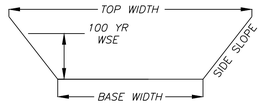
Notes

1. Contractor is responsible for verifying all existing utility locations prior to excavation
2. There are no known natural or artificial water storage detention areas, or wetlands in the area designated for construction
3. No part of the project lies within the 100 year flood plain
4. All erosion and sediment control measures need to be implemented prior to construction
5. Additional erosion control may be required by the City Engineer, Design Engineer or Owner at any time problematic areas are noted in the field or existing measures are found to be ineffective
6. Soil Stabilization of disturbed areas shall be completed within 14 days of construction inactivity
7. Contractor responsible for all density testing of roadway subgrade and granular base.



TYPICAL CHANNEL SECTION
SWALE DETAIL
Not To Scale

NOTE: Swale sections extend the entire length between upstream and downstream structures with the exception of a transition at each structure. The minimum swale depth shall be 6" over the 100-year water surface elevation.

100 YEAR OVERFLOW SWALE SECTIONS

Section	100 Yr. Runoff (c.f.s.)	Bed Slope (%)	Base Width (ft)	Side Slope (1:V)	100 Yr WSE (ft)	Sectional Area	Velocity 100Yr. (f.p.s.)	Hydraulic Radius (ft)	Shear Stress (p.s.f.)
1-1	0.82	2.00	5	6	0.11	0.62	1.32	0.10	0.12
2-2	1.30	2.00	5	6	0.14	0.82	1.59	0.12	0.15

Note: See Table 8.10 of the APWA / MARC BMP Manual for design Summary for Native Vegetation Swales.

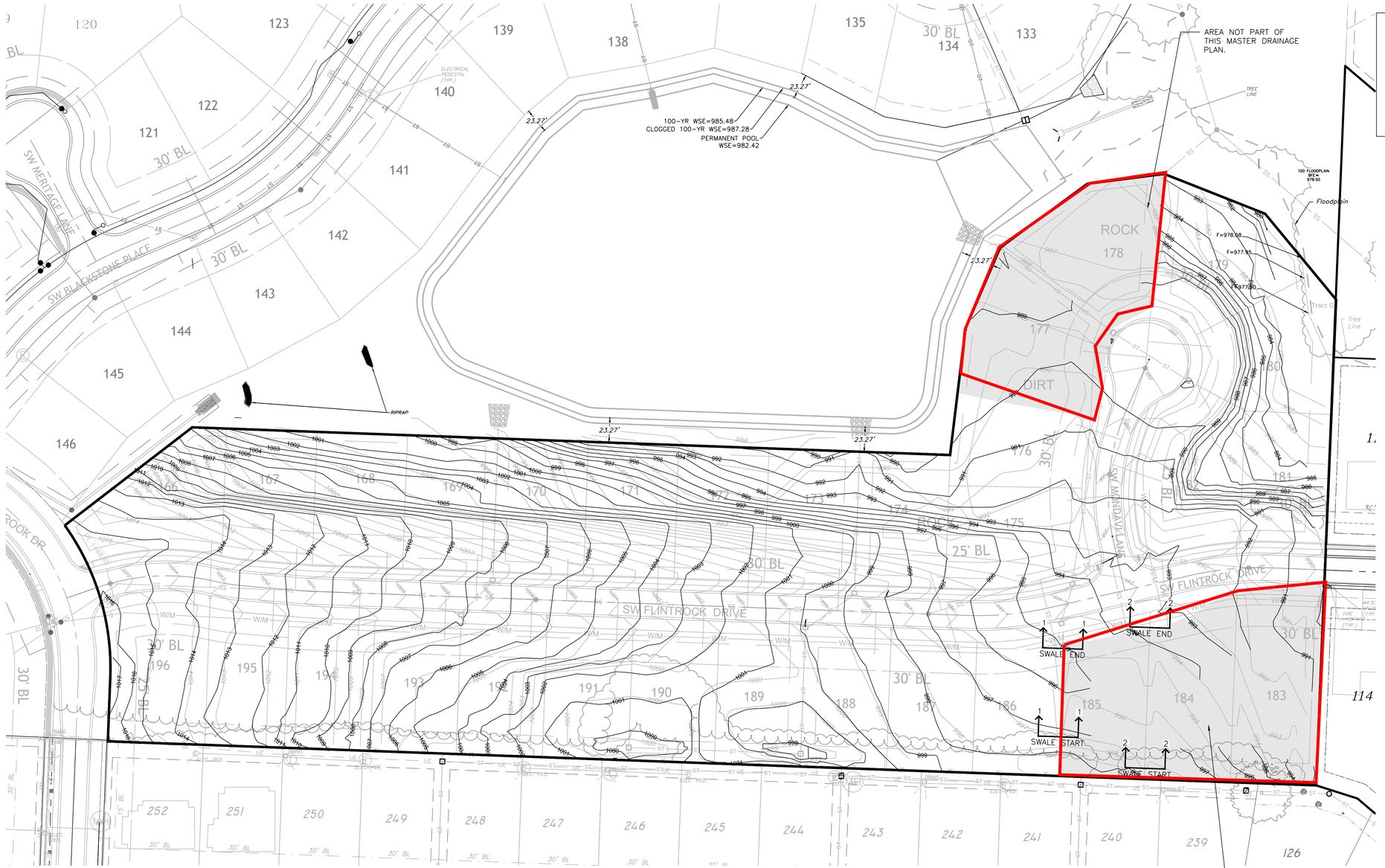
NOTE: Swale should be lined with "Straw with Net" turf reinforcement (Curlex Blanket or Eqv.). Per Table 5607-1 in APWA Manual

North

0 25' 50' 100'

GRADING PLAN

SCALE: 1" = 50'



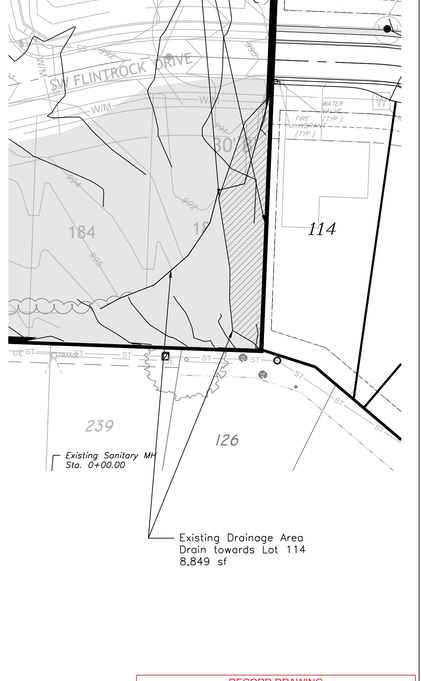
Estimated Cut / Fill Quantities

Site Area	*9.65 Acres*
Cut Volume (Unadjusted)	*17,287 c.y.*
Fill Volume (Unadjusted)	*20,068 c.y.*
Street & Sidewalk Cut Volume	*1,680 c.y.*
Net Fill	*1,101 c.y. (Unadjusted)*

Digitally signed by Gene Williams
DN: CN=Gene Williams, OU=Development, OU=LS Users, DC=DCALS, DC=LOC
Reason: I have reviewed this document
Date: 2022.11.29 14:20:25-06'00'

Accepted
Master Drainage Plan

This as-graded Master Drainage Plan (MDP) has been reviewed for accuracy. It is accepted for basic conformance to the approved MDP and may be used for the review of individual lot grading (plot) plans.



RECORD DRAWING
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Certified by: Matthew J. Schlicht
Title: Engineer
Firm: Engineering Solutions

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Napa Valley 5th Plat
Lee's Summit, Jackson County, Missouri

Project: NAPA VALLEY LSMO
Issue Date: October 31, 2022

Master Drainage Plan 1 of 3:
Grading Plan
Street, Stormwater, Master Drainage Plans for:
Napa Valley 5th Plat
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
MATTHEW J. SCHLICHT
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C.200

Lot Number	Basement Type	MBOE
166	Walkout	N/A
167	Walkout	N/A
168	Walkout	N/A
169	Walkout	N/A
170	Walkout	N/A
171	Walkout	N/A
172	Walkout	N/A
173	Walkout	N/A
174	Walkout	N/A
175	Full	N/A
176	Full	N/A
177	Full	N/A
178	Daylight	N/A
179	Walkout	N/A
180	Walkout	N/A
181	Walkout	N/A
182	Daylight	N/A
183	Full	N/A
184	Full	N/A
185	Full	N/A
186	Full	N/A
187	Daylight	N/A
188	Daylight	N/A
189	Walkout	N/A
190	Walkout	N/A
191	Walkout	N/A
192	Walkout	N/A
193	Walkout	N/A
194	Daylight	N/A
195	Full	N/A
196	Full	N/A

Accepted
Master Drainage Plan

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SPOT ELEVATIONS
SCALE: 1" = 40'

North

0 20' 40' 80'

100-YR WSE=985.48
CLOGGED 100-YR WSE=987.28
PERMANENT POOL WSE=982.42

SW MERITAGE LANE
SW BLACKSTONE
SW FLINTROCK DRIVE
SW MONDAVI LANE
SW OAK DR

100 FLOODPLAIN BFE= 978.50
Floodplain
TREE LINE
ELECTRICAL PEDESTAL (TYP.)
FIRE HYDRANT (TYP.)
WATER VALVE (TYP.)
MATCH EXISTING TC

RIPRAP

30' BL
25' BL
15' BL

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Master Drainage Plan 2 of 3:
Spot Elevations
Street, Stormwater, Master Drainage Plans for:
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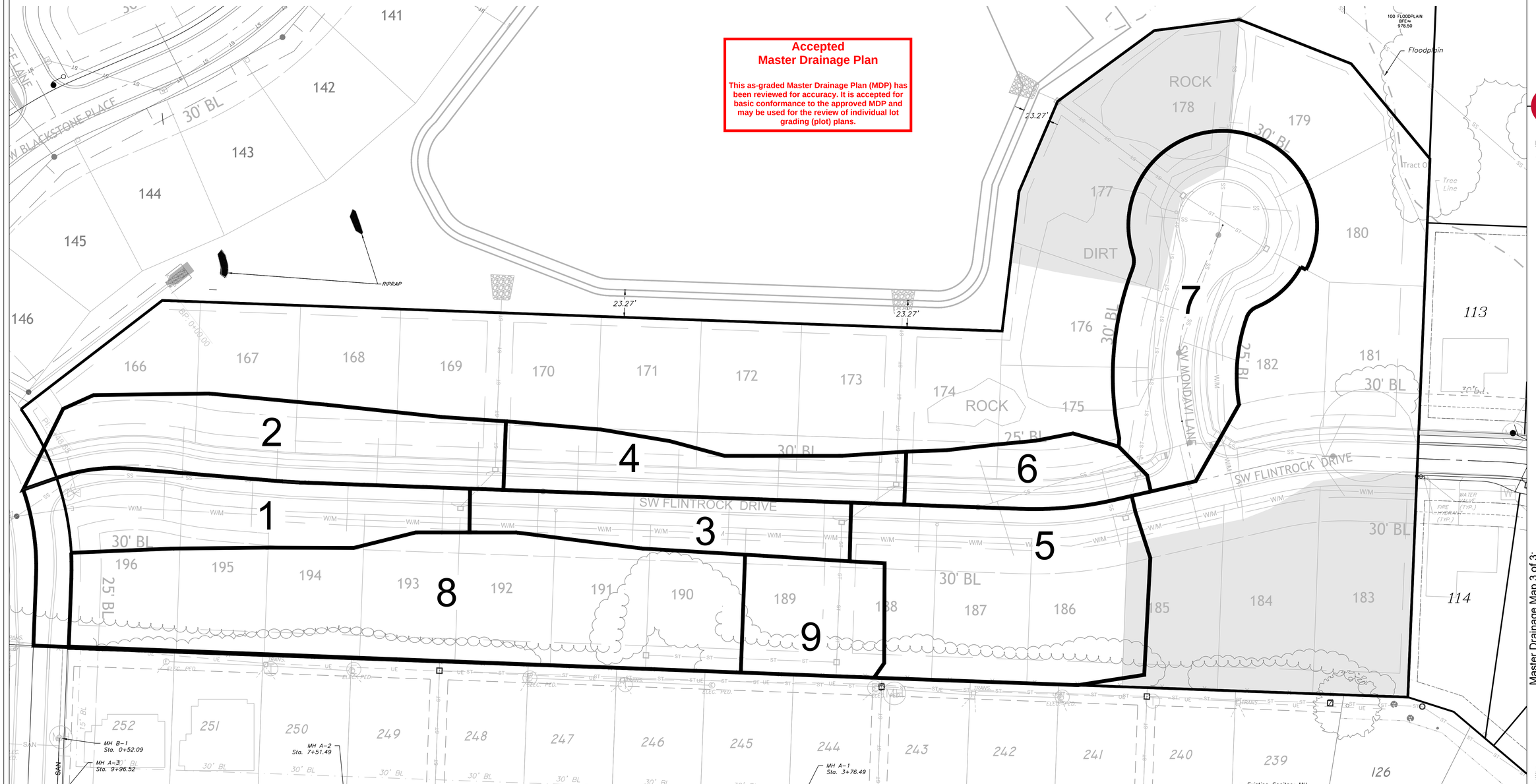
C.201



APWA STORM DRAINAGE "TC" COMPUTATIONS FOR : NAPA VALLEY 5TH PLAT

yellow areas are self computing overwrite if necessary

TOTAL WATERSHED

Surface types: Asph/Conc, Bus/Com, Dirt, Grass/Park, Lake, MultFam, SnglFam, Undev, Other

SURFACE CODES: A, B, D, G, L, M, S, U, Z

"C" Values: 0.90, 0.87, 0.60, 0.30, 0.90, 0.66, 0.51, 0.3

Overwrite if necessary: Length - DnElev or Slope

SURFACE CODE: P=Paved, U=Unpaved

Overwrite if necessary: Slope or Elevations

OVERLAND FLOW - 100' MAX

CHANNEL FLOW - FIRST REACH

TC COMPUTATION

AREA ID	TOTAL ACRES	WTRSHD LENGTH	UP ELEV	DN ELEV	SURFACE CODE	"C" VALUE	OVRLND LENGTH	UP ELEV	DN ELEV	SLOPE %	P or U	CHANNEL LENGTH	UP ELEV	DN ELEV	SLOPE %	VELOCITY F/S	Cal Overland Flow T(I)	Used Min 5 Max 15 T(I)	Cal Channel One T(T)	Cal Channel Two T(T)	Total T© 10	AREA ID
1	0.54	359.00	1015.00	1010.50	S	0.51	59.0	1015.0	1013.70	2.2	P	300.0	1013.7	1010.5	1.07	2.1	6.3	6.3	2.4	0.0	8.7	1
2	0.57	384.00	1016.00	1010.20	S	0.51	49.0	1016.0	1015.00	2.0	P	335.0	1015.0	1010.2	1.43	2.4	5.9	5.9	2.3	0.0	8.2	2
3	0.32	333.00	1010.50	1005.00	S	0.51	26.0	1010.5	1009.80	2.7	P	307.0	1009.8	1005.0	1.56	2.5	3.9	5.0	2.0	0.0	7.0	3
4	0.35	369.00	1012.20	1003.00	S	0.51	47.0	1012.2	1011.00	2.6	P	322.0	1011.0	1003.0	2.48	3.2	5.3	5.3	1.7	0.0	7.0	4
5	0.32	258.00	1007.20	994.50	S	0.51	41.0	1007.2	1004.00	7.8	P	217.0	1004.0	994.5	4.38	4.3	3.4	5.0	0.9	0.0	5.9	5
6	0.24	221.00	1005.00	994.00	S	0.51	36.0	1005.0	1003.00	5.6	P	185.0	1003.0	994.0	4.86	4.5	3.6	5.0	0.7	0.0	5.7	6
7	0.78	236.00	995.00	991.00	S	0.51	49.0	995.0	992.50	5.1	P	187.0	992.5	991.0	0.80	1.8	4.3	5.0	1.7	0.0	6.7	7
8	2.26	508.00	1016.00	999.00	S	0.51	100.0	1016.0	1014.00	2.0	U	408.0	1014.0	999.0	3.68	3.1	8.4	8.4	2.2	0.0	10.6	8
9	0.46	133.00	1008.50	999.00	S	0.51	100.0	1008.5	1000.00	8.5	U	33.0	1000.0	999.0	3.03	2.8	5.2	5.2	0.2	0.0	5.4	9

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Master Drainage Map 3 of 3:
Drainage Area Map
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