03	0.02	0.02	0.19	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	42.0	42.0	< 0.005	< 0.005	0.07	42.7
Area	0.02	0.05	< 0.005	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.42	0.88	1.31	< 0.005	< 0.005	—	1.34
Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	22.9	22.9	< 0.005	< 0.005	—	23.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.05	0.24	0.29	< 0.005	< 0.005	—	0.45
Waste	—	—	—	—	—	—	—	—	—	—	—	0.28	0.00	0.28	0.03	0.00	—	0.99
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	0.04	0.07	0.04	0.25	< 0.005	0.01	0.02	0.02	< 0.005	< 0.005	0.01	0.76	66.1	66.8	0.04	< 0.005	0.08	68.5

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.14	0.13	0.10	1.14	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.02	—	268	268	0.01	0.01	0.99	272
Area	1.18	1.23	0.09	2.26	0.01	0.29	—	0.29	0.28	—	0.28	37.5	72.2	110	0.11	< 0.005	—	113
Energy	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	138	138	0.01	< 0.005	—	139
Water	—	—	—	—	—	—	—	—	—	—	—	0.29	1.48	1.76	0.03	< 0.005	—	2.71

Waste	—	—	—	—	—	—	—	—	—	—	—	1.72	0.00	1.72	0.17	0.00	—	6.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Total	1.33	1.37	0.26	3.44	0.01	0.29	0.09	0.39	0.29	0.02	0.30	39.5	480	520	0.34	0.01	1.04	533
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.14	0.13	0.11	1.05	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.02	—	257	257	0.01	0.01	0.03	260
Area	1.16	1.21	0.08	2.03	0.01	0.29	—	0.29	0.28	—	0.28	37.5	71.6	109	0.11	< 0.005	—	112
Energy	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	138	138	0.01	< 0.005	—	139
Water	—	—	—	—	—	—	—	—	—	—	—	0.29	1.48	1.76	0.03	< 0.005	—	2.71
Waste	—	—	—	—	—	—	—	—	—	—	—	1.72	0.00	1.72	0.17	0.00	—	6.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Total	1.31	1.35	0.27	3.12	0.01	0.29	0.09	0.39	0.29	0.02	0.30	39.5	468	508	0.34	0.01	0.08	520
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.14	0.13	0.11	1.05	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.02	—	254	254	0.01	0.01	0.42	258
Area	0.09	0.25	0.01	0.29	< 0.005	0.02	—	0.02	0.02	—	0.02	2.57	5.32	7.89	0.01	< 0.005	—	8.11
Energy	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	138	138	0.01	< 0.005	—	139
Water	—	—	—	—	—	—	—	—	—	—	—	0.29	1.48	1.76	0.03	< 0.005	—	2.71
Waste	—	—	—	—	—	—	—	—	—	—	—	1.72	0.00	1.72	0.17	0.00	—	6.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Total	0.24	0.38	0.19	1.38	< 0.005	0.03	0.09	0.12	0.03	0.02	0.04	4.57	399	404	0.23	0.01	0.47	414
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.03	0.02	0.02	0.19	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	42.0	42.0	< 0.005	< 0.005	0.07	42.7
Area	0.02	0.05	< 0.005	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.42	0.88	1.31	< 0.005	< 0.005	—	1.34
Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	22.9	22.9	< 0.005	< 0.005	—	23.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.05	0.24	0.29	< 0.005	< 0.005	—	0.45
Waste	—	—	—	—	—	—	—	—	—	—	—	0.28	0.00	0.28	0.03	0.00	—	0.99
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01

Total	0.04	0.07	0.04	0.25	< 0.005	0.01	0.02	0.02	< 0.005	< 0.005	0.01	0.76	66.1	66.8	0.04	< 0.005	0.08	68.5
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3. Construction Emissions Details

3.1. Grading (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.43	3.72	37.3	31.4	0.06	1.59	—	1.59	1.47	—	1.47	—	6,598	6,598	0.27	0.05	—	6,621
Dust From Material Movement:	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.43	3.72	37.3	31.4	0.06	1.59	—	1.59	1.47	—	1.47	—	6,598	6,598	0.27	0.05	—	6,621
Dust From Material Movement:	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.36	0.31	3.07	2.58	0.01	0.13	—	0.13	0.12	—	0.12	—	542	542	0.02	< 0.005	—	544
Dust From Material Movement	—	—	—	—	—	—	0.76	0.76	—	0.30	0.30	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.56	0.47	< 0.005	0.02	—	0.02	0.02	—	0.02	—	89.8	89.8	< 0.005	< 0.005	—	90.1
Dust From Material Movement	—	—	—	—	—	—	0.14	0.14	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.09	0.10	1.63	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	289	289	0.01	0.01	1.22	293
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.19	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	150	150	0.01	0.02	0.34	158
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.09	0.12	1.39	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	274	274	0.01	0.01	0.03	277
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.20	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	150	150	0.01	0.02	0.01	158
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	22.8	22.8	< 0.005	< 0.005	0.04	23.1

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.4	12.4	< 0.005	< 0.005	0.01	13.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.78	3.78	< 0.005	< 0.005	0.01	3.83
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.05	2.05	< 0.005	< 0.005	< 0.005	2.15

3.2. Grading (2023) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.43	3.72	37.3	31.4	0.06	1.59	—	1.59	1.47	—	1.47	—	6,598	6,598	0.27	0.05	—	6,621
Dust From Material Movement:	—	—	—	—	—	—	2.39	2.39	—	0.95	0.95	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.43	3.72	37.3	31.4	0.06	1.59	—	1.59	1.47	—	1.47	—	6,598	6,598	0.27	0.05	—	6,621
Dust From Material Movement:	—	—	—	—	—	—	2.39	2.39	—	0.95	0.95	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.36	0.31	3.07	2.58	0.01	0.13	—	0.13	0.12	—	0.12	—	542	542	0.02	< 0.005	—	544	
Dust From Material Movement	—	—	—	—	—	—	0.20	0.20	—	0.08	0.08	—	—	—	—	—	—	—	
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Off-Road Equipment	0.07	0.06	0.56	0.47	< 0.005	0.02	—	0.02	0.02	—	0.02	—	89.8	89.8	< 0.005	< 0.005	—	90.1	
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	0.01	0.01	—	—	—	—	—	—	—	
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	0.11	0.09	0.10	1.63	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	289	289	0.01	0.01	1.22	293	
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Hauling	0.01	< 0.005	0.19	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	150	150	0.01	0.02	0.34	158	
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	0.11	0.09	0.12	1.39	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	274	274	0.01	0.01	0.03	277	
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	

Hauling	0.01	< 0.005	0.20	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	150	150	0.01	0.02	0.01	158
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	22.8	22.8	< 0.005	< 0.005	0.04	23.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.4	12.4	< 0.005	< 0.005	0.01	13.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.78	3.78	< 0.005	< 0.005	0.01	3.83
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.05	2.05	< 0.005	< 0.005	< 0.005	2.15

3.3. Building Construction (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.26	11.8	13.2	0.02	0.55	—	0.55	0.51	—	0.51	—	2,397	2,397	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.53	1.70	< 0.005	0.07	—	0.07	0.07	—	0.07	—	310	310	0.01	< 0.005	—	311
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.28	0.31	< 0.005	0.01	—	0.01	0.01	—	0.01	—	51.3	51.3	< 0.005	< 0.005	—	51.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	19.7	19.7	< 0.005	< 0.005	< 0.005	19.9
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.0	14.0	< 0.005	< 0.005	< 0.005	14.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.58	2.58	< 0.005	< 0.005	< 0.005	2.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.81	1.81	< 0.005	< 0.005	< 0.005	1.88
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.43
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.4. Building Construction (2023) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.26	11.8	13.2	0.02	0.55	—	0.55	0.51	—	0.51	—	2,397	2,397	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.53	1.70	< 0.005	0.07	—	0.07	0.07	—	0.07	—	310	310	0.01	< 0.005	—	311
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.28	0.31	< 0.005	0.01	—	0.01	0.01	—	0.01	—	51.3	51.3	< 0.005	< 0.005	—	51.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	19.7	19.7	< 0.005	< 0.005	< 0.005	19.9
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.0	14.0	< 0.005	< 0.005	< 0.005	14.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.58	2.58	< 0.005	< 0.005	< 0.005	2.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.81	1.81	< 0.005	< 0.005	< 0.005	1.88
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.43
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.44	1.20	11.2	13.1	0.02	0.50	—	0.50	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.44	1.20	11.2	13.1	0.02	0.50	—	0.50	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.00	0.83	7.77	9.09	0.02	0.34	—	0.34	0.32	—	0.32	—	1,661	1,661	0.07	0.01	—	1,667

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.15	1.42	1.66	< 0.005	0.06	—	0.06	0.06	—	0.06	—	275	275	0.01	< 0.005	—	276	
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	20.3	20.3	< 0.005	< 0.005	0.08	20.6	
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.8	13.8	< 0.005	< 0.005	0.04	14.4	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	19.3	19.3	< 0.005	< 0.005	< 0.005	19.5	
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.8	13.8	< 0.005	< 0.005	< 0.005	14.4	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	< 0.005	< 0.005	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.5	13.5	< 0.005	< 0.005	0.02	13.7	
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.56	9.56	< 0.005	< 0.005	0.01	9.97	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.24	2.24	< 0.005	< 0.005	< 0.005	2.27	
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.58	1.58	< 0.005	< 0.005	< 0.005	1.65	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	

3.6. Building Construction (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.44	1.20	11.2	13.1	0.02	0.50	—	0.50	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.44	1.20	11.2	13.1	0.02	0.50	—	0.50	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.00	0.83	7.77	9.09	0.02	0.34	—	0.34	0.32	—	0.32	—	1,661	1,661	0.07	0.01	—	1,667
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.15	1.42	1.66	< 0.005	0.06	—	0.06	0.06	—	0.06	—	275	275	0.01	< 0.005	—	276
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	20.3	20.3	< 0.005	< 0.005	0.08	20.6
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.8	13.8	< 0.005	< 0.005	0.04	14.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	19.3	19.3	< 0.005	< 0.005	< 0.005	19.5
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.8	13.8	< 0.005	< 0.005	< 0.005	14.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.5	13.5	< 0.005	< 0.005	0.02	13.7
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.56	9.56	< 0.005	< 0.005	0.01	9.97
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.24	2.24	< 0.005	< 0.005	< 0.005	2.27
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.58	1.58	< 0.005	< 0.005	< 0.005	1.65
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Paving (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.01	0.85	7.81	10.0	0.01	0.39	—	0.39	0.36	—	0.36	—	1,512	1,512	0.06	0.01	—	1,517
Paving	—	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.18	0.24	< 0.005	0.01	—	0.01	0.01	—	0.01	—	35.5	35.5	< 0.005	< 0.005	—	35.6
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.88	5.88	< 0.005	< 0.005	—	5.90
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.08	0.96	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	201	201	0.01	0.01	0.02	203
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.78	4.78	< 0.005	< 0.005	0.01	4.85
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.79	0.79	< 0.005	< 0.005	< 0.005	0.80
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Paving (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.01	0.85	7.81	10.0	0.01	0.39	—	0.39	0.36	—	0.36	—	1,512	1,512	0.06	0.01	—	1,517
Paving	—	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.18	0.24	< 0.005	0.01	—	0.01	0.01	—	0.01	—	35.5	35.5	< 0.005	< 0.005	—	35.6
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.88	5.88	< 0.005	< 0.005	—	5.90
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.08	0.96	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	201	201	0.01	0.01	0.02	203
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.78	4.78	< 0.005	< 0.005	0.01	4.85
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.79	0.79	< 0.005	< 0.005	< 0.005	0.80
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.23	0.31	< 0.005	0.01	—	0.01	0.01	—	0.01	—	47.3	47.3	< 0.005	< 0.005	—	47.5
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.84	7.84	< 0.005	< 0.005	—	7.86
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.07	0.88	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	197	197	0.01	0.01	0.02	199
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.25	6.25	< 0.005	< 0.005	0.01	6.33
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.03	1.03	< 0.005	< 0.005	< 0.005	1.05
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.10. Paving (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.23	0.31	< 0.005	0.01	—	0.01	0.01	—	0.01	—	47.3	47.3	< 0.005	< 0.005	—	47.5

Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.84	7.84	< 0.005	< 0.005	—	7.86
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.07	0.88	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	197	197	0.01	0.01	0.02	199
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.25	6.25	< 0.005	< 0.005	0.01	6.33
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.03	1.03	< 0.005	< 0.005	< 0.005	1.05
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	2.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.32	7.32	< 0.005	< 0.005	—	7.34
Architectural Coatings	—	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22
Architectural Coatings	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.77	3.77	< 0.005	< 0.005	< 0.005	3.82
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	0.21
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.04
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.12. Architectural Coating (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134

Architect Coatings	—	2.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.32	7.32	< 0.005	< 0.005	—	7.34
Architect ural Coatings	—	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22
Architect ural Coatings	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.77	3.77	< 0.005	< 0.005	< 0.005	3.82
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	0.21
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.04
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Linear, Paving (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.16	0.97	10.1	8.22	0.02	0.40	—	0.40	0.37	—	0.37	—	2,185	2,185	0.09	0.02	—	2,192
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.56	0.45	< 0.005	0.02	—	0.02	0.02	—	0.02	—	120	120	< 0.005	< 0.005	—	120
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.8	19.8	< 0.005	< 0.005	—	19.9

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.03	0.41	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	72.2	72.2	< 0.005	< 0.005	0.31	73.3	
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.80	3.80	< 0.005	< 0.005	0.01	3.86	
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.63	0.63	< 0.005	< 0.005	< 0.005	0.64	
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	

3.14. Linear, Paving (2023) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.16	0.97	10.1	8.22	0.02	0.40	—	0.40	0.37	—	0.37	—	2,185	2,185	0.09	0.02	—	2,192
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.56	0.45	< 0.005	0.02	—	0.02	0.02	—	0.02	—	120	120	< 0.005	< 0.005	—	120
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.8	19.8	< 0.005	< 0.005	—	19.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.03	0.41	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	72.2	72.2	< 0.005	< 0.005	0.31	73.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.80	3.80	< 0.005	< 0.005	0.01	3.86
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.63	0.63	< 0.005	< 0.005	< 0.005	0.64
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.14	0.13	0.10	1.14	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.02	—	268	268	0.01	0.01	0.99	272
Total	0.14	0.13	0.10	1.14	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.02	—	268	268	0.01	0.01	0.99	272
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.14	0.13	0.11	1.05	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.02	—	257	257	0.01	0.01	0.03	260
Total	0.14	0.13	0.11	1.05	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.02	—	257	257	0.01	0.01	0.03	260
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.03	0.02	0.02	0.19	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	42.0	42.0	< 0.005	< 0.005	0.07	42.7
Total	0.03	0.02	0.02	0.19	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	42.0	42.0	< 0.005	< 0.005	0.07	42.7

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.14	0.13	0.10	1.14	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.02	—	268	268	0.01	0.01	0.99	272
Total	0.14	0.13	0.10	1.14	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.02	—	268	268	0.01	0.01	0.99	272
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.14	0.13	0.11	1.05	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.02	—	257	257	0.01	0.01	0.03	260
Total	0.14	0.13	0.11	1.05	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.02	—	257	257	0.01	0.01	0.03	260
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.03	0.02	0.02	0.19	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	42.0	42.0	< 0.005	< 0.005	0.07	42.7
Total	0.03	0.02	0.02	0.19	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	42.0	42.0	< 0.005	< 0.005	0.07	42.7

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
----------	-----	-----	-----	----	-----	-------	-------	-------	--------	--------	--------	------	-------	------	-----	-----	---	------

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2	< 0.005	< 0.005	—	40.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2	< 0.005	< 0.005	—	40.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2	< 0.005	< 0.005	—	40.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2	< 0.005	< 0.005	—	40.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	6.66	6.66	< 0.005	< 0.005	—	6.68
Total	—	—	—	—	—	—	—	—	—	—	—	—	6.66	6.66	< 0.005	< 0.005	—	6.68

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2	< 0.005	< 0.005	—	40.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2	< 0.005	< 0.005	—	40.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2	< 0.005	< 0.005	—	40.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2	< 0.005	< 0.005	—	40.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	6.66	6.66	< 0.005	< 0.005	—	6.68
Total	—	—	—	—	—	—	—	—	—	—	—	—	6.66	6.66	< 0.005	< 0.005	—	6.68

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	98.3	98.3	0.01	< 0.005	—	98.6
Total	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	98.3	98.3	0.01	< 0.005	—	98.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	98.3	98.3	0.01	< 0.005	—	98.6
Total	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	98.3	98.3	0.01	< 0.005	—	98.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.3	16.3	< 0.005	< 0.005	—	16.3
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.3	16.3	< 0.005	< 0.005	—	16.3

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	98.3	98.3	0.01	< 0.005	—	98.6
Total	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	98.3	98.3	0.01	< 0.005	—	98.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	98.3	98.3	0.01	< 0.005	—	98.6
Total	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	98.3	98.3	0.01	< 0.005	—	98.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.3	16.3	< 0.005	< 0.005	—	16.3
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.3	16.3	< 0.005	< 0.005	—	16.3

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Hearths	1.16	1.04	0.08	2.03	0.01	0.29	—	0.29	0.28	—	0.28	37.5	71.6	109	0.11	< 0.005	—	112
Consumer Products	—	0.15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.02	0.02	< 0.005	0.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Total	1.18	1.23	0.09	2.26	0.01	0.29	—	0.29	0.28	—	0.28	37.5	72.2	110	0.11	< 0.005	—	113
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.16	1.04	0.08	2.03	0.01	0.29	—	0.29	0.28	—	0.28	37.5	71.6	109	0.11	< 0.005	—	112
Consumer Products	—	0.15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	1.16	1.21	0.08	2.03	0.01	0.29	—	0.29	0.28	—	0.28	37.5	71.6	109	0.11	< 0.005	—	112
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.01	0.01	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.42	0.81	1.24	< 0.005	< 0.005	—	1.27
Consumer Products	—	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.07	0.07	< 0.005	< 0.005	—	0.07

Total	0.02	0.05	< 0.005	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.42	0.88	1.31	< 0.005	< 0.005	—	1.34
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4.3.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.16	1.04	0.08	2.03	0.01	0.29	—	0.29	0.28	—	0.28	37.5	71.6	109	0.11	< 0.005	—	112
Consumer Products	—	0.15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.02	0.02	< 0.005	0.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Total	1.18	1.23	0.09	2.26	0.01	0.29	—	0.29	0.28	—	0.28	37.5	72.2	110	0.11	< 0.005	—	113
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.16	1.04	0.08	2.03	0.01	0.29	—	0.29	0.28	—	0.28	37.5	71.6	109	0.11	< 0.005	—	112
Consumer Products	—	0.15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	1.16	1.21	0.08	2.03	0.01	0.29	—	0.29	0.28	—	0.28	37.5	71.6	109	0.11	< 0.005	—	112
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.01	0.01	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.42	0.81	1.24	< 0.005	< 0.005	—	1.27

Consum Products	—	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.07	0.07	< 0.005	< 0.005	—	0.07
Total	0.02	0.05	< 0.005	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.42	0.88	1.31	< 0.005	< 0.005	—	1.34

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.29	1.48	1.76	0.03	< 0.005	—	2.71
Total	—	—	—	—	—	—	—	—	—	—	—	0.29	1.48	1.76	0.03	< 0.005	—	2.71
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.29	1.48	1.76	0.03	< 0.005	—	2.71
Total	—	—	—	—	—	—	—	—	—	—	—	0.29	1.48	1.76	0.03	< 0.005	—	2.71
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.05	0.24	0.29	< 0.005	< 0.005	—	0.45
Total	—	—	—	—	—	—	—	—	—	—	—	0.05	0.24	0.29	< 0.005	< 0.005	—	0.45

4.4.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.29	1.48	1.76	0.03	< 0.005	—	2.71
Total	—	—	—	—	—	—	—	—	—	—	—	0.29	1.48	1.76	0.03	< 0.005	—	2.71
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.29	1.48	1.76	0.03	< 0.005	—	2.71
Total	—	—	—	—	—	—	—	—	—	—	—	0.29	1.48	1.76	0.03	< 0.005	—	2.71
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.05	0.24	0.29	< 0.005	< 0.005	—	0.45
Total	—	—	—	—	—	—	—	—	—	—	—	0.05	0.24	0.29	< 0.005	< 0.005	—	0.45

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.72	0.00	1.72	0.17	0.00	—	6.00
Total	—	—	—	—	—	—	—	—	—	—	—	1.72	0.00	1.72	0.17	0.00	—	6.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.72	0.00	1.72	0.17	0.00	—	6.00
Total	—	—	—	—	—	—	—	—	—	—	—	1.72	0.00	1.72	0.17	0.00	—	6.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.28	0.00	0.28	0.03	0.00	—	0.99
Total	—	—	—	—	—	—	—	—	—	—	—	0.28	0.00	0.28	0.03	0.00	—	0.99

4.5.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.72	0.00	1.72	0.17	0.00	—	6.00

Total	—	—	—	—	—	—	—	—	—	—	—	1.72	0.00	1.72	0.17	0.00	—	6.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.72	0.00	1.72	0.17	0.00	—	6.00
Total	—	—	—	—	—	—	—	—	—	—	—	1.72	0.00	1.72	0.17	0.00	—	6.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.28	0.00	0.28	0.03	0.00	—	0.99
Total	—	—	—	—	—	—	—	—	—	—	—	0.28	0.00	0.28	0.03	0.00	—	0.99

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Grading	Grading	9/15/2023	10/26/2023	5.00	30.0	—
Building Construction	Building Construction	10/27/2023	12/19/2024	5.00	300	—

Paving	Paving	12/20/2024	1/16/2025	5.00	20.0	—
Architectural Coating	Architectural Coating	1/17/2025	2/13/2025	5.00	20.0	—
Linear, Paving	Linear, Paving	9/4/2023	9/29/2023	5.00	20.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Linear, Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Linear, Paving	Scrapers	Diesel	Average	1.00	8.00	423	0.48

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Linear, Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Linear, Paving	Scrapers	Diesel	Average	1.00	8.00	423	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2

Grading	Vendor	0.00	10.2	HHDT,MHDT
Grading	Hauling	2.10	20.0	HHDT
Grading	Onsite truck	0.00	0.00	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	1.44	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	0.43	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	0.29	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Linear, Paving	—	—	—	—
Linear, Paving	Worker	5.00	18.5	LDA,LDT1,LDT2
Linear, Paving	Vendor	—	10.2	HHDT,MHDT
Linear, Paving	Hauling	0.00	20.0	HHDT
Linear, Paving	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Grading	—	—	—	—

Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	0.00	10.2	HHDT,MHDT
Grading	Hauling	2.10	20.0	HHDT
Grading	Onsite truck	0.00	0.00	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	1.44	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	0.43	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	0.29	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Linear, Paving	—	—	—	—
Linear, Paving	Worker	5.00	18.5	LDA,LDT1,LDT2
Linear, Paving	Vendor	—	10.2	HHDT,MHDT
Linear, Paving	Hauling	0.00	20.0	HHDT
Linear, Paving	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	14,580	4,860	0.00	0.00	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Grading	0.00	500	90.0	0.00	—
Paving	0.00	0.00	0.00	0.00	0.95

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	0.04	0%
Road Construction	0.91	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2023	0.00	532	0.03	< 0.005
2024	0.00	532	0.03	< 0.005

2025	0.00	532	0.03	< 0.005
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5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	37.8	38.2	34.2	13,618	330	334	299	119,105

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	37.8	38.2	34.2	13,618	330	334	299	119,105

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	3
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0

Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	3
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
14580	4,860	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	27,581	532	0.0330	0.0040	153,341

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	27,581	532	0.0330	0.0040	153,341

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	149,095	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	149,095	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	3.18	0.00

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	3.18	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
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5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
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5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
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5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)
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5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	24.0	annual days of extreme heat

Extreme Precipitation	7.50	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	17.8	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about $\frac{3}{4}$ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	97.0
AQ-PM	49.6
AQ-DPM	15.5
Drinking Water	74.0
Lead Risk Housing	9.97
Pesticides	28.2

Toxic Releases	36.7
Traffic	98.9
Effect Indicators	—
CleanUp Sites	51.6
Groundwater	42.2
Haz Waste Facilities/Generators	30.6
Impaired Water Bodies	23.9
Solid Waste	0.00
Sensitive Population	—
Asthma	41.7
Cardio-vascular	34.3
Low Birth Weights	53.8
Socioeconomic Factor Indicators	—
Education	21.4
Housing	11.6
Linguistic	17.3
Poverty	6.48
Unemployment	52.5

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	86.28256127
Employed	63.51854228
Median HI	93.95611446
Education	—

Bachelor's or higher	76.26074682
High school enrollment	7.583728988
Preschool enrollment	47.26036186
Transportation	—
Auto Access	92.6344155
Active commuting	5.171307584
Social	—
2-parent households	80.99576543
Voting	69.2416271
Neighborhood	—
Alcohol availability	97.0101373
Park access	32.15706403
Retail density	77.50545361
Supermarket access	16.34800462
Tree canopy	66.31592455
Housing	—
Homeownership	92.7242397
Housing habitability	88.22019761
Low-inc homeowner severe housing cost burden	37.93147697
Low-inc renter severe housing cost burden	86.42371359
Uncrowded housing	56.30694213
Health Outcomes	—
Insured adults	84.53740536
Arthritis	21.6
Asthma ER Admissions	65.6
High Blood Pressure	33.3
Cancer (excluding skin)	11.3

Asthma	61.7
Coronary Heart Disease	28.5
Chronic Obstructive Pulmonary Disease	42.5
Diagnosed Diabetes	65.9
Life Expectancy at Birth	83.3
Cognitively Disabled	48.3
Physically Disabled	81.6
Heart Attack ER Admissions	30.1
Mental Health Not Good	71.0
Chronic Kidney Disease	55.3
Obesity	65.8
Pedestrian Injuries	19.6
Physical Health Not Good	65.0
Stroke	58.2
Health Risk Behaviors	—
Binge Drinking	28.2
Current Smoker	73.3
No Leisure Time for Physical Activity	87.1
Climate Change Exposures	—
Wildfire Risk	97.9
SLR Inundation Area	0.0
Children	37.8
Elderly	84.9
English Speaking	66.2
Foreign-born	58.9
Outdoor Workers	85.0
Climate Change Adaptive Capacity	—

Impervious Surface Cover	77.0
Traffic Density	79.5
Traffic Access	23.0
Other Indices	—
Hardship	21.8
Other Decision Support	—
2016 Voting	52.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	33.0
Healthy Places Index Score for Project Location (b)	77.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
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Land Use	Per project description and AQ questionnaire Road construction extension of Tannahill Ave and Triumph Avenue. Extension is around 660 feet or .125 miles on the eastern and western boundary of project site (.25 miles total). Per Prelim Grading, proposed width of road extensions is around 30 feet. $30*(660*2)= 39600$ sq ft or around 0.909 acres.
Construction: Construction Phases	Construction phases left as default. Demolition removed as phase is not required. Per project applicant, linear construction phases are required for roadway extension: paving
Construction: Off-Road Equipment	Construction equipment left as CalEEMod Default Linear Paving Updated Per Applicant (Scraper and Tractor)
Construction: Dust From Material Movement	Per AQ Questionnaire
Construction: Architectural Coatings	SCAQMD Rule 1113
Operations: Architectural Coatings	SCAQMD Rule 1113

**Rexhall Project
Energy Calculations**

Land Use	Natural Gas Use		Electricity Use	
	(kBTU/yr)	(Therms)	(kWh/yr)	(MWh/yr)
Single Family Housing	153,341	1,533	27,851	28
Totals	153,341	1,533	27,851	28

1 kBTU = 0.01 therms

Energy Type	Project Annual Energy Consumption	Los Angeles County Annual Energy Consumption (2021)	Percentage Increase Countywide
Electricity (MWh)	28	65,374,721	0.0000%
Natural Gas (Therms)	1,533	2,880,994,891	0.0001%

Rexhall Project Energy Calculations

Vehicle Type	Percent of Vehicle Trips ¹	Daily Trips ²	Annual Vehicle Miles Traveled	Average Fuel Economy (miles per gallon) ³	Total Annual Fuel Consumption (gallons) ⁴
Passenger Cars	0.51	19	60,208	22	2,737
Light/Medium Trucks	0.47	17	55,991	17.3	3,236
Heavy Trucks/Other	0.02	1	2,906	6.4	454
TOTAL⁶	1.00	37	119,105	--	6,427
Notes:					
1. Percent of Vehicle Trip distribution based on trip characteristics within the CalEEMod model.					
2. Daily Trips taken from ITE manual.					
3. Average fuel economy derived from the Department of Transportation.					
4. Total Daily Fuel Consumption calculated by dividing the daily VMT by the average fuel economy (i.e., VMT/Average Fuel Economy).					
5. Values may be slightly off due to rounding.					
Source: Refer to CalEEMod outputs for assumptions used in this analysis.					
Countywide operational fuel consumption, off-road construction equipment diesel fuel consumption, and on-road fuel consumption are from CARB EMFAC2021.					

County Operational 2025 4,448,480,145 0.0001%
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**Rexhall Project
Energy Calculations**

WORKER TRIPS						
Phase	Phase Length (# days)	# Worker Trips	Worker Trip Length	Total VMT	Fuel Consumption Factor (Miles/Gallon/Day)	Total Fuel Consumption
Linear, Paving	20	5	18.5	1,850		74.29
Grading	30	40	18.5	22,200		891.46
Building Construction	300	2.88	18.5	15,984	24.90284233	641.85
Paving	20	30	18.5	11,100		445.73
Architectural Coating	20	0.58	18.5	215		8.62
						2,061.96
VENDOR TRIPS						
Phase	Phase Length (# days)	# Vendor Trips	Vendor Trip Length	Total VMT	Fuel Consumption Factor (Miles/Gallon/Day)	Total Fuel Consumption
Linear, Paving	20	0	10.2	0		0.00
Grading	30	0	10.2	0		0.00
Building Construction	300	0.86	10.2	2,632	8.343886151	315.39
Paving	20	0	10.2	0		0.00
Architectural Coating	20	0	10.2	0		0.00
						315.39
HAULING TRIPS						
Phase	Phase Length (# days)	# Hauling Trips	Hauling Trip Length	Total VMT	Fuel Consumption Factor (Miles/Gallon/Day) ¹	Total Fuel Consumption
Linear, Paving	20	0	20	0		0.00
Grading	30	4.2	20	2,520		302.02
Building Construction	300	0	20	0	8.343886151	0.00
Paving	20	0	20	0		0.00
Architectural Coating	20	0	20	0		0.00
						302.02
Countywide operational fuel consumption, off-road construction equipment diesel fuel consumption, and on-road fuel consumption are from CARB EMFAC2021.						
TOTAL OFF-SITE MOBILE GALLONS CONSUMED DURING CONSTRUCTION						2,679.37

County On-road Gallons 4,530,411,359

2024 0.0001%

**Rexhall Project
Energy Calculations**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Fuel Consumption Rate (gallons per hour)	Duration (total hours/day)	# days	Total Fuel Consumption (gallons)
Grading	Graders	1	8	148	0.41	2.4272	8	30	582.53
Grading	Excavators	2	8	36	0.38	0.5472	16	30	262.66
Grading	Rubber Tired Dozers	1	8	367	0.40	5.872	8	30	1409.28
Grading	Scrapers	2	8	423	0.48	8.1216	16	30	3898.37
Grading	Tractors/Loaders/Backhoes	2	8	84	0.37	1.2432	16	30	596.74
Building Construction	Cranes	1	7	367	0.29	4.2572	7	300	8940.12
Building Construction	Forklifts	3	8	82	0.20	0.656	24	300	4723.20
Building Construction	Generator Sets	1	8	14	0.74	0.4144	8	300	994.56
Building Construction	Tractor/Loaders/Backhoes	3	7	84	0.37	1.2432	21	300	7832.16
Building Construction	Welders	1	8	46	0.45	0.828	8	300	1987.20
Paving	Pavers	2	8	81	0.42	1.3608	16	20	435.46
Paving	Paving Equipment	2	8	89	0.36	1.2816	16	20	410.11
Paving	Rollers	2	8	36	0.38	0.5472	16	20	175.10
Architectural Coating	Air Compressors	1	6	37	0.48	0.7104	6	20	85.25
Linear Paving	Tractor/Loaders/Backhoes	1	8	84	0.37	1.2432	8	20	198.91
Linear Paving	Scrapers	1	8	423	0.48	8.1216	8	20	1299.46
Total:									33,831.10
Notes:									
Fuel Consumption Rate = Horsepower x Load Factor x Fuel Consumption Factor									
Where:									
Fuel Consumption Factor for a diesel engine is 0.04 gallons per horsepower per hour (gal/hp/hr) and a gasoline engine is 0.06 gal/hp/hr.									
Countywide operational fuel consumption, off-road construction equipment diesel fuel consumption, and on-road fuel consumption are from CARB EMFAC2021.									
Source: Refer to CalEEMod outputs for assumptions used in this analysis.									

Energy Type	Project Annual Energy Consumption	LOS Angeles County Annual Energy Consumption	Percentage Increase Countywide
Electricity Consumption	28	65,374,721	0.0000%
Natural Gas Consumption	1,533	2,880,994,891	0.0001%
Fuel Consumption			
Construction Off-road Consumption	33,831	40,835,655	0.0828%
Construction On-road Consumption	2,679	4,530,411,359	0.0001%
Operational Automotive Fuel Consumption	6,427	4,448,480,145	0.0001%

APPENDIX C

Biological Resource Evaluation

BIOLOGICAL RESOURCE EVALUATION

Parcels 1 and 2
Tentative Parcel Map 80287 APN 2841-018-035
Section 04, T04N, R15W, S. B. B. & M.
Santa Clarita, California

Prepared for:

Mr. William Rex
26857 Tannahill Avenue
Santa Clarita, CA 91387

Prepared by:

Pruett Biological Resource Consulting
8819 Latera Court
Bakersfield, California 93314
661.421.0006



06 December 2023



EXECUTIVE SUMMARY

Pruett Biological Resource Consulting, Inc. (PruettBio) has prepared this biological resource evaluation of Assessor's Parcel Number (APN) 2841-018-035. The project consists of 9.97 gross acres (4.03 hectares) located in the southeast 1/4 of Section 04, Township 04 North, Range 15 West, San Bernardino Base and Meridian. The project is within the incorporated limits of the City of Santa Clarita, California.

The project is located within the geographic range of several federal-, and state-listed, threatened and/or endangered plant and animal taxa. Several non-listed, special-status species also have the potential to occur in the vicinity of the project.

The purpose of this report is to document biological resources identified during a reconnaissance-level field study of the project site and include potential biological resources identified during a literature review of the site and vicinity, identify potential impacts to biological resources resulting from the project. Evaluation of potential impacts to plant and animal species are required under federal and state regulation during a General Plan Amendment and Zone Change. California Environmental Quality Act (CEQA) Appendix G thresholds have been used to evaluate potential impacts to the biological resources from the proposed project development. Avoidance and minimization measures for implementation prior to and during project activities are recommended as appropriate.

The California Department of Fish and Wildlife (CDFW) and United States Fish and Wildlife Service (USFWS) have not been contacted regarding the preparation of this report. Appendix B, Special-Status Plant and Animal Evaluations, satisfy the requirements for an initial determination of potential impacts under the CEQA Appendix G thresholds. If CEQA threshold determinations warrant, further consultation may be required with CDFW and USFWS. If additional consultation with the agencies results in the need for Application for a California Incidental Take Permit, Cal. Code Regs., tit. 14, § 783.2 outlines requirements for detailed species-specific take analysis, proposed measures to minimize and fully mitigate impacts, compliance monitoring, and funding. A detailed description satisfying Cal. Code Regs., tit. 14, § 783.2 is not required to meet the CEQA Appendix G thresholds.

A literature review was conducted of the site and vicinity, prior to the field study, of the biological resources known to occur based on recorded, direct observation, or potentially occurring in the project impact area based on current or historical habitat conditions. During the field study, existing habitat conditions, direct observations and/or species sign was recorded to assess the potential for occurrence of special-status species. This report includes an evaluation of the potential for those special-status biological resources not observed during the field study, with the potential to occur on the property based on the habitat conditions observed.

The project lies near the southern edge of existing development for the City of Santa Clarita. Parcels 1-4 of the Tentative Parcel Map are bounded on the north, west, and east by single family home development. Land to the south is similarly developed along Sand Canyon Road, and otherwise open space to the southwest. The site is currently impacted from pedestrian and equestrian traffic from the adjacent neighborhood and vegetation fire control.

The federal and state database queries yielded 27 special-status plant species and 48 special-status animal species as potentially occurring within the vicinity of the project site. Of these, 7 plant species, and 18 animal species have federal-, and/or state-listing and are afforded protection under federal or state law.

A query of the California Native Plant Society (CNPS) database yielded 45 plants within a nine-quadrangle search of the project. The CNPS tracks plant species that do not meet the CEQA Section 15380 criteria for listing as threatened or endangered and are afforded no protection under federal or state law. A USGS nine-quadrangle query additionally includes a search area beyond a standard 10-mile



radius. Plant species meeting the criteria for Special Status Plants as defined in *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018) and evaluated under CEQA Section 15380 have been included in this report.

Some CRPR 4 taxa may meet the Section 15380 definition of an endangered, rare, or threatened species, and in the definition of CRPR 4, CNPS and CDFW suggest additional reasons for including CRPR 4 taxa in a CEQA analysis. These reasons include Regionally Rare Taxa. Considered locally significant plants, that is, plants that are not rare from a statewide perspective but are rare or uncommon in a local context such as within a county or region (CEQA Guidelines, § 15125, subd. (c)), or as designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G). “Locally rare” has not been generally defined, but in counties where a “locally rare” policy exists, it applies to taxa with only five to 10 known occurrences in that county.

The CNDDDB, iPac, and CNPS lists were cross-referenced for consistency. A separate CNDDDB query for the County of Los Angeles was also generated to evaluate plant species for local significance.

A separate report has been prepared in compliance with Ordinances 89-10 & 05-4 of the Santa Clarita Municipal Code relating to “Oak Tree Preservation & Protection Guidelines”.

The project will not conflict with existing or adopted Habitat Conservation Plans, Natural Community Conservation Plans, local or regional conservation plans, or local ordinances protecting biological resources.



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INTRODUCTION

Pruett Biological Resource Consulting, Inc. (PruettBio) has prepared this biological resource evaluation for the proposed development of APN 2841-018-035. The project consists of 9.97 gross acres (4.03 hectares) located in the southeast 1/4 of Section 04, T04, R15, S.B.B.&M. The project lies near the southern edge of existing development for the City of Santa Clarita. The report documents biological resources identified during fieldwork conducted on the project site and those identified through a literature search as potentially occurring based on known observations or historic habitat conditions. The report uses the information collected during the field study and literature search to evaluate potential impacts to biological resources, resulting from the project. The report is intended to assist in the analysis of the proposed project for residential, single-family home development.

A reconnaissance level biological evaluation was prepared by McCormick Biological, Inc. (McCormick), report dated March 2019. A third-party peer review of the MBI evaluation was prepared by Michael Baker International (Baker), report dated 19 July 2023. PruetBio reviewed both documents during the preparation of this report.

Listed plant and animal species are protected under the Federal Endangered Species Act (FESA) and the California Endangered Species Act (CESA). Protection of other non-listed, special-status species is afforded under additional regulation including the Migratory Bird Treaty Act (MBTA). Pursuant to the California Environmental Quality Act (CEQA) impacts to non-listed, special-status species must be evaluated. Where necessary, the report recommends avoidance and minimization measures for implementation prior to and during project activities. The report is intended to provide technical information in support of a CEQA preliminary review. For the purposes of this report, potential impacts to the biological resources of the proposed project were evaluated in accordance with Appendix G of the *CEQA Guidelines* (2021). If CEQA threshold determinations warrant, further consultation may be required with CDFW and USFWS. If additional consultation with the agencies results in the need for Application for a California Incidental Take Permit, Cal. Code Regs., tit. 14, § 783.2 outlines requirements for detailed species-specific take analysis, proposed measures to minimize and fully mitigate impacts, compliance monitoring, and funding. A detailed description satisfying Cal. Code Regs., tit. 14, § 783.2 is not required to meet the CEQA Appendix G thresholds.

PROJECT LEGAL DESCRIPTION

The project consists of 9.97 gross acres (4.03 hectares) of APN 2841-018-035 located in the southeast 1/4 of Section 04, T04, R15, S.B.B.&M.

PROJECT SETTING AND PHYSICAL DESCRIPTION

The project lies near the southern edge of existing development for the City of Santa Clarita. The San Gabriel Mountains are comprised of a variety of vegetation cover types including chaparral and coastal scrub, oak woodland, riparian forest and scrub and conifer woodland. The region's climate can be characterized as Mediterranean; with hot, dry summers and cool, moist winters. Summer high temperatures frequently exceed 100 °Fahrenheit (°F); Fall and winter are cool and foggy with occasional snow and temperatures often below freezing.

Rainfall averages 15 inches (38 centimeters) per year per year generally between January and March (Munz and Keck). Drought cycles occur periodically, becoming severe enough that plant and animal populations can experience large fluctuations.

The topography of the site is generally flat at approximately 1720 feet (524 meters) above sea-level. The CDFW California Natural Community of the Project is Coast live oak woodland, Element Code 71.060.01. The rarity ranking for Coast live oak woodland – *Quercus agrifolia* Alliance are listed as: G5=Secure – Common, widespread and abundant; S4= Apparently secure – Uncommon, but not rare in the state; some cause for long-term concern due to declines or other factors. A separate report, in compliance with



Ordinances 89-10 & 05-4 of the Santa Clarita Municipal Code relating to “Oak Tree Preservation & Protection Guidelines” has been prepared for the project. No undisturbed habitat is present on the site or adjacent parcels.



METHODS

LITERATURE REVIEW

PruettBio conducted a literature review to identify known observations and potential for listed, or otherwise special-status, species to occur in the vicinity of the project site. A standard, 10-mile (16-kilometer) radius query was performed. Database records reviewed included:

- **United States Fish & Wildlife Service (USFWS) iPac:** The iPac report generates a list of federal-listed species and other resources under the jurisdiction of the USFWS, including designated critical habitat for listed species, National Wildlife Refuge lands, and Wetlands in the National Wetlands Inventory. The list includes resources that are outside of the project site, but that have the potential to be impacted by project activities.
- **USFWS National Wetlands Inventory:** The Wetlands Mapper is an online inventory integrating digital map data and other resources to provide current information regarding the status of national wetlands, riparian, and deepwater habitats.
- **United States Department of Agriculture (USDA) WebSoil Survey:** The report is an online database providing soil data produced by the National Cooperative Soil Survey, a joint effort of the USDA and other federal, state, and local agencies. The information drawn for the Soil Survey of Kern County, California, Northwestern Part was originally drawn from fieldwork completed in 1981 with soil names and descriptions approved in 1982.
- **California Natural Diversity Database (CNDDDB-RareFind 5):** The CNDDDB is a database of listed, or otherwise special-status, plant and animal species and sensitive communities maintained by the California Department of Fish and Wildlife (CDFW). The information queried for this report included a standard 10-mile radius of the project site.
- **California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants:** CNPS is a private, professional organization that maintains a database evaluating the current conservation status of California's rare, threatened, and endangered plant species. The information queried for this report included a standard 10-mile radius of the project site. The list includes resources that are outside of the project site, but that have the potential to be impacted by project activities based on known historic or current habitat features. The data base was compared to the CNDDDB and iPac queries for consistency.

FIELD STUDY

A reconnaissance-level, biological field study was conducted by Steven P. Pruett on 19 August 2023. The project was surveyed by walking the perimeter and random transects to evaluate all representative habitat features of the site. The field study conducted, allowed for 100% visual coverage of the project site habitat types. Field notes included observations of all plant and wildlife species observed. Direct observations and/or species sign was recorded to assess the potential for occurrence. Land cover types and general habitat conditions were recorded and photographed. Special-status species and habitat features, such as vegetation communities or ephemeral channels, were also recorded and photographed if observed.

Coordinates for important biological resource elements and direct observations of special-status species were recorded using a handheld geographic positioning system unit. All plant taxa encountered were identified to the extent possible given the diagnostic features present. Identifications were made using keys contained in *The Jepson Manual: Vascular Plants of California* and online updates containing revisions to taxonomic treatments (Baldwin et al. 2012; Jepson Flora Project 2015).



RESULTS

This section summarizes the results of the field study conducted on the project site and evaluates those results for the known or potential for occurrence of special-status species based on the literature review and database queries and pursuant to statutory regulation. Discussions are provided describing the existing habitat conditions including vegetation communities, land cover and current use; soils; special-status biological resources potentially occurring in the vicinity of the project site; the potential for jurisdictional resources including designated critical habitat and riparian/wetland/water resource features; the potential for wildlife migration corridors and nursery sites; and regional and local policy.

VEGETATION COMMUNITIES AND LAND COVER

The CDFW California Natural Community of the Project is Coast live oak woodland, Element Code 71.060.01. The rarity ranking for Coast live oak woodland – *Quercus agrifolia* Alliance are listed as: G5=Secure – Common, widespread and abundant; S4= Apparently secure - Uncommon, but not rare in the state; some cause for long-term concern due to declines or other factors.

SOILS

The USGS soil survey map describes the soil of the project site as Unit CmF, Castaic-Balcom silty clay loams, 30 to 50 percent slopes, Unit MfA, Metz loamy sand, 0 to 2 percent slopes, and Unit YoC, Yolo loam, 2 to 9 percent slopes. The parent material for Unit CmF is residuum weathered from sedimentary rock found on backslopes and side slopes of hills. This soil is comprised of silty clay loam to about 28 inches, with weathered bedrock below to about 32 inches. The soil class is “well-drained” with run-off classified as “very high”. The depth to the water table is more than 80 inches. Available water storage is “low”. Unit MfA is alluvium found on backslopes and treads of flood plains and alluvial fans. This soil is comprised of loamy sand and stratified sand to loamy sand to a depth of about 60 inches. The soil class is “somewhat excessively drained” with run-off classified as “negligible”. The depth to the water table is more than 80 inches. Available water storage is “low”. Unit YoC is alluvium derived from sedimentary rock found on backslopes and treads of alluvial fans. This soil is comprised of loam to a depth of about 72 inches. The soil class is “well drained” with run-off classified as “medium”. The depth to the water table is more than 80 inches. Available water storage is “high”.

BIOLOGICAL RESOURCES

The literature review and database queries yielded 27 special-status plant species as potentially occurring within the vicinity of the project site. Forty-eight animal species were identified as potentially occurring in the region of the project site. No evidence of any listed animal species was observed during the field study. No evidence of otherwise special-status plant or animal species, or animal species sign was observed during the field study.

No focused, protocol-level surveys were conducted for the preparation of this report. The field study was conducted outside of the blooming period for many of the special-status plant species potentially occurring in the vicinity of the project. The project is nested within single-family homes with associated development including horse stables, outbuildings, and introduced landscaping. The project itself is maintained for fire suppression and other vegetation control and is impacted by pedestrian and horse traffic. Focused surveys are not expected to significantly impact the conclusions of this report given the current impacts to the project.

Evaluation of special-status species that were found during the literature review with a potential to occur in the region are included in Appendix B.



Special-Status Plant Species

The federal and state database queries yielded 27 special-status plant species as potentially occurring within the vicinity of the project site. A query of the California Native Plant Society (CNPS) database yielded 45 plants within a nine-quadrangle search of the project. A USGS nine-quadrangle query additionally includes a search area beyond a standard 10-mile radius. Plant species meeting the criteria for Special Status Plants as defined in *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018) were evaluated under CEQA Section 15380.

Special-status plant species considered in this evaluation include all plant species that meet one or more of the following criteria:

- Listed or proposed for listing as threatened or endangered under ESA or candidates for possible future listing as threatened or endangered under the ESA (50 CFR §17.12).
- Listed or candidates for listing by the State of California as threatened or endangered under CESA (Fish and Game Code §2050 et seq.). A species, subspecies, or variety of plant is endangered when the prospects of its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, disease, or other factors (Fish and Game Code §2062). A plant is threatened when it is likely to become endangered in the foreseeable future in the absence of special protection and management measures (Fish and Game Code §2067).
- Listed as rare under the California Native Plant Protection Act (Fish and Game Code §1900 et seq.). A plant is rare when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens (Fish and Game Code §1901).
- Meet the definition of rare or endangered under CEQA §15380(b) and (d). Species that may meet the definition of rare or endangered include the following:
 - Species considered by the California Native Plant Society (CNPS) to be “rare, threatened or endangered in California” (Lists 1A, 1B and 2);
 - Species that may warrant consideration on the basis of local significance or recent biological information.
 - Some species included on the California Natural Diversity Database’s (CNDDB) Special Plants, Bryophytes, and Lichens List (California Department of Fish and Game 2008).
- Considered a locally significant species, that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA §15125 (c)) or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G). Examples include a species at the outer limits of its known range or a species occurring on an uncommon soil type.

Some CRPR 4 taxa may meet the Section 15380 definition of an endangered, rare, or threatened species, and in the definition of CRPR 4, CNPS and CDFW suggest additional reasons for including CRPR 4 taxa in a CEQA analysis. These reasons include Regionally Rare Taxa. Considered locally significant plants, that is, plants that are not rare from a statewide perspective but are rare or uncommon in a local context such as within a county or region (CEQA Guidelines, § 15125, subd. (c)), or as designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G). “Locally rare” has not been generally defined, but in counties where a “locally rare” policy exists, it applies to taxa with only five to 10 known occurrences in that county.

The CNDDB, iPac, and CNPS lists were cross-referenced for consistency. A separate CNDDB query for the County of Los Angeles was also generated to evaluate plants for local significance. One of the seven



plant species occurring within a 10-mile radius of the project, California Orcutt grass (*Orcuttia californica californica*), is afforded federal and/or state legal protection. Three CRPR 4 taxa met the definition of “locally rare” with between five and 10 known occurrences drawn from the County of Los Angeles CNDDDB query. Those taxa are: *Dudleya densiflora* (San Gabriel dudleya), *Helianthus inexpectus* (Newhall sunflower), and *Lupinus paynei* (Payne’s bush lupine). Focused surveys are not expected to significantly impact special-status plant species.

Precipitation has been well above average to date, resulting in a good year for annual plant species observations. Of the 27 special-status plant species returned during database queries for the project vicinity, 7 species are either federally- or state-listed as threatened or endangered. Although CEQA requires consideration for impacts to locally significant plant species, no mitigation is legally required to compensate for impacts to non-listed plant species. No listed, or otherwise special-status plant species was observed during the fieldwork conducted for the preparation of this report. No listed, or otherwise special-status plant species, has been recorded as occurring within the project site.

Special-Status Animal Species

Special-status animal species considered in this evaluation include those that may occur in the project vicinity that have statutory protections. This includes federal- and state-listed (rare, threatened, or endangered; fully protected) species and candidates for listing under the respective endangered species acts. Species that are of special concern to the CDFW or the USFWS are included in this evaluation. Special-status bird species that are afforded protection under the MBTA which may nest on or within an approximate 10-mile (16-kilometer) radius of the project site are also evaluated. No evidence of any listed animal species was observed during the field study. No evidence of otherwise special-status animal species, or animal species sign was observed during the field study. The mammals evaluated in the Appendix B discussion are included as a result of the federal and state database queries for a 10-mile radius of the project. None of the mammals is expected to occur based on unsuitable habitat and/or range of the individual species.

Designated Critical Habitat

The USFWS iPac report and USFWS Designated Critical Habitat Mapper lists no Designated Critical Habitat (USFWS 2023) on the project site. The eastern edge of Designated Critical Habitat for California condor (*Gymnogyps californianus*) is approximately 21 miles northwest of the project. Designated Critical Habitat for the Coastal California gnatcatcher (*Polioptila californica californica*) is immediately southwest of the project.

Jurisdictional Water Resource Features

Section 404 of the Federal Clean Water Act (CWA) regulates discharge of dredged and fill material into Waters of the United States. Wetlands are included under this jurisdiction. Proposed activities that may result in discharge of material into Waters of the U.S. require a permit review process by the U.S. Army Corps of Engineers as set forth under CWA section 404(b)(1). Fish and Game Code section 1602 requires any person, state or local governmental agency, or public utility to notify CDFW before beginning any activity that will substantially modify a river, stream, or lake.

A search of the USFWS National Wetlands Inventory resulted in no riparian, wetlands, or other jurisdictional water features mapped on the project site (USFWS 2023). These results are consistent with the observed conditions within the survey area.

Special-Status Natural Communities

No critical habitat was identified by the USFWS iPac query, the CNDDDB, or the CNPS Inventory (USFWS 2023, CDFW 2023, CNPS 2023). The CDFW California Natural Community of the Project is Coast live oak woodland, Element Code 71.060.01. The rarity ranking for Coast live oak woodland – *Quercus*



agrifolia Alliance are listed as: G5=Secure – Common, widespread and abundant; S4= Apparently secure - Uncommon, but not rare in the state; some cause for long-term concern due to declines or other factors. A separate report, in compliance with Ordinances 89-10 & 05-4 of the Santa Clarita Municipal Code relating to “Oak Tree Preservation & Protection Guidelines” has been prepared for the project. No undisturbed habitat is present on the site or adjacent parcels.

Wildlife Migration Corridors and Nursery Sites

Wildlife corridors can be defined as connections between wildlife blocks that meet specific habitat needs for species movement generally during migratory periods but seasonally as well. Wildlife corridors generally contain habitat dissimilar to the surrounding vicinity and include examples such as riparian areas along rivers and streams, washes, canyons, or otherwise undisturbed areas within urbanization. Corridor width requirements can vary based on the needs of the species utilizing them. Development of the project would not impact wildlife migration corridors or nursery sites.

Regional and Local Policies

The proposed, modified project will not conflict with existing or adopted Habitat Conservation Plans, Natural Community Conservation Plans, local or regional conservation plans, or local ordinances protecting biological resources.

IMPACT ANALYSIS AND RECOMMENDED MITIGATION MEASURES

CEQA Appendix G thresholds have been used to evaluate potential impacts to the biological resources from the proposed project. Appendix G provides an analysis of the impacts of the proposed project following the standards of CEQA and provides recommendations that, when implemented, would reduce impacts to less-than-significant levels. It is important to note that potential take of any federal- or state-listed species from project activities would require contacting the appropriate wildlife agency (the USFWS and/or the CDFW).

The California Department of Fish and Wildlife (CDFW) and United States Fish and Wildlife Service (USFWS) have not been contacted regarding the preparation of this report. Appendix B, Special-Status Plant and Animal Evaluations, satisfy the requirements for an initial determination of potential impacts under the CEQA Appendix G thresholds. If CEQA threshold determinations warrant, further consultation may be required with CDFW and USFWS. If additional consultation with the agencies results in the need for Application for a California Incidental Take Permit, Cal. Code Regs., tit. 14, § 783.2 outlines requirements for detailed species-specific take analysis, proposed measures to minimize and fully mitigate impacts, compliance monitoring, and funding. A detailed description satisfying Cal. Code Regs., tit. 14, § 783.2 is not required to meet the CEQA Appendix G thresholds.

The project would create a significant impact to biological resources, based on the specifications in Appendix G of the CEQA Guidelines, if the following were to occur:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
3. Have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;



4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

In addition to the thresholds enumerated in Appendix G, the City of Santa Clarita requires an evaluation regarding the following question: Will the project affect a Significant Ecological Area or Significant Natural Area as Identified on the City of Santa Clarita Delineation Map?

The following analysis discusses potential impacts associated with the development of the project and provides recommendations where appropriate to further reduce potential impacts.

1. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, by the CDFW, or the USFWS?

The project is nested within single-family homes with associated development including horse stables, outbuildings, and introduced landscaping. The project itself is maintained for fire suppression and other vegetation control and is impacted by pedestrian and horse traffic.

No focused, rare plant surveys were conducted for the preparation of this report. The field study was conducted outside of the blooming period for many of the special-status plant species potentially occurring in the vicinity of the project. One of the seven plant species occurring within a 10-mile radius of the project, California Orcutt grass (*Orcuttia californica californica*), is afforded federal and/or state legal protection. Three CRPR 4 taxa met the definition of “locally rare” with between five and 10 known occurrences drawn from the County of Los Angeles CNDDB query. Those taxa are: *Dudleya densiflora* (San Gabriel dudleya), *Helianthus inexpectus* (Newhall sunflower), and *Lupinus paynei* (Payne’s bush lupine). Focused surveys are not expected to significantly impact special-status plant species.

Designated Critical Habitat for the Coastal California gnatcatcher (*Polioptila californica californica*) is immediately southwest of the project. Implementation of standard measures for the protection of biological resources including nesting birds are recommended to avoid and minimize potential impact to general wildlife.

Direct impacts, in the form of “incidental take” of a threatened, endangered, or otherwise protected species, are not expected as a result of the development of the proposed project.

A separate report has been prepared in compliance with Ordinances 89-10 & 05-4 of the Santa Clarita Municipal Code relating to “Oak Tree Preservation & Protection Guidelines”.

2. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations, or by the CDFW or the USFWS?

No riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service exists on the project site. No adverse effect will occur as a result of the development of the proposed project and no mitigation measures are recommended.



3. Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No features, identified in wetland categories, appear on the USFWS National Wetlands Inventory mapping (USFWS 2021) on the proposed, modified project site. No federally protected wetlands as defined by Section 404 of the Clean Water Act were identified during the field study conducted for the preparation of this report. No substantial adverse effect will occur as a result of the development of the project. No mitigation measures are recommended.

4. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

No migratory wildlife corridors were identified during the literature search or field study. The project will not interfere substantially with the movement of any native fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

5. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

A separate report has been prepared in compliance with Ordinances 89-10 & 05-4 of the Santa Clarita Municipal Code relating to "Oak Tree Preservation & Protection Guidelines".

6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The project does not conflict with any Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. No additional mitigation measures are recommended.

A separate report has been prepared in compliance with Ordinances 89-10 & 05-4 of the Santa Clarita Municipal Code relating to "Oak Tree Preservation & Protection Guidelines".

7. Affect a Significant Ecological Area or Significant Natural Area as Identified on the City of Santa Clarita Delineation Map

The SEA Program was originally established as a part of the 1980 County General Plan, to help conserve the genetic and physical diversity within Los Angeles County through designating biological resource areas capable of sustaining themselves into the future. The General Plan 2035 ("General Plan") updated the SEA boundary maps, goals and policies in 2015. SEAs are areas where the County deems it important to facilitate a balance between development and biological resource conservation. Where occurring within SEAs, development activities are carefully reviewed with a key focus on site design as a means for conserving fragile resources such as streams, woodlands, and threatened or endangered species and their habitats.

The project is within the City of Santa Clarita incorporated limits and is therefore not subject to the County of Los Angeles SEA program. The project is subject to the SEA requirements of the City of Santa Clarita, which require a thorough analysis of impacts to ensure that any development within a SEA is highly compatible with its resources.

SEAs are officially designated areas within LA County with irreplaceable biological resources. As specifically described on the Los Angeles County Planning Website: "The SEA Program objective is to conserve genetic and physical diversity within LA County by designating biological resource areas that are capable of sustaining themselves into the future." The SEA Ordinance establishes the permitting,



design standards, and review process for development within SEAs, balancing preservation of the County's natural biodiversity with private property rights.

Of specific note, "the SEA Program does not change the land use designation or the zoning of a property; rather it uses biological review and the application of certain development standards to balance the preservation of the County's natural biodiversity with private property rights."

The proposed land use is compatible and consistent with the existing use of the adjacent parcels. The CEQA Appendix G thresholds, as enumerated above, satisfy the evaluation required under the SEA protocols.



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APPENDIX A

PROJECT VICINTY AND SITE

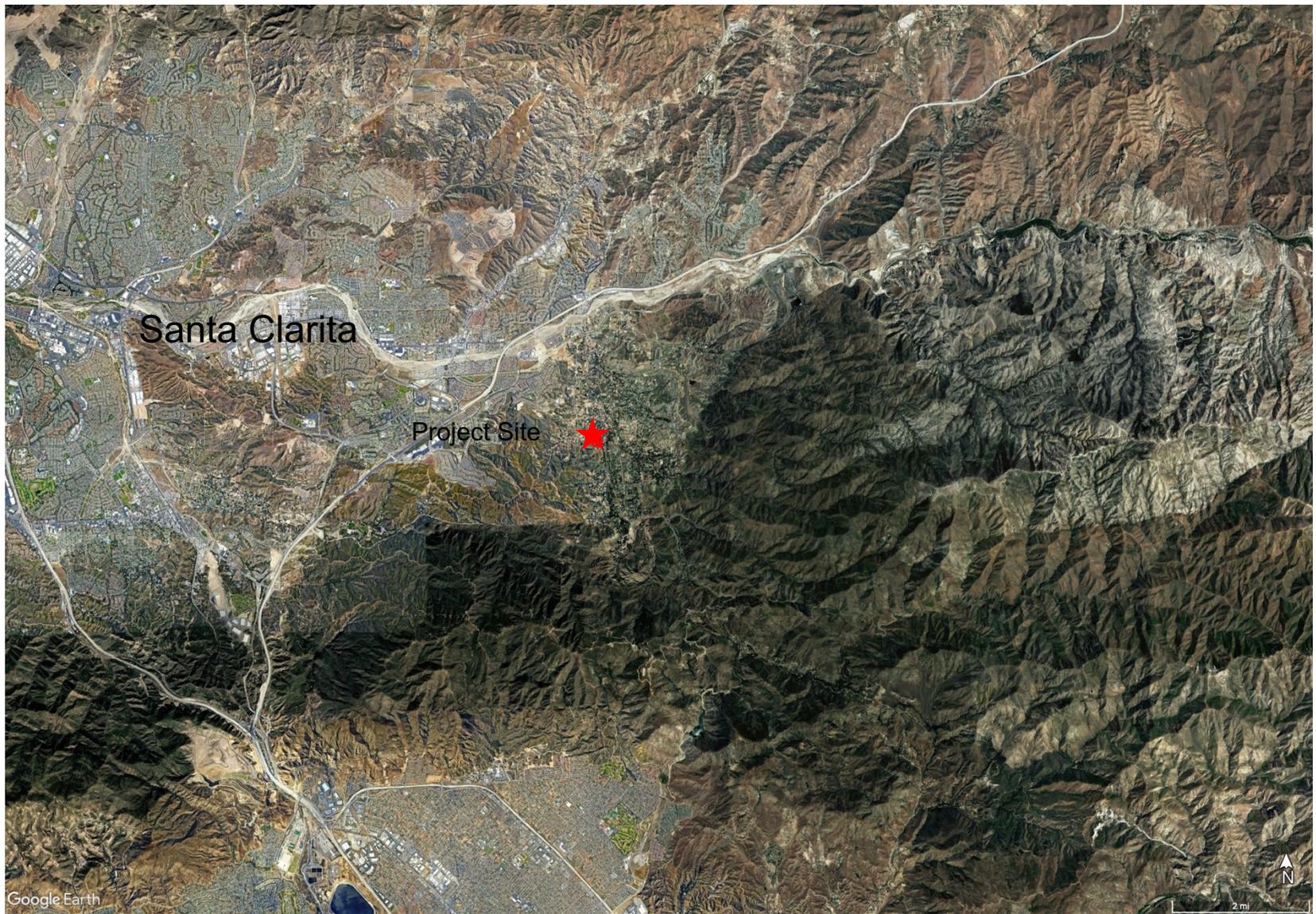


Figure A-1. Aerial photograph of the project vicinity (Google Earth Pro 2023).

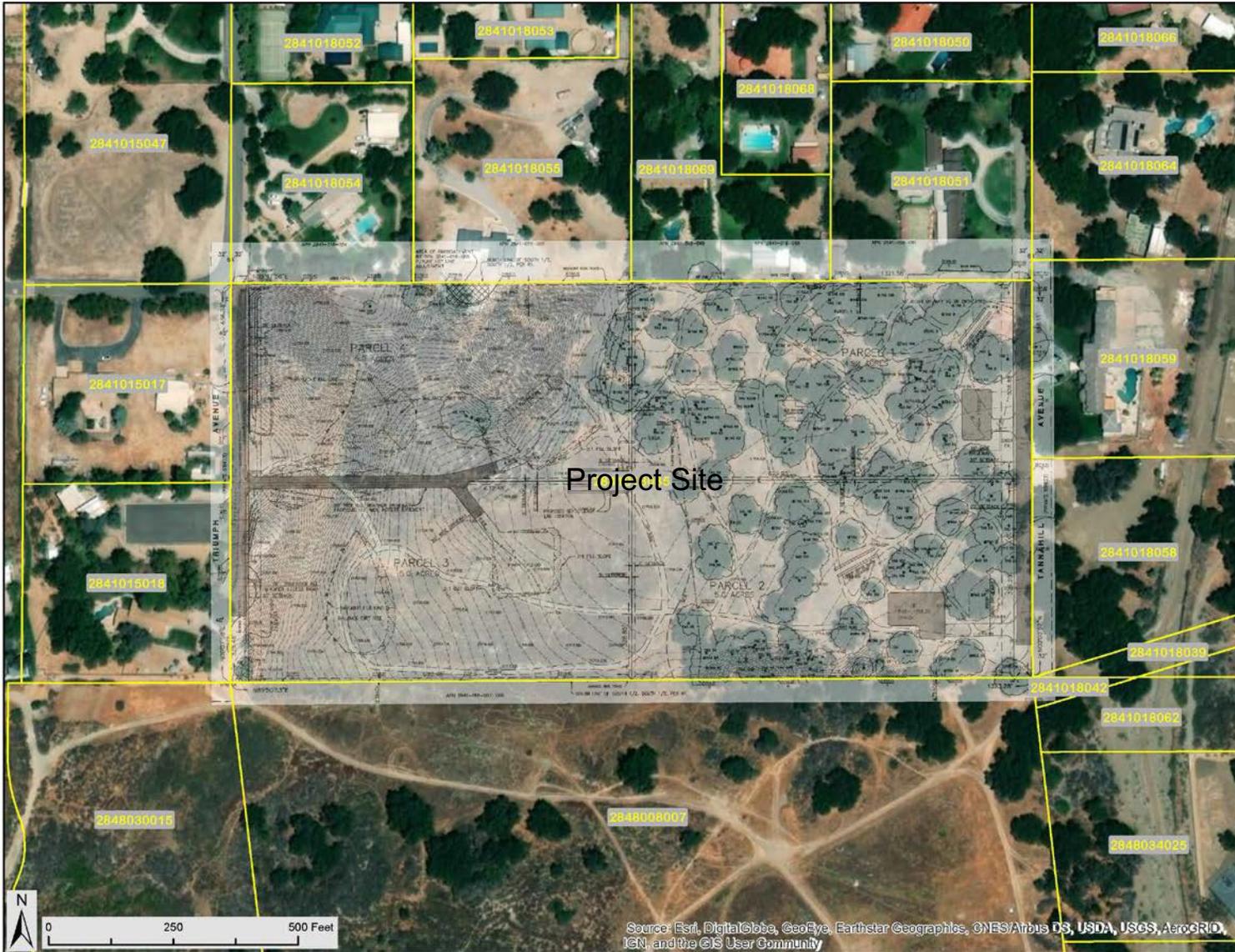


Figure A-2. Aerial photograph of APN 2841-018-035 including the project site.

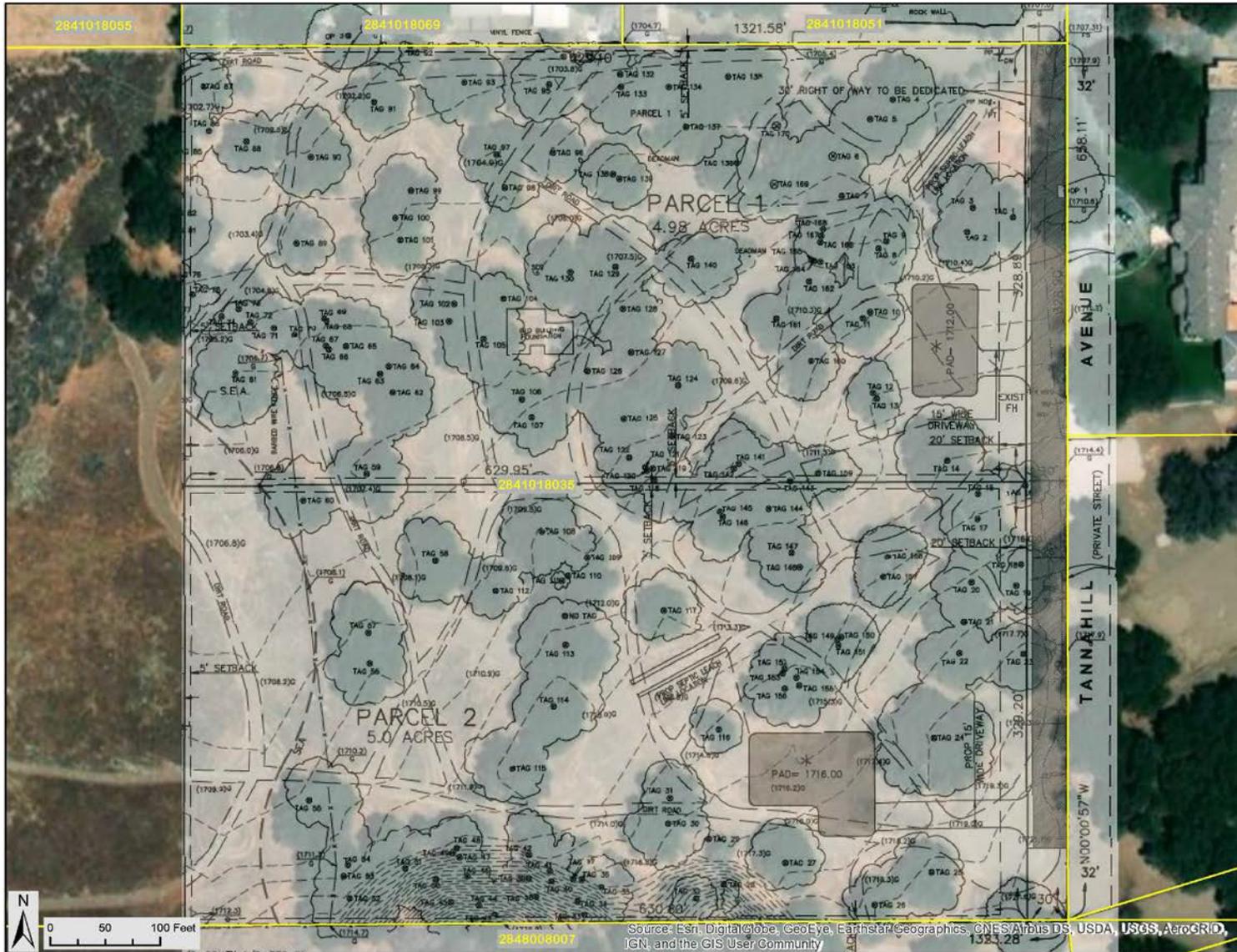


Figure A-3. Aerial photograph of the project site.

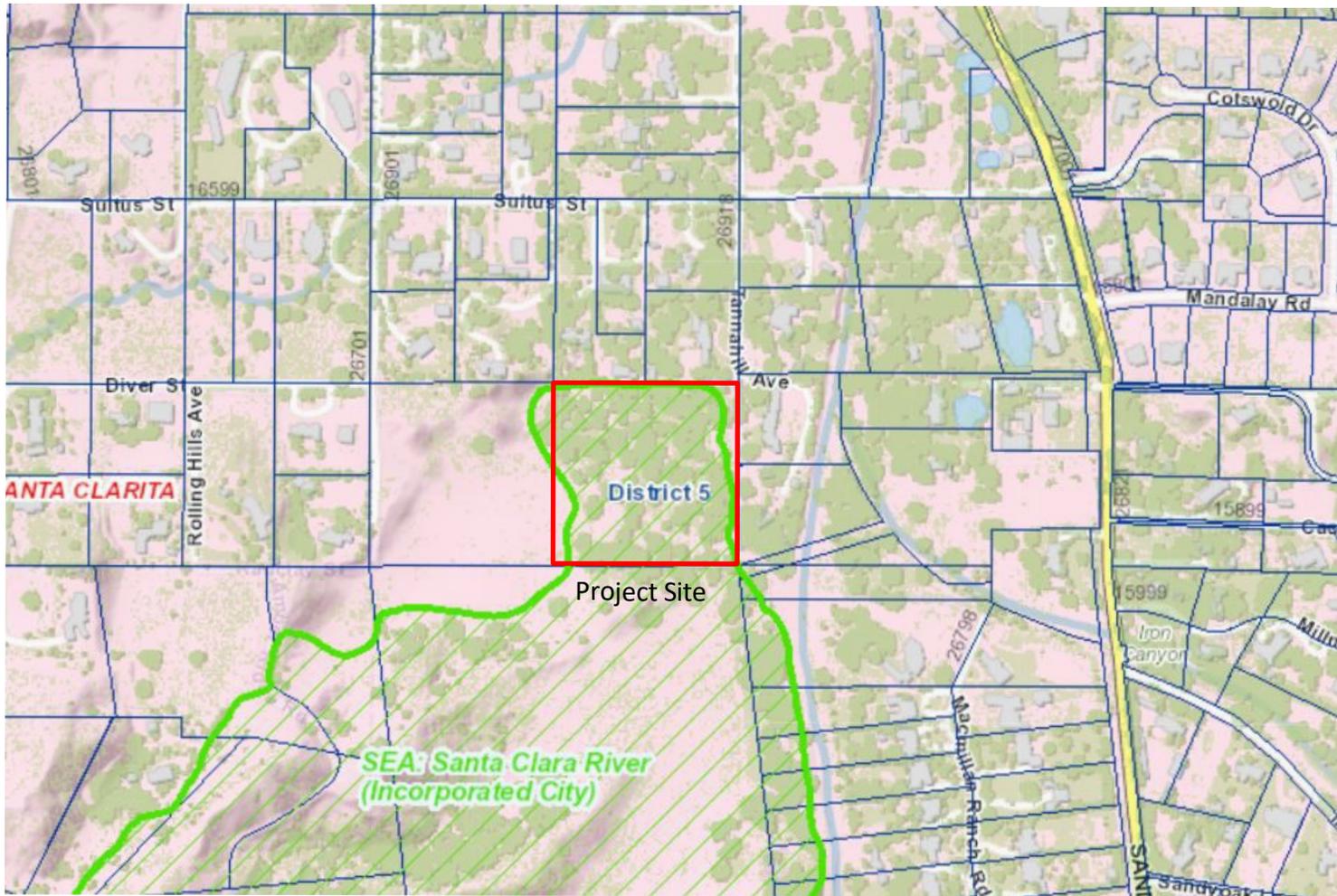


Figure A-4. Map of the project site shown at the edge of the Santa Clara River Project.



Figure A-5. Soil map of the project site (USDA, Natural Resources Conservation Service 2023).



Figure A-6. Photograph of the project site taken from the NW corner facing SE (19Aug23).



Figure A-7. Photograph of the project site taken from the SW corner facing NE (19Aug23).



Figure A-8. Photograph of the project site taken from the SE corner facing N (19Aug23).



Figure A-9. Photograph of the project site taken from the NE corner facing S (19Aug23).

APPENDIX B

SPECIAL-STATUS PLANT AND ANIMAL EVALUATION



Table B-1: Special-status Plants That May Occur in the Vicinity of the Project.

Scientific Name Common Name	Status Fed/State/CNPS	Description	Blooming Period	Field Study Results/Potential for Occurrence
<i>Arenaria paludicola</i> Marsh sandwort	E/E/1B.1	Herbaceous annual in the Caryophyllaceae occurring in marshes, swamps and areas that are wet year-round.	May to August	Not Expected. No suitable habitat for marsh sandwort exists on the project site.
<i>Berberis nevinii</i> Nevin's barberry	E/E/1B.1	Herbaceous annual in the Asteraceae found in chaparral, cismontane woodland, coastal scrub, and valley and foothill grasslands on clay or serpentinite soils between 1,476 and 3,510 feet (450–1,070 meters) in elevation.	May to November	Not Expected. No suitable soils exist for the species.
<i>Calochortus clavatus</i> <i>var. gracillis</i> Slender mariposa-lily	-/1B.2	Perennial bulbiferous herb in the Liliaceae usually found on rocky or clay, serpentinite soils in chaparral, cismontane woodland, coastal scrub, and valley and foothill grasslands between 246 and 4,265 feet (75–1,300 meters) in elevation.	May to June	Not Observed. Marginal soils exist for the species. The species does not meet the threshold to be considered "locally rare". Focused surveys would not impact the CEQA Appendix G evaluation.
<i>Calochortus palmeri</i> <i>var. palmeri</i> Palmer's mariposa-lily	-/1B.2	Perennial bulbiferous herb in the Liliaceae found in chaparral, coastal scrub, and valley and foothill grasslands often on serpentinite soils between 164 and 2,395 feet (50–730 meters) in elevation.	May to July	Not Observed. Marginal soils exist for the species. The species does not meet the threshold to be considered "locally rare". Focused surveys would not impact the CEQA Appendix G evaluation.
<i>Calochortus plummerae</i> Plummer's mariposa-lily	-/1A.2	Perennial bulbiferous herb in the Liliaceae found in chaparral, lower montane coniferous forest, and meadows and seeps on mesic soils between 3,281 and 7,841 feet (1,000–2,390 meters) in elevation. Known to occur in the Outer South Coast Ranges in San Luis Obispo and Santa Barbara Counties, in the Western Transverse Ranges in Ventura and Los Angeles Counties, the Southern Sierra Nevada Foothills through the Western Transverse Ranges in Kern County, the San Gabriel and San Bernardino Mountains in San Bernardino County, and the San Jacinto Mountains in Riverside County.	April to July	Not Observed. Marginal soils exist for the species. The species does not meet the threshold to be considered "locally rare". Focused surveys would not impact the CEQA Appendix G evaluation.



Scientific Name Common Name	Status Fed/State/CNPS	Description	Blooming Period	Field Study Results/Potential for Occurrence
<i>Calystegia peirsonii</i> Peirson's morning-glory	-/-/4.2	Rhizomatous perennial herb in the Convolvulaceae found on serpentinite or sedimentary soils in chaparral, cismontane woodland, and valley and foothill grasslands between 1,394 and 4,888 feet (425–1,490 meters) in elevation.	April to June	Not Expected. No suitable soils exist for the species.
<i>Centromadia parryi</i> <i>ssp. australis</i> Southern tarplant	-/-/1B.1	Annual herb in the Asteraceae found along margins of marshes and swamps, in vernal mesic valley and foothill grasslands, and in vernal pools below 1,575 feet (480 meters) in elevation.	May to November	Not Expected. No suitable soils exist for the species.
<i>Chorizanthe parryi</i> var. <i>fernandina</i> San Fernando Valley spineflower	-/E/1B.1	Annual herb in the Polygonaceae found on rocky, serpentinite soils in chaparral, cismontane woodland, and valley and foothill grasslands from 197 and 2,297 feet (60–700 meters) in elevation.	April to August	Not Expected. No serpentine soils exist on the project.
<i>Chorizanthe parryi</i> var. <i>parryi</i> Parry's spineflower	-/-/1B.1	Annual herb in the Polygonaceae found on rocky, serpentinite soils in chaparral, cismontane woodland, and valley and foothill grasslands from 197 and 2,297 feet (60–700 meters) in elevation.	April to August	Not Expected. No serpentine soils exist on the project.
<i>Deinandra minthornii</i> Santa Susana tarplant	-/Rare/1B.2	Annual herb in the Asteraceae found in coastal bluff, coastal scrub, and valley and foothill grasslands below 1,411 feet (430 meters) in elevation.	May to October	Not Expected. The Project is beyond the published range of the species.
<i>Dodecahema leptoceras</i> Slender-horned spineflower	E/E/1B.1	Perennial, rhizomatous herb in the Brassicaceae found in sandy coastal scrub and dunes from 10 to 164 feet (3–50 meters) in elevation. Known to occur in Los Angeles, Santa Barbara, San Luis Obispo, and Ventura Counties, and Santa Catalina, San Miguel, and San Nicolas Islands.	March to May	Not Expected. The Project is beyond the published range of the species.
<i>Dudleya densiflora</i> San Gabriel dudleya	-/-/1B.1	Perennial in the Crassulaceae found in coastal sage scrub, yellow pine forests, and chaparral.	March to June	Not Expected. Beyond the published range of the species.
<i>Harpagonella palmeri</i> Palmer's grapplinghook	-/-/4.2	Annual herb found on dry, semi-barren area of chaparral, coastal scrub, and grassland below 1000 meters.	March to April	Not Expected. The Project is not appropriate habitat.
<i>Helianthus inexpectatus</i> Newhall sunflower	-/-/1B.1	Perennial herb found in spring fed marsh in willow woodland at 300 meters. Generally within the Western Transverse Range.	August to October	Not Expected. The Project is not appropriate habitat.
<i>Horkelia cuneate</i> var. <i>puberula</i> Mesa horkelia	-/-/1B.1	Annual herb found on dry, sandy, coastal chaparral between 70 and 870 meters. Type locality generally along the foothill edge of the Los Angeles basin.	March to July	Not Expected. The Project is not appropriate habitat.
<i>Lepechinia rossii</i> Ross' pitcher sage	-/-/1B.2	Annual herb in the Lamiaceae family found on chaparral between 470 and 1200 meters.	May to September	Not Expected. The Project is beyond the published range of the species.



Scientific Name Common Name	Status Fed/State/CNPS	Description	Blooming Period	Field Study Results/Potential for Occurrence
<i>Lepidium virginicum</i> <i>var. robinsonii</i> Robinson's pepper-grass	-/-/4.3	Herbaceous annual in the Brassicaceae found in valley and foothill grasslands on alkaline and adobe clay soils between 1,099 and 3,297 feet (335–1,005 meters) in elevation. Known to occur in the South Inner Coastal Ranges from Kern and San Luis Obispo Counties.	March to May	Not Expected. The Project is beyond the published range of the species.
<i>Lupinus paynei</i> Payne's Bush Lupine	-/-/1B.1	Perennial shrub in the Fabaceae family found on sandy, coastal, and riparian scrub, and valley and foothill grassland between 220 and 420 meters.	March to April	Not Expected. Beyond the current published range of the species.
<i>Malacothamnus davidsonii</i> Davidson's bush-mallow	-/-/1B.2	Perennial shrub in the Malvaceae family found on chaparral and coastal scrub between 500 and 700 meters.	May to July	Not Expected. No perennial Malvaceae shrub was observed.
<i>Navarretia fossalis</i> Spreading navarretia	T/-/1B.1	Perennial, rhizomatous herb in the Brassicaceae found in freshwater or brackish marshes and swamps between 16 and 1,083 feet (5–330 meters) in elevation. Known to occur in Los Angeles, Orange, Santa Barbara, San Diego, and San Luis Obispo Counties. Populations historically occurring in San Bernardino County are presumed extirpated.	April to October	Not Expected. No suitable habitat exists for the species.
<i>Navarretia setiloba</i> Piute Mountains navarretia	-/-/1B.1	Annual herb in the Polemoniaceae found in coastal scrub, meadows and swamps, vernal pools, and alkaline, valley and foot hill grassland in mesic soil between 49 and 3,970 feet (15–1,210 meters) in elevation. Known to occur in Alameda, Fresno, Los Angeles, Merced, Monterey, Orange, Riverside, San Benito, Santa Clara, San Diego, and San Luis Obispo Counties. Populations historically occurring in San Bernardino County are presumed extinct.	April to July	Not Expected. The Project is beyond the current published range of the species.
<i>Opuntia basilaris</i> var. <i>brachyclada</i> Short-joint beavertail	-/-/1B.2	Perennial in the Cactaceae family found on Creosote Bush Scrub, Chaparral, Joshua Tree Woodland, Pinyon-Juniper Woodland between 1200 and 1800 meters.	April to June	Not Present. No cactus was observed. The Project does not represent suitable habitat.
<i>Orcuttia californica</i> California Orcutt grass	E/E/1B.1	Perennial stem succulent in the Cactaceae found in chenopod scrub, cismontane woodland, and valley and foothill grasslands between 394 and 1,804 feet (120–550 meters) in elevation. Requires vernal pools and wetlands within Valley Grassland occurrences.	April to May	Not Expected. No vernal pools or wetlands exist on the project.
<i>Pseudognaphalium leucocephalum</i> White rabbit-tobacco	-/-/2B.2	Annual herb in the Asteraceae found in cismontane woodland, and valley and foothill grasslands on adobe clay soils between 295 and 2,625 feet (90–800 meters) in elevation. Known to occur in the Southern Sierra Nevada Foothills from Kern County north to Fresno County.	March to April	Not Expected. The Project is beyond the published range of the species.



Scientific Name Common Name	Status Fed/State/CNPS	Description	Blooming Period	Field Study Results/Potential for Occurrence
<i>Rorippa gambellii</i> Gambel's watercress	E/T/1B.1	Perennial herb in the Brassicaceae found in freshwater-marshes.	April to October	Not Expected. No suitable habitat exists on the Project.
<i>Senecio aphanactis</i> Chaparral ragwort	-/1B.2	Perennial, rhizomatous herb in the Selaginellaceae found in cismontane woodland, lower, upper, and subalpine coniferous forest, and pinyon and juniper woodland on granitic, rocky soil between 5,249 and 8,858 feet (1,600–2,700 meters) in elevation. Known to occur in Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Tulare Counties.	July	Not Expected. The Project is well below the published elevation for the species.
<i>Streptanthus campestris</i> Southern jewelflower	-/1B.3	Perennial, rhizomatous herb in the Selaginellaceae found in cismontane woodland, lower, upper, and subalpine coniferous forest, and pinyon and juniper woodland on granitic, rocky soil between 5,249 and 8,858 feet (1,600–2,700 meters) in elevation. Known to occur in Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Tulare Counties.	July	Not Expected. The Project is well below the published elevation for the species
<i>Symphotrichum greatae</i> Greata's aster	-/1B.3	Rhizomatous herb in the Asteraceae found in cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, and vernal mesic areas in valley and foothill grasslands. Also found in ditches, streams, and springs below 6,693 feet (2,040 meters) in elevation. Known to occur in San Luis Obispo and Kern Counties, and is more widespread in the southeastern portion of the Transverse and Peninsular Ranges.	July to November	Not Expected. The Project is not suitable habitat for the species.

STATUS: Federal and State Listing Code

- D Delisted
- E Federally or State-listed Endangered
- R Rare
- T Federally or State-listed Threatened

CNPS

- 1A Plants presumed extirpated in California, and either rare or extinct elsewhere
- 1B.1 Plants considered rare, threatened, or endangered in California and elsewhere; seriously threatened in California
- 1B.2 Plants considered rare, threatened, or endangered in California and elsewhere; fairly threatened in California
- 2B.1 Plants considered rare, threatened, or endangered in California, but more common elsewhere; seriously threatened in California
- 4.2 Plants of limited distribution in California; fairly threatened in California



Table B-2: Special-status Animals That May Occur in the Vicinity of the Project.

Scientific Name Common Name	Status Federal/State	General Habitat	Survey Results/Regional or Nearest Occurrence*
Invertebrates			
<i>Bombus crotchii</i> Crotch bumble bee	-/E(Candidate)	Found in open grasslands and scrub habitats. Historically from sea level to over 8000 feet.	Not Present. No suitable habitat present.
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp	T/-	Found in vernal pools throughout California. Exist as cysts during the dry season and reproduce when pools are filled with water again.	Not Present. No suitable habitat present.
<i>Euphydryas editha quino</i> Quino checkerspot butterfly	E/-	Occupies a variety of habitats including grasslands, coastal sage scrub, chaparral, juniper woodland, and semi-desert scrub. Historically distributed throughout the coastal slopes of southern California through the Transverse Ranges and to the edges of the Anza-Borrego Desert.	Not Observed/Not Expected. Currently only known from western Riverside County, southern San Diego County, and northern Baja California, Mexico
Fish			
<i>Catostomus santaanae</i> Santa Ana sucker	T/-	Historically, the Santa Ana sucker occupied upper watershed areas of the San Gabriel and San Bernardino Mountains down to the Pacific Ocean. The Santa Ana sucker is currently found in three disjunct populations that occupy portions of the San Gabriel, Los Angeles, and Santa Ana River basins in Southern California.	Not Present. No suitable habitat present.
<i>Gasterosteus aculeatus williamsoni</i> Unarmored threespine stickleback	E/E,SFP	The unarmored threespine stickleback has a very limited distribution, with the southern California population represented in only three drainages; Upper Santa Clara River (extremely limited), Bouquet Creek (extremely limited) and Soledad Canyon Creek (possibly extirpated).	Not Present. No suitable habitat present.
<i>Gila orcuttii</i> Arroyo chub	-/CSC	Arroyo chub are native to the streams and rivers of the Los Angeles plain in southern California, including the Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa Margarita Rivers, and Malibu and San Juan Creeks.	Not Present. No suitable habitat present.
<i>Rhinichthys osculus</i> ssp. 8 Santa Ana speckled dace	-/CSC	Speckled dace occupy a variety of aquatic habitats, but optimal habitat is in perennial streams fed by cool springs and with overhanging riparian vegetation. Optimal spawning habitat is in shallow areas of gravel or gravelly riffle edges with tributary inlets.	Not Present. No suitable habitat present.
Amphibians			
<i>Anaxyrus californicus</i> Arroyo toad	E/CSC	Found in very specific habitat types including exposed sandy stream sides with stable terraces for burrowing. Generally between 300 and 1000 meters.	Not Present. No suitable habitat present.



Scientific Name Common Name	Status Federal/State	General Habitat	Survey Results/Regional or Nearest Occurrence*
<i>Rana draytonii</i> California red-legged frog	T/CSC	Found in dense, shrubby riparian vegetation associated with deep (0.6 meters, 2 feet), still or slow-moving water; arroyo willow (<i>Salix lasiolepis</i>) seems to be most suitable, but cattails (<i>Typha</i> sp.) and bulrushes (<i>Scirpus</i> sp.) also provide good habitat.	Not Present. No suitable breeding habitat present
<i>Rana muscosa</i> Southern mountain yellow-legged frog	E/E,WL	Lives in high mountain lakes, ponds, tarns, and streams--largely in areas that were glaciated as recently as 10,000 years ago. Alpine lakes used by mountain yellow-legged frogs usually have open shorelines, margins that are grassy or muddy and have a depth greater than 2.5 meters (greater than 8.2 feet). Adults are typically found sitting on rocks along the shoreline, usually where there is little or no vegetation. Larvae are often distributed in the warm water shallow areas along the shoreline during the daytime. Mountain yellow-legged frogs also use stream habitats, especially in the northern part of their range.	Not Present. No suitable breeding habitat present
<i>Spea hammondi</i> Western spadefoot	-/CSC	Central valley and adjacent foothills, Coast Ranges from Point Conception south to the Mexico border; valley-foothill grasslands and valley-foothill hardwood, shallow temporary pools used for breeding, below 1,363 meters.	Not Present. No suitable breeding habitat present
<i>Taricha torosa</i> Coast Range newt	-/CSC	Habitat types associated with this species include oak forests, chaparral, and rolling grasslands. Adults are terrestrial requiring ponds or streams for reproduction.	Not Present. No suitable breeding habitat present.
<i>Rana draytonii</i> California red-legged frog	T/-	Found in dense, shrubby riparian vegetation associated with deep (0.6 meters, 2 feet), still or slow-moving water; arroyo willow (<i>Salix lasiolepis</i>) seems to be most suitable, but cattails (<i>Typha</i> sp.) and bulrushes (<i>Scirpus</i> sp.) also provide good habitat.	Not Present. No suitable habitat present.
Reptiles			
<i>Anniella spp.</i> California legless lizard	-/CSC	Found in coastal dunes, chaparral, pine-oak woodlands, desert scrub, and sandy washes in warm moist loose soils, below 5,085 feet (1550 meters).	Not Observed/ Low Probability of Occurrence in the Project Vicinity. Limited Project size, current habitat disturbance, and surrounding development limit the po Typically found in open sandy areas in deserts, chaparral, grassland, limit the potential of occurrence.
<i>Arizona elegans occidentalis</i> California glossy snake	-/CSC	Common throughout southern California found in desert habitats, chaparral, sagebrush, valley-foothill hardwood, pine-juniper, and annual grasslands from below 1830 meters.	Not Observed/ Low Probability of Occurrence in the Project Vicinity. Limited Project size, current habitat disturbance, and surrounding development



Scientific Name Common Name	Status Federal/State	General Habitat	Survey Results/Regional or Nearest Occurrence*
			limit the potential of occurrence.
<i>Aspidoscelistigris stejnegeri</i> Coastal whiptail	-/CSC	Found in woodland, chaparral, riparian areas, or desert n coastal Southern California, mostly west of the Peninsular Ranges and south of the Transverse Ranges, and north into Ventura County.	Not Observed/ Low Probability of Occurrence in the Project Vicinity. Limited Project size, current habitat disturbance, and surrounding development limit the potential of occurrence.
<i>Emys marmorata</i> Western pond turtle	-/CSC	Completely aquatic requiring calm waters such as pools or streams with vegetation banks or logs for basking. Will utilize upland habitat up to about 0.5 kilometers from water.	Not Present. No suitable habitat present.
<i>Phrynosoma blainvillii</i> Coast horned lizard	-/CSC	Inhabits valley-foothill hardwood, coniferous and riparian, as well as pine-cypress, juniper, and annual grasslands, in Sierra Nevada below 3,937 feet (1,200 meters) and in mountains of Southern California and into the adjacent valleys.	Not Observed/ Low Probability of Occurrence in the Project Vicinity. Limited Project size, current habitat disturbance, and surrounding development limit the potential of occurrence.
<i>Thamnophis hammondi</i> Two-striped garter snake	-/CSC	Primarily aquatic and generally found around pools, creeks, cattle tanks, and other water sources. Habitats include oak woodland, chaparral, and coniferous forest.	Not Present. No suitable habitat present.
Birds			
<i>Accipiter cooperii</i> Cooper's Hawk	-/WL	Found throughout southern Canada and the United States in a variety of habitat types associated with deciduous and mixed forests and open woodland habitats. Nests in coniferous, deciduous, and mixed woods, typically those with tall trees and with openings or edge habitat nearby. Increasing associated with suburban areas	Not Observed/Moderate Probability of Occurrence in the Project Vicinity. Suitable nesting habitat on the site.
<i>Agelaius tricolor</i> Tricolored blackbird	-/T(CSC)	Forages in grasslands, wetlands, rice fields, croplands, and weedy uplands dominated by mustards and thistles, etc.; breeds in marshes containing heavy growth of bulrushes, cattails, and blackberries; found throughout the Central Valley.	Not Observed/Low Probability of Occurrence in the Project Vicinity. No suitable nesting habitat on the site. Potential for marginal foraging habitat in farmlands in the vicinity of the project.
<i>Almophilia ruficeps canescens</i>	-/WL	Inhabits oak woodlands and dry uplands with grassy vegetation and bushes. It is often found near rocky outcroppings. The species	Not Observed/Moderate Probability of Occurrence



Scientific Name Common Name	Status Federal/State	General Habitat	Survey Results/Regional or Nearest Occurrence*
Southern California rufous-crowned sparrow		is also known from coastal scrublands and chaparral areas between 910 and 1830 meters.	in the Project Vicinity. Suitable nesting habitat in the vicinity of the site.
<i>Ammodramus savannarum</i> Grasshopper sparrow	-/CSC	Breeds in lowlands and foothills west of the Sierra Nevada-Cascade crest through most of California. Occurs in dense, dry grasslands with tall forbs and sparse shrubs.	Not Observed/Low Probability of Occurrence in the Project Vicinity. Typical associated habitat is not present.
<i>Artemisiospiza belli belli</i> Bell's sage sparrow	-/WL	Inhabits coastal sage scrub and chaparral. Also year-round residents of some sage scrub habitat on the California coastal slope and foothills.	Low Probability of Occurrence in the Project Vicinity. Typical associated habitat is not present.
<i>Athene cunicularia</i> Burrowing owl	-/CSC	Inhabits dry, open grasslands, rolling hills, desert floors, prairies, savannas, agricultural land, and other areas of open, bare ground. These owls will also inhabit open areas near human habitation, such as housing developments, airports, golf courses, shoulders of roads, railroad embankments, and the banks of irrigation ditches and reservoirs.	Low Probability of Occurrence in the Project Vicinity. Typical associated habitat is not present.
<i>Aquila chrysaetos</i> Golden eagle	-/SFP	Uncommon permanent resident and migrant throughout California except center of the Central Valley; forages in rolling foothills, mountain areas, sage-juniper flans and desert areas, below 12,575 feet (3,833 meters), nests on cliffs and in large trees in open areas, very susceptible to human disturbance.	Not Observed/Moderate Probability of Occurrence in the Project Vicinity. No suitable nesting habitat on the project site.
<i>Buteo swainsoni</i> Swainson's hawk	-/T	Riparian and sometimes large isolated trees used for nesting; grasslands and agricultural lands used for foraging; in California, breeds primarily in the Sacramento Valley, with occasional nesting to the south through Kern County; migrate through the Central and San Joaquin Valleys to their wintering grounds in South America.	Not Observed/Low Probability of Occurrence in the Project Vicinity. No suitable nesting sites on the project..
<i>Coccyzus americanus occidentalis</i> Western yellow-billed cuckoo	T/E	Nests in walnut and almond orchards in California, natural nesting habitat is in cottonwood-tree willow riparian forest. Known populations of breeding western yellow-billed cuckoo are several disjunct locations in California, Arizona, and western New Mexico.	Not Observed/Moderate Probability of Occurrence in the Project Vicinity. No suitable nesting habitat on the project site.
<i>Elanus leucurus</i> White-tailed kite	-/, SFP	Associated habitats include open grasslands, savannas, agriculture, wetlands, oak woodland and riparian areas with associated open space.	Not Observed/Moderate Probability of Occurrence in the Project Vicinity. Suitable nesting habitat.
<i>Empidonax traillii extimus</i> Southwestern willow flycatcher	E/E	Breeds in dense riparian tree and shrub habitat associated with rivers, lakes, and other wetlands.	Not Observed/Moderate Probability of Occurrence in the Project Vicinity. No suitable nesting habitat on the project site.



Scientific Name Common Name	Status Federal/State	General Habitat	Survey Results/Regional or Nearest Occurrence*
<i>Eremophila alpestris actia</i> California horned lark	-/WL	Resident throughout California from the coast to the deserts up to alpine dwarf-shrub habitat above tree line.	Not Observed/Moderate Probability of Occurrence in the Project Vicinity. No suitable nesting habitat on the project site.
<i>Falco mexicanus</i> Prairie falcon	-/WL	Found in generally dry, open country such as plains, prairies, and deserts, and can be relatively common in canyon country, where it is attracted to the nesting sites afforded by cliffs and rock outcrops.	Not Observed/Low Probability of Occurrence in the Project Vicinity. No suitable nesting habitat on the project site.
<i>Gymnogyps californianus</i> California condor	E/E, SFP	Forage over wide areas of open rangelands, roost on cliffs and in large trees and snags and occur mostly between sea-level and 2,743 meters (9,000 feet), and nests from 610 to 1,981 meters (2,000–6,500 feet). Require vast expanses of open savannah, grasslands, and foothill chaparral, with cliffs, large trees, and snags for roosting and nesting.	Not Observed/Moderate Probability of Occurrence in the Project Vicinity. No suitable nesting habitat present. Designated Critical Habitat 21 miles north of the project site.
<i>Haliaeetus leucocephalus</i> Bald Eagle	D/E, SFP	Uncommon permanent resident and migrant throughout California except center of the Central Valley; forages in rolling foothills, mountain areas, sage-juniper flans and desert areas, below 12,575 feet (3,833 meters), nests on cliffs and in large trees in open areas, very susceptible to human disturbance.	Not Observed/Moderate Probability of Occurrence in the Project Vicinity. No suitable nesting habitat on the project site.
<i>Lanius ludovicianus</i> Loggerhead shrike	-/CSC	Common resident and winter visitor in lowlands and foothills throughout California; species prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches; nests on stable branches in densely-foliaged shrubs or trees, usually well-concealed.	Not Observed/Moderate Probability of Occurrence in the Project Vicinity. Suitable habitat on the project site.
<i>Polioptila californica californica</i> Coastal California gnatcatcher	T/CSC	Occurs within a very limited distribution of coastal sage scrub. This habitat is characterized by low shrubs generally dominated by California sagebrush, buckwheat, salvia, and prickly-pear cactus	Not Observed/Moderate Probability of Occurrence in the Project Vicinity. Designated Critical Habitat immediately southwest of the project.
<i>Vireo bellii pusillus</i> Least Bell's vireo	E/E	Inhabits low, dense riparian growth along water or along dry parts of intermittent streams. Typically associated with willow, cottonwood, baccharis, wild blackberry, or mesquite in desert localities.	Not Observed/Low Probability of Occurrence in the Project Vicinity. No suitable nesting habitat on the project site.
Mammals			
<i>Antrozous pallidus</i> Pallid bat	-/CSC	Throughout Californian except high Sierra Nevada from Shasta County south to Kern County and the northwestern corner of the	Not Present No suitable habitat on the project.



Scientific Name Common Name	Status Federal/State	General Habitat	Survey Results/Regional or Nearest Occurrence*
		state; grasslands, shrub lands, woodlands, and forest habitats; roosts in caves, crevices, mines and hollow trees.	
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	-/CSC	Occurs throughout California except at the highest elevations; requires caves, mines, tunnels, or other structures for roosting; prefers moist habitats, feeding from brush or trees along habitat edges.	Not Observed/Not Expected. Beyond the current published range of the species.
<i>Euderma maculatum</i> spotted bat	-/CSC	Habitat types include open and dense deciduous and coniferous forests, hay fields, deserts, marshes, riparian areas, and dry shrub-steppe grasslands; roosts in undisturbed cliff faces.	Not Observed/Not Expected. Beyond the current published range of the species.
<i>Eumops perotis californicus</i> Western mastiff bat	-/CSC	Open, semi-arid to arid habitats, including conifer and deciduous woodlands, annual and perennial grasslands, chaparral, desert scrub, and urban areas; roosts in cliff faces, as well as high buildings, trees, and tunnels; uncommon resident in southwestern San Joaquin Valley.	Not Observed/Not Expected. Beyond the current published range of the species.
<i>Lasiurus cinereus</i> Hoary bat	-/-	Open habitats or habitat mosaics with access to trees for cover and open areas or habitat edges for feeding.	Not Observed/Not Expected. Beyond the current published range of the species.
<i>Lepus californicus bennettii</i> San Diego black-tailed jackrabbit	-/-	Occupies a variety of habitat types including savannah, scrub, forest, grasslands, and desert.	Not Observed/Not Expected. Beyond the current published range of the species.
<i>Macrotus californicus</i> California leaf-nosed bat	-/CSC	Found in caves and abandoned mines in deserts of northern Mexico, Baja California, southern Arizona, southern California and southern Nevada America.	Not Observed/Not Expected. Beyond the current published range of the species.
<i>Neotamias speciosus speciosus</i> Lodgepole chipmunk	-/CSC	Habitat types include subalpine mixed conifer forests containing lodgepole pine, red fir, and Jeffrey pine generally between 1,500 and 3,300 meters. Also known to occur in woodlands including white fir, Douglas fir, ponderosa pine, sugar pine, incense cedar, and California black oak.	Not Observed/Not Expected. Beyond the current published range of the species.
<i>Neotoma lepida intermedia</i> San Diego desert woodrat	-/CSC	Found in sagebrush scrub and chaparral of southwestern California and northwestern Baja California. Additional disconnected groups occur in California in the vicinity of the southern San Joaquin Valley and southern Sierra Nevada	Not Observed/Not Expected. No Neotoma middens observed during the field study.
<i>Onychomys torridus ramona</i> Southern grasshopper mouse	-/CSC	Found in valley grasslands habitats, blue oak savanna, desert associations dominated by annual grasses and California ephedra, alkali sink scrub, saltbush scrub, and upper Sonoran shrub associations, dominated by ephedra.	Not Observed/Not Expected. Uncommon in valley foothill and montane riparian habitat.



Scientific Name Common Name	Status Federal/State	General Habitat	Survey Results/Regional or Nearest Occurrence*
<i>Taxidea taxus</i> American badger	-/CSC	Uncommon resident found through California; in less disturbed grassland and shrubland habitats in San Joaquin Valley.	Not Present. No badger burrows or other sign observed during the field study.

STATUS:

Federal

- S Listed as a BLM Sensitive Species
- D Delisted
- E Listed as Endangered
- PT Proposed as Threatened
- T Listed as Threatened
- C Candidate for Endangered Status

State

- CSC California Department of Fish and Wildlife Designated Species of Special Concern
- D Delisted
- E Listed as Endangered
- SFP California Department of Fish and Wildlife Designated Fully Protected
- T Listed as Threatened

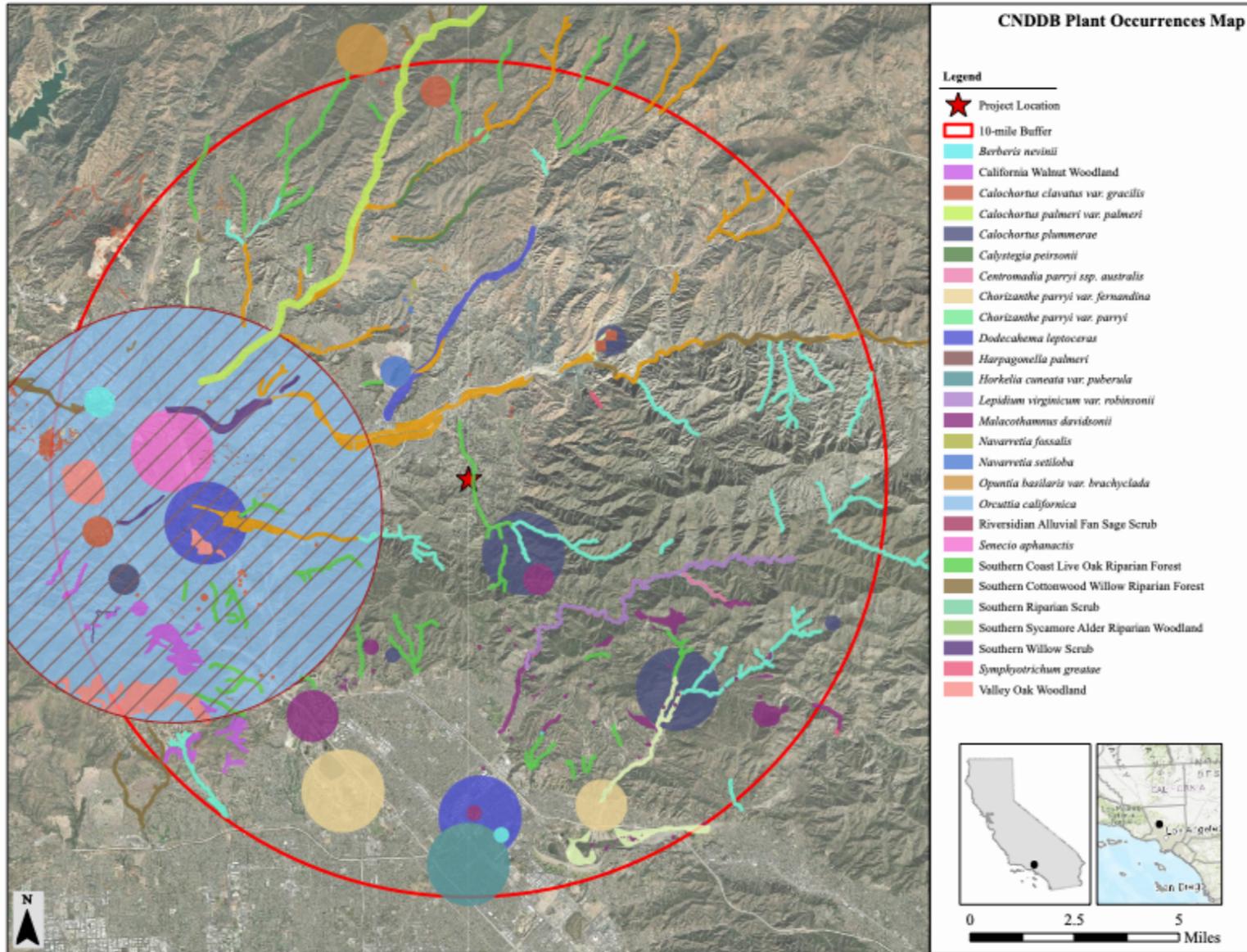


Figure B-1. CNDDDB special-status plant species occurrences within a 10-mile radius of the project (CDFW 2023).

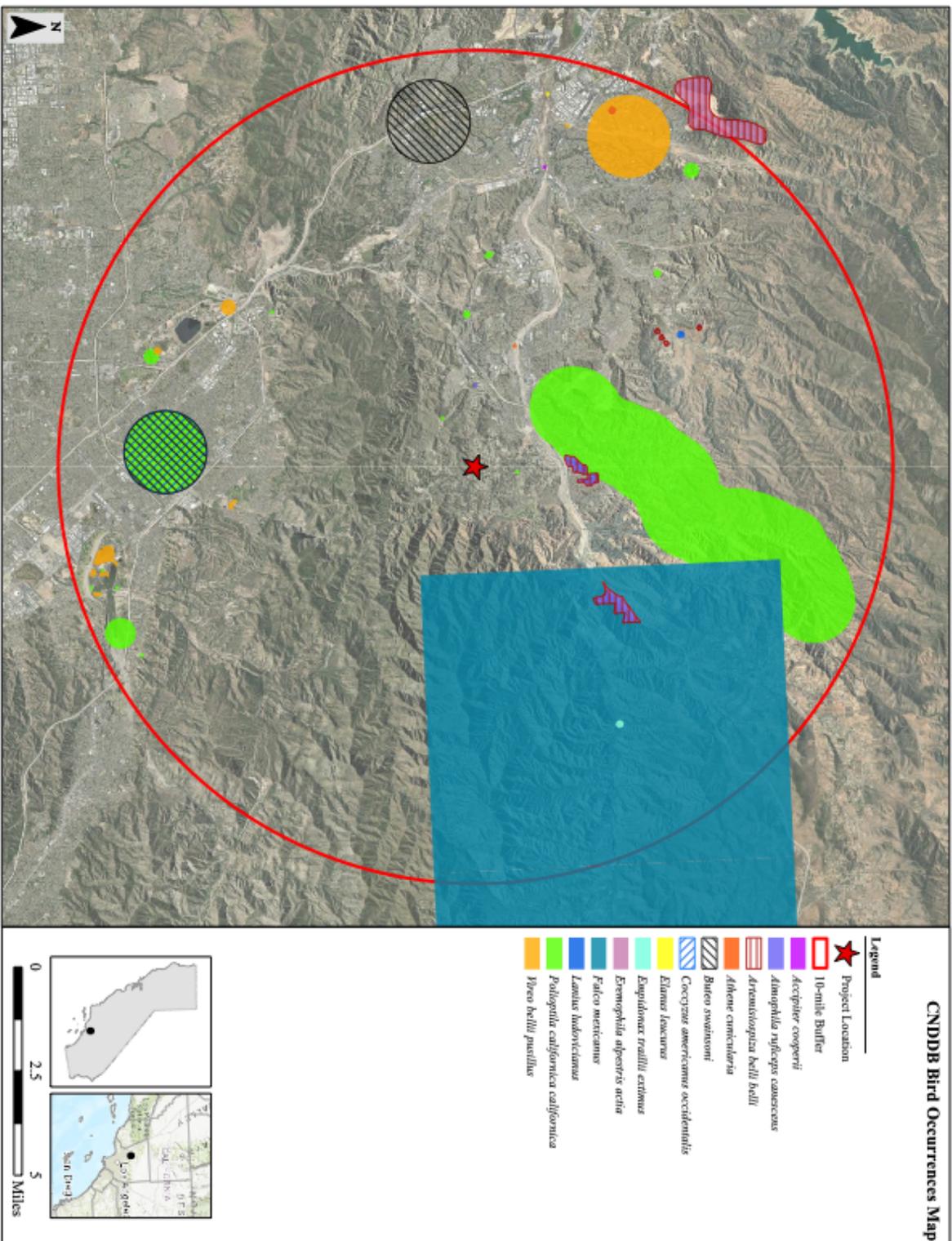


Figure B-2. CNDDDB special-status bird species occurrences within a 10-mile radius of the project (CDFW 2023).

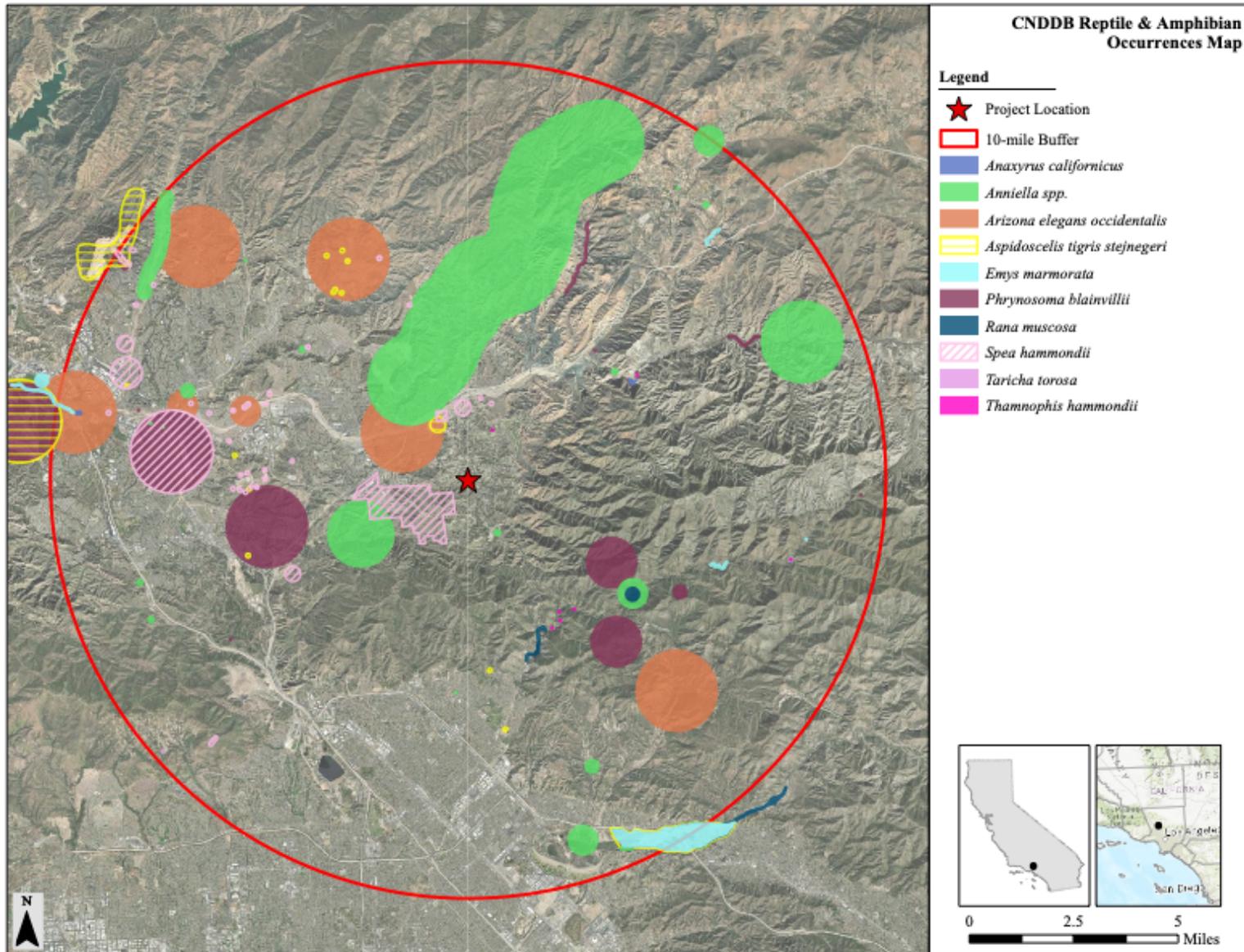


Figure B-3. CNDDDB special-status amphibian and reptile species occurrences within a 10-mile radius of the project (CDFW 2023).

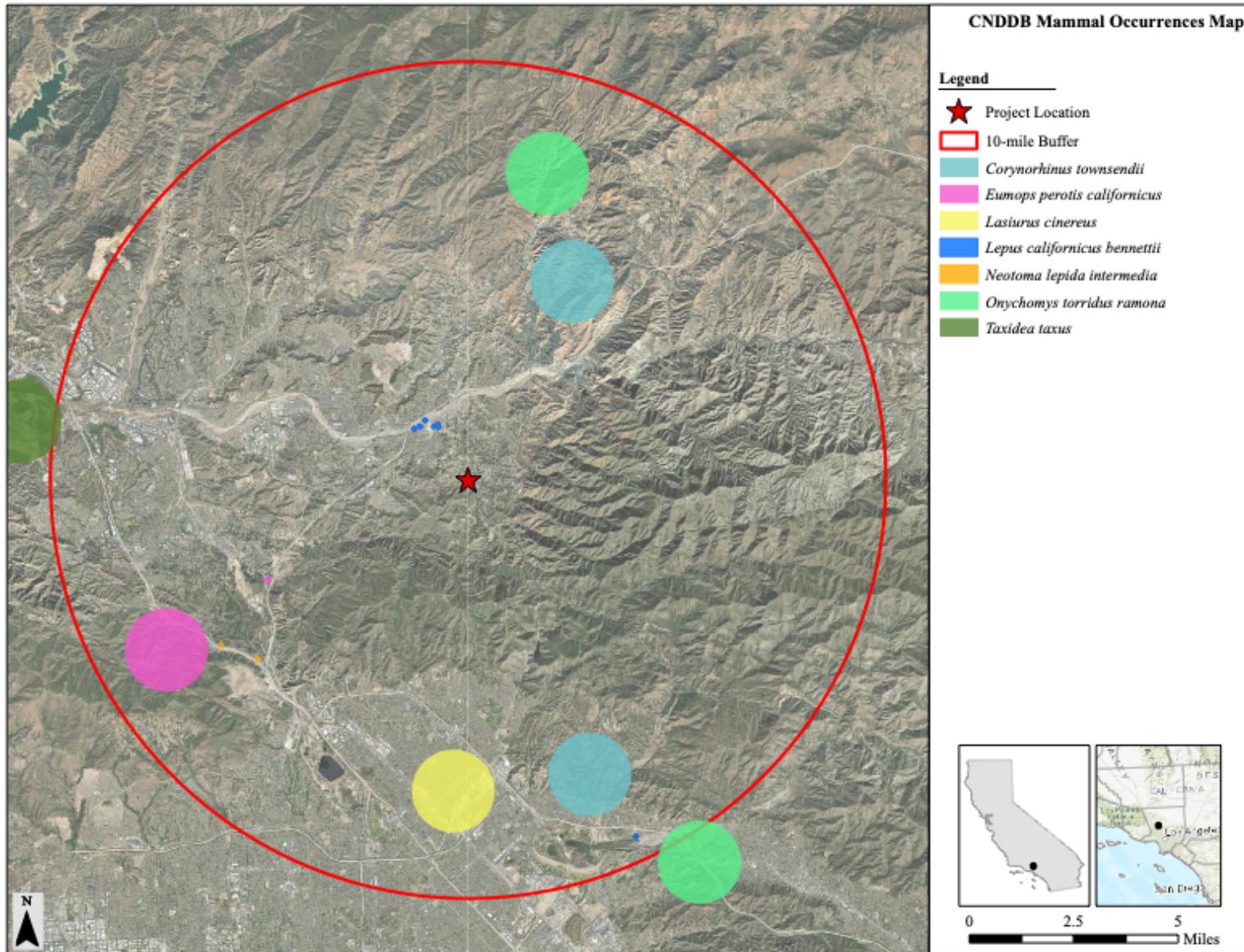


Figure B-4. CNDDDB special-status mammal species occurrences within a 10-mile radius of the project (CDFW 2023).

APPENDIX C

PLANTS AND ANIMALS OBSERVED ON THE PROJECT

FIELD STUDY CONDUCTED
19 August 2023



Table C-1. Vascular plant species observed during the field study conducted on the project site.

Scientific Name	Common Name
Adoxaceae	
<i>Sambucus</i> sp.	Elderberry
Amaranthaceae	
<i>Amaranthus albus</i>	Tumble pigweed
Asteraceae	
<i>Ambrosia acanthicarpa</i>	Flatspine bur ragweed
<i>Artemisia californica</i>	California sagebrush
<i>Pseudognaphalium californicum</i>	California cudweed
<i>Erigeron canadensis</i>	Horseweed
Boraginaceae	
<i>Amsinckia menziesii</i>	Fiddleneck
<i>Phacelia ramosissima</i>	Branching phacelia
Brassicaceae	
<i>Sisymbrium irio</i>	London rocket
<i>Sisymbrium altissimum</i>	Jim Hill mustard
Chenopodiaceae	
<i>Chenopodium album</i>	Lamb's quarters
<i>Salsola tragus</i>	Russian thistle
Euphorbaceae	
<i>Euphorbia</i> sp.	Spurge
Fagaceae	
<i>Quercus agrifolia</i>	Coast live oak
Geraniaceae	
<i>Erodium cicutarium</i>	Redstem filaree
Grossulariaceae	
<i>Ribes rubrum</i>	Currant
Lamiaceae	
<i>Marrubium vulgare</i>	Horehound
Poaceae	
<i>Avena fatua</i>	Slender wild oat

Scientific Name	Common Name
<i>Bromus madritensis ssp. rubens</i>	Red brome
<i>Cynodon</i> sp.	Bermuda grass
<i>Digitaria</i> sp.	Crabgrass
<i>Hordeum vulgare</i>	Farmer's foxtail
<i>Schismus arabicus</i>	Mediterranean grass
<i>Poa annua</i>	Annual bluegrass
Rosaceae	
<i>Prunus virginiana</i>	Chokecherry
Solanaceae	
<i>Datura wrightii</i>	Jimsonweed

Table C-2. Vertebrate animal species observed during the field study conducted on the project site.

Scientific Name	Common Name
Birds	
<i>Aphelocoma californica</i>	Scrub Jay
<i>Corvus corax</i>	Common raven
<i>Haemorhous mexicanus</i>	House finch
<i>Sayornis saya</i>	Say's phoebe
<i>Sturnus vulgaris</i>	European starling
<i>Zenaidura macroura</i>	Mourning dove
Mammals	
<i>Otospermophilus beecheyi</i>	California ground squirrel
<i>Thomomys bottae</i>	Pocket gopher (burrow)

APPENDIX D

Cultural Resources Identification Memorandum

I N T E R N A T I O N A L

Revised
October 20, 2023

February 8, 2023

Mike Ascione
Associate Planner
City of Santa Clarita
32920 Valencia Blvd., Suite 302
Santa Clarita, CA 91355

RE: CULTURAL RESOURCES IDENTIFICATION MEMORANDUM FOR THE REXHALL PROJECT, CITY OF SANTA CLARITA, LOS ANGELES COUNTY, CALIFORNIA

Dear Mr. Ascione:

Michael Baker International completed a cultural resources study for the proposed Rexhall Project (project). This report includes the results of a California Historical Resources Information System records search at the South Central Coastal Information Center (SCCIC), Native American Heritage Commission (NAHC) Sacred Lands File search, archaeological survey, literature and historical map review, Santa Clarita Valley Historical Society outreach, buried archaeological site sensitivity analysis, California Register of Historical Resources evaluation of one newly recorded historic-period archaeological site (MBI-REX-MY-01), and management recommendations. The intent of this study is to identify if historical resources, as defined by California Environmental Quality Act (CEQA) Section 15064.5(a), will be impacted by the project. The City of Santa Clarita (City) is the lead agency responsible for compliance with the CEQA.

PROJECT DESCRIPTION

The project proposes to subdivide a 19.92-acre parcel into four parcels and prepare the construction of four single-family homes located at the southeast corner of Triumph Avenue and Diver Street in Santa Clarita, California. Site preparation would involve grading and constructing four home pads, septic leaching fields, and access driveways. The property is currently undeveloped. One building foundation associated with a building constructed between 1978 and 1985, and demolished by 1992, would be removed in association with site preparation activities.

PROJECT AREA

The project area is in the City of Santa Clarita, north of the San Gabriel Mountains, west of Sand Canyon, and east of the Antelope Valley Freeway (SR-14) (**Attachment 1: Figure 1**). The project area addressed in this study is defined as the boundaries of Assessor Parcel Number 2841-018-071 and includes the maximum extent of ground disturbance and project activities associated with site preparation and construction.

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The project is mapped within the *Mint Canyon, California* USGS 7.5-minute topographic quadrangle map Township 4 North, Range 15 West, Section 26 (**Attachment 1: Figure 2**). The project area consists of undeveloped land with a series of improved dirt roads and trails running through it, with a stand of coast live oaks in the eastern half and the western half primarily composed of short grasses and California buckwheat (**Attachment 1: Figure 3**).

SETTING

ENVIRONMENTAL SETTING

California is divided into 11 geomorphic provinces, each defined by unique geologic and geomorphic characteristics. The project is in the central portion of the Transverse Ranges geomorphic province, marked by east–west trending mountain ranges and valleys in contrast to the northwest-trending ranges of coastal California (CGS 2002). This geomorphic province also extends offshore to include physiogeographic features, such as the northern members of the Channel Islands of Santa Cruz, Santa Rosa, and San Miguel Islands (CGS 2002). The Transverse Ranges province crosses several counties and is bound by the Pacific Ocean to the west, the Coast Ranges and Sierra Nevada geomorphic provinces to the north, the Mojave Desert geomorphic province to the east, and the Peninsular Ranges and Colorado Desert geomorphic provinces to the south.

The geology of the Santa Clarita area was mapped by Campbell et al. (2016) at a scale of 1:100,000 and by Dibblee and Ehrenspeck (1996) at a scale of 1:24,000. Geologic units underlying the project area are mapped as alluvial gravel, sand, and clay of the valley area that date to the Holocene epoch (Qa of Dibblee and Ehrenspeck 1996). The Mint Canyon formation consists of terrestrial sedimentary deposits ranging from conglomerate through sandstone to claystone that date to the Miocene epoch (Tmc of Dibblee and Ehrenspeck 1996).

The soils in the project area have been mapped as Castaic-Balcom silty clay loams, 30 to 50 percent slopes (CmF), Hanford sandy loam, 2 to 9 percent slopes (HcC), Metz loamy sand, 0 to 2 percent slopes (MfA), and Yolo loam, 2 to 9 percent slopes (YoC) (NRCS 2023). The Castaic series consists of well-drained, moderately slowly permeable soils strongly sloping to very steep that formed in residuum weathered from shale, sandstone, and mudstone (USDA 2001a). The Balcom series consists of moderately deep, well-drained soils formed in material weathered from shale and sandstone (USDA 2001b). Approximately 18.8 percent of the project area is composed of the Castaic and Balcom series, which contain clay-rich B horizons and are located on steep slopes. Steep slopes decrease the potential for archaeological potential due to erosion. Hanford series consists of deep, well-drained soils formed in alluvium derived from granite. Hanford series soils are on floodplains or alluvial fans (USDA 1999a). The Metz series consists of deep, somewhat excessively drained soils formed in alluvial material predominantly from sedimentary sources. Metz series soils are on floodplains and alluvial fans (USDA 1999b). The Yolo series consists of deep, well-drained soils formed in alluvium from mixed rocks. Yolo series soils are located on alluvial fans and flood plains (USDA 2018).

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The project area is within the Venturan-Angelino Coastal Hills ecoregion of California (Griffith et al. 2016). Ecoregions denote general similarity in ecosystems and environmental resources. The vegetation associated with the Venturan-Angelino Coastal Hills ecoregion consists of shrub-covered hills and mountains, including the Santa Monica Mountains, Verdugo Mountains, and the hills of the Palos Verdes Peninsula. The Pacific Ocean influences the climate in this region with thermic soil temperatures and xeric soil moisture. Although much of this ecoregion has been modified by urban and residential development, vegetation in undisturbed areas would include California sagebrush, California buckwheat, coast live oak, chamise chaparral, and annual grasslands (Griffith et al. 2016).

CULTURAL SETTING

The division of prehistory into temporal periods provides a framework for understanding cultural change in years before present (BP). The earliest occupation of southern California occurred in the Paleocoastal period, generally dated to about 13,000 and 8,500 BP (Moratto 1984; Erlandson et al. 2007). These earliest inhabitants were highly mobile hunter-gathers. Warren (1968) and others (Sutton and Gardner 2010) defined the Encinitas Tradition, dating to about 8,500 and 3,500 BP. The Encinitas Tradition is a widespread cultural phenomenon distinguished by an abundance of manos and metates and a dearth of vertebrate faunal remains, projectile points, and mortar and pestle groundstone tools. Definitions of the Intermediate and Late Prehistoric periods continue to be employed as temporal periods, as Wallace (1955) defined them. However, the understanding of cultural practices, technology, and migrations, among other aspects, has been thoroughly deepened (as summarized by Sutton 2010).

The project area is within the boundaries of Tataviam territory. Generally, their territory included much of northern Los Angeles County and portions of Ventura County, including parts of the Santa Monica Mountains near Topanga Canyon to the west, Antelope Valley to the north, portions of the San Gabriel Mountains to the east, and south through the San Fernando Valley. Much debate has occurred regarding the linguistic origins of the Tataviam language, but Travis Hudson (1982) concluded that Tataviam spoke a Uto-Aztecan language, possibly Takic. The Tataviam utilized drainages such as the Santa Clara River, Piru, and Castaic Creeks (Caruso 1988: 3). Their habitation of the Upper Santa Clara River Valley may have provided ample trade opportunities with neighboring groups, including the Chumash and Shoshone (Caruso 1988). The closest recorded Tataviam village, *Tochonanga*, is located approximately 7.9 miles southwest of the project area (King and Blackburn 1978).

Spanish explorers first visited the coast of southern California in 1542, but European settlement did not begin in the area until 1769 when Gaspar de Portola led an exploratory mission intended to open up Alta California to settlement. The expedition reached the Santa Clara River near Castaic Junction, approximately 11 miles west of the project area, on August 8. Father Fray Juan Crespi, one of the spiritual leaders of the expedition, described the site as "very suitable for a Mission" (Perkins 1957). Mission San Fernando, approximately 9 miles south of the project area, was founded in 1797 in an attempt to colonize the Santa Clara River Valley. The establishment of

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Mission San Fernando led to the subsequent enslavement of the Tataviam within the mission system (Perkins 1957).

In 1821, Mexico won its independence from Spain. The new state was secular and moved increasingly toward secularizing the mission system and dispersal of the mission properties among politically connected elites. In 1834, the missions began to be secularized, and their lands were divided. More than 600 ranchos were granted between 1833 and 1846 as the Mexican government sought to solidify its authority over Alta California amid fears of intrusion by the United States. Among these was Rancho San Francisco, a property granted to Don Antonio del Valle in 1839 (Perkins 1957). The project area is located approximately 5 miles east of the former boundaries of Rancho San Francisco (GLO 1877). In 1842, the first authenticated gold discovery occurred within Rancho San Francisco, leading to the settlement of the first mining camp in California approximately 5 miles west of the project area (Perkins 1957).

California was ceded to the United States after the Mexican-American War of 1846–1848. The discovery of gold in California led to a population boom in the 1850s and 1860s. Additionally, transportation developments in the Santa Clara River Valley transformed the region into a major travel corridor, and the establishment of Fort Tejon in 1854 cemented the area as a center of military and political power in Southern California (ICF 2021). In 1877, the Southern Pacific line connecting Los Angeles and the San Joaquin Valley was completed. In 1886, construction began on a line connecting Ventura and Soledad Canyon within 2 miles north of the project area (ICF 2021; Triem and Stone 1996).

CULTURAL RESOURCES IDENTIFICATION METHODS AND RESULTS

The methods and results of the SCCIC records search, literature and historical map search, historical society consultation, archaeological field survey, buried archaeological site sensitivity analysis, and California Register evaluation of MBI-REX-MY-01 are presented below.

SOUTH CENTRAL COASTAL INFORMATION CENTER

SCCIC staff conducted a records search (SCCIC Tracking No. 22790-8966) of the project area and half-mile search radius on October 18, 2021 (**Attachment 2**). The SCCIC, as part of the California Historical Resources Information System, an affiliate of the California Office of Historic Preservation (OHP), is the official state repository of cultural resources records and reports for Los Angeles County. As part of the records search, the following federal and California inventories were reviewed:

- Archaeological Determinations of Eligibility (OHP 2023e). The directory includes determinations for eligibility for archaeological resources in Los Angeles County.
- California Register of Historic Resources (OHP 2023a).
- California Points of Historical Interest (OHP 2023b).
- California Historical Landmarks (OHP 2023c).
- Built Environment Resource Directory (OHP 2023d). The directory includes resources evaluated for listing and listed in the National Register of Historical Places, National

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Historic Landmarks, California Register, California Historical Landmarks, and California Points of Historical Interest in Los Angeles County.

Results**Previous Studies**

Fourteen previous cultural resource investigations have been completed within a half-mile of the project area, as described in the table below. One investigation (LA-01805) intersects the current project area and addresses approximately 97 percent of it. LA-01805 was conducted by R. W. Robinson in 1989 and consisted of an intensive pedestrian survey of the project area to identify surficial cultural resources. The investigation did not result in the documentation of any archaeological resources.

Table 1: Previous Cultural Resource Investigations

Report No.	Author(s)	Date	Title	In Project Area?	Resources in Project Area?
LA-00467	McIntyre, Michael J. and Greenwood, Roberta S.	1979	Cultural Resource Survey of a Near Sand Canyon, Upper Santa Clara River Valley, Los Angeles County, California	No	No
LA-00616	Robinson, R. W.	1979	Cultural Resources Investigation Re: Tentative Map Tract No. 37802	No	No
LA-01254	Robinson, R. W.	1981	Cultural Resources Investigation Re: Tentative Parcel Map No 14532	No	No
LA-01369	Rector, Carol H.	1984	Cultural Resources Inventory for the 1984 and Part of 1985 California Metropolitan Project Area Public Lands Sale Program	No	No
LA-01515	Bissell, Ronald M.	1986	Cultural Resources Assessment of the Mitchell Properties, Santa Clarita Valley Area, Los Angeles County, California	No	No
LA-01805	Robinson, R. W.	1989	A Cultural Resources Investigation of Seventy-Six Acres in the Sand Canyon Area of North Los Angeles County, California	Yes	No

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Report No.	Author(s)	Date	Title	In Project Area?	Resources in Project Area?
LA-01996	Kleeb, Gerald N.	1976	Archaeological Impact Report on the Rezoning of Lots 1-4, PM 4297, MB 59-86	No	No
LA-02193	Romani, John F.	1990	Archaeological Assessment for the Proposed Santa Fe Specific Plan Southeast and Adjacent to the City of Santa Clarita, Los Angeles County, California	No	No
LA-02442	Norwood, Richard H.	1991	Cultural Resource Survey for Tentative Tract No. 50449, 12.1 Acres in Canyon Country, Los Angeles County, California	No	No
LA-04058	Wlodarski, Robert J.	1998	Cultural Resources Evaluation: Golden Valley Ranch EIR, City of Santa Clarita, Los Angeles County, California	No	No
LA-07503	McKenna, Jeanette A.	2004	A Phase I Cultural Resources Investigation of the Pineview Project Area in the Santa Clarita Area of Los Angeles County, California	No	No
LA-09470	Schmidt, James J.	2008	DWO 6059-4800; J.I. No. 8-4823: Python 16kV Infrastructure Replacement Project, 27215 Sand Canyon Road, Canyon Country, Los Angeles County, California	No	No
LA-10871	Schmidt, James	2011	Archaeological Letter Report: Python 12kV Deteriorated Pole Replacement Project (WO6059-4800; O-4887; TD504758), Sand Canyon Area, Los Angeles County, California	No	No

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Report No.	Author(s)	Date	Title	In Project Area?	Resources in Project Area?
LA-11454	Orfila, Rebecca	2011	Archaeological Survey for the Southern California Edison Company: Replacement of Three Deteriorated Power Poles Near Newhall and Santa Clarita in Los Angeles County, California (WO6088-4800 O-4892 and WO6088-4800, RSO Consulting CWA 9)	No	No

Previous Resources

No previously recorded cultural resources are documented within the project area or half-mile search radius. Additionally, the Built Environment Resource Directory does not indicate any built environment resources within or adjacent to the project area (OHP 2023d).

HISTORICAL TOPOGRAPHIC MAPS AND AERIAL PHOTOGRAPHS REVIEW

Michael Baker International staff reviewed historical maps and aerial photographs for information about the land use and previous development of the project area and surrounding properties. Below is a list of the resources reviewed and a summary of the results of that review.

Historical Maps

- Survey Plat Map, Township 4 North, Range 15 West (GLO 1877)
- *Fernando, CA* 1:62,500 topographic map (USGS 1900)
- *Sylmar, CA* 1:24,000 topographic map (USGS 1929)
- *Sylmar, CA* 1:24,000 topographic map (USGS 1935)
- *San Fernando, CA* 1:62,500 topographic map (USGS 1940)
- *San Fernando, CA* 1:62,500 topographic map (USGS 1945)
- *Mint Canyon, CA* 1:24,000 topographic map (USGS 1961)
- *Mint Canyon, CA* 1:24,000 topographic map (USGS 1975)
- *Mint Canyon, CA* 1:24,000 topographic map (USGS 1988)
- *Mint Canyon, CA* 1:24,000 topographic map (USGS 1995)

Historical Aerial Images

- University of California, Santa Barbara Library (UCSB) Geospatial Collection (UCSB 2023)
- National Environmental Title Research (NETR) (NETR 2023)

Historical Databases

- California Digital Newspaper Collection (2023)

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- Calisphere (2023)
- Internet Archive (2023)
- HathiTrust (2023)

In 1877, the project area was mapped within a valley east of Rancho San Francisco; a wagon road is depicted immediately to the east, but no other landscape or development features are shown within the vicinity (GLO 1877). By 1900, topographic maps revealed greater geographic detail, including the project area situated along the western portion of Sand Canyon and within 2 miles south of the Santa Clara River (USGS 1900). The Southern Pacific Railroad and the associated railway station, Humphreys, are also mapped approximately 1.2 miles northwest of the project area.

By 1935, a road was constructed within a quarter mile west of the project area and connected to what is now Sand Canyon Road, which was mapped a half mile east (USGS 1935). Between 1940 and 1975, several buildings were depicted within a half-mile of the project area, but the project area remained undeveloped (USGS 1940, 1945, 1961, 1975). Historical aerial images indicate that between 1978 and 1985, a building was constructed in the eastern portion of the project area (NETR 2023). The 1988 edition of the Mint Canyon, CA 1:24,000 topographic map (USGS 1988) is the first topographic map to identify the building within the project area. By 1992, the building is no longer visible in aerial imagery, and only a building foundation remains visible (NETR 2023).

Aerial imagery from the twentieth century shows that minimal development occurred within the project area, primarily consisting of game trails, low grasses, shrubs, and trees (UCSB 1940, 1959, 1976). The nearest permanent water source is the Santa Clarita River, located 1.5 miles northwest of the project area.

NATIVE AMERICAN HERITAGE COMMISSION SACRED LANDS FILE SEARCH

On January 4, 2023, Michael Baker International sent a letter describing the project to the NAHC in Sacramento, asking the commission to review the Sacred Lands File for any Native American cultural resources the project might affect. The NAHC responded in a letter dated January 19, 2023, that the Sacred Lands File results for the project area were negative. The letter also provided a list of Los Angeles County Native American contacts. Michael Baker International did not conduct outreach. The City will document the Assembly Bill 52 consultation separately from this report. The NAHC correspondence is included in **Attachment 3**.

HISTORICAL SOCIETY CONSULTATION

On January 12, 2023, Michael Baker International staff emailed a letter and figures depicting the project area to the Santa Clarita Valley Historical Society. The correspondence requested any information or concerns regarding historical resources within the project area. No response has been received to date (**Attachment 4**).

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FIELD SURVEY METHODS AND RESULTS

Michael Baker International Archaeologist Marcel Young conducted an intensive pedestrian archaeological and built environment field survey on January 17, 2023. The entire project area was surveyed in transects spaced 15 meters apart. Project area overview photographs and notes regarding survey area conditions were taken during the survey using Esri's *Field Maps and Survey 123* applications. Ground surface visibility throughout the project area was an average of 20 percent due to dense vegetation, including invasive grasses, buckwheat, brittlebush, sagebrush, chaparral, yucca, chamise, and California live oak (**Photos 1 and 2**). One historic-period site and two historic-period isolates were documented during the survey.

One new historic-period site, MBI-REX-MY-01, was recorded during the survey. The resource consists of 26 Budweiser pull-tab beer cans, most of which are crushed or fragmented (**Photos 3 and 4**). The site dimensions measure 5 meters north/south by 6 meters east/west. The site is along a hillside with a 25 percent slope and variable aspect. The soil in the project area consists of dark brown silty clay loam, and ground surface visibility is 50 percent. The site is in poor condition due to the fragmented conditions of the artifacts and significant disturbances, including animal burrowing, pedestrian traffic, and horse trails. A DPR 523 site record was prepared for the site and is provided in **Attachment 5**.

Two historic-period isolates were also identified during the survey. Isolate 1 is a 10-fluid-ounce glass Pepsi bottle (**Photo 5**), and isolate 2 is a partially buried Ford flatbed truck that was modified (**Photo 6**).

No prehistoric resources or historic built environment resources were identified during the survey. Disturbances in the project survey area include horse and walking trails, modern two-track roads, animal burrows, dirt push piles, and modern refuse.

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Photo 1: Representative example of field survey conditions (view north).



Photo 2: Representative example of field survey conditions (view west).



Photo 3: MBI-REX-MY-01 site overview (view north).



Photo 4: Example of Budweiser pull-tab beer can at MBI-REX-MY-01.



Photo 5. Pepsi bottle isolate identified within the project area.



Photo 6: Flatbed Ford truck identified within the project area.

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CALIFORNIA REGISTER OF HISTORICAL RESOURCES EVALUATION

The criteria for eligibility for listing in the California Register are based on the National Register criteria. A resource must be at least 50 years of age to be eligible for listing in the California Register. A resource less than 50 years of age may be considered for listing in the California Register if it can be demonstrated that sufficient time has passed to understand its historical importance. An historical resource must be significant at the local, state, or national level under one or more of the following criteria:

Criterion 1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;

Criterion 2. It is associated with the lives of persons important to local, California, or national history;

Criterion 3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic value;

Criterion 4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition to meeting a significance criterion, a property must also have integrity or the ability to convey its significance under a majority of the seven aspects of integrity: location, design, materials, workmanship, setting, feeling, and association.

MBI-REX-MY-01

The site MBI-REX-MY-01 is a newly identified historic-period can scatter and thus has yet to be evaluated for listing in the California Register (OHP 2023e). The site is evaluated below in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code.

Criterion 1 – Site MBI-REX-MY-01 does not possess an apparent association with the events significant to the broad patterns of California’s history and cultural heritage. Site MBI-REX-MY-01 is composed of crushed beverage cans, most of which are ring tab cans that date to between 1965 and 1975 (Maxwell 1993). Given the recent age of the artifacts and the lack of evidence of being associated with significant events related to the broad patterns of California’s history and cultural heritage, the site is recommended not eligible for listing under Criterion 1.

Criterion 2 – Site MBI-REX-MY-01 does not possess any evidence of being associated with the lives of persons important in our past. The site is on property previously owned by William J. Rex and the Rexhall Company (CRC Enterprises 2018, 2020). William J. Rex was the founder of the motor home company Rexhall Industries (LA Times 1989), as well as having worked with other automotive manufacturing companies such as Thor West and DSG Global, Inc (Global Newswire 2023). Additionally, he holds patents related to vehicle inventions (Justia Patents 2023). However, the historic-period can scatter site does not demonstrate a meaningful association with the

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productive life of any person or business important in our past. Therefore, this site is recommended not eligible under Criterion 2.

Criterion 3 – The site and its artifact constituents do not represent the distinctive characteristics of a type, period, region, or method of construction. The site consists of a refuse scatter composed of cans that date to the mid-twentieth century. Because the pull tab can is a ubiquitous object common to the time period from which it dates, the artifact assemblage associated with the site does not represent significance in terms of the type of method of construction. The style of the can opening was not restricted to or representative of a particular region. Additionally, because the site only represents refuse associated with alcohol consumption, the site neither represents the work of an important creative individual nor possesses high artistic value. Therefore, this site is recommended not eligible for listing under Criterion 3.

Criterion 4 – The site is not likely to yield valuable information which will contribute to our understanding of human history because the property is not and never was the principal source of important information pertaining to significant events, people, or distinctive characteristics of a type, period, region, or method of construction. The data potential was exhausted during the recording of the surficial artifact scatter. Therefore, this site is recommended not eligible for listing in the California Register under Criterion 4.

As mentioned previously, a resource must meet one of the criteria discussed above to be eligible for listing in the California Register, and it must retain integrity. Integrity is generally considered in relation to seven design aspects (design, setting association, feeling, location, materials, and workmanship). Site MBI-REX-MY-01 does not meet any of the California Register criteria. As such, a discussion of the site's integrity is moot. Lacking significance at the local, state, or national level, this property is recommended ineligible for listing in the California Register. As such, MBI-REX-MY-01 is not a historical resource as defined by CEQA Section 15064.5(a).

Isolates

The two historic-period isolate artifacts identified are not considered significant according to California Register criteria. Isolated finds typically do not meet the minimum criteria for inclusion in the California Register and generally require no additional investigations.

ARCHAEOLOGICAL SITE SENSITIVITY ANALYSIS

Sensitivity for buried archaeological sites is considered low based on the steep slopes, the distance to reliable permanent water, lack of previously recorded archaeological sites within the project area and vicinity, and modern disturbances in the project area.

Some soils within the project area contain clay-rich B horizons and steep slopes, which decrease the potential for archaeological preservation and deposition. Disturbances include the presence of modern trails and two-track roads, as well as animal burrowing. Historical maps show no natural perennial surface water within 1 mile of the project area. According to the SCCIC records search, no previously recorded cultural resources were identified within a half-mile of the project site. The literature review failed to identify Native American villages or place names associated with the

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project area. Therefore, the buried site sensitivity for the project area is low. The historic-period archaeological data potential has been exhausted by the identification and recordation of site MBI-REX-MY-01. The project area has low sensitivity for significant prehistoric or historic-period archaeology sites due to topography, the distance to reliable permanent water, lack of previously recorded nearby sites, and modern disturbances.

SUMMARY OF FINDINGS

The SCCIC records search, literature and historical map review, NAHC Sacred Lands File search, historical society outreach, and archaeological field survey identified no historical resources within the project area, as defined by CEQA Section 15064.5(a). One historic-period can scatter site, MBI-REX-MY-01, was documented on appropriate DPR 523 series forms and evaluated for listing in the California Register in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code. The resource is recommended ineligible for listing in the California Register, and no further work is recommended for this resource. Two historic isolates were identified: an abandoned flatbed truck and a glass bottle. Isolates, by definition, lack integrity and are not considered significant. There are no historical resources, as defined by CEQA Section 15064.5(a), within the project area.

Additionally, sensitivity for buried archaeological sites is considered low based on the site's soil constituents, steep slopes, proximity to water, lack of previously recorded archaeological sites within the project area and vicinity, and modern disturbances in the project area. Nonetheless, there is a potential for disturbing previously unknown archaeological resources during excavation into the native soil. Project excavations have the potential to destroy and otherwise have a significant impact to previously unidentified significant buried archaeological resources.

RECOMMENDATIONS

Based on the results of the cultural resources identification study and evaluation efforts, we provide the following recommendations.

Archaeological Resources Inadvertent Discovery. In the event that any subsurface cultural resources are encountered during earth-moving activities, it is recommended that all work within 50 feet be halted until an archaeologist can evaluate the findings and make recommendations. Prehistoric materials can include flaked-stone tools (e.g., projectile points, knives, choppers) or obsidian, chert, or quartzite toolmaking debris; culturally darkened soil (i.e., midden soil often containing heat-affected rock, ash, and charcoal, shellfish remains, and cultural materials); and stone milling equipment (e.g., mortars, pestles, handstones). Historical materials might include wood, stone, or concrete footings, walls, and other structural remains; debris-filled wells or privies; and deposits of wood, metal, glass, ceramics, and other refuse. The archaeologist may evaluate the find in accordance with federal, state, and local guidelines, including those set forth in the California Public Resources Code Section 21083.2, to assess the significance of the find and identify avoidance or other measures as appropriate. If suspected prehistoric or historical archaeological deposits are discovered during construction, all work within the

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immediate area of the discovery should be redirected and the find must be evaluated by a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983).

Human Remains Inadvertent Discovery

If human skeletal remains are found, those remains would require proper treatment in accordance with State of California Health and Safety Code Sections 7050.5-7055. Specifically, Health and Safety Code Section 7050.5 describes the requirements if any human remains are discovered during excavation of a site. As required by state law, the requirements and procedures set forth in Section 5097.98 of the California Public Resources Code would be implemented, including notification of the County coroner, notification of the Native American Heritage Commission, and consultation with the individual identified by the Native American Heritage Commission to be the "most likely descendant." If human remains are found during excavation, excavation must stop in the vicinity of the find and any area that is reasonably suspected to overlie adjacent remains until the County coroner has been called out, and the remains have been investigated and appropriate recommendations have been made for the treatment and disposition of the remains.

Following these recommendations will ensure compliance with applicable regulations regarding the inadvertent discovery of cultural resources.

PREPARER QUALIFICATIONS

MARCEL YOUNG, ARCHAEOLOGIST

Marcel has worked in various capacities in cultural resource management since 2013. He is experienced in surveying, recording and conducting evaluations of historic and prehistoric archaeological sites in California. He is versed in conducting fieldwork within frameworks of Section 106 of the National Historic Preservation Act (NHPA), National Environmental Policy Act (NEPA), and CEQA. He has participated in projects in several phases of archaeology: Phase I pedestrian, Extended Phase I testing, and shovel test surveys, buried site testing, Phase III data recovery, and Phase IV monitoring.

MAXIMILIAN VAN RENSSLAER, RA, ARCHAEOLOGIST

Maximilian has worked as an archaeologist in cultural resource management since 2013 and is certified as a Principal Investigator in California and Nevada by the Bureau of Land Management. He has more than 10 years of experience recording, excavating, and evaluating historic properties in California, Nevada, Arizona, Texas, Louisiana, Oklahoma, Indiana, and Kentucky. Maximilian specializes in applying Section 106 of the NHPA, CEQA analysis, and geospatial information science (GIS). He is pursuing a Master of Professional Studies degree in Cultural and Heritage Resource Management and has a GIS graduate certificate from the University of Maryland.

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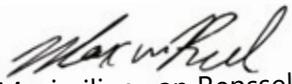
JAMES T. DANIELS JR., MA, RPA, SENIOR ARCHAEOLOGIST

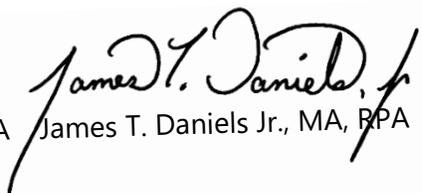
James is a senior archaeologist with cultural resource management experience in California, Nevada, and North Carolina. His experience includes archaeological surveys, evaluations of historic and prehistoric sites for listing in the California and National Registers, site mitigation data recoveries, mitigation monitoring, and preparation of archaeological resource management reports and cultural resources technical reports. As senior archaeologist, he supports projects needing CEQA, NEPA, NHPA, Section 106, Native American Graves Protection and Repatriation Act, Assembly Bill 52, US Army Corps of Engineers 404 permits, and local cultural resource regulation compliance. He also assists with environmental impact statements/reports and alternative mitigation measures for clients, including interpretive signage, informative website design, brochures, and ethnographic studies. He also assists in Native American consultation and coordination of Native American monitoring. James provides advanced technical services for clients, including geophysical surveys with ground penetrating radar (GPR), obsidian and ceramic sourcing using portable X-ray fluorescence (pXRF), photogrammetry, and GIS predictive modeling and data collection using Esri Field Maps. He meets the Secretary of the Interior's Professional Qualification Standards for archaeology and historic preservation.

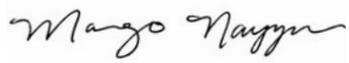
MARGO NAYYAR, SENIOR CULTURAL RESOURCES MANAGER

Senior Cultural Resources Manager Margo Nayyar provided QA/QC review of this report and evaluation. Margo is an architectural historian with 12 years of cultural management experience in California, Nevada, Arizona, Texas, Idaho, and Mississippi. Her experience includes built environment surveys, evaluation of historic-era resources using guidelines outlined in the National and California Registers, and preparation of cultural resources technical studies pursuant to CEQA and Section 106 of the NHPA, including identification studies, finding of effect documents, memorandum of agreements, programmatic agreements, and Historic American Buildings Survey/Historic American Engineering Record/Historic American Landscapes Survey mitigation documentation. She prepares cultural resources environmental document sections for CEQA environmental documents, including infill checklists, initial studies, and environmental impact reports, as well as NEPA environmental documents, including environmental impact statements and environmental assessments. She also specializes in municipal preservation planning, historic preservation ordinance updates, Native American consultation, and provision of Certified Local Government training to interested local governments. She develops Survey 123 and Esri Collector applications for large-scale historic resources surveys and authors National Register nomination packets. Margo meets the Secretary of the Interior's Professional Qualification Standards for history and architectural history.

Sincerely,


Maximilian van Rensselaer, RA


James T. Daniels Jr., MA, RPA


Margo Nayyar, MA

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Archaeologist

Senior Cultural Resources
Manager

Senior Cultural Resources
Manager

ATTACHMENTS:

Attachment 1 – Figures

Attachment 2 –SCCIC Records Search Results

Attachment 3 – NAHC Sacred Lands File Search Results

Attachment 4 – Historical Society Consultation

Attachment 5 – Confidential DPR 523 Site Forms

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MICHAEL BAKER INTERNATIONAL

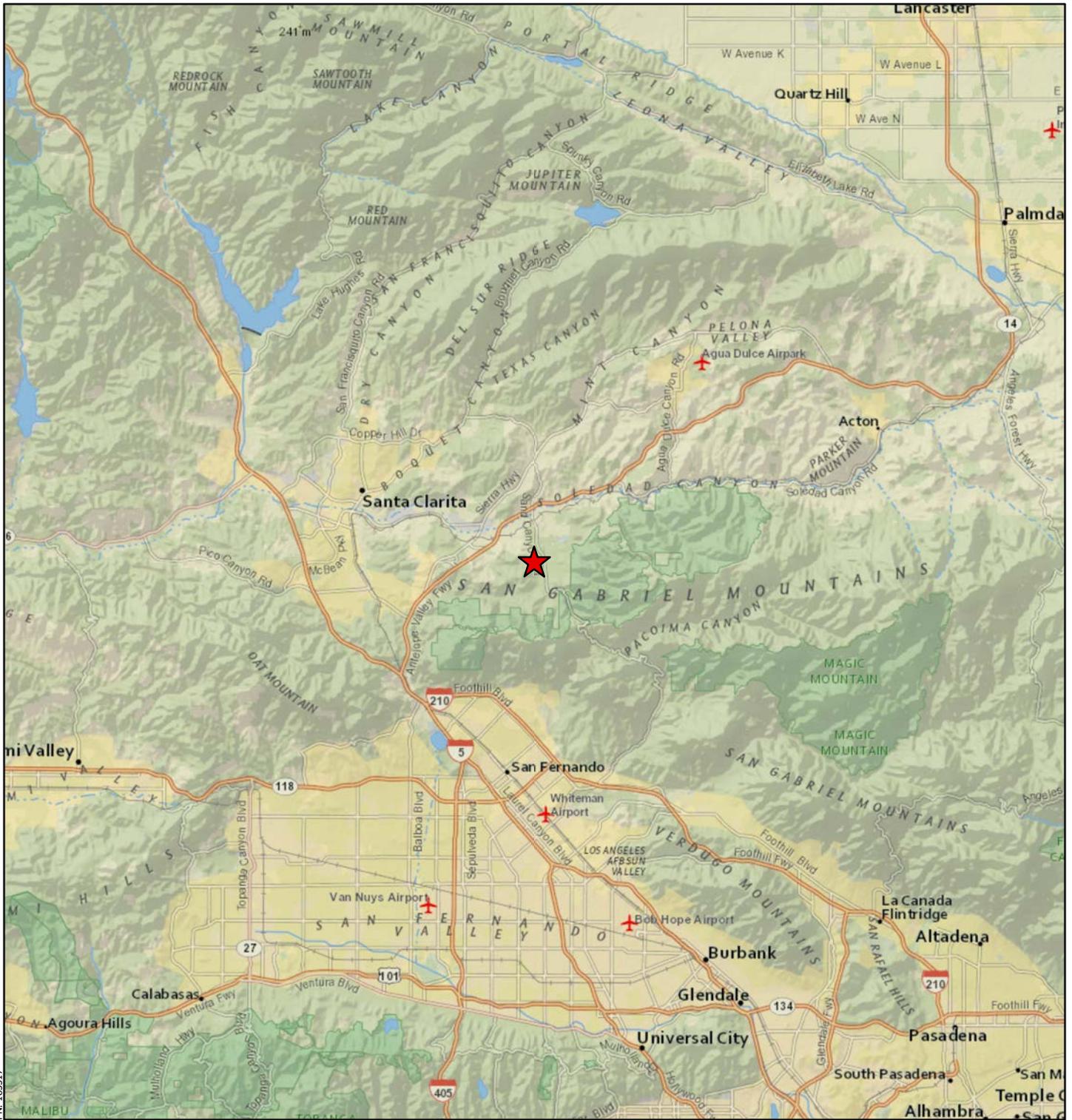
RE: CULTURAL RESOURCES IDENTIFICATION MEMORANDUM FOR THE REXHALL PROJECT, CITY OF SANTA CLARITA, LOS ANGELES COUNTY, CALIFORNIA

Page 22

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https://soilseries.sc.egov.usda.gov/OSD_Docs/Y/YOLO.html.
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<https://ngmdb.usgs.gov/topoview/viewer/#>.
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<https://ngmdb.usgs.gov/topoview/viewer/#>.
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<https://ngmdb.usgs.gov/topoview/viewer/#>.
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- Warren, Claude N. 1968. "Cultural Tradition and Ecological Adaptation on the Southern California Coast." *Archaic Prehistory in the Western United States*. Portales, NM: Eastern New Mexico University.

Attachment 1

Figures



PN: 169517

 Project Location

REXHALL PROJECT

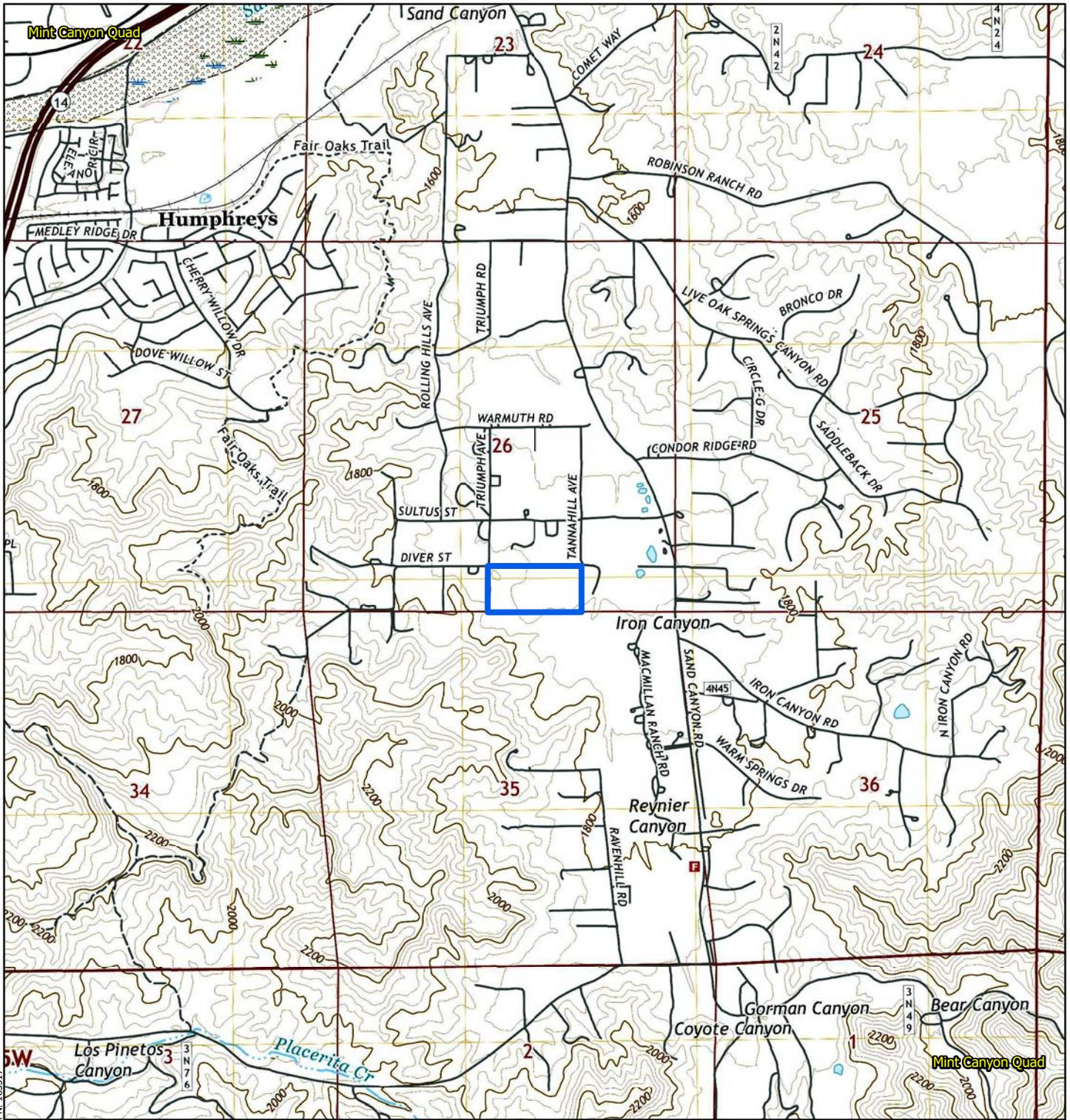
Michael Baker
INTERNATIONAL



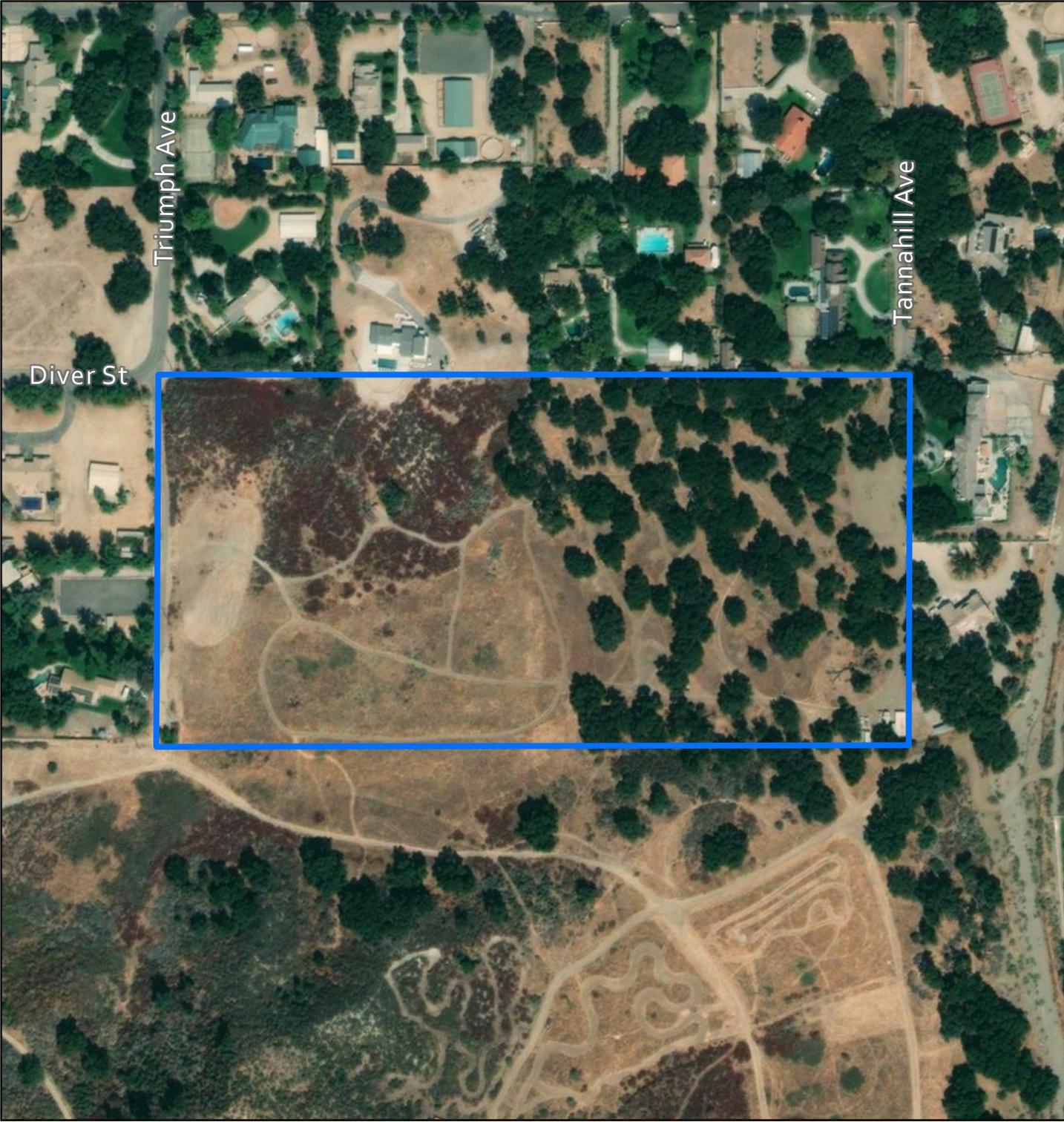
Regional Vicinity

Source: Esri, ArcGIS Online, National Geographic World Map: Santa Clarita, California

Figure 1



 Project Area



Triumph Ave

Tannahill Ave

Diver St



PN: 185517



Area of Potential Effects

Attachment 2

SCCIC Records Search Results

South Central Coastal Information Center

California State University, Fullerton
Department of Anthropology MH-426
800 North State College Boulevard
Fullerton, CA 92834-6846
657.278.5395 / FAX 657.278.5542
sccic@fullerton.edu

California Historical Resources Information System
Orange, Los Angeles, and Ventura Counties

10/18/2021

Records Search File No.: 22790.8966

Chris Wendt
Michael Baker International
2729 Prospect Park Drive Suite 220
Rancho Cordova CA 95670

Re: Records Search Results for the Rexhall Subdivision Project

The South Central Coastal Information Center received your records search request for the project area referenced above, located on the Mint Canyon, CA USGS 7.5' quadrangle. Due to the COVID-19 emergency, we have temporarily implemented new records search protocols. With the exception of some reports that have not yet been scanned, we are operationally digital for Los Angeles, Orange, and Ventura Counties. See attached document for your reference on what data is available in this format. The following reflects the results of the records search for the project area and a ½-mile radius:

As indicated on the data request form, the locations of resources and reports are provided in the following format: custom GIS maps shape files hand drawn maps

Resources within project area: 0	None
Resources within ½-mile radius: 0	None
Reports within project area: 1	LA-01805
Reports within ½-mile radius: 13	SEE ATTACHED LISTS

- Resource Database Printout (list):** enclosed not requested nothing listed
- Resource Database Printout (details):** enclosed not requested nothing listed
- Resource Digital Database (spreadsheet):** enclosed not requested nothing listed
- Report Database Printout (list):** enclosed not requested nothing listed
- Report Database Printout (details):** enclosed not requested nothing listed
- Report Digital Database (spreadsheet):** enclosed not requested nothing listed
- Resource Record Copies:** enclosed not requested nothing listed
- Report Copies:** enclosed not requested nothing listed
- OHP Built Environment Resources Directory (BERD) 2019:** available online; please go to https://ohp.parks.ca.gov/?page_id=30338
- Archaeo Determinations of Eligibility 2012:** enclosed not requested nothing listed
- Los Angeles Historic-Cultural Monuments** enclosed not requested nothing listed

Historical Maps: enclosed not requested nothing listed
Ethnographic Information: not available at SCCIC
Historical Literature: not available at SCCIC
GLO and/or Rancho Plat Maps: not available at SCCIC
Caltrans Bridge Survey: not available at SCCIC; please go to
<http://www.dot.ca.gov/hq/structur/strmaint/historic.htm>
Shipwreck Inventory: not available at SCCIC; please go to
http://shipwrecks.slc.ca.gov/ShipwrecksDatabase/Shipwrecks_Database.asp
Soil Survey Maps: (see below) not available at SCCIC; please go to
<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

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

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the [California Historical Resources Information System](#),

Michelle Galaz
Assistant Coordinator

Enclosures:

(X) Emergency Protocols for LA, Orange, and Ventura County BULK Processing Standards – 2 pages

(X) GIS Shapefiles – 14 shapes

(X) Report Database Printout (details) – 14 pages

(X) Report Digital Database (spreadsheet) – 14 lines

(X) Report Copies – (within project area) – 7 pages

(X) Invoice # 22790.8966

Emergency Protocols for LA, Orange, and Ventura County BULK or SINGLE PROJECT Records Searches IF YOU HAVE A GIS PERSON ON STAFF ONLY!!

These instructions are for qualified consultants with a valid Access and Use Agreement.

WE ARE ONLY PROVIDING DATA THAT IS ALREADY DIGITAL AT THIS TIME.

Some of you have a fully digital operation and have GIS staff on board who can process a fully digital deliverable from the Information Center. IF you can accept shape file data and do not require a custom map made for you by the SCCIC, and you are willing to sort the data we provide to you then these instructions are for you. Read further to be sure. You may have only one project at this time or some of you have a lot of different search locations that can be processed all at once. This may save you a lot of time getting results back and if we process your jobs in bulk, and you may enjoy significant cost savings as well.

Bulk processing will work for you if you have a GIS person on staff who can sort bulk data for you and make you any necessary project maps. This type of job can have as many job locations as you want but the point is that we will do them in bulk – at the same time - not one at a time. We send all the bulk data back to you and you sort it. This will work if you need searches in LA, Orange, or Ventura AND if they all have the same search radius and if all the other search criteria is the same– no exceptions. This will not work for San Bernardino County because we are not fully digital for San Bernardino County. You must submit all your shape files for each location at the same time and this will count as one search. If you have some that need a different radius, or different search criteria, then you should submit that job separately with its own set of instructions.

INSTRUCTIONS FOR BULK PROCESSING:

Please send in your requests via email using the data request form along with the associated shape files and pdf maps of the project area(s) at 1-24k scale. PDFs must be able to be printed out on 8.5X 11 paper. We check your shape file data against the pdf maps. This is where we find discrepancies between your shape files and your maps. This is required.

Please use this data request form and make sure you fill it out properly.

<http://web.sonoma.edu/nwic/docs/CHRISDataRequestForm.pdf>

DELIVERABLES:

1. A copy of the Built Environment Resources Directory or BERD for Los Angeles, Orange, Ventura, or San Bernardino County can now be found at the OHP Website for you to do your own research. This replaces the old Historic Properties Directory or HPD. We will not be searching this for you at this time but you can search it while you are waiting for our results to save time.
2. You will only get shapefiles back, which means that you will have to make your own maps for each project location.

3. You will get a bulk processed bibliographies for resources and reports as selected; you will not get individual bibliographies for each project location.
4. You will get pdfs of resources and reports if you request them, provided that they are in digital formats. We will not be scanning records or reports at this time.
5. You will get one invoice for the bulk data processing. We can't bill this as individual jobs on separate invoices for you. If there are multiple project names, we are willing to reference all the job names on the invoice if needed. If there a lot of job id's we may ask you to send them in an email so that we can copy and paste it into the invoice details. If you need to bill your clients for the data, you can refer to our fee schedule on the OHP website under the CHRIS tab and apply the fees accordingly.
6. We will be billing you at the staff rate of \$150 per hour and you will be charged for all resources and report locations according to the "custom map charges". This is in lieu of the \$12 per GIS shape file data fee that we normally charge for GIS files and this will only apply during the Covid 19 emergency. You will also be billed 0.15 per pdf page, or 0.25 per excel line as is usual.
7. Your packet will be mailed to you on a CD or via Dropbox if you have an account. We use 7-zip to password protect the files so you will need both. We email you the password.

I may not have been able to cover every possible contingency in this set of instructions and will update it if necessary. You can email me with questions at sccic@fullerton.edu

Thank you,

Stacy St. James

South Central Coastal Information Center

Los Angeles, Orange, Ventura, and San Bernardino Counties

Report Detail: LA-00467

Identifiers

Report No.: LA-00467

Other IDs:

Cross-refs:

Citation information

Author(s): McIntyre, Michael J. and Greenwood, Roberta S.

Year: 1979

Title: Cultural Resource Survey of a Near Sand Canyon, Upper Santa Clara River Valley, Los Angeles County, California.

Affiliation: Greenwood and Associates

No. pages: 30

No. maps:

Attributes: Archaeological, Field study

Inventory size: 307 ac

Disclosure:

Collections:

General notes

Associated resources

Primary No.	Trinomial	Name
P-19-101228		isolated rhyolite core tool

No. resources: 1

Has informals:

Location information

County(ies): Los Angeles

USGS quad(s): MINT CANYON

Address:

PLSS:

Database record metadata

Date	User	Action taken
Entered: 5/5/2008	jay	
Last modified: 10/3/2016	rmoritz	
IC actions: Date	User	Action taken
5/6/2008	jay	Appended records from old Surveys database.

Record status: Verified

Report Detail: LA-00616

Identifiers

Report No.: LA-00616

Other IDs:

Cross-refs:

Citation information

Author(s): Robinson, R. W.

Year: 1979

Title: Cultural Resources Investigation Re: Tentative Map Tract No. 37802

Affiliation:

No. pages:

No. maps:

Attributes: Archaeological, Field study

Inventory size: 17 ac

Disclosure:

Collections:

General notes

Associated resources

No. resources: 0

Has informals:

Location information

County(ies): Los Angeles

USGS quad(s): MINT CANYON

Address:

PLSS:

Database record metadata

	<i>Date</i>	<i>User</i>	
Entered:	5/5/2008	jay	
Last modified:			
IC actions:	<i>Date</i>	<i>User</i>	<i>Action taken</i>
	5/6/2008	jay	Appended records from old Surveys database.
Record status:			

Report Detail: LA-01254

Identifiers

Report No.: LA-01254

Other IDs:

Cross-refs:

Citation information

Author(s): Robinson, R. W.

Year: 1981

Title: Cultural Resources Investigation Re: Tentative Parcel Map No 14532.

Affiliation: R. W. Robinson

No. pages:

No. maps:

Attributes: Archaeological, Field study

Inventory size: 17ac

Disclosure:

Collections:

General notes

Associated resources

No. resources: 0

Has informals:

Location information

County(ies): Los Angeles

USGS quad(s): MINT CANYON

Address:

PLSS:

Database record metadata

	<i>Date</i>	<i>User</i>	
Entered:	5/5/2008	jay	
Last modified:			
IC actions:	<i>Date</i>	<i>User</i>	<i>Action taken</i>
	5/6/2008	jay	Appended records from old Surveys database.
Record status:			

Report Detail: LA-01369

Identifiers

Report No.: LA-01369

Other IDs:

Cross-refs:

Citation information

Author(s): Rector, Carol H.

Year: 1984

Title: Cultural Resources Inventory for the 1984 and Part of 1985 California Metropolitan Project Area Public Lands Sale Program

Affiliation: Bureau of Land Management

No. pages: 83

No. maps:

Attributes: Archaeological, Field study

Inventory size: 1802 ac

Disclosure:

Collections:

General notes

Associated resources

Primary No.	Trinomial	Name
P-19-001145	CA-LAN-001145	Temp Site No. LA-3, site 1

No. resources: 1

Has informals:

Location information

County(ies): Los Angeles

USGS quad(s): AGUA DULCE, MINT CANYON

Address:

PLSS:

Database record metadata

Date	User	Action taken
Entered: 5/5/2008	jay	
Last modified: 2/19/2016	agarcia	
IC actions: Date	User	Action taken
5/6/2008	jay	Appended records from old Surveys database.
2/19/2016	agarcia	Page count updated, re-scanned.

Record status:

Report Detail: LA-01515

Identifiers

Report No.: LA-01515

Other IDs:

Type	Name
Paleo	

Cross-refs:

Citation information

Author(s): Bissell, Ronald M.

Year: 1986

Title: Cultural Resources Assessment of the Mitchell Properties, Santa Clarita Valley Area, Los Angeles County, California

Affiliation: RMW Paleo Associates, Inc.

No. pages: 31

No. maps:

Attributes: Archaeological, Field study

Inventory size: 1200 ac

Disclosure:

Collections:

General notes

Associated resources

Primary No.	Trinomial	Name
P-19-002651	CA-LAN-002651	Isolated Lithic Scatter
P-19-002652	CA-LAN-002652	Archaeological Fire Ring and Chi
P-19-002653	CA-LAN-002653	Cairn

No. resources: 3

Has informals:

Location information

County(ies): Los Angeles

USGS quad(s): MINT CANYON, SAN FERNANDO

Address:

PLSS:

Database record metadata

Date	User
------	------

Entered: 5/5/2008	jay
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Last modified: 10/13/2014	agarcia
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IC actions: Date	User	Action taken
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5/6/2008	jay	Appended records from old Surveys database.
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Record status:

Report Detail: LA-01805

Identifiers

Report No.: LA-01805

Other IDs:

Cross-refs:

Citation information

Author(s): Robinson, R. W.

Year: 1989

Title: A Cultural Resources Investigation of Seventy-six Acres in the Sand Canyon Area of North Los Angeles County, California.

Affiliation:

No. pages:

No. maps:

Attributes: Archaeological, Field study

Inventory size: 76 ac

Disclosure:

Collections:

General notes

Associated resources

No. resources: 0

Has informals:

Location information

County(ies): Los Angeles

USGS quad(s): MINT CANYON

Address:

PLSS:

Database record metadata

	Date	User	
Entered:	5/5/2008	jay	
Last modified:	3/4/2013	agarcia	
IC actions:	Date	User	Action taken
	5/6/2008	jay	Appended records from old Surveys database.
Record status:			

Report Detail: LA-01996

Identifiers

Report No.: LA-01996

Other IDs:

Cross-refs:

Citation information

Author(s): Kleeb, Gerald N.

Year: 1976

Title: Archaeological Impact Report on the Rezoning of Lots 1-4, Pm 4297, Mb 59-86

Affiliation:

No. pages:

No. maps:

Attributes: Archaeological, Field study

Inventory size: 11 ac

Disclosure:

Collections:

General notes

Associated resources

No. resources: 0

Has informals:

Location information

County(ies): Los Angeles

USGS quad(s): MINT CANYON

Address:

PLSS:

Database record metadata

	Date	User	
Entered:	5/5/2008	jay	
Last modified:			
IC actions:	Date	User	Action taken
	5/6/2008	jay	Appended records from old Surveys database.
Record status:			

Report Detail: LA-02193

Identifiers

Report No.: LA-02193

Other IDs:

Cross-refs:

Citation information

Author(s): Romani, John F.

Year: 1990

Title: Archaeological Assessment for the Proposed Santa Fe Specific Plan Southeast and Adjacent to the City of Santa Clarita Los Angeles County, California

Affiliation: Greenwood and Associates

No. pages:

No. maps:

Attributes: Archaeological, Field study

Inventory size:

Disclosure:

Collections:

General notes

Associated resources

Primary No.	Trinomial	Name
P-19-001877	CA-LAN-001877H	Santa Fe - 1

No. resources: 1

Has informals:

Location information

County(ies): Los Angeles

USGS quad(s): MINT CANYON, SAN FERNANDO

Address:

PLSS:

Database record metadata

Date	User
------	------

Entered: 5/5/2008	jay
-------------------	-----

Last modified: 10/10/2013	agarcia
---------------------------	---------

IC actions:	Date	User	Action taken
-------------	------	------	--------------

	5/6/2008	jay	Appended records from old Surveys database.
--	----------	-----	---

Record status:

Report Detail: LA-02442

Identifiers

Report No.: LA-02442

Other IDs:

Cross-refs:

Citation information

Author(s): Norwood, Richard H.

Year: 1991

Title: Cultural Resource Survey for Tentative Tract No. 50449 12.1 Acres in Canyon Country Los Angeles County California

Affiliation: RT Factfinders

No. pages:

No. maps:

Attributes: Archaeological, Field study

Inventory size:

Disclosure:

Collections:

General notes

Associated resources

No. resources: 0

Has informals:

Location information

County(ies): Los Angeles

USGS quad(s): MINT CANYON

Address:

PLSS:

Database record metadata

	<i>Date</i>	<i>User</i>	
Entered:	5/5/2008	jay	
Last modified:			
IC actions:	<i>Date</i>	<i>User</i>	<i>Action taken</i>
	5/6/2008	jay	Appended records from old Surveys database.
Record status:			

Report Detail: LA-04058

Identifiers

Report No.: LA-04058

Other IDs:

Cross-refs:

Citation information

Author(s): Wlodarski, Robert J.

Year: 1998

Title: Cultural Resources Evaluation: Golden Valley Ranch Eir City of Santa Clarita, Los Angeles County, California

Affiliation: Historical, Environmental, Archaeological, Research, Team

No. pages:

No. maps:

Attributes: Archaeological, Field study

Inventory size: 1310 ac

Disclosure:

Collections:

General notes

Associated resources

Primary No.	Trinomial	Name
P-19-002651	CA-LAN-002651	Isolated Lithic Scatter
P-19-002652	CA-LAN-002652	Archaeological Fire Ring and Chi
P-19-002653	CA-LAN-002653	Cairn

No. resources: 3

Has informals:

Location information

County(ies): Los Angeles

USGS quad(s): MINT CANYON, SAN FERNANDO

Address:

PLSS:

Database record metadata

Date	User
------	------

Entered: 5/5/2008	jay
-------------------	-----

Last modified:

IC actions: Date	User	Action taken
5/6/2008	jay	Appended records from old Surveys database.

Record status:

Report Detail: LA-07503

Identifiers

Report No.: LA-07503

Other IDs:

Cross-refs:

Citation information

Author(s): McKenna, Jeanette A.

Year: 2004

Title: A Phase I Cultural Resources Investigation of the Pineview Project Area in the Santa Clarita Area of Los Angeles County, California

Affiliation: McKenna et al.

No. pages:

No. maps:

Attributes: Archaeological, Field study

Inventory size: 40 ac

Disclosure:

Collections:

General notes

Associated resources

No. resources: 0

Has informals:

Location information

County(ies): Los Angeles

USGS quad(s): MINT CANYON

Address:

PLSS:

Database record metadata

	<i>Date</i>	<i>User</i>	
Entered:	5/5/2008	jay	
Last modified:			
IC actions:	<i>Date</i>	<i>User</i>	<i>Action taken</i>
	5/6/2008	jay	Appended records from old Surveys database.
Record status:			

Report Detail: LA-09470

Identifiers

Report No.: LA-09470

Other IDs:

Cross-refs:

Citation information

Author(s): Schmidt, James J.

Year: 2008

Title: DWO 6059-4800; J.I. No. 8-4823: Python 16kV Infrastructure Replacement Project, 27215 Sand Canyon Road, Canyon Country, Los Angeles County, California

Affiliation: Compass Rose

No. pages: 4

No. maps:

Attributes: Archaeological, Field study

Inventory size:

Disclosure: Not for publication

Collections:

General notes

Associated resources

Primary No.	Trinomial	Name
P-19-003560	CA-LAN-003560H	Well Casings

No. resources: 1

Has informals:

Location information

County(ies): Los Angeles

USGS quad(s): MINT CANYON

Address	City	Assessor's parcel no.	Zip code
27215 Sand Canyon Road	Canyon Country		

PLSS:

Database record metadata

Date	User
------	------

Entered: 12/10/2008	tshackford
---------------------	------------

Last modified: 12/10/2008	tshackford
---------------------------	------------

IC actions:

Record status:

Report Detail: LA-10871

Identifiers

Report No.: LA-10871

Other IDs:

Cross-refs:

Citation information

Author(s): Schmidt, James

Year: 2011

Title: Archaeological Letter Report: Python 12kV Deteriorated pole replacement project (WO6059-4800;O-4887; TD504758), Sand Canyon Area, Los Angeles County, California

Affiliation: Compass Rose Archaeological, Inc.

No. pages: 4

No. maps:

Attributes: Archaeological, Field study

Inventory size:

Disclosure: Not for publication

Collections: No

General notes

Associated resources

No. resources: 0

Has informals:

Location information

County(ies): Los Angeles

USGS quad(s): MINT CANYON

Address:

PLSS:

Database record metadata

	<i>Date</i>	<i>User</i>
<i>Entered:</i>	5/4/2011	agarcia
<i>Last modified:</i>	5/4/2011	agarcia
<i>IC actions:</i>		
<i>Record status:</i>		

Report Detail: LA-11454

Identifiers

Report No.: LA-11454

Other IDs:

Cross-refs:

Citation information

Author(s): Orfila, Rebecca

Year: 2011

Title: Archaeological Survey for the Southern California Edison Company: Replacement of three deteriorated power poles near Newhall and Santa Clarita in Los Angeles County, California (WO6088-4800 0-4892 and wo 6088-4800, RSO Consulting CWA 9)

Affiliation: RSO Consulting

No. pages: 5

No. maps:

Attributes: Archaeological, Field study

Inventory size:

Disclosure:

Collections:

General notes

Associated resources

No. resources: 0

Has informals:

Location information

County(ies): Los Angeles

USGS quad(s): MINT CANYON, VAL VERDE

Address:

PLSS:

Database record metadata

	<i>Date</i>	<i>User</i>
Entered:	1/31/2012	Inoyes
Last modified:	1/31/2012	Inoyes
IC actions:		
Record status:		

Attachment 3
NAHC Sacred Lands File
Search Results

Sacred Lands File & Native American Contacts List Request

Native American Heritage Commission

1550 Harbor Blvd, Suite 100

West Sacramento, CA 95691

916-373-3710

916-373-5471 – Fax

nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: Rexhall Subdivision Project

County: Los Angeles

USGS Quadrangle Name: Mint Canyon, CA

Township: 4N **Range:** 15W **Section(s):** 26

Company/Firm/Agency: Michael Baker International

Street Address: 3100 Zinfandel Drive, Suite 125

City: Rancho Cordova **Zip:** 95670

Phone: 775-666-5524

Fax: _____

Email: max.vanrensselaer@mbakerintl.com

Project Description: The project proposes to subdivide an approximately 19.92-acre parcel into four parcels and preparation of the property for construction of four single-family homes. Site preparation would involve grading and construction of home pads, septic leaching fields, and access driveways.

NATIVE AMERICAN HERITAGE COMMISSION

January 19, 2023

Max Van Rensselaer
Michael Baker International

Via Email to: max.vanrensselaer@mbakerintl.com

Re: Rexhall Subdivision Project, Los Angeles County

Dear Mr. Van Rensselaer:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green
Cultural Resources Analyst

Attachment



CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Sara Dutschke
Miwok

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

COMMISSIONER
Buffy McQuillen
Yokayo Pomo, Yuki,
Nomlaki

COMMISSIONER
Wayne Nelson
Luiseño

COMMISSIONER
Stanley Rodriguez
Kumeyaay

COMMISSIONER
[Vacant]

COMMISSIONER
[Vacant]

EXECUTIVE SECRETARY
**Raymond C.
Hitchcock**
Miwok/Nisenan

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

**Native American Heritage Commission
Native American Contact List
Los Angeles County
1/19/2023**

Barbareno/Ventureno Band of Mission Indians

Dayna Barrios, Chairperson
Phone: (805) 890 - 6855
barrios_dayna@yahoo.com
Chumash

Barbareno/ Ventureno Band of Mission Indians

Annette Ayala, CRM Committee Chair
188 S. Santa Rosa Street
Ventura, CA, 93001
Phone: (805) 515 - 9844
annetteayala78@yahoo.com
Chumash

Chumash Council of Bakersfield

Julio Quair, Chairperson
729 Texas Street
Bakersfield, CA, 93307
Phone: (661) 322 - 0121
chumashtribe@sbcglobal.net
Chumash

Coastal Band of the Chumash Nation

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Santa Barbara, CA, 93140
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Chumash

Coastal Band of the Chumash Nation

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Phone: (805) 324 - 0135
cbcntribalchair@gmail.com
Chumash

Fernandeno Tataviam Band of Mission Indians

Rudy Ortega, Tribal President
1019 Second Street, Suite 1
San Fernando, CA, 91340
Phone: (818) 837 - 0794
Fax: (818) 837-0796
thcp@tataviam-nsn.us
Tataviam

Gabrieleno Band of Mission Indians - Kizh Nation

Andrew Salas, Chairperson
P.O. Box 393
Covina, CA, 91723
Phone: (626) 926 - 4131
admin@gabrielenoindians.org
Gabrieleno

Gabrieleno/Tongva San Gabriel Band of Mission Indians

Anthony Morales, Chairperson
P.O. Box 693
San Gabriel, CA, 91778
Phone: (626) 483 - 3564
Fax: (626) 286-1262
GTTribalcouncil@aol.com
Gabrieleno

Gabrielino /Tongva Nation

Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St.,
#231
Los Angeles, CA, 90012
Phone: (951) 807 - 0479
sgoad@gabrielino-tongva.com
Gabrielino

Gabrielino Tongva Indians of California Tribal Council

Christina Conley, Tribal Consultant and Administrator
P.O. Box 941078
Simi Valley, CA, 93094
Phone: (626) 407 - 8761
christina.marsden@alumni.usc.edu
Gabrielino

Gabrielino Tongva Indians of California Tribal Council

Robert Dorame, Chairperson
P.O. Box 490
Bellflower, CA, 90707
Phone: (562) 761 - 6417
Fax: (562) 761-6417
gtongva@gmail.com
Gabrielino

Gabrielino-Tongva Tribe

Charles Alvarez,
23454 Vanowen Street
West Hills, CA, 91307
Phone: (310) 403 - 6048
roadkingcharles@aol.com
Gabrielino

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Rexhall Subdivision Project, Los Angeles County.

**Native American Heritage Commission
Native American Contact List
Los Angeles County
1/19/2023**

**Northern Chumash Tribal
Council**

Violet Walker, Chairperson
P.O. Box 6533 Chumash
Los Osos, CA, 93412
Phone: (760) 549 - 3532
violetsagewalker@gmail.com

**Soboba Band of Luiseno
Indians**

Joseph Ontiveros, Cultural
Resource Department
P.O. BOX 487 Cahuilla
San Jacinto, CA, 92581 Luiseno
Phone: (951) 663 - 5279
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov

**San Fernando Band of Mission
Indians**

Donna Yocum, Chairperson
P.O. Box 221838 Kitanemuk
Newhall, CA, 91322 Vanyume
Phone: (503) 539 - 0933 Tativiam
Fax: (503) 574-3308
ddyocum@comcast.net

**San Luis Obispo County
Chumash Council**

Chumash

**Santa Rosa Band of Cahuilla
Indians**

Lovina Redner, Tribal Chair
P.O. Box 391820 Cahuilla
Anza, CA, 92539
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Fax: (951) 659-2228
lsaul@santarosa-nsn.gov

**Santa Ynez Band of Chumash
Indians**

Kenneth Kahn, Chairperson
P.O. Box 517 Chumash
Santa Ynez, CA, 93460
Phone: (805) 688 - 7997
Fax: (805) 686-9578
Chairman@chumash.gov

**Soboba Band of Luiseno
Indians**

Isaiah Vivanco, Chairperson
P. O. Box 487 Cahuilla
San Jacinto, CA, 92581 Luiseno
Phone: (951) 654 - 5544
Fax: (951) 654-4198
ivivanco@soboba-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Rexhall Subdivision Project, Los Angeles County.

Attachment 4
Historical Society Consultation

From: [vanRensselaer, Max](#)
To: ALAN@SCVHISTORY.COM; info@scvhistory.com
Cc: [Daniels, James](#)
Subject: Rexhall Development Project - Public Comment Request
Date: Thursday, January 12, 2023 12:35:16 PM
Attachments: [Santa Clarita Valley HS_combined.pdf](#)

Good afternoon,

I am reaching out to you to request input about effects to cultural resources regarding the proposed Rexhall Development Project. Please see the attached letter and contact me with any comments or questions.

Thank you,

Maximilian van Rensselaer | Archaeologist

5470 Kietzke Lane, Suite 300, PMB#205 | Reno, NV 89511 | [M] (775) 666-5524

max.vanrensselaer@mbakerintl.com | www.mbakerintl.com



January 12, 2023

ALAN POLLACK, PRESIDENT
SANTA CLARITA VALLEY HISTORICAL SOCIETY
24101 NEWHALL AVENUE
P.O. BOX 221925
NEWHALL, CALIFORNIA 91322
VIA EMAIL: ALAN@SCVHISTORY.COM

**RE: REXHALL DEVELOPMENT PROJECT, CITY OF SANTA CLARITA, LOS ANGELES COUNTY,
CALIFORNIA**

Dear Mr. Pollack:

Michael Baker International is conducting a cultural resources study supporting the Rexhall Development Project (project) in Santa Clarita, California. The City of Santa Clarita is conducting an environmental review on plans to construct a residential development, as shown in the attached maps. The project proposes to subdivide an approximately 19.92-acre parcel into four parcels and prepare the construction of four single-family homes. The project site is located at Diver Street between Triumph Avenue to the west and Tannahill Avenue to the east. The project is subject to the California Environmental Quality Act (CEQA).

We are contacting you to identify cultural resources the proposed project may impact. Please notify us if your organization has any information or concerns about historical resources on the project site. This is not a research request; it is solely a request for public input related to any concerns that the Santa Clarita Valley Historical Society may have. If you have any questions or comments, please get in touch with me at your earliest convenience at max.vanrensselaer@mbakerintl.com or 775-666-5524. Thank you for your time and assistance.

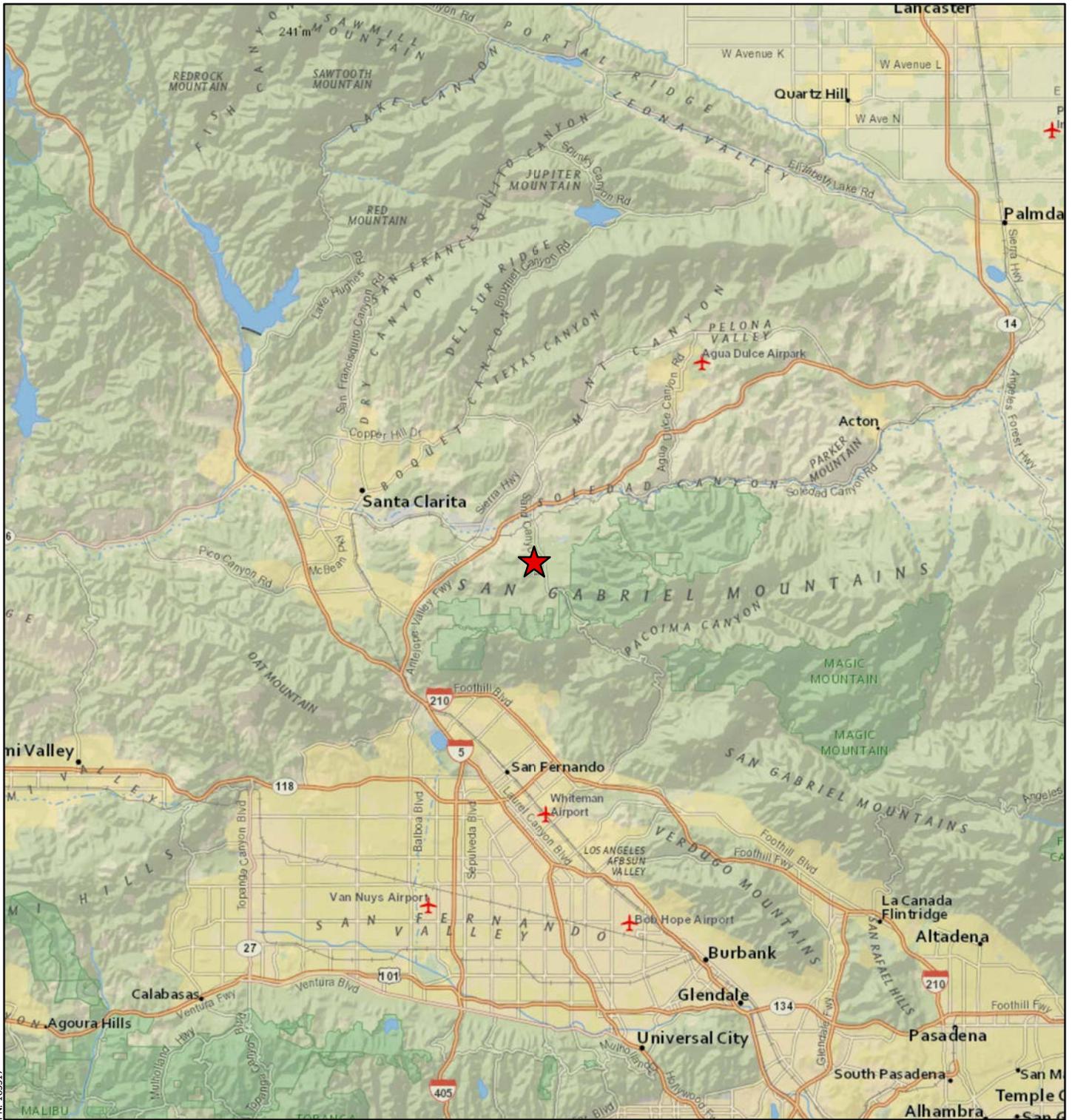
Sincerely,



Max van Rensselaer, R.A.
Archaeologist

Attachments:

Attachment 1 - Figures



PN: 169517

 Project Location

REXHALL PROJECT

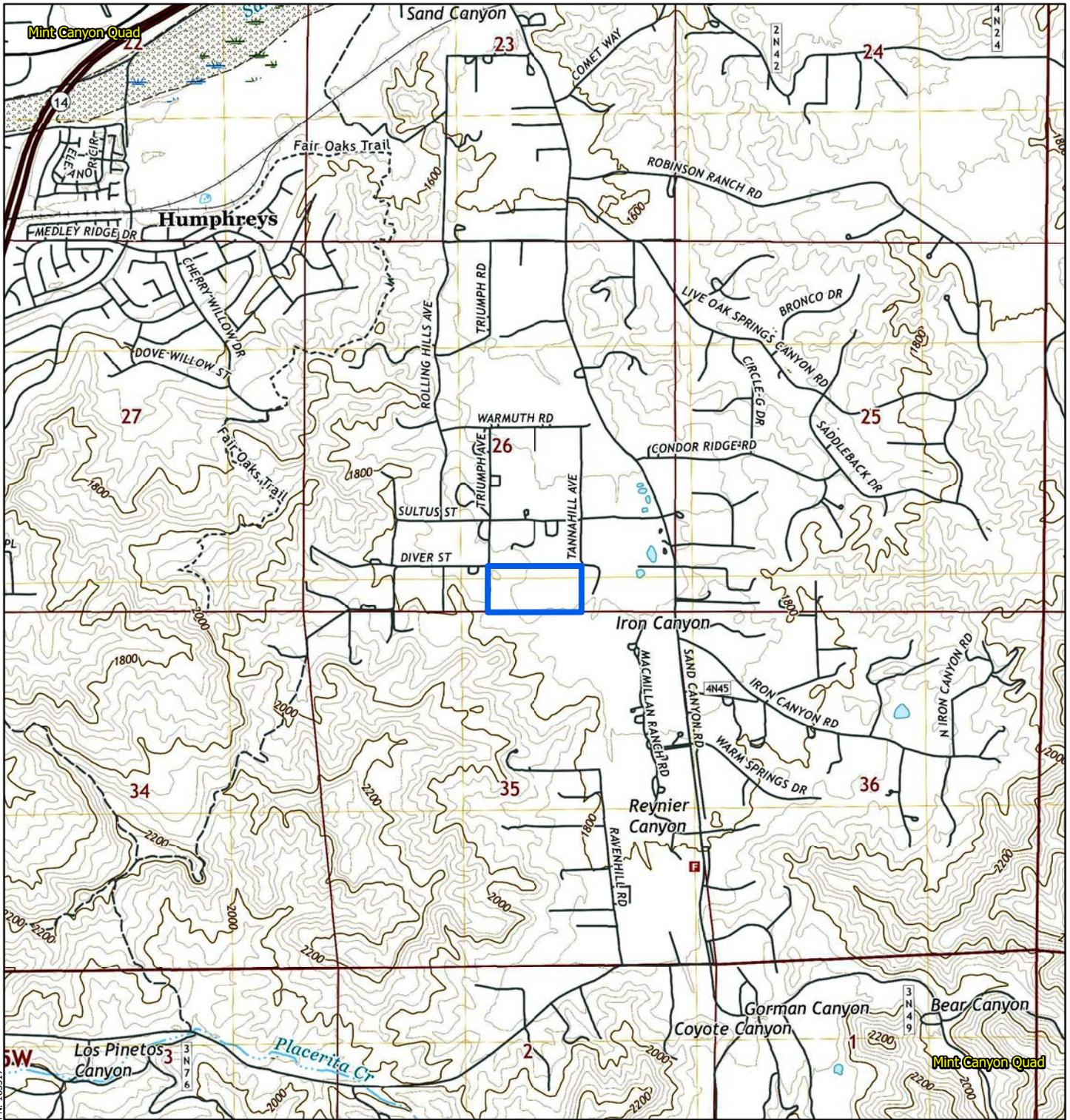
Michael Baker
INTERNATIONAL



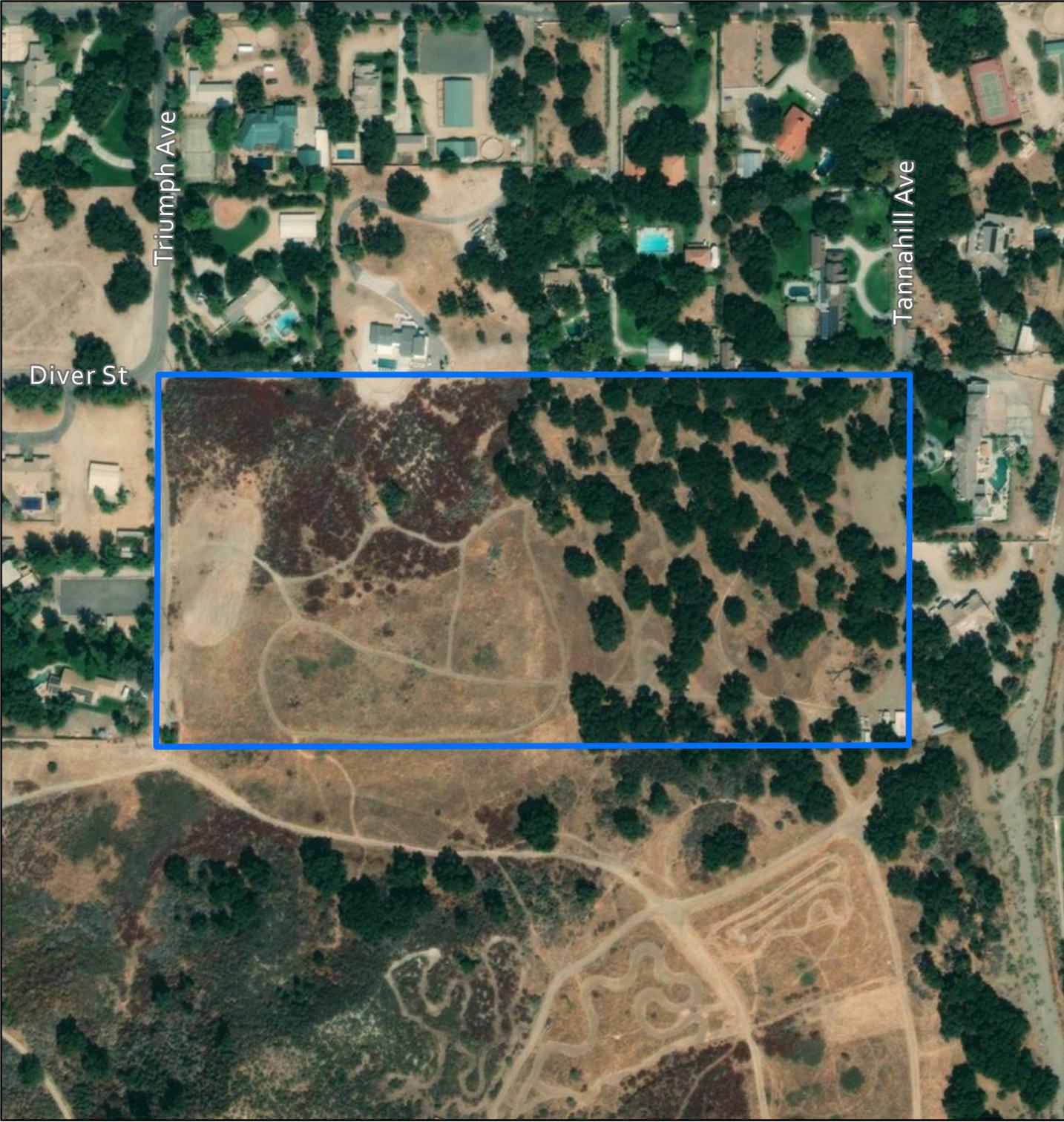
Regional Vicinity

Source: Esri, ArcGIS Online, National Geographic World Map: Santa Clarita, California

Figure 1



 Project Area



Triumph Ave

Tannahill Ave

Diver St

PN: 185517

 Area of Potential Effects

Attachment 5
Confidential DPR 523 Site Forms
Bound Separately

APPENDIX E

Preliminary Geotechnical Report and Percolation Feasibility Study

AZ GEO TECHNICS, INC.

Geotechnical and Environmental Consultants

38713 9th Street East

Palmdale, Ca. 93550

Phone: (661) 273-3123 Fax: (661) 273-4245

**PRELIMINARY
GEOTECHNICAL REPORT
FOR PROPOSED SUBDIVISION**

PROJECT NUMBER

GT-3503-S

SITE LOCATION

BETWEEN TRIUMPH AND TANNAHILL AVENUE
IN THE CITY OF SANTA CLARITA,
COUNTY OF LOS ANGELES,
STATE OF CALIFORNIA.

LEGAL DESCRIPTION

APN: 2841-018-035

DATE

November 11, 2017

PREPARED FOR

Bill Rex

A Z Geo Technics, Inc.

Geotechnical, Environmental and General Building Services

REX
GT-3503-S
Page 1

NOVEMBER 11, 2017

BILL REX
REXHALL COMPANY
45640 23RD STREET WEST
LANCASTER, CA 93536

SUBJECT: PRELIMINARY SOILS REPORT FOR A SITE LOCATED IN BETWEEN TRIUMPH AND TANNAHILL AVENUE @ THE NORTHWEST CORNER OF RADCLAY STREET, IN THE CITY OF SANTA CLARITA, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA.
APN: 2841-018-035 ("Site")

Dear Mr. Rex:

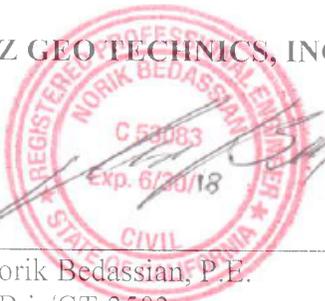
Pursuant to your authorization, AZ Geo Technics, Inc., referred to herein as "**Consultant**", has visited the Site and performed a preliminary soils evaluation for **Bill Rex**, referred to herein as "**Client**". The findings and recommendations contained in this "Report" are based upon four (4) specific exploratory borings/trenches and observations as noted within our described limitations. The materials immediately adjacent to or beneath those observed may have different characteristics and no representations are made as to the quality or extent of materials not observed.

Client, and/or Clients' contractor(s)/agents, are the responsible parties for the implementation of all recommendations during the life of the project. To the best of Consultants' knowledge, the evaluation covered in this limited study is in accordance with applicable recommendations. Any variances not approved in writing by Consultant would nullify this Report for any use. No other warranties are expressed or implied. Please note, this Report is valid for only one (1) year from the date hereof, subject to Consultants' review and approval prior to further use.

If you have any questions regarding this Report, please contact our office at your convenience. We appreciate this opportunity to be of service and will be available for future developments at your convenience.

Respectfully submitted for,

AZ GEO TECHNICS, INC.



Norik Bedassian, P.E.
NB:jr/GT-3503

SCOPE

The scope of this limited evaluation consisted of the following geotechnical steps:

- A. Review of literature, reports, and maps made available by Client pertinent to the Site.
- B. Preliminary Site reconnaissance and subsurface exploration.
- C. Laboratory analysis of selected representative bulk and relatively undisturbed samples.
- D. Preparation of this Report presenting our findings, conclusions, and recommendations.

PROPOSED DEVELOPMENT

The proposed development is reported to be a subdivision of four lot. "Client" prepared the Tentative Tract Map. The Site are intended for a one or two-story single-family residential dwelling(s). This study was performed for the proposed building pad areas, associated driveways, and on-Site utility construction only. Though no building plans were made available to Consultant at the time of the preparation of this Report, this type of structure is typically wood framed with continuous and/or isolated pad footings. Structural loads are anticipated to be light to moderate. Should something other than what is represented here be utilized during construction, Consultant should be notified immediately to review the proposed changes and modify this Report if necessary.

BACKGROUND OF SUBJECT SITE

The Site is currently vacant.

SITE DESCRIPTION

The Site is located in the City of Santa Clarita, County of Los Angeles, State of California. The Site is bounded on the north by number of residence, on the south by vacant lot, on the east by number of residence, and on the west by number of residence. The Site is approximately twenty (20) acres in size, rectangular in shape, and mostly accessible. The Site terrain is relatively flat to fooling hills.

The surface is sparsely covered with native vegetation / weeds / oak trees. Signs / No signs of watercourses or rock outcroppings were observed on the Site.

FIELD SUB-SURFACE INVESTIGATION AND LABORATORY TESTING RESULTS

Subsurface evaluation consisted of four (4) exploratory trenches, excavated to a maximum depth of fifteen (15) feet in order to determine the condition of the near-surface natural material. The trenches were logged and reviewed. Representative bulk and undisturbed samples were collected for laboratory testing. Bulk (disturbed) samples of the near surface soil were observed from the cuttings developed during excavation operations. The subsurface conditions shown on the Trench Logs apply only at the specific locations and to the dates indicated. It is not warranted to be a representative of subsurface conditions at any other locations and times.

Expansive Soils

The potential expansion characteristics of the near-surface soils are classified as low expansive in accordance with CBC Standards No. 1805A.8, Expansion Index Test. General guidelines for the proposed construction are based on soil expansion. Upon completion of rough pad grades, evaluation of foundation bearing materials should be made in accordance with CBC Standards No. 1805A.8.1. Specific recommendations for construction should be made after evaluation of foundation bearing materials.

Artificial Fill

No artificial fill or structural fill was encountered during the excavation operations.

Surface Erosion Potential

No evidence of significant erosion was observed on the Site. By nature, on-Site soil is cohesive and must be considered to be susceptible to surface erosion. The velocity of the concentration of drainage must be reduced by Rip Rap, grading, and landscaping the area to prevent possible erosion.

SHRINKAGE AND SUBSIDENCE

It is estimated that there will be a minimum of ten percent (10%) shrinkage approximately six (6) inches below surficial soil at an average density of ninety three percent (93%) compaction relative to the maximum dry density, due to the reworking of the surface soils (excluding rocks and organics). Natural ground subsidence is estimated to be as much as one-half (1/2) of an inch, depending significantly on the methods and the compaction equipment used. Some additional losses are anticipated due to the preparation and removal of surface and sub-surface obstructions, such as trees and rock outcroppings.

SETTLEMENT

It is estimated that after grading, in accordance with our recommendations/supervision, the settlement of the foundation system is expected to occur on initial load application. A maximum of one-half (1/2) of an inch settlement is anticipated, but differential settlement is anticipated not to exceed one-fourth (1/4) of an inch within a thirty (30) foot span.

ON-SITE SEWAGE DISPOSAL

It is Consultants' opinion that the proposed private on-Site sewage disposal system, via leach line at the Site (which has been tested) will not have any adverse effect as to the stability of the Site.

DRAINAGE

All pads drainage should be sheet flow and transferred to an appropriate non-erosive drainage device. The drainage will not be allowed to pond on the pad.

SUBSURFACE CONDITIONS

Based on our findings from the Site observation and exploratory trenches, the on-Site earth materials generally consist of older alluvium (Oal). These materials are typically moderately dense to dense sands, silts and clays in varying degrees of combinations. Please refer to the Trench Logs for a brief description of the on-Site earth materials encountered during the excavation operations.

Top Soil	Light Brown Silty Sand
Near Surface Materials	Light Brown Silty Sand with gravel
Subsurface At Depth Explored	Light Brown Silty Sand/gravel/cobbles
Depth To Groundwater	None encountered
Depth To Bedrock	None encountered

FOUNDATION RECOMMENDATIONS

Foundations may be conventional spread or continuous wall footings, provided they are as follows:

- ▶ Minimum continuous footings widths: Twelve (12) inches (one-story)
Fifteen (15) inches (two-story)
Eighteen (18) inches (three-story)
- ▶ Minimum column footing width: Two (2) Feet

Minimum footing depths (in inches) below lowest adjacent final grade are as follows:

Expansion Index	Expansion Classification	One Story Structure	One Story structure	Two Story Structure	Two Story Structure	Three Story Structure	Three Story Structure
		Perimeter or Bearing Walls	Interior or Non-Bearing	Perimeter or Bearing Walls	Interior or Non-Bearing	Perimeter or Bearing Walls	Interior or Non-Bearing
0 – 20	Very Low	12	12	18	18	24	18
21 – 50	Low	12	12	18	18	24	18
51 – 90	Medium	15	12	20	18	24	18
91 - 130	High	18	12	24	18	30	18

Foundation reinforcement in addition to minimum structural requirements for dead, live and seismic loads:

Expansion Classification	Expansion Index	No. 4 ReBars Top and Bottom
Very Low	0 to 20	Two (2)
Low	21 to 50	Two (2)
Medium	51 to 90	Two (2)
High	91 to 130	Two (2)

SLABS-ON-GRADE

The concrete for slabs-on grade should conform to the requirements contained in the CBC Standard No. 1805A.8.2 and the City of Santa Clarita Amendments. The concrete slab thickness *minimums* do not preclude more stringent requirements of which may be imposed by the architect, structural engineer, or building official. These *minimums* are as follows:

Expansion Classification	Expansion Index	Minimum Slab Thickness
Very Low	0 to 20	Four (4) inches
Low	21 to 50	Four (4) inches
Medium	51 to 90	Five (5) inches
High	91 to 130	Six (6) inches

Slab Reinforcement

The concrete slab reinforcement *minimums* do not preclude more stringent requirements of which may be imposed by the architect, structural engineer, or building official. These *minimums* are as follows:

Expansion Classification	Expansion Index	Slab Reinforcement
Very Low	0 to 20	No. 3 Rebar @ 24" on center, each way
Low	21 to 50	No. 3 Rebar @ 18" on center, each way
Medium	51 to 90	No. 4 Rebar @ 18" on center, each way
High	91 to 130	No. 4 Rebar @ 14" on center, each way

Moisture Vapor Barrier

Where moisture sensitive materials are to be placed on the slab, the slab should be underlain by a moisture vapor barrier (polyethylene plastic vapor barrier). Moisture barriers should have a minimum thickness of ten (10) mil. and should be protected by a two (2) inch thick layer of sand (above and below) in order to reduce the possibility of punctures and to aid in obtaining a satisfactory concrete cure. The moisture barrier must be properly lapped and/or sealed, as well as sealed around all plumbing structures and other openings. The slab areas should be presaturated to near optimum moisture content of the sub-grade material to a minimum depth of six (6) inches prior to placing sand and moisture barrier.

BEARING

Soil Bearing

For the proposed construction, foundations should be designed for an allowable bearing value not to exceed two thousand (2000) pounds per square foot (psf) on compacted material. This value is for dead loads plus the adjusted live load, which may be increased by one-third ($\frac{1}{3}$) for short term seismic and wind effects.

LATERAL LOADS

Resistance to lateral loads will be provided by passive earth pressure and base friction. For footing bearing against compacted fill, passive earth pressure may be considered to be developed at a rate of three hundred fifty (350) pounds per square foot (psf) per foot of depth. Base friction may be computed as four-hundreds (0.40) times the normal dead load. Base friction and passive earth pressure may be combined directly.

RETAINING WALLS

Retaining Wall Foundation Soils

Retaining walls should be founded on clean, non-deleterious natural or compacted competent material. Consultants' representative should observe soil materials exposed at the bottom of the proposed retaining wall footings. If these materials visually appear to be potentially expansive (e.g. clays and elastic silts), the expansion index testing should be performed in order to confirm the expansion characteristics of the material and Consultant should then make the appropriate recommendations.

Retaining Wall Design Parameters

Based upon a review of the current plans, retaining walls may be designed for a maximum height of **five (5)** feet.

The allowable net bearing pressure for retaining wall footings, at least one (1) foot wide and one (1) foot deep below the lowest adjacent grade which should be founded on competent natural soils or on at least two (2) feet of compacted fill to a minimum of ninety percent (90%) relative compaction, is **two-thousand (2000)** psf.

If retaining walls are constructed to retain on-Site compacted fill materials, they should be designed to resist lateral pressures equal to those exerted by an equivalent fluid having a density of not less than that shown in the following table.

Based upon analyses, the following Lateral Earth Pressures may be used in the design of any proposed retaining walls or similar structures:

	Driving Earth Pressure*	Resisting Earth Pressure*
Well Drained Level Soil	30 pcf	350 psf
Well Drained 2:1 Backfill Soil	40 pcf	

* Equivalent fluid pressure (psf) per foot of soil height.

SEISMIC COEFFICIENTS

Based on the California Building Code (CBC 2013), the site is located at Region 1. Due to the proposed structure’s occupancy category and the severity of the design earthquake ground motion at the site, the proposed structure will be assigned to a Seismic Design Category. Under the Earthquake Design Regulations of Chapter 16, Section 1613 of the CBC 2013, the following coefficients and factors apply to lateral – force design for structures at the site:

Site Classification CBC 2013	
Section 1613.5.2	
Latitude	34.394199 N
Longitude	118.420536 W
S _s =	20783
F _a =	1.00
S ₁ =	0.973
F _v =	1.50
Site Class	D
F _a S _s = S _{MS} =	2.783
F _v S ₁ = S _{MI} =	1.460
$\frac{2}{3}$ S _{MS} = S _{DS} =	1.855
$\frac{2}{3}$ S _{MI} = S _{DI} =	0.973

PGA=1.029

HYDRO-CONSOLIDATION

The disturbed and loose soil is underlain by sediments, which are subject to hydro-consolidation. This is a phenomenon by which metastable soils undergo rapid consolidation upon introduction of sufficient quantity of water or an increase in ambient loading. These soils are generally of low density and low moisture content.

The soils encountered beneath the Site were very dense below a depth of five (5) feet. Samples obtained below this depth had in-place dry densities of approximately (109.1) pounds per cubic foot (pcf). The moisture contents were found to be within percent (100%) of optimum moisture.

In addition to the density data, the result of a consolidation test performed on a selected sample is included in this Report.

Based upon available data, it is our opinion that hydro-consolidation of on-Site soils do not present any unusual risk for this Site provided that the recommendations contained in this Report are followed.

Over-excavating the building area, Site processing, control of landscape irrigation, and minimal changes from existing grades will further lessen the possibility of hydro-consolidation.

SUMMARY AND CONCLUSIONS

General Conclusions

The following conclusions are presented based upon the results of our findings and analysis of field and laboratory data at the time and locations as shown. No representation is made to any other areas or consistency of the conditions. Environmental testing was not a part of the report.

1. Proposed construction is feasible from a geotechnical point of view provided the soil recommendations presented in this Report have been implemented during construction.
2. The area of the proposed Site is underlain by massive Silty Sand with gravel. The soils are dense, and moist.
3. On-Site soils are primarily fine to coarse granular with an anticipated expansion potential.
4. No groundwater or evidence of seepage was encountered within the trenches.
5. Any change of plans must be approved by Consultant prior to construction.
6. At the time of further review and/or during construction, additional recommendations or changes may be provided depending on the future findings of the proposed development.

Liquefaction Potential

The primary factors influencing liquefaction potential include groundwater, soil type, and intensity of ground shaking. Liquefaction potential is greatest in saturated, loose, and poorly graded sand.

Based on our investigation, the sub-surface material is classified as a dense mixture of sand, clay, silts, and groundwater at a depth of below fifty (50) feet.

Therefore, considering the above characteristics, the potential for soil liquefaction and other secondary seismic hazards such as lurch cracks and seismically induced settlement are considered to be minor at the Site.

CITY OF SANTA CLARITA BUILDING ORDINANCE 02-08, SECTION 18, 02,03

It is the opinion of this firm that the proposed development will be safe against any geotechnical hazards from landslides, settlement, or slippage, and the proposed work will not adversely affect adjacent property in compliance with the City of Santa Clarita Building Code, provided our recommendations are followed.

RECOMMENDATIONS

General Site Grading

All Grading shall be performed in accordance with the General Earthwork and Grading Specifications (Enclosed) *except* as modified in the text of this Report.

The geotechnical exploration trench backfill is uncompacted and is unsuitable for support of structures. If any structure or other improvements (including paved access roads) are located over or immediately adjacent to the uncompacted fill, it is recommended that the backfill be over-excavated and replaced with engineered compacted fill.

Construction should allow for all plumbing and utility services to be connected with flexible connections and/or provided with convenient shut-offs. Structures should be designed in accordance with at least minimum code standards for Seismic Zone 4 as described in the City of Santa Clarita Amendments to 2013 California Building Code.

Diversion and reduction of the concentrated run-off(s) should be provided to minimize erosion of the on-Site slopes and improvements.

If Grading plans are required, all recommendations must be shown on the Grading plans prior to our review, approval, and signature; otherwise all recommendations should be addressed on the Plot Plan.

Any Site Grading should be in conformity with existing building codes contains specific considerations for grading and forms a part of this Report.

Field review of the Site Grading by Consultant, if requested as recommended, will be an additional expense and will be billed at current fee schedule rates in effect at the time of the Site Grading.

Building Area Preparation

The minimum upper four (4) feet of soils across the Site are considered unsuitable to support any structure due to possible hydro-consolidation potential. These soils should be mitigated in structural areas by a minimum over excavation of the upper four (4) feet below original grade. The resultant ground surface should be scarified an additional six (6) inches and moisture conditioned to optimum moisture and compacted to a minimum of ninety percent (90%) relative compaction prior to fill placement. All lateral over-excavation shall be extended to the equivalent of the depth of over-excavation beyond the building footprint, but not be less than five (5) feet (under any circumstances). If the building pad is to be created by cut and fill transitional, the cut area must be over-excavated thirty-six (36) inches below the bottom of the footing.

The Site should be cleared of surface and sub-surface obstructions including any existing debris, pavement, existing foundations, existing utilities, vegetation, residual top soils, and other deleterious materials. Removed materials and debris should be disposed of off-Site. All cavities created by the removal of buried obstructions should be backfilled with suitable compacted materials. Vertical temporary excavations greater than five (5) feet in height will require sloping or shoring in accordance with the requirements of OSHA.

The non-structural area shall be over-excavated to a minimum depth of twelve (12) inches from the natural grade or finish grade, whichever is lowest, and re-compacted to a minimum of ninety percent (90%) relative to maximum dry density.

Preparation Of Paving Areas

All surfaces to receive concrete or asphaltic concrete paving should be over-excavated and scarified to a minimum depth of twenty-four (24) inches, or mitigated to the Consultants' satisfaction based on exposed conditions. The scarified bottom should be moisture conditioned and re-compacted to a minimum relative compaction of ninety percent (90%) prior to placing any additional fill.

Regarding preliminary pavement sections, no "R" Value tests were conducted on samples of the proposed parking area sub-grade soils. During Site Grading, sample(s) should be tested, secured from the exposed pavement sub-grade areas, and evaluated for review or revision of the following preliminary pavement sections. Based upon "R" Value estimated, the following sections may be used for developing preliminary earth quantities and paving cost estimates:

Asphalt Concrete Pavement Sections:

Traffic Index 4.0 (Automobile and Light Truck Parking Areas): 3.0" Asphalt Concrete on 4.0" Crushed Aggregate Base or equivalent.

Traffic Index 5.0 (Automobile and Light Truck Drive Lanes): 4.0" Asphalt Concrete on 4.0" Crushed Aggregate Base or equivalent.

Asphalt concrete pavement section recommendations are based on the assumption that the pavement section is placed on a minimum twelve (12) inch thick layer of compacted sub-grade as recommended in this Report. Aggregate base material should be properly moisture conditioned and compacted to at least ninety five percent (95%) of the maximum dry density as determined by ASTM D - 1557 test procedures using mechanical compaction equipment. Pavement sections should be verified with the jurisdictional authority prior to the time of construction.

Electrically insulate each buried steel pipeline from dissimilar metals, cement-mortar coated and concrete encased steel, also electrically insulate above ground steel pipe using dielectric fittings to prevent dissimilar metal corrosion cells and to facilitate the application of cathodic protection.

Apply cathodic protection to steel piping as per NACE International RP - 0169 - 92. As an alternative for steel waterlines to a dielectric coating and cathodic protection, apply a mortar coating as per AWWA Standard C - 205.

Other Protective Measures

Electrically insulate (isolate) below-grade ferrous metals by means of dielectric fittings in exposed metal structures breaking grade.

All steel and wire concrete reinforcement of structures and foundations in contact with Site soils should have at least five tenths (0.5) of an inch greater cover than required by the ACI code and a water-cement ratio of five tenths (0.5) or less.

GEOTECHNICAL OBSERVATION AND TESTING SERVICES

Consultant should provide continuous observation and testing during Grading of the subject Site. It is the responsibility of Client to notify Consultant of the date of the pre-grade meeting as well as notifying the inspector of record. The recommendations provided in this report are based on preliminary design information and sub-surface conditions disclosed by widely spaced trenches. The outlined sub-surface conditions should be verified in the field during construction. Consultant should prepare a final as-grade soil report and maps summarizing all conditions encountered and any field modification to the recommendations provided herein. The primary aspects of geotechnical observation and testing may include the following on an as needed basis:

- Observation of all removal and over excavation.
- Observation and material testing during fill placement.
- Geologic mapping of cut slopes (if recommended).
- Observation of footing excavations.
- After pre-saturation of the slab areas, but prior to placement of sand and visqueen.
- During utility trench excavation backfilling and compaction.
- Prior to construction of pavement, parking, and driveway areas to perform R-Value tests (if needed).
- During compaction of sub-grade and aggregate base.
- When any unusual conditions are encountered.

It is the responsibility of Client to ensure the above testing/observations are satisfied and that Consultant is given forty-eight (48) hours prior notice. Any grading performed at the subject Site that does not conform to the recommendations in this Report is the sole liability of Client.

LIMITATIONS

This Report is issued with the understanding that it is the responsibility of the Client to ensure that the information and recommendations contained herein are called to the attention of all parties concerned, including but not limited to future owners, agents, designers and contractors, as well as that the necessary steps are taken to ensure that such recommendations are carried out under any and all circumstances/conditions.

Conclusions and recommendations presented in this Report are based on soil conditions as encountered at the test locations and may not necessarily represent areas between and beyond the trenches and / or borings. No representation is made to the quality or chemical characteristic of on-Site soil. This Report is not transferable without written consent of Consultant. This Report shall not be used for any appraisal purposes or cost evaluation.

If conditions other than those noted in this Report are encountered, Consultant should be notified immediately so that supplementary recommendations can be provided.

Consultant will be available to make a final review of the project plan and specifications and to assist in assuring correct interpretation of this Report's recommendations for use in applicable sections.

A representative of Consultant should inspect all Grading operations, including Site clearing and stripping. The presence of Consultants' field representative will be for the purpose of providing observation and field testing, and will not include any supervising or directing of the actual work of the Contractor (its employees or agents). Neither the presence of Consultants' field representative nor the observations and testing by Consultant shall excuse the Contractor in any way for defects discovered in Contractors' work.

It is understood that Consultant will not be responsible for job or Site safety on this project, which will be the responsibility of Client and Client's contractor.

Again, it is imperative that all recommendations provided herewith to be adhered to throughout the life of the project. No changes or variations shall be allowed without written approval of Consultant.

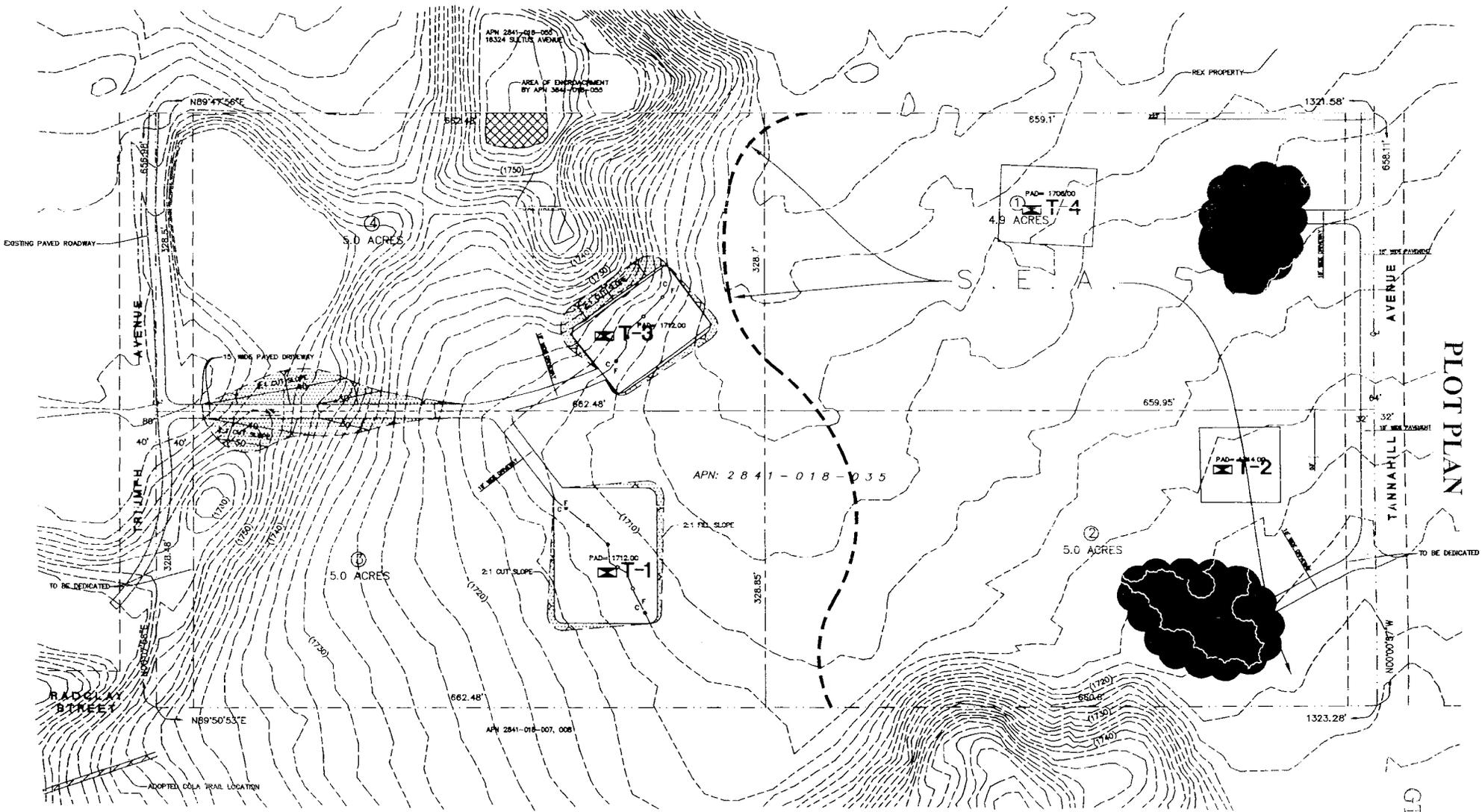
The conclusions and recommendations presented in this Report are based upon preliminary field and laboratory observation described herein and information available at this time within the limits prescribed by Client. It is possible that conditions between sampling locations may vary. Should conditions be encountered in the field that appear different than those described in this Report, Consultant should be contacted immediately in order to evaluate their effect and prepare additional recommendations.

This Report concludes Consultants' services under the scope of services and Consultant makes no other representations or any other warranties, expressed or implied.

If this Report or portions hereof are provided to contractors or included in specifications, it should be understood by all parties that they are provided for preliminary information only, and should be used as such. The Report and its contents resulting from this evaluation are not intended or represented to be suitable for reuse on extensions or modifications of the project, or for use on any other project. Furthermore, this Report is issued to **Client Name** and is not transferable; any further use of this Report beyond one year of the date of this Report will require written consent by Consultant. Consultant must negotiate any additional work clarification or investigations and services. Any variance from Consultants' prescribed requirements would nullify this Report, and Client indemnifies Consultant and its representatives of all liability and obligation. The amount paid for this Report is the total liability of Consultant and its representatives toward all parties and any claimant.

This Report does not cover any environmental, geologic, or flood hazards. If any such hazards exist, a geology report will be required.

ENCLOSURES



PLOT PLAN

TRENCH LOGS

TRENCH LOG SUMMARY

Date: 9/6/2017		Project Number: GT-3503			Logged By: JR	
Client: Bill Rex		Location: Tannahill Avenue, Santa Clarita			Trench No: T-1	
Depth	Sample Number	Dry Density (pcf)	Percent Moist.	Blow Count	USCS	Description
0						Top Soil/ Silty Sand with trace Gravel/ Dry/ Fine to Medium/ Slightly Dense
1						
2	⊗				SM/	Dark Brown to Brown/ Silty Sand to Gravelly Sand/
3	A		7.7%		GW	Fine to Coarse/ Slightly Moist/ Moderately Dense
4	②	93.6	16.5 %	13/19	SM	Dark Brown to Brown/ Poorly Graded Silty Sand/ Fine to Coarse/ Moist/ Moderately Dense
5						
6	⊗				SM	Same As Above – with Gravel and Trace Cobbles
7						
8	⊗				SM	Same As Above
9						Same As Above -- Dense
10						
11						
12						
13						
14						
15						End of Trench @ -15' No Groundwater No Bedrock

○ = Ring Sample

□ = Bulk Sample

⊗ = No Recovery

TRENCH LOG SUMMARY

Date: 9/6/2017		Project Number: GT-3503			Logged By: JR	
Client: Bill Rex		Location: Tannahill Avenue. Santa Clarita			Trench No:T-2	
Depth	Sample Number	Dry Density (pcf)	Percent Moist.	Blow Count	USCS	Description
0					SM	Light Brown/ Fine to Coarse/ Silty Sand to Sandy
1						Silt with roots/ Rootlets and Gravel/ Dry/ Dense
2						
3						
4					SP	Light Brown/ Fine to Coarse/ Gravelly Silty Sand
5						with Trace Roots/ Slightly Moist/ Moderate Dense to Dense
6						
7					GW	Brown to Light Greyish Brown/ Fine to Coarse/ Gravelly Sand to Silty Sand with Gravel Cobbles
8						And Trace Boulders/ Slightly moist/ Dense
9						
10					SM	Same as above
11						
12						
13						Same as above
14						
15						End of Trench @ -15' No Groundwater No Bedrock

○ = Ring Sample

□ = Bulk Sample

⊗ = No Recovery

TRENCH LOG SUMMARY

Date: 9/6/2017		Project Number: GT-3503			Logged By: JR	
Client: Bill Rex		Location: Tannahill Avenue, Santa Clarita			Trench No: T-3	
Depth	Sample Number	Dry Density (pcf)	Percent Moist.	Blow Count	USCS	Description
0						Light Brown/ Fine to Coarse/ Silty Sand with
1					SM	Gravel/ Dry to Very Slightly Moist/ Moderately
2						Dense
3					SM	Light Brown/ Fine to Coarse/ Silty Sand with
4						Gravel/ Dry to Very Slightly Moist/ Moderately
5						Dense
6					SM/	Very Light Brown/ Fine to Coarse/ Gravelly Sand
7					GW	with Cobbles/ Slightly Moist/ Dense
8						
9						Brown to light Greyish Brown/ Fine to Coarse/
10						Gravelly Sand with Cobbles and Trace Boulders/
11						Slightly Moist/ Dense
12					SM	Same as above
13						
14						Same as above
15						End of Trench @ -15'
						No Groundwater
						No Bedrock

○ = Ring Sample

☐ = Bulk Sample

⊗ = No Recovery

TRENCH LOG SUMMARY

Date: 9/6/2017		Project Number: GT-3503			Logged By: JR	
Client: Bill Rex		Location: Tannahill Avenue, Santa Clarita			Trench No: T-4	
Depth	Sample Number	Dry Density (pcf)	Percent Moist.	Bow Count	USCS	Description
0					SM	Brown/ Fine to Coarse/ Silty Sand to Sandy
1						Silt with roots/ Rootlets and Gravel/ Dry/ Dense
2						
3						
4					SP	Brown/ Fine to Coarse/ Gravelly Silty Sand
5						with Trace Roots/ Slightly Moist/ Moderate Dense to Dense
6						
7					GW	Brown to Light Greyish Brown/ Fine to Coarse/ Gravelly Sand to Silty Sand with Gravel Cobbles
8						And Trace Boulders/ Slightly moist/ Dense
9						
10					SM	Same as above
11						
12						
13						Same as above
14						
15						End of Trench @ -15' No Groundwater No Bedrock

○ = Ring Sample

□ = Bulk Sample

⊗ = No Recovery

LABORATORY TESTING

PLATE: M-1
J.O.: GT-3503
DATE: 11/15/2017

Maximum Dry Density & Optimum Moisture Curve

Sample Identification	Sample Description	Maximum Dry Density (PCF)	Optimum Moisture (%)
A	Silty Sand w/ Gravel	133.2	7.9

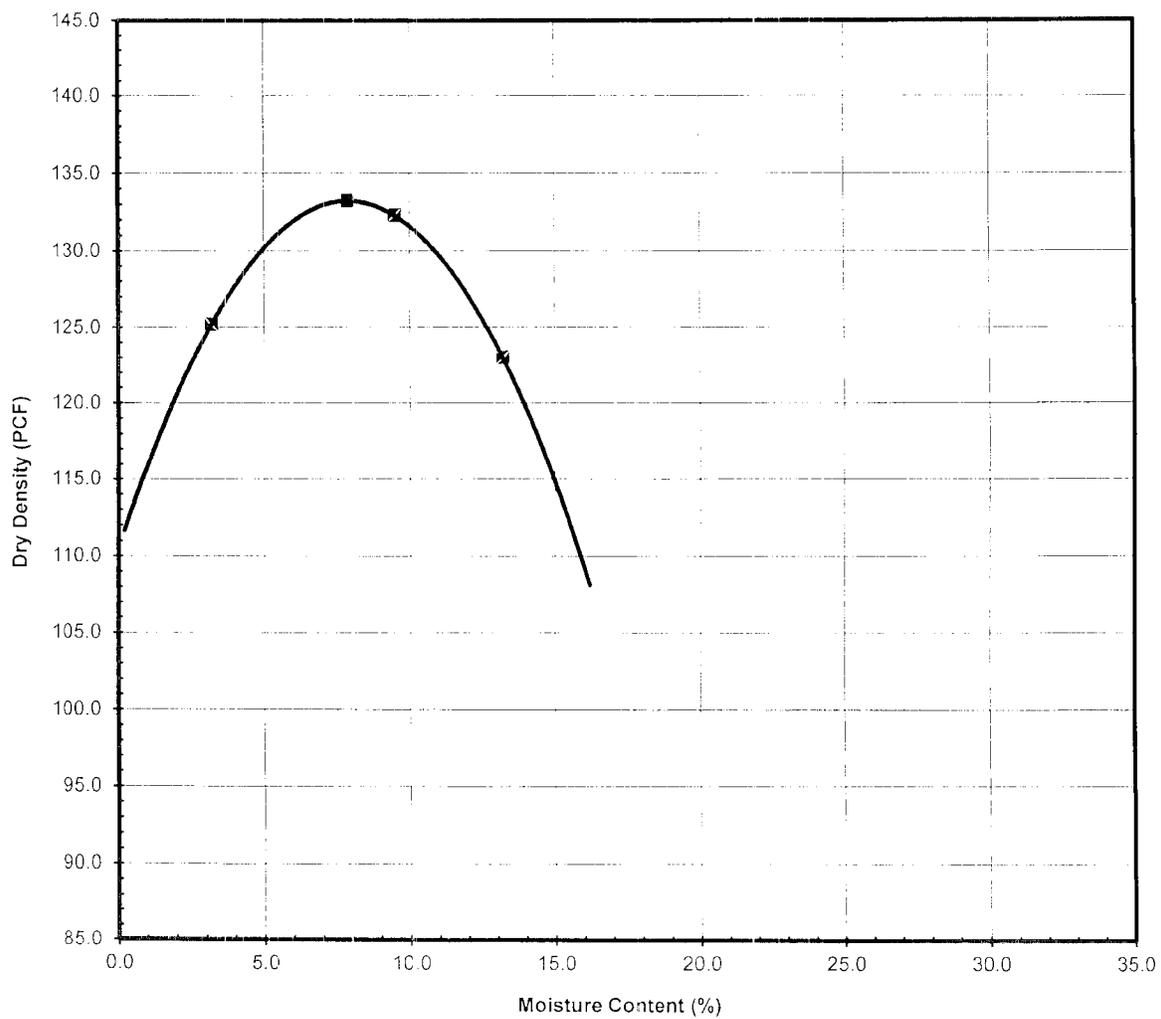


PLATE: S-1
 J.O.: GT-3503
 DATE: 11/20/2017

Direct Shear Test Diagram

Sample Identification	Sample Description	Sample Test State	Test Type
T-1 @ 4' #2	Silty Sand w/ trace Gravel	Saturated	Ultimate
Wi=16.5%	Wf=21.4%	Ws=96.3 pcf	
	Phi (Degrees)	25.1	
	Cohesion (PSF)	199.3	

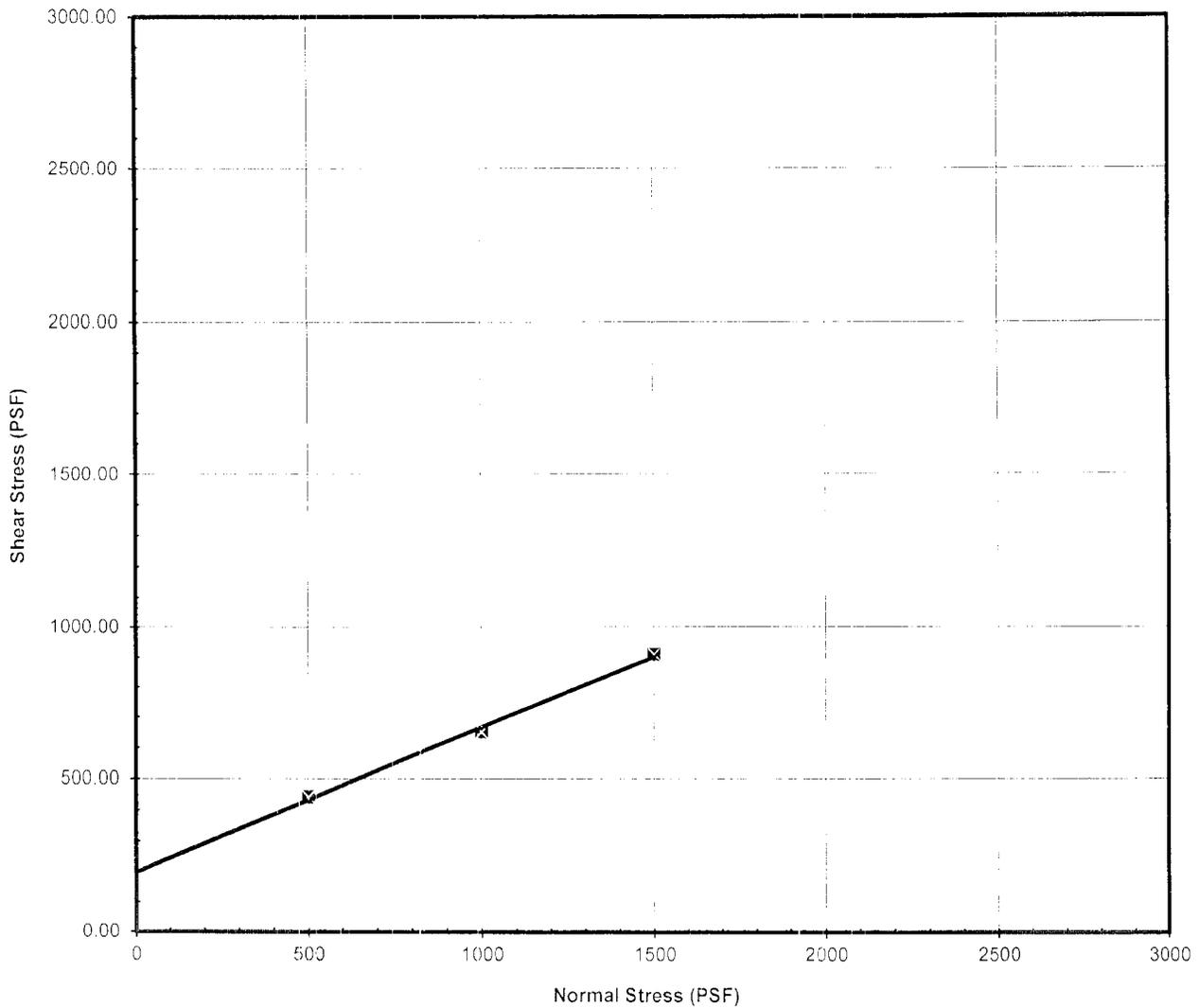
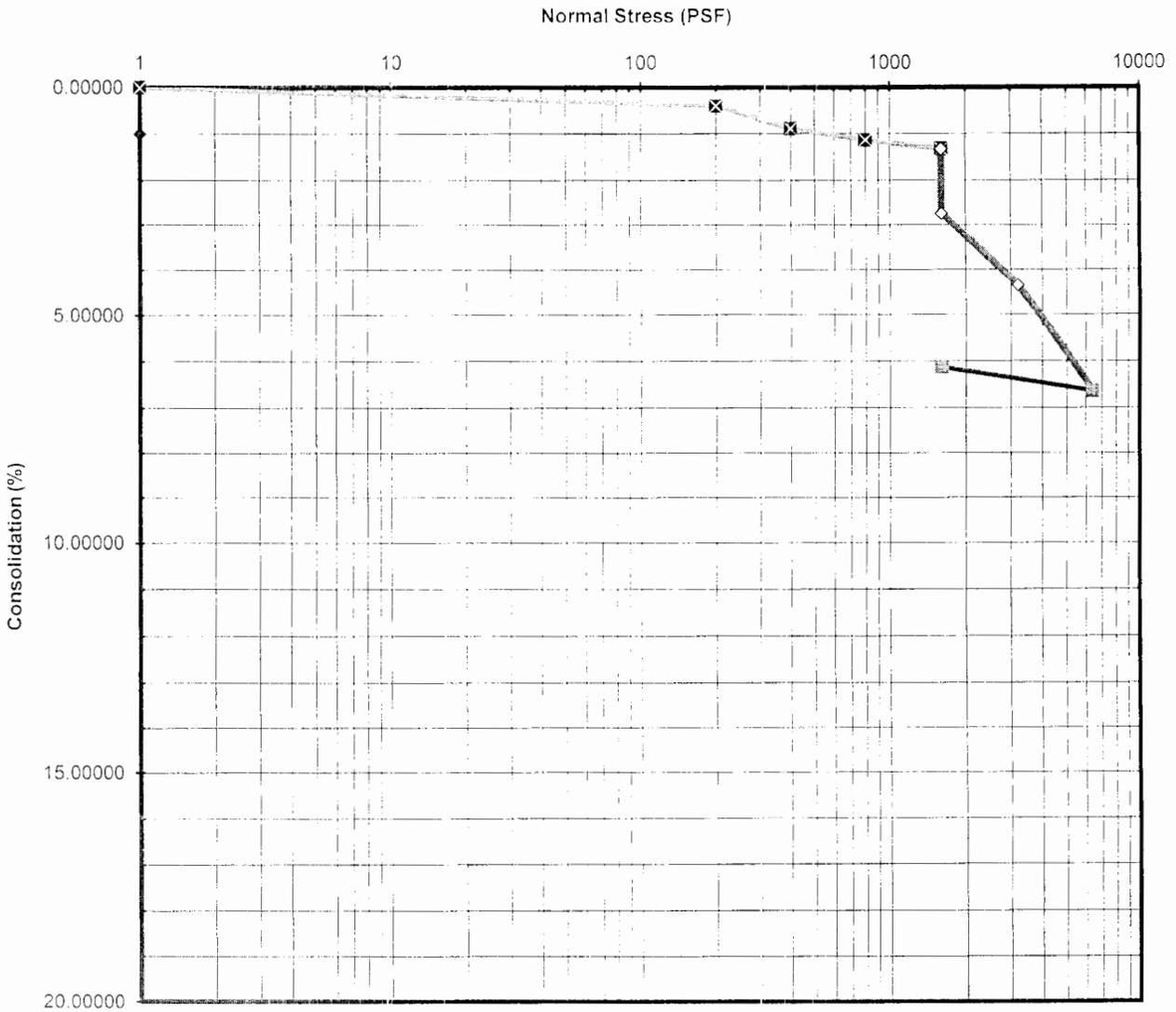


PLATE: HC-1
J.O.: GT-3503
DATE: 11/14/2017

Consolidation Pressure Curve

Sample Identification	Sample Description
T-1 @ -4' #2	Silty Sand w/ trace Clay & Gravel
Wi=16.5% Wf=24.6%	Ws=93.6 pcf



DESCRIPTION OF LABORATORY TESTING

Undisturbed Samples

Undisturbed samples for additional testing in our laboratory are obtained per Modified California Sampler D3550-01, by driving a sampling spoon into the material. A split barrel type spoon sampler was used, having an inside diameter of two and five tenths (2.5) inches, with a tapered cutting tip at the lower end and a ball valve at the upper end. The barrel is lined with thin brass rings, each one (1) inch in length. The spoon penetrated into the soil below the depth of the **boring or trench** at approximately twelve (12) inches to eighteen (18) inches. The central portion of the sample is retained for testing. All samples in the natural field condition are placed in airtight containers and transported to the laboratory. Bulk samples, representative of the surface and near-surface materials, are obtained.

Classification

Typical materials were subjected to mechanical grain-size analysis by wet sieving from U.S. Standard brass screens (ASTM D - 422). Hydrometer analyses were performed where appreciable quantities of fines were encountered. The data was evaluated in determining the classification of the materials. The grain-size distribution curves are presented in the test data and the Unified Soil Classification is presented in both the test data and the **Trench and / or Boring Logs**.

Moisture and Density Test

Moisture content and dry density determinations were performed on relatively undisturbed samples obtained from the test trenches. The results of these tests are presented in the **Boring / Trench Logs**. Where applicable, only moisture content was determined from “undisturbed” or disturbed samples.

Expansion Index Test

The Expansion Index Test, ASTM D4829-03, evaluated the expansion potential of selected materials. Specimens are molded under a given compactive energy approximately to the optimum moisture content and approximately fifty percent (50%) saturation or approximately ninety percent (90%) relative compaction.

The prepared one (1) inch thick by four (4) inches in diameter specimens are loaded to an equivalent one hundred forty-four (144) psf surcharge and are inundated with tap water until a volumetric equilibrium is reached.

Consolidation

Compression tests are performed on undisturbed and/or remolded samples in a two and five tenths (2.5) inches diameter, and one (1) inch high brass ring. Consolidometers, like the direct shear machine, are designed to receive the specimens in the rings in field condition. Porous stones, placed at the top and bottom of each specimen, permit the free flow of water from the sample during the test. Settlement accompanying each increment of load is measured by a dial indicator reading to one ten thousandths (0.0001) of an inch. To simulate possible adverse field conditions, moisture was added to an axial load of fifteen hundred (1,500) lbs./sq.ft. and Test Method: ASTM D – 2435 - 2004 was followed.

Standard Penetration Test

Standard Penetration Testing is performed in the trench per ASTM D – 1586 - 99 by driving a split spoon sampler ahead of the trench or boring at selected levels. The number of hammer blows required to drive the sampler twelve (12) inches with a one hundred forty (140) lb. Hammer dropped thirty (30) inches is identified as the Standard Penetration Resistance (SPT). Many correlations have been made between SPT values and soil properties. Empirical correlations also permit the blows of different energy or sampler sizes, such as ring samples, to be converted to SPT values.

Direct Shear

Direct shear tests were performed on selected undisturbed and/or remolded samples, which were soaked for a minimum of twenty-four (24) hours under a surcharge equal to the applied normal force during testing. After transfer of the sample to the shear box, and reloading the sample, pore pressures set up in the sample due to the transfer were allowed to dissipate for a period of approximately one (1) hour prior to application of shearing force. The samples were tested under various normal loads, a different specimen being used for each normal load.

The samples were sheared in a motor-driven, strain-controlled, direct-shear testing apparatus at a strain rate of five hundredths (0.05) of an inch per minute. After a travel of three tenths (0.300) of an inch of the direct shear machine, the motor was stopped and the sample was allowed to “relax” for approximately fifteen (15) minutes.

The “relaxed” and “peak” shear values were recorded. It is anticipated that, in the majority of samples tested, the fifteen (15) minutes relaxing of the sample is sufficient to allow dissipation of pore pressures set up in the samples due to application of shearing force. The relaxed values are therefore judged to be a good estimation of effective strength parameters. The test results were plotted on “Table 2 – Direct Shear Test”.

Residual Direct Shear Test

The samples were sheared, as described in the preceding paragraph, with the rate of shearing of five hundredths (0.05) of an inch per minute. The upper portion of the specimen was pulled back to the original position and the shearing process was repeated until no further decrease in shear strength was observed with continued shearing (at least three times resheared). There are two methods to obtain the shear values: (a) the shearing process was repeated for each normal load applied and the shear value for each normal load recorded. One or more than one specimen can be used in this method; (b) only one specimen was needed, and a very high normal load (approximately nine thousand (9,000) psf) was applied from the beginning of the shearing process. After the equilibrium state was reached (after “relaxed”), the shear value for that normal load was recorded. The normal loads were then reduced gradually without shearing the sample (the motor was stopped). The shear values were recorded for different normal loads after they were reduced and the sample was “relaxed”.

Atterberg Limits

The Atterberg Limits were determined in accordance with ASTM D – 4318 - 2005 for engineering classification of the fine-grained materials.

Maximum Density Test

The maximum dry density and optimum moisture content of typical materials were determined in accordance with ASTM D – 1557 - 2007 (five (5) layers). The results of these tests are presented in the test data.

Soluble Sulfates

The California Materials Test Method No. 417 determined the soluble sulfate contents of selected samples.

Resistivity Test

The resistivity test and selected samples and the results were determined by the California Materials Test Method # 643 as prescribed and forwarded from the California Department of Transportation Materials Lab determined the resistivity test, selected samples, and results. The sample was prepared for testing as follows: Bulk sample material was sieved through a number eight (8) sieve and sixteen hundred (1,600) grams of natural material was collected, weighed, and dried. The sample was removed from the oven and thirteen hundred (1,300) grams of material was separated and prepared as follows: The sample was oven dried and one hundred fifty (150) ml of distilled (deionized) water was added to the material and mixed thoroughly and placed into a calibrated soil box suitable for use with a Nilson Model 400 resistivity meter. The sample was compacted into the soil box by hand level with the top of the soil box.

The material was then tested for resistivity and removed from the soil box and an additional one hundred (100) ml of distilled (deionized) water was added. With two hundred fifty (250) ml. of water added to the sample the material was returned to the soil box in the manner mentioned hereinabove and the material was tested again. Both test results were recorded in an appropriate manner for recording such data.

TABLE I

Maximum Density Test Results

ASTM D - 1557

Sample	Soil Description	USCS	Maximum Dry Density (pcf)	Optimum Moisture (%)
A	Silty Sand / Gravel	SM	133.2 pcf	7.9 %

TABLE II

Direct Shear – Undisturbed Saturated Samples

Trench	Angle Of Friction (degrees)	Cohesion (psf)
T-1 @ 4'	25.1 °	199.3 psf

APPENDIX

GENERAL EARTHWORK AND GRADING SPECIFICATIONS

General

These specifications and the Grading details attached to the Grading Plans, if required, represent **AZ Geo Technics, Inc.s'** minimum requirements for Grading and other associated operations on construction projects. These specifications and recommendations of the regulatory agencies should be considered a portion of the project specifications.

Clients' contractor (prior to Site Grading) should arrange to meet at the Site along with Client, the design engineer and/or architect, the soils engineer (Consultant), and representatives of the governing authorities. *All parties should be given at least forty-eight (48) hours notice.*

It is Clients' contractor's responsibility to prepare the ground surface to receive the fills, spread, mix, and compact the fill in accordance with the job specifications. Clients' contractor should also have suitable and sufficient equipment in operation to handle the amount of fill being placed.

PREPARATION OF AREA TO BE FILLED

Clearing And Grubbing

All structures marked for removal: timber, logs, trees, brush, and other rubbish shall be removed, piled, and burned or otherwise disposed of off-Site. This is to leave the areas that have been disturbed with a neat appearance and free from unsightly debris.

A thorough search shall be made of the Site for all existing structures to be removed and for possible underground storage tanks and/or septic tanks as well as cesspools. Concrete irrigation lines shall be crushed in place and all metal underground lines shall be removed from the Site.

All trees to be removed from the Site shall be pulled in such a manner so as to remove as much of the root system as possible. Any existing brush, topsoil, loose fill, and porous soils shall be excavated to competent native materials.

Prior to placement of any fill soils, the exposed surface shall be scarified, cleansed of debris, and re-compacted to ninety percent (90%) of the laboratory standard under the direction of the soils engineer (Consultant). This is to be done in accordance with the following guidelines for placing, spreading, and compacting fill materials.

Processing

The existing ground, which is determined to be satisfactory for support of fill, shall be scarified to a minimum depth of six (6) inches. Existing ground, which is not satisfactory, shall be over excavated. Scarification shall continue until the soils are broken down and free of large clay lumps and until the working surface is reasonably uniform and free of uneven features which would inhibit uniform compaction.

Moisture Conditioning

Over-excavated and processed soils shall be watered, dried-back, and blended or mixed as required to attain uniform moisture content. For field-testing purposes, "near optimum" moisture should be considered to mean "optimum moisture to three percent (3%) above optimum moisture".

Prior to placement of additional compacted fill following a Grading delay, the exposed surface of previously compacted fill should be reprocessed. This should be accomplished by scarification, watering conditioning, and then re-compacted to a minimum of ninety percent (90%) of the laboratory maximum dry density.

No Additional fill should be placed following a period of flooding, rainfall, or over watering until damage assessments have been made and remedial Grading performed.

Benching

Where fills are to be placed on the ground with slopes steeper than five to one (5:1) the ground shall be stepped or benched. The lowest bench shall be a minimum of fifteen (15) feet wide and two (2) feet deep. This should expose firm material; it also should be approved by the soils engineer (Consultant). Other benches shall be excavated into firm material to a minimum width of four (4) feet. If Grading plans are required, typical benching and keying details are included in the Grading details on the Grading plans.

Approval

All areas to receive fill, including processed areas, removal areas, and toe-of-fill benches shall be approved by the soils engineer (Consultant) prior to fill placement.

All Grading operations should be inspected by a soils engineer (Consultant). The presence of the soils engineer (Consultant) will be for the purpose of providing observation and field-testing. This will not include any supervision of the actual work by Clients' contractor. Clients' contractor's employees and/or agents.

It is understood that the soils engineer (Consultant) will not be responsible for job or site safety on this project, which will be the sole responsibility of Client.

It should be stressed that operations undertaken at the Site without the presence of the soils engineer (Consultant) may result in exclusion of certain areas from the final compaction report.

Fill Placement

All fill material should be placed in layers a maximum of six (6) to eight (8) inches thick, moisture conditioned (as necessary), and compacted to a minimum relative compaction of ninety percent (90%) of their maximum dry density as determined by Test Method ASTM D - 1557 - 78.

FILL MATERIAL

General

Material to be placed as fill shall be free of organic matter and other deleterious substances. This shall be approved by the soils engineer (Consultant). Soils of poor gradation and expansion at strength characteristics shall be placed in areas designated by the soils engineer (Consultant) or shall be mixed with other soils to serve as satisfactory fill material.

Import materials shall meet the following minimum requirements:

- A. Plasticity index not to exceed twelve (12).
- B. R-Value not less than twenty-five (25).

Oversized Material

Rocks eight (8) inches and smaller may be utilized within the compacted fill provided that they are placed in such a manner that nesting of the rock is avoided. Fill should be placed and thoroughly compacted to the minimum requirement over and around all rock.

During the course of grading operations rocks or similar irreducible materials greater than twelve (12) inches may be generated. These rocks should not be placed within the compacted fill unless placed as recommended by the soils engineer (Consultant).

Rocks that are greater than twelve (12) inches but less than three (3) feet that are generated during Grading, may be placed within an approved compacted fill provided that it is in accordance with the recommendations in the Grading details on the Grading plans, if any. Rocks greater than three (3) feet should be broken down or disposed of off-Site. Rocks up to three (3) feet should be placed ten (10) feet below the finished grade and should not be closer than fifteen (15) feet from any slope face. Where practical oversized material should not be placed below areas where structures or deep utilities are proposed.

Oversized material should be placed in windrows on a clean over-excavated/unyielding compacted fill or firm natural ground. Select native or imported granular soils ($SE = 30$ or better) should be placed or thoroughly flooded over as well as around all windrowed rock (such that no voids remain). Windrows of oversized material should be staggered so that successive strata of oversized material are not in the same vertical plane.

COMPACTION

After each layer has been placed, mixed, and spread evenly it shall be thoroughly compacted to no less than ninety percent (90%) of the maximum density in accordance with ASTM D - 1557. Compaction shall be by sheepfoot rollers, multiple-wheel pneumatic tire rollers, or other types of rollers. Rollers shall be of such design that they will be able to compact the fill to the specified density. Rolling shall be accomplished while the fill material is at the specified moisture content. Rolling of each layer shall be continuous over its entire area. The roller shall make sufficient trips to ensure that the desired density has been attained.

Fill slopes shall be compacted by means of sheepfoot rollers or other suitable equipment. Compacting operations shall be continued until the slopes are stable, but not too dense for planting; and that there is no appreciable amount of loose soil on the slopes. Compacting of the slopes may be done progressively in increments of two (2) to four (4) feet in fill height or after the fill is brought to its total height.

Field density tests of each compacted layer of fill shall be made by the soils engineer (Consultant). Density tests may be made at intervals not exceeding two (2) feet of fill height provided that at least every one thousand (1,000) cubic yards of fill are tested. Where sheepsfoot rollers are used, the soils may be disturbed to a depth of several inches. Density test shall be taken in the compacted material below the disturbed surface.

When these tests indicate that the density of a layer or portion is below the required density, that layer or portion shall be reworked until the required density has been attained.

The fill operations shall be continued in six (6) inch compacted layers (as specified above) until the fill has been brought to the finished slopes and grades as shown on the approved Grading plans, if applicable.

SITE PROTECTION

Precautions should be taken to protect the Site from flooding, ponding, or inundation by improper surface drainage. Temporary provisions should be made during the rainy season to direct surface drainage away from the Site. Plastic sheeting should be kept on hand to prevent unprotected slopes from becoming saturated.

Where necessary, Clients' contractor should install check dams, de-silting basins, sandbags, and other devices to control erosion.

Following periods of rainfall, Clients' contractor should arrange a walk-through with the soils engineer (Consultant) to visually assess rain related damage. At the request of the soils engineer (Consultant), Clients' contractor shall make all excavations as necessary to evaluate the extent of rain related damage. Rain related damage might include erosion, silting, saturation, swelling, structural distress, or any other adverse condition observed by the soils engineer (Consultant). Soils adversely affected should be over-excavated and replaced with compacted fill as directed by the soils engineer (Consultant).

SLOPES

Compacted fill or backrolled slopes should be limited to a slope ratio of no steeper than two to one (2:1). All compacted fill slopes shall be overbuilt and cut back to grade, exposing the firm compacted fill liner core.

The actual amount of overbuilding shall be increased until the desired compacted slope surface condition is achieved. Care should be taken by Clients' contractor to provide thorough mechanical compaction to the outer edges of the overbuilt slope surface.

If excavations for cut slopes expose loose, cohesion less, significantly fractured or otherwise unsuitable material; over-excavation, and replacement with a compacted stabilization fill should be done. Stabilization fill construction should conform to the requirements of the Grading details outlined on the Grading plans, if applicable. For cut slopes made in the direction of the prevailing drainage, a non-erodible diversion swale (brow ditch) should be provided at the top-of-cut.

SLOPE MAINTENANCE

In order to enhance surficial slope stability, slope planting should consist of de-rooted vegetation requiring little water. Plants native to Southern California and plants that are relative to native plants are generally desirable. Plants native to other semi-arid and arid areas may also be appropriate. A qualified Landscape Architect should be contracted for specific recommendations.

DRAINAGE

Canyon sub-drain systems should be installed in accordance with the Grading details on the Grading plans, if applicable. Typical sub-drains for compacted fill buttresses, slope stabilizations, or side hill masses should also be installed in accordance with grading details on the Grading plans, if applicable.

All roof, pad, and slope drainage should be directed away from slope area structures to approved disposal areas via gutters, down spouts, or swales. For pad areas created above cut natural slopes, a positive drainage should be established away from the top-of-slopes. This may be accomplished by using a berm and/or appropriate pad gradient. A recommended overall gradient away from the top-of-slope should be two percent (2%) or greater. For-drainage immediately away from structures, a minimum five percent (5%) gradient should be maintained.

Pad drainage may be reduced to one percent (1%) for projects where no slopes exist, either natural or manmade.

TRENCH BACKFILLS

Utility trench backfill can be best placed by mechanical compaction. Unless otherwise specified, compaction shall be a minimum of ninety percent (90%) of the laboratory maximum density. As an alternative, where specifically approved by the soils engineer (Consultant) clean sand (sand equivalent thirty (30)) may be thoroughly jetted in place. Jetting should only be considered to apply to trenches no greater than two (2) feet in width and four (4) feet in depth. Following jetting operations, trench backfill should be thoroughly compacted by mechanical means.

AZ GEO TECHNICS, INC.
Geotechnical and Environmental Consultants

38713 9th Street East
Palmdale, California 93550
Phone: (661) 273-3123 Fax: (661) 273-4245

**PERCOLATION FEASIBILITY STUDY
VIA LEACH LINE**

PROJECT NO.

GT-3503-P

SITE LOCATION:

BETWEEN TRIUMPH AND TANNAHILL AVENUE
IN THE CITY OF SANTA CLARITA,
COUNTY OF LOS ANGELES,
STATE OF CALIFORNIA.

LEGAL DESCRIPTION:

APN # 2841-018-035

DATE

November 11, 2018

PREPARED FOR

Bill Rex

A Z Geo Technics, Inc.

Geotechnical, Environmental and General Building Services

NOVEMBER 11, 2018

BILL REX
REXHALL COMPANY
45640 23RD STREET WEST
LANCASTER, CA 93536

SUBJECT: PERCOLATION FEASIBILITY STUDY FOR PRIVATE SEWAGE DISPOSAL SYSTEMS ON A PROPOSED FOUR LOT SUBDIVISION LOCATED IN BETWEEN TRIUMPH AND TANNAHILL AVENUE @ THE NORTHWEST CORNER OF RADCLAY STREET, IN THE CITY OF SANTA CLARITA, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA.
APN: 2841-018-035 ("Site")

Dear Mr. Rex:

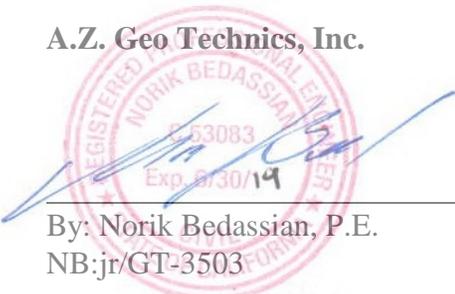
Pursuant to your authorization, **A.Z. Geo Technics, Inc.**, referred to herein as "**Consultant**", has visited the Site and performed a percolation evaluation for **Bill Rex**, referred to herein as "**Client**". The findings and recommendations contained in this "Report" are based upon four (4) specific exploratory trenches on each proposed lot for a total of twenty-four (24) test pits as noted within our described limitations.

Client, and/or Clients' contractor(s)/agents, are the responsible parties for the implementation of all recommendations during the life of the project. Any variances not approved in writing by Consultant would nullify and void this Report for any use. No other warranties are expressed or implied. Please note, this Report is valid for only one (1) year from the date hereof, subject to Consultants' review and approval prior to further use.

If you have any questions regarding this Report, please contact our office at your convenience. We appreciate this opportunity to be of service and will be available for future developments at your convenience.

Respectfully submitted for:

A.Z. Geo Technics, Inc.


By: Norik Bedassian, P.E.
NB:jr/GT-3503

PROPOSED DEVELOPMENT

The proposed development is reported to be a four (4) lot subdivision. Though no building plans were made available to Consultant at the time of the preparation of this Report, it was represented by Client that the proposed single-family dwellings shall be one or two story structures with the number of bedrooms and bathrooms to be determined at a later date.

Should something other than what is represented here be utilized during construction, Consultant should be notified immediately to review the proposed changes and modify this Report as necessary.

BACKGROUND OF SUBJECT SITE

At the time of the preparation of this Report, the subject Site is vacant.

SITE DESCRIPTION

The Site is located in the City of Santa Clarita, County of Los Angeles, State of California. The Site is bounded on the north, east and west by Single-Family Dwellings, and on the south by vacant land. The Site is approximately twenty (20) acres in size, rectangular in shape, and mostly accessible. The Site terrain is relatively flat with some gentle slopes.

Surface and Sub-Surface Water

At the time of the preparation of this report, no surface water or ponding were observed. No groundwater was encountered during the field exploration.

Vegetation

At the time of the reconnaissance, the Site was sparsely covered with native vegetation. There are numerous Oak trees scattered throughout the property, which have been surveyed and tagged with numbers by an Oak tree specialist.

Rock Outcroppings

No rock outcrops were observed at the subject Site during the site reconnaissance.

FIELD EXPLORATION

Subsurface evaluation consisted of one (1) exploratory trench, excavated to a depth of fifteen (15') feet on each proposed lot for a total of four (4) exploratory trenches. This was done in order to determine the condition of the near-surface natural material as well as to determine the presence/absence of groundwater and/or evidence of historical groundwater, if any. *Please refer to the Trench Logs for a description of the subsurface materials observed in the exploratory trench.* The subsurface conditions shown on the Trench Logs apply only at the specific locations and dates indicated. It is not warranted to be a representative of subsurface conditions at any other locations and/or times

PERCOLATION TEST PROCEDURES

Percolation testing involved the excavation of six (6) percolation test pits on each proposed lot, excavated to a depth of approximately five (5') feet below the ground surface. Once the percolation test pits were excavated, a one (1) foot by one (1) foot hole was excavated one (1) foot deep at the bottom of the percolation test trenches to be used as the test hole. The test hole was completely submerged with water, in accordance with approved test method. The initial pre-saturation was performed approximately 24 hours prior to the performance test.

After the 24-hour pre-saturation, the test holes were filled again with water. The performance test began when the hole was completely filled and that time recorded. Additional timed readings were made for each one (1) inch of fall of water. Please refer to the attached Table for actual readings.

Percolation testing was completed after recording the time between the 5th and 6th inch below the top of the hole.

All testing was performed in accordance with the Los Angeles County Health Department requirements.

SUBSURFACE CONDITIONS

Based on our findings from the Site observation and exploratory trenches, the on-Site earth materials

generally consist of materials described as follows. Please refer to the Trench Logs for a brief description of the on-Site earth materials encountered during the excavation operations.

Top Soil	Sandy Silt with Organics
Near Surface	Silty Sand to Sandy Silt w/ Gravel & trace roots
Subsurface at Depth Explored	Silty Sand w/ Gravel & trace Cobbles
Depth to Groundwater	None Encountered
Depth to Bedrock	None Encountered

Historic High Groundwater

Based upon observations from exploratory trench TP-1, there was no evidence to suggest the presence of high ground water. Consultant is not expecting the groundwater to rise within ten (10') feet of the bottom of the proposed percolation trench throughout the year.

CONCLUSION AND RECOMMENDATIONS

Based on Consultants' observation and analysis of the field data, it is Consultants' opinion that the subject Site is feasible for installation of an individual sewage disposal system under normal use and conditions, depending on the proposed disposal area and the final project plan.

The data was obtained through Consultants' percolation feasibility study on the date and approximate locations of our exploration; however, this should not be considered to preclude more restrictive requirements that may be imposed by City or County requirements. Prior to approval, building layouts will be shown on the plot plan, due to the size of the lot.

Areas not explored by Consultants' percolation test pits or trenches are not assumed to be consistent with areas tested. Other areas not for disposal, delineated on the enclosed Plot Plan, must be tested on an individual basis.

Consultant will be available to make a final review of the project plan and specifications to assist in assuring correct interpretation of this Report's recommendations for use in applicable sections. It is the responsibility of Client and/or Clients' Contractor to ensure that all recommendations are carried out properly and all backfill of the trench/the percolation test pits are periodically checked as well as restored to acceptable conditions. This Report is issued to the Client named on this Report only and is not transferable without written

consent of Consultant. Furthermore, all systems must be cared for properly. Adequate maintenance should be scheduled and records should be kept.

LIMITATIONS

Consultant has performed these services within the limits described by Client. There is no other warranty or representation, either expressed or implied.

The conclusions and recommendations in this Report are based upon data obtained from the field percolation test per County/City agencies' requirements. It should not be assumed or expected that the conditions between locations are similar to those encountered at the individual locations. It is possible that conditions between sampling locations may vary. Should conditions be encountered in the field that appear different from those described in this Report, Consultant should be contacted immediately in order that Consultant might evaluate their effect.

If this Report or portions hereof are provided to contractors or included in specifications, it should be understood by all parties that they are provided for preliminary information only and should be used as such.

This Report and its contents resulting from this investigation are not intended or represented to be suitable for reuse, extensions, modifications of the project, or for use on any other project. Any variance from Consultants prescribed requirements/recommendations would nullify this Report and Client and/or Clients' Contractor would indemnify Consultant and its representatives from any and all liabilities and/or obligations.

Consultant will be further available to assist in assuring correct interpretation of this Report's conclusions and recommendations.

PERCOLATION TEST DATA

LOT #1

(Ryon Method)

Date of Pre-Saturation September 12, 2017

Date of Test September 13, 2017

	Test Hole No. P-1	Test Hole No. P-2	Test Hole No. P-3	Test Hole No. P-4	Test Hole No. P-5	Test Hole No. P-6
	Depth = 5'					
6 Inches	7 min.	10 min.	9 min.	7 min.	11 min.	8 min.

Lot #1 Time Interval Between 5th and 6th Inch

Test Hole No. P-1	Test Hole No. P-2	Test Hole No. P-3	Test Hole No. P-4	Test Hole No. P-5	Test Hole No. P-6
7 min.	10 min.	9 min.	7 min.	11 min.	8 min.

*Use a minimum of seventeen (17) minutes for design purposes.

PERCOLATION TEST DATA

LOT #2

(Ryon Method)

Date of Pre-Saturation September 12, 2017

Date of Test September 13, 2017

	Test Hole No. P-1	Test Hole No. P-2	Test Hole No. P-3	Test Hole No. P-4	Test Hole No. P-5	Test Hole No. P-6
	Depth = 5'					
6 Inches	7 min.	10 min.	10 min.	11 min.	11 min.	9 min.

Lot #2 Time Interval Between 5th and 6th Inch

Test Hole No. P-1	Test Hole No. P-2	Test Hole No. P-3	Test Hole No. P-4	Test Hole No. P-5	Test Hole No. P-6
7 min.	10 min.	10 min.	11 min.	11 min.	9 min.

*Use a minimum of seventeen (17) minutes for design purposes.

PERCOLATION TEST DATA

LOT #3

(Ryon Method)

Date of Pre-Saturation September 12, 2017

Date of Test September 13, 2017

	Test Hole No. P-1	Test Hole No. P-2	Test Hole No. P-3	Test Hole No. P-4	Test Hole No. P-5	Test Hole No. P-6
	Depth = 5'					
6 Inches	16 min.	12 min.	8 min.	10 min.	11 min.	12 min.

Lot # 3 Time Interval Between 5th and 6th Inch

Test Hole No. P-1	Test Hole No. P-2	Test Hole No. P-3	Test Hole No. P-4	Test Hole No. P-5	Test Hole No. P-6
16 min.	12 min.	8 min.	10 min.	11 min.	12 min.

*Use a minimum of seventeen (17) minutes for design purposes.

PERCOLATION TEST DATA

LOT #4

(Ryon Method)

Date of Pre-Saturation September 12, 2017

Date of Test September 13, 2017

	Test Hole No. P-1	Test Hole No. P-2	Test Hole No. P-3	Test Hole No. P-4	Test Hole No. P-5	Test Hole No. P-6
	Depth = 5'					
6 Inches	10 min.	18 min.	29 min.	25 min.	17 min.	31 min.

Lot #4 Time Interval Between 5th and 6th Inch

Test Hole No. P-1	Test Hole No. P-2	Test Hole No. P-3	Test Hole No. P-4	Test Hole No. P-5	Test Hole No. P-6
10 min.	18 min.	29 min.	25 min.	17 min.	31 min.*

*Use thirty-one (31) minutes for design purposes.

PERCOLATION TEST DATA CALCULATIONS

BY THE RYON METHOD

LEACH TRENCH

Ryon Formula: $A = \frac{T + 6.24}{29} \times \frac{C}{2} =$

A = square feet of leaching area per gallon of effluent in 24 hours

T = time in minutes for 6th inch of drop

C = capacity of septic tank

Septic Tank @ 2000 Gallons.

LOT #'s 1, 2 & 3 : $A = \frac{17 + 6.24}{29} \times \frac{2000}{2} = \underline{802 \text{ ft}^2}$

LOT # 4 : $A = \frac{31 + 6.24}{29} \times \frac{2000}{2} = \underline{1285 \text{ ft}^2}$

LEACH FIELDS

For leach fields, the leaching area should be increased by fifty percent (50%).

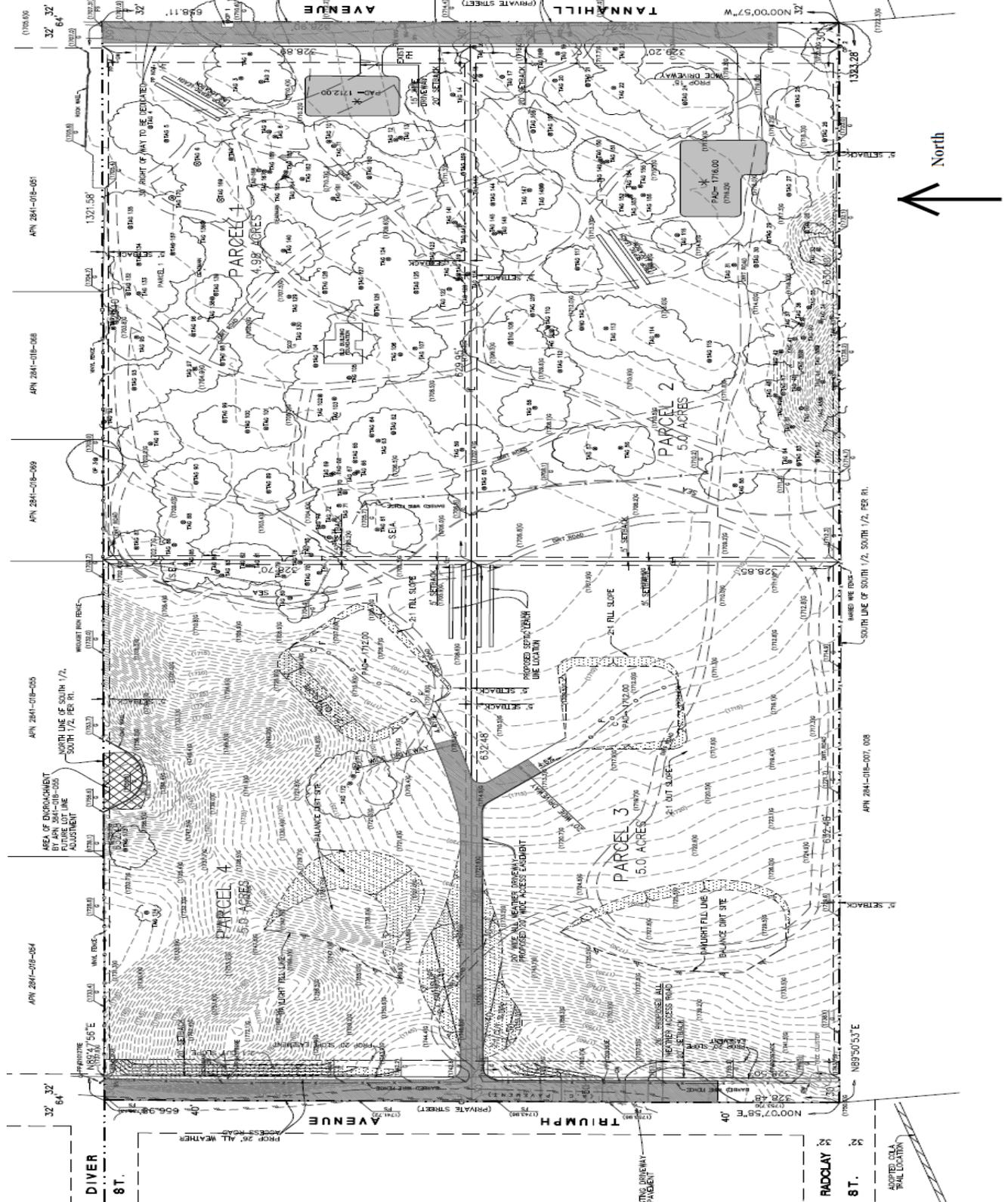
REQUIRED LEACHING AREAS FOR LOTS 1, 2 & 3

Septic Tank Capacity (gallons)	Trench Depth (feet)	No. of Leach Trenches	Trench Length (feet)	Absorption Area (sq. ft.)	Gravel Depth (feet)	Fill Cover (feet)	Trench Separation (feet)
2000	5'	2	60'	802	3'	2'	8'

REQUIRED LEACHING AREAS FOR LOT # 4

Septic Tank Capacity (gallons)	Trench Depth (feet)	No. of Leach Trenches	Trench Length (feet)	Absorption Area (sq. ft.)	Gravel Depth (feet)	Fill Cover (feet)	Trench Separation (feet)
2000	5'	2	95'	1285	3'	2'	8'

LEACH LINE LOCATION PLAN



	Size of Leach Lines	
Depth:	5.0 ft.	3.0 ft.
Distance to Building:	8.0 ft.	8.0 ft.
Distance Between Trenches:		8 ft.
Depth of Rock:	3.0 ft.	
Soil Type:	Silty Sand w/ Gravel	
Size of Tank:	2000 GAL.	
		Scale: 1" = 40'

Lot # 1, 2 & 3 = 2 lines @ 60' each
 Lot # 4 = 2 lines @ 95' each

CONSTRUCTION CONSIDERATIONS

1. The width of the absorption trenches should be at least thirty-six (36) inches nine hundred fourteen and four tenths millimeters (914.4mm). The individual laterals (preferably) should not be over one hundred (100) feet long.
2. All smeared or compacted surfaces should be raked to a depth of one (1) inch and loose material shall be removed before the gravel is placed in the trench.
3. The pipe, laid in a trench of sufficient width and depth, should be surrounded by clean graded gravel/rock, broken hard burned clay brick, or similar filtering material. The material may range in size from three-fourths (3/4) to two and a half (2 1/2) inches. Cinders, broken shells, or similar materials are not recommended because they are usually too fine and may lead to premature clogging. The material should extend from at least two (2) inches above the top of the pipe to at least twelve (12) inches below the bottom of the pipe.
4. The pervious barrier will be untreated building paper, straw, or similar porous material to prevent the closure of voids with earth backfill.
5. Evapotranspiration is often an important factor in the operation of horizontal absorption systems; therefore, an impervious covering should not be used since it would interfere with evapotranspiration at the surface.
6. The top of the new absorption trench should be hand tamped and should be overfilled with about four (4) to six (6) inches of earth. Unless this is done, the top of the trench may settle to a point lower than the surface of adjacent ground. This will cause the collection of storm water in the trench, which can lead to premature saturation of the absorption field and possibly a complete washout of the trench. Machine tapping or hydraulic backfilling of the trench should be prohibited.

CONSTRUCTION CONSIDERATIONS (con't)

7. A heavy vehicle would readily crush the tile in a shallow absorption field. For this reason, heavy machinery should be excluded from the disposal area unless special provisions are made to support the weight. All machine grading should be done before the field is laid.
8. Clogging (due to roots) occurs mostly in lines with insufficient gravel under the tile. Root problems may be prevented best by using a liberal amount of gravel and stone around the tile. In general, trenches constructed within ten (10) feet of large trees or dense shrubbery should have at least eighteen (18) inches of crushed stone or gravel beneath the tile.
9. When the disposal fields are installed in sloping ground, the minimum horizontal distance between any part of the leaching system and ground surface shall be at least fifteen (15) feet.
10. Where the sloping ground is used for the disposal area, it is usually necessary to construct a small temporary dike or surface water diversion ditch, of which should be kept free of obstructions until the field becomes well covered with vegetation. The leach lines should be placed at an area with slopes less than thirty (30) percent.
11. The use of the filled area must be restricted to activities, of which will not contribute to the compaction of the soil with the consequent reduction in soil aeration.

HOME OWNERS GENERAL GUIDELINES FOR PRIVATE SEPTIC SYSTEM

1. The septic tank should be inspected annually for scum and sludge levels and pumped as necessary.
2. At all times, only biodegradable household products approved for a septic (cleaning products, toilet paper, laundry soaps, etc.) system should be used.
3. All discharging water fixtures in the dwelling should be designed for low flow devices.
4. Never dispose of coffee grounds, grease, paint, caustic liquids, oily liquids, flues, cooking fats, motor oils, sanitary napkins, tampons, condoms, cigarettes, plastic or disposable diapers into the septic system.
5. Always be water wise and train your family on ways to save water. Spread your laundry cleaning over several days.
6. Generally three wash loads discharging into the septic system can be greater than the water use for one person per day, not counting the chemicals damage to the bacteria in the septic tank.
7. Repair any leaky plumbing fixture as soon as possible.
8. Dispose of waste products as much as possible by using your garbage waste disposal, rather than the septic system.

APPENDIX F

Paleontological Resources Records Search

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

Research & Collections

e-mail: paleorecords@nhm.org

October 1, 2023

Michael Baker International
Attn: Peter Kloess

re: Paleontological resources for the Rexhall Project

Dear Peter:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for proposed development at the Rexhall Project area as outlined on the portion of the Mint Canyon USGS topographic quadrangle map that you sent to me via e-mail on September 17, 2023. We do not have any fossil localities that lie directly within the proposed project area, but we do have fossil localities nearby from the same sedimentary deposits that occur in the proposed project area, either at the surface or at depth.

The following table shows the closest known localities in the collection of the Natural History Museum of Los Angeles County (NHMLA).

Locality Number	Location	Formation	Taxa	Depth
LACM IP 7772	Quarry in gulch northwest of Reynier Canyon	Castaic Formation	Invertebrates (uncatalogued)	Surface
LACM IP 7759	North side of Reynier Canyon	Castaic Formation (Limy conglomeratic sandstone)	Invertebrates (uncatalogued)	Surface
LACM IP 22016	Southwest corner of Sect 35, T4N, R15W	Castaic Formation (grey sandstone)	Invertebrates (uncatalogued)	Surface
LACM VP 7656*	Humphreys, just south of Fair Oaks Park	Castaic Formation (pebbly sandstone)	Sea turtle (<i>Psephophorus</i>); invertebrates (unspecified)	Unknown
LACM VP CIT 100 – 103, 199, 201, 206, 351, 430-433, 442, 443, 479, 480, 482	Mint Canyon (localities have not been georeferenced)	Mint Canyon Formation	Vertebrates, including artiodactyls and horse (Equidae), and leaves	Unrecorded, likely at surface
LACM VP 4692	In a railroad cut of the Southern Pacific Railroad 0.6 miles west of Lang Station	Mint Canyon Formation (tan to green sandy mudstones)	Camel family (Camelidae); extinct ruminant (Paleomerycidae); rodent	Unknown

interbedded with volcanic & plutonic
cobble to boulder
conglomerates) clade (Rodentia)

VP, Vertebrate Paleontology; IP, Invertebrate Paleontology; bgs, below ground surface
**Published in Robert J. Stanton. 1966. Megafauna of the Castaic Formation. J. Paleo.*
40(1):21-40.

This records search covers only the records of the NHMLA. It is not intended as a paleontological assessment of the project area for the purposes of CEQA or NEPA. Potentially fossil-bearing units are present in the project area, either at the surface or in the subsurface. As such, NHMLA recommends that a full paleontological assessment of the project area be conducted by a paleontologist meeting Bureau of Land Management or Society of Vertebrate Paleontology standards.

Sincerely,



Alyssa Bell, Ph.D.
Natural History Museum of Los Angeles County

enclosure: invoice

APPENDIX G

Los Angeles County Fire Department Conditions of Approval

APPENDIX H

Hydrology Report

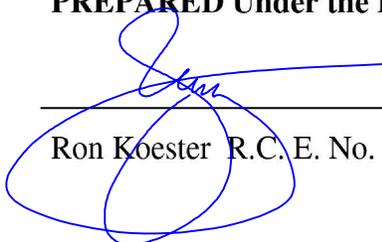
CRC 3208

HYDROLOGY STUDY

Prepared For:
Rexhall Company
45640 23rd Street West
Lancaster, CA 93536

Project Site:
Canyon Country, CA 91387
APN: 2841-018-071

PREPARED Under the Direction of:



Ron Koester R.C. E. No. 42399

17 NOV. 2023

Date



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Section 1.0: PROJECT SUMMARY

- 1.1 Design Parameters
- 1.2 Overview of Analysis Procedure
- 1.3 Project Purpose
- 1.4 Existing and Proposed Drainage
- 1.5 Hydrologic Analysis
- 1.6 Conclusion

Section 2.0: HYDROLOGIC CALCULATIONS

Appendix A: HYDROLOGY MAPS

Section 1.0

PROJECT SUMMARY

1.1 DESIGN PARAMTERS

Reference: Los Angeles County Department of Public Works, Hydrology Manual

Rainfall Isohyet:	6.2 in (50yr. – 24hr)
Soil Type:	20
DPA Zone:	9

Note: The project is not within FEMA Flood Zone “A”.
The project is not within County adopted Floodway.

1.2 OVERVIEW OF ANALYSIS PROCEDURES:

Analysis of the storm runoff for both the existing and proposed conditions the same techniques, those being as follows:

- Used LA County HydroCalc Program to determine times of concentration and peak flow rates.
- For both existing and proposed conditions, added up all the peak flow rates from the HydroCalc Program for the Q₂₅ runoff.

1.3 PROJECT PURPOSE AND SCOPE

The existing site APN is 2841-018-071 and is located at the intersection of Diver St. and Triumph Ave. in Canyon Country, CA. The site is about 19.87 acres in size and the easterly half of the site is relatively flat, has many Oak Trees, and is considered an SEA site. The westerly half of the site is hilly with existing natural slopes.

The proposed project proposed a 4 lot subdivision of the site, evenly distributed as best as possible into quarters. At the easterly end of the site there will be two proposed pads, roughly 5,000 sf in size, with access from the east along Tannahill Ave. These pads will be located within the various Oaks; however they are aligned so that the existing Oak Trees are not impacted to the maximum extent possible. At the westerly half of the site, due to the more hilly conditions, the new proposed pads will be built closer to the middle of the site. There will be a new shared driveway from Triumph Ave cutting through a section of the slope where the least amount of grading would be required. This new shared driveway will be centered about the new proposed lot line and then split to each proposed pad. These pads will be roughly 10,000 sf in size. Near each pad there will be a proposed leach field for future buildings, and these too will be located in locations that avoid impacting the Existing Oak trees as much as possible. On the westerly end of the site, there will also be two proposed fill slopes to help balance earthwork quantities onsite. There currently are no proposed buildings onsite.

1.4 EXISTING AND PROPOSED DRAINAGE CONDITIONS

As described above, the existing site is currently an empty lot. The westerly half of the site is hilly with a small portion draining west via surface flow towards Triumph Ave. and then flowing north towards the existing Sand Canyon Creek and eventually draining into the Santa Clara River. At the southeasterly end of the site, runoff from properties to the south enters the site via runoff and then continue sheet flowing north. The rest of the site also sheet flows to the north and exits the site via surface flow. Further downstream this runoff enters the existing Sand Canyon Creek and eventually drains into the Santa Clara River.

In the proposed conditions, the drainage pattern is kept consistent with the existing conditions as much as possible. Runoff from the proposed shared driveway will first flow east following the grades of the road and then once at the pads, the runoff will sheet flow to the north. The pads at the easterly end of the site will also sheet flow to the north and exist the site via surface flow. The runoff from the site then follows the same pattern as the existing conditions and ultimately drains to the Santa Clara River.

1.5 HYDROLOGIC ANALYSIS

To quantify the runoff generated by the site a broader view of the topography had to be taken into account. Since most of the runoff leaving the site comes from offsite, upstream properties to the south, additional area had to be accounted for and made part of this analysis. Additionally, since the site is not a sump location, the 25-year storm is analyzed instead of the 50-year storm. Note, the HydroCalc program requires a 50-year storm Isohyet input and then converts the output runoffs into desired storm events, 25-yr storm in this case.

In the existing conditions of this analysis, the overall area analyzed is about 114 acres (Note: the site is only about 20 acres in size). The overall tributary area is broken up into 3 separate subareas labeled 1A, 2A, and 2B. Subarea 1A is located furthest to the north and consists of majority of the project site. Subareas 2A and 2B are located at the southerly end of the site and will drain into subarea 1A. The table below is a summary of the Hydrologic Parameters of each subarea and their runoff generated in a 25-yr storm.

Subarea	Area (ac)	Flowline (ft)	Slope (ft/ft)	Imp	T _C (min)	Q ₂₅ (cfs)	V ₂₅ (ft ³)
1A	37.09	2022.19	0.119	0.01	17	33.61	119726
2A	38.06	3533.42	0.141	0.01	25	26.32	121563
2B	39.31	3243.10	0.132	0.01	24	27.97	125722
Total	114.46	-	-	0.01	-	87.90	367011

In the proposed conditions, the overall area analyzed is a slightly larger due to the proposed grades of the driveway, roughly 0.09 acres. The overall area is broken up into 7 subareas labeled 1A-1E, and 2A-2B. Subareas labeled as “1” consists of the same area as Existing Conditions 1A, except it’s broken up to account for the new proposed pads. Subareas labeled as “2” in the proposed conditions area the same as the subareas labeled as “2” in the existing conditions. The table below is a summary of the proposed hydrologic parameters of the site and their runoff generated in a 25-yr storm.

Subarea	Area (ac)	Flowline (ft)	Slope (ft/ft)	Imp	T _c (min)	Q ₂₅ (cfs)	V ₂₅ (ft ³)
1A	28.94	2022.19	0.119	0.01	17	26.22	93418
1B	1.24	470.22	0.112	0.24	6	2.50	8207
1C	3.80	538.18	0.063	0.11	7	6.54	17964
1D	1.89	486.21	0.021	0.06	8	2.91	7553
1E	1.31	384.28	0.020	0.14	7	2.29	6763
2A	38.06	3533.40	0.141	0.01	25	26.32	121563
2B	39.31	3243.10	0.132	0.01	24	27.97	125722
Total	114.55	-	-	0.02	-	94.75	381189

There will be additional runoff generated during the proposed conditions. The table below compares both the existing and proposed conditions side by side:

Subarea	Existing Conditions			Proposed Conditions			Difference		
	Area (ac)	Q ₂₅ (cfs)	V ₂₅ (ft ³)	Area (ac)	Q ₂₅ (cfs)	V ₂₅ (ft ³)	ΔArea (ac)	ΔQ ₂₅ (cfs)	ΔV ₂₅ (ft ³)
1	37.09	33.61	119726	37.81	40.45	133904	+0.09	+6.84	+14178
2	77.37	54.29	247285	77.37	54.29	247285	0	0	0
Total	114.46	87.90	367011	114.55	94.74	381189	+0.09	+6.84	+14178

**Legend for the various Tables above:

ac	Area	cfs	Cubic Feet per Second
ft	Feet	ft ³	Cubic Feet
Imp	Imperviousness	Q ₂₅	25-year Flow Runoff
T _c	Time of Concentration	V ₂₅	25-year Volume Runoff
min	Minutes		

As can be seen from the table above, there will be an additional area of about 0.09ac that leaves the site through the northerly end. With that and the proposed development, there will be an additional Q₂₅ runoff of +6.84 cfs and +14178 ft³. There will also be an increase in imperviousness in the proposed conditions, assuming full imperviousness for the proposed pads, the site imperviousness increases from roughly 1% in the existing conditions to roughly 5% in the proposed conditions.

1.6 CONCLUSION

The proposed site is currently an empty lot that generally sheet flows to the north. The runoff from the site leaves the site via surface flow, drains to Sand Canyon Creek, and ultimately onto the Santa Clara River further downstream. The project proposes to subdivide the existing lot into 4 separate lots, roughly equal in size. These lots will each have a proposed pad with a leach field nearby for future building purposes. The easterly half of the proposed site is located within an SEA site and the proposed pads and leach fields avoid the existing Oak Trees to the maximum extent possible. Drainage in the proposed conditions follows the same pattern as the existing conditions and leaves the site via surface flow at the northerly end of the site. There is an additional 0.09 ac draining to the northerly end with an additional Q25 runoff of 6.84 cfs and 14178 ft³.

Section 2.0

**HYDROLOGIC CALCULATIONS
(Existing Conditions)**

Peak Flow Hydrologic Analysis

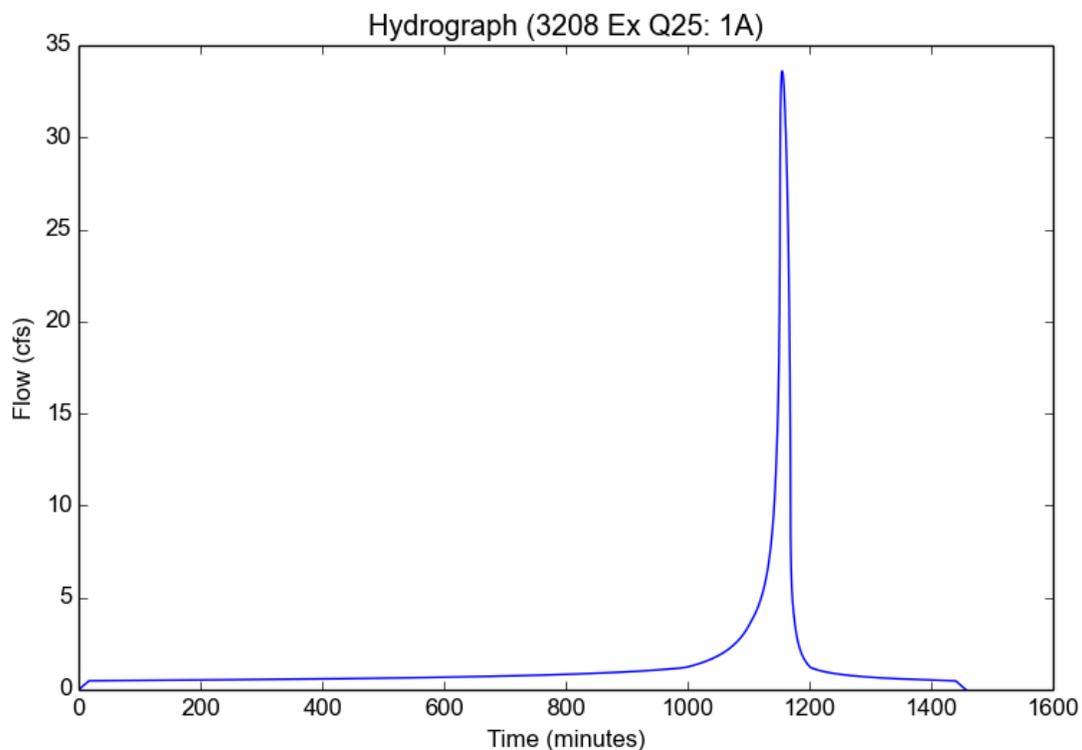
File location: F:/Job Files/3208 Rexhall Co/Civil/Hydrology/Calculations/Existing/Output/23-1005/3208 Ex Q25 Report_100523.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	3208 Ex Q25
Subarea ID	1A
Area (ac)	37.09
Flow Path Length (ft)	2022.19
Flow Path Slope (vft/hft)	0.1198
50-yr Rainfall Depth (in)	6.2
Percent Impervious	0.01
Soil Type	20
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.4436
Peak Intensity (in/hr)	1.8272
Undeveloped Runoff Coefficient (Cu)	0.4918
Developed Runoff Coefficient (Cd)	0.4959
Time of Concentration (min)	17.0
Clear Peak Flow Rate (cfs)	33.6079
Burned Peak Flow Rate (cfs)	33.6079
24-Hr Clear Runoff Volume (ac-ft)	2.7485
24-Hr Clear Runoff Volume (cu-ft)	119725.8159



Peak Flow Hydrologic Analysis

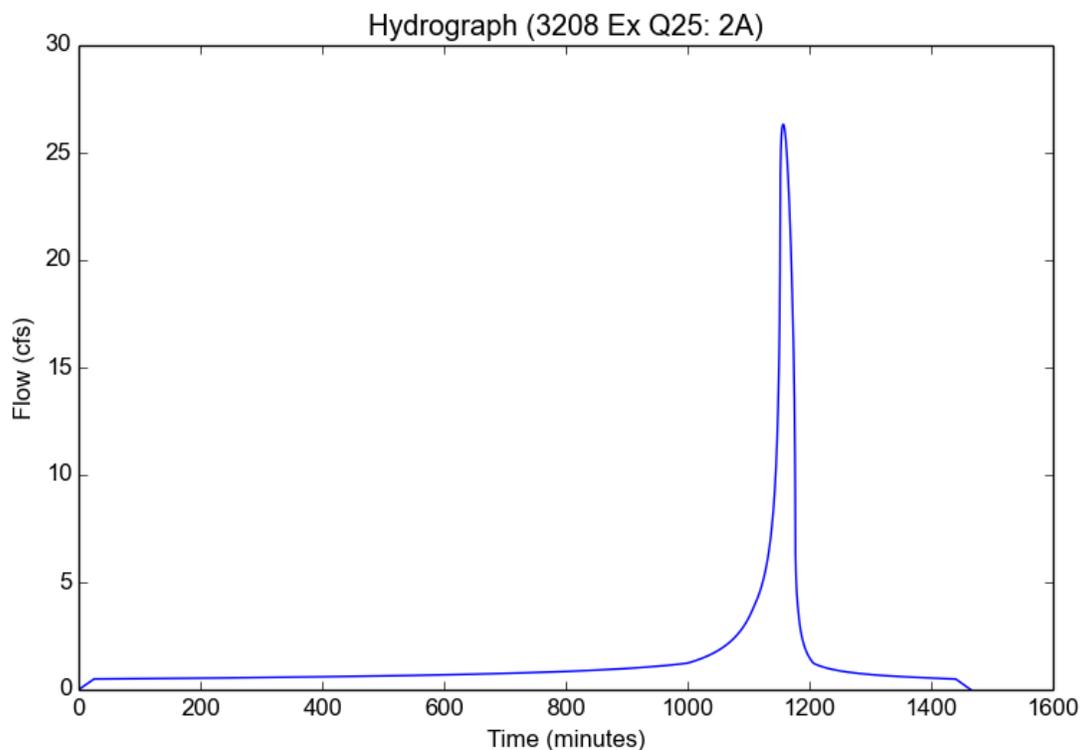
File location: F:/Job Files/3208 Rexhall Co/Civil/Hydrology/Calculations/Existing/Output/23-1005/3208 Ex Q25 Report_100523.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	3208 Ex Q25
Subarea ID	2A
Area (ac)	38.06
Flow Path Length (ft)	3533.42
Flow Path Slope (vft/hft)	0.141
50-yr Rainfall Depth (in)	6.2
Percent Impervious	0.01
Soil Type	20
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.4436
Peak Intensity (in/hr)	1.5243
Undeveloped Runoff Coefficient (Cu)	0.4492
Developed Runoff Coefficient (Cd)	0.4538
Time of Concentration (min)	25.0
Clear Peak Flow Rate (cfs)	26.3247
Burned Peak Flow Rate (cfs)	26.3247
24-Hr Clear Runoff Volume (ac-ft)	2.7907
24-Hr Clear Runoff Volume (cu-ft)	121563.1785



Peak Flow Hydrologic Analysis

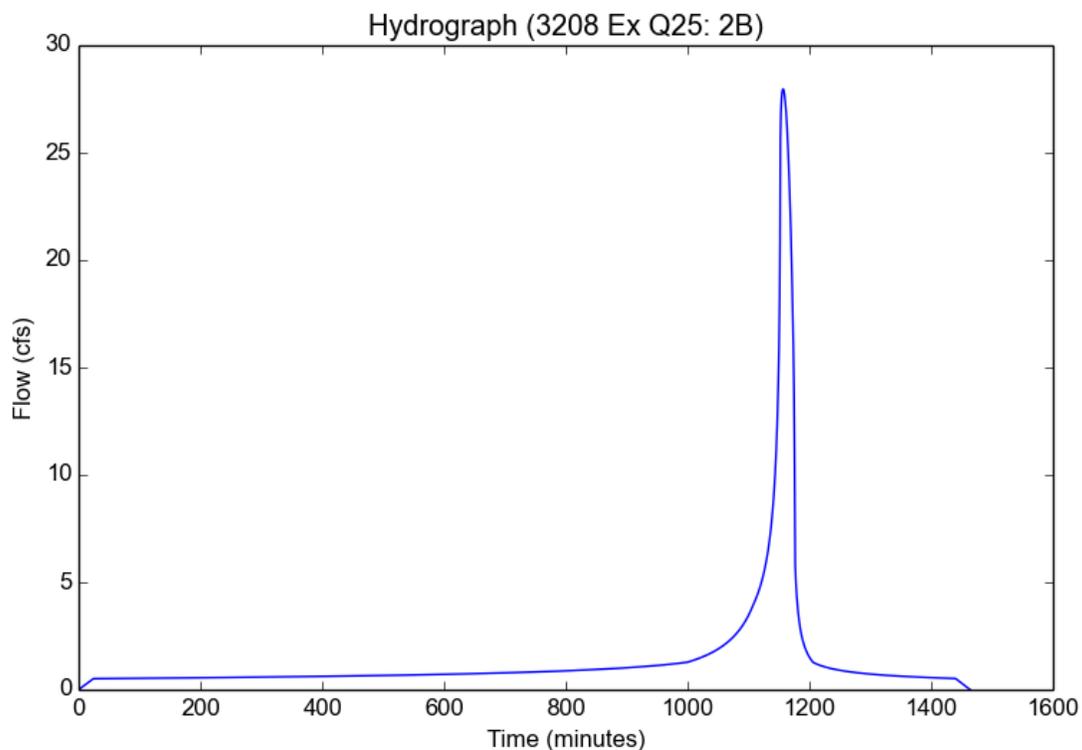
File location: F:/Job Files/3208 Rexhall Co/Civil/Hydrology/Calculations/Existing/Output/23-1005/3208 Ex Q25 Report_100523.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	3208 Ex Q25
Subarea ID	2B
Area (ac)	39.31
Flow Path Length (ft)	3243.1
Flow Path Slope (vft/hft)	0.132
50-yr Rainfall Depth (in)	6.2
Percent Impervious	0.01
Soil Type	20
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.4436
Peak Intensity (in/hr)	1.5538
Undeveloped Runoff Coefficient (Cu)	0.4534
Developed Runoff Coefficient (Cd)	0.4579
Time of Concentration (min)	24.0
Clear Peak Flow Rate (cfs)	27.9669
Burned Peak Flow Rate (cfs)	27.9669
24-Hr Clear Runoff Volume (ac-ft)	2.8862
24-Hr Clear Runoff Volume (cu-ft)	125722.0046



Section 2.0

**HYDROLOGIC CALCULATIONS
(Proposed Conditions)**

Peak Flow Hydrologic Analysis

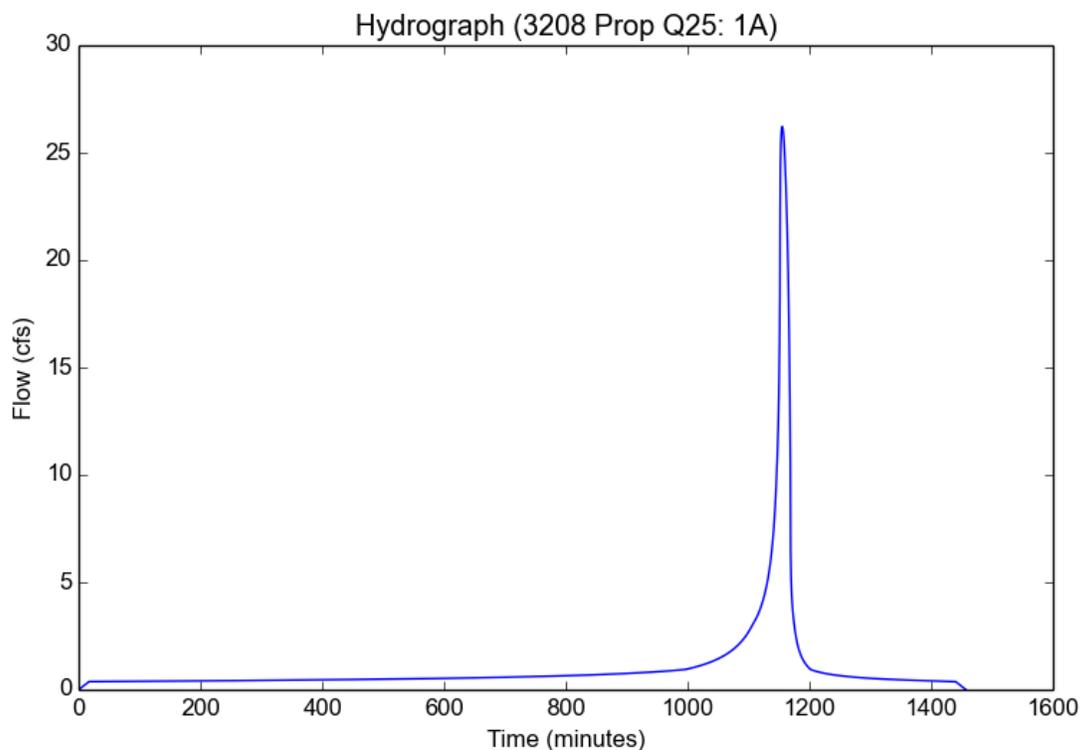
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	3208 Prop Q25
Subarea ID	1A
Area (ac)	28.94
Flow Path Length (ft)	2022.19
Flow Path Slope (vft/hft)	0.119
50-yr Rainfall Depth (in)	6.2
Percent Impervious	0.01
Soil Type	20
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.4436
Peak Intensity (in/hr)	1.8272
Undeveloped Runoff Coefficient (Cu)	0.4918
Developed Runoff Coefficient (Cd)	0.4959
Time of Concentration (min)	17.0
Clear Peak Flow Rate (cfs)	26.2231
Burned Peak Flow Rate (cfs)	26.2231
24-Hr Clear Runoff Volume (ac-ft)	2.1446
24-Hr Clear Runoff Volume (cu-ft)	93417.7706



Peak Flow Hydrologic Analysis

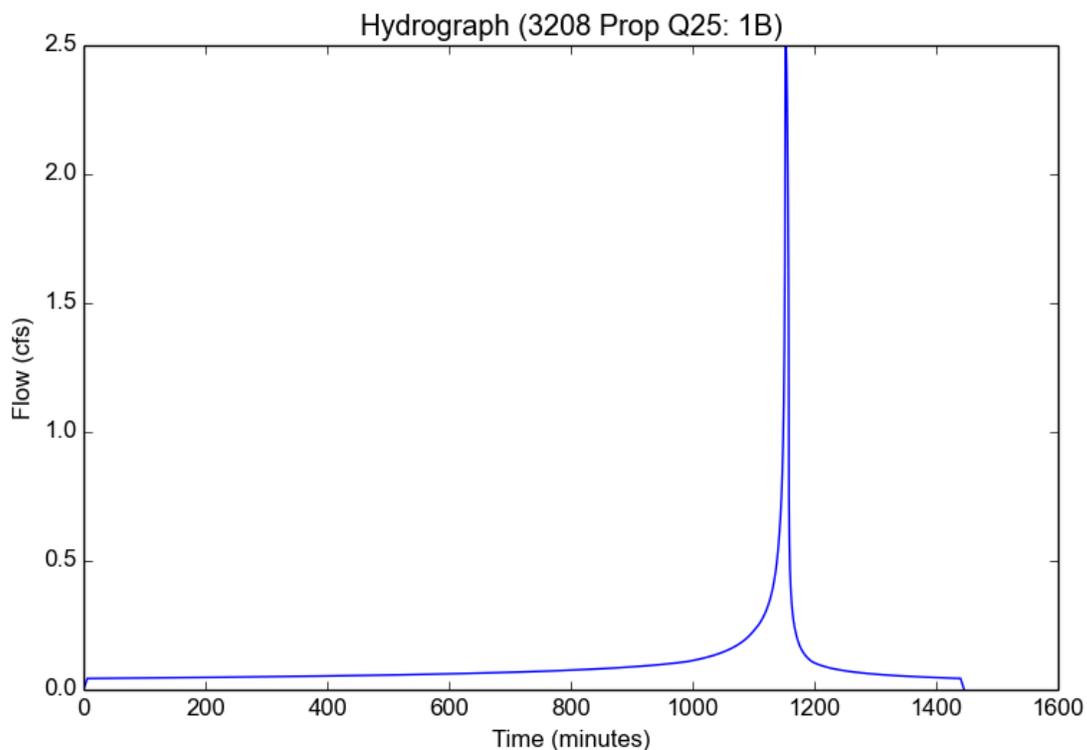
File location: F:/Job Files/3208 Rexhall Co/Civil/Hydrology/Calculations/Proposed/Output/23-1005/3208 Prop Q25 Report_100523.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	3208 Prop Q25
Subarea ID	1B
Area (ac)	1.24
Flow Path Length (ft)	470.22
Flow Path Slope (vft/hft)	0.112
50-yr Rainfall Depth (in)	6.2
Percent Impervious	0.24
Soil Type	20
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.4436
Peak Intensity (in/hr)	2.9811
Undeveloped Runoff Coefficient (Cu)	0.6049
Developed Runoff Coefficient (Cd)	0.6757
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	2.4977
Burned Peak Flow Rate (cfs)	2.4977
24-Hr Clear Runoff Volume (ac-ft)	0.1884
24-Hr Clear Runoff Volume (cu-ft)	8207.1067



Peak Flow Hydrologic Analysis

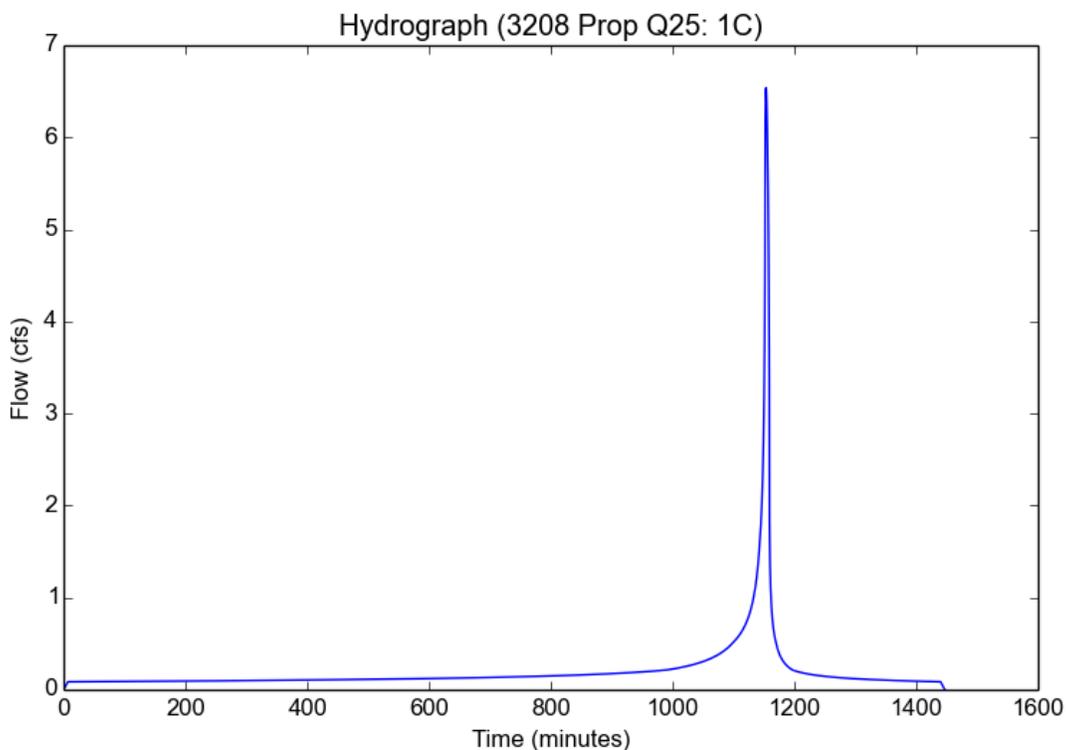
File location: F:/Job Files/3208 Rexhall Co/Civil/Hydrology/Calculations/Proposed/Output/23-1005/3208 Prop Q25 Report_100523.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	3208 Prop Q25
Subarea ID	1C
Area (ac)	3.8
Flow Path Length (ft)	538.18
Flow Path Slope (vft/hft)	0.063
50-yr Rainfall Depth (in)	6.2
Percent Impervious	0.11
Soil Type	20
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.4436
Peak Intensity (in/hr)	2.7727
Undeveloped Runoff Coefficient (Cu)	0.586
Developed Runoff Coefficient (Cd)	0.6205
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	6.5383
Burned Peak Flow Rate (cfs)	6.5383
24-Hr Clear Runoff Volume (ac-ft)	0.4124
24-Hr Clear Runoff Volume (cu-ft)	17963.5957



Peak Flow Hydrologic Analysis

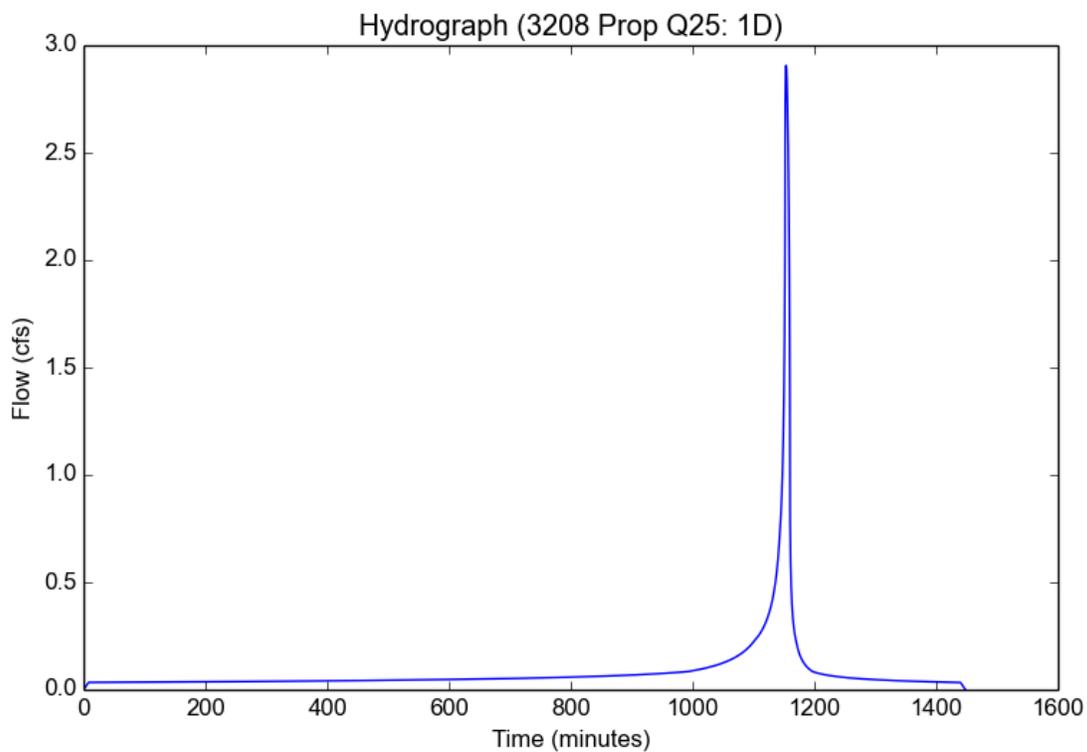
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	3208 Prop Q25
Subarea ID	1D
Area (ac)	1.89
Flow Path Length (ft)	486.21
Flow Path Slope (vft/hft)	0.021
50-yr Rainfall Depth (in)	6.2
Percent Impervious	0.06
Soil Type	20
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.4436
Peak Intensity (in/hr)	2.6041
Undeveloped Runoff Coefficient (Cu)	0.5707
Developed Runoff Coefficient (Cd)	0.5905
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	2.9063
Burned Peak Flow Rate (cfs)	2.9063
24-Hr Clear Runoff Volume (ac-ft)	0.1734
24-Hr Clear Runoff Volume (cu-ft)	7552.8495



Peak Flow Hydrologic Analysis

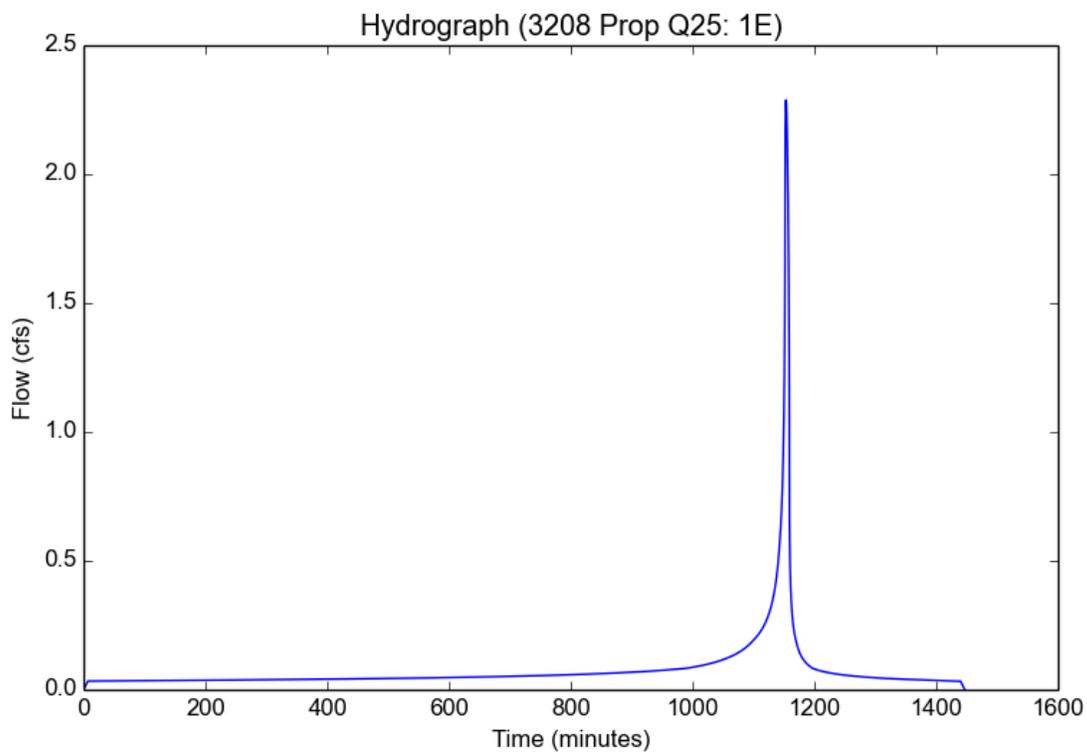
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	3208 Prop Q25
Subarea ID	1E
Area (ac)	1.31
Flow Path Length (ft)	384.28
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	6.2
Percent Impervious	0.14
Soil Type	20
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.4436
Peak Intensity (in/hr)	2.7727
Undeveloped Runoff Coefficient (Cu)	0.586
Developed Runoff Coefficient (Cd)	0.63
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	2.2882
Burned Peak Flow Rate (cfs)	2.2882
24-Hr Clear Runoff Volume (ac-ft)	0.1553
24-Hr Clear Runoff Volume (cu-ft)	6762.7846



Peak Flow Hydrologic Analysis

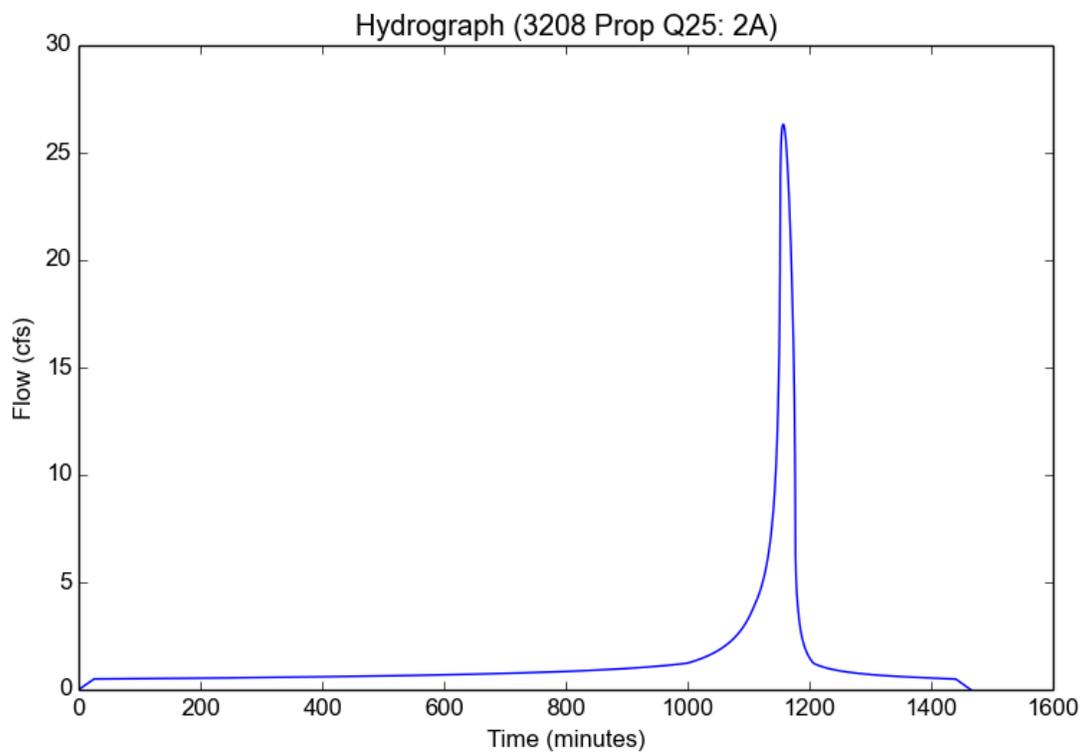
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	3208 Prop Q25
Subarea ID	2A
Area (ac)	38.06
Flow Path Length (ft)	3533.42
Flow Path Slope (vft/hft)	0.141
50-yr Rainfall Depth (in)	6.2
Percent Impervious	0.01
Soil Type	20
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.4436
Peak Intensity (in/hr)	1.5243
Undeveloped Runoff Coefficient (Cu)	0.4492
Developed Runoff Coefficient (Cd)	0.4538
Time of Concentration (min)	25.0
Clear Peak Flow Rate (cfs)	26.3247
Burned Peak Flow Rate (cfs)	26.3247
24-Hr Clear Runoff Volume (ac-ft)	2.7907
24-Hr Clear Runoff Volume (cu-ft)	121563.1785



Peak Flow Hydrologic Analysis

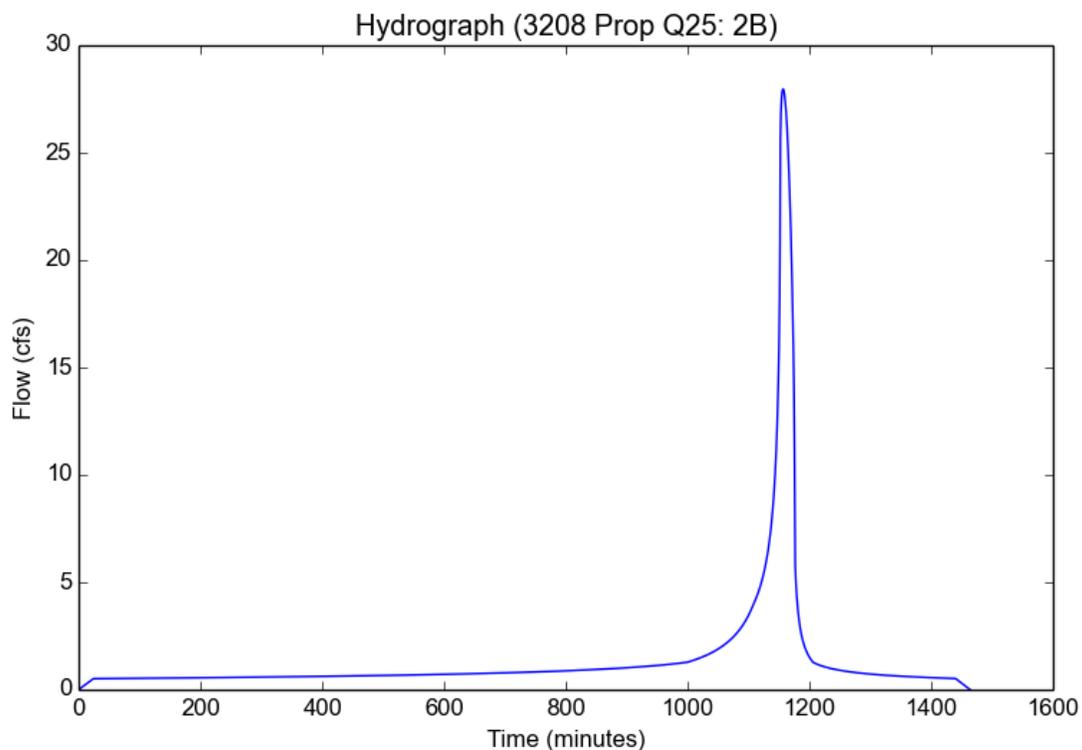
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	3208 Prop Q25
Subarea ID	2B
Area (ac)	39.31
Flow Path Length (ft)	3243.1
Flow Path Slope (vft/hft)	0.132
50-yr Rainfall Depth (in)	6.2
Percent Impervious	0.01
Soil Type	20
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

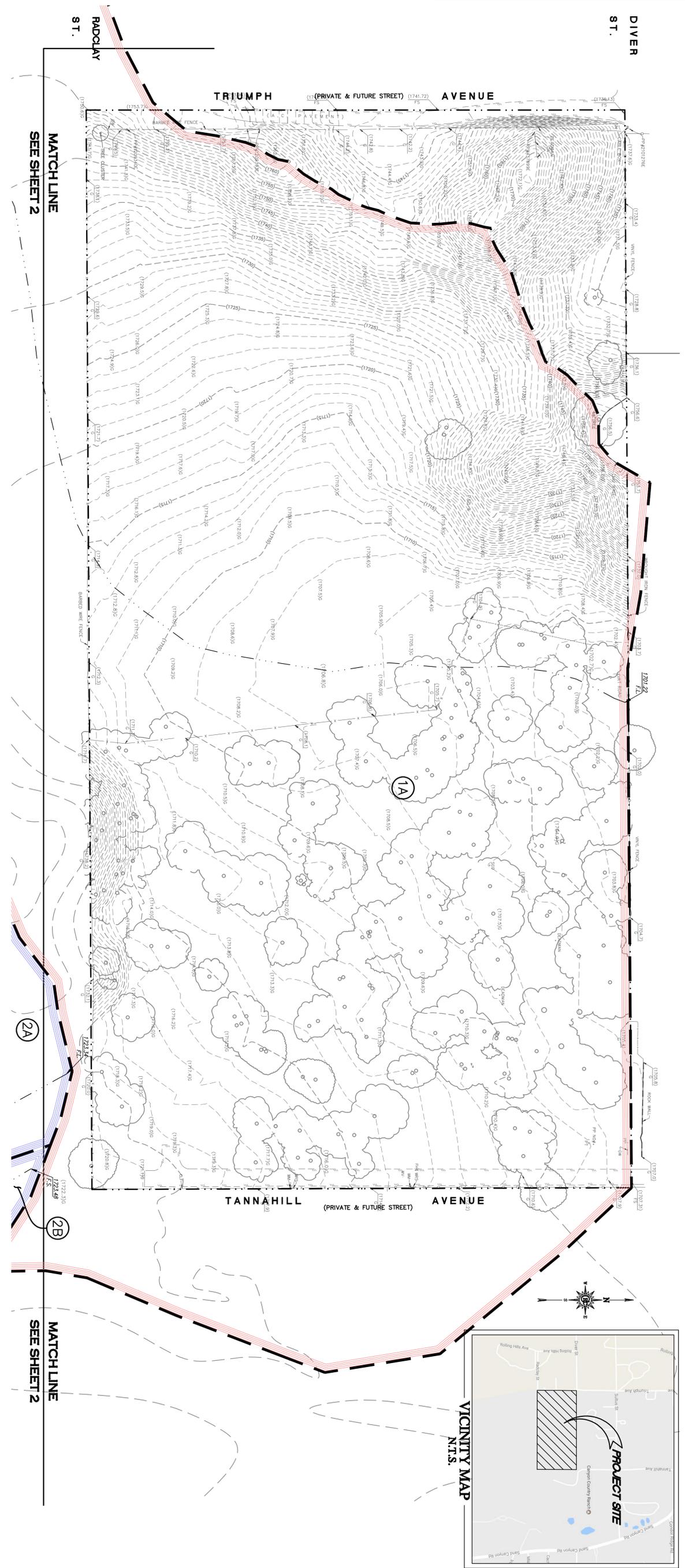
Output Results

Modeled (25-yr) Rainfall Depth (in)	5.4436
Peak Intensity (in/hr)	1.5538
Undeveloped Runoff Coefficient (Cu)	0.4534
Developed Runoff Coefficient (Cd)	0.4579
Time of Concentration (min)	24.0
Clear Peak Flow Rate (cfs)	27.9669
Burned Peak Flow Rate (cfs)	27.9669
24-Hr Clear Runoff Volume (ac-ft)	2.8862
24-Hr Clear Runoff Volume (cu-ft)	125722.0046



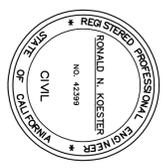
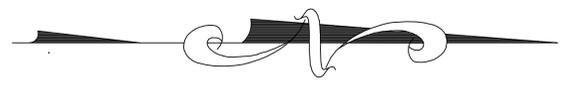
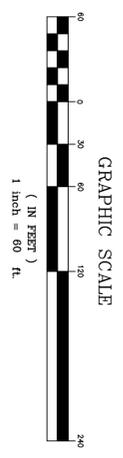
Appendix A

HYDROLOGY MAP



EXISTING CONDITIONS HYDROLOGIC TABLE

SUBAREA	AREA (ac)	FLOWLINE (ft)	SLOPE (ft/ft)	IMP	T _c (min)	Q ₂₅ (cfs)	V ₂₅ (cfs)
1A	37.09	2022.19	0.119	0.01	17	33.61	119728
2A	38.06	3533.42	0.141	0.01	25	28.32	121663
2B	38.31	3243.10	0.132	0.01	24	27.97	128722
TOTAL	114.46	-	-	-	-	87.90	367011



PLANS PREPARED UNDER THE DIRECTION OF
RON KOESTER LS 9630
 DATE 08 OCT. 2023

CRC Enterprises
 27600 Bouquet Canyon Road Suite 200 Santa Clarita Ca. 91350
 Telephone (661) 297-2336 FAX (661) 297-2331

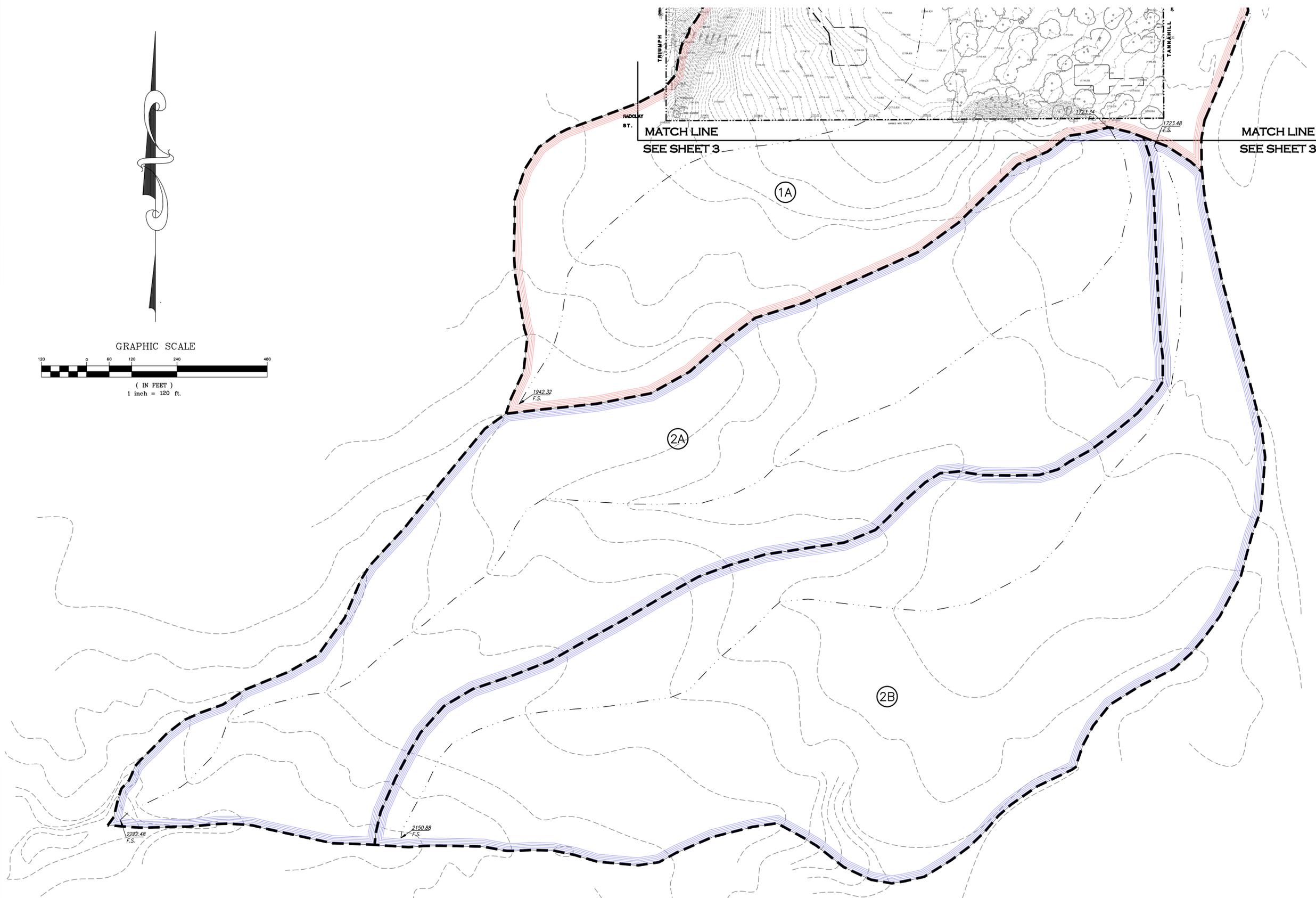
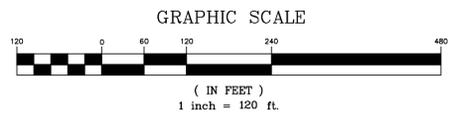
PREPARED FOR
REXHALL COMPANY
 45640 22ND ST W,
 LANCASTER, CA 93536

HYDROLOGY MAP
 EXISTING CONDITIONS

SHEET 1 OF 4 SHEETS

CRC 2808

Date	Revisions



EXISTING CONDITIONS HYDROLOGIC TABLE

SUBAREA	AREA (ac)	FLOWLINE (ft)	SLOPE (ft/ft)	MP	T ₀ (min)	Q ₅₀ (cfs)	V ₅₀ (c.f.)
1A	37.00	2022.10	0.110	0.01	17	33.01	110720
2A	33.00	3033.42	0.141	0.01	25	23.32	121000
2B	39.31	3043.10	0.132	0.01	24	27.57	120722
TOTAL	114.00	-	-	0.01	-	87.90	367011



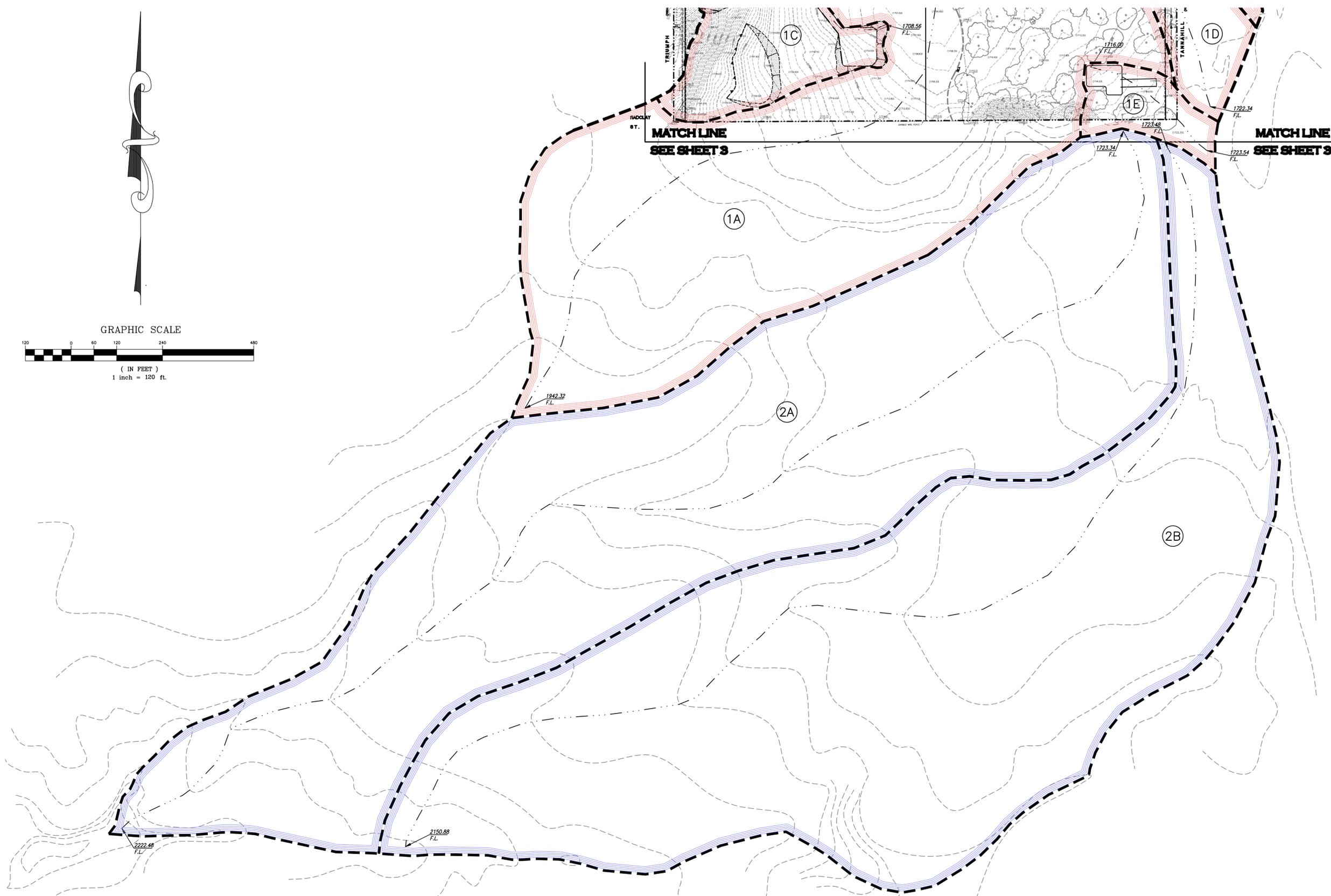
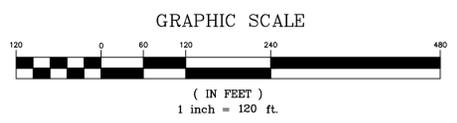
PLANS PREPARED UNDER THE DIRECTION OF

 RON KOESTER LS 5830
 DATE 06 OCT. 2023

PREPARED FOR
REXHAL COMPANY
 40040 22ND ST W.
 LANCASTER, CA 93006

CRC Enterprises
 27600 Bouquet Canyon Road Suite 200 Santa Clarita Ca. 91350
 Telephone (661) 297-2336 FAX (661) 297-2331

HYDROLOGY MAP
 EXISTING CONDITIONS
 SHEET 2 OF 4 SHEETS
 CRC 2023



PROPOSED CONDITIONS HYDROLOGIC TABLE

SUBAREA	AREA (ac)	FLOWLINE (ft)	SLOPE (ft/ft)	RMP	T _b (min)	Q ₁₀ (cfs)	V ₁₀ (cfs)
1A	28.20	2022.10	0.110	0.01	17	28.22	80410
1B	1.24	470.22	0.112	0.04	6	2.80	8207
1C	3.80	692.10	0.090	0.11	7	6.54	17004
1D	1.80	408.21	0.021	0.08	8	2.91	7080
1E	1.21	304.20	0.020	0.14	7	2.20	6700
2A	30.00	3020.42	0.141	0.01	25	28.22	121000
2B	30.21	2042.10	0.132	0.01	24	27.97	120722
TOTAL	114.06	-	-	0.02	-	84.75	301100



PLANS PREPARED UNDER THE DIRECTION OF

[Signature]

RON KOESTER LS 5830

06 OCT. 2023

DATE

<p>HYDROLOGY MAP PROPOSED CONDITIONS</p> <p>SHEET 4 OF 4 SHEETS</p>	<p>PREPARED FOR REXHALL COMPANY 46640 22ND ST. W. LANCASTER, CA 93006</p>
<p>CRC Enterprises</p> <p>27600 Bouquet Canyon Road Suite 200 Santa Clarita Ca. 91350</p> <p>Telephone (661) 297-2336 FAX (661) 297-2331</p>	<p>NO. 42399</p> <p>CIVIL</p> <p>STATE OF CALIFORNIA</p>

APPENDIX I

Noise Data

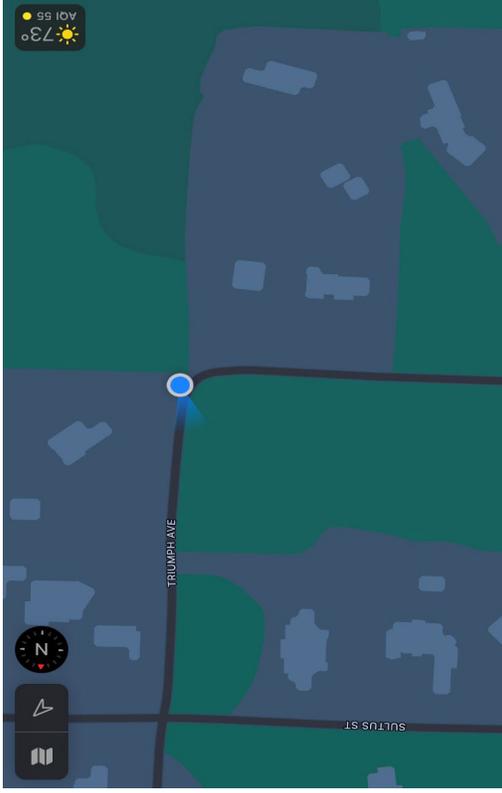


Photo of Measurement Location

Category		Type	Vendor	Model	Serial No.	Cert. Date	Note
Sound	Sound Level Meter	Brüel & Kjær	2250	3011133	03/10/2022		
	Microphone	Brüel & Kjær	4189	3086765	03/10/2022		
	Preamp	Brüel & Kjær	ZC 0032	25380	03/10/2022		
	Calibrator	Brüel & Kjær	4231	2545667	03/10/2022		
Weather Data							
Duration: 10 minutes				Sky: Sunny			
Note: dBA Offset = 0.01				Sensor Height (ft): 5 ft			
Est.	Wind Ave Speed (mph / m/s)	5 mph		73			
	Temperature (degrees Fahrenheit)	73					
	Barometer Pressure (inches)	29.95					

Noise Data			
Leg (dB)	Lmax(dB)	Lmin (dB)	Peak (dB)
48.2	62.7	38.7	87.1
Site Number: NM-1 Recorded By: Darshan Shivaiah, Winnie Woo, Dennis Dinh Job Number: 185517 Date: 4/26/2023 Time: 10:23 a.m. Location: East of Diver Street and Triumph Avenue Source of Ambient Noise: Bird chirping and lawn mower Source of Peak Noise: Traffic and Plane			



2250

Instrument:		2250
Application:		BZ7225 Version 4.7.6
Start Time:		04/26/2023 10:23:09
End Time:		04/26/2023 10:33:09
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		142.13

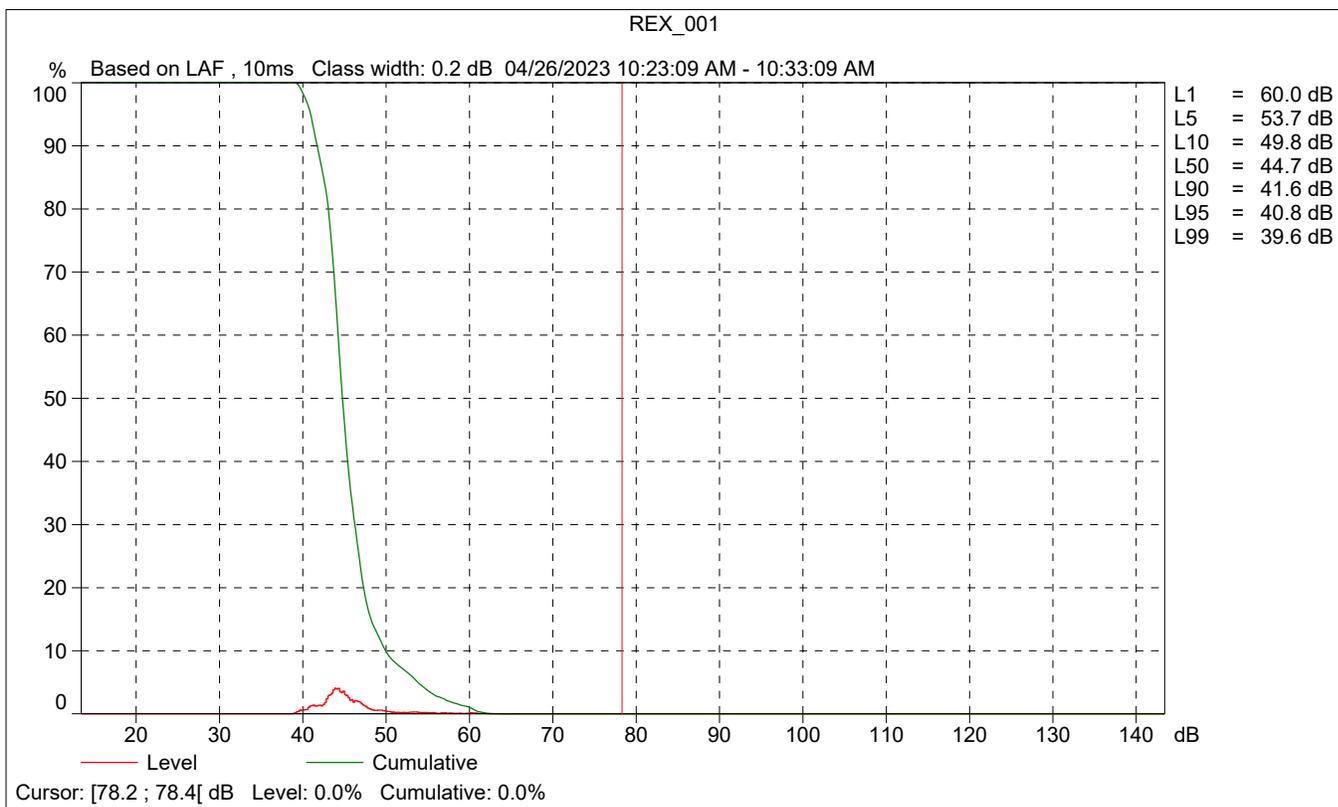
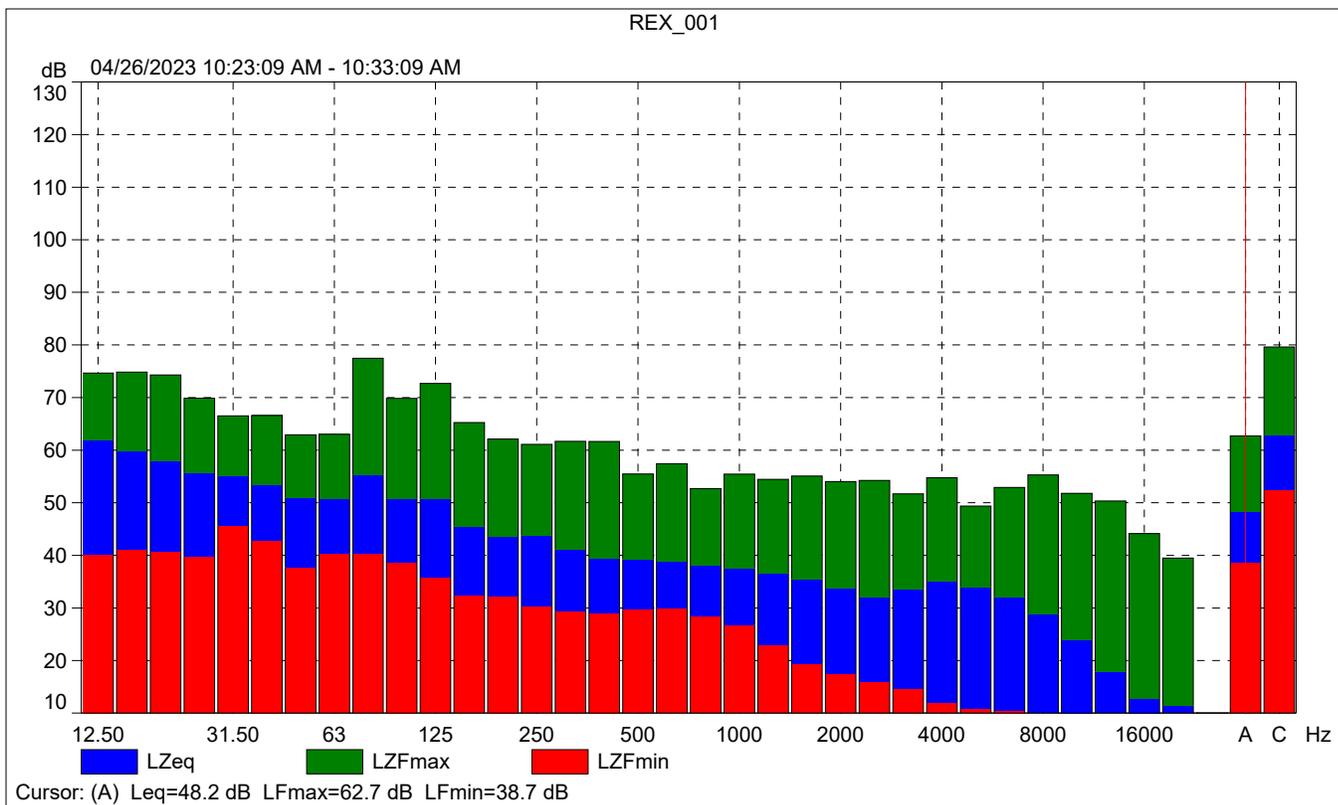
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

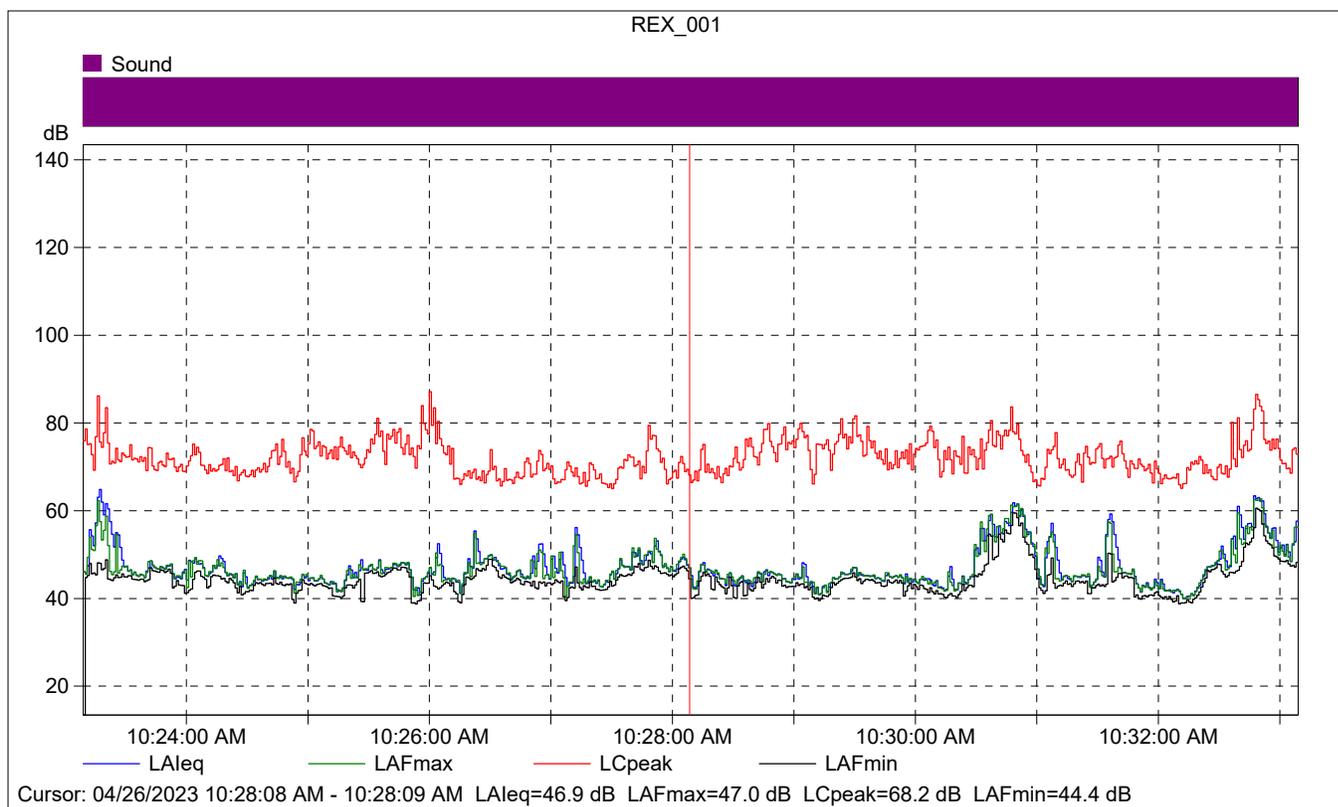
Instrument Serial Number:		3011133
Microphone Serial Number:		3086765
Input:		Top Socket
Windscreen Correction:		None
Sound Field Correction:		Free-field

Calibration Time:		04/26/2023 07:18:27
Calibration Type:		External reference
Sensitivity:		43.5842946171761 mV/Pa

REX_001

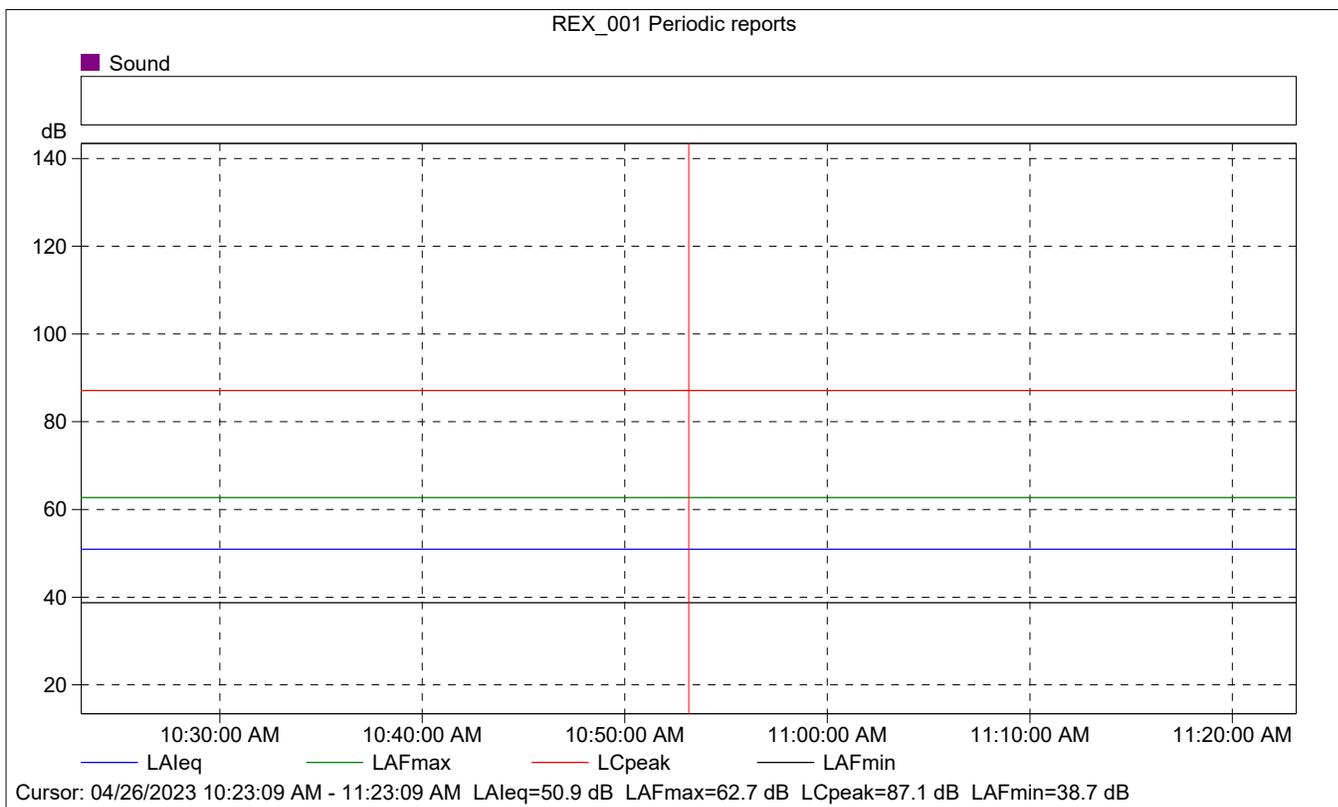
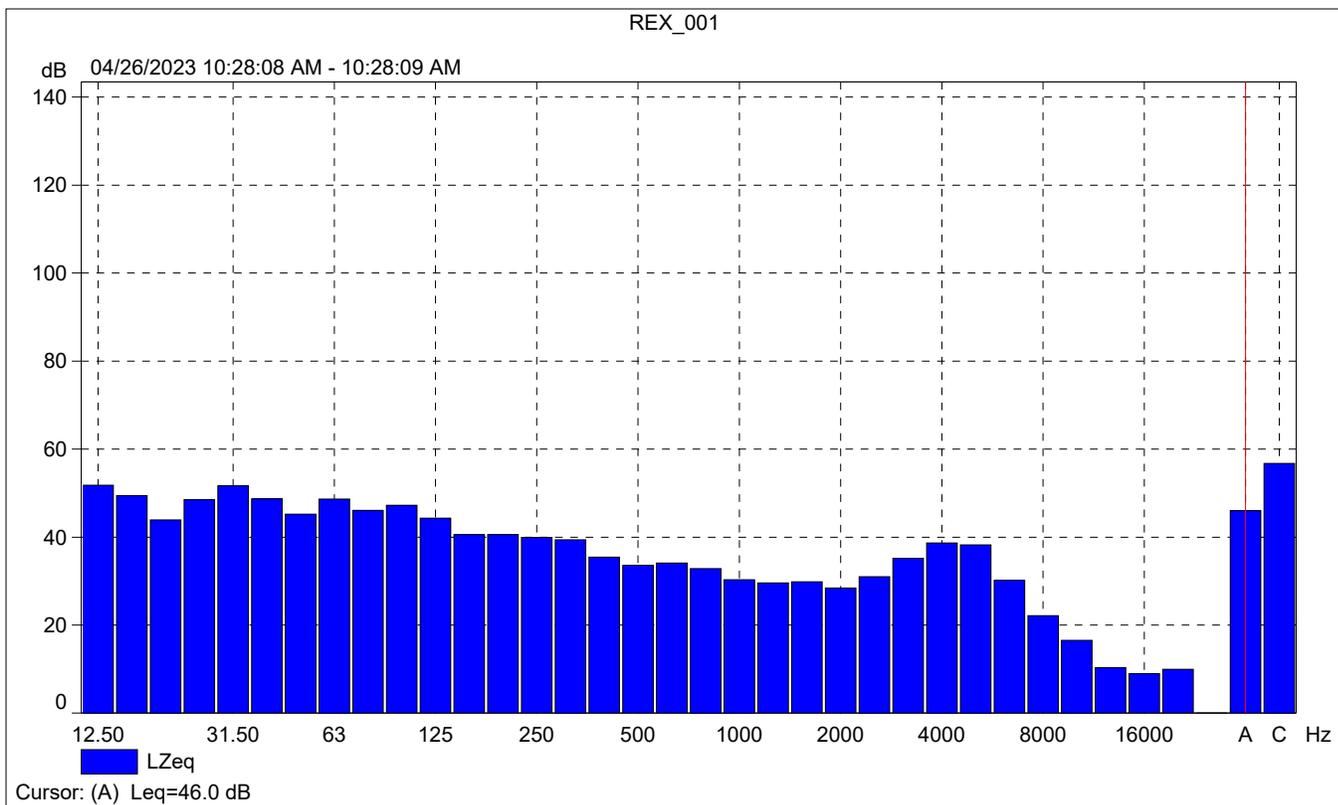
	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	48.2	62.7	38.7
Time	10:23:09 AM	10:33:09 AM	0:10:00				
Date	04/26/2023	04/26/2023					





REX_001

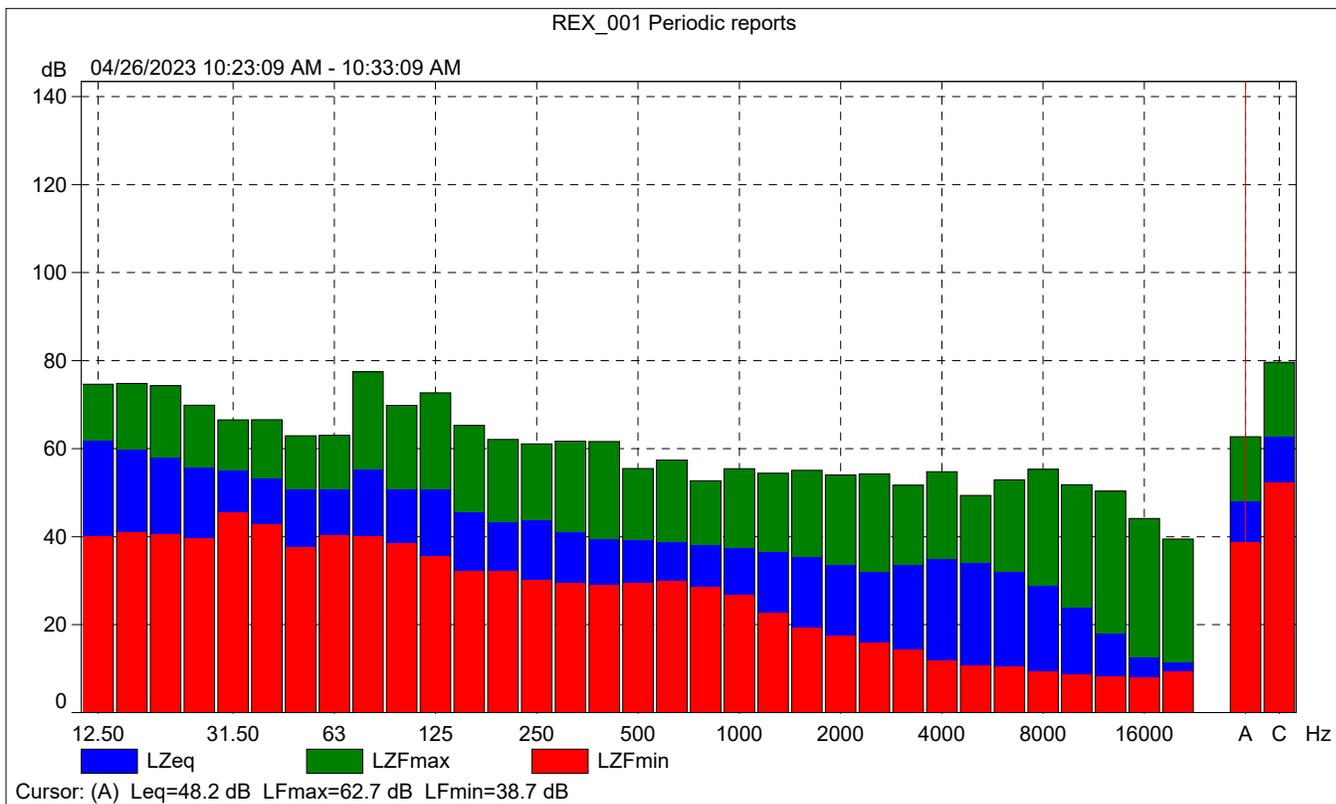
	Start time	Elapsed time	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			46.9	47.0	44.4
Time	10:28:08 AM	0:00:01			
Date	04/26/2023				





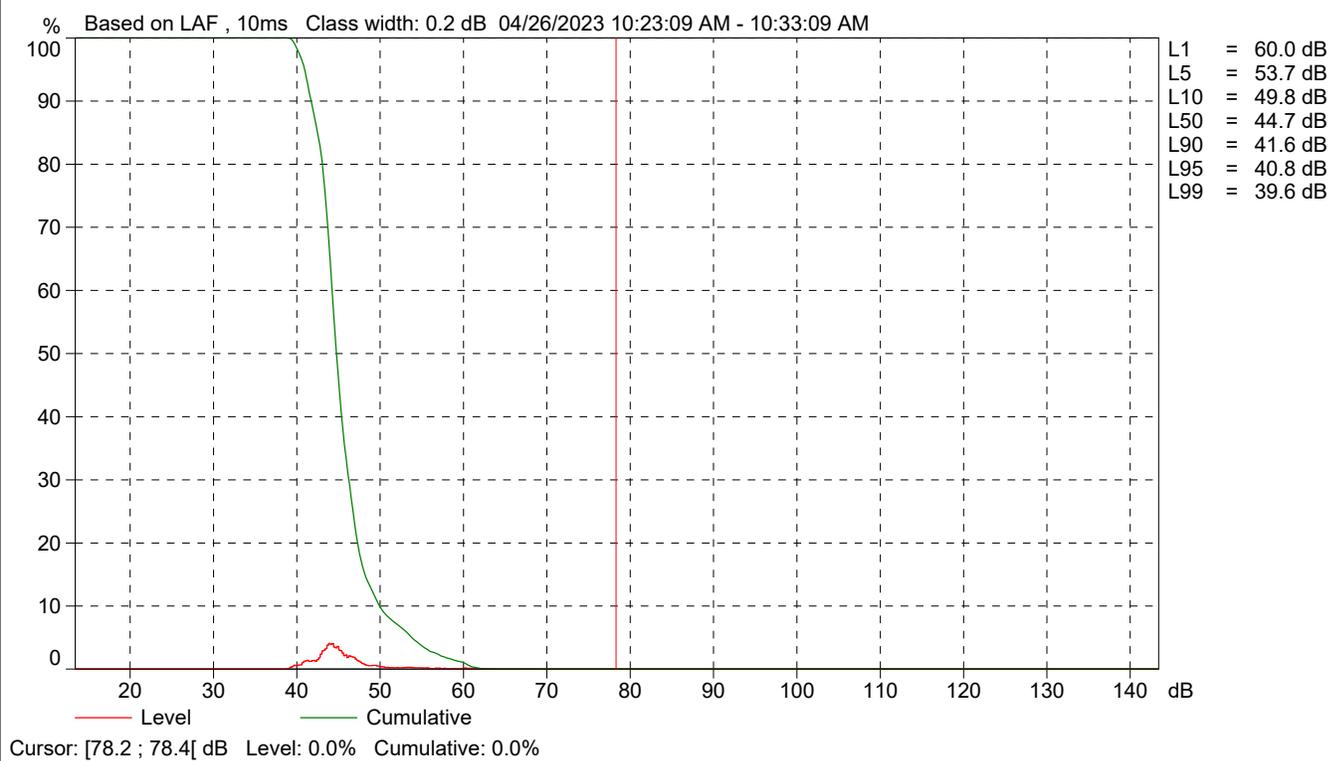
REX_001 Periodic reports

	Start time	Elapsed time	Overload [%]	LALeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	50.9	62.7	38.7
Time	10:23:09 AM	0:10:00				
Date	04/26/2023					





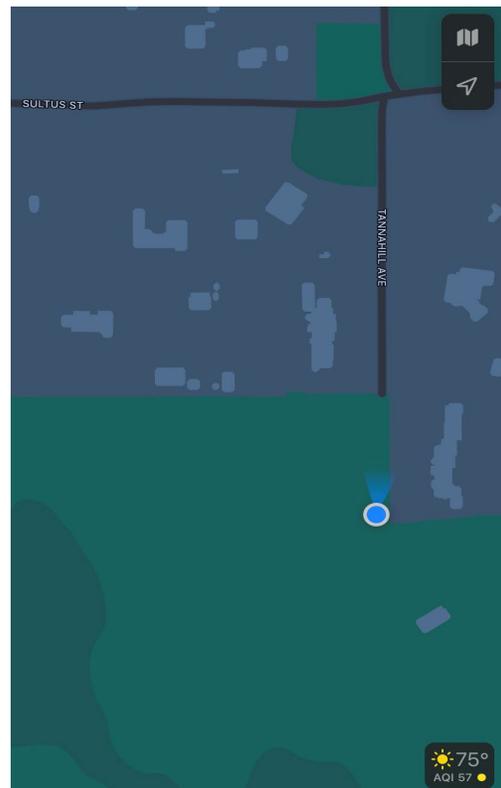
REX_001 Periodic reports



Site Number: NM-2			
Recorded By: Darshan Shivaiah, Winnie Woo, Dennis Dinh			
Job Number: 185517			
Date: 4/26/2023			
Time: 10:43 a.m.			
Location: West of single-family residence at 26754 Tannahill Avenue			
Source of Ambient Noise: Bird chirping and plane			
Source of Peak Noise: Plane			
Noise Data			
Leq (dB)	Lmax(dB)	Lmin (dB)	Peak (dB)
43.8	62.2	33.0	84.5

Equipment						
Category	Type	Vendor	Model	Serial No.	Cert. Date	Note
Sound	Sound Level Meter	Brüel & Kjær	2250	3011133	03/10/2022	
	Microphone	Brüel & Kjær	4189	3086765	03/10/2022	
	Preamp	Brüel & Kjær	ZC 0032	25380	03/10/2022	
	Calibrator	Brüel & Kjær	4231	2545667	03/10/2022	
Weather Data						
Est.	Duration: 10 minutes		Sky: Sunny			
	Note: dBA Offset = 0.01		Sensor Height (ft): 5 ft			
	Wind Ave Speed (mph / m/s)	Temperature (degrees Fahrenheit)		Barometer Pressure (inches)		
	5 mph	73		29.95		

Photo of Measurement Location





2250

Instrument:		2250
Application:		BZ7225 Version 4.7.6
Start Time:		04/26/2023 10:43:25
End Time:		04/26/2023 10:53:25
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		142.13

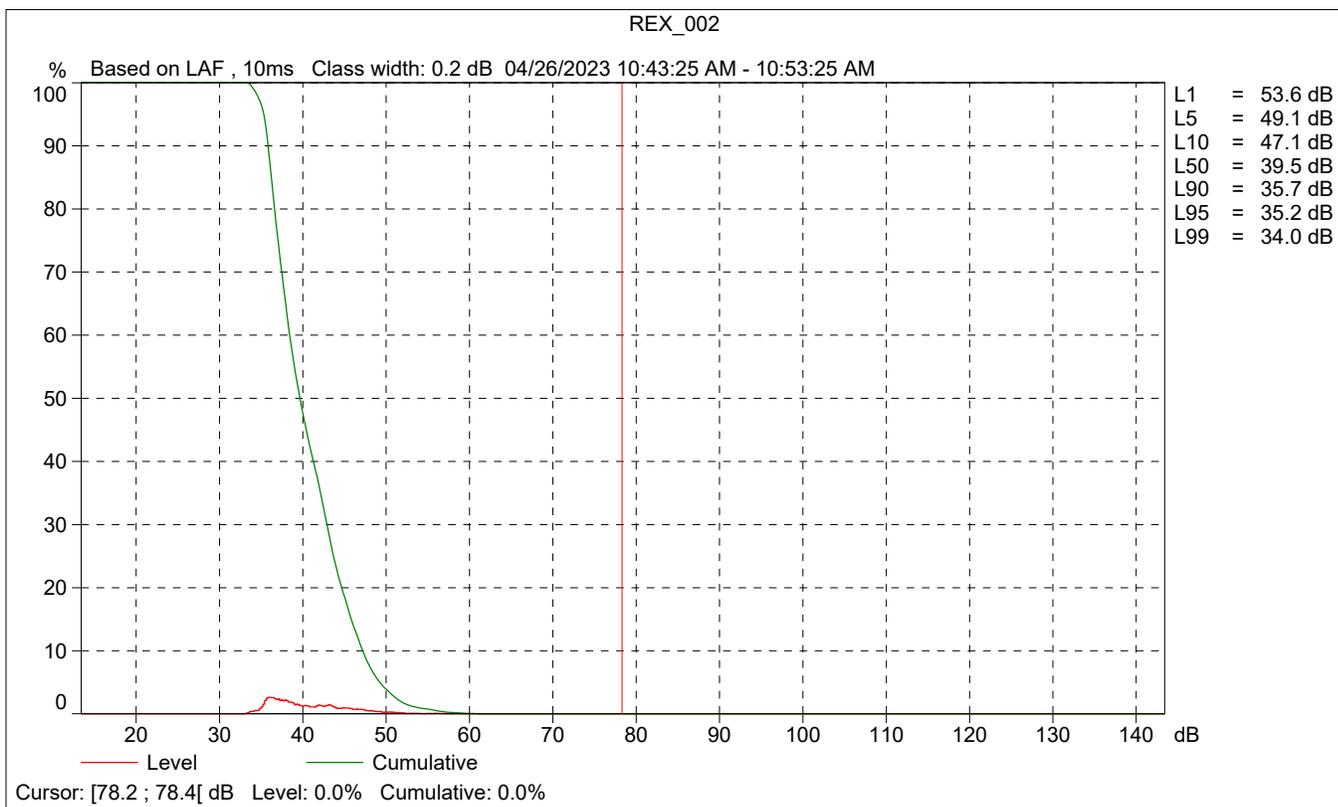
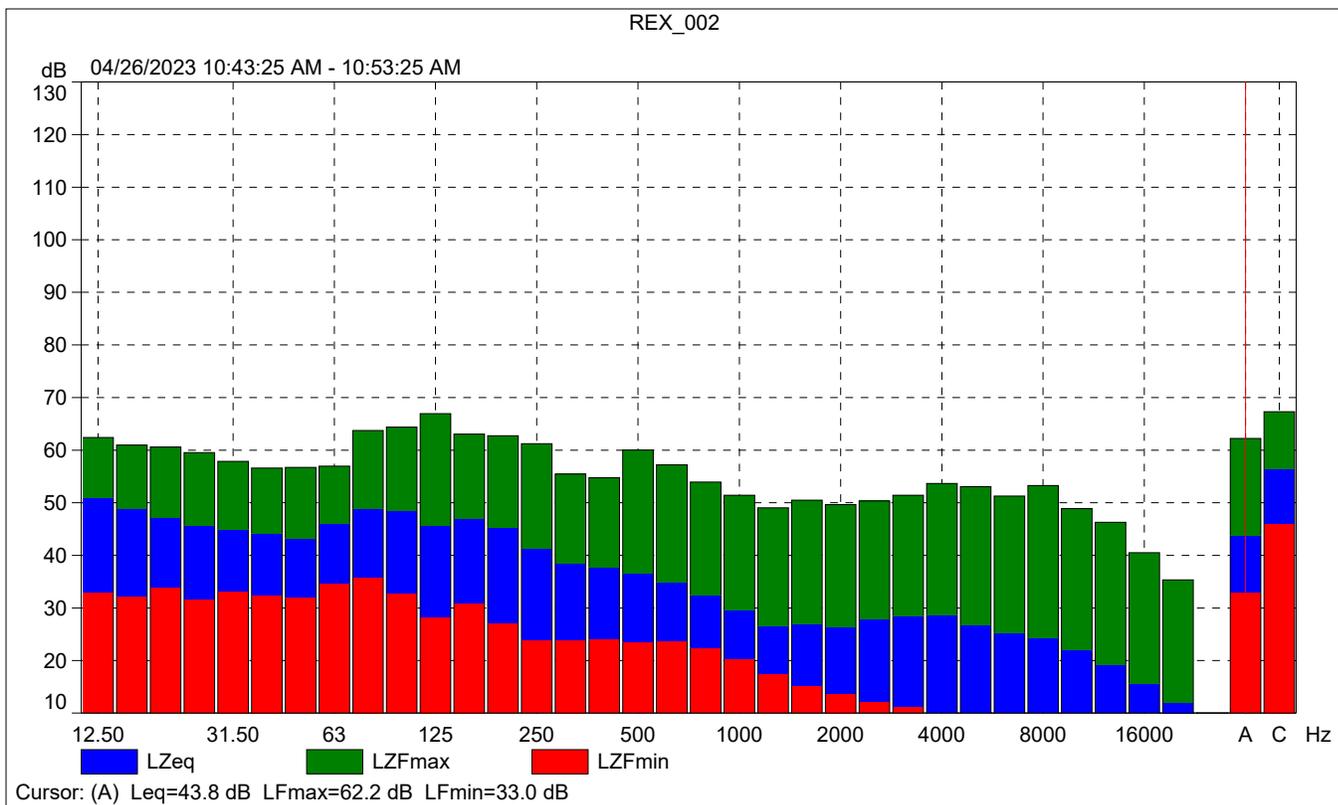
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

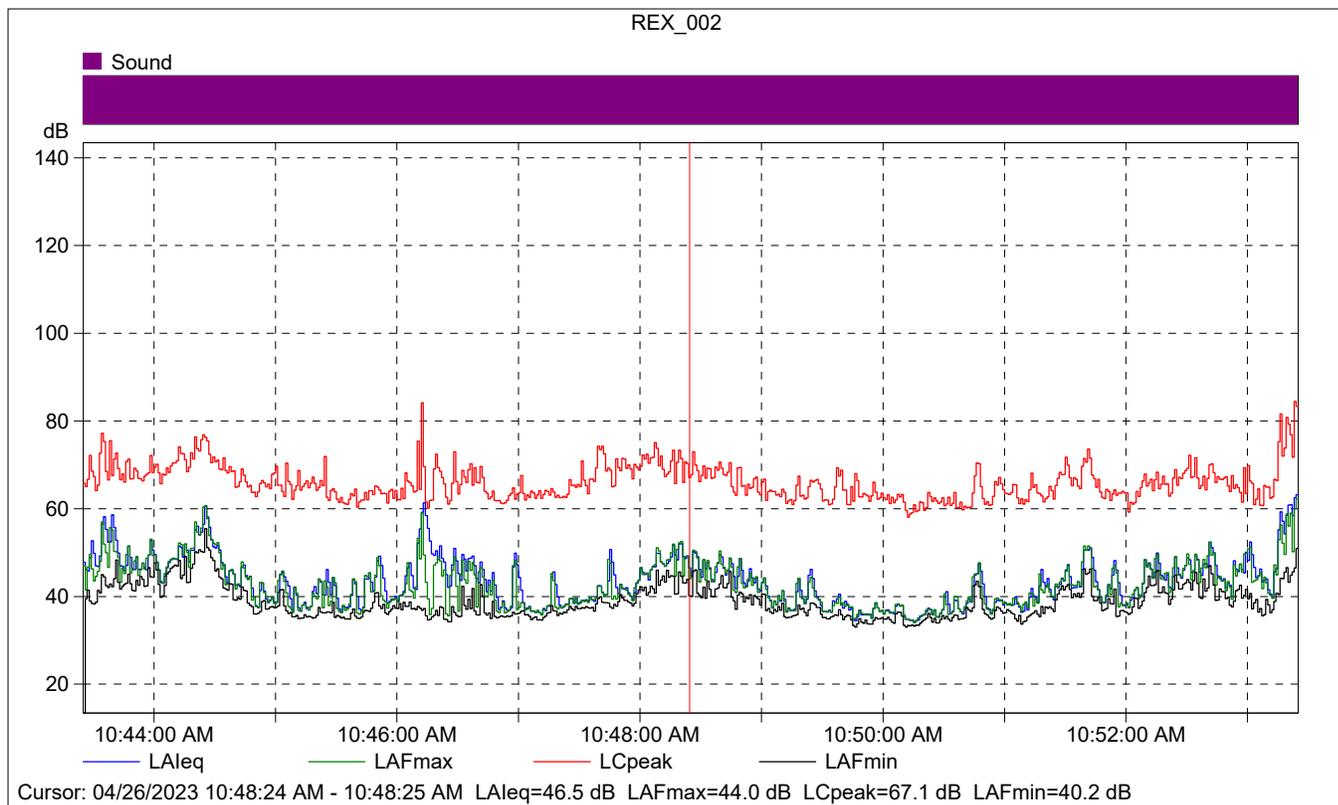
Instrument Serial Number:		3011133
Microphone Serial Number:		3086765
Input:		Top Socket
Windscreen Correction:		UA-1650
Sound Field Correction:		Free-field

Calibration Time:		04/26/2023 07:18:27
Calibration Type:		External reference
Sensitivity:		43.5842946171761 mV/Pa

REX_002

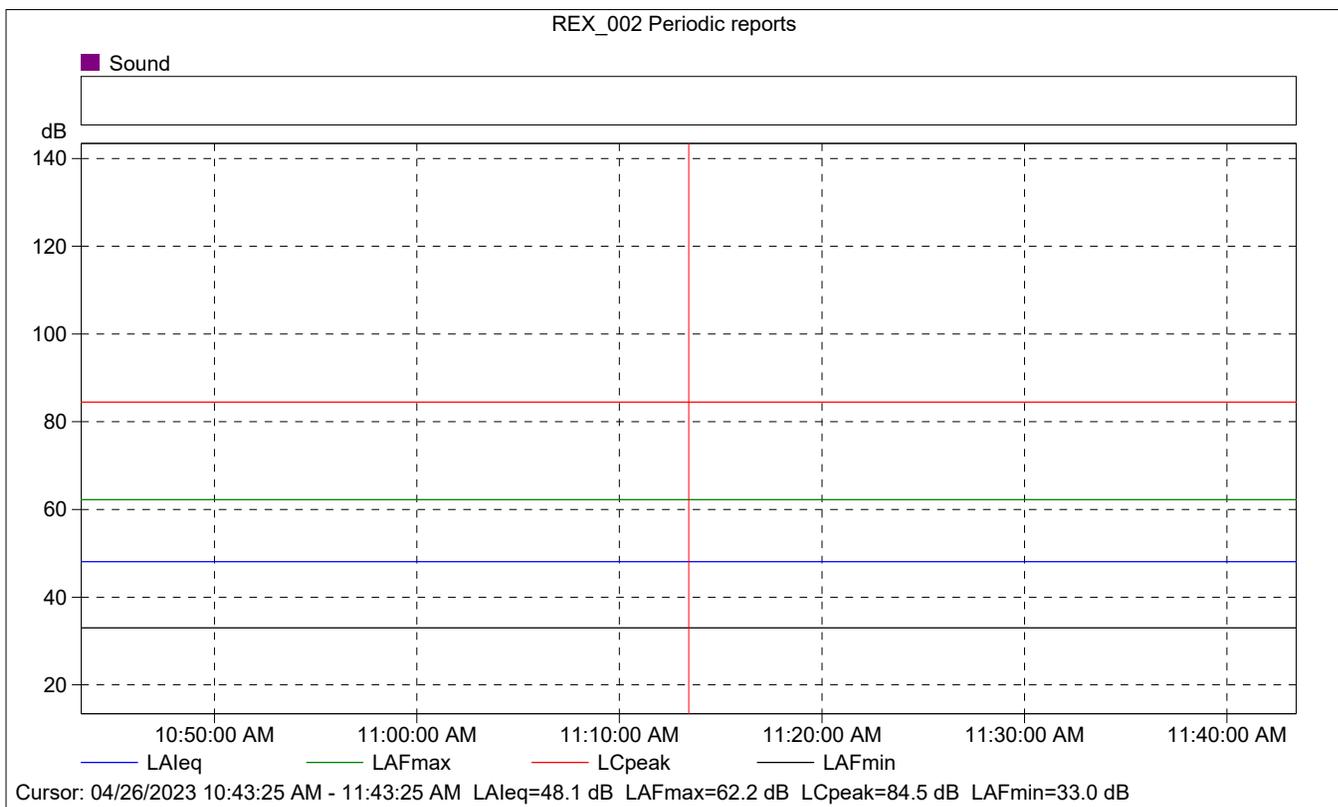
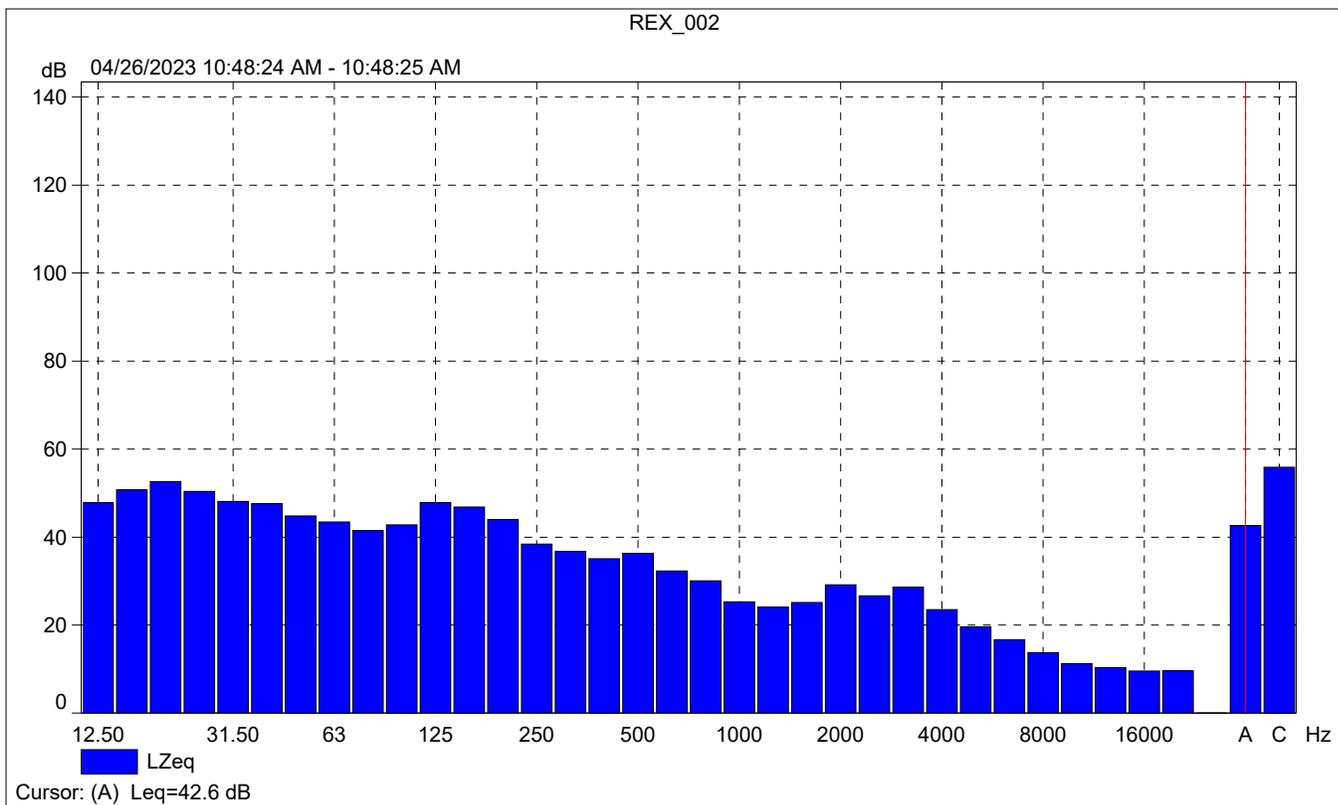
	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	43.8	62.2	33.0
Time	10:43:25 AM	10:53:25 AM	0:10:00				
Date	04/26/2023	04/26/2023					





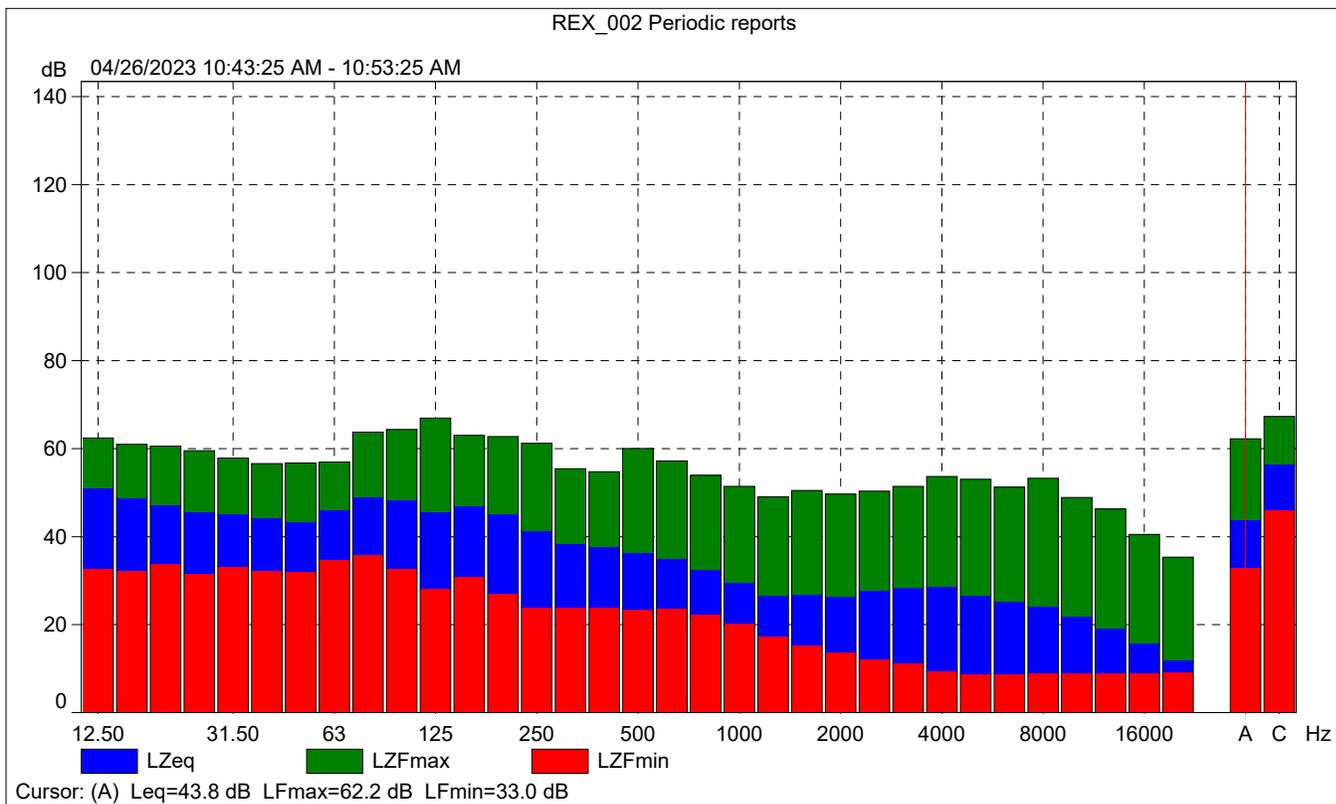
REX_002

	Start time	Elapsed time	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			46.5	44.0	40.2
Time	10:48:24 AM	0:00:01			
Date	04/26/2023				



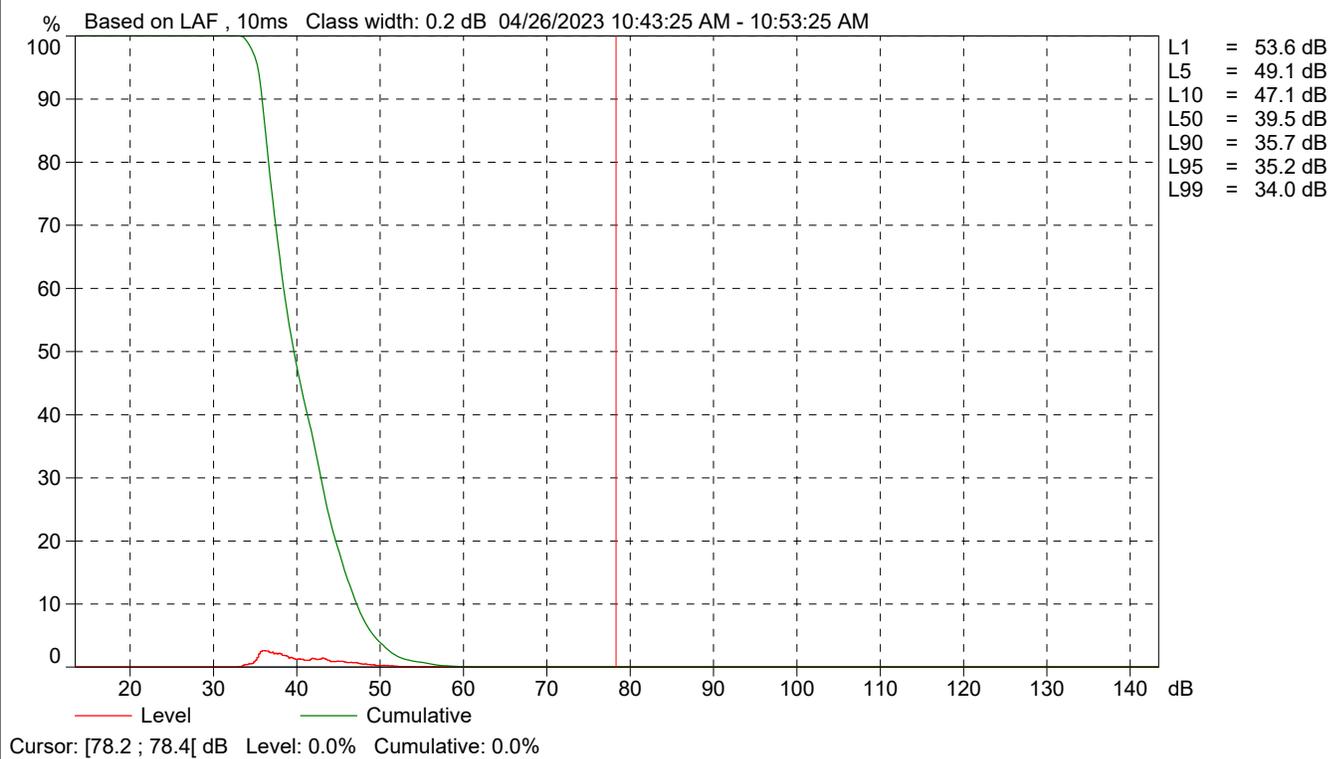
REX_002 Periodic reports

	Start time	Elapsed time	Overload [%]	LAFeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	48.1	62.2	33.0
Time	10:43:25 AM	0:10:00				
Date	04/26/2023					





REX_002 Periodic reports



APPENDIX J

Assembly Bill 52 Documentation



City of
SANTA CLARITA

23920 Valencia Boulevard • Suite 300 • Santa Clarita, California 91355-2196
Phone: (661) 259-2489 • FAX: (661) 259-8125
www.santa-clarita.com

August 29, 2023

Sarah Brunzell, Manager
Cultural Resources Management Division, Tribal Historic and Cultural Preservation Department
Fernandeño Tataviam Band of Mission Indians
1019 Second Street, Suite 1
San Fernando, California 91340

Subject: Master Case 18-182: Tentative Tract Map 80287
Assembly Bill (AB) 52 Tribal Consultation

Dear Sarah Brunzell:

In accordance with Assembly Bill (AB) 52, Public Resources Code (PRC) § 21080.3.1, the City of Santa Clarita (City) is contacting all groups that have previously requested formal notification of projects for which a Notice of Preparation, Notice of Mitigated Negative Declaration, or Notice of Negative Declaration is filed on or after July 1, 2015 (Stats. 2114, ch. 532, § 11 (c)). This correspondence is intended as formal notification of the proposed Tentative Parcel Map (TPM) 80287 (“proposed project”; Master Case 18-182) pursuant to AB 52.

The project site is approximately 19.9 acres and is located southeast of the intersection of Triumph Avenue and Diver Street, in the neighborhood of Sand Canyon, in the City of Santa Clarita. The proposed project would subdivide existing Assessor’s Parcel Number (APN) 2841-018-035 into four parcels, allowing for one single-family residences per parcel. Site preparation would include grading and construction of four pads for single-family residences, septic leaching fields, and access driveways. The property is currently undeveloped. One building foundation associated with a building constructed between 1978 and 1985, and demolished by 1992, would be removed in association with site preparation activities.

An initial study is currently being prepared to evaluate the proposed project. The project site is generally bounded by Triumph Avenue and single-family residences to the west, by single-family residences to the north, by Tannahill Avenue and single-family residences to the east, and by undeveloped, residentially-zoned land to the south. The parcel directly south of the project site is subject to an existing approval for the development of 18 single-family residences under TPM 63003. An aerial view of the project boundary as well as the tentative parcel map showing the proposed project are attached for your reference.

The applicant has applied for the following permits: a Tentative Parcel Map and an Oak Tree Permit (Class 4). Grading for the project site would balance on-site, with approximately 5, 163 cubic yards of cut and 4,656 cubic yards of fill. A concept grading plan is attached for further reference.

Sarah Brunzell, Manager
August 29, 2023
Page 2 of 2

The City is interested in knowing if you have any knowledge of tribal cultural resources (TCRs) as defined in PRC § 21074 (a)(1)(A)-(B), that may be impacted by the proposed project. If you have any comments or concerns regarding potential impacts to TCRs, please contact me within 30 calendar days from receipt of this letter to notify us in writing that you wish to consult (PRC § 21080.3.1 (b)(1)). I can be reached by phone at 661.255.4973 or by e-mail at aolson@santa-clarita.com.

Sincerely,

Andy, AICP, Associate Planner

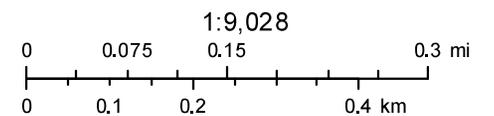
Master Case 18-182

Tentative Parcel Map 80287 | APN: 2841-018-035



8/29/2023, 4:48:01 PM

- Parcel Outlines
- County Park
- City of Santa Clarita Boundary
- Parks
- State Park
- City Park
- Schools



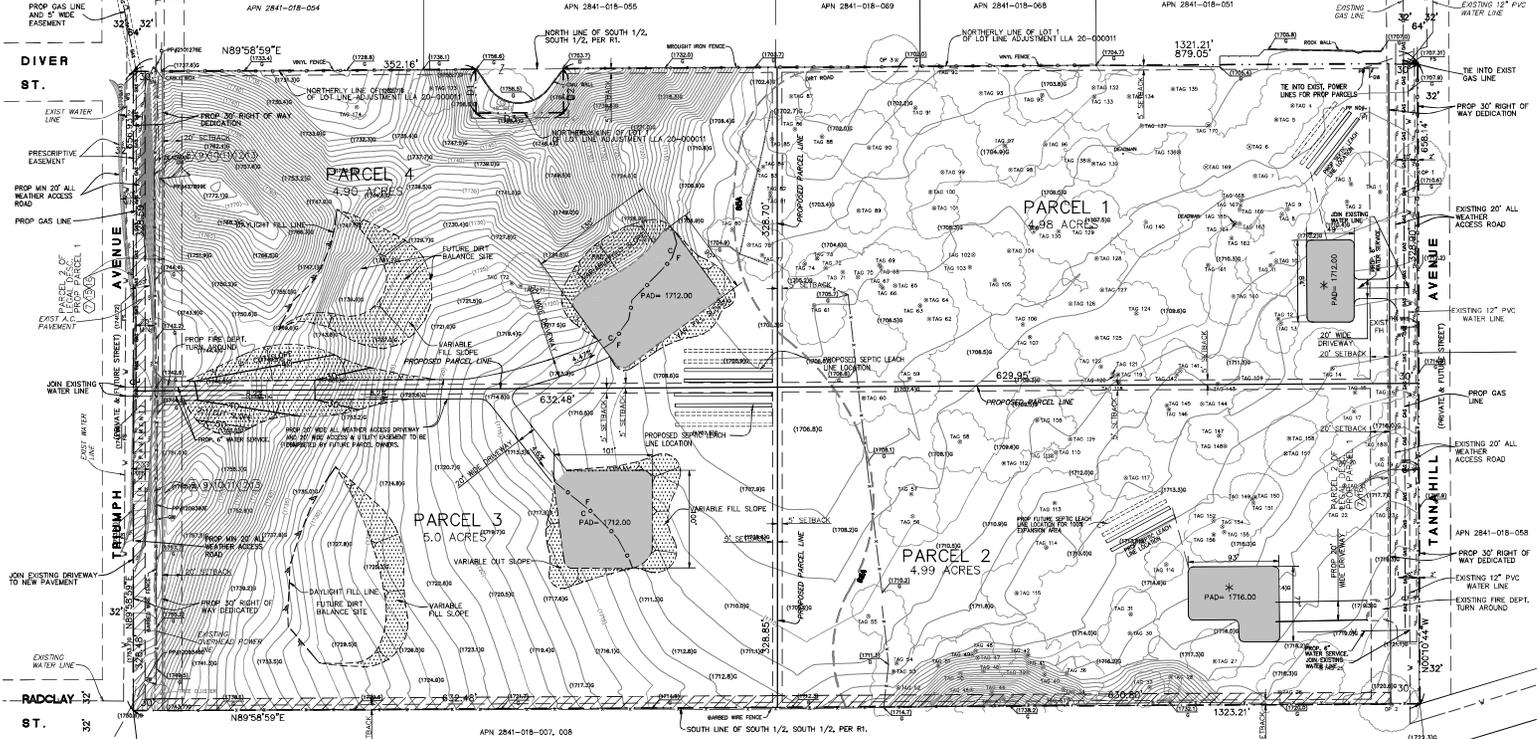
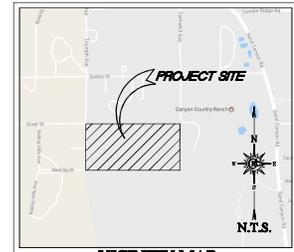
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand),

Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. The City of Santa Clarita does not warrant the accuracy of the data and assumes no liability for any errors or omissions.

COURSE TABLE		
NO.	BEARING	DIST.
1	N89°58'59"E	123.53
2	S12°52'00"W	123.53
3	S89°58'59"E	123.53
4	N12°52'00"W	123.53

TENTATIVE PARCEL MAP No. 80287

IN THE CITY OF SANTA CLARITA, COUNTY OF LOS ANGELES
STATE OF CALIFORNIA
4 PARCEL SUBDIVISION



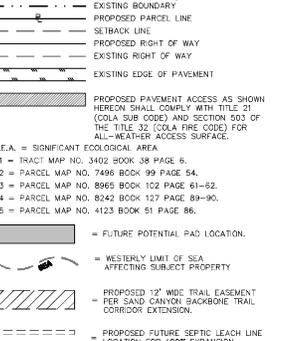
- FIRE DEPARTMENT NOTES:**
- FD4. ALL ON-SITE FIRE APPARATUS ACCESS ROADS SHALL BE LABELED AS PRIVATE DRIVEWAYS ON THE SITE PLAN ALONG WITH THE WIDTH CLEARLY IDENTIFIED ON THE PLAN. LABELING IS NECESSARY TO ASSURE THE ACCESS AVAILABILITY FOR FIRE DEPARTMENT USE. THE DESIGNATION ALLOWS FOR APPROPRIATE STORAGE PROHIBITING PARKING.
 - FD5. FIRE APPARATUS ACCESS ROADS MUST BE INSTALLED AND MAINTAINED IN A DESIGNATED MANNER PRIOR TO AND DURING THE TIME OF CONSTRUCTION. FIRE CODE 504.4.
 - FD6. ALL FIRE LANS SHALL BE CLEAR OF ALL ENCROACHMENTS AND SHALL BE MAINTAINED IN ACCORDANCE WITH THE TITLE 32, COUNTY OF LOS ANGELES FIRE CODE.
 - FD7. THE FIRE APPARATUS ACCESS ROADS AND DESIGNATED FIRE LANES SHALL BE MEASURED FROM FLOOR TO FLOOR LINE.
 - FD8. PROVIDE A MINIMUM UNOBSTRUCTED WIDTH OF 20 FEET, EXCLUSIVE OF SHOULDRS AND AN UNOBSTRUCTED VERTICAL CLEARANCE TO CLEAR TO 50' FIRE APPARATUS ACCESS ROADS TO WITHIN 100 FEET OF ALL PORTIONS OF THE EXTERIOR WALLS OF THE FIRST STORY OF THE BUILDING AS MEASURED BY AN APPROVED ROUTE AROUND THE EXTERIOR OF THE BUILDING. FIRE CODE 500.2.1 & 500.2.1.1.
 - A.) EXCEPTION: A MINIMUM VERTICAL CLEARANCE OF 15 FEET 6 INCHES MAY BE ALLOWED FOR PROTECTED TREE SPECIES ADJACENT TO ACCESS ROADS.
 - FD9. THE REQUIRED 20 FOOT WIDE DRIVING SURFACE SHALL BE INCREASED TO 26 FEET WHEN FIRE HYDRANTS ARE REQUIRED. THE 26-FOOT WIDTH SHALL BE MAINTAINED FOR A MINIMUM OF 25 FEET ON EACH SIDE OF THE HYDRANT LOCATION. FIRE CODE APPENDIX D10.3.
 - FD10. THE DIMENSIONS OF THE APPROVED FIRE APPARATUS ACCESS ROADS SHALL BE MAINTAINED AS ORIGINALLY APPROVED BY THE FIRE DEPARTMENT. FIRE CODE 503.2.2.1.
 - A.) THE DIMENSIONS OF THE TURNAROUND, WITH THE ORIENTATION OF THE TURNAROUND SHALL BE PROPERLY PLACED IN THE SECTION OF THE ROADWAY ON THE PLAN.
 - FD12. FIRE APPARATUS ACCESS ROAD SHALL BE PROVIDED WITH A 32 FOOT CENTERLINE TURNING RADIUS. FIRE CODE 503.2.4 & APPENDIX D10.4.
 - FD13. FIRE APPARATUS ACCESS ROADS SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPROD LOAD OF FIRE APPARATUS WEIGHING 75,000 POUNDS, AND SHALL BE SURFACED SO AS TO PROVIDE ALL-WEATHER DRIVING CAPABILITIES. FIRE APPARATUS ACCESS ROADS HAVING A GRADE OF 10 PERCENT OR GREATER SHALL HAVE A PAVED OR CONCRETE SURFACE. FIRE CODE 503.2.5, APPENDIX D10.4.1.
 - FD14. FIRE APPARATUS ACCESS ROADS SHALL NOT EXCEED 15 PERCENT IN GRADE. FIRE CODE 503.2.2; APPENDIX D10.4.
 - FD15. FIRE APPARATUS ACCESS ROADS SHALL NOT BE OBSTRUCTED IN ANY MANNER, INCLUDING BY THE PARKING OF VEHICLES, OR THE USE OF "BATTERY BANKING" DEVICES, INCLUDING BUT NOT LIMITED TO, SPEED BUMPERS OR SPEED BUMPS. THE MINIMUM WIDTHS AND CLEARANCES ESTABLISHED IN SECTION 503.2.1 AND SECTION 503.2.2 SHALL BE MAINTAINED AT ALL TIMES. FIRE CODE 503.2.1.
 - FD16. TRAFFIC SIGNALS DEVICES, INCLUDING BUT NOT LIMITED TO, SPEED BUMPERS AND SPEED "HUMPS", SHALL BE PROHIBITED UNLESS APPROVED BY THE FIRE CODE 503.2.1.
 - FD17. A MINIMUM 5 FOOT WIDE APPROVED PREFERENTIAL ACCESS WALKWAY LEADING FROM THE FIRE DEPARTMENT ACCESS ROAD TO ALL REQUIRED OPENINGS IN THE BUILDING'S EXTERIOR WALLS SHALL BE PROVIDED FOR FIRE FIGHTING AND RESCUE PURPOSES. FIRE CODE 504.1.
 - FD18. ALL FIRE HYDRANTS SHALL MEASURE 6" x 4" x 1/2" BRASS OR BRONZE, CONFORMING TO CURRENT ANSA STANDARD 5058 OR APPROVED EQUAL, AND SHALL BE INSTALLED IN ACCORDANCE WITH THE COUNTY OF LOS ANGELES FIRE CODE.
 - FD19. ALL REQUIRED PUBLIC FIRE HYDRANTS SHALL BE INSTALLED, TESTED AND ACCEPTED PRIOR TO BEGINNING CONSTRUCTION. FIRE CODE 504.4.
 - FD20. THE REQUIRED FIRE FLOW FOR THE PUBLIC FIRE HYDRANTS FOR SINGLE FAMILY RESIDENTIAL HOMES LESS THAN A TOTAL SQUARE FOOTAGE OF 3000 FEET IS 1200 GPM AT 20 PSI RESIDUAL PRESSURE FOR 2 HOURS WITH CALIFORNIA PUBLIC FIRE HYDRANT FLOWING ANY SINGLE FAMILY RESIDENTIAL HOME 5000 SQUARE FEET OR GREATER SHALL COMPLY TO TABLE B105.1 OF THE FIRE CODE IN APPENDIX B.
 - A.) THE FIRE FLOW IS AN INDICATOR FOR THIS SUBDIVISION, THE SPECIFIC FIRE FLOW REQUIREMENT WILL BE ADDRESSED WITH DEVELOPMENT OF EACH INDIVIDUAL LOT.

- TITLE REPORT NOTES:**
- THE EFFECTS OF EASEMENTS SHOWN IN FIDELITY NATIONAL TITLE COMPANY POLICY NO. 995-30054527, EXCEPTIONS DATED OCTOBER 2, 2020 ARE SHOWN UNLESS OTHERWISE NOTED.
- AN EASEMENT FOR ROAD PURPOSES REC. N. BOOK 49335, PAGE 431, OF O.R. (CADD EASEMENT DOES NOT AFFECT PROPERTY).
 - AN EASEMENT FOR INGRESS AND EGRESS PURPOSES REC. DEC. 27, 1968 AS INST. NO. 1476, OF O.R.
 - AN EASEMENT FOR POLE LINES PURPOSES IN FAVOR OF SO. CAL. EDISON CO. REC. IN BOOK 56021, PAGE 192, OF O.R.
 - EASEMENTS FOR POLES, CABLES AND COMMUNICATION PURPOSES IN FAVOR SO. CAL. EDISON CO. REC. IN BOOK 55866 PAGES, 257, 258, 259 260 AND 261, ALL OF O.R.
 - EASEMENTS FOR INGRESS AND EGRESS AND TO CONSTRUCT, USE, MAINTAIN, OPERATE, ALTER, REPAIR, REPLACE, RECONSTRUCT AND REMOVE AT ANY TIME ABOVE OR BELOW GROUND FIRE LINES, VALVES OR APPURTENANCES USED OR USEFUL FOR PUBLIC UTILITY PURPOSES IN FAVOR OF SANTA CLARA WATER CO. REC. APRIL 14, 1993 AS INST. NO. 93-701651, OF O.R.
 - AN EASEMENT FOR ROAD, STREET, DRAINAGE, PEDESTRIAN, EQUESTRIAN, INFRASTRUCTURE AND UTILITY PURPOSES IN FAVOR OF SAND CANYON RANCH ESTATES, A CALIF. GENERAL PARTNERSHIP RECORDED AUG. 4, 2006 AS INST. NO. 06-1727487 OF O.R.
 - AN EASEMENT FOR RIGHT OF WAY, INGRESS AND EGRESS AND TO CONSTRUCT, USE, MAINTAIN, OPERATE, ALTER, REPAIR, REPLACE, RECONSTRUCT AND REMOVE AT ANY TIME ABOVE OR BELOW GROUND WATER TANKS, WELLS, PIPELINES, VALVES, PUMPS AND/OR OTHER FACILITIES OR APPURTENANCES USED OR USEFUL FOR PUBLIC UTILITY PURPOSES IN FAVOR OF SAND CANYON OAKS MULTIJ. WATER COMPANY, A CORPORATION REC. MARCH 08, 2017 AS INST. NO. 20170269189 OF O.R.

NOTES:

- RECORD OWNERS: APN # 2841-018-035
WILLIAM HILL
2657 TANNAHILL AVE
SANTA CLARITA, CA 91367
- EXISTING AND PROPOSED AREAS: 865,340 S.F. 19.87 AC.
- EXISTING AND PROPOSED: 4.75 ACRES
- THERE ARE HUNDREDS OAK TREES ON SITE. TAG TAG NO'S ARE SHOWN
- THERE WILL BE NO GRADING OF THE PROPOSED BUILDING PADS OR DRIVEWAYS AS PART OF THIS SUBDIVISION. GRADING OF PADS AND DRIVEWAYS WILL BE DONE BY FUTURE PARCEL OWNERS
- PROPOSED PARCEL SIZES
 - PARCEL 1
GROSS ACRES: 4.98 ACRES
NET ACRES: 4.75 ACRES
 - PARCEL 2
GROSS ACRES: 4.99 ACRES
NET ACRES: 4.59 ACRES
 - PARCEL 3
GROSS ACRES: 5.00 ACRES
NET ACRES: 4.65 ACRES
 - PARCEL 4
GROSS ACRES: 4.96 ACRES
NET ACRES: 4.68 ACRES
 TOTAL GROSS ACRES: 19.87 ACRES
- FLOOD ZONE INFORMATION
 - SITE IS IN FLOOD ZONE PER FLOOD INSURANCE RATE MAP 0603703845F DATED SEPTEMBER 26, 2008
- GRADING QUANTITY
 - EARTHWORK: 5,163 CU. YDS. CUT
6,626 CU. YDS. FILL
BALANCE ON-SITE

LEGEND



LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF SANTA CLARITA, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 38, PAGE 6, OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

PARCEL 1:
THE SOUTH HALF OF THE SOUTH HALF OF LOT 2 OF TRACT NO. 3402, IN THE CITY OF SANTA CLARITA, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 38, PAGE 6, OF MAPS, EXCEPT THOSE PORTIONS SITUATED TO THE NORTHERLY LINE OF PARCEL 1, ALSO AN EASEMENT OVER THE EAST 32 FEET OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 26, TOWNSHIP 4 NORTH, RANGE 15 WEST, SAN BERNARDINO BASE AND MERIDIAN.

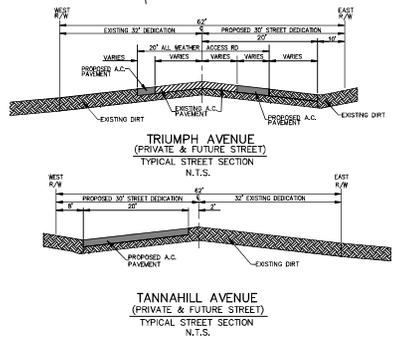
PARCEL 2:
AN EASEMENT FOR INGRESS AND EGRESS OVER THE WEST 32 FEET, NORTH 32 FEET AND THE EAST 32 FEET OF LOT 2 OF SAID TRACT 3402, IN THE CITY OF SANTA CLARITA, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 38, PAGE 6, OF MAPS, EXCEPT THOSE PORTIONS SITUATED TO THE NORTHERLY LINE OF PARCEL 1, ALSO AN EASEMENT OVER THE EAST 32 FEET OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 26, TOWNSHIP 4 NORTH, RANGE 15 WEST, SAN BERNARDINO BASE AND MERIDIAN.

AS LOT 1 OF CERTIFICATE OF COMPLIANCE FOR LOT LINE ADJUSTMENT NO. 20-00011 RECORDED 4-19-21 AS INST. # 202100626, OF OFFICIAL RECORDS.

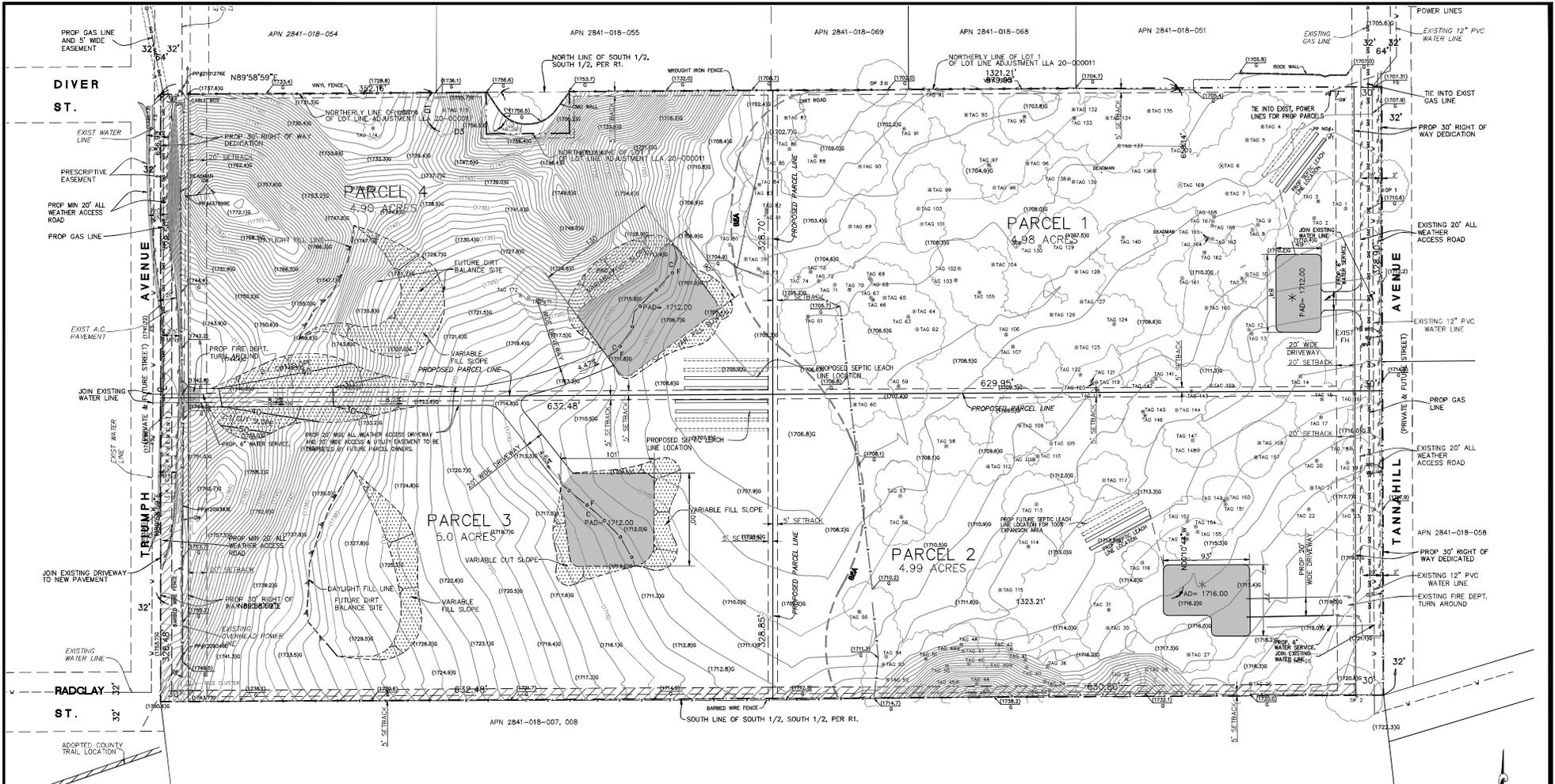
APN: 2841-018-035



PLANS PREPARED UNDER THE DIRECTION OF
RON KOESTER LS 9490
DATE: 16 JUNE 2023
19 SEP 2023

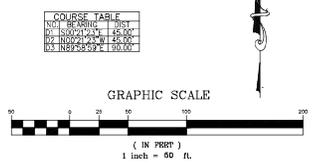


TENTATIVE PARCEL MAP NO. 80287
 PREPARED FOR FIDELITY NATIONAL TITLE COMPANY
 10000 W. CENTRAL AVENUE, SUITE 100
 LOS ANGELES, CALIFORNIA 90024
 CRC Enterprises
 27600 Bouquet Canyon Road Suite 200 Santa Clarita Ca. 91360
 Telephone (661) 297-2338 FAX (661) 297-2301



- LEGEND**
- - - - - EXISTING BOUNDARY
 - - - - - PROPOSED PARCEL LINE
 - - - - - SET-BACK LINE
 - - - - - PROPOSED RIGHT OF WAY
 - - - - - EXISTING RIGHT OF WAY
 - - - - - EXISTING LOT LINE
 - - - - - EXISTING EDGE OF PAVEMENT
 - - - - - PROPOSED PAVEMENT
 - ▨ FUTURE POTENTIAL PAD LOCATION.

- NOTES**
1. ESTIMATED EARTHWORK: 5,183 CU. YDS CUT, 4,656 CU. YDS FILL, BALANCE ON-SITE.
 2. THERE WILL BE NO GRADING OF THE PROPOSED BUILDING PAD AS PART OF THIS SUBDIVISION. GRADING OF PADS WILL BE DONE BY FUTURE PARCEL OWNERS.



LEGAL DESCRIPTION
SOUTH ONE-HALF OF THE SOUTH ONE-HALF OF LOT 2 OF TRACT NO. 3462 IN THE CITY OF SANTA CLARITA, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 38, PAGE 6, OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

PLAN APPROVED BY:
City of Santa Clarita

PLANS PREPARED FOR:
REX HALL COMPANY
45640 23rd St W,
Lancaster, CA 93536

PLANS PREPARED BY:
CRC Enterprises
37800 Bouquet Canyon Road Suite 500
Santa Clarita Ca, 91350
Telephone (661) 397-2338 FAX (661) 397-2331

PLANS PREPARED UNDER THE DIRECTION OF:
RON KROESTER RFE # 42,399
16 JUNE 2023
DATE



NO.	REVISION	REVISED BY	DATE	CITY APPROVAL	APPROVAL DATE
1					

CITY OF SANTA CLARITA
GRADING CONCEPT
TENTATIVE PARCEL MAP No. 80287

SCALE: 1"=50'
DATE: 06/16/23
JOB NO.: 3208
SHEET: 1 OF 1

Tong, Frankie

Subject: EXTERNAL: FW: AB 52 Consultation - Master Case 18-182 (TPM 80287)

From: Sarah Brunzell <Sarah.Brunzell@tataviam-nsn.us>
Sent: Thursday, September 7, 2023 12:54 PM
To: Andy Olson <AOLSON@santa-clarita.com>
Cc: THCP <thcp@tataviam-nsn.us>
Subject: Re: AB 52 Consultation - Master Case 18-182 (TPM 80287)

CITY WARNING: This email was sent from an external server. Use caution clicking links or opening attachments.

Good afternoon Andy,

Thank you to both you and the project applicant for the completion of the consultation form. The information and mitigation measures within this email serve as consultation unless there are any questions or concerns with the information and measures set forth. Should there be questions regarding this request, we can schedule a consultation meeting to discuss the Project:

The proposed project is underlain with native soil and is located a few miles from the village of Tobimonga. Members of the Tobimobit lineage had close ties to villages over four miles away, and it was not unusual for ancestors to travel several miles for social gatherings. Also, there were a number of settlements along the Santa Clara River which is about one and a half miles from the proposed project location. Although the proposed project is not located in a central area of activity, inadvertent discovery of Tribal Cultural Resources could occur.

Due to the conditions stated above, the CRM Division of the FTBMI request the following Mitigation Measures be included in the proposed project's Mitigated Negative Declaration/ Conditions of Approval:

300-2.4.1 In the Event of an Inadvertent Discovery

If cultural resources are discovered during project activities, all work in the immediate vicinity of the find (within a 60-foot buffer) shall cease and a qualified archaeologist meeting Secretary of Interior standards retained by the project applicant shall assess the find. Work on the portions of the Projects outside of the buffered area may continue during this assessment period. The Fernandeano Tataviam Band of Mission Indians (FTBMI) shall be contacted about any pre-contact and/or post-contact finds and be provided information after the archaeologist makes their initial assessment of the nature of the find, to provide Tribal input with regards to significance and treatment.

300-2.4.2 Disposition and Treatment of Inadvertent Discoveries

The Lead Agency and/or applicant shall, in good faith, consult with the FTBMI on the disposition and treatment of any Tribal Cultural Resource encountered during all ground disturbing activities.

300-2.5 Human Remains

300-2.5.2 In the Event of Inadvertent Discovery, Human Remains

If human remains or funerary objects are encountered during any activities associated with the Project, work in the immediate vicinity (within a 100-foot buffer of the find) shall cease and the County Coroner shall be contacted pursuant to State Health and Safety Code §7050.5 and that code shall be enforced for the duration of the Project.

- a. Inadvertent discoveries of human remains and/or funerary object(s) are subject to California State Health and Safety Code Section 7050.5, and the subsequent disposition of those discoveries shall be decided by the Most Likely Descendant (MLD), as determined by the Native American Heritage Commission (NAHC), should those findings be determined as Native American in origin.

Please provide a final copy of the project measures so that the FTBMI may review the included language. Once the included language is reviewed, the FTBMI will either approve and provide communication confirming the consultation pursuant to CEQA is concluded, or one of the following will be requested; modification or revision of project measures, follow up consultation. An unanticipated discovery of cultural resources during project implementation could also trigger a follow up consultation. If you should have any questions with regard to this matter, please do not hesitate to contact me.

I appreciate your time and look forward to further updates on this Project.

Kind Regards,

Please submit all proposed Projects via our Mandatory Digital Project Intake Form:

<https://www.tataviam-nsn.us/project-intake/>

THIS MESSAGE IS INTENDED ONLY FOR THE USE OF THE INDIVIDUAL OR ENTITY TO WHICH IT IS ADDRESSED AND MAY CONTAIN INFORMATION THAT IS PRIVILEGED, CONFIDENTIAL AND EXEMPT FROM DISCLOSURE UNDER APPLICABLE LAW. If the reader of this message is not the intended recipient or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination or copying of this communication is strictly prohibited. If you have received this electronic transmission in error, please delete it from your system without copying it and notify the sender by reply e-mail so that the email address record can be corrected. Thank You.

Sarah Brunzell

Manager

Cultural Resources Management Division

Tribal Historic and Cultural Preservation Department

Fernandeño Tataviam Band of Mission Indians

1019 Second Street

San Fernando, California 91340
Office: (818) 837-0794

Website: <http://www.tataviam-nsn.us>

From: Sarah Brunzell <Sarah.Brunzell@tataviam-nsn.us>
Sent: Tuesday, September 5, 2023 9:42 AM
To: Andy Olson <AOLSON@santa-clarita.com>
Cc: THCP <thcp@tataviam-nsn.us>
Subject: Re: AB 52 Consultation - Master Case 18-182 (TPM 80287)

Thanks Andy,

I'm here if either of you have questions.

Kind Regards,

Please submit all proposed Projects via our Mandatory Digital Project Intake Form:

<https://www.tataviam-nsn.us/project-intake/>

THIS MESSAGE IS INTENDED ONLY FOR THE USE OF THE INDIVIDUAL OR ENTITY TO WHICH IT IS ADDRESSED AND MAY CONTAIN INFORMATION THAT IS PRIVILEGED, CONFIDENTIAL AND EXEMPT FROM DISCLOSURE UNDER APPLICABLE LAW. If the reader of this message is not the intended recipient or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination or copying of this communication is strictly prohibited. If you have received this electronic transmission in error, please delete it from your system without copying it and notify the sender by reply e-mail so that the email address record can be corrected. Thank You.

Sarah Brunzell
Manager

Cultural Resources Management Division
Tribal Historic and Cultural Preservation Department

Fernandeño Tataviam Band of Mission Indians
1019 Second Street
San Fernando, California 91340
Office: (818) 837-0794

Website: <http://www.tataviam-nsn.us>

From: Andy Olson <AOLSON@santa-clarita.com>
Sent: Tuesday, September 5, 2023 9:41 AM
To: Sarah Brunzell <Sarah.Brunzell@tataviam-nsn.us>
Cc: THCP <thcp@tataviam-nsn.us>
Subject: RE: AB 52 Consultation - Master Case 18-182 (TPM 80287)

[CAUTION] EXTERNAL Email. Exercise caution.

Good morning Sarah,

Thanks for the quick reply on this. I'm passing along the info below to the applicant, and will keep you posted.

Thank you,
Andy

From: Sarah Brunzell <Sarah.Brunzell@tataviam-nsn.us>
Sent: Tuesday, September 5, 2023 9:37 AM
To: Andy Olson <AOLSON@santa-clarita.com>
Cc: THCP <thcp@tataviam-nsn.us>
Subject: Re: AB 52 Consultation - Master Case 18-182 (TPM 80287)

CITY WARNING: This email was sent from an external server. Use caution clicking links or opening attachments.

Good morning Andy,

The project intake form for TPM 80287 was received, thank you. The proposed project is categorized as **Low Sensitivity**. Please have the project applicant complete the project consultation form at the link below and select **Low Sensitivity**:

<https://www.tataviam-nsn.us/project-consultation-form/>

	<p>Project Consultation Form</p>
	<p>/</p>
	<p>www.tataviam-nsn.us</p>

Once the consultation form is received, consultation will be conducted and Mitigation Measures provided via email since the site is of low sensitivity.

Please let me know if you have any questions.

Kind Regards,

Please submit all proposed Projects via our Mandatory Digital Project Intake Form:

<https://www.tataviam-nsn.us/project-intake/>

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Sarah Brunzell

Manager

Cultural Resources Management Division
Tribal Historic and Cultural Preservation Department

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Office: (818) 837-0794

Website: <http://www.tataviam-nsn.us>

From: Andy Olson <AOLSON@santa-clarita.com>
Sent: Thursday, August 31, 2023 11:34 AM
To: Sarah Brunzell <Sarah.Brunzell@tataviam-nsn.us>
Subject: RE: AB 52 Consultation - Master Case 18-182 (TPM 80287)

[CAUTION] EXTERNAL Email. Exercise caution.

Good morning Sarah,

Thanks for the quick reply. I've provided the form to the applicant and will circle back with you once they submit. In the meantime, please feel free to reach out with any questions.

Thank you,
Andy

From: Sarah Brunzell <Sarah.Brunzell@tataviam-nsn.us>
Sent: Thursday, August 31, 2023 10:55 AM
To: Andy Olson <AOLSON@santa-clarita.com>
Subject: Re: AB 52 Consultation - Master Case 18-182 (TPM 80287)

CITY WARNING: This email was sent from an external server. Use caution clicking links or opening attachments.

Good morning Andy,

Thank you, I am doing well! I hope you are too. Thank you for the formal notification and opportunity to consult on Master Case 18-182 (TPM 80287). Please have the project applicant complete our mandatory project intake form at the link below. After the intake form is received, I'll confirm what level, if any, of consultation is required:

<https://www.tataviam-nsn.us/project-intake/>

Kind Regards,

Please submit all proposed Projects via our Mandatory Digital Project Intake Form:

<https://www.tataviam-nsn.us/project-intake/>

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Sarah Brunzell

Manager

Cultural Resources Management Division

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Office: (818) 837-0794

Website: <http://www.tataviam-nsn.us>

From: Andy Olson <AOLSON@santa-clarita.com>

Sent: Tuesday, August 29, 2023 5:06 PM

To: Sarah Brunzell <Sarah.Brunzell@tataviam-nsn.us>

Subject: AB 52 Consultation - Master Case 18-182 (TPM 80287)

[CAUTION] EXTERNAL Email. Exercise caution.

Good afternoon Sarah,

I hope you are doing well. Attached is a letter regarding Master Case 18-182 (Tentative Parcel Map 80287). This project would subdivide a site, just under 20 acres, into four parcels for future single-family homes.

Once you have had an opportunity to review the letter and attachments, please let me know whether the Tribe is requesting consultation on this project. The Initial Study for the project is currently being drafted, and the City's consultant has prepared a cultural resources report for the project site (attached). As always, please feel free to give me a call or reply with any questions or additional information you would need.

Thank you,
Andy

Andy Olson, AICP
Associate Planner
Planning Division
City of Santa Clarita

Phone: (661) 255-4973
Email: aolson@santa-clarita.com
Web: <http://www.santa-clarita.com>



