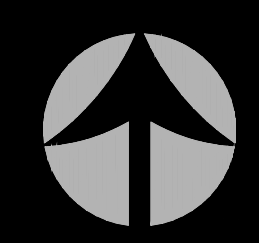
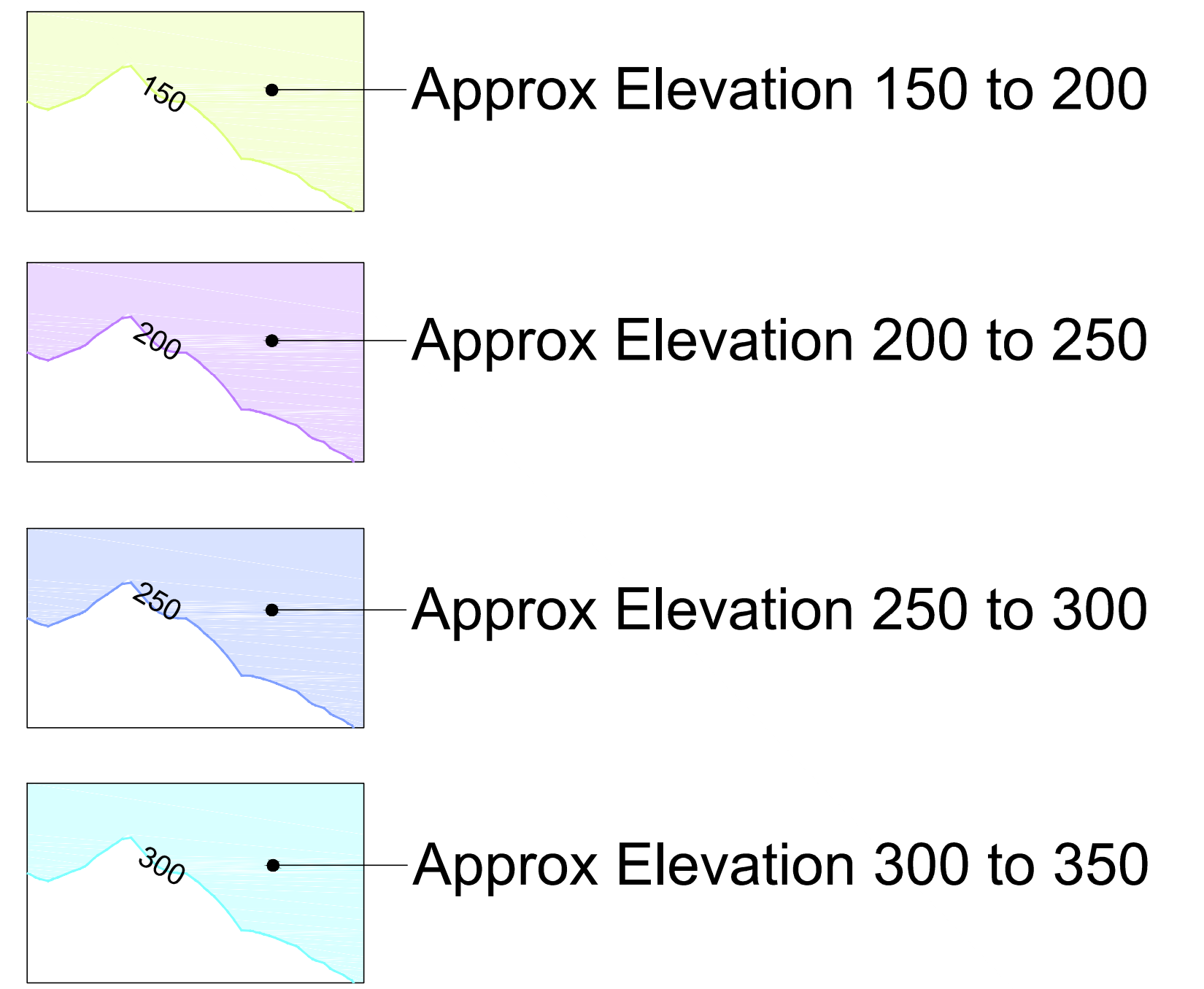


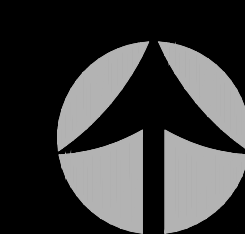
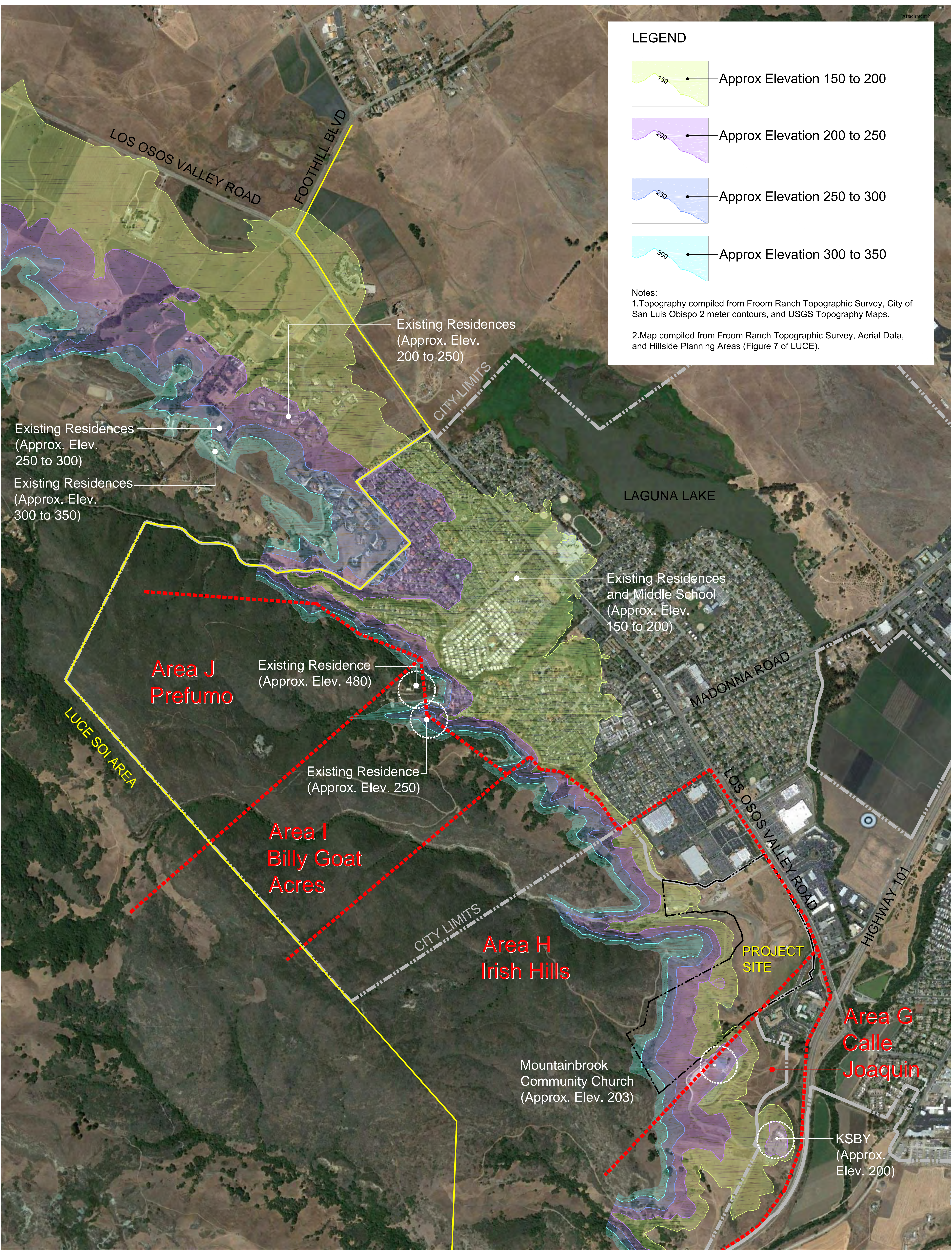
Notes:
 1. Future proposed building floor elevations are estimated based upon topographic site survey data.
 2. Bunch grass mitigation to occur on and off site. (Mitigation areas are not yet identified)

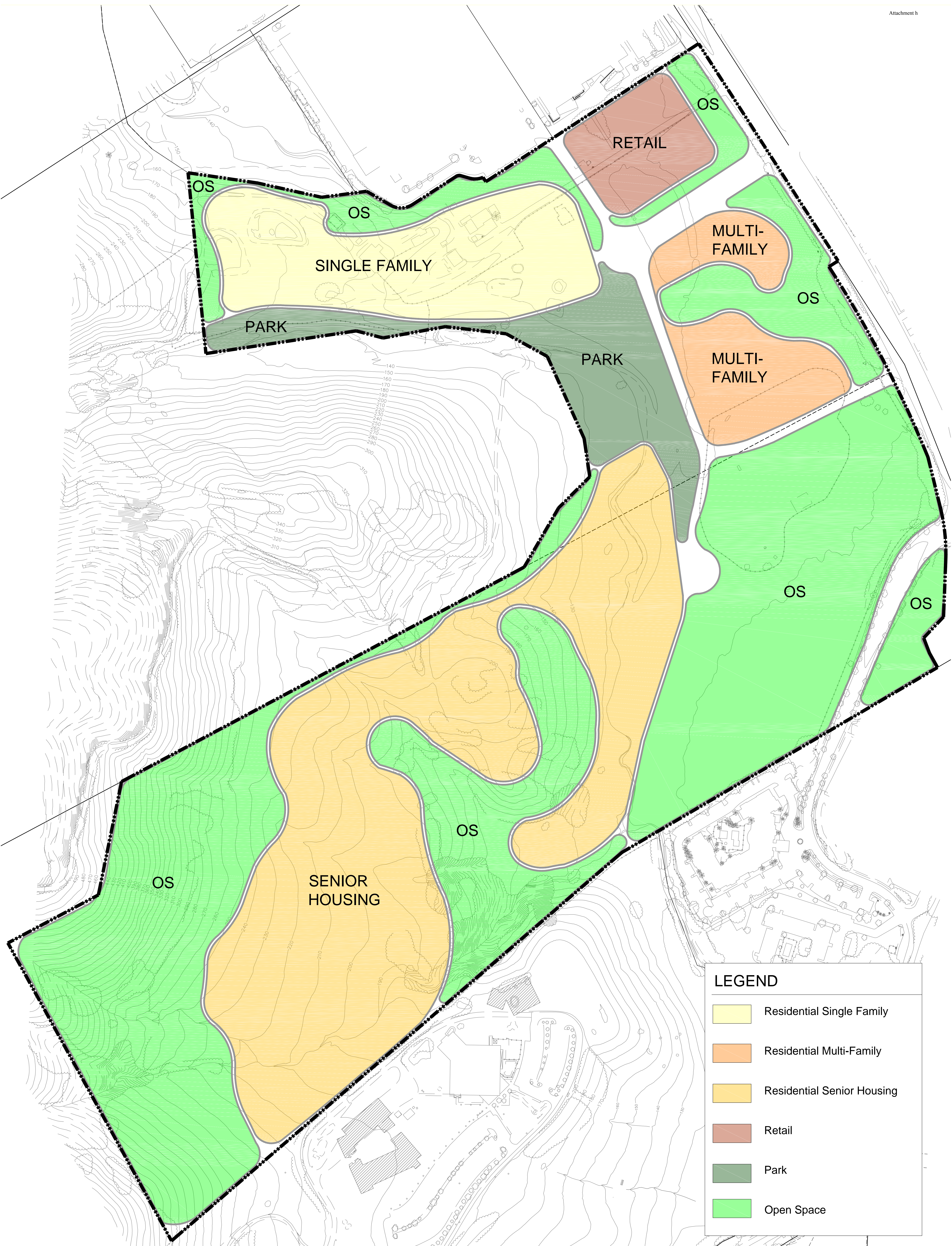


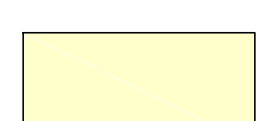
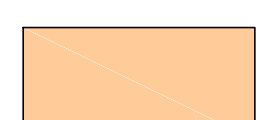


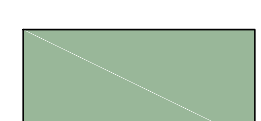
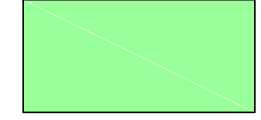
LEGEND

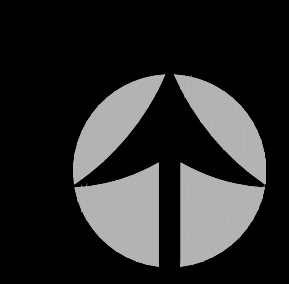


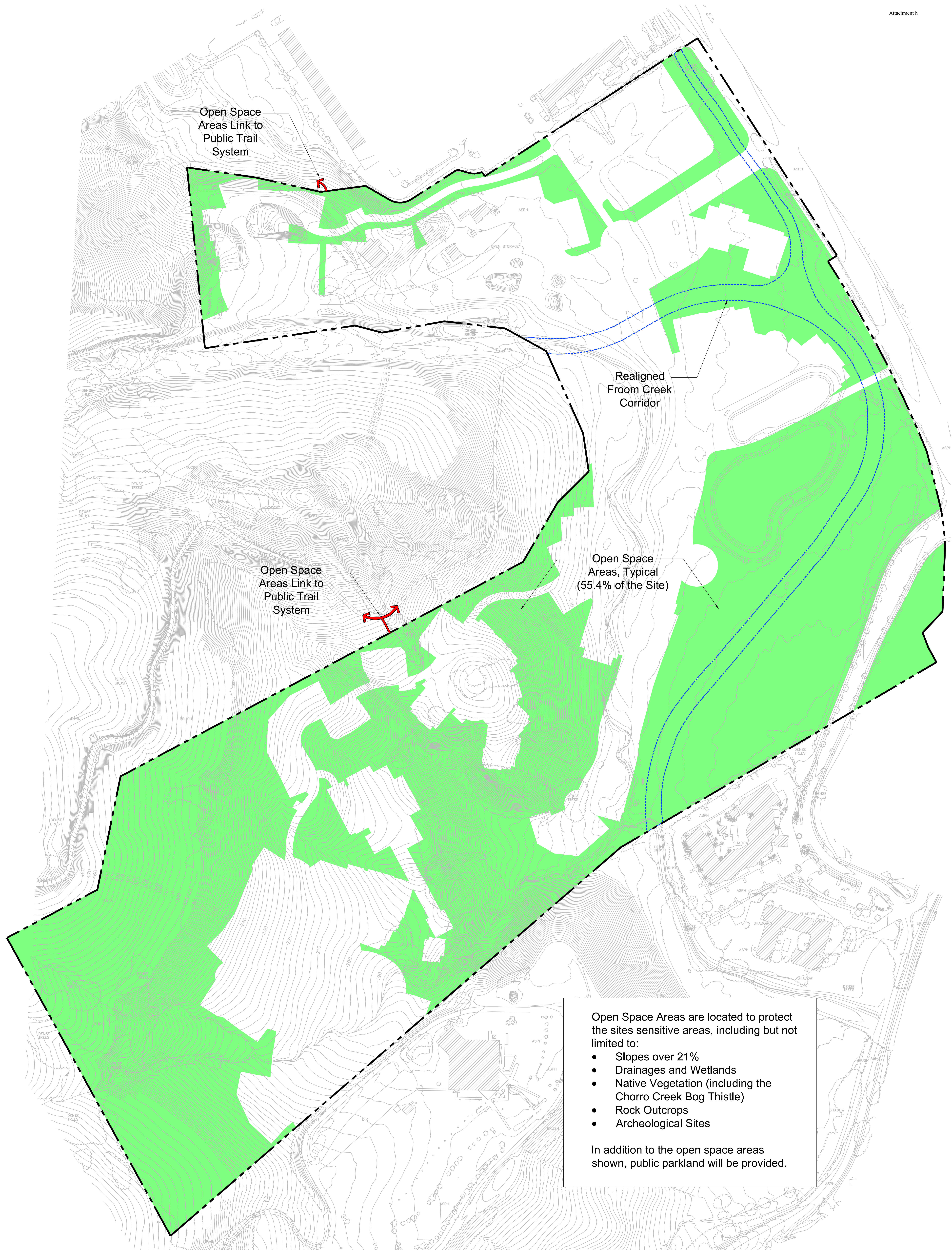
Notes:
 1. Topography compiled from Froom Ranch Topographic Survey, City of San Luis Obispo 2 meter contours, and USGS Topography Maps.
 2. Map compiled from Froom Ranch Topographic Survey, Aerial Data, and Hillside Planning Areas (Figure 7 of LUCE).





LEGEND	
	Residential Single Family
	Residential Multi-Family
	Residential Senior Housing
	Retail
	Park
	Open Space

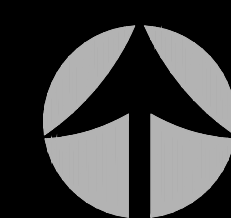


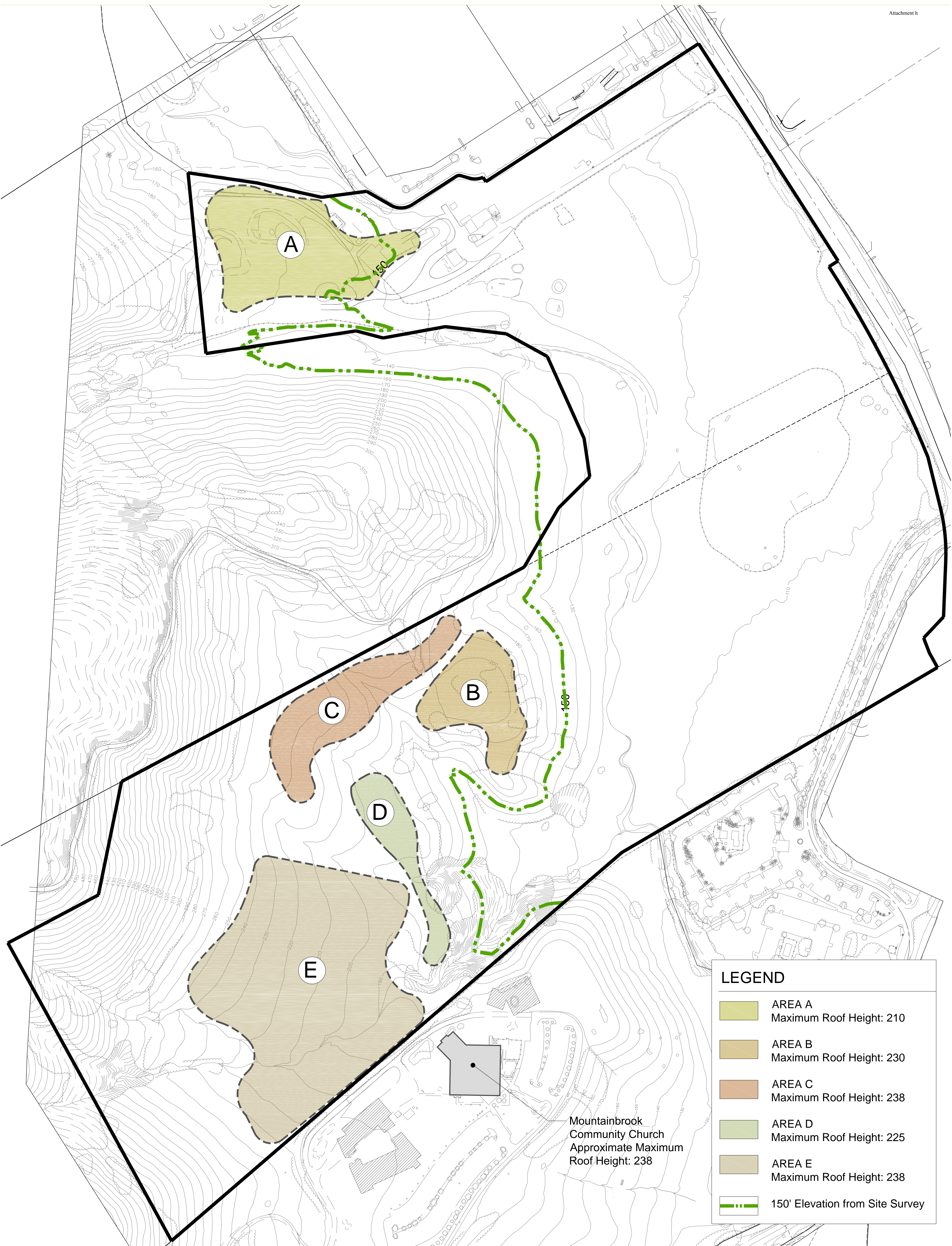


Open Space Areas are located to protect the sites sensitive areas, including but not limited to:

- Slopes over 21%
- Drainages and Wetlands
- Native Vegetation (including the Chorro Creek Bog Thistle)
- Rock Outcrops
- Archeological Sites

In addition to the open space areas shown, public parkland will be provided.

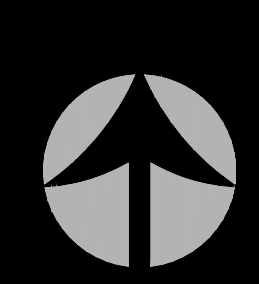


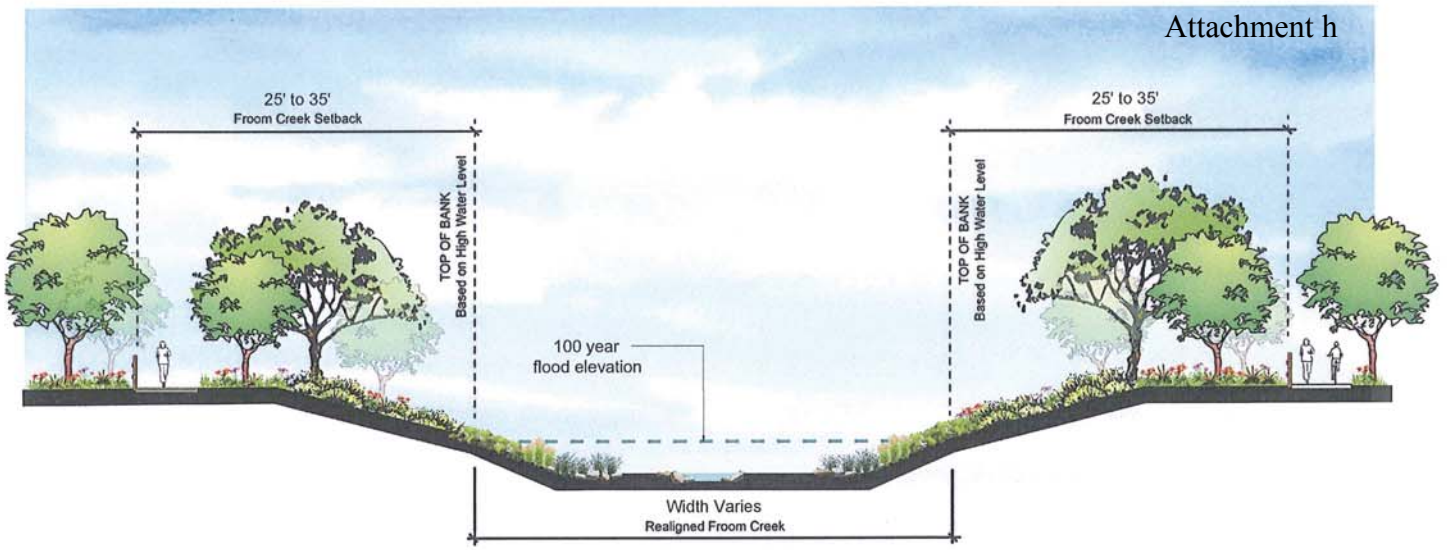


LEGEND

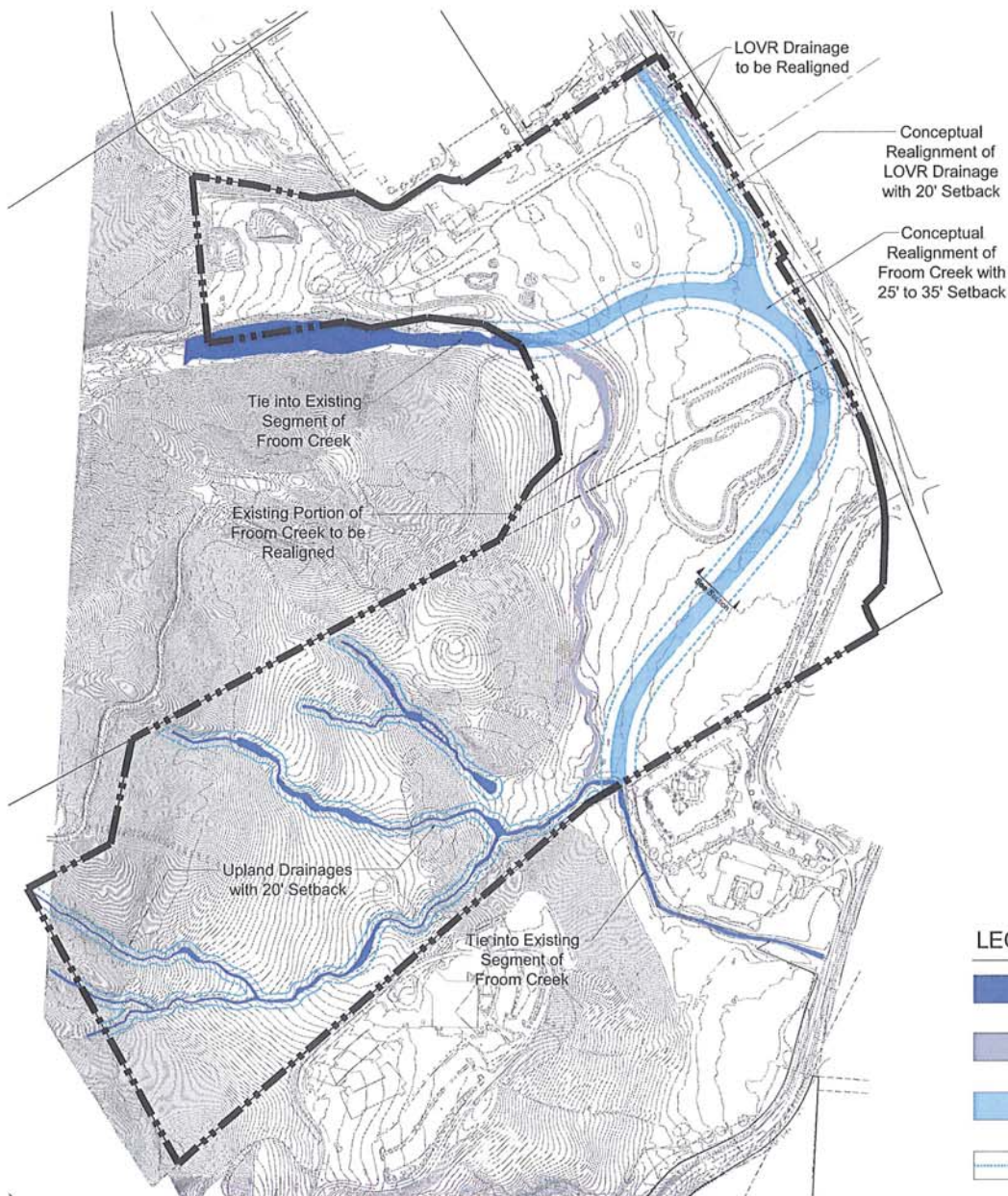
- AREA A
Maximum Roof Height: 210
- AREA B
Maximum Roof Height: 230
- AREA C
Maximum Roof Height: 238
- AREA D
Maximum Roof Height: 225
- AREA E
Maximum Roof Height: 238
- 150' Elevation from Site Survey

Mountainbrook
Community Church
Approximate Maximum
Roof Height: 238





Conceptual Section
Froom Creek Corridor



LEGEND

- Existing Drainages & Portion of Froom Creek to Remain
- Existing Portion of Froom Creek & LOVR Drainage to be Realigned
- Conceptual Realignment of Froom Creek & LOVR Drainage
- Creek Setbacks (25' to 35' Froom Creek & 20' Drainages)





MEMORANDUM

Date: February 26, 2015	
To: Victor Montgomery	Organization: RRM Design Group
From: William Strand	Title: Manager of Engineering
Project Name: Froom Ranch Specific Plan (Il Villaggio)	Project Number: 1014012
Topic: Froom Ranch Specific Plan (Il Villaggio) Stormwater	

Location and Existing Conditions

The Froom Ranch Specific Plan (Il Villaggio) project is located in the city of San Luis Obispo, California on the west side of Los Osos Valley Road and approximately 600 feet northwest of Highway 101. The project boundary is approximately 111 acres with approximately 76 acres proposed to be developed. The site is underlain by soils with high clay content which are poorly suited for infiltration ^(5.). The site is mainly undeveloped and used as range land with approximately 4 existing buildings and dirt roads at the northern end of the site. An existing drainage channel ($Q_{100} = 102$ cfs) runs south along Los Osos Valley Road conveying runoff from upstream development through the property ^(1.). Froom Creek also flows through the site along the northwestern and southeastern boundaries and has a 100-year flow rate of 1,066 cfs ^(2.). Approximately 28 acres (37%) of the project area lies within the FEMA 100-year floodplain (Zone A). The site has two existing stormwater basins that receive runoff from the adjacent Home Depot and Irish Hills commercial sites. The basin serving the Home Depot development was sized to retain a water quality volume equal to the 95th percentile capture volume of 1.27 ac-ft. The detention basin serving the Irish Hills shopping center has a capacity of 2.03 ac-ft. (sized per County of San Luis Obispo Standards to detain the 50-year storm while discharging at the 2-year storm flow rate).

Proposed Development

Proposed improvements include the construction of approximately 55 acres of single family, multi-family, and assisted living and 21 acres of commercial developments. Existing drainage patterns along Los Osos Valley Road, and Froom Creek will be maintained. Froom Creek will be slightly re-aligned and modified to contain the 100-year storm event; however, the channel will still release at the historical point of discharge. A channel with a capacity of 102 cfs will be constructed to convey flows parallel to Los Osos Valley Road. Above and below ground stormwater basins will be constructed to provide storage for the existing 1.27 ac-ft. Home Depot basin and 2.03 ac-ft. Irish Hills basin. Culverts and channels will be designed to provide capacity for flows from the 100-year storm event. No upgrades to culverts at Highway 101 are proposed.

Stormwater Requirements

Stormwater requirements are listed in the Post-Construction Stormwater Management Requirements for Development Projects in the Central Coast Region. The proposed improvements to the Froom Ranch property will require compliance with Runoff Retention and Peak Management. The design of this project will be driven by the Runoff Retention requirement since this volume is greater than the Peak Management Volume.

Runoff Retention

Most of the proposed project area lies within Watershed Management Zone 1—requiring capture of the 95th percentile storm event without runoff for water quality (3.). The 95th percentile storm depth is 2.0 inches. Since harvesting/reuse and infiltration are infeasible, retention volumes shall be multiplied by 1.2. The total required runoff retention volume is 10.91 acre-ft.

Sub-Basin #	Depth (inches)	Landuse	Post-Dev. Runoff Coeff.	Dev. Area (acres)	Capture Vol. (ac-ft.)	
1	2.0	Commercial	0.75	20.95	3.14	
2	2.0	CCRC	0.75	11.16	1.67	
3	2.0	Residential	0.70	27.04	3.79	
4	2.0	Residential	0.70	16.51	2.31	
				75.66	10.91	Total

Peak Management

Post-development peak flows discharged from the site shall not exceed pre-project peak flows for the 2- through 10-year storm events (respective depths of 2.00" and 4.51") (4.). The required Peak Management volume is 7.71 acre-ft.

Sub-Basin #	Pre-Dev. Runoff Coeff.	Proposed Landuse	Post-Dev. Runoff Coeff.	Dev. Area (acres)	2-Year, 24 Hr Depth (in.)	10-Year, 24 Hr Depth (in.)	2-Year Peak Management Volume (ac-ft)	10-Year Peak Management Volume (ac-ft)
1	0.45	Commercial	0.75	20.95	2.00	4.51	1.05	2.36
2	0.45	CCRC	0.75	11.16	2.00	4.51	0.56	1.26
3	0.45	Residential	0.70	27.04	2.00	4.51	1.13	2.54
4	0.45	Residential	0.70	16.51	2.00	4.51	0.69	1.55
				75.66			7.71	Total

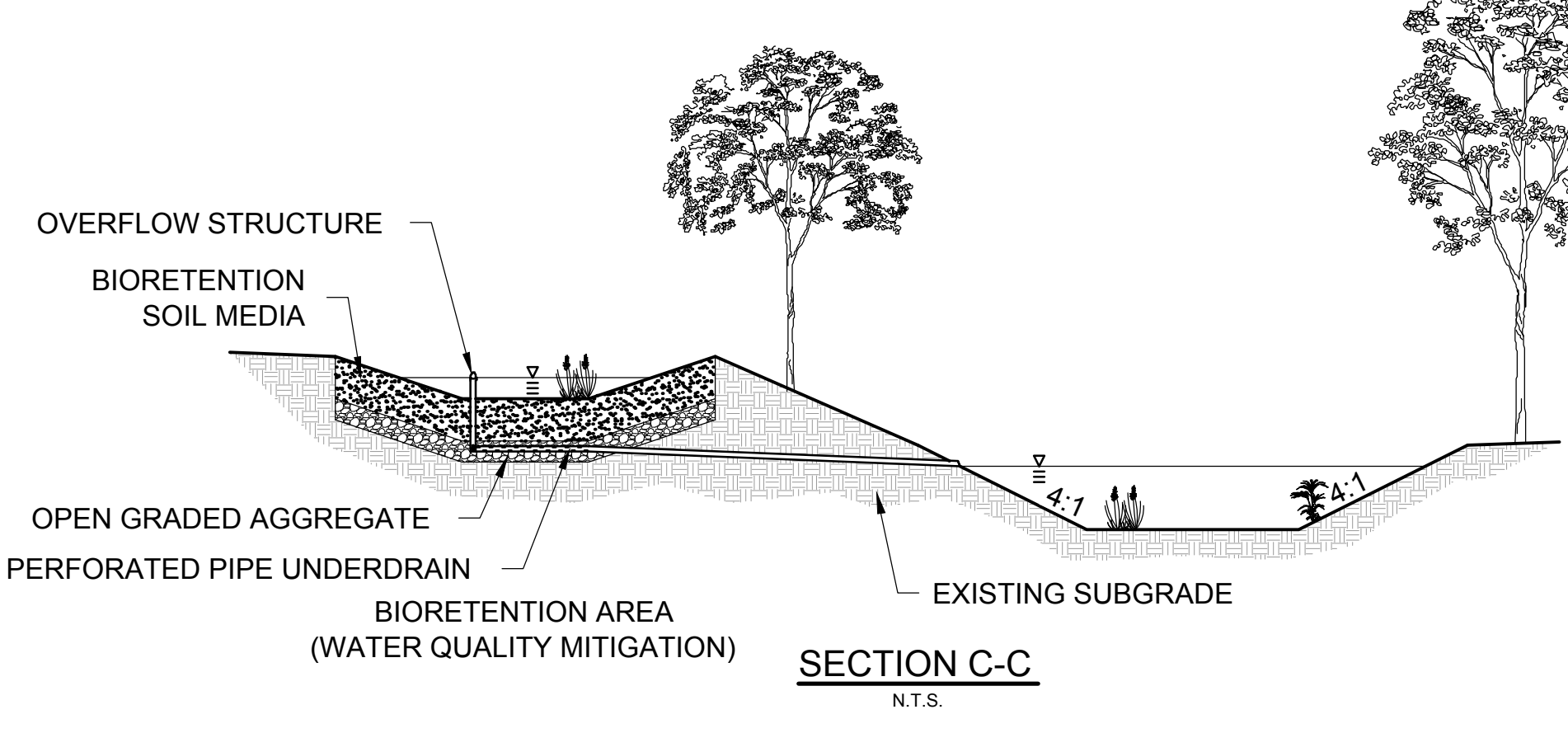
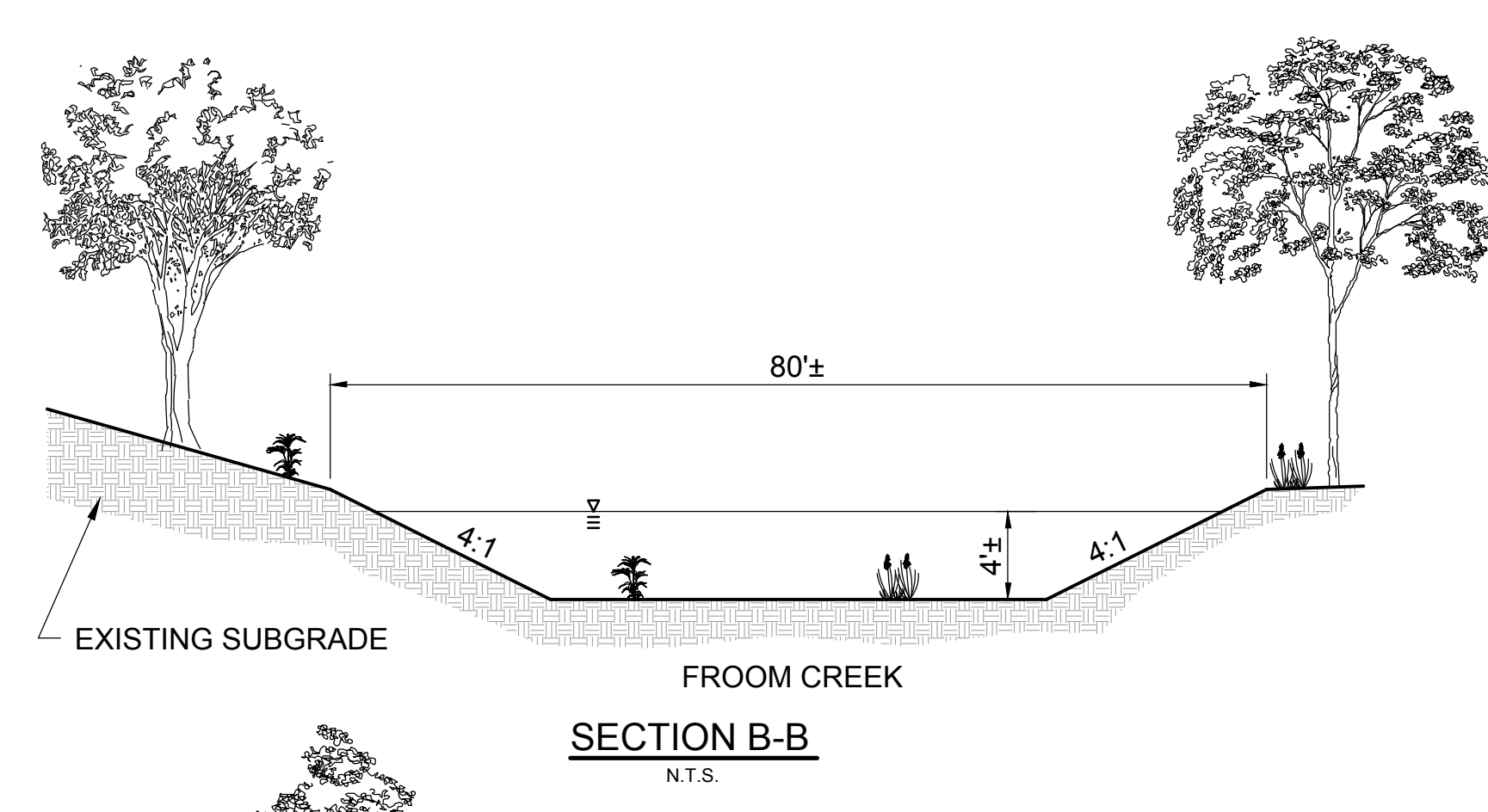
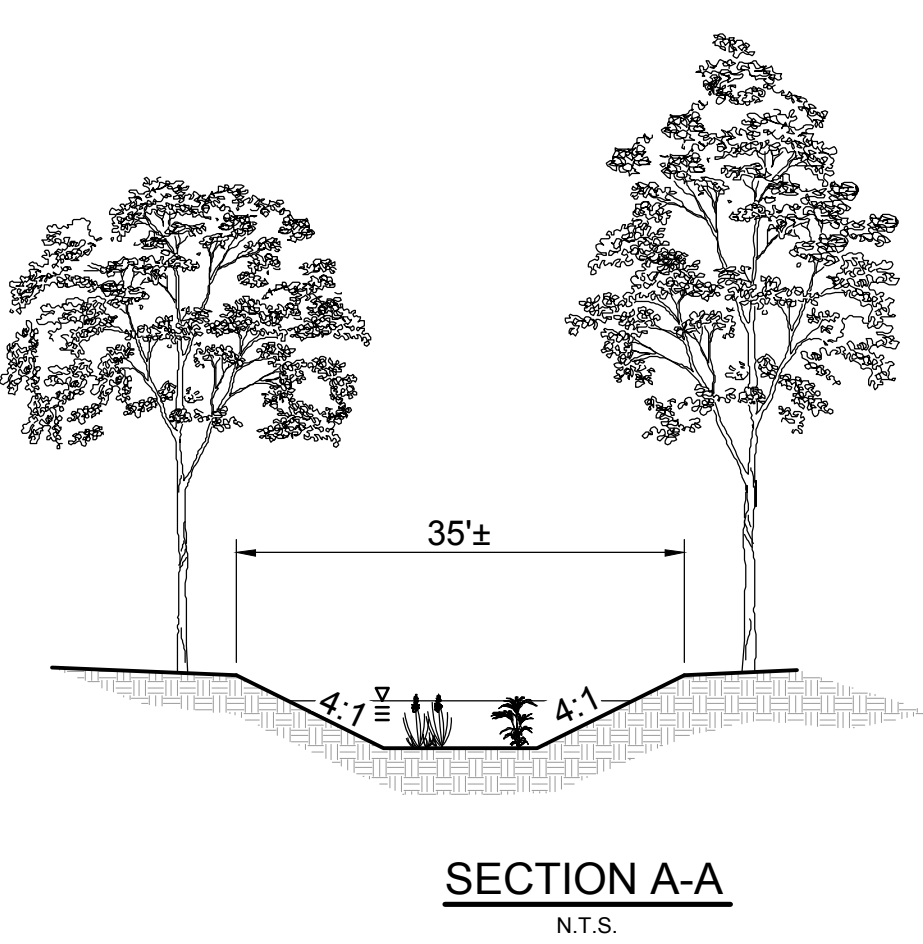
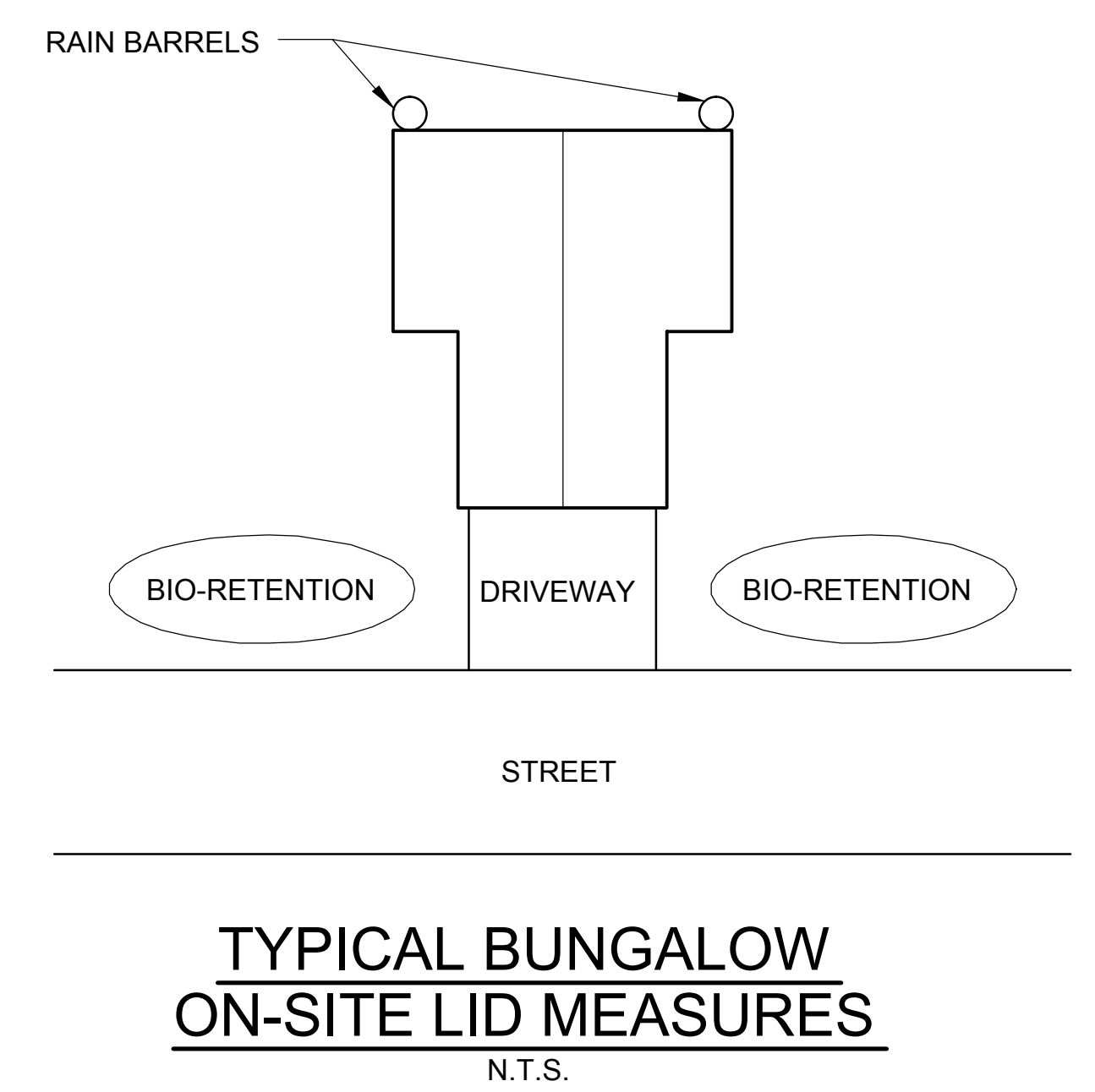
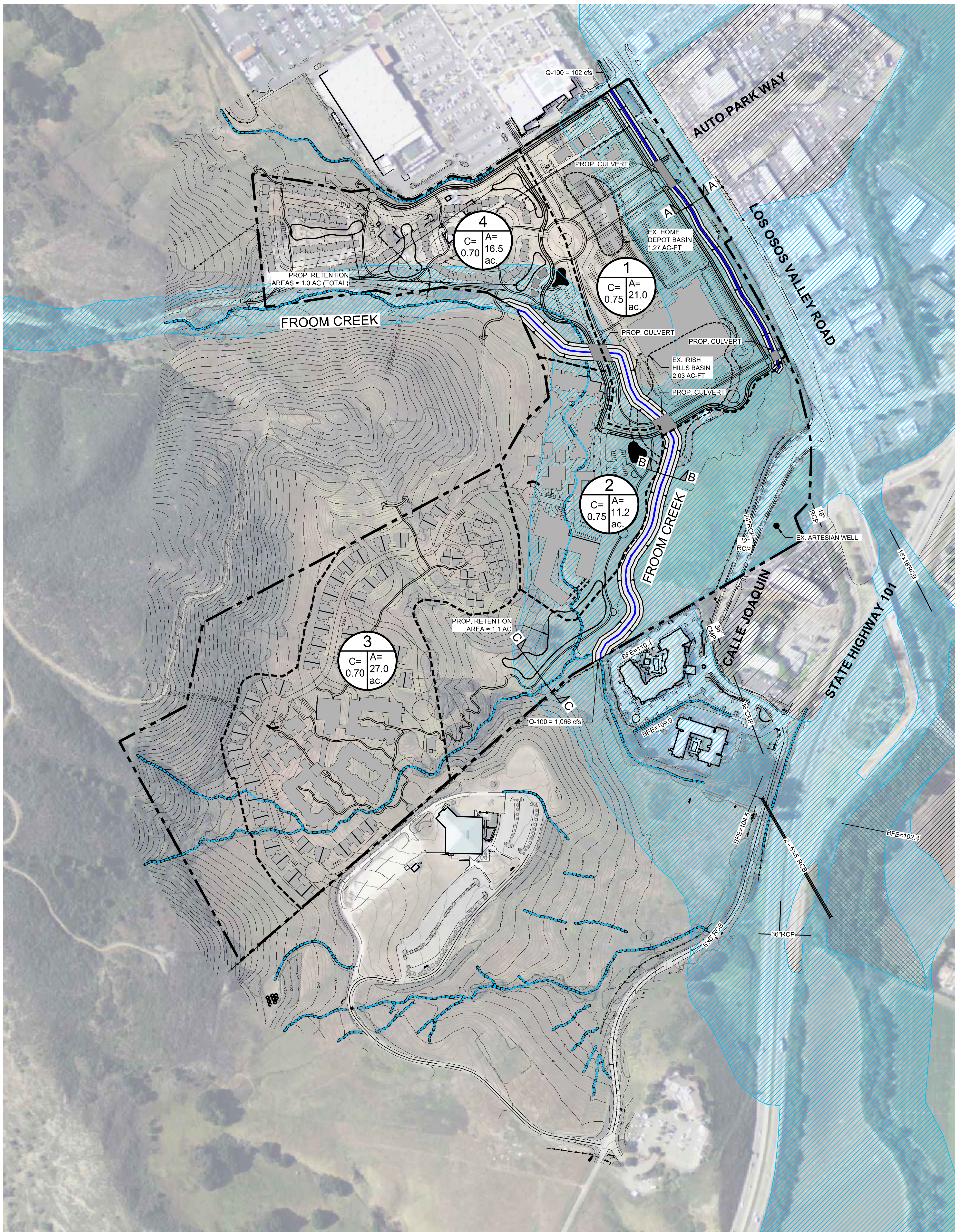
Existing On-site Retention Ponds

Sub-Basin	Pre-dev. Runoff Coeff.	Landuse	Post-Dev. Runoff Coeff.	Dev. Area (acres)	95th Percentile Depth (inches)	Detention Basin (Q-50 - Q-2) ac-ft.	95th Percentile Capture Vol. (ac-ft)
Home Depot	0.45	Commercial	0.75	10.14	2.0	--	1.27
Irish Hills	0.45	Commercial	0.75	18.62	2.0	2.03	2.33

Notes:

1. Per pg. V-6, Eagle Hardware EIR 10-1-2014

2. Per pg. 22, Revised Hydraulic Study Report Los Osos Valley Road/US 101 Interchange Improvement Project. November 2010. San Luis Obispo County
3. Per Section B.4 Post Construction Stormwater Management Requirements for Development Projects in the Central Coast Region
4. Per Section B.5 Post Construction Stormwater Management Requirements for Development Projects in the Central Coast Region
5. Per USGS Web Soil Survey



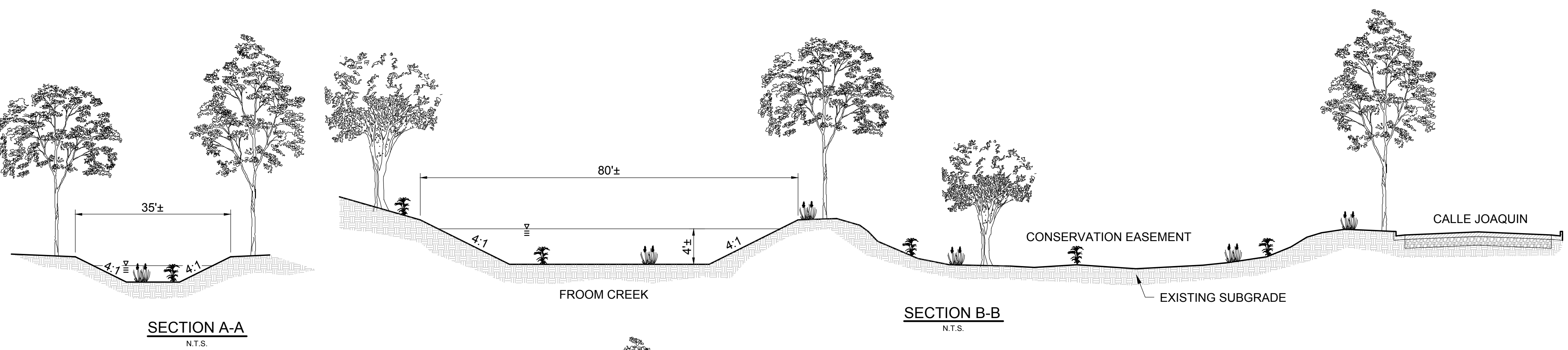
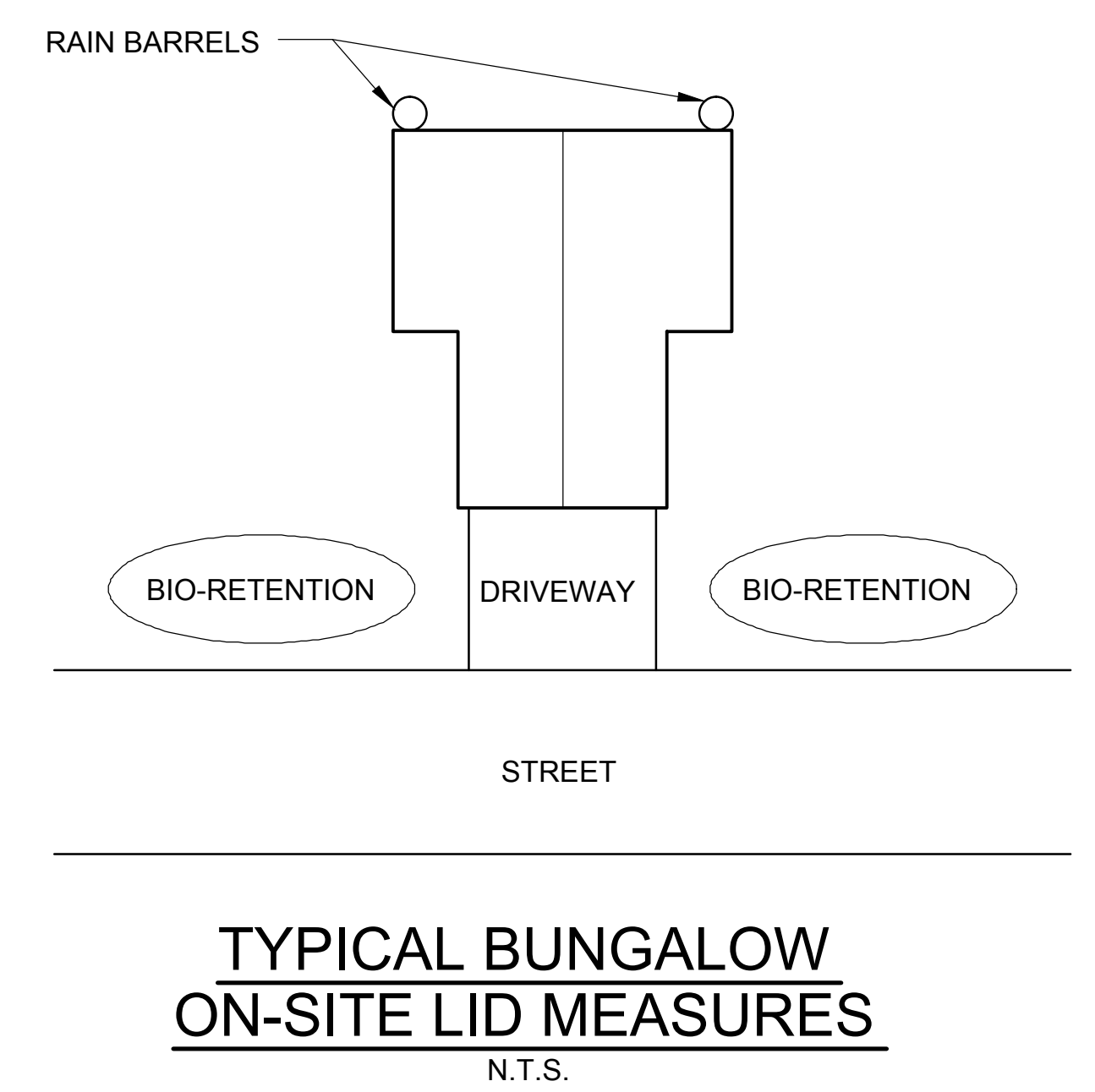
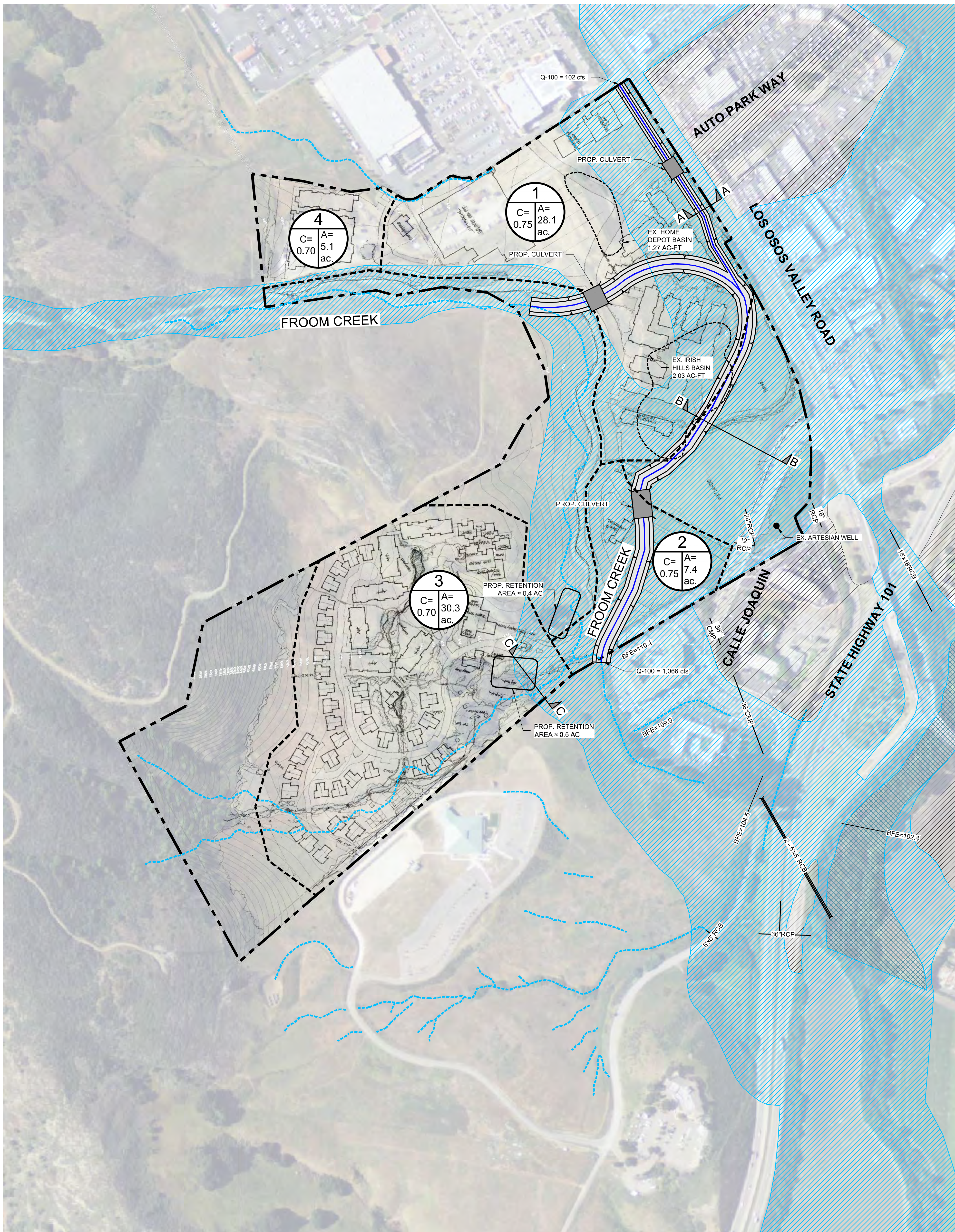
Sub-Basin	Area (ac.)	Peak Management Volume (ac-ft.)	Runoff Retention Volume (ac-ft.)	Proposed Mitigation
1	21.0	2.36	3.14	Bio-filtration & Underground Storage
2	11.2	1.26	1.67	Bio-filtration & Underground Storage
3	27.0	2.54	3.79	Flows to Bio-retention Area
4	16.5	1.55	2.31	Flows to Bio-retention Areas
Total	75.7	7.71	10.91	

EXISTING ON-SITE RETENTION BASINS			
Sub-Basin	Area (ac.)	Detention Basin (Q-50 - Q-2) ac-ft.	95th Percentile Capture Vol. (ac-ft.)
Home Depot	10.14	--	1.27
Irish Hills	18.62	2.03	2.33

LEGEND

- SUB-BASIN BOUNDARY
- 100-YEAR FLOODPLAIN (ZONE A)
- 100-YEAR FLOODPLAIN (ZONE AE)
- 100-YEAR FLOODPLAIN (ZONE X)
- EXISTING CREEK
- PROPOSED CREEK
- PROPOSED CULVERT
- EXISTING STORMWATER BASIN

ALTERNATIVE #1



Sub-Basin	Area (ac.)	Peak Management Volume (ac-ft.)	Runoff Retention Volume (ac-ft.)	Proposed Mitigation
1	28.1	3.16	4.21	Bio-treatment and Underground Storage
2	7.4	0.84	1.11	Onsite Underground Storage
3	30.3	2.85	4.25	Flows to Bio-retention Area
4	5.1	0.48	0.71	Bio-treatment and Underground Storage
70.9		7.33	10.28 Total	

EXISTING ON-SITE RETENTION BASINS

Sub-Basin	Area (ac.)	Detention Basin (Q-50 - Q-2) ac-ft.	95th Percentile Capture Vol. (ac-ft.)
Home Depot	10.14	--	1.27
Irish Hills	18.62	2.03	2.33

LEGEND

- SUB-BASIN BOUNDARY
- 100-YEAR FLOODPLAIN (ZONE A)
- 100-YEAR FLOODPLAIN (ZONE AE)
- 100-YEAR FLOODPLAIN (ZONE X)
- EXISTING CREEK
- PROPOSED CREEK
- PROPOSED CULVERT
- EXISTING STORMWATER BASIN

ALTERNATIVE #2