

Appendix G: **Hydrology and Water Quality Supporting Information**

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Memo



WOOD RODGERS

BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

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Job No.: 4342_000

To: City of San Jose

From: Mary Jane Kabalin, P.E.

Date: October 1, 2024

Re: **H23-028 & T23-022 TTLC GLIDER SCHOOL
Cozy Drive and Glider Drive (511 Cozy Drive)
Stormwater Capacity Memorandum**

This memorandum has been prepared to address the following plan check comment from the Public Works Department dated March 13, 2024 as part of the 2nd Initial Response to the Development Application for the subject Project:

Comment # 8f: Provide expected flow rate to the existing surrounding storm mains to evaluate potential capacity constraints for this proposed project. If the provided flow rate for the project exceeds the current capacity, upsizing of the surrounding mains will be required.

Existing Conditions:

The existing site is approximately 9.51-acres and is currently occupied by an elementary school that will be demolished. The site is bounded by Cozy Drive on the south, Glider Drive and on the east and residential homes to the north and west. The entire site drains towards the southwest corner with onsite existing drain lines connecting to an existing 15-inch storm drain located in Cozy Drive (See Attachment A).

Proposed Conditions:

The proposed project will consist of 80 residential units and 2 public streets. The proposed project will be divided into 3 drainage areas and connect to three separate connections along Cozy and Glider Drive. Table 1 below is a breakdown of the drainage areas (see Attachment B):

TABLE 1: PROPOSED DRAINAGE AREAS			
DRAINAGE AREA	ONSITE AREA (AC)	OFFSITE AREA (AC)	COMBINED AREA (AC)
AREA 1	8.14	0.36	8.50
AREA 2	0.72	0.35	1.07
AREA 3	0.65	0.27	0.92
TOTAL	9.51	0.98	10.49

Approximately 8.1 acres will continue to drain to the existing connection point at the southwest corner and the remaining 1.5-acres will be diverted to Areas 2 and 3. These diverted areas will drain directly to Cozy and

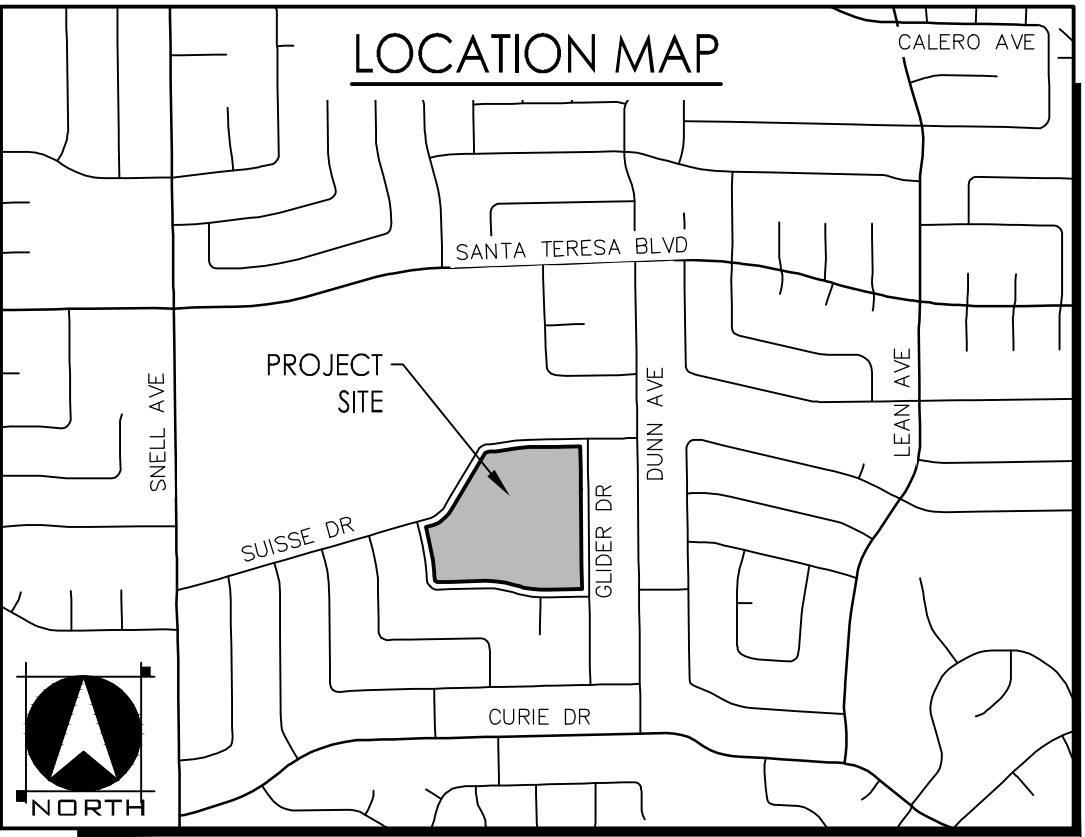
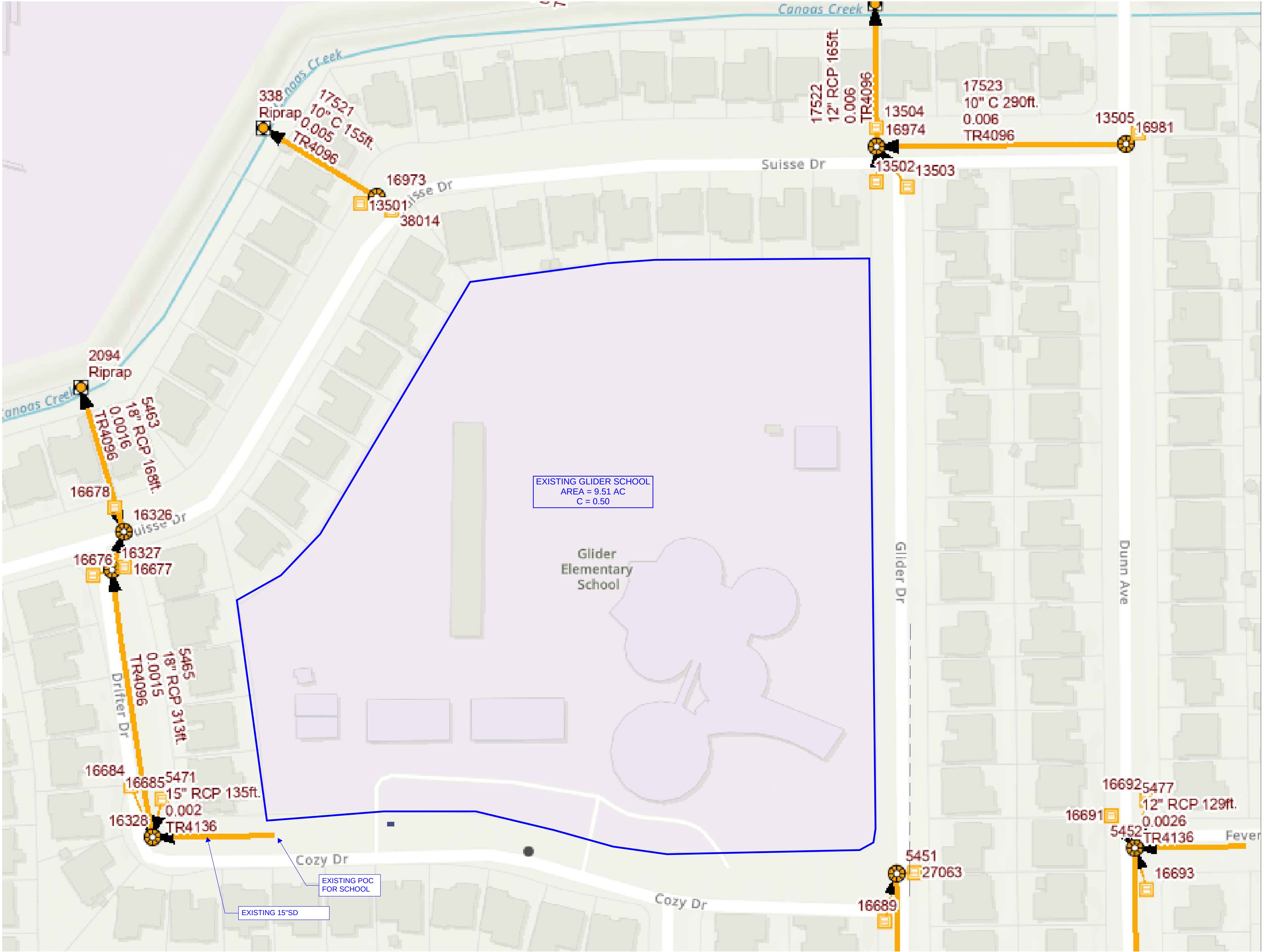
Glider Drive, therefore, approximately 1-acre of offsite area has been included in the calculations to account for the half of the street fronting the project.

The proposed storm drain pipes have been designed per *City of San Jose – Design Guidelines for Storm Drains*. In addition, StormCAD, a hydraulic modeling system, was used to perform the hydraulic calculations, and in conjunction with the following City Standards:

1. Manning's $n = 0.013$ for RCP
2. Minimum full pipe velocity = 2.5 feet per second
3. Estimated inlet time at the beginning of pipe runs:
 - Residential, zones for greater than 8DU/AC: 5 minutes
4. Inlet and manhole spacing requirements
 - Storm Drain Manhole 450' maximum spacing
 - Storm Drain Inlet 600' maximum spacing
5. Closed conduit cover requirements = 2.5' min. to street subgrade
6. Precipitation Intensity-Duration-Frequency per Appendix 3.10.01 page 3-14
7. Mean Annual Precipitation per 3.10.01 page 3-15, Constant use = 13.1 for City of San Jose
8. Storm drain system to be designed for 10-yr storm event
9. The depth of the Hydraulic Grade Line (HGL) from inlet grates and manhole rims shall not exceed one-half (0.5) foot and one (1.0) foot
10. Existing HGL information was not available for the existing connections, therefore as a conservative approach the HGL was set at 1-ft below the existing ground as our starting HGL.

Conclusion

Based on the hydraulic calculations, the proposed drainage design meets the minimum HGL freeboard requirement per item #9 above (for the results of the Hydraulic Calculations see Attachment C). Drainage Area #1 exceeds the current capacity for the existing 15-inch storm drain, therefore approximately 220-ft will be required to be upsized to an 18-inch storm drain pipe. For Areas 2 and 3, the existing storm drain pipes will adequately convey the proposed design and will not require upsizing of the existing pipes.



ATTACHMENT A

342.044
TTLCozy Drive
San Jose, CA
July 15, 2024



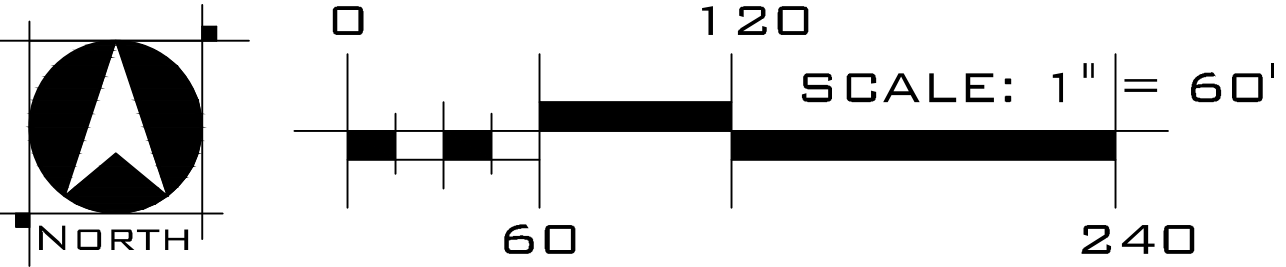
TTLCozy Drive
San Jose, CA
July 15, 2024

TTLCozy Drive, LLC

12647 Alcosta Blvd., Suite 470 San Ramon CA 94583
925.824.4300

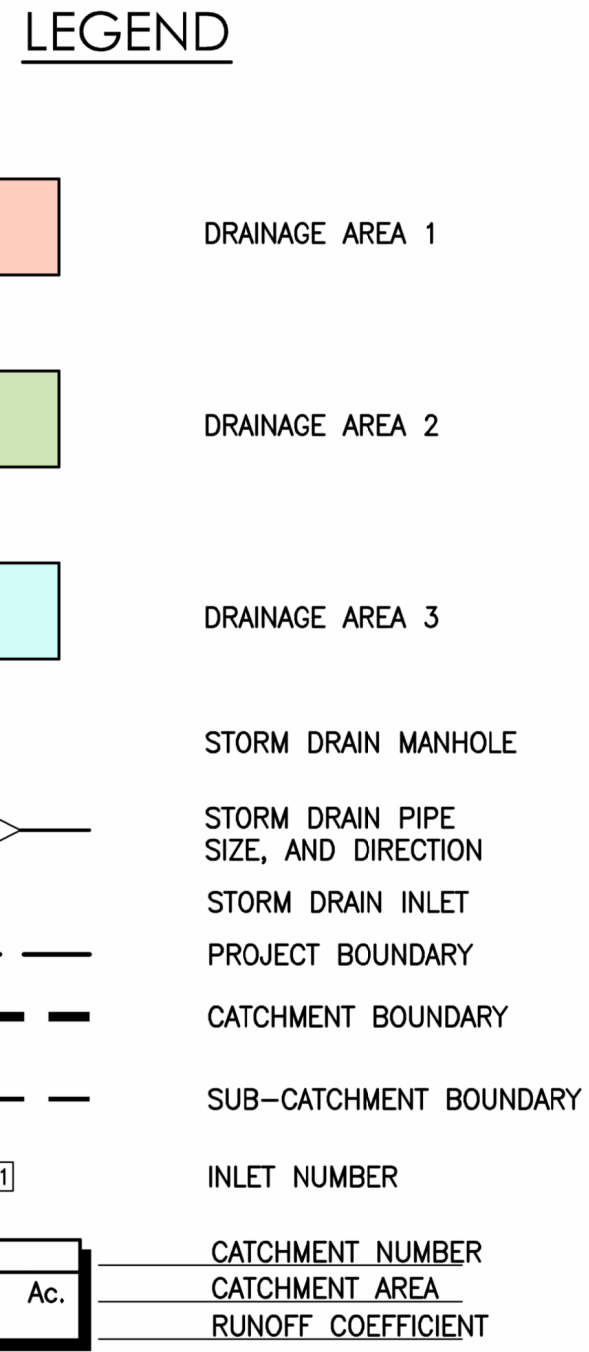
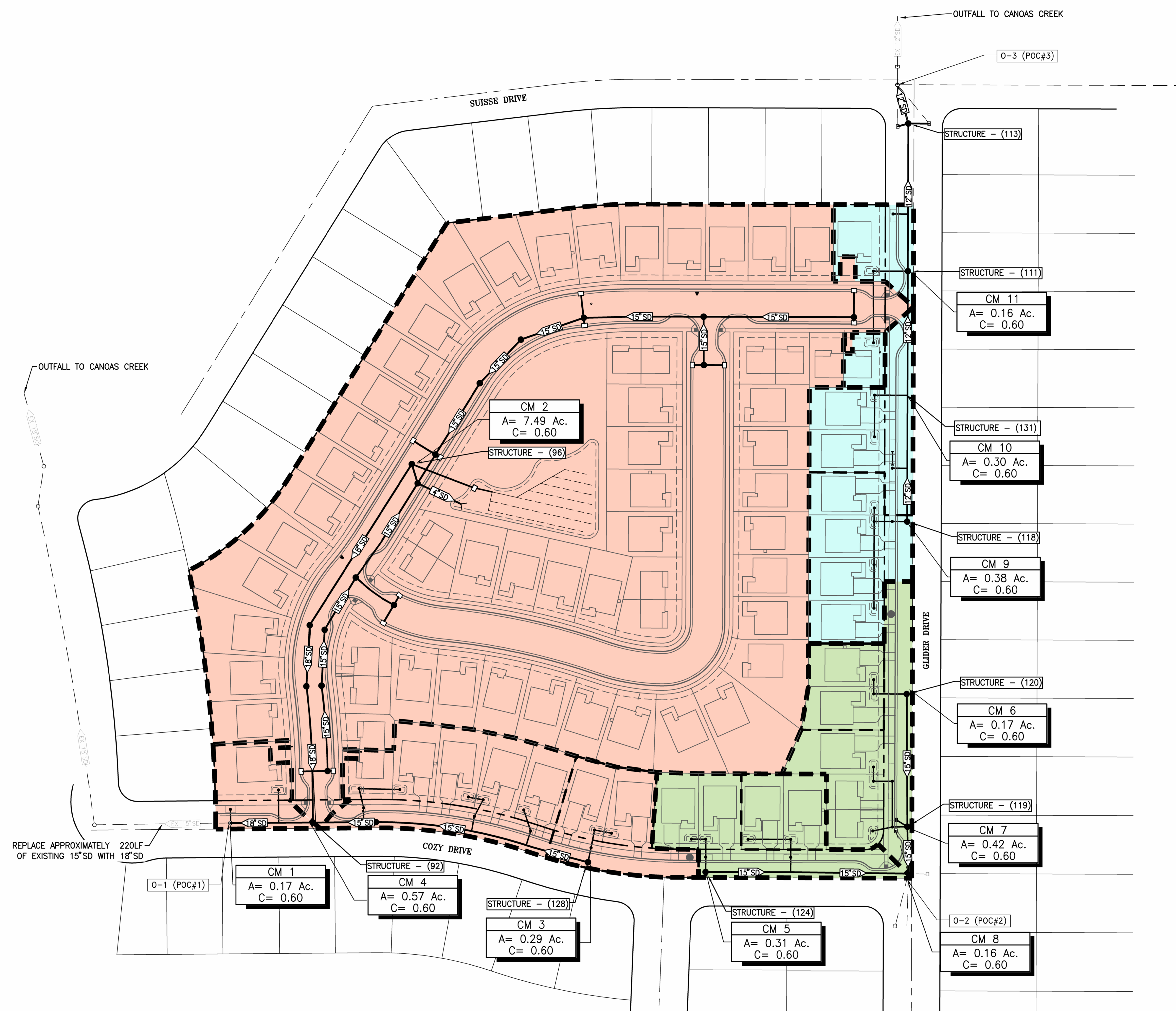
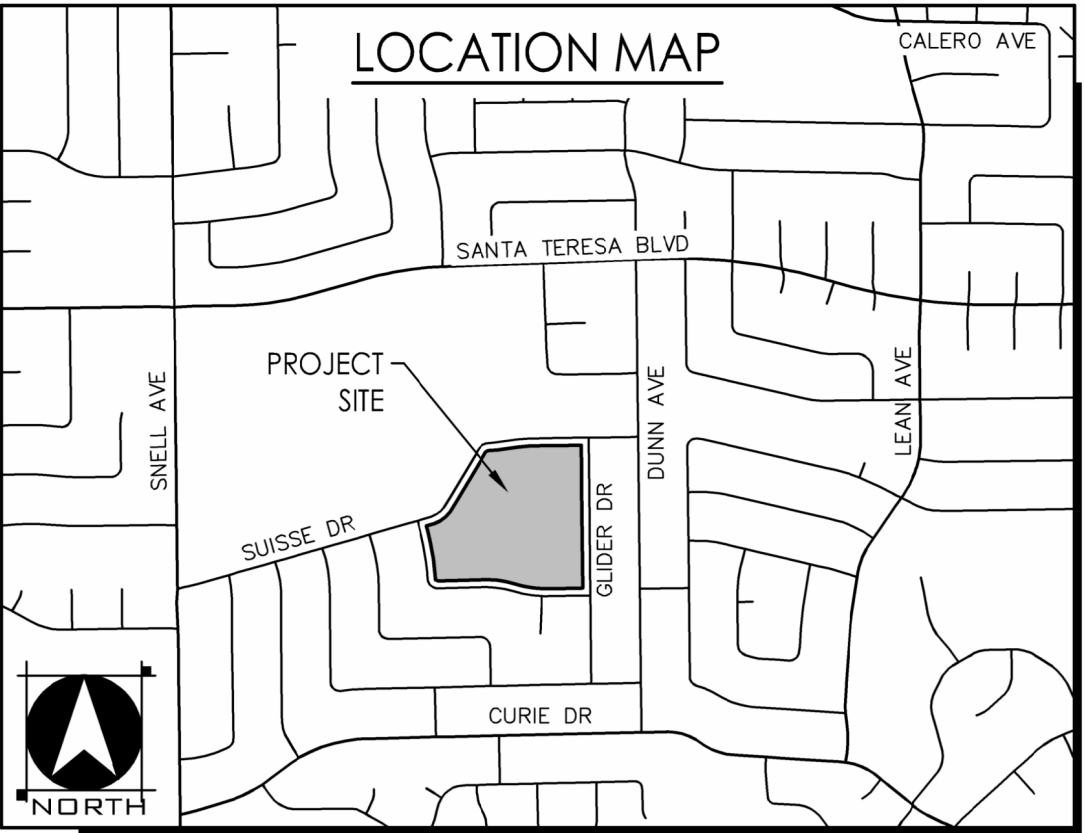
EXISTING HYDROLOGY MAP

File No. H23-028
Revision Date: 06/27/24





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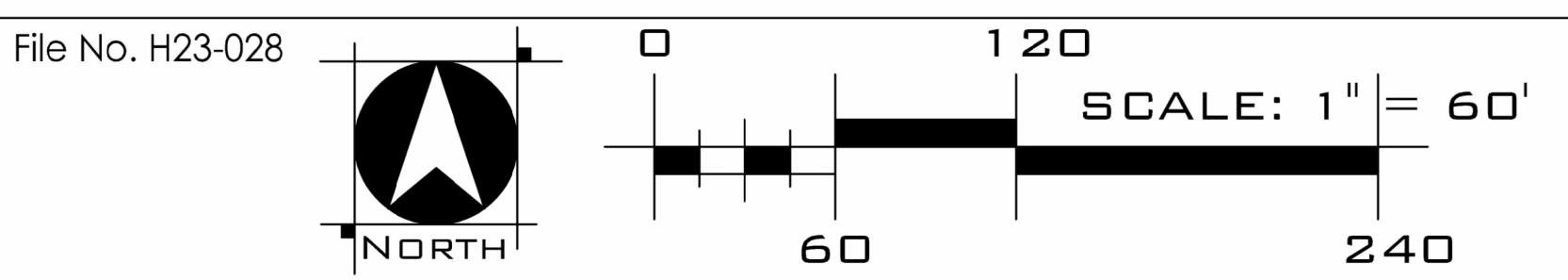


ATTACHMENT B

342.044 TTLC Cozy Drive
San Jose, CA
October 1, 2024

THE TRUE LIFE COMPANIES
TTLC San Jose - Glider, LLC
12647 Alcosta Blvd., Suite 470 San Ramon CA 94583
925.824.4300

PROPOSED HYDROLOGY MAP



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ATTACHMENT C

StormCAD Results

Hydraulic Calculation Summary - Glider 10-Year Storm Event																	
Start Node	Stop Node	System Flow Time (min)	Upstream Inlet C	System Intensity (in/h)	System Drainage Area (acres)	Flow (cfs)	Capacity (Full Flow) (cfs)	Velocity (ft/s)	Size (in)	Length (ft)	Invert (Start) (ft)	Invert (Stop) (ft)	Slope (ft/ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Elevation Ground (Start) (ft)	Elevation Ground (Stop) (ft)
Structure - (96)	Structure - (92)	30.00	0.60	1.13	7.50	5.1	5.1	2.9	18	410.0	159.3	158.4	0.0030	164.5	163.5	165.9	165.2
Structure - (128)	Structure - (92)	10.00	0.60	2.27	0.30	0.4	2.9	0.3	15	296.1	161.2	160.6	0.0020	163.5	163.5	166.0	165.2
Structure - (92)	O-1	32.35	0.60	1.10	8.40	5.6	5.7	3.2	18	87.5	158.4	158.2	0.0030	163.5	163.2	165.2	164.2
Structure - (120)	Structure - (119)	10.00	0.60	2.27	0.20	0.2	2.9	0.2	15	140.4	161.4	161.1	0.0020	165.4	165.4	166.9	166.4
Structure - (119)	O-2	22.32	0.60	1.46	0.60	0.5	2.9	0.4	15	49.6	161.1	161.0	0.0020	165.4	165.4	166.1	166.4
Structure - (124)	O-2	10.00	0.60	2.27	0.30	0.4	2.9	0.4	15	214.5	161.4	161.0	0.0020	165.4	165.4	166.5	166.4
Structure - (118)	Structure - (111)	5.00	0.60	3.15	0.40	0.7	1.6	0.9	12	264.9	158.4	157.9	0.0020	164.4	164.3	166.8	165.5
Structure - (111)	Structure - (113)	10.00	0.60	2.27	0.70	0.9	1.6	1.2	12	156.2	157.9	157.6	0.0020	164.3	164.2	165.5	167.8
Structure - (113)	O-3	12.19	0.60	2.05	0.80	1.0	1.6	1.3	12	42.5	157.6	157.5	0.0020	164.2	164.2	167.8	165.2

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