Exhibit E

WinTR-55 Current Data Description

--- Identification Data ---

User: Acme Eng.
Project: Quantum Limit
SubTitle: Pre-development Areas (A B C)
State: California
County: Napa
Filename: Z:\Jobs 2019\190101 Quantum Limit Vineyards\0104 2019 ECP\Calc\05\Hydrology\QL Pre A-C 05.w5

Date: 12/16/2020
Units: English
Areal Units: Acres

--- Sub-Area Data ---

Name	Description	Reach	Area(ac)	RCN	Tc
A		Outlet	5.88	84	0.1
B		Outlet	1.8	84	0.100
C		Outlet	2.51	84	0.1

Total area: 10.19 (ac)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	0-Yr (in)
4.18	5.5	6.55	7.94	8.98	10.0	.0

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type IA
Dimensionless Unit Hydrograph: <standard>

Quantum Limit
Pre-development Areas (A B C)
Napa County, California

Storm Data

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	0-Yr (in)
4.18	5.5	6.55	7.94	8.98	10.0	.0

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type IA
Dimensionless Unit Hydrograph: <standard>

Acme Eng.

Quantum Limit
Pre-development Areas (A B C)
Napa County, California

Watershed Peak Table

Sub-Area or Reach Identifier	Peak Flow by Rainfall Return Period 2-Yr (cfs)	5-Yr (cfs)	10-Yr (cfs)	25-Yr (cfs)	50-Yr (cfs)	100-Yr (cfs)
SUBAREAS						
A	3.74	5.66	7.21	9.29	10.84	12.36
B	1.14	1.73	2.21	2.84	3.31	3.78
C	1.59	2.41	3.08	3.96	4.62	5.27
REACHES						
OUTLET	6.48	9.80	12.49	16.09	18.78	21.41

Quantum Limit
Pre-development Areas (A B C)
Napa County, California

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period 2-Yr (cfs)	(hr)	5-Yr (cfs)	(hr)	10-Yr (cfs)	(hr)	25-Yr (cfs)	(hr)	50-Yr (cfs)	(hr)	100-Yr (cfs)	(hr)
SUBAREAS												
A	3.74	7.93	5.66	7.93	7.21	7.92	9.29	7.91	10.84	7.91	12.36	7.91
B	1.14	7.93	1.73	7.93	2.21	7.92	2.84	7.91	3.31	7.91	3.78	7.91
C	1.59	7.93	2.41	7.93	3.08	7.92	3.96	7.91	4.62	7.91	5.27	7.91
REACHES												
OUTLET	6.48		9.80		12.49		16.09		18.78		21.41	

Quantum Limit
Pre-development Areas (A B C)
Napa County, California

Sub-Area Summary Table

Sub-Area Identifier	Drainage Area (ac)	Time of Concentration (hr)	Curve Number	Receiving Reach	Sub-Area Description
A	5.88	0.100	84	Outlet	
B	1.80	0.100	84	Outlet	
C	2.51	0.100	84	Outlet	

Total Area: 10.19 (ac)

Quantum Limit
Pre-development Areas (A B C)
Napa County, California

Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
A							
SHEET	100	0.1646	0.011				0.008
SHALLOW	41	0.0646	0.050				0.003
SHALLOW	778	0.2136	0.050				0.029
					Time of Concentration		0.1
B							
SHEET	100	0.4675	0.150				0.041
SHALLOW	296	0.3915	0.050				0.008
SHALLOW	209	0.1650	0.050				0.009
					Time of Concentration		0.100
C							
SHEET	100	0.1347	0.150				0.067
SHALLOW	232	0.3375	0.050				0.007
SHALLOW	175	0.0845	0.050				0.010
					Time of Concentration		0.1

Quantum Limit
Pre-development Areas (A B C)
Napa County, California

Sub-Area Land Use and Curve Number Details

Sub-Area Identifier	Land Use		Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
A	Paved parking lots, roofs, driveways		D	.28	98
	Pasture, grassland or range	(fair)	D	3.4	84
	Pasture, grassland or range	(good)	D	1.08	80
	Woods - grass combination	(fair)	D	1.12	82
	Total Area / Weighted Curve Number			5.88	84
B	Pasture, grassland or range	(fair)	D	1.6	84
	Pasture, grassland or range	(good)	D	.1	80
	Woods - grass combination	(fair)	D	.1	82
	Total Area / Weighted Curve Number			1.8	84
C	Pasture, grassland or range	(fair)	D	2.33	84
	Woods - grass combination	(fair)	D	.18	82
	Total Area / Weighted Curve Number			2.51	84

WinTR-55 Current Data Description

--- Identification Data ---

User: Acme Eng. Date: 6/4/2020
Project: Quantum Limit Units: English
SubTitle: Pre-development Areas (A B C D E) Areal Units: Acres
State: California
County: Napa
Filename: Z:\Jobs 2019\190101 Quantum Limit Vineyards\0104 2019 ECP\Calc\04\QL Pre A-E 04.w55

--- Sub-Area Data ---

Name	Description	Reach	Area(ac)	RCN	Tc
A		Outlet	5.88	84	0.1
B		Outlet	1.8	84	0.1
C		Outlet	2.51	84	0.1
D		Outlet	2.1	80	0.1
E		Outlet	0.3	80	0.1

Total area: 12.59 (ac)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	0-Yr (in)
4.18	5.5	6.55	7.94	8.98	10.0	.0

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type IA
Dimensionless Unit Hydrograph: <standard>

Quantum Limit
Pre-development Areas (A B C D E)
Napa County, California

Storm Data

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	0-Yr (in)
4.18	5.5	6.55	7.94	8.98	10.0	.0

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type IA
Dimensionless Unit Hydrograph: <standard>

Quantum Limit
Pre-development Areas (A B C D E)
Napa County, California

Watershed Peak Table

Sub-Area or Reach Identifier	Peak Flow by Rainfall Return Period 2-Yr (cfs)	5-Yr (cfs)	10-Yr (cfs)	25-Yr (cfs)	50-Yr (cfs)	100-Yr (cfs)
SUBAREAS						
A	3.74	5.66	7.21	9.29	10.84	12.36
B	1.14	1.73	2.21	2.84	3.31	3.78
C	1.59	2.41	3.08	3.96	4.62	5.27
D	1.11	1.76	2.30	3.03	3.58	4.13
E	0.16	0.25	0.33	0.43	0.51	0.59
REACHES						
OUTLET	7.74	11.81	15.12	19.55	22.87	26.13

Acme Eng.

Quantum Limit
Pre-development Areas (A B C D E)
Napa County, California

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period					
	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr
	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
	(hr)	(hr)	(hr)	(hr)	(hr)	(hr)
SUBAREAS						
A	3.74	5.66	7.21	9.29	10.84	12.36
	7.93	7.93	7.92	7.91	7.91	7.91
B	1.14	1.73	2.21	2.84	3.31	3.78
	7.93	7.93	7.92	7.91	7.91	7.91
C	1.59	2.41	3.08	3.96	4.62	5.27
	7.93	7.93	7.92	7.91	7.91	7.91
D	1.11	1.76	2.30	3.03	3.58	4.13
	7.94	7.93	7.93	7.92	7.92	7.92
E	0.16	0.25	0.33	0.43	0.51	0.59
	7.94	7.93	7.93	7.92	7.92	7.92
REACHES						
OUTLET	7.74	11.81	15.12	19.55	22.87	26.13

Acme Eng.

Quantum Limit
Pre-development Areas (A B C D E)
Napa County, California

Sub-Area Summary Table

Sub-Area Identifier	Drainage Area (ac)	Time of Concentration (hr)	Curve Number	Receiving Reach	Sub-Area Description
A	5.88	0.100	84	Outlet	
B	1.80	0.100	84	Outlet	
C	2.51	0.100	84	Outlet	
D	2.10	0.100	80	Outlet	
E	.30	0.100	80	Outlet	

Total Area: 12.59 (ac)

Quantum Limit
Pre-development Areas (A B C D E)
Napa County, California

Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
A							
SHEET	100	0.1640	0.011				0.008
SHALLOW	41	0.0650	0.050				0.003
SHALLOW	778	0.2140	0.050				0.029
					Time of Concentration		0.1
B							
SHEET	100	0.4680	0.150				0.040
SHALLOW	296	0.4040	0.050				0.008
SHALLOW	209	0.1510	0.050				0.009
					Time of Concentration		0.1
C							
SHEET	100	0.1640	0.150				0.062
SHALLOW	232	0.3390	0.050				0.007
SHALLOW	175	0.0840	0.050				0.010
					Time of Concentration		0.1
D							
SHEET	100	0.1400	0.150				0.066
SHALLOW	289	0.2200	0.050				0.011
SHALLOW	350	0.4000	0.050				0.010
					Time of Concentration		0.1
E							
SHEET	100	0.1960	0.150				0.057
SHALLOW	59	0.1770	0.050				0.002
SHALLOW	74	0.3010	0.050				0.002
					Time of Concentration		0.1

Acme Eng.

Quantum Limit
Pre-development Areas (A B C D E)
Napa County, California

Sub-Area Land Use and Curve Number Details

Sub-Area Identifier	Land Use		Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
A	Paved parking lots, roofs, driveways		D	.28	98
	Pasture, grassland or range	(fair)	D	3.4	84
	Pasture, grassland or range	(good)	D	1.08	80
	Woods - grass combination	(fair)	D	1.12	82
	Total Area / Weighted Curve Number			5.88	84
				====	==
B	Pasture, grassland or range	(fair)	D	1.6	84
	Pasture, grassland or range	(good)	D	.1	80
	Woods - grass combination	(fair)	D	.1	82
	Total Area / Weighted Curve Number			1.8	84
				===	==
C	Pasture, grassland or range	(fair)	D	2.33	84
	Woods - grass combination	(fair)	D	.18	82
	Total Area / Weighted Curve Number			2.51	84
				====	==
D	Pasture, grassland or range	(good)	D	1.8	80
	Woods - grass combination	(fair)	D	.3	82
	Total Area / Weighted Curve Number			2.1	80
				===	==
E	Pasture, grassland or range	(good)	D	.3	80
	Total Area / Weighted Curve Number			.3	80
				==	==

WinTR-55 Current Data Description

--- Identification Data ---

User: Acme Eng.
Project: Quantum Limit
SubTitle: Post Development (Area A)
State: California
County: Napa
Filename: Z:\Jobs 2019\190101 Quantum Limit Vineyards\0104 2019 ECP\Calc\06\Hydrology\QL Post A 06.w55

Date: 9/3/2021
Units: English
Areal Units: Acres

--- Sub-Area Data ---

Name	Description	Reach	Area(ac)	RCN	Tc
A1		Reach 1	2.27	83	0.100
A2		Reach 2	1.24	83	0.100
A3		Reach 3	1.05	85	0.100
A4		Reach 4	0.59	82	0.1
A5		Reach 5	0.56	81	0.1
A6		Reach 6	0.14	80	0.1
A7		Outlet	0.03	80	0.1

Total area: 5.88 (ac)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	0-Yr (in)
4.18	5.5	6.55	7.94	8.98	10.0	.0

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type IA
Dimensionless Unit Hydrograph: <standard>

Storm Data

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	0-Yr (in)
4.18	5.5	6.55	7.94	8.98	10.0	.0

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type IA
Dimensionless Unit Hydrograph: <standard>

Quantum Limit
Post Development (Area A)
Napa County, California

Watershed Peak Table

Sub-Area or Reach Identifier	Peak Flow by Rainfall Return Period 2-Yr (cfs)	5-Yr (cfs)	10-Yr (cfs)	25-Yr (cfs)	50-Yr (cfs)	100-Yr (cfs)
SUBAREAS						
A1	1.38	2.11	2.71	3.51	4.11	4.70
A2	0.75	1.16	1.48	1.92	2.25	2.57
A3	0.70	1.04	1.32	1.69	1.97	2.24
A4	0.34	0.53	0.68	0.89	1.05	1.20
A5	0.31	0.49	0.64	0.83	0.98	1.13
A6	0.07	0.12	0.15	0.20	0.24	0.28
A7	.00	.00	.00	.00	0.05	0.06
REACHES						
Reach 1	1.38	2.11	2.71	3.51	4.11	4.70
Down	1.38	2.11	2.71	3.51	4.11	4.70
Reach 2	2.14	3.27	4.20	5.43	6.36	7.27
Down	2.14	3.27	4.20	5.43	6.36	7.27
Reach 3	2.83	4.31	5.52	7.12	8.33	9.51
Down	2.83	4.31	5.52	7.12	8.33	9.51
Reach 4	3.17	4.84	6.20	8.01	9.37	10.71
Down	3.17	4.84	6.20	8.01	9.37	10.71
Reach 5	3.49	5.33	6.84	8.85	10.35	11.83
Down	3.49	5.33	6.84	8.85	10.35	11.83
Reach 6	3.56	5.45	6.99	9.05	10.59	12.11
Down	3.56	5.45	6.99	9.05	10.59	12.11
OUTLET	3.56	5.45	6.99	9.05	10.65	12.17

Acme Eng.

Quantum Limit
Post Development (Area A)
Napa County, California

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period 2-Yr (cfs)	(hr)	5-Yr (cfs)	(hr)	10-Yr (cfs)	(hr)	25-Yr (cfs)	(hr)	50-Yr (cfs)	(hr)	100-Yr (cfs)	(hr)
SUBAREAS												
A1	1.38	7.93	2.11	7.92	2.71	7.92	3.51	7.92	4.11	7.91	4.70	7.92
A2	0.75	7.93	1.16	7.92	1.48	7.92	1.92	7.92	2.25	7.91	2.57	7.92
A3	0.70	7.93	1.04	7.92	1.32	7.92	1.69	7.91	1.97	7.91	2.24	7.91
A4	0.34	7.93	0.53	7.93	0.68	7.93	0.89	7.92	1.05	7.92	1.20	7.91
A5	0.31	7.93	0.49	7.93	0.64	7.92	0.83	7.92	0.98	7.92	1.13	7.92
A6	0.07	7.94	0.12	7.93	0.15	7.93	0.20	7.92	0.24	7.92	0.28	7.92
A7	.00	n/a	.00	n/a	.00	n/a	.00	n/a	0.05	7.92	0.06	7.92
REACHES												
Reach 1	1.38	7.93	2.11	7.92	2.71	7.92	3.51	7.92	4.11	7.91	4.70	7.92
Down	1.38	7.93	2.11	7.92	2.71	7.93	3.51	7.92	4.11	7.92	4.70	7.92
Reach 2	2.14	7.93	3.27	7.92	4.20	7.92	5.43	7.92	6.36	7.92	7.27	7.92
Down	2.14	7.93	3.27	7.92	4.20	7.93	5.43	7.92	6.36	7.92	7.27	7.92
Reach 3	2.83	7.93	4.31	7.92	5.52	7.92	7.12	7.92	8.33	7.92	9.51	7.91
Down	2.83	7.93	4.31	7.92	5.52	7.92	7.12	7.92	8.33	7.92	9.51	7.91
Reach 4	3.17	7.93	4.84	7.92	6.20	7.92	8.01	7.92	9.37	7.92	10.71	7.91
Down	3.17	7.93	4.84	7.92	6.20	7.92	8.01	7.92	9.37	7.92	10.71	7.91
Reach 5	3.49	7.93	5.33	7.92	6.84	7.92	8.85	7.92	10.35	7.92	11.83	7.91
Down	3.49	7.93	5.33	7.93	6.84	7.93	8.85	7.92	10.35	7.92	11.83	7.91
Reach 6	3.56	7.93	5.45	7.93	6.99	7.93	9.05	7.92	10.59	7.92	12.11	7.91
Down	3.56	7.94	5.45	7.93	6.99	7.93	9.05	7.92	10.59	7.92	12.11	7.92
OUTLET	3.56		5.45		6.99		9.05		10.65		12.17	

Acme Eng.

Quantum Limit
Post Development (Area A)
Napa County, California

Structure Output Table

Reach Identifier / Structure Identifier	Peak Flow (PF), Storage Volume (SV), Stage (STG) by Rainfall Return Period					
	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr

Acme Eng.

Quantum Limit
Post Development (Area A)
Napa County, California

Sub-Area Summary Table

Sub-Area Identifier	Drainage Area (ac)	Time of Concentration (hr)	Curve Number	Receiving Reach	Sub-Area Description
A1	2.27	0.100	83	Reach 1	
A2	1.24	0.100	83	Reach 2	
A3	1.05	0.100	85	Reach 3	
A4	.59	0.100	82	Reach 4	
A5	.56	0.100	81	Reach 5	
A6	.14	0.100	80	Reach 6	
A7	.03	0.100	80	Outlet	

Total Area: 5.88 (ac)

Quantum Limit
Post Development (Area A)
Napa County, California

Reach Summary Table

Reach Identifier	Receiving Reach Identifier	Reach Length (ft)	Routing Method
Reach 1	Reach 2	133	CHANNEL
Reach 2	Reach 3	62	CHANNEL
Reach 3	Reach 4	68	CHANNEL
Reach 4	Reach 5	73	CHANNEL
Reach 5	Reach 6	76	CHANNEL
Reach 6	Outlet	422	CHANNEL

Quantum Limit
Post Development (Area A)
Napa County, California

Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
A1							
SHEET	100	0.1646	0.011				0.008
SHALLOW	41	0.0646	0.050				0.003
SHALLOW	388	0.2802	0.050				0.013
					Time of Concentration		0.100
A2							
SHEET	100	0.2690	0.150				0.051
SHALLOW	48	0.1170	0.050				0.002
					Time of Concentration		0.100
A3							
SHEET	86	0.0700	0.150				0.077
					Time of Concentration		0.100
A4							
SHEET	70	0.1100	0.150				0.054
					Time of Concentration		0.1
A5							
SHEET	75	0.1330	0.150				0.053
					Time of Concentration		0.1
A6							
SHEET	100	0.1204	0.150				0.070
SHALLOW	99	0.2038	0.050				0.004
					Time of Concentration		0.1
A7							
SHEET	89	0.2210	0.150				0.050
					Time of Concentration		0.1

Sub-Area Land Use and Curve Number Details

Sub-Area Identifier	Land Use		Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
A1	Paved parking lots, roofs, driveways		D	.13	98
	Pasture, grassland or range	(fair)	D	.89	84
	Pasture, grassland or range	(good)	D	1.01	80
	Woods - grass combination	(fair)	D	.24	82
	Total Area / Weighted Curve Number			2.27	83
A2	Paved parking lots, roofs, driveways		D	.01	98
	Pasture, grassland or range	(fair)	D	.66	84
	Pasture, grassland or range	(good)	D	.3	80
	Woods - grass combination	(fair)	D	.27	82
	Total Area / Weighted Curve Number			1.24	83
A3	Paved parking lots, roofs, driveways		D	.14	98
	Pasture, grassland or range	(fair)	D	.56	84
	Pasture, grassland or range	(good)	D	.29	80
	Woods - grass combination	(fair)	D	.06	82
	Total Area / Weighted Curve Number			1.05	85
A4	Pasture, grassland or range	(fair)	D	.13	84
	Pasture, grassland or range	(good)	D	.27	80
	Woods - grass combination	(fair)	D	.19	82
	Total Area / Weighted Curve Number			.59	82
A5	Pasture, grassland or range	(fair)	D	.11	84
	Pasture, grassland or range	(good)	D	.41	80
	Woods - grass combination	(fair)	D	.04	82
	Total Area / Weighted Curve Number			.56	81
A6	Pasture, grassland or range	(good)	D	.14	80
	Total Area / Weighted Curve Number			.14	80
A7	Pasture, grassland or range	(good)	D	.03	80
	Total Area / Weighted Curve Number			.03	80

Quantum Limit
Post Development (Area A)
Napa County, California

Reach Channel Rating Details

Reach Identifier	Reach Length (ft)	Reach Manning's n	Friction Slope (ft/ft)	Bottom Width (ft)	Side Slope
Reach 1	133	0.012	0.245	0	.78 :1
Reach 2	62	0.012	0.097	0	.78 :1
Reach 3	68	0.012	0.113	0	.78 :1
Reach 4	73	0.012	0.14	0	.78 :1
Reach 5	76	0.012	0.101	0	.78 :1
Reach 6	422	0.012	0.221	0	.78 :1

Reach Identifier	Stage (ft)	Flow (cfs)	End Area (sq ft)	Top Width (ft)	Friction Slope (ft/ft)
Reach 1	0.0	0.000	0	0	0.245
	0.5	3.560	0.2	0.8	
	1.0	22.191	0.8	1.6	
	2.0	139.603	3.1	3.1	
	5.0	1598.229	19.6	7.8	
	10.0	10129.162	78.1	15.6	
	20.0	64256.000	312.2	31.2	
Reach 2	0.0	0.000	0	0	0.097
	0.5	2.240	0.2	0.8	
	1.0	13.963	0.8	1.6	
	2.0	87.841	3.1	3.1	
	5.0	1005.638	19.6	7.8	
	10.0	6373.476	78.1	15.6	
	20.0	40431.189	312.2	31.2	
Reach 3	0.0	0.000	0	0	0.113
	0.5	2.417	0.2	0.8	
	1.0	15.071	0.8	1.6	
	2.0	94.809	3.1	3.1	
	5.0	1085.413	19.6	7.8	
	10.0	6879.070	78.1	15.6	
	20.0	43638.505	312.2	31.2	
Reach 4	0.0	0.000	0	0	0.14
	0.5	2.691	0.2	0.8	
	1.0	16.775	0.8	1.6	
	2.0	105.530	3.1	3.1	
	5.0	1208.147	19.6	7.8	
	10.0	7656.927	78.1	15.6	
	20.0	48572.970	312.2	31.2	
Reach 5	0.0	0.000	0	0	0.101
	0.5	2.285	0.2	0.8	
	1.0	14.248	0.8	1.6	
	2.0	89.634	3.1	3.1	
	5.0	1026.164	19.6	7.8	
	10.0	6503.560	78.1	15.6	
	20.0	41256.400	312.2	31.2	
Reach 6	0.0	0.000	0	0	0.221
	0.5	3.381	0.2	0.8	
	1.0	21.076	0.8	1.6	
	2.0	132.589	3.1	3.1	
	5.0	1517.931	19.6	7.8	
	10.0	9620.256	78.1	15.6	
	20.0	61027.669	312.2	31.2	

Quantum Limit
Post Development (Area A)
Napa County, California

Structure Description - User Entered

Reach Identifier	Surface Area @ Crest (ac)	Height Above Crest (ft)	Surface Area @ Ht Above (ac)	Pipe Diameter (in)	Head on Pipe (ft)	Weir Length (ft)

Quantum Limit
Post Development (Area A)
Napa County, California

Structure Rating Details - Computed

WinTR-55 Current Data Description

--- Identification Data ---

User: Acme Eng. Date: 12/16/2020
Project: Quantum Limit B Units: English
SubTitle: Post Development (Area B) Areal Units: Acres
State: California
County: Napa
Filename: Z:\Jobs 2019\190101 Quantum Limit Vineyards\0104 2019 ECP\Calc\05\Hydrology\Quantum Limit TR

--- Sub-Area Data ---

Name	Description	Reach	Area(ac)	RCN	Tc
B		Outlet	1.8	82	0.1

Total area: 1.80 (ac)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	0-Yr (in)
4.18	5.5	6.55	7.94	8.98	10.0	.0

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type IA
Dimensionless Unit Hydrograph: <standard>

Quantum Limit B
Post Development (Area B)
Napa County, California

Storm Data

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	0-Yr (in)
4.18	5.5	6.55	7.94	8.98	10.0	.0

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type IA
Dimensionless Unit Hydrograph: <standard>

Quantum Limit B
Post Development (Area B)
Napa County, California

Watershed Peak Table

Sub-Area or Reach Identifier	Peak Flow by Rainfall Return Period 2-Yr (cfs)	5-Yr (cfs)	10-Yr (cfs)	25-Yr (cfs)	50-Yr (cfs)	100-Yr (cfs)
SUBAREAS						
B	1.04	1.62	2.09	2.72	3.19	3.66
REACHES						
OUTLET	1.04	1.62	2.09	2.72	3.19	3.66

Acme Eng.

Quantum Limit B
Post Development (Area B)
Napa County, California

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period 2-Yr (cfs)	(hr)	5-Yr (cfs)	(hr)	10-Yr (cfs)	(hr)	25-Yr (cfs)	(hr)	50-Yr (cfs)	(hr)	100-Yr (cfs)	(hr)
SUBAREAS												
B	1.04	7.93	1.62	7.93	2.09	7.93	2.72	7.92	3.19	7.92	3.66	7.91
REACHES												
OUTLET	1.04		1.62		2.09		2.72		3.19		3.66	

Quantum Limit B
Post Development (Area B)
Napa County, California

Sub-Area Summary Table

Sub-Area Identifier	Drainage Area (ac)	Time of Concentration (hr)	Curve Number	Receiving Reach	Sub-Area Description
B	1.80	0.100	82	Outlet	

Total Area: 1.80 (ac)

Quantum Limit B
Post Development (Area B)
Napa County, California

Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
B							
SHEET	100	0.4680	0.011				0.005
SHALLOW	296	0.4040	0.050				0.008
SHALLOW	209	0.1510	0.050				0.009
						Time of Concentration	0.1

Quantum Limit B
Post Development (Area B)
Napa County, California

Sub-Area Land Use and Curve Number Details

Sub-Area Identifier	Land Use		Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
B	Pasture, grassland or range	(fair)	D	1	84
	Pasture, grassland or range	(good)	D	.7	80
	Woods - grass combination	(fair)	D	.1	82
	Total Area / Weighted Curve Number			1.8	82

WinTR-55 Current Data Description

--- Identification Data ---

User: Acme Eng.
Project: Quantum Limit
SubTitle: Post Development (Area C)
State: California
County: Napa
Filename: Z:\Jobs 2019\190101 Quantum Limit Vineyards\0104 2019 ECP\Calc\05\Hydrology\Quantum Limit TR

Date: 12/16/2020
Units: English
Areal Units: Acres

--- Sub-Area Data ---

Name	Description	Reach	Area(ac)	RCN	Tc
C1		Outlet	0.32	80	0.1
C2		Outlet	0.53	80	0.1
C3		Outlet	0.23	80	0.1
C4		Outlet	0.19	80	0.1
C5		Outlet	0.29	80	0.100
C6		Outlet	0.2	80	0.1
C7		Outlet	0.75	80	0.100

Total area: 2.51 (ac)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	0-Yr (in)
4.18	5.5	6.55	7.94	8.98	10.0	.0

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type IA
Dimensionless Unit Hydrograph: <standard>

Storm Data

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	0-Yr (in)
4.18	5.5	6.55	7.94	8.98	10.0	.0

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type IA
Dimensionless Unit Hydrograph: <standard>

Acme Eng.

Quantum Limit
Post Development (Area C)
Napa County, California

Watershed Peak Table

Sub-Area or Reach Identifier	Peak Flow by Rainfall Return Period 2-Yr (cfs)	5-Yr (cfs)	10-Yr (cfs)	25-Yr (cfs)	50-Yr (cfs)	100-Yr (cfs)
SUBAREAS						
C1	0.17	0.27	0.35	0.46	0.55	0.63
C2	0.28	0.45	0.58	0.77	0.91	1.04
C3	0.12	0.19	0.25	0.33	0.39	0.45
C4	0.10	0.16	0.21	0.28	0.33	0.38
C5	0.15	0.24	0.32	0.42	0.49	0.57
C6	0.10	0.17	0.22	0.29	0.34	0.39
C7	0.39	0.63	0.82	1.08	1.28	1.47
REACHES						
OUTLET	1.32	2.10	2.75	3.62	4.28	4.93

Quantum Limit
Post Development (Area C)
Napa County, California

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period					
	2-Yr (cfs) (hr)	5-Yr (cfs) (hr)	10-Yr (cfs) (hr)	25-Yr (cfs) (hr)	50-Yr (cfs) (hr)	100-Yr (cfs) (hr)
SUBAREAS						
C1	0.17 7.94	0.27 7.93	0.35 7.93	0.46 7.92	0.55 7.92	0.63 7.92
C2	0.28 7.94	0.45 7.93	0.58 7.93	0.77 7.92	0.91 7.92	1.04 7.92
C3	0.12 7.94	0.19 7.93	0.25 7.93	0.33 7.92	0.39 7.92	0.45 7.92
C4	0.10 7.94	0.16 7.93	0.21 7.93	0.28 7.92	0.33 7.92	0.38 7.92
C5	0.15 7.94	0.24 7.93	0.32 7.93	0.42 7.92	0.49 7.92	0.57 7.92
C6	0.10 7.94	0.17 7.93	0.22 7.93	0.29 7.92	0.34 7.92	0.39 7.92
C7	0.39 7.94	0.63 7.93	0.82 7.93	1.08 7.92	1.28 7.92	1.47 7.92
REACHES						
OUTLET	1.32	2.10	2.75	3.62	4.28	4.93

Acme Eng.

Quantum Limit
Post Development (Area C)
Napa County, California

Sub-Area Summary Table

Sub-Area Identifier	Drainage Area (ac)	Time of Concentration (hr)	Curve Number	Receiving Reach	Sub-Area Description
C1	.32	0.100	80	Outlet	
C2	.53	0.100	80	Outlet	
C3	.23	0.100	80	Outlet	
C4	.19	0.100	80	Outlet	
C5	.29	0.100	80	Outlet	
C6	.20	0.100	80	Outlet	
C7	.75	0.100	80	Outlet	

Total Area: 2.51 (ac)

Quantum Limit
Post Development (Area C)
Napa County, California

Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
C1							
SHEET	100	0.1932	0.150				0.058
SHALLOW	50	0.2386	0.050				0.002
CHANNEL	119	0.0400	0.035	0.89	2.98	3.673	0.009
					Time of Concentration		0.1
C2							
SHEET	100	0.1280	0.150				0.068
SHALLOW	118	0.1981	0.050				0.005
CHANNEL	98	0.0400	0.035	0.89	2.98	3.889	0.007
					Time of Concentration		0.1
C3							
SHEET	65	0.4072	0.150				0.030
CHANNEL	129	0.0400	0.035	0.89	2.98	3.981	0.009
					Time of Concentration		0.1
C4							
SHEET	62	0.3950	0.150				0.030
CHANNEL	133	0.0400	0.035	0.89	2.98	3.694	0.010
					Time of Concentration		0.1
C5							
SHEET	73	0.3550	0.150				0.035
CHANNEL	103	0.0400	0.035	0.89	2.98	3.576	0.008
					Time of Concentration		0.100
C6							
SHEET	68	0.3710	0.150				0.033
CHANNEL	127	0.0400	0.035	0.89	2.98	3.920	0.009
					Time of Concentration		0.1
C7							
SHEET	100	0.0830	0.150				0.081
SHALLOW	64	0.0890	0.050				0.004
					Time of Concentration		0.100

Quantum Limit
Post Development (Area C)
Napa County, California

Sub-Area Land Use and Curve Number Details

Sub-Area Identifier	Land Use		Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
C1	Pasture, grassland or range	(good)	D	.32	80
	Total Area / Weighted Curve Number			.32	80
C2	Pasture, grassland or range	(good)	D	.53	80
	Total Area / Weighted Curve Number			.53	80
C3	Pasture, grassland or range	(good)	D	.23	80
	Total Area / Weighted Curve Number			.23	80
C4	Pasture, grassland or range	(good)	D	.19	80
	Total Area / Weighted Curve Number			.19	80
C5	Pasture, grassland or range	(good)	D	.29	80
	Total Area / Weighted Curve Number			.29	80
C6	Pasture, grassland or range	(good)	D	.2	80
	Total Area / Weighted Curve Number			.2	80
C7	Pasture, grassland or range	(good)	D	.75	80
	Total Area / Weighted Curve Number			.75	80

WinTR-55 Current Data Description

--- Identification Data ---

User: Acme Eng. Date: 6/4/2020
Project: Quantum Limit Vineyards Units: English
SubTitle: Post Development (Area D) Areal Units: Acres
State: California
County: Napa
Filename: Z:\Jobs 2019\190101 Quantum Limit Vineyards\0104 2019 ECP\Calc\04\Quantum Limit TR55 Post (Area

--- Sub-Area Data ---

Name	Description	Reach	Area(ac)	RCN	Tc
D		Outlet	2.1	80	0.1

Total area: 2.10 (ac)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	0-Yr (in)
4.18	5.5	6.55	7.94	8.98	10.0	.0

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type IA
Dimensionless Unit Hydrograph: <standard>

Storm Data

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	0-Yr (in)
4.18	5.5	6.55	7.94	8.98	10.0	.0

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type IA
Dimensionless Unit Hydrograph: <standard>

Acme Eng.

Quantum Limit Vineyards
Post Development (Area D)
Napa County, California

Watershed Peak Table

Sub-Area or Reach Identifier	Peak Flow by Rainfall Return Period 2-Yr (cfs)	5-Yr (cfs)	10-Yr (cfs)	25-Yr (cfs)	50-Yr (cfs)	100-Yr (cfs)
SUBAREAS						
D	1.11	1.76	2.30	3.03	3.58	4.13
REACHES						
OUTLET	1.11	1.76	2.30	3.03	3.58	4.13

Acme Eng.

Quantum Limit Vineyards
Post Development (Area D)
Napa County, California

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period 2-Yr (cfs)	(hr)	5-Yr (cfs)	(hr)	10-Yr (cfs)	(hr)	25-Yr (cfs)	(hr)	50-Yr (cfs)	(hr)	100-Yr (cfs)	(hr)
SUBAREAS												
D	1.11	7.94	1.76	7.93	2.30	7.93	3.03	7.92	3.58	7.92	4.13	7.92
REACHES												
OUTLET	1.11		1.76		2.30		3.03		3.58		4.13	

Acme Eng.

Quantum Limit Vineyards
Post Development (Area D)
Napa County, California

Sub-Area Summary Table

Sub-Area Identifier	Drainage Area (ac)	Time of Concentration (hr)	Curve Number	Receiving Reach	Sub-Area Description
D	2.10	0.100	80	Outlet	

Total Area: 2.10 (ac)

Quantum Limit Vineyards
Post Development (Area D)
Napa County, California

Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
D							
SHEET	100	0.1400	0.150				0.066
SHALLOW	289	0.2200	0.050				0.011
SHALLOW	350	0.4000	0.050				0.010
						Time of Concentration	0.1

Acme Eng.

Quantum Limit Vineyards
Post Development (Area D)
Napa County, California

Sub-Area Land Use and Curve Number Details

Sub-Area Identifier	Land Use		Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
D	Pasture, grassland or range	(good)	D	1.8	80
	Woods - grass combination	(fair)	D	.3	82
	Total Area / Weighted Curve Number			2.1	80

WinTR-55 Current Data Description

--- Identification Data ---

User: Acme Eng.
Project: Quantum Limit Vineyards
SubTitle: Post Development (Area E)
State: California
County: Napa
Filename: Z:\Jobs 2019\190101 Quantum Limit Vineyards\0104 2019 ECP\Calc\04\Quantum Limit TR55 Post (Area

Date: 6/4/2020
Units: English
Areal Units: Acres

--- Sub-Area Data ---

Name	Description	Reach	Area(ac)	RCN	Tc
E		Outlet	0.3	80	0.100

Total area: .30 (ac)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	0-Yr (in)
4.18	5.5	6.55	7.94	8.98	10.0	.0

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type IA
Dimensionless Unit Hydrograph: <standard>

Quantum Limit Vineyards
Post Development (Area E)
Napa County, California

Storm Data

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	0-Yr (in)
4.18	5.5	6.55	7.94	8.98	10.0	.0

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type IA
Dimensionless Unit Hydrograph: <standard>

Acme Eng.

Quantum Limit Vineyards
Post Development (Area E)
Napa County, California

Watershed Peak Table

Sub-Area or Reach Identifier	Peak Flow by Rainfall Return Period 2-Yr (cfs)	5-Yr (cfs)	10-Yr (cfs)	25-Yr (cfs)	50-Yr (cfs)	100-Yr (cfs)
SUBAREAS						
E	0.16	0.25	0.33	0.43	0.51	0.59
REACHES						
OUTLET	0.16	0.25	0.33	0.43	0.51	0.59

Acme Eng.

Quantum Limit Vineyards
Post Development (Area E)
Napa County, California

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period					
	2-Yr (cfs)	5-Yr (cfs)	10-Yr (cfs)	25-Yr (cfs)	50-Yr (cfs)	100-Yr (cfs)
	(hr)	(hr)	(hr)	(hr)	(hr)	(hr)
SUBAREAS						
E	0.16	0.25	0.33	0.43	0.51	0.59
	7.94	7.93	7.93	7.92	7.92	7.92
REACHES						
OUTLET	0.16	0.25	0.33	0.43	0.51	0.59

Acme Eng.

Quantum Limit Vineyards
Post Development (Area E)
Napa County, California

Sub-Area Summary Table

Sub-Area Identifier	Drainage Area (ac)	Time of Concentration (hr)	Curve Number	Receiving Reach	Sub-Area Description
E	.30	0.100	80	Outlet	

Total Area: .30 (ac)

Quantum Limit Vineyards
Post Development (Area E)
Napa County, California

Sub-Area Time of Concentration Details

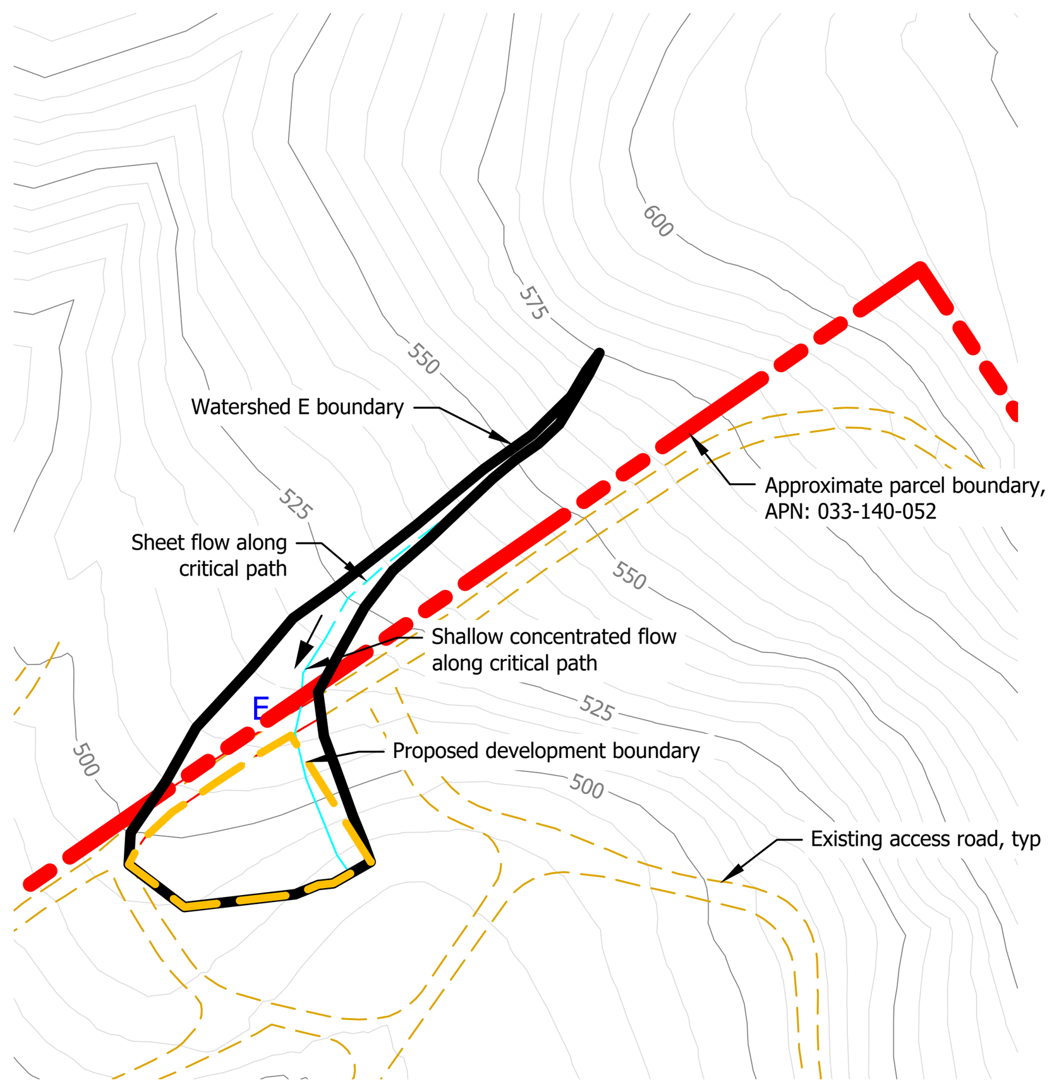
Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
E							
SHEET	100	0.1960	0.150				0.057
SHALLOW	59	0.1770	0.050				0.002
SHALLOW	74	0.3010	0.050				0.002
						Time of Concentration	0.100

Acme Eng.

Quantum Limit Vineyards
Post Development (Area E)
Napa County, California

Sub-Area Land Use and Curve Number Details

Sub-Area Identifier	Land Use	Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
E	Pasture, grassland or range (good)	D	.3	80
	Total Area / Weighted Curve Number		.3	80



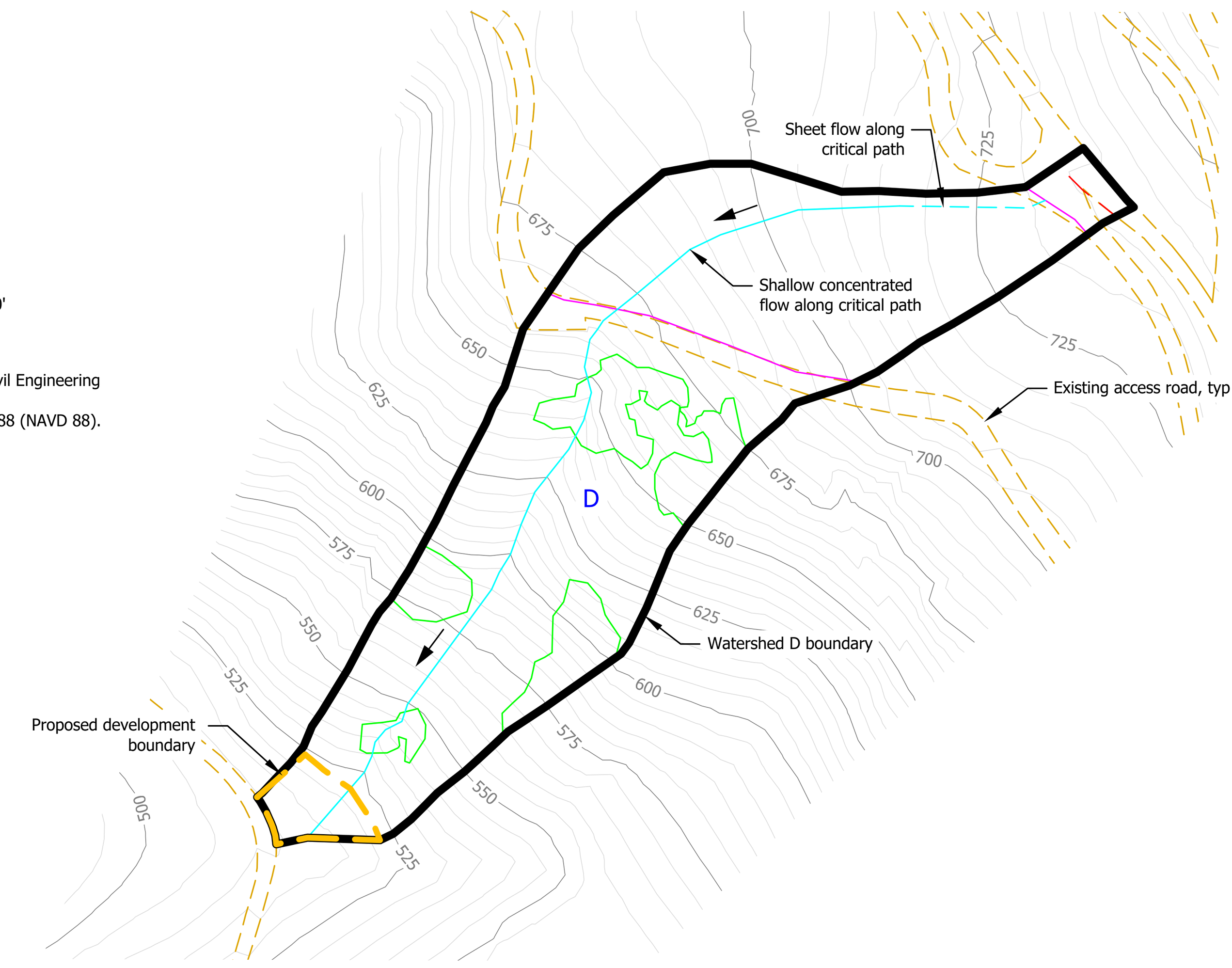
Pre-Development Watershed E Site Plan
Scale: 1" = 100'

N
True

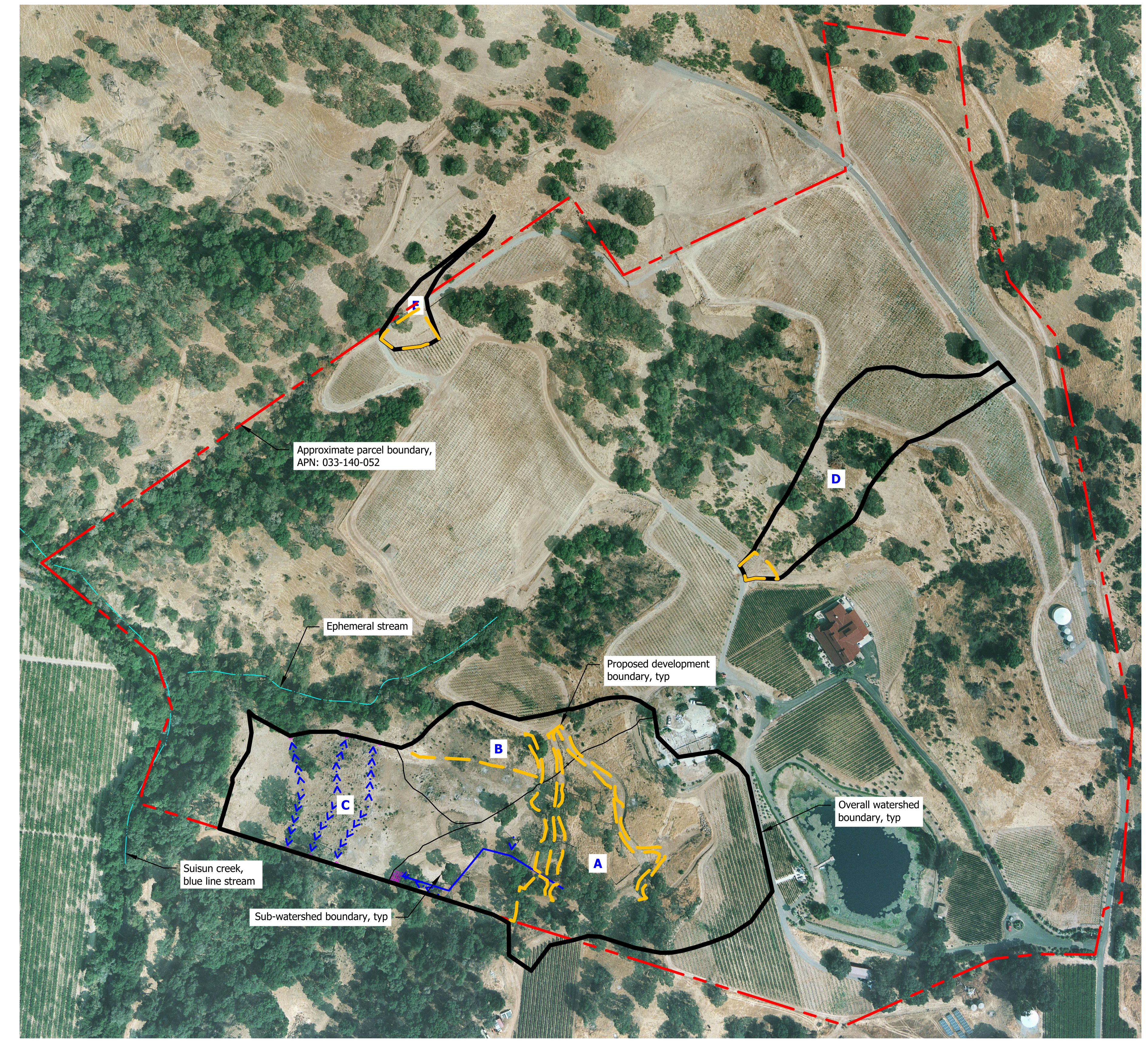
0' 100' 200'

Notes:
1. Topographic information provided by CMP Civil Engineering & Land Surveying.
2. Datum: North American Vertical Datum of 1988 (NAVD 88).

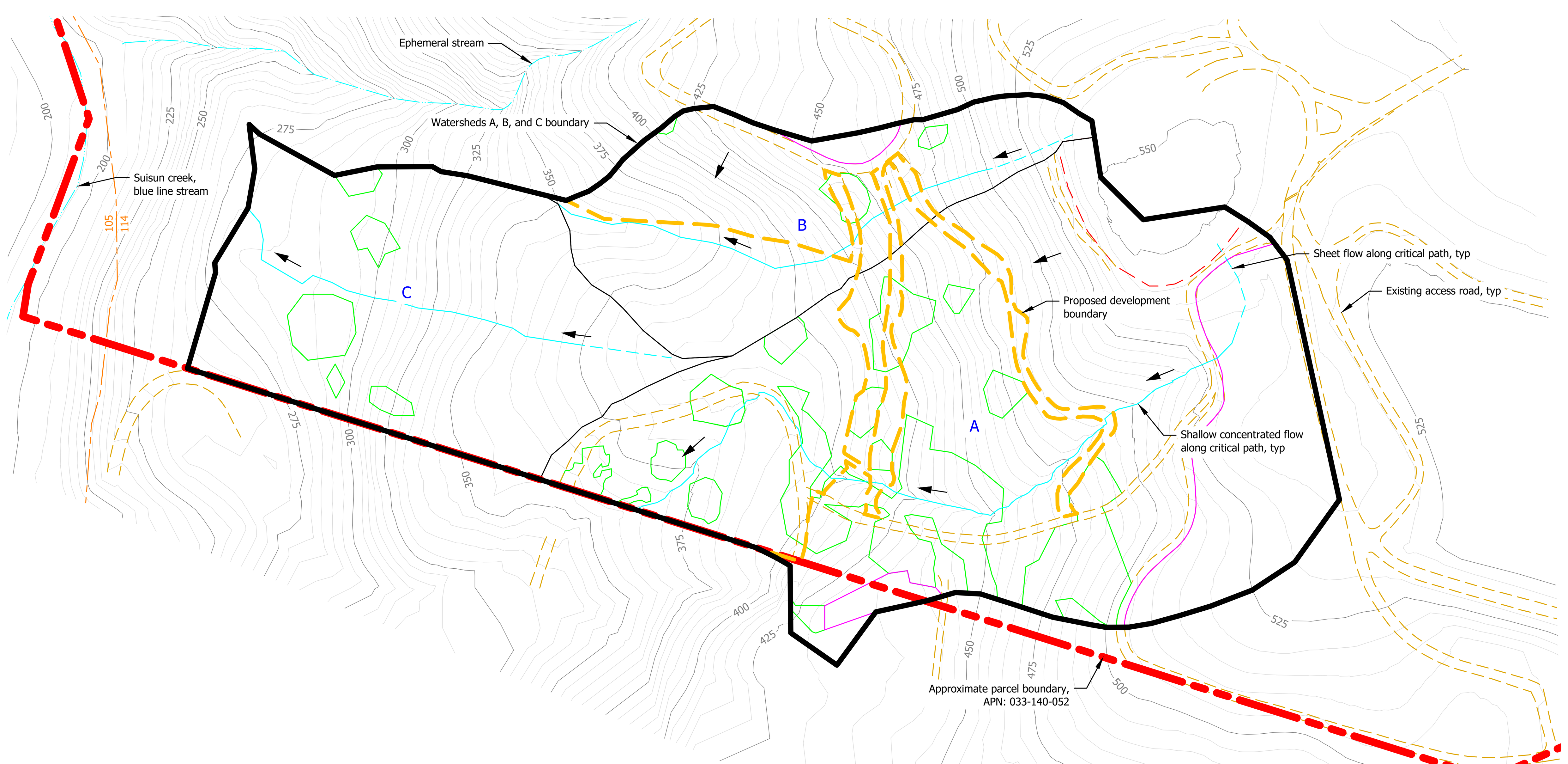
Soil Types on Site:
114 - Bressa-dibble complex
Hydrologic soil group:
Bressa component - C
Dibble component -D



Pre-Development Watershed D Site Plan
Scale: 1" = 100'



Watershed Aerial Map
Scale: 1" = 200'



Pre-Development Watersheds A, B, and C Site Plan
Scale: 1" = 100'

Summary Table Of Pre-Development Hydrologic Characteristics For Quantum Limit Vineyards					
Watershed	**Land Use**	**Hydrologic Condition**	**Hydrologic Soil Group**	**Acres**	**Curve Number**
A	Paved parking lots, roofs, driveways		D	0.28	98
	Pasture, grassland or range	Fair	D	3.40	84
	Pasture, grassland or range	Good	D	1.08	80
	Woods - grass combination	Fair	D	1.12	82
	Total			**5.88**	**84**
B	Pasture, grassland or range	Fair	D	1.60	84
	Pasture, grassland or range	Good	D	0.10	80
	Woods - grass combination	Fair	D	0.10	82
	Total			**1.80**	**84**
C	Pasture, grassland or range	Fair	D	2.33	84
	Woods - grass combination	Fair	D	0.18	82
	Total			**2.51**	**84**
D	Pasture, grassland or range	Good	D	1.80	80
	Woods - grass combination	Fair	D	0.30	82
	Total			**2.10**	**80**
E	Pasture, grassland or range	Good	D	0.30	80
	Total			**0.30**	**80**

Legend
- 1000 — Major contour (25' interval)
- Minor contour (5' interval)
- Watershed area boundary
- Watershed sub-area boundary
- Woodland boundary
- Existing vineyard boundary
- Impervious area boundary
- Sheet flow along critical path
- Shallow concentrated flow along critical path
- Vineyard development boundary
- 105 / 114 — Soil type boundary
- Approximate parcel boundary
- Ephemeral stream
- Blue line stream
- Runoff flow direction arrow
- Access road

NOTES/ REMARKS:
1. 5/15/2020. Addressed comments from Application Completeness Determination Memorandum from Napa County PBES - Engineering Services, dated 04/20/2020.
2. 6/05/2020. Addressed comments from Application Completeness Determination Memorandum from Napa County PBES - Engineering Services, dated 06/03/2020.

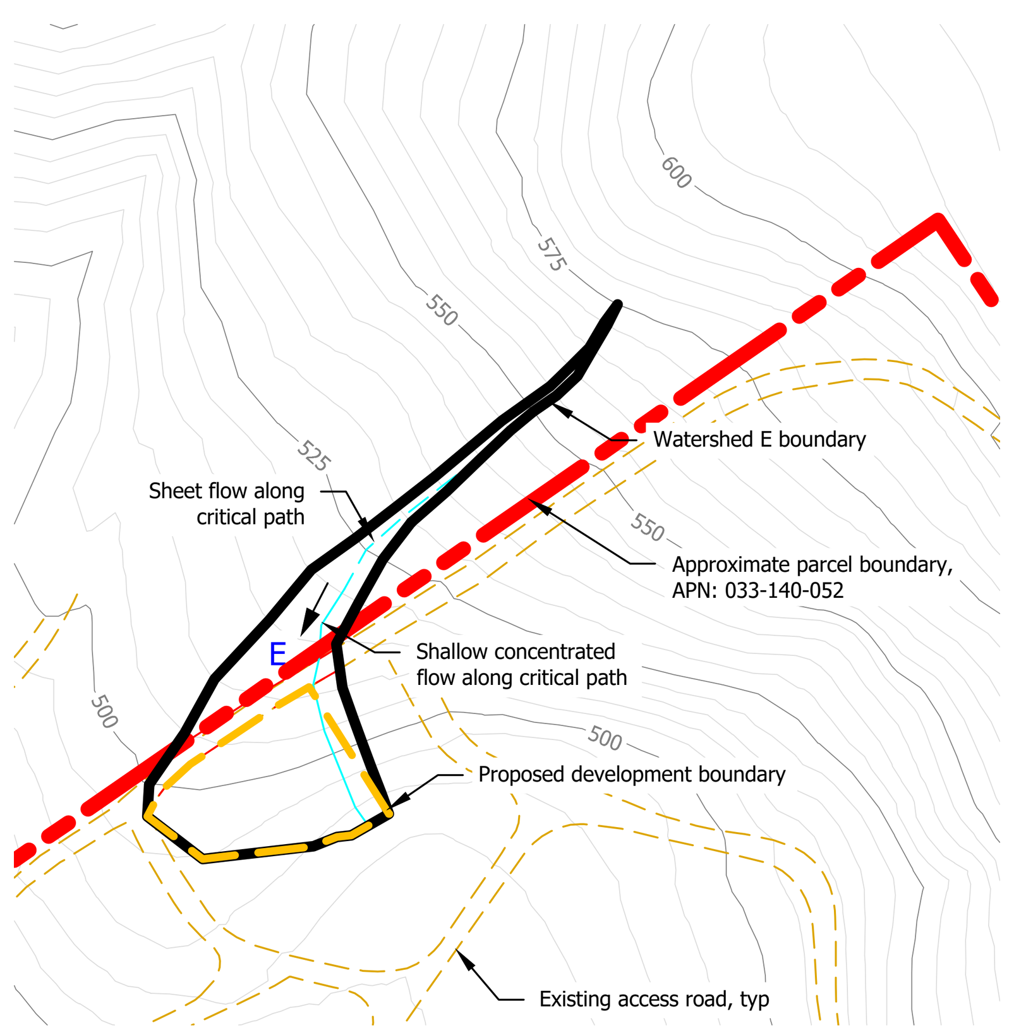
DESIGNED BY OR | DRAWN BY OR | CHECKED BY OR

REGISTERED PROFESSIONAL ENGINEER OMAR REVELES No. C 74723 EXPIRES: 12/21 CIVIL STATE OF CALIFORNIA

ACME Engineering Incorporated
www.acmeng.com
1700 Soscol Avenue
Ste. 9, Napa, CA 94559
707-253-ACME

QUANTUM LIMIT VINEYARDS
NEW VINEYARD DEVELOPMENT
TR55 PRE-DEVELOPMENT SITE PLAN & CURVE NUMBERS

PROJECT NO. 190101-0104
DRAWING NO. 04 01
SCALE AS SHOWN
DATE 06/05/2020
SHEET 1 OF 2

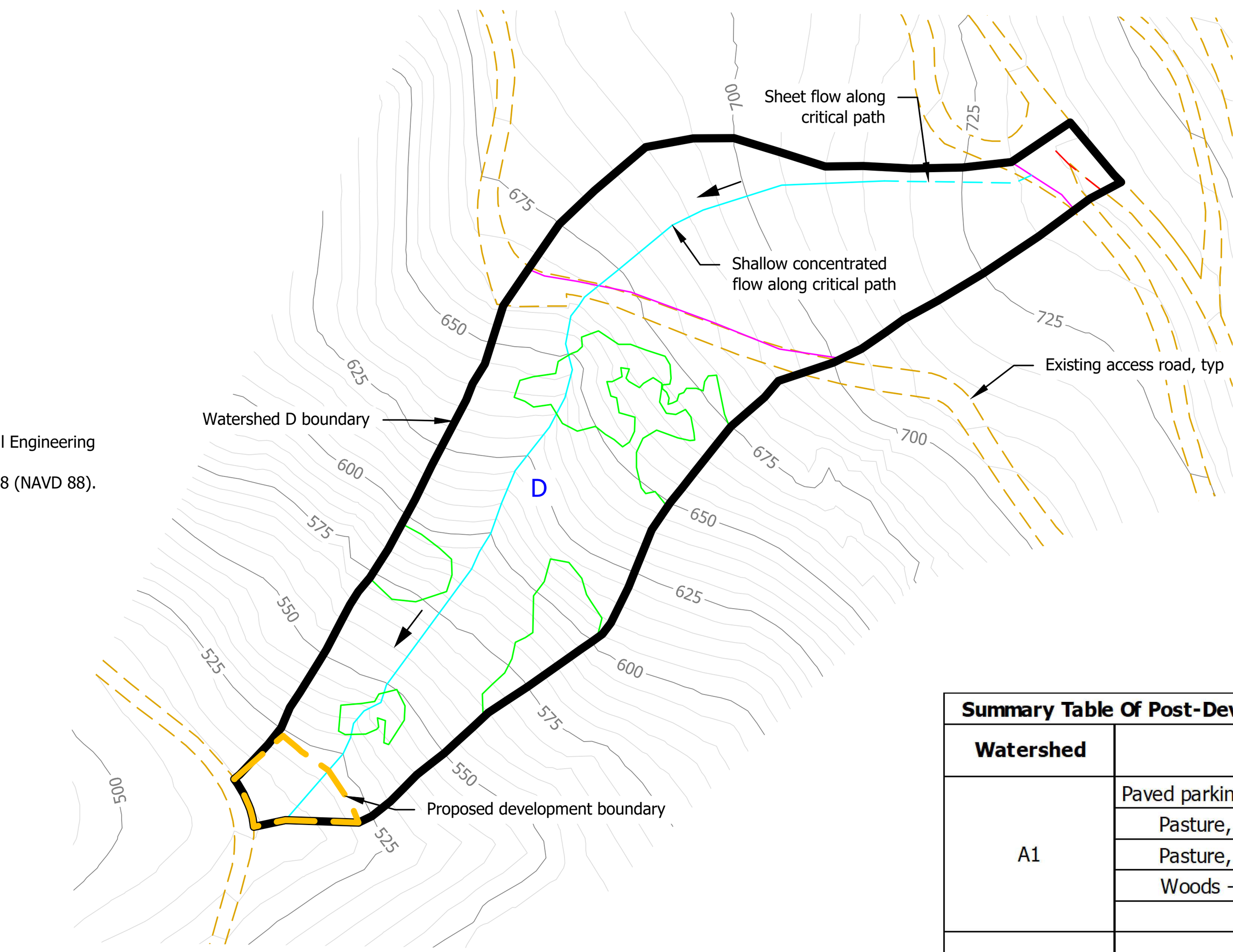


Post-Development Watershed E Site Plan
Scale: 1" = 100'

N
True
0' 100' 200'

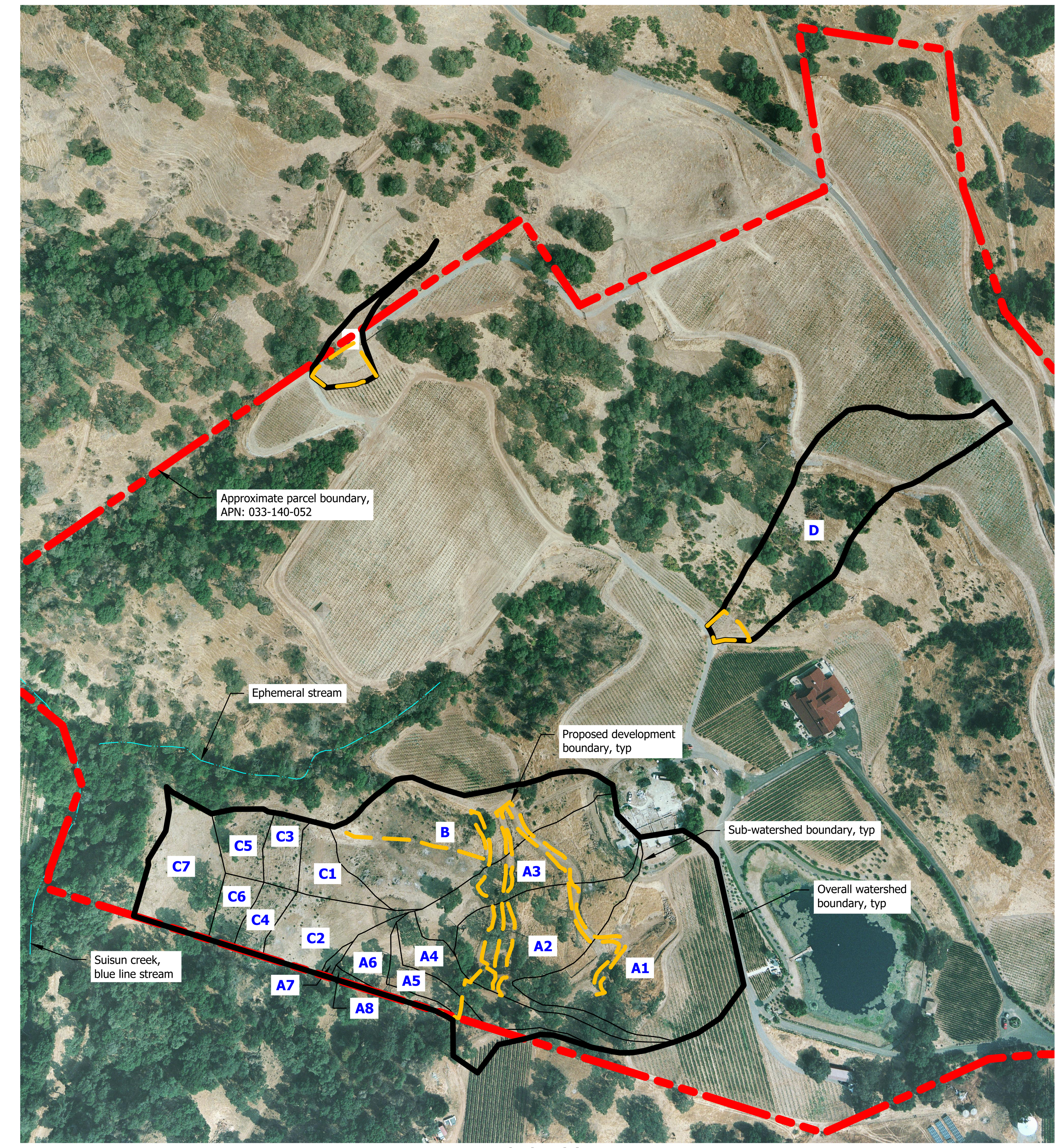
Notes:
1. Topographic information provided by CMP Civil Engineering & Land Surveying.
2. Datum: North American Vertical Datum of 1988 (NAVD 88).

Soil Types on Site:
114 - Bressa-dibble complex
Hydrologic soil group:
Bressa component - C
Dibble component -D



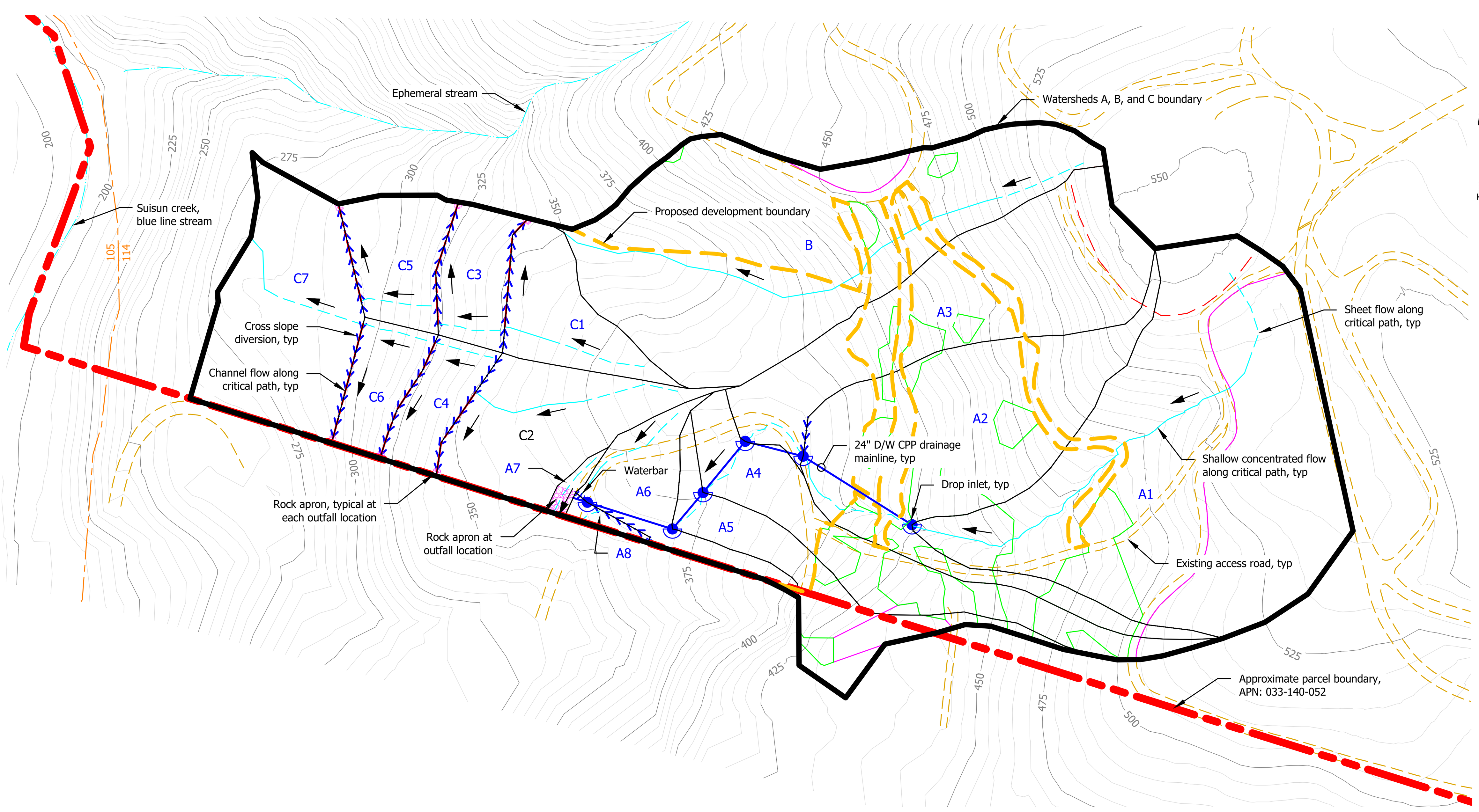
Post-Development Watershed D Site Plan
Scale: 1" = 100'

Summary Table Of Post-Development Hydrologic Characteristics For Quantum Limit Vineyards					
Watershed	**Land Use**	**Hydrologic Condition**	**Hydrologic Soil Group**	**Acres**	**Curve Number**
A1	Paved parking lots, roofs, driveways		D	0.13	98
	Pasture, grassland or range	Fair	D	0.89	84
	Pasture, grassland or range	Good	D	1.01	80
	Woods - grass combination	Fair	D	0.24	82
	Total			**2.27**	**83**
A2	Paved parking lots, roofs, driveways		D	0.01	98
	Pasture, grassland or range	Fair	D	0.66	84
	Pasture, grassland or range	Good	D	0.30	80
	Woods - grass combination	Fair	D	0.27	82
	Total			**1.24**	**83**
A3	Paved parking lots, roofs, driveways		D	0.14	98
	Pasture, grassland or range	Fair	D	0.56	84
	Pasture, grassland or range	Good	D	0.29	80
	Woods - grass combination	Fair	D	0.06	82
	Total			**1.05**	**85**
A4	Pasture, grassland or range	Fair	D	0.13	84
	Pasture, grassland or range	Good	D	0.27	80
	Woods - grass combination	Fair	D	0.19	82
	Total			**0.59**	**82**
A5	Pasture, grassland or range	Fair	D	0.10	84
	Pasture, grassland or range	Good	D	0.25	80
	Woods - grass combination	Fair	D	0.04	82
	Total			**0.39**	**81**
A6	Pasture, grassland or range	Good	D	0.28	80
	Total			**0.28**	**80**
A7	Pasture, grassland or range	Good	D	0.03	80
	Total			**0.03**	**80**
A8	Pasture, grassland or range	Good	D	0.03	80
	Total			**0.03**	**80**
B	Pasture, grassland or range	Fair	D	1.00	84
	Pasture, grassland or range	Good	D	0.70	80
	Woods - grass combination	Fair	D	0.10	82
	Total			**1.80**	**82**
C1	Pasture, grassland or range	Good	D	0.32	80
	Total			**0.32**	**80**
C2	Pasture, grassland or range	Good	D	0.53	80
	Total			**0.53**	**80**
C3	Pasture, grassland or range	Good	D	0.23	80
	Total			**0.23**	**80**
C4	Pasture, grassland or range	Good	D	0.19	80
	Total			**0.19**	**80**
C5	Pasture, grassland or range	Good	D	0.29	80
	Total			**0.29**	**80**
C6	Pasture, grassland or range	Good	D	0.20	80
	Total			**0.20**	**80**
C7	Pasture, grassland or range	Good	D	0.75	80
	Total			**0.75**	**80**
D	Pasture, grassland or range	Good	D	1.80	80
	Woods - grass combination	Fair	D	0.30	82
	Total			**2.10**	**80**
E	Pasture, grassland or range	Good	D	0.30	80
	Total			**0.30**	**80**



Watershed Aerial Map
Scale: 1" = 200'

N
True



Post-Development Watersheds A, B, and C Site Plan
Scale: 1" = 100'

N
True

Legend

- 1000 — Major contour (25' interval)
- Minor contour (5' interval)
- Watershed area boundary
- Watershed sub-area boundary
- Woodland boundary
- Existing vineyard boundary
- Impervious area boundary
- Sheet flow along critical path
- Shallow concentrated flow along critical path
- Approximate parcel boundary
- Channel flow along critical path
- Vineyard development boundary
- Ephemeral stream
- Blue line stream
- Cross slope diversion
- Waterbar
- 105 / 114 — Soil type boundary
- Runoff flow direction arrow
- Rock lined outfall
- Drop inlet
- Access road
- Drainage mainline
- CPP — Corrugated plastic pipe
- D/W — Dual wall

NOTES/ REMARKS:
1. 5/15/2020. Addressed comments from Application Completeness Determination Memorandum from Napa County PBES - Engineering Services, dated 04/20/2020.
2. 6/05/2020. Addressed comments from Application Completeness Determination Memorandum from Napa County PBES - Engineering Services, dated 06/03/2020.

DESIGNED BY OR | DRAWN BY OR | CHECKED BY OR

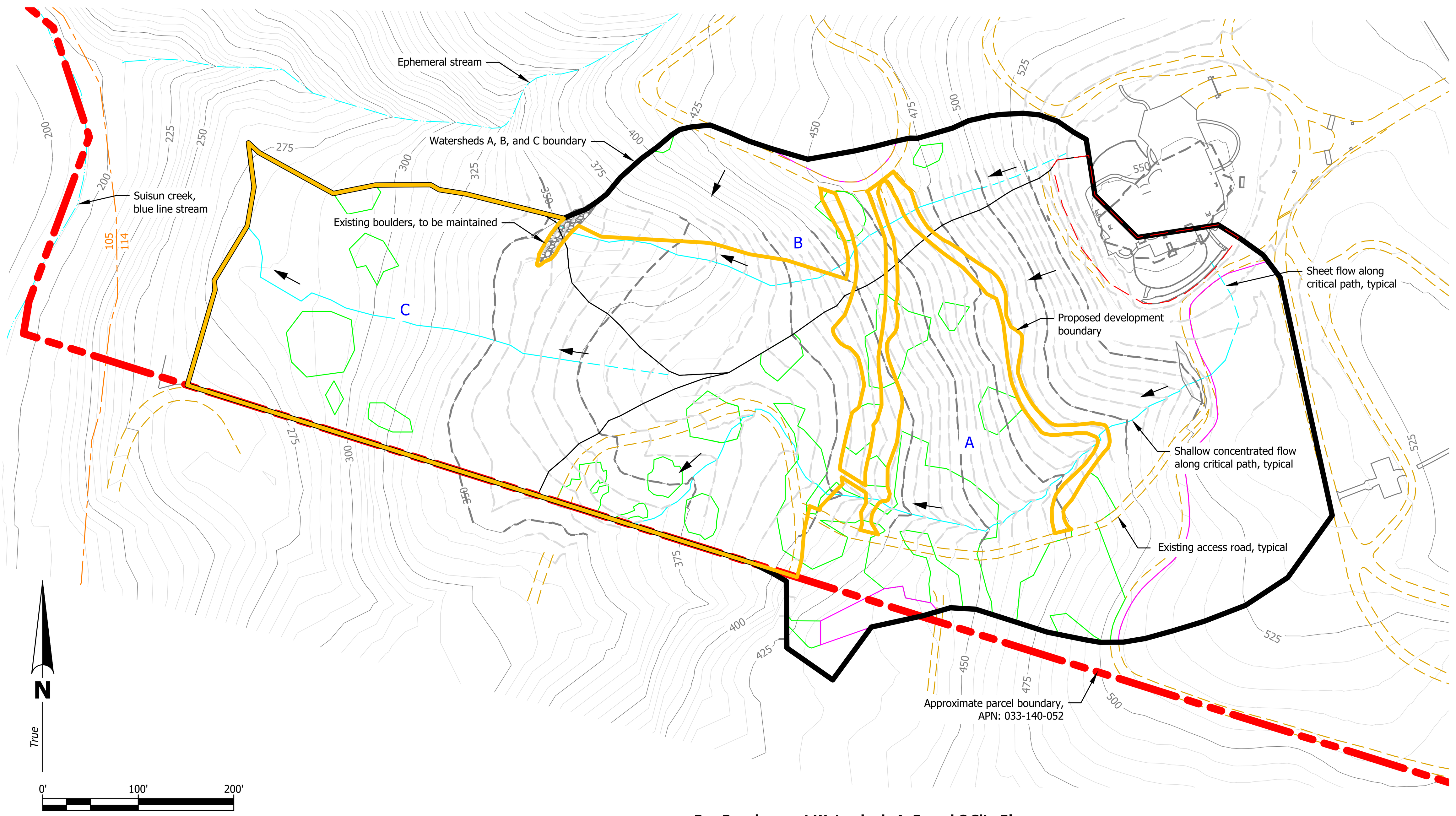
REGISTERED PROFESSIONAL ENGINEER OMAR REVELES No. C 74723 EXPIRES: 12/21 CIVIL STATE OF CALIFORNIA

ACME Engineering Incorporated
www.acmeng.com
1700 Soscol Avenue
Ste. 9, Napa, CA 94559
707-253-ACME

QUANTUM LIMIT VINEYARDS
NEW VINEYARD DEVELOPMENT
TR55 POST-DEVELOPMENT SITE PLAN & CURVE NUMBERS

PROJECT NO. 190101-0104
DRAWING NO. 04 02
SCALE AS SHOWN
DATE 06/05/2020

SHEET 2 OF 2

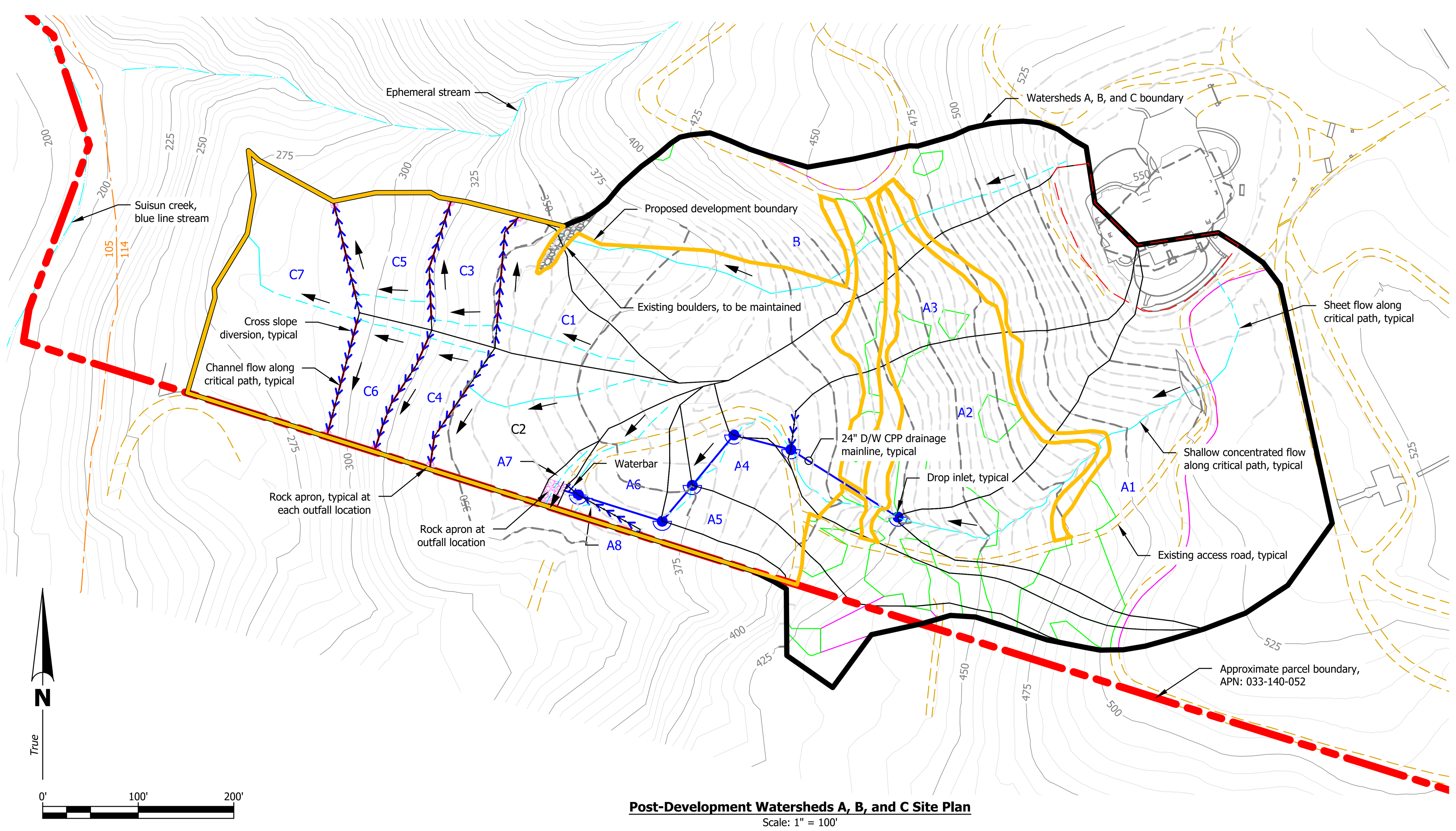


Notes:

1. Topographic information provided by CMP Civil Engineering & Land Surveying from September 2018 and December 2020.
2. Datum: North American Vertical Datum of 1988 (NAVD 88).

Pre-Development Watersheds A, B, and C Site Plan

Scale: 1" = 100'



Notes:

1. Topographic information provided by CMP Civil Engineering & Land Surveying from September 2018 and December 2020.
2. Datum: North American Vertical Datum of 1988 (NAVD 88).

Post-Development Watersheds A, B, and C Site Plan

Scale: 1" = 100'

Legend

- 1000 — Major contour (25' interval)
- Minor contour (5' interval)
- 1000 — Major contour (5' interval) from December 2020
- Minor contour (5' interval) from December 2020
- Existing boulders
- Watershed area boundary
- Watershed sub-area boundary
- Approximate parcel boundary
- Woodland boundary
- Existing vineyard boundary
- Impervious area boundary
- 105/114 — Soil type boundary
- Ephemeral stream
- Blue line stream
- Access road
- Vineyard development boundary
- Sheet flow along critical path
- Shallow concentrated flow along critical path
- Channel flow along critical path
- Runoff flow direction arrow
- Cross slope diversion
- Drop inlet
- Drainage mainline
- Rock lined outfall
- CPP — Corrugated plastic pipe
- D/W — Dual wall

Summary Table Of Pre-Development Hydrologic Characteristics For Quantum Limit Vineyards					
Watershed	Land Use	Hydrologic Condition	Hydrologic Soil Group	Acres	Curve Number
A	Paved parking lots, roofs, driveways		D	0.28	98
	Pasture, grassland or range	Fair	D	3.40	84
	Pasture, grassland or range	Good	D	1.08	80
	Woods - grass combination	Fair	D	1.12	82
	Total			**5.88**	**84**
B	Pasture, grassland or range	Fair	D	1.60	84
	Pasture, grassland or range	Good	D	0.10	80
	Woods - grass combination	Fair	D	0.10	82
	Total			**1.80**	**84**
C	Pasture, grassland or range	Fair	D	2.33	84
	Woods - grass combination	Fair	D	0.18	82
	Total			**2.51**	**84**

Soil Types on Site:
114 - Bressa-dibble complex
Hydrologic soil group:
Bressa component - C
Dibble component -D

Summary Table Of Post-Development Hydrologic Characteristics For Quantum Limit Vineyards					
Watershed	Land Use	Hydrologic Condition	Hydrologic Soil Group	Acres	Curve Number
A1	Paved parking lots, roofs, driveways		D	0.13	98
	Pasture, grassland or range	Fair	D	0.89	84
	Pasture, grassland or range	Good	D	1.01	80
	Woods - grass combination	Fair	D	0.24	82
	Total			**2.27**	**83**
A2	Paved parking lots, roofs, driveways		D	0.01	98
	Pasture, grassland or range	Fair	D	0.66	84
	Pasture, grassland or range	Good	D	0.30	80
	Woods - grass combination	Fair	D	0.27	82
	Total			**1.24**	**83**
A3	Paved parking lots, roofs, driveways		D	0.14	98
	Pasture, grassland or range	Fair	D	0.56	84
	Pasture, grassland or range	Good	D	0.29	80
	Woods - grass combination	Fair	D	0.06	82
	Total			**1.05**	**85**
A4	Pasture, grassland or range	Fair	D	0.13	84
	Pasture, grassland or range	Good	D	0.27	80
	Woods - grass combination	Fair	D	0.19	82
	Total			**0.59**	**82**
A5	Pasture, grassland or range	Fair	D	0.10	84
	Pasture, grassland or range	Good	D	0.25	80
	Woods - grass combination	Fair	D	0.04	82
	Total			**0.39**	**81**
A6	Pasture, grassland or range	Good	D	0.28	80
	Total			**0.28**	**80**
A7	Pasture, grassland or range	Good	D	0.03	80
	Total			**0.03**	**80**
A8	Pasture, grassland or range	Good	D	0.03	80
	Total			**0.03**	**80**
B	Pasture, grassland or range	Fair	D	1.00	84
	Pasture, grassland or range	Good	D	0.70	80
	Woods - grass combination	Fair	D	0.10	82
	Total			**1.80**	**82**
C1	Pasture, grassland or range	Good	D	0.32	80
	Total			**0.32**	**80**
C2	Pasture, grassland or range	Good	D	0.53	80
	Total			**0.53**	**80**
C3	Pasture, grassland or range	Good	D	0.23	80
	Total			**0.23**	**80**
C4	Pasture, grassland or range	Good	D	0.19	80
	Total			**0.19**	**80**
C5	Pasture, grassland or range	Good	D	0.29	80
	Total			**0.29**	**80**
C6	Pasture, grassland or range	Good	D	0.20	80
	Total			**0.20**	**80**
C7	Pasture, grassland or range	Good	D	0.75	80
	Total			**0.75**	**80**

Soil Types on Site:
114 - Bressa-dibble complex
Hydrologic soil group:
Bressa component - C
Dibble component -D

OR — CHECKED BY
OR — DRAWN BY
OR — DESIGNED BY

NOTES/ REMARKS:

1. 5/15/2020. Addressed comments from Application Completeness Determination Memorandum from Napa County PBES - Engineering Services, dated 04/20/2020.
2. 6/05/2020. Addressed comments from Application Completeness Determination Memorandum from Napa County PBES - Engineering Services, dated 06/03/2020.
3. 12/17/2020. Incorporate updated topographical data from December 2020.

REGISTERED PROFESSIONAL ENGINEER — OMAR REVELES — No. C 74723 — EXPIRES: 12/21 — CIVIL — STATE OF CALIFORNIA

ACME Engineering Incorporated
www.acmeng.com
1700 Soscol Avenue
Ste. 9, Napa, CA 94559
707-253-ACME

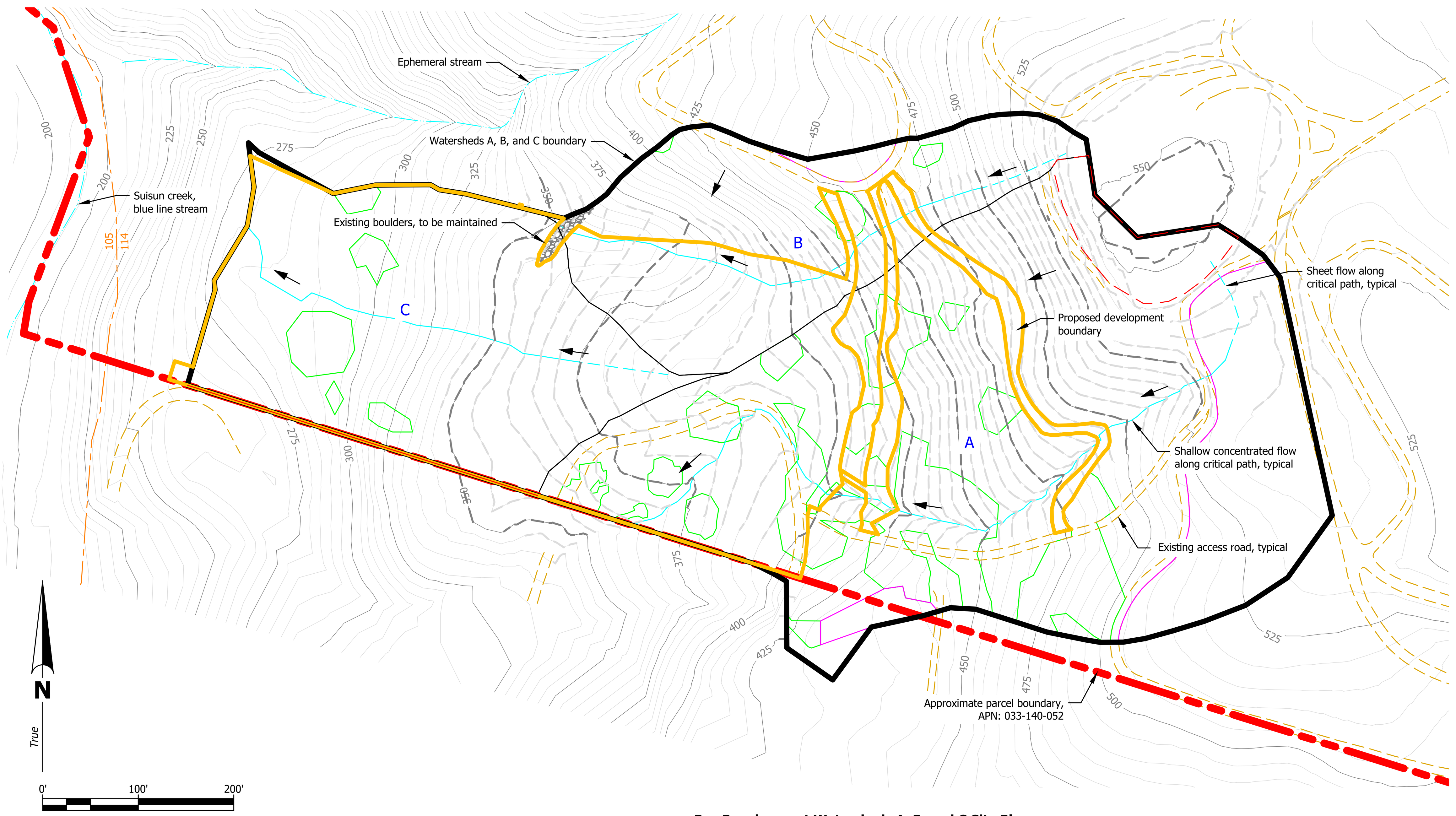
QUANTUM LIMIT VINEYARDS

NEW VINEYARD DEVELOPMENT

WATERSHEDS A-C TR55 SITE PLANS & CURVE NUMBERS

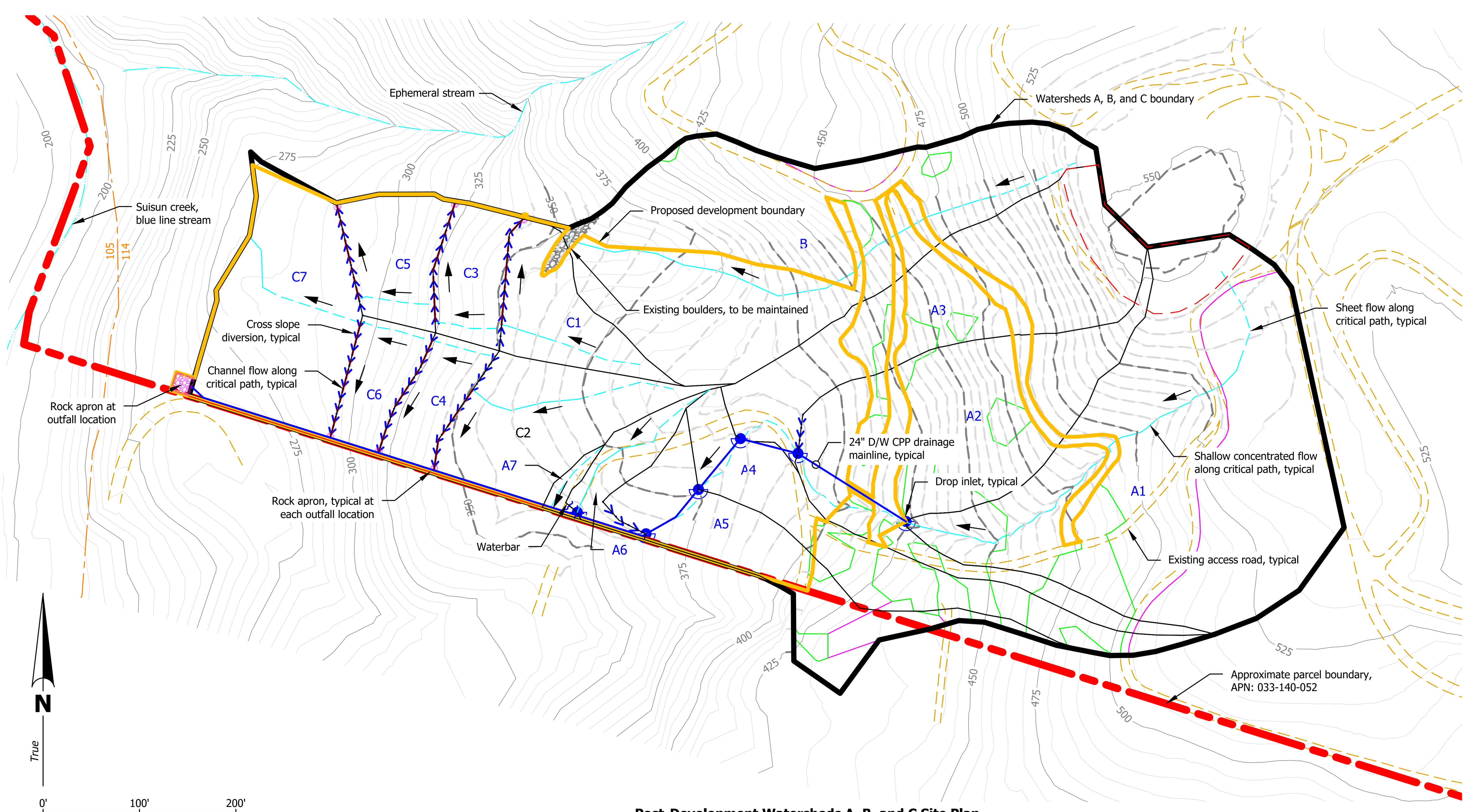
PROJECT NO. 190101-0104
DRAWING NO. 04 01
SCALE AS SHOWN
DATE 12/18/2020

SHEET 1 OF 1



Pre-Development Watersheds A, B, and C Site Plan
Scale: 1" = 100'

Notes:
1. Topographic information provided by CMP Civil Engineering & Land Surveying from September 2018 and December 2020.
2. Datum: North American Vertical Datum of 1988 (NAVD 88).



Post-Development Watersheds A, B, and C Site Plan
Scale: 1" = 100'

Notes:
1. Topographic information provided by CMP Civil Engineering & Land Surveying from September 2018 and December 2020.
2. Datum: North American Vertical Datum of 1988 (NAVD 88).

Legend

- Major contour (25' interval)
- Minor contour (5' interval)
- Major contour (5' interval) from December 2020
- Minor contour (5' interval) from December 2020
- Existing boulders
- Watershed area boundary
- Watershed sub-area boundary
- Approximate parcel boundary
- Woodland boundary
- Existing vineyard boundary
- Impervious area boundary
- Soil type boundary
- Ephemeral stream
- Blue line stream
- Access road
- Vineyard development boundary
- Sheet flow along critical path
- Shallow concentrated flow along critical path
- Channel flow along critical path
- Runoff flow direction arrow
- Cross slope diversion
- Drop inlet
- Drainage mainline
- Rock lined outfall
- CPP — Corrugated plastic pipe
- D/W — Dual wall

Summary Table Of Pre-Development Hydrologic Characteristics For Quantum Limit Vineyards

Watershed	Land Use	Hydrologic Condition	Hydrologic Soil Group	Acres	Curve Number
A	Paved parking lots, roofs, driveways		D	0.28	98
	Pasture, grassland or range	Fair	D	3.40	84
	Pasture, grassland or range	Good	D	1.08	80
	Woods - grass combination	Fair	D	1.12	82
	Total			**5.88**	**84**
B	Pasture, grassland or range	Fair	D	1.60	84
	Pasture, grassland or range	Good	D	0.10	80
	Woods - grass combination	Fair	D	0.10	82
	Total			**1.80**	**84**
C	Pasture, grassland or range	Fair	D	2.33	84
	Woods - grass combination	Fair	D	0.18	82
	Total			**2.51**	**84**

Soil Types on Site:
114 - Bressa-dibble complex
Hydrologic soil group:
Bressa component - C
Dibble component -D

Summary Table Of Post-Development Hydrologic Characteristics For Quantum Limit Vineyards

Watershed	Land Use	Hydrologic Condition	Hydrologic Soil Group	Acres	Curve Number
A1	Paved parking lots, roofs, driveways		D	0.13	98
	Pasture, grassland or range	Fair	D	0.89	84
	Pasture, grassland or range	Good	D	1.01	80
	Woods - grass combination	Fair	D	0.24	82
	Total			**2.27**	**83**
A2	Paved parking lots, roofs, driveways		D	0.01	98
	Pasture, grassland or range	Fair	D	0.66	84
	Pasture, grassland or range	Good	D	0.30	80
	Woods - grass combination	Fair	D	0.27	82
	Total			**1.24**	**83**
A3	Paved parking lots, roofs, driveways		D	0.14	98
	Pasture, grassland or range	Fair	D	0.56	84
	Pasture, grassland or range	Good	D	0.29	80
	Woods - grass combination	Fair	D	0.06	82
	Total			**1.05**	**85**
A4	Pasture, grassland or range	Fair	D	0.13	84
	Pasture, grassland or range	Good	D	0.27	80
	Woods - grass combination	Fair	D	0.19	82
	Total			**0.59**	**82**
A5	Pasture, grassland or range	Fair	D	0.11	84
	Pasture, grassland or range	Good	D	0.41	80
	Woods - grass combination	Fair	D	0.04	82
	Total			**0.56**	**81**
A6	Pasture, grassland or range	Good	D	0.14	80
	Total			**0.14**	**80**
A7	Pasture, grassland or range	Good	D	0.03	80
	Total			**0.03**	**80**
B	Pasture, grassland or range	Fair	D	1.00	84
	Pasture, grassland or range	Good	D	0.70	80
	Woods - grass combination	Fair	D	0.10	82
	Total			**1.80**	**82**
C1	Pasture, grassland or range	Good	D	0.32	80
	Total			**0.32**	**80**
C2	Pasture, grassland or range	Good	D	0.53	80
	Total			**0.53**	**80**
C3	Pasture, grassland or range	Good	D	0.23	80
	Total			**0.23**	**80**
C4	Pasture, grassland or range	Good	D	0.19	80
	Total			**0.19**	**80**
C5	Pasture, grassland or range	Good	D	0.29	80
	Total			**0.29**	**80**
C6	Pasture, grassland or range	Good	D	0.20	80
	Total			**0.20**	**80**
C7	Pasture, grassland or range	Good	D	0.75	80
	Total			**0.75**	**80**

Soil Types on Site:
114 - Bressa-dibble complex
Hydrologic soil group:
Bressa component - C
Dibble component -D

NOTES/ REMARKS:
1. 5/15/2020. Addressed comments from Application Completeness Determination Memorandum from Napa County PBES - Engineering Services, dated 04/20/2020.
2. 6/05/2020. Addressed comments from Application Completeness Determination Memorandum from Napa County PBES - Engineering Services, dated 06/03/2020.
3. 12/17/2020. Incorporate updated topographical data from December 2020.
4. 9/3/2021. Update hydrology map to reflect the relocation of the outfall in block X1, per Napa County PBES 8/23/2021 .

DESIGNED BY	DRAWN BY	CHECKED BY
OR	OR	OR

REGISTERED PROFESSIONAL ENGINEER
OMAR REVELES
No. C 74723
EXPIRES: 12/21
CIVIL
STATE OF CALIFORNIA

ACME Engineering Incorporated
www.acmeng.com
1700 Soscol Avenue
Ste. 9, Napa, CA 94559
707-253-ACME

QUANTUM LIMIT VINEYARDS

NEW VINEYARD DEVELOPMENT

WATERSHEDS A-C TR55 SITE PLANS & CURVE NUMBERS

PROJECT NO. 190101-0104
DRAWING NO. 05 01
SCALE AS SHOWN
DATE 9/3/2021

SHEET 1 OF 1